Cisco Prime Virtual Network Analysis Module

Virtualization and cloud create exciting business transformation opportunities, innovative service delivery models, and improved economics. At the same time, they introduce a new dimension of service delivery challenges that demand real-time applications and network visibility to boost operational agility.

Product Overview

Cisco Prime™ Virtual Network Analysis Module (vNAM) delivers operational agility by permitting deployment anywhere in the network to improve service levels. You can deploy the vNAM in the cloud to monitor hosted workloads, at remote sites to characterize the end-user experience, or wherever you want in the network to eliminate blind spots. It combines comprehensive application awareness, rich performance analytics, and deep network visibility, empowering network administrators with actionable information to effectively manage their networks.

Cisco Prime vNAM's versatility allows you to:

- Monitor workloads in the multitenant cloud
- Understand traffic behavior within overlay technologies such as VXLAN, LISP, and OTV
- Analyze network usage by application, host or virtual machine (VM), and conversation to identify bottlenecks that may affect performance and availability
- Troubleshoot performance problems by combining detailed traffic flow and packet analysis consistently across physical and virtual environments
- Validate infrastructure updates such as WAN optimization, Cisco TrustSec®, and quality-of-service (QoS) policy changes
- Take advantage of an integrated web-based interface to manage a site remotely, eliminating the need to backhaul the data to a centralized location, hence saving WAN bandwidth

Cisco Prime vNAM offers a comprehensive package with extensive data-collection capabilities, rich analytics, and user experience that help enable you to get actionable information quickly to accelerate operational decisions. The key features are described in Table 1.

Table 1. Cisco Prime vNAM Features and Benefits

Feature	Benefit
Deployment versatility	Meet the demand for operational agility in virtualized data center and cloud environments. You can deploy Cisco Prime vNAM in the tenant network containers, remote sites, or almost any place in the network to address specific operational needs with its rich analytics and purpose-built GUI.
Application performance analytics	Characterize the end-user experience for TCP-based applications and isolate application response-time problems to the network, server, or the application, to accelerate troubleshooting.
Voice quality analytics	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.
Traffic analysis	View short- and long-term network usage by applications, hosts, conversations, differentiated-services-code-point (DSCP) groups, and various supported encapsulations. Identify top consumers of network resources and isolate network bottlenecks, thereby allowing you to optimize network resource-allocation decisions.

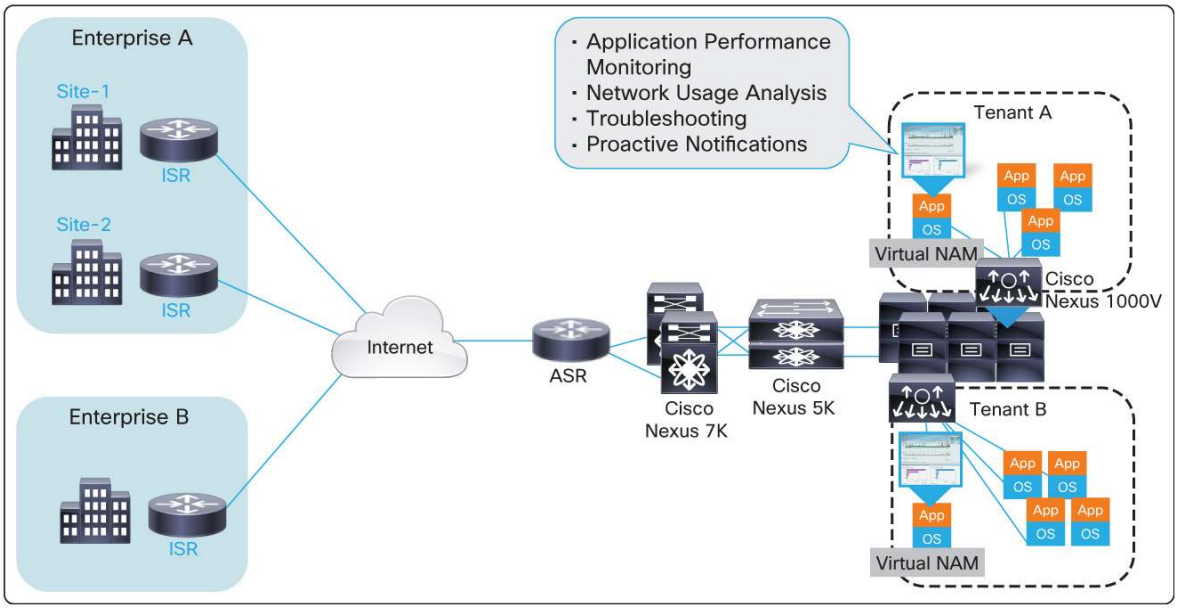
Feature	Benefit
Insight into encapsulation and overlay technologies	Design overlay networks for efficient delivery of applications. Supported protocols include OTV, LISP, VXLAN, CAPWAP, and others.
Cisco TrustSec policy validation	Validate the Cisco TrustSec policy using Security Group Tag (SGT) and evaluating the endpoints or hosts, applications, and conversations participating in one or more security groups.
WAN-optimized network visibility	Obtain end-to-end proof points demonstrating how Cisco Wide Area Application Services (WAAS) has improved application delivery (for example, decreased application transaction times or improved WAN bandwidth usage). Accelerate your return on investment (ROI) by assessing the best site and application candidates for optimization as part of the phased rollout plan.
Deep, insightful packet analysis	Solve complex performance problems with trigger-based captures, filters, decodes, and error scan features. Packet captures can be triggered based on performance thresholds, allowing you to focus on specific performance problems. In addition, use external storage to collect extensive packet captures for offline analysis.
Open interface	Preserve investment in existing management assets through integration based on a standards-based REST/XML) API.
Any time, anywhere access	Access the web interface from any desktop, eliminating the need to send personnel to remote sites or send large amounts of data over WAN links to the central site.

Example of Deployment Scenarios

Monitor Workload in Multitenant Cloud

Deployed in the tenant network container (Figure 1), Cisco Prime vNAM analyzes the TCP-based interactions for the hosted workload to monitor performance in terms of metrics such as transaction time, server response time, and application delay. Setting performance thresholds helps to proactively detect performance problems, troubleshoot application response time concerns, and minimize the risks of violating service-level objectives. Cisco Prime vNAM also provides insight into network usage by applications, top talkers, and conversations to help optimize use of cloud infrastructure, including overlay technologies such as VXLAN and LISP.

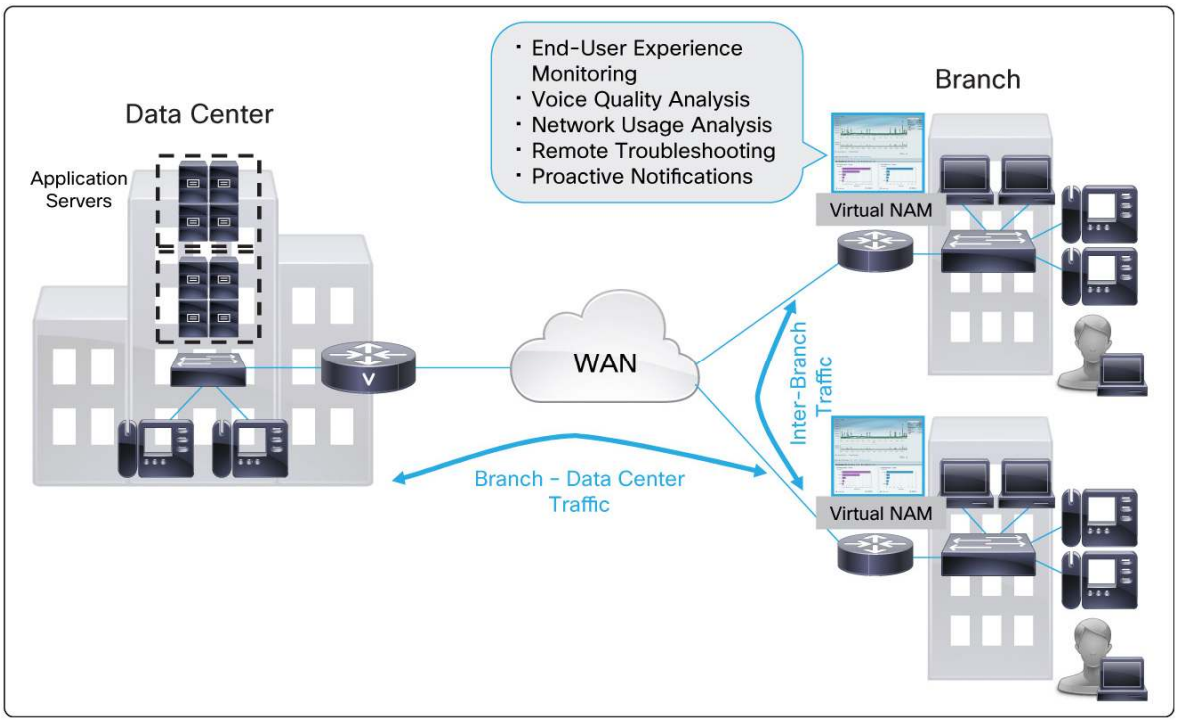
Figure 1. Track Application Performance and Resource Usage with Cisco Prime vNAM



Simplify Remote-Site Manageability

When deployed at a remote site, Cisco Prime vNAM can help network administrators characterize end-user experience (Figure 2), profile application traffic, and troubleshoot performance problems to cost-effectively deliver services across Cisco® Borderless Networks. An integrated web-based interface allows administrators to access vNAM remotely at any time and from anywhere to get a glimpse into the health of the network and applications. It eliminates the need to bring the data to a centralized location for analysis. The vNAM provides the ability to monitor all traffic entering and leaving the remote site, understanding what applications are consuming the most bandwidth, proactively identifying when application performance is being affected, assessing whether the control and optimization techniques are effectively implemented, and contextually troubleshooting the performance problems.

Figure 2. Manage Remote Sites with Cisco Prime vNAM



Licensing

Cisco Prime vNAM licensing is tied to the traffic monitoring throughput. The vNAM licenses (Table 2) are available for monitoring up to 1 Gbps traffic. The licensing is based on Cisco Software Licensing, for which additional information is available at http://www.cisco.com/go/clm. The Cisco Prime vNAM includes a 60-day evaluation license*. The software can be downloaded from Cisco Promotional Software Store.

* The evaluation software is restricted to 100Mbps traffic monitoring throughput.

Table 2. Cisco Prime vNAM License Information

vNAM License Part Number	Description	Supported Virtual Environment	Traffic Monitoring Performance
R-NAM-VX10-6.0-K9=	Cisco Prime Virtual NAM (NAM-VX10) Software Version 6.0	Red Hat Enterprise Linux KVM 0.12 or later, VMware vSphere 5.1 (ESXi 5.1) or later	Up to 150 Mbps

R-NAM-VX20-6.0-K9=	Cisco Prime Virtual NAM (NAM-VX20) Software Version 6.0	VMware vSphere 5.1 (ESXi 5.1) or later	Up to 1 Gbps

Product Specifications

Table 3 provides the specifications for the Cisco Prime vNAM.

Table 3. Product Specifications

Feature	Description
System requirements (both vNAM licenses)	• Two 64-bit CPUs • Two virtual Ethernet ports • Network interface card (NIC) driver type: VMXNET3 (for ESXi) and virtio (for KVM) • 4 GB RAM • 100 GB disk space
Supported topologies and data sources	• LAN: Switched Port Analyzer (SPAN), Remote SPAN (RSPAN), encapsulated remote SPAN (ERSPAN), Promiscuous mode (with vSwitch), VLAN access control list (VACL)–based captures, NetFlow (Versions 5 and 9), Cisco WAAS, and Cisco Performance Agent • WAN: NetFlow (Versions 5 and 9) from local and remote devices, VACL-based captures, and Cisco WAAS Flow Agent
Supported communication protocols	• HTTP/Secure HTTP (HTTPS) with embedded web-based user interface • Simple Network Management Protocol Version 1 (SNMPv1) and Version 2c, with standards-based applications
Cisco Prime NAM Software	• Cisco Prime NAM Software Version 6.0 • Requires Microsoft Internet Explorer 9.0+ or Firefox ESR 10.0+ • Support for Secure Sockets Layer (SSL) security with up to 256-bit encryption • Role-based user authorization and authentication locally or using TACACS+
MIBs	The Cisco NAMs are standards compliant, and they support the following major MIB groups: • MIB-II (RFC 1213): All groups except Exterior Gateway Protocol (EGP) and transmission • Remote Monitoring (RMON; RFC 2819): Alarm and Event groups only • RMON2 (RFC 2021): trapDestTable only • Cisco Discovery Protocol • EntityMIB (RFC 2737)
Applications and protocols	Cisco Prime vNAM identifies hundreds of unique protocols (Layers 2–4) and automatically detects unknown protocols. It also supports URL-based application definition. Supported protocols include, but are not limited to: • TCP and User Datagram Protocol (UDP) over IP including IPv6 • HTTP and HTTPS • Voice over IP (VoIP) including Skinny Client Control Protocol (SCCP), Real-Time Transport Protocol/Real-Time Control Protocol (RTP/RTCP), Media Gateway Control Protocol (MGCP), and Session Initiation Protocol (SIP) • SIGTRAN protocols • Mobile IP protocols including General Packet Radio 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 and remote-procedure call (RPC) program numbers It allows customization of the protocol engine by defining protocols based on a single port or a range of ports. A custom application can also be defined with IP address in addition to port and port range.

Warranty Information

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

Ordering Information

Cisco Prime vNAM can be purchased through regular Cisco sales and distribution channels worldwide. The order can be placed using the Cisco Ordering Homepage. The software can be downloaded from the Cisco Promotional Software Store. Table 2 provides ordering information for Cisco Prime vNAM licenses.

Cisco Services

Application Support

Network-centered software applications are the core of your most critical business operations, helping to enable continuous communication and collaboration with colleagues, customers, and business partners. Cisco and our authorized partners offer software application support services that can help customers maximize the availability, security, and performance of important business applications. Adding application support to traditional service offerings such as Cisco SMARTnet™ creates a more complete technical support solution. It provides new opportunities for increased revenue, higher profit margins, and more frequent customer interactions.

For information about Cisco Services, go to http://www.cisco.com/go/services. Table 4 shows the technical support service recommended for vNAM.

Table 4. Cisco Technical Services

Cisco Software Application Support plus Upgrades (SASU)
Cisco SASU delivers timely, uninterrupted access to Cisco's latest software updates, including major upgrade releases that might include significant architectural changes and new features and functionality. The service also provides access to a wide range of online tools and communities that help you solve issues quickly, to help you maximize business continuity, improve your competitiveness, and make the most of limited resources through increased productivity. The service covers Cisco software application products in major technologies such as network management, security, wireless management, and data center software applications and provides: • Software updates and major upgrades • Global 24-hour access to Cisco Technical Assistance Center (TAC) • Access to online knowledge base, communities, and tools • Collaborative learning providing additional knowledge and training opportunities

For More Information

For more information about Cisco Prime Virtual NAM, visit http://www.cisco.com/go/vxnam, contact your local Cisco account representative, or send an email message to nam-info@cisco.com. For more information about the Cisco Prime NAM product family, visit http://www.cisco.com/go/nam.

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