BROCADE

The University of Texas at San Antonio

EXECUTIVE SUMMARY

Challenge
Provide the university's community with highly available, secure, flexible, and robust services for networking and other technologies through a new network architecture and equipment upgrade.

Solution
Brocade MLX Series Core Routers to deliver the flexibility, scalability, and high performance required to support the needs of the university's Internet infrastructure, departments, and individual users.

Results
• Gained flexibility to quickly and easily meet the university customers' connectivity, traffic engineering, and uptime requirements.

• Achieved high performance and resiliency across all three campuses.

• Increased expertise with VPLS technology and received fast, helpful support from Brocade during deployment.

A Network That Delivers Everything And More

The University of Texas at San Antonio (UTSA) is an emerging Tier One research institution specializing in health, energy, security, sustainability, and human and social development. Approximately 30,000 students attend classes at one of three campuses: the Main Campus at the foot of the Texas Hill Country; the Downtown Campus in San Antonio's business and cultural district; and the HemisFair Park campus, which is home to the UTSA Institute of Texan Cultures. As a research institution, UTSA also supports 25 research centers and institutes, which require next-generation network performance and capabilities to help them achieve their goals.

A Change in Identity

"As you can imagine, UTSA's large number of labs, classrooms, students, faculty, and research interests constantly throw new challenges at us," says Keith Trevino, Senior Enterprise Network Engineer for UTSA. "Instead of viewing ourselves as just the network team, we began to view ourselves as network services providers for the university's departments, students, faculty, and staff. This identity shift led us to completely rethink our network architecture and approach."

The previous campus networks were designed as individual Cisco hub-and-spoke architectures on each of the three campuses. As UTSA has grown, the team needed a lot more network flexibility and state-of-the-art tools to meet its internal customers' needs. Network traffic patterns across campus locations had changed, teaching methods had changed because

of new technology capabilities, and traffic volumes had increased.

For example, faculty might need to control individual lab computers for testing purposes. Faculty on the Main Campus might need to present specific content to students on the downtown and HemisFair campuses. Extending Layer 2 services between campuses was complicated by having to bring numerous subnets together. In addition, some application licenses required Layer 2 broadcast connectivity in specific buildings but the network team had no way to deliver that Layer 2 traffic to another campus. As a result, service delivery to all university users was becoming unwieldy.

UTSA

In addition to the hub-and-spoke architecture limitations, the existing network equipment was reaching its end of life. For the IT team, it was an ideal time to reevaluate the core network and learn more about new, leading-edge capabilities.

Finding the Right Network Fit

"We knew what we wanted from a network architecture standpoint," said Trevino. "But we also wanted to know what we didn't know. That is, what capabilities and features were available to help us become better service delivery partners?"

UTSA wanted a Multiprotocol Label Switching (MPLS) and Virtual Private LAN Service (VPLS) architecture for its new network. This architecture would provide the performance and flexibility needed to deliver demanding applications across multiple locations and manage everything as one network. Strong customer support was another priority. The team was not satisfied with the support it was receiving from its incumbent vendor. The network team submitted a matrix of desired features and functionality to Brocade and two other vendors. After initial presentations, the UTSA team further refined its list of must-have capabilities.

"One vendor tried to talk us out of the MPLS/VPLS model and never gave us what we requested," said Trevino. "Another vendor had an unproven operating system, lacked some of the pieces we needed, and was much higher-priced. We chose Brocade after a hands-on test drive and got everything we wanted, and more."

UTSA deployed 26 Brocade® MLX® Series Core Routers, which offer a modular approach to scalability. UTSA's systems provide 16 slots for a mix of 1 Gigabit Ethernet (GbE) and 10 GbE interfaces. Each building on the three campuses houses a Brocade MLX Router. The Brocade MLX reduces network complexity by enabling the IT team to collapse core or backbone routing with border routing, as well as provide connectivity between sites using MPLS/VPLS. From UTSA's perspective, the Brocade MLX enables them to create a private enterprise cloud for delivering services across multiple locations.

"We were impressed with how easy it was to create the MPLS network," said Trevino. "Brocade provided a fast operating system and familiar command line interface that made it easy. It was as simple as point and a few clicks."

Flexibility for the Most Dynamic Challenges

UTSA gained the agility it needed to quickly and easily meet the needs of its most demanding users. The Brocade MLX also delivers the resiliency that ensures high uptime between geographically separated locations. When one campus building was being renovated, the network team had to quickly enable teleworkers to access their applications and physically move and re-connect other computers to the data center.

"I love the fact that I can set up a virtual network quickly, do it right, connect campuses, and provide the right connection to the data center when it's needed," said Trevino. "And if something happens, like a fiber cut, the Brocade MLX Router's dynamic resiliency instantly hops traffic to another route."

Responsive Performance

Trevino says that he was always impressed with performance and throughput of Brocade products, but the new network's speed also gives the university a business advantage. During maintenance windows, or in the event of a power outage, the old network took 10 to 12 minutes to reboot. This amount of time was unacceptable for a Tier One research institution that must maintain connections with researchers around the world. With the Brocade MLX routers, the network is up and running in three minutes or less.

From a service delivery standpoint, the Brocade MLX enables the network team to interconnect all of the core routers in a mesh environment. With a mesh architecture, the team can engineer traffic as granularly as it wants in order to meet specific departmental or user needs.

Above-and-Beyond Support

"Brocade support has been a huge benefit to us," said Trevino. "The Brocade team spent a lot of time with us to understand the nuts and bolts of VPLS. They went above and beyond to help us and brought the specific expertise that we needed. If anything happens, the event is handled or escalated if needed. We've been very happy."

Next Steps

According to Trevino, Brocade delivered everything UTSA needed with a friendly, helpful attitude.

"We have better performance, a trusted vendor, a proven operating system with an easy-to-manage MPLS network at an affordable price," he said. "Brocade gave us everything we asked for."

For more information, visit www.brocade.com.

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