Challenges in NetFlow Generation

NetFlow is a simple, effective way to increase visibility into traffic types and usage patterns across systems. The flow-generated data can be used to build relationships and usage patterns between nodes on the network. Routers and switches that support NetFlow can collect IP traffic statistics to be exported as NetFlow records. However the processor and memory load of enabling NetFlow can cause service degradation and affect their ability to pass traffic without introducing latency and packet drops. Due to this processing overhead, sampled NetFlow is implemented in most of the high-end routers. Sampling one in every "n" packets for NetFlow processing can severely limit the visibility needed to monitor flows and fail to provide a comprehensive network trend analysis.

The Gigamon® Solution

The advanced capabilities of GigaSMART® technology can be leveraged to summarize and generate unsampled NetFlow statistics from incoming traffic streams. Offloading NetFlow Generation to an out-of-band solution like the Gigamon Visibility Fabric™ completely eliminates the risk of expending expensive production network resources in generating these analytics. Combined with the flexibility offered by Gigamon's patented Flow Mapping® technology, operators can pick and choose from the incoming flows to generate NetFlow statistics, without losing critical information. Support for NetFlow versions 5 and 9 and IP information export (IPFIX), enables seamless integration with standards-based collectors. NetFlow records can also be exported to multiple collectors concurrently, providing a single flow source for business-critical management applications such as security, billing, capacity planning, and more. Pervasive flow-level visibility across remote locations and Big Data environments can be used to derive accurate statistics such as usage patterns, top talkers, and top applications for effective capacity planning and enforcing security policies.

NetFlow-based data is summarized information and does not provide access to a specific set of packets or packet payloads. Not having this information can also impede analysis around latency and jitter, application usage patterns, etc. Gigamon's Visibility Fabric architecture is the first in the industry to summarize flow statistics as well as to provide the flexibility of aggregating, replicating, filtering, and forwarding raw traffic streams to monitoring tools for detailed troubleshooting and analytics.

The Gigamon Visibility Fabric thus establishes a scalable framework to deliver pervasive flow-level visibility across enterprises, data centers, and service provider environments to accurately design, engineer, optimize, and manage their network infrastructure.
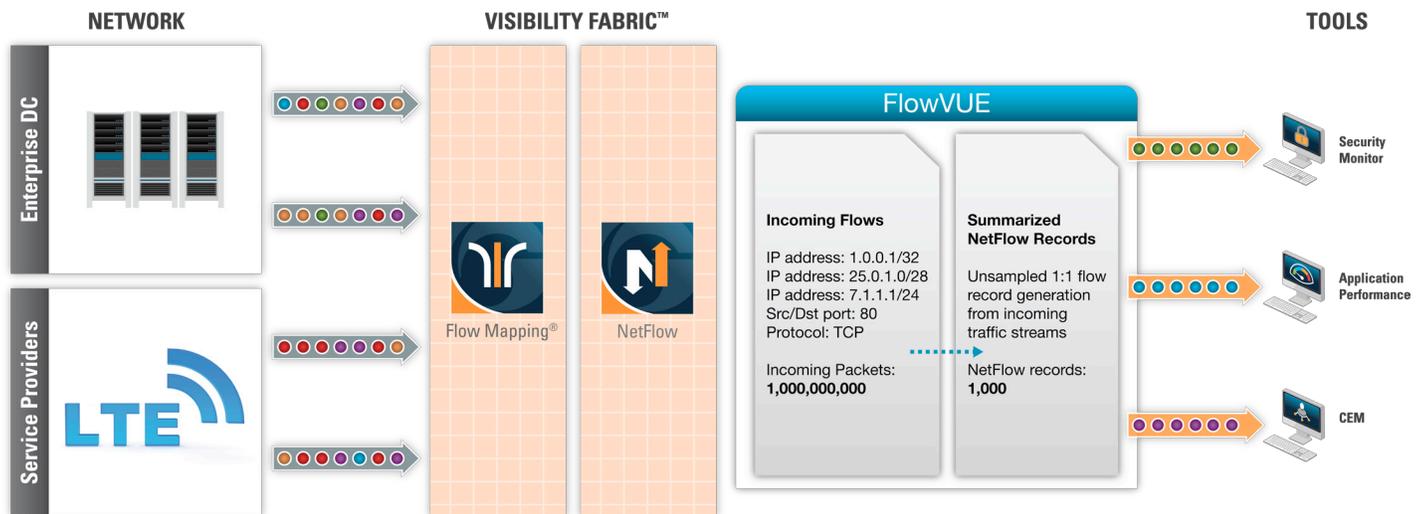

Figure 1: NetFlow Generation

Feature Description

- Out-of-Band NetFlow Generation
  - Transforms packet data across multiple devices into summarized NetFlow records
- Supported NetFlow Export Formats
  - NetFlow v5 and v9
  - IP Information Export (IPFIX)
- Ingress Filtering
  - Patented Flow Mapping technology enables granular control over incoming flows for generating NetFlow records
- Multiple NetFlow Exports
  - Supports NetFlow exports for up to six NetFlow collectors
- High Throughput Solution
  - Supports unsampled 1:1 flow record generation and configurable sampled NetFlow Generation from incoming traffic streams
- End-to-End Visibility
  - Integrated traffic visibility solution combines patented Flow Mapping with GigaSMART capabilities and NetFlow Generation

Key Benefits

- Optimize Production Network
  - Offload NetFlow Generation to Visibility Fabric to avoid expending expensive production network resources
  - Out-of-Band solution completely eliminates the risk of losing production traffic as a result of generating NetFlow
- An Industry First—Combining End-to-End Traffic and Flow Visibility
  - High throughput solution with support for unsampled 1:1 NetFlow record generation
  - Integrated traffic visibility solution combines GigaSMART capabilities with NetFlow Generation
- Facilitate Big Data Analytics
  - Increased visibility into traffic types and usage patterns across Big Data environments
- Enhanced Remote Monitoring
  - Summarized NetFlow statistics across remote sites
  - Optional drill downs into raw packet analytics for detailed troubleshooting and root cause analysis
- Enhanced Operational Efficiency
  - Gain comprehensive network visibility from multiple network observation points
  - Enable end-to-end security enforcement with visibility into every flow

About Gigamon

Gigamon provides an intelligent Visibility Fabric™ architecture to enable the management of increasingly complex networks. Gigamon technology empowers infrastructure architects, managers and operators with pervasive visibility and control of traffic across both physical and virtual environments without affecting the performance or stability of the production network. Through patented technologies, centralized management and a portfolio of high availability and high density fabric nodes, network traffic is intelligently delivered to management, monitoring and security systems. Gigamon solutions have been deployed globally across enterprise, data centers and service providers, including over half of the Fortune 100 and many government and federal agencies.

For more information about the Gigamon Visibility Fabric architecture visit: **www.gigamon.com**