



JBoss

Deployment Guide

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Table of Contents

1 Introduction	4
1.1 Document Purpose	4
1.2 Intended Audience	4
2 Template	5
3 Architecture	6
4 Configure the LoadMaster	7
4.1 Enable Subnet Originating Requests Globally	7
4.2 Enable Check Persist Globally	8
4.3 Create the JBoss Virtual Services	9
4.3.1 Create a JBoss Web App HTTP Virtual Service	9
4.3.2 Create a JBoss Web App HTTPS Offloaded Virtual Service	11
4.3.2.1 Create a JBoss Web App HTTPS Offloaded HTTP Redirect Virtual Service	12
4.3.3 Create a JBoss Web App HTTPS Reencrypted Virtual Service	12
4.3.3.1 Create a JBoss Web App HTTPS Reencrypted Redirect Virtual Service	14
4.3.4 Create a JBoss Web App HTTPS Straight Through Virtual Service	14
4.3.4.1 Create a JBoss Web App HTTPS Straight Through HTTP Redirect Virtual Service ...	16
References	17
Last Updated Date	18

1 Introduction

JBoss is an application server authored by JBoss, which is now developed by Red Hat. It was renamed WildFly in November 2014. It is written in Java and implements the Java Platform, Enterprise Edition (Java EE) specification. It runs on multiple platforms and is open source.

The Kemp LoadMaster is used to load balance the JBoss workload. The LoadMaster offers advanced Layer 4 and Layer 7 server load balancing, SSL Acceleration and a multitude of other advanced Application Delivery Controller (ADC) features. The LoadMaster intelligently and efficiently distributes user traffic among the application servers so that users get the best experience possible.

1.1 Document Purpose

This document provides the recommended LoadMaster settings used when load balancing the JBoss workload. The Kemp Support Team is available to provide solutions for scenarios not explicitly defined. The Kemp support site can be found at: <https://support.kemptechnologies.com>

1.2 Intended Audience

This document is intended to be read by anyone who is interested in configuring the LoadMaster to optimize JBoss Application Server.

2 Template

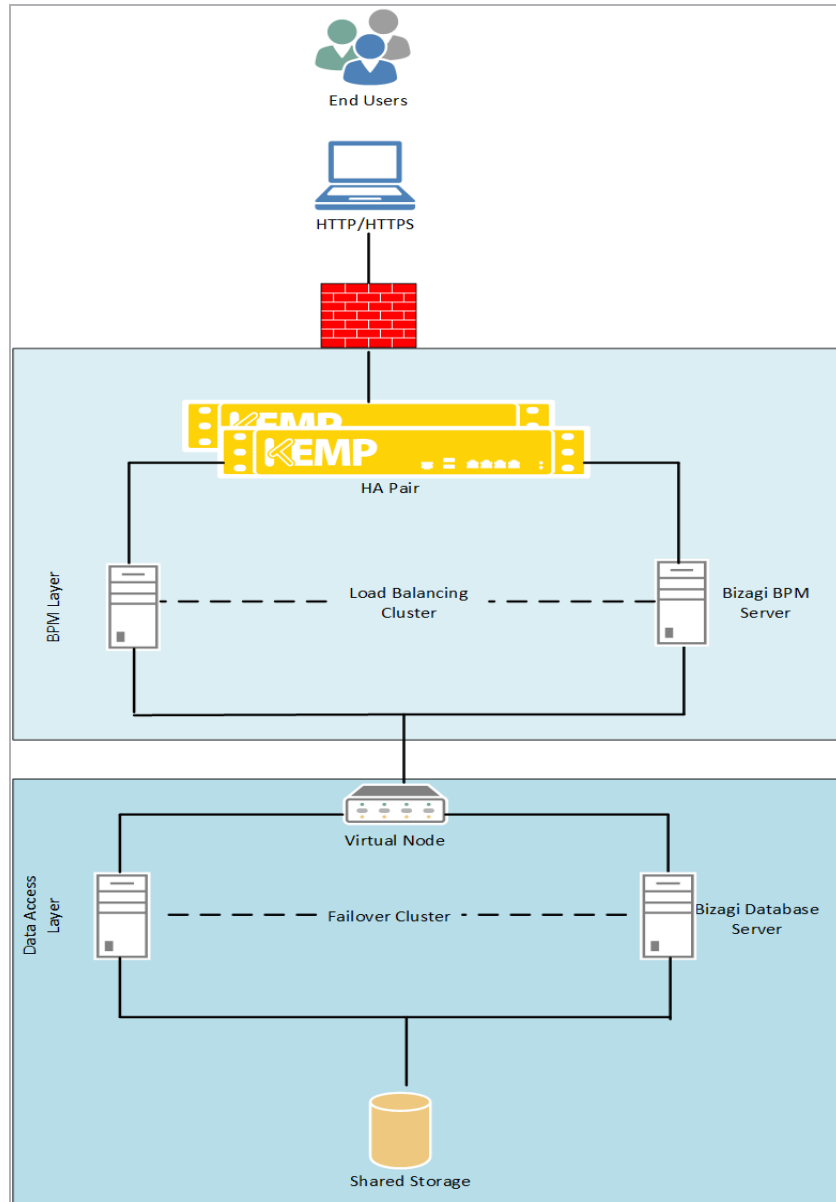
Kemp has developed a template containing our recommended settings for this workload. You can install this template to help create Virtual Services (VSs) because it automatically populates the settings. You can use the template to easily create the required VSs with the recommended settings. For some workloads, additional manual steps may be required such as assigning a certificate or applying port following, these steps are covered in the document, if needed.

You can remove templates after use and this will not affect deployed services. If needed, you can make changes to any of the VS settings after using the template.

Download released templates from the following page: [LoadMaster Templates](#).

For more information and steps on how to import and use templates, refer to the [Virtual Services and Templates, Feature Description](#) on the Kemp Documentation page.

3 Architecture



4 Configure the LoadMaster

The deployed JBoss environment determines which of the following setups is used.

4.1 Enable Subnet Originating Requests Globally

It is best practice to enable the **Subnet Originating Requests** option globally.

In a one-armed setup (where the Virtual Service and Real Servers are on the same network/subnet) **Subnet Originating Requests** is usually not needed. However, enabling **Subnet Originating Requests** should not affect the routing in a one-armed setup.

In a two-armed setup where the Virtual Service is on network/subnet A, for example, and the Real Servers are on network B, **Subnet Originating Requests** should be enabled on LoadMasters with firmware version 7.1-16 and above.

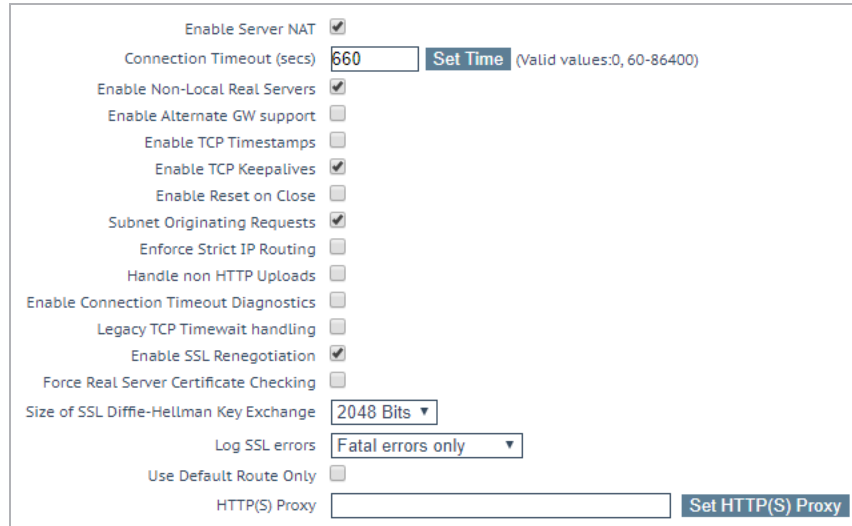
When **Subnet Originating Requests** is enabled, the LoadMaster routes traffic so that the Real Server sees traffic arriving from the LoadMaster interface that is in that network/subnet.

When **Subnet Originating Requests** is enabled globally, it is automatically enabled on all Virtual Services. If the **Subnet Originating Requests** option is disabled globally, you can choose whether to enable **Subnet Originating Requests** on a per-Virtual Service basis.

To enable **Subnet Originating Requests** globally, follow the steps below:

1. In the main menu of the LoadMaster Web User Interface (WUI), go to **System Configuration > Miscellaneous Options > Network Options**.

4 Configure the LoadMaster



The screenshot shows a configuration window with the following settings:

- Enable Server NAT: ☒
- Connection Timeout (secs): 660 (Valid values:0, 60-86400)
- Enable Non-Local Real Servers: ☒
- Enable Alternate GW support: ☐
- Enable TCP Timestamps: ☐
- Enable TCP Keepalives: ☒
- Enable Reset on Close: ☐
- Subnet Originating Requests: ☒
- Enforce Strict IP Routing: ☐
- Handle non HTTP Uploads: ☐
- Enable Connection Timeout Diagnostics: ☐
- Legacy TCP Timewait handling: ☐
- Enable SSL Renegotiation: ☒
- Force Real Server Certificate Checking: ☐
- Size of SSL Diffie-Hellman Key Exchange: 2048 Bits ▾
- Log SSL errors: Fatal errors only ▾
- Use Default Route Only: ☐
- HTTP(S) Proxy:

2. Select the **Subnet Originating Requests** check box.

4.2 Enable Check Persist Globally

It is recommended that you change the **Always Check Persist** option to **Yes – Accept Changes**. Use the following steps:

1. Go to **System Configuration > Miscellaneous Options > L7 Configuration**.

4 Configure the LoadMaster

Allow connection scaling over 64K Connections	<input type="checkbox"/>
Always Check Persist	Yes - Accept Changes ▼
Add Port to Active Cookie	<input type="checkbox"/>
Conform to RFC	<input checked="" type="checkbox"/>
Close on Error	<input type="checkbox"/>
Add Via Header In Cache Responses	<input type="checkbox"/>
Real Servers are Local	<input type="checkbox"/>
Drop Connections on RS failure	<input checked="" type="checkbox"/>
Drop at Drain Time End	<input checked="" type="checkbox"/>
L7 Connection Drain Time (secs)	300 Set Time (Valid values:0, 60 - 86400)
L7 Authentication Timeout (secs)	30 Set Timeout (Valid values:30 - 300)
L7 Client Token Timeout (secs)	120 Set Timeout (Valid values:60 - 300)
Additional L7 Header	X-Forwarded-For ▼
100-Continue Handling	RFC-7231 Compliant ▼
Allow Empty POSTs	<input type="checkbox"/>
Allow Empty HTTP Headers	<input type="checkbox"/>
Force Complete RS Match	<input type="checkbox"/>
Least Connection Slow Start	0 Set Slow Start (Valid values:0 - 600)
Share SubVS Persistence	<input type="checkbox"/>
Log Insight Message Split Interval	10 Set Log Split Interval (Valid values:1 - 100)
Include User Agent Header in User Logs	<input type="checkbox"/>
Use CEF Log Format	<input type="checkbox"/>

2. Click the **Always Check Persist** drop-down arrow and select **Yes – Accept Changes**.

4.3 Create the JBoss Virtual Services

The following sections describe the recommended settings for the JBoss Virtual Services.

4.3.1 Create a JBoss Web App HTTP Virtual Service

The following are the steps involved and the recommended settings to configure the JBoss Web App HTTP Virtual Service:

1. In the main menu of the LoadMaster Web User Interface (WUI), go to **Virtual Services > Add New**.

4 Configure the LoadMaster

Please Specify the Parameters for the Virtual Service.

Virtual Address

Port

Service Name (Optional)

Use Template

Protocol

2. Enter a valid **Virtual Address**.
3. Enter **80** as the **Port**.
4. Enter a recognizable **Service Name**, such as **JBoss Web App HTTP**.
5. Click **Add this Virtual Service**.
6. Configure the settings as recommended in the following table:

Section	Option	Value	Comment
Standard Options	Persistence Mode	Source IP Address	
	Timeout	1 Hour	
	Scheduling Method	least connection	
	Idle Connection Timeout	660 (seconds)	Click Set Idle Timeout.
Real Servers	Checked Port	8080	

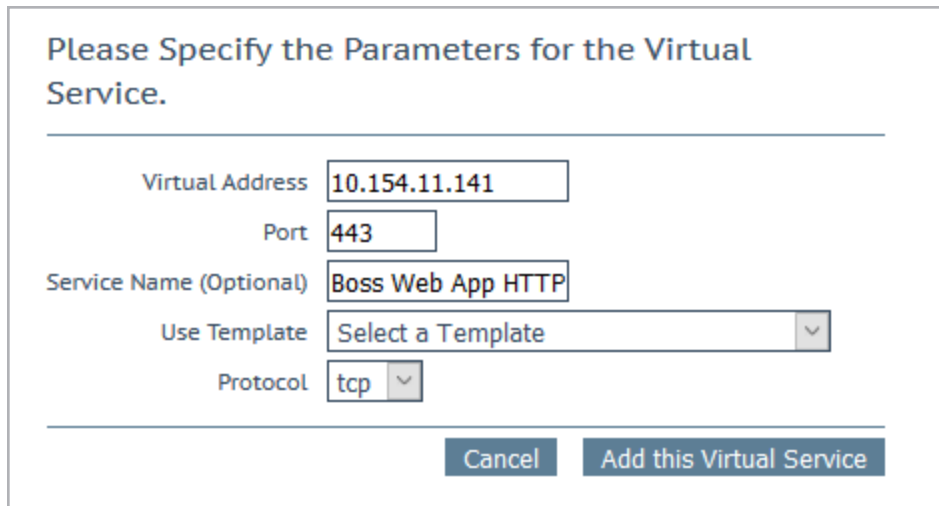
7. Add the Real Servers:
 - a) Expand the **Real Servers** section.
 - b) Click **Add New**.
 - c) Enter the address of the relevant real server.
 - d) Complete the other fields as required.
 - e) Click **Add this Real Server** then click **OK** to the pop-up message.

f) Repeat the steps above to add more Real Servers as needed, based on your environment.

4.3.2 Create a JBoss Web App HTTPS Offloaded Virtual Service

The following are the steps involved and the recommended settings to configure the JBoss Web App HTTPS Offloaded Virtual Service:

1. In the main menu of the LoadMaster WUI, go to **Virtual Services > Add New**.



Please Specify the Parameters for the Virtual Service.

Virtual Address: 10.154.11.141

Port: 443

Service Name (Optional): Boss Web App HTTP

Use Template: Select a Template

Protocol: tcp

Buttons: Cancel, Add this Virtual Service

2. Enter a valid **Virtual Address**.
3. Enter **443** as the **Port**.
4. Enter a recognizable Service Name, such as JBoss Web App HTTPS Offloaded.
5. Click **Add this Virtual Service**.
6. Configure the settings as recommended in the following table:

Section	Option	Value	Comment
Standard Options	Persistence Mode	Source IP Address	
	Timeout	1 Hour	
	Scheduling Method	least connection	
	Idle Connection	660 (seconds)	Click Set Idle Timeout.

4 Configure the LoadMaster

Section	Option	Value	Comment
Timeout			
SSL Properties	SSL Acceleration	Enabled	
	Cipher Set	BestPractices	
Advanced Properties	Add a Port 80 Redirector VS	https://%h%s	Click the Add HTTP Redirector button. This automatically creates a redirect on port 80.
Real Servers	Checked Port	8080	

7. Add the Real Servers:

- a) Expand the **Real Servers** section.
- b) Click **Add New**.
- c) Enter the address of the relevant Real Server.
- d) Complete the other fields as required.
- e) Click **Add this Real Server** then click **OK** to the pop-up message.
- f) Repeat the steps above to add more Real Servers as needed, based on your environment.

4.3.2.1 Create a JBoss Web App HTTPS Offloaded HTTP Redirect Virtual Service

Clicking the **Add HTTP Redirector** button automatically creates a port 80 redirect Virtual Service. This is optional, but the purpose of this Virtual Service is to redirect any clients who have connected using HTTP to the HTTPS Virtual Service. Kemp also recommends changing the **Persistence Mode** to **None**.

4.3.3 Create a JBoss Web App HTTPS Reencrypted Virtual Service

The following are the steps involved and the recommended settings to configure the JBoss Web App HTTPS Reencrypted Virtual Service:

1. In the main menu of the LoadMaster WUI, go to **Virtual Services > Add New**.

4 Configure the LoadMaster

Please Specify the Parameters for the Virtual Service.

Virtual Address

Port

Service Name (Optional)

Use Template

Protocol

2. Enter a valid **Virtual Address**.
3. Enter **443** as the **Port**.
4. Enter a recognizable Service Name, such as JBoss Web App HTTPS Reencrypted.
5. Click **Add this Virtual Service**.
6. Configure the settings as recommended in the following table:

Section	Option	Value	Comment
Standard Options	Persistence Mode	Source IP Address	
	Timeout	1 Hour	
	Scheduling Method	least connection	
	Idle Connection Timeout	660 (seconds)	Click Set Idle Timeout.
SSL Properties	SSL Acceleration	Enabled	
	Reencrypt	Enabled	
	Cipher Set	Best Practices	
	Add a Port 80	https://%h%s	Click the Add HTTP Redirector button. This

Section	Option	Value	Comment
Properties	redirector VS		automatically creates a redirect on port 80.
Real Servers	Checked Port	8443	

7. Add the Real Servers:

- a) Expand the **Real Servers** section.
- b) Click **Add New**.
- c) Enter the address of the relevant Real Server.
- d) Complete the other fields as required.
- e) Click **Add this Real Server** then click **OK** to the pop-up message.
- f) Repeat the steps above to add more Real Servers as needed, based on your environment.

4.3.3.1 Create a JBoss Web App HTTPS Reencrypted Redirect Virtual Service

Clicking the **Add HTTP Redirector** button automatically creates a port 80 redirect Virtual Service. This is optional, but the purpose of this Virtual Service is to redirect any clients who have connected using HTTP to the HTTPS Virtual Service. Kemp also recommends changing the **Persistence Mode** to **None**.

4.3.4 Create a JBoss Web App HTTPS Straight Through Virtual Service

The following are the steps involved and the recommended settings to configure the JBoss Web App HTTPS straight through Virtual Service:

1. In the main menu of the LoadMaster WUI, go to **Virtual Services > Add New**.

4 Configure the LoadMaster

Please Specify the Parameters for the Virtual Service.

Virtual Address

Port

Service Name (Optional)

Use Template

Protocol

2. Enter a valid **Virtual Address**.
3. Enter **443** as the **Port**.
4. Enter a recognizable Service Name, such as JBoss Web App HTTPS straight through.
5. Click Add this Virtual Service.
6. Configure the settings as recommended in the following table:

Section	Option	Value	Comment
Standard Options	Persistence Mode	Source IP Address	
	Timeout	1 Hour	
	Scheduling Method	least connection	
	Idle Connection Timeout	660	Click Set Idle Timeout.
Advanced Properties	Add a Port 80 Redirector VS		Click the Add HTTP Redirector button. This automatically creates a redirect on port 80.
Real Servers	Checked Port	8443	

7. Add the Real Servers:
 - a) Expand the **Real Servers** section.

- b) Click **Add New**.
- c) Enter the address of the relevant Real Server.
- d) Complete the other fields as required.
- e) Click **Add this Real Server** then click **OK** to the pop-up message.
- f) Repeat the steps above to add more Real Servers as needed, based on your environment.

4.3.4.1 Create a JBoss Web App HTTPS Straight Through HTTP Redirect Virtual Service

Clicking the **Add HTTP Redirector** button automatically creates a port 80 redirect Virtual Service. This is optional, but the purpose of this Virtual Service is to redirect any clients who have connected using HTTP to the HTTPS Virtual Service. Kemp also recommends changing the **Persistence Mode** to **None**.

References

Unless otherwise specified, the following documents can be found at <http://kemptechnologies.com/documentation>.

Virtual Services and Templates, Feature Description

Last Updated Date

This document was last updated on 27 July 2023.