Cisco Performance Visibility Manager 1.0.2

Cisco® Performance Visibility Manager (PVM) is a proactive network and application performance monitoring, reporting, and troubleshooting system for improving network availability. Cisco PVM increases early visibility into network and application behavior issues to identify them before they become critical.

Product Overview

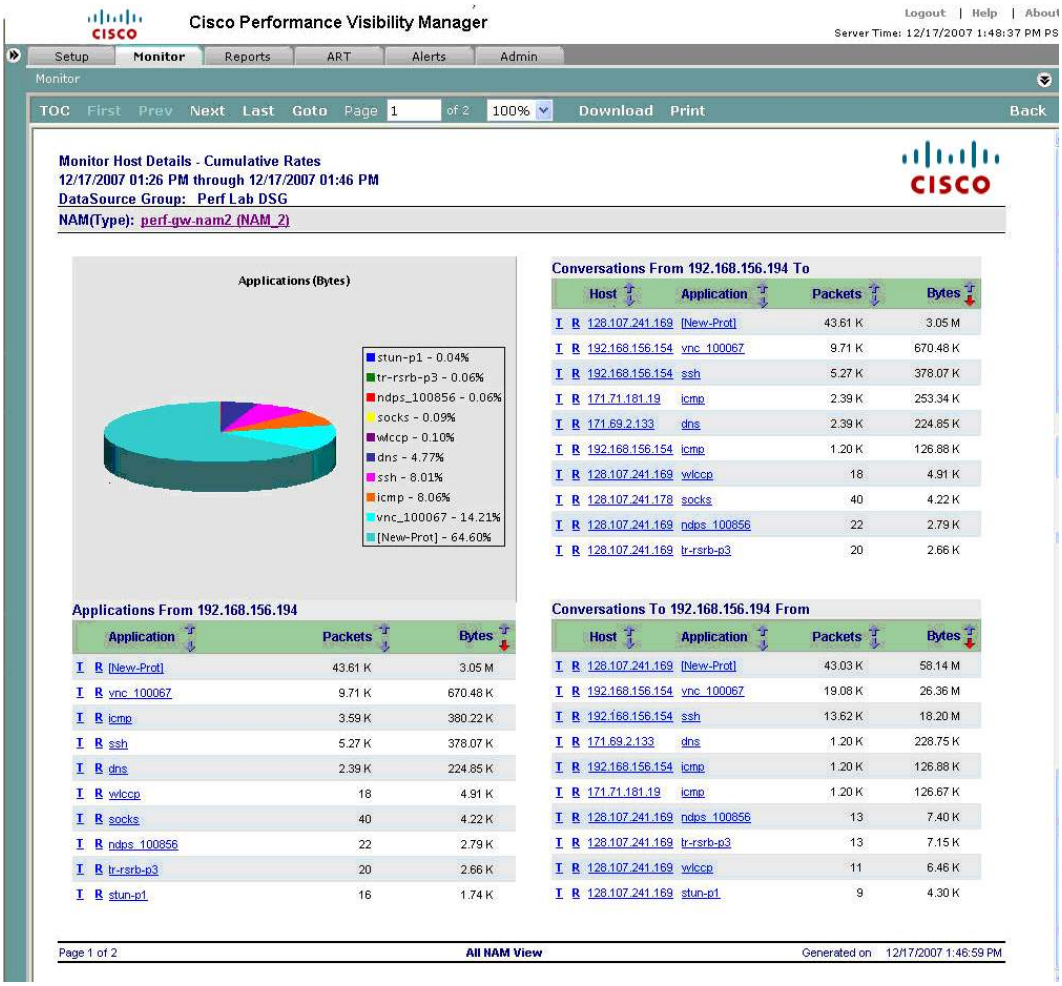
Cisco PVM gives visibility to the performance of your network and application resources. Cisco PVM can provide an intuitive and integrated view of network traffic, protocol types, and application and host bandwidth usage. Cisco PVM provides critical performance information through a GUI for troubleshooting, traffic analysis, monitoring, and capacity analysis. Cisco PVM can automatically establish a baseline network performance level and then proactively monitor for various deviations to that baseline so that network performance problems can be identified and resolved before end users are severely affected.

Traffic Analysis

Cisco PVM aggregates and correlates data from multiple Cisco NAMs to analyze traffic on your network. It provides details about the protocols, hosts, conversations, differentiated services, VLANs, switch[1] ports, and router[2] interfaces. Cisco PVM performs top-N analysis to identify top talkers and top protocols in the network. It supports several data visualization modes including tabular text and graphics so that you can easily see what is going on in your network (Figure 1). Cisco PVM stores the collected and analyzed information for historical reporting and further analysis on demand.

[1] Hosting the managed Cisco NAM device.
[2] Hosting the managed Cisco NAM device.

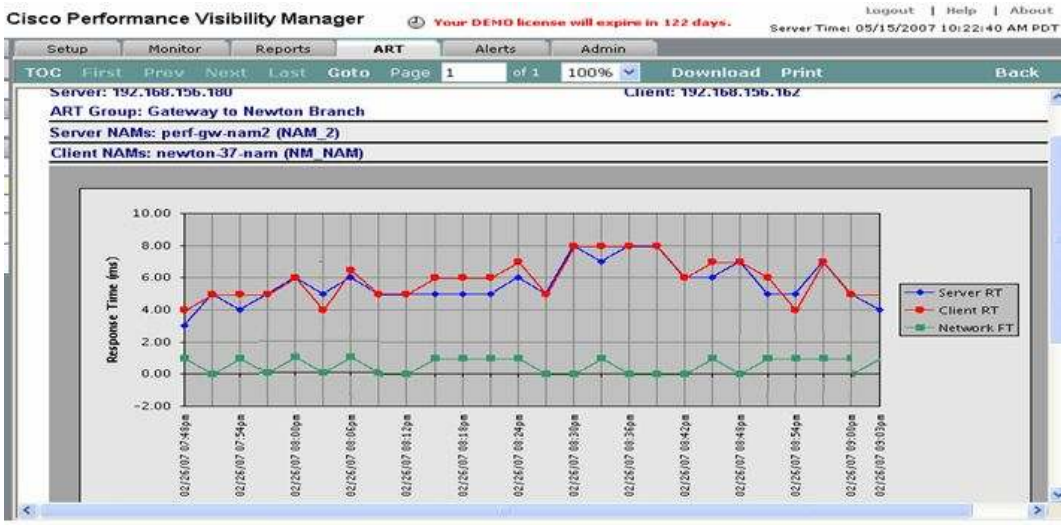
Figure 1. Traffic Analysis Reports



Application Response Time Monitoring

Cisco PVM collects application response time (ART) data from multiple Cisco NAMs and correlates the data to determine the cause of poor application performance. Cisco PVM breaks down each response time measurement into average network delay and average server delay metrics and displays the data in a set of intuitive tables and graphs (Figure 2). This allows you to quickly identify whether the problem is caused by the network or by the application. Cisco PVM stores the collected information for historical reporting and further analysis on demand.

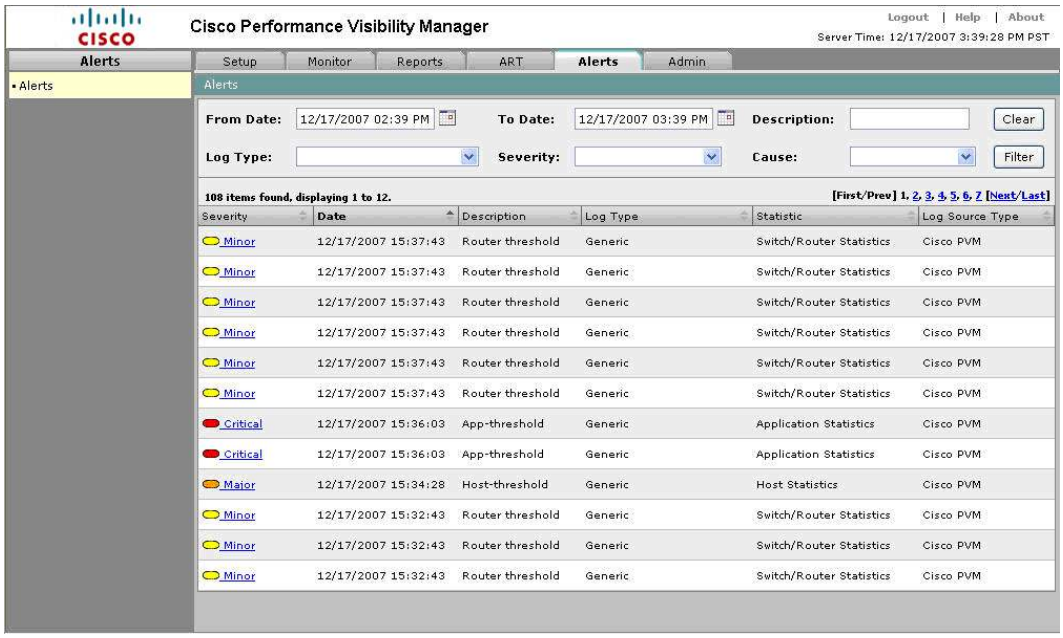
Figure 2. Application Response Time Data



Proactive Monitoring

Cisco PVM performs automatic baselining for each statistic and metric combination based on current and previous performance data collected. The designated amount of deviation from the baseline results in alerts generated as threshold-crossing events so that problems can be detected before users are affected (Figure 3).

Figure 3. Threshold-Crossing Alert



Troubleshooting

Cisco PVM can retain performance data for one year by default; the retention period is user configurable. The real-time and near-term historical information allows you to distinguish what is happening now as opposed to what happened in the recent past. The GUI provides comprehensive network visibility to help you quickly pinpoint trouble spots and obtain details for further troubleshooting.

Reporting

Cisco PVM provides a set of preconfigured reports on traffic analysis, bandwidth utilization, and ART. Reports, accessible through the Web-based interface, can either be scheduled or requested on demand. The report types include real-time, historical, and trending views. The historical reports include daily, weekly, monthly, annual, and custom interval reports based on start and end dates. Table 1 outlines the various suites of report types available from Cisco PVM.

Table 1. Report Suites

Suite Name	Description
Applications	The Applications reports provide detailed and historical information about the applications on your network, how these applications utilize the bandwidth, which hosts access the applications, and which pair of hosts generated the most traffic.
Hosts	The Hosts reports identify the hosts that are using the bandwidth, the top hosts in your network, and the protocol usage.
Conversations	The Conversations reports provide traffic statistics for each pair of hosts, application protocol usage, all conversation partners with their corresponding protocols, number of packets, and byte counts. The reports can be used to determine the most “talkative” host IP pairs for traffic from a specific protocol and location.
DSCP	The Differentiated Services Code Point (DSCP) reports monitor traffic by DSCP allocations defined by quality of service (QoS) policies. These reports can be used to refine the QoS policies in your network and identify violations of QoS policies.
VLANs	The VLANs reports allow you to analyze the amount of traffic and show which applications and hosts are consuming network bandwidth on your VLANs.
Switch/Router Link Utilization	The Switch/Router Link Utilization reports include port names, bytes, packets, broadcast packets, multicast packets, and errors collected for switches and routers hosting the managed Cisco NAM devices.
Application Response Time	The Application Response Time reports provide response time statistics for your critical applications.

Benefits

Table 2 summarizes the features and benefits that Cisco PVM offers.

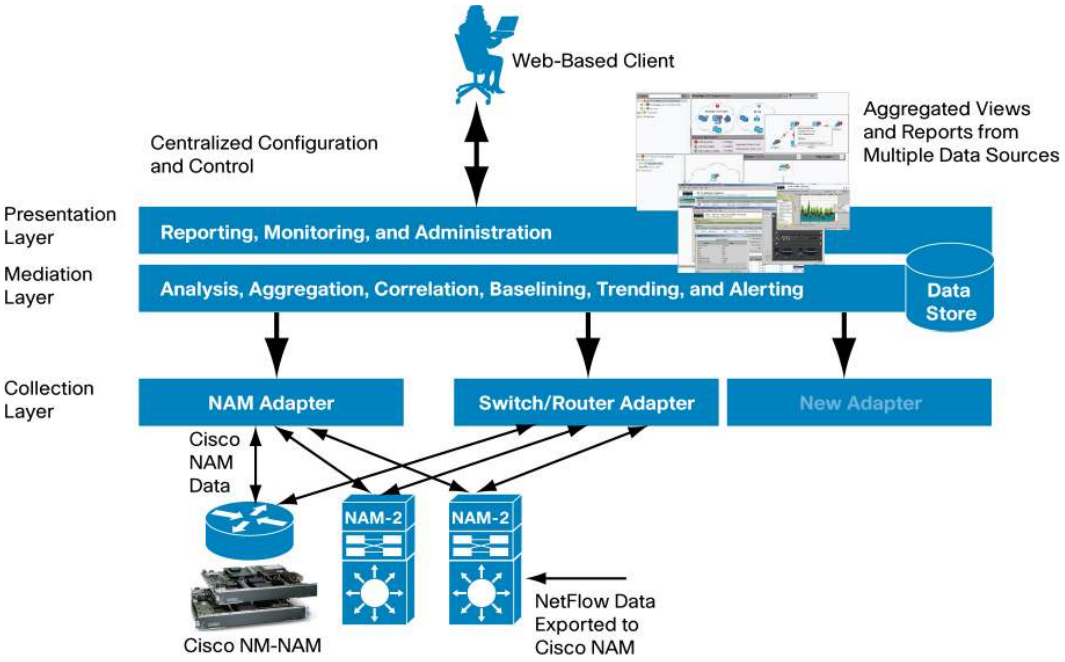
Table 2. Benefits of Cisco PVM

Feature	Benefits
Data collection and aggregation from multiple Cisco NAMs	The centralized and integrated network view provides a high-level operational perspective so that trouble spots can be quickly identified, thereby accelerating the resolution process.
Traffic and bandwidth analysis including top-N analysis	Cisco PVM identifies the types of traffic running in the network. It identifies the top talkers, the top protocols, the most utilized links, and so on. You can differentiate your business-critical applications from your recreational traffic and understand how your business actually uses the network infrastructure. This helps you make effective decisions to optimize the usage of your network to meet your business needs and prevent misuse of critical resources.
ART collection and correlation	Cisco PVM can identify whether the response-time problem is caused by the network or by the application server. The ability to quickly identify problem sources can minimize the impact to your business.
Real-time traffic monitoring and alerts based on threshold settings and baselining	Cisco PVM automatically profiles and monitors your network and application behavior. This proactive approach is essential in rectifying potential issues before they affect your business.
Real-time, historical, and trending reports	The comprehensive reports help you with effective capacity planning, trend analysis, and network-status monitoring.
Management of multiple Cisco NAMs including the capability to invoke the NAM Web-based GUI	The integration with Cisco NAMs provides the capability to easily navigate directly to NAMs for faster and further troubleshooting and analysis.
Integration with CiscoWorks Device Credential Repository	This integration minimizes the ongoing administrative task of managing your network equipment.

Product Architecture

The Cisco PVM architecture (Figure 4) consists of a scalable and modular real-time data collection, correlation, and aggregation application suite and infrastructure that provide centralized and integrated performance views of networks and applications.

Figure 4. Cisco PVM Architecture



The collection layer supports a number of collection adapters. The adapters are designated to support the managed Cisco NAMs and associated network devices. The Cisco PVM collection capability is customizable and configurable to give you a high degree of control and scalability.

The mediation layer consists of a number of applications. The analysis, aggregation, and correlation engine can process near real-time data with management intelligence for proactive monitoring, baselining, trend analysis, and QoS assurance.

The presentation layer presents the aggregated and integrated data for comprehensive visibility and rich and flexible reporting and viewing capabilities. The Web-based client application uses Java 2 Platform, Enterprise Edition (J2EE) technology for management operation, management information navigation, and views including reporting and alerting.

Product Specifications

Table 3 lists product specifications for Cisco Performance Visibility Manager 1.0.2.

Table 3. Product Specifications

Component	Specification
Product compatibility	Cisco NAM for Cisco Catalyst® 6500 Series and Cisco 7600 Series (both NAM-1 and NAM-2 models) Cisco NAM for branch routers (NM-NAM). Cisco PVM 1.0.2.2 patch can be applied to extend support to Cisco NME-NAM hardware. The patch is compatible with both Cisco PVM 1.0.1 and Cisco PVM 1.0.2 deployments.
Software compatibility	Cisco NAM Traffic Analyzer and Cisco NAM Software 3.4 and 3.5. Cisco PVM 1.0.2.2 patch can be applied to extend support to Cisco NAM version 3.6 (legacy* features only).The patch is compatible with both Cisco PVM 1.0.1 and Cisco PVM 1.0.2 deployments. CiscoWorks Common Services 3.0 Device Credential Repository
Protocols supported between Cisco PVM and NAM	HTTP and HTTPS Simple Network Management Protocol Version 1 (SNMPv1) and SNMPv2
Performance and scalability	The scalability in terms of the number of managed Cisco NAM devices is determined based on volume of data collected from across all NAM devices.
Reliability and availability	Collection redundancy and load balancing High availability configuration available for applications, data storage, and network interfaces
MIBs	Collects management information from Cisco NAMs, switches, and routers with the following major MIB groups: • MIB-II (RFC 1213) • RMON (RFC 2819) • RMON2 (RFC 2021) • SMON (RFC 2613) • DSMON (RFC 3287) • Cisco Application Response Time MIB

* Legacy features include any features already supported for NAM 3.5 software. New features introduced in NAM 3.6 software (including new ART metrics) are not supported by PVM 1.0.2.2.

Ordering Information

Cisco Performance Visibility Manager 1.0.2 is available for purchase through regular Cisco sales and distribution channels worldwide. To place an order, visit the Cisco Ordering Homepage.

To download the Cisco PVM patches, visit http://tools.cisco.com/support/downloads/go/Redirect.x?mdfid=279844017.

Service and Support

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For More Information

For more information about Cisco Performance Visibility Manager, visit http://www.cisco.com/go/pvm, contact your local account representative, or send e-mail to info-pvm@cisco.com.

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