# Oracle Fusion Cloud SCM

## Using Replenishment Planning

24A

Oracle Fusion Cloud SCM
Using Replenishment Planning

24A

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# Get Help

There are a number of ways to learn more about your product and interact with Oracle and other users.

## Get Help in the Applications

Use help icons to access help in the application. If you don't see any help icons on your page, click your user image or name in the global header and select Show Help Icons.

## Get Support

You can get support at *My Oracle Support*. For accessible support, visit *Oracle Accessibility Learning and Support*.

## Get Training

Increase your knowledge of Oracle Cloud by taking courses at *Oracle University*.

## Join Our Community

Use *Cloud Customer Connect* to get information from industry experts at Oracle and in the partner community. You can join forums to connect with other customers, post questions, suggest *ideas* for product enhancements, and watch events.

## Learn About Accessibility

For information about Oracle's commitment to accessibility, visit the *Oracle Accessibility Program*. Videos included in this guide are provided as a media alternative for text-based topics also available in this guide.

## Share Your Feedback

We welcome your feedback about Oracle Applications user assistance. If you need clarification, find an error, or just want to tell us what you found helpful, we'd like to hear from you.

You can email your feedback to *oracle_fusion_applications_help_ww_grp@oracle.com*.

Thanks for helping us improve our user assistance!

# 1 Introduction to Replenishment Planning

## Overview of Oracle Replenishment Planning

This topic provides an overview of Oracle Replenishment Planning.

Here's what you can do in the Replenishment Planning work area:

- Maintain optimum inventory levels at each node of your supply chain while meeting customer service targets.
- Use automated processes to maintain inventory policy parameters, dynamically update on-hand inventory, reduce costs by calculating the economic order quantity (EOQ) for replenishments, and improve customer service levels.
- Perform dynamic demand segmentation by grouping item-location combinations into segments that are meaningful to your business.
- Calculate service level-based inventory policies and thresholds.
- Integrate demand forecasting and time-phased inventory replenishment.
- Set up a multiechelon replenishment plan to balance demand and supply at each echelon of your supply chain and perform replenishment planning in a holistic manner.
- Rebalance inventories to move items from locations with excess inventory to locations with inventory shortages.
- Perform end item substitution and supersession during demand fulfillment.
- Simulate inventory planning.
- Set up and monitor exceptions.
- Use rich, embedded analytics.
- Open the Buyer Planning work area to manage buy recommendations from Replenishment Planning. Buyer Planning helps you evaluate ways to consolidate and group planned orders. Additionally, you can release buy recommendations from within Buyer Planning.

Also, with REST services, you can generate replenishment orders, manage segments, and integrate Replenishment Planning with other modules in Oracle Fusion Cloud Applications.

This table shows how Replenishment Planning integrates with Oracle Fusion Applications:

| Family in Oracle Fusion Applications | Entities Collected by Replenishment Planning | Entities Released by Replenishment Planning |
|---|---|---|
| Oracle Fusion Cloud Inventory Management | • On-hand inventory<br>• Inventory transfers<br>• Consumption history | • Inventory transfer recommendations |
| Oracle Fusion Cloud Procurement | • Purchase orders<br>• Requisitions | • Buy recommendations |
| Oracle Fusion Cloud Order Management | • Sales orders | Not applicable |

| Family in Oracle Fusion Applications | Entities Collected by Replenishment Planning | Entities Released by Replenishment Planning |
|---|---|---|
| | • Shipment history | |
| Oracle Fusion Cloud Product Lifecycle Management | • Items<br>• Organizations | Not applicable |

*Related Topics*

- Policy Assignment Sets
- Segmentation in Oracle Replenishment Planning
- Overview of Inventory Rebalancing
- Overview of End Item Substitution and Supersession
- Overview of Simulations for Replenishment Plans

# Overview of Supply Chain Planning Work Areas

The Oracle Fusion Cloud Supply Chain Planning solution is composed of products designed for specific supply chain planning business processes and tasks.

You perform these processes and tasks by using work areas. Each of the Oracle Supply Chain Planning products provides access to one or more work areas.

The Supply Chain Planning work areas that you can use are determined by these factors:

- The products that your enterprise has licensed and configured
- The security privileges assigned to your user account

To use the Supply Chain Planning work areas, you must be aware of these points:

- Navigation to work areas
- List of Supply Chain Planning work areas and the products to which they're applicable

## Navigation to Work Areas

You can use different paths to navigate to a specific work area including:

- From the Navigator: Click the Navigator icon to see the work areas that you have access to. The Supply Chain Planning work areas are listed within the Supply Chain Planning heading. The work area names are links. Click a specific work area link to access that work area.
- From the Springboard: On your home page you might have one or more springboard icons that represent a group of work areas, such as the group of Supply Chain Planning work areas. Click on the Supply Chain Planning springboard to access a set of icons, each of which represents a specific Supply Chain Planning work area. Click a specific icon to access that work area.

# List of Supply Chain Planning Work Areas

The following table lists the Supply Chain Planning work areas and the Oracle Fusion Cloud Supply Chain Planning modules that are applicable to each of the work areas.

| Work Area | Modules |
|---|---|
| Demand Management | Oracle Demand Management |
| Supply Planning | Oracle Supply Planning |
| Demand and Supply Planning | Both of these products must be configured:<br>• Oracle Demand Management<br>• Oracle Supply Planning |
| Planning Central | Oracle Planning Central |
| Sales and Operations Planning | Oracle Sales and Operations Planning |
| Backlog Management | Oracle Backlog Management |
| Production Scheduling | Oracle Production Scheduling |
| Replenishment Planning | Oracle Replenishment Planning |
| Plan Inputs | Use the Plan Inputs work area to perform tasks that don't require creating or accessing a plan.<br>This work area can also be opened from other Supply Chain Planning work areas. |

**Note:** If a plan that has been created in the Planning Central work area is opened from either the Supply Planning or the Demand and Supply Planning work area, then that plan will no longer be accessible from the Planning Central work area.

The Global Order Promising work area is bundled within the Oracle Fusion Cloud Order Management solution.

*Related Topics*

- Overview of the Replenishment Planning Work Area
- Overview of the Supply Planning Work Area
- Overview of the Demand Management Work Area
- Overview of the Sales and Operations Planning Work Area
- Overview of the Order Promising Work Area

# Overview of the Replenishment Planning Work Area

You use the Replenishment Planning work area to create, configure, and view your replenishment plans and analyze your real-world business processes.

Using the Replenishment Planning work area, you can:

- Create and configure replenishment plans.
- View replenishment plans and plan inputs.
- Use predefined or user-defined page layouts to view plan data that's tailored to your business.

To go to the Replenishment Planning work area and open a plan:

1. Open the work area by doing one of the following:
    - In the Navigator, go to the Supply Chain Planning group, and click **Replenishment Planning**.
    - On the home page, click the Supply Chain Planning springboard, and click the icon for Replenishment Planning.
2. To open a replenishment plan, use one of these methods:

| Method | Step |
|---|---|
| Through the **Plans** drawer | a. Click the Plans panel tab.<br>b. Expand Plans.<br>c. Right-click a replenishment plan, and select **Open**.<br><br>**Note:**<br>Only those replenishment plans that have been successfully run are shown in the Plans panel tab. |
| Through the Manage Plans page | a. Click the Tasks panel tab.<br>b. Under Plans, select **Manage Plans**.<br><br>The Manage Plans page appears.<br>c. Select a replenishment plan, and click **Actions** > **Open**. |

Your replenishment plan opens by default in the Edit Plan page, which consists of a header and configurable pane.

## Header

The header contains the **Page Layout** list and drop-down buttons such as **Open**, **Actions**, and **Save**.

## Configurable Pane

You can display the contents of your replenishment plan in the configurable pane. The number of panes displayed depends on the page layout that you're using. Using the **Change** drop-down button in the header, you can configure the number of displayed panes.

# How to Enable the Replenishment Planning Work Area

To enable the Replenishment Planning work area, you must perform two setup tasks.

You can perform these tasks in any order, but you must do both before a user can access the work area.

- Opt in to the Replenishment Planning feature
- Assign a job role to the applicable users

## Opt In to the Replenishment Planning Feature

You perform this opt in one time for your overall site.

- Offering: Supply Chain Planning
- Feature: Replenishment Planning

For more information regarding how to opt in to features, refer to the Using Functional Setup Manager guide, Offering Configuration chapter in the Oracle Help Center.

## Assign the Applicable Job Role to the Applicable Users

Assign a job role to the user associated with each of your replenishment planners that includes these privileges:

- Monitor Replenishment Planning Work Area (MSC_MONITOR_REPLENISHMENT_PLANNING_WORK_AREA_PRIV)
- Manage Segments (MSC_MANAGE_SEGMENTS_PRIV)

For more information regarding how to assign job roles to users, refer to the Securing SCM guide, Role Provisioning chapter in the Oracle Help Center.

*Related Topics*

- Role Provisioning and Deprovisioning
- Overview of Configuring Offerings

# Access Tasks as Quick Actions on a Home Page

Some tasks that are accessible by using the tasks panel drawer in a supply chain planning work area are also available from the home page as quick actions.

Click the **Show More** link on the home page to display all of the available quick actions for which you have access. You don't have to first navigate to a supply chain planning work area to take an action. For example, use quick actions to create a sourcing rule to purchase components from a new supplier without having to first select a planning work area.

In addition, there are work area-specific preferences that enable you to change your default page layout without having to first launch the work area. These preferences are useful if you configured a content-heavy default page layout that's

taking too long to load. In such cases, you can change your default page to a different page layout that opens quicker and then edit the content-heavy page layout to make it perform better.

Here's some additional information about quick actions on a home page:

- You must have the applicable privileges associated with the task to see the task as a quick action on the home page. Each quick action is secured by its related privilege or privileges. For example, if you have the Manage Planning Sourcing privilege, then you should see the Manage Sourcing Rules task in the tasks panel drawer in the work area. You should also see the task as a quick action on the Supply Chain Planning or Order Management (in the case of Global Order Promising) home pages.
- You must have access to the work area to see the associated manage preferences quick actions. For example, you must have access to the Supply Planning work area to see the Edit Supply Planning Preferences quick action.
- You can't navigate to any other UI or open other tabs. When you click a quick access link, the UI opens in the page, but you aren't in a work area.
- You can only return to the Supply Chain Planning home page when you close out of a task that you initiated from the Supply Chain Planning home page.

# Work with Page Layouts in Replenishment Planning

In the Replenishment Planning work area, you can create and edit page layouts.

## Create a Page Layout

To create a page layout:

1. In the Replenishment Planning work area, open the replenishment plan for which you want to create a page layout.
2. In the header, select **Page Layout** > **Create**.

   The Create Page Layout dialog box opens.
3. Specify the following details:
   - Enter the page layout name and description.
   - Select **Public** to make the page layout accessible to all users, or select **Private** to restrict the page layout to yourself.
   - In the **Enable in Work Area** field, ensure that **Replenishment Planning** is selected.
4. Click **Save and Close**.

   The page layout is created with an empty pane.
5. Click the **Change** drop-down button to select a pane layout (for example, Two Pane, Horizontal Split) for your page layout.
6. To add content to a pane, click the **Open** drop-down button, and select the pane.

   The Open Table, Graph, or Tile Set dialog box opens.
7. Select a table, graph, or tile set from the displayed list, and click **OK**.
8. Add content to the other panes of the page layout.
9. Click the **Save Layout** drop-down button.

## Edit a Page Layout

You can edit a user-defined page layout using the **Save Layout** drop-down button in the header or the Manage Page Layouts dialog box that's opened from the **Page Layout** field. You can't save your changes to a predefined page layout or a page layout that belongs to another user. If you modify a predefined page layout or a page layout that belongs to another user, you can save it as a new, user-defined page layout that belongs to you.

After making changes to the page layout, click the **Save Layout** drop-down button to save your changes. To save your changes to a new page layout, click **Save Layout** > **Save As**. The Save Layout As dialog box opens, and you can specify the name, description, access, and work area for the new page layout.

In the Manage Page Layouts dialog box, you can:

- Change the name, description, work area, and access for the page layout.
- Duplicate or delete the page layout.

  > **Note:** You can't delete the page layout if it's presently being used by the displayed replenishment plan.

- Make the page layout your default page layout.
- Add tables, graphs, or tile sets to the page layout.
- Remove tables, graphs, or tile sets from the page layout.

## Predefined Page Layouts for Replenishment Planning

The Replenishment Planning work area has the following predefined page layouts:

- Demand and Replenishment Plan Summary: This page layout provides infotiles for policy execution, policy effectiveness, segment analysis, total inventory value, and shipment forecast mean absolute percentage error (MAPE). By clicking the bar at the bottom of each infotile, you can view the associated graphs and tables. Use this page layout for integrated replenishment plans for which you select the **Generate forecast**, **Calculate policy parameters**, and **Calculate replenishments** check boxes on the Plan Options page.
- Product Lifecycle Management: This page layout displays the predefined Manage Product Life Cycle by Item and Date table that you can use to modify the launch and discontinuation dates for products. The page layout also displays the predefined Manage Forecast During Product Life Cycle table that you can use to modify the shipments or bookings forecasts for products. Use this page layout to manage product introductions and retirements.
- Replenishment and Rebalancing Plan Summary: This page layout provides infotiles for policy execution, policy effectiveness, segment analysis, total inventory value, and rebalancing performance. Use this page layout for analyzing the effectiveness of the inventory rebalancing process for replenishment plans for which you select the **Rebalance inventory** check box on the Plan Options page.
- Replenishment Plan Summary: This page layout provides infotiles for policy execution, policy effectiveness, segment analysis, and total inventory value. By clicking the bar at the bottom of each infotile, you can view the associated graphs and tables. Use this page layout for replenishment plans for which you select the **Calculate policy parameters** and **Calculate replenishments** check boxes on the Plan Options page.
- Replenishment Workbench: This two-pane page layout has the Replenishment Workbench table and an inventory sawtooth graph. Use this page layout when you want to simultaneously use a table and graph for analyzing replenishment planning results.

# Overview of Supply Chain Planning Plan Types

When you create a plan, plan type is the first choice that you make. After you run a plan, you can't edit the plan type.

Oracle Fusion Cloud Supply Chain Planning provides these types of plans, which you can create, edit, run, and so on, depending on the work area that you have access to:

| Plan Type | Use This Plan Type | Work Areas the Plan Type is Available |
|---|---|---|
| Demand Plan | • When you want to perform collaborative and statistical demand forecasting.<br>• When you want to use a demand plan as a demand schedule for a supply plan or replenishment plan. | Demand and Supply Planning<br>Demand Management<br>Planning Central<br>Replenishment Planning |
| Supply Plan | When you want to generate a supply schedule. | Demand and Supply Planning<br>Planning Central<br>Supply Planning |
| Demand and Supply Plan | For an integrated demand and supply planning. | Demand and Supply Planning<br>Planning Central |
| Sales and Operations Plan | For aggregate planning. | Sales and Operations Planning |
| Backlog Plan | For backlog management. | Backlog Management |
| Replenishment Plan | For replenishment planning. | Replenishment Planning |

*Related Topics*

- Actions to Manage Your Plans

# Planners for Supply Chain Planning

## How You Define Planners for Supply Chain Planning

Planners are the people in your organization who are responsible for a set of items, their inventory levels, supply and demand, and so forth. For example, some typical titles of planners are Material Planner, Supply Chain Planner, and Demand Planner.

All supply chain planning products use planners. You can define a specific person as a supply chain planner for the Oracle Fusion source system or for any other source system. You can also associate a planner to an item at the organization level.

Use the ScpPlannersImportTemplate.xlsm import template to create the CSV file for the **Load Planning Data from Files** task for planners. You can also use the Manage Planners page to define supply chain planners for each source system. Access the Manage Planners page from a Supply Chain Planning work area. Click the **Tasks** panel drawer and then click the **Manage Planners** link.

For Oracle Fusion source systems, associate the employee identification number with the planner name because Oracle Purchasing requires a valid employee identification number. When a planner releases a planned order, purchasing checks the employee identification number before creating the purchase requisition.

For external source systems, determine if the employee identification number is required when releasing planned orders. If required, use the Manage Planners page to associate the planner with their employee identification number. Or, you can use the ScpPlannersImportTemplate.xlsm template to associate the employee identification number with the planner name.

Use Oracle Product Hub to assign planners at the item-organization level. During data collections, the planning processes collect the planner-item-organization assignment. Planners can then use the planner name to search the data on most of the demand and supply planning pages.

## Update Planner Data with New Employee Information

If a planner's employee information (such as employee number, employee name, or email) changes, then that information can be updated in the planners table in several ways.

For external source systems, the collection process looks for the employee number in the data managed by Oracle Fusion Cloud Human Capital Management.

- If the employee number is available in the employee data managed by Oracle Fusion Cloud Human Capital Management, then its respective details (employee name and email) are extracted and populated in the planners table.
- If the employee number isn't available in the employee data managed by Oracle Fusion Cloud Human Capital Management, then the collection process populates the employee number as provided in the comma-separated values (CSV) file in the planners table.

Employee details are updatable only once during the initial collection process. For example, in the first collection run, 123456 is provided for an employee number. If you change the employee number to 100100 on the second collection

run, then the latest employee details aren't reflected in the planners table. To change a planner's employee information, you can select a different employee by using the Manage Planners UI or you can mass update planners.

There are two methods to mass update planners. They both involve removing planner data and then collecting the planner data again with any changes.

Method A

1. In one of the Supply Chain Planning work areas, select the **Manage Planners** task.
2. Delete all the planners who need their employee information updated.
3. Collect the planner data again by using the Load Planning Data from Files scheduled process.

Method B

**Note:** Method B will purge planner data for all planners.

1. In the Scheduled Processes work area, click **Schedule New Process**.
2. In the Schedule New Process dialog box, search for and select the **Purge Data Repository** process.
3. In the Process Details dialog box:
    a. Select the **Source System**.
    b. Set **Purge Global Entities** = **Yes**.
    c. In the Reference Data tab, move **Planners** to Selected Entities.
    d. Click **Submit**.

    The scheduled process purges the planner data.
4. Collect the planner data again by using the Load Planning Data from Files scheduled process.

## How You Reassign Item Definitions to a Different Planner

When a planner leaves an organization and that planner's items need to be reassigned, there are two ways you can reassign the planner's item definitions.

- Don't change the planner code but instead reassign the existing code to a different employee on the Manage Planners page. In this case, there's no need to change the planner codes for the item.
- Create one or more new planner codes (or use an existing one) and then either:
    - Manually reassign the items to those one or more new planners individually.
    - Use the item mass changes feature in the Product Information Management work area.

# Assign Time Zones to Locations in Supply Chain Planning

You can view supplies and demands in your Supply Chain Planning work area based on the time zone of the organization, customer site, or supplier site.

In addition, you can calculate precise in-transit time because supply chain planning considers the time zone difference between the source and destination locations.

The following points discuss in detail how you can collect time zone details and view orders depending on the locations' time zone:

- Update Time Zones Using Data Collections
- Assign Time Zones in Supply Network Model
- Calculate In-Transit Time
- View Time Zones in Supplies and Demands
- Release to Execution

## Update Time Zones Using Data Collections

Use data collections to update organizations, customer site, or supplier site time zones. You can update the time zone in one of following three ways:

- Collect the organization's time zone from an Oracle Fusion source system.
- Collect time zones from an external source system using the organization, customer, and supplier import templates.
- Update the time zone on Customers and Suppliers tabs of the Maintain Supply Network Model page.

If you are collecting from an Oracle Fusion source system, then you can update the organization's time zone using the data collections method only. You cannot manually update the organization's time zone using the Maintain Supply Network Model page in your Supply Chain Planning work area.

## Assign Time Zones in Supply Network Model

Before collecting time zones or converting time zones to a local time, you must first assign time zones to organizations, customer sites, and supplier sites. A new time zone field is available on the Organizations, Customers, and Suppliers tab of the Maintain Supply Network Model page in your Supply Chain Planning work area.

You cannot collect customer site and supplier site time zones from an Oracle Fusion source system. To update the customer site or supplier site time zone, use one of the following options:

- Use the customer or supplier import template to update the customer site or supplier site time zone. You can also use this template if you are collecting from an external source system.
- Update the customer site and supplier site time zones directly in the Maintain Supply Network Model page.

When you recollect new customer and supplier data from an Oracle Fusion source system, the existing customer site and supplier site time zone information is preserved. If you do not collect or update the customer site or supplier site time zone, then planning calculations assume that the customer site or supplier site is located in the same time zone as the organization that is associated with the demand or supply.

When you collect the supplies and demands, collections automatically convert the associated dates from the database server time zone (Coordinated Universal Time or UTC) to the local time zone based on where the event takes place. In addition, when you collect shipments and booking history from the Oracle Fusion source system for use in the Demand Management or the Demand and Supply Planning work area, collections converts the historical data from the database server time zone (UTC) to the associated organization's time zone.

## Calculate In-Transit Time

When calculating in-transit times, supply chain planning considers the time zone difference between the shipping and receiving locations. The following example shows how supply chain planning calculates the in-transit time. In this

example, the customer site is located in Sydney (UTC+10) and the shipping organization is in Sacramento, California (UTC-8).

1. When planning collects a sales order with a requested arrival date of 25-March-2018, 21:00 (UTC) on the database server, the requested arrival date is offset to the customer site's time zone. The customer site's time zone is Sydney time zone (UTC+10 hours). The requested arrival date becomes 26-March-2018, 7:00 in plan inputs (Sydney time zone).
2. When you run the plan with the Refresh with current data option, the sales order is included in the plan and supply chain planning uses this date to calculate the scheduled ship date.
3. Consider the in-transit time for the selected shipping method (Air Freight) is 36 hours. Supply chain planning first calculates the scheduled ship date as 25-March-2018, 19:00 hours (Sydney time) and then converts the date to the Sacramento time. The product is shipped from Sacramento. The time zone difference is applied to the scheduled ship date by subtracting 18 hours. The scheduled ship date becomes 25-March-2018, 1:00 Sacramento time, which is used to generate the pegged supplies.
4. After completing the calculations, supply chain planning moves all the dates to the end of the day. All dates have the time stamp of 23:59:00. The time stamp is not available on the UI, but you can query the time stamp from the planning database.

Supply chain planning makes similar in-transit calculations when shipping supplies from a supplier site to an organization, or when transferring product from one organization to another.

## View Time Zones in Supplies and Demands

On the Supplies and Demands page, use the following three columns to view supplies and demands in relation to the time zone:

- Organization Time Zone
- Source Time Zone
- Destination Time Zone

The columns aren't included in any predefined table layout. Create a user-defined table layout and include these columns in your table.

To display supply and demand measure values within a table such as Material Plan or Build Plan, supply chain planning assigns the measure value to the day based on the organization's local time zone. The supply and demand measure value is not assigned to a date based on a common time zone.

## Release to Execution

When you release orders that are marked for release to Oracle Fusion Cloud execution system, the release action offsets the date from the location's time zone to the database server time zone (UTC).

For example, when you release a planned make order, supply chain planning converts the need-by date from the organization's time zone to UTC.

# 2 Tables, Graphs, Analysis Sets, Tiles, and Tile Sets

## Overview of Tables, Graphs, Analysis Sets, Tiles, and Tile Sets

You can configure the entities for tables, graphs, analysis sets, tiles (also referred to as infotiles), or tile sets by using the Selector Tool.

You can also create and manage groups on the Selector Tool page and associate your tables and graphs with the group. Navigate to the Selector Tool from an open plan or from the **Actions** menu on a table or graph toolbar.

To create a table, graph, analysis set, tile set, or tile, open the Selector Tool:

1. From an open plan, click **Actions** and then select **Manage Tables, Graphs, and Analysis Sets**.
2. In the Manage Tables, Graphs, and Analysis Sets dialog box, click **Actions** and then select **Create**.
3. Select one of the following to open the Selector Tool:
    - Table
    - Graph
    - Analysis Set
    - Tile Set
    - Tile
4. Depending on your selection, the Selector Tool dialog box opens with the following tabs:

| Tab | Table | Graph | Analysis Set | Tile |
|---|---|---|---|---|
| Measures | Yes | Yes | Yes | Yes |
| Hierarchies | Yes | Yes | No | Yes |
| Members | Yes | Yes | Yes | Yes |
| Measure Filters | Yes | Yes | No | Yes |
| Layout | Yes | Yes | No | Yes |
| Comparison Options | Yes | Yes | No | No |

| Tab | Table | Graph | Analysis Set | Tile |
|---|---|---|---|---|
| Details | No | No | Yes | No |

**Note:** In the Selector Tool, the member values displayed are based on what's configured in the **Member Identifier to Display** column on the Configure Planning Analytics page, Levels and Attributes tab. For example, for item, you can configure your tables and graphs to show the item description instead of the item name, which is what also appears when you're in the Selector Tool.

## Measures

Use the Measures tab to select measures for a table or graph by moving measures from the Available Measures pane to the Selected Measures pane. The measures that you select determine the content of the other tabs. The dimensions of the measures determine the dimensions available on the Hierarchies tab and the dimension members on the Members tab. For example, if a measure has the Product, Organization, and Time dimensions, those dimensions and their hierarchies are visible on the other tabs. You can display the available measures by measure group or alphabetically by using the **Tree View** or **List View** icon.

A measure is usually a named time series of values that represent the following at a particular intersection of the Customer, Organization, Product, Supplier, and Resource dimensions:

- Historical performance (Bookings History). This measure isn't applicable for supply planning.
- Future projections (Shipments Forecast)
- A key performance indicator (KPI), such as Gross Margin Percentage, or a derived calculation, such as Projected Available Balance

The planning process aggregates measure data from lower levels to higher levels or computes KPIs and derives calculations from other values at the same level as needed. The planning process can also allocate or spread updates made at an aggregate level to the affected cells at lower levels. Measures can be expressed in different units of measure, such as inches, dollars, kilos, or liters. Depending on the context, you can display, update, or compare measures that are in different units. The planning process can convert values among different currencies (for monetary values).

When plans are archived, you can retrieve measures from the archived time periods and show them on a plan table. See the *View Planning Measures from Archived Time Periods* topic to learn more. However, for Demand and Supply Plans, the Demand History Buckets option determines whether the archived period is shown or not.

**Note:** Text-based measures aren't supported in graphs and aren't displayed in the Available Measures pane on the Measures tab of the Selector Tool during the configuration of graphs.

## Hierarchies

Use the Hierarchies tab to select the dimensions, hierarchies, and levels to include or exclude in the table or graph.

For each dimension, select the hierarchies and levels that you want to include in the graph or table. Checking the box in the **Display** column includes that dimension in the table or graph. Expand the dimension to view the available hierarchies. Expand the hierarchy to view the levels of the hierarchy. Checking a level includes it in the table or graph. If multiple levels are checked, the top level is displayed in the table or graph by default. Each level in the table or graph can be expanded until all checked levels are visible. The **Show Unassociated** check box determines whether the measure

values that aren't associated with a specific dimension in the table or graph are hidden or displayed. For example, a table could include Shipments Forecast and Net Resource Availability. Shipments Forecast has product, organization, and time as dimensions. Net Resource Availability has resource, organization, and time as dimensions. With the check box selected, the Resource column displays the word Unassociated when you view Shipments Forecast rows.

For a demand plan that uses a hybrid time hierarchy, only the hierarchy that was selected as the planning calendar on the Scope tab on the Plan Options page is displayed for the Time dimension along with the other, corresponding hybrid time hierarchies that were created when the Create Hybrid Time Hierarchies scheduled process was run.

You can select the levels of only one hybrid time hierarchy.

## Members

You use the Members tab to manually select dimension members by moving members from the Available Members pane to the Selected Members pane. If no selections are made on this tab for a dimension, the graph or table displays the dimension starting at the top level checked on the Hierarchies tab. For example, if you selected the Gregorian Calendar hierarchy with Quarter and Month on the Hierarchies tab, the graph or table displays all quarters; each quarter has an icon to drill to its months.

## Measure Filters

Use the Measure Filters tab to filter results based on measure values across dimension member combinations that meet the criteria that you specify. You can filter your measure data to return only multidimensional combinations that meet the measure criteria for selected dimensions of the measure.

> **Note:** The measures listed are those that are of data type number, currency, or percent that aren't dimensioned by time. Measures that are time dimensioned and of data types date and text are excluded from the list. If the table contains any configure-to-order (CTO) measures, then the Measure Filters tab is disabled.

When you create or edit a table or graph, make your selections on the Measures, Hierarchies, and Members tabs. Next, on the Measure Filters tab, specify the measure criteria to apply across combinations of your dimension selections, such as Item and Customer. The table or graph displays only the combinations that meet your specified measure criteria.

You can compare measures to fixed values or to other measures, and you can apply multiple measure conditions:

- Multiple AND conditions are allowed
- Multiple OR conditions are allowed
- Combinations of AND and OR conditions aren't allowed.

You can apply the measure filters in a table or graph to a linked table or graph in the Manage Links dialog box. On the To Table, Graph, or Layout tab, select the **Include measure filters** check box. This check box is enabled after you select the **Pass user-specified parameters** check box.

## Layout

Use the Layout tab to format tables, graphs, or tiles. The following are the key layout options for tables, graphs, and tiles:

- Tables: Use table layout options to drag and drop dimensions to change the table layout and configure drill settings.
- Graphs: Use the graph layout options to select the graph type and the formatting options for the graph type that you select. In the Filters section, you can specify the filter criteria that you want displayed in the graph.

- Tiles: Use the tile layout options to select the graph type and add tables and graphs to the content area of the tile you're creating.

## Comparison Options

The Comparison Options tab is applicable only for tables and graphs. On the Comparison Options tab, you can compare your current plan with an archived version or an alternate plan. Use this tab to compare how specific measures have varied over time. The Comparison Options tab contains three sections: Waterfall Analysis, Trend Analysis, and Plan Comparison.

**Note:** The Comparison Options tab isn't available in the Oracle Planning Central work area.

- In the Waterfall Analysis section, you can compare selected measures in a table or a graph with an archived plan.

  Select the **Use MAPE calculations** check box if you have scheduled your plan archival process. Mean absolute percentage error (MAPE) calculations use the system administrator archive and not an on-demand archive.

  In the **Measure Archives to Use** list, select one or more archives to reference. The number of weeks refers to how long ago the archive was created. The planning process uses the following logic for when to use an archive:

  - Match the exact dates. If multiple versions of an archive are within the waterfall time frame, use the closest, most current version.
  - If no match is found on the exact date, use the match closest inside the range, which is +3/-3 days of a selected weekly waterfall time frame, or +15/-15 days for a monthly archive.
  - If no match is found within +3/-3 days of a selected weekly waterfall time frame, or +15/-15 days for a monthly archive, then nothing is returned.

  For example, if you select **4 weeks ago**, the planning process searches for the archive 4 weeks prior to today's date, for instance, March 6. If your archives are stored at the month level and nothing is found on February 5, the planning process searches for the most recent archive within +15/-15 days.
- In the Trend Analysis section, you can provide the number of archives that you want to reference. The planning process selects the latest archives. For example, you have five archives, where number five is the latest archive and you have selected 3 in the **Number of Previous Versions to Include** field. The planning process selects archive number five, four, and three for the comparison. The difference between Waterfall Analysis and Trend Analysis is that in Waterfall Analysis you can choose an archive created within each selected time frame that you want to compare. In Trend Analysis, you can select the number of archives that you want to compare, and only the latest archives are used for comparison.
- The Plan Comparison section pertains to both archived plans and alternate plans that you consider for comparison. You can select the type of difference to display in tables or graphs for comparison. For example, you can choose to view the difference in percentage or absolute percentage.

*Related Topics*

- Use Advanced Options in the Selector Tool
- Use Table Drilling
- Create a Tile in Supply Chain Planning
- Create a Tile Set in Supply Chain Planning
- How You Use Levels and Attributes in Supply Chain Planning

# Use Advanced Options in the Selector Tool

You can use the Advanced Filter dialog box to filter data and select specific members that fulfill some criteria.

Click the **Advanced Filter** icon on the Members tab to open the Advanced Filter dialog box. You can use the following filter criteria tools:

- **Levels**: Select by level. Select the members in a level such as Customer Site for the Customer dimension, or Period for the Time dimension.
- **Family**: Select parent or child of a dimension member. Select members based on a parent or child relationship, such as selecting the Days in a Week.
- **Attributes**: Select based on name. For example, select members based on items whose name contains Economy.
- **Measure Criteria**: Select based on meeting measure criteria. Select members that meet the criteria, such as Products for which the gross margin is greater than a particular value.
- **Time Range**: Select a range of dates. Select time periods based on a range, a start date, or today's date.

The advanced filter criteria tools are used in conjunction with action keywords to refine selections. The following four actions determine how to apply the criteria:

- **Replace with**: Replace the current selection, if any, with members meeting the criteria.
- **Add**: Add members meeting the criteria to the current selection.
- **Keep**: Keep only the members in the current selection that meet the criteria.
- **Remove**: Remove the members from the current selection that meet the criteria.

You can apply filter criteria tools sequentially to refine your selection. For example, select all the items for a category, and then keep the top 10 items based on sales.

Click the **Show Results** button to see the filtered list of members based on the criteria. Removed members are shown below the filtered list. You have the option of accepting the results or resetting to the previous members.

When you accept the results, the criteria used to retrieve the accepted members appear in the Criteria Steps section on the tab. These criteria are evaluated when the table or graph is displayed. You can remove criteria steps.

> **Note:** Ensure that the criteria steps defined for each dimension are needed and relevant. Remove all unwanted or unnecessary criteria steps so that your table or graph displays the correct information.

- To remove a step, click the **Remove** icon in a row.
- To view the result of removing a criteria, click **Show Criteria Change**.
- To accept the Show Criteria Change results, click **Accept** and then **OK**.
- To make the change permanent, click **Save** or **Save and Close**.
- To view the results without making the change permanent, click **Apply** and **Close**.

*Related Topics*

- Overview of Tables, Graphs, Analysis Sets, Tiles, and Tile Sets

# Create an Analysis Set

An analysis set is a named set of criteria that can contain selected measures, dimension members, or both measures and dimension members.

Use the **Apply Analysis Set** and **Save as Analysis Set** buttons to apply previously made selections or to save the selections made in the Selector Tool.

Applying an existing analysis set to a table or graph is a quick way to select the measures and dimension members that you frequently use.

You have the option to save measures and dimension members. You can save the dimension members as a list or as a script. For example, you can select the top 10 items based on sales for January. If saved as a list, the same 10 items would always be displayed in the table or graph, regardless of the current month. However, as sales data changes over time, you would want to see the top items in the current month in your table or graph. To accomplish this, save the dimension members in a script that would evaluate the criteria whenever the table or graph is displayed.

*Related Topics*

- Overview of Tables, Graphs, Analysis Sets, Tiles, and Tile Sets

# Create a Tile in Supply Chain Planning

A tile is a component used to present a graphical summary of the data. A tile is also referred to as an infotile in Oracle Fusion Cloud Supply Chain Planning.

Each tile has one or more related tables or graphs with predefined drill-to actions to display additional information about that key performance indicator (KPI).

To create a tile:

1. In a Supply Chain Planning work area, open a plan.
2. Click **Actions** > **Manage Tables, Graphs, and Analysis Sets**.
3. In the Manage Tables, Graphs, and Analysis Sets dialog box, in the Search Results region, click **Actions** and then select **Create** > **Tile**.
4. In the Selector Tool - Create Tile dialog box, on the Measures tab, select the required measures and move them from the Available Measures pane to the Selected Measures pane.
5. On the Hierarchies tab, select the dimensions, hierarchies, and levels to include or exclude in the tile.
6. On the Members tab, select the required dimension members and move them from the Available Members pane to the Selected Members pane. If you don't select a dimension member, the tile displays the dimension starting at the top level selected in the Hierarchies tab.
7. On the Layout tab, do the following:
    - Select the graph type for the infotile.
    - Expand the **Content Area** panel, and then click the **Add Row** button. You can add up to four tables or graphs to display them in the content area for that tile.
8. Click **Save and Close**.

*Related Topics*

- Overview of Tables, Graphs, Analysis Sets, Tiles, and Tile Sets
- Create a Tile Set in Supply Chain Planning

# Set Measure Targets for Use in Tiles

You can enter or update goals for a measure to track performance against the goals. Set targets by editing a measure and updating the measure goal. When the plan summary displays the measure, the goal or target for that measure is visible.

You can define goals only for measures that are of data type currency, number, or percent.

For global goals, you can provide a low range or a high range. The ranges are displayed on the user interface when you view a measure in comparison with its goal. Global goals are measure level parameters and aren't defined specifically for a data population.

To enter or update measure target goals, follow these steps:

1. Open the Manage Planning Measures page:
    a. In a Supply Chain Planning work area, open a plan.
    b. On the Edit Plan page, click the Tasks panel tab.
    c. In the Tasks panel drawer, click the Manage Planning Measures link.
2. On the Manage Planning Measures page, select the measure and click the Edit icon.
3. On the Edit Measure page, navigate to the Advanced tab, Goals subtab.
4. In the Goals subtab, select whether low values or high values are better.

    For example, high values are better for Gross Margin, but low values are better for Demand at Risk.
5. In the Global Goals section, provide a low range or a high range.
6. Click Save and Close.

# Create a Tile Set in Supply Chain Planning

You can create a tile set to group individual tiles.

Tiles are also referred to as infotiles in Oracle Supply Chain Planning. Creating tile sets can be useful in cases where you want to track various metrics on a single page. You can add tile sets to a pane in a page layout.

> **Tip:** Before you create a tile set, check whether you need to create the tiles that you will be adding to the tile set.

To create a tile set:

1. In a Supply Chain Planning work area, open a plan.
2. Click **Actions** > **Manage Table, Graphs, and Analysis Sets**.
3. On the Search table toolbar, from the **Actions** menu, select **Create** > **Tile Set**.
4. In the Selector Tool - Create Tile Set dialog box, specify these details:

- Enter a name and description for the tile set.
- Select a group for the tile set.

5. From the Available Tiles pane, select the tiles to include in the tile set and move them to the Selected Tiles pane.
6. Click **Save and Close**.

*Related Topics*

- Create a Tile in Supply Chain Planning

# Use Table Drilling

After you create a table, use drilling in the table to expand and collapse the levels within the hierarchy by which you can view different levels of aggregation.

When viewing a table or graph, the dimensions and hierarchies selected on the Hierarchies tab are visible. The top selected level is visible; use drilling to view lower levels.

To drill across hierarchies or dimensions, the levels must be adjacent. Drilling is automatically available for the levels within the predefined hierarchies, but you can also configure drill pairs to drill across hierarchies or dimensions.

To display a table showing Final Shipments History with the ability to drill from customer to item, the columns Customer and Item must be adjacent:

1. On the Layout tab, use the **View** menu to select **Configure Drill Settings**.
2. Click the **Add Row** icon to add a new drill pair.
3. In the **Drill From** column, select Customer. In the **Drill To** column, select Item.

With this configuration, you can view the shipments history values by item for each customer in the table.

**Note:** Drilling is only active between the adjacent levels in the table.

*Related Topics*

- Overview of Tables, Graphs, Analysis Sets, Tiles, and Tile Sets
- Use Advanced Options in the Selector Tool
- Use Table Linking

# Use Table Linking

You can link a table or graph to another table or graph or a page layout by selecting Manage Links from the Actions menu on the toolbar.

The links enable you to pass the context of a table or graph to another table or graph or a page layout.

In the Manage Links dialog box, you can use these tabs:

- To Table, Graph, or Page Layout: Create a link to another table or graph or to a page layout.

- From Table or Graph: Link to the open table or graph from another table or graph.

Use the **Add Row** icon to add a link.

- Enable dynamic linking: Select this check box to enable dynamic linking. If selected, then the target table or graph is refreshed when the selections in the source table or graph change.
- Pass highlighted selections and selected members: If you select this option, then whatever you highlight in the current table or graph is passed as the context along with the filters in the Selector Tool to the target table, graph, or page layout.
- Pass user-specified parameters: If you select this option, then you can select the level and context of the source table or graph to pass as link parameters to the target table, graph, or page layout.
- Include measure filters: Select this check box to apply measure filters that you defined on the Measure Filters tab in the Selector Tool to a linked table or graph. This check box is enabled:
    - After you select the **Pass user-specified parameters** option.
    - If the From Table contains measure filters.

> **Note:** If you're linking a summary table that lists configure-to-order (CTO) items to a detail table that lists the CTO items along with their option classes and options, select the **Pass highlighted selections and selected members** option.

After you define the link, use the Drill icon on the toolbar to drill to the linked table, graph, or page layout.

*Related Topics*

- Overview of Tables, Graphs, Analysis Sets, Tiles, and Tile Sets
- Use Advanced Options in the Selector Tool
- Use Table Drilling

# Link to External Systems

## Overview of Linking to External Systems with Context

You can link a table or graph in your Oracle Fusion Cloud Supply Chain Planning module to supporting information in an external system to gain a deep understanding of your data and aid your decision making.

> **Note:** You can create links to external systems from only pivot tables and not regular tables.

When you're analyzing data in a table or graph in the Demand Management, Demand and Supply Planning, Planning Central, Replenishment Planning, Sales and Operations Planning, or Supply Planning work area, you might need to view additional information that resides in an external system. Using this functionality, you can link your table or graph to an object in the external system. For example, you can link your table or graph to a predefined or user-defined analysis or report in Oracle Transactional Business Intelligence (OTBI), Oracle Analytics Cloud, or Oracle Analytics Publisher.

While specifying the link, you can pass dimensions, levels, and level members in your table or graph along with the link so that it opens the external system object with the context of the data in your table or graph. You can also pass the plan name or ID along with the link to restrict the displayed data in OTBI, Analytics Cloud, or Analytics Publisher.

## How You Set Up Links to External Systems

To set up links to an external system, you must do the following:

1. Set up the application integration for the external system.
2. Configure a table or graph with a link to the external system.

## Additional Points About Links to External Systems

Note these additional points about links to external systems:

- Any link that you create from a table or graph to an external system is tied to that table or graph and your user credentials.

  When you log on to an Oracle Supply Chain Planning module, you can use the link in the table or graph from all plans that include the table or graph. Others with the required role and privileges can also use the link in the table or graph from all plans that include the table or graph.

  However, you can edit or delete the link only if you created it.
- During data migration, when you export a table that contains a link to an external system and subsequently import the table, the link is available in the table.
- When you duplicate the table or graph, you can choose to include the links to the external system in the copy.

*Related Topics*

- Structure of a Link to an External System
- Set Up the Application Integration for an External System
- Create a Link to an External System
- Use a Link to an External System

# Structure of a Link to an External System

This topic explains the structure of a link to an external system from a table or graph in an Oracle Fusion Cloud Supply Chain Planning module. The topic also provides examples of such links.

A link to an external system consists of these parts:

- Base URL: You supply this part of the link in the **Full URL** field on the Create Application Integration page. The link must include the host information and can also include the port details. This part is displayed in the **Base URL** field in the Create Link to External System dialog box and can't be modified.

  For example, the base URL could be as follows: https://...oracle.com

- Page or report path: You supply this part of the link in the **Page Path** field in the Create Link to External System dialog box. This path is appended to the base URL and contains details about the page or report in the external system to which you're creating the link.

  Along with the page path, you can also pass the name or ID of the Oracle Supply Chain Planning plan you're in to restrict the displayed information in the linked, predefined or user-defined analysis or report in Oracle Transactional Business Intelligence (OTBI), Oracle Analytics Cloud, or Oracle Analytics Publisher.

  An example of the report path without the plan context is as follows: /analytics/saw.dll?Dashboard&PortalPath=%2Fshared%2FCustom%2FSCP%2FSalesOrders_Booking_Rpt%2FSO_Bookings_Rpt4&Page=page%201&Action=Navigate, where SO_Bookings_Rpt4 is the name of the report.

  An example of the report path with the plan context is as follows: /analytics/saw.dll?Dashboard&PortalPath=%2Fshared%2FCustom%2FSCP%2FPL_OTBI_report2%2FDM_Plan_Details&Page=page%201&Action=Navigate&col3=%22Plan%22.%22Plan%20Name%22&val3=#PlanName#

  You must provide the plan context only when the page or report in the external system has a filter for the plan context, and you want to review the information by plans. For example, a link to an external web page doesn't require plan context.
- Linking parameters: You supply this part of the link in the Linking Parameters section on the To External System tab in the Manage Links dialog box. The linking parameters contain details about the dimensions, levels, and level members in the table or graph. This information is appended to a combination of a base URL and page or report path and opens the external system object with the context of the data in your table or graph.

  For example, the linking parameters could be as follows: "Distributed Order Orchestration - Fulfillment Lines Real Time"."Order Header Detail"."Ordered Date"&op1=bet&val1=timestamp '#StartDate# 00:00:00' timestamp '#EndDate# 23:59:00'

  After the link is encoded, when it's accessed from a table or graph, and the runtime values for the contextual parameters are passed, the linking parameters would look as follows: &col1=%22Distributed%20Order%20Orchestration%20-%20Fulfillment%20Lines%20Real%20Time%22.%22Order%20Header%20Detail%22.%22Ordered%20Date%22&op1=bet&val1=%22timestamp%20%272022-06-01%2000%3A00%3A00%27%22+%22timestamp%20%272022-06-30%2000%3A00%3A00%27%22

The resulting, concatenated link opens the external system object with the context of the selected data in your table or graph.

## Example of a Link to an OTBI or Analytics Cloud Report or Analysis

You must meet these requirements while creating a link from a table or graph to a report or analysis in OTBI or Analytics Cloud:

- In the **Parameter** field on the To External System tab in the Manage Links dialog box, enter the names in the col<number> format. For example, the parameter names could be col1, col2, col3, and so on.
- In the **Value** field on the To External System tab, enter the names for the subject areas and columns to which you're passing tokens, and enclose this information in quotation marks.

  Then, enter the tokens in the val<number> =<token name> format. The token names mustn't be within double quotation marks.

  If required, include operators, which you must preface in the op<number> format (for example, op2=bet).

This example depicts how the linking parameters would look before the link is encoded:

col1="Submitted Date (Booked Date) - UTC"."Submitted Date"&val1=timestamp '#MemberName# 00:00:00'

col2="Fulfillment Line Details"."Demand Class Meaning"&val2=#MemberName#

col3="Product"."Product Number"&val3=#MemberName#

col4="Planning Date 1"."Period Start Date"&op4=bet&val4=#StartDate# #EndDate#

After the link is encoded, the linking parameters would look as follows: &col1=%22Submitted+Date+%28Booked +Date%29+-+UTC%22.%22Submitted+Date%22&val1=%22timestamp+%27<date from selection context> +00%3A00%3A00%27%22&col2=%22Fulfillment+Line+Details%22.%22Demand+Class+Meaning%22&val2= %22<member name from selection context>%22&col3=%22Product%22.%22Product+Number%22&val3= %22<member name from selection context>%22&col4=%22Planning%20Date%201%22.%22Period%20Start%20Date %22&op4=bet&val4=%22<start date from selection context>%22+%22<end date from selection context>%22

**Note:** Ensure that the numbers for the parameter, value, and operator names are the same for a combination of a parameter and value.

## Example of a Link to an Analytics Publisher Report

You must meet these requirements while creating a link from a table or graph to a report in Analytics Publisher:

- In the **Parameter** field on the To External System tab in the Manage Links dialog box, enter the access parameters for Analytics Publisher.

  Some examples of access parameters are as follows:

  - _paramsp_itemname
  - _paramsp_fromdate
  - _paramsp_todate
  - _paramsp_customer

- In the **Value** field on the To External System tab, enter the token names.

  Match the access parameters for Analytics Publisher to the available token names for links to external systems.

This example depicts how the linking parameters would look before the link is encoded:

_paramsp_itemname=#MemberName#

_paramsp_fromdate=#StartDate#

_paramsp_todate=#EndDate#

_paramsp_customer=#MemberName#

After the link is encoded, the linking parameters would look as follows: &_paramsp_itemname=<member name from selection context>&_paramsp_fromdate=<start date from selection context>&_paramsp_todate=<end date from selection context>&_paramsp_customer=<member name from selection context>

*Related Topics*

- Overview of Linking to External Systems with Context
- Set Up the Application Integration for an External System
- Create a Link to an External System
- Use a Link to an External System

# Set Up the Application Integration for an External System

You must specify the application integration for an external system before you can link to it from a table or graph in your Oracle Fusion Cloud Supply Chain Planning module. You must have administrator privileges to perform this procedure.

1. In the Setup and Maintenance work area, on the Tasks panel tab, select **Manage Setup Content**.
   The Manage Setup Content page opens.
2. Under Topology Definition, select **Manage Integration of Additional Applications.**
   The Manage Integration of Additional Applications page opens.
3. Click **Actions** > **Create**.
   The Create Application Integration page opens.
4. In **Application Name**, enter the name of the external system.

   > **Note:** The name must start with "SCP_EXT_LINK_". Otherwise, you can't select the application integration in the **Application Name** field in the Create Link to External System dialog box.

5. In **Full URL**, enter the base portion of the URL to the external system. The URL must include the host information and can also include the port details. The page path and linking parameters are appended as context to this URL.
   For example, you can enter "https://...oracle.com" in the field.
   When you create the link for the table or graph, this URL is displayed in the **Base URL** field in the Create Link to External System dialog box and can't be modified. The information you specify in the **Page Path** field in the dialog box and on the To External System tab in the Manage Links dialog box is appended to this base URL.
6. In **Partner Name**, enter any value you require.
7. In **Security Policy**, ensure that **None** is selected.
8. Click **Save and Close**.

*Related Topics*

- Overview of Linking to External Systems with Context
- Structure of a Link to an External System
- Edit the Application Integration for an External System
- Create a Link to an External System

# Edit the Application Integration for an External System

You can edit or delete the application integration for an external system to which you're linking tables or graphs from your Oracle Fusion Cloud Supply Chain Planning module. You must have administrator privileges to perform this procedure.

1. In the Setup and Maintenance work area, on the Tasks panel tab, select **Manage Setup Content**.
   The Manage Setup Content page opens.
2. Under Topology Definition, select **Manage Integration of Additional Applications**.
   The Manage Integration of Additional Applications page opens.
3. Search for your application integration, and select it.
4. Do one of the following:
   - To edit the application integration, follow these steps:
     i. Click **Actions** > **Edit**.

        The Edit Application Integration page opens.

        You can't edit the application and partner names.
     ii. Edit the value in the **Full URL** field.

        The URL must include the host information and can also include the port details.
     iii. In **Security Policy**, ensure that **None** is selected.
     iv. Click **Save and Close**.
   - To delete the application integration, follow these steps:
     i. Click **Actions** > **Delete**.

        A dialog box is displayed.
     ii. Click **Yes**.

**What to do next**

After editing or deleting the application integration, you must modify the external links that use the application integration. Otherwise, the external links won't work.

*Related Topics*

- Overview of Linking to External Systems with Context
- Structure of a Link to an External System
- Set Up the Application Integration for an External System
- Create a Link to an External System
- Edit a Link to an External System

# Create a Link to an External System

After specifying an external system's application integration, you can create a link to the system from a table or graph in your Oracle Fusion Cloud Supply Chain Planning module by supplying the page path and linking parameters.

> **Tip:** To create a link to a page or report in an external system, examine the target URL. Then, enter the required information for the base URL, page or report path, and linking parameters so that the rendered link meets the external system's requirements. Use supported tokens instead of actual values in the linking parameters to pass contextual values during runtime.

1. In your table or graph in the Demand Management, Demand and Supply Planning, Planning Central, Replenishment Planning, Sales and Operations Planning, or Supply Planning work area, click **Actions** > **Manage Links**.
   The Manage Links dialog box opens.

   > **Note:** You can create links to external systems from only pivot tables and not regular tables.

2. On the To External System tab, click the **Create** icon.
   The Create Link to External System dialog box opens.
3. In **Name**, enter a unique name for the combination of the application integration and page path for which you're creating the link.
   This name is displayed when you click **Actions** > **Drill To** > **External Links** in the table or graph.
4. In **Description**, enter the link description.
5. In **Application Name**, select the application integration that was previously specified on the Create Application Integration page.
   The base URL that you entered on the page is displayed in the **Base URL** field and can't be changed.

   > **Tip:** You can reuse the same application integration in links to external systems so long as you don't need to change the base URL.

6. In **Page Path**, enter the path to the page or report in the external system.
   To restrict the displayed data to the current plan in the linked, predefined or user-defined analysis or report in Oracle Transactional Business Intelligence (OTBI), Oracle Analytics Cloud, or Oracle Analytics Publisher, specify these tokens:
   - #PlanName#: Append this token to the page path to pass the name of the current plan in the Oracle Supply Chain Planning work area.
   - #PlanId#: Append this token to the page path to pass the ID of the current plan in the Oracle Supply Chain Planning work area.

   Ensure that the path doesn't contain the host or port details because they're derived from the application integration.
7. Click **OK**.
   The link is displayed on the To External System tab in the Manage Links dialog box.
8. With the link name selected, in the Linking Parameters section, click the **Add Row** icon.
   A blank row appears in the Linking Parameters section.
   You can save the link only when it has at least one valid combination of a parameter and value.
9. In **Dimension**, select a dimension that you want to pass along with the link to the external system.
   The available dimensions are those selected for the table or graph on the Hierarchies tab in the Selector Tool.
   The **Level** field becomes available.

   If you selected the Time dimension, the **Date Format** field is enabled.
10. Select a level that you want to pass along with the link to the external system.
    The available levels are those selected for the table or graph on the Hierarchies tab in the Selector Tool.

11. In **Parameter**, enter a unique name for the parameter through which you want to pass the dimension, level, and value to the external system page or report.

    Ensure that the name meets the external system's nomenclature rules for parameters.
12. In **Value**, enter a token for passing the selected level member in the table or graph. The information in this field should be in the decoded format for URLs.

    You can specify these tokens:
    - #MemberName#: Use this token to pass the member name. For example, the token can contain the name of the item, organization, customer, week, or month.
    - #MemberId#: Use this token to pass the internal ID of the member.
    - #StartDate#: Use this token to pass the start date of the time bucket for your selection in the table or graph.
    - #EndDate#: Use this token to pass the end date of the time bucket for your selection in the table or graph.

    When you use the link, the tokens are replaced by the actual values for your selection in the table or graph.
13. In **Date Format**, select the format in which the value for the Time dimension must be passed to the external system page or report.
14. Configure additional parameters by repeating Steps 8 through 13.
15. Click **Save and Close**.

    The link is added to the External Links group that's available when you click **Actions** > **Drill To** > **External Links** for the table or graph.

*Related Topics*
- Overview of Linking to External Systems with Context
- Structure of a Link to an External System
- Edit a Link to an External System
- Set Up the Application Integration for an External System

# Edit a Link to an External System

You can edit or delete a link to an external system from a report or graph in your Oracle Fusion Cloud Supply Chain Planning module.

**Before you start**

You can edit or delete the link only if you created it.

**Here's what to do**

1. In your table or graph in the Demand Management, Demand or Supply Planning, Planning Central, Replenishment Planning, Sales and Operations Planning, or Supply Planning work area, click **Actions** > **Manage Links**.

   The Manage Links dialog box opens.
2. On the To External System tab, select the link that you want to edit.

   The linking parameters for the link are displayed.

3. To edit the link, follow these steps:
    a. Click the **Edit** icon on the toolbar above the link name.

       The Edit Link to External System dialog box opens.
    b. Change the name, description, application integration, and page path.

       Ensure that the link name is unique.

       The value in the **Base URL** field is populated according to the selected application integration and can't be changed.

       Ensure that the page path doesn't contain the host or port details because they're derived from the application integration.
    c. Click **OK**.
4. To edit the linking parameters, follow these steps:
    - To add a parameter, click the **Add Row** icon for the linking parameters.

      In the new row that appears, specify the dimension, level, parameter name, value, and date format.

      Ensure that the parameter name is unique.
    - To modify a parameter, click it, and change the values for the dimension, level, parameter name, value, and date format.

      Ensure that the parameter name is unique.
    - To delete a parameter, select it, and click the **Delete** icon for the linking parameters.

      You can delete the parameter only if at least one valid combination of a parameter and value remains for the link.
5. To delete the link, follow these steps:
    a. Click the **Delete** icon on the toolbar above the link name.
    b. Click **Yes** in the displayed dialog box.
6. Click **Save and Close**.

*Related Topics*

- Overview of Linking to External Systems with Context
- Structure of a Link to an External System
- Create a Link to an External System
- Set Up the Application Integration for an External System

# Use a Link to an External System

This topic explains how you can use a link to an external system from a table or graph in your Oracle Fusion Cloud Supply Chain Planning module.

## Prerequisites for Using Links to an External System

You can use the link to an external system if these conditions are met:

- You must have the privileges to view the data in the external system.

  Otherwise, you can't view the data in the external system when you click the link.
- The application integration for the external link must exist.
- You can open the link only if it has at least one valid combination of a parameter and value.

  After the link is configured, if the underlying table or graph is edited, and dimensions are removed, the affected combinations of parameters and values are automatically deleted. Consequently, the link might become invalid.
- You must select a cell, column, or row of the table or an area of the graph before clicking the link.
- You must select values for the levels that have been configured in the link.

  Otherwise, an error message is displayed.

  > **Tip:** To identify the required levels, examine the configuration of the link on the To External System tab in the Manage Links dialog box.

- You must select a value that's associated with or assigned to a level and then click the link.
- You can select multiple values only if they're contiguous.

1. In the Demand Management, Demand and Supply Planning, Planning Central, Replenishment Planning, Sales and Operations Planning, or Supply Planning work area, open your table or graph.
2. Make a selection.
3. Click **Actions** > **Drill To** > **External Links**, and select a link.
   The external link opens on a new tab of your web browser.

**What to do next**

Note these additional points while using links to external systems:

- Every time you click the link to the external system, it opens on a new tab of your web browser.
- After clicking the link, if you change the selection in your table or graph, the data on the page or report in the external system isn't refreshed.

  You must click the link anew to view the external system data on a new tab of your web browser according to the changed context in your table or graph.

*Related Topics*

- Overview of Linking to External Systems with Context
- Structure of a Link to an External System
- Set Up the Application Integration for an External System
- Create a Link to an External System

# Graph Layout Options

The graph layout option is available in the Selector Tool dialog box, on the Layout tab when you create or edit a graph using the Manage Tables, Graphs, and Analysis Sets option.

In the Graph Layout Options section, you can define the type of graph and configure layouts and the dimension of axes. In the Filters section you can specify the filter criteria that you want displayed in the graph.

The layout options vary according to the type of graph. For example, a bar graph has X and Y-axis layout options whereas a Pie chart doesn't have any X or Y axis. General Options is common for all layout options and includes generic information for a graph such as title, font, and position of the graph. You can also preview a graph from the Layout tab before you save the graph. In the preview mode, you can format measures, change the layout, and modify the drill settings.

The following types of graphs are available:

- X and Y axes graphs
    - Vertical bar
    - Horizontal bar
    - Line graph
- X and Y axes graphs with additional parameters
    - Area graph
    - Combination graph
    - Bubble graph
- Pie graph
- Sunburst graph and Treemap graph
- Funnel graph and Radar graph
- Gauge graph

For graphs with an X, Y, or dual Y axes, you can select up to three entities in total: measures are mandatory, and you can select one or two dimension hierarchies. A dual Y-axis graph requires the measures on the Y axis. You must select one measure for the Y2 axis in the Y2 -Axis panel. Axis title and tick label rotation options are available for all axes. Tick label options are also available for the X-axis. For example, skip a certain number of labels for legibility. The Formatting panel contains visual effect options for the graph, such as 2 dimension or 3 dimension, and bar or line style.

Here's additional information about some of the graphs:

| Graph Type | Comments |
|---|---|
| Combination | A Combination graph includes an area, bar, and line. The measures represented by each of these options are specified in the Formatting panel. |
| Bubble | A Bubble graph requires selections for the bubble component of the graph in addition to the X and Y axes options. Select the hierarchy and the bubble sizing measure in the Bubble panel. |

| Graph Type | Comments |
|---|---|
| Sunburst | A Sunburst graph is comprised of rings. Select the number of rings to display. Each ring represents a level of the hierarchy. The rings are divided into sectors for each member of the level. The size and color of the sector is determined by the measures selected for those options. |
| Treemap | A Treemap graph is comprised of rectangles. Select the depth of the rectangles for a hierarchy. The rectangles for a level of the hierarchy are nested within the parent level rectangle. The size and color of the rectangles are determined by the measures selected for those options. |
| Funnel and Radar | Funnel and Radar graphs require only a hierarchy and measure selection. |
| Gauge | Gauge graphs, which are used in infotiles, require measures with goals defined. |

*Related Topics*

- Overview of Tables, Graphs, Analysis Sets, Tiles, and Tile Sets

# Configure Filters for Graphs

You can configure graphs that specify filter criteria that enables you to page through data in the graph by one or more hierarchy levels. For example, you might want to filter for product category when analyzing your plan.

After you analyze one product category, you can select another product category to review from the filter bar above the graph. Specify the filter criteria in the Selector Tool dialog box, Layout tab, Filters section.

The hierarchy levels that you selected on the Hierarchies tab are available to select as filters. You can select one or more levels of a hierarchy for a filter. However, if you also selected the hierarchy for the X-axis or Y-axis, then you can't select all of the hierarchy levels for filters. At least one hierarchy level must be used for the X-axis or Y-axis.

The members of the levels that you select are used to filter the data shown in your graph. You can select the level member value of interest from a set of values in the filter bar above the graph.

Let's work through an example of setting up filters for a graph:

1. In the Selector Tool dialog box, on the Hierarchies tab, select the **Time**, **Product**, **Organization**, and **Customer** dimensions.

   All levels are selected by default. The levels that you select for the dimensions become visible in the Filters section.
2. On the Layout tab, in the X-Axis section, select **Gregorian Calendar**.
3. In the Y-Axis section select the **Product** hierarchy and **Measures**.
4. In the Filters section, select to filter on **Quarter** and **Zone**.
5. Click **Apply and Close**.

When you display the graph, you can see the Quarter and Zone filters above the graph. Months are on the X-Axis and items are on the Y-Axis. The months shown are determined by the selected quarter, based on the Gregorian calendar. So, for Quarter 1, the graph displays January, February, and March on the X-Axis. Levels not selected on the axes or in the Filters section, such as Organization, aren't included in the graph.

For the X-axis and Y-axis, if one or more levels are selected on the Hierarchies tab, such as Year, Quarter, and Month, the graph displays with the highest level. You can drill to lower levels that aren't selected in the Filters section.

> **Note:** Filters for graphs are similar to filters for tables. However, you can't drag and drop filters onto the X-axis or Y-axis of the graph.

# Set Your Axis Scale

Use Axis Scale Options to refine your scale.

- Axis Scale Options applies to the Y axis and Y2 axis and you can use it only for bar, line, area, or combination graphs.
- Minimum is the starting point of the axis.
- Maximum is the ending point of the axis.
- Increment is the increase in values between maximum and minimum.

Specify the behavior.

- **Automatic**. Promising automatically adjusts the scale for the Y axis and the Y2 axis.
- **Manual**. You have to manually specify the scale for the Y axis and the Y2 axis.

Assume you set Minimum to 3, Maximum to 10, and Increment to 2. The graph will display 3 as the lowest value, 10 as the highest value, and 5, 7, and 9 as incremental values for the Y axis or the Y2 axis.

# Format How Measures Are Displayed in Tables and Graphs

You can make measure formatting changes to tables and graphs to reflect your individual preferences or requirements for how you want the tables or graphs to display.

For example, you can override the name of a measure and its measure of unit. When you format measures in a planning table or graph, your measure formatting can't be overridden by another user. Any formatting changes done by other users, including the owner of the table or graph, don't take precedence over your changes. To make user-specific measure formatting changes, open a table or graph and select **View** > **Format Measures** to open the Format Measures dialog box.

If you're the owner of the table or graph, then your formatting changes are visible to you and to other users who haven't defined their own formatting. These changes can include overriding the measure label, applying conditional formatting, or changing the unit of measure that you want displayed in your table or graph. Formatting changes made by others won't impact your specific measure formatting.

If you're not the owner of the table or graph, then any measure formatting you define takes precedence over the owner's measure formatting and is visible only to you. For example, if you change decimal positions to 0 (zero) for all measures in a table, you're the only user that sees those changes. When you save your measure formatting, you'll no

longer see future formatting changes made by the table or graph owner. For example, if you save measure formatting and then the table owner adds conditional formatting on a measure, you won't see that conditional formatting.

Use the **Reset to Default** button in the Format Measures dialog box to remove your user-specific measure formatting.

- If you're the owner of the table or graph, then your measure formatting is removed. Any measure formatting by non-owners won't be impacted.
- If you're not the owner of the table or graph, then all of your measure formatting is removed. The table or graph displays all existing measure formatting saved by the owner of the table or graph.

If you duplicate a measure, the duplicated measure is added as the last measure in the table. For example, you can duplicate a measure with a different currency or unit of measure. If you're the owner of the table, the duplicated measure is visible to you and to other users who haven't defined their own formatting. If you're not the owner of the table, the duplicated measure is visible only to you. You can reorder the duplicated measures, but you must save your layout to preserve the measure order.

You can make user-specific measure formatting changes in the following work areas:

- Demand Management
- Demand and Supply Planning
- Planning Central
- Replenishment Planning
- Sales and Operations Planning
- Supply Planning

# Configure Color by Measure to Display in Graphs

You can configure the color by measure and then use that color for every graph that the measure appears in. For example, always show Final Shipments Forecast in blue and Final Sales Forecast in green.

This functionality is helpful when viewing a specific measure in several graphs in one layout. You can also specify the color to display for a measurein a specific graph.

The configure color by measure to display in graphs functionality is available in the following Supply Chain Planning work areas:

- Demand Management
- Demand and Supply Planning
- Planning Central
- Replenishment Planning
- Sales and Operations Planning
- Supply Planning

## Configure Color by Measure for All Graphs

When you configure graphs, you can have a consistent color for a specific measure in your graphs. For example, you have multiple graphs that display the forecast. You can quickly identify the forecast measure by using the same color for the measure in all of your graphs.

To configure a graph color for a specific measure to use in all graphs, select the graph color for the measure in the Edit Measure dialog box.

1. In a Supply Chain Planning work area, click the **Tasks** panel tab.
2. In the Tasks panel drawer, click the **Manage Planning Measures** link in the Configuration section.
3. On the Manage Planning Measures page, select a measure, click Actions, and then select Edit.
4. In the Edit Measure dialog box, click the Advanced tab.
5. In the Properties subtab, click the **Graph Color** drop down arrow and select a color to use for the measure in all graphs.

## Configure Color by Measure for a Specific Graph

You can configure a color for a measure in a specific graph, which overrides the color configured for the measure in the Edit Measure dialog box.

To configure a graph color for a specific measure for a specific graph, select the graph color for the measure in the Format Measures dialog box.

1. In an open table or graph, click View and then select Format Measures.
2. In the Format Measures dialog box, in the **Graph Color** column, click the drop down arrow and select a color to use.

## Automatically Assign Graph Color

If a graph color is already configured for a measure for all graphs, but you want the graph color assigned automatically for that measure for a specific graph, then select the Assign Graph Color Automatically check box on the Format Measures page.

1. In an open table or graph, click View and then select Format Measures.
2. In the Format Measures dialog box, in the **Assign Graph Color Automatically** column, click the check box in the row for the measure.

## Tips and Considerations for Assigning Graph Colors to Measures

The following is additional information about the configure color by measure to display in graphs functionality:

- Duplicate Colors: You might have a situation where you have two measures with the same color in a graph. If the color you configure for a measure is the same color as one of the colors automatically assigned to a measure in a specific graph, then you must select a different color for the measure you're configuring.
- Predefined measures: By default, predefined measures initially don't have a graph color selected on the Manage Planning Measures page. In this case, when used in a graph the planning process automatically assigns a color for the measure.
- Bar, line, and radar graphs: Only measures located in the Y-axis display the graph color settings. This is only in case the measures aren't combined with one or more hierarchies in the Y-axis. Automatically-assigned colors are used in this case.
- Plan Comparison: When comparing plans, the configured measure color in the graph is honored only for the measure itself. The measures that represent the compared plans get an automatically-assigned color, selected randomly by the planning process.
- Archive Plan: When archiving a plan and using Waterfall Analysis or Trend Analysis graphs, the configured measure color is honored only for the measure itself. The measures that represent the archive get an automatically-assigned color, selected randomly by the planning process.

- Export and Import: When exporting and importing measure settings from one environment to another, the export and import keeps the graph color settings in Manage Planning Measures and Format Measures.
- Graph Types: The graph color functionality isn't available for the following graph types:
    - Pie
    - Sunburst
    - Treemap
    - Gauge
    - Funnel
    - Bubble

*Related Topics*

- How You Manage Planning Measures
- Predefined Measures in Supply Chain Planning

# How You Can Edit Measures at an Aggregate Time Level

This topic explains how you can edit measures at an aggregate time level in tables in demand, demand and supply, replenishment, sales and operations, and supply plans.

You can edit a measure with an edit range that's set to only the future at an aggregate time level in only those table cells that don't contain time periods for the past. For example, if the current date is Wednesday, August 11, 2021, and you're viewing the data at a weekly level, you can't edit the forecast for the week starting August 09 or any aggregate level such as the year 2021. Instead, you can edit the forecasts for the days of August 11 and later as well as the weeks starting August 16 and later.

You can edit a measure with an edit range that's set to only the history at an aggregate time level in only those table cells that don't contain time periods for the future. For example, if the current date is Wednesday, August 11, 2021, and you're viewing the data at a weekly level, you can't edit the history for the year 2021. Instead, you can edit the history for the days before August 11 and the weeks starting August 02 and earlier.

The same behavior applies when you summarize data across time in tables. For example, the Adjusted Shipments Forecast measure has an edit range that's set to only the future. If you summarize the measure by time in a table, the summarized value is editable only if all the included values are editable. If the current month is August 2021, you can't edit the summary for 2021, but you can edit the summary for 2022.

The same behavior also applies to plans with aggregate planning time levels. For example, if the planning time level is week, and the current month is August 2021, you can't edit measures at aggregate time levels such as quarter and year if the underlying weeks aren't editable. Instead, you can view the data at the weekly level to update the values for editable weeks.

The edit ranges of measures are enforced at the Hybrid time level in demand plans. For example, for the week starting Monday, December 31, 2029, there are two Hybrid time level members, one starting on Monday, December 31, 2029, and the other starting on Tuesday, January 01, 2030. If the forecasting time level is set to week, and the plan is run on Wednesday, January 02, the forecast would begin on Monday, December 31. But, the first Hybrid time level member is

before the plan run date and considered as history. Therefore, any measure with an edit range that's set to the future, such as Adjusted Shipments Forecast, isn't editable for the first Hybrid time level member.

Thus, data integrity is ensured because you can't make changes to the values of measures outside of their configured edit ranges.

# How Time Periods Are Calculated and Displayed in Tables, Graphs, and the Selector Tool

This topic explains how time periods are calculated and displayed in tables, graphs, and the Selector Tool in the Demand Management, Demand and Supply Planning, Planning Central, Replenishment Planning, and Sales and Operations Planning work areas.

## Settings That Affect the Calculation and Display of Time Periods

The following settings affect the calculation and display of time periods in tables and graphs for a demand, demand and supply, replenishment planning, or sales and operations plan:

- The value in the **Demand History Days** field in the Demand: Advanced Options dialog box that you open from the Demand tab on the Plan Options page
- The selection on the Time Range tab of the Advanced Filter dialog box that's available on the Members tab in the Selector Tool
- The selected members for the Time dimension on the Members tab in the Selector Tool
- Shared measures

The following settings affect the calculation and display of available members for the Time dimension on the Members tab in the Selector Tool for the plan:

- The value in the **Demand History Days** field
- The planning horizon

The default value for the **Demand History Days** field is 182 days.

> **Note:** If data isn't available, blank rows are displayed for the time periods included in tables and graphs. Also, the amount of historical data that's considered for the forecast depends on the value in the **Historical Buckets** field on the Demand tab on the Plan Options page.

## How Time Periods Are Calculated and Displayed

Time periods are calculated and displayed in a table or graph as follows:

- If you select members of the Time dimension on the Members tab in the Selector Tool, they're displayed in the table or graph.
- If you don't select members of the Time dimension on the Members tab in the Selector Tool, time periods are displayed as follows:

- If the table or graph has shared measures, time periods are displayed for the combination of the demand history days and planning horizon.
- If the table or graph doesn't have shared measures, time periods are displayed for the planning horizon.

The display of available members for the Time dimension on the Members tab in the Selector Tool is for the combination of the demand history days and planning horizon.

*Related Topics*

- Overview of Tables, Graphs, Analysis Sets, Tiles, and Tile Sets

# Manage Measure Data in Tables

## How You Can Edit Measure Data

While working in one of the Supply Chain Planning work areas, you might be editing measure data in a table.

The following table provides a list of some features you can use when doing so, and where each feature is located:

| Feature | Location |
|---|---|
| Configure Summaries | View menu |
| Data Calculation Options | Table toolbar |
| Lock and Unlock Cells | If at least one summary is configured:<br><br>Action menu, table toolbar, right-click in cell |

*Related Topics*

- Manage Data Calculations When Editing Measure Data in a Supply Chain Planning Table
- How You Lock Cells While Editing Measure Data or Allocating Values in a Table

## Copy and Paste Values in Tables

Use the Copy and Paste options in the Actions menu for a table to copy cell values and paste them in editable cells. You can also copy values from one table to another within the same plan.

Pasting overwrites any existing values, and any measures that are dependent on the overwritten measures are recalculated.

If your data is in an external application such as Microsoft Excel, you can use the following procedure to copy and paste your data:

1. Copy your data from the external application.
2. In your work area table, click the first editable cell from which you want the data to be pasted, and select **Actions** > **Paste from Clipboard**. The Paste from Clipboard dialog box opens.
3. Press Ctrl+V to paste your content in the dialog box. You can further edit your data in the dialog box.
4. Click **Paste and Close**. The copied content is pasted into the editable cells of the table.

Alternatively, you can export your table data to Microsoft Excel using the **Export** icon, work with your data in that application, copy your data, and bring it back into your table by using the **Paste from Clipboard** option. To copy data between plans, export the table data to Microsoft Excel from one plan, and use the **Paste from Clipboard** option to copy data into the other plan.

> **Note:** You can paste values in only those cells that fall within your plan horizon. The number and orientation of the cells from which data is copied and the cells into which data is pasted must match. Only numeric data can be copied and pasted. Non-editable cells that are within a range of editable cells are skipped when data is pasted, and a warning is displayed to this effect.

*Related Topics*

- How can I highlight editable cells in a table?

# Manage Data Calculations When Editing Measure Data in a Supply Chain Planning Table

When you are working in a Supply Chain Planning work area, you might be editing measure data in tables that include dependent measures.

You can use the **Data Calculation Options** menu to determine when calculations are performed. You access the **Data Calculation Options** menu from the table toolbar for the table you are editing.

The Data Calculation Options choices are:

- Enable Automatic Calculations
- Calculate Now

## Enable Automatic Calculations

When you edit data with this option selected, each time you edit a value, calculations are performed for any applicable summaries or other measures that include an expression. The Enable Automatic Calculations choice is the default selection.

## Calculate Now

To choose when calculations are performed, you must first deselect Enable Automatic Calculations. When you make edits with the Enable Automatic Calculations choice deselected, you must click the Calculate Now choice when you want calculations to be performed. Calculations will be performed for all edits made since the last time calculations were performed.

If you save a table after making edits, any needed calculations will be performed, but you must refresh the table to see the results.

## How You Lock Cells While Editing Measure Data or Allocating Values in a Table

When you are working in a Supply Chain Planning work area, you might be editing measure data in a table.

When you have locked cells, edits, including those that spread allocations to other cells, do not change locked cells.

**Note:** You must configure at least one summary to enable the **Lock** and **Unlock** actions.

Lock cells by performing one of the following:

- Click the Lock action in the Actions menu.
- Click the Lock icon on the table toolbar.
- Right-click in an editable cell.

*Related Topics*

- How do I enable the Lock and Unlock actions for a table while editing measure data in a Supply Chain Planning table?
- Can I unlock all cells at once while editing measure data in a Supply Chain Planning table?

## How can I highlight editable cells in a table?

In the View menu for a table, select Highlight Editable Cells to provide a background color for cells that contain editable measures.

Do note that any conditional formatting that has been applied to an editable measure or a table takes precedence over the highlight color. You can choose to save your page layout with this setting.

# Predefined Tables, Graphs, and Infotiles for Replenishment Planning

## Predefined Tables for Replenishment Planning

You can use predefined tables to get insights into various aspects of your replenishment plans.

### Pivot Tables for Inventory Policies

These pivot tables pertain to inventory policies for replenishment plans:

| Name | Based on | Use | Available Drills |
|---|---|---|---|
| Fill Rate by Item Location | • Fill Rate Shortfall Percentage measure<br>• Projected Fill Rate measure<br>• Target Fill Rate measure | View the fill rates for items at a particular location.<br>**Note:** Before running your replenishment plan, set up the Target Fill Rate measure in a table with a row or column for each segment. | • Manage Policy Parameters by Item table<br>• Replenishment Workbench table |
| Manage Policy Parameters by Item | • Adjusted EOQ measure<br>• Adjusted Maximum Days measure<br>• Adjusted Maximum Quantity measure<br>• Adjusted Minimum Days measure<br>• Adjusted Minimum Quantity measure<br>• Adjusted ROP Days measure<br>• Adjusted ROP Quantity measure<br>• EOQ measure<br>• Final EOQ measure<br>• Final Maximum Days measure<br>• Final Maximum Quantity measure<br>• Final Minimum Days measure<br>• Final Minimum Quantity measure<br>• Final ROP Days measure<br>• Final ROP Quantity measure<br>• Maximum Days measure<br>• Maximum Quantity measure<br>• Minimum Days measure<br>• Minimum Quantity measure<br>• On Hand measure<br>• Policy Type measure<br>• Policy UOM measure<br>• ROP Days measure<br>• ROP Quantity measure<br>• Safety Stock measure | • Review the calculated policy parameters for an item-location combination.<br>• Manually change the policy parameters to simulate solutions to issues. | • Items table<br>• Replenishment Workbench table<br>• Supplies and Demands table |
| Planned Orders by Location | • Orders Released Automatically measure | Review the counts of automatically released orders and planned orders for item-location combinations. | Supplies and Demands table |

| Name | Based on | Use | Available Drills |
|---|---|---|---|
| | • Total Planned Orders measure | | |
| Policy Analysis by Segment - Table | • Fill Rate Shortfall Percentage measure<br>• Item Locations Planned measure<br>• Item Locations with Fill Rate Violations measure<br>• Item Locations with Safety Stock Violations measure<br>• Item Locations with Stockouts measure<br>• Stockout Cost measure | View the number of planned item-location combinations, number of item-location combinations with fill-rate violations, and so on by segment. | • Fill Rate by Item Location table<br>• Manage Policy Assignments table |
| Policy Comparison Summary by Location | • Policies Automatically Accepted measure<br>• Policies to Review measure | View the counts of items with policies for review and automatically accepted policies at a location. | Manage Policy Comparison table |
| Policy Review Status by Segment | • Policies Automatically Accepted measure<br>• Policies Manually Accepted measure<br>• Policies Reviewed measure<br>• Policies Retained measure<br>• Policies to Review measure | View the counts of item-location combinations within a segment with various policy review statuses. | • Manage Policy Comparison table<br>• Policy Comparison Summary by Location table |
| Replenishment Policy Parameters | • Adjusted EOQ measure<br>• Adjusted Maximum Days measure<br>• Adjusted Maximum Quantity measure<br>• Adjusted Minimum Days measure<br>• Adjusted Minimum Quantity measure<br>• Adjusted ROP Days measure<br>• Adjusted ROP Quantity measure<br>• Average Daily Demand measure<br>• EOQ measure<br>• Final EOQ measure<br>• Final Maximum Days measure<br>• Final Maximum Quantity measure<br>• Final Minimum Days measure | Review the calculated policy parameters by item-location combination. | • Items table<br>• Manage Policy Assignments table<br>• Replenishment Workbench table<br>• Supplies and Demands table |

| Name | Based on | Use | Available Drills |
|---|---|---|---|
| | • Final Minimum Quantity measure<br>• Final ROP Days measure<br>• Final ROP Quantity measure<br>• Item Order Quantity measure<br>• Maximum Days measure<br>• Maximum Quantity measure<br>• Minimum Days measure<br>• Minimum Quantity measure<br>• Policy Type measure<br>• Policy UOM measure<br>• ROP Days measure<br>• ROP Quantity measure<br>• Safety Stock measure | | |
| Replenishment Workbench | • Adjusted Maximum Quantity measure<br>• Adjusted Minimum Quantity measure<br>• Adjusted Shipments Forecast measure<br>• Beginning Inventory Position measure<br>• Final Inventory Position measure<br>• Final Maximum Quantity measure<br>• Final Minimum Quantity measure<br>• Final Shipments Forecast measure<br>• Gross Forecast measure<br>• Maximum Quantity measure<br>• Minimum Quantity measure<br>• Net Forecast measure<br>• On Hand measure<br>• On Order measure<br>• Planned Replenishments by Due Date measure<br>• Planned Replenishments by Order Date measure<br>• Projected Available Balance measure<br>• Purchase Orders measure | View the time-phased supplies, demands, and projected inventory levels for an item-location combination. | • Inventory Sawtooth graph<br>• Items table<br>• Manage Policy Assignments table<br>• Replenishment Policy Parameters table<br>• Supplies and Demands table |

| Name | Based on | Use | Available Drills |
|---|---|---|---|
| | • Safety Stock measure<br>• Sales Orders measure<br>• Scheduled Receipts measure<br>• Total Demand measure<br>• Total Supply measure<br>• Transfer Orders measure | | |
| Suggested Replenishment Policy Parameters | • Suggested Average Daily Demand measure<br>• Suggested EOQ measure<br>• Suggested Maximum Days measure<br>• Suggested Maximum Quantity measure<br>• Suggested Minimum Days measure<br>• Suggested Minimum Quantity measure<br>• Suggested Order Quantity measure<br>• Suggested Policy Type measure<br>• Suggested Policy UOM measure<br>• Suggested ROP Days measure<br>• Suggested ROP Quantity measure<br>• Suggested Safety Stock measure | View the suggested policy parameters by item-location combination for a policy comparison plan. | • Items table<br>• Manage Policy Assignments table<br>• Replenishment Workbench table<br>• Supplies and Demands table |

## Pivot Tables for Inventory Rebalancing

These pivot tables pertain to the inventory rebalancing functionality for replenishment plans:

| Name | Based on | Use | Available Drills |
|---|---|---|---|
| Cluster Analysis by Quantity | Planned Shipments Quantity measure | • View the rebalancing recommendations for a cluster.<br>• View the rebalancing recommendations for a specific shipping lane that consists of a source location and a destination location.<br>• View the highlighted top 10% of rebalancing | Manage Rebalancing Recommendations table |

| Name | Based on | Use | Available Drills |
|---|---|---|---|
| | | recommendations by quantity. | |
| Cluster Analysis by Value | Planned Shipments Value measure | • View the rebalancing recommendations for a cluster.<br>• View the rebalancing recommendations for a specific shipping lane that consists of a source location and a destination location.<br>• View the highlighted top 10% of rebalancing recommendations by value. | Manage Rebalancing Recommendations table |
| Rebalancing Analysis | • Gross Forecast measure<br>• Initial Excess for Rebalancing measure<br>• Initial Shortage for Rebalancing measure<br>• Net Forecast measure<br>• On Hand measure<br>• Planned Inbound Shipments measure<br>• Planned Outbound Shipments measure<br>• Projected Available Balance measure<br>• Projected Inventory measure<br>• Purchase Orders measure<br>• Reserved Safety Stock measure<br>• Safety Stock measure<br>• Sales Orders measure<br>• Transfer Orders measure | • Perform time-phased analysis of the inventory rebalancing recommendations for an item-location combination.<br>• Review the planned inbound and planned outbound shipments.<br>• Analyze how various measures are calculated. | • Items table<br>• Rebalancing Details by Item Location table |
| Rebalancing Details by Item Location | • Excess After Rebalancing measure<br>• Excess Before Rebalancing measure<br>• Excess Computation Window measure<br>• Planned Inbound Shipments measure<br>• Planned Outbound Shipments measure<br>• Shortage After Rebalancing measure | • Review the excess inventory and inventory shortage for an item across the locations within a cluster.<br>• Review the windows for computing the excess inventory and inventory shortage for all locations in a cluster. | Items table |

| Name | Based on | Use | Available Drills |
|---|---|---|---|
| | • Shortage Before Rebalancing measure<br>• Shortage Computation Window measure | | |
| Shortages by Item Location | • Item Locations with Safety Stock Violations measure<br>• Item Locations with Stockouts measure<br>• Revenue measure | Identify the items that are out of stock at locations. | • Manage Policy Parameters by Item table<br>• Replenishment Workbench table |

## Other Pivot Tables for Replenishment Planning

These are other pivot tables that are available for replenishment plans:

| Name | Based on | Use | Available Drills |
|---|---|---|---|
| Analyze Consumption Demand: Item and Organization, Daily | • Adjusted Consumption Forecast measure<br>• Adjusted Consumption History measure<br>• Consumption Forecast measure<br>• Consumption Forecast MAPE measure<br>• Consumption Forecast Status measure<br>• Consumption History measure<br>• Consumption History Average measure<br>• Final Consumption Forecast measure<br>• Final Consumption History measure | Review the consumption and forecast by item-location combination in daily buckets. | NA |
| Analyze Consumption Demand: Item and Organization, Monthly | • Adjusted Consumption Forecast measure<br>• Adjusted Consumption History measure<br>• Consumption Forecast measure<br>• Consumption Forecast MAPE measure<br>• Consumption Forecast Status measure<br>• Consumption History measure | Review the consumption and forecast by item-location combination in monthly buckets. | NA |

| Name | Based on | Use | Available Drills |
|---|---|---|---|
| | • Consumption History Average measure<br>• Final Consumption Forecast measure<br>• Final Consumption History measure | | |
| Analyze Demand: Item and Organization, Monthly | • Adjusted Shipments Forecast measure<br>• Adjusted Shipments History measure<br>• Final Shipments Forecast measure<br>• Final Shipments History measure<br>• Sales Orders measure<br>• Shipments Forecast measure<br>• Shipments Forecast Bias measure<br>• Shipments Forecast MAD measure<br>• Shipments Forecast MAPE measure<br>• Shipments History measure | Review the shipments history and forecast by item-location combination in monthly buckets. | NA |
| Forecast Consumption Definitions | • Consumption Forecast measure<br>• Final Consumption History measure | View the final consumption history and consumption forecast by item and organization. | NA |
| Forecast Shipments Definitions | • Final Shipments Forecast measure<br>• Final Shipments History measure<br>• Shipments Forecast measure | View the final shipments history, shipments forecast, and final shipments forecast by item and organization. | NA |
| Manage Forecast During Product Life Cycle | • Change to Shipments Forecast Percentage measure<br>• Adjusted Discontinuation Date measure<br>• Adjusted Launch Date measure<br>• Adjusted Shipments Forecast measure<br>• Discontinuation Date measure<br>• Final Discontinuation Date measure | Manage the shipments or bookings forecast for products. | NA |

| Name | Based on | Use | Available Drills |
|---|---|---|---|
| | • Final Launch Date measure<br>• Final Shipments Forecast measure<br>• Launch Date measure<br>• Shipments Forecast measure | | |
| Manage Product Life Cycle by Item and Date | • Adjusted Discontinuation Date measure<br>• Adjusted Launch Date measure<br>• Discontinuation Date measure<br>• Final Discontinuation Date measure<br>• Final Launch Date measure<br>• Launch Date measure<br>• Shipments Forecast Status measure | Modify the launch and discontinuation dates for products. | Manage Forecast During Product Life Cycle table |

## Other Tables for Replenishment Plans

These are other tables that are available for replenishment plans.

| Name | Use | Available Drills |
|---|---|---|
| Exceptions | Review the custom exceptions for replenishment plans. Seeded exceptions for replenishment plans aren't supported. | NA |
| Item Relationships | Review the relationships, such as end item substitution or supersession, defined between items. | • Items table<br>• Supplies and Demands table |
| Items | Review the attributes for item-location combinations. | • Item Relationships table<br>• Manage Policy Comparison table<br>• Manage Policy Parameters by Item table<br>• Manage Rebalancing Recommendations table<br>• Replenishment Policy Parameters table<br>• Replenishment Workbench table<br>• Suppliers table<br>• Supplies and Demands table |
| Manage Policy Assignments | • Review and simulate changes to the policy parameters, default policy parameters, and policy parameter overrides at the segment level. | NA |

| Name | Use | Available Drills |
|---|---|---|
| | • View the policy overrides for item-location combinations. | |
| Manage Policy Comparison | • Review and manage the policy comparison process.<br>• Accept, review, or update policy suggestions. | • Manage Policy Parameters by Item table<br>• Replenishment Policy Parameters table<br>• Suggested Replenishment Policy Parameters table |
| Manage Rebalancing Recommendations | • View the planned orders that are recommended after inventory rebalancing.<br>• Manually release the planned orders. | • Items table<br>• Rebalancing Analysis table<br>• Rebalancing Details by Item Location table |
| Suppliers | Review the details of approved suppliers for an item. | • Items table<br>• Supplies and Demands table |
| Supplies and Demands | • View the details of supplies and demands, create supplies and demands, and perform simulations.<br>• Review the details of replenishment orders, and manually release them. | • Item Relationships table<br>• Items table<br>• Replenishment Policy Parameters table<br>• Replenishment Workbench table<br>• Suppliers table |

*Related Topics*

- Predefined Graphs for Replenishment Planning
- Predefined Infotiles for Replenishment Planning

# Predefined Graphs for Replenishment Planning

You can use predefined graphs to get insights into various aspects of your replenishment plans.

| Name | Format | Based on | Use | Available Drills | Associated with |
|---|---|---|---|---|---|
| Excess by Cluster | Vertical bar graph | • Item Locations with Excess After Rebalancing measure<br>• Item Locations with Excess Before Rebalancing measure | Use this graph to view the total counts of item-location combinations with excess inventory before and after rebalancing. | • Cluster Analysis by Quantity table<br>• Cluster Analysis by Value table<br>• Manage Rebalancing Recommendations page | Rebalancing Performance infotile |
| Fill Rate Performance by Segment | Vertical bar graph | • Projected Fill Rate measure | • Compare the targeted and projected fill rates by segment. | • Fill Rate by Item Location table | Policy Effectiveness infotile |

| Name | Format | Based on | Use | Available Drills | Associated with |
|---|---|---|---|---|---|
| | | • Target Fill Rate measure | • Review how effectively your policies are driving replenishments.<br><br>**Note:** Before running your replenishment plan, set up the Target Fill Rate measure in a table with a row or column for each segment. | • Manage Policy Assignments page | |
| Inventory Sawtooth Graph | Combination graph | • Beginning Inventory Position measure<br>• Final Maximum Quantity measure<br>• Final Minimum Quantity measure<br>• On Order measure<br>• Planned Replenishments by Due Date measure<br>• Projected Available Balance measure<br>• Safety Stock measure | View the time-phased inventory levels for an item-location combination.<br><br>**Note:** When the line representing the projected available balance strays into negative territory often, it's a sign of frequent stockouts and poor setup of inventory policies. When the projected available balance is above the safety stock, the inventory position is healthy. When the line representing the beginning inventory position goes into the band representing the safety stock, replenishments are triggered. | NA | NA |
| Inventory and Safety Stock by Segment | Bubble graph | • Projected Available Balance measure<br>• Projected Available Balance Value measure<br>• Safety Stock measure | • Review aggregate inventory levels by segment at the end of the planning horizon.<br>• View the projected available balance, value of projected available balance, and safety stock by segment. | Manage Policy Assignments page | • Inventory Turnover Ratio infotile<br>• Policy Effectiveness infotile<br>• Total Inventory Value infotile |

| Name | Format | Based on | Use | Available Drills | Associated with |
|---|---|---|---|---|---|
| PAB and Safety Stock by Segment | Vertical bar graph | • Projected Available Balance measure<br>• Safety Stock measure | View and compare the projected available balance and safety stock by segment. | NA | Inventory Turnover infotile |
| Policy Analysis by Segment - Spider Graph | Absolute radar graph | • Fill Rate Shortfall Percentage measure<br>• Item Locations Planned measure<br>• Item Locations with Fill Rate Violations measure<br>• Item Locations with Safety Stock Violations measure<br>• Item Locations with Stockouts measure<br>• Stockout Cost measure | View the number of planned item-locations combinations, number of item-location combinations with fill-rate violations, and so on by segment. | • Fill Rate by Item Location table<br>• Manage Policy Assignments page | Segment Analysis infotile |
| Policy Comparison Summary by Segment | Vertical bar graph | • Policies Automatically Accepted measure<br>• Policies to Review measure | View the counts of item-location combinations with policies for review and automatically accepted policies for each segment. | • Manage Policy Comparison page<br>• Policy Comparison Summary by Location table | Policy Comparison infotile |
| Shipments Forecast MAPE by Segment | Tree map graph | • Final Shipments Forecast measure<br>• Shipments Forecast MAPE measure | View the mean average percentage error (MAPE) for the shipments forecast by segment. | NA | Shipment Forecast MAPE infotile |
| Shortages by Cluster | Vertical bar graph | • Item Locations with Shortage After Rebalancing measure<br>• Item Locations with Shortage Before Rebalancing measure | View the total counts of item-location combinations in a cluster with inventory shortages before and after rebalancing. | • Cluster Analysis by Quantity table<br>• Cluster Analysis by Value table<br>• Manage Rebalancing Recommendations page | Rebalancing Performance infotile |
| Shortages by Segment | Vertical bar graph | • Item Locations with Safety Stock Violations measure | View the counts of item-location combinations with stockouts and safety- | Shortages by Item Location table | Policy Execution infotile |

| Name | Format | Based on | Use | Available Drills | Associated with |
|---|---|---|---|---|---|
| | | • Item Locations with Stockouts measure | stock violations by segment. | | |
| Supply Details by Segment | Vertical bar graph | • Orders Released Automatically measure<br>• Total Planned Orders measure | Compare the number of automatically released orders with the number of planned orders by segment. | Planned Orders by Location table | Policy Execution infotile |

*Related Topics*

- Predefined Tables for Replenishment Planning
- Predefined Infotiles for Replenishment Planning

# Predefined Infotiles for Replenishment Planning

You can use predefined infotiles to get insights into various aspects of your replenishment plans.

| Name | Format | Based on | Use | Associated with | Available in |
|---|---|---|---|---|---|
| Inventory Turnover Ratio | Status meter gauge | Inventory Turns measure<br>Set the goals for the measure to configure the infotile. The available colors are red, yellow, and green. | Review the inventory turnover ratio for your plan, and compare the ratio with the set goal. | • PAB and Safety Stock by Segment graph<br>• Inventory and Safety Stock by Segment graph | NA |
| Policy Comparison | Horizontal bar | • Policies to Review measure<br>• Policies Automatically Accepted measure | View the counts of item-location combinations with automatically accepted policies and policies for review. | • Policy Comparison Summary by Segment graph<br>• Policy Review Status by Segment table | NA |
| Policy Effectiveness | LED gauge | Projected Fill Rate measure<br>Set the goals for the measure to configure the infotile. The available colors are red, yellow, and green. | • View the projected fill rate at the plan level.<br>• Review how effectively your policies are driving your replenishments. | • Fill Rate Performance by Segment graph<br>• Inventory and Safety Stock by Segment graph | • Demand and Replenishment Plan Summary page layout<br>• Replenishment and Rebalancing Plan Summary page layout<br>• Replenishment Plan Summary page layout |

| Name | Format | Based on | Use | Associated with | Available in |
|---|---|---|---|---|---|
| Policy Execution | Horizontal bar | • Item Locations with Stockouts measure<br>• Orders Released Automatically measure | • Analyze how many item-location combinations had stockouts at least once in the planning horizon<br>• See how many replenishment orders were automatically released<br>• Decide whether your policies are ordering enough material to keep the inventory at the right level | • Shortages by Segment graph<br>• Supply Details by Segment graph | • Demand and Replenishment Plan Summary page layout<br>• Replenishment and Rebalancing Plan Summary page layout<br>• Replenishment Plan Summary page layout |
| Rebalancing Performance | Horizontal bar | • Percentage of Item Locations with Shortage Before Rebalancing measure<br>• Percentage of Item Locations with Shortage After Rebalancing measure | Review the percentages of item-location combinations with shortages before and after rebalancing. | • Shortages by Cluster graph<br>• Excess by Cluster graph | Replenishment and Rebalancing Plan Summary page layout |
| Segment Analysis | Pie graph | Item Locations Planned measure | Analyze the performance of each segment according to key performance indicators (KPIs) such as the number of item-location combinations with stockouts, costs of stockouts, and number of item-location combinations with safety-stock violations. | • Policy Analysis by Segment graph<br>• Policy Analysis by Segment table | • Demand and Replenishment Plan Summary page layout<br>• Replenishment and Rebalancing Plan Summary page layout<br>• Replenishment Plan Summary page layout |
| Shipment Forecast MAPE | Status meter gauge | Shipments Forecast MAPE measure<br>Set the goals for the measure to configure the infotile. The available colors are green, yellow, and red. | View the summary of the mean absolute percentage error (MAPE) for the shipments forecast at the plan level. | Shipments Forecast MAPE by Segment graph | Demand and Replenishment Plan Summary page layout |
| Total Inventory Value | Status meter gauge | Projected Available Balance Value measure<br>Set the goals for the measure to configure | • View the total projected available balance | Inventory and Safety Stock by Segment graph | • Demand and Replenishment Plan Summary page layout |

| Name | Format | Based on | Use | Associated with | Available in |
|---|---|---|---|---|---|
| | | the infotile. The available colors are red, yellow, and green. | value at the plan level.<br>• See the projected available balance and safety stock by segment | | • Replenishment and Rebalancing Plan Summary page layout<br>• Replenishment Plan Summary page layout |

*Related Topics*

- Predefined Tables for Replenishment Planning
- Predefined Graphs for Replenishment Planning

# 3 Planning Analytics

## Overview of Planning Analytics

Configuring planning dimensions and hierarchies on the Configure Planning Analytics page is a key setup to use the analytics in Supply Chain Planning work areas.

It has a unified dimensional hierarchy for various uses. Depending on your security privilege, you can also open the Configure Planning Analytics page from the Setup and Maintenance work area by selecting the following:

- **Offering**: Supply Chain Planning
- **Functional Area**: Supply Chain Planning Configuration
- **Task**: Configure Planning Analytics

To run plans successfully, you must complete the following Configure Planning Analytics tasks:

- Set Up Dimension Catalogs
- Set Up Measure Catalogs
- Set Up Levels and Attributes

You can use the default hierarchies for most of the dimensions.

If the default product catalog named Product is not collected, then you must select at least one product hierarchy. If a default product catalog is collected, then the predefined Product hierarchy is selected as a product hierarchy by default. You can optionally add or change the product hierarchy. You must include at least one product hierarchy when creating a dimension catalog.

On the Configure Planning Analytics page, Levels and Attributes tab, you can configure your planning table and graphs to display descriptions instead of codes for the following entities: Items, Organizations, Resource, Work Center, and Work Area.

*Related Topics*

- Considerations for Setting Up Dimension Catalogs
- Configure Planning Analytics
- How You Use Dimensions and Dimension Catalogs in Supply Chain Planning
- How You Use Levels and Attributes in Supply Chain Planning
- Can I modify the default dimension catalog?

## Configure Planning Analytics

To run plans successfully, you must set up dimensions and dimension catalogs, measure catalogs, and levels and attributes.

You can open the Configure Planning Analytics task from one of the Supply Chain Planning work areas. Depending on your security privilege, you can also open the Configure Planning Analytics page from the Setup and Maintenance work area.

> **Note:** Default Catalog is the name of the predefined dimension catalog. It contains predefined hierarchies. Oracle recommends that you make a copy of the Default Catalog if changes are required, instead of editing the default catalog.

To configure planning analytics:

1. In the Navigator, click one of the Supply Chain Planning work areas or click the Setup and Maintenance work area.
    - If you clicked one of the Supply Chain Planning work areas, do the following:
        i. Click the Tasks panel tab.
        ii. In the Tasks panel drawer, click the **Configure Planning Analytics** link.
    - If you clicked the Setup and Maintenance work area, select the following:
        - **Offering**: Supply Chain Planning
        - **Functional Area**: Supply Chain Planning Configuration
        - **Task**: Configure Planning Analytics
2. On the Configure Planning Analytics page, Dimension Catalogs tab, do the following:
    a. Create a dimension catalog using the **Add Row** button, or duplicate the default dimension catalog using the **Duplicate** button.
    b. Specify what hierarchies to use in the dimension catalog by moving hierarchies from the Available pane to the Selected pane.
    c. Assign the dimension catalog to a plan that will use the set of hierarchies for analysis during the plan creation from Manage Plans.
3. Each Supply Chain Planning work area has a default measure catalog. Create a new measure catalog to add or remove measures.
    a. Use the **Add Row** button to create a new catalog or use the **Duplicate** button to duplicate an existing catalog.
    b. Specify the measures for the catalog by moving the measures from the Available pane to the Selected pane.
    c. Assign the measure catalog to a plan that will use the set of measures during the plan creation from Manage Plans.

    After you create and define a measure catalog, you can select the measure catalog for a plan from the Edit Plan Options page.
4. Click the Levels and Attributes tab and select the desired dimension and hierarchy.
    a. In the **Dimension** list, select a dimension.
    b. Optionally, in the **Hierarchy** list, select a hierarchy.
    c. Click the **Search** icon button.
    d. To change how the level name appears in pivot tables and graphs, select the row and enter the level name in the **Level Name to Display** field.

        > **Note:** You can't edit the Level Name to Display field for the lowest level of the hierarchy.

e. To display a particular member identifier in your tables and graphs, select a dimension (Product, Organization, or Resource) and level, and then select a value in the **Member Identifier to Display** column:

| Dimension | Level | Member Identifier to Display Options |
|---|---|---|
| Product | Item | Item Name, Item Description, Item Name and Description, or Item Description and Name |
| Organization | Organization | Organization Name or Organization Code |
| Resource | Resource | Resource Code, Resource Name, or Resource Description |
| Resource | Work Center | Work Center Code, Work Center Name, or Work Center Description |
| Resource | Work Area | Work Area Code, Work Area Name, or Work Area Description |
| Resource | Organization | Organization Name or Organization Code |
| Time | Quarter | Quarter Name or Start Date<br>The display name you configured on this page appears for quarter name on the Fiscal, Manufacturing, and Hybrid calendars. |
| Time | Month | Month Name or Start Date<br>The display name you configured on this page appears for month name on the Fiscal, Manufacturing, and Hybrid calendars. |

> **Tip:** The organization level in the Organization dimension and the organization level in the Resource dimension are separate settings. Oracle recommends that you set them to use the same identifier.

f. To add an attribute for the lowest level of the hierarchy, click the **Edit Page** button in the Attributes column.

   i. In the Manage Attribute List dialog box, click the **Add Row** button.
   ii. In the Attribute list, select an attribute.
   iii. In the Attribute Label text box, enter a label name and click **OK**.

5. On the Configure Analytics page, click the **Save and Close** button.

*Related Topics*

- How You Use Dimensions and Dimension Catalogs in Supply Chain Planning
- Considerations for Setting Up Dimension Catalogs
- How You Use Levels and Attributes in Supply Chain Planning
- Overview of Planning Analytics
- How You Use Measure Catalogs in Supply Chain Planning

# Dimensions and Dimension Catalogs

## How You Use Dimensions and Dimension Catalogs in Supply Chain Planning

Oracle Fusion Cloud Supply Chain Planning has hierarchy levels by which you can view, compare, and analyze demands and supplies of your products over various dimensions, such as geography and organizations.

Oracle Supply Chain Planning uses a single set of dimensions and hierarchies to drive aggregation context for demand planning, supply planning, embedded analytics, and management analytics.

Oracle Supply Chain Planning provides predefined planning dimensions. Each of those dimensions has a predefined hierarchy. When you implement the Oracle Supply Chain Planning offering, you must decide which dimensions and hierarchies to use for demand and supply analysis.

Each dimension catalog has a collection of hierarchies in different dimensions that is enabled for use in the plan options. By default, all predefined hierarchies are available in Planning Analytics. You can disable certain dimensions that are not relevant for your plans. For example:

- If you are only using demand plans, then supplier, resource, and order type dimensions may not be relevant
- If you are using sales and operations plans, then the order type dimension is not relevant

The following hierarchies are predefined in Oracle Supply Chain Planning:

- Customer
- Demand Class
- Exception Type
- Order Type
- Organization
- Plan
- Product
- Resource
- Supplier
- Source
- Time

Access the Configure Planning Analytics page from a Supply Chain Planning work area. Depending on your security privilege, you can also open the Configure Planning Analytics page from the Setup and Maintenance work area.

- To access the Configure Planning Analytics page from a Supply Chain Planning work area:
  a. Click the Tasks panel tab.
  b. In the Tasks panel drawer, click the **Configure Planning Analytics** link
- To access the Configure Planning Analytics page from the Setup and Maintenance work area, select the following:
  - **Offering**: Oracle Supply Chain Planning
  - **Functional Area**: Supply Chain Planning Configuration
  - **Task**: Configure Planning Analytics

In the Dimension Catalogs tab, several hierarchies are available in various dimensions. You can specify which hierarchy to use in a particular dimension catalog. For example, you can select an organization type hierarchy, a product type hierarchy, or a customer hierarchy to use in plans for analysis. After you define a dimension catalog, you can assign it to a plan that will use the set of hierarchies for analysis.

You can select one of your dimension catalogs to be used as the default dimension catalog in plans. If you do not select a default catalog, the predefined catalog named Default Catalog is used.

*Related Topics*

- Considerations for Setting Up Dimension Catalogs
- How can I use dimensions in Supply Chain Planning?
- Overview of Planning Analytics
- What's a dimension in Supply Chain Planning?
- Why You Disable or Enable Dimensions for Supply Plan Measures

# Considerations for Setting Up Dimension Catalogs

Oracle Fusion Cloud Supply Chain Planning provides predefined planning dimensions and each of those dimensions have predefined hierarchies. The predefined hierarchies are included in the default dimension catalog and are available in all plans.

## Hierarchy Selections for the Product Dimension

A predefined product hierarchy is included in the default dimension. The default product hierarchy has three fixed levels: Item, Category 1, and Category 2. Other product hierarchies (other item catalogs in Oracle Product Model that are collected into Supply Chain Planning work areas) can be optionally enabled as user-defined product hierarchies.

For Oracle Sales and Operations Planning, the Lifecycle Phase attribute is also included in the default dimension.

By default, Product Model's planning functional area catalog is collected into the product hierarchy. For the collection to run successfully, you must create the planning functional area catalog in Product Model with the following attributes:

- Controlled at = Master-Level (not Org-Level)
- Allow hierarchy of categories = No

- Default category must be selected
- Allow multiple item category assignments = Not selected
- Catalog Content = Items at Leaf Level

If this catalog is not set up with these attributes, the planning functional area catalog is not collected and the Product hierarchy will not be populated. This will result in the forecasting engine not being able to use the product aggregation and some of the predefined tables and graphs will not work correctly.

## Hierarchy Selections for the Organization Dimension

Enterprise is the default organization hierarchy and has three fixed levels: Organization, Business Unit, and Legal Entity. This default organization is defined in Oracle Fusion Cloud HCM and you can only modify it there. Optionally, you can enable other Organization hierarchies (based on regions, one per country).

## Hierarchy Selections for the Customer Dimension

The default Customer hierarchy has three fixed levels: Customer site, Customer, and Customer Class. This default customer hierarchy is defined in the trading community model and you can only modify it there.

## Hierarchy Selections for the Resource Dimension

The default Resource hierarchy has four fixed levels: Resource, Work Center, Work Area, and Organization. This default resource hierarchy is defined in Oracle Manufacturing and you can't modify it.

## Hierarchy Selections for the Supplier Dimension

The default Supplier hierarchy has two fixed levels: Supplier Site and Supplier.

## Hierarchy Selections for the Exception Type, Order Type, and Source Dimensions

Predefined Exception Type, Order Type, and Source dimensions are included in the Default dimension catalog. Each has only a single hierarchy with a single level.

## Hierarchy Selections for the Time Dimension

In the Time dimension, Gregorian calendar is the only predefined hierarchy. All other hierarchies can be optionally included as user-defined hierarchies. These include workday calendars of inventory organizations collected from Oracle Fusion Cloud Supply Chain & Manufacturing and fiscal calendars from Oracle Fusion Cloud Financial Management.

*Related Topics*

- How You Use Dimensions and Dimension Catalogs in Supply Chain Planning
- How can I use dimensions in Supply Chain Planning?
- Can I modify the default dimension catalog?
- Overview of Planning Analytics
- Why You Disable or Enable Dimensions for Supply Plan Measures

# What's a dimension in Supply Chain Planning?

A dimension is a structure that organizes data. It categorizes data to enable you to answer business questions. Commonly used dimensions are customers, products, and time.

*Related Topics*

- Configure Planning Analytics
- How can I use dimensions in Supply Chain Planning?
- How You Use Dimensions and Dimension Catalogs in Supply Chain Planning
- Considerations for Setting Up Dimension Catalogs

# How can I use dimensions in Supply Chain Planning?

Oracle Fusion Cloud Supply Chain Planning applications come with predefined hierarchies in the Product dimension.

These predefined hierarchies are part of the Dimension catalog structure in Oracle Product Model. Integrations with Oracle E-Business Suite and third-party systems where the product dimensions can still be maintained and uploaded for use by the Oracle Supply Chain Planning applications is supported.

*Related Topics*

- How You Use Dimensions and Dimension Catalogs in Supply Chain Planning
- Considerations for Setting Up Dimension Catalogs
- What's a dimension in Supply Chain Planning?

# What's a dimension catalog in Supply Chain Planning?

In Oracle Fusion Cloud Supply Chain Planning, a dimension catalog is a selected list of dimensions enabled for use in plans.

In Oracle Supply Chain Planning, a dimension catalog is a selected list of hierarchies in different dimensions that is enabled for use in plans. The Default dimension catalog appears by default, but can be changed to another dimension catalog that has been defined.

*Related Topics*

- Can I modify the default dimension catalog?
- What's a dimension in Supply Chain Planning?
- Considerations for Setting Up Dimension Catalogs
- How You Use Dimensions and Dimension Catalogs in Supply Chain Planning

## Can I modify the default dimension catalog?

Yes, you can modify the Oracle Fusion Cloud Supply Chain Planning default dimension catalog. However, if you want to make any changes, Oracle recommends that you create a duplicate of the default dimension catalog.

*Related Topics*

- How You Use Dimensions and Dimension Catalogs in Supply Chain Planning
- Considerations for Setting Up Dimension Catalogs
- What's a dimension catalog in Supply Chain Planning?

# Measure Catalogs

## Can I modify the default measure catalog?

No. Although you cannot modify the default measure catalog, you can create a measure catalog, modify the list of measures, and assign it to plans on the Plan Options page.

*Related Topics*

- How You Use Measure Catalogs in Supply Chain Planning

# Levels and Attributes

## How You Use Levels and Attributes in Supply Chain Planning

On the Levels and Attributes tab, you can enable certain item attributes (standard fields or flexfields) and organization attributes (standard fields) to be available in Planning Analytics as filters.

For example, you can enable PLANNER_CODE to use in an analysis to group metrics and measures by that particular attribute.

You can create a display name to use in the various pivot tables and graph configurations. For example, if the predefined level name is Product Category 2, you can enter a display name of Laptops. You can also configure which identifier to display in tables and graphs for selected hierarchies. For example, you can choose to display item name or item description in your tables and graphs.

## Displaying Descriptions in Tables and Graphs

You can analyze planning data in planning tables and graphs by using the description fields of selected entities in hierarchies, such as items and organizations. You can use the description fields when their primary identifier is a difficult to understand alphanumeric code.

For each dimension level (Item, Organization, Resource, Work Center, or Work Area) you can select only one member identifier option to display in a planning table or graph. To see a list of the Member Identifier to Display options, refer to the Configure Planning Analytics topic in this guide.

> **Tip:** The organization level in the Organization dimension and the organization level in the Resource dimension are separate settings. Oracle recommends that you set them to use the same identifier.

Changing a member identifier can impact the advanced criteria in tables and graphs. If you use an advanced filter criteria in a table or graph, then the criteria will be compared to the new member identifier, which can affect the search results. The change to the member identifier can result in different or no members meeting the filter criteria. For example, many names might start with AB, but no descriptions start with AB. After you make this change, you should verify that any advanced filter criteria used are still valid.

> **Note:** In the Selector Tool, the member values displayed are based on what's configured in the Member Identifier to Display column on the Configure Planning Analytics page, Levels and Attributes tab. For example, for item, you can configure your tables and graphs to show item description instead of item name, which is what also appears when you're in the Selector Tool.

*Related Topics*

- Overview of Planning Analytics
- Configure Planning Analytics

# 4 Planning Measures

## Predefined Measures in Supply Chain Planning

When you use one of the Supply Chain Planning work areas, you have access to many predefined measures.

To review the details of each predefined measure, use the following:

- The Manage Planning Measures task
- A spreadsheet available at My Oracle Support

### The Manage Planning Measures Task

On the Manage Planning Measures page, select a measure, and then select edit. You can review the details of the measure on the Edit Measure page even if you can't make changes to the measure.

### A Spreadsheet Available at My Oracle Support

Use Doc ID 2374816.1, Oracle Supply Chain Planning Cloud: List of Predefined Measures.

The List of Predefined Measures spreadsheet contains only the core measure attributes. You can use the Edit Measures page to view all the attributes associated with a particular measure.

## How You Manage Planning Measures

Use the Manage Planning Measures task to review Supply Chain Planning measures.

You can edit several measures, but some measures you can only view. You use the pivot table to view the data you edited at different aggregations. The results of the edits are stored based on definitions of a measure.

This topic discusses how you can perform these tasks:

- Update the definition of a measure
- Update aggregation parameters
- Update disaggregation parameters
- Edit data of a measure

### Update the Definition of a Measure

To update the definition of a measure:

1. In a Supply Chain Planning work area, click the Tasks panel tab.
2. In the Tasks panel, click the **Manage Planning Measures** link.
3. Expand a measure group and scroll manually or use the search option to find all measures that match the search criteria.
4. Select the measure that you want to modify and then click the **Edit** icon.

> **Note:** Look for a check mark next to **Allow editing** at the top of the measure definition controls to confirm that the measure is editable.

5. Click the **Aggregation and Disaggregation** tab to view measure definitions.

   The dimensions, hierarchies, and levels at which data persists vary from measure to measure. For the dimensions with a check mark, the measure is defined on the current dimension. For these dimensions, each measure is defined on a single hierarchy as listed on the dialog box.
6. Click **Save and Close**.

## Update Aggregation Parameters

Aggregation parameters control the way in which data of a measure is aggregated from the storage level to a table, graph, or infotile. Calculation Order enables you to chose between the following options:

- **Calculate and Aggregate**: Calculates the measure's expression at the lowest data level and then aggregate up.
- **Aggregate and Calculate**: Aggregates all measures referenced in the measure's expression and then calculate the expression.

## Update Disaggregation Parameters

The disaggregation methodology is driven by the definitions of the disaggregation parameters. Disaggregation for definitions that include time can be different from disaggregation for definitions that don't include time. For noneditable measures there are no configuration in the disaggregation parameters.

Here are the four different allocation methods:

- **Same**: Indicates that all lower-level entries into which the data is being saved will receive the same value. Service level would be a good measure to use Same Value settings as the percentage being entered should not be allocated between different items and organizations.
- **Equal**: Spreads the edited value among the lower level entries into which data is being saved. Each entry receives an equal share of the update. This could commonly be seen on the time dimension, where data may be updated for a week or month, but there is no guidance on how it should be allocated to the common storage level of days. It is typically set to the time dimension to equal value to support equal allocation between the days.
- **Self**: Uses a measure's own pre-calculated values to allocate the data to the dimension member combinations.

  For example, item-organization. The weights for each combination are calculated and stored for the measure during plan run. These weights are used to allocate the data. For example, the forecasts for P1-Org1 and P2-Org1 are 40 and 60 respectively. Therefore, the weights used for allocation would be 40% for P1-Org1 and 60% for P2-Org1.
- **Measure**: Uses values of a different measure to allocate.

## Edit Data of a Measure

To edit the data of a measure, open a table containing the measure, double-click the cell where the data is to be entered and then enter the data. In a table, editable and noneditable cells look similar. However, when you double-click a cell of an editable measure, the cell enables you to enter values.

# Copy Data from One Measure to Another

In a Supply Chain Planning table, you can update the value of one measure by using values from another measure. In several cases, a measure can have other related measures that enable you to override the value of a base measure. For example, Sales Forecast is one of those measures:

- Sales Forecast: Base measure.
- Adjusted Sales Forecast: You can override what's in Sales Forecast.
- Final Sales Forecast: The planning process takes the Adjusted Sales Forecast, if there is one, or uses the Sales Forecast. The planning process uses the Final Sales Forecast, which takes into account any manual adjustments that you made.

You can specify the data source whose values you want to copy to the selected range of cells in the target measure. Using a table containing the three measures listed in our previous example, select a range of cells associated with the Adjusted Sales Forecast measure, click Actions and then select Edit. In the Edit Measures dialog box, use the Sales Forecast measure as the source measure for Adjusted Sales Forecast and increase it by 10 percent. If your Sales Forecast is 200, then Adjusted Sales Forecast now reflects 220.

For a measure to appear in the list of values for Source Measure in the Edit Measures dialog box, the measure must be included in the table. The measure must also conform to the same dimensions as the measure you're editing.

When editing a measure's value at an aggregate level, the value is allocated down to the lowest level. For example, when editing weekly data, the value will be allocated down to the day.

You can also edit multiple measures at a time; however, you can't have circular references. In the following example, Measure3 is used as a source measure for Measure1. But, Measure3 is also being edited at the same time to increase the measure by 10 percent.

| Measure | Source Measure | Action | Value |
|---|---|---|---|
| Measure1 | Measure3 | Increase by percentage | 10 |
| Measure2 | Measure2 | Increase by percentage | 10 |
| Measure3 | Measure3 | Increase by percentage | 10 |

In this scenario, the planning engine won't know which value of the source measure to use: the original Measure3 value, or the value of Measure3 after increasing it by 10 percent. To avoid circular references, you must handle these edits separately.

*Related Topics*

- Configure Units for a Measure
- Configure Currencies for a Measure
- Configure Conditional Formatting for a Measure
- Configure Color by Measure to Display in Graphs

# Import Measure Data Into a Planning Table

When working with large volumes of data, you can export data from a planning pivot table to Microsoft Excel.

After you export the data, you can edit and make adjustments to any planning measure in the spreadsheet. When you're done making changes offline in the spreadsheet, you can then import the updated planning data back into the same table. To initiate the Upload Planning Table Data scheduled process, click the **Import** icon on the toolbar in the opened table and then select the spreadsheet.

The spreadsheet that you import must have the same structure and format as the planning table. The imported spreadsheet can be at any level of aggregation, as long as the levels match all of the levels displayed in the table. After you select the file to import, the Upload Planning Table Data scheduled process updates the table in the background in batch mode. While the import process uploads data in the background, you can work on other supply chain planning tasks. When the upload process completes, the **Import** icon in the table displays a green check mark for the planner who uploaded the data.

> **Note:** To see the uploaded data in your planning table, refresh the table after the Upload Planning Table Data scheduled process completes.

Importing data into planning tables is available for all pivot tables in Supply Planning, Sales and Operations Planning, Demand Management, Replenishment Planning, and Planning Central. Importing data isn't available for non-pivot views like standard grids or other views such as the Build Plan table.

## Tips for Importing Measure Data

Here are some tips to successfully import data from a spreadsheet into a planning table:

- The imported file must be a Microsoft Excel file with the .xlsx file extension.
- The import process only updates editable measures.
- The imported file must have the exact same format at the planning table. This includes the following:
    - The uploaded file and the target table must contain the same number of rows and columns.
    - The levels specified in the spreadsheet must match. The level names, such as Item or Organization, don't have to appear as the header columns, but the columns and rows that represent the level must match.
    - The members in each of the level rows and columns must be identical and in the same order. No member can be omitted and new members can't be added.
    - The measures column must have the same measures as the planning table for all combinations.
- The imported file must have the exact member combinations and their order listed in the column and row headers of the table. All member names, such as item names and time periods, must be present in the same order in the file being imported even if there are no updates for those combinations. Typically, you can achieve the required order by exporting the table, making the edits offline, and then using the same file for import.
- All date values must be in the correct date format.
- If you update data directly in a table when the update process is still in progress, your updates can be overwritten if they're for the same combination and measure.

- If multiple users import files into the same table, the import process that finishes last overrides the others. For planning tables that need frequent updates by multiple users, Oracle recommends that you create different tables with appropriate filters.

## Additional Information about the Import Process

Here's some additional information about importing data into planning tables:

- Tables with page filters aren't enabled for import. To use the table for import, remove the page filter or use member filters in the table configuration. Filters specified as member filters in the table configuration are respected.
- The import process evaluates and imports only the first worksheet in the workbook. If the workbook contains other worksheets, the import process ignores them.
- The worksheet can contain native Excel comments and conditional formatting. The import process ignores these comments and conditional formatting.
- If a cell has a formula based on another cell, the import process evaluates the formula and uses the result. The other cell can be in the same worksheet or a different worksheet in the same workbook.
- The import process uses the data security rules assigned to the planner doing the import.

# Configure Units for a Measure

You can view a measure in several units of measure (UOM) and currencies side by side without needing separate measures. By converting a single measure into various values and currencies, you get superior data consistency and don't require recalculation and data synchronization.

In addition, sometimes different products and organizations have data that's loaded externally using different units of measure. For example, vitamins sold in Europe may be shipped in bottles, while in Asia the quantities are by pill count. By defining units, you enable these values to be converted into a cohesive value, which can be aggregated in a seamless manner.

To configure units for a measure:

1. In a Supply Chain Planning work area, click the **Tasks** panel tab.
2. In the **Tasks** panel, click **Manage Planning Measures**.
3. Locate the measure for which you want to configure units and click **Edit**.
4. On the **Advanced** tab, select the **Properties** tab.
5. Select **UOM** from the list as the default value for the **Base Units of Measure**.
   The base units of measure define the default unit of measure to which displayed data is converted. It is editable only for numeric measures, which don't have product and organization-based levels. For measures that have product and organization, the definition comes from the data source. When using the measure, you must attempt to select only the relevant UOM entries for the measure to streamline the user process.
6. Select the relevant units of measure from the **Display Unit of Measure**.
   You completed defining the unit of measure. You can view the measure using a specific table or graph.

**Note:** To show the same measure with different unit of measures, you can create a copy from the original measure. Rename the duplicated measure to use another unit of measure of your choice. You can show the same measure as both numbers and currencies.

To override the default unit of measure:

1. Open a table and select **View**, **Format Measures** to find the measure.
2. Click the measure you want to modify and select the value from the **Unit of Measure** list.
3. Click **Save and Close**.

*Related Topics*

- How You Manage Planning Measures

# Configure Currencies for a Measure

You can view a measure in several units of measure and currencies side by side without having separate measures. By converting a single measure into various values and currencies, you get superior data consistency and don't require recalculation and data synchronization.

To configure currencies for a measure:

1. In a Supply Chain Planning work area, click the **Tasks** panel tab.
2. In the Tasks panel, click the **Manage Planning Measures** link.
3. Locate the measure for which you want to configure currencies and click **Edit**.
4. On the **Advanced** tab, select the **Properties** tab.
5. Select **Currency** from the list as the default value for the **Base Currency**.

   The base currency defines the default currency to which displayed data is converted and is editable only for currency type measures.
6. Select the relevant currencies from the Display Currency.

   You completed defining the currencies for a measure. You can view the measure using a specific table or graph. The currency value is editable only if the measure type is Currency. For numeric measures, you can change the type from Number to Currency. Select the currency that you want to use in this instance of the measure.

> **Note:** To show the same measure with different currencies, you can create a copy from the original measure. Rename the duplicated measure to use another unit of measure of your choice. You can show the same measure as both numbers and currencies.

To override the default currency:

1. Open a table and select **View**, **Format Measures** to find the measure.
2. Click the measure you want to modify and select the value from the **Currency** list.
3. Click **Save and Close**.

*Related Topics*

- How You Manage Planning Measures

# Configure Conditional Formatting for a Measure

Use conditional formatting to change the background color of a cell when a specific condition occurs.

Conditional formatting is useful to draw the attention of the user for information that requires action. You define conditions for an individual measure. A measure can have one or more formats applied. The condition is evaluated at the table level using the configured units and currencies. Two tables with different units of measure or currencies defined can have different cells trigger the conditional formats.

To configure global conditions:

1. In a Supply Chain Planning work area, click the **Tasks** panel tab.
2. In the Tasks panel, click the **Manage Planning Measures** link.
3. Locate the measure for which you want to apply conditions and click **Edit**.
4. On the **Advanced** tab, select the **Conditional Formatting** tab.
5. Click the **+** icon to add a row and complete the information.

| Field Name | Description |
|---|---|
| Measure | Locate the measure you want to use to evaluate. Conditional format for a measure can be based on another measure. |
| Condition | Compares the selected measure to a value or another measure |
| Compare to Measure | Measure to which the selected measure is compared |
| Value | When the **Compare to Measure** is empty, this value is used to compare the selected measure |
| Color | Defines the color for the cell background when the condition is met |

6. Click **Save and Close**.

To configure local overrides to conditions:

1. Open a table and select **View**, **Format Measures**.
2. Locate the measure that you want to modify and then select the **Use Override Conditional Formatting** check box.
3. The Conditional Formatting section appears. Select a new conditional format to use in your table.
4. For only the Build Plan table accessed through a Supply Planning work area, the Conditional Formatting section also includes the **Apply** and **Name** columns.

   In the **Apply** column, select whether you want the conditional formatting to be highlighted in your Build Plan table all the time or only when you select it from the Highlight Exceptions drop-down list.

   For example, if you set up a conditional format named Resource Overload and select **When selected**, Resource Overload appears in the Highlight Exceptions drop-down list in your Build Plan.

5. Click **Save and Close**.

*Related Topics*

- How You Manage Planning Measures

# Guidelines for Setting the Calculation Order

How you set the calculation order for a measure affects its computation of data.

On the Aggregation and Disaggregation tab on the Create Measure page, in Aggregation Parameters, you can select **Calculate then aggregate** or **Aggregate then calculate** in the **Calculation Order** field. If you make an incorrect selection in this field, the measure value won't be correct.

Note these guidelines for setting the calculation order of the measure:

- When the measure's calculation order is Calculate then aggregate, all dependent measures must also use the same order.

  Dependent measures are all the measures (and their dependent measures, in turn) that are used in the main measure's expression.
- On the Expression tab, your selection of the calculation order along with your use of the Lag and Lead functions can affect the calculation of data.

  The Lag and Lead functions have two parameters. The first parameter contains the measure the function is applied to. The second parameter contains the number of time buckets.

  When you use the Calculate then aggregate order, the second parameter is interpreted as being in days. For example, Lag(Bookings History Average, 10) returns the value of the Bookings History Average measure from 10 days prior to the time period of the table cell.

  When you use the Aggregate then calculate order, the second parameter is interpreted as being in the time level that the measure data is displayed at in the table. For example, in a table that displays monthly time buckets, Lead(Consensus Forecast MAD, 6) returns the value of the Consensus Forecast MAD measure 6 months after the month of the table cell.

  If you've configured the table so that time buckets can be expanded or collapsed, then the time buckets can be interpreted at different levels. For example, if you've configured the table to display both quarterly and monthly time buckets and can expand a quarter to see the underlying months, Lag(Shipments History, 2) returns the value of the Shipments History measure from 2 quarters prior to the cell being reviewed if the quarters are collapsed or 2 months prior to the cell being reviewed if the quarters are expanded.

# Manage User-Defined Measures

## Create Measures and Assign to a Measure Catalog

In addition to reviewing measures, you use the Manage Planning Measure task to create, edit, duplicate, and delete measures. You can also create measure groups and add predefined and user-defined measures in them.

This topic discusses the following:

- Creating measures
- Assigning measures to a measure catalog

## Create Measures

If you have the required privileges, you can create measures if the predefined ones don't meet your requirements. The measures that you create have the same features and functionality as predefined measures.

To create a measure:

1. In a Supply Chain Planning work area link, click the **Tasks** panel tab.

   You can create measures from one of the following work areas: Demand Management, Replenishment Planning, Supply Planning, Sales and Operations Planning, Demand and Supply Planning, or Plan Inputs.
2. In the Tasks panel, click the **Manage Planning Measures** link.
3. Click **Create** from the Actions menu.
   a. On the Create Measure page, enter a measure name and description.
   b. Select a measure group.
   c. Select a data type.
   d. Select the **Allow editing** check box if you want the measure to be editable in a pivot table.
   e. Select **Edit Range** to enable the Edit Lock tab, which controls the editable status of the measure

      The Edit Range value determines the time range over which the measure is editable. The available values are: History, Future, History and Future.
   f. On the Aggregation and Disaggregation tab, define the dimension parameters. Select the dimensions, hierarchy, and hierarchy level within the dimension to store the measure data. When a dimension and hierarchy are selected, the default setting for the Stored Level is the lowest level of the dimension's hierarchy. You can modify the level to store by selecting the hierarchy from the list and setting the stored level parameter within that hierarchy.
      - Aggregation Parameters: The Aggregation parameters control the way a measure's data is aggregated. You have two options:
        - Calculate and aggregate: Calculate and Aggregate calculates the measure's expression at the lowest data level and then aggregate up.
        - Aggregate then calculate: Aggregate and Calculate aggregates all measures referenced in this measure's expression and then calculate the expression.

      In the Time Dimension field, select the aggregation function that controls how data is aggregated for the time dimension. The Other Dimensions fields are the same as the Time dimension fields. These options control how the data is aggregated across all the dimensions except for time. The Weighted By field is enabled only if you select Weighted Average as the aggregation parameter for either Time or Other Dimensions. It enables you to select the measure to drive the weighted average calculation.

      The aggregation types include: Sum, Average, Weighted Average, Minimum, Maximum, Count, Latest, Median, Variance, and Standard Deviation.
      - Disaggregation Parameters: The Disaggregation Parameters control how changes to the data at an aggregated level are allocated down for storage. This is used when data changes are made in a pivot table, but also when made by the demand forecast. The weights for each combination, such

as item-organization, are calculated and stored for the measure during plan run. These weights are used to allocate the data. For example, the forecasts for P1-Org1 and P2-Org1 are 40 and 60 respectively. Therefore, the weights used for allocation would be 40% for P1-Org1 and 60% for P2-Org1.

The parameters for the Disaggregation Type field are: By Measure, By Self, Equal, and Same Value. The default parameter is Equal.

The Disaggregation Basis field is enabled only if you select the Disaggregation Type as By Measure. Select the measure to use as the disaggregation basis from the list of measures.

The Secondary Basis field is enabled only if you have selected the Disaggregation Type field as By Measure or By Self. The values for Secondary Basis are Booking History Average or Shipment History Average.

The Secondary Basis measure is selected in case the basis measure has no value. You can select only measures that contain pre-calculated proportions as a secondary basis. That is, they're calculated during plan run.

**g.** On the Expression tab, define any new expressions for a measure. You create an expression when you have to show any value other than its stored information. The expression provides a flexible framework for an extensive variety of calculations and information. An expression for a measure references other measures, operators, and numbers.

For example, to create a user defined measure that shows archived time periods, you need to use an archive expression. See the *View Planning Measures from Archived Time Periods* topic to learn more.

In the Expressions subtabs:

- The Functions tab lists the available functions, a description, an example of the function's use.
- The Measures tab lists the available measures, their descriptions, and data type. The Insert button inserts the highlighted measure into the expression building area where functions or arithmetic operations can be specified.
- The Attribute tab lists the attributes available for the Product dimension at Item level. The description and data type of the attribute is shown in the description pane.

After you complete the expression, use the Validate button to ensure the syntax is correct. An error or succeeded messaged is displayed.

**h.** On the Edit Lock tab, you can define a new expression similar to the measure expression. The difference is rather than evaluating and displaying the expression result, the expression result is used to control or refine the editable status of the measure. If the expression evaluates as true, the measure is locked from

editing. The expression is evaluated every time the table is run, and may change as relevant measures or attributes are modified.

i. On the Advanced tab, click the **Properties** tab and review the following parameters:

- If you select the **Shared measure** check box, then the measure is shared across plans. By default, the parameter isn't selected, and the measure is plan-specific.

  > **Note:** You can share measures across only demand plans with the day planning time level or across demand and supply plans. In such plans, shared measures are common, and the entries you make in one plan apply to other plans. For plans of other types, even if you select the check box, the measures are plan-specific.

- If you select the **Refresh with current data** check box, then the current measure value needs a placeholder to store the result in the application. For example, a noneditable measure where the data is imported from a legacy or other application. Selecting this check box allocates a space to store the measure by the defined dimensions.
- Conversion Type enables you to define the valid Unit of Measure (UOM) and Currency conversions that are available for a measure in a table.

  Base Units of Measure defines the default unit of measure used to convert displayed data. The field is editable only for Numeric measures, which don't have Product and Organization-based levels (for measures that have product and organization, the definition comes from the data source). Select any relevant units of measure, which may be useful in a table, graph, or tile. Only the UOMs that you select are available for selection in a table or graph.

  Base currency defines the default currency to which displayed data are converted. The field is editable for only Currency type measures.

  You use Price lists to convert quantities into values, which are then converted to a currency.
- **Data Lookup** value enables you to identify a data lookup source that displays the measure as a list of value. The source attributes have 3 options: None (Default), Level, and List.
  - If Source=Level, you must identify the level and the attribute to display in the measure list.
  - If Source=List, then you can create and maintain the list of values. You can either add or remove members in this list.

j. On the Advanced tab, click the **Goals** tab to define if low or high values are better for measure goals.

k. On the Advanced tab, click the **Conditional Formatting** tab to define conditional formatting settings for the measure.

4. Click **Save and Close**.

## Assign Measures to a Measure Catalog

To use the user-defined measure in your plan, add the new measure to the plan's measure catalog. Navigate to Configure Planning Analytics, find the plan's measure catalog on the Measures Catalog tab. In the Available Measures pane, search for the new user-defined measure, and add it to the Selected Measures. After you perform a plan run you can create a table or use an existing table, and add your new measure to the table.

*Related Topics*

- Configure Global Goals for Measures
- Duplicate, Edit, and Delete Measures
- Create Measure Groups

# Duplicate, Edit, and Delete Measures

You can duplicate, edit, or delete user-defined measures using the Manage Planning Measures task, which is available in the Tasks drawer.

To duplicate the measure: Select a measure from the list of measures, select the **Action** menu on the toolbar, and then click **Duplicate**. Duplicating the existing measure gives you a starting point for creating a new measure definition. When you duplicate a measure the default name is Copy of <original measure name>. Other definitions of the duplicated measure remain the same as the original measure.

To edit the measure: Select a measure from the list of measures, select **Actions** menu, and then click **Edit**. Editing a measure enables you to select an existing measure and edit its attributes.

To delete the measure: Select a measure from the list of measures, select **Actions** menu, and then **Delete**. A complete list of all objects including tables and measure groups are be displayed to ensure you are aware of impacts of deleting a measure.

*Related Topics*

- Create Measure Groups
- Configure Global Goals for Measures

# Create Measure Groups

Use Manage Planning Measures task to create a measure group. Measure groups are created to group measures together that you need frequently. Depending on your business need you can create measure groups and associate measures with appropriate groups.

To create a measure group:

1. In the Navigator, click a Supply Chain Planning work area link.
2. Click the Tasks panel tab.
3. In the Tasks panel drawer, select the **Manage Planning Measures** link.
4. Select **Create Group** from the **Actions** menu.
    - Enter a name and description.
    - From the Available Measures pane you can select measures and move them to the Selected Measures pane.
5. Click **Save and Close**.

*Related Topics*

- Create Measures and Assign to a Measure Catalog
- Duplicate, Edit, and Delete Measures

# Configure Global Goals for Measures

You can define global goals for a measure using the Goals tab when you create or edit a measure. On the Create Measure page, click the Advanced tab and then select the Goals tab to configure global goals.

Define if low or high values are better. For example, a high value is good for revenue; a low value is good for expenses.

For global goals, you can provide a low range or a high range.

Goals option is available only for measures of type Currency, Number, and Percent. Using Global Goals, you can first define if low or high values are better for a measure. The ranges are displayed on the page when you are viewing a measure in comparison with its goal, for example, in an infotile. Global goals are measure level parameters and are not defined specifically for a subset of the data. For example, you cannot have a goal of 1000 for one organization and 50000 for another.

*Related Topics*

- Create Measures and Assign to a Measure Catalog
- Duplicate, Edit, and Delete Measures

# 5 Supply Network Model

## How You Maintain Your Supply Network Model

Use the Maintain Supply Network Model page to view your collected data that includes details of organizations, customers, suppliers, carriers, and interlocation shipping networks.

To open the Maintain Network Model page, navigate to a Supply Chain Planning work area. Click the Tasks panel tab and then select the **Maintain Supply Network Model** link.

You use organizations to represent your business facilities or functions. Typically, if your business has a single physical facility that performs two different functions, then you model it as two organizations. For example, you have one facility that's a manufacturing plant and a distribution center. You can model them as two separate organizations. Additionally, if your business has one function located in two separate physical facilities, you can model those as one organization. If you modeled your facilities as one organization, you can create separate subinventories to represent inventory for each facility.

### Review the Collected Data

Based on your search results, use the Organization tab to do the following:

- Review organizations, including the time zones associated with the organizations, for all source systems.
- Create customer and supplier associations to organizations. This is used when creating the buy-sell transfers.
- Select the drop ship validation organization. For each source system, you can select only one organization as the drop ship validation organization. You can also assign a calendar to a drop ship validation organization.
- Set past due parameters for each organization, which include:
    - Past due forecast days
    - Past due sales order days
    - Past due supply days
- Set up organizations for subinventory-level replenishment planning by selecting **Yes** under **Plan Subinventories**.

Use the Customers and Supplier tabs to review collected data and assign time zones to customer sites and supplier sites. If the customer site or supplier site doesn't have an associated time zone, then the customer site or supplier site is assumed to be in the same time zone as the organization that's associated with the demand or supply.

Use the Carriers and Interlocation Shipping Networks tabs to review collected data on carriers, shipping methods, and transit times.

### Manage Organization Groups

Click the **Manage Organization Groups** button on the Organizations tab to create and manage organization groups. Organization groups are managed within the source systems and are used to:

- Limit the net change data collection from a source system to specific organizations.

- Load planning data from files for a specific organization group when collection type is Targeted.

## Enable Inventory Organization Tracking by Project

This parameter appears on the Maintain Supply Network Model page only when your organization is enabled for project-specific supply planning.

The Project Enabled parameter governs whether your inventory organization is enabled for inventory tracking by project. The value for this parameter can be Yes or No for an organization.

When the parameter value is Yes for an organization, the data collection process collects project-and-task-specific supplies and demands, and the project-specific planning releases planned orders to the organization. The value for this parameter is No for a supplier-modeled organization or a contract manufacturing organization.

## Buy and Sell Transfers

You can conduct material transfers between two organizations in a single Oracle Fusion source system by using the purchase order and sales order documents. The sales order at the source organization is used to ship the transfer. The purchase order at the destination organization is used to receive the transfer.

In the supply network model for the purchase order supply at the receiver organization:

- Define the supplier to source organization relationship and for the sales order demand at the shipping organization.
- Define the customer to destination organization relationship.

To model an organization as a supplier, update the Supplier and Supplier Site columns of the associated organization.

To model an organization as a customer, update Customer and Customer Site columns of the associated organization.

## Forecast and Consume Internal Orders

To forecast and consume internal orders, assign a customer and customer site to the organization that's the destination of the transfers. Use a customer name that makes sense for the destination organization, such as M1 Transfers. After you assign a customer and customer site on the Organizations tab, select the **Use Customer and Customer Site for Interorganization Transfers** check box for the organization.

**Note:** To complete the setup to forecast and consume internal orders, you must also do the following:

- On the Collect Planning Data page, Parameters tab, Demand Planning Data subtab, select the **Organization - Consumption Inventory Transactions to Include** check box.
- In the plan options for your plan, select the **Include transfer orders** check box in the Demand: Advanced Options dialog box. This check box is only available from a Demand Management, Planning Central, or Demand and Supply Planning work area.

*Related Topics*

- Overview of Data Collections for Supply Chain Planning
- How You Collect Different Data Types for Supply Chain Planning
- How You Load Planning Data from Files
- How You Define the Approved Supplier List for Supply Chain Planning
- Set Up Forecast Consumption for Transfer Orders

# Publish Order Forecasts to Suppliers

You publish order forecasts to your suppliers to enable them to commit supply and indicate their ability to meet the demand. Collaborating with suppliers by publishing an order forecast enables:

- Suppliers to send supply commits to the Original Equipment Manufacturer (OEM)
- OEMs to receive supply commits as supplier capacity

Collaboration enables suppliers to get an insight into the demand that the OEMs forecast and plan supply chain activities to meet the demand. Additionally, collaboration with suppliers enables OEMs to plan their downstream activities in the supply chain more efficiently.

Use the Collaboration Basis column in the Suppliers tab on the Maintain Supply Network Model page to indicate the basis on which you want to publish the order forecast to your suppliers. You can choose to publish the order forecast at the supplier and supplier site levels based on one of the following dates:

- **Start date**: Suppliers use the start date to know when they need to start manufacturing an order to fulfill the order on time
- **Dock date**: Suppliers use the dock date to know the date by which they need to fulfill the order

# How You Define the Approved Supplier List for Supply Chain Planning

An approved supplier list (ASL) is a repository of information that links items to the suppliers and supplier sites that provide them to either a specific ship-to organization or the entire enterprise.

An ASL can be global or specific to an organization; however, supply planning only recognizes global ASLs.

To determine the supplier and supplier sites for items, the planning process collects ASLs from the CSV file upload, Oracle Fusion Cloud Procurement, or both.

- Use the Load Planning Data from Flat Files process to load data directly into the planning ASL by using the Approved Supplier List CSV template (ScpApprovedSupplierListImportTemplate.xlsm).
- You can also define some ASL attributes in Oracle Procurement and then upload a CSV file that defines the attributes that you want supply planning to use. For example, define the following item-to-supplier relationships and order modifiers in Oracle Procurement:
    - Supplier

- Supplier site
- Minimum order quantity
- Fixed lot multiple

To upload additional attributes for supply planning to use, you can create and collect the ASL from purchasing. You can then use the CSV file upload to define additional attributes such as the following:

- Item-supplier lead time
- Supplier capacity calendar
- Daily supplier capacity

Oracle Fusion Cloud Supply Planning supports the approved supplier list for a base model. However, approved supplier lists aren't supported for configured items and won't be copied into a supply plan.

*Related Topics*

- How You Maintain Your Supply Network Model
- Supplier Capacity Options

# Associate Calendars with Supplier Sites

Use a supplier site calendar to measure processing lead times for purchases from a supplier site. You can associate a Supply Chain Planning calendar with a supplier site to use for all items sourced from that supplier site.

The calendar is in the collected planning data.

You can associate a calendar with supplier sites to use if there is no calendar defined through the Approved Supplier List upload for a supplier site-item combination. From a Supply Chain Planning work area, navigate to the Maintain Supply Network Model page, Suppliers tab. In the **Supplier Site Calendar** column for a supplier, select a calendar name from the list of collected calendars. You can only edit this field if the supplier row contains a supplier site.

When you run the plan, the planning process uses the selected calendar on the Maintain Supply Network Mode page if the approved supplier list calendar for the supplier site-item is blank. If the approved supplier list calendar for the supplier site-item is blank, and you do not associate a calendar with a supplier site on the Maintain Supply Network Model page, then the planning process uses the 24/7 calendar.

*Related Topics*

- How You Define the Approved Supplier List for Supply Chain Planning

# Assignment Sets, Sourcing Rules, and Bills of Distribution

You use assignment sets in a Supply Chain Planning work area to link sourcing rules and bills of distribution to items.

Using sourcing rules, bills of distribution, and assignment sets together, you can specify how material is supplied, manufactured, and transferred across a supply chain.

> **Note:** This topic is applicable to only the Planning Central, Sales and Operations Planning, Supply Planning, Demand and Supply Planning, and Replenishment Planning work areas.

When you create sourcing rules and bills of distribution, you create descriptions of the means by which you can replenish items. However, items aren't specified anywhere on the definition forms, and so a defined sourcing rule or bill of distribution can later be assigned to any item or group of items. Use assignment sets to associate specific items, categories, or organizations with the sourcing rules and bills of distribution.

You must use sourcing to describe the supply chain to the planning process. Use the following three structures to do so:

- Sourcing rules
- Bills of distribution
- Assignment sets

## Sourcing Rules

Sourcing rules and bills of distribution determine the movement of material between organizations. These organizations include supplier, manufacturing, and distribution facilities. You can navigate to a Supply Chain Planning work area and click **Manage Sourcing Rules** from the **Tasks** drawer to create or search for an existing sourcing rule.

The three types of sources are:

- Transfer From: Interorganization shipping functionality accomplishes the transfer between internal organizations. Enter the source organization in the Organization column.
- Make At: The item is manufactured at this internal organization. Enter the manufacturing organization in the Organization column.

  Oracle Fusion Replenishment Planning doesn't support make at sourcing rules.
- Buy From: Purchase the item from an external enterprise. Data entry in the Supplier and Supplier Site columns is enabled, and the Organization column is disabled.

Allocation Percent and Rank: The total allocation percentage for all sources within a rank must add up to 100 percent. The sources with the highest rank (lowest numeric value) get the highest priority in allocations. Unconstrained supply planning and Replenishment Planning only consider sources of rank one. Replenishment Planning also doesn't support sourcing splits.

## Bills of Distribution

When material flows through three or more organizations, bills of distribution describe supply chain links more efficiently than sourcing rules. However, any relationship that can be described by bills of distribution can also be described by a set of sourcing rules. Typically, most users use sourcing rules rather than bills of distribution. You can navigate to a Supply Chain Planning work area and click **Manage Bills of Distribution** from the **Tasks** drawer to create or search for existing bills of distribution.

Replenishment Planning supports bills of distribution of only rank one and doesn't support split bills of distribution.

Sales and Operations Planning doesn't support bills of distribution.

**Note:** Despite the name, bills of distribution don't describe an outward bound or push type of sourcing relationship. Both sourcing rules and bills of distribution are used only to pull material from sources to destinations.

## Assignment Sets

You use assignment sets to link sourcing rules and bills of distribution to items. In other words, you use assignment sets to link sourcing rules, items and supply nodes. The assignment set creates the sourcing and transfer links between organizations for each item involved in a supply chain plan. Alternative supply chains can be modeled by creating alternative assignment sets. You can navigate to a Supply Chain Planning work area and click **Manage Assignment Sets** from the **Tasks** drawer to create or search for existing assignment sets.

For more information, see *Create an Assignment Set*.

## Sourcing Assignment Hierarchy

The planning process uses a sourcing assignment hierarchy to determine the actual source of a specific item. You can assign replenishment sources at the following levels. Specific sourcing assignments override general assignment levels. If the planning process doesn't find any sourcing assignment, then the make or buy item attribute is used to determine sourcing.

The following table lists the supply sourcing hierarchy.

| Rank | Item or Category | Applies to |
|---|---|---|
| 1 | Item - Organization | 1. Sourcing rule |
| 2 | Category - Organization | 1. Sourcing rule |
| 3 | Item | 1. Bill of distribution<br>2. Global sourcing rule |
| 4 | Category | 1. Bill of distribution<br>2. Global sourcing rule |
| 5 | Organization | 1. Global sourcing rule |
| 6 | Global | 1. Bill of distribution<br>2. Global sourcing rule |

When entering sourcing assignments at the category level, the catalog associated with the assignment set is used to determine the list of available categories.

When you source supplies for sales orders and forecasts (independent demands), then order promising and planning use a more detailed hierarchy. This hierarchy includes the demand class, customer, and customer site which are dimensions of independent demand.

The following table lists the demand sourcing hierarchy.

| Rank | Item or Category |
|---|---|
| 1 | Item - Customer / customer site |
| 2 | Item - Customer |
| 3 | Item - Demand Class |
| 4 | Item - Region |
| 5 | Category - Customer / customer site |
| 6 | Category - Customer |
| 7 | Category - Demand Class |
| 8 | Item |
| 9 | Category - Region |
| 10 | Category |
| 11 | Customer / customer site |
| 12 | Customer |
| 13 | Demand Class |
| 14 | Region |
| 15 | Global |

Using the demand sourcing hierarchy, if a demand line includes a value for demand class, then if no sourcing rule exists for Item - Customer / customer site or Item - Customer, but a rule exists for Item-Demand Class, then that rule is used to determine supply sources for the demand line.

When using the sourcing hierarchy, if two rules conflict, the more granular rule is used. To verify which source is used for an assignment set, from within the set, click the **View Sourcing** button after entering the following required parameters:

- Assignment set
- Organization
- Item
- Date

The dialog box displays which assignments apply to the item-organization-date that you selected. If multiple rules apply, then the Active Rule is marked in the form.

*Related Topics*

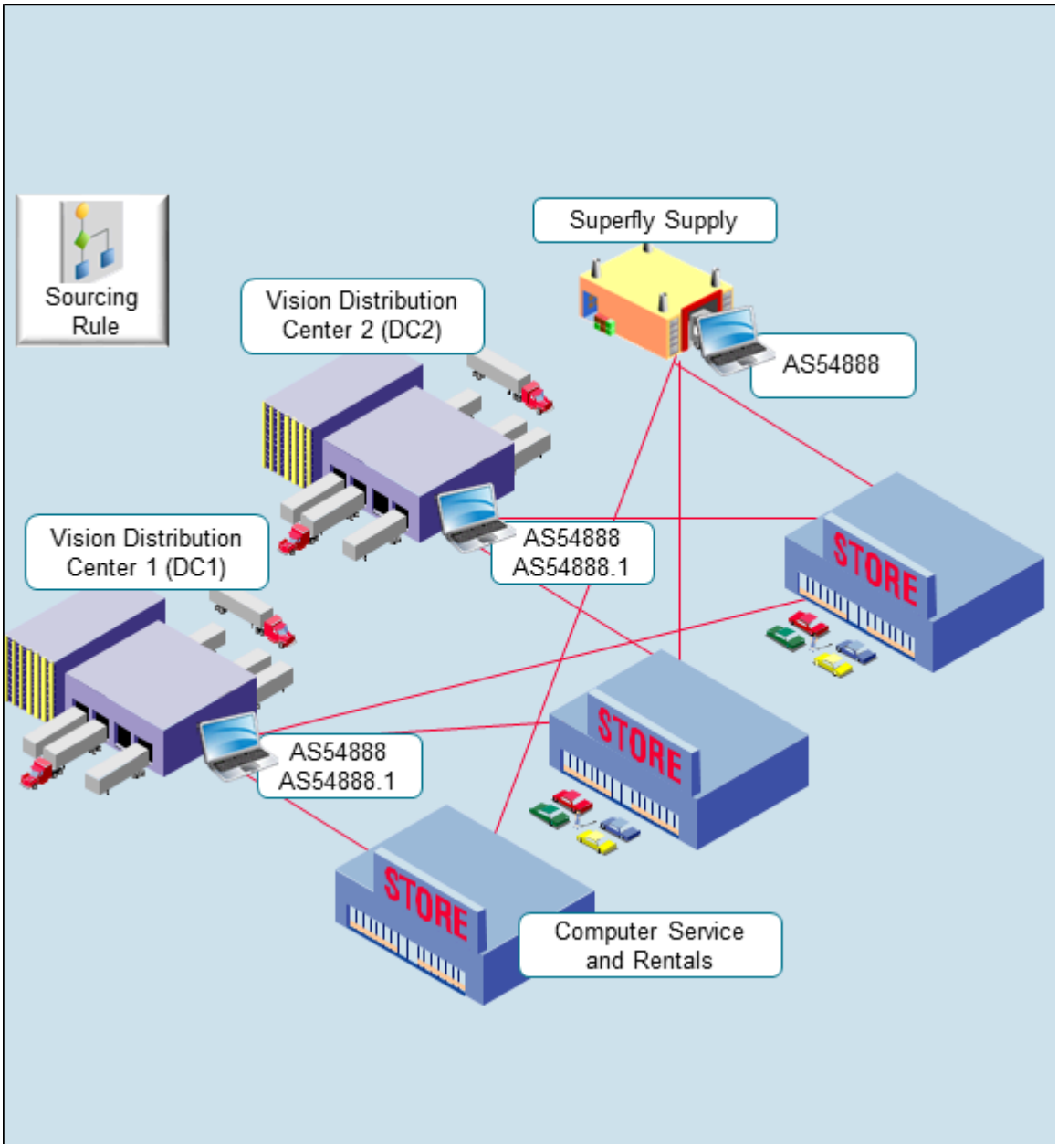
- Support for Sourcing Rules and Bills of Distribution in Oracle Replenishment Planning
- Item Attributes and Order Modifiers for Supply Planning

# Create an Assignment Set

Learn how to create an assignment set.

Assume you sell the AS54888 Computer. You're releasing a new version of it, AS54888.1 to all your customers, but you want to make sure your highest valued customer, Computer Service and Rentals, gets first dibs on it.

Here's your supply chain.




Note

- You are in the Vision Operations organization.
- You fulfill all computers that you have in the Computers category from:
-
  - Vision Distribution Center 1 (DC1)
  - Vision Distribution Center 2 (DC2)
  - Superfly Supply (S1)

You will create one sourcing rule to meet this need:

- You fulfill the AS54888.1 only from Distribution Center 1 and Distribution Center 2.

You will create a second sourcing rule to meet this need:

- You fulfill sales orders from Computer Service and Rentals that have the AS54888.1 only from Distribution Center 1.

You will create a third sourcing rule to meet this need:

- You fulfill all items that are in the Computers category from Distribution Center 1, Distribution Center 2, or Superfly.

So you need to implement this set up.

| Sourcing Rule | Item Category | Item | Fulfillment Source |
|---|---|---|---|
| 1 | Computers | - | Vision Distribution Center 1 (DC1)<br>Vision Distribution Center 2 (DC2)<br>Superfly Supply (S1) |
| 2 | - | AS54888.1 | Vision Distribution Center 1 (DC1)<br>Vision Distribution Center 2 (DC2) |
| 3 | - | AS54888.1 | Vision Distribution Center 1 (DC1) |

Summary of the Setup

1. Create your sourcing rules.
2. Assign your sourcing rules.

## Create Your Sourcing Rules

1. Go to the Global Order Promising work area, then click **Tasks > Manage Sourcing Rules**.
2. Create your first sourcing rule.
    - On the Manage Sourcing Rules page, click **Actions > Create**.
    - On the Create Sourcing Rules page, set the values.

| Attribute | Value |
|---|---|
| Name | Transfer Computers From D1, D2, and S1 |
| Description | Sourcing rule to transfer supply for all items that are in the Computers category from our distribution centers and from Superfly Supply. |
| Organization Assignment Type | Global |

    - In the Sourcing Rule Effective Dates, click **Actions > Add Row**, then set the Start Date to today's date. You want this rule to last forever, so leave the End Date attribute empty.

      If you ever need to stop using this rule, you can always come back and set the end date.
    - In the Sources area, use **Actions > Add Row** 3 times to add these rows.

| Type | Organization | Allocation Percent | Rank |
|---|---|---|---|
| Transfer From | D1 | 100 | 1 |
| Transfer From | D2 | 100 | 1 |
| Buy From | S1 | 100 | 1 |

3. Create your second sourcing rule.
    - Repeat step 2, but with these values.

| Attribute | Value |
|---|---|
| Name | Transfer Computers from D1 and D2 |
| Description | Sourcing rule to transfer supply for the AS54888.1 item from our distribution centers. |
| Organization Assignment Type | Global |

    - Add these sources.

| Type | Organization | Allocation Percent | Rank |
|---|---|---|---|
| Transfer From | D1 | 60 | 1 |
| Transfer From | D2 | 40 | 1 |

4. Create your third sourcing rule.
    - Repeat step 2, but with these values.

| Attribute | Value |
|---|---|
| Name | Transfer Computers from D1 |
| Description | Sourcing rule to transfer supply for the AS54888.1 item from our D1 distribution center. |
| Organization Assignment Type | Global |

    - Add this source.

| Type | Organization | Allocation Percent | Rank |
|---|---|---|---|
| Transfer From | D1 | 100 | 1 |

5. Click **Save and Close**.

# Assign Your Sourcing Rules

Now you create a set of assignments to assign your sourcing rules. Your set will have three assignments.

1. Click **Tasks > Manage Assignment Sets**.
2. On the Manage Assignment Sets page, click **Actions > Create**.
3. On the Create Assignment Set page, set the values.

| Attribute | Value |
|---|---|
| Name | Assign My Computers |
| Description | Assign the sourcing rules that we're using to source all of our computers. |
| Catalog | GOP_Catalog<br><br>For details about catalogs and categories, see *How Catalogs Work Together*. |

4. Click **Actions > Add Row**, then assign your first sourcing rule.

| Attribute | Value |
|---|---|
| Assignment Level | Category |
| Category | Computers |
| Sourcing Rule or Bill of Distribution | Transfer Computers From D1, D2, and S1 |

5. Click **Actions > Add Row**, then assign your second sourcing rule.

| Attribute | Value |
|---|---|
| Assignment Level | Item |
| Item | AS54888.1 |
| Sourcing Rule or Bill of Distribution | Transfer Computers from D1 and D2 |

6. Click **Actions > Add Row**, then assign your third sourcing rule.

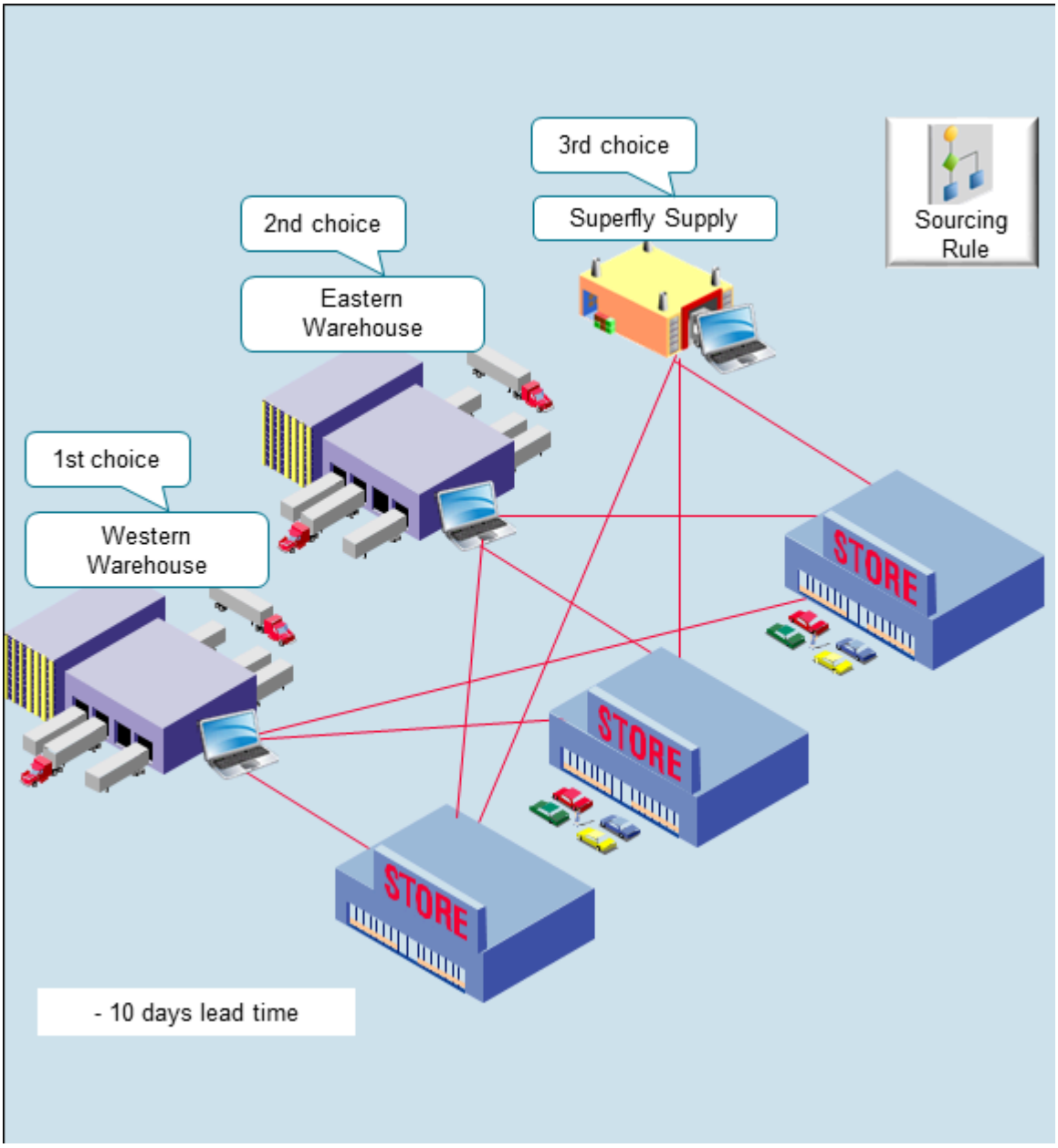
| Attribute | Value |
|---|---|
| Assignment Level | Item and Customer |
| Item and Customer | Computer Service and Rentals |
| Item | AS54888.1 |
| Sourcing Rule or Bill of Distribution | Transfer Computers from D1 |

7. Click **Save and Close**.

## Another Example of Creating an Assignment Set

Create an assignment set that Promising can use when your first choice for supply can't fulfill the demand.

Consider this supply chain.




Assume:

- You're in the Vision Operations organization.
- You sell the AS54888 Computer item, and its in the Vision Pro category of computers.
- The Western Warehouse and the Eastern Warehouse are each an organization in Vision Corporation.

- You want to ship from Western first.
- If Western can't fulfill demand in time to meet the requested delivery date, then ship from Eastern.
- If Eastern can't fulfill demand in time to meet the requested delivery date, then use Superfly Supply to fulfill demand. Superfly is your 3rd party supplier. You use the acronym SFS to identify the Superfly organization.
- You need 10 days lead time to fulfill the item.

Summary of the Setup

1. Create your sourcing rules.
2. Assign your sourcing rules.
3. Create your ATP rules.

Create Your Sourcing Rules

1. Create your first sourcing rule.
    - Go to the Global Order Promising work area, then click **Tasks > Manage Sourcing Rules**.
    - Create a new sourcing rule.

| Attribute | Value |
|---|---|
| Name | Sourcing Rule for Vision Pro Computers |
| Description | We use this sourcing rule to source all items in a category from our Western Warehouse. If Western can't fulfill the item in time, then it sources from Eastern Warehouse. |
| Organization Assignment Type | Global |

    - Set the start date to today's date. Don't enter an end date.
    - Add your sources.

| Type | Organization | Allocation Percent | Rank |
|---|---|---|---|
| Transfer From | Western Warehouse | 100 | 1 |
| Transfer From | Eastern Warehouse | 100 | 2 |

2. Create your second sourcing rule.

| Attribute | Value |
|---|---|
| Name | Sourcing Rule for a Vision Pro Item |
| Description | We use this sourcing rule to source an item from our Western Warehouse. If Western can't fulfill the item in time, then it sources from Eastern Warehouse. |
| Organization Assignment Type | Global |

    - Set the start date to today's date. Don't enter an end date.
    - Add your sources.

| Type | Organization | Allocation Percent | Rank |
|---|---|---|---|
| Transfer From | Western Warehouse | 100 | 1 |
| Transfer From | Eastern Warehouse | 100 | 2 |

3. Create your third sourcing rule.

| Attribute | Value |
|---|---|
| Name | Sourcing Rule for Superfly Supply |
| Description | We use this sourcing rule to source an item from our Superfly Supply supplier. |
| Organization Assignment Type | Local |
| Organization | SFS |

   - Set the start date to today's date. Don't enter an end date.
   - Add your source.

| Type | Organization | Allocation Percent | Rank |
|---|---|---|---|
| Buy From | Superfly Supply | 100 | 1 |

Assign Your Sourcing Rules

1. Click **Tasks > Manage Assignment Sets**.
2. On the Manage Assignment Sets page, click **Actions > Create**.
3. On the Create Assignment Set page, set the values.

| Attribute | Value |
|---|---|
| Name | Assign My Vision Pro Computers |
| Description | Assign the sourcing rules that we're using to source all of our computers in the Vision Pro category. |
| Catalog | GOP_Catalog |

4. Click **Actions > Add Row**, then assign your first sourcing rule.

| Attribute | Value |
|---|---|
| Assignment Level | Category |
| Category | Vision Pro |

| Attribute | Value |
|---|---|
| Sourcing Rule or Bill of Distribution | Sourcing Rule for Vision Pro Computers |

5. Click **Actions > Add Row**, then assign your second sourcing rule.

| Attribute | Value |
|---|---|
| Assignment Level | Item |
| Item | AS54888 |
| Sourcing Rule or Bill of Distribution | Sourcing Rule for a Vision Pro Item |

6. Click **Actions > Add Row**, then assign your third sourcing rule.

| Attribute | Value |
|---|---|
| Assignment Level | Organization |
| Organization | SFS |
| Sourcing Type | Sourcing Rule |
| Sourcing Rule or Bill of Distribution | Sourcing Rule for Superfly Supply |

7. Click **Save and Close**.

Create Your ATP Rules

1. Click **Tasks > Manage ATP Rules**.
2. Create your first ATP rule.
   Click **Actions > Create**, then set the values.

| Attribute | Value |
|---|---|
| Name | ATP Rule for the AS54888 |
| Description | ATP rule that we're using to promise the AS54888 item. |
| Promising Mode | Lead-Time Based |
| Lead Time Considered | User-Defined Lead Time |
| User-Defined Lead Time in Days | 10 |
| Assignment Basis | Item |
| Assigned-to Item | AS54888 |

3. Create your second ATP rule.

Click **Actions > Create**, then set the values.

| Attribute | Value |
|---|---|
| Name | ATP Rule for the Vision Pro Category |
| Description | ATP rule that we're using to promise items that are in the Vision Pro category. |
| Promising Mode | Lead-Time Based |
| Lead Time Considered | User-Defined Lead Time |
| User-Defined Lead Time in Days | 10 |
| Assignment Basis | Category |
| Assigned-to Item Category | Vision Pro |

# Specify Catalogs for Assignment Sets

A catalog is a group of categories that you can use to classify an item. Use it to organize your item into a hierarchy.

A catalog can have a flat or a one level structure of categories. You can also have a hierarchical structure of categories.

You must specify a catalog for each assignment set when you create the set. You associate the set with a catalog to:

- Use categories associated to that catalog in your assignment set.
- Link the sourcing assignments to the categories.

Use the Manage Assignment Sets task in the Global Order Promising work areas to create an assignment set and specify the catalog. Don't use assignment sets in the Demand Management work area.

If you don't specify a catalog, then the assignment set uses the Catalog for Sourcing Assignments (MSC_SRC_ASSIGNMENT_CATALOG) profile option as the catalog. To modify it, see *Manage Promising Profiles*.

A catalog is a collection of categories that you can use to classify your item. For example, you can assign the Floral Dress item to the Summer category in the Ladies Wear catalog. For details about catalogs and categories, including how to create a catalog and add categories and items to it, see *Assign Catalogs and Categories Using Item Rules*.

# Create a Sourcing Rule

Learn how to create a sourcing rule.

1. Collect the reference data that you need to create your sourcing rule, such as organizations, items, and so on. Make sure the collected data is up to date on the server.

   For details, see *Collect Data for Global Order Promising*.

2. Go to the Global Order Promising work area, then click **Tasks > Manage Sourcing Rules**.
3. On the Manage Sourcing Rules page, click **Actions > Create**.
4. On the Create Sourcing Rule page, enter a name and description.
5. Set the Organization Assignment Type attribute to Global or Local.

   If you set it to Local, then set a value in the Organization attribute. Select the one organization that you will apply this sourcing rule to.
6. In the Sourcing Rule Effective Dates section, click **Actions > Add Row**, then set the dates when you want the sourcing rule to be in effect.
7. In the Sources section, click **Actions > Add Row**, then set the values.

| Attribute | Value |
|---|---|
| Type | Choose one:<br>o Transfer From<br>o Make At<br>o Buy From |

8. Set other attribute values depending on the type that you selected. The page will help you. It will make some attributes available depending on the type.
9. Click **Save and Close**.

*Related Topics*

- How You Collect Different Data Types for Supply Chain Planning
- Support for Sourcing Rules and Bills of Distribution in Oracle Replenishment Planning

# Export Planning Data to CSV Files

You can replicate sourcing rules and assignment set data from your Oracle Fusion Cloud Supply Planning instance to another instance. When exporting data to CSV files, you can export a subset of the measures that are listed in a plan's measure catalog.

## Replicate Sourcing Rules and Assignment Set Data

You can replicate sourcing rules and assignment set data from your Oracle Fusion Cloud Supply Planning instance to another instance or application without manually reentering data. For example, you can replicate the sourcing rules in your Oracle Supply Chain Planning production instance into a reporting system or a test instance.

Use the Export Supply Chain Planning Data scheduled process job to extract sourcing rules and assignment set data into a comma-delimited values (CSV) file format. The generated file is in the standard file-based import (FBDI) file format that you can then use to do the following:

- Check for missing or incorrect sourcing rules or sourcing assignments. For example, does a particular item-organization have a valid sourcing assignment?
- Replicate and then modify existing sourcing rules and assignment sets in a spreadsheet. You can then upload the new setups into another instance or application to create new sourcing rule and assignment set setups.

- Copy the sourcing rule and assignment set setups from one instance to another instance or application, such as from a test instance to a production instance.

The format of the CSV files, including the header content, is the same as the format of the corresponding files in the source instance. This enables you to import the same data directly into another production or test instance. Use the Load Planning Data from Files process to upload your imported files to staging tables.

The following steps show you how to export sourcing rules and assignment set data to a CSV file:

1. In the Scheduled Processes work area, click the **Schedule New Process** button on the Overview page.
2. In the Schedule New Process dialog box, search for and select **Export Supply Chain Planning Data** and then click **OK**.
3. In the Process Details dialog box, Basic Options section, select **Sourcing Rules and Assignment Sets** from the **Entities to Export** drop down list.
4. Optionally, click the **Filter** button to filter your export with specific assignment sets. If you don't select any filters, then the process exports all sourcing rules and assignment sets.
5. In the Process Details dialog box, click the **Submit** button to submit the scheduled process job.

   After you submit your job, you will receive a confirmation with a confirmation number. The planning process appends the confirmation number to the extracted CSV file names, such as AssignmentSets_65960.csv and SourcingRules_65960.csv, where 65960 is the confirmation number.

## Export Measures Along With Planning Data

While exporting planning data, you can include a subset of measures that are part of a plan's measure catalog.

You can assign a measure catalog other than a plan's extract measure catalog defined in Plan options, in the Manage Plans UI. This improves the versatility and quality of data extracts required for planning.

Depending on your planning cycle and data needs, extract only those measures that are most relevant for the planning activity. For example, for a given plan you can export demand related measures early in a planning cycle and supply related measures later in the cycle.

You can also assign a measure catalog when running the Prepare Planning Data for Export scheduled process.

# Item Attributes for Oracle Replenishment Planning

This topic lists the item attributes that are supported by Oracle Replenishment Planning.

Replenishment Planning supports these item attributes:

- ABC Class
- Annual Carrying Cost Percentage
- Average Interarrival Time
- Average Interarrival Time Override
- Buyer
- Category
- Category Description

- Create Supply
- Create Supply After
- Currency
- Description
- Fixed Lot Multiplier
- Fixed Order Quantity
- Intermittent Demand
- Intermittent Demand Override
- Item
- Make or Buy (Replenishment Planning doesn't support Make items. If the item attribute is set to Make, Replenishment Planning considers the item attribute as Buy. This item attribute is used if no sourcing rule is present.)
- MAPE
- MAPE Override
- Maximum Order Quantity
- Minimum Order Quantity
- Net Selling Price
- Note
- Order Cost
- Planner
- Planner Description
- Planning Method (This attribute must be set to Replenishment Planning.)
- Postprocessing Lead Time
- Preprocessing Lead Time
- Processing Lead Time
- Release Time Fence Date
- Release Time Fence Days
- Release Time Fence Type
- Rounding
- Selling Price
- Service Level Percentage
- Standard Cost
- UOM

*Related Topics*

- Support for Create Supply and Create Supply After Attributes in Oracle Replenishment Planning

# 6 Planning Data Collections

## Overview of Data Collections for Supply Chain Planning

To run plans from one of the Supply Chain Planning work areas, you must collect data into a planning data repository. Order promising and order management processes also use the planning data repository to promise and manage orders.

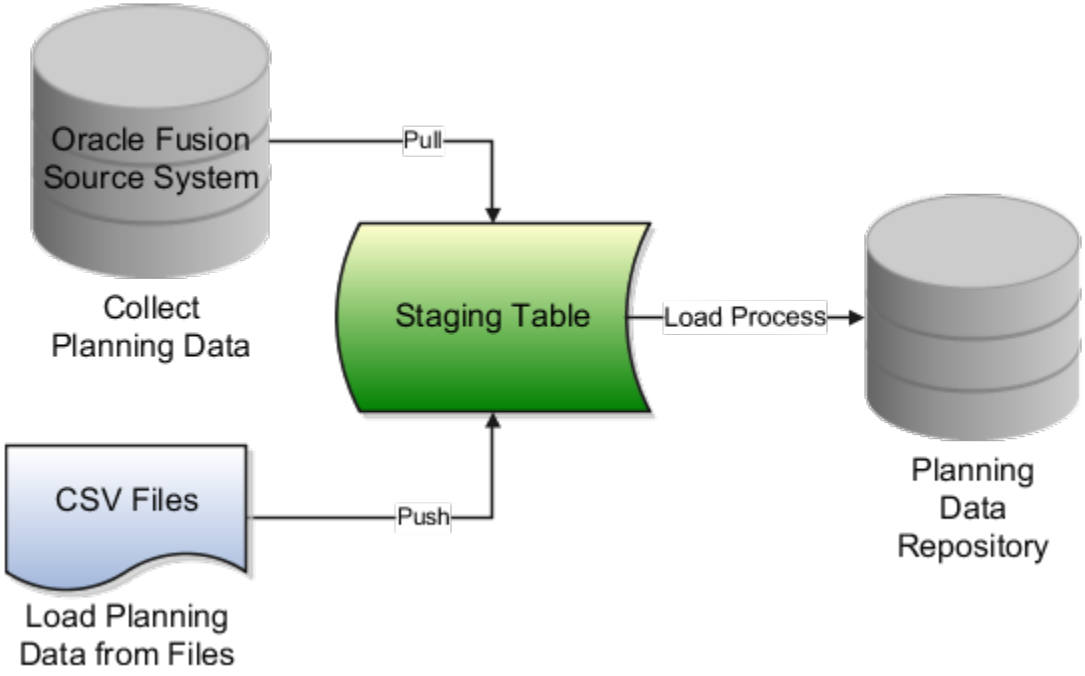
To collect data into the planning data repository, you can perform these tasks from one of the Supply Chain Planning work areas:

- Collect Planning Data: Use this task when you collect data from the Oracle Fusion source system.
- Load Planning Data from Files: Use this task when you collect data from a completely external source system.

Depending on your security privileges, you may need to manually add these tasks. In the Setup and Maintenance work area, use the following:

- Offering: Supply Chain Planning
- Functional Area: Supply Chain Planning Configuration
- Task: Collect Planning Data

The following figure illustrates the collections processes that you can use to populate the planning data repository.



## Collect Planning Data

There are two steps involved in the data collection process. The Collect Planning Data process first pulls data from the Oracle Fusion source system into staging tables. The process then loads data from the staging tables into the planning data repository.

On the Collect Planning Data page, use the following tabs to select what data you want to collect:

- Reference Data
- Demand Planning Data
- Supply Planning Data

Most of the reference data are global entities. Global entities are common for all source systems. For example, Units of Measure (UOM) is common for all source systems. The supply planning and demand planning data are transactional data. Most of the transactional data are local entities. Local entities are specific to each source system. For example, On-hand Quantity is specific for each source system.

You can also select collection filters to further refine what data you want to collect. You can save your selections to collection templates.

## Load Planning Data from Files

Use this option to populate the planning data repository using CSV files:

To load the planning data from files, follow these steps:

1. Create the CSV files. To create the CSV files, you can use a predefined set of Microsoft Excel files as import templates.
2. Import the CSV files. From the navigator, click **File Import and Export**, and create a new import. Specify scm/planningDataLoader/Import for the account.
3. Submit the Load Planning Data from Files process. When you submit the process, the process first pushes the data from the CSV files into the staging tables. The process then loads the data from the staging tables into the planning data repository.

*Related Topics*

- How do I update existing setup data?

# Global Entities

Within data collections, Oracle Fusion Cloud Supply Chain Planning refers to certain business entities as global entities.

Global entities are specific for each instance and are common for all source systems. They are common without regard to whether they are collected from the Oracle Fusion source system or collected from an external source system using the file-based data import (FBDI) method.

When collecting data for a global entity, the planning data repository stores only one record for each instance of the global entity. The data collections process removes the source system reference from the global entity and stores the data in the data repository. If the data collections process collects the same instance of a global entity from more than one source system, the data repository stores the value from the last collection.

For example, the following scenario describes the collection method of the global entity called units of measure (UOM) from three source systems, namely source system A, B, and C respectively.

- Source system A has an instance of UOM. During the collection of UOMs from source system A, the kilogram UOM is collected. This is the first time the kilogram UOM is collected. The data collections process creates a kilogram record in the data repository.
- Source system B does not have any instances of UOM. During the collection of UOMs from source system B, the data collections process does not collect the kilogram value. Since there was no record for the kilogram UOM in source system B, the data collections process does not change the kilogram record in the data repository. The record of the kilogram value from source system A is still valid.
- Source system C has an instance of UOM. During the collection of UOMs from source system C, the kilogram UOM is again collected. The data collections process registers the kilogram record in the data repository to match the values from source system C.

**Note:** When you use the FBDI collection method, the global entity files require a source system. The collections framework validates that the source system matches each record's source system. A source system identifier marks each data record.

In Supply Chain Planning, the following entities are classified as global entities:

- Order Orchestration Reference Objects
- Units of Measure and UOM Conversions
- Demand Classes
- Currency and Currency Conversion Class
- Shipping Methods (Carrier, Mode of Transport, Service Level)
- Customer and Customer Site
- Suppliers and Supplier Sites
- Regions and Zones
- Approved Supplier List
- Supplier Capacity
- Planners

# Data Collection Types for Supply Chain Planning

When you collect planning data, one of the parameters you specify for the Collect Planning Data task is the Collection Type parameter.

You can select this task from any of your Supply Chain Planning work areas. For the Collection Type parameter, you can select one of the following values:

- *Targeted*: Choose the Targeted collection type when you want to collect a significant volume of source system data. Typically, you use the Targeted collection type in scenarios such as bulk upload of transaction data, instance upgrade, and change in collection filters.
- *Net change*: Choose the Net change collection type when you want to collect changed data and new records since the last successful collection cycle.

- *Automatic selection*: Choose the Automatic collection type when you want the planning process to decide and automatically select an appropriate collection type for each of the entities.

### Targeted

You use the Targeted collection type when you want to perform a complete refresh of the data in the data repository. In this mode, the planning process deletes the existing data for the selected entities from the data repository. Next, if subsequently collected from the source, the data for the selected entities replaces the deleted data.

**Note:** For the following data collection entities, you can use only the Targeted collection type: Item Costs, Resource Availability, Fiscal Calendars, and all Shipment and Booking History data.

### Net change

When you use the Net Change collection type, you collect data incrementally. The Net Change collection type collects only changed or new data. Collecting data using the Net Change collection type is usually faster than using the Targeted collection type. You typically use the Net Change collection type when you have previously performed a Targeted collection, and now you want to keep your planning data current with your execution system data. You cannot select the demand planning data when the collection type is Net Change.

### Automatic selection

You use the Automatic collection type when you are not sure which collection type to select and you want the planning process to decide the collection type for each entity. The planning process evaluates each entity on multiple factors, such as the last collected date for an entity, and decides whether to perform a Targeted or a Net Change collection for the entity. You can manually select the entities that you want to collect or you can use one of the predefined templates to select your entities. If you select one of the predefined templates, you can't make any changes in the Reference Data, Demand Planning Data, and Supply Planning Data tabs.

## Manage Planning Source Systems for Data Collections

To populate the planning data repository, also known as the order orchestration and planning data repository, you collect data from the Oracle Fusion source system.

On the Manage Planning Source Systems page in one of the Supply Chain Planning work areas, enable organizations for collections. Depending on your security privilege, you can also enable organizations from the Setup and Maintenance work area.

Go to the Setup and Maintenance work area, then go to the task:

- Offering: Supply Chain Planning
- Functional Area: Supply Chain Planning Configuration
- Task: Manage Planning Source Systems

### The Oracle Fusion Source System

The Oracle Fusion source system is included as a source system for data collection. Supply chain planning, order orchestration, and order promising processes use data that are stored in the planning data repository. You ensure the Collections Allowed check box is enabled and manage which organizations you enable for collections.

To open the Manage Trading Community Source Systems page, navigate to the Setup and Maintenance work area and use the following:

- Offering: Supply Chain Planning
- Functional Area: Supply Chain Planning Configuration
- Task: Manage Trading Community Source System

## External Source Systems

You can also allow collections for external source systems if you will be loading planning data from files for Oracle Fusion Global Order Promising. You must first define the external source system on the Manage Trading Community Source Systems.

There are two types of external source systems: Others and External.

## Version External

The version External source system indicates that the source system is not connected to any other Oracle Fusion Cloud Applications Suite. This source system is not integrated with the Product Information Management work area, Oracle Trading Community Model, and Oracle Order Management. The external source system is also referred as a completely external source system. You cannot enable any other source system settings that are related to other Oracle Fusion applications. You can select the Collections allowed check box now or later depending on when you want to start collecting data. This enables the source system for data collections using the file-based import process.

## Version Others

The version Others source system indicates that the source system is connected to other Oracle Fusion Applications Suite. This source system is integrated for the Product Information Management work area, Oracle Trading Community Model, and Oracle Fusion Cloud Order Management. The following conditions are applicable when the external source is Others.

- External system data for Items, Item Structures, and Catalogs is uploaded to the Product Information Management work area
- External system data for Customers, Customer Sites, Regions and Zones is uploaded to Oracle Oracle Trading Community Model
- External system data for Sales Orders is uploaded to Oracle Fusion Cloud Order Management

For more information on types of data that can be collected for each source system, see the Import Templates Used to Create CSV Files for Supply Chain Planning topic.

## Organizations Enabled for Data Collections

The process for enabling organizations varies depending on the version of the source system.

To enable organizations for data collections when the source system version is **Oracle Fusion**, perform the following steps:

1. Click the Manage Organization List button for your Oracle Fusion source system.
2. Click the Refresh Organization List button to update the organizations list.

   When adding organizations to the Oracle Fusion source system to be collected into planning, you must click the **Refresh Organization List** button and then enable the organizations for collections.

3. Select the Enable for Collections check box for the organizations from which you want to collect data.

**Tip:** When performing collections during your initial setup, collect order orchestration reference objects from the predefined Oracle Fusion source system, and consider collecting organizations. After enabling organizations for collection, collect organizations first. You can confirm the collection results on the Supply Network Model page.

To enable organizations for data collections when the source system version is **External** (completely external source system), upload organizations using the file-based import process. The organizations are automatically enabled for collections.

To enable organizations for data collections when the source system version is **Others**, perform the following steps:

1. Define an organization as an item-organization in the product data model.
2. Upload the organization using the file-based import process and associate the organization with **Others** source system.

*Related Topics*

- Import Templates Used to Create CSV Files for Supply Chain Planning
- Considerations for Enabling Organizations for Data Collections
- Define Flexfield Mappings

# How the Order Orchestration and Order Promising Processes Use the Collected Planning Data

You perform data collections to populate the planning data repository. In addition to being used by Supply Chain Planning processes, the collected data is used by Oracle Order Management order orchestration processes and by Oracle Global Order Promising processes.

## Data Collections

You must perform data collections to populate the planning data repository, also called the order orchestration and planning data repository, with data from the Oracle source system or from a completely external source system. When you load data from an external source system, use the XLSM files to organize your data in the required format and then convert the data into CSV files. You can then upload the CSV files to the planning data repository.

## Order Orchestration

Order orchestration processes use some reference data directly from the planning data repository. You must perform data collections for the order orchestration reference entities even if you are not using the Supply Chain Planning work areas.

**Note:** Before collecting data from your Oracle source system, you must define at least one organization for the source system. After you have set up at least one organization, you must update the organization list on the Manage Planning Source Systems page and then enable at least one of the organizations for collections. If you have not enabled any organization, then the collections process ends with an error.

## Order Promising

The Global Order Promising processes use an in-memory copy of the data from the planning data repository. When order orchestration processes send a scheduling request or a check availability request to Oracle Global Order Promising, the order promising processes use the data stored in main memory to determine the response to send back to order orchestration. You must refresh the Global Order Promising data store after every collections so that the main memory always reflect the current.

*Related Topics*

- Collect Data for Global Order Promising

# How You Enable Cross-References of Entities by Data Collections

Cross-references enable you to locate the correct source value for each cross-referenced entity. When you enable entities for cross-referencing, data collection pays attention to the cross-references that you have set up for certain values.

To enable cross-referencing of entities, click the Manage Planning Data Collection Processes task from your supply chain planning work area. Select the source system from the list, and then enable the available entities that you want to cross-reference during data collections.

You can view the cross-referenced data for each entity on the Cross-Reference Relationships for Collected Data page in the Plan Inputs work area.

# How Planning Processes Collect Different Work Definitions and Item Structures

You may be concerned that the work definition and item structure data in your supply chain planning work area does not match with what was defined in Oracle Manufacturing.

You may be concerned that the work definition and item structure data in your supply chain planning work area does not match with what was defined in Oracle Fusion Cloud Manufacturing.

You don't need to worry. The planning application collects and uses data based on how the work definitions and item structures are defined and associated in the manufacturing source system.

## Work Definitions and Item Structures in the Source System

The work definition is a primary source of data for the planning application. The planning process uses the work definition of make order items to determine component and resource requirements. In case the work definition is not defined, the planning process uses the defined item structure, but to plan for components only. If a work definition is defined and no item structure is associated to it, then you can manually add ad hoc components to it. If an item structure is associated to it, you can still add ad hoc components to the work definition, alongside the components in

the item structure. Remember that while a work definition can be associated with only one item structure, one item structure can be associated with several work definitions within the parent item.

## Work Definitions and Item Structures in the Planning Data Repository

In the manufacturing source system, the work definitions and item structures for an item can be defined and associated in different ways. The following table lists the most common source system combinations and how the collections and run plan processes proceed accordingly:

| Oracle Manufacturing Definition | Item Structure Name and Work Definition Name in the Planning Data Repository | Planning Collections Processes |
|---|---|---|
| Only item structure is defined for an item. No work definition is defined. | Item structure name exists, no work definition name | The planning process collects the item structure information but does not collect information for routing, operations, or item resources.<br><br>The planning process uses item structure to plan components and does not plan resources. |
| Only work definition is defined for an item. No item structure is defined. | Work definition name exists, no item structure name | The planning process collects the work definition information to populate the item structure and routing information.<br><br>The planning process populates the component information and operation sequence number in the item structure based on the ad hoc components and operation assignment available in the work definition.<br><br>The planning process uses the work definition information to plan both components and resources. |
| Both item structure and work definition are defined for the item. | Both work definition name and item structure name exist | The planning process uses the components that are associated with the work definition to plan. The planning process does not consider any components of item structure that are not associated with the work definition. You can override the item structure component usage within the work definition.<br><br>The planning process collects component attributes (such as component effectivity) from the item structure if the components are associated with the work definition.<br><br>The planning process uses the work definition to plan resources. |
| Both item structure and work definition are defined for the item, but the work definition does not refer to the item structure. Ad hoc components are assigned to the work definition operations. | Work definition name exists, no item structure name | The planning process collects the components from the work definition and not from the item structure in the Oracle Fusion Product Information Management solution.<br><br>The process plans components based on work definition operation assignments and plans resources based on the work definition. |

# Enable External Data Collection for the Oracle Fusion Source System

Enable external data collection if you want to load transactional data from external systems. Typically, you do this if some of your supply chain processes are managed in external applications. You load the transactional data from these applications using file-based data imports (FBDI).

You can use external data sources for these functional areas: Inventory and Materials Management, Procurement, Order Management, and Manufacturing. When you enable external data collection for a functional area, be aware of these restrictions:

- You can't use configure-to-order, drop shipment, and back-to-back fulfillment.
- The entities associated with the functional area are no longer available for Oracle Fusion source collection. For example, if you enable Order Management, the Sales Orders entity won't be available on the Collect Planning Data page for you to select for Oracle Fusion source collection.

This table lists the entities for each functional area.

| Functional Area | Entities |
|---|---|
| Inventory and Materials Management | On-hand Quantity and Transfer Orders |
| Procurement | Purchase Orders and Requisitions |
| Order Management | Sales Orders and Reservations |
| Manufacturing | Work Order Supplies, Resource Availability, Resources, Work Definitions, and Item Structures |

## Enable External Data Collection

Use these steps to enable external data collection:

1. Select the **Manage Planning Source Systems** task in the Tasks panel from any Supply Planning work area page. Or use this task in the Setup and Maintenance work area:
    - Offering: Supply Chain Planning
    - Functional Area: Supply Chain Planning Configuration
    - Task: Manage Planning Source Systems
2. In the list of source systems, select the row that has Oracle Fusion in the **Version** column.
3. In the Actions menu, click **Select Data Sources**.
4. Select the **Enable External Data** check box, and then select the functional areas that you want to source transactional entities for.

**Note:** Every time you enable or disable external data collection, you must run a targeted data collection to ensure complete refresh of data in the data repository.

*Related Topics*

- How You Load Planning Data from Files

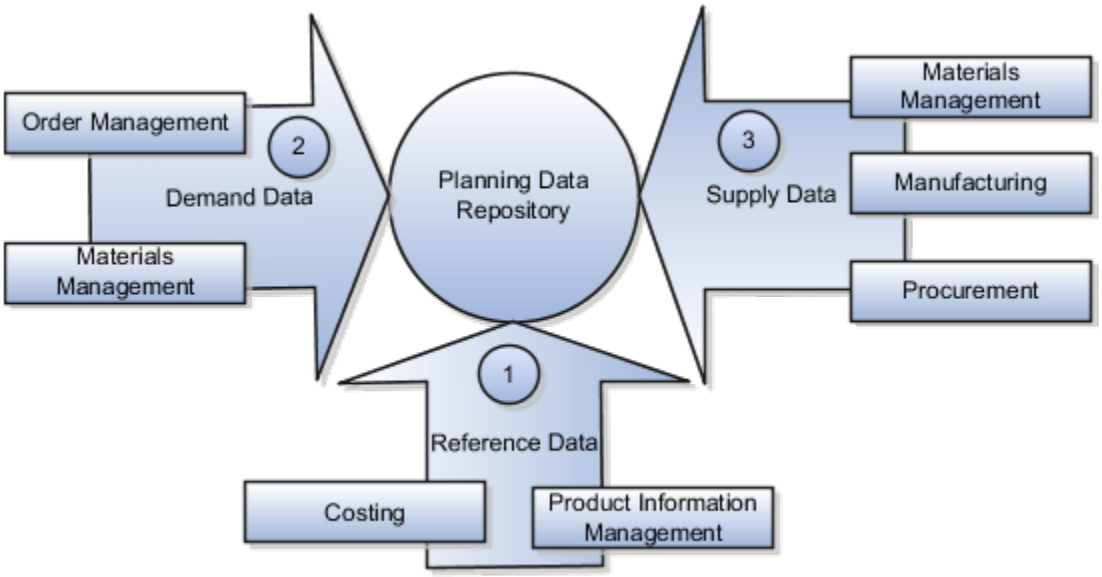
# Collect Planning Data from the Oracle Fusion Source System

## How You Collect Different Data Types for Supply Chain Planning

When you collect data, you collect data from three categories: reference data, demand data, and supply data. On the Collect Planning Data page there is a tab for each of these categories.

The collected data are stored in the planning data repository.

The following figure illustrates the three categories of data that you collect from the Oracle Fusion source system to the planning data repository.




Explanation of Callouts

1. Reference data is primarily sourced from Oracle Fusion Cloud SCM
2. Demand data comes from Oracle Fusion Cloud Order Management and Oracle Fusion Cloud Inventory Management
3. Supply data is sourced from Oracle Inventory Management, Oracle Fusion Cloud Manufacturing, and Oracle Fusion Cloud Purchasing

## Reference Data

The collection process begins with reference data, which is primarily sourced from Oracle Fusion Cloud SCM. You collect the data collection entities, such as basic item, resource, organization, customers and suppliers, and calendar data.

> **Note:** Oracle Sales and Operations Planning uses the Bill of Resources entity to link the make items with their associated components and resource requirements. For more information on collecting Bill of Resources from an external source system, see the Loading Planning Data from Files section.

You also use Oracle Fusion Cloud Supply Chain Planning to collect the following items:

- Item structures: To explode item-level demand into component demands and supplies.
- Work Definitions: To assign the component and resource requirements for make items.
- Units of measure: To align plan data and to convert plans from one set of units to another.
- Costs: To review plans in financial terms and evaluate the financial impact of planning decisions.

## Demand Data

You collect demand data from two potential sources:

- Sales orders that flow from Oracle Fusion Cloud Order Management: You can use this as the basis of the demand forecast, while current orders can consume the demand in near-term forecast time buckets.
- Shipment history from Oracle Fusion Cloud Inventory Management: You can use this to generate a shipments forecast.

## Supply Data

You collect supply data from three sources:

- Oracle Inventory Management: This provides data related to on hand inventory, reservations, material transfers, in-transit supplies, and receipts.
- Oracle Manufacturing: This provides work in process status and any manufacturing work orders.
- Oracle Purchasing: This provides purchase requisitions and purchase orders.

*Related Topics*

- How You Load Planning Data from Files
- Run the Load Planning Data from Files Process
- Import Templates Used to Create CSV Files for Supply Chain Planning

# Collection Filters and Collection Templates

You use collection filters and collection templates when you need to collect some common set of entities repeatedly.

The collection filters and collection templates are located on the Collect Planning Data page. To open the Collect Planning Data page, click the Collect Planning Data task from one of the Supply Chain Planning work areas.

Depending on your security privileges, you can also open the Collect Planning Data page from the Setup and Maintenance work area. In the Setup and Maintenance work area, use the following:

- Offering: Supply Chain Planning
- Functional Area: Supply Chain Planning Configuration
- Task: Collect Planning Data

## Collection Filters

Use collection filters to improve the performance and efficiency of the collections process, and to avoid accumulation of irrelevant data in the planning data repository. You can use several filter criteria while performing collections, such as by employing catalogs, order types, and price lists. You can also use date-based filters for collecting shipment and booking history information.

## Enabling Collection Filters

To enable collection filters, you must first run the schedule process called Load Filter Names for Planning Data Collection from the Scheduled Processes work area. When you run the scheduled process, the filters get enabled in the Collect Planning Data page. Then, you can apply the filters from the next collection.

## Collection Templates

Use collection templates when you want to collect a set of data repeatedly over a period. You can select either one of the predefined templates that serves your specific need, or you can create your own template and save it for future use.

When you select a predefined template from the list, the Collection Type field is defaulted to **Automatic selection** and you cannot edit the field. Also, when you select a predefined template, the Select Collection Filters field is disabled.

You can create a collection template on the Collect Planning Data page by selecting the data collection entities and saving the template for future use. For example, if you frequently collect certain supply planning transactional entities, such as On Hand, Purchase Orders, and Purchase Requisitions, then save these entities as a collection template. It reduces the overhead of selecting the same entities for subsequent collection cycles.

If the template file contains any error during the upload process, rectify the issue found in the log file and upload the template file again.

# Collect Data Using the Targeted Collection Type

To perform a complete refresh of the data repository used by the Supply Chain Planning products, run a targeted collection.

You can run the targeted collection immediately or you can schedule the process to run later. Demand planning data can only be collected by using the Targeted collection type.

> **Note:** Before collecting demand planning data, you must successfully run the **Load Filter Names for Planning Data Collection** scheduled process.

Perform the following steps to collect reference data, demand planning data, and supply planning data using the Targeted collection type.

1. Access the Collect Planning Data page from a Supply Planning work area or the Setup and Maintenance work area.

- If you are in one of the Supply chain Planning work areas:
    i. Click the Tasks panel tab.
    ii. In the Tasks panel drawer, click the **Collect Planning Data** link.
- If you are in the Setup and Maintenance work area, then select the following:
    - Offering: Supply Chain Planning
    - Functional Area: Supply Chain Planning Configuration
    - Task: Collect Planning Data

2. On the Collect Planning Data page, complete the following steps.
    - On the Parameters tab:
        i. Select your source system.
        ii. For the collection type, select Targeted.

            Demand planning data can only be collected by using the Targeted collection type.
        iii. Click **Select Collection Filters** to select the collection filters.
    - On the Reference Data subtab, move the required reference entities to the Selected Entities area.
    - On the Demand Planning Data subtab, set options to collect the historical demand data in the planning data repository. The planning process uses the historical demand data for statistical forecasting.
        - **Collection Time Frame Options**: You can specify a fixed or rolling date range for which to collect data.

            The **Fixed Date Range** option enables you to collect history data within a fixed date range that you specify.

            The **Rolling Date Range** option enables you to collect the history data for the number of days that you specify. For example, if you forecast weekly, specify **7** in the **Number of Days to Collect** field to collect the demand history data once per week. The data collections collect the demand history data for the latest week.

            Select **Roll off time periods automatically** to truncate the history data by the number of days that you specify in the **Number of days to keep** field each time you run collections for the demand history data. For example, if you prefer to forecast each week based on the history data of 52 weeks, select the **Roll off time periods automatically** check box and specify **Number of days to keep** as 364 days. This setting ensures that as you collect data every week, you keep the most recent history of 52 weeks and automatically purge history data older than 52 weeks.
        - **History Measures and Attributes**: Select your shipments history and bookings history measures.
        - **Collection for ETO Items**: Select **Collect history from associated base models** to collect bookings and shipments history for Engineer to Order (ETO) items from the associated base models. When you don't select this option, the history is collected from the standard ETO items.

- **History Data Options**: To collect only specific order types, select from the **Order Types to Include** list of values. By default, all order types are included.

  Select **Organization - Consumption Inventory Transactions to Include** to collect consumption inventory transactions at the organization level. You can collect only the transfer orders inventory transactions or all consumption inventory transactions.

  Select **Subinventory - Consumption Inventory Transactions to Include** to collect consumption inventory transactions at the subinventory level. You can collect only the transfer orders inventory transactions or all consumption inventory transactions for the organizations that you enabled for subinventory planning.

  Select the **Collect amount data for history** check box to collect amount data.
- **Additional Options**: Select additional options for collections.

  **Collect Price Lists**: Collect the price lists specified in the collections filter for price lists, or collect all price lists if no filter is specified.

  **Collect Configure to Order Data**: If you selected history measures and attributes, then select the relevant check boxes to collect shipment history options and booking history options.

  **Sales Organization Hierarchy**: Select **Enable sales organization hierarchy collection** to collect one or more sales hierarchies.

- On the Supply Planning Data subtab:

  i. Move the required supply entities to the Selected Entities area.
  ii. If you collect resource availability, then select a date range type: **Fixed** or **Relative to collection run date**.

  If you selected **Fixed**, then provide a start date and an end date for collecting resource availability.

  If you selected **Relative to collection run date**, then enter a number of days in the **Collection Window in Days** field. The number that you enter determines a collection window in days to collect resource availability based on a rolling time window. That rolling time window adjusts itself, based on the date that you run collections. For example, if you specify 90, then resource availability is collected for the next 90 days each time from the date of the collection run.

  > **Note:** You can save your date range type selection for resource availability collection as a collection template to use later.

  iii. You can collect the existing data for the resource availability.
  iv. You can also regenerate the resource availability data and then collect the data. If you select the **Regenerate data, and then collect** option, the collections process runs the **Update Resource Availability Job** scheduled process first and then collects the resource availability data.

3. (Optional) Click the Schedule tab and set collections to run as soon as possible or schedule to run at a different time.
4. Click **Submit** to start the collections process.
5. Monitor the collection status using the Scheduled Processes page.
6. Review the collected data in the Plan Inputs work area.

*Related Topics*

- Verify the Load Planning Data from Files Process
- Review Data in the Planning Data Repository
- Set Up Forecast Consumption for Transfer Orders

# Collect Data Using the Net Change Collection Type

You can collect data from the Oracle Fusion source system by running the net change collection or by scheduling to run the process later.

Before running a Net Change collection, you must run a Targeted collection for the selected entities. After the first Targeted collection, you can run Net Change collections.

Perform the following procedure to collect reference data and supply planning data using the net change collection type:

1. If you are in one of the Supply Chain Planning work areas, then click the Tasks panel tab. In the Tasks panel drawer, click the **Collect Planning Data** task. If you are in the Setup and Maintenance work area, then use the following:
    - Offering: Supply Chain Planning
    - Functional Area: Supply Chain Planning Configuration
    - Task: Collect Planning Data
2. Complete the following parameters for the Collect Planning Data process:
    a. Select your source system.
    b. Select the collection type as Net change.

    > **Note:** You cannot make any changes to the filter criteria and demand planning data in the net change collection type.

    c. In the **Reference Data** tab, move the required reference entities to the Selected Entities area.
    d. In the **Supplies Planning Data** tab, move the required supply entities to the Selected Entities area.
3. (Optional) Click the **Schedule** tab and set collections to run as soon as possible or schedule to run at a different time.
4. Click **Submit** to initiate the collections process.
5. Monitor the collection status using the Scheduled Processes page.
6. Review the collected data in the Plan Inputs work area.

*Related Topics*

- Verify the Load Planning Data from Files Process
- Review Data in the Planning Data Repository
- How do I update existing setup data?

## Enable Organization Group Collection for the Net Change Collection Type

You can use organization groups to limit the net change data collection from a source system to specific organizations.

Using organization groups for collection also eliminates the chances of data overlap when multiple instances of net change collections are run at a time. Planners can run collections for their organizations without waiting for each other.

Let's take a simple example where your organization considers only the D1 and D2 distribution centers in your source system for shipments to your customers. In such a case, you can create an organization group, assign D1 and D2 to the organization group, and collect net change data specifically for this group.

> **Note:** Before you begin, ensure that you have your organization groups created. A supply planner creates and manages organization groups using the Manage Organization Groups button on the Maintain Supply Network Model page.

Do these to collect net change data for an organization group.

1. Access the Collect Planning Data page or Load Planning Data from Files page from a Supply Planning work area.
2. Select the source system. Organization groups are managed within the source systems.
3. Select the Net Change collection type. You can select an organization group for data collection only when the collection type is Net Change.
4. Enable the organization group collection, and then select an organization group.
5. Perform the net change data collection. Refer to the *Collect Data Using Net Change Collection Type* topic in this chapter for instructions.

> **Note:** After selecting your organization group and other data collection entities, you can also save your selections as a template. Refer to the *Collection Filters and Collection Templates* topic in this chapter for additional information.

*Related Topics*

- Collect Data Using the Net Change Collection Type
- Collection Filters and Collection Templates
- How You Maintain Your Supply Network Model

# Load Planning Data from Others and External Source Systems

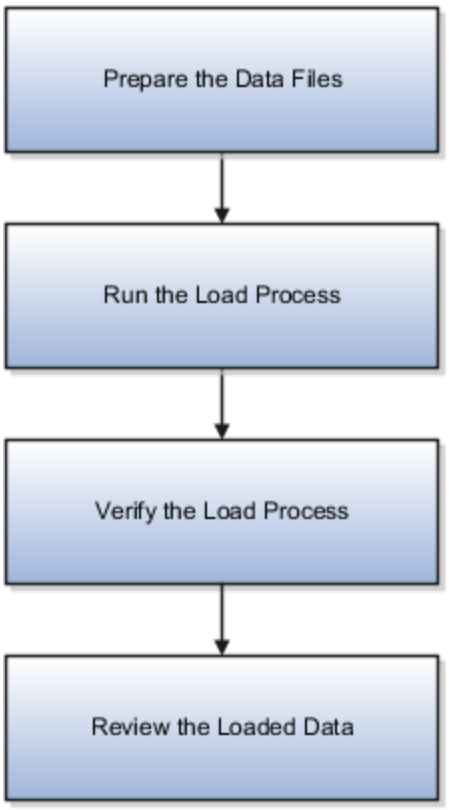
## How You Load Planning Data from Files

You upload data using CSV files for specific business objects using the targeted or net change method.

**Note:** To create the CSV files, you can use a set of Microsoft Excel template files that are provided for this purpose. You can download the templates from the File-Based Data Import (FBDI) for SCM guide in the Oracle Help Center.

You use the targeted mode when you want to refresh data for selected entities in the planning data repository. You use the net change mode to collect data incrementally. The net change collections mode collects only the changed or new data. Data collection using the net change mode is fast compared to the targeted mode. The net change mode is used to retain planning data to current with that of the executing system.

The following figure illustrates the process of collecting data from files.




To load planning data from files, you perform the following steps:

1. Create CSV files using Microsoft Excel template
2. Run the process to load planning data from files
3. Verify the load planning data process
4. Review the loaded data

*Related Topics*

- Create CSV Files to Load Planning Data
- Import Templates Used to Create CSV Files for Supply Chain Planning
- Run the Load Planning Data from Files Process
- Verify the Load Planning Data from Files Process
- Review Data in the Planning Data Repository

# Create CSV Files to Load Planning Data

To perform the Load Planning Data from Files task in one of the Supply Chain Planning work areas or Setup and Maintenance work area, you must prepare the data you want to load.

You must create the necessary CSV files used to create files for import. This procedure explains how to create CSV files to prepare planning data for loading.

1. Locate the applicable file import templates (XLSM files) in the following guide: File-Based Data Import (FBDI) for SCM. Extract the templates to a local space.

   For additional information about creating and importing CSV files, see the following section in the Implementing Common Features for SCM guide: External Integration chapter, External Data Integration Services for Oracle Cloud section.
2. Open the template file for the entity you are preparing and complete the file import template worksheet.

   You must enable the macros in the template file before generating the CSV file.

   > **CAUTION:** For the cells that contain dates, ensure that the data is set to the correct format in the data type. For example, date must be set to YYYY/MM/DD.
3. After you finish preparing the data in the worksheet, generate the CSV file. The Generate CSV File button is located in the Instructions and CSV Generation worksheet of the workbook.
4. When you save the generated CSV file, you must use the suggested name of the entity. You can add underscore and add additional characters to the file name. For example, you can name the CSV file as ShipmentHistory_abc.csv and you can name the file as LoadingCSV.zip.
5. Compress the CSV file into a zipped file format using a compression utility. You can provide any name to the zipped file.

   > **Note:** You can include multiple CSV files in a single compressed file for a source system. The load process uploads them in a sequential order. Select the CSV files and compress them directly. Do not compress the parent folder that contains the files.

   This completes the preparation of a file that you will upload to collect planning data.

*Related Topics*

- How You Load Planning Data from Files
- Run the Load Planning Data from Files Process

# Data Collection Sequence

This topic explores the sequence that you should follow for data collection.

Data collection involves collecting entities in a predefined sequence. The collected entities form the basis for supply planning calculations. To have accurate data, you must ensure to collect the entities in a proper sequence. You cannot collect some entities without collecting their precursor entities. The data collection sequence is very crucial when you collect data from an external source system using CSV files.

If you run targeted collections for all entities, you can ignore the sequence for collections because targeted collections automate the collection sequence for all entities within a single collections request. If you collect many entities in a single request, collections will process them according to the sequences shown in this topic. If you collect only a few entities, then you must be aware of the collections sequence information. For example, you should not collect work orders before you collect items or resources.

To make the workflow simple, the collection sequence is divided into two parts - Part A and Part B. The collection entities in Part B are dependent on the collection entities in Part A. You must collect the entities in Part A before you collect the entities in Part B. Also, the collection entities are grouped together for easier presentation. The data groups in Part A are:

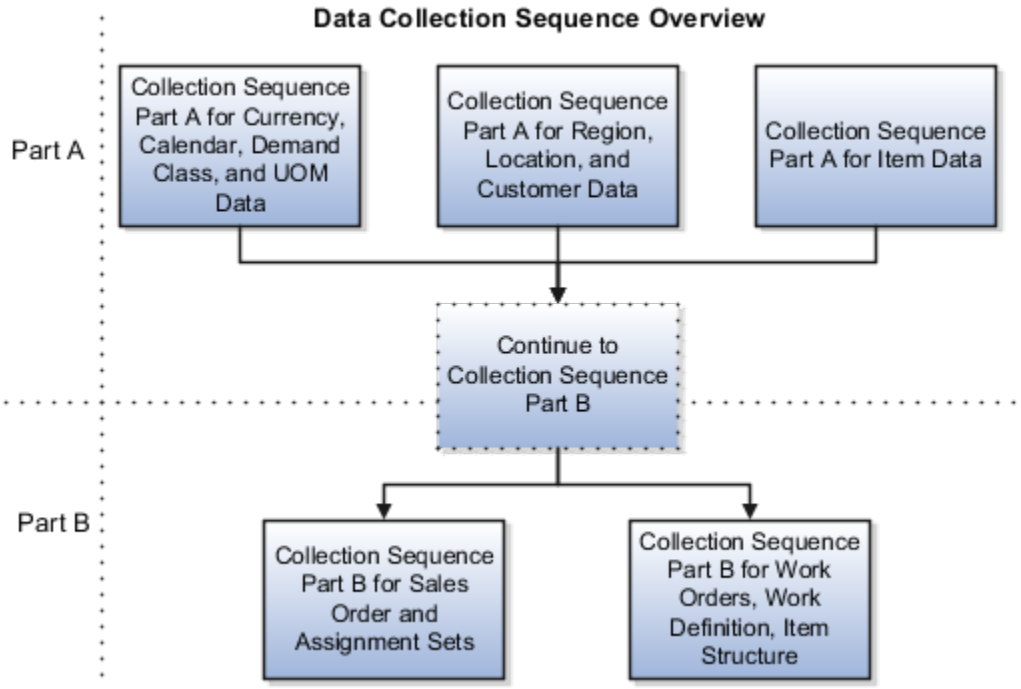
- Collections Sequence Part A for Item Data
- Collections Sequence Part A for Region, Location, and Customer Data
- Collections Sequence Part A for Currency, Calendar, Demand Class, and UOM Data

The data groups in Part B are:

- Collections Sequence Part B for Sales Order and Assignment Sets
- Collection Sequence Part B for Work Orders, Work Definition, and Item Structure

Every collection sequence in Part A starts with defining a source system where the collected data will reside. If you are collecting data to the same source system, you define the source system only once. Then, use the same source system to collect all the entities.

The following figure provides an overview of the data collection sequence. The overview shows how Part A and Part B fit together to form a complete data collection flow.

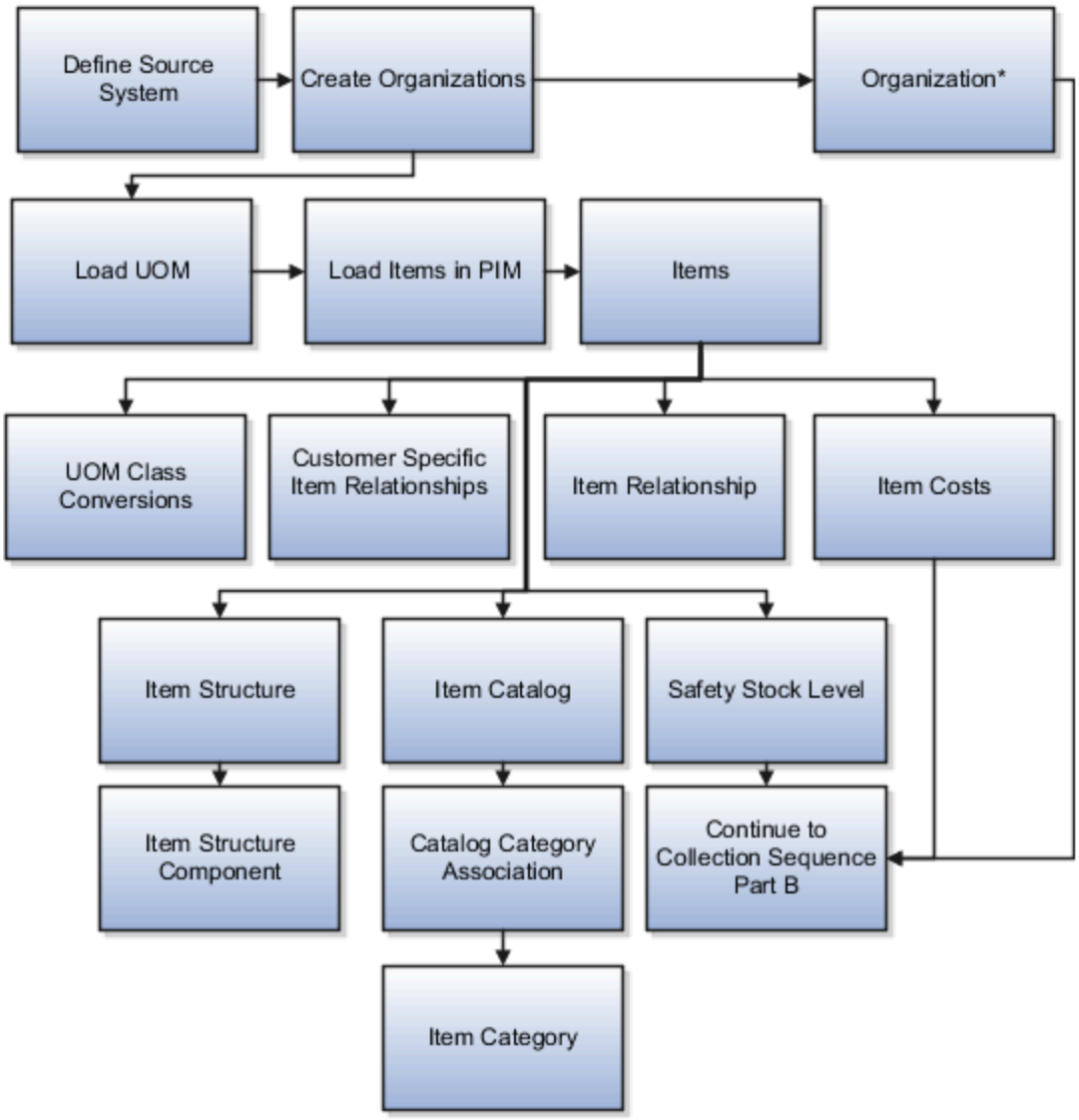



## Collections Sequence Part A for Item Data

The following image shows the collections sequence to follow while collecting Item data from external source systems. This image represents only half of the entities for collecting Item data.

**Note:** The Organization entity is marked with an asterisk because you can collect other entities such as Planner, Item Cost, Subinventory, Carrier, Calendar Assignment, Supplier, and Supplier Site after collecting Organization. For more information on the collection sequence for these entities, see the Collections Sequence Part A for Currency, Calendar, Demand Class, and UOM Data figure. Refer to the entities that are collected after Organization. Also, ensure that you collect Location before collecting Supplier Site.

**Collection Sequence Part A for Item Data**

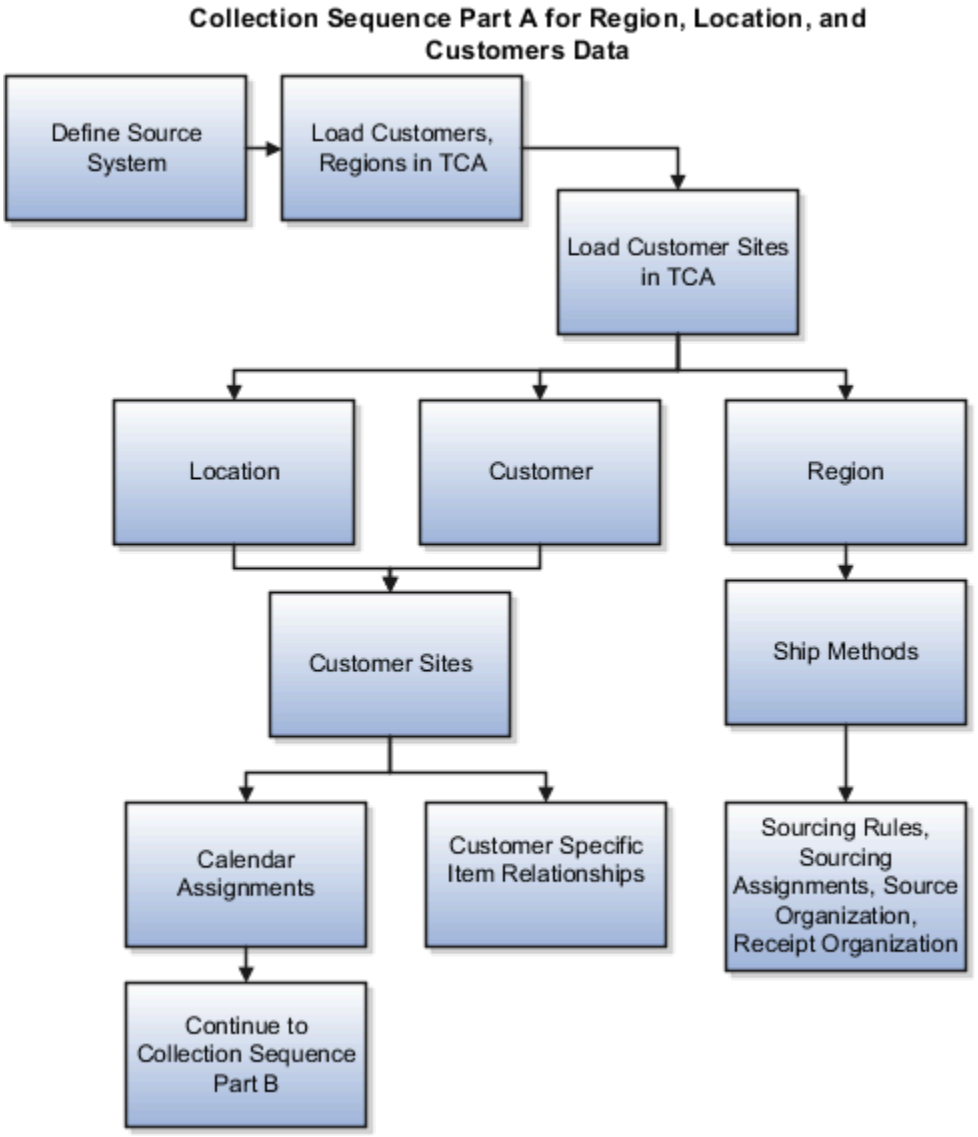



When you collect the data described here, continue to the collection sequence Part B described in the following subsections.

- Collection Sequence Part B for Sales and Order and Assignment Sets
- Collection Sequence Part B for Work Orders, Work Definition, and Item Structure

## Collections Sequence Part A for Region, Location, and Customer Data

The following image shows the collections sequence to follow while collecting Regions and Customers data from external source systems. This image represents only half of the entities for Item data.




When you collect the data described here, continue to the collection sequence Part B described in the following subsections.

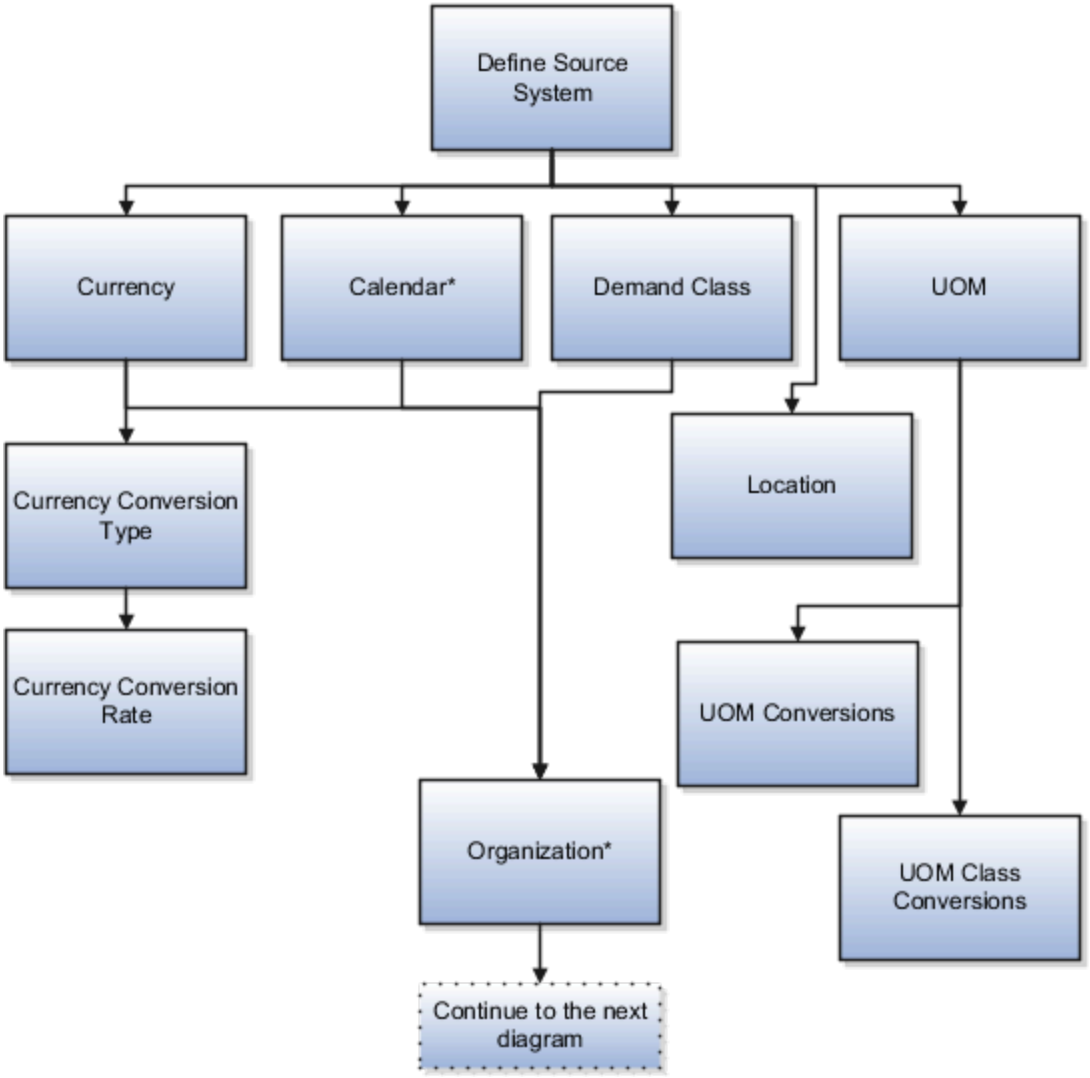
- Collection Sequence Part B for Sales and Order and Assignment Sets
- Collection Sequence Part B for Work Orders, Work Definition, and Item Structure

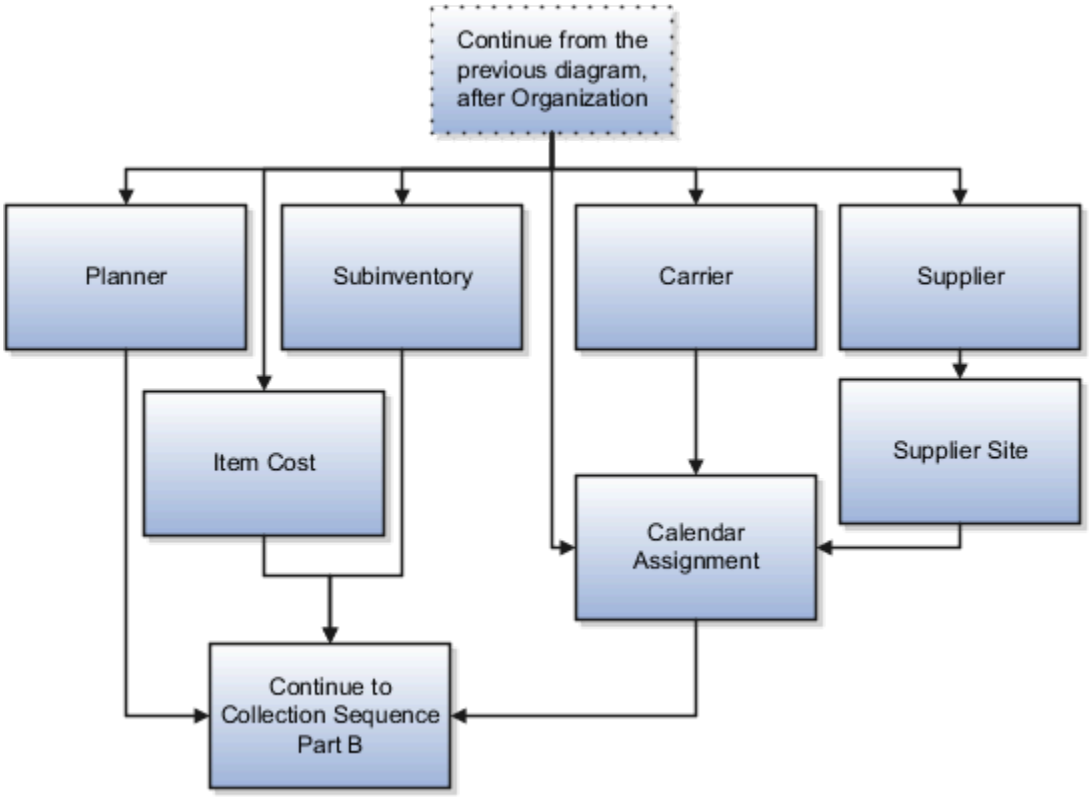
## Collections Sequence Part A for Currency, Calendar, Demand Class, and UOM Data

The following image shows the collections sequence to follow while collecting Currency, Calendar, Demand Class, and UOM data from external source systems. Also, ensure that you collect Location before collecting Supplier Site.

**Note:** The Calendar entity is marked with an asterisk because there are other entities that are associated with Calendar that you must collect in a sequence. To collect other entities associated with Calendar, see the Calendar Upload Sequence figure.

**Collection Sequence Part A for Currency, Calendar, Demand Class and UOM Data**



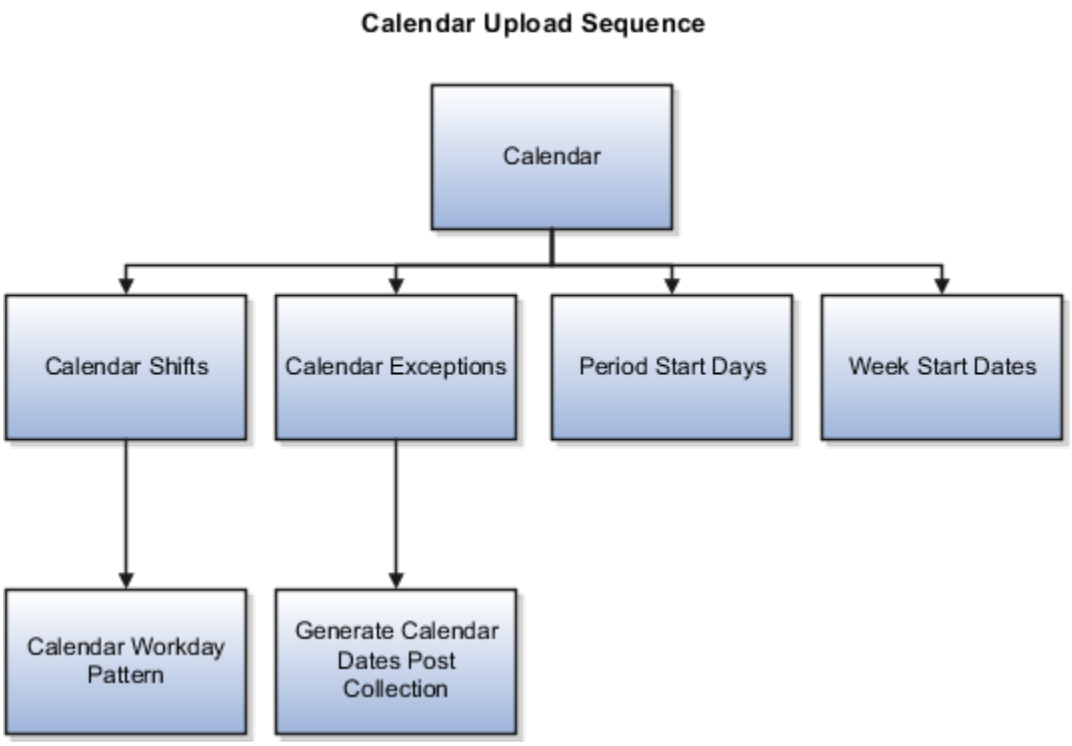



When you collect the data described here, continue to the collection sequence Part B described in the following subsections.

- Collection Sequence Part B for Sales and Order and Assignment Sets
- Collection Sequence Part B for Work Orders, Work Definition, and Item Structure

## Collection Sequence for Calendar Data

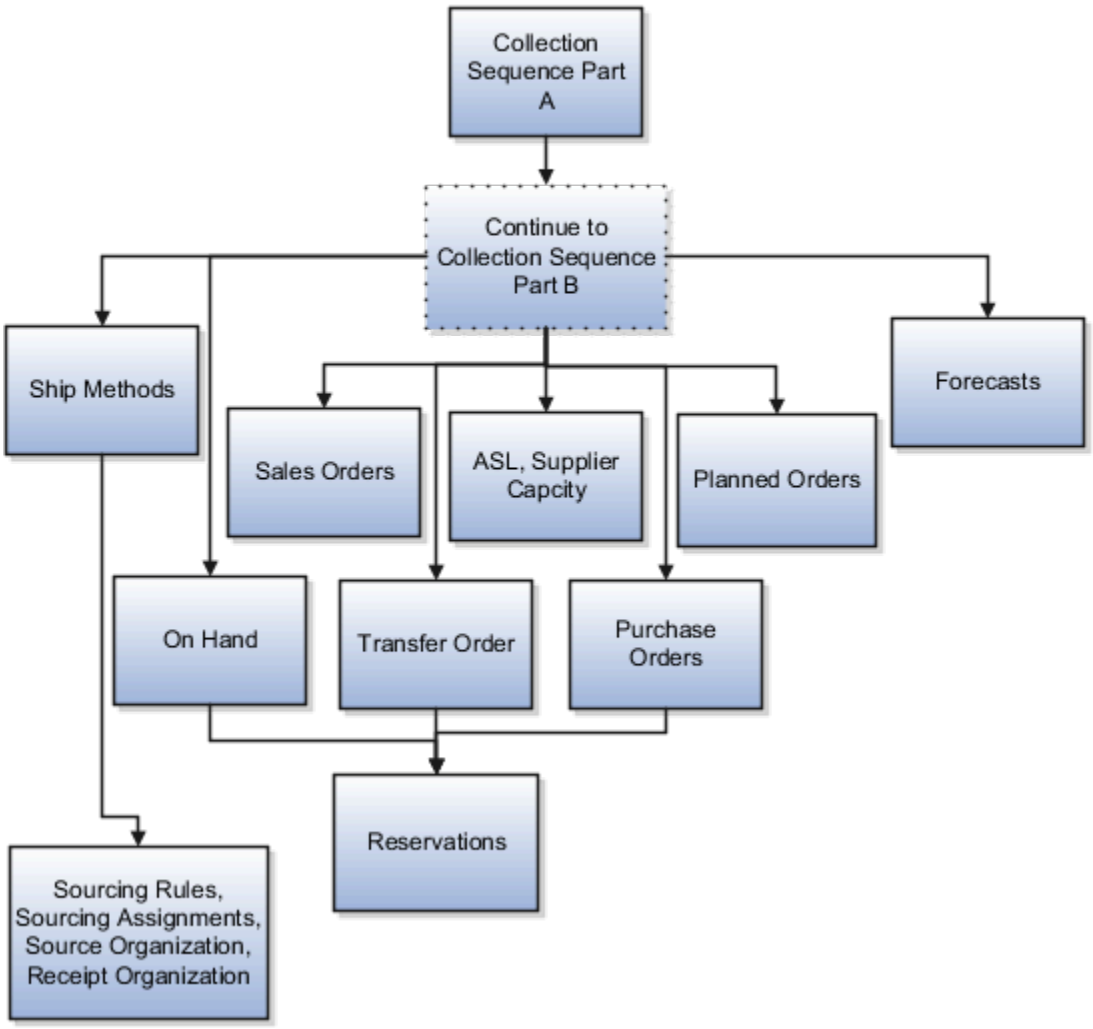
The following image shows the collections sequence to follow for collecting the Calendar data. Calendar data is a part of the data collection in Part A. You collect the Calendar data in the following subsection: Collection Sequence Part A for Currency, Calendar, Demand Class, and UOM Data.




## Collections Sequence Part B for Sales Order and Assignment Sets

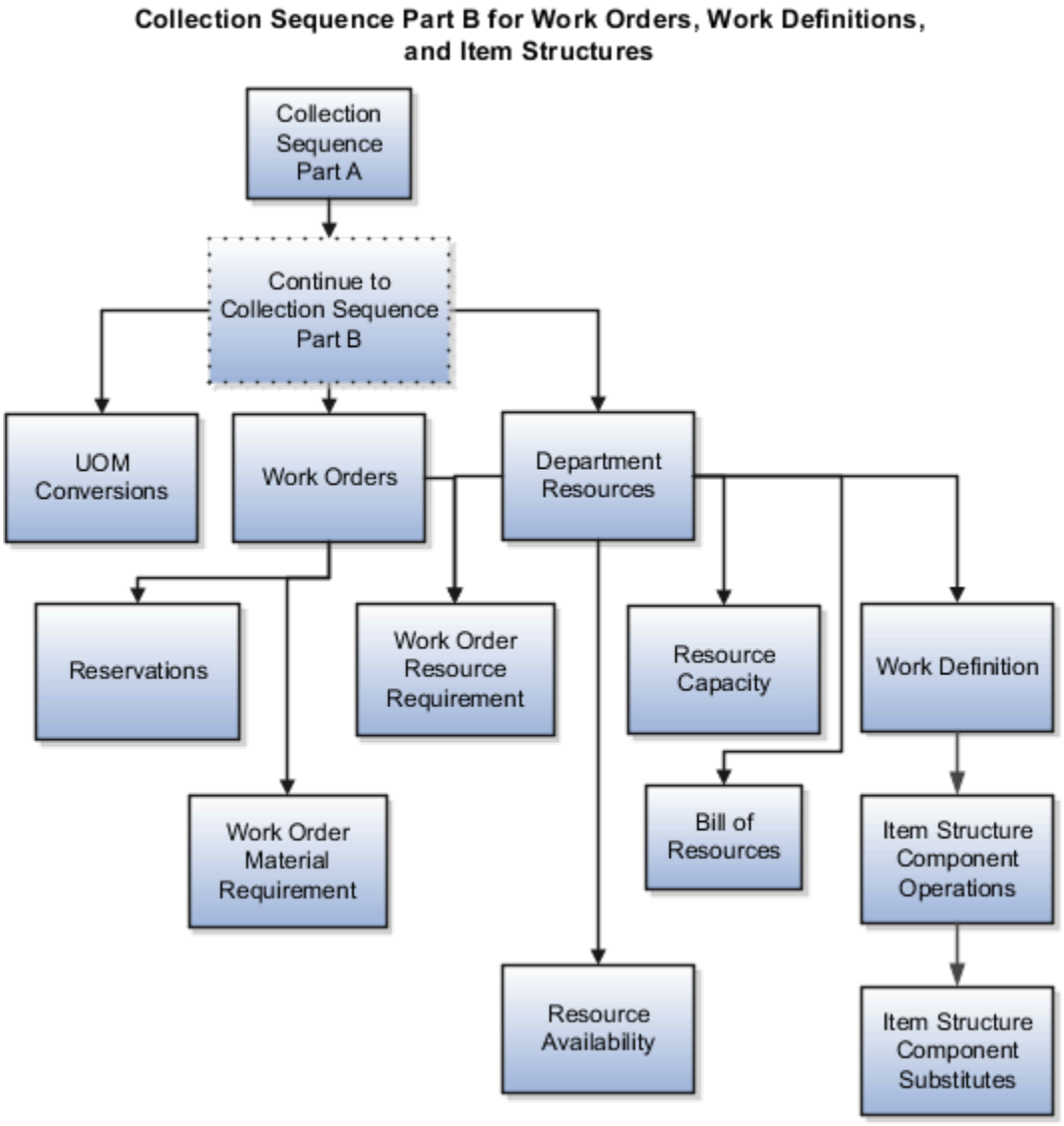
The following image shows the collections sequence to follow while collecting Sales Order and Assignment Sets data from external source systems. The data entities in Part B are dependent on Part A. So, you must collect entities listed in Part A before you collect the entities in Part B.

**Collections Sequence Part B for Sales Orders and Assignments Sets**




## Collection Sequence Part B for Work Orders, Work Definition, and Item Structures

The following image shows the collections sequence to follow while collecting Work Orders, Work Definition, and Item Structure data from external source systems. The data entities in Part B are dependent on Part A. So, you must collect entities listed in Part A before you collect the entities in Part B.




# Import Templates Used to Create CSV Files for Supply Chain Planning

You can use the Microsoft Excel templates (XLSM files) to prepare the data for the supported collection entities.

The templates are listed in the following guide: File-Based Data Import (FBDI) for SCM. Extract the templates to a local drive, enter appropriate data as described in the template, and generate CSV files. Compress the CSV files to a zipped file format and upload the .zip file to the Universal Content Manager using the File Import and Export utility. The data is then loaded from the Universal Content Manager to the planning data repository.

**Collect Data from the Oracle Fusion Source**

The following table lists the collections entities that can be loaded into the planning data repository for the Oracle Fusion source. The Collection Entity column provides the name of the entities for which you can collect the data.

The XLSM File Name column provides the template name that you will download for the respective collection entity. Download the XLSM template from the File-Based Data Import (FBDI) for SCM guide. The Link in Data Import Guide column provides the name of the topic in the FBDI guide from where you will download the template. For example, to collect data for the Item Costs collection entity, refer to the Item Cost Import topic in the FBDI guide.

| Collections Entity | Link in Data Import Guide | XLSM File Name |
|---|---|---|
| Item Costs | Supply Chain Planning Item Cost | ScpItemCostImportTemplate.xlsm |
| Customer Specific Item Relationships | Supply Chain Planning Item Substitute | ScpItemSubstituteImportTemplate.xlsm |
| Planners | Supply Chain Planning Planners | ScpPlannersImportTemplate.xlsm |
| Item Suppliers | Supply Chain Planning Approved Supplier List | ScpApprovedSupplierListImportTemplate.xlsm |
| Demand Classes | Supply Chain Planning Demand Classes | ScpDemandClassImportTemplate.xlsm |
| Allocation Assignments and Allocation Rules | Supply Chain Planning Planning Allocation Rules | ScpPlanningAllocationRulesImportTemplate.xlsm |
| ATP Assignments and ATP Rules | Supply Chain Planning Available-to-Promise Rules | ScpATPRulesImportTemplate.xlsm |
| Supply Update Rules | Supply Chain Planning Real Time Supply Updates | ScpRealTimeSupplyUpdatesImportTemplate.xlsm |
| Measures | Supply Chain Planning Measures | ScpMeasuresImportTemplate.xlsm<br><br>**Note:**<br>You must use separate CSV files to collect measure data for measures with different dimensional granularity. |
| Booking History | Supply Chain Planning Bookings History | ScpBookingHistoryImportTemplate.xlsm |
| Option Booking History | Supply Chain Planning Option Bookings History | ScpOptionBookingHistoryImportTemplate.xlsm |
| Shipment History | Supply Chain Planning Shipments History | ScpShipmentHistoryImportTemplate.xlsm |
| Option Shipment History | Supply Chain Planning Option Shipments History | ScpOptionShipmentHistoryImportTemplate.xlsm |
| Price Lists | Supply Chain Planning Price List | ScpPriceListImportTemplate.xlsm |
| Causal Factors | Supply Chain Planning Causal Factors | ScpCausalFactorsImportTemplate.xlsm |

| Collections Entity | Link in Data Import Guide | XLSM File Name |
|---|---|---|
| Forecast Measures | Supply Chain Planning Forecast Measures | ScpForecastMeasureImportTemplate.xlsm<br><br>**Note:**<br>This template has been superseded by the generic template ScpMeasuresImportTemplate.xlsm, but will continue to be supported. Future enhancements will be made only to the generic measures template. |
| Fiscal Calendars | Supply Chain Planning Fiscal Calendars | ScpFiscalCalendarImportTemplate.xlsm |
| Forecasts | Supply Chain Planning External Forecasts | ScpExternalForecastImportTemplate.xlsm |
| Safety Stock Levels | Supply Chain Planning Safety Stock Levels | ScpSafetyStockLevelImportTemplate.xlsm |
| Supplier Capacity | Supply Chain Planning Approved Supplier Capacity | ScpApprovedSupplierCapacityImportTemplate.xlsm |
| Planned Order Supplies | Supply Chain Planning Planned Order Supply | ScpPlannedOrderSupplyImportTemplate.xlsm<br><br>**Note:**<br>This template is only used to load planned order supply to Global Order Promising. |
| Sourcing Rule and Assignments | Supply Chain Planning Sourcing Rules | ScpSourcingImportTemplate.xlsm |
| Cross-Reference Mapping Information | Supply Chain Planning Cross-Reference Data | ScpCrossReferenceDataImportTemplate.xlsm |

### Collect Data from External Source - Version Others

The following table lists the collections entities that can be loaded into the planning data repository from an external source, where the version is Others. The Collection Entity column provides the name of the entities for which you can collect the data. The XLSM File Name column provides the template name that you will download for the respective collection entity. Download the XLSM template from the File-Based Data Import (FBDI) for SCM guide. The Link in Data Import Guide column provides the name of the topic in the FBDI guide from where you will download the template. For example, to collect data for the Items and Item Costs collection entities, refer to the Item Cost Import topic in the FBDI guide.

| Collections Entity | Link in Data Import Guide | XLSM File Name |
|---|---|---|
| Item Costs | Supply Chain Planning Item Cost | ScpItemCostImportTemplate.xlsm |
| Customer Specific Item Relationships | Supply Chain Planning Item Substitute | ScpItemSubstituteImportTemplate.xlsm |

| Collections Entity | Link in Data Import Guide | XLSM File Name |
|---|---|---|
| | | |
| Planners | Supply Chain Planning Planners | ScpPlannersImportTemplate.xlsm |
| Organizations (Warehouses) and Organization Site (Including Organization Site - Internal Location Mapping) | Supply Chain Planning Organizations | ScpOrganizationImportTemplate.xlsm |
| Subinventories | Supply Chain Planning Subinventories | ScpSubInventoryImportTemplate.xlsm |
| Suppliers and Supplier Sites | Supply Chain Planning Suppliers | ScpPlanningSupplierImportTemplate.xlsm |
| Item Suppliers | Supply Chain Planning Approved Supplier List | ScpApprovedSupplierListImportTemplate.xlsm |
| Interlocation Shipping Networks | Supply Chain Planning Interlocation Shipping Methods | ScpInterLocationShipMethodsImportTemplate.xlsm |
| Currencies, Currency Conversion Types, and Currency Conversion Rates | Supply Chain Planning Currencies | ScpCurrencyImportTemplate.xlsm |
| Units of Measure, Units of Measure Conversions, and Units of Measure Class Conversions | Supply Chain Planning Units of Measure | ScpUOMImportTemplate.xlsm |
| Calendars, Calendar Exceptions, Calendar Shifts, Week Start Dates, Period Start Dates, and Calendar Shift Workday Pattern | Supply Chain Planning Calendars | ScpCalendarImportTemplate.xlsm |
| Calendar Associations | Supply Chain Planning Calendar Assignments | ScpCalendarAssignmentsImportTemplate.xlsm |
| Demand Classes | Supply Chain Planning Demand Classes | ScpDemandClassImportTemplate.xlsm |
| Ship Mode of Transport, Ship Class of Service, and Carrier | Supply Chain Planning Carriers | ScpCarrierImportTemplate.xlsm |
| Allocation Assignments and Allocation Rules | Supply Chain Planning Planning Allocation Rules | ScpPlanningAllocationRulesImportTemplate.xlsm |
| ATP Assignments and ATP Rules | Supply Chain Planning Available-to-Promise Rules | ScpATPRulesImportTemplate.xlsm |
| Supply Update Rule | Supply Chain Planning Real Time Supply Updates | ScpRealTimeSupplyUpdatesImportTemplate.xlsm |
| Freight Terms, FOB Points, Invoicing and Accounting Rules, Shipment Priorities, Payment Terms, Return Reason, Tax Classification Code, Tax Exemption Reason, Sales Credit Type, | Supply Chain Planning Order Orchestration | ScpOrderOrchestrationImportTemplate.xlsm |

| Collections Entity | Link in Data Import Guide | XLSM File Name |
|---|---|---|
| Activity Type, Document Categories, Payment Methods, and Receipt Methods | | |
| Measures | Supply Chain Planning Measures | ScpMeasuresImportTemplate.xlsm<br><br>**Note:**<br>You must use separate CSV files to collect measure data for measures with different dimensional granularity. |
| Booking History | Supply Chain Planning Bookings History | ScpBookingHistoryImportTemplate.xlsm |
| Option Booking History | Supply Chain Planning Option Bookings History | ScpOptionBookingHistoryImportTemplate.xlsm |
| Shipment History | Supply Chain Planning Shipments History | ScpShipmentHistoryImportTemplate.xlsm |
| Option Shipment History | Supply Chain Planning Option Shipments History | ScpOptionShipmentHistoryImportTemplate.xlsm |
| Price Lists | Supply Chain Planning Price Lists | ScpPriceListImportTemplate.xlsm |
| Causal Factors | Supply Chain Planning Causal Factors | ScpCausalFactorsImportTemplate.xlsm |
| Forecasts Measures | Supply Chain Planning Forecast Measures | ScpForecastMeasureImportTemplate.xlsm<br><br>**Note:**<br>This template has been superseded by the generic template ScpMeasuresImportTemplate.xlsm, but will continue to be supported. Future enhancements will be made only to the generic measures template. |
| Fiscal Calendars | Supply Chain Planning Fiscal Calendars | ScpFiscalCalendarImportTemplate.xlsm |
| Forecasts | Supply Chain Planning External Forecast | ScpExternalForecastImportTemplate.xlsm |
| User-Defined Hierarchies | Supply Chain Planning User-Defined Hierarchies | ScpUser-DefinedHierarchyImportTemplate.xlsm |
| Safety Stock Levels | Supply Chain Planning Safety Stock Levels | ScpSafetyStockLevelImportTemplate.xlsm |
| Supply Reservations to Sales Orders | Supply Chain Planning Reservations | ScpReservationImportTemplate.xlsm |

| Collections Entity | Link in Data Import Guide | XLSM File Name |
|---|---|---|
| On Hand | Supply Chain Planning Supply On Hand | ScpOnhandImportTemplate.xlsm |
| Purchase Orders, Purchase Requisitions, PO in Receiving, and In Transits | Supply Chain Planning Purchase Order Requisitions | ScpPurchaseOrderRequisitionImportTemplate.xlsm |
| Transfer Orders | Supply Chain Planning Transfer Orders | ScpTransferOrderImportTemplate.xlsm |
| Supplier Capacity | Supply Chain Planning Approved Supplier Capacity | ScpApprovedSupplierCapacityImportTemplate.xlsm |
| Resources and Resource Shifts | Supply Chain Planning Resources | ScpResourcesImportTemplate.xlsm |
| Resource Availability | Supply Chain Planning Resource Availability | ScpResourceAvailabilityImportTemplate.xlsm |
| Work Definition (Including mapping between Item Structures and Work Definitions), Work Definition Operations, and Work Definition Operation Resources | Supply Chain Planning Routings | ScpRoutingsImportTemplate.xlsm |
| Work Order Supply | Supply Chain Planning Work Order Supplies | ScpWorkOrderSuppliesImportTemplate.xlsm |
| Work Order Material Requirements | Supply Chain Planning Work Order Component Demands | ScpWIPComponentDemandsImportTemplate.xlsm |
| Work Order Resource Requirements | Supply Chain Planning Work Order Operation Resources | ScpWIPOperationResourceImportTemplate.xlsm |
| Planned Order Supplies | Supply Chain Planning Planned Order Supply | ScpPlannedOrderSupplyImportTemplate.xlsm<br>**Note:**<br>This template is only used to load planned order supply to Global Order Promising. |
| Sourcing Rule and Assignments | Supply Chain Planning Sourcing Rules | ScpSourcingImportTemplate.xlsm |
| Cross Reference Mapping Information | Supply Chain Planning Cross-Reference Data | ScpCrossReferenceDataImportTemplate.xlsm |
| Key Customer Options | Supply Chain Planning Key Customer Options | ScpKeyCustomerOptionsImportTemplate.xlsm |

### Collect Data from External Source - Version External

The following table lists the collections entities that can be loaded into the planning data repository from an external source, where the version is External. The Collection Entity column provides the name of the entities for which you can collect the data. The XLSM File Name column provides the template name that you will download for the respective collection entity. Download the XLSM template from the File-Based Data Import (FBDI) for SCM guide. The Link in Data

Import Guide column provides the name of the topic in the File-Based Data Import (FBDI) for SCM guide from where you will download the template. For example, to collect data for the Items and Item Costs collection entities, refer to the Item Cost Import topic in the File-Based Data Import (FBDI) for SCM guide. All the planning-related entity names are prefixed with Supply Chain Planning in the FBDI guide.

| Collection Entities | Link in FBDI Guide | XLSM File Name |
|---|---|---|
| Items | Supply Chain Planning Items | ScpItemImportTemplate.xlsm |
| Item Costs | Supply Chain Planning Item Cost | ScpItemCostImportTemplate.xlsm |
| Item Relationships | Supply Chain Planning Item Substitute | ScpItemSubstituteImportTemplate.xlsm |
| Catalogs, Categories, and Item Categories | Supply Chain Planning Catalogs | ScpCatalogImportTemplate.xlsm.xlsm |
| Item Structures | Supply Chain Planning Item Structures | ScpBillofMaterialImportTemplate.xlsm |
| Bill of Resources | Supply Chain Planning Bill of Resources | ScpBillOfResourcesImportTemplate.xlsm |
| Planners | Supply Chain Planning Planners | ScpPlannersImportTemplate.xlsm |
| Customers and Customer Sites | Supply Chain Planning Customers | ScpCustomerImportTemplate.xlsm |
| Regions | Supply Chain Planning Regions | ScpRegionsImportTemplate.xlsm |
| Zones | Supply Chain Planning Zones | ScpZonesImportTemplate.xlsm |
| Region-Zone Mapping | Supply Chain Planning Region Zone Mappings | ScpRegionZoneMappingImportTemplate.xlsm |
| Locations and Region-Location Mapping | Supply Chain Planning Locations | ScpLocationsImportTemplate.xlsm |
| Organizations and Organization Sites | Supply Chain Planning Organizations | ScpOrganizationImportTemplate.xlsm |
| Subinventories | Supply Chain Planning Subinventories | ScpSubInventoryImportTemplate.xlsm |
| Suppliers and Supplier Sites | Supply Chain Planning Suppliers | ScpSupplierImportTemplate.xlsm |
| Item Suppliers (Approved Supplier List) | Supply Chain Planning Approved Supplier List | ScpApprovedSupplierListImportTemplate.xlsm |
| Interlocation Shipping Networks and Transit Times | Supply Chain Planning Interlocation Shipping Methods | ScpInterLocationShipMethodsImportTemplate.xlsm |
| Currencies and Currency Conversions | Supply Chain Planning Currencies | ScpCurrencyImportTemplate.xlsm |

| Collection Entities | Link in FBDI Guide | XLSM File Name |
|---|---|---|
| Units of Measure, Units of Measure Conversions, and Units of Measure Class Conversions | Supply Chain Planning Units of Measure | ScpUOMImportTemplate.xlsm |
| Calendars, Calendar Exceptions, Shifts, Shift Workday Pattern, Week Start Dates, and Period Start Dates | Supply Chain Planning Calendars | ScpCalendarImportTemplate.xlsm |
| Calendar Associations | Supply Chain Planning Calendar Assignments | ScpCalendarAssignmentsImportTemplate.xlsm |
| Demand Classes | Supply Chain Planning Demand Classes | ScpDemandClassImportTemplate.xlsm |
| Carrier, Ship Mode of Transport, and Ship Class of Service | Supply Chain Planning Carriers | ScpCarrierImportTemplate.xlsm |
| GOP Allocation Rules and Rule Assignments | Supply Chain Planning Planning Allocation Rules | ScpPlanningAllocationRulesImportTemplate.xlsm |
| GOP ATP Rules and Rule Assignments | Supply Chain Planning Available-to-Promise Rules | ScpATPRulesImportTemplate.xlsm |
| GOP Supply Update Rules | Supply Chain Planning Real Time Supply Updates | ScpRealTimeSupplyUpdatesImportTemplate.xlsm |
| Order Orchestration Reference Objects: Freight Terms, FOB Points, Invoicing and Accounting Rules, Shipment Priorities, Payment Terms, Return Reason, Tax Classification Code, Tax Exemption Reason, Sales Credit Type, Activity Type, Document Categories, Payment Methods, and Receipt Methods | Supply Chain Planning Order Orchestration | ScpOrderOrchestrationImportTemplate.xlsm |
| Cross Reference Mapping Information | Supply Chain Planning Cross-Reference Data | ScpCrossReferenceDataImportTemplate.xlsm |
| Measures | Supply Chain Planning Measures | ScpMeasuresImportTemplate.xlsm<br><br>**Note:**<br>You must use separate CSV files to collect measure data for measures with different dimensional granularity. |
| Booking History | Supply Chain Planning Bookings History | ScpBookingHistoryImportTemplate.xlsm |
| Option Booking History | Supply Chain Planning Option Bookings History | ScpOptionBookingHistoryImportTemplate.xlsm |
| Shipment History | Supply Chain Planning Shipments History | ScpShipmentHistoryImportTemplate.xlsm |

| Collection Entities | Link in FBDI Guide | XLSM File Name |
|---|---|---|
| Option Shipment History | Supply Chain Planning Option Shipments History | ScpOptionShipmentHistoryImportTemplate.xlsm |
| Price Lists | Supply Chain Planning Price Lists | ScpPriceListImportTemplate.xlsm |
| Causal Factors | Supply Chain Planning Causal Factors | ScpCausalFactorsImportTemplate.xlsm |
| Forecast Measures | Supply Chain Planning Forecast Measures | ScpForecastMeasureImportTemplate.xlsm<br><br>**Note:**<br>This template has been superseded by the generic template ScpMeasuresImportTemplate.xlsm, but will continue to be supported. Future enhancements will be made only to the generic measures template. |
| Fiscal Calendars | Supply Chain Planning Fiscal Calendars | ScpFiscalCalendarImportTemplate.xlsm |
| Measures, Sales and Operations Planning Backlog, Inventory, and Production History | Supply Chain Planning Measures | ScpMeasuresImportTemplate.xlsm<br><br>**Note:**<br>You must use separate CSV files to collect measure data for measures with different dimensional granularity. |
| User-Defined Hierarchies | Supply Chain Planning User-Defined Hierarchies | ScpUser-DefinedHierarchyImportTemplate.xlsm |
| Forecasts | Supply Chain Planning External Forecasts | ScpExternalForecastImportTemplate.xlsm |
| Sales Orders | Supply Chain Planning Sales Orders | ScpSalesOrderImportTemplate.xlsm |
| Safety Stock Levels | Supply Chain Planning Safety Stock Levels | ScpSafetyStockLevelImportTemplate.xlsm |
| Supply Reservations to Sales Orders | Supply Chain Planning Reservations | ScpReservationImportTemplate.xlsm |
| On Hand | Supply Chain Planning Supply On Hand | ScpOnhandImportTemplate.xlsm |
| Purchase Orders, Purchase Requisitions, PO in Receiving, In Transits | Supply Chain Planning Purchase Order Requisitions | ScpPurchaseOrderRequisitionImportTemplate.xlsm |
| Transfer Orders (including expense type transfers) | Supply Chain Planning Transfer Orders | ScpTransferOrderImportTemplate.xlsm |

| Collection Entities | Link in FBDI Guide | XLSM File Name |
|---|---|---|
| | | |
| Supplier Capacity | Supply Chain Planning Approved Supplier Capacity | ScpApprovedSupplierCapacityImportTemplate.xlsm |
| Resources, Resource Shifts | Supply Chain Planning Resources | ScpResourceImportTemplate.xlsm |
| Resource Availability | Supply Chain Planning Resource Availability | ScpResourceAvailabilityImportTemplate.xlsm |
| Work Definition (including mapping between Item Structures and Work Definitions), Work Definition Operations, Work Definition Operation Resources | Supply Chain Planning Routings | ScpRoutingsImportTemplate.xlsm |
| Work Order Supply | Supply Chain Planning Work Order Supplies | ScpWorkOrderSuppliesImportTemplate.xlsm |
| Work Order Material Requirements | Supply Chain Planning Work Order Component Demands | ScpWIPComponentDemandsImportTemplate.xlsm |
| Work Order Resource Requirements | Supply Chain Planning Work Order Operation Resources | ScpWIPOperationResourceImportTemplate.xlsm |
| Planned Order Supplies | Supply Chain Planning Planned Order Supply | ScpPlannedOrderSupplyImportTemplate.xlsm<br>**Note:**<br>This template is only used to load planned order supply to Global Order Promising. |
| Sourcing Rule and Assignments | Supply Chain Planning Sourcing Rules | ScpSourcingImportTemplate.xlsm |
| Key Customer Options | Supply Chain Planning Key Customer Options | ScpKeyCustomerOptionsImportTemplate.xlsm |

*Related Topics*

- Run the Load Planning Data from Files Process

# Run the Load Planning Data from Files Process

To load planning data from files, first you must prepare the data you want to load.

To prepare the data, download the relevant XLSM template, update the XLSM template with required data, and create the necessary CSV files for upload. This procedure explains how to load planning data from files after you have prepared the data and created CSV files.

1. From the Navigator, use the File Import and Export page to upload the previously prepared and zipped CSV files to the Universal Content Manager. Use the account scm/planningDataLoader/Import to upload the zipped file.

   > **Note:** For more information about uploading files to the Universal Content Manager server, see the following section in the Implementing Common Features for SCM guide: External Integration chapter, External Data Integration Services for Oracle Cloud section.

2. From one of the Supply Chain Planning work areas or Setup and Maintenance work area, Supply Chain Planning offering, select the Load Planning Data from Files task.
3. Complete the following parameters on the Load Planning Data from Files page:
   a. Select the source system.
   b. Select Collection Type: **Net change** or **Target**.
   c. Select the .zip file you previously imported into the Universal Content Manager.
4. Click **Submit**. Make a note of the process ID. You will need this process ID to review the status of the process.

*Related Topics*

- Create CSV Files to Load Planning Data

# Load Planning Data from Files for a Selected Group of Organizations

When you load planning data from files with the collection type set to Targeted, you can enable organization group collection and then select an organization group.

Data is collected for only the organizations in the organization group, and the purge of data prior to the load of the new data is also done for only the organizations in the organization group. In other words, previously collected data for organizations that aren't included in the organization group will be retained when you're doing targeted collections using the file-based data import (FBDI) process.

> **Note:** Enabling organization group collection isn't applicable to entities for demand management, such as history, measure, and price list.

## Parameters for Load Planning Data from Files

The parameters for the Load Planning Data from Files task:

- Source System: The source system for the data determines which organization groups are applicable.
- Collection Type: You must select the Targeted collection type to enable organization group collection.
- Data File: The file previously uploaded to the universal content manager.
- Enable Organization Group Collection: You must have selected Targeted for the collection type to select Yes for this parameter.

- Organization Group: You must have selected Yes for the Enable Organization Group Collection parameter to select an organization group.

## Organization Groups

The list of organization groups you can select from for the Organization Group parameter is determined by:

- Which source system you select for the Source System parameter
- What organization groups are set up for that source system

Organization groups are set up using the Maintain Supply Network Model task, Manage Organization Groups dialog. On the Maintain Supply Network Model page, Organizations tab, you click the Manage Organization Groups button to create or manage organization groups.

## Example

Here's an example that shows how data is retained for organizations in other organization groups when you load planning data for a selected organization group.

For this example, let's say you have 3 organizations and 2 organization groups, and the source for your data is the EX1 source system.

- Organization group OG1 includes organization M1
- Organization group OG2 includes organizations B1 and B2

First you load planning data for the OG1 organization group for the Work Order Supplies entity. 2 rows of data are collected for the OG1 organization group.

| Item | Organization | Order Type | Order Quantity | Suggested Due Date |
|---|---|---|---|---|
| Item 1 | EX1:M1 | Work order | 10 | 2/14/22 |
| Item 2 | EX1:M1 | Work order | 15 | 2/11/22 |

Then you load planning data for the OG2 organization group for the Work Order Supplies entity.

- 3 rows of data are collected for the OG2 organization group
- The 2 rows that were previously collected for the OG1 collection group are retained

| Item | Organization | Order Type | Order Quantity | Suggested Due Date |
|---|---|---|---|---|
| Item 1 | EX1:M1 | Work order | 10 | 2/14/22 |
| Item 2 | EX1:M1 | Work order | 15 | 2/11/22 |
| Item 1 | EX1:B1 | Work order | 11 | 2/09/22 |
| Item 1 | EX1:B2 | Work order | 16 | 1/31/22 |

| Item | Organization | Order Type | Order Quantity | Suggested Due Date |
|---|---|---|---|---|
| | | | | |
| Item 2 | EX1:B2 | Work order | 10 | 2/09/22 |

## Applicable Entities

You can use file-based data import (FBDI) to load data for a selected group of organizations using the Targeted collection type for these entities:

| Source | Entities |
|---|---|
| From an Oracle Fusion Cloud SCM source | • External Forecasts<br>• Planned Order Supply<br>• Safety Stock Levels |
| From an Oracle Fusion Cloud SCM source only when the Enable External Data option has been enabled for the entities in the Manage Planning Source System task | • On Hand<br>• Transfer Orders<br>• Purchase Orders and Purchase Requisitions<br>• Sales Order and Associated Reservations<br>• Work Order Component Demands<br>• Work Order Supplies, Work Order By-Product and Co-Product Supplies, Work Order Operation Resources<br>• Resource Availability |
| From an external source | • External Forecasts<br>• Movement Requests<br>• Planned Order Supply<br>• Purchase Orders and Purchase Requisitions<br>• Reservations<br>• Safety Stock Levels<br>• Sales Orders<br>• Transfer Orders<br>• On Hand<br>• Work Order Component Demands<br>• Work Order Supplies, Work Order By-Product and Co-Product Supplies, Work Order Operation Resources<br>• Resource Availability |

Loading data for a selected group of organization isn't applicable to:

- Entities for demand management, such as History, Measures, Price Lists
- Entities categorized as reference entities

## Additional Details

Here are a few more details to know about loading planning data from files for a selected group of organizations:

- If you have included the History, Measure, or Price List entities in a data file used during a targeted collection with organization group collection enabled, targeted collections will be done for these entities, but will be done for all organizations, not for only the organizations in the group.
- If you have included reference data entities in a data file used during a targeted collection with organization group collection enabled, these entities will be ignored during collections.
- Data security created and enabled at organization level for any role isn't applied to the Manage Organization Groups task.
- If you also use the Collect Planning Data task to collect some of your data, note that you can use organization groups for the Net Change collection type, but not for the Targeted collection type. For the Targeted collection type for the Collect Planning Data task, you use the Organizations Filter for Transaction Data filter instead.
- You can submit the Load Planning Data from Flat Files process multiple times to specify a different organization group for each submission. The submissions are processed serially in the order of submission.
- You can specify an organization group when you submit the Load Planning Data from Flat Files process for the Targeted collection type from the Scheduled Processes work area or when using a scheduled process job set.
- You can specify an organization group when you submit the Load Planning Data from Flat Files process for the Targeted collection type from the Enterprise Resource Planning integration service.

# Improve Performance of Measure Disaggregation

## Overview of Improving Performance While Disaggregating Measure Data

While importing data at an aggregate level to stored measures for Oracle Fusion Cloud Supply Chain Planning, you can improve the performance by enabling multithreading for the disaggregation process.

While using the file-based data import (FBDI) template named Supply Chain Planning Measures, you can import data at the stored levels or aggregate levels of the stored levels. For example, if your measure is configured with the dimension levels of Item, Organization, Sales Rep, Customer Site, Demand Class, and Day, you can import data at these stored levels or aggregate levels, such as product category, business unit, sales organization level, customer, demand class, and month.

Measure data that's collected at an aggregate level is disaggregated to the stored levels during the data refresh step in a plan run or when you incrementally refresh a plan after loading new measure data.

By default, the process for disaggregating the measure data is single-threaded. Consequently, long processing times can result when there's a large volume of measure data to disaggregate.

To improve performance, you can configure disaggregation to run as a multithreaded process. The disaggregation process runs in parallel for different time ranges within the time range for the collected measure data.

The multithreaded process runs in 90-day increments by default. For example, if you've collected measure data at an aggregate level for the past year (365 days), then the process runs five disaggregation jobs in parallel, four jobs of 90 days each and one job for the remaining five days of data.

You can do the following:

- Enable multithreading for measure data disaggregation for all plans in the Demand Management, Demand and Supply Planning, Planning Central, Replenishment Planning, Sales and Operations Planning, or Supply Planning work area.
- Enable multithreading for measure data disaggregation for a single plan that's enabled for demand forecasting.
- Override the default of 90 days for the multithreaded process.

*Related Topics*

- Enable Multithreading for Measure Data Disaggregation for All Plans
- Enable Multithreading for Measure Data Disaggregation for a Single Plan
- Override the Default Value for the Multithreaded Process

## Enable Multithreading for Measure Data Disaggregation for All Plans

You can enable multithreading for measure data disaggregation for all demand, demand and supply, replenishment, sales and operations, or supply plans.

**Before you start**

You may need to work with someone who has administration privileges to make these profile-related changes.

**Here's what to do**

1. In the Demand Management, Demand and Supply Planning, Plan Inputs, Planning Central, Replenishment Planning, Sales and Operations Planning, or Supply Planning work area, on the Tasks panel tab, under Configuration, select **Manage Planning Profile Options**.

   The Manage Planning Profile Options page opens.
2. Search for the SCP_PARAMETER_OVERRIDES profile option code.
3. If the SCP_PARAMETER_OVERRIDES profile option code exists, then click the **New** icon.

   A new row appears for the profile value.
4. Add the profile value as follows:
   - Profile Level: Select **Site** to set the value globally for all users. Select **User** to set the value for a specific user, in which case you must then select a user. User-level values take precedence over the site-level value.
   - Profile Value: Enter **enableParallelDisaggMeasure=true**.

   > **Note:** You can enter multiple profile values for a profile level provided you separate them with the space or semicolon. Whether you can select the site or user depends on the enabled levels in the profile option.
5. Click **Save and Close**.
6. If the SCP_PARAMETER_OVERRIDES profile option code doesn't exist, then follow these steps:
   a. In the Setup and Maintenance work area, go to the **Manage Profile Options** task.

      The Manage Profile Options page opens.
   b. Click **New**.

      The Create Profile Option page opens.
   c. Create the profile option as follows:
      - Profile Option Code: SCP_PARAMETER_OVERRIDES
      - Profile Display Name: SCP_PARAMETER_OVERRIDES
      - Application: Planning Common
      - Module: Planning Common

- Start Date: Current date

Leave the remaining fields blank.

7. Click **Save and Close**.
8. For the profile option levels for the profile option, select the check boxes under the **Enabled** and **Updatable** columns for both the Site and User levels.
9. Click **Save and Close**.
10. In your work area, open the Manage Planning Profile Options page.
11. Search for the SCP_PARAMETER_OVERRIDES profile option code.
12. Set the profile level and value as previously explained.
13. Click **Save and Close**.

*Related Topics*

- Overview of Improving Performance While Disaggregating Measure Data
- Enable Multithreading for Measure Data Disaggregation for a Single Plan
- Override the Default Value for the Multithreaded Process

## Enable Multithreading for Measure Data Disaggregation for a Single Plan

You can enable multithreading for measure data disaggregation for a single, forecast-enabled plan in the Demand Management, Demand and Supply Planning, Planning Central, Replenishment Planning, or Sales and Operations Planning work area.

1. In your work area, open the Plan Options page for your forecast-enabled plan.
2. On the Demand tab, click **Select Advanced Options**.

   The Demand: Advanced Options dialog box opens.
3. In Forecasting Control Parameters, in **Parameter Overrides**, enter **enableParallelDisaggMeasure=true**.

> **Note:** You can enter multiple values in the **Parameter Overrides** field provided you separate them with the number sign (#).

4. Click **Done**.
5. Save your plan.

*Related Topics*

- Overview of Improving Performance While Disaggregating Measure Data
- Enable Multithreading for Measure Data Disaggregation for All Plans
- Override the Default Value for the Multithreaded Process

## Override the Default Value for the Multithreaded Process

After you've enabled multithreading for the measure disaggregation process for all plans in your work area or a single, forecast-enabled plan, you can override the default value of 90 days for the process.

**Before you start**

You may need to work with someone who has administration privileges to make these profile-related changes.

**Here's what to do**

1. In the Setup and Maintenance work area, go to the **Manage Profile Options** task.
   The Manage Profile Options page opens.
2. Click **New**.
   The Create Profile Option page opens.
3. Create a profile option as follows:
   - Profile Option Code: MSC_DISAGG_PERF_BATCH_SIZE
   - Profile Display Name: MSC_DISAGG_PERF_BATCH_SIZE
   - Application: Planning Common
   - Module: Planning Common
   - Start Date: Current date

   Leave the remaining fields blank.
4. Click **Save and Close**.
5. For the profile option levels for the profile option, select the check boxes under the **Enabled** and **Updatable** columns for both the Site and User levels.
6. Click **Save and Close**.
7. In the Demand Management, Demand and Supply Planning, Plan Inputs, Planning Central, Replenishment Planning, Sales and Operations Planning or Supply Planning work area, on the Tasks panel tab, in Configuration, select **Manage Planning Profile Options**.
   The Manage Planning Profile Options page appears.
8. Search for the MSC_DISAGG_PERF_BATCH_SIZE profile option code.
9. Click the **New** icon.
   A new row appears for the profile value.
10. Add the profile value as follows:
    - Profile Level: Select **Site** to set the value globally for all users. Select **User** to set the value for a specific user, in which case you must then select a user. User-level values take precedence over the site-level value.
    - Profile Value: Enter the number of days for processing in each parallel job.
11. Click **Save and Close**.

*Related Topics*

- Overview of Improving Performance While Disaggregating Measure Data
- Enable Multithreading for Measure Data Disaggregation for All Plans
- Enable Multithreading for Measure Data Disaggregation for a Single Plan

# Collections for Oracle Replenishment Planning

This topic explains how collections are done for Oracle Replenishment Planning.

Collections are done at the organization level.

Collections are also done for all subinventories of organizations that are marked for subinventory-level planning on the Organizations tab on the Maintain Supply Network Model page.

## Collected Business Objects That Are Relevant for Replenishment Planning

This table lists the collected business objects that are relevant for replenishment planning:

| Oracle Fusion Cloud Applications | Business Object |
|---|---|
| Oracle Fusion Cloud Procurement and Oracle Fusion Cloud Inventory Management | • Purchase orders and requisitions<br>• Suppliers<br>• Approved supplier lists<br>• Units of measure (UOMs)<br>• Transfer orders<br>• Shipping methods<br>• Subinventories<br>• On-hand inventory |
| Oracle Fusion Cloud Product Lifecycle Management | • Items<br>• Organizations<br>• Catalogs |
| Oracle Cost Management, Oracle Order Management, and others | • Item costs<br>• Currencies<br>• Calendars and fiscal calendars<br>• Sales orders<br>• Bookings history<br>• Shipments history<br>• Transfer order history<br>• Price lists |

*Related Topics*

- How You Maintain Your Supply Network Model
- How You Set Up Replenishment Planning for Subinventories

# Collection of Consumption Data for Oracle Replenishment Planning

This topic discusses the collection of consumption inventory transactions or point-of-sale (POS) data from Oracle Fusion Inventory Management for the generation of consumption-based forecasts in Oracle Replenishment Planning.

To generate consumption-based forecasts for your replenishment plan, make these selections on the Collect Planning Data page:

- On the Parameters tab, for the Targeted collection type, under History Data Options on the Demand Planning Data tab, in **Organization - Consumption Inventory Transactions to Include**, select the types of consumption inventory transactions you want to collect at the organization level. If you select **Transfer orders**, historical transfer orders at the organization level are collected. If you select **All**, all historical consumption inventory transactions at the organization level are collected.
- In **Subinventory - Consumption Inventory Transactions to Include**, select the types of consumption inventory transactions you want to collect at the subinventory level. If you select **Transfer orders**, both historical transfer orders and historical movement requests at the subinventory level are collected. If you select **All**, all historical consumption inventory transactions at the subinventory level are collected.

Consumption-based forecasting provides you with these benefits:

- You can improve the effectiveness of your forecast by basing it on demand signals that are closest to your customers.

  Thereby, you can effectively compute your policy parameters and calculate and release your replenishment orders.
- In the retail and healthcare sectors, you can model stores and departments as subinventories. By collecting consumption inventory transactions at the subinventory level, you can generate forecasts at this level.

## Historical Transaction Collections for Consumption-Based Forecasting at the Organization Level

When you select **All** in the **Organization - Consumption Inventory Transactions to Include** field, all historical transactions are collected at the organization level from Inventory Management for consumption-based forecasting except for those listed in this table:

| Transaction Action | Transaction Source | Transaction Type |
|---|---|---|
| Issue from stores | Purchase Order | Return to Supplier |
| Issue from stores | Sales Order | Sales Order Issue |
| Issue from stores | Transfer Order Return | Transfer Order Return with Scrap |

## Item Transaction Collections for Consumption-Based Forecasting at the Subinventory Level

When you select **All** in the **Subinventory - Consumption Inventory Transactions to Include** field, all item transactions are collected at the subinventory level from Inventory Management for consumption-based forecasting except for those listed in this table:

| Transaction Action | Transaction Source | Transaction Type |
|---|---|---|
| Direct organization transfer | Transfer Order Return | Transfer Order Return Transfer |

| Transaction Action | Transaction Source | Transaction Type |
|---|---|---|
| | | |
| Intransit shipment | Transfer Order Return | Transfer Order Return Shipment |
| Issue from stores | Purchase Order | Return to Supplier |
| Issue from stores | Transfer Order Return | Transfer Order Return with Scrap |
| Staging transfer | Transfer Order Return | Transfer Order Return Pick |

## Difference Between Consumption History and Shipments History

While shipments history includes the history for shipped sales orders, consumption history includes the shipments history as well as the consumption-related history that falls under transaction actions such as Issue from stores.

## Measures for Storing Collected or Uploaded Consumption Data

If you're collecting consumption data from Inventory Management, the collected data is stored in the measure that you select in the **Shipments History Measures** field under History Measures and Attributes on the Demand Planning Data tab.

If you're uploading consumption data from an external source, use the file-based data import (FBDI) template named Supply Chain Planning Measures (ScpMeasuresImportTemplate.xlsm) to import consumption data into the predefined Consumption History measure.

In the import template, enter #ignore under the **Customer Level Name** and **Demand Class Level Name** columns if you don't want to specify these levels. Don't enter values in the columns for level member names.

# ERP Integrations REST Service

## Use of ERP Integrations REST Service in Collections

You can upload all reference and transactional data to Oracle Fusion Cloud Supply Chain Planning from an external source using the ERP Integrations REST service. This external source can be data from Oracle E-Business Suite, Oracle Fusion Cloud Applications, or third-party source. In Collections, this REST service is used to upload data and submit the collection job set.

### Overview

This service updates all key changes in supply chain operations like unexpected changes in inventory levels or manufacturing capacities in your application in real-time. Hence when compared to the system that relies on batch integration and synchronizes data only on periodic basis, this system provides accurate results.

**Note:** To upload data for Oracle Supply Chain Planning products, use of ERP Integrations REST service is preferred over use of ERP Integrations SOAP Service.

# ERP Integrations REST Service

The ERP Integrations REST service that is available as part of Oracle Fusion Cloud Financials is used with Oracle Fusion Cloud Supply Chain Planning products to import bulk data, upload files to UCM server, and to load planning data from flat files. The REST resource name is ERP Integrations and it supports multiple POST operations.

This topic provides specific guidelines on how to use these REST operations with Oracle Supply Chain Planning products. For the Oracle Financials documentation regarding the ERP Integrations REST service, refer to the REST API for Oracle Fusion Cloud Financials book, ERP Integrations task, in Oracle Help Center.

## Import Bulk Data

The ERP Integration Service importBulkData is the main REST operation that's used to import data for Oracle Supply Chain Planning. This is a multistep operation that invokes the following subprocesses to complete the data load:

1. Upload file content to UCM Server
2. Loads data into Planning staging tables
3. Launches Load Planning Data from Files scheduled process
4. Launches the Collect Planning Data Job Set

This operation is completed in a single API call and also handles encrypted data files and decrypts them as part of upload.

Here are the specific parameters that are used in the importBulkData REST operation.

- JobName: For Oracle Supply Chain Planning data loads, this parameter must be specified as `JobName: /oracle/apps/ess/scm/advancedPlanning/collection/configuration/CSVController`
- Parameter List: This parameter contains a comma separated list of the parameter values. This is used by the Load Planning Data from Files scheduled process that is launched as part of this REST service operation. Here are the parameters that are used in the parameter list.

  ***Parameters***

| Scheduled Process Internal Parameter | Maps to the displayed parameter of this process | Expected Value | Parameter Details |
|---|---|---|---|
| Parameter 1 | Source System | Source System | Source system code of the source system for which the data is being uploaded. This code is specified during the set up of the source system |
| Parameter 2 | Collection Type | 1 or 2 | Type of collections to be launched. Valid values are:<br>o 1 denotes Targeted Collection type |

| Scheduled Process Internal Parameter | Maps to the displayed parameter of this process | Expected Value | Parameter Details |
|---|---|---|---|
| | | | ○ 2 denotes Net change Collection type |
| Parameter 3 | Data File | Zip File name | Name of the zip file to be uploaded. |
| Parameter 4 | Not displayed | Not used | Specify as #NULL. |
| Parameter 5 | Not displayed | Document ID (DId) Value | Document ID of the zip file to be uploaded to UCM.<br><br>Optional when using importBulkData operation but mandatory when using the submitEssJobRequest operation. |
| Parameter 6 | Not displayed | Instance ID | Internal ID of the source system specified in Parameter 1 (instance code). This is stored internally as MSC_APPS_INSTANCES.INSTANCE_ID and can be derived using the following SQL query:<br><br>`SELECT instance_id FROM msc_apps_instances WHERE instance_code = '<instance code>'` |
| Parameter 7 | Not displayed | Apps Version | Internal value of the version of the source system specified in Parameter 1 (instance code). This is stored internally as MSC_APPS_INSTANCES.APPS_VER and can be derived using the following SQL query:<br>`SELECT apps_ver FROM msc_apps_instances WHERE instance_code = '<instance code>'` |
| Parameter 8 | Not displayed | Not used | Specify as #NULL. |
| Parameter 9 | Organization Group | Organization Group | This is optional. It is required only if the user wants to run collections for a specific organization group. The value is the name of the organization |

| Scheduled Process Internal Parameter | Maps to the displayed parameter of this process | Expected Value | Parameter Details |
|---|---|---|---|
| | | | group. If not specifying, use #NULL. |

## Parameters File

You must include the special parameters file Supply Chain Planning ERP Integration Service Parameters that's generated using the ScpErpIntegrationServiceParamsImportTemplate.xlsm template file when using ERP Integrations REST service with Oracle Supply Chain Planning products. This parameters file is the file that provides metadata that you need to include in the zip file along with other CSV files to load data in the ERP Integrations Flow. This file contains the following parameters:

- Source System Code (Parameter 1 in the Parameters table)
- Collection Type (Parameter 9 in the Parameters table)
- Organization Group (Parameter 9 in the Parameters table)

If the input zip file does not contain ScpErpIntegrationServiceParams.csv, then the mode of collections is defaulted to Net change and the Load Planning Data from Flat Files schedule process reads the value of instance code from the respective data files.

The ScpErpIntegrationServiceParams.csv meta data file is required only when your loading data using the ERP Integration importBulkData operation and isn't required when you submit the Load Planning Data from Flat Files process either from the Scheduled Processes page or using the submitEssJobRequest operation.

> **Note:** Oracle Supply Chain Planning data loads using importBulkData operation don't need any other properties files like jobDetails.properties that are required for other product areas.

## Upload File to UCM

The uploadfiletoUCM operation uploads a file to the UCM server in a single step based on the document specified in the REST operation.

Here is the parameter that is used to complete the operation.

DocumentAccount: For Oracle Supply Chain Planning data loads, this parameter must be specified as

```
DocumentAccount":"scm$/planningDataLoader$/import$
```

The REST response includes the DocumentId as one of the data elements.

## Load Planning Data from Flat Files

The submitEssJobRequest operation is used to load planning data from flat files. It submits the collections job set with a set of parameters in a single step.

When loading data for Oracle Supply Chain Planning products, use the following parameters and respective guidelines to complete the operation.

- JobPackageName: This parameter must be specified as
  `JobPackageName:oracle/apps/ess/scm/advancedPlanning/collection/configuration`

- JobDefName: This parameter must be specified as
  `JobDefName: CSVController`
- DocumentId: Use the document ID from the response of uploadFileToUCM operation.
- ESSParameters: This parameter must include a list of values as indicated for the Parameter List parameter of importBulkData operation. For example,
  ESSParameters:EX8,2,UOM.zip,#NULL,289568,300100110961358,3,#NULL,#NULL

The REST response includes the RqstId as one of the data elements. This data element is the process ID of the submitted scheduled process which in this case is the Load Planning Data from Files process. This process is completed only after total flow including Collect Planning Data job set is launched and completed.

For other Oracle Supply Chain Planning processes, like the Publish Data and Release Plan processes, the recommended approach is to use the respective REST services under Oracle Supply Chain Planning group and not use the submitEssJobRequest operation. For example:

- For Publish Data – use Supply Chain Planning/Supply Chain Plans/Publish Data
- For Release Plan – use Supply Chain Planning/Supply Chain Plans/Releases
- For Archive Plan – use Supply Chain Planning/Supply Chain Plans/Archives

**Note:** loadAndImportData operation isn't recommended for use with Oracle Supply Chain Planning products because with this operation you can't upload encrypted data files.

# Verify Collection Processes

## Verify the Load Planning Data from Files Process

Perform the following steps to verify the process status of the uploaded file and review log file for any errors or warnings.

1. In the Navigator, click **Scheduled Processes**.
2. In the search area, enter the process ID you noted when you submitted during the Load Planning Data from Files process. Click **Search**.
3. Monitor the process to verify completion.
   If the process completes with warnings, select the request that shows the warning status and click the **View Log** button to review the details.
4. For the rows with errors, resolve the issues found in the log file, and then upload the CSV file again. To load only the revised rows, use the Net Change option.

## Review Data in the Planning Data Repository

You can review the data collected or loaded into the planning data repository using two different options. The option you use depends on which data collection entities you want to review.

To review the data collected or loaded into the planning data repository, use one of the following options:

- Review data using the Plan Inputs page layout
- Review data using the Maintain Supply Network Model page

To review the following entities, use the Maintain Supply Network Model page:

- Organizations
- Customers
- Suppliers
- Carriers
- Interlocation Shipping Networks

To review data that's not part of the supply network model, use the Plan Inputs page layout. You can view the following data in the Plan Inputs page layout

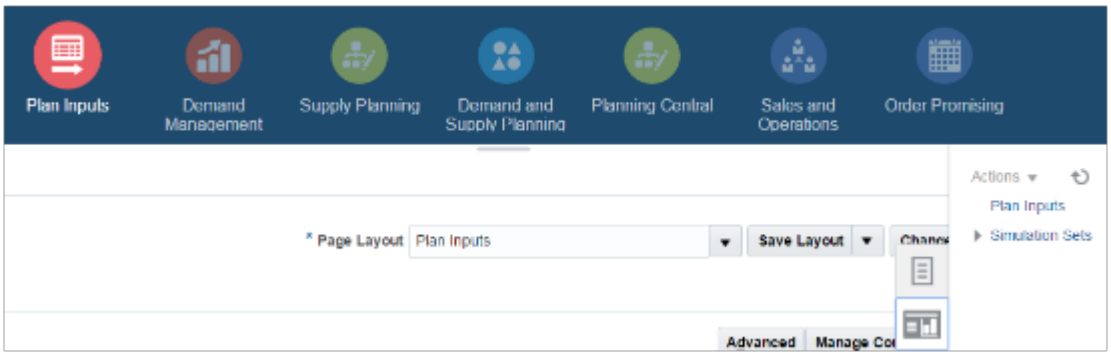
- Supply data
- Demand data

You can view Carriers and Suppliers using either option.

## Review Data Using the Plan Inputs Page Layout

Perform the following steps to review the planning data that you loaded.

1. In the Navigator, click **Plan Inputs**.
2. From the Plans menu, right-click **Plan Inputs**, and click **Open**.




> **Tip:** You can set the preview pane to Full Pane for viewing your data in full pane. Click **Change** and select **Full Pane**.

3. On the Plan Inputs page, click **Open**, and click **Full Pane**.
4. On the Open Table, Graph, or Tile Set page, search for the table name.
5. Enter the criteria for the data you want to verify and click **Search**.
6. Review the data in the Search Results table.

## Review Data Using the Maintain Supply Network Model Page

Perform the following steps to review the planning data using the Maintain Supply Network Model page.

1. In the Navigator, click **Plan Inputs**.
2. From the Tasks menu, click **Maintain Supply Network Model**.
3. Enter the criteria for the data you want to verify and click **Search**.

4. Review the data in the Search Results table.

# Purge Data

## How You Purge Collected Data from the Data Repository for Supply Chain Planning

Use the Purge Data Repository scheduled process to purge data collected by supply chain planning collections processes into the database tables that comprise the planning data repository.

Delete data from these tables to free up space and improve performance. Use the Scheduled Processes work area to run the scheduled process. This topic explains the parameters of the **Purge Data Repository** scheduled process. For information on how to run scheduled processes, refer to the Scheduled Processes chapter in the Implementing Common Features for SCM guide.

The parameters for the **Purge Data Repository** scheduled process are in one of these categories:

- The Source System and Purge Global Entities parameters
- Parameters on the Reference Data tab
- Parameters on the Demand Planning Data tab
- Parameters on the Supply Planning Data tab

### The Source System and Purge Global Entities Parameters

Provide values for these parameters to determine which data records for reference data will be purged from the staging tables when you run the **Purge Data Repository** scheduled process.

| Parameter | Notes |
|---|---|
| Source System | You must select a source system.<br>• For data collected from the Oracle Fusion source system, select OPS.<br>• For data collected from an external system, select the applicable source system code. |
| Purge Global Entities | You can select **Yes** if you want to delete data for the entities for which the planning data repository stores only one record for each instance of the global entity so there's no reference to a source system. The default is No. |

### Parameters on the Reference Data Tab

Provide values for these parameters on the Reference Data tab to determine which data records for reference data will be purged from the staging tables when you run the **Purge Data Repository** scheduled process.

| Parameter | Notes |
|---|---|
| The set of entities categorized as reference entities. The entities you haven't selected yet are included in the Reference Entities list on the Reference Data tab. | You select which reference entities you want data deleted for. The entities you select are included in the Selected Entities list on the Reference Data tab. |

## Parameters on the Demand Planning Data Tab

Provide values for these parameters on the Demand Planning Data tab to determine which data records for demand planning data will be purged from the staging tables when you run the **Purge Data Repository** scheduled process.

| Parameter | Notes |
|---|---|
| The set of entities categorized as reference entities. The entries you haven't selected yet are included in the Demand Entities list on the Demand Planning Data tab. | You select which demand entities you want data deleted for. The entities you select are included in the Selected Entities list on the Demand Planning Data tab. |
| Limit the Days to Purge | You can choose to limit the number of days to purge by selecting one of three choices. For each choice you must also specify the additional details needed for that choice:<br>• By date range, followed by a from date and a to date<br>• By number of days in the future, followed by a number of most recent days to keep<br>• By number of days in the past, followed by either a number of most recent days to keep or a number of oldest days to purge |

## Parameters on the Supply Planning Data Tab

Provide values for these parameters on the Supply Planning Data tab to determine which data records for supply data will be purged from the staging tables when you run the **Purge Data Repository** scheduled process.

| Parameter | Notes |
|---|---|
| The set of entities categorized as supply entities. The entities you haven't selected yet are included in the Supply Entities list on the Supply Planning Data tab. | You select which supply entities you want data deleted for. The entities you select are included in the Selected Entities list on the Supply Planning Data tab. |

# How You Purge Staging Tables for Supply Chain Planning

Use the Purge Staging Tables scheduled process to delete data from the staging tables used during collections processes for supply chain planning.

Delete data from the staging tables to free up space and improve performance. Use the Scheduled Processes work area to run the scheduled process. This topic explains the parameters of the **Purge Staging Tables** scheduled process.

For information on how to run scheduled processes, refer to the Scheduled Processes chapter in the Implementing Common Features for SCM guide.

Provide values for these parameters to determine which data records will be purged from the staging tables when you run the **Purge Staging Tables** scheduled process.

| Parameter | Notes |
|---|---|
| Source System | You must select a source system.<br>• For data collected from the Oracle Fusion source system, select OPS.<br>• For data collected from an external system, select the applicable source system code. |
| Record Type | You must select a record type, but you can select **All** if you want to purge all records that meet the values of the other parameters, regardless of their record type. The record types other than the All type are the status of records in the staging tables in regard to the next stage of the collections process. The next stage of the collections process is the import of the records that are in the staging tables into the tables that comprise the planning data repository.<br>• All: All records regardless of status.<br>• Complete: Records that were successfully imported into the tables that comprise the planning data repository.<br>• Error: Records that are in the Error status in the staging tables after import into the planning data repository was tried, but not successful.<br>• New: Records that were collected into the staging tables, but import into the planning data repository hasn't been tried yet.<br>• Retry: Records in the staging tables for which import into the planning data repository is being tried again.<br>• Warning: Records in the staging tables for which a warning occurred when the record was imported into the planning data repository. |
| Collection Cycle ID | You can enter a request number if you want to do so. |
| Collected From Date<br>and<br>Collected To Date | You can provide these dates if you want to purge data within a specific time frame. |
| The set of specific entities for which data is collected and deletion of the data from the staging tables is supported. | Each entity is a parameter for the scheduled process. You can select **No** for any of the parameters if you don't want to purge the data for that entity. The default value for each parameter is Yes. |

# Aggregate Customer Data

## How You Aggregate Customer Data

Use the key customer data options collections template to identify key customers.

The data for these customers will be visible. For each Zone, all non-key customers' data will be aggregated to a member named All Other. By aggregating the planning data for non-key customers, you can focus your analysis on the key customers. You use the Supply Chain Planning Key Customer Options (ScpKeyCustomerOptionsImportTemplate.xlsm) import template to identify the key customers; the rest of the customers' data will be aggregated under an All Other member.

The data that are not identified in the upload template are aggregated to an all other member for each zone. You can view the key customers and the All Other member containing the aggregated non-key customer data when you analyze the forecasts and other data.

Identifying key customers and aggregating non-key customer data helps you to do the following:

- Organize key customer data that are required for planning
- Save time by collecting only the required data from Oracle Fusion Cloud Supply Chain Management
- Build a plan specifically for your key customers

*Related Topics*
- Collection Filters and Collection Templates

## How can I reset the key customer aggregated data for a plan?

After you make changes to the aggregation level values in the ScpKeyCustomerOptionsImportTemplate.xlsm file, you must upload the file and run the plan again.

To reset the key customer aggregated data for a plan, do the following:

1. Review the ScpKeyCustomerOptionsImportTemplate.xlsm file.
2. Update the Aggregation Level values for all of the Level Name values (for example, Customer) and upload the CSV file.
3. From your Supply Chain Planning work area, open the plan and enable the **Aggregate non-key customer data to All Other level member** check box. Run the plan again.

*Related Topics*
- Considerations for Collecting Key Customer Information

# Considerations for Collecting Key Customer Information

Use the ScpKeyCustomerOptionsImportTemplate.xlsm file to identify the key customers for which nonaggregated data must be made available.

For non-key customers, the aggregation level that you define in the import template determines whether the data is retained or aggregated. You can differentiate between key customers and non-key customers and use the aggregated key customer data to build a plan specifically for your key customers.

> **Note:** For details regarding the ScpKeyCustomerOptionsImportTemplate.xlsm file, refer to the File-Based Data Import (FBDI) for SCM guide. This guide is one of the guides in the Oracle Help Center for Oracle Fusion Cloud Supply Chain Management. Use the All Books link for a list of the guides by category, and look for the Development category.

In the ScpKeyCustomerOptionsImportTemplate.xlsm file template:

1. Define your key customers on the KeyCusOptnHeader tab. Enter the name of a valid customer hierarchy in the Hierarchy Name column.
2. Next, enter the level of that hierarchy in the Level Name column. All customers in this level are identified as key customers.
3. To have only certain customers identified as key customers, enter the specific customer names on the KeyCusOptnMembers detail tab.
4. Set the aggregation level values for both key and non-key customers. Use the settings in the template to set the data to different aggregation levels, such as 1, 2, or 3.
5. Upload the template.

## Ignore Aggregate by Zone

There are two Customer hierarchies--Customer and Customer Zone--where the lowest level of each hierarchy is Customer Site. If you don't have any key customers, leave the Hierarchy Name and Hierarchy Level columns blank on the KeyCusOptnHeader tab. All customers not named in the template (non-key customers) are aggregated into an All Other member for the hierarchy.

The upload also creates All Other Zone members for the non-key customers in the Customer Zone hierarchy. If you don't want to aggregate by zone, enter #ignore_zone in the Hierarchy Name column in the KeyCusOptnHeader.csv and leave the Level Name column blank.

## Aggregation Levels

The aggregation levels are listed in the following table.

| Aggregation Level | Description |
|---|---|
| 1 | Retain all customer sites, and aggregate non-key customer sites. In addition to key customer data being available, non-key customer data is retained for plans that require data that's not aggregated. Aggregated customer data is available for plans that require aggregated non-key customer data. |
| 2 | Aggregate non-key customer sites. Customers that aren't identified as key customers are aggregated to an All Other site by zone. However, if the Hierarchy Name and Level Name columns are blank, all customers are identified as non-key customers and aggregated to an All Other site by zone. This means that there are no key customers. |

| Aggregation Level | Description |
|---|---|
| 3 | No aggregation of customer sites. All data is available at customer site level. |

To remove the key customer designation for previously-loaded customers, use Aggregation Level 3. This enables data for all customers to be made available at the lowest level. No customers are marked as key customers.

If you select the aggregation level 3, the following happens:

- No aggregation is done. All data is at the customer site level only.
- If option 2 or 3 was used in previous collection runs, all non-key customer by zone members and data are deleted.
- Plans using the Key Customer feature become invalid and you have to run them again.

The KeyCusOptnMembers detail tab is optional. Use this tab to identify specific customers as key customers. The Hierarchy Name and Level Name column entries must be the same as the information entered on the KeyCusOptnHeader tab. Enter valid level member names in the Level Member Name column. These members are the only customers that will be identified as key customers.

- If the KeyCusOptnMembers detail tab is empty, all child members of the hierarchy level chosen in the Header tab are flagged as key customers.
- If the KeyCusOptnMembers detail tab isn't empty, only the listed members are identified as key customers.

The members must be children of the hierarchy level named on the Header tab.

When you create a plan, there is an option in the Plan Options dialog box that determines what level of customer aggregation is used for the plan:

- Key customer data is available and non-key customer data is aggregated to a level member named All Other.
- No customer data is aggregated for the plan if the option is deselected.

*Related Topics*

- How can I reset the key customer aggregated data for a plan?

# Load Aggregated Customer Data from Oracle E-Business Suite

This topic explains the procedure you follow to load aggregated customer data from an Oracle E-Business Suite source system into your Oracle Fusion Cloud Supply Chain Planning destination system.

The procedure is composed of the following steps:

1. Extract data from your Oracle E-Business Suite source system.
2. Prepare the Supply Chain Planning Key Customer Options file if you have defined key customers in your Oracle E-Business Suite source system.
3. Add the files to your desktop or local hard drive.
4. Import data into your Oracle Supply Chain Planning destination system.

Additional details for each step are provided in this topic.

## Prerequisites

To perform the process that extracts data from your Oracle E-Business Suite source system, you must be assigned a configured, administrator-level role that's similar to either the Advanced Planning Administrator role or the Advanced Supply Chain Planner role.

Your source system must be set up as one of the Trading Community Source Systems for Oracle Supply Chain Planning.

You can perform the steps to import data into your Oracle Supply Chain Planning destination system from one of the Supply Chain Planning work areas. You don't need an administrator role to perform these steps.

## Extract Data

To extract the data from your Oracle E-Business Suite source system, run the Extract Data for Oracle Supply Chain Planning process.

Consider the following conditions for the MSD_DEM_CUSTOMER attribute when you run the process:

- If the MSD_DEM_CUSTOMER_ATTRIBUTE is set to null, then all sites are extracted.
- If the MSD_DEM_CUSTOMER_ATTRIBUTE is set to none, then all records are aggregated to Default Customer Site.
- If the MSD_DEM_CUSTOMER_ATTRIBUTE is set to a valid customer attribute, then all sites are extracted.

The extracted data is stored in a file in the zipped file format in the middle tier of your source system.

## Prepare the Key Customer Options File

If you have defined key customers in your Oracle E-Business Suite source system, then perform these steps to prepare the Supply Chain Planning Key Customer Option file:

1. Download the template for file-based data loads for the Supply Chain Planning Key Customer Options object.
2. Add your data to the file.
3. Generate the CSV file.

For details on preparing files for loading planning data, refer to these help topics: Loading Planning Data from Files: Overview and Creating CSV Files Used to Load Planning Data: Procedure.

## Add the Files to Your Desktop or Local Hard Drive

Locate the extracted Zip file on your Oracle E-Business Suite middle tier, and download or transfer the file to your desktop or local hard drive.

If you have defined key customers in the Oracle E-Business Suites source system, then include the Key Customer Options file in the Zip file.

## Import Data into Your Oracle Supply Chain Planning Destination System

To import the data into your Oracle Supply Chain Planning destination system, perform these steps:

1. From the Navigator, click **File Import and Export**.
2. On the File Import and Export page, perform the upload action using these values:
    - File: The file you created
    - Account: scm/planning DataLoader/Import

3. From one of the Supply Chain Planning work areas, perform the Manage Planning Source Systems task to check if your source system is already created. If your source system is not already created, then create it with the following values:
    - Version: External.
    - Code: Must be the same as the one used for your Oracle E-Business Suite source system.
4. From a Supply Chain Planning work area, perform the Load Planning Data from Files task.

# View and Refresh Collected Measure Data

## View Collected Data for Measures Before Running a Plan

The Collected Measure Data table enables you to view imported or collected records and their statuses without having to examine log files or run a plan. The table lists measures that were successfully populated as well as also those that weren't for your plan. By using this table, you can quickly resolve problems in the data load process.

Just as you can use the Supplies and Demands table to view the collected or imported supplies and demands, you can use the Collected Measure Data table to view bookings, shipments, and other entities.

For example, Small Inc. imported its shipments history data using the Supply Chain Planning Shipments History file-based data import (FBDI) template. To save time and work efficiently, the company wants to ensure that data was correctly imported before running its plan. The company uses the Collected Measure Data table and selects the option to view only records with errors. The company notices that several records have an error pertaining to invalid names for the Customer Site level member. Now that the reason behind the error has been identified, Small Inc. can fix the data in the FBDI file, import the data again, and run the plan. By using the Collected Measure Data table, Small Inc. quickly identified data import-related problems and didn't have to spend time analyzing the log files for the import or analyzing the plan after running it.

1. In the Plan Inputs work area, click the **Open** drop-down button.
   The Open Table, Graph, or Tile Set dialog box opens.
2. Select the Collected Measure Data table and click **OK**.
   The Collected Measure Data table opens in a new tab.
3. Specify your search criteria, and click **Search**.
   Use the **Errors** field to limit the records to those with errors or those without errors.

   > **Note:** By default, the table displays only the first 10,000 records that meet your search criteria. To change this limit, you need to create and use a profile option with the MSC_COLLECTED_MEASURE_DATA_MAX_ROWS code. No indication is provided if the table has records that aren't displayed because the predefined or user-defined limit has been exceeded.

4. Analyze the records that are returned according to your search criteria.
   The **Last Updated Date** column displays the date on which the records were created or last updated.
   The **Refresh Number** column displays the refresh numbers of the collection job sets through which the measures were populated when the FBDI templates or collections feature was used.
5. Optionally, to export the records to a Microsoft Excel file for further analysis, click **Actions** > **Export to Excel**.
   The records available in the Collected Measure Data table are exported to the file. The predefined or user-defined limit is applied when the records are exported.

> **Tip:** When you export the records to an Excel file, you can view more than 15 records at a time. You may find it helpful during your error analysis to view more than 15 records at a time.

# Additional Points About the Collected Measure Data Table

These are some additional points about the Collected Measure Data table:

- The table displays records that are successfully uploaded to the MSC_MEASURE_DATA table.
- For records with errors, the table displays records from the MSC_ST_MEASURE_DATA staging table that have information in the ERROR_TEXT column.

  The table doesn't display records from the staging table that weren't moved to the MSC_MEASURE_DATA table and don't have error information.
- The table filters records by the applicable security privileges of the user. For example, if you have access to only certain organizations, you can view measure values for only those organizations.
- The table lists both predefined and user-defined measures.
- The table displays measure data that's imported through these file-based data import (FBDI) templates:
  - Supply Chain Planning Bookings History
  - Supply Chain Planning Causal Factors
  - Supply Chain Planning Forecast Measures
  - Supply Chain Planning Measures
  - Supply Chain Planning Option Bookings History
  - Supply Chain Planning Option Shipments History
  - Supply Chain Planning Shipments History
- The table doesn't display measure data that's imported through the Supply Chain Planning External Forecasts and Supply Chain Planning Price Lists FBDI templates.

  To troubleshoot imported data for external forecasts or price lists, examine the log files or run your plan.
- The table also displays any measure for which information is collected from Oracle Fusion Cloud Applications Suite or imported from Oracle E-Business Suite.
- To view aggregated non-key customer data in the table for demand, demand and supply, and sales and operations plans, before collecting or importing measure data, select the **Aggregate non-key customer data to an All Other level member** check box on the Demand tab on the Plan Options page for the plan. Then, enter the required aggregation levels in the Supply Chain Planning Key Customer Options FBDI template, and import customer data with the template. After you collect or import measure data, when you filter your records by the plan name in the table, you can view the aggregated data for non-key customers. For aggregated records, the value displayed in the **Customer** column is "<zone name>:All Other."
- To avoid reduced performance, don't sort the records if you increase the maximum number of records displayed in the table by creating and using a profile option with the MSC_COLLECTED_MEASURE_DATA_MAX_ROWS code.

*Related Topics*

- How You Aggregate Customer Data

# Refresh Collected Measure Data

The Orchestrate Refresh Measures Processes scheduled process lets you update the plan data for collected planning measures without running the plan.

You can refresh a subset of predefined or user-defined measures such as shipments and bookings history, sales and marketing forecasts, and financial measures such as Budget Value and Financial Forecast Value. This process retains the measure data for statistical and simulation demand forecasts usually purged when running your plan. By defining a job set, you can automate this scheduled process to refresh measures immediately after loading external measure data from flat files.

For example, an enterprise has a weekly demand planning cycle. They need to generate a baseline statistical forecast once a week but continue to get daily updates for recent shipments, bookings, and sales forecast. Instead of running the plan daily, they modify their planning process to run it at the start of the week and then refresh the key collected measures daily.

# Orchestrate Refresh Measures Processes

Use these steps to configure the Orchestrate Refresh Measures Processes scheduled process using a measure catalog containing only a subset of plan measures:

1. In the Scheduled Processes work area, click **Schedule New Process** on the Overview page.
2. In the Schedule New Process dialog box, search for and select **Orchestrate Refresh Measures Processes**, and then click **OK**.
3. In the Process Details dialog box, Basic Options section, do the following:
    - **Plan**: Select a plan name.
    - **Measure Catalog**: Select a measure catalog.
4. Click **Advanced** and navigate to the Schedule tab. You can set up the process to run as soon as possible or establish a schedule.
5. When done, click **Submit**.

The Confirmation dialog box opens and displays the process number. You can use this process number to search for the process result in the Scheduled Processes work area.

# Additional Information about Orchestrate Refresh Measures Processes

Here's some additional information about the Orchestrate Refresh Measures Processes scheduled process:

- You can schedule the Orchestrate Refresh Measures Processes scheduled process to refresh collected measure data for one time or on a repetitive schedule from the Scheduled Processes page. You can configure a job set that contains the Orchestrate Refresh Measures Processes scheduled process after the Load Planning Data from Flat Files scheduled process to sequence and automate these planning processes.

- When copying a plan, you get the following options:
  - Copy plan options only
  - Copy plan with reference to the base plan
  - Copy plan with no reference to the base plan

  If the copied plan was created using the second option (Copy plan with reference to the base plan), then it does not support the Refresh Collected Measure Data capability. Such plans do not appear in the Plan field of the Orchestrate Refresh Measures Processes scheduled process.
- The Orchestrate Refresh Measures Processes scheduled process considers the measure data uploaded using file-based data import (FBDI) templates, including planning measures and demand history. The process does not consider transactional data such as sales orders, price changes, or new items and organizations that are not already included in a plan. For supply plans, measure data loaded using the Supply Chain Planning External Forecasts (FBDI) template can't be refreshed.
- When introducing a new measure to a plan defined with the Refresh with current data option in Manage Planning Measures, you must first run the plan to refresh with the current data before you can refresh that measure's data using this process.

  > **Note:** Run your plan after a release upgrade before using this process.

- You need to include both the Shipments History (or Bookings History) measure and the default measure used to refresh Shipments History in your measure catalog. For example, if the default measure used for the Default Shipments History Measure profile option is Shipments History: Requested Item by Shipped Date, then include both this measure and the Shipments History measure in the measure catalog used to refresh your plan.

# 7 Exceptions

## Exceptions in Plans

### Overview of Plan Exceptions

Exceptions are a key element to evaluate and improve your plan in Oracle Fusion Cloud Supply Chain Planning.

After you run a plan, view the exceptions to understand the quality of the plan and to get visibility of key problem areas. You can focus on key exceptions to understand their root causes. From the exceptions tables, you can drill down to other plan views for more details into the problem areas. After taking actions to resolve exceptions, run the plan again to evaluate whether the plan is now acceptable.

Oracle provides several predefined exceptions that the Oracle Supply Chain Planning processes compute after you run a plan. View these exceptions to identify problem areas in the plan that might need your attention. To view a list of the exceptions, open your plan and then open the Exceptions table.

The exception types and their calculation logic are predefined. However, to ensure that only significant deviations are highlighted, you can edit the conditions under which the exceptions are generated. You control which exceptions to calculate for a plan by specifying an exception set on the Plan Options page. View the metrics associated with exceptions, such as by count or by quantity, in tables or graphs at different hierarchical levels.

You can also create user-defined exceptions based on specific conditions in the supply chain that you want to identify. Base these user-defined exceptions on your business requirements and focus on specific areas to improve your supply chain planning capabilities. Use the Configure Exception task to create a user-defined exception.

> **Note:** You can't create user-defined exceptions in the Planning Central work area. Also, there are no predefined exceptions for Replenishment Planning.

#### Plan Exception Types

From within your plan, you can open the Exceptions table to view the exceptions grouped within the following folders:

| Exception Folder | Accessible from these work areas: |
|---|---|
| Demand Planning Exceptions | Demand Management<br>Planning Central<br>Sales and Operations Planning |
| Replenishment Planning Exceptions | Replenishment Planning (user-defined exceptions only) |
| Sales and Operations Planning Exceptions | Sales and Operations Planning |
| Supply Planning Exceptions | Supply Planning |

| Exception Folder | Accessible from these work areas: |
|---|---|
| | Planning Central |
| Views for Multiple Exceptions | Supply Planning<br>Planning Central |

## Exception Categories

There are two categories of exceptions:

- Measure-based exceptions
- Order-based exceptions

Oracle provides several predefined exceptions for most Supply Chain Planning modules. You can also create user-defined exceptions from most Supply Chain Planning work areas. The following table lists the Supply Chain Planning modules, the type of exception, whether the product has predefined exceptions, and whether you can create user-defined exceptions.

| Module | Type of Exception | Predefined Exceptions | User-Defined Exceptions |
|---|---|---|---|
| Oracle Demand Management | Measure-based exceptions | Yes | Yes |
| Oracle Planning Central | Measure-based exceptions | Yes | No |
| Oracle Replenishment Planning | Measure-based exceptions | No | Yes |
| Oracle Sales and Operations Planning | Measure-based exceptions | Yes | Yes |
| Oracle Supply Planning (constrained and unconstrained) | Order-based exceptions<br>Measure-based exceptions | Yes | Yes |

## View Exceptions for Your Plan

When you open the exceptions table, the number of exception records generated are shown after the exception name, in parentheses. Clicking the exception name displays a table with details of the exception. From the Exceptions tab, you can:

- Search for exceptions for a specific item and organization within a specified date range
- Search for measure-based exceptions based on various attributes such as Planner, Planner Description, Catalog, and Category. If a measure-based exception is created at the category level, categories specific to the catalog selected in the hierarchy parameter appear in search results. If a measure-based exception is created at the Item level, then you can filter the records based on Item, Catalog, and Category Level attributes. If a measure-based exception is created with no product dimension, then you can filter the records based on other attributes except Item and Category level

- Save the search criteria for future searches
- Export the table to a spreadsheet, rearrange columns, and perform other standard table actions on the table

Predefined views within the Views for Multiple Exceptions folder enable you to view all exceptions for an item, resource, or supplier within the same table. The folder is available only in the Supply Planning and Planning Central work areas.

From tables that show exception data, you can navigate in context to other plan data. This navigation capability is useful when, for example, you view exceptions for an item and you also want to see its supply or resource availability.

*Related Topics*

- How You Edit Exceptions
- Configure Exception Thresholds
- Overview of Exceptions and Exception Sets
- Overview of Predefined Planning Exceptions
- Overview of User-Defined Exceptions

# Configure Exception Thresholds

You can control the number of exceptions that your plan generates by changing the levels at which an exception is computed and its threshold value. A higher threshold value typically results in fewer exceptions.

To configure exception thresholds, do the following:

1. From a Supply Chain Planning work area, select the **Configure Exceptions** task.
2. On the Configure Exceptions page, select an exception.
3. Click **Actions** and then select **Edit**.

Demand planning, replenishment planning, and sales and operations planning exceptions are measure-based exceptions. A base measure forms the foundation for these exceptions.

In the Planning Central work area, you can't change the base measure, but you can edit the level at which the exception is computed and its threshold value.

Most supply planning exception calculations are for a specific order and aren't associated with a base measure. For these types of exceptions, select the fact associated with the exception and modify the condition that specifies when to generate the exception. Think of a fact as an attribute of the exception. Typical facts are quantity and value.

*Related Topics*

- How You Edit Exceptions
- Overview of Plan Exceptions
- Overview of User-Defined Exceptions

# Create Tables and Graphs for Exceptions

Create a table or graph for plan exceptions based on their measures, such as number of exceptions generated and the quantity associated with the exception.

## Create a Table for Exceptions

1. In a Supply Chain Planning work area, open a plan.
2. Click the **Actions** button and select **Manage Tables, Graphs, and Analysis Sets** from the list.
3. In the Manage Tables, Graphs, Analysis Sets dialog box, click **Actions**. Next, select **Create** and then select **Table**.
4. On the Create Table page, do the following:
    - Enter a name for your table.
    - Select a group.
    - Enter a description.
    - Select the type of access (public or private).
5. On the Measures tab, do the following:
    a. In the Available Measures section, expand the Overall Plan Health folder.
    The Overall Plan Health folder contains the measures associated with exceptions.
    b. Select the exception facts that you want to view in the table.
6. On the Hierarchies tab, include the Exception Type hierarchy.
7. On the Members tab, select the exception types to display in the table.
8. Click **Save and Close**.

## Create a Graph for Exceptions

1. In a Supply Chain Planning work area, open a plan.
2. Click the **Actions** button and select **Manage Tables, Graphs, and Analysis Sets** from the list.
3. In the Manage Tables, Graphs, Analysis Sets dialog box, click **Actions**. Next, select **Create** and then select **Graph**.
4. On the Create Graph page, do the following:
    - Enter a name for your graph.
    - Select a group.
    - Enter a description.
    - Select the type of access (public or private).
5. On the Measures tab, do the following:
    a. In the Available Measures section, expand the Overall Plan Health folder.
    The Overall Plan Health folder contains the measures associated with exceptions.
    b. Select the exception facts that you want to view in the graph.
6. On the Hierarchies tab, include the Exception Type hierarchy.
7. On the Members tab, select the exception types to display in the graph.
8. On the Layout tab, do the following:
    a. In the Graph Layout Options section, select a type of graph.
    b. Configure your graph in the horizontal panels below the Graph Layout Options.
    The horizontal panels below the Graph Layout Options section vary, depending on the type of graph that you select. For example, if you select Pie Graph for your graph type, the horizontal panels include General Options, Pie Slice, and Formatting.

9. Click **Save and Close**.

*Related Topics*

- How You Edit Exceptions
- Overview of Tables, Graphs, Analysis Sets, Tiles, and Tile Sets
- Overview of Plan Exceptions

# Exceptions and Exception Sets

## Overview of Exceptions and Exception Sets

On the Configure Exceptions page, you can select an exception and edit the thresholds for reporting. You can configure only those exceptions that are relevant to your Supply Chain Planning work area.

On the Configure Exception Sets page, you can restrict the exceptions that are computed as part of the plan run. You can also control the organizations, item categories, time period, and so on for which to compute exceptions.

A defined exception set is associated with a plan. The plan evaluates the exceptions using the filters associated with the exception set. Select the exception set to use during the plan run on the Plan Options page, Scope tab.

*Related Topics*

- How You Edit Exceptions
- Configure Exception Sets
- Set Filters on Planning Dimensions for Exceptions
- Overview of User-Defined Exceptions
- Define Scope Plan Options

## How You Edit Exceptions

To edit exception parameters, select an exception on the Configure Exceptions page. You can configure only those exceptions that are relevant to your Supply Chain Planning work area.

In the Edit Exception dialog box, there is an area for General Properties and Exception Detail. Depending on the Supply Chain Planning work area that you're in, you can see the following tabs in the Exception Detail section:

- Demand Management work area: Level, Threshold, and Notification
- Planning Central work area: Level and Threshold
- Replenishment Planning work area: Level, Threshold, and Notification
- Sales and Operations work area: Level, Threshold, and Notification
- Supply Planning work area: Level, Threshold, and Notification

You can edit Level and Threshold only for those exceptions whose basis is Measure. For exceptions whose basis is Order, you can edit only the Threshold.

### Level Tab

On the Level tab, the dimensions for the exception are derived from the base measure. You can edit the default values for hierarchy and level. You can also enable and disable each of the available dimensions to control the level that the exception is evaluated at.

> **Note:** Ensure that the selected hierarchy is in the dimension catalog for the plan. The Configure Exceptions task is outside of the plan context. It's possible to select a product hierarchy that's not used in the plan's dimension catalog, in which case the plan exceptions output won't display data for items.

### Threshold Tab

On the Threshold tab, the base measure used in the exception is compared to either a value or another measure. If the threshold is specified in terms of a value, the value is interpreted in terms of the data type of the base measure. To ensure that exceptions return meaningful values, set the threshold to an appropriately high or low value.

### Notifications Tab

On the Notification tab, set up notification rules for exceptions. Configure exceptions to trigger notifications to specific users or roles. In the Details section specify the entity and condition for notifications. Notifications are automatically sent at the end of the plan run.

*Related Topics*

- Configure Exception Sets
- Set Filters on Planning Dimensions for Exceptions
- Overview of Predefined Planning Exceptions
- Overview of User-Defined Exceptions
- Overview of Plan Exceptions

## Configure Exception Sets

Use the Configure Exception Sets page to create, modify, or copy an exception set.

The set of exceptions and their scope that's calculated by the plan is configured on the Create or Edit Exception Set page. When creating an exception set, you must first specify the exceptions to include in the set, which can include user-defined exceptions. User-defined exceptions aren't available in Planning Central.

The exception set also enables you to restrict the generation of exceptions for specific organizations, categories, suppliers, and customers. You can then point to the exception set on the Plan Options page for a plan.

When you create a constrained supply plan in Supply Planning, the Exception Set plan option defaults to the Constrained Supply Planning Default exception set.

Use the following steps to configure exception sets:

1. In a Supply Chain Planning work area, click the Tasks panel drawer and click **Configure Exception Sets**.

2. On the Configure Exception Sets page, select an existing exception set. Next, click **Actions** and select **Duplicate**.
3. In the Create Exception Sets dialog box:
    a. Expand the group of exceptions in the Available Exceptions section. For example, expand Supply Planning Exceptions.
    b. Select the exception from the Available Exceptions section and move it to the Selected Exceptions section.
4. Click **Save and Close** to return to your plan.

**Note:** To generate exceptions, you must include the exception set in the plan options for your plan.

*Related Topics*

- How You Edit Exceptions
- Set Filters on Planning Dimensions for Exceptions
- Overview of Plan Exceptions
- Overview of Predefined Planning Exceptions
- Overview of User-Defined Exceptions

# Set Filters on Planning Dimensions for Exceptions

After selecting available exceptions for an exception set to use in a plan, you can add filters on some of the key planning dimensions. The levels on which you can define filters are organizations, categories, suppliers, and customers.

On the Configure Exception Sets page, Filters tab, select one or more organizations, suppliers, categories, and customers in each of the tables for which to generate exceptions. If you don't specify a filter for a level, you will generate exceptions for all records in that level. For example, if you don't specify an organization, exceptions will be generated for all planning organizations when you run the plan. If any of the organizations, categories, suppliers, or customers in the exception set aren't available in the plan, they will be ignored.

In the **Exception Cutoff Days** field, specify the number of calendar days, starting from the plan start date, from which to generate the exceptions. If this field is blank, exceptions will be generated for the full planning horizon.

*Related Topics*

- Configure Exception Sets
- How You Edit Exceptions
- Overview of Plan Exceptions

# Predefined Planning Exceptions

## Overview of Predefined Planning Exceptions

The planning process computes several predefined exceptions after you run a plan.

View these exceptions to obtain quick visibility of problem areas in the plan that might need your attention. To view a list of the exceptions, from a Supply Chain Planning work area, open a plan and then open the Exceptions table.

The Exceptions table is grouped into different folders, depending on the plan type:

- Demand Planning Exceptions
- Sales and Operations Planning Exceptions
- Supply Planning Exceptions
- Views for Multiple Exceptions: View exceptions for an item, resource, or supplier within the same table. (This folder is available only in the Supply Planning and Planning Central work areas.)

**Note:** There are no predefined exceptions for Replenishment Planning, only user-defined exceptions that reside in the Replenishment Planning Exceptions folder.

*Related Topics*

- Overview of Plan Exceptions
- How You Edit Exceptions
- Predefined Demand Planning Exceptions
- Predefined Sales and Operations Planning Exceptions
- Predefined Supply Planning Exceptions

## Predefined Demand Planning Exceptions

The basis for all predefined demand planning exceptions is Measure.

The following table lists the predefined demand planning exceptions, their descriptions, the base measure used for the exception, the intersection of levels that the condition is evaluated for, the threshold to base measure, and the relevant exception set.

| Demand Planning Exception Name | Description | Base Measure | Levels | Threshold to Base Measure | Exception Set |
|---|---|---|---|---|---|
| Bookings MAPE Exceeds Threshold | The Bookings Forecast MAPE is greater than the specified threshold value. | Bookings Forecast MAPE | Item<br><br>Organization | Greater than 0.4 | Default<br><br>Demand Management |

| Demand Planning Exception Name | Description | Base Measure | Levels | Threshold to Base Measure | Exception Set |
|---|---|---|---|---|---|
| Shipment MAPE Exceeds Threshold | The Shipments Forecast MAPE is greater than the specified threshold value. | Shipments Forecast MAPE | Item<br>Organization | Greater than 0.4 | Default<br>Demand Management |
| Significant Deviation between Actual Sales and Consensus Forecast | The deviation between the Actual Sales and the Consensus Forecast is significant. | Deviation between Shipment History Shipped Items by Requested Date and Consensus Forecast | Item<br>Organization<br>Customer<br>Week | Greater than 20 percent | Demand Management |
| Significant Deviation between Bookings History and Final Bookings Forecast | The deviation between the Bookings History and the Final Bookings Forecast is significant. | Deviation between Bookings History Booked Items by Requested Date and Final Bookings | Item<br>Organization<br>week | Greater than 20 percent | Demand Management |
| Significant Deviation between Budget and Final Shipments Forecast | The deviation between the Budget and the Final Shipments Forecast is significant. | Deviation between Budget Value and Final Shipments Forecast Value | Category<br>Organization<br>Period | Greater than 0.2 | Demand Management |
| Significant Deviation between Marketing Forecast and Consensus Forecast | The deviation between the Marketing Forecast and the Consensus Forecast is significant. | Deviation between Final Marketing Forecast and Consensus Forecast | Item<br>Customer<br>Period | Greater than 20 percent | Demand Management |
| Significant Deviation between Sales Forecast and Consensus Forecast | The deviation between the Sales Forecast and the Consensus Forecast is significant. | Deviation between Final Sales Forecast and Consensus Forecast | Item<br>Customer<br>Period | Greater than 20 percent | Default<br>Demand Management |
| Significant Deviation between Sales Forecast and Final Shipments Forecast | The deviation between the Sales Forecast and the Final Shipments Forecast is significant. | Deviation between Final Sales Forecast and Final Shipments Forecast | Item<br>Organization<br>Week | Greater than 20 percent | Default<br>Demand Management |
| Significant Deviation between Sales Orders and Final Shipments Forecast | The deviation between the Sales Orders and the Final Shipments Forecast is significant. | Deviation between Sales Orders by Request Date and Final Shipments Forecast | Item<br>Organization<br>Week | Greater than 20 percent | Default<br>Demand Management |
| Significant Deviation between Shipments History and Final Shipments Forecast | The deviation between the Shipments History and the Final | Deviation between Shipment History Shipped Items by Requested Date and | Item<br>Organization | Greater than 20 percent | Demand Management |

| Demand Planning Exception Name | Description | Base Measure | Levels | Threshold to Base Measure | Exception Set |
|---|---|---|---|---|---|
| | Shipments Forecast is significant. | Final Shipments Forecast | Week | | |
| Significant Deviation in Year on Year Sales | The difference between the current year's sales and the past year's sales exceeds a specified percentage. | Deviation in Sales Year over Year | Item<br>Organization<br>Customer<br>Period | Greater than 20 percent | Default<br>Demand Management |

# User-Defined Exceptions

## Overview of User-Defined Exceptions

You can create your own exceptions to improve supply planning capabilities using specific conditions in the supply chain.

Use the Configure Exception task to create a user-defined exception.

You can create and use exceptions for these modules:

| Module | Exception Type |
|---|---|
| Oracle Demand Management | Measure-based exceptions |
| Oracle Replenishment Planning | Measure-based exceptions |
| Oracle Sales and Operations Planning | Measure-based exceptions |
| Supply Planning (constrained and unconstrained) | Order-based exceptions<br>Measure-based exceptions |

**Note:** User-defined exceptions aren't available for Oracle Planning Central.

For user-defined exceptions that are measure based, the measure forms the foundation for that exception. After you select a measure, you can specify the dimension hierarchy and level for that measure, and the threshold value or measure to generate the exception. You can create an exception based on the following thresholds:

- Value: Set the value and the specific operation, such as less than, equal, and larger than, against the base measure.

- Measure: Select the measure based on your business requirement and select the specific operation that meets the condition against the base measure.

For example, you can create a date-type, measure-based exception such as launch date or discontinuation date. You then can set the threshold value with date and select a date-type measure from the Measure parameter.

Consider the Forecast Start Date before Launch Date date-type exception. You can define the parameters as:

- Base Measure = Forecast Start Date
- Operation = Before (Available values for date type exceptions are: After, Before, Equals, On or after, and On or before)
- Threshold Measure = Product Launch Date

*Related Topics*

- Configure Measure-Based Exceptions

# Configure Measure-Based Exceptions

This topic covers how to configure measure-based exceptions in Supply Planning, Sales and Operations Planning, Demand Management, and Replenishment Planning.

You can create measure-based exceptions where the measure forms the foundation for that exception. After you select a measure, you can specify the dimension hierarchy and level for that measure, and the threshold value or measure to generate the exception. For example, you can create an exception to identify resource overloads when the resource utilization percentage is greater than 110%.

## Configure Exceptions That Are Measure Based

Use the following general steps to configure a user-defined exception that's measure based.

1. In a Supply Chain Planning work area, click the Tasks panel drawer and click **Configure Exceptions**.
2. On the Configure Exceptions page, click **Actions** and then select **Create**.
3. In the Create Exception dialog box, General Properties section, specify or enter information for the following fields:
    a. Exception
    b. Display Name
    c. Exception Group
    d. Base Measure
4. In the Exception Detail section, on the Level tab, select the dimension and its corresponding hierarchy and level to use for your exception

    What you select for levels determines the combination at which the exception condition is evaluated. For example, if you select levels Item and Organization, then the exception criteria is evaluated for each unique combination of Item and Organization.

    > **Note:** Configure Exceptions is a task defined outside of plan context. When configuring exceptions for measure-based plans, ensure the selected hierarchy is in the plan's dimension catalog in plan options. Otherwise item level exceptions might be blank after running a plan.

5. On the Threshold tab:
    a. Select an operation.
    b. Define a threshold for the base measure, which can be defined based on a value or another measure.
6. On the Notification tab, define the notification attributes.
7. When done, click **Save and Close**.

## Exception Detail Section

In the Create Exception dialog box, the Level tab in the Exception Detail section is populated based on the base measure. The Level tab consists of dimension, hierarchy, and level.

For example, for the user-defined exception Fill Rate Shortfall Percentage, the details are populated based on the base measure Fill Rate Shortfall Percentage. As defined on the Threshold tab, the planning process generates this exception when the Fill Rate Shortfall percentage is greater than 10%.

For this exception, the populated dimensions are Organization and Product. You can select dimensions and their corresponding hierarchy and levels. In this example for the Product dimension, you can select either Item or Category as the level.

If you select the Item level, the planning process generates this exception for any item with the Fill Rate Shortfall Percentage of greater than 10% as defined in the Threshold tab. This case enables you to analyze the plan output in more detail. At the same time, the number of exceptions could be large enough that analyzing each exception might not be possible.

On the other hand, if you select the Category level, the planning process generates this exception for any category with the Fill Rate Shortfall Percentage of greater than 10%. In this case, the number of exceptions is lower than the item level scenario. But, potentially some issues that exists at the item level aren't visible since the planning process generates an exception only when the specified criterion holds at the category level.

*Related Topics*

- Overview of User-Defined Exceptions
- Overview of Plan Exceptions

# Configure Exceptions for Replenishment Planning

Create user-defined exceptions in Replenishment Planning by using the same process to configure measure-based exceptions covered in the Configure Measure-Based Exceptions topic. This topic details how to configure a specific exception for Replenishment Planning.

## Projected Fill Rate Less than 90 Percent

The fill rate is the fraction of customer demand that's met through immediate stock availability, without backorders or lost sales. The planning process generates the Projected Fill Rate Less than 90 Percent exception when the projected fill rate for an item and organization is below 90 percent.

Use these steps to configure a Projected Fill Rate Less than 90 Percent exception for a replenishment plan:

1. Navigate to the Tasks panel. In the Configuration section, click the **Configure Exceptions** link.
2. On the Configure Exceptions page, click **Actions** and then select **Create**.
3. In the Create Exceptions dialog box in the General Properties section, enter or select the following:

| Parameter | Value |
|---|---|
| Exception | Projected fill rate less than 90 percent |
| Display Name | Projected fill rate less than 90 percent |
| Exception Group | Replenishment Planning Exceptions |
| Base Measure | Projected Fill Rate |

4. On the Level tab, specify the dimension and its corresponding hierarchy and level.
5. On the Threshold tab, define the threshold for the base measure as Projected Fill Rate Less than 90%:
    - In the Operation field, select **Less than**.
    - In the Threshold field, select **Value** and then enter **90**.

*Related Topics*

- Configure Measure-Based Exceptions
- Overview of User-Defined Exceptions
- Overview of Plan Exceptions
- Configure Exception Thresholds

# Configure Exceptions Based on User-Defined Measures

You might have a scenario where you need to define a user-defined measure and then configure an exception based on that measure.

For example, you want to identify the items that have demands with a risk of not being satisfied, and the value of these demands are 10 percent more than their quarterly revenue.

## Step 1: Configure a User-Defined Measure

In our example, the first step is to define a user-defined measure that represents the percentage value of demands at risk. This percentage can be calculated as follows:

Demand at Risk Value Percentage = (Demand at Risk Value / Revenue) x 100

Use the following steps to configure a user-defined measure.

1. Navigate to the Tasks panel. In the Configuration section, click the **Manage Planning Measures** link.
2. On the Manage Planning Measures page, click **Actions** and then select **Create**.

3. In the Create Measure dialog box, enter or select the following:

| Parameter | Value |
|---|---|
| Measure | Demand at Risk Value Percentage |
| Description | Enter a description |
| Data Type | Percent |
| Enable in Work Area | Supply Planning |
| Measure Groups | Overall Plan Health |

4. On the Aggregation and Disaggregation tab in the Dimension Parameters section, select the **Customer** and **Demand Class** dimensions.
5. On the Expression tab, Functions subtab, define the Demand at Risk Value Percentage equation:

   Safe_Division (Demand at Risk Value, Revenue, null) * 100.
6. Click **Save and Close**.

## Step 2: Configure a User-Defined Exception

The next step is to configure a user-defined exception using Demand at Risk Value Percentage as the base measure.

1. Navigate to the Tasks panel. In the Configuration section, click the **Configure Exceptions** link.
2. On the Manage Planning Measures page, click **Actions** and then select **Create**.
3. In the Create Exceptions dialog box, in the General Properties section, enter or select the following:

| Parameter | Value |
|---|---|
| Exception | Demand at Risk Value over 10 Percent of Revenue |
| Display Name | Demand at Risk Value over 10 Percent of Revenue |
| Exception Group | Supply Planning Exceptions |
| Base Measure | Demand at Risk Value Percentage |

4. In the Exception Detail section, on the Level tab, specify the dimension and its corresponding hierarchy and level.
5. On the Threshold tab, define the threshold for the base measure as Demand at Risk Value Percentage Greater than 10%:

| Parameter | Value |
|---|---|
| Base Measure | Demand at Risk Value Percentage |
| Description | Demand at Risk Value Percentage |
| Operation | Greater than |
| Threshold Value | 10% |

6. Click **Save and Close**.

# Calculate User-Defined, Measure-Based Exceptions

After you modify, add, or delete one or more user-defined, measure-based exceptions in your plan's exception set, you can recalculate these exceptions independent of running the plan. These calculations are based on the current definitions of the exceptions and include any changes since the plan was last run.

This calculation is based on the current definition of exceptions that includes any changes since the plan was last run. By default, the process calculates all exceptions in the plan exception set. You can change the exception set parameters of the process to calculate a subset of those exceptions.

**Note:** The Calculate Measure-Based Exception process doesn't recalculate predefined order-based exceptions.

The Calculate Measure-Based Exception process is available from the Supply Planning, Demand Planning, Replenishment Planning, and Sales & Operations Planning work areas.
You can recalculate user-defined, measure-based exceptions from these pages:

- Scheduled processes: By default, scheduled process recalculates all exceptions in the exception set. However, you can also recalculate exceptions of a subset by changing the exception set parameters.
- Actions menu on the header of the open plan
- Actions menu on Manage Plans page

**Note:** The Calculate Measure Based Exception process and Plan Run process cannot run simultaneously for the same plan.

# 8 Segmentation

## Segmentation in Oracle Replenishment Planning

Segmentation is the process of grouping item-location combinations into segments on the basis of user-defined, static, or dynamic attributes. Through segmentation, you can better manage the replenishment requirements for many item-location combinations by grouping them into a few segments.

You do replenishment planning and forecasting and apply policy assignment sets by segment groups. You also view data in tables and graphs by segments.

You can also filter data in analysis sets by using segments as filters. Then, you can apply forecasting profiles to specific segments by selecting the associated analysis sets.

For example, you can perform segmentation by defining segment groups that are based on:

- Intermittency and volatility
- Demand volume and cost
- Item attributes for the Product and Organization dimensions
- User-defined attributes and organizations, regions, and zones

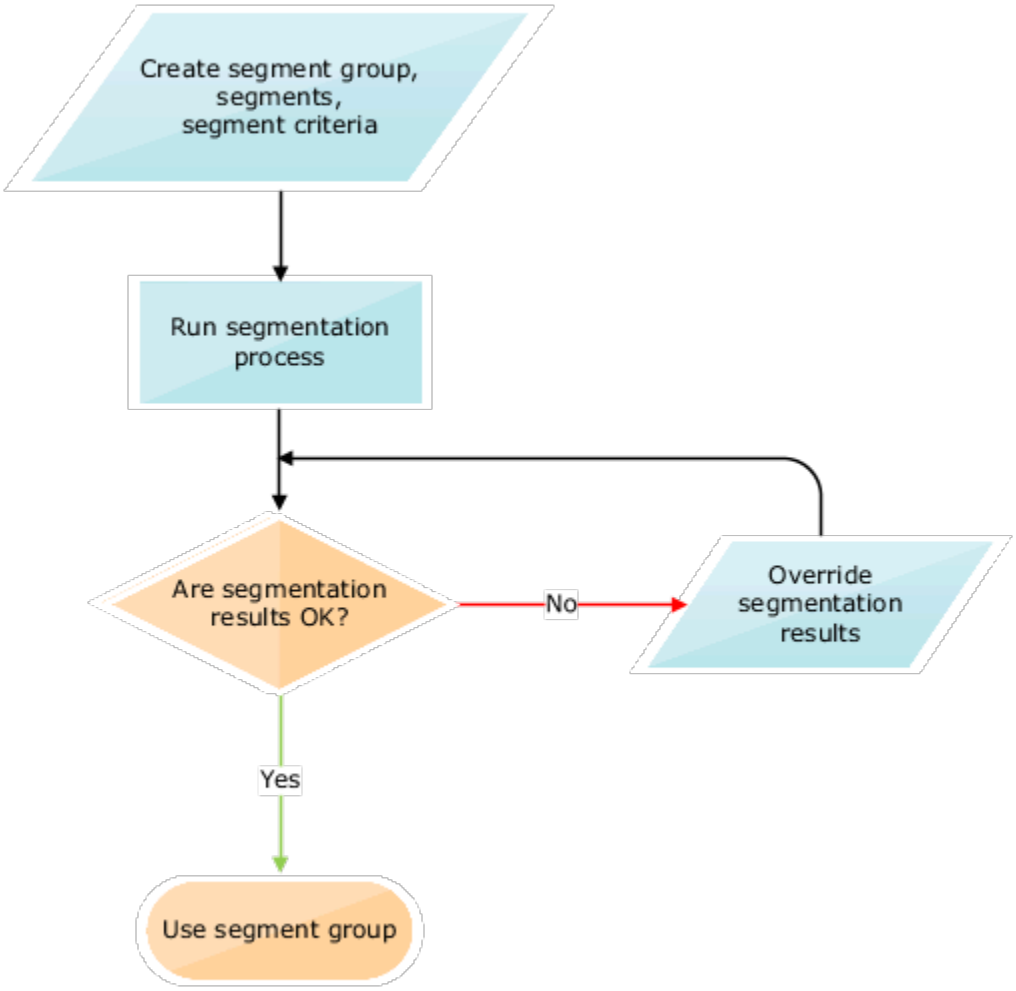
You collect the item-location combinations and associated attributes from Oracle Fusion Cloud Product Lifecycle Management. To restrict segmentation to items for which replenishment planning must be done, you first set the MPS and MRP Planning Method attribute of items to Replenishment planning in Oracle Product Lifecycle Management. Then, while setting up the criteria for segments of a segment group, you set the Planning Method attribute for the Product dimension to Replenishment planning. After segmentation, only replenishment planning items are grouped into the segments of the segment group. If you don't restrict the scope of segmentation, it happens for all item-location combinations collected from Oracle Product Lifecycle Management; however, the replenishment plans process only those item-location combinations for which the MPS and MRP Planning Method attribute is set in Oracle Product Lifecycle Management.

### How You Perform Segmentation

Here's what you do during the segmentation process:

1. Set up a segment group and its segments. The segment group has a specific granularity that's applicable to the segments. You specify dimension-based or measure-based criteria for each segment on the basis of which item-location combinations are assigned to the segment.
2. Run the segmentation job for the segment group from the Manage Segment Groups and Criteria page (**Actions** > **Execute Segmentation**).The item-location combinations are grouped into the segments.
3. View the results of segmentation, and optionally override the assignment of item-location combinations to segments to better meet your business requirements.

This flow chart summarizes the segmentation process:




When the segments are used as members for tables and graphs, for item-location combinations that aren't associated with a segment in the segment group, the segment information is shown as "Not available."

## What You Do After Segmentation

Here's what you do after the segmentation process:

1. Create a policy assignment set, and attach the segment group to the policy assignment set.
2. Attach the segment group to a replenishment plan.
3. Run the replenishment plan to calculate the unique replenishment requirements for the item-location combinations in each segment.

# Work with Segment Groups

## Create a Segment Group

A segment group consists of segments into which combinations are grouped. The segment group has a granularity that's also applicable to the segments. You define the segments on the basis of dimension-based or measure-based criteria.

- In the Replenishment Planning work area, the combinations consist of items and locations that are collected from Oracle Fusion Cloud Product Lifecycle Management.
- In the Supply Planning and Planning Central work areas, the combinations consist of items and locations that are collected from Oracle Product Lifecycle Management.
- In the Sales and Operations Planning work area, the combinations consist of items and locations that are collected from Oracle Product Lifecycle Management.
- In the Demand Management work area, the combinations could include both:
    - Items and locations that are collected from Oracle Product Lifecycle Management.
    - Customers and demand classes that are collected from Oracle Fusion Cloud Applications and external sources.

To create a segment group, you must:

1. Create the segment group.
2. Define the segments.
3. Define criteria for the segments.

To restrict segmentation to items for which replenishment planning must be done, you first set the MPS and MRP Planning Method attribute of items to Replenishment planning in Oracle Product Lifecycle Management. Then, while setting up criteria for segments of the segment group, you set the Planning Method attribute for the Product dimension to Replenishment planning. After collection and segmentation, only replenishment planning items are grouped into the segments of the segment group.

If you're planning replenishments at the item-subinventory level, select the Organization dimension for the segment group. Then, add the dimension to segments of the group, and use the Location attribute of the dimension to include subinventories in the segments. The subinventories are listed in the <organization>:<subinventory> format.

### Create the Segment Group

Follow these steps to create the segment group:

1. On the Tasks panel tab, under Plan Inputs, select **Manage Segment Groups and Criteria**.

   The Manage Segment Groups and Criteria page opens.
2. Under Search Results, click **Actions** > **Create**.

   The Create Segment Group page opens.
3. In **Segment Group**, enter the segment group name.

4. In **Source System**, select the source system for the segment group.
   The source system must be the same as that used in the plan to which you attach the segment group. Only the combinations in the selected source system are available after segmentation in the segment group.
5. In **Simulation Set**, select a simulation set for the segment group.
   If you plan to simulate changes to the same item attributes at the segment group and plan levels, preferably, use the same simulation set in both cases.
6. In **Description**, enter the segment group description.
7. Under Segment Granularity, in the **Dimension** column, select the dimension that you want to specify for the segment group granularity.
   The lowest levels for the selected dimensions are displayed in the **Level** column, and the displayed levels make up the segment group's granularity.
   Note the following:
   - For demand, demand and supply, sales and operations, and supply plans, only the predefined Customer, Demand Class, Organization, and Product dimensions are supported. You must select the Product dimension. If you select the Customer or Demand Class dimension, you must specify measure-based criteria for each segment.
   - For replenishment plans, you must select only the Organization and Product dimensions.
8. Add more dimensions as required by clicking the **Add Row** icon.
9. In **Catalog**, select the Oracle Product Lifecycle Management catalog from which you want to use categories while specifying the attributes for Product dimension-based criteria of segments in the group.
10. Click **Save**.

## Define the Segments

Follow these steps to create a segment in the segment group:

1. Under Segments, click the **Add Row** icon.
2. Enter the segment name and description.
3. Under **Rank**, accept the default number that's a multiple of 10 or enter a whole number that's unique for the segment group.
   During segmentation, if a combination meets the criteria for more than one segment, the combination is assigned to the segment with the lower rank.
4. Add more segments as required.
5. Click **Save**.

## Define Criteria for the Segments

Follow these steps to define criteria for segments:

1. Under Segments, select the segment for which you want to define criteria.
2. Under Segment Criteria, click the **Add Row** icon.
   A row appears for the segment criterion of the segment.
3. Set the criterion as follows:
   a. In the list under **Dimension**, if you want the criterion to be based on the selected dimensions for the segment group:
      i. Select a dimension.

The list under **Attribute** is enabled and displays the attributes for the selected dimension.

ii. In the list for attributes, select an attribute for the dimension.

If you selected the Product dimension, and you previously specified an Oracle Product Lifecycle Management catalog, the list includes Category as an attribute.

If you selected the Product dimension, you can select the attribute named Safety Stock Planning Method.

iii. In the list for operators, select the operator with which you want to evaluate the attribute.

Depending on your selection, fields or lists under **From Value** and **To Value** may be enabled, and dialog boxes may open.

iv. Specify the values for the attribute.

If you selected **Category** as an attribute, the categories for the selected Oracle Product Lifecycle Management catalog are displayed in the list under **From Value**.

If you selected **Safety Stock Planning Method** as an attribute, you can select **Safety stock quantity**, **Days of cover**, or **Not planned** in the list under **From Value**.

b. In the list under **Dimension**, if you want the criterion to be based on measures:

i. Select **Measure-based criteria**.

The Search and Select: Plans dialog box appears.

ii. In the Available Plans pane, in **Type**, specify the plan type.

iii. Click the **Find** icon.

The available plans are displayed. For Replenishment Planning, only those plans for which the **Generate forecast** check box is selected on the Plan Options page are displayed.

The plans should have been run and contain tables with the required measures. The tables should have only those dimensions and levels that are in the segment group.

iv. Select and move plans to the Selected Plans pane.

v. Click **OK** to return to the Create Segment Group page.

vi. In **Measure Evaluation Table**, select the table from which a measure should be selected for the segment criterion.

The tables associated with the selected demand or replenishment plans are available in the list.

vii. In **Measure Name**, select a measure.

viii. In **Operator**, select the operator with which you want to evaluate the measure value.

Depending on your selection, the **From Value** field, **To Value** field, or both are enabled.

ix. Specify the values for the measure.

4. Add more rows for segment criteria as required.

If you're adding rows, enter a whole number in the field under **Group** for each row. During segmentation, those rows with the same whole number are processed with the AND operator. Then, the resulting criteria are processed with the OR operator.

5. Click **Save**.

*Related Topics*

- How You Set Up Replenishment Planning for Subinventories

# Edit a Segment Group

You can edit and delete segment groups, segments, and segment criteria.

## Edit the Segment Group

You can duplicate, edit, and delete a segment group.

You can delete the segment group only if it's not associated with a policy assignment set or a plan for the work area.

The changes you can make to the segment group are limited. You can't change the name or source system for the segment group, and you can't change its granularity by adding or deleting dimensions.

Follow these steps to edit the segment group:

1. On the Tasks panel tab, under Plan Inputs, select **Manage Segment Groups and Criteria**.
   The Manage Segment Groups and Criteria page opens.
2. Search for the segment group that you want to edit.
3. Select the segment group, and click **Actions** > **Edit**.
   The Edit Segment Group page opens.
4. Change the description and simulation set as required.
   If you plan to simulate changes to the same item attributes at the segment group and plan levels, preferably, use the same simulation set in both cases.
5. In **Catalog**, select the catalog from Oracle Fusion Cloud Product Lifecycle Management from which you want to use categories while specifying the attributes for Product dimension-based criteria of segments in the group.
   If you previously selected a catalog and used one of its categories while setting up a Product dimension-based criterion, the list is grayed out.
6. Click **Save**.

## Edit the Segments

You can add, duplicate, and delete segments and change their names, descriptions, and ranks.

In the Replenishment Planning work area, you can delete segments only if the segment group isn't associated with a policy assignment set or replenishment plan. In the Supply Planning work area, you can delete the segment group only if it's not associated with a policy assignment set or supply plan. In the Sales and Operations Planning work area, you can delete the segment group only if it's not associated with a plan.

If you change the rank of a segment, you may change how combinations are assigned to segments after you run segmentation again. During segmentation, if a combination meets the criteria for more than one segment, the combination is assigned to the segment with the lower rank.

## Edit the Segment Criteria

You can add, edit, and delete criteria for a segment.

For dimension-based criteria, you can change the attributes, operators, and values. For measure-based criteria, you can change the plans, measure evaluation tables, measures, operators, and values.

Depending on the operator used for a criterion, you can change the values under **From Value**, **To Value**, or both.

If you change the value under **Group** for the criterion, you may affect the segmentation result. During segmentation, those criteria with the same whole number are processed with the AND operator. Then, the resulting criteria are processed with the OR operator.

# Run Segmentation

You can run segmentation for a segment group from the Manage Segment Groups and Criteria page.

Follow these steps to run segmentation for the segment group:

1. On the Tasks panel tab, under Plan Inputs, select **Manage Segment Groups and Criteria**.

   The Manage Segment Groups and Criteria page opens.
2. Search for the segment group for which you want to run segmentation.
3. Select the segment group, and click **Actions** > **Execute Segmentation**.

   The Execute Segmentation dialog box opens.
4. To retain your segment overrides, select **Retain segment overrides**.

   To save your last segmentation result for display on the Segmentation Summary page, select **Save the last segmentation result**. When you select this check box, the results of the last segmentation run are displayed under the Previous heading on the Segmentation Summary page, and the results of the segmentation run you are presently submitting are displayed under the Latest heading.

   > **Tip:** If you're performing simulations, you may want to repeatedly make changes to your segmentation criteria and run segmentation so that you can compare the results of your changes with the results of the last segmentation run, which are displayed under the Latest heading on the Segmentation Summary page. In such cases, you don't want to select this check box. When you have finished your simulations and are satisfied with the results of your changes, then select this check box.
5. Click **Submit**.

   The Information dialog box opens and provides you with the request number (process ID) of the segmentation run. You can use this request number to search for the process status and log on the Scheduled Processes page. If the segmentation run fails, see the log for more information and troubleshooting.
6. Click **OK**.

   The Information dialog box closes.
7. On the Manage Segment Groups and Criteria page, click **View** > **Refresh** to update the status and last run date of segmentation for the segment group.

# View the Segmentation Summary

You can view segmentation results on the Segmentation Summary page. The results of the latest and previous segmentation runs are displayed.

A segment group consists of segments into which combinations are grouped.

- In the Replenishment Planning work area, the combinations consist of items and locations that are collected from Oracle Fusion Cloud Product Lifecycle Management.
- In the Supply Planning and Planning Central work areas, the combinations also consist of items and locations that are collected from Oracle Fusion Cloud Product Lifecycle Management.
- In the Sales and Operations work area, the combinations consist of items and locations that are collected from Oracle Fusion Cloud Product Lifecycle Management.
- In the Demand Management work area, the combinations could include both:
    - Items and locations that are collected from Oracle Fusion Cloud Product Lifecycle Management.
    - Customers and demand classes that are collected from Oracle Fusion Cloud Applications and external sources.

## View the Summary

Follow this procedure to view the segmentation summary for a segment group:

1. Perform one of these steps:
    - On the Tasks panel tab, under Plan Inputs, select **View Segmentation Summary**.

      The Segmentation Summary page opens.
    - On the Manage Segment Groups and Criteria page, select a segment group, and click **Actions** > **View Segmentation Summary**.

      The Segmentation Summary page opens.
2. In **Segment Group**, select the segment group for which you want to view the segmentation summary.

   The page is refreshed with the segmentation summary for the segment group. The results of the latest and previous segmentation runs are displayed, along with other details of the combinations for each segment.

   You can click a number for a segment under a column to open the Manage Segment Members page and view the combinations that meet the criteria for the number that you clicked. If you perform any overrides on the Manage Segment Members page, the changes are immediately reflected on the Segmentation Summary page.

   If you opened the segmentation summary from the Manage Segment Groups and Criteria page, the field is grayed out, and you can view segmentation results for only the segment group you selected on the page.
3. Click **Done** to close the Segmentation Summary page.

## Points to Note About Displayed Information

Note these points about the information displayed on the Segmentation Summary page:

- You can use the latest and previous results to understand how and why combinations have moved from one segment to another. These movements happen because of changes in demands, sales, and consumption. By identifying the factors underlying these movements, you can fine-tune the segmentation process and apply manual overrides as required.
- Every time you run segmentation with the **Save the last segmentation result** check box selected in the Execute Segmentation dialog box, the latest results presently displayed on the Segmentation Summary page are displayed as the previous results, and the results of the job you just submitted are displayed as the latest results. Your manual overrides remain unaffected so long as you selected the **Retain segment overrides** check box in the Execute Segmentation dialog box.
- If you have run segmentation for the first time for the segment group, the previous results aren't displayed.
- No previous results are displayed for a segment that's added during the latest segmentation run.
- The values under the **Latest Count**, **Previous Count**, **Added in Latest Run**, and **Removed in Latest Run** columns don't include your manual overrides.

# Override Segmentation Results

You can override segmentation results by manually assigning combinations to segments.

- In the Replenishment Planning work area, the combinations consist of items and locations that are collected from Oracle Fusion Cloud Product Lifecycle Management.
- In the Supply Planning and Planning Central work areas, the combinations also consist of items and locations that are collected from Oracle Fusion Cloud Product Lifecycle Management.
- In the Supply Planning and Planning Central work areas, the combinations also consist of items and locations that are collected from Oracle Fusion Cloud Product Lifecycle Management.
- In the Demand Management work area, the combinations could include both:
    - Items and locations that are collected from Oracle Fusion Cloud Product Lifecycle Management.
    - Customers and demand classes that are collected from Oracle Fusion Cloud Applications and external sources.

In the case of Replenishment Planning, the combinations consist of items and locations that are collected from Oracle Fusion Product Lifecycle Management. In the case of Demand Management, the combinations could also include customers and demand classes that are collected from Oracle Fusion Cloud Applications and external sources.

You can override segmentation results using the:

- Manage Segment Members page
- Edit-in-spreadsheet feature

Changes you make to the segments for combinations are overwritten the next time you run segmentation for the segment group unless you have selected the **Retain segment overrides** check box in the Execute Segmentation dialog box.

# Override Segmentation Results Using the GUI

To override segmentation results through the Manage Segment Members page, follow this procedure:

1. Perform one of these steps:
    - On the Tasks panel tab, under Plan Inputs, select **Manage Segment Members**.

      The Manage Segment Members page opens.
    - On the Manage Segment Groups and Criteria page, select a segment group, and click **Actions** > **Manage Segment Members**.

      The Manage Segment Members page opens and displays the combinations for the segment group.
    - On the Segmentation Summary page, for the segment of a segment group, click the number under **Latest Count**, **Previous Count**, **Added in Latest Run**, **Removed in Latest Run**, **Manually Added to Segment**, **Manually Removed from Segment**, or **Final Count**.

      The Manage Segment Members page opens and displays the combinations corresponding to the number you clicked.
2. On the Manage Segment Members page, under Search, select the segment group for which you want to override the segmentation results, and click **Search**. You can further refine your search by the segment, previous segment, and levels for the dimensions in the segment group.

   The page is refreshed with the segmentation results. For each combination, the assigned segment in the latest segmentation run, assigned segment in the previous segmentation run, and segment override are displayed.
3. For each combination for which you want to override the segmentation results, under **Segment Override**, select the new segment.
4. Click **Save and Close**.

# Override Segmentation Results Using a Spreadsheet

To override segmentation results through the edit-in-spreadsheet feature, follow this procedure:

> **Note:** You must first download and install the desktop integration installer that's available under **Navigator** > **Tools**. Otherwise, you can't override segmentation results using a spreadsheet.

1. Perform one of these steps:
    - On the Tasks panel tab, under Plan Inputs, select **Manage Segment Members**.

      The Manage Segment Members page opens.
    - On the Manage Segment Groups and Criteria page, select a segment group, and click **Actions** > **Manage Segment Members**.

      The Manage Segment Members page opens and displays the combinations for the segment group.
    - On the Segmentation Summary page, for the segment of a segment group, click the number under **Latest Count**, **Previous Count**, **Added in Latest Run**, **Removed in Latest Run**, **Manually Added to Segment**, **Manually Removed from Segment**, or **Final Count**.

      The Manage Segment Members page opens and displays the combinations corresponding to the number you clicked.

2. On the Manage Segment Members page, under Search, select the segment group for which you want to override the segmentation results, and click **Search**.

   The page refreshes with the segmentation results.
3. Under Search Results, click **Edit in Spreadsheet**.

   A dialog box opens and prompts you to open or save a Microsoft Excel file.
4. Open the spreadsheet.

   The Connect dialog box opens and prompts you to connect to the application URL.
5. Click **Yes**.

   A dialog box opens and prompts you to enter your credentials.
6. Sign in with your Oracle Applications Cloud credentials.

   The spreadsheet is refreshed with the combinations in the segment group displayed on the Manage Segment Members page. For each combination, the assigned segment in the latest segmentation run, assigned segment in the previous segmentation run, and segment override are displayed. Only the first 2,000 rows are displayed.
7. To narrow your search to a combination in the segment group, enter the details in the first table, and click **Manage Segment Members** > **Search**.

   You can use the percent sign as a wildcard character for your search.
8. For each combination for which you want to override the segmentation results, under the Segment Override column, select the new segment.

   A symbol appears in the cell under the Changed column for each changed row.
9. To upload your changes, click **Manage Segment Members** > **Upload**.

   The results of the upload for each row are displayed under the Status column.

   The symbol in the cell under the Changed column disappears for each successfully uploaded row.
10. Save and close the spreadsheet.
11. To view your changes on the Manage Segment Members page, click **View** > **Refresh**.

# 9 Policy Assignment Sets and Policy Parameter Calculation

## Policy Assignment Sets

A policy assignment set is a group of policy parameters that are defined for each segment of a segment group.

Policies are calculated for item-location combinations on the basis of these policy parameters. The policy assignment set can also contain policy overrides for segments and item-location combinations.

The policy assignment set is attached to a segment group. You can define multiple policy assignment sets for the segment group. However, you can specify only one policy assignment set for the segment group on the Scope tab on the Plan Options page in a replenishment plan.

The policy assignment set consists of the following:

- Policy parameters
- Default policy parameters
- Policy parameter overrides
- Item-location level policy overrides

**Note:** For end item substitution and supersession chains, the start and end dates of item revisions aren't considered during policy computation. Consequently, policies are calculated even for time buckets for which the item revisions aren't active.

### Policy Parameters

You define policy parameters at the segment level.

This table lists the policy types that you can specify:

| Policy Type | Method for Calculation of Quantities | How the Policy Type Is Used |
|---|---|---|
| Min-max planning | The following is the formula for calculation of the minimum quantity: Demand During Lead Time + Safety Stock,<br><br>where Demand During Lead Time = Total Lead Time * Average Daily Demand<br><br>and Total Lead Time = Preprocessing Lead Time + Processing Lead Time + Postprocessing Lead Time + Transit Time for a buy order or Preprocessing Lead Time + Postprocessing Lead Time + Transit Time for a transfer order<br><br>The safety stock and average daily demand are calculated as discussed later in this guide. | When the Beginning Inventory Position measure (Projected Available Balance + On Order measures) equals or falls below the minimum quantity, a replenishment order is triggered.<br><br>The quantity of the replenishment order is what's required to bring the inventory up to the maximum quantity (provided by Maximum Quantity - (Projected Available Balance + On Order)). |

| Policy Type | Method for Calculation of Quantities | How the Policy Type Is Used |
|---|---|---|
| | The maximum quantity is calculated as specified later in this topic. | |
| Fixed order cycle | The maximum quantity is calculated as specified later in this topic. | The replenishment orders are placed on only those days on which suppliers can take orders, according to the associated fixed order cycle calendar.<br><br>When the Beginning Inventory Position measure (Projected Available Balance + On Order measures) falls below the maximum quantity, a replenishment order is triggered.<br><br>The quantity of the replenishment order is what's required to bring the inventory up to the maximum quantity (provided by Maximum Quantity - (Projected Available Balance + On Order)). |
| Reorder point (ROP) and order quantity | The following is the formula for calculation of the ROP: Demand During Lead Time + Safety Stock,<br><br>where Demand During Lead Time = Total Lead Time * Average Daily Demand<br><br>and Total Lead Time = Preprocessing Lead Time + Processing Lead Time + Postprocessing Lead Time + Transit Time for a buy order or Preprocessing Lead Time + Postprocessing Lead Time + Transit Time for a transfer order<br><br>The average daily demand and safety stock are calculated as discussed later in this guide.<br><br>The order quantity is taken for the item-location combination from the **Fixed Order Quantity** column of the Items table. If this value is unavailable, the default order quantity specified at the segment level in the policy assignment set is used.<br><br>Therefore, for this policy type, the fixed order quantity should be correctly defined at the item level. | When the Beginning Inventory Position measure (Projected Available Balance + On Order measures) equals or falls below the ROP, a replenishment order is triggered.<br><br>The quantity of the replenishment order is the order quantity.<br><br>If the fixed order quantity isn't defined in the Items table or the default order quantity isn't defined at the segment level in the policy assignment set, replenishment orders are created to bring the inventory to the ROP level. If the inventory is zero, no replenishments are created. |
| ROP and economic order quantity (EOQ) | The following is the formula for calculation of the ROP: Demand During Lead Time + Safety Stock,<br><br>where Demand During Lead Time = Total Lead Time * Average Daily Demand<br><br>and Total Lead Time = Preprocessing Lead Time + Processing Lead Time + Postprocessing Lead Time + Transit Time for a buy order or Preprocessing Lead Time + Postprocessing Lead Time + Transit Time for a transfer order | When the Beginning Inventory Position measure (Projected Available Balance + On Order measures) equals or falls below the ROP, a replenishment order is triggered.<br><br>The quantity of the replenishment order is the EOQ.<br><br>If the EOQ can't be calculated at the item-location level or the default EOQ isn't defined at the segment level in the policy assignment set, replenishment orders are created to bring the inventory to the ROP level. If the inventory is zero, no replenishments are created. |

| Policy Type | Method for Calculation of Quantities | How the Policy Type Is Used |
|---|---|---|
| | The average daily demand, safety stock, and EOQ are calculated as discussed later in this guide.<br><br>Therefore, for this policy type, the EOQ should be correctly calculated. | |

You specify whether you want to calculate safety stock on the basis of the days of cover or service level.

By specifying Units as the unit of measure (UOM), you ensure that the policies are static. By specifying Days as the UOM, you ensure that the policies are time-phased.

You determine whether the average daily demand should be calculated on the basis of the forecast or history.

You calculate the maximum quantity on the basis of these methods:

- Days of cover: The average daily demand is multiplied by the maximum quantity days of cover specified in the policy assignment set.
- Minimum plus order quantity: The minimum quantity is added to the order quantity, which is taken for an item-location combination from the **Fixed Order Quantity** column of the Items table. If this value is unavailable, the default order quantity specified at the segment level in the policy assignment set is used.
- Minimum plus EOQ: The minimum quantity is added to the EOQ.

## Default Policy Parameters

You define these default policy parameters at the segment level:

- Default daily demand: This value is used when forecast or history data is unavailable at the item-location level for the calculation of the average daily demand.
- Default order quantity
- Default EOQ: If you specify this default, the default standard cost, default carrying cost percentage, and default ordering cost can't be specified.
- Default standard cost
- Default carrying cost percentage
- Default ordering cost

The default order quantity, default standard cost, default carrying cost percentage, and default ordering cost are used when the corresponding values are unavailable for the item-location combination in the Items table.

## Policy Parameter Overrides

You define these policy parameter overrides at the segment level:

- Safety stock override
- Order quantity override
- Minimum override: If this value is specified, the safety stock isn't calculated, and no value is shown for the safety stock in tables.
- EOQ override

- Maximum override
- ROP override: If this value is specified, the safety stock isn't calculated, and no value is shown for the safety stock in tables.

Use policy parameter overrides when all item-location combinations in a segment must have the same policy values. When these overrides are specified, policies aren't calculated for the item-location combinations of the segment.

## Item-Location Level Policy Overrides

You define overrides at the level of individual item-location combinations, and these settings take precedence over those for the segments to which the item-location combinations belong:

- Policy type
- Policy UOM
- Safety stock override
- Minimum override: If this value is specified, the safety stock isn't calculated, and no value is shown for the safety stock in tables.
- Maximum override
- ROP override: If this value is specified, the safety stock isn't calculated, and no value is shown for the safety stock in tables.
- Order quantity override
- EOQ override
- Fixed order cycle calendar

Use these policy overrides when you know what values you need for item-location combinations in your business, and you want to generate replenishment orders on the basis of these values. When these overrides are specified, inventory policies aren't calculated for the corresponding item-location combinations.

## Hierarchy for Reading Policy Overrides and Item Attributes

The following hierarchy explains how policy overrides and item attributes are read during the policy calculation process:

1. If policy overrides are specified for item-location combinations, these values are used as the policies, and policies aren't calculated for these item-location combinations.
2. If policy overrides are specified for segments, these values are used as the policies for all the item-location combinations in the segments, and policies aren't calculated for these item-location combinations.
3. If a simulation set is assigned to the replenishment plan to which the policy assignment set is attached, the item attributes for item-location combinations are taken from the simulation set.
4. If values are unavailable in the simulation set, the collected item attributes are taken.
5. If item attributes are unavailable in the Items table, the default values specified at the segment level in the policy assignment set are used.

*Related Topics*

- How Lead Time Is Calculated for Buy Orders and Transfer Orders

# How You Use Policy Assignment Sets

The following is the process for using policy assignment sets in the Replenishment Planning work area:

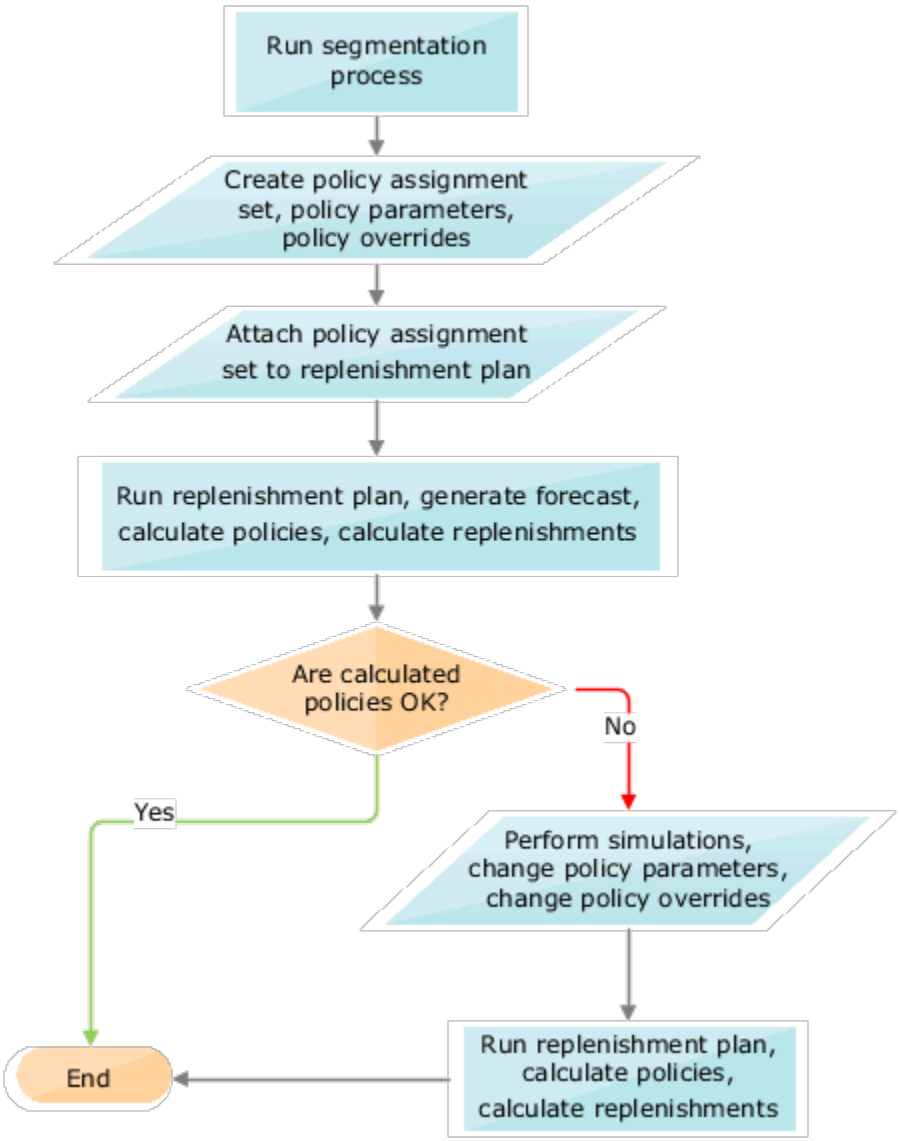
1. Perform the segmentation process.
2. Create a policy assignment set, and define the policy parameters for segments and policy overrides for item-location combinations.
3. Attach the policy assignment set to a replenishment plan.
4. Run the replenishment plan.

   Generate the forecast, calculate the policy parameters, and calculate the replenishments. Refresh the plan with the current, collected data.
5. Review the calculated policies.
6. If the calculated policies aren't satisfactory, follow these steps:

   a. Perform simulations, and make changes to the policy parameters for segments or policy overrides for item-location combinations
   b. Run the replenishment plan again.

      Calculate the policy parameters and replenishments, and don't refresh the measures with current data.

The following is the flow chart for using policy assignment sets:




# How Average Daily Demand Is Calculated in Oracle Replenishment Planning

This topic explains how average daily demand is calculated in Oracle Replenishment Planning.

## Settings That Affect Average Daily Demand

The following settings affect the calculation of the average daily demand:

- Whether the history or forecast is to be considered

- Whether policy parameters or segment-level defaults have been defined in the policy assignment set for a replenishment plan

## How Average Daily Demand Is Calculated

How average daily demand for an item-location combination is calculated depends on whether you selected **History** or **Forecast** in the **Days of Cover Basis** field on the Policy Parameters subtab for the policy assignment set.

| Selection in Days of Cover Basis Field | Calculation of Average Daily Demand | Example |
|---|---|---|
| History | These steps are taken:<br>1. The value in the **Horizon for Average Daily Demand** field on the Policy Parameters subtab is read.<br>The working days in the calendar are considered. If there's no attached calendar, all days are considered.<br>2. The MSC_DFLT_SHIPMENT_HIST_MEASURE profile is used for determining which shipment history measure must be used for the history data.<br>The shipment history is collected or uploaded through a CSV file.<br>If the history is unavailable, the default daily demand defined at the segment level is used.<br>3. The shipment history is divided by the number of days.<br>4. The result of Step 3 is multiplied by the value entered in the **Extrapolation Percentage** field on the Policy Parameters subtab.<br>5. The results of Steps 3 and 4 are added for the calculation of the average daily demand. | The horizon for the average daily demand is 30, and the calendar is open on all days.<br>The shipment history is 600.<br>The extrapolation percentage is 15.<br>This calculation provides the average daily demand: 600/30 + 15% of (600/30) = 20 + 3 = 23 |
| Forecast | These steps are taken:<br>1. The gross forecast is read.<br>The source of the gross forecast can be one of the following:<br>o A demand plan<br>o A replenishment plan for which the **Generate forecast** check box is selected on the Plan Options page<br>o An external forecast<br>o The value in the **Default Daily Demand** field on the Default Policy Parameters subtab, if the other forecast sources are unavailable | The gross forecast for the next 20 days is 500.<br>The number of days is 20, and the calendar is open on all days.<br>This calculation provides the average daily demand: 500/20 = 25 |

| Selection in Days of Cover Basis Field | Calculation of Average Daily Demand | Example |
|---|---|---|
| | 2. The number of days is identified. The gross forecast is considered during these days.<br><br>The value in the **Horizon for Average Daily Demand** field on the Policy Parameters subtab is read.<br><br>The working days in the calendar are considered. If there's no attached calendar, all days are considered. Only those days within the planning horizon of the replenishment plan are considered.<br>3. The gross forecast is divided by the number of days for the calculation of the average daily demand. | |

# How EOQ Is Calculated in Oracle Replenishment Planning

The economic order quantity (EOQ) is the optimal quantity that should be ordered so that inventory holding and ordering costs are minimized.

In a replenishment plan, you can use the reorder point (ROP) and EOQ policy type to calculate replenishments on the basis of the EOQ.

## Settings That Affect EOQ

The following settings affect the EOQ calculation:

- Whether information is present for an item-location combination in the Items table
- Whether segment-level defaults have been defined in the policy assignment set for the replenishment plan

## How EOQ Is Calculated

The following formula provides the EOQ:

$$EOQ = \sqrt{\frac{2CD}{H}}$$

| Equation Variable | Description |
|---|---|
| C | Fixed cost per order defined at the item-location level<br><br>The value of C is read as follows: |

| Equation Variable | Description |
|---|---|
| | 1. If the value is present for the item-location combination in the Order Cost column of the Items table, it's used for calculating the EOQ.<br>2. If the value isn't present for the item-location combination in the Order Cost column, the default ordering cost defined for the segment in the policy assignment set is used for calculating the EOQ.<br>3. If the value isn't present for the item-location combination in the Order Cost column, and the default EOQ is specified in the policy assignment set, the default EOQ is used. |
| H | Annual carrying cost per item-location combination, which is provided by this calculation: Carrying Cost Percentage * Standard Cost<br><br>The value of H is read as follows:<br><br>1. If the carrying cost percentage isn't present for the item-location combination in the Annual Carrying Cost Percentage column of the Items table, the default carrying cost percentage defined for the segment in the policy assignment set is used for calculating the EOQ.<br>2. If the standard cost isn't present for the item-location combination in the Standard Cost column of the Items table, the default standard cost defined for the segment in the policy assignment set is used for calculating the EOQ.<br>3. If the values aren't present for the item-location combination, and the default EOQ is specified in the policy assignment set, the default EOQ is used. |
| D | Annual demand for the item-location combination, which is provided by this calculation: Average Daily Demand * Total Number of Working Days in a Year |

# How Safety Stock Is Calculated in Oracle Replenishment Planning

You affect how safety stock is calculated during replenishment planning through selections in the policy assignment set for your replenishment plan.

## How Safety Stock Is Calculated

How safety stock for an item-location combination is calculated depends on whether you selected **Days of cover** or **Service level-based** in the **Safety Stock Calculation** field on the Policy Parameters subtab for the policy assignment set.

- If you selected **Days of cover**, the following calculation is done: Safety Stock = Average Daily Demand * Days of Cover

  The days of cover are taken from the **Safety Stock Days of Cover** field on the Policy Parameters subtab.

  For example, the average daily demand is 30, and the days of cover is 3. The safety stock is 90, which is 30 * 3.

- If you selected **Service-level based**, and the demand isn't intermittent, a normal distribution formula is used. These inputs affect the formula's result:
  - Target service level percentage. If this value isn't present in the **Service Level Percentage** column of the Items table, it's taken from the **Target Service Level Percentage** field on the Policy Parameters subtab.
  - Mean average percentage error (MAPE), which is taken from the demand plan, replenishment plan, or external demand schedule that's used as the demand schedule for the replenishment plan
  - Average daily demand
  - Replenishment lead time, which is calculated as follows:
    - For a buy order, the lead time is the total of the preprocessing, processing, and postprocessing lead times and the transit time.
    - For a transfer order, the lead time is the total of the preprocessing and postprocessing lead times and the transit time.
- If you selected **Service level-based**, and the demand is intermittent, a Poisson distribution formula is used. These inputs affect the formula's result:
  - Number of demands during the replenishment lead time
  - Target service level percentage. If this value isn't present in the **Service Level Percentage** column of the Items table, it's taken from the **Target Service Level Percentage** field on the Policy Parameters subtab.

*Related Topics*

- How Lead Time Is Calculated for Buy Orders and Transfer Orders

# How You Upload Externally Calculated Safety Stock

If you're computing safety stock in a third-party application, you can upload the computed quantities for use in policy parameter calculations by your replenishment plan.

By uploading these computed quantities, you can better align Oracle Replenishment Planning with your other planning and execution systems.

You can upload externally calculated safety stock quantities using the file-based data import (FBDI) template for supply chain planning safety stock levels.

You can view the uploaded safety stock for item-location combinations in the Safety Stock Quantity column of the Items table. However, you can't edit this quantity in the table or simulation sets.

Note these points about uploading safety stock quantities and how they're used:

- You can upload safety stock quantities for only item-organization combinations.
  You can't upload safety stock quantities for item-subinventory combinations.
- You can upload safety stock quantities in only units.
  If the unit of measure (UOM) is days for the segment that's associated with the item-location combinations, the uploaded safety stock is ignored for those item-location combinations, and the safety stock is calculated by Replenishment Planning.

- If you upload time-phased safety stock quantities, the quantity for which the effective date is on or before the plan run date and that's closest to the plan run date is used.
- The uploaded safety stock quantity is used if it's available for an item-location combination.

  Otherwise, the safety stock is calculated by Replenishment Planning.
- The safety stock override you specify at the item-location level in the policy assignment set is used even when the externally calculated safety stock is available.

  However, any safety stock override you specify at the segment level in the policy assignment set is ignored when the externally calculated safety stock is available, and the uploaded value is used in policy parameter calculations.
- When you simulate changes to policy parameters, the externally calculated safety stock is considered for item-location combinations.

*Related Topics*

- How Safety Stock Is Calculated in Oracle Replenishment Planning

# Static Policies or Time-Phased Policies in Oracle Replenishment Planning

The unit of measure (UOM) you select for a policy assignment set at the segment or item-location level determines whether the policies are static or time-phased.

If you selected Units as the UOM, the policies are static. If you selected Days, the policies are time-phased.

In static policies, the values of measures don't vary from day to day. In time-phased policies, these measure values can vary from day to day.

Use static policies when the total demand doesn't drastically change from day to day, and use time-phased policies when the total demand can vary from day to day.

If required, you can override the values of these measures for a replenishment plan by using these tables:

- Manage Policy Parameters by Item: Use this table when you want to change the measure values for all days.
- Replenishment Workbench: Use this table when you want to change the measure values for specific days.

## Static Policies

This table illustrates how static policies are calculated:

| Measure | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 | Day 10 | Day 11 | Day 12 | Day 13 | Day 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Minimum Quantity | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| Adjusted Minimum Quantity | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |

| Measure | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 | Day 10 | Day 11 | Day 12 | Day 13 | Day 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | |
| Final Minimum Quantity | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| Maximum Quantity | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 |
| Adjusted Maximum Quantity | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| Final Maximum Quantity | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |

This table depicts the calculation of static policies for a replenishment plan with a planning horizon of 14 days.

The minimum quantity is calculated by the following formula: Demand During Lead Time + Safety Stock, where Demand During Lead Time = Total Lead Time * Average Daily Demand. For a buy order, the total lead time is the sum of the preprocessing, processing, and postprocessing lead times and transit time. For a transfer order, the total lead time is the sum of the preprocessing and postprocessing lead times and transit time.

The maximum quantity is calculated through the days of cover, minimum plus order quantity, or minimum plus economic order quantity (EOQ) method.

## Time-Phased Policies

This table illustrates how time-phased policies are calculated:

| Measure | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 | Day 10 | Day 11 | Day 12 | Day 13 | Day 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Demand | 10 | 10 | 10 | 15 | 15 | 15 | 20 | 20 | 20 | 10 | 10 | 10 | 15 | 15 |
| Minimum Days | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Maximum Days | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| Minimum Quantity (Time-Phased Value) | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 50 | 40 | 30 | 35 | 40 | 40 | 40 |

| Measure | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 | Day 10 | Day 11 | Day 12 | Day 13 | Day 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Adjusted Minimum Quantity | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Final Minimum Quantity (Time-Phased Value) | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 50 | 40 | 30 | 35 | 40 | 40 | 40 |
| Maximum Quantity (Time-Phased Value) | 75 | 85 | 95 | 105 | 100 | 95 | 90 | 85 | 80 | 80 | 80 | 80 | 80 | 80 |
| Adjusted Maximum Quantity | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Final Maximum Quantity (Time-Phased Value) | 75 | 85 | 95 | 105 | 100 | 95 | 90 | 85 | 80 | 80 | 80 | 80 | 80 | 80 |

This table depicts the calculation of time-phased policies for a replenishment plan with a planning horizon of 14 days.

The total demand is calculated according to the forecast processing logic.

The formula for the calculation of the minimum days is Minimum Quantity (static value)/Average Daily Demand. The formula for calculation of the maximum days is Maximum Quantity (static value)/Average Daily Demand.

The formulas for the calculation of the static values of the minimum and maximum quantities are the same as those used for static policies.

For the calculation of the time-phased minimum quantity for Day X, the minimum days are considered, and the total demand is summed up starting from Day X for the minimum days. If the number of days left in the planning horizon is less than the minimum days on Day X, the previous day's time-phased minimum quantity is used. For the calculation of the time-phased maximum quantity for Day X, the maximum days are considered, and the total demand is summed up starting from Day X for the maximum days. If the number of days left in the planning horizon is less than the maximum days on Day X, the previous day's time-phased maximum quantity is used.

*Related Topics*

- How Lead Time Is Calculated for Buy Orders and Transfer Orders

# Work With Policy Assignment Sets

## Create a Policy Assignment Set

This topic explains how you can create a policy assignment set in the Replenishment Planning work area.

To create the policy assignment set, you perform these steps:

1. Name the policy assignment set, and associate it with a segment group.
2. Add segments, and define the following for their item-location combinations:
    a. Policy parameters
    b. Default policy parameters
    c. Policy parameter overrides
3. Define policy overrides for specific item-location combinations.

### Name the Policy Assignment Set and Associate It with a Segment Group

Follow these steps to name the policy assignment set and associate it with a segment group:

1. On the Tasks panel tab, under Plan Inputs, select **Manage Policy Assignment Sets**.

    The Manage Policy Assignment Sets page opens.
2. Under Search Results, on the toolbar, click **Create**.

    The Create Policy Assignment Set dialog box opens.
3. Enter the name and description of the policy assignment set.
4. In **Segment Group**, select the segment group to which the policy assignment set should be attached.

    Only those segment groups for which the segmentation process has been successfully run are available for selection. The segment groups that use the Customer or Demand Class dimension aren't displayed.
5. Click **Save**.

### Define Policy Parameters

Follow these steps to define policy parameters for a segment:

1. On the Segment-Level Policy Parameters Assignment tab, on the toolbar, click **Add Row**.

    A row appears underneath the toolbar.
2. In the list under **Segment**, select a segment of the segment group.
3. On the Policy Parameters subtab, under Replenishment Policy, in **Policy Type**, select the policy type for the segment.
4. In **Policy UOM**, select the unit of measure (UOM) for the policy type.

    The policy parameters are calculated based on the UOM.
5. In **Fixed Order Cycle Calendar**, select a calendar for the policy type.

    This list is enabled when you select **Fixed order cycle** in the **Policy Type** list.
6. Under Safety Stock, in **Safety Stock Calculation**, select the method for safety stock calculation.

7. In **Safety Stock Days of Cover**, enter the number of days to be covered by the safety stock.

   This field is enabled when you select **Days of cover** in the **Safety Stock Calculation** list.
8. In **Days of Cover Basis**, select whether the average daily demand should be calculated based on the history or forecast.

   > **Note:** Preferably, for bidirectional supersession chains, select **Forecast**.
9. In **Horizon for Average Daily Demand**, enter the number of days of the history or forecast for which the daily demand is averaged.
10. In **Extrapolation Percentage**, enter the value by which the average demand should be increased.

    This field is enabled when you select **History** in the **Days of Cover Basis** list.
11. In **Target Service Level Percentage**, enter the value for calculation of the safety stock.

    This field is enabled when you select **Service level-based** in the **Safety Stock Calculation** list.
12. Under Maximum Quantity, in **Maximum Quantity Calculation Method**, select the method for calculation of the maximum quantity.

    This list is enabled when you select **Min-max planning** or **Fixed order cycle** in the **Policy Type** list.
13. In **Maximum Quantity Days of Cover**, enter the number of days for which the maximum quantity must be held.

    This list is enabled when you select **Days of cover** in the **Maximum Quantity Calculation Method** list.
14. Repeat Steps 1 through 13 for other segments.
15. Click **Save**.

## Define Default Policy Parameters

Follow these steps to define default policy parameters for item-location combinations in a segment:

1. On the Segment-Level Policy Parameters Assignment tab, under the toolbar, select a segment.
2. On the Default Policy Parameters subtab, in **Default Daily Demand**, enter the default value for the daily demand.

   This value is used if history or forecast data is unavailable for the calculation of the average daily demand.
3. Enter these values:

| If You Selected One of These Combinations on the Policy Parameters Subtab | Then on the Default Policy Parameters Subtab |
|---|---|
| ○ **Min-max planning** or **Fixed order cycle** in the **Policy Type** list and **Minimum plus order quantity** in the **Maximum Quantity Calculation Method** list<br>○ **ROP and order quantity** in the **Policy Type** list | ○ In **Default Order Quantity**, enter the default value for the order quantity. |
| ○ **Min-max planning** or **Fixed order cycle** in the **Policy Type** list and **Minimum plus EOQ** in the **Maximum Quantity Calculation Method** list | ○ In **Default EOQ**, enter the default economic order quantity (EOQ).<br>If you specify this default, you can't specify the default standard cost, default carrying cost percentage, and default ordering cost.<br>○ In **Default Standard Cost**, enter the default standard cost. |

| If You Selected One of These Combinations on the Policy Parameters Subtab | Then on the Default Policy Parameters Subtab |
|---|---|
| ◦ **ROP and order quantity** or **ROP and EOQ** in the **Policy Type** list | ◦ In **Default Carrying Cost Percentage**, enter the default carrying cost percentage.<br>◦ In **Default Ordering Cost**, enter the default ordering cost. |

4. Repeat Steps 1 through 3 for other segments.
5. Click **Save**.

## Define Policy Parameter Overrides

Follow these steps to define policy parameter overrides for item-location combinations in a segment:

1. On the Segment-Level Policy Parameters Assignment tab, under the toolbar, select a segment.
2. On the Policy Parameters Overrides subtab, in **Safety Stock Override**, enter the override value for the safety stock.

   For slow-moving items or items with intermittent demand, you can optionally enter zero as the safety stock override.
3. In **Order Quantity Override**, enter the override value for the order quantity.
4. In **Minimum Override**, enter the override value for the minimum order quantity.

   The minimum override must be greater than or equal to the safety stock override.

   For slow-moving items or items with intermittent demand, you can optionally enter zero as the minimum override.

   This field is enabled when you select **Min-max planning** in the **Policy Type** list on the Policy Parameters subtab.
5. In **EOQ Override**, enter the override value for the EOQ.
6. In **Maximum Override**, enter the override value for the maximum order quantity.

   The maximum override must be greater than or equal to the minimum override and safety stock override.

   This field is enabled when you select **Min-max planning** or **Fixed order cycle** in the **Policy Type** list on the Policy Parameters subtab.
7. In **ROP Override**, enter the override value for the reorder point (ROP).

   The ROP override must be greater than or equal to the safety stock override.

   This field is enabled when you select **ROP and order quantity** or **ROP and EOQ** in the **Policy Type** list on the Policy Parameters subtab.
8. Repeat Steps 1 through 7 for other segments.
9. Click **Save**.

## Define Item-Location Level Policy Overrides

Follow these steps to define overrides at the item-location level for the segment group:

1. On the Item-Location Level Policy Overrides tab, on the toolbar, click **Add Row**.

   A row appears under the column headings.

2. In the list under **Item**, select an item of the segment group.
3. In the list under **Location**, select a location for the item.
4. In the list under **Policy Type**, select a policy type for the item-location combination.
5. In the list under **Policy UOM**, select the UOM for the policy type.
6. In the field under **Safety Stock Override**, enter the override value for the safety stock.

   For a slow-moving item or an item with intermittent demand, you can optionally enter zero as the safety stock override.
7. In the field under **Minimum Override**, enter the override value for the minimum order quantity.

   The minimum override must be greater than or equal to the safety stock override.

   For a slow-moving item or an item with intermittent demand, you can optionally enter zero as the minimum override.

   This field is enabled when you select **Min-max planning** in the **Policy Type** list.
8. In the field under **Maximum Override**, enter the override value for the maximum order quantity.

   The maximum override must be greater than or equal to the minimum override and safety stock override.

   This field is enabled when you select **Min-max planning** or **Fixed order cycle** in the **Policy Type** list.
9. In the field under **ROP Override**, enter the override value for the ROP.

   The ROP override must be greater than or equal to the safety stock override.

   This field is enabled when you select **ROP and order quantity** or **ROP and EOQ** in the **Policy Type** list.
10. In the field under **Order Quantity Override**, enter the override value for the order quantity.

    This field is enabled when you select **ROP and order quantity** in the **Policy Type** list.
11. In the field under **EOQ Override**, enter the override value for the EOQ.

    This field is enabled when you select **ROP and EOQ** in the **Policy Type** list.
12. In the list under **Fixed Order Cycle Calendar**, select a calendar for the policy type.

    This list is enabled when you select **Fixed order cycle** in the **Policy Type** list.
13. Repeat Steps 1 through 12 for other item-locations combinations.
14. Click **Save**.

# Edit a Policy Assignment Set

You can duplicate, edit, and delete a policy assignment set.

The changes you can make to the policy assignment set are limited. You can't change the policy assignment set's name, and you can't delete it if it's being used in a replenishment plan. To change the segment group, you first have to delete all the segments from the policy assignment set.

You can duplicate the policy parameters that you have specified for a segment and reuse them in another segment.

## Edit the Parameters for a Segment

You can edit the policy parameters, default policy parameters, and policy parameter overrides defined for a segment of the segment group that's attached to the policy assignment set.

Any change that you make to the policy parameters takes effect the next time you run the associated replenishment plan with the **Calculate policy parameters** check box selected on the Plan Options page.

## Edit the Item-Location Level Policy Overrides

You can edit the item-location level policy overrides defined for the segment group that's attached to the policy assignment set.

Any change that you make to the item-location level policy overrides takes effect the next time you run the associated replenishment plan with the **Calculate policy parameters** check box selected on the Plan Options page.

# 10 Policy Comparisons

## Overview of the Policy Comparison Feature

The policy comparison feature automates the comparison of suggested policy parameters with existing policy parameters. You can set a threshold percentage for automatically accepting suggested policy parameters and manually accept or reject the remaining, suggested policy parameters.

The following policy parameters are compared:

- Minimum quantity
- Maximum quantity
- Reorder point (ROP) quantity
- ROP days
- Minimum days
- Maximum days

This table lists the policy parameters that are compared for different policy types and units of measure (UOMs):

| Policy Type | UOM | Compared Policy Parameters |
|---|---|---|
| Min-max planning | Days | Minimum days and maximum days |
| Min-max planning | Units | Minimum quantity and maximum quantity |
| Fixed order cycle | Days | Maximum days |
| Fixed order cycle | Units | Maximum quantity |
| ROP and order quantity | Days | ROP days |
| ROP and order quantity | Units | ROP quantity |
| ROP and economic order quantity (EOQ) | Days | ROP days |
| ROP and EOQ | Units | ROP quantity |

## Benefits of the Policy Comparison Feature

By using the policy comparison feature, you can avail of these benefits:

- Automatically accept suggested policy parameters if the percentage of deviation between them and the existing policy parameters is within the threshold.
  Therefore, you can avoid having to manually review the suggested policy parameters for millions of item-location combinations and improve the efficiency and accuracy of your policy comparison process.
- Manually accept or reject suggested policy parameters if the percentage of deviation between them and the existing policy parameters is above the threshold.
- Use embedded analytics to review the policy comparison process.

**Note:** You can't use the policy comparison feature with the inventory rebalancing feature.

## Set Up the Policy Comparison Feature

To set up the policy comparison feature, you must do the following:

1. Create a policy comparison plan for which the **Calculate policy parameters** check box is selected, and the **Calculate replenishments** and the **Rebalance inventory** check boxes aren't selected on the Plan Options page.
   Moreover, in the Scope: Advanced Options dialog box, you must select the **Enable for policy comparison** check box and enter a value in the **Threshold Percentage for Policy Comparison** field.
   Optionally, select the **Retain policy overrides** check box to retain manual policy overrides after the replenishment plan is run with the **Refresh with current data** option selected on the Parameters tab in the Run Plan dialog box. The manual overrides are retained even if the deviation percentages between the suggested and existing policy parameters are within the threshold.
2. Run the policy comparison plan with the **Refresh with current data** option selected on the Parameters tab in the Run Plan dialog box.
3. Use the policy comparison plan to provide the updated policy parameters to an integrated replenishment plan or automated execution plan.

*Related Topics*

- Create a Replenishment Plan
- Set Up Policy Comparisons and Retain Policy Overrides
- Best Practices for Setting Up Replenishment Plans

# How You Use the Policy Comparison Feature

The following is the process for using the policy comparison feature:

1. Set up a policy comparison plan.
   In the Scope: Advanced Options dialog box of the Scope tab of the Plan Options page, select the **Enable for policy comparison** check box, and enter a value in the **Threshold Percentage for Policy Comparison** field.
2. Run the policy comparison plan.

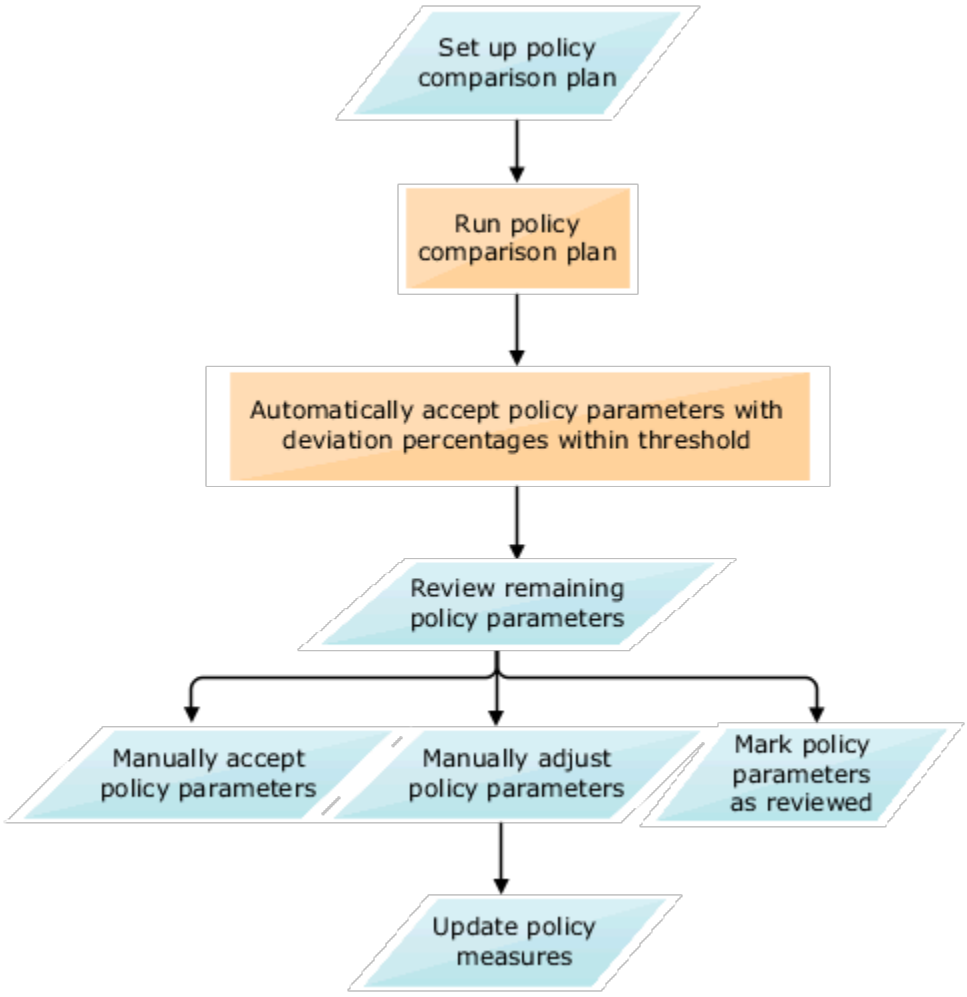
When the deviation percentages between the suggested policy parameters and existing policy parameters are within the threshold, the suggested policy parameters are automatically accepted.

3. Review the remaining, suggested policy parameters.
    - Manually accept those suggested policy parameters that don't require changes.
    - Manually adjust those suggested policy parameters that require changes.
    - Mark the remaining, suggested policy parameters as reviewed, or leave them as is.

    These suggested policy parameters don't take effect.
4. Update the policy measures so that the manually accepted or adjusted policy parameters overwrite the corresponding, existing policy parameters for item-location combinations.

    The updated policy parameters are then used by the integrated replenishment plan or automated execution plan that's linked to the policy comparison plan.

The following is the flow chart for using the policy comparison feature:




*Related Topics*

- Best Practices for Setting Up Replenishment Plans
- Run a Replenishment Plan

# Measures Used for Comparing Policy Parameters

This topic lists the measures that are used for comparing policy parameters.

These measures provide the following kinds of information:

- Summary of the policy comparison process
- Existing policy parameters and whether they were calculated or adjusted
- Suggested policy parameters
- Percentages of deviation between the existing and suggested policy parameters

## Measures that Provide a Summary of the Policy Comparison Process

These measures provide a summary of the policy comparison process:

| Measure | Description |
|---|---|
| Policies Automatically Accepted | Number of item-location combinations with policy parameters that are automatically accepted.<br><br>The policy parameters have the Automatically accepted status. |
| Policies Manually Accepted | Number of item-location combinations with policy parameters that are manually accepted.<br><br>The policy parameters have the Manually accepted status. |
| Policies to Review | Number of item-location combinations with policy parameters that must be reviewed.<br><br>The policy parameters have the To be reviewed status. |
| Policies Reviewed | Number of item-location combinations with policy parameters that are reviewed.<br><br>The policy parameters have the Reviewed status. |
| Policies Adjusted | Number of item-location combinations with policy parameters that are manually adjusted (overridden).<br><br>The policy parameters have the Adjusted status. |
| Policies Retained | Number of item-location combinations with policy parameter overrides that are retained.<br><br>The policy parameters have the Retained status.<br><br>Policy parameter overrides are retained when the **Retain policy overrides** check box is selected in the Scope: Advanced Options dialog box on the Scope tab of the Plan Options page for a replenishment plan. |

# Measures for Existing Policy Parameters

These measures provide information about the existing policy parameters and whether they were calculated or adjusted:

| Measure | Description |
|---|---|
| Previous Minimum Days | Days previously calculated for the Minimum Days measure. |
| Previous Minimum Days Type | Indicator specifying whether the previous value of the Minimum Days measure was calculated or adjusted. |
| Previous Maximum Days | Days previously calculated for the Maximum Days measure. |
| Previous Maximum Days Type | Indicator specifying whether the previous value of the Maximum Days measure was calculated or adjusted. |
| Previous Minimum Quantity | Quantity previously calculated for the Minimum Quantity measure. |
| Previous Minimum Quantity Type | Indicator specifying whether the previous value of the Minimum Quantity measure was calculated or adjusted. |
| Previous Maximum Quantity | Quantity previously calculated for the Maximum Quantity measure. |
| Previous Maximum Quantity Type | Indicator specifying whether the previous value of the Maximum Quantity measure was calculated or adjusted. |
| Previous ROP Days | Reorder point (ROP) days previously calculated for the ROP Days measure. |
| Previous ROP Days Type | Indicator specifying whether the previous value of the ROP Days measure was calculated or adjusted. |
| Previous ROP Quantity | ROP quantity previously calculated for the ROP Quantity measure. |
| Previous ROP Quantity Type | Indicator specifying whether the previous value of the ROP Quantity measure was calculated or adjusted. |

Before the policy comparison process begins, the existing policy parameters are copied into these measures.

# Measures for Suggested Policy Parameters

These measures provide information about the suggested policy parameters:

| Measure | Description |
|---|---|
| Suggested Average Daily Demand | Suggested average daily demand. |

| Measure | Description |
|---|---|
| Suggested EOQ | Suggested economic order quantity (EOQ). |
| Suggested Minimum Days | Suggested minimum days. |
| Suggested Maximum Days | Suggested maximum days. |
| Suggested Minimum Quantity | Suggested minimum quantity. |
| Suggested Maximum Quantity | Suggested maximum quantity. |
| Suggested Order Quantity | Suggested order quantity. |
| Suggested Policy Type | Suggested policy type.<br>The value is the existing policy type. |
| Suggested Policy UOM | Suggested unit of measure (UOM).<br>The value is the existing UOM. |
| Suggested ROP Days | Suggested ROP days. |
| Suggested ROP Quantity | Suggested ROP quantity. |
| Suggested Safety Stock | Suggested safety stock. |
| Suggested Safety Stock Days | Suggested safety stock days. |

You can use the Suggested Replenishment Policy Parameters table for the replenishment plan to view these measures.

## Measures for Deviation Percentages Between Existing and Suggested Policy Parameters

These measures provide the percentages of deviation between the existing and suggested policy parameters:

| Measure | Description |
|---|---|
| Minimum Days Deviation Percentage | Percentage of deviation between the Suggested Minimum Days and Previous Minimum Days measures. |
| Maximum Days Deviation Percentage | Percentage of deviation between the Suggested Maximum Days and Previous Maximum Days measures. |

| Measure | Description |
|---|---|
| Minimum Quantity Deviation Percentage | Percentage of deviation between the Suggested Minimum Quantity and Previous Minimum Quantity measures. |
| Maximum Quantity Deviation Percentage | Percentage of deviation between the Suggested Maximum Quantity and Previous Maximum Quantity measures. |
| ROP Days Deviation Percentage | Percentage of deviation between the Suggested ROP Days and Previous ROP Days measures. |
| ROP Quantity Deviation Percentage | Percentage of deviation between the Suggested ROP Quantity and Previous ROP Quantity measures. |

# Work with the Manage Policy Comparison Table

This topic explains how you work with the Manage Policy Comparison table for a policy comparison plan.

## Manage Policy Comparison Table

After the policy comparison plan is run, the Manage Policy Comparison table lists the existing and suggested policy parameters for each item-location combination. The percentage of deviation between an existing and a suggested policy parameter is also provided.

The Policy Review Status column indicates the statuses of the policies for the item-location combination:

| Status | Meaning |
|---|---|
| Automatically accepted | The suggested policy parameters for the item-location combination have been automatically accepted because the percentages of deviation were within the threshold.<br><br>This threshold was specified in the **Threshold Percentage for Policy Comparison** field in the Scope: Advanced Options dialog box of the Scope tab of the Plan Options page.<br><br>The accepted policy parameters can be seen in the Replenishment Policy Parameters table and are ready for use by the integrated replenishment plan or automated execution plan that's linked to the policy comparison plan. |
| Manually accepted | You have accepted the suggested policy parameters for the item-location combination. |
| To be reviewed | The suggested policy parameters for the item-location combination must be reviewed because the percentages of deviation are above the threshold. |
| Reviewed | You have reviewed the suggested policy parameters that had the To be reviewed status for the item-location combination and neither accepted or modified them. |
| Adjusted | You have manually adjusted the suggested policy parameters for the item-location combination. |

| Status | Meaning |
|---|---|
| | |
| Retained | The adjustments you made to the policy parameters for the item-location combination before the latest run of the policy comparison plan have been retained.<br><br>The adjustments are retained because you selected the **Retain policy overrides** check box in the Scope: Advanced Options dialog box of the Scope tab of the Plan Options page. When this check box is selected, the adjustments are retained even if the deviation percentages between the suggested and existing policy parameters are within the threshold.<br><br>The retained policy parameters can be seen in the Replenishment Policy Parameters table and are ready for use by the integrated replenishment plan or automated execution plan that's linked to the policy comparison plan.<br><br>The Retained status is also used when the item-location combination is subject to an override that's specified in the policy assignment set that's attached to the policy comparison plan. In such cases, no policy comparison takes place. |

## Work with the Manage Policy Comparison Table

To work with the Manage Policy Comparison table, follow these steps:

1. Do one of the following to open the policy comparison plan:
    - To open the policy comparison plan using the Manage Plans page:
        i. On the Tasks panel tab, under Plans, select **Manage Plans**.

        The Manage Plans page opens and displays the available replenishment plans.
        ii. Select the policy comparison plan, and click **Actions** > **Open**.

        The policy comparison plan opens in a separate tab.
    - On the Plans panel tab, under Plans, right-click the policy comparison plan, and select **Open**.

    The policy comparison plan opens in a separate tab.
2. Click the **Open** drop-down button.

    The Open Table, Graph, or Tile Set dialog box opens.
3. Search for the Manage Policy Comparison table, select it, and click **OK**.

    The Manage Policy Comparison table opens in a separate subtab of the policy comparison plan.
4. Search for the segment that you want to work with.

    To narrow your search, filter the rows by the To be reviewed status of the Policy Review Status column.
5. Follow these steps to adjust, review, or accept the suggested policy parameters:

| Objective | Steps |
|---|---|
| To adjust the policy parameters for an item-location combination | a. Select the row for the item-location combination.<br><br>The cells for the adjusted values are enabled for entry. You can perform this step for only those item-location combinations that have the To be reviewed or Retained status. |

| Objective | Steps |
|---|---|
| | b. For the policy parameter that you want to edit, enter an adjusted value. If the policy type is min-max planning, the adjustments for both the minimum and maximum values must be specified.<br><br>The final policy parameters for the item-location combination are adjusted accordingly, and the status is changed to Adjusted. |
| To mark the suggested policy parameters for the item-location combination as reviewed | a. Select the row for the item-location combination.<br><br>You can perform this step for only those item-location combinations that have the To be reviewed status.<br>b. Click **Actions** > **Mark as Reviewed**.<br><br>The status for the item-location combination is changed from To be reviewed to Reviewed.<br><br>The existing policy parameters for the item-location combination remain unchanged. |
| To accept the suggested policy parameters for the item-location combinations that are displayed after your search | Click **Actions** > **Accept All**, and click **Yes** in the warning message that appears.<br><br>For the item-location combinations with the To be reviewed status, the final policy parameters are updated accordingly, and the status changes to Manually accepted. |
| To accept the suggested policy parameters for selected item-location combinations | a. Select the rows for the item-location combinations.<br><br>The status for these item-location combinations should be To be reviewed.<br>b. Click **Actions** > **Accept Suggested Policies**.<br><br>The final policy parameters for the item-location combinations are updated accordingly, and the status changes to Manually accepted. |

6. Click **Actions** > **Update Policy Measures** to update the policy parameters for those item-location combinations for which you have manually adjusted or accepted the suggested policy parameters.

   The updated policy parameters for the item-location combinations take effect when the linked integrated replenishment plan or automated execution plan is run.
7. Save the Manage Policy Comparison table.

## Points to Remember While Working with the Policy Comparison Feature

Be aware of these points while working with the policy comparison feature:

- If policy parameters don't exist for item-location combinations, or if the policy type or unit of measure (UOM) is changed, the suggested policy parameters are automatically accepted.
- Policies aren't compared for those item-location combinations that are covered by overrides in the policy assignment set that's attached to the policy comparison plan.
- For a min-max planning policy, the deviation percentages between the suggested and existing values for both the minimum and maximum days or quantities must be within the threshold for the policy to be automatically accepted.
- The threshold for automatically accepting suggested policy parameters must be set with care. Permanently setting the threshold at a low level can decrease the efficiency of your policy comparison process. Start with a low threshold value, and increase it when you get comfortable with using the policy comparison feature.

*Related Topics*

- Best Practices for Setting Up Replenishment Plans
- Policy Assignment Sets
- Set Up Policy Comparisons and Retain Policy Overrides

# How You Use the Policy Comparison Analytics

This topic explains how you use the predefined analytics for the policy comparison feature in a policy comparison plan.

## Use the Policy Comparison Summary Tile Set

For using the analytics for the policy comparison feature, you must create a page layout that uses the predefined Policy Comparison Summary tile set. The predefined page layouts don't include this tile set.

The Policy Comparison Summary tile set includes the following:

- Policy Comparison Tile: The tile provides a plan-level summary of the policy parameters that are in the To be reviewed or Automatically accepted status.
- Policy Comparison Summary by Segment Graph: The graph provides a segment-wise breakup of the policy parameters in the Automatically accepted or To be reviewed status. By default, the graph is linked to the Manage Policy Comparison and Policy Comparison Summary by Location tables.
- Policy Review Status by Segment Table: The table provides a segment-wise breakup of the policy parameters in various statuses. By default, the table is linked to the Manage Policy Comparison and Policy Comparison Summary by Location tables.

The following example shows how you use the Policy Comparison Summary tile set to effectively use the policy comparison feature:

1. Run the policy comparison plan.
2. Open the page layout that has the Policy Comparison Summary tile set.
3. Identify the segment that has the most policy parameters with the To be reviewed status.
4. Select the graph bar or table cell for the policy parameters with the To be reviewed status:
    - To view a list of the locations to which the policy parameters pertain, click **Actions** > **Drill To** > **Default Group** > **Manage Policy Comparison Summary by Location**.

      The Policy Comparison Summary by Location table opens in a subtab and displays the policy parameters that have the To be reviewed or Automatically accepted status for various locations of the segment.

      You can select a cell and click **Actions** > **Drill To** > **Manage Policy Comparison** to view policy parameters for the items in a location and act on them.
    - To view a list of the item-location combinations to which the policy parameters pertain, and take action on them, do the following:
        i. Click **Actions** > **Drill To** > **Manage Policy Comparison**.

           The Manage Policy Comparison table opens in a subtab and displays the segment's item-location combinations that have the policy parameters with the searched status.

ii. Select the rows for the item-location combinations, and work with the suggested policy parameters.
iii. Click **Actions** > **Update Policy Measures**.

5. Return to the page layout that has the Policy Comparison Summary tile set, and click **View** > **Refresh**.

   The updated information about the policy parameters is displayed.

# 11 Statistical Forecasts

## Create a Forecasting Profile

A forecasting profile is a collection of definitions used during the generation of demand forecasts. Each profile includes the definitions of the forecasting methods used and at what level demand data is aggregated.

### Predefined Forecasting Profiles

This table lists the predefined forecasting profiles:

| Forecasting Profile | Work Area | Input Measure | Output Measure | Forecasting Table | Use |
|---|---|---|---|---|---|
| Forecast Bookings | Demand Management<br><br>Demand and Supply Planning | Final Bookings History | Bookings Forecast | Forecast Bookings Definitions | For forecasting on the basis of bookings history |
| Forecast Bookings for Supersession Chain | Demand Management<br><br>Demand and Supply Planning | Final Bookings History | Bookings Forecast | Forecast Bookings Definitions | For forecasting on the basis of bookings history for the current item revision and latest (future) item revision in a supersession chain |
| Forecast Bookings Including Event Activity | Demand Management<br><br>Demand and Supply Planning | Final Bookings History | Bookings Forecast | Forecast Bookings Definitions | For forecasting on the basis of bookings history while incorporating the impact of events |
| Forecast Bookings Including Product Lifecycle | Demand Management<br><br>Demand and Supply Planning | Final Bookings History | Bookings Forecast | Forecast Bookings Definitions | For forecasting on the basis of bookings history and the launch date and discontinuation date |
| Feature-Based Bookings Forecast for New Products | Demand Management<br><br>Demand and Supply Planning | Final Bookings History | Feature Based Bookings Forecast | Feature-Based Bookings Forecast Definitions | For forecasting for new products on the basis of historical bookings and features that are used to analyze effects on product demand |
| Forecast Consumption | Replenishment Planning | Final Consumption History | Consumption Forecast | Forecast Consumption Definitions | For forecasting on the basis of consumption history |

| Forecasting Profile | Work Area | Input Measure | Output Measure | Forecasting Table | Use |
|---|---|---|---|---|---|
| Forecast Shipments | Demand Management<br><br>Demand and Supply Planning<br><br>Replenishment Planning | Final Shipments History | Shipments Forecast | Forecast Shipments Definitions | For forecasting on the basis of shipments history |
| Forecast Shipments for Supersession Chain | Demand Management<br><br>Demand and Supply Planning<br><br>Replenishment Planning | Final Shipments History | Shipments Forecast | Forecast Shipments Definitions | For forecasting on the basis of shipments history for the current item revision and latest (future) item revision in a supersession chain |
| Forecast Shipments Including Event Activity | Demand Management<br><br>Demand and Supply Planning | Final Shipments History | Shipments Forecast | Forecast Shipments Definitions | For forecasting on the basis of shipments history while incorporating the impact of events |
| Forecast Shipments Including Product Lifecycle | Demand Management<br><br>Demand and Supply Planning<br><br>Replenishment Planning | Final Shipments History | Shipments Forecast | Forecast Shipments Definitions | For forecasting on the basis of shipments history and the launch date and discontinuation date |
| Feature-Based Shipments Forecast for New Products | Demand Management<br><br>Demand and Supply Planning | Final Shipments History | Feature Based Shipments Forecast | Feature-Based Shipments Forecast Definitions | For forecasting for new products on the basis of historical shipments and features that are used to analyze effects on product demand |

You can't edit predefined forecasting profiles. However, you can modify copies of predefined forecasting profiles for your use.

## Create a Forecasting Profile

Follow these steps to create a forecasting profile:

1. In the Demand Management, Demand and Supply Planning, or Replenishment Planning work area, on the Tasks panel tab, under Configuration, select **Manage Forecasting Profiles**.

   The Manage Forecasting Profiles page opens.
2. Click **Actions** > **Create**.

   The Manage Forecasting Profiles page opens.
3. Enter the name and description for the forecasting profile.

4. In **Machine Learning Type**, select **Bayesian** if you want the forecasting profile to use Bayesian machine learning for new or existing products. Bayesian machine learning uses the algorithms in Oracle Demand Management.

   Select **Feature-based** if you want the forecasting profile to use feature-based machine learning for new products. Feature-based machine learning uses the algorithm in the Oracle Fusion Internet of Things Intelligent Applications Cloud Service.

   > **Note:** You can't select **Feature-based** if you want to enable your forecasting profile for the Replenishment Planning work area.

5. In **Enable in Work Area**, select the check boxes for the work areas in which the forecasting profile should be available.

   After the forecasting profile is created, it'll be visible on the Managing Forecasting Profiles page in only these work areas. Moreover, during the creation of a demand plan, demand and supply plan, or replenishment plan, in the Forecast Profiles section on the Demand tab on the Plan Options page, only the forecasting profiles enabled for the work area can be selected.
6. In **Forecasting Table**, select the forecasting table for the forecasting profile.

   The forecasting table defines the data aggregation levels that are used in the forecasts.
7. In **Input Measure**, select the input measure for the forecasting profile.

   This measure's data is used as the basis of historical demand in forecasts.

   The measures available for selection are in the selected forecasting table and are dimensioned by time.
8. In **Output Measure**, select the output measure for the forecasting profile.

   This measure stores the forecast after the plan is run.

   The measures available for selection are in the selected forecasting table and are dimensioned by time. Moreover, the available measures can't be shared across plans and are refreshed with current data.
9. In **Measure Catalogs**, select the measure catalogs for the forecasting profile.

   Select all the measure catalogs that you anticipate are required for plans that use the forecasting profile. Predefined measure catalogs aren't available for selection.
10. If your forecasting profile uses Bayesian machine learning, use the Forecasting Methods tab to configure the forecasting methods and method parameters. For more information, refer to the topic on *forecasting methods for Bayesian machine learning* in this chapter.

    If your forecasting profile uses feature-based machine learning, accept the default selection of the XG Boost forecasting method on the Forecasting Methods tab. For more information, refer to the topic on the *forecasting method for feature-based forecasting* in this chapter.
11. If your forecasting profile uses Bayesian machine learning, use the Decomposition Groups tab to select and configure decomposition groups. For more information, refer to the topic on *decomposition groups* in this chapter.

    If your forecasting profile uses feature-based machine learning, use the Feature Groups tab to select and configure measures, levels, and attributes. For more information, refer to the topic on *feature groups* in this chapter.
12. Use the Forecasting Parameters tab to configure forecasting parameters.

    For more information, refer to the topic on *forecasting parameters for Bayesian machine learning* or *forecasting parameters for feature-based forecasting* in this chapter.

13. Click **Save and Close**.

*Related Topics*

- Overview of Forecasting Using Supersession Relationships
- Overview of the Product Lifecycle Management Page Layout
- Overview of Feature-Based Forecasting for New Products

# Edit a User-Defined Forecasting Profile

You can duplicate, edit, or delete a user-defined forecasting profile.

You can't edit a predefined forecasting profile. However, you can duplicate the predefined forecasting profile and edit the copy.

You also can't change the machine learning type for a forecasting profile. If you duplicate the forecasting profile, the **Machine Learning Type** field is set to the selection for the original forecasting profile and can't be changed.

To delete the user-defined forecasting profile, you must first deselect it for the associated demand, demand and supply, or replenishment plan in the Forecast Profiles section on the Demand tab of the Plan Options page.

Follow these steps to edit the user-defined forecasting profile:

1. In the Demand Management, Demand and Supply Planning, or Replenishment Planning work area, on the Tasks panel tab, under Configuration, select **Manage Forecasting Profiles**.

   The Manage Forecasting Profiles page opens.
2. Select the forecasting profile, and click **Actions** > **Edit**

   The Manage Forecasting Profiles page opens.
3. Edit the name and description as required.
4. In **Enable in Work Area**, select or deselect the work areas in which the forecasting profile should be available.

   You can't deselect a work area if the forecasting profile is associated with a plan in that work area. Before deselecting the work area, you must first deselect the forecasting profile for the plan in the Forecast Profiles section on the Demand tab of the Plan Options page.
5. In **Forecasting Table**, select the forecasting table that defines the data aggregation levels that are used in the forecasts.
6. In **Input Measure**, select the input measure for the forecasting profile.

   This measure's data is used as the basis of historical demand in forecasts.

   The measures available for selection are in the selected forecasting table and are dimensioned by time.
7. In **Output Measure**, select the output measure for the forecasting profile.

   This measure stores the forecast after the plan is run.

   The measures available for selection are in the selected forecasting table and are dimensioned by time. Moreover, the available measures can't be shared across plans and are refreshed with current data.

8. In **Measure Catalogs**, select the measure catalogs for the forecasting profile.

   Select all the measure catalogs that you anticipate are required for plans that use the forecasting profile. Predefined measure catalogs aren't available for selection.
9. If your forecasting profile is based on Bayesian machine learning, use the Forecasting Methods tab to configure the forecasting methods and method parameters. For more information, refer to the topic on forecasting methods for Bayesian machine learning in this chapter.

   If your forecasting profile is based on feature-based machine learning, accept the default selection of the XG Boost forecasting method on the Forecasting Methods tab. For more information, refer to the topic on the forecasting method for feature-based forecasting in this chapter.
10. If your forecasting profile uses Bayesian machine learning, use the Decomposition Groups tab to select and configure decomposition groups. For more information, refer to the topic on decomposition groups in this chapter.

    If your forecasting profile uses feature-based machine learning, use the Feature Groups tab to select and configure measures, levels, and attributes. For more information, refer to the topic on feature groups in this chapter.
11. Use the Forecasting Parameters tab to configure forecasting parameters.

    For more information, refer to the topic on forecasting parameters for Bayesian machine learning or forecasting parameters for feature-based machine learning in this chapter.
12. Click **Save and Close**.

    The edited forecasting profile takes effect the next time you run the associated plan.

# Forecasting Methods

You have 15 forecasting methods for use in forecasting profiles that are based on Bayesian machine learning.

You can use one or a combination of these forecasting methods while configuring your forecasting profile. You also have three naive forecasting methods that are used when the other forecasting methods can't produce an acceptable forecast in a forecasting profile that's based on Bayesian machine learning.

The following table lists the 15 forecasting methods and three naive forecasting methods:

| Forecasting Method | Enabled in Predefined Forecasting Profiles | Uses Short Causal Factors | Uses Long Causal Factors | Uses Multiplicative Causal Factors | Uses Nonseasonal Causal Factors | Supports Method Decompositio | Supports Causal Decompositio | Calculates MAPE, MAD, and Bias |
|---|---|---|---|---|---|---|---|---|
| Auto Regressive External Inputs (X) | No | No | No | No | Yes | Yes | Yes | Yes |
| Auto Regressive Integrated External (V) | No | No | No | No | Yes | Yes | Yes | Yes |

| Forecasting Method | Enabled in Predefined Forecasting Profiles | Uses Short Causal Factors | Uses Long Causal Factors | Uses Multiplicative Causal Factors | Uses Nonseasonal Causal Factors | Supports Method Decompositio | Supports Causal Decompositio | Calculates MAPE, MAD, and Bias |
|---|---|---|---|---|---|---|---|---|
| Auto Regressive Logistic (A) | No | No | Yes | No | No | Yes | Yes | Yes |
| Causal Winters (B) | No | Yes | No | No | No | Yes | No | Yes |
| Combined Transformatio (E) | No | No | Yes | No | No | Yes | Yes | Yes |
| Croston for Intermittent (F) | Yes | No | No | No | No | No | No | Yes |
| Dual Group Multiplicative (D) | No | No | No | Yes | No | Yes | Yes | Yes |
| Holt (H) | Yes | No | No | No | No | Yes | Yes | Yes |
| Logistic (G) | No | Yes | No | No | No | Yes | Yes | Yes |
| Modified Ridge Regression (M) | Yes | No | Yes | No | No | Yes | Yes | Yes |
| Multiplicative Monte Carlo Intermittent (K) | No | No | Yes | No | No | No | No | Yes |
| Multiplicative Monte Carlo Regression (C) | No | No | Yes | No | No | Yes | Yes | Yes |
| Regression (R) | Yes | Yes | No | No | No | Yes | Yes | Yes |
| Regression for Intermittent (J) | Yes | Yes | No | No | No | No | No | Yes |
| Transformatio Regression (L) | Yes | Yes | No | No | No | Yes | Yes | Yes |

| Forecasting Method | Enabled in Predefined Forecasting Profiles | Uses Short Causal Factors | Uses Long Causal Factors | Uses Multiplicative Causal Factors | Uses Nonseasonal Causal Factors | Supports Method Decompositio | Supports Causal Decompositio | Calculates MAPE, MAD, and Bias |
|---|---|---|---|---|---|---|---|---|
| Naive (N) | Yes | No | No | No | No | No | No | No |
| Holt Naive (T) | Yes | No | No | No | No | No | No | No |
| Moving Average Naive (O) | Yes | No | No | No | No | No | No | No |

The six forecasting methods that are enabled in predefined forecasting profiles provide the best results in most business scenarios that are commonly found. You can use the remaining forecasting methods in user-defined forecasting profiles.

To enable you to analyze the generated forecasts, the letters representing the used forecasting methods and their weights are stored in these measures:

**Note:** The measures for method weights are populated only when you select the **Include details of forecast methods** check box on the Parameters tab in the Run Plan dialog box for a demand or demand and supply plan.

| Measure | Description | Applicable Work Areas |
|---|---|---|
| Bookings Forecasting Methods | Contains the letters for the forecasting methods that are used for generating the bookings forecast for an item. | • Demand Management<br>• Demand and Supply Planning<br>• Sales and Operations Planning |
| Bookings Forecasting Methods Weight | Contains the weight (percentage) assigned to a forecasting method during the bookings forecast generation. | • Demand Management<br>• Demand and Supply Planning |
| Consumption Forecasting Methods | Contains the letters for the forecasting methods that are used for generating the consumption forecast for an item. | Replenishment Planning |
| Shipments Forecasting Methods | Contains the letters for the forecasting methods that are used for generating the shipments forecast for an item. | • Demand Management<br>• Demand and Supply Planning<br>• Replenishment Planning<br>• Sales and Operations Planning |
| Shipments Forecasting Methods Weight | Contains the weight (percentage) assigned to a forecasting method during the shipments forecast generation.<br><br>**Note:** In a replenishment or sales and operations plan, this measure won't return any value because causal decomposition isn't supported in such plans. | • Demand Management<br>• Demand and Supply Planning<br>• Replenishment Planning<br>• Sales and Operations Planning |

For information about forecasting methods, refer to the white paper titled "Oracle Demand Management Cloud Analytical Methods (Forecasting Methods)" that's available in Document ID 2582285.1 on My Oracle Support.

## Naive Forecasting Methods

If none of the enabled forecasting methods in the predefined or user-defined forecasting profile can generate an acceptable forecast at any level of the forecast tree, then the following steps are taken:

1. If the Holt (H) forecasting method wasn't enabled, and the number of data points in the history is sufficient, then a simplified version of the forecasting method called Holt Naive (T) is used at the highest level of the forecast tree. The generated forecast is used if acceptable.
2. If the Holt Naive (T) forecasting method doesn't generate an acceptable forecast, then the following steps are taken on the basis of the value of the EnableNaiveForecast forecasting parameter:
    a. If the value of the forecasting parameter is zero, no forecast is generated.
    b. If the value of the forecasting parameter is 1, the Naive (N) forecasting method is used at the highest level of the forecast tree. A simple forecast is generated on the basis of the average of the bookings, consumption or shipments history.

        > **Note:** In predefined forecasting profiles, the value of the EnableNaiveForecast forecasting parameter is 1. Therefore, in predefined forecasting profiles, the Naive (N) forecasting method is used.

    c. If the value of the forecasting parameter is greater than 1, then the Moving Average Naive (O) forecasting method is used at the highest level of the forecast tree. A simple moving average of the bookings, consumption, or shipments history is used for generation of the forecast. The value of the forecasting parameter determines the number of buckets that are used, and the bucket is specified in the **Forecasting Time Level** field on the Demand Tab on the Plan Options page for the demand, demand and supply, or replenishment plan.

Method decomposition and causal decomposition aren't available for naive forecasting methods.

*Related Topics*

- Create a Forecasting Profile
- Statistical Forecasts, Causal Factors, and Decomposition Groups

# Configure Decomposition Groups

A decomposition group is a container for the measures that you use as causal factors in a forecasting profile that's based on Bayesian machine learning.

Causal factors enable forecasting methods to understand the variation in historical demand and produce an accurate and adoptive forecast. Decomposition groups let you organize measures that have similar effects on a forecast.

Several predefined causal factors (predefined measures) are available for meeting commonly found forecasting needs. You can also use user-defined measures as causal factors. You can easily view and modify the information in causal factors using tables. Causal factors are the best way for you to add information that drives demand into the forecasting process and thereby improve it.

For your user-defined forecasting profile, you can add, edit, or delete decomposition groups. You can also activate and deactivate all causal factors in a decomposition group using its check box.

In a demand or demand and supply plan, you can decompose the forecast by the causal factor group. When you select the **Include details of causal factors** check box on the Parameters tab in the Run Plan dialog box, the duration of the plan run increases significantly. For this reason, decompose the forecast by causal factors preferably when you simulate the demand from a table for a subset of the plan that's based on the table selections. By doing so, you can perform a focused analysis of the causal factors. Include the details of the causal factors only when you want to analyze the results and not every time you run the plan.

> **Note:** Causal decomposition isn't supported for the Causal Winters (B), Croston for Intermittent (F), Multiplicative Monte Carlo Intermittent (K), Regression for Intermittent (J), Naive (N), Moving Average Naive (O), and Holt Naive (T) forecasting methods. No decomposed values are generated for any items that are forecast with these forecasting methods.

For information about causal factors, refer to the white paper titled "Demand Management Forecasting Causal Factors" that's available in Document ID 2551482.1 on My Oracle Support.

## Create a Decomposition Group

Perform these steps to create a decomposition group:

1. On the Decomposition Groups tab in your forecasting profile, click **Actions** > **Create**.
2. In the Create Decomposition Group dialog box, do the following:
    - Provide a name and description for the decomposition group.
    - From the Available Measures pane, move the required measures to the Selected Measures pane.

      The available measures are those that are enabled for the work area in which you create the decomposition group. Ensure that the selected measures are in the measure catalog of the plan that uses the forecasting profile.
3. Click **OK**.

## Configure Causal Factors in a Decomposition Group

Perform these steps to configure the causal factors in a decomposition group:

1. On the Decomposition Groups tab in your forecasting profile, expand the decomposition group.

   The expanded list details the available causal factors.
2. Select the check boxes for each causal factor:
    - Short: Use this setting to assign the causal factor to the Causal Winters (B), Logistic (G), Regression (R), Regression for Intermittent (J), and Transformation Regression (L) forecasting methods that use all assigned causal factors. These forecasting methods use a limited set of causal factors and aren't efficient at determining which causal factors are useful. You select this check box for most causal factors.
    - Long: Use this setting to assign the causal factor to forecasting methods that use an extended set of causal factors and are efficient at determining which causal factors are useful. These forecasting methods are Auto Regressive Logistic (A), Combined Transformation (E), Modified Ridge Regression (M), Multiplicative Monte Carlo Intermittent (K), and Multiplicative Monte Carlo Regression (C).
    - Multiplicative: Use this setting to assign the causal factor to the Dual Group Multiplicative (D) forecasting method. If you have enabled this forecasting method, each causal factor of your forecasting profile can use the **Group One** or **Group Two** value of the list. Each of these values should be selected for at least one causal factor.

- Not Seasonal: Use this setting to assign the causal factor to the Auto Regressive External Inputs (X) and Auto Regressive Integrated External (V) forecasting methods. The only causal factors that should be assigned this setting are those that aren't predictable functions of time. For example, price varies randomly with time and can be assigned this setting.
- Fill Missing: Use this setting for causal factors when there are missing values for dates, and you want to have values for these dates. The values that are entered for a causal factor are based on values of the same causal factor for other dates. Use this setting for causal factors, such as those for price, that should always have a value.

*Related Topics*

- Create a Forecasting Profile
- Forecasting Methods
- Forecasting Parameters

# Forecasting Parameters

Forecasting parameters control several aspects of a demand forecast, such as the handling of missing values, outlier detection, fit and forecast validation, and sparse data forecasting.

You can improve the default settings for forecasting parameters based on your data analysis and forecast results.

The settings for all forecasting parameters related to time are in days and automatically adjusted for aggregate forecasting time levels. For example, the default setting of 182 days for a forecasting parameter is automatically adjusted to 26 days for a weekly forecast.

**Note:** You can't make any change to the displayed forecasting parameters or their values in a predefined forecasting profile. You can make such changes in only a copy of the predefined forecasting profile.

This table lists the commonly used forecasting parameters.

| Forecasting Parameter | Description |
|---|---|
| FillMissingMethod | Specifies how to fill any undefined historical values. Parameter values may be 0, 1, 2. 0 for no missing values field. 1 for linear interpolation based on not missing neighbors. 2 for omitting missing values. |
| GlobalAllocationPeriods | Specifies the number of days going backward from the history end date that's used for calculating the average demand (for bookings, consumption, or shipments). |
| DiscontinueDateMeasure | Specifies the measure that contains the product discontinuation date for use in the functionality for managing product launches. If the measure is specified, the forecast ends on the product discontinuation date instead of the plan's forecast end date.<br><br>If the measure date is after the forecast end date of the plan, the forecast end date is used. When the selected measure doesn't contain a value or isn't present in the plan's measure catalog, the forecast end date of the plan is used. |

| Forecasting Parameter | Description |
|---|---|
| | If the date for the LaunchDateMeasure forecasting parameter is later than the date for the DiscontinueDateMeasure forecasting parameter, both dates are ignored, and the forecast is generated from the plan's forecast start date to the plan's forecast end date.<br><br>The default value for the DiscontinueDateMeasure forecasting parameter is the Final Discontinuation Date measure. The available measures for selection are of the Date data type, are available in the forecasting profile's work areas, and have all dimensions of the forecasting profile's output measure except for Time. |
| EnableNaiveForecast | Specifies whether naive modeling is used, and if so, what type. The parameter value may be 0 or a positive integer. Use 0 to disable naive modeling. 1 to use Oracle proprietary naive modeling. Any integer greater than 1 to use the simple moving average with the value controlling the number of historical periods used. |
| IntermitCriterion | Specifies the lowest percentage of zero values in historical demand for which the time series are evaluated using intermittent forecasting methods. |
| LaunchDateMeasure | Specifies the measure that contains the product launch date for use in the functionality for managing product launches. If the measure is specified, the forecast starts on the product launch date instead of the plan's forecast start date.<br><br>If the measure date is earlier than the forecast start date of the plan, the forecast start date is used. When the selected measure doesn't contain a value or isn't present in the plan's measure catalog, the forecast start date of the plan is used.<br><br>If the date for the LaunchDateMeasure forecasting parameter is later than the date for the DiscontinueDateMeasure forecasting parameter, both dates are ignored, and the forecast is generated from the plan's forecast start date to the plan's forecast end date.<br><br>The default value for the LaunchDateMeasure forecasting parameter is the Final Launch Date measure. The available measures for selection are of the Date data type, are available in the forecasting profile's work areas, and have all dimensions of the forecasting profile's output measure except for Time. |
| WriteFit | Specifies whether the forecast is generated for the future or also for the history. Enter 0 to write the forecast for only the future, or 1 to write the forecast for the future and history. When you enter 1, the fit forecast is written for the entire history used during the forecasting process. |
| DetectOutlier | Specifies whether an attempt should be made to detect and smooth outliers in the time series. If extreme highs and lows are acceptable in your demand pattern, you can disable this forecasting parameter by entering zero. |
| OutlierSensitivity | Specifies the sensitivity of outlier detection. The greater the value, the more liberal the detection. For common detection, use values less than 2. |
| RemoveExtremeOutlier | Specifies whether aggressive outlier smoothing should be performed, and if extreme values should be removed before being processed by forecasting methods. Enable this forecasting parameter by entering 1 only if there's a clear cause to remove extreme values, if extreme values are rare or because of data errors, and you want a very smooth forecast. |
| EnableFitValidation | Specifies whether to enable statistical fit validation. 1 to enable validation. 0 to disable validation. |
| EnableForecastValidation | Specifies whether to enable statistical forecast validation. 1 to enable validation. 0 to disable validation. |

| Forecasting Parameter | Description |
|---|---|
| FitValidationSensitivity | Controls the sensitivity of fit validation. Forecasting methods with a mean absolute percentage error (MAPE) greater than the specified value are rejected. The smaller the value, the stricter is the validation. For loose validation, use values between 1 and 2. For strict validation, use values between .3 and .5.<br><br>This forecasting parameter may be the most important one for your forecast. If your forecast is failing at the required level, increasing the value of this forecasting parameter might help. |
| ForecastValidationSensitivity | Specifies the sensitivity of forecast validation. The smaller the value, the stricter the test. For loose forecast validation, use values between 5 and 10. |

Additional forecasting parameters are available, and you can include them in your user-defined forecasting profile by clicking **Actions** > **Add** to open the Add Parameter to Viewable List dialog box. Select the forecasting parameter you want, and click the **Add** button to include it in the forecasting profile.

For information about forecasting parameters, refer to the white paper titled "Demand Management Forecasting Parameters" that's available in Document ID 2551481.1 on My Oracle Support.

*Related Topics*

- Create a Forecasting Profile
- Forecasting Methods
- Configure Decomposition Groups

# Measures for Bayesian Forecasting

This topic lists the measures that are used in Bayesian forecasting.

## Input Measures

This table lists the predefined input measures for Bayesian forecasting and the associated measures that are predefined or automatically created:

| Input Measure | Associated Measure |
|---|---|
| Final Bookings History | Bookings History Average<br><br>(predefined) |
| Final Consumption History | Consumption History Average<br><br>(predefined) |
| Final Shipments History | Shipments History Average<br><br>(predefined) |

| Input Measure | Associated Measure |
|---|---|
| | |
| user-defined input measure | <user-defined input measure name> History average<br><br>(automatically created and added to the measure catalog for the user-defined forecasting profile) |

## Output Measures

This table lists the predefined output measures for Bayesian forecasting and the associated measures that are predefined or automatically created:

| Output Measure | Associated Measures |
|---|---|
| Bookings Forecast<br><br>Consumption Forecast<br><br>Shipments Forecast | <predefined output measure name> Average Interarrival Time<br><br><predefined output measure name> Batch Size<br><br><predefined output measure name> Bias<br><br><predefined output measure name> Complexity<br><br><predefined output measure name> Decomposed<br><br><predefined output measure name> Decomposed Outlier<br><br><predefined output measure name> Decomposed Regime Change<br><br>Bookings Forecasting Levels/Consumption Forecasting Level/Shipments Forecasting Levels<br><br>Bookings Forecasting Methods/Consumption Forecasting Methods/Shipments Forecasting Methods<br><br>Bookings Forecasting Methods Weight/Consumption Forecasting Methods Weight/Shipments Forecasting Methods Weight<br><br><predefined output measure name> Generate Forecast/Consumption Forecast Generation Status<br><br><predefined output measure name> Has Outliers<br><br>Bookings Forecast Has Regime Change/Shipments Forecast Has Regime Change<br><br><predefined output measure name> Interval Time<br><br><predefined output measure name> Is Intermittent<br><br><predefined output measure name> MAD<br><br><predefined output measure name> MAPE<br><br><predefined output measure name> Outlier Values/Consumption Forecast Outlier Value<br><br><predefined output measure name> Status<br><br><predefined output measure name> Total<br><br>(all predefined) |
| user-defined output measure | <user-defined output measure name> Average interarrival time |

| Output Measure | Associated Measures |
|---|---|
| | <user-defined output measure name> Batch size<br><user-defined output measure name> Bias<br><user-defined output measure name> Complexity<br><user-defined output measure name> Decomposed model and causal factor forecast<br><user-defined output measure name> Decomposed outlier values<br><user-defined output measure name> Decomposed regime change indicator<br><user-defined output measure name> Forecast level<br><user-defined output measure name> Forecast method weights<br><user-defined output measure name> Forecast methods<br><user-defined output measure name> Forecast status<br><user-defined output measure name> Generate forecast indicator<br><user-defined output measure name> Intermittent indicator<br><user-defined output measure name> Interval time<br><user-defined output measure name> MAD<br><user-defined output measure name> MAPE<br><user-defined output measure name> Outlier indicator<br><user-defined output measure name> Outlier values<br><user-defined output measure name> Regime change indicator<br><user-defined output measure name> Total Forecast<br>The measures are automatically created and added to the measure catalog for the user-defined forecasting profile. If the user-defined output measure is used in more than one user-defined forecasting profile, the associated measures are reused and not created anew. |

# Forecast Trees

## Overview of Forecast Trees

A forecast tree is a structure of hierarchy levels at which data can be aggregated during the demand forecasting process.

The forecast tree enables Oracle Demand Management to aggregate data while performing analytical forecasts. In other words, the forecast tree for a forecasting profile organizes the data for the forecasting process.

The forecasting process begins at the most granular (lowest) level of the forecast tree. If the forecast can't be made at this level because of inadequate or sparse data, the process moves up the forecast tree and attempts to forecast

at higher levels of data aggregation. In general, forecasts are more accurate when they're made at lower levels of the forecast tree.

The forecast tree supports up to two dimensions. The available dimensions for the forecast tree are Product, Organization, Customer, and Demand Class. Your configuration of the forecast tree depends on your business. You typically use the Product dimension along with another dimension (for example, Product and Organization, Product and Customer, or Product and Demand Class). With respect to the Product dimension, you can use levels from any hierarchy except for levels from the configure-to-order (CTO) hierarchy (Model BOM).

The run time is short if the forecasting process has to do less data aggregation while traversing the forecast tree. If the data quality allows, use the lowest levels for two dimensions (for example, Item and Customer Site) as the first forecastable level in the forecast tree. The run time is long when the lowest forecastable levels are aggregated, or only one dimension is used.

The quality of the forecast is influenced by the forecast tree's construction. Thus, you must carefully include and arrange levels for the forecast tree.

*Related Topics*

- How a Forecast Tree Is Constructed
- Best Practices for Setting Up Forecasting Tables for Forecast Trees
- Example of an Incorrectly Constructed Forecast Tree

# How a Forecast Tree Is Constructed

You determine the forecast tree by configuring a table just as you would for a table displayed in your Oracle Fusion Cloud Supply Chain Planning module.

The forecast tree is derived from the table's layout. In the table, you select levels to include in the forecast tree, and on the Layout tab in the Selector Tool, you arrange the levels in the decreasing order of data aggregation. Finally, you select the table as the forecasting table for a forecasting profile.

> **Note:** You must arrange the levels on the row edge for the forecasting table. On the Layout tab, the row edge is the vertical axis to the left of the pivot table's body.

The forecasting process constructs the forecast tree downwards from a fictitious top level (All – All) to the lowest level of aggregation. Each included level is taken one at a time and placed in a forecast tree level under the column for the respective dimension.

Assume that you have arranged the levels in the decreasing order of aggregation as follows: Category Level 2, Legal Entity, Category Level 1, Organization, and Item.

For this level arrangement, the forecasting process constructs the forecast tree as follows:

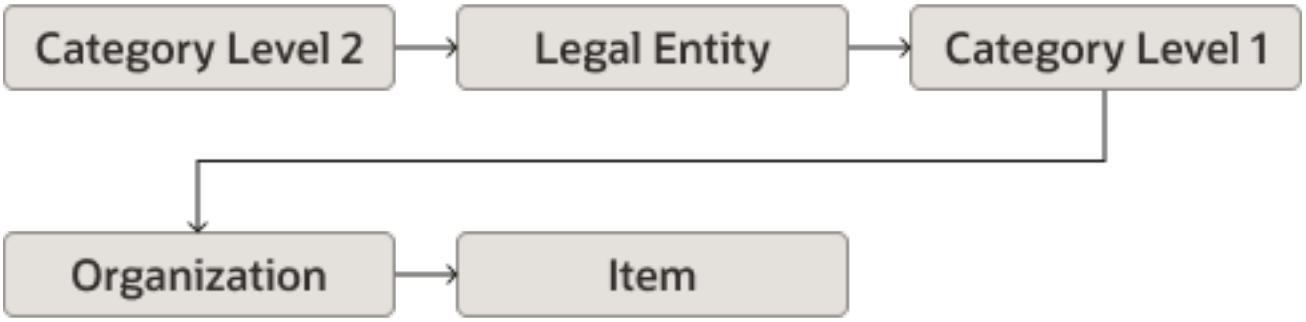
1. First, the fictitious top level of the tree is designated as All – All.
2. At the next forecast tree level, the Category Level 2 level replaces the All level under the column for the Product dimension.
3. At the next forecast tree level, the Legal Entity level replaces the All level under the column for the Organization dimension. The Category Level 2 level is retained under the column for the Product dimension.
4. At the next forecast tree level, the Category Level 1 level replaces the Category Level 2 level under the column for the Product dimension. The Legal Entity level is retained under the column for the Organization dimension.

5. At the next forecast tree level, the Organization level replaces the Legal Entity level under the column for the Organization dimension. The Category Level 1 level is retained under the column for the Product dimension.
6. At the lowest forecast tree level, the Item level replaces the Category Level 1 level under the column for the Product dimension. The Organization level is retained under the column for the Organization dimension.

The demand forecasting process moves up this forecast tree while performing the forecast. First, the forecast is attempted at the level of Item and Organization. If a forecast can't be performed at this level, the forecast is attempted at the next level of Category Level 1 and Organization, and so on.

The following figure depicts this forecast tree:

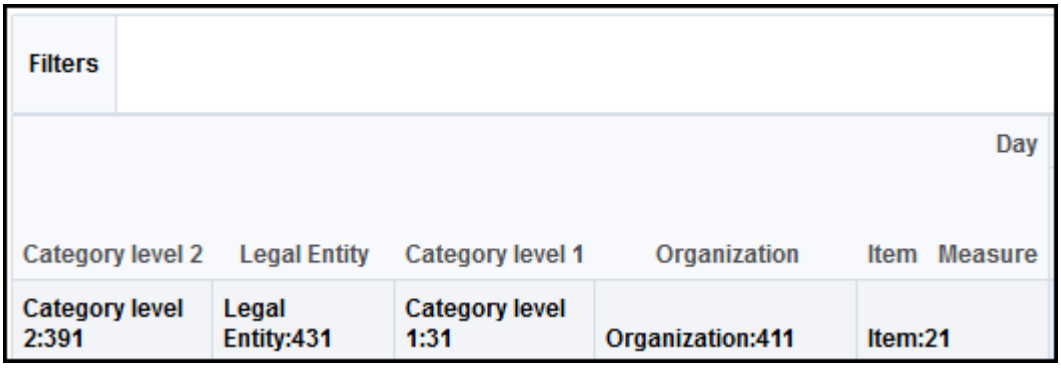
**Levels in underlying table for forecast tree**




**and corresponding forecast tree**

| Product | Organization |
|---|---|
| All | All |
| Category Level 2 | All |
| Category Level 2 | Legal Entity |
| Category Level 1 | Legal Entity |
| Category Level 1 | Organization |
| Item | Organization |

The following screenshot depicts the arrangement of levels on the Layout tab in the Selector Tool for the previously provided forecast tree:




*Related Topics*

- Overview of Forecast Trees
- Best Practices for Setting Up Forecasting Tables for Forecast Trees
- Example of an Incorrectly Constructed Forecast Tree

# Best Practices for Setting Up Forecasting Tables for Forecast Trees

Keep these points in mind while you set up the forecasting tables based on which the demand forecasting process constructs forecast trees:

- Oracle recommends that you not start from scratch while constructing the forecasting table for a forecast tree. Instead, make a copy of one of the predefined forecasting tables (for example, Forecast Bookings Definitions or Forecast Shipments Definitions), and change the copy to suit your requirements.
- Don't use any time-related dimensions in the forecasting table.
- Include at least three effective hierarchy levels in the forecasting table.
- Ensure that the data aggregation of the levels decreases along the row edge of the forecasting table. The arrangement of levels must be meaningful to your business process.
- For each dimension, select levels from a single hierarchy while configuring the forecasting table, and don't select levels from multiple hierarchies.

  If you select levels from multiple hierarchies, the demand forecasting process uses the hierarchy that has the most levels. If there is a tie in this regard, the hierarchy with the lowest internal ID is selected. Consequently, you have less control over the final structure of the forecast tree.

*Related Topics*

- Overview of Forecast Trees
- How a Forecast Tree Is Constructed
- Example of an Incorrectly Constructed Forecast Tree

# Example of an Incorrectly Constructed Forecast Tree

This topic provides an example of a forecast tree that's incorrectly constructed because the underlying forecasting table was incorrectly set up.

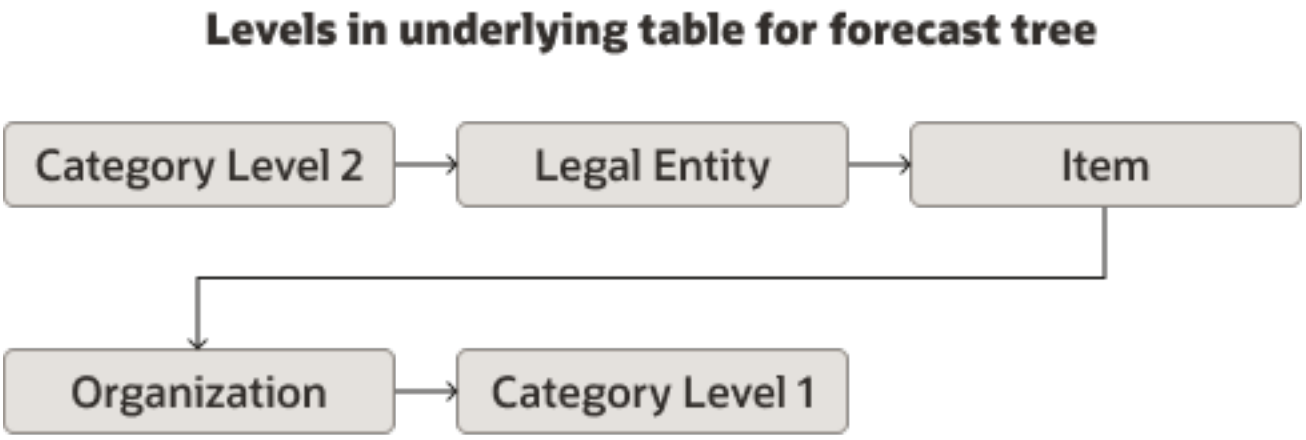
On the Layout tab in the Selector Tool, the hierarchy levels on the row edge of the forecasting table for the forecast tree must be in the order of decreasing data aggregation. While generating the forecast tree, the demand forecasting process can move in only the direction of decreasing aggregation. If a level of higher aggregation follows a level of lower aggregation, the process ignores the former. Thus, an incorrect arrangement of levels results in a forecast tree that doesn't meet expectations and causes an incorrect aggregation of data during the forecasting process.

Assume that you have arranged the levels as follows: Category Level 2, Legal Entity, Item, Organization, and Category Level 1. Here, a level with a higher aggregation (Category Level 1) is placed after a level with a lower aggregation (Item).

For this level arrangement, the forecasting process constructs the forecast tree as follows:

1. First, the fictitious top level of the forecast tree is designated as All – All.
2. At the next forecast tree level, the Category Level 2 level replaces the All level under the column for the Product dimension.
3. At the next forecast tree level, the Legal Entity level replaces the All level under the column for the Organization dimension. The Category Level 2 level is retained under the column for the Product dimension.
4. At the next forecast tree level, the Item level replaces the Category Level 2 level under the column for the Product dimension. The Legal Entity level is retained under the column for the Organization dimension.
5. At the next forecast tree level, the Organization level replaces the Legal Entity level under the column for the Organization dimension. The Item level is retained under the column for the Product dimension.
6. Finally, the Category 1 level is omitted from the forecast tree on account of having a higher aggregation than the Item level.

The following figure depicts the forecast tree:




**and corresponding forecast tree**

| Product | Organization |
|---|---|
| All | All |
| Category Level 2 | All |
| Category Level 2 | Legal Entity |
| Item | Legal Entity |
| Item | Organization |

*Related Topics*

- Overview of Forecast Trees
- How a Forecast Tree Is Constructed
- Best Practices for Setting Up Forecasting Tables for Forecast Trees

# Disaggregation of Statistical Forecasts

## How Statistical Forecasts Are Disaggregated by Default

This topic explains how statistical forecasts are disaggregated by default in the Demand Management, Demand and Supply Planning, Planning Central, Replenishment Planning, and Sales and Operations Planning work areas.

**Note:** The default disaggregation described in this topic is limited to plans that use forecasting profiles that are based on Bayesian machine learning.

## Settings That Affect Default Disaggregation of Statistical Forecasts

This table lists the forecasting parameters that affect the default disaggregation of statistical forecasts:

**Note:** In the Demand Management, Demand and Supply Planning, and Replenishment Planning work areas, you can modify these forecasting parameters in only user-defined forecasting profiles. You can use predefined forecasting profiles with only the default values. In the Planning Central and Sales and Operations Planning work areas, you can use only predefined forecasting profiles and can't modify forecasting parameters.

| Name | Description | Default Value |
|---|---|---|
| PeriodsUntilActive | Specifies the number of days going backward from the history end date that's used for determining the forecast status for a product combination. If the demand for the product combination falls only within this period, the forecast status is Inactive/New/Immature. If the demand is wholly or partially before this period but within the days specified in the PeriodsUntilInactive forecasting parameter, the forecast status is Active.<br><br>For example, if the value of the forecasting parameter is 14, but the only demand for the product combination was 10 days before the history end date, the forecast status is Inactive/New/Immature. | 14 days |
| PeriodsUntilInactive | Specifies the number of days going backward from the history end date that's used for determining the forecast status for a product combination. If the demand for the product combination falls wholly before this period, the forecast status is Inactive/Retired/Discontinued.<br><br>For example, if the value of the forecasting parameter is 182, but the only demand for the product combination was 200 days before the history end date, the forecast status is Inactive/Retired/Discontinued. | 182 days |
| GlobalAllocationPeriods | Specifies the number of days going backward from the history end date that's used for calculating the average demand (for bookings, consumption, or shipments). | 182 days |

This table lists the forecast status measures and generate forecast measures for output measures of forecasting profiles:

| Output Measure | Forecast Status Measure | Generate Forecast Measure |
|---|---|---|
| Bookings Forecast | Bookings Forecast Status<br><br>Indicates if a product combination receives a disaggregated statistical forecast for bookings.<br><br>Available in the Demand Management, Demand and Supply Planning, Planning Central, and Sales and Operations Planning work areas. | Bookings Forecast Generate Forecast<br><br>Indicates whether historical bookings should be analyzed and a forecast generated for a product combination. You can edit this measure.<br><br>Available in the Demand Management, Demand and Supply Planning, Planning Central, and Sales and Operations Planning work areas. |
| Consumption Forecast | Consumption Forecast Status<br><br>Indicates if a product combination receives a disaggregated statistical forecast for consumption.<br><br>Available in the Replenishment Planning work area. | Consumption Forecast Generation Status<br><br>Indicates whether historical consumption should be analyzed and a forecast generated for a product combination. You can edit this measure.<br><br>Available in the Replenishment Planning work area. |
| Shipments Forecast | Shipments Forecast Status<br><br>Indicates if a product combination receives a disaggregated statistical forecast for shipments.<br><br>Available in the Demand Management, Demand and Supply Planning, Planning Central, Replenishment Planning, and Sales and Operations Planning work areas. | Shipments Forecast Generate Forecast<br><br>Indicates whether historical shipments should be analyzed and a forecast generated for a product combination. You can edit this measure.<br><br>Available in the Demand Management, Demand and Supply Planning, Planning Central, Replenishment Planning, and Sales and Operations Planning work areas. |
| User-Defined Output Measure | <User-defined output measure name> Forecast Status<br><br>(created automatically) | <User-defined output measure name> Generate Forecast Indicator<br><br>(created automatically) |

The table lists the history average measures for input measures of forecasting profiles:

| Input Measure | History Average Measure |
|---|---|
| Final Bookings History | Bookings History Average<br><br>Contains the average daily bookings over the days before the history end date as specified in the GlobalAllocationPeriods forecasting parameter.<br><br>Available in the Demand Management, Demand and Supply Planning, Planning Central, and Sales and Operations Planning work areas. |
| Final Consumption History | Consumption History Average<br><br>Contains the average daily consumption over the days before the history end date as specified in the GlobalAllocationPeriods forecasting parameter.<br><br>Available in the Replenishment Planning work area. |

| Input Measure | History Average Measure |
|---|---|
| | |
| Final Shipments History | Shipments History Average<br><br>Contains the average daily shipments over the days before the history end date as specified in the GlobalAllocationPeriods forecasting parameter.<br><br>Available in the Demand Management, Demand and Supply Planning, Planning Central, Replenishment Planning, and Sales and Operations Planning work areas. |
| User-Defined Input Measure | <User-defined input measure name> History Average<br><br>(created automatically) |

## How Statistical Forecasts Are Disaggregated by Default

Whether a product combination receives a disaggregated statistical forecast depends on the forecast status of the combination, which can be one of the following:

| Forecast Status | Description |
|---|---|
| 1 | Active<br><br>A product combination has this forecast status if the demand is wholly or partially before the period specified in the PeriodsUntilActive forecasting parameter and wholly or partially within the period specified in the PeriodsUntilInactive forecasting parameter.<br><br>Only product combinations with this forecast status receive a disaggregated forecast by default. |
| 2 | Inactive/New/Immature<br><br>A product combination has this forecast status if the demand is wholly within the period specified in the PeriodsUntilActive forecasting parameter. |
| 3 | Inactive/Retired/Discontinued<br><br>A product combination has this forecast status if the demand is wholly before the period specified in the PeriodsUntilInactive forecasting parameter. |

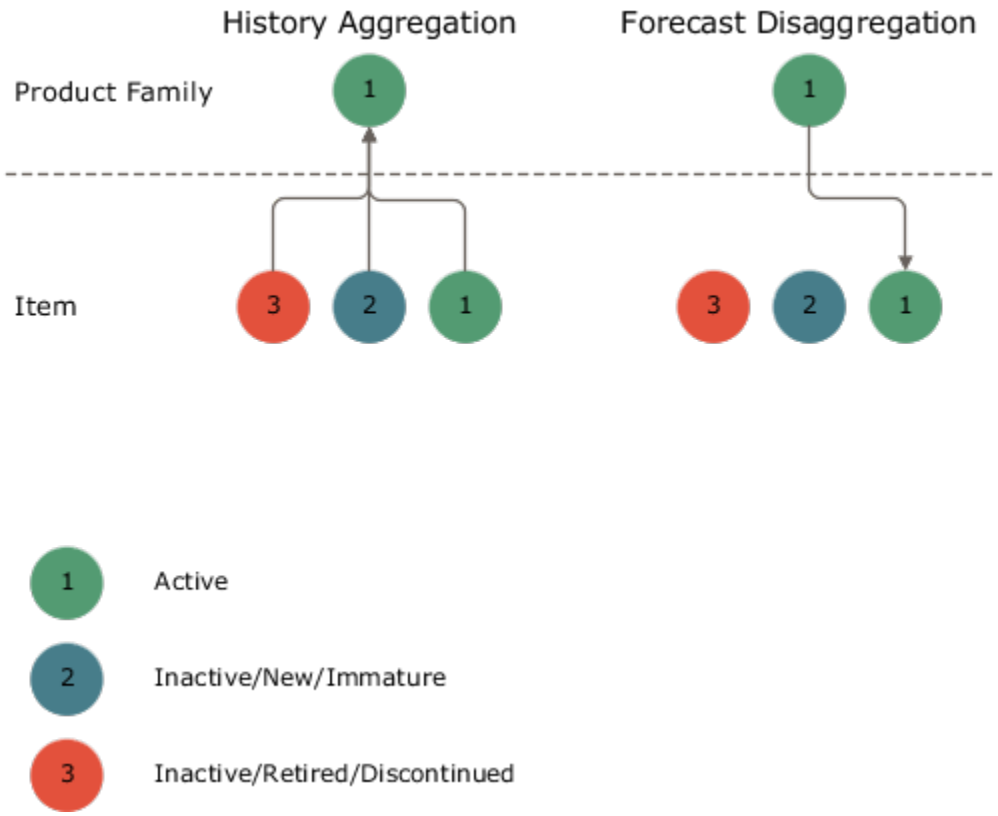
These points explain the default disaggregation of statistical forecasts:

- The forecast status measure is identified on the basis of the output measure for the forecasting profile and calculated for a product combination after these criteria are considered:
    - The values of the PeriodsUntilActive and PeriodsUntilInactive forecasting parameters.
    - The value of the associated generate forecast measure for the product combination.

    > **Note:** The generate forecast measure is an override for the forecast status measure. Edit the generate forecast measure for only those active product combinations that must not receive a forecast. Don't use this measure if you want inactive product combinations to receive a forecast.

- Depending on the input measure for the forecasting profile, the history average measure is selected. The history average for the product combination is then calculated on the basis of the GlobalAllocationPeriods forecasting parameter.
- The input history for all product combinations is collected irrespective of their forecast status (Active, Inactive/New/Immature, or Inactive/Retired/Discontinued) and aggregated to active product combinations at a higher level for generating the forecast.
- The generated forecast is disaggregated to only active product combinations at the lowest level on the basis of the history average (contained in the history average measure) and disaggregation parameters for the output measure of the forecasting profile.

As depicted in this figure, history is collected from active, inactive/new/immature, and inactive/retired/discontinued product combinations and aggregated to active product combinations at a higher level, and the forecast is disaggregated to only active product combinations at the lowest level.




*Related Topics*

- How You Configure Disaggregation of Statistical Forecasts

# How You Configure Disaggregation of Statistical Forecasts

This topic explains how you can configure the disaggregation of statistical forecasts in the Demand Management, Demand and Supply Planning, and Replenishment Planning work areas.

Instead of having the forecast disaggregated by default to active product combinations at the lowest level, you can use a measure to disaggregate the forecast to product combinations of your choice. Thereby, you can override the default logic of using the forecast status measure that corresponds to the output measure of the selected forecasting profile for identifying active product combinations that receive the disaggregated forecast.

Configuring disaggregation of statistical forecasts is useful when your organization has a product that's frequently updated, but only the latest version is available for ordering. You can generate the forecast using the historical demand for old product versions that are currently available in the market and disaggregate the forecast to only the latest product version.

**Note:** You can use this feature in only a user-defined forecasting profile that's based on Bayesian machine learning.

## Configure Disaggregation of Statistical Forecasts

Follow these high-level steps to configure the disaggregation of statistical forecasts:

1. Create a measure as follows:
    - The measure should be of the Number data type.
    - The measure should have all dimensions of the output measure of your user-defined forecasting profile except for the Time dimension.

      Any dependent measures of the created measure must also have the supported dimensions.
    - The measure expression should return 1 for product combinations that should receive the disaggregated forecast. For example, the expression could be as follows: `Case(Lifecycle Phase When 'Active' Then 1 Else 0)`

      You can also configure the expression using Item-level attributes.

      Preferably, the measure expression must not use these functions:
        - Archive
        - Bias
        - Fpos
        - Fsum
        - Lag
        - Lead
        - Log
        - Mad
        - Mape
        - MeasureOffset
        - Moving_Maximum
        - Moving_Minimum
        - Moving_Total
        - Pi
        - Power
        - Rand
    - You can populate the measure through the regular collections process or the file-based data import (FBDI) template for Supply Chain Planning measures.
2. Add the measure to the predefined Output Filters for Forecast Disaggregation measure group.

3. Add the measure and its dependent measures to the measure catalog of your plan.
   If you're using an Item-level attribute, ensure that it's present in the dimension catalog of your plan.
4. Add the ForecastOutputFilter forecasting parameter from the General Settings category to your forecasting profile.
5. Select the measure that you created for the forecasting parameter.
   Only these measures are available for the forecasting parameter:
   - The measures have the Number data type.
   - The measures have all the dimensions of the forecasting profile's output measure except for the Time dimension.
   - The measures are in the Output Filters for Forecast Disaggregation measure group.

When the plan is run, the forecast status measure corresponding to the output measure of the forecasting profile is selected for the forecasting parameter, forecast disaggregation occurs according to the default logic, and an error message is displayed on the Review Plan Messages page in these situations:

- The measure you selected for the forecasting parameter isn't in the plan's measure catalog.
- The dimensions of the dependent measures of the measure you selected for the forecasting parameter aren't supported.
- The Item-level attribute used in the measure you selected for the forecasting parameter isn't in the plan's dimension catalog.

*Related Topics*

- How Statistical Forecasts Are Disaggregated by Default
- Create Measures and Assign to a Measure Catalog
- Create a Forecasting Profile
- Forecasting Parameters

# Forecasting Using Supersession Relationships

## Overview of Forecasting Using Supersession Relationships

You can generate a forecast for the current revision and latest (future) revision of an item in a supersession chain or across multiple supersession chains by using the demand history of previous item revisions.

When the functionality for forecasting using supersession relationships is used, the demand history for previous item revisions and the available demand history for the current item revision from the history start date to the history end date of a plan are aggregated. Then, a forecast is generated on the basis of this aggregated demand history and applied to the current item revision and latest item revision from the plan start date to the forecast end date.

In industries such as automobile manufacturing, the hundreds or thousands of parts that make up a finished end item go through numerous revisions on account of design or production changes. Without the functionality for forecasting using supersession relationships, you would have to manually copy the demand history of previous item revisions to the current revision and latest revision to generate a forecast. Thus, this functionality enables you to improve efficiency by automating the process for forecasting for the current revision and latest revision in a supersession chain.

## Points to Note About Forecasting Using Supersession Relationships

Note these points about forecasting using supersession relationships:

- The functionality covers only supersession chains with reciprocal relationships among the item revisions.

  Supersession chains with unidirectional relationships aren't considered.

  For example, consider a supersession chain with item revisions A, B, C, and D, in which A and B have a reciprocal relationship, B is superseded by C, and C and D have a reciprocal relationship. Two supersession chains (A < > B and C < > D) are considered. If B is the current revision in the A < > B supersession chain, then B receives a forecast on the basis of the demand history for A and the available demand history for B. Similarly, if D is the current revision in the C < > D supersession chain, then D receives a forecast on the basis of the demand history for C and the available demand history for D.
- Item revisions with start dates that are beyond the plan horizon or forecast end date won't be considered for forecasting.

  For example, if item revision N supersedes item revision M from 01-Sep-2024, and the forecast end date is 31-Aug-2024, then a forecast won't be generated for N.

  The start date for an item revision is stored in the Item Revision Start Date measure.
- Providing the end date for an item revision is optional. This date is stored in the Item Revision End Date measure.

  If an item revision has been defined without an end date, then the Item Revision End Date measure for that item revision is populated with the date one day before the start date of the next item revision in the supersession chain. For the latest item revision, the measure is populated with the end date of the plan horizon.

  For example, consider a supersession chain with item revisions A, B, C, and D. In this supersession chain, B supersedes A, C supersedes B, and D supersedes C. The start dates for B, C, and D are 01-Feb-2021, 01-Nov-2022, and 01-Jan-2024. The end date of the plan horizon is 31-Aug-2024. For this supersession chain, the end dates set for A, B, C, and D are 31-Jan-2021, 31-Oct-2022, 31-Dec-2023, and 31-Aug-2024.
- When you have a one-to-many supersession relationship in which an item revision is superseded by more than one item revision, the item revision for the supersession relationship with the highest rank set in Oracle Fusion Cloud Product Lifecycle Management receives the forecast.

  For example, consider a supersession chain with item revision A that's superseded by item revisions B and C. The supersession relationship between A and B has a rank of one, while the supersession relationship between A and C has a rank of two. For this supersession chain, B receives the forecast that's based on the demand history for A, and C doesn't receive a forecast.
- When you have a many-to-one supersession relationship in which many item revisions are superseded by one item revision, the demand histories for the previous revisions across supersession chains are aggregated for the forecast generation for the current revision and latest revision.

  For example, if item revision X is superseded by item revision Z, and item revision Y is also superseded by Z, then the demand history for X and Y is aggregated for the forecast generation for Z.
- You can define supersession relationships in Oracle Product Lifecycle Management or using the file-based data import (FBDI) template named Supply Chain Planning Item Substitute.

  Note these points about supersession relationships that are defined in Oracle Product Lifecycle Management:

  - The item revisions in a supersession chain can belong to different organizations.

    - You can collect the item relationships using the Collect Planning Data page. You must select the Item Relationships reference entity on the Reference Data subtab on the Parameters tab.

  Note these points about supersession relationships that are defined through the import template

    - The item revisions in a supersession chain must belong to the same organization.
    - You can collect the item relationships using the Load Planning Data from Flat Files scheduled process.

- To prevent adjusting of the editable forecast measures for the current revision and latest revision outside their effective dates, you can configure an expression using the Item Revision Start Date and Item Revision End Date measures on the Edit Lock tab in the Edit Measure dialog box.
- A forecasting profile that includes the SupersessionForecastLevelMeasure forecasting parameter can generate a forecast for items with and without a supersession relationship.

  However, for better control over the forecasting process, you may choose to set up one forecasting profile for supersession forecasting and add it to your plan with an analysis set that contains only the items with supersession relationships. You can then set up another forecasting profile without the SupersessionForecastLevelMeasure forecasting parameter for items without supersession relationships and add the forecasting profile to your plan with an analysis set that contains only these items.
- If you use separate organizations for your items with supersession relationships, you can define a plan for these organizations. The organizations containing items without supersession relationships can be covered by another plan.
- During supersession forecasting in demand plans, when the SupersessionForecastLevelMeasure forecasting parameter is in the forecasting profiles, relationships among the Item, Organization, Customer Site, and Demand Class members are created for the current revision and latest revision on the basis of the relationships among these members for the previous revisions. These combinations of members for the current revision and latest revision receive the forecast. The relationships are created for current revisions and latest revisions that have item revision start dates within 365 days before the plan start date and item revision end dates after the plan start date. These relationships are stored in the granularity tables that correspond to the input measure of the forecasting profile and the forecast status measure.

  For example, consider a supersession chain with items A, B, C, and D, in which A and B are the previous revisions, C is the current revision, and D is the latest revision. Item revision A is related to organization M1, customer site S1, and demand class X, while item revision B is related to organization M2, customer site S2, and demand class X. During supersession forecasting, relationships are created for current revision C and latest revision D with organizations M1 and M2, customer sites S1 and S2, and demand class X. These combinations of members for current revision C and latest revision D receive the forecast.

  During supersession forecasting in replenishment plans, these relationships are created among the Item and Organization members because the Customer and Demand Class dimensions aren't supported for such plans. The Organization members (locations) can also be subinventories.
- For correct functioning of this feature, the previous revisions, current revision, and latest revision for an item must be present in the plan's scope.

## Example of Forecasting Using Supersession Relationships

Consider a supersession chain that consists of item revisions A, B, C, and D. There are reciprocal supersession relationships between A and B starting from February 2021, between B and C starting from November 2022, and between C and D starting from January 2024.

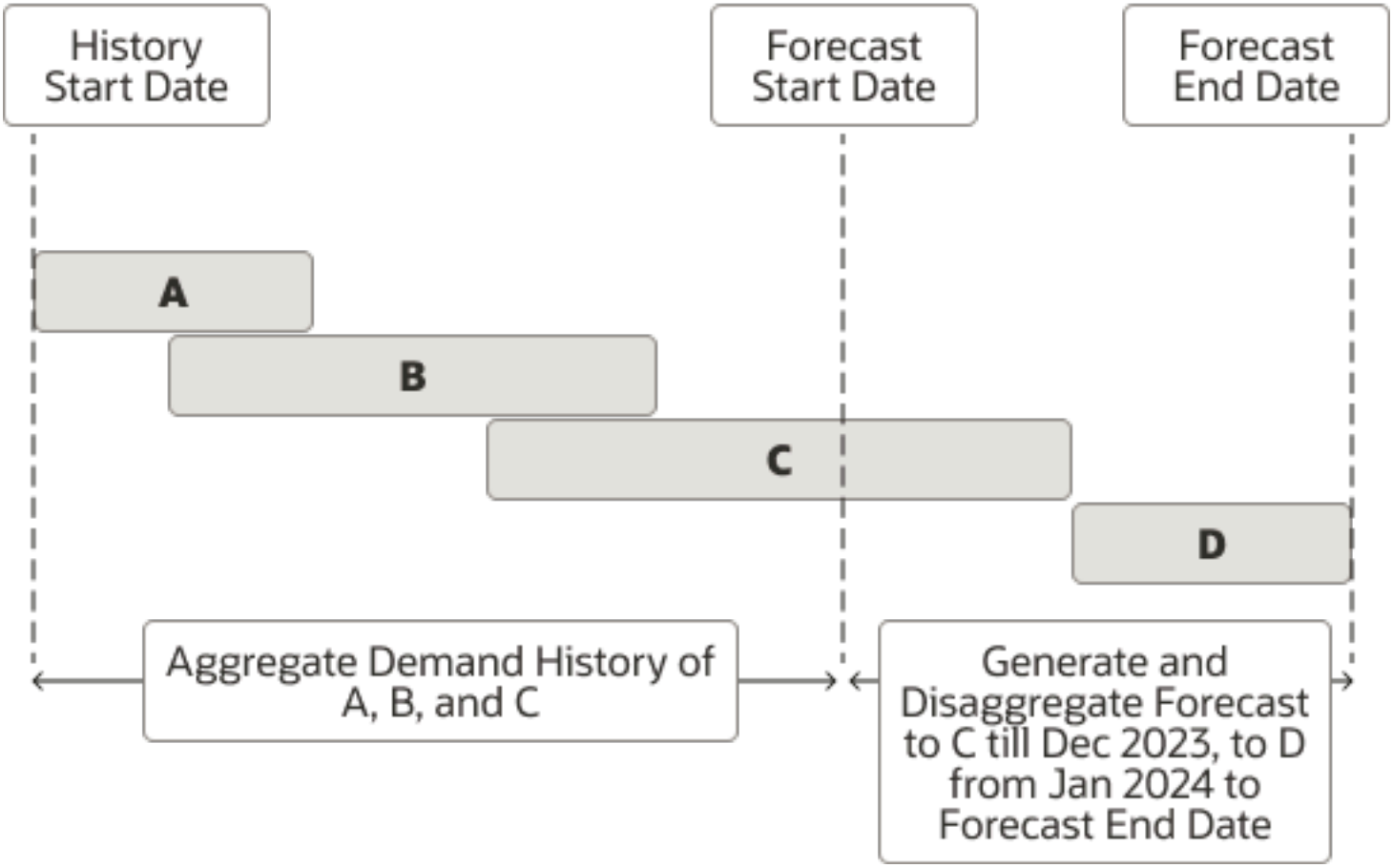
If the plan start date is between November 2022 and January 2024, A and B are the previous revisions, C is the current revision, and D is the latest revision.

When the functionality for forecasting using supersession relationships is used, the demand history for A and B and the available demand history for C from the history start date to the history end date are aggregated. Then, a forecast is generated and disaggregated for C from the plan start date to the end of December 2023 and for D from January 2024 to the forecast end date.

The following figure depicts this example:

**Supersession Chain:** A < > B < > C < > D

| From | To | Start Date | End Date |
|---|---|---|---|
| A | B | Feb 2021 | |
| B | C | Nov 2022 | |
| C | D | Jan 2024 | |



*Related Topics*

- How You Set Up Forecasting with Supersession Relationships
- How the History Average Measure Is Calculated for the Current Revision and Latest Revision
- Measures for Forecasting Using Supersession Relationships

# How You Set Up Forecasting with Supersession Relationships

This topic describes the high-level process for setting up forecasting with supersession relationships.

1. Define your supersession chains in Oracle Fusion Cloud Product Lifecycle Management or using the file-based data import (FBDI) template named Supply Chain Planning Item Substitute.
2. Collect your item relationships using one of the following:
    - The Item Relationships reference entity on the Reference Data subtab on the Parameters tab on the Collect Planning Data page
    - The Load Planning Data from Flat Files scheduled process
3. Add these predefined measures to the measure catalog for your plan:
    - Current Revision
    - Inventory ID of Latest Item Revision
    - Item Revision End Date
    - Item Revision Start Date
    - Latest Revision
    - Name of Latest Item Revision

    Alternatively, you can use the predefined measure catalog named Supersession Forecasting Catalog in your plan. This measure catalog contains the previously listed measures along with other measures.
4. Add these forecasting parameters to the forecasting profile used by your plan:
    - SupersessionForecastLevelMeasure: Select the Inventory ID of Latest Item Revision measure for this forecasting parameter.
    - LaunchDateMeasure: Select the Item Revision Start Date measure for this forecasting parameter.
    - DiscontinueDateMeasure: Select the Item Revision End Date measure for this forecasting parameter.
    - SmoothIntermittent: Set the value of this forecasting parameter to zero to generate a sparse and spiky demand forecast.

      Otherwise, the forecast generated by intermittent forecasting methods is spread across the time buckets.

    Alternatively, you can use the predefined Forecast Bookings for Supersession Chain or Forecast Shipments for Supersession Chain forecasting profile in your plan. These forecasting profiles use the previously mentioned forecasting parameters and values.
5. Run your plan with the **Refresh with current data** option selected on the Parameters tab in the Run Plan dialog box.

*Related Topics*

- Overview of Forecasting Using Supersession Relationships
- Create a Forecasting Profile
- Measures for Forecasting Using Supersession Relationships

# How the History Average Measure Is Calculated for the Current Revision and Latest Revision

When you run your plan with the Refresh with current data option selected on the Parameters tab in the Run Plan dialog box, the history average measure is calculated for the current revision and latest (future) revision of an item.

When you run your plan while refreshing it with current data, during the calculation of proportions, a history average is calculated and forecast status set for each combination in the historical demand. The specific measures that store these values are determined by the forecasting profile for the plan.

## History Average Measure

The history average measure is used for disaggregating a forecast from the level that it's generated at to the level that it's stored at. This disaggregation results in each combination getting its share of the forecast based on its share of the historical demand.

Examples of the history average measure are the predefined Bookings History Average and Shipments History Average measures.

## Forecast Status Measure

The forecast status measure identifies which combinations are active and should receive forecasts. The measure values are 1 (Active), 2 (Inactive/New/Immature), and 3 (Inactive/Retired/Discontinued). Only combinations with a forecast status of 1 receive forecasts.

Examples of the forecast status measure are the predefined Bookings Forecast Status and Shipments Forecast Status measures.

## Calculation of the History Average Measure for the Current Revision and Latest Revision

For the current revision, the value of the history average measure from the corresponding, active previous revision in a supersession chain or across supersession chains is taken. The final value of the measure for the current revision is calculated according to this formula:

History Average Measure = History Average Measure of the Current Revision Available up to the Plan Start Date + (Forecast Status Measure of the Previous Revision x History Average Measure of the Previous Revision)

The final value of the history average measure for the current revision is taken as the measure value for the latest revision.

When the history average measure is computed, the value of the forecast status measure is also changed for the previous revisions, current revision, and latest revision. The value of the measure is set to 1 for the current revision and latest revision irrespective of the demand history. The value of the measure is set to 2 for the previous revisions.

These statuses are set because the current revision and latest revision should receive the forecast, but the superseded (previous) versions shouldn't receive a forecast.

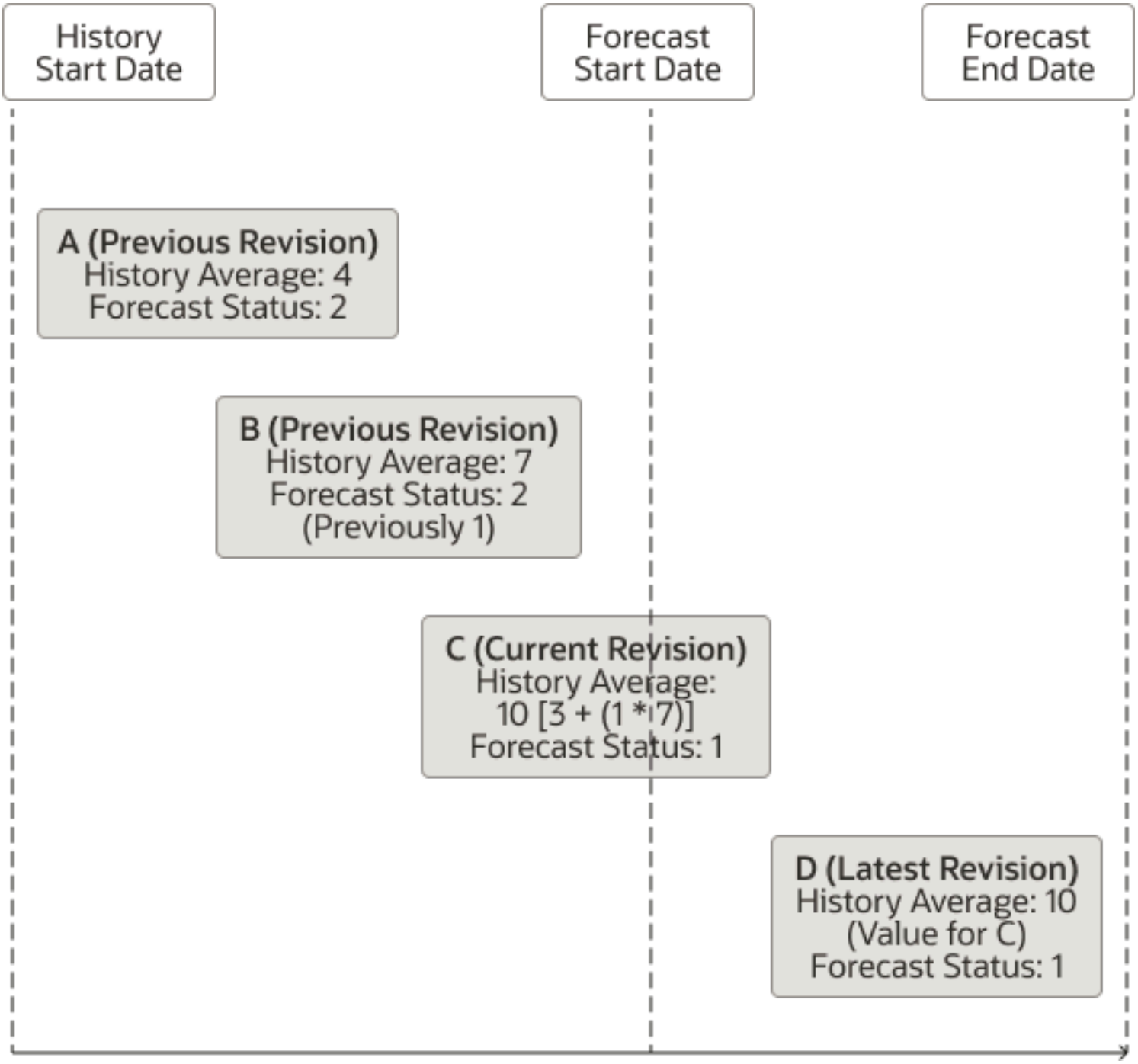
> **Note:** Don't use the generate forecast measure (for example, Bookings Forecast Generate Forecast or Shipments Forecast Generate Forecast) to turn off forecast generation for previous revisions. The value of the forecast status measure is automatically set to 2 for these revisions after the calculation of the history average measure for the current revision and latest revision.

Consider an example in which a supersession chain has previous revisions A and B, current revision C, and latest revision D:

1. For A, the value of the history average measure is 4. The value of the forecast status measure is 2.
2. For B, the value of the history average measure is 7. The value of the forecast status measure is 1.
3. For C, the value of the history average measure available up to the plan start date is 3. The value of the forecast status measure is 1.

   Thus, the final value of the history average measure for C is 10 [3 + (1 * 7)].
4. For D, the value of the history average measure is 10 (the value of the measure for C). The value of the forecast status measure is 1.
5. After the final values of the history average measure for C and D are calculated, the value of the forecast status measure for B is set to 2.

The following figure depicts this example:




*Related Topics*

- Overview of Forecasting Using Supersession Relationships
- How Statistical Forecasts Are Disaggregated by Default

## Measures for Forecasting Using Supersession Relationships

Predefined measures are available for use in forecasting with supersession relationships.

This table lists the predefined measures for forecasting with supersession relationships:

| Name | Description |
|---|---|
| Current Revision | Contains 1 if an item revision is current as of today for a supersession chain. Otherwise, the value is zero. |
| Inventory ID of Latest Item Revision | Contains the inventory ID for the latest (future) revision of an item in a supersession chain. |
| Item Revision End Date | Contains the effective end date for the revision of an item in a supersession chain. |
| Item Revision Start Date | Contains the effective start date for the revision of an item in a supersession chain. |
| Latest Revision | Contains 1 if an item revision is the latest (future) revision for a supersession chain. Otherwise, the value is zero. |
| Name of Latest Item Revision | Contains the name of the latest (future) revision of an item in a supersession chain. |

The predefined measure catalog named Supersession Forecasting Catalog contains these measures.

*Related Topics*

- Overview of Forecasting Using Supersession Relationships

# Use the Product Lifecycle Management Page Layout

## Overview of the Product Lifecycle Management Page Layout

The Product Lifecycle Management page layout helps you to manage product introductions and retirements. On this page layout, you can modify launch dates and discontinuation dates for products, while increasing or reducing baseline forecasts.

The introduction or retirement of a product often affects the demand for a related product. When the product introduction reduces the demand for the related product, the effect is termed as the cannibalization effect. When the product introduction increases the demand for the related product, the effect is termed as the halo effect.

Using this page layout along with predefined forecasting profiles in demand, demand and supply, replenishment, and sales and operations plans, you can do the following:

- Generate forecasts while allowing for the cannibalization or halo effect.
- Plan for cannibalization of existing products, and avoid revenue loss.
- Plan for the increased demand for related products on account of the halo effect.

**Note:** The page layout isn't available in the Planning Central work area.

## Description of the Page Layout

The Product Lifecycle Management page layout consists of two panes:

- The top pane displays the predefined Manage Product Life Cycle by Item and Date table, using which you can modify the launch and discontinuation dates for products.
- The bottom pane displays the predefined Manage Forecast During Product Life Cycle table, using which you can modify the shipments or bookings forecast for products.

By default, both tables display products under the Category level 1 level of the Product hierarchy in the Product dimension.

The top table is dynamically linked to the bottom table; the former passes the highlighted selection in the Category level 1 level to the latter.

**Note:** If your products are in a different Product dimension level, you need to make a copy of the page layout and its tables, modify the Product dimension level for the table copies, and ensure that the top table dynamically passes the highlighted selection in the required Product dimension level to the bottom table. You can't make changes to predefined page layouts or the hierarchy levels and links of predefined tables.

## Measures for Managing Dates for Product Lifecycle Management

The measures you use for managing dates in this page layout are as follows:

- Launch Date: Use this measure to store the date when the product is available for sale in the market. The value for this measure is collected or imported through the file-based data import (FBDI) template for Supply Chain Planning measures.
- Adjusted Launch Date: Use this measure to modify the date when the product is available for sale in the market. You can modify this measure on the page layout.
- Final Launch Date: This measure displays the final value for the date when the product is available for sale in the market. If the Adjusted Launch Date measure contains a value, that value is displayed by the Final Launch Date measure. Otherwise, the value of the Launch Date measure is displayed by the Final Launch Date measure.

  The Final Launch Date measure is the default value for the LaunchDateMeasure forecasting parameter of the Forecast Bookings Including Product Life Cycle and Forecast Shipments Including Product Life Cycle forecasting profiles.
- Discontinuation Date: Use this measure to store the date when the product is no longer available for sale in the market. The value for this measure is collected or imported through the FBDI template for Supply Chain Planning measures.
- Adjusted Discontinuation Date: Use this measure to modify the date when the product is no longer available for sale in the market. You can modify this measure on the page layout.
- Final Discontinuation Date: This measure displays the final value for the date when the product is no longer available for sale in the market. If the Adjusted Discontinuation Date measure contains a value, that value is

displayed by the Final Discontinuation Date measure. Otherwise, the value of the Discontinuation Date measure is displayed by the Final Discontinuation Date measure.

The Final Discontinuation Date measure is the default value for the DiscontinueDateMeasure forecasting parameter of the Forecast Bookings Including Product Life Cycle and Forecast Shipments Including Product Life Cycle forecasting profiles.

## Measures for Managing Forecasts for Product Lifecycle Management

**Note:** By default, the predefined Manage Forecast During Product Life Cycle table displays shipments forecast measures. If you want to generate a forecast that's based on historical bookings, you need to click **View** > **Measures** > **Manage Measures**, select the hidden and visible measures according to your requirement, and save the table layout.

The measures you use for managing the shipments forecast in this page layout are as follows:

- Shipments Forecast: This measure is the output measure for the predefined Forecast Shipments Including Product Life Cycle forecasting profile. The measure stores the shipments forecast that's based on shipments history.
- Adjusted Shipments Forecast: Use this measure to modify the shipments forecast for the product by using a number. You can modify this measure on the page layout.
- Change to Shipments Forecast Percentage: Use this measure to modify the shipments forecast for the product by using a percentage. You can modify this measure on the page layout.

  For example, to increase the shipments forecast by 75%, enter 0.75 for the Change to Shipments Forecast Percentage measure. To decrease the shipments forecast by 25%, enter -0.25 for the Change to Shipments Forecast Percentage measure.
- Final Shipments Forecast: This measure displays the final value for the shipments forecast and is dynamically updated in the Manage Forecast During Product Life Cycle table. If the Adjusted Shipments Forecast measure contains a value, it's displayed by the Final Shipments Forecast measure. If the Change to Shipments Forecast Percentage measure contains a value, the calculated value is displayed by the Final Shipments Forecast measure. Otherwise, the value of the Shipments Forecast measure is displayed by the Final Shipments Forecast measure.

  If both the Adjusted Shipments Forecast and Change to Shipments Forecast Percentage measures contain values, the percentage of the value in the Adjusted Shipments Forecast measure is calculated and displayed by the Final Shipments Forecast measure.

The measures you use for managing the bookings forecast in this page layout are as follows:

- Bookings Forecast: This measure is the output measure for the predefined Forecast Bookings Including Product Life Cycle forecasting profile. The measure stores the bookings forecast that's based on bookings history.
- Adjusted Bookings Forecast: Use this measure to modify the bookings forecast for the product by using a number. You can modify this measure on the page layout.
- Change to Bookings Forecast Percentage: Use this measure to modify the bookings forecast for the product by using a percentage. You can modify this measure on the page layout.

  For example, to increase the bookings forecast by 75%, enter 0.75 for the Change to Bookings Forecast Percentage measure. To decrease the bookings forecast by 25%, enter -0.25 for the Change to Bookings Forecast Percentage measure.
- Final Bookings Forecast: This measure displays the final value for the bookings forecast and is dynamically updated in the Manage Forecast During Product Life Cycle table. If the Adjusted Bookings Forecast measure

contains a value, it's displayed by the Final Bookings Forecast measure. If the Change to Bookings Forecast Percentage measure contains a value, the calculated value is displayed by the Final Bookings Forecast measure. Otherwise, the value of the Bookings Forecast measure is displayed by the Final Bookings Forecast measure.

If both the Adjusted Bookings Forecast and Change to Bookings Forecast Percentage measures contain values, the percentage of the value in the Adjusted Bookings Forecast measure is calculated and displayed by the Final Bookings Forecast measure.

## Forecasting Profiles for Product Lifecycle Management

You use these predefined forecasting profiles for managing product life cycles:

- Forecast Shipments Including Product Life Cycle: This forecasting profile generates a forecast on the basis of historical shipments and the Final Launch Date and Final Discontinuation Date measures.

  The forecasting profile is available for demand, demand and supply, replenishment, and sales and operations plans.
- Forecast Bookings Including Product Life Cycle: This forecasting profile generates a forecast on the basis of historical bookings and the Final Launch Date and Final Discontinuation Date measures.

  The forecasting profile is available for demand, demand and supply, and sales and operations plans.

## Other Points to Note

Note these other points about the functionality for managing the product life cycle:

- If the Final Launch Date measure doesn't contain a value or isn't present in the plan's measure catalog, the forecast is generated from the forecast start date of the plan.

  The plan's forecast start date is used if it's later than the value of the Final Launch Date measure.
- If the Final Discontinuation Date measure doesn't contain a value or isn't present in the plan's measure catalog, the forecast is generated till the forecast end date of the plan.

  The plan's forecast end date is used if it's earlier than the value of the Final Discontinuation Date measure.
- If the date in the Final Launch Date measure is later than the date in the Final Discontinuation Date measure, both measures are ignored, and the forecast is generated from the plan's forecast start date to the plan's forecast end date.
- Optionally, you can use an override label for the Change to Shipments Forecast Percentage or Change to Bookings Forecast Percentage measure in the Manage Forecast During Product Life Cycle table so that the functionality of the page layout is better reflected. For example, you can use Launch and Cannibalization Factor as the override label in the Format Measures dialog box.

*Related Topics*

- Work with Page Layouts in Replenishment Planning
- Create a Forecasting Profile
- How You Generate Forecasts While Managing Product Life Cycles
- Work with Page Layouts in Demand Management
- Manage Page Layouts in Sales and Operations Planning

# How You Generate Forecasts While Managing Product Life Cycles

To generate forecasts for your products while managing their life cycles, you can use the Product Lifecycle Management page layout in your demand, demand and supply, replenishment, or sales and operations plan.

The following is the high-level procedure for forecasting for your products while using this page layout:

1. Set up your plan.

   Include the predefined Forecast Bookings Including Product Life Cycle or Forecast Shipments Including Product Life Cycle forecasting profile in your plan.
2. Perform the collections process or use the file-based data import (FBDI) templates for importing data.

   Collect or import values for the Launch Date and Discontinuation Date measures for your products.
3. Do the following:
   - If you want to generate the forecast on the basis of historical bookings, in the table, make the bookings forecast measures visible, and hide the shipments forecast measures.
   - If your products in your plan are in a different Product dimension level than what's used in the tables, do the following:
     - Make a copy of the page layout.
     - Make copies of the page layout's tables, and select or hide the shipments forecast or bookings forecast measures as you require.
     - Change the Product dimension level for the copied tables.
     - Ensure that the copy of the Manage Product Life Cycle by Item and Date table is dynamically linked to the copy of the Manage Forecast During Product Life Cycle table, and that the top table passes the highlighted selections in the required Product dimension level to the bottom table.
4. Run the plan.
5. Open the plan, and view the information in the copy of the page layout.
6. If you're generating a forecast using shipments history, enter a value in the Adjusted Shipments Forecast or Change to Shipments Forecast Percentage measure to view the result in the Final Shipments Forecast measure. Save your changes in the table layout.

   If you're generating a forecast using bookings history, enter a value in the Adjusted Bookings Forecast or Change to Bookings Forecast Percentage measure to view the result in the Final Bookings Forecast measure. Save your changes in the table layout.
7. If you must modify the launch date for a product, enter a value in the Adjusted Launch Date measure to view the final date in the Final Launch Date measure. Save your changes in the table layout.

   If you must modify the discontinuation date for a product, enter a value in the Adjusted Discontinuation Date measure to view the final date in the Final Discontinuation Date measure. Save your changes in the table layout.

   Run the plan again to view the forecasts for the required periods for your products.

   If required, modify the value in the Adjusted Bookings Forecast, Change to Bookings Forecast Percentage, Adjusted Shipments Forecast, or Change to Shipments Forecast Percentage measure. Save your changes in the table layout.

*Related Topics*

- Overview of the Product Lifecycle Management Page Layout
- Work with Page Layouts in Replenishment Planning
- Create a Forecasting Profile
- Work with Page Layouts in Demand Management
- Manage Page Layouts in Sales and Operations Planning

# How You Forecast Product Returns

This topic explains how you can forecast product returns using forecasting profiles that are based on Bayesian machine learning.

If you must forecast product returns, Oracle recommends that you create two positive history streams, one for product demand and the other for product returns. Product sales and product returns don't necessarily occur in the same time buckets, so modeling two separate history streams is advisable. After you forecast the product demand and product returns with separate forecasting profiles, you can deduct the returns from the demand through a calculated measure.

You can import returns history only by using the file-based data import (FBDI) template for bookings history or shipments history. You can't collect returns history from other Oracle applications.

> **Note:** Oracle doesn't recommend that you import negative values using the FBDI template for bookings history or shipments history to forecast product demand and product returns in one history stream. If you import negative values, they're set to zero during the forecasting process.

# How You Generate Forecasts from a Product Launch Date

This topic explains how you can generate a forecast for a new product starting from its launch date.

## How to Set Up This Feature

Do the following to set up this feature:

- Load a launch date into the predefined Launch Date measure using the file-based data import (FBDI) template for Supply Chain Planning measures.
  Alternatively, you can manually enter a launch date into the predefined Adjusted Launch Date measure. You can also use this measure to override the imported value in the Launch Date measure.
- Add the LaunchDateMeasure forecasting parameter to your user-defined forecasting profile that's based on Bayesian machine learning.
  This forecasting parameter is in the General Settings category in the Add Parameter to Viewable List dialog box.

> **Note:** You can't use this forecasting parameter in a forecasting profile that uses feature-based machine learning. You also can't add this forecasting parameter to a predefined forecasting profile.

- Select the predefined Final Launch Date measure or a user-defined measure for the forecasting parameter.

  This measure returns the value of the Adjusted Launch Date measure if it has a value. Otherwise, the Final Launch Date measure returns the value of the Launch Date measure.
- Optionally, add the Final Launch Date, Adjusted Launch Date, and Launch Date measures to a table so that you can view and adjust the data.

  The forecasting process uses the value of the measure selected for the LaunchDateMeasure forecasting parameter even if the measure isn't present in a table.

## Points to Consider

Note these points while using this feature:

- Ensure the following if you create a measure to use instead of the Final Launch Date measure:
  - The measure has the same dimensions as those of the output measure of the forecasting profile except for the Time dimension.
  - You enable the measure for the work areas for which the forecasting profile is enabled.
  - The measure is in the measure catalog for the plan.
- The forecast is generated from the start of the forecasting horizon if these conditions are met:
  - The selected measure for the LaunchDateMeasure forecasting parameter doesn't contain a date.
  - The launch date is before the forecast start date.
- If the launch date falls within a time bucket, the beginning of the time bucket is taken as the launch date.
- The launch date is respected at the lowest level of the forecasting tree of your forecasting profile. For example, if the lowest level is a combination of the Item and Organization levels, the forecast starts on the same launch date for all customers and demand classes within the same item-organization combination. If the launch date varies by customer or demand class within the item-organization combination, the earliest launch date is used.

  To respect varying launch dates by customers for the same item, configure your forecast tree with the Product and Customer dimensions so that the lowest level is a combination of the Item and Customer Site levels.

*Related Topics*

- Forecasting Parameters
- Overview of Forecast Trees
- How You Stop Forecasts from a Product Discontinuation Date

# How You Stop Forecasts from a Product Discontinuation Date

This topic explains how you can stop a forecast for a product starting from a discontinuation date.

## How to Set Up This Feature

Do the following to set up this feature:

- Load a discontinuation date into the predefined Discontinuation Date measure using the file-based data import (FBDI) template for Supply Chain Planning measures.

  Alternatively, you can manually enter a discontinuation date into the predefined Adjusted Discontinuation Date measure. You can also use this measure to override the imported value in the Discontinuation Date measure.
- Add the DiscontinueDateMeasure forecasting parameter to your user-defined forecasting profile that's based on Bayesian machine learning.

  This forecasting parameter is in the General Settings category in the Add Parameter to Viewable List dialog box.

  > **Note:** You can't use this forecasting parameter in a forecasting profile that uses feature-based machine learning. You also can't add this forecasting parameter to a predefined forecasting profile.

- Select the predefined Final Discontinuation Date measure or a user-defined measure for the forecasting parameter.

  This measure returns the value of the Adjusted Discontinuation Date measure if it has a value. Otherwise, the Final Discontinuation Date measure returns the value of the Discontinuation Date measure.
- Optionally, add the Final Discontinuation Date, Adjusted Discontinuation Date, and Discontinuation Date measures to a table so that you can view and adjust the data.

  The forecasting process uses the value of the measure selected for the DiscontinueDateMeasure forecasting parameter even if the measure isn't present in a table.

## Points to Consider

Note these points while using this feature:

- Ensure the following if you create a measure to use instead of the Final Discontinuation Date measure:
  - The measure has the same dimensions as those of the output measure of the forecasting profile except for the Time dimension.
  - You enable the measure for the work areas for which the forecasting profile is enabled.
  - The measure is in the measure catalog for the plan.
- The forecast is generated through the end of the forecasting horizon if these conditions are met:
  - The selected measure for the DiscontinueDateMeasure forecasting parameter doesn't contain a date.

    - The discontinuation date is after the forecast end date.

- If the discontinuation date falls within a time bucket, the beginning of the time bucket is taken as the discontinuation date.
- The discontinuation date is respected at the lowest level of the forecasting tree of your forecasting profile. For example, if the lowest level is a combination of the Item and Organization levels, the forecast stops on the same discontinuation date for all customers and demand classes within the same item-organization combination. If the discontinuation date varies by customer or demand class within the item-organization combination, the latest discontinuation date is used.

  To respect varying discontinuation dates by customers for the same item, configure your forecast tree with the Product and Customer dimensions so that the lowest level is a combination of the Item and Customer Site levels.

*Related Topics*

- Forecasting Parameters
- Overview of Forecast Trees
- How You Generate Forecasts from a Product Launch Date

# How You Analyze Forecast Consumption

This topic explains how you can use the Past Due Gross Forecast measure to analyze forecast consumption in your replenishment plan. By using this measure, you can better understand how forecast is consumed before the plan start date.

You can specify optimal values for the **Past Due Forecast Days** and **Past Due Sales Order Days** fields on the Organizations tab on the Maintain Supply Network Model page by understanding the forecast consumption process.

In the rest of this topic, the use of this measure is explained, and some related points are provided.

## Use the Past Due Gross Forecast Measure

Consider an example in which the value of the **Past Due Forecast Days** field is 3, the value of the **Past Due Sales Order Days** field is 3, and the plan start date is March 15.

The initial calculations for various measures when the replenishment plan is run and which aren't visible are listed in this table:

| Measure | March 12 | March 13 | March 14 | March 15 | March 16 | March 17 | March 18 |
|---|---|---|---|---|---|---|---|
| Gross Forecast | 10 | 20 | 15 | 15 | 20 | 10 | 25 |
| Net Forecast | 0 | 8 | 15 | 15 | 20 | 10 | 25 |
| Sales Orders | 0 | 15 | 0 | 0 | 7 | 0 | 0 |

The final calculations for various measures when the replenishment plan is run and which are visible are listed in this table:

| Measure | March 12 | March 13 | March 14 | March 15 | March 16 | March 17 | March 18 |
|---|---|---|---|---|---|---|---|
| Final Shipments Forecast | 10 | 20 | 15 | 15 | 20 | 10 | 25 |
| Gross Forecast | 0 | 0 | 0 | 15 | 20 | 10 | 25 |
| Past Due Gross Forecast | 0 | 0 | 0 | 45 | 0 | 0 | 0 |
| Net Forecast | 0 | 0 | 0 | 38 | 20 | 10 | 25 |
| Sales Orders | 0 | 0 | 0 | 15 | 7 | 0 | 0 |
| Total Demand | 0 | 0 | 0 | 53 | 27 | 10 | 25 |

These points explain how you use the Past Due Gross Forecast measure to understand how the gross forecast is consumed:

- When the replenishment plan is run on March 15, as shown in the first table, the sales orders of 22 units (15 + 7) consume 10 units of the gross forecast on March 12 and 12 on March 13. After this consumption, the net forecast is set to 8 units on March 13.
- When the replenishment plan is run on March 15, note these calculations in the second table:
    - The past due net forecast is moved to that date and calculated as 38 units (8 + 15+ 15).
    - The gross forecast is always shown from the current date and is 15 units on March 15.
    - The Past Due Gross Forecast measure sums up the gross forecast before the plan start date and is 45 units (10 + 20 + 15) on March 15.
- For clarity, you can calculate the total gross forecast as 60 units on March 15 (45 units for the Past Due Gross Forecast measure and 15 units for the Gross Forecast measure). When you subtract the sales orders of 22 units from the total gross forecast of 60 units, you get a figure of 38, which is the value of the net forecast.

## Additional Information About the Use of the Past Due Gross Forecast Measure

Note these points about the use of the Past Due Gross Forecast measure:

- If you're using a user-defined measure catalog, add this measure to the catalog.
- Only forecasts that are after the start of the current plan bucket but before the plan start date are considered in the measure calculation.

  Forecasts that are before the start of the current plan bucket but within the past due forecast days aren't considered in the measure calculation.

- Open sales orders that are before the start of the current plan bucket but within the past due sales order days are carried over to the plan start date. These sales orders don't consume the forecast of the current bucket.
- The past due forecast days and past due sales order days should be set to meaningful values.

  If no values are specified for these fields, the values are considered to be zero.

# Forecast Processing in Replenishment Plans

## Overview of Forecast Processing in Replenishment Plans

This topic explains how forecasts are spread to individual working days within replenishment plans and consumed by sales orders, movement request demands, and transfer order demands before replenishment orders are calculated.

### Points About Forecast Processing

Note these points about how forecasts are spread and consumed in replenishment plans:

- The forecast can be provided through the same or another replenishment plan, a demand plan, or an external forecast schedule.
- The forecast is spread to individual working days and consumed by sales orders, movement request demands, and transfer order demands before replenishment orders are calculated. Thus, duplication of demand is avoided.
- When the spreading is done, the forecast for nonworking days is aggregated and moved to the previous working day.
- For the daily, weekly, or period planning time levels, the forecast is spread and consumed within weeks.

  For the monthly planning time level, the forecast is spread and consumed within months.
- All available open and shipped sales orders, transfer order demands, and movement request demands are aggregated within the week or month, and the forecast is consumed from the first day of the week or month.
- Past due sales orders are considered according to the value of the **Past Due Sales Order Days** field on the Organizations tab on the Maintain Supply Network Model page and moved to the plan start date for consumption of the forecast.
- Past due forecast is considered according to the value of the **Past Due Forecast Days** field on the Organizations tab on the Maintain Supply Network Model page. However, the past due forecast is considered from only the start of the current week or month.

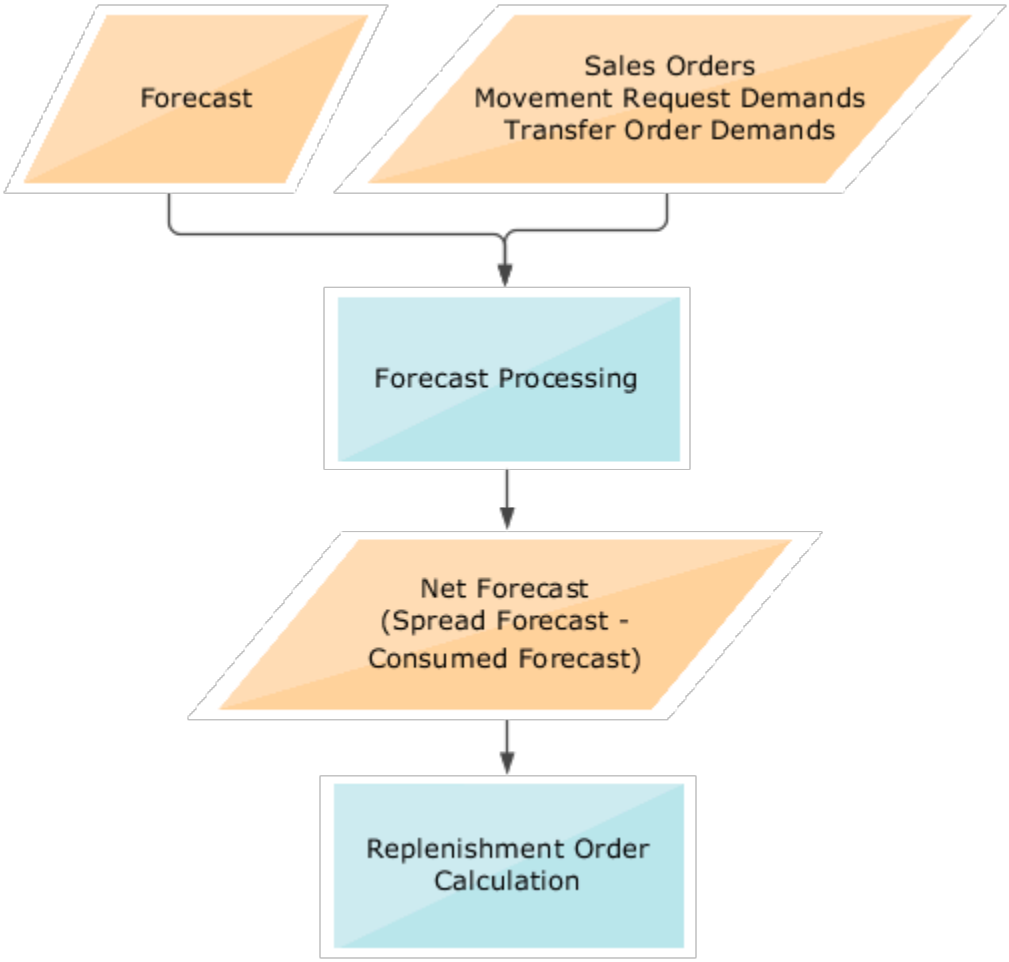
  The past due forecast for consideration is brought to the plan start date and stored in the Past Due Gross Forecast measure.
- The spread forecast is stored in the Gross Forecast measure, and the final forecast after consumption is stored in the Net Forecast measure.
- The organization's manufacturing calendar is used during forecast processing for an item-location combination.
- Demand time fences aren't supported in Replenishment Planning and hence not considered during forecast processing.

- The forecast processing functionality is enabled by default.

## Process Flow for Forecast Processing

This section describes the process for forecast processing.

As depicted in the flow chart, the forecast is processed along with the sales orders, movement request demands, and transfer order demands. The consumed forecast is subtracted from the spread forecast for calculation of the net forecast. Finally, the replenishment orders are calculated.




*Related Topics*

- Scope Plan Options for Replenishment Plans
- How You Analyze Forecast Consumption

# Examples of Forecast Processing in Replenishment Plans

This topic provides examples of forecast processing in replenishment plans with various planning time levels, forecasting time levels, and calendars.

## Example 1

In this example, the replenishment plan has a daily planning time level and forecasting time level. In the manufacturing calendar for the item-location combination, all days of the week are working days.

| | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 | Day 10 | Day 11 | Day 12 | Day 13 | Day 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Demand Forecast | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| Spread Forecast | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| Sales Orders | 0 | 0 | 30 | 0 | 5 | 0 | 0 | 20 | 0 | 5 | 0 | 0 | 0 | 0 |
| Net Forecast | 0 | 0 | 0 | 5 | 10 | 10 | 10 | 0 | 5 | 15 | 15 | 15 | 15 | 15 |
| Total Demand | 0 | 0 | 30 | 5 | 15 | 10 | 10 | 20 | 5 | 20 | 15 | 15 | 15 | 15 |

Note these points:

- The sales orders start consuming the forecast from Day 1.
- The sales orders of 30 units on Day 3 consume the spread forecast (stored in the Gross Forecast measure) on Days 1 through 3. The net forecast is zero on Days 1 through 3.
- The sales orders of 5 units on Day 5 consume the spread forecast on Day 4. The net forecast is 5 units on Day 4.
- The sales orders of 20 units on Day 8 consume the spread forecast on Days 8 and 9. The net forecast is zero on Day 8 and 10 units on Day 9.
- The sales orders of 5 units on Day 10 consume the remaining spread forecast of 10 units on Day 9. The net forecast on Day 9 is 5 units, and the spread forecast and net forecast on Day 10 remain unchanged.

## Example 2

In this example, the replenishment plan has a daily planning time level and forecasting time level. In the manufacturing calendar for the item-location combination, only five days of the week are working days.

| | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 | Day 10 | Day 11 | Day 12 | Day 13 | Day 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Demand Forecast | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| Spread Forecast | 10 | 10 | 10 | 10 | 30 | 0 | 0 | 15 | 15 | 15 | 15 | 45 | 0 | 0 |
| Sales Orders | 0 | 0 | 30 | 0 | 5 | 0 | 0 | 20 | 0 | 5 | 0 | 0 | 0 | 0 |

| | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 | Day 10 | Day 11 | Day 12 | Day 13 | Day 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | |
| Net Forecast | 0 | 0 | 0 | 5 | 30 | 0 | 0 | 0 | 5 | 15 | 15 | 45 | 0 | 0 |
| Total Demand | 0 | 0 | 30 | 5 | 35 | 0 | 0 | 20 | 5 | 20 | 15 | 45 | 0 | 0 |

Note these points:

- The sales orders of 30 units on Day 3 consume the spread forecast (stored in the Gross Forecast measure) on Days 1 through 3. The net forecast is zero on Days 1 through 3.
- The sales orders of 5 units on Day 5 consume the spread forecast on Day 4. The net forecast is 5 units on Day 4.
- Days 6 and 7 are nonworking days, and the spread forecast for these days is added to that on Day 5 (10 + 10 + 10).
- The sales orders of 20 units on Day 8 consume the spread forecast on Days 8 and 9. The net forecast is zero on Day 8 and 10 units on Day 9.
- The sales orders of 5 units on Day 10 consume the remaining spread forecast of 10 units on Day 9. The net forecast on Day 9 is five units, and the spread forecast and net forecast on Day 10 remain unchanged.
- Days 13 and 14 are nonworking days, and the spread forecast for these days is added to that on Day 12 (15 + 15 + 15).

## Example 3

In this example, the replenishment plan has a daily planning time level and weekly forecasting time level. In the manufacturing calendar for the item-location combination, all days of the week are working days.

| | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 | Day 10 | Day 11 | Day 12 | Day 13 | Day 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Demand Forecast | 0 | 0 | 0 | 0 | 0 | 0 | 70 | 0 | 0 | 0 | 0 | 0 | 0 | 105 |
| Spread Forecast | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| Sales Orders | 0 | 0 | 30 | 0 | 5 | 0 | 0 | 20 | 0 | 5 | 0 | 0 | 0 | 0 |
| Net Forecast | 0 | 0 | 0 | 5 | 10 | 10 | 10 | 0 | 5 | 15 | 15 | 15 | 15 | 15 |
| Total Demand | 0 | 0 | 30 | 5 | 15 | 10 | 10 | 20 | 5 | 20 | 15 | 15 | 15 | 15 |

Note these points:

- The demand forecast for 70 units in the first week is spread across seven days (10 units per day).
- The sales orders of 30 units on Day 3 consume the spread forecast (stored in the Gross Forecast measure) on Days 1 through 3. The net forecast is zero on Days 1 through 3.
- The sales orders of 5 units on Day 5 consume the spread forecast on Day 4. The net forecast is 5 units on Day 4.
- The demand forecast for 105 units in the second week is spread across seven days (15 units per day).
- The sales orders of 20 units on Day 8 consume the spread forecast on Days 8 and 9. The net forecast is zero on Day 8 and 10 units on Day 9.
- The sales orders of 5 units on Day 10 consume the remaining spread forecast of 10 units on Day 9. The net forecast on Day 9 is five units, and the spread forecast and net forecast on Day 10 remain unchanged.

## Example 4

In this example, the replenishment plan has a daily planning time level and forecasting time level. In the manufacturing calendar for the item-location combination, all days of the week are working days. The values of the **Past Due Forecast Days** and **Past Due Sales Order Days** fields on the Organizations tab on the Maintain Supply Network Model page for the organization are 2. The replenishment plan is run on Day 4.

| | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 | Day 10 | Day 11 | Day 12 | Day 13 | Day 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Demand Forecast | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| Spread Forecast | 0 | 0 | 0 | 30 | 10 | 10 | 10 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| Sales Orders | 0 | 0 | 30 | 0 | 5 | 0 | 0 | 20 | 0 | 5 | 0 | 0 | 0 | 0 |
| Net Forecast | 0 | 0 | 0 | 0 | 5 | 10 | 10 | 0 | 5 | 15 | 15 | 15 | 15 | 15 |
| Total Demand | 0 | 0 | 0 | 30 | 10 | 10 | 10 | 20 | 5 | 20 | 15 | 15 | 15 | 15 |

Note these points:

- The spread forecast (stored in the Gross Forecast measure) on Days 2 through 3 is carried over to Day 4, which is the plan start date. The total spread forecast on Day 4 is 30 (10 + 10 + 10). The spread forecast on Day 1 isn't considered because the **Past Due Forecast Days** field is set to 2.

  On Day 4, the value of the Gross Forecast measure is 10 units, and the value of the Past Due Gross Forecast measure is 20 units.
- The sales orders of 30 units on Day 3 are carried over to Day 4, which is the plan start date.

  The sales orders of 30 units on Day 4 consume the spread forecast on Day 4. The net forecast is zero units on Day 4.

- The sales orders of 5 units on Day 5 consume the spread forecast on Day 5. The net forecast is 5 units on Day 5.
- The sales orders of 20 units on Day 8 consume the spread forecast on Days 8 and 9. The net forecast is zero on Day 8 and 10 units on Day 9.
- The sales orders of 5 units on Day 10 consume the remaining spread forecast of 10 units on Day 9. The net forecast on Day 9 is five units, and the spread forecast and net forecast on Day 10 remain unchanged.

## Example 5

In this example, the replenishment plan has a weekly planning time level and forecasting time level. In the manufacturing calendar for the item-location combination, all days of the week are working days.

| | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 | Day 10 | Day 11 | Day 12 | Day 13 | Day 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Demand Forecast | 0 | 0 | 0 | 0 | 0 | 0 | 70 | 0 | 0 | 0 | 0 | 0 | 0 | 105 |
| Spread Forecast | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| Sales Orders | 0 | 0 | 30 | 0 | 5 | 0 | 0 | 20 | 0 | 5 | 0 | 0 | 0 | 0 |
| Net Forecast | 0 | 0 | 0 | 5 | 10 | 10 | 10 | 0 | 5 | 15 | 15 | 15 | 15 | 15 |
| Weekly Net Forecast | 0 | 0 | 0 | 0 | 0 | 0 | 35 | 0 | 0 | 0 | 0 | 0 | 0 | 80 |
| Total Demand | 0 | 0 | 0 | 0 | 0 | 0 | 70 | 0 | 0 | 0 | 0 | 0 | 0 | 105 |

Note these points:

- The demand forecast for 70 units in the first week is spread across seven days (10 units per day).
- The sales orders of 30 units on Day 3 consume the spread forecast (stored in the Gross Forecast measure) on Days 1 through 3. The net forecast is zero on Days 1 through 3.
- The sales orders of 5 units on Day 5 consume the spread forecast on Day 4. The net forecast is 5 units on Day 4.
- The demand forecast for 105 units in the second week is spread across seven days (15 units per day).
- The sales orders of 20 units on Day 8 consume the spread forecast on Days 8 and 9. The net forecast is zero on Day 8 and 10 units on Day 9.
- The sales orders of 5 units on Day 10 consume the remaining spread forecast of 10 units on Day 9. The net forecast on Day 9 is five units, and the spread forecast and net forecast on Day 10 remain unchanged.
- The net forecast is aggregated at the ends of the weekly buckets.

*Related Topics*

- How You Analyze Forecast Consumption

# 12 Replenishment Plans

## Create a Replenishment Plan

This topic explains how you create a replenishment plan in the Replenishment Planning work area.

To create the replenishment plan, follow these steps:

1. Do one of the following:
    - To create the replenishment plan from the Manage Plans page:
        i. On the Tasks panel tab, under Plans, select **Manage Plans**.

        The Manage Plans page opens.
        ii. Under Search Results, click **Actions** > **Create**.

        The Plan Options page opens.
    - To directly create the replenishment plan, on the Plans panel tab, select Plans, and click **Actions** > **Create**, or right-click Plans, and select **Create**.

    The Plan Options page opens.
2. Enter the name and description of the replenishment plan.
3. To make the replenishment plan measures available for reporting in Oracle Transactional Business Intelligence (OTBI), select the **Enable for OTBI reporting** check box.

    > **Note:** The check box is grayed out if you select a subinventory as a level member. OTBI reporting isn't supported for subinventories.

4. Define the access level.
    - Select **Public** to make the replenishment plan available to all users.
    - Select **Private** to make the replenishment plan accessible to only yourself or other users to whom you want to provide access.

    If you select **Private**, the **Edit Users** icon is enabled. Click this icon to open the Users dialog box in which you can edit the list of users who can access the replenishment plan.
5. In **Owner**, select the replenishment plan's owner.
6. Select the check boxes:

| Check Box | Feature |
|---|---|
| **Enable for incremental planning** | Select this check box to process only those item-location combinations with net changes in supplies and demands in subsequent plan runs after the initial plan run.<br><br>This check box can be used with only the **Calculate replenishments** check box. |

| Check Box | Feature |
|---|---|
| **Generate forecast** | Select this check box to use the replenishment plan to generate the demand forecast.<br><br>If you select this check box, the Demand tab is enabled, and you must select a forecasting profile on that tab for the replenishment plan.<br><br>If you don't select this check box, you can use a demand plan, another replenishment plan that has the **Generate forecast** check box selected, or an external forecast schedule for the demand forecast. Under Demand Schedules on the Organizations and Schedules subtab on the Supply tab on the Plan Options page, select the demand plan, replenishment plan, or external forecast schedule, and select the check box under **Use for Demand Schedule**. |
| **Calculate policy parameters** | Select this check box to use the replenishment plan to calculate policy parameters.<br><br>If you select only this check box, then under Demand Schedules on the Organizations and Schedules subtab on the Supply tab, you must select another replenishment plan that has the **Generate forecast** check box selected, a demand plan, or an external forecast schedule, and select the check box under **Use for Demand Schedule**.<br><br>If you don't select this check box, you can use another replenishment plan that has the **Calculate policy parameters** check box selected for calculating policy parameters. Under Demand Schedules on the Organizations and Schedules subtab on the Supply tab, select the replenishment plan, and select the check box under **Use for Policy Parameters**. |
| **Calculate replenishments** | Select this check box to use the replenishment plan to calculate replenishments.<br><br>If you select only this check box, then under Demand Schedules on the Organizations and Schedules subtab on the Supply tab, you must select another replenishment plan that has the **Calculate policy parameters** check box selected, and select the check box under **Use for Policy Parameters**. |
| **Rebalance inventory** | Select this check box to use the replenishment plan to rebalance inventory.<br><br>If you select this check box, the following happen:<br><br>o The Inventory Rebalancing tab is enabled, and you can specify the clusters, rules, and supplies and demands for inventory rebalancing on the tab.<br>o The **Enable for incremental planning** check box is grayed out.<br>o The **Enable for policy comparison** check box is grayed out in the Scope: Advanced Options dialog box that you open from the Scope tab on the Plan Options page.<br>If you select only this check box, then under Demand Schedules on the Organizations and Schedules subtab on the Supply tab, you must select another replenishment plan that has the **Calculate policy parameters** check box selected, and select the check box under **Use for Policy Parameters**. |

| Check Box | Feature |
|---|---|
| | |

To create an integrated replenishment plan, select the **Generate forecast**, **Calculate policy parameters**, **Calculate replenishments**, and **Rebalance inventory** check boxes.

Refer to other topics in this chapter for information about the Scope, Demand, Supply, and Inventory Rebalancing tabs on the Plan Options page.

*Related Topics*

- Best Practices for Setting Up Replenishment Plans

# Open a Replenishment Plan

You can open a replenishment plan using the Manage Plans page or Plans panel tab.

You can open only those replenishment plans that have been successfully run. Replenishment plans that haven't been run must be run before they can be viewed. For replenishment plans that haven't been successfully run, you must troubleshoot them and successfully run them before you can open them. Review the plan messages for troubleshooting.

Once you open replenishment plans, you can view their data and perform other actions.

On the Manage Plans page, replenishment plans are listed irrespective of their run status. On the Plans panel tab, only those replenishment plans that have been successfully run are listed.

Do one of the following to open a replenishment plan:

- To open the replenishment plan using the Manage Plans page:
  a. On the Tasks panel tab, under Plans, select **Manage Plans**.

     The Manage Plans page opens and displays the available replenishment plans.
  b. Select the replenishment plan, and click **Actions** > **Open**.

     The replenishment plan opens in a separate tab.
- On the Plans panel tab, under Plans, right-click the replenishment plan, and select **Open**.

  The replenishment plan opens in a separate tab.

# Copy a Replenishment Plan

You can make copies of replenishment plans to save time and perform planning activities incrementally.

For example, you have defined the organizations, segments, and policy assignment set for a replenishment plan. You can make a copy of that replenishment plan if the new replenishment plan uses the same entities.

Follow these steps to copy the replenishment plan:

1. To open the Duplicate Plan dialog box, do one of the following:
    - To open the Duplicate Plan dialog box from the Manage Plans page:
        i. On the Tasks panel tab, under Plans, select **Manage Plans**.

        The Manage Plans page opens.
        ii. Under Search Results, select the replenishment plan that must be copied, and click **Actions** > **Duplicate**.

        The Duplicate Plan dialog box opens.
    - To directly open the Duplicate Plan dialog box, on the Plans panel tab, under Plans, right-click the replenishment plan that must be copied, and select **Duplicate**.

      The Duplicate Plan dialog box opens.

      Only replenishment plans that have been successfully run are displayed on the Plans panel tab.
2. In **Copy Type**, select one of the following:
    - Copy plan options only: This choice is for copying the plan options to the new replenishment plan. However, the plan data isn't copied.

      If the source replenishment plan hasn't been successfully run, only this choice is available.
    - Copy all plan data with no reference to base plan: This choice is for making a full, standalone copy of the replenishment plan. Both the plan options and plan data are copied.
3. Enter a name and description for the new replenishment plan.
4. Select the access level for the new replenishment plan.

   If you select **Private**, the **Users** icon is enabled. Click this icon to open the Users dialog box in which you can edit the list of users who can open the replenishment plan.
5. In **Owner**, select the owner of the new replenishment plan.
6. Click **Save and Close**.

# View a Replenishment Plan

You can view a replenishment plan using the Manage Plans page or the Plans panel tab.

On the Manage Plans page, you can view all the replenishment plans regardless of whether they have been successfully run. You can also search for replenishment plans using various criteria.

On the Plans panel tab, you can view only those replenishment plans that have been successfully run.

Follow these steps to view replenishment plans using the Manage Plans page:

1. On the Tasks panel tab, under Plans, select **Manage Plans**.

   The Manage Plans page opens and displays the available replenishment plans.

   You can configure the columns that display information about the replenishment plans.
2. In the Search region, specify the criteria by which you want to search for replenishment plans, and click **Search**.

To view replenishment plans using the Plans panel tab, expand Plans on the panel tab.

# Manage Plan Options

## Scope Plan Options for Replenishment Plans

Scope plan options determine the replenishment plan's scope. Define or modify scope plan options on the Scope tab on the Plan Options page.

The Scope tab includes the following:

- **Dimension Catalog** field
- Plan Organizations section
- Plan Items section
- Plan Parameters section

### Dimension Catalog

In the **Dimension Catalog** field, select the dimension catalog from which hierarchies are made available for the replenishment plan.

You can use the predefined Default Replenishment Planning Catalog or a dimension catalog that you have created for your requirements. The dimension catalog that you use contains the hierarchies that you can select for your replenishment plan.

Note that Oracle Replenishment Planning doesn't support the Customer or Demand Class dimension. Any dimension catalog that contains these dimensions isn't available in the **Dimension Catalog** field.

### Plan Organizations

Specify a hierarchy, a level, and level members by which to filter the organizations for the replenishment plan. Only the Enterprise hierarchy can be selected.

You can select both organizations and subinventories as level members. Subinventories are listed in the <organization>:<subinventory> format.

> **Note:** If you select a subinventory as a level member, the **Enable for OTBI reporting** check box is grayed out. OTBI reporting isn't supported for subinventories. Subinventories are available for selection only if their parent organizations are enabled for subinventory-level planning on the Organizations tab on the Maintain Supply Network Model page.

Also, select the source system to use for filtering legal entities, business units, and organizations. Ensure that the selected source system is the same as that for the segment group that you select in the **Segment Group** field under the Plan Items section.

### Plan Items

Select the segment group and segments that must be included in the replenishment plan.

Only those segment groups for which the segmentation process has been successfully run and that don't use the Customer or Demand Class dimension are available in the **Segment Group** field.

Only those item-location combinations belonging to the selected segments and organizations selected as level members under the Plan Organizations section are included in the replenishment plan scope. Moreover, the MPS and MRP Planning Method attribute must be set to Replenishment planning for these items. If you selected legal entities or business units as level members, the organizations in these legal entities or business units are considered.

> **Note:** The number of combinations of items, locations, and planning time buckets in the replenishment plan can't exceed 31 million.

## Plan Parameters

The following table describes the plan parameters:

| Parameter | Definition |
|---|---|
| Planning Calendar | Planning calendar.<br><br>Only those planning calendars that are a part of the selected dimension catalog are available for selection. Moreover, the planning calendar can be of the fiscal, Gregorian, or organization type.<br><br>You can select fiscal calendars when only the **Generate forecast** check box is selected on the Plan Options page. |
| Planning Time Level | Planning time level.<br><br>The planning time levels you can select are day and month for a fiscal calendar, month for a Gregorian calendar, and day, week, and period for an organization calendar. |
| Number of Buckets | Number of planning time buckets that determines the planning time granularity.<br><br>The planning time level and number of planning time buckets together determine the planning horizon that's represented by the plan start date and plan end date on the General subtab on the Supply tab. |
| Policy Assignment Set | Policy assignment set for the selected segment group.<br><br>Policies are calculated on the basis of policy parameters defined in the policy assignment set.<br><br>**Note:**<br>If the **Calculate policy parameters** check box is selected, you must select a policy assignment set. |
| Measure Catalog | Catalog containing measures used in the replenishment plan output.<br><br>By enabling only those measures that are needed for your replenishment plan, you can perform a focused analysis with improved performance.<br><br>If the **Enable for incremental planning** and **Calculate replenishments** check boxes are selected on the Plan Options page, the Incremental Replenishment Planning Default Catalog is selected, and the field is grayed out. |
| Exception Set | Exceptions computed as a part of the replenishment plan. |

| Parameter | Definition |
|---|---|
| | By enabling only required exceptions, you can improve the performance of the replenishment plan.<br><br>You must create exception sets and exceptions because there aren't any predefined exception sets and exceptions for Replenishment Planning. |
| Simulation Set | Set of adjustments to item attributes.<br><br>Apply a simulation set to your replenishment plan to model different business scenarios. |

*Related Topics*

- How You Set Up Replenishment Planning for Subinventories
- Segmentation in Oracle Replenishment Planning
- Overview of Inventory Rebalancing
- Policy Assignment Sets

# Set Up Policy Comparisons and Retain Policy Overrides

You can compare policies and retain policy overrides for a replenishment plan for which the **Calculate policy parameters** check box is selected on the Plan Options page.

Additionally, while the **Generate forecast** check box may or may not be selected, the **Calculate replenishments** and **Rebalance inventory** check boxes can't be selected.

Follow these steps to set up policy comparisons and retain policy overrides:

1. Open the Plan Options page for the replenishment plan through one of these ways:
    - Use the Manage Plans page:
        i. On the Tasks panel tab, under Plans, select **Manage Plans**.

        The Manage Plans page opens.
        ii. Under Search Results, select the replenishment plan that you want to edit, and click **Actions** > **Edit Plan Options**.
    - On the Plans panel tab, under Plans, right-click the replenishment plan that you want to edit, and select **Edit Plan Options**.
2. On the Scope tab of the Plan Options page, click **Select Advanced Options**.

    The Scope: Advanced Options dialog box opens.
3. Select the **Enable for policy comparison** check box.

    The **Threshold Percentage for Policy Comparison** field and **Retain policy overrides** check box are enabled.
4. In the **Threshold Percentage for Policy Comparison** field, enter the deviation percentage for automatically accepting newly calculated policy parameters.

    If the deviation percentage between a newly calculated policy parameter and an existing policy parameter is less than the threshold value, the newly calculated policy parameter is automatically accepted.

5. Select the **Retain policy overrides** check box to retain manual policy overrides after the replenishment plan is run with the **Refresh with current data** option selected on the Parameters tab in the Run Plan dialog box.

   If you don't select this check box, the policy overrides you made are overwritten the next time you run the replenishment plan and refresh it with current data.

   If you select this check box, your policy overrides are retained even if the deviation percentages for the newly calculated policy parameters are within the threshold percentage.
6. Click **Done**.
7. Save your changes.

# Considerations for Storing Plan Data at Aggregate Time Levels

For demand plans and replenishment plans, you can select a planning time level to determine whether plan data is stored at aggregate time levels.

Storing the demand signal data at a daily level isn't efficient if you forecast using demand signals at aggregate levels, such as weekly and monthly. When your data is stored at aggregate time levels, embedded analytics are more responsive and perform faster across your demand plan or replenishment plan. This decision is applicable to the Demand Management, Demand and Supply Planning, Planning Central, and Replenishment Planning work areas. Your choices for your forecasting time level are based on what you selected for your planning time level.

## Planning Time Level Parameter

The **Planning Time Level** parameter is located on the Plan Options page, Scope tab, in the **Plan Parameters** section. Your selection for the **Planning Time Level** parameter determines the time level at which the plan data is stored. The values available for the **Planning Time Level** parameter are based on what you selected for the **Planning Calendar** parameter as follows:

- Gregorian calendar: Day or Month

  Oracle Fusion Replenishment Planning doesn't support the daily planning time level for the Gregorian calendar.
- Manufacturing calendar: Day, Week, or Period

## Forecasting Time Level Parameter

For demand plans or replenishment plans, the **Forecasting Time Level** parameter is located on the Demand tab of the Plan Options page. The selections available for the **Forecasting Time Level** parameter are limited to the selected planning time level and any parent levels above it in the selected planning calendar. For example, if the Month level in the Gregorian calendar is selected for the planning time level, then the **Forecasting Time Level** parameter is limited to Month, Quarter, and Year.

## Configuration Examples: Weekly and Monthly Plans

Weekly Plan: The following table shows an example of a configuration for a weekly demand plan or replenishment plan.

| Parameter Location | Parameter | Value |
|---|---|---|
| Plan Parameters section of the Scope tab | Planning Calendar | a manufacturing calendar |
| Plan Parameters section of the Scope tab | Planning Time Level | Week |

| Parameter Location | Parameter | Value |
|---|---|---|
| | | |
| Demand tab | Forecasting Time Level | Week |

Monthly Plan: The following table shows an example of a configuration for a monthly demand plan or replenishment plan.

| Parameter Location | Parameter | Value |
|---|---|---|
| Plan Parameters section of the Scope tab | Planning Calendar | Gregorian calendar |
| Plan Parameters section of the Scope tab | Planning Time Level | Month |
| Demand tab | Forecasting Time Level | Month |

# Demand Plan Options for Demand or Replenishment Plans

Define or modify demand options for a demand plan or replenishment plan on the Demand tab on the Plan Options page.

For a replenishment plan, the Demand tab is enabled only when you select the **Generate forecast** check box on the Plan Options page.

The following table explains how you use the Demand tab:

| Demand Plan Option | Explanation |
|---|---|
| Aggregate Non-Key Customer Data to an All Other Level Member | Select this check box to aggregate data for customers whom you don't identify as key customers. When you select this check box, the data for these non-key customers is aggregated to an All Other member for analysis, and the number of customers and customer sites is reduced in the demand plan. While certain customers and customer sites are relevant to your demand plan, most others aren't and only add to the volume of data in your demand plan.<br><br>Before using this feature, you first need to use the file-based data import (FBDI) template titled Supply Chain Planning Key Customer Options (ScpKeyCustomerOptionsImportTemplate.xlsm) to identify key customers by hierarchy and level or by customer name and run the collections process.<br><br>This check box is available in only the Demand Management work area. |
| Forecasting Time Level | Select the time level at which the forecast is generated. The selections are restricted to the planning time level that you selected on the Scope tab or higher levels. For example, for a planning time level of a week, the available forecasting time levels are week and period.<br><br>For a demand plan that uses a hybrid time hierarchy, the available forecasting time levels are parent levels of the Hybrid time level for the hierarchy that you selected as the planning calendar on the Scope tab. |

| Demand Plan Option | Explanation |
|---|---|
| | The bucket you select for the forecasting time level is also used for the historical buckets, history offset, forecast buckets, and locked forecast buckets displayed on the Demand tab.<br><br>**Note:**<br>The forecasting time level doesn't apply to forecasting profiles that use feature-based machine learning. |
| Forecasting Profile, Input Measure, and Output Measure | In the Forecast Profiles section, specify the forecasting profiles for the plan. Only those forecasting profiles that are enabled for the Demand Management or Replenishment Planning work area are available for selection. When you run the plan, the forecasting profiles run in the specified order. If the forecasting profiles use the same output measure, it stores the output of the last run forecasting profile.<br><br>You can't edit the input measure or output measure for a forecasting profile. The data in the input measure serves as the basis of historical demand for the forecast. The output measure stores the generated forecast.<br><br>The following are the predefined forecasting profiles:<br><br>• Forecast Bookings<br>o Input Measure: Final Bookings History<br>o Output Measure: Bookings Forecast<br>o Use: For forecasting on the basis of bookings history. Not available in the Replenishment Planning work area.<br>• Forecast Bookings Including Event Activity<br>o Input Measure: Final Bookings History<br>o Output Measure: Bookings Forecast<br>o Use: For forecasting on the basis of bookings history while incorporating the impact of events. Not available in the Replenishment Planning work area.<br>• Forecast Consumption<br>o Input Measure: Final Consumption History<br>o Output Measure: Consumption Forecast<br>o Use: For forecasting on the basis of consumption history. Not available in the Demand Management work area.<br>• Forecast Shipments<br>o Input Measure: Final Shipments History<br>o Output Measure: Shipments Forecast<br>o Use: For forecasting on the basis of shipments history<br>• Forecast Shipments Including Event Activity<br>o Input Measure: Final Shipments History<br>o Output Measure: Shipments Forecast<br>o Use: For forecasting on the basis of shipments history while incorporating the impact of events. Not available in the Replenishment Planning work area. |

| Demand Plan Option | Explanation |
|---|---|
| Analysis Set | Select an analysis set.<br>• If you don't select an analysis set, the forecasting profile applies to the full scope of the plan.<br>• If you select an analysis set, the forecasting profile is applied to only the subset of the plan scope that's defined by the analysis set.<br>For example, you have an analysis set containing a specific set of products, and you select that analysis set for a forecasting profile. The forecast is generated for only the products included in both the analysis set and the plan, instead of for all the products in the plan.<br>You can use segments as member filters while configuring the analysis sets. Then, you can apply forecasting profiles to specific segments by selecting the associated analysis sets. |
| Historical Buckets | Define the amount of historical data to use during the forecasting process. The number of historical buckets is multiplied by the forecasting time level for determining the time horizon (number of days between the history start and end dates) for considering the collected historical demand.<br>The historical buckets substantially affect the demand forecast generated when you run the plan. Use at least 12 months of history, but using 18 to 36 months of history is the best practice. When setting the historical buckets, keep the following in mind:<br>• Very long history affects the plan runtime and makes the forecast less relevant to current demand patterns.<br>• Less than 1 year of history makes determining the impact of seasonal occurrences and holidays difficult or impossible.<br>The historical bucket setting is the maximum amount of history used during forecast generation. The actual amount depends on the data available for a given item and organization or item-location combination. For each item and organization or item-location combination, the forecasting process identifies all available historical data, removes any leading zero demand prior to the first positive demand point, and generates a forecast. |
| History Offset | Define the buckets by which the history start date is moved backward. The forecast start date is then set to one bucket ahead of the new history end date, and the history start and end dates and forecast end date are automatically updated. The bucket size is determined by your selection in the **Forecasting Time Level** field.<br>You use the history offset when you want to perform out-of-sample forecast tuning or back testing. By moving the history start and end dates backward, you can generate a forecast for the period between the history end date and the forecast start date, for which period you already have data. You can compare your forecast with the actual data to refine your statistical forecast. |
| History Start and End Dates | For a demand plan, the history end date is determined by the plan run date and the planning calendar.<br>For a replenishment plan, the history end date is determined by the plan start date (displayed on the General subtab on the Supply tab on the Plan Options page) and the planning calendar.<br>The history start date is determined from the history end date and the number of days between the dates. The number of days between the history start and end dates is determined by multiplying the number of historical buckets by the forecasting time level. |
| Forecast Buckets | Indicates the number of time periods for the demand forecast and is driven by the planning horizon set for the plan and the forecasting time level. |
| Locked Forecast Buckets | Indicate the number of buckets from the end of historical data that don't receive a new forecast when you run the plan. The bucket size is determined by your selection in the **Forecasting Time Level** field. |

| Demand Plan Option | Explanation |
|---|---|
| | Ensure that the number you enter doesn't exceed the displayed number of forecast buckets. |
| Forecast End Date | Indicates the end date for the generated forecast. The end date is set to an end-of-period date based on the history end date, forecasting buckets, and forecasting time level. |

*Related Topics*

- Create a Forecasting Profile
- Edit a User-Defined Forecasting Profile
- Use the History Offset for Out-of-Sample Forecast Tuning
- Segmentation in Oracle Replenishment Planning
- Segmentation in Oracle Demand Management

# Use the History Offset for Out-of-Sample Forecast Tuning

This topic explains how you can use the history offset for a forecasting profile for performing out-of-sample forecast tuning or back testing.

You set the history offset in the Forecast Profiles section on the Demand tab of the Plan Options page for a demand plan, demand and supply plan (in the Demand and Supply Planning work area), or replenishment plan. When you set the history offset, the forecast start date is one bucket after the history end date.

## Benefits of Using the History Offset

The history offset enables you to shift the history end date backward so that you can generate a forecast for the period for which you have actual data. By comparing the forecast with your actual data in the period between the history end date and the current date, you can accurately fine-tune the forecasting methods, causal factors, and forecasting parameters used in your forecasting profile, thereby increasing the reliability of the statistical forecast.

By using this feature, you don't have to wait for several months to collect data and compare it with your forecast so that you can fine-tune your forecasting profile.

## Points to Note When Using the History Offset

Some points to note when using the history offset are as follows:

- Preferably, create a forecasting profile for using the history offset. Ensure that the output measure isn't used by other forecasting profiles.

  This forecasting profile should contain the forecasting methods, causal factors, and forecasting parameters that are used by the other forecasting profiles that you use for the statistical forecast.
- The history offset uses the time level you specify in the **Forecasting Time Level** field.
- When you set or change the history offset, the history start date, history end date, and forecast end date are automatically updated.
- When you use the history offset, you should ensure that the tables and graphs in your plan display historical data for enough days to cover the new history start and end dates.

You can control the number of days for displaying historical demand before the plan start date in tables and graphs by using the **Demand History Days** field in the Demand: Advanced Options dialog box that you open from the Demand tab on the Plan Options page. Enter the number of days to display historical demand before the plan start date in tables and graphs when a time filter isn't specified. The default is 182.

- If your data is seasonal, you preferably should have at least two years of history before the new history end date so that trends are captured and an accurate statistical forecast is generated. You can't generate an accurate statistical forecast if you have less than one year of history before the new history end date.
- The history offset isn't considered in the calculation of the measure that stores the history average for the forecasting profile. Instead, the original history end date is used in the calculation of the history average.
- If the plan is used as a demand schedule for a replenishment plan or a supply plan, the history offset isn't considered.

## Refine Your Statistical Forecast by Using the History Offset

These are the high-level steps for using the history offset for refining your statistical forecast:

1. Run your plan with the forecasting profile that you normally use.
   On the Parameters tab of the Run Plan dialog box, under Details, select **Refresh with current data**.
2. Create a forecasting profile and output measure for using the history offset.
3. Attach the new forecasting profile to the plan, and set the history offset.
4. Run the plan with the new forecasting profile.
   On the Parameters tab of the Run Plan dialog box, under Details, select **Do not refresh with current data**. For as long as you're fine-tuning the statistical forecast, you don't need to select **Refresh with current data**.
5. Compare the forecast with the actual data, and fine-tune the forecasting methods, causal factors, and forecasting parameters.
6. Make changes to the forecasting methods, causal factors, and forecasting parameters in the forecasting profile that you want to use for the statistical forecast, and run the plan with the forecasting profile.

*Related Topics*

- Demand Plan Options for Demand or Replenishment Plans
- Create a Forecasting Profile
- Run a Replenishment Plan
- Run a Demand Plan

# Considerations for Configuring Replenishment Plan Attributes

You can specify generic attributes of a replenishment plan, such as the assignment set and time horizon for demand, in the Replenishment Plan Attributes section on the Plan Options page, Supply tab, General subtab.

The Supply tab is enabled only when the **Calculate policy parameters**, **Calculate replenishments**, or **Rebalance inventory** check box is selected by itself or with other check boxes on the Plan Options page.

> **Note:** If you select only the **Calculate policy parameters** check box, the **Overwrite Firm Planned Orders** field is grayed out. If you select only the **Rebalance Inventory** check box, except for the **Overwrite Firm Planned Orders** field, all the other fields are grayed out under Replenishment Plan Attributes.

The plan start and end dates are calculated by the replenishment planning process. The plan start date is set to the date on which you run the replenishment plan, and the plan end date is calculated from the plan start date on the basis of the planning time level and number of buckets defined on the Scope tab. The plan start and end dates are automatically advanced each time you run the replenishment plan. The plan start and end dates together define the planning horizon.

## Assignment Set

Use assignment sets to link sourcing rules and bills of distribution to organizations and items. Using sourcing rules, bills of distribution, and assignment sets together, you specify how material is supplied and transferred across a supply chain.

Select the assignment set that must be used with the replenishment plan.

## Overwrite Firm Planned Orders

Specify whether firm planned orders are retained between replenishment plan runs. When you select **All**, the replenishment planning process overwrites all orders, planned and firm planned, from the current replenishment plan. When you select **None**, the replenishment planning process doesn't overwrite firm planned orders. However, planned orders that aren't firm are overwritten.

> **Note:** If you select the **Rebalance inventory** check box on the Plan Options page, firm planned orders are overwritten even if you select **None** in the **Overwrite Firm Planned Orders** field.

## Time Horizon for Demand

Specify the time window in which demand is considered for calculating the Beginning Inventory Position measure on a given day. When you select **None**, only the current day's demand for an item-location combination is considered. When you select **Item lead time**, the demand within the lead time for the item-location combination is considered.

## Lead Time Multiplier

Enter the number by which the lead time for the item-location combination should be multiplied when the time window for demand is considered.

When you select **Item lead time**, the Beginning Inventory Position measure is calculated as Projected Available Balance + On Order - backlog (open orders within the item lead time). By using the time horizon and lead time multiplier together, you can determine how many days of backlog are considered during the calculation of the Beginning Inventory Position measure.

A large lead time multiplier results in a large inventory.

## Supply Cutoff Days

Enter the number of days that must be added to the plan end date. All the existing orders with order due dates that fall within the specified period after the plan end date are considered during the calculation of the On Order measure.

This value is required for proper calculation of the On Order measure and prevents excess replenishments from being created when the replenishment plan is run.

The maximum number of supply cutoff days you can specify is 15. If no value is specified, zero is taken as the number of supply cutoff days.

### Aggregate Planned Orders

For a replenishment plan with a planning time level higher than a day, the inventory position is nevertheless evaluated daily so that replenishments are efficiently created. However, the planned orders are moved to the ends of the aggregate planning buckets.

For such a replenishment plan, select **Yes** to aggregate the planned orders into one large order for each aggregate planning bucket.

If you select **No**, planned orders aren't aggregated into one large order.

### Create Natural Time Fence

Select this check box to create a natural time fence for the replenishment plan. By creating a natural time fence, you ensure that a new planned order has a due date that's after the due date for the latest, firm purchase order or transfer order.

*Related Topics*

- Manually Release Replenishment Orders
- Aggregate Planning Buckets and Replenishment Orders

## How the Natural Time Fence Controls the Creation of Planned Orders

Enable a natural time fence for your replenishment plan so that a planned order is created with a due date that's after the due date of the latest, firm purchase order or transfer order.

The natural time fence date is set to the due date of the latest, firm purchase order or transfer order. Therefore, if the demand before the natural time fence date increases, a new planned order is recommended with a due date that's one day or more after the natural time fence date. Thus, the natural time fence improves the efficiency of generating planned orders.

During the bottom-up phase of multiechelon replenishment planning, for purchase orders, purchase requisitions, movement requests, and transfer orders that aren't firm and are rescheduled (preponed), the due dates must be one day after the natural time fence.

This feature is useful in scenarios such as these:

- Your supplier might delay the delivery of a purchase order on account of manufacturing issues. Your buyer firms the purchase order, and you run your replenishment plan again after collecting firm purchase orders. In this situation, you don't want to release another planned order with a due date that's before the due date of the existing, firm purchase order.
- To cater to increased demand, your store might generate a planned order with a due date that's earlier than that for an existing, firm purchase order. In this situation, you want to ensure that the due date of the new planned order is after that of the existing, firm purchase order.

## Settings That Affect the Creation of the Natural Time Fence

These settings affect the creation of the natural time fence:

- The selection of the **Create natural time fence** check box on the General subtab on the Supply tab on the Plan Options page for your replenishment plan.

  > **Note:** Select this check box for the replenishment plan for which you've selected the **Calculate replenishments** check box on the Plan Options page.

- The due date of the latest, firm purchase order or transfer order.

## How the Natural Time Fence Is Calculated

The natural time fence is set to the due date of the latest, firm purchase order or transfer order.

New planned orders are created with due dates outside the natural time fence. However, the order dates of the planned orders can be inside the natural time fence.

## Example of a Natural Time Fence

Consider this example of an item-location combination for which the policy type is min-max planning:

| Measure | March 12 | March 13 | March 14 | March 15 | March 16 | March 17 | March 18 | March 19 |
|---|---|---|---|---|---|---|---|---|
| Total Demand | 20 | 120 | 20 | 20 | 20 | 20 | 20 | 30 |
| Final Minimum Quantity | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Final Maximum Quantity | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 |
| On Hand | 60 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Purchase Orders | 0 | 0 | 0 | 0 | 0 | 140 | 0 | 80 |
| Total Supply | 60 | 0 | 0 | 0 | 0 | 140 | 160 | 80 |
| Projected Available Balance | 40 | -80 | -100 | -120 | -140 | -20 | 120 | 170 |
| On Order | 0 | 0 | 140 | 140 | 380 | 240 | 80 | 0 |
| Beginning Inventory Position | 40 | -80 | 40 | 20 | 240 | 220 | 200 | 170 |

| Measure | March 12 | March 13 | March 14 | March 15 | March 16 | March 17 | March 18 | March 19 |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
| Planned Replenishment by Order Date | 0 | 0 | 0 | 160 | 0 | 0 | 0 | 0 |
| Planned Replenishment by Due Date | 0 | 0 | 0 | 0 | 0 | 0 | 160 | 0 |
| Final Inventory Position | 40 | -80 | 40 | 180 | 240 | 220 | 200 | 170 |

Note these points:

- The replenishment plan is run on March 12.
- The due date of March 17 for the firm purchase order of 140 units is taken as the natural time fence date.

  Any new planned order must have its due date after March 17.
- The Beginning Inventory Position measure on March 12 is less than the Final Minimum Quantity measure. But, the planned order isn't created on March 12. Instead, the planned order is created with an order date of March 15 and due date of March 18 to ensure that the due date is outside the natural time fence.

*Related Topics*

- Overview of Multiechelon Replenishment Planning
- Rescheduling of Orders During Bottom-up Phase of Multiechelon Replenishment Planning

# Automatic Release Options

Automatic release uses scheduled processes to release planned orders automatically after the plan run completes.

The following options are available in the Automatic Release Parameters section on the Plan Options page, Supply Tab, General subtab in one of the work areas for Oracle Fusion Cloud Supply Chain Planning:

- Release planned orders automatically
- Include rescheduled and canceled supplies in automatic releases
- Include rescheduled supplies in automatic releases

To navigate to the Automatic Release Parameters section, follow these steps:

1. On the Plan Options page, click the Tasks panel tab.
2. In the Tasks panel tab, click **Manage Plans**.
3. In the Search area, search for your plan.
4. Select the plan from the displayed search result.
5. Click **Actions**, and then click **Edit Plan Options**.
6. On the Plan Options page, click the Supply tab.

The General subtab appears. The Automatic Release Parameters section is a part of this tab.

## Release Planned Orders Automatically

To release planned orders automatically, you must perform these steps before you run the plan:

- Select the **Release planned orders automatically** check box on the Plan Options page, Supply Tab, General subtab.
- Select the **Refresh with current data** option on the Parameters tab in the Run Plan dialog box.

The planned orders are automatically released after the run plan is successful.

For a demand and supply plan, replenishment plan, or supply plan, the selections in the Automatic Release Parameters section aren't copied when you copy a plan. The planning process won't release planned orders when you use the duplicated plan to perform simulations.

**Note:** Release time fence is an item-organization attribute and isn't defined in plan options.

## Include Rescheduled and Canceled Supplies in Automatic Releases

When you select the **Include rescheduled and canceled supplies in automatic releases** check box, the planning process automatically releases rescheduled and canceled supplies. This check box is available only if you selected the **Release planned orders automatically** check box.

**Note:** The **Include rescheduled and canceled supplies in automatic releases** check box isn't available in the Replenishment Planning work area.

## Include Rescheduled Supplies in Automatic Releases

When you select the **Include rescheduled supplies in automatic releases** check box, the planning process automatically releases purchase orders and transfer orders that aren't firm and that were rescheduled during the bottom-up phase of multiechelon replenishment planning. This check box is available only if you selected the **Release planned orders automatically** check box.

**Note:** The **Include rescheduled supplies in automatic releases** check box is available in only the Replenishment Planning work area.

*Related Topics*

- How Replenishment Orders Are Automatically Released
- Rescheduling of Orders During Bottom-up Phase of Multiechelon Replenishment Planning

# Item Relationship Options for Replenishment Plans

The selections you make in the Item Relationships section on the General subtab on the Supply tab on the Plan Options page affect how related items are used during end item substitution and supersession in your replenishment plan.

The **Use of Related Items Supplies** and **Lead Time Multiplier for Excess Window** fields are enabled only when you select the **Calculate replenishments** check box on the Plan Options page. Also, you must not select the **Rebalance inventory** check box on the Plan Options page.

In the **Use of Related Items Supplies** field, these selections are available:

- Don't use related items: This selection is the default.
- Maximize use of related items to minimize new replenishments: The supply of the substitute item or supersession item is used so that a new replenishment order for the demanded item isn't triggered. The emphasis is on bringing the quantity of the demanded item above the minimum quantity or reorder point (ROP) quantity. However, the supply of the substitute item or supersession item is maintained above the minimum quantity or ROP quantity so that the demand for this item can be met.

  The shortage of the item is calculated as follows:

  - If the Beginning Inventory Position is less than or equal to the Minimum Quantity or ROP Quantity, the shortage is calculated as Beginning Inventory Position - Minimum Quantity - 1 or Beginning Inventory Position - ROP Quantity - 1.
  - If the value of the Minimum Quantity or ROP Quantity is null, when the Beginning Inventory Position is less than zero, the shortage is equal to the Beginning Inventory Position.

  The excess is calculated as the least positive value for Projected Available Balance - Minimum Quantity - 1 or Projected Available Balance - ROP Quantity - 1 for a day in the excess window.

  If the excess window extends beyond the planning horizon, the excess window is restricted to the end of the planning horizon.
- Use related items only when necessary to avoid stockouts: The demand is fulfilled by the supply of the demanded item, including new replenishment orders, whenever possible. The supply of the substitute item or supersession item is used only for preventing backordering or stockouts of the demanded item and negative values for the Projected Available Balance.

  If the Projected Available Balance for an item on a day is less than zero, the Projected Available Balance is the shortage.

  The excess is calculated as the least positive value for the Projected Available Balance in the excess window.

  If the excess window extends beyond the planning horizon, the excess window is restricted to the end of the planning horizon.

The shortage is calculated on every day in the planning horizon and stored in the Initial Shortage for Substitution measure.

The excess is calculated on every day in the planning horizon and stored in the Initial Excess for Substitution measure.

When you select **Maximize use of related items to minimize new replenishments** or **Use related items only when necessary to avoid stockouts**, the **Lead Time Multiplier for Excess Window** field is enabled. Enter a value ranging from 0 to 10 in this field. This value is multiplied by the total lead time (preprocessing lead time + processing lead time + postprocessing lead time) specified in the Items table for the item for determination of the excess window.

If no data is available in the Items table, or you enter zero, only the supplies and demands for each day are used for determining the excess and shortage for that day.

*Related Topics*

- Overview of End Item Substitution and Supersession
- Examples of End Item Substitution and Supersession

# Enable Multiechelon Planning for Your Replenishment Plan

You enable multiechelon planning for your replenishment plan using the Plan Options page.

1. On the Plan Options page for your replenishment plan, click the Supply tab.
2. Click the General subtab.
3. In the Multiechelon Plan Attributes section, select the **Enable multiechelon planning** check box.
4. Save your work.

**Results:**

Multiechelon planning is done for your replenishment plan when you run it.

*Related Topics*

- Overview of Multiechelon Replenishment Planning
- How Multiechelon Replenishment Planning Is Done
- How You Use Multiechelon Replenishment Planning

# Release Recommendation Options

Use the Release Recommendations Parameters section in the Supply: Advanced Options dialog box to configure the following supply plan options:

- Compression days tolerance for automatic release
- Requisition load group by
- Transfer load group by
- Released only by user

Access the Release Recommendations Parameters section from a Supply Planning, Demand and Supply Planning, Replenishment Planning, or Planning Central work area.

## Compression Days Tolerance for Automatic Release

Use this option to indicate the number of compression days allowed for the automatic release of planned orders. The number of compression days applies only to automatic release of planned orders and recommendations. Compression days means the number of days reduced between the start date and due date as suggested by the planning process.

The **Compression Days Tolerance for Automatic Release** field isn't available in the Supply: Advanced Options dialog box for a replenishment plan.

## Requisition Load Group By

Use this option to indicate the requisition load group when loading requisitions to purchasing. For each option, except **All**, the planning process creates one line for each planned order within each requisition.

- **All**: The planning process creates one purchase requisition for all recommended orders.
- **Item**: The planning process creates one purchase requisition for each item.
- **Buyer**: The planning process creates one purchase requisition for each buyer.
- **Supplier**: The planning process creates one purchase requisition for each supplier.
- **Category**: The planning process creates one purchase requisition for each item category.
- **Location**: The planning process creates one purchase requisition for each location.
- **Project**: The planning process creates one purchase requisition for each project. This option is available only when the project-specific supply planning is enabled for your enterprise.

## Transfer Load Group By

Use this option to indicate the transfer load group when loading transfers to logistics. The value of **Transfer Load Group By** determines how the actual transfer order is created.

- **All**: The planning process creates all transfers in one transfer order.
- **Source and destination and ship date**: The planning process creates one transfer order for each Ship From and Ship To organization, and each ship date.
- **Source and destination, shipping method and ship date**: The planning process creates one transfer for each Ship From and Ship To organization pair, and shipping method and ship date.

## Released Only by User

Use this option to specify whether to restrict implementation of planned orders and recommendations to the current user. If you enable this option, the planning process implements only those planned orders and recommendations that the current user has marked. If you disable this option, the planning process implements planned orders and recommendations that are marked by any user.

**Note:** This option applies only to the manual release of planned orders.

Use these steps to navigate to the Release Recommendations Parameters section in the Supply: Advanced Options dialog box:

1. Open a plan:
    a. In a Supply Planning, Demand and Supply Planning, Replenishment Planning, or Planning Central work area, click the Tasks panel drawer.
    b. In the Tasks panel drawer, click **Manage Plans**.
    c. In the Search area, search for your plan.
    d. Select the plan from the displayed search result.
2. On the Edit Plan page, click **Actions** and then click **Edit Plan Options**.
3. On the Plan Options page, click the Supply tab.

4. On the General subtab, click **Select Advanced Options**.

   The Supply: Advanced Options dialog box opens, which includes the Release Recommendations Parameters section.

# Technical Control Parameters

You can use multithreading to decrease the overall runtime of a supply plan.

In the plan options, navigate to the Supply: Advanced Options dialog box, Technical tab and select the **Enable multithreading** check box. When selected, the planning process implements multithreading during the plan run.

# Organizations and Schedules Options for Replenishment Plans

Use the Organizations and Schedules subtab on the Supply tab on the Plan Options page to configure subinventory netting and demand schedules for your replenishment plan.

You also use the subtab to select replenishment plans for providing policy parameters.

The Supply tab is enabled only when you select the **Calculate policy parameters** or **Calculate replenishments** check box by itself or with other check boxes on the Plan Options page.

## Organizations

Use the Organizations section on the subtab to specify the subinventory netting for organizations that are covered by the replenishment plan.

These organizations are the same as those that you selected in the Level Members dialog box on the Scope tab on the Plan Options page.

For each listed organization, in the Subinventory Netting dialog box, select or deselect the check boxes in the **Enable Netting** column to include or exclude subinventories from the supply-demand netting in the replenishment plan. During the collection process, data is collected from the subinventories on the basis of the organization configuration in the source system. If you enable subinventory netting for a new subinventory in the source system, the replenishment plan automatically includes the new subinventory after the next collection process.

## Demand Schedules

Use the Demand Schedules section on the subtab to specify the replenishment plan for calculating policy parameters and the sources of the demand forecast.

If the **Calculate policy parameters** check box is selected on the Plan Options page, the replenishment plan is listed in the Demand Schedules section, and the check box in the **Use for Policy Parameters** column is automatically selected and can't be deselected.

You can select the following for the demand forecast:

- Another replenishment plan that has the **Generate forecast** check box selected on the Plan Options page, and that has been run

- A demand plan that has been run

  You can also select a demand plan with a hybrid time hierarchy.
- An external forecast schedule

If the replenishment plan is used for incremental planning (the **Enable for incremental planning** check box is selected along with the **Calculate replenishments** check box on the Plan Options page), you can't select another replenishment plan, a demand plan, or an external forecast schedule for the demand forecast. Only actual demands (sales orders, transfer orders, and inventory position) are considered during replenishment calculation.

If the **Generate forecast** check box is selected on the Plan Options page, the replenishment plan is listed in the Demand Schedules section, and the check box in the **Use for Demand Schedule** column is automatically selected and can't be deselected.

This table explains how you use the Demand Schedules section:

| Selected Check Box on Plan Options Page | Selection in Demand Schedules Section |
|---|---|
| **Calculate replenishments** | Select another replenishment plan that has been run with the **Calculate policy parameters** check box selected on the Plan Options page, and select the check box under **Use for Policy Parameters**.<br><br>You can select only one replenishment plan for calculating policy parameters.<br><br>You can also use the same replenishment plan for generating the forecast and calculating policy parameters if it was run with the **Generate forecast** and **Calculate policy parameters** check boxes selected on the Plan Options page. |
| **Calculate policy parameters** | Select a source for the demand forecast.<br><br>If you select more than one source, the forecasts from different sources are added up for the item-location combination.<br><br>If you select a replenishment plan, you must select the check box under **Use for Demand Schedule**. If you select a demand plan or an external forecast schedule, the check box is automatically selected and grayed out.<br><br>For a demand or replenishment plan, you must select a demand measure and forecast accuracy measures. |

*Related Topics*

- Demand Measures and Forecast Accuracy Measures

# Demand Measures and Forecast Accuracy Measures

You can select predefined or user-defined measures for demand and forecast accuracy to drive the calculation of inventory policies and safety stock and improve your replenishment planning.

In the Demand Schedules section on the Organizations and Schedules subtab on the Supply tab on the Plan Options page for your replenishment plan, click the **Select** buttons in the **Demand Measures** and **Forecast Accuracy Measures** columns to open dialog boxes in which you can select measures.

Note these points:

- The button under **Demand Measures** is available only if one of these conditions is met:
  - You selected a demand plan in the **Demand Schedule** column.
  - Under **Demand Schedule**, you selected a replenishment plan for which you've selected the **Generate forecast** check box on the Plan options page, and you've selected the check box under the **Use for Demand Schedule** column.
- The button under **Forecast Accuracy Measures** is available only if you've selected the **Calculate policy parameters** check box on the Plan Options page, and one of these conditions is met:
  - Under **Demand Schedule**, you've selected a demand plan.
  - Under **Demand Schedule**, you selected a replenishment plan for which you've selected the **Generate forecast** check box on the Plan options page, and you've selected the check box under **Use for Demand Schedule**.
  - Under **Demand Schedule**, you selected the same replenishment plan as the one for which you're editing the plan options and for which you've selected the **Generate forecast** and **Calculate policy parameters** check boxes. For this replenishment plan, the check boxes under **Use for Policy Parameters** and **Use for Demand Schedule** are automatically selected and can't be unselected.
- The buttons under **Demand Measures** and **Forecast Accuracy Measures** aren't available when you select an external forecast schedule under **Demand Schedule**.

## Demand Measures

When you click **Select** under **Demand Measures**, the Demand Measures dialog box appears.

In this dialog box, in the **End Item Demand** field, you can select one of the following measures from the selected plan:

- Approved Final Bookings Forecast
- Approved Final Shipments Forecast
- Final Bookings Forecasts
- Final Consumption Forecast
- Final Shipments Forecast (This measure is selected by default.)
- Any user-defined measure in the End Item Demand measure group in the Demand Management work area

The measure you select in the **End Item Demand** field drives the forecast for the item-location combinations in your replenishment plan.

## Forecast Accuracy Measures

When you click **Select** under **Forecast Accuracy Measures**, the Forecast Accuracy Measures dialog box is displayed.

In this dialog box, in the **Measure for MAPE** field, you can select one of the following measures from the selected plan:

- Bookings Forecast MAPE
- Consumption Forecast MAPE
- Shipments Forecast MAPE (This measure is selected by default.)
- Any user-defined measure in the Forecast Error MAPE measure group in the Demand Management work area

In the **Measure for Intermittent Demand** field, you can select one of the following measures from the selected plan:

- Bookings Forecast Is Intermittent

- Consumption Forecast Is Intermittent
- Shipments Forecast Is Intermittent (This measure is selected by default.)
- Any user-defined measure in the Intermittent Demand measure group in the Demand Management work area

In the **Measure for Average Interarrival Time** field, you can select one of the following measures from the selected plan:

- Bookings Forecast Average Interarrival Time
- Consumption Forecast Average Interarrival Time
- Shipments Forecast Average Interarrival Time (This measure is selected by default.)
- Any user-defined measure in the Average Interarrival Time measure group in the Demand Management work area

The measures you select in the **Measure for MAPE**, **Measure for Intermittent Demand**, and **Measure for Average Interarrival Time** fields drive the calculation of safety stock for the item-location combinations in your replenishment plan.

*Related Topics*

- Organizations and Schedules Options for Replenishment Plans
- How Safety Stock Is Calculated in Oracle Replenishment Planning

# Inventory Rebalancing Options for Replenishment Plans

Use the Inventory Rebalancing tab on the Plan Options page to specify the clusters, inventory rebalancing rules, and supply and demand types for calculating excess inventory and inventory shortages for your replenishment plan.

Select the **Rebalance inventory** check box on the Plan Options page to enable the Inventory Rebalancing tab.

> **Note:** The **Rebalance inventory** check box is grayed out if you select the **Enable for incremental planning** check box. The **Rebalance inventory** check box is also grayed out if you select the **Enable for policy comparison** check box in the Scope: Advanced Options dialog box that you can open from the Scope tab on the Plan Options page.

## Clusters

You can add, sequence, and remove the clusters that must be included in your replenishment plan for inventory rebalancing.

The available clusters are those that you have created on the Manage Planning Clusters page in the Replenishment Planning work area.

Inventory rebalancing is performed for each included cluster according to its sequence number. The items in each location are processed so long as the item-location combinations are also in the selected segments of the segment group that's attached to the replenishment plan.

Note these points while adding or removing clusters:

- Every cluster must have a unique sequence number.

- The sequence number for a cluster must be a whole number that's one or greater than one.

### Inventory Rebalancing Rules

Note these points about the inventory rebalancing rules for your replenishment plan:

- Reduce partial recommendations: Select this check box if you want the inventory rebalancing functionality to try to meet inventory shortages at locations using planned orders from other locations that have enough excess inventory to completely meet the shortfall. By selecting this check box, you can reduce the number of planned orders generated through inventory rebalancing.
- Move excess to sweep location: Select this check box to move the excess inventory after inventory rebalancing in a cluster to a designated sweep location that may or may not be within the cluster.
- Include safety stock in shortage calculation: Select this check box to include the safety stock for an item-location combination in the calculation of its inventory shortage.

### Supplies and Demands for Calculation of Excess Inventory and Inventory Shortages

You must specify the supply and demand types for inclusion in the calculation of the excess inventory and inventory shortage for an item-location combination.

The selected supply and demand types are used in the calculation of the Projected Inventory measure for the item-location combination.

You must select at least one supply type and one demand type for inventory rebalancing.

*Related Topics*

- Create a Cluster
- Edit a Cluster
- How the Excess Inventory and Inventory Shortage Are Calculated
- How the Projected Inventory Measure Is Calculated

## Run a Replenishment Plan

When you run a replenishment plan, you can specify how you want to refresh the data and what should be done as a part of the plan run.

Also, you can run the replenishment plan immediately or in the background at a set time or on a repetitive schedule.

Regardless of your plan setup, you use the following sequence for running your replenishment plan:

1. Generate the forecast or specify the following for the forecast:
    - Another replenishment plan that has been run with the **Generate forecast** check box selected on the Plan Options page.
    - A demand plan that has been run.
    - An external forecast schedule.
2. Calculate the policy parameters.
3. Rebalance the inventory.
4. Calculate the replenishments.

Consider these examples:

| Setup of Replenishment Plans | Run Sequence |
|---|---|
| Replenishment Plan A generates the forecast, calculates the policy parameters, and calculates the replenishments. | Run Replenishment Plan A. |
| Replenishment Plan Y generates the forecast and calculates the policy parameters, and Replenishment Plan Z calculates the replenishments. | 1. Run Replenishment Plan Y to generate the forecast and calculate the policy parameters.<br>2. Run Replenishment Plan Z to calculate the replenishments. |
| Replenishment Plan M generates the forecast and calculates the policy parameters, and Replenishment Plan N rebalances the inventory and calculates the replenishments. | 1. Run Replenishment Plan M to generate the forecast and calculate the policy parameters.<br>2. Run Replenishment Plan N to rebalance the inventory and calculate the replenishments. |

## Data Refresh Options

These data refresh options are available under the Details region on the Parameters tab in the Run Plan dialog box:

- Do not refresh with current data: Select this option for simulation planning.

  When you select this option, the planning horizon (the plan start and end dates) displayed on the Plan Options page, Supply tab, General subtab isn't advanced.
- Refresh with net-changed data: Select this option to perform incremental replenishment planning for only those item-location combinations with net changes in demands and supplies. This option is enabled only when the **Enable for incremental planning** and **Calculate replenishments** check boxes are selected on the Plan Options page for the replenishment plan.

  When you select this option, the planning horizon displayed on the Plan Options page, Supply tab, General subtab is advanced.
- Refresh with current data: Select this option to refresh the replenishment plan with the latest collected data. If you're running the replenishment plan for the first time, only this option is enabled, and it's selected by default.

  If you selected only the **Calculate policy parameters** check box on the Plan Options page and are running the replenishment plan for the policy comparison process, you must select this option.

  When you select this option, the planning horizon displayed on the Plan Options page, Supply tab, General subtab is advanced.

## Scope Options

These scope options are available under the Details region on the Parameters tab in the Run Plan dialog box:

- Generate forecast: Select this check box to generate the forecast as a part of the plan run. The check box is enabled only when the **Generate forecast** check box is selected on the Plan Options page. If this check box is enabled, and you're running the replenishment plan for the first time, the check box in the dialog box is selected by default and can't be deselected.

- Calculate policy parameters: Select this check box to calculate policy parameters as a part of the plan run. The check box is enabled only when the **Calculate policy parameters** check box is selected on the Plan Options page. If this check box is enabled, and you're running the replenishment plan for the first time, the check box in the dialog box is selected by default and can't be deselected.
- Calculate replenishments: Select this check box to calculate replenishments as a part of the plan run. The check box is enabled only when the **Calculate replenishments** check box is selected on the Plan Options page. If this check box is enabled, and you're running the replenishment plan for the first time, the check box in the dialog box is selected by default and can't be deselected.
- Rebalance inventory: Select this check box to rebalance inventory as a part of the plan run. This check box is enabled only when the **Rebalance inventory** check box is selected on the Plan Options page. If this check box is enabled, and you're running the replenishment plan for the first time, the check box in the dialog box is selected by default and can't be deselected.

  If you select this check box and the **Do not refresh with current data** option, the **Calculate replenishments** check box is selected and grayed out.
- Archive plan: Select this check box to archive the results of the plan run. This check box is enabled only when the **Refresh with current data** option is selected, and the **Enable for archiving** check box is selected in the Scope: Advanced Options dialog box that you open from the Plan Options page, Scope tab.
- Prepare for buyer planning: Select this check box to run the Prepare Plan for Buyer Planning scheduled process as a part of the plan run. The scheduled process copies buy orders from the replenishment plan to Buyer Planning for quick retrieval.

  This check box appears only if these conditions are met:

  - The replenishment plan uses a source system for Oracle Fusion Cloud Applications.
  - You've the privileges (MSC_RELEASE_PLANNING_RECOMMENDATIONS_PRIV, MSC_MONITOR_PLANNING_SCHEDULED_PROCESSES_PRIV, and MSC_EDIT_SUPPLIES_BUYER_PLANNING_PRIV) to run the Prepare Plan for Buyer Planning scheduled process.

> **Note:** Select the **Prepare for buyer planning** check box only when you've also selected the **Calculate replenishments** check box. Unless replenishments are calculated during the plan run, no buy orders will be available for being copied to Buyer Planning.

## Run the Replenishment Plan

Follow these steps to run the replenishment plan:

1. Open the Run Plan dialog box through one of these ways:
   - Use the Manage Plans page:
     i. On the Tasks panel tab, under Plans, select **Manage Plans**.

        The Manage Plans page opens.
     ii. Under Search Results, select the replenishment plan, and click **Actions** > **Run**.
   - On the Plans panel tab, under Plans, right-click the replenishment plan, and select **Run**.
   - Open the replenishment plan, and click **Actions** > **Run**.
2. Enter submission notes for your plan run.
3. On the Parameters tab, under Details, do these steps:

a. Under Data Refresh Options, select an option.

   If you select **Do not refresh with current data**, the **Manage Replan Details** link is displayed under the option. Click the link to open the Manage Replan Details dialog box, in which you can see the item-location combinations and segments for which you've made simulation-related changes. Under **Replan**, deselect the check boxes for the combinations and segments for which you don't want to run the simulation.

b. Under Scope Options, select check boxes for the type of plan run.

4. Under Demand Plan Run Options, under **Include**, select the check boxes for the forecasting profiles that you want to use for generating the forecast.

   This section is displayed if the **Generate forecast** check box is selected on the Plan Options page. The forecasting profiles selected on the Demand tab on the Plan Options page are displayed here.

   This section isn't displayed when you select **Do not refresh with current data** under Data Refresh Options.

5. On the Schedule tab, do the following:
   - To run the plan immediately, select **As soon as possible**.
   - To run the plan in the background at a set time, select **Using a schedule**.

     The **Frequency** field is displayed. Other options are displayed on the basis of the selected frequency.

     Specify a schedule for the plan run.

6. Click **OK** to run the replenishment plan.

   The Plan Status Details dialog box is displayed.

7. Click **OK**.

*Related Topics*

- Overview of Inventory Rebalancing
- Overview of Simulations for Replenishment Plans
- Overview of the Policy Comparison Feature

# Publish Plan Data

You can publish data for a plan in the Demand Management, Demand and Supply Planning, Planning Central, Replenishment Planning, Sales and Operations Planning, or Supply Planning work area to a compressed file.

You can then use the file for data integration between your Supply Chain Planning application and other Oracle or external applications.

By submitting a scheduled process from your Supply Chain Planning work area or the Scheduled Processes work area, you can publish the data in a pivot table within your plan to a file on the content server of Oracle WebCenter Content.

Using APIs of Oracle's ERP integration service for automating the data integration between your Supply Chain Planning Application and an external application, you can submit the scheduled process, check its status, and get the details of the published document.

The file name is in the <plan name>_<pivot table name>.zip format.

# Publish Plan Data from a Supply Chain Planning Work Area

Here's how you can publish data for your plan from your Supply Chain Planning work area:

1. Do one of the following to open the Publish Data dialog box:
   - On the Manage Plans page, select the plan and click **Actions** > **Publish Data**.

     The Publish Data dialog box opens.
   - Open your plan and click **Actions** > **Publish Data**.

     The Publish Data dialog box opens.
2. Optionally, enter submission notes for your scheduled process.
3. On the Parameters tab, optionally, select the **Append request number to output file name** check box.

   Selecting this check box results in the request number being appended to the file name, which enables easy identification of the file on the content server. The resulting file name (<plan name>_<pivot table name>_<request number>) is also used as the document title.

   If you don't select this check box, the document title is PUBLISHPLANDATA.
4. In **Table Name**, select the pivot table of your plan for which you want to publish data.

   The available tables are enabled for the work area of the plan, and you have the required access to these tables.
5. In **Source System**, select the source system that's specified on the Scope tab of the Plan Options page for the plan.
6. On the Schedule tab, specify whether you want to run the process as soon as possible or according to a schedule.

   If you publish the file according to a schedule, you can specify the frequency and start and end dates for the process.
7. Click **Submit**.

   The Status dialog box opens and displays the request number. Make a note of this number and then click **OK**.

   You can use this number to search for the result of your request in the Scheduled Processes work area.

   If you appended this number to the compressed file's name, you can use this number to search for the file in the File Import and Export work area. You can then download and check the file.

# Publish Plan Data from the Scheduled Processes Work Area

Here's how you can publish data for your plan from the Scheduled Processes work area:

1. On the Overview page, click the **Schedule New Process** button.

   The Schedule New Process dialog box opens.
2. In **Name**, select the Publish Plan job, and click **OK**.

   The Process Details dialog box opens.
3. To be notified when the process ends regardless of the result, select the **Notify me when this process ends** check box.
4. Optionally, enter submission notes for your scheduled process.
5. On the Parameters tab, in **Plan Name**, select your plan.
6. Optionally, select the **Append request number to output file name** check box.

Selecting this check box results in the request number being appended to the file name, which enables easy identification of the file on the content server. The resulting file name (<plan name>_<pivot table name>_<request number>) is also used as the document title.

If you don't select this check box, the document title is PUBLISHPLANDATA.

7. In **Table Name**, select the pivot table of your plan for which you want to publish data.

   The available tables are enabled for the work area of the plan, and you have the required access to these tables.
8. In **Source System**, select the source system that's specified on the Scope tab of the Plan Options page for the plan.
9. To set a schedule for your request and notify other users about the result, click the **Advanced** button.

   The Schedule and Notification tabs are displayed.

   - On the Schedule tab, specify whether you want to run the process as soon as possible or according to a schedule.

     If you publish the file according to a schedule, you can specify the frequency and start and end dates for the process.
   - On the Notification tab, specify the recipients to whom result notifications should be sent and the conditions under which the notifications are sent.
10. Click **Submit**.

    The Confirmation dialog box opens and displays the process number. Make a note of this number, and click **OK**.

    You can use this number to search for the result of your request in the Scheduled Processes work area.

    If you appended this number to the compressed file's name, you can use this number to search for the file in the File Import and Export work area. You can then download and check the file.

# Best Practices for Setting Up Replenishment Plans

You can configure replenishment plans in various ways to meet your business requirements.

This table explains the various configurations that you can use for your replenishment plans:

| Plan Type | Plan Purpose | Planning Horizon | Planning Time Level | Frequency of Plan Runs | Selected Check Boxes | Release from Plan? |
|---|---|---|---|---|---|---|
| Strategic replenishment plan | To estimate how well your policies meet anticipated demands | 6 months to 1 year | Week or period | Weekly or monthly | **Generate forecast**, **Calculate policy parameters**, and **Calculate replenishments** check boxes | No |
| Integrated replenishment plan | To monitor and execute policies according to the generated forecast | 100 days or less | Day | Daily | **Generate forecast**, **Calculate policy parameters**, and **Calculate** | Yes |

| Plan Type | Plan Purpose | Planning Horizon | Planning Time Level | Frequency of Plan Runs | Selected Check Boxes | Release from Plan? |
|---|---|---|---|---|---|---|
| | Optionally, you can use a weekly demand plan, a weekly replenishment plan, or an external forecast schedule for the forecast.<br><br>Optionally, you can use a policy comparison or policy calculation plan for the policy parameters.<br><br>Optionally, you can use the integrated replenishment plan to also rebalance the inventory by selecting the **Rebalance inventory** check box. However, this use case isn't common. | | | | **replenishments** check boxes | |
| Automated execution plan | To incrementally calculate replenishments according to a schedule and actual demands (sales orders, transfer orders, and inventory position)<br><br>You must use another replenishment plan for the policy parameters.<br><br>You can't select another replenishment plan, a demand plan, or an external forecast schedule for the demand forecast. | 15 days or less | Day | Daily or intraday | **Enable for incremental planning** and **Calculate replenishments** check boxes | Yes |
| Policy comparison plan or policy calculation plan | To compare or calculate policies<br><br>You must feed the calculated policies to an integrated | 6 months | Week | Monthly | **Generate forecast** and **Calculate policy parameters** check boxes | No |

| Plan Type | Plan Purpose | Planning Horizon | Planning Time Level | Frequency of Plan Runs | Selected Check Boxes | Release from Plan? |
|---|---|---|---|---|---|---|
| | replenishment plan or automated execution plan. | | | | | |
| Inventory rebalancing plan | To rebalance inventory among the item-location combinations in the clusters of a replenishment plan<br><br>You must use another replenishment plan with a planning time level of week, month, or period to calculate the policy parameters.<br><br>You must use another replenishment plan, a demand plan, or an external forecast schedule for the demand forecast. The planning time level of the other plan can be week, month, or period. | 100 days or less | Day | Daily | **Calculate replenishments** and **Rebalance inventory** check boxes | Yes |

Optionally, if you've selected the **Calculate replenishments** check box, you can also configure the replenishment plan for end item substitution and supersession.

*Related Topics*

- How Replenishment Orders Are Calculated During Incremental Planning
- Overview of the Policy Comparison Feature
- Policy Assignment Sets
- Overview of Inventory Rebalancing
- Organizations and Schedules Options for Replenishment Plans

# Example of Replenishment Plans for a Standard Business Scenario

This topic describes how you set up replenishment plans for a standard business scenario.

In this example, an enterprise has a distribution center that's modeled as an organization. The distribution center has buy from sourcing rules. The two warehouses, which are also set up as organizations, source goods from the distribution center using transfer from sourcing rules. The customer demands are fulfilled through the warehouses. The enterprise uses Oracle Fusion Cloud ERP.

Note these points about this example:

- You can use a single replenishment plan to generate the forecast, calculate the policy parameters, and calculate and release replenishment orders for the distribution center and warehouses.

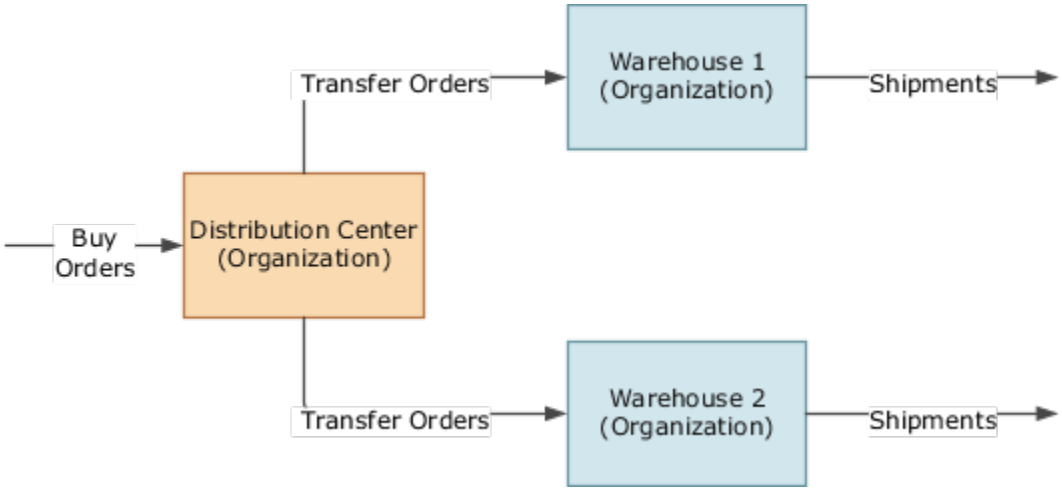
  You can also use separate replenishment plans as follows:

  - A replenishment plan generates the forecast at the distribution center by using transfer orders history and shipments history.

    This replenishment plan also calculates the policy parameters and calculates and releases the replenishment orders for the distribution center.
  - Another replenishment plan generates the forecast at the warehouses by using shipments history.

    This replenishment plan also calculates the policy parameters and calculates and releases the replenishment orders for the warehouses.
- If you're using a single replenishment plan for the distribution center and warehouses, when a planned transfer order is created at the warehouses, an equivalent planned transfer order demand isn't automatically created for the distribution center.

  Planned transfer order demand is created at the distribution center once the planned transfer orders created at the warehouses are released and collected.
- File-based data import (FBDI) templates can be used for uploading data instead of collecting it.
- At any level, you can use a single or separate replenishment plans to generate the forecast, calculate the policy parameters, and calculate and release the replenishment orders.



# Guidelines for Working with Plan Messages for Replenishment Plans

This topic explains what the plan messages for replenishment plans mean and how you should work with them.

In the Replenishment Planning work area, you can view plan messages after a replenishment plan runs. By understanding the root causes why policies and replenishments weren't calculated within the replenishment plan for item-location combinations, you can take corrective actions.

Plan messages deal with these issues:

- The size and run of the replenishment plan
- The calculation of safety stock
- The calculation of average daily demand
- Other issues, such as the calculation of the economic order quantity (EOQ)

## Messages Dealing with the Size and Run of the Replenishment Plan

This table lists plan messages that deal with the size and run of the replenishment plan:

| Message | Meaning | Corrective Action |
|---|---|---|
| The following number of item and organization combinations were included in the replenishment plan: {COUNT}. | Indicates the number of item-location combinations covered in the replenishment plan and for which replenishment planning is done.<br><br>The item-location combinations are in the selected segments and level members on the Scope tab on the Plan Options page for the replenishment plan. Moreover, in Oracle Fusion Cloud Product Lifecycle Management, for MPS MRP planning, the planning method attribute is set to Replenishment Planning for these items. | - |
| The plan was run in the Refresh with Current Data mode because targeted collection was run. | Indicates that the replenishment plan is run with current data even though the **Enable for incremental planning** check box is selected on the Plan Options page and the **Refresh with net-changed data** option is selected under the Details region on the Parameters tab in the Run Plan dialog box. Current data is used because the type of the previous collection was targeted. | - |

## Messages Dealing with the Calculation of Safety Stock

This table lists plan messages that deal with the safety stock for item-location combinations:

| Message | Meaning | Corrective Action |
|---|---|---|
| Safety stock wasn't calculated for item {ITEM} in organization {ORG} because the MAPE wasn't available. | Indicates that the safety stock isn't calculated for the item-location combination.<br><br>This plan message is displayed because of these reasons:<br><br>• In the policy assignment set that's attached to the replenishment plan, for the segment to which the item-location combination belongs, on the Policy Parameters subtab on the Segment-Level Policy Parameters Assignment tab, you selected **Service level-based** in **Safety Stock Calculation**.<br>• The demand isn't intermittent.<br>• The mean average percentage error (MAPE) isn't available for the item-location combination in the demand plan, replenishment plan, or external demand schedule that's used as the demand schedule for the replenishment plan. | Perform these steps:<br><br>1. Ensure that the MAPE is available for the item-location combination in the demand plan, replenishment plan, or external demand schedule.<br>2. Run the replenishment plan:<br><br>○ Under the Details region on the Parameters tab in the Run Plan dialog box, select **Refresh with current data**.<br>○ Select the **Calculate policy parameters** check box. |
| Safety stock wasn't calculated for item {ITEM} in organization {ORG} because the total lead time was zero. | Indicates that the safety stock isn't calculated for the item-location combination.<br><br>This plan message is displayed because of these reasons:<br><br>• In the policy assignment set that's attached to the replenishment plan, for the segment to which the item-location combination belongs, on the Policy Parameters subtab on the Segment-Level Policy Parameters Assignment tab, you selected **Service level-based** in **Safety Stock Calculation**.<br>• The demand isn't intermittent.<br>• The replenishment lead time, which is the sum of the preprocessing, processing, and postprocessing lead times and transit time for a buy order or preprocessing and postprocessing lead times and transit time for a transfer order, is zero for the item-location combination. | Perform these steps:<br><br>1. Set the preprocessing, processing, and postprocessing lead times for the item-location combination in Oracle Product Lifecycle Management.<br><br>Set the transit time in the sourcing rule or bill of distribution.<br>2. Run the collections process.<br>3. Run the replenishment plan:<br><br>○ Under the Details region on the Parameters tab in the Run Plan dialog box, select **Refresh with current data**.<br>○ Select the **Calculate policy parameters** check box. |
| Safety stock wasn't calculated for item {ITEM} in organization {ORG} because average interarrival time wasn't available. | Indicates that the safety stock isn't calculated for the item-location combination.<br><br>This plan message is displayed because of these reasons:<br><br>• In the policy assignment set that's attached to the replenishment plan, for the segment to which the item-location combination belongs, on the Policy Parameters subtab on the Segment-Level Policy Parameters Assignment tab, you | Perform these steps:<br><br>1. Ensure that the average interarrival time is available for the item-location combination in the Items table.<br>2. Run the replenishment plan:<br><br>○ Under the Details region on the Parameters tab in the Run Plan dialog box, select **Refresh with current data**.<br>○ Select the **Calculate policy parameters** check box. |

| Message | Meaning | Corrective Action |
|---|---|---|
| | selected **Service level-based** in **Safety Stock Calculation**.<br>• The demand is intermittent.<br>• The average interarrival time isn't available for the item-location combination in the Items table. | |
| The intermittent demand indicator for item {ITEM} in organization {ORG} was invalid. Safety stock was set equal to average daily demand. | Indicates that the safety stock isn't calculated for the item-location combination.<br><br>This plan message is displayed because of these reasons:<br>• In the policy assignment set that's attached to the replenishment plan, for the segment to which the item-location combination belongs, on the Policy Parameters subtab on the Segment-Level Policy Parameters Assignment tab, you selected **Service level-based** in **Safety Stock Calculation**.<br>• The value in the **Intermittent Demand** or **Intermittent Demand Override** column of the Items table for the item-location combination is invalid.<br>• Consequently, the safety stock has been set to the average daily demand for the item-location combination. | Perform these steps:<br>1. Ensure that valid values are there in the **Intermittent Demand** and **Intermittent Demand Override** columns for the item-location combination in the Items table.<br>2. Run the replenishment plan:<br>o Under the Details region on the Parameters tab in the Run Plan dialog box, select **Refresh with current data**.<br>o Select the **Calculate policy parameters** check box. |
| The uploaded safety stock quantity wasn't considered for item-location combinations in segment {SEG_NAME}.<br><br>Instead of the uploaded quantity, the safety stock defined or calculated for the segment was used because the policy UOM for the segment is Days and not Units. | Indicates that the uploaded safety stock quantity isn't considered for the item-location combinations in the specified segment. Instead, the safety stock override or calculated safety stock for the segment is used.<br><br>This plan message is displayed because the safety stock quantity was uploaded through the file-based data import (FBDI) template for Supply Chain Planning safety stock levels (ScpSafetyStockLevelImportTemplate.xlsm). The uploaded safety stock quantity is always in units and takes precedence over the calculated or override value for safety stock. However, the unit of measure (UOM) for the segment is days instead of units. | Perform these steps:<br>1. In the policy assignment set that's attached to the replenishment plan, for the segment, on the Policy Parameters subtab on the Segment-Level Policy Parameters Assignment tab, select **Units** in **Policy UOM**.<br>2. Run the replenishment plan:<br>o Under the Details region on the Parameters tab in the Run Plan dialog box, select **Refresh with current data**.<br>o Select the **Calculate policy parameters** check box. |

## Messages Dealing with the Calculation of Average Daily Demand

This table lists plan messages that deal with the demand for item-location combinations:

| Message | Meaning | Corrective Action |
|---|---|---|
| Average daily demand wasn't calculated for item {ITEM} in organization {ORG}. Policies weren't calculated. | Indicates that the average daily demand isn't calculated for the item-location combination. | Perform these steps: |

| Message | Meaning | Corrective Action |
|---|---|---|
| | This plan message is logged because the demand history isn't present or the forecast isn't generated for the item location combination. Also, the default daily demand isn't specified for the segment to which the item-location combination belongs. | 1. In the policy assignment set that's attached to the replenishment plan, for the segment to which the item-location combination belongs, on the Policy Parameters subtab on the Segment-Level Policy Parameters Assignment tab, if **History** is selected in **Days of Cover Basis**, ensure that the demand history is collected or uploaded.<br><br>If **Forecast** is selected in **Days of Cover Basis**, ensure that the demand forecast is there in the demand plan, replenishment plan, or external demand schedule that's used as the demand forecast.<br><br>Otherwise, specify a default daily demand for the segment.<br>2. Run the replenishment plan:<br><br>o Under the Details region on the Parameters tab in the Run Plan dialog box, select **Refresh with current data**.<br>o Select the **Generate forecast** and **Calculate policy parameters** check boxes. |
| For segment {SEG}, the plan horizon days was used for the horizon for average daily demand because it's less than the horizon for average daily demand. | Indicates that the number of days in the planning horizon is taken for calculation of the average daily demand for item-location combinations in the segment.<br><br>This plan message is displayed because the planning horizon is less than the value supplied in the **Horizon for Average Daily Demand** field on the Policy Parameters subtab on the Segment-Level Policy Parameters Assignment tab of the policy assignment set that's attached to the replenishment plan. | If you want the specified horizon for average daily demand to be considered, perform these steps:<br><br>1. Decrease the horizon for the average daily demand in the policy assignment set, or increase the days in the planning horizon by increasing the number of buckets on the Scope tab on the Plan Options page for the replenishment plan.<br>2. Run the replenishment plan:<br><br>o Under the Details region on the Parameters tab in the Run Plan dialog box, select **Refresh with current data**.<br>o Select the **Generate forecast** and **Calculate policy parameters** check boxes. |

## Messages Dealing with Other Issues

This table lists plan messages that deal with other issues:

| Message | Meaning | Corrective Action |
|---|---|---|
| The following number of items in ORG {ORG} were discarded because their planning method isn't set to Replenishment Planning: {COUNT}. | Indicates the number of items in the location for which replenishment planning isn't done.<br><br>The items are ignored because their MPS and MRP Planning Method attribute isn't set to | Perform these steps:<br><br>1. Set the attribute for the items in Oracle Product Lifecycle Management.<br>2. Run the collections process. |

| Message | Meaning | Corrective Action |
|---|---|---|
| | Replenishment planning in Oracle Product Lifecycle Management. | 3. Run the replenishment plan:<br>o Under the Details region on the Parameters tab in the Run Plan dialog box, select **Refresh with current data**.<br>o Select the **Generate forecast**, **Calculate policy parameters**, and **Calculate replenishments** check boxes. |
| The plan created 10 supplies on a single day for item {ITEM} in organization {ORG}. Check the order modifiers. | Indicates that 10 replenishment orders are created for the item-location combination on a day.<br><br>This plan message is displayed because of these reasons:<br>• The fixed order quantity order modifier or EOQ is used with a very small value, and many planned orders with small quantities are generated.<br>• For reducing the number of planned orders and improving the replenishment plan performance, the first nine planned orders are generated according to the order modifiers, and the remaining planned orders are grouped into the 10th planned order.<br><br>The 10th planned order might violate the order modifiers and therefore won't be released. | Perform these steps:<br>1. Review and modify the value in the **Fixed Order Quantity** column of the Items table for the item-location combination.<br><br>Otherwise, review and modify the inputs for calculating the EOQ or default EOQ for the item-location combination.<br>2. Run the replenishment plan:<br>o Under the Details region on the Parameters tab in the Run Plan dialog box, select **Refresh with current data**.<br>o Select the **Calculate replenishments** check box. |
| Policy parameters weren't found for segment {SEGMENT}. Policies weren't calculated for the item and location combinations that were part of this segment. | Indicates that replenishment policies aren't calculated for the item-location combinations in the segment.<br><br>In the policy assignment set that's attached to the replenishment plan, policy parameters aren't specified for the segment. Therefore, no policies are calculated for the item-location combinations in the segment. | Perform these steps:<br>1. In the policy assignment set, specify policy parameters for the segment.<br>2. Run the replenishment plan:<br>o Under the Details region on the Parameters tab in the Run Plan dialog box, select **Refresh with current data**.<br>o Select the **Calculate policy parameters** check box. |
| EOQ wasn't calculated for item {ITEM} in organization {ORG}. Check Item cost components. | Indicates that the EOQ isn't calculated for the item-location combination.<br><br>This plan message is displayed because of these reasons:<br>• In the policy assignment set that's attached to the replenishment plan, for the segment to which the item-location combination belongs, the policy type is one of the following:<br>o Reorder point (ROP) and EOQ | Perform these steps:<br>1. Check that values are present for the item-location combination in the Items table for the various components of the formula for EOQ calculation.<br>2. If any values are missing in the Items table, do one of these steps:<br>o Provide the values in the Items table.<br>o In the policy assignment set, enter the required defaults for the EOQ formula or the default EOQ for the segment to which the item-location combination belongs. |

| Message | Meaning | Corrective Action |
|---|---|---|
| | ○ Min-max planning or fixed order cycle, and the maximum quantity calculation method is minimum plus EOQ.<br>• For the segment to which the item-location combination belongs, the default EOQ isn't specified on the Default Policy Parameters subtab on the Segment-Level Policy Parameters Assignment tab in the policy assignment set.<br>• The fixed cost per order isn't available for the item-location combination in the **Order Cost** column of the Items table.<br>• The annual carrying cost isn't available for the item-location combination in the **Annual Carrying Cost Percentage** column of the Items table.<br>• The standard cost isn't available for the item-location combination in the **Standard Cost** column of the Item table, or the default standard cost isn't specified for the segment on the Default Policy Parameters subtab. | 3. Run the replenishment plan:<br>○ Under the Details region on the Parameters tab in the Run Plan dialog box, select **Refresh with current data**.<br>○ Select the **Calculate policy parameters** check box. |
| Forecast and policy values haven't been calculated for items in organization {ORG}.<br><br>Valid manufacturing calendar data isn't available for the organization. To get the forecast and policy values, collect the calendar data, and rerun the replenishment plan. | Indicates that the forecast and policy values aren't calculated for the items in the specified location.<br><br>This plan message is displayed because the manufacturing calendar isn't available for the location. | Perform these steps:<br>1. Ensure that the manufacturing calendar is available for the location.<br>2. Run the collections process.<br>3. Run the replenishment plan:<br>○ Under the Details region on the Parameters tab in the Run Plan dialog box, select **Refresh with current data**.<br>○ Select the **Generate forecast**, **Calculate policy parameters**, and **Calculate replenishments** check boxes. |

*Related Topics*

- How Safety Stock Is Calculated in Oracle Replenishment Planning
- How Average Daily Demand Is Calculated in Oracle Replenishment Planning
- Policy Assignment Sets
- How EOQ Is Calculated in Oracle Replenishment Planning
- Run a Replenishment Plan

# 13 Calculation and Release of Replenishment Orders

## Overview of Replenishment Order Release

This topic provides an overview of how replenishment orders are calculated and released.

While setting up your replenishment plan, on the General subtab of the Supply tab of the Plan Options page, you can choose to release replenishment orders automatically or manually after the plan run.

The released replenishment orders are sent to Oracle Supply Chain Orchestration, from where the buy orders are released to Oracle Fusion Cloud Procurement and transfer orders to Oracle Fusion Cloud Inventory Management. The replenishment orders can also be released to external source systems as CSV files.

These are some points to note about replenishment orders:

- Replenishment orders are generated on the basis of policies.
- Replenishment orders are forward-planned according to unconstrained, supply planning logic.
- Once replenishment orders are released, they can't be rescheduled or canceled from the Replenishment Planning work area.
- Reservations, supplier capacity, planning time fences, and demand time fences aren't supported in Oracle Replenishment Planning.
- When a planned transfer order is created, the corresponding dependent demand isn't directly created in the source organization. Instead, when the released transfer order is collected, dependent demand is created in the source organization.

*Related Topics*

- Automatic Release Options

## Measures Used for Calculating Replenishment Orders

This topic lists the measures that are used for calculating replenishment orders.

| Measure | Description |
|---|---|
| Beginning Inventory Position | This measure indicates the projected inventory at the beginning of a plan bucket for an item-location combination and drives the creation of replenishment orders.<br><br>The calculation of the measure is determined by the selection in the **Time Horizon for Demand** list on the General subtab of the Supply tab of the Plan Options page for a replenishment plan:<br><br>• If the selection is **Item lead time**, the measure is calculated as follows: Projected Available Balance + On Order - demand during item lead time. |

| Measure | Description |
|---|---|
| | The current day's demand is already included in the calculation of the Projected Available Balance measure and is therefore excluded from the calculation of the demand during item lead time.<br>• If the selection is **None**, the measure is calculated as follows: Projected Available Balance + On Order |
| Final Inventory Position | This measure indicates the projected inventory position at the end of the plan bucket for the item-location combination. This measure includes the replenishment orders that are required to bring the inventory to the maximum quantity or reorder point (ROP).<br><br>The measure is calculated as follows: Beginning Inventory Position + Planned Replenishments by Order Date |
| Planned Replenishments by Order Date | This measure indicates the planned replenishment quantity on the order date for the item-location combination. |
| Planned Replenishments by Due Date | This measure indicates the planned replenishment quantity on the due date for the item-location combination. |
| On Order | This measure indicates the quantity of projected replenishments that are to be received for the item-location combination.<br><br>For planned replenishment orders, the measure is populated from the day after the order date to the day before the due date. On the day a replenishment order is scheduled to be received (the due date), the Projected Available Balance measure is increased by the order quantity, and the On Order measure is reduced by the order quantity. For the existing buy and transfer orders that are collected, the On Order measure is populated from the order date. |

*Related Topics*

- Considerations for Configuring Replenishment Plan Attributes

# Support for Create Supply and Create Supply After Attributes in Oracle Replenishment Planning

Your settings for the Create Supply and Create Supply After attributes for an item affect how replenishments are created for the item.

If the sourcing rule for an item is buy from, the replenishment is created only when you've selected **Yes** in the **Create Supply** field for the item in the Product Information Management work area. If you've specified a date in the **Create Supply After** field, the replenishment is created only after that date. These values can also be supplied through the equivalent columns in the file-based data import (FBDI) template named Supply Chain Planning Items (ScpItemImportTemplate.xlsm). The values for the fields or columns take effect only after being collected.

This functionality is useful in situations such as these:

- You want to temporarily recall the item.
- You want to place a quality hold on the item until a date.

- The item has been superseded by another item.

If no sourcing rule is specified for the item, it's treated as a buy item, and a replenishment is created according to the values for the Create Supply and Create Supply After attributes.

You can change the values for these attributes in a simulation set.

> **Note:** If the sourcing rule for the item is transfer from, the replenishment is created irrespective of your settings for these attributes.

*Related Topics*

- Support for Sourcing Rules and Bills of Distribution in Oracle Replenishment Planning

# Support for Sourcing Rules and Bills of Distribution in Oracle Replenishment Planning

This topic explains how Oracle Replenishment Planning supports sourcing rules and bills of distribution.

Sourcing rules and bills of distribution are assigned to items at various levels on the Edit Assignment Set page.

When replenishment orders are calculated, sourcing rules and bills of distribution are supported as follows:

- Sourcing rules and bills of distribution of the buy from and transfer from types are supported.
- Sourcing rules and bills of distribution of the make at type aren't supported.
- Both global and local sourcing rules are supported.
- Only Rank 1 sourcing rules and bills of distribution are supported.
- Split sourcing rules and bills of distribution aren't supported.
- The transit times specified for shipping methods are considered.
- If no sourcing rule is defined for an item-location combination, the buy from sourcing rule is used as the default, and the supplier attributes are taken from the Items table.

*Related Topics*

- Create a Sourcing Rule
- Create an Assignment Set

# Examples of Replenishment Orders for Different Policy Types

This topic explains how replenishment orders are calculated for different policy types.

# Min-Max Planning

The following is how a replenishment order is calculated for the min-max policy type:

- When the Beginning Inventory Position measure (the sum of the Projected Available Balance and On Order measures) equals or falls below the minimum quantity, a replenishment order is triggered.
- The quantity of the replenishment order is what's required to bring the inventory up to the maximum quantity (provided by Maximum Quantity - Beginning Inventory Position).

Consider the example in the following table:

| Measure | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 | Day 10 | Day 11 | Day 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Demand | 10 | 15 | 5 | 15 | 20 | 10 | 15 | 10 | 20 | 15 | 10 | 10 |
| Final Minimum Quantity | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| Final Maximum Quantity | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| On Hand | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Purchase Orders | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Supply | 25 | 10 | 0 | 75 | 0 | 0 | 0 | 55 | 0 | 0 | 0 | 55 |
| Projected Available Balance | 15 | 10 | 5 | 65 | 45 | 35 | 20 | 65 | 45 | 30 | 20 | 65 |
| On Order | 10 | 75 | 75 | 0 | 0 | 55 | 55 | 0 | 0 | 55 | 55 | 0 |
| Beginning Inventory Position | 25 | 85 | 80 | 65 | 45 | 90 | 75 | 65 | 45 | 85 | 75 | 65 |
| Planned Replenish by Order Date | 75 | 0 | 0 | 0 | 55 | 0 | 0 | 0 | 55 | 0 | 0 | 0 |
| Planned Replenish by Due Date | 0 | 0 | 0 | 75 | 0 | 0 | 0 | 55 | 0 | 0 | 0 | 55 |

| Measure | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 | Day 10 | Day 11 | Day 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | |
| Final Inventory Position | 100 | 85 | 80 | 65 | 100 | 90 | 75 | 65 | 100 | 85 | 75 | 65 |

The Beginning Inventory Position measure is evaluated every day. On Day 1, the Beginning Inventory Position measure is 25 units, which is less than the Final Minimum Quantity measure of 50 units. Therefore, a replenishment order of 75 units is created (Final Maximum Quantity - Beginning Inventory Position). The order date is Day 1, and the item lead time is 3 days. Therefore, the Planned Replenishments by Due Date measure is updated for Day 4, while the On Order measure reflects 75 units on Days 2 and 3. On Day 4, the order is received in the inventory, and the Total Supply measure is updated.

The sequence is repeated on Days 5 and 9.

## Fixed Order Cycle

The following is how a replenishment order is calculated for the fixed order cycle policy type:

- The replenishment orders are placed on only the open days defined in the associated fixed order cycle calendar.
- When the Beginning Inventory Position measure (the sum of the Projected Available Balance and On Order measures) falls below the maximum quantity, a replenishment order is triggered.
- The quantity of the replenishment order is what's required to bring the inventory up to the maximum quantity (provided by Maximum Quantity - Beginning Inventory Position).

Consider the example in the following table:

| Measure | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 | Day 10 | Day 11 | Day 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Demand | 10 | 15 | 5 | 15 | 20 | 10 | 15 | 10 | 20 | 15 | 10 | 10 |
| Final Maximum Quantity | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| On Hand | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Purchase Orders | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Supply | 25 | 10 | 0 | 75 | 0 | 0 | 0 | 0 | 0 | 0 | 90 | 0 |
| Projected Available Balance | 15 | 10 | 5 | 65 | 45 | 35 | 20 | 10 | - 10 | -25 | 55 | 45 |

| Measure | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 | Day 10 | Day 11 | Day 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| On Order | 10 | 75 | 75 | 0 | 0 | 0 | 0 | 0 | 90 | 90 | 0 | 0 |
| Beginning Inventory Position | 25 | 85 | 80 | 65 | 45 | 35 | 20 | 10 | 80 | 65 | 55 | 45 |
| Planned Replenish by Order Date | 75 | 0 | 0 | 0 | 0 | 0 | 0 | 90 | 0 | 0 | 0 | 0 |
| Planned Replenish by Due Date | 0 | 0 | 0 | 75 | 0 | 0 | 0 | 0 | 0 | 0 | 90 | 0 |
| Final Inventory Position | 100 | 85 | 80 | 65 | 45 | 35 | 20 | 100 | 80 | 65 | 55 | 45 |

The associated fixed order cycle calendar is open on only Days 1 and 8.

On Day 1, the Beginning Inventory Position measure is 25 units, which is less than the Final Maximum Quantity measure of 100 units. Therefore, a replenishment order of 75 units is placed (Final Maximum Quantity - Beginning Inventory Position). The order date is Day 1, and the item lead time is 3 days. Therefore, the Planned Replenishments by Due Date measure is updated for Day 4, while the On Order measure reflects 75 units on Days 2 and 3. On Day 4, the order is received in the inventory, and the Total Supply measure is updated.

The sequence is repeated on Day 8.

## ROP and Order Quantity

The following is how a replenishment order is calculated for the reorder point (ROP) and order quantity policy type:

- When Beginning Inventory Position measure (the sum of the Projected Available Balance and On Order measures) equals or falls below the ROP, a replenishment order is triggered.
- The quantity of the replenishment order is the order quantity.
- If the fixed order quantity isn't defined in the Items table or the default order quantity isn't defined at the segment level in the policy assignment set, replenishment orders are created to bring the inventory to the ROP level.

Consider the example in the following table:

| Measure | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 | Day 10 | Day 11 | Day 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Demand | 10 | 15 | 5 | 15 | 20 | 10 | 15 | 10 | 40 | 15 | 10 | 10 |

| Measure | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 | Day 10 | Day 11 | Day 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Final ROP Quantity | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| On Hand | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Purchase Orders | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Supply | 25 | 10 | 0 | 75 | 0 | 0 | 0 | 75 | 0 | 0 | 0 | 75 |
| Projected Available Balance | 15 | 10 | 5 | 65 | 45 | 35 | 20 | 85 | 45 | 30 | 20 | 85 |
| On Order | 10 | 75 | 75 | 0 | 0 | 75 | 75 | 0 | 0 | 75 | 75 | 0 |
| Beginning Inventory Position | 25 | 85 | 80 | 65 | 45 | 110 | 95 | 85 | 45 | 105 | 95 | 85 |
| Planned Replenish by Order Date | 75 | 0 | 0 | 0 | 75 | 0 | 0 | 0 | 75 | 0 | 0 | 0 |
| Planned Replenish by Due Date | 0 | 0 | 0 | 75 | 0 | 0 | 0 | 75 | 0 | 0 | 0 | 75 |
| Final Inventory Position | 100 | 85 | 80 | 65 | 120 | 110 | 95 | 85 | 120 | 105 | 95 | 85 |

The order quantity is 75 units, and the Beginning Inventory Position measure is evaluated every day.

On Day 1, the Beginning Inventory Position measure is 25 units, which is less than the Final ROP Quantity measure of 50 units. Therefore, a replenishment order of 75 units (the order quantity) is placed. The order date is Day 1, and the item lead time is 3 days. Therefore, the Planned Replenishments by Due Date measure is updated for Day 4, while the On Order measure reflects 75 units on Days 2 and 3. On Day 4, the order is received in the inventory, and the Total Supply measure is updated.

The sequence is repeated on Days 5 and 9.

# ROP and EOQ

The following is how a replenishment order is calculated for the ROP and economic order quantity (EOQ) policy type:

- When the Beginning Inventory Position measure (the sum of the Projected Available Balance and On Order measures) equals or falls below the ROP, a replenishment order is triggered.
- The quantity of the replenishment order is the EOQ.
- If the EOQ can't be calculated at the item-location level or the default EOQ isn't defined at the segment level in the policy assignment set, replenishment orders are created to bring the inventory to the ROP level.

Consider the example in the following table:

| Measure | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 | Day 10 | Day 11 | Day 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Demand | 10 | 15 | 5 | 15 | 20 | 10 | 15 | 10 | 40 | 15 | 10 | 10 |
| Final ROP Quantity | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| On Hand | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Purchase Orders | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Supply | 25 | 10 | 0 | 75 | 0 | 0 | 0 | 75 | 0 | 0 | 0 | 75 |
| Projected Available Balance | 15 | 10 | 5 | 65 | 45 | 35 | 20 | 85 | 45 | 30 | 20 | 85 |
| On Order | 10 | 75 | 75 | 0 | 0 | 75 | 75 | 0 | 0 | 75 | 75 | 0 |
| Beginning Inventory Position | 25 | 85 | 80 | 65 | 45 | 110 | 95 | 85 | 45 | 105 | 95 | 85 |
| Planned Replenish by Order Date | 75 | 0 | 0 | 0 | 75 | 0 | 0 | 0 | 75 | 0 | 0 | 0 |
| Planned Replenish by Due Date | 0 | 0 | 0 | 75 | 0 | 0 | 0 | 75 | 0 | 0 | 0 | 75 |

| Measure | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 | Day 10 | Day 11 | Day 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Final Inventory Position | 100 | 85 | 80 | 65 | 120 | 110 | 95 | 85 | 120 | 105 | 95 | 85 |

The EOQ is 75 units, and the Beginning Inventory Position measure is evaluated every day.

On Day 1, the Beginning Inventory Position measure is 25 units, which is less than the Final ROP Quantity measure of 50 units. Therefore, a replenishment order of 75 units (the EOQ) is placed. The order date is Day 1, and the item lead time is 3 days. Therefore, the Planned Replenishments by Due Date measure is updated for Day 4, while the On Order measure reflects 75 units on Days 2 and 3. On Day 4, the order is received in the inventory, and the Total Supply measure is updated.

The sequence is repeated on Days 5 and 9.

*Related Topics*

- Policy Assignment Sets

# How Order Modifiers Are Applied When Replenishments Are Calculated

This topic explains how order modifiers are applied when replenishments are calculated for a replenishment plan.

## Settings That Affect How Order Modifiers Are Applied to Replenishments

The policy type specified in the policy assignment set that's attached to the replenishment plan affects how order modifiers are applied to the calculated replenishments.

## How Order Modifiers Are Applied to Replenishments

This table describes how order modifiers are applied to replenishments calculated for the replenishment plan when the policies are of different types:

| Policy Type | How Order Modifiers Are Applied | Example |
|---|---|---|
| Min-max planning | The order modifiers specified in the Fixed Lot Multiplier, Minimum Order Quantity, Maximum Order Quantity, and Fixed Order Quantity columns of the Items table are applied to the replenishment order quantity.<br><br>The minimum order quantity and fixed lot multiplier can also be defined at the supplier level.<br><br>Here's how the modifiers are used: | If the minimum quantity is 50, maximum quantity is 100, beginning inventory position (sum of the projected available balance and on order quantity) is 40, and fixed order quantity is 50, the replenishment order quantity is 60 (100 - 40). Two replenishment orders of 50 each are created. |

| Policy Type | How Order Modifiers Are Applied | Example |
|---|---|---|
| | • If the replenishment order quantity is less than the minimum order quantity, the former is increased to the latter.<br>• If the replenishment order quantity is more than the maximum order quantity, the former is decreased to the latter.<br>• If the replenishment order quantity isn't a multiple of the fixed lot multiplier, the former is converted into a multiple of the latter.<br>• If the fixed order quantity is defined, it's used as the replenishment order quantity. | |
| Fixed order cycle | The order modifiers are specified and used as explained for the min-max planning policy type. | If the maximum quantity is 100, beginning inventory position (sum of the projected available balance and on order quantity) is 80, and fixed lot multiplier is 50, the replenishment order quantity is 20 (100 - 80). One replenishment order of 50 is created. |
| Reorder point (ROP) and order quantity | Not applicable | Not applicable |
| ROP and economic order quantity (EOQ) | Not applicable | Not applicable |

For buy orders, the order modifiers and lead times defined at the item-supplier level are considered before those defined at the item-organization level.

# Aggregate Planning Buckets and Replenishment Orders

This topic explains how aggregate planning buckets are used with replenishment orders.

## Replenishment Calculation in Aggregate Planning Buckets

For planning buckets at a time level higher than a day, the following is how replenishments are calculated:

- Policies and replenishments are calculated at the daily level and subsequently aggregated and published at the bucket level.
- Measure values are aggregated and displayed at the bucket level.
- Replenishment orders and demands are pushed to the ends of the aggregate planning buckets.

  On the General subtab on the Supply tab on the Plan Options page for a replenishment plan, in the Replenishment Plan Attributes section, if **Yes** is selected in **Aggregate Planned Orders**, the planned orders for

each day are aggregated into one large order that's pushed to the end of the aggregate planning bucket. While the number of planned orders is reduced, order modifiers might be violated.

If **No** is selected, the planned orders generated daily are pushed to the end of the aggregate planning bucket. These planned orders aren't aggregated into one large order and don't violate order modifiers.

However, if the fixed order quantity order modifier or economic order quantity (EOQ) is used with a very small value, the replenishment plan might generate too many planned orders with small quantities. For reducing the number of planned orders and improving the replenishment plan performance, the first nine planned orders are generated according to the order modifiers, and the tenth planned order is generated for the remaining quantities and might violate the order modifiers. The tenth planned order can't be released. The generated orders are pushed to the end of the aggregate planning bucket, and this process is followed on every day of the aggregate planning bucket.

- If a replenishment plan with a planning time level higher than a day is used for releasing replenishment orders, the bucket start dates are used as the dock dates.

  Normally, such a plan isn't used for releasing replenishment orders.
- In a plan with an aggregate time level, the logic for calculating and releasing planned orders is the same whether the functionality for multiechelon replenishment planning is used or not.

## Example of Replenishment Calculation for Weekly Planning Buckets

In this example, replenishments are calculated for a replenishment plan with weekly planning buckets for the min-max planning policy type. The Minimum Quantity measure is 50 units, and the Maximum Quantity measure is 100 units.

| Measure | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 | Day 10 | Day 11 | Day 12 | Day 13 | Day 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gross Forecast | 0 | 0 | 0 | 0 | 0 | 0 | 70 | 0 | 0 | 0 | 0 | 0 | 0 | 140 |
| Total Demand | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| On Hand | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Purchase Orders | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Supply | 25 | 10 | 0 | 75 | 0 | 0 | 0 | 0 | 0 | 60 | 0 | 0 | 60 | 0 |
| Projected Available Balance | 15 | 15 | 5 | 70 | 60 | 50 | 40 | 20 | 0 | 40 | 20 | 0 | 40 | 20 |
| On Order | 10 | 75 | 75 | 0 | 0 | 0 | 0 | 60 | 60 | 0 | 60 | 60 | 0 | 60 |

| Measure | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 | Day 10 | Day 11 | Day 12 | Day 13 | Day 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Beginning Inventory Position | 25 | 90 | 80 | 70 | 60 | 50 | 40 | 80 | 60 | 40 | 80 | 60 | 40 | 80 |
| Planned Replenis by Order Date | 75 | 0 | 0 | 0 | 0 | 0 | 60 | 0 | 0 | 60 | 0 | 0 | 60 | 0 |
| Planned Replenis by Due Date | 0 | 0 | 0 | 75 | 0 | 0 | 0 | 0 | 0 | 60 | 0 | 0 | 60 | 0 |
| Final Inventory Position | 100 | 90 | 80 | 70 | 60 | 50 | 100 | 80 | 60 | 100 | 80 | 60 | 100 | 80 |

The weekly forecast is spread in daily buckets, and the Beginning Inventory Position measure is evaluated every day. On Day 1, the Beginning Inventory Position measure is 25 units, which is less than the Minimum Quantity measure of 50 units. Therefore, a replenishment order of 75 units is created (Maximum Quantity – Beginning Inventory Position). Similarly, on Day 7, a replenishment order of 60 units is created. These two replenishment orders are pushed to the end of the bucket for Week 1.

On Days 10 and 13, two more replenishment orders are created and pushed to the end of the bucket for Week 2.

When the replenishment plan is viewed through the Replenishment Workbench table, the results are aggregated as follows:

| Measure | Week 1 | Week 2 |
|---|---|---|
| Gross Forecast | 70 | 140 |
| Total Demand | 70 | 140 |
| On Hand | 25 | 0 |
| Purchase Orders | 10 | 0 |
| Total Supply | 110 | 120 |
| Projected Available Balance | 40 | 20 |
| On Order | 0 | 60 |
| Beginning Inventory Position | 40 | 80 |

| Measure | Week 1 | Week 2 |
|---|---|---|
| | | |
| Planned Replenishments by Order Date | 135 | 120 |
| Planned Replenishments by Due Date | 75 | 120 |
| Final Inventory Position | 100 | 80 |

*Related Topics*

- Considerations for Configuring Replenishment Plan Attributes
- Best Practices for Setting Up Replenishment Plans

# How Replenishment Orders Are Calculated During Incremental Planning

This topic explains how replenishment orders are calculated when incremental planning is done.

When incremental planning is enabled for a replenishment plan, replenishment planning is done for only those item-location combinations for which there are net changes in supplies and demands. So, the runtime for the replenishment plan is less. Only actual demands (demand for sales orders, transfer orders, and inventory position) are considered during replenishment calculation, and you can't select another replenishment plan, a demand plan, or an external forecast schedule for the demand forecast.

The net change collection must be run for supplies and demands before every incremental planning run. Changed item-location combinations are identified during incremental planning only through the net change collection.

New item-location combinations aren't covered by incremental planning. For such item-location combinations, you must first run the replenishment plan again with the **Refresh with current data** option selected on the Parameters tab in the Run Plan dialog box. Then, incremental planning can be done for these item-location combinations in later plan runs.

In a replenishment plan that's enabled for incremental planning and end item substitution and supersession, if an item with a change in net supplies and demands is a part of a substitution or supersession chain, then the entire chain is replanned.

In a multiechelon replenishment plan that's enabled for incremental planning, if the demand or supply of an item is changed, it's replanned at all echelons. A bottom-up pass for unconstrained planning and a top-down pass for constrained planning are performed. If you change the supply or demand for an item that's part of a substitution or supersession chain, the entire chain is replanned at all echelons. A bottom-up pass for unconstrained planning and a top-down pass for constrained planning are performed.

The hold date and expiration date for an on-hand lot are supported in a replenishment plan that's enabled for incremental planning. When a day is added to the planning horizon, for an item-location combination with no change in net supplies and demands, the value of the Expired Lot Quantity measure is null.

# Settings for Incremental Calculation of Replenishment Orders

For incrementally calculating replenishment orders, you must take these steps:

- On the Plan Options page for the replenishment plan, select the **Enable for incremental planning** and **Calculate replenishments** check boxes.

  When you select the check boxes, the following happen:

  - The **Generate forecast**, **Calculate policy parameters**, and **Rebalance inventory** check boxes are grayed out.
  - In the Plan Parameters section on the Scope tab, **Day** is selected in the **Planning Time Level** field, and it's grayed out.
  - **Incremental Replenishment Planning Default Catalog** is selected in the **Measure Catalog** field, and it's grayed out.
- To automatically release replenishment orders after incremental planning, take these steps:

  - On the General subtab on the Supply tab on the Plan Options page, in Automatic Release Parameters, select the **Release planned orders automatically** check box.
  - On the General tab in the Supply: Advanced Options dialog box that you open from the General subtab, refine the parameters for automatically releasing replenishment orders.
  - In the Items table, edit the values for the Release Time Fence Type and Release Time Fence Days columns for item-location combinations as discussed in the topic titled *How Replenishment Orders Are Automatically Released* in this chapter.
- On the Organizations and Schedules subtab on the Supply tab, in Demand Schedules, select another replenishment plan for providing the policy parameters to the plan that you're using for incremental planning.
- On the Parameters tab on the Collect Planning Data page, select **Net change** in the **Collection Type** field.
- On the Parameters tab in the Run Plan dialog box, select **Refresh with net-changed data**.

  When you run the replenishment plan for the first time, you must select the **Refresh with current data** option, and the **Refresh with net-changed data** option is grayed out.

# How Replenishment Orders Are Calculated During Incremental Planning

In this example, replenishment orders are incrementally calculated for a replenishment plan that uses the min-max planning policy type and has a maximum quantity of 100 units, minimum quantity of 50 units, and planning horizon of 7 days.

The following table depicts how replenishment orders are incrementally calculated on Day 1 for an item-location combination:

| Measure | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 |
|---|---|---|---|---|---|---|---|
| Sales Orders | 10 | 15 | 5 | 15 | 20 | 10 | 15 |
| On Hand | 25 | 0 | 0 | 0 | 0 | 0 | 0 |
| Purchase Orders | 0 | 10 | 0 | 0 | 0 | 0 | 0 |

| Measure | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 |
|---|---|---|---|---|---|---|---|
| Total Supply | 25 | 10 | 0 | 75 | 0 | 0 | 0 |
| Projected Available Balance | 15 | 10 | 5 | 65 | 45 | 35 | 20 |
| On Order | 10 | 75 | 75 | 0 | 0 | 55 | 55 |
| Beginning Inventory Position | 25 | 85 | 80 | 65 | 45 | 90 | 75 |
| Planned Replenishments by Order Date | 75 | 0 | 0 | 0 | 55 | 0 | 0 |
| Planned Replenishments by Due Date | 0 | 0 | 0 | 75 | 0 | 0 | 0 |
| Final Inventory Position | 100 | 85 | 80 | 65 | 100 | 90 | 75 |

The following is how a replenishment order is calculated for the min-max policy type:

- When the Beginning Inventory Position measure (Projected Available Balance + On Order) equals or falls below the minimum quantity, a replenishment order is triggered.
- The quantity of the replenishment order is what's required to bring the inventory up to the maximum quantity (Maximum Quantity - Beginning Inventory Position).

The Beginning Inventory Position measure is evaluated every day. On Day 1, the Beginning Inventory Position measure is 25 units, which is less than the minimum quantity of 50 units. Therefore, a replenishment order of 75 units is created (Maximum Quantity - Beginning Inventory Position). The order date is Day 1, and the item lead time is 3 days. Therefore, the Planned Replenishments by Due Date measure is updated for Day 4, while the On Order measure reflects 75 units on Days 2 and 3. On Day 4, the order is received in the inventory, and the Total Supply measure is updated.

On Days 2, 3, and 4, the Beginning Inventory Position measure is above the minimum quantity. Therefore, no new replenishments are needed. On Day 5, the Beginning Inventory Position measure is below the minimum quantity, and a replenishment order of 55 units is created.

The following table depicts how replenishment orders are incrementally calculated on Day 2 for the item-location combination:

| Measure | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 |
|---|---|---|---|---|---|---|---|
| Sales Orders | 15 | 5 | 35 | 20 | 10 | 15 | 0 |
| On Hand | 15 | 0 | 0 | 0 | 0 | 0 | 0 |

| Measure | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| Purchase Orders | 10 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Supply | 25 | 0 | 75 | 0 | 0 | 55 | 0 |
| Projected Available Balance | 10 | 5 | 45 | 25 | 15 | 55 | 55 |
| On Order | 75 | 75 | 0 | 55 | 55 | 0 | 0 |
| Beginning Inventory Position | 85 | 80 | 45 | 80 | 70 | 55 | 55 |
| Planned Replenishments by Order Date | 0 | 0 | 55 | 0 | 0 | 0 | 0 |
| Planned Replenishments by Due Date | 0 | 0 | 75 | 0 | 0 | 55 | 0 |
| Final Inventory Position | 85 | 80 | 100 | 80 | 70 | 55 | 55 |

Day 8 is added to the planning horizon. Day 4 has a new sales order. For that reason, the incremental planning is done again for the item-location combination. If there had been no change in the supply and demand for the item-location combination, the measure values for Day 7 would have been copied as the measure values for Day 8, and no incremental planning would have been done.

*Related Topics*

- Scope Plan Options for Replenishment Plans
- Automatic Release Options
- Release Recommendation Options
- Organizations and Schedules Options for Replenishment Plans
- Data Collection Types for Supply Chain Planning

# How Lead Time Is Calculated for Buy Orders and Transfer Orders

During the calculation of policies and replenishment orders, the calculation of the lead time for a buy order is different from that for a transfer order.

These points explain how the lead time is calculated for a buy order:

- If an assignment set is attached to the replenishment plan, these points apply:
  - The lead time is the total of the preprocessing, processing, and postprocessing lead times and transit time.
  - The preprocessing and postprocessing lead times are taken from the Items table for the item-location combination.
  - The transit time is taken from the sourcing rule or bill of distribution for the item in the assignment set. If no transit time is defined or available, it's considered as zero.
  - The item-supplier processing lead time from the approved supplier list (ASL) is taken as the processing lead time. If the item-supplier processing lead time isn't defined, the processing lead time is taken from the Items table for the item-location combination.
- If no assignment set is attached to the replenishment plan, the lead time is the total of the preprocessing, processing, and postprocessing lead times for the item-location combination in the Items table.

These points explain how the lead time is calculated for a transfer order:

- If an assignment set is attached to the replenishment plan, these points apply:
  - The lead time is the total of the preprocessing and postprocessing lead times and transit time.
  - The preprocessing and postprocessing lead times are taken from the Items table for the item-location combination.
  - The transit time is taken from the sourcing rule or bill of distribution for the item in the assignment set. If no transit time is defined or available, it's considered as zero.
- If no assignment set is attached to the replenishment plan, the lead time is the total of the preprocessing, processing, and postprocessing lead times for the item-location combination in the Items table.

These additional points determine how the lead time for the buy or transfer order is calculated:

- The transit time is taken from the Rank 1 sourcing rule or bill of distribution with the highest allocation percentage.
- Only those sourcing rules and bills of distribution that are active as on the replenishment plan's start date are considered.

*Related Topics*

- Support for Sourcing Rules and Bills of Distribution in Oracle Replenishment Planning

# Scheduling of Replenishment Orders

This topic explains how buy and transfer replenishment orders are scheduled.

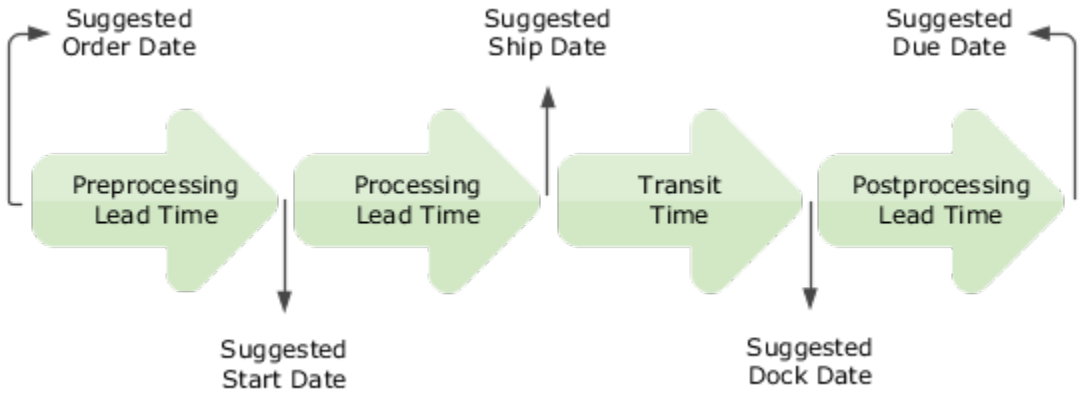
# Scheduling of Buy Orders

Buy orders are forward scheduled from the suggested order date.

These points govern the scheduling of buy orders:

- All valid shipping, organization receiving, supplier, transit, and manufacturing calendars are considered.
- The processing lead time defined at the supplier level is first considered. Otherwise, the processing lead time defined in the Items table is considered. The preprocessing and postprocessing lead times defined in the Items table are also considered.
- The preprocessing and postprocessing lead times are calculated according to the manufacturing calendar.
- The transit time is calculated according to the transit calendar.
- The processing lead time is calculated according to the supplier calendar.
- Supplier capacity isn't considered.

This figure depicts how various dates are determined for a buy replenishment order. The preprocessing lead time is added to the suggested order date for calculation of the suggested start date. The processing lead time is added to the suggested start date for calculation of the suggested ship date. The transit time is added to the suggested ship date for calculation of the suggested dock date. The postprocessing lead time is added to the suggested dock date for calculation of the suggested due date.




The suggested order date takes the manufacturing calendar into account, suggested start date takes the supplier calendar into account, suggested ship date takes the supplier shipping calendar into account, suggested dock date takes the organization receiving calendar into account, and suggested due date takes the manufacturing calendar into account.

For example, if Saturday and Sunday aren't working days, the suggested dock date is Friday, and the postprocessing lead time is 1 day, the suggested due date is Monday.

# Scheduling of Transfer Orders

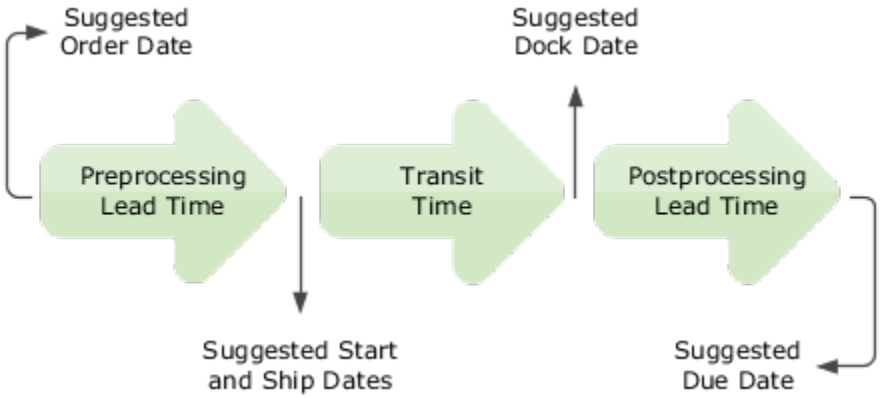
Transfer orders are forward scheduled from the suggested order date.

These points govern the scheduling of transfer orders:

- All valid shipping, receiving, transit, and manufacturing calendars are considered.
- The preprocessing lead time defined at the source organization is considered.

- No processing lead time is considered.
- The transit time is taken from the shipping method specified in the sourcing rule.
- The postprocessing lead time defined at the destination organization is considered.
- The preprocessing and postprocessing lead times are calculated according to the manufacturing calendars of the source organization and destination organization respectively.
- The transit time is calculated according to the transit calendar.

This figure depicts how various dates are determined for a transfer replenishment order. The preprocessing lead time is added to the suggested order date for calculation of the suggested start and suggested ship dates. The transit time is added to the suggested start and ship dates for calculation of the suggested dock date. The postprocessing lead time is added to the suggested dock date for calculation of the suggested due date.




The suggested order date and suggested start date take the source organization's manufacturing calendar into account, suggested ship date takes the source organization's shipping calendar into account, suggested dock date takes the destination organization's receiving calendar into account, and suggested due date takes the destination organization's manufacturing calendar into account. The suggested start date and suggested ship date are the same.

For example, if Saturday and Sunday aren't working days, the suggested dock date is Friday, and the postprocessing lead time is 1 day, the suggested due date is Monday.

# How Replenishment Orders Are Automatically Released

This topic explains how replenishment orders are automatically released.

## Settings That Affect Automatic Release of Replenishment Orders

For automatically releasing replenishment orders from a replenishment plan, you must take these steps:

- Select the **Release planned orders automatically** check box on the General subtab of the Supply tab of the Plan Options page.

  In the Supply: Advanced Options dialog box, on the General tab, refine the parameters for automatically releasing replenishment orders.
- In the Items table, for an item-location combination, set these columns:

- Release Time Fence Type: Select **User-defined time fence** or **Item total lead time** for this column.
- Release Time Fence Days: Enter the number of days in this column when the time fence is user-defined. When the time fence is determined by the item total lead time, the preprocessing lead time, processing lead time, and postprocessing lead time are added up and displayed under this column.

## How Replenishment Orders Are Automatically Released

When the replenishment plan is run, the following is how replenishment orders are automatically released:

1. The suggested order date for a planned order for an item-location combination is considered.
2. The release time fence days for the item-location combination are added to the plan start date for determination of the release time fence date.
3. When the suggested order date is earlier than or the same as the release time fence date, the replenishment order is automatically released.

*Related Topics*

- Automatic Release Options
- Release Recommendation Options

# Manually Release Replenishment Orders

This topic explains how replenishment orders are manually released for a replenishment plan that's been run.

To manually release replenishment orders, you must use the Supplies and Demands page for the replenishment plan. Before manually releasing replenishment orders, you can edit them using one of the following:

- the Supplies and Demands page
- the edit-in-spreadsheet feature

## Edit and Manually Release Replenishment Orders Using the GUI

Follow these steps to edit and manually release a replenishment order using the Supplies and Demands page:

1. Open the replenishment plan through one of these ways:
   - Use the Manage Plans page:
     i. On the Tasks panel tab, under Plans, select **Manage Plans**.

        The Manage Plans page opens.
     ii. Under Search Results, select the replenishment plan that you want to open, and click **Actions** > **Open**.

        The replenishment plan opens in a separate page.
   - On the Plans panel tab, under Plans, right-click the replenishment plan that you want to open, and select **Open**.

     The replenishment plan opens in a separate page.

2. Click the **Open** drop-down button.

   The Open Table, Graph, or Tile Set dialog box opens.
3. Search for the Supplies and Demands table, and open it.

   The Supplies and Demands page opens under the replenishment plan.
4. Under Search, perform a search for item-location combinations for which the value in the Order Type column is Planned order, and the value in the Release Status column is Release.

   The replenishment orders generated by the replenishment plan are listed as planned orders on the Supplies and Demands page.

   The rows with values under the Source Organization column represent transfer orders, while the rows with values under the Supplier and Supplier Site columns represent purchase orders.
5. Select the item-location combination for which you want to manually release the replenishment order.
   - Follow these steps to make changes before releasing the replenishment order:

     These changes are lost the next time you run the replenishment plan.

     i. Under Search Results, click **Actions** > **Mark for Release**.

        The row is marked with the **Changed** icon, and the release status for the item-location combination changes to Marked for release.

        The quantity in the Order Quantity column is copied to the Implement Quantity column.

     ii. If required, edit the values in the implementation-related and Shipping Method, Source Organization, Supplier, and Supplier Site columns.

   - Follow these steps to firm the planned orders:

     > **Note:** You don't always have to firm planned orders before releasing them. Whether you firm planned orders depends on your business requirements.

     i. Under Search Results, click **Actions** > **Mark for Release**.

        The row is marked with the **Changed** icon, and the release status for the item-location combination changes to Marked for release.

     ii. Under Firm Status, select **Firm**.

        The quantity in the Order Quantity column is copied to the Firm Quantity column.

     iii. Enter values under the Firm Date, Firm Quantity, and other editable columns.

        The values under the Firm Date and Firm Quantity columns persist until you change them. The firm planned orders persist across plan runs until you change the status under the Firm Status column to Not firm or the replenishment plan is run with **All** selected in the **Overwrite Firm Planned Orders** field on the General subtab of the Supply tab of the Plan Options page.
6. Repeat the previous step for the item-location combinations for which you want to manually release replenishment orders.
7. To change your decision about manually releasing a replenishment order, select the row, and under Search Results, click **Actions** > **Unmark for Release**.

   The release status for the item-location combination changes to Release.
8. Save the replenishment plan.

9. On the **Actions** menu for the replenishment plan, select **Release**.

   The Release Plan dialog box appears.
10. Click **Yes**.

    The Plan Status Details dialog box appears and displays the status of the release process.
11. Click **OK** to return to the Supplies and Demands page.
12. Under Search, click **View** > **Refresh**.

    For the manually released replenishment orders, the value under the Release Status column changes to Released and under the Action column to None.

## Edit Replenishment Orders Using a Spreadsheet and Manually Release Them Using the GUI

Follow these steps to edit a replenishment order using the edit-in-spreadsheet feature and thereafter manually release the replenishment order using the Supplies and Demands page:

1. Open the replenishment plan through one of these ways:
   - Use the Manage Plans page:
     i. On the Tasks panel tab, under Plans, select **Manage Plans**.

        The Manage Plans page opens.
     ii. Under Search Results, select the replenishment plan that you want to open, and click **Actions** > **Open**.

         The replenishment plan opens in a separate page.
   - On the Plans panel tab, under Plans, right-click the replenishment plan that you want to open, and select **Open**.

     The replenishment plan opens in a separate page.
2. Click the **Open** drop-down button.

   The Open Table, Graph, or Tile Set dialog box opens.
3. Search for the Supplies and Demands table, and open it.

   The Supplies and Demands page opens under the replenishment plan.
4. Under Search Results, click **Actions** > **Edit in Spreadsheet**.

   A dialog box opens and prompts you to open or save a Microsoft Excel file.
5. Open the spreadsheet.

   The Connect dialog box opens and prompts you to connect to the application URL.
6. Click **Yes**.

   A dialog box opens and prompts you to enter your credentials.

7. Sign in with your Oracle Fusion Cloud Applications credentials.

   The spreadsheet is refreshed with replenishment orders in the replenishment plan.

   The replenishment orders generated by the replenishment plan are listed as planned orders in the spreadsheet.

   The rows with values under the Source Organization column represent transfer orders, while the rows with values under the Supplier and Supplier Site columns represent purchase orders.
8. In the first table, enter the details for the item-location combinations for which you want to manually release replenishment orders.
9. Click **Supplies and Demands** > **Search**.

   The spreadsheet is refreshed with the item-location combinations that match your search criteria.
10. Select an item-location combination for which the value under the Release Status column is Release.
    - Follow these steps to make changes before releasing the replenishment order:

      These changes are lost the next time you run the replenishment plan.

      i. Edit the values under the implementation-related and Shipping Method, Source Organization, Supplier, and Supplier Site columns.

         A symbol appears under the Changed column for the item-location combination.
      ii. Under the Release Status column, select **Marked for release**.
    - Follow these steps to firm the planned orders:

      > **Note:** You don't always have to firm planned orders before releasing them. Whether you firm planned orders depends on your business requirements.

      i. Under the Firm Status column, select **Firm**.

         A symbol appears under the Changed column for the item-location combination.
      ii. Enter values under the Firm Date, Firm Quantity, and other editable columns.

         The values under the Firm Date and Firm Quantity columns persist until you change them. The firm planned orders persist across plan runs until you change the status under the Firm Status column to Not firm or the replenishment plan is run with **All** selected in the **Overwrite Firm Planned Orders** field on the General subtab of the Supply tab of the Plan Options page.
      iii. Under the Release Status column, select **Marked for release**.
11. Repeat the previous step for the item-location combinations for which you want to manually release replenishment orders.
12. Click **Supplies and Demands** > **Upload**.

    For the successfully updated rows, the symbol disappears under the Changed column. For the rows that aren't successfully updated, the symbol is retained under the Changed column, and information is displayed under the Status column.

    Save and close the spreadsheet.
13. On the Supplies and Demands page, click **View** > **Refresh**.

    The rows you changed are marked with the **Changed** icon and reflect the changes you made in the spreadsheet.

14. Select the changed rows, and under Search Results, click **Actions** > **Mark for Release**.

    The release status for the item-location combinations changes to Marked for release.
15. Save the replenishment plan.
16. On the **Actions** menu for the replenishment plan, select **Release**.

    The Release Plan dialog box appears.
17. Click **Yes**.

    The Plan Status Details dialog box appears and provides you with the status of the release process.
18. Click **OK** to return to the Supplies and Demands page.
19. Under Search, click **View** > **Refresh**.

    For the manually released replenishment orders, the value under the Release Status column changes to Released and under the Action column to None.

*Related Topics*

- Considerations for Configuring Replenishment Plan Attributes

# Create and Release Manual Planned Orders

You can create manual planned orders for buy, make, and transfer order types. For each planned order type, you can select your source specifications.

After you create the manual planned orders, you can then release the orders to the relevant source application. Creating and releasing manual planned orders enables you to respond quickly to issues by creating supplies in the source applications. You can create and release manually created planned orders from the Planning Central, Supply Planning, Demand and Supply Planning, or Replenishment Planning work area.

To create a manual planned order from the Supplies and Demands page, click the Create icon. The Create Order dialog box opens. In the Create Order dialog box, select the source type. The source type that you select enables additional parameters for the supply source.

| Source Type | Additional Parameters |
|---|---|
| Buy | • Supplier<br>• Supplier Site<br>• Shipping Method |
| Make<br><br>(Not relevant to Oracle Fusion Replenishment Planning) | • Item Structure Name<br>• Work Definition |
| Transfer | • Source Organization<br>• Shipping Method |

After you create the manual planned orders, optionally rerun your plan to determine if the new planned orders can be executed. You can then mark the manually created planned orders for release on the Supplies and Demands page. Next, run the release process and the planning process releases your manually created planned orders.

# Release Plan Recommendations to an External Execution System

You can release plan recommendations or planned orders from Oracle Fusion Cloud SCM Applications to an external execution system. When you release a planned order, the planning process generates a CSV file for the planned order.

The planning process attaches the generated CSV file to the scheduled process called Release Planning Recommendations: Release to External Source Systems. You can download the CSV file from the scheduled processes. The planning process also saves the CSV file in a .zip file format in the Universal Content Manager. The name of the .zip file is ReleasetoExternal.zip.

## Prerequisite

Before you can release planned orders from Oracle Fusion Cloud SCM Applications to an external execution system, you must do the following:

1. Assign your organization as an external source system.
2. Run collections from the external source system.

After you successfully run collections, you can plan your orders and release them to the external source system. The release process is same for an Oracle Fusion source system and an external source system.

## Release Planned Orders

Follow these steps to release the planned orders:

1. From your Supply Chain Planning work area, click the **Tasks** panel.
2. Click **Manage Plans** and then search your plan.
3. Open the plan, mark the orders for release, and then click **Actions** > **Release**.

The planning process exports the plan in the CSV format and attaches the CSV file to the scheduled process. Also, the planning process saves the CSV file in a .zip file format in the Universal Content Manager. You can download the .zip file from the **File Import and Export** link in the **Navigator**.

For more information, see Releasing Plan Recommendations to External Systems (Doc ID 2305394.1) on My Oracle Support at https://support.oracle.com.

# Verify Status of Replenishment Orders

This topic explains how the statuses of replenishment orders are verified after they're automatically or manually released.

On the Scheduled Processes page, the details of automatically released replenishment orders are listed under the Run Plan process and manually released replenishment orders under the Release Plan process.

Follow these steps to verify the statuses of replenishment orders after they're automatically or manually released:

1. On the Scheduled Processes page, search for the released replenishment orders.

   > **Tip:** You can enter the replenishment plan name in the **Submission Notes** field to search for the Run Plan or Release Plan process.

2. Under Search Results, select **Hierarchy**.
3. Expand the Run Plan or Release Plan process under which the replenishment orders are listed.
4. Expand the Release Planning Recommendations process.
5. Do one of the following:
   - For buy orders, select the Release Planning Recommendations: Load Interface Tables process for which the submission notes are "Loads interface tables with the data related to buy scenarios from planning."
   - For transfer orders, select the Release Planning Recommendations: Load Interface Tables process for which the submission notes are "Loads interface tables with the data related to transfer scenarios from planning."
6. For the selected process, under Log and Output, open the attached log file to view the statuses of the released replenishment orders.

# Support for Hold Dates and Expiration Dates in On-Hand Lots

## Overview of Support for Hold Dates and Expiration Dates in On-Hand Lots

In replenishment plans, on-hand lots are considered on or after their hold dates. The lots are also considered in the order of their expiration dates, and the expired quantity is flagged as unusable.

For example, assume that your on-hand lot has 48 units, a hold date of 12-Jan-2023, and an expiration date of 14-Jan-2023. You can use the on-hand lot only on or after 12-Jan-2023. If 40 units are used by 14-Jan-2023, then the expired lot quantity on that date is 8 units.

### Benefits of Support for Hold Dates and Expiration Dates

By using the inbuilt support for hold dates and expiration dates in replenishment plans, you get these benefits:

- You can recognize the hold date for an on-hand lot and consider it as supply only on or after the hold date, thereby streamlining inventory usage.

  Thus, you can cater to the requirements of industries (such as consumer packaged goods or healthcare) in which newly transacted inventory must go through an inspection process or physically mature before being considered for downstream processing or shipment to a customer.
- Demand isn't met through the use of expired lots or lots that expire before the due date, and customer satisfaction is increased.

- On-hand lots are considered in the order of expiry dates. Better use of on-hand lots happens because there's visibility into on-hand lots that are unused.

## Additional Points About Support for Hold Dates and Expiration Dates

Note these additional points about the support for hold dates and expiration dates:

- You can collect the hold dates and expiration dates for lots using the collection process or the file-based data import (FBDI) template named Supply Chain Planning Supply On Hand.
- The Lot, Hold Date, and Expiration Date columns in the Supplies and Demands table provide you with information about on-hand lots and their hold and expiration dates.

  These columns are populated for orders of the on-hand type.
- The expired lot order type in the Supplies and Demands table enables you to identify expired lots. The Suggested Due Date column for such orders indicates the expiry dates of the lots.
- You can review expired lot quantities using the Expired Lot Quantity measure, which stores only values that are greater than zero.

  The Expired Lot Quantity measure is used in the calculation of the Total Demand and Projected Available Balance measures. The Expired Lot Quantity measure is treated as demand, and the Projected Available Balance measure is reduced by the amount in the Expired Lot Quantity measure.

  Ensure that you add the Expired Lot Quantity measure to your user-defined measure catalog.
- After you add the Expired Lot Quantity measure to the Replenishment Workbench, you can drill from it to orders of the expired lot type in the Supplies and Demands table.
- Any on-hand lot quantity with a hold date is shown under the In Receiving measure on the hold date.
- You can simulate changes to the Hold Date column using a simulation set in the Plan Inputs work area.
- Hold dates and expiration dates for on-hand lots are supported in inventory rebalancing. When you create a cluster for inventory rebalancing, you can specify the expiration days tolerance for on-hand lots. Any on-hand lot with an expiration date within the specified tolerance isn't considered as supply during inventory rebalancing.

  After the suggested due date is calculated on the basis of the hold date, if the suggested due date falls outside the windows for calculation of the excess inventory and inventory shortage, then the on-hand lot isn't used for inventory rebalancing.

  The inventory rebalancing process is run before the replenishment planning process. After the inventory rebalancing process, the planned outbound shipments that are generated are considered as a part of the Total Demand measure and used in the computation of the Expired Lot Quantity measure.
- Hold dates and expiration dates for on-hand lots are supported in plans that use the functionality for multiechelon replenishment planning.

  The unconstrained planned order demand is included in the computation of the Total Demand measure. Therefore, when the lot expiration date for an echelon is determined on the basis of the Total Demand measure, the unconstrained planned order demand is considered indirectly.
- Hold dates and expiration dates for on-hand lots are supported in replenishment plans that are enabled for incremental planning.

*Related Topics*

- How On-Hand Lots Are Consumed in Replenishment Plans
- How the Suggested Due Dates and In Receiving Measure Are Calculated for On-Hand Lots with Hold Dates
- Create a Cluster
- Overview of Multiechelon Replenishment Planning

# How On-Hand Lots Are Consumed in Replenishment Plans

On-hand lots are consumed in replenishment plans in the order of their expiration dates.

This is the process for consumption of on-hand lots in replenishment plans:

1. The on-hand lots are arranged in the order of their expiration dates.
2. The first on-hand lot is consumed with the total demand within the lot expiry date.
3. If the on-hand lot isn't completely consumed on or before the expiration date, the unused quantity is calculated as expired and reduced from the projected available balance. The expired lot quantity is shown under the Expired Lot Quantity measure, and an order of the expired lot type is created with the expired lot quantity and the due date as the lot expiry date.

   If the on-hand lot is completely consumed, the Expired Lot Quantity measure doesn't store zero as a value.
4. Steps 2 and 3 are repeated for the remaining on-hand lots.

**Example 1**

Consider Example 1 of how an on-hand lot is consumed in a replenishment plan:

**Replenishment Workbench**

| | | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 |
|---|---|---|---|---|---|---|---|---|---|
| Total Demand | | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| On Hand | 48 | | | | | | | | |
| Expiration Date | Day 4 | | | | | | | | |
| Expired Lot Quantity | | | | | 8 | | | | |

**Supplies and Demands**

| Item | Location | Order Type | Order Quantity | Lot | Suggested Due Date | Release Status | Action |
|---|---|---|---|---|---|---|---|
| XYZ | M1 | Expired lot | 8 | 1234 | Day 4 | Ineligible | None |

**Note:** Some measures shown for the Replenishment Workbench aren't available in that table by default and must be added.

Note these points about the example:

- The on-hand lot has 48 units, and the expiration date is Day 4.
- The total demand is 10 units on each day.
- Consequently, there is an expired lot quantity of 8 units on Day 4.
- In the Supplies and Demands table, this unused quantity is shown under the expired lot order type with a suggested due date of Day 4. The release status is ineligible because the order can't be released.

**Example 2**

Consider Example 2 of how an on-hand lot is consumed in a replenishment plan:

**Replenishment Workbench**

| | | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 |
|---|---|---|---|---|---|---|---|---|---|
| Total Demand | | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| On Hand | 35 | | | | | | | | |
| Expiration Date | Day 4 | | | | | | | | |
| Expired Lot Quantity | | | | | 0 | | | | |

**Note:** Some measures shown for the Replenishment Workbench aren't available in that table by default and must be added.

Note these points about the example:

- The on-hand lot has 35 units, and the expiration date is Day 4.
- The total demand is 10 units on each day.
- Consequently, the on-hand lot is completely used up by Day 4.
- For the purpose of understanding, the expired lot quantity is shown as zero on Day 4. The measure returns only values that are greater than zero.

**Example 3**

Consider Example 3 of how an on-hand lot is consumed in a replenishment plan:

**Replenishment Workbench**

| | | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 |
|---|---|---|---|---|---|---|---|---|---|
| Total Demand | | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| On Hand (1) | 35 | | | | | | | | |
| Expiration Date (1) | Day 4 | | | | | | | | |
| Expired Lot Quantity (1) | | | | | 0 | | | | |
| | | | | | | | | | |
| On Hand (2) | 25 | | | | | | | | |
| Expiration Date (2) | Day 7 | | | | | | | | |
| Expired Lot Quantity (2) | | | | | | | | 0 | |
| | | | | | | | | | |
| On Hand (3) | 50 | | | | | | | | |
| Expiration Date (3) | Day 8 | | | | | | | | |
| Expired Lot Quantity (3) | | | | | | | | | 30 |

**Supplies and Demands**

| Item | Location | Order Type | Order Quantity | Lot | Suggested Due Date | Release Status | Action |
|---|---|---|---|---|---|---|---|
| XYZ | M1 | Expired lot | 30 | 1235 | Day 8 | Ineligible | None |

**Note:** Some measures shown for the Replenishment Workbench aren't available in that table by default and must be added.

Note these points about the example:

- Here, we have three on-hand lots.
- The first on-hand lot has 35 units, the second 25 units, and the third 50 units.

  For the purpose of understanding, the on-hand quantity is shown separately for each lot. In the Replenishment Workbench, the on-hand quantity would be shown as a consolidated amount of 110 units.
- The expiration date for the first on-hand lot is Day 4, the second Day 7, and the third Day 8.

  The on-hand lots are processed in the order of the expiration dates.
- The total demand is 10 units on each day.
- The first on-hand lot is completely used up by Day 4, and there is an unmet demand of 5 units.
- This unmet demand is met by the second on-hand lot, which is completely used up by Day 6.
- The third on-hand lot is used on Days 7 and 8.
- Consequently, there is an expired lot quantity of 30 units on Day 8.

  For the purpose of understanding, the expired lot quantity is shown as zero on Days 4 and 7. The measure returns only values that are greater than zero.

  Also, the expired lot quantity would be shown as a consolidated amount for all the lots in the table, and there's no measure for the expiration date.
- In the Supplies and Demands table, this unused quantity is shown under the expired lot order type with a suggested due date of Day 8. The release status is ineligible because the order can't be released.

*Related Topics*

- Overview of Support for Hold Dates and Expiration Dates in On-Hand Lots
- How the Suggested Due Dates and In Receiving Measure Are Calculated for On-Hand Lots with Hold Dates

# How the Suggested Due Dates and In Receiving Measure Are Calculated for On-Hand Lots with Hold Dates

The suggested due date for an on-hand lot is defaulted to its hold date. The lot quantity is shown in the In Receiving measure for the suggested due date.

These points explain how the suggested due dates and In Receiving measure are determined for on-hand lots with hold dates in replenishment plans:

- The suggested due date for an on-hand lot is set to its hold date after the manufacturing calendar for the organization is considered.
- If the on-hand lot has no hold date, the suggested due date is set to the plan run date, and the lot appears under the On Hand measure on Day 1.
- If the hold date coincides with a holiday, the next working day is set as the suggested due date.

- If the hold date is greater than the plan run date, the lot quantity is shown in the In Receiving measure for the hold date.

  The In Receiving measure is treated as another source of supply and is included in the Total Supply and On Order measures. The On Order measure is considered from Day 1 for the In Receiving measure.

  You can drill from the In Receiving measure to an order of the on-hand type in the Supplies and Demands table for the suggested due date.
- The supply that's reflected in the In Receiving measure is consumed from the suggested due date to the expiration date, and the unconsumed quantity is reflected in the Expired Lot Quantity measure.

**Example 1**

Consider this example in which the suggested due date is determined from the hold date, and the In Receiving measure reflects the lot quantity.

**Plan Input on Day 1 (Supplies and Demands)**

| Item | Location | Order Type | Order Quantity | Lot | Suggested Due Date | Hold Date |
|---|---|---|---|---|---|---|
| XYZ | M1 | On Hand | 10 | 1234 | Day 1 | |
| XYZ | M1 | On Hand | 15 | 1235 | Day 1 | |
| XYZ | M1 | On Hand | 20 | 1236 | Day 1 | Day 5 |
| XYZ | M1 | On Hand | 25 | 1237 | Day 1 | Day 8 |

**Plan Output on Day 1 (Supplies and Demands)**

| Item | Location | Order Type | Order Quantity | Lot | Suggested Due Date | Hold Date |
|---|---|---|---|---|---|---|
| XYZ | M1 | On Hand | 10 | 1234 | Day 1 | |
| XYZ | M1 | On Hand | 15 | 1235 | Day 1 | |
| XYZ | M1 | On Hand | 20 | 1236 | Day 5 | Day 5 |
| XYZ | M1 | On Hand | 25 | 1237 | Day 8 | Day 8 |

**Replenishment Workbench**

| | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 |
|---|---|---|---|---|---|---|---|---|
| On Hand | 25 | | | | | | | |
| In Receiving | | | | | 20 | | | 25 |

**Supplies and Demands**

| Item | Location | Order Type | Order Quantity | Lot | Suggested Due Date | Hold Date |
|---|---|---|---|---|---|---|
| XYZ | M1 | On hand | 20 | 1236 | Day 5 | Day 5 |

**Note:** The In Receiving measure shown for the Replenishment Workbench isn't available in that table by default and must be added to the table.

Note these points about the example:

- We have four lots. For Lots 1234 and 1235, no hold date is specified. For Lots 1236 and 1237, hold dates are specified.
- When these lots are processed, the suggested due date is set to the hold date for Lots 1236 and 1237 in the Supplies and Demands table.

  For Lots 1234 and 1235, the suggested due date is set to the plan run date, in keeping with the replenishment planning functionality when hold dates aren't specified.
- For Lots 1236 and 1237, the lot quantities are shown in the In Receiving measure in the Replenishment Workbench for the suggested due dates.
- In the Replenishment Workbench, the On Hand measure for Day 1 reflects the combined quantity for Lots 1234 and 1235. This measure is shown for Day 1.
- You can drill from the In Receiving measure in the Replenishment Workbench to the Supplies and Demands table. The quantity is shown in the Supplies and Demands table under an order of the on-hand type with the suggested due date as the hold date.

**Example 2**

Consider this example in which we have both hold dates and expiration dates:

**Plan Input on Day 1 (Supplies and Demands)**

| Item | Location | Order Type | Order Quantity | Lot | Suggested Due Date | Hold Date | Expiration Date |
|---|---|---|---|---|---|---|---|
| XYZ | M1 | On Hand | 10 | 1234 | Day 1 | | |
| XYZ | M1 | On Hand | 15 | 1235 | Day 1 | | |
| XYZ | M1 | On Hand | 18 | 1236 | Day 1 | Day 5 | Day 6 |
| XYZ | M1 | On Hand | 40 | 1237 | Day 1 | Day 8 | Day 10 |

**Replenishment Workbench**

| | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 | Day 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Total Demand | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| On Hand | 25 | | | | | | | | | |
| In Receiving | | | | | 18 | | | 40 | | |
| Expired Lot Quantity | | | | | | | | | | 10 |

**Note:** Some measures shown for the Replenishment Workbench aren't available in that table by default and must be added to the table.

Note these points about the example:

- We have four lots. For Lots 1234 and 1235, no hold date or expiration date is specified. For Lots 1236 and 1237, hold dates and expiration dates are specified.
- When these lots are processed, the suggested due dates are set to the hold dates for Lots 1236 and 1237 in the Supplies and Demands table.

  For Lots 1234 and 1235, the suggested due dates are set to the plan run date, in keeping with the replenishment planning functionality when hold dates aren't specified.
- For Lots 1236 and 1237, the lot quantities are shown in the In Receiving measure in the Replenishment Workbench for the suggested due dates.
- In the Replenishment Workbench, the On Hand measure for Day 1 reflects the combined quantity for Lots 1234 and 1235. This measure is shown for Day 1.
- The total demand is 10 units on each day.

- Lot 1236 is consumed completely on Days 5 and 6.
- Lot 1237 is consumed partially on Days 8, 9, and 10. The Expired Lot Quantity measure for Day 10 is set to 10 units.

*Related Topics*

- Overview of Support for Hold Dates and Expiration Dates in On-Hand Lots
- How On-Hand Lots Are Consumed in Replenishment Plans

# 14 Multiechelon Replenishment Planning

## Overview of Multiechelon Replenishment Planning

Multiechelon replenishment planning balances demand and supply at each echelon of your network. The demand at each level is propagated to the immediate upstream level. The supply at each level fulfills demand at the immediate lower level.

Two passes are performed through your supply network during multiechelon replenishment planning. First, a bottom-up pass is performed for propagating unconstrained demand from downstream locations to upstream locations. Unconstrained planned orders are created at destination locations, and the corresponding unconstrained planned order demands are created at source locations. The unconstrained planned orders are governed by policies. This process is repeated at every echelon till the top-most echelon is reached. Then, a top-down pass is performed for fulfilling the demands coming from the lower echelons. For fulfilling every unconstrained planned order demand from a destination location, constrained planned orders (that is, planned orders) are created at destination locations, and the corresponding constrained planned order demands are created at source locations. This process starts at the top-most echelon and is repeated at every echelon.

Multiechelon replenishment networks are common in the retail and service parts industries, among other industries. Most enterprises in such industries prefer to plan their supply networks by considering constraints at all echelons of the networks.

### Benefits of Multiechelon Replenishment Planning

A multiechelon replenishment plan provides you with these benefits:

- You can enhance your planning process by taking a holistic view of your entire supply network and considering supply constraints.

  You can work with a replenishment plan that acts as the single source of truth for demands and supplies across your supply chain.
- You can improve customer satisfaction by balancing demands and supplies at each echelon of your network.
- Forecasting is done at the lowest echelon of your network, and this forecast drives demand fulfillment across your supply chain.
- Constrained planned orders are created at a destination location only if the source location has the supply (reflected in the Constrained Projected Available Balance measure) to completely meet the unconstrained planned order demand.

  Otherwise, the creation of constrained planned orders is delayed until there's supply for meeting the unconstrained planned order demand.

# Additional Points About Multiechelon Replenishment Planning

Note these points about multiechelon replenishment planning:

- A multiechelon replenishment plan can have the daily or an aggregate planning time level.

  In a plan with an aggregate time level, the logic for calculating and releasing planned orders is the same whether the functionality for multiechelon replenishment planning is used or not.
- You can use multiechelon replenishment planning along with the feature for end item substitution and supersession.

  The supply of the substitute or supersession item at a source location can be used for meeting the requirement for the demanded item at the destination location. A planned order is created for moving the substitute or supersession item from the source location to the destination location. At the destination location, substitute supply is created for the demanded item, and substitute demand is created for the substitute or supersession item.
- You can use multiechelon replenishment planning along with the feature for inventory rebalancing.

  Inventory rebalancing is first done for the entire supply chain before multiechelon replenishment planning is done.

  If the unit of measurement (UOM) for your policy parameters is days, then the Reserved Safety Stock measure is calculated on the basis of the safety stock that doesn't include the unconstrained planned order demand.
- During simulation for a multiechelon replenishment plan, if you make a change for an item, it's replanned at all echelons.

  If you simulate a change to an item that's part of a substitution or supersession chain, the entire chain is replanned at all echelons.
- In a multiechelon replenishment plan that's enabled for incremental planning, if the demand or supply of an item is changed, it's replanned at all echelons.

  If you change the supply or demand for an item that's part of a substitution or supersession chain, the entire chain is replanned at all echelons.
- Hold dates and expiration dates are respected in a multiechelon replenishment plan.

  The unconstrained planned order demand is included in the computation of the Total Demand measure. Therefore, when the lot expiration date for an echelon is determined on the basis of the Total Demand measure, the unconstrained planned order demand is considered indirectly.
- For policy computation at all the echelons, the total forecast is required, which is the sum of the dependent and independent forecast.

  For replenishment calculation at all the echelons, only the independent forecast is required. The dependent demand is propagated from the lower echelons.
- At the upper echelons of your supply network, only sales orders are used for consumption against independent demand.

  Transfer orders or movement requests from lower echelons aren't used for consumption of independent demand.
- During multiechelon replenishment planning, purchase orders, purchase requisitions, transfer orders, or movement requests that aren't firm might get rescheduled (preponed) for avoiding the creation of planned orders.

However, lead-time and supply constraints at the source locations might prevent such rescheduling.

- You can use sourcing ranks and sourcing allocation percentages to model your multiechelon supply network and determine how demand should be propagated to upstream source locations.
  All order modifiers are supported along with sourcing ranks and sourcing allocation percentages.
- Constrained planned supply and constrained planned demand are represented by the order types called planned order and planned order demand respectively in the Supplies and Demands table. You can release orders of the planned order type.
  Unconstrained planned supply and unconstrained planned demand are represented by the order types called unconstrained planned order and unconstrained planned order demand respectively in the Supplies and Demands table. You can't release orders of these types, and you can use these orders for only analysis.
- In a multiechelon replenishment plan, the only supply constraints that are recognized at an echelon are because of the lead time, calendar, or supply constraints at the upper echelon.

*Related Topics*

- How Multiechelon Replenishment Planning Is Done
- How You Use Multiechelon Replenishment Planning
- Rescheduling of Orders During Bottom-up Phase of Multiechelon Replenishment Planning
- How Sourcing Ranks Are Used in Multiechelon Replenishment Planning
- How Sourcing Allocation Percentages Are Used in Multiechelon Replenishment Planning

# How Multiechelon Replenishment Planning Is Done

During multiechelon replenishment planning, two passes are performed through your supply chain. During the first, bottom-up pass, unconstrained planning is performed. During the second, top-down pass, constrained planning is done.

The following is the high-level process for multiechelon replenishment planning:

1. A low-level code is computed on the basis of the sourcing rules for each item-location combination in the supply chain.
2. Beginning with the item-location combinations at the bottom-most echelon, unconstrained demand is propagated up through the supply chain.
   Unconstrained planned orders are created at destination locations, and the corresponding unconstrained planned order demands are created at source locations. The lead-time constraints are adhered to during this step.
   If a substitution or supersession chain is defined at a location, then the substitute or supersession item's excess supply is first used, and only the remaining, unmet demand is propagated to the upstream location.
   Purchase orders, purchase requisitions, transfer orders, or movement requests that aren't firm might get rescheduled (preponed) for avoiding the creation of planned orders. However, the due dates for the rescheduled orders must be one day after the natural time fence.
   Sourcing ranks and sourcing allocation percentages, if defined, are used for propagating unconstrained demand to upstream source locations.

This process is repeated at every echelon until the top-most echelon is reached.

3. At the top-most echelon, constrained planned orders (that is, planned orders) are created.

   The lead-time constraints are adhered to during this step.

4. Beginning with the item-location combinations at the top-most echelon, constrained supply is propagated down through the supply chain.

   For fulfilling every unconstrained planned order demand coming from destination locations, constrained planned orders are created at destination locations, and the corresponding constrained planned order demands are created at source locations. The lead-time constraints are adhered to during this step. The constrained demand is created at a source location only after all local demand for the source location is met.

   Constrained planned orders are created at a destination location only if the source location has the required supply (reflected in the Constrained Projected Available Balance measure) to completely meet the unconstrained planned order demand. Otherwise, the creation of constrained planned orders is delayed until there's enough supply for meeting the unconstrained planned order demand.

   The supply of the substitute or supersession item at a source location can be used for meeting the requirement for the demanded item at the destination location. A planned order is created for moving the substitute or supersession item from the source location to the destination location. At the destination location, substitute supply is created for the demanded item, and substitute demand is created for the substitute or supersession item. The item relationship at the destination location is respected. If the item relationship at the destination location isn't the same as that at the source location, then substitution or supersession isn't performed.

   This process is repeated at every echelon until the bottom-most echelon is reached.

*Related Topics*

- Overview of Multiechelon Replenishment Planning
- How the Low-Level Code Is Calculated During Multiechelon Replenishment Planning
- Rescheduling of Orders During Bottom-up Phase of Multiechelon Replenishment Planning
- How Sourcing Ranks Are Used in Multiechelon Replenishment Planning
- How Sourcing Allocation Percentages Are Used in Multiechelon Replenishment Planning

# How You Use Multiechelon Replenishment Planning

This topic provides the high-level process for setting up multiechelon replenishment planning.

## Before You Begin

Note these points while setting up your multiechelon replenishment plan:

- For policy computation at each echelon, you need the total forecast, which is the sum of the dependent and independent forecast.
- For calculating the replenishments at each echelon, you need only the independent forecast, because the dependent demand is already propagated up the supply chain during multiechelon replenishment planning.
- Because of the previously mentioned points, you need to set up two replenishment plans for multiechelon replenishment planning:

- The first replenishment plan calculates policies using the total forecast (independent and dependent forecast).
- The second replenishment plan calculates replenishments using only the independent forecast. The dependent demand will anyway be propagated from lower echelons.

  For the second replenishment plan, you must supply the independent forecast using a demand plan or an external forecast schedule.

  > **Note:** If you're using the feature for multiechelon replenishment planning along with the feature for incremental planning, you don't need to supply the independent forecast to the plan that calculates replenishments. For incremental planning, only actual demand (demand for sales orders, transfer orders, and inventory position) is used during replenishment calculation, and you can't select a demand plan or an external forecast schedule for the demand forecast.

## High-Level Process for Setting Up Multiechelon Replenishment Planning

Follow these steps to set up multiechelon replenishment planning:

1. Set up your sourcing rules, sourcing ranks, and sourcing allocation percentages for all the locations in your supply chain.
2. Collect the information for your replenishment plans using the collections functionality or the file-based data import (FBDI) templates.
3. Set up your replenishment plan for calculating the total demand (dependent and independent) and policies for all echelons of your supply chain.

   On the Plan Options page, select the **Generate forecast** and **Calculate policy parameters** check boxes.
4. Run your replenishment plan for calculating the total demand and policies for all echelons of your supply chain.

   In the Run Plan dialog box, on the Parameters tab, in the Details section, ensure that the **Refresh with current data** option, the **Generate forecast** check box, and the **Calculate policy parameters** check box are selected.
5. For obtaining the independent forecast that's required for calculating replenishments, set up a demand plan for the supply chain.

   On the Demand: Advanced Options dialog box that's opened from the Demand tab on the Plan Options page, ensure that the **Include transfer orders** check box isn't selected.

   You don't need to perform this step if you're going to use an external demand schedule.
6. Run your demand plan.

   In the Run Plan dialog box, on the Parameters tab, in the Details section, ensure that the **Refresh with current data** option is selected.

7. Set up your replenishment plan for calculating replenishments for all echelons of your supply chain.
    a. On the Plan Options page, select the **Calculate replenishments** check box.
    b. On the General subtab on the Supply tab on the Plan Options page, in the Multiechelon Plan Attributes section, select the **Enable multiechelon planning** check box.
    c. If you want constrained planned orders that are created after the top-down phase to be automatically released, in the Automatic Release Parameters section, select the **Release planned orders automatically** check box.

       On the General tab in the Supply: Advanced Options dialog box that you open from the General subtab, define the parameters for automatically releasing planned orders.

       In the Items table, edit the values for the Release Time Fence Type and Release Time Fence Days columns for item-location combinations.
    d. If you want purchase orders and transfer orders that aren't firm and that are rescheduled because of multiechelon replenishment planning to be automatically released, on the General subtab, in the Automatic Release Parameters section, select the **Include rescheduled supplies in automatic releases** check box.
    e. On the Organizations and Schedules subtab on the Supply tab on the Plan Options page, in the Demand Schedules section, select the demand plan that you created or the external demand schedule. The check box in the **Use for Demand Schedule** column is automatically selected and grayed out.

       You don't need to perform this step if you're using the feature for multiechelon replenishment planning along with the feature for incremental planning.
    f. Select the replenishment plan that you created for calculating the total demand and policies for all echelons of your supply chain, and select the check box in the **Use for Policy Parameters** column.

       Ensure that the check box in the **Use for Demand Schedule** column isn't selected.
8. Run your replenishment plan for calculating replenishments for all echelons of your supply chain.

   In the Run Plan dialog box, on the Parameters tab, in the Details section, ensure that the **Refresh with current data** option and **Calculate replenishments** check box are selected.
9. Review the results of multiechelon replenishment planning using the Supplies and Demands table.

   Unconstrained demand and supply are represented by the order types called unconstrained planned order demand and unconstrained planned order. You can't release orders of these types, and you can use the orders for only analysis.

   Constrained demand and supply are represented by the order types called planned order demand and planned order. You can release orders of the planned order type.
10. If you haven't selected the **Release planned orders automatically** check box on the General subtab on the Supply tab on the Plan Options page, manually release your constrained planned orders using the Supplies and Demands table.
11. If you haven't selected the **Include rescheduled supplies in automatic releases** check box on the General subtab on the Supply tab on the Plan Options page, manually release your rescheduled purchase orders and transfer orders using the Supplies and Demands table.

*Related Topics*

- Overview of Multiechelon Replenishment Planning
- Automatic Release Options
- Organizations and Schedules Options for Replenishment Plans
- Run a Replenishment Plan
- Enable Multiechelon Planning for Your Replenishment Plan

# Measures for Multiechelon Replenishment Planning

This topic lists the predefined measures that are available for use in multiechelon replenishment plans.

## Predefined Measures for Multiechelon Replenishment Planning

This table lists the predefined measures for multiechelon replenishment planning:

| Name | Description |
|---|---|
| Constrained Beginning Inventory Position | Sum of the Constrained Projected Available Balance and Constrained On Order measures. |
| Constrained On Order | Quantity of the constrained planned replenishments from the order date to one day before the order due date. |
| Constrained Planned Order Demand | Constrained demand at a source organization (with the order type of planned order demand) that originates from constrained planned orders at a destination organization. |
| Constrained Planned Orders | Total quantity of the constrained planned orders (with the order type of planned order) for a location. |
| Constrained Projected Available Balance | Constrained projected quantity on hand in the future.<br>This measure includes orders of the planned order and planned order demand types. |
| Unconstrained Planned Order Demand | Unconstrained demand at a source organization that originates from unconstrained planned orders at a destination organization. |
| Unconstrained Planned Orders by Due Date | Total quantity of unconstrained planned orders by the due date. |
| Unconstrained Planned Orders by Order Date | Total quantity of unconstrained planned orders by the order date. |

These measures are populated for your replenishment plan only when you select the **Enable multiechelon planning** check box in the Multiechelon Plan Attributes section on the General subtab on the Supply tab on the Plan Options page.

These measures are available in the Default Replenishment Planning Catalog and Incremental Replenishment Planning Default Catalog. Ensure that you add these measures to any user-defined measure catalog for your multiechelon replenishment plan.

## Additional Points About Measures

Note these additional points about measures and their use in multiechelon replenishment planning:

- The Total Demand and Total Supply measures don't include constrained demand (orders of the planned order demand type) and constrained supply (orders of the planned order type) respectively. Therefore, the Total Demand measure represents orders of the unconstrained planned order demand type, and the Total Supply measure represents orders of the unconstrained planned order type.
- The value returned by the Projected Available Balance measure in a multiechelon replenishment plan should be considered as the value for the unconstrained projected available balance.
- The Constrained On Order measure shows values from the order date for a planned order.

  However, the On Order measure shows values from the day after the order date for the unconstrained planned order.
- The Movement Request Demand and Transfer Order Demand measures aren't used in the calculation of the Inventory Turns and Projected Fill Rate measures.

*Related Topics*

- Overview of Multiechelon Replenishment Planning
- Enable Multiechelon Planning for Your Replenishment Plan

# How the Low-Level Code Is Calculated During Multiechelon Replenishment Planning

During multiechelon replenishment planning, the low-level code is used for identifying the bottom-most echelon and upper echelons in your supply chain.

During the bottom-up pass, unconstrained demand is propagated from the bottom-most echelon through the upper echelons to the top-most echelon. During the top-down pass, constrained supply is allocated from the top-most echelon through the lower echelons to the bottom-most echelon. The low-level code is calculated for every item at a location so that all the echelons in the supply chain are identified and processed correctly. The replenishment plan uses sourcing rules for calculating the low-level code.

Consider a supply chain in which item ITM001 is present in locations M0, M1, M2, M3, M4, and M5:

- The combinations of the item and the M3, M4, and M5 locations aren't a source for any other location.

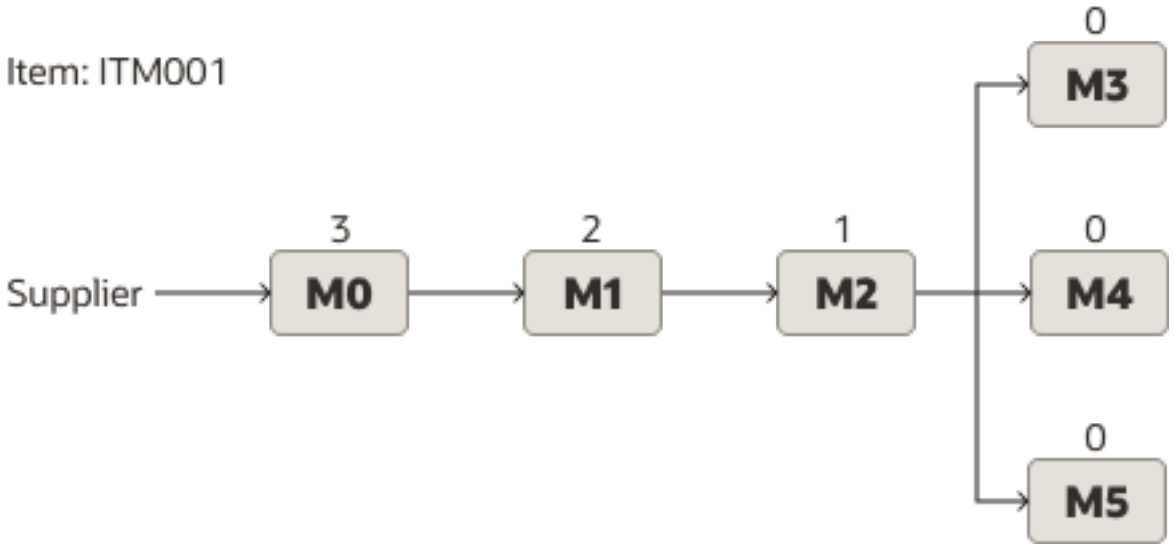
  Therefore, these item-location combinations get the low-level code of zero.
- The combination of the item and the M2 location is the source for the item at the M3, M4, and M5 locations.

  Therefore, this item-location combination gets the low-level code of 1.
- The combination of the item and the M1 location is the source for the item at the M2 location.

  Therefore, this item-location combination gets the low-level code of 2.
- The combination of the item and the M0 location is the source for the item at the M1 location.

  Therefore, this item-location combination gets the low-level code of 3.

The following figure depicts this supply chain and the computed low-level codes for the item-location combinations:




## Additional Points About the Low-Level Code

Note these additional points about the low-level code:

- The item-location combination with the lowest low-level code in the supply chain gets processed first.
- The item-location combination that doesn't have any transfer from a source location in the sourcing rule gets the highest low-level code in the supply chain.
- An item-location combination that isn't the source for any other item-location combination needn't always have the low-level code of zero. The assigned low-level code is computed on the basis of the low-level code for the source item-location combination.

  For example, if an item at the L1 location is the source for the item at the L2 location, the item at L2 isn't the source for any other item-location combination, and the item at L1 has the low-level code of 2, then the item at L2 will have the low-level code of 1.
- If an item-location combination is the source for two other item-location combinations with different low-level codes, then the source item-location combination gets a low-level code that's calculated as follows: 1 + highest low-level code among destination item-location combinations.

  For example, if an item at the L1 location is the source for the item at the L2 location with the low-level code of 1 and the item at the L3 location with the low-level code of 2, then the item at L1 will have the low-level code of 3.
- The low-level code is used for deciding the sequence for processing the item-location combinations. This process is an internal one, and you only need to ensure that sourcing rules are set correctly.

*Related Topics*

- Overview of Multiechelon Replenishment Planning
- How Multiechelon Replenishment Planning Is Done

# How Sourcing Ranks Are Used in Multiechelon Replenishment Planning

The sourcing ranks that you set in sourcing rules are used during the bottom-up pass of multiechelon replenishment planning for creating unconstrained planned orders and unconstrained planned order demands.

The multiechelon replenishment plan first checks if supply is available at the source location with the sourcing rank of 1. If supply isn't available at that location, the plan checks if supply is available at the source location with the sourcing rank of 2, and so on. Existing supply is used at the source locations in the order of the sourcing ranks. If the existing supplies aren't enough at any of the source locations, the demand is placed on the source location with the sourcing rank of 1.

Multiechelon replenishment planning supports sourcing ranks and sourcing allocation percentages with order modifiers.

Consider an organization named S1 that has source locations named M1 and M2. The sourcing rank for M1 is 1, and that for M2 is 2. An unconstrained planned order of 100 units is placed on S1.

In Example 1, if the projected available balance for M1 is 110 units, and that for M2 is 200 units, then the value of the Unconstrained Planned Order Demand measure for M1 is 100, while the measure value for M2 is zero.

In Example 2, if the projected available balance for M1 is 70 units, and that for M2 is 50 units, then the value of the Unconstrained Planned Order Demand measure for M1 is 70, while the measure value for M2 is 30. All the available supply from M1 is used before the supply from M2 is used for fulfilling the unconstrained planned order.

In Example 3, if the projected available balance for M1 is zero units, and that for M2 is 40 units, then the value of the Unconstrained Planned Order Demand measure for M1 is 60, while the measure value for M2 is 40. All the available supply from M2 is first used, and the remaining demand is placed on M1 for fulfilling the unconstrained planned order.

This table lists these examples:

| Example | Source Location | Projected Available Balance at the Source Location | Unconstrained Planned Order Demand |
|---|---|---|---|
| 1 | M1 | 110 | 100 |
| 1 | M2 | 200 | 0 |
| 2 | M1 | 70 | 70 |
| 2 | M2 | 50 | 30 |
| 3 | M1 | 0 | 60 |
| 3 | M2 | 40 | 40 |

*Related Topics*

- Overview of Multiechelon Replenishment Planning
- How Multiechelon Replenishment Planning Is Done
- How Sourcing Allocation Percentages Are Used in Multiechelon Replenishment Planning
- How Order Modifiers Are Applied When Replenishments Are Calculated

# How Sourcing Allocation Percentages Are Used in Multiechelon Replenishment Planning

The sourcing allocation percentages that you set in sourcing rules are used during the bottom-up pass of multiechelon replenishment planning for creating unconstrained planned orders and unconstrained planned order demands.

Multiechelon replenishment planning supports sourcing allocation percentages and sourcing ranks with order modifiers.

Because of order modifiers or constraints at source locations, the sourcing allocation percentages might not be adhered to during the creation of unconstrained planned orders. However, an attempt is made to honor the cumulative percentages for sourcing allocations within the planning horizon.

Consider an organization named S1 that has source locations named M1 and M2. The sourcing allocation percentage for M1 is 40%, while that for M2 is 60%. Both M1 and M2 have a sourcing rank of 1. An unconstrained planned order of 100 units is placed on S1 on days 1, 5, and 9.

On day 1, when the projected available balance for M1 is 70 units, and that for M2 is also 70 units, the allocation is done according to the specified percentages. The value of the Unconstrained Planned Order Demand measure for M1 is 40, while the measure value for M2 is 60.

On day 5, when the projected available balance for M1 is 30 units, and that for M2 is 80 units, the value of the Unconstrained Planned Order Demand measure for M1 is 30, while the measure value for M2 is 70.

On day 9, when the projected available balance for M1 is 65 units, and that for M2 is 55 units, the value of the Unconstrained Planned Order Demand measure for M1 is 50, while the measure value for M2 is 50. The measure value for M1 has been raised so that the cumulative measure value for M1 across all three days is 40% (120 units) of the cumulative value for the planned order (300 units).

This table lists this example:

| Day | Source Location | Projected Available Balance at Source Location | Unconstrained Planned Order Demand |
|---|---|---|---|
| 1 | M1 | 70 | 40 |
| 1 | M2 | 70 | 60 |
| 5 | M1 | 30 | 30 |
| 5 | M2 | 80 | 70 |
| 9 | M1 | 65 | 50 |

| Day | Source Location | Projected Available Balance at Source Location | Unconstrained Planned Order Demand |
|---|---|---|---|
| 9 | M2 | 55 | 50 |

*Related Topics*

- Overview of Multiechelon Replenishment Planning
- How Multiechelon Replenishment Planning Is Done
- How Sourcing Ranks Are Used in Multiechelon Replenishment Planning
- How Order Modifiers Are Applied When Replenishments Are Calculated

# Rescheduling of Orders During Bottom-up Phase of Multiechelon Replenishment Planning

During the bottom-up phase of multiechelon replenishment planning, movement requests, purchase orders, purchase requisitions, or transfer orders that aren't firm are rescheduled so that excess planned orders aren't created.

Note these points about the rescheduling of these order types:

- In the Supplies and Demands table for a multiechelon replenishment plan, the value in the **Action** column is **Reschedule in** for rescheduled movement requests, purchase orders, purchase requisitions, or transfer orders.
- Oracle Purchasing and Oracle Fusion Cloud Inventory Management don't support the rescheduling of purchase requisitions and movement requests respectively.

  For this reason, in the Supplies and Demands table, the value in the **Release Status** column is **Ineligible** for rescheduled purchase requisitions and movement requests.

  You can't release rescheduled purchase requisitions and movement requests.
- For rescheduled purchase orders and transfer orders, the value in the **Release Status** column is **Release**.

  If you mark such purchase orders and transfer orders for release, the value in the **Release Status** column changes to **Marked for reschedule**.
- After multiechelon replenishment planning, rescheduled purchase orders and transfer orders are automatically released if you selected the **Include rescheduled supplies in automatic releases** check box in the Automatic Release Parameters section on the General subtab on the Supply tab on the Plan Options page.

  Otherwise, you must manually release these rescheduled purchase orders and transfer orders using the Supplies and Demands table.
- Lead-time and supply constraints at the source locations might prevent such rescheduling.
- The rescheduling of movement requests, purchase orders, purchase requisitions, or transfer orders happens after end item substitution and supersession are performed.

*Related Topics*

- Overview of Multiechelon Replenishment Planning
- How Multiechelon Replenishment Planning Is Done
- Automatic Release Options
- Manually Release Replenishment Orders

# Example of Multiechelon Replenishment Planning

This topic provides an example of multiechelon replenishment planning for an item in a supply chain with a source location and two destination locations.

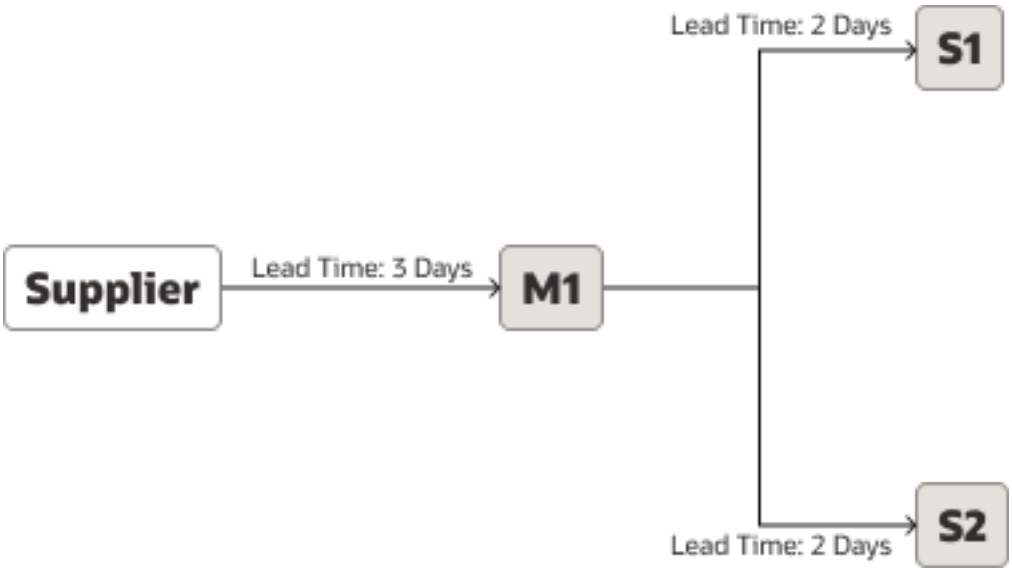
These are the details of the supply chain:

- The source location is M1 and gets its supply from a supplier.
- The lead time for M1 is 3 days. The lead time is considered as a constraint.

  However, the supplier capacity isn't considered as a constraint.
- M1 has two destination locations named S1 and S2.

  The lead time for S1 and S2 is 2 days.
- The applicable policy type is min-max planning.

The following figure depicts this supply chain:




As is evident from the example, the logic for recommending unconstrained planned orders in multiechelon replenishment planning is the same as the logic for recommending planned orders in a replenishment plan that doesn't use the functionality for multiechelon replenishment planning.

# Unconstrained, Bottom-Up Phase

The following table provides the measure values for S1 during the unconstrained, bottom-up phase:

| Measur | 01/01 | 01/02 | 01/03 | 01/04 | 01/05 | 01/06 | 01/07 | 01/08 | 01/09 | 01/10 | 01/11 | 01/12 | 01/13 | 01/14 | 01/15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gross Forecas | 10 | 8 | 11 | 19 | 10 | 8 | 11 | 10 | 8 | 11 | 10 | 9 | 10 | 8 | 8 |
| On Hand | 25 | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| Transfer Orders | – | – | 40 | – | – | – | – | – | – | – | – | – | – | – | – |
| Total Supply | 25 | – | 40 | – | – | 43 | – | – | – | 39 | – | – | – | 38 | – |
| On Order | 40 | 40 | – | – | 43 | – | – | – | 39 | – | – | – | 38 | – | – |
| Projecte Availabl Balance | 15 | 7 | 36 | 17 | 7 | 42 | 31 | 21 | 13 | 41 | 31 | 22 | 12 | 42 | 34 |
| Beginni Inventor Positior | 55 | 47 | 36 | 17 | 50 | 42 | 31 | 21 | 52 | 41 | 31 | 22 | 50 | 42 | 34 |
| Uncons Planned Orders by Order Date | – | – | – | 43 | – | – | – | 39 | – | – | – | 38 | – | – | – |
| Uncons Planned Orders by Due Date | – | – | – | – | – | 43 | – | – | – | 39 | – | – | – | 38 | – |
| Minimu Quantit | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| Maximu Quantit | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |

Note these points about S1:

- Unconstrained planned orders are recommended on 01/04, 01/08, and 01/12 when the value of the Beginning Inventory Position measure goes below 30 units. The unconstrained planned orders are the units necessary to bring the value of the Beginning Inventory Position measure up to 60 units. These unconstrained planned orders are reflected by the values of the Unconstrained Planned Orders by Order Date measure for 01/04, 01/08, and 01/12.
- After the lead time is considered, the unconstrained planned orders are reflected by the Unconstrained Planned Orders by Due Date measure for 01/06, 01/10, and 01/14.

The following table provides the measure values for S2 during the unconstrained, bottom-up phase:

| Measur | 01/01 | 01/02 | 01/03 | 01/04 | 01/05 | 01/06 | 01/07 | 01/08 | 01/09 | 01/10 | 01/11 | 01/12 | 01/13 | 01/14 | 01/15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gross Forecas | 9 | 11 | 9 | 11 | 15 | 10 | 9 | 12 | 11 | 10 | 9 | 12 | 10 | 8 | 12 |
| On Hand | 21 | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| In Transit | – | 45 | – | – | – | – | – | – | – | – | – | – | – | – | – |
| Total Supply | 21 | 45 | – | – | – | – | 54 | – | – | – | 42 | – | – | – | 41 |
| On Order | 45 | – | – | – | – | 54 | – | – | – | 42 | – | – | – | 41 | – |
| Projecte Availabl Balance | 12 | 46 | 37 | 26 | 11 | 1 | 46 | 34 | 23 | 13 | 46 | 34 | 24 | 16 | 45 |
| Beginni Inventor Positior | 57 | 46 | 37 | 26 | 11 | 55 | 46 | 34 | 23 | 55 | 46 | 34 | 24 | 57 | 45 |
| Uncons Planned Orders by Order Date | – | – | – | – | 54 | – | – | – | 42 | – | – | – | 41 | – | – |
| Uncons Planned Orders by Due Date | – | – | – | – | – | – | 54 | – | – | – | 42 | – | – | – | 41 |
| Minimu Quantit | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| Maximu Quantit | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 |

Note these points about S2:

- Unconstrained planned orders are recommended on 01/05, 01/09, and 01/13 when the value of the Beginning Inventory Position measure goes below 25 units. The unconstrained planned orders are the units necessary to bring the value of the Beginning Inventory Position measure up to 65 units. These unconstrained planned orders are reflected by the values of the Unconstrained Planned Orders by Order Date measure for 01/05, 01/09, and 01/13.
- After the lead time is considered, the unconstrained planned orders are reflected by the Unconstrained Planned Orders by Due Date measure for 01/07, 01/11, and 01/15.

## Recommendation of Constrained and Unconstrained Planned Orders at the Top-Most Echelon

The following table enables you to examine the constrained and unconstrained planned orders for M1:

| Measur | 01/01 | 01/02 | 01/03 | 01/04 | 01/05 | 01/06 | 01/07 | 01/08 | 01/09 | 01/10 | 01/11 | 01/12 | 01/13 | 01/14 | 01/15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Uncons Planned Order Demanc | – | – | – | 43 | 54 | – | – | 39 | 42 | – | – | 38 | 41 | – | – |
| Transfe Order Demanc | 40 | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| On Hand | 55 | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| In Transit | – | 66 | – | – | – | – | – | – | – | – | – | – | – | – | – |
| Total Supply | 55 | 66 | – | – | – | – | 102 | – | – | – | 93 | – | – | – | 80 |
| On Order | 66 | – | – | – | 102 | 102 | – | – | 93 | 93 | – | – | 80 | 80 | – |
| Projecte Availabl Balance | 15 | 81 | 81 | 38 | –16 | –16 | 86 | 47 | 5 | 5 | 98 | 60 | 19 | 19 | 99 |
| Beginni Inventor Positior | 81 | 81 | 81 | 38 | 86 | 86 | 86 | 47 | 98 | 98 | 98 | 60 | 99 | 99 | 99 |
| Uncons Planned Orders by Order Date | – | – | – | 102 | – | – | – | 93 | – | – | – | 80 | – | – | – |
| Uncons Planned Orders by Due Date | – | – | – | – | – | – | 102 | – | – | – | 93 | – | – | – | 80 |
| Constra Planned Orders | – | – | – | – | – | – | 102 | – | – | – | 93 | – | – | – | 80 |
| Minimu Quantit | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| Maximu Quantit | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 |

Note these points about M1:

- For every unconstrained planned order at S1 and S2, the corresponding demand has been created for M1 and is reflected by the Unconstrained Planned Order Demand measure.
- Unconstrained planned orders are recommended on 01/04, 01/08, and 01/12 when the value of the Beginning Inventory Position measure goes below 80 units. The unconstrained planned orders are the units necessary to bring the value of the Beginning Inventory Position measure up to 140 units. These unconstrained planned

orders are reflected by the values of the Unconstrained Planned Orders by Order Date measure for 01/04, 01/08, and 01/12.

- After the lead time is considered, the unconstrained planned orders are reflected by the Unconstrained Planned Orders by Due Date measure for 01/07, 01/11, and 01/15.
- The constrained planned orders that are recommended are reflected by the Constrained Planned Orders measure for 01/07, 01/11, and 01/15.

## Constrained, Top-Down Phase

The following table enables you to examine the fulfillment of unconstrained planned order demands at M1:

| Measur | 01/01 | 01/02 | 01/03 | 01/04 | 01/05 | 01/06 | 01/07 | 01/08 | 01/09 | 01/10 | 01/11 | 01/12 | 01/13 | 01/14 | 01/15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Uncons Planned Order Demanc | – | – | – | 43 | 54 | – | – | 39 | 42 | – | – | 38 | 41 | – | – |
| Transfe Order Demanc | 40 | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| On Hand | 55 | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| In Transit | – | 66 | – | – | – | – | – | – | – | – | – | – | – | – | – |
| Total Supply | 55 | 66 | – | – | – | – | 102 | – | – | – | 93 | – | – | – | 80 |
| On Order | 66 | – | – | – | 102 | 102 | – | – | 93 | 93 | – | – | 80 | 80 | – |
| Projecte Availabl Balance | 15 | 81 | 81 | 38 | –16 | –16 | 86 | 47 | 5 | 5 | 98 | 60 | 19 | 19 | 99 |
| Beginni Inventor Positior | 81 | 81 | 81 | 38 | 86 | 86 | 86 | 47 | 98 | 98 | 98 | 60 | 99 | 99 | 99 |
| Uncons Planned Orders by Order Date | – | – | – | 102 | – | – | – | 93 | – | – | – | 80 | – | – | – |
| Uncons Planned Orders by Due Date | – | – | – | – | – | – | 102 | – | – | – | 93 | – | – | – | 80 |
| Constrai Planned Orders | – | – | – | – | – | – | 102 | – | – | – | 93 | – | – | – | 80 |

| Measur | 01/01 | 01/02 | 01/03 | 01/04 | 01/05 | 01/06 | 01/07 | 01/08 | 01/09 | 01/10 | 01/11 | 01/12 | 01/13 | 01/14 | 01/15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constrai Planned Order Demanc | – | – | – | 43 | – | – | 54 | 39 | 42 | – | – | 38 | 41 | – | – |
| Constrai On Order | 66 | – | – | 102 | 102 | 102 | – | 93 | 93 | 93 | – | 80 | 80 | 80 | – |
| Constrai Projecte Availabl Balance | 15 | 81 | 81 | 38 | 38 | 38 | 86 | 47 | 5 | 5 | 98 | 60 | 19 | 19 | 99 |
| Constrai Beginni Inventor Positior | 81 | 81 | 81 | 140 | 140 | 140 | 86 | 140 | 98 | 98 | 98 | 140 | 99 | 99 | 99 |
| Minimu Quantit | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| Maximu Quantit | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 |

Note these points about M1:

- During the top-down pass, based on the constrained supply, a constrained planned order demand is created for every unconstrained planned order demand and stored in the Constrained Planned Order Demand measure.
- On 01/04, the value of the Constrained Projected Available Balance measure is 81 units and enough to meet the unconstrained planned order demand (43 units) for that day. The value of the Constrained Projected Available Balance measure is 38 units (81 – 43) after this demand is met.

  The value of the Constrained Planned Order Demand measure is 43 units for 01/04.
- On 01/05, the value of the Constrained Projected Available Balance measure is 38 units and insufficient to meet the unconstrained planned order demand (54 units) for that day.

  On 01/07, a constrained planned order of 102 units is received.

  For this reason, the unconstrained planned order demand is met on 01/07, as reflected by the value of the Constrained Planned Order Demand measure for that day.

  On 01/07, the value of the Constrained Projected Available Balance measure is 86 units (38 + 102 – 54).
- On 01/08, the value of the Constrained Projected Available Balance measure is 86 units and enough to meet the unconstrained planned order demand (39 units) for that day. The value of the Constrained Projected Available Balance measure is 47 units (86 – 39) after this demand is met.

  The value of the Constrained Planned Order Demand measure is 39 units for 01/08.
- On 01/09, the value of the Constrained Projected Available Balance measure is 47 units and enough to meet the unconstrained planned order demand (42 units) for that day. The value of the Constrained Projected Available Balance measure is 5 units (47 – 42) after this demand is met.

  The value of the Constrained Planned Order Demand measure is 42 units for 01/09.

- On 01/11, a constrained planned order of 93 units is received, which takes the value of the Constrained Projected Available Balance measure to 98 units (5 + 93).
- On 01/12, the value of the Constrained Projected Available Balance measure is 98 units and enough to meet the unconstrained planned order demand (38 units) for that day. The value of the Constrained Projected Available Balance measure is 60 units (98 – 38) after this demand is met.
  The value of the Constrained Planned Order Demand measure is 38 units for 01/12.
- On 01/13, the value of the Constrained Projected Available Balance measure is 60 units and enough to meet the unconstrained planned order demand (41 units) for that day. The value of the Constrained Projected Available Balance measure is 19 units (60 – 41) after this demand is met.
  The value of the Constrained Planned Order Demand measure is 41 units for 01/13.

The following table enables you to validate the creation of constrained planned orders at S1:

| Measur | 01/01 | 01/02 | 01/03 | 01/04 | 01/05 | 01/06 | 01/07 | 01/08 | 01/09 | 01/10 | 01/11 | 01/12 | 01/13 | 01/14 | 01/15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gross Forecas | 10 | 8 | 11 | 19 | 10 | 8 | 11 | 10 | 8 | 11 | 10 | 9 | 10 | 8 | 8 |
| On Hand | 25 | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| Transfer Orders | – | – | 40 | – | – | – | – | – | – | – | – | – | – | – | – |
| Total Supply | 25 | – | 40 | – | – | 43 | – | – | – | 39 | – | – | – | 38 | – |
| On Order | 40 | 40 | – | – | 43 | – | – | – | 39 | – | – | – | 38 | – | – |
| Projecte Availabl Balance | 15 | 7 | 36 | 17 | 7 | 42 | 31 | 21 | 13 | 41 | 31 | 22 | 12 | 42 | 34 |
| Beginni Inventor Positior | 55 | 47 | 36 | 17 | 50 | 42 | 31 | 21 | 52 | 41 | 31 | 22 | 50 | 42 | 34 |
| Uncons Planned Orders by Order Date | – | – | – | 43 | – | – | – | 39 | – | – | – | 38 | – | – | – |
| Uncons Planned Orders by Due Date | – | – | – | – | – | 43 | – | – | – | 39 | – | – | – | 38 | – |
| Constra Planned Orders | – | – | – | – | – | 43 | – | – | – | 39 | – | – | – | 38 | – |
| Constra On Order | 40 | 40 | – | 43 | 43 | – | – | 39 | 39 | – | – | 38 | 38 | – | – |

| Measur | 01/01 | 01/02 | 01/03 | 01/04 | 01/05 | 01/06 | 01/07 | 01/08 | 01/09 | 01/10 | 01/11 | 01/12 | 01/13 | 01/14 | 01/15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constra Projecte Availabl Balance | 15 | 7 | 36 | 17 | 7 | 42 | 31 | 21 | 13 | 41 | 31 | 22 | 12 | 42 | 34 |
| Constra Beginni Inventor Positior | 55 | 47 | 36 | 60 | 50 | 42 | 31 | 60 | 52 | 41 | 31 | 60 | 50 | 42 | 34 |
| Minimu Quantit | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| Maximu Quantit | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |

For S1, the due dates of the unconstrained planned orders are aligned with the dates of the constrained planned orders. Therefore, all the unconstrained planned orders have been met on time.

**Tip:** You can validate that the unconstrained planned orders have been met on time by examining the values of the Projected Available Balance and Constrained Projected Available Balance measures. If the measure values are the same, the unconstrained planned orders have been met on time.

The following table enables you to validate the creation of constrained planned orders at S2:

| Measur | 01/01 | 01/02 | 01/03 | 01/04 | 01/05 | 01/06 | 01/07 | 01/08 | 01/09 | 01/10 | 01/11 | 01/12 | 01/13 | 01/14 | 01/15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gross Forecas | 9 | 11 | 9 | 11 | 15 | 10 | 9 | 12 | 11 | 10 | 9 | 12 | 10 | 8 | 12 |
| On Hand | 21 | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| In Transit | – | 45 | – | – | – | – | – | – | – | – | – | – | – | – | – |
| Total Supply | 21 | 45 | – | – | – | – | 54 | – | – | – | 42 | – | – | – | 41 |
| On Order | 45 | – | – | – | – | 54 | – | – | – | 42 | – | – | – | 41 | – |
| Projecte Availabl Balance | 12 | 46 | 37 | 26 | 11 | 1 | 46 | 34 | 23 | 13 | 46 | 34 | 24 | 16 | 45 |
| Beginni Inventor Positior | 57 | 46 | 37 | 26 | 11 | 55 | 46 | 34 | 23 | 55 | 46 | 34 | 24 | 57 | 45 |
| Uncons Planned Orders by Order Date | – | – | – | – | 54 | – | – | – | 42 | – | – | – | 41 | – | – |

| Measur | 01/01 | 01/02 | 01/03 | 01/04 | 01/05 | 01/06 | 01/07 | 01/08 | 01/09 | 01/10 | 01/11 | 01/12 | 01/13 | 01/14 | 01/15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Uncons Planned Orders by Due Date | – | – | – | – | – | – | 54 | – | – | – | 42 | – | – | – | 41 |
| Constra Planned Orders | – | – | – | – | – | – | – | – | 54 | – | 42 | – | – | – | 41 |
| Constra On Order | 45 | – | – | – | – | – | 54 | 54 | 42 | 42 | – | – | 41 | 41 | – |
| Constra Projecte Availabl Balance | 12 | 46 | 37 | 26 | 11 | 1 | –8 | –20 | 23 | 13 | 46 | 34 | 24 | 16 | 45 |
| Constra Beginni Inventor Positior | 57 | 46 | 37 | 26 | 11 | 1 | 46 | 34 | 65 | 55 | 46 | 34 | 65 | 57 | 45 |
| Minimu Quantit | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| Maximu Quantit | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 |

Note these points about S2:

- For every constrained planned order demand at M1, a corresponding constrained planned order has been created at S2.

  In functional terms, there are constrained, inbound (planned transfer) recommendations from M1 to S2. These recommendations are represented in the Supplies and Demands table as planned orders and get converted to transfer orders after being released.
- The constrained planned order on 01/09 at S2 is late by two days because of constraints at M1.

  So, the constrained projected available balance at S2 for 01/07 and 01/08 is negative.

  On 01/07, the constrained projected available balance is –8 units (the previous day's value of 1 minus the gross forecast of 9).

  On 01/08, the constrained projected available balance is –20 units (the previous day's value of –8 minus the gross forecast of 12).
- On 01/09, a constrained planned order of 54 units is received.
- On 01/09, the constrained projected available balance is 23 units (the previous day's value of –20 minus the gross forecast of 11 plus the constrained planned order of 54).

*Related Topics*

- Overview of Multiechelon Replenishment Planning
- How Multiechelon Replenishment Planning Is Done
- Measures for Multiechelon Replenishment Planning

# 15 Replenishment Planning for Subinventories

## Overview of Replenishment Planning for Subinventories

This topic is an overview of how replenishment planning is done at the subinventory level.

These points describe replenishment planning for subinventories:

- Replenishment planning is done for subinventories and organizations in the same way.
- Organizations can be set up so that their subinventories are included for replenishment planning.

  Replenishment planning can be done for either an organization or its subinventories.
- You can configure assignment sets, sourcing rules, and bills of distribution for subinventories.
- Historical data is collected at the item-subinventory level.

  The forecast can be based on shipments history or consumption history.

  The file-based data import (FBDI) templates can also be used for collecting the following information at the subinventory level:

  - Item subinventories
  - Movement requests
  - Shipments and consumption history transactions
  - On-hand inventory
  - Purchase orders, purchase requisitions, and transfer orders
  - External forecasts
  - Policy overrides
- If lead times and order modifiers are defined at the item-subinventory level, they're used. Otherwise, lead times and order modifiers defined at the organization level are used.
- For replenishment planning at the subinventory level, open transactions (purchase orders, purchase requisitions, transfer orders, and movement requests) have to be available at the subinventory level, and open transactions at the organization level aren't considered.
- The scope of a replenishment plan can include both organizations and subinventories. Some or all of the subinventories for an organization can be included in the scope. However, if the scope includes subinventories, the replenishment plan can't be used for Oracle Transactional Business Intelligence (OTBI) reporting.
- The following types of inventory orders are supported:

  - Interorganization transfer order: From one organization to another, or from one organization to the subinventory of another organization.
  - Intraorganization transfer order: From one subinventory of an organization to another subinventory of the same organization.
  - Movement request: From one subinventory of an organization to another subinventory of the same organization.

    - Purchase order or purchase requisition: From a supplier to an organization or a subinventory of the organization.
- The information for subinventories can't be aggregated to the level of the parent organization.

## Replenishment Planning Tasks at the Subinventory Level

You can do these tasks at the item-subinventory level using Oracle Replenishment Planning:

- Assign item-subinventory combinations to segments, and override segments for the combinations.
- Accurately predict demand on the basis of shipments history or consumption history.
- Compute and view policy parameters.
- Override policies.
- Trigger replenishment orders.
- Review analytics.

  Subinventories are listed in the <organization>:<subinventory> format in all predefined analytics, tables, and graphs and on the Members tab of the Selector Tool.
- Perform simulations.

  The collected attributes for item-subinventory combinations can be viewed in the Item Subinventory table in the Plan Inputs work area.

## Pros and Cons of Replenishment Planning at the Subinventory Level

These are the benefits of replenishment planning at the subinventory level:

- You have the flexibility to model locations such as retail stores or supply storerooms as organizations or subinventories on the basis of your business requirements.

  You can use movement requests for inventory transfers between subinventories that are located close to each other. If the subinventories aren't close to each other, and you must create shipment documents, you can designate the inventory transfers as transfer orders.
- You can increase the overall efficiency of replenishment planning by forecasting demand, computing policy parameters, and calculating and releasing replenishment orders at the lowest nodes of your supply chain.
- You can reduce inventory costs and maintain optimal inventory levels at the lowest nodes of your supply chain.

However, if you plan replenishments at the subinventory level, the number of item-location combinations in your replenishment plan increases.

> **Tip:** Oracle recommends that you first do replenishment planning at the organization level. Once you understand how to use the functionality and user flows, you can perform replenishment planning at the subinventory level to suit your business requirements.

# How You Set Up Replenishment Planning for Subinventories

This is the high-level process for setting up Oracle Replenishment Planning to forecast demand, calculate policy parameters, and calculate and release replenishment orders at the subinventory level. Perform all steps except for Step 3 in the Replenishment Planning work area.

**Note:** When subinventories are available for selection, they're listed in the <organization>:<subinventory> format.

1. Collect setup data at the organization level.

   On the Parameters tab on the Collect Planning Data page, for the Targeted collection type, on the Reference Data subtab, move **Items**, **Organizations**, and **Subinventories** to **Selected Entities**. Move any other reference entities that you require to **Selected Entities**.

   Alternatively, use file-based data import (FBDI) templates for uploading setup data at the organization level.
2. Enable organizations for replenishment planning at the subinventory level.

   On the Maintain Supply Network Model page, on the Organizations tab, select **Yes** under **Plan Subinventories** for all organizations for which subinventories should be included for replenishment planning.

   To collect both nettable and nonnettable item-subinventory combinations, select **Yes** under **Collect Nonnettable Item-Subinventories**. To collect only nettable item-subinventory combinations, select **No** under the column.
3. In the Scheduled Processes work area, submit the Create Trees for Dimensions process for only the Organization dimension.

   After the process runs, Organization dimension trees are recreated with subinventory details.
4. Perform these steps on the Collect Planning Data page:

   a. To collect order modifiers and lead time at the item-subinventory level, on the Parameters tab, for the Targeted collection type, on the Reference Data subtab, move **Item Subinventories** to **Selected Entities**.

      If a stocking unit of measure (UOM) is used in Oracle Fusion Cloud Inventory Management at the item-subinventory level, the order modifiers are converted to the primary UOM if required after the collection process.

      Alternatively, use the FBDI template named Supply Chain Planning Item Subinventories (ScpItemSubinventoryImportTemplate.xlsm).

      The collected or uploaded order modifiers and lead time at the item-subinventory level can be viewed in the Item Subinventory table in the Plan Inputs work area.

   b. To generate a consumption-based forecast, on the Demand Planning Data subtab, under History Data Options, in **Subinventory - Consumption Inventory Transactions to Include**, select the types of history transactions you want to collect at the subinventory level. If you select **Transfer orders**, both

transfer orders and movement requests history at the subinventory level are collected. If you select **All**, all inventory transaction history at the subinventory level is collected.

Alternatively, use the FBDI template named Supply Chain Planning Measures (ScpMeasuresImportTemplate.xlsm) to upload data to the Consumption History measure for a consumption-based forecast.

> **Note:** In the Organization Level Member Name column of the template, specify the subinventories in the <organization>:<subinventory> format. If you don't want to specify a customer, enter #ignore in the Customer Level Name and Demand Class Level Name columns, and don't enter anything in the Customer Level Member Name, Customer Site Level Member Name, and Demand Class Level Member Name columns.

To generate a shipments-based forecast, use the FBDI template named Supply Chain Planning Shipments History (ScpShipmentHistoryImportTemplate.xlsm) for uploading shipments history at the subinventory level into the Shipments History measure.

c. On the Supply Planning Data subtab, move the supply entities, such as transfer orders and movement requests, that you want to collect at the subinventory level to **Selected Entities**.

Alternatively, use the FBDI templates for uploading supply entities at the subinventory level.

> **Note:** Replenishment planning is done for only those collected items for which you set the planning method attribute for MPS MRP Planning to Replenishment Planning in Oracle Fusion Cloud Product Lifecycle Management.

5. Configure segment criteria to include subinventory-level information.

   On the Create Segment Group page, under Segment Criteria, add the Location attribute for the Organization dimension, and specify the subinventories that should be listed in a segment. If the segment group already has the Organization dimension, on the Edit Segment Group page, under Segment Criteria, add or modify the Location attribute for the dimension to include subinventories in a segment.

   After segmentation is run, you can manually override the segments for item-subinventory combinations.

   Only items with valid subinventory data are segmented. If the segmentation criteria aren't available as attributes at the item-subinventory level, the attributes at the item-location level are considered.
6. Enable sourcing rules or bills of distribution for subinventory-level planning.
   - On the Create Sourcing Rule page, select the **Enable for subinventory-level planning** check box, and provide the remaining information.
   - On the Create Bill of Distribution page, select the **Enable for subinventory-level planning** check box, and provide the remaining information.
7. Enable assignment sets for subinventory-level planning.

   On the Create Assignment Set page, select the **Enable for subinventory-level planning** check box, and provide the remaining information.
8. If required, override policies for item-subinventory combinations.

   In your policy assignment set, on the Item-Location Level Policy Overrides tab in the Create Policy Assignment Set or Edit Policy Assignment Set dialog box, select the item-subinventory combinations for which you want to specify policy overrides.
9. On the Scope tab on the Plan Options page for your replenishment plan, under Plan Organizations, select the subinventories (level members) for which replenishment planning should be done.
10. Under Plan Items, select the segments that contain the subinventories.

11. Run the replenishment plan.

    The policies and replenishments are calculated at the subinventory level.

*Related Topics*

- Collect Data Using the Targeted Collection Type
- Create a Segment Group
- Create a Sourcing Rule
- Create a Policy Assignment Set
- Scope Plan Options for Replenishment Plans

# Example of Replenishment Plans for Stores Modeled as Subinventories

This topic describes how you set up replenishment plans for stores that are modeled as subinventories.

In this example, an enterprise has a distribution center that's modeled as an organization. The distribution center has buy from sourcing rules. The two stores, which are set up as subinventories and contained in a placeholder organization, source goods from the distribution center using transfer from sourcing rules. The customer demands are fulfilled through the stores. The enterprise owns the stores and uses Oracle Fusion Cloud ERP.

> **Note:** While this example describes replenishments for stores that are modeled as subinventories, you could also model the stores as organizations.

Note these points about this example:

- You can use a single replenishment plan to generate the forecast, calculate the policy parameters, and calculate and release replenishment orders for the distribution center and stores.

  You can also use separate replenishment plans as follows:

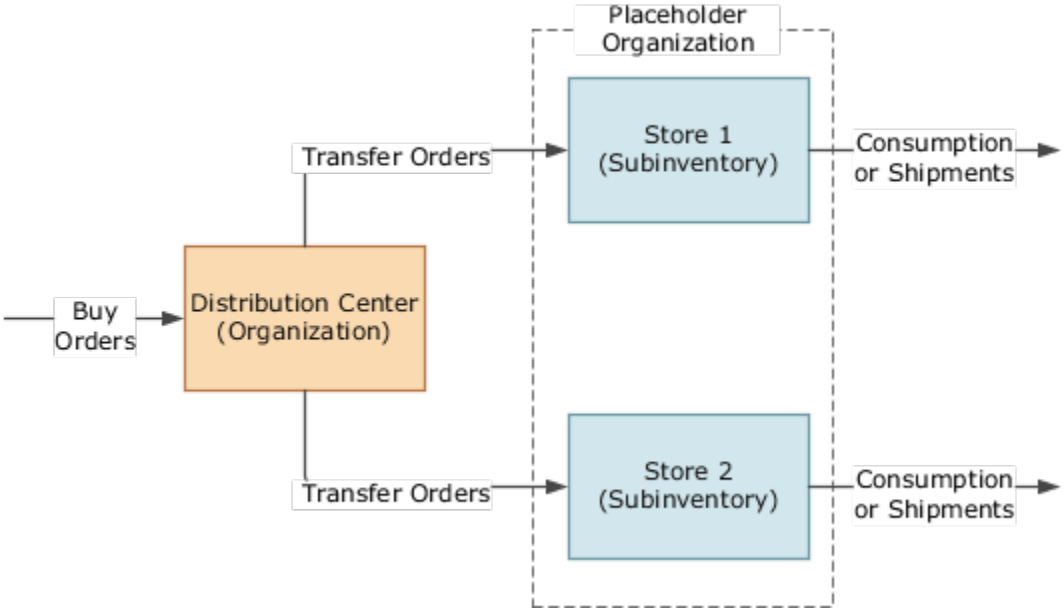
  - A replenishment plan generates the forecast at the distribution center by using transfer orders history and shipments history.

    This replenishment plan also calculates the policy parameters and calculates and releases the replenishment orders for the distribution center.
  - Another replenishment plan generates the forecast at the stores by using consumption or shipments history.

    This replenishment plan also calculates the policy parameters and calculates and releases the replenishment orders for the stores.

- If you're using a single replenishment plan for the distribution center and stores, when a planned transfer order is created at the stores, an equivalent planned transfer order demand isn't automatically created for the distribution center.

  Planned transfer order demand is created at the distribution center once the planned transfer orders created at the stores are released and collected.
- File-based data import (FBDI) templates can be used for uploading data instead of collecting it.
- At the distribution center and store levels, you can use a single or separate replenishment plans to generate the forecast, calculate the policy parameters, and calculate and release the replenishment orders.



# 16 Inventory Rebalancing

## Overview of Inventory Rebalancing

The inventory rebalancing feature enables you to rebalance an item's inventory across your supply chain.

Because of varying demands and supplies within your supply chain, some locations end up with excess inventory and others with inventory shortages. While excess inventory increases your holding costs, inventory shortages result in lost sales. By using the inventory rebalancing feature, you can move items from locations with excess inventory to locations with inventory shortages.

You can enable the inventory rebalancing feature for a replenishment plan. Once you enable the feature, it's run before the replenishment planning process. In a replenishment plan that uses the functionality for inventory rebalancing along with the functionality for multiechelon replenishment planning, inventory rebalancing is first done for the entire supply chain before multiechelon replenishment planning is done.

You can set up your replenishment plan for automatic release or manual release of the planned orders generated after inventory rebalancing.

### Salient Features of Inventory Rebalancing

You can do the following using this feature:

- Reposition inventory in your supply chain by using clusters that consist of locations, regions, or zones.

  If the clusters consist of regions or zones, inventory rebalancing is performed for the locations in these regions or zones. The locations should be connected with shipping methods.
- Specify the supplies and demands that are used in the calculation of excess inventory and inventory shortages.
- Specify if a check should be made for locations with excess inventory that can completely meet inventory shortages so that the number of planned orders is reduced.
- Specify if the safety stock for an item-location combination is used in the calculation of the inventory shortage.

  You can also set a percentage of safety stock that's reserved before excess inventory is calculated for the item-location combination.
- Set windows for computing the excess inventory or inventory shortage for each item within a location of a cluster.
- Obtain plan recommendations for moving items from locations with excess inventory to those with inventory shortages.

  Planned inbound orders and planned outbound orders are created with the use of defined shipping methods between locations in a cluster. Excess inventory might be transferred to a sweep location that's inside or outside the cluster.

  Oracle Replenishment Planning recognizes these planned inbound orders as firm supplies before generating planned orders from upstream sources.
- Use embedded analytics to evaluate the effectiveness of inventory rebalancing.

- Optimize inventory levels in your supply chain, and minimize the costs of procuring inventory from suppliers or sourcing inventory from upstream facilities.
- Improve customer satisfaction by fulfilling demands at locations with inventory shortages.

## Additional Points About Inventory Rebalancing

Note these additional points about inventory rebalancing:

- You needn't define sourcing rules to use the inventory rebalancing feature.
- The feature doesn't support order modifiers.
- You can't use the feature in a replenishment plan that's set up for policy comparison.
- You can't use the feature in a replenishment plan that's set up for incremental planning.
- You can use the feature in replenishment plans with the daily, weekly, period, or monthly planning time level.
- The excess inventory and inventory shortages are calculated as on the plan start date after consideration of the supplies and demands within the excess and shortage computation windows. Planned orders are then created with the order dates as the plan start date after consideration of the calendars for item-location combinations.

  Replenishment Planning doesn't perform time-phased evaluation of excess inventory and inventory shortages and doesn't make time-phased inventory rebalancing recommendations.
- When the feature for inventory rebalancing is used along with the feature for multiechelon replenishment planning, if the unit of measurement (UOM) for your policy parameters is days, then the Reserved Safety Stock measure is calculated on the basis of the safety stock that doesn't include the unconstrained planned order demand.
- The hold dates and expiration dates for on-hand lots are also supported in inventory rebalancing. When you create a cluster for inventory rebalancing, you can specify the expiration days tolerance for on-hand lots. Any on-hand lot with an expiration date within the specified tolerance isn't considered as supply during inventory rebalancing.

  After the suggested due date is calculated on the basis of the hold date, if the suggested due date falls outside the windows for calculation of the excess inventory and inventory shortage, then the on-hand lot isn't used for inventory rebalancing.

  After the inventory rebalancing process, the planned outbound shipments that are generated are considered as a part of the Total Demand measure and used in the computation of the Expired Lot Quantity measure.
- You must add the Cluster and Source dimensions to the dimension catalog of the replenishment plan for which you've selected the **Rebalance inventory** check box on the Plan Options page.

*Related Topics*

- Inventory Rebalancing Options for Replenishment Plans
- Overview of Multiechelon Replenishment Planning
- Overview of Support for Hold Dates and Expiration Dates in On-Hand Lots

# Work with Clusters

## Create a Cluster

This topic provides information about clusters and how you create them.

### About Clusters

A cluster is a grouping of locations, regions, or zones.

These are the notable points about clusters:

- Inventory rebalancing is performed for the selected item-location combinations in the cluster. If the cluster is defined at the level of a region or zone, inventory rebalancing is performed for the item-location combinations in the selected regions or zones.

  If **Yes** is clicked in the **Plan Subinventories** column on the Organizations tab on the Maintain Supply Network Model page for an organization (location), item-subinventory combinations are available for selection, and inventory rebalancing is performed for the selected item-subinventory combinations.
- After inventory rebalancing is performed for the cluster, the excess inventory can optionally be transferred to a sweep location that may or may not be in the cluster.
- You can even define a nested cluster that consists of the sweep locations of other clusters.
- A location can be in more than one cluster.
- You can use the Cluster dimension to configure your tables and graphs in the Replenishment Planning work area.
- While creating a cluster, you can specify the expiration days tolerance for on-hand lots. Any on-hand lot with an expiration date within the specified tolerance isn't considered as supply during inventory rebalancing.

  For example, if the expiration days tolerance is 7 days, when the replenishment plan is run on Day 1, any on-hand lot with an expiration date on or before Day 8 (the plan run date + 7 days) isn't considered for supply.

### Create a Cluster

Follow these steps to create a cluster:

1. On the Tasks panel tab, under Plan Inputs, select **Manage Planning Clusters**.

   The Manage Planning Clusters page opens.
2. Click **Add Row**.

   A new row appears for the cluster.
3. Enter the name and description for the cluster.
4. In **Source System**, select the source system from which you're going to select locations, regions, and zones for the cluster.

   Ensure that the source system matches that of the replenishment plan with which you're going to use the cluster.

5. In **Sweep Location**, optionally, select the sweep location to which excess inventory is moved after inventory rebalancing is performed for the cluster.

   The sweep location doesn't need to be a part of the cluster.
6. In **Lead Time Multiplier for Excess Window**, enter the number by which the lead time for an item-location combination is multiplied for determination of the window within which the item-location combination's excess inventory is calculated.

   The lead time is the total of the preprocessing, processing, and postprocessing lead times that are specified for the item-location combination in the Items table.

   > **Tip:** Use a long window for calculating the excess inventory for the item-location combination so that future demands within the total lead time are taken care of.
7. In **Lead Time Multiplier for Shortage Window**, enter the number by which the lead time for the item-location combination is multiplied for determination of the window within which the item-location combination's inventory shortage is calculated.

   Enter a number that's equal to or less than the number in the **Lead Time Multiplier for Excess Window** field.

   The lead time is determined as explained in the previous step.

   > **Tip:** Use a short window for calculating the inventory shortage for the item-location combination so that urgent demands can be met from nearby locations.
8. In **Reserved Safety Stock Percentage**, enter a whole number for the percentage of safety stock for the item-location combination that's reserved before the item-location combination's excess inventory is calculated.

   Only the unreserved portion of the safety stock is considered during the calculation of the excess inventory.
9. In **Expiration Days Tolerance for On Hand Lot**, enter a whole number that is equal to or greater than zero.

   If you don't enter a value, all on-hand lots are considered as supply.

   If you enter zero, on-hand lots that expire on the plan run date aren't considered as supply.
10. In **Location Hierarchy**, select the hierarchy for adding members to the cluster.

    If you select **Region** or **Zone**, inventory rebalancing is performed for the item-location combinations within the selected regions or zones.
11. Under **Cluster Members**, click **Edit: Clusters Members** to open the Search and Select: Cluster Members dialog box.

    Search for the locations, regions, or zones that you want to include in the cluster, move them to the **Selected Members** list, and click **OK**.

    If organizations (locations) are enabled for subinventory planning, you can search for and select subinventories.
12. Click **Assign Location Priority** to open the Assign Location Priority dialog box.

    You can view the selected locations or locations within the selected regions or zones.
13. Under **Location Priority**, optionally, enter a number for the priority for a location.

    During inventory rebalancing, the location with an inventory shortage and the highest priority (lowest number) is processed first. If two locations have the same number or no priority, the location with the larger shortage is processed first.
14. Click **OK** to return to the Manage Planning Clusters page.
15. Save the cluster.

*Related Topics*

- Edit a Cluster

# Edit a Cluster

This topic provides information about how you edit clusters.

You can duplicate, edit, or delete a cluster.

You can delete the cluster only when it isn't selected on the Inventory Rebalancing tab on the Plan Options page for a replenishment plan.

## Edit a Cluster

Follow these steps to edit the cluster:

1. On the Tasks panel tab, under Plan Inputs, select **Manage Planning Clusters**.
   The Manage Planning Clusters page opens.
2. Search for the cluster you want to edit, and select it.
3. Edit the name and description of the cluster.
4. In **Source System**, change the source system.

   > **Note:** If you change the source system, the previously selected sweep location and cluster members are lost. The assigned priorities in the Assign Location Priority dialog box are also lost. The cluster isn't displayed on the Inventory Rebalancing tab on the Plan Options page for replenishment plans that previously included the cluster.

5. In **Sweep Location**, change the sweep location for the cluster.
6. In **Lead Time Multiplier for Excess Window** and **Lead Time Multiplier for Shortage Window**, change the multipliers for calculating the windows for the excess inventory and inventory shortage for an item-location combination.
7. In **Reserved Safety Stock Percentage**, change the percentage of safety stock that's excluded from the calculation of the item-location combination's excess inventory.
8. In **Expiration Days Tolerance for On-Hand Lot**, change the number of days for considering the expiration date for an on-hand lot and not considering it as supply.
9. In **Location Hierarchy**, change the hierarchy for adding members to the cluster.

   > **Note:** If you change the location hierarchy, the previously selected cluster members are lost. The assigned priorities in the Assign Location Priority dialog box are also lost.

10. Under **Cluster Members**, click **Edit: Cluster Members** to open the Search and Select: Cluster Members dialog box in which you can add and remove cluster members.
11. Click **Assign Location Priority** to open the Assign Location Priority dialog box in which you can change the priorities for locations.
12. Save your changes.

*Related Topics*

- Inventory Rebalancing Options for Replenishment Plans
- Create a Cluster

# Measures for Inventory Rebalancing

This topic provides information about the measures that are used in inventory rebalancing for replenishment plans.

This table describes the predefined measures for inventory rebalancing:

| Measure | Description | Supports Cluster Dimension? | Supports Product Dimension? | Supports Organization Dimension? | Supports Time Dimension? | Supports Source Dimension? |
|---|---|---|---|---|---|---|
| Planned Inbound Shipments | Total quantity of planned orders to be received at the destination location for an item after inventory rebalancing. | Yes | Yes | Yes | Yes | No |
| Planned Outbound Shipments | Total quantity of planned orders to be shipped from the source location for an item after inventory rebalancing. | Yes | Yes | Yes | Yes | No |
| Excess Before Rebalancing | Excess quantity before inventory rebalancing for an item-location combination. The measure may differ from the Initial Excess for Rebalancing measure if the item-location combination belongs to more than one cluster, and inventory rebalancing has previously been performed for the item-location combination in another cluster. | Yes | Yes | Yes | No | No |
| Excess After Rebalancing | Excess quantity after inventory rebalancing for an item-location combination. | Yes | Yes | Yes | No | No |

| Measure | Description | Supports Cluster Dimension? | Supports Product Dimension? | Supports Organization Dimension? | Supports Time Dimension? | Supports Source Dimension? |
|---|---|---|---|---|---|---|
| Shortage Before Rebalancing | Shortage quantity before inventory rebalancing for an item-location combination. The measure may differ from the Initial Shortage for Rebalancing measure if the item-location combination belongs to more than one cluster, and inventory rebalancing has previously been performed for the item-location combination in another cluster. | Yes | Yes | Yes | No | No |
| Shortage After Rebalancing | Shortage quantity after inventory rebalancing for an item-location combination. | Yes | Yes | Yes | No | No |
| Initial Excess for Rebalancing | Excess quantity that's initially available for inventory rebalancing for an item-location combination.<br><br>The calculation of the measure is based on the Projected Inventory measure. | No | Yes | Yes | Yes | No |
| Initial Shortage for Rebalancing | Shortage quantity that's initially available for inventory rebalancing for an item-location combination.<br><br>The calculation of the measure is based on the Projected Inventory measure. | No | Yes | Yes | Yes | No |

| Measure | Description | Supports Cluster Dimension? | Supports Product Dimension? | Supports Organization Dimension? | Supports Time Dimension? | Supports Source Dimension? |
|---|---|---|---|---|---|---|
| Total Rebalancing Recommendations | Number of planned orders recommended after inventory rebalancing for an item-location combination. | Yes | Yes | Yes | No | No |
| Rebalanced Inventory Value | Total value of planned orders recommended after inventory rebalancing. The measure is calculated for an item-location combination through multiplication of the quantity of planned orders by the standard cost of the item. | Yes | Yes | Yes | No | No |
| Projected Inventory | Inventory quantity projected in the future for an item-location combination on the basis of the selected supply types and demand types. | No | Yes | Yes | Yes | No |
| Excess Computation Window | Time window in days for calculation of the excess inventory for an item-location combination.<br><br>This measure is calculated by multiplying the lead time by the value in the **Lead Time Multiplier for Excess Window** field for a cluster on the Manage Planning Clusters page.<br><br>The lead time is the total of the preprocessing, processing, and | Yes | Yes | Yes | No | No |

| Measure | Description | Supports Cluster Dimension? | Supports Product Dimension? | Supports Organization Dimension? | Supports Time Dimension? | Supports Source Dimension? |
|---|---|---|---|---|---|---|
| | postprocessing lead times that are specified for the item-location combination in the Items table. | | | | | |
| Shortage Computation Window | Time window in days for calculation of the inventory shortage for an item-location combination.<br><br>This measure is calculated by multiplying the lead time by the value in the **Lead Time Multiplier for Shortage Window** field for a cluster on the Manage Planning Clusters page.<br><br>The lead time is the total of the preprocessing, processing, and postprocessing lead times that are specified for the item-location combination in the Items table. | Yes | Yes | Yes | No | No |
| Reserved Safety Stock | Portion of the safety stock that's reserved at the location for an item during the computation of the excess inventory. | No | Yes | Yes | Yes | No |
| Item Locations with Excess Before Rebalancing | Number of item-location combinations in a cluster with excess inventory before inventory rebalancing. | Yes | Yes | Yes | No | No |
| Item Locations with Excess After Rebalancing | Number of item-location combinations in a cluster with | Yes | Yes | Yes | No | No |

| Measure | Description | Supports Cluster Dimension? | Supports Product Dimension? | Supports Organization Dimension? | Supports Time Dimension? | Supports Source Dimension? |
|---|---|---|---|---|---|---|
| | excess inventory after inventory rebalancing. | | | | | |
| Item Locations with Shortage Before Rebalancing | Number of item-location combinations in a cluster with inventory shortage before inventory rebalancing. | Yes | Yes | Yes | No | No |
| Item Locations with Shortage After Rebalancing | Number of item-location combinations in a cluster with inventory shortage after inventory rebalancing. | Yes | Yes | Yes | No | No |
| Percentage of Item Locations with Excess Before Rebalancing | Percentage of item-location combinations in a cluster with excess inventory before inventory rebalancing. | Yes | Yes | Yes | No | No |
| Percentage of Item Locations with Excess After Rebalancing | Percentage of item-location combinations in a cluster with excess inventory after inventory rebalancing. | Yes | Yes | Yes | No | No |
| Percentage of Item Locations with Shortage Before Rebalancing | Percentage of item-location combinations in a cluster with inventory shortage before inventory rebalancing. | Yes | Yes | Yes | No | No |
| Percentage of Item Locations with Shortage After Rebalancing | Percentage of item-location combinations in a cluster with inventory shortage after inventory rebalancing. | Yes | Yes | Yes | No | No |

| Measure | Description | Supports Cluster Dimension? | Supports Product Dimension? | Supports Organization Dimension? | Supports Time Dimension? | Supports Source Dimension? |
|---|---|---|---|---|---|---|
| Total Item Locations for Rebalancing | Number of item-location combinations in a cluster for inventory rebalancing. | Yes | Yes | Yes | No | No |
| Planned Shipments Quantity | Total quantity of planned orders to be shipped from the location for an item after inventory rebalancing.<br><br>The measure is functionally similar to the Planned Outbound Shipments measure, but has the Cluster, Organization, Product, and Source dimensions. | Yes | Yes | Yes | No | Yes |
| Planned Shipments Value | Total value of planned orders to be shipped from the location for an item after inventory rebalancing. The measure is calculated through multiplication of the Planned Shipments Quantity measure with the standard cost of the item.<br><br>The measure is functionally similar to the Rebalanced Inventory Value measure, but has the Cluster, Organization, Product, and Source dimensions. | Yes | Yes | Yes | No | Yes |

All these measures are in the Inventory Analysis measure group.

You must add the Cluster and Source dimensions to the dimension catalog of the replenishment plan for which you've selected the **Rebalance inventory** check box on the Plan Options page.

# How Rebalancing Recommendations Are Created

This topic explains how rebalancing recommendations are created for replenishment plans.

## Settings That Affect the Creation of Rebalancing Recommendations

These settings affect the creation of rebalancing recommendations for a replenishment plan:

- The selections on the Inventory Rebalancing tab on the Plan Options page.
- The selections on the Manage Planning Clusters page for the clusters that are selected on the Inventory Rebalancing tab.
- The selected segments on the Scope tab on the Plan Options page.

## How Rebalancing Recommendations Are Created

Oracle Replenishment Planning uses this high-level process for creating rebalancing recommendations:

1. The item-location combinations for which the process is performed are selected on the basis of these criteria:
    - The item-location combinations must be in the selected segments for the replenishment plan, and the MPS and MRP Planning Method attribute for the items should be set to Replenishment planning.
    - The locations must also be in the selected clusters for the replenishment plan.
2. The forecast is generated or imported for the replenishment plan.
3. Inventory balancing is performed for each cluster on the basis of its sequence number on the Inventory Rebalancing tab.
4. Within each cluster, locations are selected for processing as follows:
    - Locations with the highest priority (lowest number) are first processed.
    - If locations have the same priority or no priority, those with the larger inventory shortages are first processed.
    - If locations have the same priorities and inventory shortages, the locations are processed in the ascending alphanumeric order of their names.
5. For the location being processed, the following steps are taken:
    - The windows for computation of the excess inventory and inventory shortage for each item in the location are determined.
    - The excess inventory or inventory shortage for each item is calculated.
    - Rebalancing recommendations are created for each item according to the inventory rebalancing rules specified on the Inventory Rebalancing tab:
        - If the **Reduce partial recommendations** check box is selected, a search is performed for the nearest location with enough excess inventory to completely meet the inventory shortage at the location being processed.

The proximity between the location being processed and any location with excess inventory is determined through the use of the transfer lead time that's specified in the shipping method between the locations.

If no location has enough excess inventory to completely meet the inventory shortage, the nearest location with excess inventory to partially meet the inventory shortage is selected.

If the transfer lead times between the location being processed and two locations with excess inventory is the same, the location with more excess inventory is selected.

If there are multiple shipping methods between the locations, and a default shipping method isn't defined, the shipping method with the shortest lead time is selected. If different shipping methods have the same lead time, the first shipping method in the ascending alphanumeric order of names is selected.

> **Note:** If there's no shipping method between the locations, no rebalancing recommendations are created.

- If the **Include safety stock in shortage calculation** check box is selected on the Inventory Rebalancing tab, the safety stock for the item is included in the calculation of the inventory shortage for the item-location combination.

  At the end of the shortage window for the item-location combination, the safety stock is subtracted from the value of the Projected Inventory measure for calculation of the inventory shortage. If the resulting value is less than zero for the item-location combination, that value is considered as the shortage.

6. After all the locations in the cluster are processed, if the **Move excess to sweep location** check box is selected on the Inventory Rebalancing tab, the excess inventory from locations is moved to a sweep location that may or may not be in the cluster.

   If the cluster has a sweep location in another cluster, and the excess inventory is moved to the sweep location, a planned inbound order is created for the sweep location.
7. After inventory rebalancing is performed for the cluster, the next cluster is selected on the basis of its assigned sequence number.

   All the clusters selected on the Inventory Rebalancing tab are processed in this manner.
8. If the **Release planned orders automatically** check box is selected on the General subtab on the Supply tab on the Plan Options page, the planned orders with order dates within the release time fence are automatically released.

   The release recommendation parameters specified on the General tab in the Supply: Advanced Options dialog box that you open from the General subtab on the Supply tab are adhered to.

   > **Note:** The planned orders can also be manually released on the Manage Rebalancing Recommendations page.
9. The measures and analytics for the replenishment plan are calculated.

*Related Topics*

- Segmentation in Oracle Replenishment Planning
- Organizations and Schedules Options for Replenishment Plans
- Automatic Release Options
- Release Recommendation Options
- Scope Plan Options for Replenishment Plans

# How You Use the Inventory Rebalancing Feature

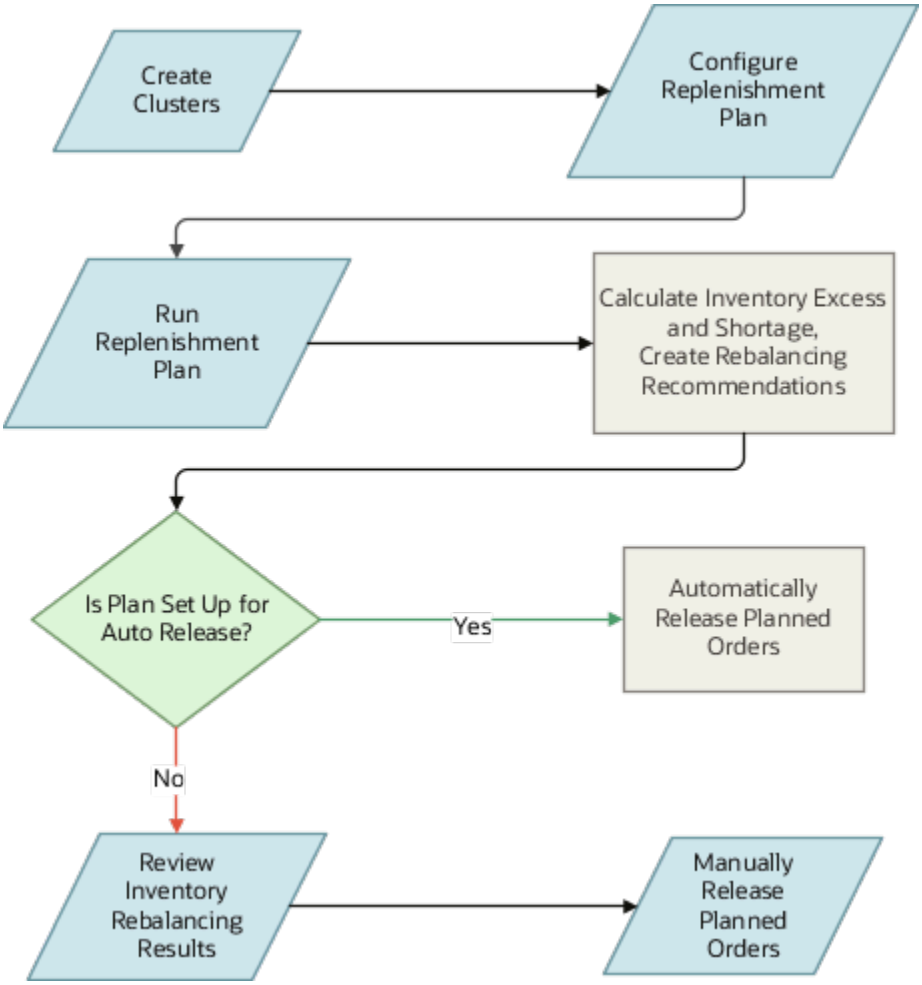
The following is the process for using the inventory rebalancing feature:

1. On the Manage Planning Clusters page, define the clusters for inventory rebalancing.
2. Configure your replenishment plan for inventory rebalancing:
    - On the Plan Options page for the replenishment plan, select the **Rebalance inventory** check box.
    - On the Inventory Rebalancing tab on the Plan Options page, select the clusters, rules, and supplies and demands for inventory rebalancing.
3. Run the replenishment plan with the **Refresh with current data** option selected on the Parameters tab in the Run Plan dialog box.

    For every item-location combination in the selected clusters, the excess inventory or inventory shortage is calculated, and rebalancing recommendations are created.

    If you selected the **Release planned orders automatically** check box on the General subtab on the Supply tab on the Plan Options page, the planned orders are automatically released.
4. Review the results of inventory rebalancing by using the following:
    - The Replenishment and Rebalancing Plan Summary page layout
    - The Cluster Analysis by Quantity and Cluster Analysis by Value pages
    - The Manage Rebalancing Recommendations page
    - The Rebalancing Analysis page
    - The Rebalancing Details by Item Location page
5. If required, manually release your planned orders using the Manage Rebalancing Recommendations page.

The following figure contains the flow chart for using the inventory rebalancing feature:




*Related Topics*

- Run a Replenishment Plan
- Automatic Release Options

# How the Projected Inventory Measure Is Calculated

The Projected Inventory measure is used in inventory rebalancing during the calculation of the excess inventory or inventory shortage for an item-location combination in a cluster of a replenishment plan.

## Settings That Affect the Calculation of the Projected Inventory Measure

The supplies and demands that you select on the Inventory Rebalancing tab on the Plan Options page for your replenishment plan affect the calculation of the Projected Inventory measure.

The Projected Inventory measure differs from the Projected Available Balance measure in that you can configure the supplies and demands that are considered during the calculation of the former.

# How the Projected Inventory Measure Is Calculated

The Projected Inventory measure is calculated according to this formula:

Projected Inventory in Bucket N = Projected Inventory in Bucket (N-1) + Sum of Supplies in Bucket N - Sum of Demands in Bucket N

where Sum of Supplies = Sum of supplies selected on the Inventory Rebalancing tab

and Sum of Demands = Sum of demands selected on the Inventory Rebalancing tab

The Projected Inventory measure is calculated at the start of the inventory rebalancing process for the item-location combination. After the measure is calculated, it isn't updated with inventory rebalancing recommendations. The measure is calculated only within the excess computation window.

If the item-location combination is in more than one cluster, the Excess After Rebalancing measure (Excess Before Rebalancing - Planned Outbound Shipments) for the first cluster is taken as the Excess Before Rebalancing measure for the item-location combination in the next cluster. Similarly, the Shortage After Rebalancing measure (Shortage Before Rebalancing - Planned Inbound Shipments) for the first cluster is taken as the Shortage Before Rebalancing measure for the item-location combination in the next cluster.

# Example 1 for Calculation of the Projected Inventory Measure

Note the following about this example:

- The window for calculation of the excess inventory is 4 days.

  The inventory rebalancing process is run on Day 1. Therefore, the Projected Inventory measure is calculated up to Day 5 (plan start date + 4 days).
- On the Manage Planning Clusters page, the value in the **Reserved Safety Stock Percentage** column for the cluster is 50.
- On the Inventory Rebalancing tab, the following have been selected:
  - Demands: Gross forecast
  - Supplies: On hand
- The Projected Inventory and Reserved Safety Stock measures are determined only during the window for calculating the excess inventory.

This table provides the measure values for Example 1:

| Measure | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 |
|---|---|---|---|---|---|---|---|
| Gross Forecast | 10 | 20 | 20 | 20 | 20 | 20 | 20 |
| Sales Orders | 0 | 0 | 35 | 0 | 0 | 0 | 0 |
| Net Forecast | 0 | 0 | 15 | 20 | 20 | 20 | 20 |
| Manual Demand | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Measure | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 |
|---|---|---|---|---|---|---|---|
| Sum of demands<br><br>(Not a measure) | 10 | 20 | 20 | 20 | 20 | 20 | 20 |
| On Hand | 100 | 0 | 0 | 0 | 0 | 0 | 0 |
| Purchase Orders | 0 | 0 | 0 | 0 | 40 | 0 | 0 |
| Sum of supplies<br><br>(Not a measure) | 100 | 0 | 0 | 0 | 0 | 0 | 0 |
| Projected Inventory | 90<br><br>(0 + 100 - 10) | 70<br><br>(90 + 0 - 20) | 50<br><br>(70 + 0 - 20) | 30<br><br>(50 + 0 - 20) | 10<br><br>(30 + 0 - 20) | Not applicable | Not applicable |
| Safety Stock | 20 | 30 | 20 | 20 | 20 | 20 | 20 |
| Reserved Safety Stock | 10 | 15 | 10 | 10 | 10 | Not applicable | Not applicable |

## Example 2 for Calculation of the Projected Inventory Measure

Note the following about this example:

- The window for calculation of the excess inventory is 4 days, and the window for calculation of the inventory shortage is 2 days.

  The inventory rebalancing process is run on Day 1. Therefore, the Projected Inventory measure is calculated up to Day 5 (plan start date + 4 days).
- On the Manage Planning Clusters page, the value in the **Reserved Safety Stock Percentage** column for the cluster is 50.
- The excess inventory is stored in the Initial Excess for Rebalancing measure and calculated according to this formula: (lowest value of Projected Inventory within the window for excess inventory calculation) - (highest value of Reserved Safety Stock within the window for excess inventory calculation) - 1.
- The Projected Inventory and Reserved Safety Stock measures are determined only during the window for calculating the excess inventory.
- On the Inventory Rebalancing tab, the following have been selected:
  - Demands: Sales orders, net forecast
  - Supplies: On hand, purchase orders

This table provides the measure values for Example 2:

| Measure | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 |
|---|---|---|---|---|---|---|---|
| Gross Forecast | 10 | 20 | 20 | 20 | 20 | 20 | 20 |
| Sales Orders | 0 | 0 | 35 | 0 | 0 | 0 | 0 |
| Net Forecast | 0 | 0 | 15 | 20 | 20 | 20 | 20 |
| Manual Demand | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sum of demands<br><br>(Not a measure) | 0 | 0 | 50 | 20 | 20 | 20 | 20 |
| On Hand | 100 | 0 | 0 | 0 | 0 | 0 | 0 |
| Purchase Orders | 0 | 0 | 0 | 0 | 40 | 0 | 0 |
| Sum of supplies<br><br>(Not a measure) | 100 | 0 | 0 | 0 | 40 | 0 | 0 |
| Projected Inventory | 100<br><br>(0 + 100 - 0) | 100<br><br>(100 + 0 - 0) | 50<br><br>(100 + 0 - 50) | 30<br><br>(50 + 0 - 20) | 50<br><br>(30 + 40 - 20) | Not applicable | Not applicable |
| Safety Stock | 20 | 30 | 20 | 20 | 20 | 20 | 20 |
| Reserved Safety Stock | 10 | 15 | 10 | 10 | 10 | Not applicable | Not applicable |
| Initial Excess for Rebalancing | 14<br><br>(30 - 15 - 1) | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable |

*Related Topics*

- Inventory Rebalancing Options for Replenishment Plans

# How the Excess Inventory and Inventory Shortage Are Calculated

This topic explains how the excess inventory or inventory shortage is calculated for an item-location combination in a cluster of a replenishment plan.

## Settings That Affect the Calculation of the Excess Inventory and Inventory Shortage

The following affect the calculation of the excess inventory or inventory shortage for the item-location combination:

- The sum of the preprocessing, processing, and postprocessing lead times specified for the item-location combination in the Items table.
- The values in the **Lead Time Multiplier for Excess Window**, **Lead Time Multiplier for Shortage Window**, and **Reserved Safety Stock Percentage** columns on the Manage Planning Clusters page for the cluster that contains the item-location combination.
- The values of the Projected Inventory, Safety Stock, and Reserved Safety Stock measures for the item-location combination.
- The selection of the **Include safety stock in shortage calculation** check box on the Inventory Rebalancing tab on the Plan Options page for the replenishment plan.

## How the Excess Inventory and Inventory Shortage Are Calculated

This table explains the calculations related to the excess inventory or inventory shortage for the item-location combination:

| Value for the Item-Location Combination | Calculation |
|---|---|
| Window for computing the excess inventory | The value in the Excess Computation Window measure is taken.<br><br>The day on which the inventory rebalancing process is run is added to this value.<br><br>Only the working days in the calendar for the organization (location) are considered for this window's calculation.<br><br>For example, if the value of the Excess Computation Window measure is 3 days, and the plan is run on Day 1, the excess computation window is up to Day 4. |
| Window for computing the inventory shortage | The value in the Shortage Computation Window measure is taken.<br><br>The day on which the inventory rebalancing process is run is added to this window.<br><br>Only the working days in the calendar for the organization (location) are considered for this window's calculation.<br><br>For example, if the value of the Shortage Computation Window measure is 2 days, and the plan is run on Day 1, the shortage computation window is up to Day 3. |

| Value for the Item-Location Combination | Calculation |
|---|---|
| | |
| Initial Excess for Rebalancing measure | (lowest value of Projected Inventory measure within the excess computation window) - (highest value of Reserved Safety Stock measure within the excess computation window) - 1<br><br>If the value of the calculation is greater than zero, the value is the excess inventory and is stored in the Initial Excess for Rebalancing measure. |
| Initial Shortage for Rebalancing measure | At the end of the shortage computation window, the following are done:<br><br>1. If the **Include safety stock in shortage calculation** check box is selected on the Inventory Rebalancing tab, the Safety Stock measure is subtracted from the Projected Inventory measure.<br><br>If the check box isn't selected, only the Projected Inventory measure is considered.<br>2. If the value of the previous step is less than zero, the value is the inventory shortage and is stored in the Initial Shortage for Rebalancing measure. |

**Note:** If the item-location combination doesn't have excess inventory or an inventory shortage, inventory rebalancing isn't performed for the item-location combination. An item-location combination that has both excess inventory and an inventory shortage is identified as having an inventory shortage.

After the total lead time is multiplied by the multipliers for the excess and shortage computation windows, the resulting values are rounded off as follows:

- Standard logic for rounding is applied when the resulting value is greater than one.
- When the resulting value is less than one, the value is rounded off to one.

## Examples for Determination of the Excess and Shortage Computation Windows

This table provides examples for determining the excess and shortage computation windows for the item-location combination:

| Total Lead Time | Lead Time Multiplier for Excess Window | Excess Computation Window (Before Rounding) | Excess Computation Window (After Rounding) | Lead Time Multiplier for Shortage Window | Shortage Computation Window (Before Rounding) | Shortage Computation Window (After Rounding) |
|---|---|---|---|---|---|---|
| 4 | 3 | 12 | 12 | 2 | 8 | 8 |
| 4 | 2.5 | 10 | 10 | 1.5 | 6 | 6 |
| 4 | 2.6 | 10.4 | 10 | 1.6 | 6.4 | 6 |
| 4 | 2.72 | 10.88 | 11 | 1.72 | 6.88 | 7 |
| 4 | 0.5 | 2 | 2 | 0.5 | 2 | 2 |

| Total Lead Time | Lead Time Multiplier for Excess Window | Excess Computation Window (Before Rounding) | Excess Computation Window (After Rounding) | Lead Time Multiplier for Shortage Window | Shortage Computation Window (Before Rounding) | Shortage Computation Window (After Rounding) |
|---|---|---|---|---|---|---|
| | | | | | | |
| 4 | 0.21 | 0.84 | 1 | 0.1 | 0.4 | 1 |
| 4 | 0.1 | 0.4 | 1 | 0.01 | 0.04 | 1 |

## Example 1 for Determination of the Excess Inventory and Inventory Shortage

Note the following about this example:

- The value of the Excess Computation Window measure is 2 days.

  Therefore, the Projected Inventory measure is calculated for 3 days.
- The value of the Shortage Computation Window measure is 1 day.

  Therefore, the shortage is calculated for 2 days.
- The value of the Safety Stock measure is 10.
- The value of the Reserved Safety Stock measure is zero.
- The **Include safety stock in shortage calculation** check box isn't selected on the Inventory Rebalancing tab.

This table provides inputs for calculating the excess inventory and inventory shortage:

| | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 |
|---|---|---|---|---|---|---|
| Sum of demands<br><br>(Not a measure) | 10 | 10 | 10 | 10 | 10 | 10 |
| Sum of supplies<br><br>(Not a measure) | 100 | 0 | 0 | 0 | 0 | 0 |
| Projected Inventory measure | 90 | 80 | 70 | Not applicable | Not applicable | Not applicable |

The excess inventory is 69 (70 - 1). Therefore, the value of the Initial Excess for Rebalancing measure for the item-location combination is 69.

On Day 2, the value of the Projected Inventory measure is 80, which is more than zero. Therefore, there's no inventory shortage.

# Example 2 for Determination of the Excess Inventory and Inventory Shortage

Note the following about this example:

- The value of the Excess Computation Window measure is 2 days.

  Therefore, the Projected Inventory measure is calculated for 3 days.
- The value of the Shortage Computation Window measure is 1 day.

  Therefore, the shortage is calculated for 2 days.
- The value of the Safety Stock measure is 10.
- The value of the Reserved Safety Stock measure is zero.
- The **Include safety stock in shortage calculation** check box isn't selected on the Inventory Rebalancing tab.

This table provides inputs for calculating the excess inventory and inventory shortage:

| | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 |
|---|---|---|---|---|---|---|
| Sum of demands<br><br>(Not a measure) | 10 | 10 | 10 | 10 | 10 | 10 |
| Sum of supplies<br><br>(Not a measure) | 30 | 0 | 0 | 0 | 0 | 0 |
| Projected Inventory measure | 20 | 10 | 0 | Not applicable | Not applicable | Not applicable |

The excess inventory is less than zero (0 - 1). Therefore, there's no excess inventory.

On Day 2, the value of the Projected Inventory measure is 10, which is more than zero. Therefore, there's no inventory shortage.

The item-location combination has no excess inventory or inventory shortage and isn't included in the inventory rebalancing process.

# Example 3 for Determination of the Excess Inventory and Inventory Shortage

Note the following about this example:

- The value of the Excess Computation Window measure is 2 days.

  Therefore, the Projected Inventory measure is calculated for 3 days.
- The value of the Shortage Computation Window measure is 1 day.

  Therefore, the shortage is calculated for 2 days.

- The value of the Safety Stock measure is 10.
- The value of the Reserved Safety Stock measure is zero.
- The **Include safety stock in shortage calculation** check box isn't selected on the Inventory Rebalancing tab.

This table provides inputs for calculating the excess inventory and inventory shortage:

| | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 |
|---|---|---|---|---|---|---|
| Sum of demands<br><br>(Not a measure) | 10 | 10 | 10 | 10 | 10 | 10 |
| Sum of supplies<br><br>(Not a measure) | 10 | 0 | 0 | 0 | 0 | 0 |
| Projected Inventory measure | 0 | -10 | -20 | Not applicable | Not applicable | Not applicable |

The excess inventory is less than zero (-20 - 1). Therefore, there's no excess inventory.

On Day 2, the value of the Projected Inventory measure is -10, which is less than zero. Therefore, the value of the Initial Shortage for Rebalancing measure for the item-location combination is 10.

## Example 4 for Determination of the Excess Inventory and Inventory Shortage

Note the following about this example:

- The value of the Excess Computation Window measure is 2 days.
  Therefore, the Projected Inventory measure is calculated for 3 days.
- The value of the Shortage Computation Window measure is 1 day.
  Therefore, the shortage is calculated for 2 days.
- The value of the Safety Stock measure is 10.
- The value of the Reserved Safety Stock measure is zero.
- The **Include safety stock in shortage calculation** check box is selected on the Inventory Rebalancing tab.

This table provides inputs for calculating the excess inventory and inventory shortage:

| | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 |
|---|---|---|---|---|---|---|
| Sum of demands<br><br>(Not a measure) | 10 | 10 | 10 | 10 | 10 | 10 |
| Sum of supplies | 0 | 0 | 50 | 0 | 0 | 0 |

| | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 |
|---|---|---|---|---|---|---|
| (Not a measure) | | | | | | |
| Projected Inventory measure | -10 | -20 | 20 | Not applicable | Not applicable | Not applicable |

The excess inventory is 19 (20 - 1).

On Day 2, the value of the Projected Inventory measure is -20, and the inventory shortage is -30 (-20 - the safety stock of 10), which is less than zero. Therefore, the value of the Initial Shortage for Rebalancing measure for the item-location combination is 30.

The item-location combination has both excess inventory and an inventory shortage and is identified as having an inventory shortage.

## Example 5 for Determination of the Excess Inventory and Inventory Shortage

Note the following about this example:

- The value of the Excess Computation Window measure is 2 days.

  Therefore, the Projected Inventory measure is calculated for 3 days.
- The value of the Shortage Computation Window measure is 2 days.

  Therefore, the shortage is calculated for 3 days.
- The value of the Safety Stock measure is 80.
- The value of the Reserved Safety Stock measure is zero.
- The **Include safety stock in shortage calculation** check box is selected on the Inventory Rebalancing tab.

This table provides inputs for calculating the excess inventory and inventory shortage:

| | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 |
|---|---|---|---|---|---|---|
| Sum of demands<br>(Not a measure) | 10 | 10 | 10 | 10 | 10 | 10 |
| Sum of supplies<br>(Not a measure) | 100 | 0 | 0 | 0 | 0 | 0 |
| Projected Inventory measure | 90 | 80 | 70 | Not applicable | Not applicable | Not applicable |

The excess inventory is 69 (70 - 1).

On Day 3, the value of the Projected Inventory measure is 70, and the inventory shortage is -10 (70 - the safety stock of 80), which is less than zero. Therefore, the value of the Initial Shortage for Rebalancing measure for the item-location combination is 10.

The item-location combination has both excess inventory and an inventory shortage and is identified as having an inventory shortage.

*Related Topics*

- Inventory Rebalancing Options for Replenishment Plans

# Example of Inventory Rebalancing

This topic provides an example of inventory rebalancing in a replenishment plan.

On the Inventory Rebalancing tab on the Plan Options page for the replenishment plan, the **Move excess to sweep location** check box is selected, but the **Reduce partial recommendations** check box isn't selected.

This table provides information about the clusters in the replenishment plan:

| Sequence Number on Inventory Rebalancing Tab | Cluster Name | Locations | Sweep Location |
|---|---|---|---|
| 1 | Cluster 1 | M1, M2, M3, M4, and M5 | M1 |
| 2 | Cluster 2 | S1, S2, S3, S4, and S5 | S4 |
| 3 | Cluster 3 | M1 and S4 | |

Within each cluster, the locations don't have any priority.

This table lists some of the lead times between source and destination locations in Cluster 1:

| Source Location | Destination Location | Lead Time |
|---|---|---|
| M1 | M3 | 3 |
| M2 | M3 | 2 |

This table lists some of the lead times between source and destination locations in Cluster 2:

| Source Location | Destination Location | Lead Time |
|---|---|---|
| S1 | S3 | 3 |

| Source Location | Destination Location | Lead Time |
|---|---|---|
| S2 | S3 | 2 |

## Inventory Rebalancing in Cluster 1

After the Projected Inventory measure is calculated for an item in the locations of Cluster 1, the excess inventory and inventory shortage are initially computed as follows:

| Measure | M1 | M2 | M3 | M4 | M5 |
|---|---|---|---|---|---|
| Excess Before Rebalancing | 12 | 6 | | | |
| Shortage Before Rebalancing | | | 9 | 1 | 7 |

Note these points:

1. The inventory rebalancing process starts with the location that has the largest inventory shortage: M3.
2. M1 and M2 have excess inventory, but the lead time between M2 and M3 is less than the lead time between M1 and M3. Therefore, a planned order for transferring 6 units is created between M2 and M3.

   The inventory shortage at M3 is now 3 units (9 - 6), and the excess inventory at M2 is zero (6 - 6).
3. A second planned order for transferring 3 units is created between M1 and M3.

   The inventory shortage at M3 is now zero (3 - 3), and the excess inventory at M1 is 9 units (12 - 3).

   > **Note:** If the **Reduce partial recommendations** check box were selected on the Inventory Rebalancing tab, a planned order for transferring 9 units would have been created between M1 and M3. Consequently, only one shipment would have been created for M3.

4. The inventory rebalancing process picks up the location with the second largest inventory shortage: M5.
5. A planned order for transferring 7 units is created between M1 and M5.

   The inventory shortage at M5 is now zero (7 - 7), and the excess inventory at M1 is 2 units (9 - 7).
6. The inventory rebalancing process picks up the last remaining location with an inventory shortage: M4.

   A planned order for transferring 1 unit is created between M1 and M4.

   The inventory shortage at M4 is now zero (1 - 1), and the excess inventory at M1 is 1 unit (2 - 1).

This table provides the final computation of the excess inventory and inventory shortage for the item in Cluster 1:

| Measure | M1 | M2 | M3 | M4 | M5 |
|---|---|---|---|---|---|
| Excess After Rebalancing | 1 | 0 | | | |

| Measure | M1 | M2 | M3 | M4 | M5 |
|---|---|---|---|---|---|
| Shortage After Rebalancing | | | 0 | 0 | 0 |

## Inventory Rebalancing in Cluster 2

After the Projected Inventory measure is calculated for the item in the locations of Cluster 2, the excess inventory and inventory shortage are initially computed as follows:

| Measure | S1 | S2 | S3 | S4 | S5 |
|---|---|---|---|---|---|
| Excess Before Rebalancing | 8 | 6 | | | |
| Shortage Before Rebalancing | | | 9 | 1 | 7 |

Note these points:

1. The inventory rebalancing process starts with the location that has the largest inventory shortage: S3.
2. S1 and S2 have excess inventory, but the lead time between S2 and S3 is less than the lead time between S1 and S3. Therefore, a planned order for transferring 6 units is created between S2 and S3.

   The inventory shortage at S3 is now 3 units (9 - 6), and the excess inventory at S2 is zero (6 - 6).
3. A second planned order for transferring 3 units is created between S1 and S3.

   The inventory shortage at S3 is now zero (3 - 3), and the excess inventory at S1 is 5 units (8 - 3).
4. The inventory rebalancing process picks up the location with the second largest inventory shortage: S5.
5. A planned order for transferring 5 units is created between S1 and S5.

   The inventory shortage at S5 is now 2 units (7 - 5), and the excess inventory at S1 is zero (5 - 5).

This table provides the final computation of the excess inventory and inventory shortage for the item in Cluster 2:

| Measure | S1 | S2 | S3 | S4 | S5 |
|---|---|---|---|---|---|
| Excess After Rebalancing | 0 | 0 | | | |
| Shortage After Rebalancing | | | 0 | 1 | 2 |

## Inventory Rebalancing in Cluster 3

These are the initial values for the excess inventory and inventory shortage for the item in Cluster 3:

| Measure | M1 | S4 |
|---|---|---|
| Excess Before Rebalancing | 1 | |
| Shortage Before Rebalancing | | 1 |

A planned order for transferring 1 unit is created between M1 and S4.

The inventory shortage at S4 is now zero (1 - 1), and the excess inventory at M1 is zero (1 - 1).

This table provides the final computation of the excess inventory and inventory shortage for the item in Cluster 3:

| Measure | M1 | S4 |
|---|---|---|
| Excess After Rebalancing | 0 | |
| Shortage After Rebalancing | | 0 |

*Related Topics*

- Inventory Rebalancing Options for Replenishment Plans

# Examples of Inventory Rebalancing and Replenishment Planning

This topic provides examples of inventory rebalancing and the subsequent replenishment planning for replenishment plans.

## Example with No Sweep Location

In this example, the replenishment plan has a cluster with two locations, Store 1 and Store 2, and none of the locations is a sweep location.

After inventory rebalancing, these are the measure values for an item in Store 1:

| Measure | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 |
|---|---|---|---|---|---|---|---|---|---|
| Gross Forecast | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Reserved Safety Stock | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |

| Measure | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 |
|---|---|---|---|---|---|---|---|---|---|
| On Hand | 125 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Purchase Orders | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Transfer Orders | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Projected Inventory | 115 | 105 | 95 | 85 | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable |
| Initial Excess for Rebalancing | 74 | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable |
| Initial Shortage for Rebalancing | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable |
| Planned Outbound Shipments | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Planned Inbound Shipments | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Projected Available Balance | 85 | 75 | 65 | 55 | 45 | 35 | 25 | 15 | 60 |

Note the following:

- The value of the Excess Computation Window measure is 3 days.

  Therefore, the Projected Inventory measure is calculated for 4 days.
- The excess inventory for rebalancing is 74 (85 - 10 - 1).

  This value is stored in the Initial Excess for Rebalancing and Excess Before Rebalancing measures.
- A planned order for transferring 30 units from Store 1 to Store 2 is recommended on account of the inventory shortage at Store 2.

  The value of the Planned Outbound Shipments measure is 30 for Day 1, which is the ship date of the planned order.
- The value of the Excess After Rebalancing measure is 44 (74 - 30).

After inventory rebalancing, these are the measure values for the item in Store 2:

| Measure | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 |
|---|---|---|---|---|---|---|---|---|---|
| Gross Forecast | 30 | 30 | 30 | 18 | 30 | 30 | 30 | 18 | 18 |
| Reserved Safety Stock | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| On Hand | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Purchase Orders | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Transfer Orders | 0 | 0 | 80 | 0 | 0 | 0 | 0 | 0 | 0 |
| Projected Inventory | 0 | -30 | 20 | 2 | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable |
| Initial Excess for Rebalancing | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable |
| Initial Shortage for Rebalancing | 30 | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable |
| Planned Outbound Shipments | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Planned Inbound Shipments | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Projected Available Balance | 0 | 0 | 50 | 12 | -18 | -48 | -78 | -96 | -114 |

Note the following:

- The value of the Excess Computation Window measure is 3 days.
  Therefore, the Projected Inventory measure is calculated for 4 days.
- The excess inventory is -9 (2 - 10 - 1), and there's no excess for rebalancing.
- The value of the Shortage Computation Window measure is 1 day.
  Therefore, the inventory shortage is calculated for 2 days.
- The **Include safety stock in shortage calculation** check box isn't selected on the Inventory Rebalancing tab on the Plan Options page for the replenishment plan. Therefore, the inventory shortage for rebalancing is 30.

This value is stored in the Initial Shortage for Rebalancing and Shortage Before Rebalancing measures.

- A planned order for transferring 30 units from Store 1 to Store 2 is recommended on account of the inventory shortage at Store 2.

  The value of the Planned Inbound Shipments measure is 30 for Day 2, which is the due date of the planned order.

- The value of the Shortage After Rebalancing measure is 0 (30 - 30).

After replenishment planning, these are the measure values for the item in Store 1:

| Measure | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 |
|---|---|---|---|---|---|---|---|---|---|
| Gross Forecast | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Net Forecast | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Sales Orders | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Demand | 40 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| On Hand | 125 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Purchase Orders | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Transfer Orders | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Planned Outbound Shipments | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Planned Inbound Shipments | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Supply | 125 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 55 |
| On Order | 0 | 0 | 0 | 0 | 0 | 55 | 55 | 55 | 0 |
| Projected Available Balance | 85 | 75 | 65 | 55 | 45 | 35 | 25 | 15 | 60 |

| Measure | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 |
|---|---|---|---|---|---|---|---|---|---|
| Beginning Inventory Position | 85 | 75 | 65 | 55 | 45 | 90 | 80 | 70 | 60 |
| Planned Replenishmer by Order Date | 0 | 0 | 0 | 0 | 55 | 0 | 0 | 0 | 0 |
| Planned Replenishmer by Due Date | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 55 |
| Final Inventory Position | 85 | 75 | 65 | 55 | 100 | 90 | 80 | 70 | 60 |
| Adjusted Minimum Quantity | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Final Minimum Quantity | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| Adjusted Maximum Quantity | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Final Maximum Quantity | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

Note the following:

- On Day 1, the Total Demand measure sums up the Net Forecast and Planned Outbound Shipments measures and is 40 (10 + 30).
- There's no change to the computation logic for replenishment orders.

After replenishment planning, these are the measure values for the item in Store 2:

| Measure | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 |
|---|---|---|---|---|---|---|---|---|---|
| Gross Forecast | 30 | 30 | 30 | 18 | 30 | 30 | 30 | 18 | 18 |
| Net Forecast | 30 | 30 | 30 | 18 | 30 | 30 | 30 | 18 | 18 |

| Measure | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 |
|---|---|---|---|---|---|---|---|---|---|
| Sales Orders | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Demand | 30 | 30 | 30 | 18 | 30 | 30 | 30 | 18 | 18 |
| On Hand | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Purchase Orders | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Transfer Orders | 0 | 0 | 80 | 0 | 0 | 0 | 0 | 0 | 0 |
| Planned Outbound Shipments | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Planned Inbound Shipments | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Supply | 30 | 30 | 80 | 0 | 160 | 0 | 0 | 0 | 0 |
| On Order | 110 | 80 | 160 | 160 | 0 | 0 | 0 | 0 | 156 |
| Projected Available Balance | 0 | 0 | 50 | 32 | 162 | 132 | 102 | 84 | 66 |
| Beginning Inventory Position | 110 | 80 | 210 | 192 | 162 | 132 | 102 | 84 | 222 |
| Planned Replenishmer by Order Date | 0 | 160 | 0 | 0 | 0 | 0 | 0 | 156 | 0 |
| Planned Replenishmer by Due Date | 0 | 0 | 0 | 0 | 160 | 0 | 0 | 0 | 0 |
| Final Inventory Position | 110 | 240 | 210 | 192 | 162 | 132 | 102 | 240 | 222 |

| Measure | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 |
|---|---|---|---|---|---|---|---|---|---|
| Adjusted Minimum Quantity | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Final Minimum Quantity | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Adjusted Maximum Quantity | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Final Maximum Quantity | 240 | 240 | 240 | 240 | 240 | 240 | 240 | 240 | 240 |

Note the following:

- On Day 2, the Total Supply measure includes the Planned Inbound Shipments measure and is 30.
- On Day 1, the On Order measure includes the planned inbound shipment of 30 units that's arriving on Day 2.
- There's no change to the computation logic for replenishment orders.

## Example with a Sweep Location

In this example, the replenishment plan has two clusters, Cluster 1 and Cluster 1.

Cluster 1 has the M1 and M2 locations, and M1 is a sweep location. M1 has excess inventory of 34 units of an item, and M2 has an inventory shortage of 30 units of the item.

After inventory rebalancing for Cluster 1, these measure values for the item in M1 are calculated:

**Note:** The measure values in this table aren't displayed and are provided only for explanation of the inventory rebalancing logic.

| Measure | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 |
|---|---|---|---|---|---|---|---|---|---|
| Gross Forecast | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| On Hand | 85 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Transfer Orders | 0 | 40 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Projected Inventory | 75 | 105 | 95 | 85 | 75 | 65 | 55 | 45 | Not applicable |

| Measure | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 |
|---|---|---|---|---|---|---|---|---|---|
| Initial Excess for Rebalancing | 34 | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable |
| Initial Shortage for Rebalancing | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable |
| Planned Outbound Shipments | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Planned Inbound Shipments | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reserved Safety Stock | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |

Note the following:

- The value of the Excess Computation Window measure is 7 days.

  Therefore, the Projected Inventory measure is calculated for 8 days.
- The value of the Initial Excess for Rebalancing measure is 34 (45 - 10 - 1).
- A planned order is created for transferring 30 units from M1 to M2.
- The value of the Excess After Rebalancing measure is calculated as follows: Excess Before Rebalancing (34) - Planned Outbound Shipments (30) = 4
- The value of the Shortage After Rebalancing measure for the item at M2 is calculated as follows: Shortage Before Rebalancing (30) - Planned Inbound Shipments (30) = 0

Cluster 2 has the M1 and S1 locations. M1 has excess inventory of 4 units of the item, and S1 has an inventory shortage of 4 units of the item.

When inventory rebalancing is done for Cluster 2, the value of the Excess After Rebalancing measure for the item at M1 in Cluster 1 is taken as the value of the Excess Before Rebalancing measure for the item at M1 in Cluster 2.

After inventory rebalancing for Cluster 2, these measure values for the item in M1 are displayed on the Rebalancing Analysis page:

| Measure | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 |
|---|---|---|---|---|---|---|---|---|---|
| Gross Forecast | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| On Hand | 85 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Measure | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 |
|---|---|---|---|---|---|---|---|---|---|
| Transfer Orders | 0 | 40 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Projected Inventory | 75 | 105 | 95 | 85 | 75 | 65 | 55 | 45 | Not applicable |
| Initial Excess for Rebalancing | 34 | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable |
| Initial Shortage for Rebalancing | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable |
| Planned Outbound Shipments | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Planned Inbound Shipments | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reserved Safety Stock | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |

Note the following:

- The value of the Excess Computation Window measure is 7 days.
  Therefore, the Projected Inventory measure is calculated for 8 days.
- A planned order is created for transferring 4 units from M1 to S1.
- The value of the Initial Excess for Rebalancing measure is 34 (45 - 10 - 1).
- The value of the Planned Outbound Shipments measure is the sum for Cluster 1 and Cluster 2 and is 34 (30 + 4).

You can see these measure values for the item on the Rebalancing Details by Item Location page:

| Cluster | Location | Excess Before Rebalancing | Excess After Rebalancing | Shortage Before Rebalancing | Shortage After Rebalancing | Planned Inbound Shipments | Planned Outbound Shipments |
|---|---|---|---|---|---|---|---|
| Cluster 1 | M1 | 34 | 4 | 0 | 0 | 0 | 30 |
| Cluster 1 | M2 | 0 | 0 | 30 | 0 | 30 | 0 |
| Cluster 2 | M1 | 4 | 0 | 0 | 0 | 0 | 4 |
| Cluster 2 | S1 | 0 | 0 | 4 | 0 | 4 | 0 |

| Cluster | Location | Excess Before Rebalancing | Excess After Rebalancing | Shortage Before Rebalancing | Shortage After Rebalancing | Planned Inbound Shipments | Planned Outbound Shipments |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

*Related Topics*

- Inventory Rebalancing Options for Replenishment Plans

# End Item Substitution and Supersession in Inventory Rebalancing

## Overview of Support for End Item Substitution and Supersession in Inventory Rebalancing

You can configure your replenishment plan so that it performs end item substitution and supersession as well as inventory rebalancing.

By using the functionality for end item substitution and supersession along with the functionality for inventory rebalancing, you can achieve the following while doing replenishment planning for a primary item at a location:

- Use the excess of a substitute or supersession item at the location before transferring the excess inventory for the primary item from other locations within a cluster.
- Use the excess of the substitute or supersession item available at other locations in the cluster so long as the item relationships are recognized.
- Minimize procurement and transportation costs and obsolescence within your supply chain.

*Related Topics*

- How End Item Substitution and Supersession Are Done with Inventory Rebalancing
- Example of End Item Substitution and Supersession with Inventory Rebalancing

## How End Item Substitution and Supersession Are Done with Inventory Rebalancing

This topic provides the high-level process for how end item substitution and supersession are done along with inventory rebalancing in a replenishment plan.

The following steps explain how end item substitution and supersession are performed along with inventory rebalancing:

1. The excess inventory or inventory shortage is calculated for an item-location combination in a cluster. The substitution or supersession chains are ignored in this step.

   The logic for inventory rebalancing is used.
2. End item substitution or supersession is performed within the location.

   The shortage of the item in the location is resolved through the use of the excess inventory for the substitute item or supersession item at the same location.

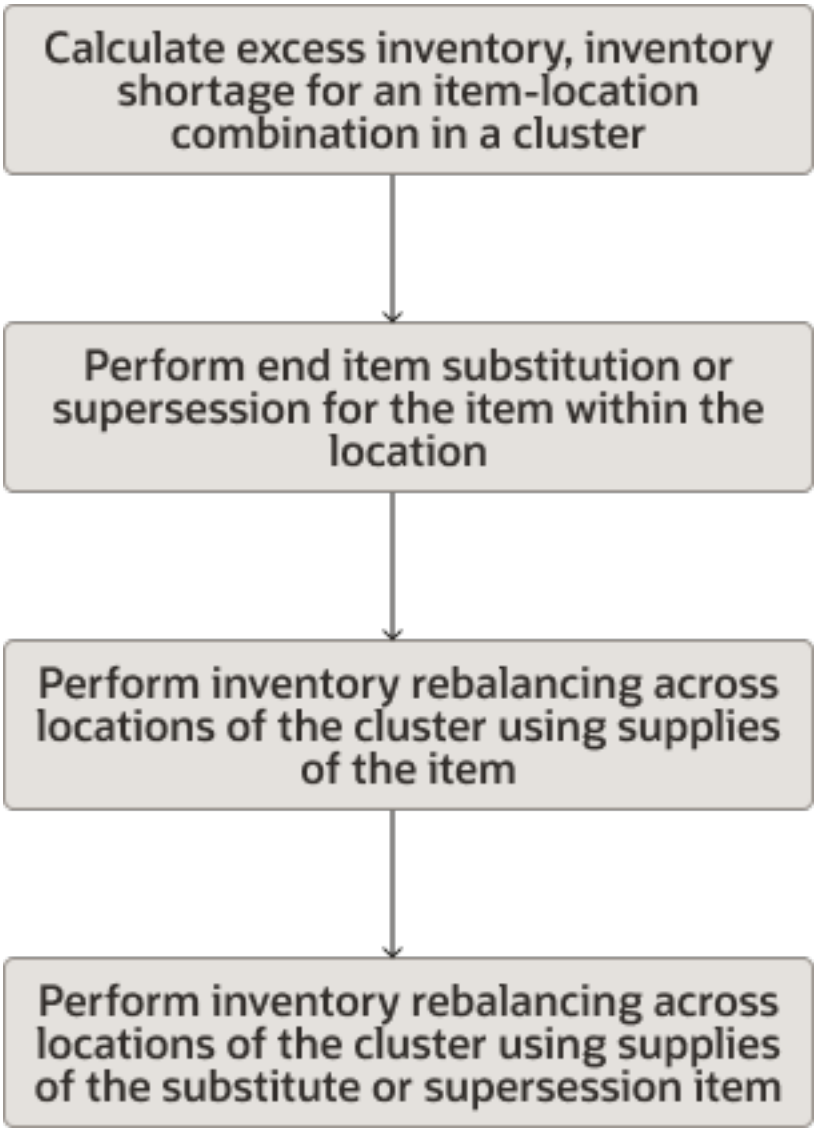
   The logic for end item substitution or supersession is used.
3. The remaining inventory shortages are resolved for the item through the use of the excess inventory for the same item in other locations in the cluster.

   The logic for inventory rebalancing is used.
4. Any remaining inventory shortages are resolved for the item through the use of the excess inventory for the substitute item or supersession item in other locations in the cluster.

   The logic for inventory rebalancing is used.

   The excess inventory is moved to the sweep location.

The process is summarized by the following diagram:




## Additional Points to Note

Note these additional points about how end item substitution and supersession are done along with inventory rebalancing:

- In inventory rebalancing, sourcing rules aren't required for the movement of inventory between locations. This feature of inventory rebalancing is leveraged when end item substitution and supersession are done along with inventory rebalancing, and sourcing rules aren't required for the movement of substitute and supersession items in a location or between locations of a cluster.
- During end item substitution and supersession, the item relationships defined for the destination organization take precedence over the item relationships defined for the source organization.
- The inventory rebalancing window for excess inventory is considered during end item substitution and supersession. The excess window defined for end item substitution and supersession isn't considered.

*Related Topics*

- Overview of Support for End Item Substitution and Supersession in Inventory Rebalancing
- Example of End Item Substitution and Supersession with Inventory Rebalancing

# Example of End Item Substitution and Supersession with Inventory Rebalancing

This topic contains an example of how end item substitution and supersession are performed with inventory rebalancing in a replenishment plan.

In this example, we have a cluster of four locations (organizations), M1, M2, M3, and M4. Also, we have two items, A, and B. Item B is a substitute for Item A.

## Calculation of Excess Inventory and Inventory Shortage for All Item-Location Combinations

The excess inventory and inventory shortage are calculated for all item-location combinations of the cluster according to the inventory rebalancing logic.

For Item A, Locations M1 and M2 have excess inventory of 12 units and 6 units respectively, and Locations M3 and M4 have an inventory shortage of 9 units and 23 units respectively.

For Item B, Locations M2 and M3 have excess inventory of 8 units and 15 units respectively, and Location M1 has an inventory shortage of 7 units.

The substitution and supersession chains are initially ignored.

The following figure depicts the excess inventory and inventory shortage for the locations:

| Items | | M1 | M2 | M3 | M4 |
|---|---|---|---|---|---|
| A | Excess | 12 | 6 | | |
| | Shortage | | | 9 | 23 |
| B | Excess | | 8 | 15 | |
| | Shortage | 7 | | | |

## End Item Substitution and Supersession Within Each Location

End item substitution and supersession are then performed within each location.

For Location M3, the inventory shortage of 9 units for Item A is met from the excess inventory of 15 units for Item B because Item B is a substitute for Item A. The substitute supply for Item A is 9 units, and the substitute demand for Item B is 9 units. The remaining excess inventory for Item B is 6 units (15-9).

The following figure depicts the results of end item substitution and supersession within each location:

| Items | | M1 | M2 | M3 | M4 |
|---|---|---|---|---|---|
| A | Excess | 12 | 6 | | |
| | Shortage | | | 0 | 23 |
| B | Excess | | 8 | 6 | |
| | Shortage | 7 | | | |

## Inventory Rebalancing Across the Cluster

Inventory rebalancing is then performed for the locations across the cluster, and the substitution or supersession chains are ignored.

For Item A, the inventory shortage is 23 units at Location M4, and the excess inventory is 12 units and 6 units at Locations M1 and M2 respectively. Planned orders are created for transfer of this excess inventory to Location M4, after which the inventory shortage at Location M4 is 5 units.

For Item B, the inventory shortage is 7 units at Location M1, and the excess inventory is 8 units and 6 units at Locations M2 and M3 respectively. A planned order is created for the transfer of the excess inventory from Location M2 to Location M1, after which the excess inventory at Location M2 is 1 unit, and the inventory shortage at Location M1 is 0 units.

The following figure depicts the results of inventory rebalancing across locations of the cluster:

| Items | | M1 | M2 | M3 | M4 |
|---|---|---|---|---|---|
| A | Excess | 0 | 0 | | |
| | Shortage | | | 0 | 5 |
| B | Excess | | 1 | 6 | |
| | Shortage | 0 | | | |

## Inventory Rebalancing Across the Cluster with Substitute and Supersession Items

Finally, inventory rebalancing is performed for the locations across the cluster, and the substitute and supersession items are used for meeting inventory shortages.

Location M4 has an inventory shortage of 5 units for Item A, and Location M3 has excess inventory of 6 units for Item B. Therefore, a planned order of 5 units of Item B is created for meeting the inventory shortage of Item A at Location M4 because Item B is a substitute for Item A. The substitute supply for Item A is 5 units, and the substitute demand for Item B is 5 units. After this planned order, the inventory shortage of Item A at Location M4 is 0 units, and the excess inventory of Item B at Location M3 is 1 unit.

The following figure depicts the results of inventory rebalancing across the locations of the cluster with the use of substitute and supersession items.

| Items | | M1 | M2 | M3 | M4 |
|---|---|---|---|---|---|
| A | Excess | 0 | 0 | | |
| | Shortage | | | 0 | 0 |
| B | Excess | | 1 | 1 | |
| | Shortage | 0 | | | |

*Related Topics*

- Overview of Support for End Item Substitution and Supersession in Inventory Rebalancing
- How End Item Substitution and Supersession Are Done with Inventory Rebalancing

# Manually Release Rebalancing Recommendations

This topic explains how you can manually release the rebalancing recommendations generated by the inventory rebalancing process for your replenishment plan.

If you haven't set up your replenishment plan for automatic release of replenishment orders by selecting the **Release planned orders automatically** check box on the General subtab on the Supply tab on the Plan Options page, you can manually release the rebalancing recommendations using the Manage Rebalancing Recommendations page.

Follow these steps to manually release your rebalancing recommendations:

1. After the inventory rebalancing process is run, open your replenishment plan through one of these ways:

   > **Note:** If you aren't using an integrated replenishment plan, open the replenishment plan for which you've selected the **Rebalance inventory** check box on the Plan Options page.

   - Use the Manage Plans page:

     i. On the Tasks panel tab, under Plans, select **Manage Plans**.

     The Manage Plans page opens.

     ii. Under Search Results, select the replenishment plan that you want to open, and click **Actions** > **Open**.

     The replenishment plan opens in a separate page.

   - On the Plans panel tab, under Plans, right-click the replenishment plan that you want to open, and select **Open**.

     The replenishment plan opens in a separate page.

2. Click the **Open** drop-down button.

   The Open Table, Graph, or Tile Set dialog box opens.

3. Search for the Manage Rebalancing Recommendations table, and open it.

   The Manage Rebalancing Recommendations page opens under the replenishment plan. Only inventory rebalancing recommendations are displayed on this page. The value under the **Order Type** column is Planned order, and the value under the **Action** column is Release.

   > **Note:** You can also drill to the Manage Rebalancing Recommendations page from the analytics for inventory rebalancing.

4. Under Search, perform a search for the item-location combinations and clusters for which you want to manually release rebalancing recommendations.
5. Select a rebalancing recommendation that you want to manually release, and follow these steps:

   a. Under Search Results, click **Actions** > **Mark for Release**.

   The row is marked with the **Changed** icon, and the release status for the item-location combination changes to Marked for release.

   The quantity in the **Order Quantity** column is copied to the **Implement Quantity** column.

b. If required, edit the values in the implementation-related and **Shipping Method** columns.

These changes are lost the next time you run the replenishment plan.

6. Repeat the previous step for the item-location combinations for which you want to manually release rebalancing recommendations.
7. To change your decision about manually releasing a rebalancing recommendation, select the row, and under Search Results, click **Actions** > **Unmark for Release**.

The release status for the item-location combination changes to Release.

8. Save the replenishment plan.
9. On the **Actions** menu for the replenishment plan, select **Release**.

The Release Plan dialog box appears.

10. Click **Yes**.

The Plan Status Details dialog box appears and displays the status of the release process.

11. Click **OK** to return to the Manage Rebalancing Recommendations page.
12. Under Search, click **View** > **Refresh**.

For the manually released rebalancing recommendations, the value under the **Release Status** column changes to Released and under the **Action** column to None.

*Related Topics*

- Automatic Release Options
- Best Practices for Setting Up Replenishment Plans

# How You Use the Analytics for Inventory Rebalancing

You can use analytics to analyze the effectiveness of the inventory rebalancing process, review the inventory rebalancing recommendations at various levels, and troubleshoot issues.

## Analytics for Inventory Rebalancing

These are the analytics for inventory rebalancing:

- The Replenishment and Rebalancing Plan Summary page layout that includes the Rebalancing Performance infotile.

  Use this infotile to access the Shortages by Cluster and Excess by Cluster graphs, using which you can review the counts of item-location combinations in clusters with excess inventory and inventory shortages before and after inventory rebalancing.

- The Cluster Analysis by Quantity and Cluster Analysis by Value pages.

  Use these pages to get a high-level view of the inventory rebalancing recommendations by quantity or value among source and destination locations in a cluster. A highlight is used for the shipping lanes with inventory rebalancing recommendations in the top 10% by quantity or value in the cluster. Using these highlighted lanes, you can further analyze the inventory rebalancing results.

- The Manage Rebalancing Recommendations page.

Use this page to view and manually release the planned orders recommended by the inventory rebalancing process.

The **Initial Excess at Source** column provides the excess inventory at the source location for an item before the planned order is released. The **Initial Shortage at Destination** column provides the inventory shortage at the destination location for the item before the planned order is released.

- The Rebalancing Analysis page.

  Use this page to analyze the time-phased inventory rebalancing results for an item-location combination. You can analyze how various measures, such as Projected Inventory, Initial Excess for Rebalancing, and Initial Shortage for Rebalancing, are calculated. You can also view the inbound and outbound planned shipments.

- The Rebalancing Details by Item Location page.

  Use this page to view the excess inventory and inventory shortage for an item across the locations of a cluster. The page also provides information about the excess and shortage computation windows.

**Note:** You must add the Cluster and Source dimensions to the dimension catalog of the replenishment plan for which you've selected the **Rebalance inventory** check box on the Plan Options page.

## Use the Analytics for Inventory Rebalancing

The following is a sample workflow for using the inventory rebalancing analytics:

1. After running your replenishment plan, open it, and select the Replenishment and Rebalancing Plan Summary page layout.
2. Click the Rebalancing Performance infotile.
3. Right-click a bar on the Shortages by Cluster or Excess by Cluster graph, and click **Drill To** > **Default Group** > **Cluster Analysis by Quantity** or **Drill To** > **Default Group** > **Cluster Analysis by Value**.

   The Cluster Analysis by Quantity or Cluster Analysis by Value page opens.
4. Right-click a shipping lane, and click **Drill To** > **Manage Rebalancing Recommendations**.

   The Manage Rebalancing Recommendations page opens with the planned orders recommended for the source location and destination location.
5. Review the planned orders, modify them if required, and release them.

   To analyze a planned order before releasing it, do the following:

   a. Select the planned order.
   b. Click **Drill To** > **Default Group** > **Rebalancing Analysis** or **Drill To** > **Default Group** > **Rebalancing Details by Item Location**.

      The Rebalancing Analysis or Rebalancing Details by Item Location page opens.

# 17 End Item Substitution and Supersession

## Overview of End Item Substitution and Supersession

End item substitution and supersession enable you to increase customer satisfaction while minimizing excess and obsolete inventory.

These are brief descriptions of end item substitution and supersession and their applicability to replenishment plans:

- End item substitution substitutes one item for another item during demand fulfillment for your replenishment plan. The substitute item's supply is used, and a replenishment order isn't created for the demanded item.
- Supersession replaces an item with a newer or more advanced version during demand fulfillment for your replenishment plan. The supply of the supersession item is used, and a replenishment order isn't created for the demanded item.

In the Product Information Management work area, on the Manage Item Relationships page, you specify the substitution or supersession relationship between the items. The type of the relationship between the items is Substitute for a substitution relationship and Superseded for a supersession relationship. The relationships can be unilateral or bilateral. By extending the substitution or supersession relationship between two items to other items, you can create a substitution or supersession chain, which can be specific to an organization or all child organizations under a master organization. The substitution or supersession chain contains all organizations to which the source item, substitute item, and supersession item are assigned. You also can import substitution and supersession relationships using the file-based data import (FBDI) template named Supply Chain Planning Item Substitute (ScpItemSubstituteImportTemplate.xlsm).

By implementing end item substitution and supersession, you get these benefits:

- You can optimize inventory costs by minimizing excess and obsolete inventory.

  By designing your substitution or supersession chain and assigning ranks, you can ensure that the excess of the substitute or superseded item is used before orders are placed for the item.

  If no excess is available, a replenishment order is placed for the item.

  - If the sourcing rule for the item is Buy from, the order is placed according to your selection in the **Create Supply** field and date in the **Create Supply After** field for the item in the Product Information Management work area. Or, the imported values are checked for the equivalent columns in the import template named Supply Chain Planning Items (ScpItemImportTemplate.xlsm).
  - If the sourcing rule is Transfer from, the replenishment order is always placed.
- You can improve customer satisfaction.

  For example, during a period of high demand in the retail industry, you can configure item B as a substitute for item A. If the supply for item A on a particular day is three units, and the demand is four units, then one unit of item B is used for fulfilling the demand for item A.
- You can configure analysis hierarchies for items with bidirectional relationships. An analysis hierarchy is a Product dimension hierarchy that consists of a catalog, categories (primes), and associated items. You can use

these categories in tables and graphs to view the results of replenishment planning at the aggregate (prime) level for your substitution or supersession chains.

The analysis hierarchy feature is especially useful in the service parts industry.

## Additional Things to Consider When You Implement End Item Substitution and Supersession

When you implement end item substitution and supersession, here are some additional things to consider:

- In a replenishment plan that's enabled for incremental planning and end item substitution and supersession, if an item with a change in net supplies and demands is a part of a substitution or supersession chain, the entire chain is replanned.
- If you enable your replenishment plan for end item substitution and supersession and simulate a change to the policy parameters, policy values, supplies and demands, or attributes for an item-location combination, the entire substitution or supersession chain is replanned.
- You can use the feature for end item substitution and supersession in a plan that's enabled for multiechelon replenishment planning.

  The supply of the substitute or supersession item at a source location can be used for meeting the requirement for the demanded item at the destination location. A planned order is created for moving the substitute or supersession item from the source location to the destination location. At the destination location, substitute supply is created for the demanded item, and substitute demand is created for the substitute or supersession item.

  The item relationship at the destination location is respected. If the item relationship at the destination location isn't the same as that at the source location, then substitution or supersession isn't performed.
- These are the two order types that represent supplies and demands for end item substitution and supersession in the Supplies and Demands table:
  - Substitute supply
  - Substitute demand

  The Firm Date, Firm Quantity, and Firm Status columns in the table aren't editable for these order types.
- You can view information about end item substitution and supersession in these columns in the Supplies and Demands table:
  - Requested Item
  - Requested Item Description
  - Supplied Item
  - Supplied Item Description
- For a substitution or supersession chain, Oracle Replenishment Planning builds implied relationships so long as the relationships in the chain are only substitution relationships or only supersession relationships.

Replenishment Planning doesn't build implied relationships for a chain that contains both substitution and supersession relationships.

Consider a substitution chain with items A, B, and C, in which B is a substitute of A, and C is a substitute of B. The following figure depicts this substitution chain:

For this substitution chain, Replenishment Planning builds an implied substitution relationship between C and A.

Consider a supersession chain with items D, E, and F, in which E supersedes D, and F supersedes E. The following figure depicts this supersession chain:

For this supersession chain, Replenishment Planning builds an implied supersession relationship between F and D.

Consider a chain with items G, H, and I, in which H is a substitute for G, while I supersedes H. The following figure depicts this chain:

For this chain, Replenishment Planning won't build any implied relationship between I and G. However, Replenishment Planning builds the substitution relationship between H and G and supersession relationship between I and H.

- The items belonging to the substitution or supersession chain can belong to different segments of the segment group for your replenishment plan.
- If the end date for an item revision is before the plan start date, then the item revision is ignored by the replenishment plan. The affected substitution or supersession chain isn't considered by the replenishment plan, and the items are individually planned.

*Related Topics*

- Overview of Multiechelon Replenishment Planning
- How You Use the End Item Substitution and Supersession Feature
- How End Item Substitution and Supersession Are Performed
- How You Create and Use Analytics for Analysis Hierarchies

# How You Use the End Item Substitution and Supersession Feature

This topic provides the high-level process that you must follow to use the end item substitution and supersession feature.

1. Set up your item relationships and substitution and supersession chains in Oracle Fusion Cloud Product Lifecycle Management.

   Or, import your item relationships using the file-based data import (FBDI) template named Supply Chain Planning Item Substitute.
2. Collect the information for your item-location combinations using the collections functionality or import template named Supply Chain Planning Items.
3. Set up your replenishment plan.

   On the General subtab on the Supply tab on the Plan Options page, under Item Relationships, select an option in the **Use of Related Items Supplies** field. Then, enter a value in the **Lead Time Multiplier for Excess Window** field.

   If your plan isn't using the Default Replenishment Planning Catalog or Incremental Replenishment Planning Default Catalog, add the measures for end item substitution and supersession to your measure catalog.
4. Optionally, on the Manage Analysis Hierarchies for Related Items page, set up your analysis hierarchies for items with bidirectional relationships. Then, submit the Create Analysis Hierarchies for Related Items scheduled process.

   Include the newly created Product hierarchies in the dimension catalog for your replenishment plan.
5. Run your replenishment plan.

   End item substitution and supersession are performed for your replenishment plan. The substitution and supersession chains are constructed, excess and shortage are calculated for each item in your substitution and supersession chains, and substitute supplies, substitute demands, and planned orders are created.
6. Manually release your planned orders on the Supplies and Demands page if you haven't enabled your replenishment plan for automatic release of planned orders.
7. If you've generated analysis hierarchies, create user-defined tables, and set up the analytics for your analysis hierarchies so that you can review the data.

*Related Topics*

- Overview of End Item Substitution and Supersession
- Item Relationship Options for Replenishment Plans
- Create Analysis Hierarchies for Related Items
- How You Create and Use Analytics for Analysis Hierarchies
- Measures for End Item Substitution and Supersession

# How End Item Substitution and Supersession Are Performed

End item substitution and supersession use the same process that's described in this topic.

1. The substitution or supersession chain is constructed for each item-location combination for which replenishment planning is to be done.

   The substitution or supersession chain is processed in sequence from the left (earliest revision) to the right (latest revision). Thus, new orders are avoided for the early revisions, and their excess quantities are used.
2. On Day 1 of the planning horizon, the excess and shortage are computed for each item in the substitution or supersession chain.

   The excess and shortage are calculated according to the values in the Item Relationships section on the General subtab on the Supply tab on the Plan Options page for the replenishment plan.
3. If the item has a shortage, then the substitute items or supersession items in the substitution or supersession chain are considered according to the ranks of the item relationships.
4. If no substitute item or supersession item has an excess in the excess window, then the Create Supply and Create Supply After attributes are checked for the item.

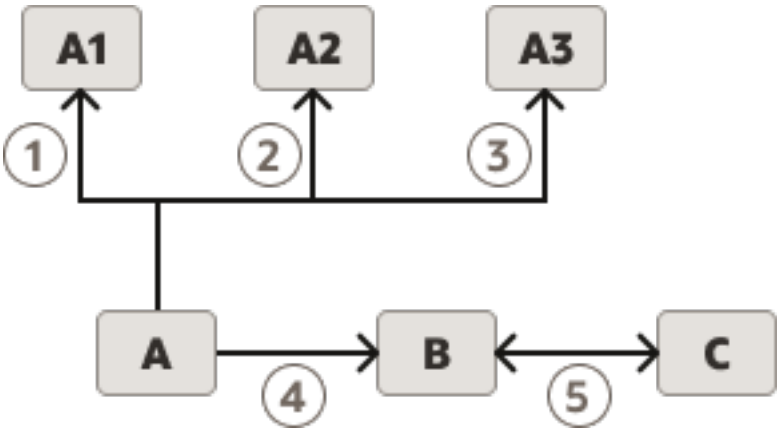
   If supply can't be created for the item, then the same checks are performed for the substitute items or supersession items according to the ranks of the item relationships.
5. A planned order is created according to the applicable policy.
6. The Substitute Demand and Substitute Supply measures are updated so that the substitution or supersession is reflected.
7. Steps 2 through 6 are repeated for the item-location combination for the remaining days of the planning horizon.

**Example for Process of End Item Substitution**

Consider a substitution chain in which we have items A, A1, A2, A3, B, and C.

Item A can be substituted by items A1, A2, A3, B, and C, and the ranks of the item relationships are 1, 2, 3, 4, and 5. Moreover, items B and C have a bidirectional relationship.

This figure depicts the substitution chain:



End item substitution is performed for this substitution chain as follows:

1. The substitution chain is constructed for item A.
2. On Day 1 of the planning horizon, the excess and shortage for items A, A1, A2, A3, B, and C are calculated.
    a. If item A has a shortage, then the substitute items are considered according to the ranks of the item relationships.

       Item A1 is checked to see if it has an excess in the excess window. If item A1 doesn't have an excess, then item A2 is considered and so on.
3. If no item has an excess, then item A is checked for the Create Supply attribute.

   If the value is Yes, then supply is created for item A. The Create Supply After attribute is considered.

   If the value is No, then the substitute items are considered according to the ranks of the item relationships. The same checks are done for item A1 and so on.
4. A planned order is created according to the applicable policy.
5. The Substitute Demand and Substitute Supply measures are updated so that the substitution is reflected.
6. On each remaining day of the planning horizon, Steps 2 through 5 are repeated.

**Example for Process of Supersession**

Consider a supersession chain in which we have items A, B, and C.

Item A is superseded by item B, item B is superseded by item C, and the ranks of the item relationships are 1 and 2. The relationships among the items are unidirectional.

This figure depicts the supersession chain:

Supersession is performed for this supersession chain as follows:

1. The supersession chain is constructed for item A.
2. On Day 1 of the planning horizon, the excess and shortage for items A, B, and C are calculated.
    a. If item A has a shortage, then the supersession items are considered according to the ranks of the item relationships.

       Item B is checked to see if it has an excess in the excess window. If item B doesn't have an excess, then item C is considered.
3. If no item has an excess, then item A is checked for the Create Supply attribute.

   If the value is Yes, then supply is created for item A. The Create Supply After attribute is considered.

   If the value is No, then the supersession items are considered according to the ranks of the item relationships. The same checks are done for item B and so on.
4. A planned order is created according to the applicable policy.
5. The Substitute Demand and Substitute Supply measures are updated so that the supersession is reflected.
6. On each remaining day of the planning horizon, Steps 2 through 5 are repeated.

*Related Topics*

- Overview of End Item Substitution and Supersession
- Item Relationship Options for Replenishment Plans
- Examples of End Item Substitution and Supersession

# Create Analysis Hierarchies for Related Items

Use the Manage Analysis Hierarchies for Related Items page to create analysis hierarchies for analyzing the results of end item substitution and supersession in your replenishment plan.

You can configure analysis hierarchies for items with bidirectional relationships. An analysis hierarchy is a Product dimension hierarchy that consists of a catalog, categories (primes), and associated items. You can use these categories in tables and graphs to view the results of replenishment planning at the aggregate (prime) level for your substitution and supersession chains.
Note these points while creating analysis hierarchies:

- You can create multiple catalogs for your replenishment plan. You can then configure your tables and graphs for display of one of the catalogs.
- For your analysis, you'll need to create copies of the Replenishment Workbench table for every catalog that you create.

  Therefore, use your judgment while creating catalogs.
- Different organizations can have different substitution and supersession chains. Even if two organizations share the same chain, they might have different subsets of the items in the chain, and the item sequence can be different.

  Therefore, while selecting locations, ensure that the resulting analysis hierarchies cover the maximum number of organizations in your catalog.
- Only those item relationships that are effective on the date the analysis hierarchy is created are considered.

1. On the Tasks panel tab, under Plan Inputs, click **Manage Analysis Hierarchies for Related Items.**
   The Manage Analysis Hierarchies for Related Items page opens.
2. Click the **Add Row** icon.
   An empty row appears in the table on the page.
3. Under **Product Hierarchy**, enter the name of the Product dimension catalog that you want to create and under which categories must be created for your bidirectional substitution and supersession chains.

   > **Note:** You can't use an existing catalog for creating the categories.

4. In **Description**, enter a description for the analysis hierarchy (catalog).
5. In **Source System**, select the source system that contains the items for your replenishment plan.
6. Under **Locations**, click the **Locations** icon.
   The Analysis Hierarchy Locations dialog box opens and displays the available locations for the source system.

   > **Note:** Subinventories aren't available for selection in the dialog box.

7. Move the required locations from the Available pane to the Selected pane, and click **OK**.
8. Click **Save**.
9. With the new row selected, click the **Create Analysis Hierarchies** button to submit the Create Analysis Hierarchies for Related Items scheduled process.

   A warning message is displayed.

   > **Note:** You can also go to the Scheduled Processes work area, search for the Create Analysis Hierarchies for Related Items scheduled process, and submit it for the created analysis hierarchy.

10. Click **Yes**.

    A dialog box is displayed with the request number of the Create Analysis Hierarchies for Related Items scheduled process that was submitted. You can use this request number to search for the result of the scheduled process in the Scheduled Processes work area.

    The table row displays information about the status of the submitted request.

11. Click **OK**.

    Click **View** > **Refresh** to update the displayed information for the newly created analysis hierarchy.

*Related Topics*

- Overview of End Item Substitution and Supersession
- Examples of Analysis Hierarchies
- Edit an Analysis Hierarchy

# Edit an Analysis Hierarchy

You can delete an analysis hierarchy or edit its description.

You can delete the analysis hierarchy only if it's not a part of any dimension catalog. Otherwise, you first have to remove the analysis hierarchy from the dimension catalog and then delete the analysis hierarchy.

To delete the analysis hierarchy, on the Manage Analysis Hierarchies for Related Items page, select the analysis hierarchy, and click the **Delete** icon. The Delete Analysis Hierarchy for Related Items scheduled process is initiated. Note down the request number so that you can track the status of the scheduled process in the Scheduled Processes work area.

You can also directly submit the Delete Analysis Hierarchy for Related Items scheduled process in the Scheduled Processes work area.

To edit the description of the analysis hierarchy, on the Manage Analysis Hierarchies for Related Items page, select the analysis hierarchy, and edit the text under **Description**.

*Related Topics*

- Overview of End Item Substitution and Supersession
- Examples of Analysis Hierarchies
- Create Analysis Hierarchies for Related Items

# Examples of Analysis Hierarchies

This topic explains how analysis hierarchies for end item substitution or supersession are created.

In the rest of this topic, one simple example and four detailed examples of analysis hierarchies are provided.

## Simple Example of Analysis Hierarchy

Consider an organization that contains these substitution or supersession chains:

> **Note:** When the left-angle bracket (<) and right-angle bracket (>) are used together, a bidirectional relationship is indicated. When the right-angle bracket is used by itself, a unidirectional relationship is indicated.

- A < > B < > C < > D
- X < > Y < > Z < > Z1
- F1 < > F2 > F3 < > F4

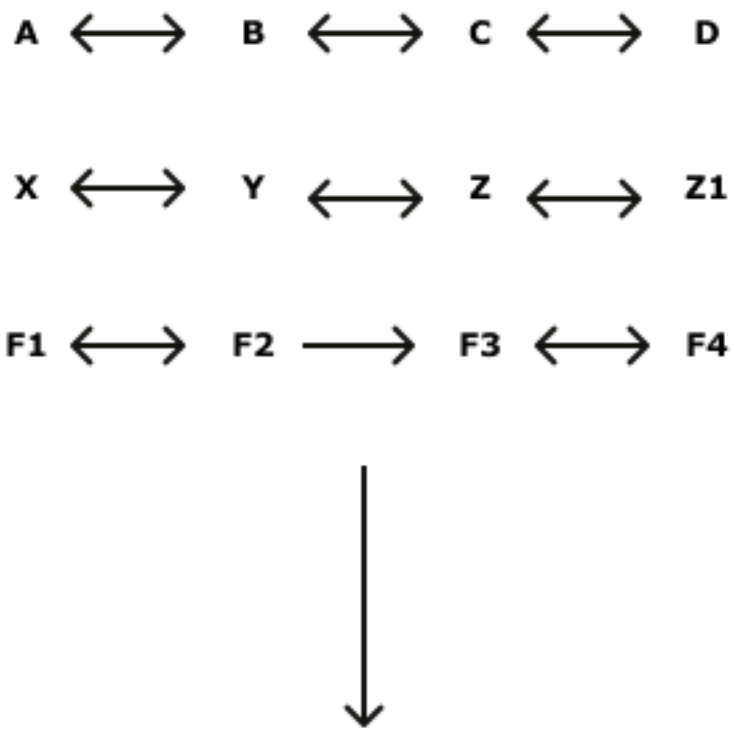
For these substitution or supersession chains, you can create a Product dimension hierarchy for a catalog called North America that contains these categories (primes):

- Category D that contains A, B, C, D.
- Category Z1 that contains X, Y, Z, and Z1
- Category F2 that contains F1 and F2
- Category F4 that contains F3 and F4

Note that a category is created for F1 and F2 and another for F3 and F4 because F2 and F3 don't have a bidirectional relationship.

Also, note that each category takes its name from the right-most item in the substitution or supersession chain.

This figure depicts the North America catalog:




| Catalog | North America | | | |
|---|---|---|---|---|
| **Category** | D | Z1 | F2 | F4 |
| **Items** | A<br>B<br>C<br>D | X<br>Y<br>Z<br>Z1 | F1<br>F2 | F3<br>F4 |

## Detailed Example 1 of Analysis Hierarchy

In this detailed example, we have two regions. The locations in the regions mostly contain the same items. Therefore, we can create an analysis hierarchy for each region.

These are the locations and items with bidirectional relationships:

- M1 (for North America)
  - A < > B < > C
  - X < > Y < > Z
  - F1 < > F2 < > F3 < > H4
- M2 (for North America)
  - A < > B < > C < > D
  - X < > Y < > Z < > Z1
  - F1 < > F2 < > F3 < > H4
- M3 (for North America)

  This location is selected for the analysis hierarchy.
  - A < > B < > C < > D < > E
  - X < > Y < > Z < > Z1 < > Z2
  - F1 < > F2 < > F3 < > H4
- M4 (for North America)
  - A < > B < > C < > D < > E
  - X < > Y < > Z < > Z1 < > Z2
  - F1 < > F2 < > F3 < > F4
- M5 (for North America)
  - A < > B < > C < > D < > E
  - X < > Y < > Z < > Z1 < > Z2
  - F1 < > F2 < > F3 < > F4
- S1 (for the Europe, Middle East, and Africa (EMEA) region)
  - A < > B < > C
  - X < > Y < > Z
  - F1 < > F2 < > F3 < > H5
- S2 (for the EMEA region)
  - A < > B < > C < > D1
  - X < > Y < > Z < > Z3
  - F1< > F2 < > F3 < > H5
- S3 (for the EMEA region)
  - A < > B < > C < > D1 < > E1
  - X < > Y < > Z < > Z3 < > Z4
  - F1< > F2 < > F3 < > H5
- S4 (for the EMEA region)

  This location is selected for the analysis hierarchy.

- A < > B < > C < > D1 < > E1
- X < > Y < > Z < > Z3 < > Z4
- F1< > F2 < > F3 < > F5

- S5 (for the EMEA region)
  - A < > B < > C < > D1 < > E1
  - X < > Y < > Z < > Z3 < > Z4
  - F1< > F2 < > F3 < > F5

This figure depicts the item relationships for this example:

| | Location | North America | | | | | Category (Prime) |
|---|---|---|---|---|---|---|---|
| 1 | M1 | A | B | C | | | E |
| | M2 | A | B | C | D | | |
| | **M3** | **A** | **B** | **C** | **D** | **E** | |
| | M4 | A | B | C | D | E | |
| | M5 | A | B | C | D | E | |
| 2 | M1 | X | Y | Z | | | Z2 |
| | M2 | X | Y | Z | Z1 | | |
| | **M3** | **X** | **Y** | **Z** | **Z1** | **Z2** | |
| | M4 | X | Y | Z | Z1 | Z2 | |
| | M5 | X | Y | Z | Z1 | Z2 | |
| 3 | M1 | F1 | F2 | F3 | H4 | | H4 |
| | M2 | F1 | F2 | F3 | H4 | | |
| | **M3** | **F1** | **F2** | **F3** | **H4** | | |
| | M4 | F1 | F2 | F3 | F4 | | |
| | M5 | F1 | F2 | F3 | F4 | | |

| | Location | EMEA | | | | | Category (Prime) |
|---|---|---|---|---|---|---|---|
| 1 | S1 | A | B | C | | | E1 |
| | S2 | A | B | C | D1 | | |
| | S3 | A | B | C | D1 | E1 | |
| | **S4** | **A** | **B** | **C** | **D1** | **E1** | |
| | S5 | A | B | C | D1 | E1 | |
| 2 | S1 | X | Y | Z | | | Z4 |
| | S2 | X | Y | Z | Z3 | | |
| | S3 | X | Y | Z | Z3 | Z4 | |
| | **S4** | **X** | **Y** | **Z** | **Z3** | **Z4** | |
| | S5 | X | Y | Z | Z3 | Z4 | |
| 3 | S1 | F1 | F2 | F3 | H5 | | F5 |
| | S2 | F1 | F2 | F3 | H5 | | |
| | S3 | F1 | F2 | F3 | H5 | | |
| | **S4** | **F1** | **F2** | **F3** | **F5** | | |
| | S5 | F1 | F2 | F3 | F5 | | |

On the Manage Analysis Hierarchies for Related Items page, the created hierarchies (catalogs) and selected locations are as follows:

- North America, for location M3
- EMEA, for location S4

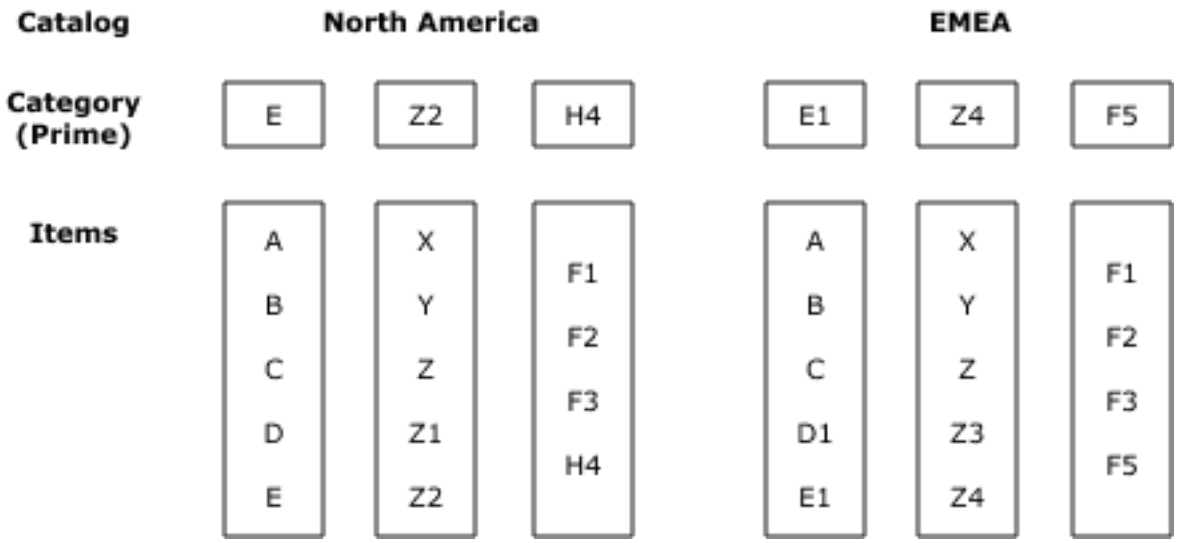
This figure depicts the created hierarchies and selected locations:

| Hierarchy (Catalog) | Location |
|---|---|
| North America | M3 |
| EMEA | S4 |

For these bidirectional item relationships and selections, these analysis hierarchies are created:

- North America (catalog), with categories E (for items A, B, C, D, and E), Z2 (for items X, Y, Z, Z1, and Z2), and H4 (for items F1, F2, F3, and H4)
- EMEA (catalog), with categories E1 (for items A, B, C, D1, and E1), Z4 (for items X, Y, Z, Z3, and Z4), and F5 (for items F1, F2, F3, and F5)

This figure depicts the analysis hierarchies for the example:




Note these points about the example:

- The organizations in North America and EMEA have different sets of items and therefore require separate analysis hierarchies. For example, M3 has items A, B, C, D, and E, while S3 has items A, B, C, D1, and E1.
- The E and Z2 categories are comprehensive enough for analysis of the substitution or supersession chains in M1, M2, M3, M4, and M5. However, the H4 category can cover analysis of only the substitution or supersession chains for M1, M2, and M3.
- The E1 and Z4 categories are comprehensive enough for analysis of the substitution or supersession chains in S1, S2, S3, S4, and S5. However, the F5 category can cover analysis of only the substitution or supersession chains for S4 and S5.
- For simplicity, the items have been listed in a sequence. However, the sequence isn't important in a substitution or supersession chain. For example, M1 could have had a substitution chain with items A, C, and E, and the substitution chain would still have been covered by the E category.

# Detailed Example 2 of Analysis Hierarchy

In this detailed example, we have two regions. The locations in the regions contain multiple substitution or supersession chains, and selecting one location in each region with a representative analysis hierarchy is difficult. Therefore, we can create two analysis hierarchies for each region to cater to all the available substitution or supersession chains.

These are the locations and items with bidirectional relationships:

- M1 (for North America)
  - A < > B < > C
  - X < > Y < > Z
  - F1 < > F2 < > F3 < > H4
- M2 (for North America)
  - A < > B < > C < > D
  - X < > Y < > Z < > Z1
  - F1 < > F2 < > F3 < > H4
- M3 (for North America)

  This location is selected for the analysis hierarchy.

  - A < > B < > C < > D < > E
  - X < > Y < > Z < > Z1 < > Z2
  - F1 < > F2 < > F3 < > H4
- M4 (for North America)

  This location is selected for the analysis hierarchy.

  - A < > B < > C < > D < > E
  - X < > Y < > Z < > Z1 < > Z3
  - F1 < > F2 < > F3 < > F4
- M5 (for North America)
  - A < > B < > C < > D < > E
  - X < > Y < > Z < > Z1 < > Z3
  - F1 < > F2 < > F3 < > F4
- S1 (for the EMEA region)
  - A < > B < > C
  - X < > Y < > Z
  - F1 < > F2 < > F3 < > H5
- S2 (for the EMEA region)
  - A < > B < > C < > D1
  - X < > Y < > Z < > Z3
  - F1< > F2 < > F3 < > H5

- S3 (for the EMEA region)

  This location is selected for the analysis hierarchy.

  - A < > B < > C < > D1 < > E1
  - X < > Y < > Z < > Z3 < > Z4
  - F1< > F2 < > F3 < > H5

- S4 (for the EMEA region)

  This location is selected for the analysis hierarchy.

  - A < > B < > C < > D1 < > E1
  - X < > Y < > Z < > Z3 < > Z5
  - F1< > F2 < > F3 < > F5

- S5 (for the EMEA region)
  - A < > B < > C < > D1 < > E1
  - X < > Y < > Z < > Z3 < > Z5
  - F1< > F2 < > F3 < > F5

This figure depicts the item relationships for this example:

| | Location | North America | | | | | Category (Prime) |
|---|---|---|---|---|---|---|---|
| 1 | M1 | A | B | C | | | |
| | M2 | A | B | C | D | | |
| | **M3** | **A** | **B** | **C** | **D** | **E** | E |
| | **M4** | **A** | **B** | **C** | **D** | **E** | E |
| | M5 | A | B | C | D | E | |
| 2 | M1 | X | Y | Z | | | |
| | M2 | X | Y | Z | Z1 | | |
| | **M3** | **X** | **Y** | **Z** | **Z1** | **Z2** | Z2 |
| | **M4** | **X** | **Y** | **Z** | **Z1** | **Z3** | Z3 |
| | M5 | X | Y | Z | Z1 | Z3 | |
| 3 | M1 | F1 | F2 | F3 | H4 | | |
| | M2 | F1 | F2 | F3 | H4 | | |
| | **M3** | **F1** | **F2** | **F3** | **H4** | | H4 |
| | **M4** | **F1** | **F2** | **F3** | **F4** | | F4 |
| | M5 | F1 | F2 | F3 | F4 | | |

| | Location | EMEA | | | | | Category (Prime) |
|---|---|---|---|---|---|---|---|
| 1 | S1 | A | B | C | | | |
| | S2 | A | B | C | D1 | | |
| | **S3** | **A** | **B** | **C** | **D1** | **E1** | E1 |
| | **S4** | **A** | **B** | **C** | **D1** | **E1** | E1 |
| | S5 | A | B | C | D1 | E1 | |
| 2 | S1 | X | Y | Z | | | |
| | S2 | X | Y | Z | Z3 | | |
| | **S3** | **X** | **Y** | **Z** | **Z3** | **Z4** | Z4 |
| | **S4** | **X** | **Y** | **Z** | **Z3** | **Z5** | Z5 |
| | S5 | X | Y | Z | Z3 | Z5 | |
| 3 | S1 | F1 | F2 | F3 | H5 | | |
| | S2 | F1 | F2 | F3 | H5 | | |
| | **S3** | **F1** | **F2** | **F3** | **H5** | | H5 |
| | **S4** | **F1** | **F2** | **F3** | **F5** | | F5 |
| | S5 | F1 | F2 | F3 | F5 | | |

On the Manage Analysis Hierarchies for Related Items page, the created hierarchies (catalogs) and selected locations are as follows:

- North America - M3, for location M3
- North America - M4, for location M4
- EMEA - S3, for location S3
- EMEA - S4, for location S4

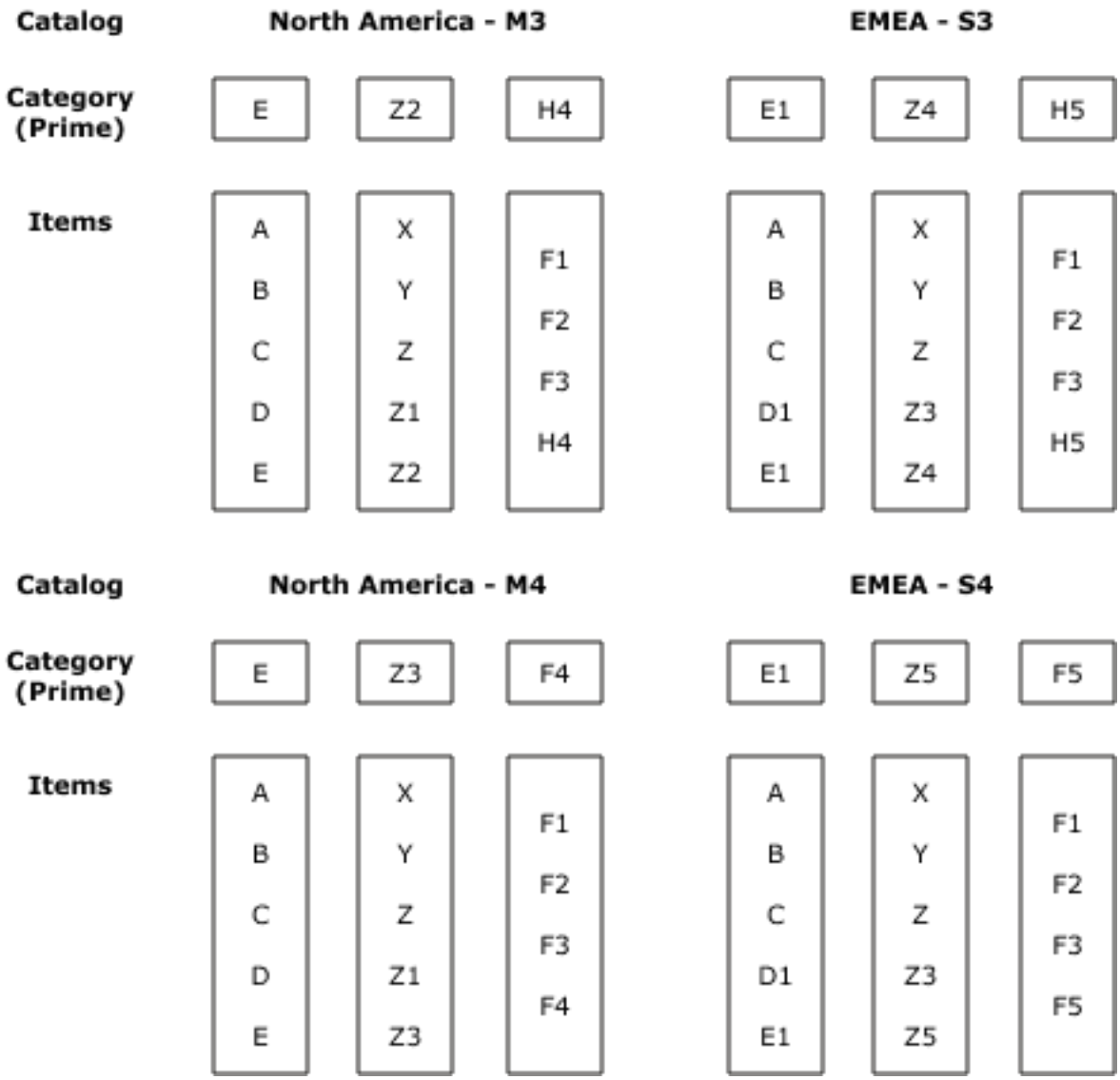
This figure depicts the created hierarchies and selected locations:

| Hierarchy (Catalog) | Location |
|---|---|
| North America - M3 | M3 |
| North America - M4 | M4 |
| EMEA - S3 | S3 |
| EMEA - S4 | S4 |

For these bidirectional item relationships and selections, these analysis hierarchies are created:

- North America - M3 (catalog), with categories E (for items A, B, C, D, and E), Z2 (for items X, Y, Z, Z1, and Z2), and H4 (for items F1, F2, F3, and H4)
- North America - M4 (catalog), with categories E (for items A, B, C, D, and E), Z3 (for items X, Y, Z, Z1, and Z3), and F4 (for items F1, F2, F3, and F4)
- EMEA - S3 (catalog), with categories E1 (for items A, B, C, D1, and E1), Z4 (for items X, Y, Z, Z3, and Z4), and H5 (for items F1, F2, F3, and H5)
- EMEA - S4 (catalog), with categories E1 (for items A, B, C, D1, and E1), Z5 (for items X, Y, Z, Z3, and Z5), and F5 (for items F1, F2, F3, and F5)

This figure depicts the analysis hierarchies for the example:




Note these points about the example:

- The organizations in North America and EMEA have different sets of items and therefore require separate analysis hierarchies. For example, M3 has items A, B, C, D, and E, while S3 has items A, B, C, D1, and E1.
- Within each region, there are subtle changes in the substitution or supersession chains. For example, M3 has items X, Y, Z, Z1, and Z2, while M4 has items X, Y, Z, Z1, and Z3.
- The E category is comprehensive enough for analysis of the substitution or supersession chains in M1, M2, M3, M4, and M5. However, the Z2 category can cover analysis of only the substitution or supersession chains for M1, M2, and M3, and the Z3 category can cover analysis of only the substitution or supersession chains for M1, M2, M4, and M5. Similarly, the H4 category can cover analysis of only the substitution or supersession chains for M1, M2, and M3, and the F4 category can cover analysis of only the substitution or supersession chains for M4 and M5.
- The E1 category is comprehensive enough for analysis of the substitution or supersession chains in S1, S2, S3, S4, and S5. However, the Z4 category can cover analysis of only the substitution or supersession chains for S1, S2, and S3, and the Z5 category can cover analysis of only the substitution or supersession chains for S1, S2, S4,

and S5. Similarly, the H5 category can cover analysis of only the substitution or supersession chains in S1, S2, and S3, and the F5 category can cover analysis of only the substitution or supersession chains for S4 and S5.

- For simplicity, the items have been listed in a sequence. However, the sequence isn't important in a substitution or supersession chain. For example, M1 could have had a substitution chain with items A, C, and E, and the substitution chain would still have been covered by the E category.

## Detailed Example 3 of Analysis Hierarchy

In this detailed example, we have two regions. The locations in the regions mostly contain the same items. Therefore, we can create an analysis hierarchy for both the regions. However, one substitution or supersession chain won't be covered by any analysis hierarchy, and duplicate categories won't be created.

These are the locations and items with bidirectional relationships:

- M1 (for North America)
  - A < > B < > C
  - X < > Y < > Z
  - F1 < > F2 < > F3 < > H4
- M2 (for North America)
  - A < > B < > C < > D
  - X < > Y < > Z < > Z1
  - F1 < > F2 < > F3 < > H4
- M3 (for North America)
  This location is selected for the analysis hierarchy.
  - A < > B < > C < > D < > E
  - X < > Y < > Z < > Z1 < > Z2
  - F1 < > F2 < > F3 < > H4
- M4 (for North America)
  - A < > B < > C < > D < > E
  - X < > Y < > Z < > Z1 < > Z2
  - F1 < > F2 < > F3 < > F4
- M5 (for North America)
  - A < > B < > C < > D < > E
  - X < > Y < > Z < > Z1 < > Z2
  - F1 < > F2 < > F3 < > H4
- S1 (for the EMEA region)
  - A < > B < > C
  - X < > Y < > Z
  - P1 < > P2 < > P3 < > P4
- S2 (for the EMEA region)
  - A < > B < > C < > D

- X < > Y < > Z < > Z1
- P1 < > P2 < > P3 < > P4

- S3 (for the EMEA region)
  - A < > B < > C < > D < > E
  - X < > Y < > Z < > Z1 < > Z2
  - P1 < > P2 < > P3 < > P4
- S4 (for the EMEA region)

  This location is selected for the analysis hierarchy.
  - A < > B < > C < > D < > E
  - X < > Y < > Z < > Z1 < > Z2
  - P1 < > P2 < > P3 < > P4
- S5 (for the EMEA region)
  - A < > B < > C < > D < > E
  - X < > Y < > Z < > Z1 < > Z2
  - P1 < > P2 < > P3 < > P4

This figure depicts the item relationships for this example:

| | Location | North America | | | | | Category (Prime) |
|---|---|---|---|---|---|---|---|
| 1 | M1 | A | B | C | | | E |
| | M2 | A | B | C | D | | |
| | **M3** | **A** | **B** | **C** | **D** | **E** | |
| | M4 | A | B | C | D | E | |
| | M5 | A | B | C | D | E | |
| 2 | M1 | X | Y | Z | | | Z2 |
| | M2 | X | Y | Z | Z1 | | |
| | **M3** | **X** | **Y** | **Z** | **Z1** | **Z2** | |
| | M4 | X | Y | Z | Z1 | Z2 | |
| | M5 | X | Y | Z | Z1 | Z2 | |
| 3 | M1 | F1 | F2 | F3 | H4 | | H4 |
| | M2 | F1 | F2 | F3 | H4 | | |
| | **M3** | **F1** | **F2** | **F3** | **H4** | | |
| | M4 | F1 | F2 | F3 | F4 | | |
| | M5 | F1 | F2 | F3 | H4 | | |

| | Location | EMEA | | | | | Category (Prime) |
|---|---|---|---|---|---|---|---|
| 1 | S1 | A | B | C | | | E |
| | S2 | A | B | C | D | | |
| | S3 | A | B | C | D | E | |
| | S4 | A | B | C | D | E | |
| | S5 | A | B | C | D | E | |
| 2 | S1 | X | Y | Z | | | Z2 |
| | S2 | X | Y | Z | Z1 | | |
| | S3 | X | Y | Z | Z1 | Z2 | |
| | S4 | X | Y | Z | Z1 | Z2 | |
| | S5 | X | Y | Z | Z1 | Z2 | |
| 3 | S1 | P1 | P2 | P3 | P4 | | P4 |
| | S2 | P1 | P2 | P3 | P4 | | |
| | S3 | P1 | P2 | P3 | P4 | | |
| | **S4** | **P1** | **P2** | **P3** | **P4** | | |
| | S5 | P1 | P2 | P3 | P4 | | |

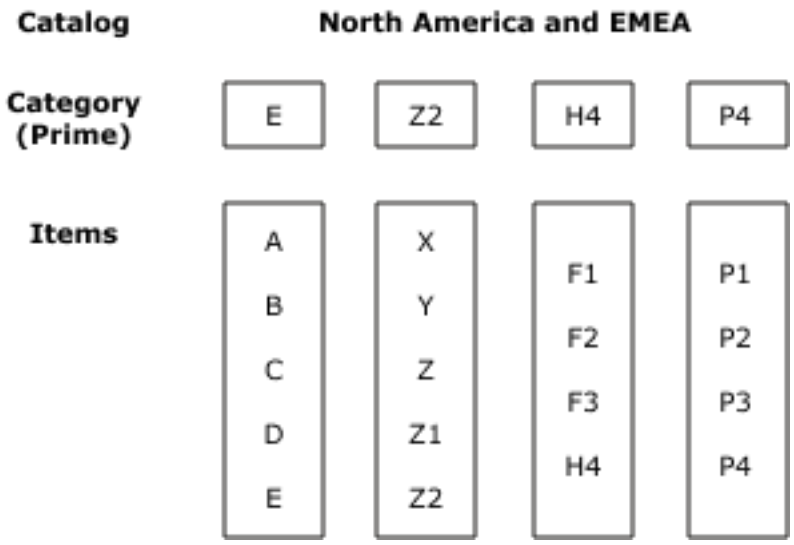
On the Manage Analysis Hierarchies for Related Items page, the created hierarchy (catalog) is North America and EMEA for the M3 and S4 locations.

This figure depicts the created hierarchy and selected locations:

| Hierarchy (Catalog) | Location |
|---|---|
| North America and EMEA | M3, S4 |

For these bidirectional item relationships and selections, the North America and EMEA analysis hierarchy (catalog) is created, with categories E (for items A, B, C, D, and E), Z2 (for items X, Y, Z, Z1, and Z2), H4 (for items F1, F2, F3, and H4), and P4 (for items P1, P2, P3, and P4).

This figure depicts the analysis hierarchies for the example:




Note these points about the example:

- The organizations in North America and EMEA have the same substitution or supersession chains and also different substitution or supersession chains. For example, M1, M2, M3, and M5 have items F1, F2, F3, and H4, while M4 has items F1, F2, F3, and F4. S1, S2, S3, S4, and S5 have items P1, P2, P3, and P4.
- The E, Z2, and P4 categories are comprehensive enough for analysis of the substitution or supersession chains in M1, M2, M3, M4, and M5, and S1, S2, S3, S4, and S5.
- The H4 category is comprehensive enough for analysis of the substitution or supersession chains in M1, M2, M3, and M5. However, the category can't cover analysis of the substitution or supersession chain for M4.
- Only one instance of the E category is created for organization M3. A duplicate of the category isn't created for organization S4.
- Only one instance of the Z2 category is created for organization M3. A duplicate of the category isn't created for organization S4.
- For simplicity, the items have been listed in a sequence. However, the sequence isn't important in a substitution or supersession chain. For example, M1 could have had a substitution chain with items A, C, and E, and the substitution chain would still have been covered by the E category.

# Detailed Example 4 of Analysis Hierarchy

In this detailed example, we have two regions. The locations in the regions contain similar and different items. Therefore, we can create two analysis hierarchies for each region. However, one substitution or supersession chain in each region won't be covered by an analysis hierarchy, and duplicate categories won't be created.

These are the locations and items with bidirectional relationships:

- M1 (for North America)
  - A < > B < > C
  - X < > Y < > Z
  - F1 < > F2 < > F3 < > H4
- M2 (for North America)
  - A < > B < > C < > D
  - X < > Y < > Z < > Z1
  - F1 < > F2 < > F3 < > H4
- M3 (for North America)

  This location is selected for the analysis hierarchy.

  - A < > B < > C < > D < > E
  - X < > Y < > Z < > Z1 < > Z2
  - F1 < > F2 < > F3 < > H4
- M4 (for North America)

  This location is selected for the analysis hierarchy.

  - A < > B < > C < > D < > E
  - X < > Y < > Z < > Z1 < > Z2
  - F1 < > F2 < > F3 < > F4
  - Q1 < > Q2 < > Q3 < > Q4
- M5 (for North America)
  - A < > B < > C < > D < > E
  - X < > Y < > Z < > Z1 < > Z2
  - F1 < > F2 < > F3 < > F4
- S1 (for the EMEA region)
  - A < > B < > C
  - X < > Y < > Z
  - F1 < > F2 < > F3 < > H5

- S2 (for the EMEA region)
  - A < > B < > C < > D1
  - X < > Y < > Z < > Z3
  - F1< > F2 < > F3 < > H5
- S3 (for the EMEA region)

  This location is selected for the analysis hierarchy.

  - A < > B < > C < > D1 < > E1
  - X < > Y < > Z < > Z3 < > Z4
  - F1< > F2 < > F3 < > H5
- S4 (for the EMEA region)

  This location is selected for the analysis hierarchy.

  - A < > B < > C < > D1 < > E1
  - X < > Y < > Z < > Z3 < > Z4
  - F1< > F2 < > F3 < > F5
  - J1 < > J2 < > J3 < > J4
- S5 (for the EMEA region)
  - A < > B < > C < > D1 < > E1
  - X < > Y < > Z < > Z3 < > Z4
  - F1< > F2 < > F3 < > F5

This figure depicts the item relationships for this example:

| | Location | North America | | | | | Category (Prime) |
|---|---|---|---|---|---|---|---|
| 1 | M1 | A | B | C | | | E |
| | M2 | A | B | C | D | | |
| | **M3** | **A** | **B** | **C** | **D** | **E** | |
| | M4 | A | B | C | D | E | |
| | M5 | A | B | C | D | E | |
| 2 | M1 | X | Y | Z | | | Z2 |
| | M2 | X | Y | Z | Z1 | | |
| | **M3** | **X** | **Y** | **Z** | **Z1** | **Z2** | |
| | M4 | X | Y | Z | Z1 | Z2 | |
| | M5 | X | Y | Z | Z1 | Z2 | |
| 3 | M1 | F1 | F2 | F3 | H4 | | H4 |
| | M2 | F1 | F2 | F3 | H4 | | |
| | **M3** | **F1** | **F2** | **F3** | **H4** | | |
| | M4 | F1 | F2 | F3 | F4 | | Q4 |
| | **M4** | **Q1** | **Q2** | **Q3** | **Q4** | | |
| | M5 | F1 | F2 | F3 | F4 | | |

| | Location | EMEA | | | | | Category (Prime) |
|---|---|---|---|---|---|---|---|
| 1 | S1 | A | B | C | | | E1 |
| | S2 | A | B | C | D1 | | |
| | **S3** | **A** | **B** | **C** | **D1** | **E1** | |
| | S4 | A | B | C | D1 | E1 | |
| | S5 | A | B | C | D1 | E1 | |
| 2 | S1 | X | Y | Z | | | Z4 |
| | S2 | X | Y | Z | Z3 | | |
| | **S3** | **X** | **Y** | **Z** | **Z3** | **Z4** | |
| | S4 | X | Y | Z | Z3 | Z4 | |
| | S5 | X | Y | Z | Z3 | Z4 | |
| 3 | S1 | F1 | F2 | F3 | H5 | | H5 |
| | S2 | F1 | F2 | F3 | H5 | | |
| | **S3** | **F1** | **F2** | **F3** | **H5** | | |
| | S4 | F1 | F2 | F3 | F5 | | J4 |
| | **S4** | **J1** | **J2** | **J3** | **J4** | | |
| | S5 | F1 | F2 | F3 | F5 | | |

On the Manage Analysis Hierarchies for Related Items page, the created hierarchies (catalogs) and selected locations are as follows:

- North America - M3 and M4, for locations M3 and M4
- EMEA - S3 and S4, for locations S3 and S4

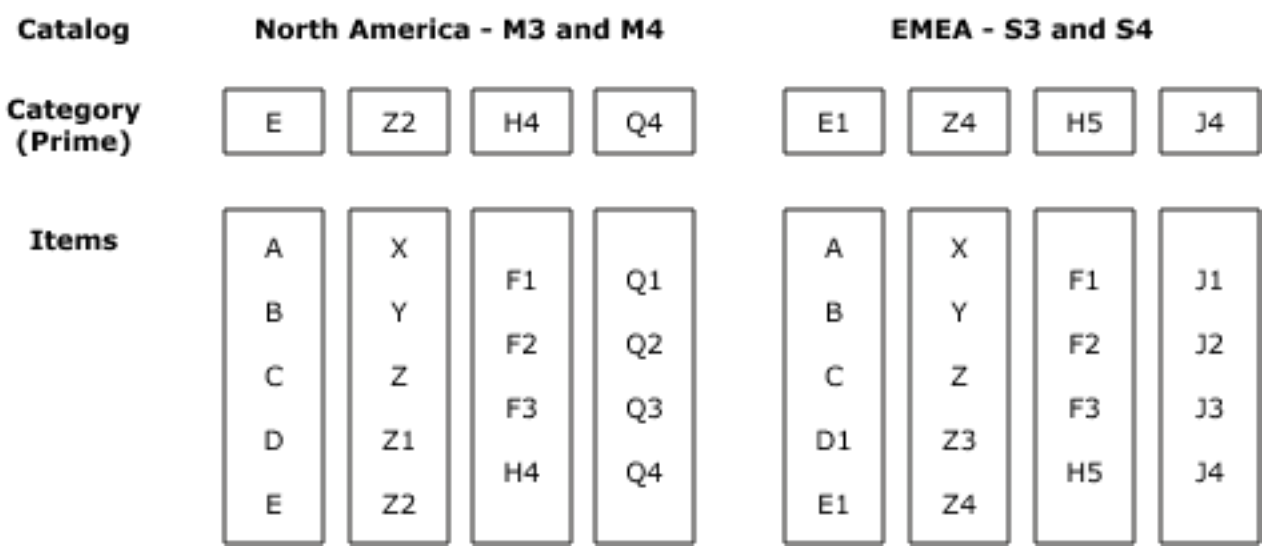
This figure depicts the created hierarchies and selected locations:

| Hierarchy (Catalog) | Location |
|---|---|
| North America - M3 and M4 | M3, M4 |
| EMEA - S3 and S4 | S3, S4 |

For these bidirectional item relationships and selections, these analysis hierarchies are created:

- North America - M3 and M4 (catalog), with categories E (for items A, B, C, D, and E), Z2 (for items X, Y, Z, Z1, and Z2), H4 (for items F1, F2, F3, and H4), and Q4 (for items Q1, Q2, Q3, and Q4)
- EMEA - S3 and S4 (catalog), with categories E1 (for items A, B, C, D1, and E1), Z4 (for items X, Y, Z, Z3, and Z4), H5 (for items F1, F2, F3, and H5), and J4 (for items J1, J2, J3, and J4)

This figure depicts the analysis hierarchies for the example:




Note these points about the example:

- The organizations in North America and EMEA have different sets of items and therefore require separate analysis hierarchies. For example, M4 has items Q1, Q2, Q3, and Q4, while S4 has items J1, J2, J3, and J4.
- The E and Z2 categories are comprehensive enough for analysis of the substitution or supersession chains in M1, M2, M3, M4, and M5. However, the H4 category can cover analysis of only the substitution or supersession chains for M1, M2, and M3, while the Q4 category can cover analysis of only the substitution or supersession chain for M4.
- The E1 and Z4 categories are comprehensive enough for analysis of the substitution or supersession chains in S1, S2, S3, S4, and S5. However, the H5 category can cover analysis of only the substitution or supersession chains for S1, S2, and S3, while the J4 category can cover analysis of only the substitution or supersession chain for S4.
- For every organization, categories are created for only unique substitution or supersession chains. A category named F4 isn't created for organization M4 because the category would be similar to the H4 category for organization M3. Similarly, a category named F5 isn't created for organization S4 because the category would be similar to the H5 category for organization S3.

  If categories are required for all variants of substitution or supersession chains, then separate catalogs should be created for organizations M3, M4, S3, and S4, as in the second detailed example.
- For simplicity, the items have been listed in a sequence. However, the sequence isn't important in a substitution or supersession chain. For example, M1 could have had a substitution chain with items A, C, and E, and the substitution chain would still have been covered by the E category.

*Related Topics*

- Overview of End Item Substitution and Supersession
- Create Analysis Hierarchies for Related Items
- Edit an Analysis Hierarchy

# Measures for End Item Substitution and Supersession

This topic lists the measures that store data for end item substitution and supersession in replenishment plans.

All measures support the Organization, Product, and Time dimensions.

The measures are a part of the Default Replenishment Planning Catalog and Incremental Replenishment Planning Default Catalog. If your replenishment plan is using other measure catalogs, ensure that you add these measures to the measure catalogs. Also, add these measures to your tables and graphs.

In a replenishment plan that's enabled for incremental planning, when a day is added to the planning horizon, these measures are populated with the null value for an item-location combination that doesn't have a change in net demand or supply.

This table lists the measures for end item substitution and supersession:

| Measure | Description |
|---|---|
| Initial Excess for Substitution | Excess quantity of the substitute item or supersession item that's initially available for substitution or supersession. |
| Initial Shortage for Substitution | Shortage quantity of the demanded item that can be initially met by the supply of the substitute item or by the supply of the supersession item. |
| Substitute Demand | Total quantity of the demanded item that's substituted by the supply of the substitute item or superseded by the supply of the supersession item. |
| Substitute Supply | Total supply of the substitute item or supersession item that meets the demand for the demanded item. |

*Related Topics*

- Overview of End Item Substitution and Supersession
- How You Use the End Item Substitution and Supersession Feature

# How You Create and Use Analytics for Analysis Hierarchies

You can use predefined and user-defined tables to view the data at the Item or category (prime) level for your analysis hierarchies. Thereby, you can resolve problems and improve the results of your replenishment plan.

## Tables for Analysis Hierarchies

You can view the data for your analysis hierarchies using these tables:

- Replenishment Workbench by Item and Prime: This user-defined table is a copy of the Replenishment Workbench table. However, on the Hierarchies tab of the Selector Tool, the category level is also included for the Product dimension. Also, on the Layout tab, the category level is selected as a filter.
- Replenishment Workbench by Prime: This user-defined table is a copy of the Replenishment Workbench table. However, on the Hierarchies tab of the Selector Tool, the Item level isn't included, while the category level is included. Also, on the Layout tab, the category level is selected as a filter.
- Supplies and Demands: You can use this predefined table to view data for the items that make up a category (prime).
- Item Relationships: You can use this predefined table to view the item relationships that you have set up in Oracle Fusion Cloud Product Lifecycle Management for your substitution and supersession chains.
- Items: You can use this predefined table to view the items for your substitution and supersession chains.
- Shortages by Item Location: You can use this predefined table to view shortages for item-location combinations in your substitution and supersession chains.
- Replenishment Workbench: You can use this predefined table to view various measures for items in your substitution and supersession chains.

**Note:** You can name the user-defined tables according to your preference. Also, you must create these tables only if you want to analyze your data by categories (primes).

## Set Up the Analytics for Analysis Hierarchies

You can set up the analytics for analysis hierarchies as follows:

1. Create a copy of the Replenishment Workbench table, and name the copy as the Replenishment Workbench by Item and Prime table.

   On the Hierarchies tab of the Selector Tool, include the category level. Also, on the Layout tab, include the category level as a filter.
2. Create a copy of the Replenishment Workbench table, and name the copy as the Replenishment Workbench by Prime table.

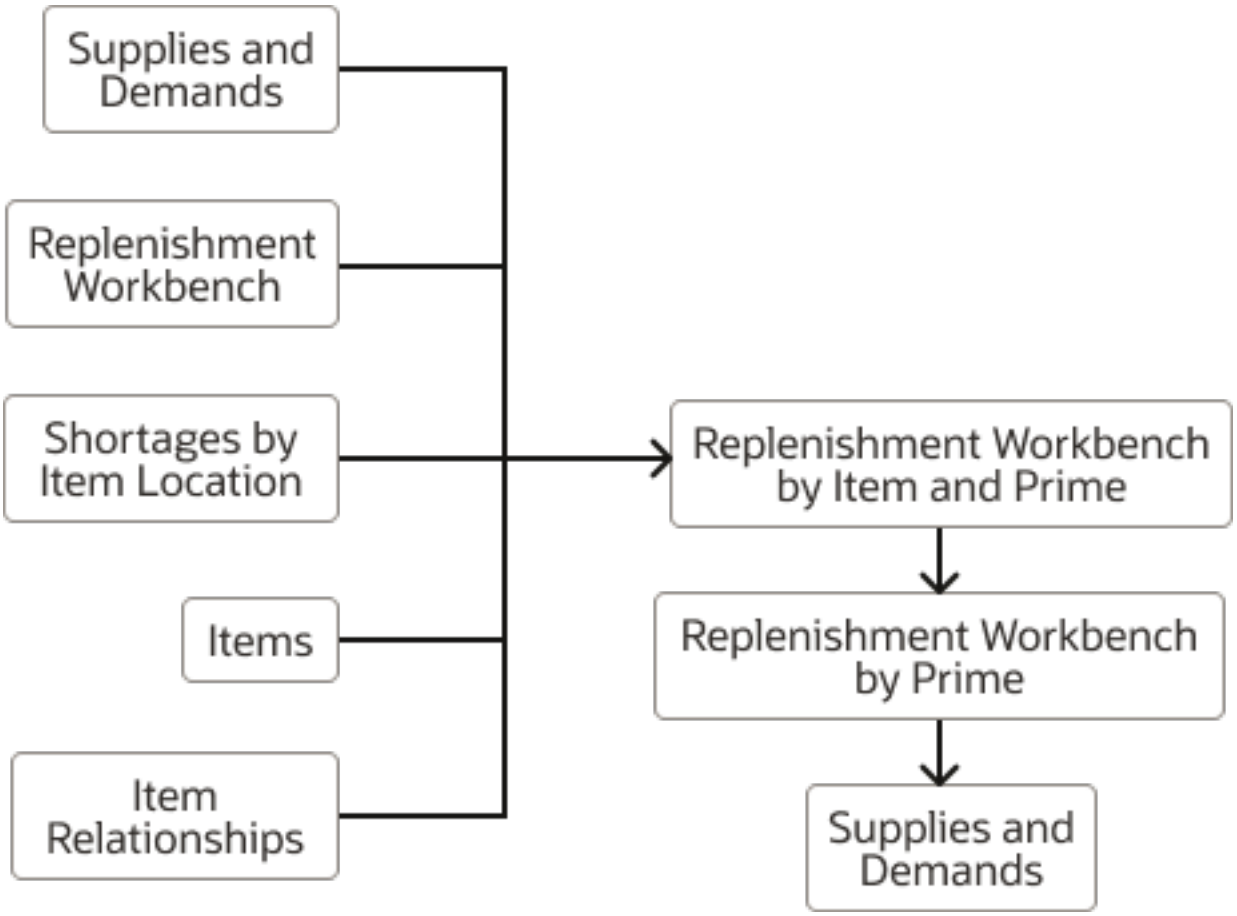
   On the Hierarchies tab of the Selector tool, include the category level, and exclude the Item level. On the Layout tab, include the category level as a filter.
3. Link the Replenishment Workbench by Item and Prime table to the Replenishment Workbench by Prime table.

   In the Manage Links dialog box for the Replenishment Workbench by Item and Prime table, on the To Table, Graph, or Page Layout tab, configure the link to pass the highlighted selections at the category level to the Replenishment Workbench by Prime table.
4. Link the Replenishment Workbench by Prime table to the Supplies and Demands table.

   In the Manage Links dialog box for the Replenishment Workbench by Prime table, on the To Table, Graph, or Page Layout tab, configure the link to pass the highlighted selections and selected members to the Supplies and Demands table.
5. Link the Supplies and Demands, Replenishment Workbench, Shortages by Item Location, Items, and Item Relationships tables to the Replenishment Workbench by Item and Prime table.

For the Replenishment Workbench and Shortages by Item Location tables, in the Manage Links dialog box, on the To Table, Graph, or Page Layout tab, configure the link to pass the highlighted selections and selected members to the Replenishment Workbench by Item and Prime table.

The following figure depicts how you link tables to view data for analysis hierarchies:




## Use the Analytics for Analysis Hierarchies

After you have set up your table links and run your replenishment plan, you can drill to the Replenishment Workbench by Item and Prime table from the Supplies and Demands, Replenishment Workbench, Shortages by Item Location, Items, or Items Relationships table. By doing so, you can view information for an item and the other items in its category (prime).

**Note:** Ensure that you select the corresponding items for the selected category while viewing data.

From the Replenishment Workbench by Item and Prime table, you can drill to the Replenishment Workbench by Prime table. By doing so, you can view the aggregated information for the category (prime).

From the Replenishment Workbench by Prime table, you can drill to the Supplies and Demands table to view information about the following for the category (prime):

- The total quantity of the demanded item that's substituted by the supply of the substitute item or superseded by the supply of the supersession item (Substitute Demand measure)

- The total supply of the substitute item or supersession item that meets the demand for the demanded item (Substitute Supply measure)

In the Supplies and Demands table, these columns are available for viewing information pertaining to end item substitution and supersession:

- 
  - Requested Item
  - Requested Item Description
  - Supplied Item
  - Supplied Item Description

*Related Topics*

- Overview of End Item Substitution and Supersession

# Examples of End Item Substitution and Supersession

How end item substitution and supersession are performed depends on your selection in the Use of Related Items Supplies field on the General subtab on the Supply tab on the Plan Options page for your replenishment plan.

The sections in this topic provide examples for end item substitution or supersession when you select **Maximize use of related items to minimize new replenishments** or **Use related items only when necessary to avoid stockouts** in the **Use of Related Items Supplies** field.

## Example for Maximizing Use of Related Items to Minimize New Replenishments

When you select **Maximize use of related items to minimize new replenishments** in the **Use of Related Items Supplies** field, the shortage of an item is calculated as follows:

- If the Beginning Inventory Position is less than or equal to the Minimum Quantity or ROP Quantity, the shortage is calculated as Beginning Inventory Position - Minimum Quantity - 1 or Beginning Inventory Position - ROP Quantity - 1.
- If the value of the Minimum Quantity or ROP Quantity is null, when the Beginning Inventory Position is less than zero, the shortage is equal to the Beginning Inventory Position.

The excess is calculated as the least positive value for Projected Available Balance - Minimum Quantity - 1 or Projected Available Balance - ROP Quantity - 1 for a day in the excess window.

In this example, we have two items, A and B, at organization WH1. Item B is a substitute for item A or the item that supersedes item A. The excess window is 1 day. The policy type is min-max planning.

On Day 1, the data for item A is as depicted in this table:

| Measures for Item A | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 |
|---|---|---|---|---|---|
| Total Demand | 15 | 5 | 10 | 10 | 10 |

| Measures for Item A | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 |
|---|---|---|---|---|---|
| Total Supply | 40 | 0 | 0 | 0 | 0 |
| Projected Available Balance | 25 | 20 | 10 | 0 | -10 |
| Beginning Inventory Position | 25 | 20 | 10 | 0 | -10 |
| Minimum Quantity | 40 | 40 | 40 | 40 | 40 |
| Maximum Quantity | 70 | 70 | 70 | 70 | 70 |
| Initial Excess for Substitution | 0 | 0 | 0 | 0 | 0 |
| Initial Shortage for Substitution | 16 | 0 | 0 | 0 | 0 |
| Substitute Supply | 0 | 0 | 0 | 0 | 0 |
| Substitute Demand | 0 | 0 | 0 | 0 | 0 |
| Planned Replenishments by Order Date | 0 | 0 | 0 | 0 | 0 |

On Day 1, the data for item B is as depicted in this table:

| Measures for Item B | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 |
|---|---|---|---|---|---|
| Total Demand | 15 | 5 | 23 | 8 | 10 |
| Total Supply | 105 | 0 | 0 | 0 | 0 |
| Projected Available Balance | 90 | 85 | 62 | 54 | 44 |
| Beginning Inventory Position | 90 | 85 | 62 | 54 | 44 |
| Minimum Quantity | 40 | 40 | 40 | 40 | 40 |
| Maximum Quantity | 70 | 70 | 70 | 70 | 70 |
| Initial Excess for Substitution | 49 | 0 | 0 | 0 | 0 |
| Initial Shortage for Substitution | 0 | 0 | 0 | 0 | 0 |
| Substitute Supply | 0 | 0 | 0 | 0 | 0 |
| Substitute Demand | 0 | 0 | 0 | 0 | 0 |
| Planned Replenishments by Order Date | 0 | 0 | 0 | 0 | 0 |

For item A, the Initial Shortage for Substitution measure is -16 (25 - 40 - 1).

For item B, the Initial Excess for Substitution measure is 49 (90 - 40 - 1).

On Day 1, the data after end item substitution or supersession for item A is as depicted in this table:

| Measures for Item A | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 |
|---|---|---|---|---|---|
| Total Demand | 15 | 5 | 10 | 10 | 10 |
| Total Supply | 56 | 0 | 0 | 0 | 0 |
| Projected Available Balance | 41 | 36 | 26 | 16 | 6 |
| Beginning Inventory Position | 41 | 36 | 26 | 16 | 6 |
| Minimum Quantity | 40 | 40 | 40 | 40 | 40 |
| Maximum Quantity | 70 | 70 | 70 | 70 | 70 |
| Initial Excess for Substitution | 0 | 0 | 0 | 0 | 0 |
| Initial Shortage for Substitution | 16 | 0 | 0 | 0 | 0 |
| Substitute Supply | 16 | 0 | 0 | 0 | 0 |
| Substitute Demand | 0 | 0 | 0 | 0 | 0 |
| Planned Replenishments by Order Date | 0 | 0 | 0 | 0 | 0 |

On Day 1, the data after end item substitution or supersession for item B is as depicted in this table:

| Measures for Item B | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 |
|---|---|---|---|---|---|
| Total Demand | 31 | 5 | 23 | 8 | 10 |
| Total Supply | 105 | 0 | 0 | 0 | 0 |
| Projected Available Balance | 74 | 69 | 46 | 38 | 28 |
| Beginning Inventory Position | 74 | 69 | 46 | 38 | 28 |
| Minimum Quantity | 40 | 40 | 40 | 40 | 40 |
| Maximum Quantity | 70 | 70 | 70 | 70 | 70 |
| Initial Excess for Substitution | 49 | 0 | 0 | 0 | 0 |
| Initial Shortage for Substitution | 0 | 0 | 0 | 0 | 0 |

| Measures for Item B | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 |
|---|---|---|---|---|---|
| Substitute Supply | 0 | 0 | 0 | 0 | 0 |
| Substitute Demand | 16 | 0 | 0 | 0 | 0 |
| Planned Replenishments by Order Date | 0 | 0 | 0 | 0 | 0 |

For item A, the Substitute Supply measure is 16.

For item B, the Substitute Demand measure is 16.

On Day 2, the data for item A is as depicted in this table:

| Measures for Item A | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 |
|---|---|---|---|---|---|
| Total Demand | 15 | 5 | 10 | 10 | 10 |
| Total Supply | 56 | 0 | 0 | 0 | 0 |
| Projected Available Balance | 41 | 36 | 26 | 16 | 6 |
| Beginning Inventory Position | 41 | 36 | 26 | 16 | 6 |
| Minimum Quantity | 40 | 40 | 40 | 40 | 40 |
| Maximum Quantity | 70 | 70 | 70 | 70 | 70 |
| Initial Excess for Substitution | 0 | 0 | 0 | 0 | 0 |
| Initial Shortage for Substitution | 16 | 5 | 0 | 0 | 0 |
| Substitute Supply | 16 | 0 | 0 | 0 | 0 |
| Substitute Demand | 0 | 0 | 0 | 0 | 0 |
| Planned Replenishments by Order Date | 0 | 0 | 0 | 0 | 0 |

On Day 2, the data for item B is as depicted in this table:

| Measures for Item B | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 |
|---|---|---|---|---|---|
| Total Demand | 31 | 5 | 23 | 8 | 10 |
| Total Supply | 105 | 0 | 0 | 0 | 0 |
| Projected Available Balance | 74 | 69 | 46 | 38 | 28 |

| Measures for Item B | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 |
|---|---|---|---|---|---|
| Beginning Inventory Position | 74 | 69 | 46 | 38 | 28 |
| Minimum Quantity | 40 | 40 | 40 | 40 | 40 |
| Maximum Quantity | 70 | 70 | 70 | 70 | 70 |
| Initial Excess for Substitution | 49 | 28 | 0 | 0 | 0 |
| Initial Shortage for Substitution | 0 | 0 | 0 | 0 | 0 |
| Substitute Supply | 0 | 0 | 0 | 0 | 0 |
| Substitute Demand | 16 | 0 | 0 | 0 | 0 |
| Planned Replenishments by Order Date | 0 | 0 | 0 | 0 | 0 |

For item A, the Initial Shortage for Substitution measure is -5 (36 - 40 - 1).

For item B, the Initial Excess for Substitution measure is 28 (69 - 40 - 1).

On Day 2, the data after end item substitution or supersession for item A is as depicted in this table:

| Measures for Item A | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 |
|---|---|---|---|---|---|
| Total Demand | 15 | 5 | 10 | 10 | 10 |
| Total Supply | 56 | 5 | 0 | 0 | 0 |
| Projected Available Balance | 41 | 41 | 31 | 21 | 11 |
| Beginning Inventory Position | 41 | 41 | 31 | 21 | 11 |
| Minimum Quantity | 40 | 40 | 40 | 40 | 40 |
| Maximum Quantity | 70 | 70 | 70 | 70 | 70 |
| Initial Excess for Substitution | 0 | 0 | 0 | 0 | 0 |
| Initial Shortage for Substitution | 16 | 5 | 0 | 0 | 0 |
| Substitute Supply | 16 | 5 | 0 | 0 | 0 |
| Substitute Demand | 0 | 0 | 0 | 0 | 0 |
| Planned Replenishments by Order Date | 0 | 0 | 0 | 0 | 0 |

On Day 2, the data after end item substitution or supersession for item B is as depicted in this table:

| Measures for Item B | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 |
|---|---|---|---|---|---|
| Total Demand | 31 | 10 | 23 | 8 | 10 |
| Total Supply | 105 | 0 | 0 | 0 | 0 |
| Projected Available Balance | 74 | 64 | 41 | 33 | 23 |
| Beginning Inventory Position | 74 | 64 | 41 | 33 | 23 |
| Minimum Quantity | 40 | 40 | 40 | 40 | 40 |
| Maximum Quantity | 70 | 70 | 70 | 70 | 70 |
| Initial Excess for Substitution | 49 | 28 | 0 | 0 | 0 |
| Initial Shortage for Substitution | 0 | 0 | 0 | 0 | 0 |
| Substitute Supply | 0 | 0 | 0 | 0 | 0 |
| Substitute Demand | 16 | 5 | 0 | 0 | 0 |
| Planned Replenishments by Order Date | 0 | 0 | 0 | 0 | 0 |

For item A, the Substitute Supply measure is 5.

For item B, the Substitute Demand measure is 5.

On Day 3, the data for item A is as depicted in this table:

| Measures for Item A | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 |
|---|---|---|---|---|---|
| Total Demand | 15 | 5 | 10 | 10 | 10 |
| Total Supply | 56 | 5 | 0 | 0 | 0 |
| Projected Available Balance | 41 | 41 | 31 | 21 | 11 |
| Beginning Inventory Position | 41 | 41 | 31 | 21 | 11 |
| Minimum Quantity | 40 | 40 | 40 | 40 | 40 |
| Maximum Quantity | 70 | 70 | 70 | 70 | 70 |
| Initial Excess for Substitution | 0 | 0 | 0 | 0 | 0 |
| Initial Shortage for Substitution | 16 | 5 | 10 | 0 | 0 |
| Substitute Supply | 16 | 5 | 0 | 0 | 0 |
| Substitute Demand | 0 | 0 | 0 | 0 | 0 |

| Measures for Item A | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 |
|---|---|---|---|---|---|
| Planned Replenishments by Order Date | 0 | 0 | 0 | 0 | 0 |

On Day 3, the data for item B is as depicted in this table:

| Measures for Item B | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 |
|---|---|---|---|---|---|
| Total Demand | 31 | 10 | 23 | 8 | 10 |
| Total Supply | 105 | 0 | 0 | 0 | 0 |
| Projected Available Balance | 74 | 64 | 41 | 33 | 23 |
| Beginning Inventory Position | 74 | 64 | 41 | 33 | 23 |
| Minimum Quantity | 40 | 40 | 40 | 40 | 40 |
| Maximum Quantity | 70 | 70 | 70 | 70 | 70 |
| Initial Excess for Substitution | 49 | 28 | 0 | 0 | 0 |
| Initial Shortage for Substitution | 0 | 0 | 0 | 0 | 0 |
| Substitute Supply | 0 | 0 | 0 | 0 | 0 |
| Substitute Demand | 16 | 5 | 0 | 0 | 0 |
| Planned Replenishments by Order Date | 0 | 0 | 0 | 0 | 0 |

For item A, the Initial Shortage for Substitution measure is -10 (31 - 40 - 1).

For item B, the Initial Excess for Substitution measure is zero (41 - 40 - 1).

On Day 3, the data after end item substitution or supersession for item A is as depicted in this table:

| Measures for Item A | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 |
|---|---|---|---|---|---|
| Total Demand | 15 | 5 | 10 | 10 | 10 |
| Total Supply | 56 | 5 | 0 | 0 | 0 |
| Projected Available Balance | 41 | 41 | 31 | 21 | 50 |
| Beginning Inventory Position | 41 | 41 | 31 | 21 | 50 |
| Minimum Quantity | 40 | 40 | 40 | 40 | 40 |

| Measures for Item A | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 |
|---|---|---|---|---|---|
| Maximum Quantity | 70 | 70 | 70 | 70 | 70 |
| Initial Excess for Substitution | 0 | 0 | 0 | 0 | 0 |
| Initial Shortage for Substitution | 16 | 5 | 10 | 0 | 0 |
| Substitute Supply | 16 | 5 | 0 | 0 | 0 |
| Substitute Demand | 0 | 0 | 0 | 0 | 0 |
| Planned Replenishments by Order Date | 0 | 0 | 39 | 0 | 0 |

On Day 3, the data after end item substitution or supersession for item B is as depicted in this table:

| Measures for Item B | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 |
|---|---|---|---|---|---|
| Total Demand | 31 | 10 | 23 | 8 | 10 |
| Total Supply | 105 | 0 | 0 | 0 | 0 |
| Projected Available Balance | 74 | 64 | 41 | 33 | 23 |
| Beginning Inventory Position | 74 | 64 | 41 | 33 | 23 |
| Minimum Quantity | 40 | 40 | 40 | 40 | 40 |
| Maximum Quantity | 70 | 70 | 70 | 70 | 70 |
| Initial Excess for Substitution | 49 | 28 | 0 | 0 | 0 |
| Initial Shortage for Substitution | 0 | 0 | 0 | 0 | 0 |
| Substitute Supply | 0 | 0 | 0 | 0 | 0 |
| Substitute Demand | 16 | 5 | 0 | 0 | 0 |
| Planned Replenishments by Order Date | 0 | 0 | 0 | 0 | 0 |

On Day 3, for item A, the Substitute Supply measure is zero because item B doesn't have any excess. Therefore a planned order of 39 units is created on Day 3 for bringing the inventory level to the Maximum Quantity.

# Example for Using Related Items Only to Avoid Stockouts

When you select **Use related items only when necessary to avoid stockouts** in the **Use of Related Items Supplies** field, the shortage and excess of the item are calculated as follows:

- If the Projected Available Balance for the item on a day is less than zero, the Projected Available Balance is the shortage.
- The excess is calculated as the least positive value for the Projected Available Balance in the excess window.

In this example, we have two items, C and D, at organization WH2. Item D is a substitute for item C or the item that supersedes item C. The excess window is 1 day. The policy type is min-max planning.

On Day 1, the data for item C is as depicted in this table:

| Measures for Item C | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 |
|---|---|---|---|---|---|
| Total Demand | 15 | 5 | 10 | 10 | 50 |
| Total Supply | 40 | 0 | 0 | 0 | 0 |
| Projected Available Balance | 25 | 20 | 10 | 0 | -50 |
| Beginning Inventory Position | 25 | 20 | 10 | 0 | -50 |
| Minimum Quantity | 40 | 40 | 40 | 40 | 40 |
| Maximum Quantity | 70 | 70 | 70 | 70 | 70 |
| Initial Excess for Substitution | 0 | 0 | 0 | 0 | 0 |
| Initial Shortage for Substitution | 0 | 0 | 0 | 0 | 0 |
| Substitute Supply | 0 | 0 | 0 | 0 | 0 |
| Substitute Demand | 0 | 0 | 0 | 0 | 0 |
| Planned Replenishments by Order Date | 45 | 0 | 0 | 0 | 0 |

On Day 1, the data for item D is as depicted in this table:

| Measures for Item D | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 |
|---|---|---|---|---|---|
| Total Demand | 15 | 5 | 23 | 8 | 10 |
| Total Supply | 105 | 0 | 0 | 0 | 0 |
| Projected Available Balance | 90 | 85 | 62 | 54 | 44 |
| Beginning Inventory Position | 90 | 85 | 62 | 54 | 44 |

| Measures for Item D | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 |
|---|---|---|---|---|---|
| Minimum Quantity | 40 | 40 | 40 | 40 | 40 |
| Maximum Quantity | 70 | 70 | 70 | 70 | 70 |
| Initial Excess for Substitution | 90 | 0 | 0 | 0 | 0 |
| Initial Shortage for Substitution | 0 | 0 | 0 | 0 | 0 |
| Substitute Supply | 0 | 0 | 0 | 0 | 0 |
| Substitute Demand | 0 | 0 | 0 | 0 | 0 |
| Planned Replenishments by Order Date | 0 | 0 | 0 | 0 | 0 |

For item C, the Initial Shortage for Substitution measure is zero because the Projected Available Balance Measure is 25 and not a negative value. A planned order of 45 units is created on Day 1 for bringing the inventory level to the Maximum Quantity.

For item D, the Initial Excess for Substitution measure is 90.

On Day 5, the data for item C is as depicted in this table:

| Measures for Item C | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 |
|---|---|---|---|---|---|
| Total Demand | 15 | 5 | 10 | 10 | 50 |
| Total Supply | 40 | 0 | 45 | 0 | 0 |
| Projected Available Balance | 25 | 20 | 55 | 45 | -5 |
| Beginning Inventory Position | 25 | 65 | 55 | 45 | -5 |
| Minimum Quantity | 40 | 40 | 40 | 40 | 40 |
| Maximum Quantity | 70 | 70 | 70 | 70 | 70 |
| Initial Excess for Substitution | 0 | 0 | 0 | 0 | 0 |
| Initial Shortage for Substitution | 0 | 0 | 0 | 0 | 5 |
| Substitute Supply | 0 | 0 | 0 | 0 | 0 |
| Substitute Demand | 0 | 0 | 0 | 0 | 0 |
| Planned Replenishments by Order Date | 45 | 0 | 0 | 0 | 0 |

On Day 5, the data for item D is as depicted in this table:

| Measures for Item D | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 |
|---|---|---|---|---|---|
| Total Demand | 15 | 5 | 23 | 8 | 10 |
| Total Supply | 105 | 0 | 0 | 0 | 0 |
| Projected Available Balance | 90 | 85 | 62 | 54 | 44 |
| Beginning Inventory Position | 90 | 85 | 62 | 54 | 44 |
| Minimum Quantity | 40 | 40 | 40 | 40 | 40 |
| Maximum Quantity | 70 | 70 | 70 | 70 | 70 |
| Initial Excess for Substitution | 90 | 85 | 62 | 54 | 44 |
| Initial Shortage for Substitution | 0 | 0 | 0 | 0 | 0 |
| Substitute Supply | 0 | 0 | 0 | 0 | 0 |
| Substitute Demand | 0 | 0 | 0 | 0 | 0 |
| Planned Replenishments by Order Date | 0 | 0 | 0 | 0 | 0 |

For item C, the Initial Shortage for Substitution measure is 5 because the Projected Available Balance measure is -5 and a negative value.

For item D, the Initial Excess for Substitution measure is 44.

On Day 5, the data after end item substitution or supersession for item C is as depicted in this table:

| Measures for Item C | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 |
|---|---|---|---|---|---|
| Total Demand | 15 | 5 | 10 | 10 | 50 |
| Total Supply | 40 | 0 | 45 | 0 | 5 |
| Projected Available Balance | 25 | 20 | 55 | 45 | 0 |
| Beginning Inventory Position | 25 | 65 | 55 | 45 | 0 |
| Minimum Quantity | 40 | 40 | 40 | 40 | 40 |
| Maximum Quantity | 70 | 70 | 70 | 70 | 70 |
| Initial Excess for Substitution | 0 | 0 | 0 | 0 | 0 |
| Initial Shortage for Substitution | 0 | 0 | 0 | 0 | 5 |
| Substitute Supply | 0 | 0 | 0 | 0 | 5 |

| Measures for Item C | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 |
|---|---|---|---|---|---|
| Substitute Demand | 0 | 0 | 0 | 0 | 0 |
| Planned Replenishments by Order Date | 45 | 0 | 0 | 0 | 70 |

On Day 5, the data after end item substitution or supersession for item D is as depicted in this table:

| Measures for Item D | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 |
|---|---|---|---|---|---|
| Total Demand | 15 | 5 | 23 | 8 | 15 |
| Total Supply | 105 | 0 | 0 | 0 | 0 |
| Projected Available Balance | 90 | 85 | 62 | 54 | 39 |
| Beginning Inventory Position | 90 | 85 | 62 | 54 | 39 |
| Minimum Quantity | 40 | 40 | 40 | 40 | 40 |
| Maximum Quantity | 70 | 70 | 70 | 70 | 70 |
| Initial Excess for Substitution | 90 | 85 | 62 | 54 | 44 |
| Initial Shortage for Substitution | 0 | 0 | 0 | 0 | 0 |
| Substitute Supply | 0 | 0 | 0 | 0 | 0 |
| Substitute Demand | 0 | 0 | 0 | 0 | 5 |
| Planned Replenishments by Order Date | 0 | 0 | 0 | 0 | 31 |

For item C, the Substitute Supply measure is 5. A planned order of 70 units is created for bringing the inventory level to the Maximum Quantity.

For item D, the Substitute Demand measure is 5. A planned order of 31 units is created for bringing the inventory level to the Maximum Quantity.

*Related Topics*

- Overview of End Item Substitution and Supersession
- Item Relationship Options for Replenishment Plans
- Measures for End Item Substitution and Supersession

# 18 Simulations for Replenishment Plans

## Overview of Simulations for Replenishment Plans

Use plan simulations to quickly perform what-if simulations, improve your replenishment plan's performance, resolve supply issues, or improve projected fill rates. When you're satisfied with a simulated outcome, you can manually release planned orders with your changes.

### Types of Simulations for Replenishment Plans

This table explains the types of simulations that you can perform for your replenishment plan:

| Type of Simulation | Explanation | Location Where Simulation Is Performed |
|---|---|---|
| Simulations for policy parameters | You perform these simulations for segments of the segment group that's attached to your replenishment plan.<br><br>You can identify policy parameter alternatives that maximize your replenishment plan's performance. | Use the Manage Policy Assignments table for the replenishment plan.<br><br>If you're satisfied with your changes, you can save them to the policy assignment set that's attached to your replenishment plan for future use. |
| Simulations for policy values | You perform these simulations for item-location combinations of the segment group that's attached to your replenishment plan.<br><br>You can identify policy value alternatives that maximize your replenishment plan's performance. | To simulate changes for all buckets within your planning horizon, use the Manage Policy Parameters by Item table for the replenishment plan.<br><br>To simulate changes for specific buckets within your planning horizon, use the Replenishment Workbench table for the replenishment plan. |
| Simulations for supplies and demands | You perform these simulations for item-location combinations by adding or modifying supplies and demands.<br><br>After changing quantities and dates, you can compare your baseline and simulated replenishment plans. | To simulate changes for all buckets within your planning horizon, use the Supplies and Demands table for the replenishment plan.<br><br>To simulate changes for specific buckets within your planning horizon, use the Replenishment Workbench table for the replenishment plan. |
| Simulations for item attributes | You perform these simulations by changing item attributes of item-location combinations for the segment group that's attached to your replenishment plan.<br><br>You can simulate changes to lead times and order modifiers to resolve supply-related issues such as stockouts.<br><br>You can also modify costs, lead times, service-level percentages, and overrides for the mean absolute percentage error (MAPE) for policy and projected fill rate simulations. | Use the Items table for the replenishment plan.<br><br>If you're satisfied with your changes, you can optionally save them to a simulation set for future use. |

| Type of Simulation | Explanation | Location Where Simulation Is Performed |
|---|---|---|
| | | |
| Simulations for inventory rebalancing | You perform these simulations by making changes to the planned orders generated after inventory rebalancing of your replenishment plan. You can change the firm dates and quantities and shipping methods.<br>You can also create a planned order of the transfer type. | Use the Manage Rebalancing Recommendations table for the replenishment plan.<br>Your firm planned orders aren't retained the next time you run the replenishment plan with the **Refresh with current data** option selected on the Parameters tab in the Run Plan dialog box. |

To perform a simulation, you run your replenishment plan by selecting the **Do not refresh with current data** option on the Parameters tab in the Run Plan dialog box. Only the following are replanned:

- Item-location combinations for segments whose policy parameters are changed
- Item-location combinations whose policy values, supplies and demands, and item attributes are changed
- The locations in different clusters for the items for which rebalancing recommendations are changed

After you're satisfied with the results of your simulation, you can manually release planned orders.

Note these points about how simulation works with other features for Oracle Replenishment Planning:

- If you enable your replenishment plan for end item substitution and supersession, if you simulate a change to the policy parameters, policy values, supplies and demands, or attributes for an item-location combination, the entire substitution or supersession chain is replanned.
- During simulation for a multiechelon replenishment plan, if you make a change for an item, it's replanned at all echelons. A bottom-up pass for unconstrained planning and a top-down pass for constrained planning are performed.

  If you simulate a change to an item that's a part of a substitution or supersession chain, the entire chain is replanned at all echelons. A bottom-up pass for unconstrained planning and a top-down pass for constrained planning are performed.

## Replan by Individual Planners

In your simulation plan, simulations are restricted to the changes done by individual replenishment planners.

This functionality is useful when a replenishment plan has subsets of item-location combinations that are managed by different replenishment planners, and they must often run simulations while resolving issues such as stockouts in storerooms or demand increases caused by promotions at retail outlets. The functionality enables you to identify inputs that change replenishment plan results, work in parallel with other replenishment planners without affecting their changes, and quickly and reliably run simulations.

For example, if you and another replenishment planner are individually changing item attributes, supplies and demands, policy parameters for segments, and policy parameter overrides for segments and item-location combinations, when you run a simulation by selecting **Do not refresh with current data** on the Parameters tab in the Run Plan dialog box, only your changes are simulated, and those made by the other replenishment planner aren't considered. Later, when the other replenishment planner runs a simulation, only the changes made by that user are simulated, and your changes aren't considered.

Further, by using the Manage Replan Details dialog box that you open from the Parameters tab in the Run Plan dialog box, you can select which of your changes you want to simulate.

*Related Topics*

- Run a Replenishment Plan
- Manually Release Replenishment Orders
- Overview of Multiechelon Replenishment Planning

# Simulate Changes to Policy Parameters for Segments Within a Replenishment Plan

Within your replenishment plan, you can simulate changes to policy parameters, default policy parameters, and policy parameter overrides at the segment level for the associated policy assignment set by using the Manage Policy Assignments table.

> **Note:** You can also use the Manage Policy Assignments table to view the policy parameters that were applied to the replenishment plan when it was last run. You don't have to see the associated policy assignment set for these details. Moreover, these policy parameters in the replenishment plan may differ from those in the policy assignment set, because it may have changed since the replenishment plan was last run.

Follow these steps to simulate changes to parameters, defaults, and overrides at the segment level:

1. Do one of the following to open the replenishment plan for which you want to perform the simulation:
    - To open the replenishment plan using the Manage Plans page:
        i. On the Tasks panel tab, under Plans, select **Manage Plans**.

        The Manage Plans page opens and displays the available replenishment plans.
        ii. Select the replenishment plan, and click **Actions** > **Open**.

        The replenishment plan opens in a separate tab.
    - On the Plans panel tab, under Plans, right-click the replenishment plan, and select **Open**.

      The replenishment plan opens in a separate tab.
2. Click the **Open** drop-down button, and click a pane if you're required to do so.

   The Open Table, Graph, or Tile Set dialog box opens.
3. Search for the Manage Policy Assignments table, select it, and click **OK**.

   The Manage Policy Assignments page opens.
4. On the Segment-Level Policy Parameters Assignment subtab on the page, select the segment for which you want to perform your simulation, and make your changes.

   > **Note:** You can only view details on the Item-Location Level Policy Overrides subtab. To simulate changes to policy values for item-location combinations, use the Manage Policy Parameters by Item or Replenishment Workbench table. For slow-moving items or items with intermittent demand, you can optionally enter zero as the safety stock override and minimum override.
5. Click the **Save** drop-down button.

6. Click **Actions** > **Run** to run the replenishment plan.

   The Run Plan dialog box opens.

   a. On the Parameters tab, under Scope Options, select the **Calculate policy parameters** and **Calculate replenishments** check boxes.
   b. Under Data Refresh Options, select **Do not refresh with current data**.

      The **Manage Replan Details** link appears under the option.
   c. Click **Manage Replan Details** to open the Manage Replan Details dialog box, in which you can see the segments for which you have made changes. Deselect the check box under **Replan** for the segments for which you don't want to run the simulation.
   d. Click **Save and Close**.
   e. Click **OK** in the Run Plan dialog box.
7. If you're satisfied with the simulation results, save your changes to the policy assignment set by clicking **Actions** > **Save Changes to Policy Assignment Set**.

   The Save Changes to Policy Assignment Set dialog box opens and displays the changes that you have saved at the segment level within the replenishment plan but not saved to the policy assignment set.

   If you don't save the changes, they're lost the next time you run the replenishment plan with the **Refresh with current data** option selected under Data Refresh Options on the Parameters tab in the Run Plan dialog box.

   a. Review the changes that you made for each segment.

      You can see the old and new values for your changes.
   b. Under **Changes to Save**, select the check boxes for the segments for which you want to save changes to the policy assignment set.
   c. Click **OK**.

*Related Topics*

- Run a Replenishment Plan

# Simulate Changes to Policy Values for Items Within a Replenishment Plan

Within your replenishment plan, you can simulate changes to policy values for item-location combinations of the associated segment group.

Changes to policy values for item-location combinations within the replenishment plan persist until you override the changes. These changes also take precedence over the item-location level policy overrides specified in the associated policy assignment set but aren't updated there.

You can use the following tables to simulate changes to policy values for item-location combinations:

- Manage Policy Parameters by Item: Use this table when you want to simulate changes to policy values for all buckets in your planning horizon. Using this table, you can change the minimum quantity, maximum quantity, minimum days, maximum days, reorder point (ROP) quantity, ROP days, and economic order quantity (EOQ) for an item-location combination by using the corresponding override measures.

- Replenishment Workbench: Use this table when you want to simulate changes to policy values for specific buckets in your planning horizon.

  > **Note:** Using this table, you can also simulate changes to the gross forecast, net forecast, adjusted shipments forecast, and planned replenishments by due date for the item-location combination, but these simulations pertain to supplies and demands. Except for the change you make to the adjusted shipments forecast, the other changes are lost the next time you run the replenishment plan with the **Refresh with current data** option selected on the Parameters tab in the Run Plan dialog box.

## Simulate Changes to Policy Values of Item-Location Combinations

Follow these steps to simulate changes to policy values for item-location combinations in the replenishment plan:

1. Do one of the following to open the replenishment plan for which you want to perform the simulation:
   - To open the replenishment plan using the Manage Plans page:
     i. On the Tasks panel tab, under Plans, select **Manage Plans**.

        The Manage Plans page opens and displays the available replenishment plans.
     ii. Select the replenishment plan, and click **Actions** > **Open**.

        The replenishment plan opens in a separate tab.
   - On the Plans panel tab, under Plans, right-click the replenishment plan, and select **Open**.

     The replenishment plan opens in a separate tab.
2. Click the **Open** drop-down button, and click a pane if you're required to do so.

   The Open Table, Graph, or Tile Set dialog box opens.
3. Search for the Manage Policy Parameters by Item or Replenishment Workbench table, select it, and click **OK**.

   The Manage Policy Parameters by Item or Replenishment Workbench page opens.
4. On the toolbar, click **View** > **Highlight Editable Cells** to identify the cells that you can edit.
5. Filter the rows by a segment and location of the segment group.

   On the Replenishment Workbench page, you must also filter the rows by item.
6. For an item-location combination for which you want to edit policy values, enter values in the editable cells on the Manage Policy Parameters by Item page.

   On the Replenishment Workbench page, enter values in the editable cells for specific days.
7. Repeat Steps 5 and 6 for the item-location combinations for which you want to simulate changes.
8. Click the **Save** drop-down button.
9. Click **Actions Run** to run the replenishment plan.

   The Run Plan dialog box opens.
   a. On the Parameters tab, under Scope Options, select the **Calculate replenishments** check box.
   b. Under Data Refresh Options, select **Do not refresh with current data**.

      The **Manage Replan Details** link appears under the option.
   c. Click **Manage Replan Details** to open the Manage Replan Details dialog box, in which you can see the item-location combinations for which you have made changes. Deselect the check box under **Replan** for the combinations for which you don't want to run the simulation.

d. Click **Save and Close**.
e. Click **OK** in the Run Plan dialog box.

*Related Topics*
- Run a Replenishment Plan

# How You Simulate Changes to Supplies and Demands in Replenishment Plans

This topic explains how you can simulate changes to supplies and demands in the Replenishment Planning work area.

In your replenishment plan, you can use these tables to simulate changes to supplies and demands:

- Supplies and Demands: Use this table when you want to simulate changes for all planning buckets in your planning horizon.
- Replenishment Workbench: Use this table when you want to simulate changes for specific planning buckets in your planning horizon.

## Simulate Changes with the Supplies and Demands Table

You can simulate changes to supplies and demands for the manual demand, planned order, and on hand order types by editing the Supplies and Demands table for your replenishment plan.

You can do the following while using the Supplies and Demands table for simulations:

- Create and edit manual demands.
- Create and edit orders of the on hand type.
- Create and edit planned orders.

This table lists the columns that you can edit in the Supplies and Demands table from your replenishment plan:

| Column | Editable in Replenishment Plan? |
|---|---|
| Customer | • Manual Demand: Yes<br>• On Hand: No<br>• Planned Order: No |
| Customer Site | • Manual Demand: Yes<br>• On Hand: No<br>• Planned Order: No |
| Firm Date | • Manual Demand: Yes<br>• On Hand: No<br>• Planned Order: Yes |

| Column | Editable in Replenishment Plan? |
|---|---|
| Firm Quantity | • Manual Demand: Yes<br>• On Hand: Yes<br>• Planned Order: Yes |
| Firm Status | • Manual Demand: Yes<br>• On Hand: Yes<br>• Planned Order: Yes |
| Shipping Method | • Manual Demand: No<br>• On Hand: No<br>• Planned Order: Yes |
| Source Organization | • Manual Demand: No<br>• On Hand: No<br>• Planned Order: Yes |
| Supplier | • Manual Demand: No<br>• On Hand: No<br>• Planned Order: Yes |
| Supplier Site | • Manual Demand: No<br>• On Hand: No<br>• Planned Order: Yes |

After saving your changes, run your replenishment plan with the **Do not refresh with current data** option and **Calculate replenishments** check box selected on the Parameters tab in the Run Plan dialog box. Click **Manage Replan Details** to open the Manage Replan Details dialog box, in which you can see the item-location combinations for which you have made changes. Deselect the check box under **Replan** for the combinations for which you don't want to run the simulation.

The changes are lost the next time you run the replenishment plan with the **Refresh with current data** option selected on the Parameters tab in the Run Plan dialog box.

## Simulate Changes with the Replenishment Workbench Table

You can simulate changes to supplies and demands in your replenishment plan by using the Replenishment Workbench table.

Use the Adjusted Shipments Forecast, Gross Forecast, and Net Forecast columns to simulate changes to demands and the Planned Replenishments by Due Date column to simulate changes to supplies.

After saving your changes, run your replenishment plan with the **Do not refresh with current data** option and **Calculate replenishments** check box selected on the Parameters tab in the Run Plan dialog box. Click **Manage Replan Details** to open the Manage Replan Details dialog box, in which you can see the item-location combinations for which you have made changes. Deselect the check box under **Replan** for the combinations for which you don't want to run the simulation.

Except for the change you make to the Adjusted Shipments Forecast column, the other changes are lost the next time you run the replenishment plan with the **Refresh with current data** option selected on the Parameters tab in the Run Plan dialog box.

*Related Topics*

- Run a Replenishment Plan

# How You Simulate Changes to Item Attributes in Replenishment Plans

You can simulate changes to item attributes by editing the Items table for your replenishment plan.

You can edit these columns in the Items table from your replenishment plan:

- Annual Carrying Cost Percentage
- Average Interarrival Time Override
- Fixed Lot Multiplier
- Fixed Order Quantity
- Intermittent Demand Override
- MAPE Override
- Maximum Order Quantity
- Minimum Order Quantity
- Order Cost
- Preprocessing Lead Time
- Postprocessing Lead Time
- Processing Lead Time
- Selling Price
- Service Level Percentage
- Standard Cost

After saving your changes, run your replenishment plan with the **Do not refresh with current data** option and **Calculate replenishments** check box selected on the Parameters tab in the Run Plan dialog box. If required, select the **Calculate policy parameters** check box. Click **Manage Replan Details** to open the Manage Replan Details dialog box, in which you can see the item-location combinations for which you have made changes. Deselect the check box under **Replan** for the combinations for which you don't want to run the simulation.

The changes are lost the next time you run the replenishment plan with the **Refresh with current data** option selected on the Parameters tab in the Run Plan dialog box. You can optionally copy the changes you make in the table to a simulation set for future use.

*Related Topics*

- Run a Replenishment Plan

# Simulations for Inventory Rebalancing Recommendations

## Overview of Simulations for Inventory Rebalancing Recommendations

You can edit the dates, quantities, and shipping methods for your inventory rebalancing recommendations and add a planned order of the transfer type. Thereafter, you can simulate the effects of your edits on inventory rebalancing for your replenishment plan.

During simulation, using the Manage Rebalancing Recommendations page, you can make changes to a subset of items within a cluster. Your new or edited planned orders for item-location combinations are considered as firm. While the excess and shortage quantities are computed for these combinations of items, source locations, and destination locations, no new planned orders are generated for these combinations. The rebalancing recommendations are recomputed for the remaining locations for these items in the cluster. The locations for these items in other clusters are also replanned.

Using the Manage Replan Details dialog box, you can further refine the list of the item-location combinations for which you want to run the simulation.

For the replanned item-location combinations, replenishments are automatically recalculated so that data consistency is ensured.

### Benefits of Simulations for Inventory Rebalancing

By simulating the effects of your changes to the inventory rebalancing for your replenishment plan, you get these benefits:

- You can effectively respond to changes within your supply chain.

  For example, to cater to a sudden demand, you can add a planned order of the transfer type to move excess inventory from a source location to a destination location. You can then simulate the impact of this change to the inventory rebalancing for other locations in the clusters for the item.
- You can optimize inventory costs within your supply chain.
- You can improve your customer service by moving inventory from locations with excess inventory to locations with inventory shortages.

### Additional Points About Simulations for Inventory Rebalancing

Note these additional points about the simulations of changes to inventory rebalancing for your replenishment plan:

- Even if your firm date (suggested ship date) for a new or edited outbound planned order is outside the excess computation window, the planned order is still considered during the calculation of the excess inventory.
- Even if your firm date (suggested due date) for a new or edited inbound planned order is outside the shortage computation window, the planned order is still considered during the calculation of the inventory shortage.

- If the pair of source and destination locations for a newly created planned order is present in more than one cluster, the first cluster is chosen on the basis of the sequence number that you assigned on the Inventory Rebalancing tab on the Plan Options page for the replenishment plan.

*Related Topics*

- Example of Simulation of Changes to Inventory Rebalancing Recommendations
- Inventory Rebalancing Options for Replenishment Plans
- How You Simulate Changes to Inventory Rebalancing Recommendations in Replenishment Plans

# How You Simulate Changes to Inventory Rebalancing Recommendations in Replenishment Plans

After you run your replenishment plan, you can review the inventory rebalancing recommendations and manually override them or create planned orders. You can then simulate the results of your changes to rebalancing recommendations.

## Types of Simulations to Inventory Rebalancing Recommendations

On the Manage Rebalancing Recommendations page for the replenishment plan for which you've selected the **Rebalance inventory** check box on the Plan Options page, you can edit the values in the following columns:

- Firm Date
- Firm Quantity
- Firm Status
- Shipping Method

You can also create planned orders of the transfer type for an item-location combination in a cluster.

## Simulate Changes to Inventory Rebalancing Recommendations

To simulate changes to inventory rebalancing recommendations for your replenishment plan, follow these steps:

> **Note:** If you aren't using an integrated replenishment plan, open the replenishment plan for which you've selected the **Rebalance inventory** check box on the Plan Options page.

1. After the inventory rebalancing process, open your replenishment plan through one of these ways:
   - Use the Manage Plans page:
     i. On the Tasks panel tab, under Plans, select **Manage Plans**.
     The Manage Plans page opens.
     ii. Under Search Results, select the replenishment plan that you want to open, and click **Actions** > **Open**.
     The replenishment plan opens in a separate page.
   - On the Plans panel tab, under Plans, right-click the replenishment plan that you want to open, and select **Open**.
     The replenishment plan opens in a separate page.
2. Click the **Open** drop-down button.
   The Open Table, Graph, or Tile Set dialog box opens.
3. Search for the Manage Rebalancing Recommendations table, and open it.
   The Manage Rebalancing Recommendations page opens under the replenishment plan.

   > **Note:** You can also drill to the Manage Rebalancing Recommendations page from the analytics for inventory rebalancing.

4. Under Search, perform a search for the item-location combinations and clusters for which you want to simulate changes to rebalancing recommendations.
5. Select a rebalancing recommendation that you want to change, and make changes to the values in the **Firm Date**, **Firm Quantity**, **Firm Status**, and **Shipping Method** columns.
   If you make any change to the date or quantity, the value in the **Firm Status** column is automatically set to Firm. Any change to the shipping method is considered only if there's a change to the date or quantity.
   Or, create a planned order of the transfer type, and provide the details under the columns. The value in the **Firm Status** column for the planned order is automatically set to Firm.
   Your firm planned orders aren't retained the next time you run the replenishment plan with the **Refresh with current data** option selected on the Parameters tab in the Run Plan dialog box.
6. Save your changes.
7. Click **Actions** > **Run**.
   The Run Plan dialog box opens.
8. On the Parameters tab, under Data Refresh Options, ensure that **Do not refresh with current data** is selected.
9. Under Scope Options, select the **Rebalance inventory** check box.
   The **Calculate replenishments** check box is automatically selected and grayed out.
10. Under the **Do not refresh with current data** option, click the **Manage Replan Details** link.
    The Manage Replan Details dialog box opens.
11. For the combinations for which you don't want to run the simulation, deselect the check box under **Replan**.
12. Click **Save and Close**.
13. Click **OK** to run the simulation.

## Release Inventory Rebalancing Recommendations After Simulation

After the simulation run, review the results of your changes.

If you're satisfied with the results of your simulations, you can manually release the rebalancing recommendations.

*Related Topics*

- Overview of Simulations for Inventory Rebalancing Recommendations
- Example of Simulation of Changes to Inventory Rebalancing Recommendations
- Manually Release Rebalancing Recommendations

# Example of Simulation of Changes to Inventory Rebalancing Recommendations

Consider an example in which you want to simulate the changes to inventory rebalancing after you consolidate two planned orders from a source destination to a destination location for an item.

In this example, your cluster has five locations: M1, M2, M3, M4, and M5.

This table depicts the excess inventory and inventory shortages before inventory rebalancing for your replenishment plan:

| Inventory | M1 | M2 | M3 | M4 | M5 |
|---|---|---|---|---|---|
| Excess inventory | 12 | 6 | 0 | 0 | 0 |
| Inventory shortage | 0 | 0 | 9 | 1 | 7 |

This table depicts the initial results after inventory rebalancing for your replenishment plan:

| | Planned Orders | Inventory | M1 | M2 | M3 | M4 | M5 |
|---|---|---|---|---|---|---|---|
| 1 | M2 to M3: 6<br>M1 to M3: 3 | Excess inventory | 9 | 0 | 0 | 0 | 0 |
| | | Inventory shortage | 0 | 0 | 0 | 1 | 7 |
| 2 | M1 to M5: 7 | Excess inventory | 2 | 0 | 0 | 0 | 0 |
| | | Inventory shortage | 0 | 0 | 0 | 1 | 0 |
| 3 | M1 to M4: 1 | Excess inventory | 1 | 0 | 0 | 0 | 0 |
| | | Inventory shortage | 0 | 0 | 0 | 0 | 0 |

First, two planned orders are created, one for six units from M2 to M3 and the other for three units from M1 to M3. The excess inventory is zero units for M2 and nine units for M1. The inventory shortage is zero units for M3. In the cluster, M3 is picked up because it has the largest inventory shortage, and M2 is picked up because it has the shortest transfer lead time.

Second, one planned order is created for seven units from M1 to M5. The excess inventory is two units for M1. The inventory shortage is zero units for M5. In the cluster, M5 is picked up because it has the second largest inventory shortage.

Third, one planned order is created for one unit from M1 to M4. The excess inventory is one unit for M1. The inventory shortage is zero units for M4.

M1 has an initial excess of 12 units and can fully meet the shortage of nine units at M3. Therefore, you may want to consolidate the number of shipments arriving at M3 to one shipment from M1 instead of two partial shipments from M1 and M2 and simulate the results of your change to the inventory rebalancing for the other locations in the cluster.

Assume that you've changed the quantity of the shipment from M1 to M3 from three to nine units and firmed the planned order. This table depicts the results of consolidating the planned orders that are received by M3:

| Planned Orders | Inventory | M1 | M2 | M3 | M4 | M5 |
|---|---|---|---|---|---|---|
| M1 to M3: 9 | Excess inventory | 3 | 6 | 0 | 0 | 0 |
| | Inventory shortage | 0 | 0 | 0 | 1 | 7 |

One planned order for 9 units is created from M1 to M3. The excess inventory is three units for M1.

This table depicts the simulation of the results of your change on the inventory rebalancing for the remaining locations of the cluster:

| | Planned Orders | Inventory | M1 | M2 | M3 | M4 | M5 |
|---|---|---|---|---|---|---|---|
| 1 | M2 to M5: 6<br>M1 to M5: 1 | Excess inventory | 2 | 0 | 0 | 0 | 0 |
| | | Inventory shortage | 0 | 0 | 0 | 1 | 0 |
| 2 | M1 to M4:1 | Excess inventory | 1 | 0 | 0 | 0 | 0 |
| | | Inventory shortage | 0 | 0 | 0 | 0 | 0 |

The excess inventory and inventory shortage are recalculated for M1 and M3. No planned orders are created from M1 to M3.

Then, inventory rebalancing is performed for the remaining locations in the cluster. First, two planned orders are created, one for six units from M2 to M5 and the other for one unit from M1 to M5. The excess inventory is zero units for M2 and two units for M1. The inventory shortage is zero units for M5. In the cluster, M5 is picked up because it has the largest inventory shortage.

Second, one planned order is created for one unit from M1 to M4. The excess inventory at M1 is one unit. The inventory shortage at M4 is zero.

If you're satisfied with the simulation results, you can manually release the modified planned order (M1 to M3) and recommended planned orders.

*Related Topics*

- Overview of Simulations for Inventory Rebalancing Recommendations
- Manually Release Rebalancing Recommendations
- How You Simulate Changes to Inventory Rebalancing Recommendations in Replenishment Plans

# 19 Simulation Sets

## Create a Simulation Set

Perform the following steps to create a simulation set from the Plan Inputs work area:

1. In the Navigator, click the Plan Inputs work area link.
2. On the Plan Inputs page, click the **Open** button.
3. In the Open Table, Graph, or Tile Set dialog box, do the following:
    a. In the **Search** drop-down list, select: **Name**.
    b. In the **Search** text box, enter the name of a table, such as **Items** or **Resources**.
    c. Click the **Search** icon button.
    d. Select the **Items** (or **Research**) table and click **OK**.
4. On the Plan Inputs page, Items tab (or Resources tab), click the **Search** button.
5. In the Search Results region, select one or more rows and do the following:
    a. Click **Actions** and then select **Add to Simulation Set**.
    b. In the Add to Simulation Set dialog box, click the **Search: Simulation Set** down arrow for a list of values, and then click **Create Simulation Set**.
    c. In the Create Simulation Set dialog box, in the **Simulation Set** field, enter the name of the simulation set you want to create.
    d. Click **Save and Close**.
    e. In the Add to Simulation Set dialog box, click **Save and Close**.

*Related Topics*

- Edit a Simulation Set
- Overview of Simulation Sets
- Simulations in Supply Planning
- Copy Data to Simulation Sets in Supply Planning
- Add Data from Plan Inputs to Simulation Sets

## Edit a Simulation Set

Perform the following steps to edit a simulation set from the Plan Inputs work area:

1. In the Navigator, click the Plan Inputs work area link.
2. On the Plan Inputs page, click the Plans panel tab.
3. In the Plans panel drawer, do the following:
    a. Expand the list of Simulation Sets.
    b. Select a simulation set, right-click on it and select **Open**.
4. On the Simulation Set page, click **Open** and then select **Full Pane**.

5. In the Open Table, Graph, or Tile Set dialog box, select a table, such as **Resources** or **Items**, and then click **OK**.

   On the Simulation Set page, a new tab opens for the table that you selected, such as the Resources tab or the Items tab.
6. In the Search region, click **Search**.
7. In the Search Results region, select one or more rows. Click **Actions** and then select **Edit** from the drop-down list.
8. In the edit dialog box, you can edit some of the attributes and drill down to additional tables, depending on the table that you accessed. For example:
   - For the Resources table, you can change the Bottleneck value. You can also drill down to the Resource Availability table.
   - For the Items table, you can change the Processing Lead Time value. You can also drill down to the Suppliers table.
9. When done, click **OK** to return to the Simulation Set page. Changed rows and fields are marked with small colored dots.

*Related Topics*

- Create a Simulation Set
- Edit a Simulation Set from a Spreadsheet
- Overview of Simulation Sets
- Simulate Demand and Supply Changes

# Edit a Simulation Set from a Spreadsheet

You can download simulation set data into a spreadsheet, make edits, including certain updates, additions, and deletions, and then upload it back to the simulation set.

In the Plan Inputs work area, while working with the Items or Supplies and Demands table in a simulation set, use the Edit in Spreadsheet option in the Actions menu to download the table rows into a Microsoft Excel file.

> **Note:** Before working with spreadsheets, you must download and install the desktop integration installer that is available under **Navigator** > **Tools**. Otherwise, you can't download information into or upload information from spreadsheets.

To edit the data in the Items or Supplies and Demands table of the simulation set in a Microsoft Excel spreadsheet, follow these steps:

1. In the Plan Inputs work area, click the Plans panel tab.

   > **Note:** The simulation set can also be edited from the Planning Central, Sales and Operations Planning, and Supply Planning work areas. However, the Supplies and Demands table is available in the simulation set only when it is edited in the Supply Planning work area.
2. In the Plans panel drawer, do the following:
   a. Expand the list of simulation sets.
   b. Select the simulation set that you want to edit, right-click, and click **Open**. The simulation set opens.

3. In the **Open** menu, select **Full Pane**. The Open Table, Graph, or Tile Set dialog box opens.
4. Select the Items or Supplies and Demands table, and click **OK**. The table opens in a page in the simulation set.
5. Perform a search for the table rows in the simulation set.
6. In the **Actions** menu for the table, click **Edit in Spreadsheet**. A dialog box opens and prompts you to save or open a Microsoft Excel file.
7. Open the spreadsheet. The Connect dialog box opens and prompts you to connect to the URL for the application.
8. Click **Yes**. A dialog box opens and prompts you to type your credentials.
9. Sign in with your credentials for the Oracle Fusion Cloud Applications Suite. The spreadsheet is refreshed with the data in the simulation set.
10. Edit the data.

| Task | Steps |
|---|---|
| To add an item to the Items table of the simulation set | Click the **Add Item** icon in the **Items** menu of the spreadsheet, and provide values in the Add Item dialog box that opens. You can add an existing item or create an item that is based on an existing item. |
| To create an order in the Supplies and Demands table of the simulation set | Click the **Create Order** icon in the **Supplies and Demands** menu of the spreadsheet, and provide values in the Create Order dialog box that opens. (Not applicable to sales and operations planning.) |
| To edit a row | Modify the values in the row cells that are not grayed out. A symbol appears in the cell under the Changed column for the row. |
| To delete a row | Click the corresponding cell in the Mark for Deletion column. A symbol appears in the cell to mark the table row for deletion. To deselect the row, click the cell again. |

11. Click the **Upload** icon in the **Items** or **Supplies and Demands** menu. In the Upload Options dialog box that appears, select the check boxes for the options that you want to use, and click **OK**. The data is uploaded to the simulation set.
12. Save the simulation set. The changes are displayed and marked with colored symbols.
13. Save and close the spreadsheet.

# 20 Buyer Planning

## Buyer Planning for Administrators

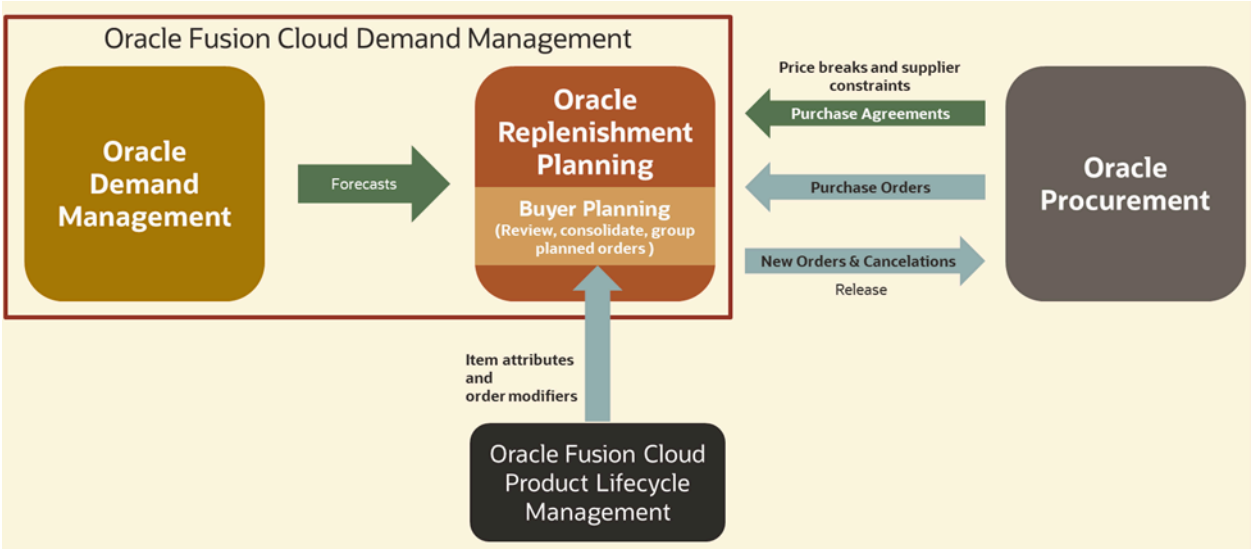
As a Buyer Planning administrator, understand how it integrates with other modules and products, and what you need to do before your planners can use it.

Buyer planners take advantage of price breaks for larger quantity orders and reductions in delivery costs into fewer deliveries.

In the Buyer Planning work area, part of Oracle Replenishment Planning, buyer planners use recommendations from Replenishment Planning to evaluate ways to consolidate and group planned orders.

### Application Integration

This graphic shows how the Buyer Planning work area interacts with other modules or products, such as Oracle Demand Management, Oracle Procurement, and Oracle Fusion Cloud Product Lifecycle Management through Oracle Replenishment Planning.




Oracle Replenishment Planning gets demand forecasts from Oracle Demand Management. Item attribute and order modifier information comes into Buyer Planning from Oracle Fusion Cloud Product Lifecycle Management. Price breaks, purchase orders, and supplier constraints come from Oracle Procurement. With all the required data gathered into a replenishment plan recommendation, Buyer Planning becomes a focused platform for the planners to plan purchasing better.

Planners can review planned orders and change implement quantities, consolidate orders for discounts, or group orders to save shipping costs. When they release a plan from Buyer Planning, purchase orders are generated in Oracle Procurement.

# Prerequisites

You must complete certain prerequisites before buyer planners can start using Buyer Planning:

| Prerequisite | Description |
|---|---|
| Opt in to Replenishment Planning | Ensure that your enterprise has opted in to Oracle Replenishment Planning. |
| Run the Prepare Plan for Buyer Planning scheduled Process | Run this scheduled process to copy buy orders of a replenishment plan into Buyer Planning's elastic index for quick retrieval.<br><br>You can run this process:<br><br>• From the Scheduled Process work area.<br>• Using the View Buyer Planning action from the Actions menu of a replenishment plan in the Replenishment Planning work area. This action runs the process and also opens Buyer Planning for the plan.<br>• Automatically, by selecting Prepare for Buyer Planning in the Run Plan dialog. |
| Define Default Weight and Volume Measures | Define a default weight unit of measure and default volume unit of measure so that planners can view weight and volume totals in the Group Summaries view. Set the default values with the collaborationParameters REST service using these codes:<br>• ORA_MSC_BP_DEFAULT_WEIGHT_UOM<br>• ORA_MSC_BP_DEFAULT_VOLUME_UOM |

**Note:** Buyer Planning supports data security at the organization level only, data security by supplier isn't supported.

# Privileges

Privileges required to use the Buyer Planning work area and its functionality:

| Privilege | Privilege Code | Description |
|---|---|---|
| Monitor Buyer Planning Work Area | MSC_MONITOR_BUYER_PLANNING_WORK_AREA_PRIV | Allows monitoring of the Buyer Planning work area. |
| Edit Supplies in Buyer Planning | MSC_EDIT_SUPPLIES_BUYER_PLANNING_PRIV | Allows management of supplies in Buyer Planning. |
| Edit Buyer Planning Participating Suppliers | MSC_EDIT_BUYER_PLANNING_PARTICIPATING_SUPPLIERS_PRIV | Allows management of Buyer Planning suppliers from the Participating Suppliers page. |

# Overview of Buyer Planning for Buyer Planners

Buyer Planning lets you evaluate ways to consolidate and group purchases to enhance product availability and reduce the total costs within supply networks.

In the Buyer Planning work area, you can view buy orders from Oracle Replenishment Planning planned recommendations, and then consolidate and group them. In addition, you evaluate the impact on projected available balances when you change quantities or dates of planned orders.

## The Buyer Planning Work Area

Use any of these ways to get to the Buyer Planning work area:

- Use the View Buyer Planning action from Actions on a replenishment plan
- Use the Buyer Planning work area icon on Supply Chain Planning

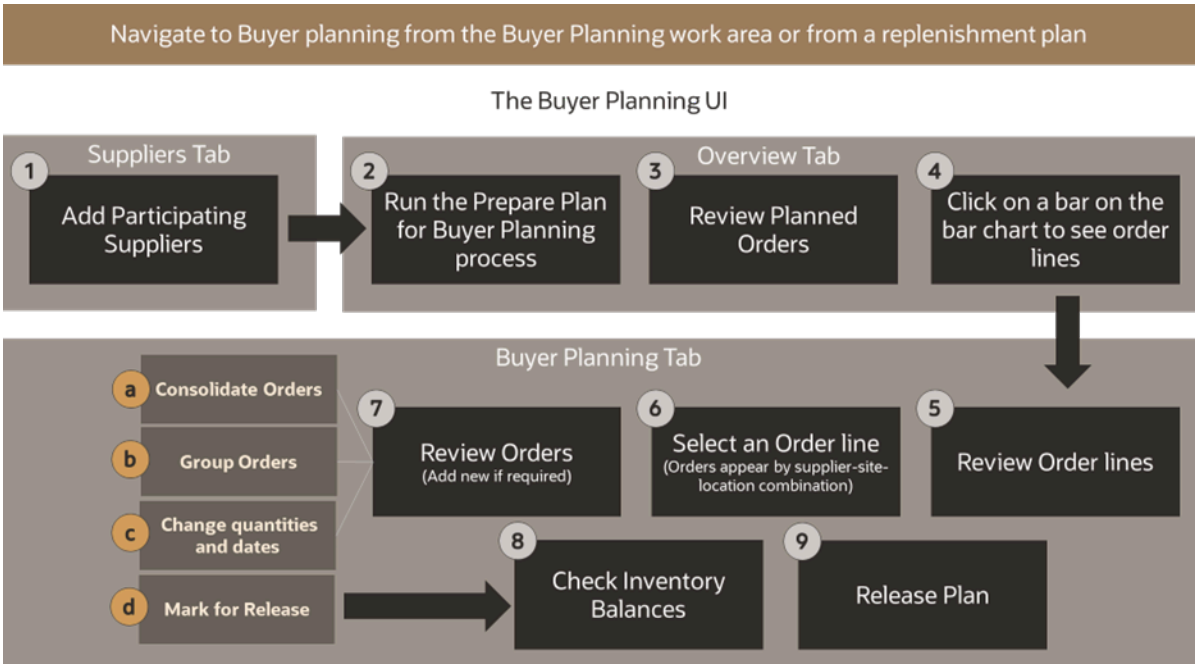
In the Buyer Planning work area, there are three tabs:

- Overview
- Buyer Planning
- Suppliers

| Tabs in the Work Area | What's There and What You can Do |
|---|---|
| Overview | Shows:<br>• Planned Orders KPI card<br>• Orders with Price Breaks KPI card<br>• Bar chart by supplier and planned order status that shows data based on the KPI card you selected<br><br>**Note:** If price break information isn't included on the agreements, then:<br>• The Planned Orders with Price Break KPI isn't displayed.<br>• Price break indicator icons for orders aren't shown and the price break tab on the items panel drawer is hidden for orders in the Buyer Planning tab. |
| Buyer Planning | Shows order lines with a supplier. When you select an order line, orders are shown based on the supplier-supplier site-location combination. The orders have:<br>• Planned orders in Ready for Release, Marked for Release, and Released statuses,<br>• Ineligible purchase requisitions, and<br>• Ineligible purchase orders.<br>On the Buyer Planning tab, purchase orders and requisitions are shown for informational purposes. You work only on planned orders. You can perform actions such as consolidating and grouping orders. You can quickly create new planned orders while on Buyer Planning. Here, you decide the implement quantity, change the implement dock date, mark the orders for release, check inventory balances, and finally, release your plan. |

| Tabs in the Work Area | What's There and What You can Do |
|---|---|
| | |
| Suppliers | Lets you manually add participating suppliers from the Buyer Planning work area. |

This graphic shows the functional flow of how to use the Buyer Planning work area:




Begin with adding the participating suppliers to the Buyer Planning work area. You can use REST service or add them manually from the **Suppliers** tab of Buyer Planning (call out 1). See the Add Suppliers to Use When Doing Buyer Planning topic.

Click the **Overview** tab. On the Overview page, run the Prepare Plan for Buyer Planning process if you get a prompt. This brings in the latest plan recommendations (call out 2). After the process is run, you see insights on planned orders based on their suppliers. Review the insights (call out 3). Click a bar on the bar chart in the Overview page (callout 4), to see the Order Lines view on the **Buyer Planning** tab. Here, you see the order lines by the supplier you selected on the chart. Review order lines (callout 5).

Select an order line (callout 6) to see the Order Details view on the **Buyer Planning** tab. The orders appear based on the supplier-site-location combination. On this page, review the planned orders that are in different statuses (callout 7). On this page, you can consolidate orders (callout 7a) and group orders (callout 6b). Here, you can create planned orders, change the implement quantities, and implement dock dates (callout 7c). After you're done making all the changes, mark the planned order for release (callout 7d).

Check the updated projected available balances of inventory (callout 8) and release the plan (callout 9) to generate purchase orders.

# How to Get Ready for Buyer Planning

To use the Buyer Planning work area, you need the latest replenishment plan recommendation data. For that, you run the Prepare Plan for Buyer Planning process.

| What You Need | Details | How To Do |
|---|---|---|
| The buy orders data from replenishment plan recommendations | Run the Prepare Plan for Buyer Planning scheduled process to get the data. Points to remember before running the process:<br>• Run the process only after confirming that the plan output meets expectations and planning recommendations are ready to be released.<br>• Rerun the process if you have rerun a plan. Otherwise, the orders displayed in Buyer Planning won't reflect the latest plan output.<br>**Note:** You won't see replenishment plan recommendations on Buyer Planning when:<br>• The plan is released from Replenishment Planning and the run is in progress.<br>• The plan run has failed.<br>• The plan is deleted. | There are several ways you can run the process:<br>• Automatically, by selecting the Prepare for Buyer Planning check box in the Run Plan dialog.<br>• By selecting the **View Buyer Planning** action from page-level Actions menu within a replenishment plan.<br>• Directly from Buyer Planning. The application checks to see if the plan data has changed since the **Prepare Plan for Buyer Planning** scheduled process was last run and shows a message if it needs to be run again. Select the link to submit the Prepare Plan for Buyer Planning scheduled process for rerun. |
| Participating Suppliers | Though replenishment plan recommendations have the supplier information, you need to add participating suppliers to the Buyer Planning work area. After adding suppliers, you can see order details and insights that help you make buying decisions. | See the **Add Suppliers to Use When Doing Buyer Planning** topic. |
| The Updated Projected Available Balances measure | The data from the Updated Projected Available Balances measure help you assess the impact of changes you made to the planned orders for the inventory. You need to add this measure to the measure catalog of a replenishment plan. | See the **Add Updated Projected Available Balances Measure** topic. |

# Add Suppliers to Use When Doing Buyer Planning

Though replenishment plan recommendations contain supplier information, you need to add participating suppliers to the Buyer Planning work area to see order details and insights that can help you make buying decisions.

Two ways to add suppliers to the Buyer Planning work area:

- Use the buyerPlanningSuppliers REST service

- Add each supplier in the Suppliers tab of the Buyer Planning work area

Here's how you add suppliers manually:

1. In the Buyer Planning work area, Suppliers tab, Click **Add**.
2. On the Add Supplier panel drawer, start typing in name of a supplier.
   You see a list of matching suppliers. Alternatively, you can click the dropdown to see all the suppliers. Select the one you want to add.
3. Click **Add**.
   The Suppliers table shows the name and number of the supplier you added.

# Add the Updated Projected Available Balances Measure

Updated projected available balances help you assess the impact on inventory caused by the changes you make to planned orders.

Add this measure to the measure catalog of a replenishment plan. You can add either from the Replenishment Planning work area or Setup and Maintenance work area.

## Add From the Replenishment Planning Work Area

1. In the Replenishment Planning work area, open a plan and click the Tasks panel tab.
2. In the Tasks panel drawer, under Configuration, click the **Configure Planning Analytics** link.
3. On the Configure Planning Analytics page, Measure Catalogs tab, under Available Measures, search for **Updated Projected Available Balances**.
4. Move the measure to **Selected Measures**.
5. Click **Save**.

## Add From the Setup and Maintenance Work Area

1. In the Setup and Maintenance work area, use the **Configure Planning Analytics** task:
   a. **Offering**: Supply Chain Planning
   b. **Functional Area**: Supply Chain Planning Configuration
   c. **Task**: Configure Planning Analytics
2. On the Configure Planning Analytics page, Measure Catalogs tab, under Available Measures, search for **Updated Projected Available Balances**.
3. Move the measure to **Selected Measures**.
4. Click **Save**.

# Consolidate Orders for Better Price Break Opportunities

You can evaluate price break opportunities and consolidate planned orders to reduce costs.

If you have many planned orders created for ordering the same item, you can consolidate all of them into a single order. However, the orders must be in the Ready for Release or Marked for Release status.

## Consolidate Orders

To consolidate orders:

1. In the Buyer Planning work area, Overview tab, click on a status bar of the planned order bar chart.

   you see the Order Lines view on the Buyer Planning tab.
2. Select an order line.

   You see the Order Details view on the Buyer Planning tab. The order details are based on the supplier-site-location combination.
3. Select orders you want to consolidate.
4. Click **Consolidate Orders**.

   Selected orders are merged into a single order. The consolidated orders icon appears for the order. The weight and quantity of the items in the orders are summed up into a final weight and final quantity.

## View the Consolidated Quantity and Weight

By default, the Final Weight and Final Quantity columns are hidden on the Order Details view. To see the final weight and final quantity after consolidation, do this:

1. Click the column icon to the right of the Order Details table.
2. On the Column UI, search for the Final Weight and Final Quantity columns.
3. Select the check box before the column name and close the UI.

   You now see the Final Weight and Final Quantity columns on the table.

## Remove Consolidation on Orders

Use the Unmark for Release action to remove consolidation on orders. Here's how you do it:

1. Select a consolidated order.
2. From **More Actions**, select **Unmark for Release**.

   The orders are unconsolidated into separate orders. The statuses of the orders change to Ready for Release.

You can also use the Unmark for Release action to:

- Ungroup the orders.
- Remove orders from the Marked for Release status back to the Ready for Release status.

# Group Orders to Save Costs

Group planned orders into purchase orders to build loads that maximize weight and volume limits and reduce the number of deliveries in a given period. You can ungroup the orders if you have changes to the grouping.

You can group orders that have different items into a single group. However, ensure that the supplier is the same and the location of the supplier is also the same. After grouping, the orders continue to appear as separate orders but belong to the same group. When you release the plan, the grouped orders become a single purchase order.

## Group a Set of Orders Using the Group Order Action

Here's how you group the planned orders:

1. In the Buyer Planning work area, Overview tab, click on a status bar of the planned order bar chart.

   You see the Order Lines view on the Buyer Planning tab.
2. Select an order line.

   You see the Order Details view on the Buyer Planning tab. The order details are based on the supplier-site-location combination.
3. Select orders you want to group and click **Group Orders**.

   You see the Group Orders panel drawer.
4. On the panel drawer, enter a **Group Name**.
5. Change the group dock date if needed.
6. Click **Save**.

   The orders that are grouped show the same group name.

## Group the Orders Using Inline Edit

To group your planned orders using inline edit:

1. In the Buyer Planning work area, Overview tab, click on a status bar of the planned order bar chart.

   You see the Order Lines view on the Buyer Planning tab.
2. Select an order line.

   You see the Order Details view on the Buyer Planning tab. The order details are based on the supplier-site-location combination.
3. On the Order Details view of the Buyer Planning tab, double-click on the Group Name field for an order.

   The field becomes editable.
4. Enter a group name. If there's a name already in the field, you can change it.
5. Click the tick mark.

   Your changes are saved.

## Remove Grouping on Orders

Use the **Unmark for Release** action to remove grouping on orders. Here's how you do it:

1. Select the orders you want to ungroup.
2. From **More Actions**, select **Unmark for Release**.

   The orders are ungrouped and the statuses of the orders change to Ready for Release.

You can also use the Unmark for Release action to:

- Remove consolidation of orders.
- Remove orders from the Marked for Release status back to the Ready for Release status.

## View Group Summaries

In the Group Summary view, you can see how many planned orders are grouped and how many aren't. Use this information to determine if any further grouping or readjustment is needed to optimize the weight and volume of loads.

1. In the Buyer Planning work area, Overview tab, click on a status bar of the planned order bar chart.
   You see the Order Lines view on the Buyer Planning tab.
2. Select an order line.
   You see the Order Details view on the Buyer Planning tab. The order details are based on the supplier-site-location combination.
3. On the Order Details view of the Buyer Planning tab, click **More Actions**, and select **Show Group Summaries**.
4. On the Group Summaries view, you see:

| Field | Description |
|---|---|
| Ungrouped orders: Number of Planned Orders | Shows the number of planned orders that aren't grouped yet. |
| Group: Number of Planned Orders | Shows the number of orders each group has. |
| Total Price Savings | You get an understanding of total cost that you saved after consolidating orders. |
| Total Weight | Shows the total weight of the items in a group order. |
| Total Volume | Shows the total volume of load containing a group order.<br><br>Total weight and volume help you save on delivery costs and number of deliveries. You can regroup to see that the container in which the items are delivered is optimally utilized so that you can avoid multiple deliveries. |

# Analyze Impact on Inventory

You can evaluate the impact on projected inventory balances and updated projected inventory balances when you change planned order quantities or dates.

Inventory analysis gives visibility to the time-phased view of a selected item. You get to know the projected available balance of an item before and after any changes, including order consolidation and grouping.
To see inventory analysis:

1. In the Buyer Planning work area, Overview tab, click on a status bar of the planned order bar chart.
   You see the Order Lines view on the Buyer Planning tab.
2. Select an order line.
   You see the Order Details view on the Buyer Planning tab. The order details are based on the supplier-site-location combination.
3. Select an order.
4. From **More Actions**, select **Inventory Analysis**.

You can see inventory analysis of only one item at a time.

5. You can use **Change Dates** to set different time periods and see the trend of inventory demand.

Inventory Analysis shows these insights based on the item-location combination in an order:

- Projected Available Balances line chart
- Table with inventory details

## Projected Available Balances Line Chart

On the chart, you see a line graph for the projected available balance and a dotted line graph for the updated projected available balance of an item against its quantities and date ranges.

In the background of the line graphs, you see safety stock, final minimum quantity, and final maximum quantity maintained for an item. This information helps you know how long the remaining stock can last before your supplier delivers the order.

## Inventory Details Table

Inventory details display the measures that help organizations understand how much demand exists for an item for a given time period, what's the total demand and supply, projected available balance, updated projected available balance, average daily demand for the item, and updated days of cover.

Based on this information, you can estimate if the item needs refilling in the near future.

## Updated Projected Available Balance

All the measures, including Updated Projected Available Balance, are available in the replenishment plan. However, the Updated Projected Available Balance measure keeps changing whenever you change the quantities of your planned orders from Buyer Planning.

Here are the other possible scenarios when the Updated Projected Available Balance measure is updated:

| Scenario | Description |
|---|---|
| When you change the Implement Quantity of an order after marking it for release | When you add or change implement quantities of more than one order, select **Calculate Inventory Balances** from **Actions** to update the Updated Projected Available Balance. |
| When you create planned orders from the Buyer Planning work area | Updated Projected Available Balance is automatically updated when you create new planned orders and add quantities for them from the Buyer Planning work area.<br>Let's assume that on Jan 4, 2024, you create a planned order from Buyer Planning. The ordered quantity is added to the Updated Projected Available Balance Jan 4, 2024. The quantity changes are reflected in the chart and the inventory details table. |

# Release Your Plan from Buyer Planning

You can release your replenishment plan from the Buyer Planning work area to generate purchase orders in Oracle Procurement. The status of the planned orders that are marked for release changes to Released.

**Note:** A good business practice is to ensure that the planning team adheres to a formal business process for releasing a plan to Oracle Procurement so that you won't release a plan prematurely.

When you release a plan, the release process generates purchase orders based on:

- Custom grouping of orders you did in the Buyer Planning work area
- Purchase agreements from Oracle Procurement
- Group By settings defined for a replenishment plan

To release a plan:

In the Buyer Planning work area, Buyer Planning tab, click **Release Plan**. The **Release Plan from Buyer Planning** scheduled process runs.

Order status changes after the process completes:

| Order Type | Status Before Release | Status After Release |
|---|---|---|
| Planned Orders | Marked for Release | Released |
| Planned Orders | Ready for Release | No change |
| Planned Orders | Released | No change |
| Purchase Requisitions | Ineligible | No change |
| Purchase Orders | Ineligible | No change |

# 21 Extract Plan Data

## Overview of Planning Measure Data Extractions from Plan Output

Planning information is an important component of supply chain analytics. It's important to extract planning measure data from any plan to build offline reports or integrate with any external system.

Planners can use the Export Plan Data action from the Manage Plans page to run the Prepare Supply Chain Planning Data for Export scheduled process. You can also run the process or schedule as a job from the Scheduled Processes page under the Tools menu in the Navigator.

When analyzing a plan, you can extract detail supply chain planning multidimensional plan output data, including measures and hierarchies. The extract is based on the measure catalog and dimension catalog assigned to the plan. The Prepare Supply Chain Planning Data for Export scheduled process extracts plan output data into a set of files for external reporting and analysis.

The extract process exports plan data to WebCenter Content in the comma-separated value (CSV) data format. This extract includes measure data, including any measures that you configured that are either stored or calculated. For calculated measures, the planning process extracts the data after evaluating the measure expressions. The extract is based on the measure catalog and dimension catalog assigned to the plan and includes user-defined hierarchies and levels. Supporting information such as hierarchies for multidimensional analysis is also exported.

Before you can run the **Prepare Supply Chain Planning Data for Export** scheduled process for a plan, you must:

1. As a one-time setup, create an application integration with login credentials.
    a. Navigate to the Setup and Maintenance work area and select the Manage Setup Content task.
    b. On the Manage Integration of Additional Applications page, set up the following:
        - Application Name: SCP_BICC_REST_CREDENTIALS
        - Full URL: Enter the host name of the application. For example: **https://example.fa.app.oraclecloud.com**
        - Partner Name: SCP_BICC_REST_CREDENTIALS
        - Security Policy: oracle/wss_username_token_over_ssl_client_policy
2. Ensure that the user running the extract has access to the Upload and Download Data from On-Premise System to Cloud System role (OBIA_EXTRACTTRANSFORMLOAD_RWD).
3. Configure the extract options for your plan. Navigate to the Plan Options page, Scope tab and click the Advanced Options button. In the Scope: Advanced options dialog box, in the Extract Options section, configure the extract parameters.
4. Navigate to the Manage Plans page and select a plan. Select Export Plan Data to run the Prepare Supply Chain Planning Data for Export scheduled process.

You can extract data at the lowest level from any of these plan types:

- Demand plan
- Demand and Supply plan
- Replenishment plan

- Sales and Operations plan
- Supply plan

# Configure Plan Extract Parameters

Before you can select the Export Plan Data action from the Manage Plans page, you must configure the extract options for your plan.

1. Navigate to the Plan Options page, Scope tab and click the **Select Advanced Options** button.
2. In the Scope: Advanced options dialog box, in the Extract Options section, select the **Enable for extract** check box to enable plan data to be extracted.
3. Configure the extract parameters for the plan.

## Dimension Catalog for Extract

Select a dimension catalog to use for the extract process. The list of values includes all dimension catalogs valid for the plan type. The list of hierarchies included in this list must be a subset of the hierarchies available in the dimension catalog associated with the plan. The list of hierarchies includes preconfigured and user-defined hierarchies. Note the following:

- The maximum number of levels per hierarchy is limited to 10 levels.
- The maximum number of hierarchies in the segment dimension is limited to two hierarchies.

## Measure Catalog for Extract

Select a measure catalog to use for the extract process. The list of values includes all measure catalogs valid for this plan type. The measure catalog must contain only the measures that are part of the measure catalog for the plan. The planning process evaluates measures with expressions and includes the results in the extract.

## Extract Time Hierarchy

Select a time hierarchy to use for the extract process. Data extraction is done only at the lowest level for all dimensions except for the time dimension. You can have only one time hierarchy per plan and it must be part of the dimension catalog used for the extract process. If it contains other time hierarchies, the extract process ignores them for extract.

The extract time hierarchy depends on the plan type, the planning calendar associated with the plan, and the planning time level. Validation rules apply for the **Extract Time Hierarchy** field, based on the type of plan.

| When the planning calendar options are | | | Extract Time options must be | |
|---|---|---|---|---|
| Plan Type | Planning Calendar Type | Planning Time Level | Extract Time Hierarchy | Extract Time Level |
| Supply Plan | Greogorian Calendar | Month | Gregorian Calendar | Month, Quarter or Year |
| | | Day | Any valid time hierarchy in plan | Any supported time levels |
| | Manufacturing Calendar | Week or Period | Same Manufacturing Calendar of the plan | Planning Time Level or above |
| | | Day | Any valid time hierarchy in plan | Any supported time levels |
| Demand Plan | Greogorian Calendar | Month | Gregorian Calendar | Month, Quarter or Year |
| | Manufacturing Calendar | Week or Period | Same Manufacturing Calendar of the plan | Planning Time Level or above |
| | Fiscal Calendar | Month | Same Fiscal Calendar of the plan | Month or Quarter |
| | | Day | Any valid time hierarchy in plan | Any supported time levels |
| Sales and Operations Plan | Greogorian Calendar | Month | Gregorian Calendar | Month, Quarter or Year |
| | | Quarter | Gregorian Calendar | Quarter or Year |
| | Manufacturing Calendar | Week or Period | Same Manufacturing Calendar of the plan | Planning Time Level or above |
| | Fiscal Calendar | Month | Same Fiscal Calendar of the plan | Month or Quarter |
| | | Quarter | Same Fiscal Calendar of the plan | Quarter |
| Replenishment Plan | Greogorian Calendar | Month | Gregorian Calendar | Month, Quarter or Year |
| | Manufacturing Calendar | Week or Period | Same Manufacturing Calendar of the plan | Planning Time Level or above |
| | | Day | Any valid time hierarchy in plan | Any supported time levels |

For a demand plan that uses a hybrid time hierarchy, the value in the **Extract Time Hierarchy** field is automatically set to the hybrid time hierarchy that you selected as the planning calendar and can't be changed.

## Extract Time Level

Select a specific time level to extract. The list of values includes all levels based on the plan type and your selection in the **Extract Time Hierarchy** field. The valid values and defaults are as follows:

- Manufacturing calendar: Week, Period (Default is Week)
- Fiscal Calendar: Month, Quarter (Default is Month)
- Gregorian Calendar: Month, Year (Default is Month)

The extract time level depends on the plan type, the planning calendar associated with the plan, and the planning time level. The Extract Time Level selection is subject to validation for each plan type.

| Plan Type | Rule |
|---|---|
| Supply plan | Largest supply planning bucket or above. For example:<br>• If Supply Planning Buckets are 0 days, 52 weeks, then the Extract Time Level can be Week or Period.<br>• If Supply Planning Buckets are 365 days, 13 Periods, then the Extract Time Level can only be Period. |
| Demand plan | Planning time level of the plan or above. |
| Demand and Supply plan | Largest supply planning bucket or above. For example:<br>• If Supply Planning Buckets are 0 days, 52 weeks, then the Extract Time Level can be Week or Period.<br>• If Supply Planning Buckets are 365 days, 13 Periods, then the Extract Time Level can only be Period. |
| Sales and Operations plans | Planning time level of the plan or above. |
| Replenishment plan | Planning time level of the plan or above. |

For a demand plan that uses a hybrid time hierarchy, in the **Extract Time Level** field, you can select a parent of the Hybrid time level for the hybrid time hierarchy that you selected as the planning calendar. For a manufacturing hybrid hierarchy, you can select the Week or Period level. For a Gregorian hybrid hierarchy, you can select the Month, Quarter, or Year level. For a fiscal hybrid hierarchy, you can select the Month, Quarter, or Year level.

# Files Created by the Plan Extract Process

The plan extract process generates a set of files. Some files have file names that begin with DATA and have a .csv.gz file extension. These files are compressed, comma-separated value (CSV) files.

The extract process also generates a set of files with file names that begin with META and have a .mdcsv.gz extension for its internal use. You can ignore the META files.

Every plan extract results in the following DATA files:

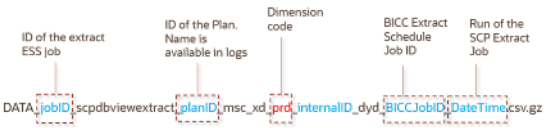
| File generated | Description of file |
|---|---|
| Dimension Data | The plan extract process generates one dimension data file for each dimension selected for the extract process. This file contains all of the level members with their associated relationships for all hierarchies in that dimension. |
| Dimension Definition | The plan extract process generates one dimension definition file for each extract and contains the names of the hierarchies and levels. |
| Measure Data | The plan extract process generates one measure data file for each set of measures that share the same dimensionality. This file contains the measure values by the different dimensions. |
| Measure Definition | The plan extract process generates one measure definition file for each extract and contains the names, data types, expressions, granularity, and aggregation rules of the measure. |

The extract process generates the dimension definition and measure definition files to help you understand the content of the data files, but they aren't essential for reporting or analysis. These files contain translatable strings in the language of the planner performing the extract.

## Naming Conventions for Extracted DATA Files

In addition to the DATA prefix and .csv.gz file extension, the data file names follow a specific naming pattern. You can search the content server for this name pattern to get the required files for download.

- **Dimension file name patterns**
  - Dimension data file:

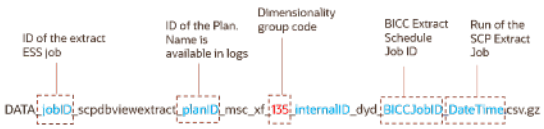



  - Dimension definition file:

DATA_jobID_scpdbviewextract_planID_msc_xtr_hierarchy_map_v-BICCJobID_DateTime.csv

| Dimension file name parts | Description |
|---|---|
| jobID | The job ID of the extract scheduled process. |
| planID | The ID of the plan. This name is available in log files. |
| Dimension code | The dimension code that the hierarchies in the file belong to. Used in the dimension data file, but not the dimension definition file. |
| BICCJobID | The job ID of the extract scheduled job of the BI Cloud Connector (BICC) tool. |
| DateTime | Date and time the extract scheduled process began. |

- **Measure file name patterns**
  - Measure data file:




  - Measure definition file:

DATA_jobID_scpdbviewextract_planID_msc_xtr_measure_map_v-BICCJobID_DateTime.csv

| Measure file name parts | Description |
|---|---|
| jobID | The job ID of the extract scheduled process. |
| planID | The ID of the plan. This name is available in log files. |
| Dimensionality group code | Name of the dimensionality group code. Used in the measure data file, but not the measure definition file. |
| BICCJobID | The job ID of the extract scheduled job of the BI Cloud Connector (BICC) tool. |
| DateTime | Date and time the extract scheduled process began. |

# Dimension Data Files Created by the Plan Extract Process

The plan extract process generates one dimension data file for each dimension and contains all of the hierarchies in that dimension. Each dimension file contains information for all of the selected hierarchies.

For example, if the planner selects two product hierarchies, an item appears twice--once for each hierarchy.

| Column name | Content |
|---|---|
| HIERARCHY_ID | Internal hierarchy identifier |
| [dimension]_LVL_MEMBER_ID | ID of the lowest-level member. Each dimension file contains its own lowest level member. For example:<br>• *PRD*_LVL_MEMBER_ID<br>• *ORG*_LVL_MEMBER_ID |
| BASE_MBR_NAME | Name of the lowest level member |
| L2-MBR_ID | Level 2 member ID |
| L2_MBR_NAME | Level 2 member name |
| L3-MBR_ID | Level 3 member ID |
| L3_MBR_NAME | Level 3 member name |
| L4-MBR_ID | Level 4 member ID |
| L4_MBR_NAME | Level 4 member name |
| L5-MBR_ID | Level 5 member ID |
| L5_MBR_NAME | Level 5 member name |
| L6-MBR_ID | Level 6 member ID |
| L6_MBR_NAME | Level 6 member name |
| L7-MBR_ID | Level 7 member ID |
| L7_MBR_NAME | Level 7 member name |

| Column name | Content |
|---|---|
| | |
| L8-MBR_ID | Level 8 member ID |
| L8_MBR_NAME | Level 8 member name |
| L9-MBR_ID | Level 9 member ID |
| L9_MBR_NAME | Level 9 member name |
| L10-MBR_ID | Level 10 member ID |
| L10_MBR_NAME | Level 10 member name |
| SR_BASE_MBR_ID | Internal use only |

# Dimension Definition Files Created by the Plan Extract Process

The dimension definition file contains information for all of the dimensions and hierarchies specified in the dimension catalog for extract. The plan extract process creates only one file per extract.

| Column name | Description |
|---|---|
| DIMENSION_ID | Unique ID of the dimension |
| HIERARCHY_ID | Unique ID of the hierarchy |
| BASE_LEVEL_ID | Lowest level (Level 1) ID |
| LEVEL_2_ID | Level 2 ID |
| LEVEL_3_ID | Level 3 ID |
| LEVEL_4_ID | Level 4 ID |
| LEVEL_5_ID | Level 5 ID |
| LEVEL_6_ID | Level 6 ID |

| Column name | Description |
|---|---|
| | |
| LEVEL_7_ID | Level 7 ID |
| LEVEL_8_ID | Level 8 ID |
| LEVEL_9_ID | Level 9 ID |
| LEVEL_10_ID | Level 10 ID |
| DIMENSION_CODE | Unique code for the dimension |
| DIMENSION_NAME | Dimension name |
| HIERARCHY_NAME | Hierarchy name |
| BASE_LEVEL_NAME | Base level name |
| LEVEL_2_NAME | Level 2 name |
| LEVEL_3_NAME | Level 3 name |
| LEVEL_4_NAME | Level 4 name |
| LEVEL_5_NAME | Level 5 name |
| LEVEL_6_NAME | Level 6 name |
| LEVEL_7_NAME | Level 7 name |
| LEVEL_8_NAME | Level 8 name |
| LEVEL_9_NAME | Level 9 name |
| LEVEL_10_NAME | Level 10 name |

# Measure Data Files Created by the Plan Extract Process

The plan extract process generates one measure data file for each set of measures that share the same dimensionality or granularity. Use the measure definition file to obtain more details about the measure, including its full name, description, aggregation methods, and so on.

The following table is an example measure data file for a specific dimensionality with a selected list of measures. The actual format depends on the dimensionality and the measures selected by users for extract.

| Column name | Description |
|---|---|
| PLAN_ID | ID of the plan |
| PRD_LVL_MEMBER_ID | Product dimension lowest level member ID |
| ORG_LVL_MEMBER_ID | Organization dimension lowest level member ID |
| TIM_LVL_MEMBER_ID | Time dimension lowest level member ID |
| FACT_DATE | Date |
| AVG_DAILY_DMD | Value of this measure |
| GROSS_MARGIN_PCT | Value of this measure |
| IN_TRANSIT | Value of this measure |
| INV_TURNS | Value of this measure |
| ITEM_STD_COST | Value of this measure |
| ONHAND | Value of this measure |
| PAB | Value of this measure |
| PAB_VALUE | Value of this measure |
| PO_QTY | Value of this measure |
| PR_QTY | Value of this measure |
| PROJECTED_ONHAND | Value of this measure |

| Column name | Description |
|---|---|
| | |
| SCHED_RCPT | Value of this measure |
| SS | Value of this measure |
| TF_QTY | Value of this measure |
| TOTAL_DEMAND | Value of this measure |
| TOTAL_DEMAND_VALUE | Value of this measure |
| TOTAL_SUPPLY | Value of this measure |
| TTL_END_ITEM_CST | Value of this measure |
| GROSS_MARGIN | Value of this measure |

The extract process generates one measure data file for each set of measures that share the same dimensionality or granularity. The measure data files contain information for all measures that share that same dimensionality. A list of predefined dimensionality groups is listed in the Dimensionality Group Codes Used by the Plan Extract Process topic. The lowest level of each of these dimensions appears in each file. They will be different for each dimensionality, based on the dimensions that are part of that group. Each measure column name is a measure code from the measure definition file. Use the measure definition file to obtain more details about the measure, including its full name, description, aggregation, and so on.

# Measure Definition Files Created by the Plan Extract Process

The measure definition file contains information for all of the measures specified in the measure catalog for extract. The plan extract process creates only one file per extract.

| Column name | Description |
|---|---|
| GRANULARITY_ID | Dimensionality group ID |
| POSITION | Internal use only |
| MEASURE_CODE | Used as the column name in measure data files |

| Column name | Description |
|---|---|
| MEASURE_ID | ID that uniquely identifies a measure |
| NAME | Name of the measure |
| DESCRIPTION | Brief description of the measure |
| DATA_TYPE | Data type |
| EXPRESSION | Internal use only |
| AGGR_ORDER | Aggregation rule:<br>1 = Calculate, then aggregate<br>2 = Aggregate, then calculate |
| AGGR_METHOD_OTHER | Aggregation method on dimensions other than the Time dimension |
| AGGR_METHOD_TIME | Aggregation method on the Time dimension |
| WEIGHTED_BY | ID of the measure to be used when aggregation method is WAVG (weighted average) |

The MEASURE_CODE column in this file contains all the measure codes for all measures. The actual measure data files use this measure code as data column name. Using this code, you can look up additional information about the measure in the definition file. Note that the expression indicated is only for internal use and is already evaluated before the extract. Aggregation methods (Sum, Latest, Average, Weighted Average, and so on) can be used to configure your analytics to aggregate these measures across various dimensions.

# Dimension Codes Used by the Plan Extract Process

The plan extract process uses preconfigured dimension codes related to a list of valid dimension.

| Code | Dimension name |
|---|---|
| tim | Time |
| res | Resource |
| cus | Customer |
| prd | Product |

| Code | Dimension name |
|---|---|
| | |
| org | Organization |
| dcs | Demand Class |
| sup | Supplier |
| fcm | Forecasting Method |
| cto | Configure to Order |
| src | Source |
| exp | Exception Type |
| ord | Order Type |
| cig | Decomposition Method |
| seg | Segment |

# Dimensionality Group Codes Used by the Plan Extract Process

The extracted files use codes related to a list of valid dimensionality groups. Dimensionality group codes shown in this topic list all of the valid preconfigured dimension groups.

For example, code 125 is for all measures that are dimensioned only by the Organization, Product, and Time dimensions. The measure data file for that dimensionality contains all measures extracted for that dimensionality.

| Dimensionality Group Code | Dimensionality Group |
|---|---|
| 10 | org, prd, tim, cus, cto |
| 15 | org, prd |
| 20 | org, res, tim |
| 25 | tim |

| Dimensionality Group Code | Dimensionality Group |
|---|---|
| | |
| 35 | org, prd, tim, cus |
| 40 | org, prd, res, tim, cus, sup, exp |
| 45 | org, prd, tim, sup |
| 50 | org, prd, tim, cus, sup, src |
| 55 | org, prd, tim, cus, dcs, ord |
| 60 | org, prd, tim, ord |
| 65 | org, prd, tim, cus, sup, dcs, ord |
| 70 | org, prd, tim, sup, ord |
| 75 | org, prd, dcs |
| 95 | org, prd, cus, dcs, fcm, clg, tim, cto |
| 100 | org, prd, tim, cus, dcs, cto |
| 105 | org, prd, cus |
| 110 | org, prd, cus, dcs |
| 125 | org, prd, tim |
| 130 | org, prd, tim, cus |
| 135 | org, prd, tim, cus, dcs |
| 145 | prd, tim, cus |
| 150 | prd, tim, cus, dcs |
| 155 | org, prd, tim, cus, sup, dcs |
| 160 | prd, cus |
| 165 | org, prd, tim, exp |

| Dimensionality Group Code | Dimensionality Group |
|---|---|
| | |
| 170 | org, tim |
| 175 | prd |
| 180 | org, prd, tim, cus, dcs, fcm, clg |
| 185 | org, prd, cus, dcs, fcm, clg |
| 190 | org, prd, cus, fcm, clg |

# 22 Troubleshooting

## Resolve Error MSC-2806379

This topic guides you on how you can resolve error MSC-2806379 that may be displayed when you view a table or graph.

The error is displayed when you view a table or graph that you don't own for your Oracle Fusion Cloud Supply Chain Planning product, and the table or graph contains too much data.

The error text is as follows: "You can't view this table or graph because the underlying data or analysis produces too much data. (MSC-2806379)

"To resolve this issue, make a copy of the table or graph because you aren't the owner of it, change configurations to reduce the data set, and try again. For example, limit the use of measures with different dimensionalities, reduce the number of measures with complex expressions, such as lead or lag functions, or check measure filter configuration. Refer to Incident ID <number> on <server name> server."

Follow these steps to resolve the error:

1. If the table or graph is open, in the toolbar, click **Actions** > **Save Table As** or **Actions** > **Save Graph As**.
   Otherwise, do the following:
   a. Click **Actions** > **Manage Tables, Graphs, and Analysis Sets**.
   b. In the Manage Tables, Graphs, and Analysis Sets dialog box, search for your table or graph, and select it.
   c. Click **Actions** > **Duplicate**.
2. In the dialog box, provide the name and description for the copied table or graph.
   Provide other details for the copied table or graph.
3. Click **Save and Edit**.
4. In the Configure Table or Configure Graph dialog box, do the following:
   - On the Measures tab, on the Selected Measures pane, select the measures that you can remove from the table or graph, and move them to the Available Measures pane.

     For example, limit the use of measures with complex expressions.
   - On the Members tab, on the Selected Members pane, select the members that you can remove from the table or graph, and move them to the Available Members pane.

     For example, on the Selected Members pane, retain only one organization or a few products according to your business requirements. You can use the Advanced Filter dialog box to reduce the number of members that are displayed by the table or graph.
   - On the Measure Filters tab, add filters to reduce the amount of data returned by your table or graph.
   - On the Layout tab, add filters to your table or graph.

     For example, if your table includes the Organization level, you can use the level as a filter that restricts the returned data to the selected member.
5. Click **Save and Close**.

*Related Topics*

- Overview of Tables, Graphs, Analysis Sets, Tiles, and Tile Sets
- Use Advanced Options in the Selector Tool
- Configure Filters for Graphs

# Resolve Error MSC-2806380

This topic guides you on how you can resolve error MSC-2806380 that may be displayed when you view a table or graph.

The error is displayed when you view a table or graph that you own for your Oracle Fusion Cloud Supply Chain Planning product, and the table or graph contains too much data.

The error text is as follows: "You can't view this table or graph because the underlying data or analysis produces too much data. (MSC-2806380)

"To resolve this issue change configurations to reduce the data set, and try again. For example, limit the use of measures with different dimensionalities, reduce the number of measures with complex expressions, such as lead or lag functions, or check measure filter configuration. Refer to Incident ID <number> on <server name> server."

Follow these steps to resolve the error:

1. If the table or graph is open, in the toolbar, click **Actions** > **Configure Table** or **Actions** > **Configure Graph**. Otherwise, do the following:
    a. Click **Actions** > **Manage Tables, Graphs, and Analysis Sets**.
    b. In the Manage Tables, Graphs, and Analysis Sets dialog box, search for your table or graph, and select it.
    c. Click **Actions** > **Edit**.
2. In the Selector Tool, do the following:
    - On the Measures tab, on the Selected Measures pane, select the measures that you can remove from the table or graph, and move them to the Available Measures pane.

      For example, limit the use of measures with complex expressions.
    - On the Members tab, on the Selected Members pane, select the members that you can remove from the table or graph, and move them to the Available Members pane.

      For example, on the Selected Members pane, retain only one organization or a few products according to your business requirements. You can use the Advanced Filter dialog box to reduce the number of members that are displayed by the table or graph.
    - On the Measure Filters tab, add filters to reduce the amount of data returned by your table or graph.
    - On the Layout tab, add filters to your table or graph.

      For example, if your table includes the Organization level, you can use the level as a filter that restricts the returned data to the selected member.
3. Click **Save and Close**.

*Related Topics*

- Overview of Tables, Graphs, Analysis Sets, Tiles, and Tile Sets
- Use Advanced Options in the Selector Tool
- Configure Filters for Graphs