IBM WEBSPHERE BUSINESS MONITOR 6.1 – LAB EXERCISE

WebSphere Business Monitor V6.1 Web-based dashboards

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What this exercise is about

The objective of this lab is to show you how to use Web-based Dashboards including Alphablox views.

Lab requirements

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

WebSphere Business Monitor V6.1 installed with Web-based Dashboards and Alphablox views.

What you should be able to do

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

- Import the ClipsAndTacks model into a new workspace
- Create a new dashboard and add the dashboard views to the dashboard canvas
- Configure Web-based dashboards such as Instances, Diagram, KPI and Alerts
- Configure Alphablox Web-based dashboards such as Dimensions and Reports
- Learn how to use the dashboard tools such as KPI manager, alerts subscription and export values

Introduction

WebSphere Business Monitor V6.1 Dashboard delivers a highly rich user experience made possible by Web 2.0. With the extensive use of the Web 2.0 technologies, WebSphere Business Monitor V6.1 introduces a new "Light Weight Dojo-based Web-based Dashboards". The Web-based Dashboards furnish lightweight functionality without requiring WebSphere Portal Server by providing a lightweight client side aggregation framework. The dashboard views available while composing a dashboard are identical to those offered in Portal.

WebSphere Business Monitor V6.1 dashboard effectively uses Ajax, the Web-client architectural style achieving harmony with the service based REST architectural style.

WebSphere Business Monitor V6.1 Dashboard is designed to give a rich user experience made possible by Dojo based Ajax, a key technique of Web 2.0. Ajax is shorthand for asynchronous JavaScript and XML. Ajax is a combination of several existing technologies, each at its best, coming together in powerful new ways. Ajax incorporates: standards-based presentation using XHTML (XML + HTML) and CSS; dynamic display and interaction using the Document Object Model (DOM); data interchange and manipulation using XML and XSLT; asynchronous data retrieval using XMLHttpRequest; and JavaScript binding everything together.

The entire data required by the Dashboard is retrieved from a **REST** style URI landscape. REST stands for **RE**presentational **S**tate **T**ransfer. REST is a broad term that defines an architectural style for interaction between systems. REST is not a protocol or a standard; rather it is an architectural style — an important distinction. The Monitoring data is returned in JSON format. **JA**vaScript **O**bject **N**otation or JASON is a lightweight syntax for representing data.

The RESTful services running on the Monitor Server abstract the monitoring data to a language and platform independent format for consumption by anyone. As a result, the Ajax-based Dojo Widgets use these services to obtain the relevant data returned in JSON format.

WebSphere Business Monitor V6.1 Web-based dashboards are installed on WebSphere Application Server V6.1 eliminating the need for a WebSphere Portal Server and runs in the presence of Monitor Server. Web-based Dashboards also serve as a highly functional unit test environment by virtue of its presence on the Monitor Server coupled with its light weight nature.

WebSphere Business Monitor V6.1 Web-based dashboards support eight views, out of which two are optional Alphablox-based views. The supported views are:

Web-based dashboards: KPI, Instances, Diagram, Alerts and Human Task

Optional Alphablox Web-based dashboards: Dimensions and Report

WebSphere Business Monitor V6.1 also provides functionality for the business users. The available tools are:

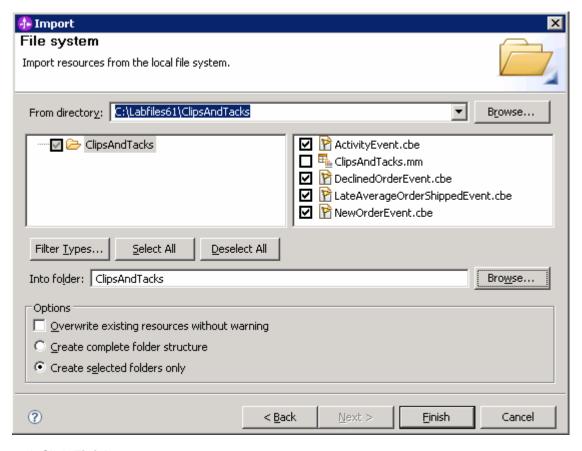
- 1 KPI manager
- 2 Alert subscription
- 3 Export values

Prerequisite: Ensure that the following software is installed:

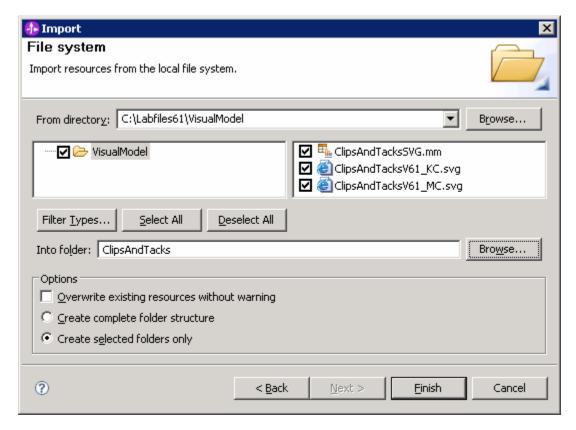
• SVG Viewer V3.0.3 in a compatible browser – for displaying the diagrams view

Part 1: Import the Clips and Tacks visual monitor model

i, you will import the Clips and Tacks visual monitor model into the workspace.
art Rational Application Developer or WebSphere Integration Developer and setup the vironment
Start Rational Application Developer or WebSphere Integration Developer, and when prompted point to a new workspace such as C:\workspaces\ClipsAndTacks
Click OK
Close the Welcome tab
You want to open the Business Monitoring perspective. From the main menu select Window → Open Perspective → Business Monitoring
If prompted for Confirm Enablement, click OK
eate a new monitoring project
Right click the Project Explorer, then select $\textbf{New} o \textbf{Business Monitoring Project}$ from the pop-up menu
Enter ClipsAndTacks in the 'Project name' field
Click Finish . You will see the new project in the Project Explorer view
Project Explorer X
port the supplied cbe files with the ClipsAndTacks lab files
Right click in the Project Explorer view, and then select Import from the pop-up menu
Select General → File system from the Import dialog and click Next
In the next panel, click the Browse button to locate the files, for example, <labfiles61>\ClipsAndTacks</labfiles61>
Select ActivityEvent.cbe
Do not select the .mm file in this folder
Select DeclinedOrderEvent.cbe
Select LateAverageOrderShippedEvent.cbe
Select NewOrderEvent.cbe
Click the Browse button and select ClipsAndTacks from the "Import Into Folder" dialog

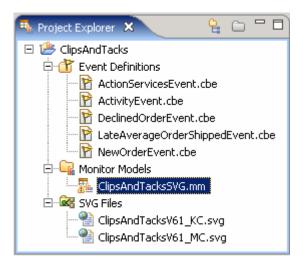


- __ j. Click Finish
- ____ 4. Import the supplied **mm** and **svg** files
 - __ a. Right click in the Project Explorer view, and then select Import... from the pop-up menu
 - __ b. Select General → File system from the Import dialog and click Next
 - __ c. In the next panel, click the **Browse** button to locate the files, for example, <LABFILES61>\VisualModel
 - d. Select ClipsAndTacksSVG.mm
 - e. Select ClipsAndTacksV61 KC.svg
 - __ f. Select ClipsAndTacksV61_MC.svg
 - __ g. Click the **Browse** button and select **ClipsAndTacks** from the "Import Into Folder" dialog



h. Click Finish

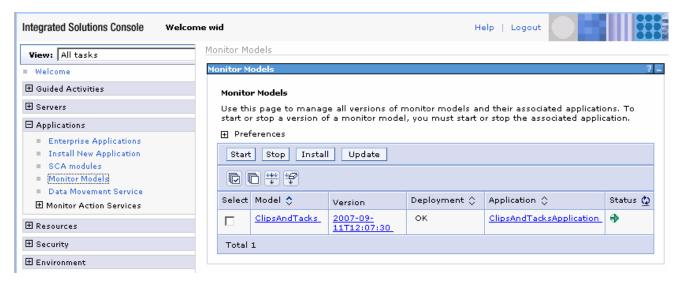
____ 5. Expand the project in the Project Explorer view, then expand the Event Definitions and you will see the new events listed. Expand Monitor Models and you will see the new ClipsAndTacks model listed. Expand the SVG files and you will see the SVG files listed.



Part 2: Publish the model to the server

	n this section you will use Rational Application Deve ne monitor model to the monitor server.	loper or WebSphere Ir	ntegration Developer to publish					
1.		In Project Explorer, expand ClipsAndTacks → Monitor models → ClipsAndTacks.mm. Right click over ClipsAndTacks.mm and then select Generate Monitor J2EE Projects from the context menu						
2	If you have already generated the ClipsAndTacks model for another lab, then you might need to select 'overwrite existing projects'. Then click Finish .							
3.	 A progress dialog shows the status of the open Check for errors in the Problems view. There If you see errors, then try to perform a clean to > select 'Clean all projects', then click OK. 	might be warnings, but	t there should not be any errors					
4.	 Click the Servers tab, then right click and select Business Monitor V6.1. This may take a few n 		tart the server WebSphere					
	Monitoring Flow Properties Problems Servers Server Status WebSphere Business Monitor v6.1 Status WebSphere Process Server v6.1	rted	State Republish Republish					
5.	5. Right click in the servers view and then select	Add and Remove Pro	ojects					
6	 Click Add to move the ClipsAndTacksApplicati configured projects. Click Finish. Note: If the then you may have run another lab and publish this window and select the 'Publish' option from 	application is already ned this application alr	in the list of configured projects					
7	7. A progress message is displayed in the lower	right corner of the wind	dow.					
8	8. Check the messages in the console view. You been started:	ı should see this mess	age when the application has					
	Application started: ClipsAndTacksApplic	cation						
9	In the servers view, right click, then select Rur a separate tab. It will prompt you for user ID a admin for password.	i administrative cons nd password. Enter a	sole. You should see it open in dmin for user ID and then enter					
1	10. Click Log in							
1	11 Click Applications > Monitor Models The a	onlication should show	v 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 Administrator 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, and then add the model, role and user information to a resource group.

Part 3: Run events to exercise the model

Rather than installing a Java EE 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 \Labfiles61\ClipsAndTacks\BatchCBEWriter. This program reads XML files which represent the Common Base Events for the model.

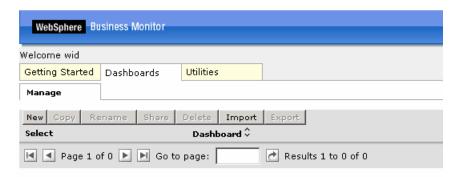
- _____1. Update BatchCBEWriter61.bat to point WAS_HOME to the monitor server home, for example 'set WAS_HOME=C:\IBM\WebSphere\AppServer'. If you are using the integrated monitor server in WebSphere Integration Developer, the path is <WID-Install-Path>\pf\WBMonSrv_wps. If you are using the integrated monitor server in Rational Application Developer, the path is <RAD-Install-Path>\pf\WBMonSrv.
- 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 is <WID-Install-Path>\pf\WBMonSrv_wps\logs\server1\SystemOut.log and the portNumber is 2810. For the integrated server in Rational Application Developer, the path is <RAD-Install-Path>\pf\WBMonSrv\logs\server1\SystemOut.log and the portNumber is 2810. Here is an example of the config.properties settings:
 - __a.connect.serverName = localhost
 - __b.connect.portNumber = 2810
- ____ 3. Open a command window, then change directory to the folder containing BatchCBEWriter61, for example, type this command
 - __ a. cd \Labfiles61\ClipsAndTacks\BatchCBEWriter
- _____4. Run commands to load the common base events to the server.
 - __ a. batchcbewriter61 -Dsource.filename="c:/labfiles61/clipsandtacks/cbe/allevents.xml"
 - __ b. When it prompts you for user identity and password, enter 'admin' for both (without the quotation marks)
- 5. When you run BatchCBEWriter61, you should see results such as:

```
C:\drivers\events\batchcbewriter61 -Dsource.filename="c:/drivers/events/clipsand tacks/allevents.xml"
Getting CBEs.
Removing Emitter.
Removing GlobalInstanceIds.
Setting missing values.
Changing Instance Ids.
Updating timestamps.
Validating CBEs.
Sending CBEs.
Sending CBEs.
START=09:14:10.875
Sending cbe[10].
Sending cbe[20].
Sending cbe[30].
Sending cbe[40].
Sending cbe[40].
Sending cbe[60].
Sending cbe[60].
Sending cbe[70].
Sending cbe[70].
Sending cbe[80].
```

Part 4: Create a dashboard

In this section you will create a new dashboard.

- ____ 1. Open the dashboard.
 - __ a. You should install the SVG viewer into your browser, then use that browser in this lab. This will allow you to use the diagrams view. Open this browser and go to this URL: http://localhost:9081/BusinessDashboard/. Ensure the correct default HTTP port number is used.
 - __ b. 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.
 - __ c. Click the **Dashboards** tab.



__ d. Click New, then enter a name for the dashboard, for example MyDashboard, and then click OK.



- _____ 2. You can add the views to the dashboard in two ways:
 - Add to Dashboard link: On clicking the link, a dialog is displayed showing the available views. Select the view you want to add and click OK.
 - **Drag and Drop** feature: To the right of the Web browser is a palette of views. You can select the required view, drag it to the dashboard canvas and drop it on the dashboard.
- _____ 3. If you use the **Drag and Drop** feature to add a view, ensure that the icon is dragged to the top of the dashboard canvas such that a **black line** shows up indicating that the icon can be dropped.
- _____ 4. The following table describes the dashboard views and the icons used to represent them:

Dashboard Views	Description	Icon
KPIs	The KPIs view displays details of modeled Key Performance Indicators (KPIs) such as KPI value relative to the defined ranges and the target, if applicable, and the status.	
Instances	The Instances view displays the available monitoring context in either individual instances or user-defined groups of context instances.	
Diagrams	The Diagrams view lets you view a process diagram associated with a particular monitoring context or KPI context. In addition, when the diagram is in the 'wired' mode, users can view detailed annotated diagrams associated with process instances.	
Alerts	The Alerts view displays the subscribes alerts that notify users of defined situations occurring at run time	
Human Tasks	The Human Tasks view displays all available human tasks and lets you perform actions on them. Supported for WebSphere Process Server only.	
Alphablox Dashboard Views	Description	Icon
Reports	The Reports view displays performance reports relative to a time axis. Such reports typically contain tables and graphs with textual descriptions of the analysis.	
Dimensions	The Dimensions view provides a multidimensional view of business performance data. Users can drill down and up on any business dimension to view details of its performance.	

____ 5. The Monitor V6.1 Dashboard provides functionality for the business user. The following tools are available:

- __ b. **Export values**: The Export Values lets you export data resulting from a specific monitor model and duration to an XML file that can be imported by WebSphere Business Modeler.
- __ c. **Alert subscription**: The Alert Subscription tool enables the business user to subscribe and unsubscribe to different alerts defined in the model. Along with subscribing to an alert, you can choose the type of notification channel associated with each alert (Dashboard alert, e-mail, pager, telephone).

__ a. **KPI manager**: The KPI Manager lets you define, copy, and update KPIs directly from the Dashboard interface.

Part 5: Configuring the Web-based dashboards

In this section you will add various views to the dashboard and configure them.

____ 1. Return to the dashboard that you created previously, and log in using the same user ID (admin)

Working with the Instances view:

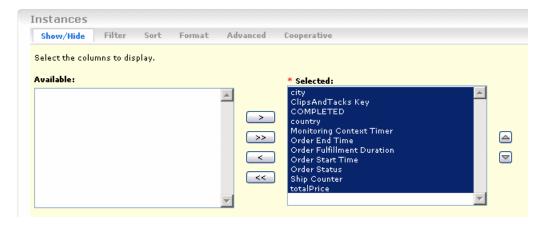
_____ 2. To add the Instances view, click 'Add to Dashboard' link and then select Instances, then click OK.



- __ a. Click Personalize.
- __ b. Click the Advanced tab, and select model 'ClipsAndTacks (All Versions)'



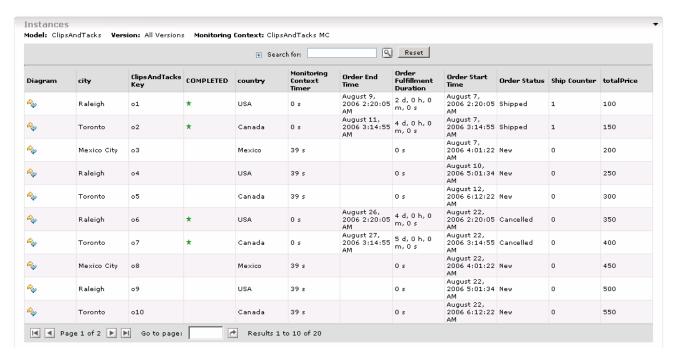
- c. Click the Show/Hide tab.
- __ d. Click >> to copy all the metrics from the available list to the selected list.



__ e. Click the **Cooperative** tab, then select 'Cooperative mode'. This will allow you to link this view to other views such as diagrams or alerts.

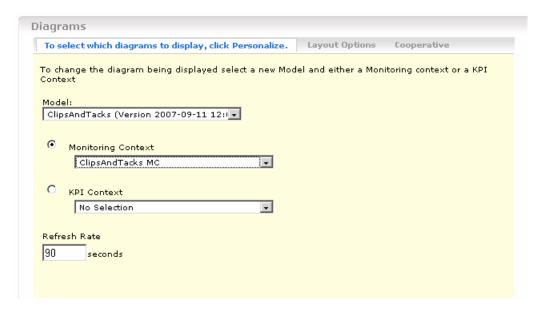


f. Click the **OK** button.



Working with the Diagrams view

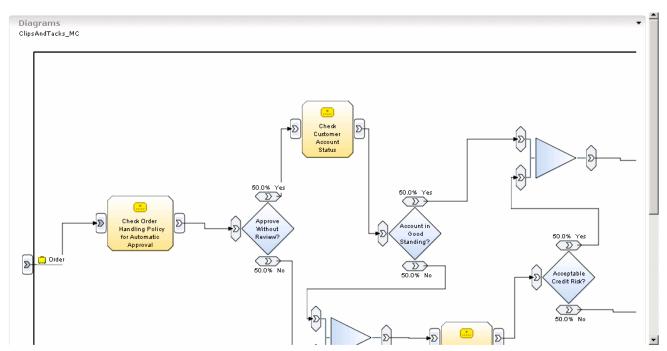
- _____ 3. Add the **Diagrams** view to the dashboard canvas and configure it to display monitoring contexts
 - a. Click Add to Dashboard, then select Diagrams from the drop down list and then click OK
 - __ b. Click Personalize. You can either view the monitoring context or the KPI context of the selected monitoring model. Follow the instructions below to configure the Diagrams view to view the Monitoring Context of the ClipsAndTacks model
 - For Model select ClipsAndTacks
 - Select the radio button next to Monitoring Context and select Clips And Tacks MC



__ c. Select the **Cooperative** tab, then select 'Cooperative mode'. Cooperative mode is used to link this view to other views such as the instances view or alerts view.



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

a _p	Raleigh	06	*	USA	0 s	August 26, 2006 2:20:05 AM	4 d, 0 h, 0 m, 0 s	August 22, 2006 2:20:05 AM	Cancelled	0	350
æ _₩	Toronto	o7	*	Canada	0 s	August 27, 2006 3:14:55 AM	5 d, 0 h, 0 m, 0 s	August 22, 2006 3:14:55 AM	Cancelled	0	400

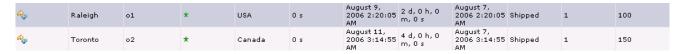
__ b. For this item, click the icon in the first column in the diagram column. This will cause the monitoring context diagram view to be updated for this specific monitoring context. Since this particular order is cancelled, the diagram should show the task 'Cancel Order and Send Notification' as blue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



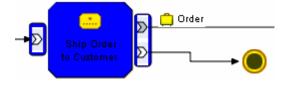
__ c. Click 'Restore Original Context' at bottom of this diagram to return this diagram to the generic diagram.



__ 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.

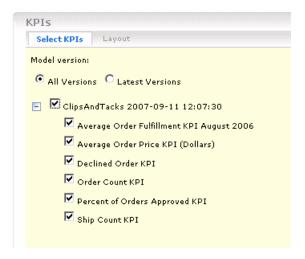


__ e. For this item, click the icon in the first column, the diagram column. This will cause the monitoring context diagram view to be updated for this specific monitoring context. Since this particular order is shipped, the diagram should show the task 'Ship Order to Customer' as blue in color.

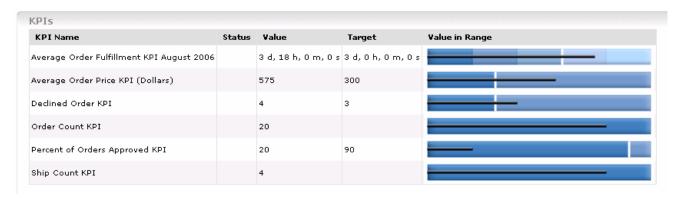


Working with the KPIs view

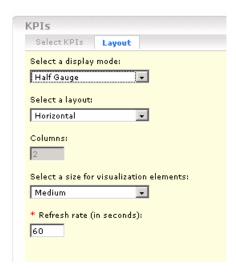
- _____ 5. Add the **KPIs** view to the dashboard canvas and configure it to graphically display the available KPI metrics in the layout that you want
 - __ a. Click Add to Dashboard, then select KPIs from the drop down list and then click OK
 - __ b. Click **Personalize**. This action lists the available monitoring models for configuration
 - c. Click the (H) icon to expand the ClipsAndTacks model's available KPI metrics



- __ d. Select the check boxes next to the KPIs you want to monitor and click **OK**
- __ e. The KPIs are displayed in the default table view as shown below:



__ f. To view the KPIs in a different layout, select **Personalize** then select **Layout**. Select Half Gauge for the display mode:



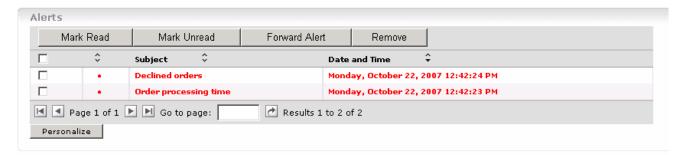
__ g. Click **OK**



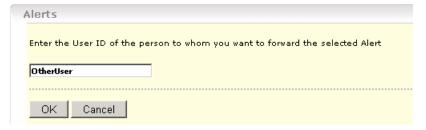
Working with the Alerts view

Note: The **Action Manager** must be configured and running in order to subscribe to the alerts for use of the **Alerts** view. Refer to the **ClipsAndTacks Business Activity Monitoring** lab for instructions to configure Action Manager.

- _____ 6. Add the **Alerts** view to the dashboard canvas and configure it to list the subscribed alerts
 - __ a. Click Add to Dashboard , select Alerts from the drop down list and then click OK



__ b. To forward the alerts to another user, select the check boxes next to the alerts and click the Forward Alert button. This action displays a text field where you can enter the user ID of the user you want to transfer the alerts. Enter an existing User ID and click OK



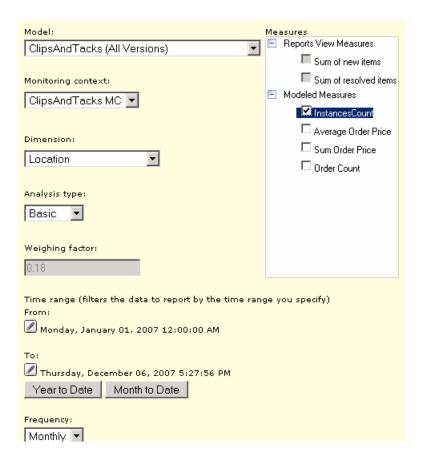
__ c. To Change the color of the alert message display, click the **Personalize** button and change color of the read and unread alerts

Part 6: Configuring the Alphablox Web-based dashboards

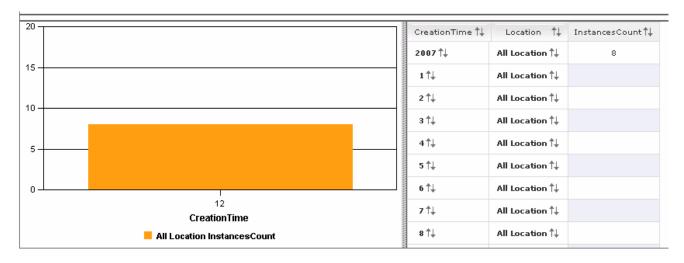
In this section you will add the Dimensions and Reports views to the dashboard canvas and configure them.

Working with the Reports view

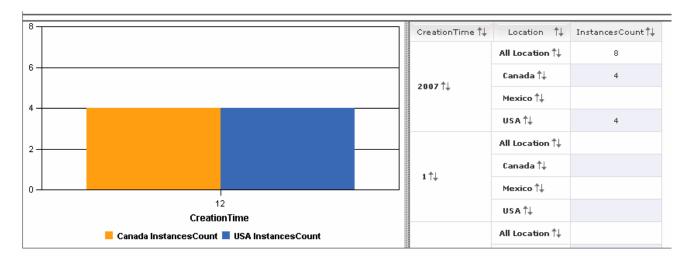
- ____ 1. Add the **Reports** view to the dashboard canvas and configure it to analyze the performance data relative to time
 - __ a. Click Add to Dashboard, select Reports from the drop down list and then click OK
 - __ b. Click Personalize
 - __ c. In the Reports view's personalize screen, select these values:
 - Monitoring Model : ClipsAndTacks (All Versions)
 - Monitoring Context : ClipsAndTacks MC
 - Dimension : Location
 - Analysis Type : Basic
 - Time range : Year to Date
 - Frequency : Monthly
 - Modeled Measures : Select the check box next to InstancesCount



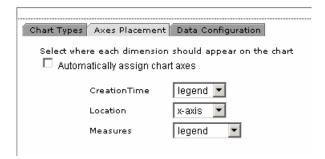
- __ a. Click **OK**
- __ b. The Reports view displays the instances count based on location relative to creation time as shown below.



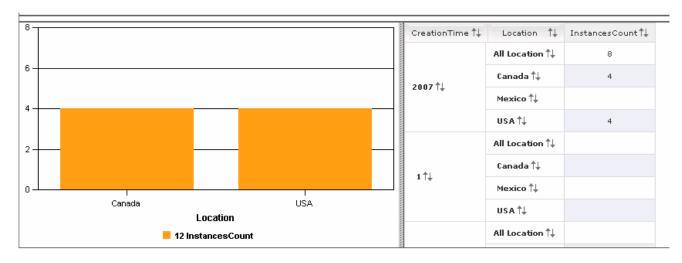
__ c. Double click on **All Location** on the first row to drill down by location.



- __ d. Use the main menu of the reports view to manipulate the visualization of the performance analysis to your needs
- __ e. You can also configure additional measures in this view. To do this, repeat the above process by clicking the Personalize button and select any of the **Modeled Measures** and save the configuration.
- __ f. If you want to see how to place a different dimension other than CreationTime on the X axis of the chart, then follow this procedure.
 - 1. Click Chart > Axis Placement...
 - 2. Change CreationTime to 'legend', and change Location to 'x-axis'. This will put Location on the X axis of the chart.

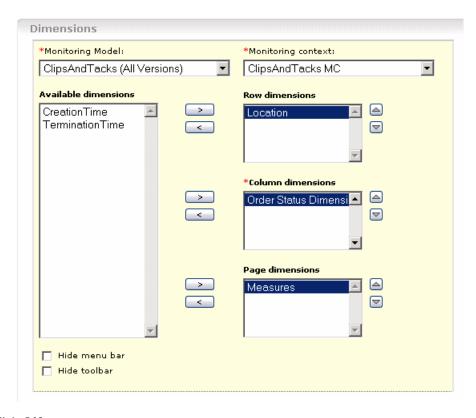


- 3. Click OK.
- 4. Now you will see Location on the X axis of the chart.

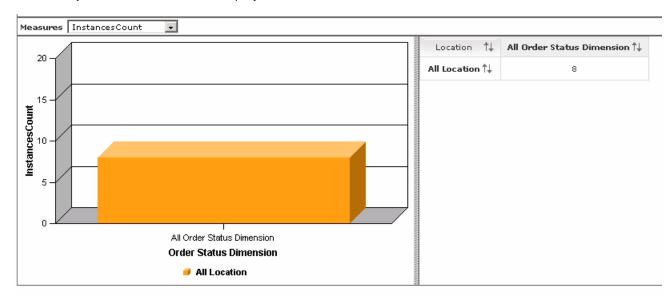


Working with the Dimensions view

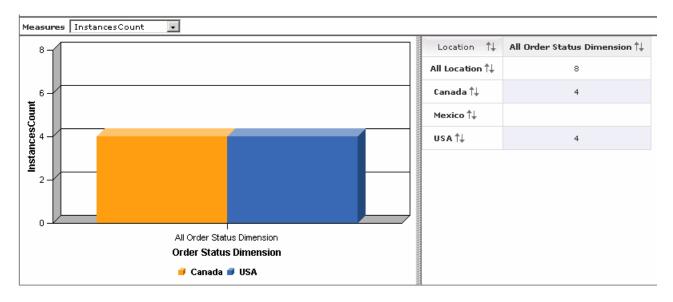
- ____ 2. Add the **Dimensions** view to the dashboard canvas and configure it to view the business performance data
 - a. Click Add to Dashboard, select Dimensions from the drop down list and then click OK
 - __ g. Click Personalize
 - __ h. In the Dimensions view's personalize screen, select these values:
 - 1. Monitoring Model: ClipsAndTacks (All Versions)
 - 2. Monitoring Context: ClipsAndTacks MC
 - 3. Select **Location** from the **Available Dimensions** list and click the right direction arrow next to **Row Dimensions** text area.
 - 4. Now select **Order Status 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**



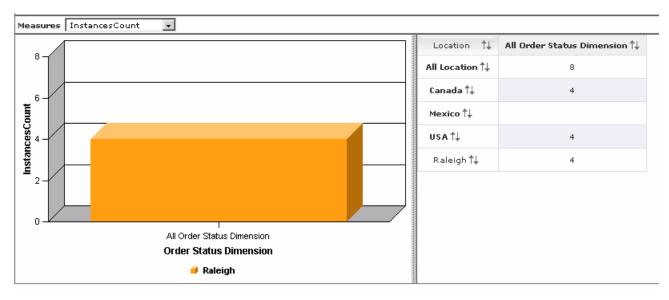
- __ i. Click OK.
- __ j. The Dimensions view displays the instances count based on location and order status.



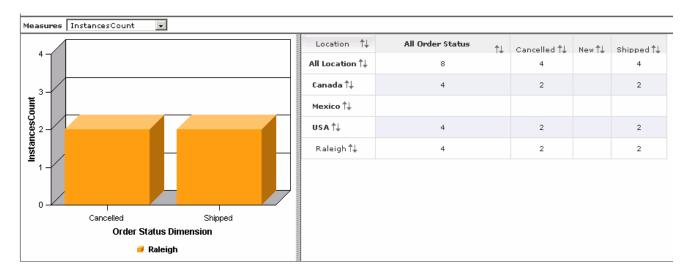
__ k. You can double click on **All Location** to drill down on location.



__ I. You can double click on **USA** to drill down on country.



__ m. You can double click on 'All Order Status Dimension' to drill down on order status.



__ n. If you want to perform analysis on different dimensions in the model, select **Personalize** and move different dimensions to the row, column and page dimensions.

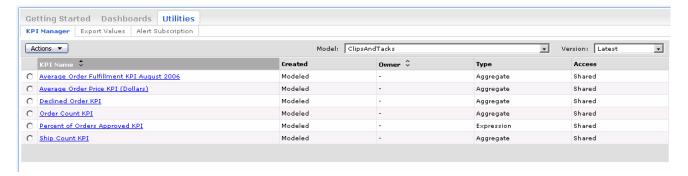
Part 7: Working with the Web-based dashboards utilities

The following utilities are available in Web-based Dashboards:

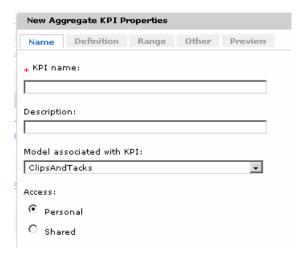
- **KPI manager**: The KPI Manager lets you define, copy, and update KPIs directly from the Dashboard interface.
- Export values: The Export Values lets you export data resulting from a specific monitor model and duration to an XML file that can be imported by WebSphere Business Modeler.
- Alert subscription: The Alert Subscription tool enables the business user to subscribe and unsubscribe to different alerts defined in the model. Along with subscribing to an alert, you can choose the type of notification channel associated with each alert (Dashboard alert, e-mail, pager, telephone).

Working with the KPI manager

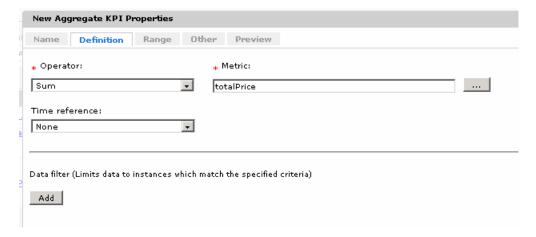
- 1. In the dashboard, select the **Utilities** tab **> KPI Manager** tab to view the KPI Manager tool
- 2. Select ClipsAndTacks from the drop down list for the Model field
- You see a list of the existing KPIs that were defined using the Monitor Model Editor. You can click on the KPI Name to edit a KPI, or you can use the Actions button to create, edit, copy or delete KPIs. Note that for KPI's that were created in the monitor model editor, you can only update the target, and the remainder of the settings including ranges are not modifiable. If you need to update these settings, you can make a copy of the KPI, and then update the copy.



4. To create a new KPI, click the **Actions** button. You can create an aggregate KPI that performs a function against a metric. You can also create a calculated KPI that uses calculations that reference other KPIs. For this example, select **New Aggregate KPI**.



- _____ 5. Create a KPI that sums the total price of orders. Select the Name tab and enter this information:
 - __ a. KPI Name : Total Price KPI
 - __ b. Select the Definition tab and enter this information:
 - Operator: Sum
 - Metric: Browse to ClipsAndTacks MC > totalPrice



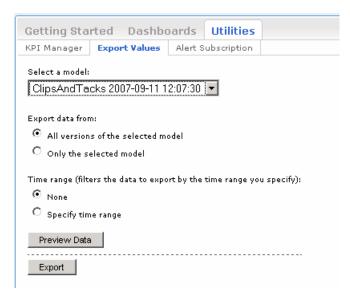
- __ c. Take a look at the other tabs to see that you can enter target values, ranges, data filters, and many other preferences. You can also click the Preview tab to see how the KPI will look on the dashboard.
- __ d. Click OK
- __ e. The new KPI has been added to the list of KPI's, and now it can be displayed in the KPI view of your dashboard.



Working with the export values tool

Note: The Export Values tool can only be used in a WebSphere Process Server environment.

____ 6. Select the **Utilities** → **Export Values** tab to view the tool

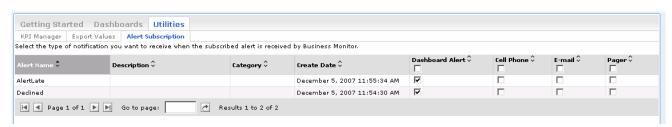


7. You can export monitor data based on the specified time range and import the results to WebSphere Business Modeler. Note that this works only for completed monitored instances.

Working with the alert subscription tool

Note: The **action manager** must be configured and running for the use of this tool. Refer to the **ClipsAndTacks** lab to configure action manager.

8. Select **Utilities** tab **> Alert Subscription** tab to view the tool



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9.	Select the check box next to the alerts you want to subscribe to and click Apply . When new alerts are sent, you are notified through the mechanism that you choose, either dashboard alert, telephone, e-mail or pager.

What you did in this exercise

In the lab, you imported the ClipsAndTacks model to a new workspace and published it to the Monitor Test Environment

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

You created a new dashboard and added views to the dashboard canvas and configured them. You also learned how to use the dashboard utilities.

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