

# **JBoss AS Administration Console User Guide**

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by Shelly McGowan and Ian Springer

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## Preface

### 1. We Need Feedback!

If you find a typographical error in the *Administration Console User Guide*, or if you have thought of a way to make this manual better, we would love to hear from you! Please submit a report in JIRA: <http://jira.jboss.org> against the project *JBoss Application Server*.

When submitting a bug report, be sure to mention the manual's identifier:

If you have a suggestion for improving the documentation, try to be as specific as possible when describing it. If you have found an error, please include the section number and some of the surrounding text so we can find it easily.

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## Overview



# JBoss AS Administration Console

The JBoss AS Administration Console is a SEAM-based web application for managing and monitoring a single JBoss AS instance. Known in the community as the open source project Embedded Jopr (pronounced "jopper"): Embedded because it runs inside a JBoss Application Server and Jopr because it uses the same infrastructure the Jopr project which is the open source enterprise management solution for JBoss middleware projects. The JBoss AS Administration Console (also referred to as Console in this guide) has been included in JBoss Application Server distributions since release 5.1.0. Successive releases continue to improve the server management capabilities eventually replacing the jmx- and web consoles.

This release of the Administration Console provides the following administrative features:

- Deploy, Undeploy, and Update Enterprise Applications including:
  - Enterprise Applications (EARs)
  - Web Applications (WARs)
  - Resource Adapters(RARs)
  - EJB JARs (EJB2 and EJB3)
- Persistent configuration changes for the following resources:
  - Datasources
  - Connection Factories
  - Service Binding Manager
  - JMS Queues and Topics based on JBoss Messaging
- View statistics and carry out operations on many other components:
  - JBoss Application Server examples: version, memory usage, thread count and stop operation
  - Hibernate Session factories
  - JBoss Web vhosts: supported aliases
  - JBoss Web connectors: for example, Maximum Request Time

## Chapter 1. Overview

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- EARs and WARs: for example, Average Response Time and lifecycle operations (start, stop and reload)
- Monitor all standard JVM metrics and execute operations. For example, garbage collection.

Let's take a closer look at how easy it is to manage your JBoss AS instance from a single administration point.

## Accessing the Console

The Console, as well as the JMX and JBossWS consoles, are deployed "on-demand" by default. This means that the consoles are deployed when the user requests access. This deferred deployment strategy minimizes the overall server boot time. This feature can be disabled, however, by passing the following property to the server start command:

```
/run.sh -Djboss.as.deployment.ondemand=false
```

Once the server is started, simply point your browser of choice to:

```
http://localhost:8080/admin-console
```

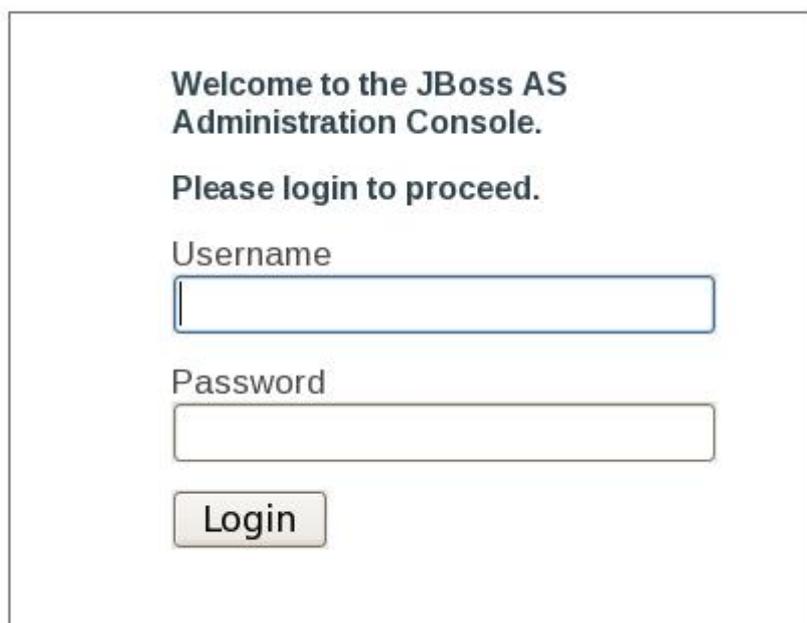
JBoss AS binds its services to localhost (127.0.0.1) by default, instead of binding to all available interfaces (0.0.0.0). This was primarily done for security reasons because of concerns of users going to production without having secured their servers properly. To enable remote access by binding JBoss services to a particular interface, simply start the JBoss AS server with the *-b* option. To bind to all available interfaces and re-enable the legacy behaviour use *-b 0.0.0.0*. If the server is started with the *-b* option, you will have to alter the URL accordingly.

### Note

It is expected that the JBoss AS Administration Console will work with any custom configuration that supports the installation of Seam applications.

JBoss AS Administration Console is not supported with the *minimal* configuration.

This will bring you to the JBoss AS Administration Console Login page.



Welcome to the JBoss AS  
Administration Console.

Please login to proceed.

Username

Password

Login

Login credentials are the same as used for the JMX console. A default user/password combination, **admin/admin**, is provided for out-of-box access. You can change/update the usernames/passwords for the configured security domain by editing the corresponding credential files:

```
server/configuration/conf/props/jmx-console-users.properties
```

Similarly, you can change/update roles for the configured security domains by editing corresponding credential files:

```
server/configuration/conf/props/jmx-console-roles.properties
```

For more information on modifying user credentials, refer to the [Secure the JMX Console](http://community.jboss.org/wiki/securetheJmxConsole) [http://community.jboss.org/wiki/securetheJmxConsole] wiki.

Click the Login button using the default user provided or your customized administrative login.

### Note

The Console is expected to work with any browser and has been tested with Mozilla FireFox 3.

# User Interface Overview

Once successfully logged in, you have an overall summary of the system that the JBoss Application Server is running on such as Operating System information and host name.

The Administration Console pages are split up into two main areas:

- The left navigation panel (blue background) allows the user to browse the different resources which are deployed into their JBoss Application Server instance. A tree metaphor is used to represent the resource hierarchy, with the root being the machine the JBoss Application Server instance is running on. The tree can be expanded to show child resources, for example the JBoss Application Server instance and then within that a list of Datasources.
- The main resource panel (white background) shows information about a particular resource or resources which were selected from the navigation on the left. This is also the place that allows direct access to all the administrative tasks for a resource (for example, update its configuration), delete it. The resource showing in the main pane is normally highlighted in **bold** in the navigation pane.

The screenshot shows the JBoss Administration Console interface. On the left is a navigation tree under 'localhost' with 'JBossAS Servers' expanded to show 'JBoss AS 6 (all)'. The main panel displays the 'JBoss AS 6 (all)' resource page, which includes tabs for Summary, Configuration, Metrics, Control, and Content. The 'Metrics' tab is active, showing a status of 'Available' and a 'Refresh' button. Below the tabs, there is a section for 'Traits' with details like Partition Name, Server Home Dir, Version Name, and Start Date. A 'Numeric Metrics' table follows, listing JVM Free Memory, JVM Max Memory, JVM Total Memory, Active Thread Count, and Active Thread Group Count with their respective values and descriptions.

Name	Value	Description
<b>Category: utilization</b>		
JVM Free Memory	128.4MB	The amount of free memory for the JVM this app server instance is running on
JVM Max Memory	455.1MB	The amount of max memory for the JVM this app server instance is running on
JVM Total Memory	345.2MB	The amount of total memory for the JVM this app server instance is running on
<b>Category: throughput</b>		
Active Thread Count	147	The current number of active threads for this app server instance
Active Thread Group Count	19	The current number of active thread groups for this app server instance

## Note

The currently running JBoss Application Server instance, with its configuration shown in parentheses, is found under the *JBossAS Servers* folder near the top of the navigation tree. Only one running server is managed at a time through the Administration Console. Click on the *JBoss AS 6 (all)* link and an overview of the JBoss Application Server instance which is running the Administration Console is shown.



## Resource Panel

You can see in the example above the main tabs which are present for all individual resources. Not all tabs are available for every sort of resource, though Summary and Metrics tabs will always be enabled. If a feature is not supported for a particular resource then that tab is greyed out (for example, the Administration Console does not support configuring a JBoss Web Virtual Host so the Configuration tab for those sort of resources will be disabled). The following is a breakdown of the functionality behind each tab:

- **Summary:** This presents a quick overview of the resource including relevant metrics on how its operating.
- **Configuration:** If enabled this tab lets you update the configuration of a resource (for example, increase the pool size for a Datasource) or switch the JBoss Application Server instance to use a different set of ports.
- **Metrics:** Shows the same information as the summary tab plus any more detailed metrics which are collected on the resource. Metrics will be gathered each time you visit the page.
- **Control:** If enabled this tab lets you execute operations on the resource (for example, stopping the JBoss Application Server instance).
- **Content:** If enabled this tab lets you update the actual files used to deploy the resource (for example, update the WAR file used to deploy a web application).

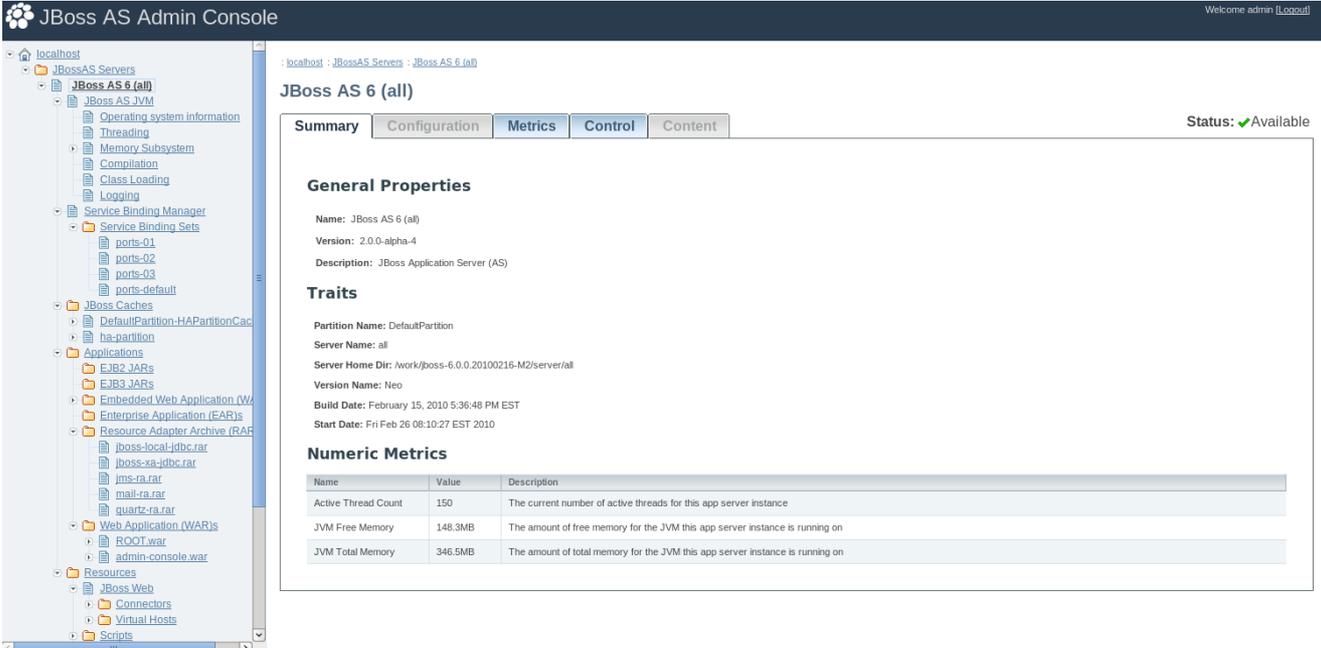
### Note

The currently selected tab is shown in white, available tabs are blue and unavailable ones are grey.



# Navigation Panel

All applications and resources discovered during server start up should be available underneath the JBoss Application Server instance in the navigation tree. The example below demonstrates a view with items in the tree expanded.



The screenshot shows the JBoss AS Admin Console interface. On the left is a navigation tree under 'localhost' and 'JBossAS Servers'. The 'JBoss AS 6 (all)' instance is selected and expanded, showing sub-items like 'JBoss AS JVM', 'Operating system information', 'Threading', 'Memory Subsystem', 'Compilation', 'Class Loading', 'Logging', 'Service Binding Manager', 'Service Binding Sets', 'JBoss Caches', 'Applications', 'Embedded Web Application (WAR)', 'Enterprise Application (EAR)', 'Resource Adapter Archive (RAR)', 'Web Application (WAR)', and 'Resources'. The main content area displays the 'Summary' tab for 'JBoss AS 6 (all)'. The status is 'Available'. The 'General Properties' section includes Name, Version, and Description. The 'Traits' section includes Partition Name, Server Name, Server Home Dir, Version Name, Build Date, and Start Date. The 'Numeric Metrics' section includes a table with columns for Name, Value, and Description.

Name	Value	Description
Active Thread Count	150	The current number of active threads for this app server instance
JVM Free Memory	148.3MB	The amount of free memory for the JVM this app server instance is running on
JVM Total Memory	346.5MB	The amount of total memory for the JVM this app server instance is running on

## Note

The navigation panel is currently fixed width so to see wider entries use the scroll bar at the bottom of the panel.

There are two sorts of items shown in the navigation panel:

- Collection of resources: These items are indicated by a yellow folder icon.
- Individual resources: These are indicated by a blue document icon.

Clicking on a collection resource (for example, the *Resources* link above) will render in the main panel either:

- a list of resource categories from where you can drill down further:

[:localhost](#) : [JBossAS Servers](#) : [JBoss AS 6 \(all\)](#) : [Resources](#)

### Resources

Different types of Resources

- **JBoss Web**  
JBoss Web Servlet Container
- **Scripts**  
provides the ability to execute a script that performs some task related to its parent JBossAS server
- **Connection Factories**  
Different types of Connection Factories
- **Datasources**  
Different types of Datasources
- **JMS Destinations**  
Different types of JMS Destinations

- or a list of actual resources from where you can drill down to see a particular resource. For some resource types you can create or delete instances of a resource from this view.

#### Virtual Host

Summary Configuration Metrics Control Content

a JBoss Web virtual host

No actions available

Name	Status	Actions
localhost	UP	
snert.home.bsd.de	UP	
snert.home.pilhuhn.de	UP	

Total: 3

Expanding one of the folder nodes in the navigation will show either individual resources or further collections of resources which themselves can be expanded.

Click on an individual resource will show the Summary tab for that resource, as seen previously for the JBoss Application Server instance. If available, expanding an individual resource node in the navigation will show the child resources it has deployed within it.

# Common Tasks

Next we will give an overview of some common tasks you can do with the Administration Console. Each task will be used to highlight a particular function within the console.

For a detailed list of all the supported resources and the functions the Administration Console can perform on them please see the accompanying resource specific documentation.

## Application Deployment

All applications running in the JBoss Application Server instance are listed in the summary view under : *<machine>* : *JBossAS Servers* : *JBoss AS 6 (all)* : *Applications* in the navigation. Applications can also be further organized by their types to simplify the view:



### Important

The Embedded application types were deployed as part of an Enterprise Archive. They are listed separately for easier management and each embedded archive shows the relationship to its' parent. Embedded applications are managed via their parent. In other words, they cannot be deleted or updated and control operations do not apply to them. The management of these applications is done through the operations on the parent.

To deploy an application, navigate to the Application type you want to add. In this example, we will use an Enterprise Application. Clicking on the link *Enterprise Applications (EAR)s* will bring you to the Enterprise Application (EAR) Summary Tab.

:localhost : JBossAS Servers : JBoss AS 6 (all) : Applications : Enterprise Application (EAR)s

### Enterprise Application (EAR)

Summary | Configuration | Metrics | Control | Content

JEE enterprise application (EAR)

[Add a new resource](#)

Name	Status	Actions
 <a href="#">eardeployment.ear</a>	UP	<a href="#">Delete</a>

Total: 1

Clicking on:



brings you to Add New Enterprise Application (EAR) page. Click the **BROWSE** button and select the EAR file to be deployed. Select whether to deploy the app exploded or to the farm directory. Click **CONTINUE** to proceed with the application deployment. The status of the deployment will be shown and if successful, added to the list of applications ready to be managed. Otherwise, the reason for the failed deployment will be shown.

You can follow this same procedure for other application types that you want to add.

# Updating Applications

To update an application, select it from the navigation panel and then in the main panel click on the Content Tab. **BROWSE** to the location of where the updated application resides then hit the **UPDATE** button. Example below of updating an .EAR deployment:

[:localhost](#) : [JBossAS Servers](#) : [JBoss AS 6 \(all\)](#) : [Applications](#) : [Enterprise Application \(EAR\)s](#) : [eardeployment.ear](#)

## eardeployment.ear

<b>Summary</b>	Configuration	Metrics	Control	Content	Status: <span style="color: green;">✔</span> Available
<p><b>File Path:</b> /work/jboss-6.0.0.20100216-M2/server/all/deploy/eardeployment.ear</p> <p><b>File Size:</b> 9,227 bytes</p> <hr/> <p>To update the EAR File, specify a local file path then click Update. Note, the specified file must be named eardeployment.ear.</p> <p><input type="text"/> <input type="button" value="Browse..."/></p> <p><input type="button" value="Update"/></p>					

### Important

The file to be updated must have the same name as the application you plan to update.

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# Application undeployment and resource removal

Many types of resources including applications can be deleted by navigating to the Resources' Type specific (for example, Enterprise Application (EAR)s) Summary Tab and simply clicking the **DELETE** button next to the name of the resource you want to delete. For example, to undeploy an EAR file, choose the *Enterprise Application (EAR)s* folder from the navigation and then in the main panel find the application you are looking to remove and click the **DELETE** button next to it. Once the removal has been confirmed, the Application will be undeployed from the server and will no longer be able to be managed. You will have to deploy it again if it is needed. As noted above, Embedded Applications do not have the delete option available.

## Datasources

Summary | Configuration | Metrics | Control | Content

Different types of Datasources

View by Type: All Types No actions available

Name	Type	Status	Actions
 <a href="#">DefaultDS</a>	<a href="#">Local Tx Datasource</a>	UP	<a href="#">Delete</a>

Total:1



## Adding Resources

Other resources, in addition to applications, can be added to your JBoss Application Server instance using the Administration Console. In fact whether you adding new resources or modifying resources already deployed to the running server, the Administration Console offers easy management of the resource properties avoiding error-prone editing of XML configuration files.

Similar to deploying an application, choose the specific type of resource you want to add from the navigation panel (for example, *Local Tx Datasources* rather than just *Datasources*), this will bring up the Summary tab for this type. Next hit the **Add a new resource** button on the right hand side of the main panel. You will be prompted for the template that will be used to create the configuration.

A template is just a set of suggested values to use for the properties defined on that resource. For example, the Oracle templates contain suggested values that are typically used when creating a Datasource for connecting to an Oracle database. Your template choices for datasource types are:

- Local Tx Datasource
  - Oracle Local TX (Local Tx Datasource)
  - default (Local Tx Datasource)
- No Tx Datasources
  - Oracle No TX (No Tx Datasource)
  - default (No Tx Datasource)
- XA Datasources
  - Oracle XA (XA Datasource)
  - default (XA Datasource)

After selecting the appropriate template, click **CONTINUE**. Add the appropriate configuration information for the datasource. Next to each editable property is a description detailing the use of the property, default value if any, and the affect of the property change. Common configuration errors are detected and will be highlighted after attempting to save. Check the Unset box if the property will not be used. At the end of your configuration session, click **SAVE** at the bottom of the page which deploys the configuration information to the server. Click **CANCEL** if you decide not to create the new resource.



After you have saved the new configuration the main panel should return to displaying a list of resources along with a message about whether or not the resource creation succeeded.

### Important

Any database drivers needed for the Datasource to function correctly must be deployed to the JBoss Application Server instance separately.

A similar procedure works for creating JMS Destinations and Connection Factories. For Connection Factories however the required resource adapter must already be deployed prior to configuring the connection factory. If this has not yet been done, simply navigate to the Resource Adapters (RAR)s or Enterprise Application (EAR)s (for a resource adapter deployed as part of an Enterprise Archive) and deploy the adaptor JAR file.

# Updating Resource Configurations

For resources that support configuration, either created through the Administration Console or deployed separately, you can use the Console to make modifications to their settings. Simply choose the resource to be modified from the navigation panel or from one of the resource list views and then select its Configuration tab, from where changes can then be made:

DefaultDS

Summary Configuration Metrics Control Content Status:  Available

**Edit Resource**

\* denotes a required field.

Connection Information <span style="float: right;">⌵ Collapse</span>			
Name	Unset	Value	Description
<b>JNDI Name *</b>	<input type="checkbox"/>	<input type="text" value="DefaultDS"/>	The global JNDI Name under which to bind the datasource
<b>Username</b>	<input type="checkbox"/>	<input type="text" value="sa"/>	The default username when creating a new connection.
<b>Password</b>	<input type="checkbox"/>	<input type="text"/>	The default password when creating a new connection.
<b>Minimum Pool Size</b>	<input type="checkbox"/>	<input type="text" value="5"/>	The minimum number of connections the pool should hold. The default is 0.

Updating a resources configuration follows a very similar pattern to adding a resource described above. Change the properties you want to be updated and hit the **SAVE** button at the bottom of the page and the changes will be applied to the JBoss Application Server instance.

## Warning

If a resource was previously deployed and modified via the Console, the administration of the resource should continue to be done via the Console. The resource modifications are persistent but will not be reflected in the resources original configuration file. This means that changes between manual edits to configuration files and changes performed via the Console are not interchangeable. If you make a change to a configuration file outside of the Administration Console it will override and replace any changes you have previously made via the Console.



# Script Execution

Scripts in the server **bin** directory are now available for execution via the Administration Console.

## Script

**Summary**

Configuration

Metrics

Control

Content

provides the ability to execute a script that performs some task related to its parent JBossAS server

No actions available

Name	Status	Actions
 <a href="#">classpath.sh</a>	UP	
 <a href="#">jboss_init_hpux.sh</a>	UP	
 <a href="#">jboss_init_redhat.sh</a>	UP	
 <a href="#">jboss_init_solaris.sh</a>	UP	
 <a href="#">jboss_init_suse.sh</a>	UP	
 <a href="#">password_tool.sh</a>	UP	
 <a href="#">probe.sh</a>	UP	
 <a href="#">run.sh</a>	UP	
 <a href="#">shutdown.sh</a>	UP	
 <a href="#">twiddle.sh</a>	UP	

### Note

Starting the JBoss Application Server from the Administration Console is not supported because the Console requires a running instance of the JBoss Application Server in order to operate.



# Monitoring the JBoss Application Server Instance

Basic information is provided on every resource managed by the Admin Console via the resources Summary tab. However some resources such as the JBoss Application Server instance itself, also offer more detailed metrics. See below for an example:

## JBoss AS 6 (all)

[Summary](#)
[Configuration](#)
[Metrics](#)
[Control](#)

View the numeric metrics and traits for this resource.

### Traits

**Partition Name:** DefaultPartition

**Server Home Dir:** /work/jboss-6.0.0.20100216-M2/server/all

**Build Date:** February 15, 2010 5:36:48 PM EST

### Numeric Metrics

Name	Value	Description
<b>Category: utilization</b>		
JVM Free Memory	129.3MB	The amount of free memory for
JVM Max Memory	455.1MB	The amount of max memory for
JVM Total Memory	354.8MB	The amount of total memory for
<b>Category: throughput</b>		
Active Thread Count	153	The current number of active th
Active Thread Group Count	19	The current number of active th

[Refresh](#)

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This metrics are collected from the resource when the Metrics tab is viewed and can be recalculated by hitting the **REFRESH** button at the bottom main panel.

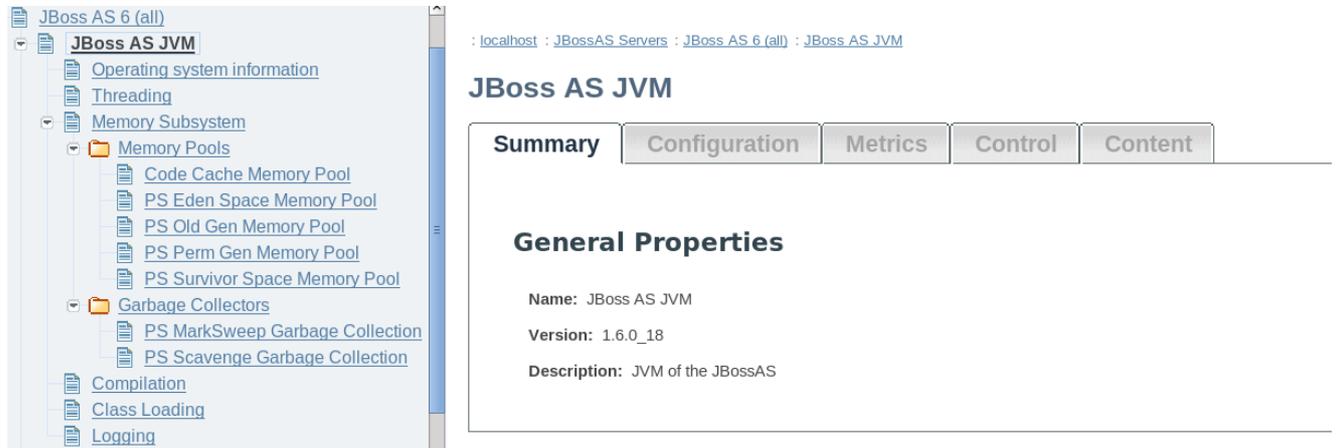
### Note

In order to see JVM resources and metrics, the JBoss Application Server instance must be started with the `-Djboss.platform.mbeanserver` system property specified as part of `JAVA_OPTS`.



# JBoss Application Server JVM

Additional JVM metrics and monitoring capabilities are available by clicking on the JBoss AS JVM link in the left navigation panel.



From here, you can view JVM metrics including virtual memory utilization, execute operations such as garbage collection and thread dumps of daemon and non-daemon threads, memory pool metrics, and metrics of classes loaded in the VM.



# Flushing the Connection Pool for a Datasource

Certain resources, such as Datasources, have support for executing particular operations from the Administration Console. These operations are exposed on the Control tab for a particular resource. Below is the Control tab for a Datasource:

Summary Configuration Metrics **Control** Content Status: ✔ Available

Select from the available control operations for this resource.

<b>Flush</b>	Flush the connections in the pool
<b>List Formatted Sub Pool Statistics</b>	Obtain a formatted sub pool statistics report
<b>List Statistics</b>	Obtain a statistics report

In order to flush the connection pool associated with a Datasource you navigate to the Datasource you are interested in, select its Control tab and then push the **FLUSH** button. Once the Control operation is executed, the Operation status is returned and listed in the Operations History section at the bottom of the main pane. Multiple operations can be executed and a history of results is maintained until the JBoss Application Server instance is restarted.

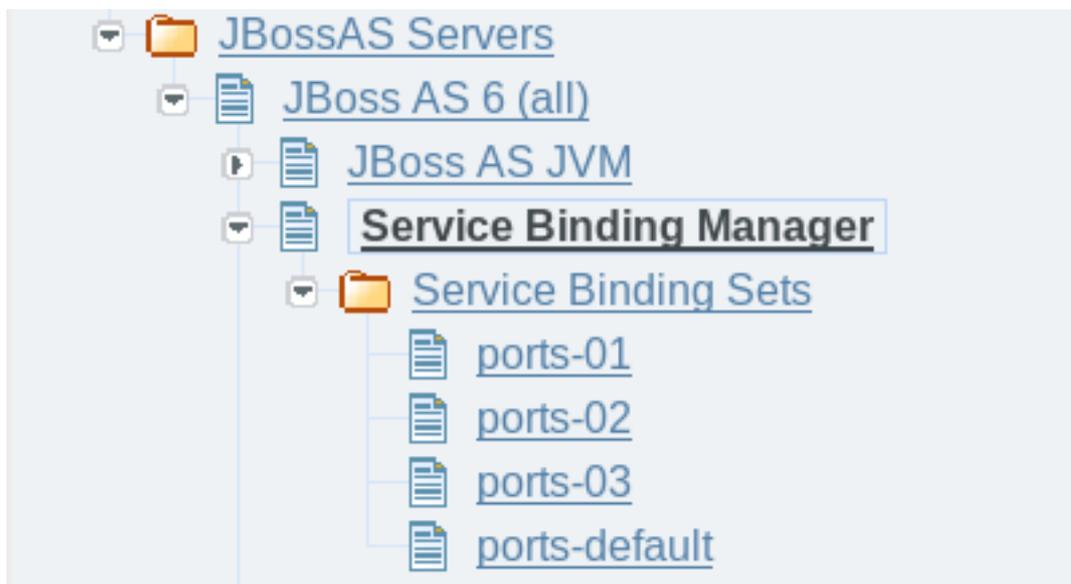
Other control operations include stopping the JBoss Application Server instance and removing all messages from a JMS Queue.

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# Port Configuration

The Service Binding Manager co-ordinates which ports the JBoss Application Server instance listens on when it starts up and the Administration Console provides a mechanism for configuring this service to change which ports get used. In the navigation pane select the SBM: *<machine>* : *JBossAS Servers : JBoss AS 6 (default) : Service Binding Manager*. Next go to its Configuration tab and for the Active Binding Set Name property enter the name of the new port set you wish the JBoss Application Server instance to use and hit the **SAVE** button at the bottom of the page. Out of the box, the JBoss Application Server ships with four port sets defined as:

- ports-default: The standard ports, for instance JBoss Web listens for HTTP requests on 8080. You can view all of the standard port settings on the Configuration tab of the Service Binding Manager resource.
- ports-01: The standard ports incremented by 100. For example, HTTP is on 8180
- ports-02: The standard ports incremented by 200. For example, HTTP is on 8280
- ports-03: The standard ports incremented by 300. For example, HTTP is on 8380



If you wish to specify a different range of ports to use then you can create your own Service Binding Set resource through the Administration Console. Select the *Service Binding Sets* folder from the navigation, hit the **Add a new resource** button on the main panel and enter in the necessary information.

Once you have updated the configuration for the Service Binding Manager, the JBoss Application Server instance must be restarted for those changes to take effect. After the restart, the new ports will be used when accessing the Administration Console (for example, <http://localhost:8180/admin-console>).



# JBoss Caches

If you are running the **all** configuration or a customized configuration based on **all**, the JBoss Cache instances of the running server are shown. Various metrics and control operations available for the cache instances are easily accessible from the main tabs of the resource panel.

The screenshot shows the JBoss AS Admin Console interface. The top navigation bar includes the JBoss logo, the text "JBoss AS Admin Console", and a user greeting "Welcome admin [Logout]". The left sidebar displays a tree view of "JBoss Caches" with sub-items like "DefaultPartition-HAPartitionCache" and "ha-partition". The main content area is titled "JBoss Cache" and features tabs for "Summary", "Configuration", "Metrics", "Control", and "Content". The "Summary" tab is active, displaying the text "The JBoss Cache instances on this server" above a table. A message "No actions available" is shown above the table. The table lists two cache instances: "DefaultPartition-HAPartitionCache" and "ha-partition", both with a status of "UP". A "Total:2" label is positioned at the bottom right of the table area.

Name	Status	Actions
<a href="#">DefaultPartition-HAPartitionCache</a>	UP	
<a href="#">ha-partition</a>	UP	

Total:2



## Further Information

For more information on the JBoss Application Server, Administration Console, and supporting technologies, refer to the following project links.

- *JBoss Application Server* [<http://www.jboss.org/jbossas>]
- *Embedded Jopr* [<http://www.jboss.org/embjopr>]
- *Jopr* [<http://www.jboss.org/jopr>]
- *SEAM Framework* [<http://www.seamframework.org>]
- *RichFaces* [<http://www.jboss.org/richfaces>]
- *JBoss AS 6 Profile Service Design* [<http://community.jboss.org/wiki/AS6ProfileServiceDesign>]
- *JSFUnit* [<http://www.jboss.org/jsfunit>]



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# Appendix A. Revision History

Revision History

Revision 1.0

Feb 26 2010

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Initial draft for JBoss AS 6

