

ENTERPRISE SOLUTIONS

Products and Solutions
Reference Guide



Table of Contents

Unified Service Delivery Management . . .	4
nGenius Service Assurance Solution . . .	8
nGenius Service Delivery Manager	11
nGenius Performance Manager	14
nGenius Trading Intelligence	16
Sniffer Analysis Modules.	18
NetFlow Analysis Modules.	24
nGenius Intelligent Data Sources	26
Portable Network Analysis.	32
Third Party Integration	36
Global Support and Services	39

In today's dynamic business environment, the modern IP network is a critical success factor. Under increasing pressure to orchestrate the seamless and reliable delivery of services to meet increasing user expectations, today's Information Technology (IT) organization must provide more services and greater business value with fewer resources and lower operating budgets than before. Yet according to Gartner, operational costs consume as much as 70 percent of the average IT budget. Today's IT requirement is to:

- Reduce the cost of IT
- Increase IT performance
- Improve operational efficiencies
- Deliver the highest quality and availability of IT services possible

This is no simple task. Due to a lack of unified and consistent visibility into network and application performance with dynamic correlation to services, the business and user experience is unacceptable.

The ever changing technology landscape has changed and the IT infrastructure has become complex. To reduce the cost and complexity, scale globally, and adapt to emerging technologies, such as cloud services, virtualization, and unified communications, the Enterprise is looking for an automated, unified approach to managing service delivery.



Unified Service Delivery Management

The Unified Service Delivery Management framework from NetScout® Systems Inc. enables your organization to build a dynamic, scalable and sustainable approach to service delivery management that aligns with IT with business objectives and improves service quality and reliability. This unified view of the service delivery environment extends from the data center, to the network, to the users, and empowers the IT organizations to manage services, network and users in unison. By reducing the underlying complexity and achieving a unified business and service perspective of converged global networks, NetScout enables IT organizations to address business and technology challenges posed by the growth of data volume and transactions, the proliferation of smart devices, and the emergence of new technologies that include unified communications, application virtualization, SOA, cloud services and data center consolidation.

NetScout works with Enterprise organizations to create a unified and flexible service delivery management architecture and increases the efficiency and effectiveness of the IT organization in the following ways:

- Assure business service continuity
- Achieve optimal user experience
- Optimize service delivery performance
- Better leverage existing infrastructure
- Simplify managing service delivery
- Reduce operations and support complexity and costs
- Lower the overall total cost of IT operations

NetScout designs distinct product families that range from portable field service tools, to dedicated hot-spot deep packet analysis and forensics, to end-to-end always on service assurance with intelligent early warning capabilities. NetScout solutions leverage advanced packet-flow technologies to enable greater visibility to effectively monitor, analyze and assure the end-to-end performance of applications and services for enterprise, government, and service providers.

These highly sophisticated tools provide both a business and technical perspective of service delivery that allows IT and business management staff to fully understand resource impact and all interdependences across networks, servers, applications and users to optimize service delivery and protect against service outages. Regardless of the design center deployment, NetScout products enable the IT organization to meet the challenges and demands associated with modern day service delivery.



The Unified Service Delivery Management framework enables the IT organization to:

- Optimize the service delivery environment, better leverage existing investments, and roll out new services with confidence
- Protect network and application performance, and assure the quality of user experience
- Simplify operations, improve workflow, consolidate tools, improve efficiency and collaboration, and lower the overall cost of IT operations

Support for IT Initiatives

NetScout nGenius® and Sniffer® technologies enable IT organizations to dramatically improve service quality while evolving their service management model from a reactive approach to a more proactive, predictable model. This always-on, high-performance approach enables organizations to consistently assure service delivery from the data center to the desktop and over the WAN to the branch office while freeing up scarce IT resources to spend time on more strategic initiatives. Common IT initiatives include:

- **Data Center and Virtualization**—Enables service delivery across virtual and physical environments for a comprehensive, unified view of application and network performance. The correlation of physical and virtual services in the data center enables IT organizations to optimize data center infrastructure investments, protect against service degradations, and simplify the operation of complex, multi-tier application environments.
- **Unified Communications**—Delivers unified visibility to view voice, data and video services side-by-side to understand the interrelationships of all services that traverse the network infrastructure.
- **Branch Office and WAN**—Brings extended visibility into the performance of applications and networks at and between locations, unified into an end-to-end solution that promotes collaborative problem-solving and planning.
- **Enterprise Mobility**—Provides service assurance across the infrastructure and applications supporting wireless service delivery, and rapid-response network troubleshooting integration.
- **Process Improvement and ITIL**—Delivers real-time and historical information that provides the insight required to restore service, manage capacity, and understand the user quality of experience while streamlining workflow to support Information Technology Infrastructure Library (ITIL) process improvements.
- **Service Assurance and Troubleshooting**—Provides real-time enterprise-wide views that are supported by high-definition, actionable information on all network traffic. This information on individual applications, segments and end-users enables rapid isolation of network issues, quick service restoration, and minimizes impact to the business.



NetScout Network and Application Performance Product Families

A market leader in Unified Service Delivery Management solutions, NetScout assures service quality and user experience for the world's most demanding and complex service delivery environments. With a rich, 26 year history of technology innovation, NetScout continues to lead the market and dramatically change how IT organizations provide service assurance across modern IP networks. NetScout remains focused on aligning the NetScout product portfolio to meet the requirements of the modern IT organization by providing robust tools that enable the efficient and effective management of dynamic network and application environments.

Network and application analysis products from NetScout provide deployment-proven valuable insight into the dynamic nature of data, voice and video running across modern IP networks. These highly sophisticated tools provide both a business and technical perspective of service delivery that enables IT and business management staff to fully understand resource impact and all interdependencies across networks, servers, applications, and users to optimize service delivery and protect against service outages.

NetScout enables IT organizations to improve service availability and reliability with highly scalable and flexible real-time service delivery management capabilities that support a wide-range of IT operational teams including network managers, data center operations, application management, network operations centers, network engineering, IT operations, and security operations.

NetScout has three distinct product families that range from portable field service tools, to dedicated hot-spot deep packet analysis and forensics, to end-to-end always-on service assurance with intelligent early warning capabilities. These tools leverage the power of packet-flow knowledge to support both strategic and tactical approaches to applications and networks performance management. These product families are:

- nGenius Service Assurance Solution
- Sniffer Analysis
- Sniffer Portable Analyzer

Additional details discussed in following sections.

TACTICAL

The Sniffer Portable Analyzer product family provides best-in-class portable network and application analysis for plug-and-play, on-demand field deployments. Built on legendary and widely deployed Sniffer technology, the software is deployed on individual laptops for portable analysis and troubleshooting to rapidly isolate issues for wired and wireless networks. NetScout has taken the idea of the portable network analyzer to the next level by adding enterprise-class security and control of user access to sensitive network data.

Field-service portable analysis with security and control

6
TROUBLESHOOTING

The Sniffer Analysis software suite provides a direct connection to nGenius InfiniStream appliances for highly optimized forensic analysis and packet data mining to fully exploit the valuable information contained within network packets. The Sniffer Analysis software suite can be deployed on a standalone basis or in concert with the comprehensive nGenius Service Assurance Solution. When deployed in a standalone mode, Sniffer Analysis provides unsurpassed segment-by-segment deep packet analysis and troubleshooting capabilities by leveraging any number of nGenius InfiniStream appliances deployed across the network. The Sniffer Analysis software suite provides a powerful view deep into IP network packets, revealing granular information about network and application interactions and response time and latency metrics.

Segment-specific troubleshooting and analysis with deep packet capture

FORENSIC ANALYSIS AND PACKET DATA MINING

The nGenius Service Assurance Solution delivers comprehensive, always-on visibility into end-to-end performance of the network, applications, services and users. Leveraging a family of unified software modules and rich packet flow-based metadata, the nGenius solution delivers unprecedented visibility into the end-to-end service delivery environment. Leveraging a robust range of Intelligent Data Sources, the nGenius solution provides unified visibility from virtually any place in the network—extending from the data center infrastructure and virtualized servers to the network core, edge and branch office—delivering highly accurate and flexible visibility into the user's experience of application and network performance. This highly scalable, always-on network-wide solution provides IT organizations the tools and streamlined workflows needed to significantly improve the quality of services delivered, thereby dramatically reducing the time required to identify and resolve performance problems and make possible a more predictive and preventative approach to managing service delivery.

Intelligent Data Sources:

nGenius InfiniStream,
Probes, Virtual Agents
and Collectors

PREDICTIVE AND PREVENTATIVE SERVICE DELIVERY MANAGEMENT

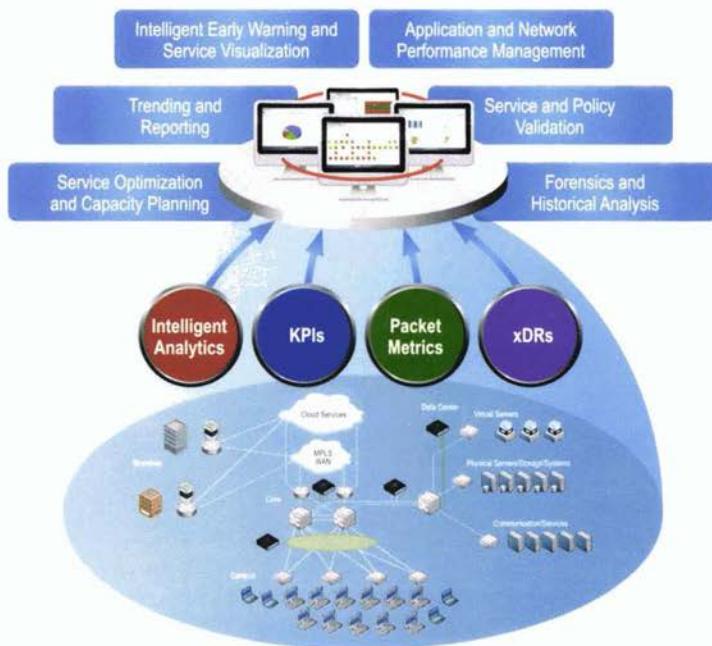
nGenius Service Assurance Solution

The nGenius Service Assurance Solution is a Unified Service Delivery Management platform that provides IT organizations with comprehensive, real-time network, application and service performance intelligence to optimize network and application performance and assure a high quality user experience.

The nGenius Service Assurance Solution allows a comprehensive approach to managing service delivery that empowers the IT organization to dramatically improve the overall quality of service for applications and services delivered across the entire enterprise. Pervasive visibility into the end-to-end service delivery environment enables the IT organization to provide greater service reliability and availability with improved network performance and responsiveness. A unified framework for service delivery management reduces the total cost of IT operations as operations are consolidated into a single tool set that can be leveraged across the entire organization.

The nGenius Service Assurance Solution provides always-on network and application visibility with a common and consistent view of service-oriented analysis and reporting functions that increases productivity and collaboration across the IT organization with team-oriented workflows. Solution capabilities include:

- Intelligent Early Warning & Service Visualization
- Application & Network Performance Management
- Service & Policy Validation
- Trending & Reporting
- Service Optimization & Capacity Planning
- Forensics & Historical Analysis



The nGenius Service Assurance Solution is a unified platform that leverages a number of specialized modules and Intelligent Data Sources that work together to provide the unified solution. Components include:

nGenius Analysis Modules leverage the nGenius Intelligent Data Sources to collect and analyze valuable user traffic on a distributed basis across a wide range of environments

- **nGenius Service Delivery Manager** - intelligent early warning, flexible service views and service-centric workflows providing end-to-end user experience visibility
- **nGenius Performance Manager** - network and application performance, service validation and optimization and planning across the modern IP network
- **nGenius Trading Intelligence** a high-performance, latency-management solution for trading environments that addresses the specialized visibility needs of exchanges, buy-side and sell side capital market firms

Sniffer Analysis Modules provides unsurpassed segment-by-segment deep packet analysis and troubleshooting capabilities by leveraging any number of nGenius InfiniStream® appliances deployed across the network

- **Sniffer Intelligence (base module)**—back-in-time application-aware analysis software supplies packet-level forensic analysis to simplify troubleshooting, including enterprise application and voice intelligence capabilities
- **InfiniStream Console Software** – direct-connect interface to an nGenius InfiniStream appliance
- **Sniffer Financial Intelligence Software** - an optional software module that is highly optimized to analyze and troubleshoot financial trading environments
- **Sniffer MultiSegment Analysis** – an optional post capture analysis software module that automates the tedious process of matching packet traces across multiple network segments determining exactly where network delays occur

NetFlow Analysis Modules correlate Cisco® NetFlow data and IP SLA results collected by nGenius Collector appliances into actionable insight for critical troubleshooting and capacity planning activities

- **nGenius Performance Manager for Flows** –leverages Cisco NetFlow or sFlow data from popular network devices as their primary source of network traffic data.
- **nGenius Analytics for Flows** leverages NetFlow conversation information to automatically detect and aid in diagnosing anomalous network and application usage

nGenius Intelligent Data Sources are a comprehensive family of appliances and software-based agents that provide packet flow-based visibility for all applications and services that flow across global networks.

- nGenius InfiniStream Appliances - dedicated intelligent deep packet capture appliances to support service assurance and unparalleled application and network performance analysis
- nGenius Probes - perform deep packet analysis and provide high-definition application and network performance information to the nGenius Service Assurance Solution. Probe technology extends pervasive visibility into the data center through a range of deployment sources:
 - nGenius Integrated Agent – deployed in third-party network devices such as switches or routers
 - nGenius Virtual Agent - deployed as an application inside virtual server
 - nGenius Hardware Probes – deployed as traditional hardware-based Intelligent Data Source
- nGenius Collector – a hardware appliance that delivers NetFlow and IP SLA-based data to the nGenius Performance Manager, nGenius Performance Manager for Flows, and nGenius Analytics for Flows

nGenius Analysis Modules

The nGenius Analysis Modules leverage the nGenius Intelligent Data Sources to collect and analyze valuable user traffic on a distributed basis across a wide range of environments. The nGenius Analysis Modules provide IT organizations with unified visibility into end-to-end service delivery in context with how services are delivered and consumed to more effectively manage the user experience.

Building on the nGenius Service Assurance Solution's comprehensive ability to collect, correlate, analyze, and report on mass volumes of packet-flow data, nGenius Analysis Modules provide IT organizations with the tools and streamlined workflows to create a predictive and preventative approach that provides actionable management insight to effectively assure service levels, improve the operating environment, and protect the user experience.

nGenius Service Delivery Manager

The nGenius Service Delivery Manager is a real-time service dashboard that provides unified visibility into end-to-end service delivery in context with how services are delivered and consumed to more effectively manage the user experience. Building on the nGenius Service Assurance Solution's ability to collect, correlate, analyze, and report on mass volumes of packet-flow data, nGenius Service Delivery Manager closes the gap between the network and business services to deliver timely and actionable management insight to effectively assure service levels.

The nGenius Service Delivery Manager combines real-time and historical views of user-defined service domains and simplifies the view into the health and availability of delivered services. The dashboard automates the detection of service quality problems and emerging security threats across physical, virtual, and cloud-based services from the application hosting environment, through the network, to the user.

Capabilities

- Contextual service views into end-to-end service delivery with flexible user-defined service domain views that allow views from "single service" or "groups of users" perspective that allow staff to visualize services in context with business deployment
- Shared, cross-indexed metrics and views eliminate the need to re-analyze incidents as problems escalate across the IT organization and promote IT collaboration
- Unified service representation that leverages data from pervasive nGenius Intelligent Data Sources and correlates components of a "service" into a unified view with a top level view reveals service status. Quickly progress from high-level service views within a selected service domain, to flow-based transactions, to deep packet analysis—from a single integrated solution. Quickly drill-down into a wide range of contextual data, isolate a situation, triage its impact, and confidently take next-step actions

(Capabilities continued)

- Automated identification and reporting of service and network anomalies—nGenius Service Delivery Manager continuously monitors and analyzes application and service traffic flowing across the network at multiple points and identifies deviations in “normal” traffic, application and server usage. Isolate service degradations before they impact the end user or lead to service meltdowns. Auto-learning service, application, and network behavior patterns, the system self-tunes to adapt to changing service delivery conditions. The Genius network-based anomaly detection engine is resident in each of the nGenius Intelligent Data Sources to support large deployments and enable end-to-end visibility with highly scalable analysis capabilities
- Integrated cyber threat management that leverages network-based anomaly detection to identify risk, emerging threats, and cyber attacks that are often missed by signature-based security solutions. Automatically recognize potential emerging threats characterized by conditions such as changes in service behavior, resource usage anomalies, server modification, or violations against a defined policy. Receive real-time, intelligent early warning when deviations or policy violations are detected
- Integration into ArcSight® ETRM platform provides richer, more meaningful alerts that enable faster time to knowledge of anomalies, and better detection and prediction of events. Extensive forensics enables much more granular event analysis.
- Graphic service maps that illustrate the flow of each application and service across the network by displaying the nGenius Intelligent Data Sources and servers that have seen the application or service
- Anytime, anyplace access to intelligent alerts and summaries from wireless or mobile PCs or handheld devices, enterprise desktops or Network Operation Center (NOC) consoles



Service Dashboard: Monitoring the health of business services, the intelligent combination of applications and relevant network protocols, for an enterprise-wide view of end user experience



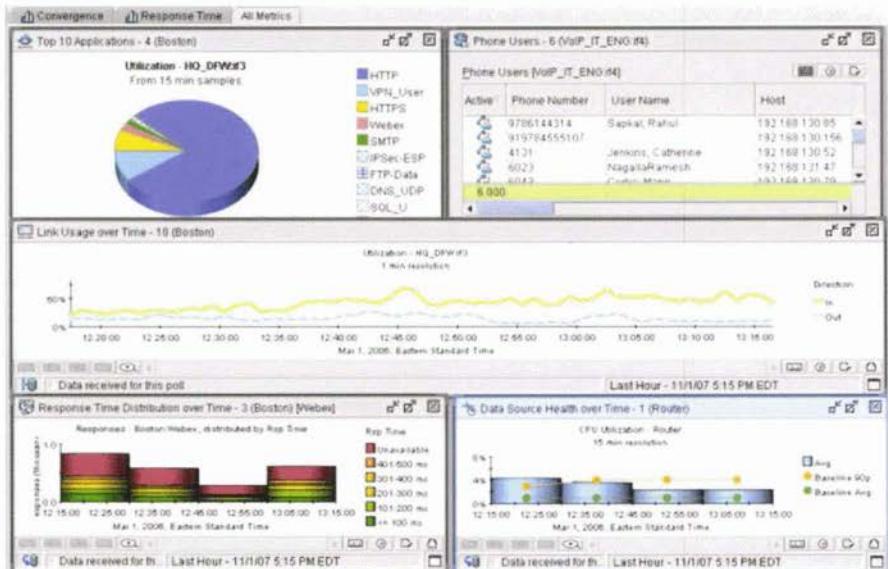
Service Map: Shows the service delivery chain for a service domain or a particular service to properly understand which components are impacted by anomalous behavior and make proper optimization decisions

nGenius Performance Manager

The nGenius Performance Manager provides an unprecedented, unified end-to-end view of service delivery, performance, and consumption from the data center to the end user. Providing granular visibility into the most complex and demanding network environments, nGenius Performance Manager leverages robust and pervasive packet flow data collected by a comprehensive family of nGenius Intelligent Data Sources. Deployed across the network, nGenius Intelligent Data Sources capture and analyze real-time IP traffic flows. nGenius Performance Manager also leverages NetFlow and sFlow data from deployed network devices to provide broader insight at key network aggregation points. nGenius Performance Manager allows your organization to identify and resolve critical issues, as well as proactively predict and prevent future issues before they impact the end-user.

Capabilities

- Unified view of a converged network environment with the ability to view voice, video and data metrics side-by-side in the same easy-to-use workspace
- Application recognition and monitoring of well-known, custom-developed, virtualized, and Web-based applications and services
- Critical application and network performance metrics that identify interrelationships and interdependencies between applications over the network infrastructure
- Response time analysis and latency metrics provide granular understanding of application behavior with early detection of application performance degradation and Quality of Experience (QoE) issues
- Highly flexible reporting and analysis capabilities including long-term trending and capacity planning with support for on-demand and scheduled reporting
- Unified monitoring of the network, applications and application server infrastructure to include both physical and virtual environments
- Extensive VoIP quality management capabilities



Unified Views: nGenius Performance Manager allows users to quickly assemble, evaluate and compare application and network-layer statistics to determine the cause of issues and profile usage patterns to manage capacity and proactively avoid network slowdowns/outages.



Robust Reporting: nGenius Performance Manager offers a broad variety of NewsPaper-style reports that can be scheduled on a daily, weekly, monthly or custom-defined basis. In addition any nGenius Performance Manager workspace can instantly be turned into an ad-hoc report for easy sharing of information among colleagues.

nGenius Trading Intelligence

nGenius Trading Intelligence is a high-performance, latency-management solution for trading environments that addresses the specialized visibility needs of exchanges, buy-side and sell side capital market firms.

nGenius Trading Intelligence provides real-time, end-to-end visibility into complex trade order execution and market data feed latency and performance for trading environments. Leveraging highly scalable and deployment-proven nGenius InfiniStream appliances, nGenius Trading Intelligence solution enables trade engineers to isolate delays, compare venue execution routes, monitor trade activity, and track client access to better optimize the performance and timing precision of trades. Tracking end-to-end latencies can be provided by:

- Trading Groups
- Instrument Code
- Execution Venues
- Trading Strategies
- Trade Paths

nGenius Trading Intelligence exposes nanosecond latency metrics that are dynamically updated as trades progress. These metrics pinpoint the latency and performance impact caused by gateways, Smart Order Routers (SORs), feed handlers, order books and matching engines. The solution's dynamic multi-hop correlation capabilities deliver latency breakouts for each monitored hop. This granularity enables trade engineers to quickly analyze, isolate, and identify latency bottlenecks.

Capabilities

- Provides messaging correlations and latency management for:
 - One way and two way latency
 - One to one trades
 - One to many trades
 - Multiple and partial matches
- Simplifies correlation and analysis of complex trading transactions provide a logical representation of the trade order path as it traverses from the trader's console, through the trading environment, and back to the trader with the resulting execution reports
- Generates dynamic tables comparing best and worst latencies, and associated volumes by:
 - Trade desks
 - Execution venues
 - Symbol groups
 - Or any configurable field item
- Provides visibility into network microburst activity and enables intelligent alarms for performance issues. The nGenius Trading Intelligence solution recognizes hundreds of financial market data feed formats and protocols, including ARCA, CME, LSE, NASDAQ, NSX, NYSE, SIAC, TIBCO. It also supports custom protocols.

(Capabilities continued)

- Addresses high data volumes with the tight integration of the nGenius InfiniStream appliances, to collect and analyze and store mass volumes of trading and market data feed traffic on a distributed basis, and the nGenius Trading Intelligence application, secure, highly scalable and reliable deep packet capture and analysis capabilities, ensure the integrity and compatibility of the collected data.
- Deployed as a stand-alone latency-management solution or as an integrated module of the nGenius Service Assurance Solution, this integration enables organizations to leverage their substantial investments in analytics and nGenius Intelligent Data Source technology to extend incremental and comprehensive end-to-end service delivery management capabilities across their network environment. When used with other nGenius Service Assurance solution modules, organizations benefit from a range of service delivery management capabilities that include availability and performance management, capacity planning, service validation, and forensics.
- Leverages an open API, thus extending Trading metrics to other platforms and applications. Custom monitoring solutions can easily benefit from the robust latency statistics provided by the solution



Latency Views: nGenius Trading Intelligence views provides highly accurate one-way and two-way trade latency measurements.

Sniffer Analysis Modules

Sniffer Analysis Modules enable IT staff to perform highly granular packet analysis, mining, and decode of packets captured and stored by nGenius InfiniStream appliances. Designed specifically for direct connection to an nGenius InfiniStream appliance, the Sniffer Analysis Module can be used within the nGenius Service Assurance Solution or on a standalone basis to provide unprecedented granular packet forensic analysis that enhances and simplifies troubleshooting. This packet-level analysis quickly pinpoints performance anomalies and isolates root causes so the IT organization can rapidly solve the most challenging and complex application and network performance issues.

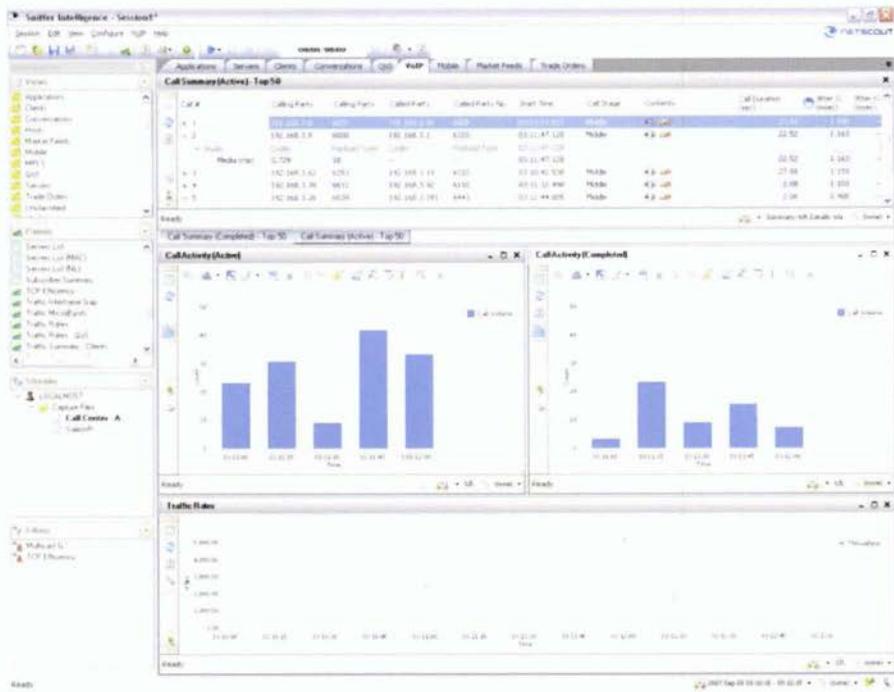
The Sniffer Analysis Modules include the base module: Sniffer Intelligence, and InfiniStream Console; in addition to optional specialized add on modules: Sniffer Financial Intelligence and Sniffer MultiSegment Analysis

Sniffer Intelligence Module

The Sniffer Intelligence Module is an application forensic analysis tool that provides back-in-time, graphical views of the conversations traversing the network to speed troubleshooting and analysis. Users can mix and match multi-dimensional views of hundreds of preprocessed statistics to create customized charts that compare data, profile applications or isolated anomalies. The Sniffer Intelligence base module is provided with Sniffer Analysis at no additional cost and is deployed on the user's desktop.

Capabilities

- Automatic identification of popular packaged applications and next-generation IP-based services
- More than a hundred flow-based statistics and metrics including detailed server and network response times, TCP efficiencies, anomalies, and QoS levels
- Recognition of Voice over IP (VoIP) call detail records
- Patented HyperLock™ multi-dimensional filtering speeds data retrieval and expedites troubleshooting
- Comprehensive yet flexible views of the data
- Industry-leading Sniffer decodes and experts



Sniffer VoIP Intelligence - Achieve higher quality audio and video service quality by analyzing VoIP packet-based call control and multimedia transmissions

Extends traditional Expert analysis and decode troubleshooting capabilities with customizable panel views of performance measures and application transaction dimensions

InfiniStream Console Software

The InfiniStream Console is a direct-connect interface to nGenius InfiniStream appliances that is typically used for quick access in troubleshooting environments. InfiniStream Console software is run on the user's local desktop and acts as a portal into the appliance. Stored packet data is directly accessed with unrestricted mining without requiring an external server. The InfiniStream Console provides a streamlined view to vital data for troubleshooting high-priority issues. Although often used in standalone mode, the InfiniStream Console can serve as a complementary user interface with the nGenius Service Assurance Solution that allows users to drill-down for granular deep packet analysis from within the unified solution.

Capabilities

- Direct connect to nGenius InfiniStream appliances to view and analyze native packet data for unrestricted data mining and perform detailed forensic analysis on network traffic
- QuickSelect thumbnail overview of traffic over time
- Merge multiple streams for a consolidated view
- Automatically launches Sniffer Intelligence with decodes for detailed troubleshooting analysis
- Quickly reacts to service delivery issues using a "crash-cart" problem resolution approach
- Provides health statistics on the nGenius InfiniStream appliance

Sniffer Financial Intelligence Software

Sniffer Financial Intelligence provides visibility into latency, service delivery, and compliance for trading environments. Specifically designed for financial trading firms and exchanges, Sniffer Financial Intelligence is an optional add-on application that is used with Sniffer Intelligence. This combination provides detailed visibility into messaging protocols to trade orders and hundreds of common data feeds critical to automated trading.

Capabilities

Sniffer Financial Intelligence helps resolve problems within FIX or TradEelect network, reports on client latency/delivery, and determines if certain transaction types run faster than others.

- Automatically identifies trade applications, such as Financial Information eXchange (FIX) and TradEelect, breaking out the details of the individual orders
- Recognizes more than 600 financial market data feeds, including Arcabook, ARCA-FAST, CME-MDP, IBM LLM, TIBCO, NASDAQ UQDF, OPRA FAST, and Russell 1000
- Supplies enhanced time stamping across nGenius InfiniStream appliances using GPS or CDMA options to correct for µsec drift where latency is critical
- Breaks out latencies by transport and the server transaction time
- Includes more than one hundred flow-based statistics and metrics including detailed server and network response times, TCP efficiencies, anomalies, and QoS levels
- Leverages patented HyperLock multi-dimensional filtering to speed data retrieval and expedite troubleshooting
- Industry-leading Sniffer decodes and experts

The screenshot displays three main windows from the NetworkMiner tool:

- Trade Orders**: Shows a table of trade orders with columns: Message, Date Received, Time Offset, Side, Order Type, Status, Client IP, Client Port, Destination IP, Destination Port, Order ID, CUSIP, CFA, CFA2, Order Qty, Order Type, Order Attr, Total, Order Single Qty, Total.
- General Messages - Top 50**: Shows a table of general messages with columns: Message, First Occurred, Status (MsgID), Summary.
- Order Details**: Shows a detailed view of an order with columns: Order ID, Order Type, Order Status, Order Qty, Price, Side, Order Attr, Total.

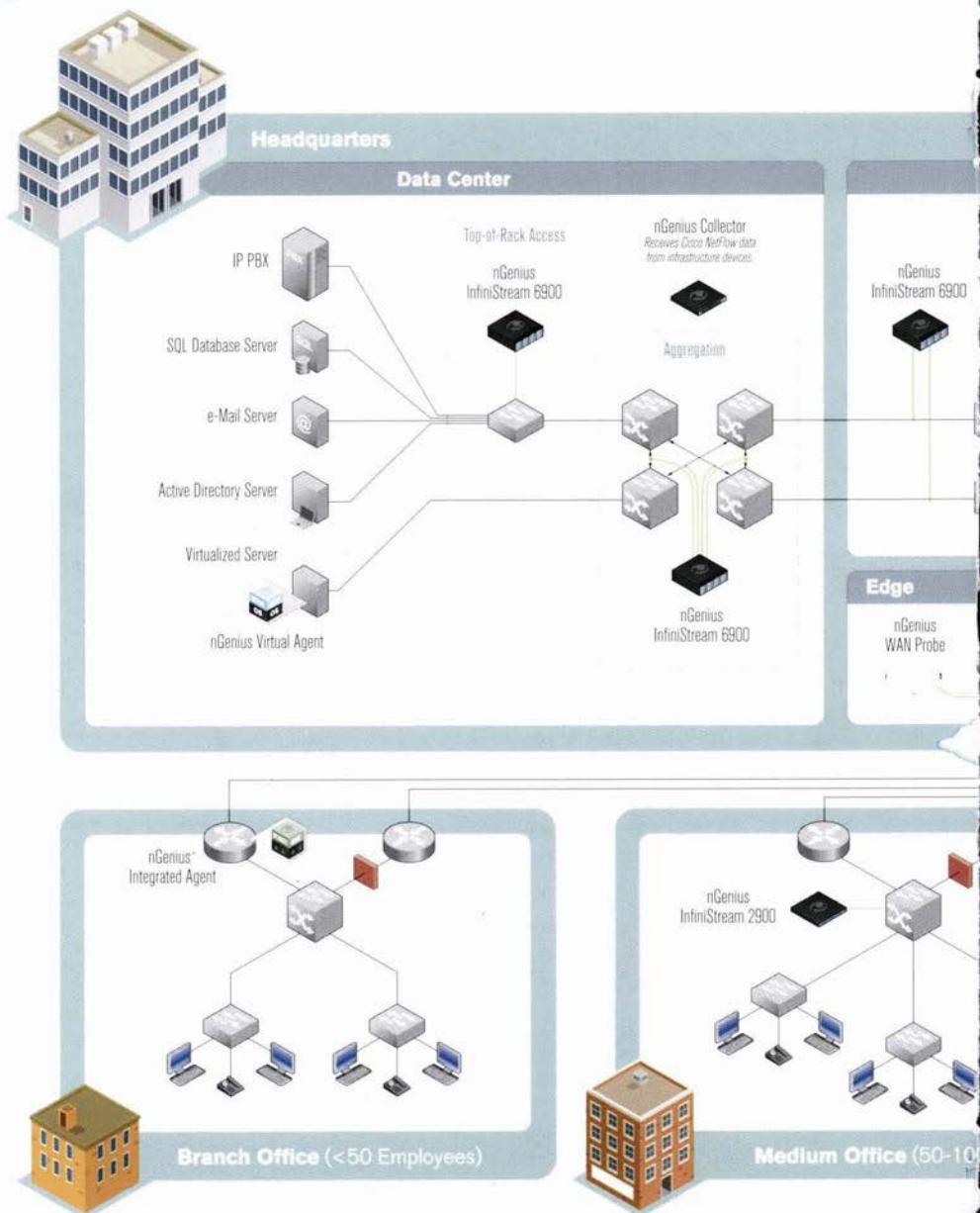
Financial Intelligence - FIX Intelligence - Trade Orders View

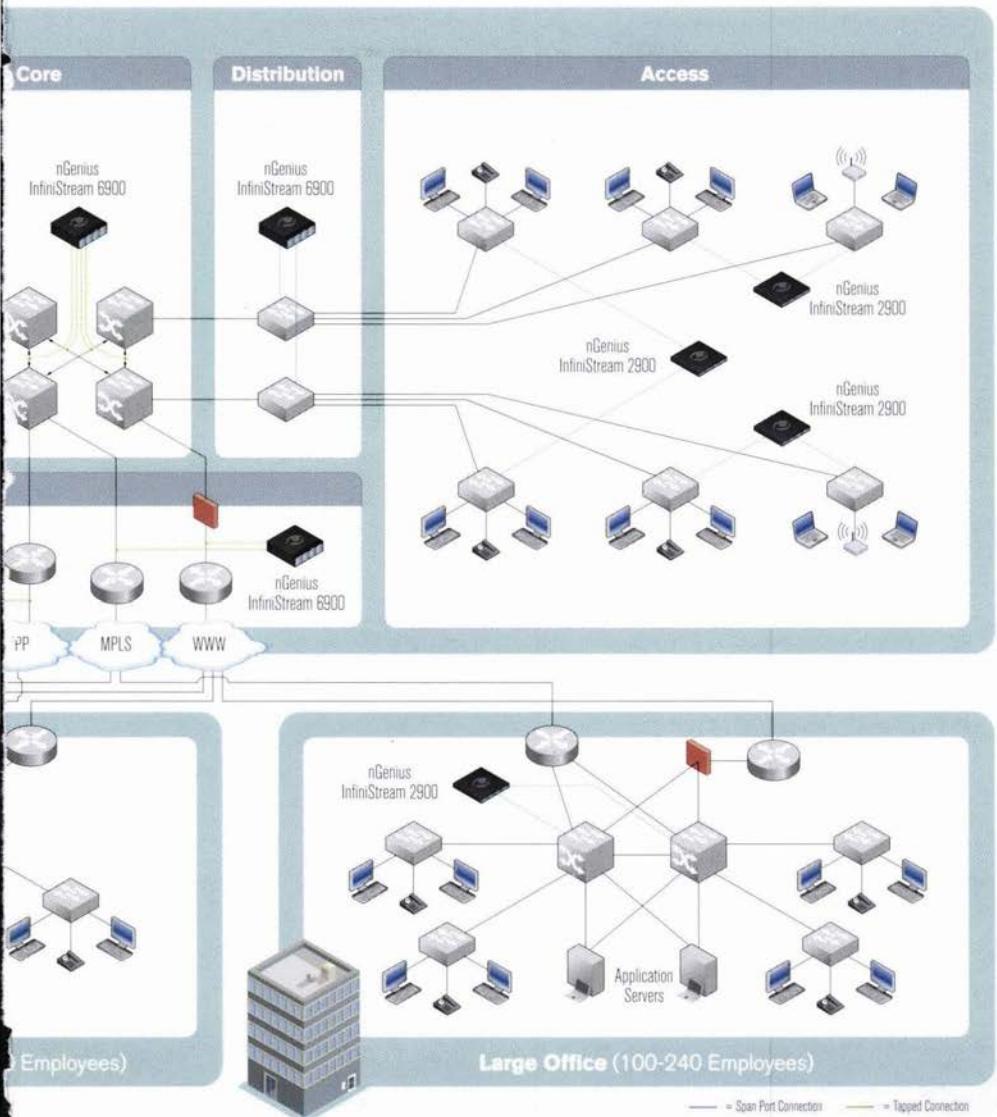
Sniffer MultiSegment Analysis

Sniffer MultiSegment Analysis is a post-capture analysis tool that automates and simplifies the tedious process of matching packet traces across multiple network segments and streamlines the process of troubleshooting complex or multi-tiered applications. Sniffer MultiSegment Analysis provides the IT organization an understanding of application delivery across segments with graphical views of specific conversations.

Capabilities

- Automates and synchronizes conversation flows across multiple segments to enable complex application troubleshooting
- Provides a structured drill-down approach to solving complex performance problems
- Visually depicts delays and networking anomalies
- Algorithmically correlates front-end Web transactions with SQL-based back-end queries for multi-tiered applications
- Presents transactions from multiple network perspectives or combined together in a multi-tiered view
- Allows drill down from higher-level reporting to the packet details
- Tracks and coordinates conversation flows across multiple segments
- Monitors the delivery of multi-tier applications from a hop-by-hop perspective





NetFlow Analysis Modules

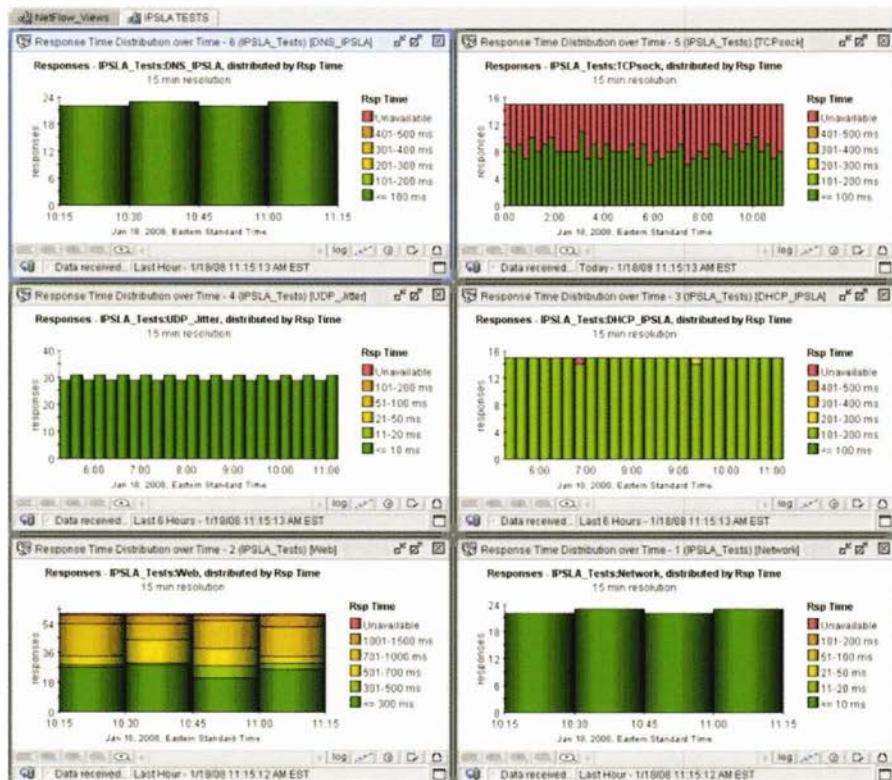
NetFlow Analysis Modules are specifically designed to collect Cisco NetFlow or sFlow data from other popular network devices as their primary source of network traffic data. Providing greater visibility in more places, these modules use flow records from network infrastructure devices to provide action-oriented alerts that contain evidentiary details and graphical charts used as the starting point to guide diagnosis. IT organizations can easily drill down for additional details necessary to resolve problems.

nGenius Performance Manager for Flows

The nGenius Performance Manager for Flows leverages Cisco NetFlow or sFlow data from popular network devices as their primary source of network traffic data. IT organizations can easily drill down to nGenius Performance Manager for Flows for additional details necessary to resolve problems. The nGenius Performance Manager for Flows analyzes and maps NetFlow and sFlow data and IP SLA results gathered by nGenius Collector appliances into the powerful real-time screens and historical reports necessary for problem resolution and capacity planning activities.

Capabilities

- Gain an accurate view of data contained within NetFlow and sFlow datagrams and IP SLA test results
- View intelligent early warning alerts that contain evidentiary details and graphical summaries to quickly identify and resolve service delivery problems
- Receive Quality of Service (QoS) configuration and statistical information from the Cisco Class-based QoS (CBQoS) MIB including: discard packets, discard bytes, and discard BIT rate
- View application, response time, and utilization data for easy enterprise-wide analysis and reporting
- Manage and forecast capacity shortfalls by leveraging the core on-demand and long-term reporting functionality of the nGenius Service Assurance Solution



nGenius Performance Manager for NetFlow - IP SLA: IP SLA tests are supported within nGenius Performance Manager for NetFlow to actively measure network and application response time metrics and VoIP quality.

nGenius Analytics for Flows

The nGenius Analytics for Flows leverages NetFlow conversation information collected by nGenius Collector appliances to automatically detect and aid in diagnosing anomalous network and application usage. Intelligent, action-oriented alerts contain evidentiary details and graphical charts to identify and resolve issues.

Capabilities

- Recognize and resolve network problems quickly and efficiently and to support capacity planning initiatives
- Receive understanding of how users are accessing the services they need to meet their business goals of application delivery across the network infrastructure, including utilization, application responsiveness and QoS configuration
- Improve service delivery by automatically identifying anomalous behavior with action-oriented alarms that provide powerful early warning of performance degradations, minimizing the impact on the end user
- Receive visibility to enable proper planning for new technology initiatives and cost justification when upgrades are needed

nGenius Intelligent Data Sources

NetScout offers a comprehensive family of Intelligent Data Sources that provide packet flow-based visibility for all applications and services that flow across global networks. NetScout Intelligent Data Sources range from intelligent deep packet capture and analysis appliances that are deployed in strategic, high-bandwidth locations, to real-time hardware and software probes and Cisco NetFlow and sFlow collection devices.

All NetScout Intelligent Data Sources leverage the Common Data Model (CDM) architecture. CDM is a NetScout technology innovation that creates a common set of statistics and metrics across multiple data sources. These sources derive traffic intelligence regardless of interface type—IP, ATM, Frame Relay, NetFlow, etc. CDM provides a highly scalable technology foundation that feeds into the nGenius Service Assurance Solution and enables consistent metrics across a broad-range of interfaces and data sources. In addition, the nGenius InfiniStream leverages NetScout Adaptive Session Intelligence™ for more granular real-time views into user sessions and transactions across multi-domain environments.

nGenius Intelligent Data Source options for the nGenius Service Assurance Solution include:

- nGenius InfiniStream Appliances - dedicated intelligent deep packet capture appliances to support service assurance and unparalleled application and network performance analysis
- nGenius Probes - perform deep packet analysis and provide high-definition application and network performance information to the nGenius Service Assurance Solution. Probe technology extends pervasive visibility into the data center through a range of deployment sources:
 - nGenius Integrated Agent – deployed in third-party network devices such as switches or routers
 - nGenius Virtual Agent - deployed as an application inside virtual server
 - nGenius Hardware Probes – deployed as traditional hardware-based intelligent data source
- nGenius Collector – a hardware appliance that delivers NetFlow and IP SLA-based data to the nGenius Performance Manager, nGenius Performance Manager for Flows, and nGenius Analytics for Flows

nGenius InfiniStream Appliances

The nGenius InfiniStream appliance delivers highly scalable intelligent deep packet capture and analysis capabilities for the long-term storage and retrieval of network packets and statistics. The nGenius InfiniStream appliances offer multi-core high performance processing to enable local, distributed analysis of packets to support intelligent capabilities such as voice quality analysis, and the generation of Extended Data Records (xDRs) and Adaptive Session Records (ASRs). nGenius InfiniStream appliances are deployed where detailed packet analysis and historical back-in-time analysis is needed. Because the nGenius InfiniStream appliance continually stores packets to disk, it provides the native packet records to go back in time to understand exactly how networked applications interrelate and to troubleshoot problems as they happen. Packet and statistical data from nGenius InfiniStream appliances can be leveraged in a standalone analysis mode or as a dedicated data source to enable the nGenius Service Assurance Solution.



the nGenius 7900 Series appliance is designed for Service Provider environments, core data centers and other sites that have 10 GbE interfaces and vast storage requirements. Since it comes in a modular format, the 7900 Series can expand as needs grow.



power and RAID storage, hot-swappable drives and power supplies, and supports high-capacity links up to 10 GbE.



nGenius InfiniStream 6900 Series—The industry standard for packet flow intelligent deep packet capture and analysis technology. Optimized for speed, performance, and resilience, the 6900 Series provides storage capacity up to 16 TB, in a single hardware-based appliance, redundant

nGenius InfiniStream 2900 Series—A small-footprint intelligent deep packet capture and analysis appliance optimized for lower-utilized links and sized to fit in space-constrained locations.

These models include 500 GB of storage for lower capacity links such as in the access layer or where traffic volumes are lower.

Capabilities

- Linux®-based, security-hardened with integrated manageability and per-device access control
- Continuously analyzes, creates robust CDM statistics and captures packets to storage in real-time
- Generates real-time XDR, ASR, and AST records for supported applications and protocols
- Provides efficient indexing for rapid retrieval and isolation of data
- Flexible, non-intrusive deployment with standard network mirror port or link tap technologies
- Hardware-based time-stamping and synchronization for millisecond granularity to better track packets and flows
- Hot-swappable drives, redundant power sources, and RAID for locations that require options for added reliability
- Ships with the Sniffer Analysis base module and includes InfiniStream Console, Sniffer Intelligence, and industry-leading Sniffer decodes and experts
- Supports multiple Ethernet interface connections from 10/100/1000 to 10 GbE for copper or fiber
- Flexible storage options with storage capacity ranging from 500 GB to 96 TB

nGenius Probes

The nGenius Probes are hardware and software Intelligent Data Sources that perform deep packet analysis and provide high-definition application and network performance information to the nGenius Service Assurance Solution. Probes are strategically deployed in high-bandwidth locations to generate key performance metrics for traffic, application and service utilization, conversations, error conditions, resource utilization, and response time. Probe technology extends pervasive visibility into the data center through a range of deployment sources:

- nGenius Integrated Agent – deployed in third-party network devices such as switches or routers
- nGenius Virtual Agent – deployed as an application inside a virtual server
- nGenius Hardware Probes – deployed as traditional hardware-based Intelligent Data Source

nGenius Integrated Agent

The nGenius Integrated Agent software is self-contained virtualized probe software integrated and deployed within a third-party network device. Optimized for deployment at the branch office and the network edge, the nGenius Integrated Agent feeds valuable performance metrics into the nGenius Service Delivery Manager or the nGenius Performance Manager and dramatically reduces costs associated with monitoring at the branch and network edge by leveraging an existing third-party network platform as an intelligent instrumentation point.

Delivering cost effective and scalable analysis of all traffic traversing the network, this solution generates rich key performance metrics that include traffic, application and service utilization, conversations, error conditions, resource utilization, and response time. The nGenius Integrated Agent software provides IT organizations with a highly scalable, predictive and preventative service delivery management approach that identifies and resolves issues before users are impacted.

The nGenius Integrated Agent for Cisco ISR

The nGenius Integrated Agent for Cisco ISR cost-effectively integrates industry-leading NetScout probe technology into Cisco Integrated Services Routers to extend packet-flow visibility to the branch environment. Optimized for deployment in the branch office, the nGenius Integrated Agent for Cisco ISR provides the following capabilities:

- Cost-effective monitoring of traffic destined to and from the WAN
- Local troubleshooting for the branch LAN without the need to dispatch a technician
- Achieve branch-to-branch monitoring for detailed visibility into decentralized networks and cloud computing
- Accurate response time analysis and Key Performance Indicators from the branch user perspective
- Validation of WAN optimized traffic
- End-to-end views and reports from the data center, through the core, out to the branch

The nGenius Integrated Agent for HP

The nGenius Integrated Agent for HP® is self-contained virtualized probe software integrated and deployed within an HP E8200 or E5400 Switch Series to cost-effectively extend granular packet-flow technology and provide visibility into network and application performance at the network edge. Optimized for deployment at the network edge, the nGenius Integrated Agent for HP provides the following capabilities:

- Unprecedented visibility into IT Service Delivery from the datacenter to the network edge and remote offices
- Predict and prevent service delivery performance issues by finding the root cause at the edge before it impacts users
- Leverage existing technology investments to deliver always-on visibility into traffic at the network edge and provide consistent and reliable service delivery management to all users regardless of location
- Assure business service continuity and achieve optimal user experience
- End-to-end views and reports from the data center, through the core, out to the edge

nGenius Virtual Agent

The nGenius Virtual Agent extends the visibility of the nGenius Service Assurance Solution into virtual computing environments. The nGenius Virtual Agent is easily deployed within a virtual server and contained within a protected and dedicated environment without impact to other virtual applications.

Bringing visibility to traffic inside virtualized servers, the nGenius Virtual Agent extends NetScout Intelligent Data Source core technology to virtualized environments. The nGenius Virtual Agent automatically discovers all applications and their interdependencies and monitors all traffic on the host hypervisor, providing visibility for intra-server, inter-server and virtual server to physical server traffic.

Capabilities

- Extends nGenius probe technology for granular packet flow visibility in virtual servers
- Provides unified views of applications and services across virtual and physical infrastructure
- Provides short-term on-demand packet capture based upon user request or defined triggers
- Identifies application movement to recognize application additions, relocations, and removals from the network perspective
- Uses Virtual TAP (vTAP) mode to forward packet flow traffic from within a virtual machine to an external InfiniStream appliance for intelligent deep packet capture and analysis
- Supports VMware® virtual server environments

nGenius Hardware Probes

The nGenius Hardware Probes are highly optimized Intelligent Data Sources that perform deep-packet analysis on network traffic and deliver key application and performance metrics to the nGenius Service Assurance Solution.



The nGenius Hardware Probes are ideally suited for deployment at the WAN edge and network edge locations that do not require continuous capture and storage of network packets.

Strategically distributed in high-bandwidth locations, nGenius Hardware Probes generate key performance metrics that include traffic, application and service utilization, conversations, error conditions, resource utilization, and response time.

Capabilities

- Analyzes all network traffic in real time and generates metadata statistics for use in the nGenius Service Assurance Solution
- Leverages the NetScout CDM architecture to provide unified metrics that scale across multiple topologies and interfaces
- Automatically recognizes well-known, Web-based, peer-to-peer, and custom applications
- Generates network and application metadata, providing insight into the hosts and traffic conversations such as traffic, application, and service utilizations
- Provides one-minute data-sampling granularity
- Tracks utilization, response times, QoS metrics, and VoIP information
- Provides short-term on-demand packet capture based upon user request or defined triggers
- Supports WAN and Gigabit Ethernet interface connections with support for fiber and copper links

nGenius Collector

The nGenius Collector is a high-capacity, high-performance data source that is optimized to collect NetFlow, sFlow, and IP SLA statistics for analysis by the nGenius Service Assurance Solution. NetFlow- and IP SLA-enabled routers and switches provide a cost-effective option to direct NetFlow datagrams and IP SLA test results to the nGenius Collector. Collecting and delivering NetFlow and IP SLA data allows the nGenius Service Assurance Solution to analyze and display this information in common formats and reports along with data from other nGenius Intelligent Data Sources.

Leveraging the unique CDM architecture, NetScout nGenius Collectors work with nGenius analysis solutions to enable the collection, analysis and display of NetFlow, IP SLA, MIB II information, and data received from NetScout data collection devices. The nGenius Performance Management System presents the NetFlow and IP SLA data, including conversation information in context with information from other sources across the network, automatically minimizing the time to analyze the data received from NetFlow and IP SLA-enabled devices.

Capabilities

- The NetScout CDM architecture provides a universal format that scales across multiple topologies and interfaces, including NetFlow, sFlow and IP SLA
- Collects NetFlow and sFlow metrics for many network switches and routers, providing insight into the hosts and traffic conversations
- Measures network performance and availability between IP SLA-enabled devices and application server end points
- Recognizes well-known and custom application port and server associations
- Provides granular five-minute data-sampling
- Tracks utilization, response times, QoS metrics, and VoIP data

Portable Network Analysis

Sniffer Portable Analyzer Family

The industry's original Sniffer technology, the Sniffer Portable Analyzer software family provides on-demand plug-and-play network analysis for wired and wireless networks. Ideally suited for rapid response to network and application issues on location in the field, these software-based solutions are built on the industry's most advanced and widely deployed Sniffer decodes and expert analysis software. Leveraging a common technology foundation, Sniffer Portable Analyzer software is available in a single standalone solution, or in an enterprise-class solution that supports from 10 to hundreds of users with centralized control and reporting of its use on the network.



Sniffer Portable Professional Analyzer

The Sniffer Portable Professional Analyzer is a single-user portable network and application analyzer that provides a high-level view of network traffic and application performance using its dashboard view and drill-downs into deep packet analysis. The dashboard displays important data about the network and creates statistical measurements about network traffic, providing an accurate picture of network activity in real time. Network managers can easily drill down from the dashboard to view individual hosts and protocols. The capture function collects and stores the actual packets from the network. During capture, expert analysis is performed on packets and results are displayed in an easy-to-read, real time view.

Capabilities

- On-demand monitoring of network and application statistics for 10/100/1000 Ethernet and wireless 802.11 a/b/g/n network segments
- Dashboard views with deep drill-down to rich packet-level analysis
- On-demand and post-capture decode of more than 500 protocols, including popular VoIP, financial, mobile, and wireless 802.11a/b/g/n + 802.11e/h protocols
- Rich expert analysis to quickly identify errors during packet-level examination
- Robust filters and alarms to quickly identify and isolate network problems
- Wi-Fi device list inventories of all 802.11a, 11b, 11g and 11n devices operating in the wireless environment
- Encryption monitoring plus rogue access point and rogue client detection to identify potential wireless security issues

Features	Sniffer Portable Professional Analyzer	Sniffer Global Analyzer
Licensing	Single User	10-User or Unlimited Enterprise
Intuitive, easy-to-use dashboards	▲	▲
Supports wired (Ethernet 10/100/1000) and wireless (802.11 a/b/g/n) network links	▲	▲
Decodes 500+ protocols	▲	▲
Rich expert modes and alarms	▲	▲
Robust filters and event triggers	▲	▲
Wireless 802.11a/b/g/n + 802.11e/h decodes	▲	▲
Wireless encryption monitoring	▲	▲
Automatic detection of known and rogue Wi-Fi devices	▲	▲
Wireless expert	▲	▲
Functionality access control, per-user/per-role		▲
Centralized authentication for tool access		▲
Online and offline tool activity tracking and reporting		▲
Integration with Cisco 3300 Series Mobility Services Engine		▲
Centralized license, upgrade and patch management		▲

Sniffer Global Analyzer

Sniffer Global Analyzer extends enterprise-class functionality to the Sniffer Portable Analyzer technology. Unlike other portable protocol analyzers, which give users full, uncontrolled access to network traffic traversing the wire, Sniffer Global Analyzer offers a unique, centralized, policy-based access control system that governs how and what a user can access on the network using the software-based client application. An administrative server controls user access to network data and analyzer functions, monitors activity within the tool, and provides usage reports--plugging a commonly overlooked and dangerous gap in security at many organizations. Sniffer Global is available in a 10-user and unlimited-user license version, for deployment flexibility across distributed and global organizations.

Capabilities

- Leverages all capabilities found in the Sniffer Portable Professional Analyzer software
- Centralized usage controls on a per-user/per-role basis to limit who can access sensitive data using the client application
- Policy-based user authentication to avoid compromising network or application security
- Online and offline user activity tracking and reporting for better auditing
- Integration with the Cisco 3300 Series Mobility Service Engine (MSE) to display physical location of wireless devices in context with relevant wireless performances metrics
- Centralized license, upgrade and patch management to assure consistency and transparency across multiple IT audiences and geographies

Third-Party Enterprise Management Systems Integration

NetScout collaborates with best-in-class technology partners to provide integrated solutions and extend the value of the nGenius Service Assurance Solution for application and network performance management across the enterprise.

Our integrated partner offerings leverage packet-flow data, Key Performance Indicators (KPIs) and other performance information derived from the nGenius Service Assurance Solution, to enhance an organization's ability to optimize, protect, and simplify the service delivery environment and consequently, the business.

ArcSight



ArcSight, an HP company, is a leader in Network and Security Information Management, delivers mission-critical solutions for security, network and IT operations that enable enterprises to turn operational data into action. ArcSight solutions address today's complex enterprise networks that span multiple organizations and corporate business initiatives. By comprehensively collecting, analyzing, managing and responding to security and network data, ArcSight solutions mitigate information risk for real-time threat management, compliance reporting and automated network response. ArcSight's customer base includes leading global enterprises, government agencies and MSSPs.

NetScout-ArcSight Partnership

The NetScout nGenius Service Assurance Solution is certified and supports the ArcSight Common Event Format (CEF) connector to deliver automated real-time alerts to the ArcSight Logger, ArcSight ESM and ArcSight Express™ platforms. ArcSight CEF integration enables plug-and-play deployment, so that on connection, nGenius solution alerts can be immediately leveraged by the ArcSight platform without additional configuration or tuning. ArcSight CEF compliance ensures interoperability and support between platforms and enables customers to have seamless future compatibility as each product evolves. Complementary to the threat management capabilities of ArcSight, NetScout solutions bring incremental value to both ArcSight and NetScout customers. The nGenius Service Assurance Solution provides:

- Enterprise-wide threat correlation
- Network-based anomaly detection
- Improved visibility of faults and threats
- User and service based context
- Rapid drill-down functionality to identify root-cause

ArcSight Partner Designation and Certification

NetScout Systems, Inc. is a registered member of the ArcSight Technology Alliance program. ArcSight forms technology partnerships with solution providers. Alliance certification to ensures that members' products and technologies have verified interoperability, and provide complimentary technologies to deliver a complete end-to-end secure network solution to their customers.

Cisco Systems



Cisco Systems, Inc. is the worldwide leader in networking for the Internet. Today, networks are an essential part of business, education, government and home communications, and Cisco Internet Protocol-based (IP) networking solutions are the foundation of these networks.

NetScout-Cisco Partnership

Building on a long history of joint technology development Cisco and NetScout continue to deliver value-added solutions to provide network and service delivery assurance across a wide range of Cisco technologies, including:

- Cisco Unified Wireless Networks
- Cisco Unified Communications
- Integrated with Cisco Integrated Services Routers (ISR) via the Application eXtension Platform (AXP)

NetScout solutions bring incremental value to both Cisco and NetScout customers by complementing Cisco management capabilities and builds on a base of mutual customer and channel relationships.

Cisco Partner Designation and Certification

NetScout Systems, Inc. is a registered member of the Cisco Developer Network (CDN), which ensures that members' products and technologies have verified interoperability, adhere to strict standards, and offer exciting new capabilities for Cisco joint customers. NetScout was the first management vendor in the Cisco Ecosystem for Cisco Motion and Unified Wireless Solutions to integrate location information from Cisco Unified Wireless Networks.

NetScout is a member of the Cisco Compatible Extensions program, which ensures the widespread availability of client devices that are interoperable with a Cisco WLAN infrastructure and take advantage of Cisco innovations for enhanced security, mobility, quality of service, and network management.

Citrix



Citrix Systems, Inc., is a leading provider of virtual computing solutions that help companies deliver IT as an on-demand service. Citrix combines virtualization, networking, and cloud computing technologies into a full portfolio of products that enable virtual workstyles for users and virtual datacenters for IT. More than 230,000 organizations worldwide rely on Citrix to help them build simpler and more cost-effective IT environments.

NetScout-Citrix Partnership

NetScout applies its CDM technology to identify and monitor Citrix® MetaFrame® Presentation Server traffic flows and Citrix-hosted applications and maps them to the powerful real-time and historical analysis views and reports available in the nGenius Service Assurance Solution.

NetScout Performance Management Solutions meet both network and application managers' need for ensuring optimal performance of applications in Citrix deployments by making it possible for IT staff to easily:

- Monitor and track each published Citrix-based application individually, simplifying performance management and troubleshooting.
- Evaluate Citrix utilization by recognizing and understanding existing network patterns and identifying Citrix traffic flows and applications running over the network.
- Maximize the performance of Citrix MetaFrame Presentation Server implementations by analyzing passive and active application response time metrics for individual Citrix applications and pinpointing application degradations for faster resolution.

Citrix Partner Designation and Certification

NetScout is a Citrix Charter Alliance Partner

EMC Ionix Control Center (*formerly SMARTS*)



EMC provides the systems, software, and services to leverage one of your most strategic assets—your business data. Our goal is to optimize your information infrastructure to meet growing demands for enterprise content management, security, archiving, storage, and virtualization.

NetScout-EMC Partnership

NetScout integrates nGenius Service Delivery Manager and nGenius Performance Manager with the following EMC® Ionix™ for IT Operations products:

- EMC Ionix Service Assurance Manager
- EMC Ionix IP Availability Manager
- EMC Ionix Discovery Manager

The NetScout-EMC Ionix integration provides joint customers with complementary visibility into the packet-flow data within the service-delivery environment and a bi-directional workflow between the nGenius Solution and EMC Ionix. The integration includes the following functionality:

- Forwarding of nGenius data source and server-based alarms to deliver the packet-flow data that is critical in managing today's most complex service-delivery environments
- A centralized view of network and application performance events consolidated within the same console for real-time event notification
- Intelligent, action-oriented nGenius solution alerts that aid in the diagnosis of service-impacting problems
- Context-sensitive drill-down into nGenius and nGenius Performance Manager to accelerate problem resolution

EMC Partner Designation and Certification

NetScout is an EMC Velocity2 Technology and ISV Partner and leverages the EMC Velocity2 ISV Program to build solutions integrated with EMC platforms. The nGenius-Ionix integration received Ionix certification, which provides assurance to customers that an offering has met or exceeded high standards set by EMC for integration with EMC platforms.

Hewlett-Packard



HP is a technology company that operates in more than 170 countries around the world. We explore how technology and services can help people and companies address their problems and challenges, and realize their possibilities, aspirations and dreams. We apply new thinking and ideas to create more simple, valuable and trusted experiences with technology, continuously improving the way our customers live and work.

NetScout-HP Partnership

NetScout has product integrations with HP Network Node Manager i-series (NNMi), HP Business Availability Center (BAC), and the HP Networking AllianceONE Advanced Services zl Module. This allows our customers to seamlessly integrate NetScout's nGenius Service Assurance Solution with HP NNMi and BAC. The nGenius Integrated Agent for HP Networking's AllianceONE Advanced Services zl Module turns HP E8200 and E5400 switch series platforms into intelligent data sources for NetScout's nGenius Service Assurance Solution. NetScout's partnership with HP provides our joint customers a unified and consistent approach to managing service delivery from the data center to the network edge.

HP Partner Designation and Certification

NetScout Inc. has a long standing relationship with HP and is a Gold Business Partner in HP's Enterprise Management Alliance Program and a HP AllianceONE partner.

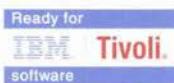
nGenius Performance Manager and nGenius Service Delivery Manager has been certified by HP to integrate with:

- HP AllianceONE Advanced Services zl Module
- HP Business Availability Center (BAC)
- HP Network Node Manager i-series (NNMi)

Certification with HP validates the interoperability of the nGenius Integrated Agent with the HP AllianceONE Advanced Services zl Module. The AllianceONE Integrated Certification is independently awarded by AppLabs to verify the application meets the AllianceONE SDK specification and is interoperable with the HP AllianceONE Advanced Services Module.

Certification with HP BTO solutions HP BAC and HP NNMI signifies that HP tested the NetScout Solution against established criteria and verified its compatibility. The certification process involves several weeks of interactive integration testing by HP engineers in cooperation with the partner's development team.

IBM



IBM® is working with its clients to develop new business designs and technical architectures that allow their businesses the flexibility required to compete in this new landscape. The business is also adjusting its footprint toward emerging geographies, tapping their double-digit growth, providing the technology infrastructure they need, and taking advantage of the talent pools they provide to better service the company's clients.

NetScout-IBM Partnership

NetScout® Systems, Inc. nGenius Performance Manager and nGenius Service Delivery Manager integrates with IBM Tivoli® Netcool®/OMINbus

The integration between NetScout and IBM platforms provides users with expanded reach of their Event Management Systems (EMS) by combining integrated fault management and service delivery assurance into a single integrated console view with a seamless troubleshooting workflow. The IBM Tivoli Netcool/OMNIBus Integration Module is made available, maintained and supported by IBM. The integration package is available for download from the IBM Tivoli Open Process Automation Library (OPAL) site.

IBM Partner Designation and Certification

NetScout is an IBM® PartnerWorld member, and has been awarded "Ready for IBM Tivoli Software" validation status to nGenius Performance Manager and nGenius Service Delivery Manager.

"Ready for IBM Tivoli Software" validation status signifies that IBM has tested the NetScout Solution against established criteria and verified its compatibility with IBM Tivoli products.

NetScout Global Support and Services

NetScout offers a full range of technical support, consulting and training services to help customers maximize their investment in the NetScout solutions.

MasterCare

MasterCareSM is the NetScout industry-leading global support service. With four global technical support centers, NetScout is dedicated to providing a rich variety of award-winning services that support the business objectives of our customers, lower their total cost of ownership, and maximize the value of their investment in NetScout technology.

MasterCare Highlights

Having access to the right resources at the right time is invaluable when assistance is needed. That's why the MasterCare Support program provides:

- 24x7 access to award-winning technical support staff
- One-hour priority response on technical support calls (after business hours by phone only)
- Access to software and firmware updates for covered products
- Advanced replacement or onsite repair of most hardware
- Access to technical self-help on the MasterCare Portal
- Up-to-date knowledge transfer and best practices via the Online Learning Center
- Free subscriptions to the MasterCare newsletter
- Discounts to the annual NetScout Engage user conferences

For those customers who need even more advanced support options, the NetScout support organization offers Technical Account Manager, Onsite Engineer and Remote Site Engineer programs as described below:

- **Technical Account Manager (TAM)**—The TAM is a regional NetScout engineer assigned to a specific customer account to shepherd incident-driven product issues or other concerns on the organization's behalf; the TAM is able to help resolve issues faster and more effectively, resulting in a better return on investment and a lower total cost of ownership
- **Remote Site Engineer (RSE)**—An RSE is a NetScout support engineer who spends 20 hours per week dedicated to monitoring and managing the customer's NetScout environment remotely from a NetScout location; in addition to acting as the customer's primary point of contact into the NetScout support organization, the RSE provides remote assistance with day-to-day, backend administration of the customer's NetScout environment
- **Onsite Engineer (OSE)**—For the most mission-critical environments, NetScout offers the OSE, a full-time Level-3 engineer hired and trained by NetScout, but who resides at the customer location to offload the planning, deployment and day-to-day maintenance of the customer's NetScout environment, freeing the network operations team to take advantage of NetScout solutions to troubleshoot problems or tackle other strategic activities

Professional Services

Many of today's network management and support organizations are operating with increased workloads and limited staffing, leaving fewer resources available for deploying new services or solutions, or for taking a more proactive approach to service assurance.

Many leading global enterprises, tier-one service providers, and government agencies around the world have turned to NetScout to optimize, protect, and simplify their network infrastructure, applications, and services. Having selected the world-class nGenius Service Assurance Solution for unified management of service delivery, the next step in the value chain is to begin using it efficiently. NetScout Professional Services provides a robust set of services to help customers get up and running effectively and expeditiously, and to accelerate ROI.

The NetScout Professional Services team offers a broad portfolio of deployment, specialized and industry-focused consulting services, including:

Deployment Services

- **nGenius Implementation**—Focuses on installing and configuring the nGenius Service Assurance Solution to optimize and accelerate the customer's ability to quickly resolve service delivery issues
- **Knowledge Transfer**—Employs mentoring and hands-on learning within an organization's network environment to increase IT staff proficiency with NetScout solutions and technologies
- **nGenius Service Delivery Manager Quick Start**—Provides deployment assistance to enable network management staff to quickly start reaping the benefits of the nGenius Service Delivery Manager services-aware dashboard and early warning system

Specialized Services

- **nGenius Service Delivery Manager Optimization**—Defines, tunes and configures an organization's most critical business services and applications to provide maximum value from nGenius Service Delivery Manager
- **Health Check**—A quarterly review of the nGenius Solution environment to assure that changing business objectives and performance management needs are being optimally met
- **Virtualization Services**—Three distinct services designed to facilitate the successful adoption and management of virtualized environments within the nGenius Service Assurance Solution
- **DoD Certification and Accreditation**—Provides review, remediation and documentation support to help implement STIG certifications within government networks in a timely manner
- **Trusted Internet Connection (TIC) Compliance**—Assists government agencies with meeting two key requirements of the TIC initiative: capturing and storing seven days of packet data for easy, post-incident analysis, and archiving 30 days of captured data for longer term analysis

Industry Services

- **Financial Services Network Assessment**—Baseline, document and provide recommendations on the overall health of trading environments to help identify delays in market data delivery and execution
- **Market Feed Operations Review**—Proactively monitor the scheduled and published changes in market feed standards and implement all necessary changes to assure real-time, packet-level visibility into the performance of the nGenius Service Assurance Solution

Sniffer University

Sniffer University provides a wide variety of comprehensive training programs designed to educate network professionals on NetScout technologies to effectively analyze, troubleshoot, and mitigate performance issues. Sniffer University utilizes a variety of educational approaches, allowing students to choose the option that best meets their needs and individual learning style, including:

- **Face-to-face classroom instruction**—Live Virtual Instructor-led training classes or onsite at customer locations
- **Subscription-based training programs**—Long-term or company-wide training plans to maximize the benefits of NetScout solutions
- **On-demand training**—Self-paced tutorials of Sniffer University's most popular courses and technical documentation
- **Community peer training**—NetScout users contribute best practice advice in the online NetScout User Forum (NUF)
- **Online learning portals**—Customized microsites created on a per-organization basis to allow students to access training information remotely regardless of their location, and to gain valuable instruction through self-paced training courses, related documentation and online interaction with Sniffer University instructors

Sniffer University Courses

Sniffer University offers intensive two, three, or five-day classes on how to more effectively use and solve problems with the NetScout Service Assurance Solution and specific products. Detailed technology courses on everything from TCP/IP, to Windows® troubleshooting, to IPv6 technology are also available. The curriculum is 50 percent lecture, 50 percent labs for a “learn by doing, try it now” experience that facilitates the rapid transfer of knowledge so that students gain skills they can use the first day back on the job. These courses are designed and led by highly experienced instructors who have trained more than 100,000 students since 1990.

Multi-Level Certification Programs

Sniffer University offers a range of certification programs that enable students to build their level of expertise with the nGenius Service Assurance Solution and use that expertise to help their organization meet operational and business goals. There are three levels of certification:

- **nGenius Certified Professional (nCP)**—Designates broad understanding in the use of nGenius Performance Manager to monitor and troubleshoot network and application performance
- **nGenius Certified Analyst (nCA)**—Designates broad understanding of packet analysis concepts and techniques to monitor and troubleshoot network and application performance
- **nGenius Certified Expert (nCE)**—Indicates advanced knowledge of the Internet Protocol (IP) suite, network troubleshooting and how to optimize application performance
- **nGenius Certified Master (nCM)**—Demonstrates an advanced understanding of network and application troubleshooting techniques, networking technology and application principles, and the use of NetScout software and instrumentation

NetScout User Forum (NUF)

A customer-driven user group, NetScout User Forum is dedicated to providing the NetScout user community with a network of peers for collaboration and information sharing. The group's mission is to "share practical experience, promote technical understanding, and provide expert insight into deploying NetScout products for maximum business value."

Membership is open to all NetScout customers and entitles users to:

- Join the online blog and forum discussions
- Participate in private podcasts, webinars and other special events
- Share tips and ask technical questions on the message board
- Gain exclusive access to product news, downloadable files, and much more
- Provide product feedback and ideas to the product development process Visit www.netscoutuserforum.com for details about how to join the NUF community.

Engage Annual User Summit

The Engage User Summit brings together NetScout customers from around the globe for advanced learning, networking, and sharing of ideas. The conference features presentations from NetScout executives and customers, individualized training labs, roundtable and panel discussions, demonstrations of new products, and interactive discussions on future product direction.



About NetScout Systems

NetScout, Inc. (NASDAQ: NTCT) is the market leader in Unified Service Delivery Management enabling comprehensive end-to-end network and application assurance. For 26 years, NetScout has delivered breakthrough packet-flow technology that provides trusted and comprehensive real-time network and application performance intelligence enabling unified assurance of the network, applications and users. These solutions enable IT staff to predict, preempt and resolve network and service delivery problems while facilitating the optimization and capacity planning of the network infrastructure. NetScout nGenius and Sniffer solutions are deployed at more than 20,000 of the world's largest enterprises, government agencies, and more than 130 service providers, on more than 740,000 network segments to assure the network, applications, and service delivery to their users and customers.



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