GigaVUE-FM Installation and Migration Guide

GigaVUE-FM

Product Version: 5.11

Document Version: 2.0

Change Notes

When a document is updated, the document version number on the cover page will indicate a new version and will provide a link to this Change Notes table, which will describe the updates.

Document Version	Date Updated	Change Notes
2.0	02/04/2021	Post-release update to address priority bugs and other improvements
1.0	12/18/2020	Original release of this document with 5.11.00 GA.

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About this Guide

This guide describes how to install and upgrade the GigaVUE-FM® Fabric Manager (GigaVUE-FM).

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- Related GigaVUE-FM CLI Commands

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 describes the minimum hardware and computing requirements.
- Install New GigaVUE-FM on VMware ESXi describes the steps to install and deploy GigaVUE-FM on VMware ESXi hypervisor.

Before You Install

This section describes the hardware and virtual computing requirements for GigaVUE-FM. Ensure that the time on the VMware ESXi host 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.

VMware ESXi and NSX-V Hardware Requirements

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

Table 1: Hardware Requirements for VMware Hypervisor

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

Hardware Requirements	
RAM	At least 16GB
Disk Space	At least 84GB shared (FC, iSCSI, NFS, or FCoE) or locally attached storage (PATA, SATA, SCSI) **NOTE:** Increase the disk space depending on the configuration load requirements for the given GigaVUE-FM instance.
Network	At least one 1Gb NIC

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

Table 2: Minimum Virtual Computing Requirements for VMware Hypervisor

Minimum Virtual Computing Requirements	
Memory	Minimum 16GB memory
Virtual CPU (vCPU)	2 vCPU
Virtual Storage for Guest	84GB using PVSCSI (VMware Paravirtual SCSI) • System Disk - 40GB • Swap Disk - 4GB • Data Disk - 40GB
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
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.
- Internet Explorer 11 (IE11) is deprecated for security reasons and is no longer supported. IE users are strongly encouraged to switch to Microsoft Edge.

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
- Initial GigaVUE-FM Configuration

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.

> **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.

The following steps are shown using the ESXi version 6.x. To deploy a GigaVUE-FM instance:

1. Log in to the VMware vCenter web interface.
2. Go to **Menu > VMs and Templates**.
3. Right-click the ESXi Host or data center on which you want to deploy GigaVUE-FM 5.8, and then select **Deploy OVF Template** as shown in the following figure:
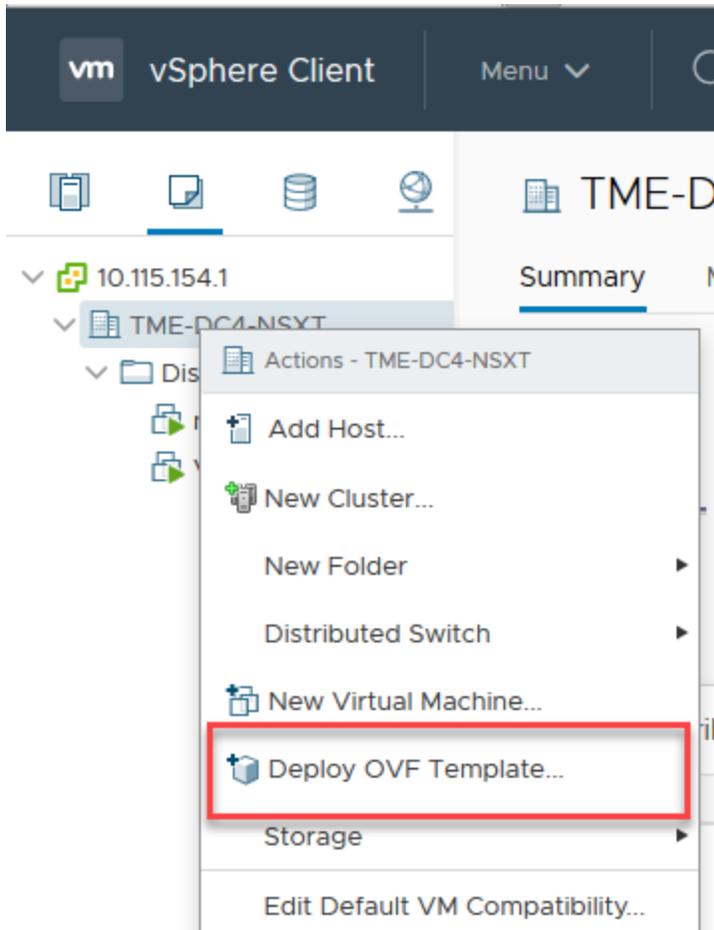
Figure 1   *vSphere Client: OVF Template*

The Deploy OVF Template wizard opens.
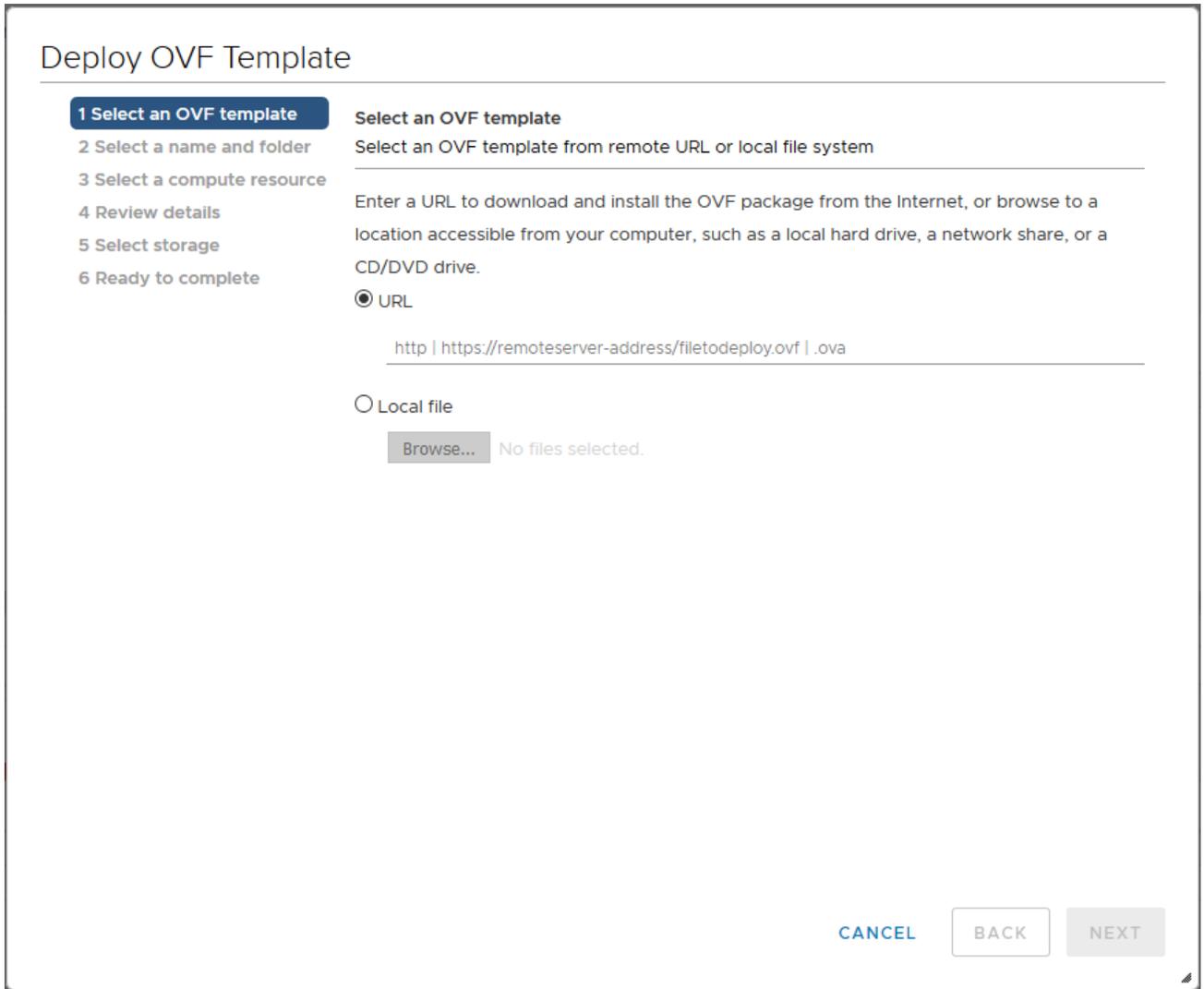
Figure 2   *vSphere Client: Find the Location of the OVA File*

4. In the **Select an OVF template** page of the **Deploy OVF Template** wizard, choose one of the following options:

   a. **URL**−Enter the URL from where you want to download and install the OVF package.

   b. **Local file**−Click **Browse** to navigate to the OVA file available on your local machine, and then select the OVA file.

5. Click the **Next**. The **Select a name and folder** page of the **Deploy OVF Template** wizard appears.
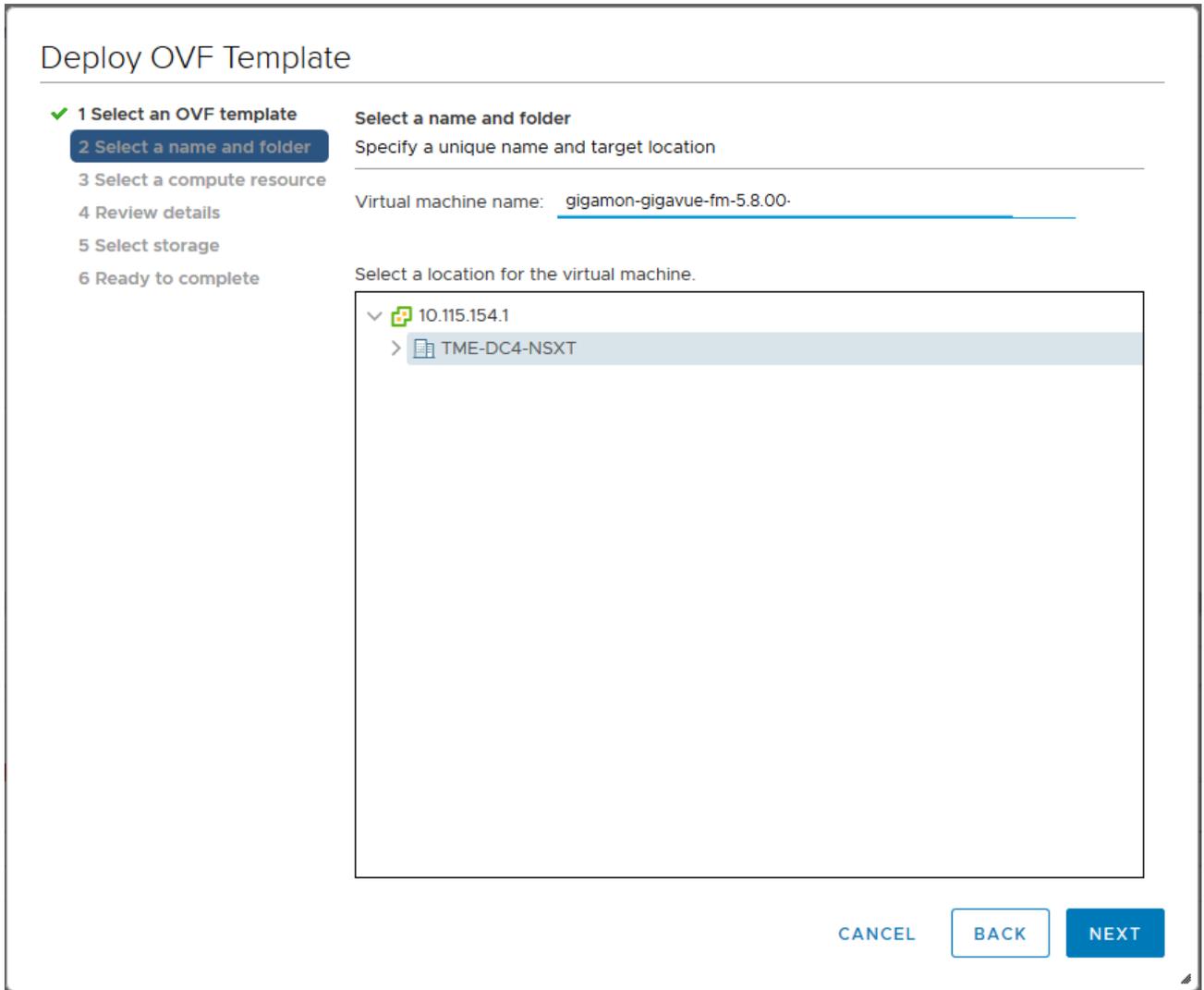
Figure 3   *vSphere Client: Enter Name and Location for OVA File on ESXi Server*

6. Specify a unique name for the GigaVUE-FM instance, and then select a location and host to which you want to deploy the GigaVUE-FM instance.

7. Click **Next**. The **Select a compute resource** page of the **Deploy OVF Template** wizard appears.
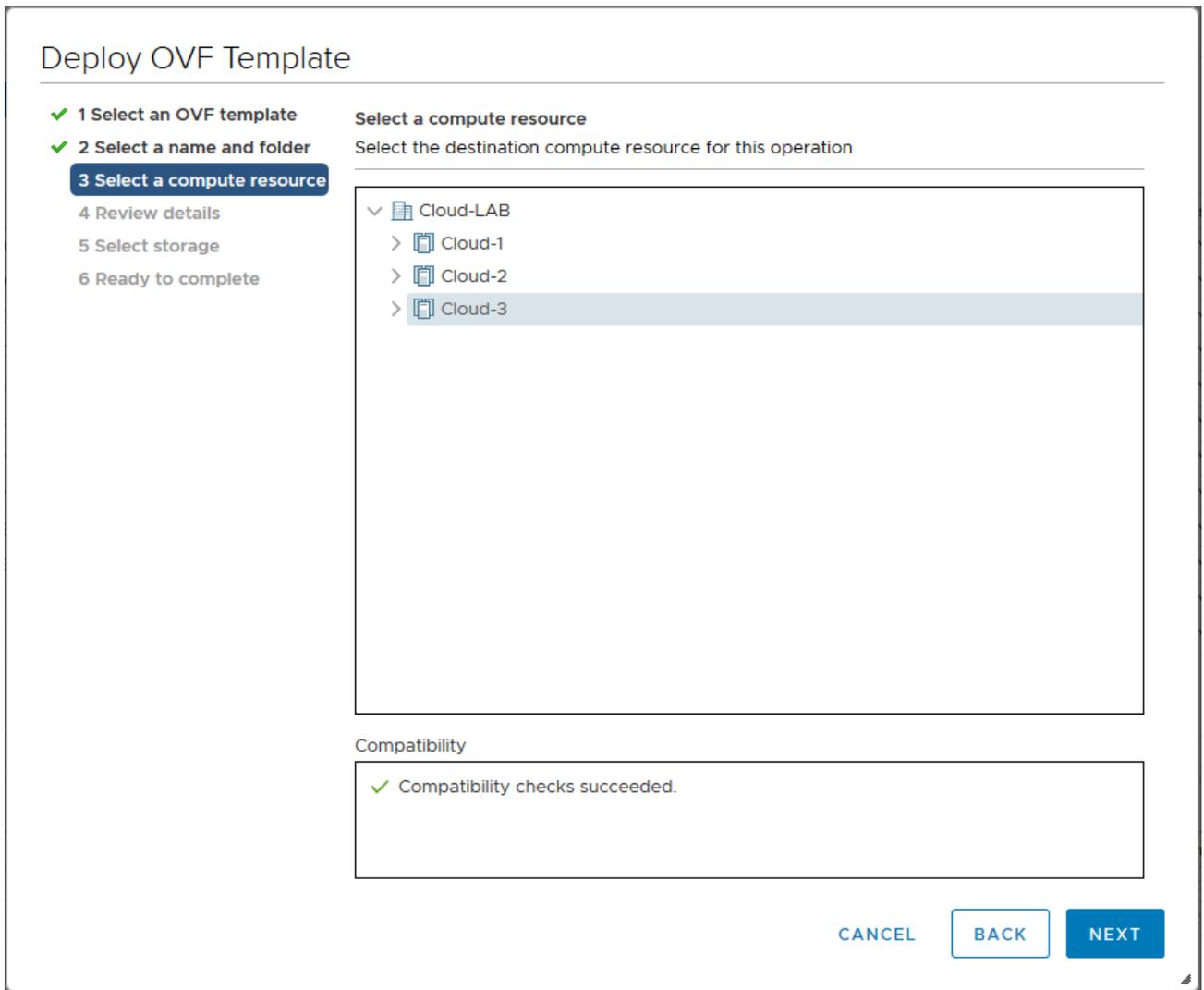
Figure 4 *vSphere Client: Select a Compute Resource for the OVF Deployment*

8. Select a destination compute host for the OVF deployment. The Deploy OVF Template wizard performs a validation to ensure that the selected host has all the resources required for the GigaVUE-FM deployment.
9. Click **Next**. The **Review details** page of the **Deploy OVF Template** wizard appears.
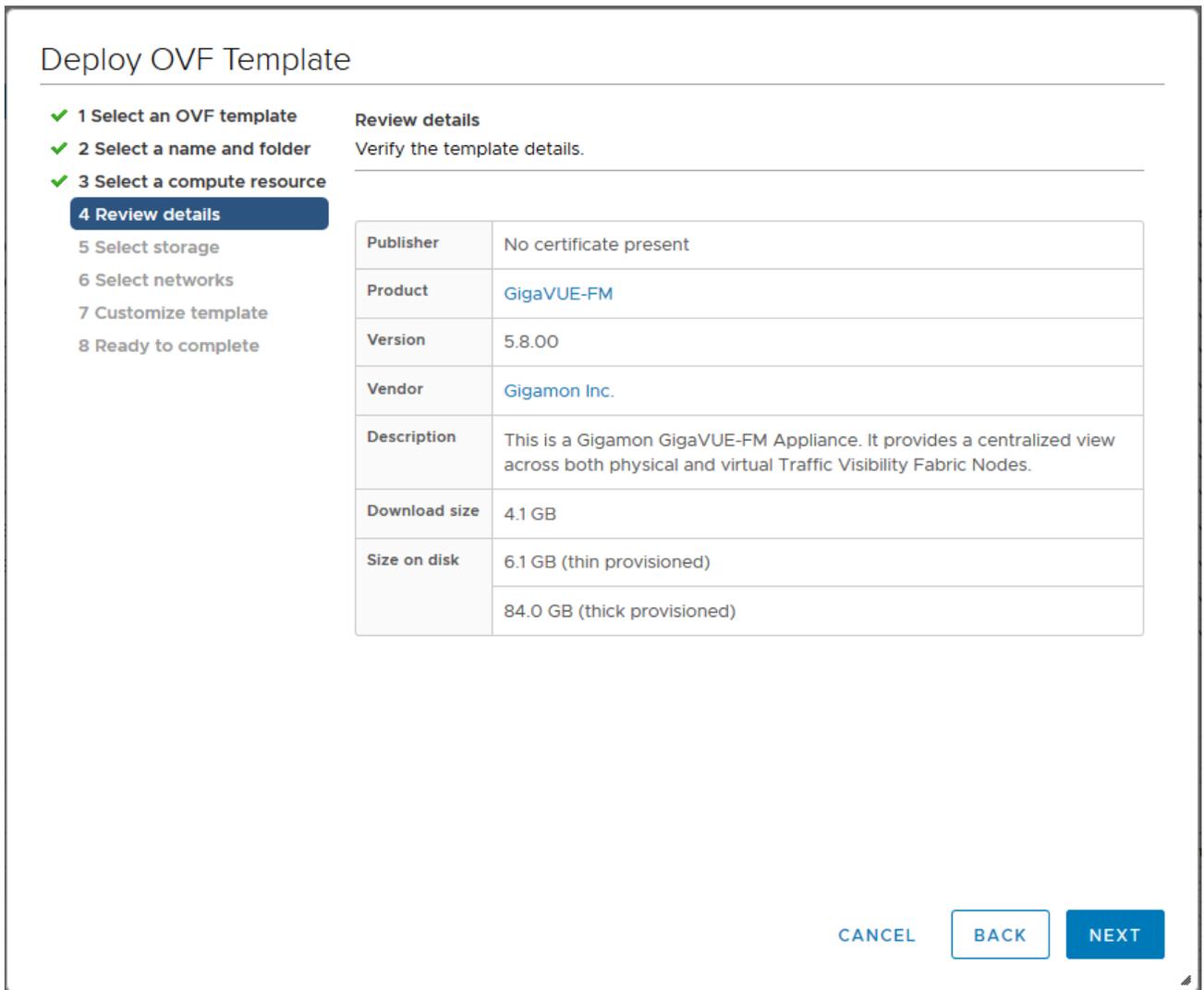
Figure 5   *vSphere Client: Review Details*

10. Verify the OVF template details, and then click **Next**. The **Select storage** page of the **Deploy OVF Template** wizard appears.
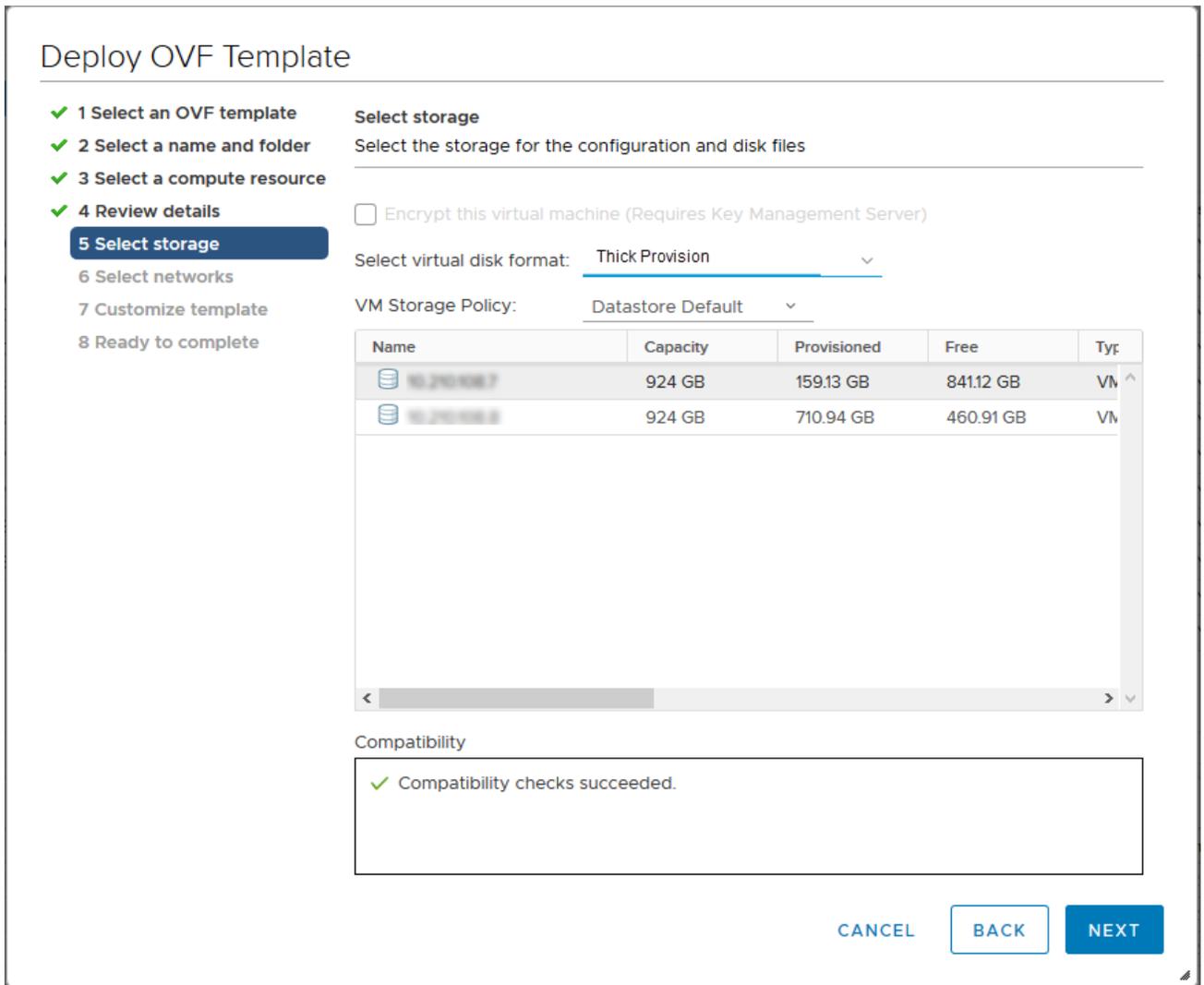
Figure 6   *vSphere Client: Select Storage*

11. From the **Select virtual disk format** drop-down list, select **Thick Provisioning** as the format for the virtual disks and provisioning.

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

12. Select the datastore where the virtual machine's files will be stored.
13. Click **Next**. The **Select networks** page of the **Deploy OVF Template** wizard appears.
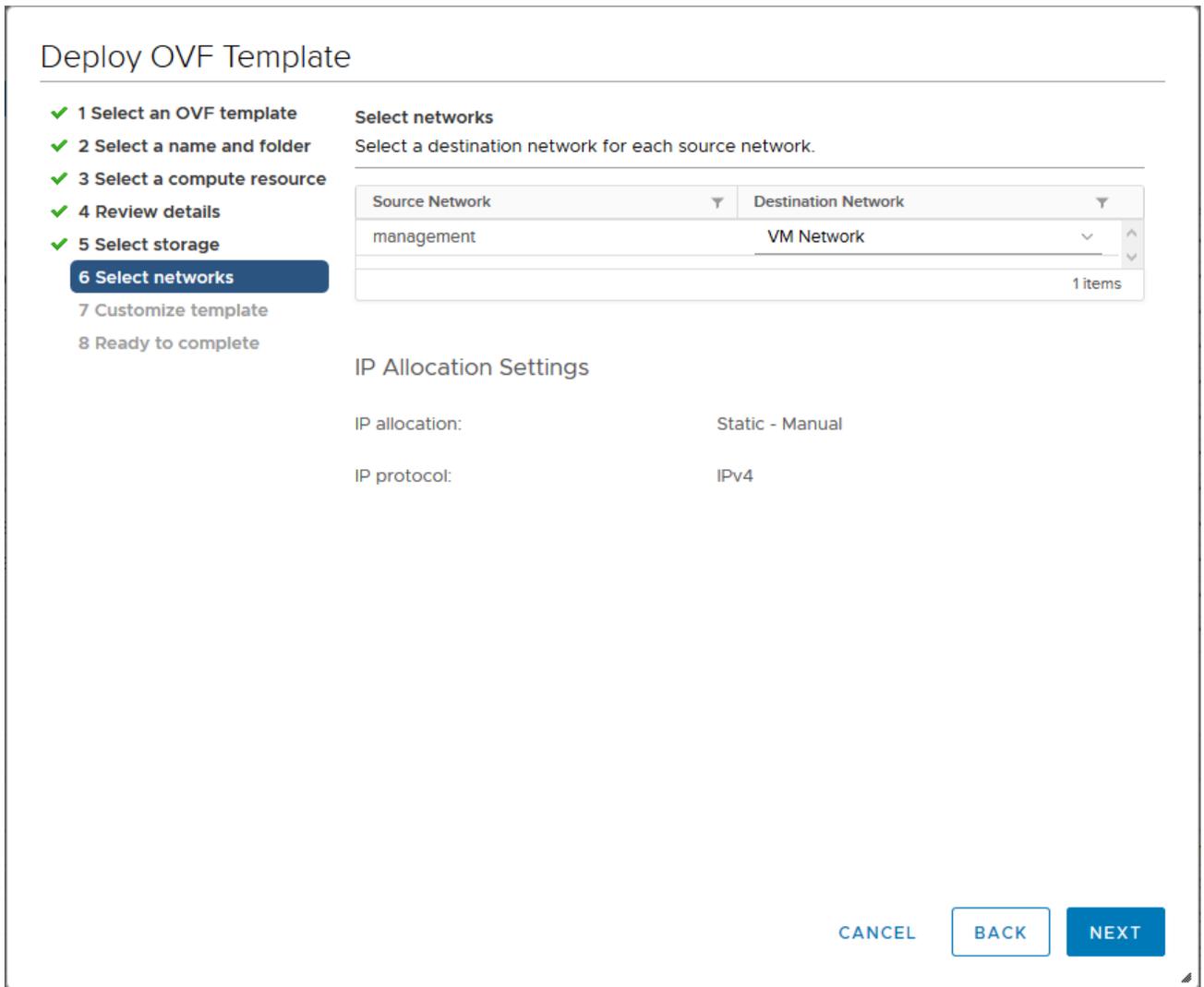
Figure 7   *vSphere Client: Select Networks*

14. 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.

15. Click **Next**. The **Customize template** page of the **Deploy OVF Template** wizard appears.
16. In the **System Hostname** field, enter the hostname of the GigaVUE-FM instance, and then specify **40** GB as the size of the data disk.
17. Set the admin password. The admin password must be a minimum of 11 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: The password that you set here is applicable only to the GigaVUE-FM Shell. To access the GigaVUE-FM UI, the default username is admin and password is admin123A!!. You can change the password when you first login to the GigaVUE-FM UI.

     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.

18. (Optional) Complete the IP Networking configurations such as the default gateway for the management port, IP address of the DNS server, and the domain name for this GigaVUE-FM instance.
19. (Optional) Complete the NTP configurations such as the IP address and version of the NTP server, and then click **Next**.
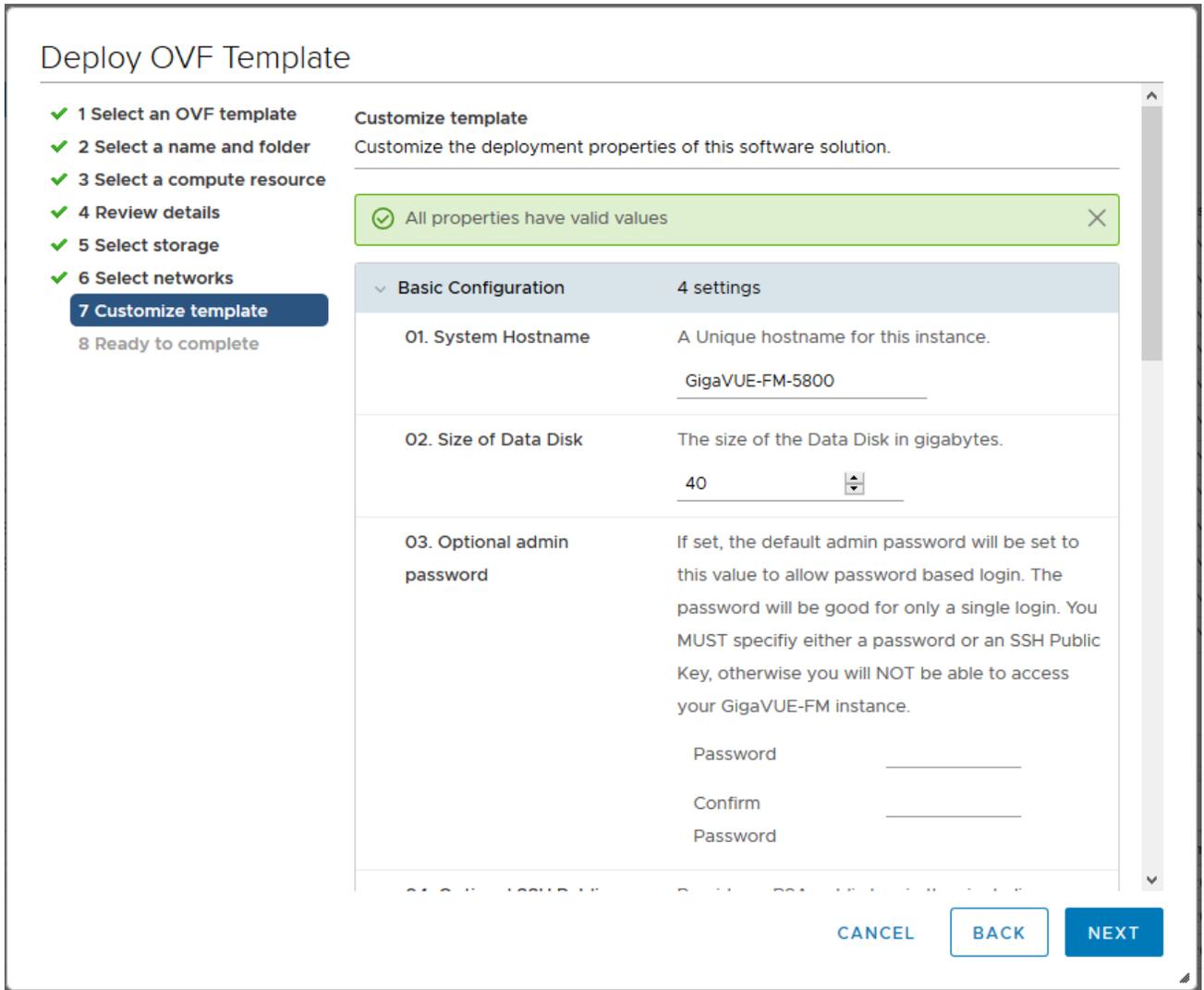
Figure 8   *vSphere Client: Customize Template*

> NOTE: You can also choose to perform the IP Networking and NTP configurations by running the `fmctl jump-start` command after you power on the GigaVUE-FM instance at the successful completion of the OVF template deployment. For details, refer to Perform Network Configurations

The **Ready to Complete** page of the **Deploy OVF Template** wizard appears.
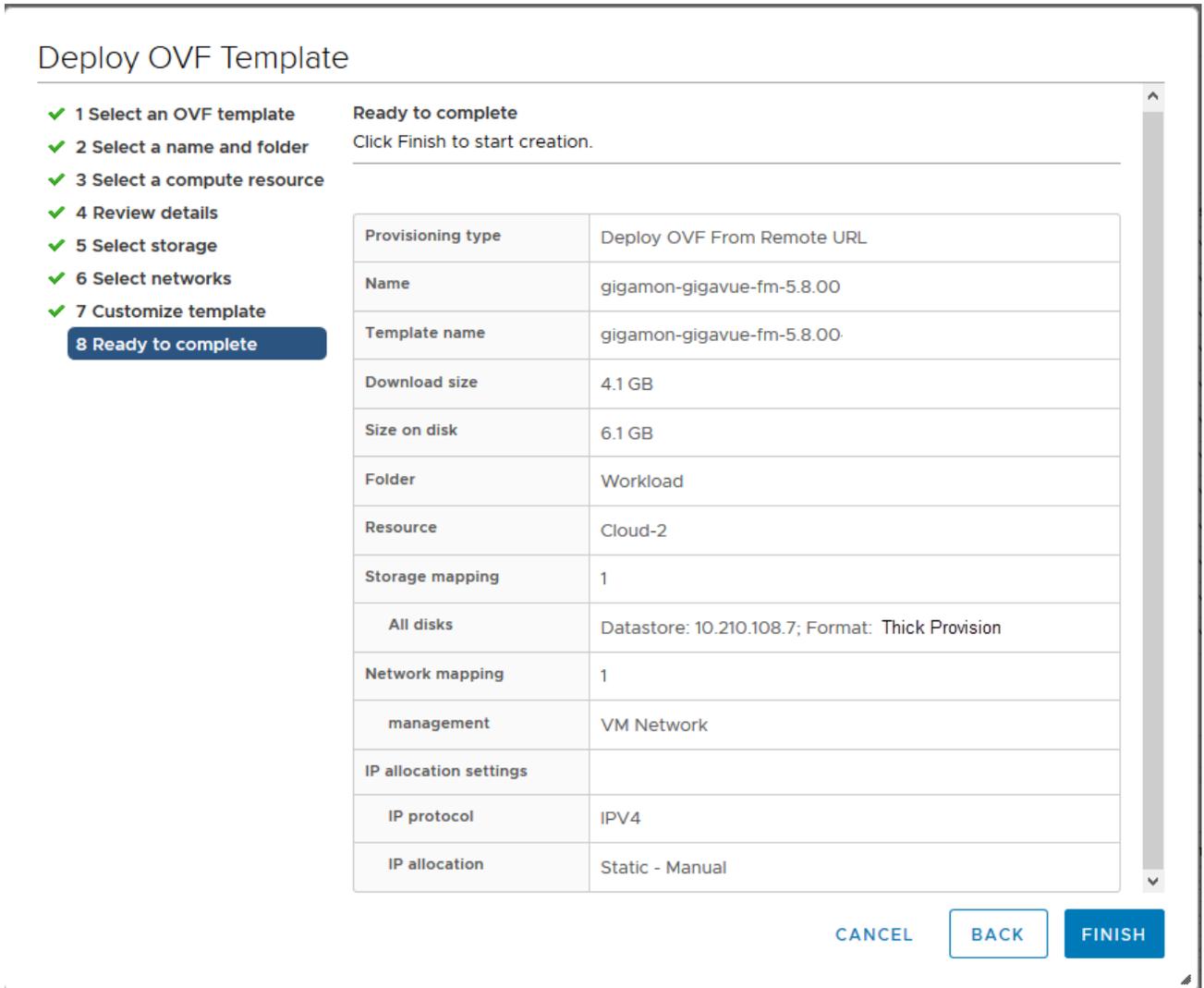
Figure 9   *vSphere Client: Final Verification Before Installation*

20. Verify that all of the settings are correct, and then click **Finish**. The Recent Tasks pane of the vSphere Client Home page shows the progress of the deployment operation.

Figure 10   *vSphere Client: OVF Deployment Progress*

When the operation completes, you have successfully deployed a GigaVUE-FM instance.

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 can choose to perform some initial configuration before you 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:

- Perform Network Configurations
- Add Additional vNIC
- Increase the Memory
- Add vCPUs

Perform Network Configurations

To perform the initial configuration:

1. Log in to GigaVUE-FM using one of the following methods:

   - If you have a static IP address set up for the GigaVUE-FM, log in through SSH.
   - If you do not have a static IP address set up for the GigaVUE-FM, complete the following steps:

     a. Log in to the VMware vCenter web interface.

     b. Go to **Menu > VMs and Templates**.

     c. Right-click the GigaVUE-FM virtual machine, and select **Open Remote Console**.

     d. Log in with your GigaVUE-FM Shell credentials.

2. Perform the following steps to complete the initial configuration:

   a. Run the `fmctl jump-start` command. The Initial System Configuration screen appears as shown in the following figure:

b. 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.

c. Enter the required domain name.

d. Decide whether to use DHCP for the management interface. Choose one of the following options:
   - If you enter **yes**, the **IPv4 Address** or **IPv6 Address**, **CIDR**, **Gateway**, **DNS Servers**, and **Search Domains** are dynamically set up for the management interface.
   - If you enter **no**, you must provide the following:
     i. **IPv4 Address** or **IPv6 Address**, and the respective **CIDR** and **Gateway**.
     ii. In the **DNS Servers** field, provide the address of any additional name servers required. Enter the set of IP addresses with spaces in between.
     iii. In the **Search Domains** field, provide the required DNS domains with spaces in between.

e. You can choose to either enable or disable NTP. In the **Enable NTP** field, enter one of the following:
   - **Yes**—Use NTP to synchronize the time between GigaVUE-FM virtual machine and the NTP server. In the **NTP Servers** and **NTP Version** fields, enter the NTP server address and the version number of the NTP server.
   - **No**—you can skip the next step and directly save your configurations.

f. Select **OK** to save your configurations.

g. Reboot your GigaVUE-FM virtual machine.

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

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 11vSphere Client: Edit Settings.
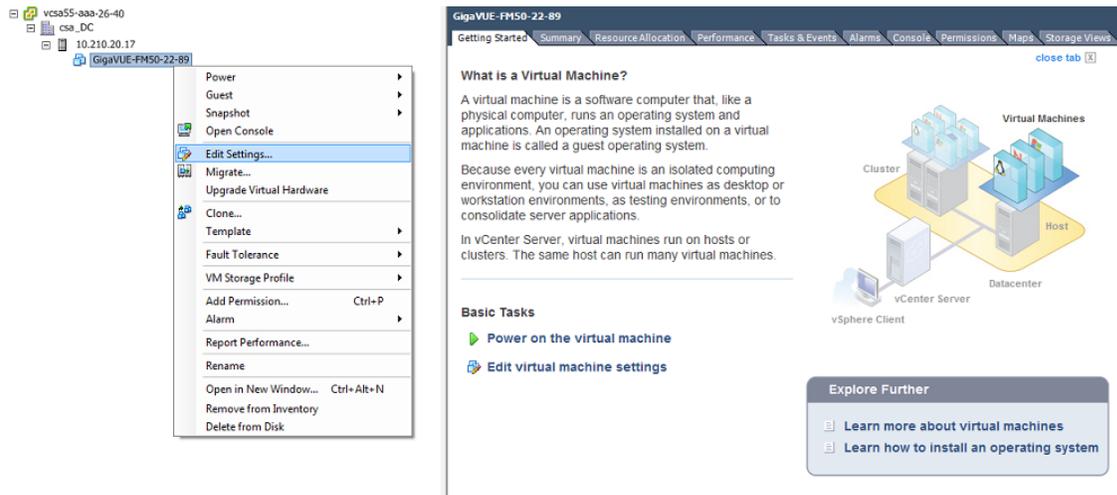
Figure 11   *vSphere Client: Edit Settings*

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

3. In the Add Hardware dialog box, select **Ethernet Adapter** and then click **Next**. Refer to Figure 12vSphere Client: Selecting Ethernet Adapter.
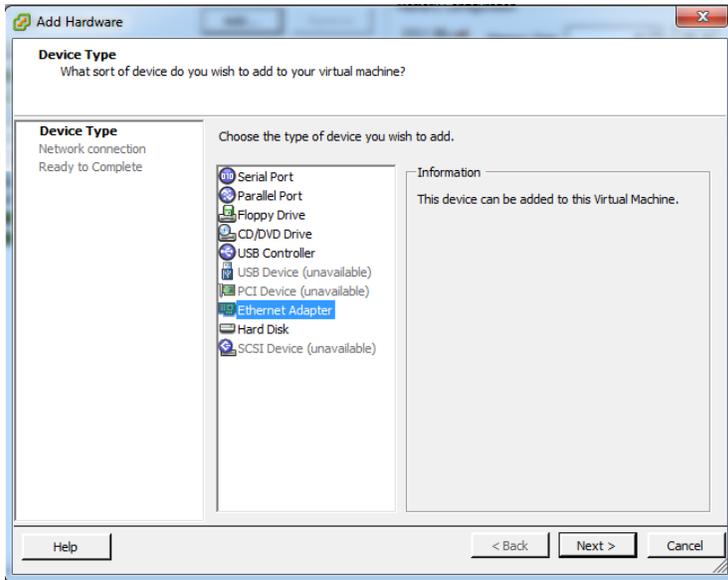
Figure 12   *vSphere Client: Selecting Ethernet Adapter*

4.   In the **Adapter Type** drop-down list, select an appropriate adapter type. Refer to Figure 13vSphere Client: Selecting Device Type.
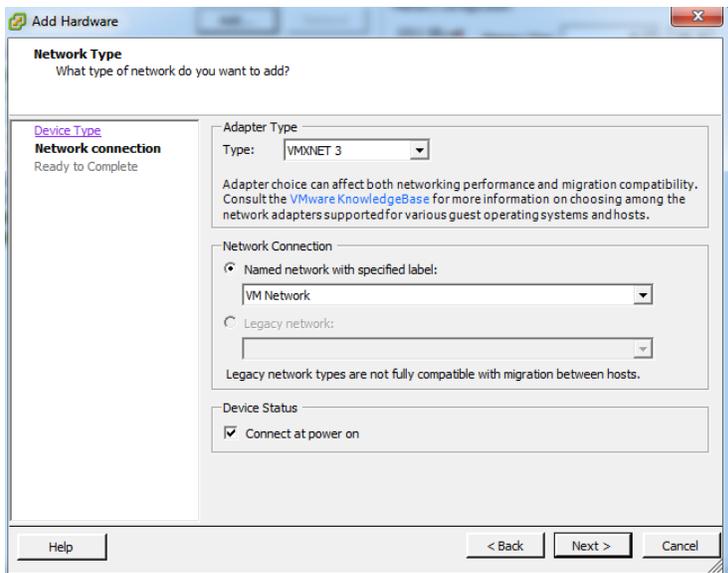
Figure 13   *vSphere Client: Selecting Device Type*

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 14vSphere Client: Edit Settings.
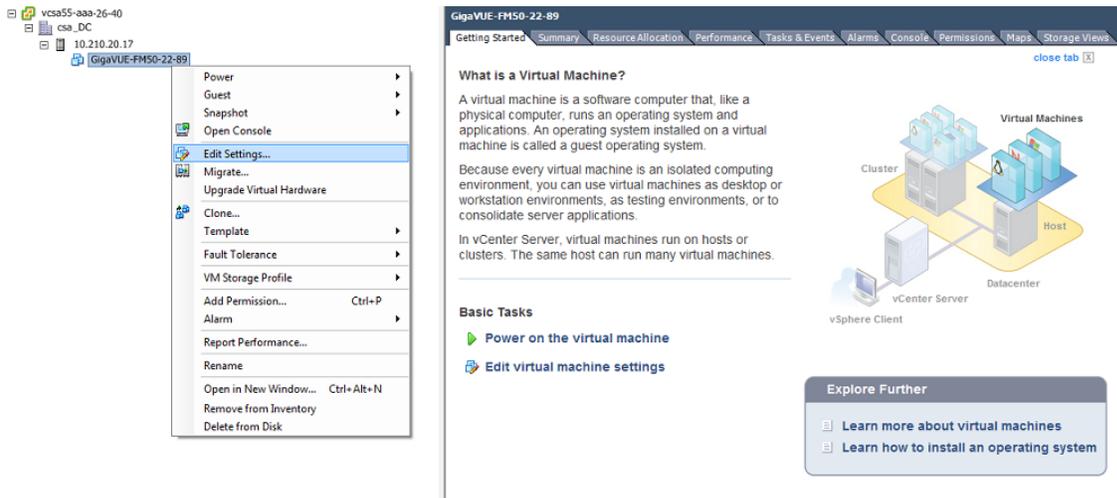
Figure 14 *vSphere Client: Edit Settings*

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 15vSphere Client: Increasing Memory.
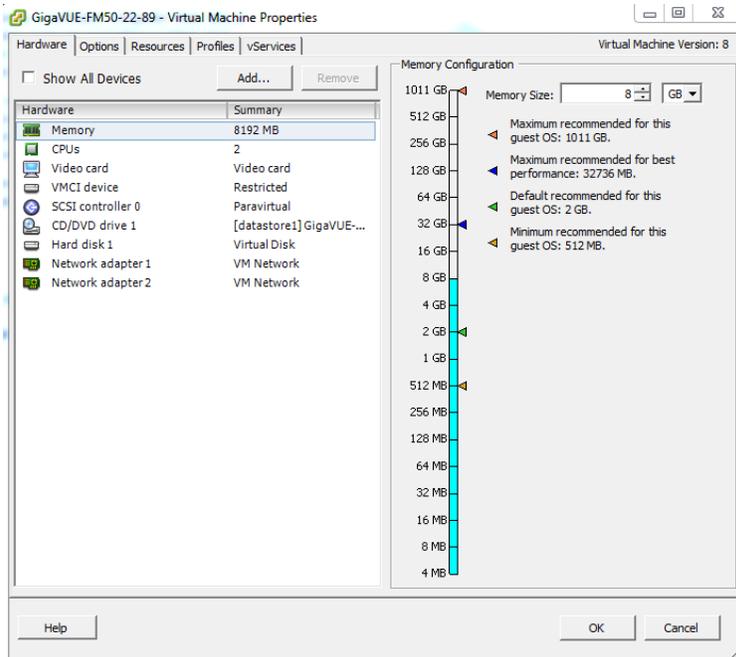
Figure 15 *vSphere Client: Increasing Memory*

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 16vSphere Client: Adding vCPUs.
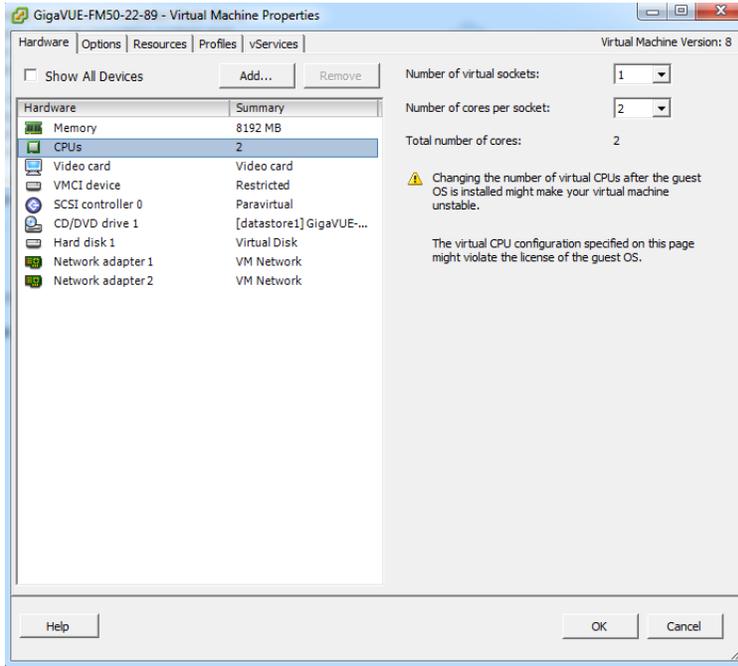
Figure 16   *vSphere Client: Adding vCPUs*

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**.

Install Third-Party Certificate

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

- Rules and Notes
- Steps

Rules and Notes

- When you copy the contents of the certificate file, do not delete the EOL characters at the start of each line.
- In case of chain of certificates, bundle the server, intermediate, and root certificates into a single certificate file before replacing the `localhost.crt`.
- For chain of certificates, add the SSLCertificateChainFile directive to `/etc/httpd/conf.d/ssl.conf: sudo vim /etc/httpd/conf.d/ssl.conf`. Add the following line:`SSLCertificateChainFile /etc/pki/tls/certs/localhost.crt`.
- When replacing the certificate key and file ensure to adhere to the following naming convention:
  - For Certificate: localhost.crt
  - For Certificate Key: localhost.key

Steps

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 .

3. Log in to the GigaVUE-FM CLI.

4. 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: `chmod 644`
   - Provide access to key: `chmod 600`
   - Restart apache as root: **systemctl restart httpd**

   The system will now start using the newly installed certificate.

GigaVUE-FM uses a public key (cms.p12 file) to encrypt the Security Assertion Markup Language (SAML) messages. You can either use the default public key available in GigaVUE-FM or generate a new public key using the following command:

```
sudo openssl pkcs12 -export -name CMS -out /etc/gigamon/cms.p12 -inkey
/etc/pki/tls/private/localhost.key -in /etc/pki/tls/certs/localhost.crt -
passout pass:cms123
```

You will be prompted for a pass phrase for the `localhost.key`.

After the public key (cms.p12 file) is generated, place the file in the `/etc/gigamon` directory. Change the access rights to `chmod 644`.

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 describes the hardware requirements.
- Install GigaVUE-FM for Microsoft Hyper-V describes the steps to install and deploy GigaVUE-FM.

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 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

Minimum Hardware Requirements	
RAM	At least 16GB
Disk Space	At least 84GB shared (FC, iSCSI, NFS, or FCoE) or locally attached storage (PATA, SATA, SCSI). NOTE: Increase the disk space depending on the configuration load requirements for the given GigaVUE-FM instance.
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	84GB Virtual IDE (the Hyper-V default) • System Disk - 40GB • Swap Disk - 4GB • Data Disk - 40GB
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
Apple® Safari®	• Version 9.1
Google®Chrome®	• Version 52
Microsoft Edge	• Version 38

Notes:

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

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. Click **Start > Administrative Tools > Hyper-V Manager** to open the Hyper-V Manager.
2. From the Actions pane, click **New > Virtual Machine**. Refer to Figure 1Opening the Virtual Machine Wizard.

   The **New Virtual Machine Wizard** opens.
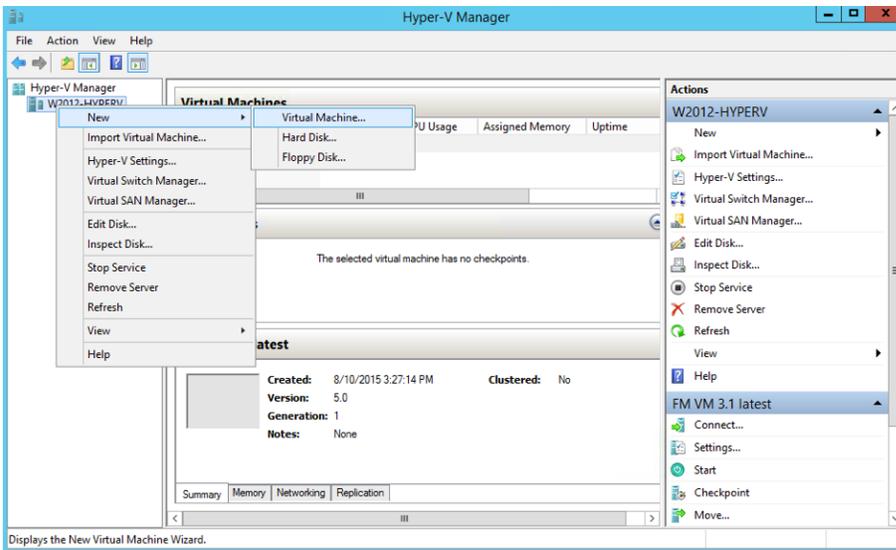
Figure 1   *Opening the Virtual Machine Wizard*

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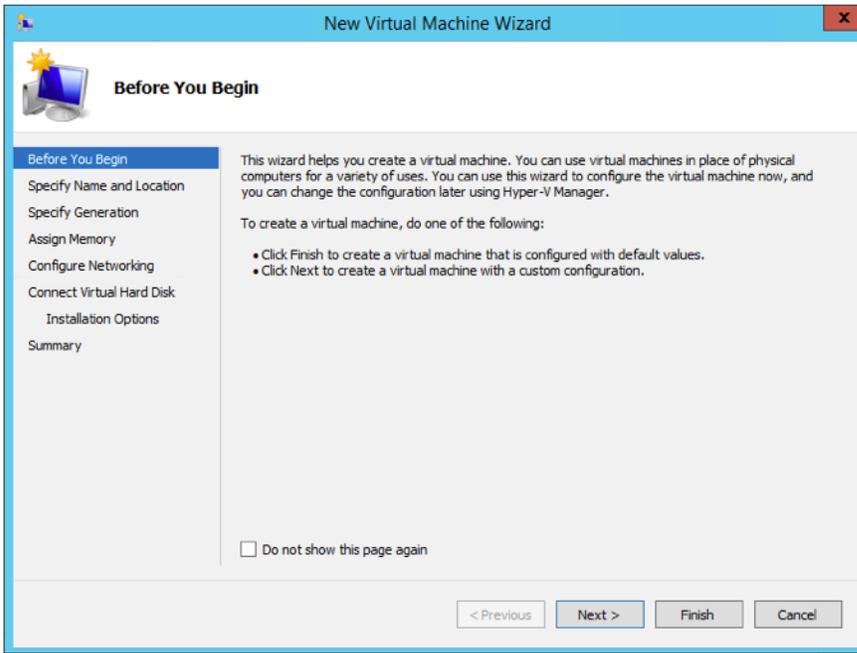
Figure 2   *Before You Begin Screen*

4. After the **Specify Name and Location** page of the **New Virtual Machine Wizard** opens as shown in Figure 3Name and Location Page, 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** check box and providing a custom path.

    b. Click **Next** to continue.
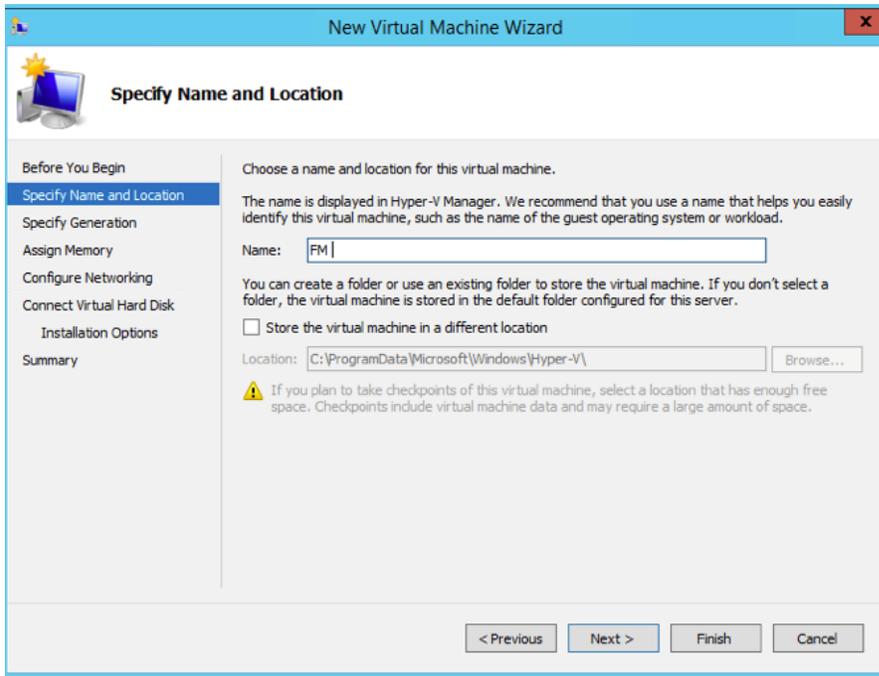
Figure 3   *Name and Location Page*

5. On the **Specify Generation** page of the **New Virtual Machine Wizard**, select **Generation 1** as shown in Figure 4Specify Generation Page

> NOTE: 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.
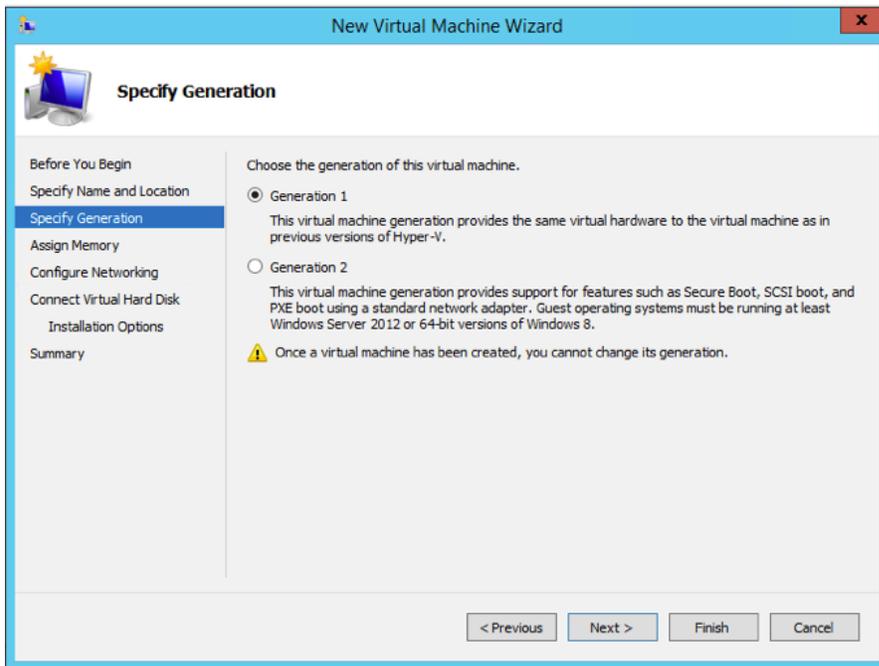
Figure 4   *Specify Generation Page*

6. Click **Next** to continue.

   The **Assign Memory** page of the **New Virtual Machine Wizard**opens, which is shown in Figure 5Assign Memory Page.
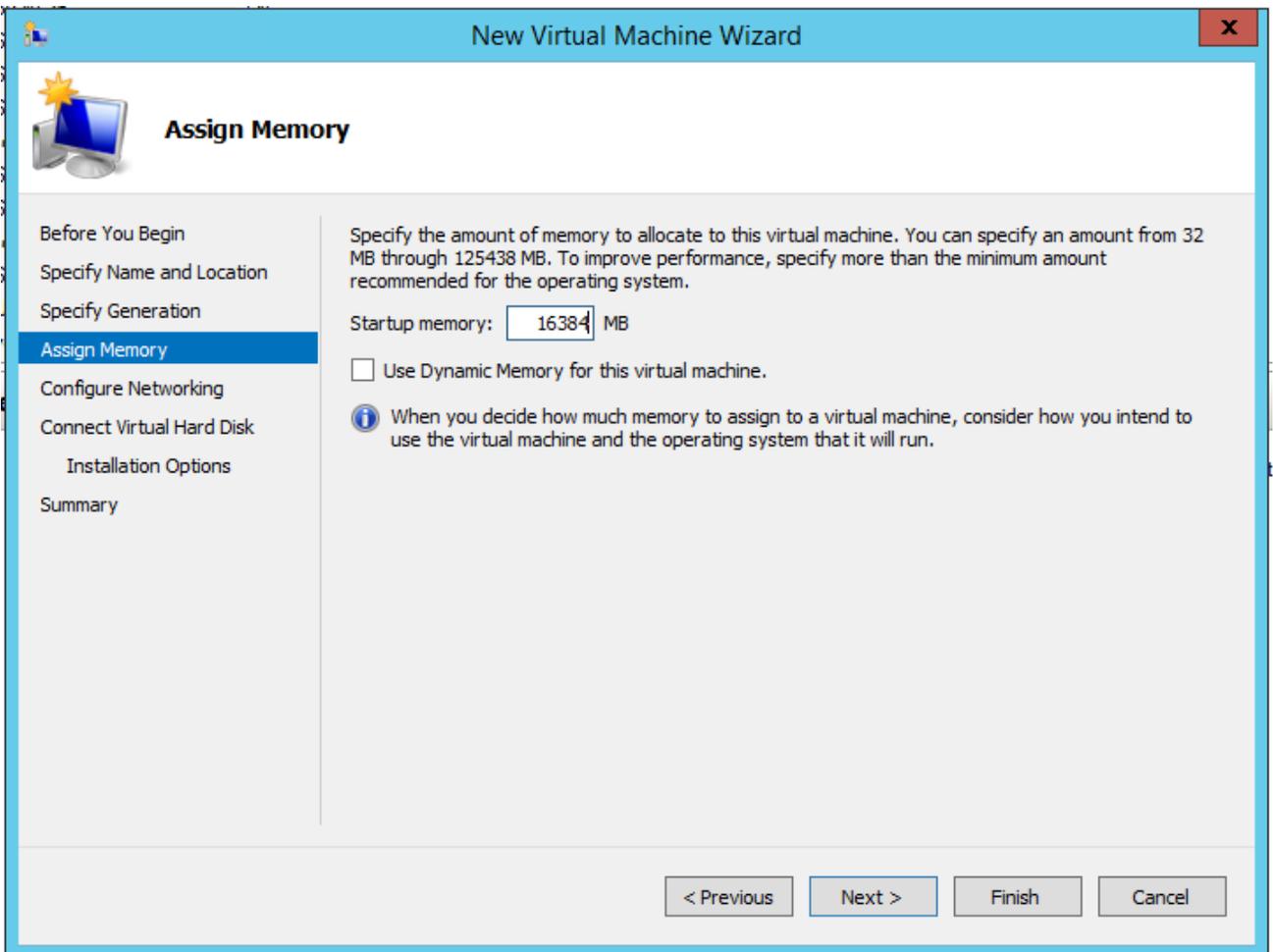
Figure 5   *Assign Memory Page*

7. Change the **Memory** assigned to this virtual machine to **16384** MB, and then click **Next** to continue.

   The **Configure Networking** page of the **New Virtual Machine Wizard**opens, which is shown in Figure 6Configure Networking Page.
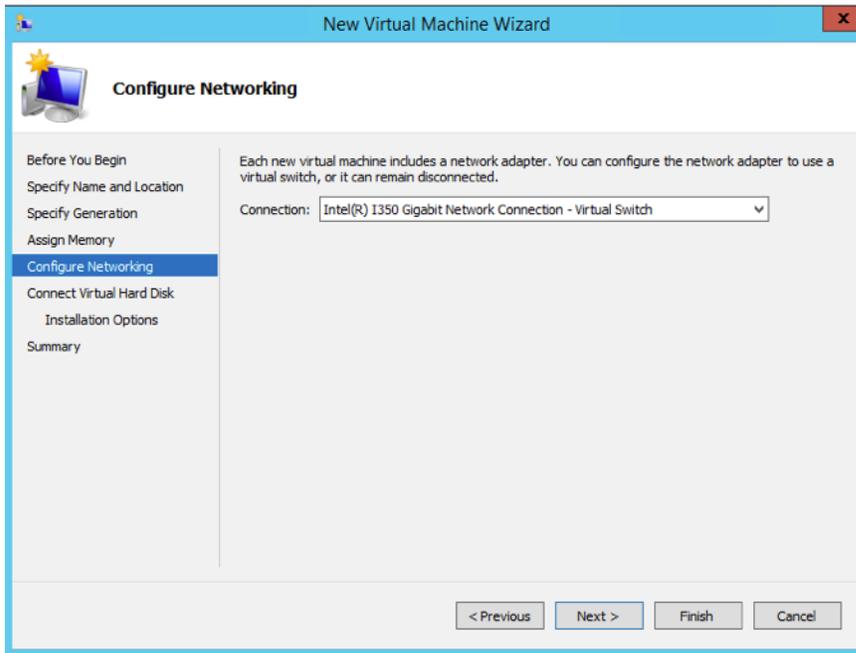
Figure 6   *Configure Networking Page*

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

    The **Connect Virtual Hard Disk**page of the **New Virtual Machine Wizard** opens,
    which is shown in Figure 7Connect Virtual Hard Disk Page.
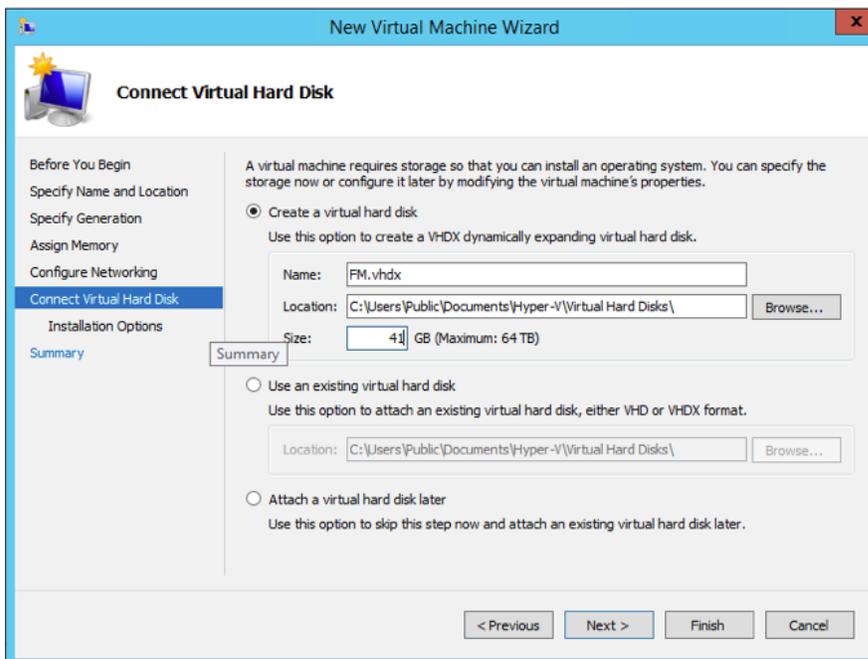
Figure 7   *Connect Virtual Hard Disk Page*

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 8Install Options Page.

10. Use this dialog box to select the ISO image file for GigaVUE-FM. As shown in the figure Figure 8Install Options Page, set the following options:

    a. Select the option **Install an operating system from a bootable 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.
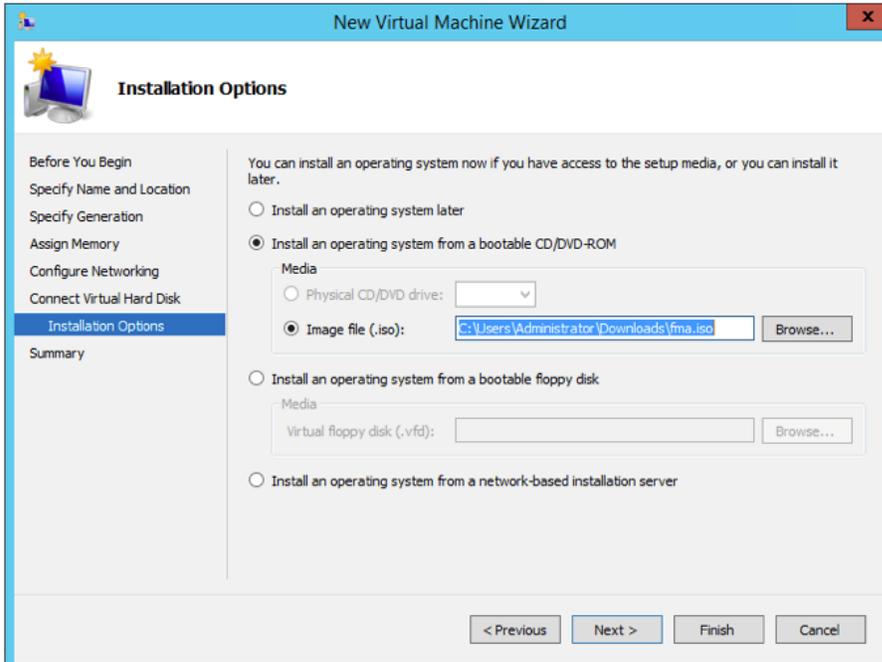
Figure 8   *Install Options Page*

   After you click **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 9Summary Page.
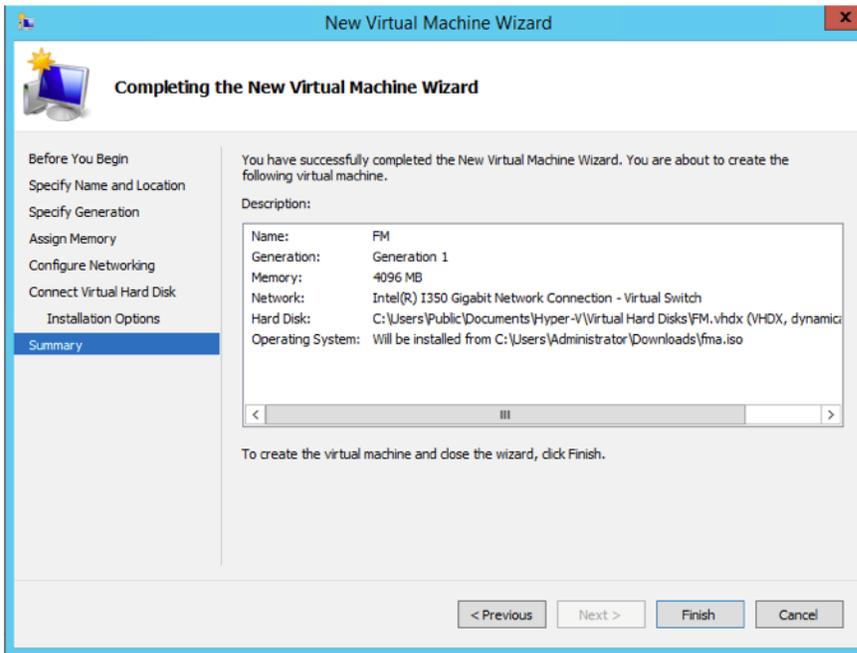
Figure 9 *Summary Page*

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 procedures given below will take you through the steps of adding an additional virtual hard disk and actually installing GigaVUE-FM.

Add Additional Virtual Hard Disk and Install GigaVUE-FM

To add an additional virtual hard disk and install GigaVUE-FM:

1. In Hyper-V Manager, from the Actions pane, select the newly added GigaVUE-FM virtual machine, and then click **Settings**.
2. In the Settings page, select **IDE Controller 0**.
3. In the IDE Controller pane that appears to the right, select **Hard Drive**, and then click **Add**. Refer to the following figure:
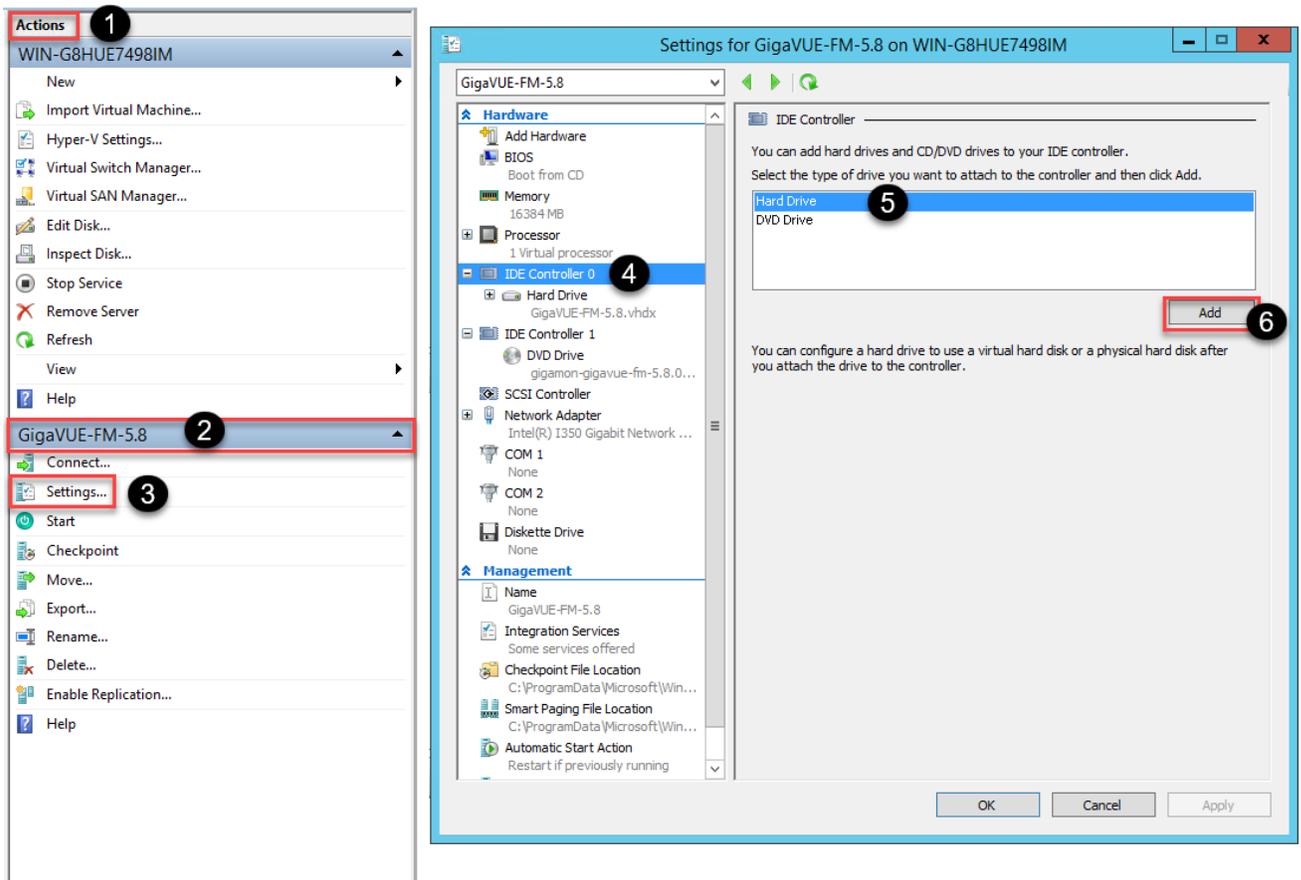
Figure 10 *Navigating to Add Additional Hard Disk*

A new Hard Drive entry is added under IDE Controller 0.

4. Select the Hard Drive entry.
5. In the Hard Drive pane that appears to the right, select **Virtual hard disk**, and then click **New** as shown in the following figure:
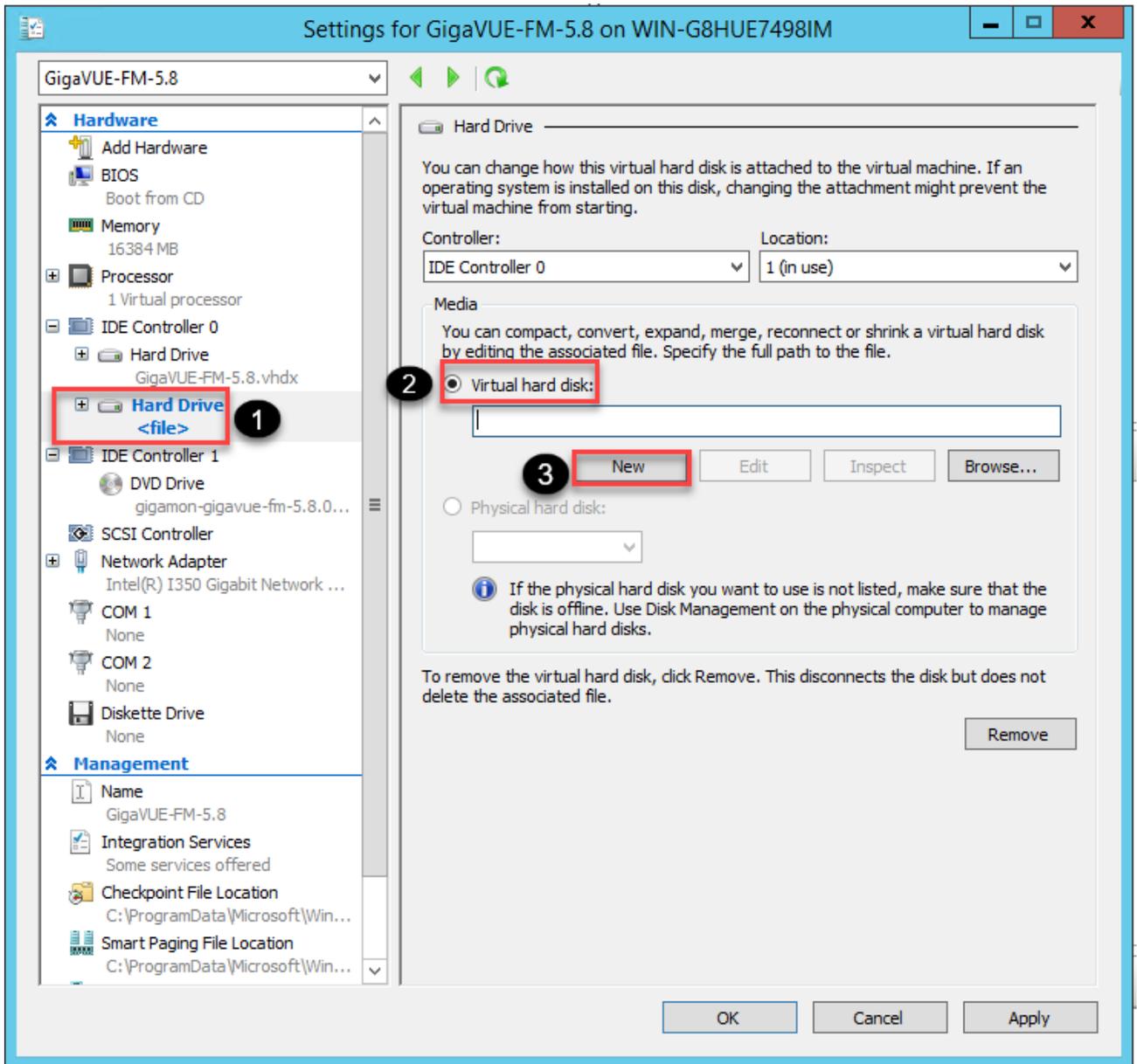
Figure 11 *Navigating to the New Virtual Hard Disk Wizard*

The **New Virtual Hard Disk Wizard** opens.
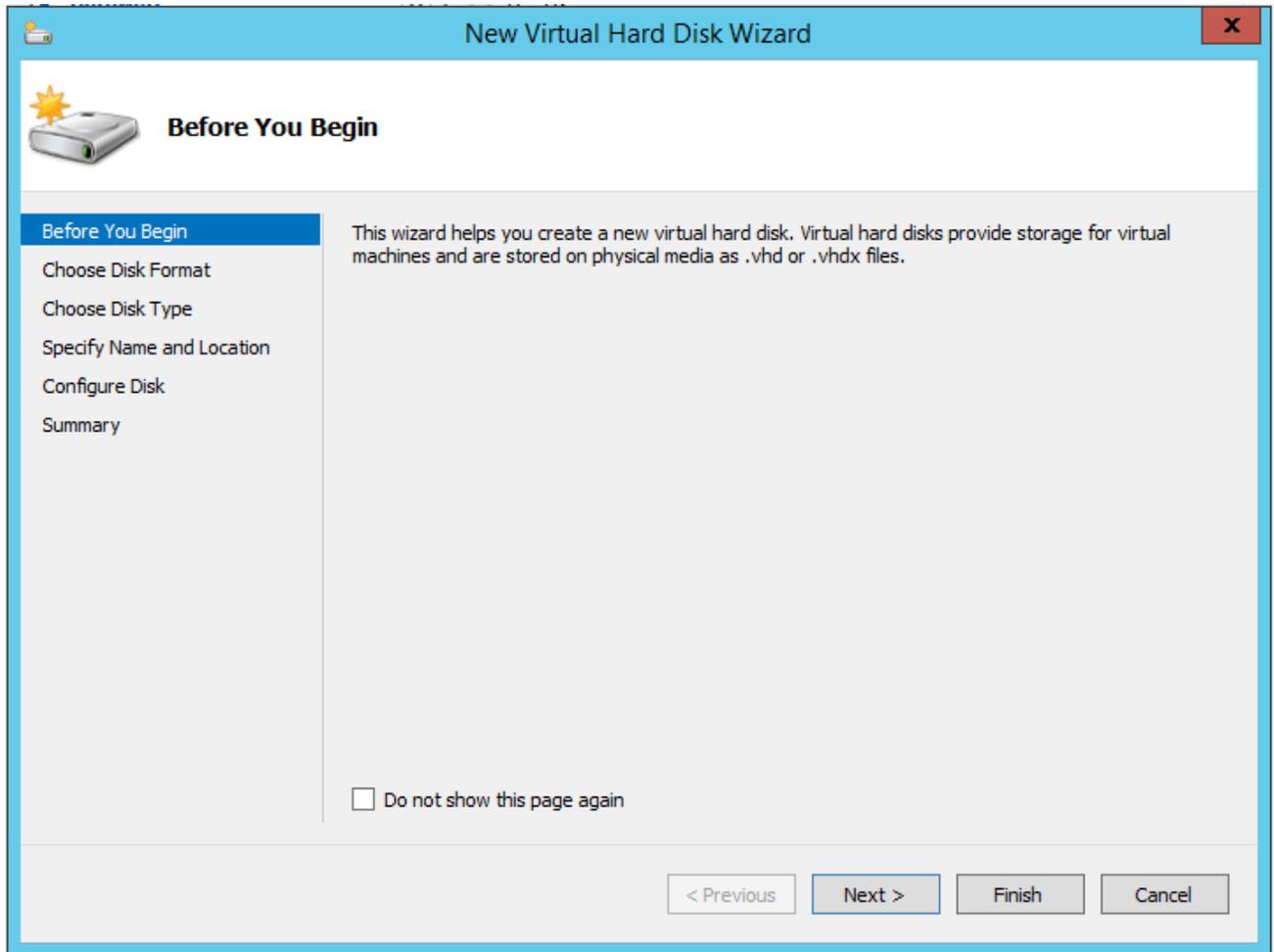
Figure 12 *New Virtual Hard Disk Wizard*

6. Click **Next** to go to the Choose Disk Format page of the wizard.
7. Select the required format that you want to use for the virtual hard disk, and then click **Next**.

   The Choose Disk Type page of the wizard appears.

8. Select the required disk type for the virtual hard disk, and then click **Next**.

   The Specify Name and Location page of the wizard appears.

9. Specify a unique name for the virtual hard disk, and then browse and select the location where you want to save the disk.
10. Click **Next**. The Configure Disk page of the wizard appears.
11. You can choose one of the following options to configure the virtual hard disk:

    - Create a blank virtual hard disk of size 41 GB.
    - Choose a physical hard disk from which you can copy the contents into the new virtual hard disk.

- Browse and select a virtual hard disk from which you can copy the contents into the new virtual hard disk.

12. Click **Next** to exit the New Virtual Hard Disk Wizard.
13. Click **OK**. The GigaVUE-FM installation begins as shown in the following figure:
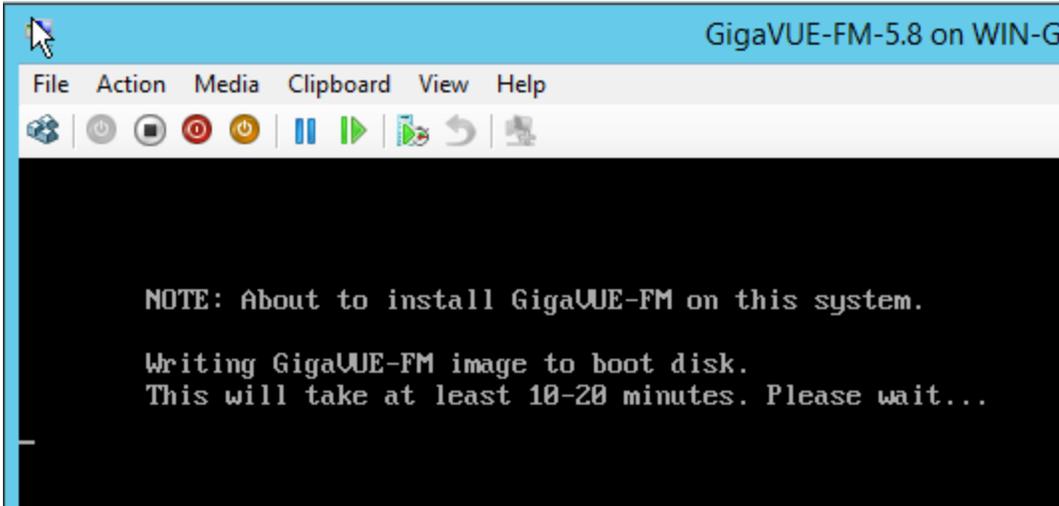
Figure 13 *GigaVUE-FM Installation Begins*

It may take several minutes for the installation to complete. The system will reboot after the installation is completed.

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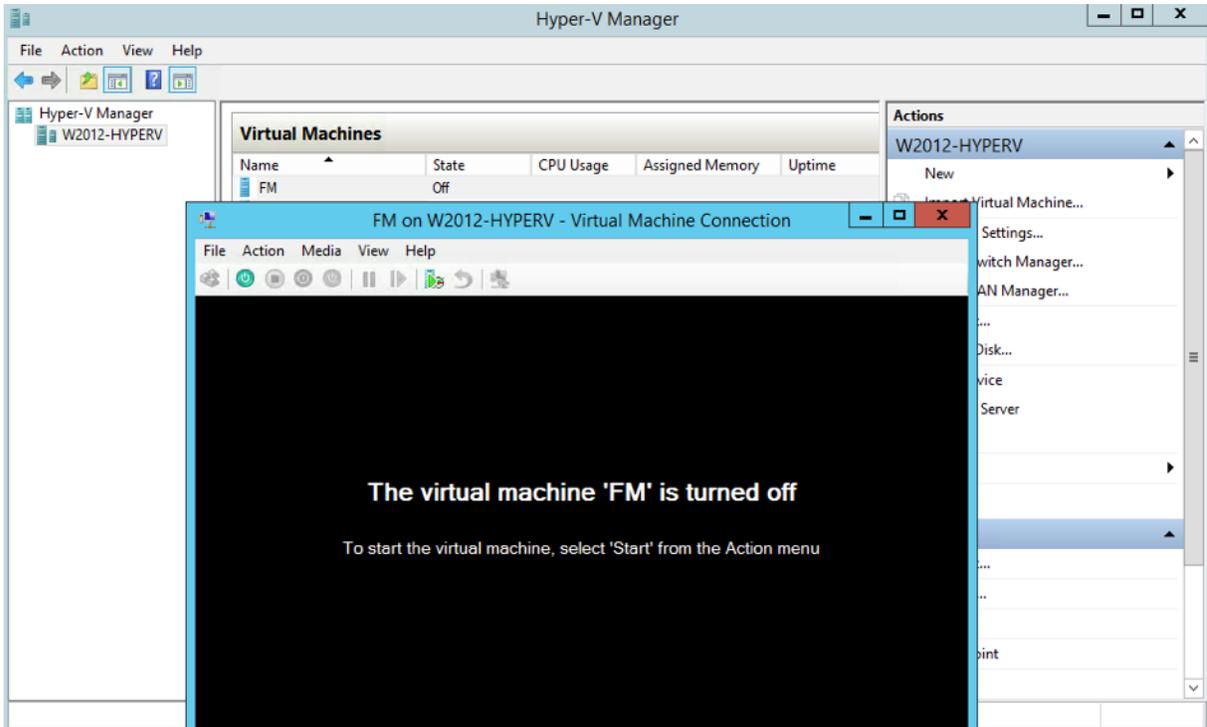
3. Select **Action > Start** to start the GigaVUE-FM virtual machine from the Virtual Machine Connection tool.

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:
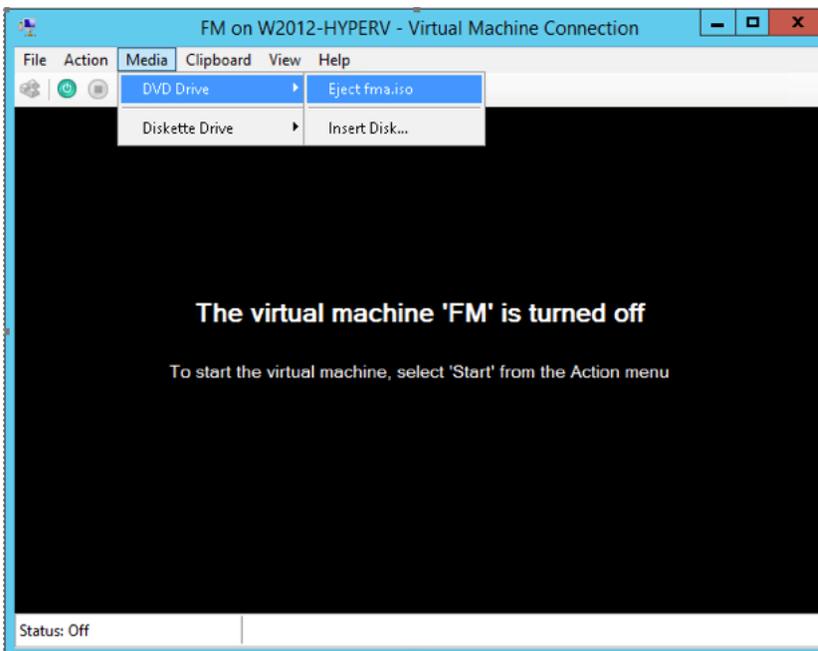
Disconnect the ISO Image File

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 .

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. Click **Start > Administrative Tools > Hyper-V Manager**.

   > **NOTE:** Make sure you have already disconnected the ISO image file used to install GigaVUE-FM. Refer to Disconnect the ISO Image File for details.

2. 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.

3. 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.

4. Log in as **admin** with password **admin123A!**. You will be prompted to change your password. After you change and confirm your password, perform the following steps:

   a. Run the `fmctl jump-start` command. The Initial System Configuration screen appears as shown in the following figure:

   b. 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.

   c. Enter the required domain name.
   d. Decide whether to use DHCP for the management interface. Choose one of the following options:
   - If you enter **yes**, the **IPv4 Address** or **IPv6 Address**, **CIDR**, **Gateway**, **DNS Servers**, and **Search Domains** are dynamically set up for the management interface.
   - If you enter **no**, you must provide the following:
     i. **IPv4 Address** or **IPv6 Address**, and the respective **CIDR** and **Gateway**.
     ii. In the **DNS Servers** field, provide the address of any additional name servers required. Enter the set of IP addresses with spaces in between.
     iii. In the **Search Domains** field, provide the required DNS domains with spaces in between.

    e. You can choose to either enable or disable NTP. In the **Enable NTP** field, enter one of the following:

- **Yes**—Use NTP to synchronize the time between GigaVUE-FM virtual machine and the NTP server. In the **NTP Servers** and **NTP Version** fields, enter the NTP server address and the version number of the NTP server.
- **No**—you can skip the next step and directly save your configurations.

    f. Select **OK** to save your configurations.

    g. Reboot your GigaVUE-FM virtual machine.

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

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 describes the hardware requirements.
- Install GigaVUE-FM for KVM describes the steps to install and deploy GigaVUE-FM.
- Initial GigaVUE-FM Configuration describes the steps to start GigaVUE-FM instance and configure it.

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) • 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.

Minimum Hardware Requirements	
RAM	At least 16GB.
Disk Space	At least 84GB shared (FC, iSCSI, NFS, or FCoE) or locally attached storage (PATA, SATA, SCSI). NOTE: Increase the disk space depending on the configuration load requirements for the given GigaVUE-FM instance.
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	84GB • System Disk - 40GB • Swap Disk - 4GB • Data Disk - 40GB
Virtual Network Interfaces	One vNIC

Supported Browsers

GigaVUE-FM has been tested on the following browsers:

Browser	Version
Mozilla Firefox™	• Version 47
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.
- Internet Explorer 11 (IE11) is deprecated for security reasons and is no longer supported. IE users are strongly encouraged to switch to Microsoft Edge.

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

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, and then click the **Create a new virtual machine** icon as shown in the following figure:
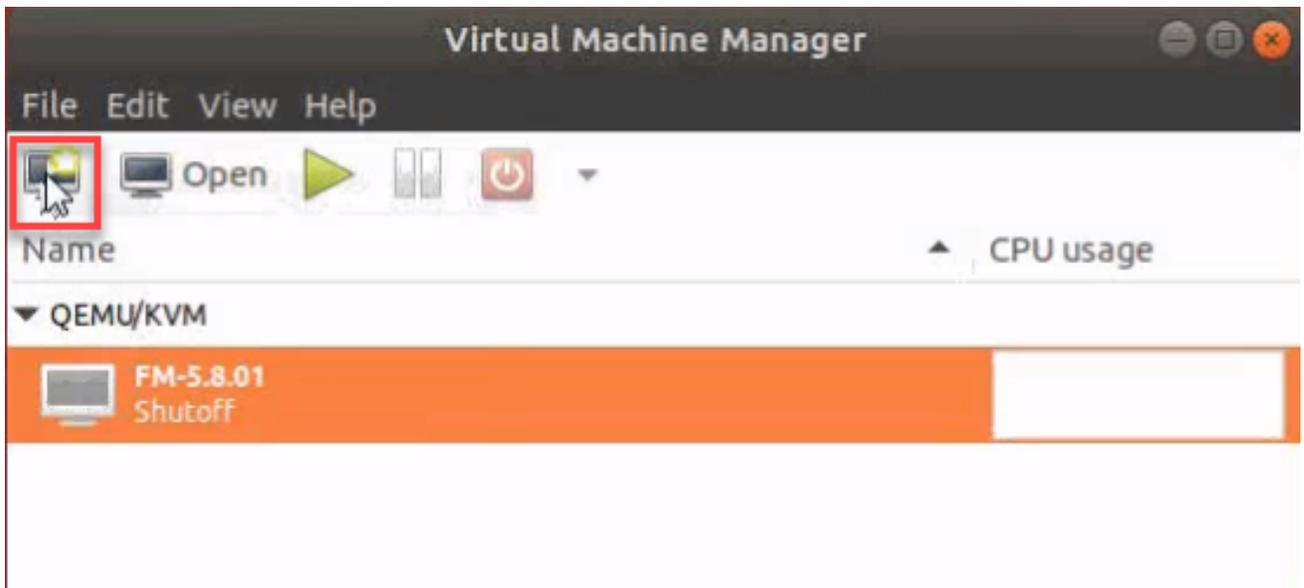
   The **New Virtual Machine Wizard** opens.

2. Select **Local install media (ISO image or CDROM)**, and then click **Forward** to continue.
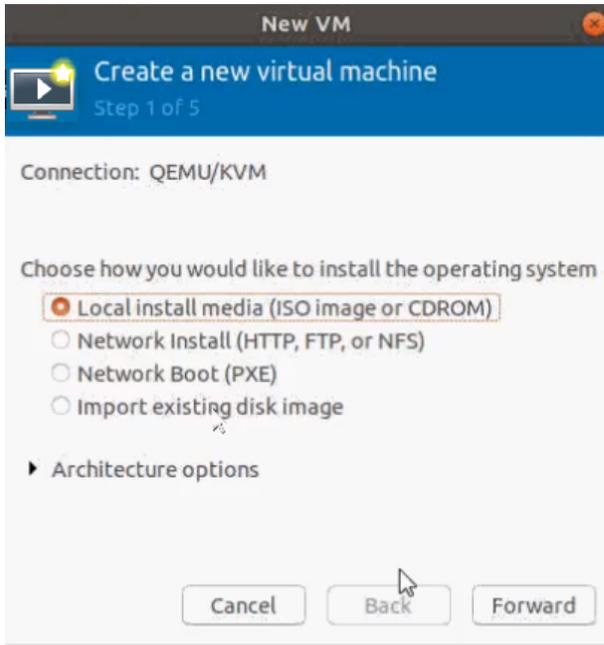
3. Browse and select the location from where to upload the GigaVUE-FM ISO image, and then select the **Automatically detect operating system based on install media** check box.
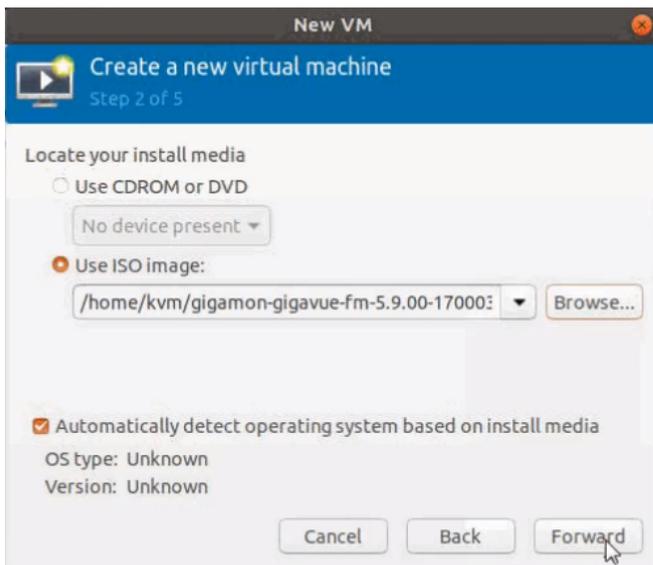
Click **Forward** to continue.

4. Set the **Memory** and **CPU** Settings.
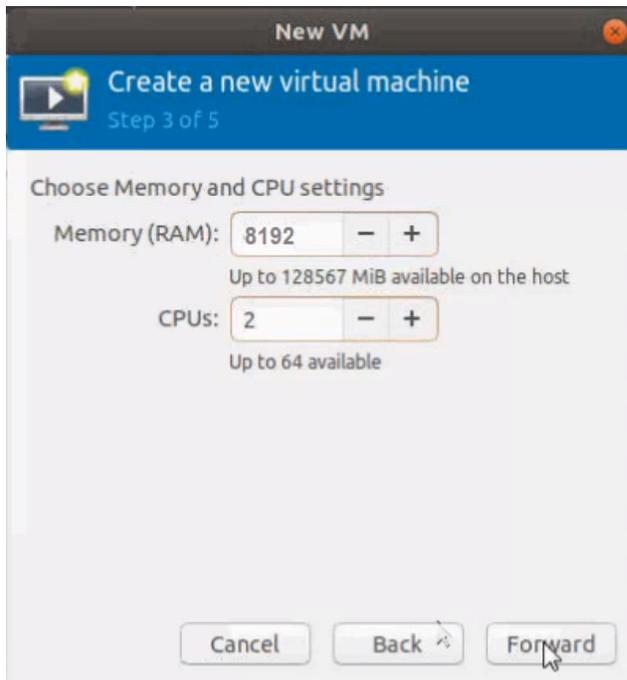
Click **Forward** to continue.

5. Select the **Enable storage for this virtual machine** check box, and set the **Size** to **40**Gb.
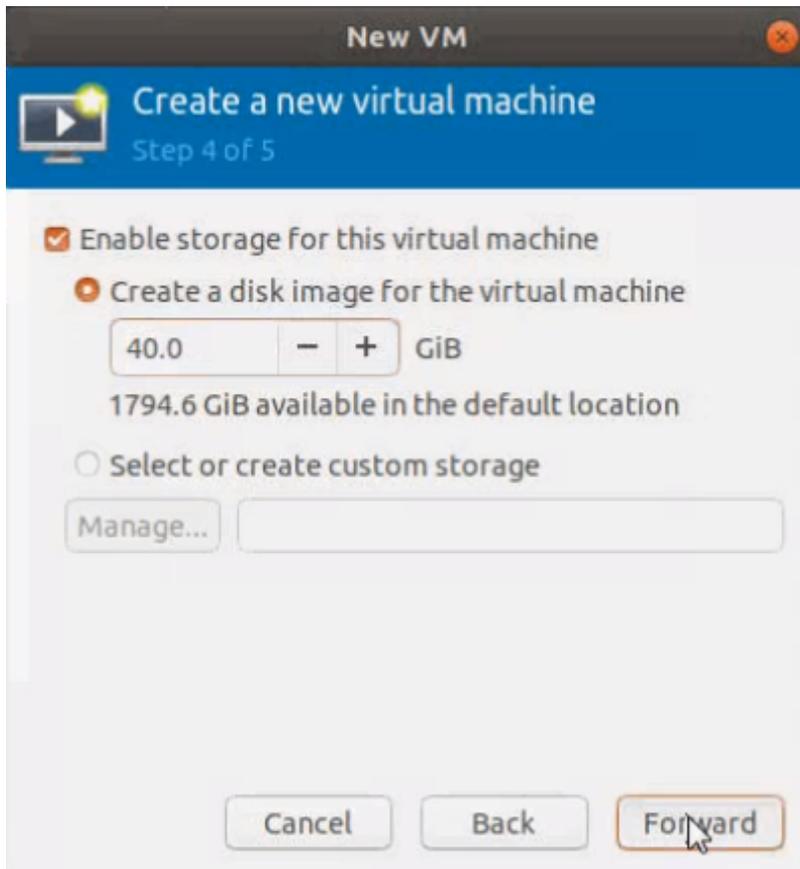
Click **Forward** to continue.

6. On the next screen, complete the following:

   a. Enter a unique name for the virtual machine.

   b. Select the **Customize configuration before install** check box.

   c. From the **Network Selection** drop-down list, select the required network communication option.

   d. From the **Source mode** drop-down list, select **Bridge**.

   e. Click **Finish**.
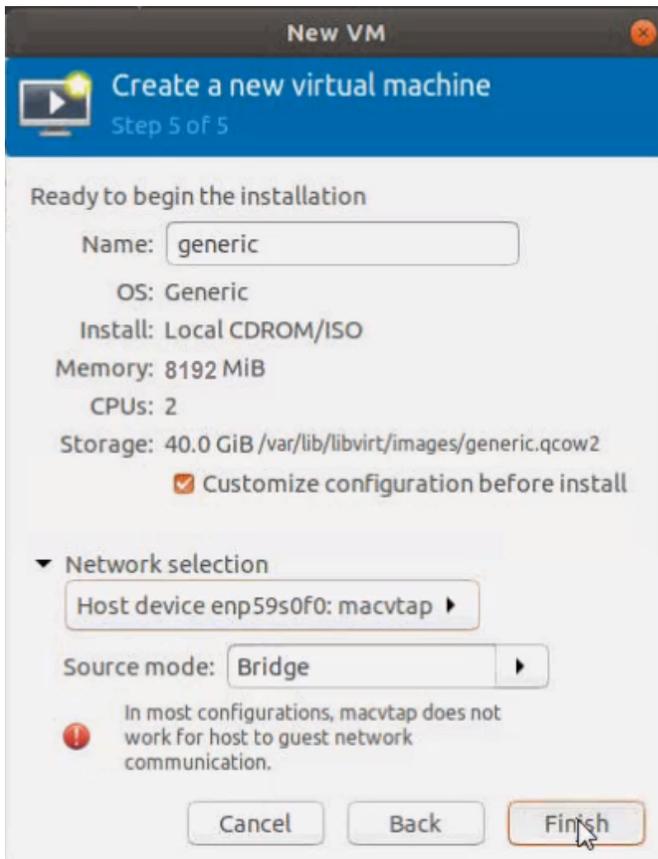
The summary screen appears as shown in the following figure:
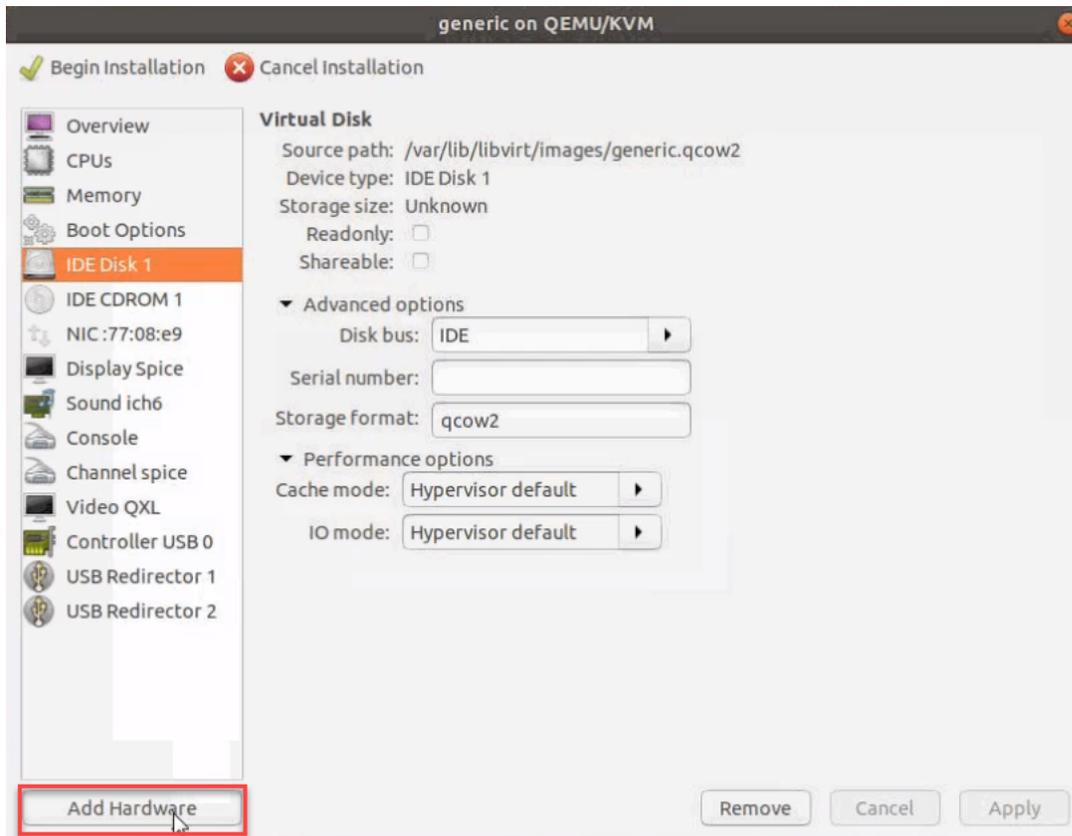
7. Verify the options that you have selected, and then click **Add Hardware** to add the second disk.

8. In the Add New Virtual Hardware screen, set the disk size to **40**Gb.
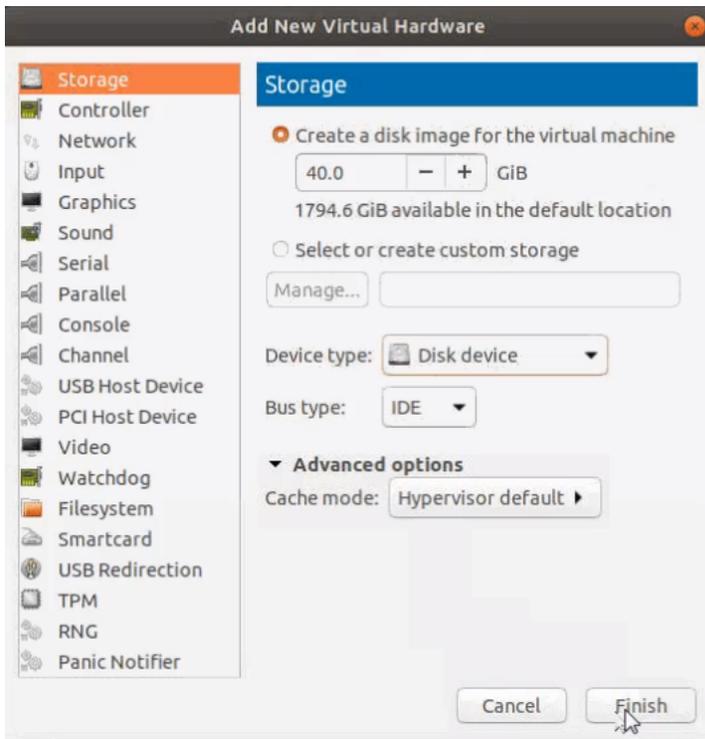
9. Click **Finish**. The summary screen appears again where you can verify the details of IDE Disk 2 that you added. Click **Begin Installation**.
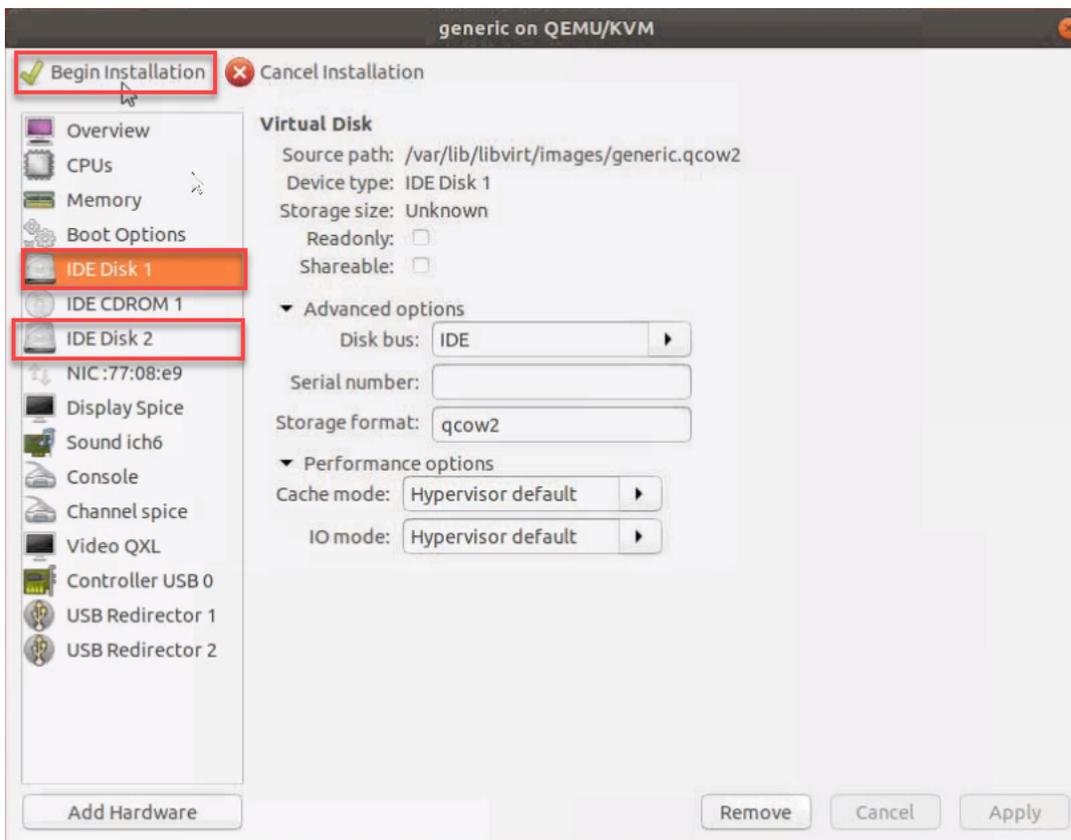
Once the installation is complete, the virtual machine launches.

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!!**. You will be prompted to change your password. After you change and confirm your password, perform the following steps:

    a. Run the `fmctl jump-start` command. The Initial System Configuration screen appears as shown in the following figure:

    b. 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.

    c. Enter the required domain name.

    d. Decide whether to use DHCP for the management interface. Choose one of the following options:

- If you enter **yes**, the **IPv4 Address** or **IPv6 Address**, **CIDR**, **Gateway**, **DNS Servers**, and **Search Domains** are dynamically set up for the management interface.
- If you enter **no**, you must provide the following:
    - i. **IPv4 Address** or **IPv6 Address**, and the respective **CIDR** and **Gateway**.
    - ii. In the **DNS Servers** field, provide the address of any additional name servers required. Enter the set of IP addresses with spaces in between.
    - iii. In the **Search Domains** field, provide the required DNS domains with spaces in between.

    e. You can choose to either enable or disable NTP. In the **Enable NTP** field, enter one of the following:

- **Yes**—Use NTP to synchronize the time between GigaVUE-FM virtual machine and the NTP server. In the **NTP Servers** and **NTP Version** fields, enter the NTP server address and the version number of the NTP server.
- **No**—you can skip the next step and directly save your configurations.

    f. Select **OK** to save your configurations.

    g. Reboot your GigaVUE-FM virtual machine.

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

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.

> **Before you upgrade**, read Important GigaVUE-FM Upgrade Guidance for special guidelines and caveats related to upgrading from specific versions of GigaVUE-FM.

At a high level, the upgrade process involves the following steps:

1. Before starting an upgrade to GigaVUE-FM, get the latest image, upgrade information, and Release Notes from the Software & Release Notes download page (login required) on the Gigamon Community.
2. Be sure to review the *GigaVUE Release Notes* for the latest release before performing the upgrade.
   - Ensure your environment supports any specified system requirements.
   - Check the minimum memory requirements in the new release as they may change between releases.
3. Once the GigaVUE-FM image is obtained, download it to a server within your environment. This must be a server that your current GigaVUE-FM instance can access to upload it.
4. **(Important)** Save your current configuration using the facilities provided by the hypervisor before upgrading.
5. Verify that the GigaVUE-FM instance time is set correctly to ensure accuracy of the trending data that is captured.
6. Perform the upgrade using either the Command-Line Interface (CLI) or the GigaVUE-FM User Interface (UI).
7. After upgrading your GigaVUE-FM instance, upgrade your GigaVUE-VM deployments. Refer to *"Bulk Upgrading GigaVUE-VM Nodes"* in the *GigaVUE Cloud Suite for VMware Configuration Guide*.

Upgrade Methods:

- Upgrade GigaVUE-FM from CLI
- Upgrade GigaVUE-FM from the UI
- How to Use the Snapshot Feature

Important GigaVUE-FM Upgrade Guidance

To upgrade GigaVUE-FM, the recommended procedure is to back up your current configuration and perform the pre-upgrade checks (memory requirements, the maximum number of images) before installing the image. You can upgrade via the GigaVUE-FM UI or CLI. It is recommended that you plan your upgrade before performing any upgrade steps.

> **Important:** Intent-Based Orchestration (IBO) Policies are removed when upgrading from any pre-5.11 version of GigaVUE-FM to version 5.11.00 or above. IBO Policies will need to be recreated after upgrading to 5.11.00 or above.

> **Best Practice:** Before performing an upgrade, in addition to taking a backup of GigaVUE-FM, also take a Sysdump, which provides valuable configuration information that is not captured in the backup. You can use the Sysdump after the upgrade to troubleshoot any upgrade-related issues with your configurations.

GigaVUE-FM Upgrade Rules and Notes

- **Best Practice:** Always upgrade your GigaVUE-FM instance before upgrading the GigaVUE-OS nodes. You can upgrade the attached nodes from the device or from GigaVUE-FM. The latter is recommended. Refer to *"Upgrading Software on a GigaVUE-FM Node or a Cluster from GigaVUE-FM"* in the *GigaVUE Fabric Management Guide*.

- **Supported upgrade paths for GigaVUE-FM 5.8 and above:**
  - 5.8.01 > 5.10.02 > 5.11.00
  - 5 5.9.01 > 5.11.00
  - 5.10.01> 5.11.00
  - 5.10.02 > 5.11.00.8.01 > 5.10.02 > 5.11.00

- **If upgrading from GigaVUE-FM versions lower than 5.10.xx:** You cannot directly upgrade your GigaVUE-FM instance to release 5.10.00 from a release prior to 5.8.xx. If your current version of GigaVUE-FM is 5.7.xx or lower and you want to upgrade to software version 5.10.xx, you must first migrate to GigaVUE-FM 5.10.xx and then upgrade to 5.11.xx.

  > NOTE: For instructions on how to migrate refer to Migrate GigaVUE-FM in GigaVUE 5.10 Documentation.

- **If upgrading from GigaVUE-FM versions lower than 5.5.00**: While upgrading from any version lower than 5.5.00, an association of more than one VPort to the same GigaSMART group needs to be removed for any existing GTP GigaSMART operation.

- **If upgrading from GigaVUE-FM versions lower than 5.4.00**: Be aware of the minimum memory requirement changes between releases. Earlier releases specified 4GB of memory for the OVA template; whereas versions after 5.4.00 require 8GB and versions after 5.7.00 require 16GB. 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. Refer to GigaVUE-FM Memory and CPU Requirements in the *GigaVUE Release Notes* for additional details.

Post-Upgrade Notes

- **Intent Based Orchestration (IBO)**: IBO Policies are removed when upgrading from any pre-5.11 version of GigaVUE-FM to version 5.11.00 or above. You must recreate the IBO Policies after upgrading to 5.11.00 or above. Refer to the *"Orchestrated Configurations"* section in the GigaVUE-FM User's Guide details on how to create policy.
- **Storage Management**: The time period specified for the storage management settings will be configured to the default values when upgrading to GigaVUE-FM v5.11.xx. After completing the upgrade, you must reconfigure the time period to the required values.
- **Remember to upgrade your GigaVUE-VM deployments**: When upgrading GigaVUE-FM, you must also upgrade your GigaVUE-VM deployments. 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*.
- **Tags Applied to Resources**: After you upgrade to software version 5.11.0.0, duplicate tag values will not get associated to nodes and ports while adding and removing nodes from the clusters. However, the existing duplicate tags on the resources do not get cleaned up as part of the upgrade. You must run the following script (bundled with 5.11) to remove the duplicate tags of nodes/clusters and ports.

  Script name: duplicate_tags_removal.

  > NOTE: It is recommended to run the script by sudo privileged user. The default admin user is a sudo user.

  To run the script:

1. SSH to GigaVUE-FM.

2. Execute sudo duplicate_tags_removal.

3. The logs can be seen in the console.

GigaVUE-FM Migration Guidance

GigaVUE-FM v5.8.01 introduced several significant changes that included improvements in usability and performance. These changes involved upgrading and replacing databases and changing the underlying operating system. For this reason, when upgrading from any pre-5.8.xx version of FM to version 5.8.xx or above, you must first migrate your existing configurations and data such as audit logs, events, syslogs, and statistics from your current pre-5.8.xx GigaVUE-FM version to GigaVUE-FM v5.10.xx.

Special migration steps and supported upgrade paths are provided under Migrate GigaVUE-FM in the 5.10 Documentation. After GigaVUE-FM v5.10.xx, migration is no longer needed when upgrading to future versions. For supported upgrade paths requiring a special migration step, see Supported GigaVUE-FM Migration and Upgrade Paths.

Upgrade GigaVUE-FM 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.

2. 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 1Console Login to vSphere Clientshows an example of the login console.

3. 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.

4. To delete an existing image from the server use the following command:

   ```
   (config) # image delete fma3300.img
   ```

5. Go to Step 2: Fetch the latest release of GigaVUE-FM.
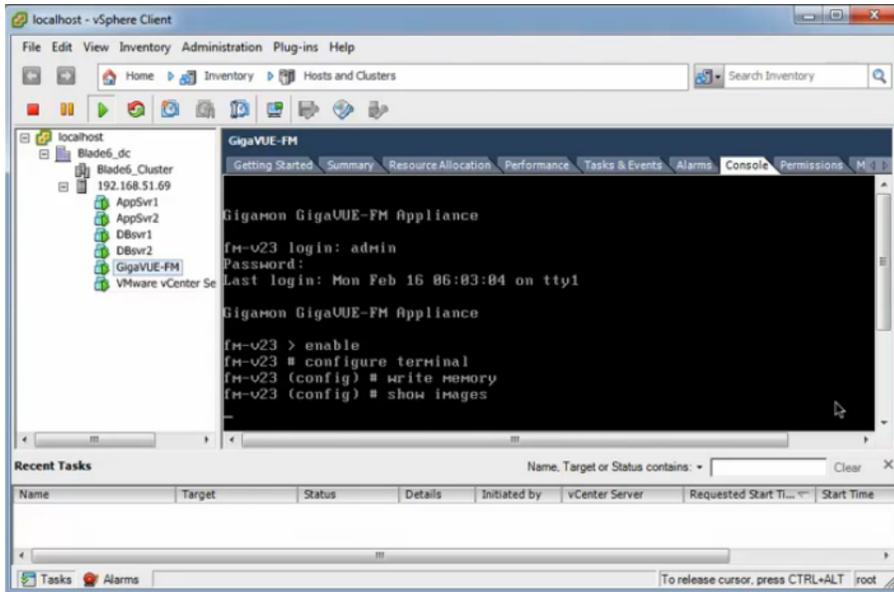
Figure 1 *Console Login to vSphere Client*

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 fma**xxxx**.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

> NOTE: Fetching the image using TFTP is time consuming, due to the size of the image and the inherent slowness of TFTP. For better performance, use SCP or HTTP to fetch the image.

4. Go to Step 3: Install the latest release of the GigaVUE-FM.

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-FM-VMs. Otherwise, maps may not work and the GigaVUE-FM-VMs will be unreachable. For information about upgrading GigaVUE-FM-VM, refer to the *"Bulk Upgrading GigaVUE-VM Nodes"* section in the *GigaVUE Cloud Suite for VMware Configuration Guide*.

Upgrade GigaVUE-FM from the 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.

Keep in mind the following rules and notes before you upgrade GigaVUE-FM from the UI:

- 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 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. On the left navigation pane, click ⚙ .

   b. Select **System** on the left navigation panel and go to **Images > External Servers**. The External Servers page appears.

   c. Click **Add.** The Add External Server page displays as shown in Upgrade GigaVUE-FM from the UI

   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. From the **Admin** drop-down list in the top right corner of the window, select **Upgrade** to open the FM Image Upgrade page as shown in the following figure.

Software Upgrade

Image File

Select the file server where you have uploaded the image file.

Image Server:	NewExternalServer ▾
Image File Path:	/<image path>/<image name>

To monitor the progress and status of the upgrade, click ⚙ "GigaVUE Administration Guide".

3. On the FM Image Upgrade page, click on the Image Server field and select the server added in Step 2.

4. In the Image File Path, enter the image path and filename on the external file server.

5. Upgrade any deployed GigaVUE-FM-VMs.

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

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.

Upgrading from GigaVUE-FM 5.6.01 to 5.7.xx.00 or 5.7.01 via an internal image will not work because internal server storage does not function during the upgrade procedure. Alternatively, you can upgrade using an external image server or the GigaVUE-FM CLI or you can use the GigaVUE-FM internal storage to store the GigaVUE-FM image, and point to it as if it were an external server as follows :

1. Add the GigaVUE-FM 5.7 image under the GigaVUE-FM internal image server (/config/gigamon/imagesRepo).
2. Configure the GigaVUE-FM external server with the GigaVUE-FM IP address.
3. Initiate the upgrade process, select External Image Server, and then specify the path to the GigaVUE-FM Image file that you added in step 1 (/config/gigamon/imagesRepo/fma5700.img).

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.force.com/gigamoncp/.

2. Upload the images file to GigaVUE-FM.

   a. On the left navigation pane, click ⚙ and select 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**.

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

Software Upgrade

Image File

Select the file server where you have uploaded the image file.

Image Server:	Internal Image Server
Version:	
Image File:	

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.

6. Click **Upgrade**.

> **NOTE:** When you change the IP address of the GigaVUE-FM instance using the jump-start configuration, the internal database and the in-memory caches of the GigaVUE-FM instance are not updated. The Database continues to have the IP address of the old GigaVUE-FM, and the image upgrade using the internal server option does not work. To fix this, you must restart the GigaVUE-FM instance after upgrade.

On the left navigation pane, click 🔧 , to monitor the progress and status of the upgrade and select **Events** on the left navigation pane. Also, email notifications are sent if email notifications have been configured.

After upgrading GigaVUE-FM, you must also upgrade any deployed GigaVUE-FM-VMs. Otherwise, maps may not work and the GigaVUE-FM-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, clear the cache before upgrading to prevent issues with the browser.

How to Use the Snapshot Feature

Follow the steps below to upgrade to the current release version of GigaVUE-FM using the snapshot feature.

> A note about upgrading from very old versions of GigaVUE-FM:
>
> - 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.
> - 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.
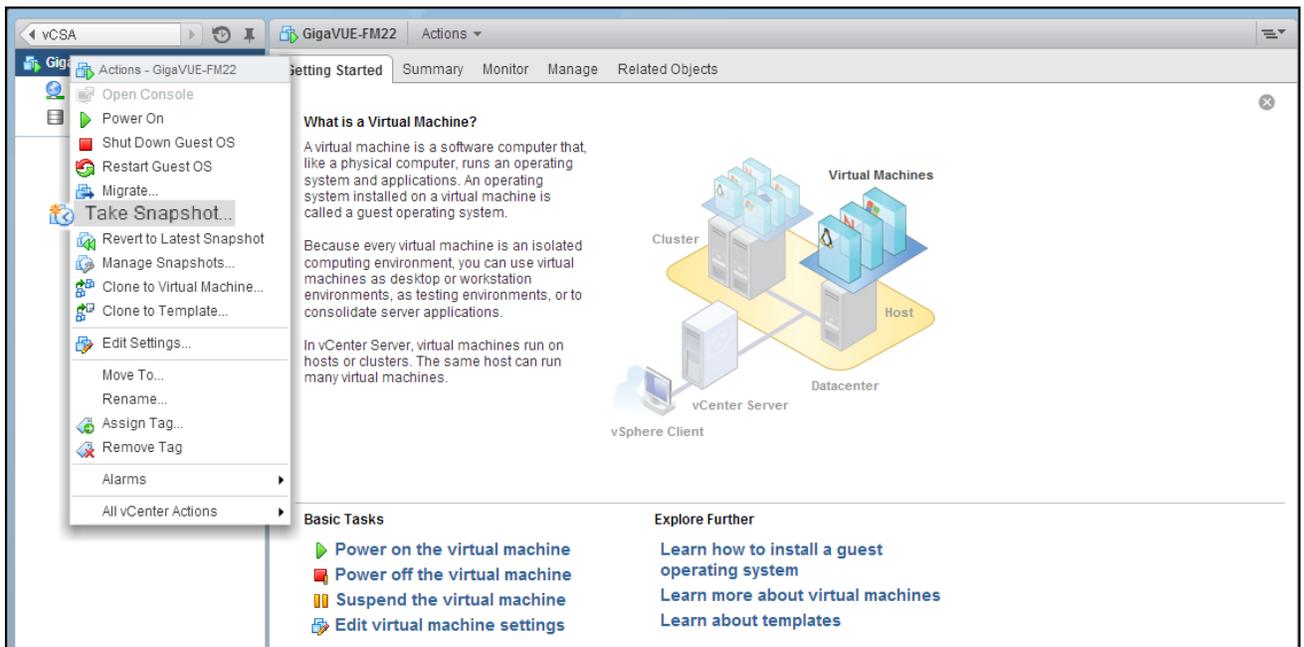
Figure 2 *"Take Snapshot" Command to Preserve Current Settings Prior to Upgrade*

   c. Follow the system prompts to record a snapshot of GigaVUE-FM's current state.
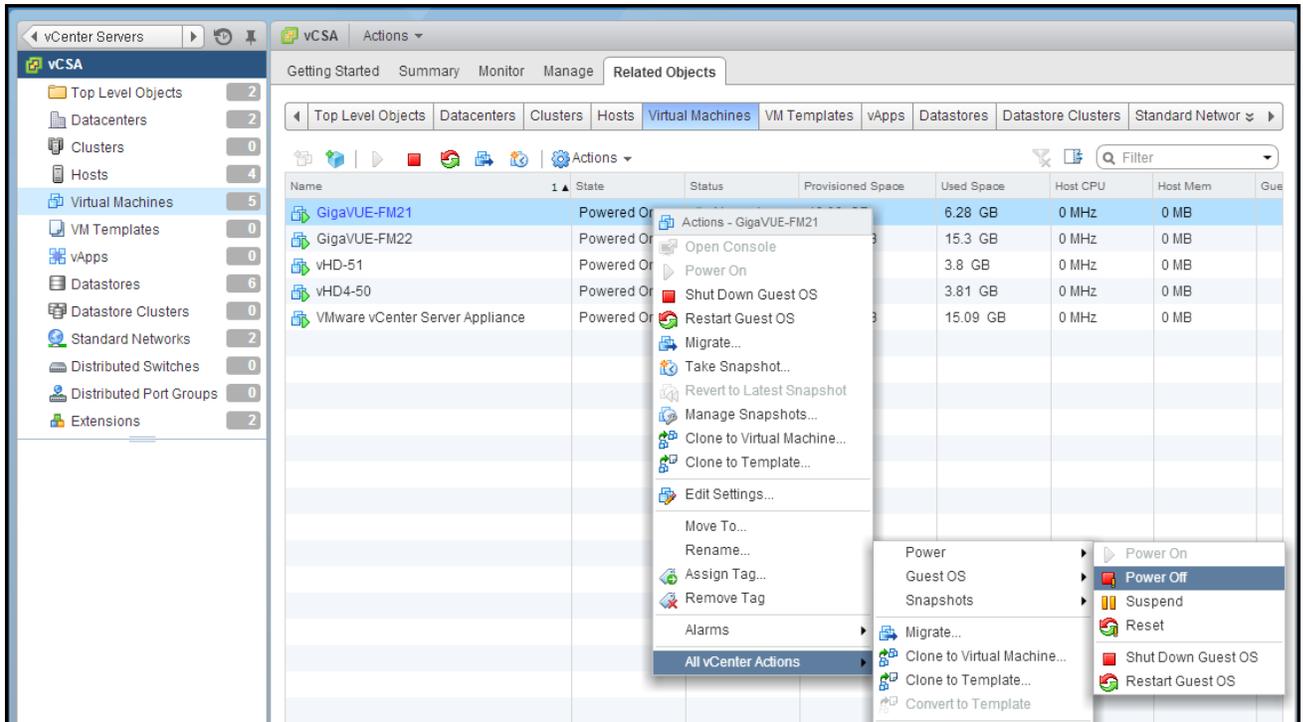
Figure 3   *Power Off Command*

Reference

This section provides additional information useful for GigaVUE-FM installation and upgrade.

Topics:

- **Setting the Admin Password for the GigaVUE-FM Shell**
- **Related GigaVUE-FM CLI Commands**

Setting the Admin Password for the GigaVUE-FM Shell

When installing GigaVUE-FM from the command line, you will be prompted to set the admin password. This topic describes the requirements for this password.

> NOTE: The password that you set from the GigaVUE-FM shell is applicable only to the GigaVUE-FM shell. To access the GigaVUE-FM UI, the default username is admin and password is admin123A!!. You can change the password when you first login to the GigaVUE-FM UI.

The admin password must be a minimum of 11 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

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.

Related GigaVUE-FM CLI Commands

This section describes the commands for GigaVUE-FM Command-Line Interface (CLI) related to installation and upgrade processes.

fmctl

Use the `fmctl` command to manage GigaVUE-FM-related configurations.

The `fmctl` command has the following syntax:

fmctl
    configuration [backup|restore][<absolute pathname of backup file>]
    image

        fetch <download URI> [<filename>]
        list [details] [<filename>]
        install <filename> [next|location {1|2}]
        boot [next|location {1|2}]
        delete [force] <filename>
        {move|rename} <old filename> <new filename>
        show

      jump-start
      logging [<fqdn>[:<port>]] [facility <facility>] [priority <priority>] [udp|tcp]
      no logging <fqdn>[:<port>]
      reset factory halt
      set UI admin password <new password>

      {get|show} interface [{mgmt|management}]

```
set interface {mgmt|management} <interface name>
[options{--help|--interface <interface name>}]
     set mapping <fqdn> <IP address>
     {get|show} {ip|ntp|hostname|domain|fqdn}
     set [ip|ip6] dhcp
     set [ip|ip6] [static] <address/cidr> <gateway> <dns1>[,<dns2>[,...]
     set {ip|ip6} route {add|remove} address/cidr gateway
     set ntp {disable|[enable] <server1>[,<server2>[,...]}
     set hostname <hostname>
     set domain <domain>
     set fqdn <hostname> <domain>
     set/get/show searchdomains [<domain1>[,<domain2>[,...]]]
     set/get/show nameservers [<dns1>[,<dns2>[,...]]]
     show backup [<absolute pathname of backup file>]
```

The following table describes the arguments for the `fmctl` command:

Argument	Description
configuration [backup|restore]	Backs up and restores the configurations such as management interface, hostname, domain, IP, search domains, and NTP. For example, use the following command to back up the system configurations: **fmctl configuration backup <absolute path name of backup file>** Use the following command to restore the system configurations from the backup: **fmctl configuration restore <absolute path name of backup file>**
image fetch <download URI> [<filename>]	Retrieves a saved configuration file from a remote host. Use HTTP(S), FTP, TFTP, or SCP to retrieve the file. The format for the download URL is as follows: **[protocol]://username [:password]@hostname/path/filename** For example, the following command retrieves the configuration file named myconfig from the FTP server at 192.168.1.10 using the **robh** account with the **xray** password: **fmctl image fetch ftp://robh:xray@192.168.1.10/myconfig** You can also use the **<filename>** argument to give the retrieved file a new name on the GigaVUE-FM H Series node. For example, the following command retrieves **myconfig** and names it **newconfig** on the node: **fmctl image fetch scp://bbochy:catch1@192.168.1.75/myconfig**

Argument	Description
	newconfig
	NOTE: You cannot retrieve a file with the same name as the currently active configuration file.
image list	Provides the list of image file names available in GigaVUE-FM. For example: **fmctl image list**
image install <filename> [next|location {1|2}]	Installs the image file. For example, use the following command to install the image file on the next partition: **fmctl image install gigamon-gigavue-fm-5.8.00-160194-trial.img next** Use the following command to install the image file on the specified partition: **fmctl image install gigamon-gigavue-fm-5.8.00-160194-trial.img location 1** NOTE: Ensure that your current partition is not the same as the partition you specified for installation. Else, an error is displayed.
image boot [next|location {1|2}]	Boots the image file on the specified partition. Ensure that the partition has the installed image file. For example, use the following command to boot the image file on the next partition: **fmctl image boot next** Use the folloaing command to boot the image file on the specified partition: **fmctl image boot location 1** NOTE: GigaVUE-FM reboots immediately.
image delete [force] <filename>	Deletes the named image file. For example: **fmctl image delete myimage**
image {move|rename} <old filename> <new filename>	Moves or renames the specified image file. For example, the following command renames myimage as newimage: **fmctl image rename myimage newimage**
image show	Displays the last boot partition. For example: **fmctl image show**
jump-start	Runs the configuration wizard for the initial setup of

Argument	Description
	GigaVUE-FM. Refer to Perform Initial Configuration.
	NOTE: When you change the IP address of the GigaVUE-FM instance using the jump-start configuration, the internal database and the in-memory caches of the GigaVUE-FM instance are not updated. The Database continues to have the IP address of the old GigaVUE-FM, and the image upgrade using the internal server option does not work. To fix this, you must restart the GigaVUE-FM instance after upgrade.
logging [<fqdn>[:<port>]] [facility <facility>] [priority <priority>] [udp|tcp]	Configures the logging server. For example: **fmctl logging 1.2.3.4:9514 facility * priority debug tcp**
no logging <fqdn>[:<port>]	Removes the logging server configuration. For example: **fmctl no logging 1.2.3.4:9514**
reset factory halt	Resets the GigaVUE-FM instance to the default configuration and shuts down the system. For example: **fmctl reset factory halt**
set UI admin password <new password>	Configures a new admin password for the GigaVUE-FM instance. **The admin password must be a minimum of 11 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 **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. For example: **fmctl set UI admin password <new password>**
{get|show} interface [{mgmt|management}]	Displays the management interface configured for the GigaVUE-FMinstance. For example:

Argument	Description
	`fmctl get|show interface management`
set interface {mgmt|management} <interface name>	Configures the management interface for the GigaVUE-FM instance, which has more than one ethernet interface. For example: **`fmctl set interface management eth1`** NOTE: You cannot use the **--interface** syntax with the **set interface management** argument.
--interface <interface name>	Allows various configurations that can be set for the management interface. This is an optional argument. For example, use the following command to ensure that eth1 management interface uses DHCP: **`fmctl --interface eth1 set ip dhcp`**
[options{--help|--interface <interface name>}] set mapping <fqdn> <IP address>	Maps the FQDN with the IP address of GigaVUE-FM. For example: **`fmctl --interface eth1 set mapping fm 10.10.10.1`** Use the following command to remove the mapping: **`fmctl --interface eth1 set mapping fm`**
[options{--help|--interface <interface name>}] {get|show} {ip|ntp|hostname|domain|fqdn}	Use to either fetch or display the IP address, NTP configurations, host name, domain name, or FQDN . For example: **`fmctl --interface eth1 get {ip|ntp|hostname|domain|fqdn}`** **`fmctl --help show {ip|ntp|hostname|domain|fqdn}`**
[options{--help|--interface <interface name>}] set [ip|ip6] dhcp	Configures the management interface to use DHCP. For example: **`fmctl --interface eth1 set ip dhcp`**
[options{--help|--interface <interface name>}] set [ip|ip6] [static] <address/cidr> <gateway> <dns1>[,<dns2>[,...]	Configures the static IP address and gateway on the management interface. You can also choose to configure DNS. For example: **`fmctl --interface eth1 set ip static 10.115.46.72/21 10.115.40.1 10.10.1.20`**
[options{--help|--interface <interface name>}] set {ip|ip6} route {add|remove} address/cidr gateway	Adds or removes the IP address and gateway for the management interface.
[options{--help|--interface <interface name>}] set ntp {disable|[enable] <server1>	Use to enable or disable NTP for synchronization of the system's clock. For example, the following command disables NTP:

Argument	Description
[,<server2>[,...]}	**fmctl --interface eth1 set ntp disable** You choose to enable NTP and add NTP servers. For example, the following command enables NTP and adds a NTP server: **fmctl --interface eth1 set ntp enable 192.168.1.10**
[options{--help|--interface <interface name>}] set hostname <hostname>	Configures the hostname. For example: **fmctl --interface eth1 set hostname myfm** NOTE: Ensure that you log out and re-login to the GigaVUE-FM to view the changes.
[options{--help|--interface <interface name>}] set domain <domain>	Configures the domain for GigaVUE-FM. For example: **fmctl --interface eth1 set domain gigamon.com**
[options{--help|--interface <interface name>}] set fqdn <hostname> <domain>	Configures the Fully Qualified Domain Name (FQDN) for the current GigaVUE-FM. **fmctl --interface eth1 set fqdn myfm gigamon.com**
[options{--help|--interface <interface name>}] set/get/show searchdomains [<domain1>[,<domain2>[,...]]]	Displays a list of domains for the current GigaVUE-FM For example: **fmctl --interface eth1 set searchdomains** **fmctl --help get | show searchdomains**
[options{--help|--interface <interface name>}] set/get/show nameservers [<dns1>[,<dns2>[,...]]]	Displays a list of name servers for the current GigaVUE-FM For example: **fmctl --interface eth1 set nameservers** **fmctl --help get | show nameservers**
[options{--help|--interface <interface name>}] show backup	Displays the configurations that were backed up. For example: **fmctl --help show backup <absolute path name of backup file>**

NOTE: To include special characters in the `fmctl` command line, enclose the string containing the special characters within single quotes. For example, to include the bang (!) special character in a password string, you must enclose the password string within single quotes, as shown in the following example:

 fmctl set UI admin password 'admin!!'

Additional Sources of Information

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

- Documentation
- Documentation Feedback
- Contact Technical Support
- Contact Sales
- The Gigamon Community

Documentation

This table lists all the guides provided for GigaVUE-FM software and hardware. The first row provides an All-Documents Zip file that contains all the guides in the set for the release.

> NOTE: In the online documentation, view What's New to access quick links to topics for each of the new features in this Release; view Documentation Downloads to download all PDFs.

Table 1: Documentation Set for Gigamon Products

GigaVUE-FM 5.11 Hardware and Software Guides
DID YOU KNOW? If you keep all PDFs for a release in common folder, you can easily search across the doc set by opening one of the files in Acrobat and choosing Edit > Advanced Search from the menu. This opens an interface that allows you to select a directory and search across all PDFs in a folder.
Hardware   how to unpack, assemble, rack-mount, connect, and initially configure ports the respective GigaVUE-FM devices; reference information and specifications for the respective GigaVUE-FM devices
*G-TAP A Series 2 Installation Guide
GigaVUE-HC1 Hardware Installation Guide
GigaVUE-HC2 Hardware Installation Guide
GigaVUE-HC3 Hardware Installation Guide
GigaVUE M Series Hardware Installation Guide
GigaVUE TA Series Hardware Installation Guide

GigaVUE-FM 5.11 Hardware and Software Guides
*GigaVUE-OS Installation Guide for DELL S4112F-ON
Software Installation and Upgrade Guides
GigaVUE-FM Installation, Migration, and Upgrade Guide
GigaVUE-OS Upgrade Guide
Administration
GigaVUE Administration Guide covers both GigaVUE-OS and GigaVUE-FM
Fabric Management
GigaVUE Fabric Management Guide how to install, deploy, and operate GigaVUE-FM; how to configure GigaSMART operations; covers both GigaVUE-FM and GigaVUE-OS features
Cloud Configuration and Monitoring how to configure the GigaVUE Cloud Suite components and set up traffic monitoring sessions for the cloud platforms
GigaVUE Cloud Suite for AnyCloud Configuration Guide how to deploy the GigaVUE Cloud Suite solution in any cloud platform
GigaVUE Cloud Suite for AWS Configuration Guide
GigaVUE Cloud Suite for AWS Quick Start Guide quick view of AWS deployment
GigaVUE Cloud Suite for AWS SecretRegions Configuration Guide
GigaVUE Cloud Suite for Azure Configuration Guide
GigaVUE Cloud Suite for Kubernetes Configuration Guide
GigaVUE Cloud Suite for Nutanix Configuration Guide
GigaVUE Cloud Suite for OpenStack Configuration Guide
GigaVUE Cloud Suite for VMware Configuration Guide
Gigamon Containerized Broker
Reference
GigaVUE-OS-CLI Reference Guide library of GigaVUE-OS CLI (Command Line Interface) commands used to configure and operate GigaVUE H Series and TA Series devices
GigaVUE-OS Cabling Quick Reference Guide guidelines for the different types of cables used to connect Gigamon devices

GigaVUE-FM 5.11 Hardware and Software Guides
GigaVUE-OS Compatibility and Interoperability Matrix compatibility information and interoperability requirements for Gigamon devices
GigaVUE-FM REST API Reference in GigaVUE-FM User's Guide samples uses of the GigaVUE-FM Application Program Interfaces (APIs)
Release Notes
GigaVUE-OS, GigaVUE-FM, GigaVUE-VM, G-TAP A Series, and GigaVUE Cloud Suite Release Notes new features, resolved issues, and known issues in this release ; important notes regarding installing and upgrading to this release NOTE: Release Notes are not included in the online documentation. NOTE: Registered Customers can log in to My Gigamon to download the Software and Release Notes from the Software & Docs page on to My Gigamon. Refer to How to Download from My Gigamon.
In-Product Help
GigaVUE-FM Online Help how to install, deploy, and operate GigaVUE-FM.
GigaVUE-OS H-VUE Online Help provides links the online documentation.

How to Download from My Gigamon

Registered Customers can download software and corresponding Release Notes documents from the **Software & Docs** page on to My Gigamon. Use the My Gigamon Software & Docs page to download:

- Gigamon Software installation and upgrade images,
- Release Notes for Gigamon Software, or
- Older versions of PDFs (pre-v5.7).

To download release-specific software, release notes, or older PDFs:

1. Log in to My Gigamon
2. Click on the **Software & Documentation** link.
3. Use the **Product** and **Release** filters to find documentation for the current release. For example, select Product: "GigaVUE-FM" and Release: "5.6," enter "pdf" in the search box, and then click **GO** to view all PDF documentation for GigaVUE-FM 5.6.xx.

> NOTE: My Gigamon is available to registered customers only. Newer documentation PDFs, with the exception of release notes, are all available through the publicly available online documentation.

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See https://www.gigamon.com/support-and-services/contact-support for Technical Support hours and contact information. You can also email Technical Support at support@gigamon.com.

Contact Sales

Use the following information to Gigamon channel partner or Gigamon sales representatives.

Telephone: +1.408.831.4025

Sales: inside.sales@gigamon.com

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Email Gigamon at inside.sales@gigamon.com for information on purchasing 24x7 Premium Support. Premium Support entitles you to round-the-clock phone support with a dedicated Support Engineer every day of the week.

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