Oracle Fusion Cloud SCM

Using Supply Chain Orchestration

24A

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1 Hello

What's New in Using Supply Chain Orchestration

Get a summary about content that's new or significantly revised in each update of Using Supply Chain Orchestration.

To get details about.

- New features in each update, see *Order Management in Oracle Cloud Release Readiness*.
- Known issues for each update, see *Oracle Supply Chain Management Cloud Functional Known Issues and Maintenance Packs (Doc ID 1563075.1)*.

Update 24A

Topic	Description
Manage Manual Reservations in Your Back-To-Back Flows	Revised. View all of your manual reservations. Cancel a manual reservation when you cancel the order line. Quickly see what excess supply you have reserved.
Create Supply Request	Revised. See the Use the New Supply Request Task subtopic.

Update 22C

Topic	Description
Use Supply Chain Orchestration to Add New Requisition Lines to Open Purchase Orders	New. You can add a new requisition line to an open purchase order instead of creating a new one.
Manage Manual Reservations in Your Back-To-Back Flows	New. View manual reservations so you can see the supply that's allocated for your sales order when you don't automatically reserve supply.
Use Supply Chain Orchestration in Your Back-to-Back Flows	Revised. See the new section about preventing duplicate supply.

Update 22B

Topic	Description
Use File-Based Data Import or REST API to Update Projects on Transfer Orders	New. You can update the project attributes on a transfer order that you import through file-based data import or REST API.
Manage Your Supply Process	Revised. Use the new On Hand and Project On Hand supply types.

Update 22A

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Topic	Description
Create Supply Request	Revised. You can include project details in your request.

Update 21D

Topic	Description
Use Dual Units of Measure with Supply Chain Orchestration	New topic. Use this feature to help you create the purchase order, transfer order, or work order when you use dual units of measure to fulfill demand.

Update 21C

Topic	Description
Create Supply Request	Revised. You can use a unit of measure on your purchase order that's different from the unit of measure that you use on the order line in the supply request.
Manage Supply Lines	Manually select an alternative supply source to recover from an unexpected disruption.

Update 21B

Topic	Description
Manage Supply Lines	Revised. Cancel supply lines for work orders that involve outside processing.

Update 20B

Topic	Description
Troubleshoot Your Supply Chain Orchestration Flows	New. Troubleshoot problems that happen with supply orders in your fulfillment flow.
Close Supply Orders That Are Open	Revised. Close supply orders in outside processing and plan-to-produce flows.
Guidelines for Setting Up Rules for Supply Orders	Revised. Use only the Set Work Order Status or Ship Through Order Management actions.

Update 20A

Topic	Description
Create Reports for Supply Requests and Supply Orders	New. Use subject areas that contain data for Supply Orchestration when you run reports in Oracle Transactional Business Intelligence.

Overview of Supply Chain Orchestration

Use Oracle Supply Chain Orchestration to manage supply for your items, and to make sure fulfillment is consistent and efficient.
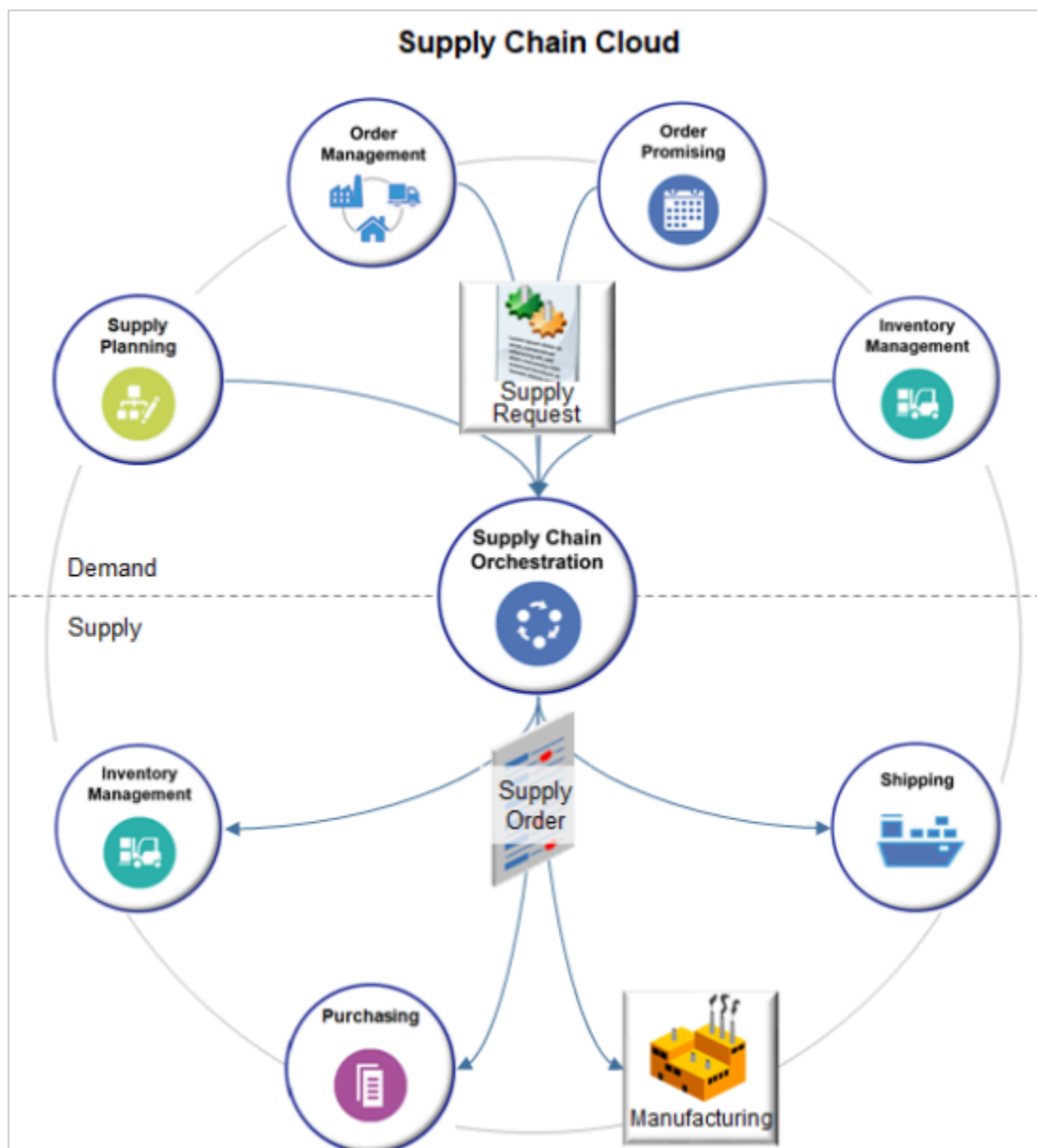
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Manage supply from one, central location.

- Receive a supply request to meet demand from an Oracle application, such as Oracle Supply Planning, Oracle Order Management, Oracle Order Promising, or Oracle 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.

You capture a sales order, configure it if its a configured item, price it, promise it, then orchestrate fulfillment.

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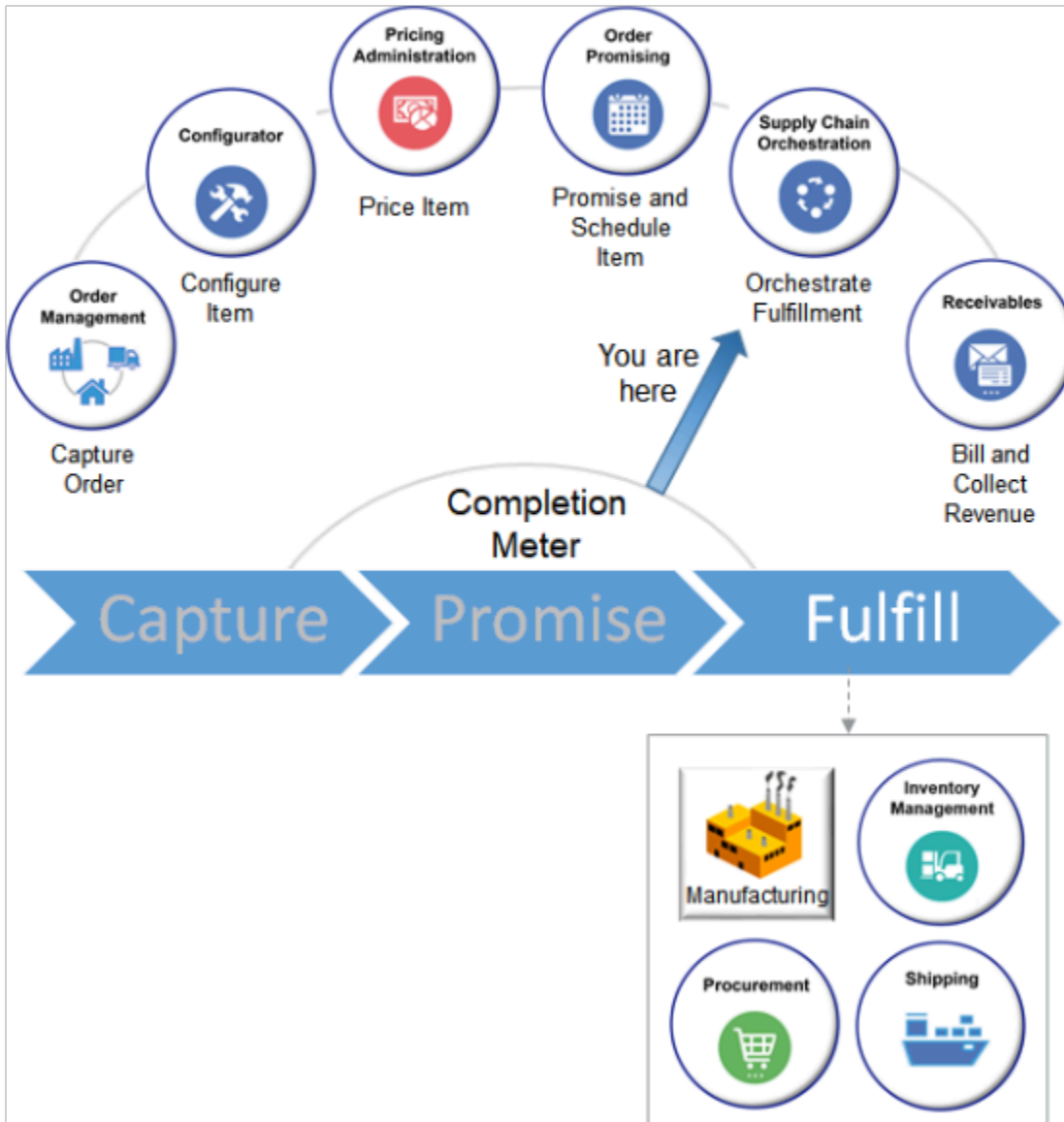
You orchestrate fulfillment differently depending on the flow.

- Back-to-back flow, such as make, buy, or transfer. Supply Chain 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.

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Manage Supply for Back-to-Back Flows

Automate your back-to-back flow. Back-to-back means Supply Chain 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.
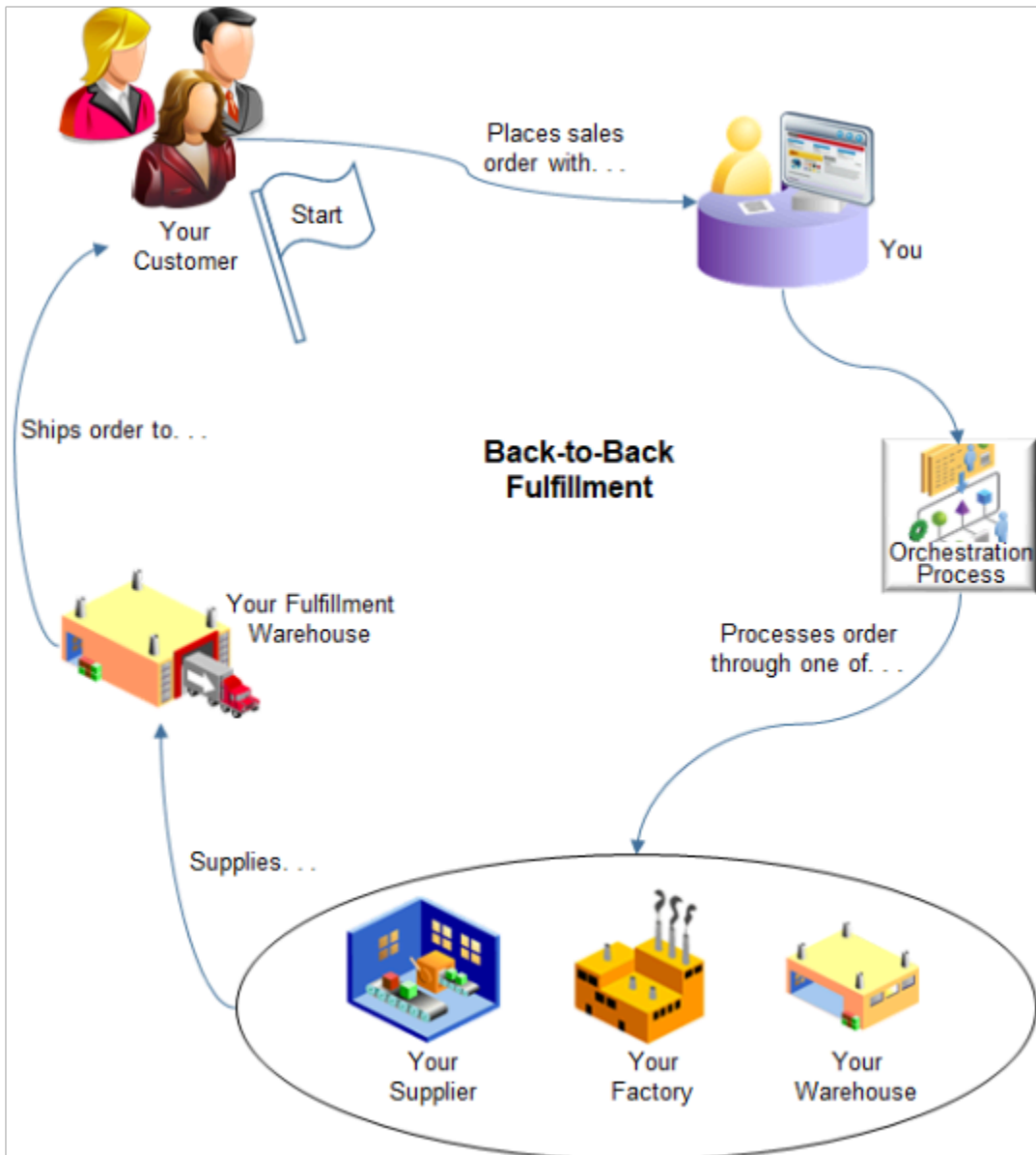
Note

- 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.

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- 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 its physically large, or its 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 *Use Supply Chain Orchestration in Your Back-to-Back Flows*.

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.

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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.

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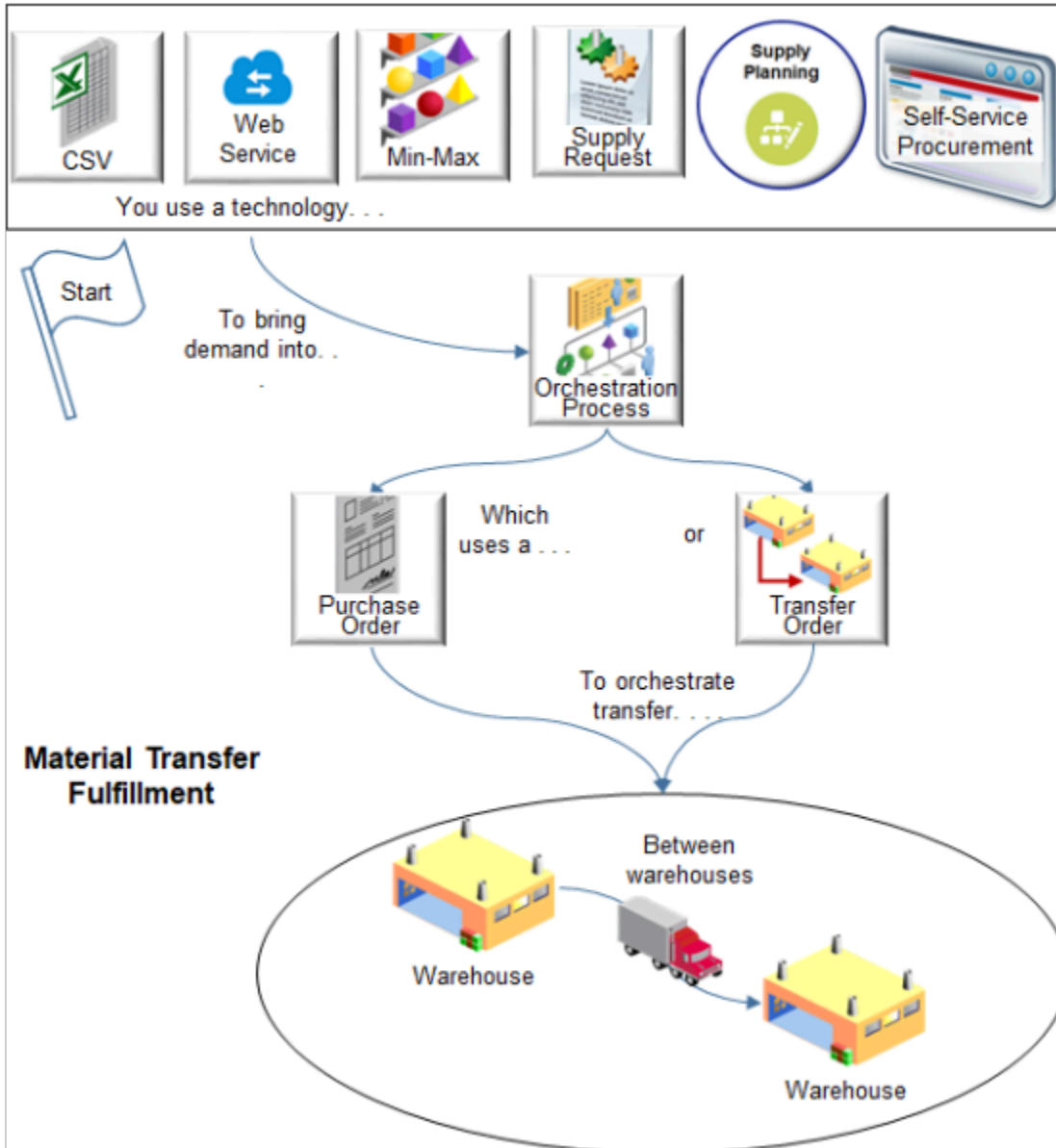
Note

- 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 *Overview of Internal Material Transfers*.

Automate Change Management

Supply Chain 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 happen with manual change.
- No set up is necessary.

Supply Chain Orchestration automatically manages change and keeps demand and supply in balance.

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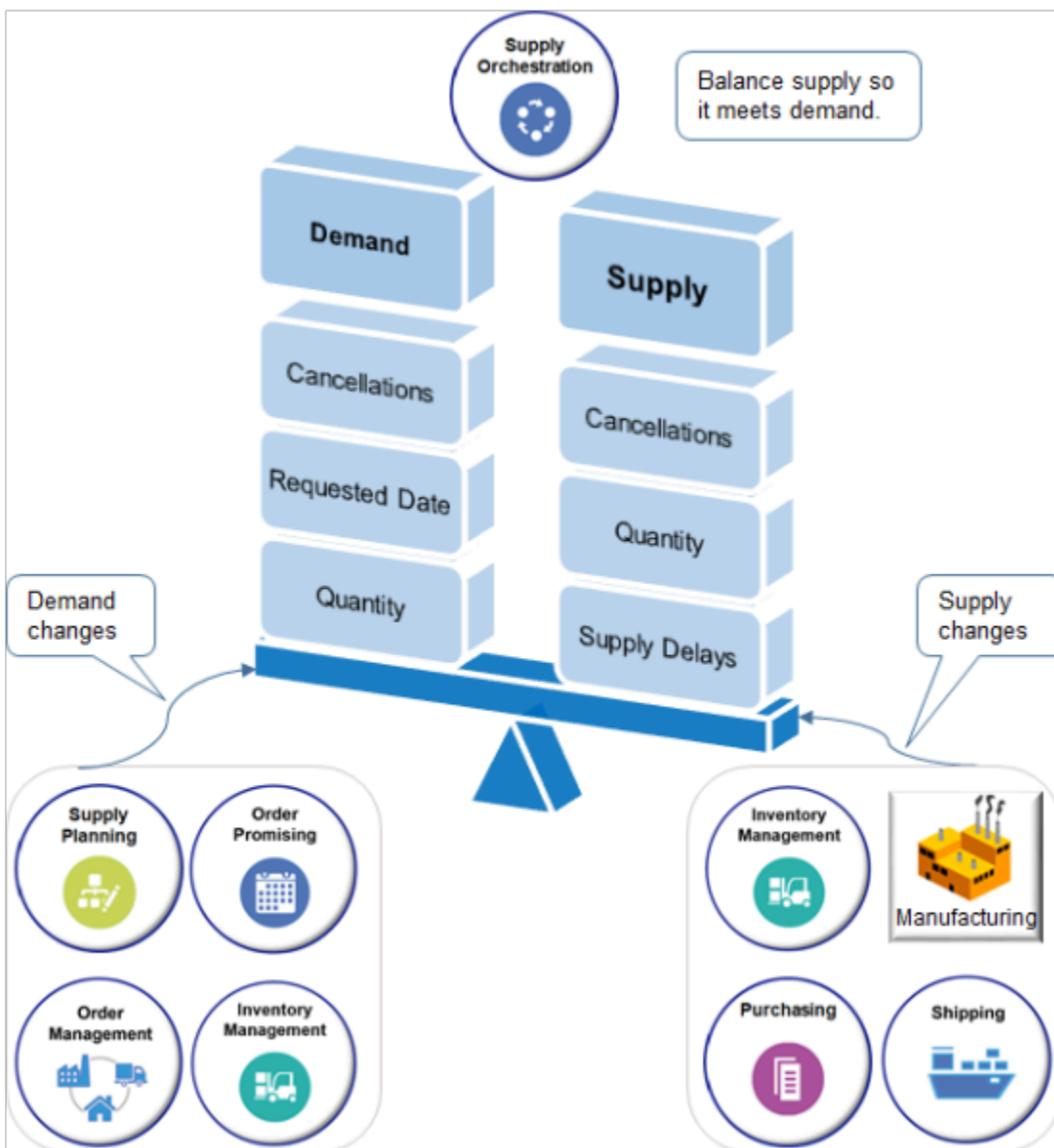
Use change management to maintain a balance between quantity and fulfillment dates. Do it when a change happens.

- 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.

  - Increase or decrease the supply quantity.

  - Change the date when supply becomes available.

  - Split supply. Make the total quantity available in more than one delivery.

  - 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 Chain Orchestration receives the request and updates the quantity on the supply document, which is the purchase order in this example. If Supply Chain Orchestration didn't automatically process the change then your supplier would have supplied more inventory than you need

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

Supply Chain 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 Chain Orchestration manages the change.

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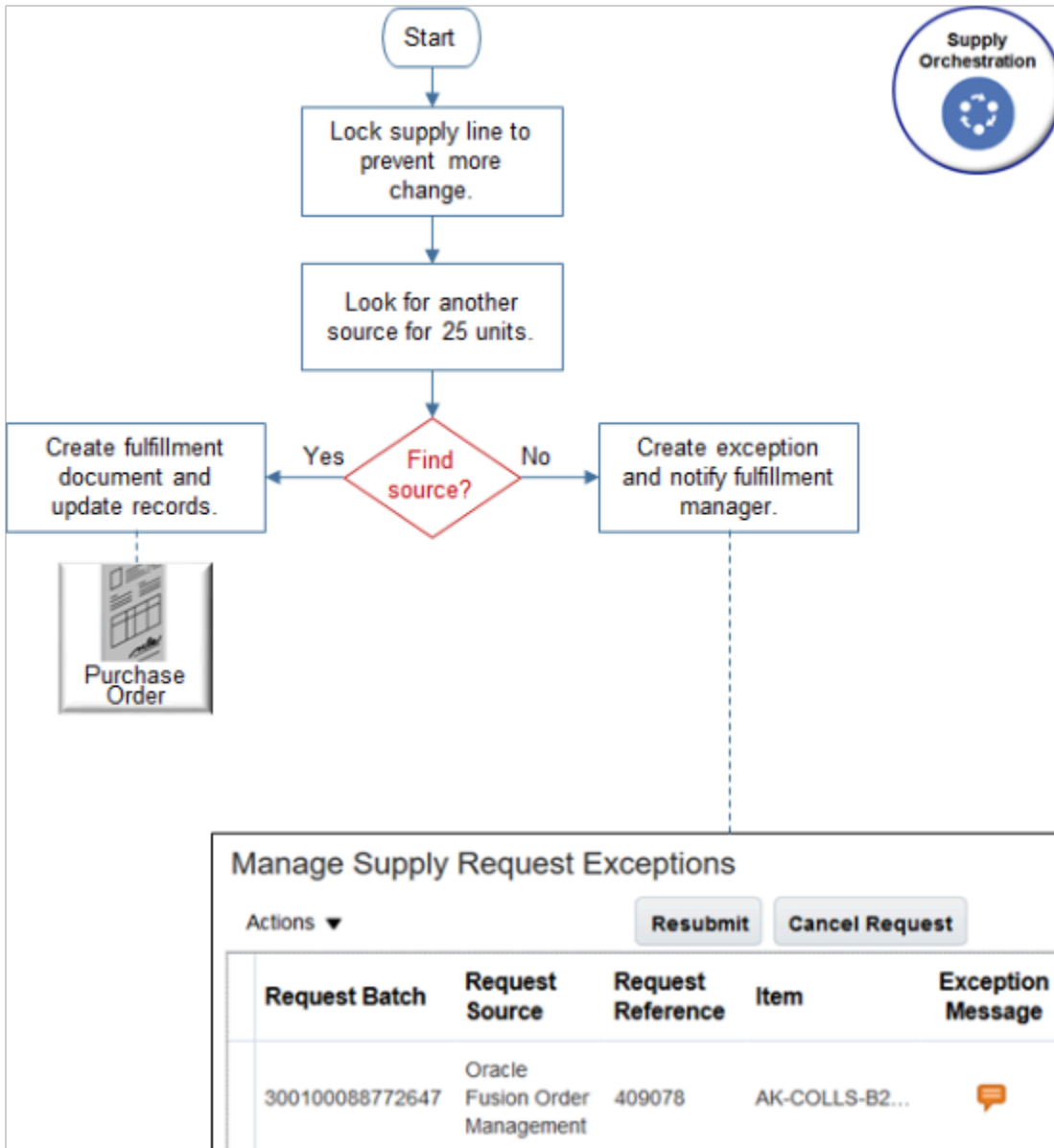
Here's what Supply Chain Orchestration does.

1. Locks the supply line to prevent more change.
2. Looks for another supply source that can fulfill 25 units.
3. If Supply Chain Orchestration:

   o **Finds another source**. Creates fulfillment document and update records. In this example, a purchase order is the fulfillment document.
   o **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 Chain Orchestration creates supply. For example, view errors, exceptions, and jeopardy for supply that's at risk of not meeting fulfillment. If an exception happens, 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
- Use Supply Chain Orchestration in Your Back-to-Back Flows
- Overview of Setting Up Supply Chain Orchestration
- Overview of Internal Material Transfers

How Supply Chain Orchestration Works

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

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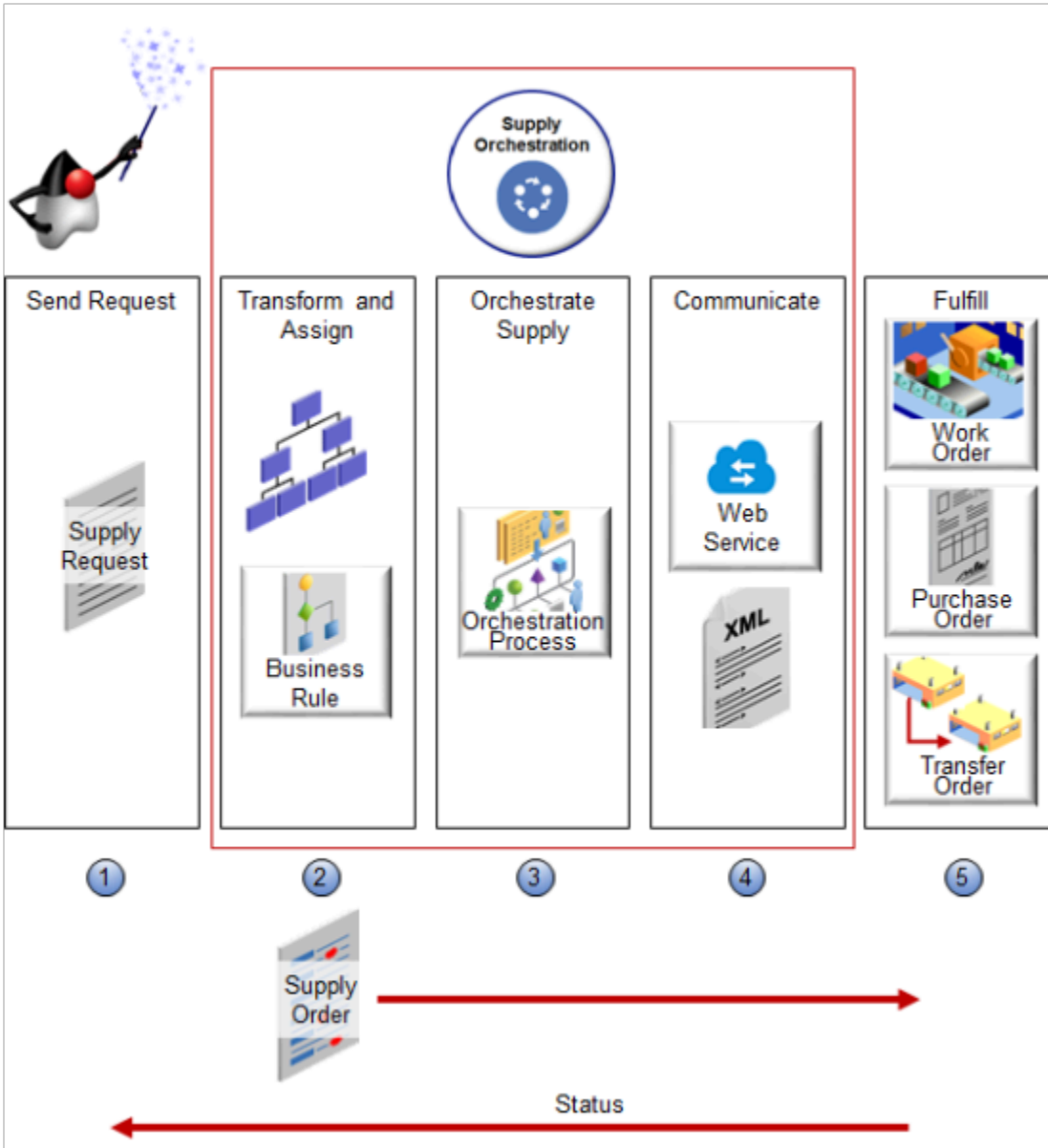
1. **Send request**. An application sends a request to Supply Chain Orchestration to create supply.

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 Management	o Order Promising confirms the sales order, then sends supply data to Supply Chain Orchestration. o Order Management schedules the sales order, then sends demand data to Supply Chain Orchestration.

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Application	What the Application Does
	o Supply Chain 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 Chain Orchestration.
File-Based Data Import	You use an Excel spreadsheet in the File-Based Data Import application to manually import request data into Supply Chain Orchestration.

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

Type of Rule	Description
Supply Order Defaulting and Enrichment Rule	Here's what you can do. o Map attribute values you receive in the supply request to values that your fulfillment system can use. If necessary, transform values to optimize fulfillment. o Modify an attribute on a purchase order, work order, or transfer order. Here are some examples. o Set shipment priority. o Select your preferred supplier. o Set the currency so it matches the currency your customer uses. o 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 Chain 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 *Use Composites to Plan Supply*.

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 happen in supply or demand during processing. Make adjustments to keep supply and demand in balance.

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- o **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.

- o Call the procurement system to create a purchase order.
- o Call the inventory system to reserve a purchase order for the demand.
- o 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.

- o Create an XML payload that's specific to each fulfillment system, then send it to the fulfillment system.
- o 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:

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

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

Use Supply Chain Orchestration in Your Back-to-Back Flows

Supply Chain 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.

  - o **Make**. Send work order to Manufacturing in Inventory.
  - o **Buy**. Send purchase order to Purchasing.
  - o **Transfer**. Send transfer order to Inventory.

- Track updates and statuses and send them to Order Management.
- Close the supply order after Order Management ships the item to your customer.

Supply Chain Orchestration also supports available-to-promise (ATP), where inventory already exists in the warehouse ready for shipping.

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Back-to-back Fulfillment

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

Supply Chain 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 happen 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 Chain 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 chain orchestration and order orchestration. Supply Chain Orchestration gets the goods that the sales order needs into the warehouse, then order orchestration ships it to your customer.

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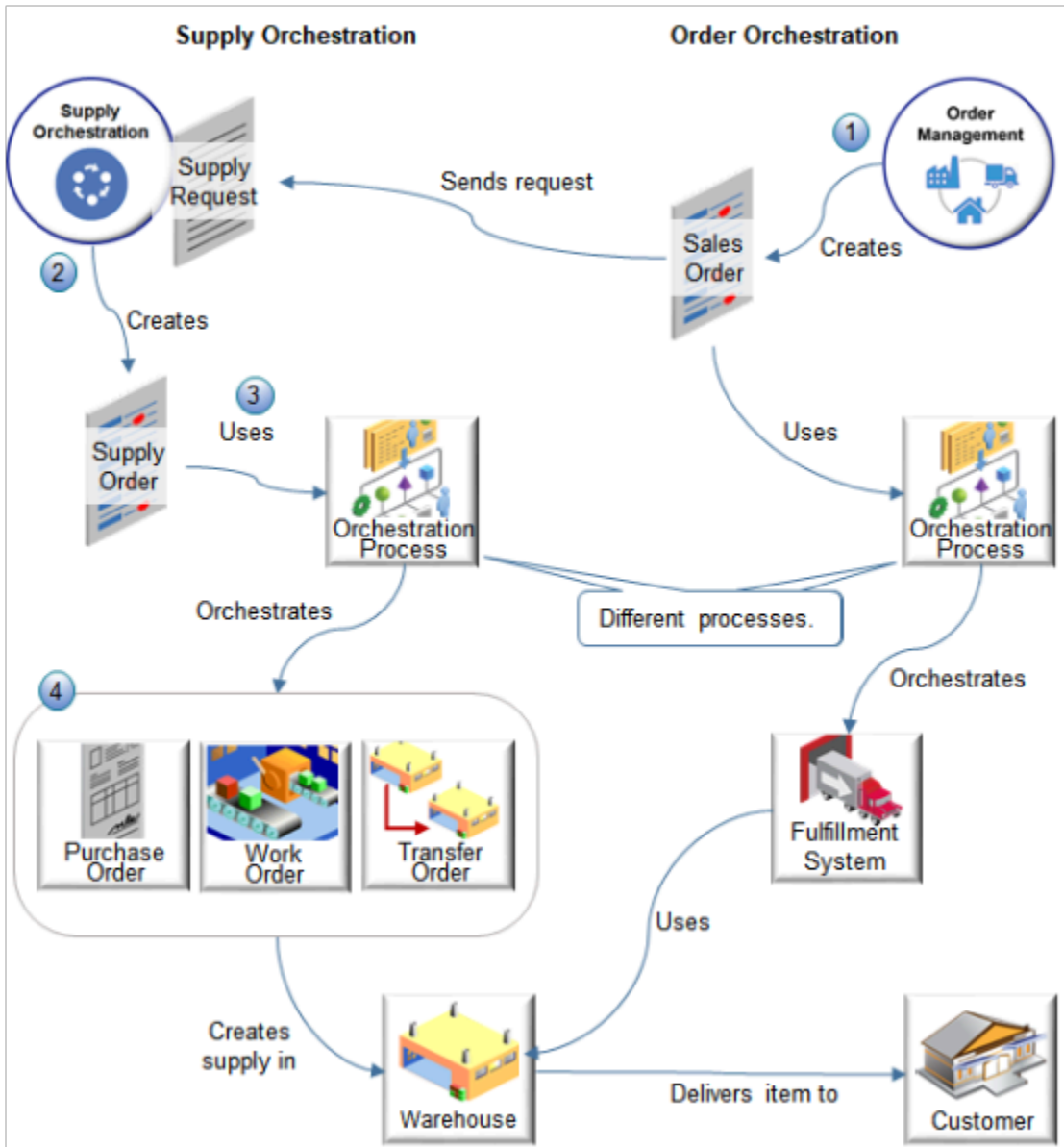
Supply Chain Orchestration orchestrates how to create and get supply into the warehouse.

- An application, such as Order Management, sends a supply request to Supply Chain Orchestration. Different applications can send a request. Supply Chain Orchestration might or might not fulfill a sales order from Order Management.

- Supply Chain 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.

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- Order orchestration doesn't fulfill supply requests. Instead, it sends a supply request to Supply Chain 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.

An Orchestration Process Does the Work

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

Flow	Steps
Sales Order	Create and stock supply before you need it. 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.
Sales Order with Back-to-Back Flow	Create supply only when you need it, on demand, in direct reply to a purchase request. 1. Request supply. Back-to-back doesn't keep supply in inventory, so it must request supply. 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. 3. Ship the item. 4. Invoice the item.
Sales Order with Drop Shipment	Drop ship the item from your supplier. 1. Schedule the item so your supplier is ready to fulfill it when you need it. 2. Create requisition to get purchase order approved. 3. Create purchase order so you can buy the item from your supplier. 4. Your supplier ships the item. 5. Invoice the item.

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.

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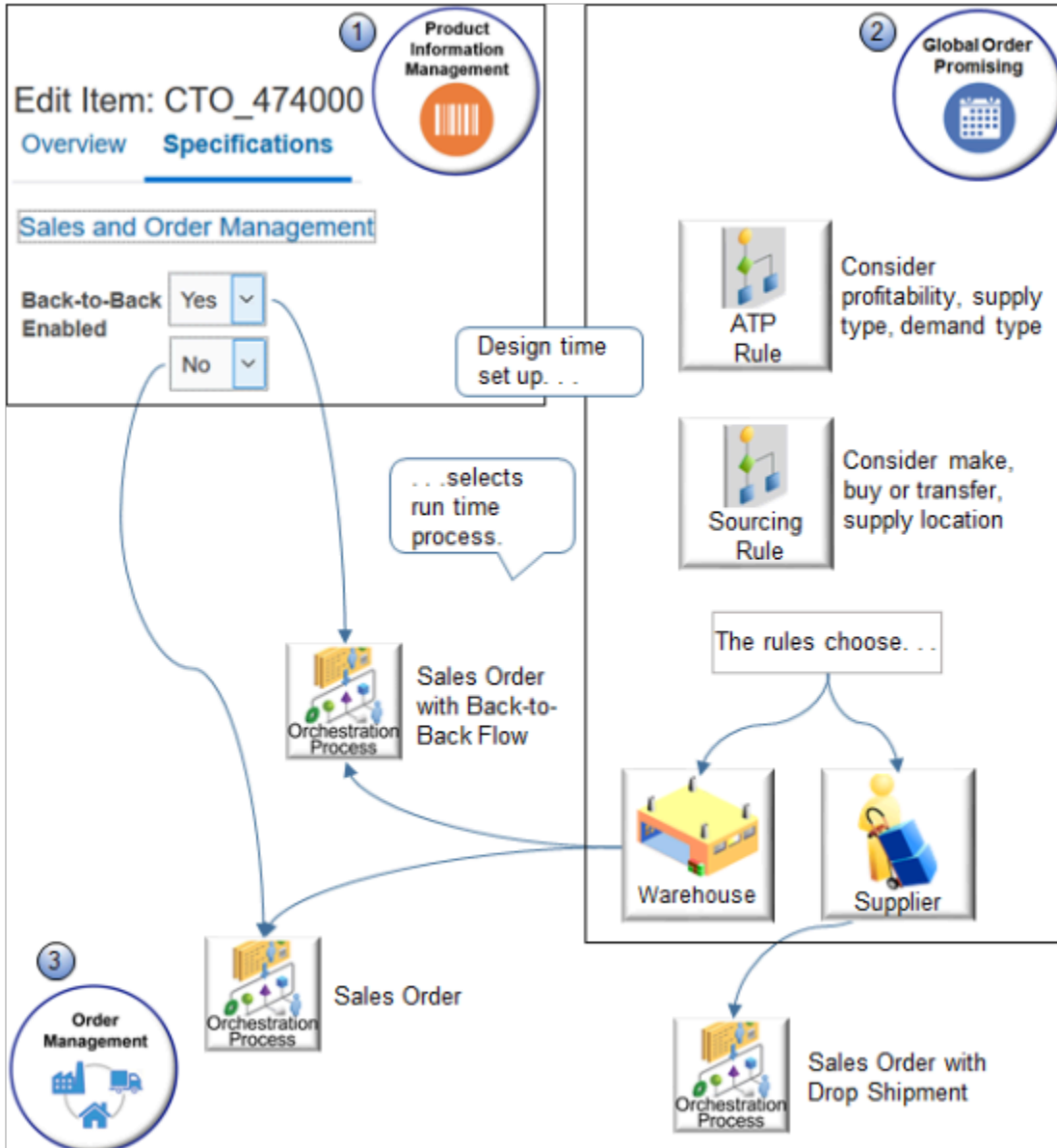
Note

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 Chain Orchestration fulfills an item in a make flow for a sales order.
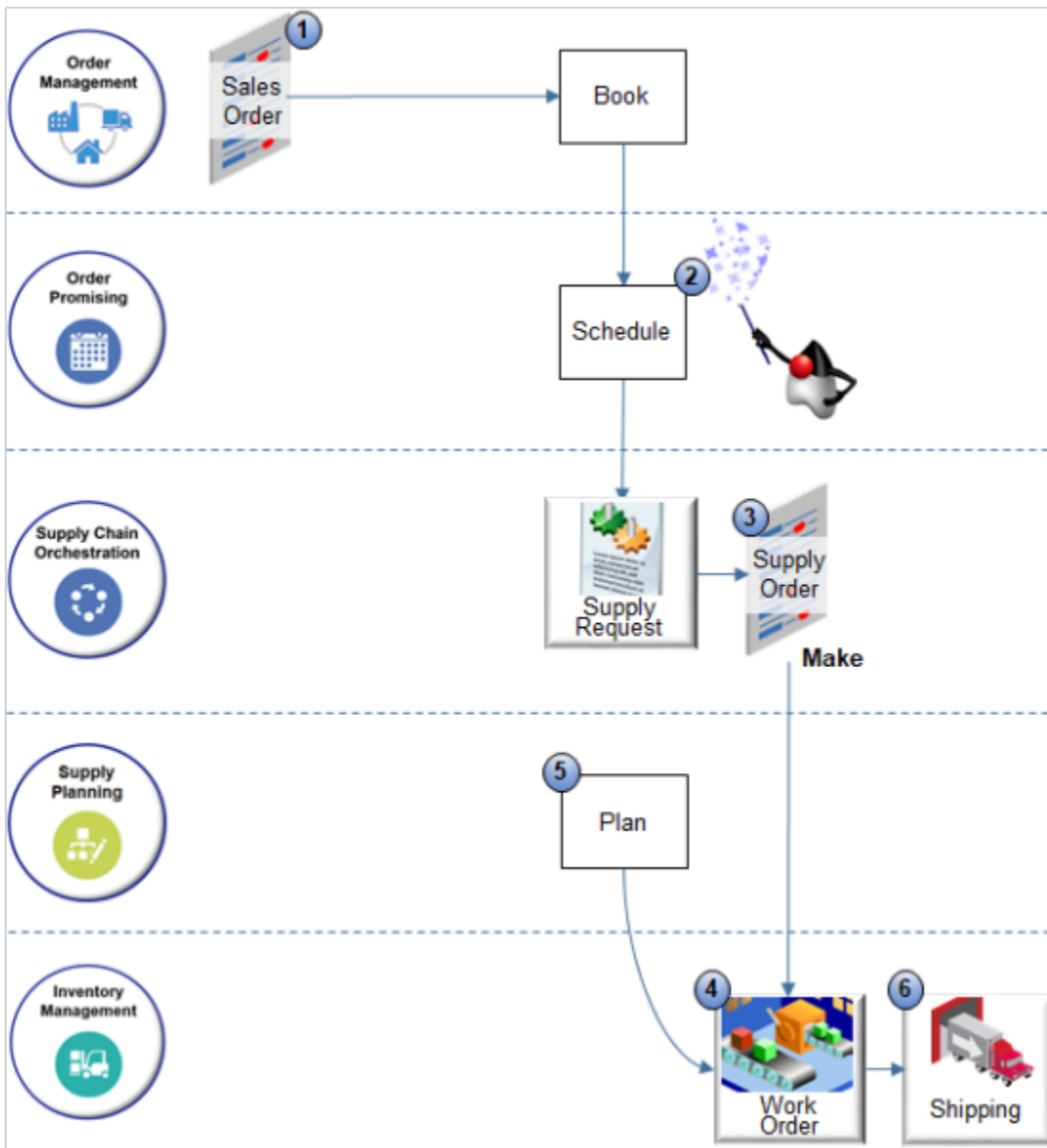
Note

1. Your user adds an item in the Order Management work area and submits it. Order Management sends a request to Supply Chain Orchestration. The request includes details about the item.

2. Order Management submits the item, then sends the sales order to Global Order Promising, and Promising schedules it.

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

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

   Promising sends a recommendation to Supply Chain 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 Chain 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.

Entity	Description
Supply order	Contains the supply order lines that Supply Chain Orchestration creates to fulfill one supply request.
Supply order line	Contains details about each supply request.
Tracking line for supply order	Tracking line that monitors the process that fulfills the supply request according to the supply type.
Details for transfer order	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.
Details for buy order	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.
Details for make order	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.

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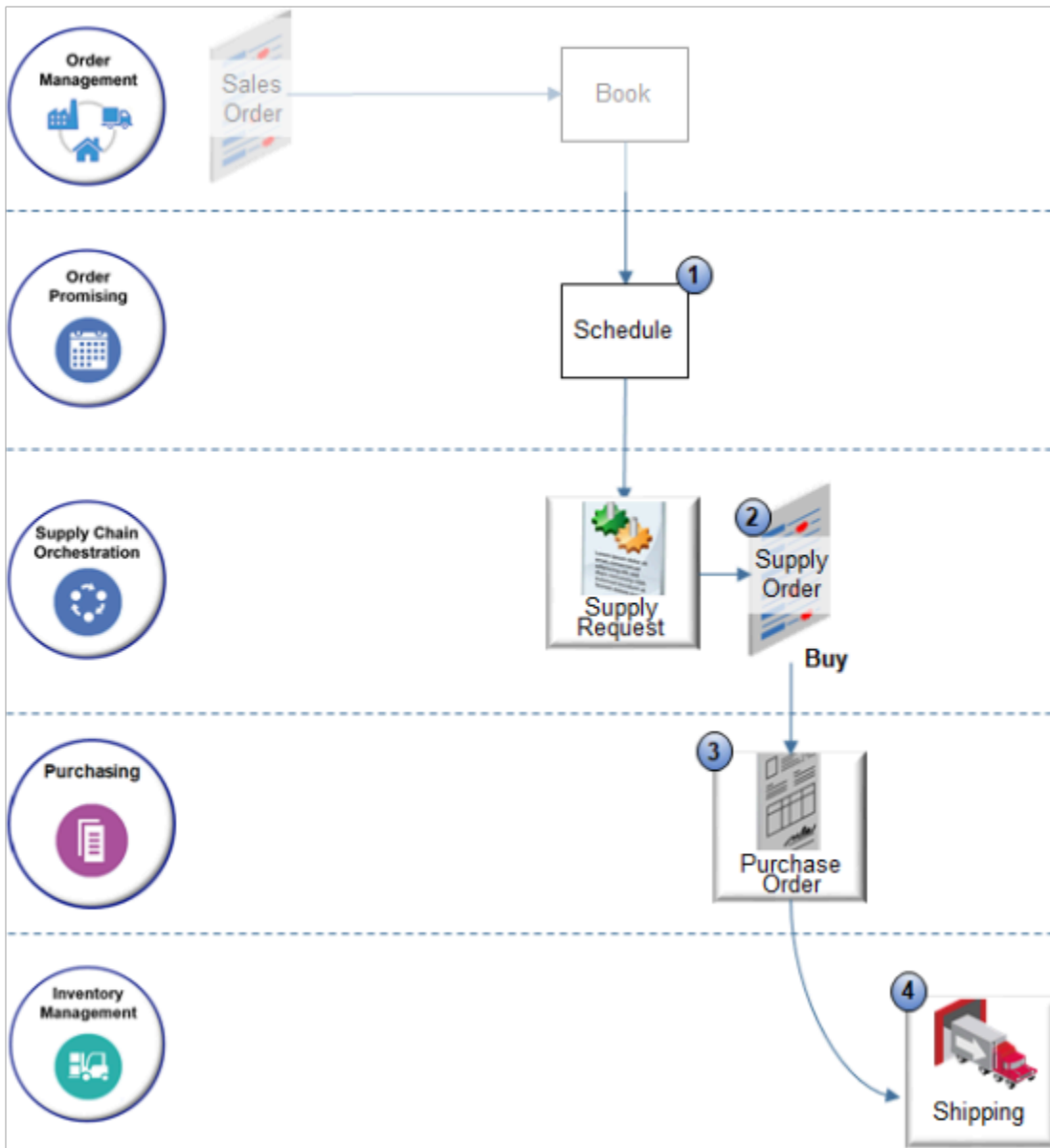
The flow is the same as the make flow but with a few differences.

1. Global Order Promising sends a buy request instead of a make request.
2. Supply Chain 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 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 Chain Orchestration also uses the buy flow for procure-to-pay, Min-Max, and outside processing (OSP).

Other Flows
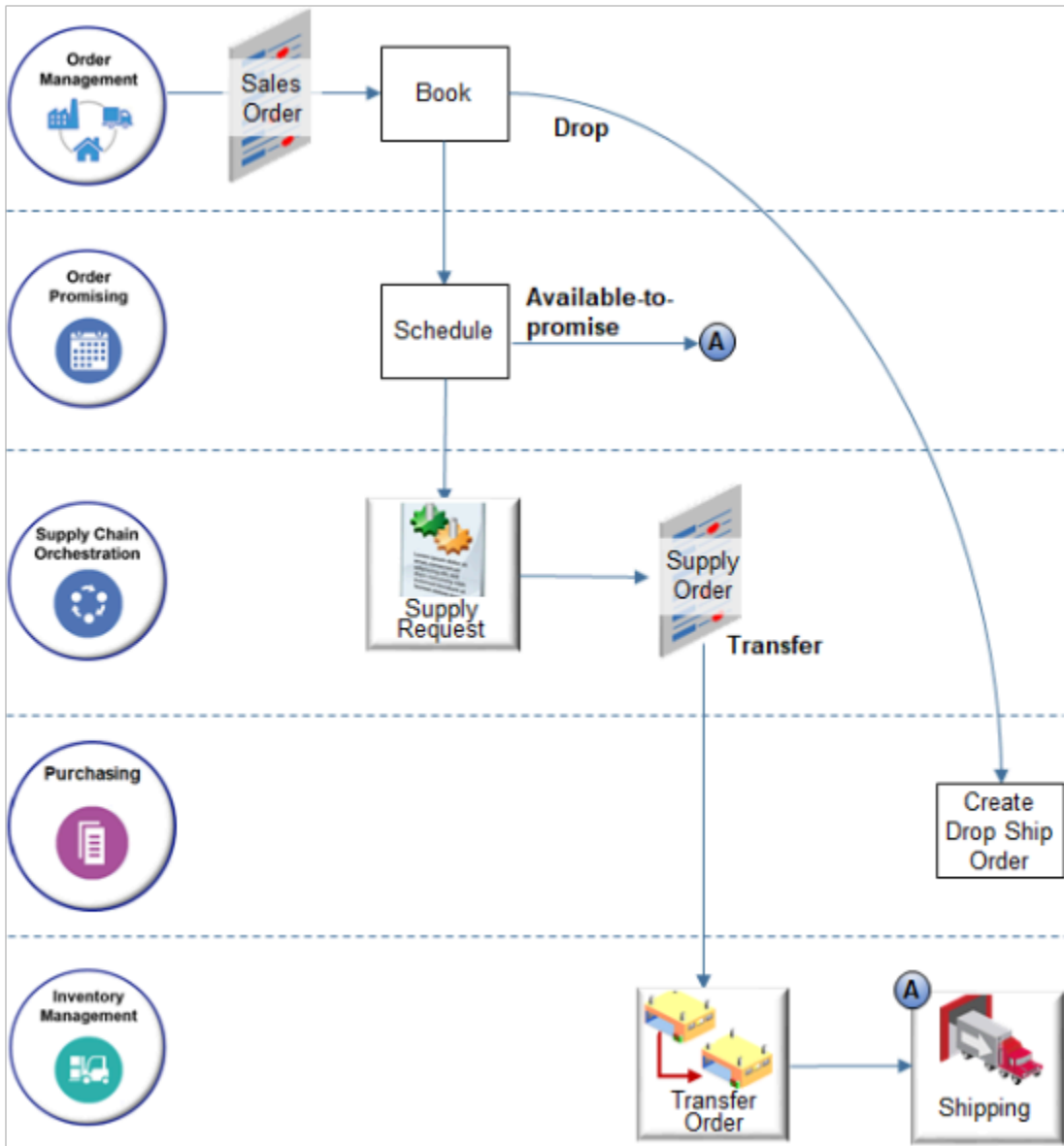
Supply Chain Orchestration supports other flows.

- **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 its 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 Chain Orchestration creates the supply request documents and sends them to Inventory Management.

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

A More Detailed View

Supply Chain Orchestration orchestrates and manages the flow between systems that request supply and systems that fulfill the supply request.

Supply Chain Orchestration can receive a supply request from an Oracle 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 Chain Orchestration receives a sales order from Order Management. Supply Chain Orchestration does some or all steps, depending on what its processing.

1. Receive a request to create supply.

Application That Sends Request	Description
Supply Planning	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.
Order Management, Order Promising, or Oracle Transactional Business Intelligence	Receive a recommendation from Order Promising. Receive demand data from Order Management after it schedules a back-to-back sales order. Supply Chain 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.
Inventory Management	Receive a request for internal transfer order for minimum or maximum replenishment.
File-Based Data Import	You use a spreadsheet to upload orders or requests for internal material transfers into Supply Chain Orchestration.

2. Supply Chain Orchestration prepares to fulfill the request.

Preparation	Description
Transform Attributes	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.

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Preparation	Description
Create Supply Order	Supply Chain Orchestration creates the supply order so it can set default values in the order and so the orchestration process can process it.
Set Default Values	Run a rule that sets default values.
Assign and Call Orchestration Process	Run a rule that assigns and calls the orchestration process. Supply Chain Orchestration comes predefined with different orchestration processes. Each process creates supply differently depending on flow. For example, one process optimizes the back-to-back flow, while another optimizes flow for contract manufacturing. Assume this example requests to make the item, so it calls the orchestration process that optimizes the make flow.

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 *Overview of Orchestration Processes*.

Interface

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

Step	Description
Integrate	The integration accepts notifications, processes them, and manages exceptions. - Creates a payload that's specific for the fulfillment system, then calls it.

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Step	Description
	o The fulfillment system notifies Supply Chain Orchestration of changes that happen, such as a purchase order status or quantity decrease.
Do fulfillment tasks	o Identify the service or fulfillment system that will fulfill the request. o Use a connector to transform the data. o Send the supply request to the fulfillment system.
Communicate status	o Send request to get the supply request status or to update the fulfillment document. o The fulfillment system creates, updates, or cancels the document according to the request. o Record status responses that Orchestration receives from each fulfillment system. o Record exceptions in fulfillment systems and notify the application that's request supply that an exception occurred. Here are some of the fulfillment systems. o Inventory Management o Procurement o Manufacturing o Shipping o 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 Chain Orchestration links the work order and purchase order documents to make sure the document parameters and the progress are synchronized.
- Supply Chain 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 can 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 Partner (MP). You pay the partner for the work they do, which might include various value-added services.

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

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- Starts the shipment request for a partially finished assembly.

- Receives shipment confirmation from Shipping.

    Sends shipment details to Manufacturing.

Supply Chain 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.

Prevent Duplicate Supply Requests

Oracle Supply Chain Orchestration will prevent you from creating duplicate requests for supply when there's a problem in communicating the request from Oracle Order Management to Supply Chain Orchestration. Sometimes there's a disruption that prevents Order Management from sending a supply request to Supply Chain Orchestration.

The disruption might never get resolved and orchestration never receives the request, or receive it only after a long delay. If Order Management doesn't receive a reply from Supply Chain Orchestration after a specific amount time, then Order Management might resend a create, update, or cancel request, and this makes it difficult for Supply Chain Orchestration to interpret how to handle the resent request.

For example, if you send a request to create supply, then Supply Chain Orchestration will reject the request and display a message if:

- The order line that needed supply is in Shipped or Canceled status.

- Supply Chain Orchestration already successfully fulfilled a supply order for the demand and set the supply order's status to Closed.

- Supply Chain Orchestration is using another supply request to process supply for the fulfillment line. You can use the Manage Supply Request Exceptions page in the Supply Orchestration work area to find the request that orchestration is currently processing, then wait for it to successfully finish. If it doesn't successfully finish, then cancel it, and resubmit your request.

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 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.

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- Someone reassigns a reserved supply.

You can manage change that happens in the supply.

- Create and manage alternate supply sources that meet demand.

- Split a 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.

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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.

To access the page, Go to the Supply Orchestration work area, then click **Supply Lines Overview**.

Here are some important concepts.

Object	Description
Supply line	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.
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 happens 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 happens when supply is delayed beyond its promised date.

Manage Your Supply Process

Get a 360 degree view of your supply process.

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See how supply moves from a sales order in the Order Management work area, to the supply order that Supply Chain Orchestration creates to supply the sales order, to the work order that Inventory Management creates to build the item that the sales order requests.
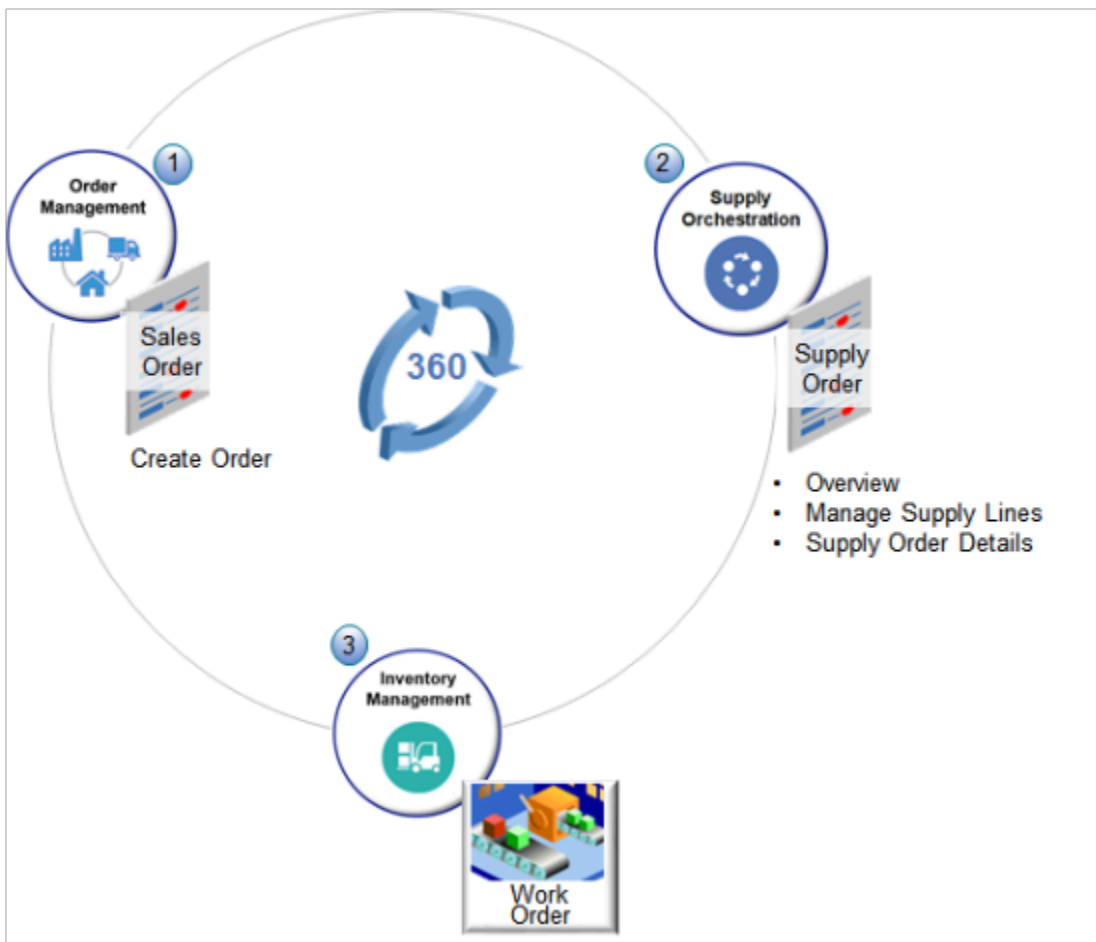
Assume Supply Chain Orchestration sends you a notification that there's an exception for an item. You need to get a 360 degree view of supply for item AS54888 Desktop Computer, in sales order 506624, that you created for customer

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Computer Service and Rentals in the Order Management work area. You set up Supply Chain Orchestration so it uses a make flow and contract manufacturing to supply the AS54888.

1. Go to the Supply Orchestration work area.

   o 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.
   o Search the Item column for AS54888, then click the **link** in the Exceptions column.

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2. Examine the Manage Supply Lines page, then click the **link** in the Supply Order Number column.

Attribute	Description
Message	Describes the cause of the exception. For example: `The supply line is in exception because a date was changed in the execution document.`
Item	Item from the order line of the sales order in the Order Management work area.
Supply Order Number	Identifies the supply order. Click it to access the supply order.

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Attribute	Description
Document Number	Identifies the document that the flow uses to create supply. For example, the work order, purchase order, or transfer order.
Supply Type	Identifies the type of flow, such as buy, make, transfer, on hand, or project on hand. The On Hand supply type fulfills supply from inventory that you currently have on hand. The Project On Hand supply type uses the supply that you currently have on hand in common inventory or in inventory that you use for your projects. Make a note of this value, because you use it in the next step.
Request Source	Source that requested supply, such as Oracle Order Management.
Line Status	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.
Customer	Name of the customer on the sales order.
Sales Order	Number of the sales order from the Order Management work area.

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3. Examine the Supply Order Details page.

Note

a. Expand the **top line** so you can view the line that contains the exception.

b. Click the **row** that contains the exception so you can view details about it.

c. Click **Orchestration Plan** so you can see the current state of the 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.

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    d. 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.

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

4. Examine the Work Order page.

Note

-   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 Supply Chain Orchestration
- Overview of Work Orders

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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.

Deviation	The Third Ring Displays Tracking Lines That Are In State
Jeopardy	High jeopardy
Exception	Supply Date Pushed Out or Quantity Reduced
Error	Undefined

Current State Analytics

Chart	Description
Deviations by Type	Deviations in supply orders that are open.
On Track by Supply Type	Compares the types of supply orders that are on schedule according fulfillment dates.
Status by Supply Type	Get a quick status summary for your buy, make, and transfer orders.
	For example, if the total in the Buy column is 600, and the Started status in the Buy column consumes a quantity of 580, it might indicate there's a problem in the factory getting the purchase orders started for some reason.

Supply Line Status

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

Supply Line Status	Reason
On Track	The requested supply quantity is on time.
Jeopardy	The requested supply quantity is available only after the requested date.
Exception	The available supply doesn't meet the requested quantity, the requested date, or both.
Error	An error occurred. For example, Oracle Procurement 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 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.

1. Go to the Supply Orchestration work area, then do one of:

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

2. 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.
3. Use the Supply Order Details page that displays to examine supply line details for the sales order.

Cancel Supply Lines for Work Orders That Involve Outside Processing

Keep your supply lines up to date with your work orders. If Oracle Purchasing hasn't created a requisition for or cancels the purchase order for a work order, then you can use the Supply Orchestration work area to cancel the supply line that fulfills the work order. Canceling the supply line allows manufacturing to resend the request.

On the Supply Order Details page, click the **supply line** you need to cancel, then click **Cancel Supply Line**.

- You can only cancel a line that involves outside processing, and when Purchasing hasn't created a purchase requisition for the supply or cancels the purchase order for the work order that creates supply. If the line doesn't meet these conditions, then the Cancel Supply Line action isn't available.

- If you sign into Oracle Applications with a custom job role that references the Supply Chain Operations Manager role, then your Supply Chain Administrator must add the Cancel Supply Lines privilege to your custom role.

Select an Alternative Source for Your Supply

You can manually select an alternative supply source to fulfill a sales order in your back-to-back flow. Use it to quickly recover from an unexpected disruption in real time and keep fulfillment on track and on time.

Sometimes the original supply source for a sales order might get canceled in your back-to-back flow, or an unexpected supply disruption might happen when fulfilling the sales order. For example, a supplier might cancel a purchase order, or someone might allocate a reserved work order to a higher priority sales order.

Create a replacement supply to recover from an unexpected disruption.

1. On the Manage Supply Lines page, use the Exception Date attribute to search for supply lines that are in exception.
2. In the search results, click a **link** in the Supply Order Number column.

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3. On the Supply Order Details page, click the **supply line** that's in exception, click **Action** then select one of these actions:

   - Create Supply from the Best Alternate Source
   - Recreate Supply from Original Source

   Supply Chain Orchestration will use your aciton to fulfill the sales order. It will update the supply status for each sales order in your back-to-back flow so you can track fulfillment in real time.

Orchestrate Purchase Orders

Supply Chain Orchestration uses a buy flow to create 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, Planning, or Inventory.
2. Decomposition processes the request.
3. Orchestration creates a supply order.
4. A fulfillment task creates a request to create the purchase order.
5. The interface sends the supply request to Oracle Procurement.
6. Procurement creates the purchase order.
7. A purchasing task tracks the purchase order.
8. The Overview page in the Supply Orchestration work area displays any exceptions that happen.

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

- Create, update, or cancel a purchase order in Oracle Procurement according to a request from Order Management, Planning, or Inventory.

- Record and respond to business events in Procurement that happen because of changes that happen to supply. Orchestration might reply with a create or cancel. It might also reply with a request to split the purchase order, split purchase order lines, or split the schedule for a purchase order line.

Orchestrate Work Orders

Supply Chain Orchestration uses a make flow to create 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, Inventory Min-Max, or Planning.
2. Decomposition processes the request.
3. Orchestration creates a supply order.
4. A task creates a request to create the work order.
5. The interface sends the supply request to Oracle Manufacturing.
6. Manufacturing creates and tracks the work order.
7. The Overview page in the Supply Orchestration work area displays any exceptions that happen.

Back-to-Back

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

Contract Manufacturing	Description
Yes	Uses the work order to track production in the contract manufacturer's facility.
No	Uses the work order to fulfill the sales order in the manufacturer's own facility.

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 happens during a back-to-back flow or with contract manufacturing.
- If a rejection happens, then Orchestration doesn't modify the original tracking line, but it does create a new tracking line for the rejected quantity.
- If an exception happens, you can manually place a work order on hold while you resolve the exception.

Orchestrate Internal Material Transfers

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

Here's how it works.

1. Orchestration receives and processes a supply request.
2. Orchestration creates a supply order.
3. A fulfillment task sends a request to Inventory to create a transfer order.
4. Business rules determine how to process the request.

   A document execution rule determines whether to use a purchase order or transfer order for the request depending on the condition.

Condition	Supply Type	Execution Document
A buy and sell relationship exists between the source organization and the 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

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

If a fulfillment update cancels the order, then Orchestration also manages the change that happens as a result of the cancel. 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 Your Back-to-Back Flows

Use a reservation to allocate material for a fulfillment line's demand from Oracle Order Management.

- If you're in a back-to-back flow, and if an inventory task creates and manages a material reservation, then you must reserve supply.

- 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 might cause an exception. The Supply Orchestration work area displays these exceptions.

Manage Manual Reservations in Your Back-To-Back Flows

Manage manual reservations so you can see the supply that's allocated for your sales order when you don't automatically reserve supply.

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You might need to manually create a reservation when Oracle Supply Chain Orchestration can't create enough supply to meet demand from Oracle Order Management. You can view these reservations in the Supply Orchestration work area:

- View details about each reservation that you create manually in a back-to-back flow for your sales order.

- View the work orders, purchase requests, and transfer orders that create supply for these reservations.

- Click a link that takes you to the work order, purchase request, or transfer order.

- View the current state of the supply lines and tracking lines for each manual reservation.

- View an icon on each supply line and tracking line to quickly determine whether you're using it for a manual reservation.

- View all of the reservations that you create manually in a back-to-back flow. You can view the supply orders, transfer orders, purchase orders, and work orders that fulfill all of your manual reservations even while Oracle Supply Chain Orchestration is still processing that supply.

- Cancel a manual reservation when you cancel the order line.

- Quickly see what excess supply you have reserved for each sales order in your back-to-back flows. If a manual reservation might cause excess supply, then the Supply Orchestration work area displays an icon on the supply line. If you hover over it, you'll see the Excess Supply text.

Here's a summary of how it works.

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Back-to-Back

Supply Order Number 300100577237959

Supply Status Manual action required

Quantity	Available-to-Ship Date	Status	Exception
6	5/8/23 12:00 AM	Awaiting supply	No
4	5/8/23 12:00 AM	Goods unavailable	Yes

Supply Order Details: 300100577237959

Supply Lines

Line	Supply Type	Item
1	Buy	DOS-RRF-B2B-BUY
1.1	Buy	DOS-RRF-B2B-BUY
1.2	Unassigned	DOS-RRF-B2B-BUY

Create Reservations

Line	Document Type	Document Number	Document Line	Back-to-Back
1	Purchase order	1005868	1.1	—
2	Purchase orde ∨	1005869 ▼	1.1 ▼	✓

You can:

1. Examine the fulfillment line in the Order Management work area and notice that there isn't enough quantity to fulfill demand.
2. Click the supply order number, then examine the supply order details in Supply Chain Orchestration to see what supply needs your action.
3. Use the Inventory Management work area to manually create a reservation. You can then use the Supply Orchestration work area to view that manual reservation.

Note

- The Order Management work area displays the Back-to-Back section only if you enable the item for back-to-back fulfillment. For details, see *Use Supply Chain Orchestration in Your Back-to-Back Flows*.

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- The Order Management work area only displays a manual reservation for a line that it hasn't assigned because there isn't enough supply to assign the line and meet demand.

- Supply Chain Orchestration doesn't automatically modify a manual reservation for a change in demand that it receives from Order Management. You must manually do any changes that you need.

- The quantity for the work order, purchase request, or transfer order might be different from the reservation's quantity or the quantity on the supply or tracking line because other requests might also use the work order, purchase request, or transfer order.

Click *here* to view a demonstration. It starts at 2:30.

Try It

Enable the Feature

1. Make sure you have these privileges:
   o Initiate Order (FOM_CREATE_ORDER_PRIV)
   o Submit Order (FOM_SUBMIT_ORDER_PRIV)
2. Go to the Setup and Maintenance work area, then select the **Manufacturing and Supply Chain Materials Management** offering.
3. Click **Change Feature Opt In**.
4. In the row that has Supply Chain Orchestration in the Name column, click the **pencil**.
5. On the Edit Features page, enable the View Manual Reservations for Your Back-to-Back Sales Orders feature, then click **Done**.

Assume you receive a call from your Computer Service and Rentals customer and they want an update on sales order 522478.

1. Go to the Order Management work area, query for, then open sales order 522478.
2. On the Order page, click **Actions > Switch to Fulfillment View**.
3. Click **Fulfillment Lines**.
4. In the Fulfillment Line section, click **Supply Details**, then examine values in the Back-to-Back section.

Attribute	Value
Supply Order Number	300100577237959
Supply Status	Manual Action Required This means there isn't enough supply to fulfill the fulfillment line's demand, so you need to take a manual action.

5. Notice the values in the Supply Line Information section. A quantity of 6 is available and awaiting supply but a quantity of 4 isn't available.

Quantity	Available to Ship Date	Status	Exception
6	5/8/23 12:00 AM	Awaiting Supply	No
4	5/8/23 12:00 AM	Goods Unavailable	Yes

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6. Click the **link** in the Supply Order Number attribute, then notice that you are now on the Supply Order Details page in the Supply Orchestration work area.
7. Notice the values in the Supply Lines area.

Line	Supply Type	Item	Requested Quantity	Fulfilled Quantity	Status
1	Buy	AS54888 Desktop Computer	10	-	In Process
1.1	Buy	AS54888 Desktop Computer	6	-	Awaiting Receipt
1.2	Unassigned	AS54888 Desktop Computer	4	0	Not Started

Note

- Line 1.1 tracks supply that's awaiting receipt.

- Line 1.2 isn't assigned yet. This is the line that requires your manual action, such as creating a manual reservation to another source of supply that resides outside of Supply Chain Orchestration. Supply Chain Orchestration won't track this supply, but you can use the Supply Chain Orchestration work area to monitor the manual reservation.

Create the Manual Reservation

1. Go to the Inventory Management work area, then click **Tasks > Manage Reservations and Picks**.
2. On the Manage Reservations and Picks page, Click **Create Reservations**.
3. On the Create Reservations page, set the values, then click **Search**.

setAttribute	Value
Organization	M1 Assume you typically use the M1 warehouse.
Demand Document Type	Sales Order
Demand Document Number	522478 This is the sales order number.

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4. Examine the search results. They contain the inventory reservations that currently exist for the sales order. Assume you see one line in the results.

Organization	Item	Customer	Document Type	Document Number	Reserved
1	AS54888 Desktop Computer	Computer Service and Rentals	Sales Order	522478	6

Next, you will add more supply for the sales order.

5. In the Organization (M1) section, below the search results, click **Select and Add** (an icon that looks like a page with a plus sign).
6. Find some supply.
   o Check to see if there's any quantity that's already on hand in inventory. Set the value, then click **Search**.

Attribute	Value
Supply Document Type	On Hand

If there's any inventory on hand, you'll see some results below the search section. For this example, assume there's no on hand inventory, and there are no results below the search section.

   o Check to see if there's already a purchase order that has some supply that you can use. Set the value, then click **Search**.

Attribute	Value
Supply Document Type	Purchase Order

   o Assume your search returns these results.

Supply Document Number	Supply Document Line	On Hand	Available to Reserve	Reserved Quantity
1005869	1.1	10	0	Empty
1005812	1.1	10	0	Empty
1005868	1.1	10	5	Empty

Purchase orders 1005869 and 1005812 don't have any supply that's available to reserve. However, purchase order 1005868 has 5 available. You need 4, so enter 4 in the Reserved Quantity attribute in the row that has purchase order 1005868, then click **OK**.

Success! You just made a manual reservation.

7. Go back to the Manage Reservations and Picks page. In the Details section, on the Reservations tab, notice that your sales order now has two reservations, one that Supply Chain Orchestration automatically created, and one that you manually created.

Line	Document Type	Document Number	Back to Back	Reserved Quantity
1	Purchase Order	1005868	Doesn't contain a check mark.	4
2	Purchase Order	1005869	Contains a check mark.	6

Also, notice that the Back to Back attribute for your manual reservation on line 1 doesn't contain a check mark.

Examine Your Updates in Order Management

1. Go to the Order Management work area, query for, then open sales order 522478.
2. On the Order page, click **Actions > Switch to Fulfillment View**.
3. Click **Fulfillment Lines**.
4. In the Fulfillment Line section, click **Supply Details**, then examine values in the Back-to-Back section.

Attribute	Value
Supply Order Number	300100577237959
Supply Status	Awaiting Supply. Note that the status was Manual Action Required before you made the manual reservation.

5. Notice the values in the Supply Line Information section. The full quantity of 10 is now awaiting supply, and the line with a quantity of 4 with the Goods Unavailable status is gone.

Quantity	Available to Ship Date	Status	Exception
10	5/8/23 12:00 AM	Awaiting Supply	No

Examine Your Manual Reservation in Supply Chain Orchestration

1. Click the **300100577237959** link in the Supply Order Number attribute, then notice that you are now on the Supply Order Details page in the Supply Orchestration work area.
2. Click **Refresh**, then expand **line 2** in the Supply Lines area.

Line	Supply Type	Item	Requested Quantity	Fulfilled Quantity	Status
1	Buy	AS54888 Desktop Computer	10		In Process

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Line	Supply Type	Item	Requested Quantity	Fulfilled Quantity	Status
1.1	Buy	AS54888 Desktop Computer	6		Awaiting Receipt
1.2	Unassigned	AS54888 Desktop Computer	4	0	Not Started
2	Buy	AS54888 Desktop Computer	4		In Process
2.1	Buy	AS54888 Desktop Computer	4	0	Awaiting Receipt

3. Notice the new supply line 2 for your manual reservation. Also note that there's an icon next to the line number for line 2. The icon indicates that the line represents a manual reservation.

   Line 2 represents the purchase order that you used to make the manual reservation and line 2.1 represents the manual reservation. You can view lines 2 and 2.1 but you can't edit them.

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4 Exceptions for Supply Requests

Supply Request Exceptions

Use the Manage Supply Request Exceptions page to view supply requests that have an exception or are in jeopardy, then troubleshoot the failure.

Try it.

1. Go to the Supply Orchestration work area.
2. Click the icon in the Exception Message column to get details about what happened.

3. Read the message text to get clues about where you need to fix your set up.
4. If the problem that causes the exception happens 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.
5. Refresh the Manage Supply Exceptions page and select the updated record.
6. Click **Resubmit**
   Orchestration removes exception messages and attempts to orchestrate supply for each row you select. However, 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.

Note

- Supply Chain Orchestration doesn't create a supply order for a request that's in exception.
- If you don't resolve the supply request exception, then the exception continues to display on the Manage Supply Exceptions page and Orchestration doesn't create the supply order.
- You can't change a request from the Manage Supply Exceptions page.
- To do an action on more than one row, hold down the Ctrl key, then click each row you want to process.
- You can use the Manage Supply Request Exceptions page to view the number of times you resubmit each request.
- You can click Mark as Inactive to remove the message from the Supply Orchestration work area. Orchestration will no longer consider the message as an exception on the supply order, but the problem that causes the exception will remain.

Project-Driven Supply Chain

Manage an exception that happens 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.

Troubleshoot Your Supply Chain Orchestration Flows

Troubleshoot problems that happen with supply orders in your fulfillment flow.

Troubles often happen because there's a problem in the setup for the application that requests supply. Learn how to identify the problem, then fix the setup that causes the trouble.

Use the Supply Orchestration work area as a starting point to get details about your supply request or supply order.

Trouble	Description
Supply Chain Orchestration receives a supply request but doesn't create a supply order.	Go to the Manage Supply Request Exceptions page. Search for your supply request, then examine the error message.
Supply Chain Orchestration creates the supply order but not the supply document.	Go to the Manage Supply Lines page. Search for your supply order, then examine the error message.

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Trouble	Description

For details, see *Manage Your Supply Process*.

Problems in Back to Back Flows

Problems in Supply Chain Orchestration

Supply Chain Orchestration failed to create the supply order.

Trouble	Shoot
A preparer isn't specified.	1. In the Setup and Maintenance work area, go to the task. o Offering: Order Management o Functional Area: Orders o Task: Manage Order Management Parameters 2. Set a value for the Preparer for Procurement parameter. For details, see *Manage Order Management Parameters*. 3. On the order line, do the Unschedule, then Reschedule tasks. Unschedule cancels the supply request in Supply Chain Orchestration. Reschedule creates a new supply request in Supply Chain Orchestration. For details, see *Schedule Fulfillment Lines Manually*.
The supply request remains on hold. Its possible that Global Order Promising didn't make a recommendation because the Need By date happens within the date range that the time fence specifies. Global Order Promising examines the Infinite Availability Fence Definition attribute and assumes that supply is infinitely available, so it doesn't make a recommendation.	1. Go to the Global Order Promising work area, then click **Tasks > Manage ATP Rules**. 2. Go to the Global Order Promising work area, then click Tasks > Manage ATP Rules. 3. Search for, then open your rule for editing. 4. On the ATP Rule Criteria tab, set the Infinite Availability Fence Definition attribute to User-Defined Lead Time. 5. Set the User-Defined Fence in Days attribute according to the actual lead time that you experience in manufacturing and procurement. For details, see *Time Fence*. 6. Refresh the server. For details, see *Collect Data for Global Order Promising*. 7. Go to the Order Management work area and revise the sales order. Unschedule, then reschedule the sales order line.

Orchestration fails in some other way.

Trouble	Shoot
Supply Chain Orchestration fails to create a reservation because the reservation quantity is greater than the available to reserve quantity.	1. Collect and update data in Global Order Promising. For details, see *Quick Start for Setting Up Order-to-Cash*. 2. Go to the Order Management work area and revise the sales order. Unschedule, then reschedule the sales order line.

Problems in Procurement

Procurement fails to create a purchase request.

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Trouble	Shoot
The carrier, mode of transport, and service levels aren't set up correctly.	1. In the Setup and Maintenance work area, go to the task. o Offering: Manufacturing and Supply Chain Materials Management o Functional Area: Carriers and Transit Times o Task: Manage Carriers 2. On the Manage Carriers page, search for and open your carrier. If you don't have one, click **Actions > Create**, and create a new one. o Make sure you set up at least one carrier. o Specify at least one shipping method. o Specify at least one service level and mode of transport for each shipping method. o Make sure at least one shipping method is active. o For details, see *Shipping Methods*. 3. Go to the Supply Orchestration work area, then use the Manage Supply Lines page to resubmit the supply line.
A blanket purchase agreement isn't set up. Procurement typically uses a blanket purchase agreement to automatically create a purchase agreement for the item that the supply order references.	1. Use Document Builder to manually process your purchase request. For details, see *How Purchasing Documents are Created and Managed for Outside Processing*. 2. Set up a blanket purchase agreement for your future orders. For details, see *How You Set Up a Blanket Purchase Agreement for Outside Processing*. For more, go to *Using Procurement*, then search for: o Supplier Agreements o Blanket Purchase Agreement Lines o Set Up a Blanket Purchase Agreement in Contract Manufacturing 3. Manually process the purchase order.
I successfully set up a blanket purchase agreement, there's no error message, but the flow fails to create a purchase order.	1. Set options in Document Builder to automatically create orders and automatically submit them to approval in the blanket purchase agreement for future orders. For details, go to *Using Procurement*, then search for Automate Order Creation for Requisitions Without Previously Negotiated Agreements. 2. Manually process the request to create a purchase order.
The Requested Date on the order line happens before the current date.	1. Go to the Order Management work area, search for your sales order, then create a revision. 2. Set the Requested Date on the order line to a value that happens on or after the current date. 3. On the order line, unschedule, then reschedule the sales order line.

Problems in Back to Back Flows and Plan to Produce Flows

Problems in Supply Chain Orchestration

Trouble	Shoot
Supply Chain Orchestration fails to create the supply order because a default buyer isn't assigned to the item.	1. Go to the Product Information Management work area, then click **Tasks > Manage Items**. 2. Search for, then open your item for editing. 3. On the Edit Item page, click **Specifications > Purchasing**.

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Trouble	Shoot
	4. Select a value for the Default Buyer attribute.
	5. Use the Manage Supply Request Exceptions page to resubmit the supply request.
Supply Chain Orchestration sends a supply request to Manufacturing, but Manufacturing fails to create a work order for it. A work definition isn't set up or a work definition version isn't set up for the date and item that the order line references.	1. Set up a work definition. For details, see *Set Up a Work Definition in Contract Manufacturing*. 2. Go to the Supply Chain Orchestration work area, then use the Manage Supply Lines page to resubmit the supply line.

Problems in Procurement

Procurement does its own validation. If validation in Procurement fails, then Procurement can't create a purchase request. It sends an error to Supply Chain Orchestration, and Supply Chain Orchestration displays the error on the Manage Supply Lines page. You can troubleshoot the error, then use the Manage Supply Lines page to resubmit the supply order.

Trouble	Shoot
List Price is empty.	1. Go to the Product Information Management work area, then click **Tasks > Manage Items**. 2. Search for, then open your item for editing. 3. On the Edit Item page, click **Specifications > Purchasing**. 4. Enter a value in the List Price attribute.
Charge account is empty or isn't set up.	1. In the Setup and Maintenance work area, go to the task. ◦ Offering: Manufacturing and Supply Chain Materials Management ◦ Functional Area: Cost Accounting ◦ Task: Manage Mapping Sets 2. On the Manage Mapping Sets page, in the search results, click **Accrual Account - Organization**. ◦ On the Edit Mapping Set page, in the Chart of Accounts list, click the Operations Accounting Flex row. ◦ In the Operations Accounting Flex area, add your inventory organization, such as 004. 3. Repeat step 2 for your other accounts. ◦ Cost of Sales Account - Organization ◦ Expense Account - Organization ◦ Expense Accrual Account - Organization ◦ Invoice Price Variance Account - Organization ◦ Material Account - Organization 4. Go to the Supply Orchestration work area, then use the Manage Supply Lines page to resubmit the supply line.

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Trouble	Shoot

The Requested Date on the order line happens before the current date.	**1.** Run the supply plan again.
	
	   o Go to the Supply Planning work area.
	
	   o Click **Tasks > Manage Plans**.
	
	   o On the Manage Plans page, in the search results, click the **row** that contains your plan.
	
	   o Click **Actions > Run**.
	
	     For details, see *Create a Plan*.
	2. Release the buy orders that Procurement planned for the item.

Problems with Configure to Order

Trouble	Shoot
I encounter one of these troubles. • Supply Chain Orchestration fails to create the supply order. • Supply Chain Orchestration fails to create a work order because a work definition isn't set up. • Procurement fails to create a purchase request. • Procurement fails to create a purchase request because a blanket purchase agreement isn't set up.	Use the solutions described in the back-to-back and plan-to-produce sections in this topic.
The sales order remains in Draft status even after you submit it. The flow fails to create the configured item.	**1.** Go to the Manage Configured Item Exceptions page, then examine the error messages. The flow might create the configured item even though the sales order is still in Draft status. The error messages might provide sufficient guidance on where to fix your set up. **2.** Fix the problem, then submit the sales order again from the Order Management work area. As an alternative, use the Manage Configured Item Exceptions page to ignore the exception and proceed with processing.

For more details, see *Troubleshoot Problems with Configure-to-Order*.

Problems with Contract Manufacturing and Min-Max Planning
Contract Manufacturing

Trouble	Shoot
Supply Chain Orchestration fails to create the supply order because there's a problem with the supplier.	**1.** Associate a supplier or supplier site with the contract manufacturing organization in your supply network model. For details, see the Supply Network Model chapter in *Using Planning Central*.

Trouble	Shoot
	2. Go to the Supply Orchestration work area, then use the Manage Supply Request Exceptions page to resubmit the supply request.
Supply Chain Orchestration fails to create the supply order because there's a problem with the service item.	1. Go to the Product Information Management work area, search for, then open your item for editing. 2. On the Edit Item page, click **Specifications > Manufacturing**, then set Contract Manufacturing to Yes. 3. Set the service item as a Buy item in the item master set up. 4. Associate the service item to the last count point operation in the work definition. 5. Make sure you set the supply type to SCM. 6. Go to the Supply Orchestration work area, then use the Manage Supply Request Exceptions page to resubmit the supply request.
Manufacturing fails to create a work order because a work definition isn't set up. Procurement fails to create a purchase request because. • Charge account is empty. • List Price is empty.	Supply Chain Orchestration models each contract manufacturer as an inventory organization, so make sure you set up charge accounts for the contract manufacturing organization. Make sure you add a list price to the service item for the contract manufacturing organization. For details, use the solutions described in the back-to-back and plan-to-produce sections in this topic.
Purchasing fails to create a purchase order, but no error displays.	1. Go to the line for the blanket purchase agreement, then select the correct item revision for the service item in the contract manufacturing organization. 2. Manually process the request for the purchase order.

Min-Max Planning

Trouble	Shoot
The supply request doesn't exist in Supply Chain Orchestration, and the Manage Supply Request Exceptions page doesn't list the supply request. This error might happen because the Print Min-Max Planning report doesn't recommend a reorder quantity.	1. Go to the Inventory Management work area. 2. On the Inventory Management page, click **Reports and Analytics > Shared Reports and Analytics > Min-Max Report > More**. Oracle Transactional Business Intelligence opens with the Folders tree expanded to Shared Folders > Supply Chain Management > Warehouse Operations > Inventory. 3. In the list of reports that display, click the **row** that includes Min-Max Report. 4. At the bottom of the list, click **Preview Min-Max Report**. 5. If the report is empty, then do the steps described in *Set Up Min-Max Planning*. 6. Examine the report. 7. If the reorder quantity in the report is 0. o On the Inventory Management page, click **Reports and Analytics > Shared Reports and Analytics > Min-Max Report > Schedule**. A page displays that you can use to set parameters for the *Print Min-Max Planning Report* scheduled process. o Set the Restock parameter to Yes. o Evaluate the required parameters and reset them as necessary. For details, see *Min-Max Planning Report Parameter Options*. o Click **Submit**.
Supply Chain Orchestration fails to create a supply order, but no error displays.	1. Go to the Scheduled Processes work area.

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Trouble	Shoot
	2. Click **Schedule New Process**. **3.** In the Search dialog, search for *Process Supply Chain Orchestration Interface*. **4.** Set parameters, then click **Submit**.
Purchasing fails to create the purchase request because the Requested Date happens before the current date.	**1.** Run the Print Min-Max Planning Report scheduled process. **2.** Run the Process Supply Orchestration Interface scheduled process as soon as Print Min-Max Planning Report finishes successfully.
Purchasing fails to create the purchase order but there's no error.	Try the solution that describes how to set up a blanket purchasing agreement in the back-to-back section of this topic.
I encounter one of these troubles. • Supply Chain Orchestration fails to create the supply order. • Supply Chain Orchestration fails to create a work order because a work definition isn't set up. • Procurement fails to create a purchase request.	Try the solutions described in the back-to-back and plan-to-produce sections in this topic.

Problems with Internal Material Transfers

Trouble	Shoot
The supply request doesn't exist in Supply Chain Orchestration, and the Manage Supply Request Exceptions page doesn't list the supply request. Its possible that there's a problem in the data you imported through the Supply Request web service or file-based data import.	**1.** Go to the Scheduled Processes work area. **2.** Click **Run Scheduled Process**, then run the *Load Interface File for Import* scheduled process. **3.** Examine errors in the log of the Load Interface File for Import scheduled process. **4.** Manually fix the errors. Usually, there's a problem in the data you're importing. **5.** Run the Load Interface File for Import scheduled process again. For details, see *Overview of Importing Orders into Order Management*.
I import through file-based data import. The import fails to create a supply order but I don't encounter any errors.	Make sure you run the *Import Sales Orders* scheduled process.

I use the Create Supply Request page to create a request, but Supply Chain Orchestration can't find a source that it can use to supply the request.	For details, see *Create a Plan*.
	
	 1. Set up an available-to-promise (ATP) rule.
	
	    o Go to the Order Promising work area, click **Tasks > Manage ATP Rules**, then create an available-to-promise rule that uses the Infinite-Availability-Based promising mode.
	    o Assign the available-to-promise rule to each of the organizations that you created for your fulfillment warehouses.
	
	     For details, see *Promising Modes for ATP Rules*.

Trouble	Shoot
	2. Set up a sourcing rule. ○ Go to the Order Promising work area, click **Tasks > Manage Sourcing Rules**, then create a global sourcing rule that specifies the warehouse you use to fulfill the sales order. Set up rules for your planned items. For details, see *Source Your Supply Chain*. ○ On the Manage Sourcing Rules page, click **Tasks > Manage Assignment Sets**, then create an assignment set that assigns the sourcing rule that you created in step 1 to the Global assignment level. See the Sourcing Assignment Levels topic. For items where you haven't set up a plan, set up interorganization parameters. For details, see *Enable Interorganization Transfers*. Use the Create Supply Request page to resubmit the supply request. For more details, see *Internal Material Transfer Setup Tasks*.
My flow fails to create a transfer order.	**1.** In the Setup and Maintenance work area, go to the task. ○ Offering: Manufacturing and Supply Chain Materials Management ○ Functional Area: Carriers and Transit Times ○ Task: Manage Transit Times **2.** On the Manage Transit Times page, set up transit times between the origin and destination. For details, see *Transit Times*. **3.** Use the Manage Supply Lines page to resubmit the supply line that's in error.

Problems with Outside Processing

Problems in Procurement

Procurement fails to create a purchase request.

Trouble	Shoot
The charge account isn't set up or its not set up correctly.	**1.** In the Setup and Maintenance work area, go to the task. ○ Offering: Manufacturing and Supply Chain Materials Management ○ Functional Area: Cost Accounting ○ Task: Manage Mapping Sets **2.** In the search results, in the Name column, click **Work Order**. **3.** On the Edit Mapping Set page, add a charge account. **4.** Use the Manage Supply Lines page to resubmit the supply line that's in error.
The preparer is missing because the manufacturing user who submitted the purchase request isn't associated with a valid person Id.	**1.** Use Oracle Identity Management to associate a valid person number with the manufacturing user. For details, see *Securing SCM*. **2.** Go to the Supply Orchestration work area, then use the Manage Supply Request Exceptions page to cancel the supply request. **3.** Create a new purchase request. **4.** Go to the Work Execution work area, then click **Tasks > Manage Supplier Operations**.

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Trouble	Shoot
	5. On the Manage Supplier Operations page, in the row that contains your work order, click the **Review Supplier Operation Details** icon. 6. On the Review Supplier Operation Details page, click **Create Purchase Requisition**.
Other set ups are missing, such as. • Missing a buyer. • Problem with the list price.	Use the solutions described in the back-to-back and plan-to-produce sections in this topic.

Other Problems with Outside Processing

Trouble	Shoot
Procurement fails to create a purchase order but there's no error. The outside processing flow doesn't require you to set up an blanket purchase agreement or approved supplier list, but you can set them up to automate the flow.	1. Set up a blanket purchase agreement. o Make sure you set up the document style correctly. For details, see *How You Set Up a Blanket Purchase Agreement for Outside Processing*. o Set up the agreement to automatically create and approve the purchase order. See the section earlier in this topic for details. 2. Set up an approved supplier list. o Go to the Purchase Agreements work area. o Click **Tasks > Manage Approved Supplier List Entries**. o On the Manage Approved Supplier List Entries page, click **Actions > Create**, then create your list. For details, see *How You Define the Approved Supplier List for Supply Chain Planning*. 3. Manually process the purchase request to create the purchase order. o Click **Tasks > Process Requisitions**. o On the Process Requisitions page, search for your purchase request, then click **Actions > Reassign**. For details, see *How Purchasing Documents are Created and Managed for Outside Processing*.
I encounter a `shipment request not found` error. Outside processing doesn't require you to create a shipment line, but you can set it up to meet your needs.	Create a shipment request. 1. Go to the Work Execution work area, then click **Tasks > Manage Supplier Operations**. 2. On the Manage Supplier Operations page, in the row that contains your work order, click the **Review Supplier Operation Details** icon. 3. On the Review Supplier Operation Details page, set the Generate Shipment option to Yes.
Manufacturing fails to create the shipment line because the item isn't shippable.	Make the item shippable. 1. Go to the Product Information Management work area, then click **Tasks > Manage Items**. 2. Search for, then open your item for editing. 3. On the Edit Item page, click **Specifications > Sales and Order Management**. 4. Set the Shippable attribute to Yes. 5. Go to the Supply Orchestration work area, then use the Manage Supply Lines page to resubmit the supply line.

Other Problems

Trouble	Shoot
Chain fails to create the supply order because the SOA (Service Oriented Architecture) server is down.	1. Contract your server administrator to bring the SOA server back into service. 2. Use the Manage Supply Request Exceptions page to resubmit the supply request.
Supply Chain Orchestration fails to create the supply document because the service that communicates with your downstream fulfillment system is down. Supply Chain Orchestration creates the supply document from a sales order, transfer order, or work order. It can't do this if it can't communicate with Manufacturing, Purchasing, or Inventory.	1. Contact your service administrator to bring the services back up. 2. Use the Manage Supply Lines page to resubmit the supply order.

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5 Exceptions for Configured Items

Manage Exceptions for Configured Items

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

Situation	What Orchestration Does	What You Do
Orchestration creates a configured item but a problem happens when it adds details for downstream processing.	Creates an exception and continues to process the sales order.	Use the logs to fix the problem. 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 happen.
Orchestration can't create the configured item.	Creates an error, sends the error to Order Management, and stops processing the sales order.	Fix your set up, then resubmit the supply request. The set up for the configured item in the Product Information Management work area probably isn't correct.

1. Go to the Supply Orchestration work area.
2. Click **Manage Configured Item Exceptions**.

   The search results displays the current exceptions.

Attribute	Description
Base Model	Name of the configuration model item.
Item	Name of the configured item that contains the problem.
Organization	Organization that you associated with the configured item.
Resubmit Count	Number of times you resubmitted the configured item.

Select 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.

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- **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 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 *Overview of Using Web Services with Configure-to-Order*.

- 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

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7   **Supply Requests**

Create Supply Request

Supply Chain Orchestration automatically creates the supply request, but you can use the Create Supply Request page to manually create an urgent request.

For example, replenish stock for an item during a time that happens 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.

    o In the Inventory Management work area, click **Tasks > Manage Item Quantities**.

    o On the Manage Item Quantities page, search for the AS54888 item.

    o In the search results, in the Item column, expand **Item AS54888**, then notice values in the quantity area.

Item	On Hand
Organization V1	50
Organization M1	25

    These are example values. The values in your tree will be different.

    o 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.

Attribute	Value
Item	AS54888
Requested Quantity	100

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Attribute	Value
UOM	Each
Requested Delivery Date	Select today's date.

If you access 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 displays supply sources in rank order depending on whether the item is planned.

Item	Rank According To
Not planned	The distance between the source and the destination organization. If the distance isn't available, then Orchestration uses a lower rank to indicate the source organization.
Planned	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 you have with the privileges that you need to 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. For details, go to *Implementing Security*, then search for Using the Security Console.

Attribute	Value
Role Category	SCM - Job Roles
Function Security Policy Name	View Planning Supply Availability
Function Security Policy Code	MSP_VIEW_PLANNING_SUPPLY_AVAILABILITY_PRIV
User Login	Select the inventory role, procurement role, or user that needs access.

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Attribute	Value

This topic uses predefined job roles. You must create your own job roles, depending on your security requirements. For details, see *Privileges That You Need to Implement Order Management*.

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	Then
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.

Use Different Units Of Measure

You can use a unit of measure on your purchase order that's different from the unit of measure that you use on the order line in the supply request. Supply Chain Orchestration will convert the unit of measure on the order line that it receives in the supply request to the unit of measure that the corresponding purchase order uses in Oracle Purchasing, and then send the converted value to Purchasing to update the purchase order.

- Improve your profit margins. Negotiate price with your supplier in a unit of measure that's different from the measure that you use on the order line.
- Each purchase requisition will use the UOM from the order line. Each purchase order will use the Blanket Purchase Agreement that you use for the UOM.
- If you set up a blanket purchase agreement that the purchase order references, then you can change the unit of measure on the purchase order. Use this feature when you need to update order line details in your back-to-back, contract manufacturing, planning, or outside processing flows.

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Include Project Details in Your Request

You can use the Create Supply Request page in the Supply Orchestration work area or the Manage Item Quantities page in the Inventory Management work area to create a transfer supply request that includes project attributes.

Here's how it works:

1. You specify the project and task when you create a supply request for a transfer order.
2. Supply Chain Orchestration gets default values for the other project attributes and does the Project Accounting Transaction Control (PATC) validation.
3. Supply Chain Orchestration sends the full set of validated project attributes and a request to create a transfer order to Inventory Management.
4. Inventory Management creates the transfer order. The transfer order includes the project attributes.

Use this feature to make sure the project expenditures that you see in inventory are accurate. Your transfer order can include project details from the Create Supply Request page. Inventory Management uses these details to fulfill the item from inventory that's specific for the project, so you can accurately apply the cost that you incur for carrying inventory to each project.

Use the New Supply Request Task

Use the New Supply Request task to help you create a transfer supply request on your desktop, tablet, or mobile device. Supply Chain Orchestration will display the supply source that provides the optimal fulfillment for your request, by default. You can accept the default supply source or pick another one from a list of sources when you create the request. You can create the request for a standard item or for an item that's part of a project.

Here is some of the cool stuff that you can do with this feature that you can't do with the Create Supply Request page or the Create Supply Request task:

- Use the New Supply Request task in the Supply Chain Orchestration work area to create a transfer request.

- Use the Manage Item Quantities task in the Inventory Management work area to create the request.

- Accept the supply source that provides the optimal fulfillment, or select another source from a list of sources that Supply Chain Orchestration automatically ranks for you according to availability.

- Set the Transfer Type attribute on your request to Inter Organization or to Intra Organization.

- Use the item's primary UOM or a nonprimary UOM.

- Create and submit more than one request for one or more destination organizations.

Try It

1. Make sure you have these privileges:
    o Process Supply Order Interface (DOS_PROCESS_SUPPLY_ORDER_INTERFACE_PRIV)

    o View Supply Orders (DOS_VIEW_SUPPLY_ORDERS_PRIV)

    o Manage Supply Request Exceptions (DOS_MANAGE_SUPPLY_REQUEST_EXCEPTIONS_PRIV)

    o View Supply Order Exceptions and Status (DOS_VIEW_SUPPLY_ORDER_EXCEPTIONS_AND_STATUS_PRIV)

    .
2. Enable the Use Redesigned Pages to Create Transfer Supply Requests feature. For details, see *Overview of Setting Up Supply Chain Orchestration*.

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3. Use the feature.
- o Go to the Supply Orchestration work area.
- o Click **Tasks > New Supply Request**.

  Don't use the Create Supply Request page.
- o Enter details on the New Supply Request page, then click **Create**.

Use Composites to Plan Supply

Get details about the composites that you can use with Supply Chain Orchestration.

Supply Type	Composite	Description
Back-to-Back	DOS_DosOrchB2BPurchaseProcessComposite DOS_DosOrchB2BTransferProcessComposite DOS_DosOrchB2BMakeProcessComposite DOS_DosOrchB2BATPProcessComposite	Fulfill supply requests from Order Management.
Contract Manufacturing	DOS_DosOrchB2BContractMfgProcessComposite DOS_DosOrchP2PContractMfgProcessComposite	Fulfill supply requests from Order Management and Planning.
Simple Buy	DOS_DosOrchSimpleBuyCreateProcessComposite DOS_DosOrchSimpleBuyUpdateProcessComposite DOS_DosOrchSimpleBuyCancelProcessComposite	Fulfill buy requests from Planning.
Simple Make	DOS_DosOrchSimpleMakeCreateProcessComposite DOS_DosOrchSimpleMakeUpdateProcessComposite DOS_DosOrchSimpleMakeCancelProcessComposite	Fulfill make requests from Planning.
Simple Transfer	DOS_DosOrchSimpleTransferCreateProcessComposite DOS_DosOrchSimpleTransferUpdateProcessComposite DOS_DosOrchSimpleTransferCancelProcessComposite	Fulfill transfer requests from Planning and Minimum Maximum planning.

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Supply Type	Composite	Description

Use Dual Units of Measure with Supply Chain Orchestration

Use this feature to help you create the purchase order, transfer order, or work order when you use dual units of measure to fulfill demand.

Create And Fulfill Sales Orders In Your Back-To-Back Flows

- Include back-to-back orders with your other order flows when you use more than one unit of measure to fulfill an item in Order Management.
- Create a sales order in the item's primary unit of measure or in another unit of measure that's in the primary UOM class, then use the standard conversion or item conversion to automatically calculate quantity in the secondary UOM.
- Price the order line in the primary UOM or the secondary UOM.
- Use an automated flow to update the order line and invoice it according to the quantity or the secondary quantity that you ship.
- Price your item in the secondary unit of measure, then track it in the primary unit of measure and in the secondary unit of measure.
- Go to the Supply Orchestration work and use the View menu to display the secondary unit of measure and the secondary quantity in your runtime environment.

Include Dual Units of Measure In Production Reports From Contract Manufacturers

Include dual units of measure in the production reports that you get from your contract manufacturers.

- Use these details in your production reports to help you track and manage your production requirements more accurately.
- Include a description of the materials the contractor used and the work that the contractor finished.
- Include details in the primary and in the secondary unit of measure.
- Import the primary unit of measure and the secondary unit of measure in your production reports from your contract manufacturers through REST API or file-based data import (FBDI). For details and examples, go to *REST API for Oracle Supply Chain Management Cloud*, then expand Supply Chain Planning.
- The import includes a description of the materials that your contractors used and a description of what they finished. It includes details in the primary and in the secondary unit of measure.
- Your contract manufacturer can also use the Supplier Portal to upload their production report.
- You don't need to do anything to set this up. Supply Chain Orchestration comes predefined to include dual units of measure in these reports.

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Use File-Based Data Import or REST API to Update Projects on Transfer Orders

You can update the project attributes on a transfer order that you import through file-based data import or REST API.

Use this feature to maximize how you use excess supply for transfer orders that do or don't include project details, and to minimize the cost of carrying excess inventory.

You can process a transfer request for a project that Supply Chain Orchestration receives from Supply Chain Planning. You can update project attributes from common to project and task, or from one project and task to another project and task. You can do this on these types of supply:

- On-hand supply

- Transfer order

- Work order

- Purchase order

Here's how it works.

1. You use the Supply Order file-based data import template or the Supply Request REST API to update a transfer order request. The request can include only the project and task, or the complete set of project attributes. For details and examples, go to *REST API for Oracle Supply Chain Management Cloud*, then expand Supply Chain Planning.
2. If the request includes only the project and task, then Supply Chain Orchestration gets default values for the project attributes that the request doesn't have.
3. Supply Chain Orchestration does a Project Accounting Transaction Control (PATC) validation to validate values for all of the project attributes in the request.
4. Supply Chain Orchestration sends the full set of validated project attributes to Inventory Management in the update request for the transfer order.
5. Inventory Management updates the transfer order with the new set of project attributes.
6. If the update fails, then Inventory Management returns an error, and the Supply Chain Orchestration work area displays it.

For details, go to *REST API for Oracle Supply Chain Management Cloud*, then expand **Inventory Management > Supply Requests > Supply Request Lines > Distribution Details > Project Flexfields on Distribution Details**.

Use Supply Chain Orchestration to Add New Requisition Lines to Open Purchase Orders

You can add a new requisition line to an open purchase order instead of creating a new one. Consolidate and maximize your open purchase orders. Avoid having unnecessary purchase orders for each of your suppliers.

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Use this feature when an Oracle application sends a request to Supply Chain Orchestration. The request asks to create a purchase request so the Oracle application can get goods or services from your supplier. Use this feature with these Oracle applications:

- Oracle Planning

- Oracle Order Management

- Oracle Inventory Management

- Oracle Manufacturing

This feature automatically manages change that happens on each purchase order and in the Oracle application. It keeps your purchase orders, sales orders, and work orders synchronized with each other.

Here's how it works:

1. The Oracle application sends a request to Supply Chain Orchestration to create a purchase request.
2. Supply Chain Orchestration sends a request to Oracle Procurement, and Procurement creates a purchase request.
3. You add the purchase request to an open purchase order.
4. Supply Chain Orchestration automatically manages each change that it receives from the Oracle application. It automatically keeps the purchase orders, sales orders, and work orders synchronized in your back-to-back, contract manufacturing, and outside processing flows.

You don't have to enable the Use Supply Chain Orchestration to Add New Requisition Lines to Open Purchase Orders feature, but there is another feature in procurement that you do have to enable. Here's how:

1. Go to the Setup and Maintenance work area, select the Procurement offering, then click **Change Feature Opt In**.
2. In the row that has Purchasing in the Name column, click the **pencil**.
3. Enable the Add New Approved Requisitions to Existing Open Purchase Orders feature, then click **Done**.

Notes

- You can add a purchase request for planning or min-max processing to any open purchase order.

- If you need to add a new requisition line to an open purchase order, then disable the Automatically Generate Orders option in the blanket purchase agreement for your item.

You can add a purchase request:

- In your back-to-back flow to any open purchase order except one that involves contract manufacturing or outside processing.

- For contract manufacturing only to a purchase order that's open for contract manufacturing.

- For outside processing only to a purchase order that involves outside processing.

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8 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.

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

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.

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Transactional Business Intelligence
All Requests in Error Status

Criteria | Results

Subject Areas

Supply Chain Orchestration - Supply Request Real Time
Supply Request Details
Request Source

Drag and drop. . .

. . . click Results to view report

Selected Columns

Supply Request Details

Request Source | Request Status | Request Creation Date

Design time

Run time

Request Source	Reques Status	Request Creation Date	Request Batch Number	Request Supply Operation
DOO	Error	12/7/15	300100075538180	CREATE
		12/7/15	300100075462626	CREATE
		12/7/15	300100075538226	CREATE
EXT	Error	11/11/19	AAPDSC111102	CREATE
		11/11/19	AAPDSC111102	CREATE
		11/11/19	AAPDSC111103	CREATE
		11/11/19	AAPDSC111103	CREATE

Report

Try it.

1. Go to the Reports and Analytics work area.
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

   ○ Supply Chain Orchestration - Supply Request Real Time
5. Click **Supply Chain Orchestration - Supply Request Real Time**.

6. Add columns to your report.

   o 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.

   o Repeat for other subject areas. Drag and drop so the Selected Columns area resembles this sequence.

Request Source	Request Status	Request Creation Date	Request Batch Number	Request Supply Operation
-	-	-	-	-

   o Click **Save Analysis**.

7. Modify a column. Assume you want the month, day, and year but not the time of day.

   o Click the **gear** next to Request Creation Date, then click **Column Properties**.

   o In the Column Properties dialog, click **Date Format**, then add a check mark to **Override Default Date Format**.

   o 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.

   o In the Save As dialog, name your report All Requests in Error Status, then click **OK**.

   o In the Selected Columns area, click the **gear** next to Request Status, then click **Filter**.

   o In the Filter dialog, set the value to `Request Status is equal to Error.`

   o 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.

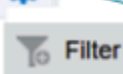# Get a Full Picture of the Supply Chain

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

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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.

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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 the values.

Attribute	Value
Column	Work Order Number
Operator	Is Not Null

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 Chain 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.

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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.

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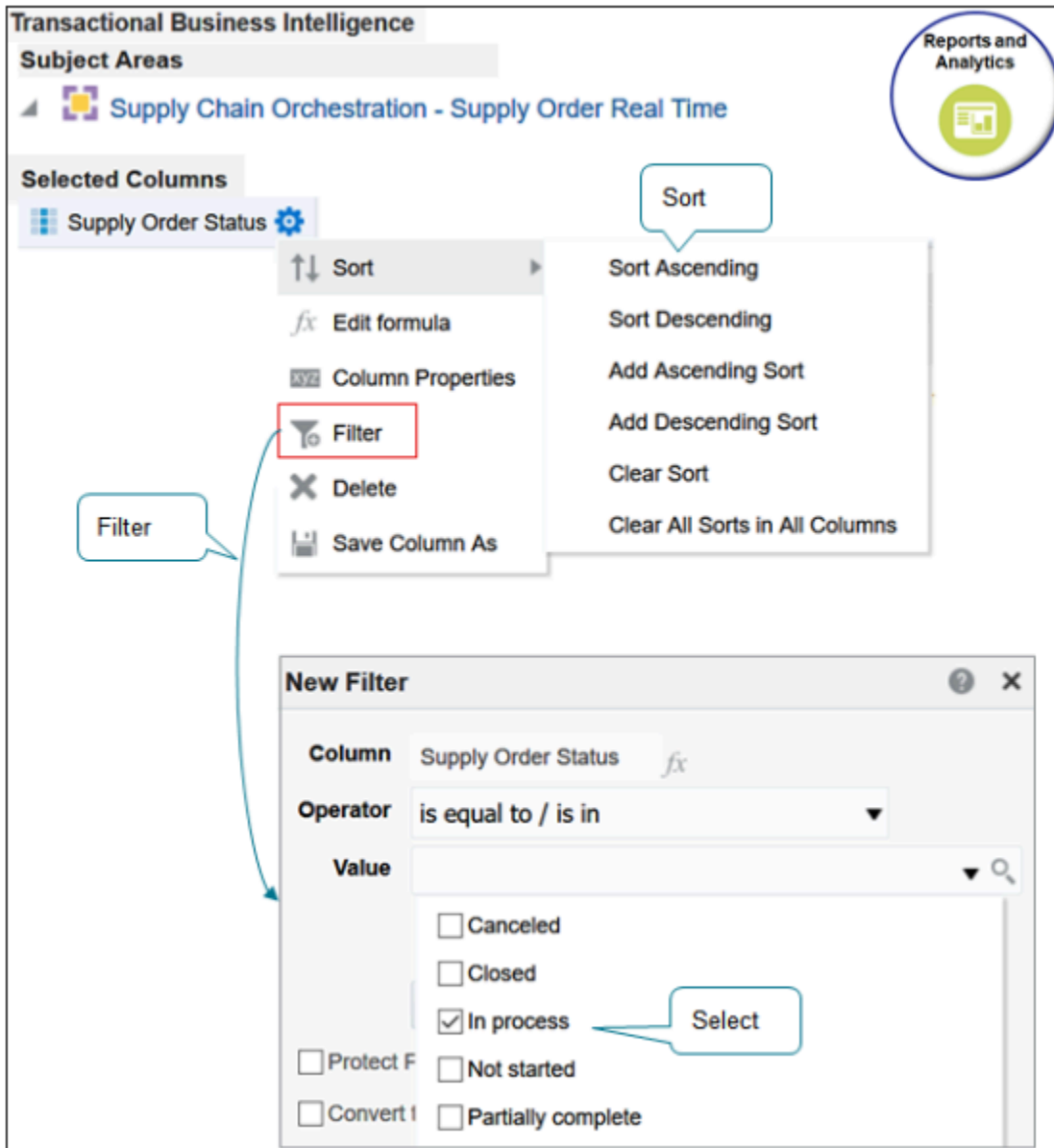
Filter your data.

- Use the Filter action to filter data. Select from a variety of operators, then select a value. For the value, the dialog makes life simple. It filters the values you can select according to subject area. For example, if the subject area is Supply Order Status, then select 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 you set up the report and the volume of data you're reporting. If it takes too long, add filters or remove 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, then 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 filter and sort to meet your specific requirements.

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- Use the Item Type subject area to filter according 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, than 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 Delivery Date
- Requested Supply
- Message Text
- Request Status
- Exception Date
- Supply Operation
- Request Submitted By

Display attribute values for sales orders.

- Sales Order Number
- Order Line

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- 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 details, see:

- *SCM Subject Aeas in Oracle 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 Chain Orchestration, orchestration processes it, then sends updated and new transactions to manufacturers. Different users have different access.

User	Description
Supplier or contract manufacturer	Access reports from the Supplier Portal work area. Use the Manage Production Reports page to upload reports. The page restricts reports according to supplier. The supplier can only view production reports for their own purchase orders.
Supply chain manager	View all reports that Supply Chain Orchestration is tracking. Access reports in one of two ways depending on the application you use to access them. • Manage Production Reports page of the Supply Orchestration work area. Resubmit or upload production reports. • Original Equipment Manufacturers (OEM). Make sure you have the privileges that you need to manage Supply Chain Orchestration, then go to the Overview page of the Supply Chain Collaboration work area. Use the supplier production reports infolet. Double-click it to go to the Manage Production Reports page.

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.

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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 Chain 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 Supply Chain 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 happens when sending data to manufacturing, then resubmit the production report.