Cisco Video Management and Storage System CLI Administrator Guide

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Cisco Video Management and Storage System Enhanced Network Module Overview

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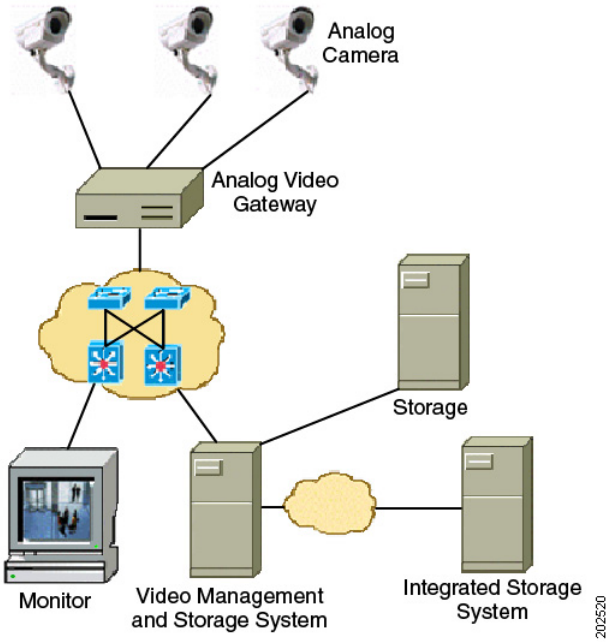
After the Cisco Video Management and Storage System application is installed on the enhanced network module, it is called the Cisco Video Management and Storage System module. It uses the IP network infrastructure to manage live video, archived video, and video sample retrieval. It also monitors inputs for event triggering and serves as the focal point for live monitoring of video data streams (see Figure 1).

Figure 1 Cisco Video Management and Storage System System Overview



The network module fits into Cisco Integrated Services Routers (Cisco ISRs) that are optimized for the secure, wire-speed delivery of concurrent data, voice, video, and wireless services.

Specific capabilities of the Cisco Video Management and Storage System application include:

- Management of all of your video sources through a single converged interface
  - Support for Cisco IP Video Surveillance Integrated Analog Video Gateway

  - Support for most major third-party IP cameras and encoders and decoders
- View live and archived video through the same Internet Explorer “thin client” interface
- Store archival video locally
  - Up to 500 GB of local storage and the ability to expand to external Small Computer System Interface over IP (iSCSI) or external Network File System (NFS) storage (recommended) for long-term archival
  - Support for Cisco Integrated Storage System to provide up to an additional 500 GB of local storage
- Intelligently manage your video store through event-based up-speeding of video stream recording
- Notify relevant security personnel using e-mail messages, pages, and Short Message Service (SMS)
- Control system access with highly configurable user privileges

This guide supports Enhanced Network Module features for version 6.2.1 and earlier versions of the Cisco Video Management and Storage System application. To view the product feature history, see the *Release Notes for the Cisco Video Management and Storage System*, which lists feature support for Cisco Video Management and Storage System application versions.

The Cisco Video Management and Storage System can be used in conjunction with the Cisco Analog Video Gateway, which converts analog camera signals into IP-accessible endpoints. For more information about the Cisco Analog Video Gateway, see *Cisco Analog Video Gateway CLI Administrator Guide*.

The Cisco Video Management and Storage System application is one of four components that make up the Cisco IP Video Surveillance solution. Other components are the:

- Cisco integrated services routers (ISRs)
- Cisco IP Video Surveillance 16-Port Analog Video Gateway Network Module
- Cisco Video Surveillance Manager product line, consisting of the Cisco Video Surveillance Operations Manager Software and the Cisco Video Surveillance Media Server Software

Security operations personnel can access live video and review archived surveillance video recorded at remote sites from terminals in their local facility.

You use the command-line interface (CLI) to configure the Cisco Video Management and Storage System software. This guide describes how to use the CLI to configure the software options of the Cisco Video Management and Storage System.

System Application

Cisco Video Management and Storage System software is a Linux-based application (see *Open Source License Notice*) that resides on an enhanced network module that plugs into a host Cisco ISR that is running Cisco IOS software.

Cisco Video Management and Storage System software installed on the module is a network video management and storage engine with its own startup and run-time configurations and its own CLI, all of which are independent of the Cisco IOS configuration on the ISR. The Linux-based software does not have its own console but uses the internal virtual console from the host router.

After Cisco Video Management and Storage System is configured using the CLI, it runs a GUI-based video distribution and management system application, called the Cisco Video Surveillance Operations Manager, based on next-generation video encoding standards.

Launch and configuration of the system is accomplished through the host router by means of a configuration session (see "Opening and Closing a Network Module Session" section on page 12). After the session, the host router CLI is displayed, and you can exit and clear the session.

Note 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. We recommend, but do not require, that the external Gigabit Ethernet connector on the faceplate of the network module be used for the iSCSI connection.

This arrangement—host router plus integrated network module—provides a router-integrated application platform for accelerating data-intensive applications.

Applications typically involve:

- Video management and storage
- Analog video gateway
- Application-oriented networking
- Contact centers and interactive-voice-response applications
- Content caching and delivery
- Data and video storage
- Network analysis
- Voice-mail and auto-attendant applications

Configuring Host Router and Cisco Video Management and Storage System Module Interfaces

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After the Cisco Video Management and Storage System application is installed on the enhanced network module, it is called the Cisco Video Management and Storage System module. To configure the network module after it is installed in your host Cisco Integrated Services Router (ISR), you need to configure the following:

- ISR external interface to an external network link, using the Cisco IOS command-line interface (CLI) for setting standard router settings
- ISR internal interface to the Cisco Video Management and Storage System module, using the Cisco IOS CLI for setting the network module IP address and default gateway router
- Cisco Video Management and Storage System module internal interface to the host router
- Cisco Video Management and Storage System module external interface to an external iSCSI device

The following sections describe the tasks required to configure the host router and Cisco Video Management and Storage System module interfaces:

- Before Configuring the Cisco Video Management and Storage System Interfaces, page 5
- Entering and Exiting the Command Environment, page 7
- Configuring Interfaces, page 9
- Opening and Closing a Network Module Session, page 12

Before Configuring the Cisco Video Management and Storage System Interfaces

Complete the following prerequisites for the ISR, the Cisco Video Management and Storage System module, and file server before you attempt to configure the module:

- Cisco ISR Prerequisites, page 6
- Network Module Prerequisites, page 6
- File Server Prerequisites, page 6

Cisco ISR Prerequisites

- Check the latest release notes (see *Release Notes for the Cisco Video Management and Storage System*) to ensure that your Cisco router is running the appropriate Cisco IOS software release and recognizes the Cisco Video Management and Storage System module.

Note After minimum release requirements are met, you can change the image either on the host router or on the Cisco Video Management and Storage System module, without affecting the other image.

Network Module Prerequisites

- If it was not already installed at the factory, install the Cisco Video Management and Storage System network module into the host router with sufficient physical memory, depending on the model number, to accommodate the Cisco Video Management and Storage System application software. For detailed information on physical memory and hardware installation, see *Cisco 2800 Series Hardware Installation*.
- If you need to swap out the Cisco Video Management and Storage System module:
  - Before swapping out a module in an existing system, perform a full backup of all data.
  - After the swap, restore the data.

Note For more information, see the "Backing Up and Restoring Configurations on the Cisco Video Management and Storage System Application" section on page 17.

- Note the Cisco Video Management and Storage System module location in the host router:
  - *slot*: Number of the host router chassis slot for the module. After you install the module, you can obtain this information by using the router **show running-config** command.
  - *unit*: Number of the daughter card on the module. This value should be 0.

Note You need this information for the "Interface Configuration Tasks" section on page 10 and the "Opening and Closing a Network Module Session" section on page 12.

File Server Prerequisites

- If you need to download a new image or to perform a configuration backup and restore, you will need to access a File Transfer Protocol (FTP) or Trivial File Transfer Protocol (TFTP) server. To verify that your download FTP or TFTP file server is accessible, see the *Cisco Video Management and Storage System Installation and Upgrade Guide*.
- Verify that the Cisco Video Management and Storage System application is accessible by first accessing the Cisco IOS CLI.

Entering and Exiting the Command Environment

The Cisco Video Management and Storage System user EXEC, privileged EXEC, and configuration command modes are similar to the user EXEC, privileged EXEC, and configuration modes for Cisco IOS CLI commands. The description for each command in this section indicates the command mode.

This section provides the procedures for entering and exiting the command environment, in which the Cisco Video Management and Storage System configuration commands are executed. See the following sections for the procedures:

- Entering the Command Environment, page 7
- Exiting the Command Environment, page 8

Entering the Command Environment

When Cisco Video Management and Storage System has been installed and is active, use the following procedure to enter the command environment.

Prerequisites

The following information is required for entering the command environment:

- IP address of the Cisco ISR that contains the Cisco Video Management and Storage System module
- Username and password for logging in to the router
- Slot number of the module

SUMMARY STEPS

1. Open a console or Telnet session.
2. **telnet** *ip-address*
3. Enter the user ID and password of the router.
4. **service-module integrated-service-engine** *slot/port* **session**
5. (Optional) **enable**

DETAILED STEPS

	Command or Action	Purpose
Step 1	Open a console or Telnet session.	Connect to the console port or use a Microsoft Windows command prompt window, a secure shell, or a software emulation tool such as WRQ Reflection.
Step 2	**telnet** *ip-address*, or Connect to the router and start a session. **Example:** `C:\>telnet 172.16.231.195`	Specify the IP address of the router at the Telnet prompt, or Connect the router to a PC or other DTE (Data Terminal Equipment) device and start a session.

	Command or Action	Purpose

Step 3	`Enter the`
	`Username: userid and`
	`Password: password.`
		Enter your user ID and password for the router.

Step 4	**`service-module integrated-service-engine`** *`slot/port`* **`session`**
	
	Example:
	`Router> service-module integrated-service-engine 1/0 session`
	`cvmss-10-0-0-0>`
		From the router, enter the Cisco Video Management and Storage System command environment by using the module located in *slot* and *port*. The prompt changes to the service module prompt.
		
		Note If the message
		`"Trying ip-address slot/port ..."`
		`Connection refused by remote host`
		appears, enter the command **service-module integrated-service-engine** *slot/port* **session clear** and repeat Step 4.

Step 5	**`enable`**
	
	Example:
	`cvmss-10-0-0-0> enable`
	`cvmss-10-0-0-0#`
		(Optional) Enters Cisco Video Management and Storage System user EXEC mode. You can begin configuring the network module.

Exiting the Command Environment

To leave the Cisco Video Management and Storage System command environment and return to the router command environment, return to the Cisco Video Management and Storage System EXEC mode and enter the **exit** command twice, or enter **Alt-Ctrl-6**, and then enter **`x`**.

The following example shows the exit procedure:

```
cvmss-10-0-0-0# exit
cvmss-10-0-0-0> exit
Router#
```

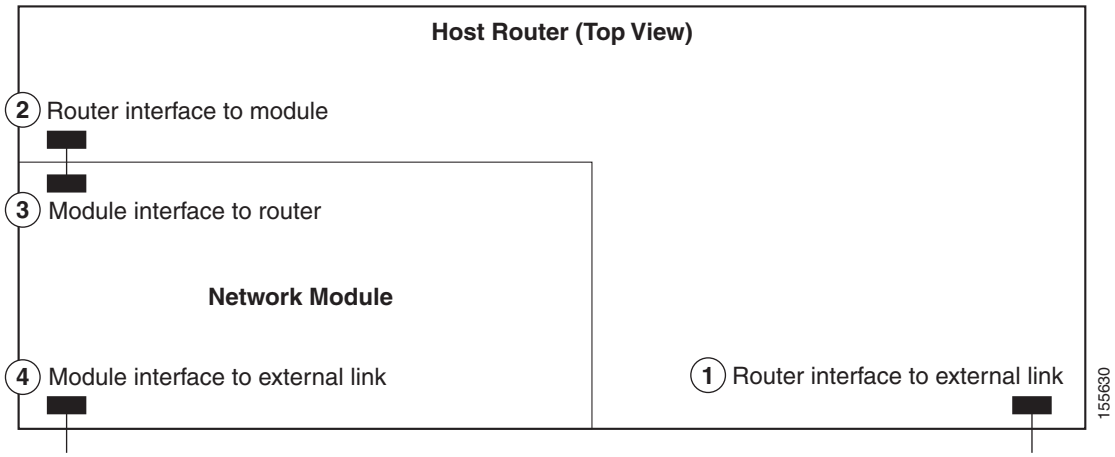
or

```
cvmss-10-0-0-0# Alt-Ctrl-6, x
```

Configuring Interfaces

The host router and the Cisco Video Management and Storage System module use several interfaces for internal and external communication (see Figure 2). Each interface is configurable from the host router by using the Cisco IOS CLI.

Figure 2 ***Router and Cisco Video Management and Storage System Network Module Interfaces***



	On This Hardware Interface...	Configure These Settings...	Using This Configuration Interface
Step 1	Host router interface to external link	Standard router settings	Host router Cisco IOS CLI
Step 2	Host router interface to the Cisco Video Management and Storage System module	Cisco Video Management and Storage System network module IP address and default gateway router	
Step 3	Cisco Video Management and Storage System module interface to host router	All other Cisco Video Management and Storage System module application settings	Cisco Video Management and Storage System module CLI
Step 4	Cisco Video Management and Storage System module interface to an iSCSI device	Support for data requests and transfers from outside sources	

The following sections provide the procedures for configuring the host router and network module interfaces:

- Interface Configuration Tasks, page 10
- Opening and Closing a Network Module Session, page 12

Interface Configuration Tasks

The first configuration task is to set up the Cisco Video Management and Storage System module interface to the host router and to its external links. This enables access to the module so that you can install and configure the Cisco Video Management and Storage System application.

Steps 1, 2, and 3 open the host router CLI to access the router interface to the Cisco Video Management and Storage System module. The remaining steps configure the interface.

Note If you lose power or connection during any of the following procedures, the system usually detects the interruption and tries to recover. If the system fails to recover, fully reinstall the system using the boot helper.

SUMMARY STEPS

From the Host-Router CLI

1. **enable**
2. **configure terminal**
3. **interface integrated-service-engine** *slot*/**0**
4. **ip address** *router-side-ip-address subnet-mask*

   or

   ip unnumbered *type number*
5. **service-module ip address** *module-side-ip-address subnet-mask*
6. **service-module external ip address** *external-ip-address subnet-mask*
7. **service-module ip default-gateway** *gateway-ip-address*
8. If the **ip unnumbered** *type number* command is used in Step 4, then set **ip route**.
9. **end**
10. **copy running-config startup-config**
11. **show running-config**

DETAILED STEPS

	Command or Action	Purpose
	From the Host-Router CLI	

Step 1	`enable`
	
	Example:
	`Router> enable`
		Enters privileged EXEC mode on the host router. If prompted, enter your password.

Step 2	`configure terminal`
	
	Example:
	`Router# config t`
		Enters global configuration mode on the host router.

	Command or Action	Purpose
Step 3	**interface integrated-service-engine** *slot*/**0** **Example:** `Router(config)# interface integrated-service-engine 1/0`	Enters interface configuration mode for the slot and port where the Cisco Video Management and Storage System module resides. • slot: specifies the module slot • port: specifies the port number

Step 4	**ip address** *router-side-ip-address subnet-mask*
	
	or
	
	ip unnumbered *if-type number*
	
	Example:
	`Router(config-if)# ip address 172.16.153.11 255.255.255.0`
	
	or
	
	`Router(config-if)# ip unnumbered ethernet 0`
		Specifies the router interface to the module.
		• *router-side-ip-address subnet-mask*—IP address and subnet mask for the host router interface.
		• *if-type number*—Type and number of another interface on which the router has an assigned IP address. It cannot be another unnumbered interface. Serial interfaces using High Level Data Link Control (HDLC), Point-to-Point Protocol (PPP), Link Access Procedure, Balanced (LAPB), Frame Relay encapsulations, Serial Line Internet Protocol (SLIP), and tunnel interfaces can be unnumbered.

Step 5	**service-module ip address** *module-side-ip-address subnet-mask* **Example:** `Router(config-if)# service-module ip address 172.16.153.11 255.255.255.0`	Specifies the IP address for the Cisco Video Management and Storage System module interface to the router. • *module-side-ip-address*—IP address for the interface. • *subnet-mask*—Subnet mask to append to the IP address; must be in the same subnet as the host router.
Step 6	**service-module ip default-gateway** *ip-address* **Example:** `Router(config-if)# service-module ip default-gateway 172.16.153.21`	Specifies the IP address for the default gateway as an IP unnumbered interface.
Step 7	**service-module ip default-gateway** *gateway-ip-address* **Example:** `Router(config-if)# service-module ip default-gateway 10.0.0.40`	Specifies the IP address for the default gateway router for the module. The argument is as follows: • *gateway-ip-address*—IP address for the gateway router.
Step 8	If the **ip unnumbered** *type number* command is used in Step 4, then add a host-specific route to the service module IP address: **ip route** *service-module-ip-address subnet-mask* **integrated-service-engine slot/***0* **Example:** `Router(config-if)# ip route 172.16.153.11 255.255.255.255 integrated-service-engine 1/0`	(Optional) Sets the **ip route** command if the **ip unnumbered** *type number* command is used in Step 4.
Step 9	**end** **Example:** `Router(config-if)# end`	Returns to global configuration mode on the host router.

	Command or Action	Purpose
Step 10	**copy running-config startup-config** **Example:** `Router# copy running-config startup-config`	Saves the new running configuration of the host router.
Step 11	**show running-config** **Example:** `Router# show running-config`	Displays the running configuration of the host router. Use this command to verify address configurations.

Examples

The following partial sample output from the **show running-config** command shows how to configure the interfaces:

```
interface integrated-service-engine 1/0
 ip address 10.0.0.20 255.255.255.0
 service-module external ip address 172.0.0.30 255.255.0.0
 service-module ip address 10.0.0.21 255.255.255.0
 service-module ip default-gateway 10.0.0.40
```

Opening and Closing a Network Module Session

This section describes how to open and close a session on the Cisco Video Management and Storage System module.

The boot helper is a small subset of the system software that runs on the module. It boots the module from the network and assists in software installation and upgrades, disaster recovery, and other operations when the module cannot access its software.

The application image contains the network module user functionality software. The application image is based on the Cisco Video Management and Storage System module software.

Note

- You can conduct only one module session at a time.
- Step 1 and Step 2 open the host-router CLI and access the module. The remaining steps open a session with the module, configure the module, clears the module session, returning you to the host-router CLI.

SUMMARY STEPS

From the Host-Router CLI

1. **enable**
2. **service-module integrated-service-engine** *slot*/**0 status**
3. **service-module integrated-service-engine** *slot*/**0 session**

From the Service-Module Interface

4. Network module configuration commands

5. **Control-Shift-6 x**
   or
   exit

From the Host-Router CLI

6. **service-module integrated-service-engine** *slot*/**0 session clear**

DETAILED STEPS

	Command or Action	Purpose
	From the Host-Router CLI	
Step 1	**enable** **Example:** `Router> enable`	Enters privileged EXEC mode on the host router. If prompted, enter your password.
Step 2	**service-module integrated-service-engine** *slot*/**0 status** **Example:** `Router# service-module integrated-service-engine 2/0 status`	Displays the status of the specified module, so that you can ensure that the module is running (that is, the module is in a steady state). **Note** If the module is not running, start it with one of the startup commands listed in the "Shutting Down and Starting Up the Cisco Video Management and Storage System Application" section on page 16.

Step 3	**service-module integrated-service-engine** *slot*/**0 session**
	
	Example:
	`Router# service-module integrated-service-engine 1/0 session`
	
	`Trying 10.10.10.1, 2065 ... Open`
		Begins a module session on the specified module. Do one of the following:
		• To interrupt the auto-boot sequence and access the boot loader, quickly type ***.
		• To start a configuration session, press **Enter**.

	From the Service-Module Interface (boot loader prompt or configuration prompt)	

Step 4	.
	.
	.
	
	Example (boot loader):
	`cvmss-module boot loader> config`
	
	or
	
	Example (configuration):
	`cvmss-module> configure terminal`
	`cvmss-module(config)>`
	.
	.
	.
	`cvmss-module(config)> exit`
	`cvmss-module> write`
		Enters boot loader or configuration commands on the module as needed.
		
		• Boot loader command choices include **boot**, **config**, **exit**, **help**, **ping**, **reboot**, **show**, and **verify**.
		
		or
		
		• Configuration command choices are similar to the commands that are available on the router. To access global configuration mode, use the **configure terminal** command. Enter configuration commands. Then exit global configuration mode by using the **exit** command. Save your new configuration by using the **write** command. Notice that you do not use the **enable** command and the prompt does not change from **>**.

	Command or Action	Purpose

Step 5	**Example (boot loader):**
	Press **Control-Shift-6 x**
	or
	exit
	Example (Configuration):
	`cvmss-module(config)> exit`
	`cvmss-module> exit`
		Closes the module session and returns to the router CLI.
		Note The module session stays up until you clear it in Step 6. While the session remains up, you can return to it from the router CLI by pressing **Enter**.

	From the Host-Router CLI	
Step 6	**service-module integrated-service-engine** *slot*/**0 session clear** **Example:** `Router# service-module integrated-service-engine 1/0 session clear`	Clears the module session for the specified module. When prompted to confirm this command, press **Enter**.

Administering the Cisco Video Management and Storage System Module

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This chapter contains the following information for administering the Cisco Video Management and Storage System application:

- Shutting Down and Starting Up the Cisco Video Management and Storage System Application, page 16
- Backing Up and Restoring Configurations on the Cisco Video Management and Storage System Application, page 17
- Verifying System Status, page 18
- Diagnostics and Logging Options, page 20
- SNMP Commands, page 22
- Adding a DNS Server (Optional), page 25
- Additional References, page 28

Note

- The tables in these sections list only common router commands and network module commands.
  - To view a complete list of the available commands, enter **?** at the prompt

    Example: `Router(config-if)# ?`
  - To view a complete list of command keyword options, enter **?** at the end of the command

    Example: `Router#` **`service-module integrated-service-engine ?`**
- The commands are grouped in the tables by the configuration mode in which they are available. If the same command is available in more than one mode, it can act differently in each mode.

Shutting Down and Starting Up the Cisco Video Management and Storage System Application

To start up or shut down the network module or the Cisco Video Management and Storage System application that runs on the module, use the **shutdown** and **startup** commands as needed from Table 1.

Note

- Some shutdown commands can potentially disrupt service. If command output for such a command displays a confirmation prompt, confirm by pressing **Enter** or cancel by typing **n** and pressing **Enter**. Alternatively, prevent the prompt from displaying by using the **no-confirm** keyword.
- Some commands shut down the module or application and then immediately restart it.

Table 1 Common Shutdown and Startup Commands

Configuration Mode	Command	Purpose
`Router#`	**service-module integrated-service-engine** *slot*/**0 reload**	Shuts down the module operating system gracefully, and then restarts it from the boot loader.
`Router#`	**service-module integrated-service-engine** *slot*/**0 reset**	Resets the hardware on a module. Use only to recover from shutdown or a failed state. **Caution** Use this command with caution. It does *not* provide an orderly software shutdown, and it can affect file operations that are in progress.
`Router#`	**service-module integrated-service-engine** *slot*/**0 session**	Accesses the specified network module and opens a module configuration session.
`Router#`	**service-module integrated-service-engine** *slot*/**0 shutdown**	Shuts down the module operating system gracefully. Use this command sequence when removing or replacing a hot-swappable module during online insertion and removal (OIR).
`Router#`	**service-module integrated-service-engine** *slot*/**0 status**	Displays configuration and status information for the module hardware and software.
`Router(config)#` `Router(config-if)#`	**interface** *slot*/**0** **shutdown**	Shuts down the network module gracefully.
`cvmss-module boothelper>`	**boot**	Starts the boot helper or application.
`cvmss-module(config)`	**event poll-interval** *seconds*	Sets the HTTP trigger event polling interval in seconds.

Table 1 Common Shutdown and Startup Commands (continued)

Configuration Mode	Command	Purpose
`cvmss-module(offline)>`	**reload**	Performs a graceful halt and reboot of the module operating system.
`cvmss-module>`	**reload**	Shuts down the module gracefully, and then reboots the module from the boot loader.
`cvmss-module>`	**shutdown**	Shuts down the module application gracefully, and then shuts down the module.

Backing Up and Restoring Configurations on the Cisco Video Management and Storage System Application

To back up or restore configuration settings or to manage previous backups, use commands listed in Table 2.

Note The backup server can be configured using either the configuration mode or the offline mode.

Table 2 Common Backup and Restore Commands

Configuration Mode	Command	Purpose
`cvmss-module(config)>`	**backup revisions**	Specifies the number of previous backups to keep on the server. A value of zero removes all previous backups and saves only the current backup.
`cvmss-module(config)>`	**backup server**	Configures an external FTP backup server for storage.
`cvmss-module(offline)>`	**backup category** {**all** | **configuration** | **data** | **VSMS** | **VSOM**}	Performs a backup of the configuration files to a backup server. **VSMS** backs up the Video Surveillance Management System data files. **VSOM** backs up the Video Surveillance Operations Management data files.
`cvmss-module(offline)>`	**backup revisions**	Specifies the number of previous backups to keep on the server. A value of zero removes all previous backups and saves only the current backup.
`cvmss-module(offline)>`	**backup server**	Configures an external FTP backup server for storage.

Table 2 Common Backup and Restore Commands (continued)

Configuration Mode	Command	Purpose
`cvmss-module(offline)>`	**restore**	Restores the system to its factory default configuration or to the specified backup.
`cvmss-module>`	**show backup**	Displays information about previous backups and about the configured backup server.

Verifying System Status

To verify the status of an installation, upgrade, or downgrade, or to troubleshoot problems, use verification and troubleshooting commands as needed from Table 3.

Note Among keyword options for many **show** commands is the provision to display diagnostic output on your screen or to "pipe" it to a file or a URL (that is, to read the output from one command and write it to the file or URL).

Table 3 Common Verification and Troubleshooting Commands

Configuration Mode	Command	Purpose
`Router#`	**ping**	Pings a specified IP address to check network connectivity (does not accept a hostname as destination).
`Router#`	**show arp**	Displays the current Address Resolution Protocol (ARP) table.
`Router#`	**show clock**	Displays the current date and time.
`Router#`	**show configuration**	Displays the current configuration as entered by means of the **configure** command.
`Router#`	**show controllers integrated-service-engine**	Displays interface debug information.
`Router#`	**show diag**	Displays standard Cisco IOS diagnostics information, including information about the Cisco Video Management and Storage System module.
`Router#`	**show hardware**	Displays information about network module and host router hardware.
`Router#`	**show hosts**	Displays the default domain name, style of name lookup, list of name-server hosts, and cached list of hostnames and addresses.
`Router#`	**show interfaces**	Displays information about all hardware interfaces, including network and disk.

Table 3 Common Verification and Troubleshooting Commands (continued)

Configuration Mode	Command	Purpose
Router#	**show interfaces integrated-service-engine**	Displays information about the module side of the router-module interface.
Router#	**show ntp status**	Displays information about Network Time Protocol (NTP).
Router#	**show processes**	Displays a list of the application processes that are running.
Router#	**show running-config**	Displays the configuration commands that are in effect.
Router#	**show startup-config**	Displays the startup configuration.
Router#	**show tech-support**	Displays general information about the host router that is useful to Cisco technical support for problem diagnostics.
Router#	**show version**	Displays information about the router software or network module hardware.
Router#	**test scp ping**	Pings the network module to check network connectivity.
cvmss-module>	**ping**	Pings a specified IP address to check network connectivity (does not accept a hostname as destination).
cvmss-module>	**show arp**	Displays the current Address Resolution Protocol (ARP) table.
cvmss-module	**show event poll-interval**	Displays the current event polling interval.
cvmss-module>	**show clock**	Displays the current date and time.
cvmss-module>	**show config**	Displays the current boot loader configuration as entered by the **configure** command.
cvmss-module>	**show hosts**	Displays the default IP domain name, lookup style, name servers, and host table.
cvmss-module>	**show interfaces**	Displays information about the network-module interfaces.
cvmss-module>	**show ntp status**	Displays information about Network Time Protocol (NTP).
cvmss-module>	**show processes**	Displays a list of the application processes that are running.
cvmss-module>	**show running-config**	Displays the configuration commands that are in effect.
cvmss-module>	**show snmp**	Displays the SNMP statistics are stored in system counters.

Table 3 Common Verification and Troubleshooting Commands (continued)

Configuration Mode	Command	Purpose
cvmss-module>	**show software directory download**	Displays the contents of the downgrade or download directory on the download FTP file server.
cvmss-module>	**show software download server**	Displays the name and IP address of the configured download FTP file server.
cvmss-module>	**show software licenses**	Displays license information for installed packages.
cvmss-module>	**show software packages**	Displays version information for installed packages.
cvmss-module>	**show software versions**	Displays version information for installed software.
cvmss-module>	**show startup-config**	Displays the startup configuration.
cvmss-module>	**show tech-support**	Displays general information about the network module that is useful for problem diagnosis to Cisco technical support.
cvmss-module>	**show trace**	Displays the contents of the trace buffer.
cvmss-module>	**show version**	Displays information about the hardware and devices.
cvmss-module>	**show video-surveillance**	Displays video surveillance configurations, logs, reports, and tasks.
cvmss-module>	**software remove**	Removes downloaded files (all files, downloaded package and payloads, or stored downgrade files created during an upgrade).

Diagnostics and Logging Options

To configure logging options for Cisco Video Management and Storage System, use logging commands from Table 4.

Note Among the keyword options for many **log** and **trace** commands is the provision to display diagnostic output on your screen or to save it to a file or a URL.

Table 4 Common Logging Commands

Configuration Mode	Command	Purpose
`cvmss-module>`	**log console monitor**	Configures error logging by means of console logging (logged messages are displayed on the console).
`cvmss-module(config)>`	**log console**	Configures error logging by means of console logging (logged messages are displayed on the console).
`cvmss-module(config)>`	**log server**	Configures error logging by means of a system-log (syslog) server (syslog is an industry-standard protocol for capturing log information for devices on a network).

Diagnostics are of two types:

- System log (syslog)—Syslog is an industry-standard protocol for capturing the following events:
  - Fatal exceptions that cause an application or system crash, during which normal error-handling paths are typically nonfunctional
  - Application run-time errors that cause unusual conditions and configuration changes

  The syslog file size is fixed at 10 MB. Syslog configurations survive a power failure.
- Traces—Trace logs capture events related to the progress of a request through the system.

  Trace logs survive a CPU reset; trace configurations survive a power failure. Log and display these configurations with the **trace** commands.

To generate and display syslog and trace diagnostics, use trace commands from Table 5.

Table 5 Common Trace Commands

Configuration Mode	Command	Purpose
`cvmss-module>`	**clear trace**	Clears logged trace events for specified modules.
`cvmss-module>`	**log trace**	Logs configured traces to the network module (can be done locally or remotely).
`cvmss-module>`	**no trace**	Disables tracing for specified modules, entities, or activities.
`cvmss-module>`	**show errors**	Displays error statistics by module, entity, or activity.
`cvmss-module>`	**show trace**	Displays trace settings.
`cvmss-module>`	**show trace buffer**	Displays the contents of the trace buffer.
`cvmss-module>`	**show trace store**	Displays the contents of the stored trace messages.
`cvmss-module>`	**trace**	Enables tracing (that is, generates error reports) for specified modules, entities, or activities.

SNMP Commands

Table 6 lists and describes the **snmp-server** SNMP command-line interface commands.

Table 6 SNMP Commands

Configuration Mode	Command	Purpose
`cvmss-module(config)#`	**snmp-server community** *community-string* [**RO** | **RW**] **no snmp-server community** *community-string* [**RO** | **RW**] Example: `cvmss-module(config)# snmp-server community cisco-snmp RO`	Enables the SNMP agent with the configured case sensitive community string. The password and the mode of access can be set to read-only or read-write. Up to five community strings that can be set for each read-only or read-write category. *community-string*—case sensitive character string with a maximum length of 15 characters. RO—Read-Only access mode. RW—Read-Write access mode. Use the **no** form of this command to remove the configuration associated with the community string. **Note** Even after all community string configurations are removed, you can still have read-only access of MIB variables using the *default* community strings. The default read-only community string is *broadware-snmp*.
`cvmss-module(config)#`	**snmp-server contact** *contact-name* **no snmp-server contact** *contact-name* Example: `cvmss-module(config)# snmp-server contact "John Doe"`	Sets or clears the contact name. *contact-name*—character string with a maximum length of 31 characters. Use the **no** form of this command to clear the contact name.

Table 6 SNMP Commands (continued)

Configuration Mode	Command	Purpose
`cvmss-module(config)#`	**snmp-server enable traps** **no snmp-server enable traps** Example: `cvmss-module(config)# snmp-server enable traps`	Enables SNMP traps to be sent to the SNMP trap destination. **Note** This command is effective only for certain types of notifications. Not all types of notifications are controlled by this command. The notifications generated as a result of archive creation or deletion are not configured by this CLI, but are configured in the Video Surveillance Management Console web page with the "SNMP Trap Destination" link. Also, this CLI does not control the traps generated from exceeding the system resource thresholds. The only form of notifications enabled (or disabled) by this CLI are the traps generated from syslog messages with severity level greater than or equal to that of warning level. Use the **no** form of this command to disable trap notifications to be sent to the trap destination.
`cvmss-module(config)#`	**snmp-server host** *ip-address community-string* **no snmp-server host** *ip-address community-string* Example: `cvmss-module(config)# snmp-server host 1.100.10.219 cisco-snmp`	Configures the IP address of the host that is to receive the trap notifications. The community string must also be specified. Up to a maximum of 5 hosts that can be configured. **Note** The **snmp-server enable traps** command must be executed for the hosts to receive the trap notifications. *ip-address*—IP address (IPv4 only is supported) in dotted decimal notation of the host that is to receive the trap notifications. *community-string*—character string with a maximum length of 15 characters. Use the **no** form of this command to clear the host configuration.

Table 6 SNMP Commands (continued)

Configuration Mode	Command	Purpose
`cvmss-module(config)#`	**snmp-server location** *location-name* **no snmp-server location** *location-name* Example: `cvmss-module(config)# snmp-server contact "San Jose"`	Sets or clears the location name. *location-name*—character string with a maximum length of 31 characters. Use the **no** form of this command to clear the location name.
`cvmss-module(config)#`	**snmp-server monitor disk** *percentage* **no snmp-server monitor disk** *percentage* Example: `cvmss-module(config)# snmp-server monitor disk 20`	Sets the threshold for monitoring the disk usage for all the disks, including local, NFS, and iSCSI devices. *percentage*—Integer variable in the range of 1 to 30 that represents the percentage of free space within each disk partition. If the free disk space percentage falls below this threshold, the system will generate a trap. Use the **no** form of this command to disable disk monitoring.
`cvmss-module(config)#`	**snmp-server monitor cpu** *percentage* **no snmp-server monitor cpu** *percentage* Example: `cvmss-module(config)# snmp-server monitor cpu 10`	Sets the threshold for monitoring the CPU utilization. *percentage*—Number in the range of 0 to 20 that represents the percentage of idle CPU time. This number includes *wait* states. Use the **no** form of this command to disable CPU monitoring
`cvmss-module(config)#`	**snmp-server monitor swap** *percentage* **no snmp-server monitor swap** *percentage* Example: `cvmss-module(config)# snmp-server monitor swap 25`	Sets the threshold for monitoring the utilization of swap space. *percentage*—Number from 1 to 50 that represents the percentage of available free swap space. Use the **no** form for this command to disable swap space monitoring.

Table 6 SNMP Commands (continued)

Configuration Mode	Command	Purpose
cvmss-module>	**show snmp configuration**	Displays the configuration of all SNMP commands. It also lists all the resource monitoring threshold configurations.

	Example:
	`cvmss-module> show snmp configuration`
	`Contact: 1234`
	`Location: SAN JOSE`
	`Community 1 RO: test1`
	`Community 2 RO: test2`
	`Community 3 RO: test3`
	`Community 4 RO: test4`
	`Community 5 RO: test5`
	`Traps: disabled`
	`Host Community 1: 1.100.10.219 cisco-snmp`
	`Host Community 2: 1.100.10.218 cisco-snmp`
	`Host Community 3: 1.100.10.217 cisco-snmp`
	`Host Community 4: 1.100.10.216 cisco-snmp`
	`Host Community 5: 1.100.10.215 cisco-snmp`
	`monitor disk limit: 8`
	`monitor memory limit: 10`
	`monitor cpu limit: 15`
	`cvmss-module>`	

Adding a DNS Server (Optional)

Cisco Video Management and Storage System uses a cache-only domain name system (DNS) server that listens on port 53 for both User Datagram Protocol (UDP) and TCP packets. A typical use for such a server is to enable the application to continue operation in a branch office when the WAN is down and the server is on the other side of the WAN in an enterprise or service-provider data center.

The DNS server cache policy is to automatically revalidate a cached entry when its time to live (TTL) expires, and to discard an entry only when the parent DNS server is accessible and no longer contains the name. This differs from most DNS caches, which simply discard an entry when the TTL expires.

Note

- Step 1 and Step 2 open the host router CLI and access the network module. The remaining steps configure the module and return to the host router CLI.
- Open, close, and clear a module session as described in the "Opening and Closing a Network Module Session" section on page 12.

SUMMARY STEPS

From the Host-Router CLI

1. **service-module integrated-service-engine** *slot*/**0 session**

From the Service-Module Interface

2. **configure terminal**
3. **hostname** *hostname*

4. **ip domain-name** *domain*
5. **ip name-server** <*ip-address*> [<*ip-address*> …]
6. **exit**
7. **show hosts**
8. **write**
9. **Control-Shift-6 x**

From the Host-Router CLI

10. **service-module integrated-service-engine** *slot*/**0 session clear**

DETAILED STEPS

	Command or Action	Purpose
	From the Host-Router CLI	
Step 1	**`service-module integrated-service-engine`** *`slot`*/**`0 session`** **Example:** `Router# service-module integrated-service-engine 2/0 session`	Opens a Cisco Video Management and Storage System module session.
	From the Service-Module Interface	
Step 2	**`configure terminal`** **Example:** `cvmss-module> configure terminal`	Enters global configuration mode on the module.
Step 3	**`hostname`** *`hostname`* **Example:** `cvmss-module(config)> hostname hostname1`	Specifies the name of the Cisco Video Management and Storage System module that appear in the prompt.
Step 4	**`ip domain-name`** *`domain`* **Example:** `cvmss-module(config)> ip domain-name domain1.com`	Defines a default domain name for use in completing unqualified hostnames (names without a dotted-decimal domain name).
Step 5	**`ip name-server`** *`ip-address`* `[<ip-address> …]` **Example:** `cvmss-module(config)> ip name-server 10.0.0.0`	Specifies the IP address for one or more DNS servers. The argument is as follows: *ip-address*—Server IP address
Step 6	**`exit`** **Example:** `cvmss-module(config)> exit`	Exits global configuration mode on the module.

	Command or Action	Purpose
Step 7	**`show hosts`** **Example:** `cvmss-module> show hosts`	Displays the default domain name, style of name lookup, list of name-server hosts, and cached list of hostnames and addresses.
Step 8	**`write`** **Example:** `cvmss-module> write`	Saves the new running configuration of the module.
Step 9	Press **Control-Shift-6 x**.	Closes the module session.
	From the Host-Router CLI	
Step 10	**`service-module integrated-service-engine`** *`slot`***`/0 session clear`** **Example:** `Router# service-module integrated-service-engine 1/0 session clear`	Clears the module session for the specified module. When prompted to confirm this command, press **Enter**.

Additional References

The following sections provide references related to the Cisco Video Management and Storage System application.

Related Documents

Related Topic	Document Title
Cisco Video Management and Storage System and the Cisco Video Surveillance Solution	• *Release Notes for the Cisco Video Management and Storage System* • *Connecting Cisco Video Management and Storage System Enhanced Network Modules to the Network* • *Cisco Video Management and Storage System Installation and Upgrade Guide* • *Connecting Cisco Integrated Storage System Enhanced Network Modules to the Network* • *Cisco Integrated Storage System Installation and Upgrade Guide* • *Cisco Integrated Storage System CLI Administrator Guide* • *Connecting Cisco Analog Video Gateway Network Modules to the Network* • *Cisco Analog Video Gateway Installation and Upgrade Guide* • *Cisco Analog Video Gateway CLI Administrator Guide* • *Cisco Analog Video Gateway XML API Guide* • *Open Source License Notice*
Cisco IOS software	*Cisco IOS Software*
Network modules	*Installing Cisco Network Modules in Cisco Access Routers*
Technical documentation, including feedback and assistance	*What's New in Cisco Product Documentation* (including monthly listings of new and revised documents)

Technical Assistance

Description	Link
For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at: Subscribe to the *What's New in Cisco Product Documentation* as a Really Simple Syndication (RSS) feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service and Cisco currently supports RSS version 2.0.	http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html
Cisco Feature Navigator website	http://www.cisco.com/go/cfn Use Cisco Feature Navigator to find information about platform support and Cisco IOS and Catalyst OS software image support. An account on Cisco.com is not required.
Cisco Software Center website	http://www.cisco.com/public/sw-center/

Configuring Local and Remote Storage

Last Updated: March 17, 2010

This section describes how to configure the Cisco Video Management and Storage System to store archive files on iSCSI (Internet small computer system interface) and NFS (Network File Systems) storage devices. Use the Cisco Video Management and Storage System command-line interface (CLI) commands to add a new iSCSI or NFS devices or to modify existing iSCSI or NFS devices.

The Cisco Video Management and Storage System enhanced network module supports an Internet SCSI (iSCSI) connection to an external storage device. We recommend, but do not require, that the external Gigabit Ethernet connector be used for iSCSI connection. 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.

This chapter describes the following:

- Configuring Local Storage Devices, page 31
- Configuring iSCSI Storage Devices, page 32
- Configuring NFS Mounts from NFS Servers, page 43

Configuring Local Storage Devices

The **format storages local** command formats the local storage device the media tag of *media0*. Use the **show storages all filesystem** command to get information about the current state of *media0*. The **local** command option is available only with 2.0 and later versions of the Cisco Video Management and Storage System.

As shown in Examples, a data loss warning message appears immediately after this command is entered. Local storage device formatting proceeds only after a **y(es)** confirmation is entered. After formatting is complete, the local storage device is automatically mounted.

Note If the Cisco Video Management and Storage System application is in the process of storing or reviewing an archive from *media0*, formatting of *media0* will not proceed and a device busy message will appear.

SUMMARY STEPS

1. **format storages local** *media-tag*

DETAILED STEPS

	Command or Action	Purpose
Step 1	**format storages local** *media-tag* **Example:** cvmss-module# **format storages local media0**	Formats the local storage device. *media-tag:* For the local storage device, the media tag sets the unique string identifier for the local storage device *media0*.

Examples

The following example shows the command to format the local storage device, media0.

```
cvmss-module> format storages local media0

!!!WARNING!!!
!!!WARNING!!!  You are about to start a destructive sequence of
!!!WARNING!!!  operations. All data on the storage device media0
!!!WARNING!!!  will be lost and unrecoverable.
!!!WARNING!!!  The device formatting can take up to a few minutes.
!!!WARNING!!!  During formatting, your console is locked and
!!!WARNING!!!  unavailable for use. Before you proceed further, back
!!!WARNING!!!  up the contents of the storage device media0.
!!!WARNING!!!
!!!WARNING!!!  If you are not sure what to do, answer "no" to the
!!!WARNING!!!  following question and then exit.
!!!WARNING!!!

Do you wish to proceed [y/n]? :
```

Configuring iSCSI Storage Devices

This section describes the following:

- Configuring Only One VSMS to Same iSCSI Target, page 32
- Formatting iSCSI Storage Devices for Version 1.1 and Earlier Versions, page 37
- Formatting iSCSI Devices for Version 2.0 and Later Versions, page 39

Configuring Only One VSMS to Same iSCSI Target

The iSCSI protocol is an Internet-enabled SCSI protocol and acts like the SCSI protocol, in which only one Video Surveillance Management System (VSMS) can access one iSCSI disk drive. You must avoid connecting more than one VSMS to the same iSCSI target. Traditional file systems, such as *ext3*, are designed to work on only one VSMS at a time.

Caution Mounting a file system on more than one VSMS at a time will almost certainly cause problems with unpredictable results.

Be aware that even when *ext3* is mounted in read-only mode, *ext3* might still write to the disk drive. It might not write data but will replay the journal. If another VSMS has already been mounted on the same file system, data will almost certainly be corrupted.

Use the **storages iscsi** commands to configure iSCSI storage devices managed by the Cisco Video Management and Storage System module.

Prerequisites and Considerations

Before configuring iSCSI storage devices, be aware of the following prerequisites and considerations:

1. The iSCSI CLI commands allow you to configure nine media tags (media1, media2, and so on to media9) to support up to nine unique iSCSI targets. The mount point */media0* is assigned to the Cisco Video Management and Storage System module local hard disk repository.
2. Each media profile must be assigned a unique IP address.
3. Only one volume can be mounted to the Cisco Video Management and Storage System at any given time.
4. Devices can be formatted by using the CLI. The iSCSI devices can be formatted only to *ext3* format.

Caution Direct access to the storage device, for example /dev/sda, is not allowed with an iSCSI device. You must use the media tag that you defined in the configuration of the iSCSI target tag. Formatting of the storage device is denied if the device is occupied or busy. However, once it is cleared of the busy condition, a storage device can be formatted regardless of its existing format—valid, invalid, supported, unsupported, or unknown FS type. The formatting of multiple devices at the same time is not supported.

5. Each volume is translated into logical unit number (LUN) numbering from initiator aspect, typically 0, 1, 2, and so on.
6. A mountable directory is named using a tag name with the LUN number suffix. For example, a target tag of */media1* with single volume number 0 is named as */media1_0*; that is, the mount point is followed by an underscore (_) character and the volume number 0.
7. Only one volume and one iSCSI storage server can be mounted on a Cisco Video Management and Storage System at any given time.
8. Authentication is not necessary because the Cisco Video Management and Storage System uses a dedicated private VLAN through either the secured internal or secured external Gigabyte Ethernet interface.
9. Administrators manage the iSCSI targets and volumes of each target allocation to ensure that no multiple VSMS access is configured to a single target or target volume (see the "Configuring Only One VSMS to Same iSCSI Target" section on page 32).
10. Any devices of unsupported file system types (for example, *ext2*) are recorded and logged in, but their use is disabled because they are not mounted.
11. If target storage servers are reloaded or power cycled, the iSCSI tags must be logged in again because, after the target iSCSI device is powered cycled or reloaded, existing sessions and sequence numbers are reset. Rediscovery and relogin are necessary after the target storage device is operational.
12. The external Gigabit Ethernet connector located on the Cisco Video Management and Storage System module is used to connect to iSCSI mass storage devices.

SUMMARY STEPS

1. **storages iscsi** *media-tag*
2. **default | description | state | target-ip | timeout-node-session**]
3. **end**
4. **exit**
5. **show storages iscsi filesystem**
   or
   show storages all filesystem
   or
   show storages iscsi configuration summary
   or
   show storages iscsi configuration detail

DETAILED STEPS

	Command or Action	Purpose

Step 1	**storages iscsi** *media-tag*
	
	Example:
	`cvmss-module(config)> storages iscsi media1`
	`Adding new iscsi`
	`cvmss-module(config-iscsi)>`
		Enters iSCSI configuration mode.
		
		media-tag: String identifier for the IP iSCSI mass storage device in the range of media1 to media9.

Step 2	[**default** | **description** | **state** | **target-ip** | **timeout-node-session**]
	
	Example:
	`cvmss-module(config-iscsi)> storages iscsi media1`
	`Adding new iscsi`
	`cvmss-module(config-iscsi)> default`
	`cvmss-module(config-iscsi)> target-ip 172.19.156.43`
	`cvmss-module(config-iscsi)> descripton"media1: southwest branch"`
	`cvmss-module(config-iscsi)> state enabled`
	`cvmss-module(config-iscsi)> timeout-node-session 160`
	`cvmss-module(config-iscsi)> end`
	`cvmss-module(config)> exit`
	`cvmss-module>`
	
	Example: With DNS Configured
	`cvmss-module(config)> ip name-server 172.70.168.183 171.68.226.120`
	`cvmss-module(config-iscsi)> storages iscsi media2`
	`Adding new iscsi`
	`cvmss-module(config-iscsi)> default`
	`cvmss-module(config-iscsi)> target-ip www.sanjose_downtown.org`
		Configures iSCSI storage target device configuration parameters.
		
		default: iSCSI storage target device default value.
		
		description: iSCSI storage target device description text in quotes. Up to 80 text characters are allowed.
		
		Default: " "
		
		state: Enables or disables the operational state of the iSCSI storage target device:
		• **disabled**: Disables the operational state of the iSCSI storage target device.
		• **enabled**: Enables the operational state of the iSCSI storage target device. If this command option is used on a multivolume device, an error message appears asking for the specific volume name and LUN number to be enabled.
		• **enabled** [**volumename** *volumename* **lun** *lun#*]: Enables the selected volume, based on its volume name and logical unit number. This option is only available in 1.1 and later versions.
		
		Default: Enabled.

	Command or Action	Purpose

	Example:target-ip
	`cvmss (config)> storages iscsi media1`
	`Modifying existing iscsi`
	`cvmss(config-iscsi)> target-ip 172.16.151.243`
	`Connecting 172.16.151.243...`
	
	When configuring a bad volume, the following message displays:
	`cvmss (config-iscsi)> target-ip 172.16.151.243 volumename iqn.2000-08.com.intransa:ivsms.dg1.BadVolName lun 0`
	`Connecting 1172.16.151.243 volume iqn.2000-08.com.intransa:ivsms.dg1.BadVolName... failed.`
	`iSCSI volume does not exist:`
	
	When attempting to configure multiple volumes and only one volume exits, the following message displays:
	`ERROR: The target could not be connected because multiple volumes exist on this storage server`
	`The following volumes exist on this storage server:`
	`volumeName iqn.2000-08.com.intransa:intransa.intransa.intvol1 LUN 0`
	`volumeName iqn.2000-08.com.intransa:intransa.intransa.intvol2 LUN 0`
	
	`cvmss(config-iscsi)> end`
	`cvmss(config)> end`
	`Use "target-ip <IP_ADDRESS>" command with volumename and lun as parameters.`
	`Multiple volume Exists on this device.`
	`Central-VMSS(config-iscsi)> target-ip 172.16.151.243 volumeName iqn.2000-08.com.intransa:intransa.intransa.intvol1 LUN 0`
	`Connecting 172.16.151.243 volume iqn.2000-08.com.intransa:intransa.intransa.intvol1... succeeded.`
		target-ip: Sets the iSCSI target IP address in dotted decimal format or hostname. You can mount a device as either a single volume, or in the case of a multi-volume device, all or selected volumes, based on volume name and logical unit number.
		Note If you need to use a hostname, make sure that you have DNS configured (see example, " With DNS Configured" section on page 34).
		• *ip-address*: Selects the IP address of a single-volume iSCSI storage target device. If this command option is used on a multivolume storage device, an error message appears, asking for the specific volume name and LUN number to be selected (see example "target-ip" section on page 35
		• *ip-address* [**volumename** *volumename* **lun** *lun#*]: Selects the volumes of a multivolume iSCSI storage target device located at the configured IP address, based on the volume name and logical unit number. This option is only available in 1.1 and later versions.
		timeout-node-session *value*: Sets the target iSCSI node time-out session in integer range 0 to 32767.
		Default: 120

Step 3	**end**
	
	Example:
	`cvmss-module(config-iscsi)> end`
	`cvmss-module(config)>`
		Exits the storage iSCSI configuration mode.

	Command or Action	Purpose

Step 4	**exit**
	
	Example:
	`cvmss-module(config)> exit`
	`cvmss-module>`
		Exits global configuration mode.

Step 5	**show storages iscsi filesystem**
	or
	show storages all filesystem
	
	show storages iscsi configuration summary
	or
	show storages iscsi configuration detail
	
	Example:
	`cvmss-module> show storages iscsi filesystem`
	or
	`cvmss-module> show storages all filesystem`
	or
	`cvmss-module> show storages iscsi configuration summary`
	or
	`cvmss-module> show storages iscsi configuration detail`
		Displays a summary of iSCSI storage devices by iSCSI or all file systems, general summary of all device configurations, or detailed summary of all device configurations.

Examples

To view a summary of file systems, use the **show storages iscsi filesystem** command. For example:

```
cvmss-module# show storages iscsi filesystem
Filesystem            1K-blocks      Used  Available  Use% Mounted on
==================== ===========  ======= ==========  ==== ==========
/dev/sdb             2307162084 1171905380 1018059636  54% /media1_0
/dev/sdc             576789800    106560 547384004      1% /media1_1
```

To view all the configured file systems, use the **show storages all filesystem** command. For example:

```
cvmss-module# show storages all filesystem
Filesystem            1K-blocks      Used  Available  Use% Mounted on
==================== ===========  ======= ==========  ==== ==========
rootfs                 9775184   1081472   8693712    12%  /
/dev/root              9775184   1081472   8693712    12%  /
none                   1036520         0   1036520     0%  /dev/shm
/dev/sda3            142284500     32828 135024032     1%  /media0
/dev/sdb             2307162084 1171912476 1018052540 54%  /media1_0
/dev/sdc             576789800    106560 547384004     1%  /media1_1
```

To view a general summary of iSCSI storage device configurations, use the **show storages iscsi configuration summary** command. For example:

```
cvmss-module# show storages iscsi configuration summary
                              Sessn
  Tag  State    Target IP    Timeo
====== ===== =============== =====
media1  on     192.168.1.254   120
```

To view a detailed summary of iSCSI storage device configuration information, use the **show storages iscsi configuration detail** command. For example:

```
cvmss-module# show storages iscsi configuration detail
                                Sessn
  Tag   State    Target IP    Timeo
======  ===== =============== =====
media1   off          0.0.0.0   120
media2   on        172.16.0.0   120
media3   on           0.0.0.0   120
media4   on           0.0.0.0   120
```

You can also display the general or detailed status of the iSCSI storage device configurations.

```
cvmss> show storages iscsi status detail
       Fou Log                                                          Portal
  Tag  nd  in   Device    Mounts    LUN  FS Types      iSCSI Portal      Reachable IO
Target Name
====== === === ======== =========== ===  ======== ====================== ========= ==
==============
media1 yes yes /dev/sdb /media1_0     0   ext3      172.16.151.243:3260,0    Yes   rw
iqn.2000-08.com.intransa:intransa.
nsa.intvol1
media1 yes no  unknown  not_support   0   unknown   172.16.151.243:3260,0    Yes   --
iqn.2000-08.com.intransa:intransa.
nsa.intvol2
```

To view a general status of the configured iSCSI storage devices, use the **show storages iscsi status summary** command. For example:

```
cvmss-module# show storages iscsi status summary
       Rec Log
  Tag  ord in   Device    Mounts    LUN Vol FS Types      iSCSI Portal      IO
====== === === ======== =========== === === ======== ====================== ==
media1 yes yes /dev/sdb /media1_0     0   2 ext3       192.168.1.254:3260,1 rw
media1 yes yes /dev/sdc /media1_1     1   2 ext3       192.168.1.254:3260,1 rw
```

To view a detailed status of the configured iSCSI storage devices, use the **show storages iscsi status detail** command. For example:

```
cvmss-module# show storages iscsi status detail
       Rec Log
  Tag  ord in   Device    Mounts    LUN Vol FS Types      iSCSI Portal      IO Target Name
====== === === ======== =========== === === ======== ====================== == ===========
media1 yes yes /dev/sdb /media1_0     0   2 ext3       192.168.1.254:3260,1 rw
iqn.1999-02.com.nexsan:p0:sataboy:01731a5a
media1 yes yes /dev/sdc /media1_1     1   2 ext3       192.168.1.254:3260,1 rw
iqn.1999-02.com.nexsan:p0:sataboy:01731a5a
```

Formatting iSCSI Storage Devices for Version 1.1 and Earlier Versions

You must take the highest level of caution when using the CLI to format iSCSI storage devices. You cannot directly access the storage device (for example, /dev/sda) with an iSCSI device. You must use the media tag that you defined in the configuration of the iSCSI target tag. If the device is occupied or busy, it cannot be formatted. However, once the device is cleared of the busy condition, a storage device can be formatted regardless of its existing format—valid, invalid, supported, unsupported, or unknown FS type. The formatting of multiple devices at the same time is not supported.

Use the **format storages** command to format iSCSI mass storage devices managed by the Cisco Video Management and Storage System version 1.1 or earlier versions of the module.

SUMMARY STEPS

1. **configure terminal**
2. **format storages** *storage-type media-tag*
3. *lun# fs-type*
4. **end**
5. **end**

DETAILED STEPS

	Command or Action	Purpose

Step 1	For 1.1 and earlier versions:
	`configure terminal`
	
	Example:
	`cvmss-module> configure terminal`
	`cvmss-module (config)#`
		Enters global configuration mode.

Step 2	**`format storages`** *`storage-type media-tag`*
	
	Example:
	`cvmss-module (config)# format storages iscsi media8`
	`cvmss-module (config-iscsi)#`
		Enters storage device configuration mode for the mass storage device identified by *storage-type* to be formatted.
		storage-type: Sets the storage interface type to iSCSI, USB, or SATA.
		Note Only iSCSI is supported.
		media-tag: Sets the unique string identifier for the IP iSCSI mass storage device in the range of media1 to media9.

Step 3	*`lun# fs-type`* **Example:** `cvmss-module (config-iscsi)# 0 ext3`	Sets the iSCSI device logical unit number and file system type. *lun#:* Sets the corresponding iSCSI volume number. *fs-type:* Sets the file system type, ext3 or reiserfs. **Note** The *exdt3* file system is the only type supported.
Step 4	**`end`** **Example:** `cvmss-module (config-iscsi)# end`	Exits storage device configuration mode.
Step 5	**`end`** **Example:** `cvmss-module (config)# end`	Exits global configuration mode.

Examples

The following example shows the format command for formatting iSCSI mass storage device media8, logical unit number (LUN) 0, and file type ext3. Note the warning message and two confirmations that you must respond to before an attempt is made to format the device.

```
cvmss-module# format storages iscsi media8 0 ext3

!!!WARNING!!!
!!!WARNING!!!  You are about to start a destructive sequence of
!!!WARNING!!!  operations. All data on the storage device will be lost
!!!WARNING!!!  and unrecoverable. Depending on the capacity of the
!!!WARNING!!!  storage device, the formatting can take up to a few
!!!WARNING!!!  hours. During formatting, your console is locked and
!!!WARNING!!!  unavailable for use. Before you proceed further, back
!!!WARNING!!!  up the contents of the storage device.
!!!WARNING!!!
!!!WARNING!!!  If you are not sure what to do, answer "no" to the
!!!WARNING!!!  following question and then exit.
!!!WARNING!!!

Do you wish to proceed [y/n]? : y
Are you sure you want to format the device and lose all the data [y/n]? : y
Formatting /dev/sdb in ext3
mke2fs 1.37 (21-Mar-2005)
Filesystem label=
OS type: Linux
Block size=4096 (log=2)
Fragment size=4096 (log=2)
366247936 inodes, 732481536 blocks
36624076 blocks (5.00%) reserved for the super user
First data block=0
22354 block groups
32768 blocks per group, 32768 fragments per group
16384 inodes per group
Superblock backups stored on blocks:
        32768, 98304, 163840, 229376, 294912, 819200, 884736, 1605632, 2654208,
        4096000, 7962624, 11239424, 20480000, 23887872, 71663616, 78675968,
        102400000, 214990848, 512000000, 550731776, 644972544

Writing inode tables:   254/22354
```

Formatting iSCSI Devices for Version 2.0 and Later Versions

You must take the highest level of caution when using the CLI to format iSCSI storage devices. You cannot directly access the storage device (for example, /dev/sda) with an iSCSI device. You must use the media tag that you defined in the configuration of the iSCSI target tag. If the device is occupied or busy, it cannot be formatted. However, once the device is cleared of the busy condition, a storage device can be formatted regardless of its existing format—valid, invalid, supported, unsupported, or unknown FS type. The formatting of multiple devices at the same time is not supported.

Use the **format storages iscsi** or the **format storages local** command to format iSCSI mass storage or local storage devices managed by the Cisco Video Management and Storage System for versions 2.0 or later versions to the module.

iSCSI Storage Devices

The **format storages iscsi** command formats the iscsi storage devices assigned media tags *media1* to *media9*. Use the **show storages all filesystem** command to get information about the state of the *media1* to *media9* devices. The **mount-option sync** command options are available only with 2.0 or later versions of the Cisco Video Management and Storage System.

Use the format storages

As shown in Examples, a data loss warning message appears immediately after this command is entered. The formatting of the selected iSCSI storage device *media0* to *media9* will proceed only after a **y(es)** confirmation is entered. After formatting is complete, the selected device is automatically mounted.

The **mount-option sync** command allows an iSCSI device to be mounted using the synchronous I/O option, where all the I/O operations to the iSCSI device are performed in a synchronous mode. That is, the I/O operation for a given request proceeds only after getting an acknowledgement from the iSCSI device. By default, this feature is turned not enabled, and the iSCSI device is mounted without the synchronous I/O option.

If the iSCSI device is already mounted when **mount-option sync** command is used, it displays the message:

```
You must disable and then enable this media before the changes will take place.
```

The configuration takes effect at the time of next login to this iSCSI device.

Caution Because iSCSI performance becomes degraded when using the **mount-option sync** option, this command should be used with caution. While using this command option helps to achieve greater iSCSI device reliability, the throughput of the iSCSI device is compromised. Although reduced throughput does not affect the archiving process, it affects the backup operation. The backup operation is much more demanding of the iSCSI performance. We recommend that, in deployment scenarios where there are frequent network or power outrages that can cause the iSCSI device to be unreachable, it is better to use this command to improve the iSCSI storage media reliability.

SUMMARY STEPS

1. **configure terminal**
2. **format storages iscsi** *media-tag*
3. **mount-option sync**
4. **end**
5. **end**

DETAILED STEPS

	Command or Action	Purpose

Step 1	For 2.0 and later versions:
	`cvmss-module> configure terminal`
	
	Example:
	
	`cvmss-module> configure terminal`
	`cvmss-module (config)#`
		Enter global configuration mode.

Step 2	`cvmss-module (config)# format storages iscsi media-tag`
	
	Example:
	
	`cvmss-module (config)# format storages iscsi media1`
	`Modifying existing iscsi`
	`cvmss-module (config-iscsi)#`
		Enter iSCSI storage device format configuration mode for the iSCSI device identified by *media-tag*.
		
		media-tag:
		
		For iSCSI storage devices, the media tag sets the unique string identifier for the IP iSCSI mass storage device in the range of media1 to media9.

Step 3	**format storages iscsi** *media-tag* [**mount-option**] [**sync**]
	
	Example:
	
	`cvmss-module (config-iscsi)# mount-option sync`
	`mount configuration has been changed successfully.`
	`cvmss-module (config-iscsi)# end`
	`cvmss-module (config)# end`
	
	`(config-iscsi)# no mount-option sync`
	`mount configuration has been changed successfully.`
	`You must disable and then enable this media before the changes will take place.`
	`cvmss-module (config-iscsi)# end`
	`cvmss-module (config)# end`
		mount-option sync: (Optional) Sets the iSCSI device to be mounted by using the synchronous I/O option, where all the I/O operations to the iSCSI device are performed in a synchronous mode.
		
		Use the **no** form of this command to remove the **mount-option sync** configuration; that is, the iSCSI file system is mounted without synchronous I/O option. For the changes to take effect, the media must first be disabled and then reenabled.
		
		Note While using this command option helps to achieve greater iSCSI device reliability, the throughput of the iSCSI device is compromised.
		
		Default: **no mount-option sync** configuration

Step 4	**end** **Example:** `cvmss-module (config-iscsi)# end`	Exits iSCSI storage device format configuration mode.
Step 5	**end** **Example:** `cvmss-module (config)# end`	Exits global configuration mode.

Examples

The following example shows the format command for formatting iSCSI mass storage device media1 in global configuration mode.

```
cvmss-module (config)# format storages iscsi media1

!!!WARNING!!!
!!!WARNING!!!  You are about to start a destructive sequence of
!!!WARNING!!!  operations. All data on the storage device will be lost
!!!WARNING!!!  and unrecoverable. Depending on the capacity of the
!!!WARNING!!!  storage device, the formatting can take up to a few
!!!WARNING!!!  hours. During formatting, your console is locked and
!!!WARNING!!!  unavailable for use. Before you proceed further, back
!!!WARNING!!!  up the contents of the storage device.
!!!WARNING!!!
!!!WARNING!!!  If you are not sure what to do, answer "no" to the
!!!WARNING!!!  following question and then exit.
!!!WARNING!!!

Do you wish to proceed [y/n]? : y
Are you sure you want to format the device and lose all the data [y/n]? : y
Formatting /dev/sdb in ext3
mke2fs 1.37 (21-Mar-2005)
Filesystem label=
OS type: Linux
Block size=4096 (log=2)
Fragment size=4096 (log=2)
366247936 inodes, 732481536 blocks
36624076 blocks (5.00%) reserved for the super user
First data block=0
22354 block groups
32768 blocks per group, 32768 fragments per group
16384 inodes per group
Superblock backups stored on blocks:
        32768, 98304, 163840, 229376, 294912, 819200, 884736, 1605632, 2654208,
        4096000, 7962624, 11239424, 20480000, 23887872, 71663616, 78675968,
        102400000, 214990848, 512000000, 550731776, 644972544

Writing inode tables:   254/22354
```

The following example uses the **mount-option sync** command, where all the I/O operations to the iSCSI media1 device are performed in a synchronous mode.

```
cvmss-module (config-iscsi)# mount-option sync
mount configuration has been changed successfully.
You must disable and then enable this media before the changes will take place.
```

The following example uses the **show running-configuration** command in user EXEC mode, where the mount-option sync command is output.

```
cvmss-module>  show running-config
Generating configuration:


clock timezone America/Los_Angeles

hostname cvmss-module

system language preferred "en_US"
software download server url "ftp://127.0.0.1/ftp" credentials hidden
"6u/dKTN/hsEuSAEfw40XlF2eFHnZfyUTSd8ZZNgd+Y9J3xlk2B35j0nfGWTYHfmPSd8ZZNgd+Y9J3xlk2B35j0nfG
WTYHfmPSd8ZZNgd+Y9J3xlk2B35j0nfGWTYHfmP"
```

```
log trace local enable

backup server url "ftp://128.107.148.164/argus_backup" credentials hidden
"Xi0lHP/mJI9CFWjDHf/D/OTywA9uqzsRSd8ZZNgd+Y9J3xlk2B35j0nfGWTYHfmPSd8ZZNgd+Y9J3xlk2B35j0nfG
WTYHfmPSd8ZZNgd+Y9J3xlk2B35j0nfGWTYHfmP"

storages iSCSI media1
 mount-option sync
 timeout-node-session 120

 target-ip 172.16.153.14

 end storages-iscsi

end
```

Configuring NFS Mounts from NFS Servers

Note NFS mount configuration is only supported on Cisco Video Management and Storage System version 2.2 and later.

NFS allows data to be stored on central servers and easily accessed from client devices in a client/server network configuration through a process called mounting. It allows a system to share directories and files with others over a network. Files stored on remote systems can be accessed almost as if they were local files. The Cisco Video Management and Storage System supports the command-line interface (CLI) configuration of NFS for remote video archiving.

Unlike iSCSI devices, NFS supports multiple mounts. However, the Cisco Video Management and Storage System supports a one-to-one relationship between NFS exports and mount configurations. For example, if you had an NFS server with four exports and you wanted to configure three of those mounts for video surveillance archive storage, you need to configure three separate media enclosures.

Also unlike iSCSI, NFS supports the **target-ip** command differently. You no longer need to disable an export to mount a new export. You can simply issue a **target-ip** *ip-address* **exportName** *export-name* command to mount a new export. If you want to change the media's IP address, simply issue **target-ip** *ip-address* command, which automatically unmounts the old IP address and export name and adds the new IP address.

SUMMARY STEPS

1. **configure terminal**
2. **storages nfs** *media-tag*
3. **end**
4. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	`cvmss-module>` **`configure terminal`** **Example:** `cvmss-module>` **`configure terminal`** `cvmss-module (config)#`	Enter global configuration mode.

Step 2	`cvmss-module (config)#` **`storages nfs`** *`media-tag`*
	
	Example:
	
	`cvmss-module (config)# storages iscsi media1`
	`Modifying existing nfs`
	`cvmss-module (config-nfs)#`
		Enter the NFS configuration mode for the NFS mount identified by *media-tag*.
		
		media-tag:
		
		For NFS mount, the media tag sets the unique string identifier for the NFS mount from an NFS server in the range of media1 to media9.
		
		Note Error Messages: If that an iSCSI device has already been configured for media1 and the following command is entered:
		
		`cvmss-module (config-nfs)> storages nfs media1`
		
		The following error message appears:
		
		`There is already a media1 enclosure configured for iSCSI. Please try a different media-tag and try again.`

	Command or Action	Purpose

Step 3	[**default** | **state** | **switch-on-fail** | **target-ip**]
	
	Example:
	`cvmss-module(config-nfs)> storages nfs media1`
	`Adding new nfs`
	`cvmss-module(config-nfs)> default`
	`cvmss-module(config-nfs)> state enabled`
	`cvmss-module(config-nfs)>`
	`cvmss-module(config-nfs)> target-ip 10.10.10.60`
	`Connecting 10.10.10.60... succeeded.`
	`cvmss-module(config-nfs)> target-ip 10.10.10.60`
	`Connecting 10.10.10.60... failed.`
	`ERROR: The target could not be connected because multiple exports exist on this storage server`
	`/var/nfs`
	`/source/nfs`
	`cvmss-module(config-nfs)> target-ip 10.10.10.60 exportname /var/nfs`
	`Connecting 10.10.10.60... succeeded.`
	`cvmss-module(config-nfs)> end`
	`cvmss-module(config)> exit`
	`cvmss-module>`
	
	Example: With DNS Configured
	`cvmss-module(config)> ip name-server 172.70.168.183 171.68.226.120`
	`cvmss-module(config-nfs)> storages nfs media2`
	`Adding new nfs`
	`cvmss-module(config-nfs)> target-ip 10.10.10.60`
	`Connecting 10.10.10.60... succeeded.`
		Configures NFS mount configuration parameters.
		
		default: NFS mount default values.
		
		state: Enables or disables the operational state of the NFS mount:
		• **disabled**: The NFS export is not mounted.
		• **enabled**: The NFS export is mounted.
		
		Default: Disabled.
		
		switch-on-fail [**on** | **off**]: Configures whether the archives can be switched to the local hard drive in the case where the NFS media device is not available. When **on**, the switchover of the archives process to the local drive occurs in the event the NFS media is not available.
		
		Note This feature is only available to the NFS device on the ISS module. It checks whether the configured device is the NFS media from the ISS module.
		
		Default: Off—The application waits for the configured NFS media device to become available before starting the archive.
		
		target-ip: Sets the NFS target IP address in dotted decimal format or name of the export server.
		
		Note If you need to use a hostname, make sure that you have DNS configured (see example, " With DNS Configured" section on page 34).
		
		• *ip-address*: Selects the IP address of a single export.
		• **exportname** *server-export*: Selects the server export directories.

Step 4	**end** **Example:** `cvmss-module (config-nfs)# end`	Exits NFS mount format configuration mode.
Step 5	**end** **Example:** `cvmss-module (config)# end`	Exits global configuration mode.

Cisco Video Management and Storage System Module Command Reference

Last Updated: March 17, 2010

This section documents commands for the Cisco Video Management and Storage System application and new commands for Cisco IOS software:

- Cisco Video Management and Storage System Module Commands, page 47
- Cisco IOS Commands, page 92

Cisco Video Management and Storage System Module Commands

- **description (storages iscsi)**
- **event poll-interval**
- **format storages**
- **format storages iscsi**
- **format storages local**
- **login (storages iscsi)** (This command removed in 1.1 and later versions.)
- **show event poll-interval**
- **show storages all filesystem**
- **show storages iscsi filesystem**
- **show storages iscsi configuration**
- **show storages iscsi parameter**
- **show storages iscsi status**
- **show storages nfs**
- **show storages nfs filesystem**
- **show storages nfs status**
- **show video-surveillance**
- **state (storages iscsi)**
- **state (storages nfs)**

- **storages nfs**
- **switch-on-fail (storages nfs)**
- **target-ip (storages iscsi)**
- **target-ip (storages nfs)**
- **timeout-node-session (storages iscsi)** (This command removed in 1.1 and later versions.)
- **video-surveillance**

description (storages iscsi)

To create a text description for the iSCSI storage target device, use the **description** sub-command in Storages iSCSI configuration mode. To remove the current description of iSCSI storage target device, use the **no** form of this command.

description *description*

no description *description*

Syntax Description

description	Text description with a string of up to 80 string characters enclosed within quotation marks

Command Default

No iSCSI storage target device description is configured.

Command Modes

Storages iSCSI configuration

Command History

Version	Modification
1.0	This command was introduced.

Usage Guidelines

For the iSCSI configuration:

- Nine media tags are configurable, for example media1, media2, and so on, for up to nine iSCSI target devices.
- Each target can have up to six volumes of major devices.
- Each volume is translated back into a logical unit number (LUN) from the initiator aspect, typically 0, 1, 2, and so on.
- The mountable directory is named with the media-tag name suffixed with the LUN.

Caution Mounting a file system on more than one Video Surveillance Management System (VSMS) at a time will almost certainly cause problems with unpredictable results. See the "Configuring Only One VSMS to Same iSCSI Target" section on page 32.

Examples

The following example shows an iSCSI text description for a storage target device as *southwest branch*: Note the description is inclusive of the quotation marks.

```
cvmss-module# configure terminal
cvmss-module(config)# storages iscsi media1
Adding new iscsi
cvmss-module(config-iscsi)# description "southwest branch"
```

Related Commands

Command	Description
show storages iscsi configuration	Displays iSCSI storage target device configuration parameters.
show storages iscsi status	Displays iSCSI storage target device status.

event poll-interval

To set the HTTP trigger event polling interval in seconds, use the **event poll-interval** command in global configuration mode.

Note The event polling interval configures the sensitivity of the system for event detection. However, it does not specify the exact amount of time it takes until an event is detected.

Use the **no** form of the command to return the event polling interval to its default value.

event poll-interval *seconds*

no event poll-interval

Syntax Description

seconds	Number of seconds to set the event polling interval. **Note** Event polling interval can only be within the range of 2 to 30 seconds.

Command Default

2 seconds

Command Modes

Global configuration

Command History

Version	Modification
6.2.1	This command was introduced.

Usage Guidelines

The default HTTP trigger event polling interval (2 seconds) optimizes performance as well as triggered event responses. However, if performance issues arise because the event polling is too frequent, then you can increase the polling interval at the expense of delayed event detection.

Examples

If the time of the polling interval are not within the valid 2 to 30 second range, the CLI returns “Event polling interval can only be 2-30 sec,” and does not accept any interval that is not within this range:

```
cvmss-module(config)# event poll-interval 32
Event polling interval can only be 2-30 sec.
```

In the next example, the poll interval of 11 seconds is accepted:

```
cvmss-module(config)# event poll-interval 11
Event polling interval changed. New value will take effect after restarting video
application.
```

To verify that the CLI has accepted the new event polling interval, use the **show event poll-interval** command, as shown in the following example:

```
cvmss-module(config)# end
```

```
cvmss-module# show event poll-interval
Event polling interval is 11 seconds.
```

For the new HTTP trigger event polling interval to take effect, you must restart the video using the **video-surveillance task restart** command. This command restarts all Cisco video services, as shown in the following example:

```
cvmss-module# video-surveillance task restart
Restarting all Cisco Video Surveillance services, please wait ...
snmpd:/usr/BWhttpd/sbin/snmpd:status...Running
snmptrapd:/usr/BWhttpd/sbin/snmptrapd:status...Running
Checking for vsrecorder
    Checking for xvcrmanMonitor... Running.
    Checking for xvcrman... Running.
    Checking for xvcrconfig... Running.
Checking for vsms daemons... running.
Checking for mediaout... Running.
Checking for httpd... running.
Checking for service MRTG mrtg:/usr/BWhttpd/bin/mrtg:status...Running
Checking for backup server... Running.
Checking for sys config agent... Running.
```

To verify that the video services are now running, use the **show video-surveillance task status** command.

Related Commands

Command	Description
show event poll-interval	Displays the HTTP trigger event polling interval.

format storages

Note Use the following command for version 1.0 and earlier of the Cisco Video Management and Storage System.

To format an iSCSI mass storage target device, use the **format storages** command.

format storages *storage-type media-tag lun# fs-type*

Syntax Description

storage-type	Storage interface type iSCSI, USB, or SATA. **Note** Only iSCSI is currently supported.
media-tag	Unique string identifier for the IP iSCSI mass storage device in the range of media1 to media9.
lun#	Corresponding iSCSI logical unit number.
fs-type	File system type, ext3 or reiserfs. **Note** The *exdt3* file system is the only type currently supported.

Command Default

An iSCSI storage target device is not formatted.

Command Modes

Format storages

Command History

Version	Modification
1.0	This command was introduced.

Usage Guidelines

For the iSCSI configuration:

- Nine media tags are configurable, for example media1, media2, and so on, for up to nine iSCSI target devices.
- Each target can have up to six volumes of major devices.
- Each volume is translated back into a logical unit number (LUN) from the initiator aspect, typically 0, 1, 2, and so on.
- The mountable directory is named with the media-tag name suffixed with the LUN.

Caution Mounting a file system on more than one Video Surveillance Management System (VSMS) at a time will almost certainly cause problems with unpredictable results. See "Configuring Only One VSMS to Same iSCSI Target" section on page 32.

Examples

The following example shows the format command to format iSCSI mass storage device media8, logical unit number (LUN) 0, and file type ext3. Note the warning message and the two confirmations that you must respond to before an attempt is made to format the device.

```
cvmss-module# format storages iscsi media8 0 ext3

!!!WARNING!!!
!!!WARNING!!!  You are about to start a destructive sequence of
!!!WARNING!!!  operations. All data on the storage device will be lost
!!!WARNING!!!  and unrecoverable. Depending on the capacity of the
!!!WARNING!!!  storage device, the formatting can take up to a few
!!!WARNING!!!  hours. During formatting, your console is locked and
!!!WARNING!!!  unavailable for use. Before you proceed further, back
!!!WARNING!!!  up the contents of the storage device.
!!!WARNING!!!
!!!WARNING!!!  If you are not sure what to do, answer "no" to the
!!!WARNING!!!  following question and then exit.
!!!WARNING!!!

Do you wish to proceed [y/n]? : y
Are you sure you want to format the device and lose all the data [y/n]? : y
Formatting /dev/sdb in ext3
mke2fs 1.37 (21-Mar-2005)
Filesystem label=
OS type: Linux
Block size=4096 (log=2)
Fragment size=4096 (log=2)
366247936 inodes, 732481536 blocks
36624076 blocks (5.00%) reserved for the super user
First data block=0
22354 block groups
32768 blocks per group, 32768 fragments per group
16384 inodes per group
Superblock backups stored on blocks:
        32768, 98304, 163840, 229376, 294912, 819200, 884736, 1605632, 2654208,
        4096000, 7962624, 11239424, 20480000, 23887872, 71663616, 78675968,
        102400000, 214990848, 512000000, 550731776, 644972544

Writing inode tables:   254/22354
```

Related Commands

Command	Description
show storages all filesystem	Displays the configuration parameter summary for all storage file systems.
show storages iscsi filesystem	Displays the configuration parameter summary for configured iSCSI storage file systems.
show storages nfs filesystem	Displays the parameter summary for currently configured NFS file systems.

format storages iscsi

Note Use the following command for version 2.0 and later of the Cisco Video Management and Storage System.

To format an iSCSI mass storage target device, use the **format storages iscsi** command in iSCSI configuration mode for the selected iSCSI device. Use the **no** form of this command to remove the **mount-option sync** configuration.

Note For the changes to take effect, the media must first be disabled and then reenabled.

format storages iscsi *media-tag* [**mount-option sync**]

Syntax Description

media-tag	Unique string identifier for the IP iSCSI mass storage device in the range of media1 to media9.
mount-option sync	(Optional) Set the iSCSI device to be mounted by using the synchronous I/O option, where all the I/O operations to the iSCSI device are performed in a synchronous mode.

Command Default

An iSCSI storage target device is not formatted.

Command Modes

Format storages iSCSI configuration mode

Command History

Version	Modification
2.0	This command was introduced.

Usage Guidelines

Nine media tags are configurable, for example media1, media2, and so on through media9, for up to nine iSCSI target devices.

Caution Mounting a file system on more than one Video Surveillance Management System (VSMS) at a time will almost certainly cause problems with unpredictable results. See "Configuring Only One VSMS to Same iSCSI Target" section on page 32.

An error message appears if another device is already mounted on the media specified in the command. For example, if an NFS device has already been mounted on the media1 tag, the following error message appears when attempting to mount and iSCSI device on the same media1 tag:

```
NFS already configured at this media tag, Please try another media tag.
```

Examples

The following example shows the format command for formatting iSCSI mass storage device media1 in global configuration mode.

```
cvmss-module# configure terminal
cvmss-module(config)# format storages iscsi media1

!!!WARNING!!!
!!!WARNING!!!  You are about to start a destructive sequence of
!!!WARNING!!!  operations. All data on the storage device will be lost
!!!WARNING!!!  and unrecoverable. Depending on the capacity of the
!!!WARNING!!!  storage device, the formatting can take up to a few
!!!WARNING!!!  hours. During formatting, your console is locked and
!!!WARNING!!!  unavailable for use. Before you proceed further, back
!!!WARNING!!!  up the contents of the storage device.
!!!WARNING!!!
!!!WARNING!!!  If you are not sure what to do, answer "no" to the
!!!WARNING!!!  following question and then exit.
!!!WARNING!!!

Do you wish to proceed [y/n]? : y
Are you sure you want to format the device and lose all the data [y/n]? : y
Formatting /dev/sdb in ext3
mke2fs 1.37 (21-Mar-2005)
Filesystem label=
OS type: Linux
Block size=4096 (log=2)
Fragment size=4096 (log=2)
366247936 inodes, 732481536 blocks
36624076 blocks (5.00%) reserved for the super user
First data block=0
22354 block groups
32768 blocks per group, 32768 fragments per group
16384 inodes per group
Superblock backups stored on blocks:
        32768, 98304, 163840, 229376, 294912, 819200, 884736, 1605632, 2654208,
        4096000, 7962624, 11239424, 20480000, 23887872, 71663616, 78675968,
        102400000, 214990848, 512000000, 550731776, 644972544

Writing inode tables:   254/22354
```

Related Commands

Command	Description
show storages all filesystem	Displays the configuration parameter summary for all storage file systems.
show storages iscsi filesystem	Displays the configuration parameter summary for configured iSCSI storage file systems.

format storages local

Note Use the following command for version 2.0 and later of the Cisco Video Management and Storage System.

To format a local storage device, use the **format storages local** command in format storages local configuration mode.

Note For the changes to take effect, the media must first be disabled and then reenabled.

format storages local *media-tag*

Syntax Description

media-tag	Unique string identifier for the LOCAL mass storage device in the range of media1 to media9.

Command Default

The local storage device contains software applications.

Command Modes

Format storages local configuration mode

Command History

Version	Modification
2.0	This command was introduced.

Usage Guidelines

The media tag for the local storage device is media0.

Examples

he following example shows the command to format the local storage device, media0.

```
cvmss-module> format storages local media0

!!!WARNING!!!
!!!WARNING!!!  You are about to start a destructive sequence of
!!!WARNING!!!  operations. All data on the storage device media0
!!!WARNING!!!  will be lost and unrecoverable.
!!!WARNING!!!  The device formatting can take up to a few minutes.
!!!WARNING!!!  During formatting, your console is locked and
!!!WARNING!!!  unavailable for use. Before you proceed further, back
!!!WARNING!!!  up the contents of the storage device media0.
!!!WARNING!!!
!!!WARNING!!!  If you are not sure what to do, answer "no" to the
!!!WARNING!!!  following question and then exit.
!!!WARNING!!!

Do you wish to proceed [y/n]? :
```

Related Commands

Command	Description
show storages all filesystem	Displays the configuration parameter summary for all storage file systems.

login (storages iscsi)

Note This command is removed in 1.1 and later versions.

To enable or disable login to an iSCSI storage target device, use the **login** sub-command in Storages iSCSI configuration mode. To disable the login mode on an iSCSI storage target device, use the no form of this command.

login [**enabled** | **disabled**]

no login [**enabled** | **disabled**]

Syntax Description

enabled	Enables login to an iSCSI storage device.
disabled	Disables login to an iSCSI storage device.

Command Default

No iSCSI storage target device is configured.

Command Modes

Storages iSCSI configuration

Command History

Version	Modification
1.0	This command was introduced.
1.1	This command is removed in 1.1 and later versions.

Usage Guidelines

For the iSCSI configuration:

- Nine media tags are configurable, for example media1, media2, and so on, for up to nine iSCSI target devices.
- Each target can have up to six volumes of major devices.
- Each volume is translated back into a logical unit number (LUN) from the initiator aspect, typically 0, 1, 2, and so on.
- The mountable directory is named with the media-tag name suffixed with the LUN.

Examples

The following example shows the enabling of login for the iSCSI storage target device *media1*:

```
cvmss-module# configure terminal
cvmss-module(config)# storages iscsi media1
Adding new iscsi
cvmss-module(config-iscsi)# login enabled
```

Related Commands

Command	Description
show storages iscsi configuration	Displays iSCSI storage target device configuration parameters.
show storages iscsi status	Displays iSCSI storage target device status.

show event poll-interval

To display the HTTP trigger event polling interval, use the **show even poll-interval** command user EXEC configuration mode.

show event poll-interval

Syntax Description

This command has no arguments or keywords.

Command Modes

User EXEC

Command History

Version	Modification
6.2.1	This command was introduced.

Examples

The following example shows the display output for the **show event poll-interval** command:

```
cvmss-module# show event poll-interval
Event polling interval is 11 seconds.
```

Related Commands

Command	Description
event poll-interval	Sets the HTTP trigger event polling interval in seconds.

show storages all filesystem

To display a configuration parameter summary for all storage file systems, use the **show storage all filesystem** command in user EXEC configuration mode.

show storages all filesystem

Syntax Description

This command has no arguments or keywords.

Command Modes

User EXEC

Command History

Version	Modification
1.0	This command was introduced.

Examples

To view a summary of all configured file systems, use the **show storages all filesystem** command. For example:

```
cvmss-module# show storages all filesystem
Filesystem            1K-blocks      Used  Available Use% Mounted on
==================== ===========  ======= ========== ==== ==========
rootfs                 9775184   1081480   8693704    12% /
/dev/root              9775184   1081480   8693704    12% /
none                   1036520         0   1036520     0% /dev/shm
/dev/sda3            142284500     32828 135024032     1% /media0
/dev/sdb             2307162084 1172169844 1017795172 54% /media1_0
/dev/sdc             576789800    106560 547384004     1% /media1_1
```

Table 7 Table 7lists and describes the output fields of the **show storages all filesystem** command.

Table 7 show storages iscsi filesystem Field Descriptions

Field	Description
Filesystem	Lists the file system and devices.
1K-blocks	Displays the available number of 1-kilobyte blocks for each of the iSCSI target devices.
Used	Displays the used number of 1-kilobyte blocks for each of the iSCSI target devices.
Available	Displays the available remaining number of 1-kilobyte blocks for each of the iSCSI target devices.
Use%	Displays the used percentage of 1-kilobyte blocks for each of the iSCSI target devices.
Mounted on	Displays the iSCSI target device name on which the file system is mounted.

Related Commands

Command	Description
show storages iscsi filesystem	Displays the configuration parameter summary for configured iSCSI storage file systems.
show storages nfs filesystem	Displays the parameter summary for currently configured NFS file systems.

show storages iscsi filesystem

To display a configuration parameter summary for configured iSCSI storage file systems, use the **show storage iscsi filesystem** command in user EXEC configuration mode.

Syntax Description

This command has no arguments or keywords.

Command Modes

User EXEC

Command History

Version	Modification
1.0	This command was introduced.

Examples

To view a summary of iSCSI storage file systems, use the **show storages iscsi filesystem** command. For example:

```
cvmss-module# show storages iscsi filesystem
Filesystem            1K-blocks      Used  Available Use% Mounted on
==================== ===========  ======= ========== ==== ==========
/dev/sdb             2307162084 1172193508 1017771508  54% /media1_0
/dev/sdc             576789800    106560 547384004      1% /media1_1
```

Table 8 lists and describes the output fields of the **show storages iscsi filesystem** command.

Table 8 show storages iscsi filesystem Field Descriptions

Field	Description
Filesystem	Lists the file system and devices.
1K-blocks	Displays the available number of 1-kilobyte blocks for each of the corresponding iSCSI target devices.
Used	Displays the used number of 1-kilobyte blocks for each of the iSCSI target devices.
Available	Displays the available remaining number of 1-kilobyte blocks for each of the iSCSI target devices.
Use%	Displays the used percentage of 1-kilobyte blocks for each of the iSCSI target devices.
Mounted on	Displays the iSCSI target device name on which the file system is mounted.

Related Commands

Command	Description
show storages all filesystem	Displays the configuration parameter summary for all storage file systems.

show storages iscsi configuration

To display a general or detailed configuration summary of the iSCSI storage target device, use the **show storages iscsi configuration** command in user EXEC configuration mode.

show storages iscsi configuration {**summary** | **detail**}

Syntax Description

summary	Displays a general summary of configured iSCSI storage target devices.
detail	Displays a detailed summary of configured iSCSI storage target devices.

Command Modes

User EXEC

Command History

Version	Modification
1.0	This command was introduced.

Examples

To view a general summary of iSCSI storage device configurations, use the **show storages iscsi configuration summary** command. For example:

```
cvmss-module# show storages iscsi configuration summary
                                Sessn
  Tag  State    Target IP    Timeo
====== ===== =============== =====
media1  on    192.168.1.254   120
```

Table 9 lists and describes the output fields of the **show storages iscsi configuration summary** command.

Table 9 show storages iscsi configuration summary Field Descriptions

Field	Description
Tag	Displays the unique media tag identifiers for the IP iSCSI storage devices in the range of media1 to media9.
Discovery	Indicates whether discovery is enabled (yes) or disabled (no).
State	Indicates whether the operational state of the device is enabled (on) or disabled (off).
Target IP	Displays the IP address of the iSCSI storage target device.
Session Timeout	Displays the node session time-out waiting period in the range seconds before reestablishing node sessions.

To view a detailed summary of iSCSI storage device configurations, use the **show storages iscsi configuration detail** command. For example:

```
cvmss-module# show storages iscsi configuration detail
                                   Sessn
Sessn
  Tag  State    Target IP    Timeo
====== ===== =============== =====
```

```
media1  off          0.0.0.0   120
media2  on    172.19.151.250   120
media3  on           0.0.0.0   120
media4  on           0.0.0.0   120
```

Table 10 lists and describes the output fields of the **show storages iscsi configuration detail** command.

Table 10 show storages iscsi configuration detail Field Descriptions

Field	Description
Tag	Displays the unique string media tag identifiers for the IP iSCSI storage devices in the range of media1 to media9.
State	Indicates whether the operational state of the device is enabled (on) or disabled (off).
Target IP	Displays the IP address of the iSCSI storage target device.
Session Timeout	Displays the node session time-out waiting period in the range seconds before re-establishing node sessions.

Related Commands

Command	Description
description (storages iscsi)	Creates a text description for the iSCSI storage target device.
login (storages iscsi)	Enables or disables login to an iSCSI storage target device.
state (storages iscsi)	Enables or disables the operational state of an iSCSI storage device.
target-ip (storages iscsi)	Configures the IP address of an iSCSI storage target device.
timeout-node-session (storages iscsi)	Configures the node session time-out value of an iSCSI storage target device.

show storages iscsi parameter

To display configuration media or all parameters for the iSCSI storage target device, use the **show storages iscsi parameter** command in user EXEC configuration mode.

show storages iscsi parameter {**media?** | **all**}

Syntax Description

media?	Displays iSCSI storage media parameters, where media? represents media1 through media9.
all	Displays all configured iSCSI storage media parameters.

Command Modes

User EXEC

Command History

Version	Modification
1.0	This command was introduced.

Examples

To view the iSCSI configuration parameters for a specific iSCSI storage device, use the **show storages parameter media?** command. For example:

```
cvmss-module# show storages iscsi parameter media8

***** media8 *****
node.name = iqn.1999-02.com.nexsan:p0:sataboy:02731a98
node.tpgt = 1
node.startup = manual
iface.hwaddress = default
iface.iscsi_ifacename = default
iface.net_ifacename = default
iface.transport_name = tcp
node.discovery_address = 172.19.156.38
node.discovery_port = 3260
node.discovery_type = send_targets
node.session.initial_cmdsn = 0
node.session.initial_login_retry_max = 4
node.session.cmds_max = 128
node.session.queue_depth = 32
node.session.auth.authmethod = None
node.session.auth.username = <empty>
node.session.auth.password = <empty>
node.session.auth.username_in = <empty>
node.session.auth.password_in = <empty>
node.session.timeo.replacement_timeout = 3000
node.session.err_timeo.abort_timeout = 10
node.session.err_timeo.reset_timeout = 30
node.session.iscsi.InitialR2T = No
node.session.iscsi.ImmediateData = Yes
node.session.iscsi.FirstBurstLength = 262144
node.session.iscsi.MaxBurstLength = 16776192
node.session.iscsi.DefaultTime2Retain = 0
node.session.iscsi.DefaultTime2Wait = 0
node.session.iscsi.MaxConnections = 1
node.session.iscsi.MaxOutstandingR2T = 1
```

```
node.session.iscsi.ERL = 0
node.conn[0].address = 172.19.156.38
node.conn[0].port = 3260
node.conn[0].startup = manual
node.conn[0].tcp.window_size = 524288
node.conn[0].tcp.type_of_service = 0
node.conn[0].timeo.logout_timeout = 15
node.conn[0].timeo.login_timeout = 15
node.conn[0].timeo.auth_timeout = 45
node.conn[0].timeo.active_timeout = 5
node.conn[0].timeo.idle_timeout = 60
node.conn[0].timeo.ping_timeout = 5
node.conn[0].timeo.noop_out_interval = 10
node.conn[0].timeo.noop_out_timeout = 15
node.conn[0].iscsi.MaxRecvDataSegmentLength = 131072
node.conn[0].iscsi.HeaderDigest = None,CRC32C
node.conn[0].iscsi.DataDigest = None
node.conn[0].iscsi.IFMarker = No
node.conn[0].iscsi.OFMarker = No
```

Related Commands

Command	Description
description (storages iscsi)	Creates a text description for the iSCSI storage target device.
login (storages iscsi)	Enables or disables login to an iSCSI storage target device.
state (storages iscsi)	Enables or disables the operational state of an iSCSI storage device.
target-ip (storages iscsi)	Configures the IP address of an iSCSI storage target device.
timeout-node-session (storages iscsi)	Configures the node session time-out value of an iSCSI storage target device.

show storages iscsi status

To display the status conditions of the iSCSI storage target device, use the **show storages iscsi status** command in user EXEC configuration mode.

show storages iscsi status {summary | detail}

Syntax Description

summary	Displays a general summary of the status of configured iSCSI storage target devices.
detail	Displays a detailed summary of the status of configured iSCSI storage target devices.

Command Modes

User EXEC

Command History

Version	Modification
1.0	This command was introduced.

Examples

To view a general status summary of configured iSCSI storage device, use the **show storages iscsi status summary** command. For example:

```
cvmss-module# show storages iscsi status summary
       Rec Log
  Tag  ord in   Device    Mounts    LUN Vol FS Types      iSCSI Portal      IO
====== === === ======== =========== === === ======== ====================== ==
media1 yes yes /dev/sdb /media1_0     0   2 ext3       192.168.1.254:3260,1 rw
media1 yes yes /dev/sdc /media1_1     1   2 ext3       192.168.1.254:3260,1 rw
```

Table 11 lists and describes the output fields of the **show storages iscsi configuration summary** command.

Table 11 show storages iscsi status summary Field Descriptions

Field	Description
Tag	Displays the unique media tag identifiers for the IP iSCSI storage devices in the range of media1 to media9.
Record	The iSCSI target successfully recorded/logged through iSCSI discovery protocol.
Device	Displays the iSCSI target device or file system.
Mounts	Displays the iSCSI target device on which the file system is mounted.
LUN	Displays the logical unit number (LUN) of the target drive.
Volume	Displays the volume number of the target drive.
FS Types	Displays the file system type.

Table 11 show storages iscsi status summary Field Descriptions (continued)

Field	Description
iSCSI Portal	Displays the IP address and port number of the corresponding iSCSI storage target device. If discovery fails, the *iSCSI Portal* and *Target Name* will not appear, meaning that the hostname or IP address is either invalid or is not an iSCSI target device.
IO	Displays input/output status of storage devices.

To view a detailed status summary of configured iSCSI storage device, use the **show storages iscsi status detail** command. For example:

```
cvmss-module# show storages iscsi status detail
       Rec Log
  Tag  ord in   Device    Mounts    LUN Vol FS Types      iSCSI Portal      IO Target Name
====== === === ======== =========== === === ======== ====================== == ===========
media1 yes yes /dev/sdb /media1_0     0   2 ext3       192.168.1.254:3260,1 rw
iqn.1999-02.com.nexsan:p0:sataboy:01731a5a
media1 yes yes /dev/sdc /media1_1     1   2 ext3       192.168.1.254:3260,1 rw
iqn.1999-02.com.nexsan:p0:sataboy:01731a5a
```

Table 12 lists and describes the output fields of the **show storages iscsi configuration summary** command.

Table 12 show storages iscsi status detail Field Descriptions

Field	Description
Tag	Displays the unique media tag identifiers for the IP iSCSI storage devices in the range of media1 to media9.
Record	The iSCSI target successfully recorded/logged through iSCSI discovery protocol.
Device	Displays the iSCSI target device or file system.
Mounts	Displays the iSCSI target device on which the file system is mounted.
LUN	Displays the logical unit number of the target drive.
Volume	Displays the volume number of the target drive.
FS Types	Displays the file system type.
iSCSI Portal	Displays the IP address and port number of the corresponding iSCSI storage target device. If discovery fails, the *iSCSI Portal* and *Target Name* columns will not appear, meaning that the hostname or IP address is either invalid or is not an iSCSI target device.
IO	Displays input/output status of storage devices.
Target Name	Indicates the path name of the iSCSI target drive.

Related Commands

Command	Description
description (storages iscsi)	Creates a text description for the iSCSI storage target device.
login (storages iscsi)	Enables or disables login to an iSCSI storage target device.
state (storages iscsi)	Enables or disables the operational state of an iSCSI storage device.
target-ip (storages iscsi)	Configures the IP address of an iSCSI storage target device.
timeout-node-session (storages iscsi)	Configures the node session time-out value of an iSCSI storage target device.

show storages nfs

To display the summary of the current NFS mount details, use the **show storages nfs** command in user EXEC configuration mode.

show storages nfs

Note This command might not reflect the actual state of the NFS mount because the configuration only occurs at mount time. You must unmount and then mount the device again for the configuration to take effect. To confirm the current mount values, use the show storages nfs status command.

Syntax Description

This command has no arguments or keywords.

Command Modes

User EXEC

Command History

Version	Modification
2.2	This command was introduced.

Examples

To view the values of the current NFS configuration, use the **show storages nfs** command. For example:

```
cvmss-module# show storages nfs
Tag     Target IP     Mount Name   IO Error Handling
======= ===========   ==========   =================
Media1  10.10.10.60   /var/nfs     soft
```

Table 13 lists and describes the output fields of the **show storages nfs** command.

Table 13 show storages nfs Field Descriptions

Field	Description
Tag	Displays the unique string identifier for the NFS mount from an NFS server in the range of media1 to media9.
Target IP	Displays the NFS device IP address.
Mount Name	Displays the NFS device mount directory name.
IO Error Handling	Displays the type of input/output error handling of the NFS mount.

Related Commands

Command	Description
state (storages nfs)	Mounts or unmounts an NFS export.
switch-on-fail (storages nfs)	Configures whether the archives can be switched to the local hard drive when the NFS media device is not available
target-ip (storages nfs)	Configures the IP address and name of an NFS export target.

show storages nfs filesystem

To display the parameter summary for currently configured NFS file systems, use the **show storage nfs filesystem** command in user EXEC configuration mode.

Syntax Description

This command has no arguments or keywords.

Command Modes

User EXEC

Command History

Version	Modification
2.2	This command was introduced.

Examples

To view a summary of the currently configured NFS file systems, use the **show storages nfs filesystem** command. For example:

```
cvmss-module# show storages nfs filesystem
Filesystem            1K-blocks   Used    Available  Use% Mounted on
==================== ===========  ======= ========== ==== ==========
10.10.10.60/var/nfs  206424760    3999716 191939284  3%   /media1
```

Table 14 lists and describes the output fields of the **show storages nfs filesystem** command.

Table 14 show storages nfs filesystem Field Descriptions

Field	Description
Filesystem	Lists the file system and devices.
1K-blocks	Displays the available number of 1-kilobyte blocks for each of the corresponding NFS mounts.
Used	Displays the used number of 1-kilobyte blocks for each of the NFS mounts.
Available	Displays the available remaining number of 1-kilobyte blocks for each of the NFS mounts.
Use%	Displays the used percentage of 1-kilobyte blocks for each of the NFS mounts.
Mounted on	Displays the NFS mount name on which the file system is mounted.

Related Commands

Command	Description
	Configures NFS file system parameters.

show storages nfs status

To display the status of the settings of the specified NFS mount, use the **show storages nfs status** command in user EXEC configuration mode.

show storages nfs status {summary | detail}

Syntax Description

summary	Displays a general summary of the status of configured NFS mount.
detail	Displays a detailed summary of the status of configured NFS mount.

Command Modes

User EXEC

Command History

Version	Modification
2.2	This command was introduced.

Examples

To view the status summary of the NFS mount settings of the specified NFS mount, use the **show storages nfs status** command. For example:

```
cvmss-module# show storages nfs status summary
Tag    Filesystem            Mounts   Port       Receive-  Write- Version  Proto  IO Error
                                      Reachable  Buffer-   Buffer-                Handling
                                                 Size      Size
====== ====================== ======  ========== ========= ====== ========  ====   ========
Media1 10.10.10.60:/var/mfs  /media1  Yes        65536     65536  3         UDP    soft
```

Table 15 lists and describes the output fields of the **show storages nfs status** command.

Table 15 show storages nfs status summary Field Descriptions

Field	Description
Tag	Displays the unique string identifier for the NFS mount from an NFS server in the range of media1 to media9.
Filesystem	Displays the NFS file system device IP address and directory.
Mounts	Displays the NFS mounts.
Port Reachable	Displays whether or not the NFS mount port is reachable.
Receive Buffer Size	Displays the NFS device receive buffer size.
Write Buffer Size	Displays the NFS device write buffer size.
Version	Displays the version number of the NFS protocol currently being used.
Proto	Displays the transport protocol currently being used.
IO Error Handling	Displays the type of input/output error handling of the NFS mount.

Related Commands

Command	Description
state (storages nfs)	Mounts or unmounts an NFS export.
switch-on-fail (storages nfs)	Configures whether the archives can be switched to the local hard drive when the NFS media device is not available
target-ip (storages nfs)	Configures the IP address and name of an NFS export target.

show video-surveillance

To display video surveillance configurations, logs, reports, and tasks, use the **show video-surveillance** command in user EXEC configuration mode.

show video-surveillance [**archive summary** | **config** | **configs** | **log** | **logs** | **reports** | **tasks**]

Note The **show video-surveillance tasks** command removed in version 2.0 and later versions.

Syntax Description

archive summary	Displays a list of the running archives and their corresponding destinations along with the IP address and export point.
config	Displays the content of a configuration file.
configs	Displays all the configuration file names.
log	Displays the content of a log file.
logs	Displays all log file names.
reports	Displays all report file names.
tasks	Displays predefined tasks.

Command Modes

User EXEC

Command History

Version	Modification
1.0	This command was introduced.
2.0	This command was modified. The **tasks** command option is removed in version 2.0 and later versions.

Examples

To view predefined tasks, use the **show video surveillance tasks** command. For example:

```
cvmss-module# show video-surveillance tasks
TASK                  DESCRIPTION
restart         Restarting all Cisco Video Surveillance services, please wait
start           Starting all Cisco Video Surveillance services, please wait
status          Report on status of Cisco Video Surveillance services
stop            Stops all running Cisco Video Surveillance services
support-report  Generate the system support report
vsom_db_restore Restore VSOM database from local disk
cron-restart    Restart cron daemon after timezone changes
cert-gen        Generate a ssl server key and certificate
```

To view the archive summary, use the **show video surveillance archive summary** command. For example:

```
cvmss-module# show video-surveillance archive summary
Archive Name            Archive Location (IP Address)   Type      Export Directory
a_p_lab_cam1_-_a_ar1    —                               local
a_p_lab_cam2_-_a_ar2    1.100.30.220                    nfs       /media0
a_p_lab_cam3_-_a_ar3    1.100.30.210                    iscsi
```

Related Commands

Command	Description
video-surveillance	Starts video surveillance.

state (storages iscsi)

To enable or disable the operational state of an iSCSI storage target device, use the **state** sub-command in Storages iSCSI configuration mode. To disable the operational state of an iSCSI storage target device, use the **no** form of this command.

state [**disabled** | **enabled** [**volumename** *volumename* **lun** *lun#*]]

no state [**disabled** | **enabled** [**volumename** *volumename* **lun** *lun#*]]

Syntax Description

disabled	Disables the operational state of the iSCSI storage target device.
enabled	Enables the operational state of the iSCSI storage target device. If this command option is used on a multivolume device, an error message appears, asking for the specific volume name and logical unit number (LUN) number to be enabled.
volumename *volumename* **lun** *lun#*	Enables the selected volume, based on its volume name and logical unit number. This option is only available in 1.1 or later versions.

Command Default

Enabled.

Command Modes

Storages iSCSI configuration

Command History

Version	Modification
1.0	This command was introduced.
1.1	The ability to enable a selected volume is an option only available in 1.1 and later versions.

Usage Guidelines

For the iSCSI configuration:

- Nine media tags are configurable, for example media1, media2, and so on, for up to nine iSCSI target devices.
- Each target can have up to six volumes of major devices.
- Each volume is translated back into a logical unit number (LUN) from the initiator aspect, typically 0, 1, 2, and so on.
- The mountable directory is named with the media-tag name suffixed with the LUN.

Examples

The following example shows the enabling of the operational state for the iSCSI storage target device *media1*:

```
cvmss-module# configure terminal
cvmss-module(config)# storages iscsi media1
Adding new iscsi
cvmss-module(config-iscsi)# state enabled
```

The following example shows the enabling of the operational state for the specified volume of the iSCSI storage target device *media1*:

```
cvmss-module# configure terminal
cvmss-module(config)# storages iscsi media1
Adding new iscsi
cvmss-module(config-iscsi)# state enabled volumename 3200 lun 0
```

Related Commands

Command	Description
show storages iscsi configuration	Displays iSCSI storage target device configuration parameters.
show storages iscsi status	Displays iSCSI storage target device status.

state (storages nfs)

To mount or unmount an NFS export, use the **state** sub-command in the Storages NFS configuration mode.

state [**disabled** | **enabled**]

Syntax Description

disabled	NFS export unmounted.
enabled	NFS export mounted.

Command Default

Disabled

Command Modes

Storages NFS configuration

Command History

Version	Modification
2.2	This command was introduced.

Usage Guidelines

Configure the NFS export state to enabled (mounted) or disabled (unmounted).

Examples

The following example shows the NFS **state** command to mount the NFS export:

```
cvmss-module# configure terminal
cvmss-module(config)# storages nfs media1
cvmss-module(config-nfs)# state enabled
Media successfully enabled!
```

Related Commands

Command	Description
switch-on-fail (storages nfs)	Configures whether the archives can be switched to the local hard drive when the NFS media device is not available
target-ip (storages nfs)	Configures the IP address and name of an NFS export target.

storages nfs

To configure the media tag for a Network File System (NFS) mount, use the **storages nfs** command in global configure mode.

storages nfs *media-tag*

Syntax Description

media-tag	Unique string identifier for the NFS mount from an NFS server in the range of media1 to media9.

Command Default

NFS mount is not configured.

Command Modes

Global configuration

Command History

Version	Modification
2.2	This command was introduced.

Usage Guidelines

For the NFS mount configuration, nine media tags, *media1* through *media9*, are configurable.

Examples

The following example shows configuring the NFS mount media1 tag for *media1* using the **storages nfs** command:

```
cvmss-module# configure terminal
cvmss-module(config)# storages nfs media1
Adding new nfs
cvmss-module(config-nfs)#
```

If *media1* has already been configured as an iSCSI target storage device, the following error message appears:

```
ERROR:  There is already a media1 enclosure configured for iSCSI. Please try a different
media tag.
```

Related Commands

Command	Description
state (storages nfs)	Mounts or unmounts an NFS export.
switch-on-fail (storages nfs)	Configures whether the archives can be switched to the local hard drive when the NFS media device is not available
target-ip (storages nfs)	Configures the IP address and name of an NFS export target.

switch-on-fail (storages nfs)

To configure whether the archives can be switched to the local hard drive in the case where the NFS media device is not available, use the **switch-on-fail** sub-command in Storages NFS configuration mode.

switch-on-fail [**on** | **off**]

Syntax Description

switch-on-fail	Set to whether the archives can be switched to the local hard drive in the case where the NFS media device is not available.
on	Switchover of the archives processing to the local drive occurs in the event the NFS media is not available.
off	The application waits for the configured NFS media device to become available before starting the archive.

Command Default

Off

Command Modes

Storages NFS configuration

Command History

Version	Modification
2.2	This command was introduced.

Usage Guidelines

The **switch-on-fail** sub-command activates a standby repository and provides automatic failover from one repository to the other. The local repository (*media0*) is the standby repository and an external storage server (*media1*, *media2*, *media3*... or *media9*) is the active repository in the initial setup. When there is a disconnect from the external storage server, the local repository, media0, automatically becomes the active repository. The failover process is as follows:

1. When an external storage server is configured for archiving, the system automatically enables media0 as the standby repository location.
2. In the event of a disconnect to the external server (determined through a *portal reachability* test), the archiver automatically uses media0 as the active repository.
3. When the external server is reconnected, all archives must be moved from media0 back to the external server.
4. Archives accumulated on media0 during the failover process are removed.

Note This failover archive feature is only available to the NFS device on the Cisco Integrated Storage System module. The software checks whether or not the configured device is the NFS media from the Cisco Integrated Storage System module.

Examples

The following example shows the NFS **state** command to mount the NFS export:

```
cvmss-module# configure terminal
cvmss-module(config)# storages nfs media1
cvmss-module(config-nfs)# switch-on-fail on
Media successfully enabled!
```

Related Commands

Command	Description
state (storages nfs)	Mounts or unmounts an NFS export.
target-ip (storages nfs)	Configures the IP address and name of an NFS export target.

target-ip (storages iscsi)

To configure the IP address of an iSCSI storage target device, use the **target-ip** sub-command in Storages iSCSI configuration mode. To remove the IP address of an iSCSI storage target device, use the **no** form of this command.

target-ip *ip-address* [**volumename** *volumename* **lun** *lun#*]

no target-ip *ip-address* [**volumename** *volumename* **lun** *lun#*]

Note If this command option is used on a multi-volume storage device, an error message appears, asking for the specific volume name and LUN number to be selected.

Syntax Description

ip-address	IP address of a single-volume iSCSI storage device in dotted decimal notation.
volumename *volumename* **lun** *lun#*	Selects the volumes of a multi-volume iSCSI storage target device located at the configured IP address, based on the volume name and logical unit number. This option is only available in 1.1 and later versions.

Command Default

No iSCSI storage target device is configured.

Command Modes

Storages iSCSI configuration

Command History

Version	Modification
1.0	This command was introduced.
1.1	The ability to select the volumes of a multi-volume iSCSI storage target is only available in 1.1 or later versions.

Usage Guidelines

For the iSCSI configuration:

- Nine media tags are configurable, for example media1, media2, and so on, for up to nine iSCSI target devices.
- Each target can have up to six volumes of major devices.
- Each volume is translated back into a logical unit number (LUN) from the initiator aspect, typically 0, 1, 2, and so on.
- The mountable directory is named with the media-tag name suffixed with the LUN.

Examples

The following example shows setting the target IP address for the iSCSI storage target device *media1*:

```
cvmss-module# configure terminal
cvmss-module(config)# storages iscsi media1
```

```
Adding new iscsi
cvmss-module(config-iscsi)# target-ip 10.10.10.60
```

The following example shows setting the target IP address and specified volume of the iSCSI storage target device *media1*:

```
cvmss-module# configure terminal
cvmss-module(config)# storages iscsi media1
Adding new iscsi
cvmss-module(config-iscsi)# target-ip 10.10.10.60 volumename 2300 lun 1
```

Related Commands

Command	Description
show storages iscsi configuration	Displays iSCSI storage target device configuration parameters.
show storages iscsi status	Displays iSCSI storage target device status.

target-ip (storages nfs)

To configure the IP address and export name of an NFS export target, use the **target-ip** sub-command in Storages NFS configuration mode. To remove the IP address and export name of an NFS storage target device, use the **no** form of this command.

target-ip *ip-address* **exportname** *name*

no target-ip *ip-address* **exportname** *name*

Syntax Description

ip-address	IP address in dotted decimal notation.
exportname	Configures the NFS export directory name.
name	Directory name.

Command Default

No NFS target IP address is configured.

Command Modes

Storages NFS configuration

Command History

Version	Modification
2.2	This command was introduced.

Usage Guidelines

For the NFS configuration, nine media tags are configurable, for example media1, media2, and so on, for up to nine NFS target devices.

Examples

The following example shows the **target-ip** command assumes only one export:

```
cvmss-module# configure terminal
cvmss-module(config)# storages nfs media1
cvmss-module(config-nfs)# target-ip 10.10.10.60
Connecting 10.10.10.60... succeeded.
```

The following example shows the **target-ip** command assumes multiple exports, causing the following failed connection error message to appear:

```
cvmss-module# configure terminal
cvmss-module(config)# storages nfs media1
cvmss-module(config-nfs)# target-ip 10.10.10.60
Connecting 10.10.10.60... failed.

ERROR: The target could not be connected because multiple exports exist on this storage
server. The following exports exist on this storage server:
/var/nfs
/source/nfs
```

The following example shows the **target-ip** command and the resulting error message when the target IP address fails to connect:

```
cvmss-module# configure terminal
cvmss-module(config)# storages nfs media1
cvmss-module(config-nfs)# target-ip 10.10.10.60
Connecting 10.10.10.60... failed.
10.10.10.60--target connection failed.
Please reissue "target-ip" to retry connection.
```

The following example shows the target-ip command with the export parameter:

```
cvmss-module# configure terminal
vmss-module(config)# storages nfs media1
cvmss-module(config-nfs)# target-ip 10.10.10.60 exportname /nfs/export
Connecting 172.107.146.207 export /nfs/export... succeeded.
```

Related Commands

Command	Description
state (storages nfs)	Mounts or unmounts an NFS export.
switch-on-fail (storages nfs)	Configures whether the archives can be switched to the local hard drive when the NFS media device is not available

timeout-node-session (storages iscsi)

To configure the node session time-out value of an iSCSI storage target device, use the **timeout-node-session** sub-command in Storages iSCSI configuration mode. To use the default value for the node session time-out of an iSCSI storage target device, use the **no** form of this command.

timeout-node-session *value*

no timeout-node-session *value*

Syntax Description

value	Time-out value in the range of 0 to 32767 seconds of either single-volume or multivolume iSCSI storage target device before reestablishing node sessions.

Command Default

120 seconds.

Command Modes

Storages iSCSI configuration

Command History

Version	Modification
1.0	This command was introduced.

Usage Guidelines

For the iSCSI configuration:

- Nine media tags are configurable, for example media1, media2, and so on, for up to nine iSCSI target devices.
- Each target can have up to six volumes of major devices.
- Each volume is translated back into a logical unit number (LUN) from the initiator aspect, typically 0, 1, 2, and so on.
- The mountable directory is named with the media-tag name suffixed with the LUN.

By default, the iSCSI connection waits 120 seconds for the session to reestablish node sessions before issuing a connection failure. Use the **timeout-node-session** command to change the node session time-out within the iSCSI target mode. If the network disruption that caused the time-out ends after the time-out period, the iSCSI mount point is set to Read-Only mode, which is normal. Issuing a state disable command, followed by issuing a state enable command, returns the mount point to Read/Write mode if the network connection is restored after the time-out period.

Examples

The following example shows setting the node session time-out value for the iSCSI storage target device *media1* before reestablishing node sessions:

```
cvmss-module# configure terminal
cvmss-module(config)# storages iscsi media1
Adding new iscsi
cvmss-module(config-iscsi)# timeout-node-session 30
```

Related Commands

Command	Description
show storages iscsi configuration	Displays iSCSI storage target device configuration parameters.
show storages iscsi status	Displays iSCSI storage target device status.

video-surveillance

To set video surveillance configurations, logs, reports, and tasks, use the **video-surveillance** command in user EXEC configuration mode.

video-surveillance {**httpd** {**set** *attribute* [*value*] | **unset** *attribute* [*value*]} | **logging** {**set** ***attribute*** [*value*] | **unset** *attribute* [*value*]} | **task** {**archive-restart** *string* | **archive-stop** *string* | **cert-gen** | **cron-restart** | **restart** | **start** | **status** | **stop** | **support-report** | **vsom_db_restore**}}

Syntax Description

httpd	Sets and unsets HTTP-related tasks.
set	Sets the attribute value name of a shell **httpd**-related or **logging**-related variable.
unset	Unsets a shell **httpd**-related or **logging**-related attribute value name, removing it from memory.
attribute	Attribute related to shell **httpd** or **logging** to set or unset.
value	Optional. Value of related to shell **httpd** or **logging** to set or unset.
logging	Sets and unsets shell **log**-related tasks.
task	Starts predefined tasks.
archive-restart	Restarts the NFS archiving process.
string	Configures NFS media tag in the range of *media1* to *media9*.
archive-stop	Stops archive processes running on NFS storage media.
cert-gen	Generates a secure SSL server key and certificate.
cron-restart	Restarts the cron daemon after time changes are made in time zones.
restart	Restarts Cisco Video Surveillance services.
start	Starts Cisco Video Surveillance services.
status	Displays the status of Cisco Video Surveillance services.
stop	Stops Cisco Video Surveillance services.
support-report	Generates the system report for tech support.
vsom_db_restore	Restores the VSOM database from the local disk drive.

Command Modes

User EXEC

Command History

Version	Modification
1.0	This command was introduced.
6.5.1	This command was modified.

Examples

To view predefined tasks, use the **show video surveillance tasks** command. For example:

```
cvmss-module# video-surveillance task status
Report on status of Cisco Video Surveillance services ...
Checking for vsms daemons... running.
Checking for httpd... running.
```

```
snmpd:/usr/BWhttpd/sbin/snmpd:status...Running
snmptrapd:/usr/BWhttpd/sbin/snmptrapd:status...Running
Checking for service MRTG mrtg:/usr/BWhttpd/bin/mrtg:status...Running
```

Related Commands

Command	Description
show video-surveillance	Displays video surveillance configurations, logs, reports, and tasks.

Cisco IOS Commands

This section documents new Cisco IOS commands used for accessing the Cisco Video Management and Storage System module from the host router.

Use the following commands to access and configure the Cisco Video Management and Storage System module from the host router.

- **service-module integrated-service-engine**
- **show controllers integrated-service-engine**
- **show interfaces integrated-service-engine**

service-module integrated-service-engine

To begin a service module session through a console connection, use the **service-module integrated-service-engine** command in privileged EXEC configuration mode.

service-module integrated-service-engine *slot/port* {**password-reset** | **reload** | **reset** | **session** | **shutdown** | **statistics** | **status**}

Syntax Description

slot	Number of the router chassis slot for the network module.
port	Number of the integrated port on the network module. For network modules, always use 0. The slash mark (/) is required between the slot argument and the port argument.
password-reset	Reset of service module password.
reload	Reload of service module.
reset	Hardware reset of the service module.
session	Service module session. Opens a Telnet session that provides the Cisco integrated encoder command-line interface (CLI) from the Cisco IOS interface side.
shutdown	Shutdown of the service module.
statistics	Shows the integrated service module reset statistics.
status	Operational information about the service module.

Command Default

None

Command Modes

Privileged EXEC

Command History

Version	Modification
12.4(11)T	This command was introduced.

Usage Guidelines

Use the **service-module integrated-service-engine** *slot/port* **shutdown** command before you remove the integrated service module from the router.

Removing the integrated encoder without using the proper shutdown sequence can result in corruption of the hard disk. After successful shutdown of the application, the Cisco IOS software displays a message indicating that the network module can be removed.

Only one session at a time is allowed into the network module from the internal network-module-side interface.

After starting a session, you can perform any integrated module configuration task. You first access the console in a user-level shell. To access the privileged EXEC command shell, in which most commands are available, use the **enable** command.

After you finish configuring the module and exit the module console session, clear the session by using the **service-module integrated-service-engine** *slot/port* **session clear** command. At the confirmation prompt, press **Enter** to confirm the action, or press **n** to cancel.

Examples

The following example shows a session being opened for a Cisco Video Management and Storage System module in slot 1:

```
Router# service-module integrated-service-engine 1/0 session

Trying 31.0.0.99, 2066 ... Open
cvmss-module>
```

Related Commands

Command	Description
enable	Enters privileged EXEC mode.
interface	Configures an interface and enters interface configuration mode.
show diag	Displays controller information for a network module.
show interface integrated-service engine	Displays basic interface configuration information for the Cisco Video Management and Storage System network module.

show controllers integrated-service-engine

To display controller information for the integrated service module, use the **show controllers integrated-service-engine** command in privileged EXEC mode.

show controllers integrated-service-engine *slot/unit*

Syntax Description

slot	Number of the router chassis slot for the video module.
unit	Number of the video module. For network modules, always use 0. The slash mark (*/*) is required between the slot argument and the unit argument.

Command Default

None

Command Modes

Privileged EXEC

Command History

Version	Modification
12.4(11)T	This command was introduced.

Examples

The following example shows the output from the **show controllers integrated-service-engine** *slot/unit* command:

```
Router# show controllers integrated-Service-Engine 4/0
Interface Integrated-Service-Engine4/0
Application is Cisco Foundation Software 5.0.0-26
Hardware is BCM5703 Gig Ethernet
IDB: 6619ABFC, FASTSEND: 60DD1034, MCI_INDEX: 0

INSTANCE=0x6619BD24
  Rx Ring entries = 512
  Rx Shadow = 0x6619C62C
  Rx Ring = 0x2DFC1C40
  Rx Ring Head = 425
  Rx Ring Last = 424
  Rx Jumbo Ring entries = 256
  Rx Jumbo Shadow = 0x6619CE64
  Rx Jumbo Ring = 0x2DFC5C80
  Rx Jumbo Ring Head = 0
  Rx Jumbo Ring Last = 255
  Rx Return Ring = 0x2DFC9CC0
  Rx Return Ring Head = 937
  Rx Return Ring Last = 936
  Rx STD Ring Shadow (malloc) = 0x6619C62C
  Rx STD Ring (malloc) = 0x2DFC1C40
  Rx JUMBO Ring Shadow (malloc) = 0x6619CE64
  Rx JUMBO Ring (malloc) = 0x2DFC5C80
  Rx Buffer Descr (malloc) = 0x2DFC9CC0
  Tx Ring entries = 512
  Tx Shadow = 0x6619DE9C
  Tx Shadow Head = 409
```

```
  Tx Shadow Tail = 409
  Tx Shadow Tail Last = 408
  Tx Shadow Free = 512
  Tx Ring = 0x2DFD1D00
  Tx Count = 0
  Tx Free = 512
  Tx Buffer Descr = 0x2DFD1D00
  Tx Shadow (malloc) = 0x6619DE9C
  Tx Ring (malloc) = 0x2DFD1D00

Status block and mail_box information
  Status = 0x0, StatusTag = 0xD4
  Status::RcvStdConIdx: 425 , RcvJumboConIdx: 0   , RcvMiniConIdx: 0
  MBOX::RcvStdProdIdx:27  , RcvJumboProdIdx:255 , RcvMiniProdIdx: 0
  Status::Send 0, SendConIdx: 409 , Rx Rtn 0, RcvProdIdx: 937
  mail_box::Send 0,SendHostProdIdx: 69  , Rx Rtn 0,RcvRetConIdx: 27

Rings Status:
 *** RX Entry: 14  , Tx Entry: 1    ***

  RX #  duration  RtnHead  RtnTail ProdHead ProdTail
  [0 ]     2         337      339      337      339
  [1 ]     1         930      931      418      419
  [2 ]     4         339      343      339      343
  [3 ]     1         343      344      343      344
  [4 ]     1         931      932      419      420
  [5 ]     1         932      933      420      421
  [6 ]     1         344      345      344      345
  [7 ]     1         933      934      421      422
  [8 ]     2         345      347      345      347
  [9 ]     1         347      348      347      348
  [10]     1         934      935      422      423
  [11]     1         935      936      423      424
  [12]     3         348      349      348      349
  [13]     1         936      937      424      425
  [14]     7         332      334      332      334
  [15]     1         334      335      334      335
  [16]     3         927      929      415      417
  [17]     1         335      336      335      336
  [18]     1         929      930      417      418
  [19]     3         336      337      336      337

  TX #  duration  Send_head Send_tail
  [0 ]     0         194      195
  [1 ]     0         388      389
  [2 ]     0         181      183
  [3 ]     0         389      392
  [4 ]     0         183      185
  [5 ]     0         392      395
  [6 ]     0         185      187
  [7 ]     0         395      396
  [8 ]     0         187      188
  [9 ]     0         396      398
  [10]     0         398      399
  [11]     0         188      189
  [12]     0         399      402
  [13]     0         402      404
  [14]     0         189      191
  [15]     0         404      405
  [16]     0         191      192
  [17]     0         405      408
  [18]     0         192      194
  [19]     0         408      409
```

```
PCI Register [0x4C800000]
  PCI Msi Control = 0x5
  PCI Msi addr = 0xFFFFFFFE, 0xDEF7FFF8
  PCI MiscHostCtrl = 0x10020098
  PCI DMA Control = 0x763F0000
  PCI PciState = 0x20FE
  PCI clk ctrl = 0xBF
  PCI ModeCtrl = 0x4030034
  PCI MiscCfg = 0x83082
  PCI MiscLocalCtrl = 0x1016F09

Mac Control Register [0x4C800400]
  MAC Mode = 0xE0480C
  Mac Status = 0x4000403
  Mac Event = 0x1000
  Mac Led = 0xC80
  Mac RX MTU = 0x2808
  Mac Tx AutoNeg = 0x0
  MAC Rx AutoNeg = 0x0
  Mac Tx Mode  = 0x52
  Mac Tx Status = 0x8
  Mac Tx Length = 0x2620
  Mac Rx Mode  = 0x406
  Mac Rx Status = 0x0
  Mac Serdes Ctrl = 0x616000
  Mac Serdes Status = 0x2

General Control Register [0x4C806800]
  GCR Mode = 0x4030034, GCR MiscCfg = 0x83082
  GCR LocalCtrl = 0x1016F09, GCR Timer    = 0x3810AB4C
  Buf Mgr Address Space Begin = 0x4C804400
  Buf Mgr Flow Control Low Water Mark Adr = 0x4C804414 Data = 0x130
  Buf Mgr Flow Control High Water Mark Adr = 0x4C804418 Data = 0x17C

Hardware MAC Address Filters
----------------------------
  Hardware Perfect Address Filters
MAC addr[00] = 00-12-80-13-47-B8
MAC addr[01] = 01-00-0C-CC-CC-CC
MAC addr[02] = 01-80-C2-00-00-07
MAC addr[03] = 01-80-C2-00-00-02
MAC addr[04] = 00-00-00-00-00-00
MAC addr[05] = 00-00-00-00-00-00
MAC addr[06] = 00-00-00-00-00-00
MAC addr[07] = 00-00-00-00-00-00
MAC addr[08] = 00-00-00-00-00-00
MAC addr[09] = 00-00-00-00-00-00
MAC addr[10] = 00-00-00-00-00-00
MAC addr[11] = 00-00-00-00-00-00
MAC addr[12] = 00-00-00-00-00-00
MAC addr[13] = 00-00-00-00-00-00
MAC addr[14] = 00-00-00-00-00-00
MAC addr[15] = 00-00-00-00-00-00
  Hardware Multicast Hash Filters
MAC Hash addr[00] = 00000000
MAC Hash addr[01] = 00000000
MAC Hash addr[02] = 00000000
MAC Hash addr[03] = 00000000
  Hardware Receive Rules Filters
Receive Rules Config = 00000008
 Rule:  [00]  = 0x42000000
 Value: [00]  = 0x7FFFFFFF
 Rule:  [01]  = 0x06000004
 Value: [01]  = 0x7FFFFFFF
```

```
 Rule:  [02]  = 0x00000000
 Value: [02]  = 0x00000000
 Rule:  [03]  = 0x00000000
 Value: [03]  = 0x00000000
 Rule:  [04]  = 0x00000000
 Value: [04]  = 0x00000000
 Rule:  [05]  = 0x00000000
 Value: [05]  = 0x00000000
 Rule:  [06]  = 0x00000000
 Value: [06]  = 0x00000000
 Rule:  [07]  = 0x00000000
 Value: [07]  = 0x00000000
 Rule:  [08]  = 0x00000000
 Value: [08]  = 0x00000000
 Rule:  [09]  = 0x00000000
 Value: [09]  = 0x00000000
 Rule:  [10]  = 0x00000000
 Value: [10]  = 0x00000000
 Rule:  [11]  = 0x00000000
 Value: [11]  = 0x00000000
 Rule:  [12]  = 0x00000000
 Value: [12]  = 0x00000000
 Rule:  [13]  = 0x00000000
 Value: [13]  = 0x00000000
 Rule:  [14]  = 0x00000000
 Value: [14]  = 0x00000000
 Rule:  [15]  = 0x00000000
 Value: [15]  = 0x00000000

Software MAC Address Filter (hash:length/addr/mask/hits)
--------------------------------------------------------
  0x000:  0  ffff.ffff.ffff  0000.0000.0000         0
  0x038:  0  0012.8013.47b8  0000.0000.0000         0
  0x0C0:  0  0100.0ccc.cccc  0000.0000.0000         0
  0x0C0:  1  0180.c200.0002  0000.0000.0000         0
  0x0C5:  0  0180.c200.0007  0000.0000.0000         0

  Software filtered frames: 0
  Unicast software filter needed: 0
  Multicast software filter needed: 0
  Promiscuous mode: 0

HARDWARE STATISTICS
  Rx good packets: 99220
  Rx CRC:          0
  Rx alignment:    0
  Rx short:        0

  Tx good frames:        146809
  Tx maxm collisions:    0
  Tx late collisions:    0
  Tx underruns:          0
  Tx lost carrier:       0
  Tx deferred:           0
  Tx single collision:   0
  Tx multiple collision: 0
  Tx total collisions:   0
  -------- HW FLOW CONTROL STATS ---------
  Rx XON PAUSE Frames Received:   0
  Rx XOFF PAUSE Frames Received:   0
  Rx XOFF State Entered:   0
  Tx XON Sent:   0
  Tx XOFF Sent:   0
```

```
INTERRUPT STATISTICS
  CX  = 76355123
  FR  = 78987643
  CNA = 0
  RNR = 0
  MDI = 0
  SWI = 0
  FCP = 0

Full Promiscuous Mode = disabled
Loopback Mode = disabled

I/O Congestion Counters:
     Standard Packet Count : 14860
     Jumbo Packet Count    : 0

I2C Registers:
  AFS - Control Register   : 0x4000D000
  SMBUS Input Register     : 0x0000041B
  SMBUS Output Register    : 0x00004C61
  SMBUS GRC Local Register : 0x01016F09

I2C Error Counter:
  Total I2C Output Errors  : 0
  Total I2C Input Errors   : 0
  I2C Transaction Errors   : 0

Module Reset Statistics:
  CLI reset count = 0
  CLI reload count = 2
  Registration request timeout reset count = 0
  Error recovery timeout reset count = 0
  Module registration count = 19
```

Related Commands

Command	Description
show interfaces integrated-service-engine	Displays basic interface configuration information for the video service module.

show interfaces integrated-service-engine

To display basic interface configuration information for an integrated interface, use the **show interfaces integrated-service-engine** command in user EXEC mode.

show interfaces integrated-service-engine *slot/port*

Syntax Description

slot	Number of the router chassis slot for the Cisco Video Management and Storage System module.
port	Number of the integrated Cisco Video Management and Storage System module. For network modules, always use 0. The slash mark (/) is required between the *slot* argument and the *port* argument.

Defaults

None

Command Modes

User EXEC

Command History

Version	Modification
12.4(11)T	This command was introduced.

Examples

The following example shows output from the **show interfaces integrated-Service-Engine 1/0** command:

```
Router# show interfaces integrated-service-Engine 4/0
Integrated-Service-Engine4/0 is up, line protocol is up
  Hardware is BCM5703, address is 0012.8013.47b8 (bia 0012.8013.47b8)
  Internet address is 11.0.0.20/24
  MTU 1500 bytes, BW 1000000 Kbit, DLY 10 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive not set
  Full-duplex, 1000Mb/s, link type is force-up, media type is internal
  output flow-control is XON, input flow-control is XON
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:00, output 00:00:00, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 6
  Queueing strategy: fifo
  Output queue: 0/512 (size/max)
  5 minute input rate 58000 bits/sec, 106 packets/sec
  5 minute output rate 1560000 bits/sec, 159 packets/sec
     100598858 packets input, 3481805992 bytes, 0 no buffer
     Received 222 broadcasts, 0 runts, 0 giants, 0 throttles
     0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
     0 watchdog, 0 multicast, 0 pause input
     0 input packets with dribble condition detected
     141669474 packets output, 550374239 bytes, 0 underruns
     0 output errors, 0 collisions, 5 interface resets
     0 babbles, 0 late collision, 0 deferred
```

```
0 lost carrier, 0 no carrier, 0 pause output
0 output buffer failures, 0 output buffers swapped out
```

Related Commands

Command	Description
interface integrated-service-engine	Configures the interface slot and port numbers where the service module resides.

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