Cisco Catalyst 6500 Series and Cisco 7600 Series Network Analysis Module 4.1

General Overview

Q. What is the Cisco® Catalyst® 6500 Series and Cisco 7600 Series Network Analysis Module (NAM) and what does it do?

A. The Cisco Catalyst 6500 Series and Cisco 7600 Series NAM is an integrated performance assurance solution that provides visibility into application and network performance to help ensure the consistent and efficient delivery of applications and services to end users.

The unique design of Cisco NAM combines a rich set of embedded data collection and analysis capabilities with a remotely accessible, web-based management console, all of which reside on a single blade that is installed into the Cisco Catalyst 6500 Series Switch or the Cisco 7600 Series Router. The Cisco NAM includes an embedded, web-based Traffic Analyzer GUI that provides quick access to the configuration menus and easy-to-read reports on voice, video, and TCP-based traffic.

Q. What are the key features and benefits of the Cisco NAM?

A. The key features and benefits of the Cisco NAM are provided in Table 1.

Table 1.   Key Features and Benefits of the Cisco NAM

Feature	Benefit
Performance assurance integrated in the switch/router	Deployed in the Cisco Catalyst 6500 Series Switch and the Cisco 7600 Router, the Cisco NAM provides greater investment protection, lower total cost of ownership, and reduced footprint to save premium rack space.
Intelligent application performance (IAP)	Analyzes TCP-based application packets as they travel from the client through the network to the data center and out again, providing insight into network round-trip time, server response time, data transfer time, transaction time, and so on, to monitor application performance.
Advanced voice quality monitoring	Reports Mean Opinion Score (MOS) along with key performance metrics every 1-minute based on 3-second data points for each active Real Time Protocol (RTP) stream. Combined voice quality monitoring and real-time troubleshooting help ensure delivery of committed service levels to the end user.
Visibility into WAN-optimized networks	Measures application response time, WAN bandwidth usage, LAN/WAN data throughput, and so on, to effectively use Cisco Wide Area Application Services (WAAS) for improving application performance.
Video performance analytics	Analyzes video packet streams and provides visibility into key network performance indicators to manage the quality of experience for the end user.
Comprehensive flow-based monitoring	Automatically identifies hundreds of protocols and provides real-time and historical performance reports on hosts, conversations, and applications using critical network resources.
LAN and WAN monitoring in one solution	Provides visibility into traffic from local and remote switches and routers for comprehensive traffic monitoring.
Web-based captures for deep, insightful data analysis	Captures the packets to help resolve acute problems before they affect users. Captures can be performed using a web browser from any desktop, and the decodes can be viewed through the Traffic Analyzer GUI while the data is still being captured. Extensive capture features, including trigger-based captures, decodes, filters, and a capture analysis toolset, help to quickly pinpoint and resolve problem areas.
Visibility into Virtual Switch System (VSS) deployments	Monitors traffic on all switch ports of both virtual switches in a VSS 1440 environment. It reduces the management overhead and simplifies monitoring of application performance, network traffic, and switch health, thereby improving the overall operational efficiency.
Anytime, anywhere access	Includes an embedded Traffic Analyzer web interface that can be accessed from any desktop, eliminating the need to send personnel to remote sites or haul large amounts of data over WAN links to the central site.
Pre- and postdeployment metrics to quantify business changes	Provides valuable "before and after" traffic analytics to help plan for and verify changes in network resources, such as new application rollouts, WAN optimization, server consolidation, segmenting the network, and deploying voice over IP (VoIP) and video.

Secure solution	Offers TACACS+, Secure Sockets Layer (SSL), and Secure Shell (SSH) Protocol–based security.
Standards-based northbound interface	Facilitates the export of data to other tools and devices that build additional value on top of NAM. For example, NAM can export application response time information to NetQoS SuperAgent for consolidated networkwide performance reporting.
Deployment flexibility	Cisco NAM can be deployed in blade form factor in Cisco Catalyst 6500 Series Switches, Cisco 7600 Series Routers, and Cisco Integrated Services Routers as multigigabit appliances, and as a virtual blade residing directly on WAAS devices. The complement of physical and virtual blades and of appliances allows NAM instrumentation to be broadly deployed in the network for comprehensive performance monitoring.

Q. **What are the business benefits of deploying Cisco NAM?**

A. Table 2 provides an overview of the business benefits that the NAM offers.

Table 2.   Business Benefits of Deploying Cisco NAM

Benefit	Description
Gain comprehensive visibility into network services and applications	Help ensure consistent and efficient delivery of applications and services. The visibility provided allows effective use of control and optimization mechanisms such as quality of service (QoS) and Cisco WAAS to improve application performance.
Enhance service levels delivered to the end user	Preempt performance issues with threshold-based proactive alerts. Reduce downtime and failures.
Increase operational efficiency	Accelerate problem isolation and minimize the amount of time IT dedicates to constantly troubleshooting problems. Enhance productivity with remote management.
Maximize the value of IT investment	Optimize the use of network resources.

Q. **What is the difference between NAM-1 and NAM-2?**

A. NAM-1 and NAM-2 share the same hardware architecture and software applications, but differ in the following ways:

- NAM-2 has an additional accelerator card that provides extra high packet processing performance to monitor gigabit bandwidth.

- With NAM software 3.1 or later, NAM-2 includes two data ports to support Switched Port Analyzer (SPAN)/VLAN Access Control List (VACL) traffic, whereas NAM-1 includes one data port only. With the second data port, the NAM-2 can receive two SPAN sessions, two VACL-based captures, or one of each data source. The SPAN sessions, each consisting of multiple ports, VLANs, or EtherChannel connections, can be used independently or together. This feature allows users to view traffic on each side of a full-duplex trunk or to dedicate one data port for troubleshooting and the other data port for reporting.

- NAM-2 has a larger capture buffer than NAM-1. The buffer capacity of NAM-2 (WS-SVC-NAM-2-250S) is 500 MB and NAM-1 (WS-SVC-NAM-1-250S) is 200 MB.

Q. **Is the NAM-1 upgradeable to NAM-2?**

A. No. NAM-1 and NAM-2 have fixed configurations and cannot be transformed from one version to the other.

Q. **What is the Cisco NAM Traffic Analyzer?**

A. The Cisco NAM includes embedded Traffic Analyzer software that analyzes and stores the collected data using standards-based MIBs and extensions (remote monitoring [RMON], DiffServ monitoring [DSMON], switch monitoring [SMON], application response time monitoring, and VoIP monitoring). The Cisco NAM also hosts an embedded web server that presents the configuration menus and traffic reports to clients using a supported web browser. These reports provide visibility into voice, video, and data traffic.

Q. **What supervisor operating systems does the Cisco NAM support?**

A. The Cisco NAM is compatible with supervisors running Cisco Catalyst OS and Cisco IOS® Software. Please refer to the Cisco NAM Release Notes for specific versions of the Catalyst OS and Cisco IOS Software supported on the NAM for the Cisco Catalyst 6500 Series Switches and for the Cisco 7600 Series Routers.

Q. **Where is the Cisco NAM deployed in the network?**

A. The Cisco NAM is deployed in the Cisco Catalyst 6500 Series at LAN aggregation points (for example, in the core or distribution layer) for proactive monitoring and quick troubleshooting; at service points (for example, in data centers, server farms, or Cisco Unified Communications Manager clusters) where performance is critical; and at critical access points. Also, the NAM can be deployed in Cisco 7600 Series Routers at WAN edges or in Catalyst 6500 Series Switches connected to WAN routers. When deployed at remote sites, the Cisco NAM uniquely allows users to perform remote troubleshooting and traffic analysis using the embedded web-based Traffic Analyzer without having to send personnel or to haul large amounts of data to the central site.

Q. **In what release were the upgraded NAM-1 (WS-SVC-NAM-1-250S) and NAM-2 (WS-SVC-NAM-2-250S) first introduced?**

A. The upgraded NAM-1 and NAM-2 were first introduced in NAM 3.6.1b.

Q. **What do the upgraded NAMs offer?**

A. The upgraded NAMs offer higher memory (DRAM) and larger onboard storage. The higher memory optimizes the performance of the NAM software. The disk drive upgrade offers larger capacity to permit the storage of more reports and captures.

Latest Release: NAM 4.1

Q. **What features does NAM Software 4.1 offer?**

A. Cisco NAM 4.1 offers the features described in Table 3.

Table 3.   New Features in Cisco NAM 4.1

Feature	Benefit
Cisco WAAS NAM Virtual Blade	First introduction of a NAM with zero hardware footprint. The Cisco WAAS NAM Virtual Blade, installed directly on the Wide Area Virtualization Engine (WAVE) 574 and the Wide Area Application Engine (WAE) 674 appliances, provides visibility into application performance improvements delivered by WAAS and helps identify ongoing application optimization opportunities.
Enhanced performance on the new Cisco NAM 2220 Appliance	Software enhancements to the NAM 2220 provide higher throughput monitoring and troubleshooting in the campus backbone, data center, and WAN.
GTP support for mobility 0perators	In anticipation of LTE, NAM now supports the GPRS Tunneling Protocol (GTP) to help simplify troubleshooting by pinpointing the clients experiencing application delivery issues that can lead to service disruptions.
Improved visibility into WAN-optimized networks	In addition to monitoring WAAS-optimized WAN traffic, NAM now monitors pass-through traffic, traffic not targeted for WAN optimization, to provide a big picture view of application performance in WAAS environments.

Q. **When is NAM Software 4.1 available?**

A. Starting in late July current Cisco NAM customers can download Cisco NAM 4.1 software from the Cisco.com Software Center at no charge using their Cisco SMARTnet® contract access privileges. NAM 4.1 is available in September 2009 as part of NAM blade orders.

Q. **Which NAM hardware platforms support NAM 4.1?**

A. NAM 4.1 is supported on the hardware platforms listed in Table 4. The platforms marked by an asterisk (*) include memory configurations that optimize NAM 4.1 performance.

Table 4.   NAM Hardware Platforms Supported with NAM 4.1

Hardware Part Number	Description
NAM2204-RJ45*	Cisco NAM 2200 Series Appliances
NAM2204-SFP*	
NAM2220*	
WS-SVC-NAM-1-250S*	Cisco Catalyst 6500 Series and Cisco 7600 Series NAM-1
WS-SVC-NAM-1 with MEM-C6KNAM-2GB=*	
WS-SVC-NAM-1	
WS-SVC-NAM-2-250S*	Cisco Catalyst 6500 Series and Cisco 7600 Series NAM-2
WS-SVC-NAM-2 with MEM-C6KNAM-2GB=*	
WS-SVC-NAM-2	
NME-NAM-120S*	Cisco Branch Routers Series NAM
NME-NAM-80S	

Q. Cisco NAM 4.1 introduces enforceable licensing. Does it apply to the Cisco Catalyst 6500 Series and Cisco 7600 Series NAM?

A. No. Enforceable licensing applies to the Cisco WAAS NAM Virtual Blade product offering only at this time.

Technical Overview

Q. How does the Cisco NAM work?

A. The Cisco NAM collects packets or flows (NetFlow Data Export [NDE]) being sent to it from the switch or router. The NAM parses the packets and extracts data to populate standards-based MIBs included in the NAM such as RMON/RMON2 and RMON extensions. The MIBs provide valuable traffic information on voice, video, and data traffic, VLANs, DiffServ configurations, hosts, conversation pairs, application usage, and application response times. This information is presented in the NAM's Traffic Analyzer GUI in easy-to-read real-time and historical reports or can be accessed using a standards-based centralized Simple Network Management Protocol (SNMP) console to build additional value for enterprisewide performance assurance and reporting.

The packets that the Cisco NAM collects are defined by the user's selecting one or more data sources. Data sources, which are features of the switch, router, or WAAS device, are described in Table 5 and include SPAN, Remote SPAN (RSPAN), Encapsulated RSPAN (ERSPAN), VACL capture, NDE, and WAAS Flow Agent. The Cisco NAM has independent backplane interfaces to collect SPAN/VACL traffic and NDE/WAAS. The NAM also has a communications interface with the supervisor and uses supervisor MIBs to provide information on port utilization (mini-RMON) and VLAN utilization (SMON).

Table 5.   Cisco Catalyst 6500 Series and Cisco 7600 Series NAM Data Sources

Data Source	Description
SPAN, RSPAN, and ERSPAN	Using the SPAN, RSPAN, and ERSPAN capabilities of Cisco Catalyst 6500 Series Switches, traffic from ports, VLANs, and EtherChannel links can be mirrored to the NAM. The NAM collects statistics on all layers of network traffic spanned to it. RSPAN allows traffic to be collected from other RSPAN-enabled devices in the same VLAN Trunk Protocol (VTP) domain. ERSPAN allows traffic to be sent to the NAM using encapsulated GRE tunnels from a Layer 3 network.
VACLs	The NAM uses VACLs to capture or "filter" selected VLANs and WAN traffic (on Cisco IOS devices only) to the NAM ports. Additional filtering rules can also be applied to target specific data flows. The NAM must be specified as the capture destination for VACL entries when configuring the local supervisor.
NDE	NetFlow Data Export records offer an aggregate view of the network traffic. When enabled on the switch, the NetFlow data source becomes available on the Cisco NAM without the need to create any SPAN sessions. In addition, the NAM can receive NDE from remote devices for analysis.

WAAS Flow Agent	The NAM gathers WAAS Flow Agent data for optimized and pass-through traffic to provide end-to-end application performance visibility in a Cisco WAAS environment. The Flow Agent data allows NAM to measure application response time, transaction time, bandwidth usage, and LAN/WAN data throughput to accurately quantify the impact of Cisco WAAS optimizations.

Q. How does the Cisco NAM gain visibility into traffic from other switches/routers?

A. The LAN or WAN traffic from other devices can be directed to the NAM for analysis using RSPAN, ERSPAN, or NDE.

Q. How does the Cisco NAM gain visibility into WAN traffic?

A. The NAM gains visibility into WAN traffic using VACL capture for WAN interfaces and NDE. VACL-based captures can be used (in supervisors running Cisco IOS Software in native mode) to monitor traffic from WAN interfaces. NDE from local and remote devices can be used to monitor WAN interfaces and provide application-level visibility into WAN segments.

Q. What is VACL capture and how does the Cisco NAM use it?

A. VACL capture is a data source that uses SPAN and fulfills similar functions. VACLs can be used to capture or "filter" selected VLANs and WAN traffic (with Cisco IOS Software). In Cisco IOS Software 12.2(18)SXF or later, VACLs can also be applied to WAN interfaces.

Q. How does the Cisco NAM use NetFlow?

A. When enabled on the switch, NetFlow data can be sent directly to the Cisco NAM without creating any SPAN sessions. All traffic that is Layer 3 switched on the policy feature card (PFC) and that is NetFlow switched on the Multilayer Switch Feature Card (MSFC) is available as NDE for monitoring. NetFlow can also be enabled on interfaces of remote devices and sent to the NAM for analysis.

The Cisco NAM supports monitoring of both SPAN and NetFlow data sources using independent backplane interfaces. These two data sources complement each other to provide a powerful and comprehensive monitoring solution. NetFlow can be used to monitor the traffic at an aggregate level to provide host, conversation, and application statistics, and for a deeper examination, SPAN can be used to send specific traffic of interest to the NAM. Also, NetFlow can be used to obtain visibility into traffic where SPAN is not available (WAN interfaces, remote router interfaces, and so on).

Q. Can the Cisco NAM collect NetFlow from remote WAN routers?

A. Yes. The Cisco NAM can collect and analyze NDE from remote devices including WAN routers. This feature is helpful in analyzing traffic on a WAN router connected to the Catalyst 6500 Series Switch or from remote WAN routers where ample bandwidth is available to send NDE.

Q. Does the Cisco NAM require a separate NetFlow data collector for monitoring?

A. No. The NAM collects and consumes NetFlow data for performance monitoring purposes.

Q. What versions of NetFlow does the Cisco Catalyst 6500 Series and Cisco 7600 Series NAM support?

A. The NAM supports versions 1, 5, 6, 7, 8, and 9.

Q. What release of Cisco IOS Software is required to support the Cisco Catalyst 6500 Series and Cisco 7600 Series NAM?

A. The Cisco NAM requires any feature license in Cisco IOS Software Release 12.2(18)SXF (or later) or Cisco Catalyst Operating System 8.2(1) (or later). Please refer to the Cisco NAM Release Notes for extensive information on the required system software.

Q. How is the Cisco NAM Traffic Analyzer secured?

A. The Cisco NAM Traffic Analyzer can be secured with up to 168-bit encryption. The NAM also supports role-based user authorization and authentication locally or using TACACS+.

Q. **Is switch performance affected when the Cisco NAM monitors traffic?**

A. No. Switch performance is unaffected. The Cisco NAM includes a complete microprocessor system onboard that consists of a hard disk and all requisite hardware and software to enable it to vigorously perform its monitoring functions.

Q. **Can NAM-1 or NAM-2 be deployed in fabric-enabled Cisco Catalyst 6500 Switches or Cisco 7600 Series without affecting switch performance?**

A. Yes. NAM-1 and NAM-2 support full fabric (crossbar) connectivity and can be deployed in a fabric-enabled chassis with no impact on switching performance.

Q. **Can multiple Cisco NAMs be installed in a Cisco Catalyst 6500 Series or Cisco 7600 Series chassis?**

A. Yes. Multiple Cisco NAMs can be installed in a single chassis.

Q. **Can the Cisco NAM be installed in a Cisco Catalyst 6500 Series or Cisco 7600 Series chassis with other services modules (for example, the Firewall Services Module [FWSM])?**

A. Yes. The Cisco NAM can be installed with other services modules.

Q. **Are there any ports or network interfaces on the Cisco NAM?**

A. No.

Q. **Can multiple VLANs be spanned to the Cisco NAM?**

A. Yes. The NAM is fully compatible with the SMON MIB and supports the monitoring of multiple VLANs.

Q. **Does the Cisco NAM support supervisor failover?**

A. Yes.

Q. **If a switch chassis is upgraded, must a new Cisco NAM be purchased?**

A. No. The Cisco NAM is fully functional in any of the modular Cisco Catalyst 6500 or 6000 Series chassis and Cisco 7600 Series chassis.

Q. **Does the NAM support Virtual Switch System on the Catalyst 6500?**

A. Yes, all Catalyst 6500 NAMs and NAM Appliances support VSS.

Q. **Which NAM and Cisco IOS Software releases support VSS?**

A. On the Catalyst 6500 NAM-1 and NAM-2, VSS is supported in NAM 3.6.1a or later with Cisco IOS Software Release 12.2(33)SXH(1) or later. On the Catalyst 6500 NAM-1-250S and NAM-2-250S, VSS is supported in NAM 3.6.1b or later with Cisco IOS Software Release 12.2(33)SXH(1) or later. On the NAM Appliances, VSS is supported in NAM 4.0 or later with Cisco IOS Software Release 12.2(33)SXH(1) or later.

Q. **Are there specific capabilities that NAM provides in a VSS environment that are distinct from the capabilities provided in a non-VSS environment?**

A. Yes, there are three key differentiators:

- Monitoring port statistics on both switches using one NAM. The NAM can provide mini-RMON statistics on both switches and identifies these statistics by chassis, slot, and port. In this way, a complete view of Layer 2 traffic utilization can be obtained to assist in quickly identifying potential bottlenecks.

- Using SPAN on one NAM to obtain visibility into traffic on both virtual switches. Typically, RSPAN or NetFlow would need to be used to obtain visibility into an adjacent switch.

- Monitoring the health of both switches using a single NAM.

Q. **What protocols does the Cisco NAM monitor?**

A. The Cisco NAM monitors several hundred unique protocols, including those defined in RFC 2896, and several Cisco proprietary protocols. In addition, the NAM can automatically detect unknown protocols and offers users

the flexibility to customize the protocol directory to meet their specific requirements. Examples of protocols supported by the Cisco NAM for monitoring follow:

- TCP and User Datagram Protocol (UDP) over IP including IPv6

- HTTP and HTTPS

- VoIP including Skinny Client Control Protocol (SCCP), RTP/Real-Time Control Protocol (RTCP), Media Gateway Control Protocol (MGCP), and Session Initiation Protocol (SIP)

- SigTran and Mobile IP protocols including GPRS Tunneling Protocol

- Storage area network (SAN) protocols including Fibre Channel over TCP/IP

- AppleTalk, DECnet, Novell, Microsoft

- Database protocols, including Oracle and Sybase

- Peer-to-peer protocols such as Gnutella, Fasttrack, and winmix

- Bridge and router protocols

- Cisco proprietary protocols

- Unknown protocols by TCP/UDP ports, Remote Procedure Call (RPC) program numbers, and so on

Software Features

Q. **Can packet captures be saved and, if so, where?**

A. Yes. The Cisco NAM offers two options to save capture data. Captures that have been stored in the NAM's buffer can be saved to the NAM's local hard drive for real-time analysis or analysis at a later date. In addition, with Cisco NAM 3.5 or later, captures can be saved directly to a remote network file server (NFS) or Small Computer System Interface over IP (iSCSI)–supported device. Saving captures on a remote storage device allows the user to capture very large amounts of raw data, which can then be analyzed remotely by NAM.

Q. **Does the Cisco NAM perform historical traffic analysis?**

A. Yes, the Cisco NAM Traffic Analyzer can display, store, and retrieve historical statistics on selected network traffic for up to 100 days. The export of historical reports can be scheduled or exported on demand. Reports can be sent by email or FTP, and export formats can include comma-separated value (CSV), XML, PDF, and HTML.

Q. **Does Cisco NAM support voice monitoring for Cisco VoIP deployments only?**

A. No. Cisco NAM monitors Real-Time Monitoring Protocol and thus, by extension, can provide reporting on any VoIP protocol that runs on top of RTP, a Layer 4 protocol.

Q. **Which VoIP signaling protocols does the Cisco NAM support?**

A. Cisco NAM supports a breadth of standards-based VoIP signaling protocols, namely, SCCP, SIP, MGCP, and H.323.

Q. **What are the key performance indicators for monitoring voice?**

A. Cisco NAM offers real-time voice quality monitoring using standards-based MOS and key performance indicators such as jitter and packet loss. It calculates MOS based on ITU-T G.107 recommendations.

Q. **Can I identify the phones affected by voice quality degradation?**

A. Yes. Cisco NAM allows the administrator to pinpoint the individual RTP stream experiencing voice quality degradation. By correlating the RTP and signaling streams, Cisco NAM can report the phone numbers and alias for each endpoint.

Q. **What Cisco Unified Communications Management Solutions support NAM?**

A. The solutions are Cisco Unified Service Monitor and Cisco Unified Operations Manager.

Q. What Cisco Unified Service Monitor and Cisco Unified Operations Manager versions first support NAM 4.x? Are these versions available today? If not, when will they be available?

A. The versions are Cisco Unified Service Monitor 2.2 and Cisco Unified Operations Manager 2.2. They are not available today. They are targeted for availability in the third quarter of 2009.

Q. How do Cisco Unified Service Monitor and Cisco Unified Operations Manager support NAM?

A. Cisco Unified Service Monitor collects voice metrics from multiple NAMs to provide enterprisewide visibility into voice quality. Cisco Unified Service Monitor generates alerts on the voice quality degradation that is reported by Cisco Unified Operations Manager. Based on these alerts, Cisco Unified Operations Manager allows the user to navigate into NAM to glean near real-time views of both voice and network performance to perform rapid troubleshooting.

Q. What is the Cisco NAM IAP feature?

A. The NAM intelligent application performance feature offers comprehensive performance measurements for TCP-based applications to accurately characterize the end-user experience. This NAM 4.x feature offers a number of useful application performance indicators to facilitate faster problem identification. For example, the source of network latency affecting the end-user experience can be isolated by analyzing network delay metrics, namely client network delay, server network delay, and network delay. Similarly, server resource issues can be identified by network metrics such as application delay and server response time. In addition, the administrator can configure thresholds on these metrics to proactively detect performance degradations before they affect end users.

Q. How does Cisco NAM support Cisco Wide Area Application Services?

A. Cisco NAM uses the built-in instrumentation of the Cisco Wide-Area Application Engine devices as a data source to gather information on the optimized traffic to provide end-to-end application performance visibility in a Cisco WAAS environment. It measures application response time, transaction time, bandwidth usage, LAN/WAN data, and so on to provide end-to-end application performance metrics, accurately quantifying the impact of WAAS optimization and helping to validate ongoing optimization improvements. NAM is also able to identify the applications that would benefit the most from deploying Cisco WAAS. Analyzing response time data over a period of time, the administrator can identify the applications where optimization can result in a material increase in available bandwidth.

Third-Party Reporting

Q. Does Cisco NAM include an API to enable partner reporting applications to use NAM as a data source?

A. Yes, the Cisco NAM includes multiple mechanisms, such as SNMP and CSV/HTTP, that allow third-party management applications to retrieve data for networkwide reporting, trending, baselining, and capacity planning. The reporting application can retrieve monitoring data such as IAP, RMON, and DSMON. To access the CSV/HTTP API, the partner must be a member of the Cisco Technology Developer Program and must apply to integrate its product with Cisco NAM.

Q. How can a partner apply for approval to use the Cisco NAM CSV/HTTP API for integration?

A. A partner can enroll in the Cisco Technology Developer Program at http://www.cisco.com/go/ctdp. During the enrollment process, the partner must select Network and Service Management as the solution technology and Cisco NAM as the network management product for integration. Once the partner is approved and has signed the nondisclosure agreement (NDA) as well as the NAM developer license agreement, the partner will receive the API for integration.

Q. Does NetQoS SuperAgent support Cisco NAM 4.x as a data source?

A. Yes. With software release 4.x, Cisco Catalyst 6500 Series and Cisco 7600 Series NAM can export application response time data to NetQoS SuperAgent 8.1 or later for consolidated networkwide reporting. The

comprehensive performance overview provided by NetQoS SuperAgent complements the granular performance information provided by Cisco NAMs to enable visibility into how applications are being delivered enterprisewide yet isolate and resolve delivery problems proactively and promptly at their source.

Ordering

Q. **What are the part numbers for the Cisco Catalyst 6500 Series and Cisco 7600 Series NAM?**

A. Table 6 lists the part numbers for the NAMs.

Table 6. Cisco Catalyst 6500 Series and Cisco 7600 Series NAM Part Numbers

Cisco Part Number	Description
WS-SVC-NAM-1-250S(=)	Cisco Catalyst 6500 Series and Cisco 7600 Series Network Analysis Module-1 (Spare)
WS-SVC-NAM-2-250S(=)	Cisco Catalyst 6500 Series and Cisco 7600 Series Network Analysis Module-2 (Spare)
MEM-C6KNAM-2GB=	Field-installable Memory Upgrade Kit for WS-SVC-NAM-1 and WS-SVC-NAM-2
SC-SVC-NAM-4.1	Cisco Catalyst 6500 Series and Cisco 7600 Series Network Analysis Module Software 4.1

Q. **How can the Cisco NAM Traffic Analyzer software be obtained?**

A. The NAM software can be obtained in one of two ways. To obtain the latest NAM software with your new hardware order, order SC-SVC-NAM-4.1 when ordering the NAM hardware. The software will then be delivered preloaded on the hardware. If you already own the hardware, download the latest software from the Cisco.com Software Center using your SMARTnet access privileges.

Q. **Must Cisco NAM software be downloaded from the Cisco.com Software Center when first deploying a Cisco Catalyst 6500 NAM?**

A. No. Cisco NAM comes with the latest NAM software release. There is no need to download the software when first deploying the Cisco Catalyst 6500 NAM.

Q. **How do I obtain access to a new Cisco NAM software release?**

A. Customers who have purchased SMARTnet for their NAM are entitled to download new software releases from the Cisco.com Software Center.

Q. **Do the NAM-1 and NAM-2 have their own software image? Where can I find it?**

A. NAM-1 and NAM-2 share a common software image, which is loaded on the Cisco NAM during its manufacture. The images are also available in the Software Center on Cisco.com. When new releases are available, the NAM can be upgraded using FTP. For details regarding compatibility, download location, and so on, please see http://www.cisco.com/go/nam.

Q. **How is the Cisco NAM Traffic Analyzer application obtained? Is it included in the price of the NAM?**

A. The Cisco NAM Traffic Analyzer application is embedded in the NAM and is included in the NAM's price.

Q. **What is required to deploy the Cisco NAM solution?**

A. The following are required to deploy the NAM solution including the NAM Traffic Analyzer:

- Cisco Catalyst 6500 Series or Cisco 7600 Series Supervisor Engine running Cisco Catalyst OS or Cisco IOS Software
- NAM running software version 4.0 or later (prior software versions are in the end-of-sale or end-of-life cycle)
- Web browser running Microsoft Internet Explorer 6.0 (with Service Pack 2), Internet Explorer 7.0, Firefox 2.0, or Firefox 3.0

Additional Information

Q. **Does the Cisco NAM complement other Cisco security solutions?**

A. Yes. The Cisco NAM is also complementary to traditional Cisco security devices. Once an intrusion is seen, the NAM can analyze the details of what is going on. The NAM also helps to deploy inline security devices by constantly measuring VLAN throughput so that the inline device is sized correctly. And, as the network grows and traffic increases, the NAM can track resource usage for future capacity planning. Also, because the NAM can analyze traffic on either side of the inline device, it provides a useful way to gauge the effectiveness of these tools and to troubleshoot potential connectivity problems as they arise.

Q. **What Cisco NAM training options are available?**

A. The Cisco NAM training is available through instructor-led training. This training can be conducted as a standalone module or included with training modules on other Cisco Catalyst 6500 services blades.

Q. **Where is additional information about the Cisco NAM found?**

A. For more information about the NAM, visit www.cisco.com/go/nam or contact either your local account representative or the NAM product marketing group at nam-info@cisco.com.

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