



KVM

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 KVM environment.

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

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

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

KEMP LoadMaster has been tested with Debian 6.0. For a full list of the compatible Linux distributions, please refer to http://www.linux-kvm.org/page/Main_Page

If you have any issues with the Virtual LoadMaster when using different Linux distributions, then please contact KEMP Support.

2 Installing Virtual LoadMaster (VLM) on a KVM Environment

The following instructions describe how to install a Virtual LoadMaster on a KVM environment.

2.1 Download the KVM Files

The VLM is packaged within a tar.gz 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 option for **KVM**.
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.

2.2 Unzip the Disk Image

The Linux disk image has been tar gzipped as a sparse file. It must be unzipped as a sparse file to ensure proper operation. For example:

```
tar xzSf LoadMaster-VLM.7.1.34.0.12345.RELEASE.tgz
```

The "S" flag tells tar to handle the file as sparse.

2.3 Deploy the LoadMaster

KEMP recommends using Virtual Machine Manager to deploy the LoadMaster. The steps below were documented using Virtual Machine Manager:

1. Click the Create a new virtual machine button.
2. Enter a **Name** for the Virtual Machine.

The name cannot contain any spaces.

3. Select Import existing disk image.

4. Click **Forward**.
5. Click **Browse**.
6. Browse to and select the disk file.
7. Select **Linux** as the **OS type**.
8. In the **Version** drop-down list, scroll to the bottom and click **Show all OS options**.
9. Click the **Version** drop-down list again. Scroll to the bottom and select **Generic 2.6.25 or later with virtio**.
10. Click **Forward**.
11. Enter a minimum of **2048** MB in the **Memory** text box.
12. Enter a minimum of **2** in the **CPUs** text box.
13. Click **Forward**.
14. Tick the **Customize configuration before install** check box.
15. Expand the **Advanced options** section.
16. Make any amendments to this section, as needed.
17. Click **Finish**.
18. Click the **Disk** option on the left.
19. Expand the **Advanced Options** section.
20. Select **Virtio** as the **Disk bus**.
21. Click the **NIC** option on the left.
22. Click **Yes** to apply the changes.
23. Select **virtio** as the **Device model**.
24. Change any other settings as needed.
25. Click **Apply**.
26. Click **Begin Installation**.

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 LoadMaster IP Address

```
#####
#
# 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: _
```

After the VLM has booted, it 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-qa.kemptechnologies.com/register>

KEMP ID:

Password:

Order ID# (optional):

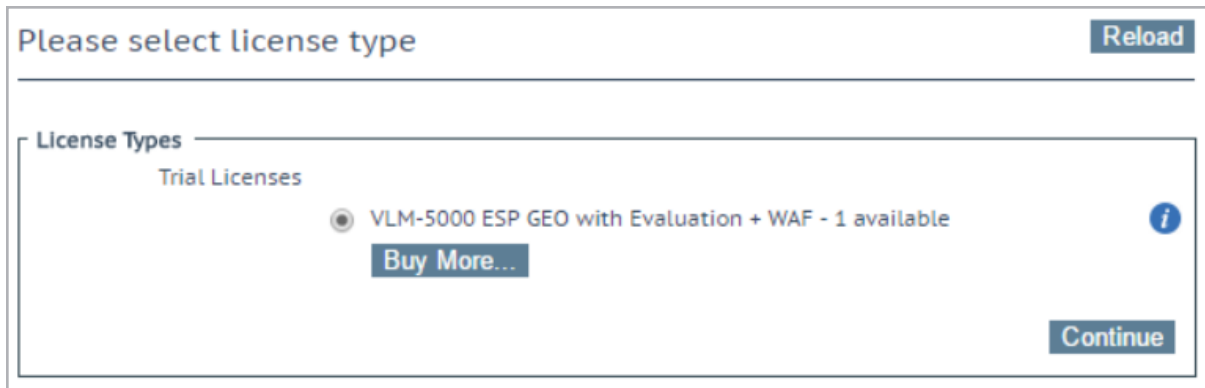
HTTP(S) Proxy (optional):

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.

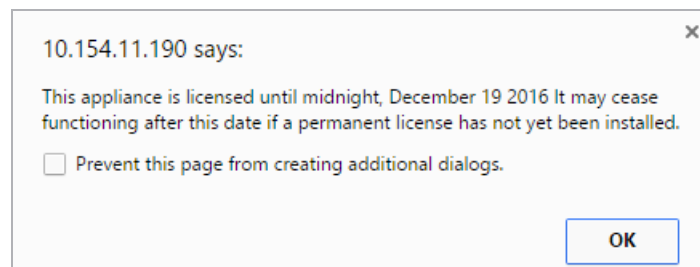
If the license type you want is not displayed, please contact your KEMP representative.

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.

Last Login: Mon Dec 5 13:38:34 UTC 2016 from 10.0.30.86
111 Successful logins in last 30 days

IP address 10.154.11.180
 LoadMaster Version 7.2.37.0.14221.DEV.20161129-1027
 Serial Number 446312
 Boot Time Mon Dec 5 11:32:33 UTC 2016

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 | <input type="text"/> 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 <input type="text"/> | Add |
| Add Search Domain | |
| Domain <input type="text"/> | 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 <input type="text" value="10.154.0.1"/> | 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.

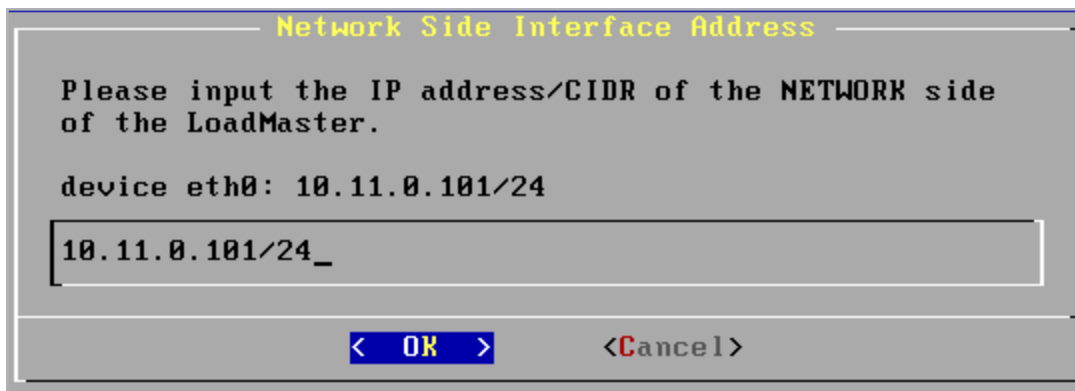
3 Troubleshooting and Notes

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.

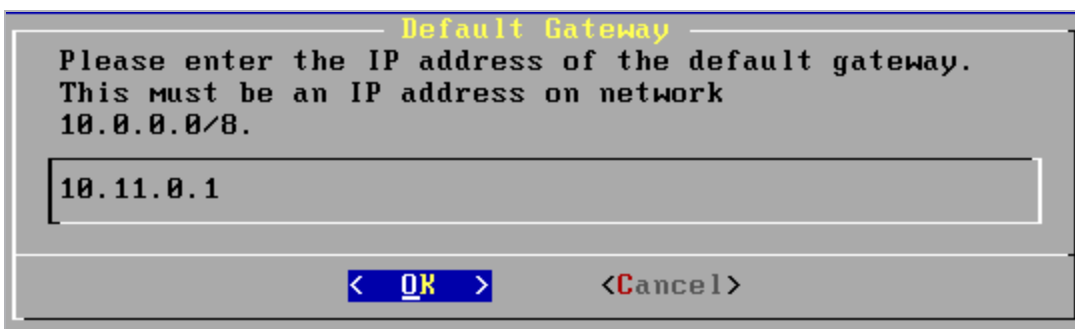
device eth0: 10.11.0.101/24

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**.

3 Troubleshooting and Notes

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 Common KVM Commands

The following list describes some commonly used KVM commands.

- Connect to VM via local console:
virsh console <NAME OF KVM / ID>
- Shutdown VM:
virsh shutdown <NAME OF KVM / ID>
- List running VMs:
virsh list
- Delete a VM:
virsh destroy <NAME OF KVM / ID>

Note that proper permissions are required to run these commands.

3.3 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 via 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 section.

References

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

Licensing, Feature Description

Last Updated Date

This document was last updated on 11 January 2018.