



Port Following

Feature Description

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1 Introduction

Kemp leads the industry in driving the price/performance value proposition for application delivery and load balancing to levels that our customers can afford. Our products' versatile and powerful architecture provide the highest value, while enabling our customers to optimize their businesses that rely on Internet-based infrastructure to conduct business with their customers, employees and partners.

Kemp products optimize web and application infrastructure as defined by high-availability, high-performance, flexible scalability, security and ease of management. They maximize the total cost-of-ownership for web infrastructure, while enabling flexible and comprehensive deployment options.

1.1 Document Purpose

This document describes various aspects of the port following feature of the Kemp LoadMaster. It describes in detail how to configure the port following feature using the LoadMaster Web User Interface (WUI).

For descriptions on each of the LoadMaster WUI fields, please refer to the [Web User Interface \(WUI\), Configuration Guide](#).

1.2 Intended Audience

This document is intended to help anyone who wishes to learn about or implement the port following feature within the Kemp LoadMaster.

2 Port Following

Port following is set when two services need to share persistence records. Typically, this is done for HTTP and HTTPS services so users maintain a server session, regardless of whether they connect securely or not.

If the Real Server for one of the Virtual Services fails, the persistence records for the same Real Server on the other Virtual Service will be cleared.

Port following has several requirements:

- The Virtual Services must have the same set of Real Servers
- The Virtual Service must be using the same persistence options

After meeting these conditions, in the Virtual Service modify screen there will be an option under **Advanced Properties** for **Port Following**. Ensure to set this on both Virtual Services to ensure that port following is done bi-directionally. Port following must be set up bi-directionally to ensure that, regardless of whether the client connects using HTTP or HTTPS, the persistence and session is saved.

Prior to LoadMaster firmware version 7.2.51, it was not possible to configure port following for Virtual Services where the **Service Type** was set to **Generic**. This is possible in version 7.2.51 and above.

Here is an example scenario where port following may be used:

- When using “shopping cart” like services where a user selects items and adds them to a list, any persistence method can be used.
- When the user decides to pay for the items, this is normally performed using a secure SSL (HTTPS) service.
- When port following is turned on, the Real Server where the “shopping cart” connection is active will be selected for the SSL session.
- This selection will only occur when a connection is still open from the same client (as determined by the source IP address), and if the SSL service has the same IP address as the “shopping cart” service.

- For example, if a connection is made to the HTTP service of www.somewebsite.com, and then a new SSL connection is made to the same address, then the SSL session will be directed to the same Real Server as the original HTTP service.

2.1 Configuring Port Following

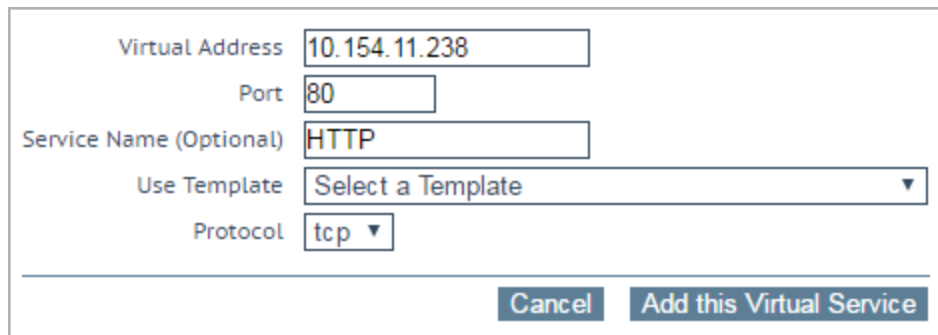
Port following is not available on SubVSs.

Follow the steps in the sections below to create the Virtual Services and configure port following. It does not matter what order the Virtual Services are created in – as long as they have the same set of Real Servers and the same Layer 7 persistence mode – you should be able to enable port following.

2.1.1 Create the Virtual Service for HTTP

To create an HTTP Virtual Service, follow the steps below:

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



2. Enter a valid IP address in the **Virtual Address** text box.
3. Enter **80** in the **Port** text box.

It is possible to use port following with Virtual Services using wildcard ports.

4. Enter a recognizable **Service Name**.
5. Click the **Add this Virtual Service** button.
6. Expand the **Standard Options** section.

| | |
|---------------------------------------|---|
| ▼ Standard Options | |
| Force L7 | <input checked="" type="checkbox"/> |
| Transparency | <input checked="" type="checkbox"/> |
| Extra Ports | <input type="text"/> Set Extra Ports |
| Persistence Options | Mode: <input type="text" value="Source IP Address"/> ▼ Timeout: <input type="text" value="6 Minutes"/> ▼ |
| Scheduling Method | <input type="text" value="round robin"/> ▼ |
| Idle Connection Timeout (Default 660) | <input type="text"/> Set Idle Timeout |
| Use Address for Server NAT | <input type="checkbox"/> |
| Quality of Service | <input type="text" value="Normal-Service"/> ▼ |

7. Select an L7 persistence mode. This is the persistence mode that will be used for any Real Servers which are added to this Virtual Service.

8. Expand the **Real Servers** section.

| | |
|------------------------------|--|
| ▼ Real Servers | |
| Real Server Check Parameters | <input type="text" value="HTTP Protocol"/> ▼ <input type="text"/> Set Check Port |
| URL: | <input type="text"/> Set URL |
| Status Codes: | <input type="text"/> Set Status Codes |
| Use HTTP/1.1: | <input type="checkbox"/> |
| HTTP Method: | <input type="text" value="HEAD"/> ▼ |
| Custom Headers: | Show Headers |
| Enhanced Options: | <input type="checkbox"/> |

9. Click the **Add New** button.

Please Specify the Parameters for the Real Server

Allow Remote Addresses

☒

Real Server Address

10.154.11.239

Port

80

Forwarding method

nat

Weight

1000

Connection Limit

Connection Rate Limit

<-Back

Add This Real Server

10. Enter the relevant address in the **Real Server Address** text box.

11. Click **Add This Real Server**.

12. Click **OK**.

Allow Remote Addresses

☒

Real Server Address

10.154.11.237

Port

80

Forwarding method

nat

Weight

1000

Connection Limit

Connection Rate Limit

<-Back

Add This Real Server

13. For the second Real Server, enter the address in the **Real Server Address** text box.

14. Click **Add This Real Server**.

15. Click **View/Modify Services** in the main menu.

16. Check that the Virtual Service has the correct **Virtual IP Address**, port number and **Real Servers** and that the **Status** is **Up**.

2.1.2 Create the Virtual Service for HTTPS/SSL Offloading

To create a HTTPS Virtual Service with SSL offloading, follow the steps below:

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

Please Specify the Parameters for the Virtual Service.

| | |
|-------------------------|---|
| Virtual Address | <input type="text" value="10.154.11.238"/> |
| Port | <input type="text" value="443"/> |
| Service Name (Optional) | <input type="text" value="HTTPS with SSL offload"/> |
| Use Template | <input type="text" value="Select a Template"/> |
| Protocol | <input type="text" value="tcp"/> |

2. Enter the IP address in the **Virtual Address** text box.
3. Enter a recognizable **Service Name**.
4. Enter **443** as the **Port**.

It is possible to use port following with Virtual Services using wildcard ports.

5. Click the **Add this Virtual Service** button.
6. Expand the **SSL Properties** section.

| SSL Properties | |
|----------------------------------|---|
| SSL Acceleration | Enabled: <input checked="" type="checkbox"/> Reencrypt: <input type="checkbox"/> |
| Supported Protocols | <input type="checkbox"/> SSLv3 <input type="checkbox"/> TLS1.0 <input checked="" type="checkbox"/> TLS1.1 <input checked="" type="checkbox"/> TLS1.2 <input checked="" type="checkbox"/> TLS1.3 |
| Add Received Cipher Name | <input checked="" type="checkbox"/> |
| Require SNI hostname | <input type="checkbox"/> |
| Certificates | <p>Self Signed Certificate in use.</p> <div> <div>Available Certificates</div> <div>None Available</div> </div> <div> <div>Assigned Certificates</div> <div>None Assigned</div> </div> <div> <div>></div> <div><</div> </div> <div>Set Certificates</div> <div>Manage Certificates</div> |
| Ciphers | <div>Cipher Set: Default <div>Modify Cipher Set</div></div> <div>Assigned Ciphers</div> <div> ECDHE-ECDSA-AES256-GCM-SHA384 ECDHE-RSA-AES256-GCM-SHA384 DHE-DSS-AES256-GCM-SHA384 DHE-RSA-AES256-GCM-SHA384 ECDHE-ECDSA-CHACHA20-POLY1305 ECDHE-RSA-CHACHA20-POLY1305 </div> |
| Client Certificates | No Client Certificates required |
| Strict Transport Security Header | Don't add the Strict Transport Security Header |
| Intermediate Certificates | Using all installed Intermediate certificates <div>Show Intermediate Certificates</div> |

7. Select **Enable**.
8. Click **OK**.
9. Expand the **Standard Options** section.

| ▼ Standard Options | |
|---------------------------------------|---|
| Transparency | <input checked="" type="checkbox"/> |
| Extra Ports | <div>Set Extra Ports</div> |
| Persistence Options | Mode: Source IP Address Timeout: 6 Minutes |
| Scheduling Method | round robin |
| Idle Connection Timeout (Default 660) | <div>Set Idle Timeout</div> |
| Use Address for Server NAT | <input type="checkbox"/> |
| Quality of Service | Normal-Service |

10. Select the same L7 persistence mode that was selected in the HTTP Virtual Service. This is the persistence mode that will be used for any Real Servers which are added to this Virtual Service.

11. Expand the **Real Servers** section.

Real Servers

Real Server Check Parameters

HTTP Protocol

Checked Port

Set Check Port

URL:

Set URL

Status Codes:

Set Status Codes

Use HTTP/1.1:

HTTP Method:

HEAD

Custom Headers:

Show Headers

Enhanced Options:

12. Click **Add New**.

Please Specify the Parameters for the Real Server

Allow Remote Addresses

Real Server Address

10.154.11.239

Port

80

Forwarding method

nat

Weight

1000

Connection Limit

Connection Rate Limit

<-Back

Add This Real Server

13. Enter the relevant address in the **Real Server Address** text box.

14. Enter **80** as the **Port**.

15. Click **Add This Real Server**.

16. Click **OK**.

Please Specify the Parameters for the Real Server

Allow Remote Addresses

☒

Real Server Address

Port

Forwarding method

Weight

Connection Limit

Connection Rate Limit

17. For the second Real Server, enter the address in the **Real Server Address** text box.
18. Enter **80** as the **Port**.
19. Click **Add This Real Server**.
20. Click **OK**.
21. Click **Back**.
22. Select View/Modify Services under Virtual Services in the main menu.
23. Check that the Virtual Service has the correct **Virtual IP Address**, port number and **Real Servers** and that the **Status** is **Up**.

2.1.3 Configure Port Following for the HTTPS Virtual Service

To configure port following for the HTTPS Virtual Service, follow the steps below:

1. In the main menu, go to **Virtual Services > View/Modify Services**.
2. Click the **Modify** button for the Virtual Service with port **443**.
3. Expand the **Advanced Properties** section.

▼

Advanced Properties

Content Switching

Disabled

Enable

HTTP Selection Rules

Show Selection Rules

HTTP Header Modifications

Show Header Rules

Response Body Modification

Show Body Modification Rules

Port Following

Follow:

tcp/10.154.11.238:80

Enable HTTP/2 Stack

☐

Enable Caching

☐

Enable Compression

☐

Detect Malicious Requests

☐

Add Header to Request

:

Set Header

Copy Header in Request

To Header

Set Headers

Add HTTP Headers

Legacy Operation(X-ClientSide)

"Sorry" Server

Port

Set Server Address

Not Available Redirection Handling

Error Code:

Redirect URL:

Set Redirect URL

Default Gateway

Set Default Gateway

Service Specific Access Control

Access Control

4. Select the port 80 Virtual Service from the **Port Following** drop-down list.

If the **Port Following** drop-down list is not visible – remember that both Virtual Services must have the same set of Real Servers and both Virtual Services should have a Layer 7 persistence method enabled.

To turn off port following, change the **Follow** drop-down list to **No VIP Selected**.

5. Wait 10 seconds, or uncheck and check the **Activate or Deactivate Service** checkbox in the **Basic Properties** section for immediate activation.

2.1.4 Configure Port Following for the HTTP Virtual Service

To configure port following for the HTTPS Virtual Service, follow the steps below:

1. In the main menu, go to **Virtual Services > View/Modify Services**.
2. Click the **Modify** button for the Virtual Service with port **80**.
3. Expand the **Advanced Properties** section.

2 Port Following

▼ Advanced Properties

Content Switching

Disabled **Enable**

HTTP Selection Rules

Show Selection Rules

HTTP Header Modifications

Show Header Rules

Port Following

Follow: tcp/10.154.11.238:443 ▼

Enable Caching

☐

Enable Compression

☐

Detect Malicious Requests

☐

Enable Multiple Connect

☐

Add Header to Request

: **Set Header**

Add HTTP Headers

Legacy Operation(X-ClientSide) ▼

"Sorry" Server

Port **Set Server Address**

Not Available Redirection Handling

Error Code:

Redirect URL: **Set Redirect URL**

Default Gateway

Set Default Gateway

Alternate Source Addresses

Set Alternate Source Addresses

Service Specific Access Control

Access Control

- Select the port 443 Virtual Service from the **Port Following** drop-down list.

If the **Port Following** drop-down list is not visible – remember that both Virtual Services must have the same set of Real Servers and both Virtual Services should have a Layer 7 persistence method enabled.

To turn off port following, change the **Follow** drop-down list to **No VIP Selected**.

- Wait 10 seconds, or uncheck and check the **Activate or Deactivate Service** check box in the **Basic Properties** section for immediate activation.

References

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

Web User Interface (WUI), Configuration Guide

Last Updated Date

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