Oracle SCM Cloud

Using Supply Chain Orchestration

20A
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Preface

This preface introduces information sources that can help you use the application.

Using Oracle Applications

Help

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. Not all pages have help icons. You can also access the Oracle Help Center to find guides and videos.

Watch: This video tutorial shows you how to find and use help.

You can also read about it instead.

Additional Resources

- **Community:** Use Oracle Cloud Customer Connect to get information from experts at Oracle, the partner community, and other users.

- **Training:** Take courses on Oracle Cloud from Oracle University.

Conventions

The following table explains the text conventions used in this guide.

<table>
<thead>
<tr>
<th>Convention</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>boldface</strong></td>
<td>Boldface type indicates user interface elements, navigation paths, or values you enter or select.</td>
</tr>
<tr>
<td><strong>monospace</strong></td>
<td>Monospace type indicates file, folder, and directory names, code examples, commands, and URLs.</td>
</tr>
<tr>
<td>&gt;</td>
<td>Greater than symbol separates elements in a navigation path.</td>
</tr>
</tbody>
</table>
Documentation Accessibility

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

Contacting Oracle

Access to Oracle Support

Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit My Oracle Support or visit Accessible Oracle Support if you are hearing impaired.

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1 Hello

What's New in Using Supply Chain Orchestration

Get details about what's new or significantly revised in Using Supply Chain Orchestration.

**Release 13 (update 20A)**

These topics are new or significantly revised.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create Reports for Supply Requests and Supply Orders</td>
<td>New. Use subject areas that contain data for Supply Orchestration when you run reports in Oracle Transactional Business Intelligence.</td>
</tr>
</tbody>
</table>

**Release 13 (update 19D)**

These topics are new or significantly revised.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manage Your Supply Process</td>
<td>New. Get a 360 degree view of your supply process.</td>
</tr>
<tr>
<td>How Supply Orchestration Works</td>
<td>Revised. New flow diagrams and descriptions.</td>
</tr>
</tbody>
</table>

**Release 13 (update 19C)**

These topics are new or significantly revised.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overview of Supply Orchestration</td>
<td>Revised. New flow diagrams and descriptions.</td>
</tr>
<tr>
<td>All other topics</td>
<td>Revised. All topics were reoriented to help you finish job tasks.</td>
</tr>
</tbody>
</table>
Overview of Supply Orchestration

Use Oracle Fusion Supply Orchestration Cloud to manage supply for your items, and to make sure fulfillment is consistent and efficient.

Manage supply from one, central location.

- Receive a supply request to meet demand from an Oracle application, such as Supply Planning, Order Management Cloud, Order Promising, or Inventory Management.
• Send a supply order to fulfill supply in an Oracle application during fulfillment, such as Inventory Management, Purchasing, Manufacturing, and Shipping.

• Create business rules that manage supply.

• Manage supply from one location.

• Start and manage a complex business process that creates supply in the warehouse to fill your anticipated demand.

• Automate change management that matches supply to demand and makes sure you balance quantity and fulfillment dates. Use automated exception management to avoid creating excess supply or not having enough supply to fulfill each sales order. Balance supply with demand on each order to meet your customer satisfaction and profitability goals.

• Use a 360 degree view to monitor the process that creates supply and the relationship between different documents in the process.

Manage supply for a variety of flows.

• Back-to-back flow, such as make, buy, or transfer. Supply Orchestration combines the demand from Order Management and the supply suggestion from Global Order Promising to create the supply document in each back-to-back flow.

• Drop shipment from your supplier to your customer

• Internal material transfer

• Contract manufacturing

• Consigned inventory

These flows come predefined to automatically process supply, but you can modify them to meet your requirements.

Manage Supply for Back-to-Back Flows

Automate your back-to-back flow. Back-to-back means Supply Orchestration processes the supply request one step after the other, consecutively, and directly.
Use back-to-back when the item is expensive to maintain as on hand inventory, or when you don't want to use up warehouse space to stock an item that only rarely sells.

Note.

- Your customer places a sales order through your order capture system.
- A predefined orchestration process that's already optimized for back-to-back fulfillment reserves supply in your supplier's factory, your factory, or your warehouse.
- The factory or warehouse supplies your fulfillment warehouse.
- Your fulfillment warehouse ships the sales order to your customer.
For example, specialized medical or scientific equipment might not be practical to store in a warehouse because it is physically large, or it is very expensive to build. Your customers only rarely order the equipment, and when they do, you specialize it for each customer. The medical facility orders the specialized equipment, then sourcing rules determine whether to make the equipment in house or procure it from a supplier. The manufacturing or procurement process finishes, ships it to your warehouse, and your warehouse ships it to the medical facility.

In another example, warehouse space might be expensive in your area. So you stock items in a less expensive location. A customer of yours who resides close to the expensive area orders the item. The back-to-back flow transfers the item from the less expensive location to a warehouse close to your customer, then ships it.

Here are the types of back-to-back flows you can fulfill.

- Make
- Buy
- Transfer

For details, see the How Supply Orchestration Processes Back-to-Back Flows topic.
Manage Supply for Drop Ship Flows

Automate your drop ship flow. Instead of creating and keeping the item in your own inventory, your supplier or contract manufacturer creates, stores, and ships the sales order to your customer.

Note.

- Your customer places a sales order through your order capture system.
- A predefined orchestration process that’s optimized for drop ship fulfillment sends a purchase order for the item to your supplier, including instructions for shipping directly to your customer.
- Your supplier creates the item or picks it from inventory, then ships it to your customer.
Your supplier sends an invoice or advance shipment notice to you.

Manage Supply for Transfer Flows

Automate your transfer flow. Use a single flow to transfer material between two different organizations, between different sections in the same organization, or between companies.

Note.

- Use a technology to bring demand into your flow.
  - File-based data import
• Web service
• Inventory management, such as min-max planning
• Manage Item Quantity of a supply request from a back-to-back flow
• Supply planning
• Requisition line in Self-Service Procurement

• A predefined orchestration process that’s optimized for material transfer fulfillment uses a purchase order or a transfer order to orchestrate the transfer. For example, between two different warehouse.

For details, see the Overview of Internal Material Transfer topic.

Automate Change Management

Supply Orchestration comes predefined to use a comprehensive set of predefined change management rules to automate change.

• Match supply to demand to prevent excess inventory. Excess inventory is expensive and isn’t necessary.
• Automate change management and reduce the cost of handling exceptions.
• Reduce errors that occur with manual change.
• No set up is necessary.
Supply Orchestration automatically manages change and keeps demand and supply in balance.

Use change management to maintain a balance between quantity and fulfillment dates. Do it when a change occurs.

- The demand changes something.
  - Change the quantity of a sales order.
  - Change the requested date of a sales order.
  - Cancel a sales order, purchase order, transfer order, or work order.
  - Split a sales order, purchase order, or transfer order.
• The source, such as a supplier or manufacturer, changes something.
  o Increase or decrease the supply quantity.
  o Change the date when supply becomes available.
  o Split supply. Make the total quantity available in more than one delivery.
  o Cancel a supply order.

Assume your customer requests to reduce the line quantity on a back-to-back sales order from 10 to 5, so your fulfillment organization changes the quantity. Supply Orchestration receives the request and updates the quantity on the supply document, which is the purchase order in this example. If Supply Orchestration didn't automatically process the change then your supplier would have supplied more inventory than you need.

Change that occurs commonly in your supply chain might require manual intervention, increasing the possibility of error and delay and cause bottlenecks in order fulfillment. Supply Orchestration automatically manages change so you don't have to manually do it.

Supply Orchestration attempts to change supply to match demand so it satisfies the new condition. If it can't, then it creates an exception and notifies the fulfillment system, such as Order Management.

**Example**

Assume your supplier reduces the purchase order quantity in a back-to-back flow.

• Demand quantity is 100 units.
• Purchase order quantity is 100 units.
• Supplier reduces supply quantity to 75 units.

Here's how Supply Orchestration manages the change.
Here's what Supply Orchestration does.

1. Locks the supply line to prevent more change.
2. Looks for another supply source that can fulfill 25 units.
3. If Supply Orchestration.
   - **Finds another source.** Creates fulfillment document and update records. In this example, a purchase order is the fulfillment document.
   - **Doesn't find another source.** Creates exception and notifies fulfillment manager. You can use the Manage Supply Exception Requests page in the Supply Orchestration work area to manage exceptions.

Manage Exceptions
Get status updates while Supply Orchestration creates supply. For example, view errors, exceptions, and jeopardy for supply that's at risk of not meeting fulfillment. If an exception occurs, then use predefined rules to reduce excess inventory and find another source for your supply.

Identify the cause of an exception. Access the supply document to get details, such as the manufacturing work order or purchase order. Resolve the supply risk, then resubmit the supply order. If you can't resolve the risk, then you can cancel the supply request.

Related Topics
- Overview of Setting Up Supply Chain Orchestration
- Overview of Internal Material Transfers
How Supply Orchestration Works

Supply Orchestration uses orchestration processes and web services to create and manage supply.

1. **Send request**. An application sends a request to Supply Orchestration to create supply.
## Application | What the Application Does
---|---
Planning Central | Sends a request for a planned sales order to Supply Orchestration in a back-to-back flow, such as make, buy, or transfer. It might also include a make order for an inventory organization that you set up as contract manufacturer.

Order Promising | Order Promising confirms the sales order, then sends supply data to Supply Orchestration.
Order Management Cloud | Order Management schedules the sales order, then sends demand data to Supply Orchestration.
Supply Orchestration combines the data it receives from Order Promising and Order Management into a single set of data, then starts a back-to-back flow.

Inventory | Min-Max Planning sends a make, buy, or transfer request to Supply Orchestration.

File-Based Data Import | You use an Excel spreadsheet in the File-Based Data Import application to manually import request data into Supply Orchestration.

2. **Transform and assign request.** Transform the supply request to a supply order. Run predefined rules or rules that you create.

<table>
<thead>
<tr>
<th>Type of Rule</th>
<th>Description</th>
</tr>
</thead>
</table>
| Supply Order Defaulting and Enrichment Rule | Here’s what you can do.  
- Map attribute values you receive in the supply request to values that your fulfillment system can use. If necessary, transform values to optimize fulfillment.  
- Modify an attribute on a purchase order, work order, or transfer order.  

Here are some examples.  
- Set shipment priority.  
- Choose your preferred supplier.  
- Set the currency so it matches the currency your customer uses.  
- Determine whether to use a transfer order or purchase order to process the transfer request. Determine whether to route the transfer through Order Management. |
| Execution Document Creation Rule | Specify the type of supply to transfer between inventory organizations, including the business process and document type to use between organizations. |
| Assignment Rule | Assign a predefined orchestration process to the supply order. Supply Orchestration uses different orchestration processes to manage supply. Each process optimizes processing according to the type of flow, such as a make flow.  

Use a scheduled process to periodically run each orchestration process. For details, see the Scheduled Processes That Plan Supply for Orchestration topic. |
3. **Orchestrate supply order.** The orchestration process contains steps that create supply and do fulfillment tasks. For example, the process might call a manufacturing system to create or modify a manufacturing work order, or a purchasing system to create or change the quantity on a purchase order.

Here’s how the orchestration process manages tasks.

- **Process planning.** Determine the start and end date for each process step. Use the duration of each task to schedule the overall process.
- **Change management.** Identify and respond to changes that occur in supply or demand during processing. Make adjustments to keep supply and demand in balance.
- **Tracking.** Track progress of each step, track the status and state of execution documents, and the overall process.

For example, the back-to-back process includes steps. Each step does a task.

- Call the procurement system to create a purchase order.
- Call the inventory system to reserve a purchase order for the demand.
- Receive supply in the warehouse.

4. **Communicate.** The flow calls a web service and uses it to send and receive messages to and from each fulfillment system.

- Create an XML payload that’s specific to each fulfillment system, then send it to the fulfillment system.
- Receive updates from the fulfillment system and send them to the orchestration process for change management. For example, receive and send a status change or quantity decrease on a purchase order.

5. **Fulfill.** The fulfillment system uses supply to create and fulfill the item. For example.

- A manufacturing plant uses supply in a work order in a make flow to build the item.
- A purchasing organization uses a purchase order to purchase the item from a supplier in buy flow.
- A warehouse uses supply in a transfer order in a transfer flow to transfer inventory from one warehouse to another warehouse.

Supply Orchestration communicates status to the application that requests supply during fulfillment.

### How Orchestration Processes Back-to-Back Flows

Supply Orchestration uses three types of back-to-back flows: make, buy, and transfer.

Here’s what orchestration does.

- Create and manage the supply order.
- Send a request depending on the type of flow.
  - **Make.** Send work order to Manufacturing in Inventory.
  - **Buy.** Send purchase order to Purchasing.
  - **Transfer.** Send transfer order to Inventory.
- Track updates and statuses and send them to Order Management Cloud.
- Close the supply order after Order Management ships the item to your customer.
Supply Orchestration also supports available-to-promise (ATP), where inventory already exists in the warehouse ready for shipping.

**Back-to-back Fulfillment**

Supply Orchestration creates the supply request only after Order Promising schedules the sales order. Use it for an item that your fulfillment systems choose not to stock. Use it to expand your item offering when you don't stock the item.

Supply Orchestration maintains a firm link between the demand document, such as a sales order, and the supply document, such as the purchase order, transfer order, or work order, in back-to-back flow. A firm link makes sure the supply chain can't allocate supply incorrectly or divert it to fulfill some other demand. Use back-to-back when fulfillment must occur on time and you must meet high customer satisfaction.

Use the Product Information Management work area to enable the item for back-to-back fulfillment.

Use the Order Promising work area to set up the sourcing rules that determine your options for creating supply.

Use back-to-back when you must view demand, supply, and exceptions in the flow.

**Supply Orchestration and Order Orchestration**
Back-to-back fulfillment doesn't keep supply on hand in the warehouse, so your back-to-back flow does supply orchestration and order orchestration. Supply orchestration gets the goods that the sales order needs into the warehouse, then order orchestration ships it to your customer.

Supply orchestration orchestrates how to create and get supply into the warehouse.

- Different applications can send a supply request to Supply Orchestration. Supply Orchestration might or might not fulfill a sales order from Order Management.
- Supply Orchestration creates a supply order.
- The supply order uses orchestration processes and business rules that Oracle has optimized to orchestrate supply.
These processes and rules create and manage the purchase orders, work orders, and transfer orders that create supply in your warehouse.

Order orchestration orchestrates how to fulfill and deliver the item to your customer.

- Order orchestration fulfills a sales order from Order Management.
- Order orchestration doesn't fulfill supply requests. Instead, it sends a supply request to Supply Orchestration.
- Order orchestration uses a set of orchestration processes that Oracle has optimized to orchestrate your fulfillment system.
- Your fulfillment system uses the warehouse to ship the item to your customer in the most cost-effective way while meeting the requested delivery date.

**Orchestration Process Does the Work**

An orchestration process contains steps, and each step does a task. Supply Orchestration uses different orchestration processes depending on the flow.
Sales Order

1. Reserve supply. The supply already exists, so the flow reserves enough supply to meet demand from the sales order.
2. Ship the item.
3. Invoice the item.

<table>
<thead>
<tr>
<th>Flow</th>
<th>Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales Order</td>
<td>Create and stock supply before you need it.</td>
</tr>
<tr>
<td></td>
<td>1. Reserve supply. The supply already exists, so the flow reserves enough supply to meet demand from the sales order.</td>
</tr>
<tr>
<td></td>
<td>2. Ship the item.</td>
</tr>
<tr>
<td></td>
<td>3. Invoice the item.</td>
</tr>
<tr>
<td>Flow</td>
<td>Steps</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>-------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Sales Order with Back-to-Back Flow</td>
<td>Create supply only when you need it, on demand, in direct reply to a purchase request.</td>
</tr>
<tr>
<td></td>
<td>1. Request supply. Back-to-back doesn't keep supply in inventory, so it must request supply.</td>
</tr>
<tr>
<td></td>
<td>2. Wait for flow to create supply. It usually takes time to purchase, make, or transfer the item, get it into the warehouse and ready for shipping.</td>
</tr>
<tr>
<td></td>
<td>3. Ship the item.</td>
</tr>
<tr>
<td></td>
<td>4. Invoice the item.</td>
</tr>
<tr>
<td>Sales Order with Drop Shipment</td>
<td>Drop ship the item from your supplier.</td>
</tr>
<tr>
<td></td>
<td>1. Schedule the item so your supplier is ready to fulfill it when you need it.</td>
</tr>
<tr>
<td></td>
<td>2. Create requisition to get purchase order approved.</td>
</tr>
<tr>
<td></td>
<td>3. Create purchase order so you can buy the item from your supplier.</td>
</tr>
<tr>
<td></td>
<td>4. Your supplier ships the item.</td>
</tr>
<tr>
<td></td>
<td>5. Invoice the item.</td>
</tr>
</tbody>
</table>

**Your Setup Selects the Orchestration Process**

Settings you make for the item and the business rules you create at design time will select the orchestration process to use for each item at run time.
1. Set the Back-to-Back Enabled option in the Sales and Order Management area of the Specifications tab for the item in the Product Information Management work area.

2. Create available-to-promise rules and sourcing rules in the Global Order Promising work area. These rules optimize flow according to various aspects of your supply chain and your fulfillment goals, such as profitability, availability, capacity of supplier, distance to delivery destination, the type of flow, such as buy, make or transfer, and other aspects specific to your environment.

   The result of the rules determine whether to use your warehouse or outsource supply to a supplier in a drop ship flow.

3. Order Management uses the orchestration process to fulfill the item.
Make Flow

Here's an example of how Supply Orchestration fulfills an item in a make flow for a sales order.

1. Your user adds an item in the Order Management work area and submits it. Order Management sends a request to Supply Orchestration. The request includes details about the item.
2. Order Management books the item, then sends the sales order to Global Order Promising, and Promising schedules it.

Note.
Promising considers a wide range factors to determine how to schedule supply so it meets the requested delivery date.

- Examines inventory, lead time, backlog, and other factors to determine availability for the item.
- Considers the type of request. For example, it might take longer to fulfill a make order that to fulfill a transfer order.
- Uses available-to-promise rules and sourcing rules to determine where to create supply.

Promising sends a recommendation to Supply Orchestration to create the supply needed to fulfill the item. For this example, assume Promising determines the most efficient and cost-effective way to fulfill the item and meet delivery dates is to make it, so it sends a make request.

3. Supply Orchestration creates a supply order, then sends it to Materials Management in Inventory Management to create a work order.
4. Materials Management creates the work order and makes the item.
5. Planning monitors fulfillment. For example, assume you order a configured item. Planning monitors the components that the work order uses to fulfill the configure options, the item it creates, whether items are in stock or need replenishment, and so on.
6. Shipping ships the item to your customer.

Here are some important concepts.

<table>
<thead>
<tr>
<th>Entity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply order</td>
<td>Contains the supply order lines that Supply Orchestration creates to fulfill one supply request.</td>
</tr>
<tr>
<td>Supply order line</td>
<td>Contains details about each supply request.</td>
</tr>
<tr>
<td>Tracking line for supply order</td>
<td>Tracking line that monitors the process that fulfills the supply request according to the supply type.</td>
</tr>
<tr>
<td>Details for transfer order</td>
<td>Contains details about the request to transfer supply. Captures details in the fulfillment document for the transfer order from Inventory. Applies when the supply type for the tracking line is Transfer.</td>
</tr>
<tr>
<td>Details for buy order</td>
<td>Contains details about the request to buy supply. Captures details in the fulfillment document for the purchase order from Purchasing. Applies when the supply type for the tracking line is Buy.</td>
</tr>
<tr>
<td>Details for make order</td>
<td>Contains details about the request to make supply. Captures details in the fulfillment document for the work order from Manufacturing. Applies when the supply type for the tracking line is Make.</td>
</tr>
</tbody>
</table>
Buy Flow

How Global Order Promising Sends a Buy Request

Assume Promising analyzes the supply chain and determines the buy flow is the best way to fulfill the sales order, so it sends a buy request.

The flow is the same as the make flow but with a few differences.

1. Global Order Promising sends a buy request instead of a make request.
2. Supply Orchestration creates and sends a supply order to Purchasing to create a purchase order.
3. Purchasing creates the purchase order and sends it to the warehouse in Inventory Management.
4. Shipping
4. Shipping ships the item to your customer.

Supply Planning works just like it does for the make flow. It isn't in the diagram for brevity.

Supply Orchestration also uses the buy flow for procure-to-pay, Min-Max, and outside processing (OSP).

Other Flows

- **Available-to-promise.** Assume you ship a configured item, the AS54888 Desktop Computer. Your customer receives it, realizes they ordered the wrong configuration, and sends it back unused and unopened. You add the item back into inventory, so it's now available to fulfill demand for another order.
• **Transfer.** Create a transfer order to do an internal material transfer from one warehouse to another warehouse, then ship it. If Global Order Promising determines that the exact configured item is available in another warehouse, then it might recommend to transfer supply to the shipping warehouse, or ship it directly from the warehouse that contains the item. Supply Orchestration creates the supply request documents and sends them to Inventory Management.

• **Drop.** Drop ship item AS54888, Sentinel Desktop, directly from your contract manufacturer to your customer. The flows goes from Order Management directly to Purchasing.

## A More Detailed View
Supply Orchestration orchestrates and manages the flow between systems that request supply and systems that fulfill the supply request.

Supply Orchestration can receive a supply request from an Oracle Cloud Application, such as Planning, Order Promising, Order Management, or Inventory. It can fulfill supply in a fulfillment application, such as Purchasing, Manufacturing, Shipping, or Receiving.

Here's an example flow where Supply Orchestration receives a sales order from Order Management. Supply Orchestration does some or all steps, depending on what its processing.

1. Receive a request to create supply.

<table>
<thead>
<tr>
<th>Application That Sends Request</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply Planning</td>
<td>Receive a request for a planned order. The request might be for a make, buy, or transfer order, or for an inventory organization that you set up as a contract manufacturing organization.</td>
</tr>
<tr>
<td>Order Management, Order Promising, or Oracle Transactional Business Intelligence</td>
<td>Receive a recommendation from Order Promising. Receive demand data from Order Management after it schedules a back-to-back sales order. Supply Orchestration matches the data it receives from Order Promising and Order Management, treats it as one set of data, then uses it to start a make, buy, or transfer flow.</td>
</tr>
<tr>
<td>Inventory Management</td>
<td>Receive an internal transfer request for minimum or maximum replenishment.</td>
</tr>
<tr>
<td>File-Based Data Import</td>
<td>You use a spreadsheet to upload orders or requests for internal material transfers into Supply Orchestration.</td>
</tr>
</tbody>
</table>

2. Supply Orchestration prepares to fulfill the request.

<table>
<thead>
<tr>
<th>Preparation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transform Attributes</td>
<td>Attributes in the supply request might not match attributes in the fulfillment system. So a transformation rule transforms them. For example, a rule might transform the attribute that identifies the supplier in Supply Planning to the attribute that identifies the supplier in Procurement. The rule might transform the attribute name, data type, and so on.</td>
</tr>
</tbody>
</table>
Chapter 1

**Hello**

### Preparation

<table>
<thead>
<tr>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create Supply Order</td>
</tr>
<tr>
<td>Set Default Values</td>
</tr>
<tr>
<td>Assign and Call Orchestration Process</td>
</tr>
</tbody>
</table>

### 3. Run the orchestration process.

An orchestration process is a sequence of steps that automate fulfillment across fulfillment systems.

The flow in this example is a make flow that uses back-to-back fulfillment. Here's a summary of what the orchestration process that optimizes the make flow does.

- Send a request to Procurement to create a purchase order.
- Send a request to Inventory Management to reserve demand for the purchase order.
- Send supply that the purchase order created to the warehouse.

Each orchestration process does quite a few fulfillment tasks. For example.

- Plan the entire schedule, including the start and end date for each process step.
- Make adjustments if supply or demand changes during fulfillment so it can meet the requested delivery date.
- Track the status for each step across fulfillment systems.

For details, see the Orchestration Processes topic.

### External Interface

The orchestration process uses the external interface to run tasks that involve an application that resides outside of Supply Orchestration, such as Procurement or Inventory Management. Here's a summary of what Supply Orchestration does through the external interface.

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrate</td>
<td>The integration accepts notifications, processes them, and manages exceptions.</td>
</tr>
<tr>
<td></td>
<td>- Creates a payload that's specific for the fulfillment system, then calls it.</td>
</tr>
</tbody>
</table>
## Step | Description
--- | ---
| Do fulfillment tasks | - The fulfillment system notifies Supply Orchestration of changes that occur, such as a purchase order status or quantity decrease.
- Identify the service or fulfillment system that will fulfill the request.
- Use a connector to transform the data.
- Send the supply request to the fulfillment system.
| Communicate status | - Send request to get the supply request status or to update the fulfillment document.
- The fulfillment system creates, updates, or cancels the document according to the request.
- Record status responses that Orchestration receives from each fulfillment system.
- Record exceptions in fulfillment systems and notify the application that's request supply that an exception occurred.

Here are some of the fulfillment systems.
- Inventory Management
- Procurement
- Manufacturing
- Shipping
- Receiving

### Contract Manufacturing
Assume you contract out manufacturing to a contract. You create your own manufacturing work order, and the contract manufacturer uses a matching purchase order.

- The purchase order serves as an agreement between you and the manufacturer.
- The work order tracks the progress of the contract manufacturer in creating supply.
- Supply Orchestration links the work order and purchase order documents to make sure the document parameters and the progress are synchronized.
- Supply Orchestration provides visibility into the processes that your contract manufacturer uses. It also uses automated exception management to balance supply and demand, and to avoid excess supply or short supply.

### Outside Processing
You outsource one or more manufacturing operations in the work order to a partner. For example, assume you're an Original Equipment Manufacturer (OEM). You do some of your own manufacturing operations but also outsource other operations to a Manufacturing Partners (MP). You pay the partner for the work they do, which might include various value-added services.

For example, Supply Orchestration receives a supply request from Oracle Manufacturing Cloud, then.

- Starts the purchase request to process the outside item.
• Sends purchase requisition or purchase order details to Manufacturing, such as purchase order number, purchase order line number, and supplier.
• Starts the shipment request for a partially finished assembly.
• Receives shipment confirmation from Shipping.

Sends shipment details to Manufacturing.

Supply Orchestration also monitors the outside processing operations, and automatically processes change orders.

The Outside Processing column on the Supply Lines Overview page indicates which supply orders include outsourced manufacturing operations.

**Related Topics**

• Overview of Configure-to-Order

---

**Deviations in Orchestrating Supply**

Supply Chain Orchestration tracks transactions during the supply lifecycle of each buy, transfer, and make flow. Use it to view the supply request and supply status, including exceptions.

A deviation is a supply line that deviates from the promised delivery date or deviates from the promised item quantity.

Change or delay might cause a deviation. Here are some example changes.

• Someone cancels the purchase order, work order, or transfer order.
• Quality assurance rejects an item because of a quality problem.
• A supplier can’t meet the requested quantity or scheduled date.
• Someone reassigns a reserved supply.

Use change management to manage change that occurs in the supply.

• Create and manage alternate supply sources that meet demand.
• Split an existing supply tracking line into more than one tracking line. Create a parallel flow in the orchestration process for each split line.

Assume you receive a tracking line for a buy request that includes 100 items.

• Orchestration sends a buy request for a quantity of 100 to your procurement system.
• Procurement creates a requisition and a purchase order that includes three schedules. One schedule with a quantity of 50, another 30, and another 20.
• Procurement sends the purchase order to orchestration.
• Orchestration tracks each schedule independently, so it splits the tracking line that contains a quantity of 100 into three tracking lines. One with a quantity of 50, another 30, and another 20. It uses a separate orchestration process instance to track each schedule.
• You use the Supply Overview work area to manage the supply tracking lines.
• You can also manage exceptions for each tracking line.
2 Overview

Overview of Managing Supply Lines

Use the Overview page in the Supply Orchestration work area to view supply lines that orchestration is processing, including current status.

Here are some important concepts.

<table>
<thead>
<tr>
<th>Object</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply line</td>
<td>Identifies the supply type, source, item, quantity, destination, date, status, and other details. For example, line 1.1 in supply order 300100081515548 is a buy line that includes a quantity of 50 for item AS54888 shipping from Los Angeles to Denver with a requested delivery date of 12/7/19 11:59 PM. It has 0 errors, 0 exceptions, 0 jeopardies and its status is In Production. Orchestration uses the supply line to track and manage the supply order.</td>
</tr>
</tbody>
</table>
| Supply tracking line    | Orchestration uses the tracking line to track fulfillment for the supply order. It tracks.  
  - The supply source, including the organization that supplies the item, subinventory and location where the item resides, and so on.  
  - The supply request, such as organization that made the request, subinventory, and location.  
  - Supply dates  
  - Status  
Orchestration creates at least one tracking line for each supply order. It might create more for a supply order depending on change that occurs during fulfillment.  
The top part of the Overview page on the Supply Lines Overview tab displays tracking lines. |
| Exception               | Change in supply that affects quantity or supply date. For example, a reduction in quantity, date change, or canceled supply.                                                                                                                                 |
| Jeopardy                | Jeopardy occurs when supply is delayed beyond its promised date.                                                                                                                                              |

To access the page, in the Navigator, click **Supply Orchestration**, then click **Supply Lines Overview**.
Manage Your Supply Process

Get a 360 degree view of your supply process, from a sales order in the Order Management work area, to the supply order that Supply Orchestration creates to supply the sales order, to the work order that Inventory Management creates to build the item that the sales order requests.

Assume Supply Orchestration sends you a notification that there's an exception for an item. You need to get a 360 degree view of supply for item AS54888 Desktop Computer, in sales order 506624, that you created for customer Computer Service and Rentals in the Order Management work area. You set up Supply Orchestration so it uses a make flow and contract manufacturing to supply the AS54888.

1. Go to the Supply Orchestration work area.
   
   - Use the Analytics area on the Overview page to get a high level view of your supply orders, including ones that are on track and ones that aren't.
Search the Item column for AS54888, then click the link in the Exceptions column.
2. Examine the Manage Supply Lines page, then click the link in the Supply Order Number column.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message</td>
<td>Describes the cause of the exception. For example.</td>
</tr>
<tr>
<td></td>
<td>The supply line is in exception because a date was changed in the execution document.</td>
</tr>
<tr>
<td>Item</td>
<td>Item from the order line of the sales order in the Order Management work area.</td>
</tr>
<tr>
<td>Attribute</td>
<td>Value</td>
</tr>
<tr>
<td>----------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Supply Order Number</td>
<td>Identifies the supply order. Click it to access the supply order.</td>
</tr>
<tr>
<td>Document Number</td>
<td>Identifies the document that the flow uses to create supply. For example, the work order, purchase order, or transfer order.</td>
</tr>
<tr>
<td>Supply Type</td>
<td>Identifies the type of flow, such as buy, make, or transfer. Make a note of this value, because you use it in the next step.</td>
</tr>
<tr>
<td>Request Source</td>
<td>Source that requested supply, such as Order Management Cloud.</td>
</tr>
<tr>
<td>Line Status</td>
<td>Status of the line in the document. For example, Work Order Complete indicates that the line in the work order for this item finished the build.</td>
</tr>
<tr>
<td>Customer</td>
<td>Name of the customer on the sales order.</td>
</tr>
<tr>
<td>Sales Order</td>
<td>Number of the sales order from the Order Management work area.</td>
</tr>
</tbody>
</table>
3. Examine the Supply Order Details page.

Note.
- Expand the top line so you can view the line that contains the exception.
- Click the line that contains the exception so you can view details about it.
- Click Orchestration Plan so you can see the current state tasks that the orchestration process is running.
  
  In this example, the orchestration process successfully created the work order task and the reservation task, started but hasn't finished the work order completion task, and hasn't started the fulfillment completion task.
In the Line Details area, click the Make link. Note that links contain data depending on the type of flow. In this example you click Make because its make flow. The Buy and Transfer links don't contain any data because the flow isn't buy or transfer.

- Click the link in the Document Number column to go to the work order.

4. Examine the Work Order page.

![Work Order: MFG2-10014 - AS54888](image)

**Note.**

- Note that the page title includes the work order number and the item number.
  
  For example, MFG2-10014 - AS54888.

  where

  MFG2-10014 is the work order number.

  AS54888 is the item number.

  Details vary depending on the type of work order. For example, some work orders include serial numbers, others don’t.

  - Click **Operations** to see what operations the work center has done to build the AS54888.
  - Click **History** to see remaining quantity, completed quantity, scrapped quantity, transaction history, inspection history, and other details.
Related Topics

- Overview of Work Orders
- Overview of Managing Sales Orders
- Overview of Supply Orchestration

Analytics for Supply Lines

Use charts on the Supply Lines Overview page to visualize details about supply lines.

Deviations by Supply Type

The Deviations by Supply Type sunburst chart on the Supply Lines Overview page includes deviations for supply tracking lines that the Overview area displays. Use it to examine lines that deviate from planned fulfillment because they're in jeopardy, or an exception or error occurred.

Get details about.

- Supply order type, such as make, buy, or transfer.
- Deviation type, such as jeopardy, exception, or error.

Double-click the chart to get details about the deviation.

The chart includes two rings. Click **Detach** to display the chart with a third ring on a separate page. The third ring displays more detail.

<table>
<thead>
<tr>
<th>Deviation</th>
<th>The Third Ring Displays Tracking Lines That Are In State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jeopardy</td>
<td>High jeopardy</td>
</tr>
<tr>
<td>Exception</td>
<td>Supply Date Pushed Out or Quantity Reduced</td>
</tr>
<tr>
<td>Error</td>
<td>Undefined</td>
</tr>
</tbody>
</table>

Current State Analytics

<table>
<thead>
<tr>
<th>Chart</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deviations by Type</td>
<td>Deviations in supply orders that are open.</td>
</tr>
<tr>
<td>On Track by Supply Type</td>
<td>Compares the types of supply orders that are on schedule according fulfillment dates.</td>
</tr>
</tbody>
</table>
Supply Line Status

Orchestration updates the status on each supply line after each change in the fulfillment process.

<table>
<thead>
<tr>
<th>Supply Line Status</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>On Track</td>
<td>The requested supply quantity is on time.</td>
</tr>
<tr>
<td>Jeopardy</td>
<td>The requested supply quantity is available only after the requested date.</td>
</tr>
<tr>
<td>Exception</td>
<td>The available supply doesn't meet the requested quantity, the requested date, or both.</td>
</tr>
<tr>
<td>Error</td>
<td>An error occurred.</td>
</tr>
</tbody>
</table>

For example, Oracle Procurement Cloud didn't create the purchase order because a web service is down or a charge account is missing.

Fix the error.

- Resubmit the supply line.
- If data is missing, isn't valid, and you can't correct it, then mark the supply line as Inactive.
3 Manage Supply Lines

Manage Supply Lines

Use the Manage Supply Lines page to get details about supply lines. For example, get details about the Buy supply lines for a back-to-back sales order.

Access the Manage Supply Lines page from the Overview page of the Supply Orchestration work area.

- Click **Tasks > Manage Supply Lines**, or...
- Click a link in Current State area.

On the Manage Supply Lines page, in the Supply Order Number column, click a link to get details about the supply lines in a sales order. Use the Supply Order Details page that displays to examine supply line details for the sales order.

How Orchestration Processes Purchase Orders

A buy flow creates a purchase order, which is a document that starts a purchase process.

Here's how it works.

1. Supply Chain Orchestration receives a supply request from Order Management Cloud, Planning, or Inventory.
2. The decomposition layer processes the request.
3. Orchestration creates a supply order.
4. The task layer creates a request to create the purchase order.
5. The external interface sends the supply request to Oracle Procurement Cloud.
6. Procurement creates the purchase order.
7. The Purchasing task layer tracks the purchase order.
8. The Overview page in the Supply Orchestration work area displays any exceptions that occur.

Orchestration can manage change that occurs during a back-to-back buy flow.

- Create, update, or cancel a purchase order in Oracle Procurement Cloud according to a request from Order Management, Planning, or Inventory.
- Record and respond to business events in Procurement that occur because of changes to supply. Orchestration might respond with a create or cancel. It might also respond with a request to split the purchase order, split purchase order lines, or split the schedule for a purchase order line.

How Orchestration Processes Work Orders

A make flow creates a work order. A work order is a set of instructions that your manufacturer uses to create the item that your supply order requests.

Here's how it works.

1. Supply Chain Orchestration receives a supply request from Order Management Cloud, Inventory Min-Max, or Planning.
2. The decomposition layer processes the request.
3. Orchestration creates a supply order.
4. The task layer creates a request to create the work order.
5. The external interface sends the supply request to Oracle Manufacturing Cloud.
6. Manufacturing creates the work order.
7. The Manufacturing task layer tracks the work order.
8. The Overview page in the Supply Orchestration work area displays any exceptions that occur.

**Back-to-Back**

Orchestration can create a work order to support a back-to-back flow for a sales order in Order Management Cloud. It creates and reserves the work order for a single sales order. Contract manufacturing affects work order usage.

<table>
<thead>
<tr>
<th>Contract Manufacturing</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Uses the work order to track production in the contract manufacturer's facility.</td>
</tr>
<tr>
<td>No</td>
<td>Uses the work order to fulfill the sales order in the manufacturer's own facility.</td>
</tr>
</tbody>
</table>

**Change and Cancel**

Change might include a change in dates or quantity.
- Orchestration might create more than one tracking line to manage demand change that occurs during a back-to-back flow or with contract manufacturing.
- If a rejection occurs, then Orchestration doesn't modify the original tracking line, but it does create a new tracking line for the rejected quantity.
- If an exception occurs, you can manually place a work order on hold while you resolve the exception.

**How Orchestration Processes Internal Material Transfers**

Supply Chain Orchestration can manage an internal material transfer that occurs within a single organization or between two different organizations.

Here's how it works.

1. Orchestration receives a supply request.
2. The decomposition layer processes the request.
3. Orchestration creates a supply order.
4. The task layer sends a request to Inventory to create a transfer order.
5. Business rules determine how to process the transfer request.

A document execution rule determines whether to use a purchase order or transfer order for the transfer request depending on the condition.
A buy and sell relationship exists between the source organization and destination organization | Buy | Purchase order

The source organization and the destination organization are separate legal entities | Buy | Purchase order

All other conditions | Transfer | Transfer order

6. Orchestration creates a purchase order or transfer order.
7. Fulfillment ships inventory to the destination organization.
8. The Supply Orchestration work area displays details for the purchase order or transfer order.

Orchestration also manages change that occurs if fulfillment updates cancels the order. Examples of change include rescheduling the order, changing the shipping method, changing the requested date, and so on.

### Approve Replenishment Requisitions for Minimum and Maximum Requests

You can submit a replenishment requisition to approval for a minimum and maximum request that your purchasing application created.

- Inventory sends the supply request to Supply Chain Orchestration.
- Orchestration sources supply details from your purchasing application.
- Orchestration verifies whether the purchasing application already approved the requisition or if it requires approval. If the requisition isn't approved, then the purchasing application doesn't create the purchase order.

You don't need to do anything in the Supply Orchestration work area.

### Manage Reservations in Back-to-Back Processing

Use a reservation to allocate material for the demand that a fulfillment line in Order Management Cloud needs.

- You must reserve supply in a back-to-back flow for an inventory task that includes creating and managing a material reservation.
- Create one reservation to supply material for one demand.
- Create a reservation for a back-to-back, buy, make, transfer, or on hand supply order.
- You can't create a reservation for partial fulfillment.
- Changing a reservation in Oracle Logistics Cloud might cause an exception. The Supply Orchestration work area displays them.
Supply Request Exceptions

Use the Manage Supply Request Exceptions page to view supply requests that failed. Examine the Exception Message column to get details about each set of supply request lines.

- In the Navigator, click Supply Orchestration. On the Overview page, click Manage Supply Request Exceptions.
- Supply Chain Orchestration doesn't create a supply order for a request that's in exception.
- If the problem that causes the exception occurs because:
  - Your set up in orchestration isn't correct. Fix the set up, then resubmit the request.
  - Data in the request is missing or isn't correct. Cancel the request, fix the data in the application that sends the request, then resend the request.
- To do an action on more than one row, hold down the Ctrl key, then click each row you want to process. If you click Resubmit, then Supply Orchestration will resubmit the supply lines for each row you select. However, Supply Orchestration doesn't process lines it can't recover. If an exception persists on the Manage Supply Request Exceptions page even after you resubmit it, then its not recoverable, and the exception will persist. You must correct the underlying problem, then resubmit.

You can also use the Manage Supply Request Exceptions page to view the number of times you resubmit each request.

Project-Driven Supply Chain

Manage an exception that occurs with project-driven supply chain. Click Add Fields > Project Number, then search for your project. Set search to Project Number Is Not Blank to return all exceptions for your projects.

What happens if I don't resolve supply request exceptions?

They continue to display on the Manage Supply Exceptions page. Orchestration doesn't create a supply orders for exceptions.

To improve performance and reduce maintenance, resolve exceptions as soon as you can.

Can I change a supply request before I resubmit it?

You can't change a request from the Manage Supply Exceptions page. Use the exception message to view the cause of the error, then correct it in your Orchestration set up or in the application that sent the request. Next, refresh the Manage Supply Exceptions page, select the updated record, and resubmit it.
What's the difference between a supply chain exception and jeopardy?

An exception is a change in supply or demand that affects quantity or fulfillment dates. Jeopardy is a deviation where planning has determined supply might be delayed beyond the promised fulfillment date, but the deviation hasn't yet occurred.
Manage Exceptions for Configured Items

Use the Manage Configured Item Exceptions page to manage exceptions that occur when orchestration creates a configured item at run time.

<table>
<thead>
<tr>
<th>Situation</th>
<th>What Orchestration Does</th>
<th>What You Do</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orchestration creates a configured item but a problem occurs when it adds details for downstream processing.</td>
<td>Creates an exception and continues to process the sales order.</td>
<td>Use the logs to fix the problem.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Orchestration uses entities in the configuration model to create each configured item. Entities include subinventories, locators, item transaction defaults, inventory consumption rules, units of measure, and so on. Orchestration logs errors that occur.</td>
</tr>
<tr>
<td>Orchestration can't create the configured item.</td>
<td>Creates an error, sends the error to Order Management, and stops processing the sales order.</td>
<td>Fix your set up, then resubmit the supply request.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The setup for the configured item in the Product Information Management work area probably isn't correct.</td>
</tr>
</tbody>
</table>

1. In the Navigator, click **Supply Orchestration**.
2. On the Overview page, click **Manage Configured Item Exceptions**.

The search results displays the current exceptions.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base Model</td>
<td>Name of the configuration model item.</td>
</tr>
<tr>
<td>Item</td>
<td>Name of the configured item that contains the problem.</td>
</tr>
<tr>
<td>Organization</td>
<td>Organization that you associated with the configured item.</td>
</tr>
<tr>
<td>Resubmit Count</td>
<td>Number of times you resubmitted the configured item.</td>
</tr>
</tbody>
</table>
Choose one or more rows, then click.

- **Actions > Resubmit.** Resubmit the configured item for processing. Make sure you fix the problem that causes the exception, then resubmit.
- **Actions > Ignore Exception.** Remove exceptions from the list. The problem that caused the exception remains but doesn't display in the list.

Here are the exception types you can search on.

- Consumption Rules
- Item Attachments
- Item Categories
- Item Locators
- Item Inventories
- Item Subinventories
- Item Transaction Defaults
- Related Items
- Units of Measure Interclass
- Units of Measure Intraclass

**Related Topics**

- Overview of Configure-to-Order
6 View Configured Items

View Structures of Configured Items

Examine the values of a configured item without opening the sales order or work order.

The user, such as an Order Entry Specialist, sets configure options for a configured item in the sales order. The work order includes the configured item, required components, configure options, substitutions, and transactional item attributes.

You use the Product Information Management work area to set up a configured item. You can’t use it to view how the user sets configuration options because the work area doesn’t store the bill of materials for the configured item. Fulfillment uses values that the user sets at run time to create the bill of materials. You can use the View Configured Item Structure page to examine the configured item the user set up without accessing the sales order.

Use the Item attribute in the Search area to search for the configured item, then use the Item Structure Details area to drill down to the configured item and configure options.

Use the Configured Item Service

You can also use the ConfiguredItemService web service to get the item structure.

- For details, see the Overview of Using Web Services with Configure-to-Order topic.
- You must make sure the required components and configure options for each configured item are the same across organizations.

Related Topics

- Overview of Configure-to-Order
7 Create Supply Requests

Create Supply Request

Use the Create Supply Request page to create an urgent request to transfer an item. For example, to replenish stock for an item outside of your regular planning cycle.

Assume you need a quantity of 100 to meet demand for the AS54888 item. You find that the quantity won’t meet demand, so you create a supply request.

1. Find your item.
   - In the Inventory Management work area, click Tasks > Manage Item Quantities.
   - On the Manage Item Quantities page, search for the AS54888 item.
   - In the search results, in the Item column, expand Item AS54888, then notice values in the quantity area.

<table>
<thead>
<tr>
<th>Item</th>
<th>On Hand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization V1</td>
<td>50</td>
</tr>
<tr>
<td>Organization M1</td>
<td>25</td>
</tr>
</tbody>
</table>

   These are example values. The values in your tree will be different.
   - Click Actions > Request Transfer Order.
     Notice that the Create Supply Request page displays the destination organization and a reference number for the supply request.

   As an alternative, start in the Supply Orchestration work area.
   - Click the Create Supply Request tab at the top of the work area.
   - On the Create Supply Request page, click Change Organization.
   - In the Select Organization dialog, select the destination organization, then click OK.

2. Add details for the supply request.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
<td>AS54888</td>
</tr>
<tr>
<td>Requested Quantity</td>
<td>100</td>
</tr>
<tr>
<td>UOM</td>
<td>Each</td>
</tr>
</tbody>
</table>
If you accessed the Create Supply Request page from the Supply Orchestration work area, then click **Add Row** before you set the details.

3. **Click Select Supply Source.**
   - The Select Supply Source page displays the source organizations that can fulfill the item according to the quantity and requested delivery date you entered.
   - The page ranks source organizations according to the distance to the destination organization or the value of the Option Ranks attribute in Global Order Promising.
   - You can also access the Select Supply Source page from the Enter Requisition Lines page in Self Service Procurement (SSP).
   - If an error displays when you click **Select Supply Source**, then make sure your user role can access Order Promising.
   
   Go to the Security Console, create a role, then assign it to a user. Use these values when you create the role.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role Category</td>
<td>SCM - Job Roles</td>
</tr>
<tr>
<td>Function Security Policy Name</td>
<td>View Planning Supply Availability</td>
</tr>
<tr>
<td>Function Security Policy Code</td>
<td>MSP_VIEW_PLANNING_SUPPLY_AVAILABILITY_PRIV</td>
</tr>
<tr>
<td>User Login</td>
<td>Choose the inventory role, procurement role, or user that needs access.</td>
</tr>
</tbody>
</table>

For details about how to create a role, see the Securing Oracle SCM Cloud book on My Oracle Support.

4. **Select a source organization, then click OK.**
   Notice that the Create Supply Request page displays values according to your request, such as destination type, destination subinventory, source organization, supply type, destination location, source subinventory, and shipping method.
   If necessary, you can modify some of these details.
   - In the Supply Details column, click **Additional Information.**
   - In the **Supply Details** dialog, modify details, then click **OK.**

5. **Click OK > Submit.**
   - Inventory Management sends a request to Supply Chain Orchestration to create a supply order.
Orchestration validates the request. If validation:

- **Succeeds**. Orchestration creates a supply order, then sends supply transfer details to Inventory Management. Inventory Management creates the transfer order and displays the reference number for the supply request and line number. You can use the reference number to search for the supply order in the Inventory Management work area.
- **Fails**. Inventory Management doesn’t create the transfer order, but instead displays an error message.

**Related Topics**
- Create Roles in the Security Console

### How Does Orchestration Rank Supply Sources?

Orchestration ranks supply sources for an unplanned item according to their distance from the destination organization. If the distance isn’t available, then orchestration uses a lower rank to indicate the source organization. Orchestration ranks sources for a planned item according to the option ranks that Order Promising provides.

### Scheduled Processes That Plan Supply for Orchestration

Get details about scheduled process you can use with Supply Orchestration.

<table>
<thead>
<tr>
<th>Supply Type</th>
<th>Process Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DOS_DosOrchB2BTransferProcessComposite</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DOS_DosOrchB2BMakeProcessComposite</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DOS_DosOrchB2BATPProcessComposite</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DOS_DosOrchP2PContractMfgProcessComposite</td>
<td></td>
</tr>
<tr>
<td>Simple Buy</td>
<td>DOS_DosOrchSimpleBuyCreateProcessComposite</td>
<td>Fulfill buy requests from Planning.</td>
</tr>
<tr>
<td></td>
<td>DOS_DosOrchSimpleBuyUpdateProcessComposite</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DOS_DosOrchSimpleBuyCancelProcessComposite</td>
<td></td>
</tr>
<tr>
<td>Supply Type</td>
<td>Process Name</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------</td>
<td>-------------------------------------------------------</td>
<td>-------------------------------------------------------</td>
</tr>
<tr>
<td>Simple Make</td>
<td>DOS_DosOrchSimpleMakeCreateProcessComposite</td>
<td>Fulfill make requests from Planning.</td>
</tr>
<tr>
<td></td>
<td>DOS_DosOrchSimpleMakeUpdateProcessComposite</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DOS_DosOrchSimpleMakeCancelProcessComposite</td>
<td></td>
</tr>
<tr>
<td>Simple Transfer</td>
<td>DOS_DosOrchSimpleTransferCreateProcessComposite</td>
<td>Fulfill transfer requests from Planning and Minimum Maximum planning.</td>
</tr>
<tr>
<td></td>
<td>DOS_DosOrchSimpleTransferUpdateProcessComposite</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DOS_DosOrchSimpleTransferCancelProcessComposite</td>
<td></td>
</tr>
</tbody>
</table>
Manage Reports

Create Reports for Supply Requests and Supply Orders

Use subject areas that contain data for Supply Orchestration when you run reports in Oracle Transactional Business Intelligence.
Organize, display, and analyze data according to subject area.

<table>
<thead>
<tr>
<th>Subject Area</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply Chain Orchestration - Supply Request Real Time</td>
<td>Includes data that Supply Orchestration receives as part of a create, update, or cancel request from an upstream source, such as purchasing or inventory.</td>
</tr>
<tr>
<td>Supply Chain Orchestration - Supply Order Real Time</td>
<td>Includes data that Supply Orchestration receives from Order Management and Inventory Management. Includes the latest available details for work orders, purchase orders, and transfer orders.</td>
</tr>
</tbody>
</table>

Here are some of the benefits you can realize.

- Use reports and analytics to manage hundreds of sales orders and their corresponding supply orders.
- Identify critical sales orders that have issues with supply requests and supply orders.
- Efficiently manage supply orders that need your attention so they can reach completion.

Get details in each subject area of your report.

- Number of successful records for each request source.
- Number of error records for each request source.
- Number of errors for open sales orders. Include the requested delivery date for each order according to day, such as end of month, end of quarter, and so on.
- Number of errors for shipped or closed sales orders.
Assume you need a report that displays supply requests that are in an error status. You want the source, status, date, batch number, and operation.

Try it.

1. In the Navigator, click **Reports and Analytics**.
2. On the Reports and Analytics page, click **Browse Catalogs**.

   Oracle Transactional Business Intelligence opens in a new tab on your browser.
3. On the Catalog page, click **New > Analysis**.
4. In the Select Subject Area dialog, scroll down to locate the subject areas.
   - Supply Chain Orchestration - Supply Order Real Time
5. Click **Supply Chain Orchestration - Supply Request Real Time**.
6. Add columns to your report.
   - On the Untitled page, in the Subject Areas area, expand **Supply Chain Orchestration - Supply Request Real Time**, expand **Supply Request Details**, then drag **Request Source** from the Subject Areas area and drop it onto the **Selected Columns** area.
   - Repeat for other subject areas. Drag and drop so the Selected Columns area resembles this sequence.

<table>
<thead>
<tr>
<th>Request Source</th>
<th>Request Status</th>
<th>Request Creation Date</th>
<th>Request Batch Number</th>
<th>Request Supply Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

- Click **Save Analysis**.
7. Modify a column. Assume you want the month, day, and year but not the time of day.
   - Click the **gear** next to Request Creation Date, then click **Column Properties**.
   - In the Column Properties dialog, click **Date Format**, then add a check mark to **Override Default Date Format**.
   - Delete all the content in the Custom Date Format window except for M/d/yy, click **OK**, then click **Save Analysis**.
8. Add a filter.
   - In the Save As dialog, name your report All Requests in Error Status, then click **OK**.
   - In the Selected Columns area, click the **gear** next to Request Status, then click **Filter**.
   - In the Filter dialog, set the value to **Request Status is equal to Error**.
   - Make sure the Filter by Request Status Code contains a check mark, click **OK**, then click **Save Analysis**.
9. Click **Results**, wait for the result to finish building, then examine the results.

### Report on a Wide Range of Data

Here are just a few examples of the kind of data you can report on:

- Count of supply requests from DOO in status Error sorted by year.
- Count of supply requests from DOO in status Success sorted by year.
- Errors for columns across subject areas.
- Supply lines that are in error for open sales orders.
- Closed supply orders for configured items sorted by year.
- All supply requests that are in status Success sorted by day.
- Closed and fulfilled supply orders with sales orders that are in Processing status.
- Transfer orders that are in error sorted by item.
Get a Full Picture of the Supply Chain

Here’s an example of a run time report that follows a sales order from start to finish.

This example also illustrates how you can filter data to avoid a lot of unwanted empty output. Assume you want a full picture of the supply chain but are only interested in flows that include the sales order, supply order, purchase order, and work order. You don’t want to display a lot of rows that don’t have any purchase orders, work orders, and so on. You can filter the data.

Try it.

1. Expand the Supply Chain Orchestration - Supply Order Real Time subject area.
2. Filter work orders.
   - Add the Work Order Number subject area to the Selected Columns area.
   - Click the gear next to Work Order Number in the Selected Columns area, then click Filter.
   - In the New Filter dialog, set values.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Column</td>
<td>Work Order Number</td>
</tr>
<tr>
<td>Operator</td>
<td>Is Not Null</td>
</tr>
</tbody>
</table>

3. Create similar filters for Supply Order Number and Purchase Order Number.

Here's what this example does.

- Get sales order data, such as the sales order number and item, from Order Management.
- Get supply order data, such as the supply order number and status, from Supply Orchestration.
- Get purchase order data, such as the purchase order number, from Purchasing.
- Get work order data, such as the work order number and status, from Inventory Management.

Organize According to Date

Need to scan the status of supply orders according to source, organized by date, and drill down on date? Use the time subject areas.

- Time - Supply Request Creation Date
- Time - Supply Request Need by Date

Arrange your report according to time, such as by day, week, month, or year, including start dates and end dates.
Here's an example that organizes supply orders according to date.

Try it.

1. Expand **Supply Chain Orchestration - Supply Order Real Time**, expand **Supply Order**, then drag and drop **Count of Supply Orders**.
2. Under Supply Chain Orchestration - Supply Order Real Time, expand **Supply Header Details**, then drag and drop **Supply Order Source** and **Supply Order Status**.
3. Under Supply Chain Orchestration - Supply Order Real Time, expand **Time - Supply Request Need by Date**, then drag and drop **Date - Year**.
4. Click **Save** and name your report **Count of Supply Orders According to Date**.
5. At run time, expand the **Date - Year** column down to the level you need, from the year all the way down to the day.
Points to Consider

Filter and manipulate column data to focus your report.

Filter your data.

- Use the Filter action to filter data. Choose from a variety of operators, then choose a value. For the value, the dialog makes life simple. It filters the values you can choose according to subject area. For example, if the subject area is Supply Order Status, then choose one or more statuses.
- Use the Edit Formula action to create your own formula that filters results. Include functions, columns, variables, equations, and so on in your formula.
• The result might take minutes to build, depending on how you set up the report and the volume of data you're reporting. If it takes too long, consider adding filters or removing columns.

• Consider how each subject area you add to your report affects report output. For example, if your report includes Request Supply Operation and Item Number, the output might include more than one item number for each operation because the relationship between operation and item number is one to many. Other relationships between columns might result in a lot of rows in one column for only one row in another column. The good news is that you can filter and sort to meet your specific requirements.

• Use the Item Type subject area to filter according to item type, such as configured item.

Sort your data.

• Use the Sort action to sort data.

• Use Sort Ascending or Sort Descending to sort report output according to column. For example, sort on Request Supply Operation so the report displays all records that include a Cancel operation, then Create operations, then Update.

• Use Add Sort Ascending or Add Sort Descending to add more than one level of sort. For example, sort ascending on Request Supply Operation and use Add Sort Ascending on Request Creation Date to sort according to the operation, then according to date within each operation.

Do other cool stuff.

• Use column properties to change appearance, such as font, alignment, borders, headings, suppress repeating values, and so on.

• Consider adding graphics to improve the impact of your reports.

• Add columns in real time. If you're reviewing a report and want to add data, there's no need to go back to the Criteria tab. When you're on the Result tab, just drag the data you want from the Subject Area, then drop it onto the report.

• Right-click each column in the report output to sort, remove, exclude, and so on.

### Some of the Attributes You Can Use In Your Reports

Hundreds of attributes are available. This section lists a few of them.

Display attribute values in your report.

• Request Batch ID
• Request Source
• Request Source Line
• Request Reference Number
• Item Number
• Requested Quantity
• Requested Supply
• Requested Delivery Date
• Message Text
• Request Status
• Exception Date
• Supply Operation
Request Submitted By

Display attribute values for sales orders.
- Sales Order Number
- Order Line
- Fulfillment Line Status
- Line Quantity
- Line Scheduled Ship Date

Display attribute values for work orders.
- Work Order Number
- Work Order Status
- Planned Completion Date

For more details.
- Overview of Oracle Transactional Business Intelligence
- Guidelines for Creating Cross Subject Area Analyses in Oracle Transactional BI (Doc ID 1567672.1) on My Oracle Support

Related Topics
- Overview of Transactional Business Intelligence
- Guidelines for Creating Cross Subject Area Analyses in Oracle Transactional BI (Doc ID 1567672.1)

Production Reports

Use the Manage Production Reports page to get reports for contract manufacturing.
Your contract manufacturer uploads production report data to Supply Orchestration, orchestration processes it, then sends updated and new transactions to manufacturers. Different users have different access.

<table>
<thead>
<tr>
<th>User</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplier or contract manufacturer</td>
<td>Access reports from the Supplier Portal work area.</td>
</tr>
<tr>
<td></td>
<td>Use the Manage Production Reports page to upload reports.</td>
</tr>
<tr>
<td></td>
<td>The page restricts reports according to supplier. The supplier can only view production reports for their own purchase orders.</td>
</tr>
<tr>
<td>Supply chain manager</td>
<td>View all reports that Supply Orchestration is tracking.</td>
</tr>
<tr>
<td></td>
<td>Access reports in one of two ways depending on the application you use to access them.</td>
</tr>
<tr>
<td></td>
<td>- Manage Production Reports page of the Supply Orchestration work area. Resubmit or upload production reports.</td>
</tr>
</tbody>
</table>
Take action.

- **Upload.** If you’re a supplier, upload your production report to create records in the manufacturing application. If you encounter a data validation error, correct the data and upload again.

- **Resubmit.** If you’re a supply chain manager, and if the manufacturing application couldn’t update production data because of a system failure, then resubmit the report.

To view report details on the Manage Production Reports page, click the link in the Production Report column, then use the tabs.

- **Completion.** Examine transaction completion details.

- **Materials.** Examine material details that your manufacturer or contract manufacturer used to do the transaction. If the contract manufacturer provides all material, then the tab doesn't display any data.

Use links in the Details column in each tab to view lot numbers and serial numbers that production used for completion or material transaction.

### Upload Production Reports

Upload a file that contains your production data and submit it.

1. Use the upload file template to gather production data. Use the template to make sure data is complete and accurate.

   If necessary, send the file to your supplier so they can fill it out. Alternatively, provide your supplier with sign in access to orchestration so they can upload it directly.

2. Use the Manage Production Reports page to upload the file.

Supply Orchestration validates the uploaded data, then uses it to create production reports. Orchestration sends the reports to the manufacturing application, and manufacturing uses it update their work orders.

If Orchestration can't create a report, then it cancels the upload and doesn't send any data to manufacturing. You must correct the data that caused the error, and upload again.

If a system failure occurs when sending data to manufacturing, then resubmit the production report.
Glossary

orchestration process
A process that includes a sequence of steps. These steps process one or more fulfillment lines during order fulfillment. An orchestration process coordinates the orchestration of physical goods and activities in a single order, and it automates order orchestration across fulfillment systems. It contains the instructions that describe how to process an order, such as the steps and services to use, step dependencies, conditional branching, lead-time information, how to handle change orders, and the status values to use. It describes how to schedule, reserve, ship, return, and invoice a sales order.