

THE GEORGE WASHINGTON UNIVERSITY DELIVERS ROBUST, SECURE WIRELESS NETWORK SERVICES ACROSS THE CAMPUS

Summary

Industry: Education

Challenge:

- Deploy a secure wireless network service at a large urban university campus in the Washington, D.C., area
- Protect the campus network against unauthorized access, network intrusions, and attacks

Selection Criteria: After a competitive evaluation of five SSL VPNs, GW selected Juniper Networks' best-in-class security platform as the best fit for its business and technology needs.

Network Solution: Juniper Networks SA6000 SSL VPN Appliance

Results:

- Wireless network will be used by all students, faculty, and staff on three campuses
- Dramatic increase in wireless network use because of greater ease of use and administration
- Lower cost of operation because SSL VPN is easier to use and administer than previous wireless security solution
- Receipt of Computerworld "Best Practices in Mobile and Wireless" award

Just four blocks from the White House and a stone's throw from monuments, memorials, and federal government buildings in the heart of Washington, D.C., you'll find The George Washington University (GW). GW is a private university founded by an Act of Congress in 1821, and is the largest university in the District of Columbia with more than 20,000 undergraduate and graduate students studying business, law, medicine, education, public health, international affairs, engineering, and liberal arts. With the firm belief that productivity increases with the freedom to work anywhere, GW offers its students, faculty, and staff secure access to the wireless network from their classrooms, offices, dorms—just about anywhere they go on campus. That's no easy feat, considering that GW's Foggy Bottom Campus spans 43 acres in downtown D.C. The university also provides wireless network service on its 23-acre Mount Vernon Campus on Foxhall Road, in Washington, D.C., and on its 100-acre Virginia Campus in suburban Loudoun County.

Challenges

"We're an urban campus, so security is especially important for our wireless network," says Bret Jones, Managing Director of Technical Operations and Engineering at GW. "The streets and sidewalks of our campus are public, and there's great potential for people who are not affiliated with the university to drive by or walk by and connect to our wireless network."

The challenge facing GW was to deploy wireless network service everywhere while allowing access only to authorized users. The university needed to prevent intrusions into the network that could result in loss of sensitive information and intellectual property, distribution of malware and spam, network attacks, or other misuse. In short, IT needed a way to control access that would be highly secure and operationally efficient.

"We tried an IPSec VPN, but having to install and manage client software on thousands of individuals' computers was too cumbersome and required too much end-user support," Jones says. He and his team considered the alternatives for wireless LAN security in an effort to achieve the delicate balance between easy access and strong security.

Selection Criteria

With GW's urban environment driving the wireless security requirements balanced against IT's need for operational efficiency, Jones and his team decided to look at SSL VPN solutions. "An SSL VPN is highly secure and it's easier on users than other wireless security approaches," he says. "It had the best balance between security and ease of use."

GW conducted a head-to-head comparison of five SSL VPNs. "After the request for quotation and evaluation process, we selected the Juniper Networks SA Series SSL VPN Appliances because it worked best in our environment," Jones says.

"While most SSL VPNs are similar from the perspective of the user experience, Juniper Networks stood out from the pack from an administrative perspective," says Jones. "The ease of management and ease of operation were the primary driving factors in our decision."

Solution

More than 3,500 concurrent users, including students, faculty, staff, and campus operations, use SSL VPN daily. GW deployed six SA6000 SSL VPN Appliances, which deliver best-in-class performance, scalability, and redundancy for organizations that have high-volume secure access and authorization needs.

A High Availability (HA) SA6000 cluster supports 2,500 concurrent users at the GW's Foggy Bottom Campus in Washington, D.C. Another SA6000 HA pair supports 1,000 concurrent users at GW's Ashburn campus, and another HA cluster pair is running at an internal development lab.

For high levels of security and deployment flexibility, the SSL VPN traffic from different user constituencies is logically segmented within the Secure Access clusters. GW used the Secure Access Instant Virtual System (IVS) option to provision logically independent SSL VPN gateways within a single cluster using granular, role-based VLAN tagging. "Juniper's features around VLAN tagging made administration much easier and was a critical factor in the selection process," Jones notes.

GW is assured of end-to-end security on its wireless network. Users use SSL, which is available in all Web browsers, as a means of secure transport, so they can access the appropriate applications and information resources without needing to install client security software or to download Web agents. SSL works across the many client devices used at the university, including Windows, Mac OS, and Linux systems. Access to information resources on the network is driven by identity and specified by user group or role, as well as by network, device, and session attributes, which enables GW to easily ensure that only authorized individuals can use the wireless network.

"We selected Juniper Networks' SSL VPN platform simply because it worked best in our environment."

Bret Jones,
Technical Operations and Engineering,
George Washington University

The Results

The SSL VPN is a big success, according to Jones. "Students like it better because it's much easier to use, and it's easier for the IT staff to administer," he says. "IT doesn't need to install, configure, and test client software."

Jones adds that since the deployment, use of the SSL VPN has increased significantly. IT can centrally manage the SA Series, which results in streamlined operations.

In addition to getting recognition from its own users, in 2007 GW received accolades from Computerworld magazine, which gave the university's SSL VPN deployment a "Best Practices in Mobile and Wireless" award in the category "Maximizing Wireless Security to Prevent Intrusion."

Jones credits the flexibility of GW's SSL VPN deployment as the reason GW won the award. "A lot of academic institutions have open access networks and most corporations have closed networks, but we're unique in the type of access we offer," he says. "Doing it the way we did it—we're fairly open, but we allow our community access to the network only with the SSL VPN and single sign-on authentication—is why we won the Computerworld award."

Next Steps and Lessons Learned

With the tremendous success of the SSL VPN for single sign-on and authentication to the wireless network, Jones is looking forward to using SSL VPNs for IT administrative access and retiring more IPSec VPNs. "We're working to transition IT administrative access into a role-based management, so we can use SSL VPNs for secure remote access," he says.

About Juniper Networks

Juniper Networks, Inc. is the leader in high-performance networking. Juniper offers a high-performance network infrastructure that creates a responsive and trusted environment for accelerating the deployment of services and applications over a single network. This fuels high-performance businesses. Additional information can be found at www.juniper.net.

About The George Washington University

Located four blocks from the White House, The George Washington University was created by an Act of Congress in 1821. Today, The George Washington University is the largest institution of higher education in the nation's capital. The university offers comprehensive programs of undergraduate and graduate liberal arts study as well as degree programs in medicine, public health, law, engineering, education, business, and international affairs. Each year, The George Washington University enrolls a diverse population of undergraduate, graduate, and professional students from all 50 states, the District of Columbia, and more than 130 countries.

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