



Case Study

Clemson University: Balancing Network Performance and Security to Connect and Protect Today's Great Minds

"To protect the university from cyberthreats, we need to know our network – and Gigamon provides the visibility we need to know what's traversing our network."

–John Hoyt, Security Information and Operations Director, Clemson University

Customer Benefits

- Optimized existing security stack, even with 100Gb upgrade.
- Maintained security without jeopardizing the speed and efficiency of the network.
- Reduced false positives by more than 60 percent, helping to identify threats faster.
- Increased visibility by more than 75 percent for deeper and wider inspection of network traffic.
- Increased NetFlow from 30,000 flows/second to 70,000 flows/second.

Gigamon Solution

GigaSECURE® Security Delivery Platform with:

- GigaVUE-HC2 Series visibility nodes.
- GigaVUE-TA Series edge traffic aggregation nodes.
- GigaVUE-FM for centralized management.
- GigaSMART® traffic intelligence modules with NetFlow/Metadata Generation, De-duplication, SSL/TSL Decryption, Load Balancing.

Gigamon Partners

- Bro
- Splunk
- Cisco/Lancopce

Challenges

Like a small city, Clemson University is home to many things. Its sprawling campus houses students, power stations, water treatment plants, supervisory control and data acquisition (SCADA) systems and even, its own police force and fire department. Everyone and everything connects into the university's network – and nothing can go unprotected.

For Security Infrastructure and Operations Director John Hoyt, providing that protection is a big job – and it's not without its obstacles.

"As a research university, Clemson can be a bit like the Wild West," said Hoyt. "Students, faculty and researchers – including those traveling abroad – all want to easily connect, collaborate and share over an open network, but at the same time, my team is responsible for protecting sensitive, critical assets like their personal data and research. It can be tough to maintain a balance between network access, performance and protection."

For years, Hoyt relied on NetFlow to analyze network traffic, gain important insights into usage patterns across systems and help uncover potential security risks. For that reason, when the network operations (NetOps) team chose to upgrade to a 100Gb network with equipment from Juniper Networks that did not support NetFlow, Hoyt felt the scales tip a bit too far in favor of speed over security.

"I understand the need to upgrade a network to meet the demands for increased throughput," said Hoyt, "but for my team, the loss of NetFlow was a serious issue. We depend on NetFlow to give us the broad and deep visibility we need to troubleshoot incidents and track down problem users and systems."

Solution

“Universities are different from corporations, which may be less inclined to share ‘competitive’ information,” said Hoyt. “In higher education, we’re in this fight together. If I have questions, I turn to the community. If someone reaches out to me, I’m happy to share lessons learned. My community colleagues are an invaluable source of trusted information, and when they recommended Gigamon, I listened.”

Hoyt took their advice and sought support from the university’s upper management and executive leadership to bring back NetFlow. After careful due diligence, Clemson chose the GigaSECURE® Security Delivery Platform (GigaSECURE) from Gigamon.

GigaSECURE was cost-effective and supported 100Gb throughput, IPv6 and NetFlow Version 9. With GigaSECURE, Clemson has confidence in its ability to perform wider and deeper inspections of network traffic. Already, Hoyt and his security operations (SecOps) team have increased flow rate from 30,000 flows per second to 70,000 flows per second.

“To protect the university from cyberthreats, we need to know our network – and Gigamon provides the visibility we need to know what’s traversing our network,” said Hoyt. “Our board of directors and executive staff are prioritizing security and they understand how challenging it is for my team to do our jobs without adequate network visibility.”

Results

With NetFlow support from GigaSECURE, Hoyt’s team can get a high-level, metadata view of information – for example, data location, author, timestamp – and with Flow Mapping, they can prioritize which tools see what data. They have also extended the intelligence and value of GigaSECURE with additional GigaSMART applications – for example, using de-duplication to avoid unnecessary packet-processing overhead on security tools and load balancing to spread monitoring across multiple devices and enhance visibility into packet contents.

“I always felt we were barely scratching the surface with our network monitoring,” said Hoyt. “My highest priority was finding a solution that allowed us to watch more than the ocean of data passing at the network border, that allowed us to sharpen our focus on the data we care about most. Now, we feel more comfortable that we’re not missing traffic and are better able to highlight and inspect traffic of interest to reduce false positives and optimize inline security tool performance.”

A win-win for NetOps and SecOps, GigaSECURE improves security without jeopardizing the speed and efficiency of the network or inhibiting the free flow of ideas that university research students and staff require.

About Clemson University

One of the country’s most selective public research universities, Clemson University is a science- and engineering-oriented college that serves a uniquely driven and highly accomplished student body. Founded in 1889, Clemson is the second largest university in student population in South Carolina with a campus that sits on 1,400 acres in the foothills of the Blue Ridge Mountains.

About Gigamon

Gigamon is the company driving the convergence of networking and security. We make threats more visible with the GigaSECURE Security Delivery Platform, a next-generation packet broker purpose-built for security. Whether on-premises, virtual or in the cloud, organizations use a single platform for visibility to stop tool sprawl and save costs. Learn how you can make your infrastructure more resilient, more agile and more secure at www.gigamon.com, [our blog](#), and [Twitter](#), [LinkedIn](#) and [Facebook](#).