



webMethods BPM for Developers

Exercise Guide

Software AG
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EXERCISE 01:

CONFIGURE THE RUNTIME AND DEVELOPMENT ENVIRONMENT

Objectives

In this exercise, you will verify that the appropriate servers have been started as Windows services. In case they are inactive, you will manually start them by using the Service Control Panel. In addition, you will check the availability of some required Integration Server packages and configure your development environment preferences.

In this exercise and all subsequent exercises, please replace:

<workshop_dir> by C:\Training\622-65E

Steps

1. Ensure that the time zone and time setting of your VM mirrors your local time zone and time setting. If necessary, double-click the clock in the lower right corner of the Windows task bar to open the Windows Date and Time Properties of your VM, and adjust the settings.
2. Launch the Windows Services Control Panel to verify the configuration of Windows services.



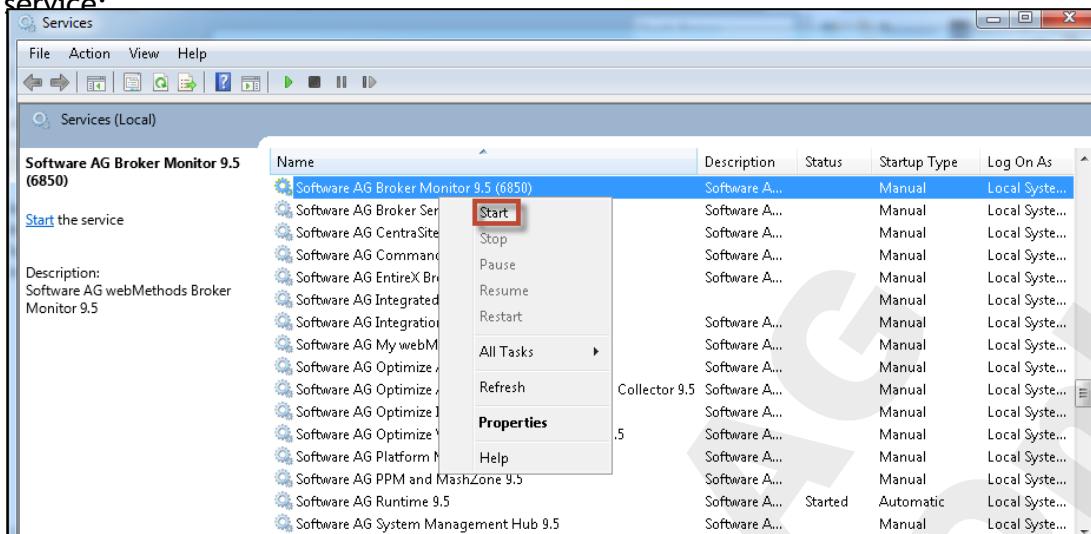
Verify that the following Windows services are available and in the following state:

SQL Server (MSSQLSERVER)	started
SQL Server VSS Writer	not started
Software AG Broker Monitor (6850)	not started
Software AG Broker Server (6849)	not started
Software AG Integration Server	not started
Software AG My webMethods Server (default)	not started
Software AG Optimize Analytic Engine	not started
Software AG Optimize Infrastructure Data Collector	not started
Software AG Optimize Web Service Data Collector	not started
Software AG Runtime	started
Software AG Universal Messaging (umserver)	not started

Exercise 01:

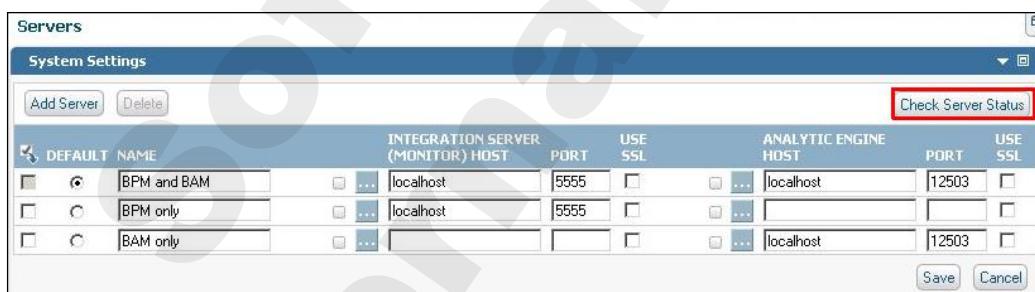
Configure the Runtime and Development Environment

3. Use the Service Control Panel to start the **Software AG Broker Monitor (6850)** as a Windows service.

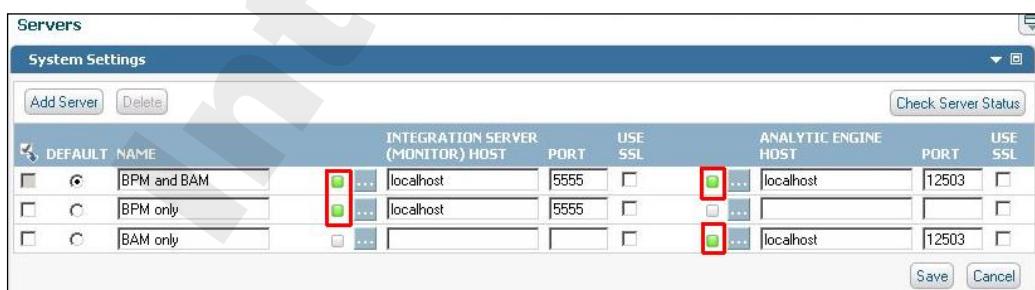


Similar, use the Service Control Panel to start the following Windows services in the sequence:

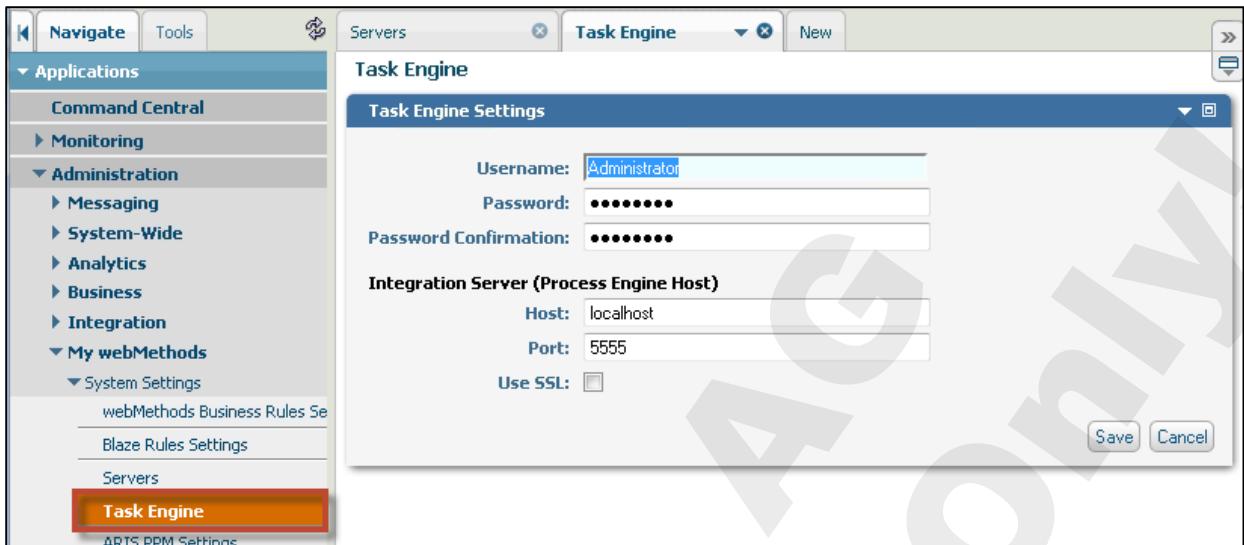
1. **Software AG Universal Messaging (umserver)**
 2. **Software AG Integration Server**
 3. **Software AG My webMethods Server**
 4. **Software AG webMethods Optimize Analytic Engine**
4. Open a browser tab and login to My webMethods using the URL <http://localhost:8585>. Provide **Administrator/manage** for authentication.
(Note: It may take a while until MWS has completed its startup and is able to serve the URL from above).
5. Select the Navigate tab and drill down to Applications -> Administration -> **My webMethods** -> **System Settings** -> **Servers**. Confirm the Integration Server and Analytic Engine configurations match the following details:



Use **Check Server Status** to check the configuration:



6. Drill down to Applications -> Administration -> My webMethods -> System Settings -> Task Engine. Confirm the Task Engine settings match the following details (password is manage):

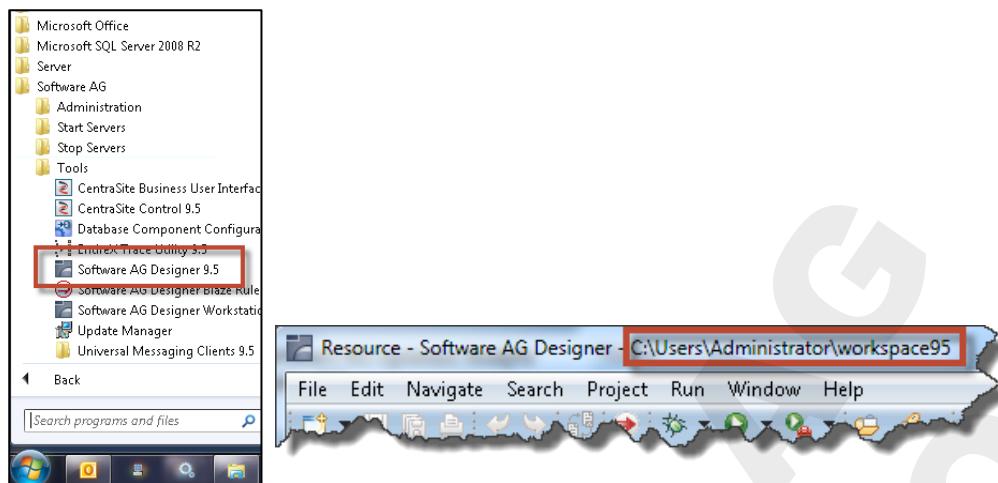


7. Use a browser and URL <http://localhost:5555> to open the Integration Server Administration console. Use Administrator/manage for authentication.
8. In the IS Administration console visit Packages -> Management. Ensure that the packages **BPMDevSupport** and **CommonSupport** are enabled. If they are disabled, click the appropriate link in the Enabled column to enable them.

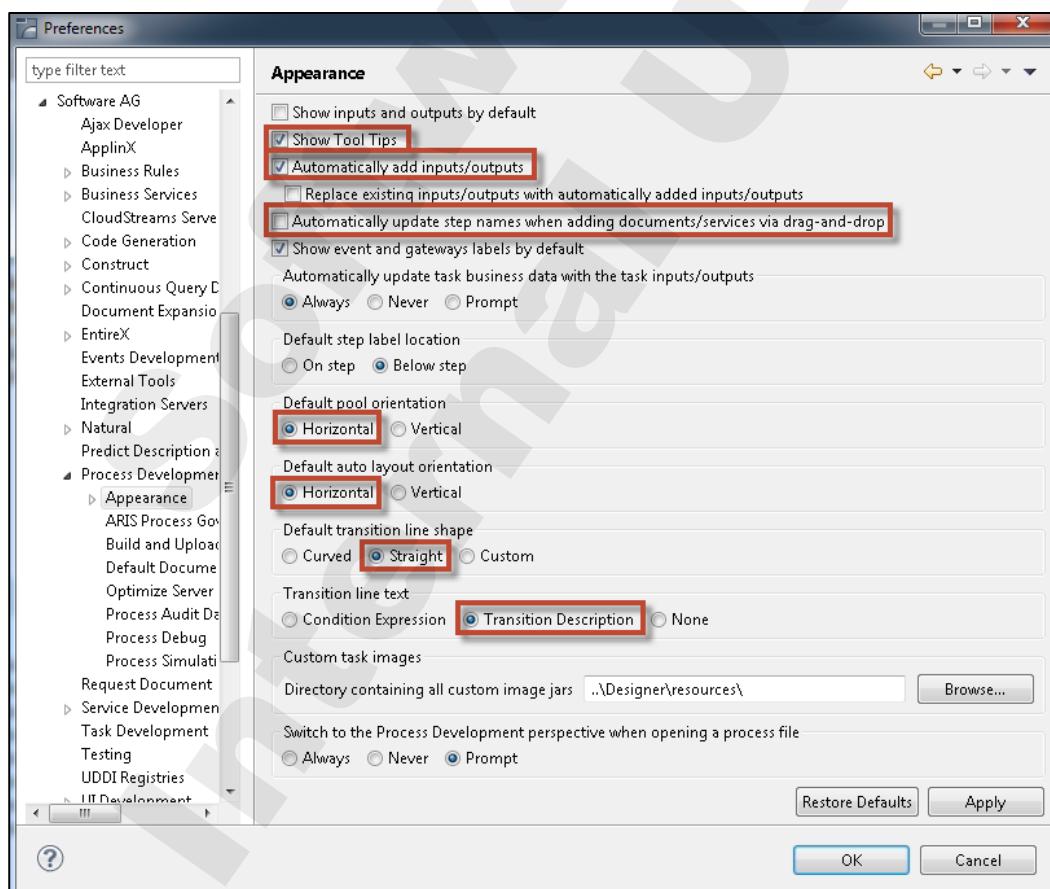
The screenshot shows the left navigation pane with 'Management' selected under 'Packages'. The main panel displays the 'Package List' table. The table has columns: Package Name, Home, Reload, Enabled, Loaded, Archive, Safe Delete, and Delete. The packages listed are:

Package Name	Home	Reload	Enabled	Loaded	Archive	Safe Delete	Delete
Acme							
AcmeHR							
BPMDevSupport							
CancelProcess							
CollaborativeTasksProcesses							
CommonSupport							

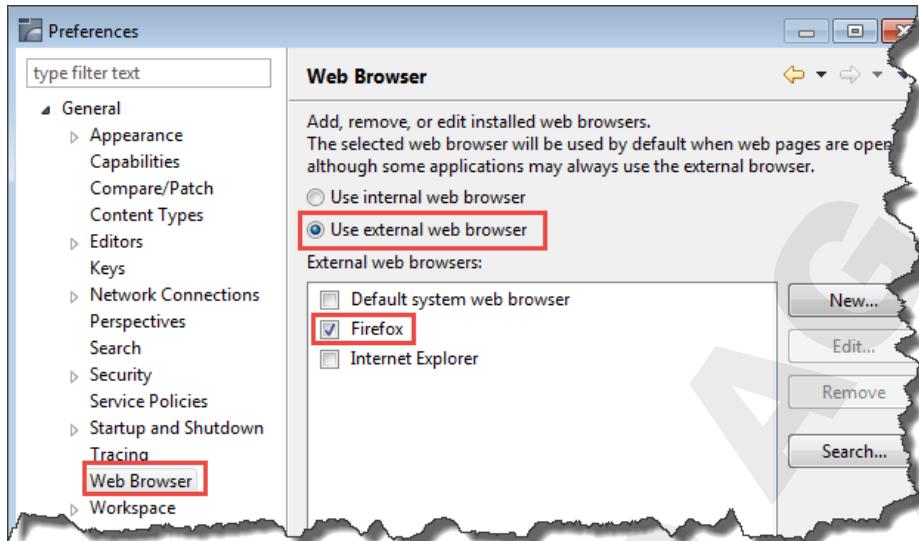
9. Launch Software AG Designer. Ensure you are working in the preconfigured default workspace named C:\Users\Administrator\workspace95.



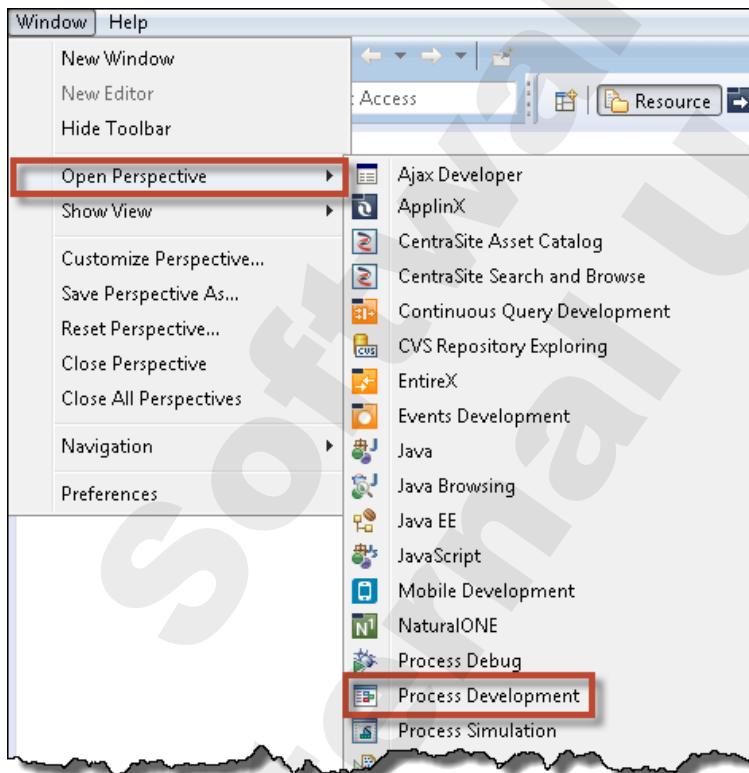
10. In Designer, update the Process Development Appearance preferences by clicking **Window > Preferences > Software AG > Process Development > Appearance**. Set up the Appearance Preferences by ensuring that **Horizontal** is selected for **Default pool orientation** and **Default auto layout orientation**. Choose **Straight** transition lines as **Default transition line shape** and select **Transition Description** for **Transition line text**. Also, enable **Show Tool Tips**, **Automatically add inputs/outputs** and disable **Automatically update step names when adding...**.



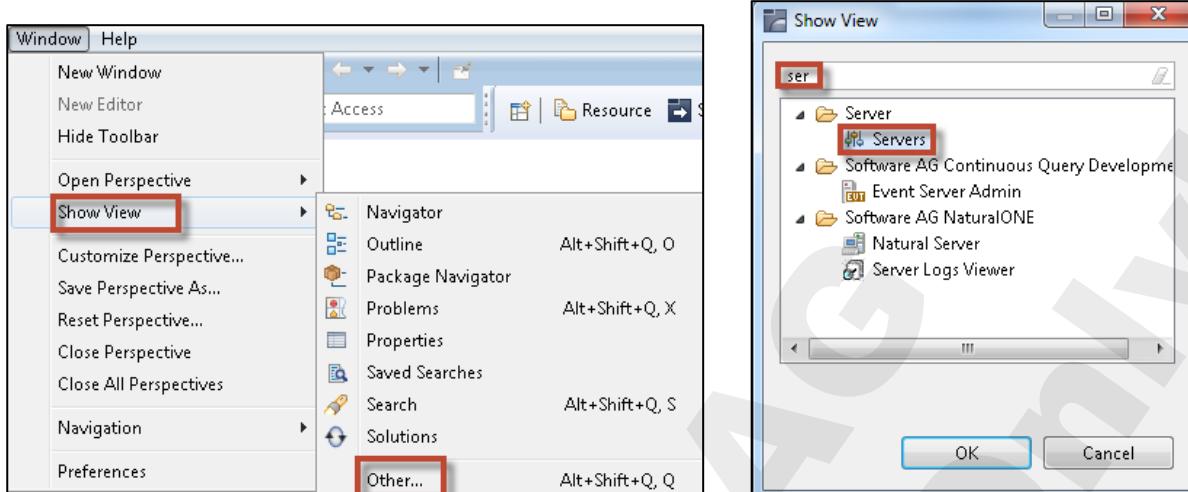
11. In Designer, update the default browser used by Designer to show web content by clicking **Window -> Preferences -> General -> Web Browser**. Choose **Use external web browser** and select **Firefox** as external web browser. Hit **Apply** and **OK**.



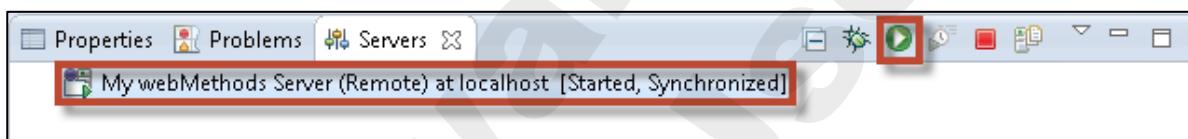
12. If necessary, switch to the **Process Development** perspective:



13. In the Process Development perspective, open the **Servers** view, if it is not already open:



14. In the Servers view, the existing My webMethods Servers is already preconfigured. Select the **My webMethods Server** marked as **Remote** you have started as a Windows service. Click the green start button. If asked for authentication, provide **Sysadmin/manage** as user credentials. When clicking the green start button, Designer detects that the MWS is running and shows its State as **Started, Synchronized**.



15. In Designer, open the **Package Navigator** view. If not connected yet, connect to your **Default Integration Server**. If asked for authentication, provide **Administrator/manage** as user credentials. Ensure that packages **BPMDevSupport** and **CommonSupport** are available for later process development.

Check Your Understanding

1. What is the URL for the Integration Server Administration console?
2. Which packages did we enable to be used by the Integration Server for this course?
3. Does the Start Server button in the Servers view always launch a new server instance?

EXERCISE 02:

CREATING AN AUTOMATED BUSINESS PROCESS

Objectives

In this exercise, you will create a new business process named **HandleNewOrder** from scratch. You will add pools and BPMN steps to the process. The **HandleNewOrder** process handles purchase orders submitted by customers to the Acme Corp.

Note:

This process model will be enhanced step by step by the subsequent exercises.

If you are unable to complete all of the steps of any given exercise within the course, refer to the Appendix at the end of this document for instructions how to obtain the solution to an exercise so that subsequent exercises can be completed.

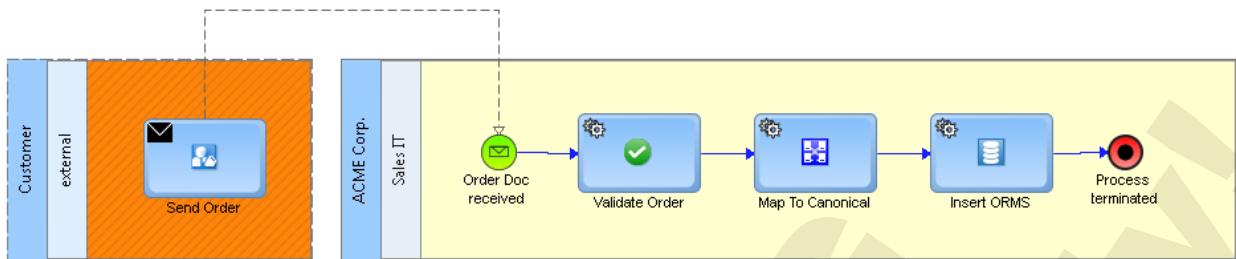
Steps

1. Ensure all Windows services mentioned in exercise 1 step 3 are up and running.
2. Launch Software AG Designer and ensure you are in **Process Development** perspective.
3. In the **Solutions** view, right-click on Processes and select **New Process Project**. Name the new project **CorporateProcesses**. Use the default location and select **Finish**.
4. From the Solutions view right-click the **CorporateProcesses** project and select **New Process**. For the Process Name enter **HandleNewOrder** and select **CorporateProcesses** for the Process Project. Click the **Finish** button.
5. Enable the **Process Developer mode** by clicking the  icon in the menu bar.
6. Using the Palette, add an internal pool **ACME Corp.** to your process. Rename its default swimlane to **Sales IT**.
7. Add an external pool called **Customer** to the left. Rename its default swimlane to **external**. Change the color of the swimlane in the external pool to orange.
8. Add a Start Message Event named **Receive Order Doc** to your internal pool. Add three Service Task Activity steps named **Validate Order**, **Map To Canonical**, and **Insert ORMS** to your internal pool. Add a trailing End Terminate Event named **Process terminated** behind **Insert ORMS**. In the external pool, add a Send Task Activity named **Send Order**.

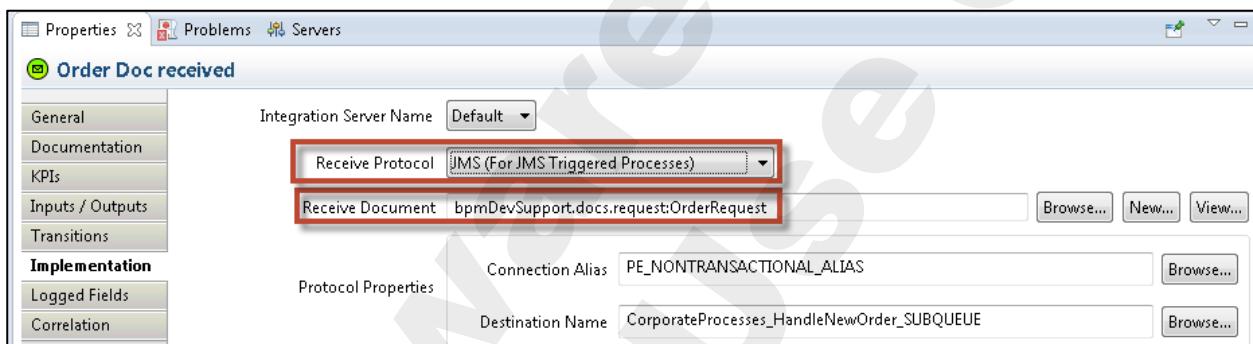
Your process model should now look like this:



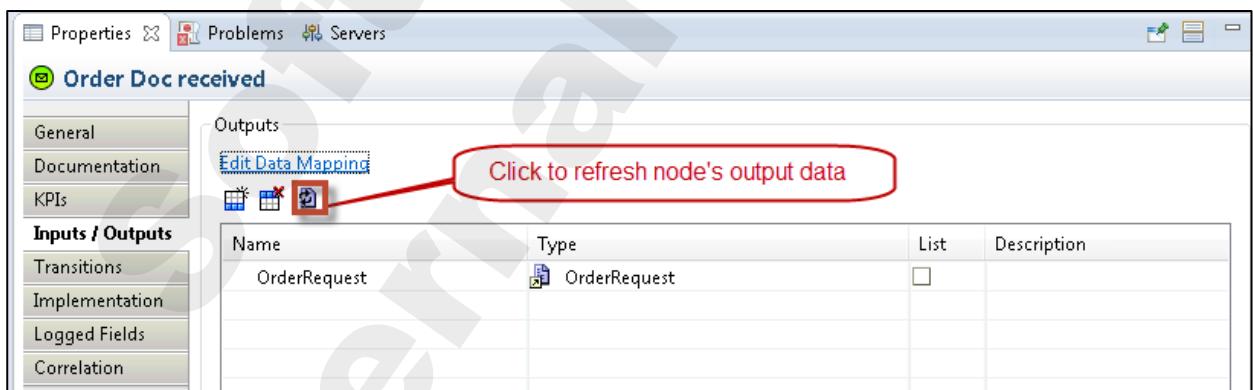
9. For each step, use the Speed Panel to add transitions and the context menu to add step images. Finally your model should correspond to the following screen shot:



10. Select the **Order Doc received** event in the process model to configure its receive document and receive protocol. To do so, you can either browse for the IS document type **bpmDevSupport.docs.request:OrderRequest** as Receive Document on the Implementation tab of the Properties view or use drag the document type **bpmDevSupport.docs.request:OrderRequest** from the Package Navigator view onto the step in the design canvas. Ensure the Receive Protocol is configured as **JMS (For JMS Triggered Processes)**.

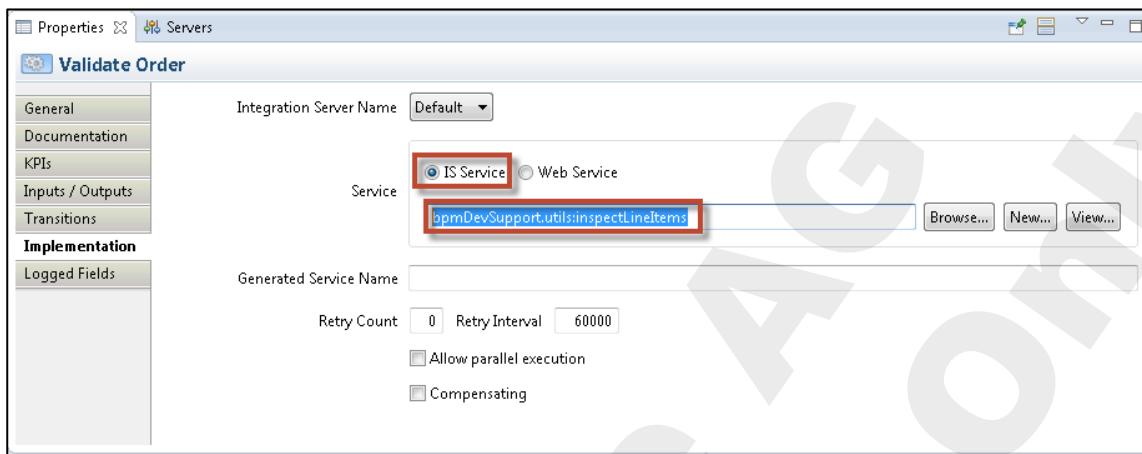


Ensure that the document is assigned as output in the steps Inputs/Outputs properties.

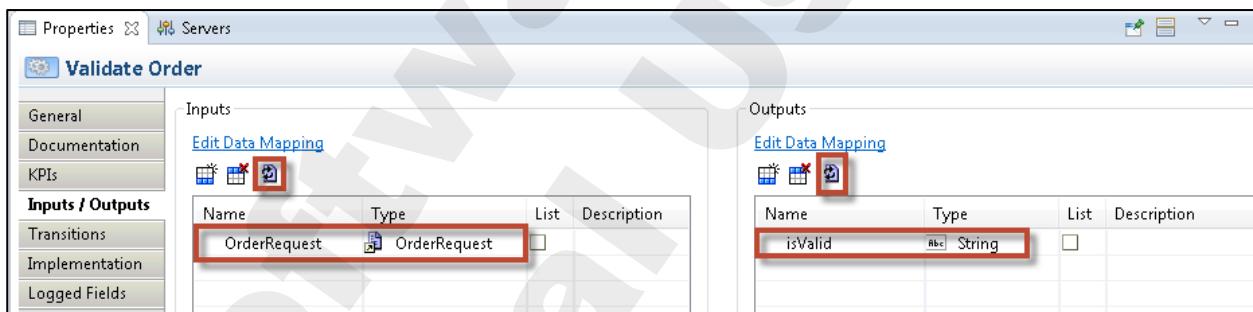


11. Setup the Service Task Activity Validate Order to invoke the provided IS service `bpmDevSupport.utils:inspectLineItems`.

To do so, drag and drop the IS service from the Package Navigator view onto the step in the design canvas. This will adjust the implementation type and service name in the Implementation tab of the Validate Order step properties:

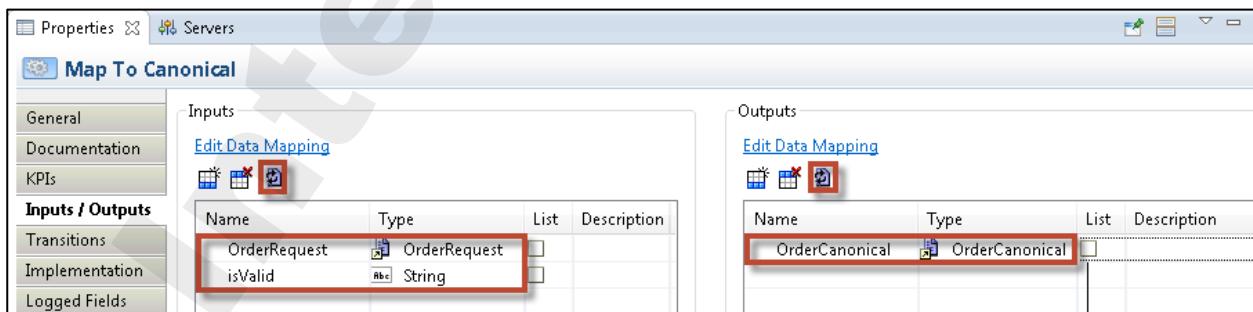


Then select **Inputs/Outputs** in the steps Properties view. In the Inputs section, ensure that the inputs were set automatically (if not, click the Refresh button to refresh the inputs from the service signature). You should also make sure that the outputs were set automatically (if not, click the Refresh button to refresh the outputs from the service signature). Input and output data should look like this:



12. Next, setup step Map To Canonical to invoke the provided IS service `bpmDevSupport.maps:OrderRequestToCanonical`. Check that inputs and outputs were set automatically, otherwise refresh them from the service signature.

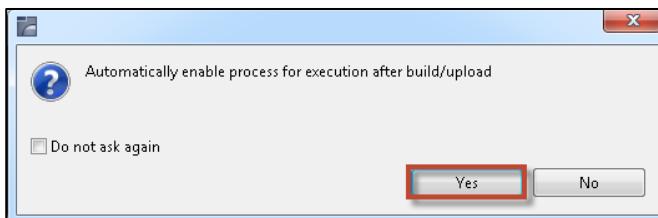
The Inputs/Outputs tab within the Properties view should look like this:



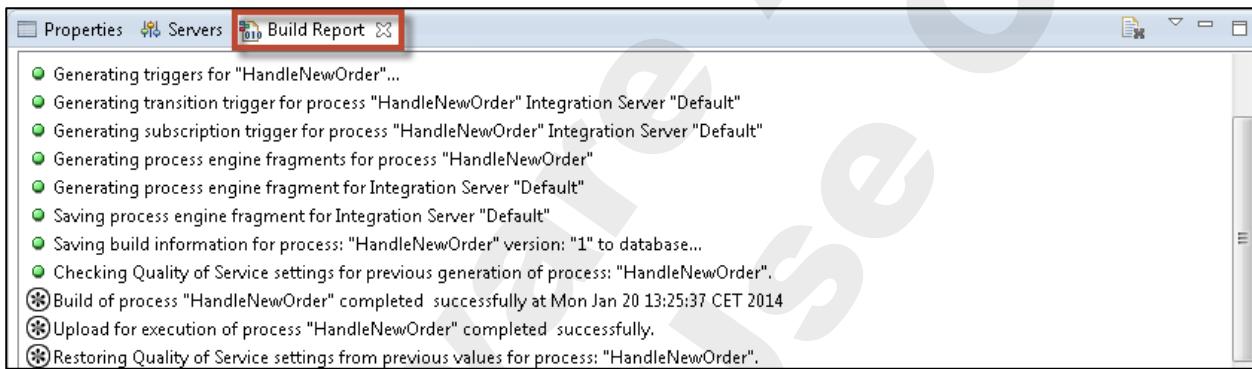
13. Finally setup the step **Insert ORMS** to invoke the provided IS service **bpmDevSupport.utils:insertOrderCanonical**.

After checking/refreshing inputs and outputs, the step should have a reference to the OrderCanonical document as input; there are no outputs for this step.

14. Click  to Build and Upload the project. When asked for saving or enabling the process for execution, always confirm with Yes.



15. Use the Build Report view to ensure the project builds successfully with no errors:



Check Your Understanding

1. What was the purpose of adding the external pool?
2. What was the purpose of the “Order Doc received” event?
3. After the “Process terminated” event is executed, what happens to the process instance?

EXERCISE 03:

GENERATE PROCESS DOCUMENTATION

Objectives

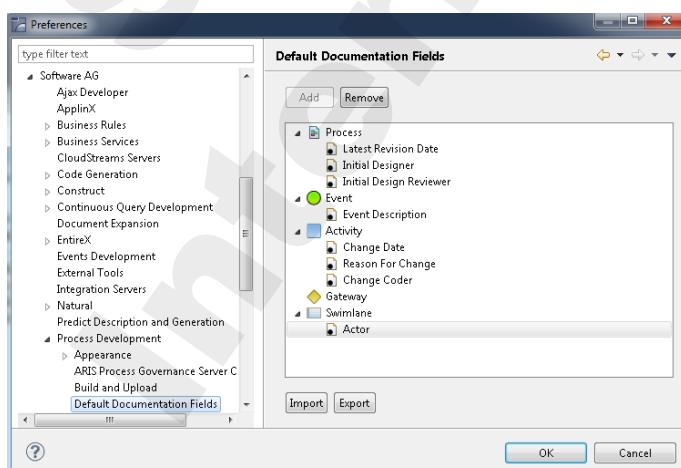
In this exercise, you will document your HandleNewOrder process and create a technical documentation report. This can be used to talk to Business Analysts.

Steps

1. Ensure all Windows services mentioned in exercise 1 step 3 are up and running.
2. Launch Software AG Designer.
3. Open Software AG Designer preferences. Drill down to **Software AG -> Process Development -> Default Documentation Fields**. Add the following documentation fields to the categories Process, Event, Activity, and Swimlane:

Category	Documentation Fields
Process	Latest Revision Date
	Initial Designer
	Initial Design Reviewer
Event	Event Description
Activity	Change Date
	Reason For Change
	Change Coder
Swimlane	Actor

Your Preferences should look like on the screen shot below. Click **OK** to save your entries.



4. Open the Properties view of your HandleNewOrder process. Use the Documentation tab to document the process with the following details:

Documentation Field	Value for the Field
Latest Revision Date	" <i>Current Date</i> "
Initial Designer	John Smith
Initial Design Reviewer	Bill Campbell

Additionally, visit the General tab to add the Description text **Receives and saves a new order** to your process model.

5. For each step in the HandleNewOrder process, set the Description property as shown in the following table:

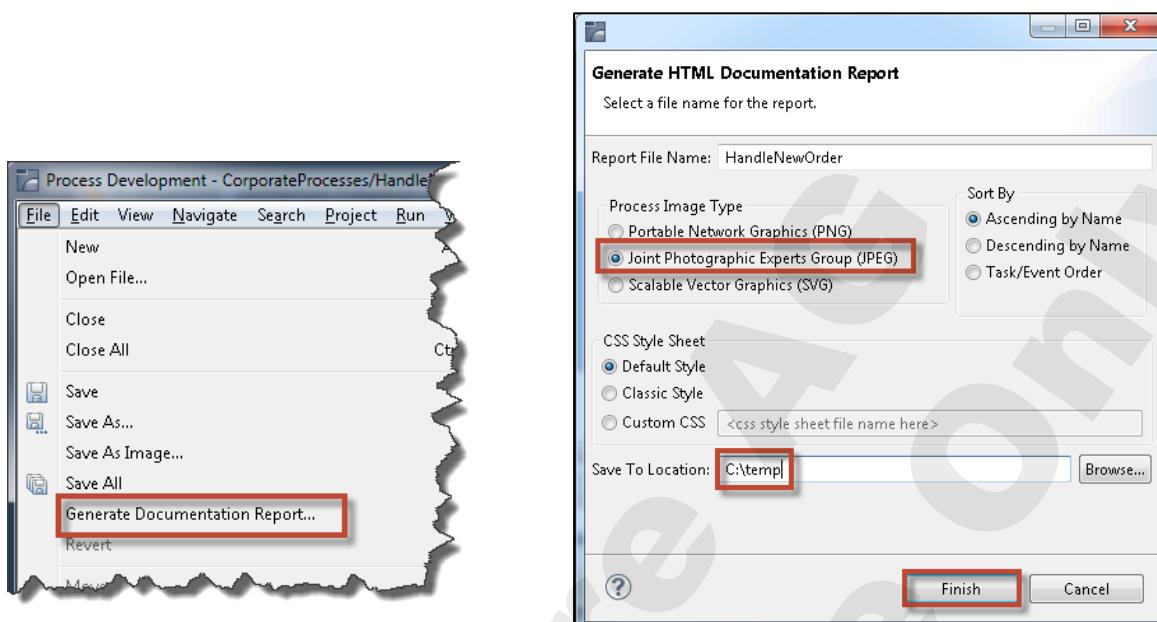
Step	Description
Order Doc received	Receives OrderRequest document
Validate Order	Validates purchase order
Map to Canonical	Maps OrderRequest to OrderCanonical
Insert ORMS	Inserts canonical order into database
Process terminated	Terminates process with status "Completed"

6. Open the Inputs/Outputs tab of the Validate Order step. Add the following descriptions to the input/output fields:

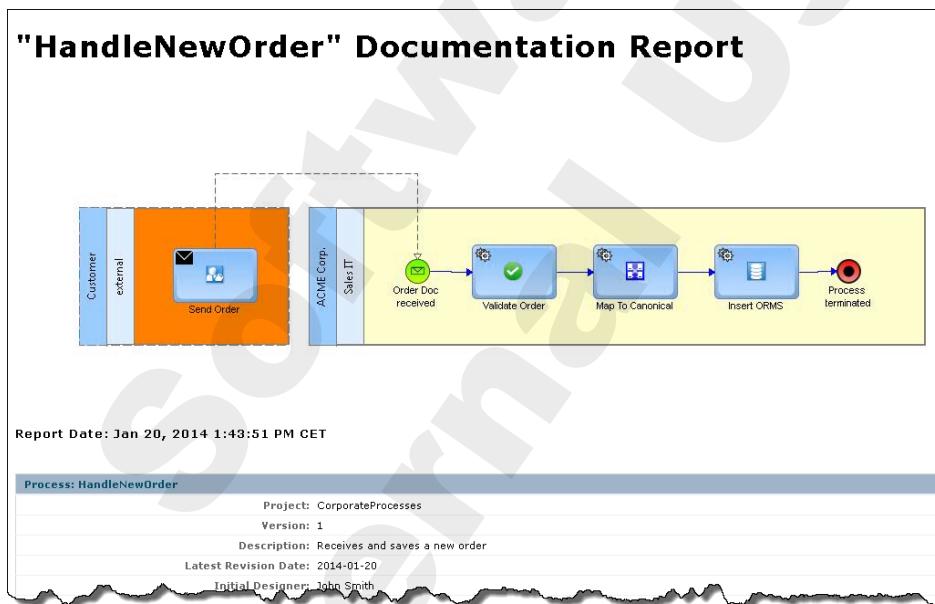
Field name	Input/Output	Description
OrderRequest	input	Purchase order document
isValid	output	true or false

7. Save your process.

8. Select **Generate Documentation Report...** from the File menu to generate an HTML documentation report for the HandleNewOrder process. Set the **Process Image Type** to **JPEG**, and browse for the Save To Location **C:\temp**:



9. Open your documentation report stored **C:\temp\HandleNewOrder.html**. Browse the different sections of the report.



Check Your Understanding

1. What is the format of the generated documentation?
2. Where or when would the generated documentation be used?

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EXERCISE 04:

PROCESS DEBUGGING

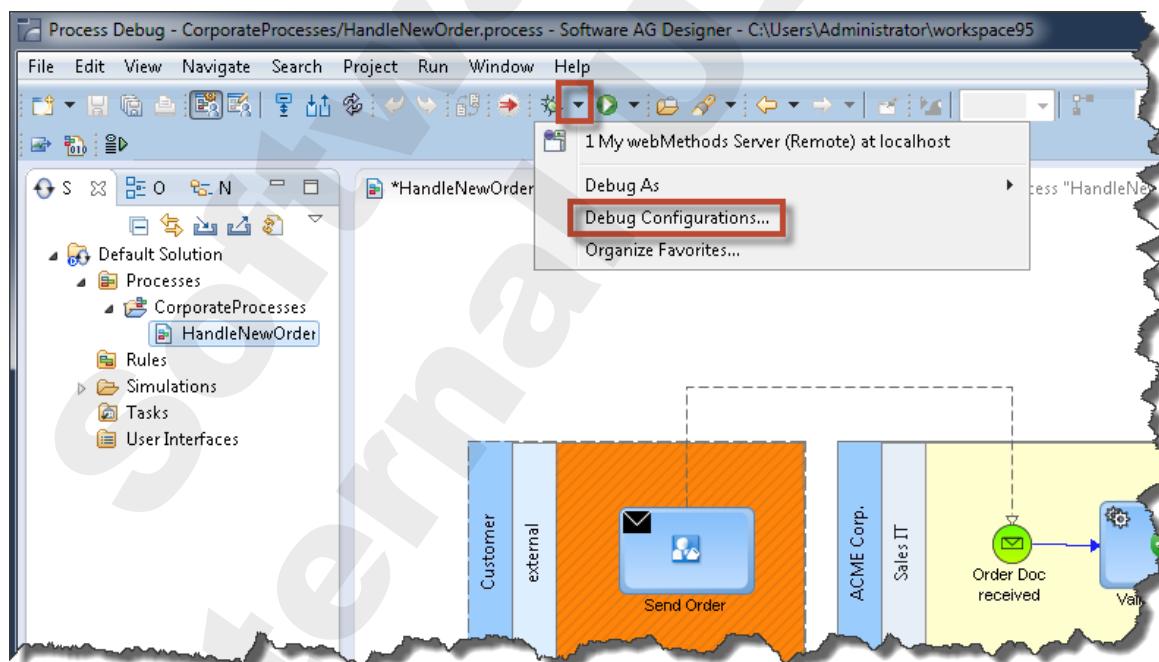
Objectives

After creating and building the HandleNewOrder process in the previous exercises, you will now test and step through a process using the built-in Debugger in Software AG Designer.

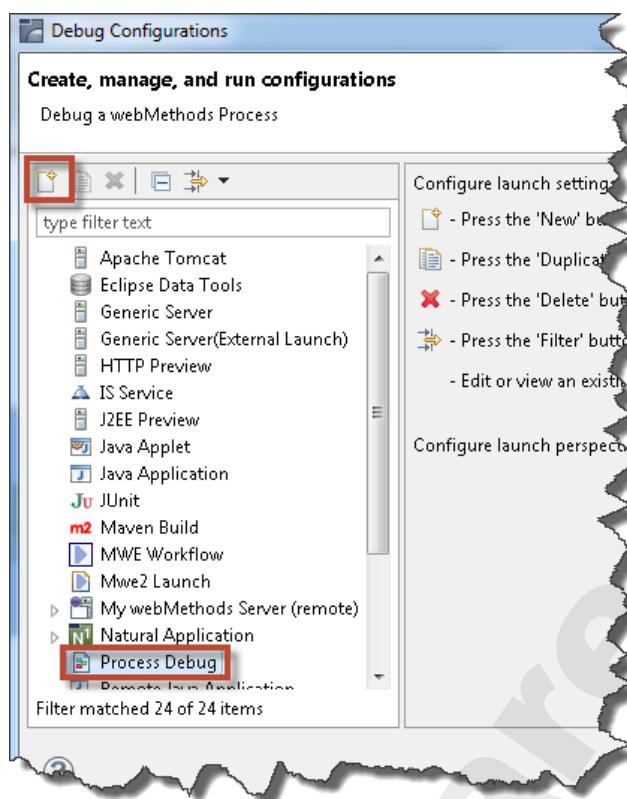
To double-check that the data is persisted in the database you will also inspect the related database tables for new order entries.

Steps

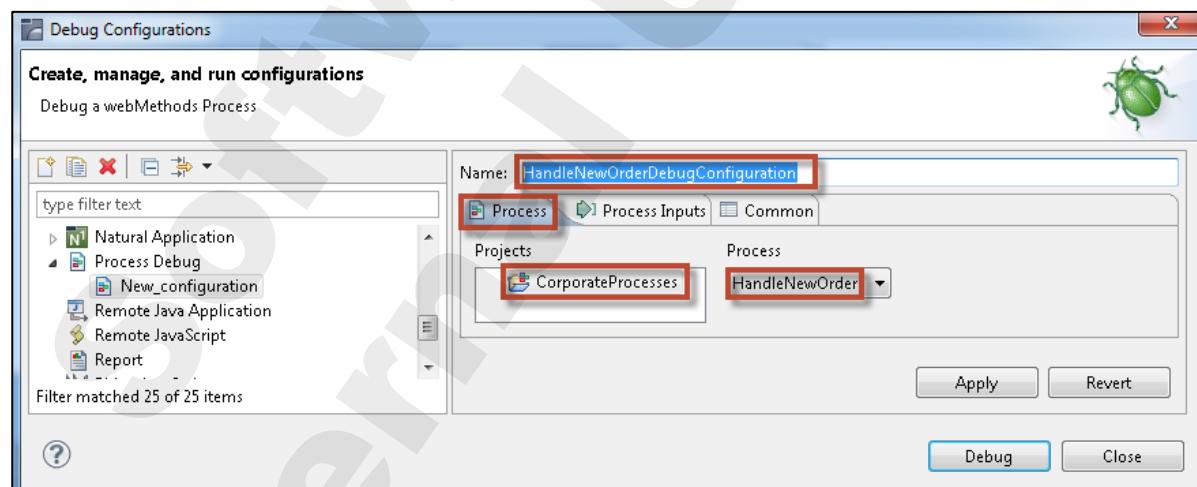
1. Ensure all Windows services mentioned in exercise 1 step 3 are up and running.
2. Launch Software AG Designer and ensure you are in **Process Debug** perspective.
3. Re-build and upload the **HandleNewOrder** process.
4. Now test your process model using the Process Debugger:
 - a) Before you can debug a process model for the very first time, you have to create a Debug Configuration in your Designer workspace. To do so, click the triangle next to the Debug icon having the process model loaded in the process editor. Select **Debug Configurations...** .



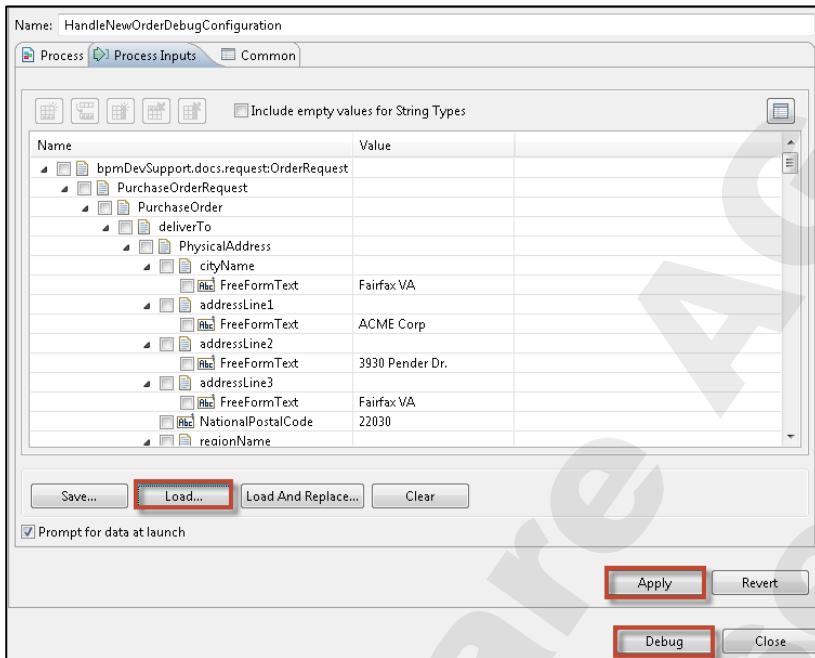
Select asset type **Process Debug** and hit the **New** button.



On the **Process** tab of your new Debug Configuration, specify **HandleNewOrderDebugConfiguration** as Run Configuration name and select the process model **HandleNewOrder** within the process project **CorporateProcesses**.



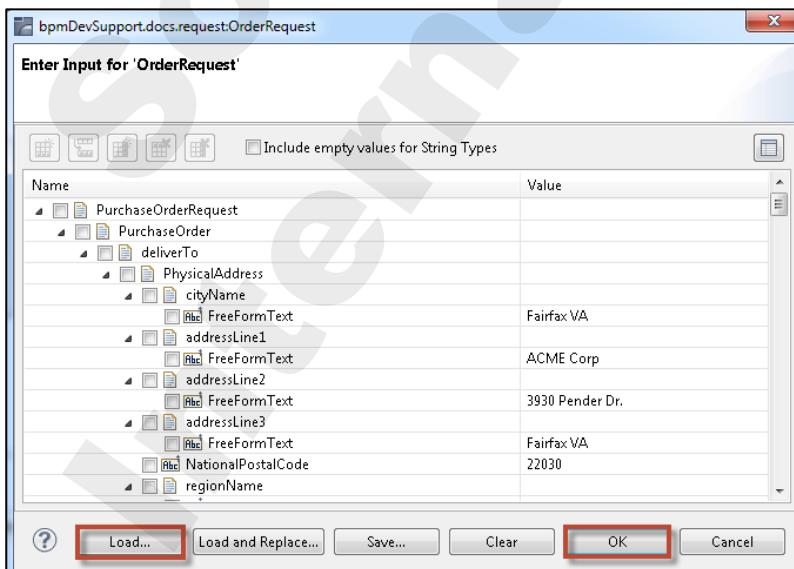
On the **Process Inputs** tab, provide input data for the Start Message Event and check to get prompted to type/alter those data when debugging starts.
Instead of typing you can load input data from
`<workshop_dir>\Exercise4\Resources\Ex4_ConfigInput.txt`. Click **Apply** to save the Debug Configuration. Then click **Debug** to start process debugging.



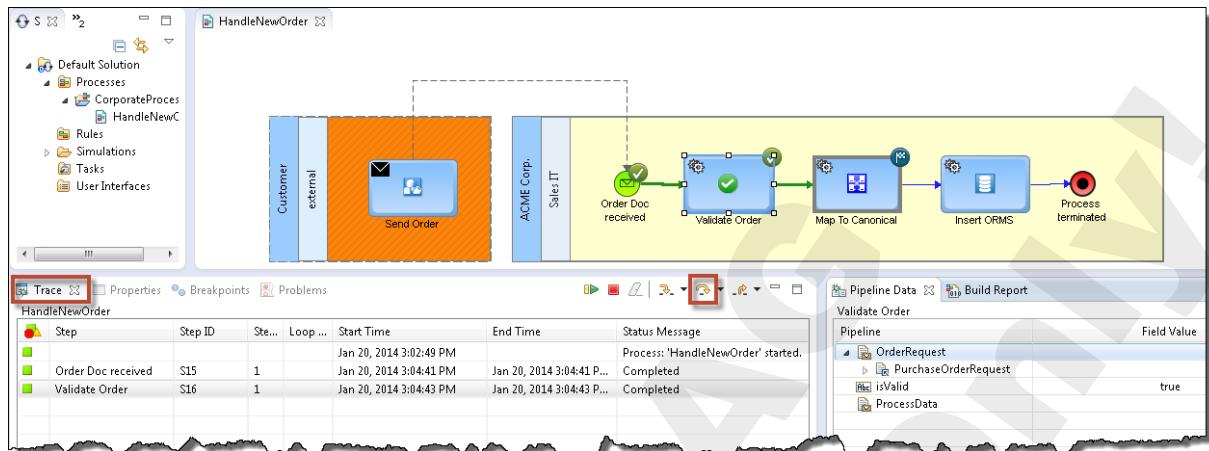
- b) Because of the settings you made in the Debug Configuration you get prompted for the input data having your data specified as in the Run Configuration preloaded. Sample input can optionally be loaded from
`<workshop_dir>\Exercise4\Resources\Ex4_DebugInput.txt`.

Note: When you load the test data for debugging, feel free to update the data, including the date fields with current dates/times. It's not mandatory but your test data will appear more current. If you change any data, remember the changes you made so that you can find it in the server log when testing.

Click **OK**.



- c) Use the Trace view to step through the process until the process ends. The provided order is valid; the process should complete successfully and should insert the order into the database.

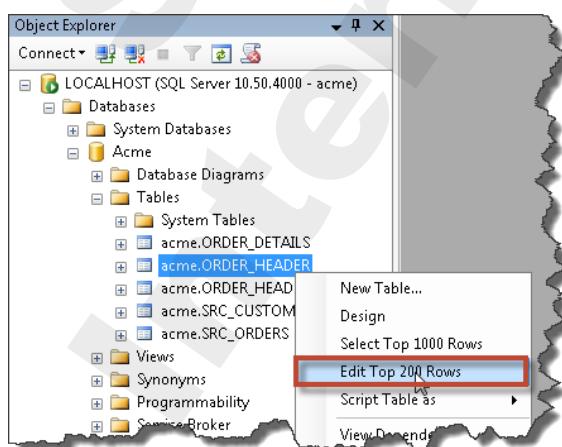


5. Ensure the order was entered successfully into the Acme database:

- Start SQL Server Management Studio Express by navigating to Start -> All Programs -> Microsoft SQL Server 2008 R2-> SQL Server Management Studio.
- For authentication choose LOCALHOST as server name, select SQL Server Authentication, and provide Acme/manage as user credentials:



- Under the Object Explorer, navigate to LOCALHOST -> Databases -> Acme -> Tables. To view the contents of the dbo.ORDER_HEADER or dbo.ORDER_DETAILS table, right-click the table and click Edit Top 200 Rows:



- d) Verify that your order has been stored in both tables:

SAGBASE.Acme -...e.ORDER_HEADER							
	ORDER_ID	TRANSACTION...	ORDER_DATE	TOTAL_COST	IS_VALID	SENDER_ID	RECEIVER_ID
EAcme - acme ORDER HEADER			January 20, 2014	6510	true	11-111-1111	11-111-1111

SAGBASE.Acme -...e.ORDER_DETAILS				SAGBASE.Acme -...e.ORDER_HEADER
	ORDER_ID	TRANSACTION...	SKU	QUANTITY
A	A	A	ANVIL	150
A	A	A	HAMMER	120

Check Your Understanding

1. Why did you load the file <workshop_dir>\Exercise4\Resources\Ex4_DebugInput.txt?
2. What did performing the SQL table lookup prove?

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EXERCISE 05:

ADVANCED PROCESS DEBUGGING

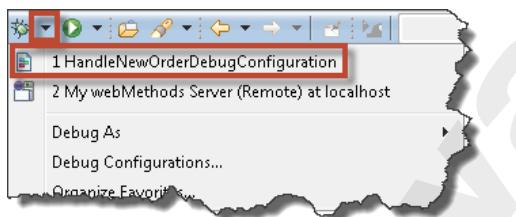
Objectives

In this exercise, you will again test and debug the HandleNewOrder process using the Debugger contained in Software AG Designer.

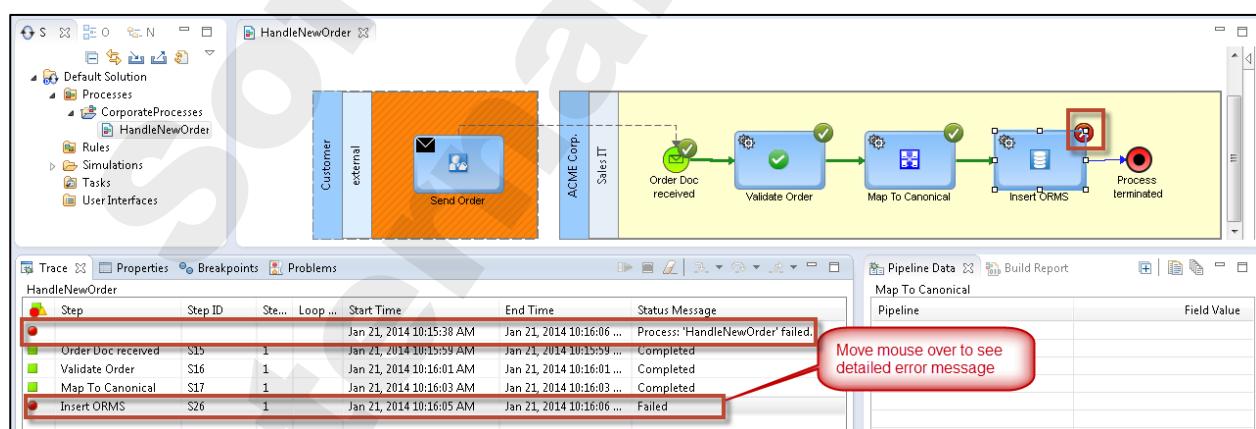
In this exercise, an invalid order will be used for debugging.

Steps

1. Ensure all Windows services mentioned in exercise 1 step 3 are up and running.
2. Launch Software AG Designer and ensure you are in **Process Debug** perspective. If not already opened, open your process model **HandleNewOrder** in the process editor.
3. To start a new debug session, click the black triangle next to the Debug icon in the menu bar and select your existing Debug Configuration **HandleNewOrderDebugConfiguration** from the drop-down.



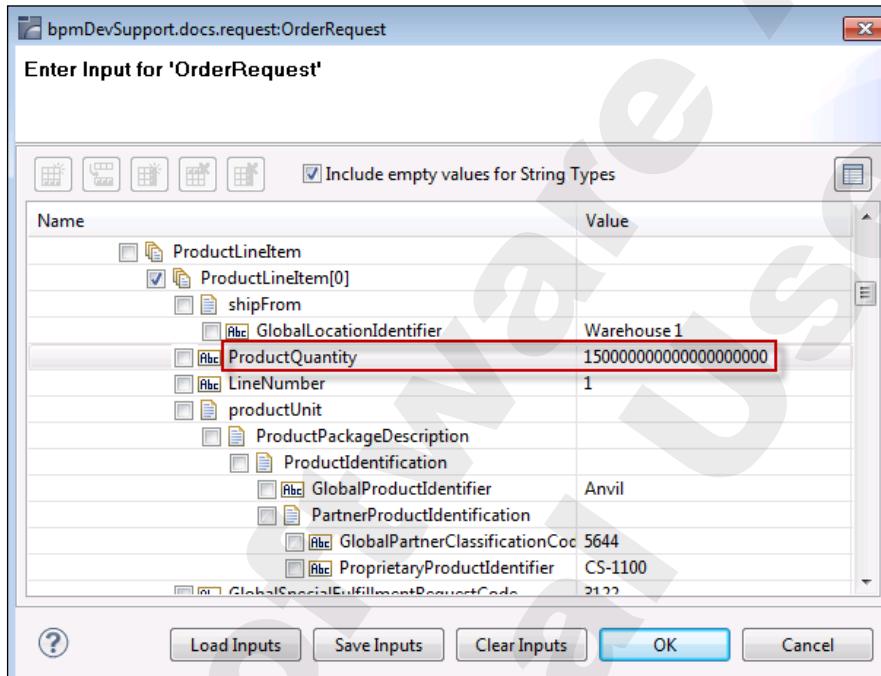
4. To overwrite the input data of your Debug Configuration, load the provided input order data from file <workshop_dir>\Exercise5\Resources\Ex5_DebugInput.txt. Step through the process. The provided order contains bad data, so the process should stop with an error:



5. Open the Integration Server's **server.log** file to investigate the error. The **server.log** file can be found in the folder **C:\SoftwareAG\IntegrationServer\logs**.
As an alternative, you can inspect the **server.log** file by using the IS Administration console (<http://localhost:5555>).

The screenshot shows the 'Logs' section of the sagbase :: Integration Server administration console. A red box highlights a series of error messages from the log:

```
[1449]2014-01-21 09:57:40 ME2 [ISS.0135.00031] JNDIConfigurationManager added new JNDI Properties file "EventBusJndiProvider" [{"java.naming.factory.initial=com.pcbsys.nirvana.nSpace.NirvanaContextFactory"}]
[1450]2014-01-21 09:57:41 ME2 [MED.0204.0013W] No value defined in CCC cache for this key: currentInterval
[1451]2014-01-21 10:15:38 ME2 [BPM.0102.0196I] 97ecaf0-827c-11e3-ad5c-a17a3a974945:1, MID=CorporateProcesses/HandleNewOrder, MVer=1: process started
[1452]2014-01-21 10:16:06 ME2 [ART.0114.1007E] Adapter Runtime: Error Logged. See Error log for details. Error: [ADA.1.316] Cannot execute the SQL statement "INSERT INTO ORDER_DETAILS(ORDER_ID, TRAN
[1453][2001/8152] [SoftwareAG] [SQLServer JDBC Driver][SQLServer]String or binary data would be truncated.
[1454][H0000/3621] [SoftwareAG] [SQLServer JDBC Driver][SQLServer]The statement has been terminated."
[1455][SoftwareAG] [SQLServer JDBC Driver][SQLServer]String or binary data would be truncated.
[1456]2014-01-21 10:16:06 ME2 [ART.0114.1007E] Adapter Runtime: Error Logged. See Error log for details. Error: [ART.117.4002] Adapter Runtime (Adapter Service): Unable to invoke adapter service bpmDevSupp
[1457][ADA.1.316] Cannot execute the SQL statement "INSERT INTO ORDER_DETAILS(ORDER_ID, TRANSACTION_ID, SKU, QUANTITY) VALUES (?, ?, ?, ?)".
[1458][2001/8152] [SoftwareAG] [SQLServer JDBC Driver][SQLServer]String or binary data would be truncated.
[1459][H0000/3621] [SoftwareAG] [SQLServer JDBC Driver][SQLServer]The statement has been terminated."
[1460][SoftwareAG] [SQLServer JDBC Driver][SQLServer]String or binary data would be truncated.
[1461]2014-01-21 10:16:06 ME2 [BPM.0102.0002E] Exception: com.wkr.app.pr.ProcessException
[1462]2014-01-21 10:16:06 ME2 [BPM.0102.0376E] 97ecaf0-827c-11e3-ad5c-a17a3a974945:1, S26: exception invoking service CorporateProcesses.HandleNewOrder.HandleNewOrder_1.Default:Insert_ORMS; [PR
[1463]2014-01-21 10:16:06 ME2 [BPM.0102.0199I] 97ecaf0-827c-11e3-ad5c-a17a3a974945:1, MID=CorporateProcesses/HandleNewOrder, MVer=1: process failed
```



Check Your Understanding

1. Which log did you use to show the exception details?
2. In the Trace view, how can you easily identify that the process instance failed?

EXERCISE 06:

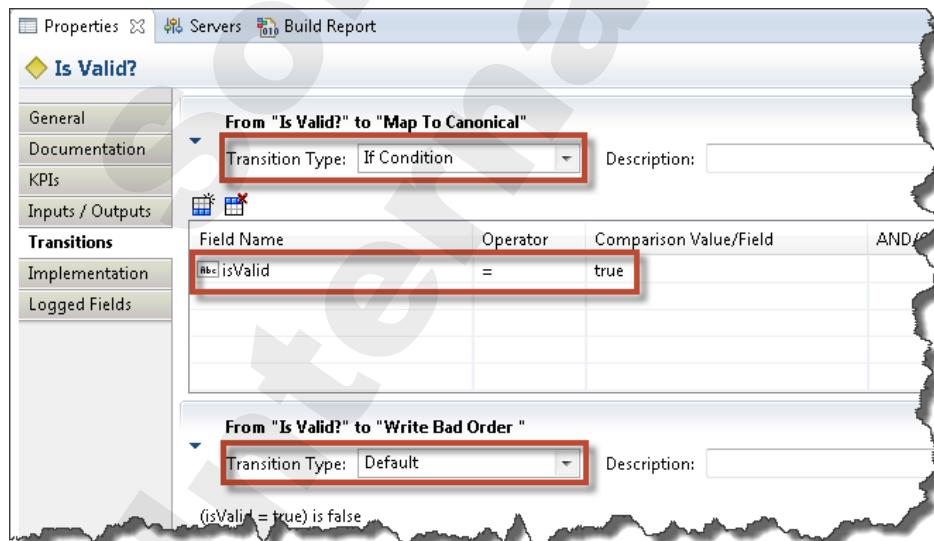
ADJUST THE FLOW OF DATA

Objectives

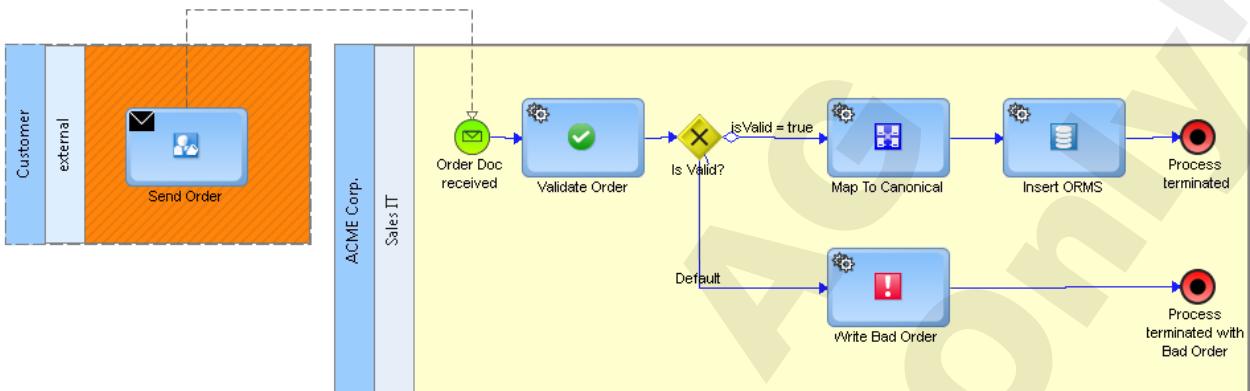
In this exercise, you will add a Gateway with conditional transitions to handle invalid orders. Moreover, you will test the process in various ways: by debugging, sending an IS document via JMS, and starting a process instance from a web form.

Steps

1. Ensure all Windows services mentioned in exercise 1 step 3 are up and running.
2. Launch Software AG Designer and ensure you are in the **Process Development** perspective.
3. Remove the transition between **Validate Order** and **Map To Canonical**.
4. Insert an Exclusive Gateway and position it between **Validate Order** and **Map To Canonical**. Rename its label to **Is Valid?**.
5. Draw a transition from the **Validate Order** step to the **Is Valid?** Gateway.
6. Add a new Service Task Activity called **Write Bad Order** to write an invalid incoming order to the file system. Set up the **Write Bad Order** step to invoke the IS service **bpmDevSupport.utils:writeDocToFile**. Remember to check the inputs and outputs from the Input/Output tab of the Properties View (click  icon, if necessary).
7. Draw an outgoing transition from the **Is Valid?** step to the **Map To Canonical** step. Draw a second outgoing transition from the **Is Valid?** step to the **Write Bad Order** step.
8. Select the **Transitions** tab in the **Is Valid?** step properties. Add the following transition conditions:
 - For the transition from **Is Valid?** to **Map to Canonical**: **if isValid = true**
 - For the transition from **Is Valid?** to **Write Bad Order**: **Default**



9. Add another trailing End Terminate Event named **Process terminated with Bad Order** to the right of the **Write Bad Order** step. Draw a transition from the **Write Bad Order** step to the **Terminate Process With Bad Order** event.
10. Add an image to the **Write Bad Order** step. The HandleNewOrder process should now correspond to the following image:



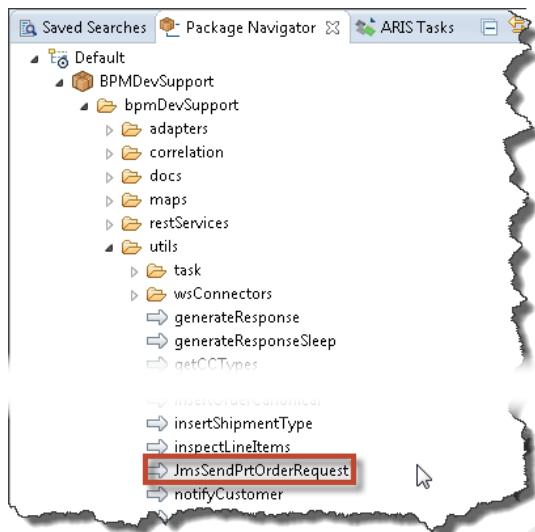
11. Save, build and upload your enhanced HandleNewOrder process.
12. Switch to the Process Debug perspective.
Click the black triangle next to the Debug icon in the menu bar and select your existing **Debug Configuration HandleNewOrderDebugConfiguration** from the drop-down.
13. To overwrite the input of your Debug Configuration, load the provided file `<workshop_dir>\Exercise6\Resources\Ex6_DebugInput1.txt`. Use the Debugger to step through the process. The order is invalid, so the process should execute the route **Order Doc received -> Validate Order -> Is Valid? -> Write Bad Order -> Process terminated with Bad Order**.
14. Select step **Write Bad Order** in the Trace view, then use the Pipeline Data view to ensure that pipeline variable **isValid** contains value **false**.
15. Examine the log file created in the folder `C:\temp`.
16. Start another debug session by running your Debug Configuration **HandleNewOrderDebugConfiguration**, saving the current process if required. To overwrite the input of your Debug Configuration, load input data from the file `<workshop_dir>\Exercise6\Resources\Ex6_DebugInput2.txt`.
Step through the process. This time the order is valid, so the process should execute the route **Order Doc received -> Validate Order -> Is Valid? -> Map To Canonical -> Insert ORMS -> Process terminated**.
17. To confirm your valid order has been received, ensure the message ******* A new order with ID=C2 has been saved to the database ******* is displayed in the Integration Server's `server.log` file. To do so, open the `IS server.log` file by using an editor or by using the IS Administration console.

```

[1467]2014-01-21 11:03:42 MEZ [BPM.0102.01961] 4eb7ec90-8283-11e3-b741-9c893e876826:1, MID=CorporateProcesses/HandleNewOrder, MVer=1: process started
[1468]2014-01-21 11:03:47 MEZ [ISP.0090.0003C] ***** A new order with ID=C2 has been saved to the database *****
[1469]2014-01-21 11:03:47 MEZ [BPM.0102.02021] 4eb7ec90-8283-11e3-b741-9c893e876826:1, MID=CorporateProcesses/HandleNewOrder, MVer=1: process completed
  
```

18. Start another **HandleNewOrder** process instance by sending an OrderRequest document to the Process Engine via JMS using an IS service:

- Locate the IS service **bpmDevSupport.utils:JmsSendPrtOrderRequest** in the Package Navigator view:



- Right-click the service and select **Run As -> Run Flow Service** from the context menu.
 - For the input data document to be send, load the provided input file
`<workshop_dir>\Exercise6\Resources\Ex6_ServiceInput.txt` and click **OK** to run the service.
19. To confirm your order has been received, ensure the message “**** A new order with ID=C3 has been saved to the database ****” is contained in the Integration Server’s **server.log** file.
To do so, open the **IS server.log** file by using an editor or by using the IS Administration console:

```
[1992]2014-01-21 13:59:33 MEZ [BPM.0102.01961] df4e4fc0-829b-11e3-9360-ca62a25122b1:1, MID=CorporateProcesses/HandleNewOrder, MVer=1: process started
[1993]2014-01-21 13:59:33 MEZ [ISP.0090.0003C] **** A new order with ID=C3 has been saved to the database ****
[1994]2014-01-21 13:59:33 MEZ [BPM.0102.02021] df4e4fc0-829b-11e3-9360-ca62a25122b1:1, MID=CorporateProcesses/HandleNewOrder, MVer=1: process completed
```

20. Finally test your process by starting a **HandleNewOrder** process instance using a web form via a browser. To do so, double-click the provided web form `<workshop_dir>\Exercise6\Resources\Ex6_SubmitOrder.html`. Review the order in the text area and click the **Submit** button. If prompted for IS authentication use Administrator/manage.

The screenshot shows a web-based XML form submitter. The title bar says "XML Form Submitter". Below it is a text area containing XML code. At the top right of the text area is a "Submit" button. The XML code is as follows:

```
<?xml version="1.0"?>
<!!--
webMethods BPM Training Course
Sample XML Message Purchase Order Request
-->
<PurchaseOrderRequest xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance">
  <PurchaseOrder>
    <deliverTo>
      <PhysicalAddress>
        <cityName>
          <FreeFormText>Fairfax VA</FreeFormText>
        </cityName>
        <addressLine1>
          <FreeFormText>ACME Corp</FreeFormText>
        </addressLine1>
        <addressLine2>
          <FreeFormText>3930 Pender Dr.</FreeFormText>
        </addressLine2>
        <addressLine3>
          <FreeFormText>Fairfax VA</FreeFormText>
        </addressLine3>
      </PhysicalAddress>
    </deliverTo>
  </PurchaseOrder>
</PurchaseOrderRequest>
```

21. To confirm your order has been received, ensure the message “**** A new order with ID=C4 has been saved to the database ****” contained in the Integration Server’s server.log file. To do so, open the IS server.log file by using an editor or by using the IS Administration console.

Check Your Understanding

1. Which step sets the value of the `isValid` variable?
2. Which step generated the log file in the `c:\temp` directory?
3. At a high level, describe what happens when the submit button is clicked on the `Ex6_SubmitOrder.html` form.

EXERCISE 07:

INSERTING USER INTERACTION

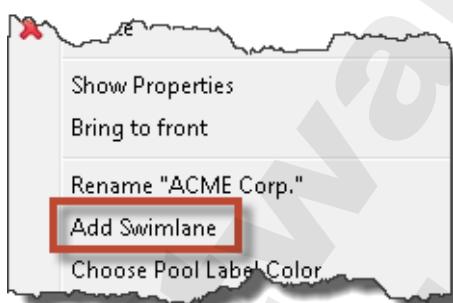
Objectives

In this exercise, you will add user interaction by adding a User Task Activity to the **HandleNewOrder** process. A corresponding User Task UI will be generated from scratch and improved in subsequent exercises.

The User Task Activity will be invoked if the submitted order is invalid. In this case and a new user task instance will be created and assigned to the sales department for review.

Steps

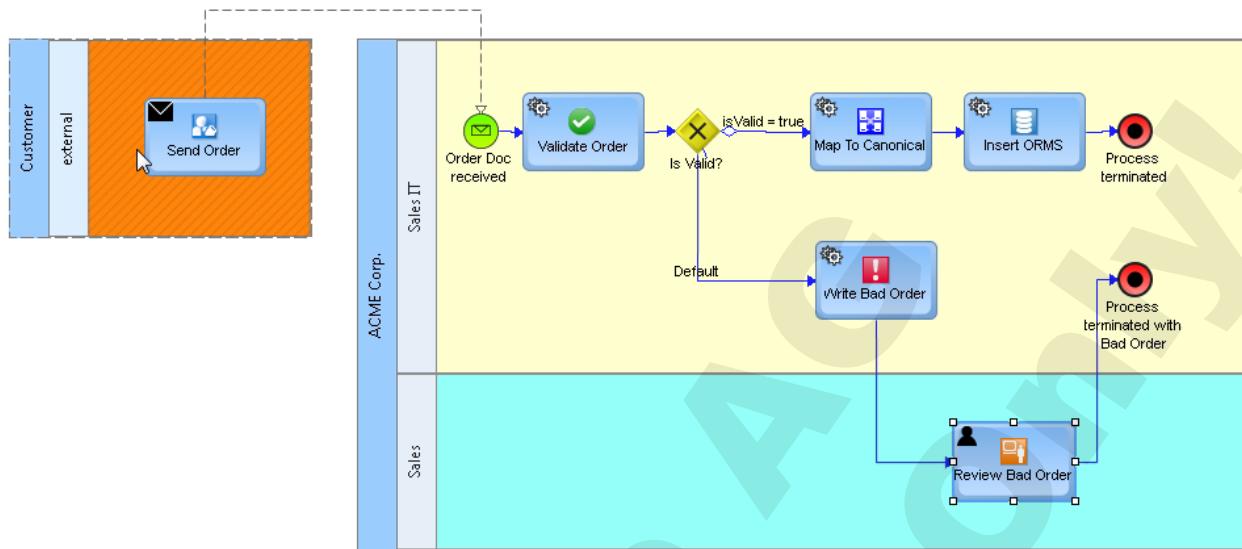
1. Ensure all Windows services mentioned in exercise 1 step 3 are up and running.
2. Launch Software AG Designer and ensure you are in **Process Development** perspective.
3. Right-click the internal pool ACME Corp. and select **Add Swimlane** from the popup menu to add a new swimlane:



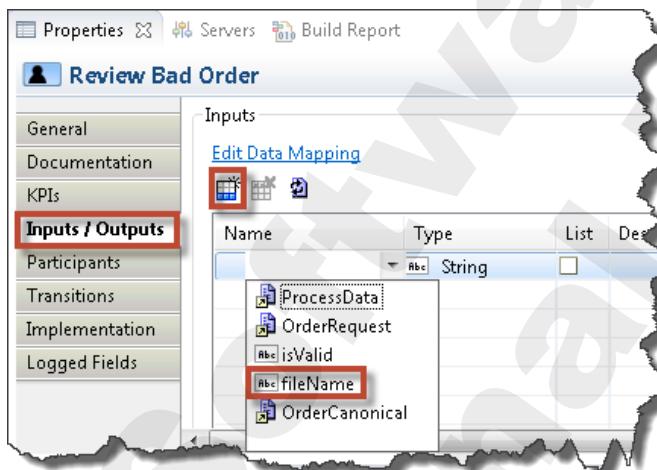
Name the new swimlane **Sales** and change its color to turquoise.

4. Remove the transition from **Write Bad Order** to **Process terminated with Bad Order**.
5. Add a User Task Activity to the **Sales** swimlane. Name the User Task Activity **Review Bad Order**.
Add a transition from the **Write Bad Order** step to the new **Review Bad Order** step. Then add a transition from the **Review Bad Order** step to the **Process terminated with Bad Order** event.
6. To compact your process model in the editor, click in menu bar to position all step label on the steps.

7. Add an image as shown below to the **Review Bad Order** step. Your **HandleNewOrder** process should now correspond to the following image:



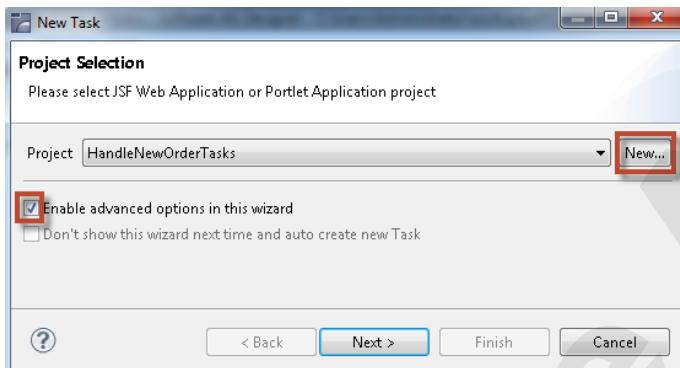
8. Mark **Review Bad Order** in the design canvas and open the Properties view of the step. Using the Inputs/Outputs tab, click the Create new input button () in the Inputs section and select **fileName** of type string as an input for step **Review Bad Order**.
Note: Variable **fileName** has been added to the pipeline as the return parameter of the previous Write Bad Order step.



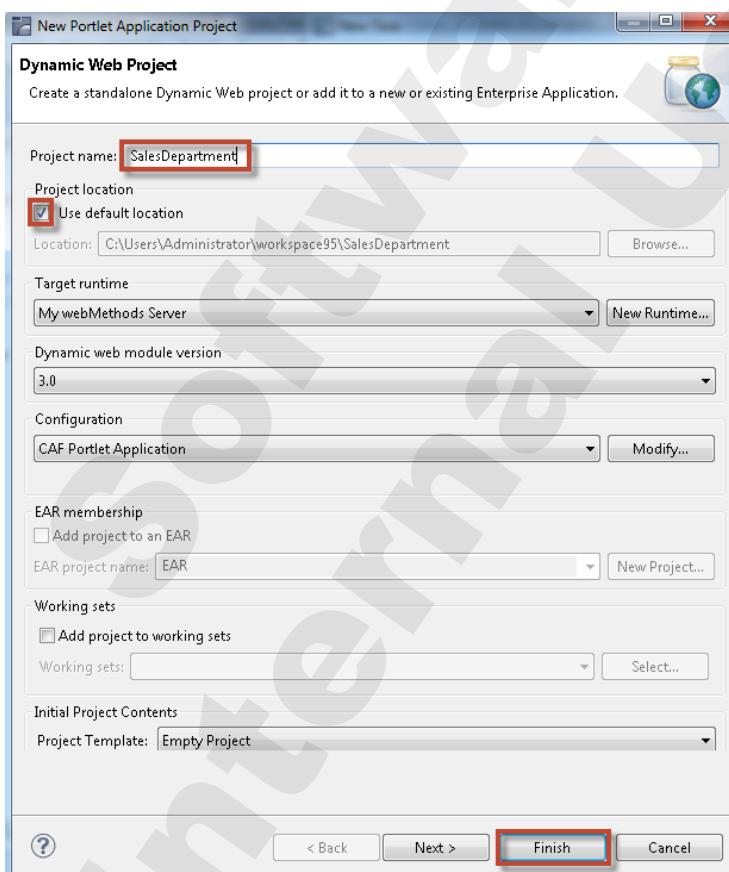
9. Save your changes.

10. Create a new User Task implementation for the **Review Bad Order** step:

- Right-click the **Review Bad Order** step in the design canvas and choose **Create Implementation -> New User Task...** from the context menu.
- In the Project Selection wizard, check the box beside "Enable advanced options in this wizard". Then click **New** to create a new CAF project first.
Important: After clicking on any button in the wizards, wait for the progress bar in the lower right corner of Designer to fully complete (disappear) before continuing.

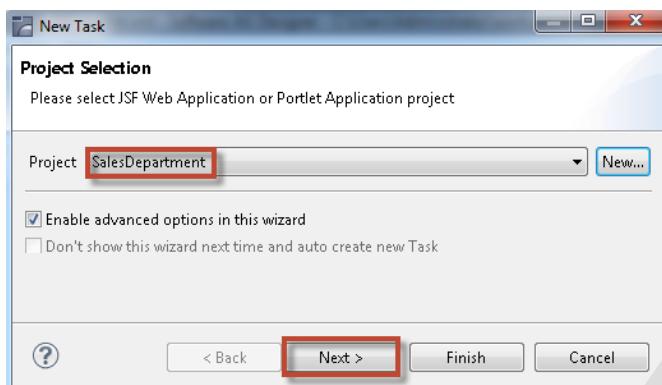


- In the New Portlet Application Project wizard, specify the (CAF) Portlet Application project name as **SalesDepartment**. Keep all the other default values and click **Finish** to complete the Portlet Application project wizard:

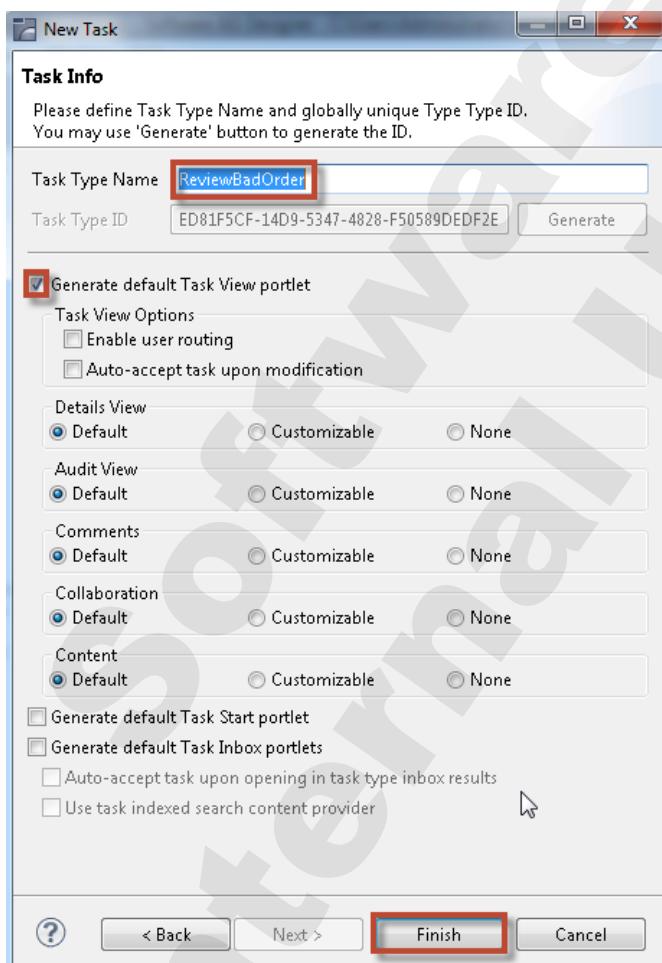


- If asked, accept to switch to the **UI Development** perspective.

- e) When you are returned to the New Task wizard, confirm that **SalesDepartment** is the project name and click **Next:**

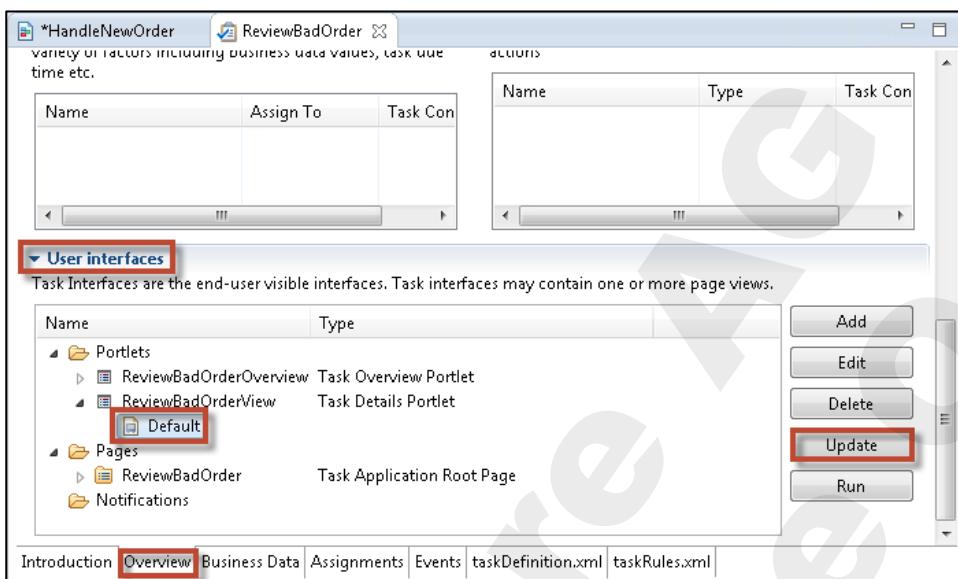


- f) In the subsequent dialog remove the spaces between the Task Type Name, so it reads: **ReviewBadOrder**. Check **Generate default Task View portlet**. Click **Finish** to complete the New Task wizard.

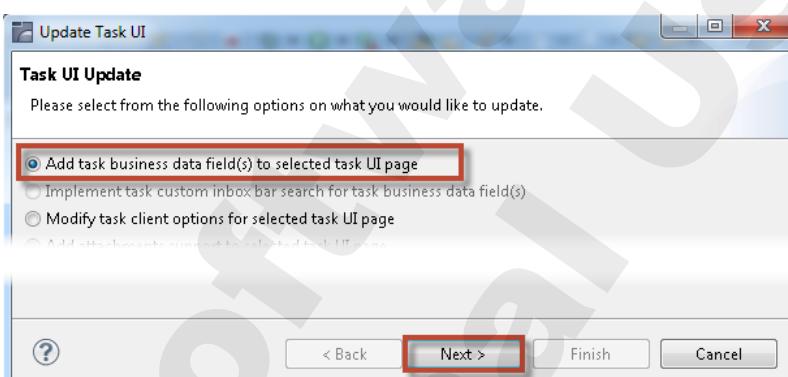


11. Customize the generated default Task UI:

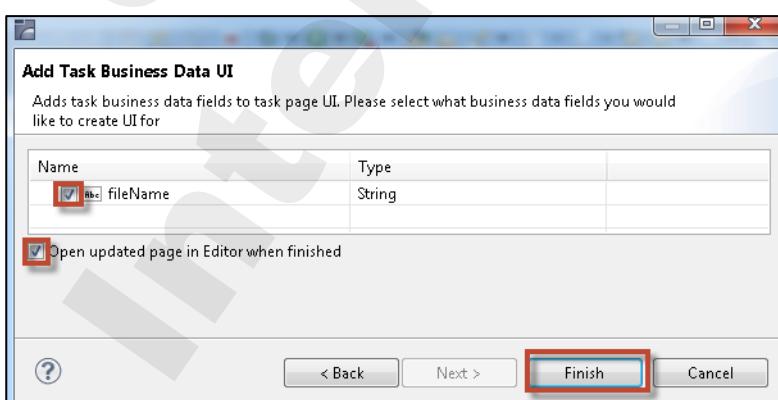
- After successful creation, your new User Task type **ReviewBadOrder** is opened in the Task Editor. Select the **Overview** tab and navigate to the **User interfaces** section at the very bottom. Mark the **Default** view of the generated Task Details Portlet **ReviewBadOrderView** and hit **Update**.



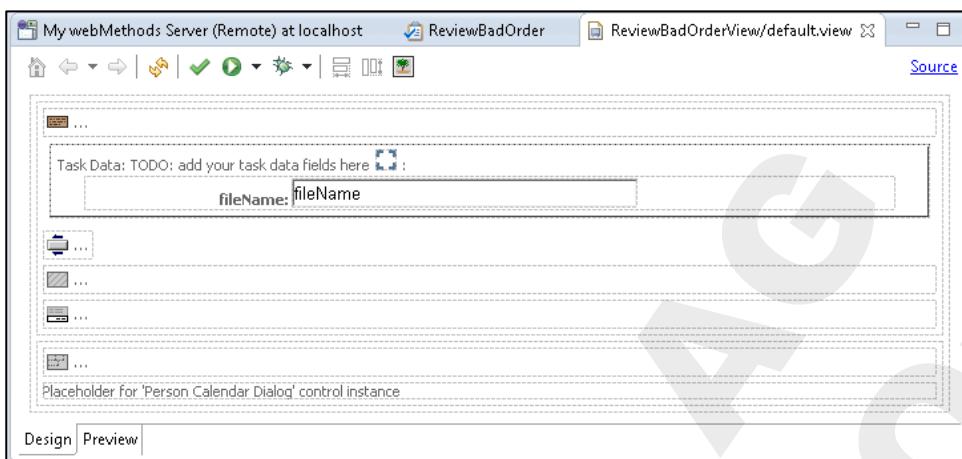
- On the Update Task UI panel select **Add task business data fields...** and click **Next**.



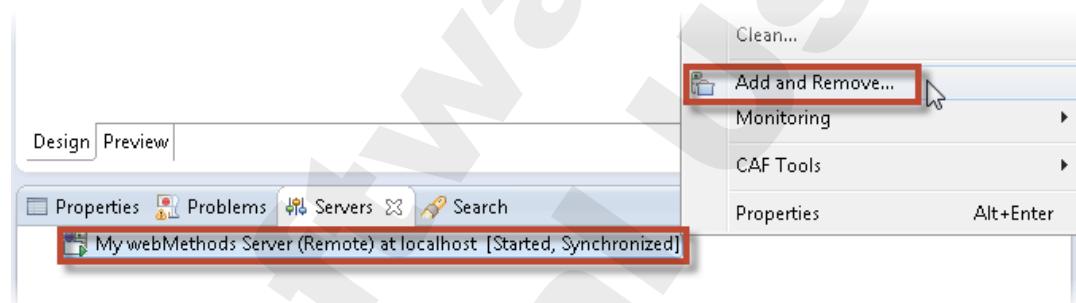
- On the next panel select the one and only Business Data field **filename** to be added to the task view. Additionally check **Open updated page in Editor** when finished to see the result in an editor. Click **Finish**.



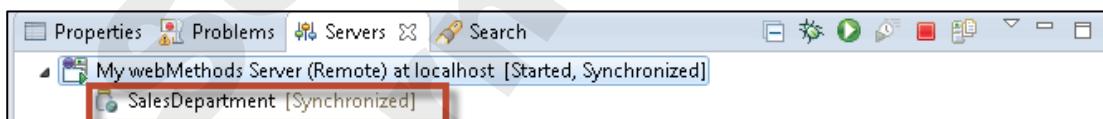
The default.view of the ReviewBadOrderView portlet should now be opened in the editor and look like this:



12. Save all your changes.
13. Open the Servers view. Make sure that the status for **My webMethods Server (Remote) at localhost** is **[Started, Synchronized]**. If it is not started, first click on the server, then click the Start icon . This will establish connectivity to the My webMethods Server on port 8585. Right-click the server and add the **SalesDepartment** project to your My webMethods Server (MWS). If prompted for Authentication, use **Sysadmin/manage**.

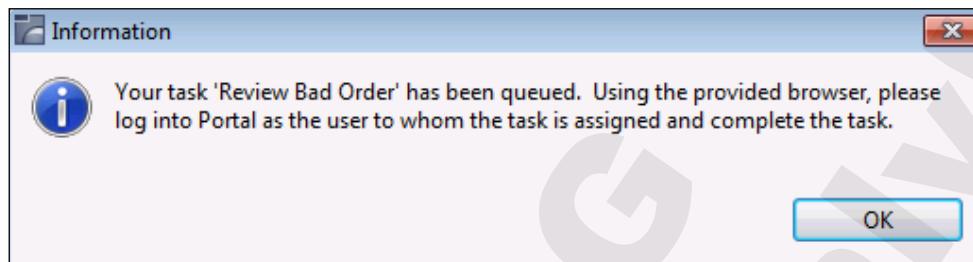


As a result, your **SalesDepartment** project should have been published to your MWS.



14. Switch back to the Process Development perspective.
If not opened yet, open your **HandleNewOrder** process in the process editor.
Re-build and upload your process model.
Note: Ignore warnings during the build and upload.
15. Debug your process model **HandleNewOrder**:
 - a) Start a debug session by running your **Debug Configuration HandleNewOrderDebugConfiguration**. When you get prompted, allow switching to the Process Debug perspective.
To overwrite the input of your Debug Configuration, load input data from the file **<workshop_dir>\Exercise7\Resources\Ex7_DebugInput.txt**.

- b) Step through the process. The provided order is invalid, so the process should execute the route Order Doc received -> Validate Order -> Is Valid? -> Write Bad Order -> Review Bad Order. Step Write Bad Order should log the invalid order in the C:\temp folder. Step Review Bad Order should create a new User Task instance:



16. An external browser page will open so that you can login to My webMethods as **Administrator/manage**. The Task List Management page will open automatically. Hit the **Search** button in the Search portlet view first, then locate your User Task instance in the lower Task portlet. Click on the corresponding Task ID value to open it:

A screenshot of the "My webMethods" application interface. The left sidebar shows a navigation tree with "Applications" selected, followed by "Command Central", "Monitoring", "Business", "Tasks" (which is expanded to show "ReviewBadOrder"), and "My Inbox". The main content area is titled "Task List Management". It features a "Search" portlet with a "Filter" section and a "Tasks" portlet below it. The "Tasks" portlet displays a table of tasks. One row in the table is highlighted, showing a red box around the "TASK ID" column value "0245". The table columns include: TASK ID, TASK TYPE, PRIORITY, CREATED DATE, EXPIRATION DATE, LAST UPDATED DATE, and ASSIGNED TO.

	TASK ID	TASK TYPE	PRIORITY	CREATED DATE	EXPIRATION DATE	LAST UPDATED DATE	ASSIGNED TO
	0245	ReviewBadOrder	None	21.01.2014 16:29		21.01.2014 16:29	

17. Accept and Complete the User Task through the opened Task Details page.
Ensure you can see the **fileName** variable adat in the task data view.

The screenshot shows the 'Task List Management > ReviewBadOrder Details' page. On the left, there's a navigation sidebar with 'Task List Management' selected. The main area displays 'Task Data: TODO: add your task data fields here' with a 'fileName' input field containing the value 'C:\temp\log_d_2014-01-21-16-29-34'. Below this, 'Task Info:' details are shown: Name: Review Bad Order, Description: (empty), Created On: 21.01.2014 16:29 By My webMethods Administrator, Last Modified On: 21.01.2014 16:37 By My webMethods Administrator, Expires On: (empty), Status: Active. At the bottom right, there are buttons for 'Complete', 'Release', 'Submit', and 'Return', with 'Complete' being highlighted by a red box.

18. In Designer, go back to the Trace view and step through the residual steps to complete the process debug session normally.

Check Your Understanding

1. Why did you declare **fileName** as an input to step **Review Bad Order**?
2. Why did you add Business Data filename to the default view of your User Task UI?
3. Does the User Task **Review Bad Order** run in MWS, or in an Integration Server?

EXERCISE 08:

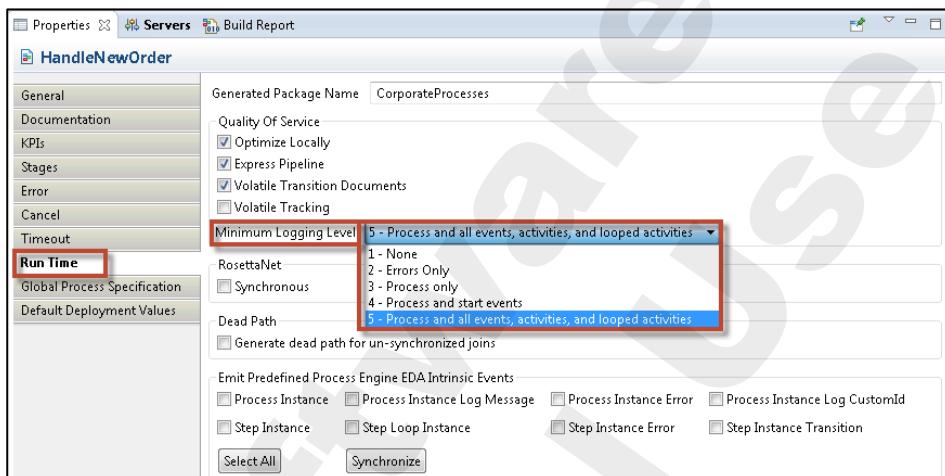
MONITOR AND RESUBMIT PROCESSES

Objectives

In this exercise, you will configure process logging for the **HandleNewOrder** process. Additionally, you will enable process steps for resubmission.

Steps

1. Ensure all Windows services mentioned in exercise 1 step 3 are up and running.
2. Launch Software AG Designer and ensure you are in the **Process Development** perspective.
3. Open the **HandleNewOrder** process and visit its Properties view. Using the **Run Time** tab, ensure the **Minimum Logging Level** is set to **5**. Save your process model, if necessary.



4. In case you have changed your process model, click to re-build and upload it.
5. Use a browser tab to login to My webMethods as **Administrator/manage**.
6. Drill down to the **Applications -> Administration -> Business -> Business Processes Dashboard** page. Click on the link of the process **HandleNewOrder** to edit process model properties.

Process Name	Execution	Active	Analysis	Total Instances	Running Instances	Failed Instances
HandleNewOrder (CorporateProcesses)	✓	○		11	0	2

7. Enable all of the process steps to be resubmit-enabled and save your changes.

8. Start the **HandleNewOrder** process using a new browser tab by double-clicking the web page:
<workshop_dir>\Exercise8\Resources\Ex8_SubmitOrder.html
 Review the order in the text area. Note that the order has two items, the first item with quantity equal to -9 and the second item with a quantity equal to 120. Click the submit button. If prompted, login to IS as Administrator/manage.
9. Switch back to the **Business Processes Dashboard** page in My webMethods. Click **Reload** to refresh its content. Move your mouse over the number of **Total Instances** to see a list of process instances belonging to your process model **HandleNewOrder**. Click the link belonging to the process instance that has been recently started with a **Started** status.

Instance ID	Last Updated	Status
9c7ff5d0-82b5-11e3-a96e-9f2335a085b1	1/21/2014 5:03:47.837 PM	Started
85b47ce0-82b0-11e3-9d2c-c5375c06723e	1/21/2014 4:38:47.233 PM	Completed
67bbe60-829e-11e3-952e-b79d0ba87263	1/21/2014 2:17:40.933 PM	Completed
df4e4fc0-829b-11e3-9360-ca62a25122b1	1/21/2014 1:59:33.167 PM	Completed
c4ebc2d0-8295-11e3-8ed0-c420e6551c8c	1/21/2014 1:15:54.477 PM	Completed
041ca8b0-8292-11e3-b876-a440542f1290	1/21/2014 12:49:02.347 PM	Completed
74693400-8290-11e3-884b-d53224c17181	1/21/2014 12:37:49.873 PM	Failed
4eb7ec90-8283-11e3-b741-9c893e876826	1/21/2014 11:03:47.203 AM	Completed
9cc90a60-8281-11e3-b45d-df9303e92857	1/21/2014 10:54:09.480 AM	Completed
97ecaf1f-827c-11e3-ad5c-a47a3a974945	1/21/2014 10:16:06.757 AM	Failed

On the Process Instance Detail page being opened, drill down to Step Summary. Ensure that steps **Order Doc received**, **Validate Order**, **Is Valid?**, and **Write Bad Order** have a **Completed** status. However, **Review Bad Order** has a **Started** status:

Step Summary								
Step Name	Start Date / Time	Last Updated	Instance Iteration	Step Iteration	Loop Iteration	Status	Duration	Referenced Process
Review Bad Order	1/21/2014 5:03:47.910 PM	1/21/2014 5:03:47.910 PM	1	1		Started	0d 00:00:00.000	
Write Bad Order	1/21/2014 5:03:47.897 PM	1/21/2014 5:03:47.907 PM	1	1		Completed	0d 00:00:00.010	
Is Valid?	1/21/2014 5:03:47.893 PM	1/21/2014 5:03:47.893 PM	1	1		Completed	0d 00:00:00.000	
Validate Order	1/21/2014 5:03:47.883 PM	1/21/2014 5:03:47.887 PM	1	1		Completed	0d 00:00:00.004	
Order Doc received	1/21/2014 5:03:47.837 PM	1/21/2014 5:03:47.847 PM	1	1		Completed	0d 00:00:00.010	

10. Stop the HandleNewOrder process instance from its Process Instance Detail in My WebMethods:

Business Processes Dashboard > Process Instance Detail

Process Instance Information

Process: HandleNewOrder
Model Version: 1
Start Date / Time: 1/21/2014 5:03:47.837 PM
Last Updated: 1/21/2014 5:03:47.837 PM
Instance ID: 9c7ff5d0-82b5-11e3-a96e-9f2335a885b1
Instance Iteration: 1
Status: Started
Duration: 0d 00:11:12.932

Buttons: Close, Refresh, PREV, NEXT, Update, Suspend, Stop (highlighted)

11. In a new tab within My webMethods, navigate to Applications -> Monitoring -> Business -> Tasks -> Task List Management. Click Search in the Search portlet to refresh the list of User Task instances being displayed in the Tasks portlet below.
Note a User Task instance of type ReviewBadOrder with a Canceled status (red bullet icon).

Task List Management

Search

Filter

Field Name	Value
Task Type	

Tasks

RESUME	TASK ID	TASK TYPE	PRIORITY	CREATED DATE	EXPIRATION DATE	LAST UPDATED DATE	ASSIGNED TO
	8049	ReviewBadOrder	None	21.01.2014 17:03		21.01.2014 17:22	
	8046	ReviewBadOrder	None	21.01.2014 16:29		21.01.2014 16:38	

12. Switch back to the Business Processes Dashboard page. Review the list of process instances. Your process instance should now have a status **Stopped**.

The screenshot shows the Business Processes Dashboard. On the left, a table lists a single process instance: "HandleNewOrder (CorporateProcesses)" with a green checkmark under "Execution" and a red circle under "Analysis". On the right, a detailed list of process instances is shown in a table:

Instance ID	Last Updated	Status
9c7ff5d0-82b5-11e3-a96e-9f2335a885b1	1/21/2014 5:22:56.583 PM	Stopped
85b47ce0-82b0-11e3-9dd2-c5375c0e723e	1/21/2014 4:38:47.233 PM	Completed
67bbe60-829e-11e3-952e-b79d0ba87263	1/21/2014 2:17:40.933 PM	Completed
df4e4fc0-829b-11e3-9360-ca62a25122b1	1/21/2014 1:59:33.167 PM	Completed
c4ebc2d0-8295-11e3-8ed0-c420e6551c8c	1/21/2014 1:15:54.477 PM	Completed
041ca8b0-8292-11e3-8b76-a440542f1290	1/21/2014 12:49:02.347 PM	Completed
74693400-8290-11e3-884b-d53224c17181	1/21/2014 12:37:49.873 PM	Failed
4eb7ec90-8283-11e3-b741-9c893e876826	1/21/2014 11:03:47.203 AM	Completed
9cc90a60-8281-11e3-b45d-df9303e92857	1/21/2014 10:54:09.480 AM	Completed
97eca1f0-827c-11e3-ad5c-a47a3a974945	1/21/2014 10:16:06.757 AM	Failed

13. Click the link of your stopped process instance to re-open its Process Instance Detail page. In the Step Summary section, click to see the Process Step Detail page of the step **Validate Order**. Hit **Edit Pipeline**.

The screenshot shows two overlapping windows. The left window is "Process Instance Information" for instance 9c7ff5d0-82b5-11e3-a96e-9f2335a885b1. It shows the process is "HandleNewOrder", the status is "Stopped", and the step iteration is "Iteration: 1". The right window is "Step Information" for the "Validate Order" step. It shows the step name is "Validate Order", the start date is 1/21/2014 5:03:47.883 PM, and the status is "Completed". Both windows have a red box around the "Edit Pipeline..." button.

14. Edit the pipeline for the step **Validate Order** so that the quantity of the first (index 0) ProductLineItem is **-15** instead of **-9**:

The screenshot shows the "Edit Step" dialog for the "Validate Order" step. The pipeline table shows a row for "ProductLineItem[0]" with a value of "-9". A modal dialog is open over the table, asking for a "New Value". The input field contains "-15", which is highlighted with a red box. The "OK" button at the bottom of the dialog is also highlighted with a red box.

Save your change.

15. Resubmit the Validate Order step:



- 16. Close the Process Step Detail page to get back to the Process Instance Detail page. In the Step Summary section, ensure that the steps Validate Order, Is Valid?, Write Bad Order, and Review Bad Order have been resubmitted.**

Step Name	Start Date / Time	Last Updated	Instance Iteration	Step Iteration	Loop Iteration	Status	Duration	Referenced Process	Detail
Review Bad Order	1/21/2014 5:40:37.853 PM	1/21/2014 5:40:37.853 PM	2	1		Started	0d 00:00:00.000		
Write Bad Order	1/21/2014 5:40:37.840 PM	1/21/2014 5:40:37.850 PM	2	1		Completed	0d 00:00:00.010		
Is Valid?	1/21/2014 5:40:37.773 PM	1/21/2014 5:40:37.833 PM	2	1		Completed	0d 00:00:00.060		
Validate Order	1/21/2014 5:40:37.690 PM	1/21/2014 5:40:37.767 PM	2	1		Completed	0d 00:00:00.077		
Review Bad Order	1/21/2014 5:03:47.910 PM	1/21/2014 5:03:47.910 PM	1	1		Started	0d 00:00:00.000		
Write Bad Order	1/21/2014 5:03:47.897 PM	1/21/2014 5:03:47.907 PM	1	1		Completed	0d 00:00:00.010		

- 17. Re-visit the Task List Management page and click Search to refresh the content. Ensure a new User Task instance with status Active has been created. Open the User Task instance. Hit Accept and Complete to complete the User Task instance.**

- 18. Switch back to the Business Processes Dashboard page. Review the list of process instances for processes type HandleNewOrder. Your process instance from above should now have a status Completed. Click on the Instance ID to re-open the Process Instance Detail page. Ensure that all steps are marked as Completed.**

Check Your Understanding

1. The logging level was set to 5 in Designer. Could you have decreased the logging level in My webMethods?
2. Can a process step be enabled for resubmission in Designer?
3. In step 11 you located a canceled User Task. What forced this User Task to be marked as canceled?
4. What would have happened if you have changed the value in step 14 to a value of 15?

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EXERCISE 09:

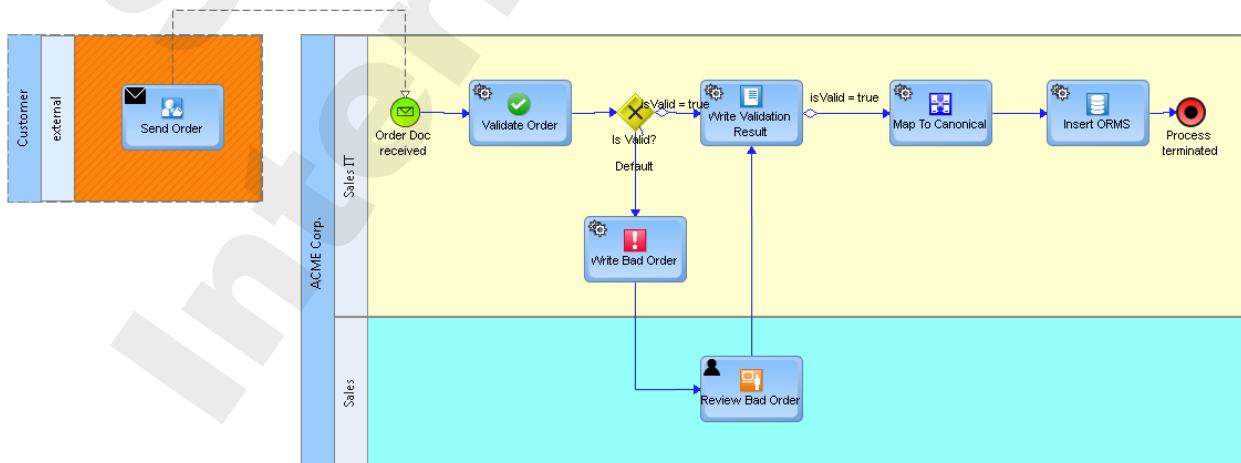
ADDING A BPMN SUBPROCESS

Objectives

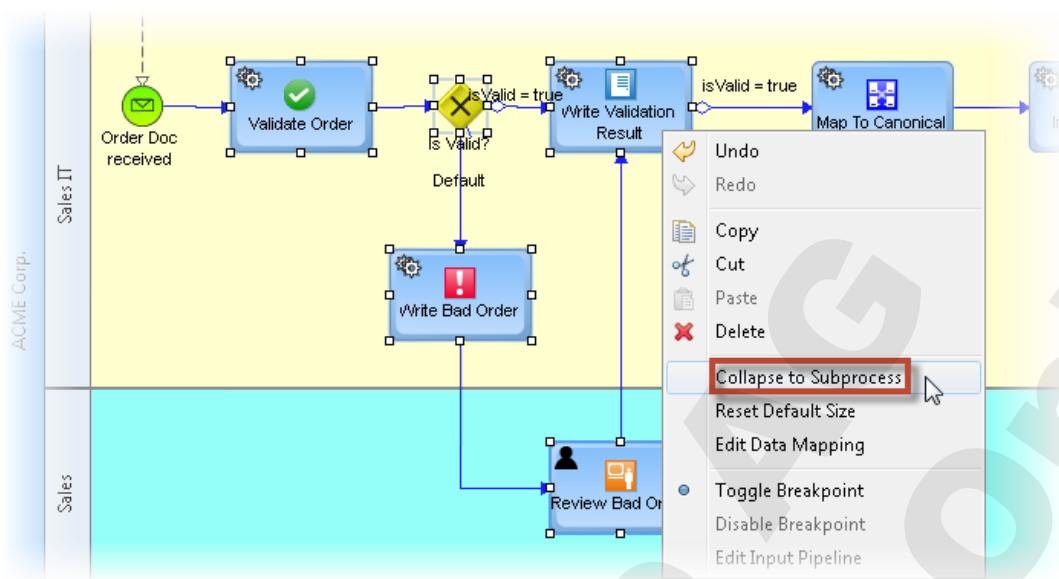
In this exercise, you will add a BPMN Subprocess to the **HandleNewOrder** Process to encapsulate several process steps. The subprocess can be expanded to show the hidden steps for technical users or it can be collapsed to hide the technical complexity and to improve the readability of your process model.

Steps

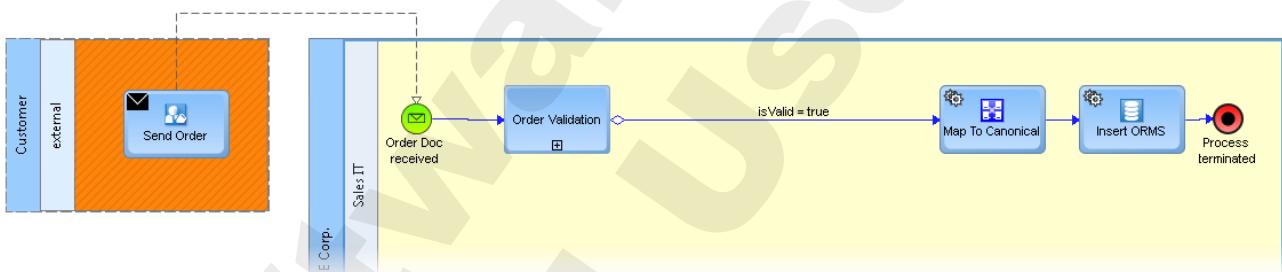
1. Ensure all Windows services mentioned in exercise 1 step 3 are up and running.
2. Launch Software AG Designer and ensure you are in the **Process Development** perspective.
3. Open the **HandleNewOrder** process.
4. Remove the **Process terminated with Bad Order** event.
5. Delete the transition from **Is Valid?** To **Map To Canonical**.
6. You will need to resize the ACME Corp. pool at the right side. To do this click on the internal pool Acme Corp., and drag the pool to the right. This will also make the swimlanes wider.
7. Drag steps **Map To Canonical**, **Insert ORMS**, and **Process terminated** to the right of the Sales IT swimlane.
8. Add a Service Task Activity named **Write Validation Result** into the Sales IT Swimlane next to **Is Valid?**. Set up the **Write Validation Result** step to invoke the IS service **bpmDevSupport.utils:writeDocToFile**. Remember to check the inputs and outputs.
9. Draw a conditional transition from **Is Valid?** to **Write Validation Result** that is only used if the field **isValid** contains true.
10. Draw another conditional transition from **Write Validation Result** to **Map To Canonical** that is only used if the field **isValid** contains true.
11. Draw a transition from **Review Bad Order** to **Write Validation Result**.
12. For step **Write Validation Result**, set the Join Type in its Joins properties to **OR** and add a step image as shown below. Your process should correspond to the following screen shot:



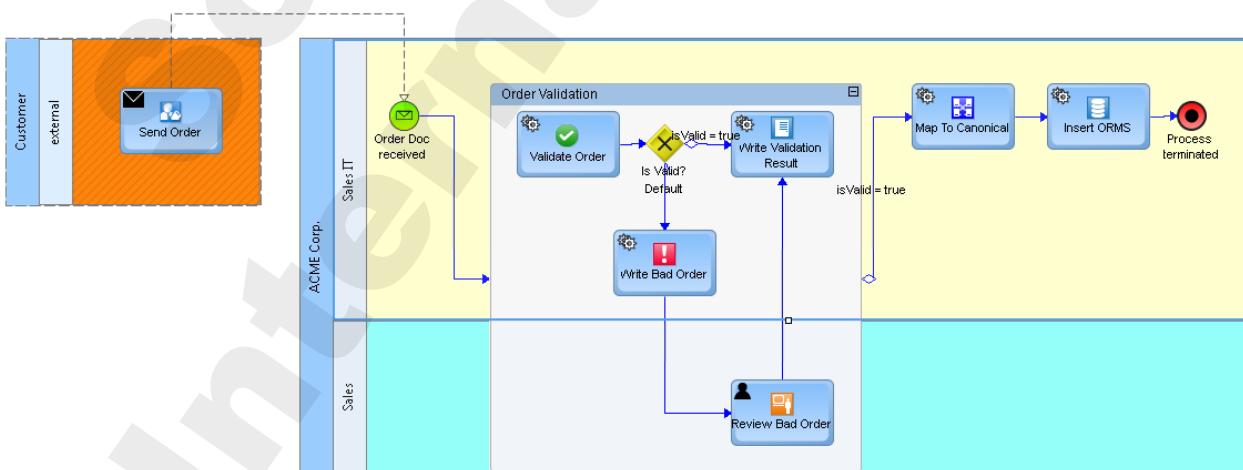
13. Select the steps **Validate Order**, **Is Valid?**, **Write Validation Result**, **Write Bad Order**, and **Review Bad Order** to collapse them to a new BPMN Subprocess.



Rename the Subprocess to **Order Validation** and re-arrange its position, incoming and outgoing transitions like this:



Click its + Activity Marker to expand it. Your process model should correspond to the following image:



14. Save, build and upload the **HandleNewOrder** process.

15. Debug your process model HandleNewOrder:

- a) Start a debug session by running your Debug Configuration **HandleNewOrderDebugConfiguration**. When get prompted, allow switching to the Process Debug perspective.
To overwrite the input of your Debug Configuration, load input data from the file <workshop_dir>\Exercise9\Resources\Ex9_DebugInput1.txt.
- b) In the Trace view, step through the process and to debug steps in the subprocess one by one.
- c) The provided order is invalid, so debugging will create a new User Task. A browser page will open in an external browser so that you can login to My webMethods as **Administrator/manage**. The Task List Management page will open automatically. Hit the **Search** button in the Search portlet view first, then locate your User Task instance in the lower Task portlet. Click on the corresponding Task ID value to open it. On the Task UI, **Accept** and **Complete** the User Task.

16. After the User Task is completed make sure you debug the process until it completes. The process should terminate successfully by executing the route **Order Doc received -> Validate Order -> Is Valid? -> Write Bad Order -> Review Bad Order -> Write Validation Result:**

Step	Step ID	Start Time	End Time	Status Message
		Jan 22, 2014 1:32:11 PM	Jan 22, 2014 1:32:46 PM	Process: 'HandleNewOrder' is done.
Order Doc received	S15	Jan 22, 2014 1:32:13 PM	Jan 22, 2014 1:32:13 PM	Completed
Order Validation	C55	Jan 22, 2014 1:32:14 PM	Jan 22, 2014 1:32:46 PM	Completed
Validate Order	S16	Jan 22, 2014 1:32:15 PM	Jan 22, 2014 1:32:15 PM	Completed
Is Valid?	S33	Jan 22, 2014 1:32:16 PM	Jan 22, 2014 1:32:16 PM	Completed
Write Bad Order	S36	Jan 22, 2014 1:32:16 PM	Jan 22, 2014 1:32:16 PM	Completed
Review Bad Order	S46	Jan 22, 2014 1:32:16 PM	Jan 22, 2014 1:32:41 PM	Completed
Write Validation Res...	S51	Jan 22, 2014 1:32:46 PM	Jan 22, 2014 1:32:46 PM	Completed

17. Start another debug. This time, load a valid order from the file <workshop_dir>\Exercise9\Resources\Ex9_DebugInput2.txt. Step through the process. The process should terminate successfully by executing the route: **Order Doc received -> Validate Order -> IS Valid? -> Write Validation Result -> Map to Canonical -> insert ORMS -> Process terminated.**

Step	Step ID	Start Time	End Time	Status Message
		Jan 22, 2014 1:35:32 PM	Jan 22, 2014 1:35:52 PM	Process: 'HandleNewOrder' is done.
Order Doc received	S15	Jan 22, 2014 1:35:35 PM	Jan 22, 2014 1:35:35 PM	Completed
Order Validation	C55	Jan 22, 2014 1:35:37 PM	Jan 22, 2014 1:35:40 PM	Completed
Validate Order	S16	Jan 22, 2014 1:35:38 PM	Jan 22, 2014 1:35:38 PM	Completed
Is Valid?	S33	Jan 22, 2014 1:35:39 PM	Jan 22, 2014 1:35:39 PM	Completed
Write Validation Res...	S51	Jan 22, 2014 1:35:40 PM	Jan 22, 2014 1:35:40 PM	Completed
Map To Canonical	S17	Jan 22, 2014 1:35:42 PM	Jan 22, 2014 1:35:42 PM	Completed
Insert ORMS	S26	Jan 22, 2014 1:35:44 PM	Jan 22, 2014 1:35:44 PM	Completed
Process terminated	S19	Jan 22, 2014 1:35:52 PM	Jan 22, 2014 1:35:52 PM	Completed

Check Your Understanding

1. Is the subprocess reusable?
2. If the order is invalid, will the process instance leave the subprocess and execute the Map To Canonical step?

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EXERCISE 10:

PROCESS INVOCATION VIA CALL ACTIVITIES

Objectives

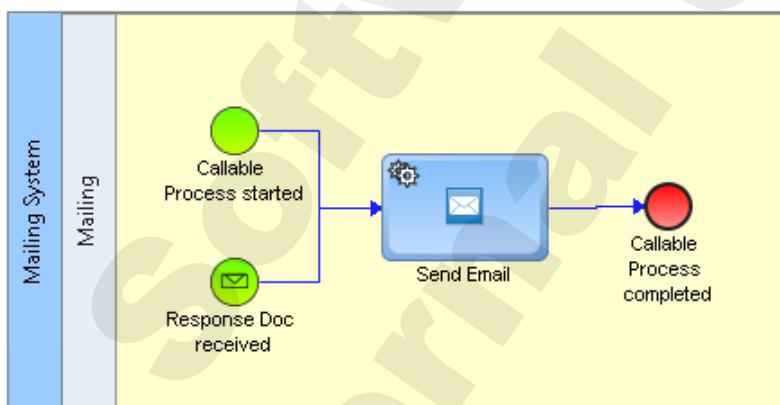
In this exercise, you will add a new process to your **CorporateProcesses** project. The new process called **NotifyCustomer** is used to notify the customer whether the order is approved or rejected. You will invoke the process model in your **HandleNewOrder** process multiple times using Call Activities. This introduces modularization and reuse.

The parent process invokes **NotifyCustomer** as BPMN Callable Process as well as webMethods Referenced Process. To support this and to allow standalone debugging, you will implement the **NotifyCustomer** process as a “hybrid” process with two Start Events.

Steps

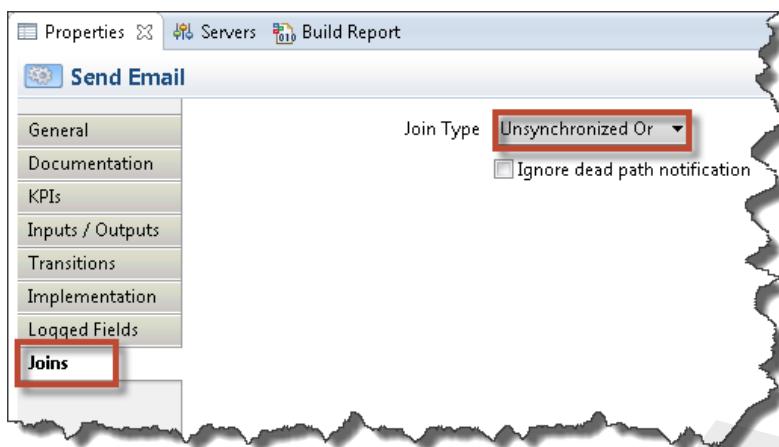
1. Ensure all Windows services mentioned in exercise 1 step 3 are up and running.
2. Launch Software AG Designer and ensure you are in the **Process Development** perspective.
3. Create a new process in your **CorporateProcesses** project. Name your process **NotifyCustomer**.

Add an internal pool named Mailing System with a Swimlane named **Mailing**. Add a Start None Event named **Callable Process started**, a Start Message Event named **Response Doc received**, a Service Task Activity named **Send Email**, and an End None Event named **Callable Process completed**. Add transitions to the process model, and customize the image of the Service Task Activity to correspond to the following image:

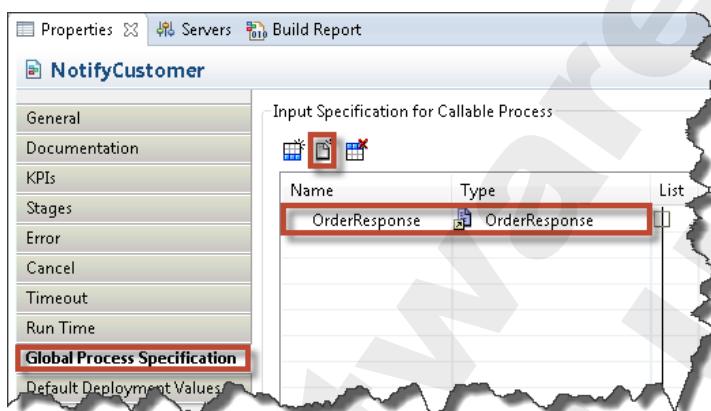


4. Set up the Start Message Event **Response Doc received** to receive a document of type **bpmDevSupport.docs.response:OrderResponse** via JMS as Receive Protocol. Stay on the Protocol Properties defaults. Double-check the step output contains a document of type **bpmDevSupport.docs.response:OrderResponse** named **OrderResponse**.
5. Set up the Start None Event **Callable Process started** to use JMS as Receive Protocol.
6. Use drag & drop from the Package Navigator to set up the Service Task Activity **Send Email** to invoke the IS Service **bpmDevSupport.utils:notifyCustomer**. Double-check the step inputs and outputs.
Note: The service **notifyCustomer** service does not return any output.

7. Set the Join Type of step **Send Email** to **Unsynchronized Or**.



8. In the **Global Process Specification** of your process model **NotifyCustomer**, create a document reference of type **bpmDevSupport.docs.response:OrderResponse** as input specification. Save your process model.

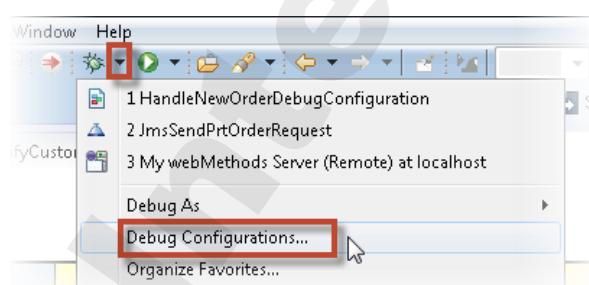


9. Double-check the step output of Start None Event **Callable Process started** contains a document of type **bpmDevSupport.docs.response:OrderResponse** named **OrderResponse**.

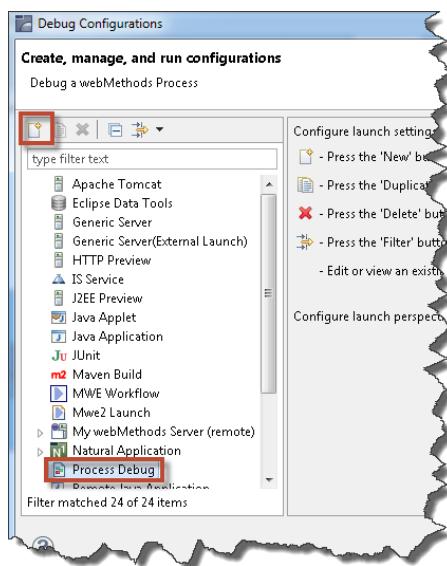
10. Save, build and upload the **NotifyCustomer** process.

11. First, test your callable process model standalone using the Process Debugger:

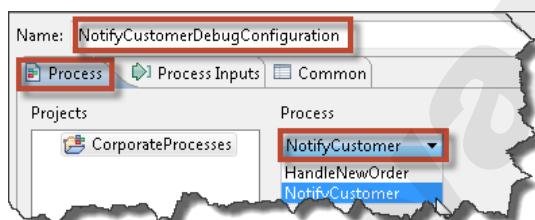
- Create another Debug Configuration in your Designer workspace. To do so, click the triangle next to the Debug icon having the process model loaded in the process editor. Select **Debug Configurations...**



Select asset type **Process Debug** and hit the **New** button.

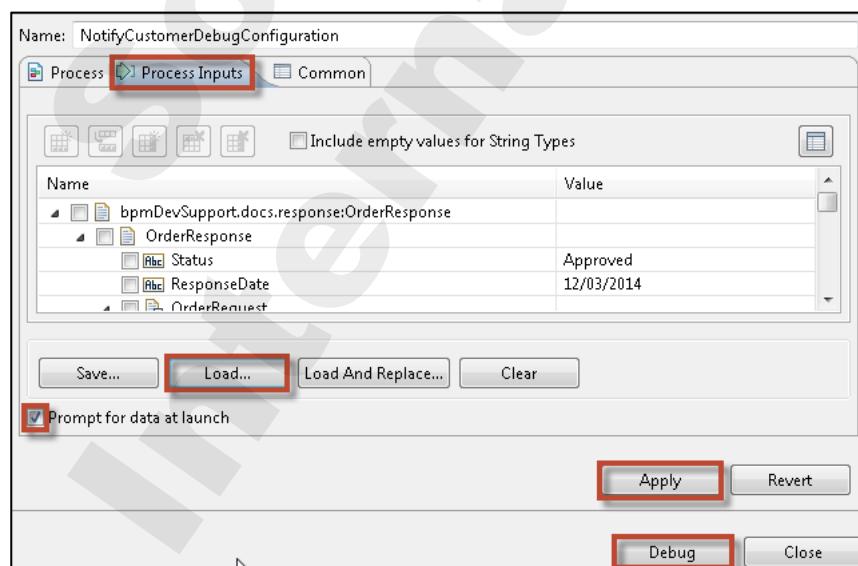


On the **Process** tab of your new Debug Configuration, specify **NotifyCustomerDebugConfiguration** as Run Configuration name and select the process model **NotifyCustomer** within the process project **CorporateProcesses**.



On the **Process Inputs** tab, provide input data for the Start Message Event and check to get prompted to type/alter those data when debugging starts.

Instead of typing you can load input data from `<workshop_dir>\Exercise10\Resources\Ex10_ConfigInput.txt`. Click **Apply** to save the Debug Configuration. Then click **Debug** to start process debugging.
Accept to switch to the Process Debug perspective.



- b) Because of the settings you made in the Debug Configuration you get prompted for the input data having your data specified as in the Run Configuration preloaded. Sample input can optionally be loaded from <workshop_dir>\Exercise10\Resources\Ex10_DebugInput1.txt. Click OK.

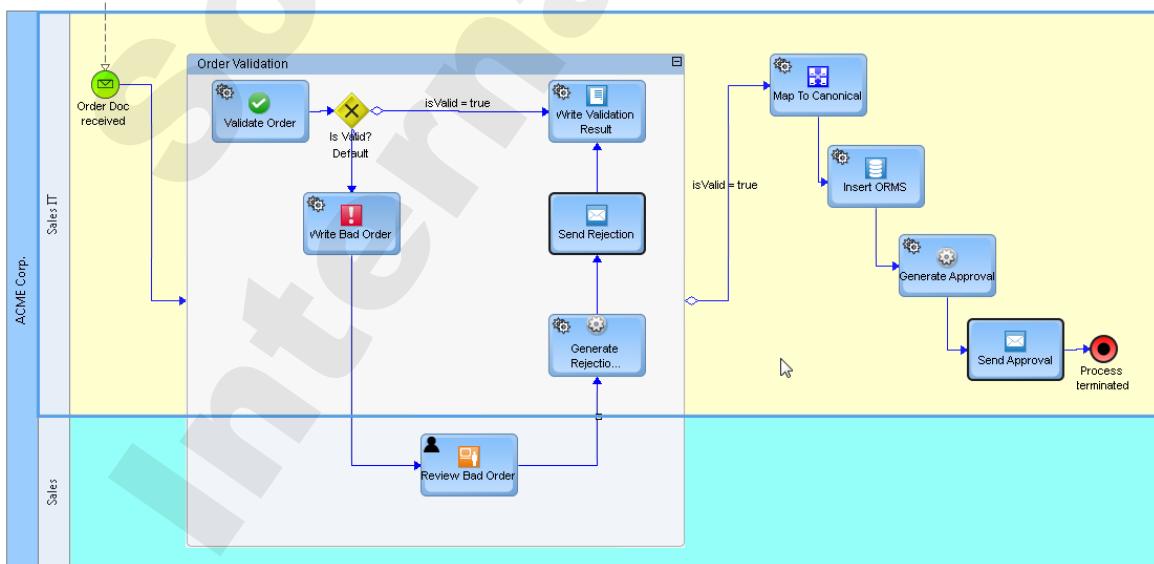
12. Use the Trace view to step thru all of the steps until the callable process ends.

Ensure you can see a message similar to “ **** The customer was notified that the order has been Approved...” in the IS Server server.log file. To do so, open the IS server.log file by using an editor or by using the IS Administration console:

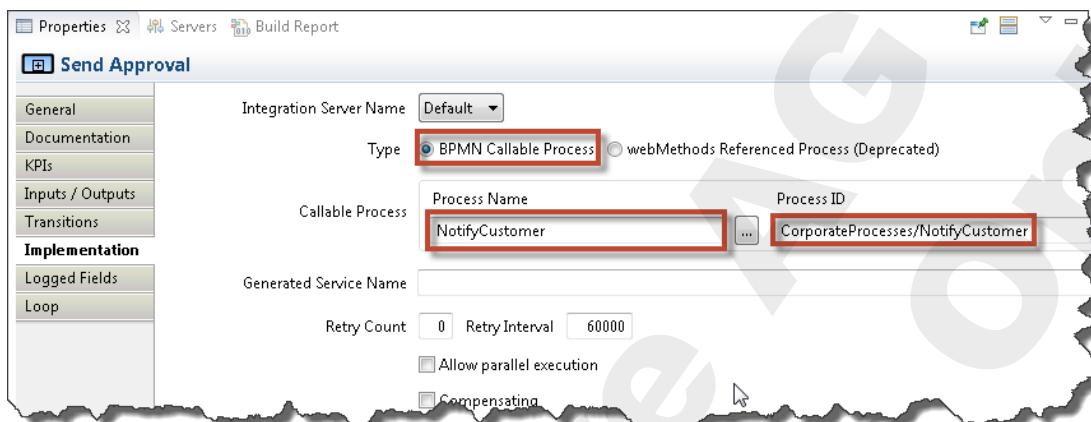
```
[2274]2014-01-22 14:27:37 ME2 [BPM.0102.02021] ef385250-8368-11e3-a3ff-923414c49294:1, MID=CorporateProcesses/NotifyCustomer, MVer=1: process completed
[2273]2014-01-22 14:27:36 ME2 [ISP.0090.0003C] **** The customer was notified that the order has been Approved on 12/03/2014, ****
[2272]2014-01-22 14:27:26 ME2 [BPM.0102.01961] ef385250-8368-11e3-a3ff-923414c49294:1, MID=CorporateProcesses/NotifyCustomer, MVer=1: process started
```

13. Enhance your HandleNewOrder process being opened in Designer:

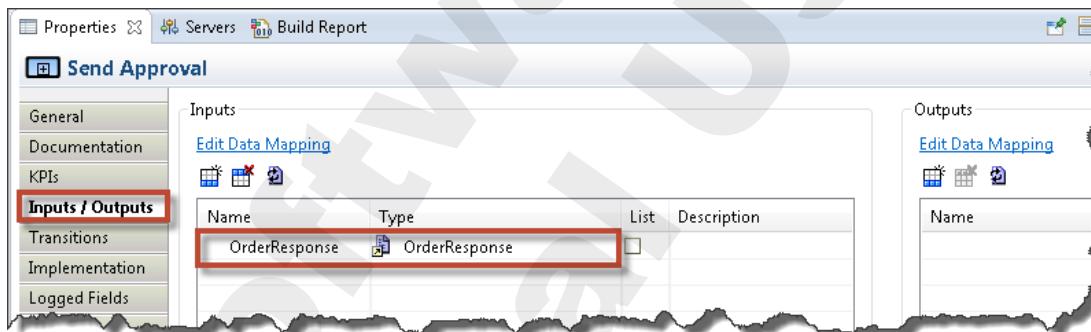
- Enlarge the expanded Subprocess Order Validation at the right side.
- Remove the transition from Review Bad Order to Write Validation Result.
- Add a Service Task Activity named **Generate Rejection Response** and a Call Activities named **Send Rejection** to the subprocess process within Swimlane SalesIT.
- Add three transitions:
 - from Review Bad Order to Generate Rejection Response
 - from Generate Rejection Response to Send Rejection
 - from Send Rejection to Write Validation Result
- Remove the transition from Insert ORMS and Process terminated.
- Between Insert ORMS and Process terminated, add a Service Task Activity named **Generate Approval Response** and a Call Activities named **Send Approval** within Swimlane SalesIT.
- Add three transitions:
 - from Insert ORMS to Generate Approval Response
 - from Generate Approval Response to Send Approval
 - from Send Approval to Process terminated
- Adjust step images so that the HandleNewOrder process now corresponds to the following image:



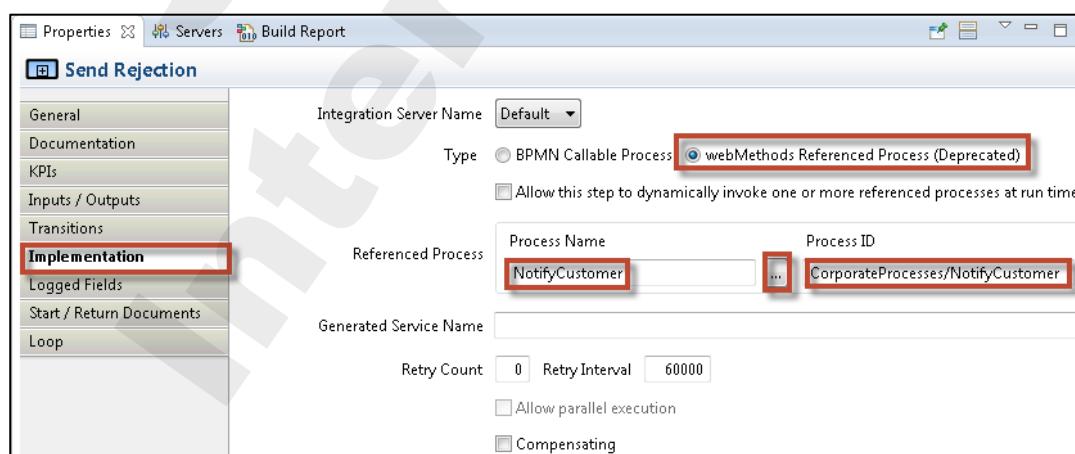
14. Reset the join condition of step **Write Validation Result** to the Join Type **OR**.
15. Use drag and drop from the Package Navigator to setup Service Task Activities **Generate Rejection Response** and **Generate Approval Response** both to invoke IS service `bpmDevSupport.utils:generateResponse`. Double-check their inputs and outputs.
16. Drag process model **NotifyCustomer** from the Solutions view onto Call Activity **Send Approval**. This should configure the step to invoke NotifyCustomer as a BPMN Callable Process:



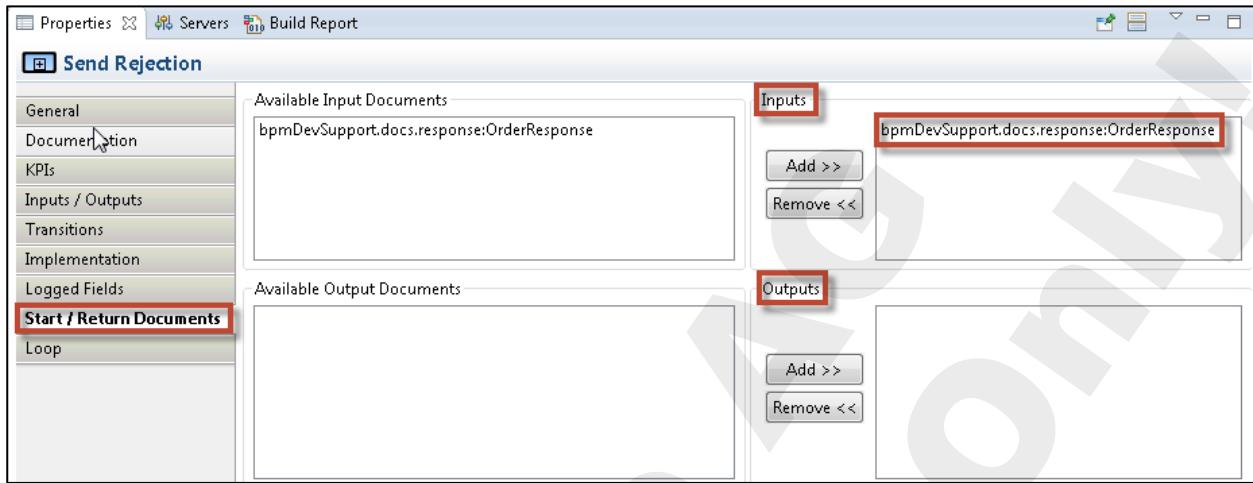
On the Inputs/Outputs tab, double-check the Inputs and Outputs of the Send Approval Call Activity. Note that they are retrieved from the Global Process Specification of your invoked **NotifyCustomer** process.



17. In the Properties view of Call Activity **Send Rejection**, configure the step to invoke the process **NotifyCustomer** as a **webMethods Referenced Process**:



Use the **Start/Return Document** tab to ensure that the Start document corresponds to the document to be received (Inputs) by your referenced **NotifyCustomer** process.
Note: **NotifyCustomer** does not publish any return document, so the return document (Outputs) has to be empty.



Finally double-check the Inputs and Outputs of the **Send Rejection** Call Activity.

18. Save, build and upload your **HandleNewOrder** process.

19. Now debug your entire **HandleNewOrder** process:

- To start a new debug session, click the black triangle next to the Debug icon in the menu bar and select your existing Debug Configuration **HandleNewOrderDebugConfiguration** from the drop-down.
 - To overwrite the input data of your Debug Configuration, load provided input order data from the file <**workshop_dir**>\Exercise5\Resources\Ex10_DebugInput2.txt.
- Accept to switch to the process Debug perspective. In the Trace view, step through the process. Because the input contains an invalid order, a new User Task gets queued. **Accept/Complete** the User Task instance in the Task List Management page and then finish stepping through the process.
- Ensure you can see a message similar to “ **** The customer was notified that the order has been Rejected ...” in the IS Server **server.log** file:

```
[2727]2014-01-23 08:57:25 MEZ [BPM.0102.0202I] d1514760-8403-11e3-968d-b2c6d6b28960:1, MID=CorporateProcesses/HandleNewOrder, MVer=1; process completed
[2726]2014-01-23 08:57:13 MEZ [BPM.0102.0202I] f795ba00-8403-11e3-97ea-eb8dcf09a54b:1, MID=CorporateProcesses/NotifyCustomer, MVer=1; process completed
[2725]2014-01-23 08:57:13 MEZ [ISP.0090.0003C] **** The customer was notified that the order has been Rejected on 01/23/2014 08:57:12. ****
[2724]2014-01-23 08:57:12 MEZ [BPM.0102.0196I] f795ba00-8403-11e3-97ea-eb8dcf09a54b:1, MID=CorporateProcesses/NotifyCustomer, MVer=1; process started
[2723]2014-01-23 08:56:08 MEZ [BPM.0102.0196I] d1514760-8403-11e3-968d-b2c6d6b28960:1, MID=CorporateProcesses/HandleNewOrder, MVer=1; process started
```

HandleNewOrder						
Step	Step ID	Ste...	Loop ...	Start Time	End Time	Status Message
				Jan 23, 2014 8:56:08 AM	Jan 23, 2014 8:57:25 A...	Process: 'HandleNewOrder' is done.
Order Doc received	S15	1		Jan 23, 2014 8:56:18 AM	Jan 23, 2014 8:56:18 A...	Completed
Order Validation	C55	1		Jan 23, 2014 8:56:20 AM	Jan 23, 2014 8:57:25 A...	Completed
Validate Order	S16	1		Jan 23, 2014 8:56:21 AM	Jan 23, 2014 8:56:21 A...	Completed
Is Valid?	S33	1		Jan 23, 2014 8:56:23 AM	Jan 23, 2014 8:56:23 A...	Completed
Write Bad Order	S36	1		Jan 23, 2014 8:56:23 AM	Jan 23, 2014 8:56:23 A...	Completed
Review Bad Order	S46	1		Jan 23, 2014 8:56:23 AM	Jan 23, 2014 8:57:12 A...	Completed
Generate Rejection ...	S57	1		Jan 23, 2014 8:57:12 AM	Jan 23, 2014 8:57:12 A...	Completed
Send Rejection	S58	1		Jan 23, 2014 8:57:12 AM	Jan 23, 2014 8:57:13 A...	Completed
Write Validation Res...	S51	1		Jan 23, 2014 8:57:25 AM	Jan 23, 2014 8:57:25 A...	Completed

20. Use your Debug Configuration **HandleNewOrderDebugConfiguration** to start another debug session. For the input document, load a valid order from the file **<workshop_dir>\Exercise10\Resources\Ex10_DebugInput3.txt**. Use the Trace view to step through the process until your process terminates successfully. Ensure you can see a message similar to “ **** The customer was notified that the order has been Approved ...” in the IS Server **server.log** file:

```
[2733]2014-01-23 09:13:28 MEZ [BPM.0102.02021] 3afbd660-8406-11e3-9aed-e90b5748ecd0:1, MID=CorporateProcesses/HandleNewOrder, MVer=1: process completed
[2732]2014-01-23 09:13:28 MEZ [BPM.0102.02021] 3d895f10-8406-11e3-9b27-8451aafa02e2:1, MID=CorporateProcesses/NotifyCustomer, MVer=1: process completed
[2731]2014-01-23 09:13:28 MEZ [ISP.0090.0003C] **** The customer was notified that the order has been Approved on 01/23/2014 09:13:28. ****
[2730]2014-01-23 09:13:28 MEZ [BPM.0102.01961] 3d895f10-8406-11e3-9b27-8451aafa02e2:1, MID=CorporateProcesses/NotifyCustomer, MVer=1: process started
[2729]2014-01-23 09:13:28 MEZ [ISP.0090.0003C] **** A new order with ID=H3 has been saved to the database. ****
[2728]2014-01-23 09:13:24 MEZ [BPM.0102.01961] 3afbd660-8406-11e3-9aed-e90b5748ecd0:1, MID=CorporateProcesses/HandleNewOrder, MVer=1: process started
```

Step	Step ID	Start Time	End Time	Status Message
		Jan 23, 2014 9:13:24 AM	Jan 23, 2014 9:13:28 AM	Process: 'HandleNewOrder' is done.
Order Doc received	S15	Jan 23, 2014 9:13:28 AM	Jan 23, 2014 9:13:28 AM	Completed
Order Validation	C55	Jan 23, 2014 9:13:28 AM	Jan 23, 2014 9:13:28 AM	Completed
Validate Order	S16	Jan 23, 2014 9:13:28 AM	Jan 23, 2014 9:13:28 AM	Completed
Is Valid?	S33	Jan 23, 2014 9:13:28 AM	Jan 23, 2014 9:13:28 AM	Completed
Write Validation Res...	S51	Jan 23, 2014 9:13:28 AM	Jan 23, 2014 9:13:28 AM	Completed
Map To Canonical	S17	Jan 23, 2014 9:13:28 AM	Jan 23, 2014 9:13:28 AM	Completed
Insert ORMS	S26	Jan 23, 2014 9:13:28 AM	Jan 23, 2014 9:13:28 AM	Completed
Generate Approval	S62	Jan 23, 2014 9:13:28 AM	Jan 23, 2014 9:13:28 AM	Completed
Send Approval	S63	Jan 23, 2014 9:13:28 AM	Jan 23, 2014 9:13:28 AM	Completed
Process terminated	S19	Jan 23, 2014 9:13:28 AM	Jan 23, 2014 9:13:28 AM	Completed

21. Monitor your executed process in My webMethods:

- a) Use a browser tab to login to My webMethods as **Administrator/manage**. Use the **Business Processes Dashboard (Applications > Administration > Business > Business Processes Dashboard)** to open the Process Instance Details page of your last **HandleNewOrder** process instance. Drill down to the **Step Summary** to verify the invocation of the **NotifyCustomer** process.

Step Name	Start Date / Time	Last Updated	Instance Iteration	Step Iteration	Loop Iteration	Status	Duration	Referenced Process	Detail
Process terminated	1/23/2014 9:13:28.920 AM	1/23/2014 9:13:28.947 AM	1	1		Completed	0d 00:00:00.027		
Send Approval	1/23/2014 9:13:28.830 AM	1/23/2014 9:13:28.910 AM	1	1		Completed	0d 00:00:00.080	NotifyCustomer	
Generate Approval	1/23/2014 9:13:28.810 AM	1/23/2014 9:13:28.813 AM	1	1		Completed	0d 00:00:00.003		
Insert ORMS	1/23/2014 9:13:28.790 AM	1/23/2014 9:13:28.800 AM	1	1		Completed	0d 00:00:00.010		
Map To Canonical	1/23/2014 9:13:28.773 AM	1/23/2014 9:13:28.780 AM	1	1		Completed	0d 00:00:00.007		
Order Validation	1/23/2014 9:13:28.503 AM	1/23/2014 9:13:28.760 AM	1	1		Completed	0d 00:00:00.257		
Write Validation Result	1/23/2014 9:13:28.650 AM	1/23/2014 9:13:28.717 AM	1	1		Completed	0d 00:00:00.067		
Is Valid?	1/23/2014 9:13:28.597 AM	1/23/2014 9:13:28.593 AM	1	1		Completed	0d 00:00:00.006		
...

- b) Click on the **NotifyCustomer** link to open the Process Instance details of the invoked child process.
To get back to the invoking process instance, click the link of the Parent Instance Id.

The screenshot shows a 'Business Processes Dashboard > Process Instance Detail' window. At the top right are 'Close', 'Refresh', '< PREV', and 'NEXT >' buttons. Below is a 'Process Instance Information' section with the following details:

Process:	NotifyCustomer
Model Version:	1
Start Date / Time:	1/23/2014 9:13:28.850 AM
Last Updated:	1/23/2014 9:13:28.903 AM
Instance ID:	3d895f10-8406-11e3-9b27-0451aafa02e2
Parent Instance ID:	8afbd660-8406-11e3-9aed-e90b5748ecd0
Instance Iteration:	1
Status:	Completed
Duration:	0d 00:00:00.053

A red box highlights the 'Parent Instance ID' field, which contains the value '8afbd660-8406-11e3-9aed-e90b5748ecd0'. A cursor arrow points towards this highlighted field.

Check Your Understanding

1. Is the process invoked by your Send Approval Call Activity reusable?
2. Process NotifyCustomer is invoked twice in the parent (HandleNewOrder) process. It produces different results based on where it is executed from in the parent. What causes the different results to be generated?

EXERCISE 11:

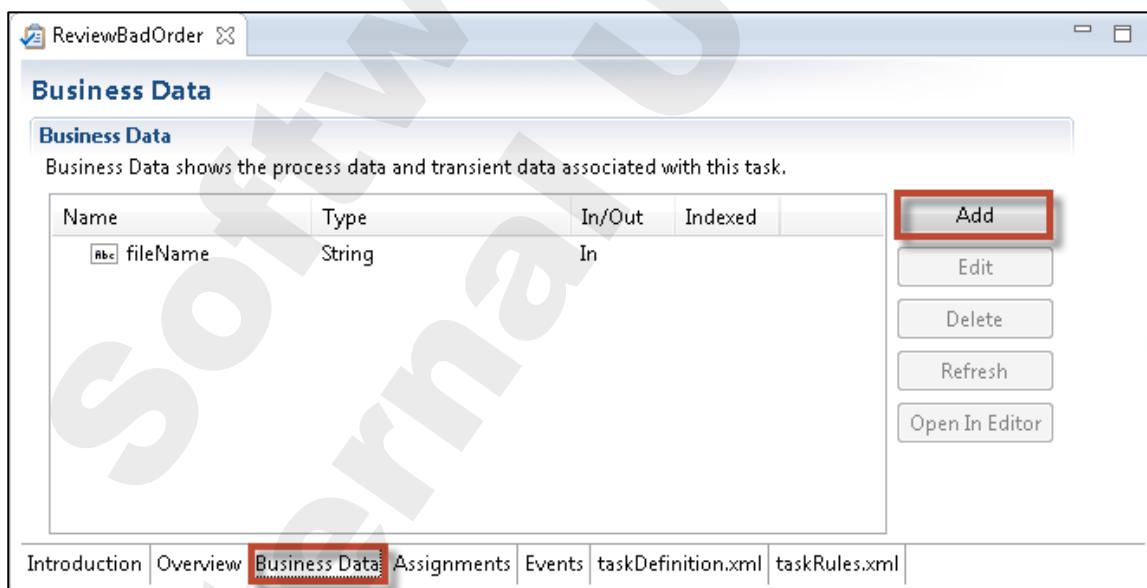
RE-FACTOR USER TASK INPUTS AND OUTPUTS

Objectives

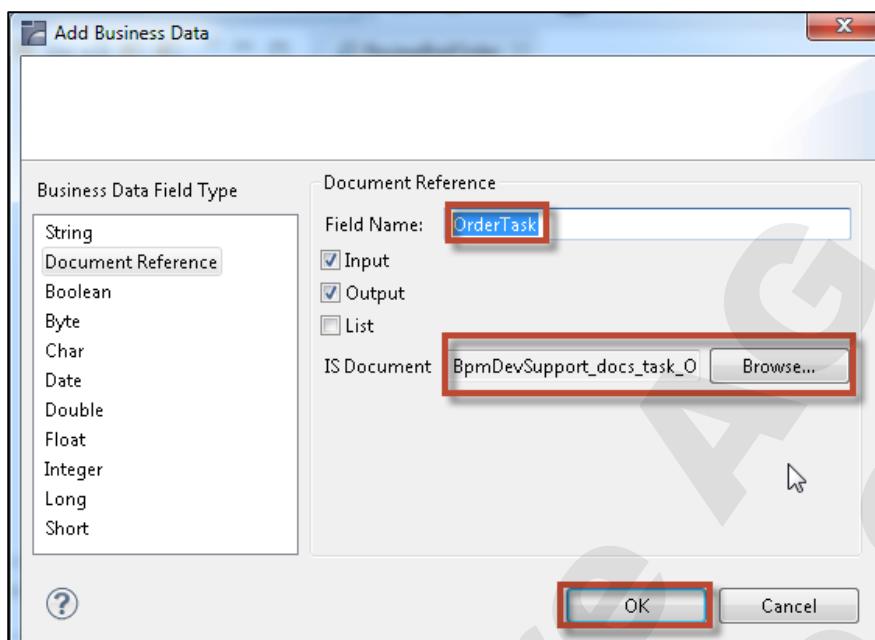
In this exercise, you will modify the **ReviewBadOrder** User Task to display more realistic business data and to return a revalidation flag. You will enhance the **HandleNewOrder** process to react on the revalidation decision made by the user in the User Task UI. You will also have to adjust the inputs and outputs of the corresponding User Task Activity in the **HandleNewOrder** process so that they match the business data expected in the User Task.

Steps

1. Ensure all Windows services mentioned in exercise 1 step 3 are up and running.
2. Launch Software AG Designer and ensure you are in the **UI Development** perspective.
3. Using the Solutions view, open the **ReviewBadOrder** User Task by double-clicking **Tasks/SalesDepartment/ReviewBadOrder**. Select the Business Data tab in the Task editor to modify the **ReviewBadOrder** User Task's Business Data in the following way:
 - a) Add a document reference of type **bpmDevSupport.docs.task:OrderTask** to the Business Data as an In/Out field. To do so, click on **Add** or use drag and drop from the Package Navigator:



Click the Browse button and select `bpmDevSupport.docs.task:OrderTask`. Make sure the value of Field Name changes to `OrderTask`:



- b) Delete the existing `fileName` string variable from the task Business Data:

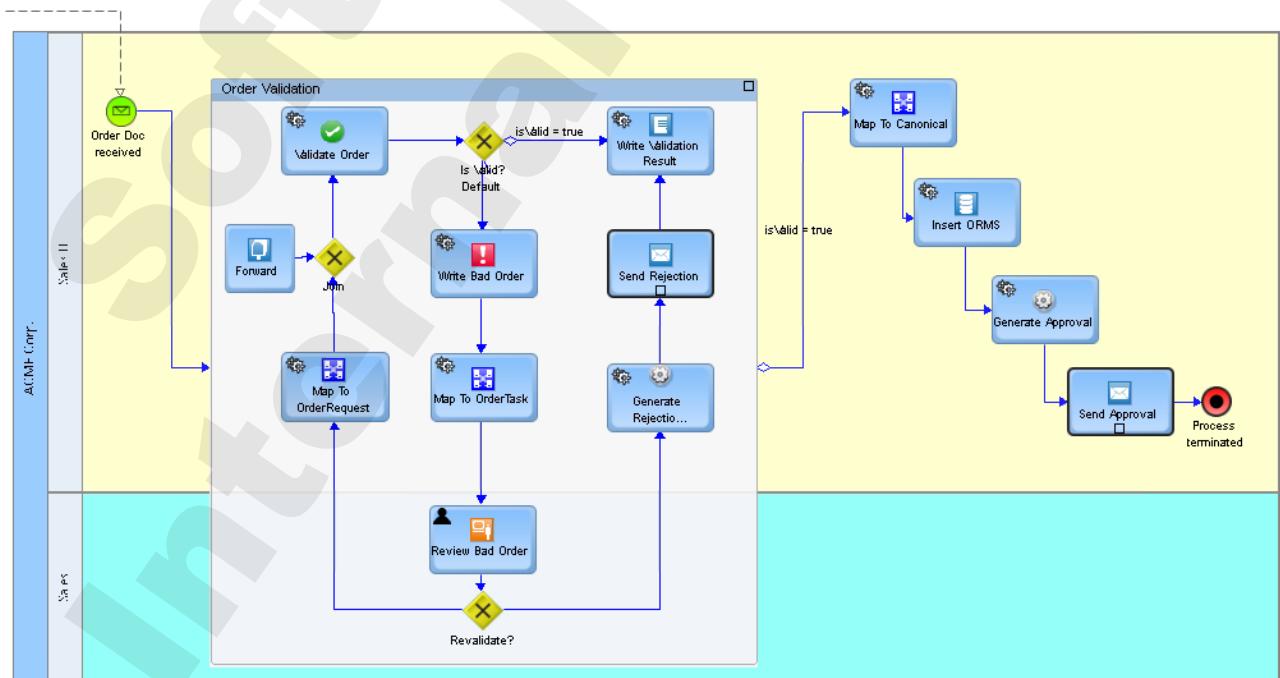
The screenshot shows the 'Business Data' tab of the process editor. It displays a table of variables with columns: Name, Type, In/Out, and Indexed. The table includes the following rows:

Name	Type	In/Out	Indexed
fileName	String	In	
OrderTask	bpmDevSupport.docs.tas... (In/Out)		
OrderID	String		
OrderDate	String		
TotalCost	String		
RevalidateYN	String		
ReceiverID	String		
SenderID	String		
ProductQuantity	String		

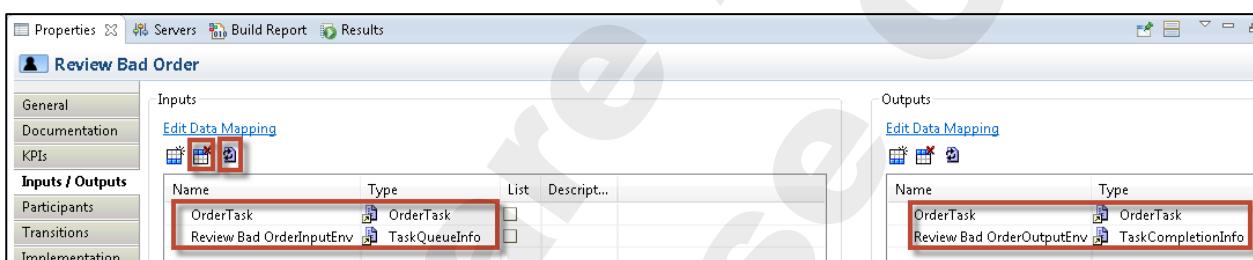
On the right side of the table, there are buttons for 'Add', 'Edit', 'Delete' (which is highlighted with a red border), 'Refresh', and 'Open In Editor'. At the bottom of the screen, there are tabs for 'Introduction', 'Overview', 'Business Data' (which is highlighted with a red border), 'Assignments', 'Events', 'taskDefinition.xml', and 'taskRules.xml'.

- c) Save your changes.

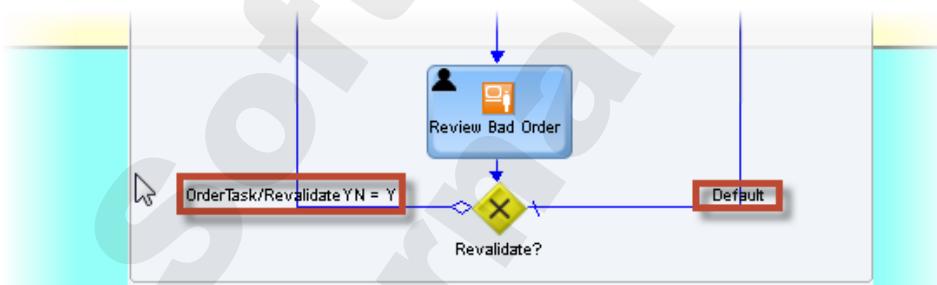
4. Switch to the **Process Development** perspective to enhance your **HandleNewOrder** process:
 - a) Open process model **HandleNewOrder** in Designer.
 - b) Enlarge the internal pool **ACME Corp.** at the bottom. This will increase the size of the Sales swimlane.
 - c) Delete the following transitions:
 - **Review Bad Order** to **Generate Rejection Response**
 - **Write Bad Order** to **Review Bad Order**
 - d) In the Sales IT Swimsnake, add a Service Task Activity named **Map To OrderTask** between **Write Bad Order** and **Review Bad Order**. Add transitions from:
 - **Write Bad Order** to **Map To OrderTask**
 - **Map To OrderTask** to **Review Bad Order**.
 - e) In the Sales Swimsnake, add an Exclusive Gateway named **Revalidate?** beneath **Review Bad Order**.
 - f) In the Sales Swimsnake, add another Service Task Activity named **Map To OrderRequest** placed on the left of **Map To OrderTask**.
 - g) In the Sales swimlane, add an Abstract Task Activity labeled as **Forward** and another Exclusive Gateway named **Join** in the space between **Validate Order** and **Map To OrderRequest**.
 - h) Add the following transitions from:
 - **Review Bad Order** to **Revalidate?**
 - **Revalidate?** to **Generate Rejection Response**
 - **Revalidate?** to **Map To OrderRequest**
 - **Map To OrderRequest** to **Join**
 - **Forward** to **Join**
 - **Join** to **Validate Order**
 - i) Finally provide step images for **Forward**, **Map To OrderTask**, and **Map To OrderRequest** so that your process model corresponds to the following image:



5. Set up Service Task Activity **Map To OrderRequest** to invoke the IS service **bpmDevSupport.maps:OrderTaskToOrderRequest**. If necessary, refresh the input and output data for the step.
6. Set up Service Task Activity **Map To OrderTask** to invoke the IS service **bpmDevSupport.maps:OrderRequestToOrderTask**. If necessary, refresh the input and output data for the step.
7. The Abstract Task Activity **Forward** acts as a unique entry point of the entire BPMN Subprocess. It forwards the incoming order to the Gateway step labeled as **Join**. This Gateway joins between newly received orders and orders to be revalidated. Ensure that the Join type of the **Join** Gateway is an **Unsynchronized Or**.
8. To align the step's Inputs and Outputs with the changed Business Data of your User Task type **ReviewBadOrder**, perform the following actions on the Inputs/Outputs tab of User Task Activity **Review Bad Order**:
 - a) Delete all inputs and outputs.
 - b) Refresh all inputs and outputs.



9. Add the condition “**OrderTask/RevalidateYN = Y**” to the transition from **Revalidate?** to **Map To OrderRequest**.
Change the transition from **Revalidate?** to **Generate Rejection Response** to become the **Default** transition:

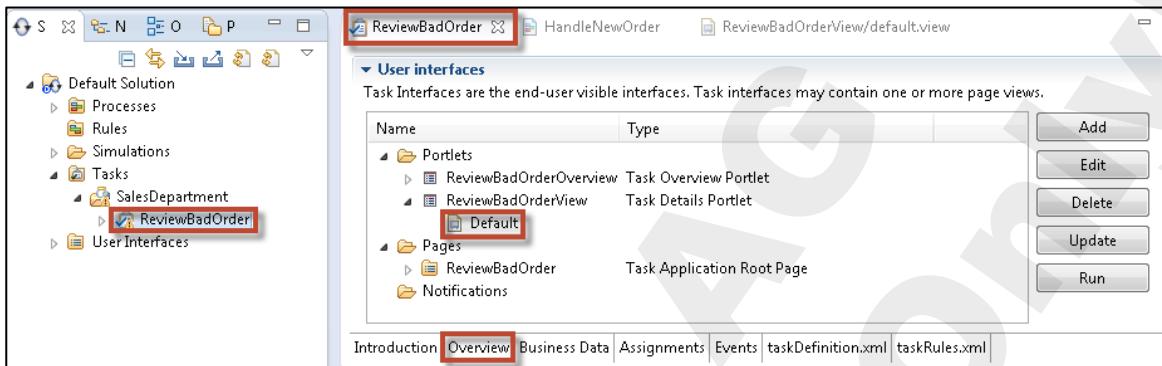


10. Because the workflow now contains an indefinite loop, change the join condition of step **Write Validation Result** to the Join Type **Unsynchronized Or**.
11. Save your changes.

12. Now adjust your Task UI:

- Switch back to the **UI Development** perspective.

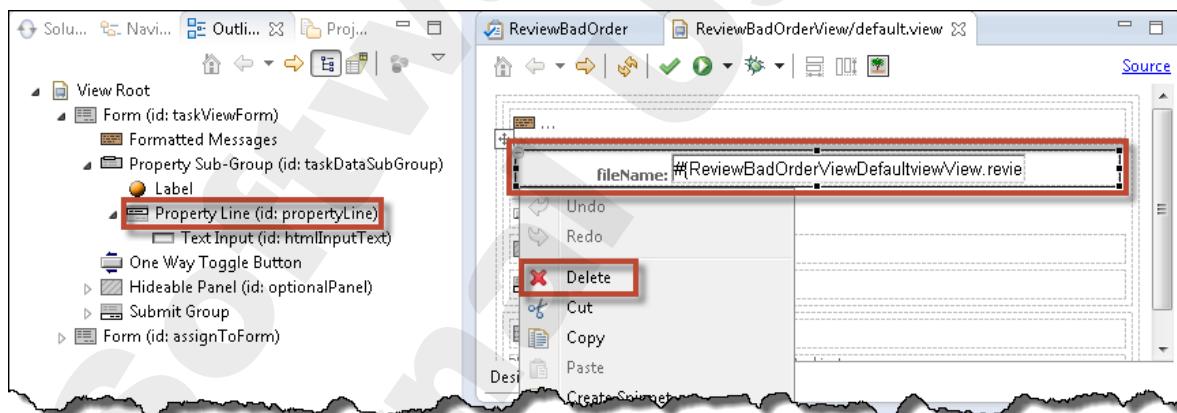
Using the Solutions view, drill down to **Tasks -> SalesDepartment -> ReviewBadOrder**. Double-click **ReviewBadOrder** to open the User Task type in the Task Editor. On the **Overview** tab, revisit the **User Interfaces** section. Double-click **Portlets/ReviewBadOrderView/Default** to open the Task UI in the editor.



Note: As an alternative, you can also open the Task UI using the Solutions view. Drill down to **Tasks -> SalesDepartment -> ReviewBadOrder -> ReviewBadOrderView -> Default** to open the **default.view**.

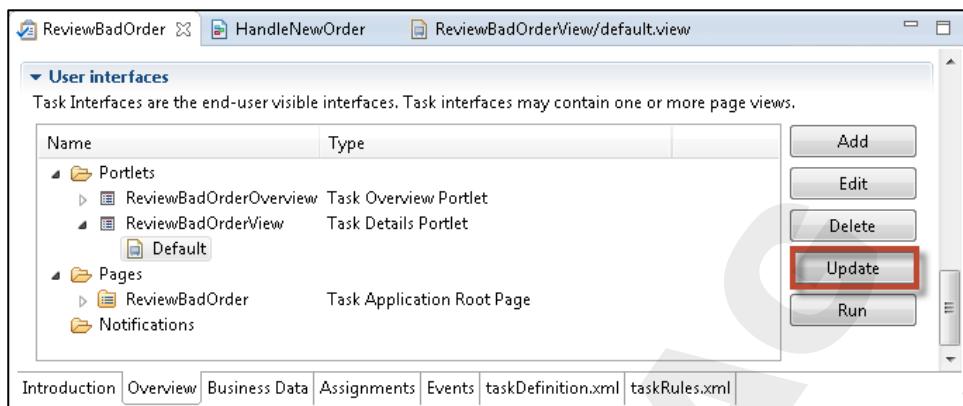
- In the Design canvas, select the Property Line control in which holds the variable **filename**. **Delete** the property line control from the UI.

Note: Selecting and deleting can also be performed by using the Outline view.

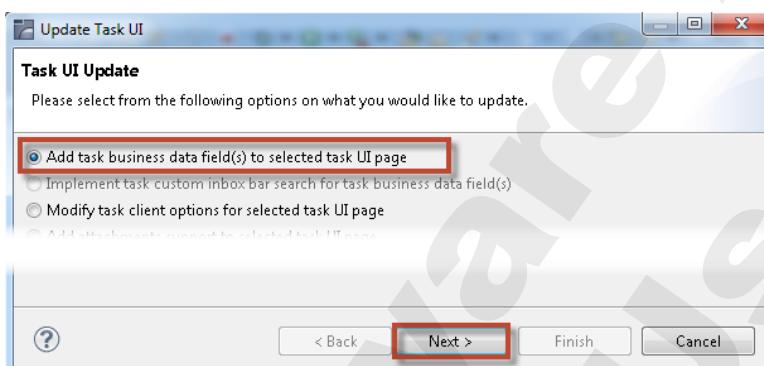


Exercise 11:
Re-factor User Task Inputs and Outputs

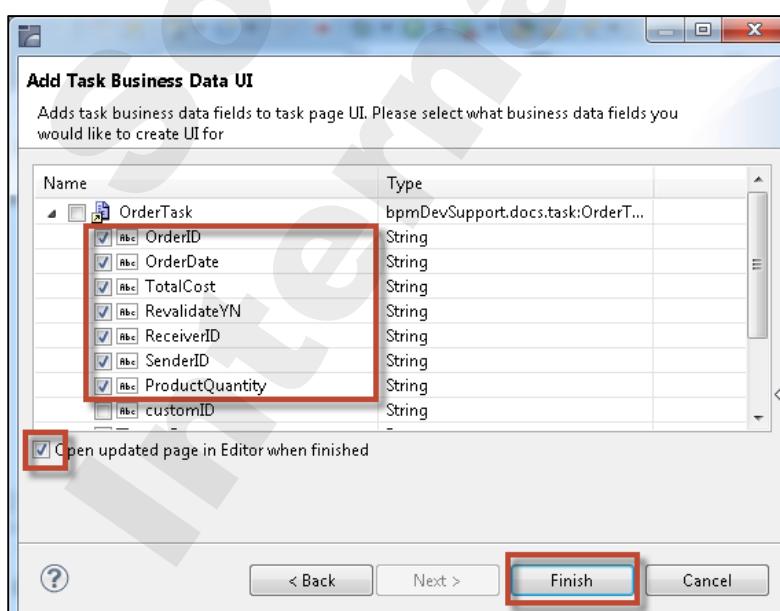
- c) Switch back to the Task Editor being opened for your User Task. On the Overview tab, drill down to the **User interfaces** section at the very bottom. Mark the **Default** view of the Task Details Portlet **ReviewBadOrderView** and hit **Update**.



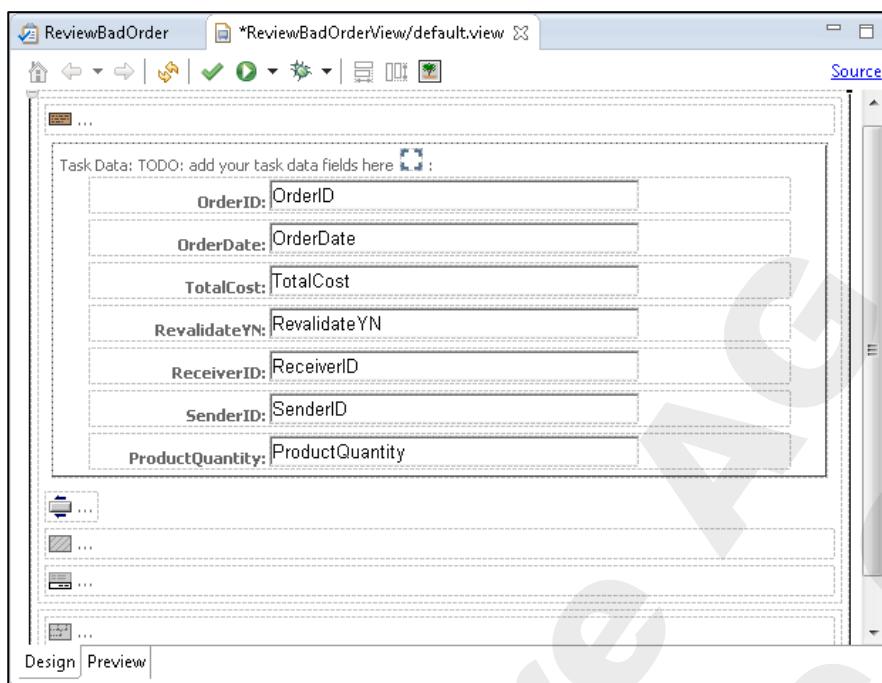
- d) On the Update Task UI panel select **Add task business data fields...** and click **Next >**.



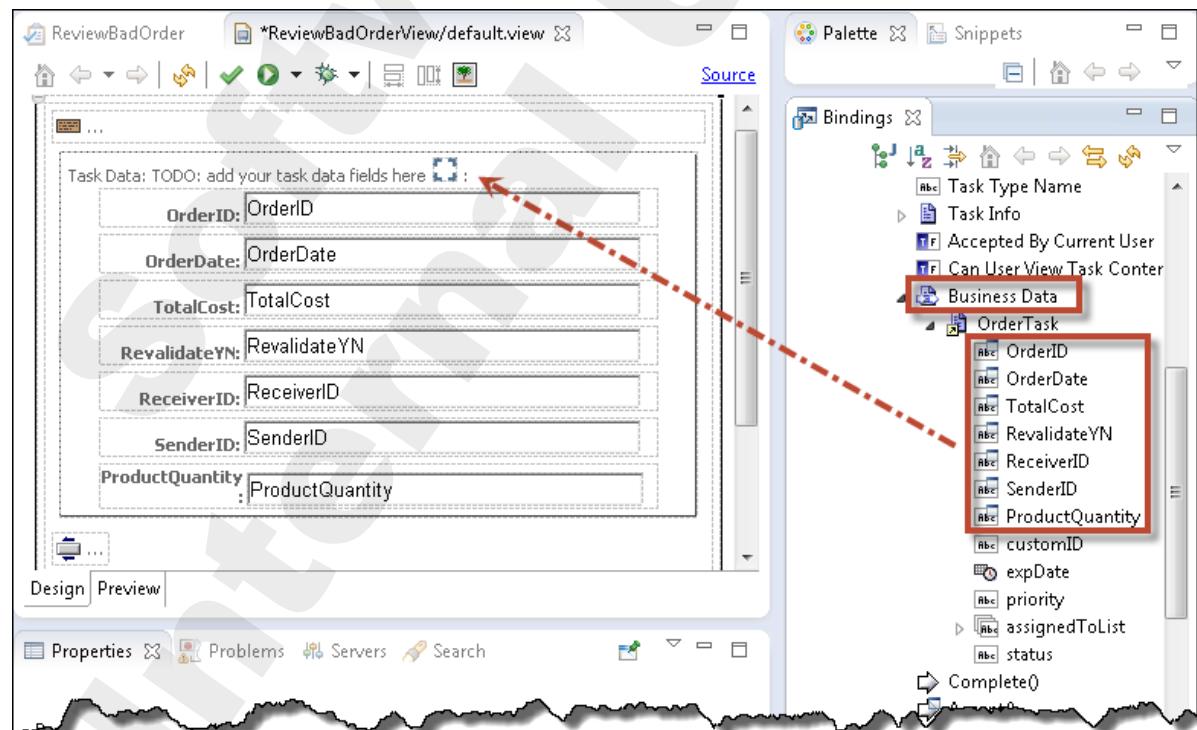
- e) On the next panel select the following Business Data fields of document OrderTask to be added to the User Task default view (Task UI):
OrderId, **OrderDate**, **TotalCost**, **RevalidateYN**, **ReceiverID**, **SenderId**, **ProductQuantity**
Additionally check Open updated page in Editor when finished to see the result in an editor. Click **Finish**.



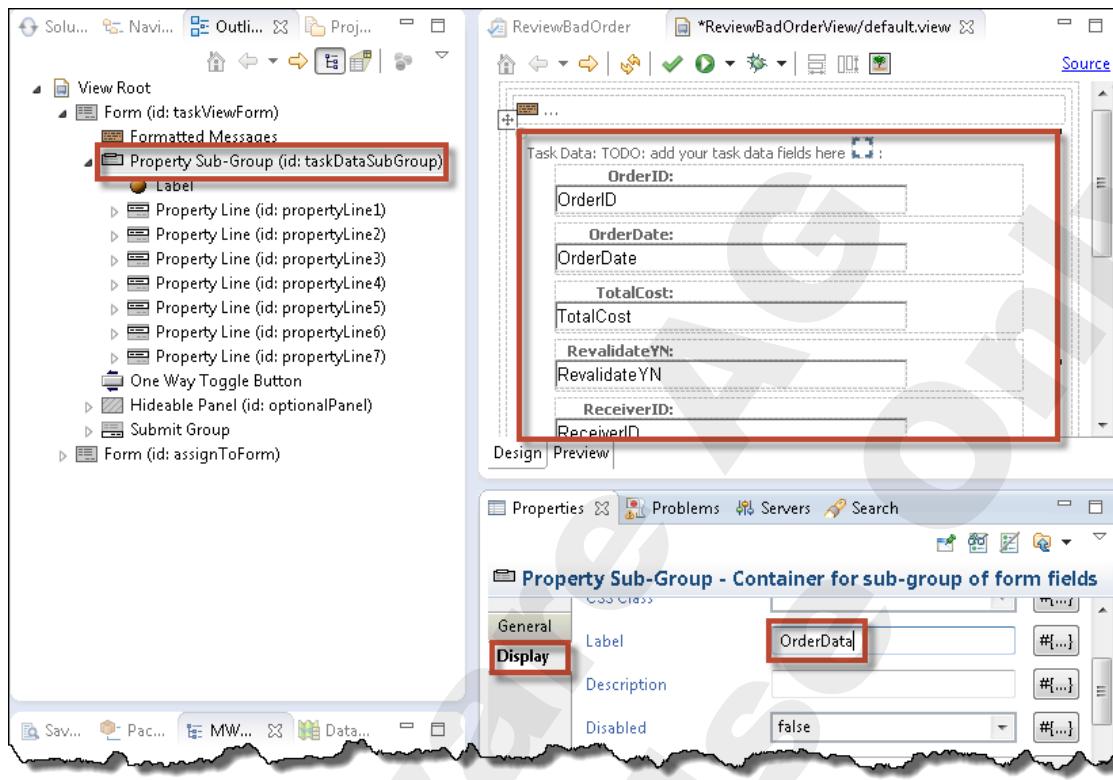
Your Task UI should now look like this:



Note: As an alternative, you can also create UI controls by dragging Business Data fields from the Bindings view into the Property Sub-Group control on the Task UI. To do so, navigate in the Bindings view to the **Managed Beans/.../Review Bad Order/Business Data/OrderTask** document, and drag and drop the desired fields to the Property Sub-Group control in the **ReviewBadOrderView/default.view**. You can use the shift key to select multiple fields to be dragged and dropped.

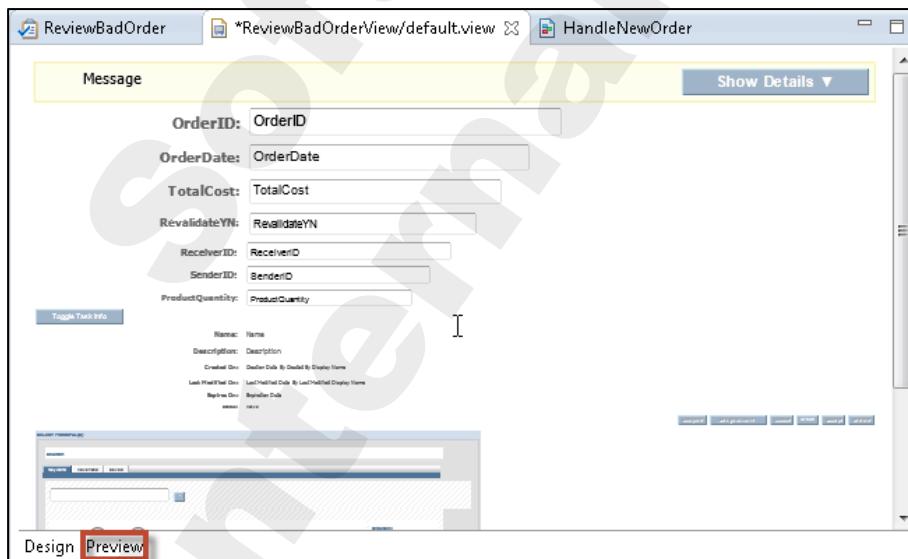


- f) Highlight the box around your User Task data (or select the Property Sub-Group in the Outline view) and select **Display** in the Properties view. Give your User Task data a more user friendly label by entering **Order Data** in the **Label** field.



13. Save your changes.

14. Select the **Preview** tab at the bottom of the task details editor to preview the User Task data presentation of the **ReviewBadOrderView/default.view**:



Note: Preview server does not show all details compared with the UI rendered by My webMethods Server.

15. Using the Servers view, re-publish the SalesDepartment project into My webMethods Server:



If prompted for Authentication, provide **Sysadmin/manage**. As a result, SalesDepartment should be marked with [Synchronized].

16. Switch back to the Process Development perspective.

17. Build and upload the HandleNewOrder process.

18. To start another HandleNewOrder process instance using a browser, double-click <workshop_dir>\Exercise11\Resources\Ex11_SubmitOrder.html. Review the order data in the text area. Note that the order is invalid since the quantity of the first product item is -9. Click the Submit button. If asked for IS authentication, provide Administrator/manage.

19. Using My webMethods, drill down to Applications -> Administration -> Business -> Business Processes Dashboard. Hover over process model name Handle New Order and look for a new HandleNewOrder process instance with a Started status. Click the corresponding instance ID link to view the details of the process instance.

Business Processes		Process Name	Execution Status	Last Updated	Action
Business Processes Dashboard					
Business Processes Dashboard					
Filter				1 - 3 of 3 Items	Reload
Process Name	Execution Status	Instance ID	Last Updated	Action	
HandleNewOrder (CorporateProcesses)		556ea310-8424-11e3-adc3-86952210a71d	1/23/2014 12:48:53.937 PM	Started	
NotifyCustomer (CorporateProcesses)		3afbd660-8406-11e3-9ae9-e90b5748ecd0	1/23/2014 9:13:28.940 AM	Completed	
		d1514760-8403-11e3-968d-b2c6d6b28960	1/23/2014 8:57:25.473 AM	Completed	
		b98ef910-8403-11e3-959c-f2ba58e8a2d2	1/23/2014 8:55:41.280 AM	Completed	
		7cc8e060-8401-11e3-9352-f470b7d1d45c	1/23/2014 8:39:30.837 AM	Completed	
		875ab1c0-837f-11e3-a889-8884e7d1c54c	1/22/2014 5:09:25.953 PM	Completed	
		77cac6f0-837f-11e3-a85f-836f9c80cb5	1/22/2014 5:08:44.703 PM	Completed	
		4ca2a6a0-837f-11e3-a7af-a3a1da641edb	1/22/2014 5:07:57.753 PM	Completed	
		2c2fc420-837f-11e3-a6eb-f23a0c93637a	1/22/2014 5:06:57.103 PM	Completed	
		067362b0-837e-11e3-a17b-da685479a40c	1/22/2014 4:58:33.253 PM	Completed	

20. In the process instance details, under Step Summary, expand the BPMN Subprocess Order Validation. Ensure that steps Order Doc received, Forward, Join, Validate Order, Is Valid?, Write Bad Order, and Map To OrderTask have been completed and User Task Activity Review Bad Order has a Started status.

Business Processes Dashboard > Process Instance Detail									
Step Summary									
Step Name	Start Date / Time	Last Updated	Instance Iteration	Step Iteration	Loop Iteration	Status	Duration	Referenced Process	Detail
Order Validation	1/23/2014 12:48:53.947 PM	1/23/2014 12:48:53.947 PM	1	1		Started	0d 00:00:00.000		
---Review Bad Order	1/23/2014 12:48:54.020 PM	1/23/2014 12:48:54.020 PM	1	1		Started	0d 00:00:00.000		
---Map To OrderTask	1/23/2014 12:48:53.987 PM	1/23/2014 12:48:54.017 PM	1	1		Completed	0d 00:00:00.030		
---Write Bad Order	1/23/2014 12:48:53.973 PM	1/23/2014 12:48:53.983 PM	1	1		Completed	0d 00:00:00.010		
---Is Valid?	1/23/2014 12:48:53.967 PM	1/23/2014 12:48:53.970 PM	1	1		Completed	0d 00:00:00.003		
---Validate Order	1/23/2014 12:48:53.963 PM	1/23/2014 12:48:53.963 PM	1	1		Completed	0d 00:00:00.000		
---Join	1/23/2014 12:48:53.957 PM	1/23/2014 12:48:53.957 PM	1	1		Completed	0d 00:00:00.000		
---Forward	1/23/2014 12:48:53.953 PM	1/23/2014 12:48:53.953 PM	1	1		Completed	0d 00:00:00.000		
---Order Doc received	1/23/2014 12:48:53.937 PM	1/23/2014 12:48:53.943 PM	1	1		Completed	0d 00:00:00.006		

Exercise 11:
Re-factor User Task Inputs and Outputs

21. In My webMethods, switch to the Applications -> Monitoring -> Business -> Tasks -> Task List Management page. A new instance of a Review Bad Order User Task has been created. Select and Accept the User Task. Set field RevalidateYN to Y, and Complete the User Task:

Task List Management > ReviewBadOrder Details

Data View	Details View	Audit View	Comments	Collaboration	Content
Order Data:					
OrderID:	1				
OrderDate:	January 23, 2014				
TotalCost:	6510				
RevalidateYN:	<input checked="" type="checkbox"/>				
ReceiverID:	11-111-1111				
SenderId:	88-888-8888				
ProductQuantity:	-9				
<input type="button" value="Toggle Task Info"/>					
Task Info:					
Name:	Review Bad Order				
Description:	View				
Created On:	23.01.2014 12:48 By My webMethods Administrator				
Last Modified On:	23.01.2014 13:21 By My webMethods Administrator				
Expires On:					
Status:	Active				
<input type="button" value="Complete"/> <input type="button" value="Release"/> <input type="button" value="Submit"/> <input type="button" value="Return"/>					

22. Switch back to the Process Instance Detail page and ensure that the order was revalidated. Since the order is still invalid, a new User Task is created and started:

Process Instances > Process Instance Detail

Step Summary

17 Items

Step Name	Start Date / Time	Last Updated	Instance Iteration	Step Iteration	Loop Iteration	Status	Duration	Referenced Process	Detail
Order Validation	1/23/2014 12:48:53,947 PM	1/23/2014 12:48:53,947 PM	1	1		Started	0d 00:00:00.000		View
Review Bad Order	1/23/2014 1:22:49,220 PM	1/23/2014 1:22:49,220 PM	1	2		Started	0d 00:00:00.000		View
Map To OrderTask	1/23/2014 1:22:49,213 PM	1/23/2014 1:22:49,217 PM	1	2		Completed	0d 00:00:00.004		View
Write Bad Order	1/23/2014 1:22:49,203 PM	1/23/2014 1:22:49,213 PM	1	2		Completed	0d 00:00:00.010		View
IsValid?	1/23/2014 1:22:49,197 PM	1/23/2014 1:22:49,200 PM	1	2		Completed	0d 00:00:00.003		View
Validate Order	1/23/2014 1:22:49,193 PM	1/23/2014 1:22:49,197 PM	1	2		Completed	0d 00:00:00.004		View
Join	1/23/2014 1:22:49,187 PM	1/23/2014 1:22:49,190 PM	1	2		Completed	0d 00:00:00.003		View
Map To OrderRequest	1/23/2014 1:22:49,190 PM	1/23/2014 1:22:49,187 PM	1	1		Completed	0d 00:00:00.007		View

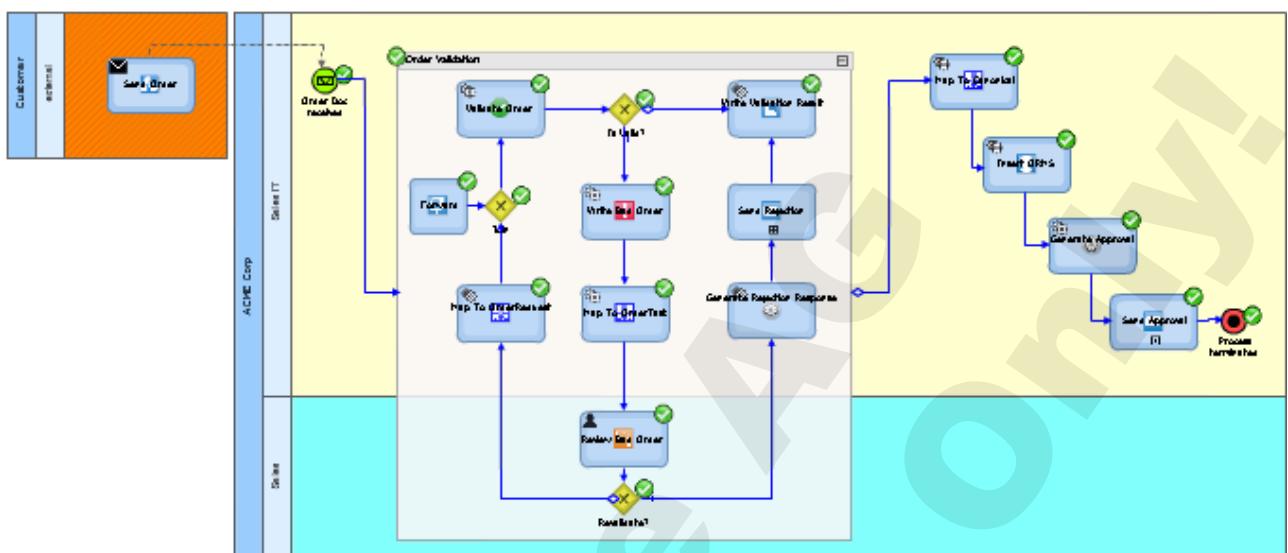
23. In My webMethods, switch to the **Task List Management** page. Click **Search** in the Search Portlet to refresh the list until the new User Task with status **Active** is seen:

The screenshot shows the 'Task List Management' interface. At the top, there's a search bar with tabs for 'Advanced', 'Saved', and 'Options'. Below it is a 'Filter' section with a dropdown for 'Field Name' set to 'Task Type' and a dropdown for 'Value' containing a single item. A 'Search' button is highlighted with a red box. The main area is titled 'Tasks' and contains a table with columns: TASK ID, TASK TYPE, PRIORITY, CREATED DATE, EXPIRATION DATE, LAST UPDATED DATE, and ASSIGNED TO. There are six rows of data, with the first row (Task ID 8079) having its entire row highlighted by a red box.

24. Select and Accept the new User Task. Set the field **RevalidateYN** to **Y**, change the **ProductQuantity** field from **-9** to **9**, and Complete the User Task.

The screenshot shows the 'Task List Management > ReviewBadOrder Details' page. It has tabs for 'Data View', 'Details View', 'Audit View', 'Comments', 'Collaboration', and 'Content'. The 'Data View' tab is selected. Under 'Order Data', there are several fields: OrderID (empty), OrderDate (Januar 23, 2014), TotalCost (6510), RevalidateYN (highlighted with a red box and set to 'Y'), ReceiverID (11-111-1111), SenderID (88-888-8888), and ProductQuantity (highlighted with a red box and set to '9'). Below this is a 'Toggle Task Info' button. The 'Task Info' section contains details: Name (Review Bad Order), Description, Created On (23.01.2014 13:22 By My webMethods Administrator), Last Modified On (23.01.2014 13:30 By My webMethods Administrator), Expires On, and Status (Active). At the bottom right are buttons for 'Complete' (highlighted with a red box), 'Release', 'Submit', and 'Return'.

25. Switch to the Process Instances page (**Applications > Monitoring > Business > Process Instances**). Open the process instance and ensure the order is revalidated, and it is valid. Also, ensure the rest of the steps are executed successfully.



Process Instances > Process Instance Detail										
Step Summary										
Step Name	Start Date / Time	Last Updated	Instance Iteration	Step Iteration	Loop Iteration	Status	Duration	Referenced Process	Detail	
Process terminated	1/23/2014 1:44:46.677 PM	1/23/2014 1:44:46.713 PM	1	1		Completed	0d 00:00:00.036			
Send Approval	1/23/2014 1:44:46.553 PM	1/23/2014 1:44:46.677 PM	1	1		Completed	0d 00:00:00.124	NotifyCustomer		
Generate Approval	1/23/2014 1:44:46.550 PM	1/23/2014 1:44:46.550 PM	1	1		Completed	0d 00:00:00.000			
Insert ORMS	1/23/2014 1:44:46.537 PM	1/23/2014 1:44:46.547 PM	1	1		Completed	0d 00:00:00.010			
Map To Canonical	1/23/2014 1:44:46.527 PM	1/23/2014 1:44:46.537 PM	1	1		Completed	0d 00:00:00.010			
Order Validation	1/23/2014 1:43:05.543 PM	1/23/2014 1:44:46.523 PM	1	1		Completed	0d 00:01:40.980			
Write Validation Result	1/23/2014 1:44:46.457 PM	1/23/2014 1:44:46.467 PM	1	1		Completed	0d 00:00:00.010			
Is Valid?	1/23/2014 1:44:46.453 PM	1/23/2014 1:44:46.453 PM	1	3		Completed	0d 00:00:00.000			
Validate Order	1/23/2014 1:44:46.447 PM	1/23/2014 1:44:46.447 PM	1	3		Completed	0d 00:00:00.000			

Check Your Understanding

- The User Task Business Data was declared as an In/Out parameter. What does this mean at runtime?
- When interacting with the User Task you set RevalidateYN to Y. If you also set the quantity of the product to a positive number, what results did you expect?
- If you send the process invalid data, what mechanisms could you employ to ensure the process instance does not get stuck in an infinite loop?

EXERCISE 12:

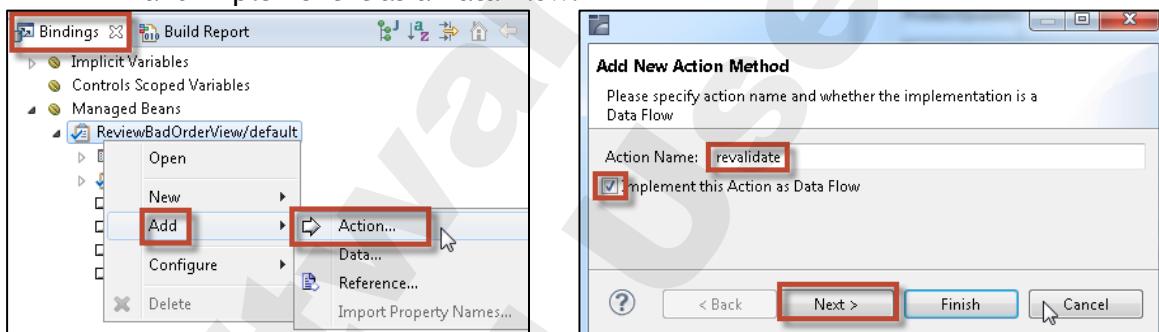
CUSTOMIZING THE USER TASK UI

Objectives

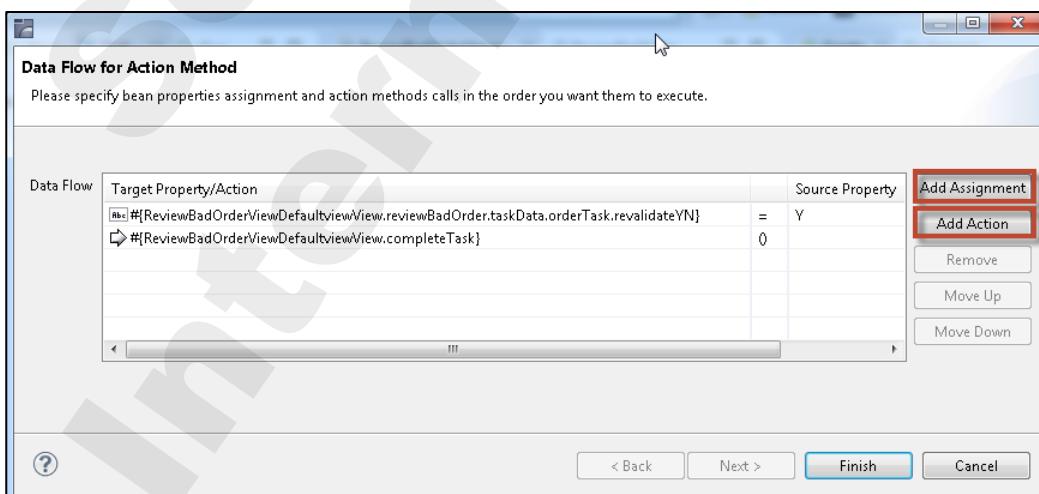
In this exercise, you will customize the UI (Default view) of your **ReviewBadOrder** User Task. You will change control types, add Action Flows, Command Buttons, and Validators to the view.

Steps

1. Ensure all Windows services mentioned in exercise 1 step 3 are up and running.
2. Launch Software AG Designer and ensure you are in **UI Development** perspective.
3. Open the file **Tasks/SalesDepartment/ReviewBadOrder/ReviewBadOrderView/Default** from the Solutions view.
4. Open the Bindings view and create a new Action:
 - a) Right-click **ReviewBadOrderView/default** and choose **Add -> Action**. Name the Action **revalidate** and implement it as a Data Flow:

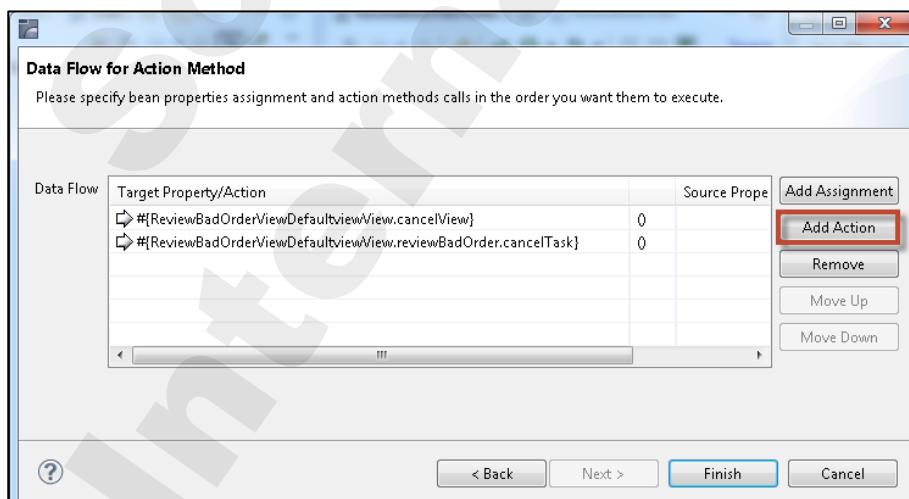
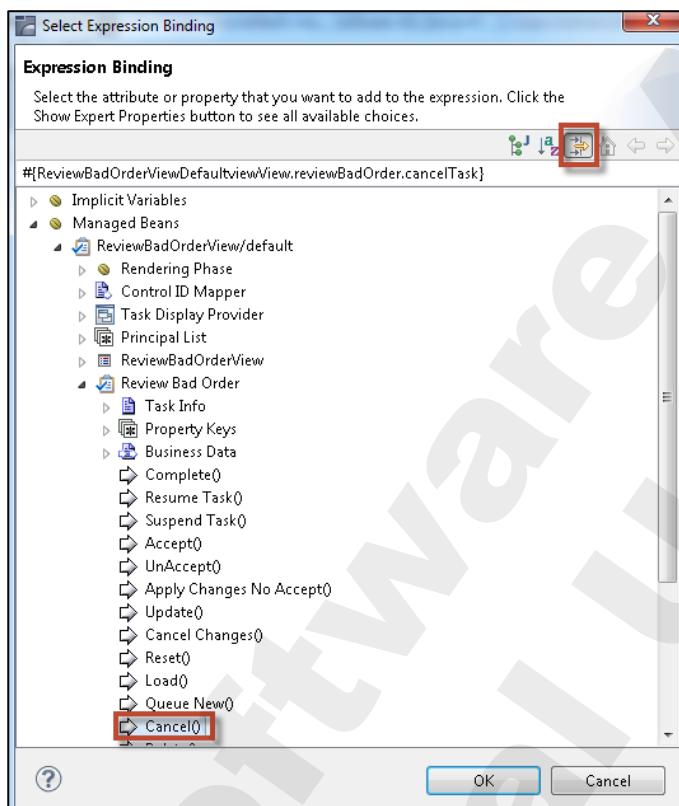


- b) First add an assignment to the Flow Action to set the field **ReviewBadOrderView/default -> Review Bad Order -> Business Data -> OrderTask -> RevalidateYN** to Y. Then add the existing action **ReviewBadOrderView/default -> Complete Task()** as an Action to the **revalidate** Action Data Flow.



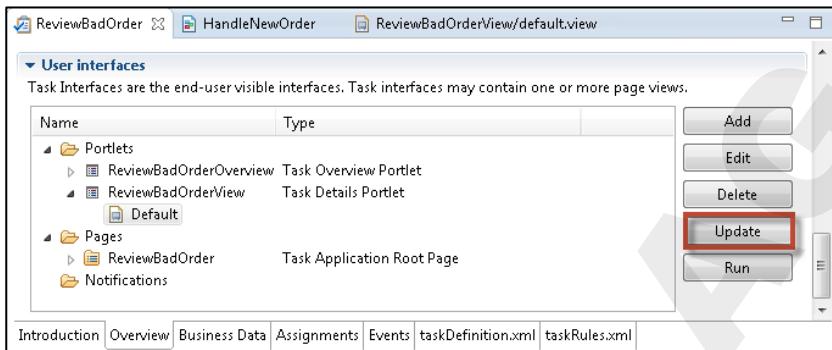
- c) Click **Finish**.

5. In the Bindings view, click the Refresh icon  in the upper-right corner.
6. Add another action:
 - a) Right-click **ReviewBadOrderView/default** in the Bindings view and add another Action. Name the Action **abort** and implement it as a Data Flow.
 - b) Add the existing action **ReviewBadOrderView/default -> cancelView()** as a new Action to the **abort** Action Data Flow.
 - c) Add the existing action **ReviewBadOrderView/default -> Review Bad Order -> Cancel()** action as a new Action to the **abort** Action Data Flow. To access the **Cancel()** action mentioned above, click  to show the Expert Properties.

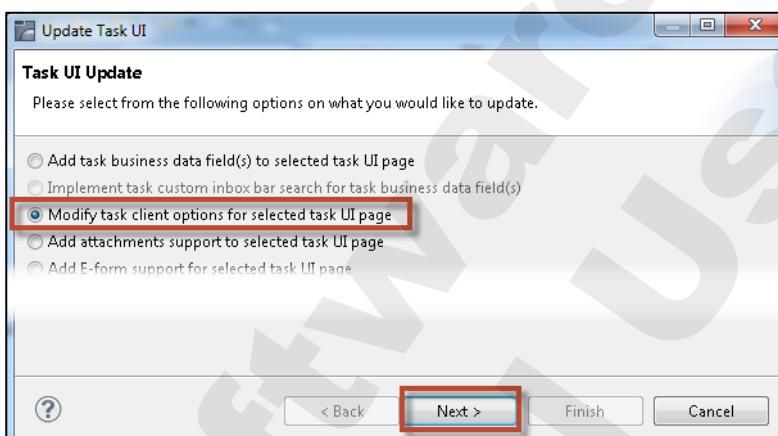


- d) Click **Finish**.

7. The User Task should be accepted automatically when first opened by an assignee. To do so:
 - a) Double click User Task type **ReviewBadOrder** in the Solutions view to open the User Task in the Task Editor.
 - b) On the **Overview** tab, drill down to the **User interfaces** section at the very bottom. Mark the **Default** view of the Task Details Portlet **ReviewBadOrderView** and hit **Update**.

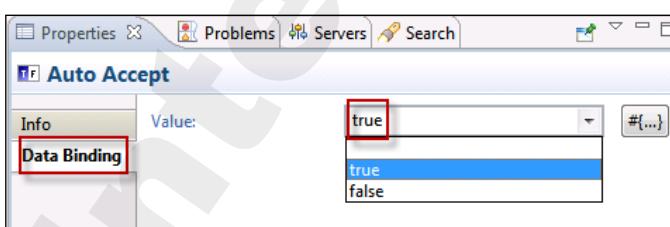


- c) On the Update Task UI panel select **Modify task client options...** and click **Next**.



On the Task Client Options panel mark **Auto-accept task upon modification** and click **Finish**.

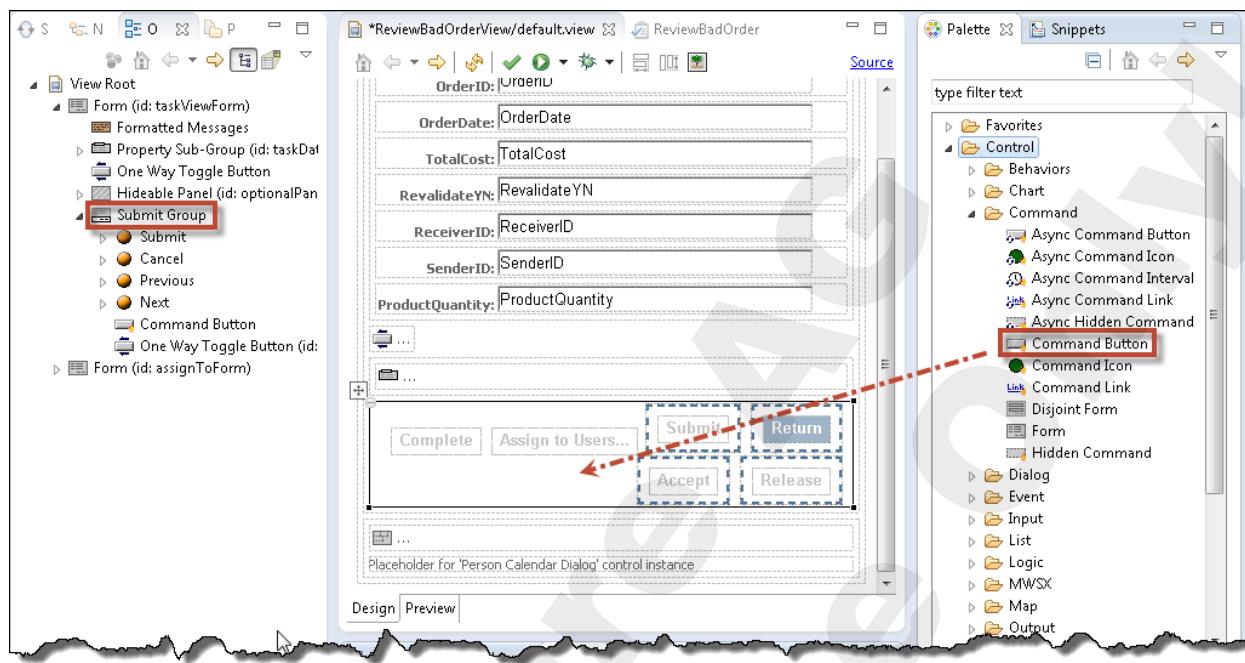
Note: As a result of running this wizard, the value of the (hidden) property **ReviewBadOrderView/default -> Review Bad Order -> Auto Accept** is set to true. To see the property in the Bindings view, enable the Show Expert Properties button  at the top of the Bindings view.



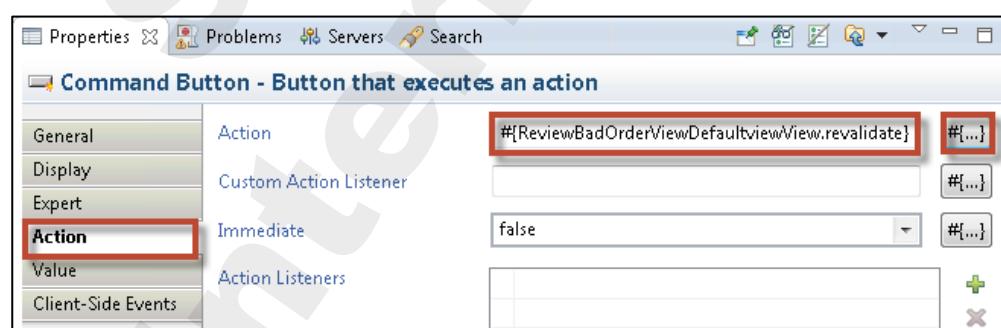
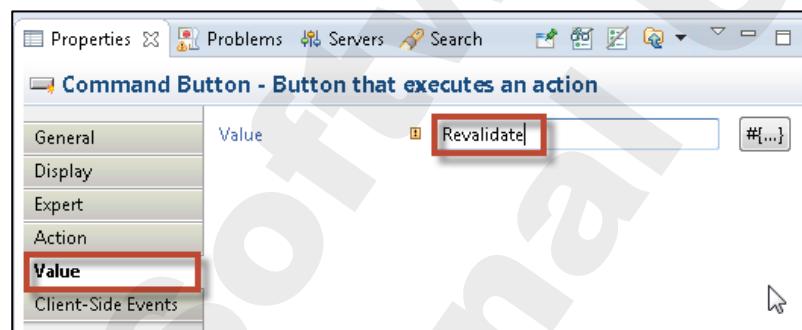
Exercise 12:

Customizing the User Task UI

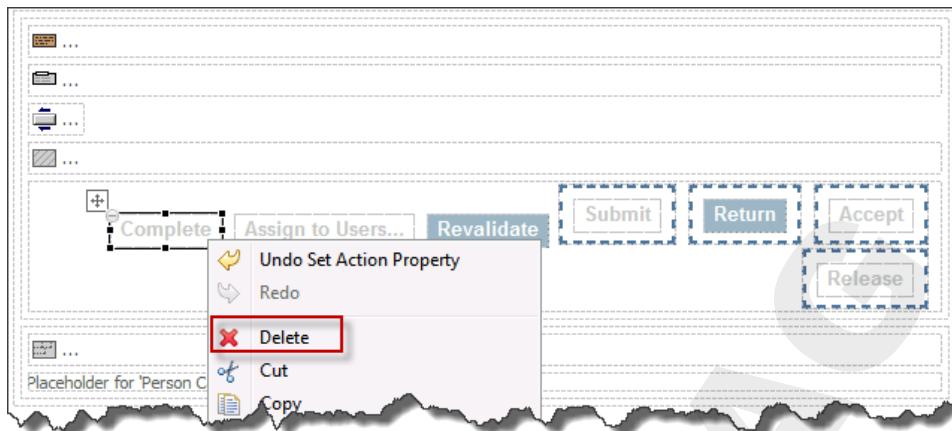
8. Switch back to **ReviewBadOrderView/default.view** being opened from the Solutions view. Expand the pre-configured **Submit Group** in the Design canvas for your User Task default view. From the Palette, drag and drop a Command Button into the Submit Group section. **Note:** You can also drag and drop a Command Button to the Outline view.



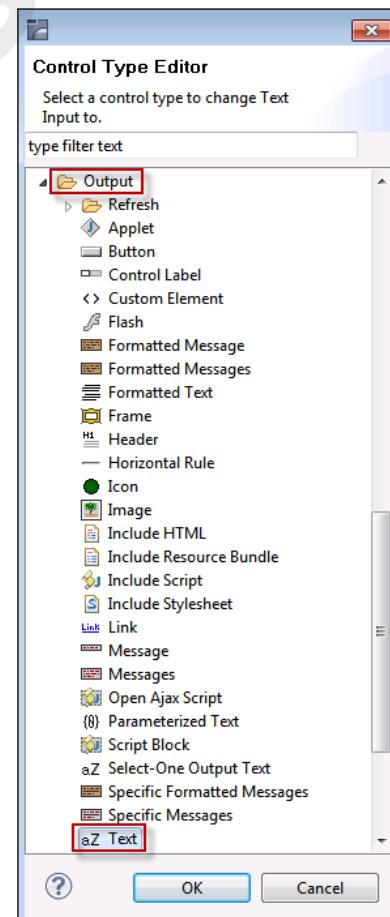
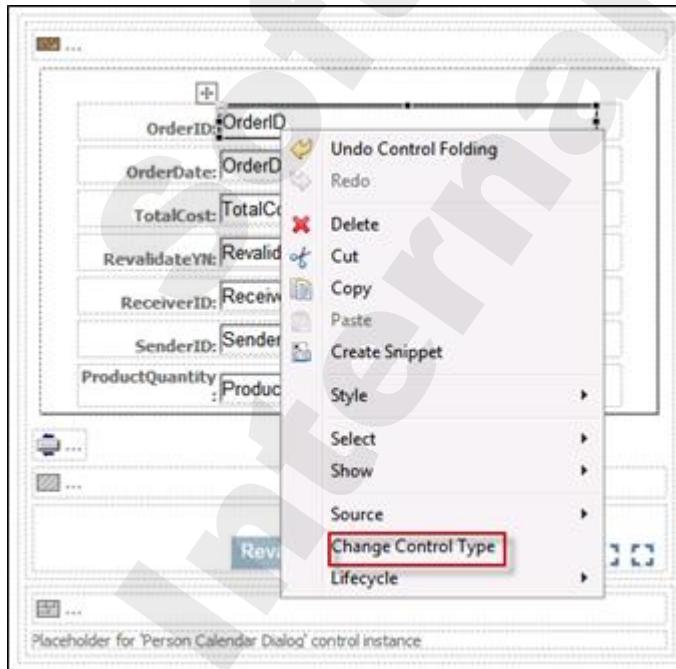
In the Properties view of the added Command Button, change the **Value** field on the Value tab to **Revalidate** and set the **Action** field on the Action tab to the **Revalidate()** Action Data Flow.



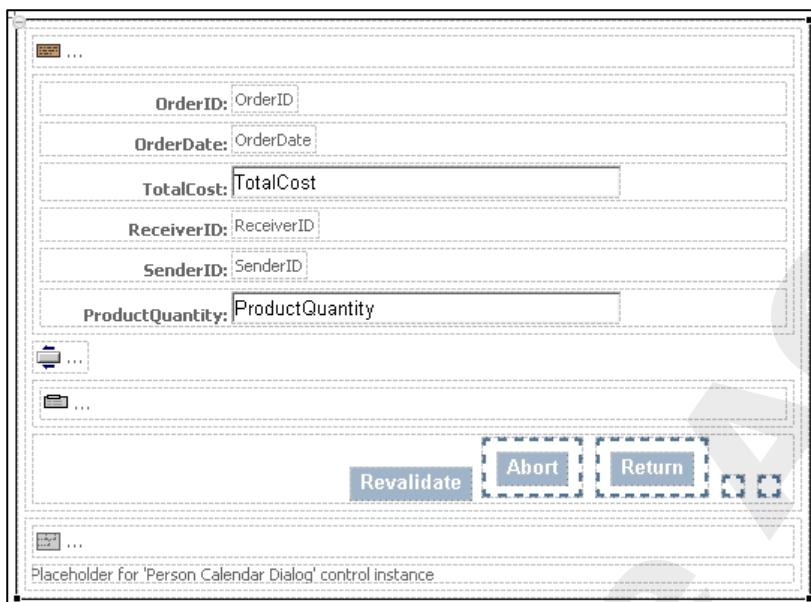
9. Delete the buttons Complete, Assign to Users, Submit, Return, Accept, and Release from the Submit Button Group section.



10. From the Palette, add another Command Button to the view `ReviewBadOrderView/default.view` in the Group panel to the right of the Revalidate button.
11. In the Properties view of the new Command Button, set the Value field to Abort and set the Action to the Abort() Action Flow.
12. Change the Output control types for the fields OrderID, OrderDate, ReceiverID, and SenderID from Input - Text Input to Output - aZ Text.

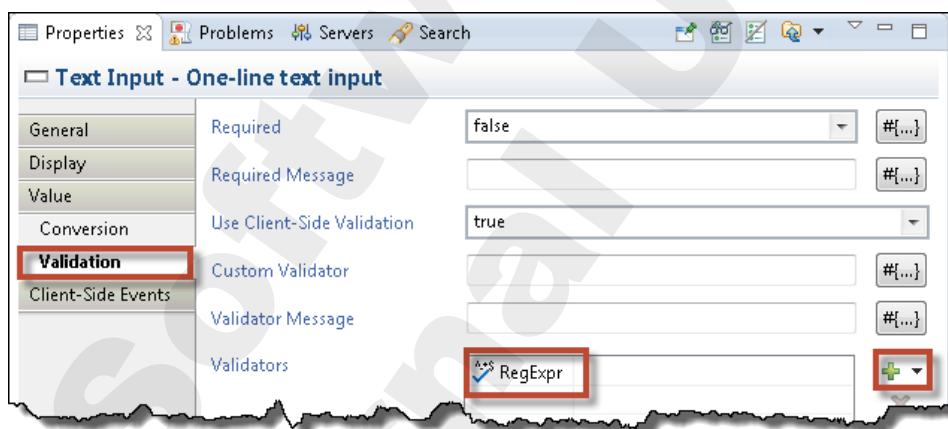


13. Remove the Property Line with the label **RevalidateYN** including the Text Input control from the view.



14. Add a Validator to the **TotalCost** input field:

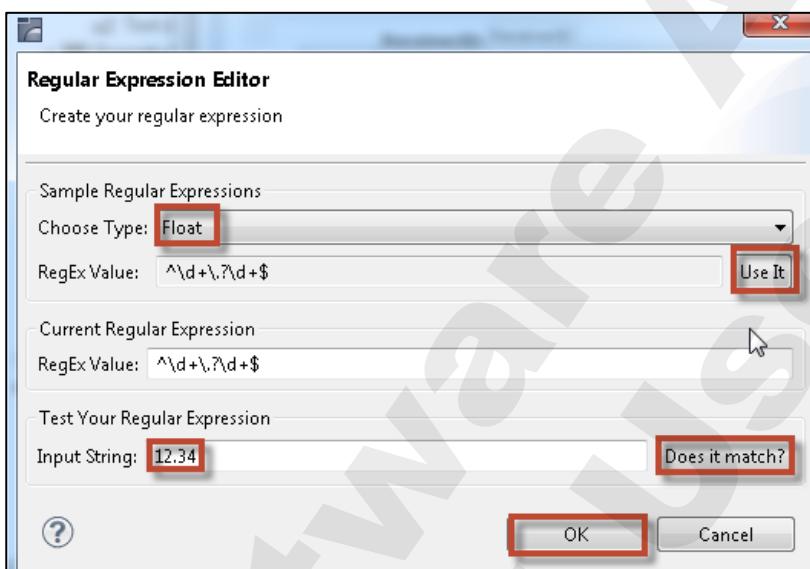
- Highlight Text Input control **TotalCost** on the view **ReviewBadOrderView/default.view**.
- Open the Validation tab in the Properties view. Add a Validator of type **RegExpr**.



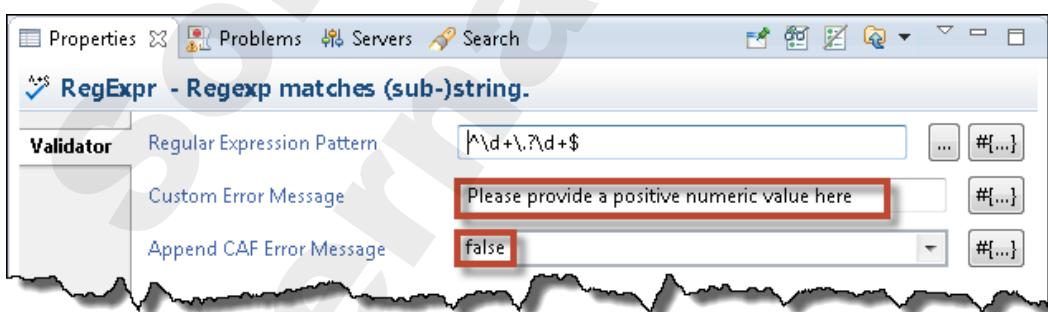
- Double-click the **RegExpr** icon in the Validators list. Assign a Regular Expression Pattern by clicking the browse button:



- d) In the Regular Expression Editor, select type **Float** and click **Use It**. Test the regular expression in the editor by providing some input strings and clicking **Does it match?** Finally, click **OK** to accept the regular expression.



- e) Specify **Please provide a positive numeric value here** as custom error message and disallow CAF error messages to be appended:



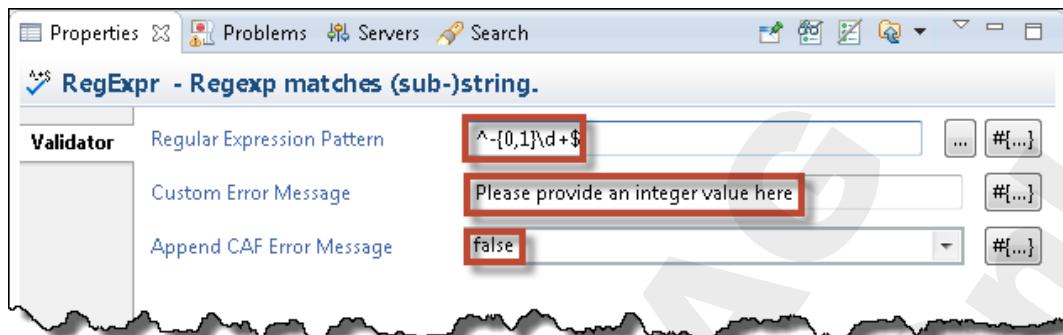
15. In the same way, add another Validator to the ProductQuantity input field:

- Select Text Input control **ProductQuantity** on the default view.
- Open the Validation tab in the Properties view. Add a Validator of type **RegExpr**.

- c) Double-click the icon in the Validators list. Provide `^-{0,1}\d+\$` as the Regular Expression Pattern.

Note: This pattern allows positive and negative integer values.

Specify **Please provide an integer value here** as custom error message and disallow CAF error messages to be appended:



16. Save your changes.
17. Use the Servers view to re-publish the **SalesDepartment** project to MWS.
18. Switch to the **Process Debug** perspective and open the **HandleNewOrder** process.
19. Use your existing Debug Configuration **HandleNewOrderDebugConfiguration** to start a debug session.
 - a) To overwrite the default input, load an invalid order from file `<workshop_dir>\Exercise12\Resources\Ex12_DebugInput1.txt`.
 - b) Use the Trace view to step through the process.
 - c) The process should queue a new User Task instance. Search and select the User Task instance from the Task List Management page in My webMethods Monitoring. Open the User Task and inspect its Business Data on the Task UI.
 - d) To test your Validators, specify a negative numeric value (e.g. `-1234.56`) for the input field **TotalCost**. Also try to assign a non-numeric value to **ProductQuantity**.

- e) Finally reassign **6510** to **TotalCost** and change the **ProductQuantity** from **-9** to **9** and click **Revalidate** to complete the User Task.

The screenshot shows the 'Task List Management > ReviewBadOrder Details' screen. At the top, there are tabs: Data View (selected), Details View, Audit View, Comments, Collaboration, and Content. Below the tabs, the 'Order Data:' section contains fields: OrderID: I, OrderDate: January 23, 2014, TotalCost: **6510** (highlighted with a red box), ReceiverID: 11-111-1111, SenderID: 88-888-8888, and ProductQuantity: **9** (highlighted with a red box). Below this is the 'Task Info:' section with fields: Name: Review Bad Order, Description: (empty), Created On: 23.01.2014 15:29 By My webMethods Administrator, Last Modified On: 23.01.2014 15:29 By My webMethods Administrator, Expires On: (empty), and Status: Active. At the bottom right are buttons: Revalidate (highlighted with a red box), Abort, and Return.

- f) Because of the corrected ProductQuantity, the order is now valid. Ensure the remaining steps execute successfully in the Process Debugger.

The screenshot shows the 'HandleNewOrder' process in the Process Debugger. The top navigation bar includes Trace, Properties, Breakpoints, and Problems. The main area displays a table of step executions:

Step	Step ID	Ste...	Loop ...	Start Time	End Time	Status Message
				Jan 23, 2014 3:46:10 PM	Jan 23, 2014 3:46:53 P...	Process: 'HandleNewOrder' is done.
Order Doc received	S15	1		Jan 23, 2014 3:46:12 PM	Jan 23, 2014 3:46:12 P...	Completed
Order Validation	C55	1		Jan 23, 2014 3:46:14 PM	Jan 23, 2014 3:46:38 P...	Completed
Forward	S71	1		Jan 23, 2014 3:46:14 PM	Jan 23, 2014 3:46:14 P...	Completed
Join	S79	1		Jan 23, 2014 3:46:14 PM	Jan 23, 2014 3:46:14 P...	Completed
Validate Order	S16	1		Jan 23, 2014 3:46:14 PM	Jan 23, 2014 3:46:14 P...	Completed
Is Valid?	S33	1		Jan 23, 2014 3:46:14 PM	Jan 23, 2014 3:46:14 P...	Completed
Write Bad Order	S36	1		Jan 23, 2014 3:46:14 PM	Jan 23, 2014 3:46:14 P...	Completed
Map To OrderTask	S76	1		Jan 23, 2014 3:46:14 PM	Jan 23, 2014 3:46:14 P...	Completed
Review Bad Order	S46	1		Jan 23, 2014 3:46:14 PM	Jan 23, 2014 3:46:37 P...	Completed
Revalidate?	S72	1		Jan 23, 2014 3:46:37 PM	Jan 23, 2014 3:46:37 P...	Completed
Map To OrderRequ...	S80	1		Jan 23, 2014 3:46:37 PM	Jan 23, 2014 3:46:37 P...	Completed
Join	S79	2		Jan 23, 2014 3:46:37 PM	Jan 23, 2014 3:46:37 P...	Completed
Validate Order	S16	2		Jan 23, 2014 3:46:38 PM	Jan 23, 2014 3:46:38 P...	Completed
Is Valid?	S33	2		Jan 23, 2014 3:46:38 PM	Jan 23, 2014 3:46:38 P...	Completed
Write Validation Res...	S51	1		Jan 23, 2014 3:46:38 PM	Jan 23, 2014 3:46:38 P...	Completed
Map To Canonical	S17	1		Jan 23, 2014 3:46:47 PM	Jan 23, 2014 3:46:47 P...	Completed
Insert ORMS	S26	1		Jan 23, 2014 3:46:50 PM	Jan 23, 2014 3:46:50 P...	Completed
Generate Approval	S62	1		Jan 23, 2014 3:46:51 PM	Jan 23, 2014 3:46:51 P...	Completed
Send Approval	S63	1		Jan 23, 2014 3:46:52 PM	Jan 23, 2014 3:46:52 P...	Completed
Process terminated	S19	1		Jan 23, 2014 3:46:53 PM	Jan 23, 2014 3:46:53 P...	Completed

20. Start another debug session using your Debug Configuration.

- a) To overwrite the default input, load an order from file <workshop_dir>\Exercise12\Resources\Ex12_DebugInput2.txt. Use the Trace view to step through the process.
- b) The process should queue a new User Task instance. Search and select the User Task instance from the Task List Management page in My webMethods. Open the User Task and inspect its Business Data on the Task UI. Leave the Business Data unchanged and click Abort to cancel the User Task.
- c) Ensure the User Task is marked as **Canceled** in My webMethods under Applications -> Monitoring -> Business -> Tasks -> Task List Management.

Task ID	Task Type	Priority	Created Date	Expiration Date	Last Updated Date	Assigned To
8085	ReviewBadOrder	None	23.01.2014 15:42		23.01.2014 15:42	
8086	ReviewBadOrder	None	23.01.2014 15:34		23.01.2014 15:34	

- d) Execute the remaining steps in the Process Debugger to complete the process.

Check Your Understanding

1. You implemented the actions as Data Flow. What other language could you have employed?
2. You removed the RevalidateYN field from the view. The process works as expected. Where was the RevalidateYN field set?
3. In the last step, the User Task shows up in Monitor as canceled. What caused the User Task to be marked as canceled?

EXERCISE 13:

USER TASK EVENTS

Objectives

In this exercise, you will enhance your **ReviewBadOrder** User Task by adding a Task Event. The event will be used to automatically initialize some User Task fields by taking values from the Task Business Data whenever the User Task is queued.

Steps

1. Ensure all Windows services mentioned in exercise 1 step 3 are up and running.
2. Launch Software AG Designer and ensure you are in **UI Development** perspective.
3. In the Solutions view, double click the User Task **ReviewBadOrder** to open the Task Editor. Ensure the Task Configuration Editor is displayed in the Introduction tab of the editor pane.
4. Click the **Events** tab at the bottom of the Task Editor.
5. Add an event to your User Task.
 - a) Provide the following **General Information**:

General Information

Event Name: Initialize Task

Event Description: Set RevalidateYN, CustomID, and Priority for new User Task instances

Task Control Set

Click **Save** in the menu bar.

- b) Set the **Event Type** to **Queued**. Leave the **Extra Conditions** empty.

Event Type

Select task event and define its configuration if any

Event Type: Queued

Extra conditions

Join: ALL are true ANY is true ONE only is true

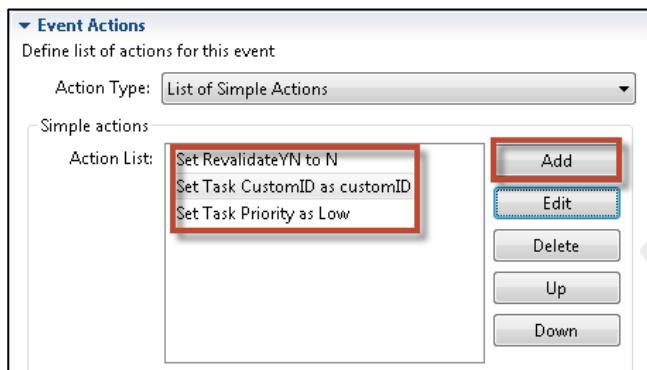
Conditions:

Add
Edit
Delete
Up

- c) Add three **Event Actions** of type **List of Simple Actions** using the lower portion of the Events window as shown by the screen shot below.

Notes: To set the **RevalidateYN** field, select the predefined Task Action **Set Business Data Field** and browse for the Data Field **RevalidateYN** from the Business Data, then set the **Value** text field to **N**.

Field **custom ID** to be assigned to the Task Custom ID is part of the Business Data also.



- d) Finally click **Save** in the menu bar.

6. Republish the **SalesDepartment CAF** project to My webMethods Server.
7. Switch to **Process Debug** perspective and load your **HandleNewOrder** process model.
8. Use your Debug Configuration to start a debug session. Overwrite the default data with an invalid order from the file <**workshop_dir**>\Exercise13\Resources\Ex13_DebugInput.txt. Use the Trace view to step through the process.
9. Use the Task List Management page to search for a new User Task of type Review Bad Order. Ensure the User Task's Custom ID is set to **K55-254-8595** and the User Task's priority is set to **4-low**.

Note: If the column **CUSTOM ID** isn't displayed, you can add it by clicking the button in the header of the User Task list, selecting Properties and then selecting **CUSTOM ID** from the list of Available Columns. Make sure you **Apply** your changes.

Tasks							
		TASK ID	TASK TYPE	CUSTOM ID	PRIORITY	CREATED DATE	EXPIRATION DATE
0 selected							
<input type="checkbox"/>		8088	ReviewBadOrder	K55-254-8595	4-Low	23.01.2014 16:16	23.01.2014 16:16
<input type="checkbox"/>		8086	ReviewBadOrder		None	23.01.2014 15:46	23.01.2014 15:46
<input type="checkbox"/>		8085	ReviewBadOrder		None	23.01.2014 15:46	23.01.2014 15:42

10. Open the User Task instance, change the **ProductQuantity** from **-9** to **9**, and click **Revalidate** to complete the User Task.
11. Complete your process in Debugger.

Check Your Understanding

1. When is the User Task priority set?
2. Could the RevalidateYN, Priority and Custom ID be set in three events, or must they be consolidated into a single event?

EXERCISE 14:

USER TASK ASSIGNMENT

Objectives

In this exercise, you will first create users, groups and a role. You will enhance your ReviewBadOrder User Task to use an assignment to automatically assign new User Task instances to your specified role.

Steps

1. Ensure all Windows services mentioned in exercise 1 step 3 are up and running.
2. Login to My webMethods as **Administrator/manage**. Navigate to the **Applications -> Administration -> System-Wide -> User Management -> Users** page.
Add two users (**Bill, Mary**) with the following details:

The image contains two side-by-side screenshots of a 'Create User' dialog box. Both screens show the same fields filled out with different values for each user.

Left Screenshot (User Bill):

- * User ID: Bill
- * Password: **manage**
- * Confirm: **manage**
- First Name: Bill
- Last Name: Smith
- E-mail Address: bsmith@company.com

Right Screenshot (User Mary):

- * User ID: Mary
- * Password: **manage**
- * Confirm: **manage**
- First Name: Mary
- Last Name: Jones
- E-mail Address: mjones@company.com

In both screenshots, the 'Create' button at the bottom is highlighted with a red box.

Password is always **manage**. Confirm with **Create and Save**.

3. Switch to the **Applications -> Administration -> System-Wide -> User Management -> Groups** page. Add two groups (**SalesReps, SalesManagers**) with the following details:

The image contains two side-by-side screenshots of a 'Create Group' dialog box. Both screens show the same fields filled out with different values for each group.

Left Screenshot (Group SalesReps):

- * Group ID: SalesReps
- * Group Name: Sales Representatives
- E-mail Address: (empty)

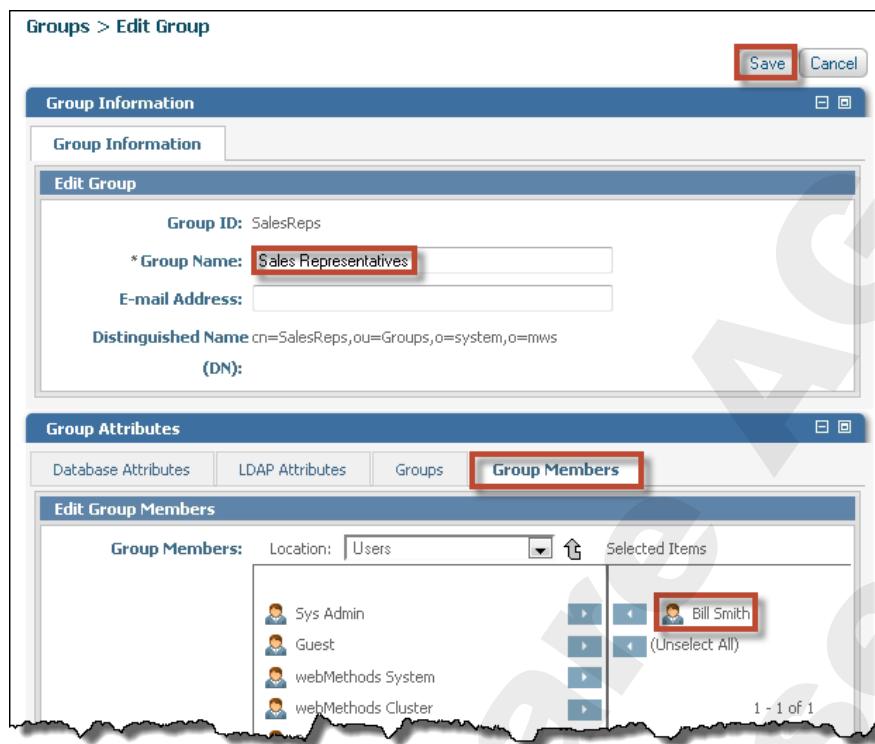
Right Screenshot (Group SalesManagers):

- * Group ID: SalesManagers
- * Group Name: Sales Managers
- E-mail Address: (empty)

In both screenshots, the 'Create' button at the bottom is highlighted with a red box.

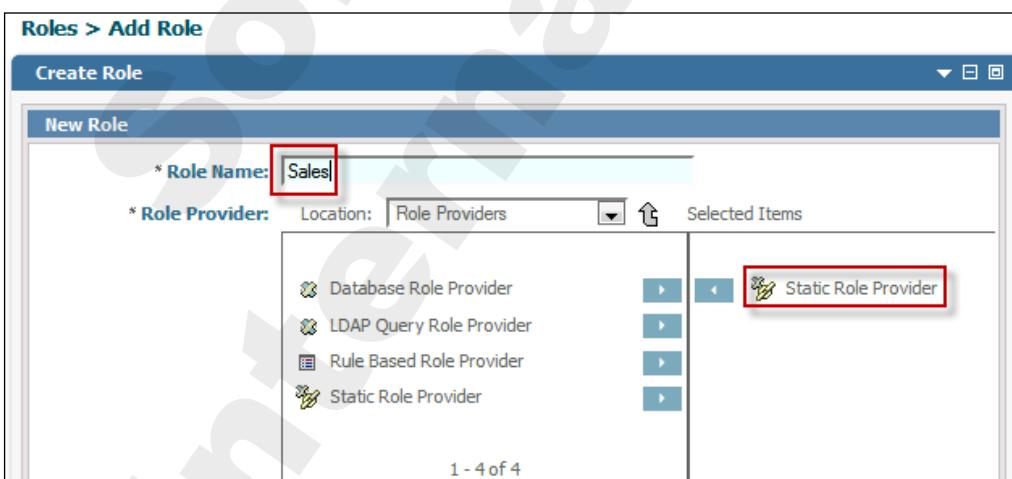
Confirm with **Create and Save**.

4. On the Applications -> Administration -> System-Wide -> User Management -> Groups page, edit the Group Members of the Sales Representatives group. Select and add user Bill Smith as a member of the group.



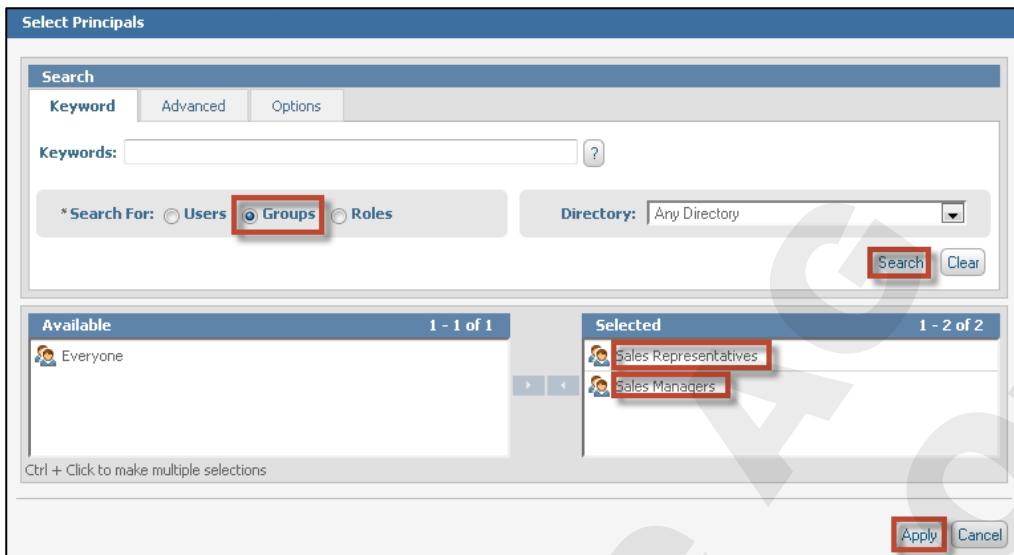
Save your changes.

5. On the Applications -> Administration -> System-Wide -> User Management -> Groups page, edit the Group Members of the Sales Managers group. Select and add the user Mary Jones as a member of the group. Save your changes.
6. Switch to the Applications -> Administration -> System-Wide -> User Management -> Roles page. Add a role named Sales with a Static Role Provider:



Confirm with Create Role.

7. Edit the Role Attributes of the **Sales** role to have the groups **SalesRep** and **SalesManagers** as its members:



Apply and Save your changes.

8. Launch Software AG Designer and ensure you are in **UI Development** perspective.
9. Ensure the MWS Admin view (lower left corner of Designer) is available in your perspective. Expand the tree view for MWS within the MWS Admin view. If asked for authentication, provide **Sysadmin/manage**.
10. Switch to the Solutions view. Open the User Task **ReviewBadOrder** in the Task Editor.
11. Click the **Assignments** tab at the bottom of the **ReviewBadOrder** Task Editor.
12. Add an assignment to your User Task:

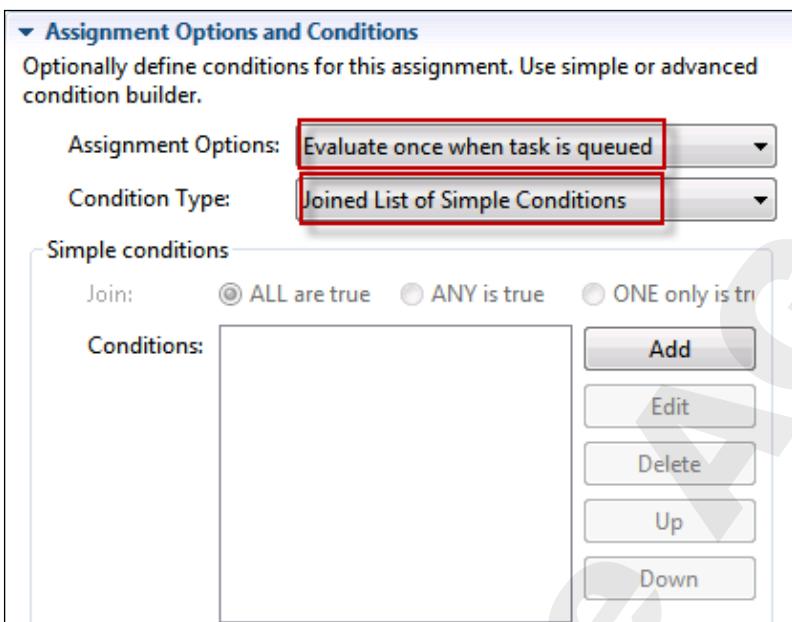
- a) Provide the following **General** information:

General	
General Information	
Assignment Name:	Assign to Sales Role
Assignment Description:	Assign a Sales representative to work on a bad order
Task Control Set	

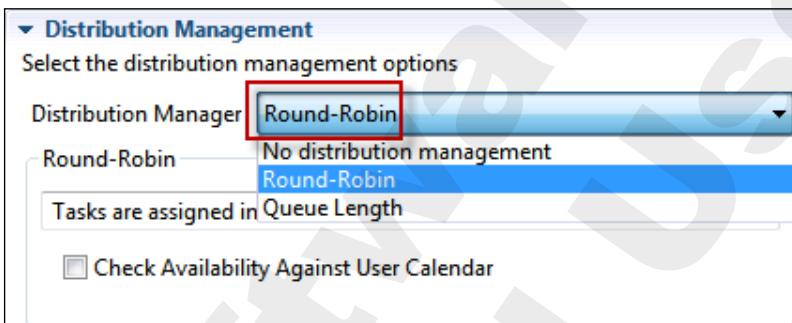
- b) Use drag and drop from the MWS Admin view (or use the **Add** button) to add role **Sales** as an assignee to the Assignee List:

Assignee	
Select the Assignment's target Roles or Users. You can use drag and drop from MWS Admin / Roles to add roles to the list.	
Assignee List:	Role : Sales
<input type="button" value="Add"/> <input type="button" value="Edit"/> <input type="button" value="Delete"/> <input type="button" value="Up"/> <input type="button" value="Down"/>	

- c) Specify the following Assignment Options and Conditions:



- d) In the Distribution Management section select Round Robin as Distribution Manager:



- e) Save the User Task Assignment.

13. Use the Servers view to re-publish the SalesDepartment project to My webMethods Server.
If asked for authentication, provide **Sysadmin/manage**.
14. Start a new instance of the HandleNewOrder process by submitting an (invalid) Order document using a web form. To do so, open the following in a browser tab:
<workshop_dir>\Exercise14\Resources\Ex14_SubmitOrder.html.
 - a) Click the **Submit** button.
If prompted for authentication, enter **Administrator/manage** as username/password.
 - b) Perform step 14a) at least 5 more times (use the back button of your browser to resubmit).

15. Use a browser tab to login to My webMethods as **Administrator/manage**.
16. Open the **Applications -> Monitoring -> Business -> Tasks -> Task List Management** page.
Hit **Search** in the Search portlet to refresh the list of displayed User Tasks. On the lower Tasks portlet, customize the portlets properties to include the **ASSIGNED TO** column in the tasks list, if not already shown. Ensure the User Tasks are assigned to the Sales Representatives and Sales Managers. The assignments should be round-robin:

TASK ID	TASK TYPE	CUSTOM ID	PRIORITY	CREATED DATE	EXPIRATION DATE	LAST UPDATED DATE	ASSIGNED TO
8115	ReviewBadOrder	I88-888-8888	4-Low	24.01.2014 10:11		24.01.2014 10:11	Sales Representatives
8114	ReviewBadOrder	I88-888-8888	4-Low	24.01.2014 10:11		24.01.2014 10:11	Sales Managers
8113	ReviewBadOrder	I88-888-8888	4-Low	24.01.2014 10:11		24.01.2014 10:11	Sales Representatives
8112	ReviewBadOrder	I88-888-8888	4-Low	24.01.2014 10:11		24.01.2014 10:11	Sales Managers
8111	ReviewBadOrder	I88-888-8888	4-Low	24.01.2014 10:11		24.01.2014 10:11	Sales Representatives
8110	ReviewBadOrder	I88-888-8888	4-Low	24.01.2014 10:11		24.01.2014 10:11	Sales Managers

17. Click on Task ID associated with the oldest active User Task assigned to the **Sales Managers**.
18. In the User Task UI, change the **ProductQuantity** from **-9** to **9**. Click **Revalidate**.
19. Perform steps 17 and 18 for all other active User Tasks assigned to **Sales Managers** (not Sales Representatives). The Sales Managers should now have zero active User Tasks and the Sales Representatives should have several:

TASK ID	TASK TYPE	CUSTOM ID	PRIORITY	CREATED DATE	EXPIRATION DATE	LAST UPDATED DATE	ASSIGNED TO
8115	ReviewBadOrder	I88-888-8888	4-Low	24.01.2014 10:11		24.01.2014 10:11	Sales Representatives
8114	ReviewBadOrder	I88-888-8888	4-Low	24.01.2014 10:11		24.01.2014 10:21	Sales Managers
8113	ReviewBadOrder	I88-888-8888	4-Low	24.01.2014 10:11		24.01.2014 10:11	Sales Representatives
8112	ReviewBadOrder	I88-888-8888	4-Low	24.01.2014 10:11		24.01.2014 10:20	Sales Managers
8111	ReviewBadOrder	I88-888-8888	4-Low	24.01.2014 10:11		24.01.2014 10:11	Sales Representatives
8110	ReviewBadOrder	I88-888-8888	4-Low	24.01.2014 10:11		24.01.2014 10:20	Sales Managers

20. In Designer, go to the **Assignment configuration** of your **ReviewBadOrder** User Task and change the **Distribution Management** from Round-Robin to Queue Length:

Distribution Management
Select the distribution management options

Distribution Manager: Queue Length

Queue Length: No distribution management
Round-Robin

Tasks are assigned to: Queue Length

Task Queue: Use User's Default Inbox Use Saved Search

Saved Search: Ignore Other Task Types
 Check Availability Against User Calendar

21. Save your User Task changes in Designer.

22. Use the Servers view to re-publish the **SalesDepartment** project to My webMethods Server. If asked for authentication, provide **Sysadmin/manage**.

23. Start new process instances:

- Double-click the file <**workshop_dir**>\Exercise14\Resources\Ex14_SubmitOrder.html.
- Click the **Submit** button. If prompted, enter **Administrator/manage** as the username/password combination.
- Perform step 23b) at least 5 more times (use the back button of your browser to resubmit).

24. Switch back to the Task List Management in My webMethods. Click the **Search** button on the upper Search portlet to refresh the User Task list on the lower Tasks portlet. Inspect the distribution of new User Tasks:

The screenshot shows a table of user tasks. A red box highlights the 'ASSIGNED TO' column for tasks 8115 through 8086, which are all assigned to 'Sales Managers'. The table includes columns for Task ID, Task Type, Custom ID, Priority, Created Date, Expiration Date, Last Updated Date, and Assigned To.

TASK ID	TASK TYPE	CUSTOM ID	PRIORITY	CREATED DATE	EXPIRATION DATE	LAST UPDATED DATE	ASSIGNED TO
8121	ReviewBadOrder	I88-888-8888	4-Low	24.01.2014 10:27		24.01.2014 10:27	Sales Managers
8120	ReviewBadOrder	I88-888-8888	4-Low	24.01.2014 10:27		24.01.2014 10:27	Sales Representatives
8119	ReviewBadOrder	I88-888-8888	4-Low	24.01.2014 10:27		24.01.2014 10:27	Sales Managers
8118	ReviewBadOrder	I88-888-8888	4-Low	24.01.2014 10:27		24.01.2014 10:27	Sales Managers
8117	ReviewBadOrder	I88-888-8888	4-Low	24.01.2014 10:27		24.01.2014 10:27	Sales Managers
8116	ReviewBadOrder	I88-888-8888	4-Low	24.01.2014 10:27		24.01.2014 10:27	Sales Managers
8115	ReviewBadOrder	I88-888-8888	4-Low	24.01.2014 10:11		24.01.2014 10:11	Sales Representatives
8114	ReviewBadOrder	I88-888-8888	4-Low	24.01.2014 10:11		24.01.2014 10:21	Sales Managers
8113	ReviewBadOrder	I88-888-8888	4-Low	24.01.2014 10:11		24.01.2014 10:11	Sales Representatives
8112	ReviewBadOrder	I88-888-8888	4-Low	24.01.2014 10:11		24.01.2014 10:20	Sales Managers
8111	ReviewBadOrder	I88-888-8888	4-Low	24.01.2014 10:11		24.01.2014 10:11	Sales Representatives
8110	ReviewBadOrder	I88-888-8888	4-Low	24.01.2014 10:11		24.01.2014 10:20	Sales Managers
8088	ReviewBadOrder	K55-254-8595	4-Low	23.01.2014 16:16		23.01.2014 16:20	Sales Managers
8086	ReviewBadOrder		None	23.01.2014 15:46		23.01.2014 15:46	

25. Finally, ensure that all active User Tasks are completed by changing **ProductQuantity** to **9** and selecting the **Revalidate** button.

If more than 20 User Tasks are available, use the **Next>>** link at the bottom of the page to view additional User Tasks.

Note: The default number of User Task instances that appear in the list can be adjusted by selecting the Tasks portlet **Properties**, then selecting the **Preferences** tab.

Check Your Understanding

- Does round-robin distribution take the number of User Tasks assigned to an individual, group or role into account when assigning a User Task?
- In step 23 you launched multiple process instances. The order in which User Tasks were assigned did not correspond to a round-robin distribution. Why?
- Can a User Task Assignment be based on a Business Calendar?

EXERCISE 15:

USER TASK EXPIRATION BASED ON BUSINESS CALENDARS

Objectives

In this exercise, you will set up a Business Calendar in MWS. The Business Calendar defines workdays and business hours. It will be used for your **ReviewBadOrder** User Task to set up task expiration to cross over working business days.

Steps

1. Ensure that the time zone and time setting of your VM mirrors your local time zone and time setting. If necessary, double-click the clock in the lower right corner of the Windows task bar to open the Windows Date and Time Properties of your VM, and adjust the settings.
Only in the case you have changed the Windows date and time settings of your VM, you should restart your Integration Server, My webMethods Server, and Optimize Analytic Engine.
2. Ensure all Windows services mentioned in exercise 1 step 3 are up and running.
3. Login to My webMethods as **Administrator/manage**.
4. Navigate to **Applications -> Administration -> System-Wide -> Calendars Management -> Business Calendars**. Click **Create New Calendar** to add a new Business Calendar to MWS with the following details:

Data	Value
Name	USCalendar
Lookup Name	USCalendar
Time Zone	<Current> (default)
Workday 1	<Today> 8:00 am TO <30 minutes later than current system time>
Workday 2	<Tomorrow> 8:00 am TO 5:00 pm (8:00 - 17:00)

At the end, ensure you click the **Create New** button in My webMethods.

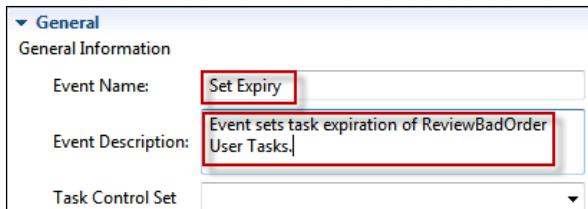
5. Open Software AG Designer and switch to the **UI Development** perspective. Ensure the MWS Admin view (lower left corner of Designer) is available in your perspective. Refresh the tree view for MWS in the MWS Admin view. If asked for authentication, use **Sysadmin/manage**. Drill down to **localhost.8585 -> Business Calendars**. Your Business Calendar **USCalendar** should appear in the tree.
6. Use the Solutions view to open the User Task **ReviewBadOrder** in the Task Editor (**Tasks -> SalesDepartment -> ReviewBadOrder**). In the Task Editor, select the **Events** tab.

Exercise 15:

User Task Expiration based on Business Calendars

7. Add a second Event named **Set Expiry** to your **ReviewBadOrder** User Task:

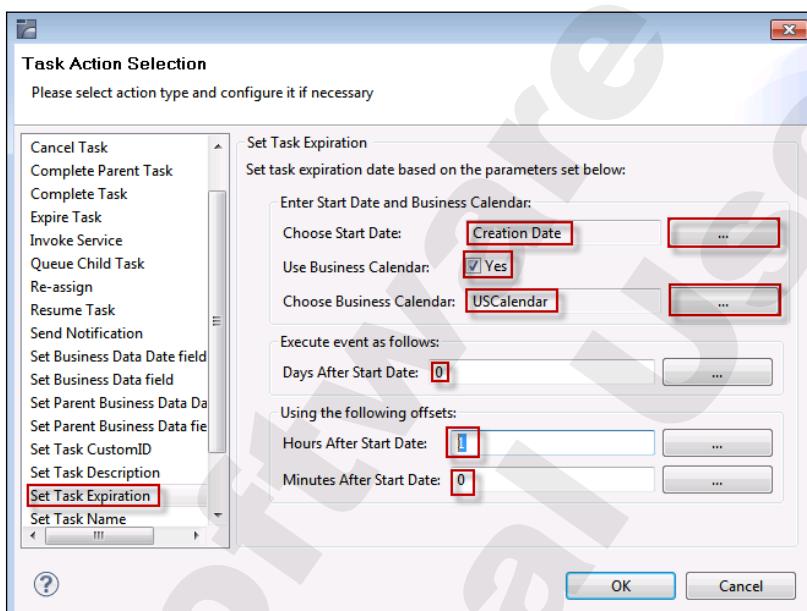
- a) Provide the following **General Information**:



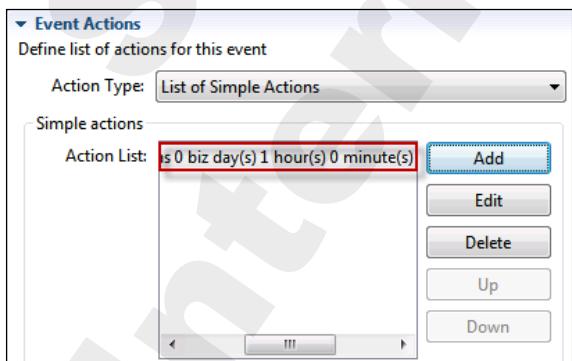
- b) Set the **Event Type** to **Queued**. Leave the **Extra Conditions** empty.

- c) Add an **Event Action** of type **List of Simple Actions** using the lower portion of the Events window. Select the existing simple action **Set Task Expiration** to be executed. Configure the simple action to set the task expiration based on your Business Calendar **USCalendar** and select/provide the additional settings as shown on the screen shot below.

Note: Field **Creation Date** can be selected from **Task Info**.



Click OK. Your Event Action should now look like this:



- d) Save your modified User Task in Designer.

8. Add a third Event named **Expire Task** to your **ReviewBadOrder** User Task:

- a) Provide the following General Information:

General
General Information
Event Name: Expire Task
Event Description: Set User Task status of ReviewBadOrder User Tasks to expired when task expiration reached.
Task Control Set

- b) Set the **Event Type** to **Expiration Date Reached**. Leave the **Extra Conditions** empty.
- c) Add an **Event Action** of type **List of Simple Actions** using the lower portion of the Events window. Select the existing simple action **Expire Task** to be executed.

Event Actions
Define list of actions for this event
Action Type: List of Simple Actions
Simple actions
Action List: Expire Task
Add
Edit
Delete
Up
Down

- d) Save your modified User Task in Designer.
9. Use the Servers view to re-publish your **SalesDepartment** project to My webMethods Server. If prompted for Authentication use **Sysadmin/manage**.
10. Start a new instance of the HandleNewOrder process by submitting an (invalid) Order using a test web form. To do so, open the following in a browser tab:
`<workshop_dir>\Exercise15\Resources\Ex15_SubmitOrder.html`. Click **Submit**.
 If prompted for authentication, enter **Administrator/manage** as the username/password.
11. Login to My webMethods as **Administrator/manage**. Navigate to **Applications -> Monitoring -> Business -> Tasks -> Task List Management**.
12. Search for a new User Task of type **ReviewBadOrder**. Note **Created Date** and **Expiration Date** of the newly created User Task instance. The User Task is set to expire one hour from its start time as defined by the Workdays created in the Business Calendar. That is, if there are 30 minutes from the creation of the User Task to the end of today's Business Calendar workday, there should be 30 minutes remaining to complete the User Task from the beginning of tomorrow's Business Calendar workday. If there are 25 minutes for today, there should be 35 minutes remaining for tomorrow, etc.

	TASK ID	TASK TYPE	CUSTOM ID	PRIORITY	CREATED DATE	EXPIRATION DATE	LAST UPDATED DATE	ASSIGNED TO
<input type="checkbox"/>	8131	ReviewBadOrder	I88-888-8888	4-Low	24.01.2014 11:05	25.01.2014 09:36	24.01.2014 11:05	Sales Managers
<input type="checkbox"/>	8121	ReviewBadOrder	I88-888-8888	4-Low	24.01.2014 10:27		24.01.2014 10:33	Sales Managers
<input checked="" type="checkbox"/>	8120	ReviewBadOrder	I88-888-8888	4-Low	24.01.2014 10:27		24.01.2014 10:33	Sales Representatives
<input type="checkbox"/>	8119	ReviewBadOrder	I88-888-8888	4-Low			24.01.2014 14:00:33	Managers

13. Do NOT complete this task. We want to test the **Expire Task** User Task Event that you created. This event will set the User Task's status to **EXPIRED** when its Expiration Date/Time is reached. Check this User instance after the Expiration Date/Time is reached to make sure the status changes to EXPIRED.

Check Your Understanding

1. Why are Business Calendars important for User Task expiration?
2. In step 12, you were asked to verify the User Task expiration. Why did the expiry time roll over to tomorrow's date?
3. Can you complete a User Task outside of a business day window? For example, could you complete the User Task above in, say, 90 clock minutes from the creation time of the User Task?

EXERCISE 16:

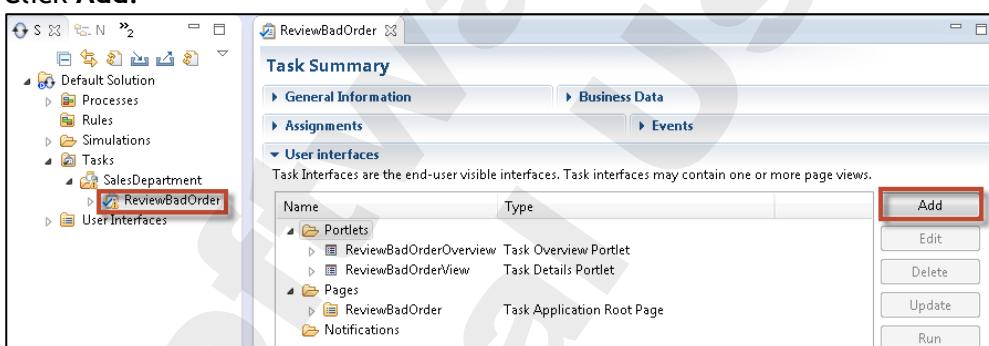
USER PRIVILEGES

Objectives

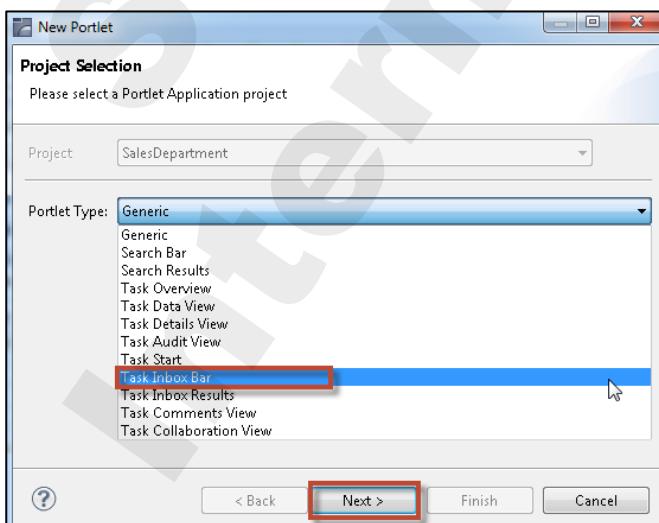
In this exercise, you will enhance your existing User Task type to offer My Inbox portlets which are used by business users in My webMethods as an entry point to act their assigned User Tasks. Then you will configure lacking My webMethods User Privileges for the business users defined in the previous exercise. This will give the business users authorization to login to My webMethods and work on their assigned User Tasks using the My Inbox page.

Steps

1. Ensure all Windows services mentioned in exercise 1 step 3 are up and running.
2. Add My Inbox portlets to your ReviewBadOrder User Task type. To do so:
 - a) Start Designer and open the **UI Development** perspective.
 - b) Double-click User Task type **ReviewBadOrder** from the Solutions view to become opened in the Task Editor.
 - c) In the Task Editor, use the **Overview** tab and navigate to the **User Interfaces** section. Click **Add**.



- d) In the New Portlet wizard, select Portlet Type **Task Inbox Bar** and click **Next**.

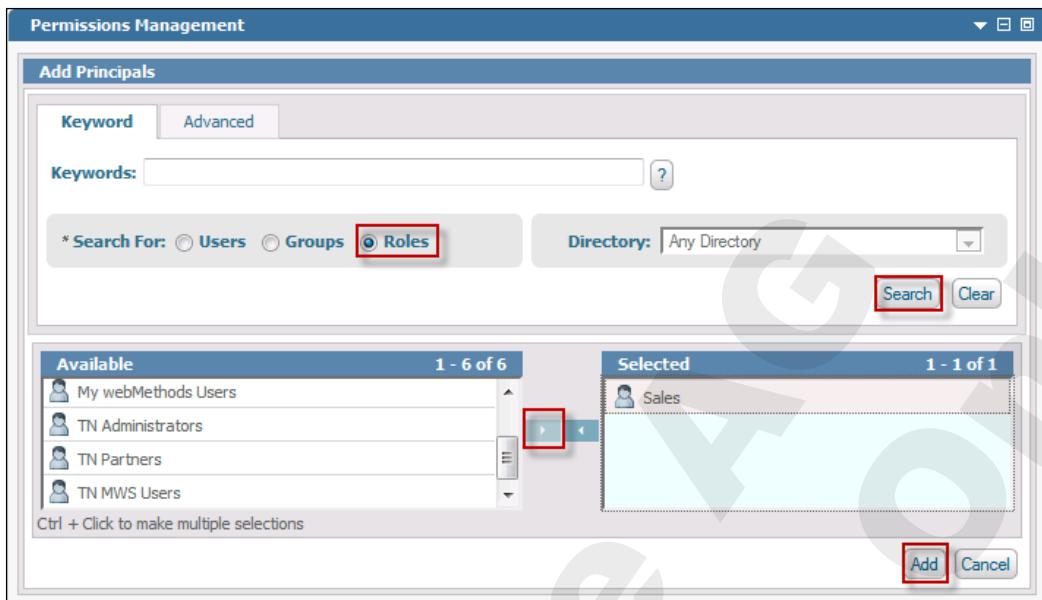


- e) On the next panel, leave all values unchanged and hit **Finish** to create the Task Inbox Bar portlet.
- f) Switch back to the Task Editor's **Overview** tab and navigate to the **User Interfaces** section. Click **Add** again.
- g) In the New Portlet wizard, this time select Portlet Type **Task Inbox Results** and hit **Next**.
- h) On the next panel, leave all values unchanged and hit **Finish** to create the Task Inbox Results portlet.
- i) Switch back to the Task Editor's **Overview** tab and navigate to the **User Interfaces** section. Ensure your User Task now offers the following portlets:

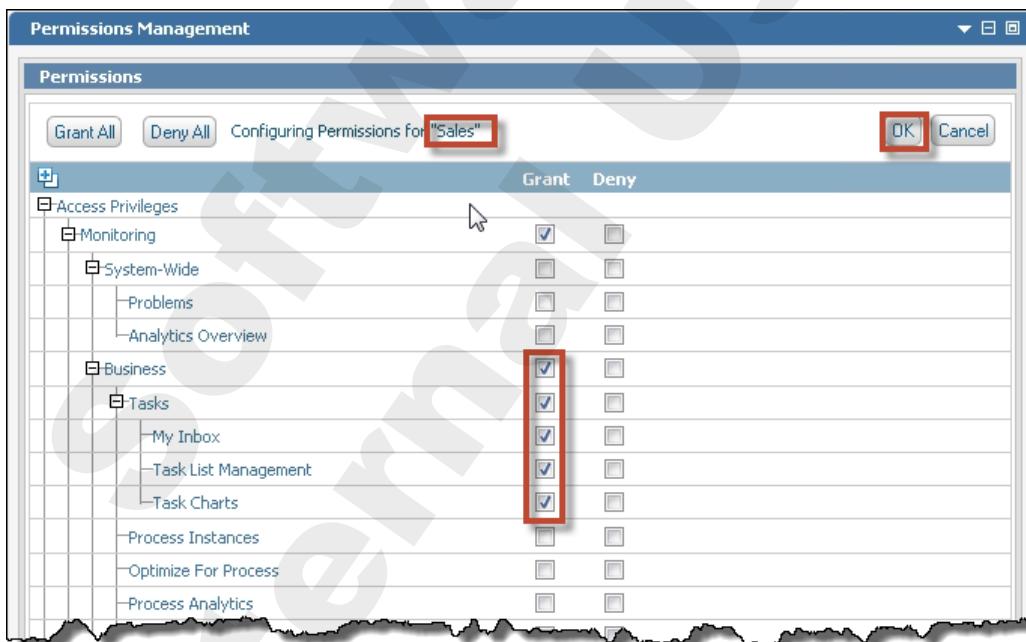
The screenshot shows the 'Task Summary' interface with the 'User interfaces' section expanded. Under 'Portlets', there are four items listed: 'ReviewBadOrderOverview' (Task Overview Portlet), 'ReviewBadOrderView' (Task Details Portlet), 'ReviewBadOrderInboxBar' (Task Inbox Search Bar Portlet, highlighted with a red box), and 'ReviewBadOrderInboxResl' (Task Inbox Search Results Portlet). To the right of the table are buttons for 'Add', 'Edit', 'Delete', 'Update', and 'Run'.

- j) Save your modified User Task in Designer.
3. Use the Servers view to re-publish your **SalesDepartment** project to My webMethods Server. If prompted for Authentication use **Sysadmin/manage**.
4. If you still logged into My webMethods in a browser tab, logout of My webMethods first. Login to My webMethods as **Bill/manage**.
5. You will notice that Bill has no access privileges in My webMethods. Logout of My webMethods.
6. Login to My webMethods as **Administrator/manage**.
7. Define the lacking permissions for My webMethods pages:
 - a) Navigate to the **Applications -> Administration -> System-Wide -> Permissions Management** page.

- b) Select Resource Type **My webMethods Application** and click **Next**. Click **Add**. Search for **Roles**. Select the **Sales** role and click **Add**.



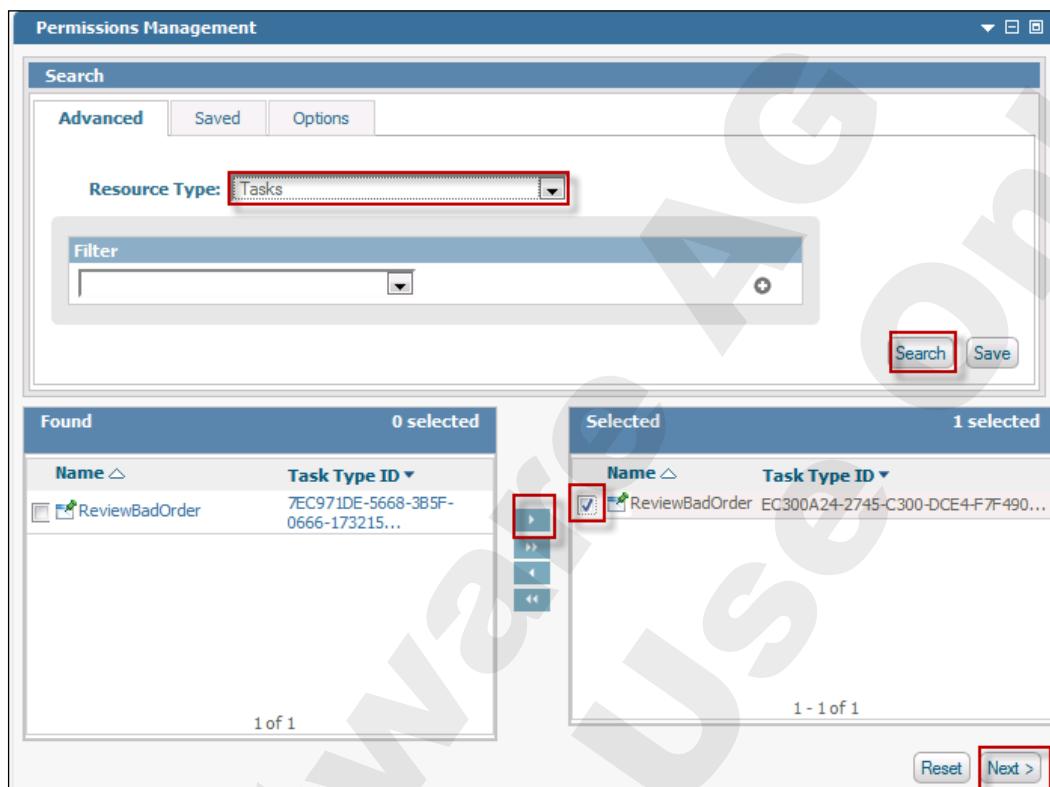
- c) Grant the following Access Privileges to the Sales role:
Access Privileges-> Monitoring -> Business -> Tasks -> My Inbox
Access Privileges-> Monitoring -> Business -> Tasks -> Task List Management
Access Privileges-> Monitoring -> Business -> Tasks -> Task Charts



- d) Click **OK** and **Apply** to save your changes.

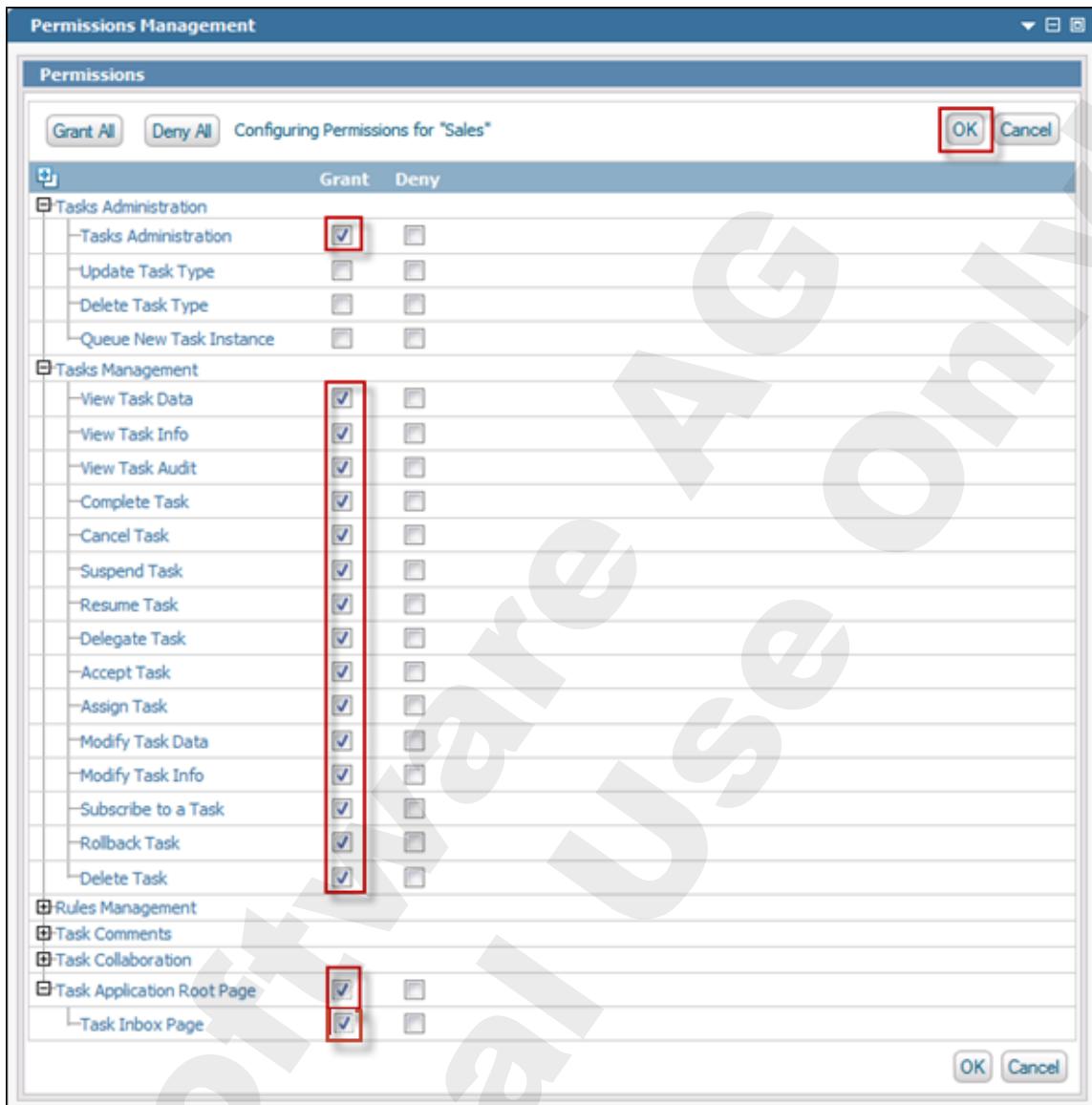
8. Define permissions for ReviewBadOrder User Tasks:

- a) Revisit the page Applications -> Administration -> System-Wide -> Permissions Management.
- b) Select the Resource Type Tasks and click Search. Select the ReviewBadOrder checkbox in the Found list and click the arrow right button to move it to the Selected list. Select the ReviewBadOrder checkbox in the Selected list. Click Next.



- c) Click Add and search for Roles. Select the Sales role from the Available list and click Add.

- d) Grant permissions for Tasks Administration -> Tasks Administration, all Tasks Management activities, Task Application Root Page, and Task Inbox Page access:



Click OK and Apply to save your changes.

9. Double-click the file <*workshop_dir*>\Exercise16\Resources\Ex16_SubmitOrder.html. Use the **Submit** button to start a new process with an invalid Order. If prompted for authentication, provide **Administrator/manage** as the username/password.
10. Logout from My webMethods.

11. Login to My webMethods as Bill/manage or Mary/manage.
12. Navigate to Applications -> Monitoring -> Business -> Tasks -> My Inbox.

The screenshot shows the My webMethods application interface. At the top, there's a navigation bar with 'Bill Smith' (highlighted with a red box), 'My Profile', 'Help', 'About', and 'Logout'. Below the navigation bar is a toolbar with 'Navigate' and 'Tools'. The left sidebar has a tree structure under 'Applications': Monitoring > Business > Tasks. Under Tasks, 'ReviewBadOrder' is expanded, and 'My Inbox' is selected and highlighted with an orange box. The main content area is titled 'My Inbox' and contains a search bar with tabs for 'Advanced', 'Saved' (highlighted with a red box), and 'Options'. A dropdown menu for 'Saved Search' shows 'All My Tasks' with a 'Search' button. Below the search area is a table titled 'Inbox' with columns: TASK ID, TASK TYPE, PRIORITY, CREATED DATE, EXPIRATION DATE, LAST UPDATED DATE, and CUSTOM ID. One row is visible, showing Task ID 8170, Task Type 'ReviewBadOrder', Priority '4-Low', Created Date '24.01.2014 12:46', Expiration Date '25.01.2014 10:00', Last Updated Date '24.01.2014 12:46', and Custom ID '188-888-8888'. Buttons for 'Delegate...' and 'Remove Delegation' are at the top of the table. At the bottom right of the table, it says '1 of 1'.

13. Select the newly created User Task, change the Product Quantity to 9, and click Revalidate to complete the User Task and the corresponding process instance.

Check Your Understanding

1. Why could you not see User Tasks instances assigned to Bill when you originally logged in?
2. What is the difference between privileges for webMethods Applications and privileges for Tasks?

EXERCISE 17:

USER TASK MANAGEMENT

Objectives

In this exercise, you will perform User Task Management activities on User Task instances, including delegating a User Task instance from one user to another.

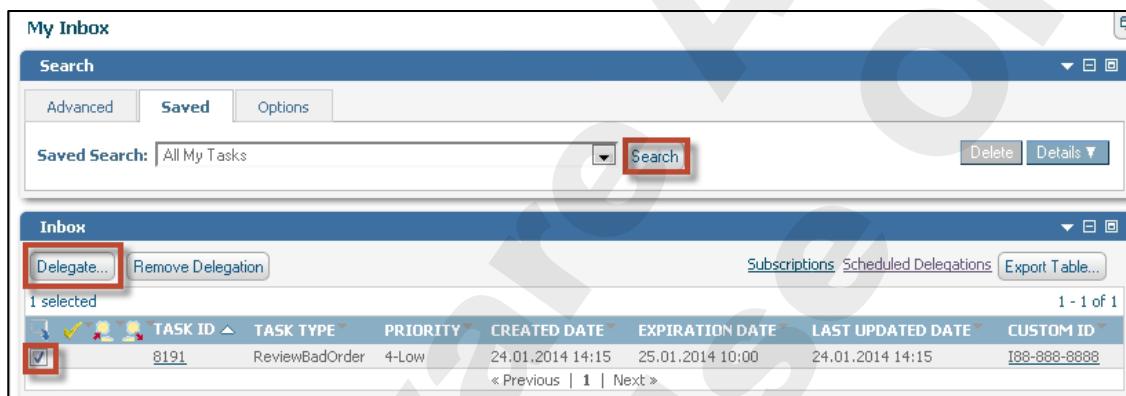
Steps

1. Ensure all Windows services mentioned in exercise 1 step 3 are up and running.
2. Launch Software AG Designer and ensure you are in the **UI Development** perspective.
3. Open the User Task **ReviewBadOrder** from the Solutions view.
4. In the Task Editor, open the **Assignments** tab.
5. Select and modify the existing **Assign to Sales Role** assignment.
 - a) Set the Distribution Management to **No Distribution management**.
 - b) Delete role Sales from the list of assignees. Add user **Bill** to the Assignee List.
Note: Instead of typing, you can drag user **Bill** from the **Users** folder in the MWS Admin view into the Assignee List.
 - c) Change the **Assignment Name** and **Assignment Description** according to the following screen shot:

The screenshot shows the Software AG Designer Task Editor with the 'Assignment' tab selected. The 'General' section displays the assignment name 'Assign to User' and its description 'Assign a user to work on a bad order.'. The 'Assignee' section contains a list with 'User UID : Bill' and buttons for managing the list: 'Add' (highlighted), 'Edit', 'Delete' (highlighted), 'Up', and 'Down'. The 'Assignment Options and Conditions' and 'Distribution Management' sections are also visible.

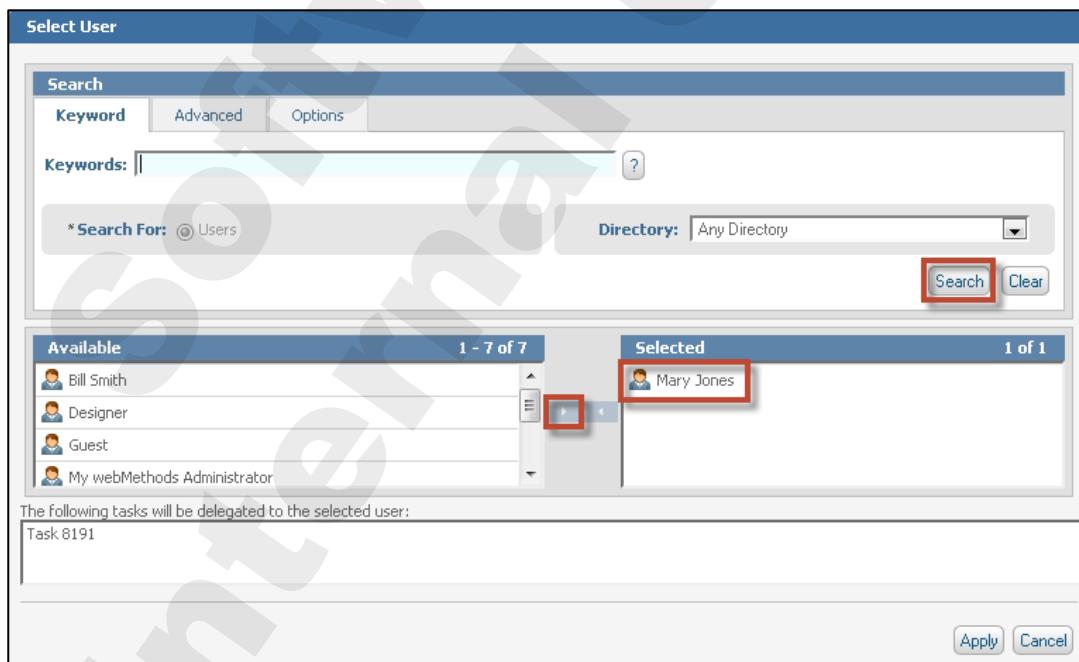
6. Save your Task changes.

7. Use the Servers view to re-publish the **SalesDepartment** project to My webMethods Server. If asked for authentication, provide **Sysadmin/manage**.
8. Double-click <**workshop_dir**>\Exercise17\Resources\Ex17_SubmitOrder.html and press the **Submit** button to start a new process with an invalid Order. If prompted for authentication use **Administrator/manage** as the username/password.
9. In a browser tab, login to My webMethods as **Bill/manage**.
 - a) Navigate to **Monitoring > Business > Tasks > My Inbox** to ensure a new User Task instance has been queued and assigned to Bill Smith, so it appears in his Inbox.
Note: If no User Task is displayed, click **Search** in the Search portlet to refresh the Inbox portlet content.
Bill should now delegate his User Task instance to **Mary Jones**. To do so, select the checkbox next to the Task ID, then select the **Delegate...** button in order to begin task delegation definition.



The screenshot shows the 'My Inbox' interface. At the top, there is a search bar with a dropdown set to 'All My Tasks' and a red box around the 'Search' button. Below the search bar is a toolbar with 'Subscriptions', 'Scheduled Delegations', and 'Export Table...'. The main area is titled 'Inbox' and contains a table with one row. The table columns are: TASK ID, TASK TYPE, PRIORITY, CREATED DATE, EXPIRATION DATE, LAST UPDATED DATE, and CUSTOM ID. The first row shows: 8191, ReviewBadOrder, 4-Low, 24.01.2014 14:15, 25.01.2014 10:00, 24.01.2014 14:15, and 188-888-8888. There is a red box around the 'Delegate...' button in the toolbar above the table, and another red box around the checkbox in the first column of the table.

- b) On the Select User panel, search for user **Mary Jones**.



The screenshot shows the 'Select User' interface. At the top, there is a search bar with a 'Keyword' field and a red box around the 'Search' button. Below the search bar is a toolbar with 'Advanced' and 'Options'. The main area is divided into two sections: 'Available' on the left and 'Selected' on the right. The 'Available' section lists users: Bill Smith, Designer, Guest, and My webMethods Administrator. The 'Selected' section lists one user: Mary Jones, with a red box around her name. At the bottom, there is a note: 'The following tasks will be delegated to the selected user:' followed by a list: 'Task 8191'. There are 'Apply' and 'Cancel' buttons at the bottom right.

Click **Apply** to confirm the delegation.

- c) Make sure the User Task now shows a **Delegated to** icon indicating that the User Task was delegated from Bill Smith to somebody.

The screenshot shows the 'Inbox' portlet in the My webMethods interface. A single user task is listed in the grid:

TASK ID	TASK TYPE	PRIORITY	CREATED DATE	EXPIRATION DATE	LAST UPDATED DATE	CUSTOM ID
8191	ReviewBadOrder	4-Low	24.01.2014 14:15	25.01.2014 10:00	24.01.2014 14:25	I88-888-8888

A red box highlights the small blue delegation icon next to the task ID '8191'. Below the table, a button labeled 'Delegated' is visible.

- d) Logout from My webMethods.

10. Login to My webMethods as Mary/manage.

- a) Navigate to **Monitoring > Business > Tasks > My Inbox** to look for Mary's User Tasks in her Inbox. If necessary hit **Search** in the Search Portlet to refresh the Inbox content.
- b) Make sure there is a new User Task showing a **Delegated from** icon indicating that the User Task was delegated from somebody to Mary Jones.

The screenshot shows the 'My Inbox' search results. A single user task is listed in the grid:

TASK ID	TASK TYPE	PRIORITY	CREATED DATE	EXPIRATION DATE	LAST UPDATED DATE	CUSTOM ID
8191	ReviewBadOrder	4-Low	24.01.2014 14:15	25.01.2014 10:00	24.01.2014 14:25	I88-888-8888

A red box highlights the small blue delegation icon next to the task ID '8191'. Above the table, a 'Search' button is highlighted with a red box.

- c) Select the User Task instance and open the **Details View** tab. Look for the delegation trail:

The screenshot shows the 'My Inbox > ReviewBadOrder Details' page. The 'Details View' tab is selected. In the 'Task Basic Info' section, the 'Accepted Date' field contains the delegation information:

Assigned To: Bill Smith
Delegation: Bill Smith -> Mary Jones

This delegation detail is highlighted with a red box.

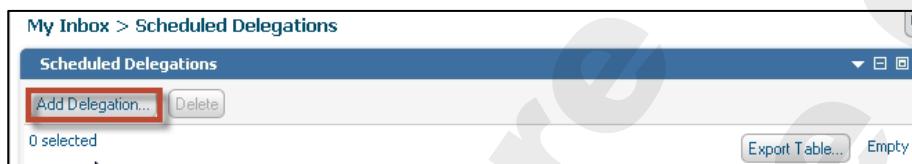
- d) Switch to the **Data View** tab, change the **ProductQuantity** from **-9** to **9**, and click **Revalidate** to complete the User Task.
- e) Refresh the content of Mary's Inbox. The User Task should have vanished from the list.
- f) Logout from My webMethods.

11. Login to My webMethods as **Bill/manage**.

- a) Navigate to **Applications -> Monitoring -> Business -> Tasks -> My Inbox** and select the **Scheduled Delegations** link in the **Inbox** portlet:



- b) Add a Scheduled Delegation:



Configure the Scheduled Delegation to work on User Tasks of type **ReviewBadOrder** and to delegate to user **Mary Jones**. The delegation should be valid **<this week>** only. Save your Scheduled Delegation.

A screenshot of a 'Add Delegation' dialog box. It has the following fields:

- Task:** A dropdown menu set to **ReviewBadOrder**.
- Delegate From :** **Bill Smith**.
- Delegate To:** **Mary Jones** with a **Browse...** button next to it.
- Scheduled Delegation Dates:** Set to **Custom**.
 - Start Date:** **1/19/2014** with a calendar icon.
 - Time:** **12 : 00 AM** with a dropdown arrow.
 - End Date:** **1/24/2014** with a calendar icon.
 - Time:** **11 : 59 PM** with a dropdown arrow.
- Save** and **Cancel** buttons at the bottom right.

The 'Start Date' and 'End Date' fields are highlighted with a red box.

12. Double-click **<workshop_dir>\Exercise17\Resources\Ex17_submit.html** and press the **Submit** button to start another process instance. If prompted for authentication use **Administrator/manage** as the username/password.

13. Logout from My webMethods.

14. Login to My webMethods as Mary/manage.

- Navigate to her **My Inbox** page and ensure that a new User Task instance is automatically delegated from Bill to Mary.

The screenshot shows the 'My Inbox' interface. In the 'Inbox' section, there is one task listed:

Task ID	Task Type	Priority	Created Date	Expiration Date	Last Updated Date	Custom ID
8195	ReviewBadOrder	4-Low	24.01.2014 14:51	25.01.2014 10:00	24.01.2014 14:51	I88-888-8888

Two specific fields are highlighted with red boxes: the 'Assigned To' field (containing 'Bill Smith') and the 'Delegation' field (containing 'Bill Smith -> Mary Jones').

- Open the User Task instance. Use the **Details View** tab to inspect the delegation path.

The screenshot shows the 'My Inbox > ReviewBadOrder Details' page, specifically the 'Details View' tab. Under the 'Task Basic Info' section, the 'Delegation' field is highlighted with a red box, showing the delegation path 'Bill Smith -> Mary Jones'.

- Use the Data View tab to complete the User Task and corresponding process. To do so, change the **ProductQuantity** from **-9** to **9**, and click **Revalidate**.

Check Your Understanding

- The User Task above was delegated. Name one difference between delegation and reassignment.
- Explain the difference between a delegation and a scheduled delegation.

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EXERCISE 18:

PROCESS ERROR AND TIMEOUT HANDLING

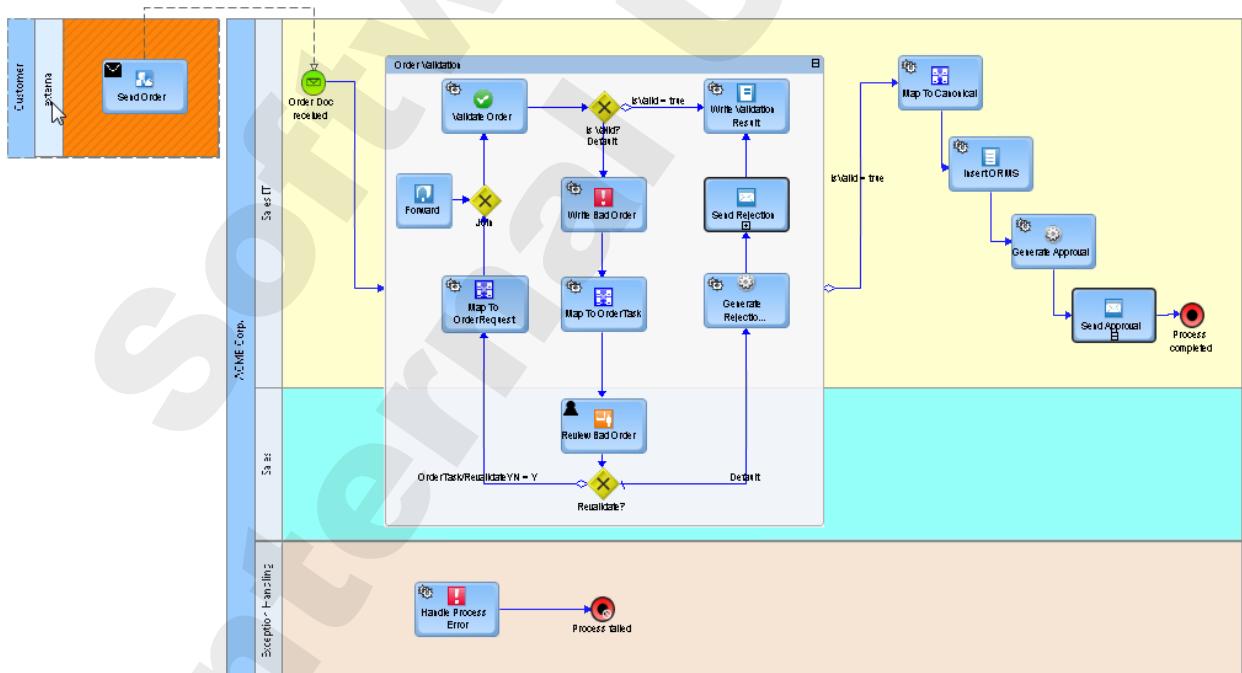
Objectives

In this exercise, you will enhance the robustness of the HandleNewOrder process by inserting error and timeout handling on process level.

Steps

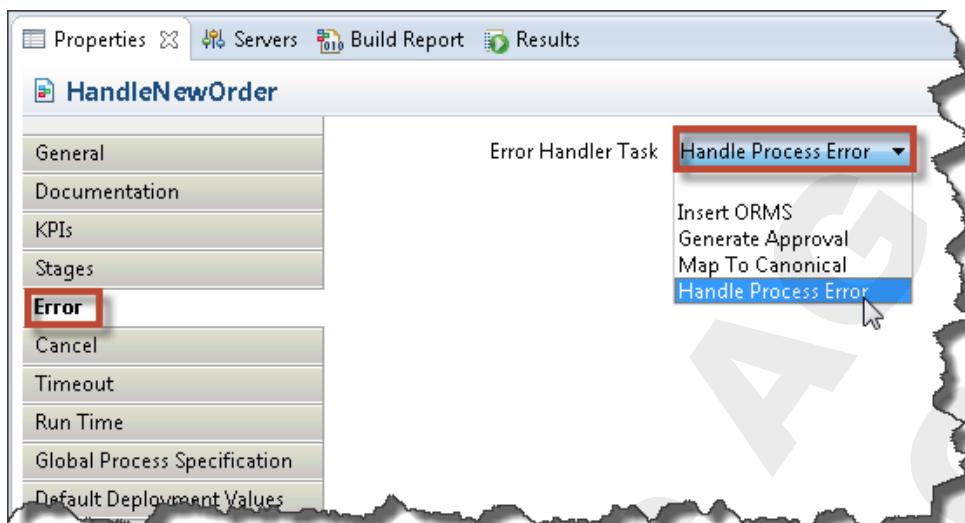
1. Ensure all Windows services mentioned in exercise 1 step 3 are up and running.
2. Launch Software AG Designer and ensure you are in the **Process Development** perspective.
3. Open the **HandleNewOrder** process.
4. Rename the existing End Terminate Event to **Process completed**.
5. Right-click the **Sales** swimlane in the design canvas to add a new Swimlane below. Name the swimlane **Exception Handling** and choose a light red color as swimlane color.
6. In the Exception Handling Swimlane, add a Service Task Activity named **Handle Process Error**, and a second End Terminate Event named **Process failed**.
Using the Implementation tab, configure **Process failed** to set the process status upon termination to **Failed**.
Add a transition from **Handle Process Error** to **Process failed**.

Change the image of the Service Task Activity and to correspond to the following image:

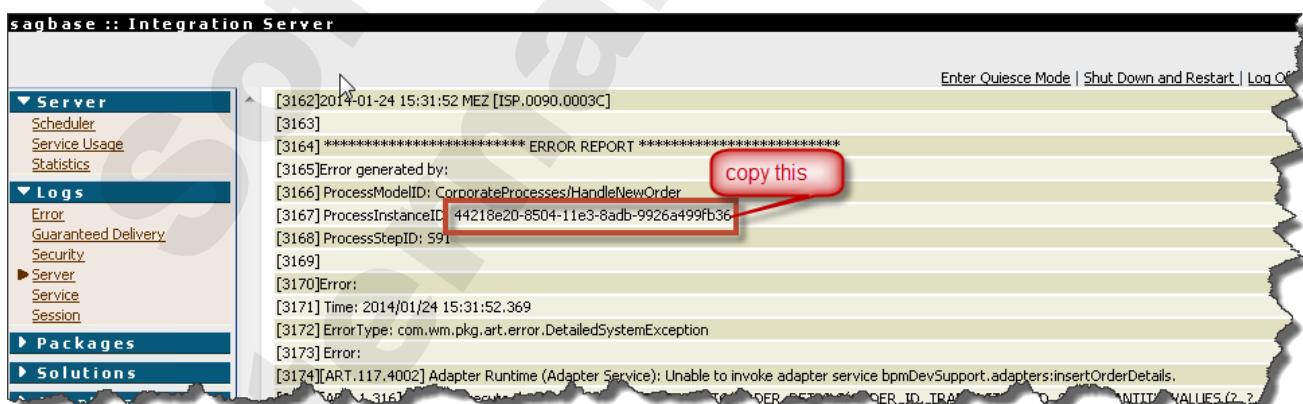


7. Drag the service **bpmDevSupport.utils:handleError** from the Package Navigator view and drop it on the Handle Process Error step. This will automatically configure the step to invoke this service. Double-check the automatically entered Inputs/Outputs of the **Handle Process Error** step.

8. Click in the whitespace in the process editor to view the process properties. On the **Error** tab of the **HandleNewOrder** process properties, select **Handle Process Error** as Error Handler Task.



9. Save, build and upload the **HandleNewOrder** process.
10. To start the **HandleNewOrder** process using a browser, double-click `<workshop_dir>\Exercise18\Resources\Ex18_SubmitOrder1.html` and click the **Submit** button. If asked for authentication use **Administrator/manage**. The process will fail due to an order quantity string that is too long.
11. Open the **IS server.log** file by using an editor or the IS Administration console. Search for "*** ERROR REPORT ***" and then copy the value of the **ProcessInstanceId** to the Windows clipboard.
Hint: If using IS Administration console to display the server.log, increase the number of entries being displayed first.



12. Open a browser session and login to My webMethods as **Administrator/manage**.

13. Navigate to Applications -> Monitoring -> Business -> Process Instances. Look for, or paste and search for the process instance ID of the failed process mentioned in the IS server.log file. Ensure that the process has a Failed status.

Last Updated	Start Date / Time	Process Name	Version	Process Instance ID	Status	Duration	Detail
1/24/2014 3:31:52.430 PM	1/24/2014 3:31:52.170 PM	HandleNewOrder	1	44218e20-8504-11e3-8adb-9926a499fb36	Failed	0d 00:00:00.260	

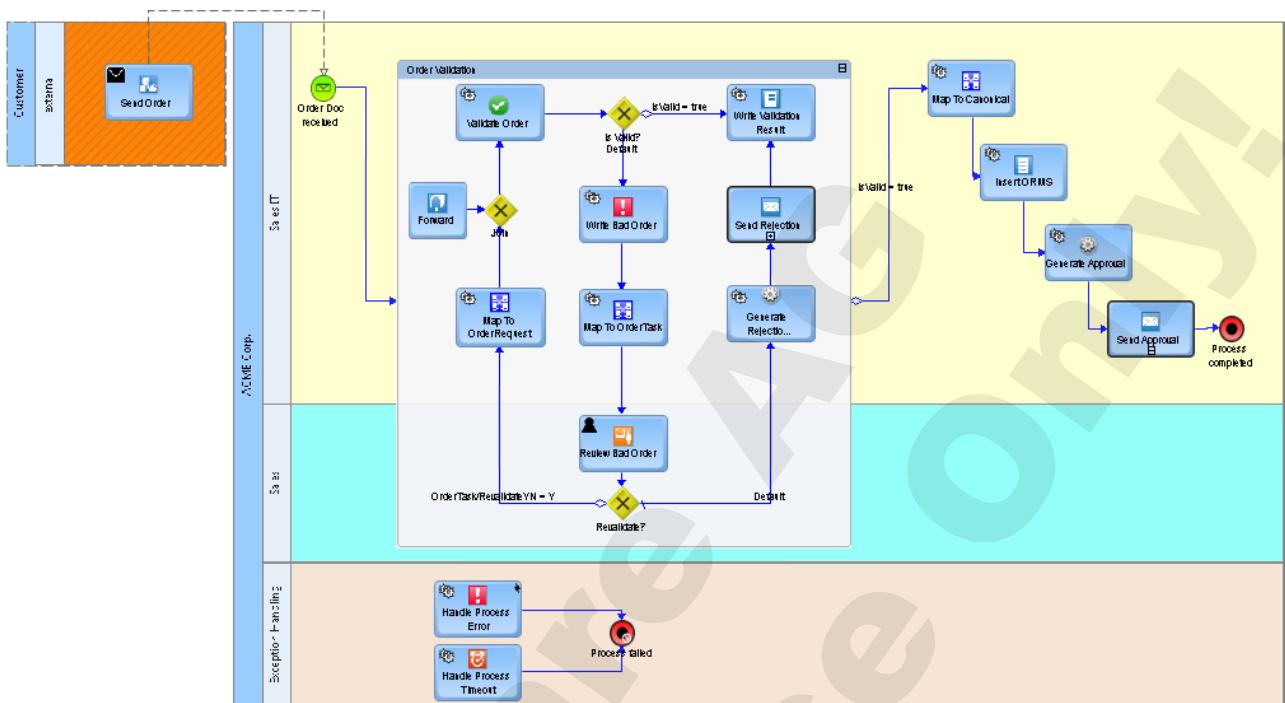
Note: As an alternative, you can also use the **Business Processes Dashboard** (Applications -> Administration -> Business -> Business Processes Dashboard) and look for failed processes of type HandleNewOrder.

Instance ID	Last Updated
44218e20-8504-11e3-8adb-9926a499fb36	1/24/2014 3:31:52,430 PM
f0817650-8377-11e3-839a-9bdeafba3b40	1/22/2014 4:15:04,003 PM
6a630cf0-8377-11e3-8301-f89e531752d2	1/22/2014 4:11:17,827 PM
1ecd6150-8377-11e3-81de-b1707f93183a	1/22/2014 4:09:47,320 PM
74693400-8290-11e3-884b-d53224c17181	1/21/2014 12:37:49,873 PM
97ecaf10-827c-11e3-ad5c-a47a3a974945	1/21/2014 10:16:06,757 AM

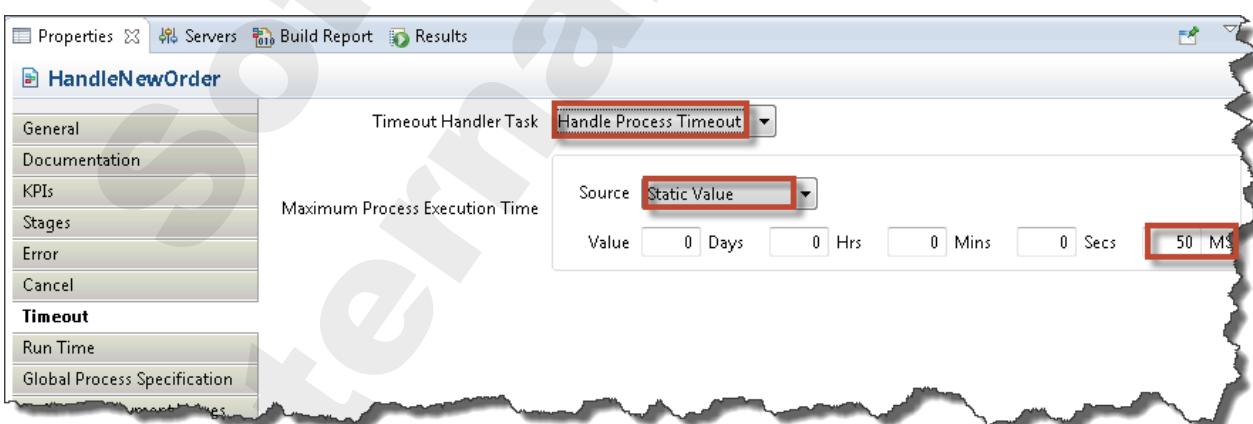
14. Open the **Process Instance Details** page (click on the Process Instances page or click the Instance ID on the Business Processes Dashboard pop-up) of the failed process instance and determine the step that failed from the Step Summary section:

Step Name	Start Date / Time	Last Updated	Instance Iteration	Step Iteration	Loop Iteration	Status	Duration	Referenced Process	Detail
Process failed	1/24/2014 3:31:52,417 PM	1/24/2014 3:31:52,433 PM	1	1		Completed	0d 00:00:00.016		
Handle Process Error	1/24/2014 3:31:52,407 PM	1/24/2014 3:31:52,417 PM	1	1		Completed	0d 00:00:00.010		
Insert ORMS	1/24/2014 3:31:52,237 PM	1/24/2014 3:31:52,407 PM	1	1		Failed	0d 00:00:00.170		
Map To Canonical	1/24/2014 3:31:52,233 PM	1/24/2014 3:31:52,237 PM	1	1		Completed	0d 00:00:00.004		
Order Validation	1/24/2014 3:31:52,173 PM	1/24/2014 3:31:52,230 PM	1	1		Completed	0d 00:00:00.057		
Order Doc received	1/24/2014 3:31:52,170 PM	1/24/2014 3:31:52,173 PM	1	1		Completed	0d 00:00:00.003		

15. Switch back to Designer. In the **HandleNewOrder** process, add another Service Task Activity named **Handle Process Timeout**. Add the step image and add a transition from **Handle Process Timeout** to **Process failed**. Use the following image as a reference:



16. Set the **Join Type** of the **Process failed** event to **Unsynchronized Or**.
17. Drag the service **bpmDevSupport.utils:handleProcessTimeout** from the Package Navigator view and drop it on the **Handle Process Timeout** Activity. This will automatically configure the Activity to invoke this service. Double-check the automatically entered Inputs/Outputs of the **Handle Process Timeout** step.
18. In the **HandleNewOrder** process properties, open the **Timeout** tab. Set the **Maximum Process Execution Time** to a **Static Value** of **50 milliseconds** and set the **Timeout Handler Task** to **Handle Process Timeout**:



19. Save, build and upload the **HandleNewOrder** process.
20. To start the **HandleNewOrder** process using a browser, double-click `<workshop_dir>\Exercise18\Resources\Ex18_SubmitOrder2.html`. Click the **Submit** button. If asked for authentication use **Administrator/manage**.

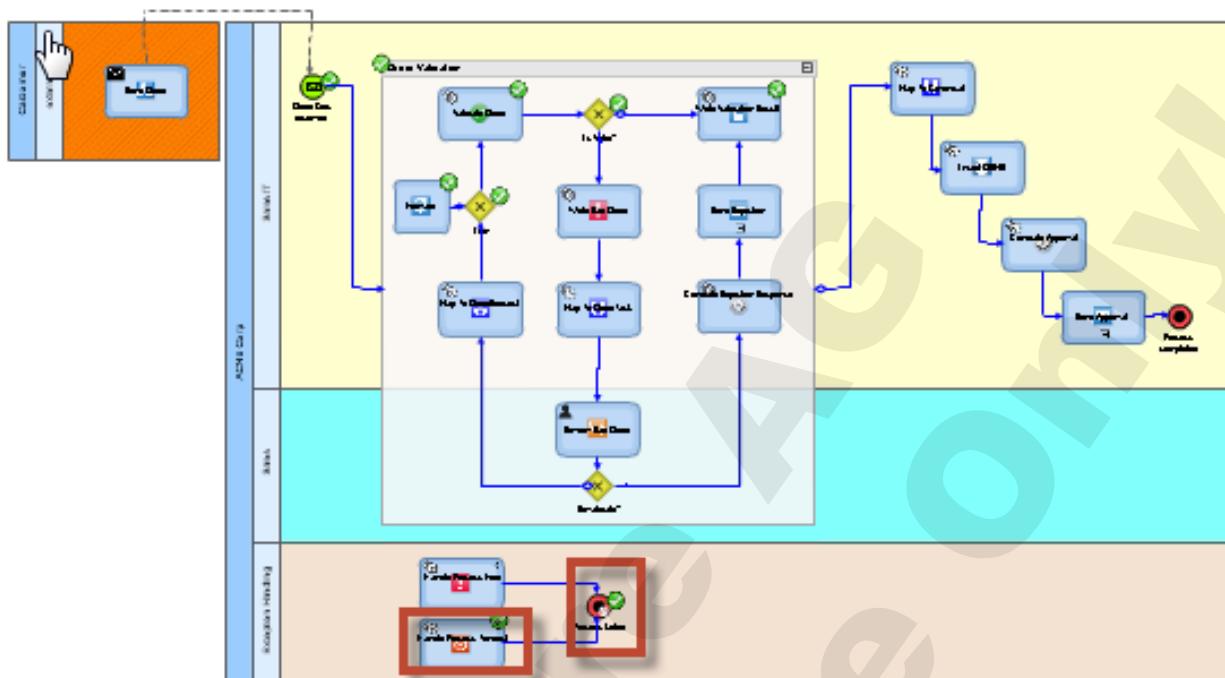
21. Open the IS server.log file by using an editor or the IS Administration console. Search for "*** TIMEOUT REPORT ***" and then copy the value of the ProcessInstanceID to the Windows clipboard.

```
Server Log Entries as of 2014-01-24 16:20:26 MEZ
[3470]2014-01-24 16:20:16 MEZ [BPM.0102.0199I] 07442dd0-850b-11e3-9c28-bd78aecdc7aa:1, MID=CorporateProcesses/HandleNewOrder, MVer=1: process failed
[3469]
[3468]
[3467] **** TIMEOUT REPORT ****
[3466]
[3465]AuditContext: %ProcessData/AuditContext%
[3464]TryCount: 1
[3463]Logical Server: Default
[3462]ProcessStepID: 594
[3461]ProcessModelVersion: 1
[3460]ProcessModelID: CorporateProcesses/HandleNewOrder
[3459]ProcessInstanceID: 07442dd0-850b-11e3-9c28-bd78aecdc7aa
[3458]
[3457] **** TIMEOUT REPORT ****
[3456]
[3455]2014-01-24 16:20:16 MEZ [ISP.0090.0003C]
[3454]2014-01-24 16:20:16 MEZ [BPM.0102.0196I] 07442dd0-850b-11e3-9c28-bd78aecdc7aa:1, MID=CorporateProcesses/HandleNewOrder, MVer=1: process started
```

22. Using a browser tab, login to My webMethods as **Administrator/manage**.
23. Navigate to the **Applications -> Monitoring -> Business -> Process Instances** page. Look for, or paste and search for the process instance ID of the failed process displayed in the IS server.log file. Ensure that the process has a **Failed** status:

Last Updated	Start Date / Time	Process Name	Version	Process Instance ID	Status	Duration	Detail
1/24/2014 4:20:16,700 PM	1/24/2014 4:20:16,610 PM	HandleNewOrder	1	07442dd0-850b-11e3-9c28-bd78aecdc7aa	Failed	0d 00:00:00.090	Detail

24. View the details of the failed process and ensure that the **Handle Process Timeout** step and the **Process Failed** event have been reached:



25. In the Step Summary, click the magnifying glass for step **Process failed** to check the final process status has been set to Failed.

Step Summary								
Step Name	Start Date / Time	Last Updated	Instance Iteration	Step Iteration	Loop Iteration	Status	Duration	Referenced Process
Process Failed	1/24/2014 4:20:16.677 PM	1/24/2014 4:20:16.703 PM	1	1		Completed	0d 00:00:00.026	
Order Validation	1/24/2014 4:20:16.613 PM	1/24/2014 4:20:16.683 PM	1	1		Completed	0d 00:00:00.070	
Handle Process Timeout	1/24/2014 4:20:16.670 PM	1/24/2014 4:20:16.677 PM	1	1		Completed	0d 00:00:00.007	
Order Doc received	1/24/2014 4:20:16.610 PM	1/24/2014 4:20:16.613 PM	1	1		Completed	0d 00:00:00.003	

26. *Houskeeping:* To avoid premature process timeouts in the next exercises, adjust the **HandleNewOrder** process to a proper state:

- Switch back to Designer. Open the Properties of your **HandleNewOrder** process. Use the Timeout tab to adjust the **Maximum Process Execution Time** to a more realistic **Static Value of 3 days**.
- Save, build and upload the **HandleNewOrder** process.

Check Your Understanding

- The Handle Process Error step does not have any incoming transitions. When will it be invoked?
- Which two documents are automatically sent to the Handle Process Error step?
- Which step caused the process instance to be marked as “Failed”?

EXERCISE 19:

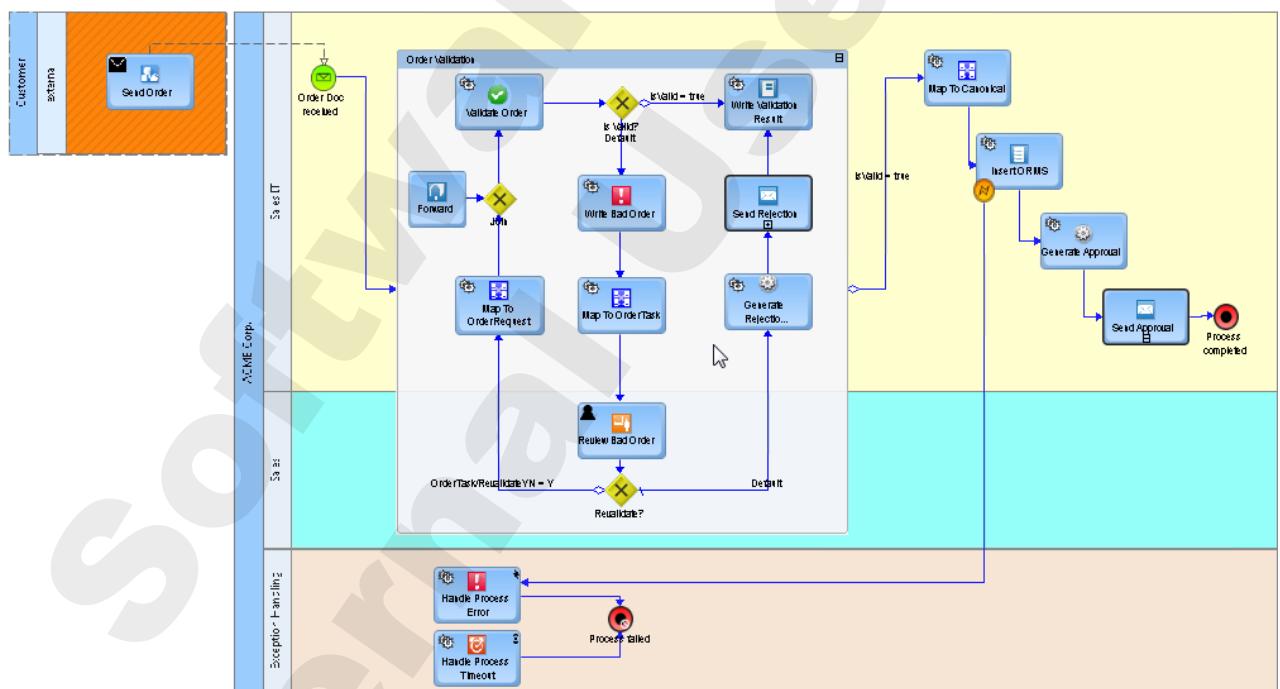
STEP ERROR AND TIMEOUT HANDLING

Objectives

In this exercise, you will enhance the robustness of the **HandleNewOrder** process by inserting event-driven error and timeout handling on the step level.

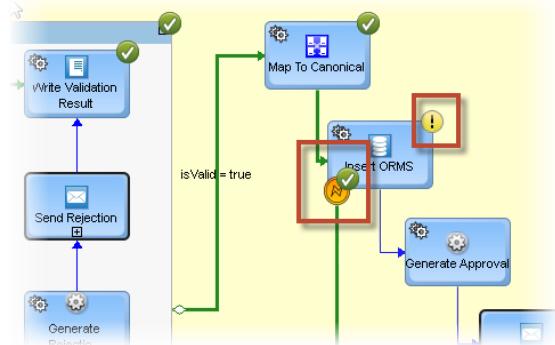
Steps

1. Ensure all Windows services mentioned in exercise 1 step 3 are up and running.
2. Open and modify the **HandleNewOrder** process:
 - a) Right-click step **Insert ORMS** to add an **Interrupting Boundary Error Event** to this Service Task Activity. Select the Boundary Event and set its label name to **Catch Database Error**.
 - b) In the Handle Exception Swimlane, add a transition from the Boundary Error Event **Catch Database Error** to the step **Handle Process Error**. Your process should now correspond to the following image:



3. Save, build and upload the **HandleNewOrder** process.
4. Debug your **HandleNewOrder** process:
 - a) Switch to the **Process Debug** perspective.
 - b) Execute your Debug Configuration **HandleNewOrderDebugConfiguration**.
 - c) Overwrite the default data with an order from the file
`<workshop_dir>\Exercise19\Resources\Ex19_DebugInput.txt`.

- d) Use the Trace view to step through the process until you reached the **Insert ORMS** step. The process should fail at the **Insert ORMS** step due to an order quantity string that is too long. Proceed to the next step by clicking the icon or pressing F6. The Error Boundary Event should get triggered and its outgoing transition to the Handle Process Error should be used. Step **Insert ORMS** should be flagged as interrupted:



Trace							
	Step	Step ID	Ste...	Loop ...	Start Time	End Time	Status Message
	I:isValid?	S33	1		Jan 27, 2014 9:50:04 AM	Jan 27, 2014 9:50:04 A...	Completed
	Write Validation Res...	S51	1		Jan 27, 2014 9:50:04 AM	Jan 27, 2014 9:50:04 A...	Completed
	Map To Canonical	S17	1		Jan 27, 2014 9:50:05 AM	Jan 27, 2014 9:50:06 A...	Completed
	Catch Database Error	S96	1		Jan 27, 2014 9:50:41 AM	Jan 27, 2014 9:50:41 A...	Completed
	Insert ORMS	S26	1		Jan 27, 2014 9:50:41 AM	Jan 27, 2014 9:50:41 A...	Interrupted

- e) Use Step Over (F6) to execute step **Handle Process Error**. Highlight step **Handle Process Error** in the Trace view and inspect the Pipeline Data View. Look for the content of the pipeline variables **perror** and **ExceptionTransitionInfo**:

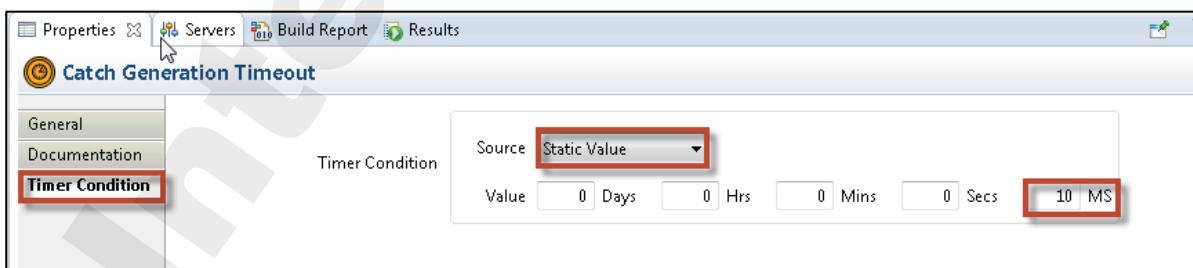
Pipeline Data	
Handle Process Error	Field Value
message	***** ERROR REPORT ***** Error generated by: ProcessModelID: CorporateProc...
ProcessErrorDoc	***** ERROR REPORT ***** Error generated by: ProcessModelID: CorporateProc...
errorString	
insertOrderDetailsInput	
insertOrderHeaderInput	
OrderCanonical	
isValid	true
OrderRequest	
insertOrderHeaderOutput	
perror	[ART.117.4002] Adapter Runtime (Adapter Service): Unable to invoke adapter service bpmDevSupport.adapters:insertOrderDetail... com.wm.adk.error.AdapterServiceException: [ADA.1.316] Cannot execute the SQL statement "INSERT INTO ORDER_DETAIL(SO... CorporateProcesses.HandleNewOrder.HandleNewOrder_1.Default:Insert_ORMS Administrator 2014/01/27 09:50:41.892 callStack [ART.117.4002] Adapter Runtime (Adapter Service): Unable to invoke adapter service bpmDevSupport.adapters:insertOrderDetail... Service Thread Pool
errorDump	
service	
user	
time	
callStack	
localizedError	
threadID	
nestedErrorInfo	
errorDetails	
ExceptionTransitionInfo	StepError S26 1 [PRT.0101.9125] Service CorporateProcesses.HandleNewOrder.HandleNewOrder_1.Default:Insert_ORMS failed.
_env	
ProcessData	

5. Terminate your debug session by clicking the **Run/Resume** button or pressing F8.

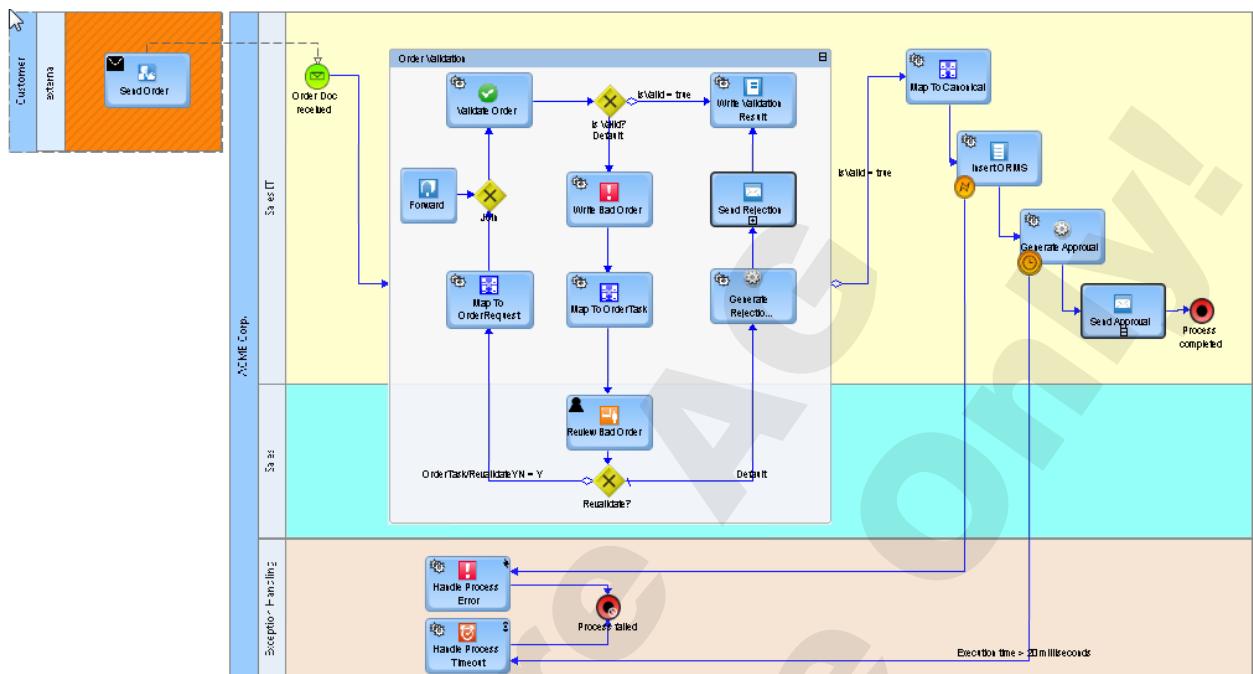
6. Open the IS server.log file by using an editor or the IS Administration console. Search for "**** ERROR REPORT ****" and then copy the value of the ProcessInstanceId to the Windows clipboard.
7. Open a browser tab and login to My webMethods as Administrator/manage:
 - a) Navigate to the Applications -> Monitoring -> Business -> Process Instances page. Look for, or paste and search for the process instance ID of the failed process displayed in the IS server.log file. Ensure that the debugged process has a Failed status.
Note: As an alternative, you can use the Business Process Dashboard in My webMethods to look for your failed process instance.
 - b) View the process details to ensure that the step Insert ORMS has been interrupted, the Boundary Error Event Catch Database Error fired, and that the outgoing transition of the Boundary Error Event has been used. Open the Details of step Process failed to check the final process status is set to Failed.

Step Name	Start Date / Time	Last Updated	Instance Iteration	Step Iteration	Loop Iteration	Status	Duration	Referenced Process	Detail
Process failed	1/27/2014 10:02:25.370 AM	1/27/2014 10:02:25.413 AM	1	1		Completed	0d 00:00:00.043		
Handle Process Error	1/27/2014 9:54:33.877 AM	1/27/2014 9:54:33.967 AM	1	1		Completed	0d 00:00:00.090		
Catch Database Error	1/27/2014 9:50:41.940 AM	1/27/2014 9:50:41.940 AM	1	1		Completed	0d 00:00:00.000		
Insert ORMS	1/27/2014 9:50:41.063 AM	1/27/2014 9:50:41.940 AM	1	1		Interrupted	0d 00:00:00.877		
Map To Canonical	1/27/2014 9:50:05.937 AM	1/27/2014 9:50:06.027 AM	1	1		Completed	0d 00:00:00.090		
Order Validation	1/27/2014 9:50:04.600 AM	1/27/2014 9:50:05.487 AM	1	1		Completed	0d 00:00:00.887		
Order Doc received	1/27/2014 9:50:02.177 AM	1/27/2014 9:50:02.217 AM	1	1		Completed	0d 00:00:00.040		

8. Switch back to your HandleNewOrder process model in Designer:
 - a) Switch to the Process Development perspective.
 - b) Open the Properties view of the Service Task Activity Generate Approval Response. On the Implementation tab, replace the invoked IS Service by the existing IS Service **bpmDevSupport.utils:generateResponseSleep**.
Note: This service enforces a delay of approximately 180 seconds.
 - c) Right-click step Generate Approval Response to add an **Interrupting Boundary Timer Event to this Service Task Activity**.
 - d) Select the new Boundary Timer Event to open its Properties view. On the General tab, set the label to **Catch Generation Timeout**.
 - e) On the Timer Condition tab specify a timeout as a **Static Value of 10 milliseconds**.



- f) Add a transition from the Boundary Timer Event Catch Generation Timeout to the step **Handle Process Timeout**. Your process should now correspond to the following image:



9. Save, build and upload the **HandleNewOrder** process.
10. To start the **HandleNewOrder** process using a browser tab, double-click `<workshop_dir>\Exercise19\Resources\Ex19_SubmitOrder.html`. Click the **Submit** button. If asked for authentication use **Administrator/manage**.
11. Open the **IS server.log** file by using an editor or the IS Administration console. Search for "**** TIMEOUT REPORT ****" and then copy the value of the **ProcessInstanceId** to the Windows clipboard.
12. Use a browser tab to login to My webMethods as **Administrator/manage**.
 - a) Navigate to the Applications -> Monitoring -> Business -> Process Instances page. Look for, or paste and search for the process instance ID of the failed process displayed in the **IS server.log** file. Ensure that the process has a **Failed** status.
 - b) View the process details to ensure that the **Generate Approval Response** step has an **Interrupted** status and the **Catch Generation Timeout** Boundary Event fired:

Process Instances > Process Instance Detail									
Step Summary									
Step Name	Start Date / Time	Last Updated	Instance Iteration	Step Iteration	Loop Iteration	Status	Duration	Referenced Process	Detail
Process Failed	1/27/2014 11:01:22.067 AM	1/27/2014 11:01:22.087 AM	1	1		Completed	0d 00:00:00.020		
Handle Process Timeout	1/27/2014 11:01:22.057 AM	1/27/2014 11:01:22.063 AM	1	1		Completed	0d 00:00:00.006		
Catch Generation Timeout	1/27/2014 11:01:22.050 AM	1/27/2014 11:01:22.050 AM	1	1		Completed	0d 00:00:00.000		
Generate Approval	1/27/2014 11:01:22.020 AM	1/27/2014 11:01:22.050 AM	1	1		Interrupted	0d 00:00:00.030		
Insert ORMS	1/27/2014 11:01:22.013 AM	1/27/2014 11:01:22.020 AM	1	1		Completed	0d 00:00:00.007		
Map To Canonical	1/27/2014 11:01:22.007 AM	1/27/2014 11:01:22.010 AM	1	1		Completed	0d 00:00:00.003		
Order Validation	1/27/2014 11:01:21.933 AM	1/27/2014 11:01:22.007 AM	1	1		Completed	0d 00:00:00.074		
Order Doc received	1/27/2014 11:01:21.920 AM	1/27/2014 11:01:21.930 AM	1	1		Completed	0d 00:00:00.010		

13. *Houskeeping:* To avoid premature timeouts in the next exercises, adjust the **HandleNewOrder** process in Designer to a proper state:

- a) Reset the Generate Approval Response Service Task Activity to invoke the original IS Service **bpmDevSupport.utils:generateResponse**.
- b) Change the Timeout value of the **Catch Generation Timeout** Boundary Timer Event to a **Static Value of 2 minutes**.
- c) Save, build and upload the **HandleNewOrder** process.

Check Your Understanding

1. Can the Handle Process Error step catch errors thrown from steps in the subprocess?
2. Can you change the Boundary Error Event Catch Database Error at the Service Task Activity Insert ORMS to be non-interrupting?
3. Briefly describe the impact if you change the Interrupting Boundary Timer Event to be non-interrupting.

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EXERCISE 20A:

WEBMETHODS BUSINESS RULES

Objectives

In this exercise, you will first modify a provided webMethods Business Rules project using Designer. The business rule in the project will return a value of “-local-” or “-remote-”, depending on the global country code that is passed in as input. You will deploy the rules to the Integration Server from Designer.

To use the Decision Table, you will enhance the existing process NotifyCustomer. The process will invoke the Decision Table and display the returned value in the notification message.

Finally, you will deploy a Rule Management Console (RMC) to your MWS to allow business users to perform instant rule modifications.

Steps

1. Ensure all Windows services mentioned in exercise 1 step 3 are up and running.
2. Launch Designer, switch to the **Rules Development** perspective, and open the Solutions view.
3. Import a webMethods Business Rules project containing a preconfigured Decision Table:
 - a) Select **File -> Import**
 - b) Choose **General -> Existing Projects into Workspace**. Then click **Next**.
 - c) Click **Select archive file** and browse for the provided zip file:
`<workshop_dir>\Exercise20a\Resources\CorporateProcessesRules.zip`
 - d) Select the zip file and click **Open**.
 - e) Click **Finish**.

As a result you should see a project named **CorporateProcessesRules** contained in the Rules folder in the Solutions view.

4. Switch to the Rules Explorer view and double-click to open the existing Decision Table **DetermineShipmentDestination** in the Rule Editor.

Note:

The Decision Table has an In/Out parameter named **ShipmentDoc** of Data Model type **ShipmentDoc**. This Data Model refers to the existing IS document **bpmDevSupport.docs.rules:ShipmentDoc**.

It is the task of the rules contained in the Decision Table instance to investigate the value of the incoming **Country** field - as contained in the input parameter **ShipmentDoc** - and to assign a string value in a field called **ShipmentType** which is also part of the **ShipmentDoc**.

As Acme is located in the United States, country codes of 001 (US), 001345 (Cayman Islands), and 001808 (Hawaii) should be handled as **-local-** shipments, 0034 (Spain), 0049 (Germany), and 0060 (Malaysia) should be **-remote-**. Additionally each rule ensures, that articles are ordered by verifying that **NumArticles** does not contain an empty string.

5. In the Rule Editor, insert a new rule after row five by dragging a Rule from the Palette and dropping it in the Decision Table.

	Country	NumArticles	ShipmentType
1	= 001	!= EMPTY STRING	= -local-
2	= 001345	!= EMPTY STRING	= -local-
3	= 001808	!= EMPTY STRING	= -local-
4	= 0034	!= EMPTY STRING	= -remote-
5	= 0049	!= EMPTY STRING	= -remote-
6	= 0060	!= EMPTY STRING	= -remote-

6. In the inserted rule, add a condition = 0052 (Mexico) for Country, != Empty String for NumArticles, and the assignment = -local- for ShipmentType.
Note: To customize the condition for NumArticles, left-click the cell and click the pencil icon to open the extended cell editor. Empty String is available at the Constants tab.

	Country	NumArticles	ShipmentType
1	= 001	!= EMPTY STRING	= -local-
2	= 001345	!= EMPTY STRING	= -local-
3	= 001808	!= EMPTY STRING	= -local-
4	= 0034	!= EMPTY STRING	= -remote-
5	= 0049	!= EMPTY STRING	= -remote-
6	= 0052	= EMPTY STRING	= -local-
7	= 0060	!= EMPTY STRING	= -remote-

7. Save your definitions.
8. To test your Decision Table **DetermineShipmentDestination** in Designer, right-click your Decision Table in the Rules Explorer view and select Run As -> Run Decision Table. You can load the file <*workshop_dir*>\Exercise20a\Resources\Ex20a_RuleInput1.txt as input.

Name	Value
ShipmentDoc	001
Country	001
NumArticles	12
ShipmentType	-local-

Repeat the test with the input file:
<*workshop_dir*>\Exercise20a\Resources\Ex20a_RuleInput2.txt

9. To invoke your Decision Table from a BPM process, the webMethods Business Rule project has to be deployed to an Integration Server hosting the Rule Engine.

To do so:

- In Designer, select **File -> Export**
- Choose **Software AG -> Rule Project to Integration Server runtime**. Then click **Next**.
- Select Rule project **CorporateProcessesRules** and Integration Server Default. Then click **Finish**.

Note: When the webMethods Rule project gets deployed to the Integration Server, it will be stored as a jar file in the folder:

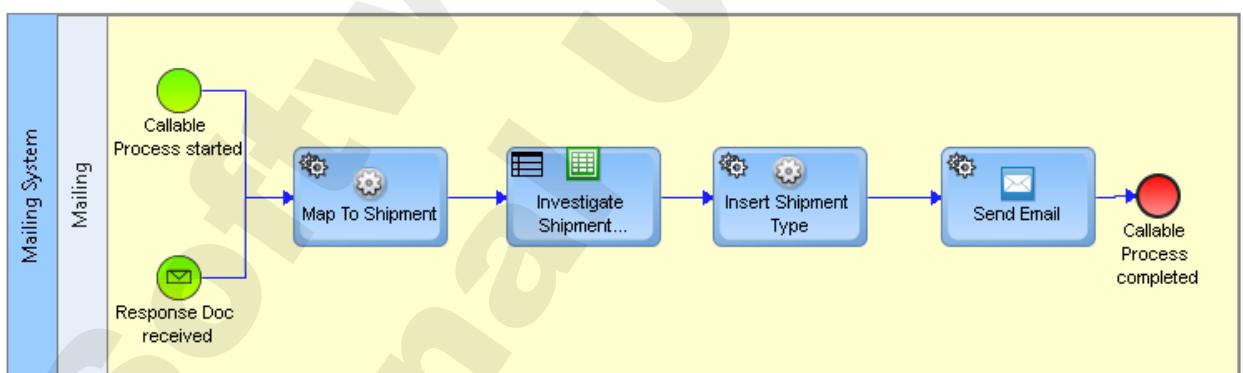
`<install root>\IntegrationServer\packages\WmBusinessRules\projects`

Therefore, you should now see the file **CorporateProcessesRules.jar** in this folder.

10. Switch to the **Process Development** perspective.

11. Open the existing process model **NotifyCustomer** as contained in your **CorporateProcesses** process project and perform the following modifications:

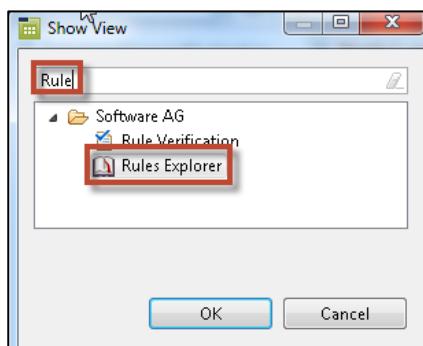
- You will need to resize the Mailing swimlane on the right side. To do this click on the internal pool **Mailing System**, and drag the pool to the right. This will also make the Mailing swimlane wider.
- Remove both incoming transitions of Service Task Activity **Send Email**.
- Insert two Service Task Activities of type IS Service named **Map To Shipment** and **Insert Shipment Type**, and a Rule Task Activity named **Investigate Shipment Destination** on the left of **Send Email**. Adjust step images and add transitions to correspond with the following image:



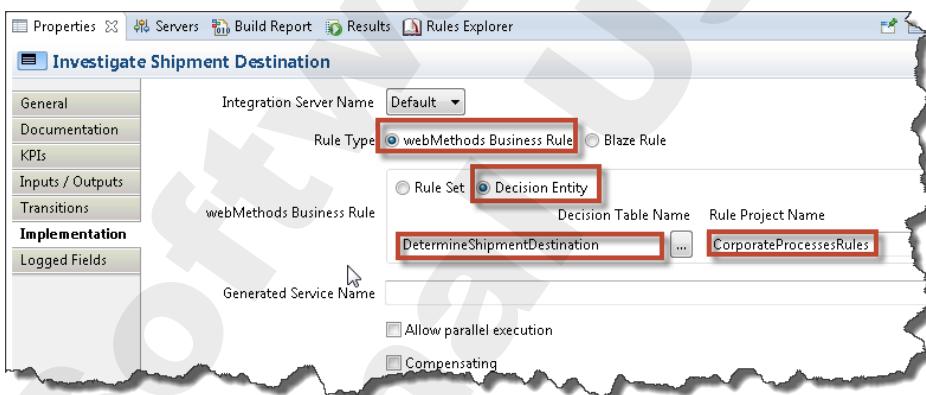
- Use drag and drop from the Package Navigator view to assign **bpmDevSupport.maps:OrderResponseToShipment** as the implementing IS service of step **Map To Shipment**. Ensure that the Join Type at the Map To Shipment step is of type **Unsynchronized Or**. Also check that the step's Inputs/Outputs have been set accordingly.

- e) Configure the properties of the Rule Task Activity **Investigate Shipment Destination** like this:

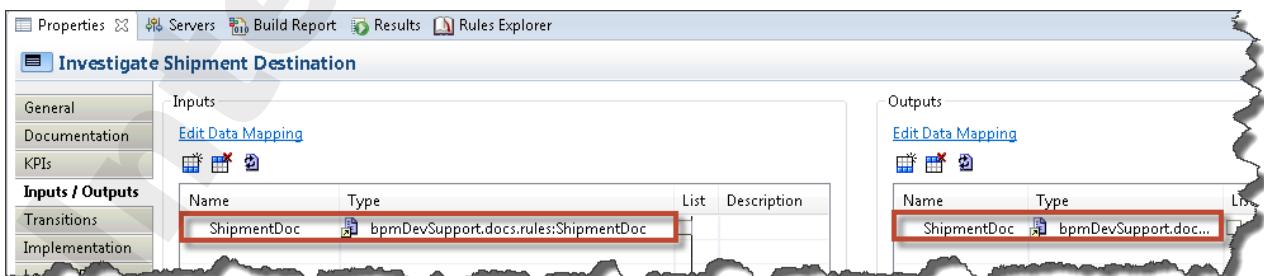
- Open the **Rules Explorer** view in the Process Development perspective. To do so, navigate to **Window > Show View > Other...**, type **Rule** as filter value, and select the **Rules Explorer** from here.



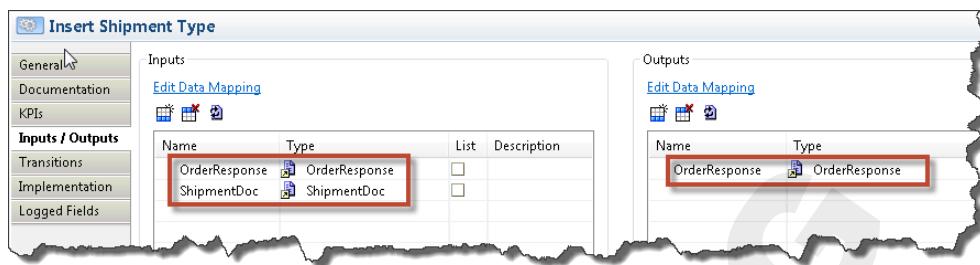
- To configure the **Investigate Shipment Destination** Rules Task Activity, drag the existing Decision Table **DetermineShipmentDestination** from the **Rules Explorer** view.
- In the Properties view of step **Investigate Shipment Destination**, open the Implementation tab to double-check the settings: Rule Type should be **webMethods Business Rules**, Business Rule to be invoked is **Decision Entity DetermineShipmentDestination** contained in your Rule project **CorporateProcessesRules**.



- Ensure the inputs and outputs of your Rule Task Activity contain **ShipmentDoc** of type **bpmDevSupport.docs.rules:ShipmentDoc**:



- f) Use drag and drop from the Package Navigator view to assign the IS service **bpmDevSupport.utils:insertShipmentType** to the step **Insert Shipment Type**. Ensure the input of the step contains **OrderResponse** and **ShipmentDoc**, and the output contains **OrderResponse**:



12. Save, build and upload your **NotifyCustomer** process.

13. Debug your Notify Customer process:

- Switch to the **Process Debug** perspective.
- Reuse your existing Debug Configuration **NotifyCustomerDebugConfiguration** to start debugging. To overwrite the default input, load the file **<workshop_dir>\Exercise20a\Resources\Ex20a_DebugInput1.txt**. Note the provided Global Country Code is **001**.
- In the Trace view, step through the process until step **Investigate Shipment Destination** has been executed. Highlight the step **Investigate Shipment Destination** in the Trace view and use the Pipeline Data view to ensure the step data of **Insert Shipment Type** contains the expected rule result:

Field	Value
OrderResponse	
ShipmentDoc	
Country	001
NumArticles	23
ShipmentType	-local-
ProcessData	
_PRT_TDE_ANALYTICS_ENABLED_	false
_PRT_TDE_LOG_STEP_DATA	true

- Click Run/Resume to complete your process in Debugger.

14. Open the Integration Server's **server.log** file by using an editor or the IS Administration console. If using an editor the **server.log** file can be found in the folder **C:\SoftwareAG\IntegrationServer\logs**. You should see an enhanced message like "**** The customer was notified that the -local- order has..." written by the Send Email step:

```
[3931]2014-01-27 13:54:18 MEZ [BPM.0102.02021] 5f4c6630-8751-11e3-a1a6-f89ef75a5a63:1, MID=CorporateProcesses/NotifyCustomer, MVer=1: process completed
[3930]2014-01-27 13:54:18 MEZ [ISP.0090.0003C] **** The customer was notified that the -local- order has been Approved on 2011-08-31. ****
[3929]2014-01-27 13:48:51 MEZ [BPM.0102.01961] 5f4c6630-8751-11e3-a1a6-f89ef75a5a63:1, MID=CorporateProcesses/NotifyCustomer, MVer=1: process started
```

15. Test your entire **HandleNewOrder** process.

Note: Remember that **HandleNewOrder** invokes **NotifyCustomer** as twice, once as a BPMN Callable Process, second as a webMethods Referenced Process.

Test both cases by double-clicking the provided HTML forms:

- <workshop_dir>\Exercise20a\Resources\Ex20a_Submit_DE_ValidOrder.html
- <workshop_dir>\Exercise20a\Resources\Ex20a_Submit_US_InvalidOrder.html

In either case, click the **Submit** button to start the process. If asked for authentication use **Administrator/manage**.

16. Use a browser tab to login to My webMethods as **Administrator/manage**. Navigate to the **Applications -> Monitoring -> Business -> Process Instances** page. Ensure that the first process instance completed successfully.

Because of invalid data, the second process instance should wait for a User Task first.

Navigate to the **Applications -> Monitoring -> Business -> Tasks -> Task List Management** page. Select and open the User Task instance and **Abort** the User Task instance. This should complete the process also.

17. Inspect the IS Server log to check that the first order is flagged as an accepted **-remote-** order. The second order should be flagged as a rejected **-local-** order in the server.log file.

```
[4212] 2014-01-27 14:26:10 MEZ [BPM.0102.0202] 89829320-8756-11e3-b661-a41eb04bbeaa:1, MID=CorporateProcesses/HandleNewOrder, MVer=1: process completed
[4211] 2014-01-27 14:26:10 MEZ [BPM.0102.0202] 95c21a70-8756-11e3-b6c2-a95ce9712b1c:1, MID=CorporateProcesses/NotifyCustomer, MVer=1: process completed
[4210] 2014-01-27 14:26:10 MEZ [ISP.0090.0003C] **** The customer was notified that the -local- order has been Rejected on 01/27/2014 14:26:08. ****
[4209] 2014-01-27 14:26:10 MEZ [BPM.0102.0196] 95c21a70-8756-11e3-b6c2-a95ce9712b1c:1, MID=CorporateProcesses/NotifyCustomer, MVer=1: process started
[4208] 2014-01-27 14:25:49 MEZ [BPM.0102.0196] 89829320-8756-11e3-b661-a41eb04bbeaa:1, MID=CorporateProcesses/HandleNewOrder, MVer=1: process started
[4207] 2014-01-27 14:25:49 MEZ [ISP.0090.0003C] true
[4206] 2014-01-27 14:25:43 MEZ [BPM.0102.0202] 859b1fc0-8756-11e3-b621-aeb7a2f1c1e0:1, MID=CorporateProcesses/HandleNewOrder, MVer=1: process completed
[4205] 2014-01-27 14:25:43 MEZ [BPM.0102.0202] 85b58590-8756-11e3-b63a-da791ceb1da:1, MID=CorporateProcesses/NotifyCustomer, MVer=1: process completed
[4204] 2014-01-27 14:25:43 MEZ [ISP.0090.0003C] **** The customer was notified that the -remote- order has been Approved on 01/27/2014 14:25:43. ****
[4203] 2014-01-27 14:25:43 MEZ [BPM.0102.0196] 85b58590-8756-11e3-b63a-da791ceb1da:1, MID=CorporateProcesses/NotifyCustomer, MVer=1: process started
[4202] 2014-01-27 14:25:43 MEZ [ISP.0090.0003C] **** A new order with ID=I has been saved to the database ****
[4201] 2014-01-27 14:25:42 MEZ [BPM.0102.0196] 859b1fc0-8756-11e3-b621-aeb7a2f1c1e0:1, MID=CorporateProcesses/HandleNewOrder, MVer=1: process started
```

18. Deploy a Rule Management Console that corresponds to your webMethods Business Rules project to MWS. To do so:

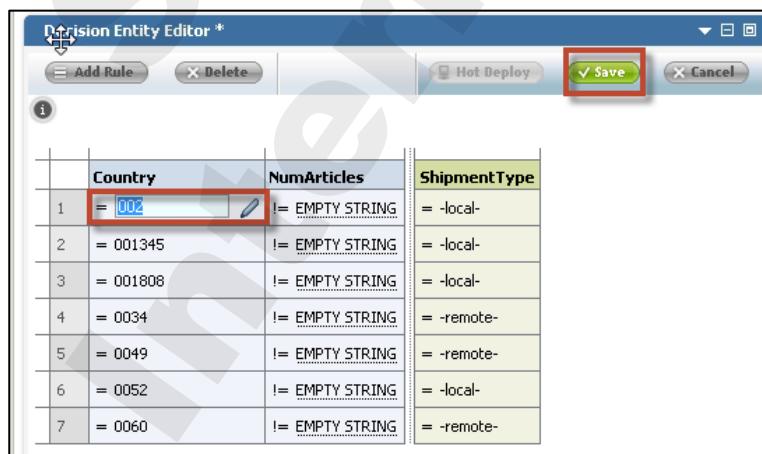
- In Designer, select **File -> Export**
- Choose **Software AG -> Rule Project to My webMethods Server repository**. Click **Next**.
- Select Rule project **CorporateProcessesRules** and My webMethods Server **MWS Content Repository**. Then click **Finish**.

19. After successful deployment, use a browser to login to My webMethods as **Administrator/manage**.

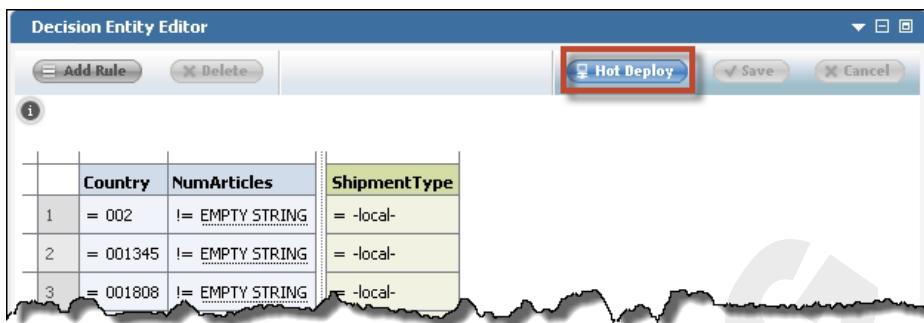
- Navigate to **Applications -> Administration -> Business -> webMethods Business Rules -> Welcome**. On the Welcome page, click **Update Entries in Navigation Pane** to add your deployed RMC to the Navigation bar.

In the Navigation bar, click the Refresh Navigation Tree icon.

- Navigate to **Applications -> Administration -> Business -> webMethods Business Rules -> CorporateProcessesRules -> Decision Tables**. On the appearing page, click **Decision Table DetermineShipmentDestination** to open it in the Decision Entity Editor. Replace the Country value 001 by 002 and click **Save** to commit your modification:



- c) Using the RMC, perform a **Hot Deploy** of your modified Business Rule project to your Integration Server:



On the appearing panel, confirm that you wish to deploy.

20. Double-check the modification done in the RMC by debugging the **NotifyCustomer** process again:

- Go back to Designer, if necessary switch to the **Process Debug** perspective.
- Ensure that your process **NotifyCustomer** is opened in Designer.
- Reuse your existing Debug Configuration **NotifyCustomerDebugConfiguration** to start debugging. To overwrite the default input, load the file `<workshop_dir>\Exercise20a\Resources\Ex20a_DebugInput2.txt`. Note the provided Global Country Code is 002.
- In the Trace view, step through the process until step **Investigate Shipment Destination** has been executed. Highlight the step **Investigate Shipment Destination** in the Trace view and use the Pipeline Data view to ensure the step data of **Insert Shipment Type** contains the expected rule result:

The screenshot shows the Eclipse IDE interface with two open views. On the left is the 'Trace' view, which lists steps for the 'NotifyCustomer' process: Step, Step ID, and Step Name. The step 'Investigate Shipment Destination' is highlighted with a red box. On the right is the 'Pipeline Data' view, which displays data for the 'Investigate Shipment Destination' step. It shows a tree structure with nodes like 'OrderResponse', 'ShipmentDoc', 'Country' (value 002), 'NumArticles' (value 23), and 'ShipmentType' (value local-). There are also other nodes like 'ProcessData', '_PRT_TDE_ANALYTIC', and '_PRT_TDE_LOG_STEI' with their respective field values.

- Click Run/Resume to complete your process in Debugger.

Check Your Understanding

- What happens when you export a webMethods Business Rules project to an Integration Server?
- Is it always necessary to deploy a Rules Management Console to MWS?

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EXERCISE 20B:

BLAZE BUSINESS RULES

Objectives

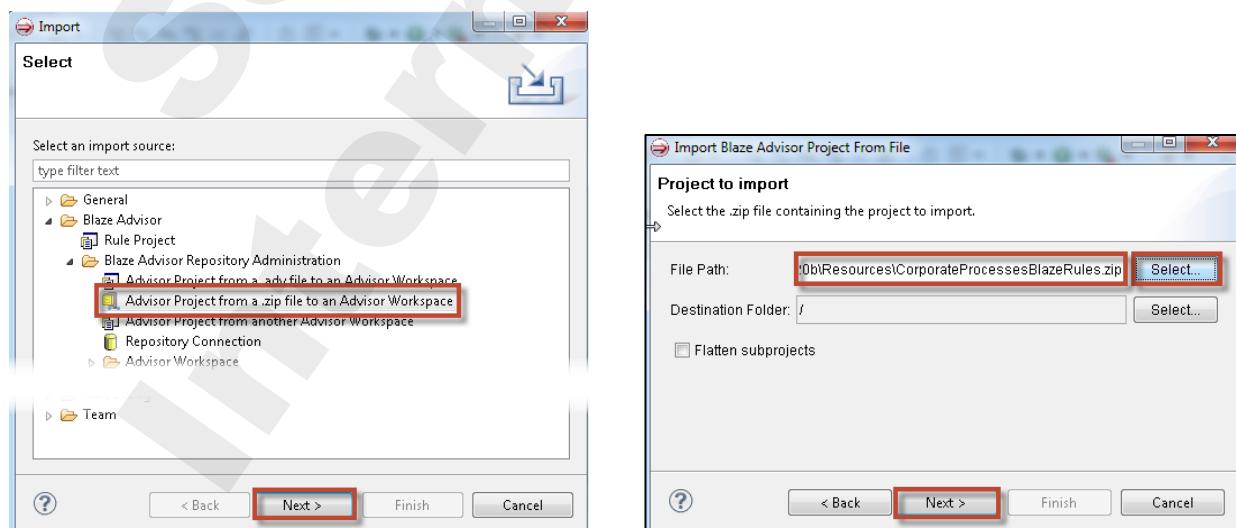
In this exercise, you will first modify a provided Blaze Business Rule project using webMethods Blaze Advisor. The contained business rules will determine and return a value of “-local-” or “-remote-”, depending on the incoming global country code. Using Blaze Advisor, the rules will be deployed to your Integration Server and stored as a Blaze Business Rule service.

To use the Blaze Business Rule service, you will enhance the existing process NotifyCustomer. The process will invoke the Blaze Business Rule service and display the returned value in the notification message.

Finally, you will deploy a Blaze Rule Maintenance Application (RMA) to your MWS to allow business users to perform instant rule modifications.

Steps

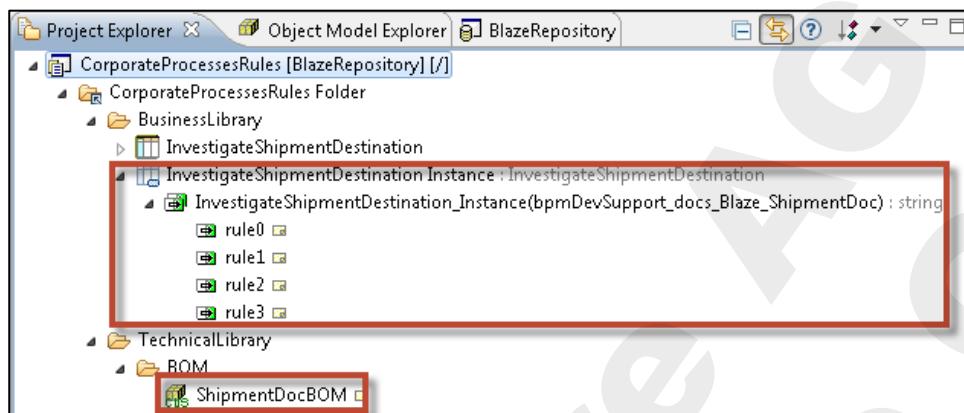
1. Ensure all Windows services mentioned in exercise 1 step 3 are up and running.
2. Start webMethods Blaze Advisor from Start -> All Programs -> Software AG -> Tools -> Software AG Designer Blaze Rules Development. Accept the default workspace location C:\Users\Administrator\workspace95blaze.
3. In webMethods Blaze Advisor, ensure you are in the **Blaze Advisor** perspective. Choose Window -> Show View -> Repository Explorer, select the existing **BlazeRepository** and hit OK to connect to the existing repository in the common WEBMDB database. If asked, connect as user **Administrator** with password **manage**.
4. Switch to the Project Explorer view. Right-click in whitespace of the Project Explorer view and choose Import. Select the import source **Blaze Advisor** -> **Blaze Advisor Repository Administration** -> **Advisor Project** from a .zip file to an Advisor Workspace and click Next. Choose **BlazeRepository** as Repository Connection and select the import file <workshop_dir>\Exercise20b\Resources\CorporateProcessesBlazeRules.zip Leave all other values unchanged, hit Next and Finish.



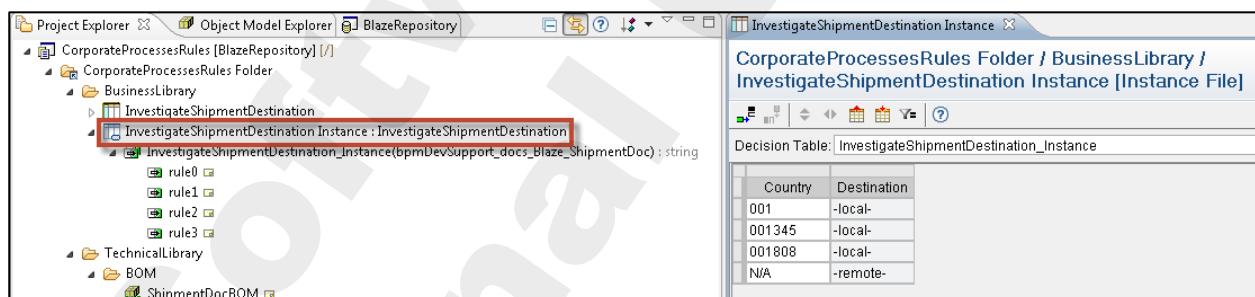
5. As a result, a Blaze Business Rule project named **CorporateProcessesRules** should be opened in the Project Explorer view. If you are asked for a username/password to connect to the Integration Server, enter **Administrator / manage**.

Note that the project already contains a document named **ShipmentDocBOM** in the **CorporateProcessesRules Folder -> TechnicalLibrary -> BOM** folder. This was imported from the IS document: **bpmDevSupport.docs.Blaze:ShipmentDoc**

Also it contains a rule instance named **InvestigateShipmentDestination Instance** located in the **CorporateProcessesRules Folder -> BusinessLibrary** folder:



6. Double-click the Decision Table instance **InvestigateShipmentDestination Instance** to open it. It is the task of the rules contained in the Decision Table instance to investigate the value of the incoming **Country** field - as contained in the input document **ShipmentDocBOM** - and to return a string value in a field called **Destination**. As Acme Corp. is located in the United States, country codes of 001 (US), 001345 (Cayman Islands), and 001808 (Hawaii) should be handled as **-local-** shipments, others should be **-remote-**.



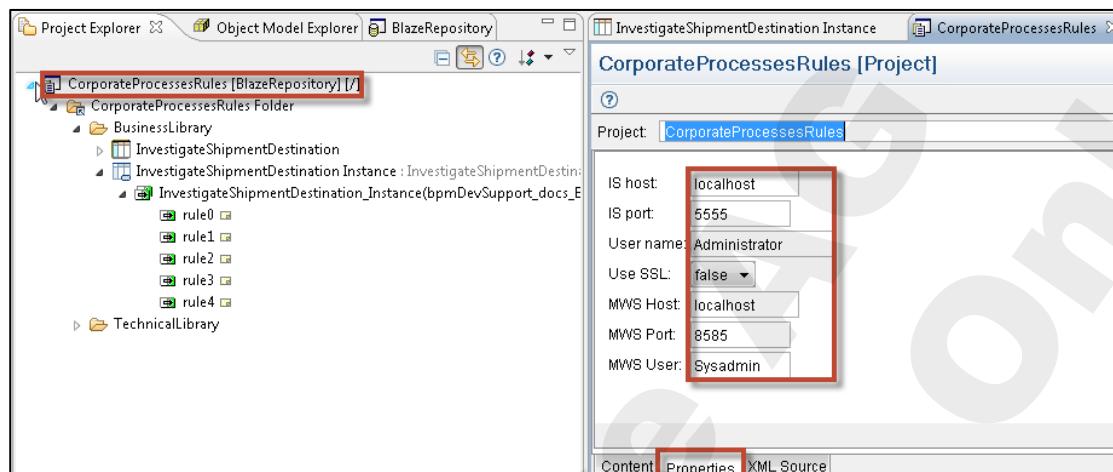
Right-click the last row of the Decision Table and insert a new row above. Add country value **0052** (Mexico) as another **-local-** country code:



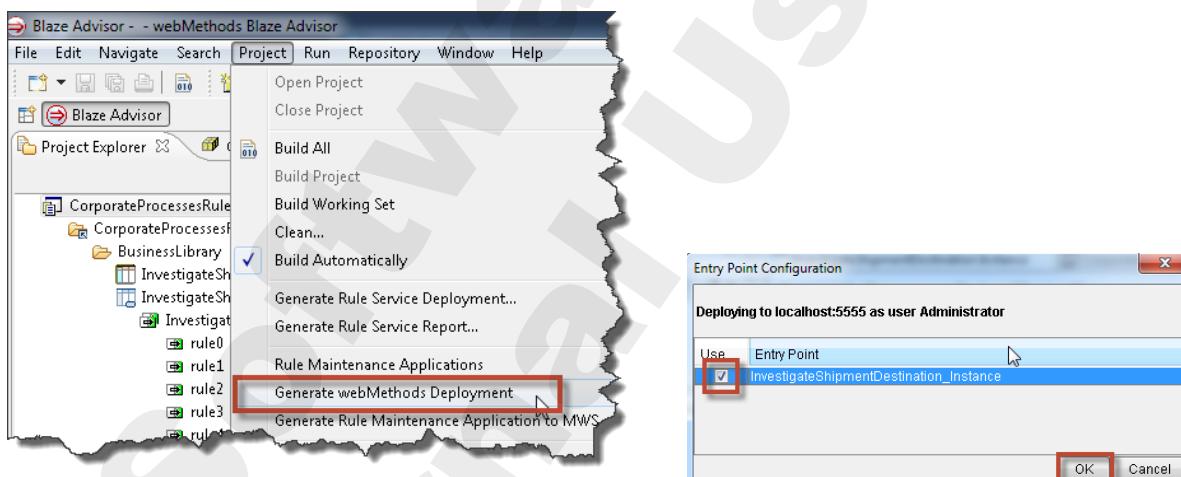
7. Save all your definitions.

8. Click to build your rules in Blaze Advisor.

9. From the Project Explorer view, right-click the **CorporateProcessesRules** project and select **Open Process Editor**. Ensure that the project connectivity parameter on the **Properties** tab fit to your webMethods environment:

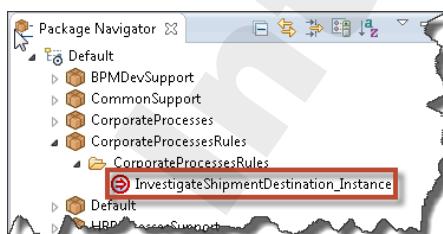


10. From the menu bar, select **Project -> Generate webMethods Deployment**. Check **InvestigateShipmentDestination_Instance** for deployment to your Integration Server and hit **OK**. If asked, specify **manage** as password.



11. If not already started, launch Software AG Designer.

12. Switch to the **Process Development** perspective and refresh the content of the Package Navigator view. After successful rule redeployment (step 10), there should be a new IS package named **CorporateProcessesRules** containing a rule service called **InvestigateShipmentDestination_Instance**:



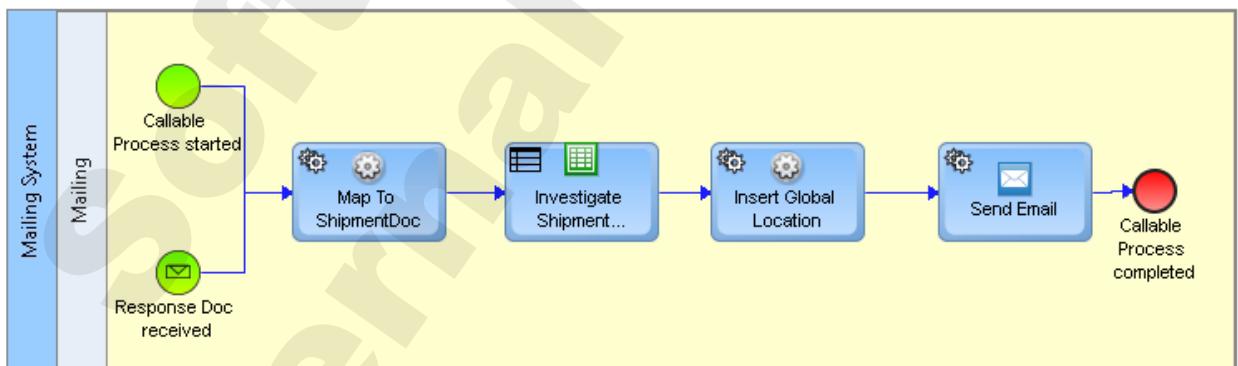
13. To test the rule service, right-click the service in the Package Navigator view and select **Run As -> Run Service** from the context menu. Specify different country codes and check the rule service results in the Service Result view.

Name	Value
ShipmentDoc Abc Country	001345
NumArticles	
ShipmentType	
_env	

Name	Value
ShipmentDoc Abc Country	001345
Abc result	-local-

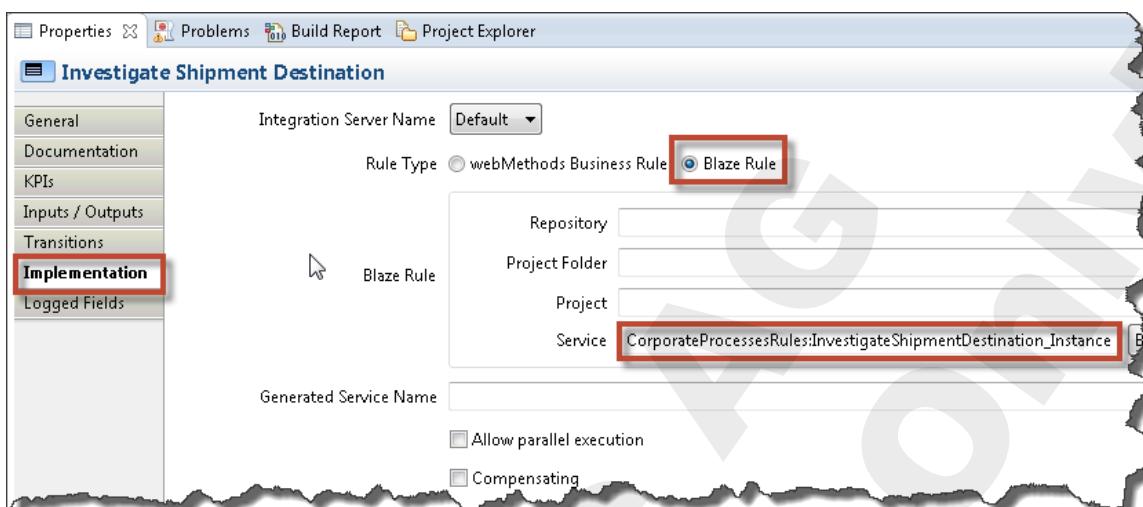
Name	Value
Country	001345

14. In Designer, switch to the **Process Development** perspective.
 15. Open the existing process model **NotifyCustomer** as contained in your **CorporateProcesses** process project and perform the following modifications:
- You will need to resize the Mailing swimlane on the right side. To do this click on the internal pool **Mailing System**, and drag the pool to the right. This will also make the Mailing swimlane wider.
 - Remove both incoming transitions of Service Task Activity **Send Email**.
 - Insert two Service Task Activities of type IS Service named **Map To ShipmentDoc** and **Insert Global Location**, and a Rule Task Activity named **Investigate Shipment Destination** on the left of Send Email. Adjust step images and add transitions to correspond with the following image:

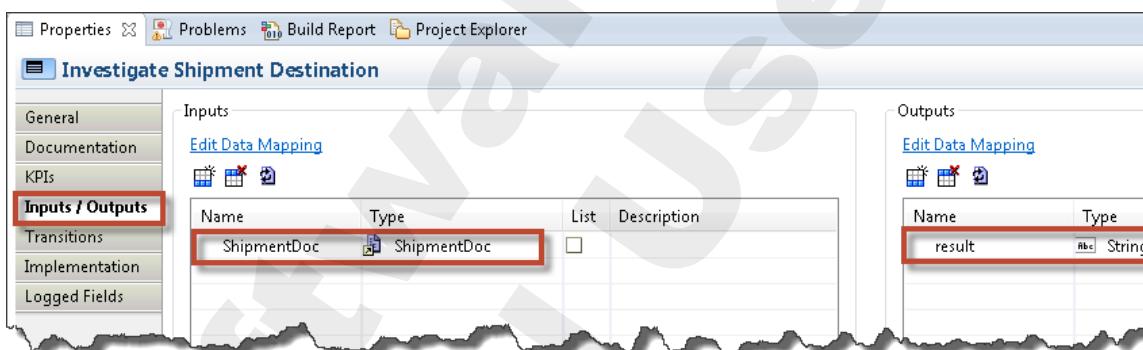


- Use drag and drop from the Package Navigator view to assign **bpmDevSupport.maps:OrderResponseToShipmentDoc** as the implementing IS service of step **Map To Shipment**. Ensure that the Join Type at the Map To ShipmentDoc step is of type **Unsynchronized Or**. Ensure the input of step contains **OrderResponse** and the output contains **ShipmentDoc**.

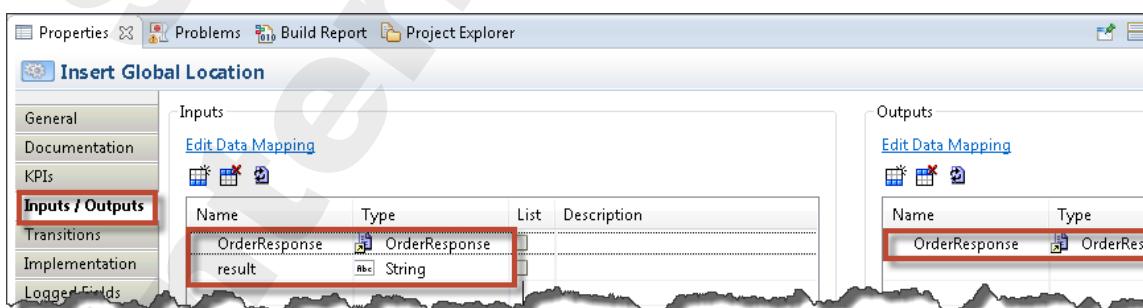
- e) To configure the Rule Task Activity, drag and drop the Blaze Business Rule Service **CorporateProcessesRules:InvestigateShipmentDestination_Instance** onto the step **Investigate Shipment Destination**. Its Implementation properties should now look like this:



Ensure the input of Rule Task Activity contains **ShipmentDoc** and the output contains **result**:



- f) Use drag and drop from the Package Navigator view to assign the IS service **bpmDevSupport.utils:insertGlobalLocation** to the step **Insert Global Location**. Ensure the input of step contains **OrderResponse** and **result** and the output contains **OrderResponse**:



16. Save, build and upload your **NotifyCustomer** process.

17. Debug your Notify Customer process:

- Switch to the **Process Debug** perspective.
- Reuse your existing Debug Configuration **NotifyCustomerDebugConfiguration** to start debugging. To overwrite the default input, load the file `<workshop_dir>\Exercise20a\Resources\Ex20b_DebugInput1.txt`. Note the provided Global Country Code is **001**.
- Use the Trace view to step through the process until step **Investigate Shipment Destination** has been executed. Highlight the step **Investigate Shipment Destination** in the Trace view and use the Pipeline Data view to ensure the step data of **Insert Shipment Type** contains the expected rule result:

Pipeline Data	
Investigate Shipment Destination	
Pipeline	Field Value
ShipmentDoc	
Country	001
NumArticles	23
OrderResponse	
ProcessData	
result	-local-

- Click Run/Resume  to complete your process in Debugger.

18. Open the Integration Server's **server.log** file by using an editor or the IS Administration console. If using an editor the **server.log** file can be found in the folder **C:\SoftwareAG\IntegrationServer\logs**. You should see an enhanced message like "**** The customer was notified that the -local- order has..." written by the Send Email step:

```
[80449]2014-01-29 10:45:30 MEZ [BPM.0102.0202I]f6ba85f0-88c9-11e3-9e85-853155563cf1: MID=CorporateProcesses/NotifyCustomer, MVer=1: process completed  
[80448]2014-01-29 10:45:15 MEZ [ISP.0090.0003C] **** The customer was notified that the -local- order has been Approved on 2011-08-31. ****  
[80447]2014-01-29 10:44:36 MEZ [BPM.0102.0196I]f6ba85f0-88c9-11e3-9e85-853155563cf1: MID=CorporateProcesses/NotifyCustomer, MVer=1: process started
```

19. Test your entire **HandleNewOrder** process.

Note: Remember that **HandleNewOrder** invokes **NotifyCustomer** as twice, once as a BPMN Callable Process, second as a webMethods Referenced Process.

Test both cases by double-clicking the provided HTML forms:

- `<workshop_dir>\Exercise20b\Resources\Ex20b_Submit_DE_ValidOrder.html`
- `<workshop_dir>\Exercise20b\Resources\Ex20b_Submit_US_InvalidOrder.html`.

In both cases click the **Submit** button to start the process. If asked for authentication use **Administrator/manage**.

20. Use a browser tab to login to My webMethods as **Administrator/manage**. Navigate to the **Applications -> Monitoring -> Business -> Process Instances** page. Ensure that the first process instance completed successfully.

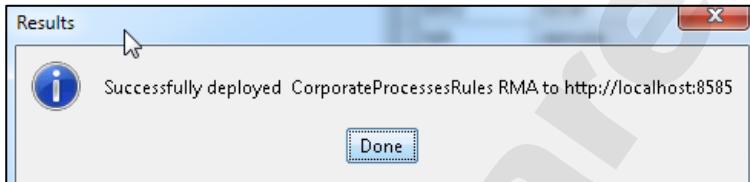
Because of invalid data, the second process instance should wait for a User Task first.

Navigate to the **Applications -> Monitoring -> Business -> Tasks -> Task List Management** page. Select and open the User Task instance and **Abort** the User Task instance. This should complete the process also.

21. Inspect the IS Server log to check that the first order is flagged as an accepted -remote- order. The second order should be flagged as a rejected -local- order in the server.log file.

```
[80463]2014-01-29 10:56:41 MEZ [BPM.0102.02021] 5b216260-88cb-11e3-a0ce-8d49a58e1c5e:1, MID=CorporateProcesses/HandleNewOrder, MVer=1: process complete
[80462]2014-01-29 10:56:41 MEZ [BPM.0102.02021] a7462ea0-88cb-11e3-a149-e1b9f51ec247:1, MID=CorporateProcesses/NotifyCustomer, MVer=1: process completed
[80461]2014-01-29 10:56:41 MEZ [ISP.0090.0003C] **** The customer was notified that the -local- order has been Rejected on 01/29/2014 10:56:40. ****
[80460]2014-01-29 10:56:41 MEZ [BPM.0102.01961] a7462ea0-88cb-11e3-a149-e1b9f51ec247:1, MID=CorporateProcesses/NotifyCustomer, MVer=1: process started
[80459]2014-01-29 10:56:02 MEZ [CommonLib.MWS.0002I] XTypeID 0 not found
[80458]2014-01-29 10:54:34 MEZ [BPM.0102.01961] 5b216260-88cb-11e3-a0ce-8d49a58e1c5e:1, MID=CorporateProcesses/HandleNewOrder, MVer=1: process started
[80457]2014-01-29 10:54:33 MEZ [ISP.0090.0003C] true
[80456]2014-01-29 10:54:30 MEZ [BPM.0102.02021] 57547be0-88cb-11e3-a048-f69fec71f885:1, MID=CorporateProcesses/HandleNewOrder, MVer=1: process completed
[80455]2014-01-29 10:54:30 MEZ [BPM.0102.02021] 58fd22d0-88cb-11e3-a0ad-d745ed294441:1, MID=CorporateProcesses/NotifyCustomer, MVer=1: process completed
[80454]2014-01-29 10:54:30 MEZ [ISP.0090.0003C] **** The customer was notified that the -remote- order has been Approved on 01/29/2014 10:54:30. ****
[80453]2014-01-29 10:54:30 MEZ [BPM.0102.01961] 5b216260-88cb-11e3-a0ad-d745ed294441:1, MID=CorporateProcesses/NotifyCustomer, MVer=1: process started
[80452]2014-01-29 10:54:30 MEZ [ISP.0090.0003C] **** A new order with ID=1 has been saved to the database ****
[80451]2014-01-29 10:54:27 MEZ [BPM.0102.01961] 57547be0-88cb-11e3-a048-f69fec71f885:1, MID=CorporateProcesses/HandleNewOrder, MVer=1: process started
```

22. Switch back to the Blaze Advisor tool. From the menu bar, select Project -> Generate Rules Maintenance Application to MWS. If asked for a Sysadmin password, specify manage. Note: Generation might take a while. Finally you will see a confirmation pop-up.

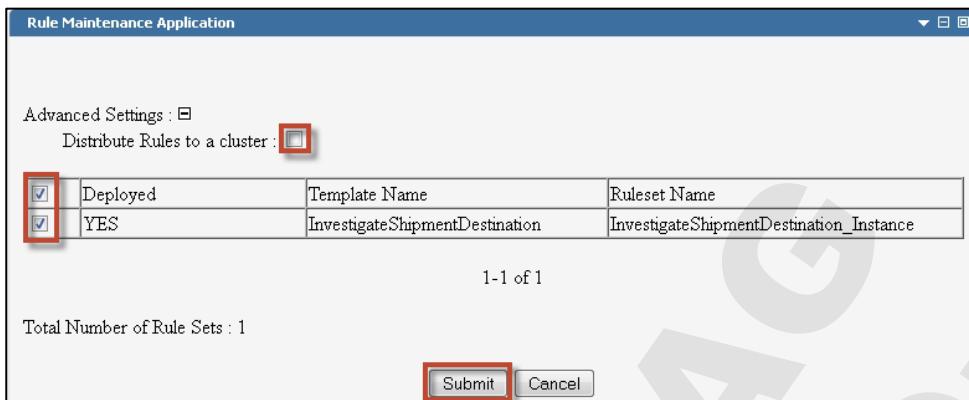


23. After successful deployment, use a browser tab within Firefox or Internet Explorer to login to My webMethods as Administrator/manage:

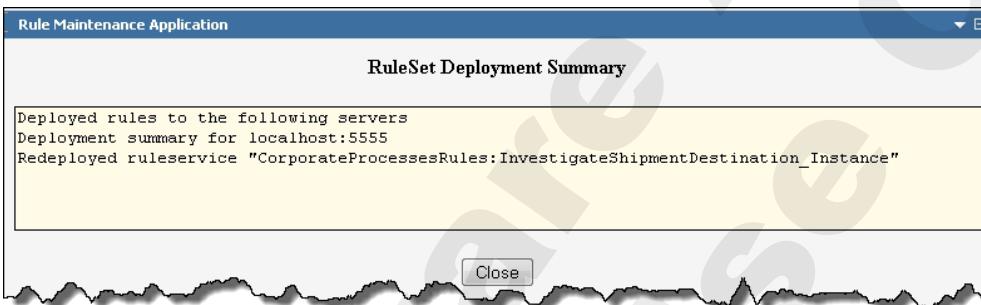
- Navigate to Applications -> Administration -> Business -> Blaze Rules. Select the project name **CorporateProcessesRules** (it may take a while the first time you do this). Drill into: **CorporateProcessesRules Folder** -> **BusinessLibrary** -> **InvestigateShipmentDestination Instance**.
- In the tool bar of the Rule Maintenance Application portlet, select the Edit icon to allow modifications of your Decision Table instance. Replace the Country value 001 by 002 and click the Save icon to commit your modification:

A	B
Country	Destination
1 002	-local-
2 001345	-local-
3 001808	-local-
4 0052	-local-
5 N/A	-remote-

- c) In the upper tool bar of the Rule Maintenance Application portlet, click the icon to your modified Decision Table to your IS. Check all items, uncheck the box beside Distribute Rules to a cluster and hit Submit.



You should get a confirmation like this:



24. In Designer, double-check the modification done in the RMA by running the Blaze Business Rule Service again:
- If necessary, switch to the **Service Development** perspective.
 - Refresh the content of Package Navigator view.
 - In the Package Navigator view, right-click the rule service **CorporateProcessesRules:InvestigateShipmentDestination_Instance** and select **Run As -> Run Service** from the context menu.
 - Specify **002** as Country value.
 - Check the Blaze Business Rule Service result in the Service Result view.

The screenshot shows the Blaze Business Rule Service interface. On the left, the 'NotifyCustomer' table is displayed with several steps listed:

Step	Step ID	Ste...
Response Doc received	S18	1
Map To Shipment	S26	1
Investigate Shipment Destination	S28	1

On the right, the 'Pipeline Data' table shows the following data:

Pipeline	Field Value
OrderResponse	
ShipmentDoc	
ABC_Country	002
ABC_NumArticles	23
ABC_ShipmentType	Local
ProcessData	
ABC_PRT_TDE_ANALYTIC	false
TF_PRT_TDE_LOG_STEI	true

Check Your Understanding

1. What happens when you perform a webMethods Deployment from Blaze Advisor?
2. Is it always necessary to deploy a Rules Maintenance Application to MWS?

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EXERCISE 21:

STARTING A PROCESS FROM A CAF PORTLET

Objectives

In this exercise, you will use a provided CAF portlet user interface that will allow a customer to create an order and send it to the **HandleNewOrder** process.

The portlet UI contains a form that invokes an existing IS service as a Web service. The invoked service converts the input data into an IS document and publishes it to start a new process instance. Moreover, input data on the UI are checked by several Validators.

You will enhance the portlet UI to invoke another Web service to initialize the contents of a dropdown control. All necessary Web services are already provided in your IS environment.

Steps

1. Ensure all Windows services mentioned in exercise 1 step 3 are up and running.
2. Launch Software AG Designer and ensure you are in **UI Development** perspective.
3. Switch to the Solutions view. Import a provided CAF project containing the portlet:
 - a) Select **File -> Import**
 - b) Choose **Software AG > Existing CAF Projects into Workspace**. Click **Next**.
 - c) Click **Select archive file** and browse for the provided zip file:
`<workshop_dir>\Exercise21\Resources\CustomerUIBasic.zip`
 - d) Select the zip file and click **Open**.
 - e) Click **Finish**.

As a result you should get a new project named **CustomerUI** containing a portlet called **CustomerOrderInformation**.

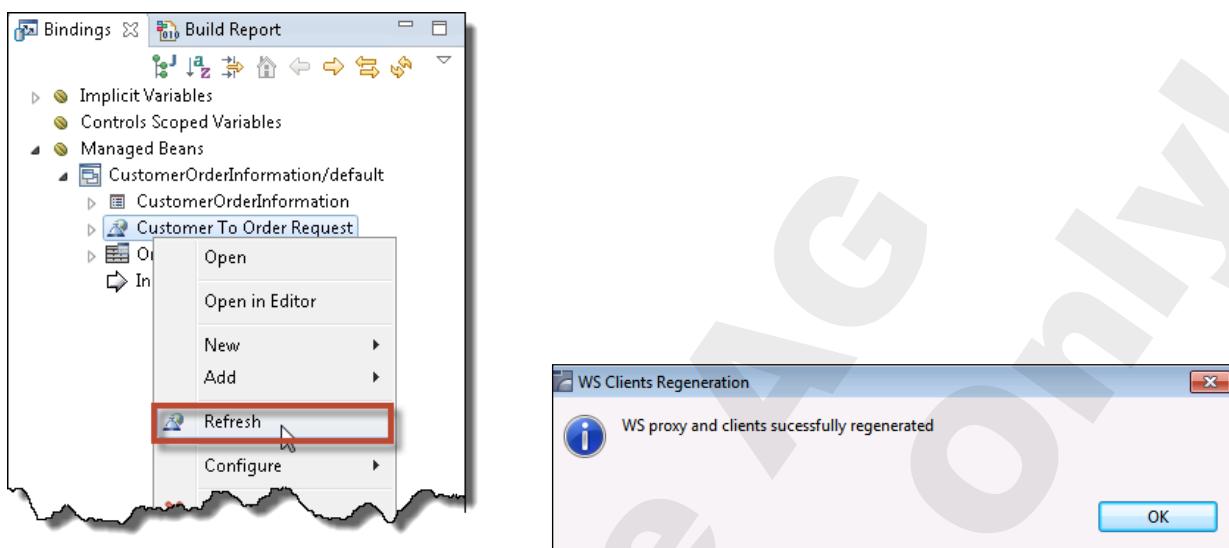
4. Open the Package Navigator view. If asked for authentication, provide **Administrator/manage**. Open the folder **bpmDevSupport\webservices** of the **BPMDevSupport** package.
5. Use the Solutions view and navigate to **User Interfaces -> CustomerUI -> CustomerOrderInformation -> Default**. Open the **Default** view of the imported CAF portlet.

Note:
The view was previously created by dragging and dropping the Web service descriptor **bpmDevSupport.webservices:CustomerToOrderRequestWS** onto the design canvas. By selecting the Web service operation **CustomerToOrderRequest**, all fields related to the Web service operation signature were provided on the form using default controls.

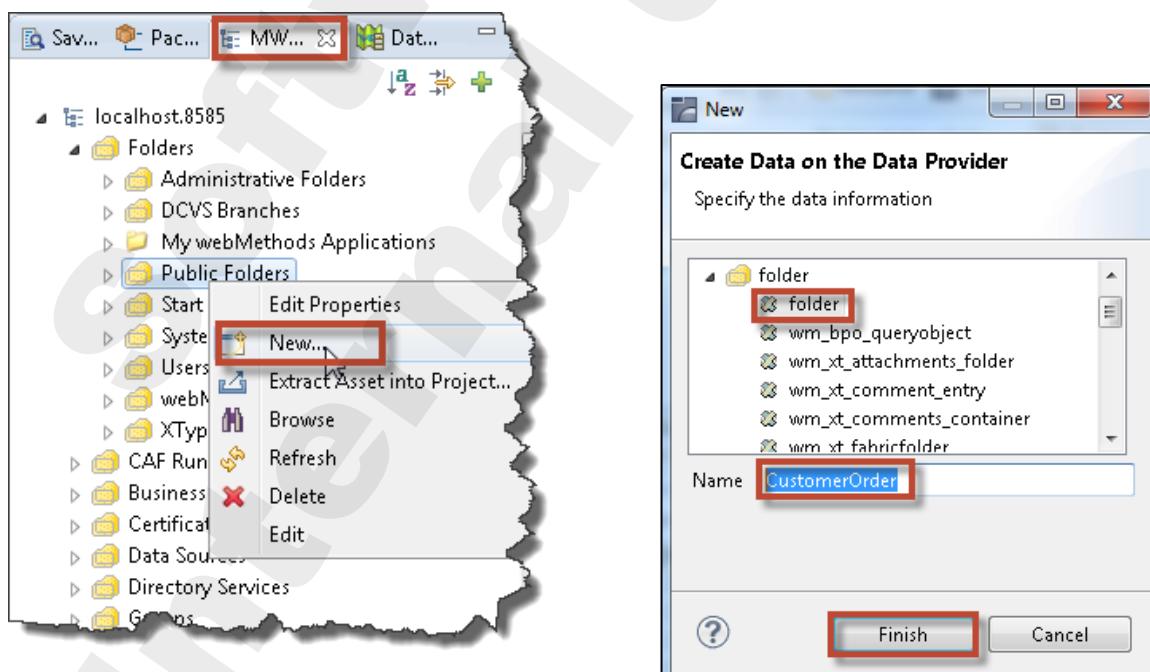
In addition, a Web service connector named **Customer To Order Request** was automatically added to the Bindings view of the portlet.

Note that some of the default controls have been doctored, e.g. **Delivery Methods** has been changed into a Radio Button group. Moreover, the provided CAF portlet UI already contains Validators for the input fields **ZIP** (Regular Expression Validator), **Email** (Email Validator) and **Credit Card Number** (Credit Card Validator).

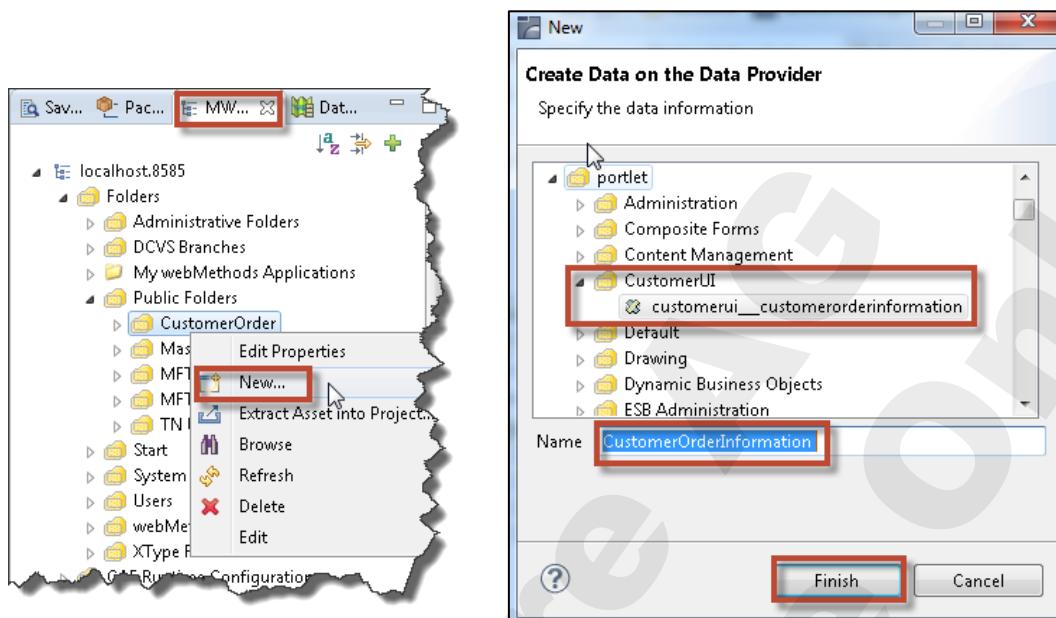
6. In the Bindings view, right-click the existing Web service connector named **Customer To Order Request**. Select **Refresh** from the context menu to regenerate the Web service proxy and client for your environment.



7. Use the Servers view to add the **CustomerUI** project to the My webMethods Server. Ensure that it is synchronized with the server. If asked for authentication, provide **Sysadmin/manage**.
8. To enable the portlet to run as an MWS portlet application, you have to add it to a MWS Public Folder:
- Use the MWS Admin view and create a new folder below **Public Folders** named **CustomerOrder**. If asked for authentication, provide **Sysadmin/manage**.



- b) In the MWS Admin view, add a new portlet named **CustomerOrderInformation** to your **CustomerOrder** Public Folder. The portlet is associated with the existing **customerui_customerorderinformation** portlet.



9. Test your portlet UI from Designer:

- Click the dropdown next to the green run icon from the tool bar of the design canvas (NOT in Designer's menu bar). Select **My webMethods Server (Remote)** at **localhost** from the dropdown choices. Now click on the green run button to run the portlet on the MWS. Use **Sysadmin/manage** when prompted for authentication.
- In the portlet UI, enter data in all of the fields. Enter at least one product item by clicking the Append Row button.
Because of the existing Credit Card Validator, you have to provide a valid credit card number. For testing you can use one of the following valid sample credit card numbers, or just use one of yours ☺:
 - Master Card: 5105105105105100
 - VISA: 4111111111111111
 - American Express: 378282246310005
 - Discover: 6011111111111117

c) Finally click the Submit Order button:

Home Administration My Profile My Folders Public Folders Directory Help

Hello, Sys Admin! Logout

Public Folders > CustomerOrder > CustomerOrderInformation

CUSTOMER TO ORDER REQUEST

INPUT PARAMETERS

CUSTOMER TO ORDER REQUEST INPUT

CUSTOMER

CUSTOMER ORDER

CUSTOMER INFO

Name: Bill Smith
Address: 27 Harbour Road
City: Reston
State: VA
*Zip: 12345
*Email: Bill.Smith@softwareag.com

Order Info Provider: **Append Row**

DESCRIPTION	SKU	QUANTITY
Hammer	H1	2
Nail	N5	1200

1 - 2 of 2

BILLING INFO

Credit Card Type: Visa
Credit Card Num: 123412341234
Credit Card Exp Date: 3/5/2010
Delivery Method: Overnight Express Standard

com.webmethods.caf.is.wsclient.bpmdevsupport.webservices.customerorderrequestws.CustomerToOrderRequestOutput@4d12c **Submit Order**

10. In a browser tab, login to My webMethods using **Administrator/manage**. Navigate to the **Applications -> Monitoring -> Business -> Process Instances** page. Search for new process instances. Ensure a new process instance of type **HandleNewOrder** has been started and completed successfully.

Process Instances

Search

Keyword Advanced Saved Options

Keywords: **Search**

Process Instances

Resubmit Closest Resubmit Earliest Export Table...

0 selected 1 - 9 of 9

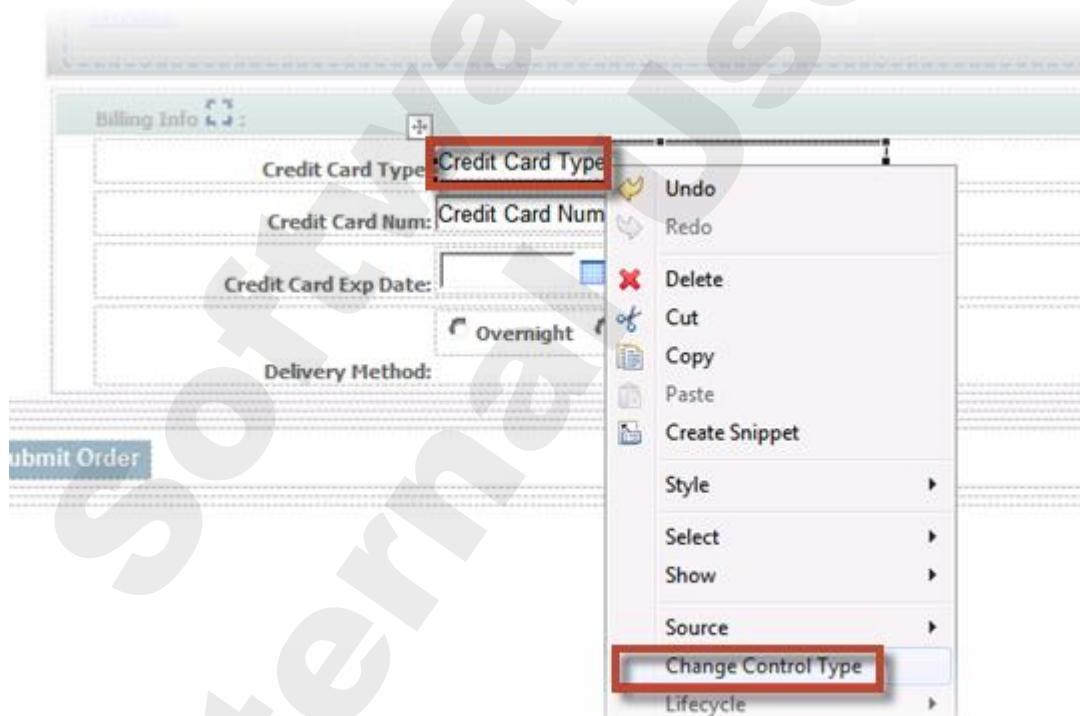
Last Updated	Start Date / Time	Process Name	Version	Process Instance ID	Status	Duration	Detail
1/29/2014 12:57:11.253 PM	1/29/2014 12:57:10.530 PM	HandleNewOrder 1		7be9a820-88dc-11e3-aaf8-df4f989635db	Completed	0d 00:00:00.723	P
1/29/2014 12:57:11.213 PM	1/29/2014 12:57:10.873 PM	NotifyCustomer 1		7c2b1df0-88dc-11e3-ab16-d1290bd58de8	Completed	0d 00:00:00.340	P

11. Open the IS server.log file. The server.log file should contain your submitted order data:

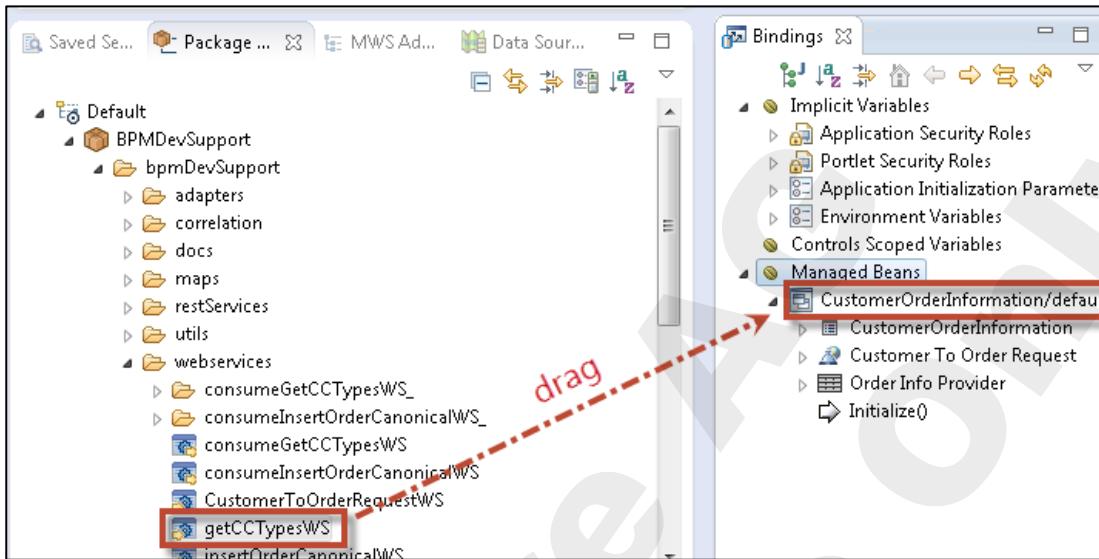
```
<PurchaseOrderRequest>
  <PurchaseOrder>
    <deliverTo>
      <PhysicalAddress>
        <cityName>
          <FreeFormText>Reston, VA</FreeFormText>
        </cityName>
        <addressLine1>
          <FreeFormText>27 Harbour Road</FreeFormText>
        </addressLine1>
        <addressLine2>
          <FreeFormText>Reston, VA</FreeFormText>
        </addressLine2>
        <addressLine3>
          <FreeFormText>Reston, VA</FreeFormText>
        </addressLine3>
        <NationalPostalCode>12345</NationalPostalCode>
        <regionName>
          <FreeFormText>VA</FreeFormText>
        </regionName>
      </PhysicalAddress>
    </deliverTo>
  </PurchaseOrder>
</PurchaseOrderRequest>
```

12. In Designer, customize the Text Input field **Credit Card Type** to become a dropdown with choices automatically filled by a Web service invocation:

- a) Open **CustomerOrderInformation/default.view**, right-click Text Input **Credit Card Type** contained in the Property Group **Billing Info**. Change its control type to **Input/Dropdown**:



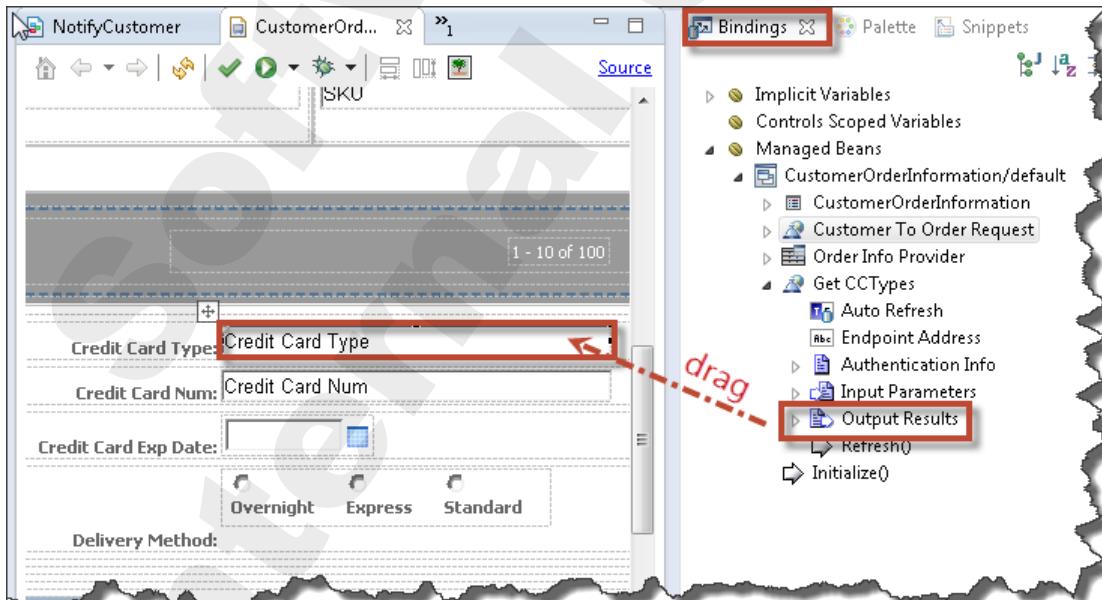
- b) Locate the Web Service Descriptor `bpmDevSupport.webservices:getCCTypesWS` in the Package Navigator view. Drag and drop the Web Service Descriptor `getCCTypesWS` from the Package Navigator view onto the `CustomerOrderInformation/default` Managed Bean in the portlets Bindings view:



In the appearing wizard, click the **Next** button, select the Web service operation `IgetCCTypesWS_PortType/getCCTypes(getCCTypes)`, and click **Finish**.

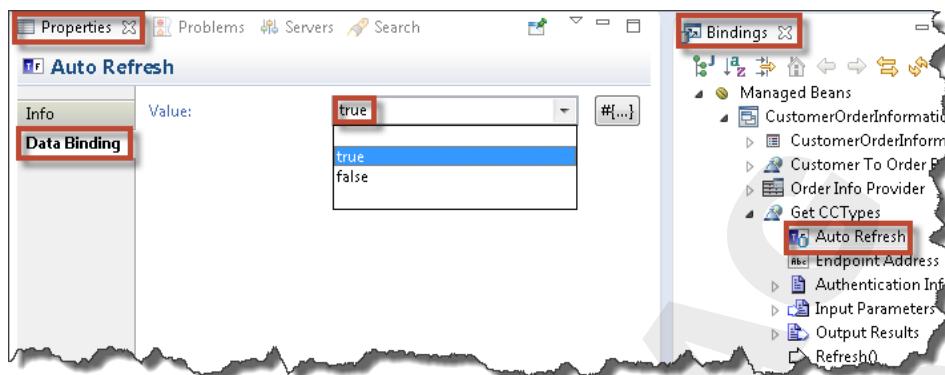
Note: This will add another Web service connector named **GetCCTypes** to the portlets Managed Beans.

- c) From the Bindings view, drag the **Output Results** of the **GetCCTypes** Web service connector to the **Credit Card Type** dropdown control on the view `CustomerOrderInformation/default.view` in the editor pane.



This is to fill the dropdown with the outputs of the Web service.

- d) Configure the Web service to be called automatically before the view is rendered. To do so, locate the property **Auto Refresh** of the **GetCCTypes** Web service connector in the Bindings view. Double-click the property to open its properties. In its Properties view, set the **Data Binding Value** to true:



13. Save your work.

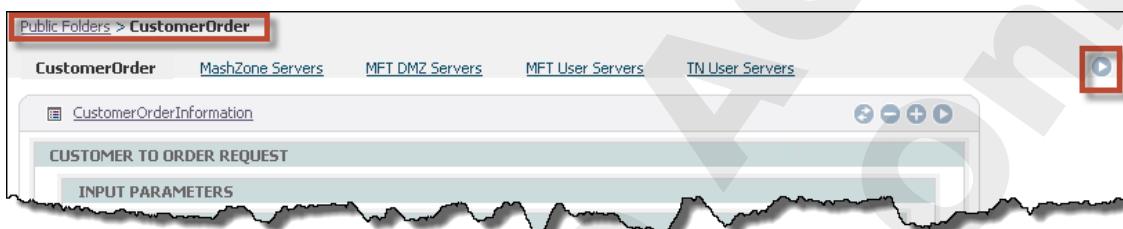
14. Using the Servers view, republish your **CustomerUI** project to My webMethods Server.

15. Re-test your portlet UI from Designer:

- Click the dropdown next to the green run icon from the tool bar of the design canvas (NOT in Designer's menu bar). Select **My webMethods Server (Remote)** at **localhost** from the dropdown choices. Now click on the green run button to run the portlet on the MWS. Use **Sysadmin/manage** when prompted for authentication.
- Notice the entries in the Credit Card Type dropdown input box. Enter some data including an invalid credit card number. Click the **Submit Order** button and confirm there is a credit card number validation error message at the top of the page and under the field:

The screenshot shows the 'CustomerOrderInformation' portlet running in the Oracle ADF Designer. The 'INPUT PARAMETERS' section contains fields for Name, Address, City, State, Zip, and Email, all filled with placeholder data. The 'BASIC INFO' section includes a dropdown for 'Credit Card Type' set to 'MasterCard', a field for 'Credit Card Num:' containing '333344445555', and a date field for 'Credit Card Exp Date' set to '3/20/2010'. A validation error message 'Validation Error: Invalid card number for these card types: AMEX VISA MasterCard Discover' is displayed in a red box below the credit card number field. At the bottom right is a 'Submit Order' button.

- c) Change the credit card number into a valid one. For testing you can use one of the valid sample numbers mentioned in step 9d. Then click **Submit Order** again.
16. Login to My webMethods using **Administrator/manage**. Navigate to the **Applications -> Monitoring -> Business -> Process Instances** page. Ensure a new process instance has been started and completed successfully.
17. *For extra credit:* Define an alias in MWS for your UI page (public folder) that allows defined MWS users to use the page to place an order:
- Use a browser tab to login to My webMethods as **Sysadmin | manage**.
 - Navigate to **Folders > Public Folders > CustomerOrder** to open the UI page.



- Click on at the right side and select **Properties**.
- In the MAINTENANCE section, click **Add...** to add a page (public folder) alias named **PlaceOrder**. Apply your change.



- Logout from My webMethods.
- Open a new browser tab. Specify the URL <http://localhost:8585/PlaceOrder>. Login as **Mary | manage** and place a new order.

Check Your Understanding

- Why did you have to publish your application in step 7 before adding the portlet in the MWS Admin view?
- What protocol was used to make the invocation that retrieved the credit card types?
- What was the purpose of setting the Auto Refresh property to true?
- If you did not republish the application in step 14, what results would you have expected?

EXERCISE 22 (OPTIONAL):

STARTING A PROCESS FROM AN E-FORM

Objectives

In this exercise, you will modify the **HandleNewOrder** process so that it can also be started by an InfoPath e-form that contains Order data:

The screenshot shows an 'Order E-form' with the following fields:

- Please provide your order data:**
- Name:** Jeff Miller
- Address:** 66 Mining Road
- City:** Cripple Creek
- State:** Colorado
- Zip:** 80813
- Email:** Jeff.Miller@goldrush

Article Name	SKU	Quantity
Scraper	SC-001	3
Dynamite	DY-001	600

Insert item

Credit Card Type: MasterCard
Credit Card Num: 1111222233334444
Credit Card Exp Date: 2013-12-31
Delivery Method: Overnight

To enable this scenario, you will configure an E-form environment using My webMethods, create a new IS document type by importing an e-form template and finally, add a new parallel Start Message Event to the process along with a new Order transformation step.

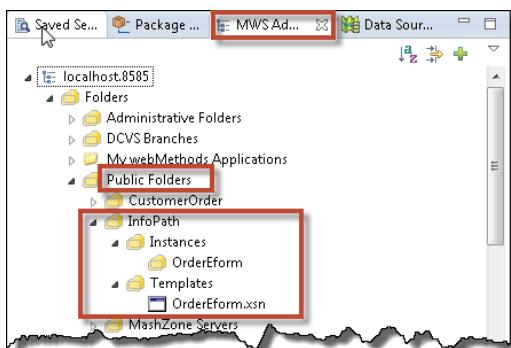
Steps

1. Ensure all Windows services mentioned in exercise 1 step 3 are up and running.
2. Start Designer and switch the **UI Development** perspective.
3. Create a Content Repository in the public folder structure of your MWS:
 - a) Import the folder structure and e-form template:
 - I. Select **File -> Import**
 - II. Choose **General > Existing Projects into Workspace**. Click **Next**.
 - III. Click **Select archive file** and browse for the provided zip file:
`<workshop_dir>\Exercise22\Resources\EformContentProject.zip`
 - IV. Select the zip file and click **Open**.
 - V. Click **Finish**.

As a result, you should see a new project named **EformContentProject** displayed in the Project Explorer view.

- b) In the Servers view, select **My webMethods Server (Remote)** and add the project **EformContentProject** to your MWS. From the Servers view, publish the project to MWS.

- c) Switch to the MWS Admin view and refresh its content. If asked for authentication, provide **Sysadmin/manage**. As a result of the step above, the following folder structure should have been added to the Public Folder in MWS:



4. Login to My webMethods as user **Administrator/manage**.
5. Navigate to **Applications -> Administration -> System Wide -> Environments -> Define Environments**. Add a new Environment with the name **OrderEformEnvironment**. Provide “Environment used to work with InfoPath e-forms” as description. Save your definition. Then click the environment name to edit/modify it like this:

- a) On the **Design Servers** tab, add the E-forms Server as associated Logical Server. To do so, click the **Add...** button and select the existing **E-forms Server v9.x.x.x**. Click **OK**.
- b) On the **Configure Servers** tab, expand the tree and select the **E-forms Configuration** link. Configure the E-forms Server with an E-forms Configuration containing the following definitions:
 - Friendly name: **localhost_10999_OrderEforms**
 - Server Host: **localhost**
 - Server Port: **10999**
 - Server Path: **mwsRepository**
 - Server User: **Administrator**
 - Server Password: **manage**
 - Server Listening Path: **/Public Folders/InfoPath/Instances/OrderEform/**
 - Server Template Path: **/Public Folders/InfoPath/Templates/**

E-forms Configuration for E-forms Server v9.0.1.0	
Friendly Name:	localhost_10999_OrderEforms
Server Host:	localhost
Server Port:	10999
Server Path:	mwsRepository
Server User:	Administrator
Server Password:	*****
Server Listening Path:	/Public Folders/InfoPath/Instances/OrderEform/
Server Template Path:	/Public Folders/InfoPath/Templates/

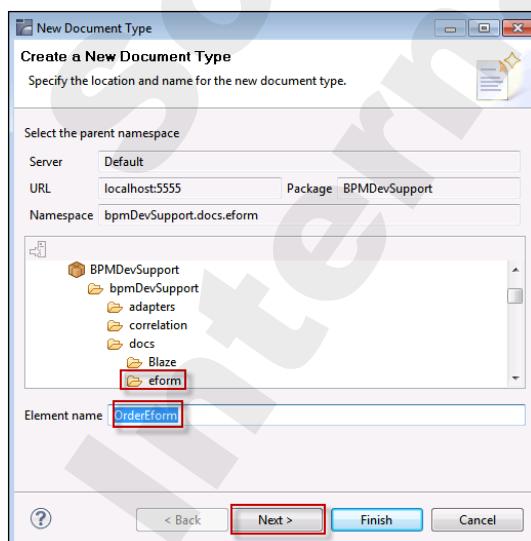
Click **Save**.

- c) On the **Define Hosts** tab, add a host to your environment with the following values:
 - Display Name: **localhost**
 - Host Name or IP Address: **localhost**
 Click **OK**.
- d) On the **Map Servers** tab, select the **Map All** button to map the logical E-forms Server to the physical host **localhost**.
- e) On the **Map Endpoints** tab, accept all the defaults (port **15006**, which is the default Process Engine Listener port running at IS:15006). Click **Save**.
- f) Select **Map DB Pools** tab and click on **Save** only.
- g) On the **Validate** tab, you should see a green checkmark with the message "Valid Configuration". Click on **Finish**.
- h) Your OrderEformEnvironment should now be in the state **CONFIGURED** and **READY TO DEPLOY**:

Define Environments				
Environments				
ENVIRONMENT NAME	CONFIGURED	READY TO DEPLOY	DEPLOYED	ACTIONS
Local	✓	✓	✓	
OrderEformEnvironment	✓	✓	○	

For the environment **OrderEformEnvironment** click  in the **ACTIONS** column to start the deployment. On the next page, choose **Deploy All**. You should see a green checkmark with the message "Successfully deployed environment".

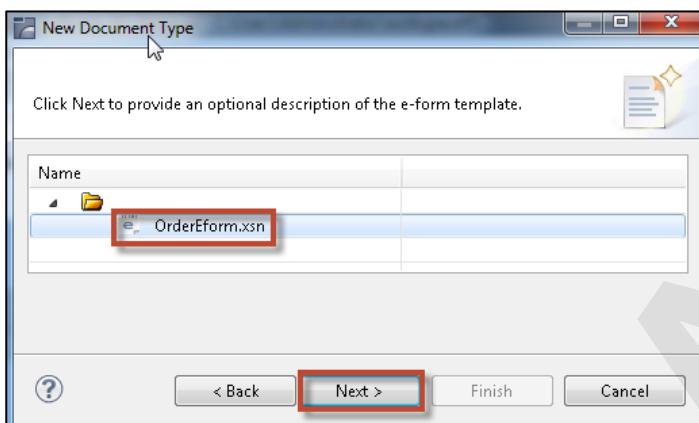
6. Create an IS document type and schema using an InfoPath e-form template. To do so:
 - a) Open Designer and switch to the Process Development perspective.
 - b) In the Package Navigator view, drill down to the existing empty folder **bpmDevSupport.docs.eform**.
 - c) Right-click on the **eform** folder and select **New** to create a new **Document Type**. Provide **OrderEform** as element name for your new document type and click **Next**:



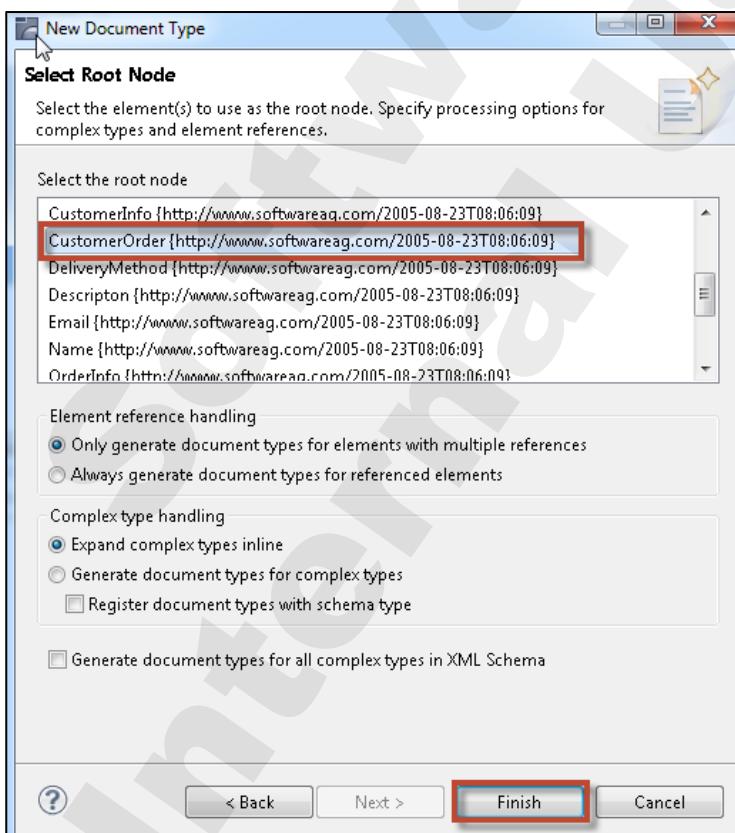
Exercise 22 (optional):

Starting a Process from an E-form

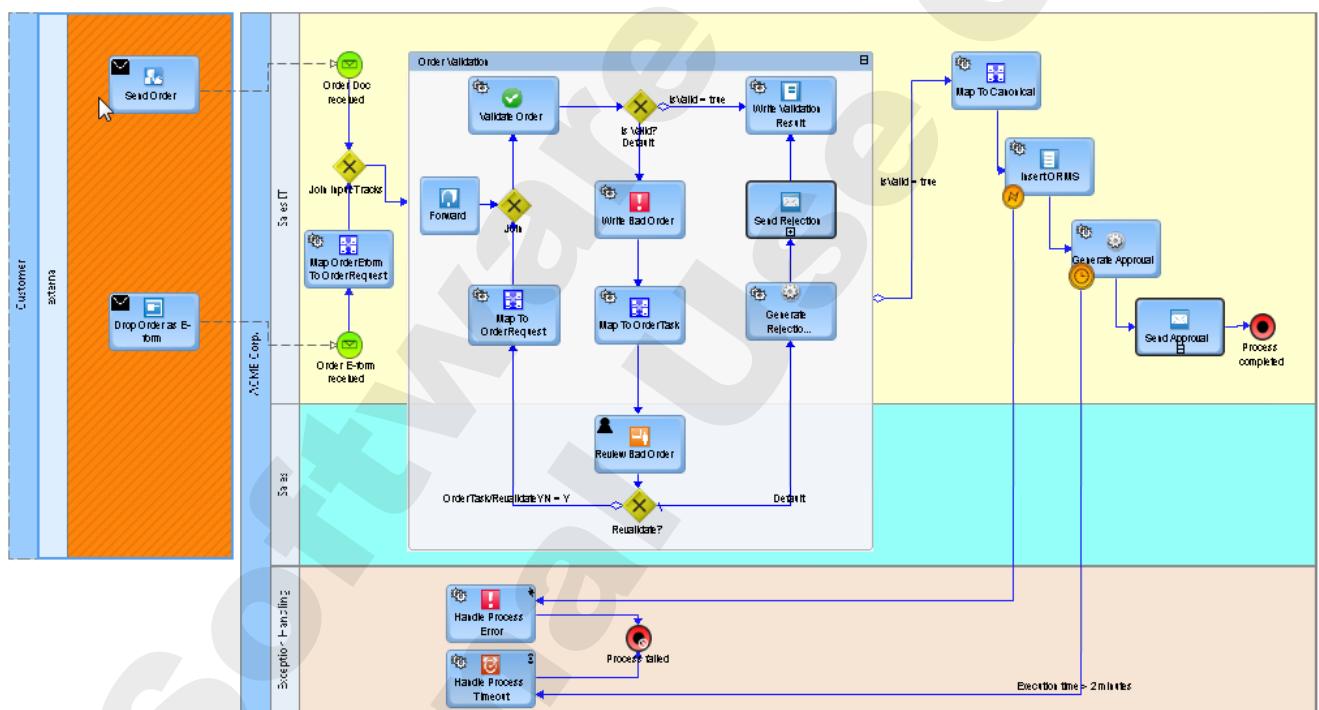
- d) On the next dialog, select **Microsoft® InfoPath® E-form Template** as template type and click **Next**. Select **From Repository** and from the drop-down list select your Content Repository **localhost_10999_OrderEforms**. Click **Next**. Now drill down to the e-form template **OrderEform.xsn**. If the e-form template isn't visible, move the column to the right. Select the e-form template row and click **Next**.



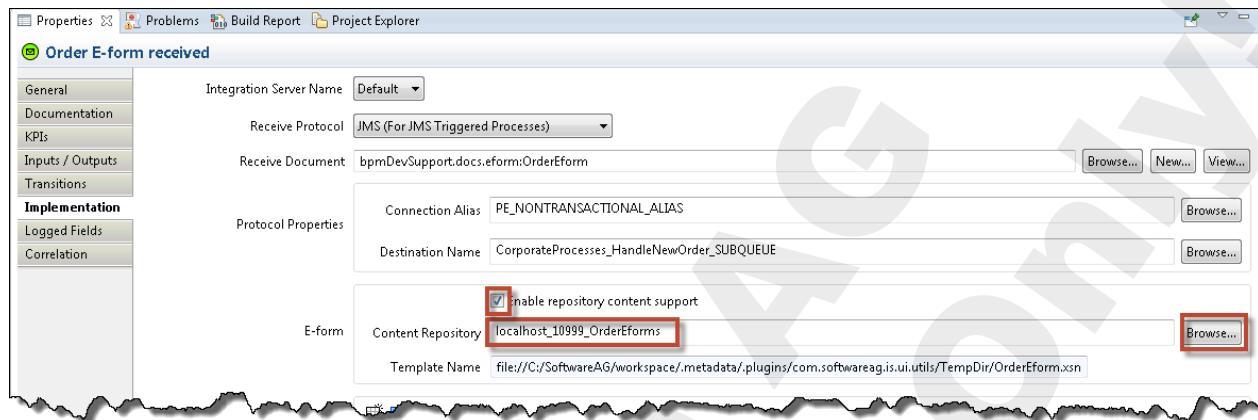
- e) On the Template Description panel skip providing an optional description and hit **Next**.
- f) On the Processing Options panel, use the default schema, select Content model compliance **None**, leave Enable MTOM streaming unchecked and Validate schema using Xerces checked. Hit **Next**.
- g) On the final panel, select **CustomerOrder** as the root node and leave all other settings unchanged. Click **Finish** and accept warnings.



7. Open your **HandleNewOrder** process model as contained in the **CorporateProcesses** project from the Solutions view. Perform the following modifications:
- Remove the existing transition from **Order Doc received** to the BPMNSubprocess **Order Validation**.
 - Enlarge the size of the external pool **Customer** at the bottom.
 - Add the following steps at the left side of the Sales IT swimlane within the internal pool **ACME Corp.:**
 - a Start Message Event named **Order E-form received**
 - a Service Task Activity named **Map OrderEform To OrderRequest**
 - an Exclusive Gateway named **Join Input Tracks**
 - Add a Send Task Activity named **Drop Order As E-form** to the **external Customer** pool in the external **Customer** pool.
 - Add transitions and adapt step images so that your process model corresponds to the following image:



8. Drag and drop the new IS document type `bpmDevSupport.docs.eform:OrderEform` onto the added Start Message Event to assign the Receive Document type and the E-form Template. Open the Start Message Event's Properties view. On the Implementation tab, ensure the **Enable repository content support** is checked and the Receive Protocol is **JMS**. Browse for your Content Repository `localhost_10999_OrderEforms` and leave the protocol-related properties unchanged.



9. Drag and drop the existing IS service `bpmDevSupport.maps:OrderEformToOrderRequest` onto the added Service Task Activity named **Map OrderEform To OrderRequest**. This is to assign the implementing IS service and to set the Inputs/Outputs.

10. Save, build and upload the **HandleNewOrder** process.

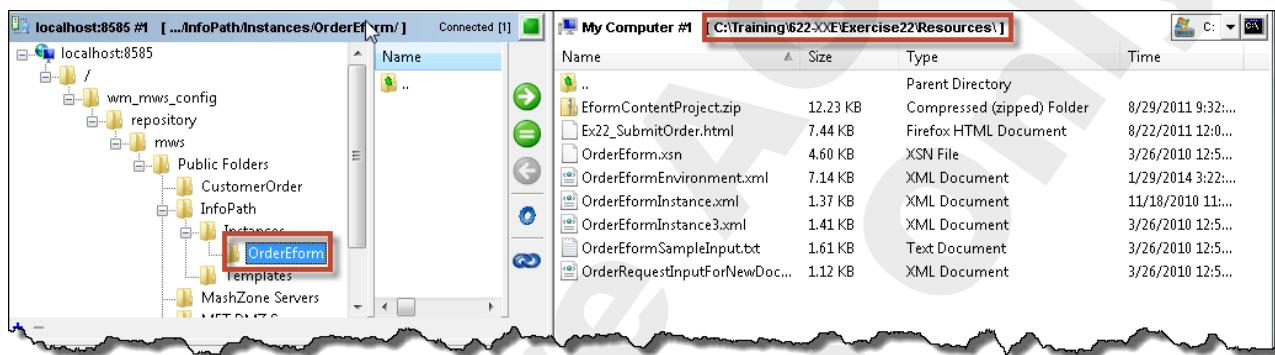
11. First, ensure that your process can be started as before:

- a) Double-click `<workshop_dir>\Exercise22\Resources\Ex22_SubmitOrder.html`. Click the Submit button. If asked for authentication use **Administrator/manage**.
 - b) As the order data is valid, a new process instance should have completed successfully without any User Task interaction.
- Login to My webMethods as **Administrator/manage** and navigate to **Applications -> Monitoring -> Business -> Process Instances** to search for the process instance. Open its Details view. Check that the Event **Order Doc received** is the first in the trail of executed steps:



12. Now ensure that your process can be started by dropping an InfoPath e-form instance into your MWS-based Content Repository:

- Launch a WebDAV client (Start-> All Programs -> Tools -> BitKinex -> BitKinex).
- In the BitKinex tool tree view, locate and double-click the pre-configured WebDAV connection **localhost:8585** to connect to your MWS Content Repository.
- Use the WebDAV explorer view on the left side to expand the **Public Folders** and navigate to **Public Folders -> InfoPath -> Instances -> OrderEform**.
Use the file explorer view on the right side to navigate to your local folder:
`<workshop_dir>\Exercise22\Resources`.

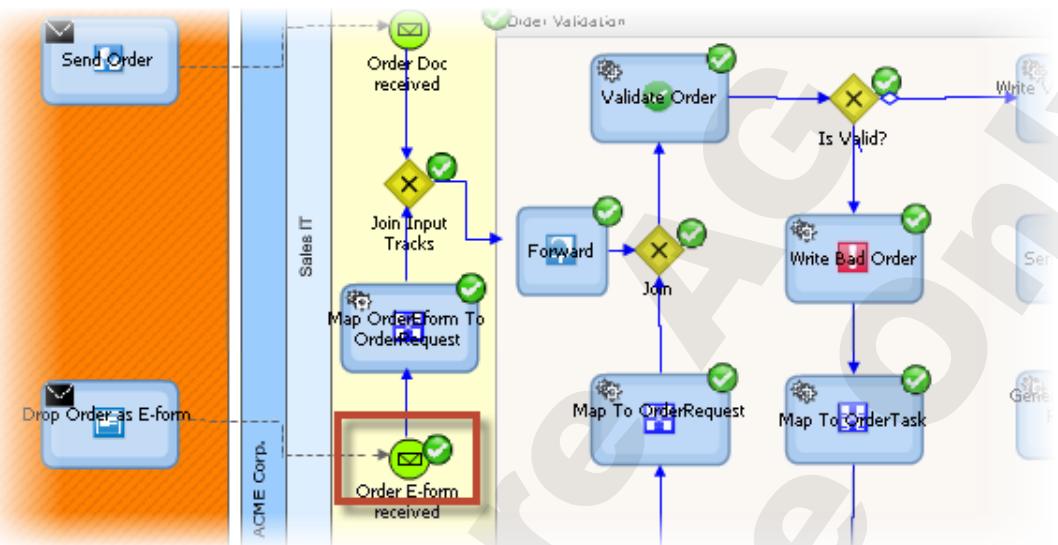


- Drag and drop the provided sample e-form instance **OrderFormInstance.xml** from the file explorer view on the right side into the (empty) **OrderEform** Content Repository folder on the left side.



Note: If you intend to repeat this action, use the file explorer view to rename **OrderFormInstance.xml** first (e.g. **OrderFormInstance1.xml**) or create a copy of it. Then drag and drop this e-form instance to your Content Repository folder as described above.

- e) As the dropped e-form instance contains invalid order data, a new process instance should have been started and a new User Task should have been queued. Login to My webMethods as **Administrator/manage** and navigate to **Applications -> Monitoring -> Business -> Process Instances** to search for the process instance. Open its Details view. Check that **Event Order E-form received** is the first in the trail of executed steps:



- f) Open the queued User Task using the Task Management List page, provide a valid quantity and click **Revalidate** to complete the User Task as well as the process.

Check Your Understanding

1. Can you configure one Start Message Event to receive an IS Document Type and an e-form-related IS document?
2. In step 12d, why do you provide **OrderEformInstance.xml** to the MWS public folder?
3. Instead of using a WebDAV client as above, name at least two other possibilities to start a process via an e-form when MWS is used as e-form Content Repository.

EXERCISE 23:

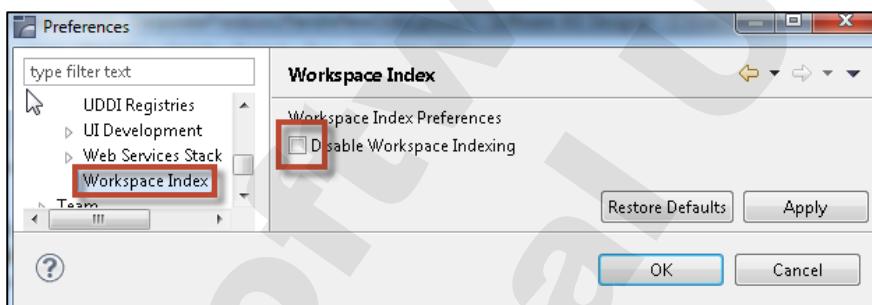
LOCAL AND SHARED METADATA

Objectives

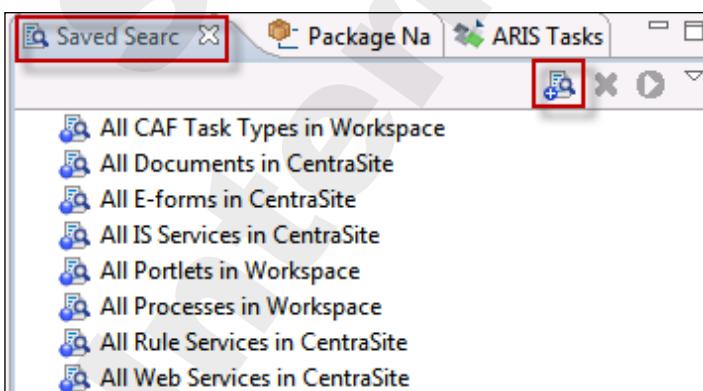
In this exercise, you will use Software AG Designer to use your local metadata first by creating and running a Saved Search. Then you will publish a re-usable process to CentraSite. After publishing you are able to perform a graphical impact analysis based on the published shared metadata. Finally you will retract your shared metadata from CentraSite registry/repository.

Steps

1. In this exercise, ensure that **Software AG Broker Monitor**, **Software AG Universal Messaging**, and **Software AG Integration Server** are running as Windows services, but the Windows services **Software AG My webMethods Server** and **Software AG Optimize Analytic Engine** are stopped.
Note: You are stopping these services to free up memory in the training VM so that you can start the CentraSite services. In a real webMethods environment you will not have to do this.
2. Launch Software AG Designer and ensure you are in the **Process Development** perspective.
3. In Designer Preferences, under **Software AG -> Workspace Index**, ensure that **Workspace Indexing** is enabled (checkbox is unchecked). If **Workspace Indexing** was previously disabled, enable it and restart Designer.



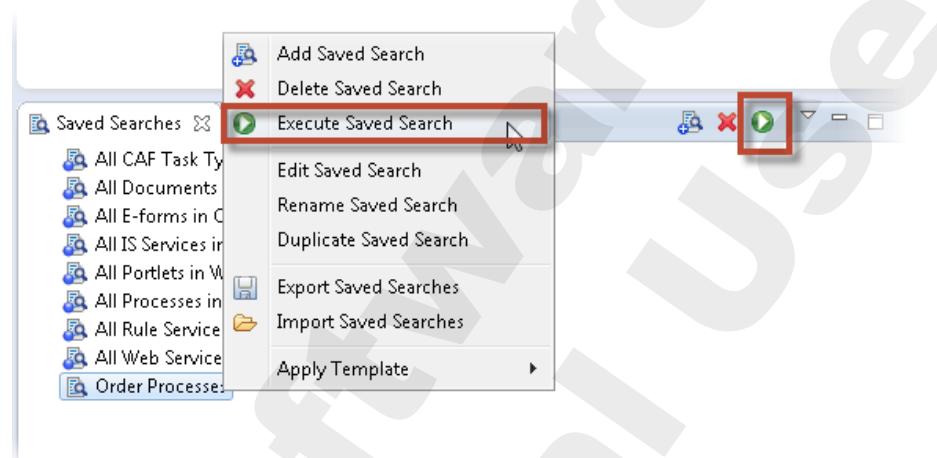
4. Show the **Saved Searches** view (if not displayed, use **Window -> Show View -> Other... -> Software AG -> Saved Searches** to open it). Add a new Saved Search:



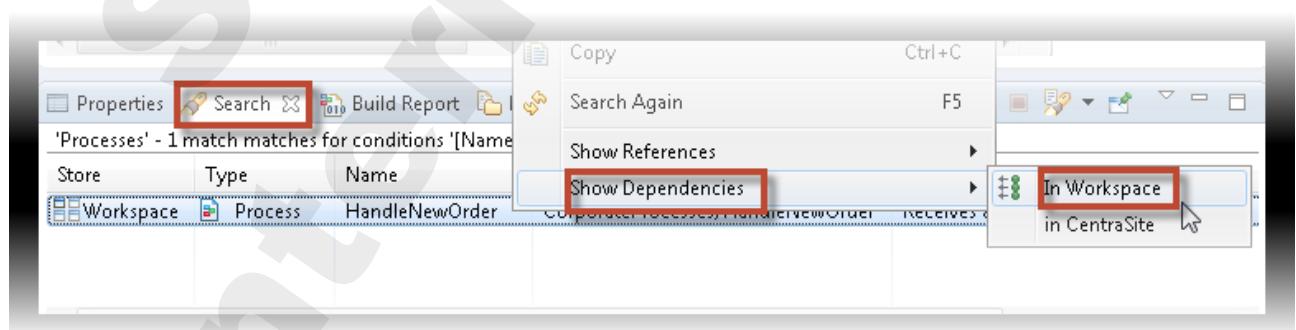
Provide the Saved Search details mentioned in the table below. Finally save your definitions:

Data	Value	
Search Name	Order Processes	
Asset Type	Process	
Properties	Property	Name
	Condition	contains
	Value(s)	order
Match Condition	Any	
Search In	Workspace	

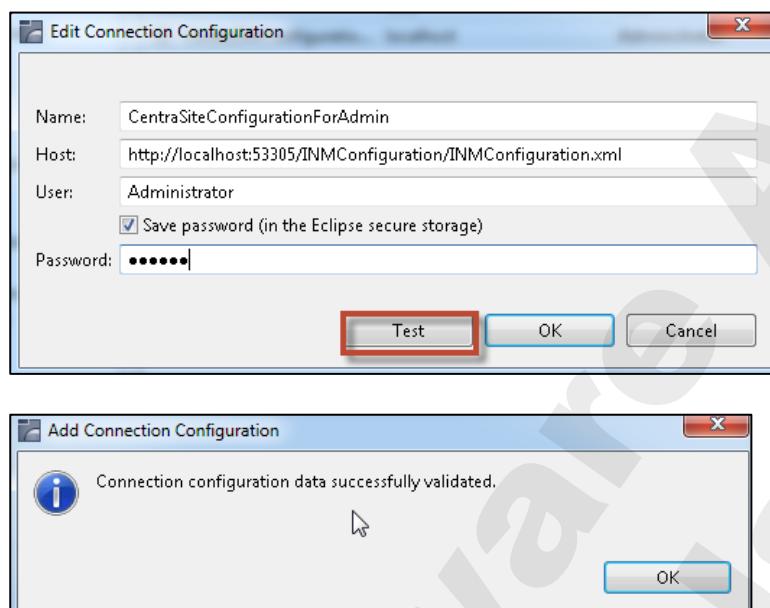
5. From the Saved Searches view, execute the Order Processes Saved Search.



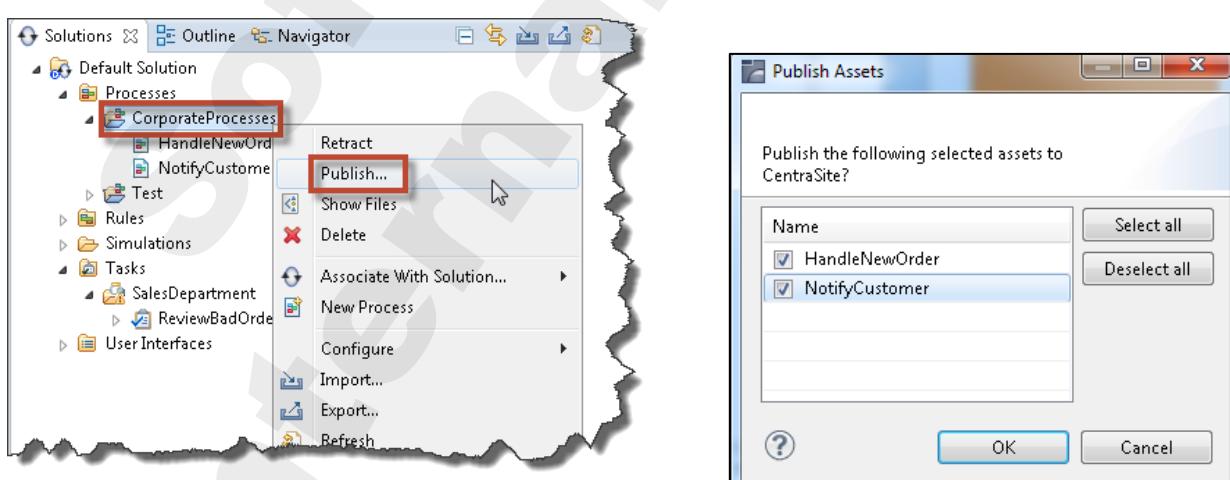
6. Inspect the resulting Search view. Select the match which is related to the **HandleNewOrder** process. Based on the local metadata, retrieve the process dependencies in the Workspace.



7. To work with Shared Metadata also, start your local CentraSite:
Use the Windows Service Control Panel to start the following services, if not already started:
 - Software AG CentraSite Registry Repository
 - Software AG Runtime
8. Back to Software AG Designer, use Windows -> Preferences -> CentraSite -> Connections to check that a CentraSite connection has already been configured in your Designer environment. Edit the existing connection, and use Test to check the connectivity:



9. In the Solutions view, publish the meta-data of the process project **CorporateProcesses** to CentraSite. On the subsequent panel, publish the meta-data for all the processes.
Note: Click the Run in Background button, and wait for “Publish Action Completed” to appear:



10. Right-click on your Custom Saved Search **Order Processes** in the Saved Searches view. Edit the custom search to search only in **CentraSite**. Save your modifications.
11. Re-execute your **Order Processes** Custom Saved Search from the Saved Searches view.

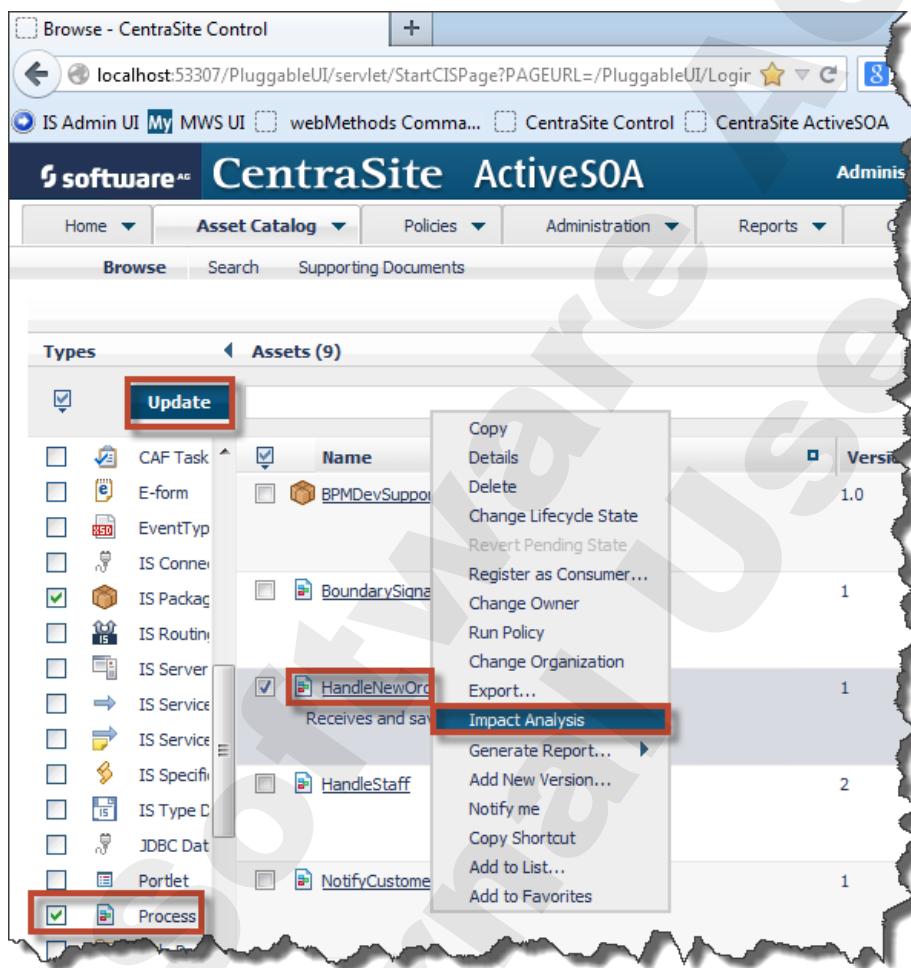
12. In the Search view, ensure that **HandleNewOrder** is found from the CentraSite Store:

A screenshot of a software interface showing a search results table. The title bar says 'Processes' - 1 match matches for conditions '[Name]' in CentraSite. The table has columns: Store, Type, Name, ID, and Description. There is one row: Store is CentraSite, Type is Process, Name is HandleNewOrder, ID is CorporateProcesses/HandleNewOrder, and Description is Receives and saves a new order.

Store	Type	Name	ID	Description
CentraSite	Process	HandleNewOrder	CorporateProcesses/HandleNewOrder	Receives and saves a new order

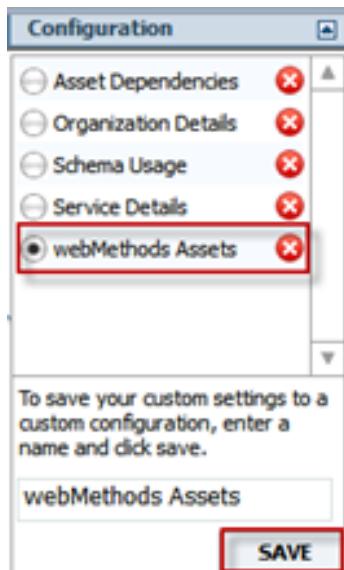
13. Use Start -> All Programs -> Software AG -> Tools -> CentraSite Control x.x to logon to CentraSite within a browser tab as **Administrator | manage**.

14. Within CentraSite Control, choose Asset Catalog -> Browse from the menu bar. In the left-hand asset types panel, ensure at least asset type **Process** is selected. Click **Update**. Right-click your published process asset **HandleNewOrder** and select **Impact Analysis**.

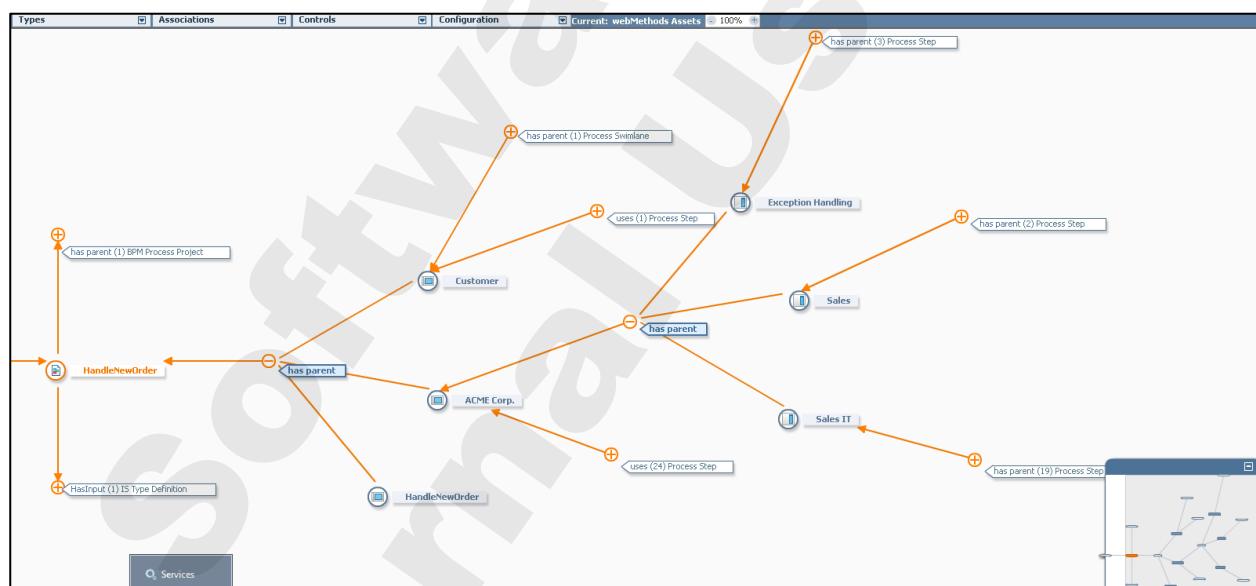


15. Impact Analyzer will be opened. Maximize the browser tab to full screen mode to get more space for displayed assets.

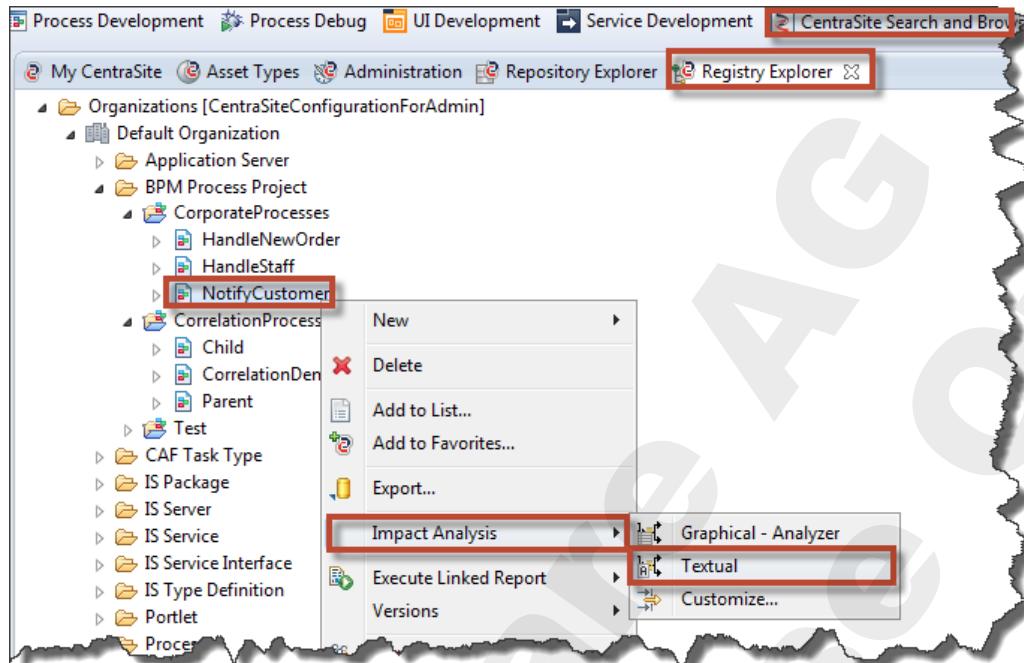
16. To filter for BPM-relevant asset types, select **webMethods Assets** from the Configuration dropdown list. Click **SAVE** to reload the data:



17. In the graphical impact analysis representation, first expand **has parent (n) Process Pool**. To the right of ACME Corp., expand **has parent (n) Process Swimlane**. Continue to drill into the process. You will notice you will get a lot of detail. You can use the drop-downs at the top of the view to filter what you see.



18. Switch back to Designer. Open the CentraSite Search and Browse perspective. Use the Registry Explorer view and drill down to the asset related to your NotifyCustomer process.
Note: Because user Administrator belongs to the Default Organization in CentraSite, your assets published from Designer to CentraSite will belong to this organization.
Choose Impact Analysis -> Textual from the context menu.

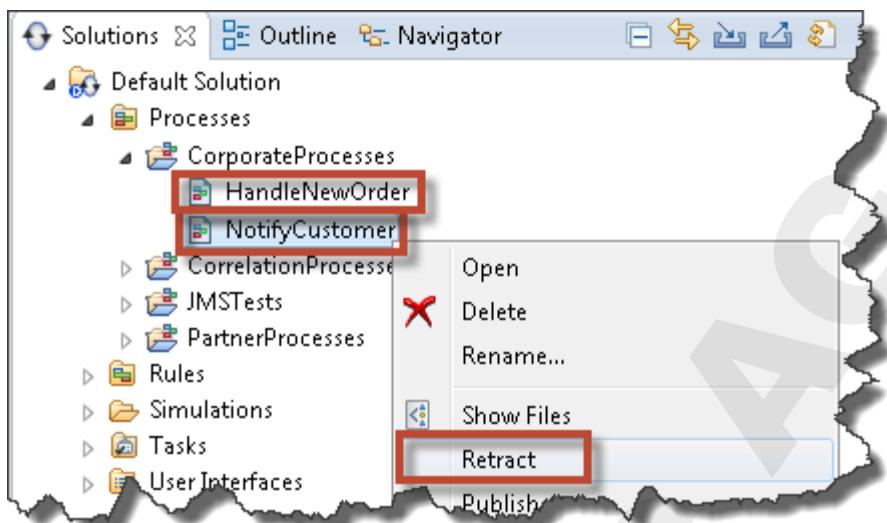


Inspect the results of the generated textual impact analysis in the Contents view:

The screenshot shows the 'Impact Analyzer' application window with the 'Contents' tab selected. The title bar indicates 'Impact Analysis for NotifyCustomer'. The main area displays a table with three columns: 'Source Object', 'ReferenceType', and 'Target Object'. The table lists various objects and their relationships to the 'NotifyCustomer' process. The 'Source Object' column contains entries like 'Process: NotifyCustomer', 'Process Step: Send Rejection', 'Process Pool: Mailing System', etc. The 'ReferenceType' column includes 'HasInput', 'HasParent', 'Uses', etc. The 'Target Object' column lists corresponding objects such as 'XML Schema: bpmDevSupport.docs.response:OrderResponse', 'BPM Process Project: CorporateProcesses', etc.

I. Source Object	ReferenceType	Target Object
Process: NotifyCustomer	HasInput	XML Schema: bpmDevSupport.docs.response:OrderResponse
Process: NotifyCustomer	HasParent	BPM Process Project: CorporateProcesses
Process: NotifyCustomer	HasInput	XML Schema: bpmDevSupport.docs.response:OrderResponse
Process Step: Send Rejection	Uses	Process: NotifyCustomer
Process Step: Send Approval	Uses	Process: NotifyCustomer
Process Pool: Mailing System	HasParent	Process: NotifyCustomer
Process Step: Callable Process started	HasParent	Process: NotifyCustomer
Process Step: Callable Process completed	HasParent	Process: NotifyCustomer
Process Pool: NotifyCustomer	HasParent	Process: NotifyCustomer
Process Step: Map To ShipmentDoc	HasParent	Process: NotifyCustomer
Process Step: Response Doc received	HasParent	Process: NotifyCustomer
Process Step: Investigate Shipment Destination	HasParent	Process: NotifyCustomer
Process Step: Insert Global Location	HasParent	Process: NotifyCustomer
Process Step: Send Email	HasParent	Process: NotifyCustomer

19. Switch back to the Process Development perspective. Use the Solutions view first to retract metadata of process model **HandleNewOrder**, second to retract metadata of process model **NotifyCustomer** from CentraSite:



20. *Housekeeping:*

Use the Windows Service Control Panel to stop the **CentraSite** services you started in step 7. Additionally, start your **My webMethods Server** service again.

Check Your Understanding

1. In which view would you create a Custom Saved Search?
2. Why would you need to consider an asset's references and dependents?

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Software AG
Internal Use Only!

EXERCISE 24:

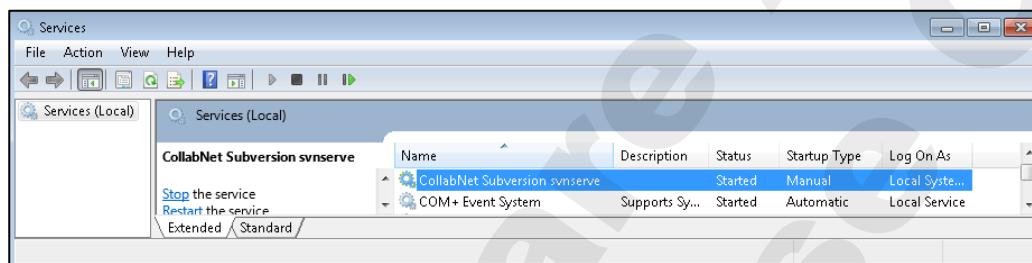
COLLABORATIVE DEVELOPMENT USING SUBVERSION

Objectives

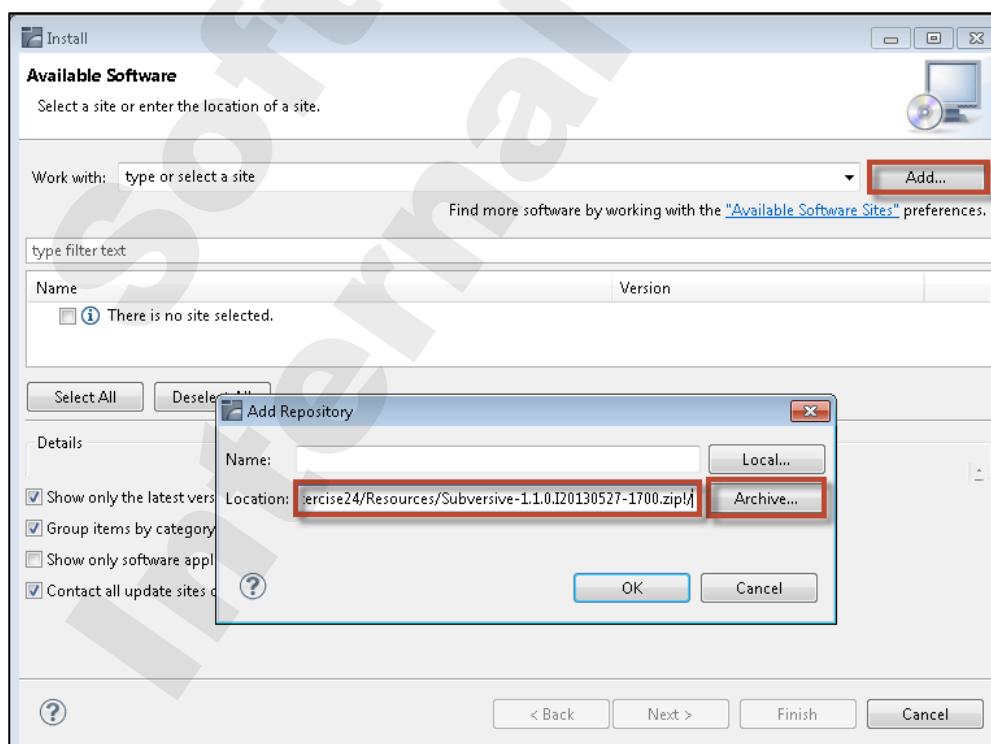
In this exercise, you will change the configuration of Software AG Designer to enable collaborative development using Subversion.

Steps

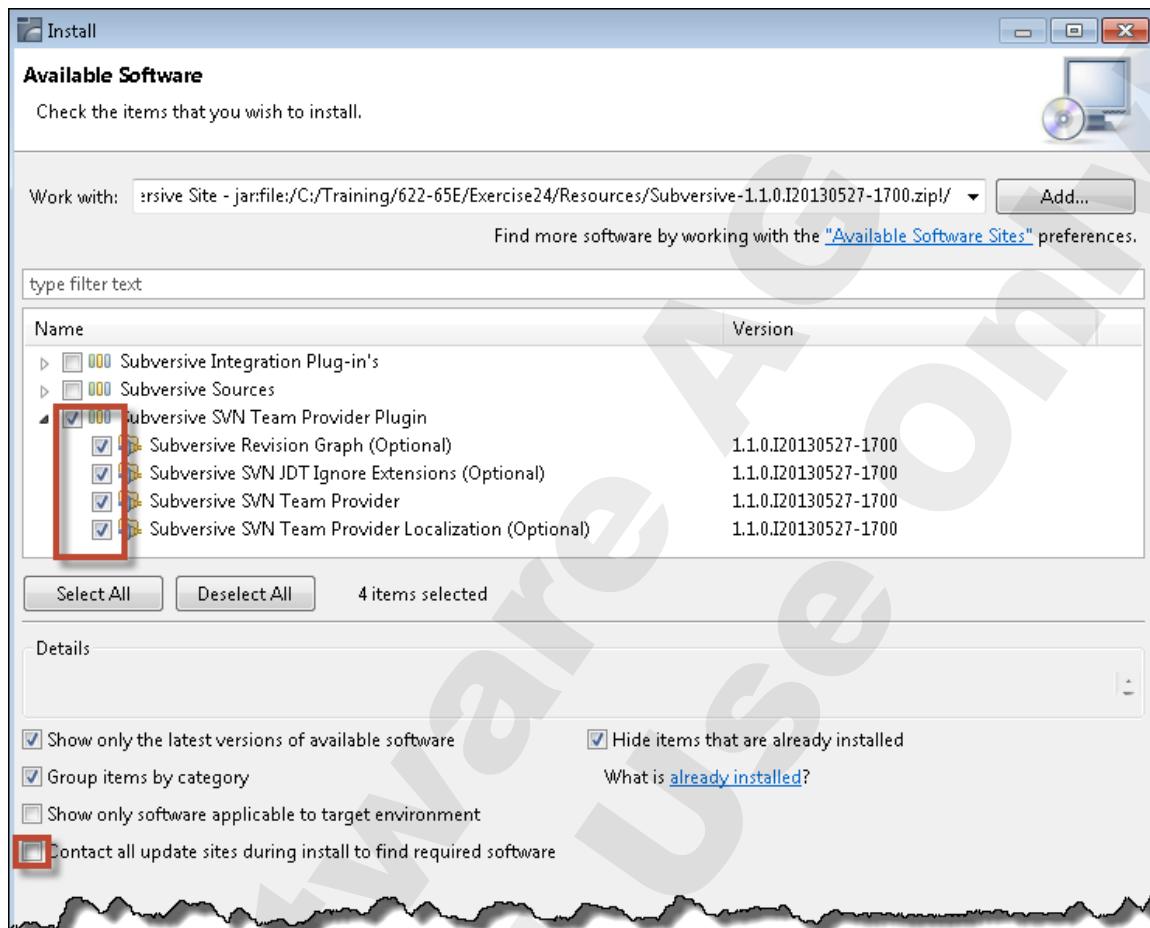
1. Ensure all Windows services mentioned in exercise 1 step 3 are up and running. Additionally ensure that the service **CollabNetSubversion svnserve** is started. Start it if it is not running.



2. Launch Software AG Designer (if not already started). Install the Subversive client plug-in.
 - a. Go to Help > Install New Software. The Available Software window will open. Click Add. From the dialog box, click the Archive button then navigate to <*workshop_dir*>\Exercise24\Resources and select the file named Subversive-1.1.0.I20130527-1700.zip. Click OK.

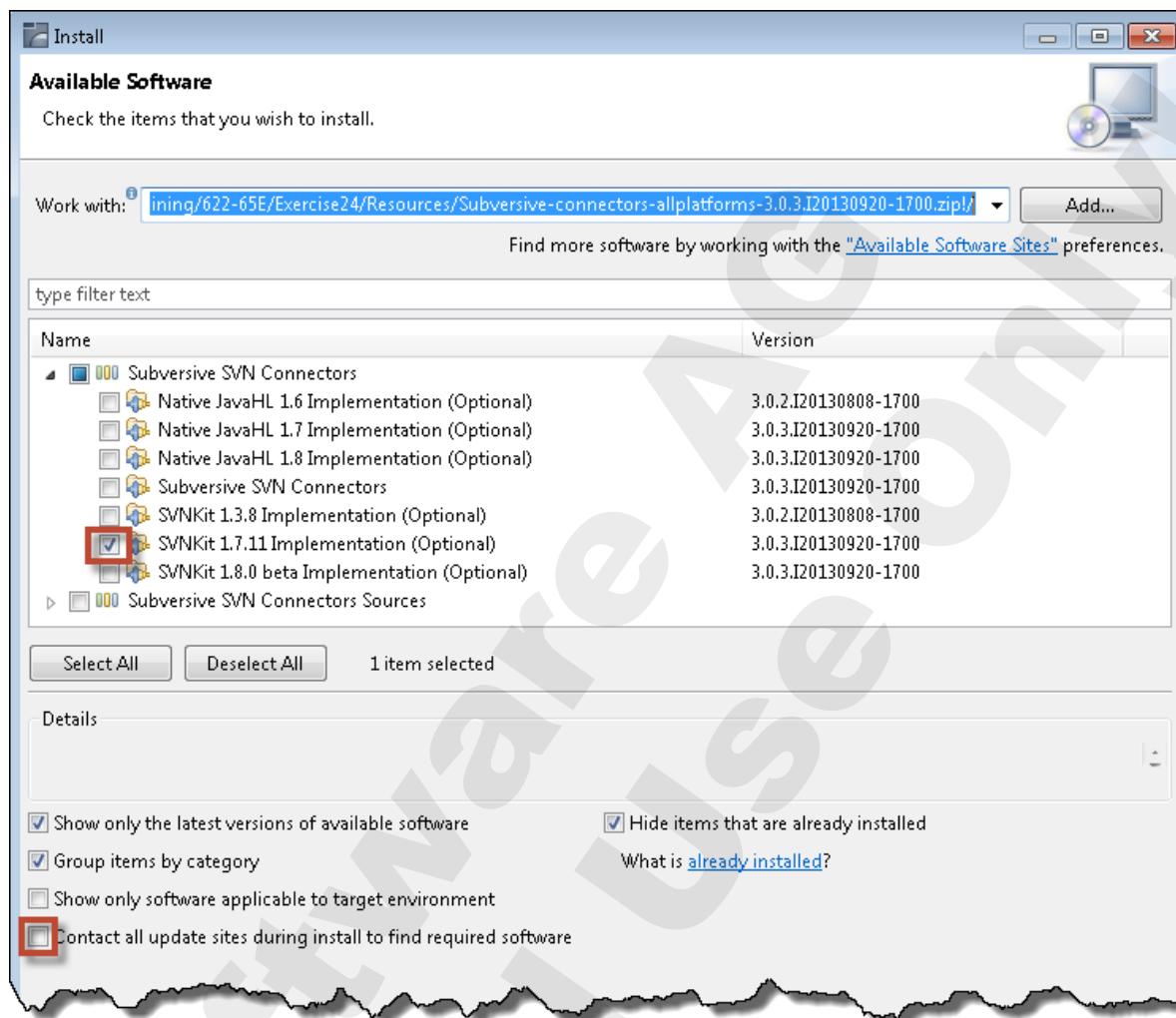


- b. From the list of the packages contained in the archive select **only** the item listed as **Subversive SVN Team Provider Plugin**. Un-select the box next to “Contact all update sites during install to find required software”. Leave all other options default and click **Next**.



- c. You'll see a screen asking you to review the components to be installed. Click **Next** again. Accept the license terms, then click **Finish**.
- d. Once Designer is done installing the plug-in, it will need to restart. Select **Restart Now** from the resulting dialog box.
3. Next install the SVN Connectors library. This library implements the ability to connect to a subversion repository; either using native Windows code (JavaHL) or native Java libraries (SVNKit). We'll use the SVNKit libraries:
- In Designer, go to **Help > Install New Software**. Click **Add** then **Archive**. Navigate to `<workshop_dir>\Exercise24\Resources` and select the file named **Subversive-connectors-allplatforms-3.0.3.I20130920-1700.zip**. Click **OK**.

- b. From this archive only select **SVNKit 1.7.11 Implementation (Optional)** under **Subversive SVN Connectors**. Un-check the box next to “Contact all update sites during install to find required software”. Leave all other options default and click **Next**.



- c. Click **Next** again. Accept the license terms, then click **Finish**. You may see a security warning dialog box. Click **OK** and let the install continue.
- d. Click **Restart Now** when the install is finished.
4. Once Designer restarts open or change to the **SVN Repository Exploring** perspective. Click the **New Repository Location** icon.

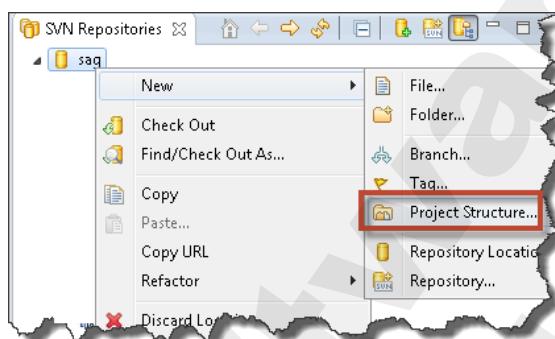


In the General tab, enter:

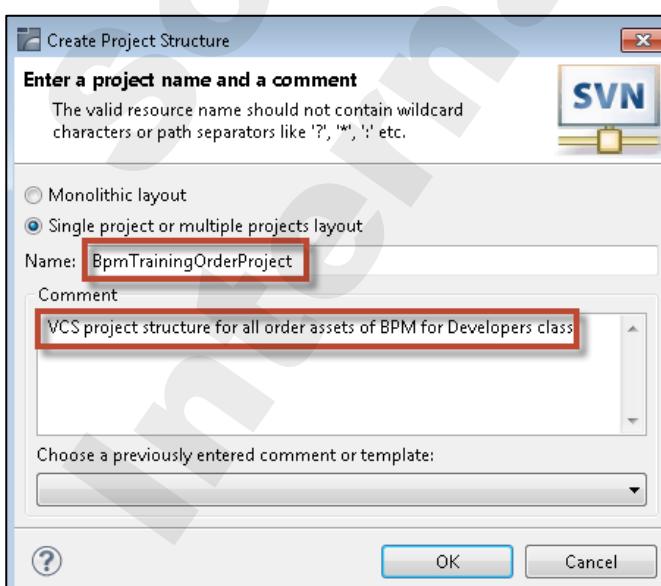
SVN Connection	Value
URL	svn://localhost:3690/sag
Use a custom label	<checked>, label value: sag
User	Administrator
Password	manage
Save Authentication	<checked>

Leave everything else at the default values and click the **Finish** button.

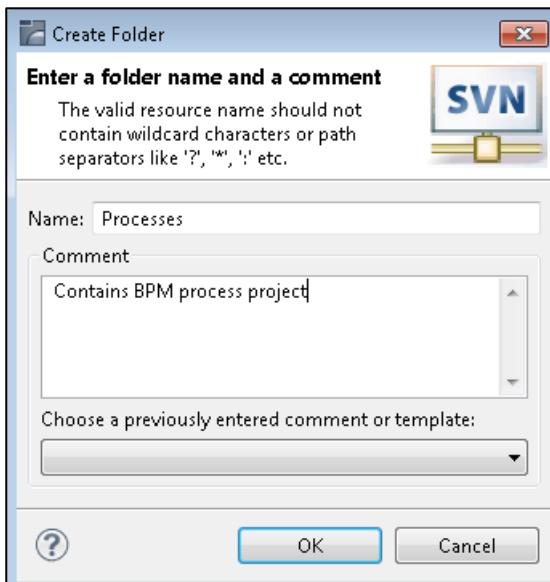
5. Create the project and folders within the SVN repository to use for the order assets created in the class.
 - a. To do so, use the SVN Repositories view in Designer, right-click at the top-level of the repository, and select **New > Project Structure**.



For the Project Name enter **BpmTrainingOrderProject**, select the radio button **Single project or multiple projects layout**, provide a comment as shown in the picture below, and click the **OK** button.



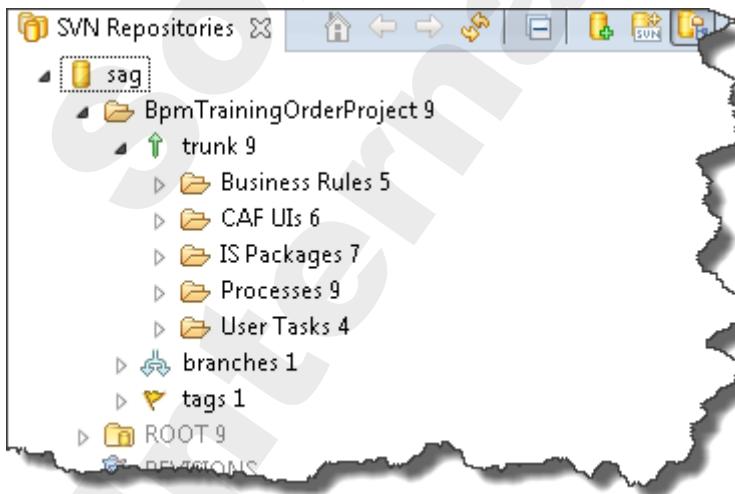
- b. To setup the folder structure in Subversion to store your solution components right-click on **trunk** and select **New > Folder**. Enter the Name **Processes** and comment **Contains BPM process projects**. Hit **OK**.



- c. Create four more folders under the trunk of your SVN project like this:

Folder Name	Comment
Business Rules	Contains Business Rules projects
CAF UIs	Contains CAF UI projects
User Tasks	Contains User Tasks projects
IS Packages	Contains IS packages

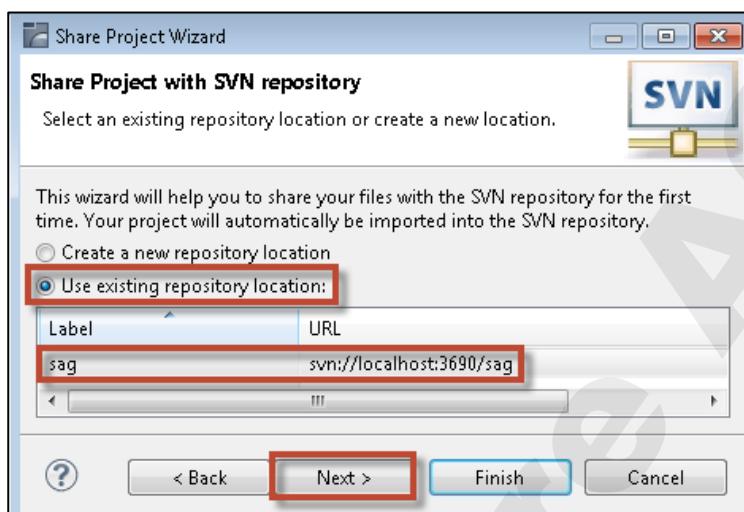
You should now have:



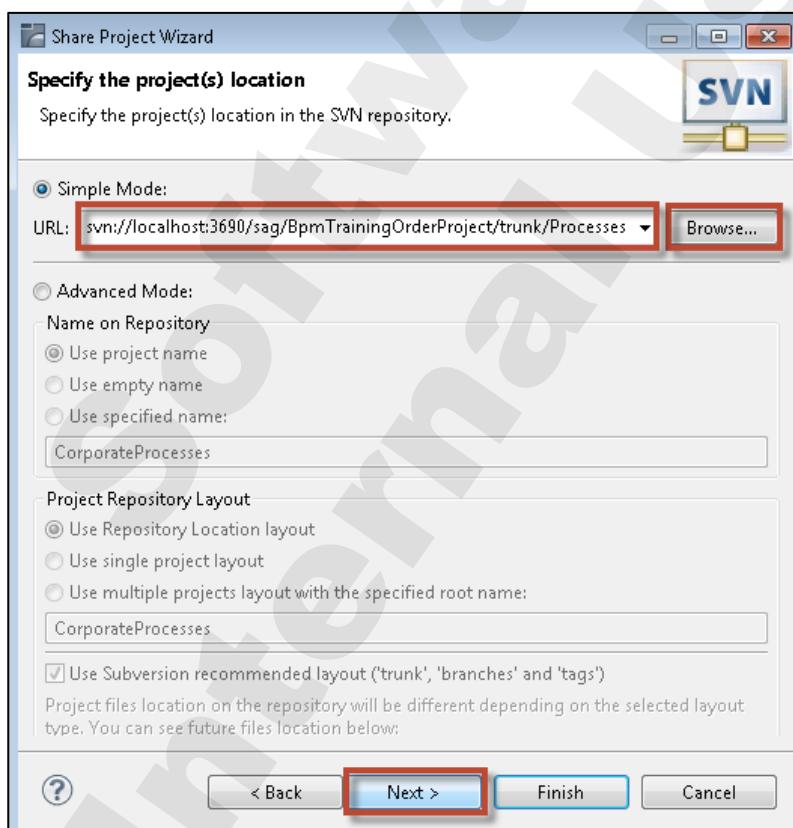
Note: Don't worry about the numbers at the end (e.g. trunk 9). This is just a Subversion revision number.

6. We're ready to add our BPM project CorporateProcesses to version control:

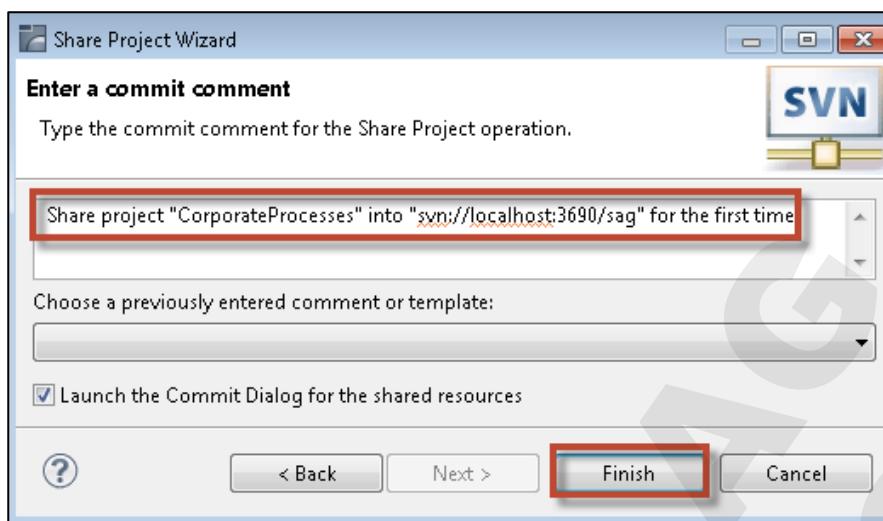
- a) Switch to the process Development perspective and open the **Navigator** view. Right-click on the **CorporateProcesses** project, select **Team > Share Project**. This will bring up the Share Project wizard. Select **SVN** then click **Next**.
- b) Select **Use existing repository location** and your existing repository location **sag**. Hit **Next**.



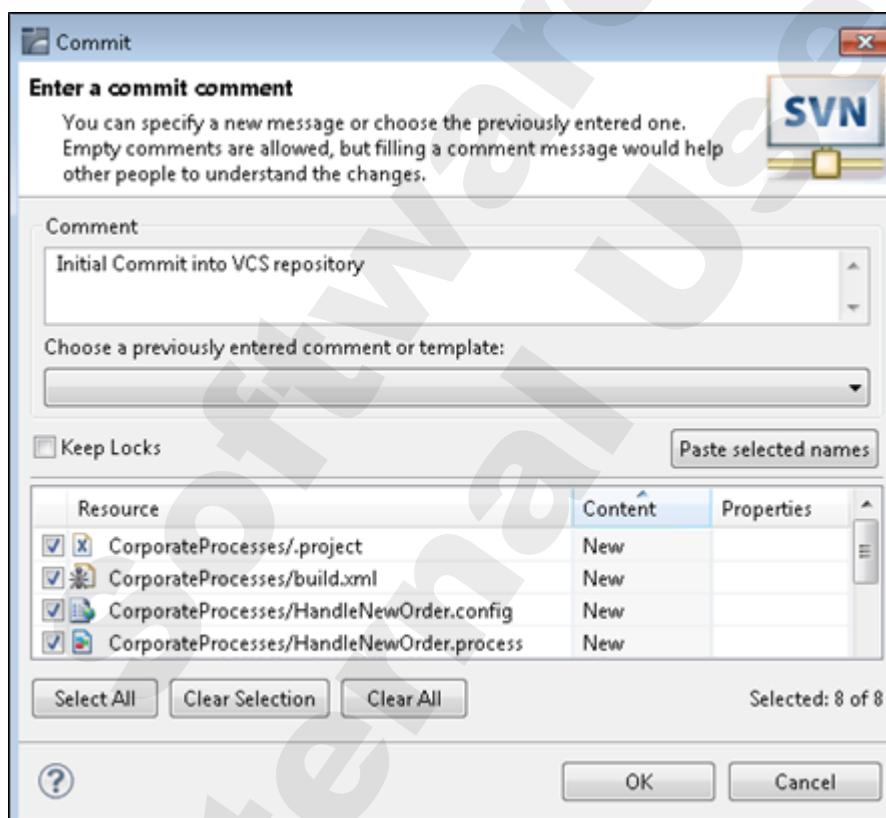
- c) On the next panel, browse for your **Processes** subdirectory in the repository and leave all other defaults unchanged. Click **Next**.



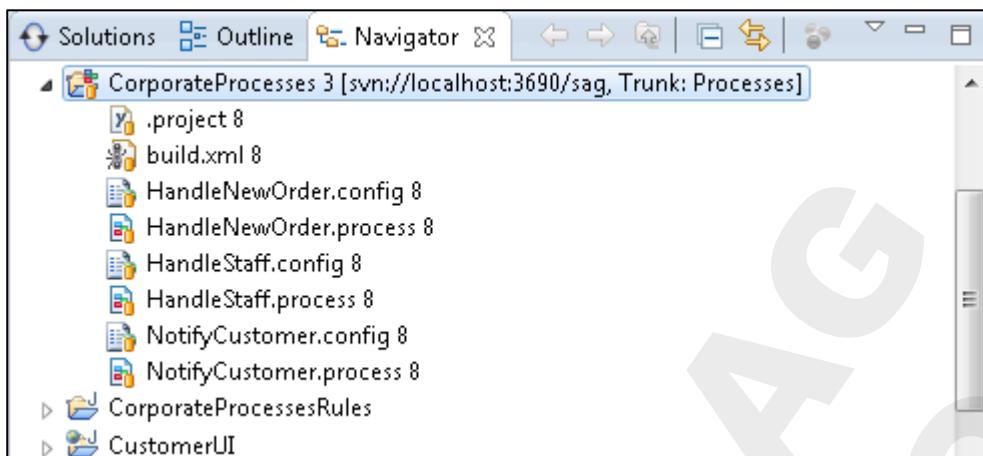
- d) On the last panel, enter a commit comment for the Share Project operation as shown on the screen shot and click **Finish**.



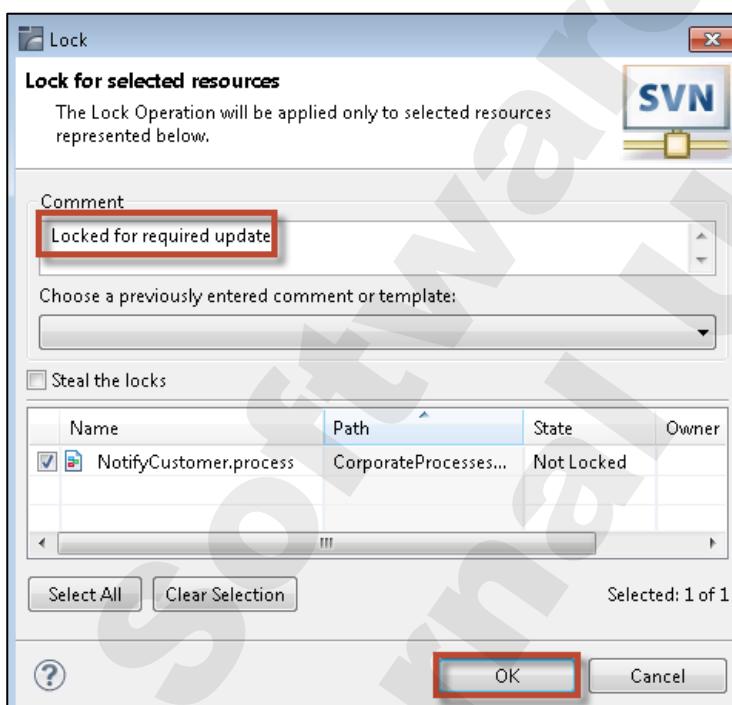
- e) Before Designer will add all project assets to SVN, you'll get prompted to enter another commit comment. Specify the comment as shown below and click **OK**.



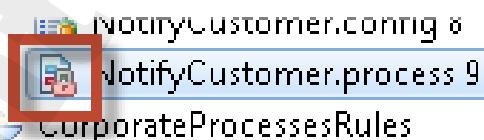
7. After Designer (Subversive plug-in) finishes adding all the assets into version control, you'll notice the Navigator view will now have the location of our asset noted as well as the version number:



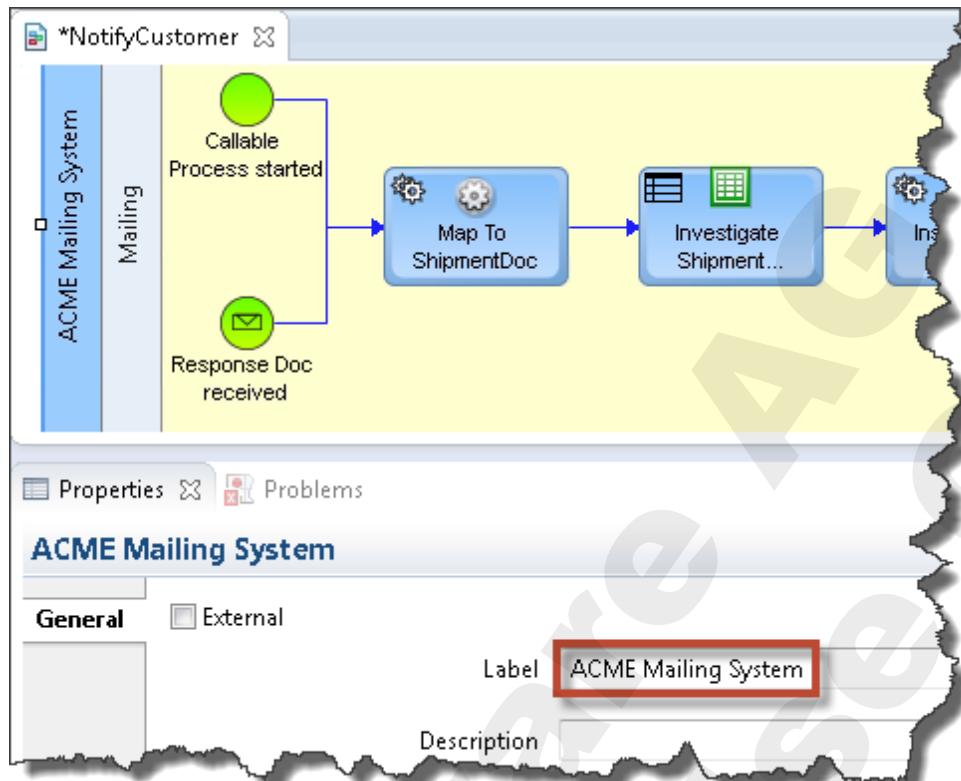
Right click on **NotifyCustomer.process** in the Navigator view and select **Team > Lock**. In the Lock window, enter **Locked for required update** as comment, then click **OK**.



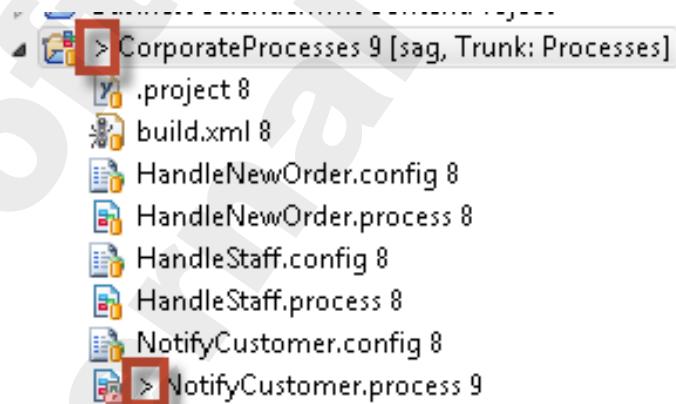
As a result, process model NotifyCustomer should be displayed as locked in the Navigator view:



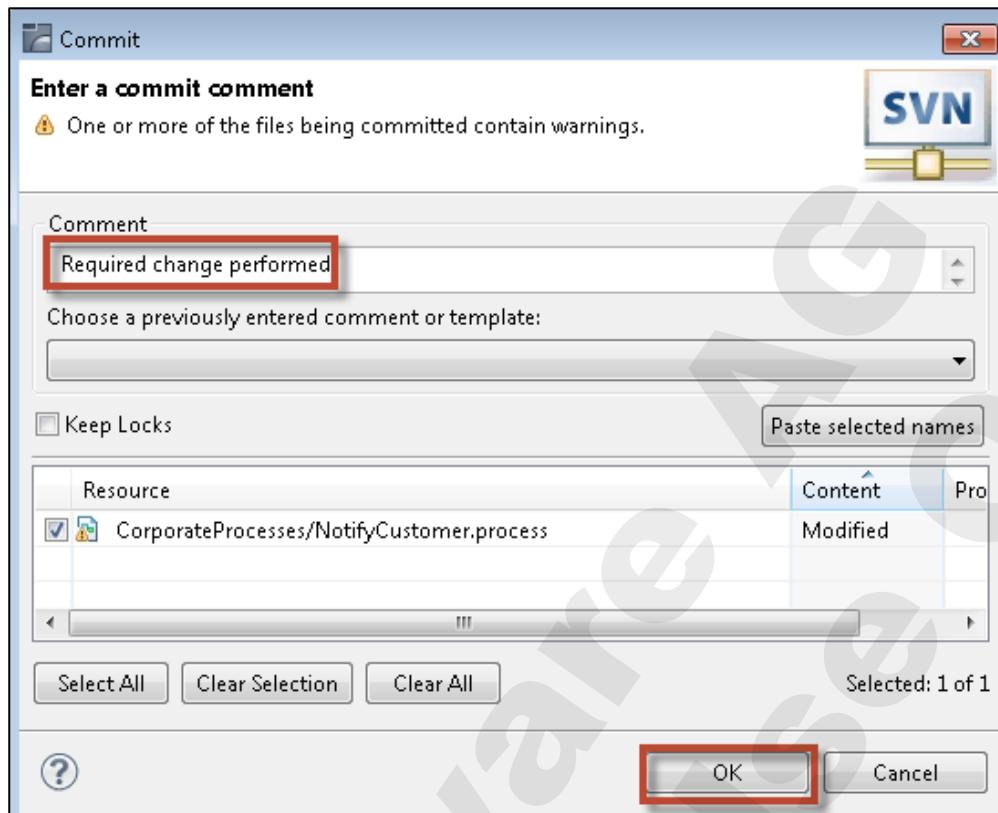
8. Open process model **NotifyCustomer** from the Navigator view (as an alternative you can also use the Solution view) to perform some modifications. Select internal pool **Mailing System** in the process editor and change its label to **ACME Mailing System** in the Properties view.



9. Save process model **NotifyCustomer**. As a result, the locked asset as well as the entire process project should be preceded by a “>” character in the Navigator view to indicate it has been changed.



10. Right-click on the **CorporateProcesses** project in the Navigator view, select **Team > Commit**. Enter **Required change performed** as comment. You'll notice that process model **CorporateProcesses/NotifyCustomer** is captured as having been changed. Click **OK**.



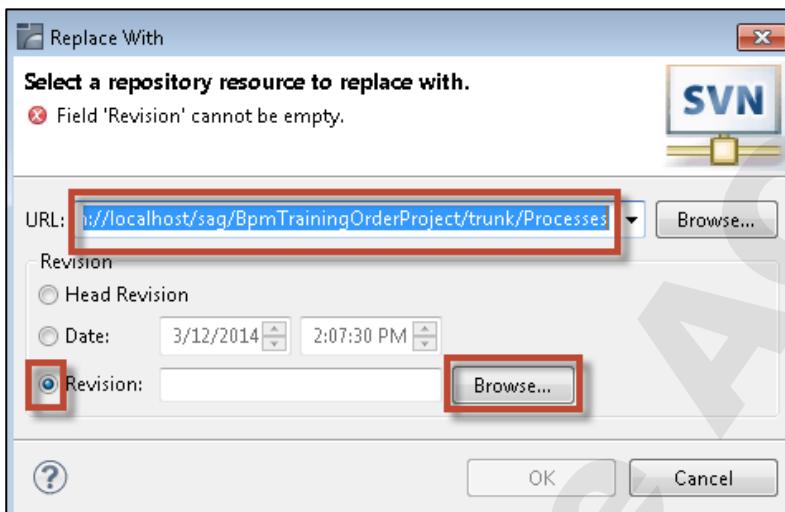
As a result, process model **NotifyCustomer** should get unlocked and all change markers (">") should vanish from the Navigator view.

11. Right-click on the **CorporateProcesses** project in the Navigator view again, this time select **Team > Show History**. The History view will open showing the details of our changes:

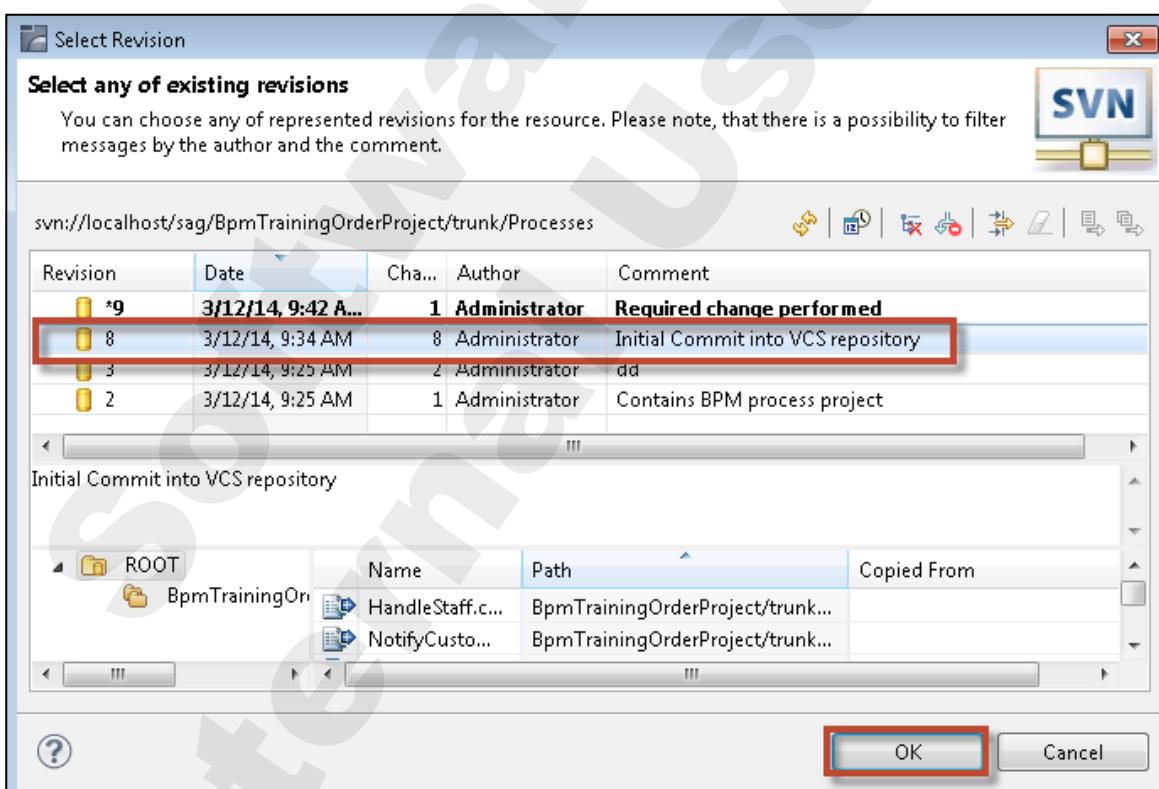
Revision	Date	Changes	Author	Comment
9	3/12/14, 9:42 AM		Administrator	Required change performed
8	3/12/14, 9:34 AM		Administrator	Initial Commit into VCS repository
3	3/12/14, 9:25 AM		Administrator	dd
2	3/12/14, 9:25 AM		Administrator	Contains BPM process project

12. Development requires retracting the last change. To do so, perform the following steps:

- Right-click on the **CorporateProcesses** project in the Navigator view and select **Replace With > Revision or URL...**. On the Replace With panel, ensure your Processes folder is selected in the URL, select **Revision** and hit **Browse...**.

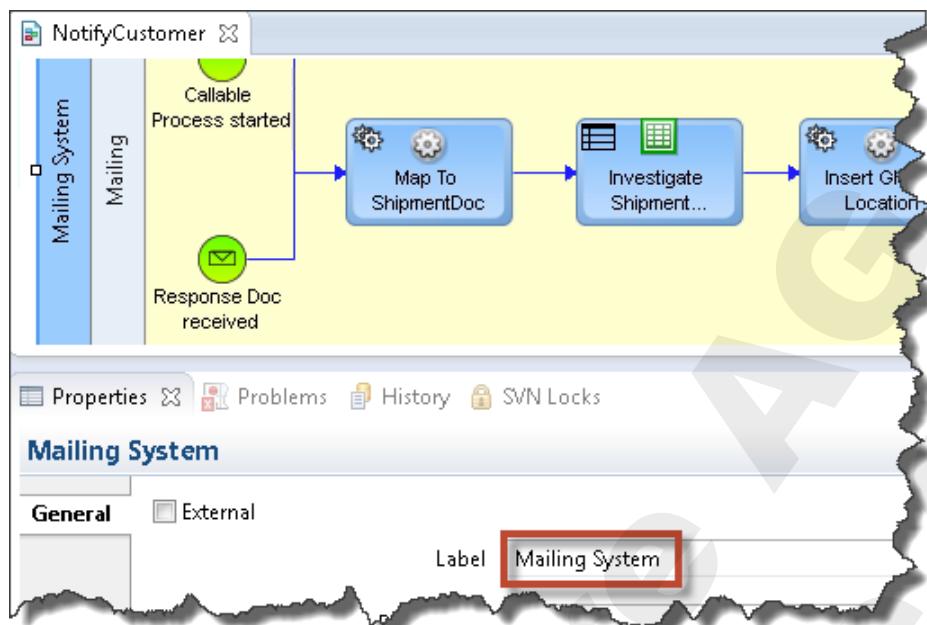


- On the upcoming panel, highlight the row with revision created during the initial commit and click **OK**.

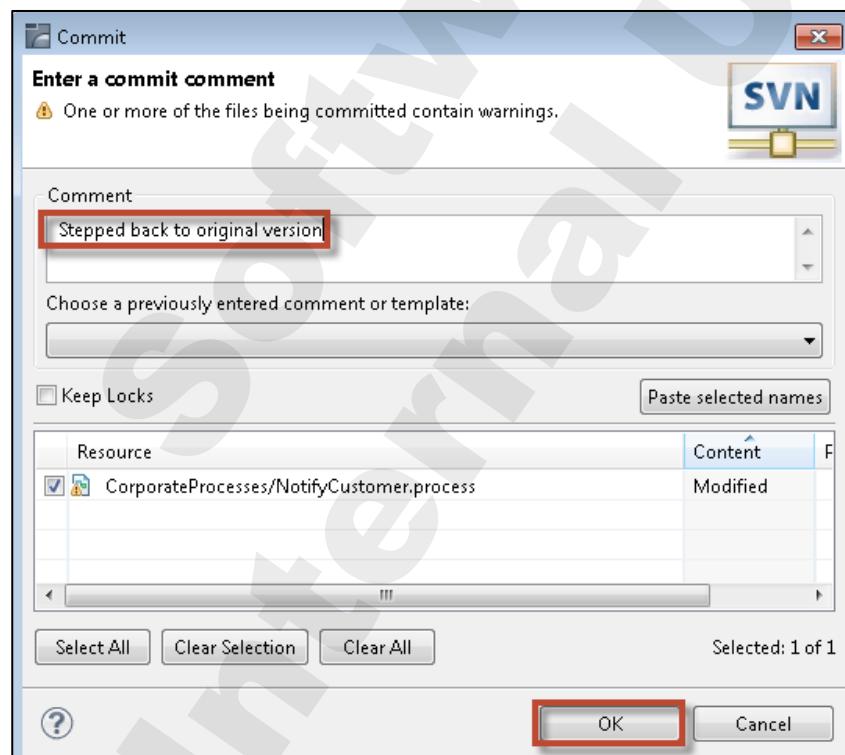


- Hit **OK** again and confirm to apply the changes.

13. If still opened in the process editor, close process model **NotifyCustomer**. Re-open **NotifyCustomer** from the Navigator view to check your changes have been retracted:



14. Your process project **CorporateProcesses** and process model **NotifyCustomer** should be “dirty” again. Right-click on the **CorporateProcesses** project in the Navigator view to perform another commit at project level (Team > Commit). Specify **Stepped back to original version** as comment and hit **OK**.



15. *For extra credit:*

Add and commit your
d) User Task project **SalesDepartment**

- e) CAF project **CustomerUI**
f) Business Rules project **CorporateProcessesRules**

to the corresponding SVN folders (**User Tasks**, **CAF UIs**, **Business Rules**) of your SVN project **BpmTrainingOrderProject**.

Check Your Understanding

1. What benefits does SVN add to team development of BPM, CAF, and Rules projects?
2. Is SVN the only source code management system that could be used from Designer?
3. Can you use CVS for source code control of your IS packages?

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EXERCISE 25:

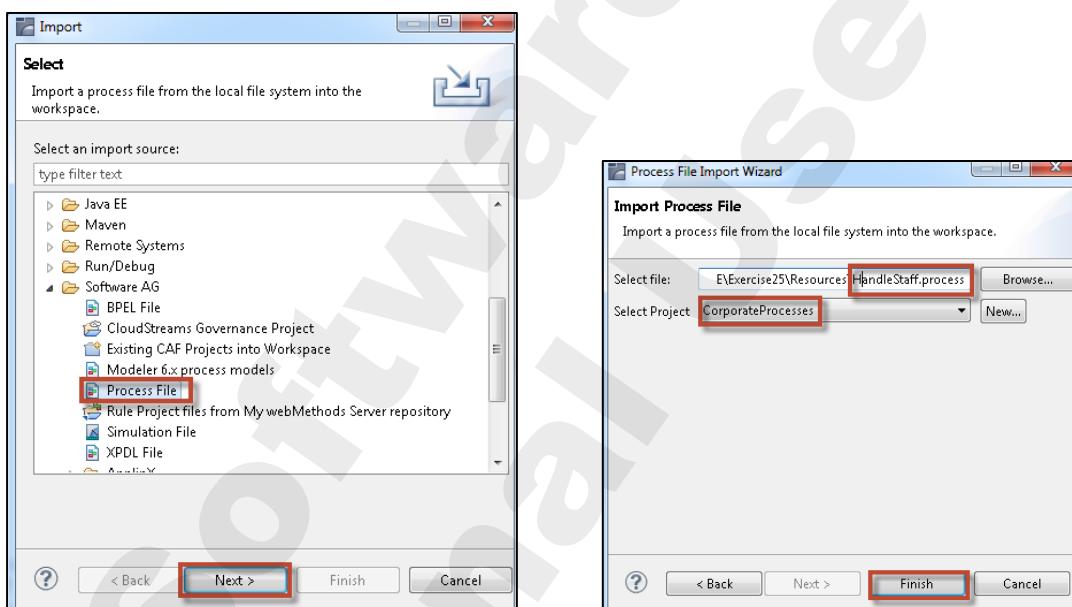
PROCESS VERSIONING

Objectives

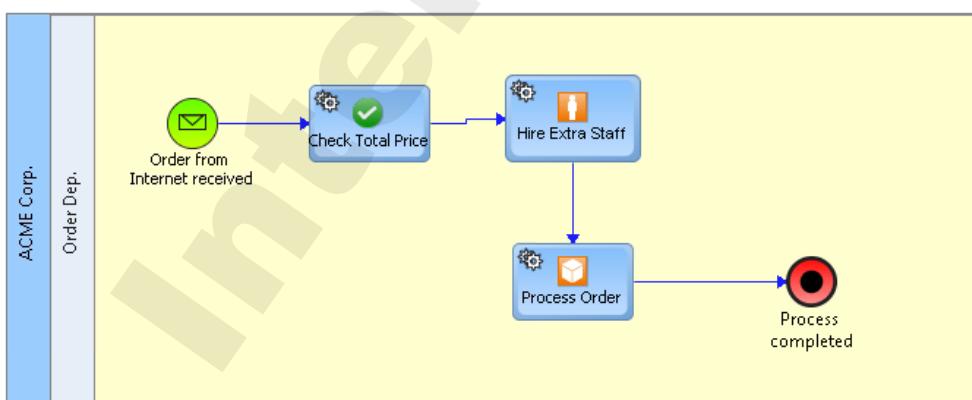
In this exercise, you will import and modify a process called **HandleStaff** to test process versioning. During your testing you will see how a process instance that is already running will continue to use a previous process version even after a new version has been released.

Steps

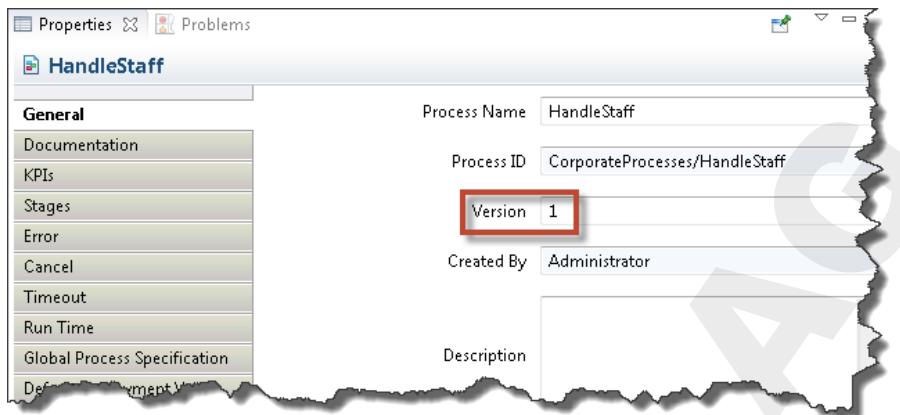
1. Ensure all Windows services mentioned in exercise 1 step 3 are up and running.
2. Start Software AG Designer and ensure you are in the **Process Development** perspective.
3. Choose **File -> Import** from the menu bar to import a new **Process File**. In the wizard, select process file `<workshop_dir>\Exercise25\Resources\HandleStaff.process` and make sure Project is set to **CorporateProcesses**.



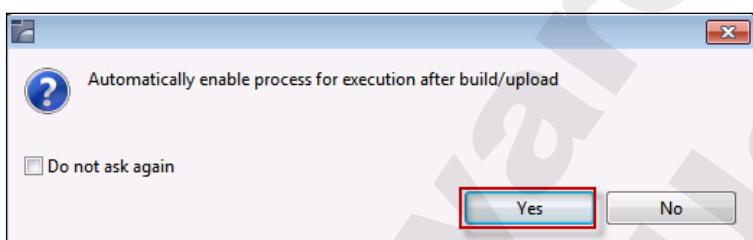
4. If not opened, open the **HandleStaff** process model in the design canvas:



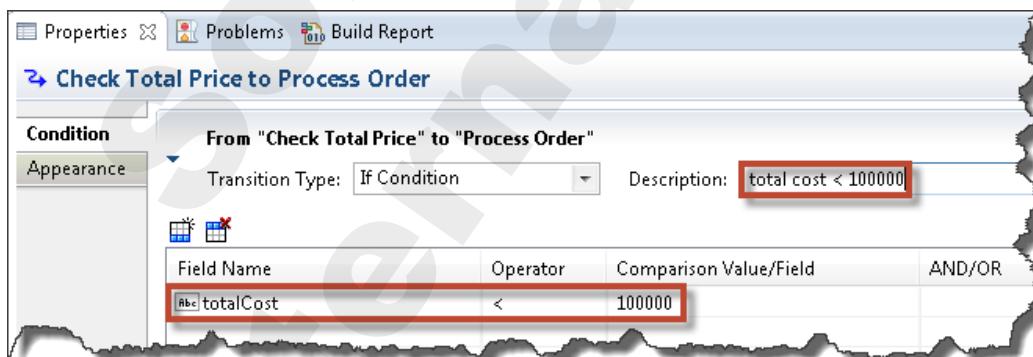
5. Double-check that the Start Message Event named Order from Internet received receives a document of type bpmDevSupport.docs.request:OrderInternet via JMS and step Hire Extra Staff invokes the IS Service bpmDevSupport.utils:sixMinuteDelay.
6. In the Properties view of the process model HandleStaff, ensure its process version is 1:



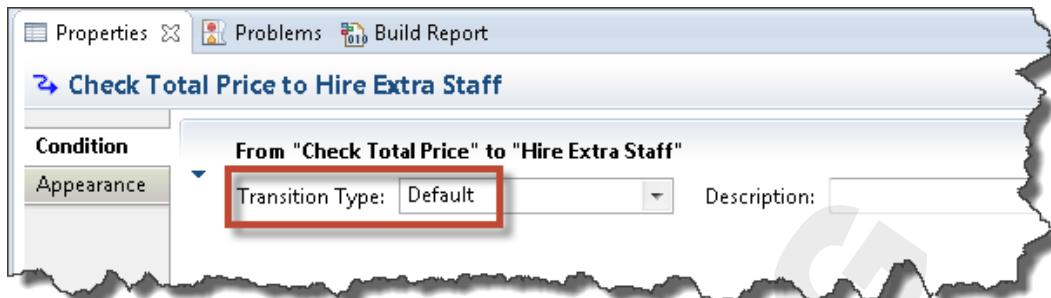
7. Build and upload the HandleStaff process. If asked for “Automatically enable process for execution...”, confirm with Yes.



8. In the Properties view of the process model HandleStaff, change the process version from 1 to 2.
9. Add a transition from step Check Total Price to step Process Order with an If Condition OrderRequest/PurchaseOrderRequest/PurchaseOrder/totalCost < 100000. Set the transition Description to total cost < 100000:

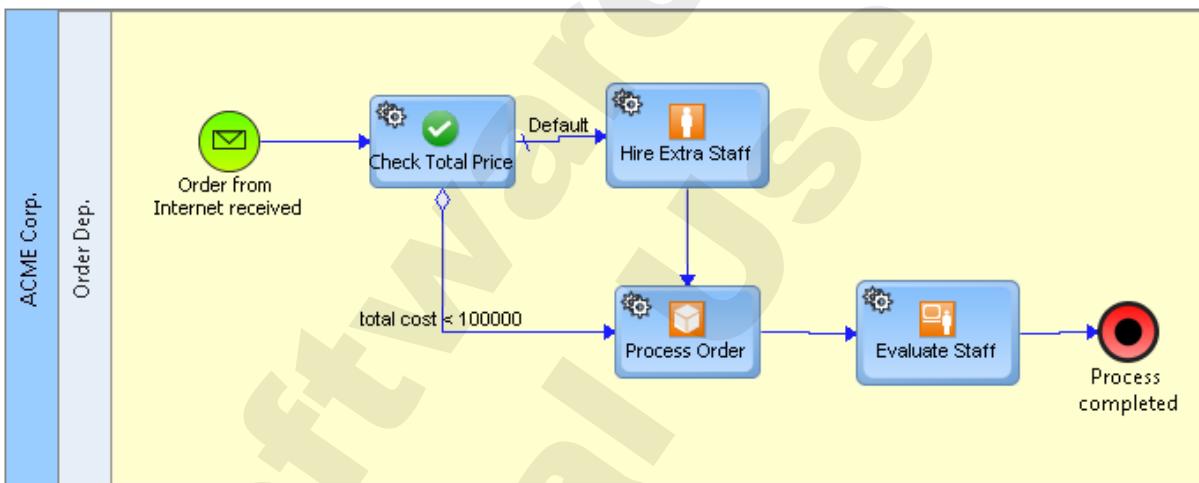


10. Change the transition type of the other transition leaving step **Check Total Price** to type **Default**.

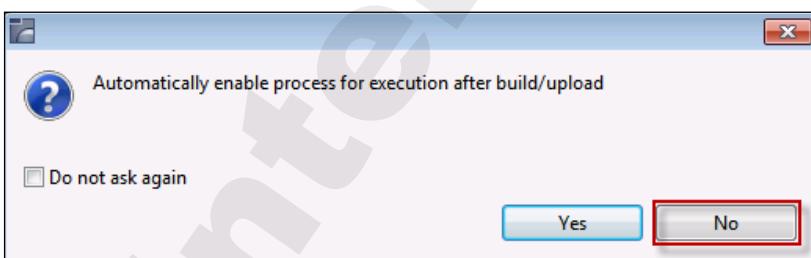


11. Remove the transition between **Process Order** and **Process completed**.

12. Insert a Service Task Activity named **Evaluate Staff**. Add a transition from **Process Order** to **Evaluate Staff** and a transition from **Evaluate Staff** to **Process Completed**. Add an image to the **Evaluate Staff** step using the picture below as a reference. The **HandleStaff** process should now look like the following:



13. Using the Properties tab of the **Process Order** step, under Joins, select the Join Type **Unsynchronized Or**.
14. Save, build and upload the **HandleStaff** process. If asked this time for “Automatically enable process for execution...” confirm with **No**.



15. Login to My webMethods as Administrator/manage.
16. Navigate to Applications -> Administration -> Business -> Business Processes Dashboard. Ensure both process model versions of HandleStaff are visible, version 1 is enabled for execution, and version 2 is currently disabled for execution (if not, click on the icon in the Execution column to change):

Process Name	Active	Total Instances	Running Instances	Failed Instances
HandleNewOrder (CorporateProcesses)	✓	20	0	1
HandleStaff (CorporateProcesses)	✓	0	0	0
Version 1	✓	0	0	0
Version 2	○	0	0	0
NotifyCustomer (CorporateProcesses)	○	12	0	0

17. To start a process instance, double-click the provided form <workshop_dir>\Exercise25\Resources\Ex25_SubmitOrder.html. Click the Submit button. If asked for IS authentication, provide Administrator/manage.
18. Switch back to the Business Processes Dashboard in My webMethods. Click Reload to refresh the content. You should see one process instance of HandleStaff (Version 1) that is in a Started state.
Note: The process should run approximately six minutes because of step HireExtraStaff invoking service bpmDevSupport.utils:sixMinuteDelay.

Process Name	Active	Total Instances	Running Instances	Failed Instances
HandleNewOrder (CorporateProcesses)	✓	24	0	1
HandleStaff (CorporateProcesses)	○	0	0	0
Version 1	✓	0	0	0
Version 2	○	0	0	0
NotifyCustomer (CorporateProcesses)	○	0	0	0

Details for the HandleStaff (CorporateProcesses) instance:

- Instance ID: f73b4500-8cb6-11e3-bd6f-bcda4fcf9eb4
- Last Updated: 2/3/2014 10:38:41.203 AM
- Status: Started

19. In My webMethods, navigate to Applications -> Administration -> Business -> Business Processes. Edit the second version of process model HandleStaff and enable it for execution. Hit Save.

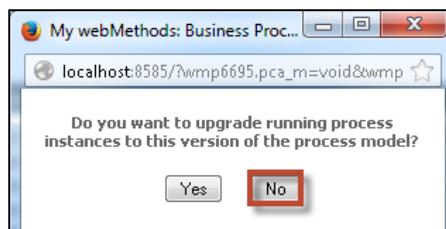
Business Processes > Edit Process

Process Information

Process Name: HandleStaff (CorporateProcesses)	Used: Yes
Model Version: 2	
Description:	
Created By: Administrator	
Date Deployed: 2/3/2014 12:15:12 PM	
Execution Enabled: <input checked="" type="checkbox"/>	
Analysis Enabled: <input type="checkbox"/>	

Save **Cancel**

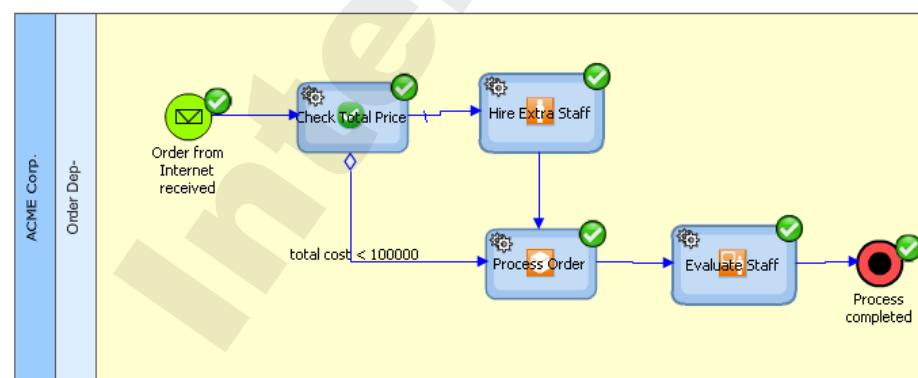
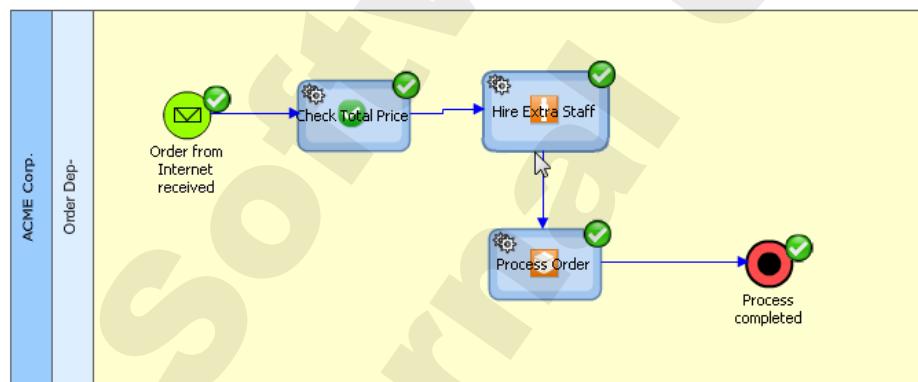
This will automatically disable the previous version. If asked for upgrading running process instances, select **No**.



20. Again, double-click <workshop_dir>\Exercise25\Resources\Ex25_submit.html and click the Submit button to start a new process instance.
21. In the Applications -> Administration -> Business -> Business Processes Dashboard, click Reload to refresh the list of listed process instances. You should now see two process instances of type HandleStaff. Ensure both instances used a different version number.

Business Processes Dashboard					
Process Name	Execution	Analysis	Total Instances	Running Instances	Failed Instances
HandleNewOrder (CorporateProcesses)	✓	○	24	0	1
HandleStaff (CorporateProcesses)	✓	○	2	1	0
Version 1	○	○	1	0	0
Version 2	✓	○	1	1	0
NotifyCustomer (CorporateProcesses)	✓	○	14	0	0

22. Monitor both instances until their completion and note the steps executed in each.



Check Your Understanding

1. Can instances of multiple process versions be running simultaneously?
2. Is the version set in the process properties or in step properties?
3. Why you were asked for upgrading running process instances when enabling version 2 of your HandleStaff process model?

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EXERCISE 26 (OPTIONAL):

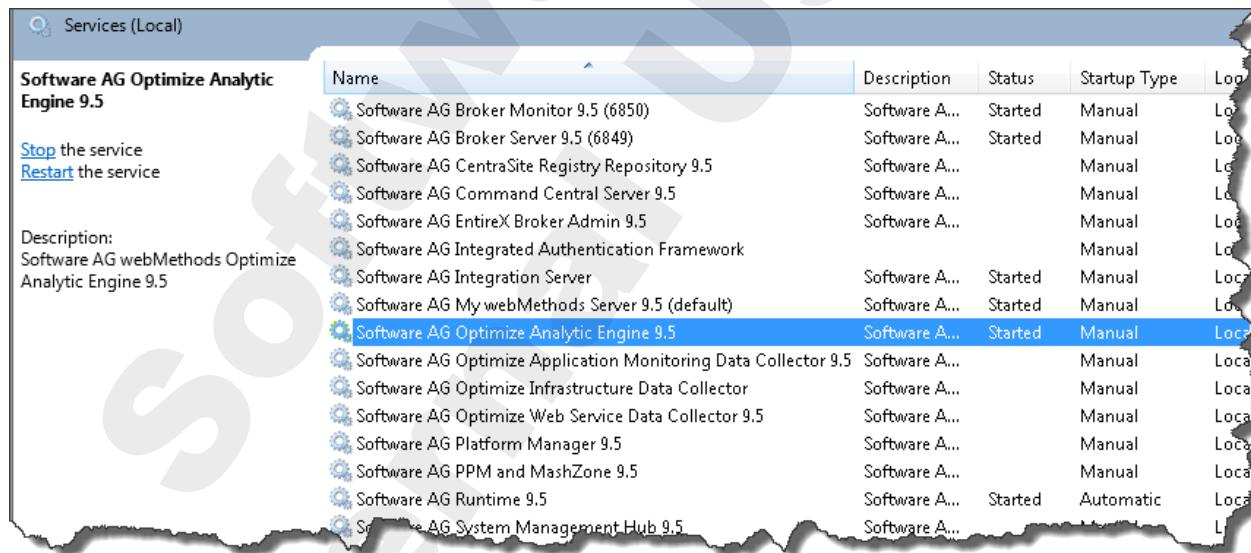
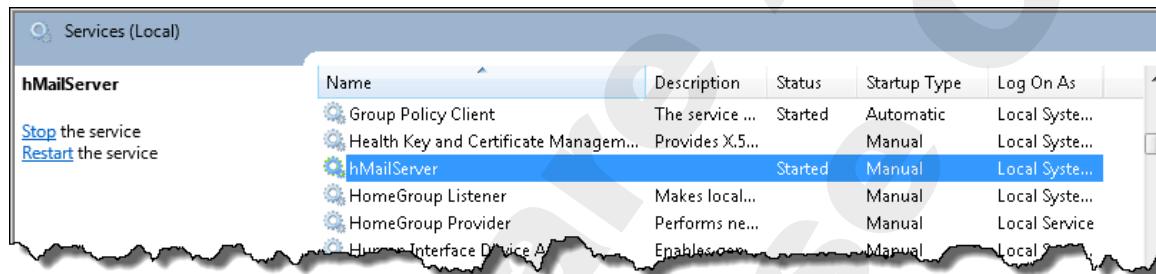
BUSINESS ACTIVITY MONITORING - AGGREGATED DATA

Objectives

In this exercise, you will enable a process model for analysis. Running multiple process instances in parallel will create analytic data collected by the Analytic Engine. These data can be aggregated and inspected using process analytics in My webMethods.

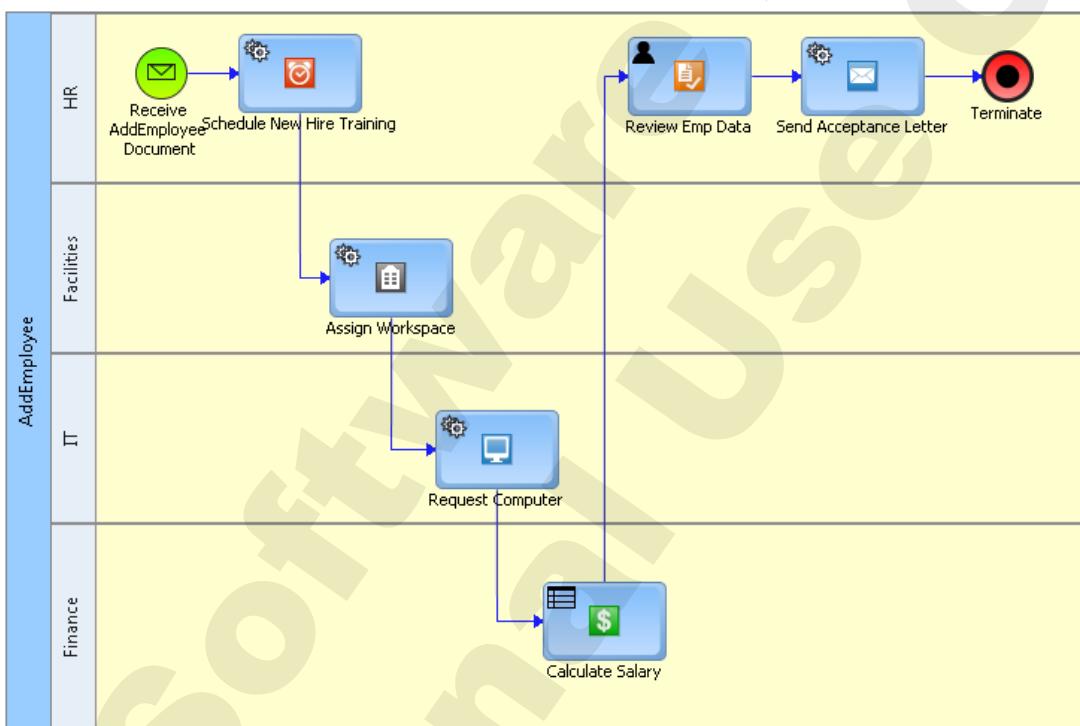
Steps

1. Ensure all Windows services mentioned in exercise 1 step 3 are up and running.
Additionally start the services **hMail Server** and **Software AG Optimize Analytic Engine**.



2. Use a browser tab to login to the IS Administration console (localhost:5555) as Administrator | manage. Visit **Packages** -> **Management**. Ensure that the packages **BPMTestDrive** and **BPMTestDriveRules** are enabled. If it is disabled, click the appropriate link in the Enabled column to enable.

3. Start Designer and open the Process Development perspective.
4. In Designer, import the **HRTasks** Task project by selecting **File -> Import... -> Software AG -> Existing CAF Projects into Workspace**. Select **Archive File** and browse to the **HRTasks.zip** file as provided in the directory **<workshop_dir>\Exercise26\Resources**.
5. Also, import the process project **HRProcesses** from the archive file provided as **<workshop_dir>\Exercise26\Resources\HRProcesses.zip** by selecting **File -> Import... -> General -> Existing Projects into Workspace**.
6. Finally, import the Business Rules project **HRBusinessRules** from the archive file provided as **<workshop_dir>\Exercise26\Resources\ HRBusinessRules.zip** by selecting **File -> Import... -> General -> Existing Projects into Workspace**.
7. To deploy (export) the imported Business Rules to the Rule Engine in IS, right-click the Rule project **HRBusinessRules** in the Solutions view and select **Export -> Rule Project to Integration Server runtime**. Stay on the defaults and click **Finish**.
8. From the Solutions view open process model **AddEmployee** as contained in the process project **HRProcesses** in the process editor.



9. Build and Upload the process model. During build, allow to deploy the Task project **HRTasks** to your MWS and to enable the process model for execution in the Process Engine.
10. Test your process once:
 - a) As this process uses Subscription as Receive protocol, you have to synchronize the IS Document type with the underlying Message Provider (webMethods Broker) first. To do so, right-click the IS Document type **bpmTestDrive.docs:AddEmployee** in the Package Navigator view and select **Sync Document Type**. Allow to push the Document type to the Message provider.
 - b) To start a process instance, use the Package Navigator view to run the IS service **bpmTestDrive.services.util:publishAddEmployeeDoc** (**Run As -> Run Flow Service**). You'll get prompted for input. Simply load the provided input data from **<workshop_dir>\Exercise26\Resources\AddEmployee_input.txt** and hit **OK**.

- c) Use another browser tab to login to My webMethods as Administrator | manage. Navigate to Applications > Monitoring > Business > Tasks > Task List Management. Search for a new User Task instance of type ReviewEmpData. Open the User Task instance, accept and complete the User Task.

The screenshot shows the 'Tasks' screen in My webMethods. At the top, there are buttons for Resume, Suspend, Assign To..., Accept For..., Resubmit, Set Status..., Delete, Delegate..., and Remove Delegations. Below these are tabs for Subscriptions and Scheduled Delegations. A message '0 selected' is displayed. On the right, there are buttons for Export Table... and a link to '1 - 20 of 113'. The main area displays a table with columns: TASK ID, TASK TYPE, PRIORITY, CREATED DATE, EXPIRATION DATE, LAST UPDATED DATE, and ASSIGNED TO. One row is visible, showing task ID 8982, task type 'ReviewEmpData', priority '3-Medium', created date '12.03.2014 16:08', expiration date '13.03.2014 00:08', last updated date '12.03.2014 16:08', and assigned to 'My webMethods Users'.

- d) In My webMethods, navigate to Applications > Monitoring > Business > Process Instance. Search for a new process instance of type AddEmployee. Ensure the process has been completed successfully.

The screenshot shows the 'Process Instances' screen in My webMethods. At the top, there are buttons for Resubmit Closest and Resubmit Earliest. A message '0 selected' is displayed. On the right, there is an 'Export Table...' button and a link to '101 - 105 of 105'. The main area displays a table with columns: Last Updated / Time, Start Date / Time, Process Name, Version, Process Instance ID, Status, Duration, and Detail. One row is visible, showing the process name 'AddEmployee_1' and status 'Completed'.

11. Now, let's enable Business Activity Monitoring:

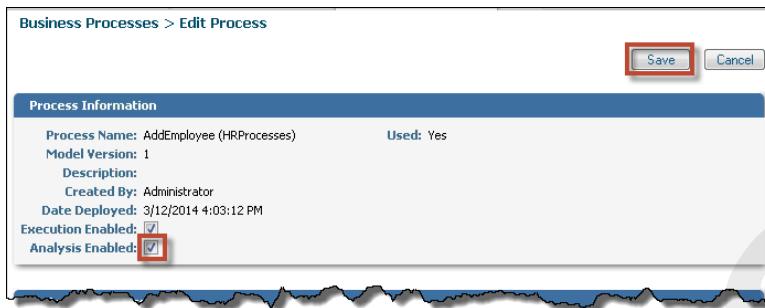
- a) In My webMethods navigate to Applications > Administration > Business Processes. Set Server to BPM and BAM. Then click the pencil icon beside your Process model AddEmployee to edit its properties.

The screenshot shows the 'Business Processes' configuration screen in My webMethods. The left sidebar shows a navigation tree with Applications, Administration, and Business sections. Under Business, 'Business Processes' is selected. The main area shows a 'Business Process Configuration' table. At the top of this table, there is a 'Server' dropdown menu with options: BPM and BAM (selected), BPM Only, and BAM Only. The table has columns: PROCESS NAME, MODEL VERSION, EXECUTION ENABLED, ANALYSIS ENABLED, USED, DATE DEPLOYED, and EDIT. One row is visible, showing the process name 'AddEmployee (HRProcesses)' and status 'Yes' in the USED column. The 'EDIT' checkbox in the last column is highlighted with a red box.

Exercise 26 (optional):

Business Activity Monitoring - Aggregated Data

- b) On the Edit Process page, check the **Analysis Enabled** checkbox for this process model and **save** your settings.



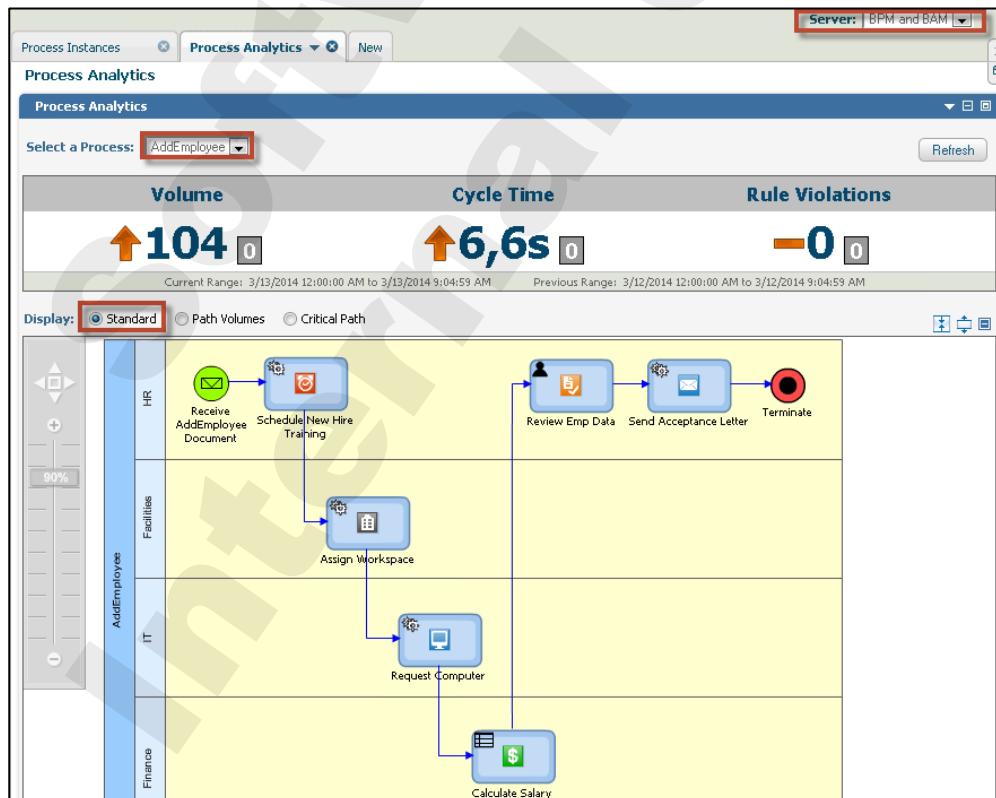
12. To create a significant amount of analytic data, you will run multiple instances of process AddEmployee in parallel. To do so:

- Switch back to Designer and re-visit the Package Navigator view. Run IS service **bpmTestDrive.services.util.runManyAddEmployees** from the context menu (**Run As -> Run Flow Service**).
- As this service requires no input data, a **No Input** dialog pops up. Click the **OK** button to run the **runManyAddEmployees** service.

Note: This service will start 100 new instances of the **AddEmployee** process; one every 2 seconds; so it will run for 200 seconds.

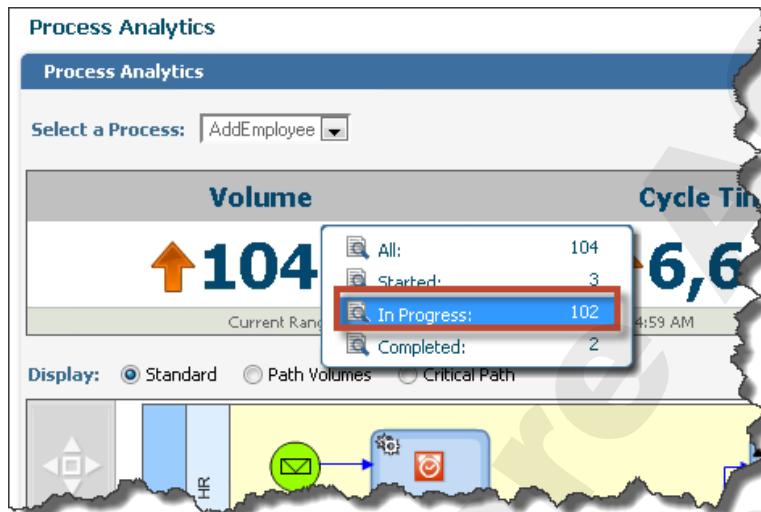
13. Inspect aggregated analytic data while the service/processes are still running. This allows to analyse the overall performance of a business process based on multiple process executions.

- Switch back to the **My webMethods** as Administrator | manage and navigate **Applications -> Monitoring -> Business -> Process Analytics**. On the Process Analytics page ensure Server is set to **BPM and BAM**. Select process model **AddEmployee** from dropdown and choose Display type **Standard**.



Note: The upper metrics panel shows how many process instances have been received (today - big number, yesterday - small number), the average process cycle time (today, yesterday) and how many Optimize rules have been violated (today/yesterday). Arrows indicate trends - trending up, down, or flat from 12am to present time.

- b) Click on the big volume number to see a detailed statistic of today's processes instances in a specific status:



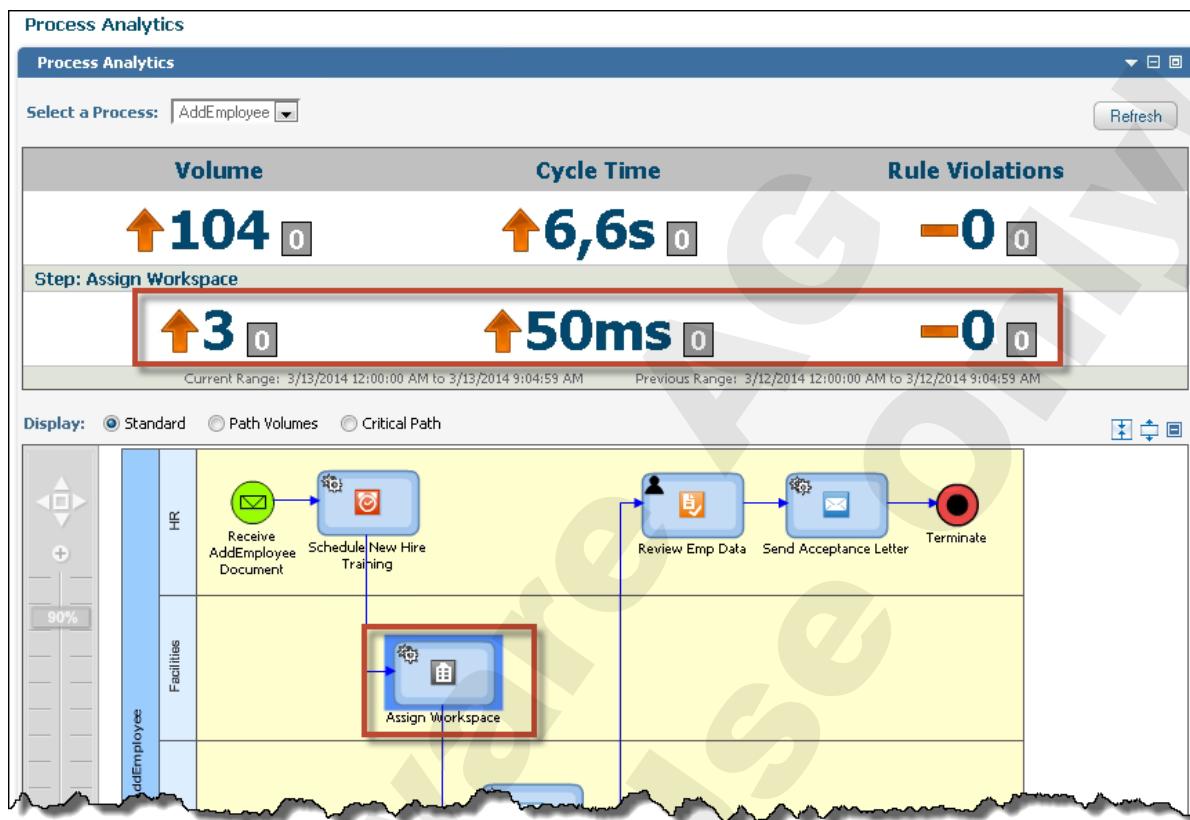
- c) Click the row In Progress to open the list of process instances being in progress.

Last Updated	Start Date/Time	Process Instance ID	Tracking Status	Cycle Time	Detail
3/13/2014 8:49:13.939 AM	3/13/2014 8:49:12.564 AM	f7bdb6d0-aab83-11e3-9d0c-be044c52bcd	Started		
3/12/2014 4:08:55.478 PM	3/12/2014 4:08:55.449 PM	3ac88450-a9f8-11e3-b421-f37294e2c4c7	Started		
3/12/2014 4:08:53.288 PM	3/12/2014 4:08:53.202 PM	39721c10-a9f8-11e3-b3c6-f5c76aa86c20	Started		
3/12/2014 4:08:51.436 PM	3/12/2014 4:08:51.403 PM	385f7390-a9f8-11e3-b3b2-f9675eb8024f	Started		
3/12/2014 4:08:49.221 PM	3/12/2014 4:08:49.195 PM	370e8990-a9f8-11e3-b36f-d2d382713905	Started		
3/12/2014 4:08:47.436 PM	3/12/2014 4:08:47.401 PM	35fcfb70-a9f8-11e3-b31b-ac57e5582c59	Started		
3/12/2014 4:08:45.238 PM	3/12/2014 4:08:45.176 PM	34a97070-a9f8-11e3-b2da-aa04efc6fc0	Started		
3/12/2014 4:08:43.443 PM	3/12/2014 4:08:43.416 PM	339cbb60-a9f8-11e3-b28a-f7bba0bc256d	Started		
3/12/2014 4:08:41.209 PM	3/12/2014 4:08:41.169 PM	3245ddf0-a9f8-11e3-b26c-ae1d57d907af	Started		
3/12/2014 4:08:39.386 PM	3/12/2014 4:08:39.359 PM	3131d5e0-a9f8-11e3-b22d-be76b7f7c85c	Started		

Exercise 26 (optional):

Business Activity Monitoring - Aggregated Data

- d) Close the data panel showing the process instance list by clicking the X in the panel.
- e) Click step **Assign Workspace** in the lower process display panel. This brings up its step-specific metrics:

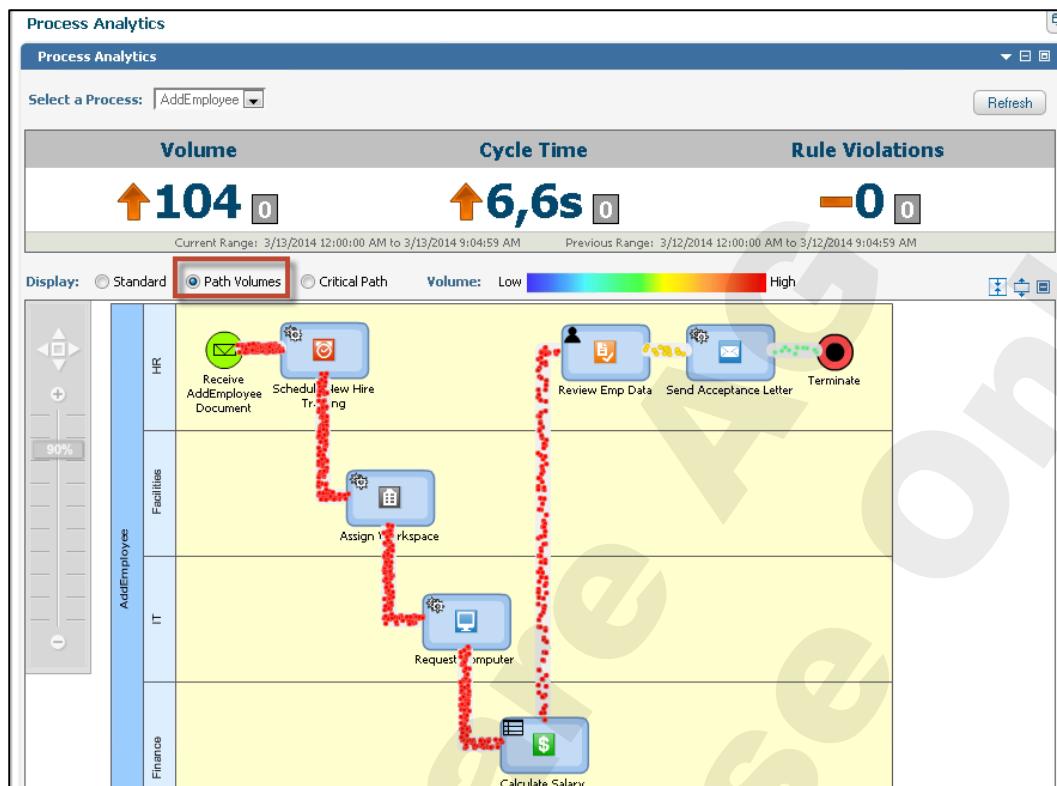


- f) Click on the big Cycle Time number to see a detailed statistic of today's step cycle times:

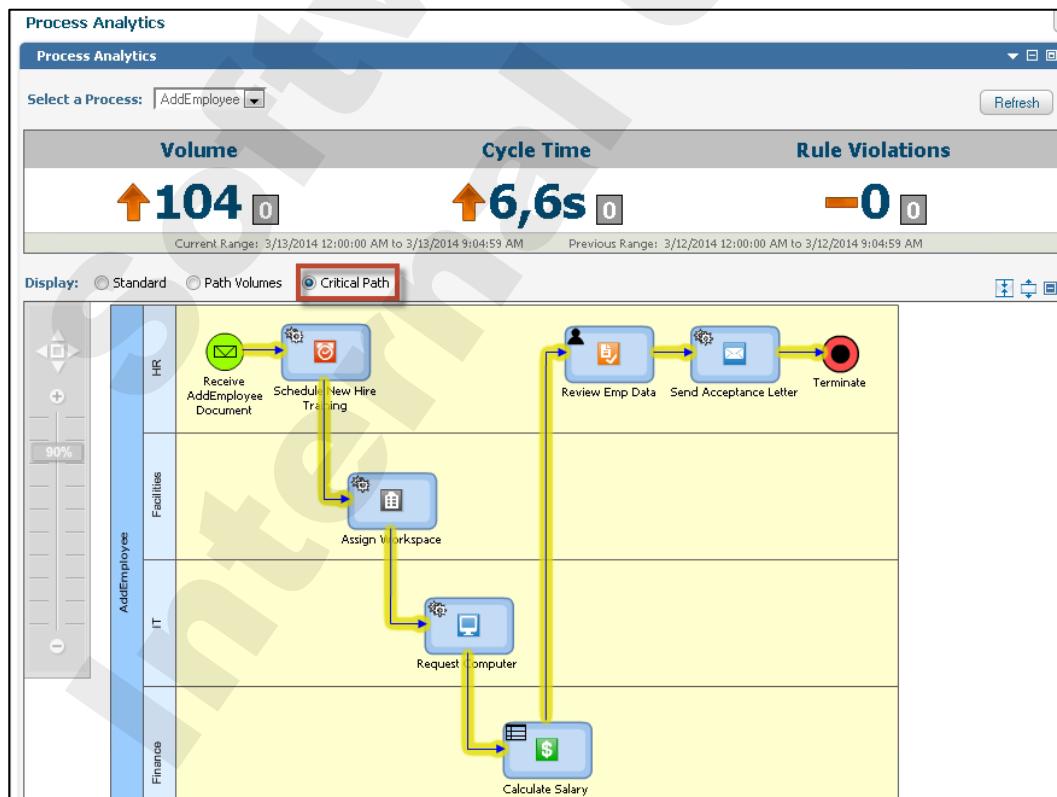


- g) Click step **Assign Workspace** in the lower process display panel a second time to remove the step metrics from the metrics panel.

- h) Select Display type **Path Volumes**. This display type shows “bees” representing percentage of instances taking a specific path.



- i) Finally select Display type **Critical Path**. This display type shows the most common path taken by all process instances.



Check Your Understanding

1. Why did we see a low path volume for transitions from Review Emp Data to Send Acceptance Letter and Send Acceptance Letter to Terminate?
2. Why can't you see Analytic data for processes of type HandleNewOrder?

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EXERCISE 27 (OPTIONAL):

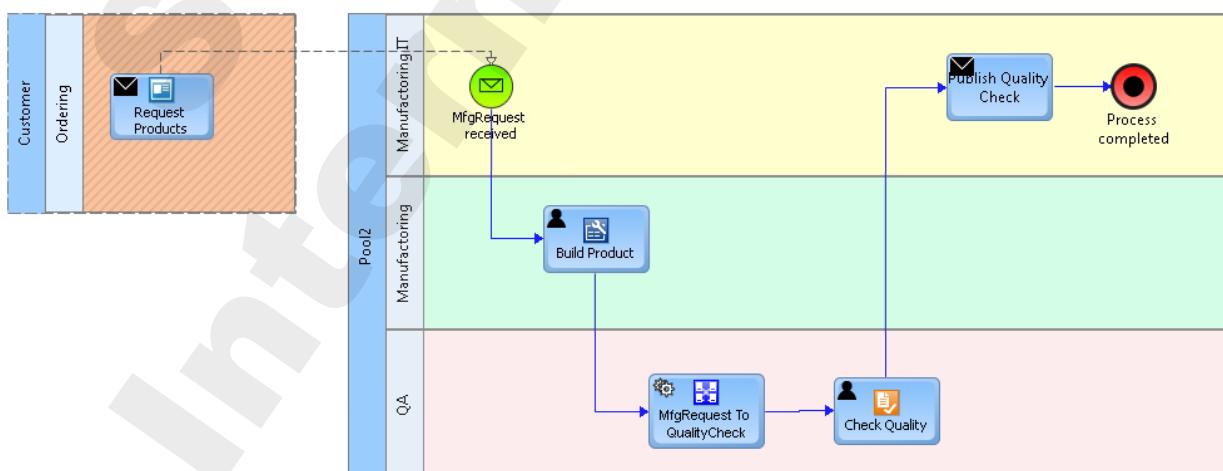
PROCESS SIMULATION

Objectives

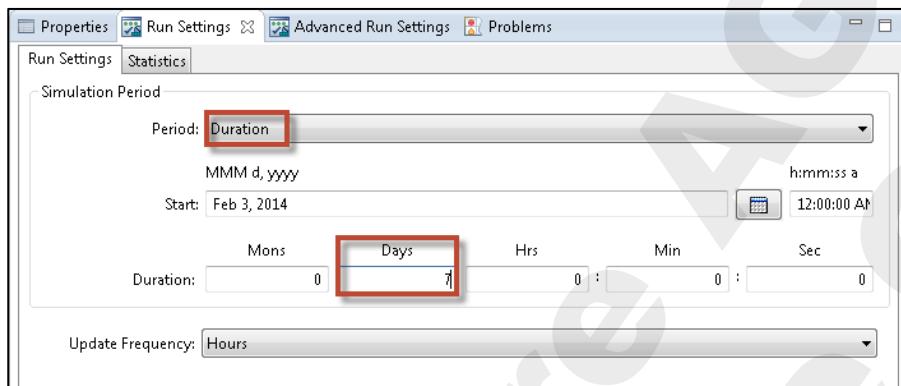
In this exercise, you will build and examine a simulation of the Manufacturing and QA process. You will specify resources and assign them to task steps. Moreover, you will optimize the resources by using the internal optimization engine, and finally export your simulation results as an Excel report.

Steps

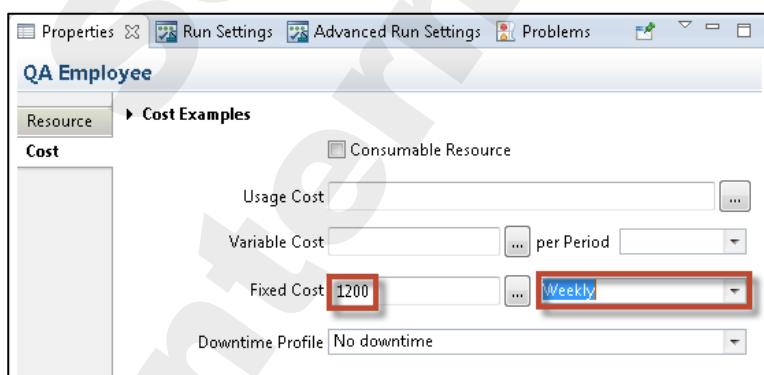
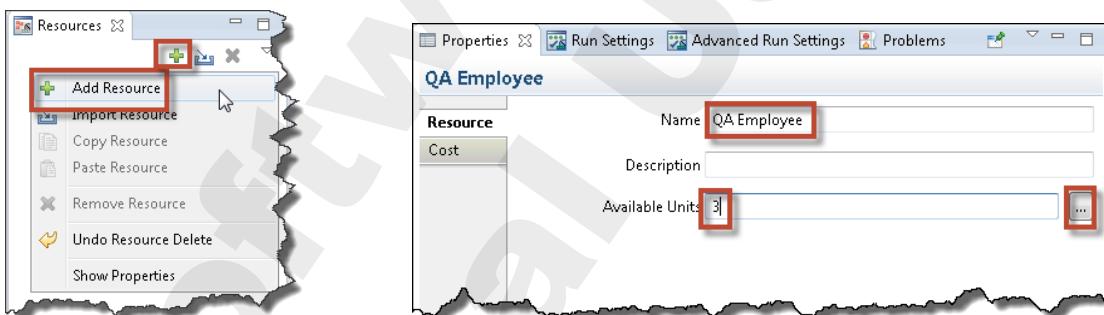
1. Ensure all Windows services mentioned in exercise 1 step 3 are up and running.
 2. Use a browser tab to login to the IS Administration console (localhost:5555) as Administrator | manage. Visit **Packages** -> **Management**. Ensure that the package **BPMBasicSupport** is enabled. If it is disabled, click the appropriate link in the Enabled column to enable it.
- 
3. Launch webMethods Designer and switch to the **Process Simulation** perspective.
 4. Import the **MfgQATasks CAF Project** by selecting **File** -> **Import...** -> **Software AG** -> **Existing CAF Projects into Workspace**. Select **Archive File** and browse to the **MfgQATasks.zip** file as provided in the directory **<workshop_dir>\Exercise27\Resources**.
 5. Also, import the process project **AcmeManufacturing** from the archive file provided as **<workshop_dir>\Exercise27\Resources\AcmeManufacturing.zip** by selecting **File** -> **Import...** -> **General** -> **Existing Projects into Workspace**.
 6. Using the Solutions view, locate and open the **MfgQA** process model contained in the process project **AcmeManufacturing**. If asked, stay in the Process Simulation perspective.
 7. Ensure the process resembles the following figure:



8. Use the Simulate Process button  in the menu bar of Designer to create a new process simulation based on your **MfgQA** process model. In the appearing wizard accept all defaults and click **Finish**.
9. The previous step should have created and opened a simulation file called **MfgQA.simulation**. Before running the simulation the first time, you should first configure Run Settings, define and assign Resources.
 - a) Ensure the **Run Settings** view is visible in Designer. Add it, if necessary (**Window -> Show View**). From the Run Settings view, set the **Simulation Period** as a Duration of **0 Mons** and **7 Days** starting at the <current> date:

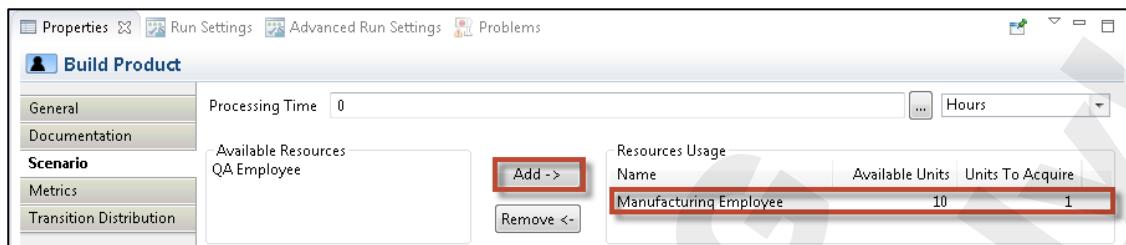


- b) Ensure the Resources view is visible in Designer. Add it, if necessary (**Window -> Show View**). From the Resources view, add a resource named **QA Employee**, with a constant number of **3** available units at a **fixed cost of 1200/week**.

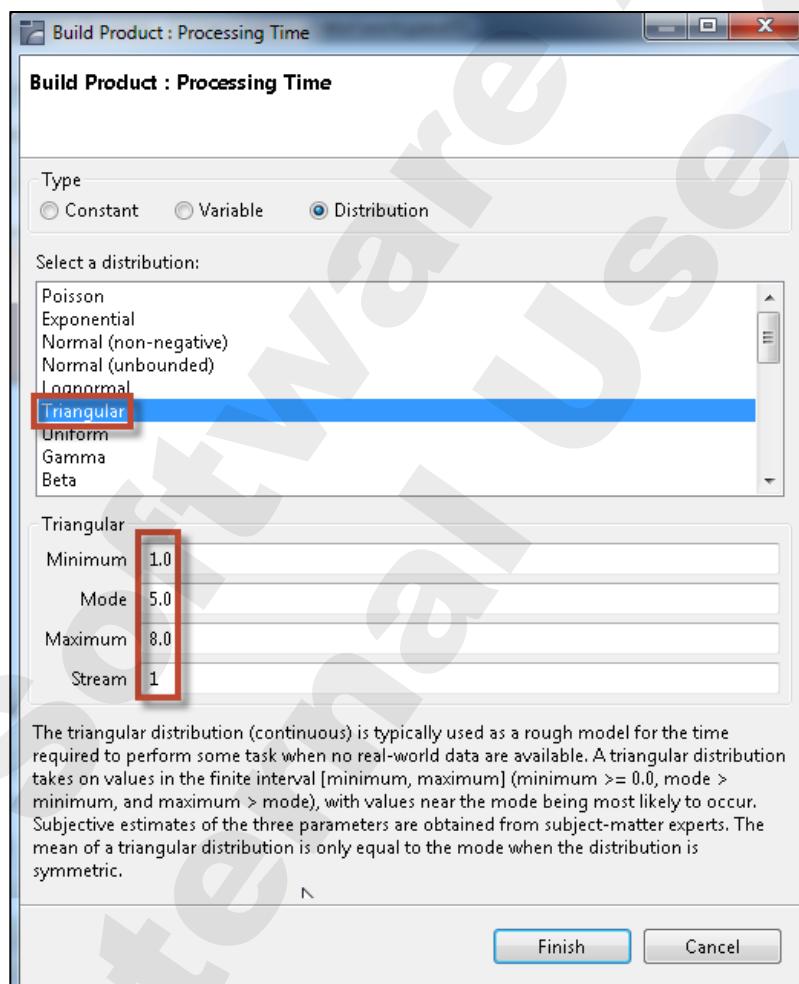


- c) Add another resource named **Manufacturing Employee**, with a constant number of **10** available units at a **fixed cost of 1000/week**.
- d) Save all your work.

- e) Select the User Task Activity **Build Product** in the Process Simulation editor and open the Scenario tab in the corresponding Properties view.
- i) Assign **Manufacturing Employee** as the resource to be used at this User Task Activity.

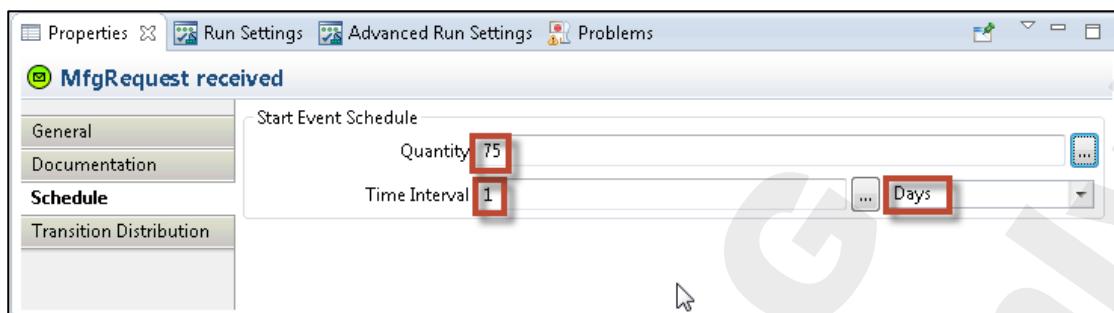


- ii) Click the **[...]** button (next to Processing Time) and set the User Task steps Processing Time to correspond to a **Distribution type of Triangular with Minimum 1.0, Mode 5.0, Maximum 8.0, Stream 1 hours** and hit **Finish**. This assumption will give us a more realistic data model:

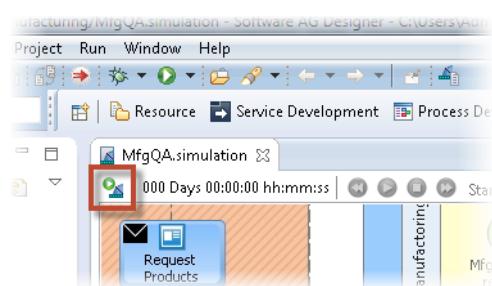


- f) Select the second User Task step named **Check Quality** in the Process Simulation editor and open the Scenario tab in the corresponding Properties view.
- i) Assign **QA Employee** as the resource to be used.
- ii) Click the **[...]** button to set the User Task steps Processing Time to correspond to a **Triangular distribution with Minimum 1.0, Mode 2.5, Maximum 3.0, Stream 1 hours**.

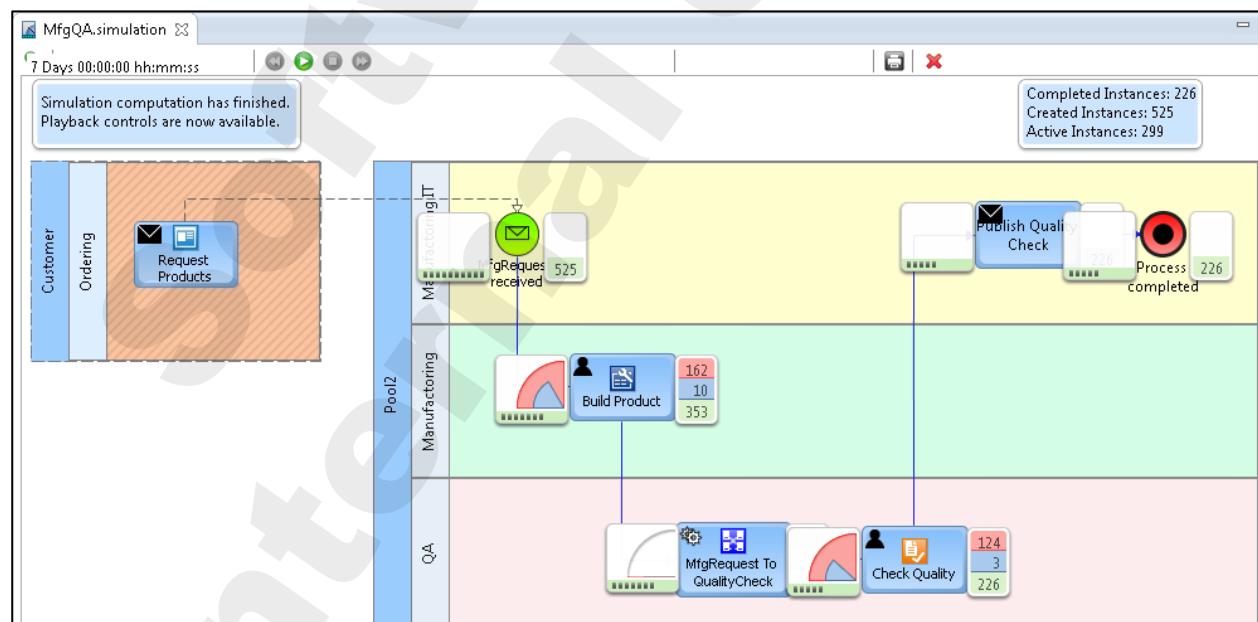
- g) Select the Start Message Event **MfgRequest received** in the Process Simulation editor and open the Schedule tab in the corresponding Properties view. Define that **75** documents will arrive **per day**:



10. Save and run your simulation by clicking the **Simulate and animate** button:



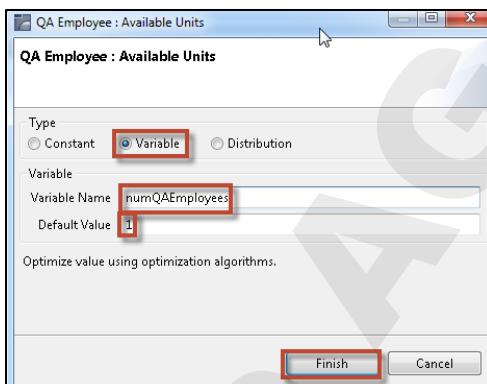
11. Look for potential bottlenecks in your simulation. The red number should always approximate zero, but may jump to 1 or 2 occasionally as your simulation runs. If the red number never goes above zero, you have too many resources. If at the end of the simulation the red number is greater than 2, you have too few:



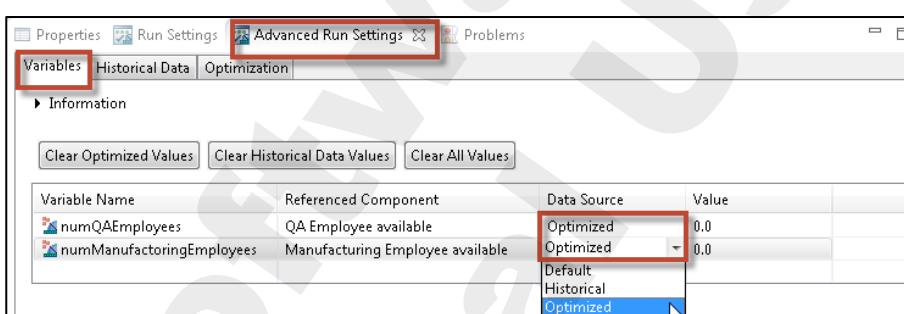
12. The simulation shows that we have a shortage of resources assigned.

Instead of guessing a reasonable number of required resources to avoid bottlenecks, we will calculate their number by using the internal Optimization Engine:

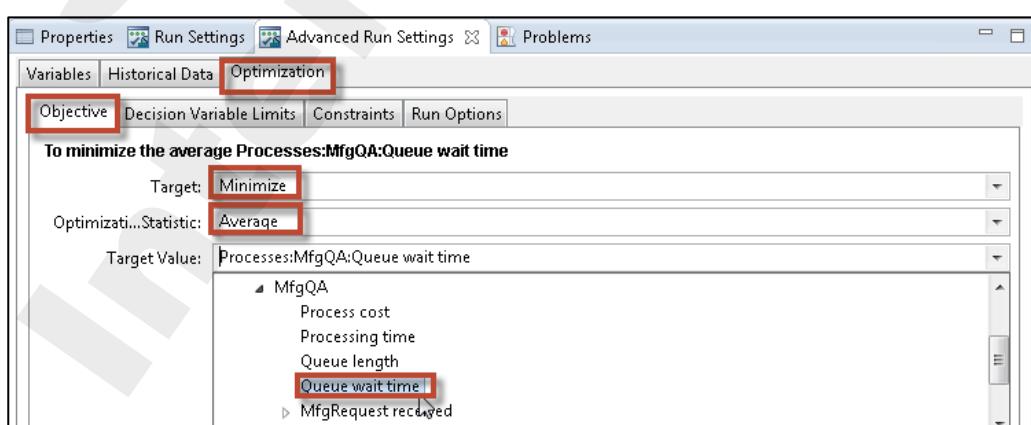
- a) Select resource **QA Employee** from the Resources view and open the corresponding Properties view. On the Resource tab, click on the **...** button and change the resource to be of type **Variable** with a **Default Value** of 1. Specify **numQAEmployees** as variable name and hit **Finish**.



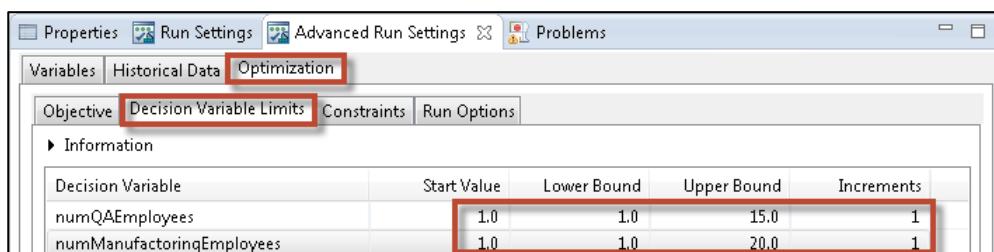
- b) Select resource **Manufacturing Employee** from the Resources view and open the corresponding Properties view. On the Resource tab, click on the **...** button and change the resource to be of type **Variable** with a **Default Value** of 1. Specify **numManufacturingEmployees** as variable name. Hit **Finish**.
- c) Open the **Advanced Run Settings** view and open the **Variables** tab. For both variable names displayed here, change **Data Source** to a value **Optimized**:



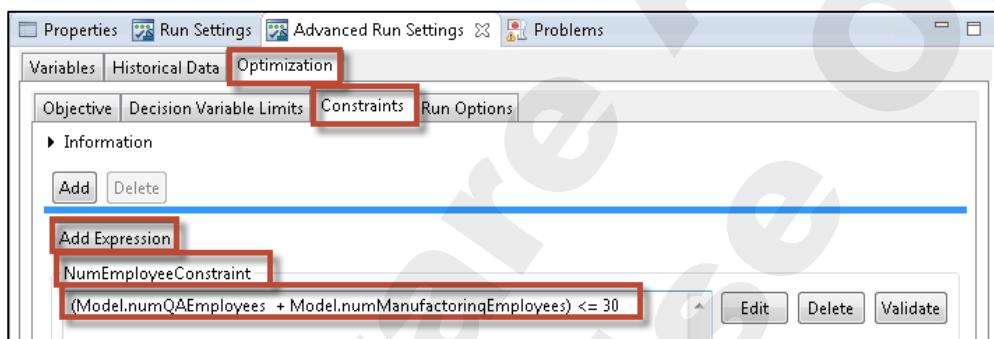
- d) In the **Advanced Run Settings** view, switch to the **Optimization** tab.
- i) On the **Objective** sub-tab specify Target **Minimize**, Optimization Statistic **Average**, and select **Processes:MfgQA:Queue wait time** as Target Value to be minimized:



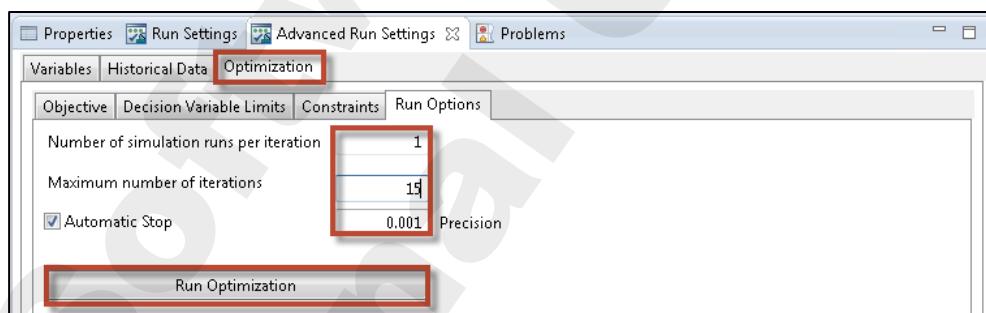
- ii) On the **Decision Variable Limits** sub-tab provide the following boundaries:



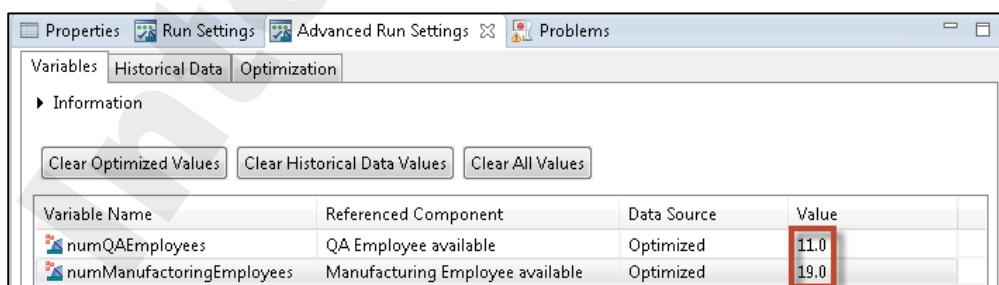
- iii) On the **Constraints** sub-tab click **Add Expression** to create a constraint by using the offered Expression Builder. The Constraint Name should be **NumEmployeeConstraint** and should limit the total number of resources (`Model.numQAEmployees + Model.numManufacturingEmployees`) to a value less than or equal 30. Validate your expression.



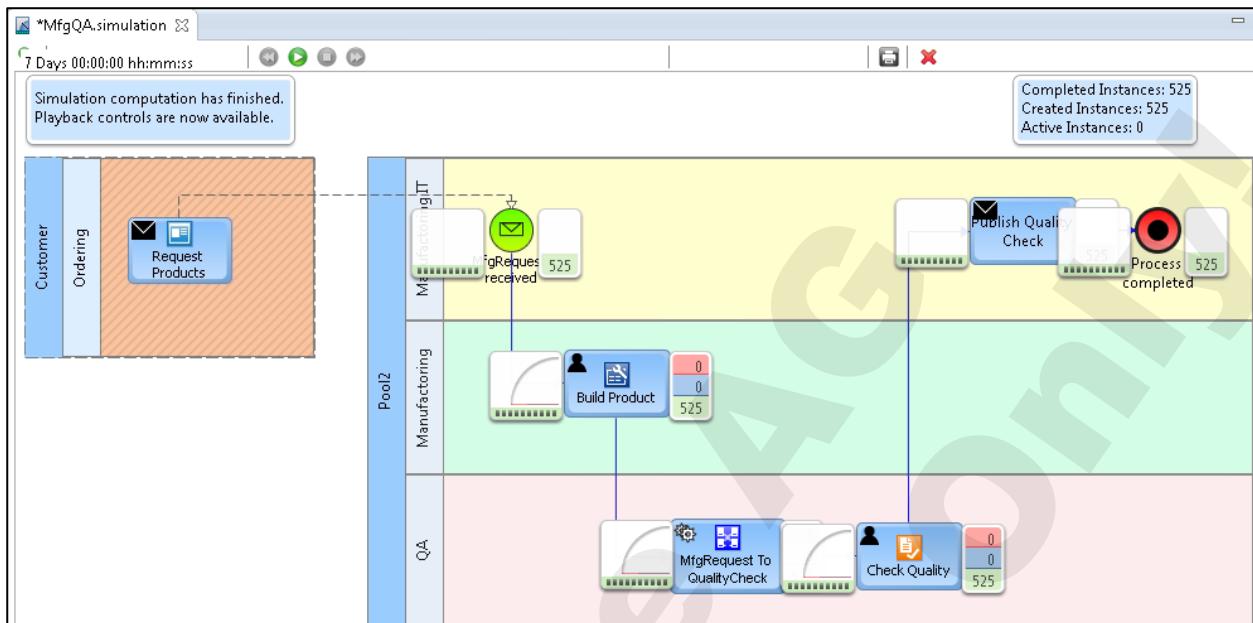
- iv) On the final **Run Options** sub-tab specify the Run Options as displayed below and click on **Run Optimization**. If prompted for saving your changes, click Yes.



- v) Optimization should calculate best fitting values for both resource variables. Monitor the optimization progress displayed in the Optimize Statistics view. Finally, optimized results are visible on the Variables tab of the Advanced Run Settings view and are stored in each resource definition.



13. Save and rerun your simulation by clicking the  **Simulate and animate** button.
Look again for bottlenecks:



14. Generate and save a report in Excel format from your simulation. Specify C:\temp as target folder and provide **MfgQA_SimulationReport** as report name.



15. Open the saved report using Microsoft Excel Viewer. Locate the total cost of your simulation on a per-swimlane basis.

Simulation Report for MfgQA					
Simulation Results - Process Level					
Times, Costs, Counts					
Processes	Cycle Time	Processing Time	Wait Time	Completed Instances	Cost in Dollars
MfgQA	Avg	Avg	Avg	Total	Avg
MfgQA	13.54015099	6.810007605	6.730143386	525	61.33333333
Resource Utilization					
Resources	Consumption				
MfgQA	Avg	Max	Min	Total	MfgQA
QA Employee	1	11	0	525	
Manufacturing Employee	1	19	0	525	
Resources	Cost in Dollars				
Cost Per Unit	Total				
MfgQA	MfgQA				
QA Employee	25.14285714	13200			
Manufacturing Employee	36.19047619	19000			

Check Your Understanding

3. Why did we create two resources in the Resources view?
4. Could you change the flow of the model in the Simulation view?

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APPENDIX:

HELP INFORMATION

When You Get Lost...

If you are unable to complete any of the exercises, you may use the following instructions to import the needed projects from the Solution folder of the exercise (`<workshop_dir>\Exercise##\Solution`). You need to delete your existing projects first, and then import the CAF/Task project, followed by the Process and/or Business Rules project.

To delete a project from workspace:

1. In the Navigator view, right-click the project name and click **Close Project**.
2. *CAF/Task projects only:*
If a CAF or Task project is published to the MWS, you will need to right-click the **My webMethods Server** in the Servers view and click **Add and Remove Projects**.
Select the project (e.g. SalesDepartment or CustomerUI), select **Remove**, and click **Finish**.
3. In the Navigator view, right-click the project name and select **Delete**.
4. Select the option **Also delete contents under...** . Click **Yes**.

To import a CAF project into a workspace (e.g. SalesDepartment.zip):

1. In the File menu, click **Import**.
2. In the Import window, click **Software AG -> Existing CAF Projects into workspace**. Click **Next**.
3. Enable **Select archive file** and browse to the Exercise's setup folder (`<workshop_dir>\Exercise##\SetupExercise`)
4. Select the archived file of the CAF project and click **Open**. Click **Finish**. Only in case of an error notified by a pop-up, just ignore the error (click **OK** on the pop-up), then hit **Cancel** on the Import panel. CAF Project will get imported successfully.
5. Right-click the **My webMethods Server** in the Servers view and click **Add and Remove Projects**.
Select the CAF project (e.g. SalesDepartment), select **Add>**, and click **Finish**.

To import a Process or Business Rules project into a workspace (e.g. CorporateProcesses.zip):

1. In the File menu, click **Import**.
2. In the Import window, click **General -> Existing Projects into workspace**. Click **Next**.
3. Enable **Select archive file** and browse to the exercise's setup folder (`<workshop_dir>\Exercise##\SetupExercise`)
4. Select the archived file of the Process/Business Rules project and click **Open**. Click **Finish**.