

nGenius Enterprise Intelligence

Faster, more efficient and accurate analysis, of complex service transactions across multi-domain environments

Highlights

- End-to-end service session analysis with in-depth insight into applications
- Link and track application and network performance and the downstream effect on user experience
- Enables a granular understanding of how network and application interdependencies impact overall service performance
- Session-oriented perspective of complex service delivery environments
- Visualize network and application performance correlated with user business service transactions
- On-demand fast and flexible service analysis

nGenius® Enterprise Intelligence is a software module, for the nGenius Service Assurance Solution that provides network, applications and operations managers the ability to analyze the performance of enterprise applications as they traverse the network and within the context of the services they support. Building on the nGenius Service Assurance Solution's ability to collect, correlate, analyze and report on mass volumes of packet-flow data, nGenius Enterprise Intelligence extends these capabilities by providing highly granular visibility into the application flow as it moves through multiple hops across the network. The solution takes IP performance management and analysis of Enterprise applications and transactions to the next level by seamlessly integrating user session analysis with protocol analysis to enable rapid, more efficient troubleshooting and isolation of user experience problems in today's enterprise networks.

nGenius Enterprise Intelligence performs multi-protocol correlation—with network, service and user context and displays graphical views of end-to-end user sessions in an easy-to-navigate browser based interface. The result is a highly scalable, real-time solution that provides rapid analysis of service problems with per session details of performance metrics on applications, transactions and, actionable multi-hop, multi-protocol ladder diagrams for more efficient troubleshooting and analysis of Enterprise IP networks.

nGenius Enterprise Intelligence delivers

Session-based, multi-hop application analysis

Visualizes network and application performance correlated with user business service transactions with key application metrics, such as traffic, application, error conditions, and response time

Application recognition and troubleshooting

Tracks voice, Web and well known applications in order to provide a comprehensive view of the service

Multi-hop correlation

Faster, efficient and more accurate analysis of complex business service transactions correlated across a multi-domain service delivery environment

Unified Communications services management

View voice and data metrics together to achieve an end-to-end view of the applications and how they support service delivery

Granular, actionable, performance metrics

Provides real-time record generation for application flows, session transactions, network hop latency, response time, and failure analysis with nanosecond resolution to quickly detect and investigate the root cause of complex service delivery issues

Instant access to session correlation

Real-time on-demand session correlation enables fast and flexible service analysis with session-oriented perspective of complex service delivery environments

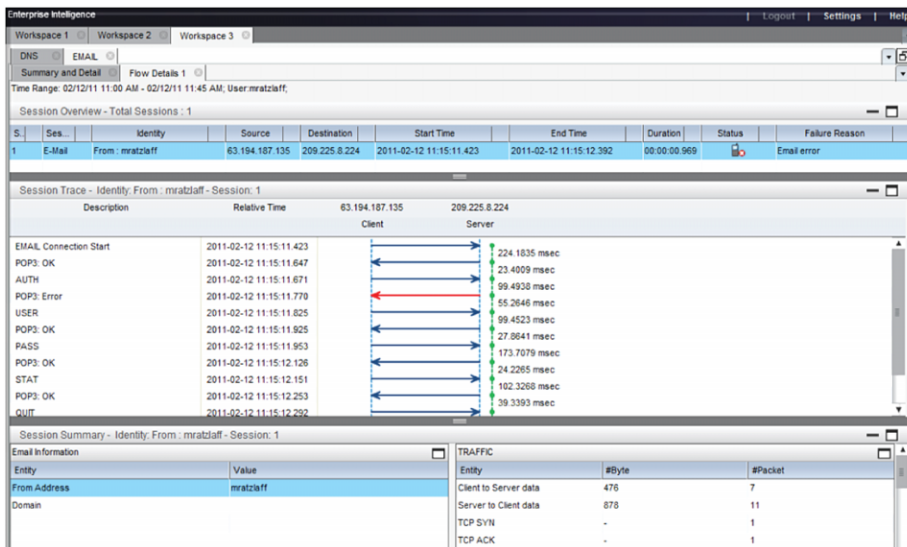


Figure 1: nGenius Enterprise Intelligence provides correlated session trace and detailed summaries of application performance information such as email (shown here) all in an intuitive and easy to navigate graphical user interface.

Built on ASI Technology

nGenius Enterprise Intelligence leverages Adaptive Session Intelligence™ (ASI) technology to provide, high visibility into discrete application transactions without the need for extensive data mining. ASI creates application, session and transaction records in real-time to provide an in-depth analysis of application performance. ASI can scale to millions of application sessions and reveals complex relationships between network and service transactions. ASI provides nGenius Enterprise Intelligence session-oriented end-user experience transaction data with insight into user experience.

Quickly drill-down into deep application analysis

nGenius Enterprise Intelligence seamlessly drills-down from application summary view into detailed application session and transaction views providing focused analytics and troubleshooting. The nGenius Enterprise Intelligence's dynamic, multi-hop correlation capabilities deliver granular microsecond latency breakouts for each monitored hop, enabling IT operations staff to quickly isolate and identify application performance issues and greatly aids in identification of the problem source. nGenius Enterprise Intelligence creates transaction records in real-time and with no impact to network performance.

nGenius Enterprise Intelligence leverages Adaptive Session Records (ASR), part of ASI technology and deep packet capture and analysis technology built into nGenius InfiniStream® appliances. The nGenius InfiniStream appliances passively and non-intrusively capture all packets on monitored links in Enterprise data networks. The packets are captured and streamed to disk in real-time. ASRs are generated for each of the monitored protocols involved for all sessions and stored for further analysis using nGenius Enterprise Intelligence.

The actual data records consist of application and protocol information associated with those applications and any corresponding events that occur while the session is active. Session data is captured on each protocol and the data record structure stores logical information pertaining to that protocol. Each session may have multiple connections. For example, the individual hop-by-hop jumps an application takes as it travels from network node to network node can each constitute a connection. In turn, each connection may be connected to multiple events as a server response or an error code. Finally, data records are created for the various applications that comprise a multiprotocol service. In this manner, nGenius Enterprise Intelligence constructs a stateful, correlated view of each monitored session. The data records

are efficiently sized and readily correlated, reducing the time and bandwidth required in moving the information from the nGenius InfiniStream appliances to the nGenius Enterprise Intelligence analysis engine. With deep packet capture and analysis the packets can be stored in a distributed fashion throughout the network on the nGenius InfiniStream appliances and still be available for drill down and viewing from nGenius Enterprise Intelligence.

End-to-End Analysis of Multiple Application Transactions

nGenius Enterprise Intelligence identifies interrelationships and performance levels of applications such as Web and VoIP and into complex environments including cloud and blended service delivery models combined with application flow as it moves through multiple hops across the network. With its advanced session and transaction analysis capabilities, nGenius Enterprise Intelligence provides application visibility within a single data center, across multiple data centers and across the entire enterprise network with cross-domain, transaction-level granularity. nGenius Enterprise Intelligence traces these applications in context with their associated network segments providing correlated views of their attributes a full view into the traffic paths across the data center and all network nodes traversed.

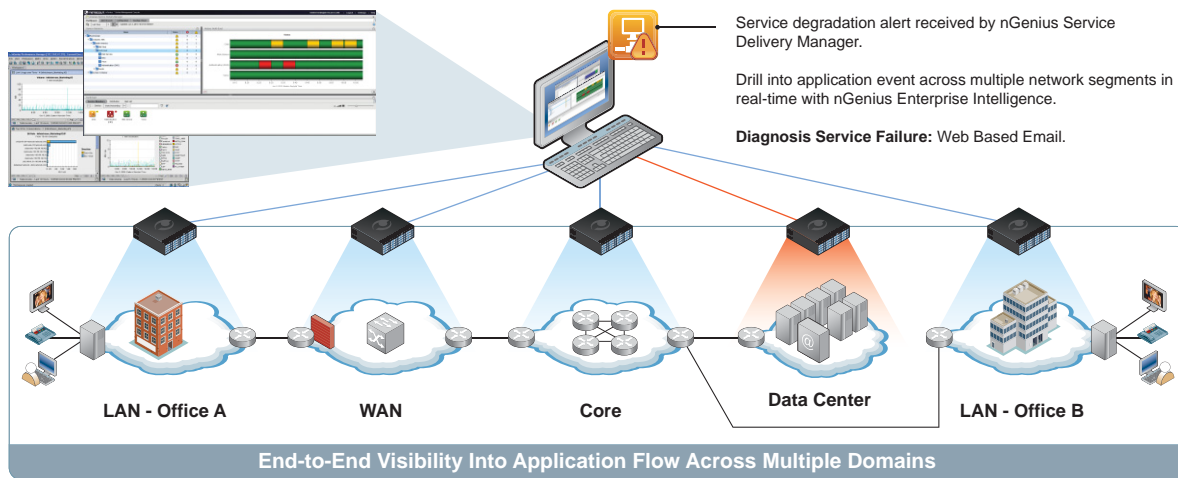


Figure 2: Quickly drill down from nGenius Service Delivery Manager directly into nGenius Enterprise Intelligence to quickly troubleshoot and correlate applications across multi-hops and multiple network segments such as with web based email (shown here).

Key Capabilities

Multi-protocol, core-to-access, correlated graphical views of application, and transactions in Enterprise networks

Protocols supported include:

- HTTP-based applications
- DNS
- LDAP
- FTP
- VoIP: SIP, SCCP, H.323 Media (RTP with voice quality metrics), Radius
- Email (SMTP, POP3)
- Financial (ISO 8583)

Advanced session analysis with a flexible browser-based user interface that graphically displays Transaction and details.

- Session overview lists application specific summary information including:
 - Error code distribution
 - Source-destination address
 - Duration
 - Failure reason
 - Session counts
 - VoIP post dial delay and network efficiency ratios

- Core-to-access, hop-by-hop ladder diagram views of correlated application and session messages:
 - Correlated messages that comprise each session
 - Associated message time stamp with nanosecond granularity
 - Network elements involved including node type and IP address
 - Elapsed time between messages
 - Drill down to packet decodes
- Application set up and tear down summary
 - Setup latency
 - Teardown latency
 - Failure cause
- Payload summary
 - Application,
 - Total bytes/packets,
 - Total sessions
 - Failed sessions
- Per session details on users, applications and services, network instrumentation points traversed, and performance

Part of the nGenius Service Assurance Solution

nGenius Enterprise Intelligence as part of the nGenius Service Assurance Solution, uses common data and metrics and is tightly integrated with nGenius Service Delivery Manager, further extending the deep-dive application performance management capabilities of the nGenius Service Assurance Solution. nGenius Service Delivery Manager continuously monitors and analyzes application and service traffic flowing across the network at multiple points providing unified views of service delivery health and user experience. Using high definition network-based anomaly detection capabilities, the real-time dashboard provides Intelligent Early Warning to automate identification of deviations and anomalies in user, network, server and application usage and behavior. Using a common set of underlying data, IT users can contextually progress from a high level business service status view into a specific user session within nGenius Enterprise Intelligence to see specific transactions between application tiers and network elements for a particular user session. This unified workflow greatly simplifies and automates the task of managing application and network performance for highly complex, multi-location service delivery environments, thus improving operational efficiency and speeding time to knowledge.

Components key to implementation include:

nGenius Service Delivery Manager

- Intelligent early warning of performance degradation
- Service-aware dashboard with proactive and predictive alarming and alerting
- Flexible representation of end-to-end services with regional, local or geographic views
- Automatic detection and alarming of anomalous service behavior

nGenius Performance Manager

- Service performance visualization, analysis and reporting
- Packet flow-based KPIs
- End-to-end performance views
- Identification of end user affecting issues

Sniffer® Analysis/Intelligence

- Packet-level analysis
- Deep dive problem analysis and troubleshooting

nGenius Infinistream Intelligent Data Sources

- Always-on, high speed capture of rich packet details for granular post-event analysis
- Generates packet flow data, KPIs and session data records
- Local processing and scalable storage options up to 96 TB
- Passive and non-intrusive

Hardware and Software Requirements

Minimum Console Requirements:

- Operating System: Microsoft® Windows® XP Professional w/ Service 2; Windows 2003 – 2008, Windows Vista w/Service 1
- CPU: Intel® dual core 2.4 GHz or higher
- RAM: 2 GB RAM available system memory (3 GB recommended)
- Storage: HDD 5400 RPM, 1 GB free hard disk space, CD-ROM Drive

nGenius Enterprise Intelligence Server Requirements:

- nGenius Performance Manager server release 4.11 MR1
- Minimum Enterprise Intelligence software release v4.11 MR1

Data Source Requirements:

- One or more nGenius InfiniStream appliances



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