Cisco Video Assurance Management Solution 1.5

Solution Overview

Cisco® Video Assurance Management Solution (VAMS) 1.5 performs real-time, centralized monitoring of your core, distribution, and aggregation networks for broadcast video transport. Cisco VAMS provides the framework for a modular, end-to-end assurance management architecture for video services.

Cisco Video Assurance Management Solution 1.5 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 2.5: This tool provides a rich set of multicast monitoring and troubleshooting functions that allow Cisco VAMS 1.5 to be notified of any changes in multicast or threshold events on elements in the multicast trees that may affect video performance. Cisco VAMS 1.5 collects outputs from Cisco Multicast Manager into Cisco ANA, providing views of both device and multicast faults.
- Cisco Info Center: This suite of products provides the manager of managers for the VAMS 1.5 solution. Traps from ANA and Cisco Multicast Manager and video probes may be collected and correlated with affected broadcast services. In addition, the service dashboard provides a simple overview of the traps and their association to the services and helps enable the user to focus on specific service-related events. Using specific extensions to Cisco Info Center, the user may cross-launch Cisco Multicast Manager from multicast-related traps received to support problem isolation and multicast troubleshooting.

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 1.5 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 1.5 includes dedicated VNEs that support vendor-specific video MPEG probes; this release includes VNEs for Ineoquest, Mixed Signals, and Tektronics video probes. The information from these probes allows problems in the video streams to be isolated to specific parts of the video system.

Cisco VAMS 1.5 makes use of northbound APIs that support integration with OSS applications. Cisco Info Center (IBM Tivoli Netcool software) provides the consolidated view of the services and their association to faults in the video transport network.

Cisco VAMS 1.5 provides a video service assurance solution with a wide breadth of coverage across the transport network for broadcast video services.

Features and Benefits

Cisco VAMS 1.5 provides the following features and benefits:

- Service visualization
  - A service dashboard view of the services supported (specifically program IDs), providing associated multicast addresses that support the programs and correlated multicast-related traps collected
- Transport network visualization
  - Network map and device views
  - Multicast visualization
- Advanced monitoring and troubleshooting
  - Context-sensitive cross-launch of multicast troubleshooting tool
  - Network faults
  - Multicast faults
  - Performance degradation
  - Video probe information collection

Table 1 further describes the features and benefits of Cisco VAMS 1.5.

Table 1. Features and Benefits

Feature	Benefit
Visualization	
Core and distribution topology map	Allows operators to view their core and distribution networks in a single map
Service level dashboard	A single view of the services supported (specifically program IDs), providing associated multicast addresses that support the programs and correlated multicast related traps collected
Event view	A single view of all events received provided with information about the source, the time of last receipt, and the number of occurrences
Context-sensitive cross-launch	The user may select specific multicast-related traps and cross-launch Cisco Multicast Manager to facilitate problem isolation and troubleshooting.
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: • Non-Reverse Forwarding Path (non-RFP) drops, for example, video packets arriving on the “wrong” interface • Ingress/egress cyclical redundancy check (CRC) packet drop rates exceeding the rate threshold (only on Protocol Independent Multicast [PIM]–enabled interfaces) • Configurable drop/error rate thresholds
Cisco 7600 Series Routers	
Cisco Catalyst 4948 Switches	

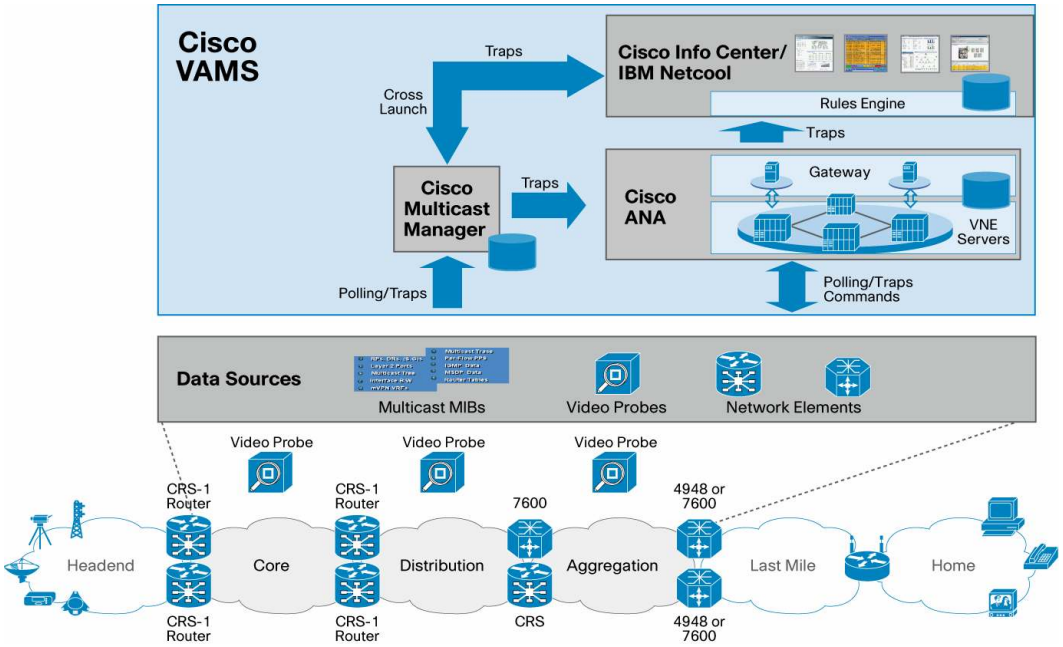
Tektronix MTM400 **Ineoquest** **Mixed Signals**	• Add a vendor-specific probe VNE to ANA network view. • Add the network links between the probe to the network element to which it is connected. • ANA monitors probe properties exposed through MIB2 (system and interface). • ANA receives video stream-related 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 1.5 provide the following functions (Figure 1):

- ANA 3.6 covers the backbone, regional, and aggregation network, providing device, performance, and network monitoring.
- Cisco Multicast Manager 2.5 provides IP multicast visualization and troubleshooting and reports multicast faults to ANA and Cisco Info Center.
- Cisco Info Center (ObjectServer and Webtop 7.2, TBSM 4.1, and Impact 4.0) provides a service-level dashboard and a common database for collection of faults from multiple sources including ANA and Multicast Manager, correlation of multicast-related faults to program IDs, and context-sensitive cross-launch of Multicast Manager.
- Third-party video probes installed at demarcation points report video faults to ANA.

Figure 1. Cisco VAMS 1.5 Reference Architecture



Solution Specifications

To order Cisco VAMS 1.5, the following must also be purchased as prerequisites:

- Cisco ANA 3.6 with VNEs and right-to-use (RTU) licenses for relevant devices (4948s, 7600s, and CRS-1s)
- Cisco Multicast Manager 2.5 with the Video Operations Solution (VOS) extensions
- Cisco Info Center - Object Server 7.2, Webtop 2.1, TBSM 4.1, and Impact 4.0

Cisco VAMS 1.5 may then be deployed as extensions to the above.

Note: VAMS has been structured in a modular architecture. Customers may choose to deploy specific modules of VAMS depending on their existing NMS/OSS environment. Customers may also chose to take a phased approach to rolling out VAMS, selecting Cisco Multicast Manager 2.5, for example, as an initial starting point for deployment and then building out from there.

Customers are recommended to work with their account teams and with Cisco Advanced Services to identify the appropriate strategy.

Table 2 lists hardware specifications for Cisco VAMS 1.5.

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 lists ordering information for Cisco VAMS 1.5.

Table 3. Ordering Information

Product Description	Part Number
VAMS 1 ANA Extensions	
Cisco VAMS 1 , Extensions to ANA 3.6 (Top level part number)	VAMS1-ANA3.6-SW
VAMS 1 ANA Options	
VAMS 1, Extension to 4948 (G2) VNE – ANA 3.6	VAMS1-ANA36VNE4948
VAMS 1, Extension to 7600 (G3) VNE – ANA 3.6	VAMS1-ANA36VNE7600
VAMS 1, Extension to CRS-1 (G5) VNE – ANA 3.6	VAMS1-ANA36VNEG5
VAMS 1, Extension to CRS-1 (G6) VNE – ANA 3.6	VAMS1-ANA36VNEG6
VAMS 1, Cisco Multicast Mgr VNE – ANA 3.6	VAMS1-ANA36VNECMM
VAMS 1, Ineoquest Video Probe VNE – ANA 3.6	VAMS1-ANA36VNEIQ
VAMS 1, Mixed Signals Video Probe VNE – ANA 3.6	VAMS1-ANA36VNEMS
VAMS 1, Tektronics Video Probe VNE – ANA 3.6	VAMS1-ANA36VNETK
VAMS 1, Ineoquest Video Probe RTU – RTU for one IQ probe	VAMS1-ANA36IQRTU
VAMS 1, Mixed Signals Video Probe RTU for one MS probe	VAMS1-ANA36MSRTU
VAMS 1, Tektronics Video Probe RTU for one TK probe	VAMS1-ANA36TKRTU
VAMS 1, Ineoquest Video Probe RTU for one IQ probe	VAMS1-ANA36RTUIQ
VAMS 1, Mixed Signals Video Probe RTU for one MS probe	VAMS1-ANA36RTUMS
VAMS 1, Tektronics Video Probe RTU for one TK probe	VAMS1-ANA36RTUTK
VAMS 1 Cisco Info Center Extensions	
VAMS 1, Extensions to CIC (Top level part number)	VAMS1-CIC-SW

VAMS 1 Cisco Info Center Options	
VAMS 1, Extensions to Cisco Info Center 7.2 ObjectSvr/Webtop	VAMS1-CICMOM72-K9
VAMS 1, Extensions to Cisco Info Center 7.2 ObjectSvr/Webtop – Failover	VAMS1-CICMOM72F-K9
VAMS 1, Extensions to Cisco Info Center 7.2 ObjectSvr/Webtop – Non Prod	VAMS1-CICMOM72N-K9
VAMS 1, Extensions to Cisco Info Center TBSM 4.1	VAMS1CICTBSM41-K9
VAMS 1, Extensions to Cisco Info Center TBSM 4.1 – Failover	VAMS1CICTBSM41F-K9
VAMS 1, Extensions to Cisco Info Center TBSM 4.1 – Non Prod	VAMS1CICTBSM41N-K9
VAMS 1, Extensions to Cisco Info Center Impact 4.0	VAMS1CICIMPT40-K9
VAMS 1, Extensions to Cisco Info Center Impact 4.0 – Non Prod	VAMS1CICIMPT40N-K9

Service and Support

Using Cisco Lifecycle Services, 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.

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