



VMware

Installation Guide

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Table of Contents

1 Introduction	4
1.1 Upgrading Your Virtual Machine	5
2 Best Practices	6
3 Installing Virtual LoadMaster (VLM) using vSphere	7
3.1 Static MAC Addresses Must Be Configured	7
3.2 Download the OVF File	7
3.3 Deploy the OVF File	8
3.4 Check the Virtual Machine Settings	13
3.5 Power On the LoadMaster	13
3.6 License and Configure the LoadMaster	14
4 Troubleshooting	19
4.1 Configuring the LoadMaster Using the Console	19
4.2 Factory Reset	20
4.3 VMware Tools	21
4.4 Working with VMware Virtual Switches	21
References	22
VMware Tools Add-On Package, Feature Description	22
Licensing, Feature Description	22
Last Updated Date	23

1 Introduction

The Kemp Virtual LoadMaster is a version of the Kemp LoadMaster that runs as a virtual machine within a hypervisor and can provide all the features and functions of a hardware-based LoadMaster.

This document describes the installation of the Virtual LoadMaster (VLM) within a VMware hypervisor environment.



The Virtual LoadMaster is VMware ready. Starting with LoadMaster Operating System (LMOS) version 7.2.50:

- The VMware VLM is delivered as a hardware version 10 virtual machine. You can upgrade to a higher virtual machine number as needed. For further details, refer to the **Upgrading Your Virtual Machine** section.
- Virtual LoadMaster is supported with:
 - VMware ESXi 5.5 and above
 - vCenter Server 5.5 and above

There are several different versions of the VLM available. Full details of the currently supported versions are available on our website: www.kemptechnologies.com.

The VMware virtual machine guest environment for the VLM, at minimum, must include:

- 2 x virtual CPUs (reserve 2 GHz)
- 2 GB RAM
- 16 GB disk space (sparse where possible)

There may be maximum configuration limits imposed by VMware such as maximum RAM per VM, Virtual NICs per VM and so on. For further details regarding the configuration limits imposed by VMware, please refer to the relevant VMware documentation.

1.1 Upgrading Your Virtual Machine

The VMware VLM is delivered as a hardware version 10 virtual machine. You can upgrade to a higher virtual machine number as needed. Before upgrading, first take a backup or snapshot of the virtual machine. If you do this, you can reverse the upgrade if needed.

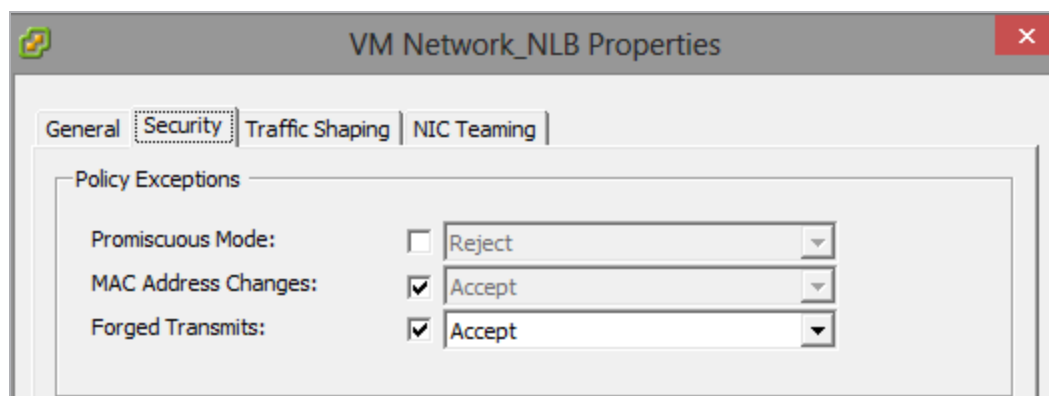
For further details on upgrading a virtual machine, refer to this VMware article: [Upgrade Virtual Hardware](#).

There is a significant difference when updating your LoadMaster virtual machine to the instructions provided for Windows virtual machines in the linked VMware article. You must upgrade the virtual hardware machine version for the LoadMaster before you upgrade VMware Tools.

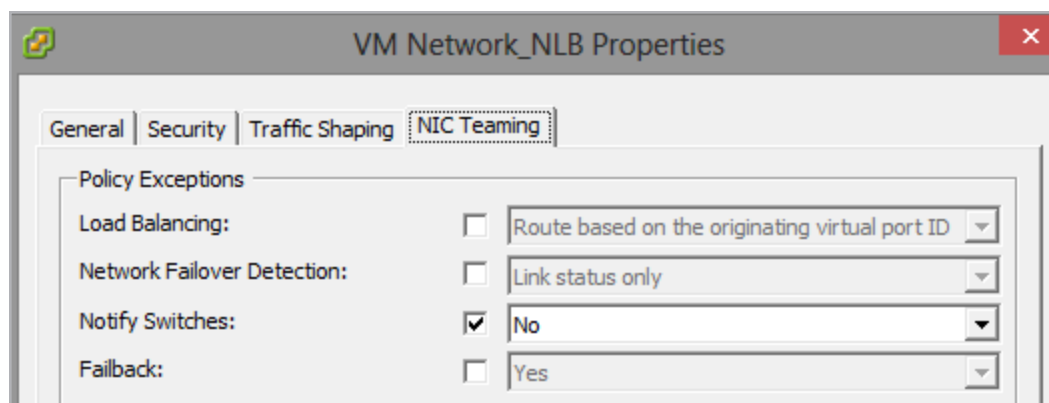
2 Best Practices

Some best practices to be aware of before deploying a LoadMaster on VMware are below:

- Configure an existing or new load balancing port group for the relevant VLAN to avoid port flooding
- Use the VMXNET3 network adapter type when deploying the VLM



- When using High Availability (HA), ensure that **MAC Address Changes** and **Forged Transmits** are both selected and set to **Accept**. Ensure this is forced (hard coded) on the port group as any changes to the vSwitch will affect all port groups by default.



- When using HA and the LoadMasters are on different hosts: To prevent the transmission of RARP packets from being sent every time a Virtual Machine is powered on, set the **Notify Switches** option to **No**.

3 Installing Virtual LoadMaster (VLM) using vSphere

The following instructions describe how to install a Virtual LoadMaster on a VMware ESXi environment using the VMware vSphere client.

3.1 Static MAC Addresses Must Be Configured

In case you move a VLM system to a different Virtual Machine, ensure that the MAC addresses of the Virtual Machine's NICs stay the same. Static MAC addresses must be configured for all NICs within Virtual Machines.

For further information on configuring static MAC addresses, please refer to the relevant VMware documentation.

3.2 Download the OVF File

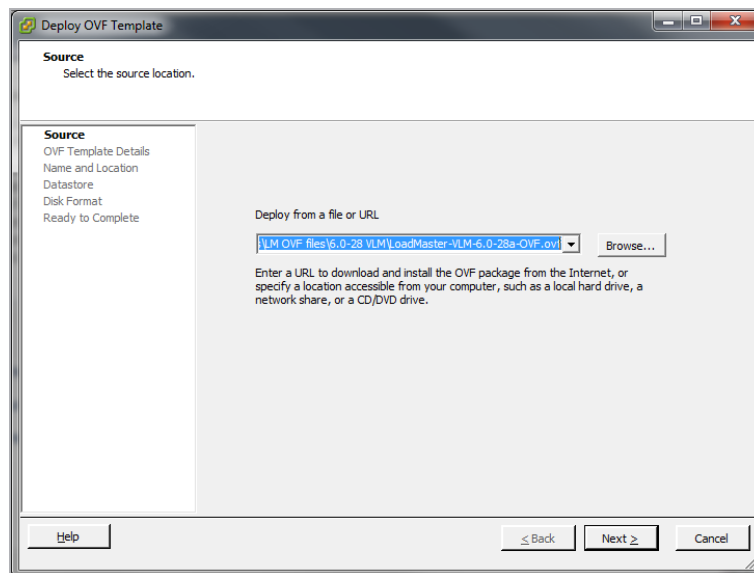
The VLM is packaged with an .ovf file for ease of deployment. This file can be freely downloaded from Kemp for a 30 day evaluation period. To download the VLM please follow the following instructions.

1. Go to <http://www.kemptechnologies.com/try>.
2. Click the **Download Now** button.
3. Within the **Select your hypervisor** section, select the option for **VMware (OVF)**.
4. Select your country from the drop-down list provided.
5. Read the End User License Agreement.
6. To proceed with the download, ensure the **I agree to the End User License Agreement terms** check box is ticked.
7. Click the **Download** button.
8. Unzip the contents of the file to an accessible location.

3.3 Deploy the OVF File

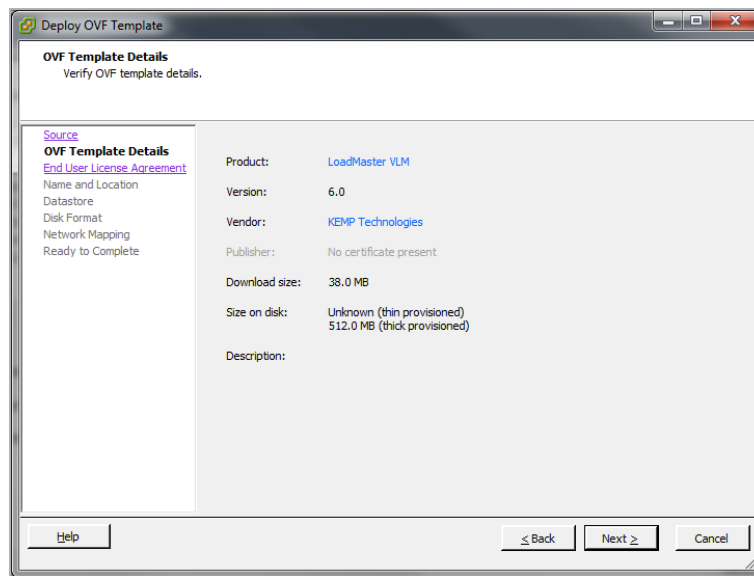
To deploy the VLM we initiate a **Deploy OVF Template** wizard which gathers all the information required to correctly deploy the VLM.

1. Open the VMware vSphere client.
2. Select the correct Resource Pool within which you wish to install the VLM.
3. Select the **File > Deploy OVF Template** menu option, this initiates the **Deploy OVF Template** wizard.
4. Within the **Source** screen, click on the **Browse** button and select the downloaded file.



5. Click **Next**.
6. Within the **OVF Template Details** screen, ensure that all the details regarding the VLM are correct.

3 Installing Virtual LoadMaster (VLM) using vSphere



7. Click **Next**.

8. Within the **End User License Agreement** screen, read the Kemp SOFTWARE LICENSE AGREEMENT.

9. If you wish to continue with the installation, you must accept the end-user license agreement by clicking the **Accept** button.

10. When the **Accept** button has been clicked the **Next** button will become available.

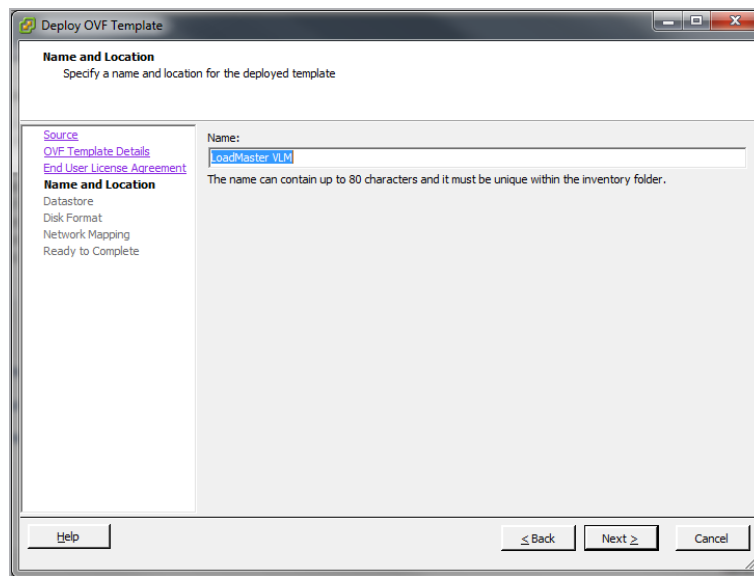
11. Click the **Next** button.

12. In the **Name and Location** field, enter a name for the VLM into the **Name** field.

The name can be up to 80 characters long. It should be unique within the virtual machine folder. Names are case sensitive.

13. If required, select the folder location within the inventory where the VLM will reside

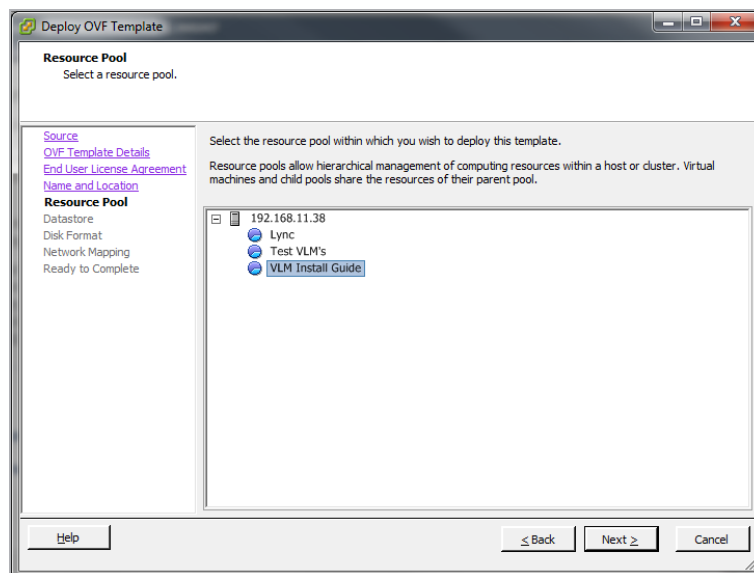
3 Installing Virtual LoadMaster (VLM) using vSphere



14. Click **Next**.

15. Within the **Resource Pool** screen, select the resource pool where the VLM will run.

This page is only displayed if the cluster contains a resource pool and if you had not selected a resource pool within the inventory tree before initiating the deployment wizard.

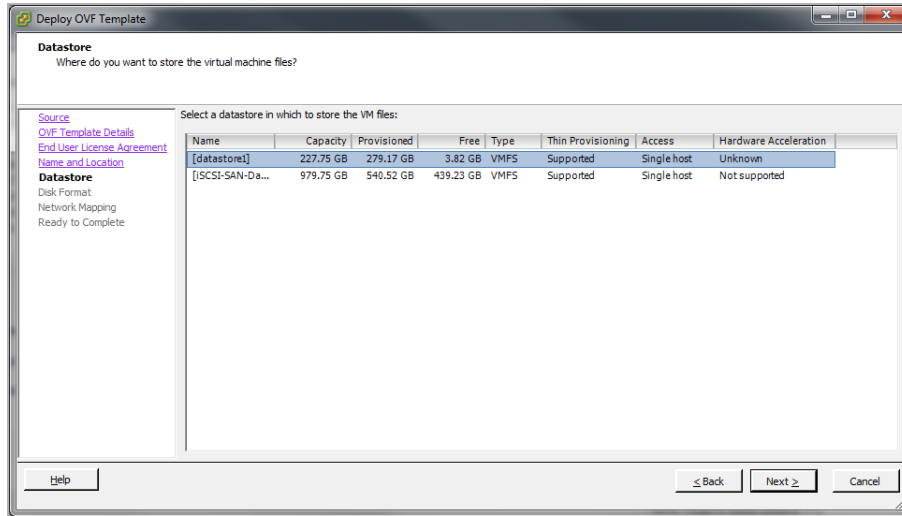


16. Click the **Next** button

17. Within the **Datastore** screen, select the datastore in which you wish to store the VLM.

You may only select from preconfigured datastores within this screen.

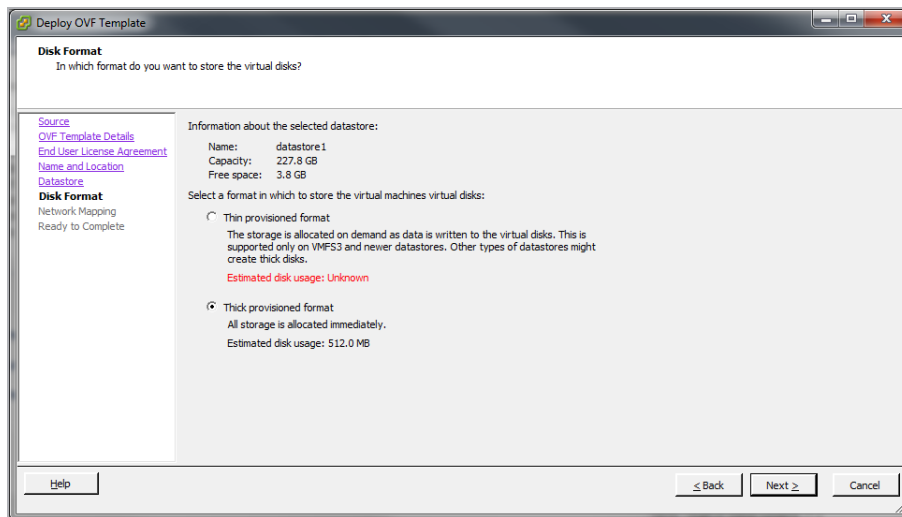
3 Installing Virtual LoadMaster (VLM) using vSphere



18. Click **Next**.

19. Within the **disk Format** screen, select whether you wish to use **Thin provisioned format** or **Thick provisioned format**

Kemp recommends you using the **Thick provisioned format** option. The estimated disk usage is approximately 32 GB.

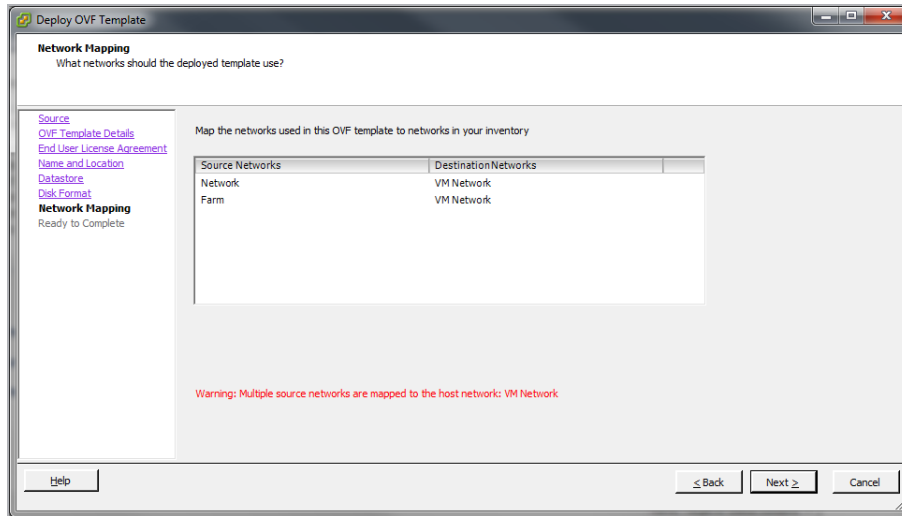


20. Click **Next**.

21. Within the **Network Mapping** screen, select which networks in the inventory should be used for the VLM.

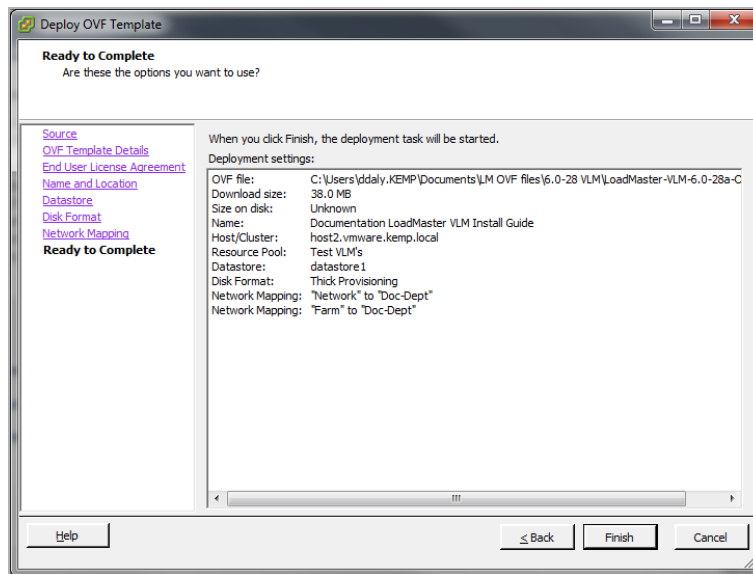
3 Installing Virtual LoadMaster (VLM) using vSphere

Select the network mapping for **Network** and **Farm** by right-clicking the **Destination Network** column and choosing the relevant preconfigured network from the drop-down list.



22. Click **Next**.

23. Within the **Ready to Complete** screen, ensure that all the details are correct.



24. Click the **Finish** button.

Once the **Finish** button is clicked, the VLM is deployed.

3.4 Check the Virtual Machine Settings

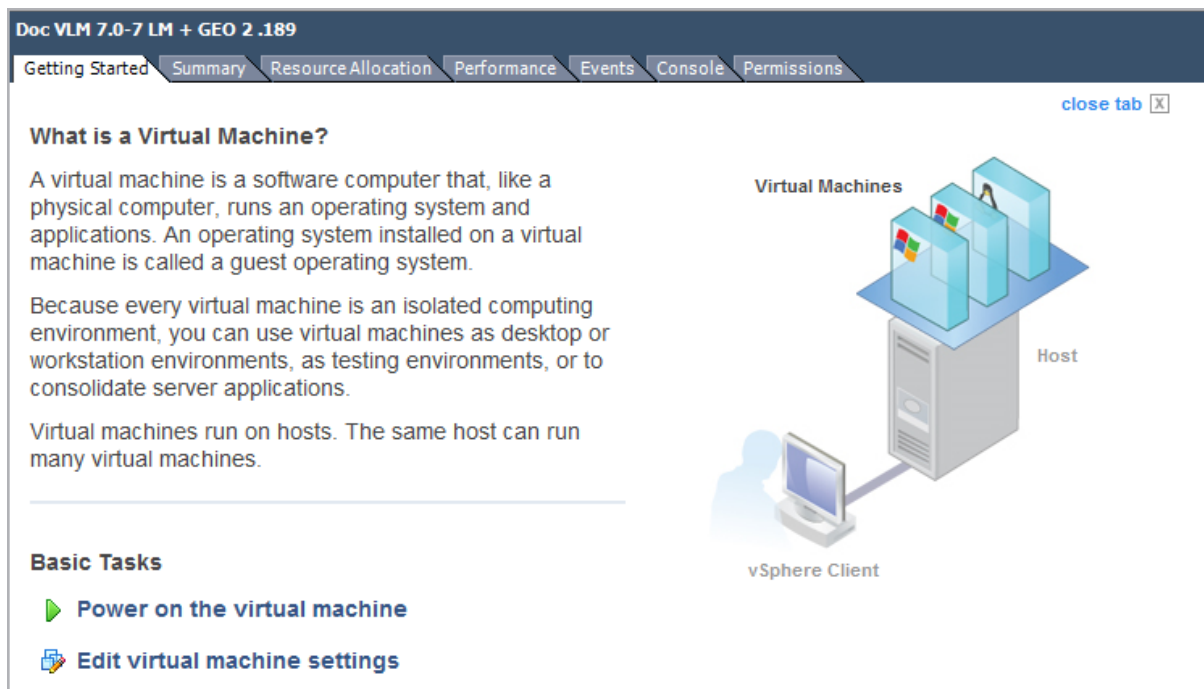
Please verify that the Virtual Machine settings are configured with the recommended values:

- 2 x virtual processors
- 2 GB RAM
- 16 GB virtual hard disk capacity (sparse where possible)

3.5 Power On the LoadMaster

To power on the Virtual LoadMaster, follow the steps below:

1. In the left panel of the client, select the LoadMaster Virtual Machine.



2. Click the **Power on the virtual machine** link.
3. Select the **Console** tab and wait for the Virtual Machine to finish booting.

3 Installing Virtual LoadMaster (VLM) using vSphere

```
#####  
#  
# Your LoadMaster has finished booting.  
# UUID: 31159ab6-5da4-4b92-8ee2-b8922cc08dfe  
# Serial Number: 446312  
# IP address of LoadMaster is 10.154.11.180  
#  
# Point your browser at https://10.154.11.180 to configure your LoadMaster.  
#  
#####
```

4. When the Virtual Machine finishes booting, a screen similar to the one above appears which will show the **IP address**. Take note of this as you will need it to access the LoadMaster Web User Interface (WUI).

To change the IP address using the console view, follow the steps in the **Configuring the LoadMaster Using the Console** section.

3.6 License and Configure the LoadMaster

The LoadMaster must now be configured to operate within the network configuration.

1. In an internet browser, enter the IP address that was previously noted.

Ensure to enter **https://** before the IP address.

2. A warning may appear regarding website security certificates. Please click the continue/ignore option.
3. The LoadMaster End User License Agreement screen appears.

Please read the license agreement and, if you are willing to accept the conditions therein, click on the **Agree** button to proceed.

3 Installing Virtual LoadMaster (VLM) using vSphere

License Required To Continue

Please select License Method to proceed: Online Licensing ▾

Please enter your Kemp ID and password below to license this LoadMaster.

If you do not have a Kemp ID, please create one by visiting:
<https://kemptechnologies.com/kemp-id-registration>

Kemp ID:

Password: License Now

Order ID# (optional):

HTTP(S) Proxy (optional):

4. If using the **Online** licensing method, fill out the fields and click **License Now**.

If you are starting with a trial license, there is no need to enter an Order ID. If you are starting with a permanent license, enter the Kemp **Order ID#** if this was provided to you.

If using the **Offline Licensing** method, select **Offline Licensing**, obtain the license text, paste it into the **License** field and click **Apply License**.

For detailed instructions on how to register for a Kemp ID and license the LoadMaster, refer to the **Licensing, Feature Description** on the [Kemp Documentation Page](#).

Please select license type Reload

License Types

Trial Licenses

☒ VLM-5000 ESP GEO with Evaluation + WAF - 1 available i

Buy More...

Continue

3 Installing Virtual LoadMaster (VLM) using vSphere

5. If you entered an **Order ID**, a screen appears that provides a list of available licenses for that order ID, in addition to any licenses registered for the Kemp ID based on the LoadMaster platform type. Select the license type you want to apply to this LoadMaster.

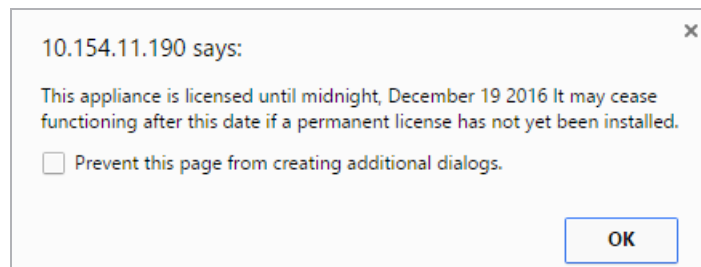
If the license type you want is not displayed, please contact your Kemp representative.

6. Click **Continue**.

7. The login screen appears, enter the **bal** user name and the password.

8. In the screen informing you that the password has changed, press the **Continue** button.

9. If your machine has shipped with a temporary license you should get a warning informing you that a temporary license has been installed on your machine and for how long the license is valid.



10. Click **OK**.

11. You should now connect to the **Home** screen of the LoadMaster.

12. Go to **System Configuration > Network Setup** in the main menu.

13. Click the **eth0** menu option within the **Interfaces** section.

Network Interface 0			
Interface Address (address[/prefix])	<input type="text"/>	Set Address	
Link Status	Speed: 10000Mb/s, Full Duplex	Automatic ▼	Force Link
	MTU: <input type="text" value="1500"/>	Set MTU	
Additional addresses (address[/prefix])	<input type="text"/>	Add Address	
VLAN Configuration Interface Bonding			

3 Installing Virtual LoadMaster (VLM) using vSphere

14. In the **Network Interface 0** screen, enter the IP address of the eth0 interface, the network facing interface of the LoadMaster, in the **Interface Address** input field.

15. Click the **Set Address** button.

16. Click the **eth1** menu option within the **Interfaces** section.

17. In the **Network Interface 1** screen, enter the IP address of the eth1 interface, the farm-side interface of the LoadMaster, in the **Interface Address** input field.

18. Click on the **Set Address** button.

This interface is optional, depending on the network configuration.

19. Click on the **Local DNS Configuration > Hostname Configuration** menu option.

Set Hostname

Hostname

Set Hostname

20. In the **Hostname configuration** screen, enter the hostname into the **Current Hostname** input field.

21. Click the **Set Hostname** button.

22. Click the **Local DNS Configuration > DNS Configuration** menu option.

DNS Servers

DNS NameServer (IP Address)	Operation
10.154.75.25	Delete

Add Nameserver

IP Address

Add

Add Search Domain

Domain

Add

23. In the **DNS configuration** screen, enter the IP address(es) of the DNS Server(s) which is used to resolve names locally on the LoadMaster into the **DNS NameServer** input field.

3 Installing Virtual LoadMaster (VLM) using vSphere

24. Click the **Add** button.
25. Enter the domain name that is to be prepended to requests to the DNS nameserver into the **DNS NameServer** input field.
26. Click the **Add** button.
27. Click the **System Configuration > Network Setup > Default Gateway** menu option.

The IPv4 default gateway must be on the 10.154.0.0/16 network

IPv4 Default Gateway Address **Set IPv4 Default Gateway**

28. In the **DNS configuration** screen, enter the IP address of the default gateway into the **IPv4 Default Gateway Address** input field.

If you have an IPv6 Default Gateway, please enter the value in the **IPv6 Default Gateway Address** input field.

29. Click the **Set IPv4 Default Gateway** button.

The LoadMaster is now fully installed and ready to be used. For further information on how to configure and implement the Virtual LoadMaster, please refer to the LoadMaster documentation which can be downloaded from the <http://kemptechnologies.com/documentation> page.

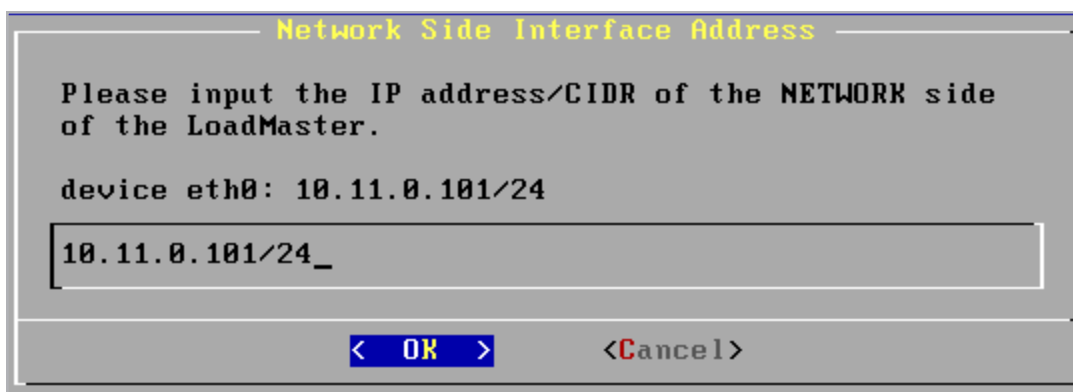
4 Troubleshooting

4.1 Configuring the LoadMaster Using the Console

If the LoadMaster does not automatically obtain an IP address using DHCP, or if the user prefers to configure the LoadMaster using the console, then the following configuration steps must be completed before starting the LoadMaster.

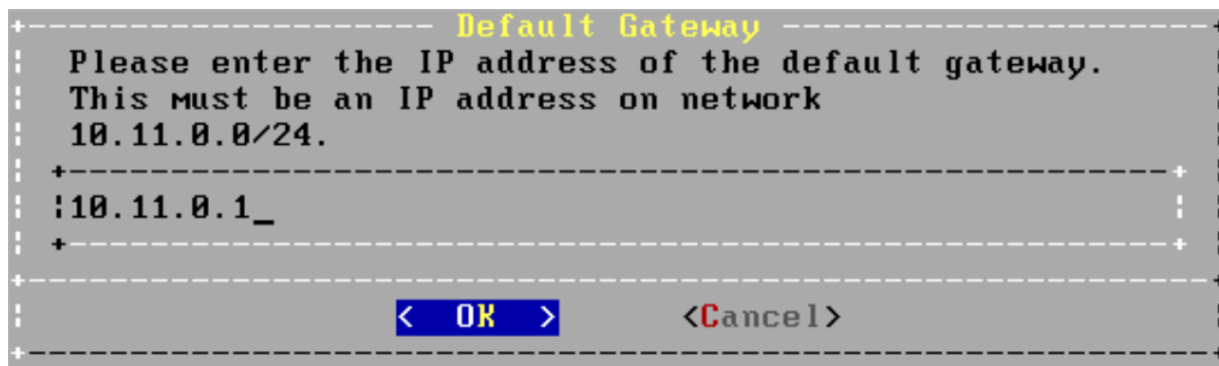
1. Login into the LoadMaster using the console with the following settings:

- lb100 login: bal
- Password: 1fourall



A screenshot of a terminal window showing a configuration dialog titled "Network Side Interface Address". The dialog contains the text: "Please input the IP address/CIDR of the NETWORK side of the LoadMaster." Below this, it shows "device eth0: 10.11.0.101/24". There is an input field containing "10.11.0.101/24_". At the bottom, there are two buttons: "< OK >" and "<Cancel>".

2. Enter the IP address of the eth0 interface, the network facing interface of the LoadMaster, in the input field within the **Network Side Interface Address** dialog box.
3. Press **OK**.



A screenshot of a terminal window showing a configuration dialog titled "Default Gateway". The dialog contains the text: "Please enter the IP address of the default gateway. This must be an IP address on network 10.11.0.0/24." Below this, there is an input field containing "10.11.0.1_". At the bottom, there are two buttons: "< OK >" and "<Cancel>".

4. Enter the IP address of the default gateway in the input field of the **Default Gateway** dialog box.
5. Press **OK**.
6. Once these are set, a prompt will appear asking to connect to the web interface at the newly configured IP address. In an internet browser enter the IP address of the eth0 entered in Step 2.

Ensure to enter **https://** before the IP address.

7. A warning may appear regarding website security certificates. Please click the continue/ignore option.
8. The LoadMaster End User License Agreement screen appears.
9. Please read the license agreement and, if willing to accept the conditions therein, click on the **Agree** button to proceed.
10. If the machine has shipped with a temporary license, a warning will appear informing that a temporary license has been installed on the machine and for how long the license is valid.
11. Click **OK**.
12. The home screen of the LoadMaster should appear.

The LoadMaster is now fully installed and ready to be used. For further information on how to configure and implement the Virtual LoadMaster, please refer to the LoadMaster documentation which can be found here: <https://kemptechnologies.com/documentation>.

4.2 Factory Reset

If you perform a factory reset on your VLM, all configuration data, including the VLM's IP address is deleted. During the subsequent reboot the VLM attempts to obtain an IP address using DHCP. If the VLM is on a different subnet to the DHCP server then an IP address will not be obtained and the IP address is set to the default 192.168.1.101.

The VLM may not be accessible using this address. If this is the case then you must run through the quick setup using the console as described in the **Configuring the LoadMaster Using the Console** section.

4.3 VMware Tools

The VLM supports integration with VMware Tools. For more information, please refer to the [VMware Tools Add-On Package, Feature Description](#).

4.4 Working with VMware Virtual Switches

When working with VMware Virtual Switches within your configuration, please ensure that the value of the Forged Transmit Blocking option is **Accept**. If this option's value is **Reject**, the LoadMaster is prevented from sending traffic as it appears to come from nodes on the network other than the LoadMaster.

Please refer to your VMware documentation for further details on how to configure the VMware Virtual Switch.

References

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

VMware Tools Add-On Package, Feature Description

Licensing, Feature Description

Last Updated Date

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