IBM WEBSPHERE BUSINESS MONITOR 7.0 – LAB EXERCISE

WebSphere Business Monitor V7.0 Visual model

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What this exercise is about

The objective of this lab is to show you how to use SVG diagrams in the monitor visual model. You will see how to edit the visual model for the KPI context diagram and the monitoring context diagram. And you will use the diagram widget in the business space dashboard to see the results of the visual actions. You will also use the instances widget and wire it to the diagrams widget so you can click an instance and see the diagram for that particular instance.

Lab requirements

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

- Rational Application Developer 7.5 or WebSphere Integration Developer 7.0
- WebSphere Business Monitor 7.0 Toolkit installation including the Monitor development environment (Monitor Model editor) and Monitor test environment
- SVG viewer plug-in for your browser for viewing SVG diagrams in the Diagram view
 - Adobe SVG Viewer 3.0.3 http://www.adobe.com/svg
 - Examotion Renesis Player 1.1.1 http://www.examotion.com

What you should be able to do

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

- Use Rational Application Developer or WebSphere Integration Developer to add and edit the visual model for a monitoring context and a KPI context
- Define a dashboard to view KPI context diagrams and monitoring context diagrams

Introduction

In this lab you will build on the ClipsAndTacks model which is described in another lab document titled 'WebSphere Business Monitor V7.0 ClipsAndTacks business activity monitoring lab'. You will import the full Clips and Tacks model, then update the visual model, deploy the changed model and submit events to the monitor model.

The SVG diagrams have been created for you so you can just import them into the workspace. The SVG diagrams were created using WebSphere Business Modeler V7.0. You can create SVG diagrams using other tools. Here is a list of some SVG editing tools: http://wiki.svg.org/SVG Links#Development tools

For the monitoring context diagram, you will change the color of tasks in the diagram based on the order status. Shipped orders will cause the task 'Ship Order to Customer' to be displayed with a blue color. Cancelled orders will cause the task 'Cancel Order and Send Notification' to be displayed with a blue color. There is a metric called 'Order_Status' which already contains the status of the order so you will use that metric to cause the color changes.

For the KPI context diagram, you will change the color of tasks in the diagram based on the total number of shipped orders. If the total ship count is less than or equal to 2, then the task 'Ship Order to Customer' will be displayed with a red color. If the total ship count is greater than 2, then the same task will be displayed with a green color. You will also display the total number of orders as a text field underneath the task. There is a KPI called 'Ship_Count_KPI' which already contains the total count of shipped orders so you will use that KPI as a source for these visual actions.

Useful URLs

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

https://localhost:9043/ibm/console

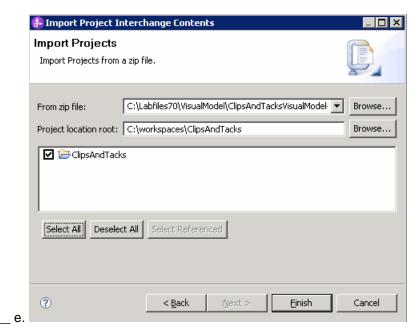
Business space dashboard

https://localhost:9443/BusinessSpace

Part 1: Import the Clips And Tacks monitor model

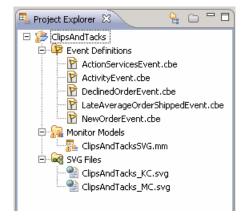
In this section, you will import the supplied project interchange into the workspace.

- ____ 1. Start Rational Application Developer or WebSphere Integration Developer and setup the environment
 - __ a. Start Rational Application Developer or WebSphere Integration Developer, and when prompted point to a new workspace such as c:\workspaces\ClipsAndTacks
 - b. Click **OK**
 - __ c. Close the Welcome tab
 - __ d. Open the Business Monitoring perspective. From the main menu select Window → Open Perspective → Business Monitoring
 - __ e. If prompted for Confirm Enablement, click OK
- ____ 2. Import the project interchange file
 - __ a. Right click the Project Explorer, then select Import... from the pop-up menu
 - __ b. Select Other > Project Interchange, then click Next
 - __ c. Click the **Browse** button to locate the archive file, for example, <LABFILES70>\VisualModel\ClipsAndTacksVisualModel_Pl.zip
 - __ d. Click Select All



__ f. Click Finish. You will see the new project in the Project Explorer view

____ 3. Expand the project in the Project Explorer view, then expand the Event Definitions and you will see the new events listed. Expand Monitor Models and you will see the new ClipsAndTacks model listed. Expand the SVG files and you will see the SVG files listed.



Part 2: Edit the visual model for the monitoring context diagram

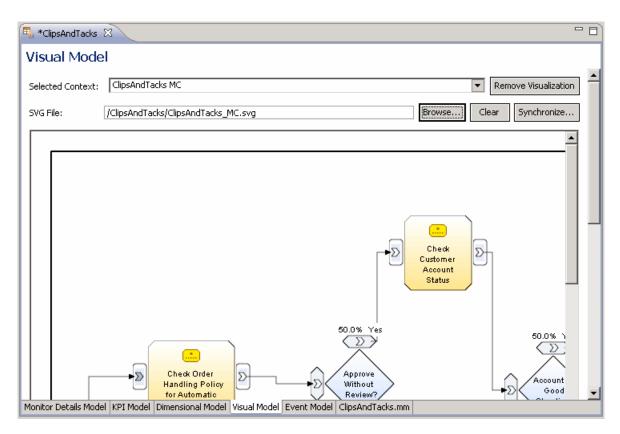
In this section you will use Rational Application Developer or WebSphere Integration Developer to edit the visual model for the monitoring context diagram.

1.	In the project explorer, navigate to ClipsAndTacks → Monitor Models and then double click 'ClipsAndTacksSVG.mm' to open the editor on the model
2.	Select the Visual Model tab at the bottom of the editor view Dimensional Model Visual Model Event Model
3.	The 'Selected Context' defaults to the monitoring context 'ClipsAndTacks MC'

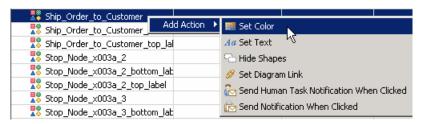
_ 4. To 'Choose an SVG file' click the 'Browse...' button and navigate to ClipsAndTacks
→ClipsAndTacks_MC.svg in the SVG Resource Selection dialog



- ____ 5. Click **OK**
- _____ 6. A question dialog pops up asking, 'Create shape sets based on SVG files?' Click Yes
- _____ 7. The SVG diagram opens in the visual editor as shown below:



- 8. Scroll to the right in the diagram and you see the tasks 'Ship Order to Customer' and 'Cancel Order and Send Notification' which are the tasks that you will manipulate
- 9. Set the color of the task 'Ship Order to Customer' to blue if the order is shipped. Use the metric Order Status to determine if the order has been shipped
 - __ a. In the bottom left portion of the visual editor view in the section "Add and Edit Shape set
 Actions", you see the SVG shapes that are available for use in this file. Find the shape set
 action 'Ship_Order_to_Customer' in this list. Right click this item and then select Add Action
 → Set Color from the pop-up menu



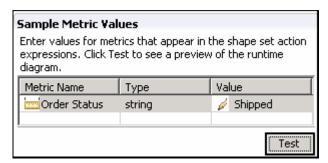
- __ b. The set color action is added beneath the task in the list.
- __ c. Click in the cell to the right of 'condition'. A button (....) appears in the expression field. Click on the button and then use content assist (Ctrl-space) or type in the following expression in the 'Expression dialog': Order_Status eq 'Shipped'



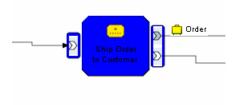
__ d. Click in the cell to the right of 'fill color'. A button (____) appears. Click the button, select the blue color from the color dialog and click **OK**



- __ e. Press Ctrl-S to save your work
- 10. Test the changes using the diagram test facility
 - __ a. In the lower right corner of the visual editor view, you see the metrics listed that are referenced in the visual model. You can set values for the metrics to see how the model will behave. Enter a value for the metric 'Order Status' as follows:
 - Value : Shipped



__ b. Click the **Test** button. A diagram preview window is opened. Scroll to the right and you can see that the task '**Ship Order to Customer**' has been changed to blue color.



- __ c. Close the diagram preview window
- _____11. Set the color of the task 'Cancel Order and Send Notification' to blue if the order is cancelled. Use the metric Order Status to determine if the order has been cancelled.
 - __ a. In the bottom left portion of the visual editor view in the section "Add and Edit Shape set Actions", you see the SVG shapes that are available for use in this file. Find the shape set 'Cancel Order and Send Notification' in this list. Right click this item and then select Add Action → Set Color from the pop-up menu

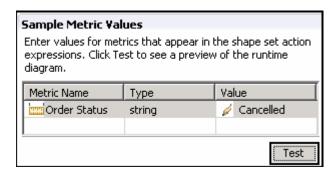
- __ b. The set color action is added beneath the task in the list.
- __ c. Click in the cell to the right of **condition**. A button (____) appears in the expression field. Click on the button and then use content assist (Ctrl-space) or type in the following expression in the 'Expression dialog': **Order_Status eq 'Cancelled'**



__ d. Click in the cell to the right of 'fill color'. A button (____) appears. Click the button, select the blue color from the color dialog and click **OK**



- __ e. Press Ctrl-S to save your work
- ____ 12. Test the changes using the diagram test facility
 - __ a. In the lower right corner of the visual editor view, you see the metrics listed that are referenced in the visual model. You can set values for the metrics to see how the model will behave. Enter a value for the metric 'Order Status' as follows:
 - Value : Cancelled



- __ b. Click the **Test** button. A diagram preview window is opened. Scroll to the right and you can see that the task 'Cancel Order and Send Notification' has been changed to blue color
- c. Close the diagram preview window
- ____ 13. 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 3: Edit the visual model for the KPI context diagram

In this section you will use Rational Application Developer or WebSphere Integration Developer to edit the visual model for the KPI context diagram

- ____ 1. If not already open, navigate to ClipsAndTacks → Monitor Models and then double click 'ClipsAndTacksSVG.mm' to open the editor on the model in the project explorer
- ____ 2. Select the **Visual Model** tab at the bottom of the editor view
- _____ 3. Select "My KPI Context" for the 'Selected Context' field from the drop down list
- ____ 4. To choose and SVG file, click the 'Browse...' button and navigate to ClipsAndTacks
 →ClipsAndTacks_KC.svg in the SVG Resource Selection dialog



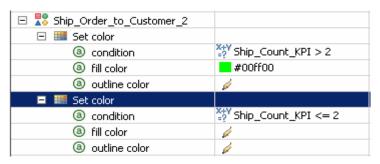
- 5. Click **OK**
- _____ 6. A question dialog pops up asking, 'Create shape sets based on SVG files?' Click Yes
- 7. Now you will see the SVG diagram opened in the visual editor
- Set the color of task 'Ship Order to Customer' to green if the total number of shipped orders is greater than 2. Use Ship_Count_KPI in the KPI model which contains the total number of shipments
 - __ a. In the bottom left portion of the visual editor view in the section "Add and Edit Shape set Actions", you see the SVG shapes that are available for use in this file. Find the shape set 'Ship_Order_to_Customer_2' in this list. Right click this item and then select Add Action → Set Color from the pop-up menu
 - b. The set color action is added beneath the task in the list.
 - __ c. Click in the cell to the right of **condition**. A button (....) appears in the expression field. Click on the button and then use content assist (Ctrl-space) or type in the following expression in the 'Expression dialog': **Ship Count KPI > 2**



__ d. Click in the cell to the right of 'fill color'. A button (____) appears. Click the button, select the green color from the color dialog and click **OK**



- 9. Set the color of the task 'Ship Order to Customer' to red if the total number of shipped orders is less than or equal to 2. Use Ship_Count_KPI in the KPI model which contains the total number of shipments
 - __ a. In the bottom left portion of the visual editor view in the section "Add and Edit Shape set Actions", you see the SVG shapes that are available for use in this file. Find the shape set 'Ship_Order_to_Customer_2' in this list. Right click this item again and then select Add Action -> Set Color from the pop-up menu
 - b. The set color action is added beneath the task in the list.
 - __ c. Click in the cell to the right of **condition**. A button (....) appears in the expression field. Click on the button and then use content assist (Ctrl-space) or type in the following expression in the 'Expression dialog': **Ship_Count_KPI <= 2**

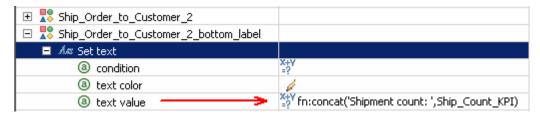


__ d. Click in the cell to the right of 'fill color'. A button (....) appears. Click the button, select the red color from the color dialog and click **OK**

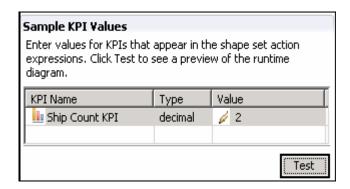


- __ e. Press Ctrl-S to save your work
- ____ 10. Set the text for the task 'Ship_Order_to_Customer_2_bottom_label' so the Ship_Order_to_Customer_2 will show the actual number of shipments. Use Ship_Count_KPI in the KPI model which contains the total number of shipments
 - __ a. In the bottom left portion of the visual editor view in the section "Add and Edit Shape set Actions", you see the SVG shapes that are available for use in this file. Find the shape set 'Ship_Order_to_Customer_2_bottom_label' in this list. Right click this item again and then select Add Action → Set Text from the pop-up menu

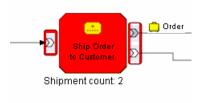
- __ b. The set text action is added beneath the task in the list.
- __ c. Click in the cell to the right of 'text value'. A button (____) appears in the expression field. Click on the button and then use content assist (Ctrl-space) or type in the following expression in the 'Expression dialog': fn:concat('Shipment count: ',Ship_Count_KPI).



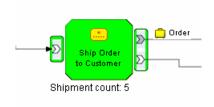
- __ d. Press Ctrl-S to save your work
- ____ 11. Test the changes using the diagram test facility
 - __ a. In the lower right corner of the visual editor view, you see the KPIs listed that are referenced in the visual model. You can set values for the KPIs to see how the model will behave. Enter a value of 2 for Ship_Count_KPI as follows:
 - Value : 2



__ b. Click the **Test** button. A diagram preview window is opened. Scroll to the right and you can see that the task 'Ship Order to Customer' has been changed to red color, and the number of shipments is shown beneath the task:



- __ c. Close the diagram preview window
- __ d. Now test the **green** condition. Enter a value of **5** for Ship_Count_KPI in the sample KPI values table
- __ e. Click the Test button. A diagram preview window is opened. Scroll to the right and you can see that the task 'Ship Order to Customer' has been changed to green color, and the number of shipments is shown beneath the task

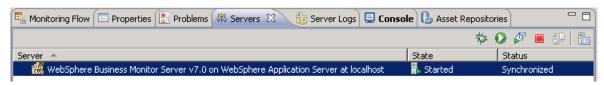


- __ f. Close the diagram preview window
- ____ 12. Check for any errors in the Problems view. You should resolve any errors before continuing. Warnings and informational messages may be present but these will not be a problem

Part 4: Publish the model to the server

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

- __ 1. In Project Explorer, expand ClipsAndTacks → Monitor models → ClipsAndTacksSVG.mm. Right click over ClipsAndTacksSVG.mm and then select Generate Monitor JEE Projects from the pop-up menu
- 2. If you have already generated the ClipsAndTacks model for another lab, then you may need to select 'overwrite existing projects'. Then click **Finish**.
- 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 Server v7.0. This may take a few minutes to complete.



- _____ 5. Right click in the servers view and then select Add and Remove Projects...
- 6. Click Add to move the ClipsAndTacksSVGApplication from the list of available projects to the list of configured projects. Click Finish. Note: If the application is already in the list of configured projects, then you may have run another lab and published this application already, so in that case, cancel this window and select the 'Publish' option from the server menu.
- 7. A progress message is displayed in the lower right corner of the window.
- 2. Check the messages in the console view. You should see the following message when the application has been started:

Application started: ClipsAndTacksSVGApplication

- 9. In the servers view, right click, then select Administration > Run administrative console. You should see it open in a separate tab. It will prompt you for user ID and password. Enter admin for user ID and then enter admin for password.
- Click Log in
- ____ 11. Click **Applications > Monitor Models**. The application should show green status if it started successfully.



____ 12. 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.

13.	Check the server log to ensure there are no problems. You can check this in the console view.
14.	If you are using the integrated server within WebSphere Integration Developer or Rational Application Developer, then you do not need to setup Monitor data security, since the administrative 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.

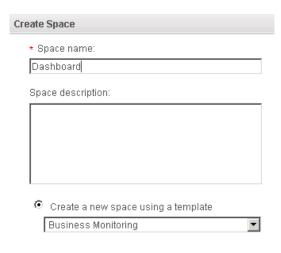
Part 5: Create a dashboard

In this section you will build a dashboard in business space. You should install the SVG viewer into your browser, then use that browser in this lab.

- Create the dashboard.
 - __ a. 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 Window > Preferences > General > Web browser > select 'Use external Web browser'. Select an external browser. Click OK.
 - __ b. In WebSphere Integration Developer, in the servers view, right click and select Launch > Business Space
 - __ 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 user ID. Also, in the toolkit environment, this is the user that is automatically defined on the secured server.
 - __ d. Click in the Actions menu to create a new space



___ e. Enter a name such as Dashboard, and select the Business Monitoring template.



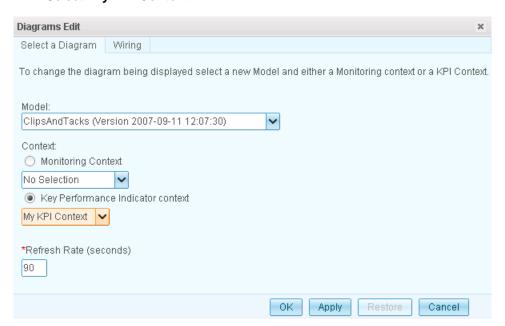
__ f. Click Save.



- _____ 2. Configure the diagrams widget.
 - __ a. On the new space, click the Operational tab.
 - __ b. Click the 'Edit Page' link to enter edit mode.
 - __ c. To configure the Diagrams widget, hover the mouse over the right corner of the widget
 - and then click the down arrow. Select 'Edit Settings...'.

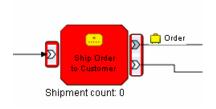


- __ d. You can either view the monitoring context or the KPI context of the selected monitor model. Follow the instructions below to configure the Diagrams widget to view the KPI Context of the ClipsAndTacks model
 - Select the ClipsAndTacks model
 - Select "Key Performance Indicator context"
 - Select "My KPI Context"



__ e. Click **OK**. You should see the diagram displayed in the view. Scroll to the right and you see the ship task is marked with red color and the total shipment count is zero. This is correct because you have not processed any events yet, and in the model you specified that the color should be red if the shipment count is less than or equal to 2.

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- __ f. Click 'Save' to save your changes.
- __ g. Do not close the browser, since you will come back here to check results later. Proceed to the next section to process some shipments.

Part 6: Run events to exercise the model

Rather than installing an application to create the events that you want to monitor, you are going to use a program to simulate the submission of events from the application.

The supplied program is 'BatchCBEWriter61' and it will submit the events to the Common Event Infrastructure. Look for the program in \Labfiles70\BatchCBEWriter. This program reads XML files which represent the common base events for the model.

Update BatchCBEWriter61.bat to point WAS HOME to the monitor server home, for example 'set WAS HOME=C:\IBM\WebSphere\AppServer'. If you are using the integrated monitor server in WebSphere Integration Developer, the path would be <WID WTE HOME>\runtimes\bi v7. If you are using the integrated monitor server in Rational Application Developer, the path would be <RAD_WTE_HOME>\runtimes\base_v7. Update config.properties, setting the serverName and portNumber. You can find the port number by browsing the server log and finding 'bootstrap port'. For example, check for the log at C:\IBM\WebSphere\AppServer\profiles\WBMon01\logs\server1\SystemOut.log . For the integrated server in WebSphere Integration Developer, the path would be <WID WTE HOME>\runtimes\bi v7\profiles\gmwps\logs\server1\SystemOut.log. For the integrated server in Rational Application Developer, the path would be <RAD WTE HOME>\runtimes\base v7\profiles\WBMonSrv\logs\server1\SystemOut.log. Here is an example of the config.properties settings: a. connect.serverName = localhost __b.connect.portNumber = 2809 Open a command window, then change directory to the folder containing BatchCBEWriter61, for example, type this command a. cd \Labfiles70\BatchCBEWriter 4. Run commands to load the common base events to the server. __ a. batchcbewriter61 -Dsource.filename=allevents.xml __ b. When it prompts you for user identity and password, enter 'admin' for both (without the quotation marks)

When you run BatchCBEWriter61, you should see results such as:

```
© Command Prompt

C:\Labfiles 70\BatchCBEWriter>batchcbewriter 61 -Dsource.filename=allevents.xml

Getting CBEs.
Getting Emitter.
Removing GlobalInstanceIds.
Setting missing values.
Changing Instance Ids.
Updating timestamps.
Validating CBEs.
Sending CBEs.
START=12:42:18.953
Sending cbe[10].
Sending cbe[10].
Sending cbe[20].
Sending cbe[30].
Sending cbe[40].
Sending cbe[60].
END=12:42:24.546
TotalTime=5593 milliseconds.

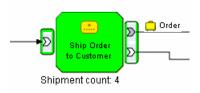
C:\Labfiles 70\BatchCBEWriter>____

✓
```

Part 7: Check the diagram view for the KPI context

Now that you have created the events, there should be shipments, so now you can check your dashboard to see how this is reflected in the diagram view for the KPI context.

- ____ 1. Return to the dashboard that you created previously.
- 2. Take a look at the diagram view in the dashboard. To get the latest results, you may need to refresh the widget. Click the down arrow in the upper right corner of the diagrams widget, then select the option to refresh. In the diagram, scroll to the right and you see the ship task is marked with green color and the total shipment count is 4. This is correct because in the model you specified that the color should be green if the shipment count is greater than 2



_____ 3. Do not close the browser, since you will need your dashboard in the next section

Part 8: Configure the diagram view for monitoring contexts

In this section you will configure the instances widget so you can see the monitoring context instances. You will also add the diagram view for monitoring contexts. Then you will be able to click a monitoring context instance in the instances view and see the diagram for that specific instance.

- ____ 1. Return to the dashboard that you created previously
- 2. Configure the instances widget
 - __ a. On the Operational tab, if you are not in edit mode already, click the 'Edit Page' link to enter edit

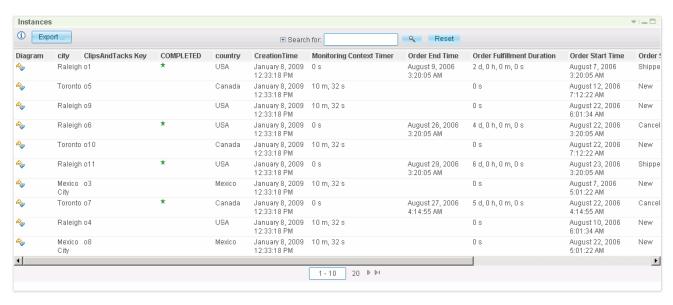


- __ b. Click **Edit Settings...** on the Instances widget menu.
- __ c. Click the **Show/Hide** tab, and select monitoring context 'ClipsAndTacks MC'.



Click button >> to move all the fields to the Selected box. Also, click button 'Set as default' which will make this the default monitoring context to display.

- __ d. Click the **Wiring** tab, then select 'Enable this widget to send events over wires.'
- __ e. Then click **OK**. You should see a list of monitoring context instances for the events that you just processed.



- _____ 3. Configure the diagram widget to display monitoring contexts
 - __ a. Click **Edit Settings...** on the Diagrams widget menu.
 - __ b. Select the model and monitoring context.
 - Select the ClipsAndTacks model
 - Select "Monitoring context"

- Select "ClipsAndTacks MC"
- __ b. Click the **Wiring** tab, then select 'Enable this widget to send events over wires.'
- __ c. Then click **OK**. You should see the diagram displayed in the view. This is the generic diagram without any visual actions displayed.
- 4. Click the diagram icon in the instances view to see the diagram for specific instances.
 - __ a. In the instances view find one of the monitoring contexts that show 'Cancelled' in the order status column.

Raleigh o6	*	USA	January 6, 2010 12:42:18 PM	0 s	August 26, 2006 3:20:05 AM	4 d, 0 h, 0 m, 0 s	August 22, 2006 3:20:05 AM	Cancelled
Apr Toronto o7	*	Canada	January 6, 2010 12:42:18 PM	0s	August 27, 2006 4:14:55 AM	5 d, 0 h, 0 m, 0 s	August 22, 2006 4:14:55 AM	Cancelled

_ b. For this item, click the icon in the first column in the diagram column. This will cause the monitoring context diagram view to be updated for this specific monitoring context. Since this particular order is cancelled, the diagram should show the task 'Cancel Order and Send Notification' as blue in color.



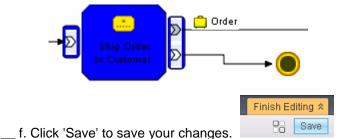
__ c. Click 'Restore Original Context' at bottom of this diagram to return this diagram to the generic diagram.

Restore Original Content

__ d. In the dashboard, scroll up to the instances view and then find one of the monitoring contexts that show 'Shipped' in the order status column.



__ e. For this item, click the icon in the first column, the diagram column. This will cause the monitoring context diagram view to be updated for this specific monitoring context. Since this particular order is shipped, the diagram should show the task 'Ship Order to Customer' as blue in color.



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What you did in this exercise

In the lab, you edited the visual model for the monitoring context diagram and the KPI context diagram.

Then you published the model to the monitor server.

You used the supplied program to simulate the submission of events from the monitored application.

You configured dashboards to view KPI context diagrams. You also configured cooperation between the instances widget and monitoring context diagrams.

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