Cisco Video Assurance Management Solution 1.0

Solution Overview

Cisco[®] Video Assurance Management Solution (VAMS) 1.0 delivers to service providers real-time centralized monitoring of their backbone, regional, and aggregation networks for broadcast video transport. Cisco Video Assurance Management Solution 1.0 provides the framework for a flexible end-to-end assurance platform for video.

Cisco Video Assurance Management Solution 1.0 comprises the following Cisco products and solutions:

- **Cisco Active Network Abstraction (ANA) 3.6:** This system operates between the network and the operations support system (OSS) layers acting as a mediation and abstraction between OSS applications and the network devices. Its abstracted network model removes the complexity of upgrading each and every OSS application when there is an upgrade of any element within the network. It also provides a gateway to the network for OSS applications supporting correlation and aggregation of events in the network and provides this correlated information northbound.

- **Cisco IPTV SLA solution built around Cisco Multicast Manager (CMM) 2.4:** This tool provides a rich set of multicast monitoring and troubleshooting functions that enable Cisco VAMS 1.0 to be notified of any changes in multicast or threshold events on elements in the multicast trees that may affect video performance. Cisco VAMS 1.0 collects outputs from Cisco Multicast Manager into Cisco Active Network Abstraction (ANA) providing views of both device and multicast faults.

Cisco ANA 3.6 builds an abstracted network model through a set of virtual network elements (VNEs). Each VNE represents an element in the managed network. Cisco VAMS 1.0 enhances the base functions of Cisco ANA 3.6 VNEs for Cisco 7600s Series Routers, Cisco Catalyst 4948 Switches, and Cisco CRS-1 Carrier Routing System devices that address the specific requirements of video delivery across the network.

In addition, Cisco VAMS 1.0 includes dedicated VNEs supporting vendor-specific video MPEG probes; this release includes VNEs for Ineoquest, Mixed Signals, and Tektronics video probes. Cisco VAMS 1.0 provides a video service assurance solution with a wide breadth of coverage across the transport network for broadcast video services.

Cisco VAMS 1.0 may be combined with a northbound API that supports integration with OSS applications such as IBM Tivoli Netcool, part of the Cisco Assurance Management Solution 1.0, providing a consolidated view of the video transport network.

Features and Benefits

Cisco VAMS 1.0 provides the following features and benefits:

- Transport network visualization
    - Network map and device views
    - Multicast visualization

- Advanced monitoring
  - Network faults
  - Multicast faults
  - Performance degradation
  - Video probe information collection

Table 1 further describes the features and benefits of Cisco VAMS 1.0.

Table 1.   Features and Benefits

Features	Benefits
Virtualization	
Core and distribution topology map	Allows operators to view their core and distribution networks in a single map
Chassis views for elements on map	Allows operators to find more details on devices and status in both a tabular and graphical manner
Multicast view	Allows operators to see how the multicast trees overlay the physical topology
Visualize video probes on map	Allows pinpointing of problem areas by using information from video probes and their location on the topology map and the multicast trees
Monitoring	
Service monitoring	Uses network device instrumentation to detect service-affecting packet drops and uses video probes to detect service degradation
Device fault monitoring	Aggregates device and service faults into a consolidated fault view
OSS integration API	Northbound API to support integration with third-party OSS products, for example, IBM Tivoli Netcool, part of the Cisco Assurance Management Solution
Extended Device Support	
Cisco CRS-1 Carrier Routing System	Traps based on:
Cisco 7600Series Routers	• Non-Reverse Forwarding Path (non-RFP) drops, for example video packets with unrecognized source addresses
Cisco Catalyst 4948 Switches	• Multicast including PIM interface config and operational status and changes to multicast route tables
Tektronix MTM400	Add a vendor-specific probe VNE to ANA Network View.
Ineoquest	Add the network links between the probe to the network element to which it is connected.
Mixed Signals	ANA monitors probe properties exposed through MIB2 (system and interface).
	ANA receives video stream-related traps from the probe and maps into ANA format and severity levels.
	Video events are visible through ANA Network View or ANA Event View and are forwarded through the ANA northbound interface.

Solution Architecture

The components of Cisco VAMS 1.0 provide the following functions:

- ANA 3.6.2 covers the backbone, regional, and aggregation network, providing device, performance, and network monitoring.

- Cisco Multicast Manager 2.4 provides IP multicast visualization and troubleshooting and reports multicast faults to ANA.

- Third-party video probes installed at demarcation points report video faults to ANA.

Figure 1.   Cisco VAMS 1.0 Architecture
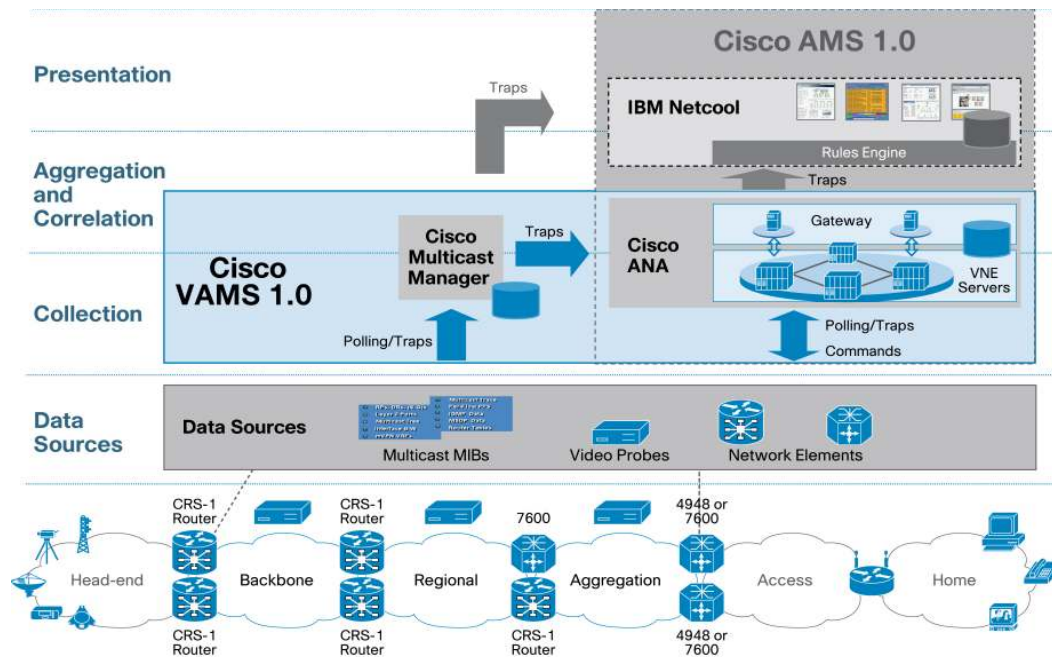
Solution Specifications

To order Cisco VAMS 1.0, the following must also be purchased as prerequisites:

- [Cisco ANA 3.6](#) (Service Patch 2) with VNEs and RTU licenses for relevant devices (4948s, 7600s and CRS-1s)
- [Cisco Multicast Manager 2.4](#) with the VOS (Video Operations Solution) extensions

Cisco VAMS 1.0 may then be deployed as an extension to the above.

Table 2 lists hardware specifications for Cisco VAMS 1.0.

Table 2.   Hardware Specifications

Cisco ANA Gateway	
Disk space	Recommended: Two 73-GB hard disk drives
Hardware	• Sun V490 • 1 DVD drive • 2 10/100M Ethernet ports • Solaris 10 compatible
Processor	4 at least 1.35-GHz UltraSPARC IV processors
Memory	• 16 GB • 8 GB of Solaris SWAP per CPU
Software	• Solaris 10 • Customer-supplied Oracle 9i
Cisco ANA Unit	
Disk space	Recommended: Two 73-GB hard disk drives
Hardware	• Sun V490 • 1 DVD drive • 2 10/100M Ethernet ports • Solaris 10 compatible
Memory	16 GB

Processor	4 at least 1.35-GHz UltraSPARC IV processors
Software	Solaris 10
Cisco ANA Client	
Disk space	2 GB of free disk space
Hardware	• Pentium IV, 2.66-GHz processor or better • 1 DVD drive • Minimum screen resolution of 1024 by 768 pixels • Truecolor (32 bit) setting
Memory	• 1 GB • 512 MB of free nonvirtual memory
Software	Windows® 2000 or Windows® XP
Cisco Multicast Manager Server	
Disk space	2 GB or more free space for Cisco Multicast Manager application and data
Hardware	Linux • Dual AMD Opteron Processor 250 2.4-GHz 64 Bit for Large Enterprise (more than 500 devices) • Dual 2.8-GHz Intel Pentium IV or dual 2.8-GHz Intel Xeon processor for Large Enterprise (more than 500 devices) • 2.8-GHz Intel Pentium IV or 2.8-GHz Intel Xeon processor Solaris • Sun Fire v440 Up to four 1.593-GHz UltraSPARC IIIi processors for Large Enterprise (more than 500 devices) • Sun Fire v240 One 1.34-GHz or two 1.5 GHz UltraSPARC processors
Memory	• 2 GB • 4 GB for Large Enterprise (more than 500 devices)
Software	Linux • Redhat Enterprise Linux ES/AS 3 • Redhat Enterprise Linux ES/AS 4 Solaris • Solaris 8 • Solaris 9 • Solaris 10 Note: Solaris x86 is not supported
Browser	• Firefox 1.5 or greater • Internet Explorer 6 • Netscape 7.0 • Mozilla 1.7 • Safari 2.0

Ordering Information

Table 3 list ordering information for Cisco VAMS 1.0.

Table 3.   Ordering Information

Product Description	Part Number
Cisco Video Assurance Management Solution 1.0 (Top level part number)	VAMS-1-SOFTWARE
Video Extensions to 4948 (G2) VNE – Software (optional, qty 0-1)	VAMS1.0-3.6VNE4948
Video Extensions to 7600 (G3) VNE – Software (optional, qty 0-1)	VAMS1.0-3.6VNE7600
Video Extensions to CRS-1 (G5) VNE – Software (optional, qty 0-1)	VAMS1.0-3.6VNEG5
Video Extensions to CRS-1 (G6) VNE – Software (optional, qty 0-1)	VAMS1.0-3.6VNEG6
Cisco Multicast Manager (CMM) VNE – Software (optional, qty 0-1)	VAMS1.0-3.6VNECMM
Ineoquest Video Probe VNE – Software (optional, qty 0-1)	VAMS1.0-3.6VNEIQ
Mixed Signals Video Probe VNE – Software (optional, qty 0-1)	VAMS1.0-3.6VNEMS
Tektronics Video Probe VNE – Software (optional , qty 0-1)	VAMS1.0-3.6VNETK

Ineoquest Video Probe RTU – Right-to-use for one IQ probe (optional, qty 0-unlimited)	VAMS1.0-3.6IQRTU
Mixed Signals Video Probe RTU – Right-to-use for one IQ probe (optional, qty 0-unlimited)	VAMS1.0-3.6MSRTU
Tektronix Video Probe RTU – Right-to-use for one IQ probe (optional, qty 0-unlimited)	VAMS1.0-3.6TKRTU

Service and Support

Using the Cisco Lifecycle Services approach, Cisco and its partners provide a broad portfolio of end-to-end services and support that can help increase your network's business value and return on investment. This approach defines the minimum set of activities needed, by technology and by network complexity, to help you successfully deploy and operate Cisco technologies and optimize their performance throughout the lifecycle of your network.

For More Information

For more information about Cisco Video Assurance Management Solution, visit http://www.cisco.com/go/vams or contact your local Cisco account representative.