LogicBlaze FUSE Console Guide

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The LogicBlaze FUSE Console is a graphical interface to LogicBlaze FUSE. The LogicBlaze FUSE console is a portal that allows the user to start, stop, and monitor the LogicBlaze FUSE distribution, perform deployments, and view operational statistics. This guide discusses the console and how to use it.

Contents

1. Introduction

In addition to the installation requirements discussed in the *Getting Started with LogicBlaze FUSE* guide, running the console requires a Web browser, such as:

- Internet Explorer
- Mozilla Firefox

2. Starting the Console

To view and use the console, LogicBlaze FUSE must first be started. If you installed LogicBlaze FUSE as a Windows service or a Linux daemon proceed to step 2, otherwise open a command window and do the following:

1. Start LogicBlaze FUSE running.

   ```
   cd [fuse_dir]

   bin\fuse
   ```

   where `[fuse_dir]` is the directory in which LogicBlaze FUSE was installed.

   Please see the *Getting Started with LogicBlaze Fuse* guide for more detailed instructions on starting LogicBlaze FUSE.

2. Once LogicBlaze FUSE is running, open a Web browser at the following URL:

   ```
   http://[hostname]:8080/
   ```

`hostname` should be replaced by the name of the server on which LogicBlaze FUSE is running, for example, `localhost`. If the Web server port number was modified, then use the new value instead of 8080.

> You must use the Jetty Web server supplied with LogicBlaze FUSE, so if there is a port conflict, please change the LogicBlaze FUSE configuration to use another port. For instructions please see the *LogicBlaze FUSE Getting Started Guide*.

3. Using the Console

The default homepage of the Console contains the "FUSE Links" portlet which contains a list of demo applications using LogicBlaze FUSE. Click on a link to run one of the applications.
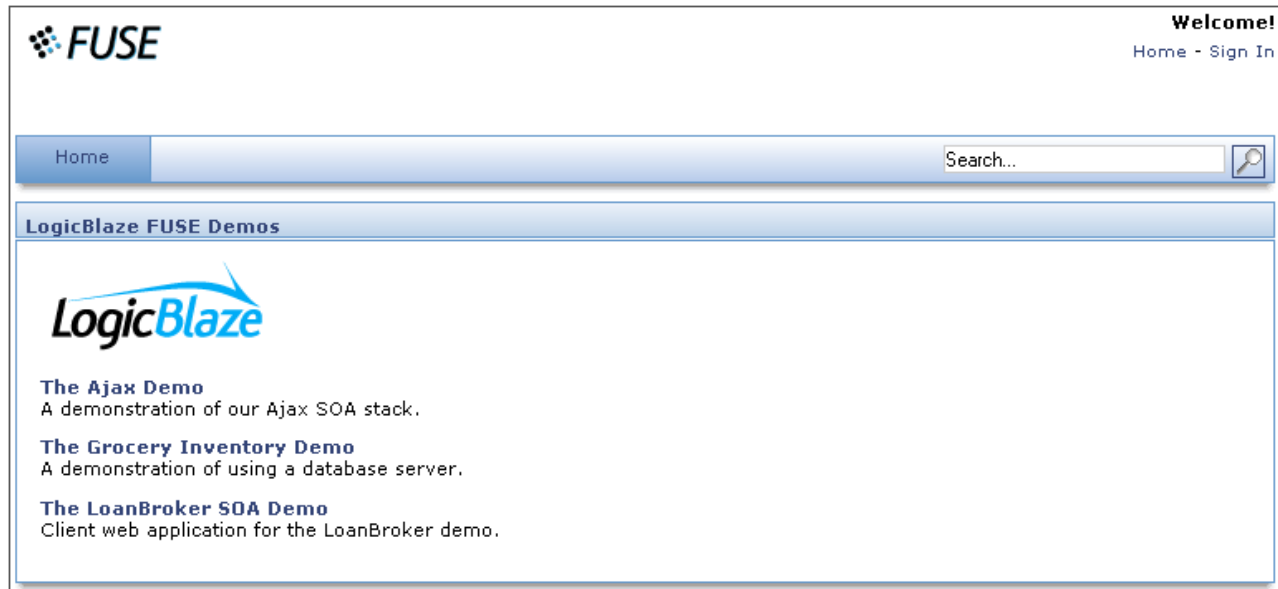
Figure 1: LogicBlaze FUSE home page

To access the Console, click on the "Sign In" link found on the upper right hand corner of the page. On the following page you can sign in by entering your username and password. If this is your initial sign-in you may use the default username of "`admin@logicblaze.com`" with the password of "`welcome`". Or if you already have an existing account, use those credentials. Otherwise, click on the "Create Account" tab and create your own account that you'll use to sign in to the Console.

Once signed in, additional menu items can be seen on the upper right hand corner of the page, under the Welcome banner. Clicking on My Places >> Guest (Public) will show again the "LogicBlaze FUSE Demos" portlet like in Figure 1.
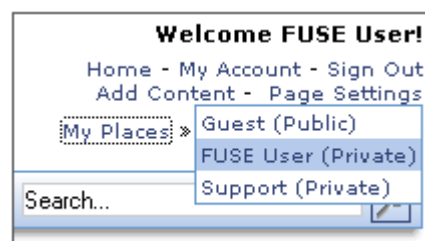
Figure 2: My Places menu

On the navigation bar you will see four tabs: "FUSE", "ActiveMQ", "ServiceMix" and "Admin". From the "Admin" tab you can perform some administrative tasks. The "Admin" section is discussed in a later section of this document.

By default, the "FUSE" tab is selected and on the page you will see "FUSE Links" portlet. The "ActiveMQ" tab contains the "JMSBrokers", "JMSTopics" and "JMSQueues" portlets. The "ServiceMix" tab has the "JBIContainer", "JBIComponents", "JBIUpload" and "JBIStatistics" portlets. You can add other portlets on the page. Adding portlets is discussed in a later section.
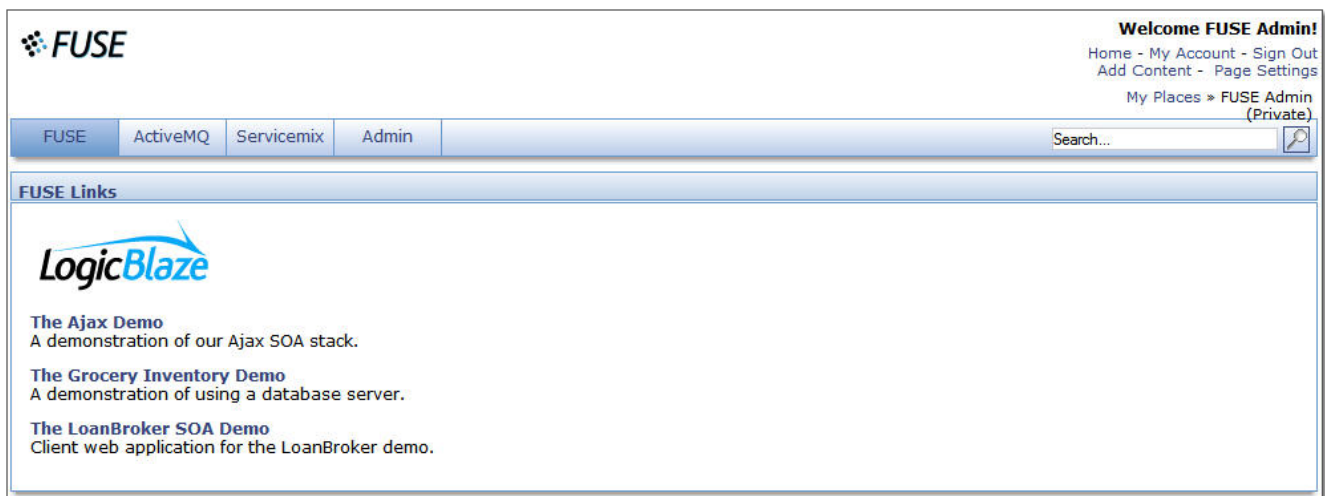
Figure 3: FUSE page

Now, let's take a closer look at each portlet.

3.1. JBI Components Portlet

The JBI Components portlet lists all the components and service assemblies installed and allows the user to start, stop, or shutdown a component.

Figure 4: JBI Components portlet

The four columns (Name, Type, Status, Actions) in the Components List will be described next.

Name: the Name column shows the names of the installed components. A component can be selected by clicking on the name. This will change the mode of the JBI Components portlet to display details about the selected component (see Figure 5).

The details shown are similar to the details in the other view, with a notable exception. This view shows the Service Units (SUs) deployed to component.
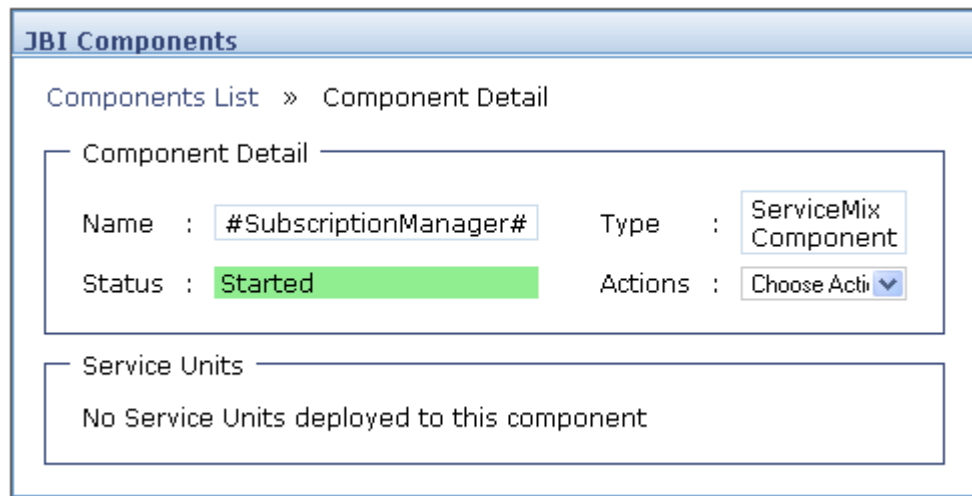
Figure 5: JBI Components Details portlet

To get back to the Components List view, click the Components List link.

Type: There are three types of components that will be listed: Binding Components (BC), Service Engines (SE), and ServiceMix lightweight components. A different icon represents each type of component:

Table 1: Component Icons

State	Affect on the JBI Container and LogicBlaze FUSE Transitions Allowed
	Service Engines are represented by the cog icon .
	Binding Components are represented by the link icon.
	ServiceMix Lightweight Components are represented by stacking boxes.

If you hover over the icon, text will be displayed showing the type of the component.

Status: The Status column shows the state the component is in: Started, Stopped, or Shutdown.

Table 2: Actions

State	Affect on the JBI Container and LogicBlaze FUSE	Transitions Allowed
Started	Starts the component individually. LogicBlaze FUSE is up.	Stop
Stopped	Stops the component, but does not affect LogicBlaze FUSE - it is up.	Shutdown or Start
Shutdown	The component is shutdown. LogicBlaze FUSE is up.	Start or Uninstall

From the Shutdown state, the component can be uninstalled by selecting Uninstall from the pull-down menu.

The difference between the stopped state and the shutdown state is that from the shutdown state you may uninstall the component which cannot be done from the stopped state. The states and their transitions are defined by JSR 208.

Actions: Each component is given a drop-down menu option for the actions that can be performed on them depending on their states.

3.2. JMS Queues
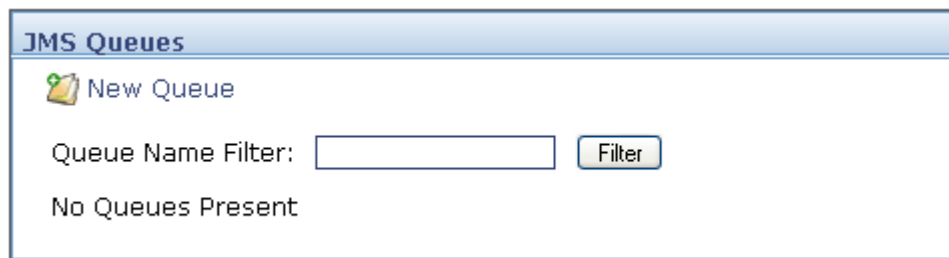
Figure 6: JMS Queues portlet

The Queues portlet is for monitoring Apache ActiveMQ queues.

By default all queues are displayed; you can view a subset of your queues by entering a regular expression, such as "*.Advisory.*", then clicking the Filter button.

3.3. JBI Upload Portlet

Figure 7: JBI Upload portlet

This portlet allows you to install components and deploy service assemblies and service units. The LogicBlaze FUSE console will detect whether the uploaded file is a component or a service assembly/service unit and install or deploy them depending on which action is necessary.

To install or deploy:

1. Click on Browse to select the item to be installed or deployed.
2. Follow the prompts in the pop-up window to select the component or SA.
3. Click the Install/Deploy button. The service assembly will be installed and started with this operation.

3.4. JBI Container Portlet

The JBI Container portlet shows information pertaining to the JBI container. There are two areas on this portlet: JBI Container and System Services.

Figure 8: JBI Container portlet

JBI Container

JBI Container shows the software version of the JBI container. In Figure 8 the software version information displays the name of the JBI container, its status, and a pull-down "Actions" menu.

The Name column displays the name of the JBI container. Apache ServiceMix is the JBI container for the LogicBlaze FUSE distribution. By default Apache ServiceMix sets the name of the JBI container to `defaultJBI`. This is configurable, however, modifying the Apache ServiceMix configuration is beyond the scope of this document. Please see the *Additional Resources* section below for where to find ServiceMix configuration information.

The Status column shows the status of the JBI container, either started or stopped.

The Actions pull-down menu allows the user to stop, start, and shutdown the JBI container.

The table below shows the different states the JBI container can be in, the effect those states have on the JBI container and/or the entire distribution, and what state you can transition to from the state you are in. In other words, from the Started state you can transition to the Stopped state, but not the Shutdown state. From the Stopped state you can go to the Started or Shutdown states, and so on.

Table 3: JBI Container States

State	Affect on the JBI Container	Affect on LogicBlaze FUSE	Transitions Allowed
Started	All JBI components up	LogicBlaze FUSE is up	Stop
Stopped	Stops all JBI components	LogicBlaze FUSE is up	Shutdown or Start
Shutdown	All components are shutdown	LogicBlaze FUSE is shutdown, including the JBI container	Start

System Services

System Services show the state of all the JBI system services and allows you to start, stop, and shutdown the service individually. Please be aware that typically the entire container is stopped or shutdown; it is not common to stop or shutdown individual services.

System services are standard management `MBean` components. Many of them are required to be JSR 208 (JBI specification) compliant. Each service is described briefly below:

- **AdminCommandsService** - These are the Apache Ant tasks required by the the JSR 208 specification. Apache Ant is a scripting language. Ant tasks are used to manage the JBI system. The tasks provide services such as jbi-install-component, jbi-deploy-service-assembly, and many more.

- **AutoDeploymentService** - In Started state will continuously poll, at a predefined interval, for new Service Assemblies (SA) and Service Units (SU) to deploy. This is required by the JSR 208 specification.

- **DefaultBroker** - Allows you to start and stop the Apache ActiveMQ message broker.

- **DeploymentService** - Used to deploy and undeploy artifacts to installed components and to control the running state of individual deployments.

- **EnvironmentContext** - This service is Apache ServiceMix specific. It starts and stops the Apache ServiceMix configuration and in a later release of LogicBlaze FUSE it will display Apache ServiceMix parameters that are settable. For the present, ServiceMix can be configured manually by editing the ServiceMix `servicemix.xml` file. Please see the end of the document for a link to the Apache ServiceMix Wiki.

- **InstallationService** - The installation service is used for installing JBI components and shared libraries. If this service is in the stopped state nothing will be installed.

- **`jbdcAuditor`** - This is an Apache ServiceMix service which stores all normalized messages (JBI messages) that were sent via the normalized message router. These messages are stored in the Apache Derby database in the LogicBlaze FUSE distribution or to the MySQL database in the LogicBlaze FUSE-MySQL distribution. By default the jdbcAuditor service is in a stopped state because it will create a lot of entries in the database. It can be started and used for troubleshooting or monitoring and then turned off (stopped).

- **`ManagementContext`** - In the JBI specification, this is called `AdminService`. The LogicBlaze FUSE `ManagementContext` extends the `AdminService` class.

- **`Registry`** - This is Apache ServiceMix specific. The registry keeps track of all registered JBI components, service units, and endpoints. The JBI Components portlet (shown below) displays the list of registered components.

3.5. JBI Statistics Portlet

JBI Statistics

⊙ Start Monitoring

Name	inboundExchangeCount	inboundExchangeRate	inboundQueueSize	outboundExchangeCount	outboundExchangeRate
#SubscriptionManager#	0	0.0	0	0	0.0
InventoryDbPoller	13545	2515.8014765596163	0	13545	2515.8014765596163
InventoryViewComponent	0	0.0	0	0	0.0
InventoryViewTransformComponent	0	0.0	0	0	0.0
JdbcToJmsComponent	13545	2515.824584717608	0	13546	2515.638860180127
JdbcToResponseComponent	0	0.0	0	0	0.0
bank0	0	0.0	0	0	0.0
bank1	0	0.0	0	0	0.0
bank1-pipeline	0	0.0	0	0	0.0
bank1-xslt-in	0	0.0	0	0	0.0
bank1-xslt-out	0	0.0	0	0	0.0
creditAgency	0	0.0	0	0	0.0
loanbroker	0	0.0	0	0	0.0
loanbroker-jms	0	0.0	0	0	0.0
servicemix-bpe	0	0.0	0	0	0.0
servicemix-http	0	0.0	0	0	0.0
servicemix-jms	1	2031.0	0	0	0.0
servicemix-jsr181	0	0.0	0	0	0.0
servicemix-lwcontainer	0	0.0	0	0	0.0
servicemix-wsn2005	0	0.0	0	0	0.0

Figure 9: JBI Components Statistics portlet
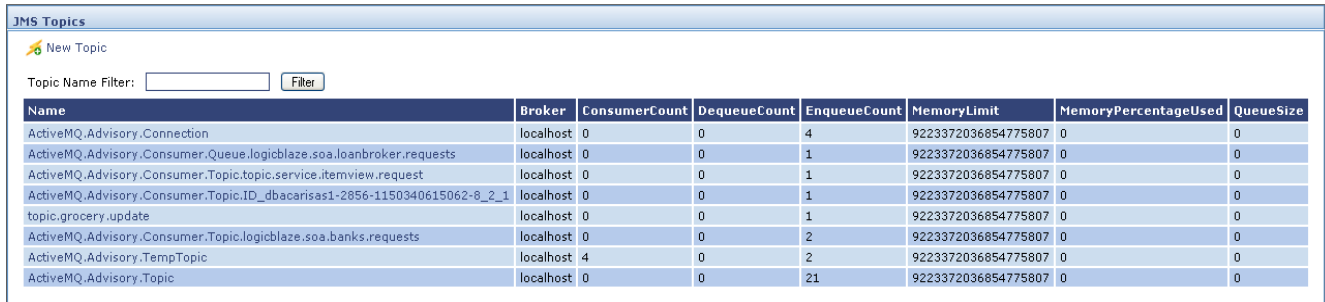
This portlet monitors statistics about the components. By default the monitoring is in a stopped state. To see the latest statistics click the `Start` button. The monitor polls the log files every second and displays the information back to the portlet.

The statistics we are monitoring are:

- **`inboundExchangeCount`**: The counter for inbound `MessageExchanges` to the `DeliveryChannel` for the Component.
- **`inboundExchangeRate`**: The rate (number/sec) of inbound `MessageExchanges`.

- **inboundQueueSize**: The size of the inbound queue.
- **outboundExchangeCount**: The counter for outbound `MessageExchanges` from the Component.
- **outboundExchangeRate**: The rate (number/sec) of inbound `MessageExchanges.`

3.6. JMS Topics Portlet

Name	Broker	ConsumerCount	DequeueCount	EnqueueCount	MemoryLimit	MemoryPercentageUsed	QueueSize
ActiveMQ.Advisory.Connection	localhost	0	0	4	9223372036854775807	0	0
ActiveMQ.Advisory.Consumer.Queue.logicblaze.soa.loanbroker.requests	localhost	0	0	1	9223372036854775807	0	0
ActiveMQ.Advisory.Consumer.Topic.topic.service.itemview.request	localhost	0	0	1	9223372036854775807	0	0
ActiveMQ.Advisory.Consumer.Topic.ID_dbacarisas1-2856-1150340615062-8_2_1	localhost	0	0	1	9223372036854775807	0	0
topic.grocery.update	localhost	0	0	1	9223372036854775807	0	0
ActiveMQ.Advisory.Consumer.Topic.logicblaze.soa.banks.requests	localhost	0	0	2	9223372036854775807	0	0
ActiveMQ.Advisory.TempTopic	localhost	4	0	2	9223372036854775807	0	0
ActiveMQ.Advisory.Topic	localhost	0	0	21	9223372036854775807	0	0

Figure 10: JMS Topics portlet

The Topics portlet monitors Apache ActiveMQ topics.
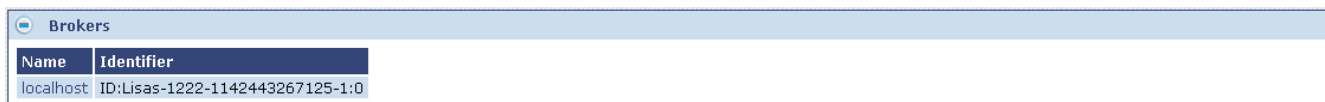
By default all topics are displayed; you can view a subset of your topics by entering a regular expression, such as "*.`Advisory`.*", then clicking the Filter button.

The table in this portlet shows statistics for each topic:
- **ConsumerCount**: the number of active JMS consumers currently connected to the JMS broker and consuming from that topic.
- **DequeueCount**: the number of messages sent from the destination to a JMS consumer.
- **EnqueueCount**: the number of messages sent to the destination.
- **Messages**: the number of messages being buffered by the destination.
- **MessagesCached**: the number of messages actually held in memory.

3.7. JMS Brokers Portlet

This portlet lists the Apache ActiveMQ message brokers running.

Name	Identifier
localhost	ID:Lisas-1222-1142443267125-1:0

Figure 11: JMS Brokers portlet

4. Liferay Portal

LogicBlaze FUSE builds upon the Portlet API (JSR 168) and uses the Liferay 4.0RC1 as the portlet container. As such, portal navigation, user management, page settings, etc. will be handled by Liferay. The default FUSE console already has the FUSE portlets and the Liferay admin portlets setup as default.

The Liferay Portal is an open source portal that provides a consolidated view of different applications. It allows reuse of existing resources, whether they are customized, free, or vendor-provided. It supports the following technologies:

1. JSR-168 - It can deploy customized or vendor-provided portlets, as long as they adhere to the JSR-168 specification.
2. JSR-220 (Hibernate) - Hibernate is used to persist all data and called through the POJO implementations.
3. JSR-127 (JSF) - JavaServer Faces (JSF) implemented portlets can also be deployed on Liferay portals.
4. AJAX - Asynchronous JavaScript And XML (AJAX) is a Web development technique for creating interactive Web applications. This increases Liferay's interactivity, speed, and usability.
5. Spring, EJB, and Aspect Oriented Programming (AOP)
6. Struts and Tiles - Allows developers who are already familiar with Struts to have an easier time of writing portlets in a familiar framework. Tiles makes the look and feel of the portal to be easily customized.
7. Velocity - Velocity is a Java-based template engine that is used within portlets, to layout Journal articles, and to design themes.
8. WSRP - A web services standard that allows portlets from your portal to be published to external portals.

Hot deployment of portlets is currently not available on the default configuration due to the default Web container's limitation for this feature.

There are some additional Liferay specific configurations needed in your JSR 168 portlet WAR before it can be deployed into LogicBlaze FUSE. To deploy a JSR 168 compliant portlet perform the following steps :

1. Start LogicBlaze FUSE. Please see the *Getting Started with LogicBlaze Fuse* guide for more detailed instructions on starting LogicBlaze FUSE.

2. Drop your JSR 168 compliant war into `[fuse_dir]\data\deploy\`. This deployment directory can also be configured on the Admin Portlet (Auto Deploy tab).

   FUSE will automatically modify your war's `web.xml` file by adding the following configurations :

```
<context-param>
  <param-name>company_id</param-name>
  <param-value>liferay.com</param-value>
</context-param>
...

<listener>
  <listener-class>
    com.liferay.portal.shared.servlet.PortletContextListener
  </listener-class>
</listener>
...

<taglib>
  <taglib-uri>http://java.sun.com/portlet</taglib-uri>
  <taglib-location>/WEB-INF/tld/liferay-portlet.tld</taglib-location>
</taglib>
```

   FUSE will also extract the content of your JSR 168 compliant war to `[fuse_dir]\components\activemq\servicemix\portal\webapps`.

3. Stop LogicBlaze FUSE. FUSE needs to shutdown as you will need to modify the FUSE configuration which currently does not support runtime modifications.

4. Your portlet webapp directory will be automatically created here:

   `[fuse_dir]\components\activemq\servicemix\portal\webapps\<my_JSR168_portlet>`

   Add the following files to your portlet webapp:

   a. `WEB-inf\tld\liferay-portlet.tld` – You can just copy the one from `[fuse_dir]\components\activemq\servicemix\portal\webapps\liferay\WEB-INF\tld`.

   b. `liferay-display.xml` – Create this file for additional definitions for the portlet that is used by the Liferay portal. For example:

```
<?xml version="1.0"?>
<!DOCTYPE liferay-portlet-app PUBLIC "-//Liferay//DTD Portlet Application
  4.0.0//EN" "http://www.liferay.com/dtd/liferay-portlet-app_4_0_0.dtd">
<liferay-portlet-app>
  <portlet>
    <portlet-name>JSPPortlet</portlet-name>
    <use-default-template>true</use-default-template>
    <instanceable>true</instanceable>
  </portlet>
  <role-mapper>
    <role-name>administrator</role-name>
    <role-link>Administrator</role-link>
  </role-mapper>
  <role-mapper>
    <role-name>guest</role-name>
    <role-link>Guest</role-link>
  </role-mapper>
  <role-mapper>
    <role-name>power-user</role-name>
    <role-link>Power User</role-link>
  </role-mapper>
  <role-mapper>
    <role-name>user</role-name>
    <role-link>User</role-link>
  </role-mapper>
</liferay-portlet-app>
```

c. `liferay-portlet.xml` – Create this file. Display information for this portlet makes it possible for users to add this portlet via the personalized pages screen. For example:

```
<?xml version="1.0"?>
<!DOCTYPE display PUBLIC "-//Liferay//DTD Display 4.0.0//EN"
  "http://www.liferay.com/dtd/liferay-display_4_0_0.dtd">
<display>
  <category name="category.test">
    <portlet id="JSPPortlet" />
  </category>
</display>
```

For the `liferay-display.xml` and `liferay-portlet.xml` please refer to `[fuse_dir]\components\activemq\servicemix\portal\webapps\liferay\WEB-INF` to view how they are configured.

5. Edit the `[fuse_dir]\components\activemq\servicemix\portal\jetty-xbean.xml` file. You'll need to add your portlet webapp to the FUSE jetty configuration :

```
<webAppContext contextPath="/my_JSR168_portlet"
  resourceBase="${xbean.current.dir}/webapps/my_JSR168_portlet" >
  <serverClasses />
</webAppContext>
```

It is important that your webapp definition should be added after the Liferay webapp definition as this is needed to be loaded first before any JSR 168 portlet webapps gets loaded :

```
<webAppContext contextPath="/"
  resourceBase="${xbean.current.dir}/webapps/liferay" >
  <serverClasses />
</webAppContext>
```

6. Start LogicBlaze FUSE. On your console you be able to see the following line:

```
INFO - HotDeployPortletListener.invokeDeploy(280) | Portlets for
<my_JSR168_portlet> registered successfully

Your portlet should now be available to be added on FUSE (please refer
to "Adding Portlet")
```

The following sections provide an introduction to using the Liferay portal. To learn more about Liferay please see the *Additional Resources* section for a link to Liferay documentation.

4.1. Admin Tab

The "Admin" tab opens to a page that contains portlets that will allow you to perform administrative tasks.

On the "Admin" portlet, select the "Portlets" tab and you'll see a complete list of the portlets available for use along with their status, if it's active or not, and the user roles that have permission to use the specified portlet. These portlets can be added into the console. See section 4.3 *Adding a Portlet* for instructions.

Figure 12: A list of portlets from the Portlets Tab, under "Admin"

4.2. General Characteristics

Portlets have three modes much like the regular window screens we have on our computers. By default the portlets are in their normal mode where only the title or name of the portlet can be seen on the title bar. See all figures above for examples. If you position the mouse pointer on the title bar four buttons can be seen on the upper right corner. See the following table for the list of buttons and their respective actions.

Button	Actions
⊠	This button closes the portlet and removes it from the page.
☐	This button maximizes the portlet. A portlet is in maximized mode when it is the only portlet that can be seen on the page and a left-pointing arrow button (see next button) is on it's upper right corner.
⬅	This button can be seen when the portlet is in maximized mode. Clicking this button directs you back to the console.
☐	This button minimizes the portlet. A portlet is in minimized mode when only the title bar can be seen.
⧉	This button can be seen when the portlet is in minimized mode, and clicking this button restores the portlet to its normal mode.
✳	This Configure button opens the configuration screen of the portlet. You can configure the "Look and Feel" and "Permissions" for that specific portlet.

Some text is a link; links can be seen by hovering over the text. An example of this is shown in section 3.1., the *JBI Components Portlet*.

4.3. Adding a Portlet

The user can add one or more portlets on the FUSE console, as long as he has permission to do so. This permission is defined in the user role (see Figure 12).

To add a portlet to the console:

1. Recall the menu items displayed when you signed in (see Figure 2). Click on the "Add Content" menu link and a pop-up window will show.
2. On that pop-up window, select the portlet you want to add. The portlets are grouped into different categories. Expand a category and the portlets will be listed.

3. Click the "Add" button beside the portlet you want to add and that portlet will be automatically added on the console.
4. You can add as many portlets into the console as you want, just repeat steps 2 and 3.
5. If you're done, click the "Finished" button.

Figure 13: Adding a portlet

Take note of the "Template" item above the "Finished" button. This allows you to define the layout of your console. If you select the same option as shown above: "2 Columns (30/70)", then the portlets in the console can be arranged in two columns. The first column will have a width of 30% the actual width of the console, and the second column will have the rest of the 70%.

4.4. How to Change the Page Look and Feel

1. Login as `admin@logicblaze.com`.
2. Click "Page Settings" on the upper right of the screen.
3. Choose the "Look and Feel" tab.
4. Choose the theme you want to use.

4.5. How to Change the Page Template

1. Login as `admin@logicblaze.com`.
2. Click "Add Content" on the upper right of the screen.
3. A window will appear on the upper left portion of the screen.
4. On the bottom part of the window, choose the template you want to use.

4.6. How to Edit the Welcome Page

1. Login as `admin@logicblaze.com`
2. Click the "My Places" on the upper right of the screen and choose "Guest (Public)".
3. Any changes that are implemented on this page will be reflected on the login page.

Adding Tabs

1. Login as `admin@logicblaze.com`.
2. Click "Page Settings" on the upper right of the screen.
3. Click "FUSE Admin" at the left side of the screen (Root page).
4. Click the "Children" tab.
5. Enter the "Name" and "Type" of the page.
6. Click "Add Page". There should be a new link to the page on the left and a new tab at the top of the screen. You can customize the page by clicking the new link in the left side.

Adding Pages

1. Login as `admin@logicblaze.com`.
2. Click "Page Settings" on the upper right of the screen.
3. Click the page you want to be the parent page on the left side of the screen.
4. Click the "Children" tab.
5. Enter the "Name" and "Type" of page.

6. Click "Add Page". You can customize the page by clicking the new link on the left side.

Customizing a Page

1. Login as `admin@logicblaze.com`.
2. Click "Page Settings" on the upper right of the screen.
3. Click the page you want to customize on the left side of the screen.
4. Customize the page (There are different options per page type).
5. Click "Save".

Deleting Tabs/Pages

1. Login as `admin@logicblaze.com`.
2. Click "Page Settings" on the upper right of the screen.
3. Click the page you want to delete on the left side of the screen.
4. Click the "Page" tab.
5. Click "Delete".

4.7. Liferay Authentication ID

By default the FUSE Liferay console uses the user's email address for authentication. The default account is `admin@logicblaze.com` and the password is `welcome`.

4.8. Account Administration

This section provides instructions for administrative tasks, such as adding and removing users.

Add a User

1. Login as `admin@logicblaze.com`.
2. Click the "Admin" tab.
3. On the "Enterprise Admin" portlet, click the "Users" tab.
4. Click the Add button and fill in the user info.
5. Click save. Then enter the password for the user.
6. To go back to the user list, just click the "Users" tab.

Edit a User Account

1. Login as `admin@logicblaze.com`.
2. Click the "Admin" tab.
3. On the "Enterprise Admin" portlet, click the "Users" tab.
4. Click the user on the list.
5. A screen with the user info will appear. Edit the user fields and click save.

Remove a User

A user can either be active or non-active (deactivated). To remove a user, the user must first be deactivated.

1. Login as `admin@logicblaze.com`.
2. Click the "Admin" tab.
3. On the "Enterprise Admin" portlet, click the "Users" tab.
4. Click the the check box on the left side of the user you want removed.
5. Click the "Deactivate" button.
6. On the upper right of the portlet, you will notice a list box "Active". Choose "No" and click search.
7. This will list all the users that are deactivated and ready to be deleted.
8. Click the the check box on the left side of the user you want removed and click the Delete button.

How to Assign Roles

To create new roles:
1. Login as `admin@logicblaze.com`.
2. Click the "Admin" tab.
3. On the "Enterprise Admin" portlet, click the "Roles" tab.
4. Click the "Add" button.
5. Enter your new role and press save.

To assign/unassign roles to user:

1. Login as `admin@logicblaze.com`.
2. Click the "Admin" tab.
3. On the "Enterprise Admin" portlet, click the "Roles" tab.
4. You will notice a list of roles on the bottom part of the portlet. There are three (3) icons for each role listed. Click the rightmost icon of the role in which you want to assign or unassign a user/s. For example, if you want to assign or unassign the Guest role to one or more users just click on the rightmost icon along the 'Guest' role listed then proceed to the following steps.
5. On the next page, click the "Current" tab to view all users that currently have this role assigned to them. You will notice that the check boxes on the left side of the users listed are ticked. This means that these users are assigned with the selected role, which in the case of the given example above is Guest.
6. Here you can unassign the role from the user by un-checking the check box on the left side of the user and clicking the "Update Associations" button.
7. Click the "Available" tab to view all users that are available to be assigned with this role.
8. Check/uncheck the check box on the left side of the user and click the "Update Associations" button to assign/unassign the role to that user.

4.9. Communities

A Community is a grouping of accounts/users. Being part of a Community means that a user can have access to it's view/pages on the "My Places" link. A Community must have at least 1 page for it to be active.

Adding Communities

1. Login as `admin@logicblaze.com`.

2. Click the "Admin" tab.

3. Click the "Available" tab on the "Communities" portlet.

4. Click "Add".

5. Enter the Community Name and click "Save".

Adding pages to a Community

1. Login as `admin@logicblaze.com`.

2. Click the "Admin" tab.

3. Click the "Available" tab on the "Communities" portlet.

4. Click the corresponding (Pages) link of the Community.

5. Click the "Children" tab.

6. Enter the "Name" and "Type" of the page.

7. Click "Add Page".

Assigning an account to a Community

1. Login as `admin@logicblaze.com`.

2. Click the "Admin" tab.

3. Click the "Available" tab on the "Communities" portlet.

4. Click the corresponding (Assign) link of the Community.

5. Search for the account.

Select the account and click "Update Associations". If the Community has child pages, it should now be selectable by clicking "My Places" in the upper right.

4.10. Enterprise

An Enterprise can have many Organizations. An Organization can have many Locations. This represents a corporate hierarchy. In the administrative level, the Organization Admin Portlet can access its own information and information for any locations and users that belong to it. The Location Admin Portlet can access its own information and any users that belong to it.

Adding an Organization

1. Login as `admin@logicblaze.com`.
2. Click the "Admin" tab.
3. Click the "Organizations" tab in the "Enterprise Admin" portlet.
4. Click the "Add" button.
5. Enter the info for the organization.
6. Click "Save".

Editing an Organization

1. Login as `admin@logicblaze.com`.
2. Click the "Admin" tab.
3. Click the "Organizations" tab in the "Enterprise Admin" portlet.
4. Click the corresponding (Edit) link of the Organization.
5. Enter the info for the organization.
6. Click "Save".

Adding a Location

1. Login as `admin@logicblaze.com`.
2. Click the "Admin" tab.
3. Click the "Locations" tab in the "Organization Admin" portlet.
4. Click the "Add" button.
5. Enter the info for the Location.
6. Click "Save".

Editing a Location

1. Login as `admin@logicblaze.com`.
2. Click the "Admin" tab.
3. Click the "Locations" tab in the "Organization Admin" portlet.
4. Click the corresponding (Edit) link of the Location.
5. Enter the info for the Location.
6. Click "Save".

4.11. Liferay Database

The default database used by Liferay is HSQL. Liferay uses Hibernate and Hibernate does not support the Derby database (the default database used by FUSE). However, Hibernate does allow you to use other databases, such as MySQL.

Note: To change the default Liferay database you must download a source version of FUSE.

---

1. Download MySQL Connector/J JDBC driver package (as of this writing, `mysql-connector-java-3.1.13.zip`) from http://dev.mysql.com/downloads/connector/j/.

2. Extract `mysql-connector-java-3.1.13-bin.jar` from the above file then place it in `[fuse_dir]\target\fuse-1.2.x\fuse-1.2.x\shared\lib`.

3. Setup MySQL and create the Liferay database.
   a. If MySQL is not installed, install and configure it.
   b. Run the Liferaydb SQL script for MySQL either from the MS-DOS console or the MySQL command line client. The script will create the database and set it up.

   If you prefer the MS-DOS command line. Run the Liferaydb SQL script for MySQL, preferably from the directory of the MySQL `liferaydb.script`, for example:

   ```
   cd [fuse_dir]\target\fuse-1.2.x\optional\dbscripts\mysql

   mysql -u root -p < liferaydb.script
   ```

   After which you will be asked to enter the password.

   OR

   Run the MySQL command line client. You may need to enter a username and password on start up. To run the `liferaydb.script`, enter the command

   ```
   \. [full_path_to]\file or source [full_path_to]\file
   ```

   For example:

   ```
   \. [fuse_dir]\target\fuse-1.2.x\optional\dbscripts\mysql\liferaydb.script
   ```

   OR

   ```
   source [fuse_dir]\target\fuse-1.2.x\optional\dbscripts\mysql\liferaydb.script
   ```

   c. Exit MySQL by typing: `exit`

4. FUSE JNDI configuration:

   In `[fuse_dir]\target\fuse-1.2.x\fuse-1.2.x\components\jndi\jndi-xbean.xml`, replace the "`jdbc/LiferayPool`" entry with:

```
<entry key="jdbc/LiferayPool">
  <bean id="mysql-ds"
    class="org.enhydra.jdbc.standard.StandardXADataSource">
    <property name="driverName" value="com.mysql.jdbc.Driver" />
    <property name="url" value="jdbc:mysql://localhost/lportal" />
    <property name="user" value="fuse"/>
    <property name="password" value="fuse"/>
  </bean>
</entry>
```

4.12. JAAS

By default, the FUSE console is configured to use the Java Authentication and Authorization Service (JAAS). To disable JAAS, perform the following steps:

1. Open the `\shared\classes\portal.properties` file.

2. Set `portal.jaas.enable` to false.

3. Comment out JAAS settings on the Liferay `web.xml` file:

```
<!-- <security-constraint>
  <web-resource-collection>
  <web-resource-name>/c/portal/protected</web-resource-name>
  <url-pattern>/c/portal/protected</url-pattern>
  <http-method>GET</http-method>
  <http-method>POST</http-method>
  </web-resource-collection>
  <auth-constraint>
    <role-name>*</role-name>
  </auth-constraint>
</security-constraint>

<login-config>
  <auth-method>FORM</auth-method>
  <realm-name>LdapRealm</realm-name>
  <form-login-config>
  <form-login-page>/c/portal/j_login</form-login-page>
  <form-error-page>/c/portal/j_login_error</form-error-page>
  </form-login-config>
</login-config -->
```

4.13. ApacheDS

By default, ApacheDS is already configured when FUSE is started. ApacheDS is used as another layer of authentication in the FUSE console. You can disable this authentication if you want to only use the Liferay database authentication. To do so:

1. Open the `\shared\classes\portal.properties` file.

2. Comment out the following:

```
auth.pipeline.pre=org.logicblaze.ldap.LDAPAuth
service.user.management = org.logicblaze.ldap.ApacheDSUserManagement
```

Please note that by default, the JAAS configuration uses ApacheDS authentication, so it would be a good idea to also disable JAAS if you are going to disable the ApacheDS authentication

If you want to change your authentication from ApacheDS to a different authentication mechanism then create your own class that would implement the `Authenticator` and `UserManagement` interface, for example:

```
auth.pipeline.pre=org.logicblaze.ldap.MyOwnAuthentication
service.user.management = org.logicblaze.ldap.MyOwnUserManagement
```

4.14. HttpServletRequest.getRemoteUser() Issue

When running in JAAS configuration (default), it appears that the Jetty version (6.0 beta 15) that FUSE (and ServiceMix) uses has an issue when using the `HttpServletRequest.getRemoteUser()` method. Instead of returning the user name entered it returns the `JAASUserPrincipal` object `toString()` value. A workaround to this is to use the `HttpServletRequest.getUserPrincipal().getName()` method to retrieve the remote user name instead. This also applies to other Web applications that will run on the default FUSE install.

5. Additional Resources

For more information about Apache ServiceMix and customizing it, please see the Wiki documentation: http://incubator.apache.org/servicemix/.

For more information about Apache ActiveMQ please see the Wiki documentation: http://incubator.apache.org/activemq/.

To read the Java Business Integration specification (JSR 208) please see: http://www.jcp.org/en/jsr/detail?id=208.

For more information on Liferay portal, please see the documentations and user guide: http://www.liferay.com/web/guest/devzone/documentation

http://content.liferay.com/4.0.0/docs/users/index.html

For more information on how to build your own JSR 168 portlets please refer to http://developers.sun.com/prodtech/portalserver/reference/techart/jsr168/

To see examples of service assemblies and a demo of deployment, please read the *Loan Broker Tutorial*.