

Cisco IP Video Surveillance for the Integrated Services Router

Solution Overview

Q. What is the Cisco® IP Video Surveillance solution for the Cisco integrated services router?

A. The Cisco IP Video Surveillance solution includes a suite of integrated, cost-effective products that enable your business to consolidate costly video surveillance equipment when tightening security. Two network modules for the Cisco integrated services router function as a complete solution for remote-office video surveillance. In deployments where a pure-play IP methodology is required, the Cisco Video Management and Storage System (VMSS) Network Module provides the ability to monitor, manage, and record video feeds from a wide variety of devices, including Cisco's own standard-definition cameras, major third-party IP cameras, and encoders. When a hybrid analog system is required to interface with existing analog video infrastructure, the analog video capture port of the Cisco IP Video Surveillance 16-Port Analog Video Gateway (AVG) Network Module can be utilized to complete the solution.

Q. What is the Cisco VMSS Network Module?

A. The module provides the ability to manage all of your video sources through a single converged interface, view live and archived video through this same Internet Explorer "thin client" interface, and store archive video locally. The VMSS module houses the Cisco Video Surveillance Operations Manager (VSOM) Software and Video Surveillance Media Server (VSMS) Software, which provide all the video configuration and management capabilities.

Q. What is Cisco VSOM Software?

A. Cisco VSOM Software is a GUI-based video distribution and management system application that allows you to configure, manage, and view all of your video sources. It works in conjunction with Cisco VSMS Software, and both are packaged together as a single installation on the Cisco VMSS module.

Q. What is Cisco VSMS Software?

A. Cisco VSMS Software is the core component in the solution and performs video surveillance system functions such as collection and routing of video from a wide range of third-party cameras and video encoders over an IP network; event tagging and recording of video for review and archival purposes; and secure local, remote, and redundant video archive capabilities over LANs and WANs.

Q. Is the VMSS solution interoperable with other products from the Cisco Network-centric Video Surveillance product line

A. Yes, the video surveillance software suite is the common thread among these products, providing interoperability with all of the products within the Cisco Video Surveillance product line.

Q. What is the Cisco IP Video Surveillance 16-Port AVG Network Module?

- A.** The AVG module is an extension voice module (EVM) that encodes up to 16 analog signal streams for the IP network. The AVG also supports up to eight integrated contact closure ports and two RS-485 ports for pan-tilt-zoom (PTZ) control.

Q. Which Cisco integrated services router platforms support the VMSS and AVG network modules?

- A.** Table 1 provides platform support information.

Table 1. Supporting Platforms

Network Module	Cisco 2811 Integrated Services Router	Cisco 2821 Integrated Services Router	Cisco 2851 Integrated Services Router	Cisco 3825 Integrated Services Router	Cisco 3845 Integrated Services Router
EVM-IPVS-16a		X	X	X	X
NME-VMSS2-16	X	X	X	X	X
NME-VMSS-16	X	X	X	X	X
NME-VMSS-HP16				X	X
NME-VMSS2-HP32				X	X
NME-VMSS-HP32				X	X

Features of the Cisco VMSS Network Module**Q. What are the different models of the Cisco Video Management and Storage System (VMSS) Network Module?**

- A.** There are five models, shown in Table 2.

Table 2. Cisco VMSS Network Module Models

Network Module	CPU	Memory	Hard Disk Size	Number of Streams Supported
NME-VMSS2-16	1.0 GHz	2 GB	500 GB	16
NME-VMSS-16	1.0 GHz	512 MB	120 GB	16
NME-VMSS-HP16	1.4 GHz	2 GB	160 GB	16
NME-VMSS2-HP32	1.4 GHz	2 GB	500 GB	32
NME-VMSS-HP-32	1.4 GHz	2 GB	160 GB	32

Q. What is the difference between the VMSS and VMSS2 models?

- A.** Both of the VMSS2 network modules have a larger hard disk at 500 GB. The onboard memory for the VMSS2 has increased to 2.0 GB as well.

Q. What does the VMSS module ship with?

- A.** The VMSS module ships with the Cisco VSOM and VSMS Software suite already installed by default. To enable the use of this software suite, you can complete the configuration setup process and apply a valid VSOM/VSMS license key if required (please see the following question for clarification).

Q. How do I obtain a valid license key for the Cisco VSOM and VSMS Software?

- A.** The NME-VMSS-16 and NME-VMSS-HP-16 require a 16-stream VSOM/VSMS license. Similarly, the NME-VMSS-HP-32 requires a 32-stream VSOM/VSMS license. To obtain a license key for the VSOM/VSMS application, send the MAC address of the VMSS module to vsm-license@cisco.com, and a key will be generated for that particular module. Starting with software release 2.2 of the VMSS, license keys are no longer required.

Q. Where can I find the MAC address for my VMSS module?

- A.** If using a release before VMSS 2.2, there are three ways to find the MAC address for the Ethernet interface of the VMSS:
- If the VSOM software is accessible, you can find the MAC address under the Licensing section from the server console page. Only one MAC address is necessary (ethernet 0).
 - During installation of the VSOM/VSMS application, the MAC address is displayed toward the end of the installation process, right before the system prompts for a license key.
 - From the host router, executing “show arp” will also display the MAC address next to the interface name “Integrated-Service-EngineX/0.”

Q. Can I use the VMSS module for archival storage?

- A.** Yes, the hard disk on the video module is partitioned with 12 GB of space for the operating system and the rest is reserved for video retention.

Q. What if I need more storage space than what is available on the local hard disk?

- A.** A. There are two ways to increase storage capacity. The first is an integrated solution using the the Integrated Storage System (ISS) network module which combined with the VMSS2 can provide up to 1TB of space. Since the ISS is also an enhanced network module (NME) form factor, a 3800 platform is required to support both the ISS and VMSS2 modules. The second solution is to use external storage devices through an iSCSI connection to the VMSS2.

Q. Is there a recommended storage device that has been tested by Cisco for use with the VMSS?

- A.** The VMSS platform has support for standard iSCSI product for third-party storage systems. Please contact your local sales representative for the most up-to-date list of validated storage partners.

Q. What is the external Gigabit Ethernet port used for on the VMSS module?

- A.** The external Gigabit Ethernet port on the VMSS module can be used for connecting external iSCSI storage devices, such as the one mentioned earlier. This port does not support full routing capabilities, so the device connected needs to be on the same subnet.

Features of the Cisco AVG Module**Q. What does the Cisco IP Video Surveillance 16-Port AVG Network Module ship with?**

- A.** The analog video gateway module ships with the IP video surveillance (IPVS) software already installed by default. You may use the initial setup dialog to configure the module. The AVG module also ships with the 16-port video breakout cable. The video cable has 16 male BNC connectors on one end and a DB-37 connector on the opposite end. No license is required for the AVG.

Q. How many video streams does each AVG module support?

- A.** The AVG module supports up to 16 analog video streams. The true number of analog streams supported will depend on the codec and resolution configured per stream. Please consult the IPVS DSP calculator tool to find out how many AVG modules are required to support your configuration.

- Q. What type of codec, resolution, and frame rates are supported on the AVG module?**
- A.** The AVG module is capable of supporting video resolutions from Common Intermediate Format (CIF) to 4CIF, frame rates up to 30 frames per second (fps) per port, and flexible codec selection with Motion JPEG (MJPEG), MPEG4, and H.264. Please consult the IPVS DSP calculator to find the stream combination supported per AVG module.
- Q. Is motion detection supported on the AVG module?**
- A.** Yes, motion detection is supported on the AVG module and can be configured from the Cisco Video Surveillance Operations Manager.
- Q. How many alarm and RS-485 ports does the AVG module support?**
- A.** The AVG module supports eight alarm ports, of which four are dedicated inputs and four are input/output ports. There are also two independent RS-485 loops for serial PTZ control of traditional cameras.
- Q. Does the AVG module provide power to the alarm application?**
- A.** No, this is considered a dry contact closure, which means the application must provide a 12VDC power source.
- Q. Does the AVG module have a separate GUI?**
- A.** Yes, the AVG module's GUI can be accessed using <http://x.x.x.x/login.html>, where x.x.x.x is the IP address of the AVG module. There are three options on the menu. The IPVS MJPEG IP Viewer allows you to view a live MJPEG stream for any of the video cameras attached to the module. The RS-485 tool allows you to configure the parameters for PTZ as well as control PTZ devices on the RS-485 port. The contact closure and alarm interface allow you to monitor the status of the alarm ports and LEDs. The AVG GUI should only be used for troubleshooting purposes. To configure the video streams for viewing or archiving, please use the VSOM software.

Router and Module Setup

- Q. What Cisco IOS® Software image is required on the host Cisco integrated services router to support the AVG and VMSS network modules?**
- A.** The host router requires Cisco IOS Software Release 12.4(15)T or later, with the IP Voice feature set or higher.
- Q. How can I tell if the host router has successfully recognized the video modules?**
- A.** Two new interfaces will show up on the configuration. The AVG module will be labeled "Video-Service-EngineX/0," and the VMSS will be labeled "Integrated-Service-EngineX/0."
- Q. What configuration is required on the host router to set up the video modules?**
- A.** The interface for the network modules on the Cisco integrated services router has to be configured, and a route statement for each module has to be added. Here is a sample configuration:

```
interface Integrated-Service-Engine1/0
 ip unnumbered GigabitEthernet0/1
 service-module ip address 192.168.1.11 255.255.255.0
 service-module ip default-gateway 192.168.1.1
```

```

interface Video-Service-Engine2/0
  ip unnumbered GigabitEthernet0/1
  service-module ip address 192.168.1.10 255.255.255.0
  service-module ip default-gateway 192.168.1.1

ip route 192.168.1.10 255.255.255.255 Video-Service-Engine2/0
ip route 192.168.1.11 255.255.255.255 Integrated-Service-Engine1/0

```

Q. How do I access the CLI for the network modules?

A. To access the CLI for the network modules, execute the session command for each module:

```

Service-module Video-Service-Engine2/0 session
Service-module Integrated-Service-Engine1/0 session

```

Q. How do I configure the analog encoder as well as other cameras?

A. The AVG and IP cameras can be managed and configured using the VSOM software. To launch the VSOM, type in `http://x.x.x.x`, where `x.x.x.x` is the IP address of your VMSS module in a browser window. You will be prompted to log in with a username and password. The default username is "root," and the default password is "secur4u." Once logged in, you can go to the administrator view and change the password or create other user accounts.

Q. How do I upgrade my modules to the latest version of software?

A. The modules can be upgraded using the CLI command "install clean." Refer to the installation and upgrade guide at

<http://www.cisco.com/en/US/docs/video/cvms/cvmsinstall/cvmsinstall.html>. An FTP server is required for an online upgrade or install, and a Trivial File Transfer Protocol (TFTP) server is required for an offline installation.

Q. Where can I find the software images for both the AVG and VMSS modules?

A. You can find the images under the Physical Security section at:
<http://www.cisco.com/web/solutions/ps/products.html#netcentric>.



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