Load Balancing VMware Platform Services Controller

Version 1.3.0

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1. About this Guide

This document provides a quick reference guide on how to load balance multiple VMware Platform Services Controllers (PSC) using Loadbalancer.org appliances.

2. Loadbalancer.org Appliances Supported

All our products can be used for load balancing VMware PSC. For full specifications of available models please refer to https://www.loadbalancer.org/products/enterprise.

Some features may not be available or fully supported in all cloud platforms due to platform specific limitations. For more details, please refer to the "Main Differences to our Standard (Non-Cloud) Product" section in the appropriate cloud platform Quick Start Guide or check with Loadbalancer.org support.

3. Software Versions Supported

3.1. Loadbalancer.org Appliance

- V8.9.1 and later

> Note   The screenshots used throughout this document aim to track the latest Loadbalancer.org software version. If you're using an older version, or the very latest, the screenshots presented here may not match your WebUI exactly.

3.2. VMware PSC

- vSphere v6.0 and later

4. Related Documentation

For additional information, please refer to the Administration Manual and the relevant Quick Start / Configuration Guide.

5. VMware PSC

Platform Services Controller was introduced in vSphere 6.0 as a mechanism to simplify and centralize common vSphere infrastructure services. The PSC handles vSphere single sign-on (SSO), licensing, tagging, global permissions, custom roles, and certificate management.

If the PSC is down, you cannot start any new vCenter Server sessions or any second party VMware products that depends on it. Also, vCenter Server is unable to fully restart until PSC is restored.

6. Load Balanced Ports / Services

Port	Uses
389	Active Directory
443	PSC / vCenter communications
636	vCenter Single Sign-On LDAPS
2012	Control interface RPC for vCenter Single Sign-On
2014	RPC port for all VMCA (VMware Certificate Authority) APIs
2020	Authentication framework management

# 7. Appliance Configuration Overview

7.1. Operation Mode

The load balancer is configured using single-arm layer 7 SNAT mode. This mode does not require any mode specific configuration changes to the load balanced Real Servers. Source IP address persistence is used to ensure clients connect to the same PSC server for the duration of their session.

7.2. PSC Health checks

A HTTPS negotiate health-check is used to verify that each PSC Server is available.

7.3. Deployment Concept

Once the load balancer is deployed, clients connect to the Virtual Service (VIP) on the load balancer rather than directly to one of the PSC servers.
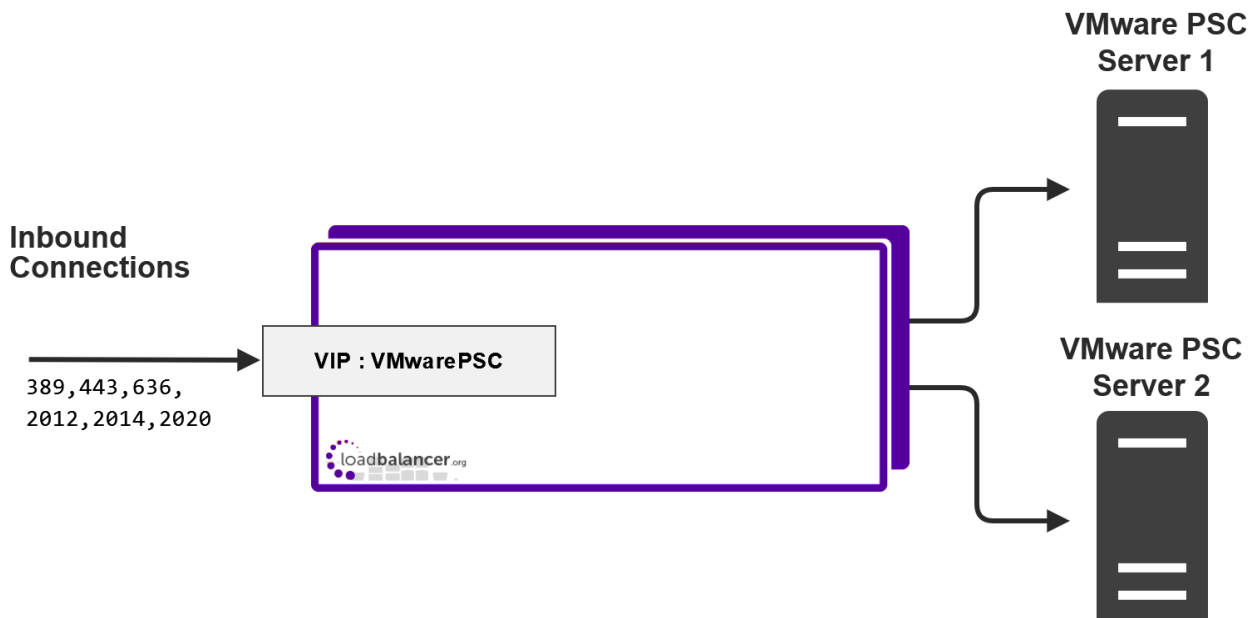
8. Deploying & Accessing the Appliance

8.1. Deployment

Deploy the Loadbalancer.org appliance as described in the relevant Quick Start / Configuration Guide.

8.2. Accessing the Appliance WebUI

The WebUI is accessed using a web browser. By default, users are authenticated using Apache authentication. Users can also be authenticated against LDAP, LDAPS, Active Directory or Radius - for more information, please refer to External Authentication.

> **⚷ Note**   There are certain differences when accessing the WebUI for the cloud appliances. For details, please refer to the relevant Quick Start / Configuration Guide.

1. Using a browser, navigate to the following URL:

   https://<IP-address-configured-during-the-network-setup-wizard>:9443/lbadmin/

   > **⚷ Note**   You'll receive a warning about the WebUI's SSL certificate. This is due to the default self signed certificate that is used. If preferred, you can upload your own certificate - for more information, please refer to Appliance Security Features.

   > **⚷ Note**   If you need to change the port, IP address or protocol that the WebUI listens on, please refer to Service Socket Addresses.

2. Log in to the WebUI using the following credentials:

   Username: loadbalancer
   Password: <configured-during-network-setup-wizard>

   > **⚷ Note**   To change the password, use the WebUI menu option: *Maintenance > Passwords.*

   Once logged in, the WebUI will be displayed as shown below:

3. You'll be asked if you want to run the Setup Wizard. Click **Dismiss** if you're following a guide or want to configure the appliance manually. Click **Accept** to start the Setup Wizard.

> 🔒 **Note**   The Setup Wizard can only be used to configure Layer 7 services.

8.2.1. Main Menu Options

System Overview - Displays a graphical summary of all VIPs, RIPs and key appliance statistics

Local Configuration - Configure local host settings such as IP address, DNS, system time etc.

Cluster Configuration - Configure load balanced services such as VIPs & RIPs

Maintenance - Perform maintenance tasks such as service restarts and creating backups

View Configuration - Display the saved appliance configuration settings

Reports - View various appliance reports & graphs

Logs - View various appliance logs

Support - Create a support download, contact the support team & access useful links

Live Chat - Start a live chat session with one of our Support Engineers

9. Appliance Configuration

9.1. Configure the Virtual Service (VIP)

Create a new VIP as described below. A multi-port VIP is used which includes all required ports.

1. Using the WebUI, navigate to: *Cluster Configuration > Layer 7 – Virtual Services* and click **Add a New Virtual Service**.

2. Enter the following details:

Layer 7 - Add a new Virtual Service

Virtual Service		[Advanced +]	
Label	VMwarePSC		❓
IP Address	192.168.1.100		❓
Ports	389,443,636,2012,2014,202…		❓
Protocol			
Layer 7 Protocol	TCP Mode ⌄		❓

<div style="text-align:right">Cancel   Update</div>

3. Define the required *Label* (name) for the VIP, e.g. **VMwarePSC**.

4. Set the *Virtual Service IP address* field to the required IP address, e.g. **192.168.1.100**.

5. Set the *Virtual Service Ports* field to **389,443,636,2012,2014,2020** , i.e. all required ports.

6. Set the *Layer 7 Protocol* to **TCP Mode**.

7. Click **Update**.

8. Now click **Modify** next to the newly created Virtual Service.

9. Under *Persistence*, click **Advanced** to show more options.

10. Set *Persistence Timeout* to **8h** , i.e. 8 hours.

11. Under *Health Checks*, click **Advanced** to show more options.

12. Configure the health check settings as shown below:

- Change *Health Checks* to **Negotiate HTTPS (GET)**.

- Set *Request to Send* to **/websso/HealthStatus**.

- Leave *Response Expected* blank.

> 🔒 **Note** Leaving this field blank will mean that all HTTP 2xx (usually HTTP 200) and HTTP 3xx responses will be considered as valid and the server will be marked as up.

- Set *Check Port* to **443**.

13. Click **Update**.

9.2. Define the Real (Platform Services Controller) Servers

1. Using the WebUI, navigate to: *Cluster Configuration > Layer 7 – Real Servers* and click **Add a new Real Server** next to the newly created VIP.

2. Enter the following details:

3. Enter an appropriate label for the Real Server , e.g. **PSC1**.

4. Change the *Real Server IP Address* field to the required address, e.g. **192.168.1.110**.

5. Leave the *Real Server Port* field blank.

6. Click **Update**.

7. Repeat the above steps to add your other VMware PSC server(s).

9.3. Finalizing the Configuration

To apply the new settings, HAProxy must be reloaded. This can be done using the buttons in the "Commit changes" box at the top of the screen or by using the *Restart Services* menu option:

1. Using the WebUI, navigate to: *Maintenance > Restart Services*.

2. Click **Reload HAProxy**.

10. Testing & Verification

10.1. Check Server State

Once everything is configured correctly and all load balanced Platform Services Controllers are up, the VIP should be displayed green in the System Overview of the WebUI.

10.2. Check Connectivity

Ensure that DNS points to the VIP rather than one of the PSC servers and verify that everything works as expected.

11. Loadbalancer.org Technical Support

If you have any questions regarding the appliance or would like assistance designing your deployment, please don't hesitate to contact our support team: support@loadbalancer.org.

12. Document Revision History

Version	Date	Change	Reason for Change	Changed By
1.1.0	5 November 2019	Styling and layout	General styling updates	AH
1.1.1	28 August 2020	New title page Updated Canadian contact details New screenshot and amended instructions for configuring health check	Branding update Change to Canadian contact details Changes to the appliance WebUI	AH
1.2.0	1 September 2022	Converted the document to AsciiDoc Updated links and instructions where necessary	Move to new documentation system Required updates	AH
1.2.1	28 September 2022	Updated layer 7 VIP and RIP creation screenshots	Reflect changes in the web user interface	AH
1.2.2	5 January 2023	Added one level of section numbering	Housekeeping across all documentation	AH
1.2.3	2 February 2023	Updated screenshots	Branding update	AH
1.2.4	7 March 2023	Added the section "Finalizing the Configuration" to ensure HAProxy is explicitly reloaded	Provided clarity for reloading HAProxy post-configuration	AH
1.2.5	17 March 2023	Improved document structure Changed the health check to look for a valid HTTP response from each PSC rather than specific text	Document standardization Method is supported by all versions of PSC	RJC
1.3.0	24 March 2023	New document theme Modified diagram colours	Branding update	AH

About Loadbalancer.org

Loadbalancer.org's mission is to ensure that its clients' businesses are never interrupted. The load balancer experts ask the right questions to get to the heart of what matters, bringing a depth of understanding to each deployment. Experience enables Loadbalancer.org engineers to design less complex, unbreakable solutions - and to provide exceptional personalized support.