Progress®
Kemp® LoadMaster®

# Installation Guide Oracle VirtualBox

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# 1

# Introduction

The Virtual LoadMaster is a version of the 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 an Oracle VirtualBox hypervisor environment.

The VLM has been tested with Oracle VirtualBox 5.1.38.

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

The Oracle VirtualBox environment for the VLM, at minimum, must include:

- 2 x virtual processors
- 2 GB RAM
- 16 GB disk space (sparse recommended - this may grow, depending on usage)

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

# 2

# Installing Virtual LoadMaster (VLM) using Oracle VirtualBox

The following instructions describe how to install a Virtual LoadMaster on an Oracle VirtualBox.

**Related Links**

For details, see the following topics:

- Download the OVF File
- Deploy the OVF File
- Check the Virtual Machine Settings
- Power On the LoadMaster
- License and Configure the LoadMaster

## Download the OVF File

The VLM is packaged with an .ova file for ease of deployment. This file can be freely downloaded from Progress Kemp 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 **Oracle VirtualBox**.

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 **Download**.
8. Unzip the contents of the zip file to an accessible location.

# Deploy the OVF File

To deploy the VLM, follow the steps below in **Oracle VM VirtualBox Manager**:

1. Open the **Oracle VM VirtualBox Manager.**
2. Click the **File > Import Appliance** menu option.
3. Browse to and select the OVF file.
4. Click **Next.**
5. Click the **Import** button to begin the import of the VLM.
6. When complete, the LoadMaster VLM should be imported into the **Oracle VM VirtualBox Manager** in a powered off state.

# 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)

# Power On the LoadMaster

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

1. Select the deployed VLM in the pane on the left.
2. Click the **Start** button.

   If the LoadMaster does not obtain an IP address using DHCP the static IP address of **192.168.1.101** is assigned and the LoadMaster must be manually configured using the console.

   On initial deployment, DHCPv4 and DHCPv6 both run to attempt to obtain an IP address. If the LoadMaster obtains an IP address using DHCP, take note of it because this is how you will access the LoadMaster.

```
#########################################################################
#
# 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.
#
#########################################################################
```

**Note:** The console should launch and the VLM should begin to boot up.

Refer to the Configuring the LoadMaster via the Console section for instructions on how to manually set the IP address.

# License and Configure the LoadMaster

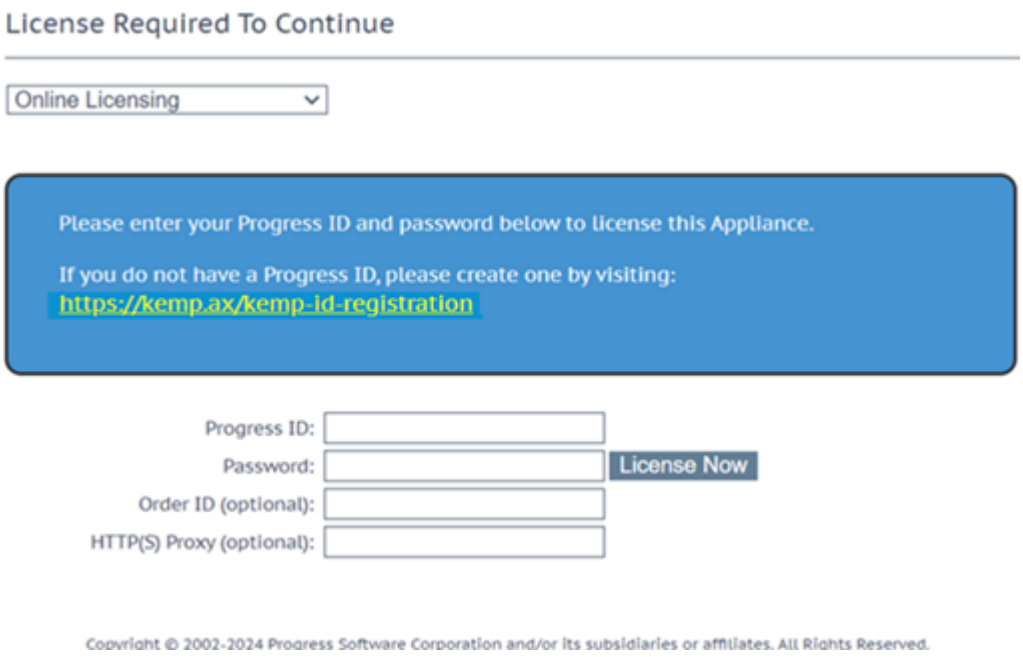
The LoadMaster must now be configured to operate within the network configuration.

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

   **Note:** 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.

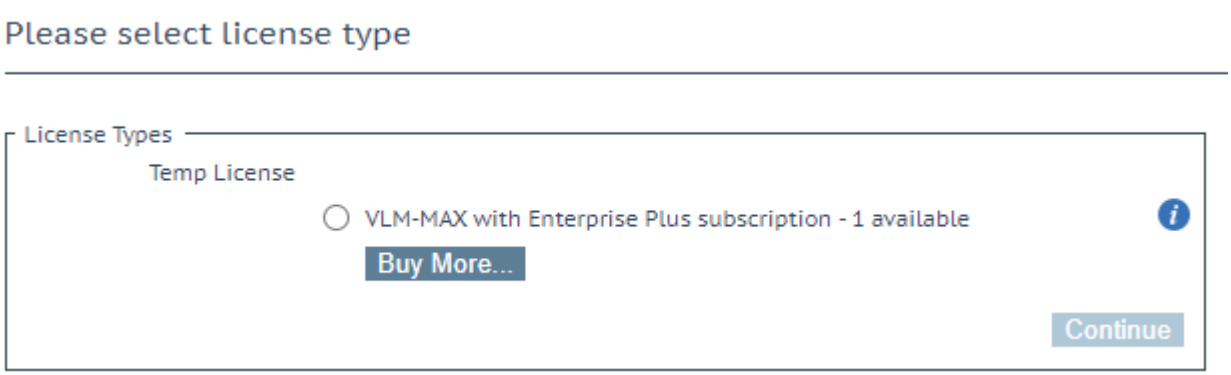


4. If using the **Online** licensing method, fill out the fields and click **License Now**.

   **Note:** 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 Progress Kemp **Order ID#** if this was provided to you.

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

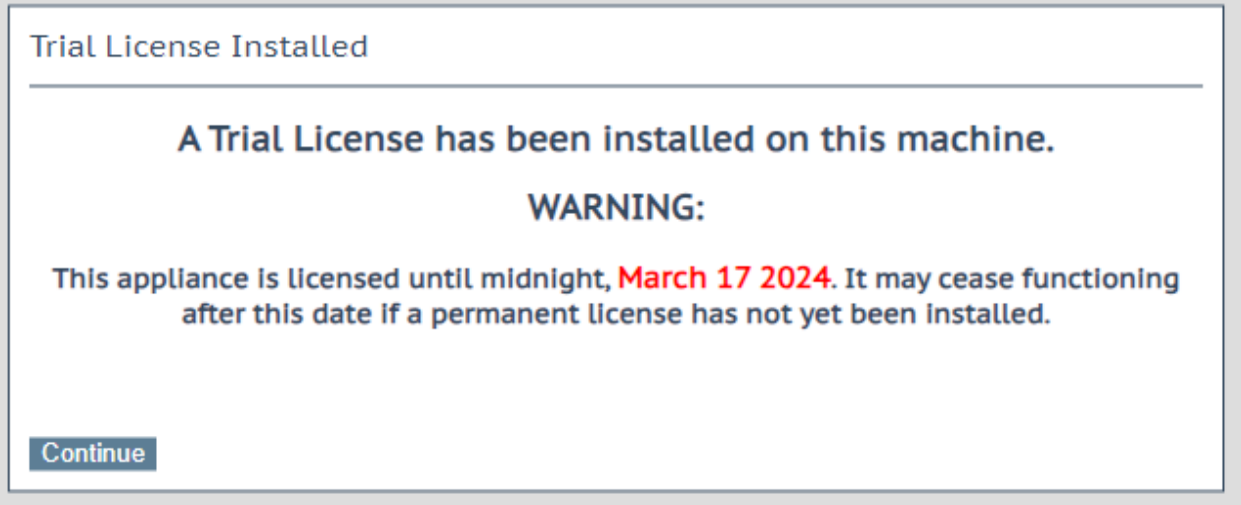
   **Note:** For detailed instructions on how to register for a Progress ID (formerly Kemp ID) and license the LoadMaster, refer to the **Licensing, Feature Description** on the Documentation Page.




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 Progress ID based on the LoadMaster platform type. Select the license type you want to apply to this LoadMaster.

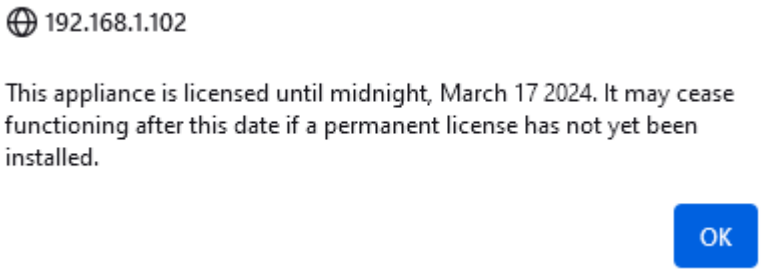
   **Note:** If the license type you want is not displayed, please contact your Progress Kemp representative.

6. Click **Continue**.

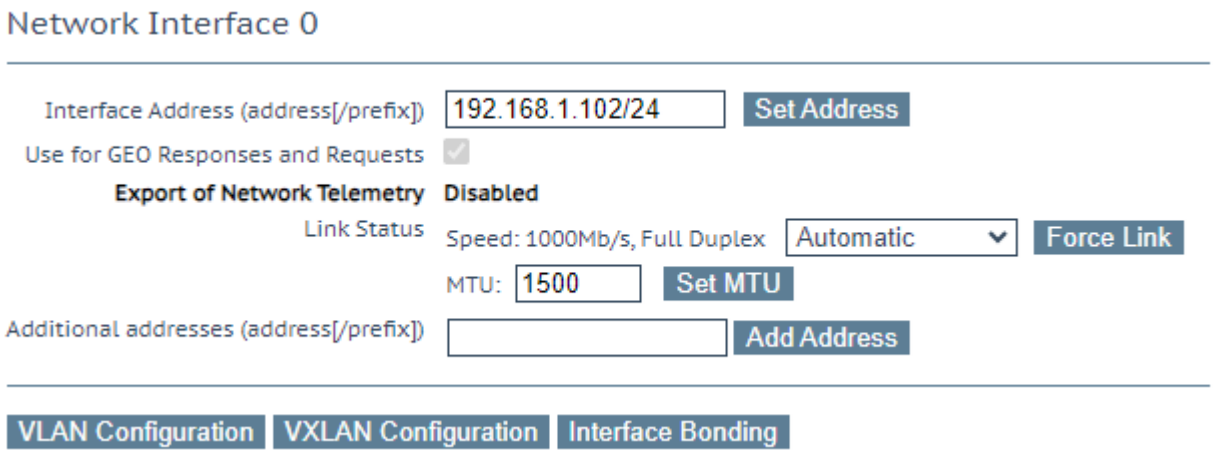



7. The login screen appears, enter the **bal** user name and the password.
8. In the screen informing you that the password has changed, press the **Continue** button.
9. If your machine has shipped with a temporary license you should get a warning informing you that a

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.




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.

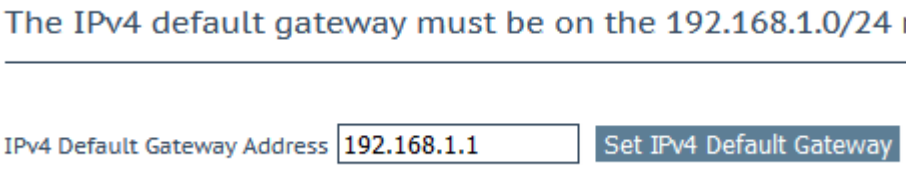
19. Go to **System Configuration > Network Setup > Host & DNS Configuration**.



20. In the **Hostname configuration** screen, enter the hostname into the **Current Hostname** input field.
21. Click the **Set Hostname** button.
22. Click the **System Configuration > Network Setup > Host & DNS Configuration** menu option.




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.




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 https://docs.progress.com/ page.

# 3

# Troubleshooting

Refer to the following sections for troubleshooting details.

**Related Links**

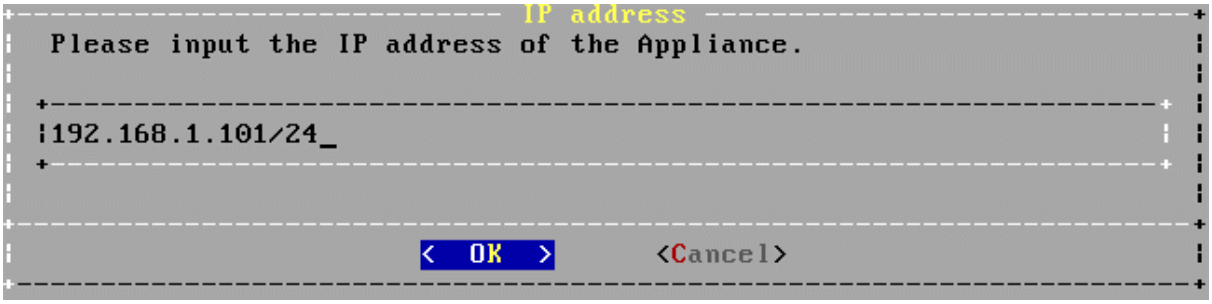
For details, see the following topics:

- Configuring the LoadMaster Using the Console
- Static MAC Addresses Must Be Configured
- Factory Reset
- NIC Ordering After Reboot

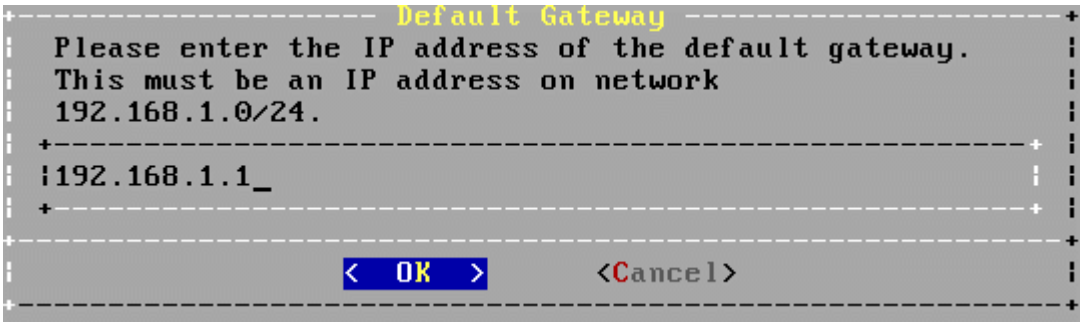
## Configuring the LoadMaster Using the Console

If the LoadMaster does not automatically obtain an IP address using DHCP, or if you would prefer 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



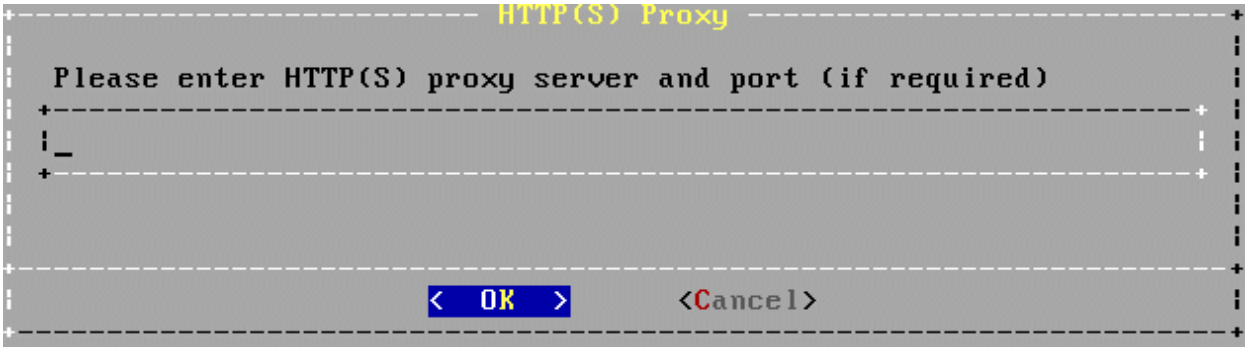

2. Enter the IP address of the eth0 interface, the network facing interface of the LoadMaster, in the input field within the **IP address** dialog box.
3. Press **OK**.




4. Enter the IP address of the default gateway in the input field of the **Default Gateway** dialog box.
5. Press **OK**.




6. Enter a space separated list of nameserver IP addresses.



7. Enter the HTTP(S) proxy server and port (if required).
8. 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.

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

9. A warning may appear regarding website security certificates. Please click the continue/ignore option.
10. The LoadMaster End User License Agreement screen appears.
11. Please read the license agreement and, if willing to accept the conditions therein, click on the **Agree** button to proceed.
12. 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.
13. Click **OK**.
14. 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://docs.progress.com/.

# 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. It is recommended to configure static MAC addresses for all NICs within virtual machines.

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

# 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 via the Console section.

# NIC Ordering After Reboot

When you add a new NIC to the VLM and reboot the machine, addresses are assigned to the NICs based on the order they are detected during the device scan. There is no guarantee that the NICs will retain the addresses they had previous to the reboot.

Thus, if you had a VLM setup with NIC0 assigned to eth0 add NIC1 assigned to eth1, after adding a third NIC, NIC3, and rebooting, there is no guarantee that that NIC0 and NIC1 will remain assigned to the

interfaces they were assigned to previous to addition of an extra NIC. For example NIC0 could end up assigned to eth1 and NIC 1 assigned to eth2.

This will not occur if no additional NICs are added. For further information on ensuring that the ordering remains constant, please refer to the Oracle VirtualBox documentation.

# 4

# Best Practices for Backups

Hypervisor snapshots cannot be used to restore a LoadMaster to a working state. The best way to back up your LoadMaster settings is by using the native backup and restore facility in the LoadMaster WUI or API.

To back up your LoadMaster configuration, follow these steps:

1. In the main menu, go to **System Configuration > System Administration > Backup/Restore**.
2. Click **Create Backup File**.

You can create a remote host for automated backups using SCP to save backups to a remote server.

For further details on backing up and restoring the LoadMaster configuration, including certificates and cipher sets, refer to the following links:

- Backup and Restore Technical Note
- How to Create and Restore a LoadMaster Configuration or Certificate Backup

# 5

# References

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

**Licensing, Feature Description**