

*“With Gigamon appliances, NCSA is able to protect its cyber infrastructure to best serve the researchers who use that cyber infrastructure to advance science and engineering.”*

// **Mike Dopheide**, Security Engineer



The National Center for Supercomputing Applications (NCSA / [www.ncsa.illinois.edu](http://www.ncsa.illinois.edu)) is a U.S. state-federal partnership to develop and deploy national-scale cyber infrastructure that advances science and engineering. NCSA operates as a unit of the University of Illinois at Urbana-Champaign, providing leading-edge computing, data storage and visualization resources to researchers across the country and around the world. NCSA was established in 1986 as one of the original National Science Foundation supercomputer centers and is supported by the state of Illinois, the University of Illinois, the National Science Foundation, and grants from other federal agencies. Today, NCSA is collaborating with IBM, under a grant from the National Science Foundation, to build Blue Waters, a supercomputer capable of sustained performance of 1 quadrillion calculations per second, a measure known as a petaflop. Blue Waters is due to come online in 2011.

**Challenge:**

- Improve intrusion detection capabilities and increase security while enabling continued network growth

**Resolution:**

- GigaVUE-2404 Traffic Visibility Node

**Benefits:**

- Aggregate and replicate data to multiple IDS tools storage archives
- Secure access and complete visibility of all internet facing connections
- Provide a scalable solution for future network growth

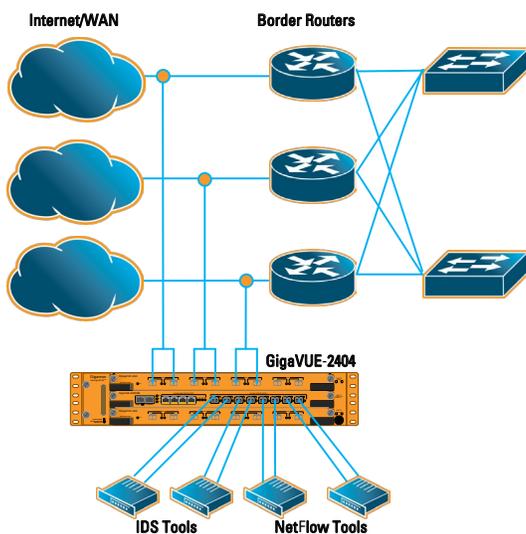
### Business Challenge

NCSA supports multiple government and scientific programs throughout the world and must provide open access to the various scientific communities that share its network. As a result, the security team must ensure that all network traffic crossing NCSA's border is safe from a variety of threats. In the past, NCSA primarily used a single 10Gbps passive regeneration tap at the WAN edge that would connect to various specialized Bro IDS and NetFlow tools. The security team at NCSA found this did not provide the scalability they required as they upgraded the network to multiple 10Gbps connections to support the Blue Waters project. The security team required a scalable and cost effective solution to monitor the multiple 10Gbps connections with existing 10Gbps Bro IDS and NetFlow tools.

### Resolution

The security team at NCSA developed a robust monitoring architecture, with the GigaVUE® appliance, that allowed them to aggregate multiple 10Gbps connections between the border routers/WAN and replicate the traffic to existing Bro IDS sensors and Netflow tools. The NCSA security team first passively tapped the connections between the border routers that connected to the WAN. Then traffic from the taps was fed into several GigaVUE-2404s which aggregated, replicated and load balanced this traffic before delivering it to the monitoring infrastructure.

This methodology was far superior to the conventional method they used in the past because the security team now had the ability to balance the aggregated traffic load to multiple IDS sensors, provide active failover, and ensure that 100% of the network traffic is seen by the centralized security suite. Without this comprehensive monitoring architecture it was possible that the team would miss an attack that occurred on the network.



**FIGURE A**  
Centralizing monitoring tools  
after implementing GigaVUE

### **Benefit**

By deploying the Gigamon GigaVUE-2404 Data Access Switches, the NCSA security team was able to centralize their monitoring tools while providing scalability for future growth. The NCSA security team is now confident that they can handle the increased network traffic by utilizing Gigamon filtering technology to reduce traffic loads for all their security and monitoring infrastructure. The GigaVUE provides greater visibility into network data than the previous solution and allows NCSA to protect their cyber infrastructure while meeting the stringent availability and reliability requirements of the researchers who are developing some of the world's most exciting advancements in science and engineering.

### **About Gigamon**

Gigamon provides intelligent Traffic Visibility Networking solutions for enterprises, data centers and service providers around the globe. Our technology empowers infrastructure architects, managers and operators with unmatched visibility into the traffic traversing both physical and virtual networks without affecting the performance or stability of the production environment. Through patented technologies, the Gigamon GigaVUE portfolio of high availability and high density products intelligently delivers the appropriate network traffic to security, monitoring or management systems. With over seven years experience designing and building intelligent traffic visibility products in the US, Gigamon serves the vertical market leaders of the Fortune 1000 and has an install base spanning 40 countries.

For more information about our  
Gigamon products visit:

[www.gigamon.com](http://www.gigamon.com)