Network Performance Management solutions from CA Technologies compliment your services to deliver easily implemented and maintained solutions that allow you to open a new revenue stream from your existing clientele and give you a competitive edge.

CA Technologies provides flexible solutions that are scalable and customizable to various environments. This document provides information about the different deployment options and the various components utilized to deliver Application Infrastructure Monitoring and Traffic Analysis reporting to Managed Services customers. While some components can be used on their own, most benefits are derived when used together to deliver a complete picture of the services delivered to customers.

Network Performance Management

Managing application performance and delivery across the modern service provider networks is a complex undertaking. CA Technologies provides solutions that are designed to capture and analyze data from applications, devices, and the network itself to provide an accurate and comprehensive understanding of how well an organization is supporting application delivery.

This document provides information for the different components available to deliver Application Infrastructure Monitoring and Traffic Analysis solutions to Managed Services customers. These components can be used independently, but greater benefits are derived when used together to deliver a complete picture of the services delivered.

This document describes different parts of the solution and the main functionality of the various components that comprise each.

All components of the proposed solution provide multi-tenancy capability and can provide reporting capabilities to different end users and different audiences (managers, engineers, operations) within each end user organization by providing the capability to configure different roles and access rights to the data and reports.
Network Traffic Analysis Architecture

Figure 1 shows the high level architecture of the CA Technologies Traffic Analysis Solution. The solution is based on CA NetQoS ReporterAnalyzer harvesting traffic statistics from flow enabled devices in the customer network and CA NetQoS Performance Center for integrated workflows, reporting and analysis.

CA NetQoS ReporterAnalyzer provides insight into how application traffic impacts network performance. By harvesting a rich set of traffic statistics, it is designed to easily scale to support the volume of data on the world’s largest networks, providing real-time visibility and behavior analysis of network traffic, customizable reporting, actionable alerts, and automatic investigations. Customizable calculations for capacity planning, including “what if” trending based on application, location, and bandwidth, help ensure accurate decisions are made regarding cost reduction and capacity planning.

CA NetQoS ReporterAnalyzer is designed to utilize the data collection capabilities of existing infrastructure by leveraging traffic statistics collected from Cisco IOS® NetFlow and the industry-standard IP Flow Information Export (IPFIX)-enabled routers and switches including sFlow, JFlow and more. This provides a very economical method to collect meaningful data about network behavior. CA NetQoS ReporterAnalyzer gives detailed information about the impact of application traffic on overall network performance, capacity and availability. It enables timely and cost-effective decisions for improving and optimizing network service delivery.

The Harvester collects this data and then stores it in the Data Storage Appliance which can then be reported upon from the Console.

The solution can scale to 100 Harvesters. The number of Harvesters required will depend on the flow data send from the routers. Each harvester can process between 4 and 9 Million Flows per minute depending on the number of interfaces sending data. The Harvesters can be deployed at remote concentration points to reduce the amount of flow traffic send over WAN links. The exact number of Harvesters will depend on the requirements specific to each individual project.

The Data Storage Appliance (DSA) stores long term data for up to 1000 devices or 5000 interfaces. The number of DSAs in each solution depends only on the number of configured interfaces or devices.

The Console automates the process of writing the data to the DSAs. The exact number of DSAs will depend on the number of reported interfaces/devices.

Up to 3 RA Consoles can be associated with one CA NetQoS Performance Center.

Clients access the reports provided by the service through an MSP enabled web portal from their desktop.
CA Application Delivery Analysis is designed to provide end-to-end application response time monitoring—providing a consistent and common set of service quality metrics that help prove the performance of applications delivered over the network, mitigate risks from planned changes or unexpected events, and resolve problems faster.

It measures and analyses performance, compares the response time against the baselines and thresholds that it calculates, and alerts when performance deteriorates. With several passive collection methods, end-user response time is measured in a non-intrusive way with zero overhead to the end user or customer transaction. As such, it is a key component for the provisioning of an E2E high level application performance monitoring service.

CA Application Delivery Analysis is designed to enable rapid troubleshooting of network, performance bottlenecks and provides insight into the duration, frequency, pervasiveness, and severity of problems. An understanding of normal performance is established via automatic, intelligent baselines which are based on long term data collection and factor in hour of day, day of the week and day of the month. This helps distinguish between normal, degraded and excessively degraded application delivery.

CA Application Delivery Analysis provides alerts when performance deteriorates and intuitively gathers diagnostic data that further enables faster resolution of performance problems. Convenient application scorecards provide an at-a-glance view of critical application performance, while SLA reporting summarizes both performance and availability of applications. You can measure the before-and-after impact of infrastructure changes on application performance as well as validate the effectiveness of an MPLS migration, VoIP deployment, WAN optimization, QoS policy change, load balancers, and link and server upgrades.
The CA Application Delivery Analysis Collector monitors the traffic traversing key switch ports for the performance of preconfigured TCP applications; the Collector sends data to the Management Console at regular intervals.

Depending on the traffic volume being monitored in the customer network, several different types of collectors are available for the solution:

**Standard Collector** – A single port collector with the capability to process up to 750M of traffic. This collector is equivalent to one Collection unit to the Management Console. This configuration provides extensive network, server, and application response-time analysis with end-to-end and multi-tier transaction visibility while reducing the amount of management and reporting traffic traversing the WAN.

**Multiport Collector** – Providing 4 or 8 1Gb/s Copper or FO ports or 2 10Gb/s ports. This collector has 10TB of long term packet capture revolving buffer and provides extended data analysis capability, looking into 1 minute performance data down to single client conversations. This collector is equivalent to 5 Collection units to the Management Console. This configuration helps minimize deployment costs, reduce rack space and lower on-going management.

**CA GigaStor** – When there is a requirement for a long term data capture this combination can be used to provide information for the performance of the applications traversing the long term packet capture device. This collector is equivalent to one Collection unit to the Management Console. This configuration option offers long term packet capture and industry-leading workflows that drill-down from enterprise-level dashboard to expert packet analysis.

**Virtual Collector** – This is used to monitor the performance of the applications delivered by virtual servers. It is installed on a guest within the virtual environment. It is equivalent to 0.5 Collection units to the Management Console.

**Cisco NAM** – The Cisco NAM device can be used as a collection device to the Application Performance solution. It is equivalent to 0.5 Collection units to the management console. This configuration is designed to minimize the footprint and cost of monitoring while supporting drill-down into high-resolution troubleshooting views available through the NAM Web interface.

**Cisco WAAS** – Our solution provides the ability to use the WAE devices as collectors to provide information for the performance of the optimized applications traversing the WAAS environment. It requires a Standard collector for each Data Centre WAE. This configuration is designed to provide accurate performance analysis of optimized links and visibility into the benefits of optimization at the link level and application level.

**Management Console** – Each can consolidate data from up to 15 Collection units and up to 4 Management consoles can be configured in one Performance Center.
Figure 3 above illustrates that the CA NetQoS Performance Center serves as a platform for integration of the Network Performance Management solution components as well as other Third Party data sources. With one of the industry’s most comprehensive data collection, analytics, and reporting capabilities, the CA NetQoS Performance Center is designed to capture and analyze data from applications, devices, and the network itself to provide an accurate and thorough understanding of how well an organization is supporting applications and where problems exist. The CA NetQoS Performance Center leverages technologies from other CA Technologies solution components, and also third party technologies from leading providers including Cisco, F5, EMC, Microsoft® & VMware®.

Through a single Web-based reporting dashboard, CA NetQoS Performance Center helps access the right information at the right time. To transform data into actionable information, it analyzes data packets with intelligent baselines, thresholds, trending, and anomaly-detection algorithms. The CA NetQoS Performance Center is designed to link end-to-end service and transaction visibility with top-to-bottom understanding of the underlying IT infrastructure across networks, systems and databases to deliver a comprehensive, unified understanding of how applications and infrastructure deliver business services.

The CA NetQoS Performance Center is designed to provide a holistic performance view and operational workflows that speed understanding of how the infrastructure is supporting applications and where problems exist.

**Separate solutions per customer or one solution for multiple customers** can be deployed depending on the project.

One CA NetQoS Performance Center can be utilized to provide reporting capabilities to multiple clients—it can separate not only the data for different customers, but also for the different audiences within each individual customer organization. User and role-based access control limits specific users or roles with granular rights to certain reports, dashboards and specific elements.

**Conclusion**

CA Technologies provides flexible and scalable deployment options for Network Performance Management solutions that can be quickly provisioned and customized for your unique needs. Allow our experts to tailor a service to meet your requirements and quickly deploy the appropriate solution.
CA Technologies is an IT management software and solutions company with expertise across all IT environments—from mainframe and distributed, to virtual and cloud. CA Technologies manages and secures IT environments and enables customers to deliver more flexible IT services. CA Technologies innovative products and services provide the insight and control essential for IT organizations to power business agility. The majority of the Global Fortune 500 rely on CA Technologies to manage their evolving IT ecosystems. For additional information, visit CA Technologies at ca.com.