



# VMware Horizon View 6

## Deployment Guide

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# 1 Introduction

VMware Horizon (with View) delivers virtualized remote desktops and applications to remote users using desktop client and browser interfaces. This document describes how to balance client traffic in a VMware Horizon (with View) environment using the Kemp LoadMaster. For clarity, the VMware Horizon (with View) product will be referred to as View throughout this document.

## 1.1 Related Firmware Version

Published with LMOS version 7.2.48.4 LTS. This document has not required substantial changes since 7.2.48.4 LTS. However, the content is in sync with the latest LoadMaster LTS firmware.

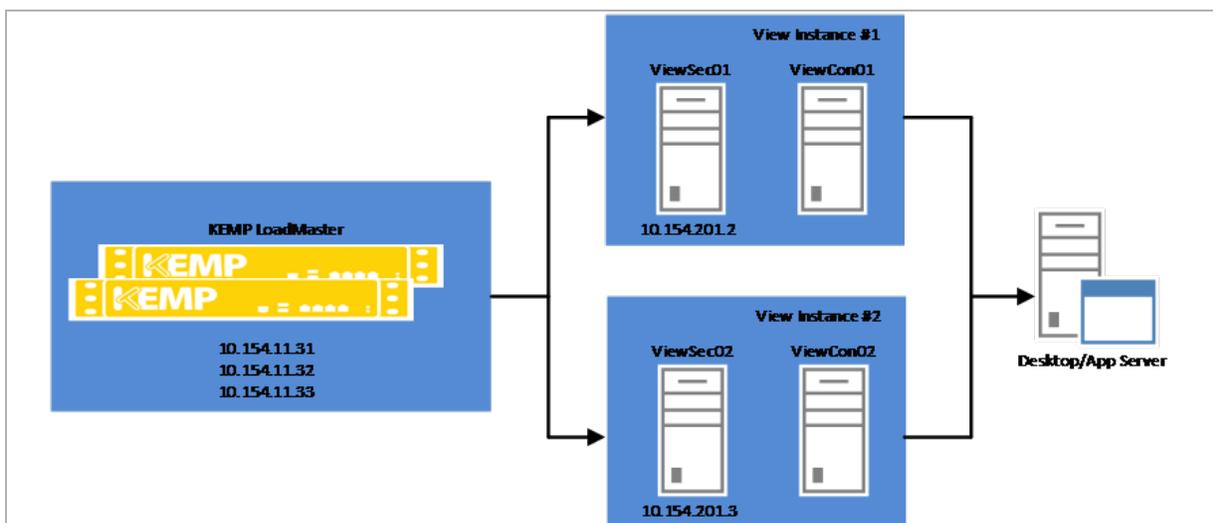
## 1.2 How VMware Horizon (with View) Works

A simple View environment consists of a Security server and a Connection server which authenticate and connect remote users to the virtual desktop/application environment. These servers act together and are deployed in 1:1 pairs. From a LoadMaster point of view, all connections are with the security server. The initial connection is made over HTTPS and once authenticated, the security server provides the client with connection details (URL for web connections and an IP address for PCoIP). The client then establishes a connection to the services on the URL/IP address provided in the authentication reply.

Only the initial (HTTPS) connection needs to be load-balanced as there is a 1:1 mapping between the URL/IP address provided and the security/connection server pair that will service the client session.

## 1.3 Solution Environment

The LoadMaster is deployed in-line as a proxy for all services including PCoIP. Alternative deployment options could have PCoIP bypass the LoadMaster as it is only the initial session establishment (HTTPS) that needs to be load balanced.



On the LoadMaster, the 10.154.11.31 Virtual IP (VIP) address is used to balance the client’s initial HTTPS connection between the two View instances which are represented by the 10.154.11.32/10.154.11.33 VIPs. Each of the View instance VIPs offers services on HTTPS, on port 4172 for PCoIP (UDP and TCP) and on port 8443 for View Blast.

## 1.4 Product Versions and Platforms Tested

Product	Product Version	Deployment Platform
Kemp LoadMaster	7.1-20c	Applies to all virtual and physical platforms
View Client	3.1.0.21879	Windows 8.1 Enterprise
View Connection/Security server	6.0.0-1884746	Windows 2012 R2 Server

# 2 Service Configuration

## 2.1 Configuring LoadMaster for View 6

To support the environment outlined above, a number of Virtual Services need to be defined on the LoadMaster. The table below outlines example details that would need to be configured on the LoadMaster.

VIP	Real Server (s)	Purpose
10.154.11.31:443 (TCP)	10.154.201.2 10.154.201.3	Balance the initial SSL connection from the client between the View Connection/Security server instances
10.154.11.32:443 (TCP)	10.154.201.2	Accept load-balanced client connections on HTTPS
10.154.11.32:4172 (TCP)	10.154.201.2	PCoIP connections can be over UDP or TCP. These Virtual Services forward connections to the View Connection Server.
10.154.11.32:4172 (UDP)	10.154.201.2	
10.154.11.32:8443 (TCP)	10.154.201.2	Blast is the View via a browser protocol which we deliver on port 8443
10.154.11.33:443 (TCP)	10.154.201.3	Second View instance of the above services
10.154.11.33:4172 (TCP)	10.154.201.3	
10.154.11.33:4172 (UDP)	10.154.201.3	
10.154.11.33:8443 (TCP)	10.154.201.3	

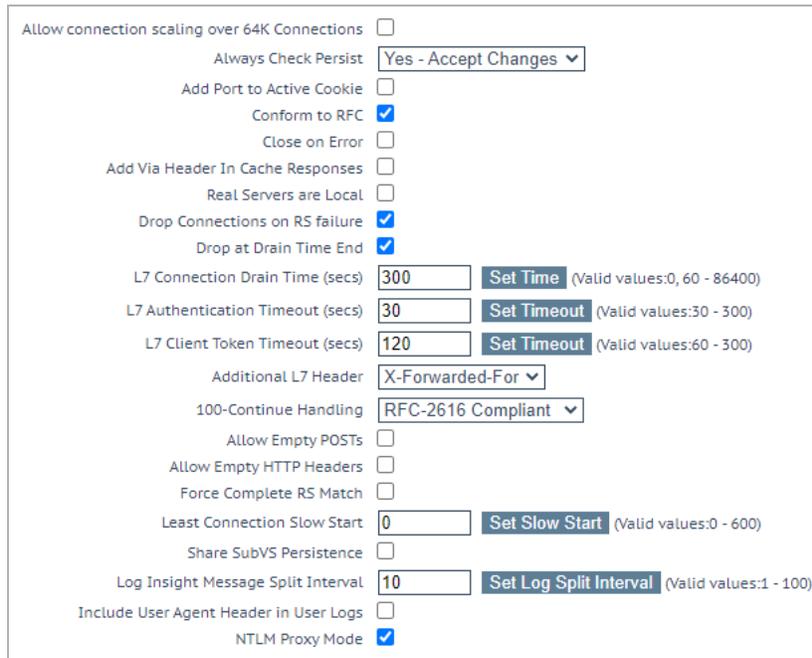
HTTPS is being offered on three Virtual Services in the configuration above. Each of these will require a certificate and associated private key for the Fully Qualified Domain Name (FQDN) of the

VIP. In the example, we are using a wildcard certificate (\*.viewlab.net) on all of the Virtual Services supporting HTTPS.

## 2.2 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**.



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 <span>Set Time (Valid values:0, 60 - 86400)</span>
L7 Authentication Timeout (secs)	30 <span>Set Timeout (Valid values:30 - 300)</span>
L7 Client Token Timeout (secs)	120 <span>Set Timeout (Valid values:60 - 300)</span>
Additional L7 Header	X-Forwarded-For ▼
100-Continue Handling	RFC-2616 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 <span>Set Slow Start (Valid values:0 - 600)</span>
Share SubVS Persistence	<input type="checkbox"/>
Log Insight Message Split Interval	10 <span>Set Log Split Interval (Valid values:1 - 100)</span>
Include User Agent Header in User Logs	<input type="checkbox"/>
NTLM Proxy Mode	<input checked="" type="checkbox"/>

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

## 2.3 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 **Templates** section on the [Kemp Documentation page](#).

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.

## 2.4 Virtual Service Settings on LoadMaster

Virtual IP Address	Prot	Name	Layer	Certificate Installed	Status	Real Servers	Operation
10.154.11.31:443	tcp	VHViewLogin	L7	on Real Server	● Up	10.154.201.2 10.154.201.3	Modify Delete
10.154.11.32:443	tcp	ViewHTTP01	L7	on Real Server	● Up	10.154.201.2	Modify Delete
10.154.11.32:4172	tcp	ViewPCoIP01	L4		● Up	10.154.201.2	Modify Delete
10.154.11.32:4172	udp	PCoIPUDP01	L4		● Up	10.154.201.2	Modify Delete
10.154.11.32:8443	tcp	ViewBlast01	L7		● Up	10.154.201.2	Modify Delete
10.154.11.33:443	tcp	ViewHTTP02	L7	on Real Server	● Up	10.154.201.3	Modify Delete
10.154.11.33:4172	tcp	ViewPCoIP02	L4		● Up	10.154.201.3	Modify Delete
10.154.11.33:4172	udp	PCoIPUDP02	L4		● Up	10.154.201.3	Modify Delete
10.154.11.33:8443	tcp	ViewBlast02	L7		● Up	10.154.201.3	Modify Delete

For clarity in the example, each of the services is explicitly defined giving a Virtual Services list as in the above screenshot.

## 2.5 Configuring the Initial SSL Connection Virtual Service

To configure the initial SSL Virtual Service on the LoadMaster, follow the steps below in the WUI:

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

Virtual Address	<input type="text" value="10.154.11.31"/>
Port	<input type="text" value="443"/>
Service Name (Optional)	<input type="text" value="VMViewLogin"/>
Use Template	<input type="text" value="Select a Template"/>
Protocol	<input type="text" value="tcp"/>

2. Enter a valid **Virtual Address**.
3. Enter **443** as the **Port**.
4. Enter a recognizable **Service Name**.
5. Click **Add this Virtual Service**.
6. Configure the settings as shown in the following table:

Section	Option	Value	Comment
SSL Properties	SSL Acceleration	Enabled	
	Reencrypt	Enabled	
	Certificates	Select the appropriate certificate.	Click > to assign the certificate. Click <b>Set Certificates</b> .
Standard Options	Persistence Mode	Server Cookie	
	Cookie name	JSESSIONID	Click <b>Set Cookie</b> .
	Scheduling Method	Select the appropriate method for the particular View infrastructure that is deployed.	

7. Expand the **Real Servers** section.

▼ Real Servers

Real Server Check Parameters: HTTPS 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:

8. Click **Add New**.

Real Server Address

Port

Forwarding method nat

Weight

Connection Limit

9. Enter the relevant **Real Server Address**, for example **10.154.201.3**.

10. Click **Add This Real Server**.



In some environments, it may be appropriate to create a HTTP to HTTPS redirect to automatically forward unencrypted connection requests to the secure service. To add the redirect Virtual Service, follow the steps in the section below.

### 2.5.1 Configuring the Redirect Virtual Service

To create and configure the Redirect Virtual Service, follow the steps below:

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

Virtual Address	<input type="text" value="10.154.11.31"/>
Port	<input type="text" value="80"/>
Service Name (Optional)	<input type="text" value="VMWare View Redirect"/>
Use Template	<input type="text" value="Select a Template"/>
Protocol	<input type="text" value="tcp"/>

2. Enter the same IP address as the one used when creating the initial SSL connection Virtual Service in the **Configuring the Initial SSL Connection Virtual Service** section.
3. Enter **80** as the **Port**.
4. Click **Add this Virtual Service**.
5. Configure the settings as shown in the following table:

Section	Option	Value
Advanced Properties	Error Code	302 Found
	Redirect URL	https://%h%s
Standard Options	Transparency	Disabled

## 2.6 Configuring the Load-Balanced HTTPS Virtual Service

This Virtual Service needs to be defined for each security server in the View environment. There is a 1:1 relationship between this Virtual Service and the Security server so scheduling options can be left at default.

Configure the settings as shown in the following table:

Section	Option	Value	Comment
Standard Options	Persistence Mode	Server Cookie	
	Cookie name	JSESSIONID	Click <b>Set Cookie</b> .
SSL Properties	SSL Acceleration	Enabled	
	Reencrypt	Enabled	

## 2.7 Configuring the PCoIP Virtual Service

The PCoIP Virtual Service provides a simple Layer 4 reverse proxy connection to the security server on port **4172**. Two variants are required to support both TCP and UDP connections.

**Basic Properties**

Service Name:  **Set Nickname**

Service Type:  ▼

Activate or Deactivate Service:

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▼ **Standard Options**

Force L7:

Transparency:

Extra Ports:  **Set Extra Ports**

Persistence Options: Mode:  ▼

Scheduling Method:  ▼

Use Address for Server NAT:

SSL offloading is not required for this service. The service should have a **Generic** Service Type with default persistence and scheduling.

▼ **Real Servers**

Real Server Check Parameters:  ▼ Checked Port:  **Set Check Port**

Enhanced Options:

In the TCP Virtual Service, the PCoIP system health check is performed by setting the health check to **TCP Connection Only**.

▼ **Real Servers**

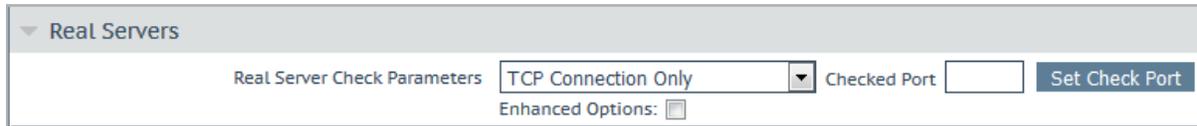
Real Server Check Parameters:  ▼

Enhanced Options:

In the UDP Virtual Service, the health check should be set to **ICMP Ping**.

## 2.8 Configuring the Blast Virtual Service

The Blast Virtual Service provides a reverse HTTPS proxy on port 8443. This protocol may be SSL offloaded and reencrypted or passed directly to the server.

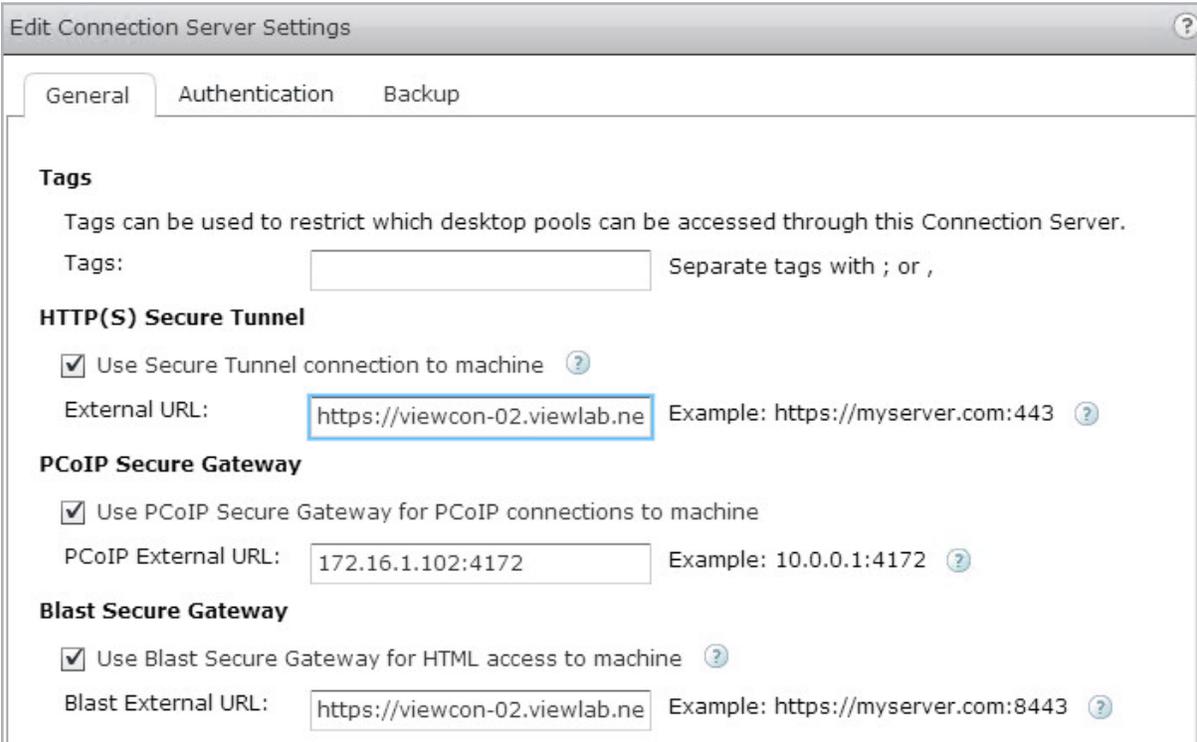


The screenshot shows a configuration window titled "Real Servers". Inside, there is a section for "Real Server Check Parameters". A dropdown menu is set to "TCP Connection Only". To the right of the dropdown is a "Checked Port" input field which is currently empty. A "Set Check Port" button is located to the right of the input field. Below the dropdown and input field, there is a label "Enhanced Options:" followed by an unchecked checkbox.

The health check method should be set to **TCP Connection Only**.

# 3 Configuring VMware Horizon (with View)

The connection points for the remote clients can be set to the relevant LoadMaster Virtual Services in the **Connection Server Settings** screen in VMware view.



**Edit Connection Server Settings**

General Authentication Backup

**Tags**

Tags can be used to restrict which desktop pools can be accessed through this Connection Server.

Tags:  Separate tags with ; or ,

**HTTP(S) Secure Tunnel**

Use Secure Tunnel connection to machine ?

External URL:  Example: https://myserver.com:443 ?

**PCoIP Secure Gateway**

Use PCoIP Secure Gateway for PCoIP connections to machine

PCoIP External URL:  Example: 10.0.0.1:4172 ?

**Blast Secure Gateway**

Use Blast Secure Gateway for HTML access to machine ?

Blast External URL:  Example: https://myserver.com:8443 ?

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The HTTP(S) and Blast URLs must be an FQDN and the PCoIP URL must be an IP address. The ports specified must match the Virtual Services ports defined in the LoadMaster.

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In the context of the example, each Connection Server is configured with the URLs that point to the per-instance Virtual Services on the LoadMaster. The URLs resolve as follows:



URL	IP Address
Viewcon-01.viewlab.net	10.154.11.32
Viewcon-02.viewlab.net	10.154.11.33

# 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 25 March 2021.