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Kemp® LoadMaster®

Deployment Guide VMware Horizon View 6

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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 LoadMaster. For clarity, the VMware Horizon (with View) product will be referred to as View throughout this document.

Contents

- How VMware Horizon (with View) Works
- Solution Environment
- Product Versions and Platforms Tested

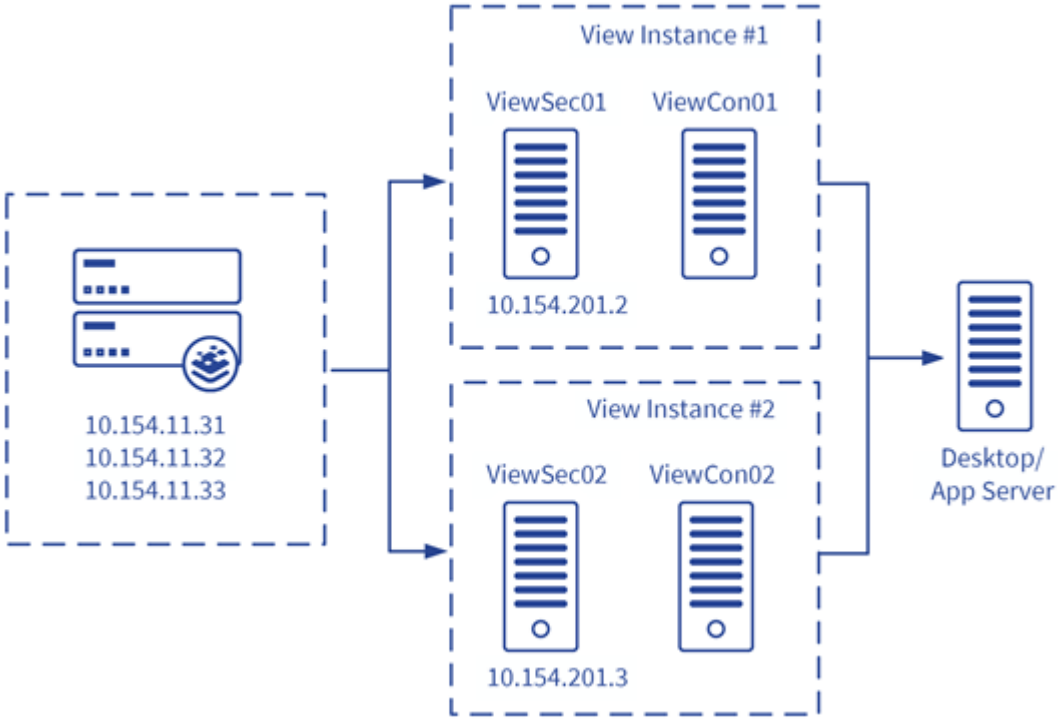
How VMware Horizon (with View) Works

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.

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.

Product Versions and Platforms Tested

Product	Product Version	Deployment Platform
LoadMaster	7.1-20c	Applies to all virtual and physical platforms
View Client	3.1.0.21879	Windows 8.1 Enterprise

Product	Product Version	Deployment Platform
View Connection/Security server	6.0.0-1884746	Windows 2012 R2 Server

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Service Configuration

Refer to the following sections for details on configuring the LoadMaster with the recommended settings for VMware Horizon View 6.

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- Configuring LoadMaster for View 6
- Enable Check Persist Globally
- Template
- Virtual Service Settings on LoadMaster
- Configuring the Initial SSL Connection Virtual Service
- Configuring the Load-Balanced HTTPS Virtual Service
- Configuring the PCoIP Virtual Service
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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.

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

Template

Progress 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.

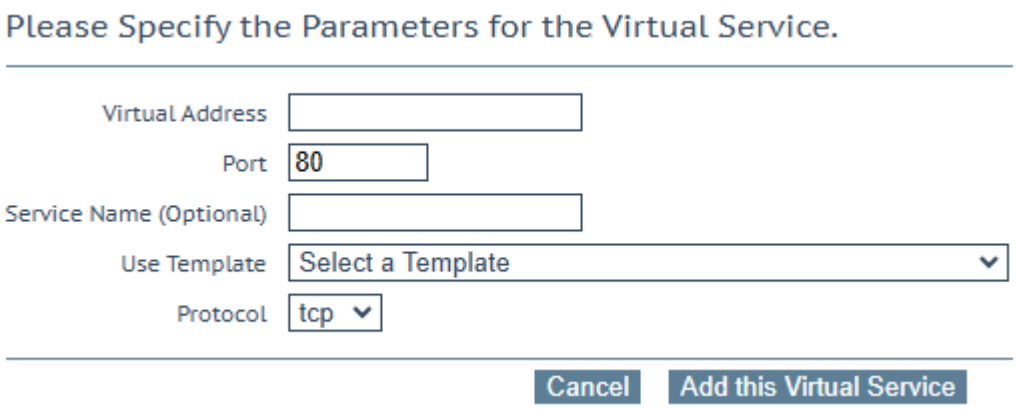
You can remove templates after use and this will not affect deployed services. If needed, you can make changes to any of the VS settings after using the template.

Download released templates from the following page: LoadMaster Templates.

You can import templates to the LoadMaster through the **Manage Templates** page under **Virtual Services** in the main menu of the LoadMaster User Interface (UI).

Click **Choose File**, select the template to install and click **Add New Template**. The template will then be available to select when you are adding a new Virtual Service.

To begin the process of creating a new Virtual Service, click **Virtual Services** and **Add New** in the main menu.



This opens the Virtual Service parameters page which prompts to enter the Virtual IP (VIP) address of the Virtual Service, the port, and the name to give the service and the protocol. You can select a previously-imported template in the **Use Template** drop-down list.

For more information and steps on how to use templates, refer to the Virtual Services and Templates,

Feature Description.

Virtual Service Settings on LoadMaster

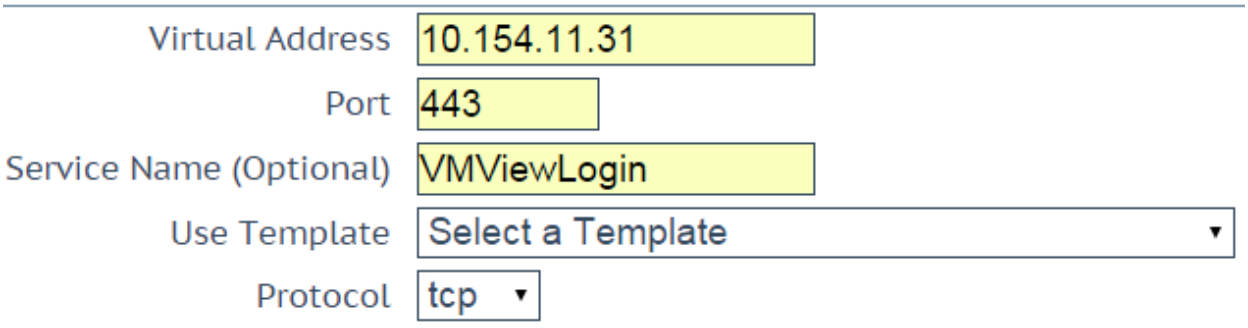
Virtual IP Address	Prot	Name	Layer	Certificate Installed	Status	Real Servers	Operation
10.154.11.31:443	tcp	VHViewLogin	L7	on Real Server	Up	10.154.201.2 10.154.201.3	Modify Delete
10.154.11.32:443	tcp	ViewHTTP01	L7	on Real Server	Up	10.154.201.2	Modify Delete
10.154.11.32:4172	tcp	ViewPCoIP01	L4		Up	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.

Configuring the Initial SSL Connection Virtual Service

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

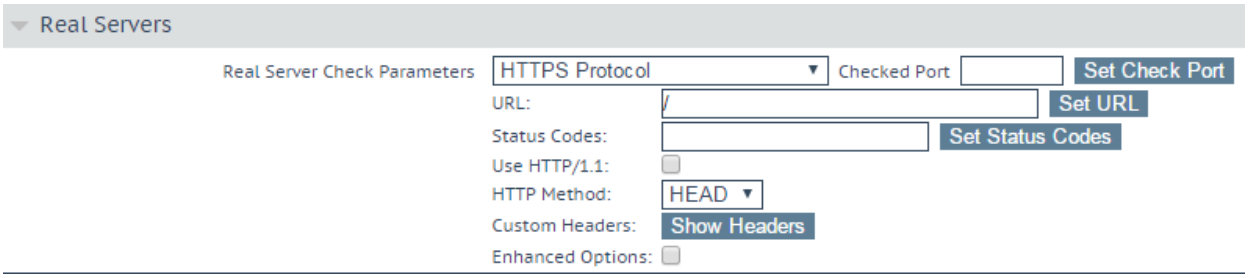
1. In the main menu, select **Virtual Services > Add New**.



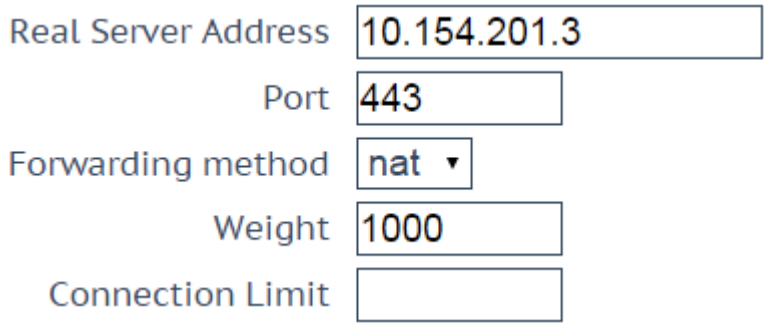
2. Enter a valid **Virtual Address**.
3. Enter **443** as the **Port**.
4. Enter a recognizable **Service Name**.
5. Click **Add this Virtual Service**.
6. Configure the settings as shown in the following table:

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

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



8. Click **Add New**.



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.

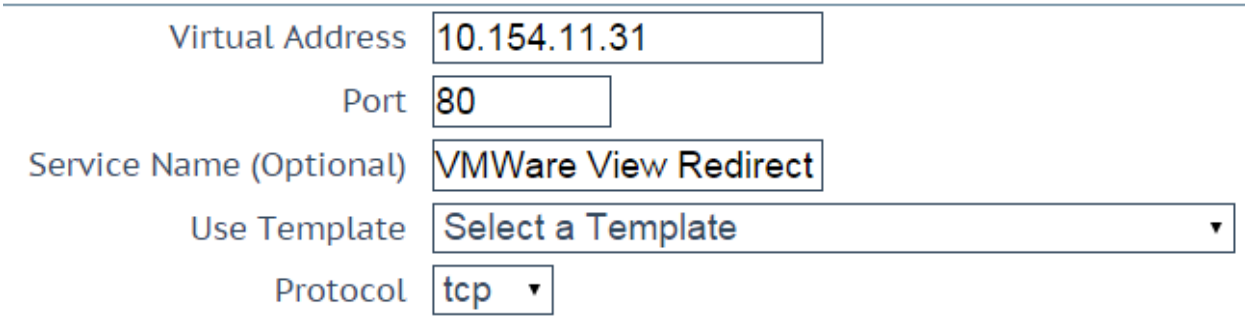
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- Configuring the Redirect Virtual Service

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**.



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

Configuring the Load-Balanced HTTPS Virtual Service

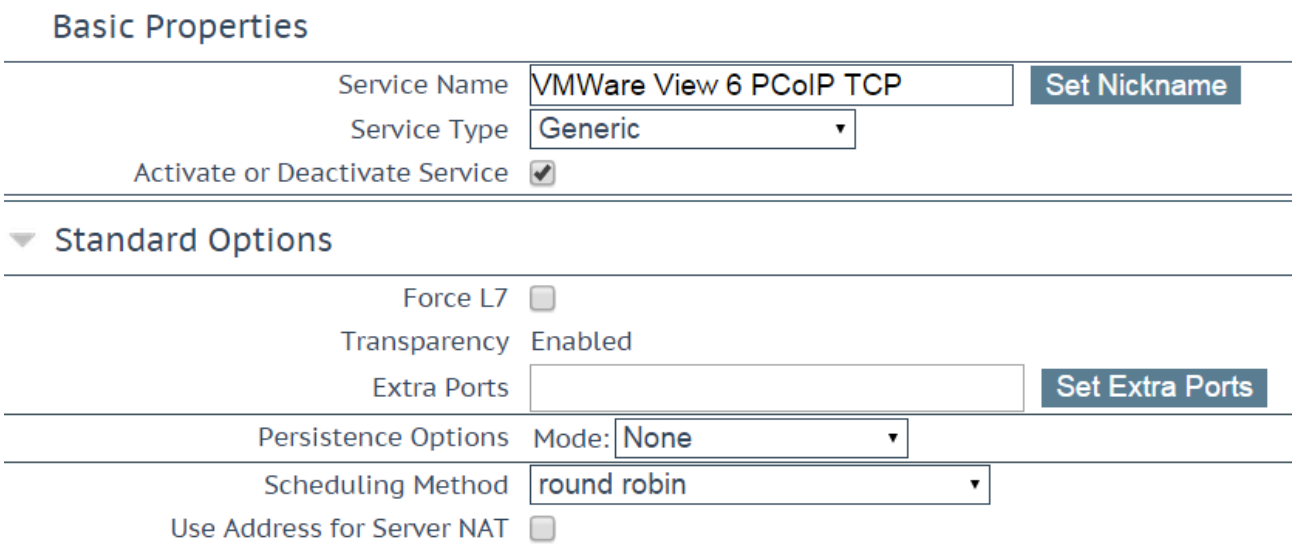
This Virtual Service needs to be defined for each security server in the View environment. There is a 1:1 relationship between this Virtual Service and the Security server so scheduling options can be left at default.

Configure the settings as shown in the following table:

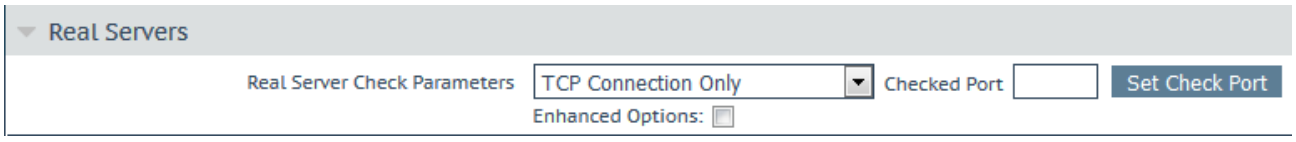
Section	Option	Value	Comment
Standard Options	Persistence Mode	Server Cookie	
	Cookie name	JSESSIONID	Click **Set Cookie**.
SSL Properties	SSL Acceleration	Enabled	
	Reencrypt	Enabled	

Configuring the PCoIP Virtual Service

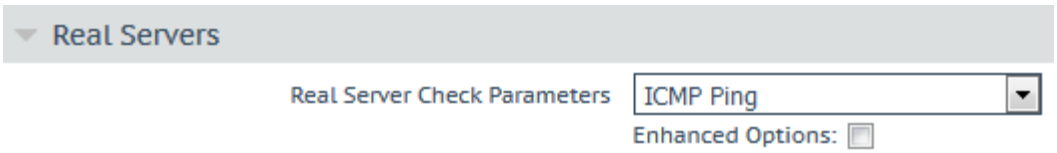
The PCoIP Virtual Service provides a simple Layer 4 reverse proxy connection to the security server on port **4172**. Two variants are required to support both TCP and UDP connections.



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



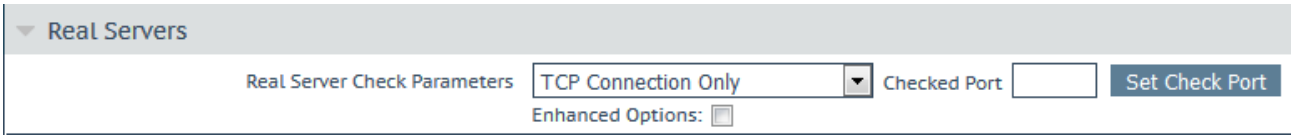
In the TCP Virtual Service, the PCoIP system health check is performed by setting the health check to **TCP C onnection Only**.



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

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.

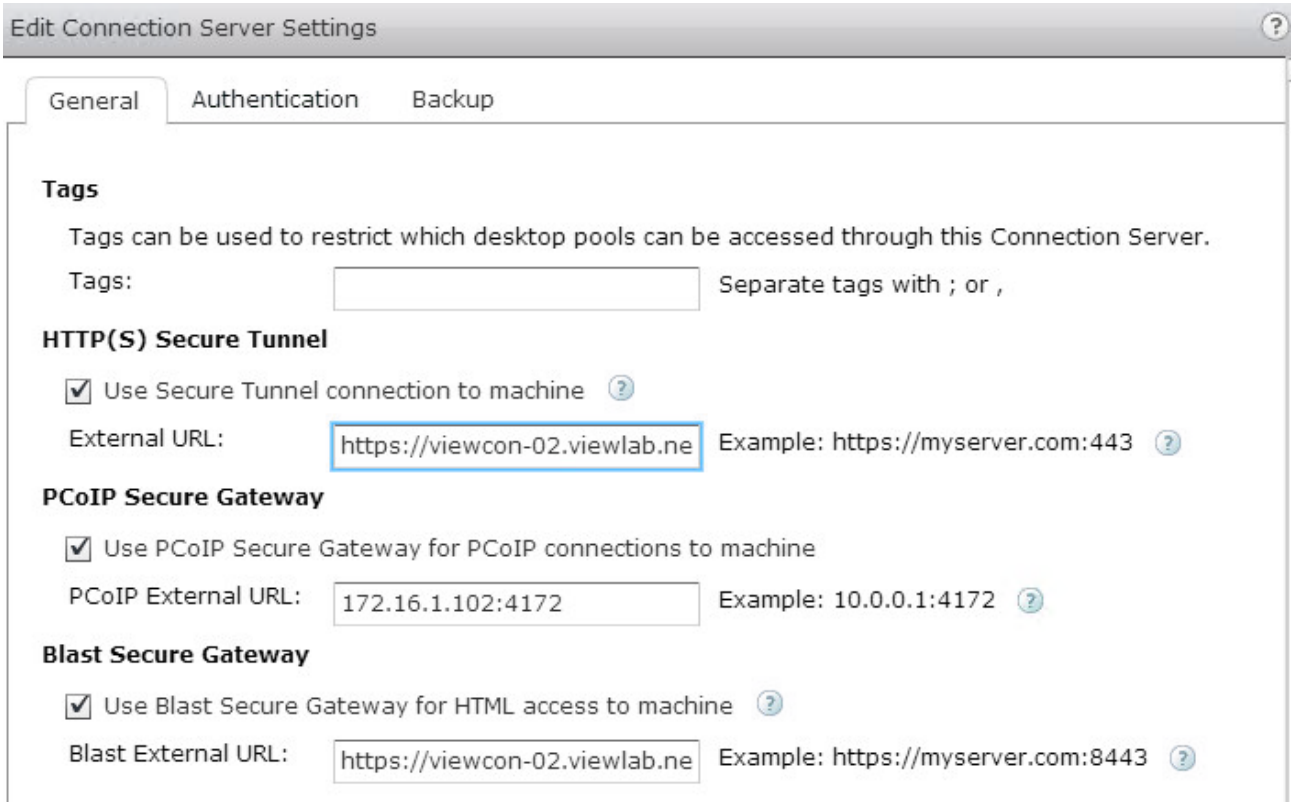


The health check method should be set to **TCP Connection Only**.

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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.



Note: 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.

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

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References

Unless otherwise specified, the following documents can be found at https://docs.progress.com/.

Virtual Services and Templates, Feature Description