



WHITEPAPER

Is the Network Really to Blame for Performance Problems?

Eliminate Fingerprinting by Quantifying Network, Server and Application Performance

When users complain about application performance, fingerprinting between IT groups often follows. “The network is slow!” “It’s the application!” “What happened with the database server?” Every minute spent in the ‘blame storm’ costs money. Customers cannot transact business easily and become irritated; employee productivity grinds to a halt; IT staff burn cycles when they could be working on more constructive and interesting projects.

This paper details how the NetQoS Performance Center and NetQoS SuperAgent helps network engineers measure how networked applications perform under normal circumstances, understand how performance is impacted by infrastructure and application changes, and isolate the sources of above-normal latency. Thus, enabling IT organizations to ensure problems are resolved quickly, mitigate risk, and take measured steps to optimize application performance.

Isolating Performance Problems

The backbone of a competitive, agile business enterprise is its network. As businesses race to keep up with their rivals, network management teams battle to maintain fast, efficient network performance to enhance the productivity of end users, who in turn accomplish the business goals of the enterprise. Because this network backbone spans the entire business operation, when something goes wrong, the network is usually the first to take the blame from end users. This leaves the network team in a hard spot—constantly struggling to put out fires, and often having to deploy tools outside their realm of responsibility to determine if, indeed, the network is the problem, or if some other source is at fault. The ability to isolate a problem, fix it quickly, and satisfy the end user is critical to effective network performance management.

Eliminate Finger Pointing

The accountant laboring away in the corner cubicle doesn't know a ping from a packet, and doesn't care where the problem originates; he just knows he can't perform his job as quickly and efficiently as he'd like because his accounting software seems to be moving at a glacier pace. Every extra second that drags by is an eternity. He is about to call the help desk and utter the five words that are like nails screeching against a chalkboard to network engineers everywhere, **“What's wrong with the network?”**

The end user does not consider the state of the servers or the application as possible culprits, because these possibilities do not have as high a profile as the network. So every day, network managers and their engineering teams are called on to prove the quality of their network's performance. This does not make the job of the network management team any easier.

Network managers need a solution that provides a universal view of the network environment coupled with an accurate method to isolate and identify problems. They need to determine quickly if it's the network, the server, or the application actually causing the slowdown. It's not about blame-shifting; it's about solving the problem for the end user and getting rid of all the useless finger-pointing among IT groups.

NetQoS SuperAgent® for End-to-End Performance Data

The NetQoS Performance Center and end-to-end performance data module—SuperAgent®—provide at-a-glance analyses of network, server, and application performance, and quickly isolate response time problems, providing IT staff the information needed to correct the problem and improve end user satisfaction. SuperAgent monitors any TCP-based application to determine if a single user, department, geographic region, or entire enterprise is affected by performance problem—**without deploying any desktop or server agents**. Performance across applications, user groups, or servers can be viewed in a single graphical report. Within seconds, a network engineer can drill down to see exactly where the problem is occurring, and take the proper course of action to correct it.

Sometimes problems are elusive. The end user may experience an anomaly that disappears too quickly for IT to observe, only to reappear a short time later and repeat the pattern. Using SuperAgent, investigations focusing on the application, network, or server can be automatically launched to gather statistics and information that will uncover additional diagnostics to help solve the problem. For example, to identify the cause of a server issue, an SNMP query gathers CPU, memory, and top processes data; during a network problem, a traceroute can be automatically performed.

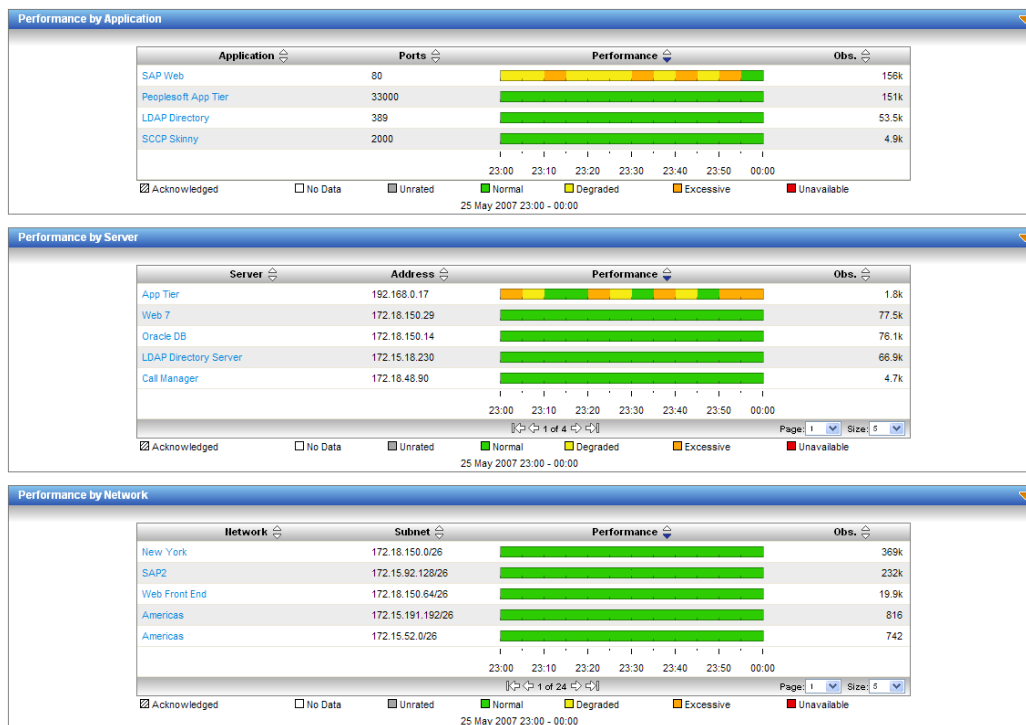
“With NetQoS SuperAgent, we’ve changed troubleshooting from a guessing game to a focused analysis that gets fast results.”

- Jack Mendell, Network Analyst, Watkins Motor Lines

Beyond Troubleshooting – Optimizing Network Performance

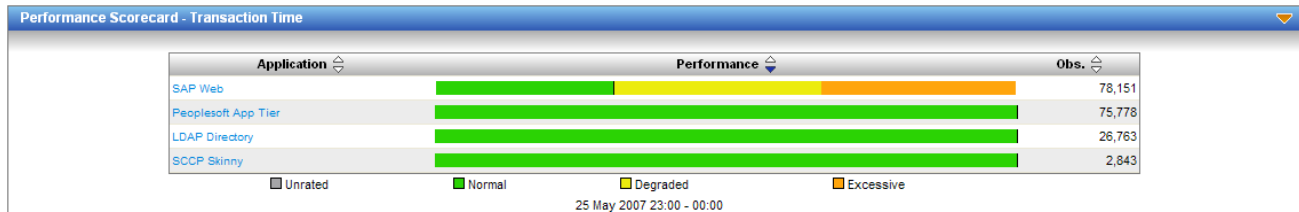
SuperAgent provides more than just streamlined troubleshooting capabilities; it helps optimize network performance using two key elements: operations overview and baselines of normal performance.

The operations overview provides a comparison of network, server and application components over thresholds, highlights where potential problems exist, and helps assess the cause and pervasiveness of the problem. The operations overview summarizes network data, enabling engineers to compare performance throughout the infrastructure, server and application. Drilling into the high level overview provides views into the cause of the problems and the impacted network server and application components.



Performance problems to the network, server or application

It's important to know what "normal" network performance is in order to make good judgments about the management of IT assets. The performance scorecard assists in evaluating how current performance compares to past performance by creating a performance **baseline**. The baseline is determined by using historical performance information to establish what is "normal performance" based on ten different metrics for every application, server and network combination. Baselines automate the discovery of developing issues, and alert the IT team to potential problems. With SuperAgent, IT has the means to monitor network, server and application performance, and use that data to identify potential problems before they severely impact end user and business productivity.



Identify the duration, severity and pervasiveness of performance problems

“NetQoS SuperAgent significantly reduces the time and effort it takes to identify and resolve issues with our enterprise applications.”

- Kevin Brown, Network Services Manager, Service Corporation International

Validate the Impact of Change

Changes to the network infrastructure occur in all forms and all of the time. Planned changes such as VoIP deployments, MPLS migrations, application rollouts, and data center consolidations are a large part of a network manager's responsibilities. However, effectively quantifying the impact of those changes can often be a challenge. SuperAgent identifies network, server and application delay before, during, and after changes are made so that results can be quickly measured and quantified.

Unplanned changes such as inadvertent changes to QoS policies, DDoS attacks, and non-business application usage can also cause performance problems. SuperAgent rapidly alerts on threshold violations and automatically investigates the cause of the problem. Reports can be generated on a regular basis and shared with other departments and higher level managers to demonstrate on-going network performance improvement. What is seen and quantified in the reports is experienced as fewer trouble-tickets, faster, more efficient troubleshooting, and happier end users.

SuperAgent also measures the levels of service to end users by automatically monitoring and measuring availability and application level performance to ensure compliance with service level agreements (SLAs). SLA compliance for all application and user transactions is monitored according to three distinct metrics: transaction time, server response time, and network roundtrip time. A truly effective SLA is more than merely a monitoring and analysis method.

A well thought-out SLA will help ensure that IT resources are aligned with the needs of the end users. An SLA should be easy to deploy, easy to manage, and should free up time for strategic action by the IT team.

Application	Result	SLA 1	Result	SLA 2	Observations
LDAP Directory	✓ 99.31%	98%	NA	NA	41,526
SAP Web	✓ 93.6%	90%	✓ 99.33%	99%	6,089
Peoplesoft App Tier	✓ 78.19%	75%	NA	NA	224,222

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Baseline normal performance

SuperAgent rapidly identifies the source of performance issues to the network, server or application. It ensures that mission-critical applications perform up to par with the expectations of business users. As business increasingly comes to rely on the network infrastructure, network performance management is no longer just about whether the network is up or down—not just about providing troubleshooting and configuration—it’s about acknowledging the valuable role the network occupies in an enterprise, and delivering a consistent quality of service.

About the NetQoS Performance Center

The NetQoS Performance Center is a single web-based portal that delivers global visibility into the entire network infrastructure for the insight to resolve performance issues, troubleshoot infrastructure problems, perform capacity planning, plan for and validate the effects of change, and track Service Level Agreements (SLAs). The NetQoS Performance Center provides an integrated view of critical performance data delivered by NetQoS' best in class products—SuperAgent® for end-to-end performance data, ReporterAnalyzer™ for traffic analysis, and NetVoyant® for device performance data. With this visibility, you will make more informed decisions based on precise network infrastructure usage data, improve staff efficiency, and resolve performance issues rapidly. You can also mitigate risks and validate the impact of planned changes such as VoIP deployments, MPLS migrations, WAN optimization, QoS policy implementation, and application rollouts. The NetQoS Performance Center is fast and easy to deploy, and scales to the largest networks.

About NetQoS

NetQoS is the fastest growing network performance management products and services provider. NetQoS has enabled hundreds of the world's largest organizations to take a Performance First approach to network management—the new vanguard in ensuring optimal application delivery across the WAN. By focusing on the performance of key applications running over the network and identifying where there is opportunity for improvement, IT organizations can make more informed infrastructure investments and resolve problems that impact the business. Today, NetQoS is the only vendor that can provide global visibility for the world's largest enterprises into all key metrics necessary to take a Performance First management approach. More information is available at www.netqos.com.

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