

Foglight® for Virtualization, Enterprise Edition
8.8

Foglight for Storage Management 4.6

Virtual Appliance Installation and Setup Guide



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Legend

- **WARNING:** A WARNING icon indicates a potential for property damage, personal injury, or death.

- ⚠ **CAUTION:** A CAUTION icon indicates potential damage to hardware or loss of data if instructions are not followed.

- ⓘ **IMPORTANT NOTE, NOTE, TIP, MOBILE, or VIDEO:** An information icon indicates supporting information.

Foglight for Virtualization, Enterprise Edition/Foglight for Storage Management Virtual Appliance Installation and Setup Guide
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Install and configure the virtual appliance

This guide provides instructions for installing and configuring the Foglight® for Virtualization, Enterprise Edition virtual appliance and the Foglight® for Storage Management virtual appliance (hereafter called Foglight-FVE-FSM-vApp). The instructions are similar for the two appliances; any specific instructions are noted, where applicable.

The Foglight-FVE-FSM-vApp provides three installers that allow you to select the appropriate version, as needed:

- *Foglight-FVE-FSM-vApp-xLarge*: install this version if there are less than 10,000 virtual machines deployed in your environment.
 - **NOTE:** Quest strongly recommends that you install *Foglight-FVE-FSM-vApp-xLarge* on a Solid State Drive (SSD) storage; otherwise you might confront with the performance issues.
- *Foglight-FVE-FSM-vApp-large*: install this version if there are less than 3000 virtual machines deployed in your environment.
- *Foglight-FVE-FSM-vApp-small*: install this version if there are less than 1000 virtual machines deployed in your environment.

The Foglight-FVE-FSM-vApp is delivered as a fully configured virtual appliance which contains two virtual machines and can be installed on a VMware® vSphere® virtualization platform. Before starting the installation, review the [System requirements](#) section, to ensure that your target system meets the requirements.

- **IMPORTANT:** If you deploy the Foglight-FVE-FSM-vApp and enable the Foglight for Virtualization, Enterprise Edition trial license, but install a purchased Foglight for Storage Management license, 30 days later your system will lose all the Foglight for Virtualization, Enterprise Edition features, including the ability to map virtual machines to storage resources.

For more details, see these topics:

- [Install as a VMware virtual appliance](#)
- [Power on and initialize the virtual appliance](#)
- [Configure the virtual appliance](#)
- [Change the network settings](#)
- [Change the timezone](#)

System requirements

The *Foglight-FVE-FSM-vApp-xLarge* virtual appliance is configured as three virtual machines:

- *FMS* is allocated with 48GB of Memory, twelve vCPU, and two virtual disks of 10GB and 70GB, respectively.
- *FglAM* is allocated with 12GB of Memory, four vCPU, and two virtual disks of 10GB and 70GB, respectively.
- *DBS* is allocated with 12GB of Memory, four vCPU, and three virtual disks of 10GB, 10 GB, and 500GB, respectively.

The *Foglight-FVE-FSM-vApp-large* virtual appliance is configured as two virtual machines:

- *FMS* is allocated with 26GB of Memory, six vCPU, and two virtual disks of 10GB and 70GB, respectively.
- *DBS* is allocated with 10GB of Memory, four vCPU, and three virtual disks of 10GB, 10 GB, and 250GB, respectively.

The *Foglight-FVE-FSM-vApp-small* virtual appliance is configured as two virtual machines:

- *FMS* is allocated with 12GB of Memory, two vCPU, and two virtual disks of 10GB and 40GB, respectively.
- *DBS* is allocated with 4GB of Memory, two vCPU, and three virtual disks of 10GB, 10GB, and 40GB, respectively.

These settings must remain unchanged in order for the virtual appliance to work correctly.

VMware® Software Requirements:

- vSphere® 5.1 or later

Next step: [Install as a VMware virtual appliance](#)

Install as a VMware virtual appliance

The VMware® virtual appliance installation involves downloading the virtual appliance, and then deploying it to your VMware environment using the VMware Deploy OVF Template option.

i | **NOTE:** This procedure contains instructions for deploying the virtual appliance using the Deploy OVF Template wizard. For complete information about this wizard and other vSphere® Client features, see your vSphere Client documentation.

For details, see these topics:

- [Installation prerequisites](#)
- [Download the virtual appliance](#)
- [Deploy the virtual appliance](#)

Installation prerequisites

Before proceeding with installing the *Foglight-FVE-FSM-vApp*, ensure that the following prerequisites are met:

i | **NOTE:** The *Foglight-FVE-FSM-vApp* represents *Foglight-FVE-FSM-vApp-xLarge*, *Foglight-FVE-FSM-vApp-large*, and *Foglight-FVE-FSM-vApp-small* unless otherwise specified.

- Verify that you have permissions to deploy OVF templates to the inventory.
- Do not deploy the virtual appliance from an ESX® host. Deploy it only from the vCenter® Server.
- DRS is a requirement from VMware for all vApps. If the ESX® host is part of a cluster, enable DRS in the cluster. Otherwise it will not be able to power on the vApp.
- Verify that you are connected to a vCenter® Server system with the vSphere® Client.
- Verify that at least one internal network is configured.
- If firewall is enabled on the Agent Manager host, you must ensure that all of the UDP ports used for Netflow collections are open. By default, the UDP port 9995 is only open for Netflow collections on a virtual appliance. To open additional ports, update the `/etc/sysconfig/SuSEfirewall2` file.

Next step: [Download the virtual appliance](#)

Download the virtual appliance

To download the virtual appliance:

- 1 Download the Foglight-FVE-FSM-vApp- xLarge, large, or small, as needed.
- 2 Unzip the compressed (.zip) file to a Windows® server or workstation.
The zipped file contains the OVF file and five VMDK files.
- 3 Copy the files to a location that is accessible to the VMware® vSphere® Client.

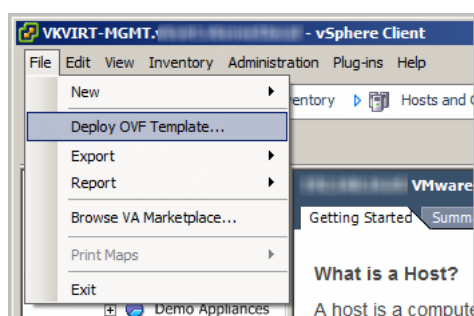
Next step: [Deploy the virtual appliance](#)

Deploy the virtual appliance

i **IMPORTANT:** If you deploy the Foglight-FVE-FSM-vApp and enable the Foglight for Virtualization, Enterprise Edition trial license, but install a purchased Foglight for Storage Management license, 30 days later your system will lose all the Foglight for Virtualization, Enterprise Edition features, including the ability to map VMs to storage resources.

To deploy the virtual appliance:

- 1 Open the VMware® vSphere® Client and click **File > Deploy OVF Template**.



The *Deploy OVF Template* wizard appears.

- 2 Click **Browse** to navigate to the location of the extracted OVF file and select it. Click **Next**.
- 3 On the *OVF Template Details* page, verify the Product and Version number. Click **Next**.
- 4 On the *End User License Agreement* page, review the license agreement, click **Accept**, then click **Next**.
- 5 On the *Name and Location* page, type a name for the virtual appliance, and select a destination folder. Click **Next**.
- 6 On the *Resource Pool* page, select a location within the infrastructure hierarchy. Click **Next**.
- 7 On the *Storage* page, select the datastore in which that the virtual machine (VM) should reside. Click **Next**.
- 8 On the *Disk Format* page, select the type of datastore provisioning.
 - **Thick Provision Lazy Zeroed:** Creates a virtual disk in a default thick format.
 - **Thick Provision Eager Zeroed:** Creates a type of thick virtual disk that supports clustering features, such as Fault Tolerance.
 - **Thin Provision:** Creates a disk in thin format.

- i** **NOTE:** Use the “Thin Provision” format if you do not want to use the maximum disk space at deployment, and save on storage space.
- NOTE:** The “Thick Provision Eager Zeroed” format provides about a 10 percent performance improvement over the other two disk formats. VMware recommends that you select the thick provisioned eager-zero option, when possible.
- NOTE:** Snapshots can negatively affect the performance of a virtual machine and typically result in a 25-30 percent degradation for the vCenter® workload. VMware recommends that you do not use “Snapshots”.

Click **Next**.

- 9 On the *Network Mapping* page, map your existing virtual networks to the ones in the deployed template, and then click **Next**.
 - **Internal Network:** Private network for virtual appliance components to communicate with each other. If you need to have several Foglight-FVE-FSM-vApp virtual appliances running, you must create the dedicated internal network for every vApp (with different names).

To set up the dedicated internal network for every vApp, you must manually reconfigure the static IP of the newer vApp VMs, and change the DBS Internal IP address in the *FMS* VM configuration file.

 - Reconfigure static IPs for both *FMS* and *DBS* VMs for the second NIC which is packaged with 192.168.200.1 and 192.168.200.2 IP to a different value. For details, see [Change the network settings](#).
 - Change the DB IP in the *FMS* VMs *server.config* file to the one set for the *DBS* VM. Change the line `Server.database.host` with the new IP in the `/home/foglight/Quest/Foglight/config/server.config` file.
 - **External Network:** Public network to collect data from the virtual environment.
- i** **NOTE:** The external and internal networks should be configured on the same ESX host. Also the internal network name should be unique inside vCenter® (only one ESX has such network name). If you have only one network, you can assign the same network to the template networks, but only one vApp copy can run in such environment.
- 10 On the *Properties* page, select a time zone to set inside Guest OS. Also, implement the following network settings:
 - **FMS VM IP Address:** IP address for the FMS VM interface. Leave this field blank when using DHCP.
 - **VM Netmask:** Netmask for the vApps VMs. Leave this field blank when using DHCP.
 - **Default Gateway:** Default gateway address for the vApps VMs.
 - **DNS:** Domain name servers for the vApps VMs (separated by a semicolon).

Click **Next**.

- 11 Review the deployment settings and click **Finish**.

When the deployment process is complete, the vApp appears as a virtual machine in the inventory.

Next step: [Power on and initialize the virtual appliance](#)

Power on and initialize the virtual appliance

After installing the OVF, you must power on and initialize the virtual machines.

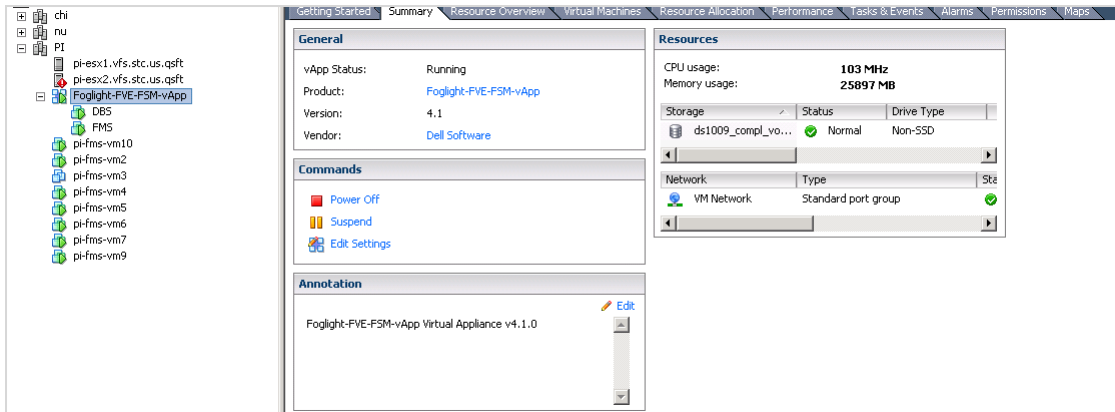
To initialize the virtual appliance:

- 1 Open vCenter®, select the **Foglight-FVE-FSM-vApp** that you installed, then click **Power on the vApp**.

For Foglight for Virtualization, Enterprise Edition: Once the appliance is started, it initializes the operating systems on both virtual machines, and starts Foglight for Virtualization, Enterprise Edition. By default, `Pool.ntp.org` is used as the Network Time Protocol (NTP) server.

For Foglight for Storage Management: Once the appliance is started, it initializes the operating systems on both virtual machines, and starts Foglight for Storage Management. By default, `Pool.ntp.org` is used as the Network Time Protocol (NTP) server.

- 2 Wait until the IP address of Foglight for Virtualization, Enterprise Edition / Foglight for Storage Management appears in the vCenter **Summary** tab.



After the IP address appears, it will take several more minutes to start the application server.

- 3 Once that is completed, access Foglight for Virtualization, Enterprise Edition / Foglight for Storage Management by copying the IP address (either with or without “:8080”) on a standard web browser.
- 4 If DHCP is present, the *FMS* VM acquires an IP address. If you want to assign a static IP address, follow the instruction in the [Change the network settings](#) section.
- 5 If you already have other **Foglight-FVE-FSM-vApp**, **FVE-vApp**, or **FSM-vApp** running on the Host/Cluster, you must manually reconfigure the static IP of the newer vApp VMs, and change the DBS Internal IP address in the *FMS* VM configuration file.
 - a Reconfigure static IPs for both *FMS* and *DBS* VMs for the second NIC which is packaged with `192.168.200.1` and `192.168.200.2` IP to a different value. For details, see [Change the network settings](#).
 - b Change the DB IP in the *FMS* VMs `server.config` file to the one set for the *DBS* VM. Change the line `Server.database.host` with the new IP in the `/home/foglight/Quest/Foglight/config/server.config` file.

To stop the virtual appliance:

- 1 Open vCenter®, select **Foglight-FVE-FSM-vApp** from the navigation tree, and click **Power off vApp**.

Next step: [Configure the virtual appliance](#)

Configure the virtual appliance

To begin using Foglight for Virtualization, Enterprise Edition / Foglight for Storage Management, open a standard web browser and type the IP address of the Foglight for Virtualization, Enterprise Edition / Foglight for Storage Management virtual machine. For a list of validated web browsers, see the *System Requirements and Platform Support Guide*.

The page loads and requests a user name and password. The default user name is `foglight` and the default password is `foglight`.

Foglight for Virtualization, Enterprise Edition only:

To collect data from a vCenter®, create at least one VMware® Performance agent, using the Foglight for VMware cartridge automatically installed with Foglight for Virtualization, Enterprise Edition. For detailed instructions about this topic, see the *Managing Virtualized Environments User and Reference Guide*, “Configuring Monitoring Agents for Data Collection” section.

Foglight for Storage Management only:

To collect data from the storage devices in your environment, you must configure StorageCollector agents, using the Storage & SAN/Storage Environment/Administration dashboard. For more information, refer to the *Foglight™ Managing Storage in Virtual Environments, Installation and Configuration Guide*.

To collect data from a vCenter®, create at least one VMware® Performance agent, using the Foglight for VMware cartridge automatically installed with Foglight for Storage Management. For more information, refer to the *Foglight™ Managing Storage in Virtual Environments, Installation and Configuration Guide*, “Configuring VMWare Performance Agents” section.

To collect data from Hyper-V servers in your environment, you must create Hyper-V Performance agents, using the Foglight for Hyper-V cartridge automatically installed with Foglight for Storage Management. For more information, refer to the *Foglight™ Managing Storage in Virtual Environments, Installation and Configuration Guide*, “Configuring Hyper-V Agents” section.

Next step: If you need to change the static IP address of the *FMS* VM, see [Change the network settings](#).

Change the network settings

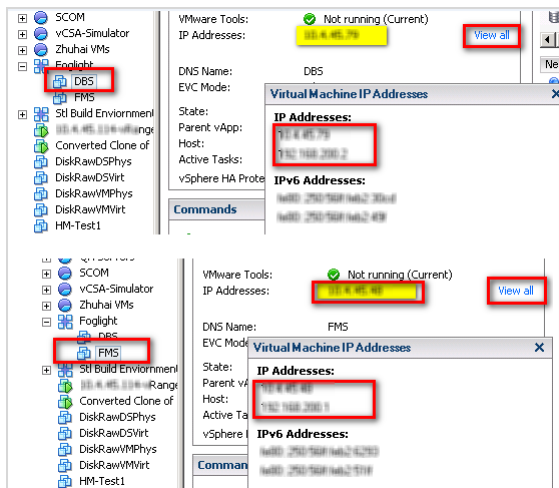
i **NOTE:** The following procedure should be implemented only after the vApp has completed its initialization, after being deployed and started for the first time. Assigning a static IP address requires a restart of the network services on the virtual machine. Restarting the network before the vApp is initialized interrupts the connection between the *FMS* and *DBS* VMs, and could result in some cartridges not being enabled. The vApp initialization process normally takes about 10 minutes after the vApp is started for the first time. The easiest way to determine that the vApp has completed its initialization is to look at the CPU utilization for the *FMS*. The CPU shows some activity during the initialization, but goes down to just a few percent when the initialization is complete.

Both *FMS* and *DBS* VMs have two NICs — one for communication to the outside and one just for communication to each other. The two NICs that communicate between the VMs have static IPs that should not be changed (192.168.200.1 and 192.168.200.2, respectively).

Change the NICs that are used to communicate to the outside world (that is, *eth0*) on both *FMS* and *DBS* VMs.

If DHCP is enabled, you should see IPs in your range assigned to the *FMS* and *DBS* VMs. If you have these IPs, open a web browser to `http://<FMS IPaddress>` and log in using the user name `foglight` and password `foglight`.

Figure 1. Changing a static IP address



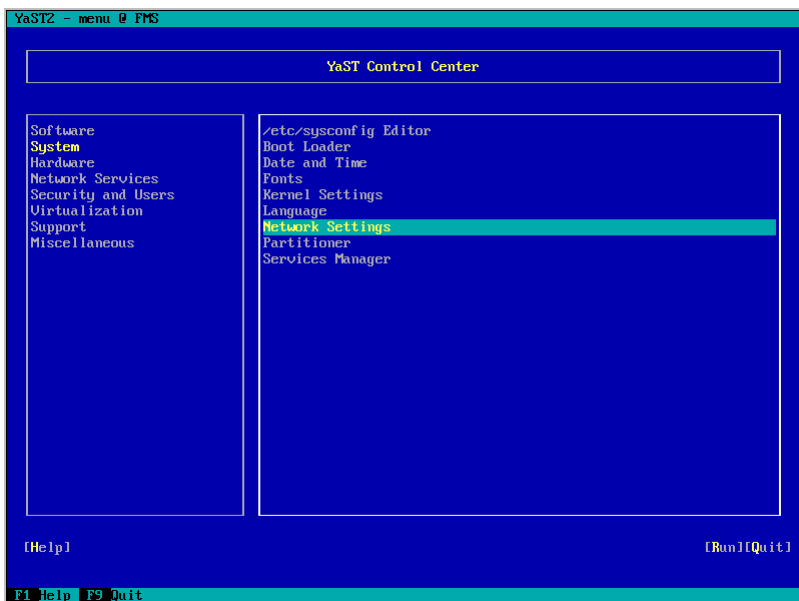
If DHCP does not provide IPs for the *FMS* and *DBS* VMs, edit the network settings in the OS.

To configure networking for a static IP, the following information is needed:

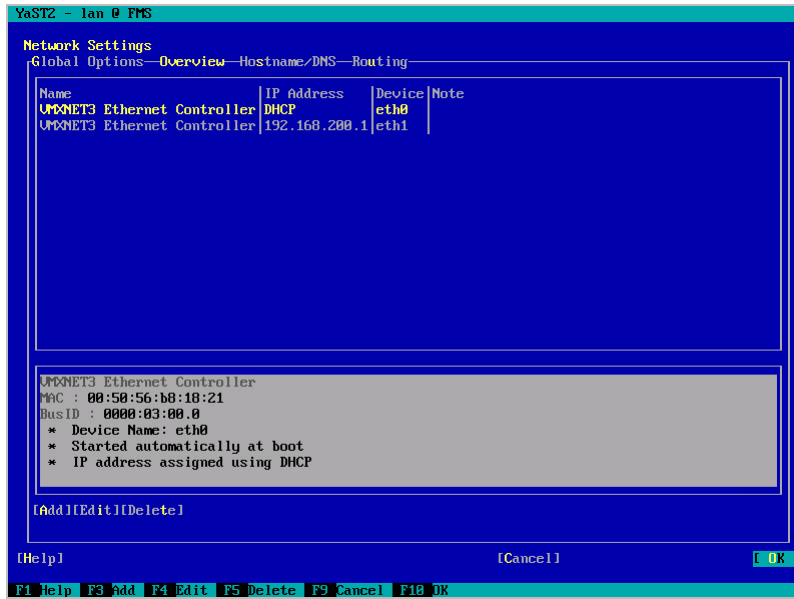
- IP address
- Subnet Mask
- Default gateway
- Nameserver(s)

To change a static IP address:

- 1 Open a console and log in using the user name `root` and password `password`.
- 2 Run `yast`.
The YAST® menu appears.
- 3 Use the arrow keys to select **System > Network Settings**, then press **Enter**.

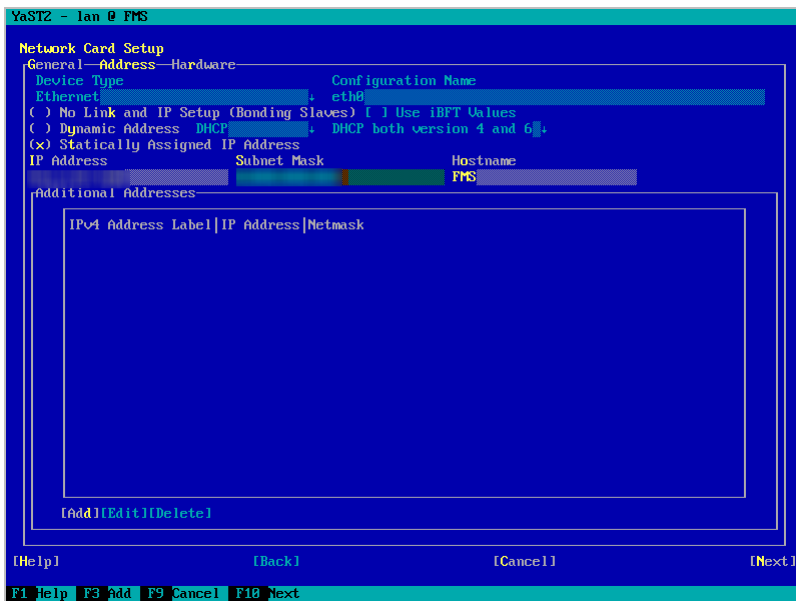


- 4 Tab to **Device eth0** and press **F4** to edit this device.

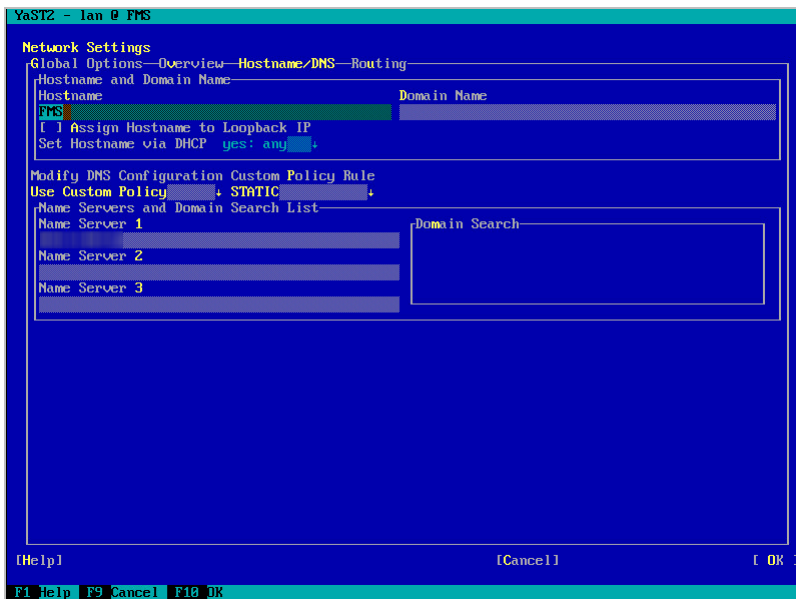


- 5 Tab to **Statically assigned IP Address** and press the spacebar to select it.

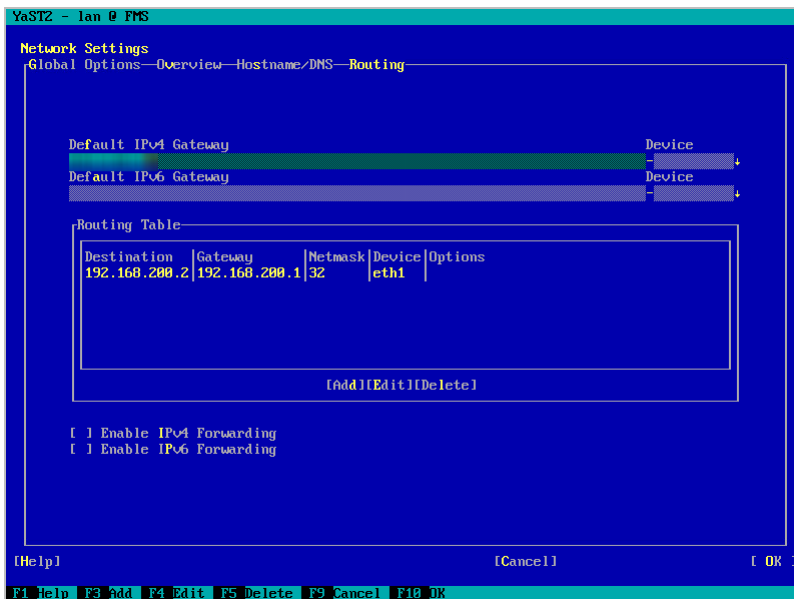
- 6 Tab to and fill out the **IP Address** and **Subnet Mask** Fields.



- 7 Press **F10** to continue.
- 8 Use the arrow keys to select **Hostname/DNS**.
- 9 Tab to **Domain Name** and enter your domain.
- 10 Tab to the **Name Server** fields and enter one or more **Name Servers**.



- 11 Tab back up to the top row and use the arrow keys to select **Routing**.



- 12 Enter your default **Gateway** and press **F10** to save the changes.
The changes are applied and the network is restarted.
- 13 Press **F9** to quit and return to the console.
- 14 Once you are back on the console, ping your vCenter® by FQDN to ensure that the name server, gateway, and IP are working as expected.

Next step: If you need to change the timezone for your virtual appliance, see [Change the timezone](#).

Change the timezone

The timezone settings in your virtual appliance can be changed in several ways. The following options are recommended:

- [Option 1. Manually change the date](#)
- [Option 2. Manually change the timezone](#)
- [Option 3. Change the hardware clock](#)
- [Option 4. Change the localtime file](#)
- [Option 5. Change the timezone file](#)

Option 1. Manually change the date

To manually change the date:

- 1 Use the `date` command for both viewing and changing the date and time.
- 2 Change the time by using the `date` command followed by the month, day, hour, minute, and year, all numeric and no spaces. For example, to set the date and time to “November 2nd, 2003 12:57”, use the command

```
date 110212572003
```

Option 2. Manually change the timezone

To manually change the timezone:

- 1 The hardware clock can be updated in UTC (coordinated universal time), or a required local time.

```
hwclock --utc --systohc
```

- 2 Update it to local time by removing the `--utc` and adding `--localtime`.

```
hwclock --systohc
```

Option 3. Change the hardware clock

The date and time can be changed directly to the hardware clock and then used to update the system clock.

To change the system clock by updating the hardware clock:

- 1 Change the hardware clock.

```
hwclock --set --date="02/19/2003 15:00:00"
```

```
hwclock -- show
```

- 2 Change the system clock.

```
hwclock --hctosys
```

```
date
```

Option 4. Change the localtime file

The `/etc/localtime` file is a link to or a copy of a file containing information about time zone. Zone information files are usually in `/usr/share/zoneinfo`, but this depends on your distribution. If the `localtime` file points to a zone info file that is not the time zone, this can be changed by browsing the directories in `/usr/share/zoneinfo` to find the local zone or country, then find the city or a city in the same time zone, and link `localtime` to it.

To change the localtime file:

- `$ ln -sf /usr/share/zoneinfo/America/Los_Angeles /etc/localtime`

Some applications may use the configuration file `/etc/sysconfig/clock` to determine the current time zone, so it is recommended to set the `ZONE` entry (for example, "America/Los_Angeles").

Option 5. Change the timezone file

To change the timezone file:

- Navigate to `/etc/timezone` and enter the required timezone. For example, if only "Asia/Vladivostok" is contained in this file, remove this entry using a text editor of your choice (for example `vi`) and replace it with the required entry (for example, "Australia/Melbourne"). A restart of the appliance/VM is not required after making this change.

Upgrade the virtual appliance

This section provides instructions for upgrading the Foglight-FVE-FSM-vApp virtual appliance.

For details, see these topics:

- [Upgrade paths](#)
- [Upgrade the vApp](#)

Upgrade paths

Foglight for Virtualization, Enterprise Edition upgrade path

The Foglight for Virtualization, Enterprise Edition 8.8 virtual appliance can be directly upgraded from version 8.7.5. To upgrade from version 8.7, 8.6, 8.5.5, 8.5, 8.4, 8.3, or 8.2, you must first upgrade the virtual appliance to version 8.7.5, then to version 8.8.

Foglight for Storage Management upgrade path

There is no longer a separate virtual appliance provided for Foglight for Storage Management. It is now bundled with the Foglight for Virtualization, Enterprise Edition virtual appliance.

Foglight for Storage Management versions 4.6 are upgraded when the virtual appliance is upgraded. For versions of Foglight for Storage Management prior to 4.6, you must first upgrade the virtual appliance to version 4.6, ensure all deployed agents are upgraded, and then upgrade the virtual appliance to the latest version.

Next step: [Upgrade the vApp](#)

Upgrade the vApp

To upgrade the virtual appliance:

- 1 Download the *Foglight for Virtualization, Enterprise Edition Linux x86 64* installer from Quest Support:
<https://support.quest.com/foglight-for-virtualization-enterprise-edition/download-new-releases>
- 2 In preparation for the upgrade, take a backup or snapshot of all relevant VMs. This includes both the *FMS* and *DBS* VMs, as well as any additional VMs hosting agents.

i | **NOTE:** The *FVE-FMS* and *FVE-MySQL* VMs were renamed *FMS* and *DBS*, respectively, in the Foglight for Virtualization, Enterprise Edition 8.0.1 release.

- 3 Immediately prior to upgrading, deactivate all running agents. This can be done individually from the **Administration** tab on each domain's **Environment** dashboard, or from the dashboard found in **Dashboards > Administration > Agents > Agent Status**.
- 4 Using an sftp client (for example, Bitvise SSH Client), connect to the *FMS* machine on port 22, *sftp://IP of FMS:22*, as the *foglight* user. The password is *foglight* if it has not been changed after installation.
- 5 Extract the files from the downloaded zip file and copy the installer to the directory:


```
/home/foglight/Quest/Foglight/upgrade
```
- 6 Log into the *FMS* VM console as the user *foglight* (default password is *foglight*).
- 7 Type the following command to set execute permissions on files in the upgrade folder for the *foglight* user:


```
chmod -R 744 /home/foglight/Quest/Foglight/upgrade
```
- 8 Run the following command to start the upgrade process:


```
/home/foglight/Quest/Foglight/upgrade/Foglight-Virtualization-Enterprise-  
<version>-install_linux-x86_64.bin -i console
```
- 9 Follow the prompts to accept the license agreement.
- 10 When prompted for an installation directory, enter (case sensitive):


```
/home/foglight/Quest/Foglight
```
- 11 When prompted, select 1 for upgrade.
- 12 When prompted after the *Pre-Installation Summary*, press **Enter** to continue.
- 13 When prompted for the database running state, press **Enter** to continue.
- 14 When prompted, select **1** to **Run Now**.
- 15 When prompted, press **Enter** to exit the installer.

It usually takes five to ten minutes for the *FMS* to start up and be ready for login.

i | **TIP:** Run the following command and monitor the cpu utilization for the *fms* process.

```
top -u foglight
```

It will be very busy while the upgrade is finishing, but it settles down to a few percent when it is ready to login.
- 16 Allow the startup to complete, then login using a browser.
- 17 To complete Foglight Agent Manager (FglAM) and agent upgrade, see the “Upgrade the Foglight Agent Manager” in the *Foglight Upgrade Guide*.

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