

# nGenius PFS Management Software

## Unified, End-to-End Management and Provisioning for the nGenius 3900 Series Packet Flow Switch

### Highlights

- Streamlined, unified management of nGenius 3900 series packet flow switch and the monitoring fabric with intuitive, drag-and-drop GUI
- Scalable, unified management and provisioning of a monitoring fabric up to thousands of ports
- Intelligent, end-to-end, cross-switch provisioning reduces administration time and avoids configuration errors
- Real-time and historical tracking of monitoring fabric load with threshold alarms to enable load optimization and capacity upgrade planning
- Dashboard views of switch and port status, alarm capabilities, and integrated diagnostics to reduce time to resolution in case of errors
- Highly resilient with active-standby server redundancy with hitless failover
- Supports multi-team use with secure, multi-user access and streamlined, role-based authorization

### Product Overview

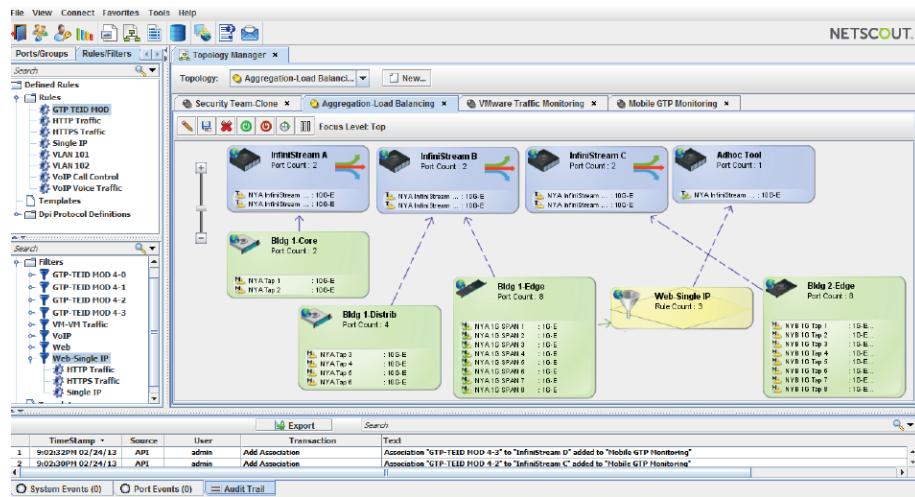
nGenius® PFS Management software is an intelligent management and provisioning platform for network monitoring fabrics implemented using the nGenius 3900 series packet flow switch. The platform comprises Linux®-based software running on NetScout pre-built server hardware. Administrators can access the platform from virtually any location using thin client access from a standard web browser with the Java™ Runtime Environment.

nGenius PFS Management software eases the challenges associated with managing, provisioning and maintaining large-scale, multi-switch distributed monitoring fabric environments. This unified management and provisioning platform supports large-scale monitoring fabrics and enables efficient end-to-end connectivity management through intuitive, point-and-click provisioning. The platform intelligently translates the graphical configuration viewed on-screen into switch-specific settings and bandwidth allocations that are automatically applied to effected nGenius 3900 series switches across the fabric to establish new targeted connections or modify existing configurations. The platform also facilitates secure administration by multiple operational groups through user authentication and role-based user access control to enable different teams to independently control connections serving their respective tools.

### Product Capabilities

- Unified, end-to-end, GUI-based management of the monitoring fabric and nGenius 3900 series packet flow switch
- Supports up to thousands of managed ports across a single monitoring fabric
- Intelligent, drag-and-drop, intra-switch and cross-switch connection provisioning with optional guaranteed bandwidth
- Intuitive management of one-to-one, many-to-one, any-to-many, and many-to-any connections as well as packet-flow filters
- Powerful configuration of Deep Packet Inspection (DPI) filters to manage complex traffic flows like IP-in-IP and IP-in-GTP
- Graphical dashboard of switch inventory, configuration, capacity, and port status
- Integrated reporting and diagnostics provides real-time and historical traffic statistics and link utilization threshold alarms
- Advanced, automatic topology management based on activity schedules
- CLI accessible via SSH
- Supports high availability requirements with active-standby server redundancy with stateful failover
- User access control, and user role enforcement based on industry-standard AAA





**Figure 1:** The graphical Topology Manager module accelerates connection provisioning and simplifies the management of packet-flow filtering rules.

## Simplified Management

nGenius PFS Management software is optimized to manage and provision monitoring fabrics from small single monitoring switch environments to large-scale, multi-switch distributed deployments. The management platform provides unified administration of the entire installed base of nGenius 3900 switches across sites and geographic regions, thereby enabling end-to-end control by service delivery focused teams. An intuitive, browser-based, point-and-click graphical dashboard provides users with easy navigation between deployed switches and a clear presentation of switch configuration and capacity. Administrators can also perform a drill-down from the system level to the port level for a streamlined administrative workflow. The Topology Manager module further abstracts and simplifies administration, allowing the creation of packet-flow connections using simple drag-and-drop operations. In addition, the Topology Manager enables the definition of packet-flow filtering rules, as well as aggregation and distribution connectivity maps. The platform provides connectivity management, status monitoring, and troubleshooting for thousands of ports across a distributed environment.

## Rapid, Intelligent Provisioning

nGenius PFS Management software is built with the intelligence to accelerate various administrative tasks and increase team productivity. The platform supports diverse fabric interfaces, and automatically detects link speed and medium type to assure error free configuration and enable rapid interface deployment in the field.

Using end-to-end, multi-hop provisioning, administrators need to only define the endpoints of a connection, and the platform automatically performs the requisite provisioning from ingress to egress, including allocating guaranteed bandwidth on inter-switch links to ensure connection reliability and avoid packet loss.

Connectivity is managed through administrator defined topologies that can be activated either manually or automatically based on activity schedules. This enables agile deployment or redeployment of monitoring tools to facilitate ad-hoc, in-depth troubleshooting activities or to support focused analysis during scheduled maintenance windows.

## Analysis of the Monitoring Fabric

nGenius PFS Management software provides a graphical view of the deployed monitoring switches and port status. Real-time and historical traffic statistics provide insights into traffic loads within the monitoring fabric to enable proactive optimization of monitoring tool load, and facilitate proactive planning

of future capacity upgrades. In addition, link utilization threshold alarms help direct administrator attention to significant incidents that may require reassignment of load, or capacity upgrade to maintain dependability of the overall monitoring solution. Dashboard views enable real-time tracking of monitoring fabric performance, health, and alarm status for continuous verification of system integrity and rapid troubleshooting and resolution in case of faults.

## High Availability

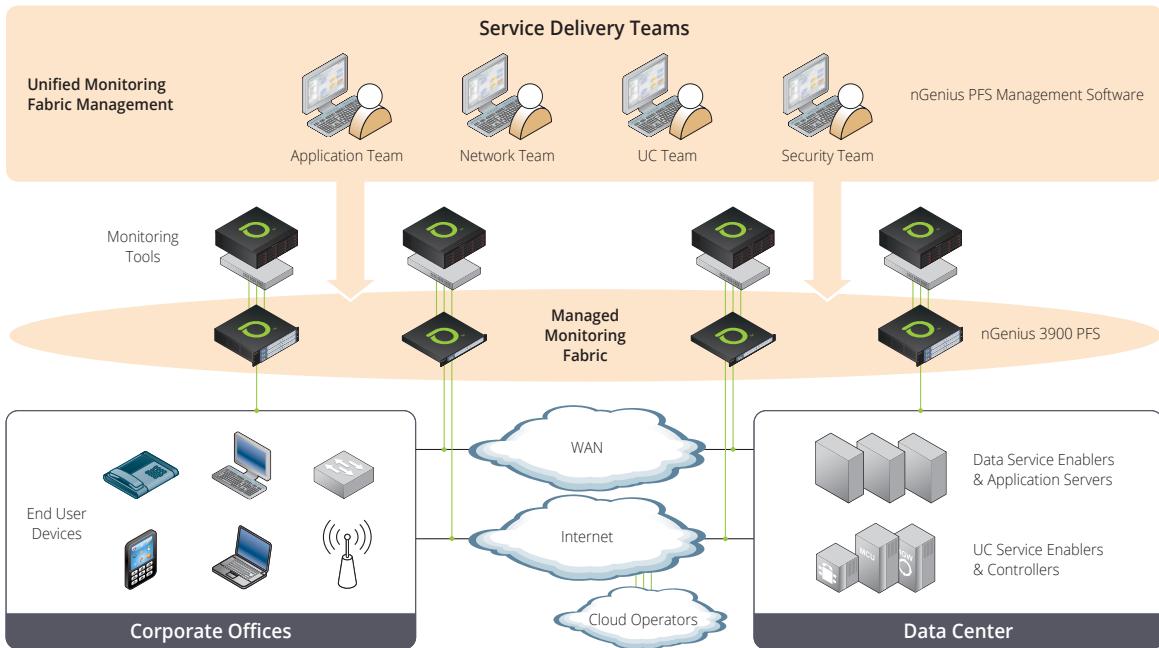
nGenius PFS Management software is available as a pre-built server and may be deployed in a standalone or redundant configuration. In a redundant configuration, two servers operate in an active-standby mode with complete state synchronization between the servers. In case of active server failure, the standby automatically assumes control of the monitoring fabric without loss in configuration or disruption to connectivity through the fabric.

## Secure, Multi-Team Administration

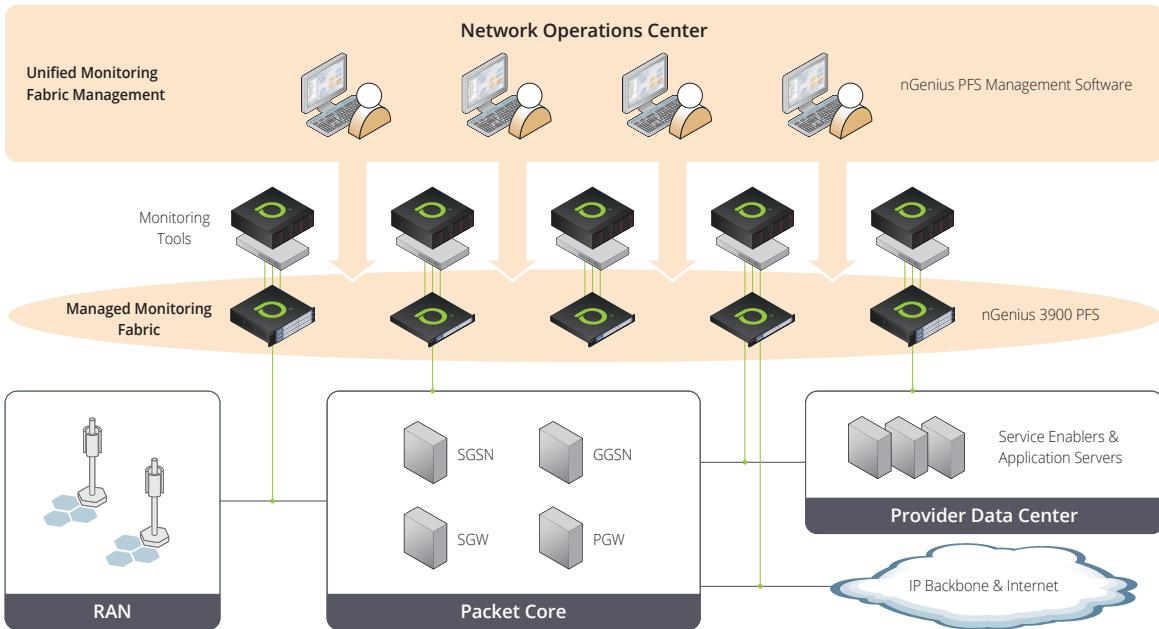
The nGenius PFS management platform integrates with standard RADIUS and TACACS+ systems to enable control of administrative access and privileges. By granting simultaneous access to authenticated users, enforcing user roles, and logging user activity, the platform enables each of the operations teams to independently control the ports and connections that they utilize. This eliminates the need for creating a central team that manages the monitoring fabric, streamlines administrative workflow, and increases operational efficiency and agility.

## Sample Deployment Scenarios

nGenius PFS Management software can be deployed for unified management and provisioning of the network monitoring fabric implemented using the nGenius 3900 series packet flow switch. The high scalability of the software enables streamlined management of the fabric across geographic locations in enterprise and wireline/wireless service provider networks. Moreover, the software enables the different operations groups to independently configure the fabric connections serving their respective monitoring tools for maximizing operational efficiency and cross-team collaboration.



**Figure 2: Enterprise IT organization leveraging nGenius PFS Management software to streamline the administration of the nGenius 3900 series packet flow switch across diverse geographic locations.**



**Figure 3: nGenius PFS Management software scales end-to-end provisioning and management of the nGenius 3900 series packet flow switch in service provider networks.**

## Technical Specifications

### Pre-Built Server Functional Specifications

nGenius PFS Management Software Pre-Built Server	
OS Storage Type	HDD
Data Storage Type	HDD
Data Storage Capacity	2 TB
Data Storage Redundancy	RAID 1
Console Ports	1 x EIA/TIA-232 (DB-9)
Network Ports	2 x 10/100/1000Base-T (RJ45)
Power Supply Type	Internal, hot swappable
Power Supply Redundancy	1+1
Air Flow	Front to back

### Pre-Built Server Physical, Environmental, and Power Specifications

nGenius PFS Management Software Pre-Built Server	
Height (RU)	1
Mounting Brackets	Included
Dimensions	19" W x 3.4" H x 28.5" D (in) 48.24 W x 8.73 H x 72.3 D (cm)
Weight	71.5lbs (32.5kg)
Operating Temperature	50°F - 95°F (-10°C - 35°C)
Storage Temperature	-40°F - 149°F (-40°C - 65°C)
Operating Relative Humidity	10% - 80%, non-condensing
Storage Relative Humidity	5% - 95%, condensing, max wet-bulb 91°F
Max. AC Power Consumption (W) @ 100 - 240 VAC, 50/60Hz	1200 W
Max. Thermal Output for AC (Btu/h)	2891
Regulatory Agency Approvals	IEC 60950-1, EN 60950-1, FCC Class A, CISPR 22 Class A, EN 55022 Class A, CISPR 24, EN 55024, EU RoHS Directive 2002/95/EC, NFPA 99:2005, EnergyStar for Computer Servers v1.1

### Client-Side System Requirements

Operating System	Microsoft Windows XP/Vista/7
Web Browser	<ul style="list-style-type: none"> <li>• Microsoft Internet Explorer®</li> <li>• Mozilla Firefox®</li> <li>• Google Chrome™</li> </ul>
Java Runtime Environment	<ul style="list-style-type: none"> <li>• JRE v7 Update 6</li> <li>• (32- and 64-bit)</li> </ul>
Processor	866 MHz Intel P3 or better
RAM	Minimum 4 GB
HDD Space	Minimum 40 GB
Ethernet Adapter	10/100/1000 Mbps or better
Screen Resolution	Minimum 1024x768, 256 colors



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