Cisco Catalyst 6500 Series and Cisco 7600 Series Network Analysis Module with Software 5.1

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 traffic and performance analysis blade that empowers network administrators to quickly understand how traffic over the network is being used and how it is performing to troubleshoot performance issues and help ensure a consistent end-user experience. Its unique design 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.

Cisco NAM with Software 5.1 include an embedded, intuitive web-based graphical user interface (GUI) with prepackaged reports, workflows, and contextual navigation to expedite problem resolution and optimization decisions. It also includes a Performance Database that preserves historical data, allowing you to understand what happened in the past when an event that affected network performance occurred. Additional information about Cisco Prime Network Analysis Module 5 software is available here.

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.
Application performance intelligence	Characterize the end-user experience for TCP-based applications and isolate application response time problems to the network, server, or the application minimizing any triage process.
Cisco TelePresence Performance visibility	Manage performance of Cisco TelePresence sessions with accurate characterization of RTP streams (codec H.264) using key performance indicators such as Packet Loss, Concealment Seconds (SoC), Severe Concealment Seconds (SSC). Apply thresholds for proactively detect any degradation before end-user experience is affected.
Comprehensive voice quality monitoring and real-time troubleshooting	Gather real-time reports on Mean Opinion Score (MOS) and other key performance indicators (KPIs) such as jitter and packet loss to understand and improve how the end user experiences the delivery of voice services. MOS is computed based on ITU-T Recommendations G.107 offering accurate characterization of voice quality. Combine monitoring with real-time troubleshooting using pre-packaged dashboards to improve the end-user service levels.
WAN optimized networks visibility	Obtain end-to-end proof points demonstrating how WAAS has improved application delivery (for example, decreased application transaction times, improved WAN bandwidth utilization). Accelerate the ROI for your investment by assessing the best site and application candidates for optimization as part of the phased roll-out plan.
Detailed traffic analytics	View short- and long-term performance data on hosts, conversations, and applications that use critical network resources.
Historical analysis	Look back to the past with the embedded Performance Database to understand what happened when an event that affects network performance occurred to accelerate root-cause analysis and prevent any reoccurrence. Use historical analysis for advancing optimization and capacity decisions.
Deep, insightful packet captures	Solve complex performance issues with trigger-based captures, filters, decodes and Packet Capture Error Scan features. Packet captures can be triggered based on performance thresholds allowing you to focus on specific performance issues. Utilize 10G FCoE link to connect to your SAN to collect extensive packet captures for offline analysis
Advanced Hardware and Software Filters	Reduce the time to get to the critical data to accelerate troubleshooting and analysis of network traffic behavior.

Feature	Benefit
Monitor Virtual Switching System (VSS) deployments	Monitor both virtual switches in VSS environments, reducing management overhead while improving operational efficiency.
Cisco Nexus® 1000V deployment visibility	Simplify the operational management of Cisco Nexus 1000V switch environments by gaining visibility into the virtual machine (VM) network including interactions across virtual machines and virtual interfaces. Monitor the VMs uninterrupted by vMotion operations.
Site-based Monitoring	View network and application performance by logical groups or sites that you can create to mirror your network topology. For example, you can create sites by geographic locations, departments, or even managed customer networks. The feature facilitates tracking site-specific service-level objectives, resolving performance issues, or enforcing optimization policies.
Pre- and post-deployment metrics	Glean valuable before and after traffic analytics to help plan for and verify changes in network resources, such as introducing new applications, establishing QoS policies, consolidating servers, and deploying VoIP.
Open interface	Ease NAM configuration and export of computed NAM data using standards-based APIs (XML/REST for configuration, NetFlow Version 9 for data export).
Anytime, anywhere access	Access the web interface 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.

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

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

Table 2.   Business Benefits of Deploying Cisco NAM

Benefit	Description
Improve operational efficiency with faster problem resolution and greater productivity	• Rapid problem isolation with prepackaged reports, visual correlation, contextual navigation, and one-click packet captures • Packet Capture Scan feature highlights observed protocol/packet level anomalies, accelerating complex root-cause analysis • Combined packet and flow analysis reduces time to noteworthy and actionable information to expedite troubleshooting • Remote management eliminates the need to travel to remote sites
Enhance service levels with consistent application performance visibility across the network	• Accurate characterization of performance with advanced analytics for voice and TCP applications • Consistent application recognition using new application classification architecture • Improved end-user experience with effective use of control and optimization techniques such as QoS and Cisco WAAS • Preemption of performance issues with threshold-based proactive alerts reduces downtime and failures
Reduce total cost of ownership	• Integrated with Cisco platforms, NAM delivers reduced network footprint, lower operational cost, and simplified manageability • NAM form factors offer cost-effective options and deployment flexibility to address location-specific network instrumentation needs • Open standards-based API preserves investment in existing management assets

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

A. NAM-1 and NAM-2 share the same hardware architecture and software, 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 only one data port. 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 the NAM-1 cannot be upgraded to NAM-2.

Q. **What is the Cisco Prime Network Analysis Module Software?**

A. Cisco Prime Network Analysis Module Software includes an intuitive, web-based GUI with prepackaged reports, workflows, and contextual navigation to expedite problem resolution and optimization decisions. It provides quick access to the configuration menus and interactive reports on the performance of voice, video, and TCP-based traffic.

In addition, the software hosts an embedded web server that enables remote access from anywhere so that network performance can be viewed, managed, and improved at any time, eliminating the need to travel to remote sites or haul large amounts of data over WAN links to a central site.

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 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 without having to send personnel or to haul large amounts of data to the central site. When deployed in the data center server access, the Cisco NAM can also be used for monitoring traffic in the virtual machine network, extending the visibility into the virtual infrastructure with Cisco Nexus 1000V switch deployments.

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 Software 5.1

Technical Overview

Q. **How does the Cisco NAM with Software 5.1 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, gathers relevant data and stores processed information in the new Performance Database. This database provides valuable traffic information on voice, video, and data traffic, VLANs, Differentiated Services (DiffServ) configurations, hosts, conversation pairs, application usage, and application response times. This information is presented in the NAM's GUI in easy-to-read interactive reports.

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. The Cisco NAM has independent backplane interfaces to collect SPAN/VACL traffic and NDE/WAAS/ERSPAN.

Table 3. Cisco Catalyst 6500 Series and Cisco 7600 Series NAM Traffic Sources

Traffic Source	Description
SPAN, Remote SPAN (RSPAN), and Encapsulated RSPAN (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 generic routing encapsulation (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	The NAM uses the built-in instrumentation on WAAS to gather information about the optimized and pass-through traffic to provide end-to-end application performance visibility in a Cisco WAAS environment. The information 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 NetFlow Data Exports.

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 with Software 5.1 use NetFlow?

A. The Cisco NAM supports monitoring of both packet- and NetFlow-based traffic 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 gain an extensive view of the traffic to analyze who is using your network, what applications they're using, and how much bandwidth is being consumed. For deeper analysis, it can be combined with packet data using traffic sources such as SPAN, VACL, ERSPAN, or RSPAN. Also, NetFlow can be used to obtain visibility into traffic where SPAN is not available (for example, WAN interfaces, remote router interfaces, and so on).

NetFlow can be enabled on interfaces of local or remote devices and sent to the NAM for analysis. As a consumer, the NAM can receive NetFlow packets on its management port from devices such as Cisco routers and switches. Those records are stored in its performance database as if that traffic had appeared on one of the NAM data ports. The NAM understands NetFlow versions 1, 5, 6, 7, 8, and 9. Incoming NetFlow data is parsed by the NAM, stored in its internal database, and presented in the GUI in the same way as traffic from other data sources.

Some network devices have more than one "engine" that is capable of independently exporting NetFlow. Depending upon features of the device, flows can be exported from multiple flow caches in the hardware and/or software. For example, supervisor and line cards may be able to export flows independently from their local caches. By default, NAM 5.1 will automatically create independent data sources for each engine exporting NetFlow records to NAM.

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 secured?**

A. The Cisco NAM can be secured with up to 256-bit encryption. The NAM also supports role-based user authorization and authentication locally or using TACACS+.

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 device does the Cisco Catalyst 6500 NAM monitor in the virtualized data center?**

A. The Cisco Catalyst 6500 NAM can extend its visibility into the Cisco Nexus 1000V switch in deployment scenarios where the Cisco Catalyst 6500 is an End-of-Row (EoR) access switching platform in the virtualized data center. The Cisco Nexus 1000V switch is a software switch on a server that delivers Cisco Virtual Network Link (VN-Link) services to VMs hosted on the server. This distributed switch has two major components: the Virtual Ethernet Module (VEM) and the Virtual Supervisor Module (VSM), which manages the VEMs. The Cisco Nexus 1000V can be configured to direct NetFlow Data Export from virtual or physical interfaces on the Nexus VEM to the Cisco Catalyst 6500 NAM. Also, ERSPAN can be configured to enable the Cisco Catalyst 6500 NAM to remotely monitor the traffic in the VM network.

Q. **What NAM data sources can be used to monitor traffic in the Cisco Nexus 1000V switch environment?**

A. As previewed in the answer above, the Cisco Catalyst 6500 NAM can monitor the Cisco Nexus 1000V using ERSPAN and NetFlow data sources (for more information about these NAM data sources, please refer to Table 5 of this Q&A). ERSPAN can be configured on the Cisco Nexus 1000V to enable the Cisco NAM to obtain visibility into specific ports or VLANs. The data made available by ERSPAN permits the NAM to provide core traffic usage metrics (on applications, hosts, and conversations), response time analytics, and QoS and VLAN monitoring statistics. NetFlow Data Export can be configured on select virtual and physical interfaces of the Cisco Nexus 1000V. The data made available by NetFlow permits the NAM to provide core traffic analytics and QoS monitoring statistics.

Q. **Where should I deploy the Cisco Catalyst 6500 NAM to obtain visibility into the virtualized data center?**

A. The Cisco Catalyst 6500 NAM is ideally deployed in an EoR Catalyst 6500 switch. Using the ERSPAN data source from the Cisco Nexus 1000V, headers of designated traffic flows (by port or VLAN) are encapsulated in a GRE tunnel and forwarded to the Cisco NAM for analysis.

Q. **When would I purchase a Cisco Catalyst 6500 NAM vs. a Cisco Nexus 1000V NAM VSB?**

A. The Cisco Catalyst 6500 NAM is a hardware module integrated in the Cisco Catalyst 6500 that provides visibility into both physical and virtual networks. It comes with a feature set and level of performance commensurate with providing high-performance monitoring and troubleshooting in the campus or data center. Cisco Prime NAM for Nexus 1010 is a software integrated in the Cisco Nexus 1010 Virtual Service Appliance. Cisco Prime NAM for Nexus 1010 comes with a feature set and level of performance that is specifically targeted for monitoring and troubleshooting the Cisco Nexus 1000V environment. Cisco Prime NAM for Nexus 1010 is a perfect fit for customers who are deploying the Cisco Nexus 1010, offering both ease of deployment and investment value. For those customers who have Cisco Catalyst 6500s, who may want to monitor more than the Cisco Nexus 1000V environment, who require higher overall performance, and/or who perform extensive captures and decodes will want to consider the Cisco Catalyst 6500 NAM. Additionally, the Catalyst 6500 NAM should be considered if a Cisco Catalyst 6500 is deployed in the data center access layer in VSS mode for high availability considerations. In this deployment scenario the Cisco Catalyst 6500 NAM can monitor switch ports and associated application traffic on both the Cisco Catalyst 6500 and on the Cisco Nexus 1000V.

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 General Packet Radio Service (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

Ordering

Q. What are the part numbers for the Cisco Catalyst 6500 Series and Cisco 7600 Series NAM-1 and NAM-2?

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

Table 4.   . 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-5.1-K9	Cisco Catalyst 6500 Series and Cisco 7600 Series Network Analysis Module Software 5.1

Q. How can the Cisco NAM 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-5.1-K9 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 application obtained? Is it included in the price of the NAM?**

A. The Cisco NAM 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:

- Cisco Catalyst 6500 Series or Cisco 7600 Series Supervisor Engine running Cisco Catalyst OS or Cisco IOS Software
- NAM running software version 4.2 or later (prior software versions are in the end-of-sale or end-of-life cycle)
- Web browser running English Firefox 3.6+ or Microsoft Internet Explorer 8+ or later (Microsoft Internet Explorer 7 is not supported)

Additional Information

Q. **Does the Cisco NAM complement 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 http://www.cisco.com/go/nam or contact either your local account representative or the NAM product marketing group at nam-info@cisco.com.