JBoss Portal

Reference guide

0.2

Table of Contents

Target Audience

Developers of portlets for JBoss portal should read this document

Acknowledgements

We would like to thank all developers that participate in the JBoss Portal project effort, Remy for his help and the Nodesk team that gave us that nice theme.

Contribution of any kind is always welcome, you can contribute by providing ideas, filling bug reports, producing some code, designing a theme, writing some documentation... There are various way to help. To report a bug please use our Jira system [http://jira.jboss.com].

1

JSR168 portlets

Thomas Heute <theute@jboss.org>

1.1. Introduction

The JSR 168 specification aims at defining porlets that can be used by any JSR168 portlet container also called portals. There are different portals out there with commercial and non-commercial licences. In this chapter we will briefly describe such portlets but for more details you should read the specifications available on the web.

As of today, JBoss portal is fully JSR168 1.0 compliant, that means that any JSR168 portlet will behave as it should inside the portal.

1.2. The basics

What is really important to know about such portlets is that when a page is displayed it is divided into two distincts parts, an action part on one portlet followed by rendering parts for every porlets displayed on a page. A portal just aggregates all the chunks of HTML rendered by the different portlets of a page.

1.2.1. Portal

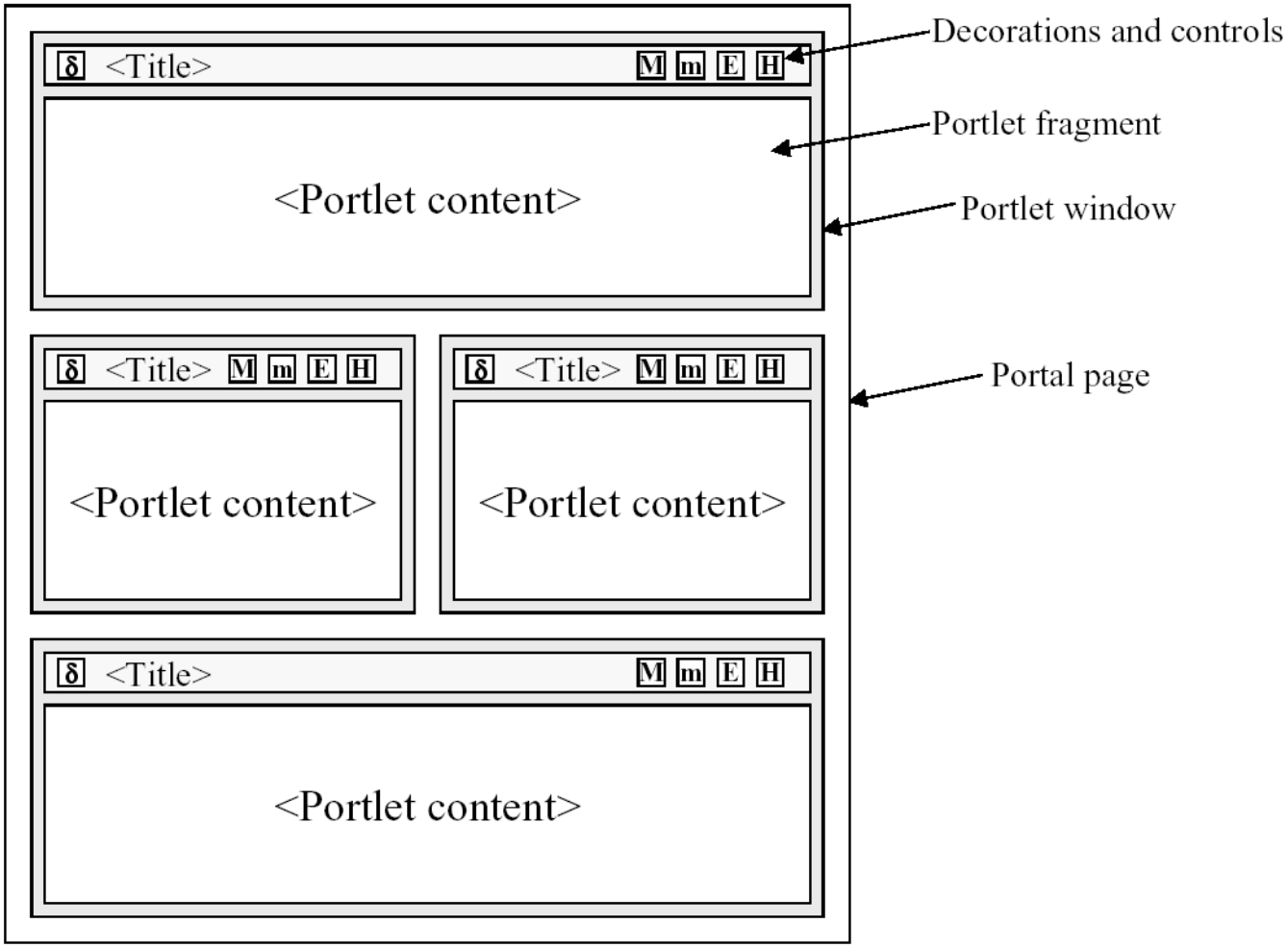
Before we even talk about portlets, let's talk about the container called portal.

A portal is basically a web application in which modules can be easily added or removed. We call those modules 'portlets'. A module can be as complex as a forum, a news management system or as simple as a text or text with images with no possible interaction.

On a single web page different portlets can appear at the same time.

1.2.2. Page composition

A portal can be seen as pages with different areas and inside areas, different windows and each window having one portlet.



1.2.3. Rendering modes

A porlet can have different view modes, three modes are defined by the specification but a portal can extends those modes.

2

XML descriptors

Thomas Heute `<theute@jboss.org>`

2.1. Introduction

To define your portals, you need to create few XML files in order to declare your portlet, portlet instances, windows, pages and then your portals.

2.2. /WEB-INF/jboss-portlet.xml

Here is a sample took from the forums portlet:

```
<portlet-app>
   <app-name>forums</app-name>
   <portlet>
      <portlet-name>ForumsPortlet</portlet-name>
      <security>
         [...]
      </security>
   </portlet>
</portlet-app>
```

First must be defined an application name, this will be used to create a reference to a portlet in the other descriptors. Then if some extra information are needed because you are using specific features of JBoss Portal, you need to add those details in this file, the `portlet-name` must be the same as defined in `portlet.xml`. (The security tag is explained in the security chapter of this documentation).

2.3. /WEB-INF/portlet.xml

This file is used to declare the portlets of your application, following is an example of such a file

```
<?xml version="1.0" encoding="UTF-8"?>
<portlet-app
   xmlns="http://java.sun.com/xml/ns/portlet/portlet-app_1_0.xsd"
   xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
   xsi:schemaLocation="http://java.sun.com/xml/ns/portlet/portlet-app_1_0.xsd
                       /opt/SUNWps/dtd/portlet.xsd" version="1.0">
   <portlet>
      <portlet-name>UserPortlet</portlet-name>
      <portlet-class>org.jboss.nukes.core.portlet.user.UserPortlet</portlet-class>
      <supported-locale>en</supported-locale>
      <supported-locale>fr</supported-locale>
      <resource-bundle>Resource</resource-bundle>
      <supports>
```

```
         <mime-type>text/html</mime-type>
         <portlet-mode>VIEW</portlet-mode>
      </supports>
      <portlet-info>
         <title>User portlet</title>
      </portlet-info>
   </portlet>
   <portlet>
      <portlet-name>CMSPortlet</portlet-name>
      <portlet-class>org.jboss.nukes.core.portlet.cms.CMSPortlet</portlet-class>
      <init-param>
         <description>Content Repository Type: (webdav|http)</description>
         <name>repository</name>
         <value>webdav</value>
      </init-param>
      <init-param>
         <description>WebDAV server username</description>
         <name>username</name>
         <value>root</value>
      </init-param>
      <init-param>
         <description>WebDAV server password</description>
         <name>password</name>
         <value>root</value>
      </init-param>
      <supported-locale>en</supported-locale>
      <resource-bundle>Resource</resource-bundle>
      <supports>
         <mime-type>text/html</mime-type>
         <portlet-mode>VIEW</portlet-mode>
         <portlet-mode>HELP</portlet-mode>
      </supports>
      <portlet-info>
         <title>CMS portlet</title>
      </portlet-info>
   </portlet>
<portlet-app>
```

As you can see for any portlet you need to add a `portlet` tag, then you need to give extra information as follow:

- `portlet-name` a mandatory entry to give a name to this portlet
- `portlet-class` a mandatory entry to specify the class of the portlet
- `supported-locale` optional entries to specify the supported languages (two letter country code)
- `resource-bundle` an optional entry to specify the name of the resource bundle file (.properties)
- `init-param` optional entries to give parameters to the portlet
- `supports/mime-type` optional entries to specify all the supported mime-types
- `supports/portlet-mode` optional entries to specify all the supported modes, VIEW, HELP, EDIT and/or custom modes
- `portlet-info/title` optional entry to define a title to the portlet

2.4. portlet-instances.xml

After you defined all the portlets you need, you will need to define the instances that you will use.

```
<?xml version="1.0" standalone="yes"?>
<instances>
   <instance>
      <instance-name>UserPortletInstance</instance-name>
      <component-name>UserPortlet</component-name>
      <preferences>
         <preference>
            <name>one</name>
            <value>1.5</value>
         </preference>
         <preference>
            <name>two</name>
            <value>2.5</value>
            <read-only>true</read-only>
         </preference>
         <preference>
            <name>three</name>
            <value>3.5</value>
            <read-only>true</read-only>
         </preference>
      </preferences>
   </instance>
   <instance>
      <instance-name>CMSPortletInstance</instance-name>
      <component-name>CMSPortlet</component-name>
   </instance>
</instances>
```

Again the file is pretty simple, the `instances`tag includes `instance` elements with:

- `instance-name` required to specify the name of the instance
- `component-name` required and has to be defined in the `portlet.xml`
- `preferences` optional to define preferences relevant to this instance of a portlet

2.5. *-page.xml

You defined your portlets then your instances of portlet, now let's put them together on a page, to do so you can create files with `-page.xml` and put them either in the `WEB-INF` of a war file or in the `deploy` directory of JBoss.

Here is the page for the forums module as example:

```
<pages>
   <portal-name>default</portal-name>
   <page>
      <page-name>forums</page-name>
      <window>
         <window-name>ForumsPortletWindow</window-name>
         <instance-ref>forums.ForumsPortlet.ForumsPortletInstance</instance-ref>
         <default>true</default>
         <region>left</region>
         <height>0</height>
```

```
      </window>
   </page>
</pages>
```

Again this is pretty straightforward. At first you need to define in which portal this page should belongs to (we will see later how to define a portal). Then you define the pages, you can define as many page as you want, this is how a page is define:

- `page-name` required element to define the name of a page
- `window` required element to define a window
  - `window-name` required element to define the name of a window
  - `instance-ref` required element, it must refers to an existing portlet instance. Notice how the name is decomposed, first you have the application name as defined in `jboss-portlet.xml`, the name of the portlet (as defined in `portlet.xml`) another dot and finally the name of the portlet instance (as defined in portlet-instances.xml.
  - `default` optional element, it defines if this window should be the default window (and will occupy most of the space on the screen.
  - `region` required element, it defines where on the theme, the window should be displayed, only the documentation of the theme can define what region exists for this specific theme.
  - `height` required element, this integer defines where the window should be displayed compare to the others in a same region. The higher the number is the higher in the theme it will be displayed. If two windows have the same height value then the windows will be randomly placed.

2.6. *-portal.xml

Those files are used to define different portals. The files `*-portal.xml` can be include into a war file (WEB-INF directory) or directly in the `deploy` directory of JBoss.

```
<?xml version="1.0" encoding="UTF-8"?>
<portal>
   <portal-name>default</portal-name>
   <supported-modes>
      <mode>VIEW</mode>
      <mode>EDIT</mode>
      <mode>HELP</mode>
   </supported-modes>
   <supported-window-states>
      <window-state>NORMAL</window-state>
      <window-state>MINIMIZED</window-state>
      <window-state>MAXIMIZED</window-state>
   </supported-window-states>
   <pages>
      <default-page>default</default-page>
      <page>
         <page-name>default</page-name>
         <window>
```

```
            <window-name>CMSPortletWindow</window-name>
            <instance-ref>portal.CMSPortlet.CMSPortletInstance</instance-ref>
            <default>true</default>
            <region>left</region>
            <height>0</height>
         </window>
         <window>
            <window-name>UserPortletWindow1</window-name>
            <instance-ref>portal.UserPortlet.UserPortletInstance</instance-ref>
            <region>left</region>
            <height>0</height>
         </window>
      </page>

      <page>
         <page-name>admin</page-name>
         <window>
            <window-name>UserPortletWindow2</window-name>
            <instance-ref>portal.UserPortlet.UserPortletInstance</instance-ref>
            <default>true</default>
            <region>left</region>
            <height>0</height>
         </window>
         <window>
            <window-name>GroupPortletWindow</window-name>
            <instance-ref>portal.GroupPortlet.GroupPortletInstance</instance-ref>
            <region>right</region>
            <height>1</height>
         </window>
         <window>
            <window-name>AdminCMSPortletWindow</window-name>
            <instance-ref>portal.AdminCMSPortlet.AdminCMSPortletInstance</instance-ref>
            <region>left</region>
            <height>4</height>
         </window>
      </page>

      <page>
         <page-name>test</page-name>
         <window>
            <window-name>DefaultPortletWindow</window-name>
            <instance-ref>portal.DefaultPortlet.DefaultPorltetInstance</instance-ref>
            <default>true</default>
            <region>left</region>
            <height>0</height>
         </window>
         <window>
            <window-name>TestPortletWindow</window-name>
            <instance-ref>portal.TestPortlet.TestPortletInstance</instance-ref>
            <region>left</region>
            <height>1</height>
         </window>
         <window>
            <window-name>PreferencesPortletWindow</window-name>
            <instance-ref>portal.PreferencesPortlet.PreferencesPortletInstance</instance-ref>
            <region>left</region>
            <height>2</height>
         </window>
      </page>

   </pages>
</portal>
```

This file is the descriptor of a portal, of course you can define several portals containing several pages. Here is how you define a portal:

- `portal-name` this is a required element to define the name of a portal.
- `supported-modes` all the supported modes at the portal level, you can then specify for each instance the supported modes for a specific portlet.
- `supported-window-states` all the supported window states at the portal level. You can add your own window states here.
- `pages` to define the pages of your portal, the syntax is the same as in the `-page.xml` files.

3

Portal urls

Julien Viet <julien@jboss.org>

3.1. Introduction

Most of the time portals use very complicated urls, however it is possible to setup entry points in the portal that follow simple patterns.

Each portal container can contain multiple portals and within a givin portal, windows are organized in pages, a page simply being a collection of windows associated to a name.

Before reading this chapter you must know how to define a page and a portal, you can refer to the chapter about XML descriptors to have a better understanding of those notions.

3.2. Acessing a portal

Each portal container can contains multiple portals, also there is one special portal which is the default portal, i.e the one used when no portal is specified in particular.

The following examples show you how the selection is done.

- ```
  ""
  "/"
  "/index.html" with no parameters
  "/portal"
  "/portal/"
  => default / "/index.html"
  ```

- ```
  "/portal/blah.html"
  => default / "/blah.html"
  ```

- ```
  "/portal/another/"
  => another / "/index.html"
  ```

- ```
  "/portal/another/blah.html"
  => another / "/blah.html"
  ```

- ```
  "files"
  "/files/"
  => default / "/index.html"
  ```

- ```
  "/files/blah.html"
  => default / "/blah.html"
  ```

- any other URL, like "/blah.html" is served from the another servlet (war files or security for instance)

3.3. Accessing a page

It is possible to have multiple page per portal. As for portal there is a default page for a given portal. Once the portal has been selected, then a page must be used and all the windows present in that page will be rendered. The page selection mechanism is the following.

- If there is a target window in the URL, the page where this window resides is chosen. Usually these URLs are rendered by portlets to target themselves.

- If there is a "page" parameter then a page with that name is looked in the current portal, for intance th URL "/index.html?page=admin" will chose the admin page in the default portal.

- the default page for the current portal is used, for instance the URL "/index.html" will use the default page in the default portal.

4

Bring security to JBoss portlets

Thomas Heute `<theute@jboss.org>`

4.1. Introduction

JSR 168 specifications does not define any particular security implementation even though you can get the authenticated user and its role.

In JBoss portal, each portlet defines its own security model, and the portal gives an easy way to check if a user has a permission.

4.2. Defining the security model for your portlet

To define your security model, you need to edit the file `WEB-INF/jboss-portlet.xml`. First you need to define all kind of permissions you want, and how those permissions are related one to the other.

Let's take a small example, in your portlet you want to define two different permissions, `read` and `write`. Here is an exemple of security model:

```
<security>
   <model>
      <permission-description>
         <permission-name>write</permission-name>
         <description>Writing permission</description>
      </permission-description>
      <permission-description>
         <permission-name>read</permission-name>
         <description>Reading permission</description>
      </permission-description>
   </model>
</security>
```

This would be sufficient but if a user can write usually he can read as well. With the current model, we would need to add the role to both permission. There is another way, we could just specify that the `write` permission implies the `read` permission. To do so we just need to write:

```
<security>
   <model>
      <permission-description>
         <permission-name>write</permission-name>
         <description>Writing permission</description>
         <implies>read</implies>
      </permission-description>
      <permission-description>
         <permission-name>read</permission-name>
```

```
         <description>Reading permission</description>
      </permission-description>
   </model>
</security>
```

A permission can imply any number of permissions, just make sure you are not doing cycles (when a permission implies another that implies the first)

4.3. Giving permissions to roles

Once you defined what kind of permissions you want, you need to attribute roles to them, to do so you need to add a scheme to the model:

```
<security>
   <model>
      <permission-description>
         <permission-name>write</permission-name>
         <description>Writing permission</description>
         <implies>read</implies>
      </permission-description>
      <permission-description>
         <permission-name>read</permission-name>
         <description>Reading permission</description>
      </permission-description>
   </model>
   <scheme>
      <domain></domain>
      <item>
         <path>/</path>
         <permission>
            <permission-name>read</permission-name>
            <role-name>Users</role-name>
         </permission>
         <!-- For non logged users -->
         <permission>
            <permission-name>read</permission-name>
            <role-name></role-name>
         </permission>
         <permission>
            <permission-name>write</permission-name>
            <role-name>Admins</role-name>
         </permission>
      </item>
   </scheme>
</security>
```

Here we add the `read` permission to the `Users` role and anonymous users then the `write` permission to the `Admins` role. The `path` defines a scope on which the permissions will be defined. This will have different meanings for different portlets. For example the forums portlet uses a path to specify on which category or forum you want to apply the permissions (/mycategory/myforum for example)

4.4. Checking a permission inside your portlet

You can check a permission on a `JBossRenderRequest` or a `JBossActionRequest` using any of the `hasPermission` methods (see the API).

In our simple example, `req.hasPermission("write")` will check if the user accessing the website has the `write`

privilege.

5

Deploying Custom Portlets

Roy Russo `<roy at jboss dot org>`

Thomas Heute `<theute@jboss.org>`

5.1. Introduction

This section describes the steps to incorporate your own portlets in to JBoss Portal. You can download a Hello-World Portlet example from here [http://docs.jboss.org/jbportal/helloworld.war.zip].

5.2. Assumptions

Assumptions:

1. You already have a portlet war named helloworld.war
2. The WAR file has a standard webapp directory structure:

```
/helloworld.war
   /WEB-INF
      /classes
      /lib
      /portlet.xml
      /web.xml
   /META-INF
```

3. Your `porlet.xml` looks like this:

```
<?xml version="1.0" encoding="UTF-8"?>
<portlet-app xmlns="http://java.sun.com/xml/ns/portlet/portlet-app_1_0.xsd"
version="1.0"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://java.sun.com/xml/ns/portlet/portlet-app_1_0.xsd
http://java.sun.com/xml/ns/portlet/portlet-app_1_0.xsd">
<portlet>
    <portlet-name>HelloWorldPortlet</portlet-name>
    <portlet-class>com.myapp.portlet.HelloWorldPortlet</portlet-class>
    <expiration-cache>0</expiration-cache>
    <supports>
      <mime-type>text/html</mime-type>
      <portlet-mode>help</portlet-mode>
```

```
    </supports>
    <supported-locale>en</supported-locale>
    <portlet-info>
      <title>Hello World Portlet</title>
    </portlet-info>
  </portlet>
</portlet-app>
```

5.3. Adding the XML Descriptors

There are three files you will need to add under `/WEB-INF` for your portlet to work in Jboss Portal. The first is a very short one, it should look like:

```
<portlet-app>
   <app-name>helloworld</app-name>
</portlet-app>
```

This is used to define the first element in the dotted notation of an instance reference (see in `helloworld-pages.xml` for example).

Then you need to create `helloworld-pages.xml`. The portal will scan this file to find out which portal instance to target and what page name it will be in. In this case, we can access our portlet by going to `http://localhost:8080/portal/index.html?page=hello`

```
<pages>
   <portal-name>default</portal-name>
   <page>
      <page-name>hello</page-name>
      <window>
         <window-name>HelloWorldPortletWindow</window-name>
         <instance-ref>helloworld.HelloWorldPortlet.HelloWorldPortletInstance</instance-ref>
         <default>true</default>
         <region>user1</region>
         <height>0</height>
      </window>
   </page>
</pages>
```

The second file needed under `/WEB-INF` is a `portlet-instances.xml`. This file maps the portlet name in your `portlet.xml` file to the portlet instance in your `helloworld-pages.xml`.

```
<?xml version="1.0" standalone="yes"?>
<instances>
   <instance>
      <instance-name>HelloWorldPortletInstance</instance-name>
      <component-name>HelloWorldPortlet</component-name>
   </instance>
</instances>
```

Now add these two files to your war and you should be able to access the helloworld portlet by going to `http://localhost:8080/portal/index.html?page=hello`.