WebSphere Business Monitor V6.1 Clips and Tacks business process monitoring lab

What this exercise is about

The objective of this lab is to show you how to monitor a business process which was developed in WebSphere Business Modeler, implemented in WebSphere Integration Developer and deployed to WebSphere Process Server.

This lab will provide solutions that you can import into Modeler and WebSphere Integration Developer, so then you can concentrate on building the monitor model, deploying it, running tests and viewing monitored data in the dashboards.

Lab requirements

List of system and software required for the student to complete the lab:

- WebSphere Business Modeler V6.1.
- WebSphere Integration Developer V6.1.
- WebSphere Business Monitor V6.1 – Toolkit Installation including the Monitor Model editor and Monitor Server

- DB2 Alphablox is an optional prerequisite for the installation of the Monitor toolkit. If you choose not to install it, then you will not be able to use the report and dimension views in the Web dashboard.

What you should be able to do

At the end of this lab you should be able to:

- Use Modeler to export the business measures model and process model.
- Use WebSphere Integration Developer to implement the monitor model, and deploy it to the server.
- Define a dashboard to view monitored data.

Introduction

In this lab you will learn how to deploy a monitor model from end to end using WebSphere Business Modeler, WebSphere Integration Developer and WebSphere Business Monitor. This lab will show you the basic procedure for creating and implementing a simple model.

The model used in this lab is the **ClipsAndTacks** model which is also used in IBM Redbook **SG247148** – **Business Process Management: Modeling through Monitoring Using WebSphere V6.0.2 Products**. In the Redbook, there are several models that are referenced, but in this lab you will be using the Future 1 Process.

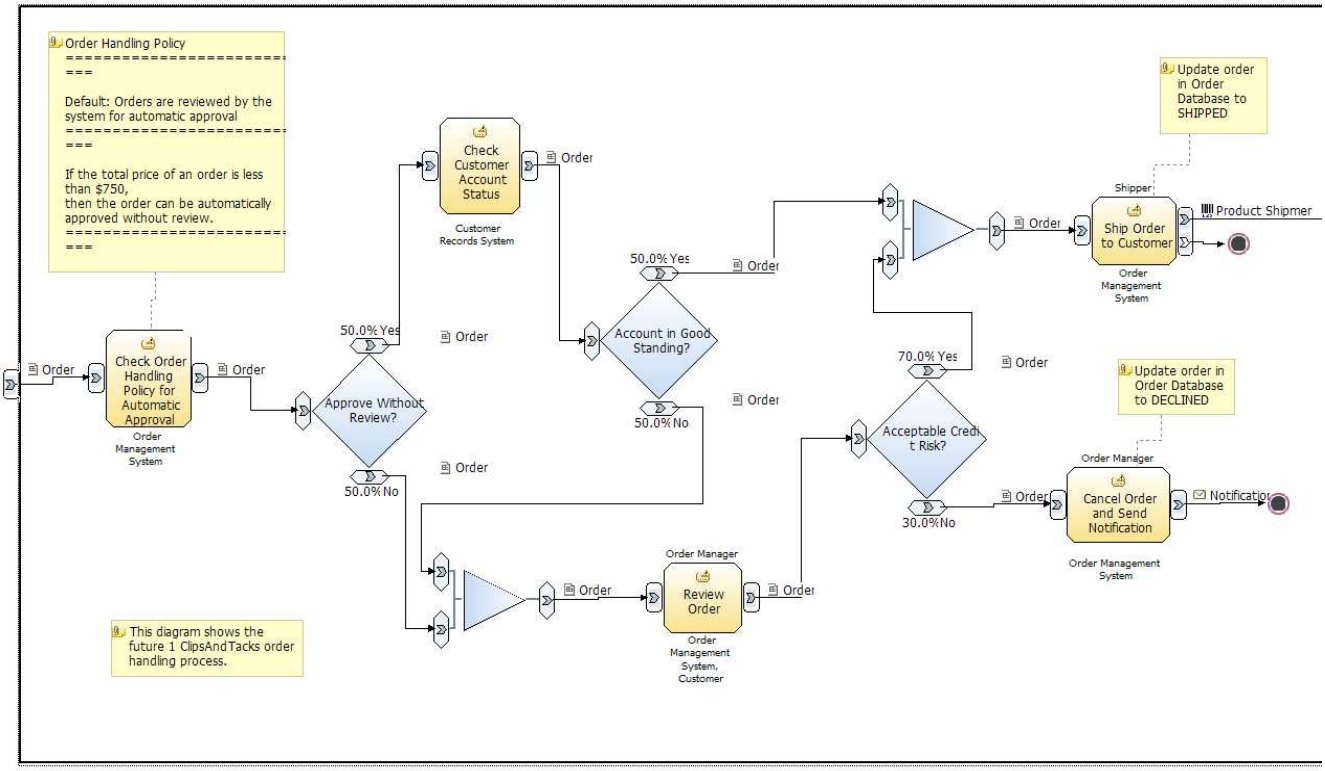
In this lab you will build a monitor model that has the same basic elements as the one that is defined in the Redbook. Namely you will create monitoring constructs in support of two KPIs:

- Average order fulfillment is 3 days or less
- Percentage of shipped orders is greater than 90%

You will also create situation events when the average order fulfillment time is greater than 3 days, and when the percentage of orders shipped is less than 85%.

For dimensional analysis, you will create a Location dimension which allows you to drill down on country and city. You will also add an Order Status metric, which shows orders as 'New', 'Cancelled' or 'Shipped'. And you will add measures for average order price, sum of order price for all orders, and order count.

Here is a diagram of the ClipsAndTacks process model:



This is the ordering process for the Clips And Tacks company. In this process, orders are received and optionally submitted to a review process. Orders which pass all checks are shipped to the customer. Other orders may be cancelled.

When you build the monitor model, first you will auto-generate a monitor model from the BPEL process. This monitor model will have the necessary monitor elements to create and terminate monitoring context instances, and to correlate BPEL events with the monitoring context instances. You will also import the business measures model that was created in Modeler. This model contains the high level business measures and KPI's that you want to create in the final monitor model. So then you will merge the business measures model from Modeler with the auto-generated monitor model.

URL cheat sheet

The following URLs may be helpful to you as you exercise this lab. Note that the port numbers in the URL of your installation may be different depending on your configuration.

- Server administrative console

http://localhost:9061/ibm/console/

- Web dashboard

http://localhost:9081/BusinessDashboard/

Part 1: Import the model into Modeler

Instead of building the process model from scratch, you will import the model into WebSphere Business Modeler. You will review the process model and the business measures model.

____ 1. Start WebSphere Business Modeler and setup the environment.

__ a. Start WebSphere Business Modeler, and when prompted point to a new workspace such as c:\workspaces\clipsmodel

__ b. A quickstart wizard will pop up, click the Cancel button.

__ c. Close the Welcome tab.

__ d. Click **Modeling** > **Mode** > **WebSphere Process Server**.

____ 2. Import the supplied Modeler project.

__ a. Right click in the Project Tree, then select **Import**…

__ b. Select **WebSphere Business Modeler project (.mar, .zip)**

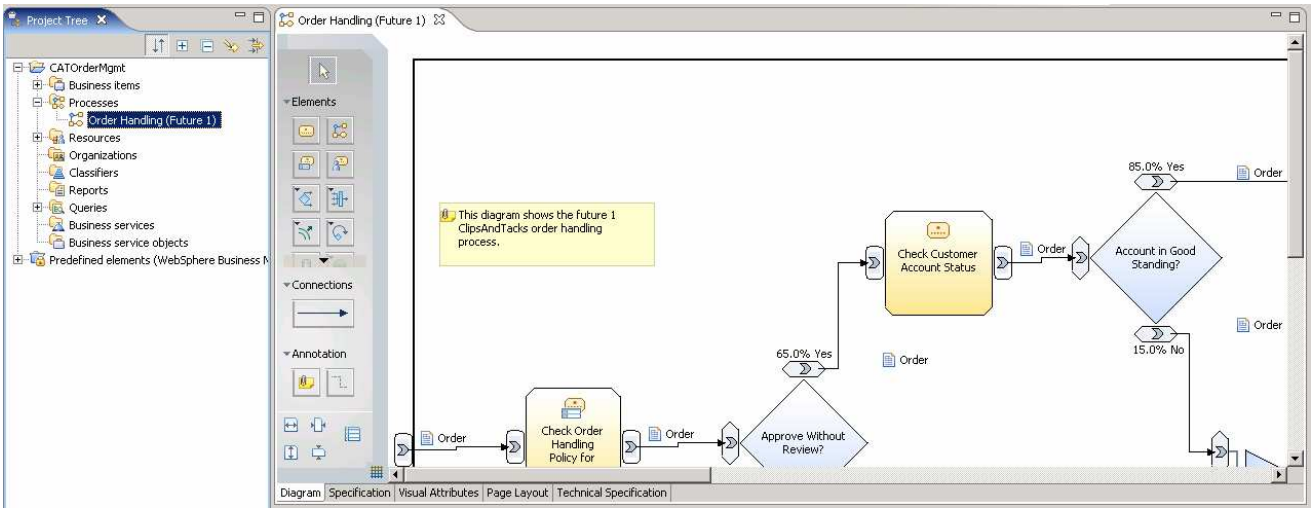
__ c. **Browse** to the supplied mar file, for example, c:\Labfiles61\ClipsAndTacksBPM\CATOrderMgmt.mar

__ d. For **target project**, click **New** to create a new project. You can take the defaults to create the project.

__ e. On the import dialog, click **Finish**.

____ 3. Review the process.

__ a. In the Project Tree, navigate to **CATOrderMgmt > Processes > Order Handling (Future 1)**, then double click on the process to open the editor. In the editor, you can review the diagram which represents the process model. Notice that there are various tasks, decisions, human tasks, plus one business rule.



__ b. For each task in the diagram, click the task, then click the Attributes tab and review the information. For implementation details, click the Technical Attributes View tab. You will see these implementations:

1) Check Order Handling Policy for Automatic Approval – rule group. Click the Business Rules tab and you will find that a business rule is used to check the order price and require manual approval if it is greater than or equal to $750.

2) Review Order – human task

3) Ship Order to Customer – human task

4) Check Customer Account Status – java

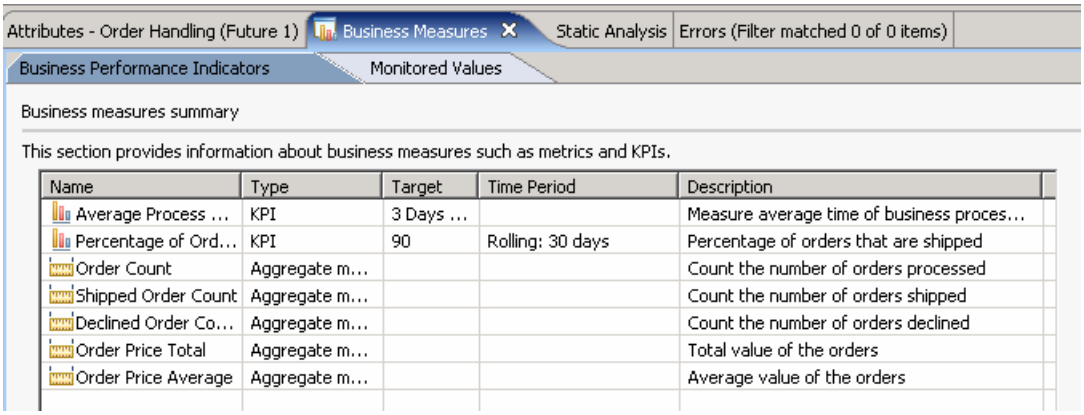
5) Cancel Order and Send Notification – java

6) Update Order Database – java

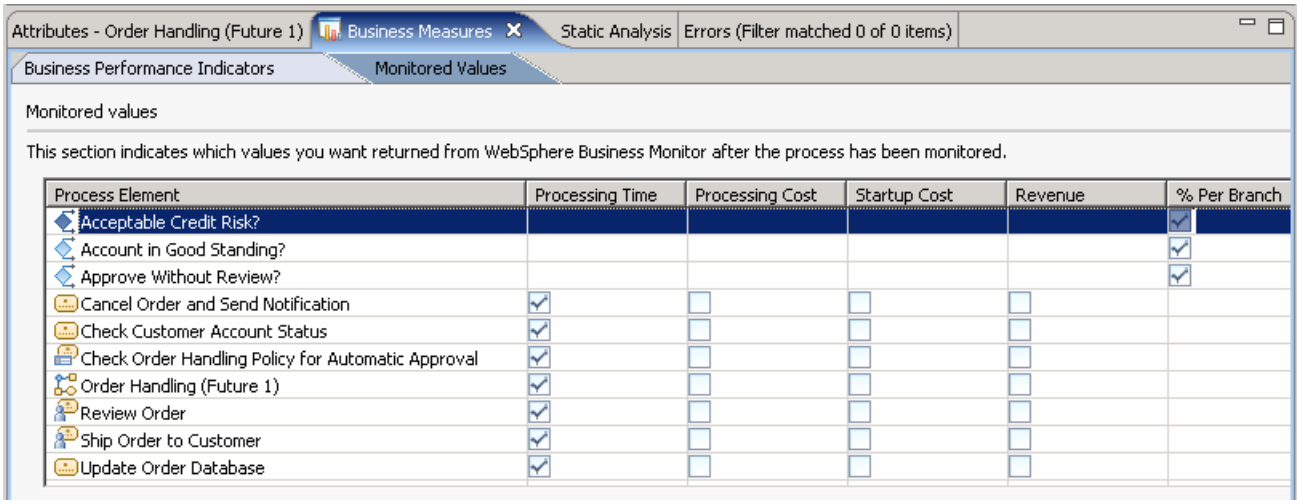
____ 4. Review the business measures.

__ a. Click the Business Measures tab.

__ b. On the Business Performance Indicators tab, review the listed KPIs and aggregate metrics. For each item, you can click the Edit Details button to see more information.



__ c. On the Monitored Values tab, review the values that will be returned to Modeler from the monitored data.



____ 5. Export to WebSphere Business Monitor.

__ **a.** Right click in the Project Tree on CATOrderMgmt, then select **Export > WebSphere Business Monitor Development Toolkit (.mm).**

__ **b.** Click **Next.**

__ **c.** Browse to a target directory, then click **Finish**.

____ 6. Export to WebSphere Integration Developer.

__ a. Right click in the Project Tree on CATOrderMgmt, then select **Export > WebSphere Integration Developer.**

__ b. Click **Next**.

__ c. Browse to a target directory. Do not select Enable default events.

__ d. Click **Next**.

__ e. Click **Finish**.

____ 7. Close WebSphere Business Modeler.

Part 2: Import the process into WebSphere Integration Developer

In this section you will import the process from Modeler into WebSphere Integration Developer. Normally, then you would implement the various tasks in the process, but to save some time you will import a solution which already has the implementions for the tasks. Using the best practice approach, Modeler has automatically created three separate projects, one for the process (CATOrderMgmt), one for the implementation (CATOrderMgmt_impl) and one for a library of common elements (CATOrderMgmt_lib).

____ 1. Start WebSphere Integration Developer and setup the environment.

__ a. Start WebSphere Integration Developer, and when prompted point to a new workspace such as c:\workspaces\clipsbpm

__ b. Close the Welcome tab.

__ c. By default, you are in the Business Integration perspective.

____ 2. Import the process.

__ a. In the Business Integration view, right click then select **Import**…

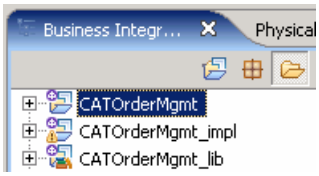
__ b. Navigate to **Other > Project Interchange** then click **Next**.

__ c. For the .zip file, browse to the output file from Modeler, for example, 'CATOrderMgmt_2007-10-15T10.12.26.zip'. Note that the timestamp in your file name will be different.

__ d. You should see three projects listed, so click **Select All**.

__ e. Click **Finish**.

__ f. You should see three projects listed in the Business Integration view, one for the process (CATOrderMgmt), one for the implementation (CATOrderMgmt _impl) and one for a library of common elements (CATOrderMgmt _lib):



____ 3. Import the implementation solution.

__ a. In the Business Integration view, right click then select **Import**…

__ b. Navigate to **Other > Project Interchange** then click **Next**.

__ c. For the zip file, browse to the supplied file, for example,

c:\Labfiles61\ClipsAndTacksBPM\CATOrderMgmt-PI.zip

__ d. Select all projects.

__ e. Click **Finish**. Click **OK** to confirm overwrite.

__ f. If you see errors, then try to clean the workspace by selecting Project > Clean … > select 'Clean all projects' , then click OK.

__ g. If you would like to review the implementation, in the Business Integration view, navigate to **CATOrderMgmt_impl > Business Logic**. You will find three Java implementations.

1) CheckCustomerAccountStatus – Java is used to calculate the credit amount for the customer. When you run an instance of the business process, you will enter the old credit rating and old credit amount. This routine calculates a new credit rating which is a random number between 500 and 800. It calculates a new credit amount which is based on an adjustment to the old credit amount, using this formula: newAvailCredit = oldAvailCredit +((newRating-oldRating)*0.1).

2) The other two Java implementations just print messages to the log.

__ h. If you would like to review the BPEL process, in the Business Integration view, navigate to **CATOrderMgmt > Business Logic > Processes > processes\orderhandlingfuture1**, then double click on **OrderHandlingFuture1** to open the BPEL editor. This is a summary of the flow:

1) Check Order Handling Policy for Automatic Approval. Implemented as a business rule. If Order.totalPrice < 750, go to Check Customer Account Status, else go to Review Order

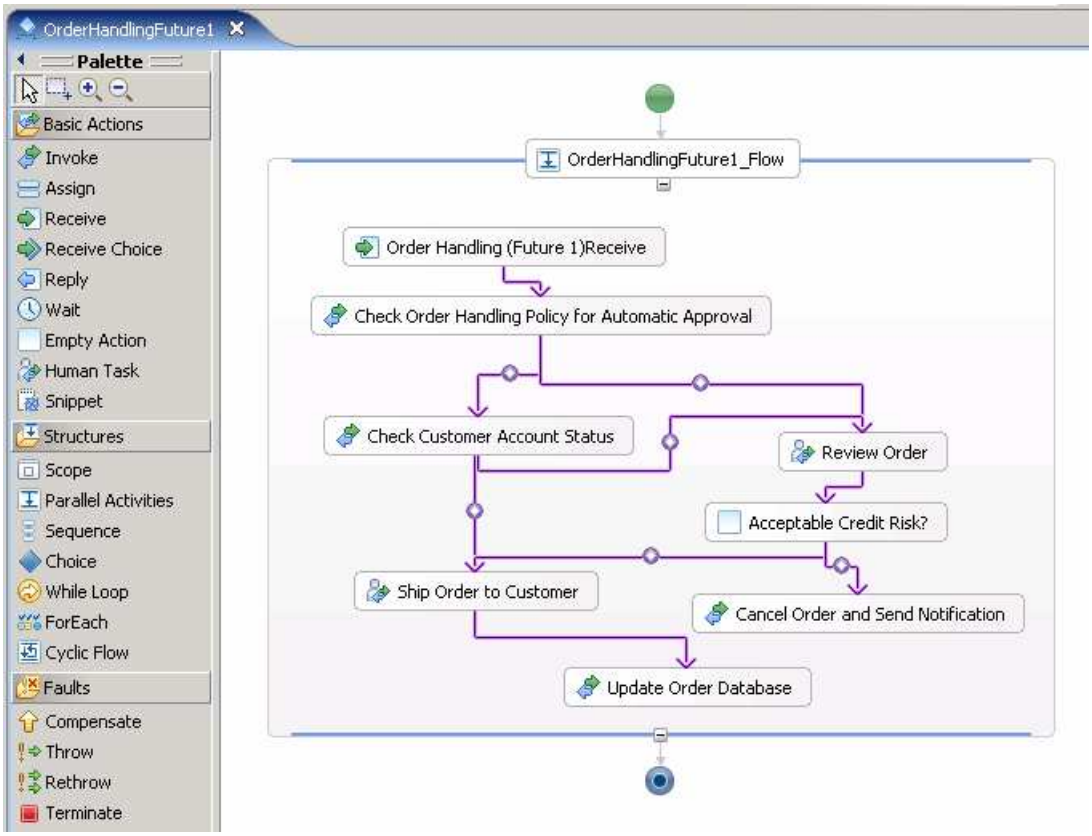
2) Check Customer Account Status. Implemented as Java to calculate a new credit amount. If Order.totalPrice > new credit amount, go to Review Order else go to Ship Order to Customer.

3) Review Order. Implemented as a human task. If ReviewOrder.OrderStatus is APPROVED then go to Ship Order to Customer else if ReviewOrder.OrderStatus is DECLINED go to Cancel Order and Send Notification.

4) Ship Order to Customer. Implemented as a human task. Goes to Update Order Database.

5) Cancel Order and Send Notification. Implemented as Java to print messages to the log. This is the end of the flow.

6) Update Order Database. Implemented as Java to print messages to the log. This is the end of the flow.



Part 3: Update the BPEL process to emit monitor events

Before you create the monitor model, you should select the events to be generated by Process Server for Monitor to use. You will need to emit events for the process and the invokes in the process. Modeler decisions become links in BPEL, so to emit events for the links you need to emit events for the flow element in BPEL.

You can access the payload from several events including the SCA ENTRY events, receive activity EXIT events or the invoke activity ENTRY events. If you use the SCA events, then the auto-generated monitor model will not have a termination trigger so this option requires extra effort to add the termination trigger. You could use the receive activity EXIT event, but in this lab you will use the first invoke in the process to access the payload.

____ 1. In the Business Integration view, navigate to **CATOrderMgmt > Business Logic > Processes > processes\orderhandlingfuture1**, then double click on **OrderHandlingFuture1** to open the BPEL editor.

____ 2. Click on the white backbround of the process. Make sure that you click outside of the flow element which is the large rectangle that contains the receive, reply and invoke elements . Then click the **Properties** tab, then click the **Event Monitor** tab. For a production application, you would want to select the individual events to emit, but for simplicity, select **All**.

____ 3. Click inside the flow element **OrderHandlingFuture1_Flow**, and then click **All** on the Event Montor tab.

____ 4. Similarly, select **All** events for each of the six invokes. You will select each invoke in the BPEL diagram then update the Event Monitor tab. Update these invokes:

__ a. Check Order Handling Policy for Automatic Approval

__ b. Check Customer Account Status

__ c. Review Order

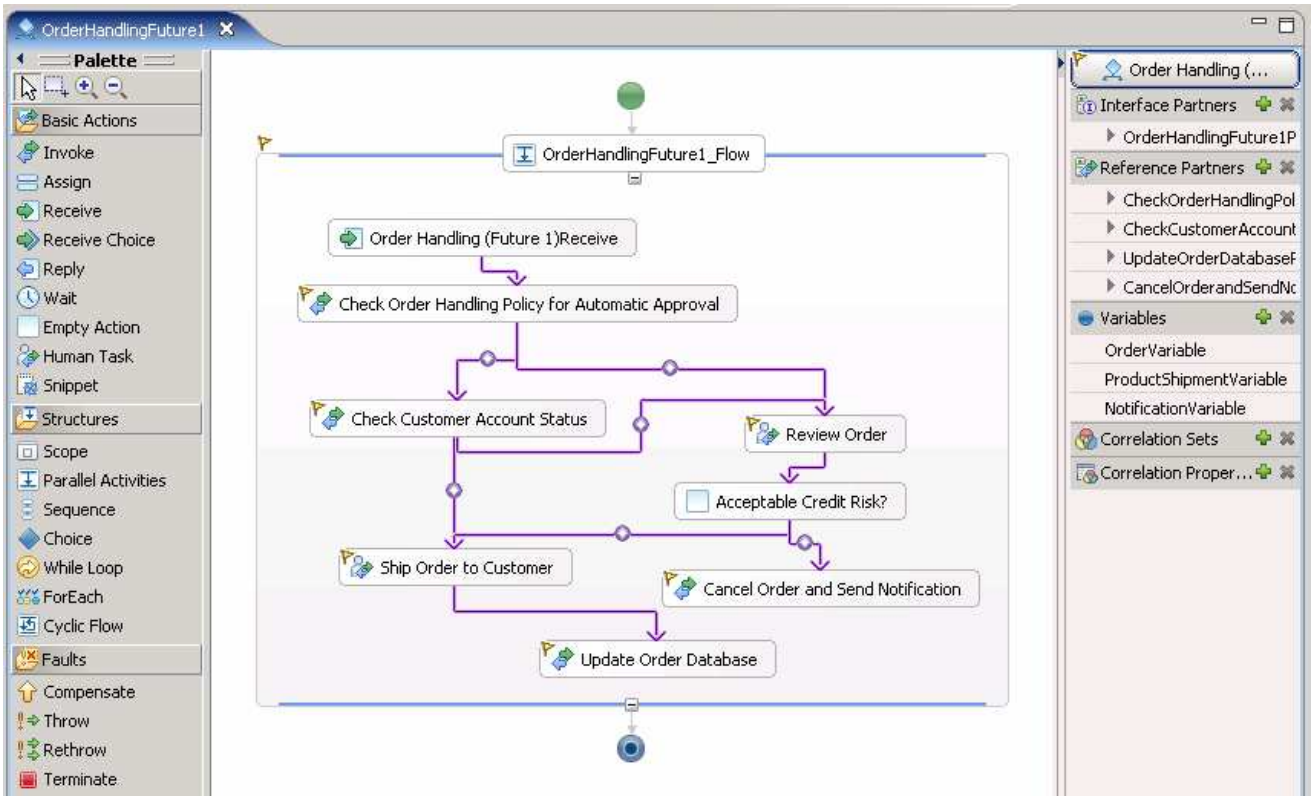
__ d. Ship order to Customer

__ e. Cancel Order and Send Notification

__ f. Update Order Database

____ 5. Press **Ctrl-S** to save your work.

____ 6. Here is a screen print that shows the small yellow flags that indicate that the events are selected for the components. There are flags on each of the six invokes. The flag in the upper left represents the flow. The flag in the upper right represents the process. So there are eight flags in total.



Part 4: Create the monitor model

To create the monitor model, you will use the wizard to auto-generate the monitor model from the process.

You will then have two monitor models, the business measures model from Modeler (the high level model) and the monitor model generated from the process (the low level model). The high level model contains the monitor elements that you need to implement in the final monitor model. The low level model contains the monitoring context instance creation, termination and correlation information based on the events generated from WebSphere Process Server.

You have three options with regard to using these two monitor models:

1. Keep both models intact and create outbound events from the low level model to feed metric information to the high level model. This options supports synchronization support for both models to easily handle changes made to the process or changes made to the business measures model. But this option also requires extra work to build the event definitions and the monitor elements to support it.

2. Keep the high level model intact, and add important inbound events to the high level model using 'New > Create from Application', and then copy / paste them into the monitoring context for the high level model. This option is simple, and may be useful when the low-level application is stable, but the business measure requirements are churning. But this option does not support synchronization support with the process application.

3. Keep the low level model intact, and add business measures information to the low level model from the high level model using copy / paste. This option is simple, and may be useful when the low-level application is churning, but the business measure requirements are stable. But this option does not support synchronization support with the business measures from Modeler.

For this lab, you will use option three. So you will need to merge the two models into one monitor model. Then you will add the implementation details for the KPI's and other monitor elements.

If you would like to skip this section, then a solution has been provided. You can import the supplied monitor model into WebSphere Integration Developer, and then proceed to the next section. Refer to Appendix 1, and then proceed to the next section.

____ 1. Generate the monitor model from the process.

__ a. In the Business Integration view, right click on the folder **CATOrderMgmt**, then select **Monitor Tools > Generate Monitor Model.**

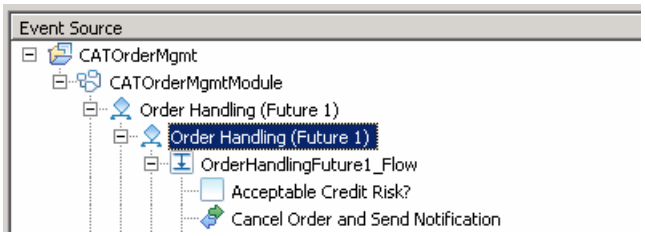
__ b. For target monitor project, enter **clips**

__ c. Click **New Project…** , then click **Finish**

__ d. For target monitor model name, enter **clipsbpm**

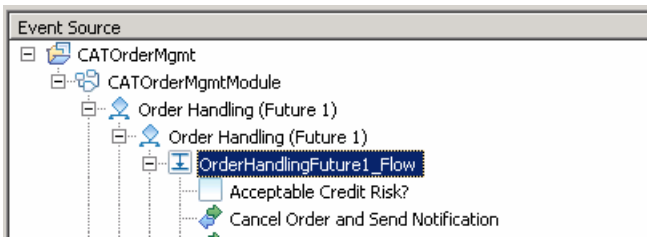
__ e. Click **Next**

__ f. In Event Source, navigate to **CATOrderMgmt > CATOrderMgmtModule > Order Handling (Future 1) > Order Handling (Future 1)** and select the latter as follows:



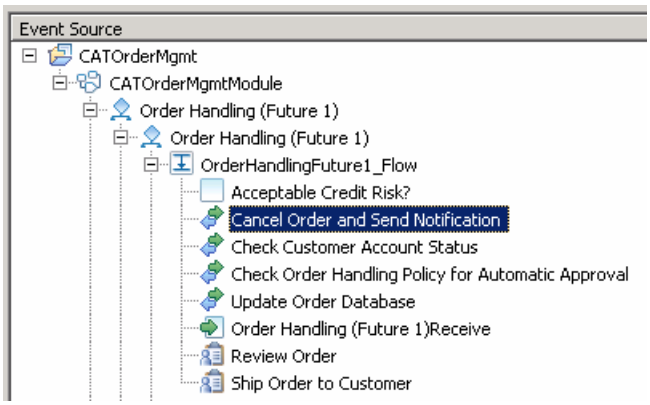
__ g. On the **Monitoring Templates** tab, click **Select All.** The generated monitor model will contain monitoring elements to track all of these items. One of these is the average process duration which will satisfy the requirement in the business measures model to track processing time.

__ h. In Event Source, navigate to **CATOrderMgmt > CATOrderMgmtModule > Order Handling (Future 1) > Order Handling (Future 1) > OrderHandlingFuture1_Flow** and select it as follows:



__ i. On the **Emitted Events** tab, click **Select All.** The generated monitor model will subscribe to events for the flow which includes events for the decisions which are represented in BPEL by links in the flow.

__ j. In the business measures model, it was specified to track processing time for the tasks, so click the monitoring template for elapsed duration for each activity. To do this, select Cancel Order and Send Notification, as in the following screen print. Then on the **Monitoring Templates** tab, select **Average Elapsed Duration - Measure**



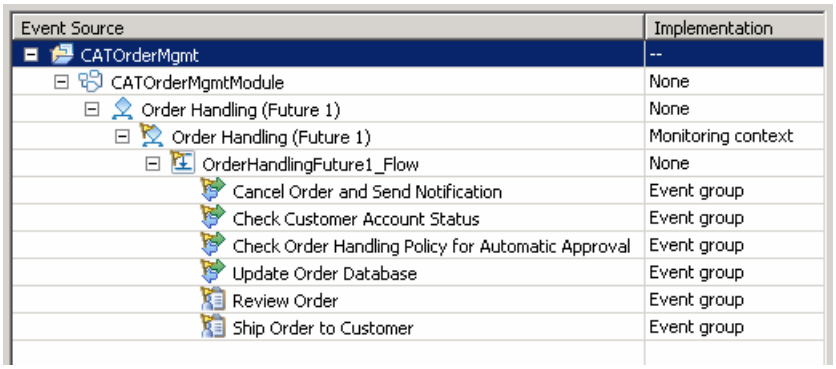
1) Repeat this for the remaining three invokes and the two human tasks. It is not necessary to do it for the receive element, Order Handling (Future 1)Receive. Nor is it necessary to do it for the empty element, Acceptable Credit Risk?.

__ k. Click **Next**

__ l. On the next page, you should simplify the monitor model by flattening the structure of the monitor model so that there is only one monitoring context. You will create event groups to organize the events and provide some structure in the monitor model.

1) For each of the six invokes change the implementation to **Event group**.

2) Here is a sample:

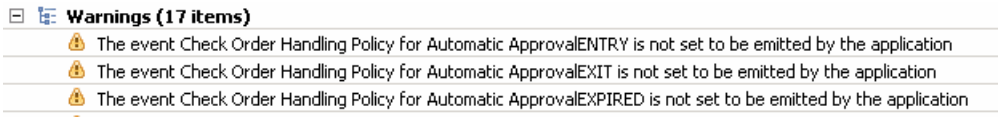


3) Click **Next.** You can preview the model here.

4) Click **Finish**. When prompted, click yes to switch to the Business Monitoring perspective. When prompted, do not launch getting started.

5) The monitor model is opened in the monitor model editor.

6) You should check the Problems view. If you have forgotten to emit monitor events in the module that the monitor model requires based on your configuration, then warnings will appear to indicate that the events are missing. If you see these messages, you should update the monitor event settings in the module and then synchronize the model with the application (in the project explorer, right click on the model > Synchronize with Application…).



____ 2. Import the business measures model from Modeler

__ a. In the Project Explorer, right click on the **clips** project, then select **Import**…

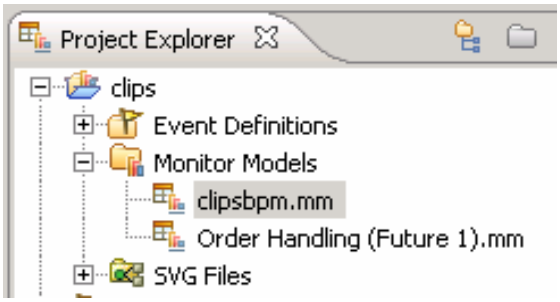
__ b. Select **General** > **File system**, click **Next**

__ c. Browse to the location containing the business measures model from Modeler, then select the two svg files and the monitor model as follows:

__ d. Make sure the into folder is clips, then click **Finish**.

__ e. There will be many errors in the Problems view because the metrics for the business measures model have not been implemented yet.

__ f. Now you should have the auto-generated model (clipsbpm.mm) and the business measures model (Order Handling(Future 1).mm) in your clips project:



____ 3. You need to merge these two monitor models together. You have several options. You could use the menu options **Combine Monitor Models** or **Compare With > Each Other.** Since the names of the monitoring contexts, KPI contexts and cubes are different between the two models, using the merge tools will result in a monitor model containing two monitoring contexts, two KPI contexts and two cubes. The merge options work better if both models start from a common base, so that these containers have the same name. In this example, it is easier to just copy the monitor elements using copy/paste functions from one model to the other.

__ a. Open the editor for both monitor models, **clipsbpm.mm** and **Order Handling(Future 1).mm**, by double clicking on each of them in the Project Explorer.

__ b. Copy the elements from the Order Handling to clipsbpm.

1) Click the Monitor Details Model tab for Order Handling. Select all six percentage metrics, and click to copy:

a) Acceptable Credit Risk? No Percentage

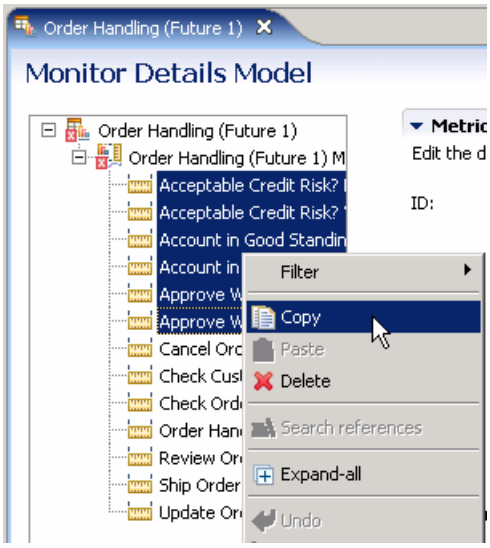
b) Acceptable Credit Risk? Yes Percentage

c) Account in Good Standing? No Percentage

d) Account in Good Standing? Yes Percentage

e) Approve Without Review? No Percentage

f) Approve Without Review? Yes Percentage

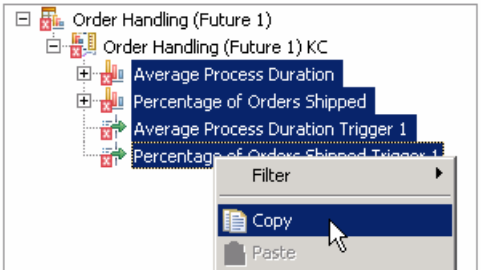


2) Click the Monitor Details Model tab in clipsbpm, then right click on Order Handling (Future 1) and paste the metrics that you copied.

3) Press **Ctrl-S** to save your work.

4) There are several additional metrics in the details model for Order Handling. These are for processing time, but you will not need them since they were created automatically in clipsbpm, because you selected the duration monitoring templates in the generation wizard.

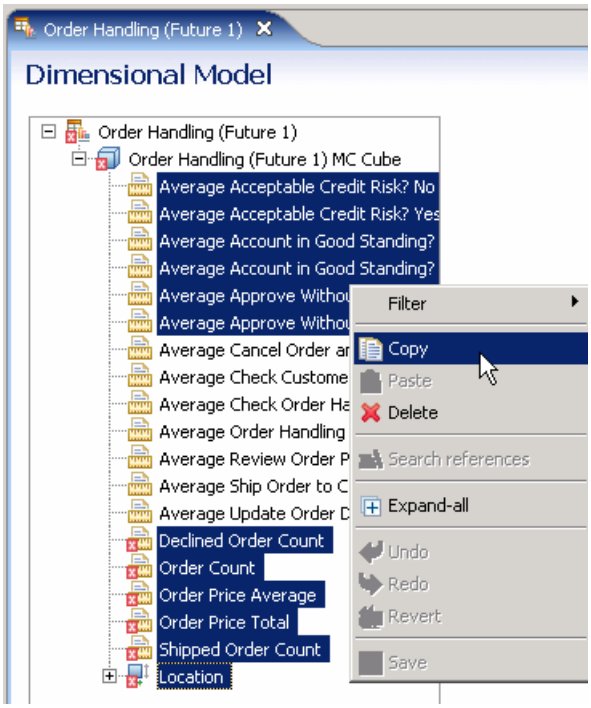
5) Click the KPI Model tab for Order Handling. Select all four elements, the 2 KPI's and the 2 triggers. Click to copy.



6) Click the KPI Model tab in clipsbpm, then right click on Template KPI Context and paste the elements that you copied.

7) Press **Ctrl-S** to save your work.

8) Click the Dimensional Model tab for Order Handling. Select all elements, except for the 7 measures whose names end with _Processing_Time. These 7 measures are already in the clipsbpm model. Click to copy.



9) Click the Dimensional Model tab in clipsbpm, then right click on Order Handling (Future 1) Cube and paste the elements that you copied.

10) Press **Ctrl-S** to save your work.

11) For the 7 processing time measures that you did not copy, you will need to copy the tracking keys from Order Handling to clipsbpm. The tracking keys are needed by Modeler when you export Monitor data back to Modeler. For example, in the dimensional model of Order Handling, click the measure **Average Cancel Order and Send Notification Processing Time**, then you will see the tracking key in the editor as in the following screen capture. Select the text for the tracking key, then copy it to the corresponding measure of the dimensional model in clipsbpm, **Cancel Order and Send Notification Average Elapsed Duration**. Repeat this for the other six processing time measures. Note that for Order Handling in clipsbpm, there is a working duration measure and an elaspsed duration measure, so make sure you update the tracking key for the elapsed duration only. Here is a list of the tracking keys to copy:

    a) **From**: Average Cancel Order and Send Notification Processing Time **to**: Cancel Order and Send Notification Average Elapsed Duration

    b) **From**: Average Check Customer Account Status Processing Time **to**: Check Customer Account Status Average Elapsed Duration

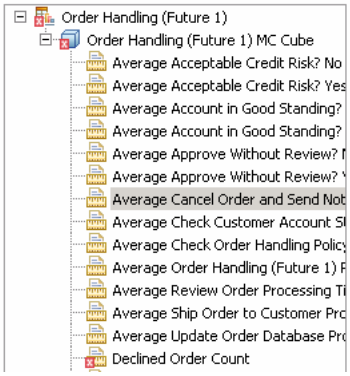
    c) **From**: Average Check Order Handling Policy for Automatic Approval Processing Time **to**: Check Order Handling Policy for Automatic Approval Average Elapsed Duration

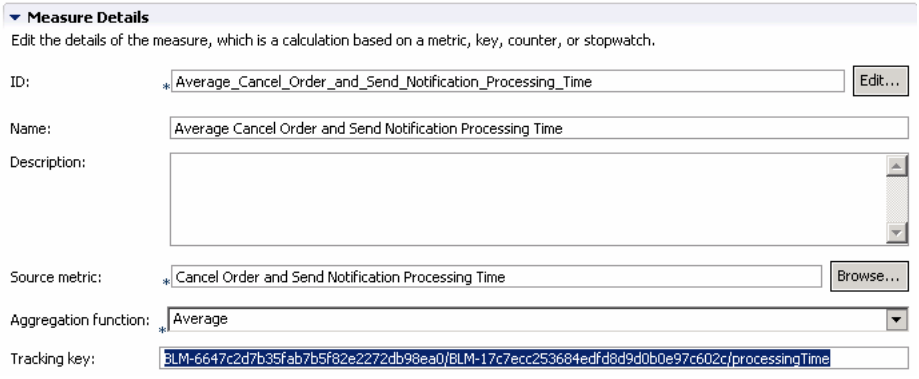
    d) **From**: Average Order Handling (Future 1) Processing Time **to**: Order Handling (Future 1) Average Elapsed Duration

    e) **From**: Average Review Order Processing Time **to**: Review Order Average Elapsed Duration

f) **From**: Average Ship Order to Customer Processing Time **to**: Ship Order to Customer Average Elapsed Duration

g) **From**: Average Update Order Database Processing Time **to**: Update Order Database Average Elapsed Duration





12) Click on the Visual Model tab in clipsbpm. For context **Order Handling (Future 1)** click **Browse**. Navigate to **clips** and select Order_Handling__x0028_Future_1_x0029__MDM_Order_Handling__x0028_Future_1_x0029__MC.svg, click OK. When prompted, click to create shape sets.

13) Change the context to **Template KPI Context**, then click **Browse**. Navigate to **clips** and select Order_Handling__x0028_Future_1_x0029__KM_Order_Handling__x0028_Future_1_x0029__KC.svg, click OK. When prompted, click to create shape sets.

14) Press **Ctrl-S** to save your work.

15) You can close the Order Handling monitor model since you have copied everything that you will need. You should delete it from the workspace since there are many errors associated with this model that will continue to show in the Problems view.

16) The rest of the work will be done in the clipsbpm model.

17) There still are many errors, which will go away after you specify more implementation details.

____ 4. Click on the **Monitor Details model** tab of the clipsbpm model.

____ 5. Complete the expressions for the six decision percentage metrics in the monitor details model. There are three decisions in the process model, so in the monitor model there is a 'yes' metric and a 'no' metric for each decision. There will be a measure in the dimensional model that averages each metric, so the measure will show the percentage of the time that the branch was taken. If a decision branch has not been traversed then you do not want to include it in the averaging calculation, so if the value is null then it will not be included. Therefore you will set the default value to null for each metric. You will also create a trigger for each decision that determines when the 'yes' path is taken, then sets the value of the 'yes' metric to 100, and sets the value of the 'no' metric to 0. You will also create a trigger for each decision that determines when the 'no' path is taken, then sets the value of the 'no' metric to 100, and sets the value of the 'yes' metric to 0. Then, when the measure averages each metric for the instances, the values will be null, 0 or 100, and therefore the average represents the percentage of the time that the branch was taken. In the following expressions, the names of the links were obtained from the BPEL editor for the process.

__ a. Create a new trigger Acceptable Credit Risk Yes Trigger

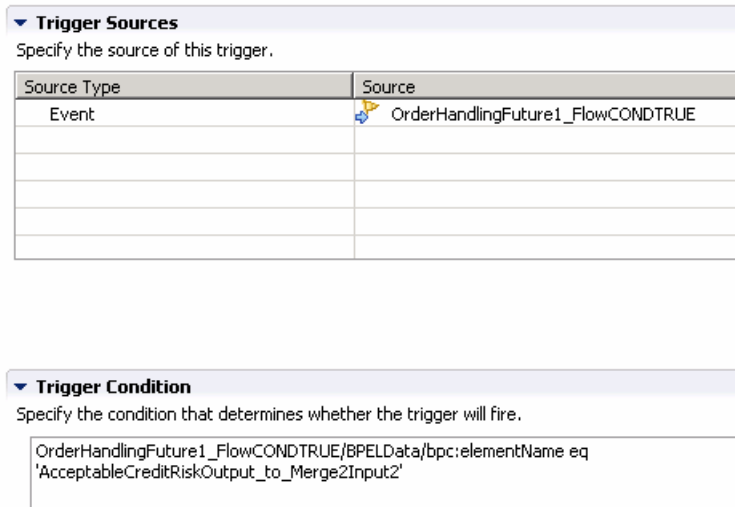
1) Right click in the **Monitor Details Model** navigator, and select **New > Trigger**

2) Enter name: Acceptable Credit Risk Yes Trigger, click OK

3) In trigger sources, click Add, then select Other source type, navigate to Order Handling (Future 1) > OrderHandlingFuture1_FlowCONDTRUE, click OK

4) In trigger condition, enter

OrderHandlingFuture1_FlowCONDTRUE/BPELData/bpc:elementName eq 'AcceptableCreditRiskOutput_to_Merge2Input2'



__ b. Create a new trigger Acceptable Credit Risk No Trigger

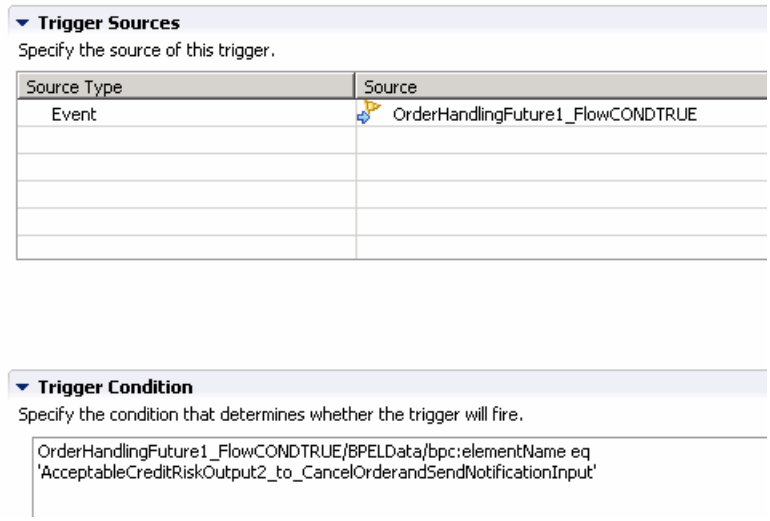
1) Right click in the **Monitor Details Model** navigator, and select **New > Trigger**

2) Enter name: Acceptable Credit Risk No Trigger, click OK

3) In trigger sources, click Add, then select Other source type, navigate to Order Handling (Future 1) > OrderHandlingFuture1_FlowCONDTRUE, click OK

4) In trigger condition, enter

5) OrderHandlingFuture1_FlowCONDTRUE/BPELData/bpc:elementName eq 'AcceptableCreditRiskOutput2_to_CancelOrderandSendNotificationInput'



__ c. Create a new trigger Account in Good Standing Yes Trigger

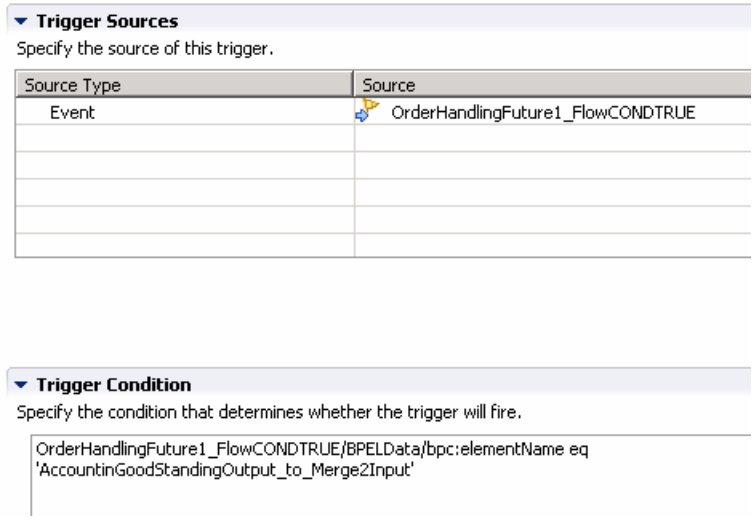
1) Right click in the **Monitor Details Model** navigator, and select **New > Trigger**

2) Enter name: Account in Good Standing Yes Trigger, click OK

3) In trigger sources, click Add, then select Other source type, navigate to Order Handling (Future 1) > OrderHandlingFuture1_FlowCONDTRUE, click OK

4) In trigger condition, enter

OrderHandlingFuture1_FlowCONDTRUE/BPELData/bpc:elementName eq
'AccountinGoodStandingOutput_to_Merge2Input'



__ d. Create a new trigger Account in Good Standing No Trigger

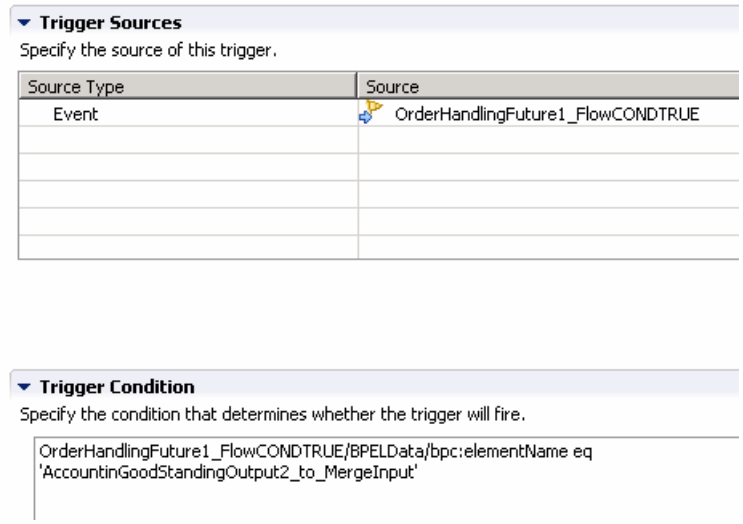
1) Right click in the **Monitor Details Model** navigator, and select **New > Trigger**

2) Enter name: Account in Good Standing No Trigger, click OK

3) In trigger sources, click Add, then select Other source type, navigate to Order Handling (Future 1) > OrderHandlingFuture1_FlowCONDTRUE, click OK

4) In trigger condition, enter

OrderHandlingFuture1_FlowCONDTRUE/BPELData/bpc:elementName eq 'AccountinGoodStandingOutput2_to_MergeInput'



__ e. Create a new trigger Approve Without Review Yes Trigger

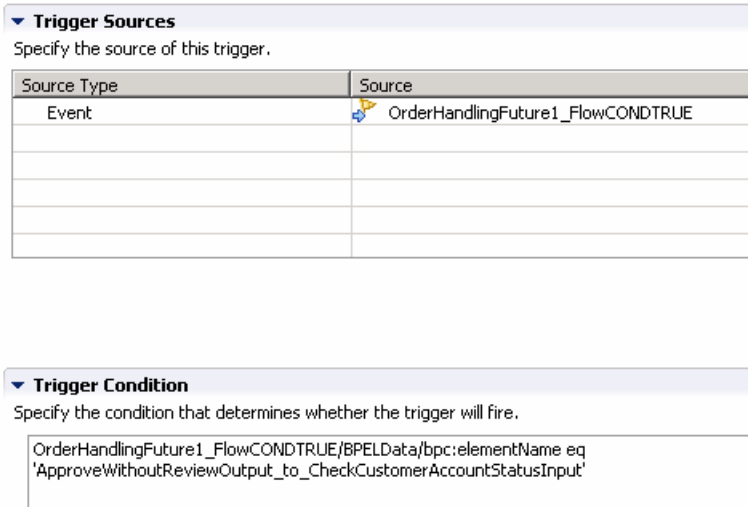
1) Right click in the **Monitor Details Model** navigator, and select **New > Trigger**

2) Enter name: Approve Without Review Yes Trigger, click OK

3) In trigger sources, click Add, then select Other source type, navigate to Order Handling (Future 1) > OrderHandlingFuture1_FlowCONDTRUE, click OK

4) In trigger condition, enter

OrderHandlingFuture1_FlowCONDTRUE/BPELData/bpc:elementName eq 'ApproveWithoutReviewOutput_to_CheckCustomerAccountStatusInput'



__ f. Create a new trigger Approve Without Review No Trigger

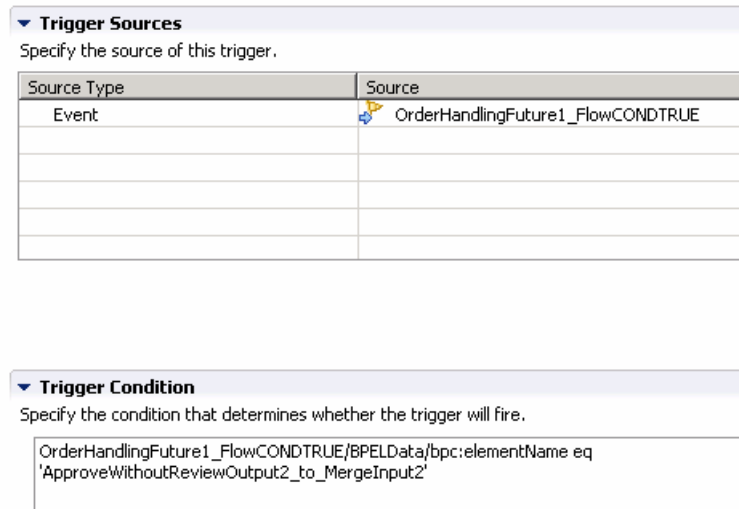
1) Right click in the **Monitor Details Model** navigator, and select **New > Trigger**

2) Enter name: Approve Without Review No Trigger, click OK

3) In trigger sources, click Add, then select Other source type, navigate to Order Handling (Future 1) > OrderHandlingFuture1_FlowCONDTRUE, click OK

4) In trigger condition, enter

OrderHandlingFuture1_FlowCONDTRUE/BPELData/bpc:elementName eq 'ApproveWithoutReviewOutput2_to_MergeInput2'



__ g. In the Monitor details model, select **Acceptable Credit Risk? No Percentage**.

1) Remove the default value of 0 by backspacing over it.

2) In the expression table click **Add**.

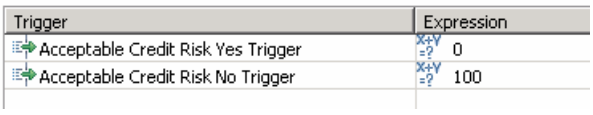
3) For trigger, specify: Acceptable Credit Risk Yes Trigger

4) For expression, specify: 0

5) In the expression table click **Add**.

6) For trigger, specify: Acceptable Credit Risk No Trigger

7) For expression, specify: 100



__ h. In the Monitor details model, select **Acceptable Credit Risk? Yes Percentage**

1) Remove the default value of 0 by backspacing over it.

2) In the expression table click **Add**.

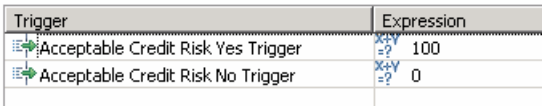
3) For trigger, specify: Acceptable Credit Risk Yes Trigger

4) For expression, specify: 100

5) In the expression table click **Add**.

6) For trigger, specify: Acceptable Credit Risk No Trigger

7) For expression, specify: 0



__ i. In the Monitor details model, select **Account in Good Standing? No Percentage**

1) Remove the default value of 0 by backspacing over it.

2) In the expression table click **Add**.

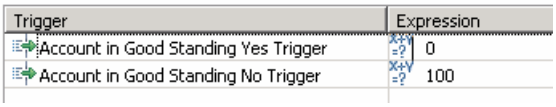
3) For trigger, specify: Account in Good Standing Yes Trigger

4) For expression, specify: 0

5) In the expression table click **Add**.

6) For trigger, specify: Account in Good Standing No Trigger

7) For expression, specify: 100



__ j. In the Monitor details model, select **Account in Good Standing? Yes Percentage**

1) Remove the default value of 0 by backspacing over it.

2) In the expression table click **Add**.

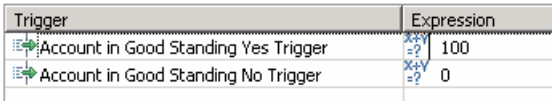
3) For trigger, specify: Account in Good Standing Yes Trigger

4) For expression, specify: 100

5) In the expression table click **Add**.

6) For trigger, specify: Account in Good Standing No Trigger

7) For expression, specify: 0



__ k. In the Monitor details model, select **Approve Without Review? No Percentage**

1) Remove the default value of 0 by backspacing over it.

2) In the expression table click **Add**.

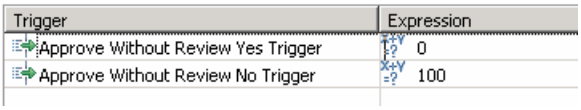
3) For trigger, specify: Approve Without Review Yes Trigger

4) For expression, specify: 0

5) In the expression table click **Add**.

6) For trigger, specify: Approve Without Review No Trigger

7) For expression, specify: 100



__ l. In the Monitor details model, select **Approve Without Review? Yes Percentage**

1) Remove the default value of 0 by backspacing over it.

2) In the expression table click **Add**.

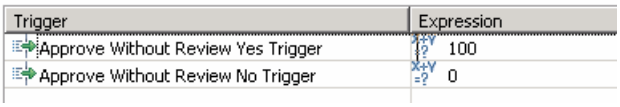
3) For trigger, specify: Approve Without Review Yes Trigger

4) For expression, specify: 100

5) In the expression table click **Add**.

6) For trigger, specify: Approve Without Review No Trigger

7) For expression, specify: 0



____ 6. Press **Ctrl-S** to save your work.

____ 7. Click on the **KPI Model** tab.

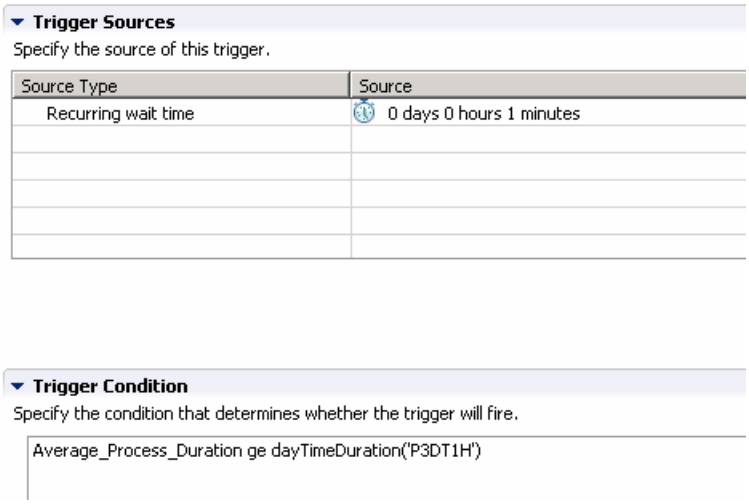
____ 8. In the KPI model, update **Average Process Duration Trigger 1.** This trigger is used to fire the situation event when the process duration is too long.

__ a. In the trigger source table, click **Add**

__ b. Select **Recurring wait time**, then click **OK**. This will default to 1 minute.

__ c. For Trigger condition, enter this expression:

Average_Process_Duration ge dayTimeDuration('P3DT1H')



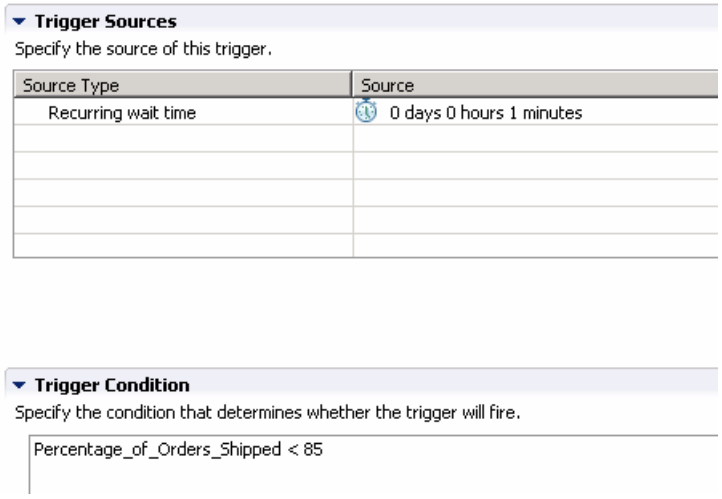
____ 9. In the KPI model, update **Percentage of Orders Shipped Trigger 1.** This trigger is used to fire the situation event when the percentage of shipped orders is too small.

__ a. In the trigger source table, click **Add**

__ b. Select **Recurring wait time**, then click **OK.** This will default to 1 minute.

__ c. For Trigger condition, enter this expression:

Percentage_of_Orders_Shipped < 85



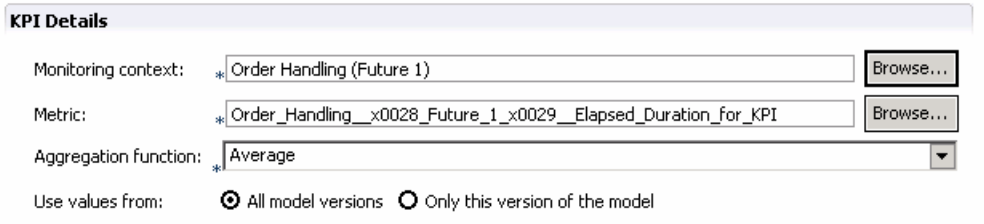
____ 10. In the KPI model, update the KPI **Average Process Duration.**

__ a. Since this was copied from another model, you need to update the **monitoring context**, so click **Browse** next to the monitoring context, then navigate to **clipsbpm > Order Handling (Future 1)**, then click **OK**.

__ b. The metric value is blank. Note that there is another KPI, Order Handling (Future 1) Average Elapsed Duration, which has the same function as Average Process Duration. The former was auto-generated. You can view it to see which metric should be used.

__ c. Next to **metric**, click **Browse**, then navigate to **Order Handling (Future 1) > Order Handling (Future 1) Elapsed Duration for KPI**, then click **OK**

__ d. Set the **aggregation function** to **Average**.



____ 11. **Delete** KPI **Order Handling (Future 1) Average Elapsed Duration**, since it is a duplicate of 'Average Process Duration'.

____ 12. Press **Ctrl-S** to save your work.

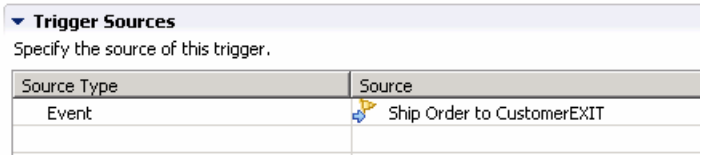
____ 13. In the KPI model, update the KPI **Percentage of Orders Shipped.** In order to calcuate the percentage of orders shipped you will create a KPI for the number of shipped orders, and you will create another KPI for the total number of orders, then you can determine the percentage by dividing the shipped orders by the total orders.

__ a. In the details model, create a new trigger **Shipped Order Trigger**

1) Right click in the **Monitor Details Model** navigator, and select **New > Trigger**

2) Enter name: Shipped Order Trigger, click OK

3) In trigger sources, click Add, then select Other source type, navigate to Order Handling (Future 1) > Ship Order to CustomerEXIT, click OK

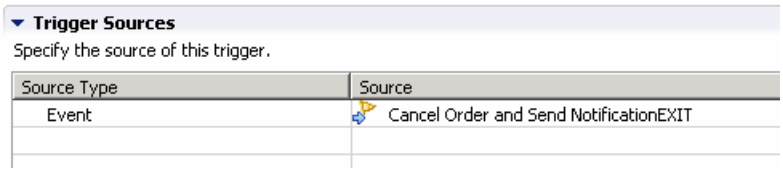


__ b. In the details model, create a new trigger **Cancelled Order Trigger**

1) Right click in the **Monitor Details Model** navigator, and select **New > Trigger**

2) Enter name: Cancelled Order Trigger, click OK

3) In trigger sources, click Add, then select Other source type, navigate to Order Handling (Future 1) > Cancel Order and Send NotificationEXIT, click OK



__ c. In the details model, create a new metric **Order Status**

1) Right click in the **Monitor Details Model** navigator, and select **New > Metric**

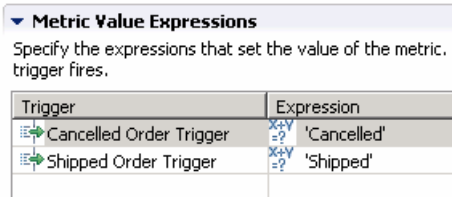
2) Enter name: Order Status, enter type: String, click OK

3) Select 'A value is required for this metric', since a dimension will use this metric and that requires a value for dimensional analysis.

4) For Default value, enter 'New' with the quotes.

5) In Metric value expressions, click Add. In the trigger cell, enter trigger type Cancelled Order Trigger. In the expression cell, enter 'Cancelled' with the quotes.

6) In Metric value expressions, click Add. In the trigger cell, enter trigger type Shipped Order Trigger. In the expression cell, enter 'Shipped' with the quotes.



__ d. In the KPI model, create a new KPI **Shipped Orders.** You will use the key metric to count all incoming instances, then filter it by the order status so you only count shipped orders. You will also filter it by the process state, so only completed process instances are counted.

1) In the KPI model navigator, right click and select New > KPI.

2) Set the type to decimal.

3) For KPI value, select 'Base this KPI on a metric and an aggregation function'

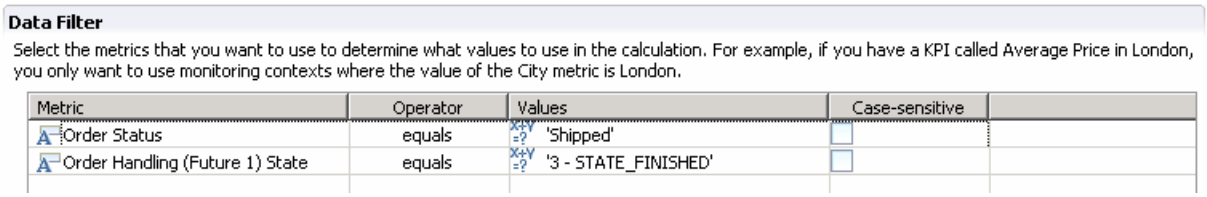
4) For monitoring context, browse to Order Handling (Future 1)

5) For metric, browse to Order Handling (Future 1) Instance ID.

6) For aggregation function, select Count

7) For data filter, click Add, then browse to Order Handling (Future 1) > Order Status, then click OK. In the values cell, enter 'Shipped' with the quotes.

8) For data filter, click Add, then browse to Order Handling (Future 1) > Order Handling (Future 1) State, then click OK. In the values cell, enter '3 - STATE_FINISHED' with the quotes.



__ e. In the KPI model, create a new KPI **Total Orders.** You will use the key metric to count all incoming instances. You will also filter it by the process state, so only completed process instances are counted.

1) In the KPI model navigator, right click and select New > KPI.

2) Set the type to decimal.

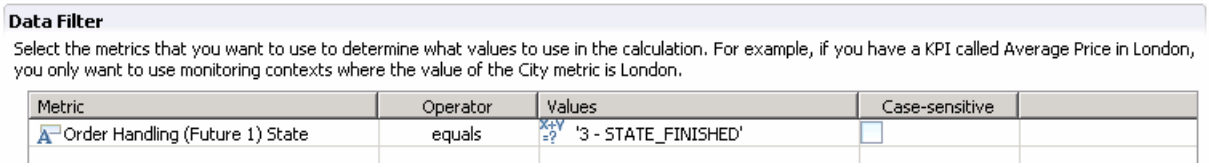
3) For KPI value, select 'Base this KPI on a metric and an aggregation function'

4) For monitoring context, browse to Order Handling (Future 1)

5) For metric, browse to Order Handling (Future 1) Instance ID.

6) For aggregation function, select Count

7) For data filter, click Add, then browse to Order Handling (Future 1) > Order Handling (Future 1) State, then click OK. In the values cell, enter '3 - STATE_FINISHED' with the quotes.



__ f. Finalize the KPI, **Percentage of Orders Shipped**

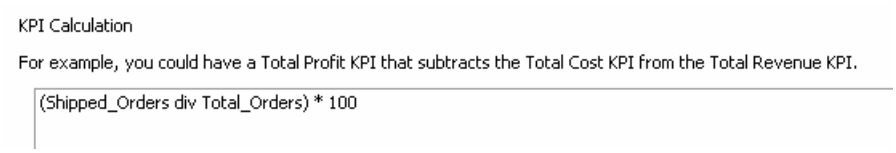
1) In the KPI model navigator, select the KPI Percentage of Orders Shipped

2) Set the type to Decimal

3) For KPI Value, select 'Write an expression to calculate this KPI based on existing KPIs'

4) For KPI Calculation, enter:

(Shipped_Orders div Total_Orders) * 100



____ 14. Press **Ctrl-S** to save your work.

____ 15. Create an event definition to use for the shipped percentage situation event.

__ a. Create the event definition **ShippedPercentage.cbe**

1) Right click in the project explorer on Event Definitions, then select New > Event Definition … (cbe)

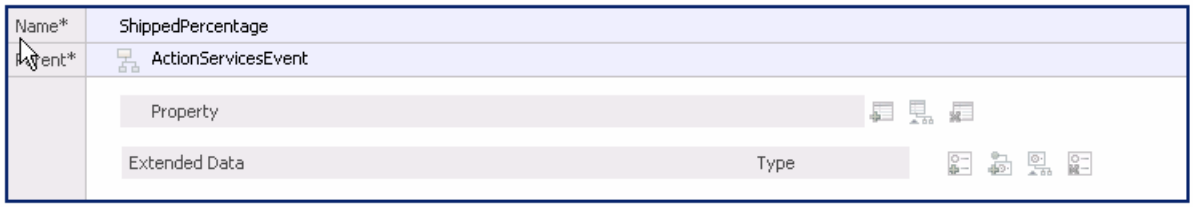
2) For file name, enter ShippedPercentage.cbe, then click Finish.

3) The Event Definition Editor opens.

4) Double click the hierarchical icon next to the label **Parent**.

5) On the **Select Event Definition** Dialog double click on **ActionServicesEvent**.

6) **ActionServicesEvent** is now shown as the parent of **ShippedPercentage**



7) Press **Ctrl-S** to save your work.

__ b. Create the outbound event **Shipped Percentage Event**

1) In the clipsbpm model, click the KPI Model tab

2) Right click in the navigator, select New > Outbound Event

3) For name, enter Shipped Percentage Event

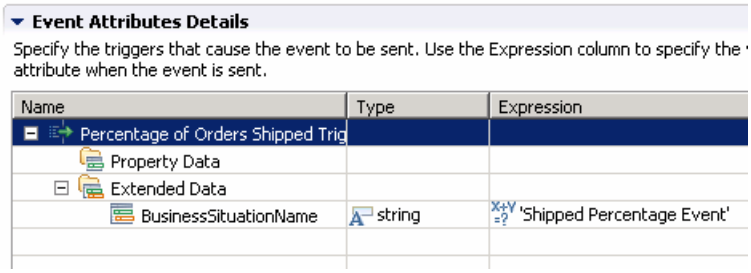
4) Select the check box for 'Configure this event to generate an alert in the dashboards'

5) For trigger, browse to Template KPI Context > Percentage of Orders Shipped Trigger 1

6) Click OK

7) In Event Type Details, for extension name, browse to clips > ShippedPercentage.cbe > Shipped Percentage, then click OK

8) In the Event Attributes Details, navigate to BusinessSituationName, and you will see that the value of the situation name has been set for you to 'Shipped Percentage Event'.



____ 16. Press **Ctrl-S** to save your work.

____ 17. Create the outbound event for the order processing time situtation.

__ a. Create the event definition **OrderFulfillmentTime.cbe**

1) Right click in the project explorer on Event Definitions, then select New > Event Definition … (cbe)

2) For file name, enter OrderFulfillmentTime.cbe, then click Finish.

3) The Event Definition Editor opens.

4) Double click the hierarchical icon next to the label **Parent**.

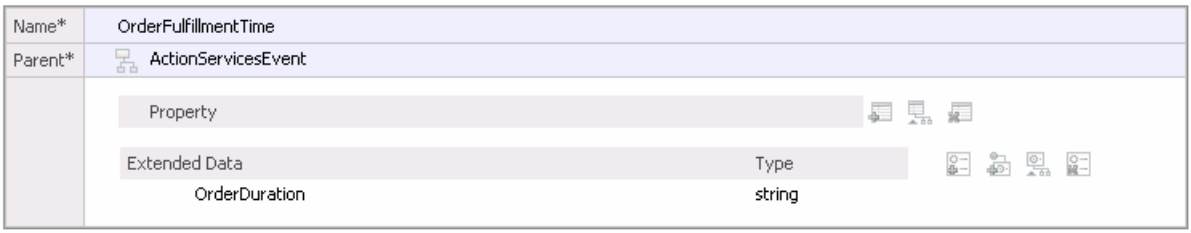
5) On the **Select Event Definition** Dialog double click on **ActionServicesEvent**.

6) **ActionServicesEvent** is now shown as the parent of **OrderFulfillmentTime**

7) In the extended data section, click the icon to add an extended data element

8) Change the name to **OrderDuration**

9) Change the type to **string**



10) Press **Ctrl-S** to save your work.

__ b. Create the outbound event **Order Fulfillment Event**

1) In the clipsbpm model, click the KPI Model tab

2) Right click in the navigator, select New > Outbound Event

3) For name, enter Order Fulfillment Event

4) Select the check box for 'Configure this event to generate an alert in the dashboards'

5) For trigger, browse to Template KPI Context > Average Process Duration Trigger 1

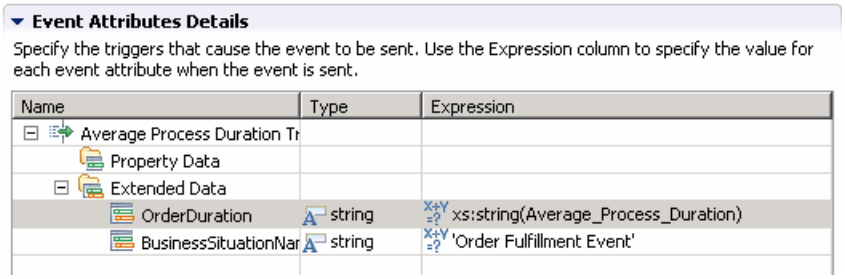
6) Click OK

7) In Event Type Details, for extension name, browse to clips > OrderFulfillmentTime.cbe > OrderFulfillmentTime, then click OK

8) In the Event Attributes Details, navigate to BusinessSituationName, and you will see that the value of the situation name has been set for you to 'Order Fulfillment Event'.

a) Set the expression for OrderDuration to

xs:string(Average_Process_Duration)



____ 18. Press **Ctrl-S** to save your work.

____ 19. Click on the **Dimension Model** tab.

____ 20. **Delete Declined Order Count, Order Count**, and **Shipped Order Count**. You can get this information using the builtin function Instances Count in the Dimensional view of the dashboard, and

then creating a dimension on order status which is a metric which identifies new orders, shipped orders and cancelled orders.

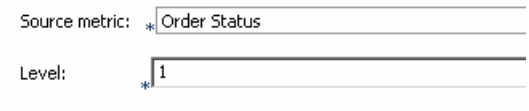
____ 21. **Create dimension Order Status**. This will be useful for drilling down in the Dimensional view of the dashboard to aggregate instances by their order status.

__ a. Right click in the Dimensional Model navigator on Order Handling (Future 1) Cube, then select New > Dimension.

__ b. Name it Order Status

__ c. Right click on Order Status in the Dimensional Model navigator, then select New > Dimension Level

__ d. Name it Order Status, then click Browse next to Source Metric, and navigate to Order Handling (Future 1) > Order Status, then click OK.



__ e. Click OK.

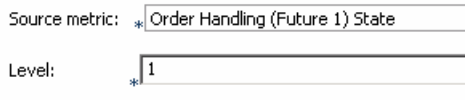
____ 22. **Create dimension State**. This will be useful for drilling down in the Dimensional view of the dashboard to aggregate instances by their process completion state.

__ a. Right click in the Dimensional Model navigator on Order Handling (Future 1) Cube, then select New > Dimension.

__ b. Name it State

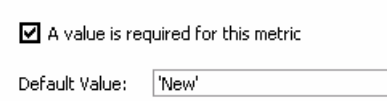
__ c. Right click on State in the Dimensional Model navigator, then select New > Dimension Level

__ d. Name it State, then click Browse next to Source Metric, and navigate to Order Handling (Future 1) > Order Handling (Future 1) State, then click OK.



__ e. Click OK.

__ f. Notice that you see an error on this dimension since the state metric is not initialized when the monitoring context is created. To solve this problem, in the Monitor Details Model tab, update the metric Order Handling (Future 1) State. Select 'A value is required for this metric'. Change the default value from empty to 'New', including the quotes.



____ 23. There is a dimension called **Location** which you can see in the Dimensional Model, but there are errors associated with it. This element came from the business measures model, and it should contain two levels, first the country and then the city. To enable Location, you need to create metrics for country and city, then you can update the Location dimension to reference the metrics.

__ a. In the monitor details model, **create metric Country**

1) Right click in the **Monitor Details Model** navigator, and select **New > Metric**

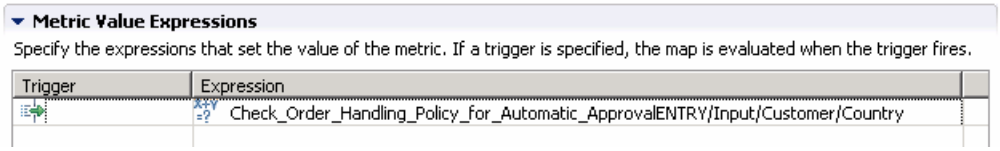
2) Enter name: Country, enter type: String, click OK

3) Select 'A value is required for this metric', since a dimension will use this metric and that requires a value for dimensional analysis.

4) For default value, enter an empty string (two single quotes)

5) In Metric value expressions, click Add. In the expression cell, use content assist to navigate to the following inbound event field for country.

Check_Order_Handling_Policy_for_Automatic_ApprovalENTRY/Input/Customer/Country



__ b. In the monitor details model, **create metric City**

1) Right click in the **Monitor Details Model** navigator, and select **New > Metric**

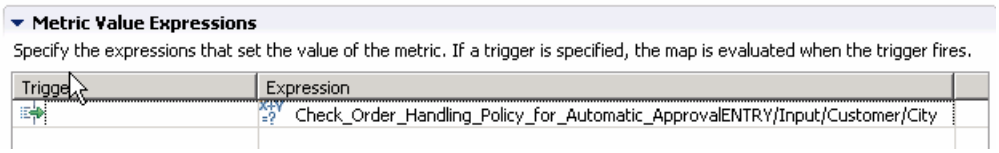
2) Enter name: City, enter type: String, click OK

3) Select 'A value is required for this metric', since a dimension will use this metric and that requires a value for dimensional analysis.

4) For default value, enter an empty string (two single quotes)

5) In Metric value expressions, click Add. In the expression cell, use content assist to navigate to the following inbound event field for city.

Check_Order_Handling_Policy_for_Automatic_ApprovalENTRY/Input/Customer/City



__ c. In the Dimensional model, **update** the **Location** dimension for the two metrics.

1) In the KPI model, delete the Location level underneath the Location dimension.

2) Right click on Location in the Dimensional Model navigator, then select New > Dimension Level

3) Name it Country, then click Browse next to Source Metric, and navigate to Order Handling (Future 1) > Country, then click OK.

4) Click OK.

5) Right click on Location in the Dimensional Model navigator, then select New > Dimension Level

6) Name it City, then click Browse next to Source Metric, and navigate to Order Handling (Future 1) > City, then click OK.

7) Click OK.

8) In the navigator you should see Location listed with two sub-levels as follows:

____ 24. In the Dimensional model, **update** measure **Order Price Average.** You will need to create a metric for the price to use as a source for this measure.

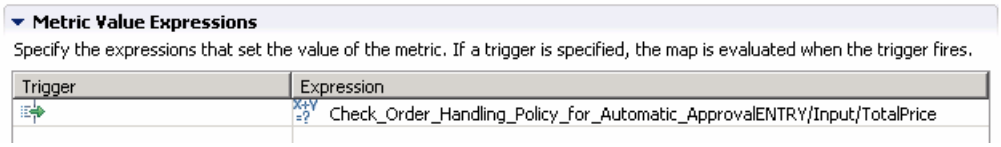
__ a. In the Monitor Details Model, **create metric Total Price**

1) Right click in the **Monitor Details Model** navigator, and select **New > Metric**

2) Enter name: Total Price, enter type: Decimal, click OK

3) In Metric value expressions, click Add. In the expression cell, use content assist to navigate to the following inbound event field for total price.

Check_Order_Handling_Policy_for_Automatic_ApprovalENTRY/Input/TotalPrice



__ b. In the dimensional model, update measure Order Price Average with the new metric.

1) Click on the Dimensional Model tab and select measure Order Price Average.

2) For source metric, browse to Order Handling (Future 1) > Total Price, click OK.

__ c. In the dimensional model, update measure Order Price Total with the new metric.

1) Click on the Dimensional Model tab and select measure Order Price Total.

2) For source metric, browse to Order Handling (Future 1) > Total Price, click OK.

____ 25. Press **Ctrl-S** to save your work.

____ 26. Select Project > Clean…, then select 'Clean all projects', then click OK.

____ 27. Check for any errors in the Problems view. You should resolve any errors before continuing. Warnings and informational messages may be present but these will not be a problem.

Part 5: Generate and publish the model to the server

In this section you will use WebSphere Integration Developer to publish the monitor model to the monitor server.

____ 1. In Project Explorer, expand **clips → Monitor models → clipsbpm.mm**. Right click over **clipsbpm.mm** and then select **Generate Monitor J2EE Projects** from the context menu

____ 2. Select **Finish**.

____ 3. A progress dialog shows the status of the operation and it closes when the operation is complete. Check for errors in the Problems view. There may be warnings, but there should not be any errors. If you see errors, then try to perform a clean to see if the errors can be removed: Project > Clean… > select 'Clean all projects', then click OK.

____ 4. Click the Servers tab, then right click and select the **Start** option to start the server WebSphere Business Monitor V6.1. This may take a few minutes to complete.

____ 5. Right click in the servers view, then select **Add and Remove Projects….**

____ 6. Click to move **clipsbpmApplication, CATOrderMgmt_implApp, and CATOrderMgmtApp** from the list of available projects to the list of configured projects.

____ 7. Click **Finish**.

____ 8. A progress message is displayed in the lower right hand corner of the window.

____ 9. Check the messages in the console view. You should see the following messages when the applications have been started

____ 10. In the servers view, right click, then select **Run administrative console**. You should see it open in a separate tab. It will prompt you for userid and password. Enter 'admin' without the quotes for userid, then enter 'admin' without the quotes for password.

____ 11. Click **Log in**

____ 12. Click **Applications > Monitor Models**. The application should show green status if it started successfully.

____ 13. If the model shows red (stopped), then wait a moment, then refresh by clicking on the icon to the right of Status in the last column of the table. You should see green (started) for the model. If it does not show green, be patient and keep refreshing until it does show green.

____ 14. Check the server log to ensure there are no problems. You can check this in the console view.

____ 15. If you are using the integrated server within WebSphere Integration Developer, then you do not need to setup Monitor data security, since the 'Admin' user is automatically authorized to all models. If you are using a different server, then you should open the administrative console, navigate to **Security > Monitor Data Security,** then add the model, role and user information to a resource group.

Part 6: Configure action manager for business situation events

This section shows you how to configure action manager to create alerts based on business situation events defined in the monitor model. The alerts will be visible in the Alert view on your dashboard.

You do not need an LDAP server to test the situation events.

____ 1. Add a template for shipped percentage alerts.

__ a. In the administrative console, navigate to **Applications > Monitor Action Services > Template Definitions > Notifications.**

__ b. Click **New.**

__ c. Enter **AlertShip** as Template name and a description**.**

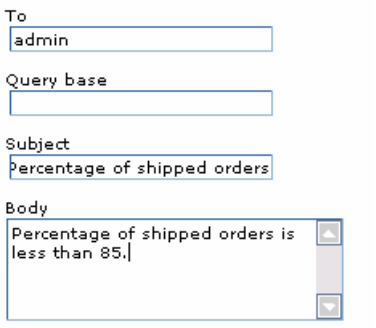
__ d. Select **Dashboard Alert.**

__ e. Select **User id.**

__ f. For the **To** field, enter **admin.** This userid is the one that will receive the alert, so you must log into the dashboard with this userid.

__ g. Enter a subject, such as 'Percentage of shipped orders'

__ h. Enter the body, such as 'Percentage of shipped orders is less than 85.'



__ i. Click **OK**.

____ 2. Add a template for order processing time alerts.

__ a. In the administrative console, navigate to **Applications > Monitor Action Services > Template Definitions > Notifications.**

__ b. Click **New.**

__ c. Enter **AlertTime** as Template name and a description**.**

__ d. Select **Dashboard Alert.**

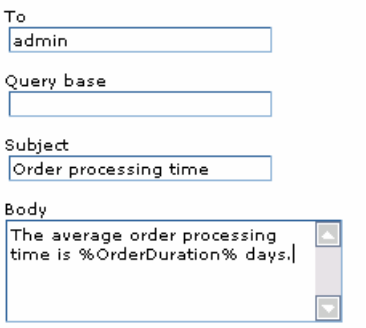
__ e. Select **User id.**

__ f. For the **To** field, enter **admin.** This userid is the one that will receive the alert, so you must log into the dashboard with this userid.

__ g. Enter a subject, such as 'Order processing time'.

__ h. Enter the body, and you may optionally enter a substitution variable as shown below. For the actual alert that is sent, the average order processing time from the event payload will be substituted for %OrderDuration% in the body. For example:

The average order processing time is %OrderDuration% days.



__ i. Click **OK**.

____ 3. Add the binding from the situation event to the action type for shipped percentage.

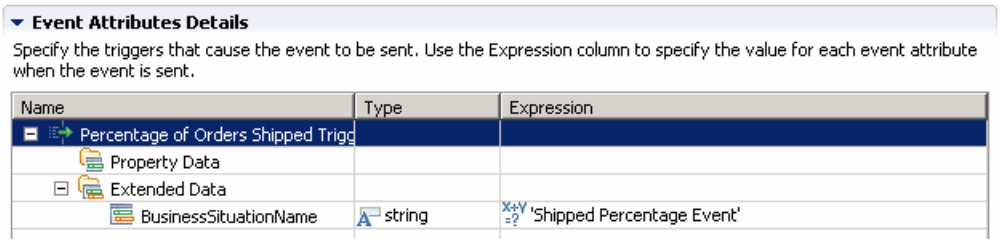
__ a. In the administrativeconsole, navigate to **Applications > Monitor Action Services > Installed Situation Event Bindings.**

__ b. Click **New**.

__ c. Enter the situation event name that you defined in the model. In this lab, you created a business situation name as follows:

Shipped Percentage Event

__ d. This must match exactly the value in the BusinessSituationName field in the outbound event. You may want to copy/paste from the model. Here is a screen capture from the model showing the Shipped Percentage Event attributes:



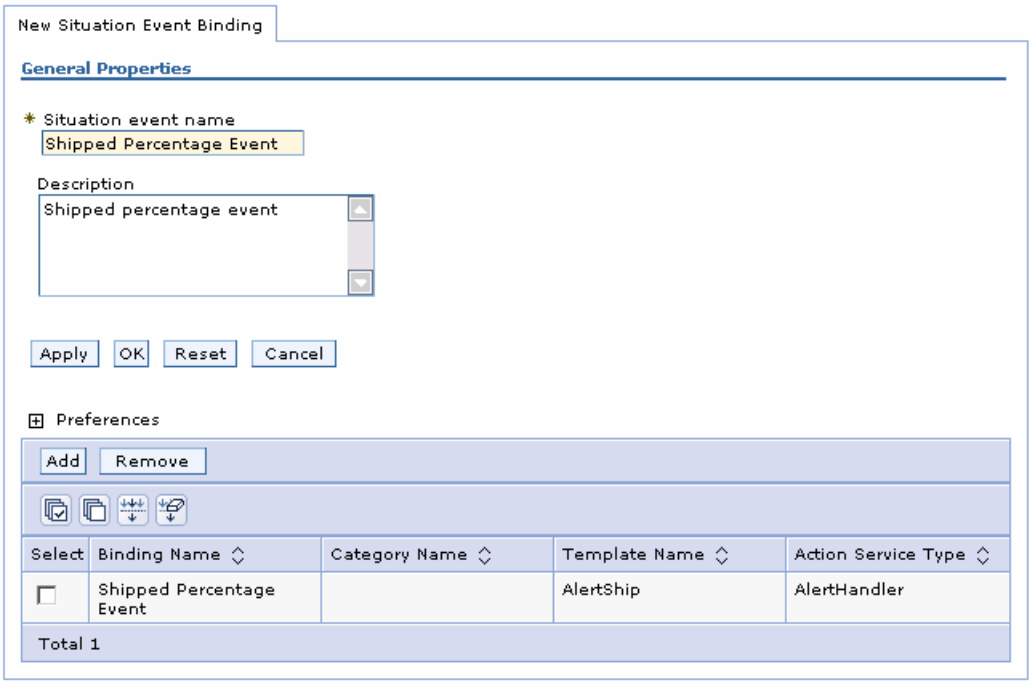
__ e. Enter a description, then click **Apply**.

__ f. Click **Add**.

__ g. Enter a binding name, then select the template **AlertShip.**

__ h. Click **OK**.

__ i. Notice that you now have one action defined for this situation event. If you had other action templates defined then you could add more actions to this event. So then you could send a notification for this situation to multiple destinations including e-mail, alerts and Web services.



__ j. Click **OK**.

____ 4. Add the binding from the situation event to the action type for order processing time.

__ a. In the administrativeconsole, navigate to **Applications > Monitor Action Services > Installed Situation Event Bindings.**

__ b. Click **New**.

__ c. Enter the situation event name that you defined in the model. In this lab, you created a business situation name as follows:

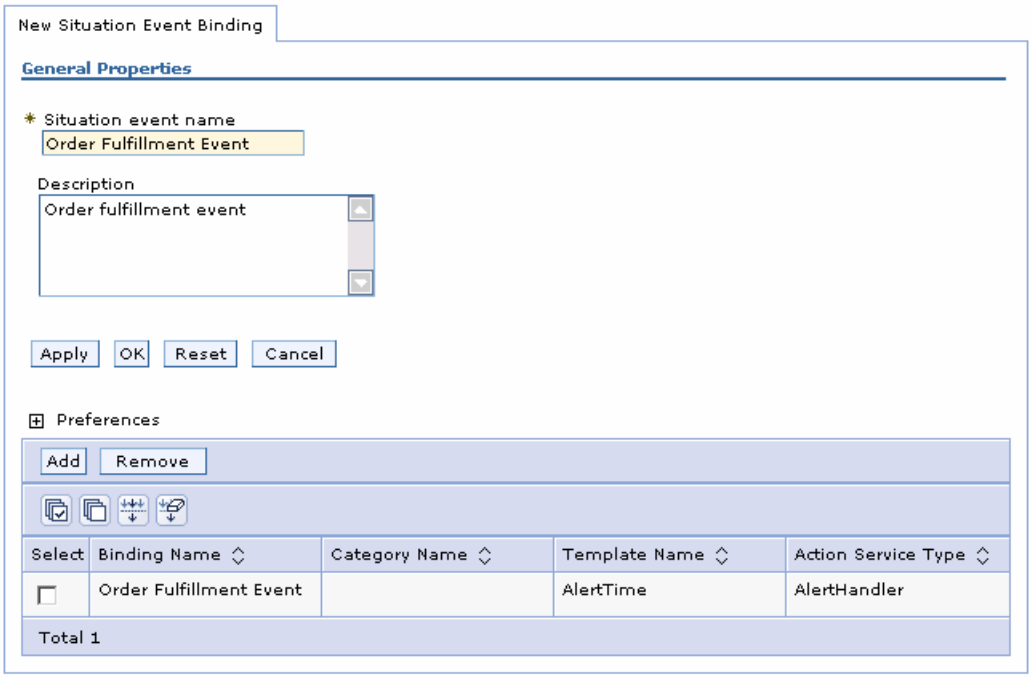
Order Fulfillment Event

__ d. . This must match exactly the value in the BusinessSituationName field in the outbound event. You may want to copy/paste from the model

__ e. Enter a description, then click **Apply**.

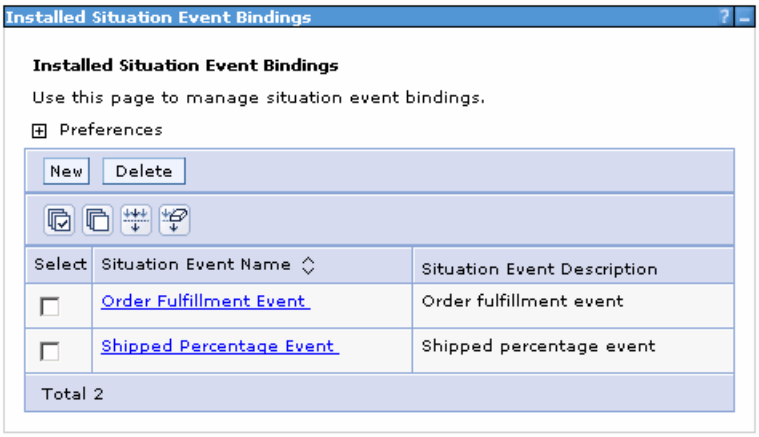
__ f. Click **Add**.

__ g. Enter a binding name, then select the template **AlertTime**, then click **OK**.



__ h. Click **OK**.

____ 5. In the administrativeconsole, navigate to **Applications > Monitor Action Services > Installed Situation Event Bindings.** You should see the two bindings that you created.



Part 7: Run events to exercise the model

In this section you will use the business process choreographer explorer to run process instances.

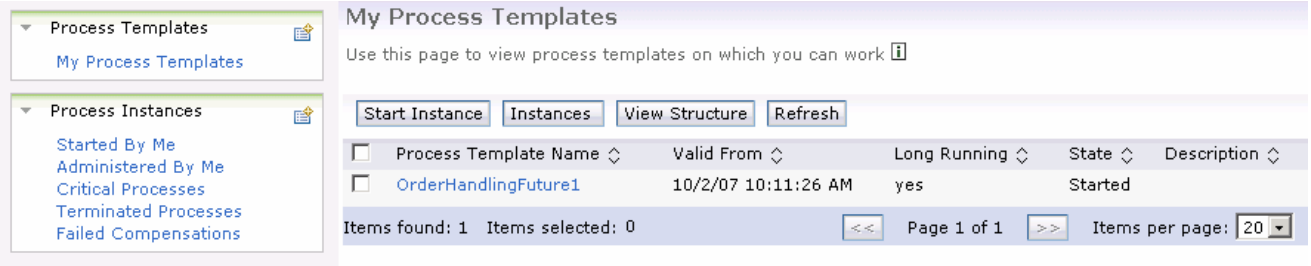
There are five different paths to take through the model. For each path, here are sample data elements that will invoke the listed path:

a. Approve without review, account in good standing, ship
   i. Start instance: rating – 800, available credit – 800, total price – 20
   ii. Ship task: no required elements
b. Approve without review, account not in good standing, approve the order, ship
   i. Start instance: rating – 800, available credit – 100, total price – 200
   ii. Review task: order status – APPROVED
   iii. Ship task: no required elements
c. Approve without review, account not in good standing, decline the order
   i. Start instance: rating – 800, available credit – 100, total price – 200
   ii. Review task: order status – DECLINED
d. Do not approve without review, approve the order, ship
   i. Start instance: rating – 10, available credit – 10, total price – 900
   ii. Review task: order status – APPROVED
   iii. Ship task: no required elements
e. Do not approve without review, decline the order
   i. Start instance: rating – 10, available credit – 10, total price – 900
   ii. Review task: order status – DECLINED

In order to see an alert in the alerts view of the dashboard, you will need the number of shipped orders to be less than 85 percent of the total number of orders. An easy way to achieve this is to process one DECLINED order, then before you add any other process instances, go to the dashboard section of this document and create a dashboard to view the alerts.

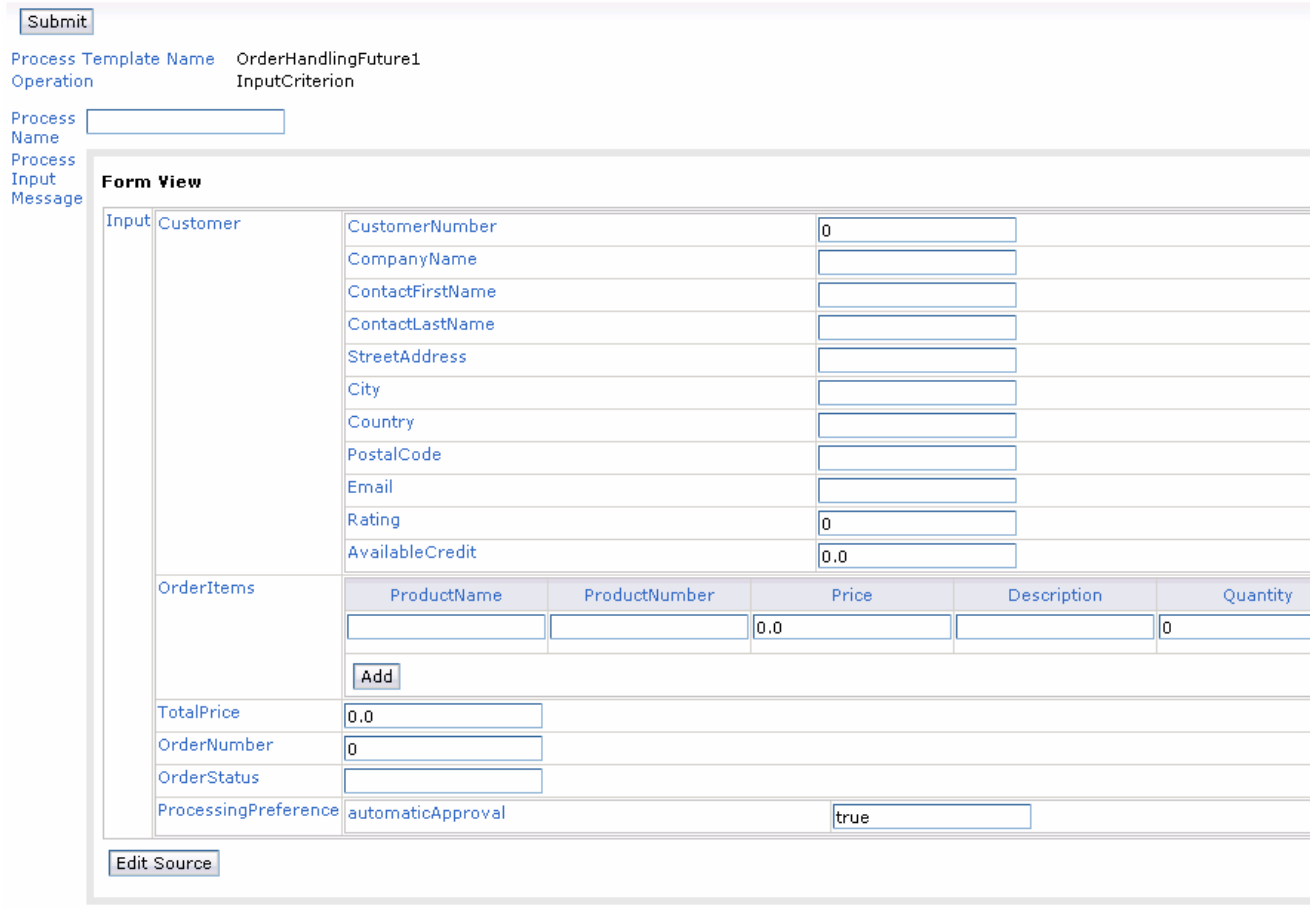
____ 1. In the Servers view, right click on server WebSphere Business Monitor v6.1 > Launch > Business Process Choreographer Explorer

____ 2. Click My Process Templates



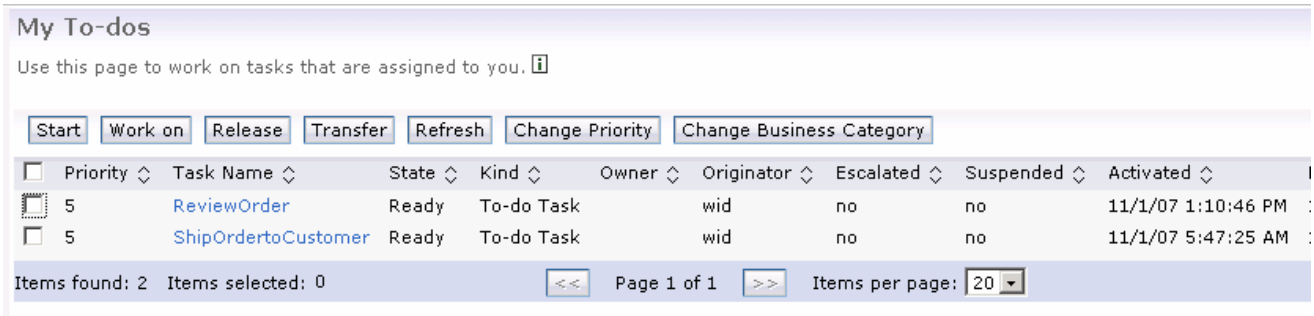
____ 3. Select OrderHandlingFuture1, then click Start Instance

____ 4. In the following data entry page, enter a unique value for the process name, then enter values for the fields in the various business objects listed. You can use just one line item for OrderItems, or you can enter additional ones if you like by clicking on the Add button. The values for Rating, AvailableCredit, and TotalPrice determine which paths the process will take. See the introduction to this section for more information.



____ 5. Click the Submit button.

____ 6. Select Task Instances > My To-do's. Here you will find either the ReviewOrder task or the ShipOrdertoCustomer task, depending on the values that you entered when you started the process instance.

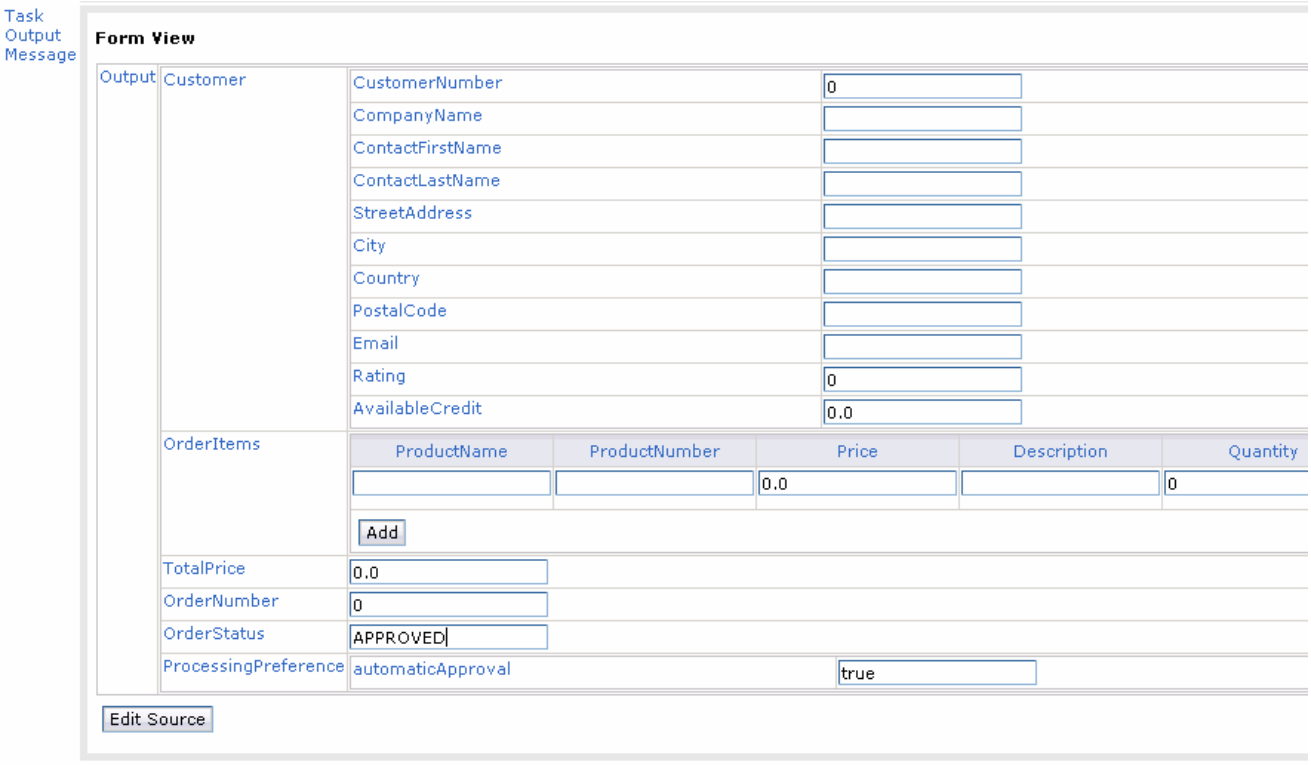


____ 7. To complete a task, select the check-box for it, then click 'Work on'. You will be given a page to enter values for the task. You should enter the values in the section for the task output message.

__ a. For the ship task, you can just press the Complete button, since the data elements are not required values for this process.

__ b. For the review task, you should enter 'APPROVED' or 'DECLINED' (without the quotes) into the OrderStatus field. The other fields are optional for this process, so you can choose to not enter them to save time. Then press the Complete button.

__ c. This screen capture shows the review task and the string 'APPROVED' (without the quotes) has been entered in the OrderStatus field.



Part 8: Create a dashboard

In this section you will build a dashboard. You will add views to the dashboard and configure them.

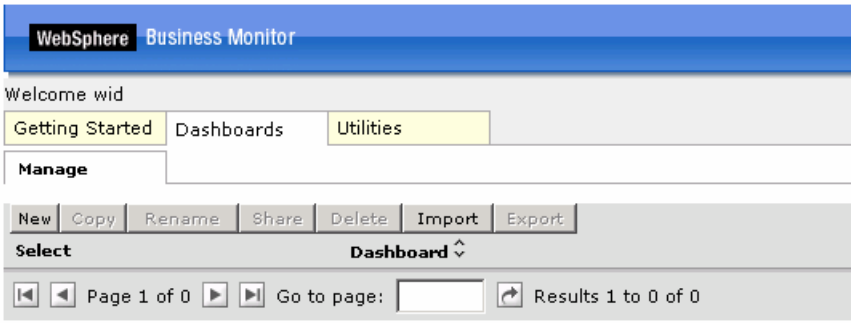
____ 1. Create the dashboard.

__ a. In WebSphere Integration Developer, click Window > Web Browser. The default browser is 'Internal Web Browser', but you should not use this one since some standard functions are not provided that you may need. Select 'Default system Web browser' or any other listed browser other than the internal browser.

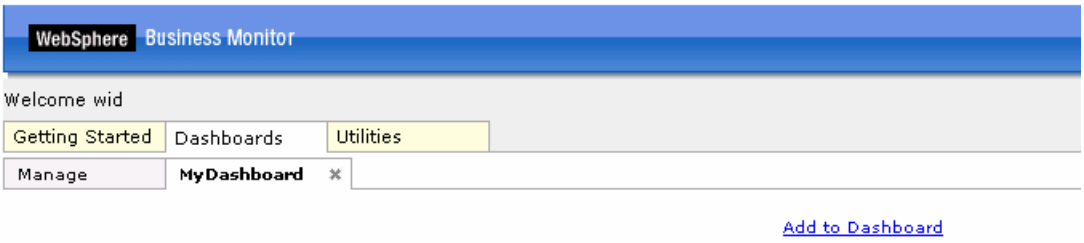
__ b. In WebSphere Integration Developer, in the servers view, right click and select **WebSphere Business Monitor Dashboard**

__ c. When prompted, enter **admin** for the user ID and enter **admin** for the password. You must log in with 'admin' so that you can view the alerts which were setup in action manager to be sent to this particular userid. Also, in the toolkit environment, this is the user that is automatically defined on the secured server.

__ d. Click the **Dashboards** tab.



__ e. Click **New**, then enter a name for the dashboard, then click **OK**.

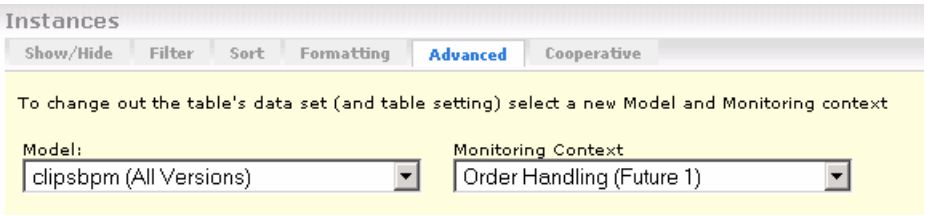


____ 2. Add the instances view to see monitored instances.

__ a. Click **Add to Dashboard**, then select **Instances**, then click **OK**. Note that you can also add a view by dragging the view from the palette on the right and dropping it onto the dashboard.

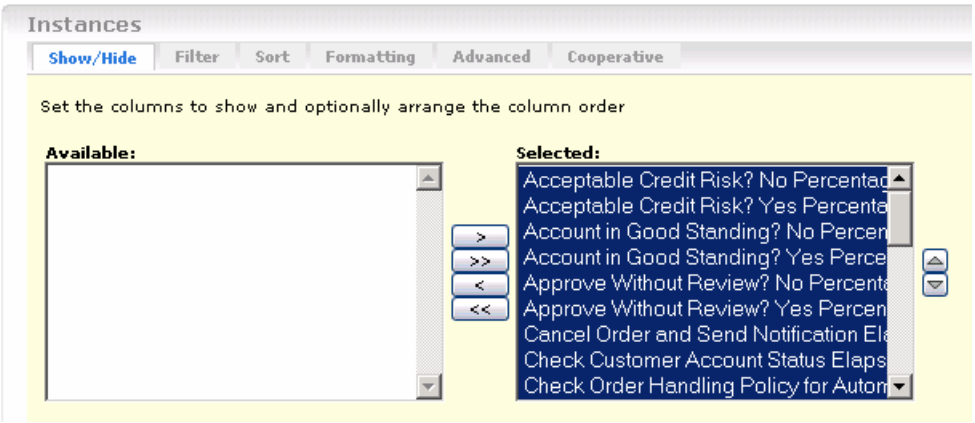
__ b. Click **Personalize**.

__ c. Click the **Advanced** tab, and select model 'clipsbpm (All Versions)'

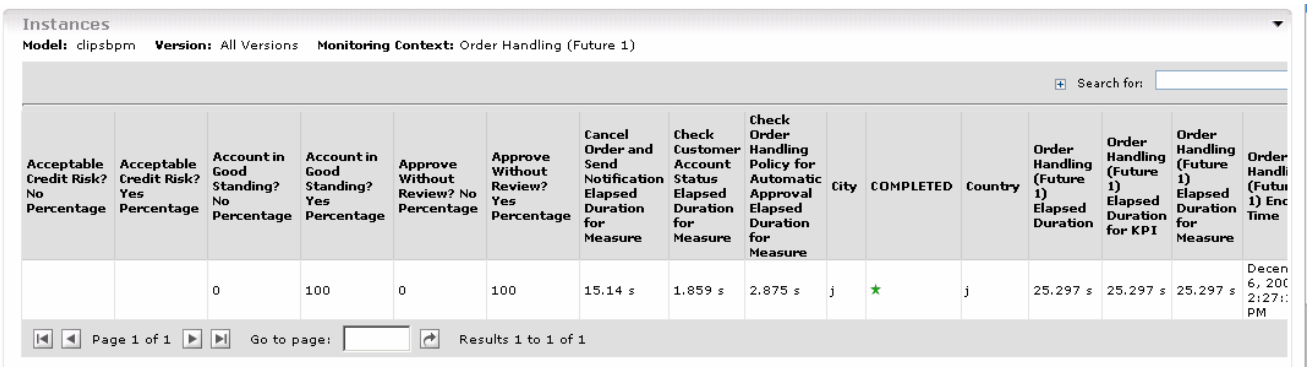


__ d. Click the **Show/Hide** tab.

__ e. Click **>>** to copy all the metrics from the available list to the selected list.



__ f. Then click **Save**. You should see a list of monitoring context instances for the events that you just processed.



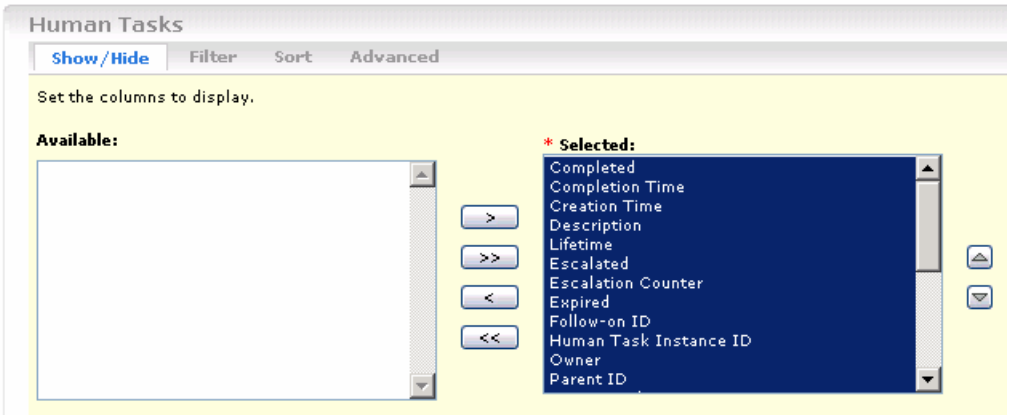
____ 3. Add the human tasks view.

__ a. Click **Add to Dashboard**, then select **Human Tasks**, then click **OK**. Note that you can also add a view by dragging the view from the palette on the right and dropping it onto the dashboard.

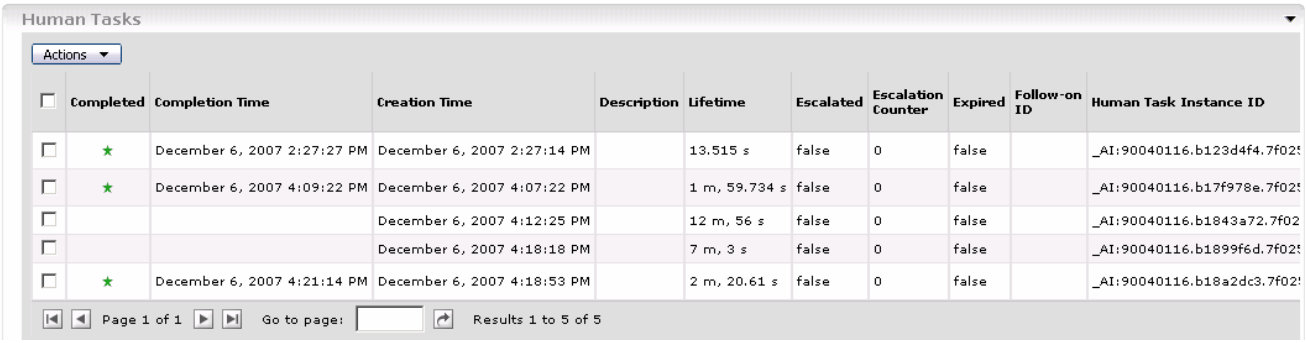
__ b. Click **Personalize**.

__ c. Click the **Show/Hide** tab.

__ d. Click **>>** to copy all the metrics from the available list to the selected list.



__ e. Click **OK**.



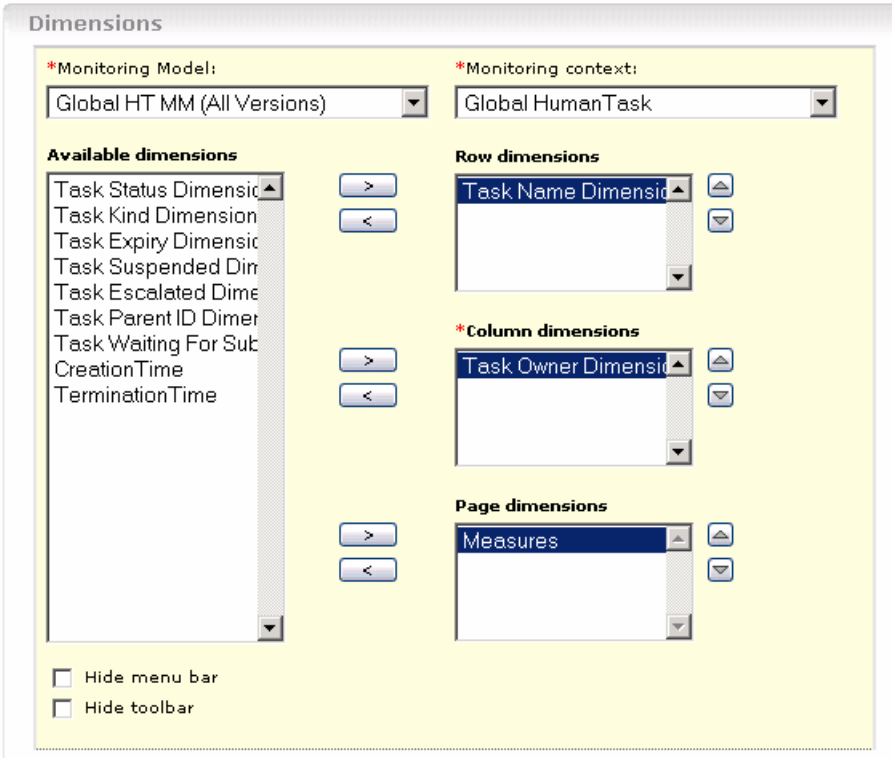
____ 4. Add the dimensions view and configure it to show aggregated human task information.

__ a. Click **Add to Dashboard**, then select **Dimensions**, then click **OK**.

__ b. Click **Personalize**.

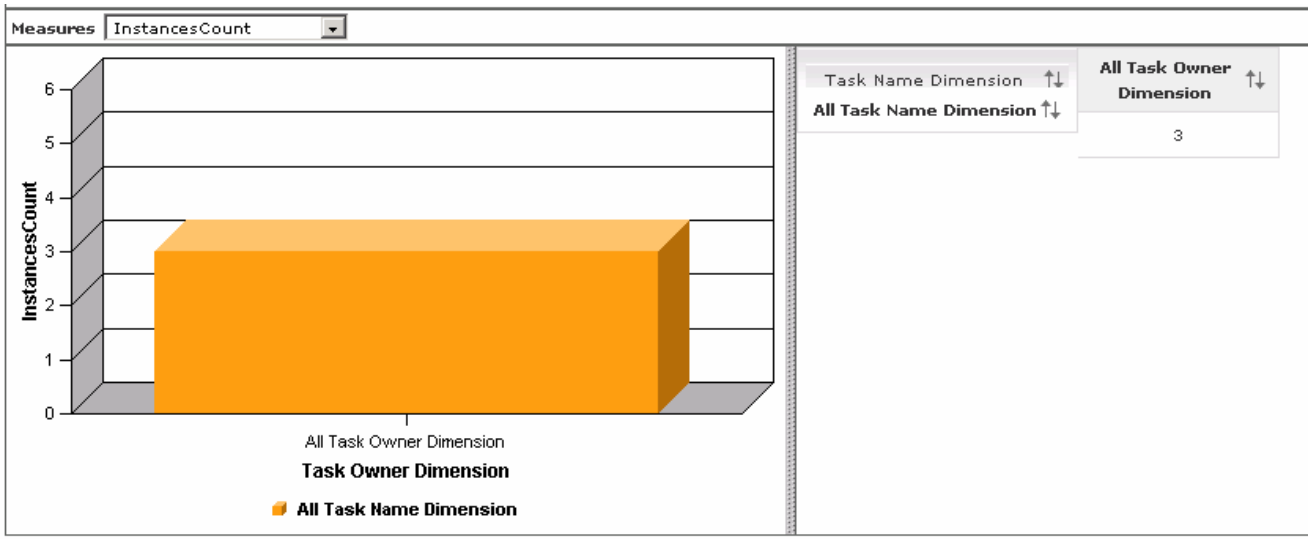
__ c. In the Dimensions view's personalize screen, select the following values:

1. Monitoring Model: **Global HT MM (All Versions)**
    - Note that this is the global human task monitor model which is automatically installed when you install the toolkit.
2. Monitoring Context : **Global Human Task**
3. Select **Task Name Dimension** from the **Available Dimensions** list and click the right direction arrow () next to **Row Dimensions** text area.
4. Now select **Task Owner Dimension** from the **Available Dimensions** list and click the right directional arrow () next to **Column Dimensions** text area
5. Now select **Measures** from the **Available Dimensions** list and click the right direction arrow () next to **Page Dimensions**

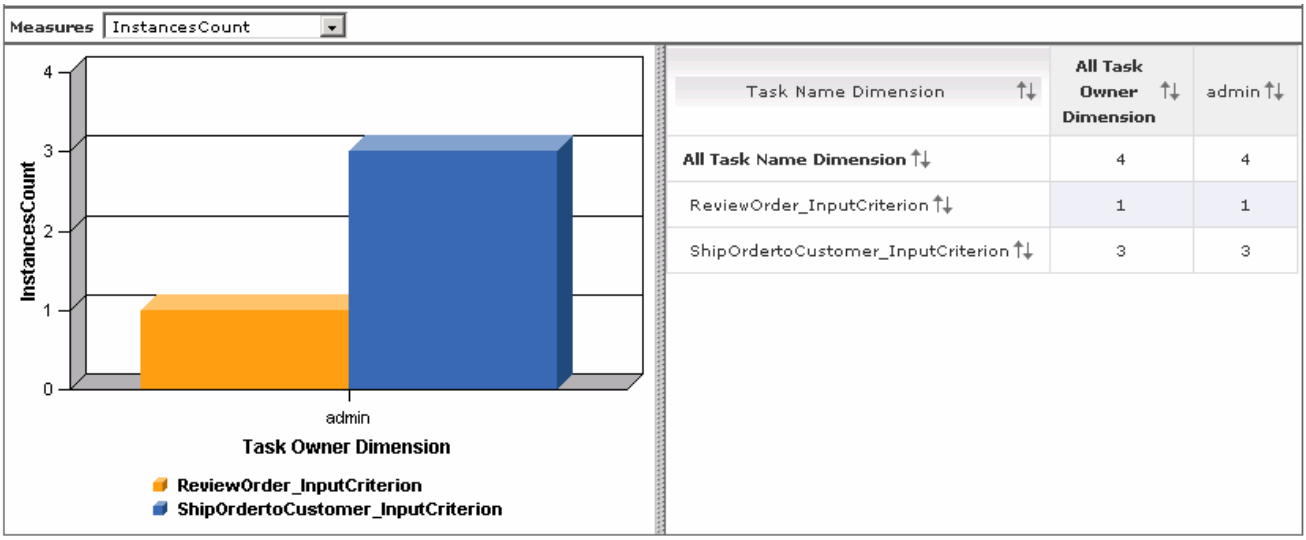


__ b. Click the **Save** button.

__ c. The Dimensions view displays the instances count based on task name and task owner.

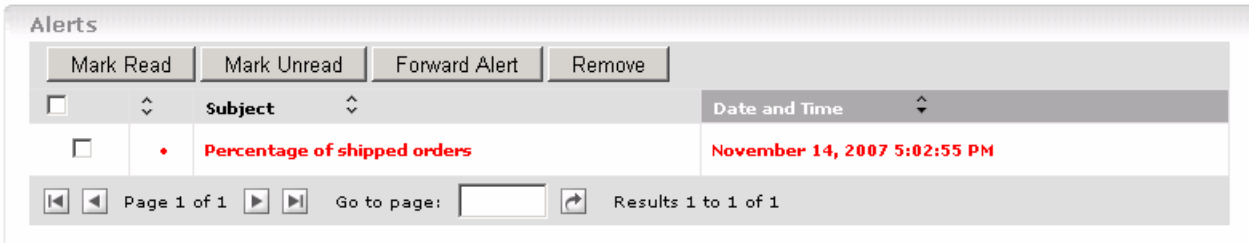


__ d. You can double click on **All Task Name Dimension** to drill down on task name. Then double click on **All Task Owner Dimension** to drill down on task owner.



____ 5. Add the alerts view. There are two alerts defined in the model, one for shipped percentage and one for order processing time. The latter is based on a processing time greater that 3 days, so it will be difficult to test here. The former can be tested easily by ensuring that the number of shipped orders is less than 85 percent of the number of total orders.

__ a. Click **Add to Dashboard**, then select **Alerts**, then click **OK**.

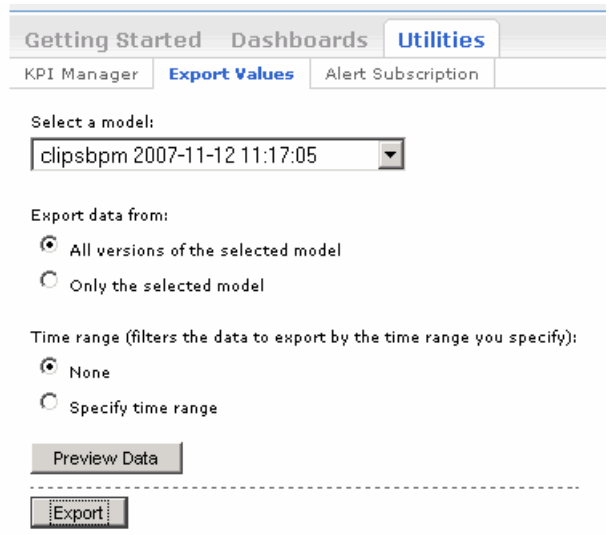


____ 6. Export values to Modeler. Note that you must have some completed monitoring context instances for this, so make sure that you have started and completed some process instances before exporting the values.

__ a. Click the **Utilities** tab.

__ b. Click the **Export Values** tab.

__ c. Select the correct model, then click **Export**.



__ d. The XML is displayed in a browser window, click File > Save page as… or Save as…, then select your destination folder and click Save. The file is stored by default as exportvalues.xml.

__ e. Open **WebSphere Business Modeler**, and point to the workspace containing your model.

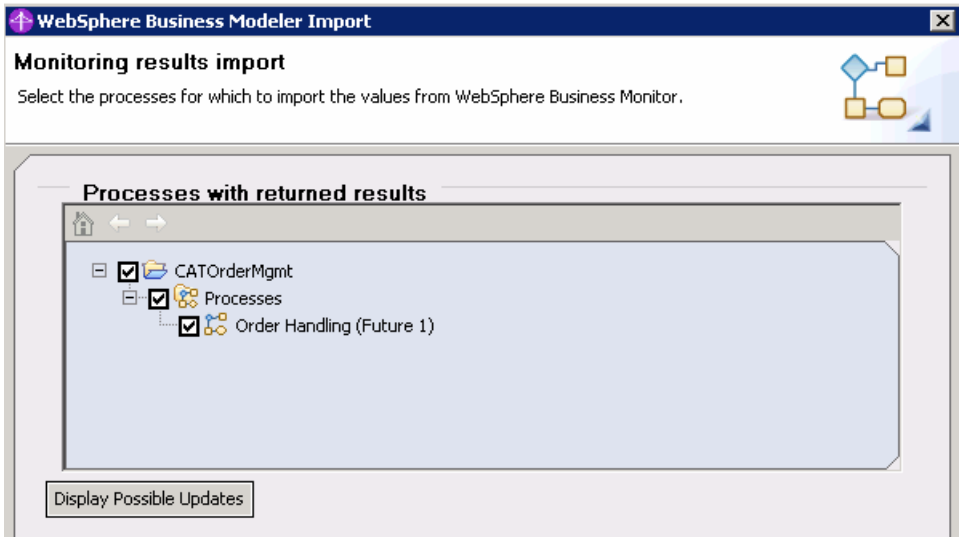
__ f. In the project tree, navigate to **CATOrderMgmt > Processes > Order Handling (Future 1)**, and select it

__ g. Right click on Order Handling (Future 1), then select **Import…**

__ h. Select **Monitoring result (.xml)**, then click **Next.**

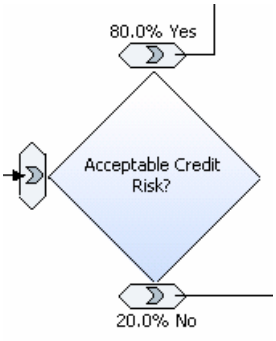
__ i. **Browse** to the folder containing the exportvalues.xml file.

__ j. Select **exportvalues.xml,** then click **Next.**

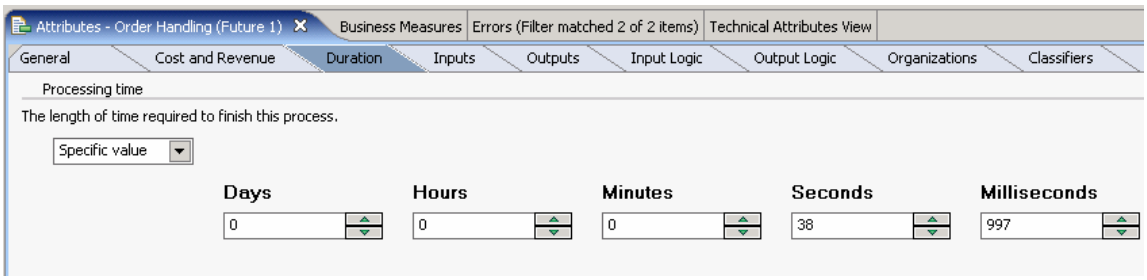


__ k. Click **Finish**.

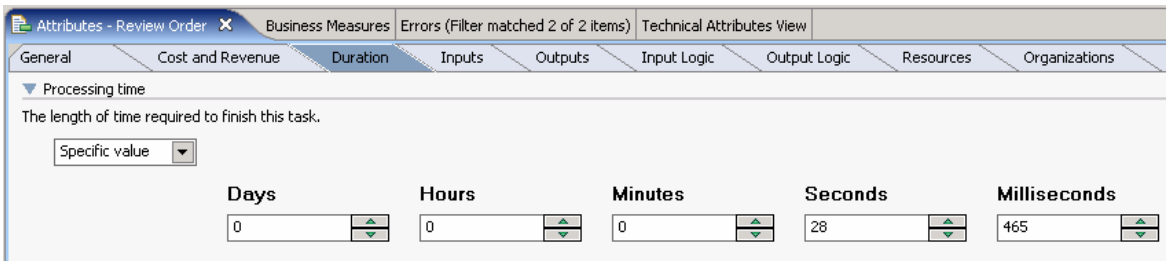
__ l. Double click on the process in the project tree to open the process diagram. Browse the process diagram to see the updated values for the six decision percentages.



__ m. To check the updated process duration time, click on the background of the diagram, then click the Attributes tab, then click the Duration tab.



__ n. To check the updated task duration times, click on one of the tasks in the diagram, then click the Attributes tab, then click the Duration tab, then click the icon in front of 'Processing time'.



What you did in this exercise

In the lab, you imported the model into WebSphere Business Modeler and reviewed the process model and business measures model.

You exported the process model and business measures model to WebSphere Integration Developer, and imported the implemented process solution.

You generated the BPEL monitor model, and merged that with the business measures model.

You completed the implementation of the merged monitor model.

You deployed the process and the monitor model, and ran process instances.

Finally, you created a dashboard and exported monitored values back to Modeler.

Appendix 1 – Import the solution into the monitor model editor

A solution has been provided so that you do not have to build the model from scratch. This section shows you how to import the monitor model project into WebSphere Integration Developer. After importing the model then you can proceed to the section to publish the model to the server.

____ 1. Import the monitor model project into WebSphere Integration Developer.

__ a. In the Business Integration view, right click then select **Import**…

__ b. Navigate to **Other > Project Interchange** then click **Next**.

__ c. For the zip file, browse to the supplied file, for example,

__ d. c:\Labfiles61\ClipsAndTacksBPM\CATOrderMgmt-PI-withMM.zip

__ e. You should see four projects listed, but select only project **clips**.

__ f. Click **Finish**.

____ 2. Expand the project in the Project Explorer view, then expand the Event Definitions and you will see the events listed. Expand Monitor Models and you will see the model listed.

____ 3. Now you may proceed to the section to generate and publish the model to the server.

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