



Microsoft Hyper-V

Installation Guide

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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 Microsoft Hyper-V environment. The VLM has been tested with Windows Server 2008 R2, Windows Server 2012, Windows Server 2012 R2, Windows 8 and Hyper-V 2016.

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 Microsoft Hyper-V virtual machine guest environment for the VLM, at minimum, must include:

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

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

2 Installing Virtual LoadMaster (VLM) using Hyper-V Manager

The following instructions describe how to install a Virtual LoadMaster on a Hyper-V environment using the Hyper-V Manager.

2.1 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 Hyper-V documentation.

2.2 Download the Hyper-V Files

The VLM is packaged within a .vhd file for ease of deployment. This file can be freely downloaded from KEMP Technologies for a 30 day evaluation period. To download the VLM please follow the instructions below:

1. Go to <http://www.KEMPtechnologies.com/try>.
2. Click the **Download Now** button.
3. Within the **Select your hypervisor** section, select the relevant option for **Microsoft Hyper-V**.
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 zip file to an accessible location.

2.3 Creating the VLM

To create the VLM, use the **New Virtual Machine** function within the Hyper-V Manager:

1. Open the Hyper-V Manager and select the relevant server node in the left panel.
2. Click **New** in the **Actions** column and select **Virtual Machine** from the list.
3. Click **Next** then type the name of the virtual machine and click **Next**.

4. Specify the amount of memory to allocate to the virtual machine then click **Next**.
5. Configure your networking connection then click **Next**.
6. The LoadMaster instance should be completed and should now appear within the **Virtual Machines** pane in the Hyper-V Manager.

2.4 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)

2.5 Power On the LoadMaster

Once the VLM has been deployed it can be powered on:

1. Right-click the Virtual Machine that was imported within the Virtual Machines pane.
2. Click **Start**.

The VLM should begin to boot up.

3. Right-click the VLM and select **Connect** to open the console window.

```
#####
#
# Your LoadMaster has finished booting.
# UUID: bed15b0f-cd9a-4517-b95e-a11d080b3d89
# Serial Number: 1050976
# IP address of LoadMaster is 10.154.11.170
#
# Point your browser at https://10.154.11.170 to configure your LoadMaster.
#
#####

Master Resource Control: runlevel 2 has been reached

LoadMaster from KEMP Technologies
(c) 2002-2016 KEMP Technologies
Version 7.1-33-1707

lb100 login: _
```

4. The VLM should obtain an IP address via DHCP. Make a note of this address.

If the VLM does not obtain an IP address, or if the IP address needs to be changed, it can be manually configured in the console by following the steps in the **Configuring the LoadMaster via the Console** section.

2.6 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.

4. A screen appears asking if you are OK with the LoadMaster regularly contacting KEMP to check for updates and other information. If you are OK with this, click **Continue** to proceed. If you want to disable this functionality, remove the check from the **Enable Call Home** check box and click **Continue** to proceed.

License Required To Continue

Please select License Method to proceed:

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://alsi-ga.kemptechnologies.com/register>

KEMP ID:

Password:

Order ID# (optional):

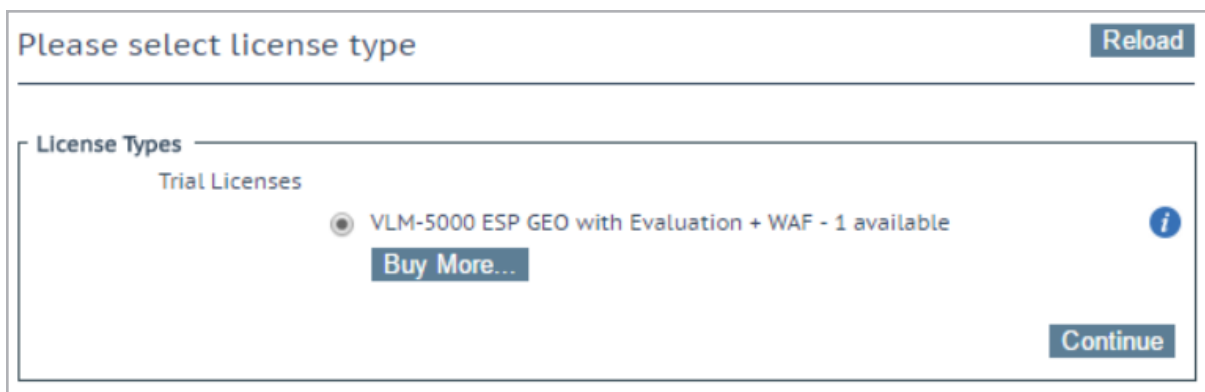
HTTP(S) Proxy (optional):

5. 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](#).



6. 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.

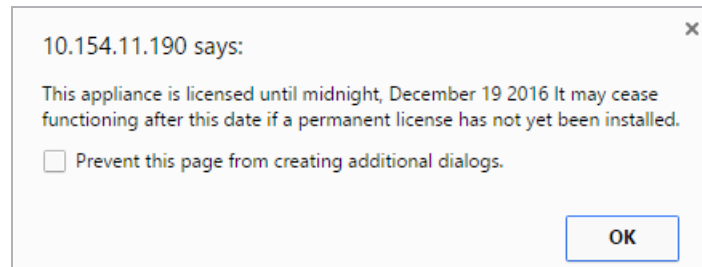
If the license type you want is not displayed, please contact your KEMP representative.

7. Click **Continue**.

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

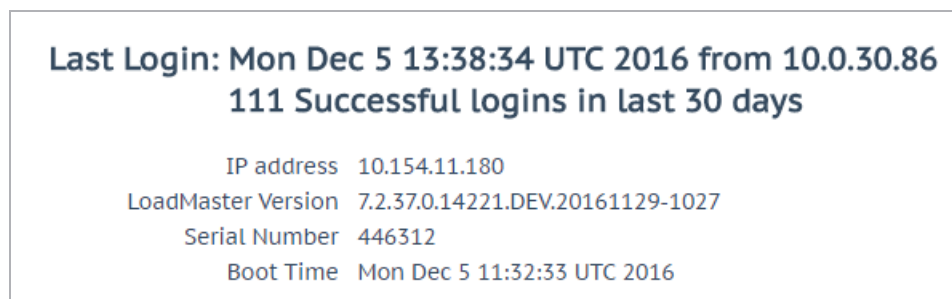
9. In the screen informing you that the password has changed, press the **Continue** button

10. 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.



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 <input type="button" value="Force Link"/>
MTU:	<input type="text" value="1500"/> Set MTU
Additional addresses (address[/prefix])	<input type="text"/> Add Address
VLAN Configuration Interface Bonding	

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.

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.

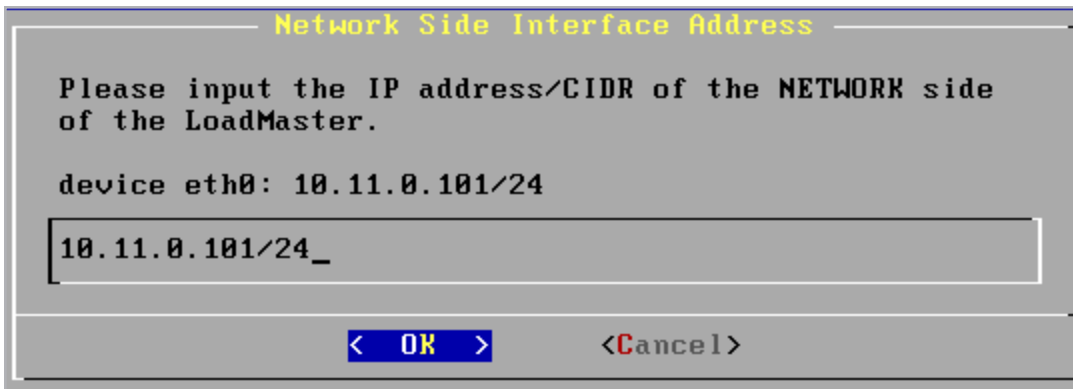
3 Troubleshooting

3.1 Configuring the LoadMaster via the Console

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

1. Login into the LoadMaster via the console using the settings

- lb100 login: bal
- Password: 1fourall



Network Side Interface Address

Please input the IP address/CIDR of the NETWORK side of the LoadMaster.

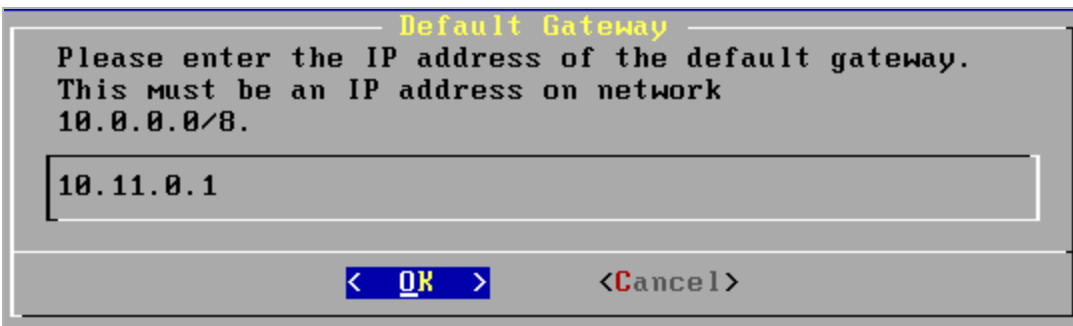
device eth0: 10.11.0.101/24

10.11.0.101/24_

< OK > <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**.



Default Gateway

Please enter the IP address of the default gateway.
This must be an IP address on network
10.0.0.0/8.

10.11.0.1

< OK > <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 Appliance Vitals screen of the LoadMaster should appear.

IP address	10.154.11.51 (lb100:10.154.11.50)
Serial Number	1050788
Boot Time	Tue Sep 8 09:30:58 UTC 2015
Active Since	Tue Sep 8 09:31:13 UTC 2015
LoadMaster Version	7.1-29-1851.20150907-1730
License	UUID: 6987ad8c-ff52-4158-acbb-372a07faa13d Activation date: Thu Aug 20 09:04:46 UTC 2015 Licensed until: September 20 2015 Support Level: Evaluation + WAF Support Until: Sat Aug 20 04:00:00 UTC 2016 License Type: VLM-5000 ESP GEO License Status: Single Temp Appliance Model: VLM-5000G+
Upgrade ↗	
CPU Load	2% 
TPS	Total 0 (SSL 0)
WAF Stats	Total handled: 0 Incidents: 0
NetLoad	Mbits/sec
eth0	0.0 

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>.

3.2 NIC Types Cannot Be Mixed

If you add new Network Adapters to a VLM then they must be of the same Adapter Type as those already configured on the VLM.

If you install a Network Adapters with a different Adapter Type as those already configured on the VLM the VLM will not recognize the new interface.

3.3 Make this VM Highly Available Option is Greyed Out

There is an option in the Virtual Machine Manager called **Make this VM highly available**. This option is set when the Virtual Machine is placed on a host. Therefore, the option will be grayed out, even when the Virtual Machine is not running. There is a way to work around this problem without having to delete and re-create the Virtual Machine. The Virtual Machine can be migrated. Follow the steps below to do this:

1. Open the Virtual Machine Manager console.
2. Right-click the relevant Virtual Machine that you want to make highly-available and select **Migrate**.
3. Select the current host from the list for migration.
4. Click **Yes** to the prompt asking if you want to make the Virtual Machine highly available.
5. The path can be changed if needed. Click **Next**.
6. Select the network and click **Move**.
7. Wait for the migration to complete.

3.4 Factory Reset

If you perform a factory reset on the 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 via the console as described in the **Configuring the LoadMaster via the Console** section.

3.5 Status of Degraded (Integration Services Upgrade Required)

Adapter	Connection	IP Addresses	Status
Network Adapter (Static MAC: 00:15:5D:01:C8:ED)	MGMTLan		Degraded (Integration services upgrade required)
Legacy Network Adapter (Dynamic MAC: 00:15:5D:01:3E:82)	STD-VMLan		OK (Emulated)

This is a warning message indicating that the LoadMaster software is too old to run on it and can be ignored. Integration services are used when booting to enable Hyper-V to see that the LoadMaster is running. After this point, it is no longer used.

References

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

Microsoft Hyper-V – Windows 2008 R2, Installation Guide

Licensing, Feature Description

Last Updated Date

This document was last updated on 11 January 2018.