IBM WEBSPHERE BUSINESS MONITOR 7.0 – LAB EXERCISE

WebSphere Business Monitor V7.0 - Clips and Tacks business activity monitoring using XSD style events

What this exercise is about

The objective of this lab is to show you how to build a monitor model using XSD event definitions in Rational Application Developer or WebSphere Integration Developer, deploy it to WebSphere Business Monitor and then view your monitored data on the Monitor dashboards.

This lab will show you business activity monitoring (BAM) which involves event based monitoring. With BAM, your monitored application can run anywhere, and submit events to the Monitor server so that you can view monitored data in the dashboard. Typically, you identify the events that will be created by the application, and then create a monitor model that represents the monitored data that you want to collect from the events.

Changes from the previous version

This lab has been modified for the 7.0 release. Here are the major changes:

- Updated the dashboard section to show how to use the new business space which is based on Lotus Mashups.

Lab requirements

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

- Rational Application Developer V7.5 or WebSphere Integration Developer V7.0.

- WebSphere Business Monitor V7.0 – Toolkit Installation including the monitor model editor and embedded monitor server

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 create the monitor model, and deploy it to the server.

- Use a sample program to create events that represent events from your process.

- Define a dashboard to view monitored data.

Introduction

In this lab you will learn how to develop and deploy a model from end to end using Rational Application Developer or 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 **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 the Redbook, the process is implemented as a BPEL process running in WebSphere Process Server. However this lab will demonstrate **Business Activity Monitoring** which can monitor events from any source. So, the lab will simulate the running of the process, by creating events that could have been sourced from anywhere, a J2EE application or BPEL, or any other source. These events are in the form of Common Base Events, which is an OASIS standard for common event format, and these are used by the Common Event Infrastructure (CEI) in WebSphere Process Server.

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 three days or less

- Percentage of shipped orders is greater than 90%

You will also create situation events if declined orders are greater than or equal to three and if the order fulfillment time is greater than three days.

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:

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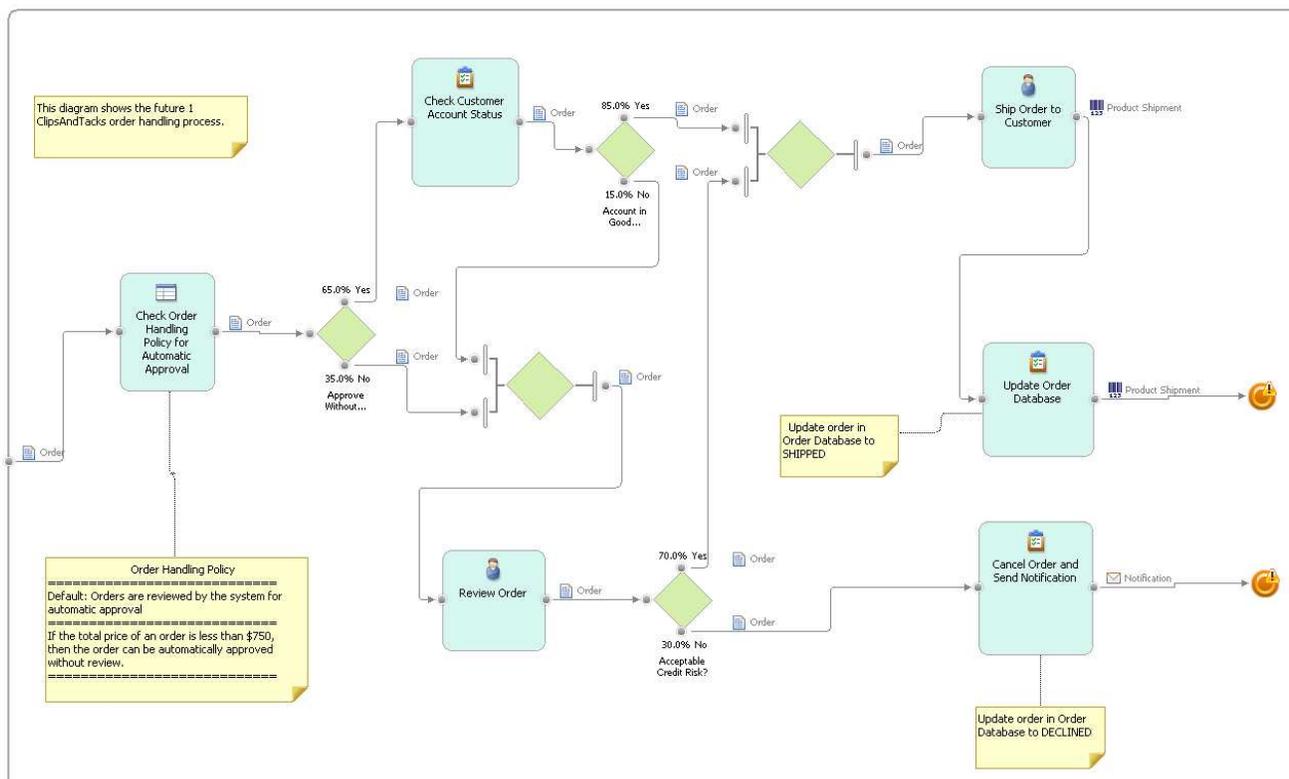
This is the ordering process for the Clips And Tacks Company. In this process, orders are received and optionally submitted to a review process. Orders which pass all checks are shipped to the customer. Other orders may be cancelled.

In the monitor model, you will create one monitoring context for each customer order. You will identify the inbound event that represents the receipt of the order, and this is marked so that it will create a new monitoring context instance for the order. You will also identify the inbound event that represents shipping the order, and this is marked so that it will trigger the termination of the monitoring context instance for the order. Since an order may also be cancelled, you will identify the inbound event that represents cancellation of the order, and this is also marked so that it will trigger the termination of the monitoring context instance.

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:9044/ibm/console

- Business space dashboard

https://localhost:9444/BusinessSpace

Part 1: Create the monitor model

To create the monitor model, you will use the monitor model editor in Rational Application Developer or WebSphere Integration Developer. Note that the screen captures in this lab are based on WebSphere Integration Developer, so they may differ slightly from yours if you are using Rational Application Developer.

Note that there is a 'Problems' tab that displays errors concerning the model. Periodically, you should check this view to see if you have any problems that need to be addressed. Normally, warnings and informational messages are not a problem, but errors should be addressed.

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

____ 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\ClipsAndTacksXSD

__ b. Close the Welcome tab

__ c. By default, you are in the Business Integration perspective. But you need to open the Business Monitoring perspective. From the main menu, select **Window → Open Perspective → Other**. The 'Open Perspective' dialog opens

__ d. Select '**Business Monitoring**' from the 'Open Perspective' dialog and click **OK**

____ 2.   Create a new monitoring project. A project is a container for your monitor models and event definitions.

__ a. Right-click inside **Business Monitoring** project explorer (top left view in the Business Monitoring Perspective) and select **New → Business Monitoring Project…** from the pop-up menu. The 'New Business Monitoring Project' panel opens

__ b. In the 'New Business Monitoring Project', enter the 'Project name:' as **ClipsAndTacks**

__ c. Click the **Finish** button.

__ d. A new project named **ClipsAndTacks** is created as shown below:
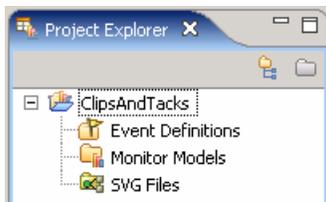
____ 3.   Create a new XSD event definition named, **ActivityEvent**

__ a. In the Business Monitoring project explorer view, expand **ClipsAndTacks**, right-click **Event Definitions** and select **New → Event Definition… (xsd)** from the pop-up menu
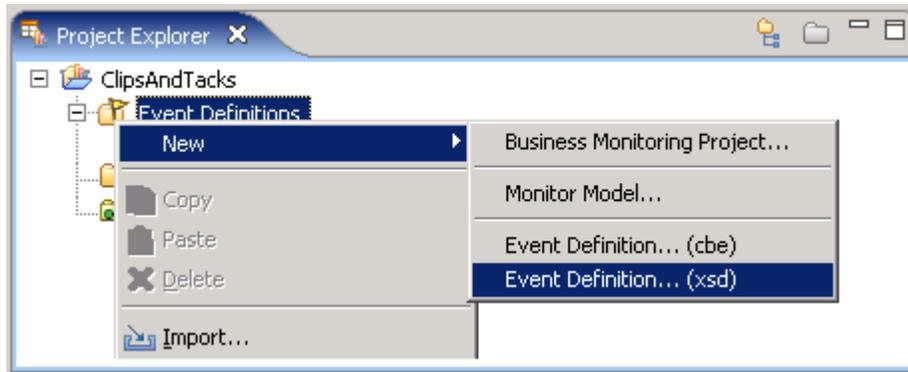
__ b. The '**New XSD Schema**' panel opens as shown below:
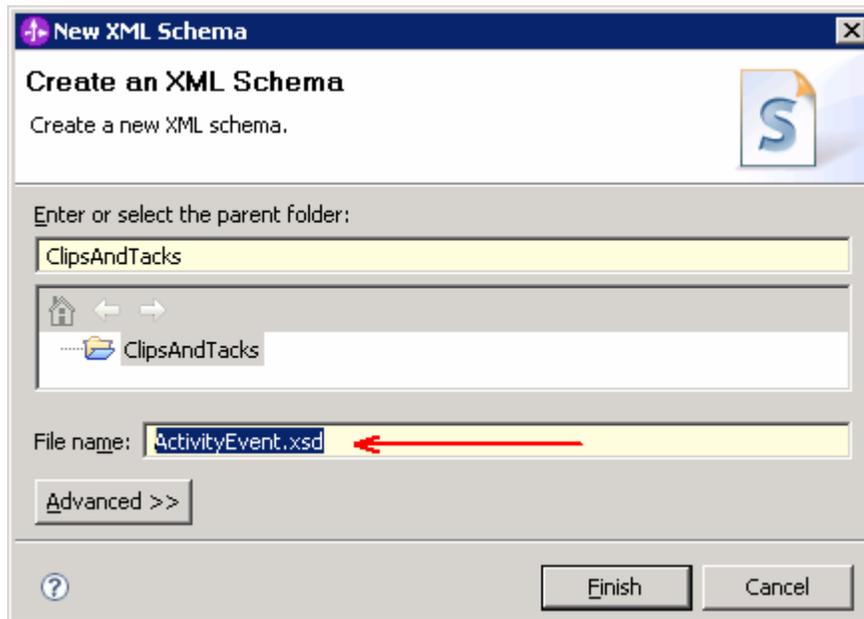
__ c. Enter '**ActivityEvent.xsd**' as 'File name:' and click **Finish**

__ d. The schema you created is listed under the event definitions category and the schema is opened in the XSD editor.

__ e. There are several view modes that you can use on the XSD editor. Change the XSD editor view to **Detailed** by clicking on the pull down menu icon (▼) located in the top right corner.

ClipsAndTacks (XSD event definitions)
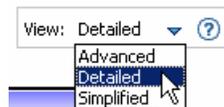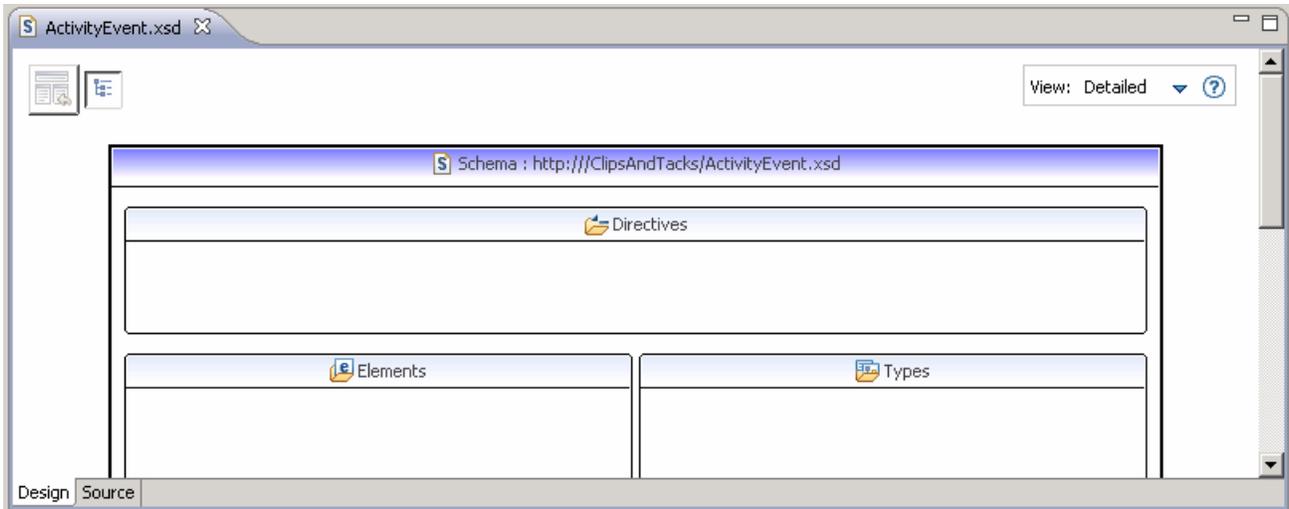
_____ 4.   Review and update the <schema> element, which is the root element of the schema

　　__ a. In the XSD editor, select the schema element and then select the '**Details**' tab of the '**Properties**' view
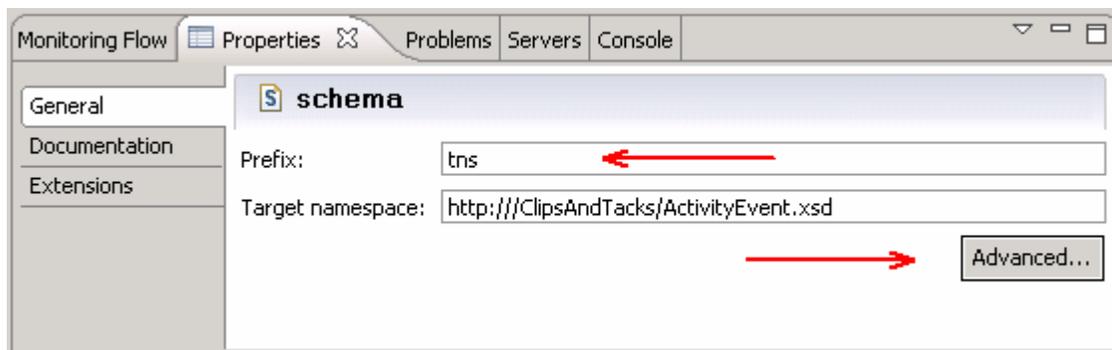
　　__ b. Update the '**Prefix:**' from **tns** to **ae** (where **ae** stands for activity event and the prefix resembles the name of the schema)

　　__ c. Click the **Advanced** button to edit the schema information (attributes)

ClipsAndTacks (XSD event definitions)
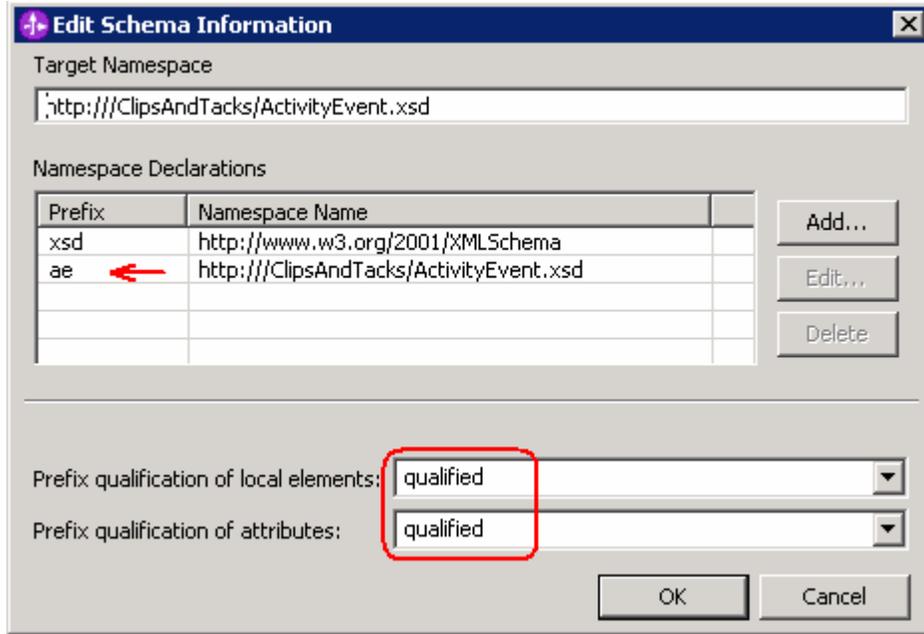
__ d. Ensure that the prefix qualification of local elements and the attributes is set to '**qualified**'

Note: Prefix qualification indicates whether locally declared elements or attributes must be qualified by the target namespace in an instance document. If the value of this attribute is 'unqualified', then locally declared elements should not be qualified by the target namespace. If the value of this attribute is 'qualified', then locally declared elements must be qualified by the target namespace. Using 'qualified' helps to ensure that expressions written to access pieces of information within a type are unambiguous.

__ e. Click **OK**. The '**General**' properties view of the 'ActivityEvent' schema should look like the picture below:
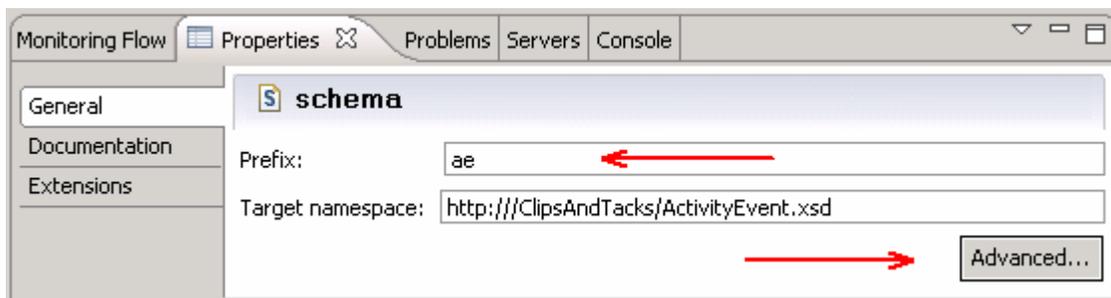
__ f. Save the changes. **File → Save** or **Ctrl + S**

____ 5. Add a complex element type named, **ActivityEventData** and the following sequence of elements to the complex type

The following are the elements including the data types you will be adding:

Name of the Element	Type
businessUnit	string
processName	string
mcID	string
activityName	string
eventType	string
startTime	dateTime
endTime	dateTime

__ a. Right click in the **Types** section of the XSD editor and select '**Add Complex Type**' from the pop-up menu
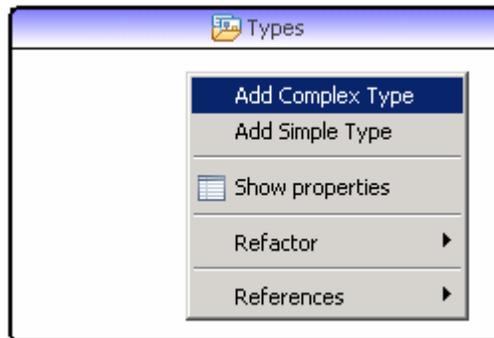
__ b. Name the complex type as **ActivityEventData** and save the changes. You should see the new complex type element added, as shown below:
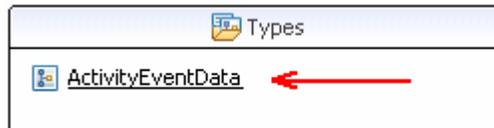
__ c. Right click the complex type '**ActivityEventData**' again and select '**Add Element**' from the pop-up menu. By default the new element is created with a default name '**NewElement**' and xsd type '**string**' as shown below:
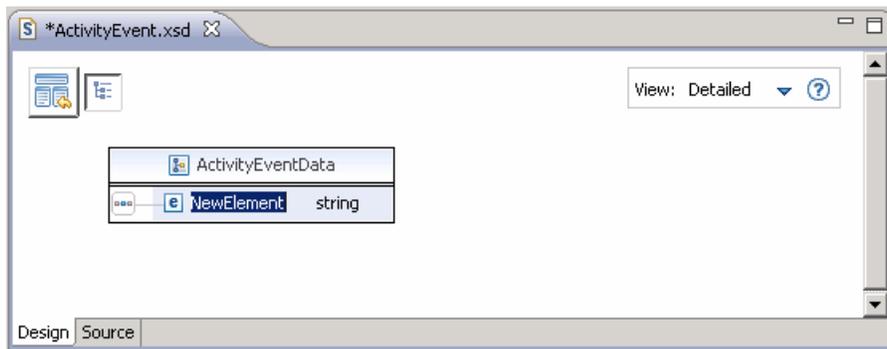
__ d. Modify the element name from 'NewElement' to '**businessUnit**' and accept the default xsd type as '**string**'

__ e. Repeat the above instructions to add the remaining elements mentioned in the table. The final '**ActivityEventData**' complex type should look like the picture below:
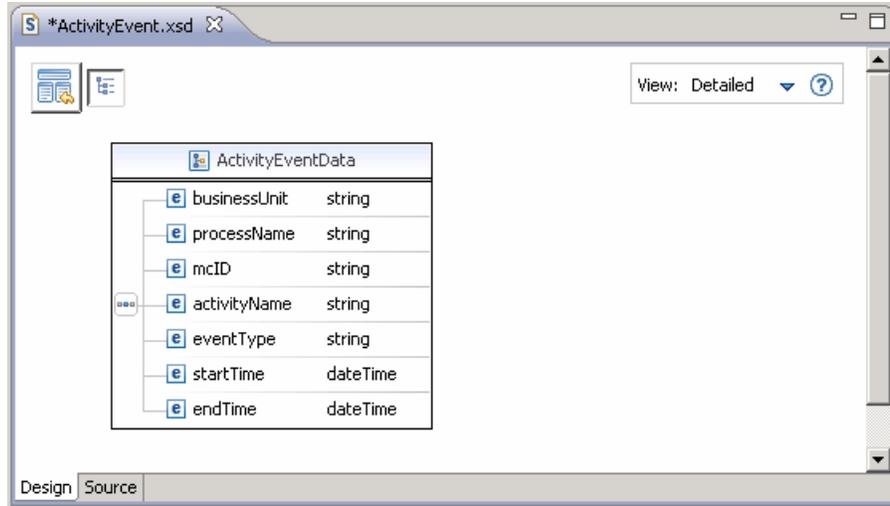
__ f. Now click the icon ([icon]) located in the upper left corner. This leads you back to the full schema editor view.

__ g. Save the changes. **File → Save** or **Ctrl + S**

____ 6. Add another complex element type named **OrderBOData** and the following sequence of elements to the complex type

The following are the elements including the data types you will be adding:

Name of the Element	Type
orderNumber	string
customerNumber	string
orderState	string
city	string
country	string
productNumber	string
quantity	int
totalPrice	float

__ a. Right click in the **Types** section of the XSD editor and select '**Add Complex Type**' from the pop-up menu and name it OrderBOData

ClipsAndTacks (XSD event definitions)
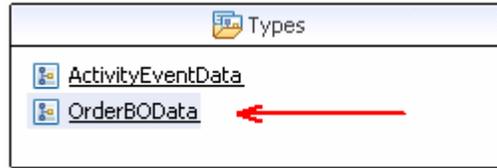
__ b. Right click the complex type '**OrderBOData**' again and use '**Add Element**' as required to create all the elements required for this complex type. The final '**OrderBOData**' complex type should look like the picture below:
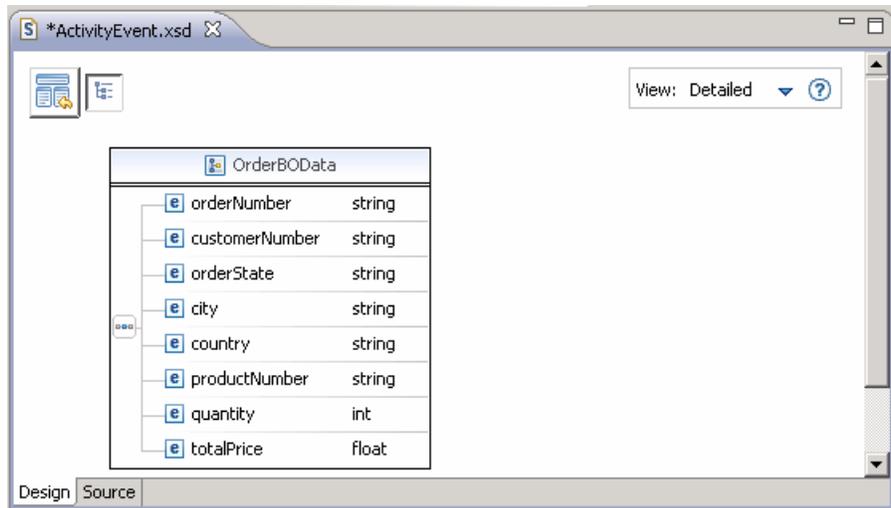
__ c. Now click the icon ( ) located in the upper left corner. This leads you back to the full schema editor view.

__ d. Save the changes. **File → Save** or **Ctrl + S**

____ 7. You can click the source tab to view the source XSD of the ActivityEvent schema you created.

____ 8. WebSphere Business Monitor 7.0 has support for concurrent versions of monitor models. In order to take advantage of the Monitor server's version handling capabilities, each monitoring context should have a unique event definition that is the single inbound event that has the setting 'If no instances are found: Create new instance'. One can think of this as one inbound event carrying 'create monitor context' semantics, and all others as 'update monitor context' semantics. Clips And Tacks is a simple sample and could use a single event definition for the process. However, to satisfy the requirement of a unique event definition for version handling, you will create a new event definition that will create new instances of the monitor model.

__ a. In the project explorer, right click **Event Definitions** and select **New → Event Definition… (xsd)** from the pop-up menu. The 'New' event definition panel opens.

__ b. In the **New** event definition panel, select **ClipsAndTacks** as the parent folder and enter the 'File name:' as **NewOrderEvent.xsd** and click **Finish**.

____ 9. Review and update the <schema> element, which is the root element of the schema

__ a. In the XSD editor, select the schema element and then select the '**General**' tab of the '**Properties**' view
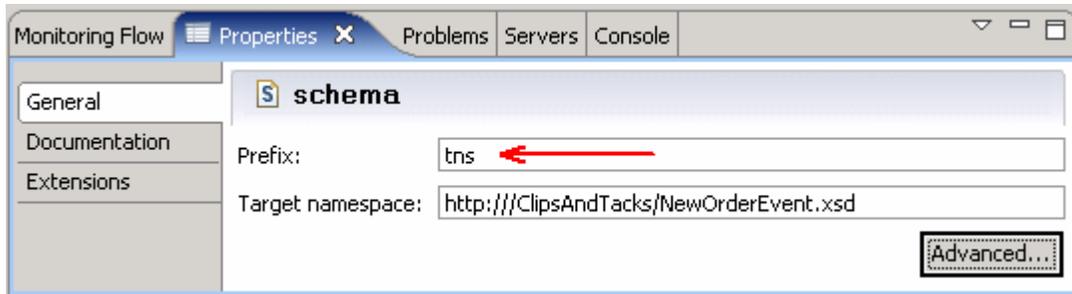
__ b. Update the '**Prefix:**' from **tns** to **noe** (short for NewOrderEvent)

__ c. Click the **Advanced** button to edit the schema information (attributes)
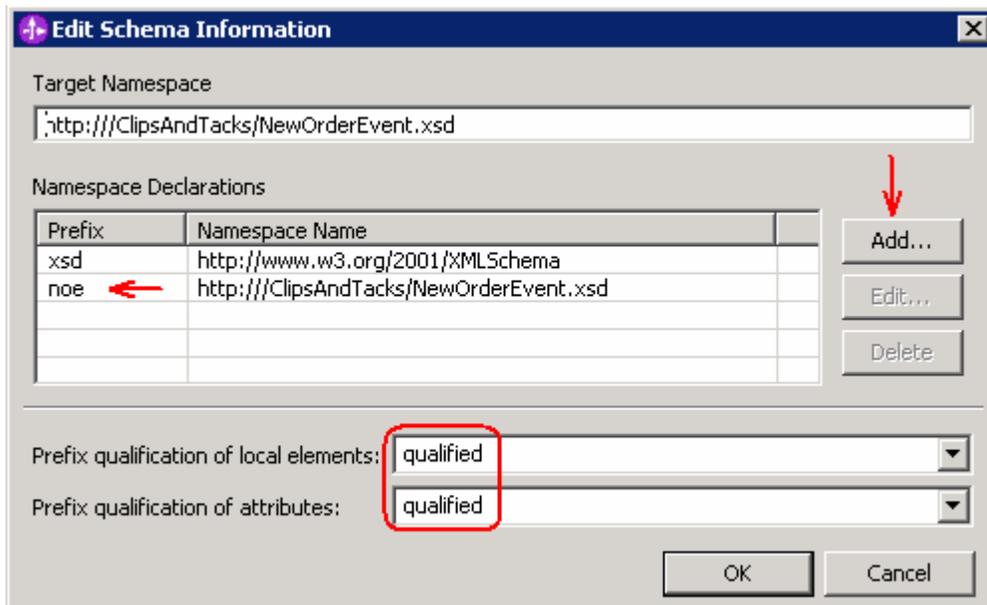
__ d. Click the **Add** button to add the **ActivityEvent** namespace so the 'ActivityEvent' schema can be imported to the current 'NewOrderEvent' schema. The '**Add Namespace Declarations**' panel opens

__ e. Enter the following parameters:

- Select the radio button for '**Specify New Namespace**'

- Prefix : **ae**

- Namespace Name : **http:///ClipsAndTacks/ActivityEvent.xsd**
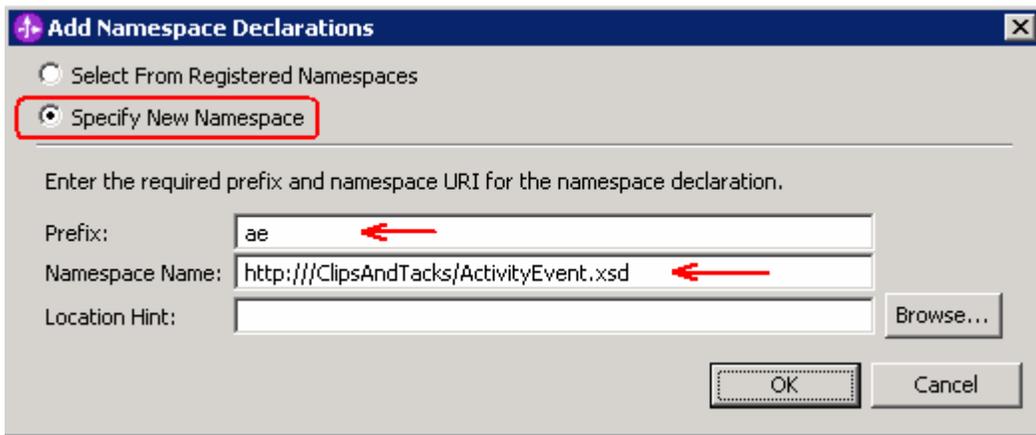
__ f. Click **OK**
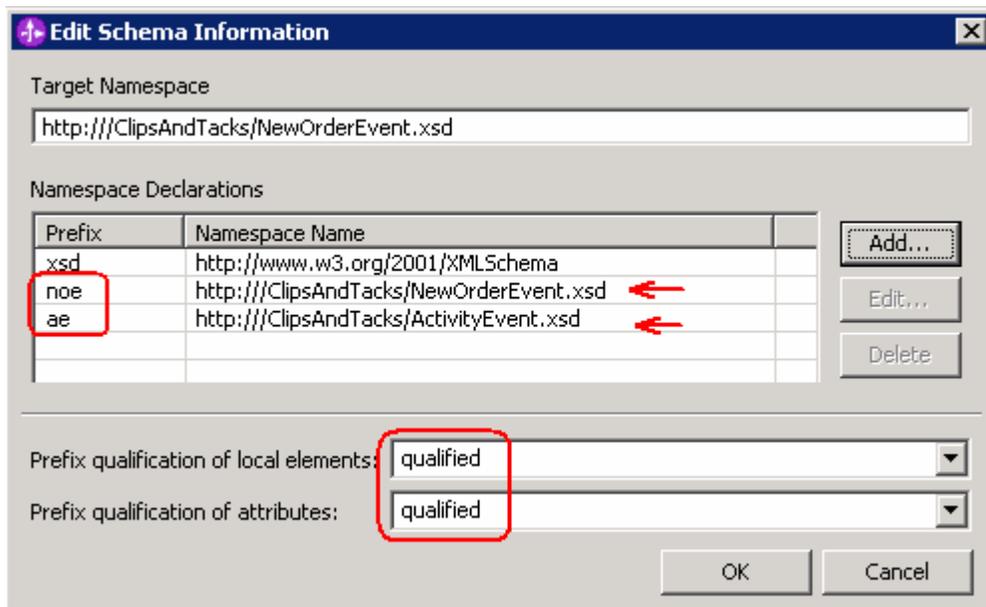
__ g. Ensure that the prefix qualification of local elements and the attributes is set to '**qualified**'

__ h. Click **OK**. The '**General**' properties view of the 'ActivityEvent' schema should look like the picture below:
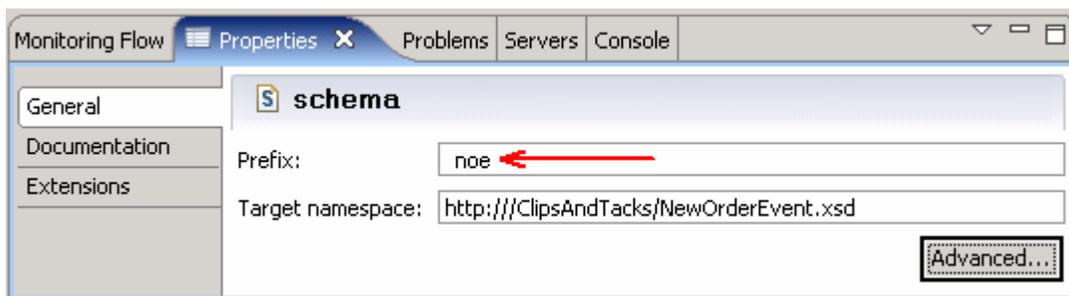
__ i. Save the changes. **File → Save** or **Ctrl + S**

__ j. Right click any where in the '**Directives**' section of the XSD editor and select '**Add Import**' from the pop-up menu to import the 'ActivityEvent' schema. An empty XSD <import> element is added

__ k. In the XSD editor, select the empty XSD <import> element and then select the 'Properties' General panel
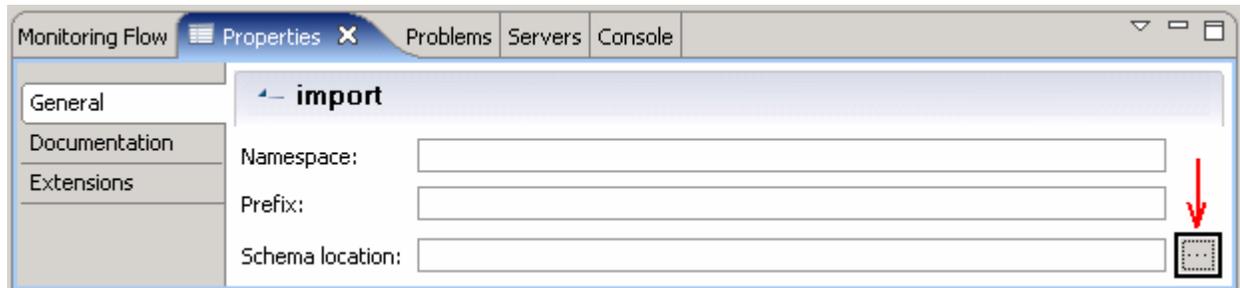
1) Click the button for '**Schema Location**'. The '**Select XML Schema file**' panel opens
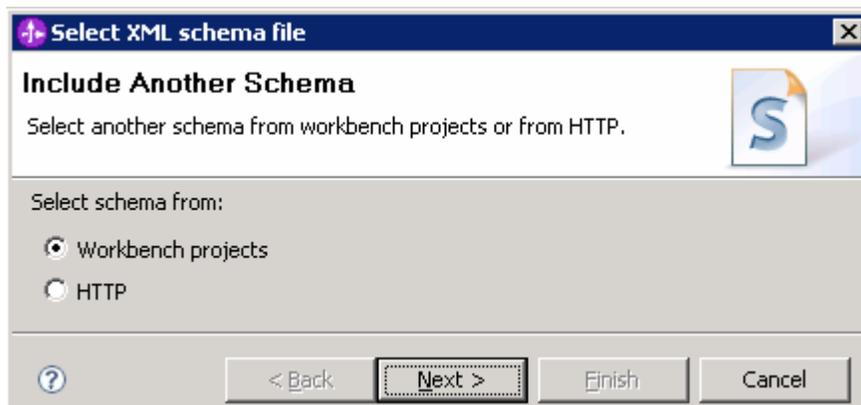
2) Ensure the radio button next to '**Workbench projects**' is selected and click **Next**

3) In the following panel, expand the 'ClipsAndTacks' folder and then select 'ActivityEvent.xsd'
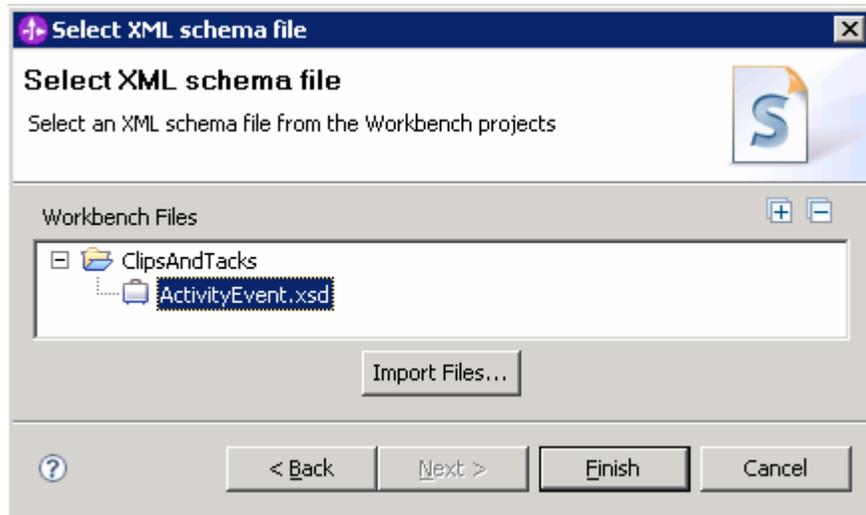
4) Click **Finish**. The Properties **General** panel should look the picture below:
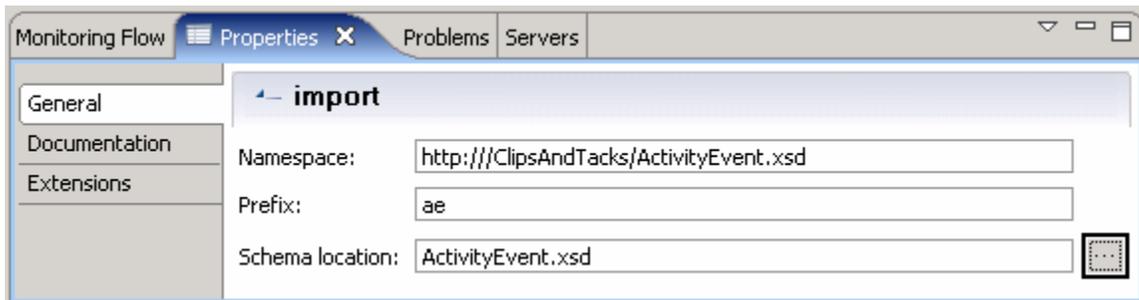
5) Save the configuration. **File → Save** or **Ctrl + S**

__ l. Now right click in the '**Types**' section and select the '**Add Complex Type**' from the pop-up menu. An XSD <complexType> element is added with a default name, which you should change to '**NewOrderEvent**' .
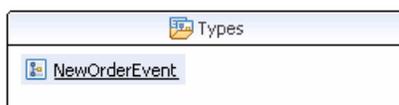
__ m. Save the configuration. **File → Save** or **Ctrl + S**

__ n. Right click the '**NewOrderEvent**' complex type element again and select '**Add Element**' from the pop-up menu. A new element of type string is added with a default name as shown below:
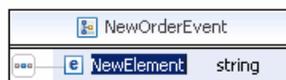
__ o. Rename the name of the element to '**NEWActivityEventData**'

__ p. For the '**Type:**' select '**Browse**' from the drop down list. The '**Set Type**' panel opens
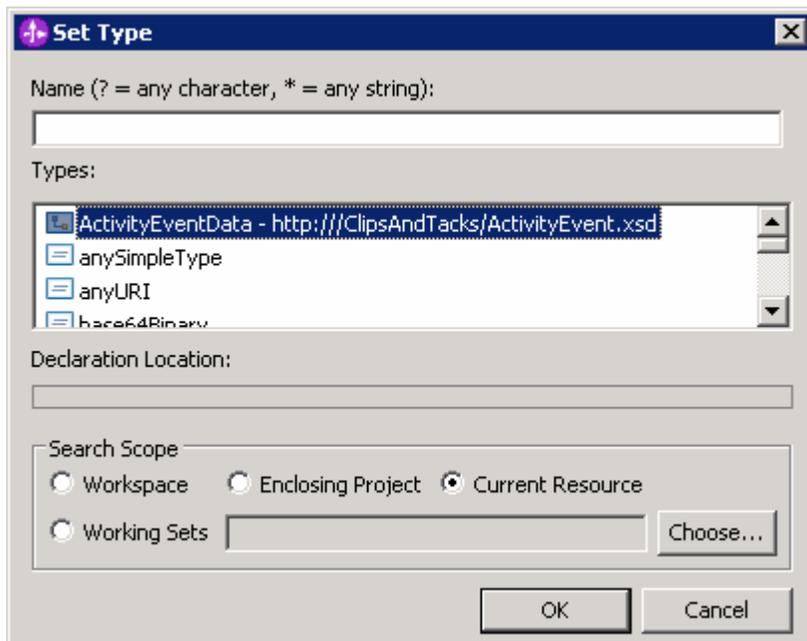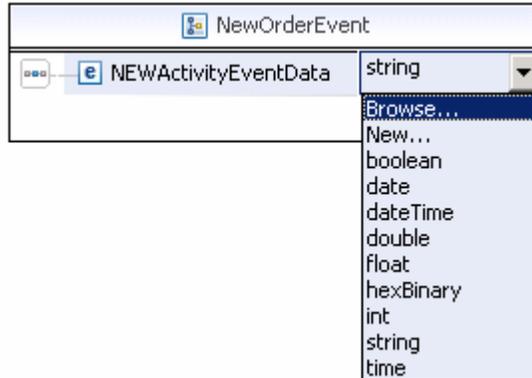
__ q. Select 'ActivityEventData' from the 'Types' text area and click **OK**. The **NEWActivityEventData**
element should look like the picture below. You can click the + next to ActivityEventData to see
the details of the element.

__ r. Save the configuration. **File → Save** or **Ctrl + S**

__ s. Now right click the '**NewOrderEvent**' complex type element and select '**Add Element**' from the
pop-up menu. A new element of type string is added with a default name as shown below:

ClipsAndTacks (XSD event definitions)
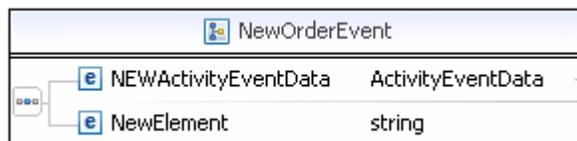
__ t. Rename the name of the element to '**NEWOrderBOData**'. For the '**Type:**' select '**Browse**' from the drop down list. The '**Set Type**' panel opens. Select 'OrderBOData' from the 'Types' text area and click **OK**. The **NEWOrderBOData** element should look like the picture below.
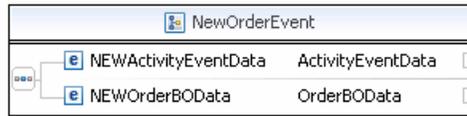
__ u. Click the + icons to see the details.
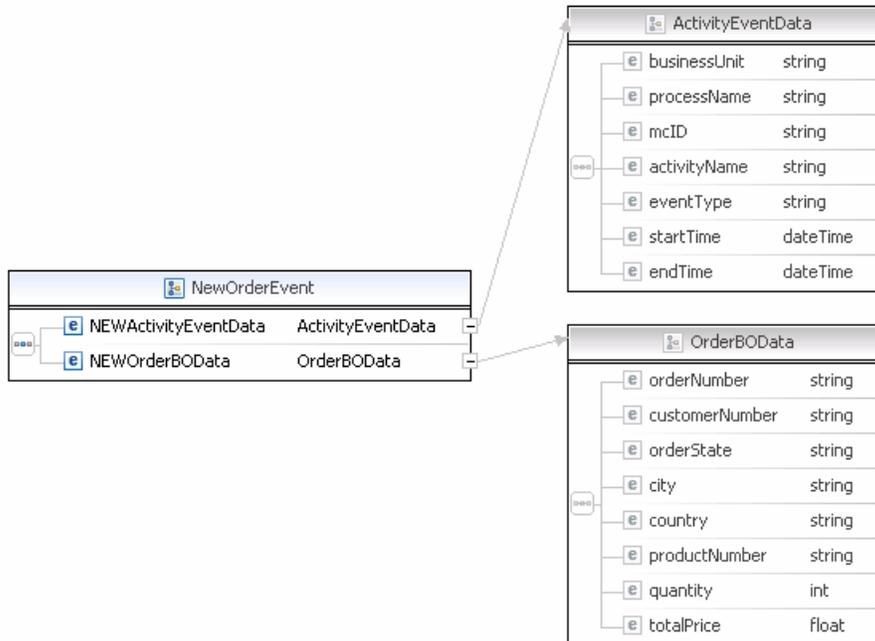
__ v. Save the configuration. **File → Save** or **Ctrl + S**

__ w. Click the source tab to see the XSD source.

__ x. Close the XSD schema editor

____ 10. Create a new monitor model ClipsAndTacks. The monitor model contains the metrics and KPIs that you want to monitor and it will be the source for creating the deployment code for the monitor server.

__ a. Right click in the 'Business Monitoring' project explorer view and select **New → Monitor Model…** from the pop-up menu. The Monitor Model panel opens

1) For the 'File name:', enter **ClipsAndTacks**

ClipsAndTacks (XSD event definitions)
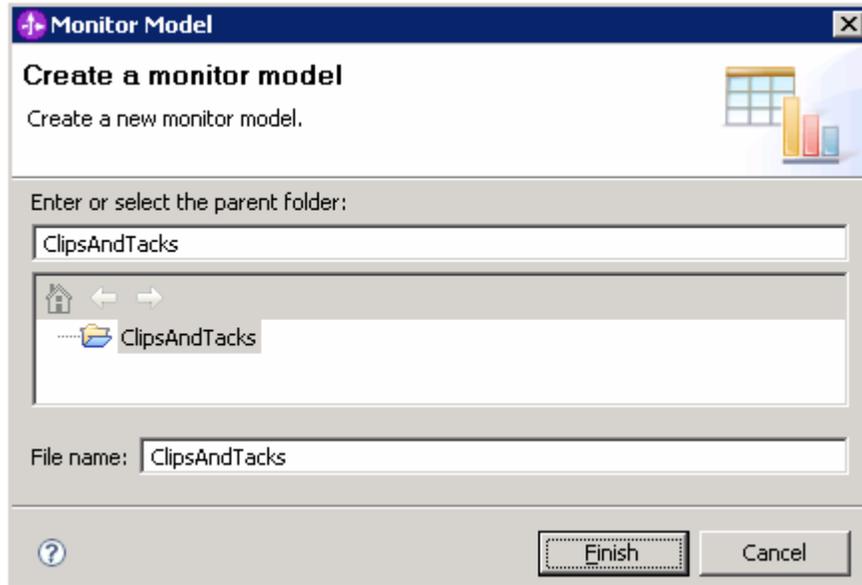
2) Click **Finish**. The model editor is opened as follows:

Note: When the model editor first opens you will have errors in the model. This is normal and is signaling that required elements are missing or incomplete. Next you will complete these required elements.
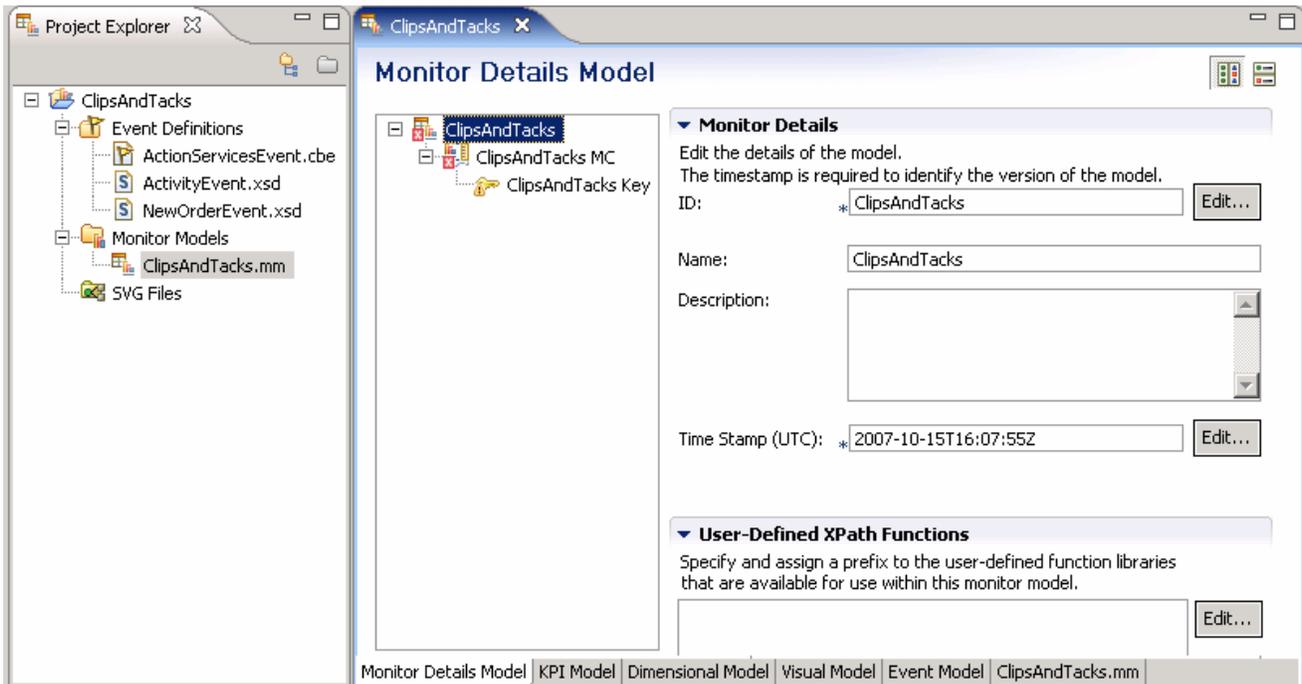
_____ 11. Notice in the Monitor Details Model navigator that a new model is created (ClipsAndTacks) along with a monitoring context (ClipsAndTacks MC). Now you need to specify the inbound events that will be processed by this model. You need to indicate which event will create a new monitoring context instance and which event will terminate the monitoring context instance. You also need to identify the correlation information for the monitoring context so that Monitor knows which monitoring context instance should receive the events. The ClipsAndTacks model uses one event definition, ActivityEvent, to represent the layout of all of the events to be processed. NewOrderEvent derives

from ActivityEvent but does not add additional event elements. In ActivityEvent, ActivityName is a field used to identify specific activities in the ClipsAndTacks process. ActivityName is used to determine when to terminate the monitoring context. You will create correlation that is based on orderNumber, which is another field defined in ActivityEvent.

____ 12. In the Monitor Details Model, expand ClipsAndTacks in the navigation view. Then expand ClipsAndTacks MC. You will see that a key has been created for you automatically when you created the model.

____ 13. In the model navigation view, right click ClipsAndTacks MC, then select **New → Inbound Event** from the pop-up menu

__ a. For the name, type **Activity Event**. Notice that the ID will automatically be set for you to the same name with underscores (**Activity_Event**)
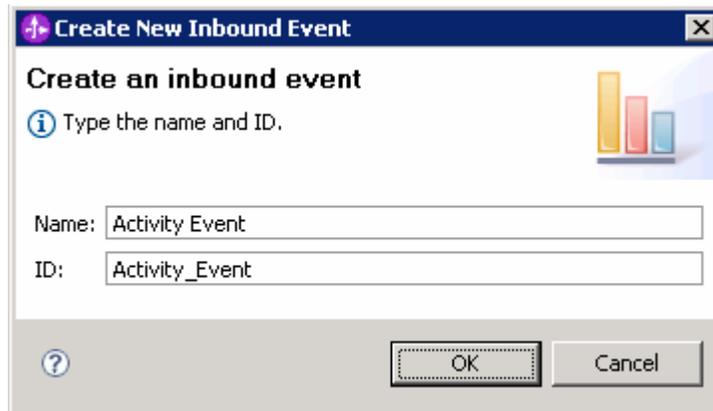
__ b. Click **OK**. The inbound 'ActivityEvent' opens in an editor

__ c. In the inbound 'ActivityEvent' editor, click the '**Add**' button for '**Event Parts**' to create a new event part type in the 'Event Type Details' section. The 'Create New Event part Type' panel opens

__ d. In the 'Create New Event part Type' panel, enter the following:

1) Name : **My Event Part1**

2) ID   : **My_Event_Part1**

3) Click the '**Select Type**' button for the 'Type' field. The 'Select Event Part Data Type' panel opens

a) Select the check box for 'Choose the data type from XML schemas accessible from this monitor project'

b) Expand **ClipsAndTacks → ActivityEventData** and select '**ae:ActivityEventData**'

ClipsAndTacks (XSD event definitions)
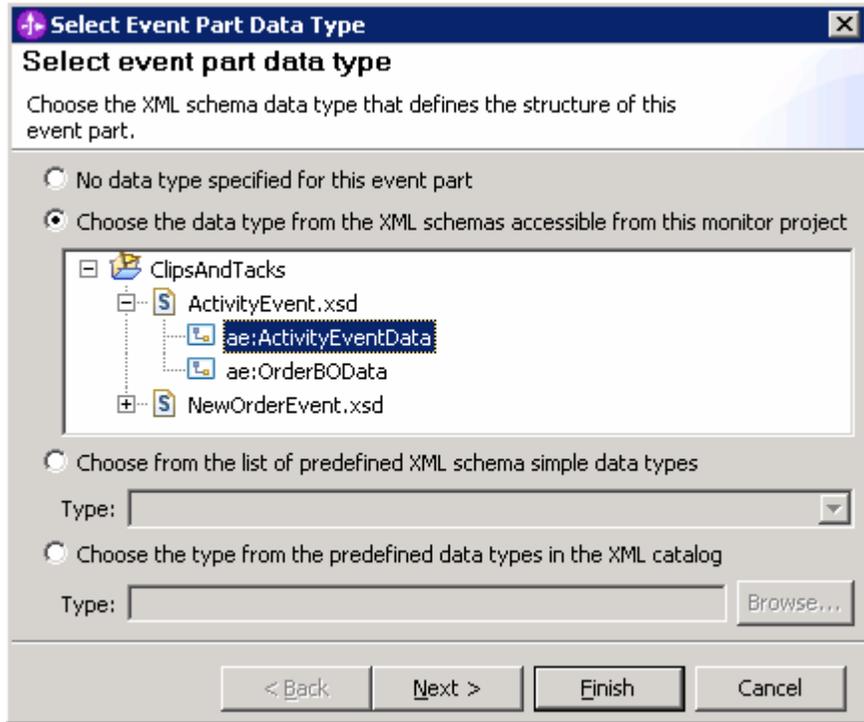
> c) Click **Finish**

> 4) Path : **cbe:CommonBaseEvent/ae:ActivityEventData**

Note: The path is an XML Path Language (XPath) expression that identifies the location in the event definition of the structure defined by the event part type. The expression is based on the structure of the actual event instance to be received at run time. It always starts with `cbe:CommonBaseEvent` and navigates into content that is placed in the `xs:any` slot of the Common Base Event. In general, if an XML Schema Definition (XSD) used to define an event structure contains an <xsd:any> or <xsd:anyType> slot, you should use an event part to specify the actual structure of the content that will fill that slot at run time. In this event part, you use **cbe:CommonBaseEvent/ae:ActivityEventData** as the path. Refer to '**allXSDevents.xml**' located in the **Labfiles70.zip** file, to see how the XSD based events are being sent during runtime.

ClipsAndTacks (XSD event definitions)
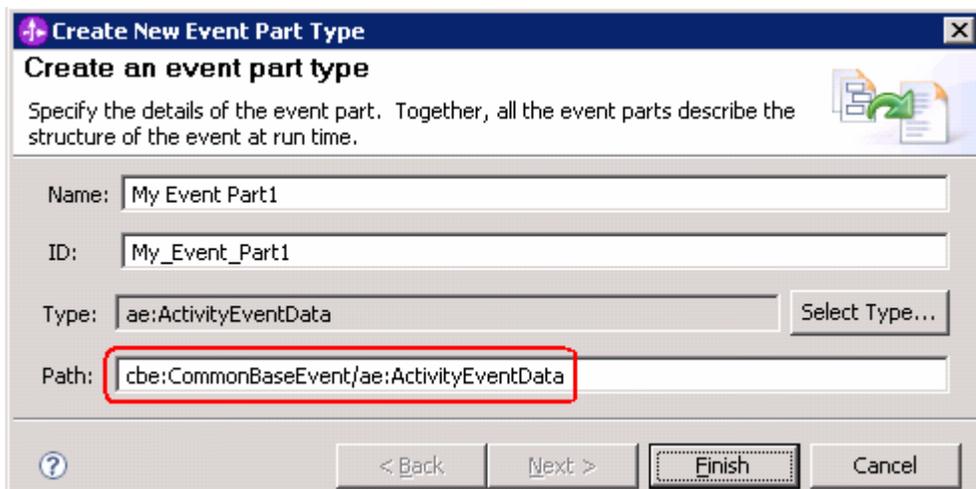
5) Click **Finish**

____ 14. In the inbound 'ActivityEvent' editor, click the '**Add**' button '**Event Parts**' again to create another event part type in the 'Event Type Details' section. The 'Create New Event part Type' panel opens

    __ a. In the 'Create New Event part Type' panel, enter the following:

        1) Name : **My Event Part2**

        2) ID   : **My_Event_Part2**

        3) Click the '**Select Type**' button for the 'Type' field. The 'Select Event Part Data Type' panel opens

            a) Select the check box for 'Choose the data type from XML accessible from this monitor project'

            b) Expand **ClipsAndTacks → ActivityEventData.xsd** and select '**ae:OrderBOData**'

            c) Click **Finish**

        4) Path : **cbe:CommonBaseEvent/ae:OrderBOData**

ClipsAndTacks (XSD event definitions)

Create New Event Part Type

Create an event part type

Specify the details of the event part. Together, all the event parts describe the structure of the event at run time.

Name: My Event Part2

ID: My_Event_Part2

Type: ae:OrderBOData   Select Type...

Path: cbe:CommonBaseEvent/ae:OrderBOData

< Back   Next >   Finish   Cancel
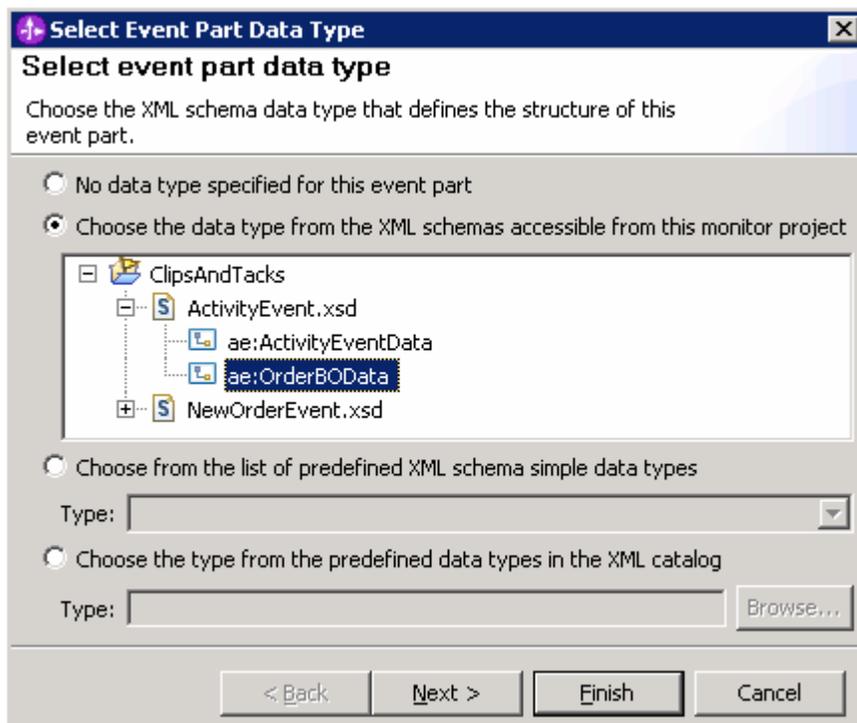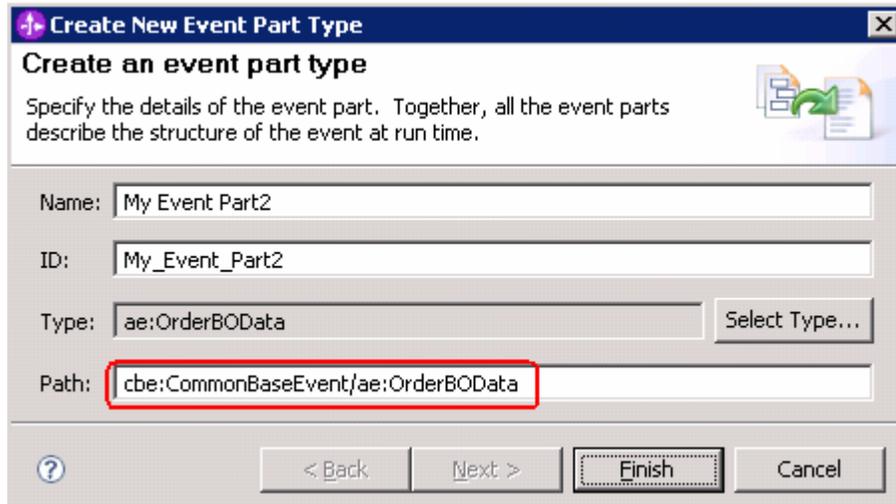
        5) Click **Finish**

__ b. The final 'Event Type Details' section with the two 'Event parts' should look like the picture below:

▼ Event Type Details

Specify the event type or the XML schemas that together describe the structure of this inbound event.
You can specify an extension name, event parts, or both.

Extension name: | Browse...   Clear

Event parts:	ID	Name	Type	Path
	My_Event_P...	My Event P...	ae:ActivityEventData	cbe:CommonBaseEvent/ae:ActivityEventData
	My_Event_P...	My Event P...	ae:OrderBOData	cbe:CommonBaseEvent/ae:OrderBOData

__ c. Save the configuration. **File → Save** or **Ctrl + S**

__ d. To enter the **Filter Condition**, you can use Content Assist with the keys Ctrl-Space, or you can type the expression directly into the expression window. When completed the expression should be as follows. Note the single quotation marks used for string handling.

    Activity_Event/My_Event_Part1/ae:businessUnit = 'Clips And Tacks' and
    Activity_Event/My_Event_Part1/ae:processName = 'Order Handling'

__ e. To enter the **Correlation Expression**, you can use Content Assist with the keys Ctrl-Space, or you can type the expression directly into the expression window. When complete the expression should be

    ClipsAndTacks_Key =Activity_Event/My_Event_Part2/ae:orderNumber

__ f. For 'If no instances are found', select 'Treat as error'

__ g. For 'If one instance is found', select 'Deliver to the instance'

__ h. For 'If multiple instances are found', select 'Treat as error'

__ i. Here is a sample of a portion of the definition:

▼ Filter Condition

Define a condition based on the event attributes to identify whether to accept an event of this type.

```
Activity_Event/My_Event_Part1/ae:businessUnit = 'Clips And Tacks' and
Activity_Event/My_Event_Part1/ae:processName = 'Order Handling'
```

▼ Correlation Expression

Define an expression to identify the monitoring context instance or instances that receive the event at runtime.

```
ClipsAndTacks_Key = Activity_Event/My_Event_Part2/ae:orderNumber
```

If no instances are found	Treat as error ▼
If one instance is found	Deliver to the instance ▼
If multiple instances are found	Treat as error ▼

__ j. Save the configuration. **File → Save** or **Ctrl + S**

____ 15. In the model navigation view, right click ClipsAndTacks MC, then select **New → Inbound Event** from the pop-up menu

__ a. For the name, type **New Order Event**. Notice that the ID will automatically be set for you to the same name with underscores (**New_Order_Event**)

__ b. Click **OK**. The inbound 'NewOrderEvent' opens in an editor

__ c. In the inbound 'NewOrderEvent' editor, click the '**Add**' button for '**Event Parts**' to create a new event part type in the 'Event Type Details' section. The 'Create New Event part Type' panel opens

__ d. In the 'Create New Event part Type' panel, enter the following:

1) Name : **My Event Part**

2) ID : **My_Event_Part**

3) Click the '**Select Type**' button for the 'Type' field. The 'Select Event Part Data Type' panel opens

    a) Select the check box for 'Choose the data type from XML accessible from this monitor project'

    b) Expand **ClipsAndTacks → NewOrderEvent.xsd** and select '**noe:NewOrderEvent**'
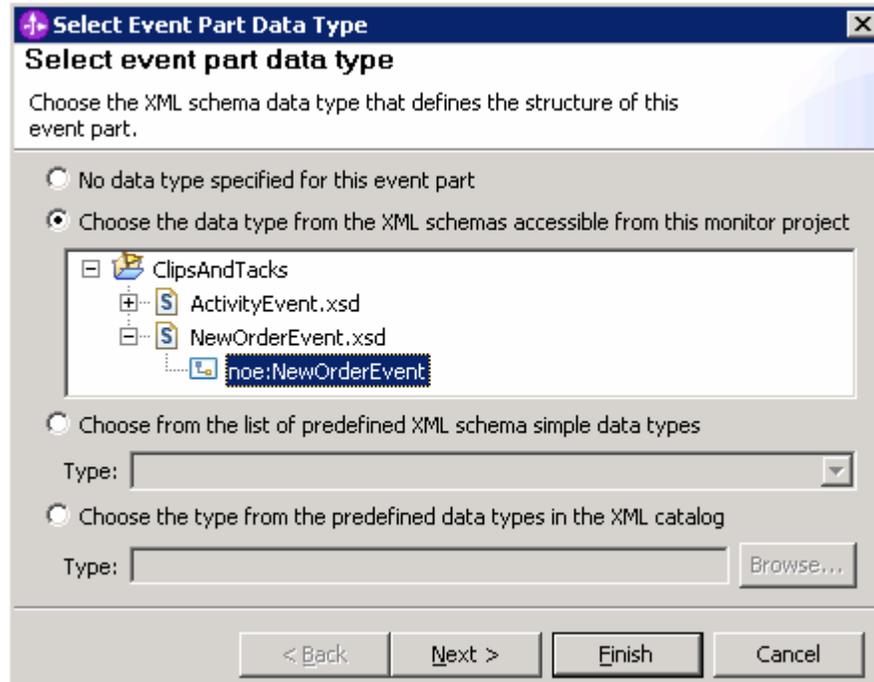
      c) Click **Finish**

     4) Path : **cbe:CommonBaseEvent/noe:NewOrderEvent**

Note: The path is an XML Path Language (XPath) expression that identifies the location in the event definition of the structure defined by the event part type. The expression is based on the structure of the actual event instance to be received at run time. It always starts with `cbe:CommonBaseEvent` and navigates into content that is placed in the `xs:any` slot of the Common Base Event. In general, if an XML Schema Definition (XSD) used to define an event structure contains an <xsd:any> or <xsd:anyType> slot, you should use an event part to specify the actual structure of the content that will fill that slot at run time. In this event part, you use **cbe:CommonBaseEvent/ noe:NewOrderEvent** as the path. Refer to '**allXSDevents.xml**' part of the **Labfiles70.zip** to see how the XSD based events are being sent during runtime.

ClipsAndTacks (XSD event definitions)
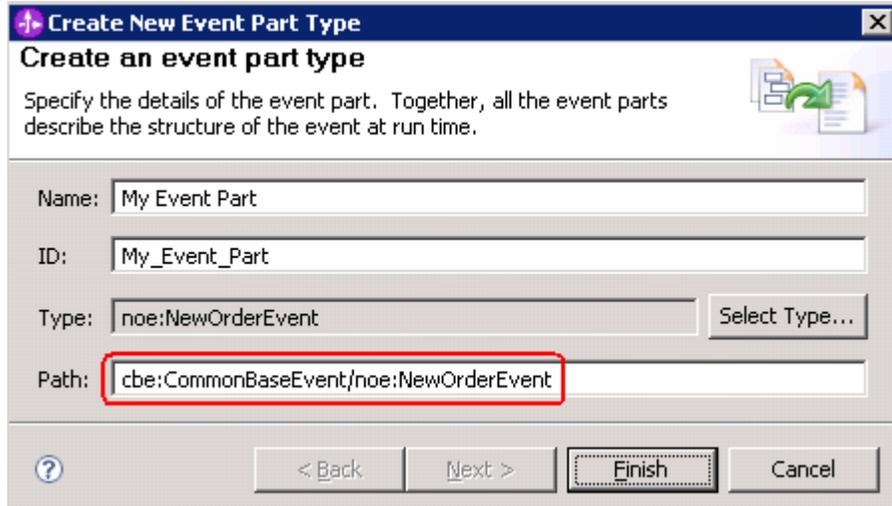
5) Click **Finish**

__ e. The final 'Event Type Details' section with the 'Event part' should look like the picture below:
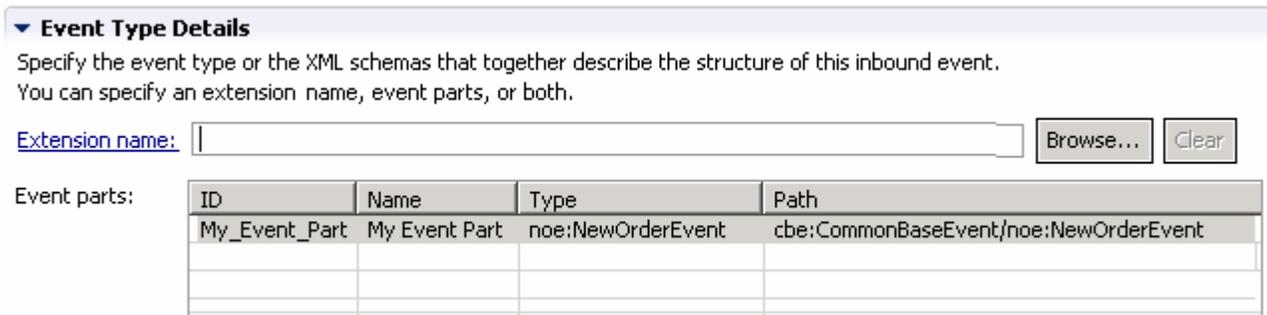
__ f. Save the configuration. **File → Save** or **Ctrl + S**

__ g. To enter the Filter Condition, you can use Content Assist with the keys Ctrl-Space, or you can type the expression directly into the expression window. When complete, the expression should be as follows. Note the single quotation marks used for string handling.

New_Order_Event/My_Event_Part/noe:NEWActivityEventData/ae:businessUnit = 'Clips And Tacks' and New_Order_Event/My_Event_Part/noe:NEWActivityEventData/ae:processName ='Order Handling'

__ h. To enter the Correlation Expression, you can use Content Assist or you can type the expression directly into the expression window. When complete the expression should be

ClipsAndTacks_Key = New_Order_Event/My_Event_Part/noe:NEWOrderBOData/ae:orderNumber

__ i. For 'If no instances are found', select 'Create new instance'

__ j. For 'If one instance is found', select 'Treat as error'

__ k. For 'If multiple instances are found', select 'Treat as error'

__ l. Here is a sample of a portion of the definition:

▼ Filter Condition

Define a condition based on the event attributes to identify whether to accept an event of this type.

```
New_Order_Event/My_Event_Part/noe:NEWActivityEventData/ae:businessUnit = 'Clips And Tacks' and
New_Order_Event/My_Event_Part/noe:NEWActivityEventData/ae:processName = 'Order Handling'
```

▼ Correlation Expression

Define an expression to identify the monitoring context instance or instances that receive the event at runtime.

```
ClipsAndTacks_Key = New_Order_Event/My_Event_Part/noe:NEWOrderBOData/ae:orderNumber
```

If no instances are found	Create new instance	▼
If one instance is found	Treat as error	▼
If multiple instances are found	Treat as error	▼

    __ m. Save the configuration. **File → Save** or **Ctrl + S**

____ 16. In the model navigation view, double click **ClipsAndTacks Key**, to open the key in the editor

    __ a. For Key Value Expressions, click '**Add…**' Note that double clicking in the table will produce the same results.

    __ b. A row is added to the table and in the expression cell it shows << No expression specified >>. Click this cell of the table, then a button is displayed. Click this button and the expression editor is displayed. You can use Content Assist, or type this expression directly into the window:

        New_Order_Event/My_Event_Part/noe:NEWOrderBOData/ae:orderNumber

    __ c. Click **OK**.

    __ d. Here is a sample of the key:

ClipsAndTacks (XSD event definitions)

__ e. Save the configuration. **File → Save** or **Ctrl + S**

Note: At this point there should not be any errors remaining in the model. The errors shown initially were the result of the monitoring context key not being complete.

____ 17. Create triggers that indicate the end of the monitoring context. The first trigger is based on an order being shipped, and the second trigger is based on an order being cancelled.

__ a. In the model navigation view, right click **ClipsAndTacks MC**, then select **New → Trigger**. Enter the following values:

1) Name : **Ship Order to Customer Trigger**

2) ID : **Ship_Order_to_Customer_Trigger**

3) Select the check box next to '**Terminate monitoring context**'

4) For Trigger Sources, click Add, then select **Other source type → Activity Event** and then click OK

5) For Trigger Condition, enter

Activity_Event/My_Event_Part1/ae:activityName = 'Ship Order to Customer' and
Activity_Event/My_Event_Part1/ae:eventType = 'completed'

__ b. Save the configuration. **File → Save** or **Ctrl + S**

__ c. Here is a sample of this trigger:

Trigger Details
Edit the details of the trigger, which detects an occurrence and initiates an action in response.

ID:	* Ship_Order_to_Customer_Trigger [Edit...]
Name:	Ship Order to Customer Trigger
Description:		

☐ Trigger is repeatable
☑ Terminate monitoring context ←

Trigger Sources
Specify the source of this trigger.

Source Type	Source
Event	Activity Event

[Add] [Remove]

Trigger Condition
Specify the condition that determines whether the trigger will fire.

Activity_Event/My_Event_Part1/ae:activityName = 'Ship Order to Customer' and
Activity_Event/My_Event_Part1/ae:eventType = 'completed'

__ d. In the model navigation view, right click ClipsAndTacks MC, then select **New > Trigger**. Enter these values:

    1) Name : **Cancel Trigger**

    2) ID   : **Cancel_Trigger**

    3) Select the check box next to '**Terminate monitoring context**'

    4) For Trigger Sources, click Add, then select Other source type > Activity Event, then click OK.

    5) For Trigger Condition, enter

    Activity_Event/My_Event_Part1/ae:activityName = 'Cancel Order and Send Notification' and
    Activity_Event/My_Event_Part1/ae:eventType = 'completed'

__ e. Save the configuration. **File → Save** or **Ctrl + S**

____ 18. Create a KPI for Average fulfillment three days or less. First you will create a trigger which fires when a new order is started. Metrics are created to hold the order start time and order end time. The values of the metrics are set when the new order trigger fires. You create a duration metric which is calculated based on subtracting the order end time metric from the order start time metric. You will create a KPI context which is a container to hold the KPIs. Then you create a KPI which is based on the duration metric and you apply an average function to it.

__ a. In the model navigation view, right click ClipsAndTacks MC, then select **New → Trigger**. Enter these values:

1) Name : **New Order Trigger**

2) ID : **New_Order_Trigger**

3) For Trigger Sources, click Add, then select Other source type > New Order Event, then click OK.

4) For Trigger condition, enter

New_Order_Event/My_Event_Part/noe:NEWActivityEventData/ae:activityName = 'Check Order Handling Policy for Automatic Approval' and
New_Order_Event/My_Event_Part/noe:NEWActivityEventData/ae:eventType = 'started'

5) Save the configuration. **File → Save** or **Ctrl + S**

__ b. In the model navigation view, right click ClipsAndTacks MC, then select **New → Metric**. Enter these values:

1) Name : **Order Start Time**

2) ID : **Order_Start_Time**

3) Type : **DateTime**

4) For Metric Value Expressions, click Add

5) In the first row of the Metric Value Expressions table, select the cell under column Trigger, then a button is shown, then click the button and select Trigger type > ClipsAndTacks MC > New Order Trigger, click OK

6) In the first row of the Metric Value Expressions table, select the cell under column Expression, then a button is shown, then click the button and enter this text:

New_Order_Event/My_Event_Part/noe:NEWActivityEventData/ae:startTime

7) Click OK.

8) Save the configuration. **File → Save** or **Ctrl + S**

▼ Metric Details

Edit the details of the metric, which is a holding spot for information used in other calculations.

ID:	Order_Start_Time [Edit...]
Name:	Order Start Time
Description:	
Type:	DateTime ▼

☐ A value is required for this metric

Default Value: [_____] [Edit...]

☐ This metric can be used for sorting

▼ Metric Value Expressions

Specify the expressions that set the value of the metric. If a trigger is specified, the map is evaluated when the trigger fires.

Trigger	Expression	
New Order Trigger	New_Order_Event/My_Event_Part/noe:NEWActivityEventData/ae:startTime	

__ c. In the model navigation view, right click ClipsAndTacks MC, then select **New → Metric**. Enter these values:

1) Name : **Order End Time**

2) ID : **Order_End_Time**

3) Type : **DateTime**

4) For Metric Value Expressions, click Add

5) In the first row of the Metric Value Expressions table, select the cell under column Trigger, then a button is shown, then click the button and select Trigger type > ClipsAndTacks MC > Ship Order to Customer Trigger, click OK

6) In the first row of the Metric Value Expressions table, select the cell under column Expression, then a button is shown, then click the button and enter this text:

Activity_Event/My_Event_Part1/ae:endTime

7) Click OK.

8) For Metric Value Expressions, click Add

9) In the second row of the Metric Value Expressions table, select the cell under column Trigger, then a button is shown, then click the button and select Trigger type > ClipsAndTacks MC > Cancel Trigger, click OK

10) In the second row of the Metric Value Expressions table, select the cell under column Expression, then a button is shown, then click the button and enter this text:

IBM WebSphere Business Monitor 7.0 – Lab exercise

ClipsAndTacks (XSD event definitions)

Activity_Event/My_Event_Part1/ae:endTime

11) Click OK.

__ d. Save the configuration. **File → Save** or **Ctrl + S**

▼ **Metric Details**

Edit the details of the metric, which is a holding spot for information used in other calculations.

ID: *Order_End_Time   [Edit...]

Name: Order End Time

Description: [   ]

Type: *DateTime   [▼]

☐ A value is required for this metric

Default Value: [   ]   [Edit...]

☐ This metric can be used for sorting

▼ **Metric Value Expressions**

Specify the expressions that set the value of the metric. If a trigger is specified, the map is evaluated when the trigger fires.

Trigger	Expression
Ship Order to Customer Trigger	Activity_Event/My_Event_Part1/ae:endTime
Cancel Trigger	Activity_Event/My_Event_Part1/ae:endTime

__ e. In the model navigation view, right click ClipsAndTacks MC, then select **New > Metric**. Enter these values:

1) Name : **Order Fulfillment Duration**

2) ID   : **Order_Fulfillment_Duration**

3) Type   : **Duration**

4) For Default Value, click Edit…

5) On the Select Duration dialog, click OK, and this will set the default duration to zero

6) For Metric Value Expressions, click Add

7) In the first row of the Metric Value Expressions table, select the cell under column Trigger, then a button is shown, then click the button and select Trigger type > ClipsAndTacks MC > Ship Order to Customer Trigger, click OK

8) In the first row of the Metric Value Expressions table, select the cell under column Expression, then a button is shown, then click the button and enter this text:

xs:dayTimeDuration(Order_End_Time - Order_Start_Time)

9) Click OK

10) For Metric Value Expressions, click Add

11) In the second row of the Metric Value Expressions table, select the cell under column Trigger, then a button is shown, then click the button and select Trigger type > ClipsAndTacks MC > Cancel Trigger, click OK

12) In the second row of the Metric Value Expressions table, select the cell under column Expression, then a button is shown, then click the button and enter this text:

xs:dayTimeDuration (Order_End_Time - Order_Start_Time)

13) Click OK.

__ f. Press **Ctrl-S** to save your work.

▼ **Metric Details**
Edit the details of the metric, which is a holding spot for information used in other calculations.

ID:	*Order_Fulfillment_Duration [Edit...]
Name:	Order Fulfillment Duration
Description:	
Type:	Duration ▼

☐ A value is required for this metric

Default Value: | dayTimeDuration('P0DT0H0M0.000S') [Edit...]

☐ This metric can be used for sorting

▼ **Metric Value Expressions**
Specify the expressions that set the value of the metric. If a trigger is specified, the map is evaluated when the trigger fires.

Trigger	Expression
Ship Order to Customer Trigger	xs:dayTimeDuration (Order_End_Time - Order_Start_Time)
Cancel Trigger	xs:dayTimeDuration (Order_End_Time - Order_Start_Time)

[Add] [Remove]

__ g. Click the **KPI Model tab**.

__ h. Create a KPI context to store the KPIs.

1) In the navigation view of the KPI Model, right click ClipsAndTacks, then select **New → KPI Context**

a) Name :- **My KPI Context**

b) ID   :- **My_KPI_Context**

__ i. Create the average order fulfillment KPI.

Note that you will create the KPI based on events for August 2006. This will work for you no matter what month or year that you run this lab because the timestamps in the test data are based on August 2006, so your results will be the same as in these lab instructions.

1) In the navigation view of the KPI Model, right click **My KPI Context**, then select **New → KPI**

    a) Name :- **Average Order Fulfillment KPI August 2006**

    b) ID   :- **Average_Order_Fulfillment_KPI_August_2006**

2) Enter these values:

    a) Type – Duration

    b) Select 'Keep track of historical values for this KPI'

    c) In KPI Target and Ranges, for Target click **Details**…, then change the value to 3 Days, then click OK

    d) In KPI Target and Ranges, for Ranges select Actual value

    e) In the Range table,

        (1) Click Add, or double click anywhere in the table

        (2) Change the Name to Day 1, and the ID to Day_1

        (3) A row is created in the Range table with a range name Day 1.

        (4) For this row, select the cell in the Start value column and a button is displayed. Click this button, then change all values to 0, then click OK.

        (5) For this row, select the cell in the End value column and a button is displayed. Click this button, then change Days to 1 and the other values to 0, then click OK.

    f) Now you have created one range called Day 1. Repeat the above step to create four more ranges:

        (1) Day 2 with start values 1 Days and end value 2 Days

        (2) Day 3 with start values 2 Days and end value 3 Days

        (3) Day 4 with start values 3 Days and end value 4 Days

        (4) Day 5 with start values 4 Days and end value 5 Days

    g) KPI Value – select '**Base this KPI on a metric and an aggregation function**'

    h) Under KPI Details, for Monitoring context, click Browse…, then select '**ClipsAndTacks MC**', then click OK

    i) Metric – click Browse…, then select **Order Fulfillment Duration**, then click OK

    j) Aggregation function – select **Average**.

    k) Under Time Filter, for Metric, click Browse…, then select **Order Start Time**, then click OK

ClipsAndTacks (XSD event definitions)

l) Specify time period – **Fixed**

m) Start date – click Edit... then select date **2006-08-01**, time **00:00:00**, click OK

n) End date – click Edit…, then select **2006-08-31**, time **23:59:59**, click OK

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

▼ KPI Details

Edit the details of the KPI, which is a performance measurement used to track business objectives.

ID: ＊ | Average_Order_Fulfillment_KPI_August_2006 | Edit...

Name: | Average Order Fulfillment KPI August 2006

Description:

Type: ＊ | Duration

☑ Keep track of historical values for this KPI

▼ KPI Target and Ranges

Specify a target, which is an exact value for the KPI to achieve, or ranges against which to track the KPI, or both.

Target: | 3 Days | Details...

Ranges: ＊ | Actual value

Range name	Start value	End value	Color	
Day 1	0 Milliseconds	< 1 Days		
Day 2	1 Days	< 2 Days		
Day 3	2 Days	< 3 Days		
Day 4	3 Days	< 4 Days		
Day 5	4 Days	< 5 Days		

Add | Remove | Sort

ClipsAndTacks (XSD event definitions)

__ j. Note that this KPI as it stands averages order fulfillment time for shipped orders and cancelled orders, but you probably are not interested in the cancelled orders to be included in this KPI. So update the average order fulfillment KPI to show the values for shipped orders only. First you will create a new metric to hold the order status. Then you will add this metric as a data filter on the KPI.

__ k. Click the **Monitor Details Model tab**.

__ l. In the Monitor Details Model navigation view, right click ClipsAndTacks MC, then select **New → Metric**. Enter these values:

      1) Name :- **Order Status**

      2) ID   :- **Order_Status**

      3) Type :- **String**

      4) Select the check box for '**A value is required for this metric**'

      5) Default Value (enter this text with single quotation marks) – '**New**'

      6) For Metric Value Expressions, click **Add**

      7) In the first row of the Metric Value Expressions table, select the cell under column Trigger, then a button is shown, then click the button and select Trigger type > ClipsAndTacks MC > Cancel Trigger, click OK

      8) In the first row of the Metric Value Expressions table, select the cell under column Expression, then a button is shown, then click the button and enter this text with the quotation marks:

ClipsAndTacks (XSD event definitions)

'Cancelled'

9) Click OK.

10) For Metric Value Expressions, click Add

11) In the second row of the Metric Value Expressions table, select the cell under column Trigger, then a button is shown, then click the button and select Trigger type > ClipsAndTacks MC > Ship Order to Customer Trigger, click OK

12) In the second row of the Metric Value Expressions table, select the cell under column Expression, then a button is shown, then click the button and enter this text with the quotation marks:

'Shipped'

13) Press **Ctrl-S** to save your work

Metric Details

Edit the details of the metric, which is a holding spot for information used in other calculations.

ID:	*Order_Status [Edit…]
Name:	Order Status
Description:	
Type:	*String ▼
	Maximum String Length: 256
	☐ Allocate additional space in database to accommodate Unicode string for globalization
	☑ A value is required for this metric ←
Default Value:	*'New' [Edit…]
	☐ This metric can be used for sorting

Metric Value Expressions

Specify the expressions that set the value of the metric. If a trigger is specified, the map is evaluated when the trigger fires.

Trigger	Expression
Cancel Trigger	'Cancelled'
Ship Order to Customer Trigger	'Shipped'

__ m. Update the order fulfillment KPI to use the order status as a filter.

1) Click the **KPI Model tab**.

2) In the KPI Model navigation view, navigate to ClipsAndTacks > My KPI Context > Average Order Fulfillment KPI August 2006

3) In the Data Filter section for this KPI, click Add

4) In the dialog, navigate to **ClipsAndTacks MC → Order Status**, then click OK

5) In the row containing metric Order Status, make sure the operation defaults to 'equals'. Also, click the cell in the column Values, then enter this text (with quotation marks):

'Shipped'

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

Metric	Operator	Values	Case-sensitive
Order Status	equals	'Shipped'	

____ 19. Create a KPI for number of approved orders greater than 90%. First you will create a KPI to count the number of total orders. Then you will create a KPI to count the number of shipped orders. Finally, you will create a KPI that calculates the approval percentage as this formula: (ship count / order count) * 100.

__ a. Click the **KPI Model tab** then create the order count KPI.

1) In the navigation view of the KPI Model, right click My KPI Context, then select **New > KPI**

a) Name :- **Order Count KPI**

b) ID   :- **Order_Count_KPI**

2) Enter these values:

a) Type   :- **Decimal**

b) Select 'Keep track of historical values for this KPI'

c) Do not specify targets nor ranges

d) KPI Value – select '**Base this KPI on a metric and an aggregation function**'

e) Under KPI Details, for Monitoring context, click Browse…, then select '**ClipsAndTacks MC**', then click OK

f) Metric – click Browse…, then select **ClipsAndTacks Key**, then click OK

g) Aggregation function – select **Count**

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

__ b. Create the ship count KPI.

1) In the navigation view of the KPI Model, right click My KPI Context, then select **New > KPI**

a) Name :- **Ship Count KPI**

b) ID   :- **Ship_Count_KPI**

2) Enter these values:

a) Type   :- **Decimal**

b) Do not specify targets nor ranges

c) KPI Value – select '**Base this KPI on a metric and an aggregation function**'

ClipsAndTacks (XSD event definitions)

d) Under KPI Details, for Monitoring context, click Browse…, then select '**ClipsAndTacks MC**', then click OK

e) Metric – click Browse…, then select **ClipsAndTacks Key**, then click OK

f) Aggregation function – select **Count**

g) In the Data Filter section for this KPI, click **Add**

h) In the dialog, navigate to **ClipsAndTacks MC → Order Status**, then click OK

i) In the row containing metric Order Status, make sure the operation defaults to 'equals'. Also, click the cell in the column Values, then enter this text (with quotation marks):

'Shipped'

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

__ c. Create the percent of orders approved KPI.

1) In the navigation view of the KPI Model, right click My KPI Context, then select **New > KPI**

a) Name :- **Percent of Orders Approved KPI**

b) ID   :- **Percent_of_Orders_Approved_KPI**

2) Enter these values:

a) Type :- **Decimal**

b) Select 'Keep track of historical values for this KPI'

c) In KPI Target and Ranges, for Target click Details…, then change the value to **90**, then click OK

d) In KPI Target and Ranges, for Ranges select **Actual value**

e) In the Range table,

(1) Click **Add**

(2) Change the Name to **Low Range**, and the ID to **Low_Range**

(3) A row is created in the Range table with a range name Low Range.

(4) For this row, select the cell in the Start value column and a button is displayed. Click this button, then change the value to 0 and then click OK.

(5) For this row, select the cell in the End value column and a button is displayed. Click this button, then change the value to 90 and then click OK.

f) Repeat the above step to create one more range:

(1) **High Range** with start value 90 and end value 100

g) KPI Value – select '**Write an expression to calculate this KPI based on existing KPIs**'

ClipsAndTacks (XSD event definitions)

h) For KPI Calculation, enter this text:

fn:round((Ship_Count_KPI div Order_Count_KPI) * 100)

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

▾ KPI Target and Ranges

Specify a target, which is an exact value for the KPI to achieve, or ranges against which to track the KPI, or both.

Target: 90 | Details... |

Ranges: Actual value   ▼
        *

Range name	Start value	End value	
▤ Low Range	0	< 90	
▤ High Range	90	< 100	

| Add | Remove | Sort |

▾ KPI Definition

Specify how the value of the KPI is set.

KPI Value

Choose how the KPI will get its value:

○ Base this KPI on a metric and an aggregation function.

◉ Write an expression to calculate this KPI based on existing KPIs

KPI Calculation

For example, you could have a Total Profit KPI that subtracts the Total Cost KPI from the Total Revenue KPI.

💡 fn:round((Ship_Count_KPI div Order_Count_KPI) * 100)|

_____ 20. In the dashboards, you might like to see the total order price, the average order price and the total number of orders. And you might be interested in seeing this information by country and city, and by order status. So now you will create dimensions and measures that allow you to see this information. For aggregated numeric information like total order price, you will create a measure in the dimensional model. For textual attributes like order status, you will create a dimension in the dimensional model. In order to see the country and city information, you will create a multi-level location dimension containing country as the first level and city as the second level. Each measure and dimension needs a metric as a source, so you will also need to create metrics for country, city and total price.

__ a. Click the **Dimensional Model tab**.

__ b. Add order status as a dimension to the Dimensional Model.

1) In the navigation view, click ClipsAndTacks MC Cube

2) In the dimensions table, click **New Dimension…**

a) Name :- **Order Status Dimension**

b) ID   :- **Order_Status_Dimension**

c) Click **OK**

3) Click **New Level…**

    a) Name :- **Order Status**

    b) ID   :- **Order_Status**

    c) Source metric – Click Browse…, then select **ClipsAndTacks MC → Order Status**.
       Then click OK.

    d) Click OK.

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

▼ Dimensions

Work with the dimensions and dimension levels of this cube. Dimensions are data categories made up of hierarchical dimension levels.

Dimension / Dimension Level	Source Metric		
⊟ 🖳 Order Status Dimension			New Dimension…
⇥ Order Status	📏 Order Status		New Level…
			Remove
			Move Up
			Move Down
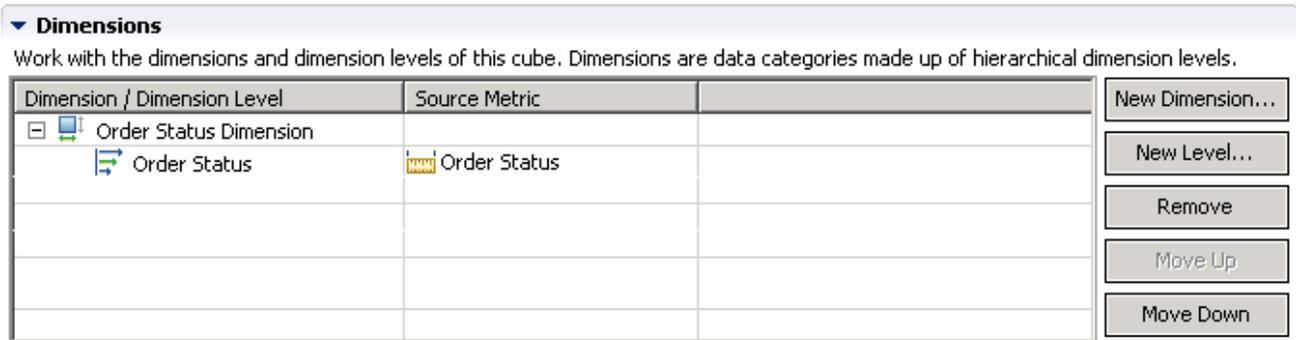
  __ c. Click the **Monitor Details Model tab**.

  __ d. In the Monitor Details Model navigation view, right click ClipsAndTacks MC, then select **New >
Metric**. Enter these values:

    1) Name :- **country**

    2) ID   :- **country**

    3) Type :- **String**

    4) Select the check box for '**A value is required for this metric**'

    5) Default value : **''** (**Note:** Empty single quotation marks)

    6) For Metric Value Expressions, click Add

    7) In the first row of the Metric Value Expressions table, select the cell under column Trigger,
       then a button is shown, then click the button and select Trigger type > ClipsAndTacks MC
       > New Order Trigger, click OK

    8) In the first row of the Metric Value Expressions table, select the cell under column
       Expression, then a button is shown, then click the button and enter this text:

       New_Order_Event/My_Event_Part/noe:NEWOrderBOData/ae:country

    9) Click OK.

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

__ e. In the Monitor Details Model navigation view, right click ClipsAndTacks MC, then select **New > Metric**. Enter these values:

> 1) Name :- **city**
>
> 2) ID   :- **city**
>
> 3) Type :- **String**
>
> 4) Select the check box for '**A value is required for this metric**'
>
> 5) Default value : **' '**   (**Note:** Empty single quotation marks)
>
> 6) For Metric Value Expressions, click Add
>
> 7) In the first row of the Metric Value Expressions table, select the cell under column Trigger, then a button is shown, then click the button and select Trigger type > ClipsAndTacks MC > New Order Trigger, click OK
>
> 8) In the first row of the Metric Value Expressions table, select the cell under column Expression, then a button is shown, then click the button and enter this text:
>
>> New_Order_Event/My_Event_Part/noe:NEWOrderBOData/ae:city
>
> 9) Click OK.
>
> 10) Press **Ctrl-S** to save your work

__ f. In the Monitor Details Model navigation view, right click ClipsAndTacks MC, then select **New > Metric**. Enter these values:

> 1) Name :- **totalPrice**
>
> 2) ID   :- **totalPrice**
>
> 3) Type   :- **Decimal**
>
> 4) For Metric Value Expressions, click Add
>
> 5) In the first row of the Metric Value Expressions table, select the cell under column Trigger, then a button is shown, then click the button and select Trigger type > ClipsAndTacks MC > New Order Trigger, click OK
>
> 6) In the first row of the Metric Value Expressions table, select the cell under column Expression, then a button is shown, then click the button and enter this text:
>
>> New_Order_Event/My_Event_Part/noe:NEWOrderBOData/ae:totalPrice
>
> 7) Click OK.
>
> 8) Press **Ctrl-S** to save your work

__ g. Click the **Dimensional Model tab**.

__ h. Add location as a dimension to the Dimensional Model.

> 1) In the navigation view, click ClipsAndTacks MC Cube
>
> 2) In the dimensions table, click **New Dimension…**

ClipsAndTacks (XSD event definitions)

a) Name :- **Location**

b) ID   :- **Location**

c) Click **OK**

3) Click **New Level…**

a) Name :- **Country**

b) ID   :- **Country**

c) Source metric – Click Browse…, then select **ClipsAndTacks MC → country**. Then click OK.

d) Click OK.

4) Click **New Level…**

a) Name :- **City**

b) ID   :- **City**

c) Source metric – Click Browse…, then select **ClipsAndTacks MC → city**. Then click OK.

d) Click OK.

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

__ i. Ensure that the **Dimensional Model tab** is selected.

__ j. In the Dimensional Model, add a measure for average order price.

1) In the navigation view, click ClipsAndTacks MC Cube

2) In the Measures table, click **New …**

a) Name :- **Average Order Price**

b) ID   :- **Average_Order_Price**

c) Source metric - Click Browse…, then select **ClipsAndTacks MC → totalPrice**.

d) Aggregation function: - select **Average**.

e) Then click OK.

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

__ k. In the Dimensional Model, add a measure for sum of order price.

1) In the navigation view, click ClipsAndTacks MC Cube

2) In the Measures table, click **New …**

a) Name :- **Sum Order Price**

b) ID   :- **Sum_Order_Price**

c) Source metric - Click Browse…, then select **ClipsAndTacks MC → totalPrice**.

d) Aggregation function – select **Sum**.

e) Then click OK.

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

__ l. In the Dimensional Model, add a measure for order count.

1) In the navigation view, click ClipsAndTacks MC Cube

2) In the Measures table, click **New …**

a) Name :- **Order Count**

b) ID   :- **Order_Count**

c) Source metric - Click Browse…, then select **ClipsAndTacks MC → ClipsAndTacks Key**.

d) Aggregation function – select **Count**.

e) Then click OK.

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

ClipsAndTacks (XSD event definitions)

____ 21. In the dashboards you might like to see the average order price and track that relative to a target.

  __ a. Create a KPI for the average order price.

    1) Click the **KPI Model tab**.

    2) In the navigation view of the KPI Model, right click My KPI Context, then select **New → KPI**

        a) Name :- **Average Order Price KPI (Dollars)**

        b) ID   :- **Average_Order_Price_KPI__x0028_Dollars_x0029_**

    3) Enter these values:

        a) Type :- **Decimal**

        b) Select 'Keep track of historical values for this KPI'

        c) In KPI Target and Ranges, for Target click Details…, then change the value to **300**, then click OK

        d) In KPI Target and Ranges, for Ranges select **Actual value**

        e) In the Range table,

            (1) Click **Add**

            (2) Change the Name to **Low Range**, and the ID to **Low_Range**

            (3) A row is created in the Range table with a range name Low Range.

            (4) For this row, select the cell in the Start value column and a button is displayed. Click this button, then change the value to 0, and then click OK.

            (5) For this row, select the cell in the End value column and a button is displayed. Click this button, then change the value to 300, and then click OK.

        f) Now you have created one range called Low Range. Repeat the above step to create one more range:

            (1) High Range with start value 300 and end value 1000

        g) KPI Value – select '**Base this KPI on a metric and an aggregation function**'

        h) Under KPI Details, for Monitoring context, click Browse…, then select '**ClipsAndTacks MC**', then click OK

        i) Metric – click Browse…, then select **totalPrice**, then click OK

        j) Aggregation function – select **Average**.

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

▼ KPI Target and Ranges

Specify a target, which is an exact value for the KPI to achieve, or ranges against which to track the KPI, or both.

Target: `300`   Details...

Ranges: `Actual value`

Range name	Start value	End value
Low Range	0	< 300
High Range	300	< 1000

▼ KPI Definition

Specify how the value of the KPI is set.

KPI Value

Choose how the KPI will get its value:

⦿ Base this KPI on a metric and an aggregation function.

◯ Write an expression to calculate this KPI based on existing KPIs

KPI Details

Monitoring context: `ClipsAndTacks MC`   Browse...

Metric: `totalPrice`   Browse...

Aggregation function: `Average`

____ 22.   **(Optional)** To demonstrate the use of a counter, you can optionally use this section to create a counter which will be incremented if you ship the order (versus canceling the order). For every monitoring context, this counter will either be zero or one depending on whether the order is cancelled or shipped. Counters would be more useful in other scenarios – perhaps to count the number of times an iterated activity is executed.

__ a. In the Monitor Details Model navigation view, right click ClipsAndTacks MC, then select **New > Counter**. Enter these values:

1) Name :- **Ship Counter**

2) ID   :- **Ship_Counter**

3) For Counter Controls, click Add, then select **ClipsAndTacks MC → Ship Order to Customer Trigger**, click OK

4) Note that the Resulting Action defaults to **Add One**, which is correct.

__ b. Press **Ctrl-S** to save your work

Counter Details
Edit the details of the counter, which counts the number of occurrences of some situation or event.

ID: * Ship_Counter   Edit...

Name: Ship Counter

Description:

☐ This counter can be used for sorting

Counter Controls
Specify what causes the counter to change and what action is taken.

Trigger / Inbound Event	Resulting Action
Ship Order to Customer Trigger	Add One

_____ 23. **(Optional))** To demonstrate the use of a stopwatch, you can optionally use this section to create a timer which will measure the duration of the monitoring context. You might find this useful in the dashboard instances view to quickly see which monitoring contexts have not been terminated.

   __ a. In the model navigation view, right click ClipsAndTacks MC, then select **New → Stopwatch**. Enter these values:

   1) Name :- **Monitoring Context Timer**

   2) ID   :- **Monitoring_Context_Timer**

   3) For Stopwatch Controls, click Add, then select **ClipsAndTacks MC → New Order Trigger** and then click OK.

   4) Note that the default Resulting Action is **Start**

   5) For Stopwatch Controls, click Add, then select **ClipsAndTacks MC → Ship Order to Customer Trigger** and then click OK.

   6) Note that the default Resulting Action is Start, but you need to change it to **Stop** for this trigger. So click the second row in column Resulting Action. A drop down box is shown, so pick **Stop** in the list.

   7) For Stopwatch Controls, click Add, then select **ClipsAndTacks MC → Cancel Trigger** and then click OK.

   8) Note that the default Resulting Action is Start, but you need to change it to **Stop** for this trigger. So click the second row in column Resulting Action. A drop down box is shown, so pick **Stop** in the list.

   __ b. Press **Ctrl-S** to save your work.

Stopwatch Details

Edit the details of the stopwatch. which keeps track of elapsed time. If an accumulating stopwatch is given two or more start and stop times, the durations are added together to produce an accumulated time.

ID:	* Monitoring_Context_Timer	Edit...
Name:	Monitoring Context Timer	
Description:		

☐ This stopwatch is an accumulating stopwatch

☐ This stopwatch can be used for sorting

Stopwatch Controls

Specify what causes the stopwatch to change and what action is taken.

Trigger / Inbound Event	Resulting Action
New Order Trigger	Start
Ship Order to Customer Trigger	Stop
Cancel Trigger	Stop

_____ 24. Create a business situation event when the number of declined orders is greater than or equal to 3. You will use the built-in event definition ActionServicesEvent. This event contains a field called BusinessSituationName which is a required field for the outbound situation event. You will create a KPI that will track the total number of declined orders. Then you will create a trigger which is fired when the number of declined orders is greater than or equal to 3. Then you will define an outbound event which is fired by the trigger. In this outbound event, you will provide a value for the field BusinessSituationName which will be used later when configuring action manager in the server administrative console.

  __ a. Create a KPI for declined orders.

      1) Click the **KPI Model tab** for the ClipsAndTacks model.

      2) In the navigation view of the KPI Model, right click My KPI Context, then select **New > KPI**

          a) Name – Declined Order KPI

          b) ID - Declined_Order_KPI

      3) Enter these values:

          a) Type – Decimal

          b) Select 'Keep track of historical values for this KPI'

          c) In KPI Target and Ranges, for Target click Details…, then change the value to 3, then click OK

          d) In KPI Target and Ranges, for Ranges select Actual value

          e) In the Range table,

              (1) Click Add

(2) Change the Name to Low Range, and the ID to Low_Range

(3) A row is created in the Range table with a range name Low Range.

(4) For this row, select the cell in the Start value column and a button is displayed. Click this button, then change the value to 0, and then click OK.

(5) For this row, select the cell in the End value column and a button is displayed. Click this button, then change the value to 3, and then click OK.

f) Now you have created one range called Low Range. Repeat the above step to create one more range:

(1) High Range with start value 3 and end value 10

g) KPI Value – select 'Base this KPI on a metric and an aggregation function.'

h) Under KPI Details, for Monitoring context, click Browse…, then select 'ClipsAndTacks MC', then click OK

i) Metric – click Browse…, then select 'ClipsAndTacks Key', then click OK

j) Aggregation function – select Count.

k) In the Data Filter section for this KPI, click Add

l) In the dialog, navigate to ClipsAndTacks MC > Order Status, then click OK

m) In the row containing metric Order Status, make sure the operation defaults to 'equals'. Also, click the cell in the column Values, then enter this text (with quotation marks):

'Cancelled'

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

▼ KPI Definition

Specify how the value of the KPI is set.

KPI Value

Choose how the KPI will get its value:

⦿ Base this KPI on a metric and an aggregation function.

◯ Write an expression to calculate this KPI based on existing KPIs

KPI Details

Monitoring context:	＊ClipsAndTacks MC [Browse...]
Metric:	＊ClipsAndTacks Key [Browse...]
Aggregation function:	＊Count ▼
Use values from:	⦿ All model versions ◯ Only this version of the model

Time Filter

Select a time period over which the KPI should be calculated.

Metric: [   ] [Browse...]

Time period:

⦿ None   ◯ Repeating   ◯ Rolling   ◯ Fixed

Data Filter

Select the metrics that you want to use to determine what values to use in the calculation. For example, if you have a KPI called Average Price in London, you only want to use monitoring contexts where the value of the City metric is London.

Metric	Operator	Values	Case-sensitive	
A Order Status	equals	X+Y=? 'Cancelled'	☐	

__ b. Create a trigger to fire the outbound situation event.

> 1) In the navigation view of the KPI Model, right click My KPI Context, then select **New > Trigger**

>> a) Name – Declined Order Trigger

>> b) ID - Declined_Order_Trigger

> 2) Enter these values:

>> a) Under Trigger Sources, click Add.

>> b) Select Recurring wait time, then click OK

>> c) In the Source column you see the default wait time is 1 minute.

>> d) In Trigger Condition, enter this text:

>>> Declined_Order_KPI >= 3

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

ClipsAndTacks (XSD event definitions)

▼ Trigger Details
Edit the details of the trigger, which detects an occurrence and initiates an action in response.

ID: * Declined_Order_Trigger

Name: Declined Order Trigger

Description:

☐ Trigger is repeatable

▼ Trigger Sources
Specify the source of this trigger.

Source Type	Source
Recurring wait time	🕐 0 days 0 hours 1 minutes

▼ Trigger Condition
Specify the condition that determines whether the trigger will fire.

Declined_Order_KPI >= 3

__ c. Create an outbound situation event for declined orders.

    1) In the navigation view of the KPI Model, right click My KPI Context, then select **New > Outbound Event**

        a) Name – Declined Order Outbound Event

        b) ID - Declined_Order_Outbound_Event

        c) Select 'Configure this event to generate an alert in the dashboards'

        d) For trigger, click Browse…, then select My KPI Context > Declined Order Trigger, then click OK

    2) Enter these values:

        a) Notice that the extension name defaults to ActionServicesEvent

        b) In the Outbound Event Content table, expand Declined Order Trigger, expand Extended Data, then on the same row as BusinessSituationName, set Expression to (include the quotation marks):

        'Too many orders have been declined'

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

▼ **Outbound Event Details**
Edit the details of the outbound event, which is sent by the monitoring context. The type must be an event definition.

ID: * Declined_Order_Outbound_Event [Edit...]

Name: Declined Order Outbound Event

Description:

▼ **Event Type Details**
Specify the event type or the XML schemas that together describe the structure of this outbound event. You can specify an extension name, event parts, or both.

Extension name: ActionServicesEvent [Browse...] [Clear]

Event parts:

ID	Name	Type	Path

[Add] [Remove]

▼ **Outbound Event Content**
Specify the triggers that cause the event to be sent. Use the Expression column to specify the value for each event attribute when the event is sent.

Name	Type	Expression
⊟ ➡ Declined Order Trigger		
Property Data		
⊟ Extended Data		
BusinessSituationName	A⁻ string	ˣ⁺ʸ⁼? 'Too many orders have been declined'

_____ 25. Create a business situation event when the order fulfillment duration is greater than 3 days. First you will create an event definition for the outbound situation event. You will create a field called BusinessSituationName which is a required field for the outbound situation event, and you will create another field for the average order processing time which will eventually be placed into the alert body. You do not need to create a KPI since there is already a KPI containing the average processing time. You will create a trigger which is fired when the average processing time is greater than 3 days. Then you will define an outbound event which is fired by the trigger. In this outbound event, you will provide a value for the field BusinessSituationName which will be used later when configuring action manager in the server administrative console, and you will populate the field on the event containing the average order processing time.

    __ a. Create an event definition for average order processing time.

        1) In Project Explorer, right click ClipsAndTacks and select **New > Event Definition…(cbe)**

        2) For file name, enter LateAverageOrderShippedEvent.cbe

        3) Click Finish

        4) The Event Definition Editor for LateAverageOrderShippedEvent opens.

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

6) On the **Select Event Definition** Dialog double click **event**.

7) **Event** is now shown as the parent of **LateAverageOrderShippedEvent**

8) On the event definition, click the icon for Add Extended Data ⊞ . This adds a row to the Extended Data table.

9) For the new data element, change the Extended Data name from 'data1' to 'BusinessSituationName' by clicking on data1 and typing the new name.

10) For the new element, change the type to string. Do this by clicking on 'noValue' and then you are given a drop down box.

11) On the event definition, click the icon for Add Extended Data. This adds a second row to the Extended Data table.

12) For the second data element, change the Extended Data name to AverageOrderProcessingTime

13) For the second element, change the type to string.

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

Name*	LateAverageOrderShippedEvent	
Parent*	event	
	Property	
	Extended Data	Type
	BusinessSituationName	string
	AverageOrderProcessingTime	string

__ b. Create a trigger to fire the outbound situation event.

1) In the navigation view of the KPI Model, right click My KPI Context, then select **New > Trigger**

a) Name – Order Fulfillment Timer Trigger

b) ID - Order_Fulfillment_Timer_Trigger

2) Enter these values:

a) Under Trigger Sources, click Add.

b) Select Recurring wait time, then click OK

c) In the Source column you see the default wait time is one minute.

d) In Trigger Condition, enter this text:

Average_Order_Fulfillment_KPI_August_2006 ge dayTimeDuration ('P3DT1H')

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

▼ **Trigger Details**

Edit the details of the trigger, which detects an occurrence and initiates an action in response.

ID: * Order_Fulfillment_Timer_Trigger

Name: Order Fulfillment Timer Trigger

Description:

☐ Trigger is repeatable

▼ **Trigger Sources**

Specify the source of this trigger.

Source Type	Source
Recurring wait time	🕐 0 days 0 hours 1 minutes

▼ **Trigger Condition**

Specify the condition that determines whether the trigger will fire.

Average_Order_Fulfillment_KPI_August_2006 ge dayTimeDuration('P3DT1H')

___ c. Create an outbound situation event for average order processing time.

   1) In the navigation view of the KPI Model, right click My KPI Context, then select **New > Outbound Event**

      a) Name – Order Fulfillment Outbound Event

      b) ID - Order_Fulfillment_Outbound_Event

      c) Select 'Configure this event to generate an alert in the dashboards'

      d) For trigger, click Browse…, then select My KPI Context > Order Fulfillment Timer Trigger, then click OK

   2) Enter these values:

      a) For extension name, click Browse…, then select ClipsAndTacks > LateAverageOrderShippedEvent.cbe > LateAverageOrderShippedEvent, then click OK

      b) In the Outbound Event Content table, expand Order Fulfillment Timer Trigger, expand Extended Data, then on the same row as BusinessSituationName, set Expression to (include the quotation marks):

      'Average shipment is too late'

c) In the Outbound Event Content table, on the same row as
AverageOrderProcessingTime, set Expression to:

xs:string(Average_Order_Fulfillment_KPI_August_2006 div
xs:dayTimeDuration('P1D'))

Note: This results in a time unit of days, since you are dividing the order fulfillment duration by a constant duration of one day.

---

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

▼ **Outbound Event Details**
Edit the details of the outbound event, which is sent by the monitoring context. The type must be an event definition.

| ID: | * | Order_Fulfillment_Outbound_Event | | Edit... |

| Name: | Order Fulfillment Outbound Event |

| Description: | |

▼ **Event Type Details**
Specify the event type or the XML schemas that together describe the structure of this outbound event. You can specify an extension name, event parts, or both.

Extension name: LateAverageOrderShippedEvent | Browse... | Clear

Event parts:	ID	Name	Type	Path

Add | Remove

▼ **Outbound Event Content**
Specify the triggers that cause the event to be sent. Use the Expression column to specify the value for each event attribute when the event is sent.

Name	Type	Expression
Order Fulfillment Timer Trigger		
Property Data		
Extended Data		
BusinessSituationName	string	'Average shipment is too late'
AverageOrderProcessing	string	xs:string(Average_Order_Fulfillment_KPI_August_2006 div xs:d

____ 26. 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 2: 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.

____ 27. In Project Explorer, expand **ClipsAndTacks → Monitor models → ClipsAndTacks.mm**. Right click over **ClipsAndTacks.mm** and then select **Generate Monitor JEE Projects** from the pop-up menu

____ 28. Select **Finish**.

____ 29. 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.

____ 30. 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.

Monitoring Flow	Properties	Problems	Servers ⊠	Server Logs	Console	Progress

Server ▲	State	Status
WebSphere Business Monitor Server v7.0 on WebSphere Process Server	Started	Synchronized
WebSphere Process Server v7.0 at localhost	Stopped	
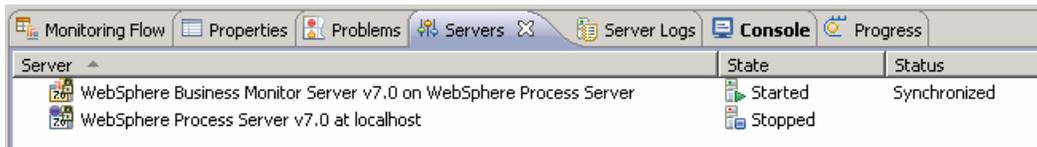
____ 31. Right click in the servers view, then select **Add and Remove Projects….**

____ 32. Click **Add** to move the ClipsAndTacksApplication from the list of available projects to the list of configured projects.

Add and Remove Projects

Add and Remove Projects

Modify the projects that are configured on the server

Move projects to the right to configure them on the server

Available projects:

Configured projects:

⊞ ClipsAndTacksApplication

Add >

< Remove

Add All >>

<< Remove All

< Back	Next >	Finish	Cancel
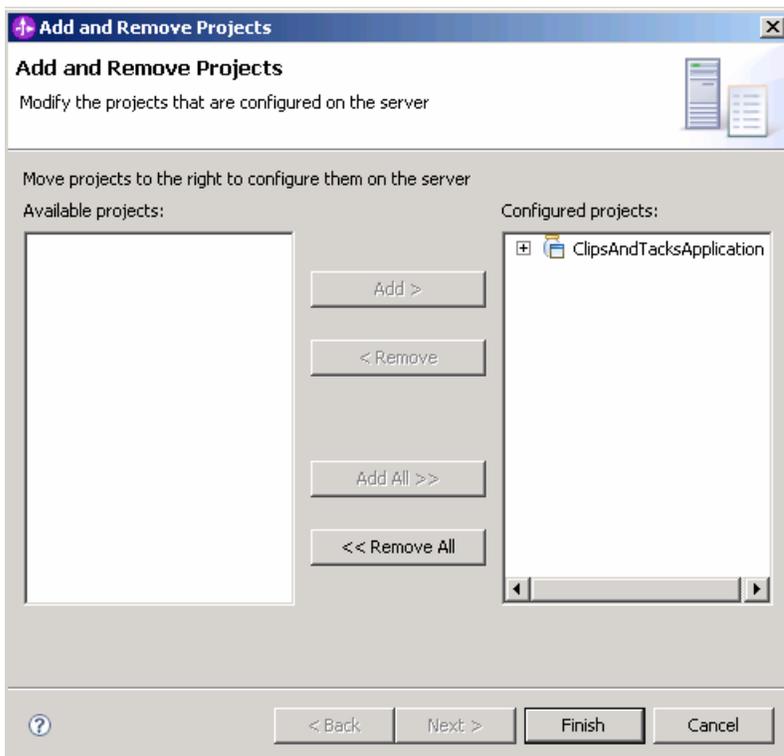
____ 33.   Click **Finish**.

____ 34.   A progress message is displayed in the lower right corner of the window.

> Publishing to WebSph......: (14%)
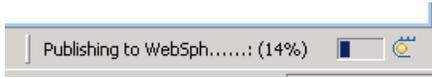
____ 35.   Check the messages in the console view. You should see the following message when the
application has been started:

> Application started: ClipsAndTacksApplication

____ 36.   In the servers view, right click, then select **Administration > Run administrative console**. You
should see it open in a separate tab.

____ 37.   It will prompt you for user ID and password. Enter 'admin' without the quotation marks for user ID,
then enter 'admin' without the quotation marks for password. Click **Log in**

____ 38.   Click **Applications > Monitor Models**. The application should show green status if it started
successfully.

Monitor Models

Monitor Models

Use this page to manage all versions of monitor models and their associated applications. To start or stop a version of a monitor model, you must start or stop
the associated application. All models are initially added to the root resource group and may not be visible by its intended dashboard users. Use the Monitor
data security panel to assign permission to the models.

⊞ Preferences

| Start | Stop | Install |

Select	Model ◇	Version	Deployment ◇	Application ◇	Data Security	Status ↻
☐	ClipsAndTacks	2007-12-07T12:16:40	OK	ClipsAndTacksApplication	Members assigned	➡
☐	GlobalHTMM	2007-06-18T09:54:38	OK	IBM_WBM_HUMAN_TASK_MONITOR_MODEL	Members assigned	➡
☐	Global_Process_Monitor	2009-11-	OK	IBM_WBM_GLOBAL_PROCESS_MONITOR	Members	➡

____ 39.   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.

____ 40.   Check the server log to ensure there are no problems. You can check this in the console view.

____ 41.   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.

*ClipsAndTacks (XSD event definitions)*

Part 3: 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. When you configure the notification template, you can specify a dashboard login rather than a user registry.

In this section, you will use the administrative console to configure the alerts. However, you could also create business user alerts using the Alert Manager widget in the dashboard. In a production environment, an end user could use the alert manager widget to manage the business user alerts, however, an IT administrator would manage the modeled alerts in the administrative console.

_____ 1.   Verify the federated repository service provider URL.

   __ a. In the administrative console, navigate to Applications > Monitor Services > Monitor Action Services > Configuration > Federated Repositories.

   __ b. In the Service provider URL field, type the URL of the federated repositories server that is used to connect to the user registry. For a stand-alone server, this value might be `localhost:2809`. For a network deployment environment, this field must be set to the deployment manager host name plus the deployment manager BOOTSTRAP_ADDRESS port (separated by a colon). To determine the bootstrap port, in the WebSphere Application Server administrative console, click Servers > Server Types > WebSphere application servers > server1. Under Communications, click Ports.

   __ c. To save the settings you entered, click Apply or OK.

   __ d. To make these changes effective, stop and restart the WebSphere Business Monitor server.

_____ 2.   Add a template for declined order alerts.

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

   __ b. Click **New.**

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

   __ d. Select **Dashboard Alert.**

   __ e. Select **User id.**

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

   Note: The user **admin** is the default username configured for Monitor Test Environment profile

   __ g. Enter a subject.

   __ h. Enter the body.

* Template name

AlertDeclined

Description

Default action service type

- ● Dashboard Alert
- ○ Cell phone
- ○ Email
- ○ Pager

'To' query type

- ○ Federated repositories query
- ○ LDAP query
- ○ Email address
- ● User id

To

admin

Query base

Subject

Declined Orders

**Body**

Too many orders have been declined.|

__ i. Click **OK**.

____ 3.   Add a template for order processing time alerts.

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

__ b. Click **New.**

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

__ d. Select **Dashboard Alert**

__ e. Select **User id**

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

   Note: The user **admin** is the default username configured for Monitor Test Environment profile

__ g. Enter a subject.

ClipsAndTacks (XSD event definitions)

__ 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 %AverageOrderProcessingTime% in the body. For example:

The average order processing time is %AverageOrderProcessingTime% days.

__ i. Click **OK**.

____ 4.   Add the binding from the situation event to the action type for declined orders.

__ a. In the admin console, navigate to **Applications > Monitor Services > 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:

Too many orders have been declined

ClipsAndTacks (XSD event definitions)

__ d. This should 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 Declined Order Outbound Event:

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

__ f. Click **Add**.

ClipsAndTacks (XSD event definitions)

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

__ 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**.

____ 5.   Add the binding from the situation event to the action type for order processing time.

__ a. In the admin console, navigate to **Applications > Monitor Services > 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:

Average shipment is too late

__ d. . This should 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 **AlertLate**, then click **OK**.

__ h. Click **OK**.

____ 6. In the admin console, navigate to **Applications > Monitor Services > Monitor Action Services > Installed Situation Event Bindings.** You should see two bindings as follows:

ClipsAndTacks (XSD event definitions)

Part 4: Run events to exercise the model

Rather than installing a application to actually 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.

_____ 1. Update BatchCBEWriter61.bat to point WAS_HOME to the monitor server home, for example 'set WAS_HOME=C:\IBM\WebSphere\MonServer'. 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.

_____ 2. 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\MonServer\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\qmwps\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`

_____ 3. 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=allXSDevents.xml

__ b. Enter the user and password for the server.

_____ 5. When you run BatchCBEWriter61, you should see results such as:

```
Command Prompt                                                          _ □ ×

C:\Labfiles70\BatchCBEWriter>batchcbewriter61 -Dsource.filename=allXSDevents.xml

Getting CBEs.
Getting Emitter.
Removing GlobalInstanceIds.
Setting missing values.
Changing Instance Ids.
Updating timestamps.
Validating CBEs.
Sending CBEs.
START=18:40:03.671
Sending cbe[10].
Sending cbe[20].
Sending cbe[30].
Sending cbe[40].
Sending cbe[50].
Sending cbe[60].
END=18:40:07.140
TotalTime=3469 milliseconds.

C:\Labfiles70\BatchCBEWriter>
```

ClipsAndTacks (XSD event definitions)

Part 5: Create a dashboard

In this section you will configure a dashboard in business space.

____ 1. 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.

ClipsAndTacks (XSD event definitions)

____ g. On the new space, click the Operational tab.

_____ 2.   Use the Alerts widget to view the alerts.

____ a. On this page, you see the Alerts widget, and you should see alerts listed since the model processed 3 or more cancelled orders, and the average order processing time is greater than 3 days.

Alerts

Mark Read	Mark Unread	Forward Alert	Remove

☐	Subject	Date and Time
●	Order processing time	December 7, 2009 10:53:16 AM
●	Declined Orders	December 7, 2009 10:53:16 AM
	Fee compliance: Loan 091220	November 16, 2009 4:52:49 PM

____ b. You can click on an alert in the list, then you will see a pop-up showing the details of the alert.

Subject		Dat
Order processing time		De
Declined Orders		De
Fee compliance		No
Fee compliance		No
Fee compliance		No

December 7, 2009 10:53:16 AM   ✕
Subject
Order processing time
Business situation name
Average shipment is too late
Comments
The average order processing time is 4.34602622685185 days.

_____ 3.   Use the Instances widget to view the monitored instances.

Edit Page ⌄

____ a. Click the 'Edit Page' link to enter edit mode.

____ b. To configure the Instances widget, hover the mouse over the right corner of the widget

and then click the down arrow. Select 'Edit Settings…'.

▤ Edit Settings...
▢ Rename...

____ c. Click the **Show/Hide** tab, and select monitoring context 'ClipsAndTacks MC'.
ClipsAndTacks(Across all versions)
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. Then click **OK**. You should see a list of monitoring context instances for the events that you just processed.

Instances   ▼ | _ □

ⓘ   [Export ...]   ⊞ Search for: [   ] [🔍] [Reset]

city	ClipsAndTacks Key	COMPLETED	country	CreationTime	Monitoring Context Timer	Ord
Raleigh o2		★	USA	December 7, 2009 10:53:03 AM	0 s	Augu 4:14
Mexico City o3			Mexico	December 7, 2009 10:53:03 AM	51 m, 37 s	
Raleigh o4			USA	December 7, 2009 10:53:03 AM	51 m, 37 s	
Toronto o5			Canada	December 7, 2009 10:53:03 AM	51 m, 37 s	
Raleigh o6		★	USA	December 7, 2009 10:53:03 AM	0 s	Augu 3:20
Toronto o7		★	Canada	December 7, 2009 10:53:03 AM	0 s	Augu 4:14
Mexico City o8			Mexico	December 7, 2009 10:53:03 AM	51 m, 37 s	
Raleigh o9			USA	December 7, 2009 10:53:03 AM	51 m, 37 s	
Toronto o10			Canada	December 7, 2009 10:53:03 AM	51 m, 37 s	
Raleigh o11		★	USA	December 7, 2009 10:53:03 AM	0 s	Augu 3:20

◀ |▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓ | ▶

[1 - 10] 16 ▶ ▶|

__ e. Click 'Finish Editing' to save your changes and close the edit menus.

`Finish Editing ⌃`   `Save`

What you did in this exercise

In the lab, you created a monitor model using Rational Application Developer or WebSphere Integration Developer.

Then you published the model to the monitor server.

You also configured action manager to create alerts based on business situation events.

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

You configured dashboards and viewed monitored data.

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 project interchange file into Rational Application Developer or WebSphere Integration Developer. After importing the project then you can proceed to the section to publish the model to the server.

____ 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\ClipsAndTacksXSD**

 __ b. Close the Welcome tab

 __ c. By default, you are in the Business Integration perspective. Open the Business Monitoring perspective. Select **Window > Open Perspective > Other > Show all > Business Monitoring**.

 __ d. If it asks you to Confirm Enablement, then click **OK**.

____ 2. Import the project interchange file.

 __ a. Right click in the Project Explorer view, and then select **Import…**

 __ b. Select **Other > Project interchange,** click **Next**.

 __ c. Browse to the location containing the files, for example, **C:\Labfiles70\ClipsAndTacksXSD**

 __ d. Select **ClipsAndTacksXSD_Solution_PI.zip**

 __ e. Click **Select All**

 __ f. Click **Finish**.

____ 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.

____ 4. Now you may proceed to the section to publish the model to the server.

ClipsAndTacks (XSD event definitions)