Cisco Catalyst 6500 Series and Cisco 7600 Series Network Analysis Module with Software 5.0

It all comes down to knowing. Knowing who is using the network, knowing what applications are running on the network, knowing how the network is performing, knowing how traffic over the network is being used and how it is performing are the foundation for managing and improving the delivery of your business-critical applications. It is the foundation for establishing and verifying quality of service (QoS) policies, undertaking WAN optimization projects, and rolling out voice over IP (VoIP). It is also the foundation for recognizing when a configuration change has unintentionally degraded application performance or for providing proof points that it is the application and not the network that is causing one of your business planning systems to perform poorly so that the appropriate actions can then be taken.

Product Overview

The Cisco® Catalyst® 6500 Series and Cisco 7600 Network Analysis Module (NAM) helps you know. It is your source for unparalleled network and application visibility, analyzing traffic flows between users and their critical applications to help you ensure that the network performs to the rigorous demands of the business. And, when there's a problem, the Cisco NAM can help you find it fast, reducing the time it takes to resolve it from days to just minutes.

Figure 1. Cisco Catalyst 6500 Series and Cisco 7600 Series Network Analysis Modules, NAM-1 and NAM-2

As a member of the Cisco NAM family of products, the Cisco Catalyst 6500 Series and Cisco 7600 Series NAM (Figure 1) delivers granular traffic analysis, rich application performance metrics, comprehensive voice analytics, and deep insightful packet captures to help you manage and improve the operational effectiveness of Cisco Borderless Networks and the Cisco data center. Its unique design combines embedded data collection and analysis capabilities with a remotely accessible, web-based management and reporting 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.

Figure 2. Cisco NAM Traffic Summary Dashboard

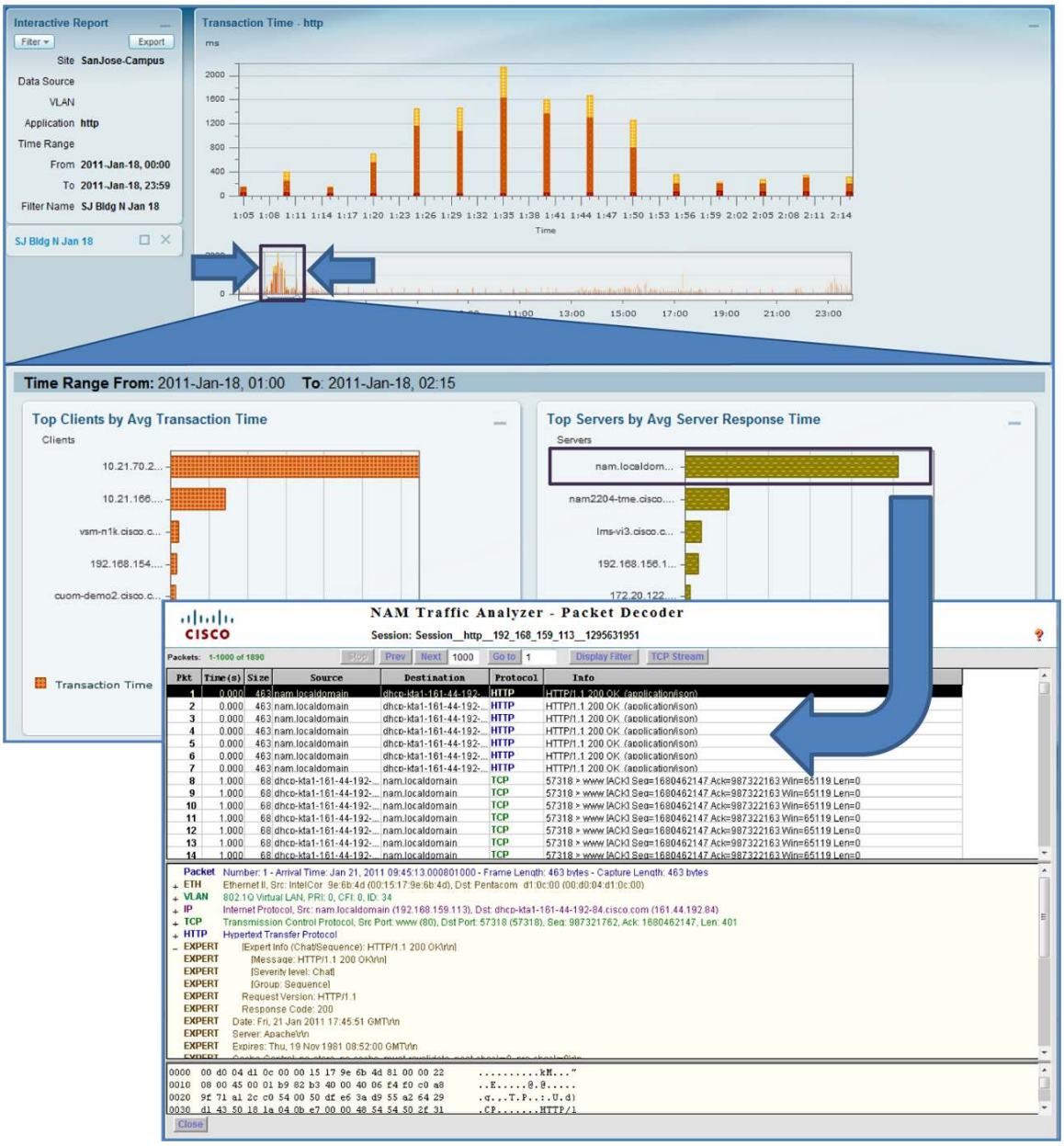
The Cisco Catalyst 6500 Series and Cisco 7600 Series NAM includes a snappy graphical user interface (GUI) with dashboards (Figure 2) to give you an immediate view of network performance and workflows to help you simplify problem detection and resolution. It also uses a rich set of Cisco infrastructure features as sources of data, such as Switched Port Analyzer (SPAN) packet data and NetFlow, giving you more ways to see and understand what's happening on your network. And, with an array of vital features and functions, such as a new embedded Performance Database, which preserves historical data, allowing you to understand what happened in the past when a network event that affected performance occurred, the Cisco NAM makes it easier than ever before to manage and improve network and application performance anytime and anywhere.

The Cisco Catalyst 6500 Series and Cisco 7600 Series NAM can be deployed wherever your Cisco Catalyst 6500s and Cisco 7600s are deployed, for example, in the campus, data center, and WAN edge. The Cisco NAM is the glue binding your Cisco Borderless Network deployments, providing application visibility between and within disparate places in the network. Deployed within your Cisco data center, they help drive application delivery consistency and efficiency in both physical and virtual environments.

NAM 5.0 Innovations

NAM 5.0 means agility - agility that allows you to quickly know what is happening on the network and see where trouble is lurking. NAM 5.0 offers new and enhanced capabilities that help enable you to get to the appropriate data fast, whether it is data that helps you respond to a help desk call on slow application performance, understand application performance before and after deploying Cisco Wide Area Application Services (WAAS), confirm that VoIP performance is rock solid at one of your international sites, or learn whether application performance has also made the leap with your migration from physical servers to virtual machines.

Figure 3. Application Performance Troubleshooting Workflow



- **Redesigned GUI simplifies monitoring and troubleshooting:** The Cisco NAM's redesigned GUI includes preconfigured dashboards that provide a comprehensive graphical view of network performance so you can immediately grasp if all is well or if a problem is emerging. It also includes workflows (Figure 3) with helpful features such as contextual navigation, interactive reports, and one-click packet captures. The NAM's GUI reduces not only the time it takes to solve problems, but also the time it takes to learn the product, giving you more time to spend on advancing new business initiatives.
- **NetFlow and packet data analysis in one box offer unprecedented levels of breadth and depth:** NetFlow and packet data complement each other to provide a powerful monitoring solution, all in one box. With expanded NetFlow reporting capabilities, you can obtain an extensive view of traffic usage information, such as who is using your network, what applications they're using, and how much bandwidth is being consumed. Pinpointing traffic of interest, you can use packet-based data to perform a "deeper dive" to quickly spot and address issues that affect performance.

- **A Performance Database lets you flash back to the past:** The Cisco NAM's Performance Database stores computed, historical data so you can flash back to the past to learn what happened on your network when a particular event occurred. Only too often do these anomalous events occur and are then gone. Now, with the Cisco NAM's Performance Database, you can look back, discover the facts, and solve the problem fast.
- **NetFlow Version 9 Data Export extends network reporting:** By exporting analytics in a standardized format, this new capability allows you to use computed NAM data to feed in-house or third-party reporting applications that you already own, building up additional value and building out existing investments.
- **Site-based monitoring delivers reporting flexibility:** This feature allows you to view network and application performance by logical groupings 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 and view performance data on a per site basis making it easier to obtain both a global and local view of how your applications are performing.
- **Network-Based Application Recognition (NBAR) improves application identification consistency:** The Cisco NAM now supports standardized application identifiers generated by Cisco's homegrown application classification technology, NBAR, to discover and identify applications, simplifying your user experience by helping bring consistency to application recognition across the network.
- **Packet Capture Error Scan finds problems fast:** The Cisco NAM's new Packet Capture Error Scan feature highlights packet-level anomalies to accelerate root-cause analysis and avoid your having to manually inspect the packet data to find the "needle in the haystack."

Cisco Catalyst 6500 Series and Cisco 7600 Series NAM Features and Benefits

The Cisco NAM offers an extensive set of features (Table 1) that provide a multilayer view of network performance to help you successfully navigate the labyrinth of application delivery challenges in today's hyperconnected world. They provide the foundation of knowing, giving you the edge in managing and improving network and application performance.

Table 1. Cisco Catalyst 6500 Series and Cisco 7600 Series NAM Features and Benefits

Feature	Benefit
Infrastructure integration	Deployed in the Cisco Catalyst 6500 Series switch and the Cisco 7600 Series Router, the Cisco NAM provides greater investment protection, lower total cost of ownership, and a reduced footprint to save premium rack space.
Application performance intelligence	View transaction-aware analytics of TCP-based applications to characterize the end-user experience and isolate application response time problems to the network, server, or the application itself.
Granular traffic analytics	View short- and long-term performance data on hosts, conversations, and applications that use critical network resources.
Comprehensive voice quality monitoring	Gather granular 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.
Historical analysis	Look back to the past with the Cisco NAM's Performance Database to understand what happened when an event that affects network performance occurred to accelerate problem resolution.
WAN optimized networks visibility	Obtain end-to-end proof points demonstrating how WAAS has improved application delivery (for example, decreased application latency).
Deep, insightful packet captures	Use capture features, such as trigger-based captures, filters, decodes, and Packet Capture Error Scan to increase troubleshooting agility.
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.
Pre- and postdeployment 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.

Feature	Benefit
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 embedded Traffic Analyzer 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.

Product Specifications

Table 2 lists the product specifications.

Table 2. Product Specifications

Feature	Description
NAM-1 hardware architecture	• High-performance dual processor architecture offering sub-Gigabit Ethernet monitoring performance, 2 GB RAM, and a 250 GB SATA hard disk drive • Two data-collection interfaces to backplane (one for SPAN/VLAN access control list (VACL) capture data sources, one for NetFlow, Encapsulated Remote SPAN (ERSPAN), and WAAS Flow Agent data sources) • Second-generation fabric-enabled platform with interface to both bus- and crossbar-based architectures
NAM-2 architecture	• Extra high-performance dual processor architecture with hardware-based packet acceleration offering up to Gigabit Ethernet monitoring performance, 2 GB RAM, and a 250 GB SATA hard disk drive • Three data-collection interfaces to backplane (two for SPAN/VACL capture data sources, which can be used independently or together, and one for NetFlow, ERSPAN, and WAAS Flow Agent data sources) • Second-generation fabric-enabled platform with interface to both bus- and crossbar-based architectures
Supported platforms	• NAM-1 and NAM-2 can be deployed in a slot in Cisco Catalyst 6500 and 6000 Series Switches and Cisco 7600 Series Routers • Supported with Cisco IOS® Software or Cisco Catalyst Operating System
Supported topologies and data sources	• LAN: SPAN, RSPAN, ERSPAN, VACL-based captures, NetFlow (versions 1, 5, 6, 7, 8, and 9) and WAAS Flow Agent • WAN: NetFlow (versions 1, 5, 6, 7, 8, and 9) from local and remote devices, VACL-based captures for FlexWAN/Optical Service Module (OSM) and Shared Port Adapter (SPA) interfaces, and WAAS Flow Agent
Supported interfaces	• HTTP/HTTPS with embedded web-based Cisco NAM Traffic Analyzer • Simple Network Management Protocol Version 1 (SNMPv1) and Version 2c, with standards-based applications
NAM Traffic Analyzer	• NAM Software 5.0 • Web-based: Requires Microsoft Internet Explorer 8.0+ or Firefox 3.6+; Supports both English and Japanese versions • Supports Secure Sockets Layer (SSL) security with up to 256-bit encryption • Role-based user authorization and authentication locally or using TACACS+ • Supports the following Cisco Catalyst 6500 Series and Cisco 7600 Series NAMs: ◦ NAM-1: WS-SVC-NAM-1 with MEM-C6KNAM-2GB= ◦ NAM-1: WS-SVC-NAM-1-250S ◦ NAM-2: WS-SVC-NAM-2-250S ◦ NAM-2: WS-SVC-NAM-2 with MEM-C6KNAM-2GB= ◦ NAM-2: WS-SVC-NAM-2 • Supported with Cisco IOS Software Release 12.2(18)SXF (minimum) or Cisco Catalyst Operating System 8.2(1) (minimum). Refer to the NAM 5.0 Release Notes for more details regarding supported system software
MIBS	The Cisco NAMs are standards compliant and support the following major MIB groups: • MIB-II (RFC 1213) - All groups except Exterior Gateway Protocol (EGP) and transmission • RMON (RFC 2819) - Alarm and Event groups only • RMON2 (RFC 2021) - trapDestTable only • Cisco Discovery Protocol • EntityMIB (RFC 2737)

Feature	Description
Protocols	Cisco NAM identifies hundreds of unique protocols and automatically detects unknown protocols. The NAM also allows customization of the protocol engine by defining protocols on a single port or on a range of ports. Protocols supported include (this list is not all-inclusive): • TCP and User Datagram Protocol (UDP) over IP including IPv6 • HTTP and HTTPS • VoIP including Skinny Client Control Protocol (SCCP), Real-Time Protocol/Real-Time Control Protocol (RTP/RTCP), Media Gateway Control Protocol (MGCP), and Session Initiation Protocol (SIP) • SigTran protocols • Mobile IP protocols including General Radio Packet Service (GPRS) Tunneling Protocol (GTP) • Storage area network protocols • Database protocols • Peer-to-peer protocols • Switch and router protocols • Cisco proprietary protocols • Unknown protocols by TCP/UDP ports, Remote Procedure Call (RPC) program numbers and so on
Physical dimensions	Dimensions (H x W x D): 1.2 x 14.4 x 16 inches (3.0 x 35.6 x 40.6 centimeters); occupies one slot in the chassis
Operating environment	• Operating temperature: 32 to 104 degrees F (0 to 40 degrees C) • Nonoperating and storage temperature: -40 to 158 degrees F (-40 to 70 degrees C) • Operating relative humidity: 10% to 90% (noncondensing) • Nonoperating relative humidity: 5% to 95% (noncondensing) • Operating and nonoperating altitude: Sea level to 10,000 feet (3050 meters)
Approval and compliance	Regulatory: • CE Marking (89/366/EEC and 73/23/EEC) Safety: • UL 1950 • CAN/CSA-C22.2 No. 950 • EN60950 • IEC 60950 • AS/NZS 60950 EMC: • 47CFR part 15 Class A (FCC regulations) • AS/NZS CISPR22 Class A • EN300 386 • EN55022 Class A • ICES003 Class A • VCCI Class A • EN50082-1 • EN61000-6-1 • EN55024 • EN61000-3-2 • EN61000-3-3 • CISPR22 Class A

Warranty Information

Find warranty information on Cisco.com at the Product Warranties page.

Ordering Information

To place an order, visit the Cisco Ordering Home Page. See Table 3 for part numbers. To download software, visit the Cisco Software Center.

For new Cisco NAM customers, please select NAM Software 5.0, part number SC-SVC-NAM-5.0, as the software option when ordering your Cisco NAM and it'll be delivered to you preloaded on your NAM hardware. For current Cisco NAM customers, NAM Software 5.0 can be downloaded from the Cisco.com Software Center at no charge using your Cisco SMARTnet® contract access privileges.

Table 3. Ordering Information

Product Information	Part Number
Cisco Catalyst 6500 Series and Cisco 7600 Series Network Analysis Module-1 (Spare)	WS-SVC-NAM-1-250S(=)
Cisco Catalyst 6500 Series and Cisco 7600 Series Network Analysis Module-2 (Spare)	WS-SVC-NAM-2-250S(=)
Cisco NAM Software 5.0	SC-SVC-NAM-5.0

Cisco Services

Cisco Services make networks, applications, and the people who use them work better together. Today, the network is a strategic platform in a world that demands better integration between people, information, and ideas. The network works better when services, together with products, create solutions aligned with business needs and opportunities.

The unique Cisco Lifecycle approach to services defines the requisite activities at each phase of the network lifecycle to help ensure service excellence. With a collaborative delivery methodology that joins the forces of Cisco, our skilled network of partners, and our customers, we achieve the best results.

For More Information

For more information about Cisco Catalyst 6500 Series and Cisco 7600 Series NAM, visit http://www.cisco.com/go/nam, contact your local account representative, or email the Cisco NAM product marketing group at nam-info@cisco.com.

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Printed in USA C78-642316-00 01/11