



# Connecting Cisco Video Management and Storage System Enhanced Network Modules to the Network

---

This guide describes how to connect Cisco Video Management and Storage System enhanced network modules to your network. It contains the following sections:

- [Cisco Video Management and Storage System Enhanced Network Modules, page 1](#)
- [Connecting Cisco Video Management and Storage System Network Modules, page 3](#)
- [Online Insertion and Removal of Cisco Network Modules Procedure, page 5](#)
- [Additional References, page 7](#)

## Cisco Video Management and Storage System Enhanced Network Modules

The Cisco Video Management and Storage System enhanced network module is a network video recorder for Cisco integrated services routers, which archives video captured by the Cisco Analog Video Gateway network module (EVM-IPVS-16A) or other cameras connected to your network. [Table 1](#) lists the second generation Cisco Video Management and Storage modules. [Table 2](#) lists the first generation Cisco Video Management and Storage modules.

All models ship from the factory with the following hardware preinstalled.

**Table 1** *Preinstalled Hardware in the Second Generation Cisco Video Management and Storage System Enhanced Network Modules*

Model	Processor	Hard Disk	Memory
NME-VMSS2-16	1.0 GHz	500 GB (SATA)	2 GB
NME-VMSS2-HP32	1.4 GHz	500 GB (SATA)	2 GB

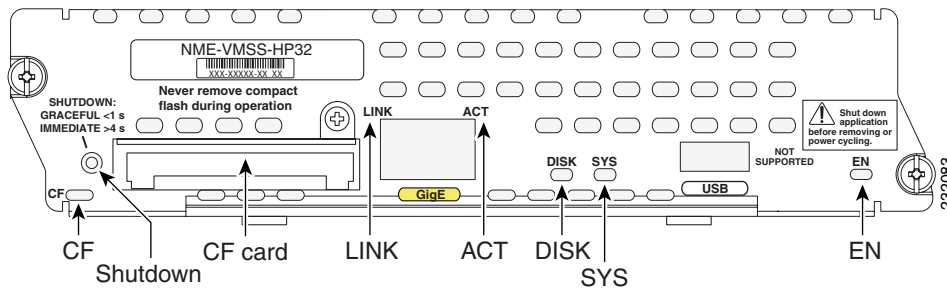


**Table 2** Preinstalled Hardware in the First Generation Cisco Video Management and Storage System Enhanced Network Modules

Model	Processor	Hard Disk	Memory
NME-VMSS-16	1.0 GHz	120 GB (SATA)	512 MB
NME-VMSS-HP16	1.4 GHz	160 GB (SATA)	2 GB
NME-VMSS-HP32	1.4 GHz	160 GB (SATA)	2 GB

The Cisco Video Management and Storage System enhanced network module LEDs are shown in [Figure 1](#) and described in [Table 3](#).

**Figure 1** NME-VMSS and NME-VMSS2 Faceplate



**Table 3** NME-VMSS and NME-VMSS2 LED Description

<b>CF</b>	The Compact Flash slot is not used on the NME-VMSS or NME-VMSS2 modules.
<b>SHUTDOWN</b>	Press the SHUTDOWN button for less than 2 seconds to gracefully shut down the module. Press the SHUTDOWN button for more than 4 seconds to cause an immediate module shutdown, which may affect file operations that are in progress.
<b>LINK</b>	Status of Gigabit Ethernet link On—Link is enabled Off—Link is disabled
<b>ACT</b>	Status of Gigabit Ethernet activity On—Active Off—Inactive
<b>DISK</b>	Status of hard drive activity On—Active Off—Inactive

**Table 3** NME-VMSS and NME-VMSS2 LED Description

<b>SYS</b>	Status of system shutdown <b>Note</b> Do not remove power without first shutting down the application. On—Application is stable. Off—System is shut down and ready for host power-down Flashing—System shutdown is in progress
<b>EN</b>	Status of the network module On—Detected by the host Cisco IOS software and enabled. Off—Disabled.

## Shutting Down Cisco Video Management and Storage System Enhanced Network Modules

Press the SHUTDOWN button on the network module faceplate for less than 2 seconds to perform a graceful shutdown of the network module before removing power from the router or before starting an online insertion and removal (OIR) sequence on the router. The application may take up to 2 minutes to fully shut down.



### Caution

If you press the SHUTDOWN button for *more than 4 seconds*, a nongraceful shutdown of the hard disk will occur and may corrupt files on the network module's hard disk. After a nongraceful shutdown, the HD and SYS LEDs remain lit. Press the SHUTDOWN button for *less than 2 seconds* to gracefully reboot the network module.

## Connecting Cisco Video Management and Storage System Network Modules

To connect Cisco Video Management and Storage System network modules to an external device, use a straight-through two-pair Category 5e unshielded twisted-pair (UTP) cable, and connect the RJ-45 Gigabit Ethernet port on the network module to a switch, hub, repeater, server, or other Gigabit Ethernet network device.



### Note

RJ-45 cables are not available from Cisco. These cables are widely available and must be Category 5e cables.

## Connecting to an External Storage Device using iSCSI

The Cisco Video Management and Storage System enhanced network module supports an Internet SCSI (iSCSI) connection to an external storage device. The Gigabit Ethernet port on the faceplate of the network module and the Gigabit Ethernet port on the router can be configured as iSCSI connections.

To connect Cisco Video Management and Storage System enhanced network modules to an external storage device using iSCSI:

- Use a straight-through two-pair Category 5e unshielded twisted-pair (UTP) cable to connect the Cisco Video Management and Storage module to a switch.
- Use a straight-through two-pair Category 5e unshielded twisted-pair (UTP) cable to connect to an iSCSI device to a switch.
- Use a crossover two-pair Category 5e unshielded twisted-pair (UTP) cable to connect the Cisco Video Management and Storage module to an iSCSI device.

**Note**

RJ-45 cables are not available from Cisco. These cables are widely available and must be Category 5e cables.

For details about configuring iSCSI connections, see the *Cisco Video Management and Storage System 1.0 CLI Administrator Guide*.

## Establishing a Gigabit Ethernet Internal Connection

Use the Cisco High-Speed Intrachassis Module Interconnect (HIMI) feature to establish a Gigabit Ethernet internal logical connection between two network modules, or between an onboard small-form-factor pluggable (SFP) Gigabit Ethernet module and a network module on a Cisco 3825 router or a Cisco 3845 router.

Connections can be established only as follows:

- Between the Gigabit Ethernet port in an installed onboard SFP module on the Cisco 3825 router or Cisco 3845 router
- Between Gigabit Ethernet interfaces in network module slots 1 and 2 on a Cisco 3825 router
- Between Gigabit Ethernet interfaces in network module slots 2 and 4 on a Cisco 3845 router

**Note**

A module interconnection between the Gigabit Ethernet port on an SFP module on a Cisco 3825 router or a Cisco 3845 router and a network module slot *or* a network module-to-network module cross-connection is permitted at any given time. However, both types of connections cannot be implemented at the same time.

**Note**

Connections between the onboard Ethernet ports and network module slots are not supported.

For details about configuring High-Speed Intrachassis Module Interconnect (HIMI) connections, see the *Cisco High-Speed Intrachassis Module Interconnect (HIMI) Configuration Guide* on Cisco.com:

[http://www.cisco.com/en/US/products/ps5855/prod\\_configuration\\_guide09186a008068ea83.html](http://www.cisco.com/en/US/products/ps5855/prod_configuration_guide09186a008068ea83.html)

# Online Insertion and Removal of Cisco Network Modules Procedure

Some Cisco routers allow you to replace network modules without switching off the router or affecting the operation of other interfaces. This feature is called *online insertion and removal* (OIR). OIR of a module provides uninterrupted operation to network users, maintains routing information, and ensures session preservation.

**Caution**

Unlike other network modules, Cisco Video Management and Storage System enhanced network modules use hard disks. Online removal of network modules without proper shutdown can cause file system corruption and might render the disk unusable. You must shut down the operating system on the network module in an orderly way before removing or powering down the module.

**Caution**

Cisco routers support OIR with identical modules only. If you remove a module, install in its place another module exactly like the one you removed. If you remove a 2-slot module (along with any installed WAN or voice interface cards), install another module and card combination exactly like the one you removed.

For a description of informational and error messages that may appear on the console during this procedure, see the hardware installation guide for your router.

## Integrated Storage System Module

If your router contains an Integrated Storage System module, you need to make sure that any archives being sent from the Cisco Video Management and Storage module to the Integrated Storage System module are stopped.

Before performing online removal of a network module and insertion of a replacement of the Cisco Video Management and Storage module, complete the following steps to check whether or not archives are being sent to from the Cisco Video Management and Storage module to the Integrated Storage system module. If the archives are being sent, you need to stop the archiving process.

- 
- Step 1** From the Cisco Video Management and Storage module, use the **show video-surveillance archive** command to check whether there are active archives being sent to the Integrated Storage System module.
- ```
SE-module> show video-surveillance archive
```
- Step 2** If archives are being sent to the Integrated Storage System module, stop the archiving process using the following command:
- ```
SE-module> video-surveillance task archive-stop media
```
- Step 3** To verify that the archive process has stopped, use the following command:
- ```
SE-module> show video-surveillance archives
```
-

After verifying that there are no archives being sent to the Integrated Storage System module, complete the following steps in the router privileged EXEC mode to perform online removal of a network module and insertion of a replacement:

**Step 1** Initiate a network module session by using the following command:

```
Router# service-module integrated-Service-Engine slot/unit session
```

```
Trying 10.10.10.1, 2065 ... Open
```

```
SE-Module> enable
```

```
SE-Module#
```

**Step 2** Back up the configuration files, see Appendix A: Backing Up Files in the [Cisco Video Management and Storage CLI Administrator Guide](#).

**Step 3** Exit the network module session by pressing **Control-Shift-6**, followed by pressing **x**.

**Step 4** On the router, clear the integrated-Service-Engine console session by using the following command:

```
Router# service-module integrated-Service-Engine slot/unit session clear
```

**Step 5** Perform a graceful shutdown of the network module disk drive by using the following command:

```
Router# service-module integrated-Service-Engine slot/unit shutdown
```

**Step 6** Shut down the network module interface:

```
Router (config)# interface integrated-Service-Engine slot/unit
```

```
Router (config-if)# shutdown
```

```
Router (config-if)# exit
```

**Step 7** Unplug all network interface cables from the network module.

**Step 8** Loosen the two captive screws that are holding the network module in the chassis slot.

**Step 9** Slide the network module out of the slot.

**Step 10** Align the replacement network module with the guides in the chassis slot, and slide it gently into the slot.



**Note** If the router is not fully configured with network modules, make sure that blank panels fill the unoccupied chassis slots to provide proper airflow.

**Step 11** Push the module into place until you feel its edge connector mate securely with the connector on the backplane.

**Step 12** Reconnect the network interface cables that you removed in [Step 7](#).

**Step 13** Check that the network module LEDs are on. This inspection ensures that connections are secure and that the new unit is operational.

**Step 14** Initiate a network module session by using the following command:

```
Router# service-module integrated-Service-Engine slot/unit session
```

```
Trying 10.10.10.1, 2129 ... Open
```

```
SE-Module> enable
```

```
SE-Module#
```

**Step 15** Restore the configuration files, see Appendix B: Restoring Files in the [Cisco Video Management and Storage CLI Administrator Guide](#).

- Step 16** Exit the network module session by pressing **Control-Shift-6**, followed by pressing **x**.
- Step 17** If the **switch-on-fail** command option on the Cisco Video Management and Storage module is:
- Disabled—the sending of archives to the Integrated Storage System module is automatically resumed.
  - Enabled—archives are sent to the local disk drive of the Cisco Video Management and Storage module.
- Step 18** On the router, clear the network module session by using the following command:
- ```
Router# service-module integrated-Service-Engine slot/unit session clear
```

## Additional References

For additional information, see the following documents and resources.

Related Topic	Document Title
Cisco Video Management and Storage and the Cisco Video Surveillance Solution	<ul style="list-style-type: none"> <li>• <a href="#">Release Notes for the Cisco Video Management and Storage System</a></li> <li>• <a href="#">Connecting Cisco Video Management and Storage System Enhanced Network Modules to the Network</a></li> <li>• <a href="#">Cisco Video Management and Storage System Installation and Upgrade Guide</a></li> <li>• <a href="#">Cisco Video Management and Storage System CLI Administrator Guide</a></li> <li>• <a href="#">Connecting Cisco Integrated Storage System Enhanced Network Modules to the Network</a></li> <li>• <a href="#">Cisco Integrated Storage System Installation and Upgrade Guide</a></li> <li>• <a href="#">Cisco Integrated Storage System CLI Administrator Guide</a></li> <li>• <a href="#">Connecting Cisco Analog Video Gateway Network Modules to the Network</a></li> <li>• <a href="#">Cisco Analog Video Gateway Installation and Upgrade Guide</a></li> <li>• <a href="#">Cisco Analog Video Gateway CLI Administrator Guide</a></li> <li>• <a href="#">Cisco Analog Video Gateway XML API Guide</a></li> <li>• <a href="#">Open Source License Notice</a></li> </ul>
Regulatory compliance and safety information	<a href="#">Cisco Network Modules and Interface Cards Regulatory Compliance and Safety Information</a>
Cisco IOS software	<a href="#">Cisco IOS Software</a>
Network modules	<a href="#">Installing Cisco Network Modules in Cisco Access Routers</a>
Technical documentation, including feedback and assistance	<a href="#">What's New in Cisco Product Documentation</a> (including monthly listings of new and revised documents)

