Progress®
Kemp® LoadMaster®

Installation Guide Nutanix

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1

Introduction

The Virtual LoadMaster (VLM) is a version of the LoadMaster that runs as a Virtual Machine (VM) in a hypervisor and can provide all the features and functions of a hardware-based LoadMaster.

This document describes the installation of the VLM in a Nutanix Acropolis Hypervisor Virtualization (AHV) environment. The VLM has been tested with Nutanix AHV and has been certified as **Nutanix Ready**.

Nutanix AHV is a license-free virtualization solution included with Acropolis that delivers enterprise virtualization ready for a multi-cloud world. With Acropolis and AHV, virtualization is tightly integrated into the Enterprise Cloud OS rather than being layered on as a standalone product that must be licensed, deployed, and managed separately. Common tasks such as deploying and protecting VMs are managed centrally through Nutanix Prism, rather than utilizing disparate products and policies in a piecemeal strategy.

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

For the latest supported Nutanix versions for LoadMaster, refer to the Progress Kemp Technologies page on the Nutanix website.

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

- 2 x virtual processors
- 4 GB RAM
- 16 GB virtual hard disk capacity

There may be maximum configuration limits imposed by Nutanix such as maximum RAM per VM, Virtual Network Interface Controllers (NICs) per VM, and so on. For further details regarding the configuration limits imposed by Nutanix, refer to the relevant Nutanix documentation.

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Installing a VLM

The following instructions describe how to install a VLM in a Nutanix AHV environment using Prism Central.

Contents

- Static MAC Addresses must be Configured
- Download the VLM
- Add Image to Nutanix AHV Using Prism Central
- Deploy the LoadMaster from an Image Using Prism Central
- Start the LoadMaster
- License and Configure the LoadMaster

Static MAC Addresses must be Configured

If you move a VLM system to a different VM, ensure that the MAC addresses of the VMs NICs stay the same. Static Media Access Control (MAC) addresses must be configured for all NICs in VMs.

For further information on configuring static MAC addresses, refer to the relevant Nutanix AHV documentation.

Download the VLM

The VLM is packaged in a .disk file for ease of deployment. This file can be freely downloaded from Progress Kemp for a 30-day evaluation period. To download the VLM, follow the instructions below:

1. Go to http://www.Kemptechnologies.com/try.
2. Click **Download Now**.
3. Log in using your Progress ID. If you do not have one, sign up for one using the form provided.
4. In the **Hypervisor** section, select **Nutanix AHV**.
5. Select your country from the drop-down list provided.
6. Read the End User License Agreement.
7. To proceed with the download, ensure you select the **I agree to the End User License Agreement terms** check box.
8. Click **Download Now**.
9. Unzip the contents of the file to an accessible location.

Add Image to Nutanix AHV Using Prism Central

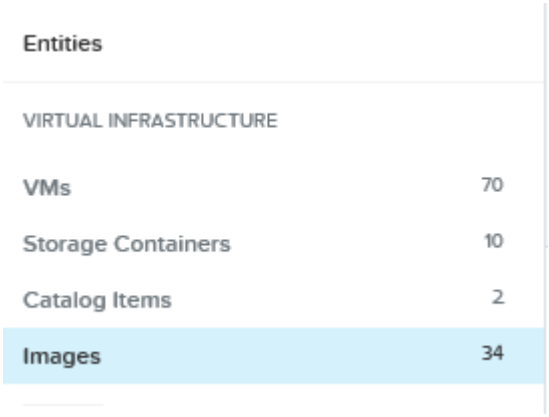
You must upload the LoadMaster KVM image (.disk) into the Nutanix AHV environment.

Note: In some cases, the upload into Nutanix Prism fails due to the image size. In these environments, you can use SFTP to successfully upload the image.

The steps in this section are being executed in Nutanix Prism Central:



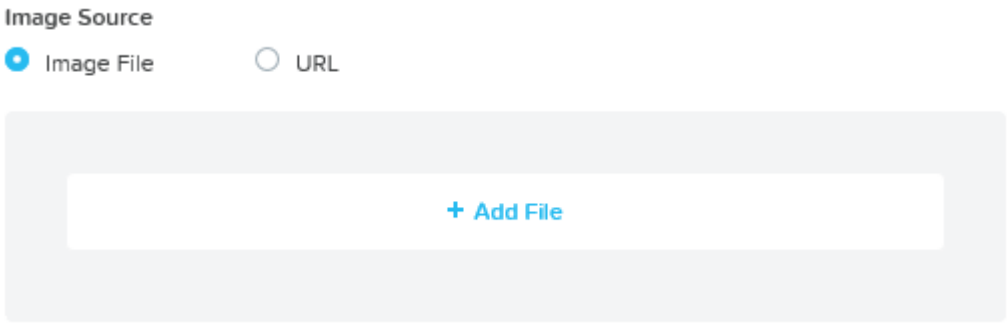
1. In the top navigation, click **Explore**.



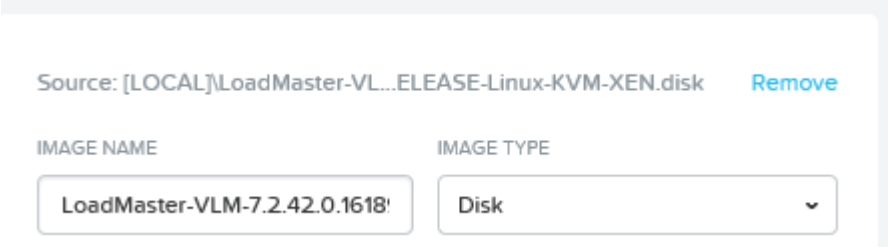
2. In the left-hand navigation, click **Images**.



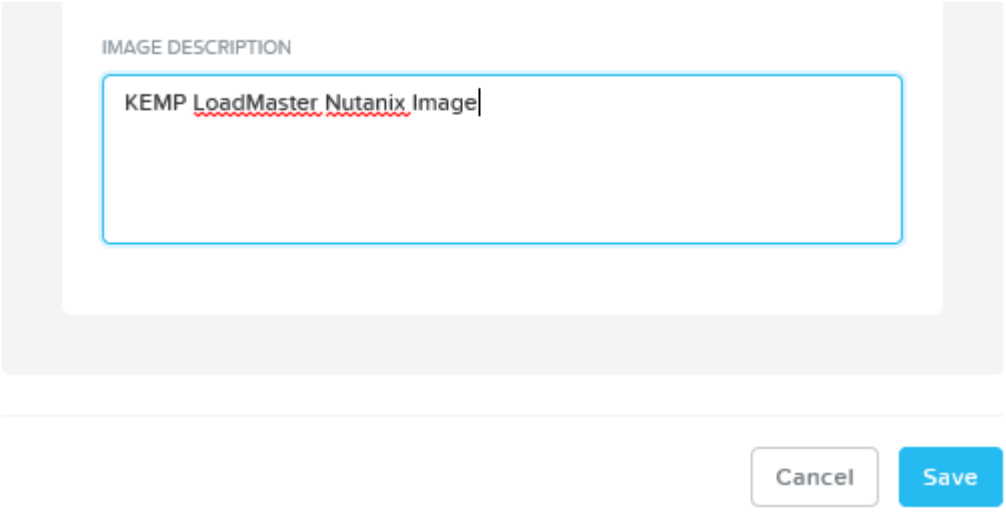
3. Click **Add Image**.



4. Select **Image File** and click **+ Add File**.



5. Select the extracted LoadMaster KVM disk image and select **Disk** as the **IMAGE TYPE**.



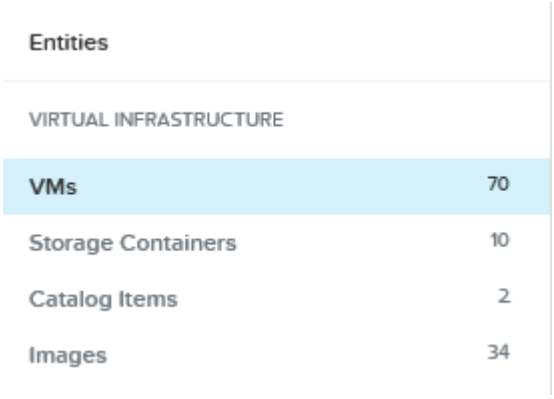
6. Enter an **IMAGE DESCRIPTION** and click **Save**.

Deploy the LoadMaster from an Image Using Prism Central

When the image is uploaded, you can deploy a new LoadMaster from Prism Central.



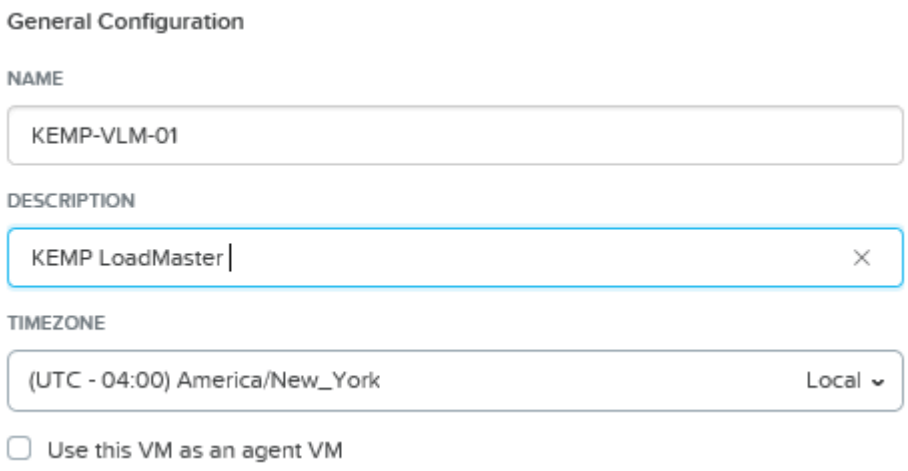
1. In the top navigation, click **Explore**.



2. In the left-hand navigation, click **VMs**.

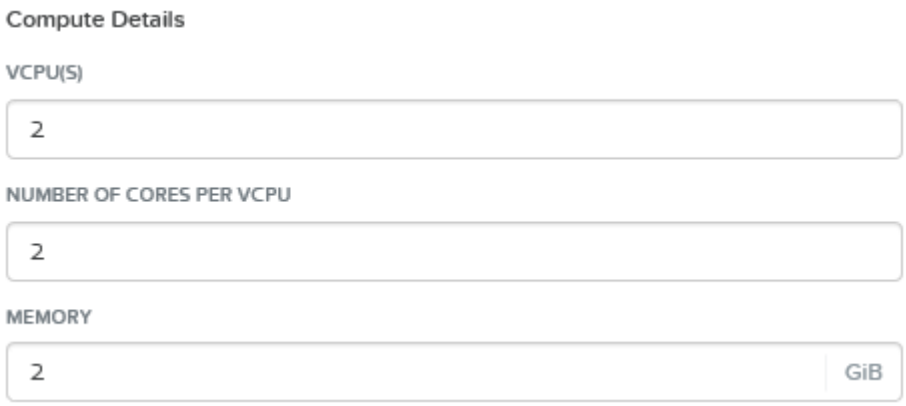


3. Click **Create VM**.

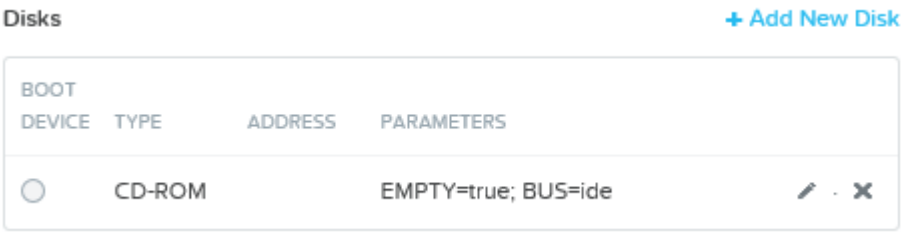


4. Enter the following under **General Configuration**:

1. **NAME** – A unique name for the LoadMaster.
2. **DESCRIPTION** – A brief description of the LoadMaster.
3. **TIME ZONE** – The time zone in which this is being deployed.
4. Clear the **Use this VM as an agent VM** check box.

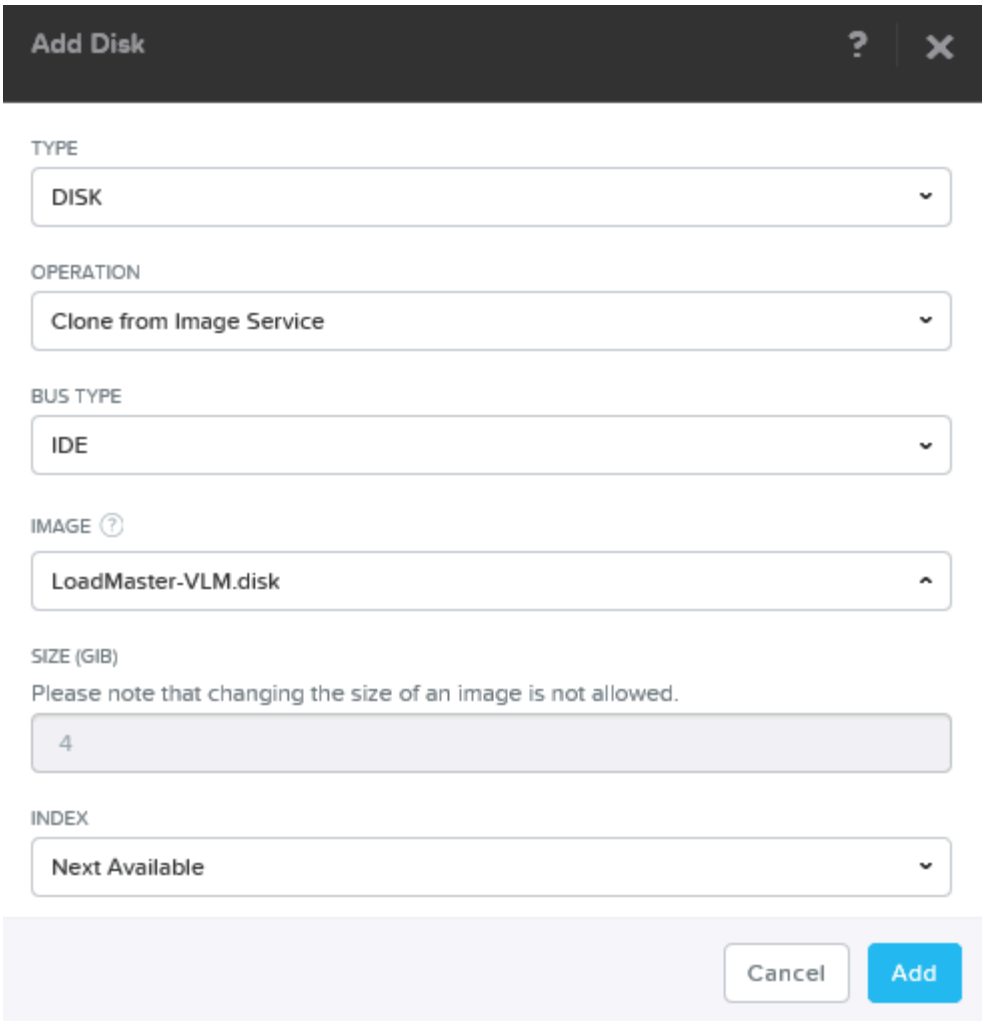


5. Enter the following under **Compute Details**:
   1. **VCPU(S)** – At a minimum, you should allocate two VCPUs.
   2. **Number of Cores per VCPU** – At a minimum, you should allocate 2 cores.
   3. **Memory** – At a minimum, you should allocate 2 GB of memory.



Note: You may require more resources based on the workload (or workloads) being published through the LoadMaster.

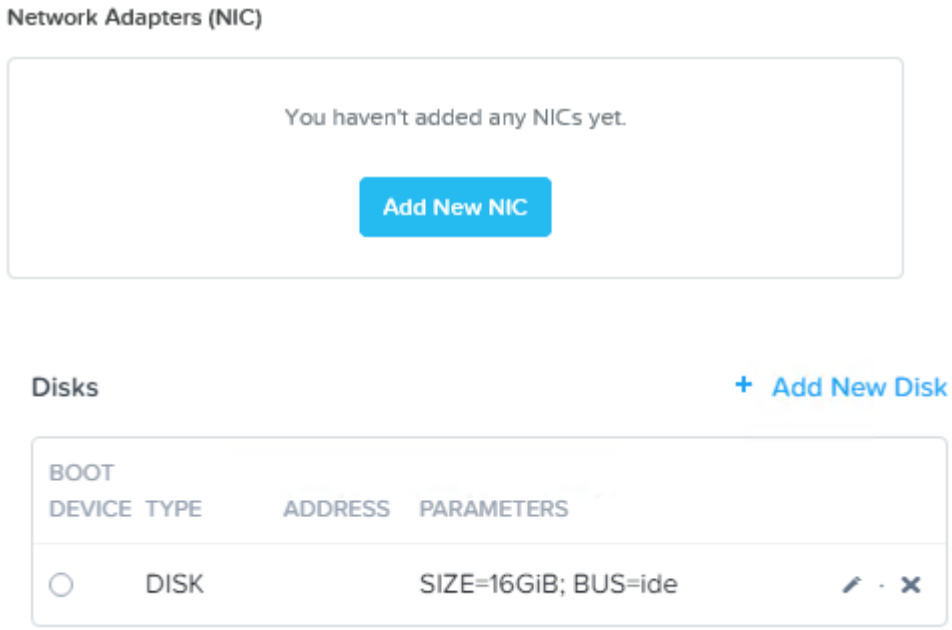
6. Under **Disks**, remove/delete the CD-ROM by clicking **x**.
7. Click **+ Add New Disk** to add the LoadMaster disk.



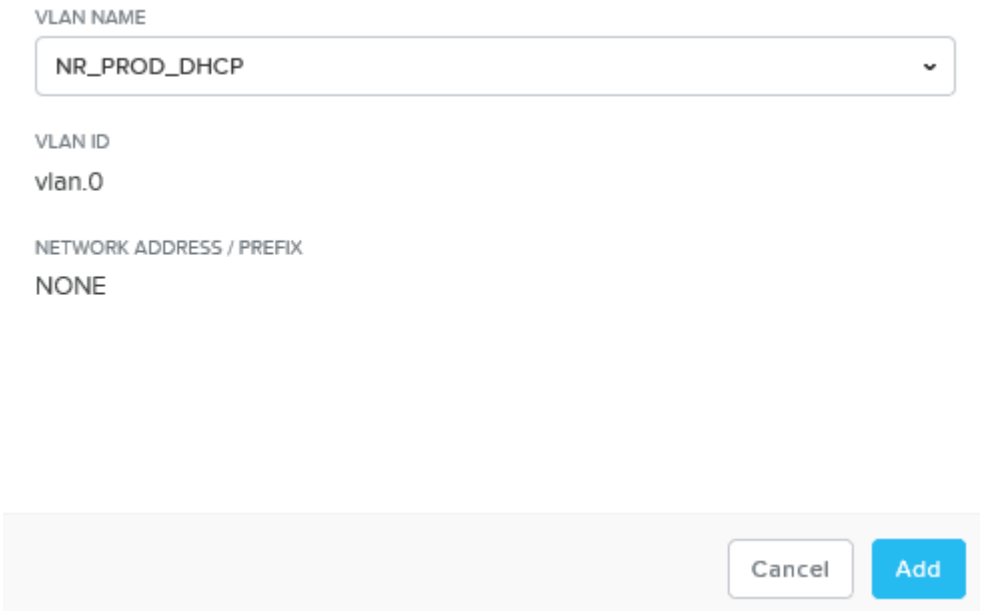
8. Enter the following in the **Add Disk** screen:
   1. **TYPE** – **DISK**
   2. **OPERATION** – **Clone from Image Service**
   3. **BUS TYPE** – **IDE**
   4. **IMAGE** – The name of the uploaded image
   5. **INDEX** = **Next Available**

Note: IDE must be selected for bus type. The LoadMaster only utilizes the disk for config changes and logging, therefore there is no performance impact with this setting.

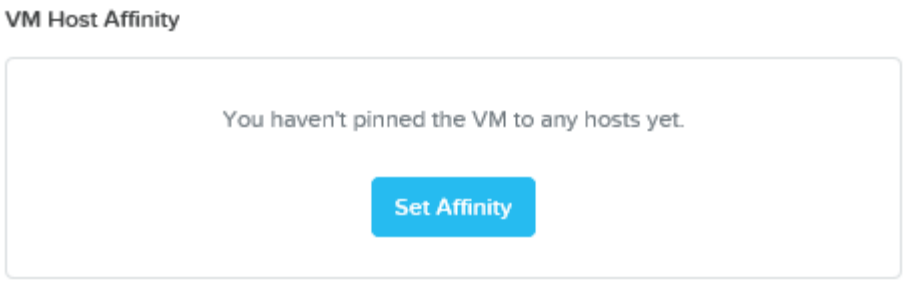
9. Click **Add**.



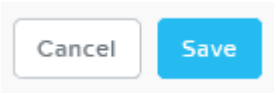
10. Under **Network Adapters (NIC)**, click **Add New NIC**.



11. Select an existing **VLAN NAME** and click **Add**.
12. (Optional) – In multi-arm configurations, you can add additional NICs.



13. (Optional) – Click **Set Affinity** to create an affinity between the VM and multiple hosts. Nutanix recommends you select at least two hosts in an Affinity.



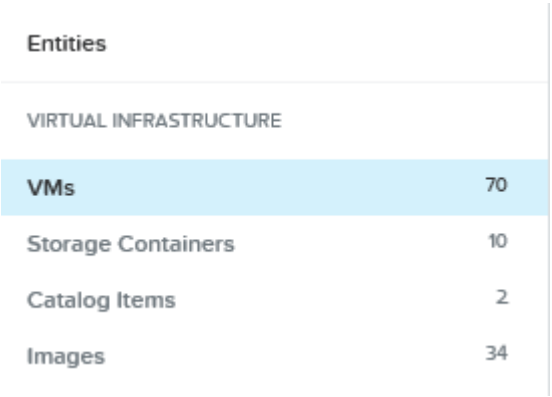
14. Click **Save** to complete the deployment.

Start the LoadMaster

When the LoadMaster deploys, you must manually start it to complete the configuration:



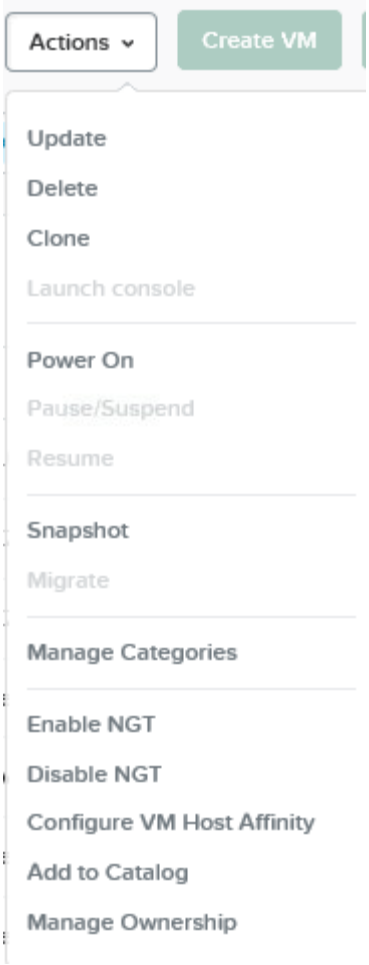
1. In the top navigation, click **Explore**.



2. In the left-hand navigation, click **VMs**.



3. Scroll down, find the newly deployed LoadMaster, and click the block to select it.



4. Click **Actions** and **Power On**.

License and Configure the LoadMaster

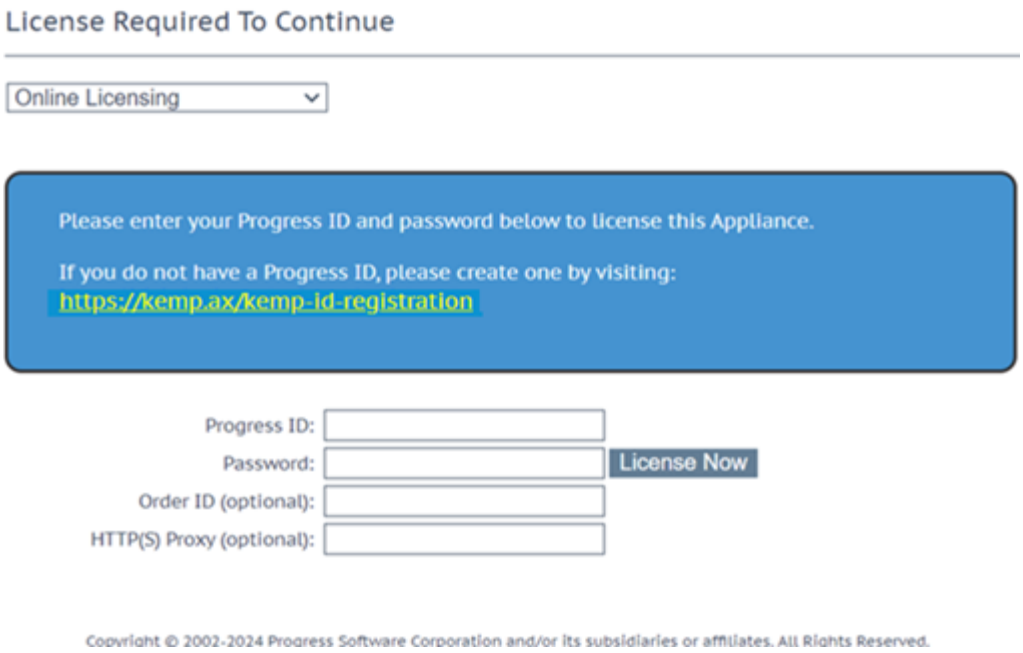
You must now configure the LoadMaster to operate in the network configuration.



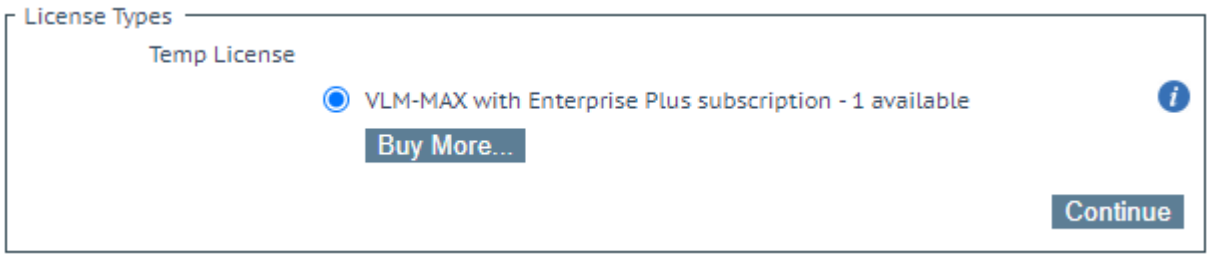
1. When using DHCP, the IP address is displayed in the list of VMs.
2. In an internet browser, enter the IP address that you previously noted.

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

3. A warning may appear regarding website security certificates. Click the continue/ignore option.
4. The LoadMaster End User License Agreement screen appears. Read the license agreement and, if you are willing to accept the conditions, click **Agree** to proceed.



5. 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**.

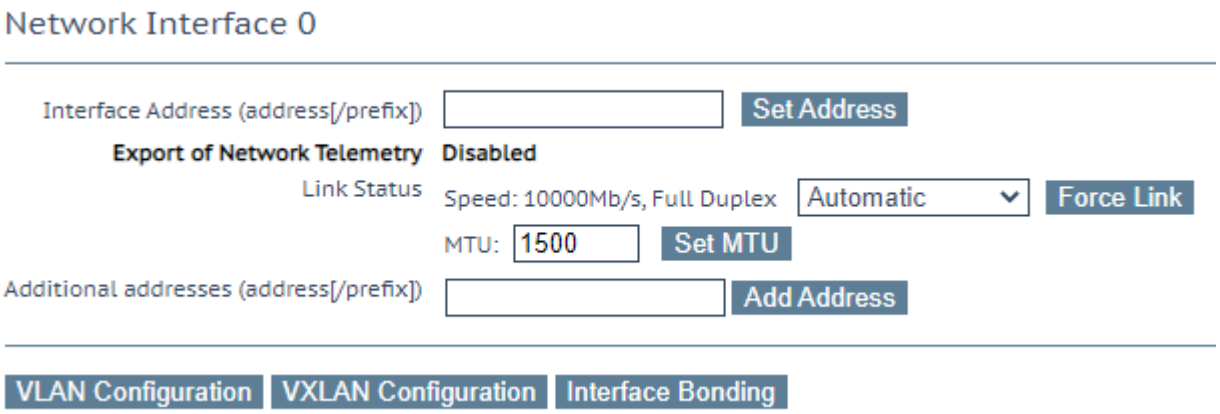
Note: For detailed instructions on how to register for a Progress ID and license the LoadMaster, refer to the **Licensing, Feature Description** on the Documentation Page.

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 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, contact your Progress 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, click **Continue**. If you licensed your machine 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. The **Home** screen of the LoadMaster appears.
11. Go to **System Configuration > Network Setup** in the main menu.
12. Click the **eth0** menu option in the **Interfaces** section.



13. 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** text box.
14. Click **Set Address**.

Note: The **Speed** in the **Link Status** section may show as **Unknown!**. This is because it is a virtual interface and there is no maximum speed associated with it. You can see the speed (if under load) in **Statistics > Real Time Statistics** in the User Interface (UI). The speed on the UI and Application Programming Interface (API) changes depending on how much load is put through the interface.

15. Click the **eth1** menu option in the **Interfaces** section.
16. 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** text box.
17. Click **Set Address**.

Note: This interface is optional, depending on the network configuration.

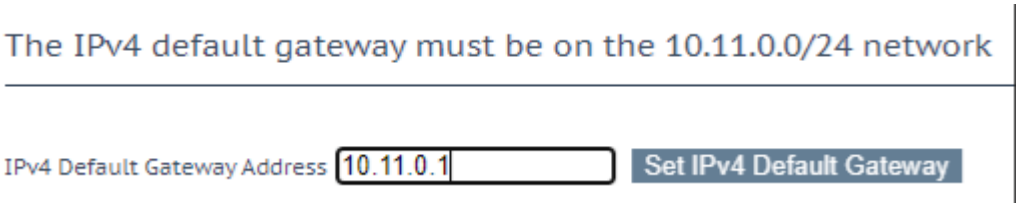
18. Click the **Host & DNS Configuration** menu option.



19. Enter the hostname into the **Hostname** text box.
20. Click **Set Hostname**.



21. Enter the IP address (or addresses) of the DNS Server (or servers) which is used to resolve names locally on the LoadMaster into the **IP Address** text box in the **Add Nameserver** section.
22. Click **Add**.
23. Enter the domain name that is to be prepended to requests to the DNS nameserver into the **Domain** text box.
24. Click **Add**.
25. Click the **System Configuration > Network Setup > Default Gateway** menu option.



26. Enter the IP address of the default gateway into the **IPv4 Default Gateway Address** text box.

    Note: If you have an IPv6 Default Gateway, enter the value in the **IPv6 Default Gateway Address** text box.

27. Click **Set IPv4 Default Gateway**.

The LoadMaster is now fully installed and ready to use. For further information on how to configure and implement the VLM, refer to the LoadMaster documentation which you can access here: https://docs.progress.com/.

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Troubleshooting

Refer to the following sections for troubleshooting details.

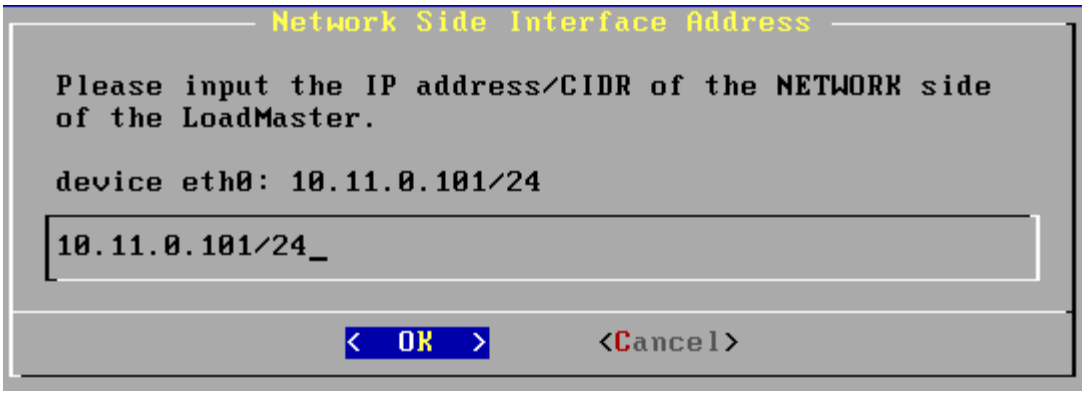
Contents

- Configuring the LoadMaster Using the Console
- Nutanix Cloning
- Factory Reset
- Preventing Input/output Errors

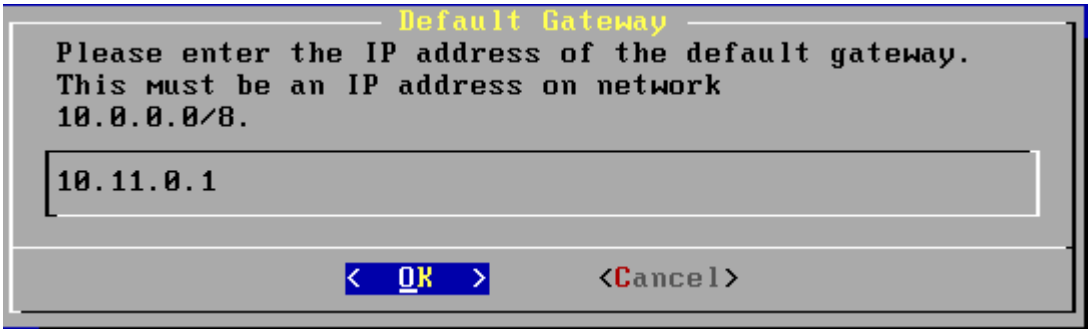
Configuring the LoadMaster Using the Console

If the LoadMaster does not automatically obtain an IP address using DHCP, or if you prefer to configure the LoadMaster using the console, then you can complete the following configuration steps before starting the LoadMaster:

1. Log in into the LoadMaster in the console using the following credentials:
   - **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 in the **Network Side Interface Address** dialog box.
3. Press **OK**.

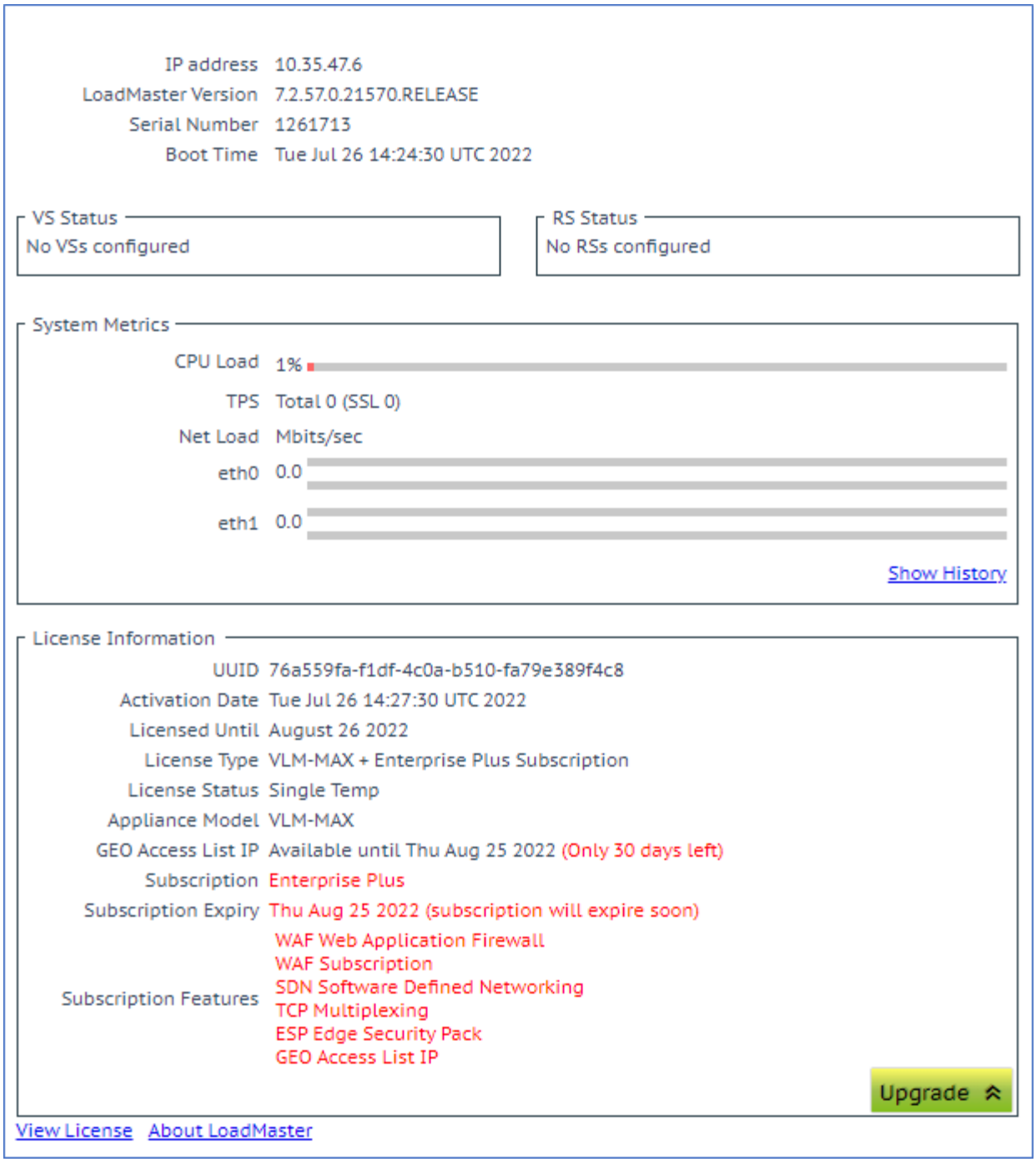


4. Enter the IP address of the default gateway in the input field of the **Default Gateway** dialog box.
5. Press **OK**.
6. Once these are set, a prompt appears asking to connect to the web interface at the newly configured IP address. In an internet browser, enter the IP address of the eth0 interface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

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

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7. A warning may appear regarding website security certificates. Click the continue/ignore option.
8. The LoadMaster End User License Agreement screen appears.
9. Read the license agreement and, if willing to accept the conditions, click **Agree** to proceed.
10. If the machine has shipped with a temporary license, a warning appears 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 use. For further information on how to configure and implement the VLM, refer to the LoadMaster documentation at: https://docs.progress.com/.

Nutanix Cloning

If you use the cloning features in Nutanix, it is possible an IP conflict may occur. This may be caused by the DHCP address obtained, a static IP address configured on the LoadMaster, or Virtual Services that are

configured on the LoadMaster before cloning. Therefore, we recommend not using the Nutanix cloning feature in production environments.

Factory Reset

If you perform a factory reset on the VLM, all configuration data, including the VLMs 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 is not 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.

Preventing Input/output Errors

The LoadMaster expects a serial port connection. However, not having a serial port connection does not cause problems, other than causing the following log message:

```
agetty##: ttyS0: ioctl: Input/output error
```

To prevent these errors from appearing in the logs, enable a virtual serial port on Nutanix AHV by following these steps:

1. Turn off the VM.
2. SSH into one of the Controller VMs (CVMs) in the AHV cluster.
3. Run the following command to add the serial port to the VM:

```
acli vm.serial_port_create <VMName> type=kServer index=0
```

Replace **<VMName>** with the name of the VM.

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, you can find the below documents at https://docs.progress.com/.

Licensing, Feature Description