

IBM WEBSHERE CUSTOM EVENT MONITORING – LAB EXERCISE

WebSphere custom event monitoring – JSP emitter

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What this exercise is about

The objective of this lab is to demonstrate how to submit a common base event to the common event infrastructure using the event emitter API's. You will learn how import a sample Java server page (JSP) which uses the API's for generating events. You will also deploy the application, test it and verify that the events are being created.

WebSphere Business Monitor supports two different event formats, either the common base event-style event or the XSD style event. In the common base event, the payload is stored in the extended data elements in the event. The XSD event is a newer style where the payload is stored in XML format in the xs:any slot of the event.

There are solution files provided for both styles of events. In this lab, the instructions work the same for either style.

Lab requirements

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

- WebSphere Integration Developer V6.2 with embedded WebSphere Process Server test environment

What you should be able to do

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

- Import the sample JSP emitter and configure it
- Run the JSP emitter to create events
- Use the common base event browser to view the events

Part 1: Setup the project environment

In this section, you will start WebSphere Integration Developer with a new workspace to hold the work you will do in this lab.

- ___ 1. Select **Start > Programs > IBM WebSphere Integration Developer > IBM WebSphere Integration Developer V6.2 > WebSphere Integration Developer V6.2**.
 - ___ a. Enter the name for your workspace, for example C:\workspaces\JspEmitter.
- ___ 2. Select the **Web** perspective.
 - ___ a. The Business Integration perspective shows up by default when opening a new workspace.
 - ___ b. From the main menu, select **Windows > Open Perspective > Other....**
 - ___ c. Select **Web** perspective from the list. If you do not see the perspective, select the **Show all** check box.
 - ___ d. Click **OK**.

Part 2: Import the JSP file

In this part of the lab, you will create a new dynamic Web project named **cemWeb** (custom event monitoring) and enterprise application named **cemWebEAR**. You will import a sample Java Server Page named **cemJSP.jsp** to the Web project. Also you will import **login.html** and **loginerror.html** files to the Web project.

You can import either of the two supplied solutions, the common base event style solution or the XSD style solution.

- ___ 1. Create a dynamic Web project.
 - ___ a. Right click in the **Enterprise Explorer**.
 - ___ b. Select **New**
 - ___ c. Select **Dynamic Web Project**.
 - ___ d. In the following panel, enter the following information:
 - Project Name : **cemWeb**
 - Target Runtime : **WebSphere Process Server V6.2**
 - Select the check box for 'Add project to an EAR'
 - EAR Project Name : **cemWebEAR**

New Dynamic Web Project

Dynamic Web Project
Create a standalone Dynamic Web project or add it to a new or existing Enterprise Application.

Project name:

Contents
 Use default
 Directory:

Target Runtime

Dynamic Web Module version

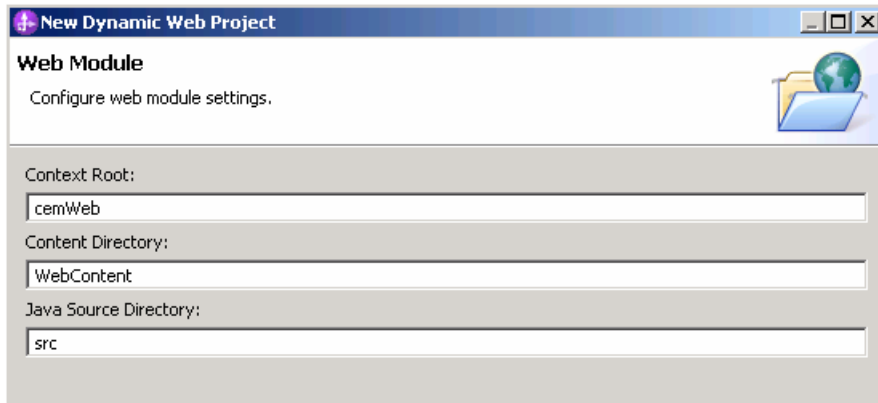
Configuration

 A good starting point for working with WebSphere ESB Server v6.2 runtime. Additional facets can later

EAR Membership
 Add project to an EAR
 EAR Project Name:

- ___ e. Click **Next**

- ___ f. In the following, '**Web Module**' panel, make a note of the '**Context Root**'. By default the context root named based on the name of the Web module. You can modify it to your convenience at this point.

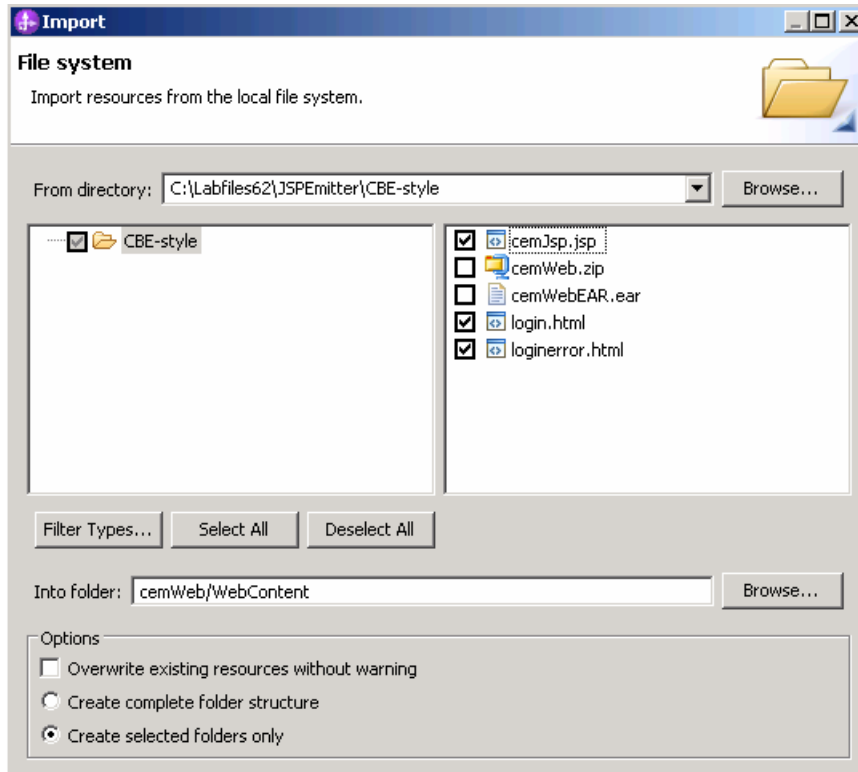


- ___ g. Click **Finish**.

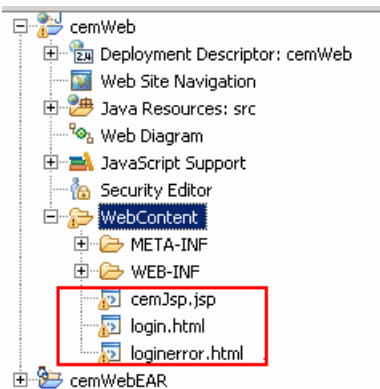
Note: At this point, you should see two projects created in the Enterprise Explorer view, which are cemWeb and cemWebEAR.

- ___ 2. Import the sample Java Server Page file
 - ___ a. From the Enterprise Explorer view, navigate to **cemWeb → Web Content**
 - ___ b. Right-click the **Web Content** node and select **Import** from the pop-up menu.
 - ___ c. On the **Import** wizard, expand **General** and select **File System**
 - ___ d. Click **Next**.
 - ___ e. Specify the location where the JSP, login.html and loginerror.html files are located. For example, C:\LabFiles62\JSPemitter. Within JSPemitter there are two folders, so you can select either of the two supplied solutions, the common base event style solution or the XSD style solution. For example, to select the common base event style solution:

The image shows a text input field labeled 'From directory:' with the path 'C:\Labfiles62\JSPemitter\CBE-style' entered.
 - ___ f. Select the check boxes next to **cemJsp.jsp**, **login.html**, **loginerror.html**. Ensure the **Into folder** parameter is set to '**cemWebWebContent**'



- ___ g. Click **Finish**.
- ___ h. In the enterprise explorer, check to see if the files that you imported are listed under **CemWeb > Web Contents**.

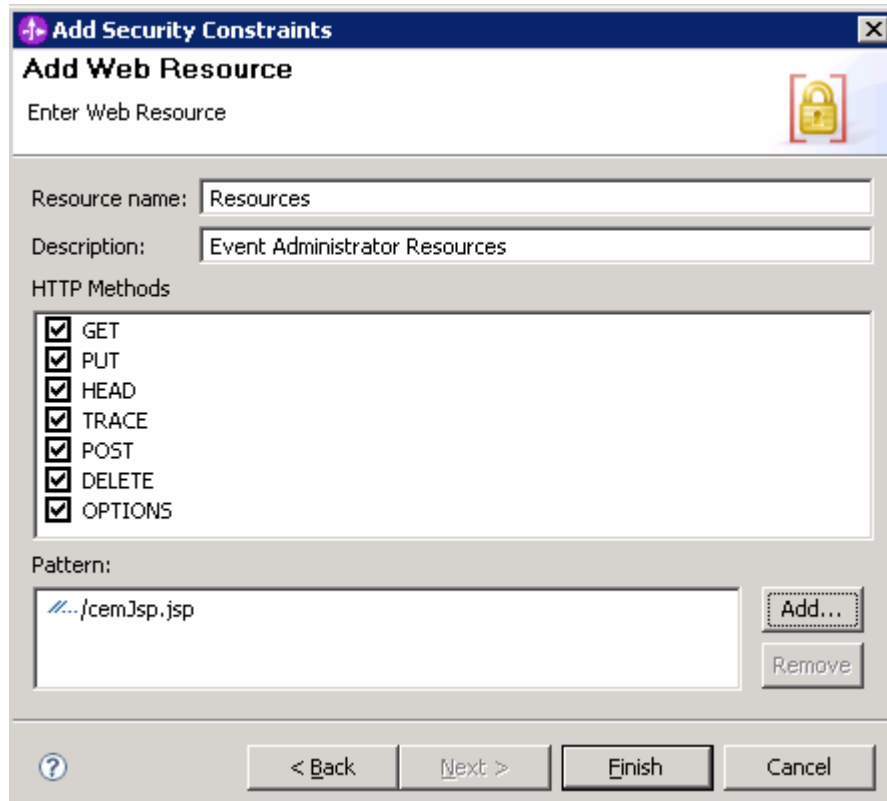


- ___ i. Double-click **cemJsp.jsp** to open it in the editor to review the Java code. The JSP displays a login screen, then it displays an input screen for entering data values for the customer order event. You will see that the event is created using the EventFactory class and the event is submitted to CEI using the EmitterFactory class.
- ___ j. Check the problems view for errors. You should not see any errors at this point, but you can ignore any warnings if you see them.

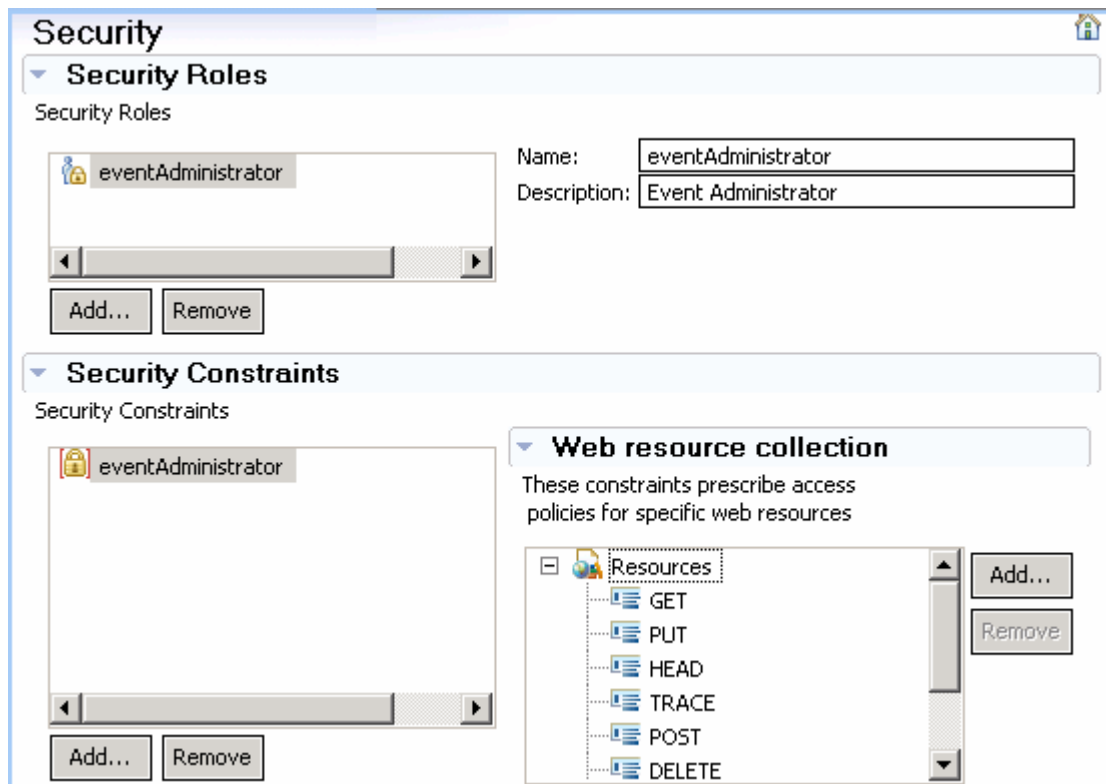
Part 3: Configure the deployment descriptors

In this part of the lab, you will configure the Web and application deployment descriptors for WebSphere security.

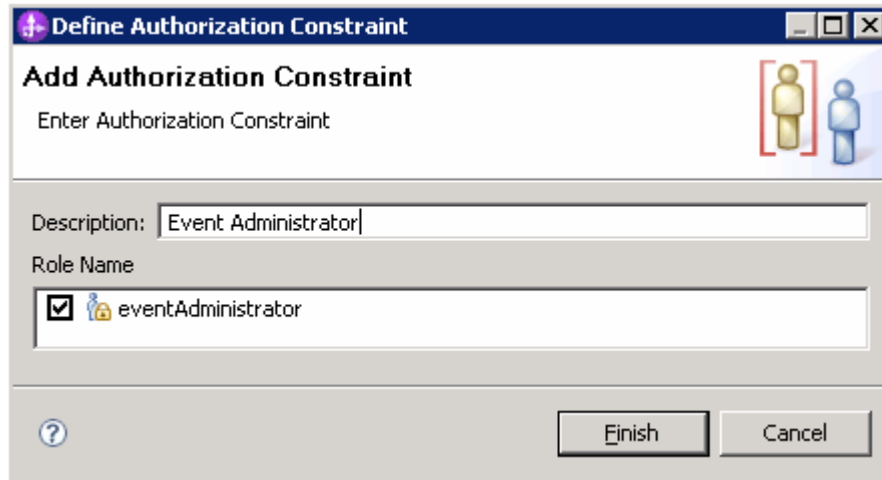
- ___ 1. In the enterprise explorer, expand **cemWeb** and double click '**Deployment Descriptor: cemWeb**' to open it in the editor
- ___ 2. Add security roles and constraints
 - ___ a. In the Web Deployment Descriptor editor, select the '**Security**' tab
 - ___ b. Click the '**Add**' button under '**Security Roles**' section. The '**Add Security Role**' panel opens
 - ___ c. Enter the following information:
 - Name : **eventAdministrator**
 - Description : **Event Administrator**
 - ___ d. Click **OK**
 - ___ e. Click the '**Add**' button under '**Security Constraints**' section. The '**Add Security Constraints**' panel opens
 - ___ f. Enter the following information:
 - Constraint Name : **eventAdministrator**
 - ___ g. Click **Next**
 - ___ h. In the following panel enter the following information:
 - Resource Name : **Resources**
 - Description : **Event Administrator Resources**
 - Select all of the options listed under '**HTTP Methods**'
 - Click the '**Add**' button for '**Pattern**'. Enter '**/cemJsp.jsp**' in the pattern dialog and click **OK**



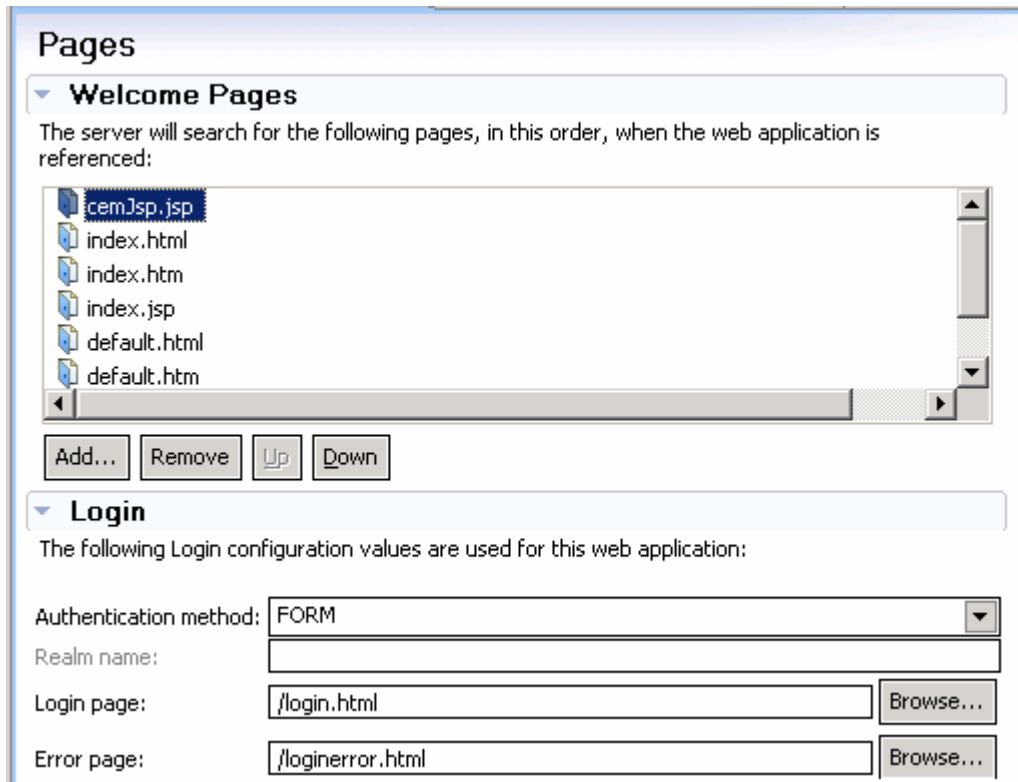
___ i. Click **Finish**. The Security Roles and Constraints information you entered must look like in the screen capture shown below:



- ___ j. Click **Add** button under the **Authorized Roles** section
- ___ k. In the **Add Authorization Constraint** panel, enter the following:
 - Description : **Event Administrator**
 - Select the check box for the **eventAdministrator** role name



- ___ l. Click **Finish**
 - ___ m. Save the changes (Ctrl + S)
- ___ 3. Configure pages for the dynamic Web project
- ___ a. In the Web Deployment Descriptor editor, select the **'Pages'** tab
 - ___ b. Under the **'Welcome Pages'** section click the **'Add'** button. The **'Add a Welcome File'** panel opens.
 - ___ c. In the **'Add a Welcome File'** panel, enter **cemJsp.jsp** as the **'Welcome file name'** and click **Finish**
 - ___ d. Now select cemJsp.jsp from the welcome pages list and then click the **'UP'** button several times to move this file to the top of the list
 - ___ e. Enter the following information under the **'Login'** section
 - Authentication Method : **FORM** (Select from drop down list)
 - Login page : **/login.html** (Click the **Browse** and select)
 - Error page : **/loginerror.html** (Click the **Browse** and select)



__ f. Save the changes (Ctrl + S)

___ 4. In the enterprise explorer, expand **cemWebEAR** and double click '**Deployment Descriptor: cemWebEAR**' to open it in the editor

___ 5. Configure security roles and WebSphere bindings

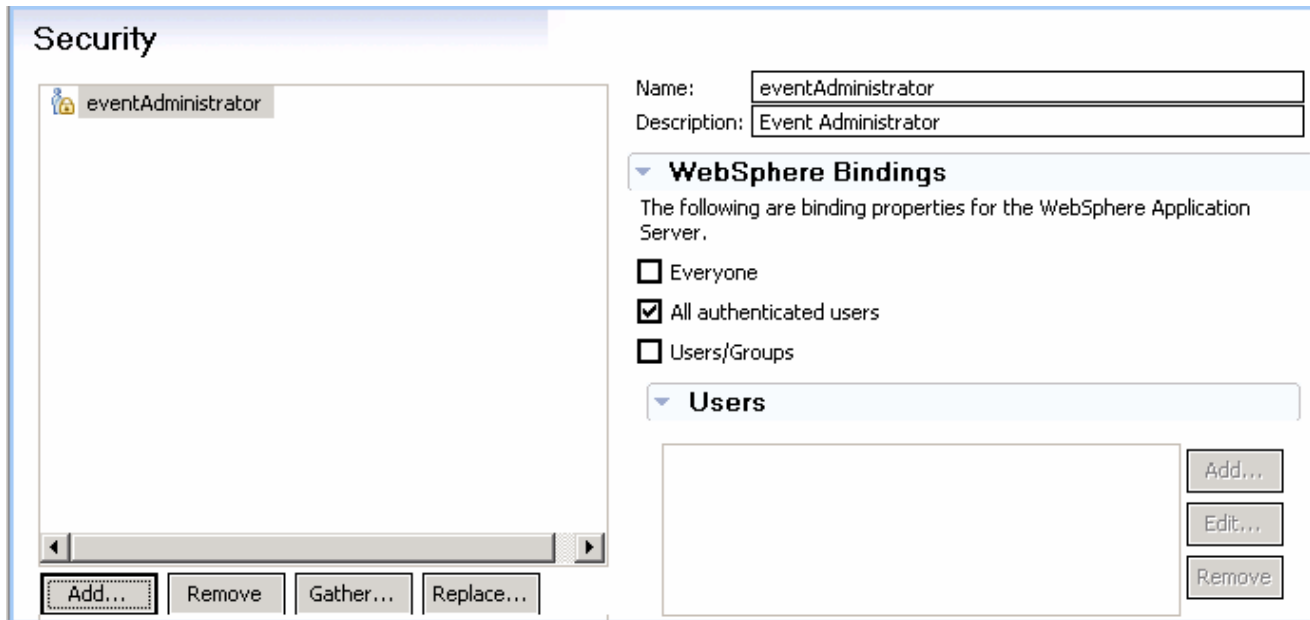
__ a. In the Application Deployment Descriptor editor, select the '**Security**' tab

__ b. Click the '**Add**' button under the '**Security**' section. The '**Add Security Role**' panel opens

__ c. Enter the following information:

- Name : **eventAdministrator**
- Description : Event Administrator

__ d. Under the '**WebSphere Bindings**' section, select the check box next to '**All authenticated users**'



___ e. Save the changes (Ctrl + S)

___ 6. At this time you should not see any errors in the problems view. Some warnings may be there but you can ignore them.

Part 4: Test the application

- ___ 1. Check the availability of WebSphere Process Server in the Servers view.
 - ___ a. Select **Window > Show View > Servers** view from the main menu. If it does not appear, click **Other...**, expand **Server** in the **Show view** windows, and finally select **Servers**.
 - ___ b. Open the **Servers** view by clicking the **Servers** tab.
- ___ 2. Start the server.
 - ___ a. Switch to the **Servers** view, and verify the status of the server you want to use.
 - ___ b. If the server is already started, you can skip the next three steps (c, d and e) and jump to section 4, otherwise, right-click the **WebSphere Process Server v6.2** in the Servers view.
 - ___ c. Click **Start** from the pop-up menu.
- ___ 3. Add the **cemWebEAR** project to the server.
 - ___ a. Switch to the **Servers** view.
 - ___ b. Right-click **WebSphere Process Server v6.2** and select **Add and remove project**.
 - ___ c. Select **cemWebEAR** project in the left panel of the **Add and Remove projects** window.
 - ___ d. Click **Add**, which adds the **cemWebEAR** project to the **Configured projects** panel for testing.
 - ___ e. Click **Finish**.

Note: You should check the **Console** or **Problems** view, and see if any exception occurs. If so, check logs such as SystemOut.log, SystemErr.log, activity.log and startServer.log in the server profile directory.

- ___ 4. Run the JSP page from the WebSphere Integration Developer test environment.
 - ___ a. In the enterprise explorer, navigate to cemWeb > WebContent > then right-click **cemJsp.jsp**.
 - ___ b. Select **Run As> Run on Server...**
 - ___ c. From the Server selection window, select the server that was configured, for example, **WebSphere Process Server v6.2**
 - ___ d. Click **Finish**, which launches an embedded Web browser and displays the login.html page if WebSphere Process Server security is enabled.
 - ___ e. You can also open your own browser with http://<your_host>:<port_number>/cemWeb/cemJsp.jsp for example, <http://localhost:9080/cemWeb/cemJsp.jsp>.

Customer Event Order Test - Login

https://localhost:9443/cemWeb/login.html

Welcome, Customer Event Order Test..Login!

Please supply a userid and password below:

Userid:

Password:

- ___ f. Enter the user name and password. Click **Login**
- ___ g. Fill in all fields on the form. Make sure you enter numeric characters in the quantity and order price fields, otherwise you will receive an exception if typing input other than numeric characters.
- ___ h. Click **Submit**.

Customer Event Order Test

Customer Name:

Country:

City:

Product Number:

Order Number:

Quantity: **Input a number**

Order Price: **Input a number**

Event Type:

- ___ 5. Check the status of the event creation.
 - ___ a. If you see the following page, the event submission is successful.

Customer Event Order Test (XSD style events)

Create a new event The create event was successful

CreationTime	2009-08-05T19:31:23.250Z
EventType	CREATE
CustomerName	A.J. Harper
Country	USA
City	Atlanta
ProductNumber	JS-2008
OrderNumber	670021
Quantity	5
OrderPrice	599

___ b. If you want to submit another request, click the link on the page.

___ 6. Review the Event in the common base event browser.

___ a. Right click the server in the servers view and select Launch > Common Base event browser, or launch a Web browser and enter the following URL:
http://localhost:<yourPort>/ibm/console/cbebrower

___ b. Click **Get Events** link in the top-left corner of the common base event browser. To reduce the number of events that are retrieved, enter today's date for the **from creation date** and the **to creation date** in the event filter properties. You will also need to enter an appropriate time range in the fields **from creation time** and **to creation time**.

___ c. Click **Get Events** button at the bottom of the common base event browser page.

Note: Keep in mind that there are two items named **Get Events** in the common base event browser, "Get Events" tab and "Get Events" button. You must click **Get Events** tab first, then click **Get Events** button if you want to view the events in the common base event browser.

___ d. To view the event submitted, select **All Events** under the Event Views in the left panel. You can see an event you just submitted by matching the timestamp or other common base event attributes.

___ e. To view the details of an event, click the hyper link for the event. You should be able to find several attributes that match your input when submitting this event.

CBE style events

The customer order fields are stored as extended data elements:

Common Base Event Browser - Microsoft Internet Explorer

Address: http://localhost:9060/ibm/console/cbebrowser/events/

WebSphere software
Common Base Event Browser

User ID : admin

Get Events | Logout | Help

2008-02-18T05:04:43.171Z CustomerOrder

extendedDataElement / EventType	CREATE
extendedDataElement / CustomerName	A.J. Harper
extendedDataElement / Country	USA
extendedDataElement / City	Atlanta
extendedDataElement / ProductNumber	JS-2008
extendedDataElement / OrderNumber	670021
extendedDataElement / Quantity	5
extendedDataElement / OrderPrice	599.0
reporterComponentId	
sourceComponentId / component	WPS#Platform 6.1 [ND 6.1.0.13 cf130745.06] [WBI
sourceComponentId / subComponent	J2EE_Application
sourceComponentId / componentIdType	ProductName

Event Views

- All Events
- BPEL Process Events
- User Data Events
- Server Events

Number of events: 4

XSD style events

The customer order fields are stored as an XML string in the 'any' section of the event:

The screenshot shows the WebSphere software Common Base Event Browser interface. The top navigation bar includes 'Get Events', 'Logout', and 'Help' menus, with the user ID 'admin' displayed on the right. A sidebar on the left lists 'Event Views' with options for 'All Events', 'BPEL Process Events', 'User Data Events', and 'Server Events'. The main area displays a table of events, with the selected event (ID: 2009-08-05T19:31:23.250Z) expanded to show its details. A red arrow points to the 'any' section of the event data, which contains an XML string representing customer order information.

sourceComponentId / componentId	Type
sourceComponentId / instancelId	JSP Emitter
sourceComponentId / application	JSP Emitter
sourceComponentId / executionEnvironment	
sourceComponentId / location	aimcp
sourceComponentId / locationType	IPV4
sourceComponentId / processId	
sourceComponentId / threadId	
sourceComponentId / componentType	Custom Emitter
msgDataElement	
situation / categoryName	AvailableSituation
situation / situationType / reasoningScope	EXTERNAL
situation / AvailableSituation / operationDisposition	STARTABLE
situation / AvailableSituation / availabilityDisposition	NOT AVAILABLE
situation / AvailableSituation / processingDisposition	FUNCTION_PROCESS
any	<cust:CustomerOrder xmlns:cust="http://www.example.org/customer/order" xmlns:xsi="http://www

What you did in this exercise

In the lab, you imported the JSP to a new workspace, configured it and published it to the test server.

Then you submitted events and verified that the events were submitted using the common base event browser.

This page is left intentionally blank.