VSS monitoring

Case Study

"VSS Monitoring provided the infrastructure we needed to differentiate our network offering."
- Network Architect

About the Company

Industry: Mobile broadband services
Location: Nationwide, USA

Business Challenges

Roll out a differentiated high-speed mobile network with a fail-safe monitoring system and the ability to expand

Selection Criteria

- NEBS compliance
- vStack Mesh redundancy
- Support cost-effective growth

Monitoring Solutions

- V24 Hotswap NEBS 1GigE and10 GigE Intelligent Optical Taps
- Passive Optical taps

Benefits

- CAPEX savings by increasing analyzer efficiency through load-balancing and filtering
- Simple and cost-effective scalability
- Ease and affordability of upgrading 1G to 10G

Savings

- The operator saved over $2 Million with an effective reduction in Capex of 80% and Opex of 50%. ROI was over 1700%, payback period was less than 2 months.

Product Information

VSS Distributed Series™
http://www.vssmonitoring.com/products/dtcs.asp

Business Challenges

The first 4G network operator in the US, recently launched a fully differentiated 4G/FDD-LTE nationwide offering. Due to there being a number of other FDD-LTE operators already deployed, the operator wanted to focus on critical network efficiency and QoE differentiation.

Rolling out the new network posed some significant challenges in assuring network performance and service quality. Building a fast mobile broadband network with an unlimited download offering meant aggressive, cutting-edge technology backed up by world-class monitoring and analysis for service assurance.

"The new network represented a clear market differentiator," a network architect on the project said. *"We wanted to continue our unlimited download offerings, so we found high-tech ways to improve the economics to allow our subscribers to continue to experience a rock solid network."*

The Requirements

The new monitoring system had to support both 1G and 10G Ethernet interfaces and be able to tap 100 percent of the traffic from every interface in the core network, located over 7 NOC sites.

But passing all that traffic back to the analyzer ports would overload both the network and the analyzer, so the monitoring system needed to be able to filter the tapped traffic based on extensive criteria developed by the carrier, filtering rules that would extract only the relevant traffic to send over the network to the analyzer ports.

In addition to filtering, the monitoring system had to provide the maximum reliability and resiliency for the monitored traffic. Hotswap NEBS compliant units were used in a Mesh configuration which provided multiple paths for the monitored data to traverse should a link or node go down.

"As demand increases, we will upgrade 1G transmission lines to 10G. The monitoring system had to be able to easily and cost-effectively upgrade to accommodate growth," the architect said.

The solution

It was clear that VSS Monitoring was the best system to meet all the requirements. *"We chose a VSS Monitoring solution as the foundation of our monitoring system because it supports all Ethernet interfaces in a single unit, can cost-effectively upgrade to 10G through SFP+ transceivers, and can easily configure complex filtering rules,"* the architect said.

With the VSS Monitoring system, passive optical taps and fail-safe copper taps on individual links capture 100 percent of the traffic and aggregate it to a distributed tap in each location, which then feeds filtered traffic to centrally-located analyzers. The efficiency of the VSS system allows network engineers to analyze traffic from multiple sites at a single network operations center (NOC) with one multiport analyzer.

Benefits of VSS solution

Efficiency.

Advanced filtering capabilities let the carrier configure the system to forward only the captured traffic required for monitoring. This is important when you have hundreds of ports feeding into a single multiport analyzer. Without filtering, the analyzer ports would be overwhelmed with traffic. The carrier also benefits from the increased efficiency provided by filtering because the analyzer ports don't waste processor cycles capturing, inspecting and discarding unwanted traffic.

Cost-effectiveness.

The filtering capabilities of the VSS system reduces the amount of traffic to be inspected and processed by the analyzer. This means the carrier can monitor more links with fewer analyzer ports. The resulting CAPEX savings are significant for a carrier monitoring traffic on the mobile broadband network with unlimited download subscriber data plans.

Usability.

To achieve that level of efficiency and cost-effectiveness, the carrier applies hundreds of filtering rules on each core network interface. The VSS system simplifies this process with a GUI that allows the application of rules to be automated. *"Managing filtering rules is much simpler in a VSS Monitoring tool than in other devices,"* the architect said.

Upgradeability.

Because VSS Monitoring systems have SFP+ ports, when the carrier upgrades a link from 1G to 10G, they can upgrade the tap to 10G by replacing the 1G SFP+ transceiver with a 10G SFP+ transceiver. Speed upgrades of an existing line does not require the purchase of a new tap, only a transceiver. A new tap is required only when new lines are added.

Other advantages inherent in VSS Monitoring systems include:

- **Scalability.** Unlike other systems, in which every box must be configured manually with a command-interface to be made aware of new hardware, VSS Monitoring devices use a self-learning multi-unit infrastructure to automatically connect to each other in a full-mesh topology. They automatically reconfigure as other units are added or removed, significantly reducing turn up costs during network expansion.

- **Manageability.** In addition, any VSS Monitoring device can be configured from a single location with a simple GUI, regardless of the number of sites or devices connected in the mesh, making post-installment management a simple task.

- **Reliability.** The set-and-forget nature of VSS Monitoring's intelligent nodes is important in the always-on network and means that network traffic is never interrupted.

Going Forward

"Would I recommend VSS Monitoring? Here's the best answer I can give. We are in the process of deploying a FDD-LTE network in one of most competitive places in the world. VSS Monitoring will be an integral part of our monitoring infrastructure and success for that project," the architect said.

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VSS Monitoring is the world leader in Network Intelligence Optimization, providing a visionary, systems-approach for optimizing and scaling the connectivity between network switching and the entire network intelligence ecosystem of analytics, inline security, and acceleration tools.

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