nGeniusPULSE

Visibility to the Edge of the Network To Ensure Availability and Performance From Anywhere

Product Overview

As part of the nGenius Service Assurance portfolio providing end-to-end network visibility, nGeniusPULSE is an always-on and automated solution for cloud, hybrid, and virtual environments that helps customers manage the user experience and isolate issues between assets they own and the multitude of service providers they use. nGeniusPULSE also correlates service delivery with health of the supporting infrastructure, ensuring that the most critical elements of the business eco-system are connected and working.

With automatic and continuous active (synthetic) testing of business services availability and performance, nGeniusPULSE provides 24x7 monitoring of critical applications and services from anywhere in the enterprise; in the Data Center, at remote branches, with remote workers, for IoT devices and more.

The nGeniusPULSE solution is centrally managed and deployed in a data center on a hardware or virtual server appliance. Sensors, called nPoints, are deployed anywhere throughout the organization to run active tests – over wired or Wi-Fi connections, and send results to the nGeniusPULSE Server. From the Server, results are displayed in an intuitive interface that includes dashboards, drilldowns, and alerts, as well as easy-to-use configuration and administration and an API for data extraction or configuration. nGeniusPULSE includes direct technical support from NETSCOUT's best-in-class support teams with 24x7 support services.

nGeniusPULSE can be deployed as part of the NETSCOUT Smart Edge Monitoring solution, via NETSCOUT's Cloud Adaptor in InfinStreamNG® and vSTREAM® appliances, to capture the packet-level data from synthetic tests. This packet data is analyzed by nGeniusONE to provide critical visibility into end-user experience.

Product Capabilities

- Enterprise Business Application Availability Monitoring
- Capture and decrypt packet data from synthetic transactions for deep-dive analysis
- Compare Business Service Performance via Wired and/or Wi-Fi Connections
- Business Transaction Testing (BTT) – Customer-Defined Testing from Web Application Login-to-Logout
- VoIP Call Testing
- Network Performance Testing
- VPN Availability
- HTTP, HTTPS, DNS, FTP, and Other Network Service Tests
- Network Path Monitoring
- Wi-Fi Infrastructure Health and Availability Monitoring
- Network Device Health and Availability Monitoring
- Server Health and Availability Monitoring
- Advanced Custom Test Script Platform
- Hardware and Software Monitoring Agents
- Web-based User Interface
- Up/Down and Performance-based Alerting

HIGHLIGHTS

- Detect business service issues experienced by remote sites and remote users anywhere
- Know about problems in the absence of real-user activity especially during off-hours
- Monitor via wired and Wi-Fi networks
- Verify VPN availability
- Supports deployment in the NETSCOUT® Smart Edge Monitoring Solution to streamline troubleshooting
- Correlate infrastructure health issues with business service problems
nGeniusPULSE supports monitoring wireless network infrastructures that use these controllers:
- Cisco hardware controllers (2500, 5500, 8500 series)
- Aruba hardware controllers (7000 and 7200 series)
- Aruba Instant Access Points (IAP) when Virtual Controller IP is enabled
- Ruckus Virtual SmartZone v3.6 and higher

Figure 1: nGeniusPULSE monitors availability and performance of an organization’s revenue generating applications and services. It also monitors the availability and performance of network and server infrastructure. Smart Edge Monitoring supports all synthetic tests.

<table>
<thead>
<tr>
<th>Monitor</th>
<th>Elements</th>
<th>Monitoring Method</th>
<th>Measurements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Applications</td>
<td>SaaS and data center applications</td>
<td>Synthetic tests; Business Transaction Testing (BTT)</td>
<td>Application, DNS, SSL, Client, Network and Server delay</td>
</tr>
<tr>
<td>VoIP Services</td>
<td>On-premise and cloud hosted, SIP-based VoIP systems</td>
<td>Synthetic test using VoIP infrastructure to make real phone calls</td>
<td>MOS, Loss, Latency, Jitter, Dial Delay, Ring Delay, Codec</td>
</tr>
<tr>
<td>Network</td>
<td>Network performance, DNS, FTP, VPN, and other network services</td>
<td>Synthetic Test; Custom Scripts</td>
<td>Path, Loss, Latency, Jitter, Availability, and Other Service-Specific Metrics</td>
</tr>
<tr>
<td>Wi-Fi Performance</td>
<td>Service performance over Wi-Fi connections. Supports all Wi-Fi networks</td>
<td>Synthetic test</td>
<td>Signal Strength, Connection Time; Plus Any/All of the Above Active Tests</td>
</tr>
<tr>
<td>Servers</td>
<td>Windows, Linux</td>
<td>SNMP and WinRM polling</td>
<td>Uptime, CPU, Memory, Disk Usage and I/O, Network I/O</td>
</tr>
<tr>
<td>Network Devices</td>
<td>Routers, Switches, Firewalls</td>
<td>SNMP polling</td>
<td>Uptime, CPU, Memory, Interface Status, Utilization</td>
</tr>
<tr>
<td>Wi-Fi Infrastructure</td>
<td>Wireless LAN Controllers Access Points, Radios¹</td>
<td>SNMP polling of Wireless LAN Controllers</td>
<td>Uptime, CPU, Memory, Interface Status, Channel Utilization, Retry Rate, Error Frame Rate</td>
</tr>
<tr>
<td>VMware Infrastructure</td>
<td>Hypervisors, Virtual Machines</td>
<td>VMware APIs</td>
<td>Uptime, CPU, Disk Latency and I/O, Network I/O and Packet Drops, Top VMs</td>
</tr>
</tbody>
</table>

¹ nGeniusPULSE supports monitoring wireless network infrastructures that use these controllers:
- Cisco hardware controllers (2500, 5500, 8500 series)
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- Aruba Instant Access Points (IAP) when Virtual Controller IP is enabled
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nPoint Deployment Options
nGeniusPULSE has deployment options to fit multiple scenarios and conduct active tests from anywhere users are located. nPoints provide continuous and automatic testing from locations such as warehouses, branch offices, laptops of users working from home, individual floors in a building, server closets - or even on “things” such as trains, ambulances, forklifts, or ships. An organization can deploy one or multiple types of nPoints, in any combination, depending on testing requirements and environment.

- **nPoint 3000** – Conduct service tests via Wi-Fi and wired connections to compare results. The hardware nPoint 3000 is a small purpose-built device with a built-in Wi-Fi radio allowing you to monitor service delivery – including SaaS, data center apps, VoIP, and network performance tests over wired and/or Wi-Fi connections from any location. The nPoint 3000 can also perform Business Transaction Tests from anywhere it is deployed.

- **nPoint 2000** – Conduct service tests over Ethernet connection. The nPoint 2000 is a small, purpose-built hardware device that runs on Power-over-Ethernet (PoE) and can easily be deployed anywhere to perform business service tests. If PoE is not present, a simple PoE injector can be used.

- **Virtual nPoint** – The nPoint 3000 and nPoint 2000 can be deployed as a software-based agent on Windows or Linux machines such as laptops, servers, or VMs – or emailed to a remote home-based user who is having issues to help diagnose the problem. This is especially useful when troubleshooting a problem at a remote location where you do not already have instrumentation.

- **NETSCOUT Cloud Adaptor** – licensed with NETSCOUT InfiniStreamNG or vSTREAM appliance, enables packet capture on test transactions for integration with nGeniusONE and wire-data analysis.
SPECIFICATIONS

nPoint 3000      nPoint 2000

Hardware Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>NP3000-H</th>
<th>NP2000-H</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wi-Fi</td>
<td>802.11ac 2x2 radio</td>
<td>None</td>
</tr>
<tr>
<td>Power</td>
<td>PoE 802.3af/at, USB-C</td>
<td>PoE 802.3af/at</td>
</tr>
<tr>
<td>Ethernet</td>
<td>1 Gbps</td>
<td>1 Gbps</td>
</tr>
<tr>
<td>Mounting</td>
<td>Mounting holes, Kensington lock</td>
<td>none</td>
</tr>
<tr>
<td>Size</td>
<td>5.25 x 5.25 x 1 inches, 133 x 133 x 25 mm</td>
<td>4.4 x 1.6 x 1.3 inches, 111 x 41 x 33 mm</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>32°F to 104°F (0°C to +40°C)</td>
<td>32°F to 122°F (0°C to +50°C)</td>
</tr>
</tbody>
</table>

Virtual Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>NP3000-V</th>
<th>NP2000-V</th>
</tr>
</thead>
</table>

Minimum Platform Requirements

<table>
<thead>
<tr>
<th>Feature</th>
<th>NP3000-V</th>
<th>NP2000-V</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU</td>
<td>2-Core</td>
<td>2-Core</td>
</tr>
<tr>
<td>RAM</td>
<td>4GB</td>
<td>2GB</td>
</tr>
<tr>
<td>Storage</td>
<td>2GB</td>
<td>1GB</td>
</tr>
</tbody>
</table>

Testing Capabilities

<table>
<thead>
<tr>
<th>Feature</th>
<th>nPoint 3000</th>
<th>nPoint 2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Network Performance</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>VoIP</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Business Transaction</td>
<td>✔</td>
<td>–</td>
</tr>
<tr>
<td>Wi-Fi</td>
<td>✔ (NP3000-H)</td>
<td>–</td>
</tr>
</tbody>
</table>
nGeniusPULSE Hardware Specifications
- **Platform**: Dell R740 R2
- **CPU**: 2 Intel Xeon Silver 4110 (8-Core Dual Broadwell 2.1 Ghz)
- **RAM**: 96GB
- **Storage**: 10 x 1TB, 2 x 600GB
- **Power**: Dual, Hot-Plug, Redundant Power Supply (1+1), 750W

nGeniusPULSE Collector
- **Platform**: Super-micro: 800-1248 V4 1U
- **CPU**: 8-Core Dual Broadwell 2.1 Ghz
- **RAM**: 64GB
- **Storage**: 16TB

Virtual Specifications
- **Production Requirements**
  - **CPU**: 16-Core
  - **RAM**: 64GB
  - **Storage**: 4TB

- **Minimum Requirements**
  - **CPU**: 4-core
  - **RAM**: 16GB
  - **Storage**: 50GB

System Capacity
- **nPoints**
  - nGeniusPULSE Server supports up to 5,000 nPoints*
  - nGeniusPULSE Collector supports up to 50,000 MEs
  - nGeniusPULSE Server with external Collectors in a distributed deployment supports up to 500,000 MEs

- **Monitored Elements (MEs)**
  - nGeniusPULSE Server with built-in Collector supports up to 25,000 MEs
  - nGeniusPULSE Collector (external) supports up to 50,000 MEs

nGeniusONE Service Assurance Platform
nGeniusONE is a real-time information platform that provides a single pane of glass to view the data, voice, and video service delivery performance to manage both the availability and quality of the user's experience.

Available on both hardware and virtual platforms, nGeniusONE leverages NETSCOUT smart data as a universal source for providing smarter analytics for end-to-end visibility throughout private, virtualized, public, and hybrid cloud environments.

**ASI Technology**
Adaptive Service Intelligence® (ASI) technology transforms wire traffic into smart data, providing real-time visibility into user experience for the most advanced and adaptable information platform to ensure security, manage risk, and drive service performance.

**NETSCOUT Smart Edge Monitoring**
The Cloud Adaptor enables smart data to be received from nGeniusPULSE nPoints strategically deployed throughout the enterprise. Synthetic tests, including business transaction tests (BTT), configured and scheduled to provide analysis from regional offices, branch locations, and even home offices for evaluating user experience with applications hosted in data centers, cloud, and SaaS environments, will now be sent to InfiniStreamNG or vSTREAM appliances. The metadata generated from these tests are consumed alongside passive packet monitoring smart data to provide views and analysis that identify issues impacting end-user experience, along with details to quickly pinpoint the cause of the degradation.