

# nGenius Packet Flow Switch Family for Traffic Distribution

Many data centers and network cores are in the process of being upgraded and/or redesigned. As this occurs, it is an ideal time to insert a true network monitoring plane to pass data between the network infrastructure layer and the monitoring layers. Packet-flow data is a highly reliable source of traffic metrics and is being used more frequently for refined analysis by several different types of monitoring technologies.

A well thought out monitoring architecture strategy, leveraging the flexible distribution and powerful filtering capabilities of the nGenius® packet flow switch family, will help organizations meet their needs for greater visibility. It also empowers the network team to collect traffic from any monitoring point and distribute it to the appropriate monitoring tools for consumption and analysis - that is, to get the right information to the right tool at the right time.

## Challenges Addressed by the nGenius Packet Flow Switch Family

The common challenges of limited visibility and increasingly complex monitoring and analysis requirements combined with deficiencies in traffic conditioning have left IT organizations with the need to architect a strategy that includes network monitoring switches for better distribution of packet-flow data. Further, with recent data center infrastructure improvements, organizations strive to extend the value of investments made in existing monitoring devices. Network

monitoring switches offer ways to adapt disparate connectivity between the network and monitoring devices while also applying conditioning techniques that optimize end-device performance.

Using the nGenius packet flow switch family, IT organizations can distribute traffic from critical network visibility points to multiple monitoring tools to efficiently share rich packet-flow data. The nGenius packet flow switches, with highly granular filtering and advanced conditioning capabilities, reduces the complexity of sharing the data while improving end-device performance, delivering only the specific data necessary from a particular packet-flow or user session.

## nGenius Packet Flow Switch Family

To meet the demands to deliver rich packet-flow data across a wide range of uses, the nGenius packet flow switch family provides intelligent control and distribution of IP traffic from a single network connection. This enables IT organizations to improve their pervasive visibility throughout the environment and to achieve efficient, cost-effective sharing of packet-flow data with a full complement of monitoring tools including the InfiniStream® appliance.

Deployed in some of the world's most demanding data center deployments, the switches in the nGenius family offer a variety of features to meet the unique requirements of a range of environments and purposes. Whether demands are for high performance,

line-rate packet de-duplication, high-density scalability, choices of time-stamping protocols, header stripping, load balancing, or intelligent traffic processing, there is an nGenius switch to meet the needs. These network monitoring switches enable IT organizations to distribute, filter and control network traffic for data, voice and video monitoring and security deployments.

Key features of nGenius packet flow switch family that aid in traffic distribution scenarios include:

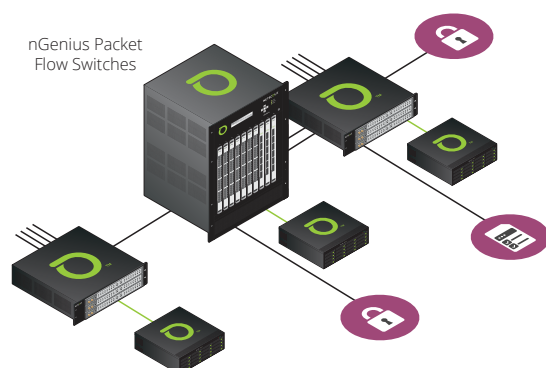
**High performance and the highest port density** with flexible port configuration supporting 1/10 GbE operation or 1/10/40/100 GbE operation, and with any port usable for any operation, such as tapping for receiving or for sending to the monitoring device.

**Advanced packet conditioning** functions are included as standard capabilities that leverage sophisticated, layer 2/3/4 analysis for creating refined packet-flow forwarding streams that meet corporate needs while optimizing end-device operation.

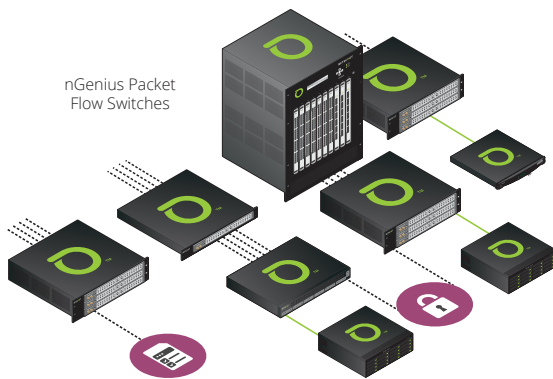
## Traffic Distribution Use Cases and Deployment Scenarios

Traffic distribution is one of several deployment scenarios for the nGenius packet flow switch family, for one-to-many delivery of filtered or unfiltered traffic flows from strategic points in the network to multiple analysis tools. From a critical point in the data center to the network core, for instance, the nGenius switch intelligently filters, replicates, and load-balances the packet flow traffic to distribute the right amount and type of traffic to a diverse range of monitoring devices. Depending on the specific network and the attached monitoring tools, an nGenius switch may be configured to distribute different subsets of the packet flows as required.

There are many deployment scenarios where packet-flow data is leveraged by a wide range of management tools and devices ranging from fairly localized and simple (forwarding traffic to two or more monitoring devices), to more complex and broadly distributed (forwarding traffic to another nGenius switch further downstream in the environment to its final tool destination).



**Figure 1: Simple traffic distribution with the nGenius packet flow switch is accomplished by forwarding traffic from a specific network location and delivering to one or more monitoring tools, including the InfiniStream appliance for performance management.**



**Figure 2: Complex traffic distribution with the nGenius packet flow switch is performed by forwarding traffic from a specific network location and feeding filtered or unfiltered traffic to another nGenius switch destined to monitoring tools located further downstream in data center and campus locations.**

**Simple Distribution:** From a strategic point (or points) in the network, all the IP-traffic is fed to the nGenius packet flow switch and distributed to a single or several InfiniStream

Appliance(s) and other monitoring tools such as an IDS device. The built-in advanced filtering and conditioning capabilities of the nGenius switch are particularly useful in some of the following simple distribution scenarios:

- Traffic from a high volume core segment distributed to InfiniStream appliance for network and application performance analysis as well as to other monitoring tools simultaneously.
- The nGenius switch can receive traffic from a 10 or 40 GbE segment in a data center, filter on specific VLANs, and distribute each VLAN stream to a specific port on a multiport InfiniStream appliance. Integration between the nGenius switch and the nGeniusONE™ Service Assurance platform provides for appended VLAN tags for particular monitoring scenarios.
- The nGenius 6010 packet flow switch offers line-rate performance for packet deduplications for greater tool efficiency.

Better visibility and end-device performance can be achieved with traffic distribution through the nGenius packet flow switch as part of a broader monitoring architecture strategy. With the nGenius switch in place, as other needs arise, access to critical packet flow data is readily available.

### Complex Traffic Distribution Example:

Large, globally distributed networks create even more challenges to efficient and effective traffic distribution. The situation may require an organization to funnel traffic from regional offices to both local management tools as well as to headquarters or data center-based analysis tools. In complex traffic distribution scenarios, the volume of traffic that needs to be distributed is substantially larger and must be forwarded to the right devices without compromising network performance. The nGenius packet flow switches are especially adept at handling such complex globally distribution scenarios with intelligent filtering, packet slicing and conditioning. A monitoring fabric based on the nGenius switch can efficiently distribute packet flow data to locally attached devices as well as to other nGenius switches on its way to more centrally hosted devices for security or compliance analysis.

Reduced complexity and improved flexibility in building out existing and future monitoring strategies across large organizations is possible when the nGenius packet flow switch is in place. A more elegant sharing of data from one location to many tools offers a less complex and easier to manage environment with a more refined distribution of the right amount of data to the right tool. Time to deploy new or additional monitoring devices is also greatly improved as the complexity of the environment is reduced by using the nGenius switch to streamline the monitoring architecture.

### Benefits to Traffic Distribution with the nGenius Packet Flow Switch Family

- Improves IT operational efficiency by cost-effectively distributing and replicating packet-flow data for a broad range of monitoring, performance management and security uses
- Improves distribution and control of packet-flow traffic with sustained performance levels for high traffic volume and low-latency environments.
- Eliminates contention for access to traffic data, thereby enabling expansion of diverse monitoring strategies for greater efficacy.
- Facilitates any-to-any connectivity from a single network connection point enabling network staff to direct the right information to multiple tools at the right time.
- Improves end device performance, and ultimately extends its useful life with sophisticated filtering and aggregation of packet-flow traffic.
- Improves operational efficiency and agility by reducing the time to deploy additional monitoring devices and simplifying connectivity provisioning.
- Integration with the nGeniusONE platform greatly simplifies the architecture of a performance management system, reduces vendor complexity, and lowers overall total cost of ownership.
- Improve ROI of overall monitoring strategies.

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