Cisco Prime Network Analysis Module Software 5

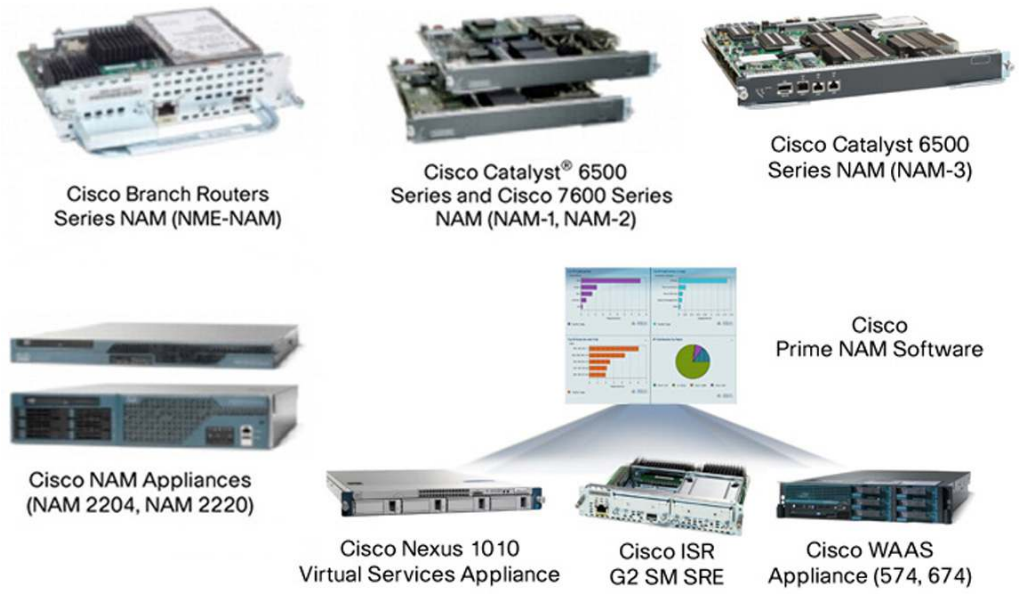
Network administrators need multifaceted visibility into the network and application to help ensure consistent and cost-effective delivery of service to end users. Knowing how traffic over the network is being used and how it is performing is essential for managing and improving the delivery of your 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.

Cisco Prime™ Network Analysis Module (NAM) Software offers integrated network and application visibility (Figure 1) that empowers network administrators to optimize network resources, troubleshoot performance issues, and help ensure a consistent end-user experience. The software delivers detailed 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.

Figure 1. At-a-glance view of network and application performance

The Cisco Prime portfolio of enterprise and service provider management offerings supports integrated lifecycle management of Cisco architectures and technologies based on a business-centered framework. Built on an intuitive workflow-oriented user experience, Cisco Prime products dramatically increase IT productivity, network scalability, and control of the network infrastructure and endpoints.

Figure 2. Cisco NAM Product Family



Product Family Overview

Cisco Prime NAM Software is supported across the NAM product family (Figure 2), which includes integrated services modules, virtual service blades, and standalone appliances offering deployment flexibility and consistent performance visibility from the branch to the data center. The products within the NAM product family are listed in Table 1.

Table 1. Cisco NAM Product Family

Cisco NAM Products	Cisco Prime NAM Software Version	Description
Cisco Prime Network Analysis Module (NAM) for ISR G2 SRE	5.1(2)	This software integrated with Cisco ISR G2 SM-SRE-700 series and SM-SRE-900 series platforms offers multiservice visibility, traffic analysis, and performance assurance in Cisco Borderless Networks.
Cisco Branch Routers Series NAM (NME-NAM)	5.1(2)	As an incumbent solution for monitoring remote branch locations, this service module integrates with both Cisco ISR G2 and first-generation Cisco ISRs to provide performance monitoring and troubleshooting capabilities.
Cisco Catalyst® 6500 Series NAM (NAM-3)[1]	5.1(2)	This next-generation integrated service module helps enable high performance traffic monitoring, extensive packet captures, and accurate performance analytics at 10 Gigabit speeds. Advanced hardware filters accelerate troubleshooting to dramatically decrease your mean time to repair/restore. It helps simplify operational manageability of network resources in the enterprise campus, data center, and WAN.
Cisco Catalyst® 6500 Series and Cisco 7600 Series NAM (NAM-1, NAM-2)	5.1(2)	These traditional service modules offer integrated visibility into network and applications to help quickly resolve performance issues and streamline application delivery across the network.
Cisco NAM Appliances (NAM 2204, NAM 2220)	5.1(2)	An extension of the Cisco NAM portfolio, these appliances maximizes deployment flexibility across the network.
Cisco Prime Network Analysis Module for Cisco Nexus® 1010	5.1(2)	Integrated with the Cisco Nexus 1010 appliance, this virtual service blade offers operational insight into the virtual machine (VM) network with Cisco Nexus 1000V switch deployments.
Cisco Prime Network Analysis Module for WAAS Virtual Blade (VB)	5.1(2)	Using the existing Cisco Wide Area Application Services (WAAS) footprint, Cisco Prime NAM for WAAS VB offers an integrated solution for application performance visibility in WAN-optimized deployments. Cisco Prime NAM is available for the WAAS 574 and 674 Appliances when deployed in the data center.

[1] Expected availability around mid-CY 2011.

Cisco Prime NAM Software Features

Cisco Prime NAM Software helps improve operational agility - it helps enable you to quickly access critical network information to accelerate application performance troubleshooting and advance optimization decisions. The software release 5.1 takes big strides in delivering the most comprehensive application performance assurance solution in conjunction with Cisco WAAS for Cisco Borderless Network deployment.

The key features of the software include:

- **Interactive reports:** Offers prepackaged dashboards (Figure 3) with embedded workflows and capabilities such as advanced filters, contextual navigation, and one-click packet captures to simplify monitoring and accelerate troubleshooting.

Figure 3. Host Traffic Analysis Dashboard

- **Site-based monitoring:** 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. The feature facilitates tracking site-specific service-level objectives, resolving performance issues, or enforcing optimization policies.
- **Application performance intelligence:** Analyzes TCP-based application packets as they travel from the client through the network to the data center and out again, providing transaction-aware analytics to help characterize the end-user experience and isolate application response time problems to the network, server, or the application itself.
- **Voice quality analysis:** 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.
- **Cisco Performance Agent (PA) reporting:** Provides visibility into application response time and traffic statistics at the remote branch utilizing the Cisco PA supported on ISR 880, ISR 890, and ISR G2 platforms with Cisco IOS® Software Release 15.1(4)M. Deployed in conjunction with WAAS Express, this features allows an end-to-end view into the WAN-optimized network, delivering a cost-effective and scalable solution.

- **Flow- and packet-based traffic monitoring:** Identifies what applications are running over the network, how much network resources are consumed, and who is using these applications and resources. Provides real-time and historical reports offering traffic statistics related to applications, hosts, conversations, differentiated services code point (DSCP), and VLANs.
- **Cisco WAAS Central Manager (WCM) Integration:** Easy access to performance reports from WCM facilitates quick assessment and validation of WAN-optimization benefits. Integrated offering delivers the most comprehensive solution for application performance monitoring and troubleshooting in a WAN optimization deployment. Unified management experience improves user productivity and enhances operational manageability for Cisco Borderless Networks Application Velocity solution.
- **NBAR-based application recognition:** Cisco Prime NAM Software now supports standardized application identifiers generated by Network-Based Application Recognition (NBAR) to help discover and identify applications, helping bring consistency to application recognition across the network. NAM accepts these identifiers as part of NetFlow Version 9 exports from technologies and network platforms such as Cisco Performance Agent and Cisco Catalyst® 6500 Series Switches.
- **Historical analysis with embedded Performance Database:** Stores computed data so you can flash back to the past to learn what happened on your network when a particular event occurred. The data is available to analyze unanticipated performance issues and assess optimization needs.
- **Web-based captures for deep, insightful data analysis:** Captures the packets to help resolve acute problems. Captures can be performed using a web browser from any desktop. Extensive capture features, including trigger-based captures, decodes, filters, and Packet Capture Error Scan, help to quickly pinpoint and resolve problem areas.
- **Standards-based API:** Facilitates integration with customer in-house managed applications or third-party reporting vendor of choice. Eases configuration and export of computed NAM data, building up additional value and building out existing investments. Cisco Prime NAM Software 5 introduced the Representational State Transfer (REST)/XML-based API for configuration and NetFlow Version 9 for data export.
- **Anytime, anywhere access:** Enables web-based access 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.

Benefits Summary

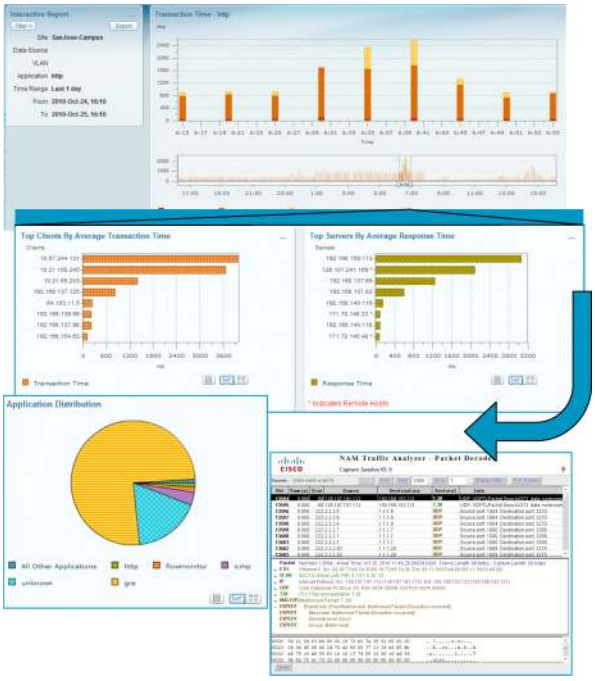
Cisco Prime NAM Software establishes a new landmark in terms of the ability to get to the appropriate information quickly, whether it is data that helps you respond to a help desk call on slow application performance, understand application performance before and after deploying Cisco WAAS, confirm that 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.

Enhance operational efficiency with faster problem detection and resolution

Cisco Prime NAM Software accelerates problem isolation and root-cause analysis, reducing the time it takes to resolve a performance issue from weeks and days to hours and minutes. The new graphical user interface (GUI) includes prepackaged dashboards with intuitive features, such as interactive reports, contextual navigation, and one-click packet captures, that expedite the problem resolution process. The embedded workflows allow you to isolate application problems to the network, the application, or the server. NAM identifies the client endpoints being affected by the performance degradation and the servers that could be the cause of response time delay (Figure 4). The network problems can be further investigated using comprehensive traffic analysis views with detailed information on VLANs, Differentiated Services (DiffServ), hosts, conversation pairs, and application usage. Pinpointing the traffic of interest, you can use packet-based data to perform a “deeper dive” to quickly spot and address issues that affect performance. Operational productivity can be further improved with the use of the Packet Capture Error Scan feature

that highlights observed packet-level anomalies, eliminating the cumbersome task of manually analyzing the entire packet capture.

Figure 4. Application Performance Troubleshooting Workflow



The built-in Performance Database introduced with Cisco Prime NAM Software 5 lets you flash back to the past to understand what happened when a particular event that affected performance occurred. The backtracking lets you effectively confront any unanticipated performance issues and take corrective action to minimize their reoccurrence, thus improving the overall service levels for end users.

Simplify the delivery of applications and services

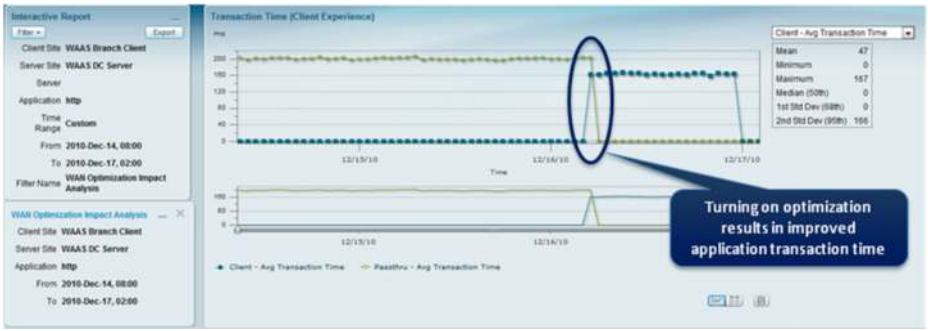
Managing application performance entails full visibility across all stages of application delivery, such as profiling, baselining, control, optimizaton, and troubleshooting. Cisco Prime NAM Software implements application performance analytics that can not only characterize the end-user experience but also provide performance visibility across the entire application delivery cycle. It offers you a comprehensive set of transaction-based statistics such as response time, transaction time, data transfer time, and retransmission time. It allows you to monitor and analyze application performance trends for TCP-based business applications and preempt performance issues by enabling threshold-based proactive alerts. The performance data can be rolled up and segregated on the basis of sites that you can create to mirror your network topology. Site-based monitoring can not only be used to track service-level objectives tied to specific sites but can also be used to help to quickly isolate and resolve performance issues, minimizing any impact to the end users at the site.

Gain the most from WAN optimization initiatives

Cisco Prime NAM Software offers end-to-end application performance visibility in the WAAS environment. The visibility empowers you to effectively use Cisco WAAS to improve application performance. It measures and reports on application response time, transaction time, bandwidth usage for optimized and pass-through traffic, and LAN/WAN data throughput among other performance metrics across all WAAS segments. The software will identify candidate sites and applications that will benefit the most with WAN optimization while quantifying and validating the impact of WAAS on application and network performance. The real-time visibility can also be used for ongoing

optimization improvements and troubleshooting performance degradation issues. Figure 5 illustrates the impact of Cisco WAAS on the application transaction time.

Figure 5. Impact of Cisco WAAS on Application Performance



Improve voice service levels with superior voice quality analytics

Convergence of voice and data over a shared network infrastructure offers a new set of challenges in managing voice quality. Voice is a real-time application and is highly sensitive to network parameters such as packet loss and jitter. Cisco Prime NAM Software can analyze voice streams in real time to provide critical performance information, including MOS values, to monitor voice quality. The software can also quickly identify the sites, endpoints, and RTP streams with the lowest observed voice quality, providing actionable information to further investigate the performance issues. Cisco Prime NAM Software offers a number of capabilities that can be utilized for troubleshooting voice quality degradations and improving the end-user experience. For example, NAM provides visibility into QoS/DiffServ reports to help validate QoS planning assumptions and quickly isolate voice performance degradations possibly due to the impact of other non-business-critical applications.

Extend operational visibility into the virtual switching layer

As mission-critical workloads migrate to virtual servers, visibility into the virtual switching infrastructure becomes critical to manage end-to-end service delivery. Cisco Prime NAM Software provides operational insight into Cisco Nexus 1000V deployments to simplify manageability of the virtual switching infrastructure. It helps enable you to troubleshoot performance issues with extended visibility into VM-to-VM traffic, virtual interface statistics, and application response times. Analyzing the network usage behavior also helps to improve effectiveness of the network to support events such as dynamic resource allocations and virtual machine migrations.

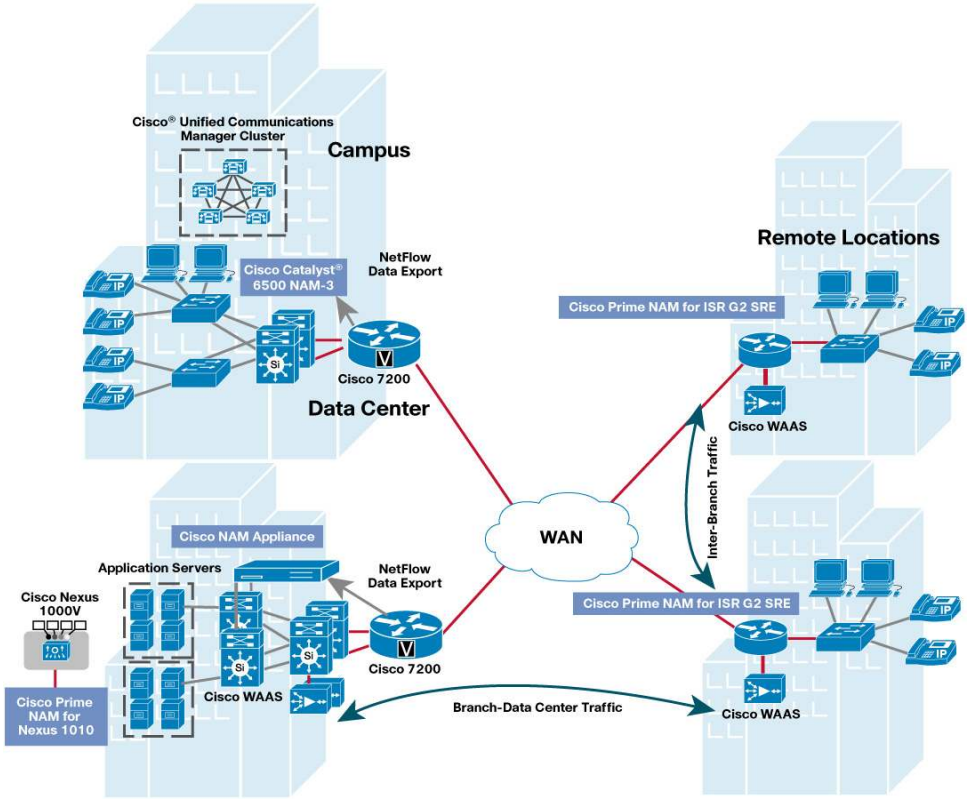
Reduce risk and management complexity with comprehensive network visibility

Cisco Prime NAM helps you in mitigating risk by providing deeper insight into the network when undertaking IT initiatives such as new application rollouts, data center consolidation, and WAN optimization. It helps you to ensure consistent performance levels, optimal use of network resources, and a minimal impact on business during such undertakings. You can also anticipate any infrastructural changes by analyzing resource usage and traffic trends. As a result, Cisco NAM helps enhance IT agility in meeting changing business needs.

Deployment Flexibility with Cisco NAM Product Family

The Cisco NAM product portfolio provides a choice of form factors, offering flexibility of deployment across the network to help enable the comprehensive visibility required to deliver consistent end-to-end application performance levels. In an example scenario illustrated in Figure 6, Cisco Catalyst 6500 Series NAM-3 or Cisco NAM Appliance can be deployed in the data center to monitor performance of TCP-based applications being delivered to remote sites.

Figure 6. Integrated Network and Application Performance Visibility across the network



Cisco Prime NAM for ISR G2 SRE can be deployed in the empowered branch to get full visibility into the traffic entering or leaving the branch, hence offering comprehensive performance views for applications being delivered in the empowered branch.

Cisco Prime NAM for Nexus 1010 is deployed in the data center for visibility into the virtual machine network.

The products within the family may have some differences in terms of feature set. Please consult individual product data sheets for detailed feature lists.

Ordering Information

The ordering information related to the Cisco NAM product family can be obtained from the corresponding datasheets:

- Cisco Prime Network Analysis Module (NAM) for ISR G2 SRE
- Cisco Branch Routers Series NAM (NME-NAM)
- Cisco Catalyst Cat6500 Series NAM (NAM-3)
- Cisco Catalyst 6500 Series and Cisco 7600 Series NAM (NAM-1/NAM-2)
- Cisco NAM 2200 Series Appliances
- Cisco Prime Network Analysis Module (NAM) for Nexus 1010
- Cisco Prime Network Analysis Module (NAM) for WAAS VB

To place an order, visit the Cisco Ordering Homepage. To download software, visit the Cisco Software Center.

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Table 2 shows the technical services providing hardware, OS, and application support for the Cisco Network Analysis Module. Availability of technical services differ based on specific product within NAM product family. Please consult individual product datasheets to learn about supported technical services.

Table 2. Cisco Technical Services for Cisco Network Analysis Module

Technical Services[3]
Cisco SMARTnet Service • Around-the-clock, global access to the Cisco Technical Assistance Center (TAC) • Unrestricted access to the extensive Cisco.com resources, communities, and tools • Next-business-day, 8x5x4, 24x7x4, and 24x7x2 advance hardware replacement[1] and onsite parts replacement and installation available • Ongoing operating system software updates within the licensed feature set[2]
Cisco Software Application Support (SAS) • Application software maintenance and minor updates • Around-the-clock, global access to Cisco TAC engineers with specialized application software expertise • Unrestricted access to the extensive Cisco.com resources, communities, and tools
Cisco Software Application Support plus Upgrades (SASU) • Access to application software maintenance and minor updates, and major software application upgrades • Around-the-clock, global access to Cisco TAC engineers with specialized application software expertise • Unrestricted access to the extensive Cisco.com resources, communities, and tools

Footnotes:
1. Advance hardware replacement is available in various service-level combinations. For example, 8x5xNBD indicates that shipment will be initiated during the standard 8-hour business day, 5 days a week (the generally accepted business days within the relevant region), with next business day (NBD) delivery. Where NBD is not available, same day ship is provided. Restrictions apply; please review the appropriate service descriptions for details.
2. Cisco operating system updates include the following: maintenance releases, minor updates, and major updates within the licensed feature set.
3. SMARTnet is offered for all hardware NAM platforms, SAS is offered for Cisco Prime NAM for Nexus 1010 and Cisco Prime NAM for WAAS VB, while SASU is offered for Cisco Prime NAM for ISR G2 SRE only.

For More Information

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

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