



GigaVUE-FM Installation and Upgrade Guide

Version 5.7.00

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DOCUMENT REVISION – 8/11/19

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1 GigaVUE-FM Installation and Upgrade

This guide describes how to install the GigaVUE® Fabric Manager (GigaVUE-FM) on ESX, MS HyperV, and KVM. Upgrade information is also provided. Refer to the following sections for details:

- [Install GigaVUE-FM on VMware ESXi on page 7](#)
- [Install GigaVUE-FM on MS Hyper-V on page 31](#)
- [Install GigaVUE-FM on KVM on page 47](#)
- [Upgrade GigaVUE-FM on page 59](#)

2 Install GigaVUE-FM on VMware ESXi

This section describes how to install GigaVUE-FM on VMware hypervisor, ESXi. It consists of the following main sections:

- [Before You Install on page 7](#) describes the minimum hardware and computing requirements.
- [Install New GigaVUE-FM on VMware ESXi on page 9](#) describes the steps to install and deploy GigaVUE-FM on VMware ESXi hypervisor.
- [Configure SSH Settings on page 28](#) describes the CLI for setting SSH.
- [HTTP/HTTPS Ports on page 29](#) describes the CLI for setting the Web access.

Before You Install

This section describes the hardware and virtual computing requirements for GigaVUE-FM. Ensure that the GigaVUE-FM time is set correctly to ensure accuracy of the trending data that is captured.

Prerequisites for GigaVUE-FM

Before Installing GigaVUE-FM, ensure that VMware vSphere Standard, Enterprise, or Enterprise Plus is installed on hardware that meets minimum requirements. The following VMware vSphere versions are supported. Note the minimum version requirements under [Hardware Requirements on page 7](#).

VMware ESXi and NSX-V Hardware Requirements

The following table describes the hardware requirements on which VMware ESXi runs GigaVUE-FM.

Table 2-1: Hardware Requirements for VMware Hypervisor

Hardware Requirements	
VMware Hypervisor	vSphere ESXi: v5.5 and above.

Table 2-1: Hardware Requirements for VMware Hypervisor

Hardware Requirements	
CPU	One or more 64-bit x86 CPUs with virtualization assist (Intel-VT or AMD-V) enabled. Note: To run GigaVUE-FM, hardware support for virtualization must be enabled on the VMware ESXi host. Make sure that the BIOS option for virtualization support is not disabled. For more information, see your BIOS documentation
RAM	At least 8GB
Disk Space	At least 40GB shared (FC, iSCSI, NFS, or FCoE) or locally attached storage (PATA, SATA, SCSI)
Network	At least one 1Gb NIC

The following table lists the virtual computing resources for GigaVUE-FM.

Table 2-2: Minimum Virtual Computing Requirements for VMware Hypervisor

Minimum Virtual Computing Requirements	
Memory	Minimum 8GB memory
Virtual CPU (vCPU)	2 vCPU
Virtual Storage for Guest	40GB using PVSCSI (VMware Paravirtual SCSI) 80GB (or more) using FabricVUE Traffic Analyzer
Virtual Network Interfaces	One vNIC using VMXNET3 (VMware 3rd Generation Paravirtual NIC)

Supported Browsers

GigaVUE-FM has been tested on the following browsers:

Browser	Version
Mozilla Firefox™	• Version 49.00
Windows® Internet Explorer®	• Version 11 and higher
Apple® Safari®	• Version 9.1 and Higher
Google® Chrome®	• Version 54 and higher
Microsoft Edge	• Version 38

Notes:

- Only the browsers that support TLS v1.2 can access GigaVUE-FM.
- DNS prefetch is a known limitation of Internet Explorer 11. If GigaVUE-FM is configured with DNS and you are using Internet Explorer 11, every new screen can be slowed significantly. If a direct IP address is used instead of a DNS name, the UI response is similar to other browsers. It is recommended that you use the GigaVUE-FM IP when using Internet Explorer 11 or use either a FireFox or Chrome browser instead.

- IE11 Compatibility view mode is not supported.

Install New GigaVUE-FM on VMware ESXi

The GigaVUE-FM software package is distributed as an OVA file. The following sections describe how to deploy a fresh installation of GigaVUE-FM on an ESXi host and perform its initial configuration:

- [Deploy GigaVUE-FM from an OVA File on page 9](#)
- [Initial GigaVUE-FM Configuration on page 19](#)

Upgrades and OVA Files

You can also use the GigaVUE-FM OVA file to upgrade an existing deployment. However, settings and data are not retained when updating from an OVA file. Upgrade using the provided image file to retain settings and data across an upgrade. For details, refer to [Upgrade an Existing GigaVUE-FM Deployment on page 59](#).

Deploy GigaVUE-FM from an OVA File

Use the vSphere Client to install the GigaVUE-FM OVA file. Starting from software version 5.3, you cannot deploy GigaVUE-FM directly from the ESXi host. You must login to the VCenter on the vSphere client to deploy a GigaVUE-FM instance.

NOTE: The OVA file must be stored in a location that is accessible to the vSphere Client. This location cannot be a datastore accessible to the ESXi host which will be the target of the deployment.

The following steps are shown using the ESXi version 5.5 Update 2b. ESXi version 6.x will use the same steps to deploy GigaVUE-FM; however, the screens may look different from the ESXi version 5.5.

NOTE: Starting in software version 5.4.01, you cannot deploy the GigaVUE-FM OVA file on older versions of VMware ESXi. If you have an older version of ESXi, then you must upgrade your VMware ESXi to at least version 5.5. Otherwise, GigaVUE-FM OVA deployment will fail.

If you apply the current GigaVUE-FM release as an image upgrade, then it will not change the VM Virtual Hardware version of the existing GigaVUE-FM virtual machine. To change the Virtual Hardware version of an existing GigaVUE-FM installation, you must shut-down the VM instance and use the 'Upgrade Virtual Hardware' dialog in the vSphere client.

To deploy a GigaVUE-FM instance:

1. Log in to vCenter on the vSphere Client. The main page of the vSphere Client opens as shown in [Figure 2-1](#).

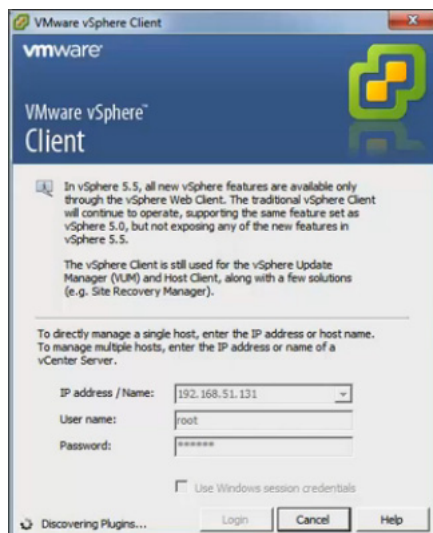


Figure 2-1: vSphere Client 5.5

2. Select the entry for the ESXi Host or Data Center on which you would like to install the GigaVUE-FM instance in the inventory panel.
3. From the vSphere Client, click the **File** menu and select **Deploy OVF Template** as shown in [Figure 2-2](#).

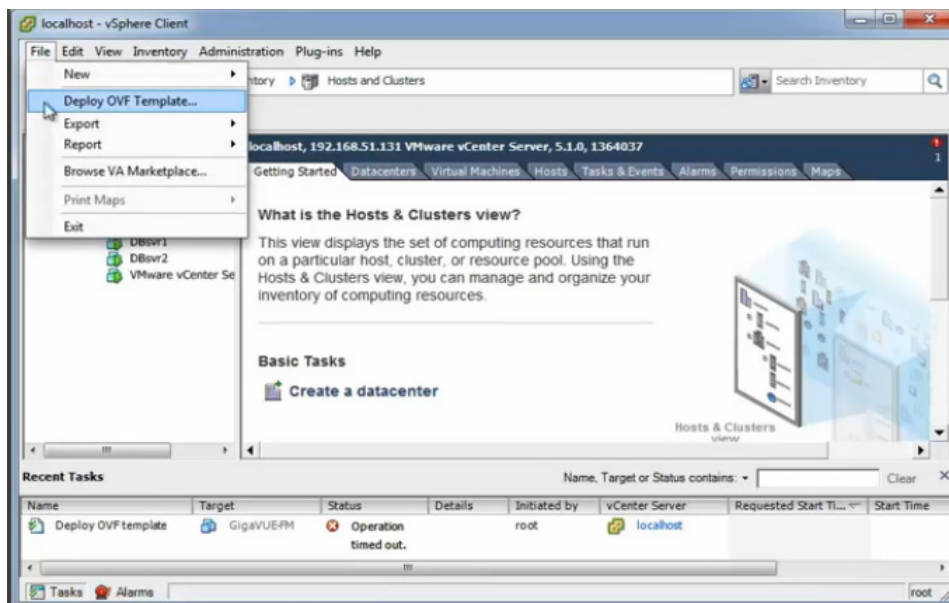


Figure 2-2: vSphere Client: OVF Template

4. When the **Source** page of the **Deploy OVF Template** wizard opens, do the following to open the OVA file:

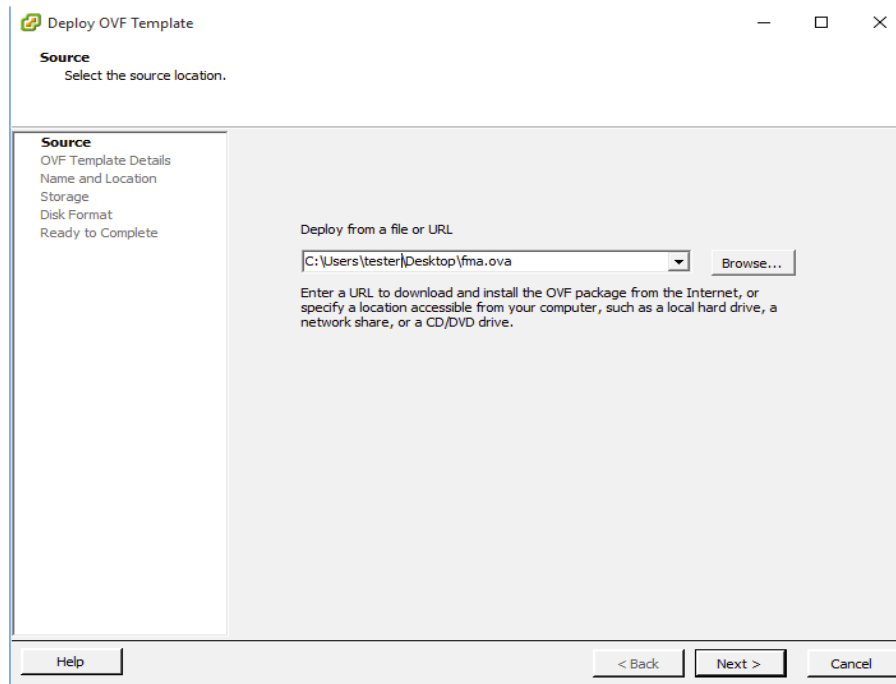


Figure 2-3: vSphere Client: Find the Location of the OVA File

- a. Click **Browse** to navigate to the OVA file available on your local machine and its accessible network shares or to an HTTP URL.
- b. Select the GigaVUE-FM OVA file and click **Open**.

The **Open** dialog closes, returning you to the **Source** page with the OVA file displayed in the field on the page.

- c. Click the **Next**.

The **OVF Template Details** page opens, showing the details of the OVA file. [Figure 2-4](#) shows an example of the details page.

OVF Template Details
Verify OVF template details.

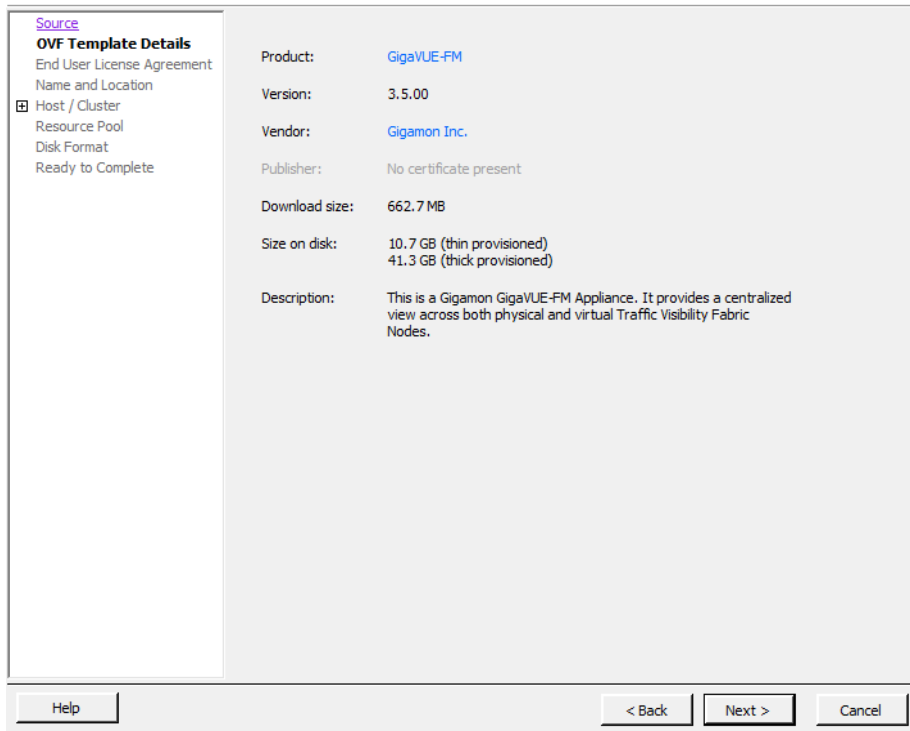


Figure 2-4: vSphere Client: OVF Template Details

5. Review the EULA for the OVA file, and then click **Accept**, and then **Next**.
6. Select the name of the GigaVUE-FM instance and the host to which to deploy it.
 - a. When the **Name and Location** page opens, enter a name for this GigaVUE-FM instance, select the location to deploy it to, and then click **Next**.

[Figure 2-5](#) shows an example of the **Name and Location** page, where the specified name is FM and the specified location is DC-2/discovered virtual machine.

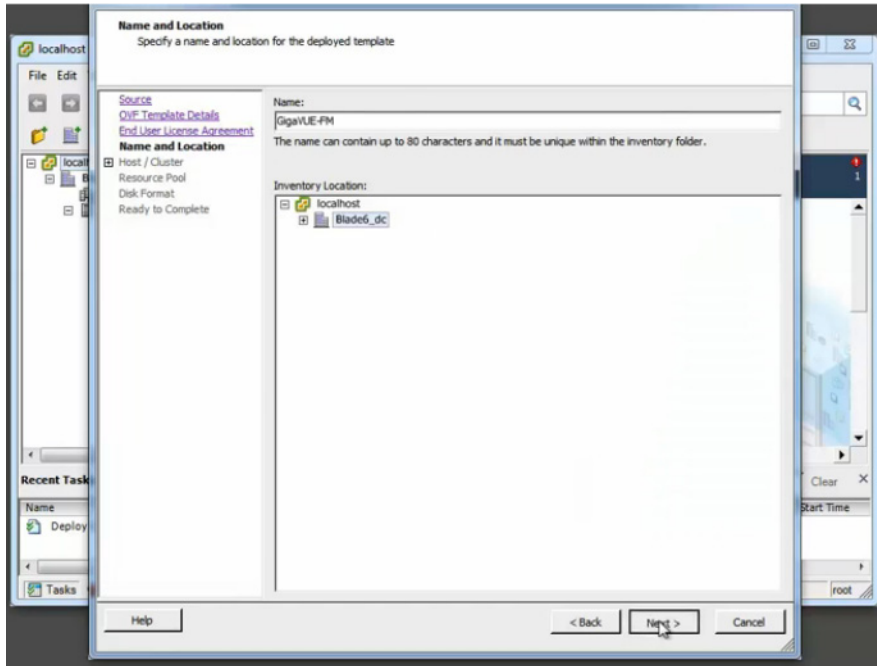


Figure 2-5: vSphere Client: Enter Location for OVA File on ESXi Server

- b. Select the host to which you wish to deploy this GigaVUE-FM instance.

NOTE: If you selected a Data Center rather than an ESXi host in [Step 2](#), you are prompted to select a host now.

- c. Click **Next**.

The OVF Wizard performs a validation to ensure that the selected host has all the resources required for this GigaVUE-FM deployment. and presents the **Storage** page.

7. Select the storage location for the virtual machine files by doing the following:
 - a. After the **Storage** page opens, choose the datastore where the virtual machine's files will be stored.
 - b. Click **Next**.

[Figure 2-6](#) shows an example of the Storage page with the datastore selected.

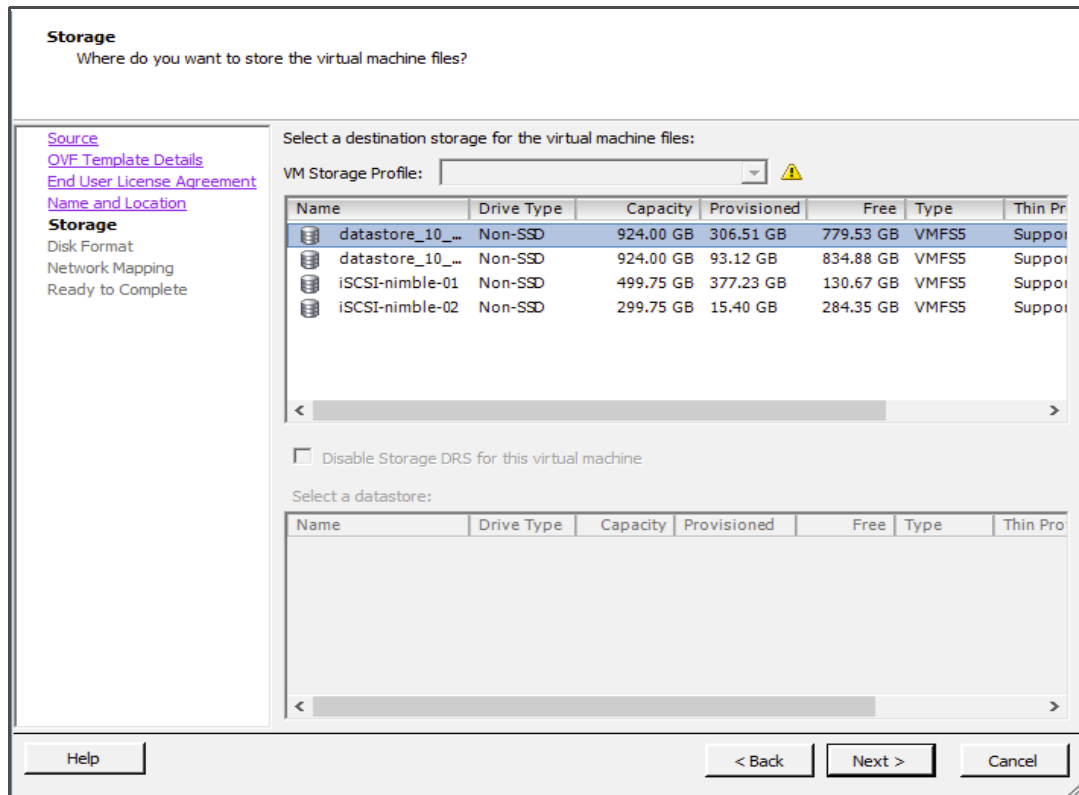


Figure 2-6: vSphere Client: Storage Information Verification

8. Set the disk format by doing the following:

- a. After **Disk Format** page opens, select **Thick Provisioning** as the format for the virtual disks and provisioning.

NOTE: You *must* deploy FM using **Thick Provisioning**. Any other choice results in FM not working correctly.

- b. Click **Next**.

Figure 2-7 shows an example of the Disk Format page with Thick Provisioning selected.

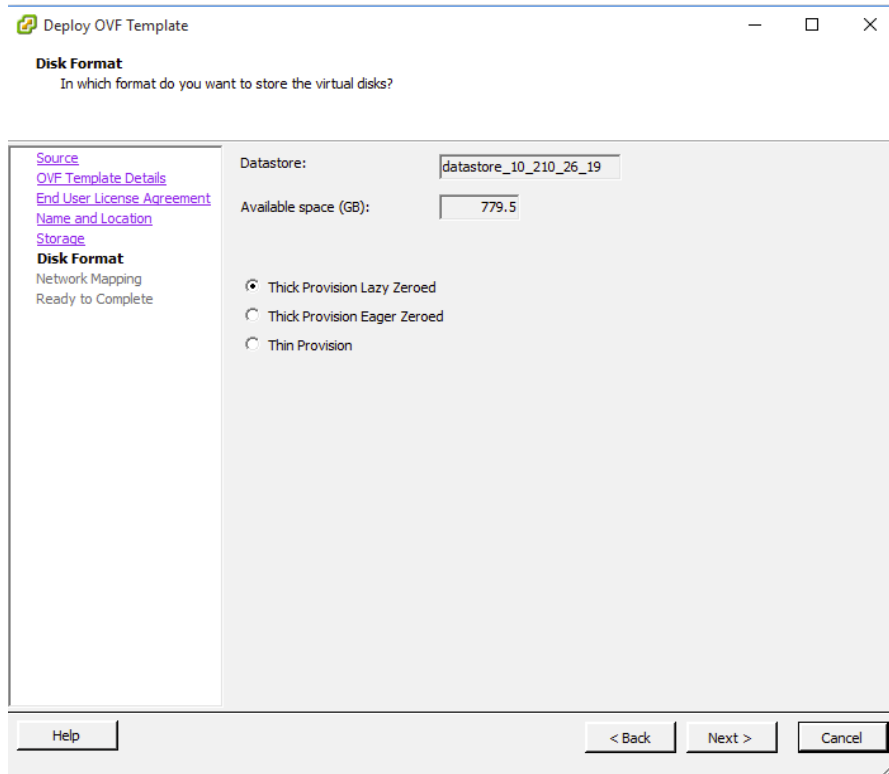


Figure 2-7: vSphere Client: Select Datastore

9. After the **Network Mapping** page opens, set network mapping by doing either of the following, depending on how your are deploying, and then click **Next**:
 - **If you are not deploying on a standalone ESXi host**, the **Network Mapping** displays under **Source Networks**. Use the drop-down lists to assign the correct **Destination Network** to the source network.
 - **If you are deploying GigaVUE-FM on a standalone ESXi host**, the network mapping is set automatically by assigning the destination network to the VM Network. In case of multiple port groups, you need to manually assign the destination network to the VM Network.

Figure 2-8 shows an example of the Network Mapping page.

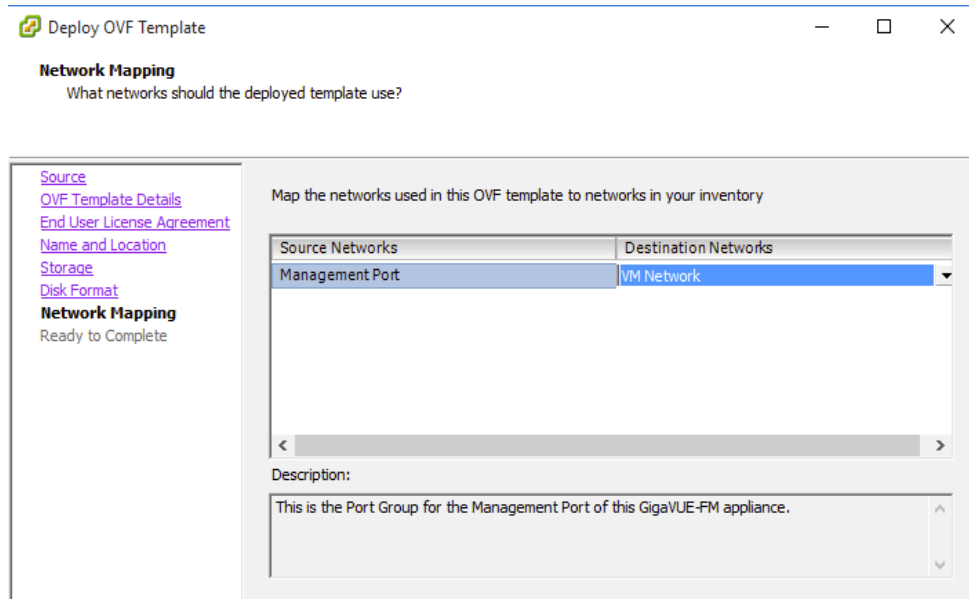


Figure 2-8: vSphere Client: Network Mapping Menu

10. In the **Properties** page, enter the hostname of the GigaVUE-FM instance and set the admin password. The admin password must be a minimum of 8 characters and a maximum of 30 characters. The characters must include at least:

- One numerical character
- One upper case character
- One lower case character
- One special character

NOTE: Keep in mind that *admin123!* is not an acceptable password. Empty passwords will also not be accepted.

If the password does not meet the complexity requirements:

- The system does not display any error message.
- The parameters configured above are not passed on to the GigaVUE-FM except the host name parameter.
- The static IP addresses that were configured originally will be unavailable after GigaVUE-FM is deployed.

If the password has not been accepted, you must login to the console with the admin/admin123A! credentials after deployment and configure the devices using the jump-start wizard (which is automatically invoked).

11. Configure the IP networking information and click **Next**.

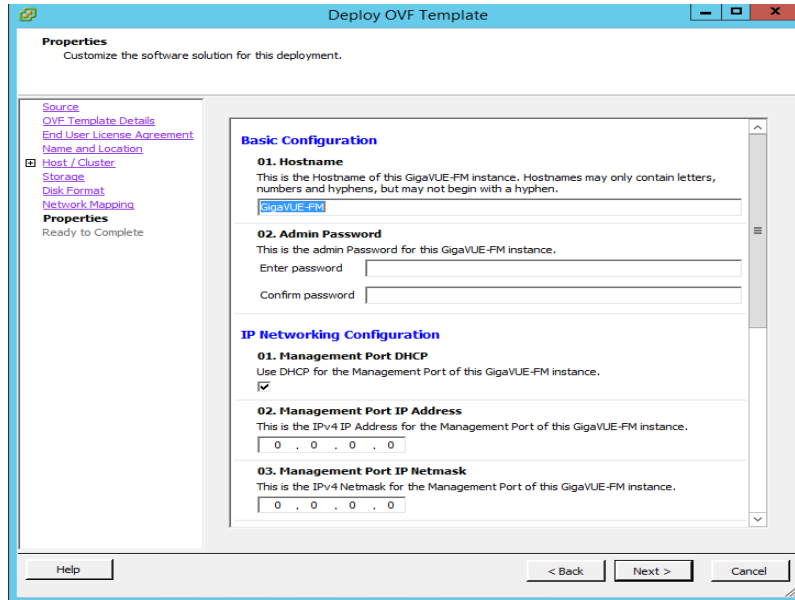


Figure 2-9: vSphere Client: Properties Page

12. After the **Ready to Complete** page opens, do the following:

- a. Verify that all of the settings are correct.
- b. (Optional) Select **Power on after deployment**.

NOTE: Do not select **Power on after deployment** if you want to change the default configuration of GigaVUE-FM. The configuration changes could be as follows—adding vCPUs, increasing the memory size, or adding another Network Interface Card. For more information on these configurations, refer to [Perform Initial Configuration on page 20](#).

- c. Click **Finish**.

Figure 2-10 shows an example of the Ready to Complete page.

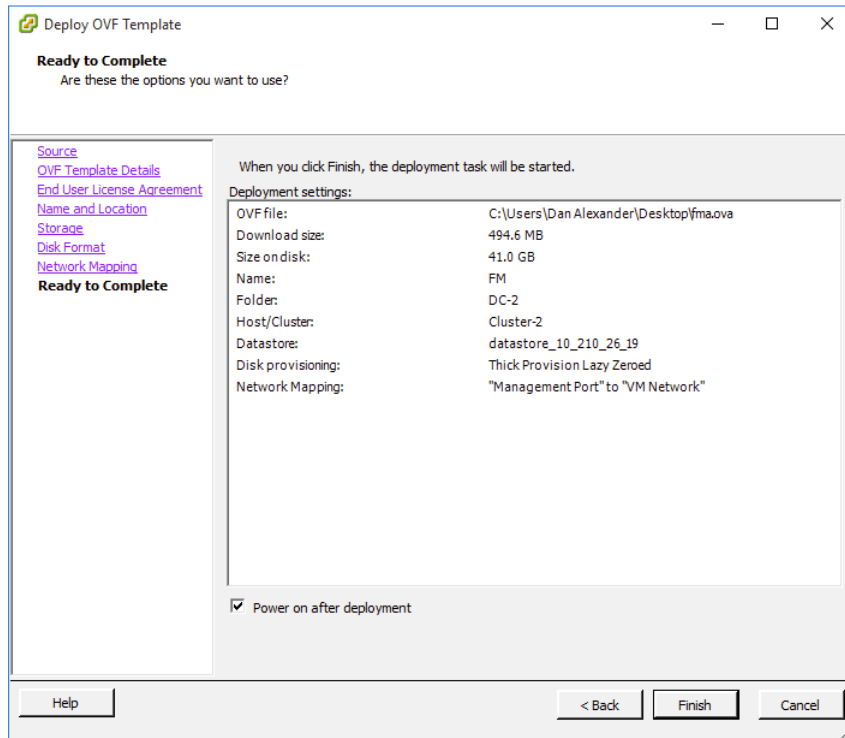


Figure 2-10: vSphere Client: Final Verification before Installing

After clicking Finish, a dialog opens (refer to Figure 2-11), showing the progress of the deployment operation. When the operation completes, you have successfully deployed a GigaVUE-FM instance.

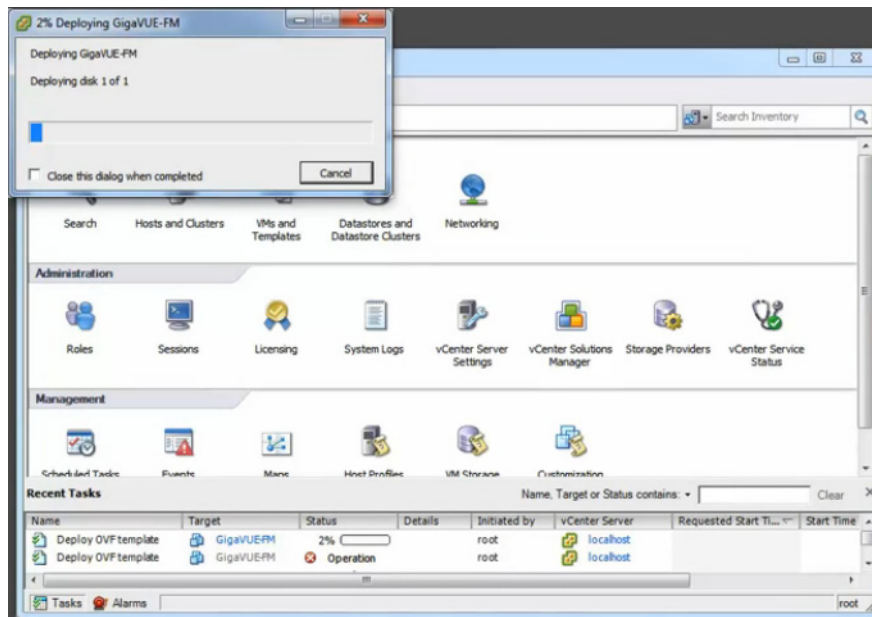


Figure 2-11: vSphere Client: Dialog Showing the Installation Progress

Important: Clear the browser cache before logging in to GigaVUE-FM!

Redeploy GigaVUE-FM Instance (with VMs Already Deployed)

If there is a need to remove an existing instance of GigaVUE-FM and reinstall it, delete all the virtual centers configured in the Virtual > Management > Virtual Center tab prior to deleting the GigaVUE-FM. To re-install GigaVUE-FM, refer to the [Install New GigaVUE-FM on VMware ESXi](#) or [Install GigaVUE-FM for Microsoft Hyper-V](#).

By deleting the virtual centers, you will lose all the GigaVUE-VM nodes and vMaps configured on those virtual centers and they will need to be recreated.

Initial GigaVUE-FM Configuration

After you have deployed a new GigaVUE-FM instance, you need to perform an initial configuration before you can start using GigaVUE-FM. This procedure only needs to be performed once for each GigaVUE-FM instance deployed.

NOTE: Use Care when Shutting Down or Rebooting a GigaVUE-FM. **Never** directly Power-Off the virtual machine. In VMware ESXi environment when using vSphere client, ALWAYS use **Shut Down Guest OS** or **Restart Guest** functions from VMware. Access is available from either the FILE menu or from the appropriate buttons on the GigaVUE-FM console. Failure to follow these steps may lead to database corruption issues.

Use Fault Tolerance for GigaVUE-FM Deployments (VMware ESXi only)

Gigamon recommends that you enable the VMware Fault Tolerance feature for the GigaVUE-FM virtual machine, providing redundancy in the case of a failure. Enabling the VMware Fault Tolerance feature provides a “hot” GigaVUE-FM virtual machine instance on another ESXi host in the cluster. If the ESXi host with the primary GigaVUE-FM instance goes down, you can take advantage of the Fault Tolerance feature to continue GigaVUE-FM operations.

When in Fault Tolerance mode, the MAC address and the UUID for both the primary GigaVUE-FM and the “hot” GigaVUE-FM virtual machine instance remains the same, therefore there is no need to update the existing licenses for GigaVUE-FM or GigaVUE-VM that are installed on the primary.

Both instances of the GigaVUE-FM implement VMware vLockstep technology to keep in virtual lockstep with each other. Any events are executed on the primary and then transmitted over a Gigabit Ethernet network to the other instance. Both instances access a common disk and appear as a single instance since they share the MAC address and UUID.

NOTE: Refer to the VMware Fault Tolerance documentation for deployment requirements and instructions.

Depending on the host configurations, there may be a need to shutdown GigaVUE-FM (primary) to enable the Fault Tolerance mode.

Perform Initial Configuration

Before powering on GigaVUE-FM, you can optionally perform the following:

- [Add Additional vNIC on page 20](#)
- [Increase the Memory on page 22](#)
- [Add vCPUs on page 23](#)

Add Additional vNIC

Gigamon allows you to configure GigaVUE-FM with two network interfaces—eth0 and eth1. The network interface eth0 can be configured to connect to a network used to manage Gigamon devices. The other network interface eth1 can be configured to connect to a network hosting different servers like SMTP server, Archive server, and so on.

To add an additional vNIC:

1. Right-click the GigaVUE-FM instance and select **Edit Settings...** Refer to [Figure 2-12](#).

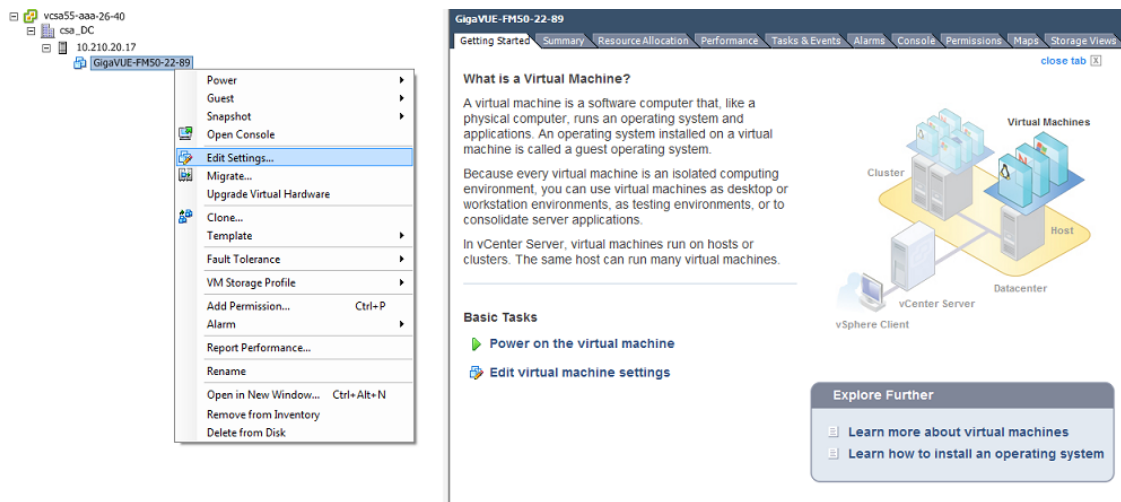


Figure 2-12: vSphere Client: Edit Settings

2. In the Hardware tab, click **Add**.

3. In the Add Hardware dialog box, select **Ethernet Adapter** and then click **Next**. Refer to [Figure 2-13](#).

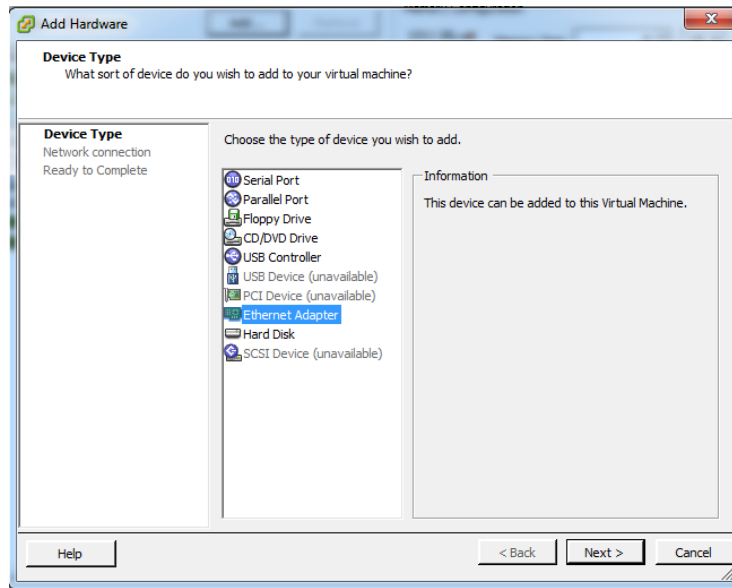


Figure 2-13: vSphere Client: Selecting Ethernet Adapter

4. In the **Adapter Type** drop-down list, select an appropriate adapter type. Refer to [Figure 2-14](#).

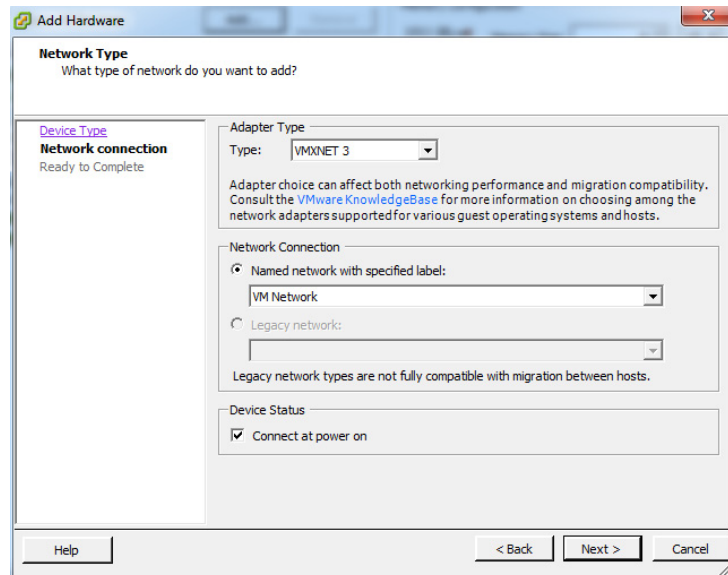


Figure 2-14: vSphere Client: Selecting Device Type

5. In the **Named network with specified label** drop-down list, select an appropriate network and click **Next**.

The Network adapter 2 is added to GigaVUE-FM.

Increase the Memory

Based on the requirement, you can increase the memory of the GigaVUE-FM instance.

To increase the memory:

1. Right-click the GigaVUE-FM instance and select **Edit Settings...** Refer to [Figure 2-15](#).

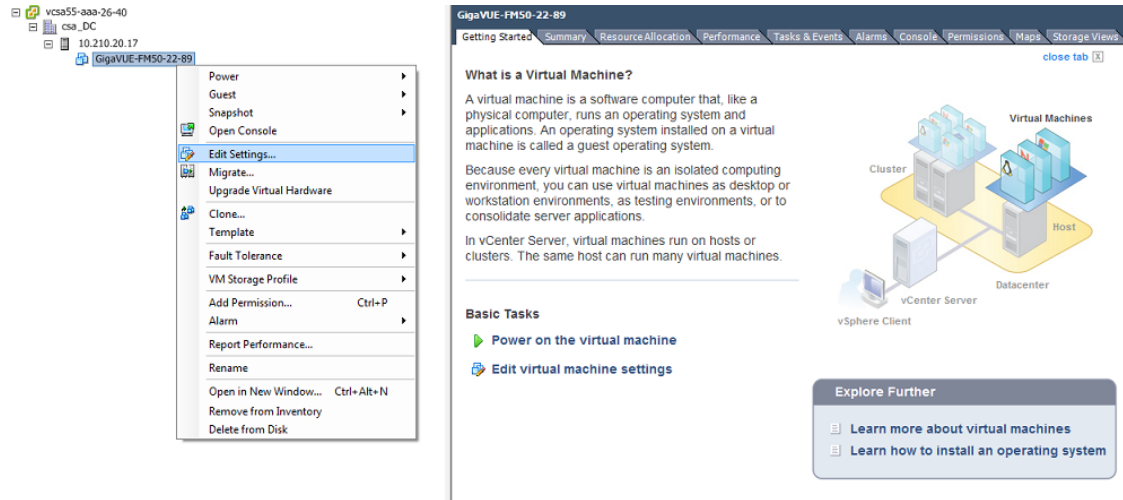


Figure 2-15: vSphere Client: Edit Settings

2. In the Hardware tab, select **Memory**.
3. In Memory Configuration, increase the size of the memory as per your requirement. Refer to the recommended size for your guest OS in the dialog box. Refer to [Figure 2-16](#).

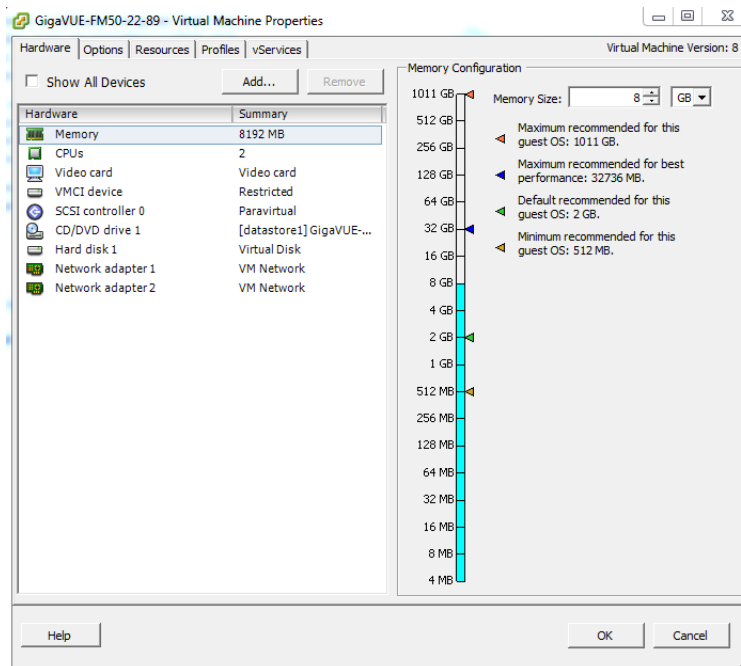


Figure 2-16: vSphere Client: Increasing Memory

4. Click **OK**.

Add vCPUs

Based on the requirement, you can add additional vCPUs to the GigaVUE-FM instance.

1. Right-click the GigaVUE-FM instance and select **Edit Settings...**
2. In the Hardware tab, select **CPUs**. Refer to [Figure 2-17](#).

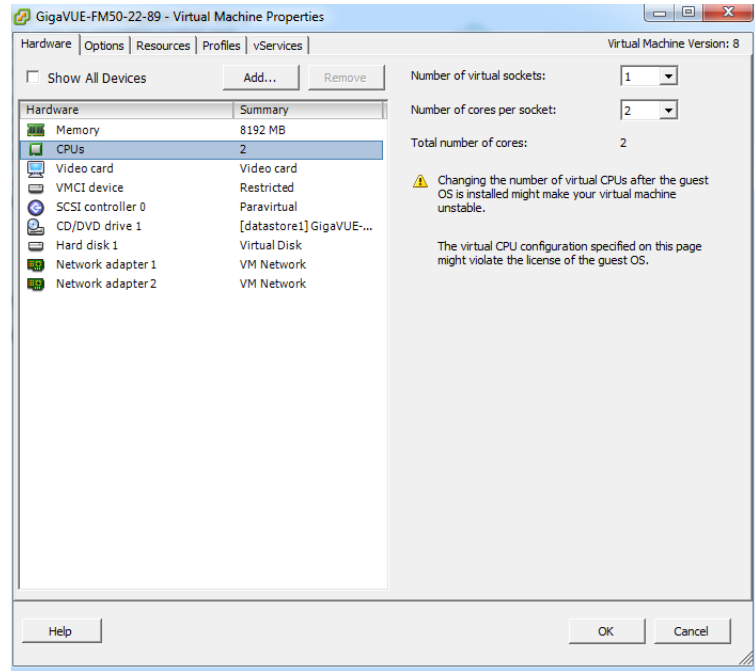


Figure 2-17: vSphere Client: Adding vCPUs

3. In the **Number of virtual sockets** field, enter the appropriate number of sockets.
4. In the **Number of cores per socket** field, enter the appropriate number of cores per socket.
5. Click **OK**.

Following are the steps to perform the initial configuration of GigaVUE-FM after installing on VMware ESXi:

1. Log in to vCenter in the vSphere Client.
2. Ensure that the UTC time for GigaVUE-FM is configured correctly. Refer to the vSphere documentation for instructions on how to set the time.
3. If you checked the **Power on after deployment** box at the end of the GigaVUE-FM deployment in the previous procedure, then the GigaVUE-FM instance starts automatically in vSphere Client.

If you did not check the box, you can power GigaVUE-FM on now by right-clicking the GigaVUE-FM instance (refer to [Figure 2-18](#)) in the vSphere Client by selecting **Power**, and then **Power On**.

A GigaVUE-FM console displays a login prompt.

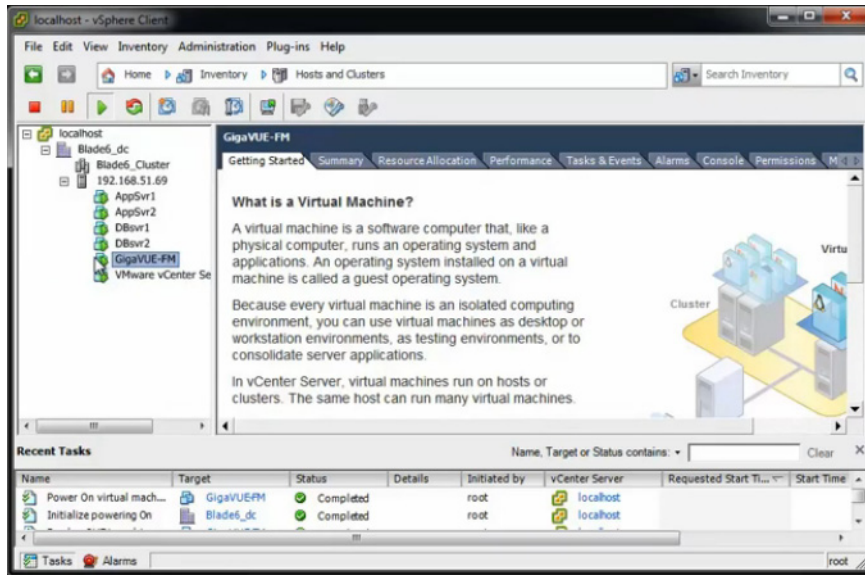


Figure 2-18: GigaVUE-FM in vSphere Client

4. Log in as **admin** with password **admin123A!**

For a new installation of GigaVUE-FM, a password is required.

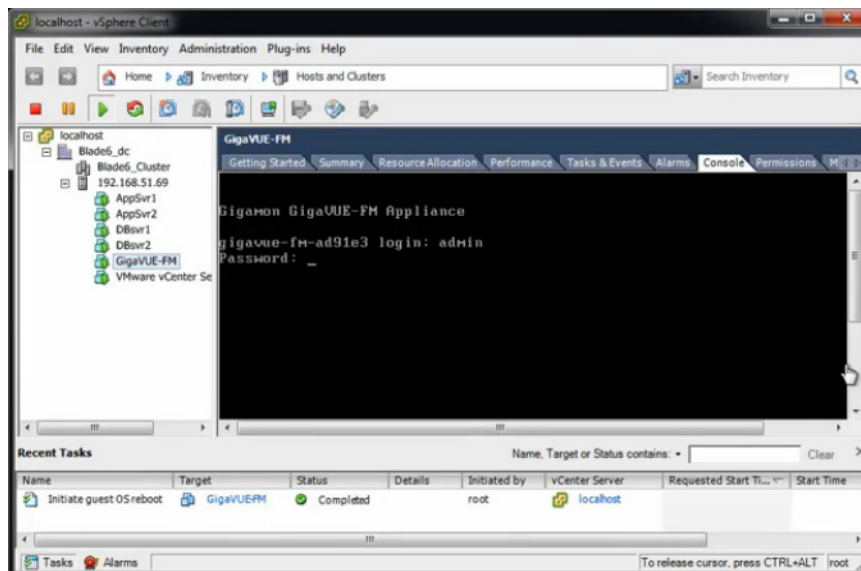


Figure 2-19: Jump Start Configuration Starts Automatically

5. The jump start configuration for GigaVUE-FM starts automatically.

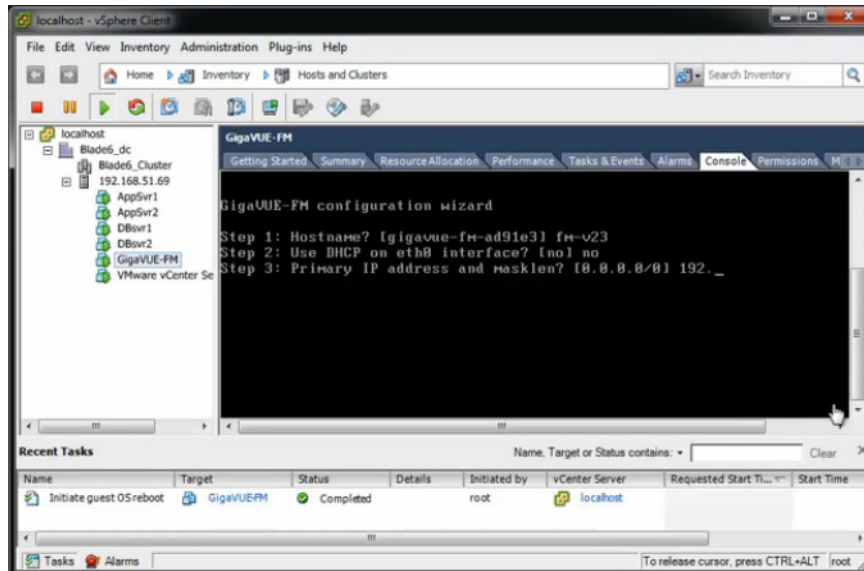


Figure 2-20: Jumpstart Wizard for GigaVUE-FM

6. Provide a unique hostname for GigaVUE-FM. Note that the hostname may contain letters, numbers, periods (.), and hyphens (-), but may not begin with a hyphen. No other special characters are permitted. The hostname will display as part of the command line prompt after configuration jump-start completes.
7. To enable DHCP on eth0 interface, type yes and press enter.
8. Enter the primary IP address and the mask length, and then press enter.
9. Enter the default gateway and press enter.
10. Enter the primary DNS server address and press enter. Refer to [Figure 2-21](#).

```

Step 1: Hostname? [FM50-22-89]
Step 2: Use DHCP on eth0 interface? [no]
Step 3: Primary IP address and masklen? [10.210.22.89/21]
Step 4: Default gateway? [10.210.16.11]
Step 5: Primary DNS server? [10.10.1.20]
Step 6: Domain name? [gigamon.com]
Step 7: Use DHCP on eth1 interface? [no]
Step 8: eth1 IP address and masklen? [10.210.22.90/21]
Step 9: Admin password (Enter to leave unchanged)?
Step 10: Additional Domain Name Server IP addresses? [10.10.1.21]
Step 11: Additional DNS Domains? [fmqa.com]
Step 12: Enable NTP? [yes]
Step 13: NTP Server IP address?
Step 14: NTP Server version?

```

Figure 2-21: Jump-Start Wizard for Network Interface Configuration

11. (optional) To enable DHCP on eth1 interface, type yes and press enter. Follow steps 7 to 10 to enable DHCP on eth1 interface.
12. Provide an appropriate password for your environment. (Type a password and press **Enter**, or just press **Enter** to leave the password unchanged.)
NOTE: GigaVUE-FM requires a password.
13. For configuration options:

- a. **Additional Domain Name Server IP Addresses?** - the address of any additional name servers required. These must be provided as a set of IP addresses with spaces as shown in the [Figure 2-22](#).
- b. **Additional DNS Domains?** - Multiple DNS domains can be defined in the jump start configuration with spaces in between as shown in [Figure 2-22](#).
- c. **Enable NTP? [no]** - the default is set to “yes”, the following options are available:
 - NTP Server IP Address? - enter the NTP server address
 - NTP Server Version? - enter the NTP version number of the NTP server

```

nnfm03.fvmvqa.com > en
nnfm03.fvmvqa.com # configure t
nnfm03.fvmvqa.com (config) # configuration jump-start

GigaVUE-FM configuration wizard

Step 1: Hostname? [nnfm03.fvmvqa.com]
Step 2: Use DHCP on eth0 interface? [no]
Step 3: Primary IP address and masklen? [10.210.26.3/20]
Step 4: Default gateway? [10.210.16.1]
Step 5: Primary DNS server? [10.210.208.66]
Step 6: Domain name? [fvmvqa.com]
Step 7: Admin password (Enter to leave unchanged)?
Step 8: Additional Domain Name Server IP addresses? [10.210.208.66 10.10.1.20]
Step 9: Additional DNS Domains? [fvmvqa.com gigamon.com]
Step 10: Enable NTP? [no]

You have entered the following information:

 1. Hostname: nnfm03.fvmvqa.com
 2. Use DHCP on eth0 interface: no
 3. Primary IP address and masklen: 10.210.26.3/20
 4. Default gateway: 10.210.16.1
 5. Primary DNS server: 10.210.208.66
 6. Domain name: fvmvqa.com
 7. Admin password (Enter to leave unchanged): (unchanged)
 8. Additional Domain Name Server IP addresses: 10.210.208.66 10.10.1.20
 9. Additional DNS Domains: fvmvqa.com gigamon.com
10. Enable NTP: no

To change an answer, enter the step number to return to.
Otherwise hit <enter> to save changes and exit.

Choice:
Configuration changes saved.

```

Figure 2-22: Jumpstart Wizard for Additional Domain Name Server IP Addresses

14. The console displays the summary of the chosen selections with instructions on how to make changes, as needed.

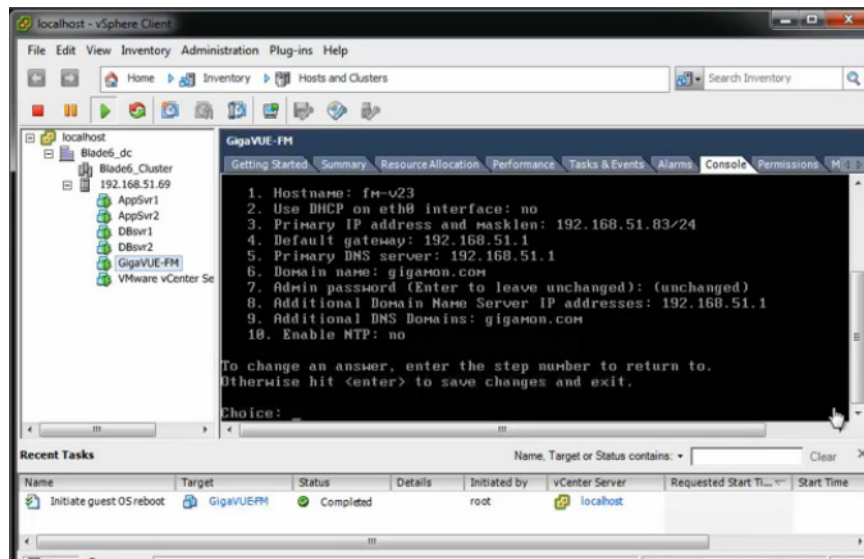


Figure 2-23: Summary of the Selections from Jumpstart Menu

15. Press **Enter** to save your choices and exit the wizard.

The initial configuration is saved and GigaVUE-FM is up and running. GigaVUE-FM is now accessible using a web browser, using IP address specified in the jumpstart steps. Also the first time GigaVUE-FM starts, a EULA is presented. Accept the EULA to continue and see a dashboard similar to the one shown in [Figure 2-24](#).

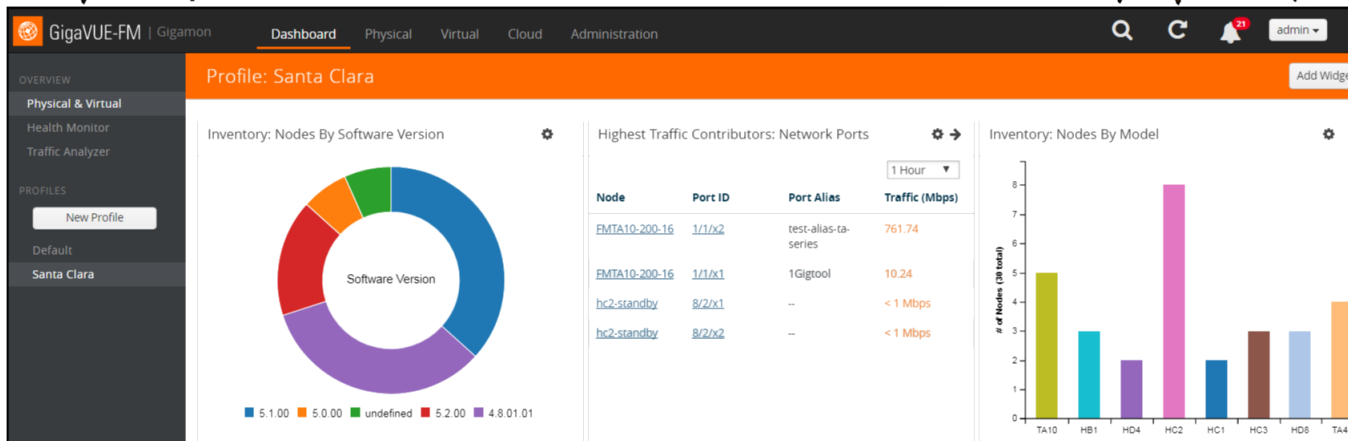


Figure 2-24: Instance of GigaVUE-FM from Web Client

Configure SSH Settings

SSH access is enabled by default on new GigaVUE-FM and GigaVUE-VM deployments. By default, the SSH server runs on port 22.

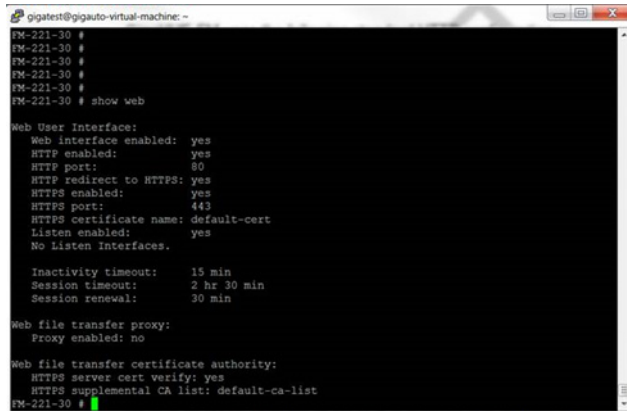
GigaVUE-FM can be configured to use a custom port for its SSH server with the **ssh server ports <port number>** command followed by a **write memory** command to save the configuration. For example, the following commands change the SSH port number to 2222.

```
(config) # ssh server ports 2222
(config) # write memory
(config) #
```

After making the settings shown above in the GigaVUE-FM CLI, you can connect an SSH session to GigaVUE-FM using the new port number from a web client.

HTTP/HTTPS Ports

GigaVUE-FM uses the following standard HTTP configuration shown in [Figure 2-25](#)



```
gigatest@gigauto-virtual-machine: ~
FM-221-30 #
FM-221-30 #
FM-221-30 #
FM-221-30 #
FM-221-30 # show web

Web User Interface:
Web interface enabled: yes
HTTP enabled: yes
HTTP port: 80
HTTP redirect to HTTPS: yes
HTTPS enabled: yes
HTTPS port: 443
HTTPS certificate name: default-cert
Listen enabled: yes
No Listen Interfaces.

Inactivity timeout: 15 min
Session timeout: 2 hr 30 min
Session renewal: 30 min

Web file transfer proxy:
Proxy enabled: no

Web file transfer certificate authority:
HTTPS server cert verify: yes
HTTPS supplemental CA list: default-ca-list
FM-221-30 #
```

Figure 2-25: GigaVUE-FM CLI Screen to Configure Web Client

HTTPS port can be changed for GigaVUE-FM but the HTTP port is hard-coded to 80. As long as **HTTP redirect to HTTPS** is enabled (the default), connections to the fixed HTTP port of 80 will redirect to whatever the configured HTTPS port is.

Install Third-Party Certificate

Use the following procedure to install a third-party certificate on GigaVUE-FM:

1. Generate a certificate and a private key file in pem format. Use the following command on Linux or a Linux app (such as Cygwin) for generating the files:
`openssl req -x509 -nodes -days 365 -newkey rsa:2048 -keyout privatekey.pem -out certificate.pem`
2. Copy the contents of the certificate file. You will use the contents in [Step 5](#).

NOTE: When you copy the contents, do not delete the EOL characters at the start of each line.

3. Log in to the GigaVUE-FM CLI.
4. Enable configuration mode by entering the following commands:
`> en`
`# conf t`
5. Use the **crypto certificate** command to add a new certificate. In the following example, the certificate is named “my-cert” and the contents of the public certificate pem file is copied inside the quotes.
`(config) # crypto certificate name my-cert public-cert pem “<contents-of-public-certificate-pem>”`
6. Copy the contents of the private key file. You will use the contents in [Step 7](#).
7. Use the following command to add the private key, which is “my-cert” in this example. The contents of the private key pem file is copied between the quotes.
`(config) # crypto certificate name my-cert private-key pem “<contents-of-private-key-pem-file>”`
The private key file and certificate are installed and ready to use.
8. Set the certificate (“my-cert” in this example) to be the default self-signed certificate by using the following command:

```
(config) # crypto certificate default-cert name my-cert
```

The system will now start using the newly installed certificate.

Install Third-Party Certificate on GigaVUE-FM in AWS

Use the following procedure to install a third-party certificate on GigaVUE-FM that is hosted in AWS:

1. Log in to GigaVUE-FM.
2. Execute the following steps from the shell prompt as a root user (`sudo`):
 - Replace `SSLCertificateFile`: `/etc/pki/tls/certs/localhost.crt`
 - Replace `SSLCertificateKeyFile`: `/etc/pki/tls/private/localhost.key`
 - Provide access to certificate and key files: `chmod 777`
 - Restart apache as root `systemctl restart https`.

3 Install GigaVUE-FM on MS Hyper-V

This section describes how to install and configure GigaVUE-FM in a Microsoft Hyper-V environment. It consists of the following main sections:

- [System Requirements on page 31](#) describes the hardware requirements.
- [Install GigaVUE-FM for Microsoft Hyper-V on page 33](#) describes the steps to install and deploy GigaVUE-FM.
- [Initial GigaVUE-FM Configuration on page 43](#) describes the steps to start GigaVUE-FM instance and configure it.
- [Configure SSH Settings on page 44](#) describes the SSH settings
- [HTTP/HTTPS Ports on page 45](#) describes how to setup the HTTP client

System Requirements

This section describes the hardware and virtual computing requirements for GigaVUE-FM. Before installing GigaVUE-FM, ensure that a supported version of Windows Server is installed on hardware that meets minimum requirements (see [Windows Server Hardware Requirements on page 32](#) for hardware requirements).

Ensure that the GigaVUE-FM time is set correctly to ensure accuracy of the trending data that is captured.

The Hyper-V implementations provided by the following Windows Server versions have been tested and found to operate acceptably with GigaVUE-FM:

- Windows Server 2012 R2 and later

Windows Server Hardware Requirements

The following table describes the minimum requirements for the hardware on which Microsoft Hyper-V runs GigaVUE-FM.

Minimum Hardware Requirements	
Hypervisor	Microsoft Hyper-V
CPU	One or more 64-bit x86 CPUs with virtualization assist (Intel-VT or AMD-V) enabled. Note: To run GigaVUE-FM, hardware support for virtualization must be enabled. Make sure that the BIOS option for virtualization support is not disabled. For more information, see your BIOS documentation
RAM	At least 8GB
Disk Space	At least 41GB shared (FC, iSCSI, NFS, or FCoE) or locally attached storage (PATA, SATA, SCSI)
Network	At least one 1Gb NIC

NOTE: Refer to the Microsoft documentation for information on enabling Hyper-V.

The following table lists the virtual computing resources that the Windows Server must provide for each GigaVUE-FM instance.

Minimum Virtual Computing Requirements	
Memory	Minimum 8GB memory
Virtual CPU	2 vCPU
Virtual Storage for Guest	41GB using Virtual IDE (the Hyper-V default)
Virtual Network Interfaces	1 vNIC using Hyper-V Virtualized NIC (the Hyper-V default)

Supported Browsers

GigaVUE-FM v3.5 has been tested on the following browsers:

Browser	Version
Mozilla Firefox™	• Version 47
Windows® Internet Explorer®	• Version 11
Apple® Safari®	• Version 9.1
Google® Chrome®	• Version 52
Microsoft Edge	• Version 38

Notes:

- Only the browsers that support TLS v1.2 can access GigaVUE-FM.

- DNS prefetch is a known limitation of Internet Explorer 11. If GigaVUE-FM is configured with DNS and you are using Internet Explorer 11, every new screen can be slowed significantly. If a direct IP address is used instead of a DNS name, the UI response is similar to other browsers. It is recommended that you use the GigaVUE-FM IP when using Internet Explorer 11 or use either a FireFox or Chrome browser instead.
- IE11 Compatibility view mode is not supported.

Install GigaVUE-FM for Microsoft Hyper-V

The GigaVUE-FM software package for Microsoft Hyper-V environments is distributed as an **ISO image** file. The following sections describes how to deploy a fresh installation of GigaVUE-FM on a Hyper-V host and perform its initial configuration:

- [Install GigaVUE-FM from an ISO Image File](#)
- [Initial GigaVUE-FM Configuration on page 43](#)

Install GigaVUE-FM from an ISO Image File

Use the Hyper-V Manager to install the GigaVUE-FM ISO image file.

NOTE: The ISO image file must be stored in a location that is accessible to the Hyper-V Manager.

To create the Virtual Machine for GigaVUE-FM in Microsoft Hyper-V:

1. Open Hyper-V Manager by clicking **Start > Administrative Tools > Hyper-V Manager**.
2. From the Actions pane, click **New > Virtual Machine**. Refer to [Figure 3-1](#).
The **New Virtual Machine Wizard** opens.

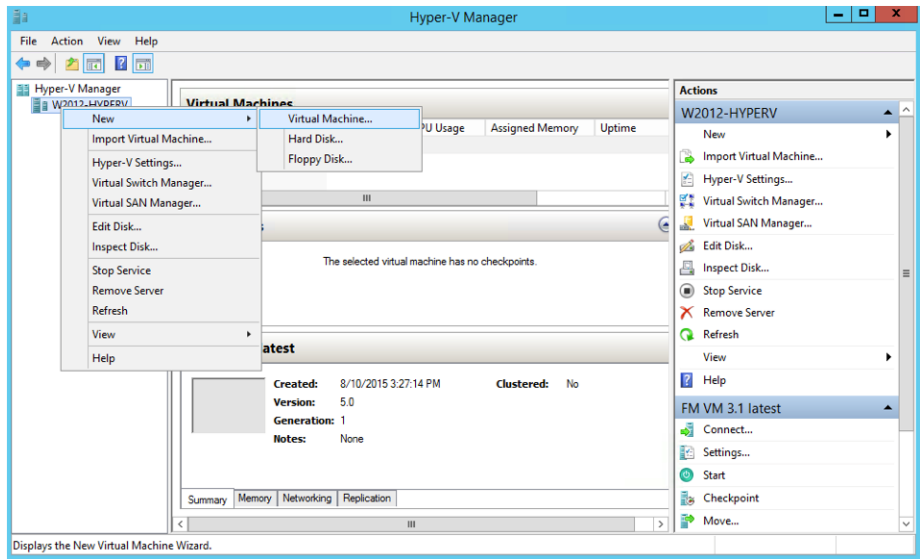


Figure 3-1: Opening the Virtual Machine Wizard

3. Read the notes on the Before You Begin screen (refer to [Figure 3-2](#)), and then click **Next** to continue.

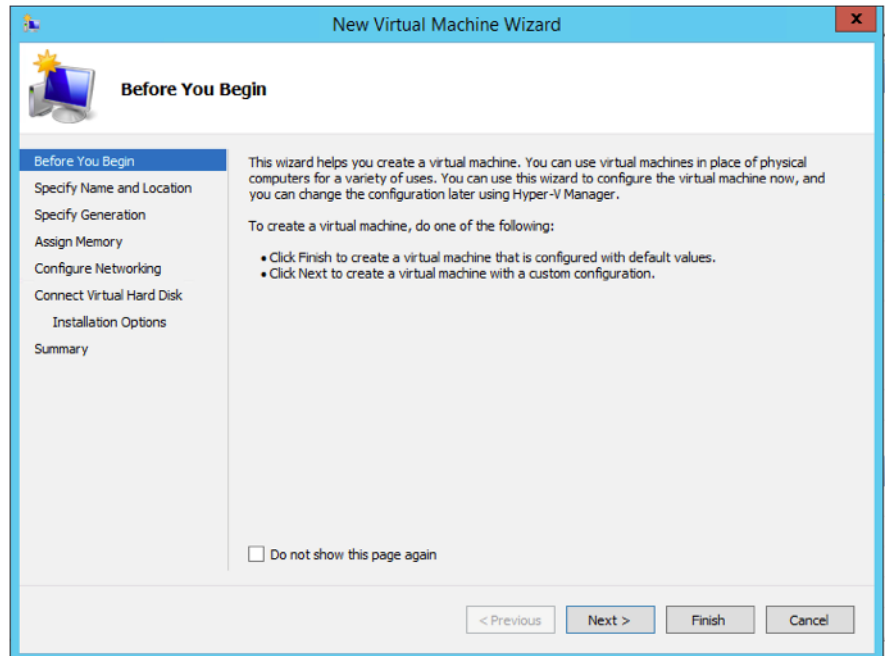


Figure 3-2: Before You Begin Screen

4. After the **Specify Name and Location** page of the **New Virtual Machine Wizard** opens, which is shown in [Figure 3-3](#), do the following:
 - a. Supply a descriptive name for the GigaVUE-FM virtual machine in the **Name** field.

By default, the virtual machine will be stored in the default configuration folder shown in the **Location** text box. You can change this default location by checking the **Store the virtual machine in a different location** checkbox and providing a custom path.

- b. Select **Next** to continue.

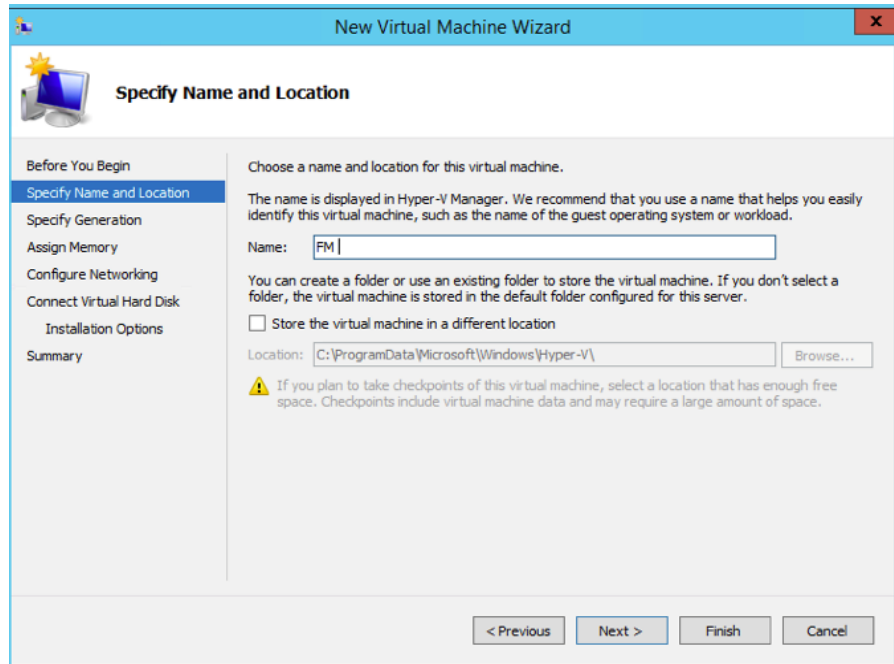


Figure 3-3: Name and Location Page

5. On the **Specify Generation**, select **Generation 1** as shown in Figure 3-4

It is important to select Generation 1 and not Generation 2. Selecting Generation 2 may lead to failure of the GigaVUE-FM installation process because the CD Drive is presented as an SCSI device and not IDE.

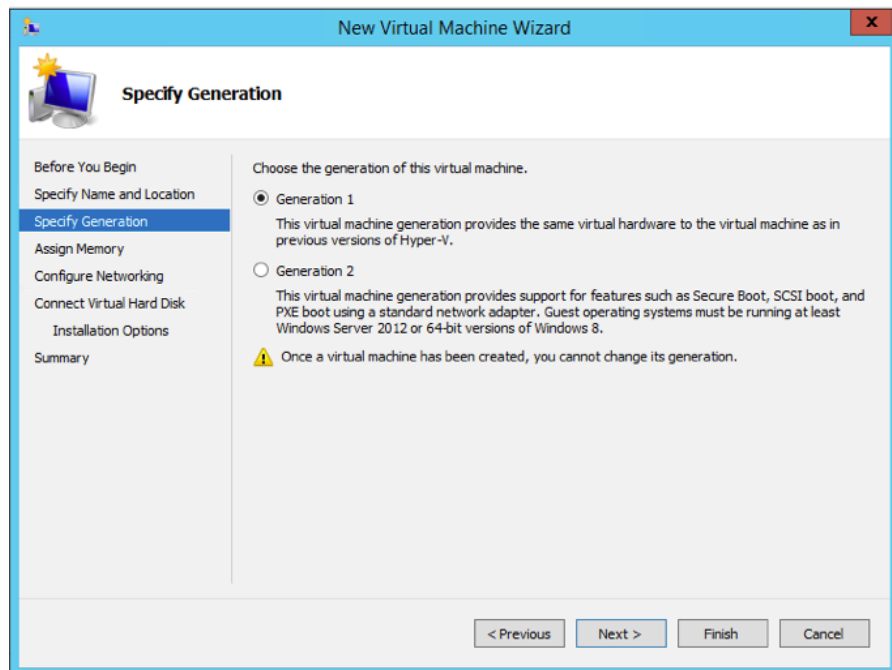


Figure 3-4: Specify Generation Page

6. Click **Next** to continue.

The **Assign Memory** page of the **New Virtual Machine Wizard** opens, which is shown in [Figure 3-5](#).

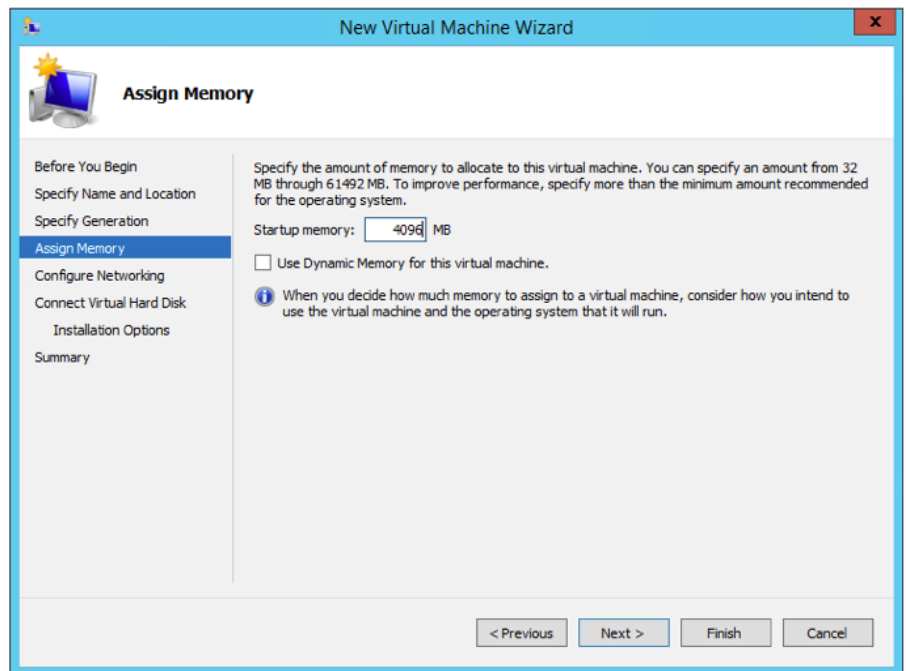


Figure 3-5: Assign Memory Page

7. Change the **Memory** assigned to this virtual machine to **4096 MB**, and then click **Next** to continue.

The **Configure Networking** page of the **New Virtual Machine Wizard** opens, which is shown in [Figure 3-6](#).

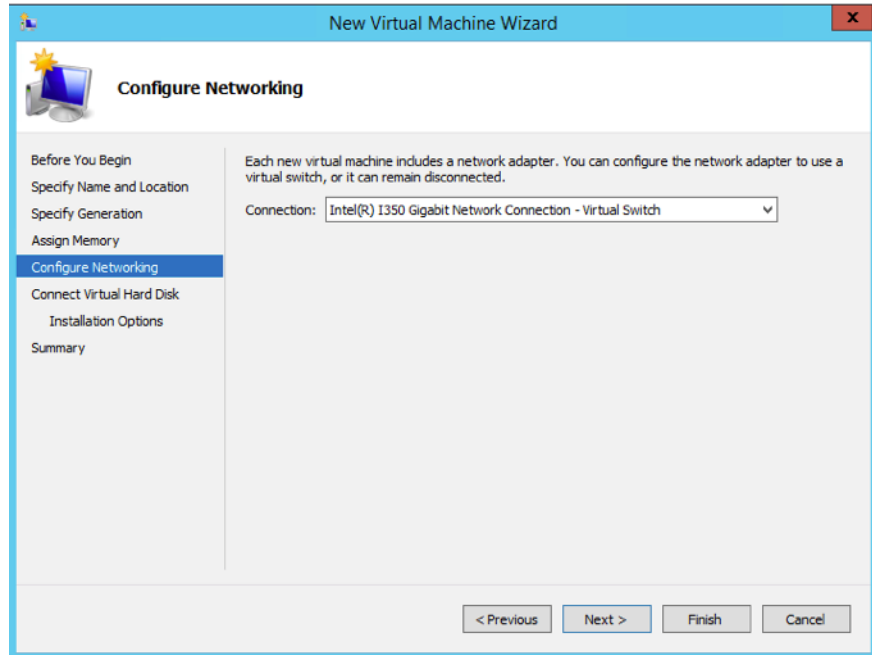


Figure 3-6: Configure Networking Page

8. Choose the virtual network to which GigaVUE-FM will connect from the drop-down list, and then click **Next** to continue.

The **Connect Virtual Hard Disk** page of the **New Virtual Machine Wizard** opens, which is shown in [Figure 3-7](#).

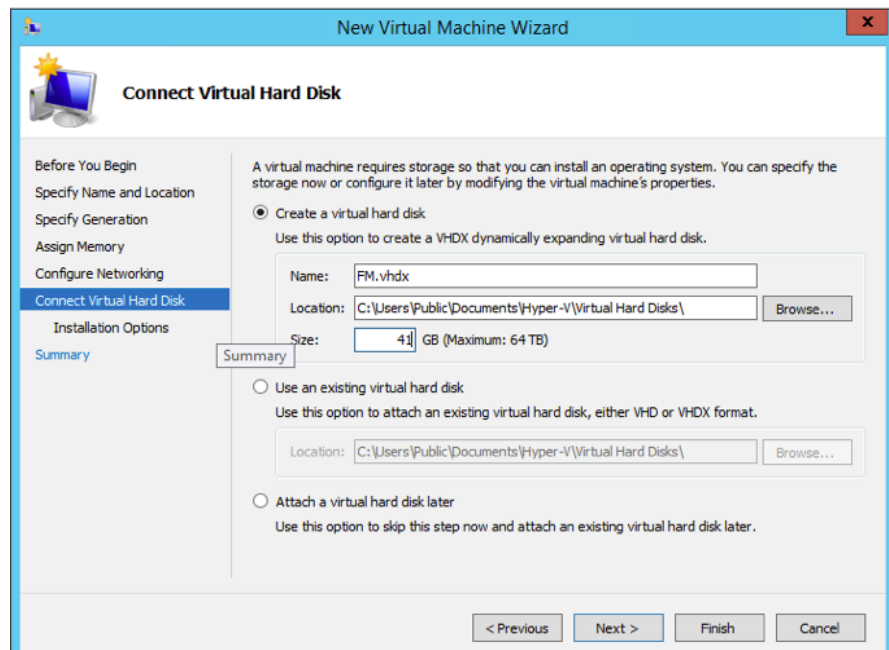


Figure 3-7: Connect Virtual Hard Disk Page

9. Select the **Create a virtual hard disk** option and set the **Size** to **41 GB**.

You can accept the default **Name** and **Location** or customize them according to your needs. When you have finished, click **Next** to continue.

The **Installation Options** page of the **New Virtual Machine Wizard** opens., which is shown in [Figure 3-8](#).

10. Use this dialog box to select the ISO image file for GigaVUE-FM. As shown in the figure [Figure 3-8](#), set the following options:
 - a. Select the option **Install an operating system from a boot CD/DVD-ROM**.
 - b. Set the **Media** option to **Image file (.iso)**.
 - c. Use the **Browse** button to navigate to the GigaVUE-FM ISO image file.

- d. Click **Next** to continue.

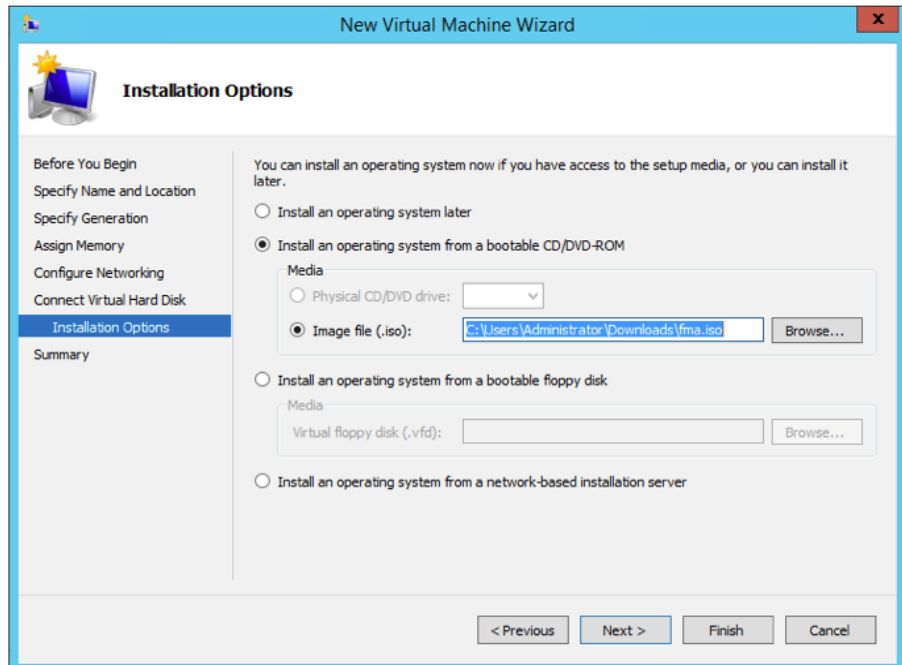


Figure 3-8: Install Options Page

After clicking **Next**, the summary page of the **New Virtual Machine Wizard** opens, showing the settings that you configured for the GigaVUE-FM virtual machine. An example is shown in [Figure 3-9](#).

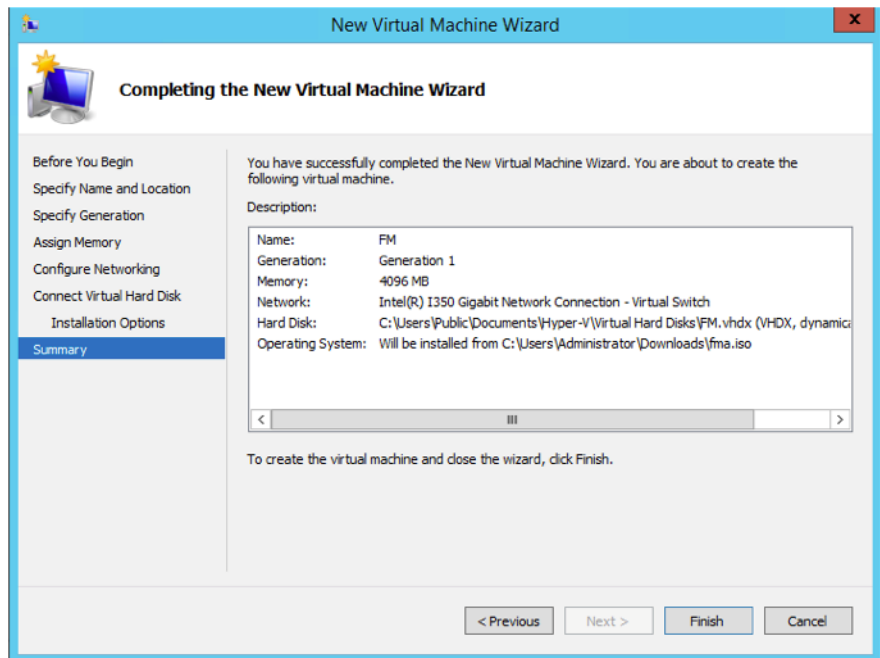


Figure 3-9: Summary Page

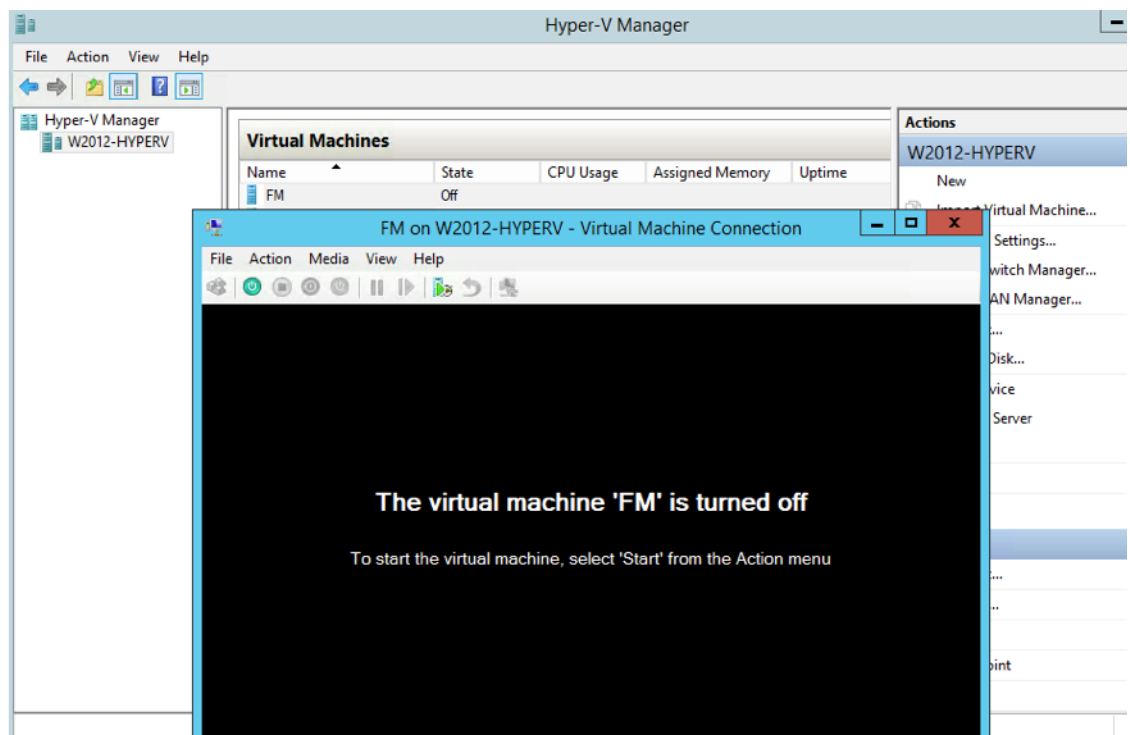
11. Click **Finish** to create the GigaVUE-FM virtual machine as configured. Alternatively, you can use the **Previous** button to go back and change settings.

The New Virtual Machine Wizard only creates the GigaVUE-FM virtual machine, returning you to the Hyper-V Manager when creation is complete. The new GigaVUE-FM virtual machine is listed in the **Action** pane by the name you supplied during installation. The rest of this procedure will take you through the steps of actually installing GigaVUE-FM.

Connect and Power On the GigaVUE-FM Virtual Machine

The next step is to connect to the GigaVUE-FM virtual machine from within Hyper-V Manager and start it. This begins the actual installation of the GigaVUE-FM Virtual Appliance from the connected ISO image file. Once GigaVUE-FM finishes installing from the ISO image file, you will then disconnect the ISO image file and restart the virtual machine.

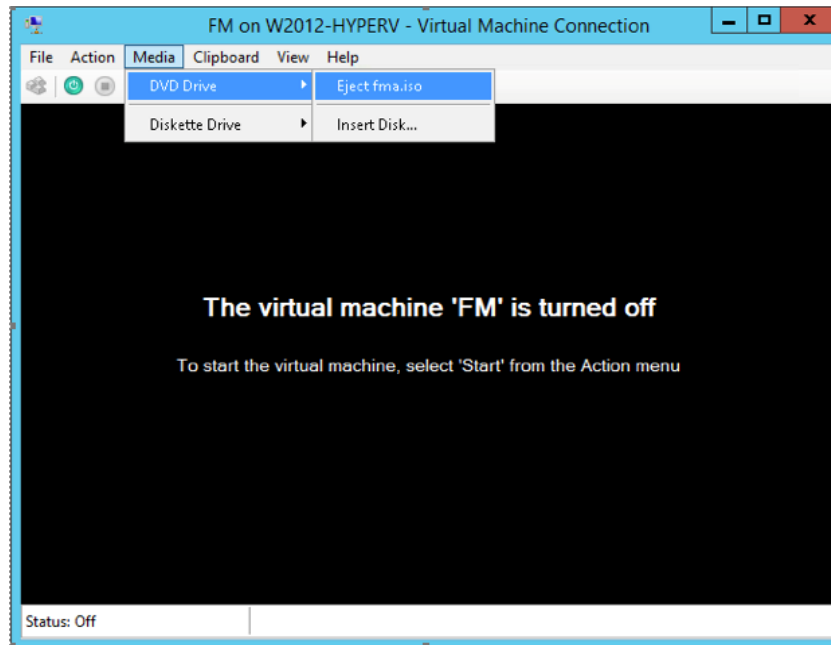
1. In Hyper-V Manager, locate the **Virtual Machines** entry in the results pane, right-click the GigaVUE-FM virtual machine, and click the **Connect** option.
2. The Virtual Machine Connection tool opens for the GigaVUE-FM virtual machine.



3. Select **Action > Start** to start the GigaVUE-FM virtual machine from the Virtual Machine Connection tool.

4. The GigaVUE-FM virtual machine powers on. You can monitor the progress of the system start in the Virtual Machine Connection tool.

The system power-on can take several minutes as GigaVUE-FM is installed from the ISO image file. Disconnect the media before Powering On as shown below:



Disconnect the ISO Image File

It is important to disconnect the ISO image file before you power on GigaVUE-FM again so you don't have to go through the image install process again. Disconnect the ISO image file as follows:

1. In Hyper-V Manager, locate the **Virtual Machines** entry in the results pane and select the GigaVUE-FM virtual machine.
2. In the **Actions** pane, click the **Settings** entry under the GigaVUE-FM virtual machine name.

A Settings dialog box for the GigaVUE-FM virtual machine appears.

3. Select the **DVD Drive** entry in the panel on the left of the Settings dialog box and change its setting from **Image file** to **None**, as shown in the figure below.
4. Click the **OK** button to apply the changes.

This concludes the installation procedure for GigaVUE-FM on Hyper-V. The next step is to power on the virtual machine and perform its initial configuration, as described in [Initial GigaVUE-FM Configuration on page 43](#).

IMPORTANT: Clear the browser cache before logging in to GigaVUE-FM!

Initial GigaVUE-FM Configuration

After you have deployed a new GigaVUE-FM instance, you need to perform an initial configuration before you can start using GigaVUE-FM. This procedure only needs to be performed once for each GigaVUE-FM instance deployed.

NOTE: Use Care When Shutting Down or Rebooting a GigaVUE-FM. **Never** directly Power-Off the virtual machine. For Microsoft Hyper-V environment, you cannot use any of the reset, or turn-off hooks. Using either of these may lead to corruption that will prevent proper GigaVUE-FM operation.

The best ways to **shutdown** a GigaVUE-FM on Hyper-V is to use either Shutdown or Ctrl+Alt+Del from the **Action** button on the virtual console.

To perform the initial configuration:

1. Open Hyper-V Manager by clicking **Start > Administrative Tools > Hyper-V Manager**.
2. Make sure you have already disconnected the ISO image file used to install GigaVUE-FM. Refer to [Disconnect the ISO Image File on page 42](#) for details.
3. Locate the **Virtual Machines** entry in the results pane, right-click the GigaVUE-FM virtual machine, and click the **Connect** option.

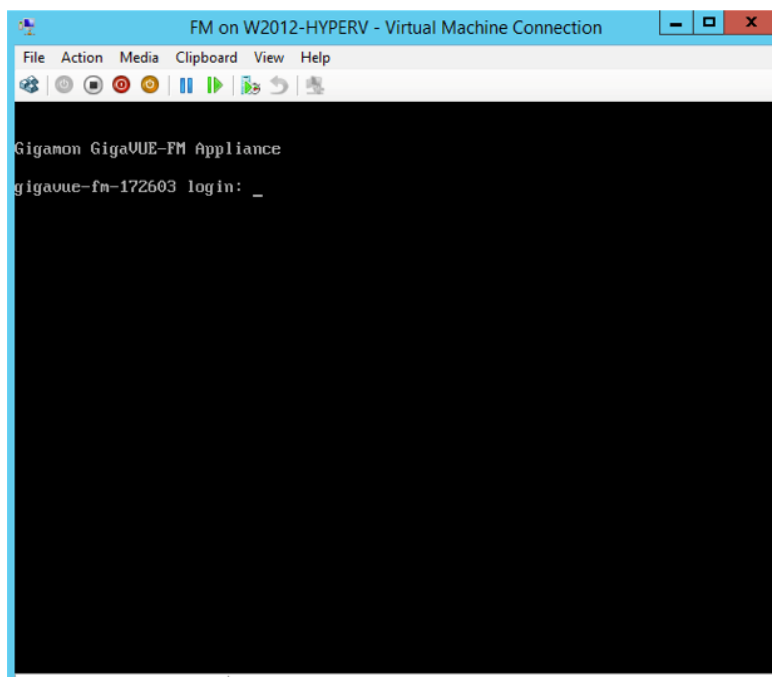
The Virtual Machine Connection tool opens for the GigaVUE-FM virtual machine.

4. Select **Action > Start** to start the GigaVUE-FM virtual machine from the Virtual Machine Connection tool.

The GigaVUE-FM virtual machine powers on and displays a login prompt.

5. Log in as **admin** with password **admin123A!**

The configuration wizard starts automatically, as shown in the following figure.



6. At this point, the wizard presented a series of steps for you to provide the initial configuration for GigaVUE-FM. These are the steps
 - a. Provide a unique hostname for GigaVUE-FM. Note that the hostname may contain letters, numbers, periods (.), and hyphens (-), but may not begin with a hyphen. No other special characters are permitted.
 - b. Decide whether to use DHCP for the management interface.
If you choose **no**, you will be prompted to provide the following:
 - **IPv4** address and **masklen**
 - **Default gateway**
 - **Primary DNS server**
 - **Domain name**If you choose yes, skip to [Step c](#)
 - c. If you choose Yes for [Step b](#), follow these instructions. The same options are repeated if DHCP is selected as No, but only one DNS IP address and domain server can be listed.
For configuration options:
 - Additional Domain Name Server IP Addresses?** - the address of any additional name servers required must be provided as a set of IP addresses with spaces as shown in the following figure.
 - Additional DNS Domains?** - Multiple DNS domains can be defined in the jump start configuration with spaces in between as shown in the following figure.
 - Enable NTP?** [yes] - the default is set to “yes”. The following options are available:
 - NTP Server IP Address?** - enter the NTP server address
 - NTP Server Version?** - enter the NTP version number of the NTP server
7. Provide an appropriate password for your environment. (Type a password and press **Enter**, or just press **Enter** to leave the password unchanged.)
NOTE: Blank passwords are not permitted.
The console displays your selections with instructions on how to make changes, if necessary.
8. Press **Enter** to save your choices and exit the wizard.
9. Your initial configuration is saved and GigaVUE-FM is up and running. You should now be at a standard mode command prompt.
You can now access GigaVUE-FM by opening a browser and entering its IP address (the IP address you specified).

Configure SSH Settings

SSH access is enabled by default on new GigaVUE-FM deployments. You can enable SSH from the CLI using the **ssh server enable** command. By default the SSH server runs on port 22.

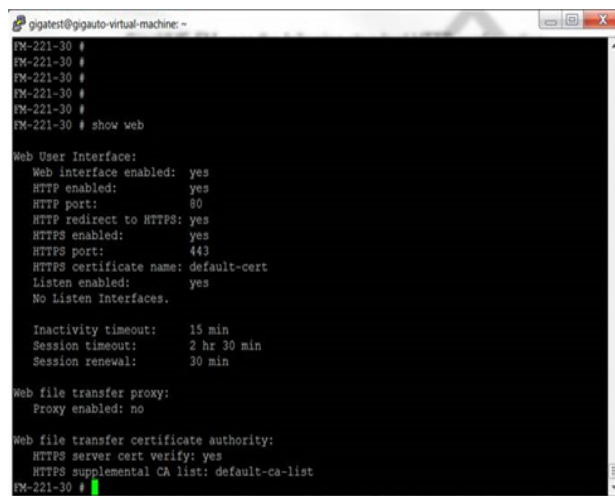
You can configure GigaVUE-FM to use a custom port for its SSH server with the **ssh server ports <port number>** command followed by a **write memory** command to save the configuration. For example, the following CLI commands change the SSH port number to 2222.

```
(config) # ssh server ports 2222
(config) # write memory
(config) #
```

After making the settings shown above with the GigaVUE-FM CLI command, you can connect an SSH session to GigaVUE-FM using the new port number.

HTTP/HTTPS Ports

GigaVUE-FM uses the standard HTTP configuration shown in the following figure:



```
gigatest@gigauto-virtual-machine: ~
FM-221-30 #
FM-221-30 #
FM-221-30 #
FM-221-30 #
FM-221-30 # show web

Web User Interface:
Web interface enabled: yes
HTTP enabled: yes
HTTP port: 80
HTTP redirect to HTTPS: yes
HTTPS enabled: yes
HTTPS port: 443
HTTPS certificate name: default-cert
Listen enabled: yes
No Listen Interfaces.

Inactivity timeout: 15 min
Session timeout: 2 hr 30 min
Session renewal: 30 min

Web file transfer proxy:
Proxy enabled: no

Web file transfer certificate authority:
HTTPS server cert verify: yes
HTTPS supplemental CA list: default-ca-list
FM-221-30 #
```

In this release, you can change the HTTPS port for GigaVUE-FM but the HTTP port is hard-coded to 80. As long as **HTTP redirect to HTTPS** is enabled (the default), connections to the fixed HTTP port of 80 will redirect to whatever the configured HTTPS port is.

Make Sure the Web Server is Enabled on Nodes to be Managed

GigaVUE-FM can only discover and manage nodes with their web servers enabled and operating on the default HTTP port of 80. Both G and H Series nodes have their web servers enabled by default. However, if you disabled a node's web server or changed its HTTP port, you will need to restore the settings before GigaVUE-FM can manage it.

GigaVUE-FM can manage nodes operating on custom HTTPS ports. Incoming HTTP connections redirect to the custom HTTPS port.

The **show web_server** and **show web** output listed below summarizes the necessary HTTP settings for G and H Series GigaVUE nodes managed by GigaVUE-FM. The items shown in red are required settings.

G Series

```
G Series>show web_server
Admin      : 1 (Must be enabled)
Operation  : 1
HTTP port  : 80 (Must remain at its default setting of 80)
HTTPS port : 8000 (Can be set to any custom value; HTTP redirects here)
Timeout    : 5 (minutes)
HTTPS Cert : Default Certificate
```

H Series

```
H Series (config) # show web
Web-based management console enabled: yes
HTTP enabled:          yes (Must be enabled)
HTTP port:             80 (Must remain at its default setting of 80)
HTTP redirect to HTTPS: yes (Must remain enabled)
HTTPS enabled:         yes (Must remain enabled)
HTTPS port:            443 (Can be set to any custom value; HTTP redirects here)
Listen enabled:        yes
No Listen Interfaces.
Inactivity timeout:    15 min
Session timeout:       2 hr 30 min
Session renewal:       30 min
Web proxy enabled: no
```

4 Install GigaVUE-FM on KVM

This section describes how to install and configure GigaVUE-FM in a KVM environment. It consists of the following main sections:

- [System Requirements on page 47](#) describes the hardware requirements.
- [Install GigaVUE-FM for KVM on page 49](#) describes the steps to install and deploy GigaVUE-FM.
- [Initial GigaVUE-FM Configuration on page 54](#) describes the steps to start GigaVUE-FM instance and configure it.
- [Configure SSH Settings on page 56](#) describes the SSH settings.
- [HTTP/HTTPS Ports on page 56](#) describes how to setup the HTTP client.

Limitations

You can install GigaVUE-FM in a KVM environment, but you cannot access GigaVUE-FM through CLI in a KVM environment using SSH. In KVM, you can only access the GigaVUE-FM CLI using the VNC console.

System Requirements

This section describes the hardware and virtual computing requirements for GigaVUE-FM. Ensure that the GigaVUE-FM time is set correctly to ensure accuracy of the trending data that is captured.

Linux Server Hardware Requirements

The following table describes the minimum requirements for the hardware on which KVM runs GigaVUE-FM.

Minimum Hardware Requirements	
Hypervisor	KVM Supported (tested on previous versions of GigaVUE-FM) <ul style="list-style-type: none">v2.0.0
CPU	One or more 64-bit x86 CPUs with virtualization assist (Intel-VT or AMD-V) enabled. Note: To run GigaVUE-FM, hardware support for virtualization must be enabled. Make sure that the BIOS option for virtualization support is not disabled. For more information, see your BIOS documentation.
RAM	At least 8GB.
Disk Space	At least 40GB shared (FC, iSCSI, NFS, or FCoE) or locally attached storage (PATA, SATA, SCSI).
Network	At least one 1Gb NIC.

The following table lists the virtual computing resources that the Linux Server must provide for each GigaVUE-FM instance.

Minimum Virtual Computing Requirements	
Memory	Minimum 8GB memory
Virtual CPU	2 vCPU
Virtual Storage for Guest	41GB
Virtual Network Interfaces	One vNIC

Supported Browsers

GigaVUE-FM has been tested on the following browsers:

Browser	Version
Mozilla Firefox™	<ul style="list-style-type: none">Version 47
Windows® Internet Explorer®	<ul style="list-style-type: none">Version 11
Apple® Safari®	<ul style="list-style-type: none">Version 9.1
Google® Chrome®	<ul style="list-style-type: none">Version 52
Microsoft Edge	<ul style="list-style-type: none">Version 38

Notes:

- Only the browsers that support TLS v1.2 can access GigaVUE-FM.

- DNS prefetch is a known limitation of Internet Explorer 11. If GigaVUE-FM is configured with DNS and you are using Internet Explorer 11, every new screen can be slowed significantly. If a direct IP address is used instead of a DNS name, the UI response is similar to other browsers. It is recommended that you use the GigaVUE-FM IP when using Internet Explorer 11 or use either a FireFox or Chrome browser instead.
- IE11 Compatibility view mode is not supported.

Install GigaVUE-FM for KVM

The GigaVUE-FM software package for KVM environments is distributed as an **ISO image** file. The following sections describes how to deploy a fresh installation of GigaVUE-FM on a KVM host and perform its initial configuration:

- [Install GigaVUE-FM from an ISO Image File](#)
- [Initial GigaVUE-FM Configuration on page 54](#)

These steps are only valid for new installations of GigaVUE-FM.

Install GigaVUE-FM from an ISO Image File

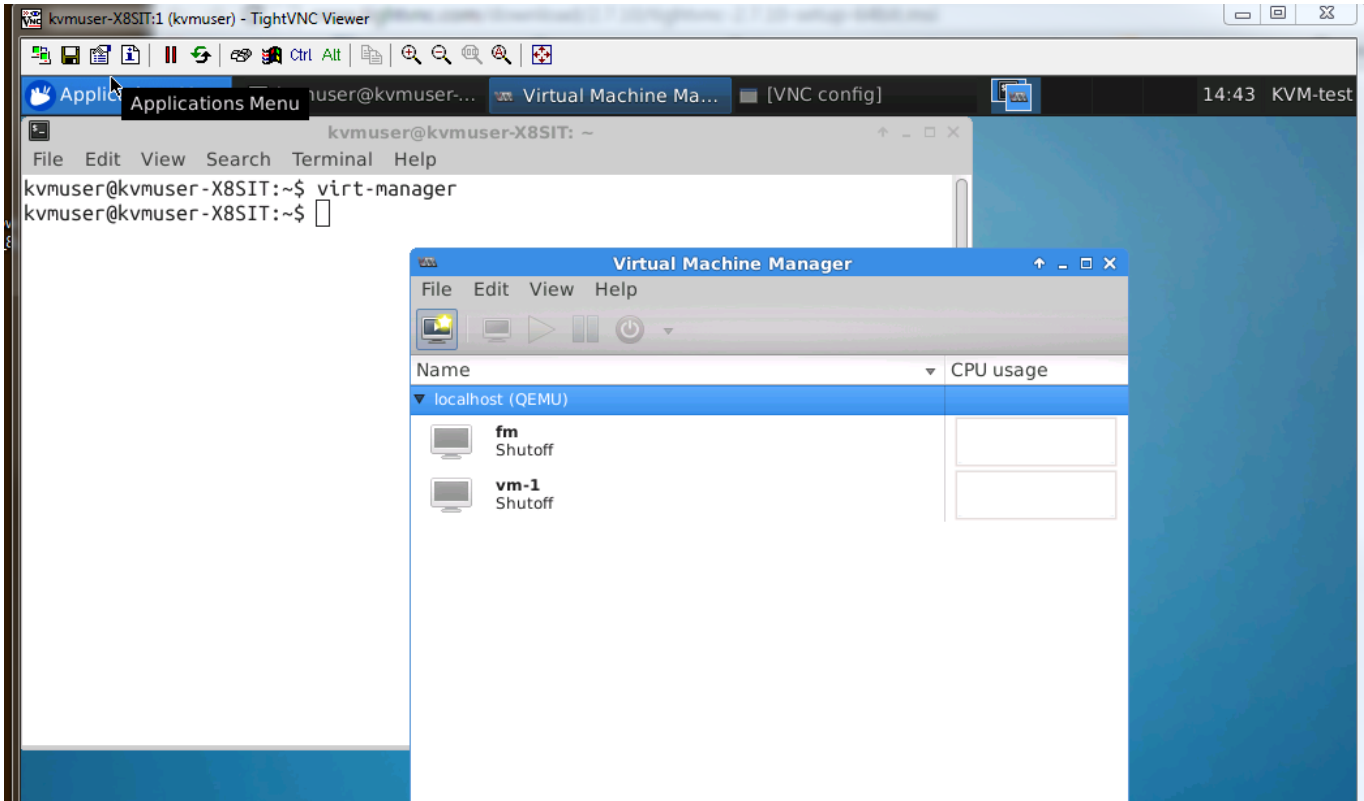
Use the Virtual Machine Manager to install the GigaVUE-FM ISO image file.

NOTE: The ISO image file must be stored in a location that is accessible to the Manager.

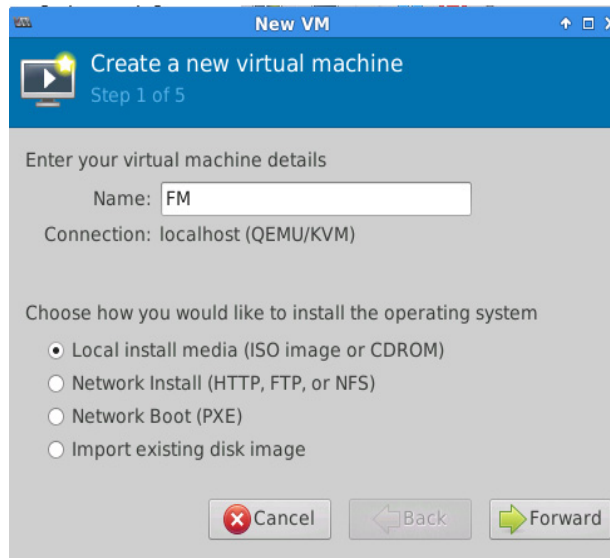
To create the Virtual Machine for GigaVUE-FM in KVM:

NOTE: These instructions use “Virtual Machine Manager” to create and manage the virtual machines (VMs).

1. Open the Virtual Machine Manager by using **virt-manager** from the command line. Select **Create a new virtual machine**. The **New Virtual Machine Wizard** opens.



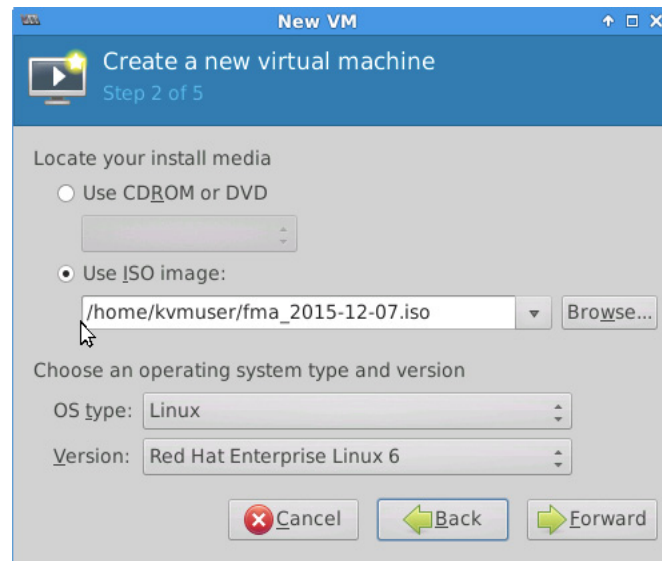
2. Then, specify **Name** and **Location**.



It is recommended to supply a descriptive name for the GigaVUE-FM virtual machine in the **Name** field.

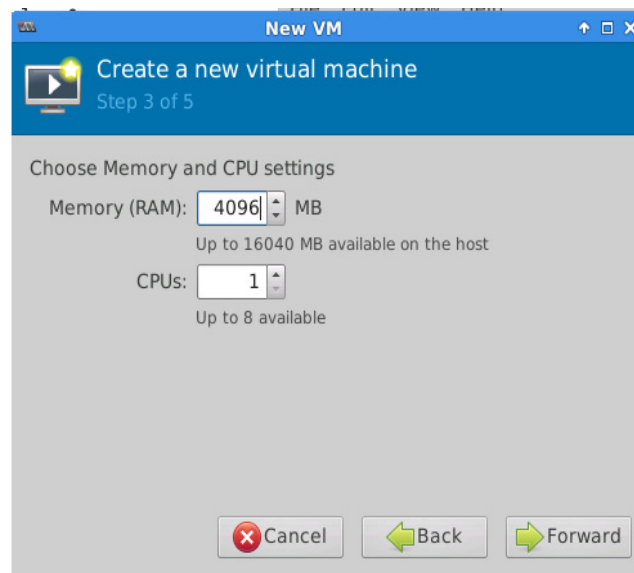
Click **Forward** to continue.

3. Enter the Location from where to upload the GigaVUE-FM iso image and choose the OS type and Version.



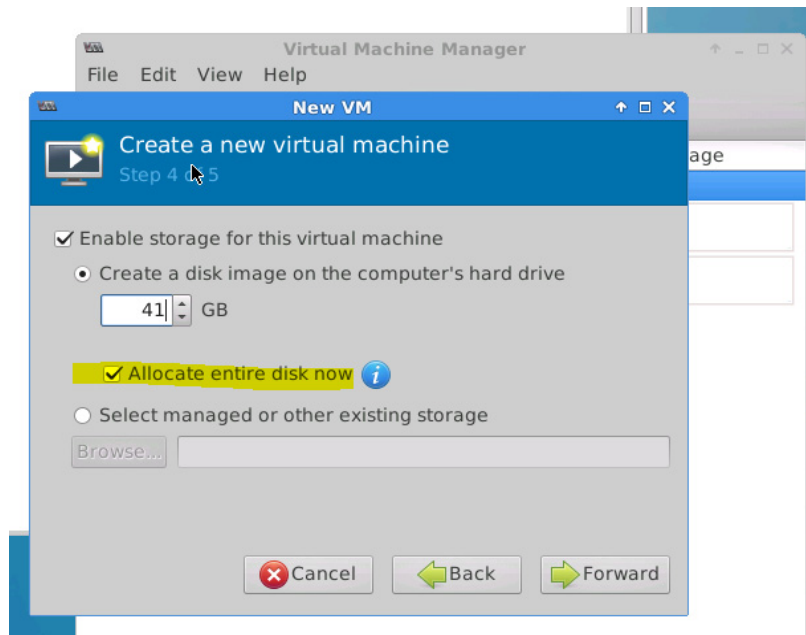
Click **Forward** to continue.

4. Set the **Memory** and **CPU** Settings.

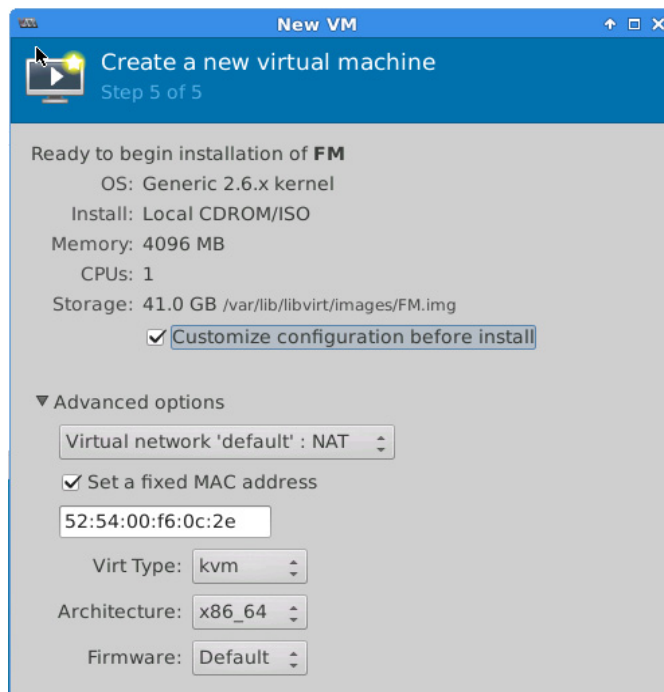


Click **Forward** to continue.

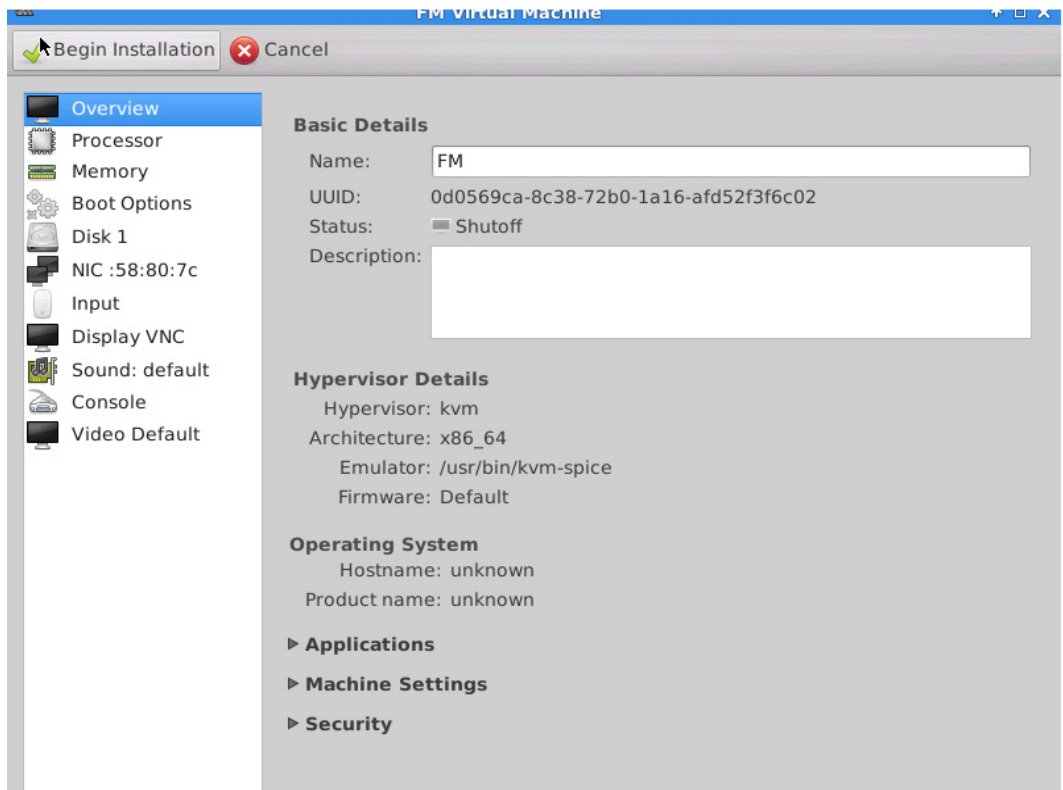
5. **Enable the storage for this virtual machine** option and set the **Size** to **41 GB**. Select **Allocate entire disk now**. When you have finished, click **Forward** to continue.



6. On the next screen, select **Customize configuration before install**.
 - Use the **Advanced options** to set the VM connection to the network adapter.
 - Connect the VM to the network that you have configured on your hypervisor that ensures the network connectivity to your managed VMs.
 - Ensure that the **Virt Type** is set to **KVM**



7. The **Summary** page of the **New Virtual Machine Wizard** opens, showing the settings you have configured for the GigaVUE-FM virtual machine.



8. Connect and power on the GigaVUE-FM Virtual Machine.

Initial GigaVUE-FM Configuration

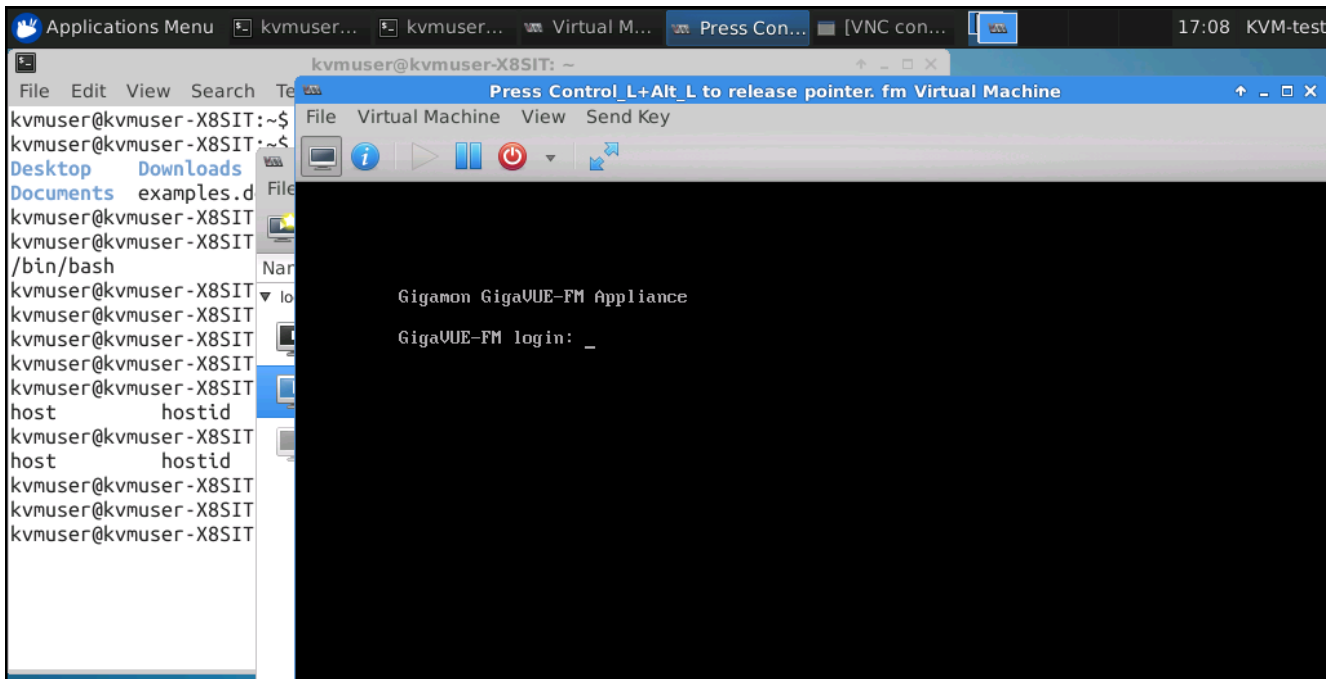
After you have deployed a new GigaVUE-FM instance, you need to perform an initial configuration before you can start using GigaVUE-FM. This procedure only needs to be performed once for each GigaVUE-FM instance deployed.

To perform the initial configuration:

1. Open Virtual Machine Manager.
2. Locate the **Virtual Machines** entry in the results pane, right-click the GigaVUE-FM virtual machine, and click the **Open** option.

The Virtual Machine Connection tool opens for the GigaVUE-FM virtual machine.

3. Open the GigaVUE-FM virtual machine from the Virtual Machine tool.



4. The GigaVUE-FM virtual machine powers on and displays a login prompt.
5. Log in as **admin** with password **admin123A!**
The configuration wizard starts automatically, as shown in the figure below.
6. At this point, you will be presented with a series of prompts for you to provide the initial configuration for GigaVUE-FM.
 - a. Provide a unique hostname for GigaVUE-FM. Note that the hostname may contain letters, numbers, periods (.), and hyphens (-), but may not begin with a hyphen. No other special characters are permitted.

- b. Decide whether to use DHCP for the management interface.

If you choose **no**, you will be prompted to provide the following:

- **IPv4** address and **masklen**
- **Default gateway**
- **Primary DNS server**
- **Domain name**

If you choose yes, skip to [Step c](#)

- c. If you choose Yes for [Step b](#), follow these instructions. The same options are repeated if DHCP is selected as No, but only one DNS IP address and domain server can be listed.

For configuration options:

•**Additional Domain Name Server IP Addresses?** - the address of any additional name servers required must be provided as a set of IP addresses with spaces as shown in the following figure.

•**Additional DNS Domains?** - Multiple DNS domains can be defined in the jump start configuration with spaces in between as shown in the following figure.

•**Enable NTP?** [yes] - the default is set to “yes”. The following options are available:

NTP Server IP Address? - enter the NTP server address

NTP Server Version? - enter the NTP version number of the NTP server

7. Provide an appropriate password for your environment. (Type a password and press **Enter**, or just press **Enter** to leave the password unchanged.)

NOTE: Blank passwords are not permitted.

The console displays your selections with instructions on how to make changes, if necessary.

8. Press **Enter** to save your choices and exit the wizard.
9. Your initial configuration is saved and GigaVUE-FM is up and running. You should now be at a standard mode command prompt.

You can now access GigaVUE-FM by opening a browser and entering its IP address (the IP address you specified).

Configure SSH Settings

SSH access is enabled by default on new GigaVUE-FM deployments. You can enable SSH from the CLI using the **ssh server enable** command. By default the SSH server runs on port 22.

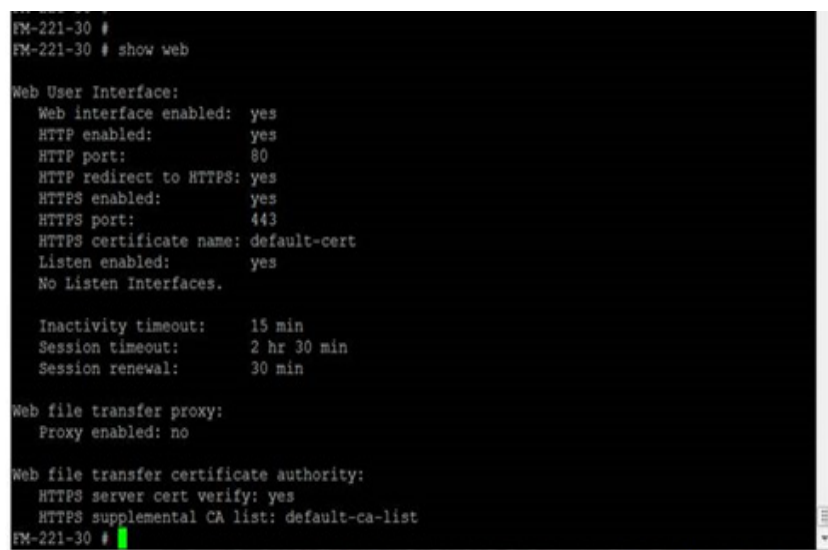
You can configure GigaVUE-FM to use a custom port for its SSH server with the **ssh server ports <port number>** command followed by a **write memory** command to save the configuration. For example, the following commands change the SSH port number to 2222.

```
(config) # ssh server ports 2222
(config) # write memory
(config) #
```

After making the settings shown above in the GigaVUE-FM CLI, you can connect an SSH session to GigaVUE-FM using the new port number.

HTTP/HTTPS Ports

GigaVUE-FM uses the following standard HTTP configuration:

A screenshot of a terminal window showing the output of the 'show web' command on a GigaVUE-FM device. The output is as follows:

```
FM-221-30 #
FM-221-30 # show web

Web User Interface:
  Web interface enabled: yes
  HTTP enabled:         yes
  HTTP port:            80
  HTTP redirect to HTTPS: yes
  HTTPS enabled:        yes
  HTTPS port:           443
  HTTPS certificate name: default-cert
  Listen enabled:       yes
  No Listen Interfaces.

  Inactivity timeout:   15 min
  Session timeout:      2 hr 30 min
  Session renewal:      30 min

Web file transfer proxy:
  Proxy enabled: no

Web file transfer certificate authority:
  HTTPS server cert verify: yes
  HTTPS supplemental CA list: default-ca-list
FM-221-30 #
```

In this release, you can change the HTTPS port for GigaVUE-FM but the HTTP port is hard-coded to 80. As long as **HTTP redirect to HTTPS** is enabled (the default), connections to the fixed HTTP port of 80 will redirect to whatever the configured HTTPS port is.

Make Sure the Web Server is Enabled on Nodes to be Managed

GigaVUE-FM can only discover and manage nodes with their web servers enabled and operating on the default HTTP port of 80. Both G and H Series nodes have their web servers enabled by default. However, if you disabled a node's web server or changed its HTTP port, you will need to restore the settings before GigaVUE-FM can manage it.

GigaVUE-FM can manage nodes operating on custom HTTPS ports. Incoming HTTP connections redirect to the custom HTTPS port.

The **show web_server** and **show web** output listed below summarizes the necessary HTTP settings for GigaVUE nodes managed by GigaVUE-FM. The items shown in red are required settings.

H Series

```
H Series (config) # show web
Web-based management console enabled: yes
HTTP enabled:      yes (Must be enabled)
HTTP port:         80 (Must remain at its default setting of 80)
HTTP redirect to HTTPS: yes (Must remain enabled)
HTTPS enabled:     yes (Must remain enabled)
HTTPS port:        443 (Can be set to any custom value; HTTP redirects here)
Listen enabled:    yes
No Listen Interfaces.
Inactivity timeout: 15 min
Session timeout:   2 hr 30 min
Session renewal:   30 min
Web proxy enabled: no
```


5 Upgrade GigaVUE-FM

This section describes how to upgrade GigaVUE-FM to the latest revision in either a VMware ESXi host or in Microsoft HyperV environment. Starting with release 3.1, Gigamon supports KVM environments. Previous versions of GigaVUE-FM have not been tested in the KVM environment.

NOTE: To upgrade software on H Series or TA Series nodes, refer to the “*Upgrading Software on a GigaVUE Node or a Cluster from GigaVUE-FM*” section in the *GigaVUE-FM User’s Guide*.

The topic covered in this sections cover:

- [Upgrade an Existing GigaVUE-FM Deployment on page 59](#), which describes the overall upgrade path from an existing GigaVUE-FM deployment.
- [How to Use the Snapshot Feature on page 66](#), which describes how to upgrade GigaVUE-FM 3.1 and above to the current version of GigaVUE-FM.

Upgrade an Existing GigaVUE-FM Deployment

Before starting an upgrade to GigaVUE-FM version, be sure to get the latest image, upgrade information, and release notes from the customer portal. Be sure to review the release notes for the latest release prior to upgrading your instance of GigaVUE-FM.

Once the GigaVUE-FM image is obtained, download it to a server within your environment from which the current instance of GigaVUE-FM can upload it. It is important to save your current running configuration using the facilities provided by the hypervisor before upgrading.

NOTE: When upgrading from any version of GigaVUE-FM lower than 5.4.00, be aware of the minimum memory requirements in the new release. Earlier releases specified 4GB of memory for the OVA template; whereas versions after 5.4.00 require 8GB. If the existing virtual or physical hardware running GigaVUE-FM is configured with less memory than required, then increase the amount of memory available to the GigaVUE-FM machine.

Ensure that GigaVUE-FM time is set correctly to ensure accuracy of the trending data that is captured.

You can upgrade the existing deployment of GigaVUE-FM either from the CLI or from the GigaVUE-FM UI.

NOTE: When upgrading GigaVUE-FM, you must also upgrade GigaVUE-VM. For the steps to upgrade GigaVUE-VM, refer to the “*Bulk Upgrading GigaVUE-VM Nodes*” section in the *GigaVUE Cloud Suite for VMware Configuration Guide*.

Upgrade from CLI

There are five steps on how to upgrade an existing GigaVUE-FM deployment to the current release.

1. Verify that less than two images are present on the GigaVUE-FM server.
2. Download the new image into GigaVUE-FM using either HTTP, HTTPS, FTP, TFTP, SCP, or SFTP.
3. Install the new image.
4. Change boot partition.
5. Reboot GigaVUE-FM.

Notes:

- It is important to log in with the **admin** account/username when upgrading the image on the existing GigaVUE-FM.
- GigaVUE-FM 3.2 and higher versions compute node health status differently than previous versions. After the upgrade completes, rediscover the nodes to recompute node health status.
- Prior to GigaVUE-FM 3.2, backup files for physical nodes were in a binary format. Starting with GigaVUE-FM 3.2, backup and restore files use a text based format and binary backup or restore on physical nodes is not supported. When upgrading from a version lower than version 3.2, backup your configuration prior to upgrading to the current version of GigaVUE-FM if you desire, but the files will be in a binary format. Existing binary backups are not visible to GigaVUE-FM. For binary backups, you must back up the node using the CLI commands rather than GigaVUE-FM. For more information about the CLI commands, refer to the *GigaVUE-OS CLI Reference Guide*.
- When using the Firefox or IE browser, clear the cache before upgrading to prevent issues with the browser.

Step 1: Verify that only two images are present on GigaVUE-FM server

NOTE: It is important that you log in with the **admin** account/username when upgrading the image on the existing GigaVUE-FM.

1. To begin an upgrade, open a SSH session or console session within the vSphere Client, and log into GigaVUE-FM and change to configure mode, by entering the following on the command line:
 - a. Type **en** <Enter> to switch to Enable mode.
The system prompt changes from *[hostname] >* to *[hostname] #*.
 - b. Type **config t** <Enter> to switch to Configure mode.

The system prompt changes from **[hostname] #** to **[hostname] (config) #**

Figure 5-1 shows an example of the login console.

2. Check the number of images currently available for installation with the following command from the GigaVUE-FM CLI:

(config) # show images

Important: If there are more than two images listed in the **Images available to be installed** section of the **show images** output, Gigamon recommends that you use the **image delete** command to remove existing images until the system has only a single image. Both GigaVUE-FM and GigaVUE-VM will display a warning if you attempt to fetch a third image.

3. To delete an existing image from the server use the following command:
(config) # image delete fma3300.img
4. Go to [Step 2: Fetch the latest release of GigaVUE-FM on page 61](#).

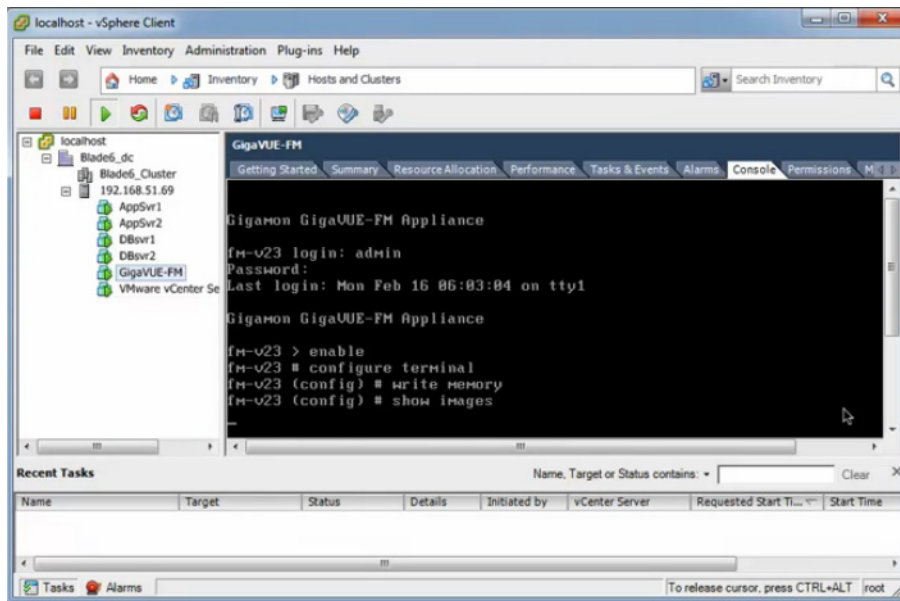


Figure 5-1: Console Login to vSphere Client

Step 2: Fetch the latest release of GigaVUE-FM

Gigamon provides an FTP site where the new release image file resides. To fetch the latest release, do the following:

1. Locate the image file for the new release. Image files are named using a **fmaxxxx.img** format. The **xxxx** indicates the version and build number (for example, **fma3500.img** for the v3.5 release).
2. Copy the image to your file server.
3. Use the **image fetch** command to retrieve the software image from your file server. The CLI shows you the progress of the image fetch with a series of hash marks, returning you to the system prompt when complete.

Note: The **image fetch** command supports the use of HTTP, HTTPS, FTP, TFTP, SCP, or SFTP for the transfer of images.

- a. The following command uses SCP to retrieve the **fma3500** image from the image server with the IP address of 10.115.0.100 using login and password.
(config) # image fetch scp://user:password@10.115.0.100/fma3500.img
 - b. The following command uses FTP to retrieve the same image using login and password as well.
(config) # image fetch ftp://user:password@10.115.0.100/fma3500.img
 - c. The following command uses TFTP to retrieve the same image without using a password but using a DNS server instead of an IP address for the download server.
(config) # image fetch tftp://myserver.gigamon.com/tftpboot/fma3500.img
Ensure that you specify the base directory when using TFTP
4. Go to [Step 3: Install the latest release of the GigaVUE-FM on page 62](#).

Step 3: Install the latest release of the GigaVUE-FM

Use the **image install** command to install the downloaded image file. When running the following command, the process will first verify that the filename used for the image is suitable for installation prior to installing the image. For example, to install the image downloaded in the previous step:

```
(config) # image install fma3400.img
```

Step 4: Change the boot partition

Set the image you just installed to boot next with the following command. This ensures that at the next boot the latest image will be picked up.

```
(config) # image boot next
```

Step 5: Reboot

The following command shuts down the current instance of GigaVUE-FM and reloads. If Step 4 is performed, upon reboot, the new image is used.

```
(config) # reload
```

Step 6: Upgrade GigaVUE-VM

After upgrading GigaVUE-FM, you must also upgrade any deployed GigaVUE-VMs. Otherwise, maps may not work and the GigaVUE-VMs will be unreachable. For information about upgrading GigaVUE-VM, refer to the “*Bulk Upgrading GigaVUE-VM Nodes*” section in the *GigaVUE Cloud Suite for VMware Configuration Guide*.

CLI Summary of the Upgrade Path

The following summarizes the CLI commands used to upgrade an image after logging in from the console:

```
> en
# config t
(config) # write memory
(config) # show images
(config) # image delete fma3400.img
```

```
(config) # image fetch tftp://192.158.51.41/fma3500.img
(config) # image install fma3500.img
(config) # image boot next
(config) # reload
```

Upgrade from GigaVUE-FM UI

This section describes the steps to upgrade GigaVUE-FM from the UI. You can upgrade by using an image that is located on an external image server, or you can use GigaVUE-FM as the image server.

NOTE:

- When using the GigaVUE-FM UI to upgrade GigaVUE-FM, you can only upgrade to the currently available version or to the next version. You cannot downgrade.
- When using the Firefox or IE browser, clear the cache before upgrading to prevent issues with the browser

Upgrade from External Image Server

This section provides the steps for upgrading the GigaVUE-FM from an image stored on an external server. The image can be transferred from the server to the GigaVUE-FM using either SCP or TFTP file protocols.


To upgrade with an image stored on an external image server, do the following:

1. Upload the image to the external image server to make it available to GigaVUE-FM.

To obtain software images, register on the customer portal and download the software. To reach the customer portal, go to <https://gigamoncp.force.com/gigamoncp/>.

2. Add the image server to GigaVUE-FM. This stores the credentials, image file name, and IP address of the server on GigaVUE-FM.

To add the image server:

- a. In GigaVUE-FM, click  on the top navigation bar.
- b. Select **System** on the left navigation panel and go to **Images > External Servers**. The External Servers page displays as shown in [Figure 5-2](#).

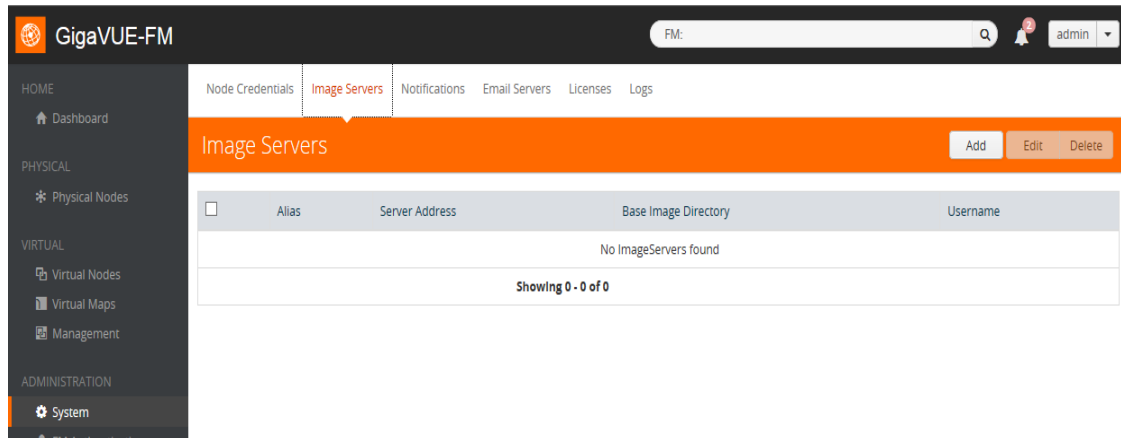


Figure 5-2: Adding Image Servers

- c. Click **Add**. The Add External Server page displays as shown in [Figure 5-3](#)

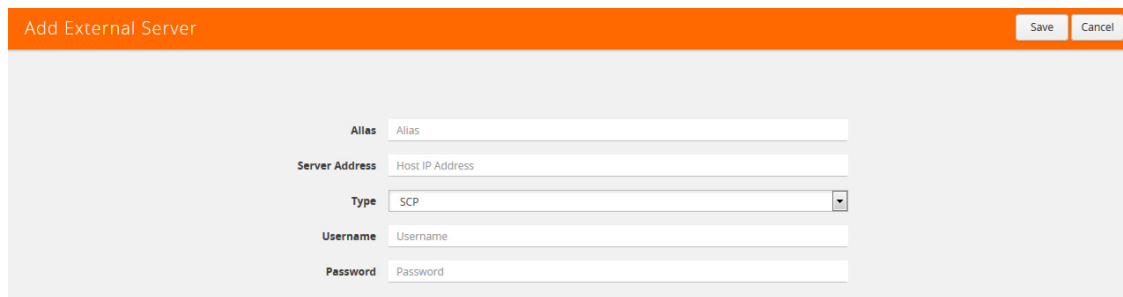


Figure 5-3: Add External Server

- d. On the Images Server page, specify the following:
 - An alias to help identify the image server.
 - The host IP address of the server.
 - The protocol to use for the download: SCP or TFTP.
 - The user name and password if you selected SCP. They are not needed for TFTP.
 - e. Click **Save**.
The External Server page displays the newly added external server.
3. From the **Admin** drop-down list in the top right corner of the window, select **Upgrade** to open the FM Image Upgrade page shown in [Figure 5-4](#).

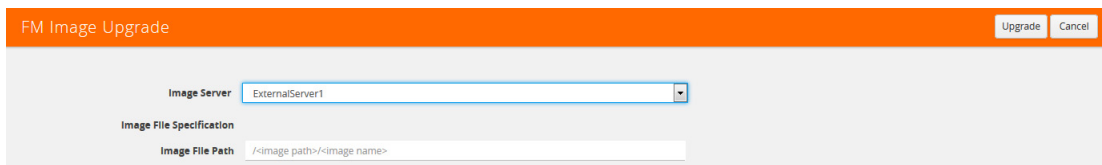



Figure 5-4: FM Image Upgrade Page

To monitor the progress and status of the upgrade, click  on the top navigation bar and go to **Events**. Also, email notifications are sent if Email Notifications have

been configured. For more information about Email Notifications, refer to the “Notifications” section in the “GigaVUE-OS and GigaVUE-FM Administration Guide”.

4. On the FM Image Upgrade page, click on the Image Server field and select the server added in [Step 2](#).
5. In the Image File Path, enter the image path and filename on the external file server.
6. Upgrade any deployed GigaVUE-VMs.

After upgrading GigaVUE-FM, you must also upgrade any deployed GigaVUE-VMs. Otherwise, maps may not work and the GigaVUE-VMs will be unreachable. For information about upgrading GigaVUE-VM, refer to the “Bulk Upgrading GigaVUE-VM Nodes” section in the *GigaVUE Cloud Suite for VMware Configuration Guide*.

NOTE: If you are using FireFox or Internet Explorer, you must refresh the browser to ensure that the cached information is not displayed after upgrading to the latest version of GigaVUE-FM.


Upgrade with GigaVUE-FM as the Image Server

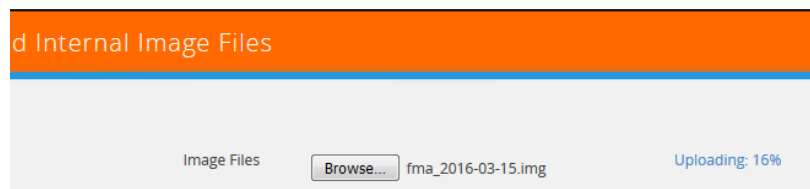
This section provides the steps for upgrading GigaVUE-FM when GigaVUE-FM is used as the file server instead of an external server.

To upgrade a GigaVUE-FM using internal image files, do the following:

1. Download the images from the Gigamon website and place them where they can be available for uploading to GigaVUE-FM.

To obtain software images, register on the customer portal and download the software. To reach the customer portal, go to <https://gigamoncp.forc.com/gigamoncp/>.

2. Upload the images file to GigaVUE-FM.
 - a. Click  on the top navigation bar. In the left navigation panel, go to **System > Images > Internal Image Files**.
 - b. On the Internal Image File page, click **Upload**.
 - c. Click **Browse** to locate the image file.
 - d. Click **OK** to upload the file. The page displays the progress of the upload.



After the upload completes, you can see the GigaVUE-FM image to use for the upgrade on the Internal Images Files page.

3. Click the **Admin** drop-down list on the top right of the window and select **Upgrade** as shown in [Figure 5-5](#).

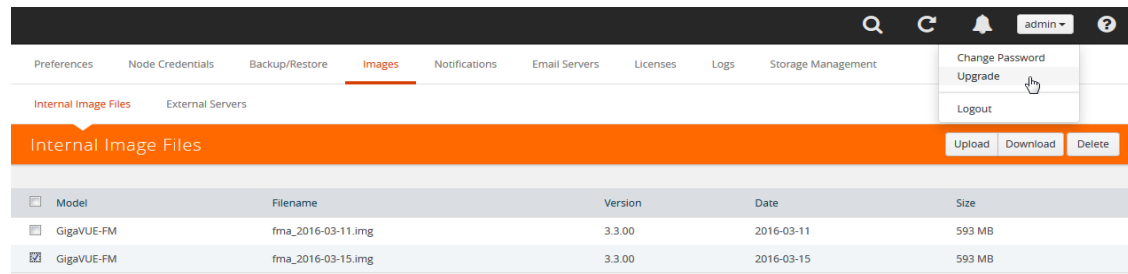
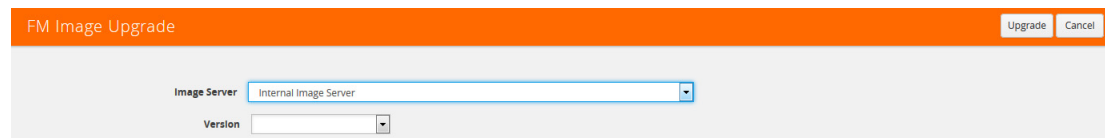


Figure 5-5: Selecting Upgrade


4. On the FM Image Upgrade page, click in the **Image Server** field and select **Internal Image Server**.



5. From the **Version** drop-down list, select the version to which you are upgrading.

NOTE: You can only upgrade to another instance of the current version or the immediate next version. Downgrading to a lower version is not supported through the UI. To downgrade to a lower version, use the CLI.

6. Click **Upgrade**.

To monitor the progress and status of the upgrade, click  on the top navigation bar and select **Events** on the left navigation panel. Also, email notifications are sent if email notifications have been configured.

7. Upgrade any deployed GigaVUE-VMs.

After upgrading GigaVUE-FM, you must also upgrade any deployed GigaVUE-VMs. Otherwise, maps may not work and the GigaVUE-VMs will be unreachable. For information about upgrading GigaVUE-FM, refer to the “*Bulk Upgrading GigaVUE-VM Nodes*” section in the *GigaVUE Cloud Suite for VMware Configuration Guide*.

NOTE: If you are using FireFox or Internet Explorer, clear the cache before upgrading to prevent issues with the browser.

How to Use the Snapshot Feature

This procedure is only valid for upgrading from GigaVUE-FM v3.0 and above. For upgrades from pre-3.0 releases, review the GigaVUE-FM v3.0 User’s Guide and upgrade to release GigaVUE-FM v3.1. Then follow the steps below to upgrade to the current release version of GigaVUE-FM.

NOTE: You cannot directly upgrade from a pre-3.3 releases to the current release. You can only upgrade from GigaVUE-FM v3.3 or v3.4 release.

1. Prior to upgrading, ensure that the available **memory size is at least 8GB** prior to upgrading to the new GigaVUE-FM release. If the available memory size is less than 8GB, it will cause out of memory issues. Also, at least 2 vCPU are required.
2. When upgrading from v3.1, it's a good idea to use the vSphere client's **Snapshot** feature to record the current state of the GigaVUE-FM virtual machine. Steps to use **Snapshot** feature are as follows:
 - a. Log into the vSphere client and navigate to the Datacenter or Cluster level where the GigaVUE-FM installation is located.
 - b. Right-click the GigaVUE-FM entry in the vSphere client and select the **Take Snapshot** option.

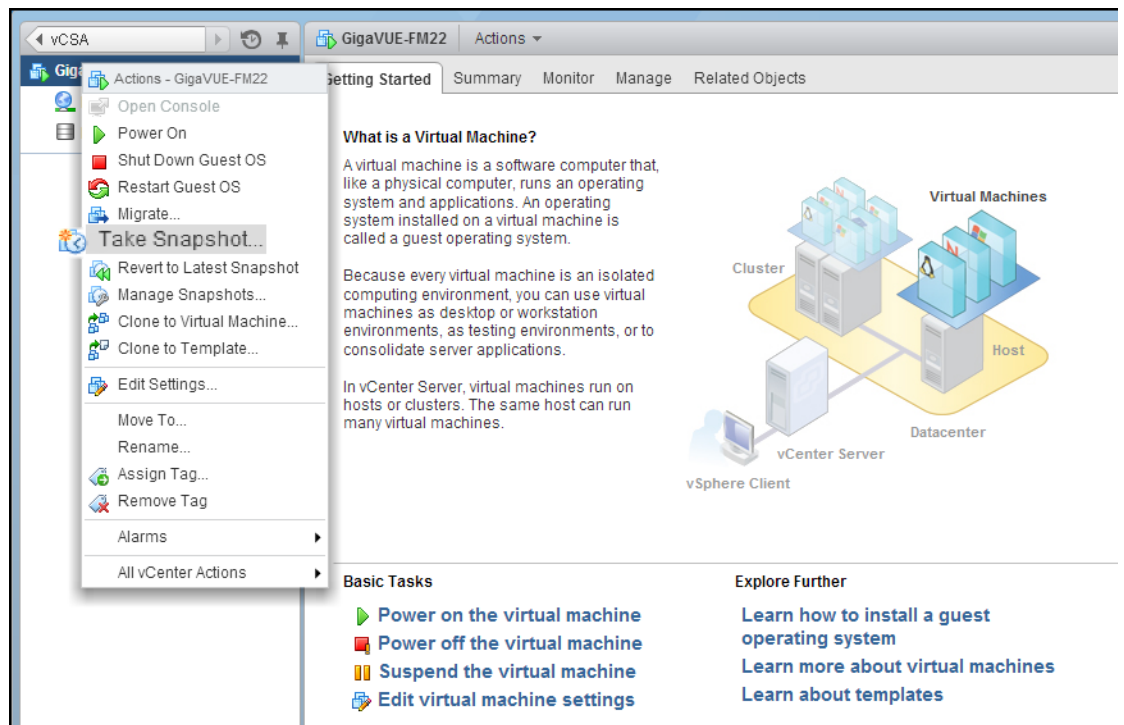


Figure 5-6: “Take Snapshot” Command to Preserve Current Settings Prior to Upgrade

- c. Follow the system prompts to record a snapshot of GigaVUE-FM’s current state.

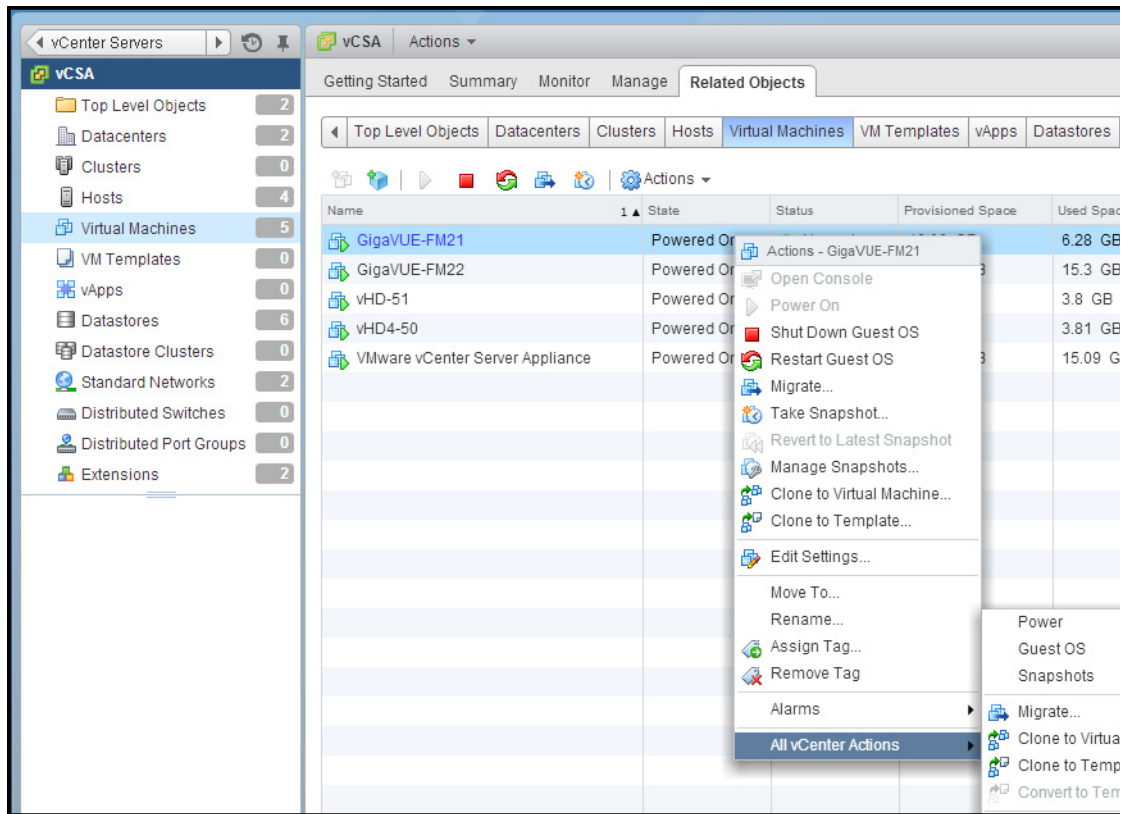


Figure 5-7: Power Off Command

6 Additional Sources of Information

This appendix provides additional sources of information. Refer to the following sections for details:

- [Documentation on page 69](#)
- [Documentation Feedback on page 71](#)
- [Contacting Technical Support on page 71](#)
- [Contacting Sales on page 71](#)
- [The Gigamon Community on page 71](#)

Documentation

[Table 6-1](#) lists the documents that are provided for the various Gigamon products. You can download the PDF versions of these documents from the [Gigamon Customer Portal](#).

Table 6-1: Documentation Suite for Gigamon Products

Document	Summary
Hardware Installation Guides	
GigaVUE-HC1 Hardware Installation Guide	
GigaVUE-HC2 Hardware Installation Guide	Describes how to unpack, assemble, rack-mount, connect, and perform the initial configuration of the various GigaVUE nodes. Also provides reference information for the respective GigaVUE nodes, including specifications.
GigaVUE-HC3 Hardware Installation Guide	
GigaVUE TA Series Hardware Installation Guide	
GigaVUE-OS Installation Guide on a White Box	Describes how to install the GigaVUE-OS on a white box.
Software Installation and Upgrade Guides	
GigaVUE-FM Installation and Upgrade Guide	Provides instructions for installing GigaVUE-FM on VMware ESXi, MS Hyper-V, and KVM. Also, provides instructions to upgrade GigaVUE-FM.
GigaVUE-OS Upgrade Guide	Describes how to upgrade a GigaVUE H Series node or a GigaVUE TA Series node to the latest GigaVUE-OS.

Document	Summary
Administration Guide	
GigaVUE-OS and GigaVUE-FM Administration Guide	Describes how to use the GigaVUE-FM interface to administer the GigaVUE H Series and GigaVUE TA Series software.
Configuration and Monitoring Guides	
GigaVUE-FM User's Guide	Provides instructions for installing, deploying, and operating the GigaVUE® Fabric Manager (GigaVUE-FM).
GigaVUE Cloud Suite for VMware Configuration Guide	Provides instructions for installing, deploying, and operating the GigaVUE® Virtual Machine (GigaVUE-VM).
GigaVUE Cloud Suite for AWS Configuration Guide	
GigaVUE Cloud Suite for Azure Configuration Guide	Provides instructions on configuring the GigaVUE Cloud components and setting up traffic monitoring sessions for the respective Cloud platform.
GigaVUE Cloud Suite for OpenStack Configuration Guide	
GigaVUE Cloud Suite for Kubernetes Container Configuration Guide	
GigaVUE Cloud Suite for AnyCloud Configuration Guide	Describes how to deploy the GigaVUE Cloud solution in any of the cloud platforms available in the market.
Reference Guides	
GigaVUE-OS CLI Reference Guide	Describes how to use the CLI (Command Line Interface) to configure and operate the GigaVUE H Series and TA Series software.
GigaVUE-OS Cabling Quick Reference Guide	Provides guidelines to the different types of cables to be used to connect the Gigamon devices as well as connect Gigamon devices to third-party devices.
GigaVUE-OS Compatibility and Interoperability Matrix	Provides information about the compatibility and interoperability requirements for the Gigamon devices.
REST API Getting Started Guide	Introduction to the Application Program Interfaces (APIs) for GigaVUE-FM and provides an overview of these REST APIs, basic work flows, and use cases. The APIs are implemented with the Representational State Transfer (REST) architecture. (Deprecation announcement: This has not been updated since 5.4. The content will be merged into the GigaVUE-FM User's Guide in a subsequent release.)
Release Notes	
GigaVUE-OS, GigaVUE-FM, GigaVUE-VM, and GigaVUE Cloud Suite Release Notes	Summarizes new features, resolved issues, and known issues in this release for GigaVUE-OS, GigaVUE-FM, and GigaVUE Cloud Suite. Also provides important notes regarding installing and upgrading to this release.

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