# Developing WCM based WebSphere Portal application using IBM Rational Application Developer

# Table of Content

Abstract ..... 3
Sample Use case ..... 3
Prerequisite ..... 3
Developing the portlet project ..... 4
    Connecting to WCM repository in Source portlet ..... 5
    Fetching the list of WCM libraries ..... 6
    Setting the default library and fetching the content ..... 7
    Designing the view JSP for the Source portlet ..... 9
    Connecting to WCM repository in Target portlet ..... 10
    Modifying the TargetPortletSessionbean ..... 10
    Designing the view JSP for the Target portlet ..... 11
    Enabling Source Portlet to publish the event ..... 12
    Enabling Target Portlet to subscribe to the event ..... 14
Deploying the portlet on WebSphere Portal ..... 16
    Executing the use case on the server ..... 17
Summary ..... 22
Resources ..... 22

## Abstract

Content management is playing an increasingly significant role in today's dynamic business world. The ease and efficiency to manage the web content throughout its lifecycle or workflows is the key to the success of a business sites. IBM® Web Content Manager included along with IBM WebSphere Portal provides a robust web content management solution to help customer manage their content from creation to rendering phase. You can extend the standard features of IBM® Web Content Manager (hereafter referred as WCM at some places) using the Web Content Manager API as well.

The aim of this article is to showcase development of Web Content Management (WCM) based portlets for WebSphere® Portal using IBM Rational® Application Developer V8.5. The article will cover how to use IBM Web Content Management API to build a portlet application and will also provide a sample application to help you using the IBM Web Content Management API that can be downloaded. This article assumes that you are aware of IBM Web Content Management and portlet development using IBM Rational Application Developer.

The sample use case of this article incorporates fetching the content from a content repository using WCM APIs.

## Sample Use case

In this sample use case, you will work with a portlet project having two portlets that fetch and render the content from WCM libraries. These portlets would participate in inter-portlet communication by using the events mechanism provided by JSR 286 specification of portlet API.

The first portlet would list the content libraries available at server and based on the library selected it would fetch the content from the library and list the items in a HTML table. Content name in the first table would be a hyper-link, the second portlet would show the metadata and details of the content selected in first portlet. If the content selected in first portlet is an image resource type, it would be previewed in the second portlet, for file resource type content there would be a link provided in second portlet to save and open the resource along with its metadata.

## Prerequisite

To create the sample, install the following software:

1) IBM Rational® Application Developer version 8.5
2) IBM WebSphere® Portal and Web Content Manager V8.0

On skill level, you should know how to work with IBM Rational Application Developer and portlet development to simplify the process of project creation.

You can prepare the development environment by installing IBM Rational Application Developer v8.5 and WebSphere Portal and Web Content Manager Server v8.0. You can import the sample project provided along with the article to IBM Rational® Application Developer workspace to have a detailed look. You need to import the content library to your Web Content Manager V8.0 server before you try to execute the sample on server. You can refer the detailed instructions at WCM infocenter.

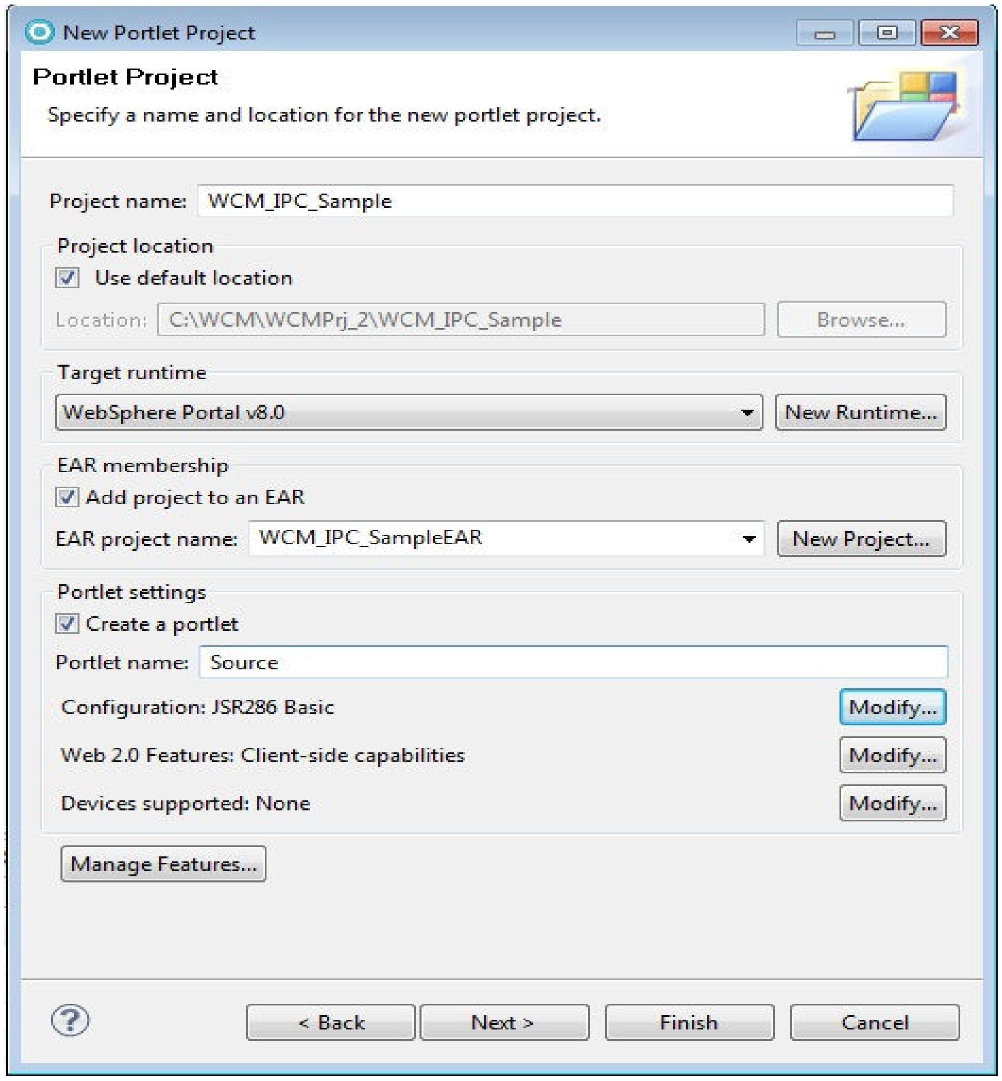
## Developing the portlet project

You would create a portlet project with two portlet. Use WCM_IPC_Sample as the portlet project name, Source as the first portlet name and Target as the names for the second portlet. To create the portlet project

Select File->New->Portlet Project. The Project creation dialog would launch

- Enter WCM_IPC_Sample as the name of the project name.
- Select WebSphere Portal v8.0 as your target runtime.
- Select the Create a portlet checkbox.
- Enter the Portlet name as Source.
- Click the modify button of the Configuration label, and select JSR286 as portlet API and Basic portlet as Portlet type.
- Click Finish.

**Figure 1: New portlet project wizard**



New Portlet Project

Portlet Project

Specify a name and location for the new portlet project.

Project name: WCM_IPC_Sample

Project location

[✓] Use default location

Location: C:\WCM\WCMPrj_2\WCM_IPC_Sample

Target runtime

WebSphere Portal v8.0

EAR membership

[✓] Add project to an EAR

EAR project name: WCM_IPC_SampleEAR

Portlet settings

[✓] Create a portlet

Portlet name: Source

Configuration: JSR286 Basic

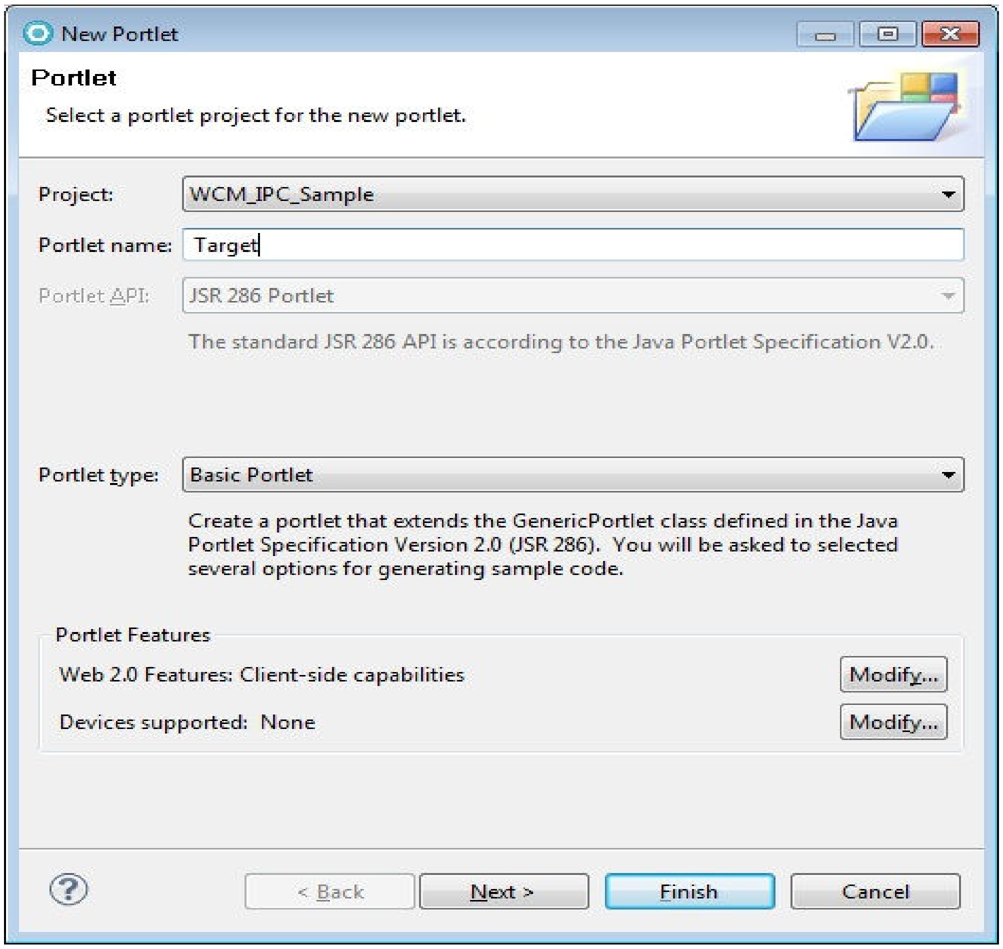
Web 2.0 Features: Client-side capabilities

Devices supported: None

The portlet project containing the Source portlet would be created in the workspace. To create the second portlet i.e. Target portlet, Select File->New->Portlet. The Portlet creation dialog would launch

- Enter the Portlet name as Source.
- Select Finish

**Figure 2: New portlet wizard**


New Portlet

Portlet

Select a portlet project for the new portlet.

Project: WCM_IPC_Sample

Portlet name: Target

Portlet API: JSR 286 Portlet

The standard JSR 286 API is according to the Java Portlet Specification V2.0.

Portlet type: Basic Portlet

Create a portlet that extends the GenericPortlet class defined in the Java Portlet Specification Version 2.0 (JSR 286). You will be asked to selected several options for generating sample code.

Portlet Features

Web 2.0 Features: Client-side capabilities

Devices supported: None

The portlet project WCM_IPC_Sample would now contain two portlets, Source portlet and Target portlet.

## Connecting to WCM repository in Source portlet

Workspace is the core of the IBM® Web Content Manager API. Content is created, saved, deleted and searched for in scope of a workspace item. A workspace is associated to a user and is an interface to Web Content Manager. You would request for a workspace object from repository singleton.

You would create the connection to the WCM repository in the init phase of the portlet itself. The init method of the portlet class would look like the code snippet below:

**Code Snippet 1: Init method of Source portlet**

```
public void init() throws PortletException{
   super.init();
   try {
    myworkspace = WCM_API.getRepository().getWorkspace();
    if ( myworkspace != null ){
     myworkspace.login();
    }else {
     System.out.println( "Unable to get a valid workspace.<br/>" );
    }
   }catch (Exception e) {
    System.out.println("Exception " + e.getMessage());e.printStackTrace();
   }

  }
```

The statement WCM_API.getRepository().getWorkspace() is responsible for fetching a workspace object to interface with WCM.

## Fetching the list of WCM libraries

There can be multiple document libraries available at server as per the configuration. To let the user choose the desired library you need to fetch the list of available libraries from WCM workspace and store the list of library names. To store the list you can define an ArrayList 'libraries' as a list of strings and create the desired getter and setters for the same. As the list of libraries is to be persisted at session level you would opt to use the session bean SourcePortletSessionBean generated along with portlet project by RAD. At a later stage while developing the GUI for the Source portlet you would map this list of document libraries to the dropdown to let user select the desired library.

In portlet session bean SourcePortletSessionBean  you would define an ArrayList to store the list of libraries, along with its getters and setters.

**Code Snippet 2: ArrayList to store the list of libraries in SourcePortletSessionBean**

```
 private List<String> libraries = new ArrayList();

 public void setLibraries(String libText) {
  libraries.add(libText);
 }
 public List getLibraries() {
  return this.libraries;
 }
```

To get the list of available document libraries in WCM, you would add the desired piece of code to the getSessionBean method of the source portlet class.

**Code Snippet 3: getSessionBean method to fetch the list of libraries in SourcePortlet.java**

```
//Populate the drop down with list of libraries in workspace
    Iterator<DocumentLibrary> myLibraries = myworkspace.getDocumentLibraries();
    if (myLibraries.hasNext()){
     while (myLibraries.hasNext()){
      sessionBean.setLibraries(myLibraries.next().getName());
      }
     }
```

myworkspace.getDocumentLibraries() would fetch the list of libraries available in the workspace and then sessionBean.setLibraries is storing the library names to the list iteratively.

## Setting the default library and fetching the content

To allow selection of document library and fetch the contents from the selected library, you can refer the following snippet in processAction method in SourcePortlet class.

**Code Snippet 4: Snippet from processAction method in SourcePortlet.java**

```
try {
DocumentLibrary myLibrary =
myworkspace.getDocumentLibrary(request.getParameter(FORM_DROPDOWN).toString());
     if (myLibrary != null) {
      sessionBean.populatedocList(myworkspace, myLibrary);
     } // end of MyLibrary if
     else
      System.out.println("Library is null<br/>");
    }  //end of try block
    catch (Exception e) {
     // Normally exceptions would be added to logs
     System.out.println("Exception " + e.getMessage());
     e.printStackTrace();
    } //end of catch block
```

The method populatedocList is implemented in SourcePortletSessionBean and is intended to set the selected library as the workspace library and then search the content from the selected library. You can refer the following snippet in populatedocList method of SourcePortletSessionBean.

**Code Snippet 5: Snippet from populatedocList method of SourcePortletSessionBean**

```
myworkspace.setCurrentDocumentLibrary(myLibrary);
QueryService queryService = myworkspace.getQueryService();
Query query = queryService.createQuery();
query.addSelector(Selectors.libraryEquals(myworkspace.getCurrentDocumentLibrary
()));
query.addSelector(Selectors.typeIn(DocumentTypes.LibraryFileComponent.getApiTyp
e(),DocumentTypes.LibraryImageComponent.getApiType()));
ResultIterator resultIterator = queryService.execute(query);
```

The statement myworkspace.setCurrentDocumentLibrary(myLibrary) would set the selected library to the current workspace library. Then you would use QueryService to retrieve WCM Document by DocumentQuery. For the use case we are limiting the scope to only two DocumentTypes i.e. *LibraryFileComponent and LibraryImageComponent* . The result set of query execution would be stored in an iterator of WCM API query results i.e. resultIterator.

The code snippet below would parse the result set and get the desired properties for the nodes returned in result which would be referenced to render the details. You would store these details in a node docList and then final collection of these nodes would be maintained in another ArrayList of these nodes.

**Code Snippet 6: Snippet from populatedocList method of SourcePortletSessionBean**

```
      if (resultIterator.hasNext()) {
       while (resultIterator.hasNext()) {
        WCMApiObject resource = (WCMApiObject) resultIterator.next();
        DocumentList docList = new DocumentList();
        resourceName = resource.getName();
        if (resource instanceof LibraryImageComponent) {
         resourceURL = ((LibraryImageComponent) resource)
           .getResourceURL();
         resourceCreator = ((LibraryImageComponent) resource)
           .getCreator();
         resourceDate = ((LibraryImageComponent) resource)
           .getCreationDate().toString();
         docList.setDocumentList(resourceName, resourceURL, resourceCreator,
           resourceDate, LIB_IMAGE_COMP);
         setResult(docList);
        } else if (resource instanceof LibraryFileComponent) {
         resourceURL = ((LibraryFileComponent) resource)
           .getResourceURL();
         resourceCreator = ((LibraryFileComponent) resource)
           .getCreator();
         resourceDate = ((LibraryFileComponent) resource)
           .getCreationDate().toString();
         docList.setDocumentList(resourceName, resourceURL, resourceCreator,
           resourceDate, LIB_FILE_COMP);
         setResult(docList);
        } //end of else if
       } // end of while
      } //end of resultIterator if
      else {
       System.out.println("No objects Found");
      }  //end of resultIterator else
   }
```

The SourcePortletSessionBean has another ArrayList result defined to store the result with additional metadata that is required to display the details.

**Code Snippet 7: Snippet from SourcePortletSessionBean**

```
public List<DocumentList> result = new ArrayList();

public void setResult(DocumentList obj) {
  result.add(obj);
}

public List getResult() {
  return this.result;
}
```

The element result is an ArrayList of type DocumentList. DocumentList is an additional bean defined to store the desired metadata of the content items. The snippet above references an element type DocumentList, setDocumentList is the setter method to save the metadata for this additional bean.

**Code Snippet 8: Snippet from DocumentList.java**

```
public void setDocumentList(String resName, String resURL, String resAuthors,
String resDate, String resType) {
    this.name= resName;
    this.url = resURL;
    this.authors= resAuthors;
    this.date = resDate;
    this.type= resType;
   }

public DocumentList getDocumentList() {
    return (DocumentList) this;
   }
```

## Designing the view JSP for the Source portlet

The objective of source portlet is to let user make a selection of WCM library and based on library selected, fetch and display the list of contents in a HTML table. You can refer the SourcePortletView.jsp in attached sample file to get the JSP details.

**Code Snippet 9: Snippet from SourcePortletView.jsp to display list of libraries**

```
<% String formText = sessionBean.getFormText();
 Iterator libLst= sessionBean.getLibraries().iterator();
 Iterator resLst= sessionBean.getResult().iterator(); %>

 <FORM method="POST" action="<portlet:actionURL/>">
  <LABEL  for="<%=com.ibm.wcm_ipc_sample.SourcePortlet.FORM_TEXT%>">Select the
WCM library :</LABEL><BR>
  <select name="<%=com.ibm.wcm_ipc_sample.SourcePortlet.FORM_DROPDOWN%>">
  <option value="">Select a Library</option>
  <% while (libLst.hasNext()) {
   String library = (String)libLst.next();%>
  <option value="<%= library %>"><%= library %></option>
  <% } %>
  </select>
      <INPUT name="<%=com.ibm.wcm_ipc_sample.SourcePortlet.FORM_SUBMIT%>"
type="submit" value="Submit"/>
 </FORM>
</DIV>
```

The code snippet above provides a dropdown with the list of libraries values populated using sessionBean.getLibraries().iterator(). Once you make a selction and click Submit, the value of library would be passed to populateList method through processAction method of SourcePortlet class to set it as a current library of workspace.

To display the list of result set generated post selecting the library, you can refer the following snippet.

**Code Snippet 10: Snippet from SourcePortletView.jsp to display the content**

```
<% if (resLst.hasNext()) { %>
  <table border="1" cellpadding="3" cellspacing="2">
   <tr bgcolor="#c0c0c0">
    <th align="center" valign="middle">Name</th>
    <th align="center" valign="middle">Authors</th>
    <th align="center" valign="middle">Creation Date</th>
    <th>Resource Path</th>
   </tr>
   <% int loopcount = 0;
      while (resLst.hasNext()) {
    DocumentList result = (DocumentList) resLst.next();
    String val = result.getName() + "::" + result.getAuthors() + "::" +
result.getDate() + "::" + result.getUrl()+ "::" + result.getType();
    if ((loopcount % 2) == 0 ) %>
    <tr bgcolor="#F5F5F5">
     <%
      else {
     %>
    <tr bgcolor="#c0c0c0">
     <%
      }
     %>
     <td align="left" valign="middle"><a
      href='<portlet:actionURL><portlet:param name="DOCUMENTNAME_PARAM"
value="<%=val%>"/></portlet:actionURL>'><%=result.getName()%>
     </a></td>
     <td align="left" valign="middle"><%=result.getAuthors()%></td>
     <td align="left" valign="middle"><%=result.getDate()%></td>
     <td align="left" valign="middle"><%=result.getUrl()%></td>
    </tr>
    <%
   loopcount++;
    }
  %>
  </table>
 <%
  } else {
   if (!(sessionBean.getFormText().isEmpty())) {
 %>
  <DIV style="margin: 6px"><H2>
  There's no content matching the search criteria in selected library.<BR>
</H2>
 <% }
  }%>

</DIV>
```

The result iterator would loop to place the nodes in list in a HTML table format. The first column would display the name and would be a hyperlink, its value would be a concatenated string of its metadata separated by :: “double hash”. This string would be passed on to target portlet to display the properties of a selected item to depict the inter-portlet communication.

## Connecting to WCM repository in Target portlet

Similar to Source portlet you would create the connection to the WCM repository in the init method of the Target portlet itself to interface with the WCM.

## Modifying the TargetPortletSessionbean

TargetPortletsessionbean has a method setDisplayObject to contain the logic to parse the concatenated string that is passed by the source JSP (as a value of event to achieve inter-portlet communication). It would decipher the string to display the selected content’s metadata. You can refer the source in the attached sample.

**Code Snippet 11: Snippet from TargetPortletSessionBean**

```
public void setDisplayObject(String formObj) {
  displayObj.setName(formObj.substring(0, formObj.indexOf("::")));
  formObj = formObj.replace(displayObj.getName()+"::", "");
  displayObj.setAuthors(formObj.substring(0, formObj.indexOf("::")));
  formObj = formObj.replace(displayObj.getAuthors()+"::", "");
  displayObj.setDate(formObj.substring(0, formObj.indexOf("::")));
  formObj = formObj.replace(displayObj.getDate()+"::", "");
  displayObj.setUrl(formObj.substring(0, formObj.indexOf("::")));
  formObj = formObj.replace(displayObj.getUrl()+"::", "");
  displayObj.setType(formObj);
 }
```

## Designing the view JSP for the Target portlet

The view JSP for target portlet would fetch the details of the object to display using the call sessionBean.getDisplayObject().

For image resource types it would preview the image along with its metadata in a HTML table format and for file resources it would render the hyperlink for the resource along with its metadata in a HTML table format.

**Code Snippet 12: Snippet from TargetPortletView.jsp**

```
<%
 DocumentList disp = sessionBean.getDisplayObject();
 if (!(disp.getName().isEmpty())) {
  if (disp.getType().matches("LibraryImageComponent")){
  %>
  <table border="1" cellpadding="2" cellspacing="1">
   <tr bgcolor="#F5F5F5">
    <td colspan="2" align="center"><img src="<%=disp.getUrl()%>" width="510"
height="300"></td>
   </tr>
   <tr bgcolor="#c0c0c0">
    <th align="center" valign="middle" width="250">Document Name</th>
    <td width="250"><%=disp.getName()%></td>
   </tr>
   <tr bgcolor="#F5F5F5">
    <th align="center" valign="middle" width="250">Document Creators</th>
    <td width="250"><%=disp.getAuthors()%></td>
   </tr>
   <tr bgcolor="#c0c0c0">
    <th align="center" valign="middle" width="250">Document Type</th>
    <td width="250"><%=disp.getType()%></td>
   </tr>
  </table>
 <%
  } else { %>
  <table border="1" cellpadding="3" cellspacing="2">
   <tr bgcolor="#F5F5F5">
    <th align="center" valign="middle" colspan="2">Document Details</th>
   <tr bgcolor="#c0c0c0">
    <th align="center" valign="middle" width="250">Document Name & Link</th>
    <td width="250"><a href="<%=disp.getUrl()%>"><%=disp.getName()%></a></td>
   </tr>
   <tr bgcolor="#F5F5F5">
```

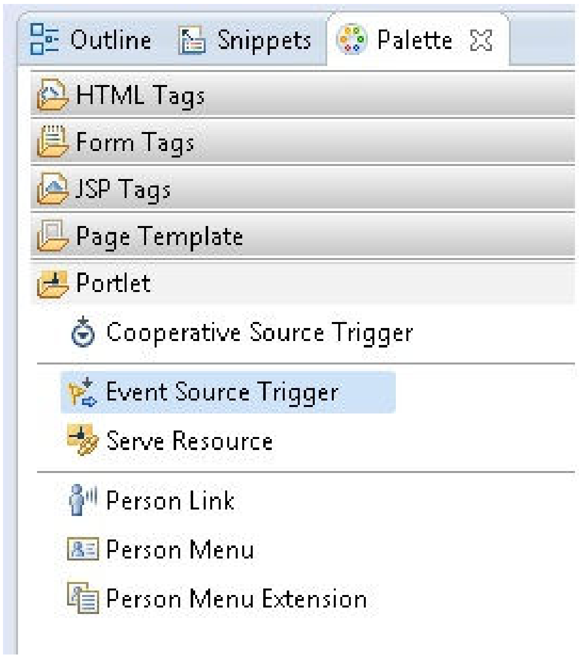
```
      <th align="center" valign="middle" width="250">Document Creators</th>
      <td width="250"><%=disp.getAuthors()%></td>
     </tr>
     <tr bgcolor="#c0c0c0">
      <th align="center" valign="middle" width="250">Document Type</th>
      <td width="250"><%=disp.getType()%></td>
     </tr>
     </tr>
    </table>
    <%
  }
  }
  %>
```

## Enabling Source Portlet to publish the event

Finally you would setup the events mechanism to let the two portlets i.e. Source portlet and Target portlet communicate to each other. To set the events mechanism in Source portlet,

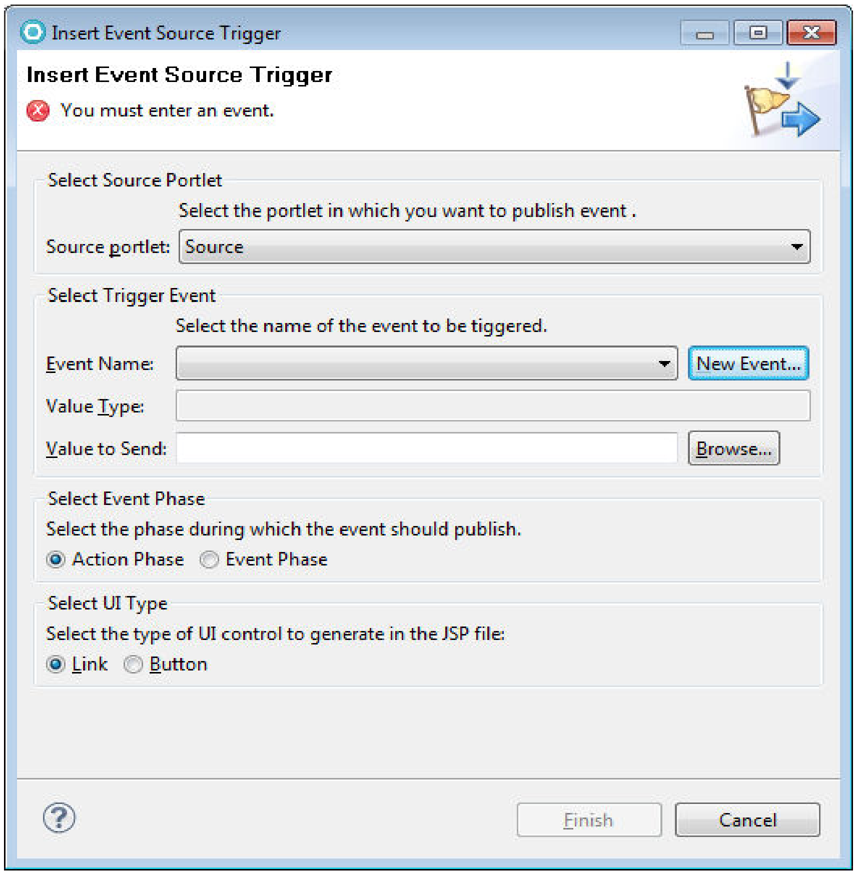
- Open the view JSP for Source portlet
- Drag and drop the Event Source Trigger from the portlet drawer in palette view on to the Name column in HTML table.

**Figure 3: Event Source Trigger option in palette view**



- Insert Event Source Trigger wizard will open.

**Figure 4: Insert event source trigger wizard**


Insert Event Source Trigger

**Insert Event Source Trigger**

You must enter an event.

Select Source Portlet

Select the portlet in which you want to publish event .

Source portlet: Source

Select Trigger Event

Select the name of the event to be tiggered.

Event Name:

Value Type:

Value to Send:

Select Event Phase

Select the phase during which the event should publish.

[✓ Action Phase] Event Phase

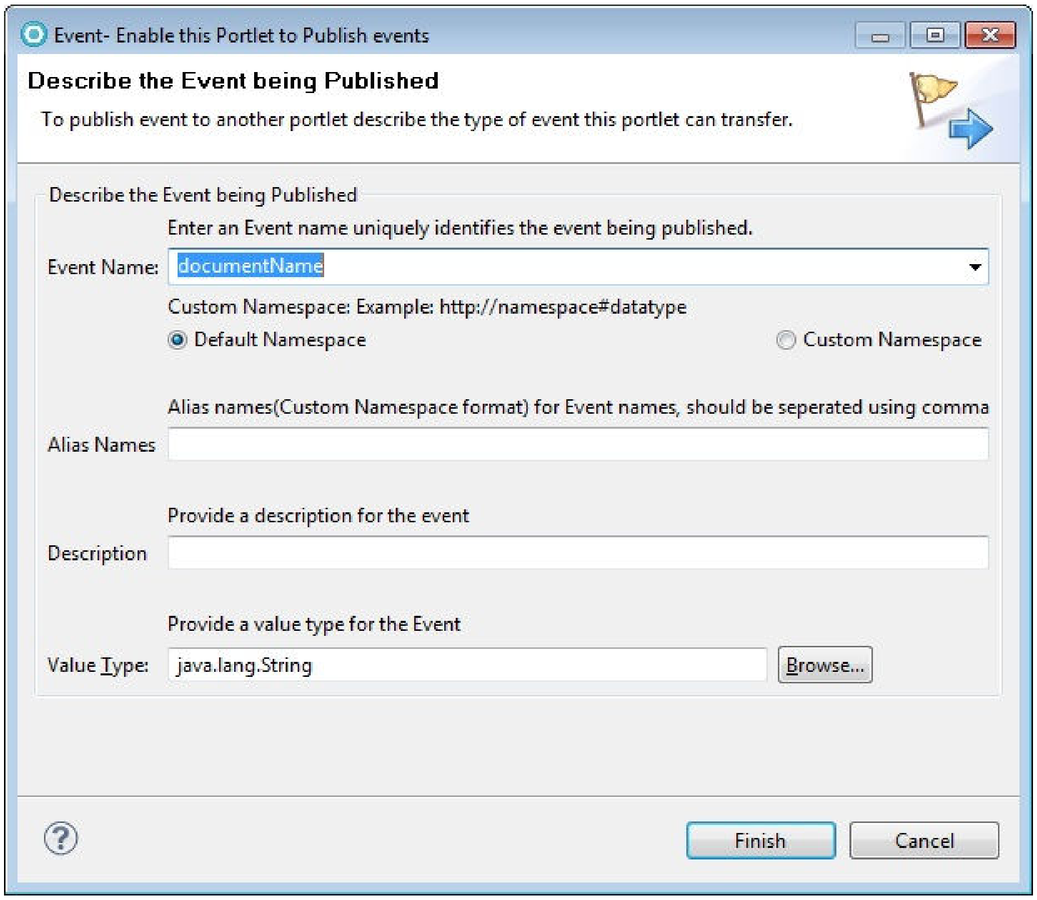
Select UI Type

Select the type of UI control to generate in the JSP file:

[✓ Link] Button

- Select the source portlet as the Source.
- Click the New Event button against the Event name.
- Describe the Event being published dialog will open

**Figure 5: Enable this portlet to publish event wizard**


Event- Enable this Portlet to Publish events

Describe the Event being Published

To publish event to another portlet describe the type of event this portlet can transfer.

Describe the Event being Published

Enter an Event name uniquely identifies the event being published.

Event Name: documentName

Custom Namespace: Example: http://namespace#datatype

(● Default Namespace) ○ Custom Namespace

Alias names(Custom Namespace format) for Event names, should be seperated using comma

Alias Names

Provide a description for the event

Description

Provide a value type for the Event

Value Type: java.lang.String

- Input the event name as documentName.
- Select Finish keeping rest of the values as default.

It would modify the processAction method in SourcePortlet class with the following snippet.

**Code Snippet 13: Snippet from processAction method in SourcePortlet class**

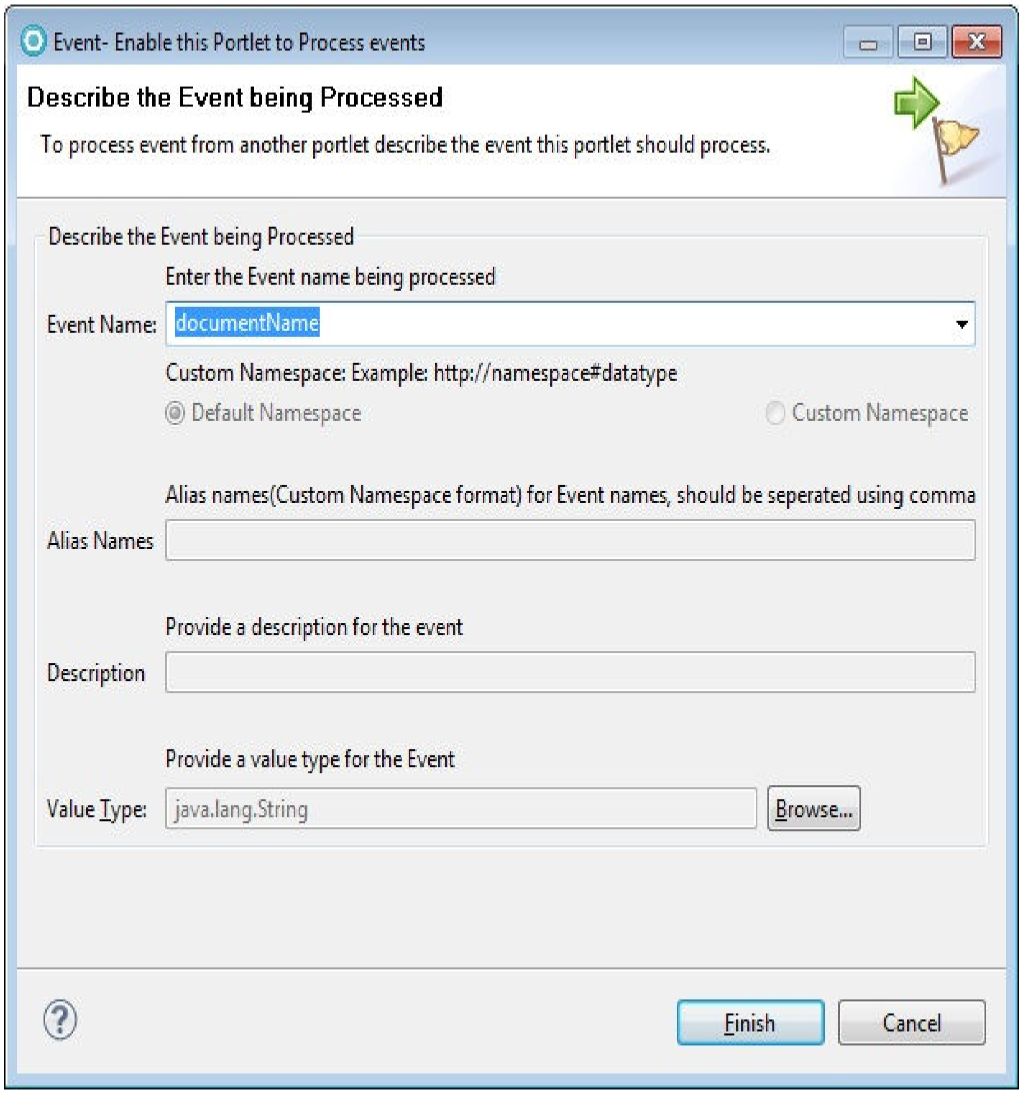
```
if (request.getParameter(DOCUMENTNAME_PARAM) != null) {
    response.setEvent("documentName",
      request.getParameter(DOCUMENTNAME_PARAM));
   }
```

## Enabling Target Portlet to subscribe to the event

Now you would enable the target portlet to process the event send by the Source portlet. To enable the target portlet to subscribe to the event published by source portlet.

- Expand the Portlet Deployment Descriptor node in Enterprise Explorer view of the workspace. Select the target portlet.
- In the context menu, select Events -> Enable this portlet to Process Event.
- Describe the Event being Processed dialog would open.

**Figure 6: Enable this portlet to process the event wizard**


Event- Enable this Portlet to Process events

Describe the Event being Processed

To process event from another portlet describe the event this portlet should process.

Describe the Event being Processed

Enter the Event name being processed

Event Name: documentName

Custom Namespace: Example: http://namespace#datatype

(●) Default Namespace ( ) Custom Namespace

Alias names(Custom Namespace format) for Event names, should be seperated using comma

Alias Names

Provide a description for the event

Description

Provide a value type for the Event

Value Type: java.lang.String

- Select the same event name from the drop down, which was used in source portlet i.e. documentName
- Press Finish.

It would add a method processEvent in portlet class for target portlet. You need to modify that to ensure it meets the objective for your usecase. Refer the code snippet below.

**Code Snippet 14: Snippet from processEvent method in TargetPortlet class**

```
Event sampleEvent = request.getEvent();
 if(sampleEvent.getName().toString().equals("documentName")) {
  Object DocumentDetails = sampleEvent.getValue();
  TargetPortletSessionBean sessionBean = getSessionBean(request);
  if( sessionBean != null )
   sessionBean.setDisplayObject(DocumentDetails.toString());
```

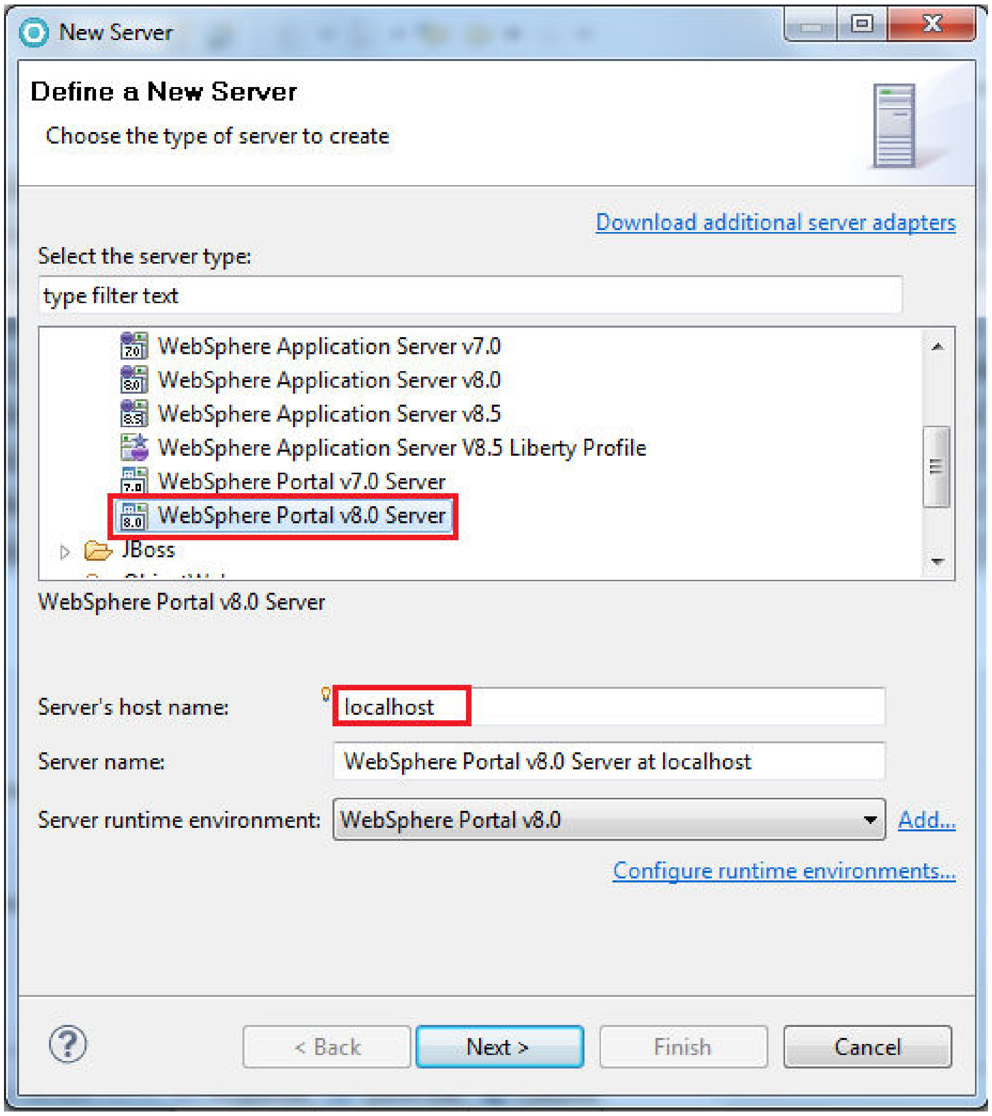
In the snippet above, on receiving the documentName event, it would fetch the value received and inoke the method sessionBean.setDisplayObject to parse the value passed by the source portlet.

## Deploying the portlet on WebSphere Portal

Now you are all set to publish the portlet application on to WebSphere Portal. To publish the project, create the server instance and start the server, in case it is not started. To create the server instance:

- Go to File -> New -> Other -> Server to launch the server creation wizard
- Select WebSphere Portal v8.0 Server and provide the hostname, click Next.

**Figure 7: Server creation wizard**


New Server
Define a New Server
Choose the type of server to create
Download additional server adapters
Select the server type:
type filter text
WebSphere Application Server v7.0
WebSphere Application Server v8.0
WebSphere Application Server v8.5
WebSphere Application Server V8.5 Liberty Profile
WebSphere Portal v7.0 Server
WebSphere Portal v8.0 Server
JBoss
WebSphere Portal v8.0 Server
Add...
Configure runtime environments...
< Back
Next >
Finish
Cancel

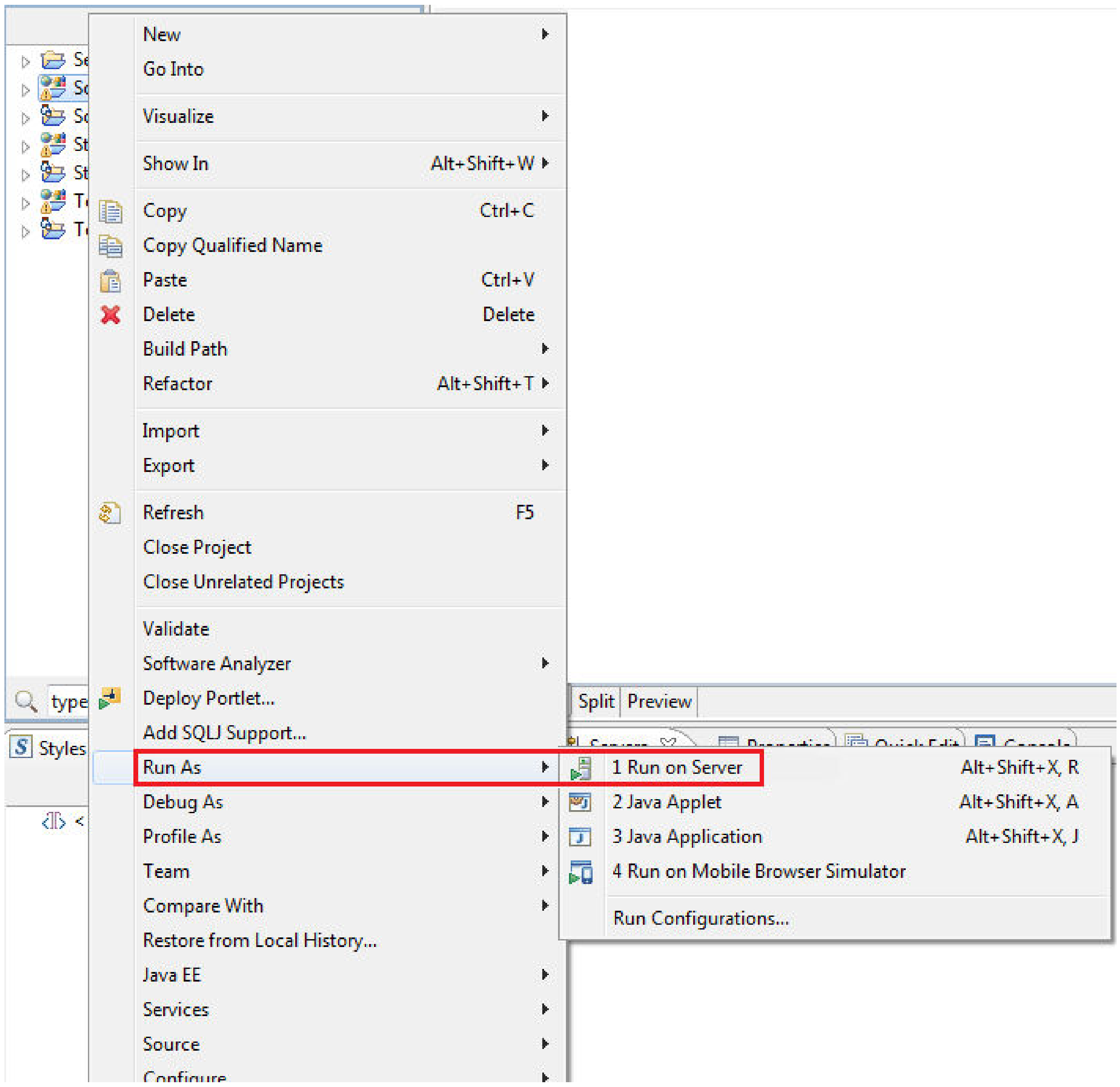
Server's host name: localhost
Server name: WebSphere Portal v8.0 Server at localhost
Server runtime environment: WebSphere Portal v8.0

- On the WebSphere Settings wizard, provide the port numbers to connect to the server, server credentials, and click Next.
- On the Portal Settings wizard, provide the server credentials required to publish the project to the server, and click Next.
- Click Finish.
- If server is not started, right-click the server instance created above and select Start.
- After the server starts, right-click on portlet project and select Run on server to display the Run

On Server wizard.

- In the Run On Server wizard, select the server instance that you created and click Finish.

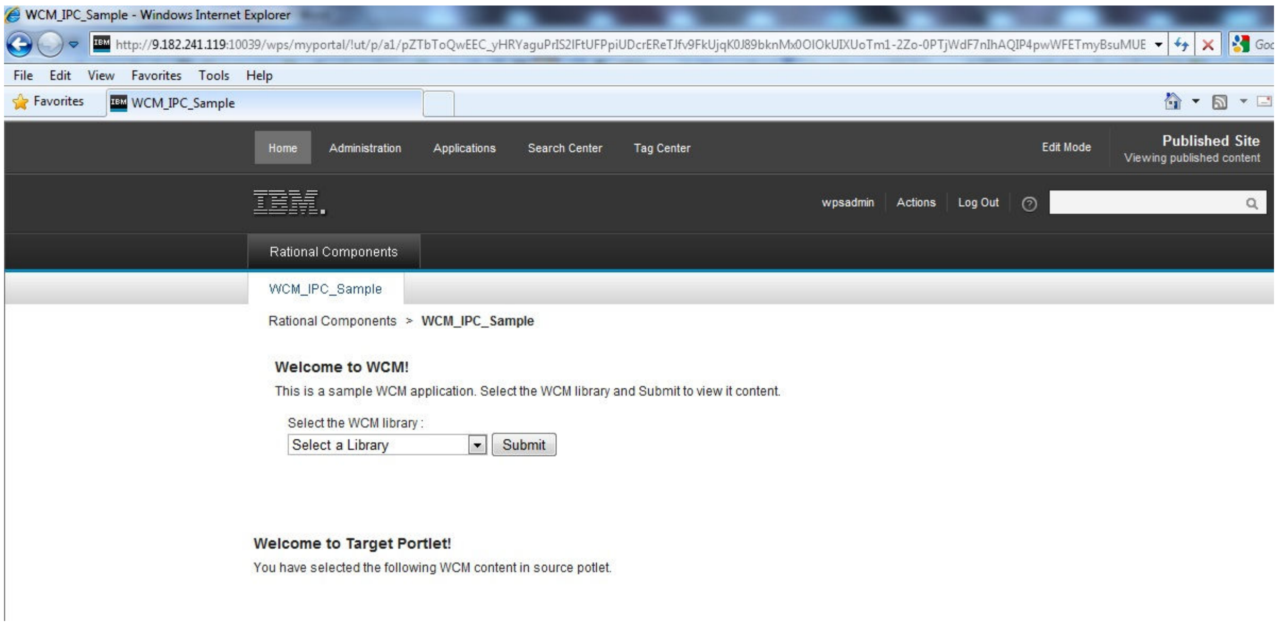
**Figure 8: Run On Server option**



## Executing the use case on the server

The Run On Server wizard publishes the portlet project. It also places the portlet on a portal page labeled as Rational Components, and opens the browser instance rendering the portlet. You will have the portlets Source and Target on the page.

## Figure 9: Output displaying the source and target portlets


WCM_IPC_Sample - Windows Internet Explorer
http://9.182.241.119:10039/wps/myportal/!ut/p/a1/pZTbToQwEEC_yHRYaguPrIS2IFtUFPpiUDcrEReTJfv9FkUjqK0J89bknMx0OIOkUIXUoTm1-2Zo-0PTjWdF7nIhAQIP4pwWFETmyBsuMUE
File Edit View Favorites Tools Help
Favorites
WCM_IPC_Sample
Home
Administration
Applications
Search Center
Tag Center
Edit Mode
Published Site
Viewing published content
wpsadmin
Actions
Log Out
Rational Components
WCM_IPC_Sample
Rational Components > WCM_IPC_Sample
Select a Library
Submit

Welcome to WCM!

This is a sample WCM application. Select the WCM library and Submit to view it content.

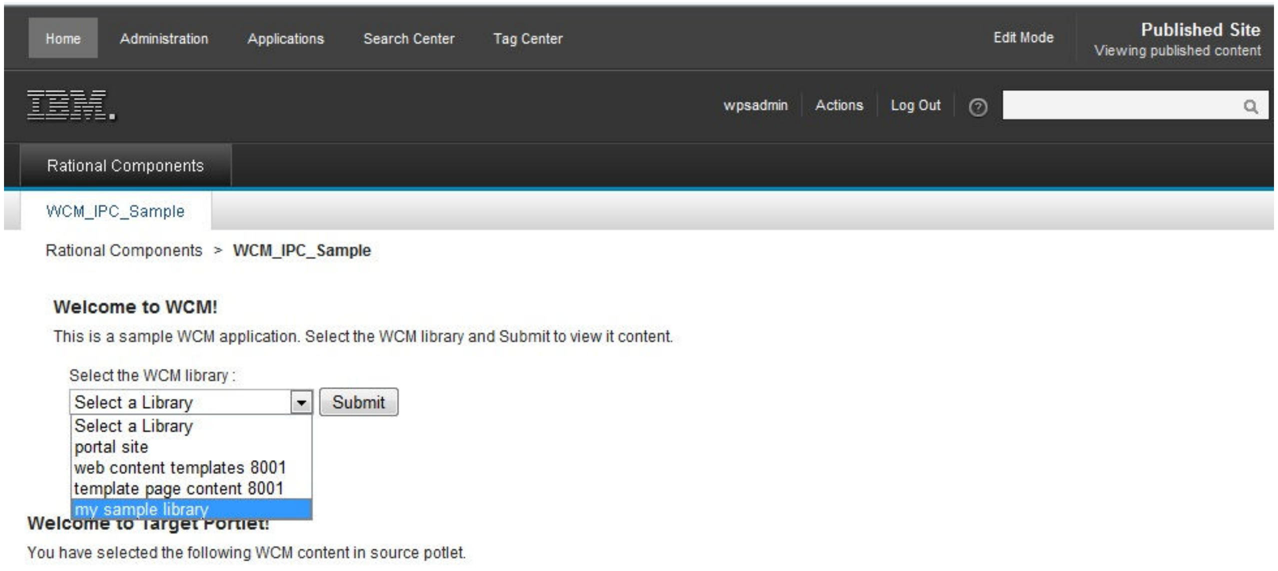
Select the WCM library :

Welcome to Target Portlet!

You have selected the following WCM content in source potlet.

Source portlet would have a dropdown showing the list of available WCM libraries in the server.

## Figure 10: Output with Select library dropdown expanded



Welcome to WCM!

This is a sample WCM application. Select the WCM library and Submit to view it content.

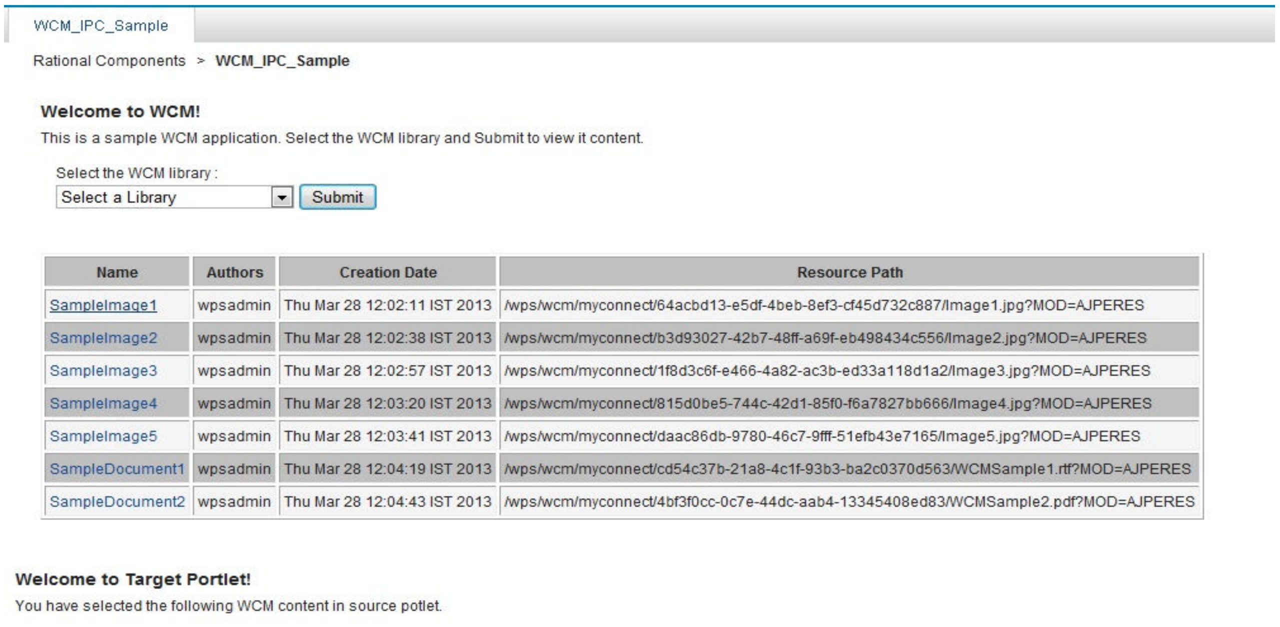
Select the WCM library :

Welcome to Target Portlet!

You have selected the following WCM content in source potlet.

Select a library and press Submit button to display the content list matching the filter criteria set in populate method.

**Figure 11: Output with list of content displayed**



**Welcome to WCM!**

This is a sample WCM application. Select the WCM library and Submit to view it content.

Select the WCM library :

| Name | Authors | Creation Date | Resource Path |
|---|---|---|---|
| SampleImage1 | wpsadmin | Thu Mar 28 12:02:11 IST 2013 | /wps/wcm/myconnect/64acbd13-e5df-4beb-8ef3-cf45d732c887/Image1.jpg?MOD=AJPERES |
| SampleImage2 | wpsadmin | Thu Mar 28 12:02:38 IST 2013 | /wps/wcm/myconnect/b3d93027-42b7-48ff-a69f-eb498434c556/Image2.jpg?MOD=AJPERES |
| SampleImage3 | wpsadmin | Thu Mar 28 12:02:57 IST 2013 | /wps/wcm/myconnect/1f8d3c6f-e466-4a82-ac3b-ed33a118d1a2/Image3.jpg?MOD=AJPERES |
| SampleImage4 | wpsadmin | Thu Mar 28 12:03:20 IST 2013 | /wps/wcm/myconnect/815d0be5-744c-42d1-85f0-f6a7827bb666/Image4.jpg?MOD=AJPERES |
| SampleImage5 | wpsadmin | Thu Mar 28 12:03:41 IST 2013 | /wps/wcm/myconnect/daac86db-9780-46c7-9fff-51efb43e7165/Image5.jpg?MOD=AJPERES |
| SampleDocument1 | wpsadmin | Thu Mar 28 12:04:19 IST 2013 | /wps/wcm/myconnect/cd54c37b-21a8-4c1f-93b3-ba2c0370d563/WCMSample1.rtf?MOD=AJPERES |
| SampleDocument2 | wpsadmin | Thu Mar 28 12:04:43 IST 2013 | /wps/wcm/myconnect/4bf3f0cc-0c7e-44dc-aab4-13345408ed83/WCMSample2.pdf?MOD=AJPERES |

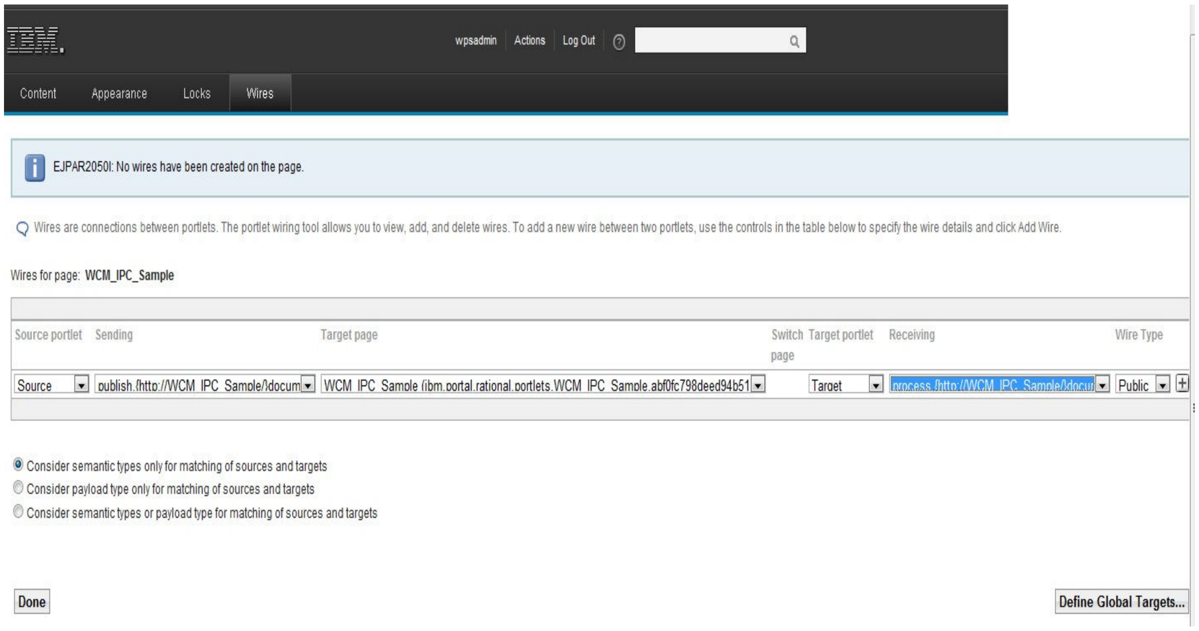
**Welcome to Target Portlet!**

You have selected the following WCM content in source potlet.

Before you can witness inter-portlet communication, you need to wire the source and target portlets on server. To wire the two portlets (refer figure 12)

- Select Edit Page Layout for the page on which the portlets are placed.  To traverse to the page go to Administration > Portal User Interface > Manage Pages > Content Root > Home and select the page where portlet is placed.
- Select the Wires tab.
- For the source portlet, select Source from the drop-down menu, and for the target portlet, select the Target portlet. For the event names, click the drop-down arrow for the Sending and Receiving fields.
- Click the plus sign and then click Done.

**Figure 12: Wire the source and target portlets**



EJPAR2050I: No wires have been created on the page.

Wires are connections between portlets. The portlet wiring tool allows you to view, add, and delete wires. To add a new wire between two portlets, use the controls in the table below to specify the wire details and click Add Wire.

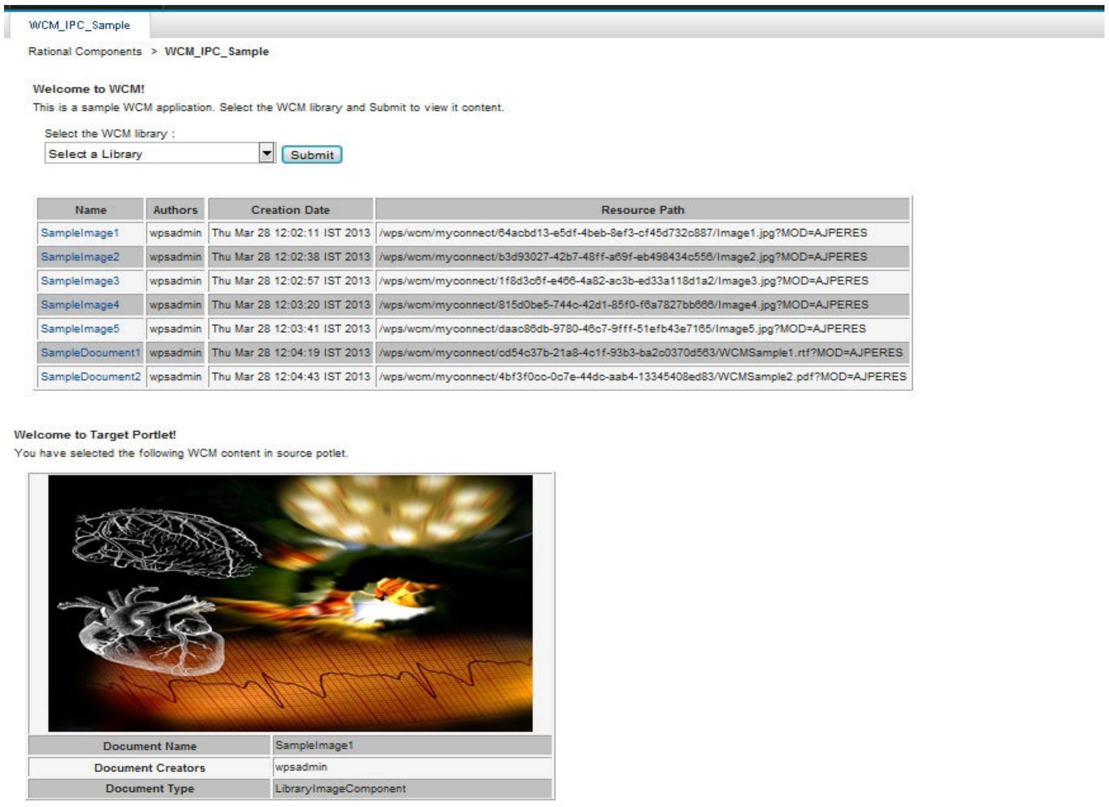
Wires for page: **WCM_IPC_Sample**

| Source portlet | Sending | Target page | Switch page | Target portlet | Receiving | Wire Type |
|---|---|---|---|---|---|---|
| Source | publish.{http://WCM_IPC_Sample/}docum | WCM_IPC_Sample (ibm.portal.rational.portlets.WCM_IPC_Sample.abf0fc798deed94b51 | | Target | process.{http://WCM_IPC_Sample/}docu | Public |

[✓ Consider semantic types only for matching of sources and targets]
Consider payload type only for matching of sources and targets
Consider semantic types or payload type for matching of sources and targets

Once you have wired the portlets, select a content Name in source portlet (for example, the first row in the Source Portlet). When you click the Name, an event displayName is triggered by the Source portlet, which sends the value (i.e. concatenated metadata) to Target portlet. On receiving the event, the Target Portlet processes the event. It fetches the value and parses and displays the same for the user in a HTML table.

## Figure 13: Output with details of image resource displayed in target portlet



WCM_IPC_Sample

Rational Components > WCM_IPC_Sample

**Welcome to WCM!**

This is a sample WCM application. Select the WCM library and Submit to view it content.

Select the WCM library :

Select a Library | Submit

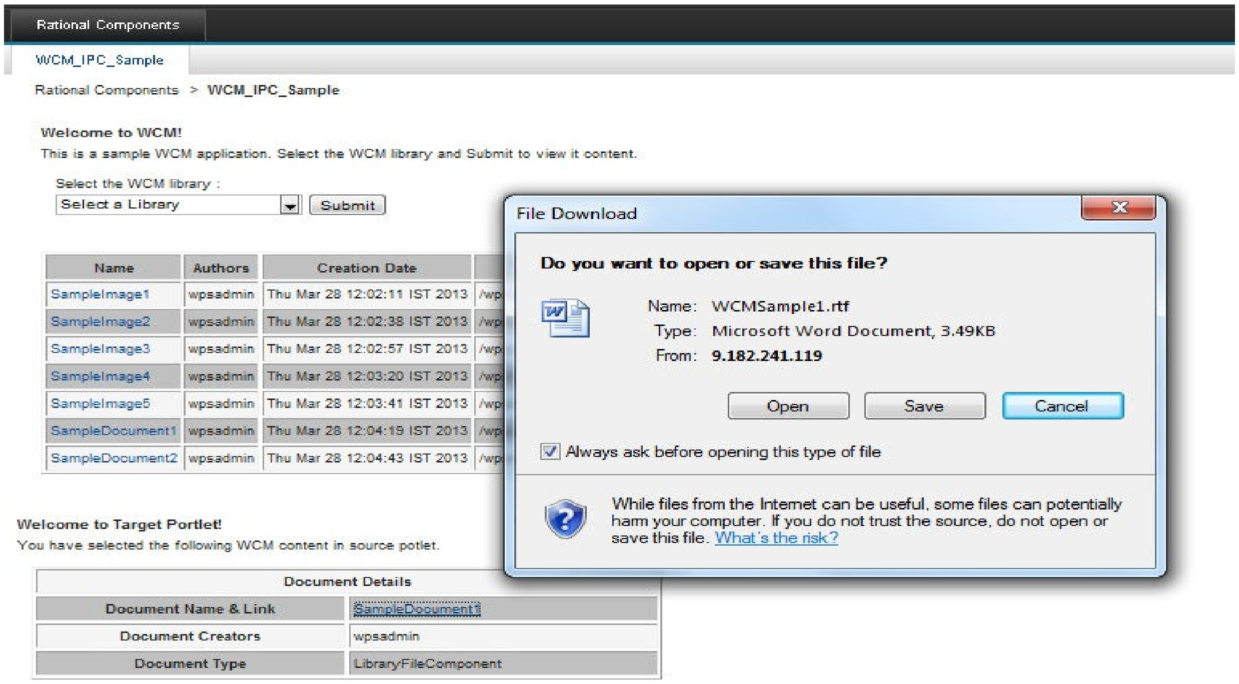
| Name | Authors | Creation Date | Resource Path |
|---|---|---|---|
| SampleImage1 | wpsadmin | Thu Mar 28 12:02:11 IST 2013 | /wps/wcm/myconnect/64acbd13-e5df-4beb-8ef3-cf45d732c887/Image1.jpg?MOD=AJPERES |
| SampleImage2 | wpsadmin | Thu Mar 28 12:02:38 IST 2013 | /wps/wcm/myconnect/b3d93027-42b7-48ff-a69f-eb498434c556/Image2.jpg?MOD=AJPERES |
| SampleImage3 | wpsadmin | Thu Mar 28 12:02:57 IST 2013 | /wps/wcm/myconnect/1f8d3c6f-e466-4a82-ac3b-ed33a118d1a2/Image3.jpg?MOD=AJPERES |
| SampleImage4 | wpsadmin | Thu Mar 28 12:03:20 IST 2013 | /wps/wcm/myconnect/815d0be5-744c-42d1-85f0-f6a7827bb666/Image4.jpg?MOD=AJPERES |
| SampleImage5 | wpsadmin | Thu Mar 28 12:03:41 IST 2013 | /wps/wcm/myconnect/daac86db-9780-46c7-9fff-51efb43e7165/Image5.jpg?MOD=AJPERES |
| SampleDocument1 | wpsadmin | Thu Mar 28 12:04:19 IST 2013 | /wps/wcm/myconnect/cd54c37b-21a8-4c1f-93b3-ba2c0370d563/WCMSample1.rtf?MOD=AJPERES |
| SampleDocument2 | wpsadmin | Thu Mar 28 12:04:43 IST 2013 | /wps/wcm/myconnect/4bf3f0cc-0c7e-44dc-aab4-13345408ed83/WCMSample2.pdf?MOD=AJPERES |

**Welcome to Target Portlet!**

You have selected the following WCM content in source potlet.

| | |
|---|---|
| Document Name | SampleImage1 |
| Document Creators | wpsadmin |
| Document Type | LibraryImageComponent |

## Figure 14: Output with details of file resource displayed in target portlet



Rational Components

WCM_IPC_Sample

Rational Components > WCM_IPC_Sample

**Welcome to WCM!**

This is a sample WCM application. Select the WCM library and Submit to view it content.

Select the WCM library :

Select a Library | Submit

| Name | Authors | Creation Date | |
|---|---|---|---|
| SampleImage1 | wpsadmin | Thu Mar 28 12:02:11 IST 2013 | /wp |
| SampleImage2 | wpsadmin | Thu Mar 28 12:02:38 IST 2013 | /wp |
| SampleImage3 | wpsadmin | Thu Mar 28 12:02:57 IST 2013 | /wp |
| SampleImage4 | wpsadmin | Thu Mar 28 12:03:20 IST 2013 | /wp |
| SampleImage5 | wpsadmin | Thu Mar 28 12:03:41 IST 2013 | /wp |
| SampleDocument1 | wpsadmin | Thu Mar 28 12:04:19 IST 2013 | /wp |
| SampleDocument2 | wpsadmin | Thu Mar 28 12:04:43 IST 2013 | /wp |

File Download

**Do you want to open or save this file?**

Name: WCMSample1.rtf
Type: Microsoft Word Document, 3.49KB
From: **9.182.241.119**

Open | Save | Cancel

☑ Always ask before opening this type of file

While files from the Internet can be useful, some files can potentially harm your computer. If you do not trust the source, do not open or save this file. What's the risk?

**Welcome to Target Portlet!**

You have selected the following WCM content in source potlet.

| Document Details | |
|---|---|
| Document Name & Link | SampleDocument1 |
| Document Creators | wpsadmin |
| Document Type | LibraryFileComponent |

## Summary

In this article you have learned development of Web Content Management (WCM) based portlets for WebSphere® Portal by using IBM Rational Application Developer. The use case that you followed created a portlet project in IBM Rational Application Developer, and showed how to use WCM API to interface with WCM using a workspace object. You fetched the list of content libraries before setting one of the library as a current workspace library. Then you queried for the content in a library based on the document type. This was followed by learning how easily eventing can be achieved between two portlets using IBM Rational Application Developer, where Source portlet was configured to publish an event and Target portlet was configured to subscribe and process the same event.  Finally, to visualize and test the application, you published the portlet project to WebSphere Portal Server and wire the two portlets using the wiring tool provided by WebSphere Portal Server.

## Resources

1) Get information about Rational® Application Developer and how to use it:
- IBM Rational Application Developer v85 Information center.
- IBM Rational application Developer wiki – Portal tools

2) For product documentation about IBM Web Content Manager v 8.0
- IBM Web Content Manager 8 Product Documentation
- Troubleshooting WCM API, How To, and Sample Code