

Getting SMART About Analytic Tool Costs: How Subscriber-aware Traffic Processing Resulted in Big Savings and a Clear Business Advantage for Tier 1 Carrier



CHALLENGE

With exploding traffic levels after a successful subscriber promotion, the service provider faced expense challenges as a result of needing more tools to meet the demands of network performance and customer experience.

SOLUTION

- + Gigamon Visibility Fabric™
- + Gigamon GigaSMART®

CUSTOMER BENEFITS

- + Doubled tool processing throughput
- + Eliminated cost of external load balancers
- + Improved cost savings on tools and probes

BUSINESS CHALLENGE

The network is the most important product a service provider offers, as well as their primary way of generating revenue. To make sure the network stays up and services are offered at the quality and scale subscribers demand, a large array of expensive analytic tools are deployed across the network to help the service provider understand how the network is performing and the quality of the services experienced by subscribers. These analytic tools often focus on very specific areas that are of interest to the service provider:

- + Customer experience management
- + Utilization of the network/services by subscribers
- + Stability and performance of the core network itself

Apple released the first iPhone in 2007 resulting in significantly increased network traffic. But after the first 4G/LTE networks turned up in late 2010, traffic levels exploded. It is not uncommon for service providers to comment that traffic on their networks is doubling every 12 months and that their existing tools can no longer cope with this level of traffic.

More importantly, service providers can no longer afford the sheer number of tools that are needed to process all the traffic on their networks. When network bandwidth upgraded from 1Gb to 10Gb, the cost of individual tools on average rose from \$10k per appliance to \$100k per appliance. One gigabit tools were able to process traffic at line rate.

However, newer 10Gb tools are unable to process at line rates due to processor limitations, often only being able to process at 80% of line rate. In simple terms the service provider is spending more but getting less. (It is expected the same will happen with tools designed to process 40Gb and, in the future, tools aimed at processing 100Gb pipes. Neither of these are expected to get anywhere near line-rate processing speeds and potentially will be too costly for the average service provider to afford.)

RESOLUTION

Gigamon solved the service provider's problems by offering a completely new architectural approach to the issues associated with rising network traffic. By moving the GTP correlation function to the Gigamon Visibility Fabric, individual tool processing throughput increased. Additionally, the service provider's costs were reduced as fewer GTP correlation licenses were needed from their tool vendors.

Further, the service provider was able to redeploy their load balancers to another part of the network, as the Visibility Fabric also took on the function of session-aware load balancing the tools—including stateful recovery.

FlowVUE traffic scaling enabled the service provider to reduce by 50% the amount of traffic that flowed to its tools, removing duplicated packets and solving their tool over-subscription problem, which was creating erroneous results (see Figure 1).

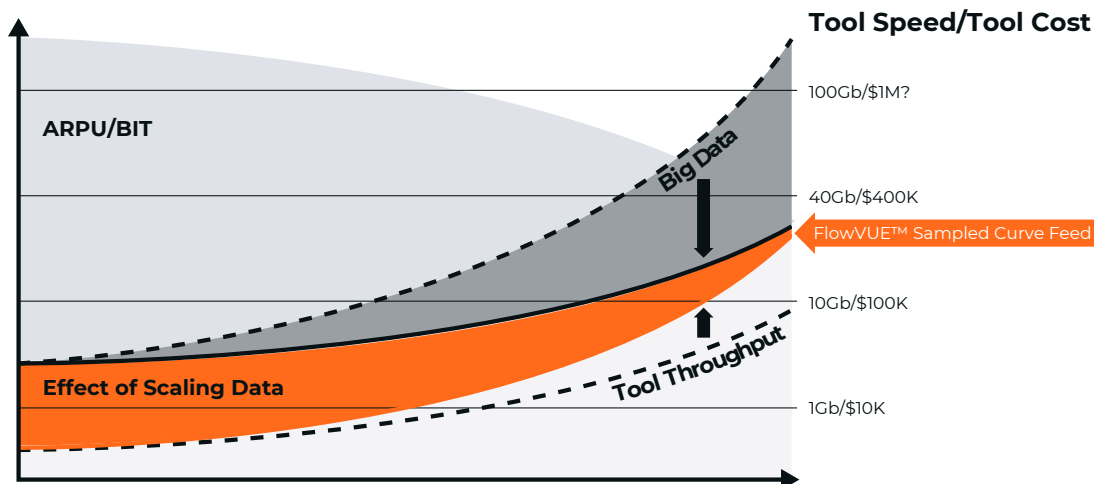


Figure 1. Big Data/tool processing throughput/cost of tools/FlowVUE sampling

The service provider employed and populated the forward-list capability which allowed them to see 100% of the traffic from the subscribers on those lists, enabling their high-value or trouble-ticket customers to have their traffic stored or analyzed on demand.

BENEFITS

Provide greater visibility to the overall network

Gigamon's Visibility Fabric allows either a single tool or multiple tools to connect to a single network segment or multiple network segments, providing greater visibility to the overall network. Each tool can therefore provide higher-quality results from a wider visibility perspective.

Reducing down Big Data

Tools often waste processor cycles by processing traffic that is not relevant to them. For example there's little point in a videoquality tool processing voice traffic—it's a waste of analytic processing capability. The Visibility Fabric provides only the traffic relevant to each and every tool connected to the tool rail.

Optimize tool processing throughput

Tools often need to undertake complex and processor-demanding transformations to traffic before the traffic can be processed. Examples of these complex treatments are SSL decryption and GTP correlation. As a result, the attached tools can concentrate on processing the traffic and not on putting the traffic into the right format. Clearly this would be preferred to the "just buy another tool" school of thinking.

In addition, if there are four different types of tools connected to the tool rail with load balancing groups of four appliances each, as many as 16 licenses can be needed. With Gigamon only one license per complex treatment is required because the processing is done in a "head-end" fashion and at line rate.

Innovative new monitoring methodologies

Not all traffic needs to be processed. Gigamon's unique flow sampling methodology, FlowVUE, allows a service provider to increase or decrease the amount of traffic to match the processing throughput of the attached tools. This is akin to being on a mountaintop and having a wider view of where the issues are. The service provider can then focus in more detail when problems are found. Considering current and future costs, scaling the traffic down to fit existing tools' capacity, instead of scaling the number of tools to fit the rising traffic capacity, is the way a service provider can sustain their existing business model.

Transform the norm: Enable new business models

With Gigamon's GTP correlation capability, forward-listing, and traffic scaling capabilities through FlowVUE, operators are, for the first time, in a unique position to deploy subscriber-aware capabilities to their advantage. For example, it makes no sense for a service provider to provide the same support services to a subscriber that uses 80% of network resources but only contributes 5% Average Revenue Per User (ARPU) compared with a subscriber who provides an 80% ARPU level to the service provider, but who only uses 20% of network resources (see Figure 2).

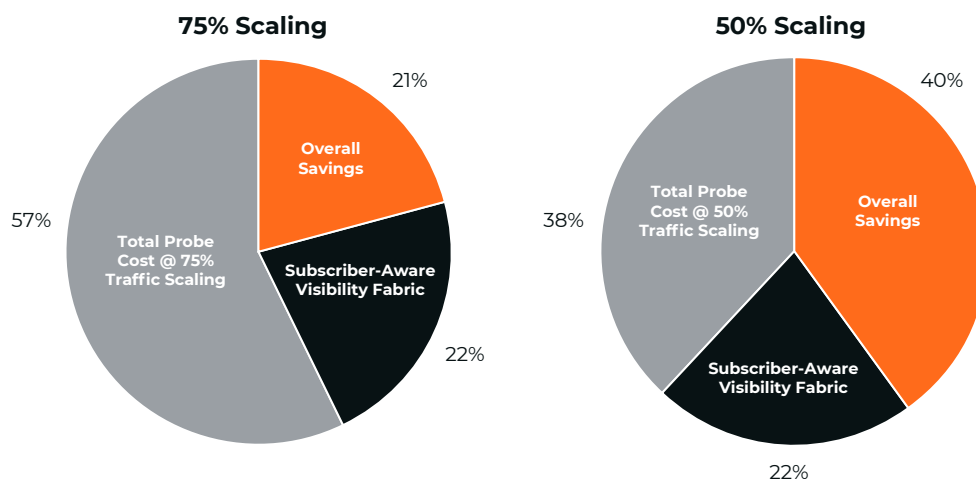


Figure 2. Cost savings percentage with respect to investment costs in Subscriber-aware Visibility

In addition to the large CAPEX savings resulting from the greatly reduced spend on analytic tools and load balancers, Gigamon's subscriber-aware Visibility Fabric also delivers these extra benefits:

- + Increased tool performance and higher confidence in tool fidelity/results
- + Reduced need to continuously engineer and install additional probes
- + Simplified opportunities to focus analysis on varying populations of interest through forward-listing capability

ABOUT GIGAMON

Gigamon offers a deep observability pipeline that harnesses actionable network-level intelligence to amplify the power of observability tools. This powerful combination enables IT organizations to assure security and compliance governance, speed root-cause analysis of performance bottlenecks, and lower operational overhead associated with managing hybrid and multi-cloud IT infrastructures. The result: modern enterprises realize the full transformational promise of the cloud. Gigamon serves more than 4,000 customers worldwide, including over 80 percent of Fortune 100 enterprises, nine of the 10 largest mobile network providers, and hundreds of governments and educational organizations worldwide. To learn more, please visit gigamon.com.

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