



UT ARLINGTON SUSTAINS STUDENT SUCCESS WITH SMART, AGILE JUNIPER NETWORK

Summary

Company:

The University of Texas at Arlington

Industry:

Education

Business Challenges:

Create personalized digital experiences for students to increase engagement and retention.

Technology Solution:

- Juniper Access Points
- Marvis Virtual Network Assistant
- Juniper Mist Wired Assurance
- EX Series Ethernet Switches
- SRX5000 line of Services Gateways
- QFX5100 line of Switches
- MX960 Universal Routing Platform

Business Results:

- Pivoted quickly to remote and in-person learning with a flexible network
- Doubled Wi-Fi capacity with fast, reliable coverage indoors and outdoors
- Enhanced campus-wide network resiliency and agility
- Streamlined network operations with a self-healing network
- Forged strategic partnership for AI-driven network solutions

The University of Texas at Arlington is the second largest institution in The University of Texas System. UTA is located in the heart of Dallas-Fort Worth and is a Carnegie Research 1 institution with a mission of learning, research, and community outreach. Through its academic, internship, and research programs, its students are challenged to be critical thinkers and receive real-world experiences that help them contribute to their communities and ultimately the broader world. UTA is No. 1 in Texas for serving first-generation, low-income students, and it has been recognized as a best value in education by Forbes and others.

"With our industry in a state of rapid transition, our goal is to future-proof our technology services to continue to provide a stable platform for education and enable innovation that allows our students, faculty, and administrators to excel," says Jeff Neyland, CIO of UTA. "When COVID hit, we were able to rapidly adapt to the changing demands that it brought. It took us less than two weeks to move to e-learning and work from home so that we could continue to provide access to education and perform business tasks.

"Before the pandemic, almost 80% of our classes were face to face, and now 85% are online," Neyland explains. "In this time of great uncertainty, we have the strategic relationships, technology, and capabilities to support our constituents remotely or in person, depending on their needs."

UTA's Office of Information Technology (OIT) has been on a multiyear journey to align business and IT, enhancing student interactions with UTA's applications and digital services and streamlining administrative decision making through data. OIT has been consolidating its IT portfolio, moving to cloud, and reducing IT complexity.

"Teaching, learning, and doing research digitally was a big shift for us as an institution," says Jason Hardy, director of infrastructure and operations at UTA. "We were well-prepared because of the choices we've made."

"Marvis democratizes support. I can have the helpdesk use the same tool that I use to manage the network. The Mist support experience is truly meaningful."

- Jason Hardy, director of infrastructure and operations, The University of Texas at Arlington

The strategy for UTA has been to move to Software as a Service (SaaS)-based cloud services to support the use of modern applications and to support the 24x7 access needed for today's students. The full portfolio of applications has undergone dramatic change with the learning management system, the institution website, and security tools as examples of cloud tools that have been deployed. UTA had implemented Microsoft Office 365 more than two years ago and then moved to Microsoft Teams for fully unified communications including voice, chat, and group collaboration. The university relies heavily on its on-campus infrastructure and external data network to be highly available and secure to meet this new application tool set.

OIT began its migration to Juniper networking in 2015, and most recently deployed Juniper Networks® EX Series Ethernet Switches and the Juniper® Series of High Performance Access Points, powered by Mist AI™, for its campus. The university relies on the high-performance, scalable Juniper Networks MX960 Universal Routing Platform for its network core and edge, Juniper Networks QFX5100 line of Switches for its 10GbE/40GbE data center network fabric, and the Juniper Networks SRX5000 line of Services Gateways to protect the university's network from cyber attack.

"Standardizing our network deployments with Juniper has allowed us to consolidate our portfolio and reduce management complexity while simultaneously providing integration with critical systems," Hardy says.

"In this time of great uncertainty, we have the strategic relationships, technology, and capabilities that allow UT Arlington to thrive in new education and work models."

- Jeff Neyland, CIO, The University of Texas at Arlington

Engaging Student Experiences

Students, faculty, and staff expect great connectivity everywhere they go. But UTA's aging wireless network couldn't keep pace as digital demands rose. "With our previous wireless LAN, the experience of being mobile on campus was frustrating," Hardy says. "With Juniper Mist, the overall experience of students, faculty, and staff has been transformed."

UTA deployed Juniper Access Points across its picturesque 400-acre campus, doubling the Wi-Fi coverage and delivering high-performance, reliable connectivity in 70 buildings and across its outdoor spaces. The campus is now completely Wi-Fi 6 and optimized for a high-density mobile environment.

Fast, reliable Wi-Fi is available anywhere on campus, indoors or outdoors, wherever students are in class, studying, or gaming. Gone are frustrations like phone calls dropping while walking around campus or Wi-Fi dead spots.

Outdoor Wi-Fi is essential in the era of COVID-safe learning. "When I walk around campus, I see students sitting outside watching lectures from a park-like setting," Hardy says. "Before Juniper Mist Wi-Fi Assurance, students would have to be inside buildings or in a computer lab because our outdoor coverage was lacking."

The change in user experience was immediately noticed. "One staff member in the central library thanked me because there had never been any Wi-Fi coverage," Hardy says. "He was concerned about getting his work done in a socially distant way, and now he can."

Cloud Ingenuity, a Dallas-area solution provider, provides UTA with a managed network service based on the Juniper Mist™ solution.

Self-Healing Network Streamlines Operations

"Automate everything" is one of the OIT team's guiding tenets, and with a Juniper network, UTA can take advantage of AI-driven automation and actionable insights to automate the support experience. The AI-driven Marvis Virtual Network Assistant cloud service simplifies troubleshooting with self-driving actions and network performance analysis with real-time answers. IT can engage with Marvis to streamline operations and boost user experiences.

"Marvis sped up our time-to-value," Hardy says. "We have the ability to optimize network performance based on applications. We have consistent configurations and policies, which was a big challenge before."

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OIT uses Juniper Mist Wired Assurance to automate the onboarding, management, and troubleshooting of its EX Series switches. "Mist Wired Assurance lets us track down the gremlins," Hardy says. A switch may be missing a VLAN, configurations drift over time, or there's unexplained behavior.

"We had a case where a VLAN was missing on a switch," he continues. "Mist Wired Assurance popped it up, and we could send someone to resolve the problem right away, rather than trying to troubleshoot through the experience of the end user being poor."

Enhanced Campus-Wide Network Resiliency and Agility

"The modality of how students are learning has completely changed," Neyland says. "Connectivity is even more important than it's ever been."

UTA is in the midst of a data center and campus upgrade that will further improve the resiliency and agility of IT service delivery. Previously, the university operated a flat, Layer 2 campus network. "A couple of times a year, we would have spanning-tree events that would take down the entire wired campus," Hardy says.

To improve network resiliency, UTA is migrating to a Layer 3 architecture in both the data center and campus core. Using Ethernet VPN-Virtual Extensible LAN (EVPN-VXLAN) as the overlay network, UTA can address its multitenancy and workload requirements in the data center. EVPN-VXLAN also allows OIT to extend Layer 2 VLANs between buildings to support cameras, HVAC systems, and other IoT devices that share the network with academic and administrative systems. "Having the encapsulation of EVPN to provide Layer 2 networking to different buildings while also having a routed network provides the reliability and resilience we need," Hardy says.

Forging a Strategic Partnership

UTA has been on a five-year journey to an all-Juniper network with outcomes proven year after year. The engineering and operational simplicity of a Juniper network empowers OIT to deliver IT service excellence in support of the university's academic, research, and community goals.

"As the reliance on IT has increased, having Juniper as a partner has helped us get things done," Hardy says.

The pandemic has forced universities around the world to rethink research and education, but at UTA, students, researchers, and faculty can continue to learn and lead, whether in synchronous, asynchronous, or hybrid modes. And with a flexible Juniper network, UTA is ready for whatever the future holds.

"Learning today is person-focused," Neyland says. "The classroom is anywhere. Higher education is in a dramatic state of transition. We were very fortunate to have been prepared for this shift and are excited at the new opportunities it brings to improve access to education. Our world is changing."

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To find out more about Juniper Networks products and solutions, please visit www.juniper.net.

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Juniper Networks brings simplicity to networking with products, solutions and services that connect the world. Through engineering innovation, we remove the constraints and complexities of networking in the cloud era to solve the toughest challenges our customers and partners face daily. At Juniper Networks, we believe that the network is a resource for sharing knowledge and human advancement that changes the world. We are committed to imagining groundbreaking ways to deliver automated, scalable and secure networks to move at the speed of business.

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