



nGENIUS | INFINISTREAM®

Dedicated intelligent Deep Packet Capture enabled appliances

The NetScout's nGenius® InfiniStream® appliances utilize intelligent Deep Packet Capture (iDPC) technology. Real-time and back-in-time analysis support rapid problem isolation and service delivery assurance. Used standalone or as the foundation for nGenius Service Assurance Solution, the InfiniStream appliances provide the industry's richest source of packet-level intelligence required to enable network visibility and solve complex problems.

Recommended Applications:

- **Rapid identification of application and network performance issues**
- **Analysis of applications and services in production and prior to roll-out**
- **Continuous monitoring and analysis tool for important links throughout the network**
- **Proactive statistical monitoring tool for nGenius Service Assurance Solution**

Leveraging more than two decades of industry innovation and technology advances, the nGenius InfiniStream appliance line exploits the most robust source of network and application performance data: the packet.

Unique product capabilities include:

- iDPC for always-on, high speed capture of rich packet details for granular post-event analysis
- Statistical analysis and performance monitoring based on NetScout's Common Data Model (CDM), an advanced, scalable framework for calculating packet/flow-based statistics
- Sniffer® Intelligence post-capture software provides critical back-in-time analysis -- automatically recognizes hundreds of applications and provides critical performance data
- Scalable product line supporting multiple network configurations from core to wiring closet
- Operates standalone or as the foundation data source for the nGenius Service Assurance Solution, including nGenius Performance Manager and nGenius K2 Service Delivery Manager

An Intelligent Data Source

The nGenius InfiniStream appliance is first and foremost an intelligent data source. The appliance collects packet-flow information that can be used for multiple purposes to meet a variety of problem solving and monitoring needs. There are two methods to access this information.

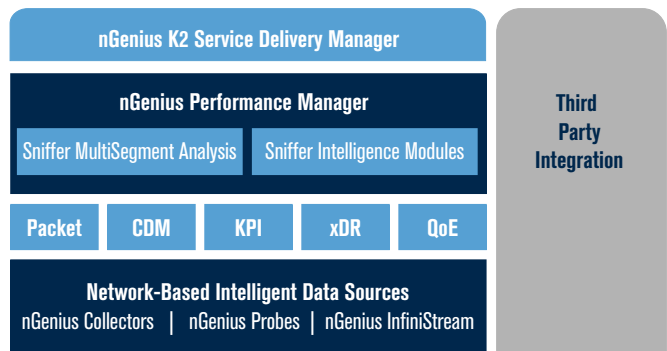
- Sniffer Analysis (Standalone Mode)
- The nGenius Service Assurance Solution

Sniffer Analysis (Standalone Mode)

Sniffer Analysis enables the nGenius InfiniStream appliance to work in standalone mode, providing sophisticated forensic

analysis without the need of additional equipment or centralized monitoring consoles. Designed for the self-reliant problem solver, all nGenius InfiniStream appliances include the direct-connect InfiniStream Console to summarize packet data and serve as a platform from which to mine data from the robust nGenius InfiniStream store. Sniffer Intelligence then simplifies troubleshooting issues and helps speed root cause, leveraging back-in-time analysis on the retrieved data. Applications such as Oracle®, SAP® R/3®, Microsoft® Exchange and VoIP-based SIP are automatically identified and understood. Optional modules are available for specific Financial Trading applications. If detailed packet analysis is required, Sniffer Decodes and Experts are readily available. Sniffer Analysis is perfect for intermittent or after-hours problem solving, tracking network-related security issues, or anytime forensic analysis is required.

The nGenius Service Assurance Solution



The nGenius InfiniStream appliances are a primary data source of the nGenius Service Assurance Solution

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The nGenius Service Assurance Solution

The nGenius Service Assurance Solution is a suite of products that can leverage data from multiple nGenius InfiniStream appliances, as well as other nGenius data sources such as nGenius Probes and Collectors. The information gathered by nGenius InfiniStream appliances is brought to life with nGenius Performance Manager to present a single console view of information collected from various points across the network. This provides an end-to-end unified view of the network traffic. In addition to the Forensic Analysis capabilities of Sniffer Analysis, the nGenius Service Assurance Solution is often used for Intelligent Early Warning, Application & Network Performance Management, Planning & Optimization, and Service & Policy

Validation. When issues are reported or deeper analysis is required, flexible drill down quickly exposes the facts using the same Sniffer Intelligence, Decodes, and Expert modules as available in Sniffer Analysis. Proactive alarming is available using nGenius K2 Service Delivery Manager. The nGenius Service Assurance Solution also integrates with third-party software from vendors such as Hewlett Packard or IBM. The high-value solution leverages both troubleshooting and monitoring to squeeze the most value out of packet-flow data.

Combining Sophisticated Monitoring with Deep Packet Capture

The product combines the benefits of sophisticated statistical monitoring and packet capture technologies into a single robust database appliance. Using patented streaming methods, the nGenius InfiniStream devices capture all the packets off the wire and record them to disk for storage and future analysis. The intelligence in iDPC is the ability to maximize storage capabilities using algorithms that balance overall drive storage with quick retrieval and resiliency. As the packets are being stored, statistics are also gathered on individual communication flows enabled by NetScout's Common Data Module (CDM) architecture. This CDM technology provides a consistent format for which data can be accumulated from various network types into a common repository that includes everything from response time-based statistics to policy-based configurations for VoIP, MPLS, QoS, and VPNs. The combination of high-level statistics with deep packet storage is a powerful solution providing statistical analysis for reporting and initial drill down while reserving the packets for in-depth problem resolution and service analysis.

FEATURES

Broad Storage Capabilities

Configured in a variety of rack-mounted chassis options, storage capabilities range from 500 GB to 16 TB. Chassis options vary from 1RU appliances to larger systems.

Remote Management

Appliances are designed for deployment across the infrastructure. As such, remote management capabilities are available both in-band and out-of-band for most models.

Sophisticated Sniffer Intelligence

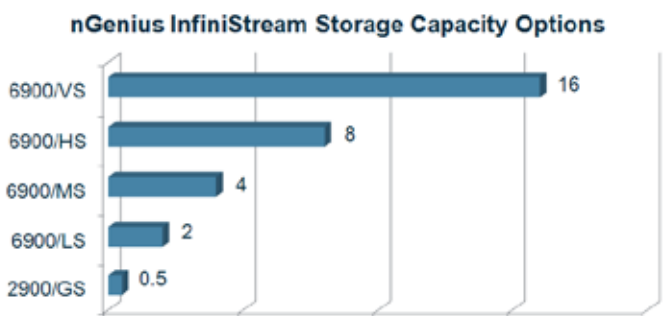
Problem diagnosis is simplified through the use of a logical, yet flexible workflow that seamlessly and contextually guides the user from high-level metrics into the depths of the packets. This application-aware software component is well suited for consolidated networks running a combination of traditional data and VoIP services. Optional Sniffer Intelligence modules are available for financial market trade and commercial mobile carrier applications.

Interfaces and Speeds

More than two dozen models are available to accommodate deployments across the modern IP network. Monitoring speeds range from 10base-T, to Fast Ethernet, to high-speed 10-GbE interfaces. Port densities are available in 2-Port, 4-Port, and 8-Port capture configurations.



Sophisticated VoIP analysis is available in Sniffer Intelligence.



Available in a variety of storage capacity options up to 16 TB.

Flexible Mining

Sophisticated indexing provides for flexible mining to quickly retrieve the right information when it is required.

Data Optimization

NetScout's Smart Recording and Data Mining SRDM technology enables the user to selectively record and store all or just a portion of packets of interest, thus extending the amount of data that can be recorded and the length of time data is available for retrieval. SRDM is available on a per application basis via nGenius Performance Manager.

Hardened and Secure

Built as an enterprise-class product, nGenius InfiniStream runs on a hardened Linux operating system custom-built for secured operation. All access is password protected.

The nGenius InfiniStream Appliances Available in Two Product Lines

All nGenius InfiniStream family of appliances share a common foundation of proven technology including Packet-Flow-based CDM monitoring, continuous iDPC and Sniffer Intelligence analysis. However, two product lines exist to scale to the needs of today's service providers, enterprises and government agencies. The two nGenius InfiniStream product lines are the 2900 Series and the 6900 Series



The nGenius InfiniStream 2900 Series

The InfiniStream 2900 Series is the newest addition to the product line developed to expand iDPC capabilities to areas of the network previously either underserved or ignored. The 2900 Series is a space-optimized, lower storage capacity appliance. At only 1RU in height, this small-footprint device is perfectly suited for access layers, wiring closets, and branch offices running business-critical applications and services. The 2900 Series appliance brings affordable visibility and problem resolution capabilities to these important segments of the network.

Specific functionalities of the nGenius InfiniStream 2900 Series include:

- 500 GB of storage capacity for packet capture
- Complete integration with nGenius Performance Manager and the rest of the nGenius Service Assurance Solution

- A small-footprint profile that can be rack mounted in either 4- or 2-post deployments
- Low-power consumption



The nGenius InfiniStream 6900 Series

InfiniStream 6900 Series continues to lead the industry in iDPC enabled appliances. Corporate and government datacenters around the globe have deployed more InfiniStream appliances than all other competing products combined. With robust performance, storage capacity and resiliency, the 6900 Series is deployed at service aggregation points such as the core, datacenter server farms, high-capacity distribution points and larger regional offices.

Specific functionalities of the nGenius InfiniStream 6900 Series include:

- Robust storage capacity options ranging from 2 - 16 TB
- Multiple multi-core processors for speed and performance
- High port density, with broadest range of link interfaces/speeds
- Support for high-capacity links up to 10 GbE
- Redundant power & RAID drives for "always-on" operation
- Hot-swappable drives and power supplies

Advanced Time Synchronization

Traditionally, IT shops have used Network Time Protocol (NTP) to synchronize the clocks of the computers and appliances within their network. Since nGenius InfiniStream timestamps the packets as they are captured, accurate timing is important.

Some companies, such as Financial Trading and certain Government institutions, require more accurate time stamping. For these situations, NetScout provides the following options to synchronize timing closer than that obtained by NTP alone:

External CDMA Receiver

The nGenius InfiniStream appliance provides a serial port to connect a Code Division Multiple Access (CDMA) device to take advantage of the advanced timing methods used by mobile carriers to align with Universal Coordinated Time (UTC). A CDMA receiver takes radio signals from a local cell tower and aligns NTP on the appliance with the time shown by the mobile carrier. This is the same technology used by mobile telephones to synchronize their own system times. The supported receiver is the End Run Technologies Praecis CT, which operates in the 824-895 MHz frequency band. It must be deployed in an area with IS-95 CDMA cellular coverage. For more information of the device, see the End Run Technologies web site (<http://www.endruntechnologies.com>).

nGenius Time Synchronization Adapter

The nGenius Time Synchronization Adapter leverages the precise clock times of Global Positioning Systems (GPS) and then uses satellite triangulation from multiple geosynchronous satellites to determine the accurate terrestrial location of the appliance to determine the travel signal distance. The accuracy of the adapter is superior to other methods because the UTC time comes directly from multiple satellites and then is adjusted for distance. The adapter includes its own power source and requires an external GPS antenna/receiver. As many as four nGenius InfiniStream appliances can connect to a single adapter using the supplied connector cables to coordinate timings across appliances. The nGenius Time Synchronization Adapter supports all nGenius InfiniStream appliances.

nGenius InfiniStream 2900 Series Product Specifications Fast/Gigabit Ethernet:

For Models: 2906/GS, 2910/GS, and 2916/GS

| | Specifications | Additional Information |
|---------------------------------|---|------------------------|
| Rack Unit | 1 Server Rack Unit (1RU) | |
| Weight | 25lbs. (11.34kg) | |
| Dimensions | Chassis: 24"D x 17"W x 1.72"H (60.96cm x 43.18cm x 4.37cm) | |
| Side Rails | Rack mount slide rails included (4 post) | 2-post rails optional |
| Capture Ports | | |
| 2906/GS | 2 x 10/100/1000 Base-T | |
| 2916/GS | 4 x 10/100/1000 Base-T | |
| 2910/GS | 4 x SFP | |
| Capture Store | GS model - 500 GB | |
| Management Port | 2 x RJ45 | |
| Console Port | DB9M | |
| Embedded Linux OS Support | Separate flash drive dedicated to OS | |
| Power | 100-240VAC, 50/60Hz, 400W supply, (6A at 100VAC, 3A at 240VAC), | |
| Optional DC Power | Not available | |
| Max Power Consumption | 1.2A, 130 W, 444 BTU/hr | |
| Environmental Specifications | Operating Temperature: 41° to 104°F (10° to 40°C) Operating Humidity: 5% - 80% (non-condensing) | |
| Regulatory and Agency Approvals | Regulatory Model Number: AQU, FCC Class A, CE Mark (EN 55022 Class A, EN 55024, EN 61000-3-2, EN 61000-3-2), VCCI (Japan) Class A, UL 60950-1 CAN/CSA C22.2 No. 60950, EN 60950, CB Report, UL-GS (DEMKO) | |

nGenius InfiniStream 6900 Series Product Specifications Fast/Gigabit Ethernet:

For Models: 6910/LS, 6910/MS, 6910/HS, 6910/VS, 6916/LS, 6916/MS, 6980/LS, 6980/HS, 6980/HS, 6980/VS, 6986/LS, 6986/HS, and 6986/VS

| Specifications | |
|--|--|
| Rack Unit | 3 Server Rack Unit (3RU) |
| Weight | 77lbs. (35kg) |
| Dimensions | Chassis: 30.5"D x 19"W x 5.25"H (77.4cm x 48.3cm x 13cm) |
| Side Rails | Rack mount slide rails included |
| Capture Ports / Model | |
| 6910/XX | 4 x SFP Available in, /LS, /MS, /HS, /VS configurations. |
| 6916/XX | 4 x 10/100/1000 Base-T Available in /LS, /MS configuration. |
| 6980/XX | 8 x SFP – Available in /LS, /MS, /HS, /VS configurations. |
| 6986 /XX | 8 x 10/100/1000 Base-T – Available in /LS, /HS, /VS configurations. |
| Capture Store | LS model - 2 TB, MS model - 4 TB, HS model - 8 TB, VS model -16 TB |
| Management Port | RJ45 |
| Console Port | DB9M |
| Embedded Linux OS Support | Two (2) separate drives dedicated to OS |
| Power | 100-240VAC, 60/60Hz, 800W, 12-6A (x2), 1+1 Hot-swappable, redundant power |
| Optional DC Power | -48VDC, 800W, 15A (x2), 1+1 Hot-Swappable Power Supply |
| Max Power Consumption (AC) | 4.1A, 448W, 1529 BTU/Hr (total, across power supplies) |
| Max Power Consumption (DC) | 9A, 450 W, 1536 BTU/hr (total across power supplies) |
| Environmental Specifications | Operating Temperature: 50° to 95°F (10° to 35°C) Operating Humidity: 8% - 85% (non-condensing) |
| Regulatory and Agency Approvals | Regulatory Model Number: AFM3U2, FCC Part 15 Class A, CE Mark (EN 55022 Class A, EN 55024, EN 61000-3-2, EN 61000-3-2), VCCI (Japan) Class A, NOM (Mexico), UL 60950-1 CAN/CSA C22.2 |

nGenius InfiniStream 6900 Series Product Specifications 10 Gigabit Ethernet:

For Models: 6990/MS, 6990/HS, 6990/VS, 6995/MS, 6995/HS, and 6995/VS

| Specifications | |
|---------------------------------|--|
| Rack Unit | 3 Server Rack Unit (3RU) |
| Weight | 77lbs. (35kg) |
| Dimensions | Chassis: 30.5"D x 19"W x 5.25"H (77.4cm x 48.3cm x 13cm) |
| Side Rails | Rack mount slide rails included |
| Capture Ports | |
| 6990/XX | 2 x XFP - Available in /MS, /HS, VS configurations. |
| 6995/XX | 4 x XFP - Available in /MS, /HS, VS configurations. |
| Capture Store | MS model - 4 TB, HS model - 8 TB, VS model -16 TB |
| Management Port | RJ45 |
| Console Port | DB9M |
| Embedded Linux OS Support | Two separate drives dedicated to OS |
| Power | 100-240VAC, 50/60Hz, 750W (12A at 100VAC, 6A at 240VAC) 1+1 Hot-swappable, redundant power |
| Optional DC Power | -48VDC, 800W, 15A (x2), 1+1 Hot-swappable, redundant power |
| Max Power Consumption (AC) | 5A, 534 W, 1822 BTU/hr (total, across power supplies) |
| Max Power Consumption (DC) | 10.5A, 504 W, 1720 BTU/hr (total across power supplies) |
| Environmental Specifications | Operating Temperature: 50° to 95°F (10° to 35°C) Operating Humidity: 8% - 85% (non-condensing) |
| Regulatory and Agency Approvals | Regulatory Model Number: AFM3U2, FCC Class A, CE Mark (EN 55022 Class A, EN 55024, EN 61000-3-2, EN 61000-3-2), VCCI (Japan) Class A, NOM (Mexico), UL 60950-1 CAN/CSA C22.2 No. 60950, EN 60950, CB Report, UL-GS (DEMKO) |



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