LESSON 2.2: Sourcing and Scheduling Configuration

Overview

This lesson provides an overview of Sourcing and Scheduling Rules that are required to fulfill a Sales Order.

Lesson Objectives

This lesson is designed to enable you to:

- Describe Scheduling and different types of Schedule Transactions.
- Configure Scheduling Rules and assign them to an Order.
- Describe Sourcing and Distribution Groups.
- Configure Sourcing Rules for various Fulfillment Modes.
- Configure Landed Costs.

References

For more information on Sourcing and Scheduling Rules, refer to:

- http://www.ibm.com/support/knowledgecenter/SS6PEW_9.5.0/com.ibm.help.dom.concepts.doc/productconcepts/c_OrderPromisingAndScheduling.html

Navigate to **Sterling Order Management** > **Sterling Order Management 9.5.0** > **Configuring supplied and add-on solutions** > **Sterling Distributed Order Management** > **Considerations** > **Order Promising and Scheduling**

Order Schedule

Overview

After receiving a Sales Order, you must follow a series of steps to fulfill the Order. The Order is said to be fulfilled when the shipment is shipped from a Ship Node. Therefore, you must determine an appropriate Ship Node to fulfill the Order.

Factors to determine Shipping Nodes

Some of the factors that determine the Shipping Nodes are:

- Distribution Groups
- Sourcing Rules
- Scheduling Rules
- Item Level Controls
- Node Level Controls
- Driving Dates
- ATP Rules

We will discuss each of these in detail in the following sections.

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Order Schedule

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Scheduling Rule

Scheduling is a process that helps balance customer demands with your ability to fulfill that demand. Scheduling considers all possibilities and constraints such as Inventory Availability, resource availability, geographical location of Nodes and customers to fulfill an Order.

You can define two types of Scheduling Rules:

- **Manual** - You can run the Scheduling Rule manually at the time it is needed.
- **Time triggered** - You can define the time at which the Scheduling Rule must run.

 Note

Scheduling Rules are set up at the Enterprise level. Sterling Selling and Fulfillment Foundation uses the rule defined by the Enterprise of the Order Transaction.

Example

Assume that a customer places an Order for 100 units of TV. You can run a default or a specific Scheduling Rule to identify the Nodes that have adequate inventory. Based on the Inventory Availability, you can schedule an Order and promise an appropriate ship date to the customer.

Functions of a Scheduling Rule

When you run a Scheduling Rule, it performs the following functions:

- Determines Node Preferences
- Checks Inventory Availability
- Controls Driving Date and Lead Time
- Adheres to the defined Optimization Types and Priorities
- Reserves inventory at the Nodes, if defined.

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Order Schedule

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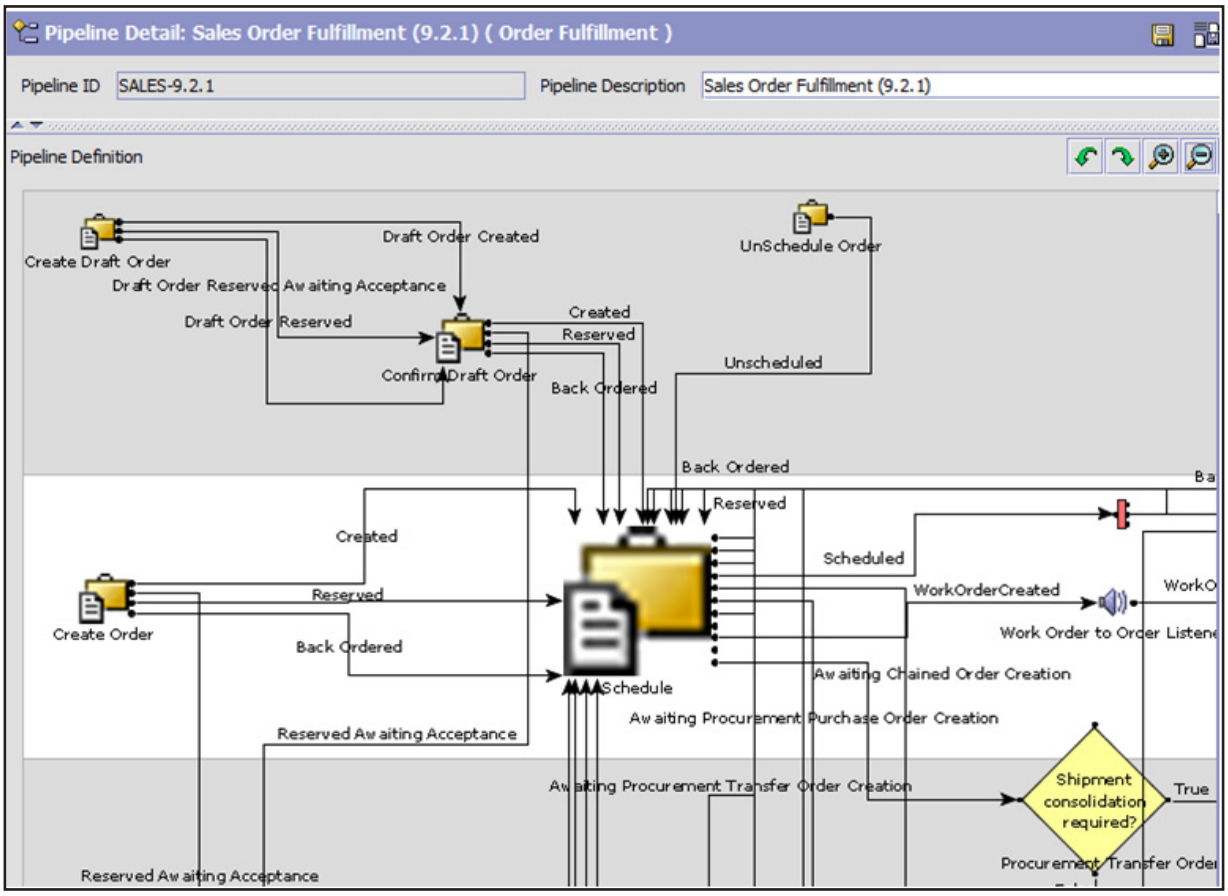
Schedule Order Pipeline

When a Scheduling Rule is entered, it follows the Pipeline as shown in the following figure:



Schedule Order Transactions

The Schedule Order transaction typically follows a Create Order transaction.

When the Schedule Transaction is entered, the following Statuses can be achieved:

- **BackOrdered** - When there is not enough inventory in any of the Nodes to fulfill an Order.
- **Work Orders** - If some additional work needs to be performed to fulfill an Order. Example - Gift Wrapping or Provided Services.

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Order Schedule

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Schedule Order Transactions

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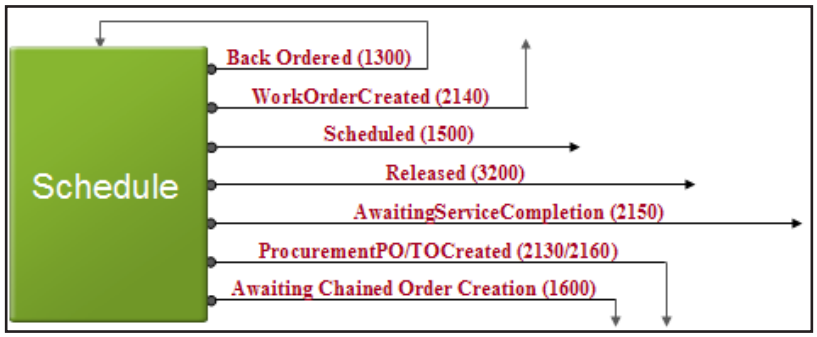
- **Scheduled** - When the supply is met (onhand or future inventory) and the Nodes have adequate inventory to fulfill an Order.
- **Released** - Based on the inventory considerations, the Order is moved to the Release state.
- **Awaiting Service Completion** - If the Order has a Service Item, and Work Order is not generated, the Order moves to awaiting Service Completion status.
- **Procurement PO/TO Created** - When the inventory is not available in the shipping Node and is procured from another Node, the Order moves to the Procurement PO/TO Created status.
- **Awaiting Chained Order Creation** - When the inventory is unavailable in a shipping Node or any Nodes within an Enterprise, and procure inventory from an external Node, a Chained Order is created, and the Order moves to Awaiting Chained Order Creation status.

The following figure depicts the different Statuses of an Order when a Scheduling Rule is entered:



Scheduling Rule Assignments

There are three ways to assign a Scheduling Rule to an Order:

- The Scheduling Rule is passed as part of the Order Data when creating an Order.
- A customer service representative selects a Scheduling Rule from the Application Console.
- If a Scheduling Rule is not assigned by other means, Sterling Multi-Channel Fulfillment uses the default SYSTEM Scheduling Rule.

Configuring a Scheduling Rule

Introduction

You can configure a Scheduling Rule for all Orders or can associate a specific Scheduling Rule with an Order. This allows different Scheduling Rules to be used based on your business requirements.

In the following procedures, you will learn how to configure, specify, and enable Rules and Values.

Create Scheduling Rule

The procedure to create a Scheduling Rule is divided into subprocedures for ease of understanding. These are listed:

1. Go to Scheduling Rule Screen
2. Specify Primary Information
3. Specify Retry Intervals and Constraints
4. Specify Inventory Controls
5. Specify Lead Times and Reservations
6. Specify Priority and Optimization
7. Specify Additional Optimization, Backward Compatibility, Other Rules

Browse to the Scheduling Rule Screen

Procedure to browse to the Scheduling Rule Screen

1. Launch the **Applications Manager**.
2. Go to **Applications** > **Distributed Order Management** > **Cross Application** > **Order Promising** > **Sourcing and Scheduling** > **Scheduling Rules**. The **Scheduling Rules** screen displays.
3. Click  to create a Scheduling Rule. The **Scheduling Rule Details** screen displays.

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Configuring a Scheduling Rule

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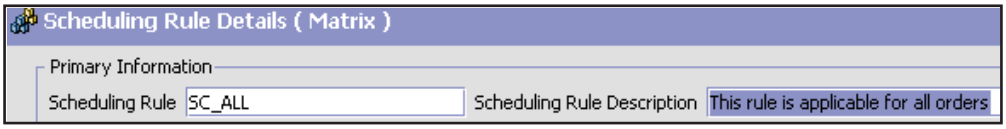
Specify Primary Information

The Primary Information panel enables you to specify the identification details of the scheduling rule you want to create. The following figure displays the Primary Information panel.

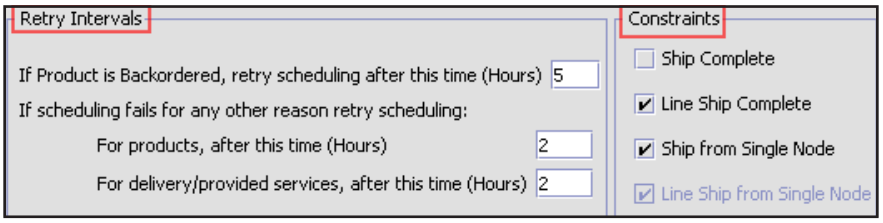


Procedure to Specify Primary Information

1. Enter a name and description for the Scheduling Rule
2. Click to save the changes.

Specify Retry Intervals and Constraints

You can configure the retry intervals and constraints to be considered while scheduling. The following figure displays the Retry Interval and Constraints panel.



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Configuring a Scheduling Rule

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Specify Retry Intervals and Constraints ....(Continued)

Procedure to Specify Retry Intervals and Constraints

1. Enter values in the **Retry Interval** panel as described. The Retry Intervals panel allows you specify the time at which you can re-execute the Scheduling Rule if the Order is backOrdered or failed for any other reason.
   - **If Product is BackOrdered, retry scheduling after this time (Hours)** allows you to enter the number of hours after an Order is BackOrdered when the system should try to reschedule the Order.

     Remember that the minimum wait period for retrying to schedule an Order is 30 minutes, even if the value specified is less than that. For instance, if the wait period is set to 0.2 hours, the business logic of Sterling Selling and Fulfillment Foundation still considers it as if it were 0.5 hours.
   - For **If scheduling fails for any other reason retry scheduling**:
     - **For products, after this time (Hours)** - You can specify how many hours after which the Schedule Time-Triggered Transaction should try to schedule a Product Item Order Line if the Order Line is not ready to schedule when it is initially picked up.
     - **For delivery/provided services, after this time (Hours)** - Enter how many hours after which the Schedule Time-Triggered Transaction should try to schedule a Service Item Order Line if the Order Line is not ready to schedule when it is initially picked up.

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Configuring a Scheduling Rule

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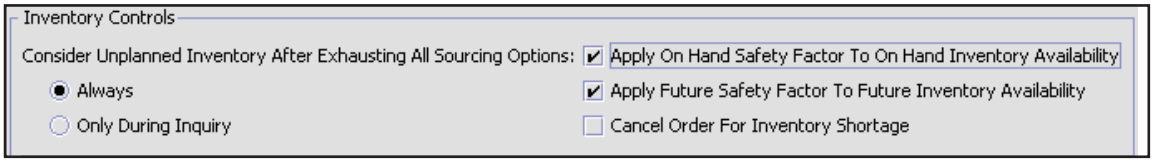
Specify Retry Intervals and Constraints ....(Continued)

2. Enter values in the **Constraints** panel as described. The Constraints panel enables you to specify the Sourcing preference that is considered when entering this Scheduling Rule to fulfill the Orders.
   - Select **Ship Complete** if you want all Order Lines in an Order to either be completely sourced or not sourced at all. However, if you select this field, you are not restricting Sourcing from multiple Ship Nodes. The inventory can be sourced from different shipping locations.
   - Select **Line Complete** when you want to schedule at the Order Line Level. In other words, the complete Order is not sourced and sourcing is possible at every Order Line Level. However, the lines can be sourced from multiple shipping locations. This field is automatically selected when Ship Complete field is selected.
   - Select **Ship From Single Node** if you want the complete Order to be sourced from a single Ship Node.
   - Select **Line Ship From Single Node** if you want to source every line in an Order from a Single Node. However, this Rule does not enforce that all lines are shipped from the same Node. A particular line is shipped from Node 1 while another line is shipped from Node 2. Note - This field is automatically selected when the Ship From Single Node field is selected.

Specify Inventory Controls

You can configure some Inventory Controls that must be considered when scheduling. The following figure displays the **Inventory Controls** screen.



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Configuring a Scheduling Rule

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Specify Inventory Controls

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Procedure to Specify Inventory Controls

1. Enter values in the **Inventory Controls** panel as described:
   - For Consider Unplanned Inventory After Exhausting All Sourcing Options, you can choose the following:
     - **Always** - To consider unplanned inventory at both the inquiry and Scheduling Stages after having exhausted all other Sourcing Options.
     - **Only During Inquiry** - To consider unplanned inventory only during the Inquiry Stage when other Sourcing Options are exhausted.
   - Select **Apply On Hand Safety Factor To On Hand Inventory Availability** if you want the Onhand Safety Factor to be applied to the Onhand Inventory. If the Onhand Safety Factor is set to 5, by selecting this option, 5 units of inventory is excluded from the total Inventory Availability.

     Example - Assume that the Onhand Safety Factor is set to 5 and the total inventory available is 25. If this rule is enabled, when Scheduling an Order, the Inventory Availability is considered only as 20 units.
   - Select **Apply Future Safety Factor To Future Inventory Availability** if you want the Future Safety Factor to be applied to the future inventory.
   - Select **Cancel Order For Inventory Storage** if you want the system to cancel an Order if there is a shortage of inventory. Note: If this rule is disabled, and the Order gets backOrdered.

Specify Lead Times and Reservations

You can configure the lead time and reservations to consider while scheduling. The following figure displays the Lead Times and Reservations panels.

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Configuring a Scheduling Rule

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Specify Lead Times and Reservations ....(Continued)

Procedure to Specify Lead Times and Reservations

1. Enter information in the **Lead Times** panel as described. In this panel, you can enter specific Lead Times to consider for various tasks.
   - **Maximum no. of days Order can be shipped/delivered beyond its requested date** allows you specify the number of days after the requested ship date until which you can ship or deliver the Orders. For example, consider 30 days as the lead time, and the ship date as 31st December. In this case, an Order can be shipped or delivered until 30th January.
   - **Maximum no. of days Order can be scheduled before its ship date** allows specify the number of days before the ship date that an Order must be scheduled.
   - **Maximum no. of days to search service availability for** allows to specify the maximum number of days through which you want to look up the service and slot Availability.
2. Enter information in the **Reservations** panel such as, you can enable Reservations on Scheduling an Order and specify its preferences.
   - **Allow Reservations** lets you to reserve inventory at Nodes upon Scheduling an Order. For example, a Customer Orders for five units of a TV and the Inventory Availability for the TV at Node1 is 10 units. If this rule is enabled, at the time of Scheduling the Order, the inventory reserves 5 units of the TV to this Order. The Inventory Availability for TV at Node1 then becomes 5.
   - **Reserve Bundle Out of Ratio** allows you to reserve components of a bundle that are out of ratio.

Ignore Fill Quantity (Ship Complete) enables you to allow reservation of partial quantity of a line that has a Ship Complete Constraint or to reserve the quantity that is less than the fill quantity.

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Configuring a Scheduling Rule

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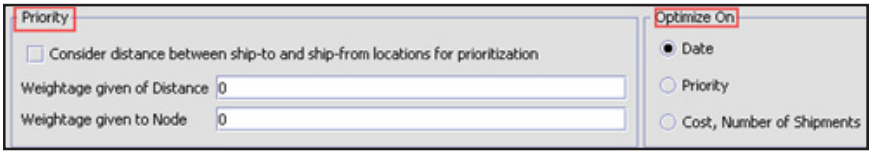
Specify Priority and Optimization

You can configure the priority and optimization rules to be considered when scheduling. The figure displays the Priority and Optimize On panels.



Procedure to Specify Priority and Optimization

1. Enter information in the Priority panel as described.
   - Select **Consider distance between Ship-To and ship-from locations for prioritization** to enable the geography-based distance calculations for choosing a Ship Node. If you select this field, ensure that the Optimize On rule is set to Priority.
   - You can specify **Weightage given of a distance**. Once the distance between the ship-location and the Ship Node address is calculated using longitude and latitude, it is multiplied by this weighting factor. You can enter any fractional number greater than, or equal to, zero. A value of 0 nullifies any distance considerations in the calculation.
   - You can enter the **Weightage given to Node**. The Ship Node priority specified in the Distribution Group is multiplied by this weighting factor. Enter any fractional number greater than, or equal to, zero. A value of 0 nullifies any Node priority considerations in the calculation. For this weighting factor to be applied, Distribution Groups must be used to determine the set of possible Ship Nodes from which a product can be shipped.
2. Enter information in the **Optimize On** panel as described.
   - Select **Date** for inventory scheduling to be optimized by date. If you select this option, Sterling Selling and Fulfillment Foundation selects the Node that can make the earliest delivery of the product.
   - Select **Priority** for inventory scheduling to be optimized by Node priority. If this is selected, Node selection is based on the priority setup in the Distribution Group and the distance from the Node to the Ship-To location.
   - Select **Cost, Number of Shipments** for inventory scheduling to be optimized by number of shipments. When Landed Cost Optimization is enabled, it takes precedence over Optimization by the number of shipments. When Landed Cost Optimization is disabled, Optimization by the number of shipments is used.

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Configuring a Scheduling Rule

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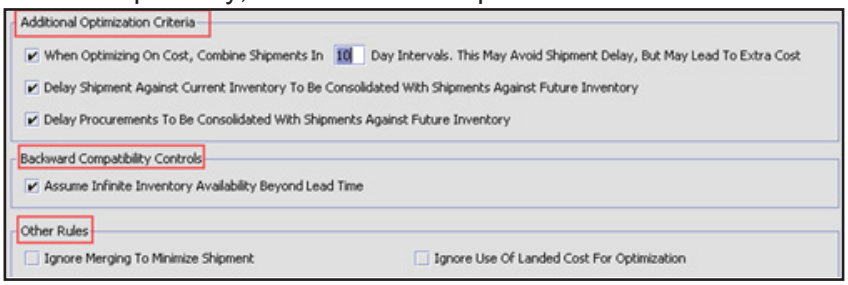
Specify Additional Optimization, Backward Compatibility, Other Rules

You can configure the additional optimization, backward compatibility, and other rules to be considered when scheduling. The following figure displays the Additional Optimization Criteria, Backward Compatibility, and Other Rules panel.



Procedure to Specify Additional Optimization, Backward Compatibility and Other Rules

1. Enter information in the **Additional Optimization Criteria** panel as described.
   - Select **When Optimizing On Cost, Combine Shipments In ... Day Intervals. This May Avoid Shipment Delay, But May Lead To Extra Cost** to combine the Optimization based on both cost and specified number of days. In this case, you can enter the number of days up to which the Optimization is considered.
   - You can select **Delay Shipment Against Current Inventory To Be Consolidated With Shipments Against Future Inventory** to delay shipments against the Onhand Inventory to be consolidated with the future inventory. When this option is selected, the Onhand Inventory is kept on hold for the specified number of days to combine with shipments that include future inventory. If the future inventory is not received on or before the specified number of days, the Onhand Inventory is shipped individually. This option can be selected only when the "When Optimizing On Cost, Combine Shipments" box is enabled.

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Configuring a Scheduling Rule

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Specify Additional Optimization, Backward Compatibility, Other Rules

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- You can select **Delay Procurements To Be Consolidated With Shipments Against Future Inventory** if you want to delay shipments when the Inventory Through Transfers are available. When this option is selected, the Inventory Through Transfers is kept on Hold for the specified number of days to combine with shipments that include future inventory. If the future inventory is not received on or before the specified days, the inventory is shipped individually. This option can be selected only when the "When Optimizing On Cost, Combine Shipments" box is enabled.

2. Enter information in the **Backward Compatibility Controls** panel as described. This rule is provided only for customers who have implemented older versions of Sterling Selling and Fulfillment Foundation and NOT for new customers.
   - You can select **Assume Infinite Inventory Availability Beyond Lead Time** if you want the system to consider any inventory beyond the lead time plus processing time frame to be infinite.
3. Enter information in the **Other Rules** panel as described.
   - You can select **Ignore Merging To Minimize Shipment** if you want to ignore the merging of shipments at the Scheduling Level. When this option is selected, the Minimize Number Of Shipments To Customer Through Transfers Between Shipping Nodes option is overridden at the Enterprise level in Forwarding/Transfer Rules.
   - You can select **Ignore Use Of Landed Cost For Optimization** if you want to ignore the use of Landed Cost Optimization at the Scheduling Level. When this option is selected, the Use Landed Cost option is overridden at the Enterprise level in Landed Cost Optimization.
4. Click  to save the changes.

Exercise 2.2.1: Create a Scheduling Rule

Scenario

Matrix wants to create a separate Scheduling Rule to handle Onhand Inventory. They want some of the Onhand Inventory to be stored by applying a Safety Factor and want it to be considered when scheduling an order. They also want to check if the Scheduling Rule is applied accurately.

Instructions

For ease of understanding, the procedures are split into two parts:

- Procedure to Create a Scheduling Rule.
- Procedure to Assign the New Scheduling Rule to an Existing Created Order.

Each procedure is taken up in the following sections.

Procedure to Create a Scheduling Rule

1. Launch **Applications Manager**.
2. Go to **Applications** > **Distributed Order Management**.
3. Click the **Load Rules for Organization** to select the Organization **Matrix**.
4. Go to **Cross Application** > **Order Promising** > **Sourcing And Scheduling** > **Scheduling Rules**. The **Scheduling Rules** screen displays.
5. Click  to create a Scheduling Rule. The **Scheduling Rule Details** screen displays.
6. Enter **SC_OnHand** as the Scheduling Rule and **Handle Onhand Inventory** as the Scheduling Rule Description.
7. In Inventory Controls panel, ensure that the **Apply On Hand Safety Factor To Onhand Inventory Availability** rule is enabled. This rule is enabled by default and you should check if this is enabled. The **Apply Future Safety Factor To Future Inventory Availability** is also enabled. You can either enable or disable this field.

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Exercise 2.2.1: Create a Scheduling Rule

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Instructions

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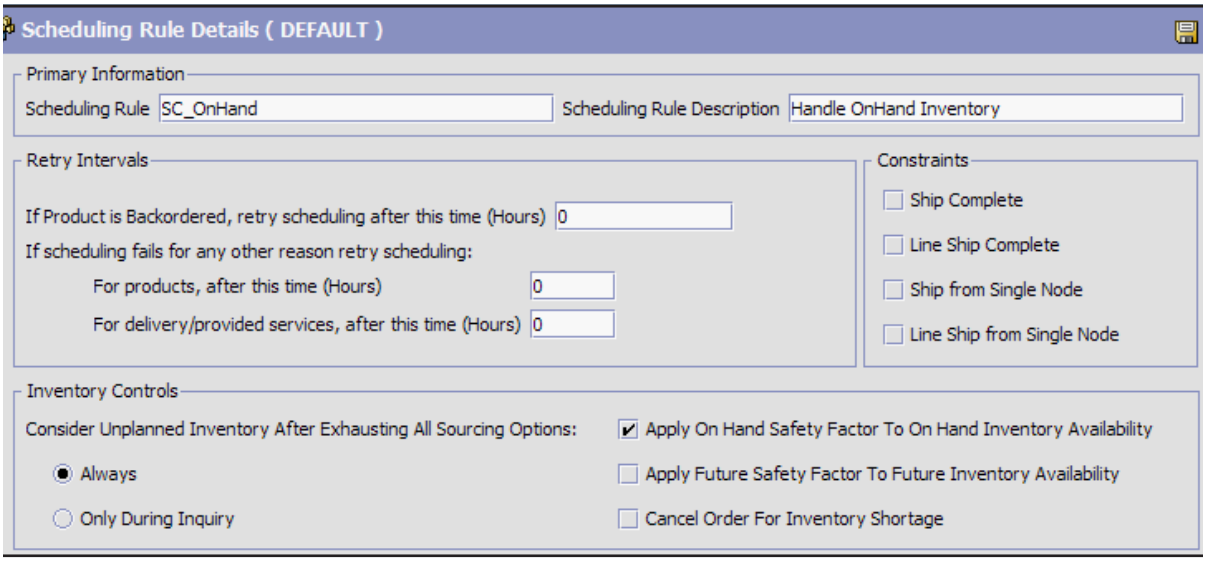
8. Click to save the changes made. The following figure displays the **Scheduling Rule Details** screen.



Procedure to Assign a Scheduling Rule to an Order

Now that you created a Scheduling Rule, you must assign it to an Order and check if the Order gets scheduled.

1. In the **Applications Console**, click **Order** > **Create Order.**

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Exercise 2.2.1: Create a Scheduling Rule

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Instructions

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2. On the Order Entry screen, manually enter the Enterprise **Matrix** and enter the following fields *(Enter the details in the Bill To section).*

Field	Description
First Name	JOHN
Last Name	DOE
Company	BITBOOST SYSTEMS
Address Line 1	SUITE 5A-1204
Address Line 2	421 E DRACHMAN
City	TUCSON
State	AZ
Country	US

3. Click **Create Order.**
4. Enter the following details on **Order Entry** screen:

Field	Description
Items in Line 1	100011
Unit Of Measure	EACH
Ship Node in Line 1	Matrix_WH1
Quantity in line 1	5

5. Click **Save**, and on the **Order Detail** screen click **>>** to **confirm** the order.
6. View the Order Holds by clicking on the  icon on the Created Status.

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Exercise 2.2.1: Create a Scheduling Rule

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Instructions

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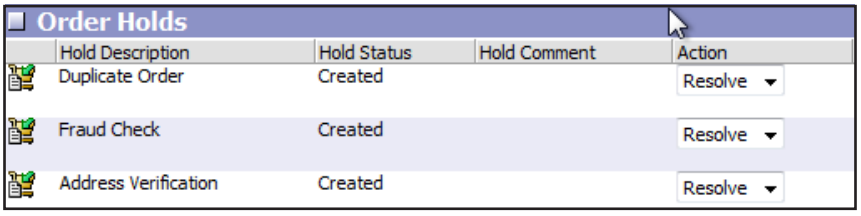
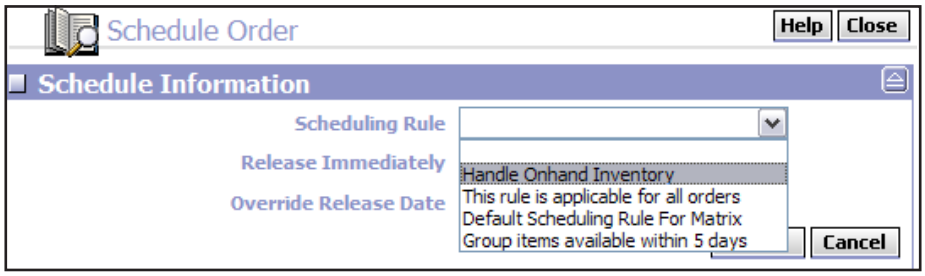
7. Resolve the Duplicate Order, Fraud Check and Address Verification order holds. Click **Save**.



8. Authorize payment by selecting **Authorized** under the Payment Info panel and click **Save**. Click **Ok** on the Modification Reasons window.
9. Click **Schedule**. The **Schedule Order** pop-up screen displays.
10. From the **Scheduling Rule** menu list, select **Handle Onhand Inventory**.



11. Click **OK**. The Order now moves to the **Scheduled** status.
12. The following figure displays the **Order Detail** screen with the scheduled status.

Result

You successfully created a separate Scheduling Rule to handle Onhand Inventory and assigned the new Scheduling Rule to an Order.

Order Sourcing

Introduction

Sourcing is a process of determining the location from which a product is shipped or delivered. In addition, Sourcing is used to determine the locations from which product can be replenished to a particular Delivery Node from which the final delivery can be made.

Example

If a customer places an Order for 10 units of a TV and all 10 units of this item are available at Node1, then the process of procuring these items from Node1 to fulfill the Order is termed, Sourcing.

Sourcing Fundamentals

This section explains some of the key factors and rules to be considered while Sourcing.

Factors effecting Sourcing

The selection of the correct shipping location is based on:

- What product is being shipped
- Ship to location
- Product availability at different locations
- Total number of shipments that are required to complete the request (one or multiple shipments)
- Prioritization of Nodes (Based on geographical locations).
- Customer specified constraints (ship together dependencies and fill quantities being met from the selected Node).
- Ability to perform services for a Work Order (Provided and Delivery Services).
- Ability to perform VAS (Gift wrapping).
- A customizable Order Sourcing classification (customer attribute as a Sourcing parameter).

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Order Sourcing

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Sourcing Fundamentals ....(Continued)

Sourcing Configuration

Now that you know the factors you must consider for Sourcing, now discuss the configurations required to achieve it.

You must consider some of the following parameters and configure them:

- Are Sourcing Rules defined?
- Is inventory information available to the system?
- Is inventory maintained externally.
- Have you defined a default Distribution Node group

This helps in a smooth process of Sourcing and Fulfilling an Order.

Sourcing Rules

You can define specific Rules for Sourcing products that are being shipped, Delivered, or Procured.

A Sourcing Rule can be created by specifying one or more of the following key parameters:

- Item Classifications or Item ID
- Geographical region of the Ship-To location or Ship-To Node
- Fulfillment type
- Seller Organization

Sourcing criteria

For each Sourcing Rule, you can specify a sequence of Node or Distribution Group to be used for Sourcing the product.

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Order Sourcing

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Level of Service

You can define different Levels of Services for your customers. At an Enterprise level, you can schedule and define the Notification Time for each Level of Service. The Levels of Service can be defined at both the Order header and the Order Line Level. Based on the selected Level of Service, different delivery or shipping dates are promised to the customer.

 Note

These levels must be configured at the Hub and is administered only by the Hub user.

How Does it Work?

Sterling Selling and Fulfillment Foundation searches the Order Header/Line to determine Notification Schedules, based on the Level of Service on the Order, and then uses the specified Notification Schedule to calculate the expected ship date.

Order Lines with different Levels of Service are never a part of the same release whereas the bundled items always have the same Level of Service.

Rush Orders

Sometimes a customer wants an Order to be shipped quickly. In such a case, the customer can opt for a Rush Order Level of Service. The Order is then shipped to the customer in less time, for an additional fee.

For rush Orders, the minimum Notification Time must be less than the minimum Notification Time for normal Orders. In addition, Node Notification Schedule must be modified to handle the rush Orders. For Rush Orders, the minimum Notification Time can be configured at the Node level and overrides the item and the Nodes regular Notification Time.

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Order Sourcing

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Level of Service

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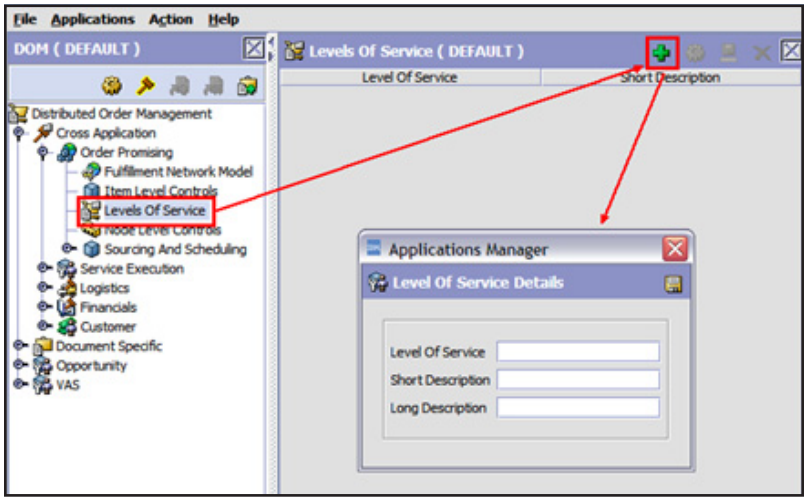
The following figure displays the Level of Services screen



Notification Time

Notification Time represents the minimum number of business hours/days it takes to ship an Order when it is scheduled to a Node. You can create various Notification Schedules based on calendar timeframes.

Formula to Create Notification Date

The **Notification Date** is calculated as:

Expected shipment date - Maximum working hours (including the shipping Node calendar) - Advanced notification days.

Notification Types:

- Organizational Level Notification
- Node Level Notification
- Item Level Notification

In the following sections, learn about each of the notification types in detail.

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Order Sourcing

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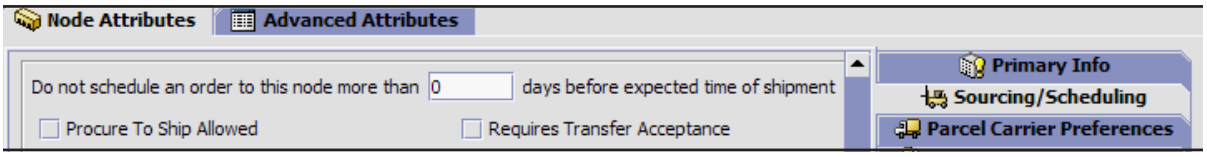
Organizational Level Notification

You can define the Notification Schedule at the time of creating an Organization. When scheduling an Order, if the Notification Time is not defined at the Node or the Item Level, the Organizational Level Notification is considered. You can specify the number of days before the expected ship date that you want the Order to be scheduled to a Node.

The figure displays the **Node Attributes** screen (when creating an Organization as a Node) where you can specify the Notification Time.



Node Level Notification

Order Notification and Promising rules can be defined for individual Nodes. When scheduling an Order, if the Notification Time is defined at a Node Level, this Notification Time takes precedence over the Organizational Level Notification.

Procedure to Create Node Level Notification

1. Launch **Applications Manager**.
2. Go to **Applications** > **Distributed Order Management** > **Cross Application** > **Order Promising** > **Node Level Controls**. The **Ship Node Search** screen displays.
3. Enter the appropriate search criteria and click  . A list of Nodes matching your search criteria displays.
4. Double-click one of the Nodes. The **Node Details** screen displays.

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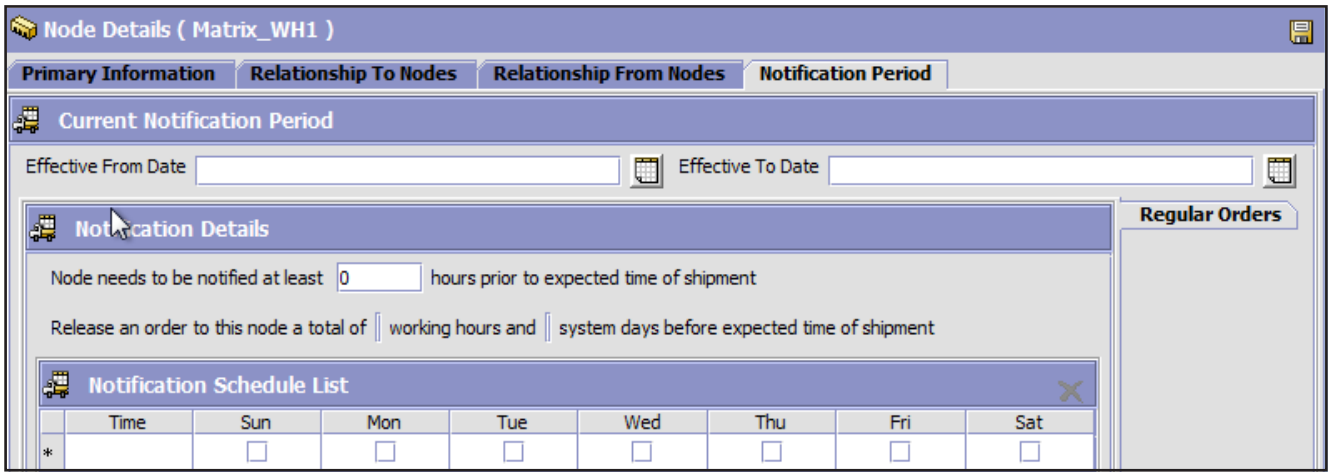
Order Sourcing

(Continued)

Node Level Notification

....(Continued)

5. Click the **Notification Period** tab.



6. Enter the fields as described in the following table:
   - Enter the **Effective From** and **Effective To Dates** for the Notification Period.
   - In the **Notification Details** panel:
     - **Node needs to be notified at least hours prior to expected time of shipment** lets you enter the minimum number of hours a Node needs to be notified before the expected time of shipment.
     - **Release an Order to this Node a total of working hours and system days before expected time of shipment** lets you enter the total number of working hours and system days an Order for this Node should be released before its expected time of shipment.
   - In the **Notification Schedule List** panel:
     - **Time** specifies the time of day this Node can be contacted.
     - **Days of the week** specify the days of the week for which the mentioned defined schedule applies.
     - **Notification Period List** panel displays a list of the existing Notification Periods.
7. Click to save the changes made

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Order Sourcing

(Continued)

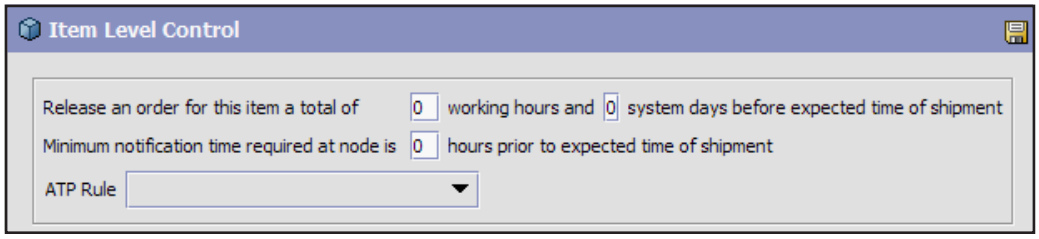
Item Level Notification

The Notification Time is defined at an Item Level for every Node. When scheduling an Order, if the Notification Time is defined at the Item Level, then the Item Level Notification takes precedence over both the Node level and the Organization Level Notifications.

Note

You can define the Item Level notification for a Node by browsing to **Distributed Order Management** > **Cross Application** > **Order Promising** > **Item Level Controls**.

The following figure displays the **Item Level Controls** screen.



Sourcing Rules Configuration

Introduction

In this section, discuss creating Distribution Groups and defining Sourcing Rules for the following:

- Products being shipped
- Products being delivered
- Provided Services
- Procurement

Distribution Group

Distribution Group is a set of Nodes or Organizations defined for distributing products or services. These Distribution Groups are then associated to Sourcing Rules to fulfill an Order.

Grouping of Nodes

You can group Nodes based on some of the following parameters:

- Proximity of shipping locations.
- Grouping all Nodes belonging to Sterling Selling and Fulfillment Foundation
- Grouping all supplier Nodes into one Distribution Group.

Note

A single Node can belong to multiple Distribution Groups.

How does it work?

Sterling Selling and Fulfillment Foundation considers all the Nodes or Organizations that are part of this group and optimizes on various factors for making the Node selection. A priority number is also specified for each Node or Organization that is used for Node selection based on the Optimization mode used for scheduling.

Example

Node1, Node2, Node3, and Node4 belong to Distribution Group, D1, and is assigned a sequence of 1. Node5 and Node6 belong to Distribution Group, D2, and are assigned a sequence 2. D1 is grouped based on Nodes belonging to Sterling Selling and Fulfillment Foundation and D2 contains all the external Nodes. When the Sourcing Rule is applied, the rule first checks for inventory in D1. If not enough inventory is found, it searches for inventory in all Nodes within D2.

(Continued on next page)

Sourcing Rules Configuration

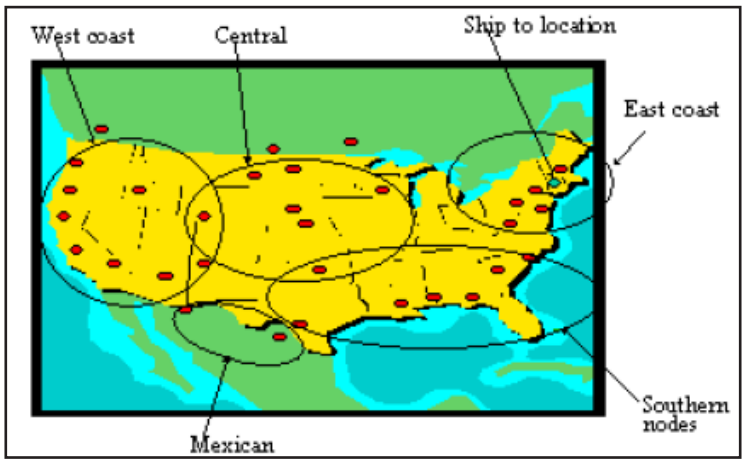
(Continued)

Distribution Group

....(Continued)

Model

In the figure, West Coast, Central, East Coast, Southern Nodes, and Mexican are multiple Distribution Groups containing multiple Nodes within them.



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Sourcing Rules Configuration

(Continued)

Distribution Group

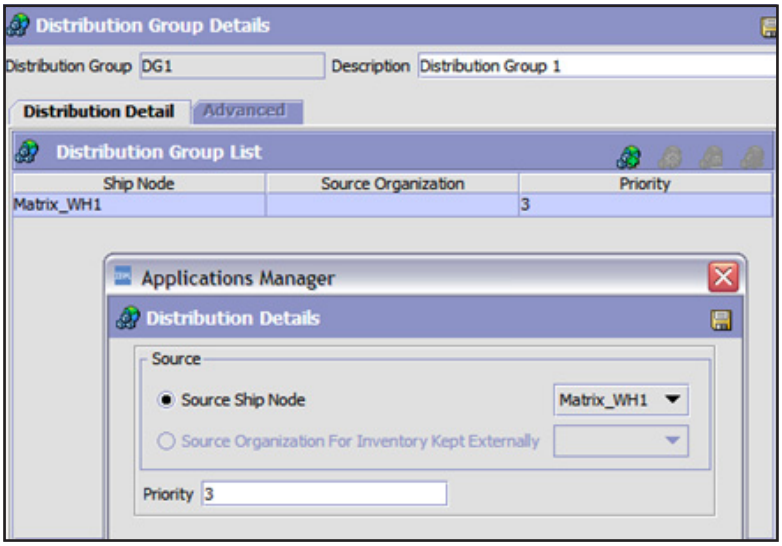
....(Continued)

Defining Distribution Group

You can create a Distribution Group for the following items:

- Product Items
- Service items
- Procured Items

The following figure displays the **Distribution Group Details** screen.



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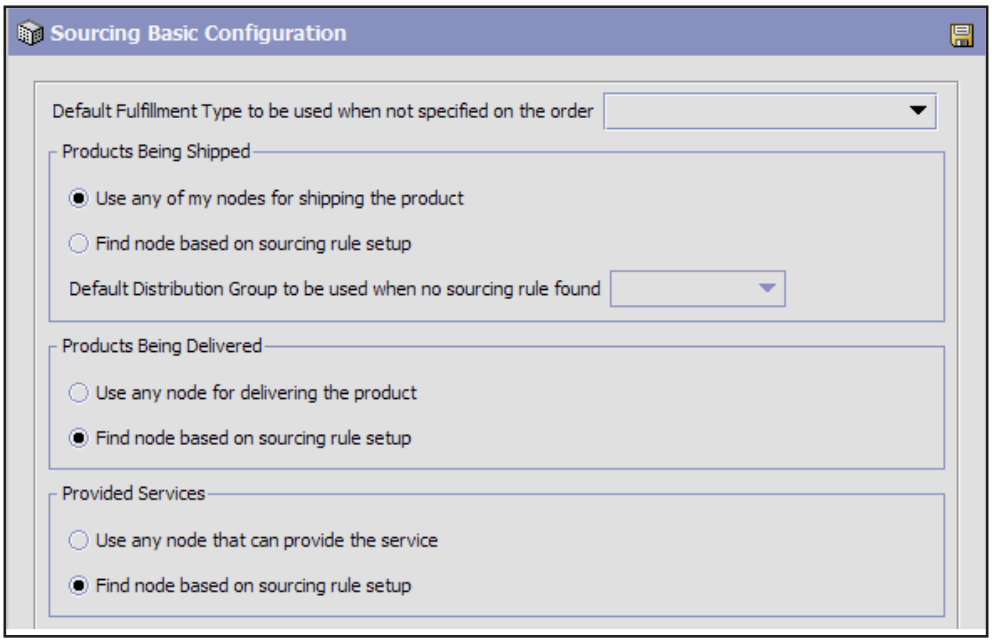
Sourcing Rules Configuration

(Continued)

Basic Configuration for Sourcing

You must set up some basic Sourcing configurations such as determining if an Organization uses the defined Sourcing Rule or not. You do not need to define complex Sourcing Rules if an Organization deals with just a Node or two. However if an Organization deals with multiple Nodes within itself and some external Nodes, and you define Sourcing Rules to ensure that the optimal Nodes are used to handle shipping and service fulfillment. The following figure displays the **Sourcing Basic Configuration** screen.



Procedure to Configure Basic Configuration for Sourcing

1. Launch **Applications Manager**.
2. Go to **Applications** > **Distributed Order Management** > **Order Promising** > **Sourcing and Scheduling** > **Basic Configuration**. The **Sourcing Basic Configuration** screen displays.

(Continued on next page)

Sourcing Rules Configuration

(Continued)

Basic Configuration for Sourcing ....(Continued)

3. Enter the fields as described:
   - **Default Fulfillment Type to be used when not specified on the Order** lets you select an appropriate fulfillment type you want to be use by default for Sourcing when no fulfillment type is specified on the Order from the menu list. The fulfillment menu list is populated from the fulfillment types that are provided out-of-the-box. You can also create new fulfillment types.
   - In the **Products Being Shipped** panel:
     - You can choose **Use any of my Nodes for shipping the product** if you do not want to define Product Item Sourcing Rules for the Organization you are configuring. If you select this option, the system optimizes product Sourcing based on the Node(s) you have defined for the Organization. Note - If an Enterprise inherits Sourcing Rules from another Organization, they inherit the parent Enterprise Nodes when they select this option.
     - You can choose **Find Node based on Sourcing Rule setup** if you want to use configured product item Sourcing Rules with the Organization you are configuring.
     - You can select an appropriate Distribution Group from the **Default Distribution Rule to be used when no Sourcing Rule found** menu list as the default Distribution Group you want to use to source product items when the system cannot determine an appropriate Sourcing Rule to use for an Order. The menu list contains all the Distribution Groups you created.
   - In the **Products Being Delivered** panel:
     - You can choose **Use any Node for delivering the product** if you want the system to select any Node that supports delivery of products for a delivery region.
     - You can choose **Find Nodes based on Sourcing Rule setup** if you want to use configured Delivery Service item Sourcing Rules with the Organization you are configuring.
   - In the **Provided Services** panel:
     - You can choose **Use any Node that can provide the service** if you want the system to select any Node that includes Provided Services for a shipping region.
     - You can choose **Find Node based on Sourcing Rule setup** if you want to use configured Provided Service item Sourcing Rules with the Organization you are configuring.
4. Click  to save the changes made.

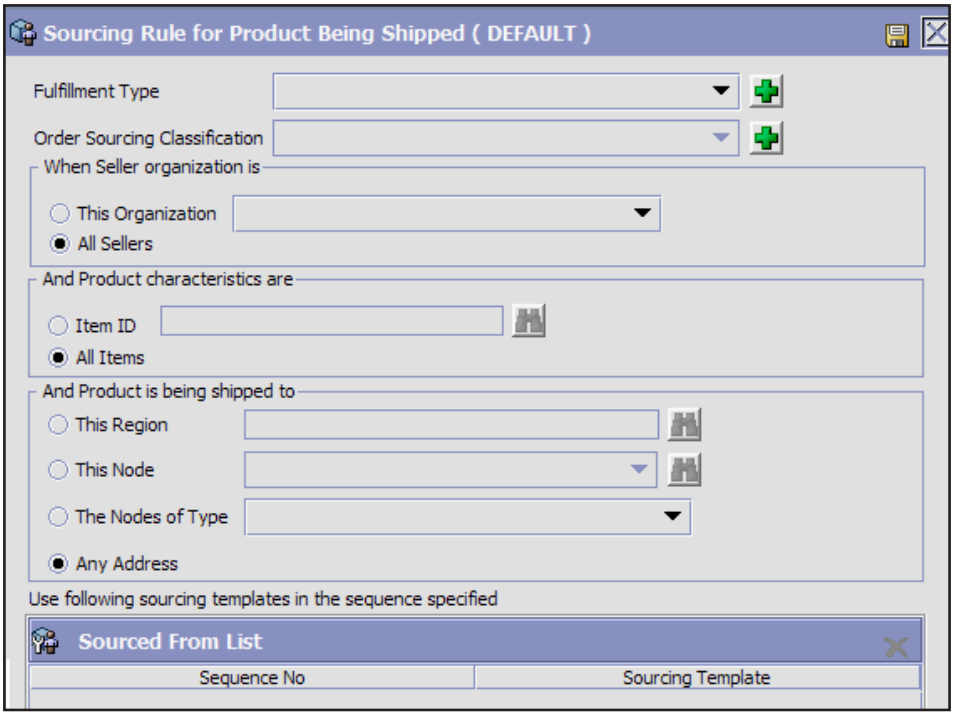
(Continued on next page)

Sourcing Rules Configuration

(Continued)

Sourcing Rules for Products Being Shipped

In this section, you will configure Sourcing Rules for all the products that are being shipped. The basic configurations for Sourcing are considered and these specifications are additional configurations. The following figure displays the Sourcing Rule for Products Being Shipped screen.



Procedure to Define Sourcing Rules for Products Being Shipped

1. Launch **Applications Manager**.
2. Go to **Applications** > **Distributed Order Management** > **Order Promising** > **Sourcing and Scheduling** > **Products Being Shipped >Sourcing Rules**. The Product Being Shipped - Sourcing Rule Search screen displays.

(Continued on next page)

Sourcing Rules Configuration

(Continued)

Sourcing Rules for Products Being Shipped ....(Continued)

3. In the Sourcing Rules for Product Being Shipped panel, click  to create a Sourcing Rule. The **Sourcing Rules for Product Being Shipped** screen displays.
4. Enter the fields as described in the following tables:
   - You can select an appropriate **Fulfillment Type** from the menu list to associate with the Sourcing Rule. The fulfillment menu list is populated from the fulfillment types that are provided out-of-the-box. You can also create new fulfillment types.
   - You can select an appropriate **Order Sourcing Classification** if you want to associate this Sourcing Rule with a particular Order Sourcing classification.
   - In the **When Seller Organization is** panel:
     – You can choose **This Organization** and select a specific organization for which you want to associate this Sourcing Rule from the menu list.
     – You can choose **All Sellers** if you want this Sourcing Rule to be associates with any seller Organization.
   - In the **And Product Characteristics Are** panel:
     – You can choose **Item ID** and search for a specific item by clicking  to which you want to associate this Sourcing Rule.
     – You can choose **All Items** if you want the Sourcing Rule to be associated to all the items maintained at the Sourcing Node.
   - In the **And Product is being shipped to** panel:
     – You can choose **This Region** and enter an appropriate region if you want this Sourcing Rule to be used when products are shipped to a specific region. The region you identify must belong to the region schema associated with product item Sourcing for the Organization you are working with.

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Sourcing Rules Configuration

(Continued)

Sourcing Rules for Products Being Shipped ....(Continued)

- You can choose **This Node** and select a specific Node from the menu list if you want the Sourcing Rule to be used when the products are shipped to this specific Node.
- You can choose **The Node of Type** and select an appropriate Node type if you want to use the Sourcing Rule when the products are shipped to this specific Node type.
- You can choose **Any Address** this Sourcing Rule can be used when products are shipped to any Node.

5. Click  to save the changes made. The Sourced From List panel now gets enabled.
6. In the **Sourced From List** panel, click  to define the sequence number and the template type.
7. Click  to save the changes made.

(Continued on next page)

Sourcing Rules Configuration

(Continued)

Sourcing Rules for Products Being Delivered

You can configure Sourcing Rules for all the products delivered. This configuration is similar to configuring the rules for products shipped. In this case, you do not need to specify the Item Characteristics as delivery is associated to a particular item.

Sourcing Rules for Provided Services

You can configure Sourcing Rules for Provided Services. This configuration is similar to configuring the rules for products shipped. In this case, for Item Characteristics, you must associate the service with a particular item, as a Provided Service can be for specific items and not all items need a Provided Service.

Sourcing Rules for Procurement

You can configure Sourcing Rules for procurement of products. This configuration is similar to configuring the rules for products shipped.

As procurement is possible only between Nodes,

- The **Procure to** is a Node and cannot be shipped to any address.
- The Seller Organization is only one and therefore, you need not define the same.

Exercise 2.2.2: Sourcing Rules for Provided Services

Scenario

Matrix Inc. wants to create and maintain different Sourcing rules for different selling organizations such as Matrix Retail, Matrix Online, and Matrix Business. For now, they want to create a Sourcing Rule for Matrix Retail and follow a sequence of different nodes to fulfill an order based on the following parameters:

- Fulfillment Type
- Service Item ID
- The region to which the service must be provided

Instructions

Procedure to Configure Sourcing Rules for Provided Services

1. Launch **Applications Manager**.
2. Go to **Applications** > **Distributed Order Management**.
3. Click the icon **Load Rules for Organization.** In the Load Organization for Configuration screen, select **Matrix** from the Organization drop down list. Click **OK.**
4. Go to **Cross Application** > **Order Promising** > **Sourcing And Scheduling** > **Provided Services > Sourcing Rules**. The **Provided Services** screen displays.
5. Click  .
6. From the **Fulfillment Type** menu list, select **Store Fulfillment**.
7. In **When Seller Organization is** panel, choose **This Organization** and select **Matrix-R** from the menu list.
8. In **And Provided Service characteristics are** panel, click  to search for Item ID and select **PSELECREP**.
9. In **And Service Location is** panel, choose **Any Address**.
10. Click **Save**.

(Continued on next page)

Exercise 2.2.2: Sourcing Rules for Provided Services

(Continued)

Instructions

....(Continued)

11. In **Sourced From List** panel, click to add Sourcing Details. The **Sourced From Details** screen displays.
12. In **Sequence No** field, type **1**.
13. Click the **Template Type** list, and select **Specific Node: <...>** from the options.
14. For **Consider the following inventory during Sourcing**, choose **All Inventory**.
15. In the **Source From** work area, and **click to Select a Node** hyperlink. The **Search** screen displays.
16. Click to search for Specific Nodes. A list of Nodes available are listed.
17. Select **Mtrx_Store_1** and click **Select**. The **Sourced From Details** screen displays.
18. Click to save the changes made. Click **Ok** when the Warning dialog box is displayed.
19. Create another Source-From Node with a different sequence number and a different Node.
20. To add multiple Source-From Nodes, repeat **Steps 11 through 18** with different values.
21. Click to save the changes made.

Result

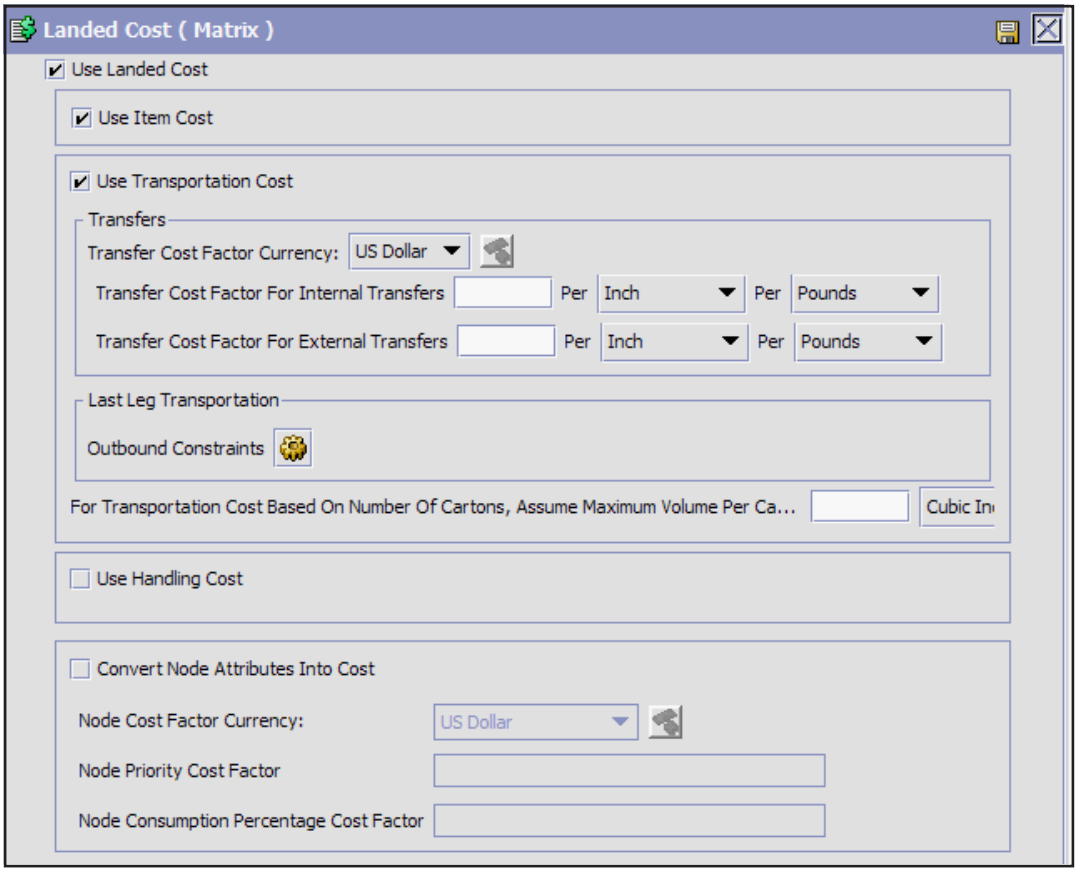
You created a Sourcing Rule for Matrix Retail and followed another sequence of Node to fulfill an Order based on Fulfillment Type, Service Item ID, and the region to which the service must be provided.

Landed Costs

Introduction

The Landed Cost is consisted of Item Cost, Handling Cost, and Transportation Cost. Sterling Selling and Fulfillment Foundation enables you to specify Landed Cost parameters to be considered for evaluation during Order Promising, if the "Cost, Number of Shipments" Optimization type is selected in your Scheduling Rule. The Landed Costs can be configured separately. If Landed Cost Optimization is enabled, it takes precedence over Optimization by the number of shipments. When Landed Cost Optimization is disabled, Optimization by the number of shipments is used.

The following figure displays the Landed Costs screen.



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Landed Costs

(Continued)

Introduction ....(Continued)

Procedure to Configure Landed Costs

1. Launch **Applications Manager**.
2. Go to **Applications** > **Distributed Order Management** > **Order Promising** > **Sourcing and Scheduling** > **Landed Costs**. The **Landed Costs** screen displays.
3. Enter the fields as described in the following tables:
   - You can select **Use Landed Cost** if you want to enable the use of Landed Cost Optimization. You can clear this field to disable all options in this window.
   - You can select **Use Item Cost** if you want to the item cost to be used when computing Landed Cost.
   - You can select **Use Transportation Cost** if you want the transportation cost to be included when computing the Landed Costs.
   - In the **Transfers** panel:
     – You can select the appropriate currency used for the transfer cost factor from the **Transfer Cost Factor Currency** menu list.
     – **Transfer Cost Factor __ Per __ Per __ for Internal Transfers** lets you enter the transfer cost factor and select the appropriate UOMs for internal transfers. The internal transfer cost factor is used to calculate transfer cost when there is a transfer schedule between two Nodes. The value of the Transfer Cost Factor Per Unit specified in the Transfer Schedule pop-up window overrides the value of the Transfer Cost Factor for the internal transfers.
     – **Transfer Cost Factor __ Per __ Per __ for External Transfers** lets you enter the transfer cost factor and select the appropriate UOMs for external transfers. The external transfer cost factor is used to calculate transfer cost when there is no transfer schedule between two Nodes. The value of the Transfer Cost Factor Per Unit specified in the Transfer Schedule pop-up window overrides the value of the Transfer Cost Factor for the external transfers.

(Continued on next page)

Landed Costs

(Continued)

Introduction

....(Continued)

- In the **Last Leg Transportation** panel:
  - For **Outbound Constraints**, you can click  to configure outbound constraints and define Routing Guides.
- **For Transportation Cost Based On Number Of Cartons, Assume Maximum Volume Per Carton To Be __** lets you enter the maximum volume and select an appropriate the volume UOM to be used when transportation cost is based on the number of cartons.
- You can select **Use Handling Cost** to include the handling costs when computing the Landed Costs.
- You can select **Convert Node Priority Into Cost** to use the priority of the Node to be converted into cost. When this field is enabled, the Node with a lower priority is considered when optimizing on cost.
- **Node Priority Cost Factor __** lets you enter the cost factor for the Node. You can enter values to this field only when the "Convert Node Priority into Cost" is enabled. Choose the currency for the cost from the menu.

4. Click  to save the changes made.

Optional Exercises

Create a Scheduling Rule, Constraints

Matrix analyzed the number of Orders that were scheduled successfully and the Orders that were backOrdered using the Default Scheduling Rule. They concluded that the number of back Orders were more than the number of Orders that were scheduled. The realized that the Orders were being sourced from a single Node, forcing most of the Orders to get backOrdered. Therefore, to improve their efficiency, Matrix wants to source inventory for the Orders from any Node and schedule the Order only when the complete Order is sourced. They also want to check if most of the Orders now get scheduled smoothly. In this exercise, you will update the default Scheduling Rule to fulfill the stated requirements.

Instructions

1. Launch Applications Manager and go to Scheduling Rules.
2. Enable the appropriate constraints to meet the expectations set by Matrix Inc.
3. Save the changes.
4. Schedule an Order by running the Default Scheduling Rule in the Application Console.

Result

An Order must move to the Scheduled status in the Application Console.

Create a Scheduling Rule, Optimization

Matrix Inc. in the past year, used to consolidate shipments to reduce the shipping costs. They believed that they were best in the industry for shipping the products to their customers with less shipping costs until they realized that some of their customers were unhappy as they did not receive their products on time. To solution this issue, Matrix Inc. now wants to create a Scheduling Rule that checks which of their Nodes can ship the products at the earliest and reserve that inventory when scheduling.

Instructions

1. Launch **Applications Manager** and go to **Scheduling Rules**.
2. Set the Optimization and Reservation Rules.
3. Save the changes.

Result

The Scheduling Rule must be Optimized by date. The Reservations Rule must be enabled.

(Continued on next page)

Optional Exercises

(Continued)

Configure Level of Service and Set Notification Time

Matrix wants to improve their customer satisfaction levels by providing new and enhanced service levels. On a trial basis, they want to offer their customers a new expedited Level of Service for one month at the node Matrix_WH1. Using this new service level, products can be shipped to the customers in a shorter interval of time, even if the Node is notified just 8 hours before shipping the products.

Instructions

1. Launch Applications Manager as Hub administrator and go to **Levels of Service**.
2. Create a Level of Service, Rush Orders.
3. At the Node level, define the Notification Period.
4. Save the changes.

Result

1. A new Level of Service, Rush Orders must be created.
2. The Notification Period is set for a month, and the Notification Time to the Node is set to 8.

Create Sourcing Rule for Products Being Delivered

Matrix wants to follow a specific process to define Sourcing Rules for all its selling Organizations that are delivering goods to its customers in North America. One of the biggest fulfillment Nodes is, Matrix_WH1, from where most of the Customer Orders are fulfilled. Therefore, Matrix considers this Node as it's top priority Node. This new Sourcing Rule helps them in scheduling the Orders and delivering it on-time to their customers, which in turn improve customer experience.

Instructions

1. Launch **Applications Manager**.
2. Go to **Distributed Order Management** > **Products Being Delivered**.
3. Define Fulfillment Type, Seller Details, and the Region to which product is being delivered.
4. Define Sourcing Rules by entering the Sequence and the specific Node.
5. Save the changes.

Result

When the Fulfillment Type is Product being Delivered and is for all Sellers belonging to North America, the inventory is sourced first from Matrix_WH1.

Lesson Review

Completed Objectives

This lesson was designed to enable you to:

- Describe Scheduling and different types of Schedule Transactions.
- Configure Scheduling Rules and assign them to an Order.
- Describe Sourcing and Distribution Groups.
- Configure Sourcing Rules for various Fulfillment Modes.
- Configure Landed Costs.

LESSON 2.3: Order Fulfillment Rules Configuration

Introduction

This lesson will provide you with an overview of Order Fulfillment Rules configuration.

Lesson Objectives

This lesson is designed to enable you to:

- Describe an Order Fulfillment process.
- Release Orders.
- Create and Confirm Shipments.
- Consolidate Shipments.

References

For more information on Order Fulfillment Rules configuration, see:

- http://www.ibm.com/support/knowledgecenter/SS6PEW_9.5.0/com.ibm.help.dom.config.doc/configuration/c_ConfiguringAnOrderDocumentsFulfillment-SpecificComponents.html

Navigate to **Sterling Order Management** > **Sterling Order Management 9.5.0** > **Configuring supplied and add-on solutions** > **Sterling Distributed Order Management** > **Configuring** > **Configuring an order document's fulfillment-specific components**

Order Fulfillment Overview

Order Statuses So Far

An Order goes through multiple Statuses during fulfillment and until it is shipped. So far, you learned about the following Statuses:

- **Draft Order** - This is the first stage of the Order until it is confirmed. All aspects of this Order can be modified until it is confirmed.
- **Created** - The Order reaches the Created state when the Order is confirmed.
- **Scheduled** - The applicable Node(s) have the inventory to fulfill the purchase Order and can be scheduled for release.

Order Status Related to Fulfillment

In the following sections, you will learn the different Statuses an Order will attain after it is scheduled.

The Statuses are:

- **Released** - All the Orders are requested to be released to their respective shipping Node.
- **Sent to Node** - The Order is sent in the form of an Order Release.
- **Shipped** - The Order is shipped to the customer from a specific Node.

Other Order Types

Sometimes, a regular Order flow must take deviations to fulfill an Order. Therefore, Sterling Selling and Fulfillment Foundation supports additional Order types such as:

- Chained Orders
- Derived Orders

Some Orders are Provided or Delivery Service lines or have special requests for gift wrapping from customers. For such Orders, you must create:

- Work Orders

Each of these Order Types is explained in detail in the following sections.

(Continued on next page)

Order Fulfillment Overview

(Continued)

Chained Orders

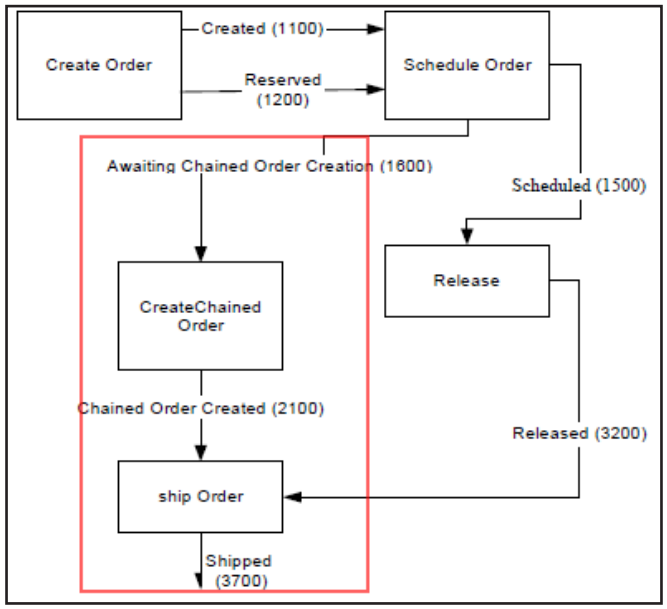
Chained Orders are created when some portion of the Order cannot be fulfilled by the system and will be fulfilled through external systems (third party). The chained Order must be fulfilled first for the complete Order to be termed, fulfilled. Any modification made to the parent Order after the Chained Orders are created may be propagated to each Chained Order.

Example

Assume that an Order SO1 is placed for five units of a TV. The inventory available in the Enterprise is just three units. To fulfill the Order, you might want to create a purchase Order for two units of a TV with an external supplier. This purchase Order becomes a chained Order to the parent Order, SO1.

Model

The following figure displays the Chained Order flow.



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Order Fulfillment Overview

(Continued)

Derived Orders

Derived Order is a subordinate created from a parent order. After a Derived Order is created, it follows an independent lifecycle from their parent. Any change made to the parent Order does not affect the Derived Order. A Derived Order need not be completed for a parent Order to be termed, fulfilled, and vice versa. A link is maintained between a derived Order and parent Order only for tracking progression of the parent Order into other various Order documents.

Types of Derived Order

Typically, a Derived Order is:

- Generated even when the parent Order is fulfilled.

  Example - Creating a PO from a Planned Order.

- Newly created for parallel processing

  Example - Creating an Exchange Order for return even before a return disposition is done.

Derived Orders Creation

To create Derived Orders, the following two abstract transactions must be created:

- Include in Derived Order
- Create Derived Order

These transactions can be copied during Transaction Configuration to create appropriate meaningful transactions. Both transactions can have multiple Pickup Statuses and a single drop status.

 Note

An Order can have multiple derived Orders out of the same quantity. Since Chained Orders are created to complete the fulfillment of the parent Order, a unit in the parent Order can belong to only one chained Order.

(Continued on next page)

Order Fulfillment Overview

(Continued)

Work Orders

Work Orders are additional services that are performed on the Order. A Work Order in Sterling Selling and Fulfillment Foundation captures the activity required to perform a service.

Work Order Creation

In Sterling Selling and Fulfillment Foundation, the Work Order is created in the following ways:

- **Manual** - User initiates a Work Order
- **Automatic creation based on inventory levels** - After a minimum or a maximum SKU level is reached, the inventory monitors raise a Work Order request.
- **Automatic creation based on an Order** - A request is issued by a Sales Order for an item on the Order.

Types of Work Orders

The Work Orders can be of two types. They are:

- **Service Work Orders** - Provided and Delivery Services.
- **Value Added Services (VAS)** - Gift wrapping, Labeling.

 Note

The difference between the two types of Work Orders is that the Service Work Order is performed at the customer location and the VAS is performed in a warehouse.

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Order Fulfillment Overview

(Continued)

Work Orders

....(Continued)

Node Determination for a Work Order

Each Work Order is created for the specific Node which owns the Work Order execution. In Selling and Fulfillment Application, the Node determination is based on the following criteria:

- If a Node specified during Work Order creation is used.
- If a Node is specified on any of the service lines, that Node is used as the Work Order Node.
- If capacity is blocked by an Order line, the Node of the Resource Pool that was used to block the capacity is used.
- If there is no predefined Node on the Work Order or the service lines, the Sourcing Rules for either Provided Service (for a Provided Service Work Order) or Delivery Service (for a Delivery Service Work Order) is used. In this case the primary Node is used as the Work Order Node.

 Note

A Node cannot be changed on the Work Order. If you must change the Node, the Work Order must be canceled and re-created.

Work Order Completion

The Work Order is considered complete when all the Provided Service lines are completed and all products are delivered. The Delivery line is not marked as complete but the Status reflects as Delivered.

Work Order Cancellation

Work Order Cancellation depends on the status of the service lines. If any of the Service Lines were completed or any of the product lines were delivered, the Work Order is marked as completed. Only appointments that are open are cancelled and the associated Capacity Reservation is removed.

Order Release Configuration

Order Release Overview

Order Release is the transaction that follows an Order Scheduling transaction in a Sales Order Fulfillment Pipeline. Order Release means releasing an Order to a Fulfillment Node.

If a shipment is to be made from one of the Organization Nodes or from a Node not requiring a separate chained document, an Order Release is sent as the shipping instruction.

Based on the scheduled ship date, Sterling Selling and Fulfillment Foundation calculates a Notification Date, then creates an Order Release on the Notification Date. The Order Release is then communicated to the shipping Node to enable the Node to carry out the shipping process.

 Note

Order Releases and Order Release lines contain the same information as Orders and Order Lines, with the addition of Ship Node/Organization information.

Difference Between Schedule and Release

Let us now look at some differences between Schedule and Release Order Transactions.

A Schedule Transaction schedules Orders to specific Ship Nodes making sure that the scheduled Ship Nodes have enough inventory to process the Order. It checks inventory, fulfillment dates, the Node from where the Order can be fulfilled and confirms Order fulfillment. This transaction follows the Order creation process.

A Release transaction, releases Orders to specific Ship Nodes by breaking an Order into Order Releases. It maps between Order fulfillment and Shipment Creation. This transaction is started after the scheduling process.

Example

Consider an Order that is placed for 100 units of shirts and is expected to be shipped on a certain date. Schedule Order transaction determines the Inventory Availability, the Nodes that can fulfill the Order and confirms the date on which the Order can be scheduled to release. The Release Order Transaction is then called which checks if the Order can have a single or a multiple release, based on availability, and allows Shipment Creation.

(Continued on next page)

Order Release Configuration

(Continued)

Release an Order

An Order can be released in two ways:

- Time-Triggered Transactions
- Manually through Application Console

Time-Triggered Transactions

You can release an Order with Time-Triggered Transactions issued at scheduled intervals. To set up Time-Triggered Transactions for Release Orders,

1. Login as Administrator, launch Applications Manager.
2. Go to **Applications** > **Application Platform** > **Process Modeling**. Select the **Order Fulfillment** process type.
3. Go to **Release Order** transaction. The Transaction Detail screen displays.
4. Click the **Time-Triggered** tab.

Manually from the Application Console

You can manually release an Order that is in the scheduled status using the Release option from the Order Details screen. The following figure displays an **Order Details** screen.

(Continued on next page)

Order Release Configuration

(Continued)

Release Status

The Order Release Status has various drop Statuses.

- **BackOrdered** - This indicates that there was insufficient inventory. For example, if inventory was available during scheduling but in the period between schedule and release the inventory became unavailable, then the Order Release becomes backOrdered.
- **Released** - This indicates that there is enough inventory to schedule to the Order for fulfillment. The Order is released to the Application Consoles, the Sterling Warehouse Management System, or another third-party warehouse management system.
- **Awaiting Shipment Consolidation** - This indicates that the Order is to be grouped and consolidated with other shipments before it continues through the Pipeline.
- **Awaiting WMS Interface** - This indicates that the Order must interface with the Sterling Warehouse Management System before continuing in the Pipeline.

The following figure displays some of the drop status for a Release transaction.

(Continued on next page)

Order Release Configuration

(Continued)

Criteria Parameters for Release Order Transaction

A **Release Order Transaction has** the following Criteria Parameters:

Criteria Parameter	Description
Action	This is a required field. You must specify the action that triggers the transaction. If this field is left blank, the fields value defaults to Get, which is the only valid value.
Number of Records To Buffer	This is an optional field. This field value specifies the number of records that should be retrieved and processed at one time. If this field is left blank or specified as 0 (zero), the field value defaults to 5000.
CollectPendingJobs	If you set this parameter to N, the agent does not collect information about the pending jobs for this monitor. This pending job information is used for monitoring the monitor in the System Management Console.
IgnoreReleaseDate	This is an optional field. This field determines whether the Schedule Process must ignore line Release date criteria. Valid values are: ■ Y - Releases line quantities regardless of Release Date criteria. ■ N - This is the default value. Releases line quantities only after Release Date criteria is met.
CheckInventory	This is an optional field. This field determines whether inventory should be checked. Valid values are: ■ Y - This is the default value. It specifies that inventory needs to be checked. ■ N - This specifies that inventory does not need to be checked.
Next Task Queue Interval	This is an optional field. This field specifies in hours how long a failed task should be suspended before it is considered for reprocessing. This field value defaults to 5 hours.
ColonyID	This field is required in a multi-schema deployment where a table exists in multiple schemas.

(Continued on next page)

Order Release Configuration

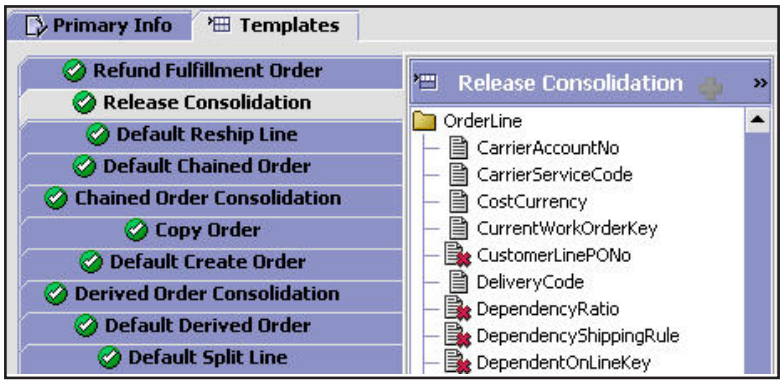
(Continued)

Release Consolidation Templates

In addition to mandatory Order Line attributes, a Release Template can be configured to include additional Order Line attributes.

You can specify additional Order Line attributes, by going to **Applications > Distributed Order Management > Document Specific > Sales Order > Fulfillment > Process Type Details**. The **Fulfillment Process Type Details** screen displays. You can specify additional Order Line attributes by going to **Templates > Release Consolidation**.

The following figure displays some of the additional Order Line attributes for Release Consolidation.



Shipment Creation

Overview

A Shipment is a group of items, from one or multiple Customer Orders, that are collected and sent to the same Ship-To address. Shipments are created to optimize shipping and reduce costs.

Each shipment must have the same:

- Ship-To and Ship-from combination
- Seller
- Buyer
- Currency
- Enterprise
- Document Type

Shipment Example

Assume that there are three Orders: Order1, Order 2, and Order 3, that are released on the same date. The details of the three Orders are displayed:

Items	Required Quantity	Node 1	Node 2	Node 3
Order 1 (Enterprise: ***Default***, Seller: ***HeavyLift***, Buyer: ***Bolton Networks***, Buyer Node: ***BN Node***)				
Item 1	10	10		
Item 2	20		20	
Item 3	50		20	30
Order 2 (Enterprise: ***Default***, Seller: ***HeavyLift***, Buyer: ***Best Bay***, Buyer Node: ***BB Node***)				
Item 4	50	25	25	
Item 5	60		30	30
Order 3 (Enterprise: ***Default***, Seller: ***HeavyLift***, Buyer: ***Bolton Networks***, Buyer Node: ***BN Node***)				
Item 6	30	30		
Item 7	50		50	

(Continued on next page)

Shipment Creation

(Continued)

Shipment Example

....(Continued)

For the example, the shipment list is as follows:

Items	Required Quantity	Node 1	Node 2	Node 3	Shipments
Order 1 (Enterprise: ***Default***, Seller: ***HeavyLift***, Buyer: ***Bolton Networks***, Buyer Node: ***BN Node***)					
Item1	10	10			(Item1, Node1) = Shipment 1
Item2	20		20		(Item2, Node2) = Shipment 2
Item3	50		20	30	(Item3, Node2) = Shipment 2 (Item3, Node3) = Shipment 3
Order 2 (Enterprise: ***Default***, Seller: ***HeavyLift***, Buyer: ***Best Bay***, Buyer Node: ***BB Node***)					
Item4	15	15			(Item4, Node1) = Shipment 4
Item5	30		30		(Item5, Node2) = Shipment 5
Order 3 (Enterprise: ***Default***, Seller: ***HeavyLift***, Buyer: ***Bolton Networks***, Buyer Node: ***BN Node***)					
Item6	30	20		10	(Item6, Node1) = Shipment 1 (Item6, Node3) = Shipment 3
Item7	50		50		(Item7, Node2) = Shipment 2

As you can see from the example, one Order can be divided into multiple shipments. Similarly, multiple Orders can be consolidated into one shipment.

Note

You can add releases to an already-created shipment. This is done manually using the Application Console.

(Continued on next page)

Shipment Creation

(Continued)

Shipment Creation

There are two ways of creating a shipment. These are:

- Time-Triggered Transactions
- Manually through Application Console

Time-Triggered Transactions

Shipments can be created automatically when Order Lines are released for shipment. This requires an agent to be running in the background.

Manually through Application Console

Shipments can also be created manually without Order Releases using the Create Outbound Shipment menu option. After creating such a shipment, you can add Order Releases to the Shipment.

The following figure displays the **Create Outbound Shipment** menu option.

(Continued on next page)

Shipment Creation

(Continued)

Ship Advice Order Configuration

Ship Advice refers to the 'advice' that is given to a warehouse regarding Order shipments. You can configure the rules that are used when a Ship Advice Number or Order Release is generated.

You can configure Ship Advice rules by browsing Applications Manager and go to **Applications** > **Application Platform** > **System Administration** > **Installation Rules**.

In the **Installation Rules** screen that displays, you can specify the **Ship Advice** rules.

The following figure displays a **Ship Advice Number Generation** panel from the Installation Rules screen.

Order Fulfillment Application Definition

Order Fulfillment is handled at the Node level. You can configure different types of Order Fulfillment. Order Fulfillment can use the following applications:

- Sterling Order Management
- Sterling Warehouse Management System
- WMS 6.2
- External Application

You can configure an Order Fulfillment application for a Node by browsing Applications Manager and going to **Applications** > **Application Platform** > **Participant Modeling** > **Participant Setup**.

In the **Organization Search** screen that displays, locate a Node and open its **Organization Details** screen.

(Continued on next page)

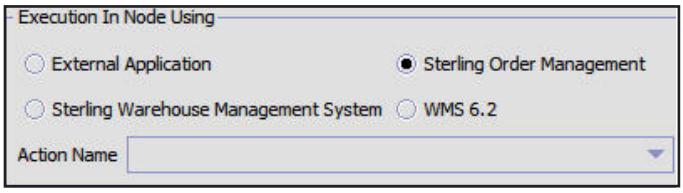
Shipment Creation

(Continued)

Order Fulfillment Application Definition

Browse to **Roles & Participation** > **Node Attributes**. You can select an Order fulfillment application from the **Execution In Node Using** panel.

The following figure displays an Execution In Node Using panel for a Node.



Note

Small warehouses do not require the elaborate Pick, Pack, Ship function of a standard WMS application. Such warehouses therefore, can use the Sterling Order Management (that is, Application Console) for shipping purposes. The Order Fulfillment application in such cases should be specified as Sterling Order Management.

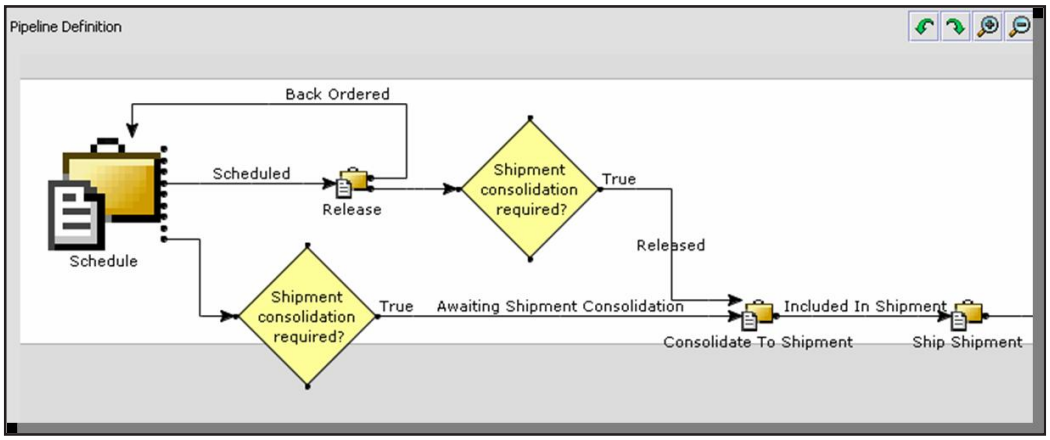
(Continued on next page)

Shipment Creation

(Continued)

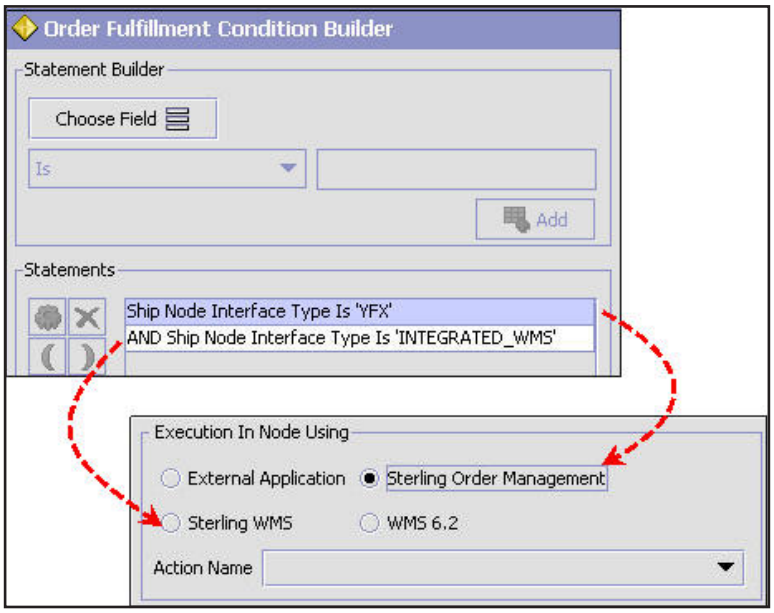
Shipment Related Pipeline

The following figure displays two paths in an Order Fulfillment Pipeline.



In the second Pipeline, if an Order is released as part of scheduling, the system checks if Shipment Consolidation is required. This condition returns as true if either Sterling Order Management or Sterling WMS are selected.

The following figure displays the conditions in the Order Fulfillment Condition Builder and their correlation with the Order Fulfillment applications panel.



(Continued on next page)

Shipment Creation

(Continued)

Shipment Related Pipeline

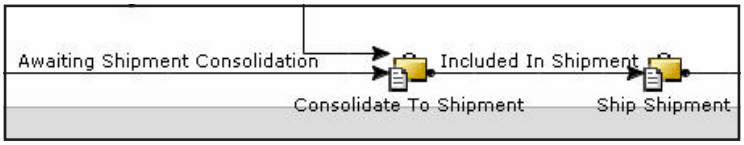
....(Continued)

If the condition returns as true, the Order moves to the ***Awaiting Shipment Consolidation*** Status. The following figure displays the Scheduling Pipeline showing the ***Awaiting Shipment Consolidation*** Status.

After the Order is in the ***Awaiting Shipment Consolidation*** status, the Consolidate to Shipment agent determines the shipments that the Orders are consolidated into.

After the Consolidate to Shipment agent consolidates the Orders into shipments, the status of the Order changes to ***Included In Shipment***. Then, the shipments are handed over to the Shipment Pipeline.

The following figure displays a part of the Scheduling Pipeline showing the ***Included In Shipment*** status.



Shipment Consolidation Configuration

Shipment Consolidation Overview

Sterling Selling and Fulfillment Foundation provides features for flexible shipment planning. You can establish conditions that control consolidation of shipments. These conditions are established for the Enterprise and for each Buyer Organization.

Some shipment consolidation methods are listed:

- Shipment Consolidation Criteria

  In addition to the mandatory criteria for Shipment Creation, there are additional optional criteria that can control how a shipment is created.

- Do Not Mix Constraints

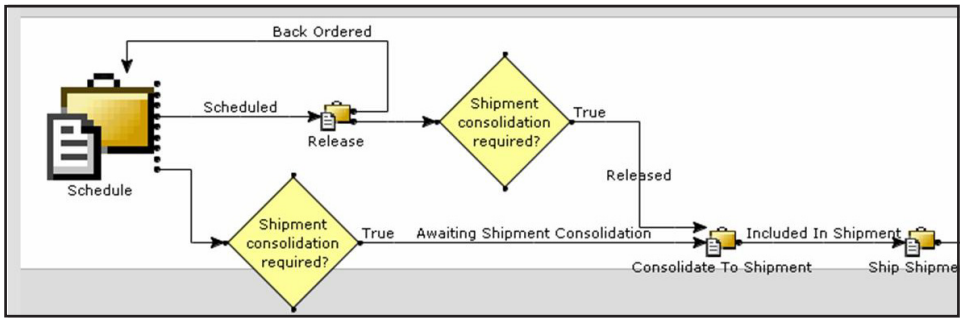
  Do Not Mix Constraints are used to create separate shipments for items that have different values for some common attributes.

- Economic Shipping Parameters (ESP)

  ESPs are used in shipping consolidation. ESP support consolidation of shipments until a weight or volume threshold is met, or until a certain time elapses. By consolidating shipments, shipping costs can be reduced.

Outbound Shipment Pipeline

The following figure displays the paths in an **Order Fulfillment Pipeline**.



(Continued on next page)

Shipment Consolidation Configuration

(Continued)

Outbound Shipment Pipeline

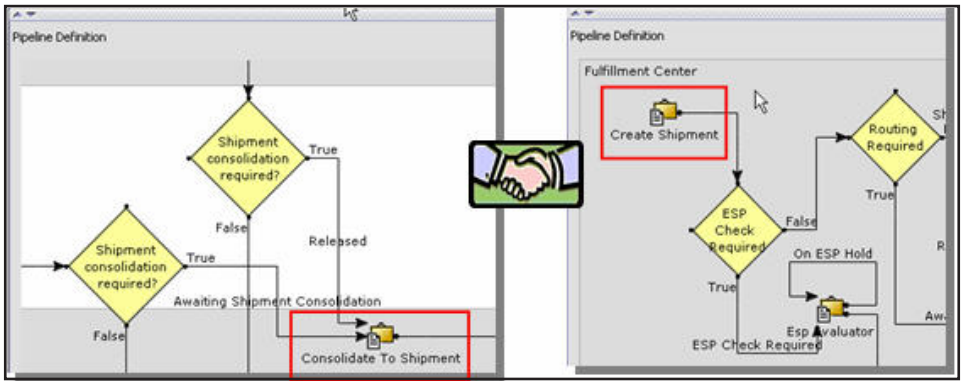
....(Continued)

The Consolidate To Shipment agent performs one of the following tasks for each Order Release:

- Finds an existing shipment into which the Release can be included.
- Creates a shipment if the Order Release cannot be included in any existing shipment.

After the Consolidate To Shipment agent consolidates Order Releases into shipments, the shipments are ready to be handed over to the outbound shipment Pipeline.

The following figure displays the transition from the **Order Fulfillment Pipeline** to the **Outbound Shipment Pipeline**.



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Shipment Consolidation Configuration

(Continued)

Buyer Parameters

Buyer Parameter refers to certain conditions that the Buyer specifies for Shipping and Routing.

Procedure to Configure Buyer Parameters

1. Launch **Applications Manager**.
2. Open **an Organization Details** screen for a Buyer Organization by following these steps:
   d. Go to **Applications** > **Application Platform** > **Participant Modeling** > **Participant Setup**. The Organization Search screen displays.
   e. Specify the role as Buyer from the Roles menu list.
   f. Click  . A list of Buyers displays in the Search Results panel.
   g. Double-click the row for a Buyer Organization to open its Organization Details screen.
3. Click the **Roles & Participant** tab.
4. By default, the **Inbound Compliance** tab is displayed. Specify the Buyer Parameters Do not mix in a shipment. The different fields in the Do not mix in a shipment panel are explained:
   - Select **Buyer Mark For Node Id** if separate shipments must be created based on the Buyer Mark for Node Id.
   - Select **Customer PO #** if separate shipments must be created based on the Customer's Purchase Order number.
   - Select **Department Code** if separate shipments must be created based on the department for which the item is intended.
   - Select **Gift Flag** if separate shipments must be created if the Order line is a Gift Item.
   - Select **Level of Service** if separate shipments must be created based on the Order Level of Service.
   - Select **Mark For** if separate shipments must be created based on the person for whom this shipment is marked for.
   - Select **Order #** if separate shipments must be created based on the Order Number.
   - Select **Order Type** if separate shipments must be created based on the Buyer defined Order Type.

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Shipment Consolidation Configuration

(Continued)

Buyer Parameters

....(Continued)

5. Specify the Buyer Parameters Transportation Optimization. The main fields in the Transportation Optimization panel are explained:
   - Economic Shipping Parameters (ESP) are used in Shipping Consolidation. Select **Economic shipping parameters maintained** to enter Economic Shipping Parameters fields.
   - Enter the number of days the shipment date can be moved forward in the **Expedite shipment by not more than __ Days** field if shipments can be shipped earlier than their currently planned shipment date,
   - **Delay shipment by not more than __ Days** specifies the number of days this shipment can be delayed before it should be shipped.
   - Enter a weight and volume in the **Consolidate up to weight threshold of** and **Consolidate up to volume threshold of** fields.
6. Click  to save your changes. This completes the procedure to configure Buyer Parameters.

(Continued on next page)

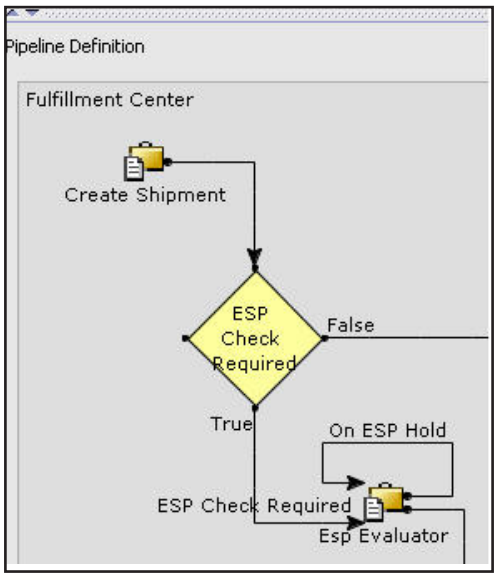
Shipment Consolidation Configuration

(Continued)

Economic Shipping Parameters

In the Shipment Pipeline, after a shipment is created, the system checks whether ESP are maintained at the Enterprise of Buyer level.

The following figure shows the Shipment Pipeline that shows the ESP Check Required condition.



As you can see in the Pipeline, if ESP is maintained, the new shipment goes to ESP Check Required status.

Next, an ESP Evaluator checks the shipment to determine if any of the criteria (that is, Weight, Volume, or Days) are met. If the ESP criteria are not met, the ESP Evaluator puts the shipment on ESP Hold.

(Continued on next page)

Shipment Consolidation Configuration

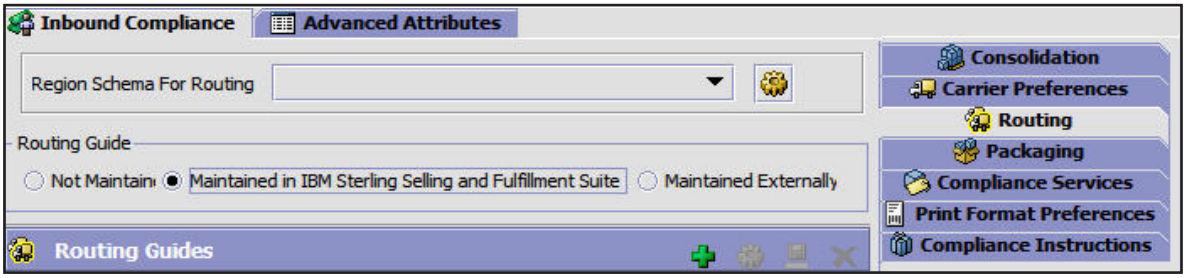
(Continued)

Shipment Routing

Routing is the process by which a carrier is selected for a shipment. Carrier selection is determined by Ship From, Ship To, Carrier Service Level, and various other Shipment Characteristics.

Routing is often based on established guides, called Routing Guides, that are published by either a Buyer or an Enterprise. Routing Guides help you determine the carrier for a shipment. Routing Guides can be maintained externally or internally.

To specify whether Routing Guides are maintained internally or externally, you must open the **Roles & Participation** tab for a Buyer or Enterprise and then go to **Inbound Compliance** > **Routing**. The following figure displays the Routing fields.



Routing Guides can also influence Freight Terms and Ship To designations.

Note

A single Organization can have multiple Routing Guides to support varying requirements.

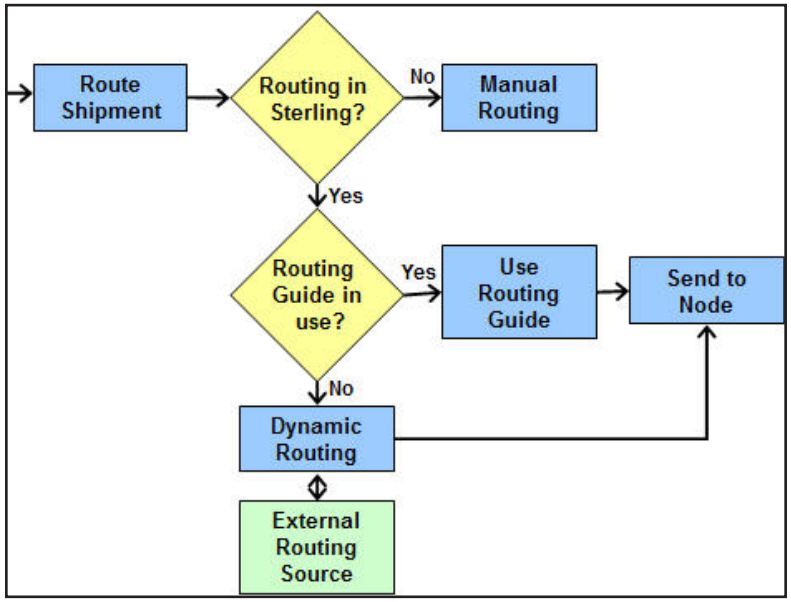
(Continued on next page)

Shipment Consolidation Configuration

(Continued)

Routing Process Overview

An Outbound Shipment Pipeline defines the requirement for a shipment to be routed. The following figure displays the Routing Process logic.



There are three ways that routing can be performed:

- **Using Routing Guides** - Routing is based on the Buyer or Enterprise Routing Guides
- **Dynamic** - Routing is based on an external resource, such as a Transportation Management System or a customized interaction with the Buyer.
- **Manual Routing** - Shipment routing is established by the console operator.

Routing Guideline Definition

Routing Guides are a list of conditions which determine how a shipment should be routed and what carrier and service should be used. If a Buyer Routing Guide fails to determine a carrier, the Supplier's Routing Guide is used. While routing shipments, the Ship-To-city and ship-from-city are factors influencing the determination of a carrier.

To create a Routing Guide, you must open the **Roles & Participation** tab for a Buyer or Enterprise and then go to **Inbound Compliance** > **Routing**. In the Routing Guides panel that displays, click. This displays the Routing Guide Details page. You can create a Routing Guide by specifying its details in the fields provided.

Exercise 2.3.1: Fulfilling an Order

Scenario

You need to create an order for Item ID 100003 with fulfillment node Matrix_WH1 and schedule and release the Order using Sterling Selling and Fulfillment Foundation.

Before you schedule and release the Order, you need to check for certain configurations:

1. Is the assigned Ship Node (Matrix_WH1) using Sterling Order Management as the interface?
2. Is shipping allowed for the Item ID 100003?

Instructions

For ease of understanding, the procedures are divided into four parts.

1. Procedure to check whether a node uses Sterling Order Management.
2. Procedure to check whether Shipping is allowed for Item ID 100003.
3. Procedure to Schedule and Release an Order.
4. Procedure to Create and Confirm a Shipment.

Each procedure is taken up in the following sections.

Procedure to check whether a node uses Sterling Order Management

To check whether the Node Matrix_WH1 uses Sterling Order Management (specifically, Application Console) as the interface, you need to open the Organization Details window for the Organization Matrix-WH1.

To open the Organization Details window for the Organization Matrix-WH1, follow these steps:

1. Launch **Applications Manager**.
2. Go to the **Applications > Application Platform > Participant Modeling > Participant Setup**. The **Organization Search** screen displays.
3. Select **Node** from the Roles drop down list and click  .

(Continued on next page)

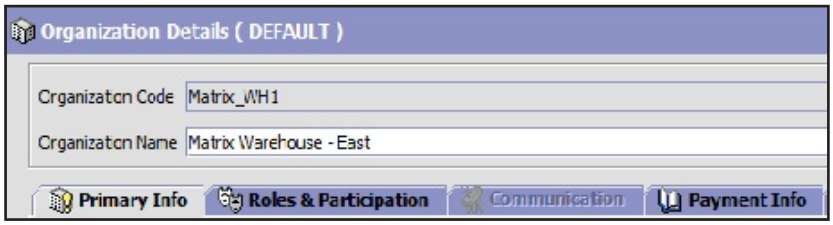
Exercise 2.3.1: Fulfilling an Order

(Continued)

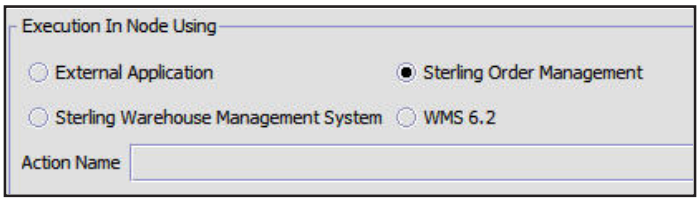
Instructions

....(Continued)

4. Double-click **Matrix-WH1** from the list of Nodes displayed. The Organization Details window for the Matrix-WH1 Node displays.



5. Click the **Roles & Participation** tab.
6. Scroll down to the **Execution In Node Using** panel.
7. Ensure that the **Sterling Order Management** option is selected as shown in the following figure.



8. Click **Save**.
9. Close the **Organization Details** and **Organization Search** screens.

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Exercise 2.3.1: Fulfilling an Order

(Continued)

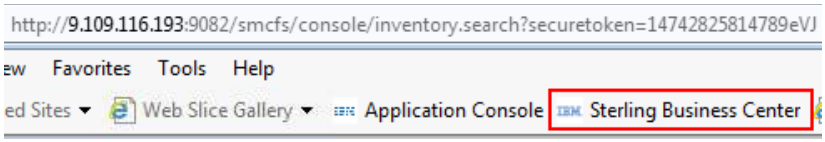
Instructions

....(Continued)

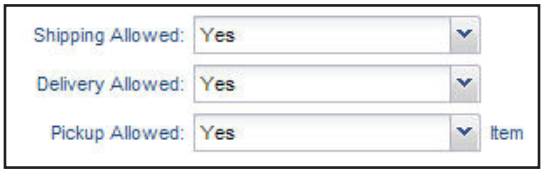
Procedure to Check whether Shipping is Allowed for Item

To check whether shipping is allowed for Item ID 100003, you need to open the Item Details window for the item. To open the Item Details window for Item ID 100003, follow these steps:

1. Log in to **Sterling Business Center** from the Favorites bar of your browser.



2. Log in with user ID as **admin** and password as **password**.
3. Switch the organization to **Matrix, Incorporated** on upper right corner of the screen.
4. Go to **Products** > **Item > Find Item.** (Alternatively, you can click Find Item from the home page.)The **Item Search** screen displays.
5. Enter the Item Id as **100003** in the Item ID Contains field and click **Search**. The **Primary Information** screen for Item Id 100003 displays.
6. To view whether shipping is allowed for Item ID 100003, click **Manage Fulfillment Information** from the left panel. The **Fulfillment Information** screen displays in the work area.
7. Ensure that the **Shipping Allowed** option is set to **Yes**.



Procedure to Schedule and Release an Order

To schedule an Order for **Matrix** using Application Console, follow these steps:

1. In the **Applications Console**, click **Order** > **Create Order**.

(Continued on next page)

Exercise 2.3.1: Fulfilling an Order

(Continued)

Instructions

....(Continued)

2. On the Order Entry screen manually enter the Enterprise **Matrix** and enter the following fields. *(Enter the details in the Bill To section)*

Field	Description
First Name	JOHN
Last Name	DOE
Company	BITBOOST SYSTEMS
Address Line 1	SUITE 5A-1204
Address Line 2	421 E DRACHMAN
City	TUCSON
State	ARIZONA
Country	US

3. Click **Create Order**.
4. Enter the following on the **Order Details** screen in the **Order Lines** panel.

Field	Description
Items in Line 1	100003
Unit Of Measure	EACH
Ship Node in Line 1	Matrix_WH1
Quantity in line 1	10

5. Click **Save**. The Order Status changes to **Draft Order Created**.

(Continued on next page)

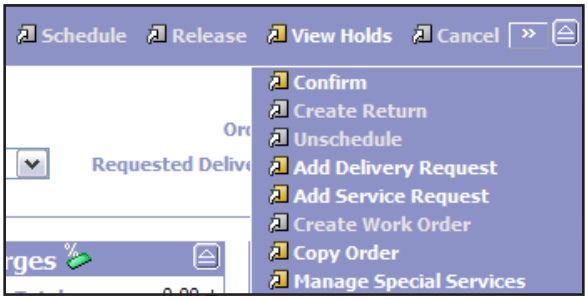
Exercise 2.3.1: Fulfilling an Order

(Continued)

Instructions

....(Continued)

6. To confirm the order, click **>>** and click **Confirm** as shown in the following figure.

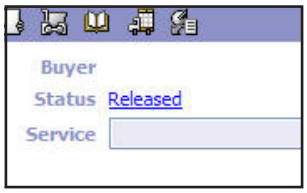


   The Order Status changes to **Created**.

7. View the Order Holds by clicking on the icon on the Created Status.
8. Resolve Duplicate Order, Fraud Check and Address Verification order holds and click **Save**.

   Authorize payment by selecting **Authorized** under the Payment Info panel and click **Save**.
9. To schedule this Order, click the **Schedule** from the menu bar.
10. Select **Default Scheduling Rule For Matrix** as the **Scheduling Rule**. Click **OK**.

    The Order moves to the **Scheduled** status.
11. To release the order, click **Release** from the menu bar. Select **Default Scheduling Rule For Matrix.** The Order Status changes to **Released**.



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Exercise 2.3.1: Fulfilling an Order

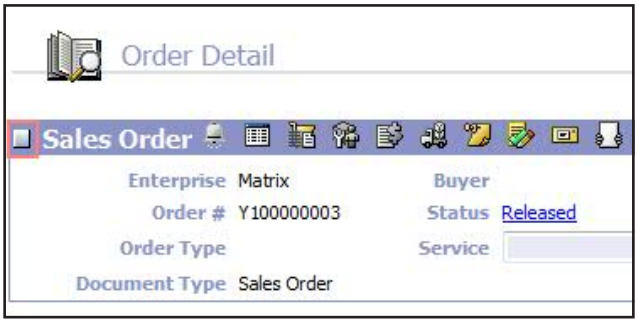
(Continued)

Instructions

....(Continued)

Procedure to Create and Confirm a Shipment

1. Open the **Order Details** screen for the Order that you created now. The Order is in the **Released** status.
2. Click from the Sales Order panel header bar. The **Order** options display as shown in the following figure.



3. Click **Releases(1)**. The **Order Releases For Order** window displays.
4. Click the **Release # 1** hyperlink from the Order Releases panel. The **Order Release Details** window displays.
5. Click **Create Shipment** from the Order Release panel. The Shipment Details window displays. The shipment is in the **Shipment Created** status.

   The shipment is a separate document that is created. This document is now moving through the Outbound Shipment Pipeline. Since no ESP parameters or Routing Guidelines is specified, the next applicable status for the shipment is Shipment Created.

(Continued on next page)

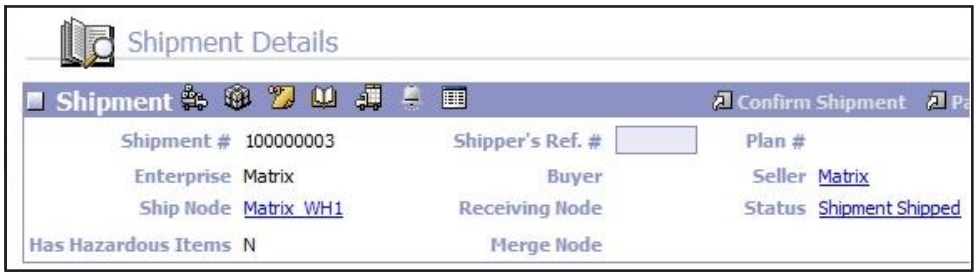
Exercise 2.3.1: Fulfilling an Order

(Continued)

Instructions

....(Continued)

6. To confirm the shipment, click **Confirm Shipment** from the **Shipment** panel. The status changes to the **Shipment Shipped** status, as shown in the following figure.



(This is because the shipment is moving through the **Outbound Shipment Pipeline** and the next applicable status after the shipment is confirmed, is the **Shipment Shipped** status.)

7. Click **Close** in the **Shipment Details** window and click **Close** in the **Order Release Details** window.

Note

The **Order Releases** status is displayed as **Shipped**.

8. Click **Close** in the **Order Release For Order** window.

Note

The **Order Release For Order Status** is displayed as **Shipped**.

9. The **Order Details** screen for the order displays the status as **Shipped**.

   (This is because the Sales Order is still moving the Sales Order Fulfillment Pipeline. After the Order is included in a shipment and the shipment is confirmed, the next applicable status for the Sales Order is the Shipped status.)

Result

The order is in the Shipped status in the Order Detail screen.

Optional Exercise

Fulfill an Order

Assume that you are required to create, confirm, schedule, and ship an Order for Item ID 100001 from the Node Matrix_WH1. The seller is Matrix-B. The Order number should be specified as Y1000000__.

Instructions

1. Ensure that adequate quantity of Item ID 100001 exists in the system.
2. Launch Applications Manager.
3. Create a Draft Order.
4. Confirm the Order.
5. Schedule and Release the Order.
6. Create and confirm a shipment for the Order.

Result

If you perform an Order search, the Order Y1000000__ should be in the Shipped status.

Lesson Review

Completed Objectives

This lesson was designed to enable you to:

- Describe an Order Fulfillment process.
- Release Orders.
- Create and Confirm Shipments.
- Consolidate Shipments.