

## ***Unit 5: Overview of Process Modeling***

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In this unit, you will learn how to model your business requirements appropriately and accurately using the features of Process Modeling. You will also learn how to configure a process type to provide a standard set of workflow entities and rules to model a defined business process for a document.

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## LESSON 5.1: Overview of Process Modeling

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### Introduction

This lesson provides you with an overview of the process modeling features available in Sterling Selling and Fulfillment Foundation.

Additionally, you will learn how a business process work flow can be set up for an organization.

### Lesson Objectives

This lesson is designed to enable you to:

- Discuss the concept of process modeling.
- Describe the process modeling components.
- Configure a process type.
- List the process type pipelines provided by default.

### References

For more information on process modeling, refer:

- [http://www.ibm.com/support/knowledgecenter/SS6PEW\\_9.5.0/com.ibm.help.proc.model.concepts.doc/productconcepts/c\\_ProcessModelingConcepts.html](http://www.ibm.com/support/knowledgecenter/SS6PEW_9.5.0/com.ibm.help.proc.model.concepts.doc/productconcepts/c_ProcessModelingConcepts.html)

Navigate to **Sterling Order Management 9.5.0 > Configuring shared components and users > Process modeling > Considerations**

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## Introduction to Process Modeling Concepts

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### Introduction

Sterling Selling and Fulfillment Foundation provide features that enable organizations to model their business requirements appropriately. One of these features is Process Modeling which enables you to set up the business work flow of orders, inventory changes, returns, or many other system events. These workflows comprise the entire set of business logic that defines how Sterling Selling and Fulfillment Foundation handles business documents and transacts with them. It provides components that enable businesses to rapidly model, change, activate, and deactivate unique business scenarios.

### Role of a Hub

A Hub is the center or focal point of activity. In Sterling Selling and Fulfillment Foundation, the Hub role is the central organization around which all other organizations are built. Regardless of how a business is modeled, a Hub is required and there can be one identified Hub for the entire business.

The Hub is the central point. Businesses model the Hub to maintain the list of all items sold, inventory and, service capacity available for all Enterprises and making the information available across Enterprises.

As with all organizations in Sterling Selling and Fulfillment Foundation, the Hub might also assign itself multiple roles (for example, the Hub might be an Enterprise, a Seller, and a Node).



#### Note

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The Hub determines the business model and can configure the roles for all the other organizations.

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- Enterprises, which define rules
- Sellers, which sell items
- Buyers, which buy items
- Nodes, which carry inventory and service capacity
- Carriers, which move goods



#### Important

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When an organization assumes the role of 'Template', other roles Buyer, Hub, and Carrier is disabled. This is because a Template organization cannot be a Buyer or Carrier but can plan additional logical roles as an Enterprise, Seller, or Node.

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## Introduction to Process Modeling Concepts

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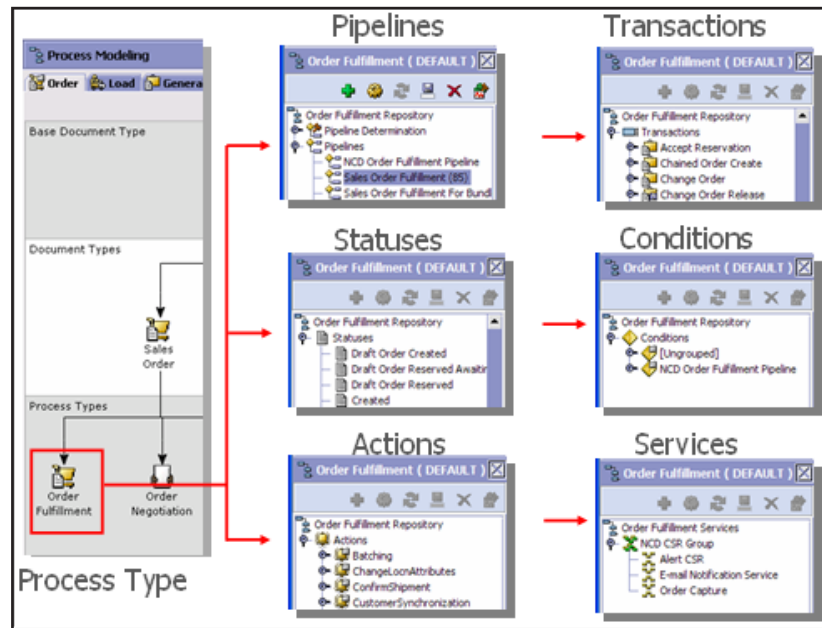
### Role of an Enterprise

In Sterling Selling and Fulfillment Foundation Business Model, organizations who play the role of an Enterprise control the business rules that is associated with the Sterling Selling and Fulfillment Foundation documents such as Sales Orders and Work Orders.

Enterprises are modeled as high as possible in the organizational structure, since they define the rules for all other players in that Enterprise. If a business has multiple business units that follow different business rules, however, each business unit might be defined as a separate Enterprise. Enterprises can inherit the default configuration from the Hub. However, in certain situations they can override the Hub configuration by setting up specific business rules.

### Process Modeling Layout

The following figure shows the different components of Process Modeling.



Note

Because Sterling Selling and Fulfillment Foundation interprets business rules at the Enterprise level, every organization in a multi-Enterprise business model must either be an Enterprise, or designate another Enterprise as its primary Enterprise.

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## Introduction to Process Modeling Concepts

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### Components

A typical Business Process Model consists of the following eight components:

- Document Types - ***administer the rules***
- Pipelines - ***define the processes***
- Statuses - ***indicate the document state***
- Conditions - ***enable decision making***
- Transactions - ***perform the actual task***
- Events and Actions - ***represent processes and programs***
- Services - ***transport the data***
- Repositories - ***contain data***

These components are explained in the following sections.

### Benefits

Sterling Selling and Fulfillment Foundation enables organizations to model their business requirements accurately and completely. Using Process Modeling provides the following benefits:

- Interactive visual method for defining standard business processes.
- Default features for creating business workflows.
- Easy-to-use workflow components that can be combined to create new components.
- Ability to extend and customize the existing process modeling components.



Note

Login as the HUB administrator of General Holdings Incorporated. Use admin as the Login ID and password as the Password.

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## Introduction to Process Modeling Concepts

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### Process Modeling Tasks

You can configure the Process Modeling Workflow components for modeling any business. In order to accomplish the configuration, you must complete the necessary tasks:

- Loading process-type repositories
- Creating, modifying, and deleting:
  - Statuses
  - Pipelines
  - Transactions
  - Actions
  - Conditions
  - Event to a Transaction
- Adding a Pickup and Drop Status to a Transaction
- Deleting a Pickup and Drop Status from a Transaction
- Setting up Event Handlers and Status Monitoring Rule definitions
- Viewing all entities affected by a Condition

### Procedure to Navigate to Process Modeling

1. Point the browser to: `http://<hostname:port>/smcfs/console/login.jsp`

Where,

*hostname* = computer name or IP address of the computer where Sterling Selling and Fulfillment Foundation is installed.

*9080* = listening port of the computer where Sterling Selling and Fulfillment Foundation is installed.

2. Type the **Login ID** and **Password** and Click **Sign In**.



Important

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Enterprise users who maintain an enterprise can access Applications Manager through `http://<Sterling Selling and Fulfillment Foundation installation server>/smcfs/console/login.jsp`

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3. Choose **Configuration > Launch Applications Manager** from the menu bar.
  4. Navigate to **Applications > Application Platform** and double-click **Process Modeling**. The Process Modeling (DEFAULT) screen displays.
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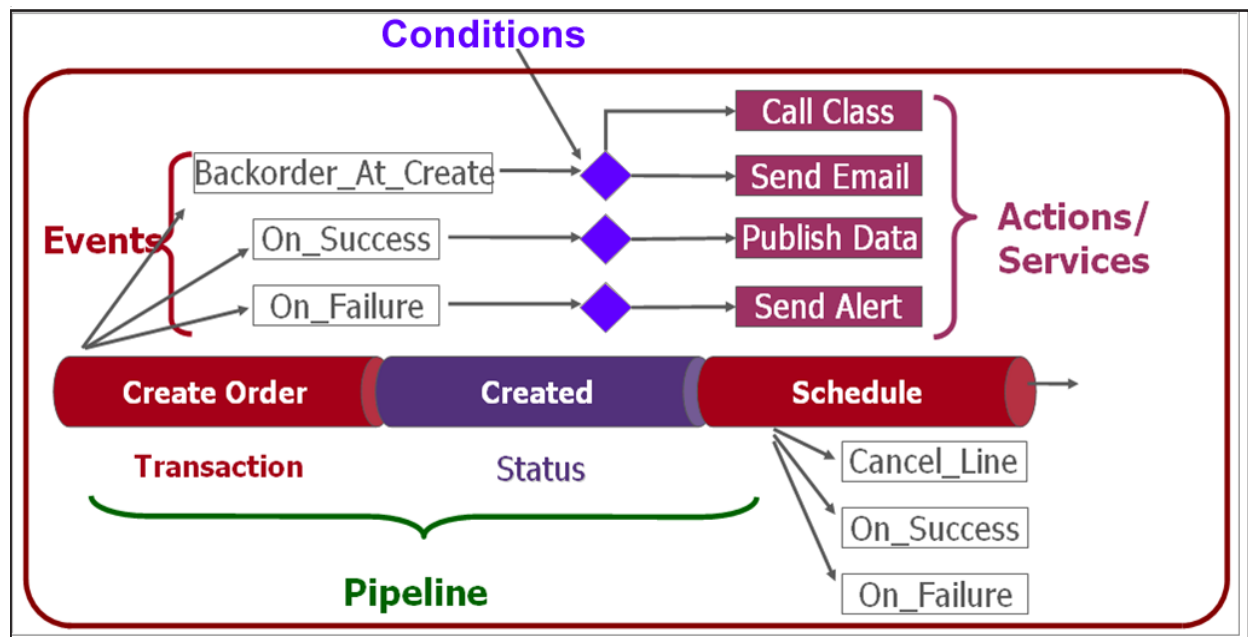
## Components of Process Modeling

### Overview

The Business Process Workflow components are tightly linked together. The eight components are dependent on the other components to process their predefined task.

### Process Modeling Components Representation

The following figure shows how the components function together.



Note

An example of a document that administers rules for internal processes - the count document specifies the rules for counting inventory, and the Load document specifies rules for loading shipments onto trailers.

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## Components of Process Modeling

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### Document Types

Sterling Selling and Fulfillment Foundation uses documents to carry process rules through a configured work flow. For example, the:

- Sales Order document carries the rules for capturing and processing sales orders.
- Work Order document carries the rules for processing work orders to provide services.
- Purchase Order document administers the rules for authorizing the purchase of goods from suppliers.

In addition to documents for administering Order Management, the Sterling Selling and Fulfillment Foundation includes documents that administer rules for internal processes. Businesses using the Sterling Selling and Fulfillment Foundation can use the standard rules that ship with the product, or configure (customize) those rules to meet their specific business requirements.

### Process Types

A Business Document, such as an order, goes through a series of defined processes. These processes are called process types. Process types provide a standard set of work flow entities and rules to model a defined business process for a document.

The process type is a part of the generic work flow engine. This work flow engine supports the extensible pipelines and work flow available within Sterling Selling and Fulfillment Foundation. You can configure process type details to significantly change the behavior of a process type for a document.

### Transactions

Each process type has a set of base Transactions defined for it. A Transaction is a logical unit of work that is necessary for performing an activity. Base Transactions are predefined Transactions that contain information about how the Transaction behaves. It provides information such as:

- How many copies of a Transaction can be kept in a process type.
- Whether, it can have configurable base pick and Drop Statuses.

Base Transactions can be used to create new Transactions. These Transactions can be changed within the limits that are defined in the base Transaction.

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## Components of Process Modeling

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### Statuses

When a document moves through a pipeline, it changes its state. Statuses are the actual states that the document assumes. For example, Created and Scheduled. A Transaction can contain the following two types of Statuses:

- Drop Status - A document moves into a Drop Status when the Events and Conditions of a Transaction is completed.
- Pickup Status - A Pickup Status takes the document from the previous Drop Status and moves it through the next Transaction.

### Condition

A Condition matches document type attributes against decision points and routes the document to the appropriate path based on the specified attribute and value combinations. The document type attributes for which Conditions can be created are pre-defined in Sterling Selling and Fulfillment Foundation. You can use these attributes in any combination or you can create Conditions that run the appropriate application logic for specific circumstances. You can create stand-alone conditions that can be applied to the appropriate application decision points.

### Actions and Events

An Action is a process or a program triggered by an Event. These processes and programs send Alert Notifications and automatically resolve issues.

An Event is a specific occurrence in a Transaction - often a Status change or a generated alert. Events are associated with Conditions and Actions which trigger Sterling Selling and Fulfillment Foundation. For example, releasing an order, or canceling an Order Line.

### Process Type Pipeline

A process type pipeline is a series of Transactions and Statuses that guide document types, such as Sales Order and Purchase Order, through a related process. A pipeline consists of the different Statuses a document goes through during fulfillment.

Sterling Selling and Fulfillment Foundation is configured with default pipelines for each process type. You can use these default pipelines as the basis for creating new pipelines as per the Hub and the Enterprises.

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## Components of Process Modeling

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### Services and Repositories

A Service is a pre-defined flow triggered by an Action, usually to communicate with an external system/organization.

A Repository is a logical collection of entities that define the Business Process Workflow. The following entities are included in a Repository:

- Pipelines
  - Transactions
  - Statuses
  - Conditions
  - Actions
  - Services
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## Base Document Types

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### Introduction

As explained earlier, a base document type defines the business documents that Sterling Selling and Fulfillment Foundation handles, and defines a common storage structure for all derived document types. The base document types carry information through a configured work flow process and specifies the business documents that is handled by Sterling Selling and Fulfillment Foundation.

### Base Document Types

Sterling Selling and Fulfillment Foundation provides eight default base document types. The following base document types are pre-defined and cannot be added to.

- General
- Order
- Load
- Count
- Container
- Wave
- Work Order
- Opportunity

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## Base Document Types

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### Process Types Associated with Base Document Types

Each base document type is associated with a set of document types, which in turn is associated with a set of process types. These process types define the standard business processes that a base document type follows. The following table lists the process types defined in Sterling Selling and Fulfillment Foundation (for the base document types):

Base Document Type	Associated Process Type For...
Order	<ul style="list-style-type: none"><li>■ Order Fulfillment and Negotiation</li><li>■ Inbound and Outbound Shipment</li><li>■ Sales Order Receipt</li><li>■ Planned Order Execution and Negotiation</li><li>■ Reverse Logistics</li><li>■ Return Shipment and Receipts</li><li>■ Template Order</li><li>■ Purchase Order Execution and Negotiation</li><li>■ Purchase Order Receipt</li><li>■ Transfer Order Execution and Delivery</li><li>■ Transfer Order Receipt</li><li>■ Master Order and Quote Fulfillment</li></ul>

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## Base Document Types

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### Process Types Associated with Base Document Types

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Base Document Type	Associated Process Type For..
Load	Load Execution
General	<ul style="list-style-type: none"><li>■ General</li><li>■ WMS Putaway</li><li>■ WMS Layout Definition</li><li>■ WMS Inventory</li><li>■ Trailer Loading</li><li>■ Task Execution</li><li>■ Move Request Execution</li><li>■ Manifesting</li><li>■ Over Pack Build</li><li>■ Resource Planning</li></ul>
Count	Count Execution
Container	Pack Process
Wave	Outbound Picking
Work Order	VAS Process
Opportunity	Opportunity Fulfillment

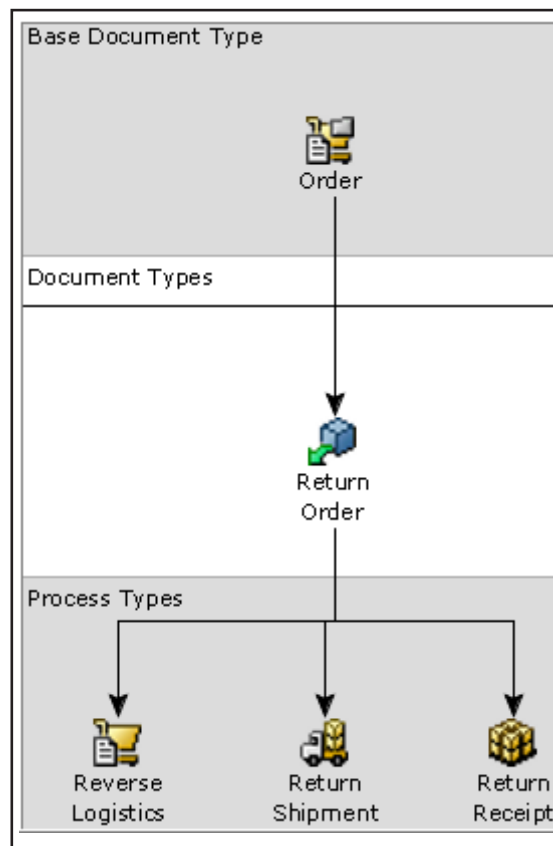
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## Base Document Types

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### Association Layout

The figure represents the mapping between the base document types, document types, and process types.



## Document Types

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### Introduction

Document types are specific Business Documents that are derived from a base document type. For example, document types such as Transfer Order and Return Order are derived from the base document type - Order.

Sterling Selling and Fulfillment Foundation provides you with a graphical representation of each base document type and its Document and process types.

### Document Types Associated with Base Document Types

Each base document type is associated with a predefined set of document types. The following table lists the base document types along with the associated document types.

Document Type	Description of the Document Type
<b>Order (Base Document Type)</b>	
Sales Order	Used to sell items or Services, either from Business-to-Business (B2B) or Business to Customer (B2C).
Planned Order	Used to plan an order that takes place in the future.
Return Order	Used for returning items to the seller.
Template Order	Used to create a template that future orders can be modeled from.
Purchase Order	A business purchases items or services from another business.
Transfer Order	Used to transfer items from one organization to another Example: Warehouse to a distribution center, Warehouse to another warehouse, distribution center to a store.
Master Order	Used to sell items that ship in a timed sequence, either from Business-to-Business or Business to Customer.
Quote	Used to provide quotes for a sales opportunity.
<b>Load (Base Document Type)</b>	
Load	Used for a delivery plan which consolidates multiple shipments into a single delivery.

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## Document Types

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### Document Types Associated with Base Document Types

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Document Type	Description of the Document Type
<b>General (Base Document Type)</b>	
General	Used for Transactions and Services that do not fall under other document types.
Putaway	Used for Transactions and Services that are used for the putaway related processes (to specify the location where the products coming into the warehouse would be putaway).
Layout	Used for Transactions and Services that are used for configuring the warehouse layout and related processes.
Inventory	Used for Transactions and Services that are used for inventory tracking, maintenance, and related processes.
Trailer	Used for Transactions and Services that are used for the trailer loading and unloading related processes.
Task	Used for Transactions and Services that plan all tasks that need to be done within a warehouse.
Move Request	Used for Transactions and Services that describe how products are moved from one location to another within a warehouse.
Manifest	Used for Transactions and Services related to the manifest process, and provide the carrier that describes what is in the shipment.
Resource Planning	Used for Transactions and Services that relate to resource planning purpose, which involves planning capacity and resources.
Over Pack	Used for Transactions and Services that relate to the overpacking process, which involves packing one or more outbound containers into another outbound container.
<b>Count (Base Document Type)</b>	
Count	Used for Transactions and Services that relate to performing a physical count of inventory in the warehouse.
<b>Container (Base Document Type)</b>	
Container	Used for Transactions and Services that are related to containers for outbound pack.

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## Document Types

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### Document Types Associated with Base Document Types

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Document Type	Description of the Document Type
<b>Wave (Base Document Type)</b>	
Outbound Picking	Used for Transactions and Services that relate to the outbound picking process.

Document Type	Description of the Document Type
<b>Work Order (Base Document Type)</b>	
Work Order	Used in two different contexts: <ul style="list-style-type: none"> <li>■ WMS: Tasks that are performed in a warehouse, typically item-related tasks (tagging, kitting, and so on).</li> <li>■ DOM: When a Provided Service is ordered, a Work Order is created for tasks such as installation and repairs.</li> </ul>

Document Type	Description of the Document Type
<b>Opportunity (Base Document Type)</b>	
<b>Opportunity</b>	Used for a delivery plan which consolidates multiple shipments into a single delivery.

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## Document Types

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### New Document Type Creation

You might need to create document type whenever the business demands. To create a document type, you can save an existing document type as a new custom document type.

The new document type retains all the process types associated with the original document type. The following components are copied to the new document type:

- Database tables at the document type level, and
- Database table at the process type level.

### Create a New Document Type

#### **Procedure to Create a New Document Type**

1. Select the **Order**, **Load**, or **General** tab in the Process Modeling screen. You can view the corresponding Process Modeling Tree for that base document type.
2. Right-click on the applicable document type in the **Document Types** swimlane and choose Save As.
3. In new **Document Type** window, enter the new document type identification number and a brief description.
4. For each **Process type** associated with the document type you are saving, enter the process type, the process type name, and a brief description.
5. Choose the **Save** icon. The new document type displays in the **Document Type** tree with the associated process types.



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#### Note

An **.ex** extension is automatically appended to the document type and process type values you have specified.

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## Document Types

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### **Document Type Attributes Associated With a New Document Type**

The following document type attributes are copied to the new document type:

- Document parameters
- Document templates
- Charge categories
- Charge names
- Common codes
- Order Line types
- Purge criteria
- Business rules
- Receiving disposition

### **Process Type Attributes Associated With a New Document Type**

The process type Level attributes that are copied to the new document type are:

- Process Type rules,
  - Date types
  - Process Task Types
  - Statuses.
  - Status inventory types
  - Modification types
  - Modification rules
  - Transactions
  - Transaction Pickup Statuses
  - Transaction Drop Statuses
  - Events
-

## Process Types

### Overview

process type is a standard set of workflow entities and rules that models a defined business process for a document. Each base document type has a defined set of base process types.

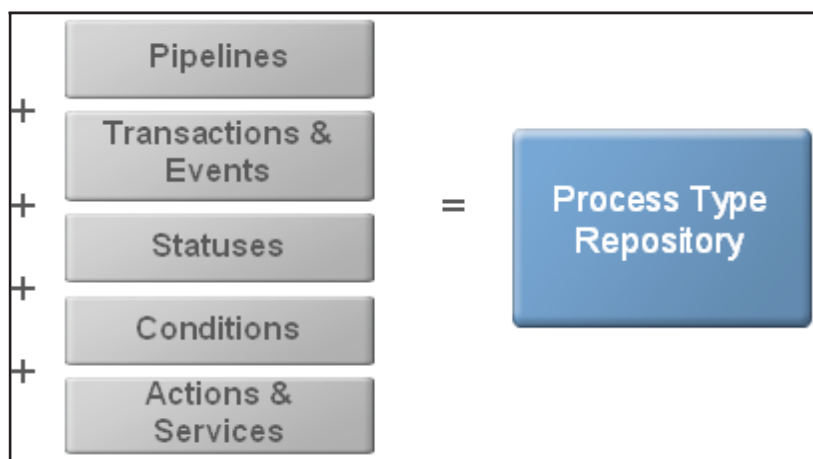
#### Example

The Order base document type has the following base process types defined:

- Fulfillment
- Negotiation
- Delivery

### Representation

The following figure provides a graphical representation of a process type.



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## Process Types


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### Process Types Related Information

Sterling Selling and Fulfillment Foundation enables you to define the templates and primary information parameters that are specific to a process type. These definitions are applied to a document throughout its lifecycle in the process type. Sterling Selling and Fulfillment Foundation enables you to define the process type parameters as shown in the following figure. These parameters are applied throughout the document lifecycle.

The screenshot shows the 'Fulfillment Process Type Details' dialog box. It has two tabs: 'Primary Info' and 'Templates'. The 'Primary Info' tab is active. It contains several input fields and checkboxes. The 'Process Type' is set to 'ORDER\_FULFILLMENT' and 'Process Type Name' is 'Order Fulfillment'. The 'Description' is 'Order Fulfillment'. The 'Document Classification' is a dropdown menu set to 'Sales Order'. There are two checkboxes: 'Use As A Template Order' (unchecked) and 'Validate Item During Order Creation/Modification' (unchecked). The 'Driver Date' section has two radio buttons: 'Requested Ship Date' (unchecked) and 'Requested Delivery Date' (checked). Below these are four tabs: 'Order Creation', 'Inventory', 'Financials', and 'Related Entities'. The 'Order Creation' tab is active. It contains three checkboxes: 'Use Template Order For Defaulting' (checked), 'Log Audits For Draft Order' (unchecked), and 'Default Delivery Method Based On Catalog' (checked). There are also two dropdown menus: 'Template Document Type' set to 'Template Order' and 'Refund Fulfillment Order Document Type' set to 'Sales Order'. At the bottom right, there is a green circular button with a document icon.

#### Procedure to Define a Process Type's Primary Info

1. Select the **Order** tab from the Process Modeling screen.
2. Right-click **Order Fulfillment** process type in the process types swimlane.
3. Choose **Details**. The Fulfillment Process Type Details screen displays.
4. The key fields are explained as follows:
  - **Use as a Template Order** - allows the documents in this process type to be used as a template for another document.
  - **Validate Item During Order Creation/ Modification** - validates the item IDs and UOMs against the Catalog Management application (or external Catalog Management application) upon order creation or adding an Order Line.
  - **Driver Date** - enables you to specify dates that drive the shipping and delivery tasks.
5. Click  to save the changes.

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## Process Types

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### Process Types Related Information

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#### Procedure to Define the Inventory Parameters

1. Select the **Inventory** tab from the Fulfillment Process Type Details screen.

2. The key fields are explained as follows:

- **Demand Type For Schedule** - specify the Demand Type when, the Schedule Order Time-Triggered Transaction starts. The Supply Types associated with the Demand Type are considered for scheduling inventory to satisfy demand optimization.
- **Demand Type for Release** - specify the Demand Type when, the Release Order Time-Triggered Transaction starts. The Supply Types associated with the Demand Type in the Inventory Considerations table are considered for release inventory calculations.
- **Allow Inventory Updates For The Seller Organization** -enables the system for inventory updates for the Seller. Similarly, inventory updates are for the Buyer organization.
- **Allow Inventory Check During Schedule And Release** - allows the use of supply and demand data that is stored in the system to calculate availability during the schedule and release processes.



#### Note

If both, Allow Price Calculation For Draft Orders and Allow Price Calculation For Confirmed Orders are unchecked, then price calculations on orders is not performed even if they have price lists associated with them. If both fields are selected, price calculations can be performed at any point in an order's creation cycle. If only Allow Price Calculation For Draft Orders field is selected, price calculations is done at the time of draft order creation. If only Allow Price Calculation For Confirmed Orders field is selected, price calculations are done only after orders have been confirmed (example, after a quantity adjustment).

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## Process Types

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### Process Types Related Information

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#### Note

Chained Procurement Transfer Order document type - The procurement transfer order scenario occurs when the final shipping point to the customer is one of your Nodes. It will not have enough stock and another Node within the organization should replenish it.

- **Create Reservation On Order Creation** - enables reservations during order creation. However, this field does not apply to Procurement Orders.
- **Procurement Placed Supply Type** - enables selection of the supply type to be considered when a procurement order is placed.
- Save the changes

#### Procedure to Define the Financials Parameters

1. Select the **Financials** tab from the Fulfillment Process Type Details screen.

Order Creation	Inventory	Financials	Related Entities
<input checked="" type="checkbox"/> Allow Invoice Creation		<input type="checkbox"/> Allow Pro Forma Invoice Creation For Shipments	
<input checked="" type="checkbox"/> Allow Payment Processing		<input checked="" type="checkbox"/> Allow Price Calculation For Draft Orders	
<input checked="" type="checkbox"/> Allow Price Calculation For Confirmed Orders			

2. The key fields are explained as follows:
  - **Allow Invoice Creation** - enable invoice creation for orders or shipments.
  - **Allow Pro Forma Invoice Creation For Shipments** - enables creation of Pro Forma invoice creation for shipments. However, this field is only applicable to shipments created from orders.
  - **Allow Price Calculation For Draft Orders** - enables price association with an item during draft order creation.
  - **Allow Price Calculation For Confirmed Orders** - enables pricing to be done upon draft order confirmation and order creation.
3. Save the changes

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## Process Types

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### Process Types Related Information

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- **Create Reservation On Order Creation** - enables reservations during order creation. However, this field does not apply to Procurement Orders.
  - **Procurement Placed Supply Type** - enables selection of the supply type to be considered when a procurement order is placed.
4. Save the changes.

### Procedure to Define the Related Entities Parameters

1. Select the **Related Entities** tab from the Fulfillment Process Type Details screen.



Order Creation	Inventory	Financials	Related Entities
<input checked="" type="checkbox"/> Allow Chained Order Creation			Chained Procurement Inbound Order Document Type: Purchase Order
<input type="checkbox"/> Consolidate New Order Releases			Chained Procurement Transfer Order Document Type: Transfer Order
<input checked="" type="checkbox"/> Allow Propagation Of Changes To Derived Par...			<input checked="" type="checkbox"/> Create Shipments For Products Being Delivered In Addition To Work Or...

2. The key fields are explained as follows:
- **Allow Chained Order Creation** - enables chained orders creation during scheduling.
  - **Chained Procurement Inbound Order Document Type** - Select the document type for the chained order document in a procurement inbound order scenario.
  - **Note:** This scenario occurs when the final shipping point to the customer is one of your Nodes and it does not have enough stock and needs to be replenished from an External Organization Node.
  - **Consolidate New Order Releases** - enables the system consolidate new releases into existing releases that are not processed.
  - **Chained Procurement Transfer Order Document Type** - enables selection of the document type for the chained order document in a procurement transfer order scenario.
  - **Allow Propagation Of Changes To Derived Parent** - allows propagation of changes from a derived order to its derived parent when the appropriate listener Transaction is configured. If this field is not selected, a derived order quantity can be greater than the parent order that is derived.
  - **Create Shipments For Products Being Delivered In Addition To Work Order** - If this field is checked, shipments should be created for all the products, which are delivered along with the work order. If the flag is unchecked, you cannot create releases since releases are not required without shipments.
3. Save the changes.

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## Process Types

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### Process Type's Templates

Document templates are critical components of Sterling Selling and Fulfillment Foundation. The Template Type indicates how it is used. Typically, templates are required in scenarios where a set of attributes of an entity must be processed.

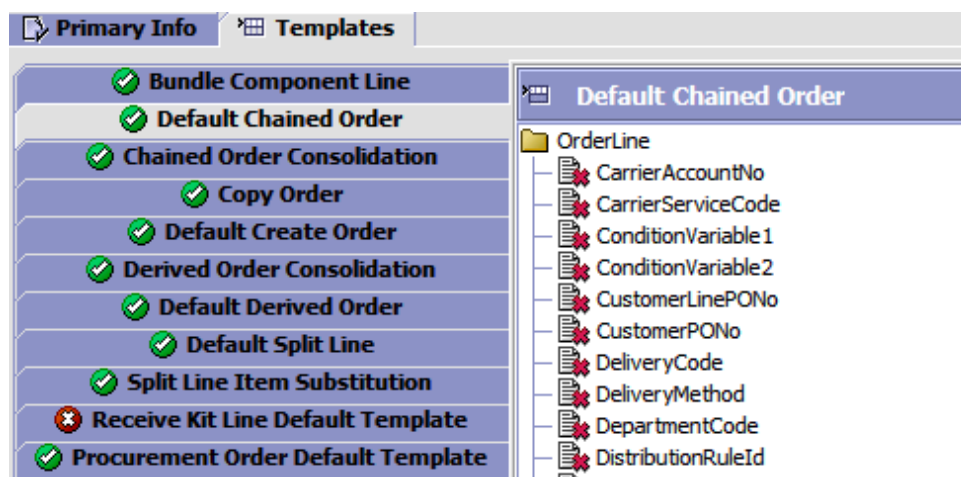
#### Example

When calling the `copyOrder()` API, the Copy Order template is used to indicate the order attributes that is copied. You can determine which XML attributes and elements should be included or excluded from master template XMLs (for a fulfillment process type.)

#### Procedure to Define a Process Type's Templates

1. Select the **Order**, **Load**, or **General** tab from the Process Modeling screen.
2. In the Process Types swimlane, right-click on the applicable process type and choose **Details**.
3. Choose the **Templates** tab.

The available master templates for the selected fulfillment process type shows as tabs. These master templates are retrieved from the `YFS_BASE_DOCUMENT_ TYPE` table.



## Preconfigured Process-Type Pipelines

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### Overview

A process type pipeline is a series of Transactions and Statuses that guides document types (such as a Sales Order) through a predefined process. A pipeline consists of the different Statuses a document goes through during fulfillment, negotiation, shipment, or receipt. You can also set up Transactions with Events, Actions, and Conditions that are related to the pipeline you configure.

### Default Process Type Pipelines

Sterling Selling and Fulfillment Foundation provides several default pipelines. You can always create additional process type pipelines to define your business process workflow and modify the default pipelines. The following sections list the document type along with the associated pipelines provided by default.

### Sales Order

The process type pipelines provided by default for the Sales Order document type are listed:

Process Type	Pipeline
Order Fulfillment	Sales Order Fulfillment Sales Order Fulfillment for Bundle Parent Sales Order Service Fulfillment Sterling Call Center and Store Sales Order Fulfillment Sterling Call Center and Store Sales Order Service Fulfillment
Order Negotiation	Order Negotiation
Outbound Shipment	Outbound Shipment
Sales Order Receipt	Sterling Call Center and Store Order Shipment

## Preconfigured Process-Type Pipelines

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### Planned Order

The process type pipelines provided by default for the Planned Order document types are listed:

Process Type	Pipeline
Planned Order Execution	Planned Order Execution
Planned Order Negotiation	Planned Order Negotiation

### Return Order

The process type pipelines provided by default for the Return Order document types are listed:

Process Type	Pipeline
Reverse Logistics	Consumer Returns Pipeline Reverse Logistics Pipeline Reverse Logistics Pipeline for Bundle Parent Reverse Logistics Service Pipeline Sterling Call Center and Store Reverse Logistics Pipeline Sterling Call Center and Store Reverse Logistics Pickup Service Pipeline
Return Shipment	Returns Shipment
Return Receipt	Return Receipt

**Note**

The Template Order document type does not have any associated pipelines.

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## Preconfigured Process-Type Pipelines

(Continued)

### Purchase Order

The process type pipelines provided by default for the Purchase Order document types are listed:

Process Type	Pipeline
Purchase Order Execution	DCS Integration Drop Ship Purchase Order Execution Drop Ship Purchase Order Execution for Bundle Parent Purchase Order Execution Purchase Order Execution for Bundle Parent
Purchase Order Negotiation	Purchase Order Negotiation
Inbound Shipment	Inbound Shipment
Purchase Order Receipt	Purchase Order Receipt

### Transfer Order

The process type pipelines provided by default for the Transfer Order document types are listed:

Process Type	Pipeline
Transfer Order Execution	Transfer Order Execution
Transfer Order Delivery	Transfer Order Delivery
Transfer Order Receipt	Transfer Order Receipt

(Continued on next page)

## Preconfigured Process-Type Pipelines

---

(Continued)

### Master Order Fulfillment

The process type pipelines provided by default for the Master Order fulfillment document types are listed:

Process Type	Pipeline
Master Order Fulfillment	Master Order Fulfillment

### Quote Fulfillment

The process type pipelines provided by default for the Quote Fulfillment document types are listed:

Process Type	Pipeline
Quote Fulfillment	Quote Fulfillment

---

## Walk-through: Navigate a Pipeline

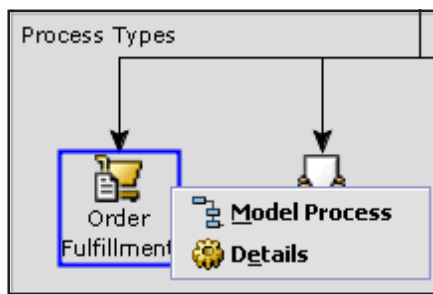
---

### Procedure to Navigate to a Pipeline

Watch as the Instructor demonstrates how to browse to the Sales Order pipeline.

#### Instructions

1. Launch **Application Platform**.
2. Double-click **Process Modeling**.
3. The Process Modeling (DEFAULT) screen displays.
4. Select the **Order Fulfillment** process type under the Sales Order document type.
5. Right-click **Order Fulfillment** and select **Model Process**.
6. The Application Rules side panel shows a list of Sales Order Fulfillment pipelines.



## Check Your Understanding

---

The following set of multiple choice questions enable you to evaluate your understanding of the concepts covered and reinforce the content presented so far. The answer key for these questions are provided in the Appendix of this course.

### Questions

- 1. Which of the following views are available in Application Console?**
    - a. Search View
    - b. List View
    - c. Detail View
    - d. All of the Above
  - 2. What mechanism is used to guide document types through a series of components such as transactions and conditional tests**
    - a. Process Type
    - b. Workflow
    - c. Pipeline
    - d. All of the above
  - 3. Which of the following is not a base document type?**
    - a. General
    - b. Load
    - c. Order Fulfillment process type
    - d. Order
-

## Lesson Review

---

### Completed Objectives

This lesson has been designed to enable you to:

- Discuss the concept of Process Modeling.
  - Describe the Process Modeling components.
  - Configure a process type.
  - List the default process type pipelines.
-



## ***Unit 6: Configuration Basics***

---

In this unit you will learn how to configure different types of Statuses and Conditions, along with how to configure different types of Services, Events, Actions and Transactions. This unit also teaches you the Pipeline Determination Rules and allows you to configure a simple Pipeline. Additionally, you will learn to create a Pipeline for a specific Process Type that you are working with.

---

## LESSON 6.1: Statuses and Conditions

---

### Introduction

This lesson provides you with an overview of Statuses. Also, learn how to configure the different types of Statuses and Conditions.

### Lesson Objectives

This lesson is designed to enable you to:

- Describe Statuses.
- Configure different types of Statuses.
- Describe Conditions.
- Configure different types of Conditions.

### References

For more information on process modeling, refer:

- [http://www.ibm.com/support/knowledgecenter/SS6PEW\\_9.5.0/com.ibm.help.proc.model.concepts.doc/productconcepts/c\\_ProcessModelingConcepts.html](http://www.ibm.com/support/knowledgecenter/SS6PEW_9.5.0/com.ibm.help.proc.model.concepts.doc/productconcepts/c_ProcessModelingConcepts.html)  
Navigate to **Sterling Order Management 9.5.0 > Configuring shared components and users > Process modeling > Considerations**
-

## Overview of Statuses

---

### Definition

When a document is processed, it maintains information about its state of processing, called the Status of the document. When a Sales Order is processed; for example, the Order Fulfillment pipeline can maintain the document in one of over two dozen statuses, such as: Created, Canceled, Shipment Delayed, Shipped, or Back Ordered.

Because documents maintain Statuses, Processing Rules can be set based on that document status. For example, rules might be defined for a Sales Order to start a specific action (such as sending an email to the customer) if the status of that Sales Order document is Back Ordered.

Each Pickup and Drop Status is associated with a code that uniquely identifies the Status such as 1100, 1040. Depending on your business requirements, you might require additional Custom Statuses. However, such Statuses are not stand-alone and follow the Status from which they extend.

### Statuses in a Pipeline

Each document moves through a predefined Pipeline in Sterling Selling and Fulfillment Foundation. During this process, the document assumes different Statuses which are maintained in the Pipeline repository.



#### Important

---

Enterprises cannot modify the default Statuses. However, they can extend or derive from the original Status.

---

### Example

A Sales Order flows through a set of Transactions and Statuses until its completion. This chain of Transactions that is combined with the Sales Order Statuses is called the Sales Order Pipeline. Each Sales Order Pipeline begins with a Transaction that creates a Draft Sales Order and ends with a Transaction that closes the Sales Order. The Sales Order Status describes its state as it moves it from one Transaction to another.

---

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## Overview of Statuses

(Continued)

### Statuses List

The following Statuses are commonly used in a Sales Order Pipeline. However, it might be different depending on your Business Process workflow:

Draft Order Created	Created
Reserved	Accepted
Back Ordered	Scheduled
Chained Order Created	Work Order Created
Released	Sent To Node
Order Delivered	Receipt Closed

### Pickup and Drop Status

As mentioned, the Pickup, and Drop Status applies to each Transaction. The Drop Status moves a document from the current Transaction to the next Transaction Pickup Status. A Pickup Status pulls the document from the preceding Drop Status and brings it into the Transaction. Each Pickup and Drop Status is identified with a unique number.



#### Important

You cannot add Pickup Statuses or Drop Statuses to a system Transaction. However, you can use an Extended Status as a Pickup or Drop Status until its Base Status is included in the Transaction Pickup or Drop Statuses. You cannot delete an Extended Transactions Pickup Status if it is the Transactions' only Pickup Status, and Drop Statuses exist for the Transaction.

(Continued on next page)


## Overview of Statuses

(Continued)

### Pickup and Drop Status

....(Continued)

#### Procedure to Create an Extended Status

1. Select the **Order**, **Load**, or **General** tab in the Process Modeling screen.  
You can view the corresponding Process Modeling Tree for that Base Document Type.
2. Right-click on the applicable Process Type in the Process Types swimlane and choose **Model Process**.
3. Choose the **Statuses** tab at the bottom.
4. Expand the **Statuses** section.
5. Select a Status and  choose. The Status Detail screen shows the work area.
6. Type the extension number in the **Status** text box. This number must be sequential with any other existing Extended Status.
7. Type the name of the Extended Status in the **Status Name** text box as shown in the figure and click **Save**. Extended Status is created.



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## Overview of Statuses

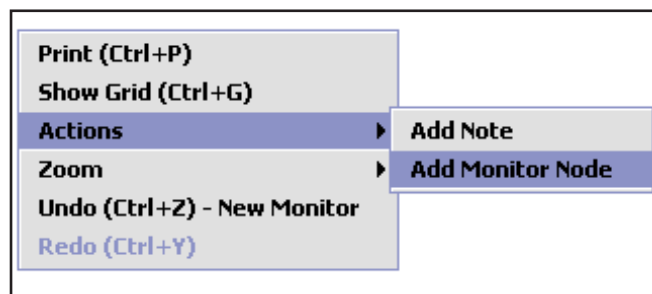
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### Status Monitoring Rule

The Status Monitoring Rule enables you to monitor documents that stay in a particular Status for a set amount of time. When, the configured time elapses the Actions that you define in the Status Monitoring Rule definition work area are processed.

#### Procedure to Define Status Monitor Rule

1. Navigate to the **Statuses** tab.
2. Double-click the applicable Status.
3. Right-click in the work area and select **Actions > Add Monitor Node**.



A Monitor Node is seen in the work area.

4. Select the applicable Actions and Conditions into the work area and connect them as per the rules that are detailed in this section.
5. Connect the **Status Monitor Node** to the applicable Actions
6. Save the changes.

On the connecting line, note the duration (in hours) for which a document stays in the Status before the Action is raised. To change the time, right-click on the time, choose Change, and enter the new time.

### Status Milestones

A Milestone is a type of date that Sterling Selling and Fulfillment Foundation automatically determines when an order moves from one Status to another. It represents a significant point in the processing lifecycle that can be used as a basis for monitoring. You can configure Statuses in a Process Type to be Milestones. Additionally, you can define and track Milestones at the order, order line, order release, and order release line levels.

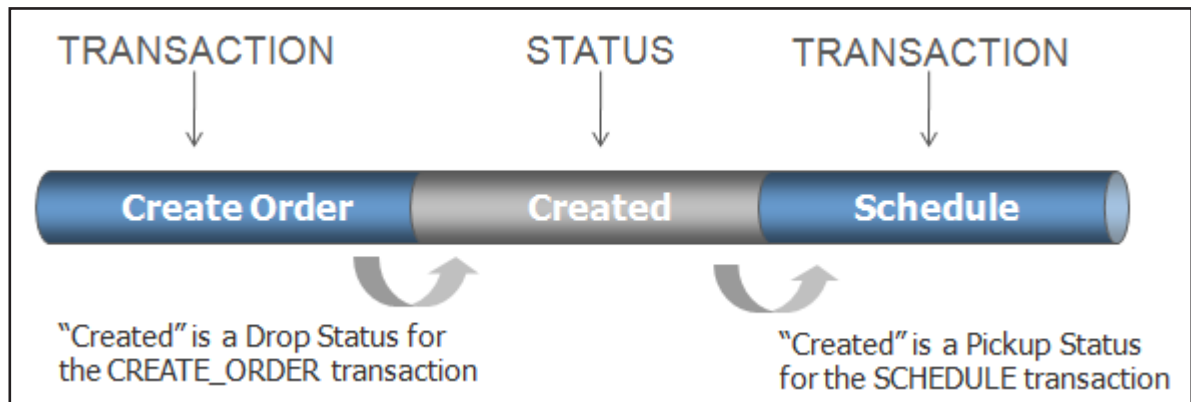
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## Overview of Statuses

(Continued)

### Relationship Between Statuses and Transactions

Sterling Selling and Fulfillment Foundation provides a default that is set for Statuses. These Statuses are used to connect Transactions. The following figure provides a graphical representation of how Statuses work.



## Exercise 6.1.1: Create a New Status

---

### Scenario

Keeping in mind its future business requirements, General Holdings wants to create custom statuses in addition to the default statuses provided by Sterling Selling and Fulfillment Foundation.

### Instructions

1. From the **Applications Console** launch the **Applications Manager**.
2. Navigate to **Applications > Application Platform > Process Modeling** and then double-click **Process Modeling**.

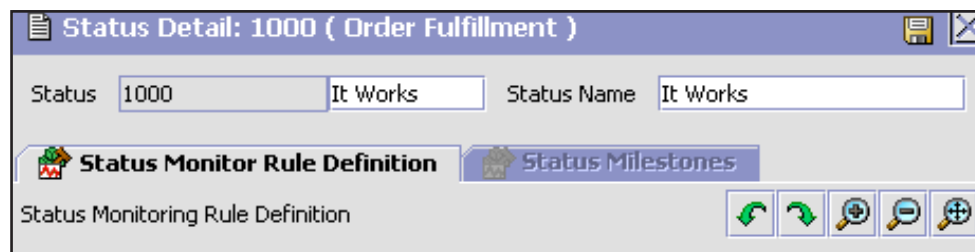


Important

Ensure that the DEFAULT organization rules are loaded.

---

3. Double-click the **Order Fulfillment** Process Type for the Sales Order Document Type. The Order Fulfillment repository is seen.
4. Click the **Statuses** tab at the lower left corner of your screen.
5. Right-click the **Created** Status and click **Create New**.
6. Type **It Works** as the Status and Status Name.



7. Click  to save the changes. The Status It Works is created as an Extended status.

### Result

You have successfully created a custom status, derived out of a base status, that is called It Works. The newly created status must be visible in the Application Rules side panel.

---



## Overview of Conditions

### Conditions Definition

A Condition matches the attributes of a Document Type with decision points. Based upon the outcome, it routes the documents to different paths for the specific attribute and value combinations. Sterling Selling and Fulfillment Foundation provides a specific set of Document Type Attributes for which Conditions can be created. You can use these attributes in any combination or you can create stand-alone Conditions that run the appropriate logic for specific circumstances. Conditions are of three types. They are:

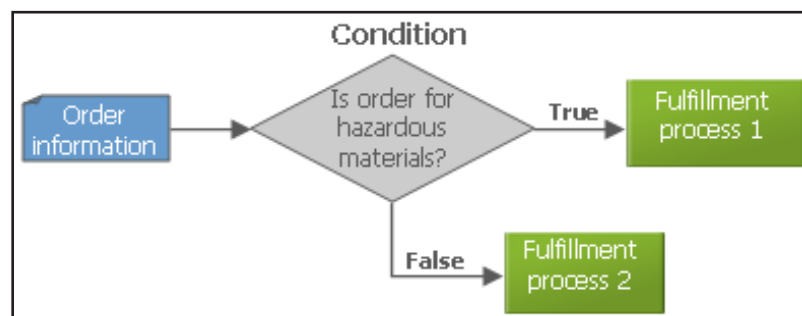
- Static Condition
- Dynamic Condition
- Advanced XML

### Scenario

You can set a condition to determine an order that contains hazardous materials. You can include the condition at a certain point in the Sales Order fulfillment process-type pipeline. When an order reaches this Condition in the Pipeline, it cannot move further until the Condition is met with a definitive 'yes' or 'no' value. If the order does not contain hazardous materials, the value is 'no' and the order continues through the regular pipeline. If the order contains hazardous materials, the value is 'yes'. Then, the order is sent down an alternating section of the Order Pipeline that is configured to deal with hazardous material orders.

### Condition Representation

The following figure provides a graphical representation of the scenario. Conditions are decision-making structures that are typically represented as follows:



(Continued on next page)


## Overview of Conditions

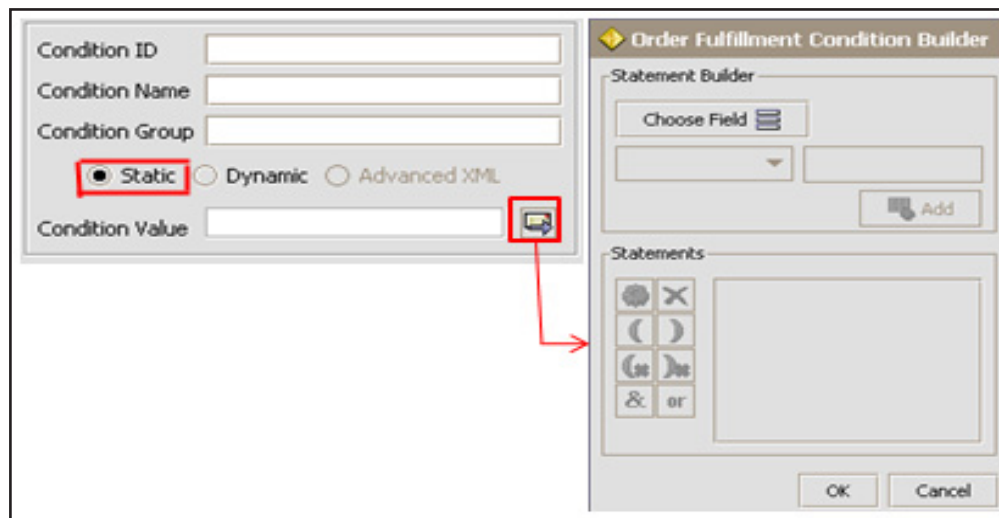
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### Static Condition

The Static Condition operates based on the data that is available for Condition evaluation. Therefore, the result of the Static Condition varies depending upon the flow such as Service Determination Rule (SDF) Pipeline, Pipeline Determination Rule, and Event Handlers.

#### Procedure to Create a Static Condition

1. Select the **Order**, **Load**, or **General** tab in the Process Modeling screen. In this procedure **Order** tab is selected.
2. Right-click on the applicable Process Type in the Process Types swimlane and choose **Model Process**.
3. Choose the **Conditions** tab at the lower left of the screen.
4. Navigate to **Conditions** and choose  to create a Static Condition. The Condition Detail: New (Order Fulfillment) screen displays.
5. Specify a unique **Condition ID**, **Name**, and **Group**. The new Condition is created under this group.
6. Specify the **Condition Value** (if the Static option is selected). Select the Condition Builder to set up the Condition value. The Condition Builder helps you set the Condition Value. You can set it up in a formula readout using the available symbols.



7. Save the changes.

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## Overview of Conditions

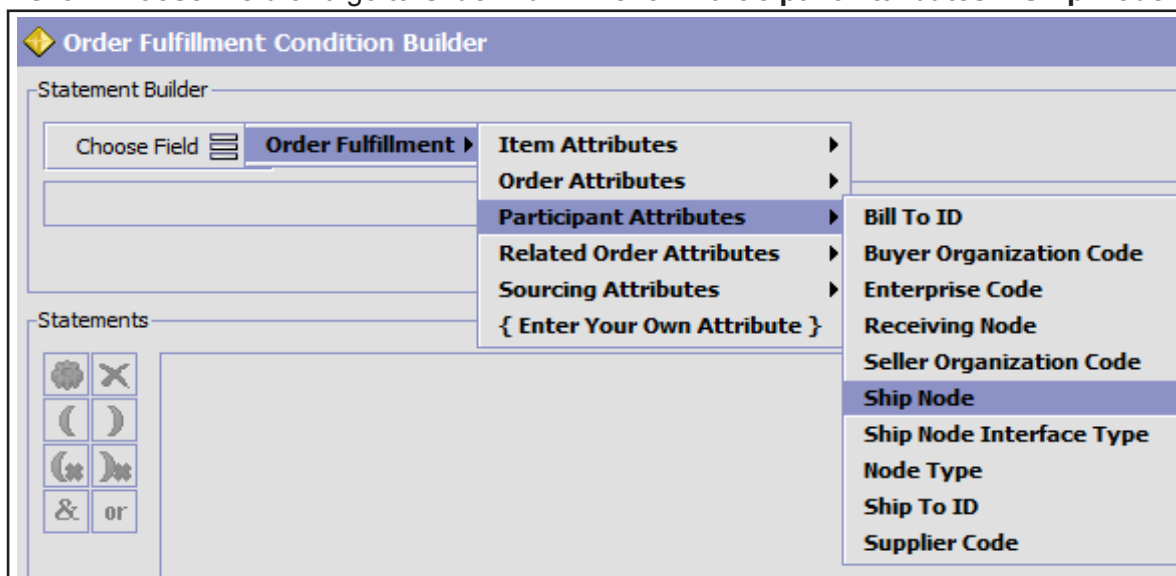
(Continued)

### Condition Builder

You can use the Condition Builder to create Condition values. You can use the Condition Builder for only Static Conditions. To use the Condition Builder you must first select the fields to analyze when the Condition is used and associate the appropriate value with them. You can also build complex strings when creating a Condition value with the Condition Builder. For example, you want to set up a Condition - SN1 - to search for a specific Node for Order Fulfillment. You can achieve this by setting up this Condition value with the Condition Builder.

#### Procedure to Use the Condition Builder

1. Select the **Condition Builder** next to the Condition Value field. The Order Fulfillment Condition Builder displays.
2. Click **Choose Field** and go to **Order Fulfillment > Participant Attributes > Ship Node**.



3. Select '**is**' and type **SN1** as the value from the list.
4. Choose **Add** and then click **Ok**.
5. A Condition value is created, that reads "Ship Node is SN1". When this Condition is processed, the application verifies the documents that are associated with SN1. If the Condition is true, the document moves through the Pipeline per your configuration.

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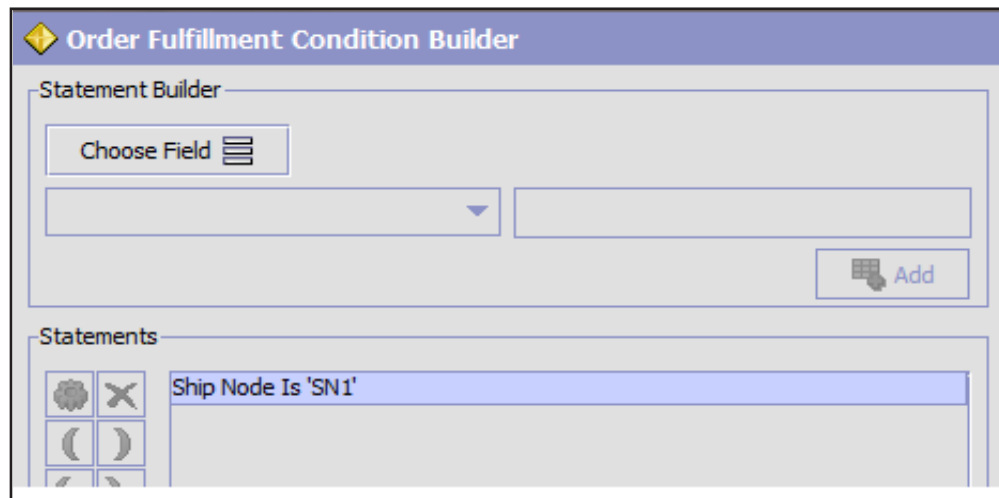
## Overview of Conditions

(Continued)

### Condition Builder

....(Continued)

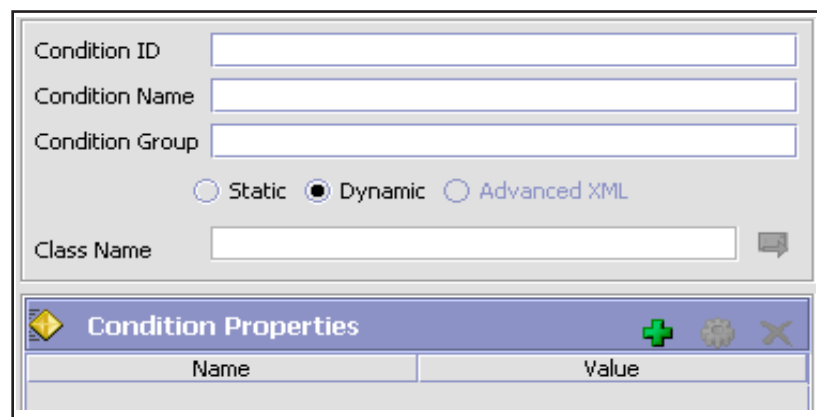
The figure shows the Condition Builder that is used for creating Static Conditions:



### Dynamic Condition

Dynamic Conditions provide complete visibility into the incoming flow data and flexibility for evaluating any simple or complex Conditions. Dynamic Conditions are created in the same manner as Static Conditions. However, the Condition Builder is not available to you. Instead, you must provide a Java class name that evaluates the Condition at run time. You must also provide the class name that implements the following Java interface:

`com.yantra.ycp.japi.YCPDynamicCondition`



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## Overview of Conditions

(Continued)



### Advanced XML

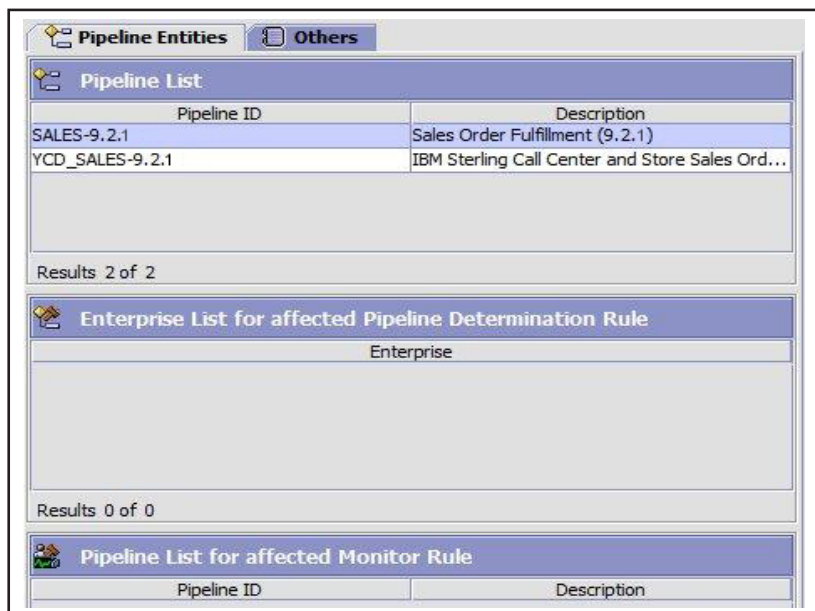
You can create an Advanced XML Condition using the Sterling Greex Editor IDE tool. This tool describes an Advanced XML Condition in simple English. All modifiable parameters of an Advanced XML Condition display as a hyperlink on the IDE tool screen. You can edit any parameter by clicking the hyper links provided.

### Entities Affected by a Condition

You can view all of the Events, Pipelines, and Status Rules, affected by a particular Condition. It is useful when you need to modify a Condition so that you can see the impact of your modification.

#### Procedure to View the Entities Affected by a Condition:

1. Expand the **Conditions** section.
2. Select the applicable Condition and choose .
3. Select . The Pipeline Entities tab provides a list of Pipelines that affects the Condition, Enterprises that affects determination rules containing the Condition, and Pipelines that affects Monitoring Rules containing the Condition. The Others tab details all the Events, Statuses, and Services that affects the Condition.



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## Overview of Conditions

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(Continued)

### Entities Affected by a Condition

....(Continued)

4. Close the **Condition Details** window.



Note

---

To use extended attributes for a Condition, implement the YCPDynamicConditionEx interface.

---

## Exercise 6.1.2: Create a Custom Condition

---

### Scenario

General Holdings wants to create a condition to track item # 100012 received from the seller Matrix-B.

### Instructions

1. Navigate to **Applications > Application Platform > Process Modeling** and then double-click **Process Modeling**.



#### Important

---

Ensure that the DEFAULT organization rules are loaded.

---

2. Double-click the **Order Fulfillment** Process Type for the Sales Order Document Type. The Order Fulfillment repository is seen.
3. Click the **Conditions** tab at the lower left of your screen.
4. Right-click the **Conditions** group and click **Create New**. The Condition Detail: New (Order Fulfillment) screen is displayed.
5. Enter the values as listed in the following table:

Field	Description
Condition ID	OrdersForGH
Condition Name	OrdersForGH
Condition Group	OrdersForGH
Condition Type	Static

6. Click **Condition Builder** next to the Condition Value field. The Order Fulfillment Condition Builder window displays.
7. Click **Choose Field > Order Fulfillment > Participant Attributes > Seller Organization Code**.
8. From the list select **'Is'** and type **Matrix-B** as the value.
9. Click **Add**.

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## Exercise 6.1.2: Create a Custom Condition

(Continued)

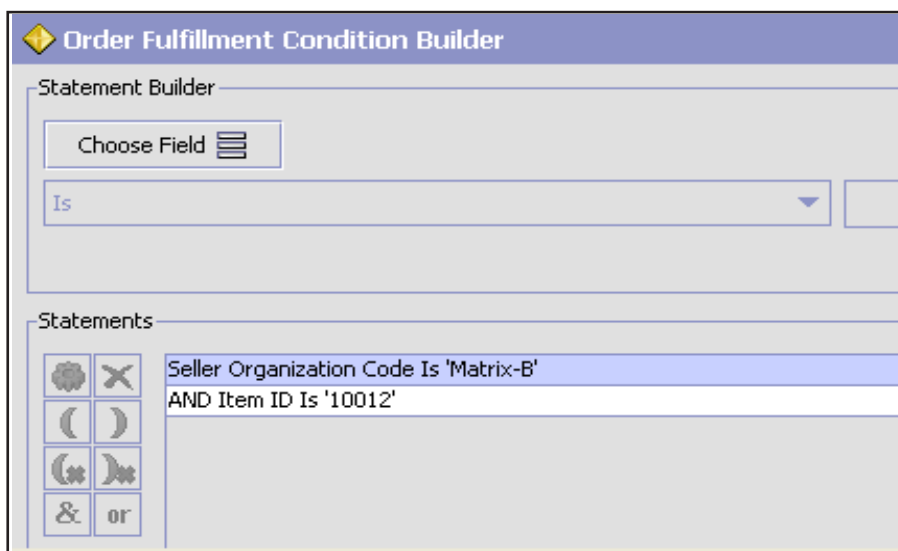
### Instructions


....(Continued)

10. Repeat steps 7 through 9 for the following values:

Navigation	Condition	Value
Choose Field > Order Fulfillment > Item Attributes > Item ID	Is	10012

The following figure shows the Condition Builder:



11. Click **OK**.
12. Click  to save the changes.

### Result

You should be able to view a new condition group that is called **OrdersForGH** in the Application Rules side panel.



---

## Optional Exercises

---

### Create a Custom Status

General Holdings wants to create a Custom Status that is Extended Status from the Base Status created. In this exercise, create the Custom Status called **DraftReady**.

#### **Instructions**

Create a Custom Status that is called DraftReady from the Base Status created. Save the newly created Status.

#### **Result**

The newly created Custom Status is now visible in the Status list in the Application Rules Side panel.

### Create a Custom Condition

General Holdings wants to create a Custom Condition in addition to the base Conditions provided by Sterling Selling and Fulfillment Foundation. This Condition must check if Matrix Business is the Seller Organization for the orders. Based on the outcome of the Condition, the orders must move through a specific Pipeline.

#### **Instructions**

Create a Custom Condition with the following values and Save it:

- Condition ID, Condition Name, Condition Group = Is Seller Organization Matrix-B
- Condition Type = Static

### Result

The newly created Custom Condition and Condition Group is now visible in the Conditions list in the Application Rules side panel.

---

## Lesson Review

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### Completed Objectives

This lesson has been designed to enable you to:

- Describe Statuses.
  - Configure different types of Statuses.
  - Describe Conditions.
  - Configure different types of Conditions.
-

## LESSON 6.2: Services, Events, Actions, and Transactions

---

### Introduction

This lesson provides you with an overview of Events, Actions, Transactions, and Services. Also, learn how to configure the different types of Actions, Transactions, and Services.

### Lesson Objectives

This lesson is designed to enable you to:

- Describe Services, Events, Actions, and Transactions.
- Configure an Action and Service.
- Configure different types of Transactions.

### References

For more information on Events, Actions, and Transactions, refer:

- [http://www.ibm.com/support/knowledgecenter/SS6PEW\\_9.5.0/com.ibm.help.proc.model.concepts.doc/productconcepts/c\\_ProcessModelingConcepts.html](http://www.ibm.com/support/knowledgecenter/SS6PEW_9.5.0/com.ibm.help.proc.model.concepts.doc/productconcepts/c_ProcessModelingConcepts.html)

Navigate to **Sterling Order Management 9.5.0 > Configuring shared components and users > Process modeling > Considerations**

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## Overview of Services

---

### Definition

Services transport data between Sterling Selling and Fulfillment Foundation and third-party applications/external system/organization, converting that data into formats that are readable by each system. A Service is a pre-defined flow that is triggered by an Action. It represents the logic that regulates document workflow Services.

Services can be built as small reusable components that can be linked together to provide complex business processing. Furthermore, services can be initiated either through the business processes or by external systems. Although there are pre-defined services that ship with the Sterling Selling and Fulfillment Foundation, the power of service definitions is in the ability of businesses. Businesses create custom services that communicate with external applications with various communication channels such as the Web, databases, and file I/O.

### **Example**

Assume that a business wanted to link the timing of shipments to real-time schedule updates received from a Carrier. The business can create a service in the Outbound Shipment pipeline that checked the Carriers database for the latest pickup schedule for each order shipped.

### Service Invocation

Services can be started or accessed with the following mechanisms:

- executeFlow() API
- Resource configuration for accessing from the user interface.
- Actions that are associated to start a Service.
- User-Triggered Transactions to raise an alert to inform the applicable users.
- Document Routers and Monitors.

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## Overview of Services

(Continued)

### Service Builder

A Service Builder provides an easy-to-use interface for creating Service Workflows. It consists of a Service palette consisting of drag-and-drop components. These components are logically placed under different Service Nodes. For building a custom service, the components are pulled into the work area and connected together. A Service Logic is then associated with each component. You can create Services under the following situations:

- Transporting data, typically between Sterling Selling and Fulfillment Foundation and external applications.
- Transforming data from one format to another.
- Extending the application logic when Events are raised.

### Service Components

Service Components are classified under the following Service Nodes:

Transport Nodes	Component Nodes
Adapter Nodes	Connector Nodes

### Transport Node

Transport Nodes forward messages, allowing Sterling Selling and Fulfillment Foundation to communicate with external systems. Transports (and the entire Service) can be classified into the following categories:

- Synchronous - immediately forward messages.
- Asynchronous - store and forward messages.

Based upon your need, you can use either synchronous or asynchronous Service Types. Each Transport type has the following Sender and Receiver aspects:

- Receiver - defines how information is received.
- Sender - defines how information is sent to the transport.

(Continued on next page)

## Overview of Services

(Continued)

### Component Nodes

Component Nodes format or translate data. A few of the component Nodes available in Sterling Selling and Fulfillment Foundation are:

Alert	API
Email	Composite Service
Text Translator	XSL Translator

You can add a Component Node by dragging it from the pallet into the work area.

### Adapter Nodes

The Service Definition Framework provides hooks to connect to external systems like Sterling Integrator through custom adapters. Adapter Nodes implement an adapter with an external system. Presently, Sterling Selling and Fulfillment Foundation provides only the Sterling Integrator adapter.

### Connector Nodes

Connector Nodes enables you to link Nodes together without adding any additional logic. It enables you to build a complete Service - from start to end. The types of available Connector Nodes are as follows:

- Start Node - All Services must begin with a Start Node. The Start Node defines where to begin running the Service Definition Framework logic. When you create a flow, the Start Node is already laid out for you.
- End Node - All Services must end with an End Node. The End Node defines where a particular flow must end. When you create a flow, the End Node is already laid out for you.
- Pass-through Node - The pass-through Node connects synchronous and asynchronous components together. You can add a connector Node by right-clicking in the work area and selecting from the mentioned connector Node types.

(Continued on next page)

## Overview of Services

(Continued)


### Service Completion Criteria

A Service Flow can contain one or more Service Components. However, each Service requires certain conditions and parameters to satisfy. Service Components are listed in the following table.

Component	Required	Quantity
Start Node	Yes	Maximum One
Transport Node	Optional	Zero or many
Component Node	Yes	One or many
Adapter Node	Optional	Zero or many
End Node	Yes	One or many

In addition, all Nodes must be connected together. Moreover, all required properties on all Nodes and links must have values specified.

### Procedure to Create a Service

1. Select the **Order**, **Load**, or **General** tab in the Process Modeling screen.
2. Right-click on the applicable Process Type in the Process Types swimlane and choose **Model Process**.
3. Choose the **Service Definitions** tab that is at the bottom.
4. Select the parent Node of the Service Definitions tree and  choose. The Create New Service dialog box displays.

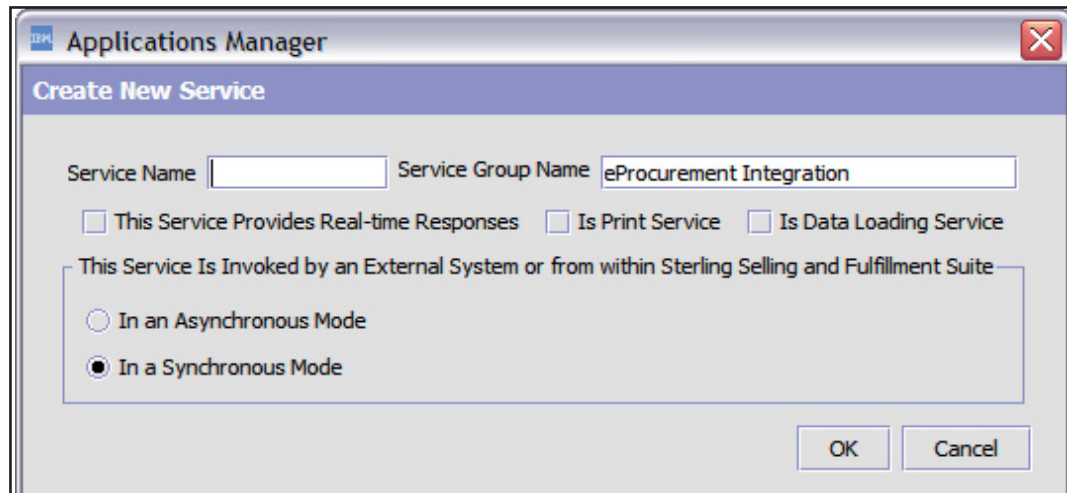
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## Overview of Services

(Continued)

### Service Completion Criteria

....(Continued)



5. Enter the values for the following key fields:

- **This Service Provides Real-time Responses** - enables you to return a response to the caller. This option is only available for Services that are started synchronously, either from within Sterling Selling and Fulfillment Foundation or externally.
- **Data Loading Service** - enables you to upload bulk data.
- **Asynchronous Mode** - enables you to start the Service by retrieving a message from an asynchronous transport source. The Service starts from a queue or database. When this option is selected the first Node after the Start Node must be an asynchronous Transport Node.
- **Synchronous Mode** - enables you to start a Service synchronously or asynchronously from Sterling Selling and Fulfillment Foundation or an External System.
- Click **OK**.



#### Note

When the “This Service Provides Real-time Responses” field is selected, asynchronous transports cannot be added to the Service. In an Asynchronous mode, the Service definition does not need details of how the message arrives at asynchronous source such as queue or database.



## Exercise 6.2.1: Create a Custom Service

---

### Scenario

General Holdings receives thousands of orders every day. Each order is validated before it is processed. If a duplicate order is encountered, the system raises an alert and notifies the Customer Service Representative (CSR), Adam Calder.

### Instructions

1. Navigate to **Applications > Application Platform > Process Modeling** and then double-click **Process Modeling**.



#### Important

---

Ensure that the DEFAULT organization rules are loaded.

---

2. Double-click the **Order Fulfillment** Process Type for the Sales Order Document Type. The Order Fulfillment repository is seen.
3. Click the **Service Definitions** tab at the lower left corner of your screen.
4. Right-click the **Order Fulfillment Services** group and click **Create New**.
5. Enter the values that are provided in the following table:

Field	Description
Service Name	Alert Notification Services
Service Group Name	GH CSR Group

6. Select **This Service Provides Real-time Responses**.



#### Note

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This option automatically selects the radio button In A Synchronous Mode.

---

7. Click **OK**. The Service Detail screen for Alert Notification Service is seen.

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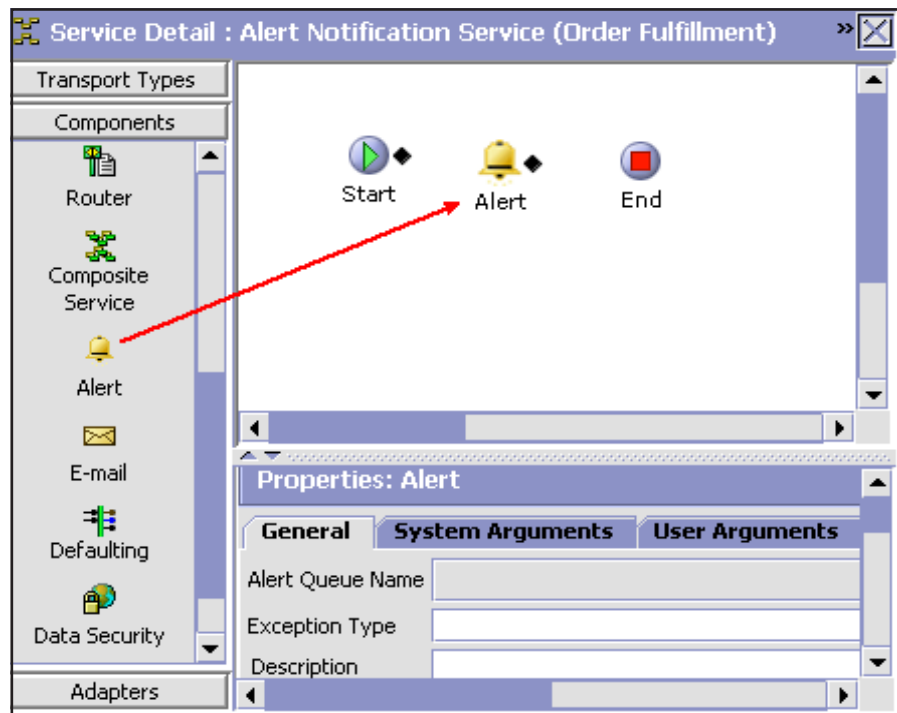
## Exercise 6.2.1: Create a Custom Service

(Continued)

### Instructions

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8. Click the **Components** tab. Drag the Alert Component into the work area for Alert Notification Service.



9. Connect the **Start** Node to the Alert Component, and the Alert Component to the **End** Node.
10. Click the Alert Component. The properties window of the Alert Component is seen at the bottom half of the screen.

(Continued on next page)

## Exercise 6.2.1: Create a Custom Service

(Continued)

### Instructions

....(Continued)

11. Type the values that are provided in the table:

Field	Description
<b>General</b> tab: Specify the following General Properties of the alert.	
Alert Queue Name	Default (DEFAULT)
Exception Type	New Order Created
User ID	acalder
Priority	3
Resolve By (Hrs)	4

12. Click **Save** to save the changes.

### Result

You should be able to view a new service group that is called GH CSR Group along with a new alert service in the Application Rules side panel.

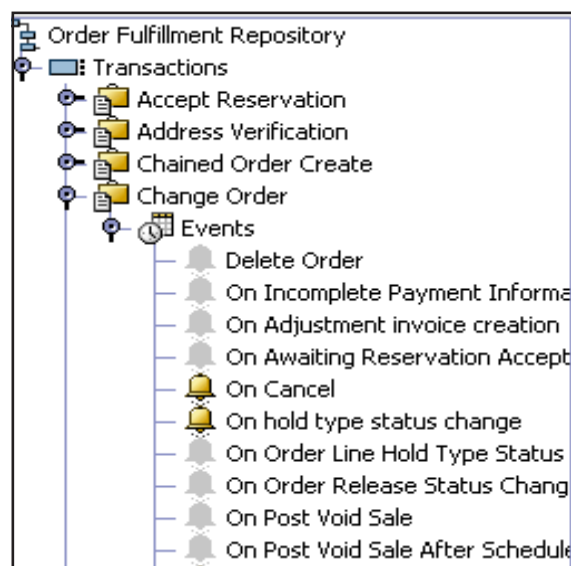
## Overview of Events and Actions

### Events Definition

An Event is a specific occurrence in the business process, often creating a Status change or generated alert. Events are associated with Conditions and Actions, which trigger pre-defined commands. When, an Event occurs in a Transaction, an Action is triggered. Some examples of an Event are, releasing an order, and canceling an Order Line.

### Layout

The following figure shows the Events layout:



(Continued on next page)

## Overview of Events and Actions


(Continued)

### Actions Definition

An Action is a process or program triggered by an Event. These processes and programs send Alert Notifications, publish data, or initiate Custom Services.

For example, when an order is released (Event), you can set an Action to send an email to the customer.


#### Procedure to Configure Invoked Services

1. Select the **Order**, **Load**, or **General** tab in the Process Modeling screen.
2. Right-click on the applicable Process Type in the Process Types swimlane and choose **Model Process**.
3. Choose the **Actions** tab that is located at the bottom.
4. Select **Actions** and  choose.
5. Provide the unique values for the Action Code, Action name, and Action Group.
6. Save the changes. The Invoked Services tab is activated.
7. Select the **Invoke following Services as part of this Action** to start a pre-configured service.



#### Important

If you configure Actions that invoke a Service to insert messages into an MQ Series queue, you must include specific .jar files in the CLASSPATH environment variable for the application server (WebLogic, WebSphere, or JBoss).

8. Add additional Services by choosing  from the Invoked Services list. The Services are started by the specific Action.
9. Save the changes.



#### Note

The Send Fax, Template, Call COM Extension, and Prog ID fields are no longer supported.

(Continued on next page)

## Overview of Events and Actions

(Continued)

### Additional Settings

You can configure additional settings for an Action. The fields in this tab can be configured within the Service Definition Framework. The information in this tab is provided solely for compatibility with earlier version purposes. From Version 5.0 onwards, it should be configured as a Service.

#### Procedure to Configure Additional Settings

1. Click the **Others** tab in the **Action Details** window.

The screenshot shows the 'Others' tab in the 'Action Details' window. The window has two tabs: 'Invoked Services' and 'Others'. The 'Others' tab is active. It contains several configuration options:

- ☒ Send To Alert Console Queue Name [dropdown] [icon]
- User Name [text field] [icon]
- Template [text field]
- List Template [text field]
- ☐ Send E-Mail Template [text field]
- ☐ Call Java Extension Class Name [text field]
- ☐ Execute Program [text field]
- ☐ Call DB Extension Stored Procedure [text field]
- ☐ Call HTTP Extension URL [text field]
- ☐ Send Fax Template [text field]
- ☒ Call COM Extension Prog ID [text field]
- ☒ Publish Data

At the bottom, there is a 'System ID' section with a green plus icon and a red minus icon.

(Continued on next page)

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## Overview of Events and Actions

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(Continued)

### Additional Settings

....(Continued)

2. The key fields are explained:

- **Template** - specifies the Alert Console template. It can be any name with an ECT or XSL extension.
  - If the template is within the EAR file: The value of the Template field that is specified in the Action should be the same as the path to the template file as built within the EAR. The path should be relative to the root of the EAR.
  - If the template is outside the EAR file: The value of the Template field specified in the Action can be the path to the file relative to the path given in the CLASSPATH specified in the application servers start-up script.
  - **Send email** - enables you to send an email message. However, you must configure your email server before you can activate this Action.
  - **Call Java Extension** - enables you to call a particular Java component.
  - **Execute** - enables you to call a particular executable.
  - **Program** - enables you to provide a Program (executable) name. Make sure that the executable exists in the system PATH.
  - **Call DB Extension** - enables you to call a particular stored procedure.
  - **Call HTTP Extension** - enables you to call a particular URL.
  - **URL** - enables you to provide the URL to be called for the HTTP Extension.
  - **Publish Data** - enables you to publish data to an external system.
  - **System ID** - specifies the System ID of the external system that publishes the data. However, System IDs cannot exceed 20 characters.
-

## Exercise 6.2.2: Create an Action

### Scenario

In this exercise, you are required to create an action that starts a specific service to raise alert notifications for General Holdings. Also, you will fix a service component to a transaction to fire out on an event.

### Instructions

1. Navigate to **Applications > Application Platform > Process Modeling** and then double-click **Process Modeling**.



#### Important

Ensure that the DEFAULT organization rules are loaded.

2. Double-click the **Order Fulfillment** Process Type for the Sales Order Document Type. The Order Fulfillment repository is seen.
3. Click the **Actions** tab at the lower left corner of your screen.
4. Right-click the **Actions** group and click **Create New**. The Action Detail: New (Order Fulfillment) screen is seen.
5. Enter the values that are as shown in the following table and click **Save**.

Condition	Value
Action Code	Raise Alert
Action Name	
Action Group	GH CSR Group



#### Important

This means that the Raise Alert Action will be a subset of the GH CSR Group Action group.

6. Select **Invoke the following Services as part of this Action** option to configure the Raise Alert action.
7. Click the **Create New** icon to start a Service as part of the Raise Alert Action.
8. Click **Alert Notification Service** from the Service List and click the **Add System To Be Published** icon.
9. Click **Save** to save the changes. The Raise Alert Action is configured to start the Alert Notification Service.

(Continued on next page)



## Exercise 6.2.2: Create an Action

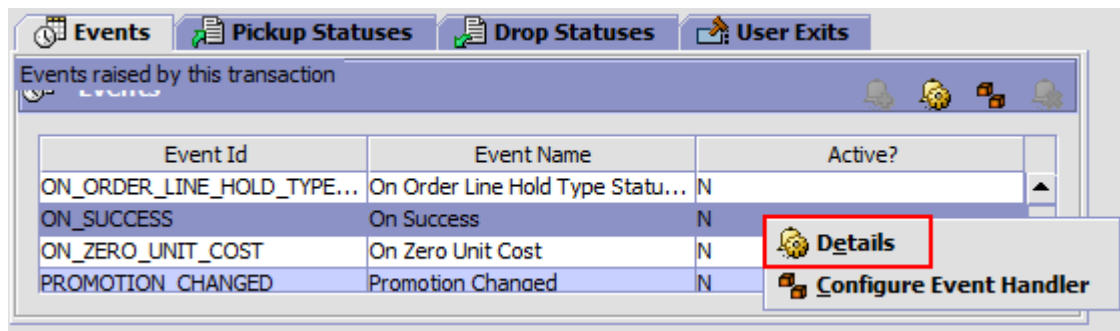
(Continued)

### Instructions

....(Continued)

**Fix a Transaction using the Alert component that is created in the previous exercise.**

1. Open the **Transactions** tab and double click **Confirm Draft Order**.
2. In the **Events** tab, search for the event **ON SUCCESS**, then right-click and select **Details**.



3. In the Event Details window, tick the option **Is Active?** and click **OK**.
4. Once again, right click the ON\_SUCCESS Event ID and chose **Configure Event Handler**. Delete any existing Action in the event handler.
5. Open the Actions tab and expand the **GH CSR Group**.
6. Drag-and-drop the **Raise Alert** action that you created in to the Event Handler Definition work area and save the entire transaction page.

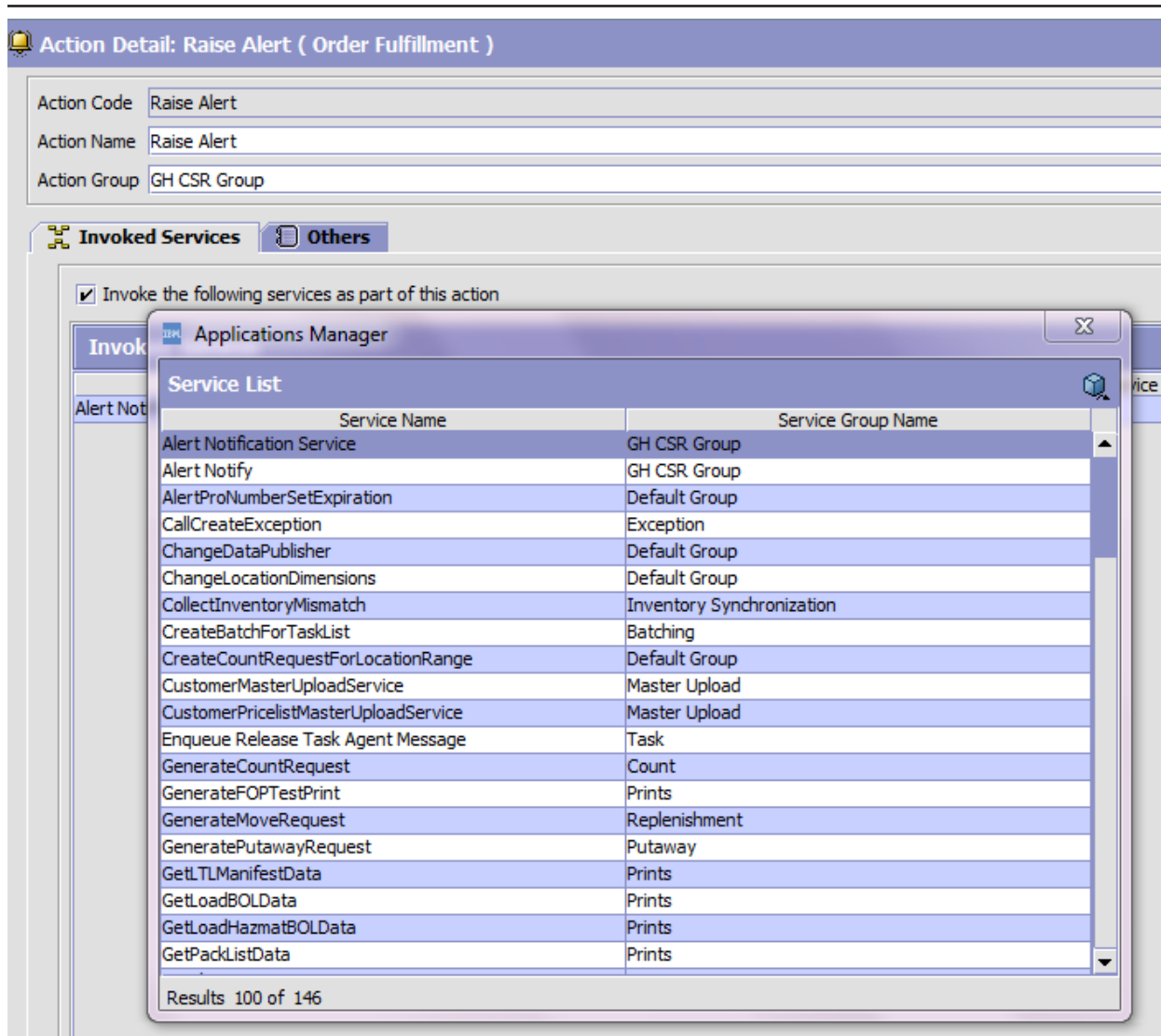
(Continued on next page)

## Exercise 6.2.2: Create an Action

(Continued)

### Instructions

....(Continued)



7. Now create an order to see how the raise alert action is used. Navigate to the **Application Console > Order > Create Order**.
8. The Order Entry screen is seen. The Order Entry screen enables a user to manually enter orders.

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## Exercise 6.2.2: Create an Action

(Continued)

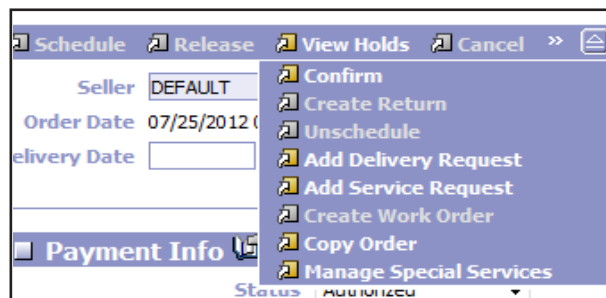
### Instructions

....(Continued)

9. Ensure that the Enterprise **DEFAULT** is selected. In the **Bill To Address**, type the following address:

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

10. Click **Create Order**. The Order Detail screen is seen with the order in the Draft Status.
11. Scroll down to the **Order Lines** section of the Order Detail screen. Click the **Search for Item** icon (magnifying glass) to search for the Item ID or type the item ID **10012**.
12. Type **1.00** as the Line Qty. Save this tab to see the status **Draft Order Created**.
13. To confirm this order, on the **Order Detail** screen, Click on **>>** adjacent to **Cancel**, select **Confirm** and notice that the status moves to **CREATED**.



(Continued on next page)

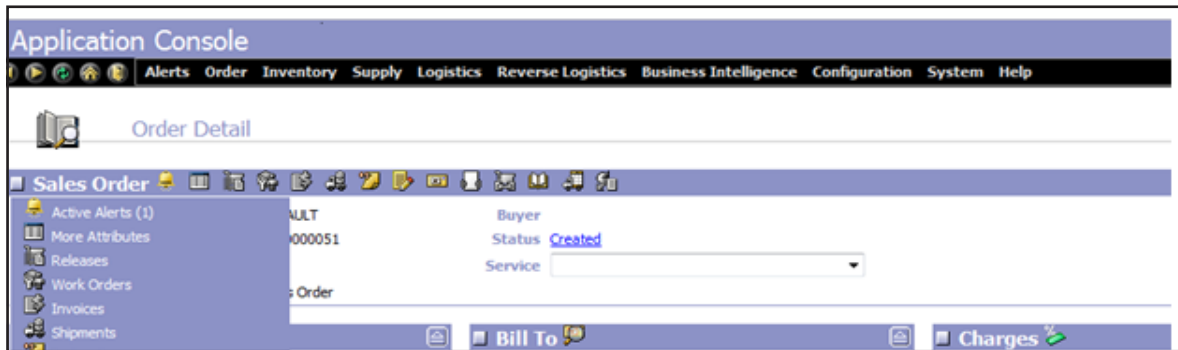
## Create an Action

(Continued)

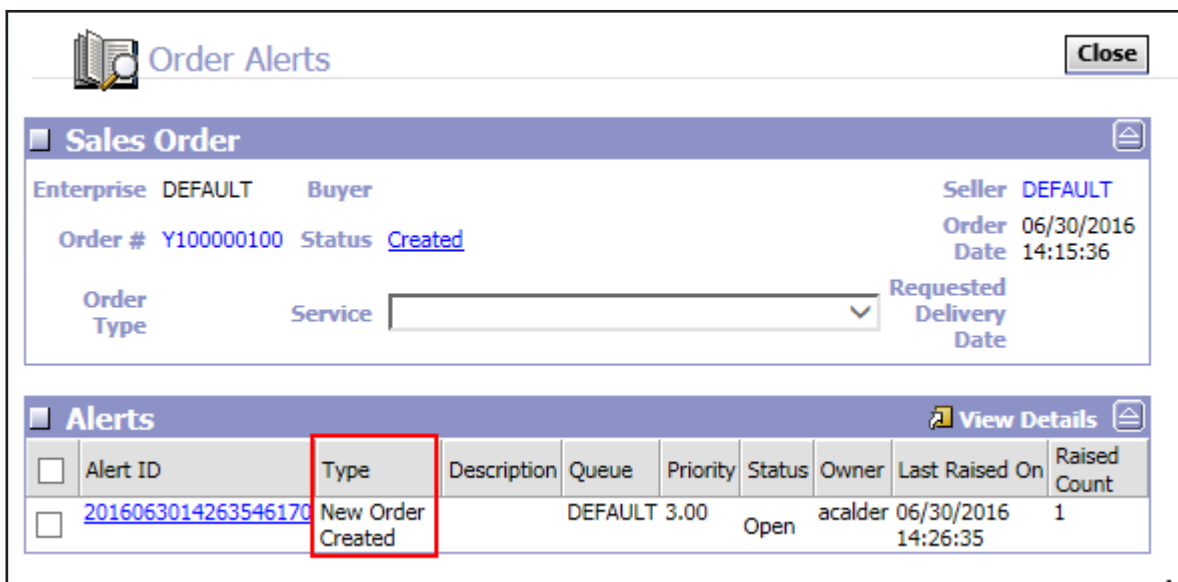
### Instructions

....(Continued)

14. Click the Alert Bell icon **Active Alerts(1)**.



15. Click the Alert Id to view the details of the Alert. This Alert tells you of the Exception Type that was created in an earlier exercise.



(Continued on next page)

## Exercise 6.2.2: Create an Action

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(Continued)

### Instructions

....(Continued)

16. You can now either close the alert, or resolve, or assign it to another user.

### Result

You should be able to see a new Action group that is called GH CSR Group in the Application Rules side panel.

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## Overview of Transactions

### Definition

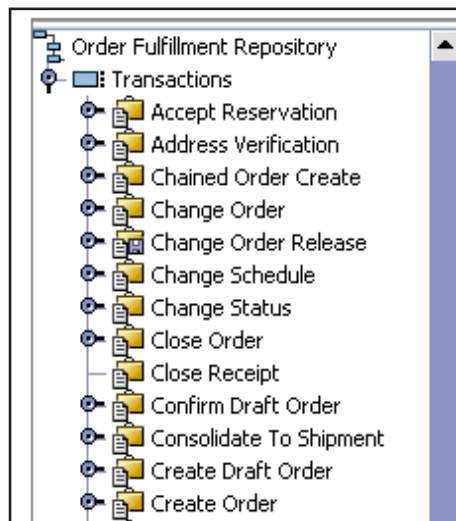
A Transaction is a logical unit of work necessary for an Activity. Every Process Type has a set of base Transactions that is defined for it. These base Transactions are predefined Transactions that contain information such as:

- The number of Transaction copies that is maintained in a Process Type.
- The configurable base Pick and Drop Statuses.

New Transactions can be created using the existing base Transactions. These Transactions can be modified within the limits that is defined in the base Transaction.

### Layout

The following figure shows the Transaction layout:



### How do Transactions Work?

Transactions are issued using Application Program Interfaces (APIs) or background programs. When an API is started, the Transaction ID is determined based on the context the API was issued. The Transaction ID identifies the Transaction that must be issued. Based on the situation, the Transaction ID is passed as an input parameter or is predefined for starting API.

(Continued on next page)

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## Overview of Transactions

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(Continued)

### Types of Transactions

Transactions can be classified into the following categories:

- Externally-triggered
- User-Triggered
- Time-Triggered

### Abstract Transactions

System Abstract Transactions are optional Transactions that can be incorporated within a Pipeline. For example, a Listener is an optional Transaction that can be used in one Pipeline to listen for activities in another Pipeline. A Transaction that is derived from an Abstract Transaction contains specific details such as, Statuses and triggering mechanisms that do not require custom coding.

#### **Example**

Consider a scenario where you are configuring an Order Document Pipeline that requires several different types of Order Status Change transactions. You can derive multiple Extended Transactions from the Change Order Status abstract Transaction and configure them in your Pipeline without custom coding.

### Extended Transactions

Extended or Derived Transactions are user-defined Transactions that are written and deployed for a specific implementation. Some Extended Transactions that are created might require custom coding to implement logic for the Transaction.

The code for the Custom Transaction must be developed independently before the Extended Transaction can be used within a Pipeline.

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(Continued on next page)

## Overview of Transactions

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(Continued)

### Transaction Dependency

In the Order Fulfillment Cycle, certain products and Services must be fulfilled in a particular sequence. Transaction dependencies enable you to process an order based on certain Conditions defined for a Transaction. It can be configured at the Enterprise, Document Type, and Process Type level. You can configure Transaction dependencies in groups, with one dependency group being active at a time.

Dependencies enable you to define rules that are based on item classifications, item IDs, Service types, and other Conditions for an Order Line. For multiple Transaction dependencies, all the dependencies must be satisfied before the Order Line can be processed.

Dependencies can also be defined for bundle components. In this case, the Order Lines might have interdependencies while fulfilling a bundle order. The bundle parent line cannot be invoiced until every child line completes the specified Transaction. You can specify dependencies using templates that are provided with Sterling Selling and Fulfillment Foundation.

### Transaction Completion

You can configure the Transactions based on an Order Line Status in the Order Fulfillment Process Type. However, only Custom or Extended Transactions can be completed. When an order runs the Custom Transactions, it is evaluated for completion. The Transaction is then marked complete or incomplete based on Transaction completion criteria. This configuration enables you flexibility to set completion dependencies for Transactions that are based on its Drop Statuses.

Apart from Transactions, completion criteria can also be configured for the extended listeners that is used in the Pipeline. However, you need to configure the completion for every instance of the listener.



#### Important

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You cannot configure Transaction completion for Standard Transactions provided by Sterling Selling and Fulfillment Foundation. Example: You cannot configure completion for the Standard Schedule Transaction. However, some of the Status-based Transactions such as Schedule and Release are provided with completion criteria.

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(Continued on next page)






## Transaction-Related Tasks

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### Overview

You can create new Custom Transactions in the Process Type you are working with. These Transactions can then be used in Pipeline creation and modification. When you create an Extended Transaction that is not derived from an Abstract Transaction, you are creating a Custom Transaction for which software development must be done separately before the Extended Transaction can be used within a Pipeline.

#### Procedure to View Externally Triggered Transactions

1. Select the **Order**, **Load**, or **General** tab in the Process Modeling screen.
2. Right-click on the applicable Process Type in the Process Types swimlane and choose **Model Process**.
3. Choose the **Transactions** tab that is located at the bottom.
4. Select the **Accept Reservation** Transaction and choose .
5. Select the **This Transaction is triggered from external systems** check box to indicate an Externally-Triggered Transaction.
6. Click  to list the services that trigger the Accept Reservation transaction. The Service List window shows the Service Name and group it belongs to.
7. Select a **Service Name** and click  to enable the service to trigger the transaction.
8. Select the **Events** tab to specify the Actions triggered by the Event in the Transaction. You can view the Event details and configure the Event Handler Settings.
9. Select the **Pickup Statuses** tab to view and specify the Pickup Statuses that are associated with the transaction.
10. Select the **Drop Statuses** tab to view the Drop Statuses that are associated with the transactions. Additionally, you can set the transaction completion criteria for an order line.
11. Define Event Handlers to determine the type of Actions performed when an Event in a Transaction occurs. You can drag-and-drop actions to the Event Handler Definition area and specify the services it should start.

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(Continued on next page)

## Transaction-Related Tasks

(Continued)

### Overview

....(Continued)

12. Close the **Transaction Detail** screen. The following figure shows an Externally Triggered Transaction.

The screenshot shows the 'Transaction Detail' screen for the transaction 'ACCEPT\_RESERVATION'. The 'Transaction ID' is 'ACCEPT\_RESERVATION' and the 'Transaction Name' is 'Accept Reservation'. The 'Externally Triggered' tab is selected, and the checkbox 'This Transaction is triggered from external systems' is checked. Below this, the 'Services Triggering This Transaction' table lists one service: 'Inventory' with 'Service Group Name' 'InitialDataLoad'. The 'Events' tab is also visible, showing a table with one event: 'ON\_RESERVATION\_ACCEPTANCE' with 'Event Name' 'On Reservation Acceptance' and 'Active?' 'N'. The 'Event Handler Setup' section is at the bottom.

Transaction ID	Transaction Name
ACCEPT_RESERVATION	Accept Reservation

☒ Externally Triggered
 ☐ Time Triggered
 ☐ User Triggered
 ☐ Others

☐ This Transaction is triggered from external systems

Service Name	Service Group Name
Inventory	InitialDataLoad

☒ Events
 ☐ Pickup Statuses
 ☐ Drop Statuses
 ☐ User Exits

Event Id	Event Name	Active?
ON_RESERVATION_ACCEPTANCE	On Reservation Acceptance	N

Event Handler Setup

(Continued on next page)

## Transaction-Related Tasks



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(Continued)

### Time Triggered Transactions

Time Triggered Transactions perform repetitive Actions on a scheduled basis. Typically, the tasks performed by such Transactions include database updates, raising Events, and calling APIs automatically and at specific time intervals. Monitors are Transactions that look out for processes or circumstances that are out of bounds and then raise alerts. Many times the tasks retrieve from the task queue or work from the Pipeline.

#### Procedure to View Time Triggered Transactions

1. Select the **Release Order** Transaction and choose .
2. Choose the **Time Triggered** tab from the Transaction Details screen.
3. Select the **This Transaction is time triggered (an agent)** field to indicate a Time-Triggered Transaction. The Java Class name specifies the agent class that handles agent messages.
4. The **Agent Criteria Definitions** panel enables you to specify the agent-related information. Click  to configure the Agent Server Details:
5. **Agent Server** - specifies the server on which this instance of the transaction is to run.
6. **JMS Queue Name** - specifies the JNDI name for the JMS Queue.
7. **No. of Threads** - specifies the wanted number of threads the agent should run.
8. **Initial Context Factory** - enables remote Java clients to connect to your application. Initial context factory codes are predefined in the application.
9. **QCF Lookup** - specifies the JNDI QCF lookup for the queue that you created (this is the Queue Connection Factory that is created for the applicable JMS Server).
10. **Provider URL** - specifies the URL containing the protocol and address used to access the JMS queue. It is the location where the JMS system resides, and is JMS vendor specific.

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## Transaction-Related Tasks

(Continued)

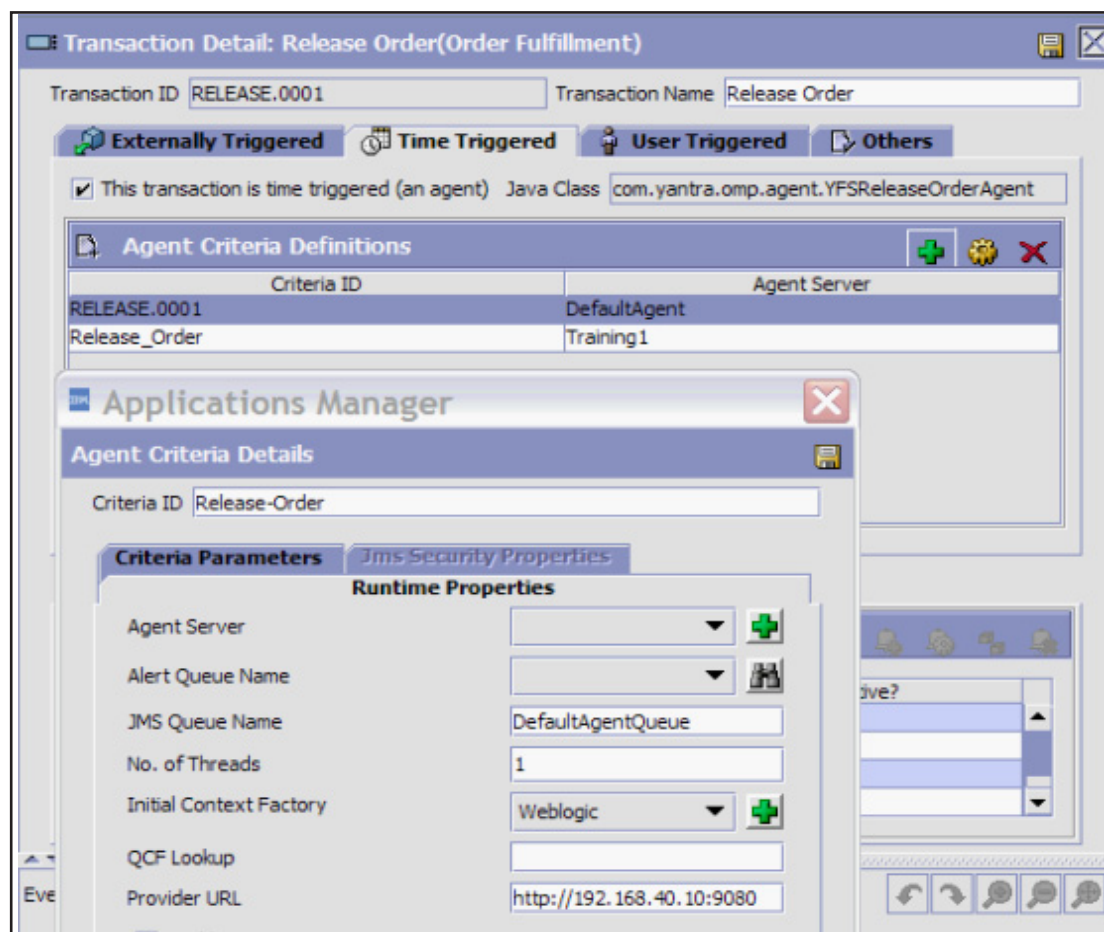
### Time Triggered Transactions

....(Continued)

11. Save all changes.

The following figure shows a Time Triggered Transaction.

**Note:** User Exits can be specified only for Time Triggered Transactions.



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## Transaction-Related Tasks

(Continued)

### User-Triggered Transactions

You can create a transaction triggered by the user. The basic criteria that is defined for such transactions are similar to the Time Triggered or Externally Triggered Transactions.

#### Procedure to View User Triggered Transaction

1. Select the **Purge Order** Transaction and choose . The Transaction Detail: Purge Order (Order Fulfillment) screen displays.
2. Choose the **User-Triggered** tab from the Transaction Details screen.



Transaction ID: PURGE      Transaction Name: Purge Order

**Time Triggered**   **User Triggered**   Others

**Externally Triggered**

☒ This transaction is triggered by users

When ready, notify user using: YCD\_DuplicateOrderAlert\_1.0

3. Select **This Transaction is triggered by Users** to indicate a User-Triggered Transaction.
4. From the **When ready, notify user using** the list, select the service to trigger when a document enters this transaction pickup status.
5. Continue to enter information in the relevant transaction fields per the Externally Triggered Transaction procedure information.
6. Save the changes.

### Events and Event Handler

You can add events and event handlers to transactions. The Events signify occurrences in the Process Types workflow and call associated Actions. You can define Event Handlers to determine the type of Actions performed when an Event occurs. You can provide Conditions that apply to the Event Handler.

(Continued on next page)


## Transaction-Related Tasks

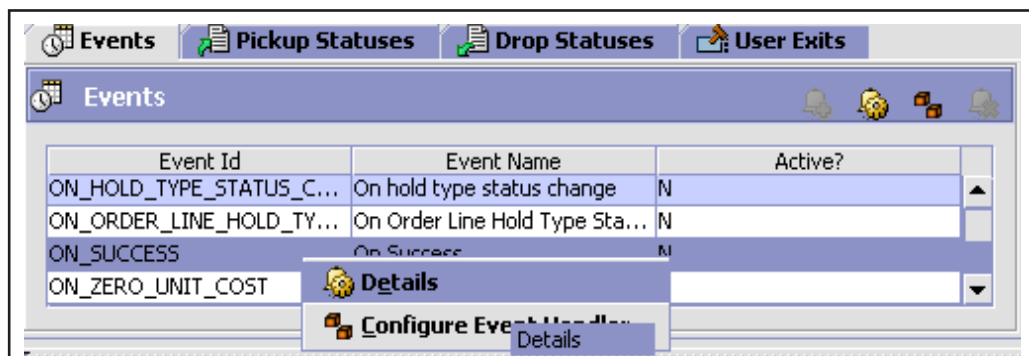
(Continued)

### Events and Event Handler

....(Continued)

#### Procedure to Define Events and Event Handlers

1. Select the **Create Order** Transaction and choose .
2. Choose the **Events** tab from the Transaction Details screen.
3. Select the **ON\_SUCCESS** Event from the list and right-click.
4. Choose **Details** to view the Event-related information.



The Event Detail: ON\_SUCCESS screen displays.

5. The key fields are explained as follows:
  - **Is Active?** - specifies if the Event is active for the Transaction. Leave this field clear to deactivate the Event.
  - **Can Enterprise Configure Event Handler?** - select this field for Enterprises to configure Event Handlers.  
**Note:** If the Transaction works across multiple Enterprises or Enterprise information is not available to the Transaction, the default Event Handler is used.
  - **Requires Backward Compatibility** - select this field if the Event Handler properties require compatibility with earlier version. If you select this field, choose the applicable version.

(Continued on next page)

## Transaction-Related Tasks

(Continued)

### Events and Event Handler

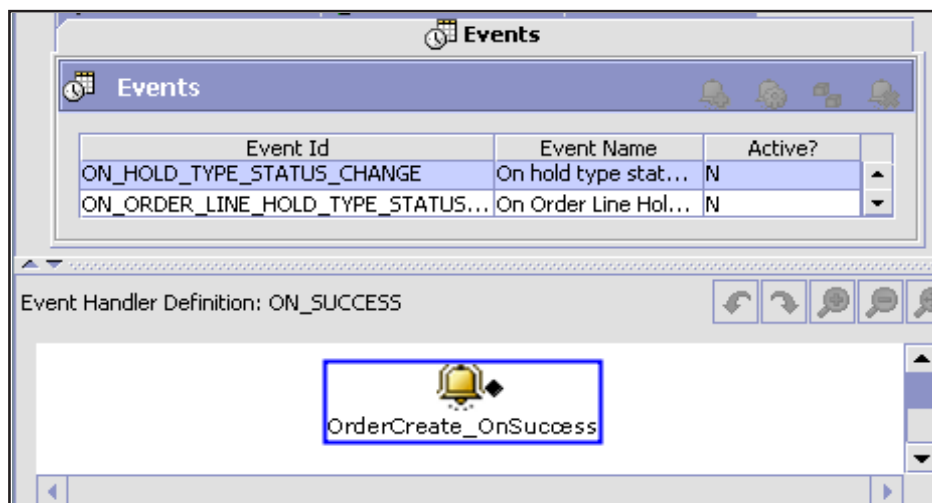
....(Continued)

6. Select the **Configure Event Handler** option from the Events tab. The Event Handler Definition work area activates.



7. Drag the applicable Actions and Conditions into the work area and connect them as per the rules that are detailed in this section.
8. Save the changes.

The following figure shows the Events and Event Handler layout.



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## Transaction-Related Tasks

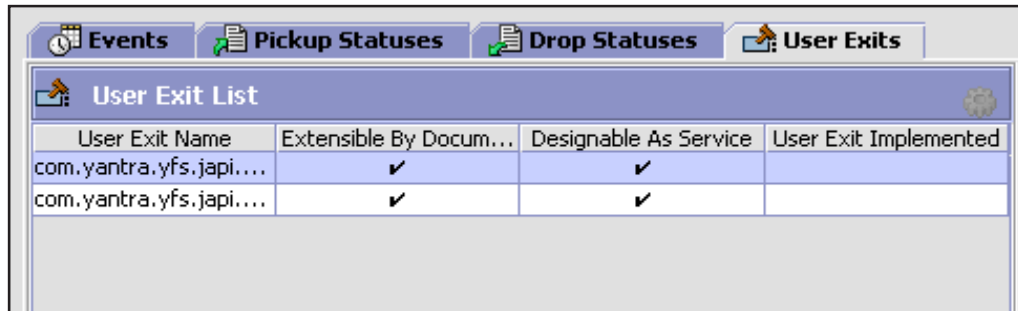
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### User Exits


User Exits are Java interfaces which can be implemented for creating Custom Logic components. You must configure the User Exits so that the Sterling Selling and Fulfillment Foundation Transactions can start the necessary logic at run time.

#### Procedure to Manage User Exits

1. Select the **Create Order** Transaction, and  choose. The Transaction Detail: Create Order (Order Fulfillment) screen displays.
2. Choose the **User Exits** tab from the Transaction Details screen.



User Exit List			
User Exit Name	Extensible By Docum...	Designable As Service	User Exit Implemented
com.yantra.yfs.japi....	✓	✓	
com.yantra.yfs.japi....	✓	✓	

3. Select an applicable User Exit from the list and  click User Exit Details (DEFAULT) screen is seen.
4. Save the changes.



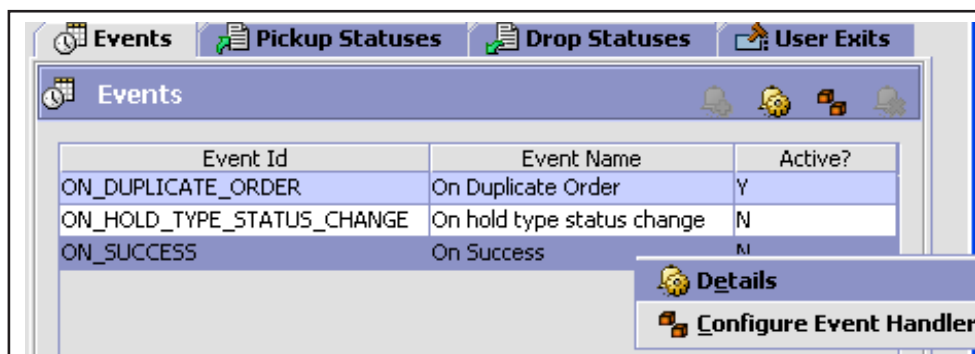
## Exercise 6.2.3: Set Up an Event Handler

### Scenario

General Holdings wants to set up an Event Handler that will trigger an Action to raise Alert Notifications.

### Instructions

1. Navigate to **Applications > Application Platform > Process Modeling** and then double-click **Process Modeling**.
2. Double-click the **Order Fulfillment** Process Type for the Sales Order Document Type. The Order Fulfillment repository is seen.
3. Click the **Transactions** tab at the bottom left of your screen.
4. Double-click the **Duplicate Order** Transaction.
5. Click the **ON\_SUCCESS** Event ID under the Events tab.
6. Right-click the **ON\_SUCCESS** Event ID and click **Details**. The Event Detail window is shown.



7. Select the **Is Active** check box to activate the event.



**Important**

The event handler works only if this option is selected.

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## Exercise 6.2.3: Set Up an Event Handler

(Continued)

### Instructions

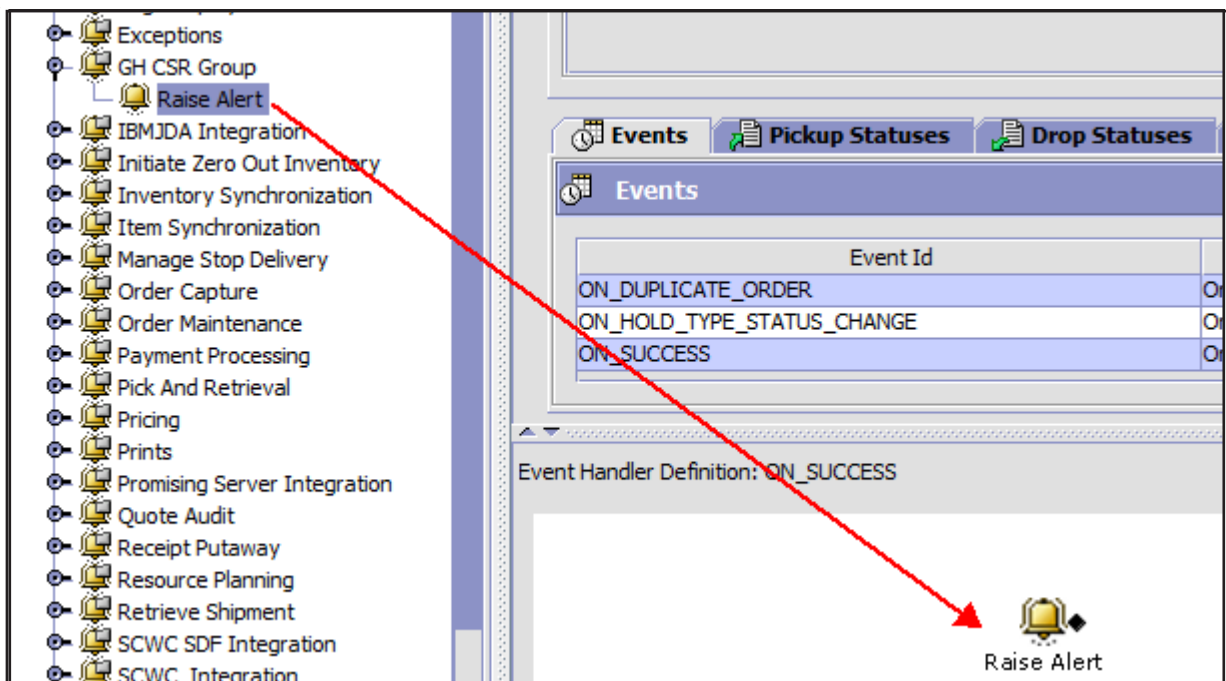
....(Continued)


8. Click **OK**.

To configure the Event Handler for the ON\_SUCCESS Event of the Duplicate Order Transaction, click the **Actions** tab at the lower left of the screen.

9. Double-click the **GH CSR Group** option to expand it.

10. Double-click **ON\_SUCCESS**. The work area for the Event Handler displays. Drag **Raise Alert** into the Event Handler Definition work area of the ON\_SUCCESS Event.



11. Click  the Event Handler is set up. An alert is raised and put in the appropriate Alert Queue whenever a duplicate order is encountered during order validation.



#### Warning

It is important that you deactivate this service to continue the life cycle of the order for the remaining exercises.

(Continued on next page)

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## Exercise 6.2.3: Set Up an Event Handler

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(Continued)

### Instructions

....(Continued)

#### **Procedure to Deactivate a Service**

1. Click the **Actions** tab at the lower left of your screen.
2. Double-click **Raise Alert** from the list of available Actions seen. The Action Detail window is seen.
3. Clear the **Invoke the following Services as part of this Action** check box to deactivate this Service.
4. Save the changes.

**Important**

It is important that you click **Save** for the deactivation to take effect.

---

## Optional Exercises

---

### Create a Custom Service

When customer orders are processed at General Holdings, the orders are validated for a few parameters such as Address and Payment Information. When the order is confirmed, an email is sent to the customer. If the Order Validation fails, an email is sent to the Customer Service Representative. In this exercise, you are required to create a Service that sends an email to a CSR.

#### **Instructions**

Create a Custom Service with the following values and Save it.

Field	Description
Service Name	Email Notification Service
Service Group Name	GH CSR Lead Group
Service Parameter Checkbox	This Service Provides Real-time Responses
Service Component Name	Component
Component Name	Email
Email Server	Email Server that is used at training site
Subject	Your order is placed
From	instructor@ibm.com
Email Server Listener Port	25
To	instructor@ibm.com

#### **Result**

You should be able to view a new Service Group called GH CSR Lead Group along with a Service to send emails, in the Application Rules side panel.

### Create an Action

General Holdings wants to create an Action that starts a specific Service. In this exercise, you are required to create an Action to start a Service that sends emails to Customer Service Representatives.

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(Continued on next page)

## Optional Exercises

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(Continued)

### Create an Action

....(Continued)

#### Instructions

Create an Action using the following values and Save the changes.

Condition	Value
Action Code	Send email
Action Name	Send email
Action Group	GH CSR Lead Group
Start the following Services as part of this Action	Yes
Service Name	Email Notification Service

### Result

You should be able to see a new Action group that is called GH CSR Lead Group in the Application Rules side panel.

---

## Optional Exercises

(Continued)

### Set Up an Event Handler

General Holdings wants to set up an Event Handler that trigger an Action to send emails to customers. In this exercise, you are required to set up this Event Handler.

#### Instructions

1. Select the **Confirm Draft Order** Transaction.
2. Configure the Event Handler for the **INCOMPLETE\_PAYMENT\_INFORMATION** Event of the Confirm Draft Order Transaction.
3. Locate the Send email Action and use it to set up the Event Handler.
4. Save the newly created Event Handler.

### Result

You should be able to set up the Event Handler to trigger an Action to send emails



#### Warning

---

It is important that you deactivate this Service to continue the life cycle of the order for the remaining exercises. Follow the instructions from the previous walk-through.

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## LESSON 6.3: Pipeline Creation and Determination

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### Introduction

This lesson provides you with an overview of Pipelines. Also learn about Pipeline Determination Rules and how to configure a simple Pipeline.

### Lesson Objectives

This lesson is designed to enable you to:

- Describe Pipelines.
- Discuss the Hub and Pipeline Determination Rules.
- View the Sales Order Pipeline.
- Configure a Pipeline.

### References

For more information on pipelines, refer:

- [http://www.ibm.com/support/knowledgecenter/SS6PEW\\_9.5.0/com.ibm.help.proc.model.concepts.doc/productconcepts/c\\_ProcessModelingConcepts.html](http://www.ibm.com/support/knowledgecenter/SS6PEW_9.5.0/com.ibm.help.proc.model.concepts.doc/productconcepts/c_ProcessModelingConcepts.html)  
Navigate to **Sterling Order Management 9.5.0 > Configuring shared components and users > Process modeling > Considerations**
-

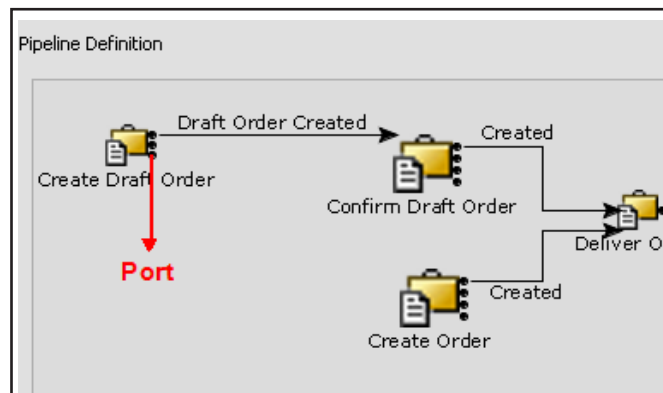
## Pipeline Creation

### Introduction

You can create a pipeline for a specific process type that you are working with. The process flow for each document is defined with one or more pipelines. Pipelines visually define the logical flow of the specific Transactions, Statuses, Actions, Conditions, and Services that make up a Pipeline process. The Sterling Selling and Fulfillment Foundation allows businesses graphically modify Pipelines by editing existing logic or dragging new logic (different transactions or conditions, for example) onto the Pipeline.

### Layout

The following figure shows a pipeline along with the ports:



(Continued on next page)



## Pipeline Creation

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(Continued)

### Navigation

To browse to the Pipeline for a specific Process Type, such as Order Fulfillment, you must follow the steps that are listed:

1. Launch **Applications Manager**.
2. Navigate to **Applications > Applications Platform**.
3. Double-click **Process Modeling**.
4. Double-click the Order Fulfillment Process Type for the Sales Order Document Type. The Order Fulfillment repository is seen.
5. Click the **Pipelines** tab at the lower left of your screen.

You can see the entire list of Pipelines available for your organization. You can also locate the Pipeline Determination Rules provided by Sterling Selling and Fulfillment Foundation.

### Pipeline Construction Concepts

To construct a Pipeline, you can drag Transactions and Conditions into the Pipeline work area. Each Transaction has a set of sections relating to each Drop Status. In order to link two Transactions, you must drag the appropriate port from the first Transaction to the second. You can identify the Status of a port by placing the cursor over the Transaction ports. You can link Transactions back to themselves, allowing them to pick up the Status being linked to.

Transactions can also be linked to Conditions. If you want to extend the Drop Status with a Condition, drag the port to the applicable Condition and then to the Pickup Transaction. If the Pickup Status has the same base as the port, the link is allowed. When the link is set up, it is defaulted to the first possible Pickup Status.

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## Pipeline Creation

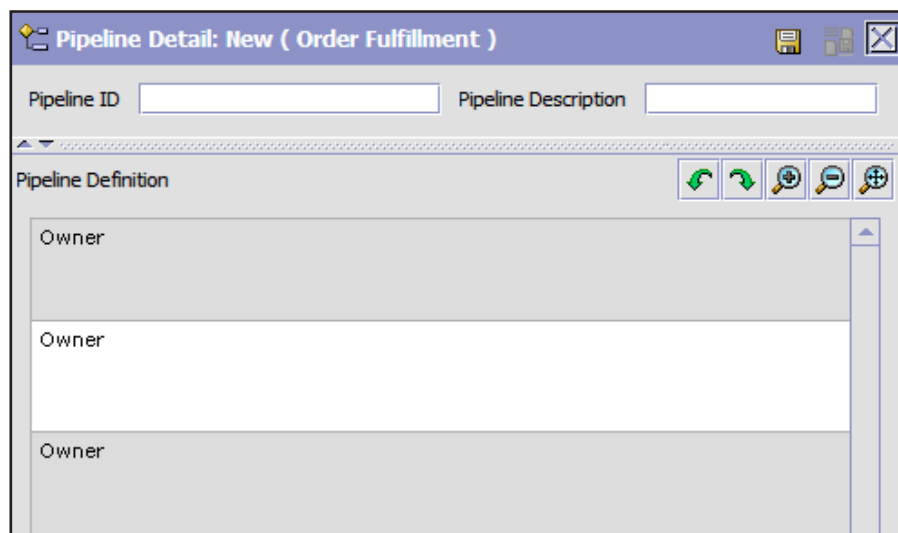
(Continued)

### Pipeline Construction Concepts

....(Continued)

#### Procedure to Create a Pipeline

1. Select the **Order**, **Load**, or **General** tab in the process modeling screen.
2. Right-click on the applicable Process Type in the Process Types swimlane and choose **Model Process**.
3. Choose the **Pipeline** tab at the lower left of the screen.
4. Select **Pipelines** and choose . The Pipeline Detail screen displays.



5. Drag and drop the required Transactions and Conditions into the work area and connect them.
6. Save the changes.

(Continued on next page)

## Pipeline Creation



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(Continued)

### Incomplete Pipelines

You can save an incomplete Pipeline as a draft. This draft can be retrieved for a final save without any necessary validations. When you save and activate the Pipeline, the Draft Pipeline is automatically deleted from the system.

#### **Procedure to Save an Incomplete Pipeline**

1. Launch the Pipeline Detail screen.
2. Configure a Pipeline per the rules that are detailed in the previous section.
3. Click . The Pipeline is saved as a draft Service.
4. When you are ready to save it as a complete and functional Pipeline,  click.



#### **Important**

---

During runtime, when a status is reached that is configured to be picked up by more than one TaskQ-based Transaction in the Pipeline, a TaskQ record for each of those Transactions is created. This includes situations where the Yes and No section of Condition both drop into the same Status, but feed into different TaskQ-based Transactions. When you save a Pipeline as a draft, any existing draft for the Pipeline is overwritten. When you save the draft as an actual Pipeline, any existing Pipeline with the same Pipeline ID is overwritten. The Order Delivered status can be picked by more than one Transaction. There is no implied order of processing between these Transactions. Depending on which Transaction is run first, this Status is processed.

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(Continued on next page)

## Pipeline Creation

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(Continued)

### Pipeline Monitoring Rules

Using the Monitoring Rule Components that you configured while defining the Process Type, you can define the parameters used to monitor orders and shipments throughout their life cycle in fulfillment and shipment Process Type Pipelines.




#### Important

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You can define Pipeline Monitoring Rules if your organization owns the Pipeline you are configuring them for.

---

#### Procedure to Define a Pipeline's Monitoring Rules

1. Navigate to the **Pipelines** section.
2. Right-click on the applicable Pipeline and choose **Configure Monitoring Rules**. The Monitor Rules window is seen in the work area.
3. Choose  from the Rules List.
4. Select the Rule Type that you want to define and add to the Rule List. The Rule Details is seen in the lower frame. You can select the hyper-text in the rule details and define the individual parameters.  
**Note:** When defining the Hours parameter, you can select whether the hours are based on elapsed hours or on the working hours for any calendars you might have defined.
5. Save the changes.



#### Note

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You can increase or decrease a Monitoring Rules priority by selecting the rule and choosing the up-arrow to increase its priority and the down-arrow to decrease its priority.

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## Exercise 6.3.1: Create an Order

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### Scenario

You are required to create an order manually from the create order console.

### Instructions

1. Login to Sterling Selling and Fulfillment Foundation application with **admin / password** as the login credentials. Click **Sign In**.
2. Click **Order** from the menu bar and select **Create Order** from the list. The Order Entry screen is seen. The Order Entry screen enables a user to manually enter orders.
3. Ensure that the Enterprise **DEFAULT** is selected. In the **Bill To Address**, type the address:

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

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(Continued on next page)

## Exercise 6.3.1: Create an Order

(Continued)

### Instructions

....(Continued)



#### Important

If the Seller Organization is not specified, the system will assume that the Seller Organization is DEFAULT.

The Order Detail screen is seen with the order in the Draft Status. Note the order number. It is a unique order number similar to the following figure.

**Order Detail**

**Sales Order**

Enterprise DEFAULT Buyer

Order # Y100000035 Status [Draft]

Order Type Service

Document Type Sales Order

**Ship To**

BITBOOST SYSTEMS  
SAM DOVE

**Bill To**

BITBOOST SYSTEMS  
JOHN DOE  
SUITE 5A-1204  
421 E DRACHMAN  
TUCSON ARIZONA US

4. Scroll down to the **Order Lines** section of the Order Detail screen. Click the **Search for Item** icon (magnifying glass) to search for Item ID **10012**. Click the **tick mark** next to Item ID or type the Item ID.
5. Type **1.00** as the Line Qty.

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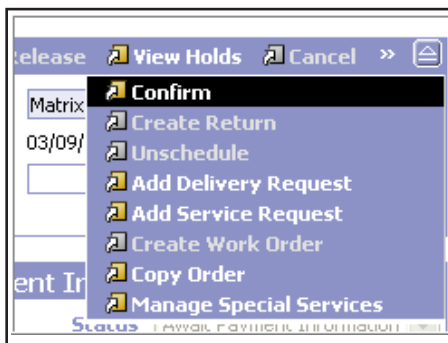
## Exercise 6.3.1: Create an Order

(Continued)

### Instructions

....(Continued)

6. Save the changes. The order moves to the **Draft Order Created** Status.
7. Select the Order # that you created earlier in the exercise and you are back on the **Order Detail** screen.
8. Click on >> adjacent to **Cancel** and confirm the Order.



The order moves to the Created Status. The Sales Order document is moving through the Sales Order Fulfillment Pipeline and on confirmation of the draft order, Created is the next applicable Status for the Sales Order.

### Result

You successfully created an order that moves through the default Sales Order Pipeline. The Status of the order is Created.

## Exercise 6.3.2: Create a New Pipeline

### Scenario

You are required to create an Order Fulfillment Pipeline called GH Order Fulfillment Pipeline.

### Instructions

1. Navigate to **Applications > Application Platform > Process Modeling** and then double-click **Process Modeling**.



#### Important

Ensure that the DEFAULT organization rules are loaded.

2. Double-click the **Order Fulfillment** Process Type for the Sales Order Document Type. The Order Fulfillment repository is seen.
3. Click the **Pipelines** tab at the lower left of your screen.
4. Right-click the **Pipelines** group and click **Create New**. The Pipeline Detail: New (Order Fulfillment) screen displays.
5. Type the values that are provided in the following table:

Field	Description
Pipeline ID	GH Pipeline
Pipeline Description	GH Order Fulfillment Pipeline

6. Save the changes. The GH Order Fulfillment Pipeline is created.
7. Click the **Transactions** tab at the lower left of your screen to view the available Transactions.



#### Important

If the Seller Organization is not specified, the system will assume that the Seller Organization is DEFAULT.

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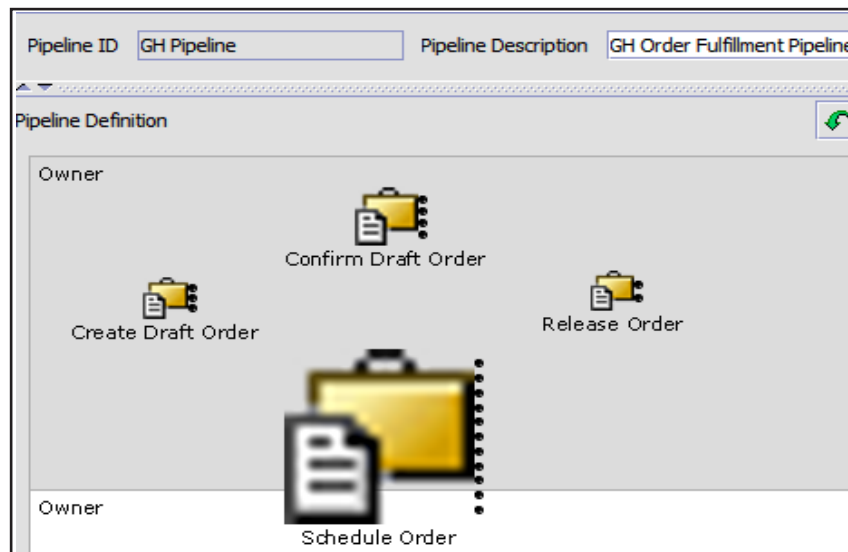
## Exercise 6.3.2: Create a New Pipeline

(Continued)

### Instructions

....(Continued)

8. Drag the following transactions into the work area as they are positioned in the figure:
  1. Create Draft Order
  2. Confirm Draft Order
  3. Schedule Order
  4. Release Order



9. Right-click in the work area and click **Enable Auto Hint**.
10. Connect the Transactions in the work area with the help of Auto Hint, such that:
  - a. The Drop Status for Create Draft Order is Draft Order Created.
  - b. The Drop Status for Confirm Draft Order is Created.
  - c. The Drop Status for Schedule Order is Scheduled.

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## Exercise 6.3.2: Create a New Pipeline

(Continued)

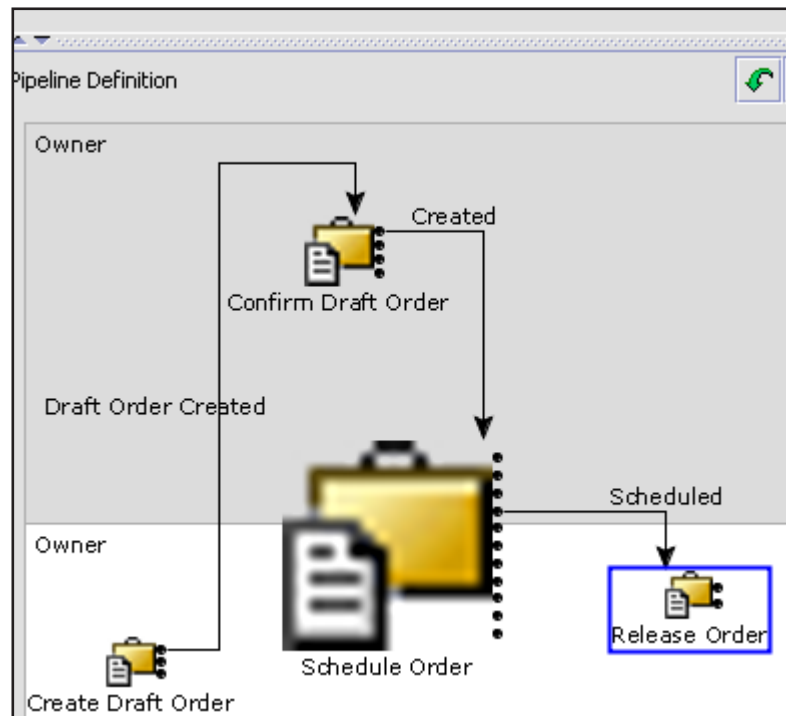
### Instructions

....(Continued)

For example, to connect the Create Draft Order Transaction to the Confirm Draft Order Transaction:

1. Identify the port (see the following figure) that belongs to the Draft Order Created Drop Status.
2. To identify the port, keep your mouse over each port.
3. Auto Hint is seen the applicable Statuses.
4. Drag the port that belongs to the Draft Order Created Drop Status from the Create Order Transaction to the Confirm Draft Order Transaction.

Similarly, connect the Confirm Draft Order Transaction to Schedule Order Transaction to construct the GH Order Fulfillment Pipeline.



5. To include the Status **It Works** in the Pipeline, right-click on the Status **Created**. Click **Change**.
6. Select **It Works** from the **Please Select A Status** list. Click **OK**.

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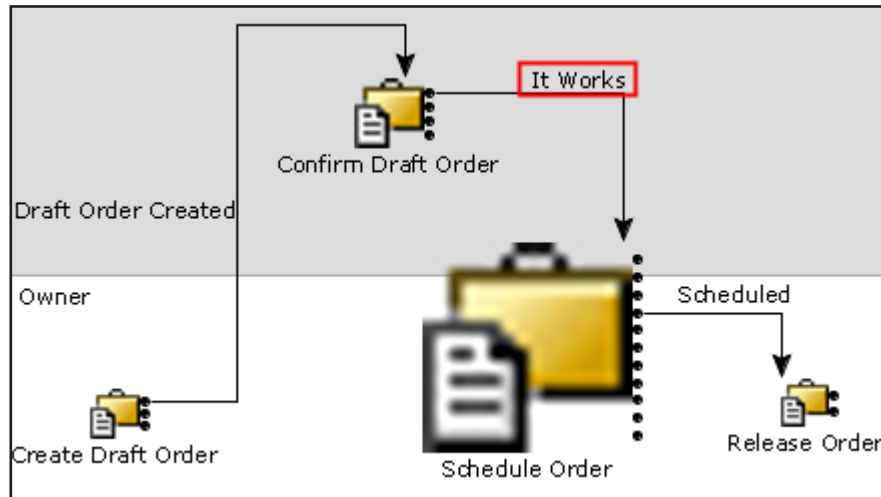
## Exercise 6.3.2: Create a New Pipeline

(Continued)

### Instructions

....(Continued)

The GH Order Fulfillment Pipeline shows the updated Status after the previous step.



7. Save the changes.

### Result

You should now be able to view the newly constructed GH Order Fulfillment Pipeline.

## Pipeline Determination

---

### Definition

A Process Type Pipeline is a series of Transactions and Statuses that guide Document Types, such as a Sales Order, through a predefined process. A Pipeline consists of the different Statuses a document goes through during Fulfillment, Negotiation, Shipment, or Receipt. You can also set up Transactions consisting of Events, Actions, and Conditions pertaining to the Pipeline you are configuring.

### Pipeline Determination Rules

Pipeline Determination enables you to set up Conditions that determine the Pipeline to be used during the start of the Business Process Workflow. When you expand the Pipeline Determination section, the components shown depends on the role you log in as. If you log in as a Hub User, the Hub Rule is seen. It implies that:

- If you log in as a Hub User - then the Hub Rule is seen.
- If you log in as an Enterprise User - both the Hub Rule and all user-created determination rules (such as My Rule) displays.

Double-click the applicable Node to show the Pipeline Determination Rules. Each Process Type maintains an independent Hub Rule.

### **Example**

Consider an organization, XYZ, which occasionally deals with Sales Orders containing hazardous materials. It uses the following two Pipelines:

1. For orders with Order Lines without any hazardous materials, and,
2. For orders with Order Lines containing hazardous materials. These orders go through inspection before continuing through the order process.

XYZ uses Pipeline Determination to set up a Condition that determines whether the Order Lines contain hazardous materials. Based on the result, it sends the Order Line down the correct Pipeline.



#### Important

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If you log in as an Enterprise User, the Hub Rule screen is grayed out and cannot be modified.

---

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## Pipeline Determination

(Continued)

### Pipeline Determination Rules

....(Continued)

### Condition Variable for Pipeline Determination

Whenever you create a order or add a line to an existing order, the Pipeline determination occurs based on the Order Document Type Pipeline. When changes are made to Draft orders, the Pipeline determination does not occur. Pipeline determination takes place based upon the Conditions specified in the Hub Rule. You can create robust and complex Conditions that enable you to choose a specific Pipeline for your Business Process Workflow. These complex Conditions can be built using the Condition Builder attributes.

A few of the key Order Fulfillment (Sales Order) Condition Builder attributes that are used for Pipeline Determination are listed in the table:

Field	Value
<b>Order Attributes</b>	
Condition Variables 1 and 2	A variable that is used for Condition building. This is an existing field in the YFS_ORDER_LINE database table, and can be used to create Conditions without extending the database.
Delivery Method	The delivery method of the order (shipment, pickup, or delivery).
Disposition Codes	The Disposition Code of an item. This field is only applicable for Reverse Logistics and Supply Collaboration.
Line Type	The type of the Order Line. Sterling Selling and Fulfillment Foundation has no application logic that is associated with the Order Line type. This field can be set up per your business practices.

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## Pipeline Determination

(Continued)

### Condition Variable for Pipeline Determination

....(Continued)

Field	Value
<b>Participant Attributes</b>	
Bill To ID	The ID of the Bill to Address for the order.
Buyer Organization Code	The code of the organization buying the goods or services.
Enterprise Code	The code of the Enterprise on the order.
Receiving Node	The Node that receives the shipment for the order.
<b>Item Attributes</b>	
Item Group Code	The Group Code of the Service item. Example: If the Service is a provided Service item, then the item group code is PS.
Product Line	The Product Line of the item on the Order Line.
<b>Item Attributes</b>	
Fulfillment Type	The Fulfillment Type of the order.
Intentional Backorder	The flag indicating whether the order was intentionally dropped into backordered Status at order creation.

---

## Exercise 6.3.3: Create a Hub Determination Rule

---

### Scenario

You are required to create a Hub Determination Rule.

### Instructions

1. Navigate to **Applications > Application Platform > Process Modeling** and then double-click **Process Modeling**.



Important

Ensure that the DEFAULT organization rules are loaded.

2. Double-click the **Order Fulfillment** Process Type for the Sales Order Document Type. The Order Fulfillment repository is seen.
3. Expand **Pipeline Determination**. Double-click **Hub Rule**.
4. Right-click the link connecting the **False** Node of the **Is Bundle Parent** Condition to the Sales Order Fulfillment Pipeline. Click **Delete**.
5. Click the **Conditions** tab at the lower left of the screen to include the Condition ID OrdersForGH in the Hub Determination Rule.
6. Click the **OrdersForGH** Condition Group to expand it.

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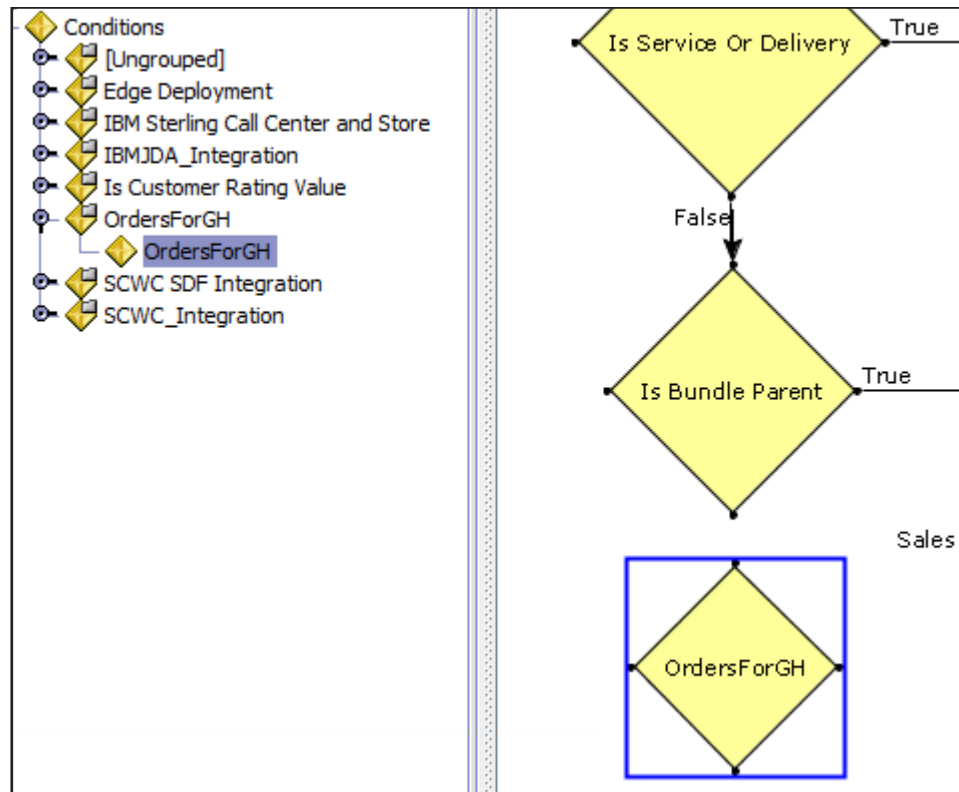
## Exercise 6.3.3: Create a Hub Determination Rule

(Continued)

### Instructions

....(Continued)

7. Drag the Condition **OrdersForGH** into the workarea.



8. Click the **Pipelines** tab under the Order Fulfillment Repository to link the Condition ID **OrdersForGH** to the GH Order Fulfillment Pipeline.

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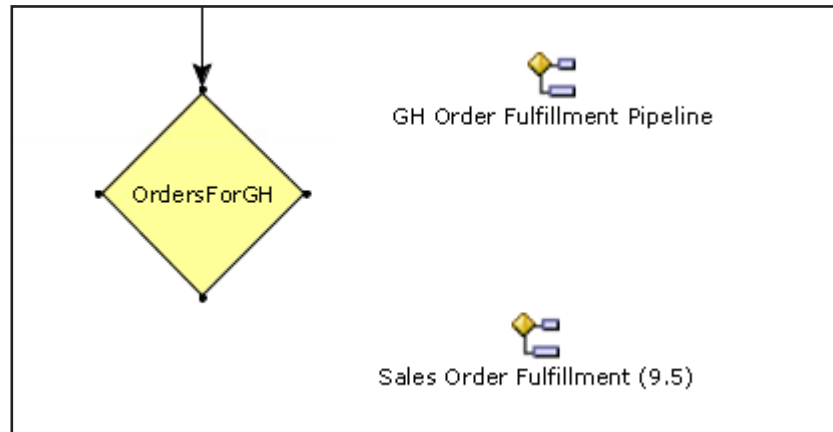
## Exercise 6.3.3: Create a Hub Determination Rule

(Continued)

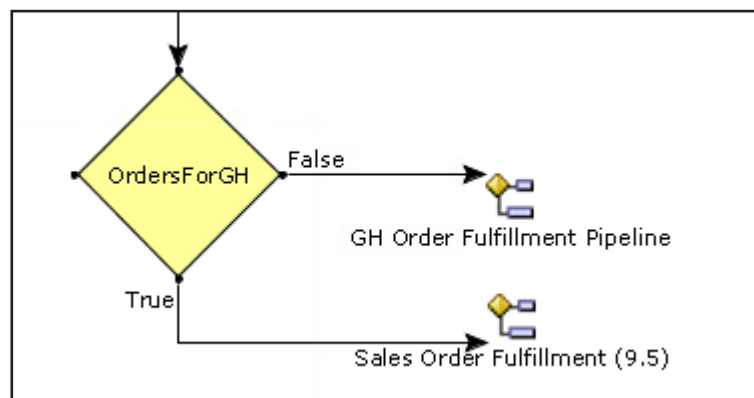
### Instructions

....(Continued)

9. Drag the **GH Order Fulfillment Pipeline** into the work area.



10. Connect the False Node of the Is Bundle Parent Condition to the OrdersForGH Condition.
- Click the **False** Node of the Condition **Is Bundle Parent**.
  - Drag the arrow to the **OrdersForGH** Condition.
11. Connect the **True** Node of the **OrdersForGH** Condition to the **GH Order Fulfillment Pipeline** and False Node to the **Sales Order Fulfillment Pipeline**.



12. Save the changes. The new Hub Determination Rule is created.

### Result

The new Hub Determination Rule must ensure that all orders with enterprise as GH should go through the GH pipeline and all others orders through the DEFAULT pipeline.

## Exercise 6.3.4: Create an Order Manually

### Scenario

You are required to create an order manually for Seller; Matrix-B and item #10012 using the Create Order console.

### Instructions

1. Login to Sterling Selling and Fulfillment Foundation application with **admin / password** as the login credentials. Click **Sign In**.
2. Click **Order** from the menu bar and select **Create Order** from the list. The Order Entry console is seen. The Order Entry console enables a user to manually enter orders.
3. Ensure that the Enterprise is **DEFAULT** and the Seller is **Matrix-B**.
4. In the Bill To Address field, type the following address:

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

5. Click **Create Order**. The Order Detail screen is seen with the order in the Draft Status. Note that the order has a unique Order Number.



#### Important

If the Seller Organization is not specified, the system will assume that the Seller Organization is DEFAULT.

6. Scroll down to the Order Lines section of the Order Detail screen. Click the Search for Item icon (magnifying glass) to search for Item ID **10012** or type the Item ID. Type **1.00** as the Line Qty.

(Continued on next page)

## Exercise 6.3.4: Create an Order Manually

(Continued)

### Instructions

....(Continued)

7. Save the changes. The order moves to the **Draft Order Created** Status. To confirm the order, click >> adjacent to **Cancel** and click **Confirm** from the list.

**Order Detail** Save

---

**Sales Order** Schedule Release View Holds Cancel >>

Enterprise: DEFAULT    Buyer: Status: **It works**    Seller: [Matrix-B](#)  
 Order #: Y100000104    Order Date: 06/30/2016 17:26:34  
 Order Type:    Service:     Requested Delivery Date:  
 Document Type: Sales Order

---

**Ship To**  
 BITBOOST SYSTEMS  
 JOHN DOE  
 SUITE 51-1204  
 421 E DRACHMAN  
 TUCSON ARIZONA US

**Bill To**  
 BITBOOST SYSTEMS  
 JOHN DOE  
 SUITE 51-1204  
 421 E DRACHMAN  
 TUCSON ARIZONA US

**Charges**  

Line Sub Total	0.00 +
Total Charges	0.00 +
Total Tax	0.00 +
Total Discount	0.00 -
Grand Total	\$ 0.00

**Payment Info**  
 Status:   
 Type:  
 Authorized: 0.00  
 Collected: 0.00

---

**Order Lines** View Details View Instructions View Kit Components View Audits >>

	Line	Item ID	PC	UOM	Description	Recv Node	Ship Node	Delivery Date	Line Qty	Amount	Status
<input type="checkbox"/>	1	10012			T-Shirt Reg				1	\$ 0.00	<b>It works</b>

The order moves to the It Works Status. Based on the Condition, the Sales Order document moves through the GH Order Fulfillment Pipeline and on confirmation of the draft order, It Works is the next applicable Status for the Sales Order.

### Result

You have successfully created an order that moves through the custom pipeline that is based upon the condition.

## Optional Exercises

---

### Create a New Pipeline

General Holdings wants to create a Order Fulfillment Pipeline. In this exercise, you are required to create a Order Fulfillment Pipeline and update the Created Status to DraftReady Status (refer to Lesson 2 for this new Status).

#### Instructions

1. Create an Order Fulfillment Pipeline with the following values:

Field	Description
Pipeline ID	GH Pipeline-1
Pipeline Description	GH Order Pipeline

2. Include the following Transactions in the Pipeline:
  1. Create Draft Order
  2. Confirm Draft Order
  3. Schedule Order
  4. Release Order
  5. Include Order in Shipment
  6. Ship Shipment
3. Connect the Transactions with the help of Auto Hint.
4. Change the Created Status to DraftReady and save the changes.

### Result

You successfully created a Pipeline for General Holdings.

---

(Continued on next page)

## Optional Exercises

---

(Continued)

### Create a Pipeline Determination Rule

General Holdings wants to create a Hub Determination Rule to check for specific Conditions. If the Conditions are met, then it wants the orders to go through a Custom General Holdings Pipeline.

### Instructions

1. Include the Condition ID Is Seller Organization Matrix-B in the Hub Determination Rule.
2. Link the Condition ID Is Seller Organization Matrix-B to the GH Order Pipeline created in the previous exercise.
3. Replace the Condition ID OrdersForGH with Is Seller Organization Matrix-B.
4. Save the Pipeline Determination Rule.

### Result

You successfully created a Pipeline Determination Rule that validates the Seller Organization on all orders.

---

(Continued on next page)

## Optional Exercises

---

(Continued)

### Create an Order for Seller Matrix

General Holdings has included a new Pipeline in their Service Definition Framework. Their business requirements are such that all orders for seller Matrix Business must pass through a specific Pipeline. In this exercise, you are required to create an order and confirm it. Based upon the Pipeline Determination Rules, the order will go through the respective Pipeline.

### Instructions

Create an order with the following details:

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

### Result

You have successfully created a Pipeline Determination Rule that validates the Seller Organization on all orders. The Status of the order must show DraftReady.

---

---

## Check Your Understanding

---

The following set of multiple choice questions enable you to evaluate your understanding of the concepts covered and reinforce the content presented so far. The answer key for these questions are provided in the Appendix of this course.

### Questions

1. **Time triggered transactions are often called:**
  - a. Actions
  - b. Events
  - c. Agents
  - d. Event Handlers
2. **Which of the following is not a component of a pipeline?**
  - a. Status
  - b. Transaction
  - c. Determination Rule
  - d. Condition
3. **In a Pipeline, what moves a document from the current transaction to the next transaction's Pickup Status?**
  - a. Pickup Status
  - b. Drop Status
  - c. User Exit
  - d. Event Handler
4. **What is the primary Process Type component that is used to transport data between Sterling and third-party applications, external systems and organizations?**
  - a. Event Handlers
  - b. Actions
  - c. Services
  - d. Transactions

---

(Continued on next page)

## Check Your Understanding

---

(Continued)

### Questions

....(Continued)

5. **What is the name used for optional transactions that can be incorporated within a Pipeline? These optional transactions contain specific details such as statuses. For example, a listener transaction.**
  - a. Custom Transaction
  - b. Abstract Transaction
  - c. Extended Transaction
  - d. Derived Transaction
6. **What are the Java interfaces in transactions that can be implemented for creating custom logic components:**
  - a. Pickup Statuses
  - b. User Exits
  - c. Events
  - d. Agents
7. **Because custom transactions have no need for extended logic, configurations cannot create user exits for custom transactions**
  - a. True
  - b. False
8. **Time-Triggered Transactions are not triggered by conditions, events, or user input.**
  - a. True
  - b. False
9. **Some Time-Triggered Transactions use custom logic to determine their work. These agents typically do not refer to the Task Q table to get their tasks and they are classified or typed as:**
  - a. Non task-based agents
  - b. Task based agents
  - c. None of the above

---

(Continued on next page)



## Check Your Understanding

---

(Continued)

### Questions

....(Continued)

10. **Created, Canceled, Shipment Delayed** are examples of:
  - a. Transactions
  - b. Actions
  - c. Statuses
  - d. Services
11. **One way to extend a system transaction is by adding Pickup and Drop statuses.**
  - a. True
  - b. False
12. What best describes the relationship between statuses and transactions?
  - a. Statuses call transactions
  - b. Statuses are used to connect transactions
  - c. Statuses are used to extend transactions
  - d. None of the above
13. **In the Process Modeler there are three types of conditions namely, Static, Dynamic and**
  - a. Ad hoc
  - b. Advanced XML
  - c. Optional
  - d. None of the above
14. **Which Process Type component can be used to transport data especially to external entities?**
  - a. Actions
  - b. Statuses
  - c. Conditions
  - d. Services

---

(Continued on next page)

## Check Your Understanding

---

(Continued)

### Questions

15. **An alert service is an example of a:**
    - a. Synchronous service
    - b. Asynchronous service
    - c. Both Synchronous and Asynchronous service
    - d. None of the above
  16. **Events Trigger:**
    - a. Actions
    - b. Services
    - c. Transactions
    - d. Conditions
  17. **Actions typically call:**
    - a. Other actions
    - b. Services
    - c. Transactions
    - d. Statuses
  18. **The functionality of the default transactions can be extended by:**
    - a. Statuses
    - b. User Exits
    - c. Agents
    - d. Pipelines
-

## Lesson Review

---

### Completed Objectives

This lesson is designed to enable you to:

- Describe Pipelines.
  - Discuss the Hub and Pipeline Determination Rules.
  - Create a Pipeline.
  - Configure a Hub Determination Rule.
-

