



Highlights

- Delivers a comprehensive understanding of application and service performance across the network infrastructure, assuring a high performance service delivery environment
- Optimized and efficient network infrastructure to run at peak efficiency and deliver a consistent high quality end-user experience
- Granular understanding of how users access key business applications and assure users have access to the services needed to meet business objectives
- Real-time recognition of poor service delivery conditions, speeding the identification and diagnosis of service degradation to minimize the impact to users

nGENIUS® | PERFORMANCE MANAGER

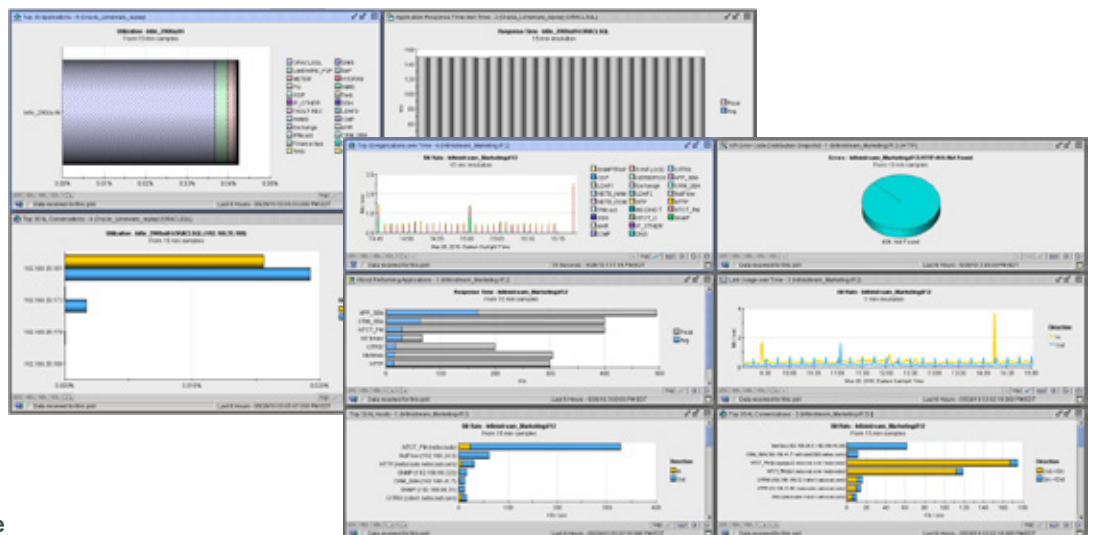
Comprehensive, software for the intelligent analysis and reporting of service, application and network performance

Comprehensive Performance Management

nGenius® Performance Manager enables the real-time and historical packet flow-based analysis; any view, any metric reporting; and configuration capabilities for the nGenius Service Assurance Solution. nGenius Performance Manager is highly optimized to support the most complex and demanding network environments by leveraging robust and pervasive packet-flow data collected by a comprehensive family of nGenius intelligent data sources. Deployed across the network, these data sources capture and analyze real-time IP traffic flows. In addition, the nGenius Performance Manager can also leverage Cisco® NetFlow and sFlow data from deployed network devices to gain broader insight from key network aggregation points.

nGenius Performance Manager is a comprehensive, performance management solution used to provide unprecedented visibility into complex networks for:

- 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 that include both physical and virtualized server environments



For More information please visit www.netscout.com or contact NetScout sales at 800-309-4804 or +1 978-614-4000.

Figure 1: The nGenius Performance Management console provides a unified view of services by presenting data from multiple intelligent data sources to be viewed in the same charts and workspaces.

nGenius Performance Manager leverages intelligent Deep Packet Analysis (iDPA) and flow-based metrics to deliver complete visibility into real-time, operational intelligence that spans:

- Application flow data, such as utilization, conversations or top talkers
- Packet-level analysis, such as Expert Analysis, decodes or bounce diagrams

The value of this flow-based viewpoint is its ability to deliver a comprehensive understanding of application and network performance by delivering a high-definition view into the packet-flows that deliver application data to the end user. Leveraging any view, any metric reporting nGenius Performance Manager provides the ability to customize the long-term reporting structure to meet the needs of any environment and deliver critical data to optimize the existing environment, identify trends that may lead to capacity shortfalls and show how well service levels are being maintained.

With a granular understanding of users access key business applications nGenius Performance Manager assures users have access to the resources they need to meet their goals and business objectives. This coupled with real-time recognition of poor performance, users of the nGenius Service Assurance Solution helps speed the identification and diagnosis of performance degradations to minimize the impact to the end user.

nGenius Performance Manager collects performance data from a wide variety of network-attached intelligent data sources, allowing the platform to monitor the usage patterns of all network infrastructures, topologies and applications (see “Network Visibility” and “Data Sources” for details). nGenius Performance Manager then presents the results in customizable real-time and historical views and reports that highlight the performance of applications, identify the users of network resources, as well as the network capacity various resources are consuming.

Dedicated intelligent data sources— such as nGenius InfiniStream® appliances, nGenius Probes and nGenius Software probes— are strategically deployed throughout the core, distribution and access layers of the network, within virtual environments and in the branch office in order to provide the nGenius Performance Manager with the granular performance data necessary to monitor end-to-end service delivery.

Key Features

Application and network traffic recognition and monitoring

nGenius Performance Manager provides robust support for today’s most complex service delivery environments with extensive application recognition and monitoring, including:

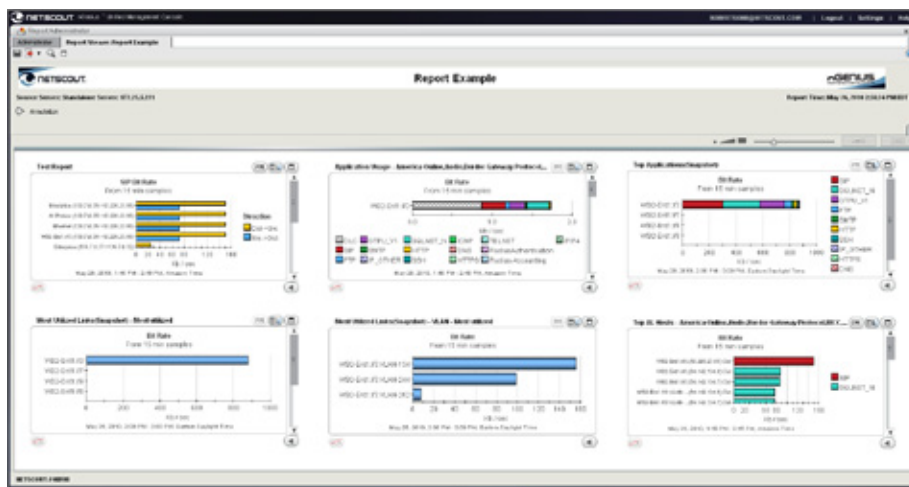
- Well-known and children of well-known applications
- User-defined, custom-developed applications
- Virtualized applications
- Complex applications using port ranging/port-hopping
- Web-based applications and URLs
- Peer-to-peer applications
- VoIP signaling and transmission protocols
- Financial services applications and 600+ market data feeds
- Support for Service Provider-specific environments such as CDMA and GSM mobile networks
- WAN-optimized protocols, such Riverbed®

High definition packet-flow analysis for volume and response time analysis and troubleshooting

The value of the nGenius Service Assurance Solution top-down, KPI-to-Flow-to-Packet approach lies in its ability to seamlessly provide multiple diagnosis paths from service problems and anomalies to packet level information.

This approach reduces the time required to identify, diagnose and resolve network and application performance problems and helps accelerate restoration of essential business services. Features include:

- Passive and active application responsiveness measurements
- Response time metrics for virtually all application types
- Separates network flight time versus server think time
- 1-minute granularity: average response time, no. of active sessions, no. of successful transactions, and no. of server error types



Figures 2: nGenius Performance Manager provides long-term reporting that can leverage pre-defined or custom defined reports providing the ability to better optimize the existing service delivery environment, understand capacity shortfalls and provide proof as to how well service levels are being maintained

- 15 minute granularity: maximum & average response time per client/server pair, total no. of transactions, no. of successful transactions, TCP connect time, no. of active sessions, total packet loss, responses time distribution, no. of timeouts, no. of retries, and application payload
- Contextually integrates with the nGenius InfiniStream console for decode and Expert Analysis
- Contextually integrates with Sniffer® Intelligence modules for advanced packet-level data mining and troubleshooting analysis
- Contextually integrates with Sniffer MultiSegment Analysis for visibility and analysis of application flows across multiple network segments

Data, voice, video convergence management

nGenius Performance Manager provides end-to-end unified visibility that allows IT professionals not only to understand how individual services are delivered, but also how they interact with and impact the performance of one another. The nGenius Performance Manager platform delivers critical visibility into converged environments with:

- Quality of Experience monitoring with MOS and R-Factor monitoring with direct links to packet impairment views and the evidence that allows an understanding of how voice quality is being impacted
- Volume, utilization, host and conversation details for RTP Voice and RTP Video protocols
- Application-layer details for call set-up protocols, such as SIP, H.323, Q.931 and MGCP, plus Cisco SCCP and Avaya H.323 extensions
- VoIP quality metrics: jitter, call set-up time, packet loss, incomplete and failed calls, and MOS scores
- IP addresses, phone extensions and connect times
- Packet-level visibility and decode of voice protocols
- Call session recording and play-back using packet recording devices
- Voice configuration data including Codec, dialing plan and QoS assignments

Any view, any metric reporting and capacity planning

With nGenius Performance Manager, network managers can report on and analyze growth trends and usage patterns in order to make decisions about optimizing bandwidth, rescheduling activities or reallocating traffic, with:

- On demand, ad-hoc reports for instant collaboration
- Custom-defined scheduling of Newspaper-style reports
- Daily, weekly and monthly trend-based reporting
- Top-down analysis through drill-downs
- HTML, PDF, Web viewer, CSV and autoemail formats

Alarming and event notification

nGenius Performance Manager recognizes and alerts users of service impacting issues the moment they happen by delivering:

- Virtual interface alarming on NetFlow, QoS, Site, DLCI, VLANs and PVCs
- Threshold-based with evidence for utilization, errors, response time and availability metrics
- Burst Alarms with millisecond resolution
- "Power Alarms" highlight root cause by gathering top users and applications automatically at violation time
- Rising, falling and time-over-threshold parameters
- Auto-actions to trigger scripts, packets decodes and SNMP traps
- User notification by email, visual indications in viewing console and alert notification export

Packet decode and analysis

nGenius Performance Manager can trigger ad-hoc packet capture for nGenius

Probes or mine packets stored on nGenius InfiniStream appliances to provide:

- TCP Session/Follow Stream support
- Multi-hop and Multi-tier bounce diagram support
- Pre- and post-capture filtering
- Text, hex, host, application, pattern and custom filtering capabilities
- Save, share, import and export capture files in standard formats (dat, cap, dmp, pcap)
- Extended duration analysis by trace file merging

Third Party Integration

nGenius Performance Manager supports feeds to third-party fault management systems:

- Out-of-the-box integration support with HP, IBM® and EMC®
- HP® Operations Manager and Network Node Manager
- IBM Tivoli® NetView®, Netcool/OMNibus
- EMC® Ionix™

Architecture & Scalability

nGenius Performance Manager, employs a distributed architecture that is designed to support today's largest and most complex global service delivery environments, by offering:

- Dedicated Global Server configurations for managing large or geographically dispersed environments
- Three-tiered, web-based client/server access methodology
- Standby Server options for disaster recovery
- Access control through role-based security
- External authentication through Cisco ACS Server, LDAP v3, Radius and Windows Active Directory
- Local and remote storage of reports
- Remotely update nGenius InfiniStream appliances

Network Visibility

- LAN – Fast Ethernet, Gigabit Ethernet, 10-Gigabit Ethernet
- WAN – Frame Relay (T1/E1, T3 (DS3)/E3), ATM - (T3(DS3)/E3, OC-3c, OC-12c) and POS (OC-3c, OC-12c, OC-48c)
- Virtual Channels – VLANs, DLCIs, PVCs, QoS (via DSCP), sites
- Encrypted Channels – MPLS, IPEnabled VPN, WAN optimized
- Virtualized Computing Environments - VMware™

Supported Data Sources

- nGenius InfiniStream appliances
- nGenius Probes
- nGenius Virtual Agent for virtual server environments

nGenius Integrated Agent for deployment in network and compute equipment

- nGenius Collectors to support Cisco NetFlow data collection
- Additional datasources supported include: Routers, switches and other network devices supporting RMON/RMON2, Mini-RMON, NetFlow, sFlow, IP SLA,NAM, NAM2, NM NAM, SPAN, MIB2, Frame Relay MIB (RFC 2115), CPU and memory from Cisco devices

Unified IP Service Assurance Solution

nGenius Performance Manager is a core component of the nGenius Service Assurance Solution. Through full integration with other nGenius applications operators can support seamless multiple work flow paths to facilitate faster detection, analysis, isolation and resolution of service and network problems. Other components of the nGenius Service Assurance Solution include:

nGenius Service Delivery Manager

- End-to-end end user experience visibility
- Intelligent Early Warning for predictive problem identification
- Flexible service views align to operations and business intuitive providing service level management visibility
- Service-centric workflows enable proper triage of service impacting conditions

Features	Minimum Requirement
File system (Windows)	<ul style="list-style-type: none"> ▪ Minimum 30 GB for the OS partition (if installing nGenius Performance Manager on a second partition) ▪ Virtual memory page file set for System Managed Size. ▪ NTFS-formatted hard disk is required
File system (Linux platforms)	<ul style="list-style-type: none"> ▪ Minimum 100 MB for the boot partition ▪ Minimum 10 GB for the OS or / (root) partition ▪ Remaining space allocated to the /opt partition for nGenius Performance Manager installation
RAID configuration	<ul style="list-style-type: none"> ▪ RAID 5; Ultra 320 SCSI, SATA, or SAS
Hard drive configuration	<ul style="list-style-type: none"> ▪ 5 x 300 GB or 6 x 250 GB
Media device	<ul style="list-style-type: none"> ▪ DVD-ROM drive recommended
Network Adapter	<ul style="list-style-type: none"> ▪ One 100/1000 Ethernet adapter
Power supply configuration	<ul style="list-style-type: none"> ▪ Dual, redundant power supplies
Java version	<ul style="list-style-type: none"> ▪ JRE v1.6.0_07 (32 or 64-bit); also referred to as Java SE 6, Update 7

Note: nGenius Performance Manager can also be purchased as a pre-loaded appliance running either Red Hat Linux or Windows 2003 Standard and Enterprise editions. nGenius Performance Manager cannot be installed on a virtual machine.

Sniffer MultiSegment Analysis

- Automates concurrent data capture and correlation across multiple network segments
- Provides transactional analysis to identify which business transactions are impacted by delays
- Furnishes comparative statistics for server and application response times, as well as network segment utilization

Sniffer Analysis/Intelligence

- Troubleshoot intermittent and elusive network and application performance problems
- Analyze network-based security issues to determine how a virus spreads or where vulnerabilities are being exploited
- Evaluate root cause of Voice over IP (VoIP) quality problems in conjunction with sophisticated Sniffer Intelligence and call play-back analysis

nGenius Intelligent Data Sources

- nGenius InfiniStream appliances
- nGenius Probes
- nGenius Virtual Agent for virtual server environments
- nGenius Integrated Agent for deployment in network and compute equipment
- nGenius Collectors to support Cisco NetFlow data collection
- Additional datasources supported include: Routers, switches and other network devices supporting RMON/RMON2, Mini-RMON, NetFlow, sFlow, IP SLA,NAM, NAM2, NM NAM, SPAN, MIB2, Frame Relay MIB (RFC 2115), CPU and memory from Cisco devices



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