

IBM BUSINESS MONITOR 7.5 – LAB EXERCISE

IBM Business Monitor V7.5

Script adapter lab

What this exercise is about	1
Lab requirements	1
What you should be able to do	1
Introduction	2
Part 1: Import the process and monitor model into IBM Integration Designer	3
Part 2: Generate and publish the model to the server	5
Part 3: Run events to exercise the model	6
Part 4: Create a dashboard in business space	8
What you did in this exercise	16

What this exercise is about

The objective of this lab is to show you how to use the script adapter widget in the dashboard to receive an input event and generate a custom output event.

This lab will provide solutions that you can import into IBM Integration Designer, so then you can concentrate on using the script adapter in the dashboards.

Lab requirements

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

- IBM Integration Designer V7.5.
- IBM Business Monitor V7.5 – Toolkit Installation including the Monitor Model editor and Monitor Server

What you should be able to do

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

- Use IBM Integration Designer to install the process and the monitor model, and deploy them to the server.
- Define a business space dashboard to view monitored instance data.
- Create a script in the script adapter widget to generate a custom output event.

- Use the custom output event from the script adapter to display location information in the Google gadget.
-

Introduction

In this lab you will learn how to use the script adapter widget to receive an input event and generate a custom output event. This capability makes it easy to link two widgets together. After creating the script you will be able to click on a monitored instance in the instances widget, and then that will automatically display weather information in the Google gadget for the specific address associated with the monitored instance.

The BPEL process has already been built for you. And the monitor model is already created and it includes a metric which contains customer address information. This metric is used to display the weather information in the Google gadget.

URL Cheat sheet

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

- Server administrative console
<https://localhost:9043/ibm/console>
 - Business space dashboard
<https://localhost:9443/BusinessSpace>
-

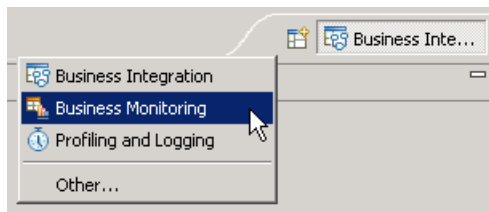
Part 1: Import the process and monitor model into IBM Integration Designer

In this section you will import the supplied project interchange files for the process and the monitor model into IBM Integration Designer.

- ___ 1. Start IBM Integration Designer and setup the environment.
 - ___ a. Start IBM Integration Designer, and when prompted point to a new workspace such as `c:\workspaces\scriptadapter`
 - ___ b. Close the Welcome tab.
 - ___ c. By default, you are in the Business Integration perspective.
- ___ 2. Import the supplied process.
 - ___ a. In the Business Integration view, right click then select **Import...**
 - ___ b. Navigate to **Other > Project Interchange** then click **Next**.
 - ___ c. For the .zip file, browse to the solution file, for example, '`c:\Labfiles75\ScriptAdapter\Order.zip`'.
 - ___ d. Click **Select All**.
 - ___ e. Click **Finish**.
 - ___ f. You should see two projects listed in the Business Integration view.
 - ___ g. The process contains one human task. The business item is a customer record which allows you to enter the customer name and address.

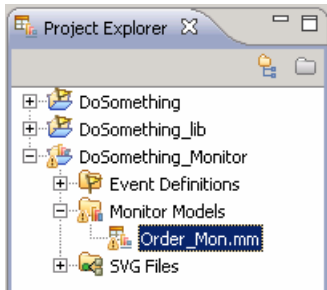


- ___ 3. Switch to the Business Monitoring Perspective
 - ___ a. In the upper right corner, click the perspective icon and select Business Monitoring.



- ___ 4. Import the supplied monitor model.
 - ___ a. In the Project Explorer view, right click then select **Import...**
 - ___ b. Navigate to **Other > Project Interchange** then click **Next**.

- ___ c. For the .zip file, browse to the monitor model, for example, "c:\Labfiles75\ScriptAdapter\Order_Monitor.zip'.
- ___ d. Click **Select All**.
- ___ e. Click **Finish**.
- ___ f. You should see the new project DoSomething_Monitor listed in the Project Explorer view. Inside the project, there is the monitor model 'Order_Mon.mm'. This model includes a metric to track the customer address.

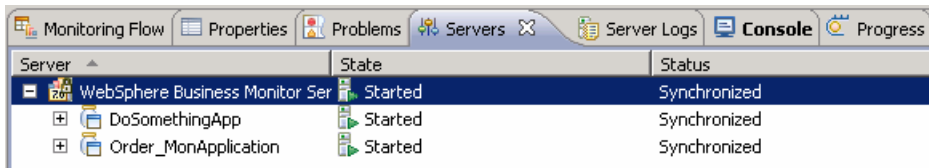


- ___ 5. Check for any errors in the Problems view. You should resolve any errors before continuing. Warnings and informational messages may be present but these will not be a problem.

Part 2: Generate and publish the model to the server

In this section you will use IBM Integration Designer to publish the process and monitor model to the monitor server.

- ___ 1. Open the Business Monitoring perspective.
- ___ 2. In Project Explorer, expand **DoSomething_Monitor > Monitor models > Order_Mon.mm**. Right click and then select **Generate Monitor JEE Projects** from the pop-up menu
- ___ 3. Select **Finish**.
- ___ 4. 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.**
- ___ 5. Click the Servers tab, then right click and select the **Start** option to start the server. This may take a few minutes to complete.
- ___ 6. Right click in the servers view, then select **Add and Remove Projects....**
- ___ 7. Click to move **DoSomethingApp, Order_MonApplication** from the list of available projects to the list of configured projects.
- ___ 8. Click **Finish**.
- ___ 9. A progress message is displayed in the lower right corner of the window.
- ___ 10. When the publishing is complete, the applications should show started in the Servers view:



- ___ 11. If you are using the integrated server within IBM Integration Designer, then you do not need to setup Monitor data security, since the administrative user is automatically authorized to all models. If you are using a different server, then you should open the administrative console, navigate to **Security > Monitor Data Security**, then add the model, role and user information to a resource group.

Part 3: Run events to exercise the model

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

When you start the process instance, make sure that you enter a zip code or a city/state into the address field. This will be used to send to the weather map. You may want to submit several process instances for testing different locations.

It is not necessary to complete the human task associated with the process. The instances will be tracked in the instances widget as soon as you submit the process instance.

- ___ 1. In the Servers view, right click the server **IBM Business Monitor Server V7.5 > Launch > BPEL Process Choreographer Explorer**
- ___ 2. Click Process Templates > Currently Valid

Views Reports

Process Templates

- Currently Valid
- All Versions

Process Instances

- Started By Me
- Administered By Me
- Critical Processes
- Terminated Processes
- Failed Compensations

Currently Valid Process Templates

Use this page to view process templates on which you can work. [i](#)

Start Instance Instances View Structure Refresh

<input type="checkbox"/>	Process Template Name	Valid From	Long Running	State
<input type="checkbox"/>	Order	4/5/2010 11:22:56 AM CDT	yes	Started

Items found: 1 Items selected: 0 << Page 1 of 1 >> Item

page: 20

- ___ 3. Select Order then click Start Instance
- ___ 4. In the following data entry page, enter a unique value for the process name, then enter values for the name and address. For the address, you can enter a zip code, or you could enter a city and state, for example 'Raleigh, NC'.

Process Input Message

Use this page to provide the input that is needed to start an instance. [i](#)

Submit

Process Template Name Order

Process Description

Operation Order

Process Name P1

Process Input Message

Form View

Input	Name	Value
	Name	Any name
	Address	27709

- ___ 5. Click the Submit button.
- ___ 6. You can submit several more instances to test various addresses.

Part 4: Create a dashboard in business space

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 IBM Integration Designer, in the servers view, right click and select **Launch > Business Space**

___ c. When prompted, enter your user ID and password.

___ d. Click in the Actions menu to create a new space



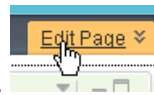
___ e. Enter a name such as **MyDashboard**.

___ f. Click **Save**. When prompted, enter a page name and click **OK**.

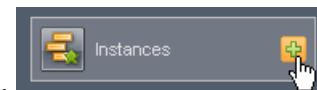


___ 2. Use the Instances widget to view the monitored instances.

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



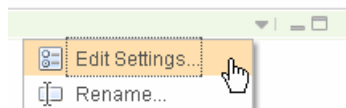
___ b. In the list of widgets, click to add the Instances widget to the page.



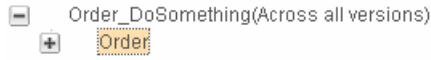
___ c. To configure the Instances widget, hover the mouse over the right corner of the widget



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



- ___ d. Click the **Show/Hide** tab, and select monitoring context 'Order_DoSomething(Across all versions) > Order'.



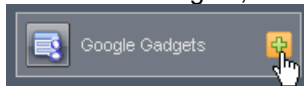
Click button **>>** to move all the fields to the Selected box. Also, click button **Set as default** which will make this the default monitoring context to display.

- ___ e. Then click **OK**. You should see a list of monitoring instances for the process instances that you submitted. In this example, notice that there are two records and that each has a zip code provided in the address metric.

Address	COMPLETED	CreationTime	Order Instance ID	Order Processing Time
27514		April 5, 2010 11:46:10 AM	_PI:90030127.cedd6c9e.7fb7573f.5dbe0363	1 h, 9 m, 16 s
27709		April 5, 2010 12:53:47 PM	_PI:90030127.cf1b5782.7fb7573f.5dbe03ab	1 m, 39 s

___ 3. Add the Google gadget to the page.

- ___ a. In the list of widgets, click to add the **Google Gadgets** widget to the page.



- ___ b. To configure the widget, hover the mouse over the right corner of the widget and then click the down arrow. Select **Edit Settings...**



- ___ c. In the search field enter 'weather channel interactive', then click the button **Search gadgets**.


- ___ d. Select this one:



- ___ e. There are various options that you can enter. If you enter a zip code or city/state in the Location field then the gadget will display the weather information for this location. You do not need to enter it now because you will configure the script adapter to send the location from the instances widget. So just take the defaults and click **Save**.

Google Gadgets

Weather Channel Interactive W



LOCATION *

LATITUDE

LONGITUDE

Alpha

ZOOM

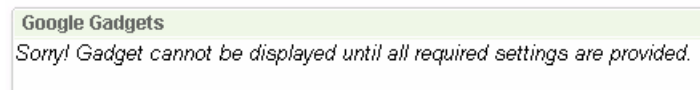
HEIGHT

DISPLAY

BASE

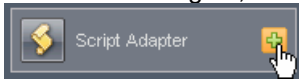
DANI

___ f. The gadget is added to the page, and you will see a warning because it does not have enough information to display a location.



___ 4. Configure the script adapter to capture the location from the instances widget and send it to the weather gadget.

___ a. In the list of widgets, click to add the **Script Adapter** widget to the page.

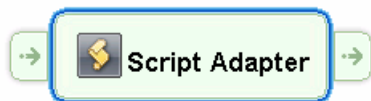


___ b. To configure the wiring, hover the mouse over the right corner of the Script Adapter widget

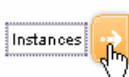


and then click the down arrow. Select **Edit Wiring...**

___ c. In the wiring diagram you see just the script adapter. The input to the widget is shown as an incoming arrow on the left. The output from the widget is shown as an outgoing arrow on the right.



___ d. Configure the adapter to receive input from the Instances widget. To do this, click the incoming arrow and you see the available widgets that can fire events. In this case you see the Instances widget in the list.

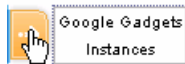


- ___ e. Select Instances in the list and the diagram changes to show the Instances widget wired to the Script Adapter widget.

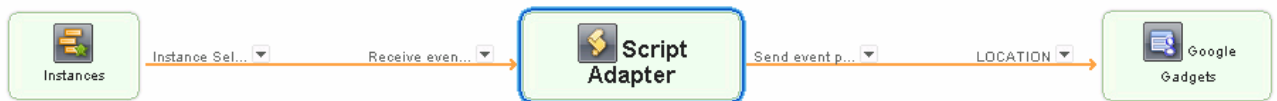


- ___ f. Click the arrow on the wire next to Instance. There are several events listed, so make sure that 'Instance Selected' is the one that is selected.

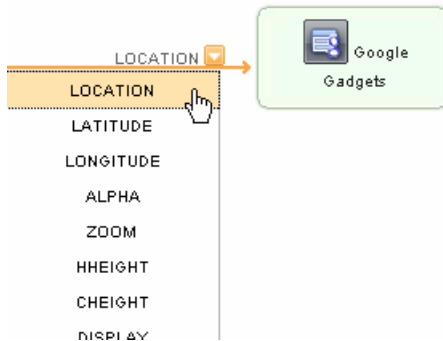
- ___ g. Configure the adapter to send output to the Google Gadget widget. To do this, hover your mouse near the right edge of the Script Adapter in the diagram and you will see the outgoing arrow pop up. Click the outgoing arrow and you see the widgets in the list that can receive events.



- ___ h. Click 'Google Gadgets' in the list. The diagram changes to show the Google Gadgets wired to the Script Adapter.



- ___ i. If you click the arrow next to Location on the outbound wire, you will see a list of event types that can be sent to the Google Gadgets. Location is the default and that is what you need to display the zip code in the Weather Channel widget.



- ___ j. Click **OK**.
- ___ k. Since the instance event is not compatible with the location event you will add script to the Script Adapter to convert the Instance event to the Location event. To do this, hover the mouse over



the right corner of the widget and then click the down arrow. Select **Edit Settings....**

- ___ l. The first check box allows you to show the JavaScript on the Script Adapter widget. The second check box allows you to block the outbound event so that you can view the incoming event without affecting the widget on the outbound side. This is helpful during the development cycle to determine the fields in the payload of the event so you can construct a script to perform the correct processing. For this test you can leave both of the boxes cleared.

- ___ m. The following JavaScript should be copied into the JavaScript text box, replacing the return statement that is already in the text box. This script takes the instances event payload and uses the REST service to retrieve metric data for a specific monitor model instance. The REST call used in this script is 'GET rest/bpm/monitor/models/{model id}/mcs/{mc id}/instances/{instance id}?{parameters}'. You can find more information on the REST calls in the Business Space information center: <http://publib.boulder.ibm.com/infocenter/dmndhelp/v7r0mx/topic/com.ibm.bspace.help.api.rest.doc/coverview.html>. This documentation also lists the JSON values which are returned for the REST calls. For debugging purposes, you can use the JavaScript alert statement to display values. In the script, the metricIndex is set to the index of the Address metric which then is extracted and sent in the outbound event.

```

var payloadJSON = eval( "(" + payload + ")" );

var model = payloadJSON.selectedModelAndVersion.split(":")[0];

var MC = payloadJSON.selectedMC;

var mcid = payloadJSON.instanceId;

var xmlhttp = new XMLHttpRequest();

xmlhttp.open("GET", "/rest/bpm/monitor/models/" + model + "/mcs/" + MC + "/instances/" + mcid, false);

xmlhttp.send(null);

var responseJSON = eval( "(" + xmlhttp.responseText + ")" );

var instanceData = responseJSON["Instance Data"];

var metricIdArray = responseJSON["Metric ID Array"];

var metricDataArray = instanceData["Metric Data"];

var metricIndex = metricIdArray.indexOf("Address"); /* metric name to find in metric ID array */

/*alert("metricIndex:" + metricIndex);*/

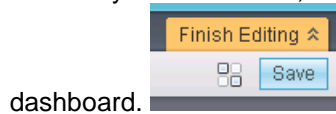
var location = metricDataArray[metricIndex]; /* index into the metric value array */

return location;

```

- ___ n. Click OK.

___ o. To save your dashboard, click Save then click Finish Editing in the upper right corner of the



dashboard.

___ 5. Test the configuration. Click a record in the Instances widget and verify that the Script Adapter is working.

___ a. Click anywhere on one of the records in the instances widget.

<input type="checkbox"/>	Address	COMPLETED	CreationTime	Order Instance ID	Order Processing Time	TerminationTime	Order2
<input type="checkbox"/>	27514		August 5, 2011 8:01:00 AM	_PI:90030131.9a3f3b29.7de7fcf6.d63903a6	48 m, 41 s		
	27709		August 5, 2011 8:01:19 AM	_PI:90030131.9a3f84a5.7de7fcf6.d6390422	48 m, 22 s		

___ b. This triggers the event to be sent from the Instances widget. Since you configured the Script Adapter to receive this event, then you can view the Script Adapter to see the processing of the event. In the Received Event section, you see the payload for the event from the Instances widget. The payload contains the monitor model version, monitoring context, instance identifier and widget identifier. This is enough to uniquely identify the monitor instance. Since the payload does not carry the address metric, the script retrieves the address metric using the REST service.

Received Event

```
Event Name: com.ibm.bspace.scriptadapter.payloadReceived
Event Type: string
Source Widget: Instances
Source ID: ns_cec24d6040db11df8badb7d84958d103
Payload: ("selectedModelAndVersion":"Order_DoSomething.Processes:20100405112508","selectedMC":"Order","instanceId":1,"widgetId":"ns_cec24d6040db11df8badb7d84958d103")
```

___ c. In the Sent Event section of the Script Adapter, you see the event that is sent to the Google gadget. The JavaScript retrieved the address metric and returned this as the output event. So in the following example you see that the payload is the zip code which was supplied in the address field of the monitored instance.

Sent Event

```
Event Name: com.ibm.bspace.scriptadapter.payloadHandled
Event Type: Any
Source Widget: Script Adapter
Source ID: ns_7c33674040eb11df8badb7d84958d103
Payload: 27514
```

___ d. You configured the Google gadget to receive the output of the script adapter, so you can verify the results in this widget. It may help to increase the size of the Google Gadget widget, so click 'Resize...' on the widget menu and set the value to 300, then click Save.

___ e. You should see the map updated to show the geographic area near the zip code that was supplied in the event.

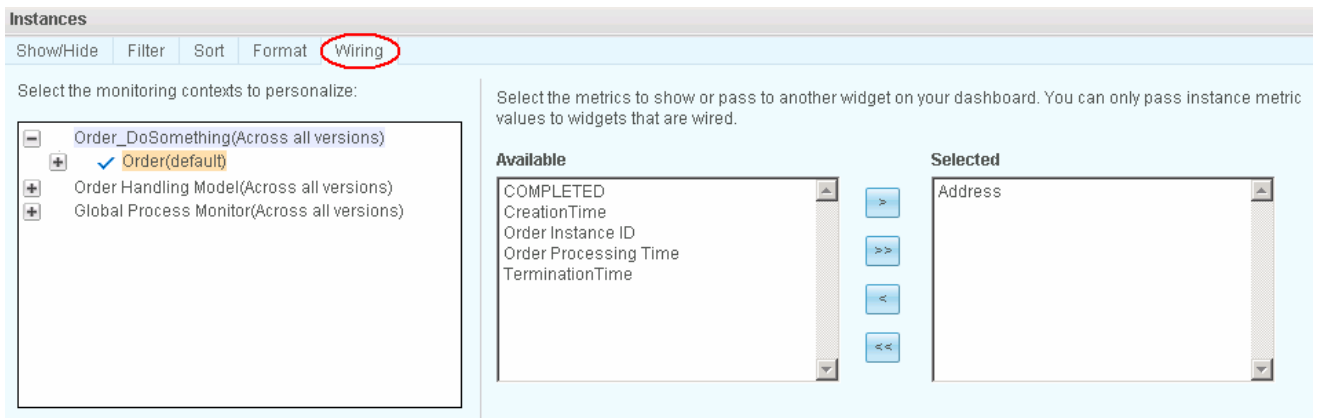


- ___ f. The script adapter seems to be working properly, so you can hide the script adapter so it will not be visible on the page. Click 'Edit Page' in the upper right corner to enter into edit mode. On the Script Adapter widget menu, select 'Hide'. To re-show the widget, make sure you are in edit



mode on the page, then click the icon to show hidden widgets:

- ___ 6. In the previous section, you used REST service calls to access the instance metric data from the Monitor database. There is an easier way to access metric data.
 - ___ a. Edit the page, then edit the settings for the Instances widget.
 - ___ b. Click the Wiring tab.
 - ___ c. In the list of available metrics, select to move Address from the Available box to the Selected box.



- ___ d. Click OK.
- ___ e. Make sure that the script adapter widget is not hidden.
- ___ f. Click a record in the instances widget, then review the received event in the script adapter widget. Notice that the name and value of metric Address is now listed in the event payload.

```
Source
Widget: Instances
Source
ID: M090318825507E03E0F395725868DBE0000B5
{"selectedModelAndVersion":"Order_DoSomething.Processes:20100405112508","selectedMC":"Order","instanceId":1,"Instance
Payload: Data":{"Instance ID":{"Metric Data":{"27514"}},"Metric ID Array":
{"Address"},"widgetId":"M090318825507E03E0F395725868DBE0000B5"}
```

- g. Since you have the address information in the event payload, it is not necessary to use the REST service call to get the address. So you could modify the script in the Script Adapter to remove the REST service call, and add logic to extract the address payload directly from the incoming event, then format it as a location to send to the weather gadget.

What you did in this exercise

In the lab, you imported the process and monitor model into IBM Integration Designer, and deployed both to the server. Then you ran process instances.

You created a dashboard in business space and added the instances, Google gadget and script adapter widgets to the page. Then you configured the script adapter and added JavaScript to convert the instances event into a location event that can be processed by the Weather Channel gadget.