Case Study

The University of South Carolina Improves Visibility After 100Gb Network Upgrade to Increase Traffic Capacity with Gigamon

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TOM WEBB
Deputy CISO and Director of Security Operations
University of South Carolina

Challenges

The University of South Carolina upgraded its core network from 10Gb to 100Gb and needed a monitoring infrastructure to keep up with the resulting surge of traffic.

Solution

- GigaVUE® HC Series
- GigaVUE® TA Series
- GigaSMART® Traffic Intelligence
- GigaStream Traffic Distribution

Customer Benefits

- Maintained pervasive visibility during network upgrade
- Deduplicated network packets by 6X
- Reduced irrelevant inbound traffic to monitoring tools by 75 percent
- Reduced network latency and improved tool utilization
- Load balanced traffic across data centers

With more than 50,000 students and staff, the University of South Carolina's Columbia campus occupies more than 350 acres. Managing a university network isn't like running IT in an office building. Network and security teams must deal with tens of thousands of users, spread out across multiple buildings on hundreds of acres — and many of them live there full time.

Juggling various networking and security needs while continually keeping equipment and software up to date can be a real challenge.

Everyone and everything connects to the university's network, so safety and security are top concerns. At the University of South Carolina, Tom Webb, Deputy CISO and Director of Security Operations, and Jonathan Martin, Senior Network Security Engineer, found themselves navigating these challenges. They also faced a major infrastructure change — upgrading the university's core network from 10Gb to 100Gb for its 50,000 students and staff.

With the surge in traffic capacity, Tom and Jonathan knew they would need a monitoring infrastructure that could keep up. "We made the stipulation that if we're upgrading the core data center, we also have to upgrade our visibility," said Tom. "That was a prime requirement in the project."

Fortunately, they knew where to turn. The university had been a satisfied Gigamon customer since 2009. "We always had great tech support from Gigamon and positive experiences with the account team," said Tom.

Solution

The university's primary data center is running two GigaVUE HC series visibility nodes, with a GigaSMART de-duplication module to reduce packet duplication. A secondary data center, with two GigaVUE TA series edge traffic aggregation nodes, serves to forward aggregated traffic back to the primary data center.

Improving Load Balancing

"We're using GigaStream® technology across all of our different hardware platforms for load balancing,"

explained Tom, "because at 100Gb, a single product is not going to be able to handle it."

This arrangement provides crucial flexibility. He added, "The way GigaStream technology works, you're able to pull stuff in and out as easily as you patch it and put it back in deployment. It also improves efficiency by weighting traffic delivery to match tool processing capabilities or port bandwidth capacity."

With the Gigamon Deep Observability Pipeline, the university can now route its traffic into a suite of tools for analysis. "We're feeding several different intrusion detection systems that we have, including some advanced threat prevention (ATP) solutions from a leading vendor," said Tom.

Tangible Results

To get the most from all those tools, the university also needed to cut down on extraneous and irrelevant traffic. One crucial way to do that is via de-duplication with Gigamon.

"We had six times packet duplication at one point," said Jonathan. "Obviously we can't monitor the network at those rates." With the GigaSMART de-duplication traffic intelligence module, they were able to overcome this problem across the university network and reduce the load on tools.

Plans for the Future

The university doesn't plan to rest on its laurels when it comes to gaining network visibility. "SSL decryption is something that we're planning on implementing, so we can see all the encrypted communications coming inbound to protected enclaves in our datacenter," said Tom.

"That's the next part of the project." Overall, the upgrade project was built on the University's long relationship with Gigamon. "Gigamon has been a great vendor to work with," said Tom. "They've been very reliable, and we hope to continue a long relationship."

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 organisations 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 organisations worldwide.

To learn more, please visit gigamon.com.

Gigamon®

Worldwide Headquarters
3300 Olcott Street, Santa Clara, CA 95054 USA
+1 (408) 831-4000 | gigamon.com

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