Configuring Host Router and Cisco Analog Video Gateway Module Interfaces

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To configure the Cisco Analog Video Gateway network module after it is installed in your host Cisco Integrated Services Router (ISR), you need to configure the following:

- Cisco ISR external interface to an external network link using the Cisco IOS CLI for setting standard router settings
- Cisco ISR internal interface to the Cisco Analog Video Gateway module, using the Cisco IOS CLI for setting the network module IP address and default gateway router
- Cisco Analog Video Gateway module internal interface to the host router, using network module firmware for setting application settings
- Cisco Analog Video Gateway module external interface to an external link, using the module firmware for servicing external requests

Whenever possible, configuration and management of the Cisco Analog Video Gateway module should be configured using the Video Surveillance Operations Manager (VSOM) graphical user interface.

The following sections describe the tasks required to configure the host router and Cisco Analog Video Gateway module interfaces:

Before Configuring the Cisco Analog Video Gateway

Complete the following prerequisites for the ISR, network module, and file server before you attempt to configure the Cisco Analog Video Gateway:

Cisco ISR

- Plan software installations, upgrades, or downgrades for times when you can take out of service or off line all applications that run on the host router.
- Ensure that your Cisco router serves as your host router, running the appropriate Cisco IOS release. To learn which release your router is currently running, check the output from the **show version** command.

Note When minimum release requirements are met, you can change images on either the host router or on the Cisco Analog Video Gateway module, without affecting the other image.

Network Module

- If it is not already installed at the factory, install the Cisco Analog Video Gateway network module into the host router with sufficient physical memory (see Table 1) to accommodate the Cisco Analog Video Gateway application software.

Table 1 Cisco Analog Video Gateway Module Memory Requirements

Type of Memory	Required Size
CompactFlash memory	512 M
RAM	512 M

Note For detailed information on hardware installation, see *Installing Cisco Network Modules in Cisco Access Routers*.

- Before swapping out a Cisco Analog Video Gateway 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" section on page 19.

- Note the Cisco Analog Video Gateway 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 12 and the "Opening and Closing a Network Module Session" section on page 14.

File Server

- Verify that your download File Transfer Protocol (FTP) or Trivial File Transfer Protocol (TFTP) file server is accessible:
  - FTP file server: Use for installations, backups, and data restores.
  - TFTP file server: Use for boot helper operations to recover from a failed installation.
- Configure the Cisco Analog Video Gateway module software only from a console that connects to a serial console port on the host router.

Note See the *Cisco Analog Video Gateway Installation and Upgrade Guide* for more information.

- Access the Cisco Analog Video Gateway module software only by first accessing one of the following:
  - Cisco IOS command-line interface (CLI)
  - Cisco Analog Video Gateway XML application programming interface (API)

Entering and Exiting the Command Environment

This section describes the procedures for entering and exiting the command environment, in which the Cisco Analog Video Gateway configuration commands are executed. The following sections describe these procedures:

- EXEC and Configuration Modes, page 9
- Entering the Command Environment, page 9
- Exiting the Command Environment, page 10

EXEC and Configuration Modes

The Cisco Analog Video Gateway user EXEC, privileged EXEC, and configuration command modes are similar to the user EXEC, privilege EXEC, and configuration modes for Cisco IOS CLI commands. The description for each command of this section indicates the command mode.

Entering the Command Environment

When the Cisco Analog Video Gateway module has been installed and is active, use the following procedure to enter the command environment.

Prerequisites

The following information is required to enter the command environment:

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

SUMMARY STEPS

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

DETAILED STEPS

	Command or Action	Purpose
Step 1	Open a Telnet session.	Use Microsoft Windows command prompt window, a secure shell, or a software emulation tool such as WRQ Reflection.
Step 2	**telnet** *ip-address* **Example:** `C:\>telnet 172.16.231.11`	Specifies the IP address of the router.
Step 3	`Username: userid` `Password: password`	Enter your user ID and password for the router.
Step 4	**service-module video-service-engine** *slot/port* **session** **Example:** `Router# service-module video-service-engine 1/0 session` `se-10-0-0-0#`	Enters the Cisco Analog Video Gateway module command environment by using the module located in *slot* and *port*. The prompt changes to the service module prompt with the IP address of the network module. If the message `"Trying ip-address slot/port ..."` `Connection refused by remote host` appears, enter the command **service-module video-service-engine** *slot/port* **session clear** and repeat Step 4.
Step 5	**enable** **Example:** `se-10-0-0-0# enable`	(Optional) Enters Cisco Analog Video Gateway EXEC mode. You can begin configuring the network module.

Exiting the Command Environment

To leave the Cisco Analog Video Gateway module command environment and return to the router command environment, return to the Cisco Analog Video Gateway EXEC mode and enter the **exit** command twice.

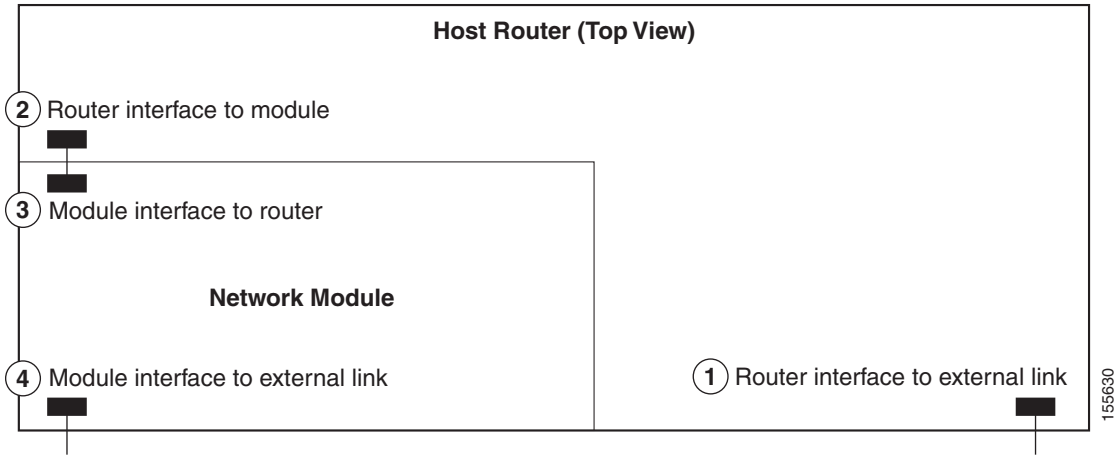
The following example shows the exit procedure:

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

Configuring Interfaces

The host router and the Cisco Analog Video Gateway network module use several interfaces for internal and external communication (see Figure 2). Each interface is configurable—for the router by using the Cisco IOS CLI, and for the module by using the module firmware Linux-based CLI or XML API.

Figure 2 Router and Cisco Analog Video Gateway Module Interfaces



	On This Hardware Interface...	Configure These Settings...	Using This Configuration Interface
1	Host router interface to external link	Standard router settings	Host router Cisco IOS CLI
2	Host router interface to module	Cisco Analog Video Gateway network module IP address and default gateway router	
3	Cisco Analog Video Gateway module interface to router	All other Cisco Analog Video Gateway module application settings	Cisco Analog Video Gateway module CLI or XML API
4	Cisco Analog Video Gateway module interface to external link	Support for data requests and transfers from outside sources **Note** This external network interface was disabled and is not usable in software version 1.2 and later.	

The following sections describe the tasks that are necessary for configuring the host router and network module interfaces:

- Interface Configuration Tasks, page 12
- Opening and Closing a Network Module Session, page 14

Interface Configuration Tasks

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

Steps 1 and 2 open the host router CLI and accesses the router interface to the Cisco Analog Video Gateway 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 it fails to do so, fully reinstall the system using the boot helper.

SUMMARY STEPS

From the Host-Router CLI

1. **enable**
2. **configure terminal**
3. **interface video-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 **ip unnumbered** *type number* 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. Enter your password if prompted.
Step 2	**configure terminal** **Example:** `Router# config t`	Enters global configuration mode on the host router.

	Command or Action	Purpose
Step 3	**interface video-service-engine** *slot*/**0** **Example:** `Router(config)# interface video-service-engine 1/0`	Enters interface configuration mode for the slot and port where the Cisco Analog Video Gateway 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** *type number* **Example:** `Router(config-if)# ip address 10.0.0.20 255.255.255.0` 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. • *type number*—Type and number of another serial 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 172.0.0.20 255.255.255.0`	Specifies the IP address for the Cisco Analog Video Gateway 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 external ip address** *external-ip-address* subnet-*mask* **Example:** `Router(config-if)# service-module external ip address 172.0.0.30 255.255.255.0`	Specifies the IP address for the external LAN interface on the module. • *external-ip-address*—IP address for the interface. • *subnet-mask*—Subnet mask to append to the IP address.
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	(Optional) If the **ip unnumbered** *type number* command is used in step 4, then set: **ip route** *service-module-ip-address subnet-mask* **video-service-engine** *1/0* **Example:** `Router(config-if)# ip route 172.0.0.20 255.255.255.255 video-service-engine 1/0`	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 the interfaces are configured.

```
interface video-service-engine1/0
 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 172.0.0.20 255.255.255.0
 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 Analog Video Gateway module.

Note

- Before you install your application software, opening a session brings up the boot loader. The boot loader is a small set of system software that runs when the system first powers up. It loads the operating system from the disk (external CompactFlash memory) or network, which loads and runs the Cisco Analog Video Gateway application. The boot loader may optionally load and run the boot helper. After you install the software, opening a session brings up the application.
- You can conduct only one session at a time.
- The Steps 1 and 2 open the host-router CLI and access the module. The remaining steps configure the module and return you to the host-router CLI.

SUMMARY STEPS

From the Host-Router CLI

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

From the Service-Module Interface

4. Network module configuration commands
5. **Control-Shift-6 x**

From the Host-Router CLI

6. **service-module video-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. Enter your password if prompted.
Step 2	**service-module video-service-engine** *slot*/**0 status** **Example:** `Router# service-module video-service-engine 2/0 status`	Displays the status of the specified module, so that you can ensure that the module is running (that is, in 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 Analog Video Gateway Application" section on page 18.
Step 3	**service-module video-service-engine** *slot*/**0 session** **Example:** `Router# service-module video-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 ***. **Note** The *** entry can only be executed at reload. • To start a configuration session, press **Enter**.
	From the Service-Module Interface (boot loader prompt or configuration prompt)	
Step 4	. . . **Example (boot loader):** `VSE-Module bootloader> config` OR **Example (Configuration):** `VSE-Module> configure terminal` `VSE-Module(config)>` . . . `VSE-Module(config)> exit` `VSE-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 those that are available on the router. Access global configuration mode by using the **configure terminal** command. Enter configuration commands. Then exit global configuration mode with the **exit** command and save your new configuration with the **write** command. Notice that you do not use the **enable** command and the prompt does not change from **>**.
Step 5	Press **Control-Shift-6 x**.	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**.

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

Configuring the Cisco Analog Video Gateway Profiles

After you configure the host router and the Cisco Analog Video Gateway network module, you can begin to configure the video (see Configuring Video Parameters), contact-closure (see Configuring Contact Closure Profiles), and alarm-monitor (see Configuring Alarm Monitor Profiles) profiles.