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# JBoss Operations Network 3.0

## Managing JBoss Servers with JBoss ON

real scenarios for managing EAP instances



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December 7, 2011

### Abstract

Once JBoss Operations Network is installed, you are ready to set up your *inventory*. The inventory in JBoss ON lists all of the recognized platforms, servers, and services

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## 1. Managing JBoss Products with JBoss ON

JBoss Operations Network provides extra tools that help manage JBoss server instances. These management tools cover everything from manually configuring a JBoss inventory to applying JBoss patches.

## 2. Deploying Applications on JBoss Instances

A number of different types of services can be deployed on a JBoss instance by adding it as a child of that instance. JBoss ON provides additional guidance and options in the UI to simplify the process for deploying EARs, WARs, data sources, connection factories, and JMS queues.

### 2.1. Deploying EAR and WAR Files

1. Search for the JBoss server instance to which to deploy the EAR or WAR.
2. On the details page for the selected JBoss server instance, open the **Inventory** tab.
3. In the **Create New** drop-down menu, select the item for - **Web Application (WAR)** or - **Enterprise Application (EAR)**, as appropriate.
4. In the resource form, enter the information for the application to be deployed. Aside from the obvious settings, like the resource name, the WAR or EAR resource entry requires the following information:
  - The package name that the EAR or WAR file will be deployed as. In other words, the target entry name.
  - The package architecture.

**NOTE**

For EAR and WAR deployment, the package architecture should always be **noarch**.

- The full path to the file to be deployed, in the **File** field.
- Whether the file should be unzipped when it is deployed.
- The path to the directory to which to deploy the EAR or WAR package. The destination directory is relative to the JBoss server instance installation directory; this cannot contain an absolute path or go up a parent directory.

## 2.2. Deploying Data Sources

1. Search for the JBoss server instance to which to deploy the data source.
2. On the details page for the selected JBoss server instance, open the **Inventory** tab.
3. In the **Create New** drop-down menu, select the item for **- Data Sources**.
4. Select a template for the data source. There are three data sources templates to populate a data source with common information:
  - The default template is used with SQL databases like PostgreSQL or MySQL
  - The Oracle Local TX is used for Oracle databases with local transactions.
  - The Oracle XA template is used for Oracle databases with XA transactions.
5. Along with the obvious settings, like the resource name, enter the information for the specific child resource to be deployed:
  - The type of data source to create, either No TX Data Sources, Local TX Data Sources or XA Data Sources
  - A unique JNDI name for the DataSource wrapper to use to bind under
  - The fully qualified name of the JDBC driver or DataSource class, such as **org.postgresql.Driver**
  - The JDBC driver connection URL string, such as **jdbc:postgresql://127.0.0.1:5432/foo**
  - The username and password to use to connect to the data source
  - The minimum and maximum connection pool sizes for this data source

Additional settings are available under the **Advanced Settings** area. These are the same as the advanced settings available when the JBoss ON server is installed.

### 2.3. Deploying Connection Factories

1. Search for the JBoss server instance to which to deploy the connection factory.
2. On the details page for the selected JBoss server instance, open the **Inventory** tab.
3. In the **Create New** drop-down menu, select the item for - **Connection Factory**.
4. Along with the obvious settings, like the resource name, enter the information for the specific child resource to be deployed:
  - The type of connection factory to create, either tx-connection-factory (transaction) or no-tx-connection-factory (no transaction)
  - A unique JNDI name for the DataSource wrapper to use to bind under
  - The username and password to use to connect to the data source
  - The minimum and maximum connection pool sizes for this data source

Additional settings are available under the **Advanced Settings** area. These are the same as the advanced settings available when the JBoss ON server is installed.

### 2.4. Configuring JMS Queues and Topics

JMS Queues and JMS Topics are child resources of a JBossMQ service or JBossMessaging service resource, which itself is a child of a JBoss server instance.

1. Search for the JBoss messaging service to which to deploy the JMS queue or topic.
2. On the details page for the selected JBoss messaging service, open the **Inventory** tab.
3. In the **Create New** drop-down menu, select the item for - **JMQ JMS Topic** or - **JMQ JMS Queue**, as appropriate.
4. Aside from the obvious settings, like the resource name, the JMS Queue or JMS Topic entry requires two additional parameters:
  - The name of the queue or topic to use as the JMX object name
  - A unique JNDI name for the DataSource wrapper to use to bind under

Additional settings are available under the **Advanced Settings** area. These are the same as the advanced settings available when the JBoss ON server is installed.

### 2.5. Updating and Deleting Applications on JBoss Servers

EARs and WARs can both be updated on JBoss server instances simply by uploading the updated packages.

1. Browse to the EAR or WAR resource in the JBoss ON UI.
2. In the EAR or WAR resource details page, open the **Content** tab, and click the **New** subtab.

The screenshot shows the JBoss Management Console interface for a resource named 'hellothere.war' located at 'localhost/hellothere'. The resource is a 'Web Application (WAR) (Service)' with version 'none' and parent 'JBossAS Server '0.0.0.0:2099''. The 'MONITOR' tab is selected, showing a 'NEW' button. Below this, the 'Packages Eligible for Deployment' section is visible, followed by the 'Upload New Package' section which contains an 'UPLOAD NEW PACKAGE' button.

hellothere.war (//localhost/hellothere)  
jetengine > 0.0.0.0:2099

**Summary**

**Type:** Web Application (WAR) (Service) **Description:** Web Application (//localhost/hellothere)  
**Version:** none **Parent:** JBossAS Server '0.0.0.0:2099'

**MONITOR** **INVENTORY** **ALERT** **OPERATIONS** **CONTENT**

DEPLOYED **NEW** SUBSCRIPTIONS HISTORY

**Packages Eligible for Deployment**

The following packages were found from the repositories currently subscribed to by this resource. In order to enable more existing packages for deployment, use the subscriptions sub-tab to subscribe this resource to more repositories.

<input type="checkbox"/>	Package Name	Version	Type	Architecture	Description
--------------------------	--------------	---------	------	--------------	-------------

DEPLOY SELECTED Total: 0

**Upload New Package**

The following option will begin the workflow to upload a new package into the system. Once the package information has been specified and the file uploaded, the workflow to deploy the newly created package to this resource will resume.

**UPLOAD NEW PACKAGE**

3. Click the **UPLOAD NEW PACKAGE** button.
4. Click the **UPLOAD FILE** button.

The screenshot shows the 'Package File' section of the JBoss Management Console. It features a button labeled 'UPLOAD FILE...'.

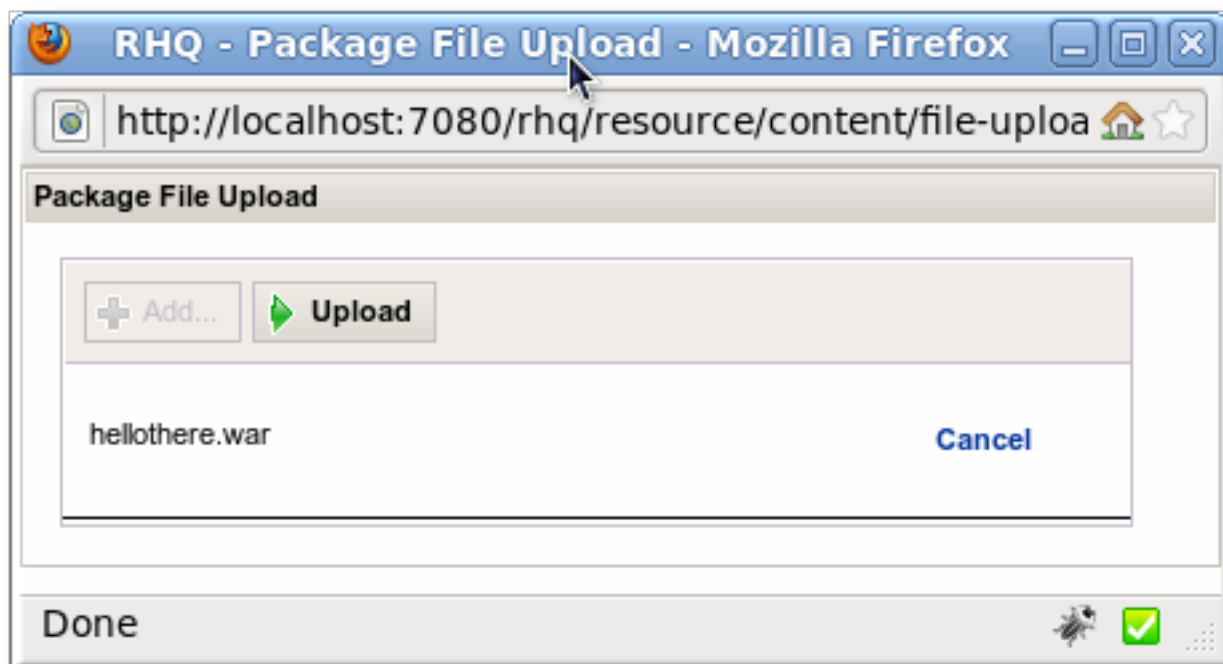
**SUMMARY** **MONITOR** **INVENTORY** **ALERT** **CONTENT**

DEPLOYED **NEW** SUBSCRIPTIONS HISTORY

**Package File**

**UPLOAD FILE...**

5. In the pop-up window, click the **Add** button, and browse the local filesystem to the updated WAR or EAR file to be uploaded.



6. Click the **UPLOAD** button to load the file and dismiss the window.
7. In the main form, select the repository where the WAR or EAR file package should be stored. If one exists, select an existing repository or a subscribed repository for the resource. Otherwise, create a new repository.
8. Confirm the details for the new package, then click **CONTINUE**.

SUMMARYMONITORMONITORINVENTORYINVENTORYALERTALERTOPERATIONSOPERATIONSCONTENTCONTENT

DEPLOYEDNEWSUBSCRIPTIONSHISTORY

Review Packages

The following packages will be deployed. For each package, the plugin may be able to generate a list of what steps will be performed in the deployment. Click this 'view' button on the desired package to request the instructions from the agent. Note that this will make a live call to the agent and thus may take some time.

Package Name	Version	Type	Architecture	Description	Instructions
hellotthere.war	1272591633911	file	noarch		<a href="#">VIEW</a>

Total: 1

Packages Deployment Notes

Notes specified below will be displayed when tracking the status of this request in order to help further identify the purpose of this request. They are not sent to the plugin for use during the installation.

Packages: hellotthere.war 1272591633911

CANCELCONTINUE

When the package is successfully uploaded, the UI redirects to the history page on the **Content** tab.

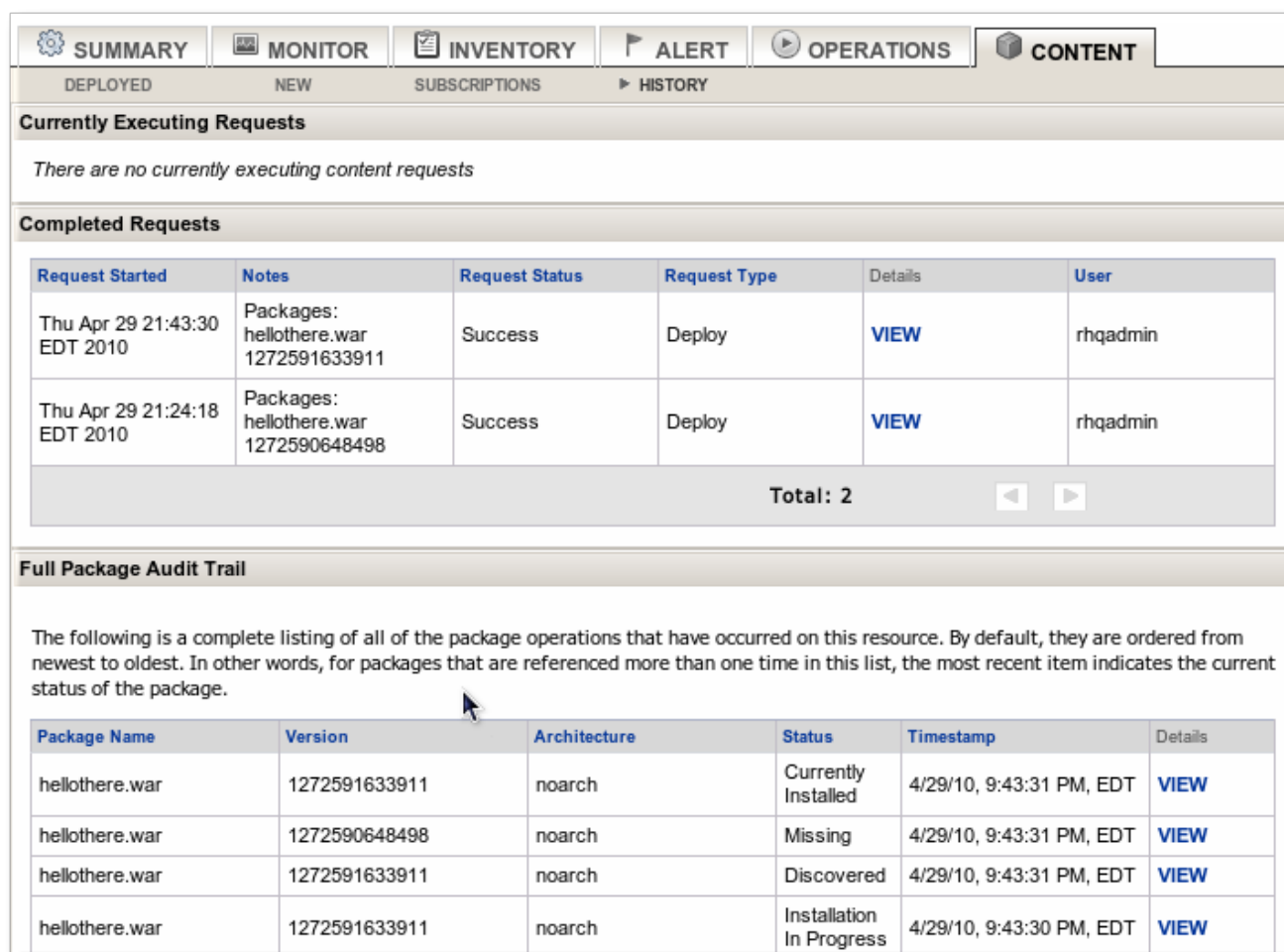


Figure 1. Deployment History for a Resource



## NOTE

To undeploy an EAR or WAR, simply delete the EAR or WAR child resource.

## 3. Applying JBoss Patches

Content management can be used to apply cumulative patches to JBoss AS, JBoss EAP, JBoss SOA-P, and JBoss EWP instances. By default, the JBoss ON server comes pre-configured with the JBoss Patch Content Source and JBoss Patch Repository.

A *content source* connects a JBoss ON server to all the JBoss patches. A *repository* maps a content source to the resources in the inventory that the patches are applied to. For JBoss patches, the default content provider connects the JBoss ON server to the cumulative patches provided by the JBoss Customer Service Portal. The default repository associated with the content provider is where the metadata about the patches and the patches themselves are stored within JBoss ON.

The patch process updates existing JAR and class files with upgraded JAR and class files that are contained in the patch package. Other changes that need to be completed manually (all the "Not Performed" steps, for example) are also listed. If the configuration does not include one of the JAR files to be patched, then that step is skipped.



The patching process does not care what the server configuration profile is called or which base configuration it is derived from.

The JBoss ON agent is the entity which actually executes the patching process on a resource. The agent is informed of updates, pulls the information from the server, and then updates the local JAR and class files within the managed JBoss instance. The patching process runs independently of any server configuration profile or base configuration.

### 3.1. Supported JBoss Products for Patch Updates

Enterprise JBoss products can receive and apply patch updates through the JBoss CSP feed in JBoss ON. The supported products include:

- JBoss Enterprise Application Platform (EAP)
- JBoss Enterprise Web Platform and Web Services (EWP and EWS)
- JBoss Enterprise Data Services (EDS)
- JBoss SOA Platform (SOA-P)



#### NOTE

A CSP feed is only available for a product or a specific version of a product if there is a patch in the CSP for that product. JBoss ON depends on the JBoss CSP to provide patch information.

### 3.2. Situations That Can Require Manual Steps

Some patches require additional, manual changes, such as editing an XML configuration file. Any required manual changes are listed as *special steps* in the patch installation summary. There are several different situations that require manual intervention:

- The file to be patched is not present in the configuration.
- There are files that need to be removed manually.
- Configuration files, such as XML or Java properties files, require patches that need to be applied manually.
- Seam is being used and must be patched manually.

### 3.3. Enabling the Default JBoss Patch Content Source

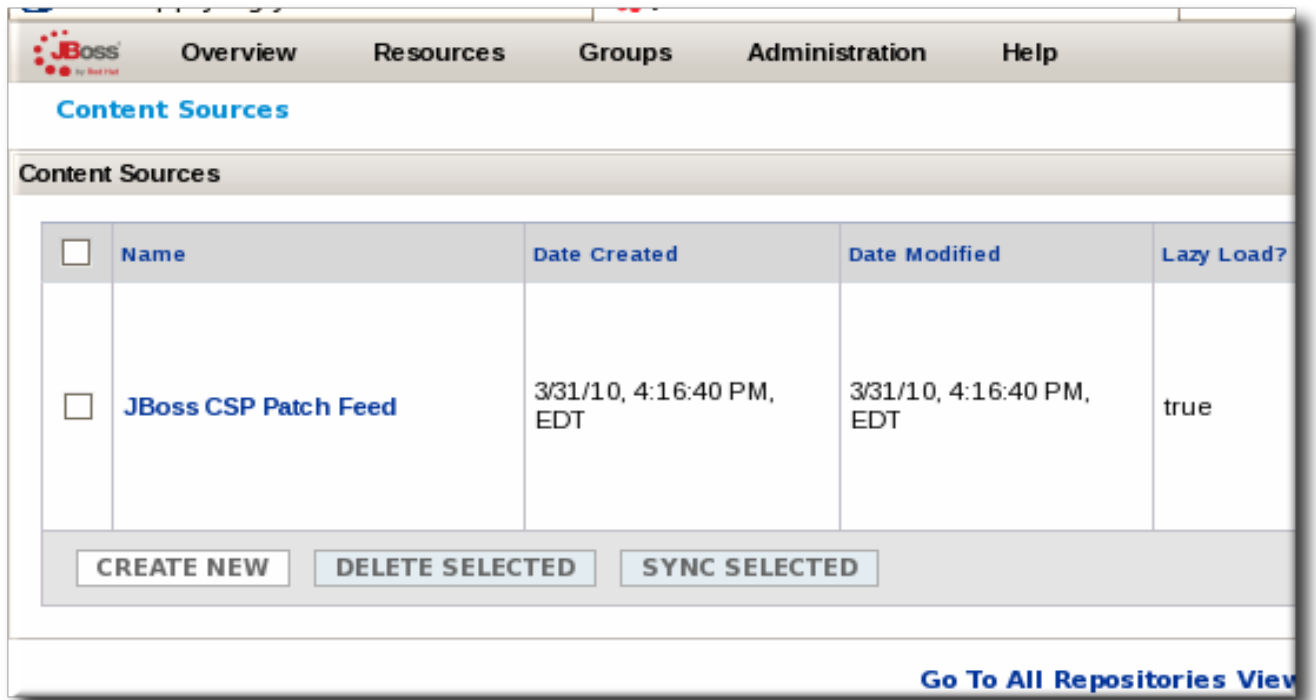


#### TIP

Perform patch installations during off hours or scheduled maintenance periods.

1. In the **Administration** tab in the top menu, open the **Content** menu and select the **Content Sources** item.

- Click the **JBoss CSP Patch Feed** source.



- Click the **Edit** button at the bottom of the **CSP Feed Settings** area to modify the content source.
- Fill in the required connection information.

**Content Sources > JBoss CSP Patch Feed**

**Basic Details**

**Type:** JBossASPatchSource

**Name:** JBoss CSP Patch Feed

**Description:** an RSS feed published by the JBoss Customer Service Portal (CSP) website which provides a list of all JBoss

**Synchronization Schedule:** 0 0 0 1 \* ?

**Lazy Load:** ☒

**Download Mode:** DATABASE

**Creation Date:** 3/31/10, 4:16:40 PM, EDT

**Last Modified Date:** 3/31/10, 4:16:40 PM, EDT

**Last Download Error:** None

\* denotes a required field.

**CSP Feed Settings** ⌵ Collapse

Name	Unset	Value	Description
<b>Feed URL *</b>		<a href="https://access.redhat.com/jbossnetwork/restricted/feed/software.html?product=all&amp;downloadType=all&amp;flavor=rss&amp;version=&amp;jonVersion=2.0">https://access.redhat.com/jbossnetwork/restricted/feed/software.html?product=all&amp;downloadType=all&amp;flavor=rss&amp;version=&amp;jonVersion=2.0</a>	URL of the RSS feed.
<b>Username</b>	<input type="checkbox"/>	jsmith	Username used to log into the CSP.
<b>Password</b>	<input type="checkbox"/>	*****	Password used to log into the CSP.
<b>Active *</b>		<input checked="" type="radio"/> Yes <input type="radio"/> No	Indicates if this instance should go out and check the feed for packages.

**Proxy Settings** ⌵ Expand

**SAVE** **CANCEL**

- The Customer Support Portal username and password
- The URL for the content source (<https://access.redhat.com/jbossnetwork/restricted/feed/software.html?product=all&downloadType=all&flavor=rss&version=&jonVersion=2.0>)
- The activation state (**Yes**)

Most of the default settings, such as the schedule, can be kept.



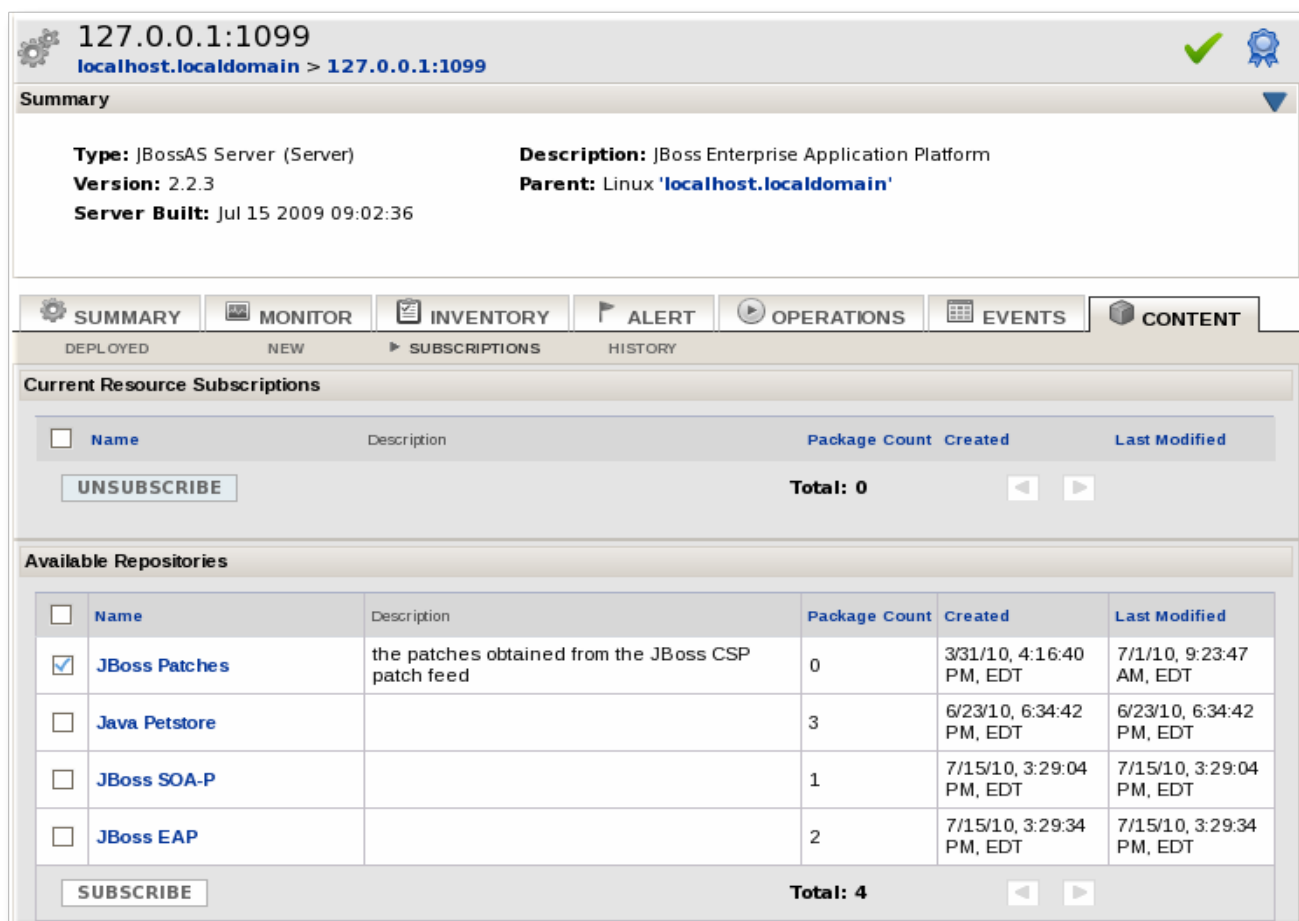
## IMPORTANT

Keep the **Lazy Load** checkbox activated, or all patches defined in the RSS feed, 1 GB of data, is preemptively downloaded by the JBoss ON server.

5. Click **Save**.
6. Optionally, use **Synchronize** button to force the content source to pull down the latest RSS Feed and synchronize it with the local data. The history of synchronization attempts is listed in the **Synchronization Results** section.

### 3.4. Subscribing a Specific Resource to the Default JBoss Patch Repository

1. In the **Resources** item in the top menu, go to the **Servers** item.
2. Search for the JBoss instance to subscribe to the repository.
3. On the JBoss server resource's entry page, open the **Content** tab and select the **Subscriptions** subtab. The JBoss patches repository is listed as available for subscription.



The screenshot displays the JBoss ON interface for a server resource. At the top, the address bar shows '127.0.0.1:1099' and the breadcrumb 'localhost.localdomain > 127.0.0.1:1099'. The 'Summary' section provides details about the JBossAS Server (Server), including its version (2.2.3) and build date (Jul 15 2009 09:02:36). The 'Description' is 'JBoss Enterprise Application Platform' and the 'Parent' is 'Linux localhost.localdomain'.

The 'Content' tab is selected, and the 'SUBSCRIPTIONS' subtab is active. The 'Current Resource Subscriptions' section shows a table with columns: Name, Description, Package Count, Created, and Last Modified. The table is currently empty, with a 'Total: 0' and an 'UNSUBSCRIBE' button.

The 'Available Repositories' section shows a table with columns: Name, Description, Package Count, Created, and Last Modified. The table lists four repositories: JBoss Patches, Java Petstore, JBoss SOA-P, and JBoss EAP. The 'JBoss Patches' repository is selected with a checked checkbox. The 'Total: 4' and 'SUBSCRIBE' button are at the bottom of this section.

Name	Description	Package Count	Created	Last Modified
<input checked="" type="checkbox"/> JBoss Patches	the patches obtained from the JBoss CSP patch feed	0	3/31/10, 4:16:40 PM, EDT	7/1/10, 9:23:47 AM, EDT
<input type="checkbox"/> Java Petstore		3	6/23/10, 6:34:42 PM, EDT	6/23/10, 6:34:42 PM, EDT
<input type="checkbox"/> JBoss SOA-P		1	7/15/10, 3:29:04 PM, EDT	7/15/10, 3:29:04 PM, EDT
<input type="checkbox"/> JBoss EAP		2	7/15/10, 3:29:34 PM, EDT	7/15/10, 3:29:34 PM, EDT

4. Select the checkbox beside the JBoss patches repository, and click the **SUBSCRIBE** button. When the assignment is complete, the repository is listed under the **Current Resource Subscriptions** area, rather than **Available Repositories**.

127.0.0.1:1099  
localhost.localdomain > 127.0.0.1:1099

**Summary**

**Type:** JBossAS Server (Server)      **Description:** JBoss Enterprise Application Platform  
**Version:** 2.2.3      **Parent:** Linux 'localhost.localdomain'  
**Server Built:** Jul 15 2009 09:02:36

SUMMARY MONITOR INVENTORY ALERT OPERATIONS EVENTS CONTENT

DEPLOYED NEW SUBSCRIPTIONS HISTORY

Subscribed [1] repositories to resource

**Current Resource Subscriptions**

<input type="checkbox"/>	Name	Description	Package Count	Created	Last Modified
<input type="checkbox"/>	JBoss Patches	the patches obtained from the JBoss CSP patch feed	0	3/31/10, 4:16:40 PM, EDT	7/1/10, 9:23:47 AM, EDT

UNSUBSCRIBE Total: 1

### 3.5. Subscribing Multiple JBoss Resources to the Default JBoss Patch Repository

The repository is associated with a content source (the patches that can be applied) and resources are then subscribed to this repository (where the patches can be applied to).

1. In the **Administration** tab in the top menu, open the **Content** menu and select the **Repositories** item.
2. Click the **JBoss Patch Channel**.

The JBoss patch repository is associated with the JBoss patch content source by default. To associate the repository to another content source, click the **ASSOCIATE...** button and assign the content source.

3. In the main page for the repository, click the **SUBSCRIBE...** button to subscribe JBoss resources to the patch repository.
4. In the search area, select **Server** in the drop-down menu.
5. Select all the JBoss server instance resources to subscribe to this repository.

### 3.6. Applying a Patch

For patches to be applied to a JBoss server, the server must first be subscribed to the JBoss content repository.

1. Stop the JBoss instance.
2. In the **Resources** item in the top menu, go to the **Servers** item.
3. Search for the JBoss instance to patch.

- On the JBoss server resource's entry page, open the **Content** tab and select the **New** subtab. This lists all of the packages and patches which are available for that specific resource type.
- Select the checkboxes beside the names of the patched to install, and click the **DEPLOY SELECTED** button.

The screenshot shows the JBoss ON interface with the 'CONTENT' tab selected. Below the main navigation bar, there are sub-tabs: 'DEPLOYED', 'NEW', 'SUBSCRIPTIONS', and 'HISTORY'. The 'NEW' sub-tab is active, displaying a section titled 'Packages Eligible for Deployment'. A text block explains that packages are found from repositories subscribed to by the resource and suggests using the 'SUBSCRIPTIONS' sub-tab for more packages. Below this is a table with two rows of packages. Each row has a checkbox in the first column. The table columns are: Package Name, Version, Type, Architecture, and Description. At the bottom of the table area, there is a 'DEPLOY SELECTED' button and a 'Total: 2' indicator with navigation arrows.

<input type="checkbox"/>	Package Name	Version	Type	Architecture	Description
<input type="checkbox"/>	JBoss EAP 5.0.0.GA_CP02	5.0.0.GA_CP02	Cumulative Patch	noarch	CP02 is the second cumulative patch for JBoss EAP 5.0.0.GA. All the patches included in this patch are listed in the long description. More information about Cumulative Patches can be found in the JBoss ON wiki: <a href="#">What is a CP?</a>
<input type="checkbox"/>	JBoss EAP 5.0.0.GA_CP07	5.0.0.GA_CP07	Cumulative Patch	noarch	CP07 is the seventh cumulative patch for JBoss EAP 5.0.0.GA. It should NOT be applied to JBoss AS 5.0.0.GA. All the patches included in this patch are listed in the long description. More information about Cumulative Patches can be found in the JBoss ON wiki: <a href="#">What is a CP?</a>

DEPLOY SELECTED Total: 2

- Review the information on the page and verify everything is correct. Click the **VIEW** link in the **Instructions** column to review the steps that will be performed during the package installation process.

SUMMARY
MONITOR
INVENTORY
ALERT
OPERATIONS
EVENTS
CONTENT

DEPLOYED
NEW
SUBSCRIPTIONS
HISTORY

### Review Packages

The following packages will be deployed. For each package, the plugin may be able to generate a list of what steps will be performed in the deployment. Click the 'view' button on the desired package to request the instructions from the agent. Note that this will make a live call to the agent and thus may take some time.

Package Name	Version	Type	Architecture	Description	Instructions
JBoss EAP 5.0.0.GA_CP02	5.0.0.GA_CP02	cumulativePatch	noarch	CP02 is the second cumulative patch for JBoss EAP 5.0.0.GA. All the patches included in this patch are listed in the long description. More information about Cumulative Patches can be found in the JBoss ON wiki: <a href="#">What is a CP?</a>	<a href="#">VIEW</a>

Total: 1








### Packages Deployment Notes

Notes specified below will be displayed when tracking the status of this request in order to help further identify the purpose of this request. They are not sent to the plugin for use during the installation.

Packages: JBoss EAP 5.0.0.GA\_CP02 5.0.0.GA\_CP02

CANCEL
CONTINUE

- Optionally, enter any notes to describe the patch deployment or environment.
- Click the **CONTINUE** button to install the updates. The patch process runs in the background; the progress can be viewed in the **History** subtab of the **Content** tab.
- When the installation process is complete, the patch job is listed in the **Completed Requests** area. Clicking the **VIEW** button displays the list of steps that performed in the process and whether they succeeded, failed, or were skipped.

 SUMMARY	 MONITOR	 INVENTORY	 ALERT	 OPERATIONS	 EVENTS	 CONTENT
DEPLOYED	NEW	SUBSCRIPTIONS	▶ HISTORY			
Package Details						
Package Name	JBoss EAP 5.0.0.GA_CP02					
Version	5.0.0.GA_CP02					
Architecture	noarch					
Result	Success					
Error Message						
Installation Step Details						
Step Number	Description	Errors	Result			
1	java.lang.RuntimeException: Could not stream package bits for [PackageDetailsKey[Name=JBoss EAP 5.0.0.GA_CP02, Version=5.0.0.GA_CP02 Arch=noarch Type=cumulativePatch]]	<a href="#">View</a>	Success			
1	Calculate the digest of [{downloadFolder}/{software.filename}] using the [MD5] algorithm and check it matches [{software.MD5}].		Not Performed			
1	Unzip [{downloadFolder}/{software.filename}] into [{patchFolder}]		Not			

10. When the patch process is complete, start the JBoss instance.

## 4. Managing mod\_cluster Deployments

The mod\_cluster module provides intelligent, dynamic load balancing for web applications. There are two halves to mod\_cluster: one in the JBoss application server (which manages the web application contexts) and one in the HTTP server (which manages sessions and routing). JBoss ON monitors and manages the mod\_cluster module within the JBoss server.



### NOTE

JBoss ON supports mod\_cluster version 1.1.2. This version of mod\_cluster is not currently supported on JBoss EAP or the httpd service on Red Hat Enterprise Linux.

### 4.1. About mod\_cluster

mod\_cluster is an HTTP load balancer that provides a level of intelligence and control over web applications that is not available with other HTTP load balancers. mod\_cluster has lots of features that improve performance and management, but two are crucial:

- By using multicast (*advertising*), mod\_cluster signals workers what proxy servers are available, so workers can register themselves dynamically with the cluster domain.
- Using a special communication layer between the JBoss server and the HTTP server, mod\_cluster can not only register when a web context is enabled but also when it is disabled and removed from load balancing. This allows mod\_cluster to handle full web application life cycles.

More detail about the features of mod\_cluster is in the product documentation at [http://www.jboss.org/mod\\_cluster](http://www.jboss.org/mod_cluster).

mod\_cluster has two modules: one for the HTTP server which handles routing and load balancing and one for the JBoss server to manage the web application contexts. Both modules must be installed and configured for the cluster to function.



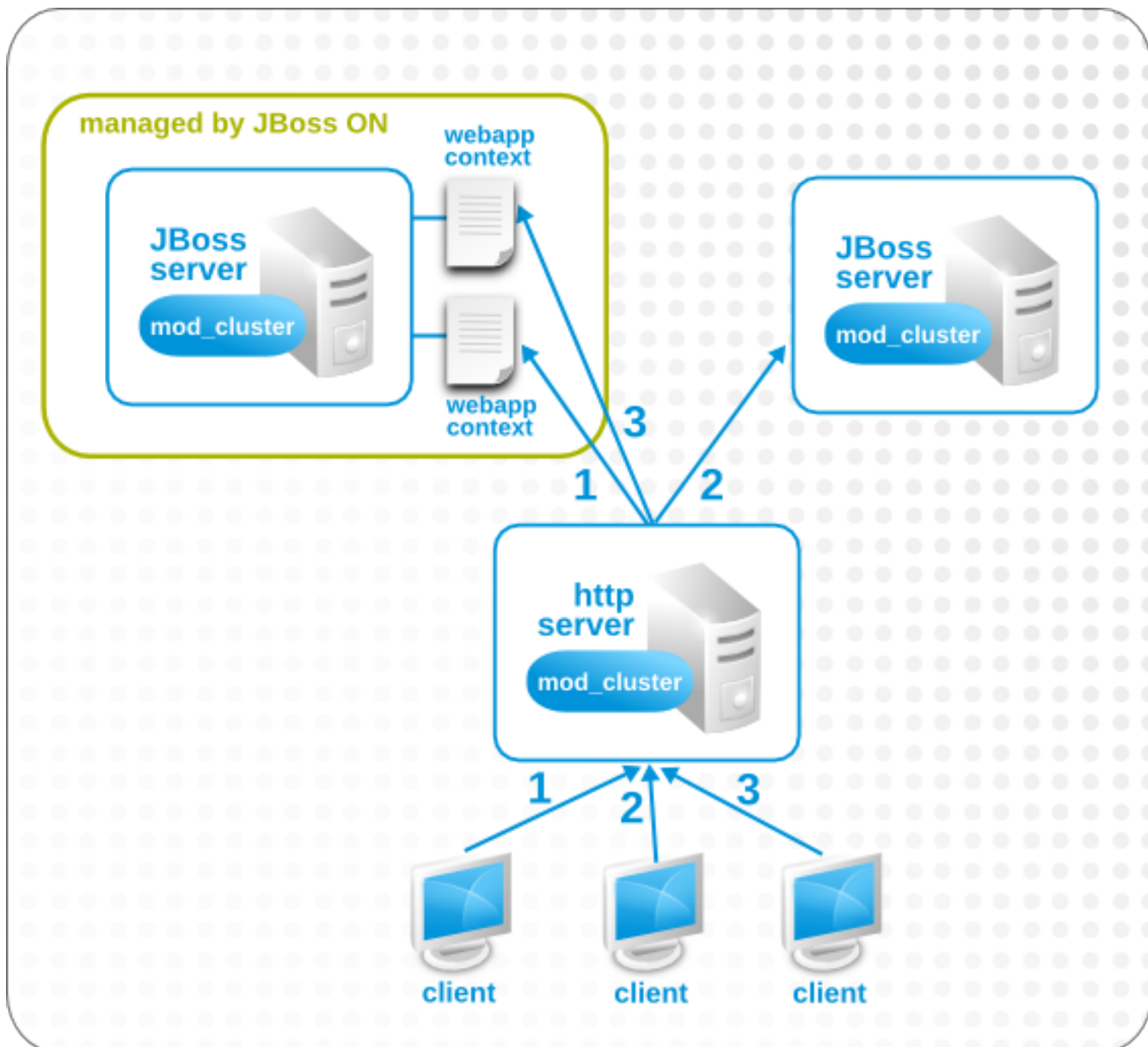


Figure 2. The mod\_cluster Topology

In JBoss ON, the entire mod\_cluster domain is imported as a child resource for the JBoss server. The web application contexts are listed as children resources for the cluster, with contexts as children within the mod\_cluster module.

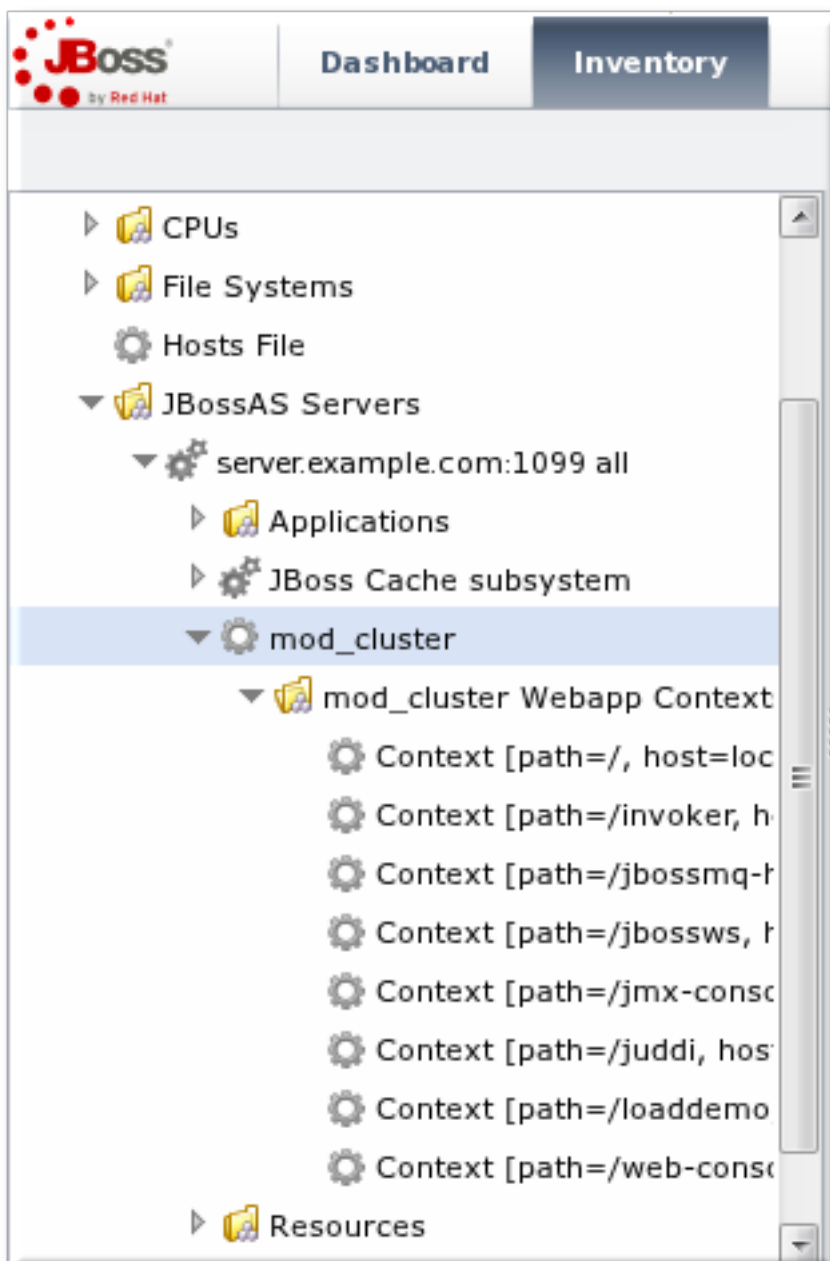


Figure 3. The mod\_cluster Resource Hierarchy



## IMPORTANT

The mod\_cluster module in the HTTP server is configured externally from JBoss ON and is not managed by JBoss ON.

The mod\_cluster module in the JBoss server can be managed by JBoss ON, and it is critical that the cluster is properly configured in order for JBoss ON to manage its resources. JBoss ON detects mod\_cluster like any other JMX resource (such as Hibernate).

There are a number of resources available for installing and configuring mod\_cluster:

- [http://docs.jboss.org/mod\\_cluster/1.1.0/html/](http://docs.jboss.org/mod_cluster/1.1.0/html/)
- [http://docs.redhat.com/docs/en-US/JBoss\\_Enterprise\\_Application\\_Platform/5/html/HTTP\\_Connectors\\_Load\\_Balancing\\_Guide/index.html](http://docs.redhat.com/docs/en-US/JBoss_Enterprise_Application_Platform/5/html/HTTP_Connectors_Load_Balancing_Guide/index.html)

## 4.2. Managing mod\_cluster

The mod\_cluster properties provide direct management over how the mod\_cluster domain operates. Almost any part of the mod\_cluster configuration can be managed through JBoss ON, but two elements are critical for domain behavior:

- How the mod\_cluster domain handles sticky sessions. Sticky sessions are enabled in mod\_cluster by default, but this can be disabled or its behavior can be changed through the configuration properties.
- Enabling advertising (multicast). mod\_cluster can send the JBoss information to any VirtualHost configured in the HTTP server. This allows workers to find the cluster and register themselves with the JBoss server dynamically.

The screenshot displays the JBoss ON web interface. The top navigation bar includes links for Dashboard, Inventory, Reports, Bundles, Administration, and Help. A green banner at the top states: "All configuration properties have valid values, so the configuration can now be saved." The left sidebar shows a tree view of system components, with 'mod\_cluster' selected under 'JBossAS Servers'. The main panel shows the 'mod\_cluster' configuration page. The 'Configuration' tab is active, displaying a table of properties:

Property	Unset?	Value	Description
Sticky Sessions		<input checked="" type="radio"/> Yes <input type="radio"/> No	Enables sticky sessions.
Sticky Session Remove		<input checked="" type="radio"/> Yes <input type="radio"/> No	Remove session when the request cannot be routed to the right node.
Advertise		<input checked="" type="radio"/> Yes <input type="radio"/> No	Enable autodiscovery of httpd servers.

Figure 4. Setting Server-Level Properties

The server-level operations apply to all web application contexts configured within the `mod_cluster` domain. The obvious ones that impact the web application contexts are enabling and disabling all contexts. The other options are used to reset the `mod_cluster` domain after an error (reset the node) or reload the cluster configuration after making changes to the cluster properties.

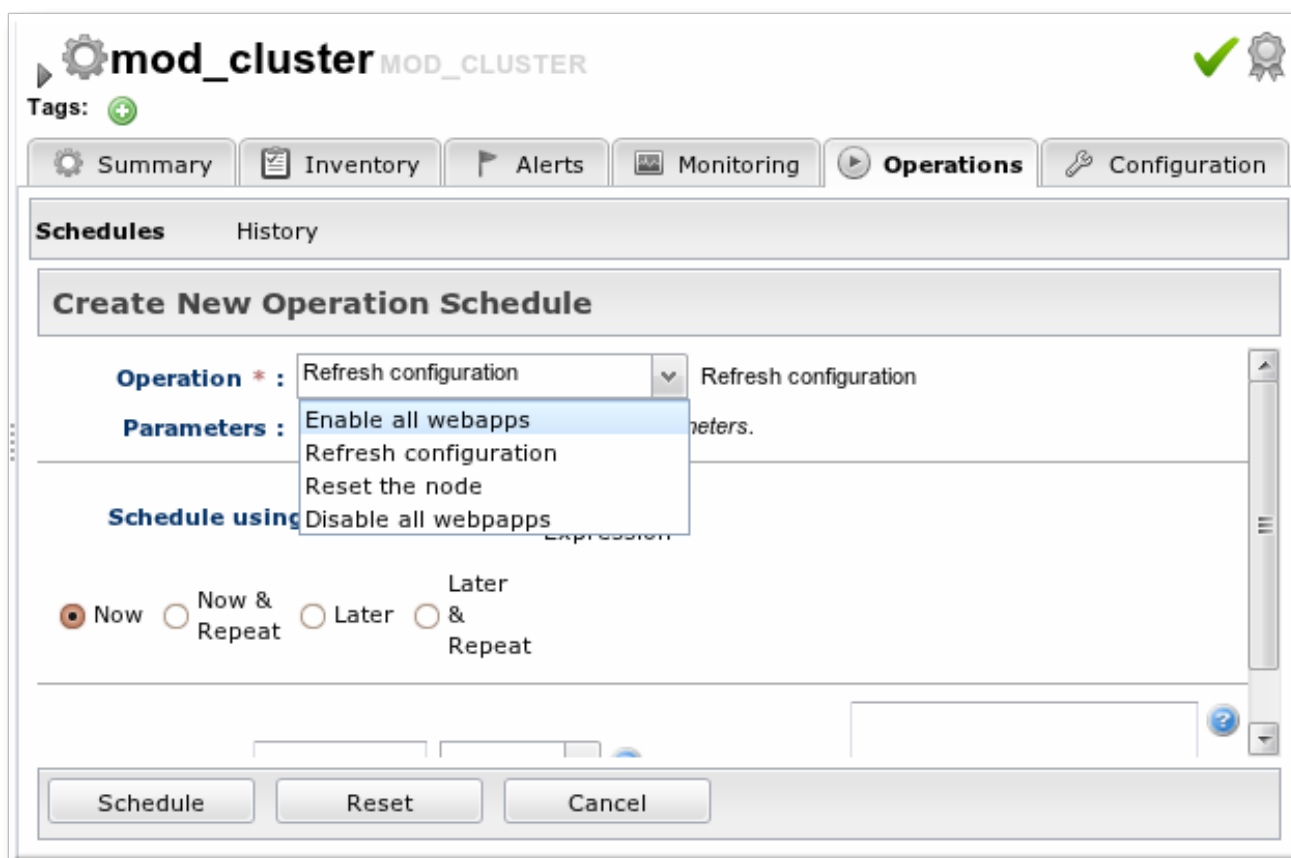


Figure 5. Running Server-Level Operations

### 4.3. Managing Web Applications Contexts

JBoss ON manages the full lifecycle of web application contexts within the `mod_cluster` load-balancing cluster.

Web application contexts can be stopped or disabled. Stopping or disabling a webapp context removes it from load-balancing so that the Apache server cannot forward requests to the webapp, but it leaves the application running and available directly from the JBoss server address. (Stop allows the webapp context to drain before removing it from the load-balancing, so this essentially shuts down the webapp gracefully. It can take several minutes or even hours for the webapp context to stop. Disabling a webapp context immediately removes it from load balancing.)

JBoss ON has operations that allow JBoss administrators to manage the state of their web contexts within the `mod_cluster` domain.

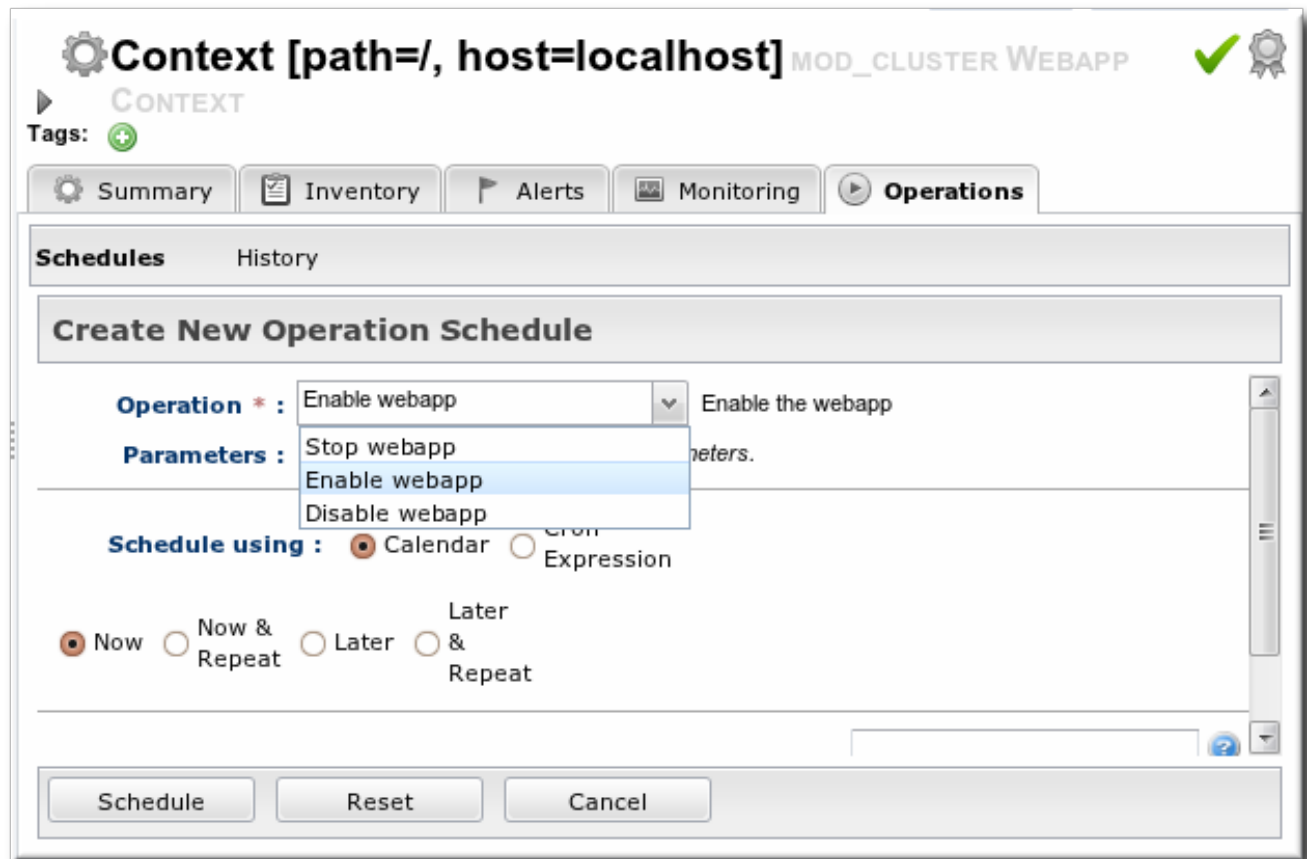


Figure 6. Running Web Application Context Operations

Web context resource operations only apply to the specific selected context.

## 5. Document Information

This guide is part of the overall set of guides for users and administrators of JBoss ON. Our goal is clarity, completeness, and ease of use.

### 5.1. Giving Feedback

If there is any error in this guide or there is any way to improve the documentation, please let us know. Bugs can be filed against the documentation for the community-based RHQ Project in Bugzilla, <http://bugzilla.redhat.com/bugzilla>. Make the bug report as specific as possible, so we can be more effective in correcting any issues:

1. Select the **Other** products group.
2. Select **RHQ Project** from the list.
3. Set the component to **Documentation**.
4. Set the version number to 3.0.
5. For errors, give the page number (for the PDF) or URL (for the HTML), and give a succinct description of the problem, such as incorrect procedure or typo.

For enhancements, put in what information needs to be added and why.

6. Give a clear title for the bug. For example, "**Incorrect command example for setup script options**" is better than "**Bad example**".

We appreciate receiving any feedback — requests for new sections, corrections, improvements, enhancements, even new ways of delivering the documentation or new styles of docs. You are welcome to contact Red Hat Content Services directly at [docs@redhat.com](mailto:docs@redhat.com)<sup>1</sup>.

## 5.2. Document History

Revision 3.0-0 December 5, 2011

Ella Deon Lackey [dlackey@redhat.com](mailto:dlackey@redhat.com)

With the initial release of JBoss Operations Network 3.0.

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