

# TULSA TECH EXPANDS ITS EDUCATIONAL REACH WITH VIRTUAL CLASSROOMS ENABLED BY SA SERIES SSL VPN APPLIANCES

## Summary

Industry: Education

Challenge:

- Give students and instructors secure remote access to coursework and other resources to enable a virtual classroom setting
- Support the growing demand for continuing education without expanding facilities

Network Solution:

- Juniper Networks SA4000 SSL VPN Appliance
- Juniper Networks MX480 Ethernet Services Router
- Juniper Networks EX4200 Line

Results:

- Return on investment in less than one year
- Reduced operations costs with easy management
- Convergence of voice and data over the same network with business-quality telecommunications

As the oldest and largest career and technical training center in Oklahoma, Tulsa Tech has offered full- and part-time programs for students and training for business and industry for over 40 years. Adults and high school students come to Tulsa Tech for day, evening and weekend classes in fields including agriculture, architecture, construction, finance, health science, hospitality, IT, manufacturing and transportation.

## Challenges

With multiple training locations, a career services center and a district office, Tulsa Tech's wide reach draws in more than 67,000 students a year. Demand for continuing education is growing, but students are increasingly pressed for time. Tulsa Tech is meeting that demand by creating virtual classrooms and online instructional materials that keep students and instructors connected with coursework from anywhere with an Internet connection.

"Our new online instructional modules leverage the capabilities of our Juniper SSL VPN, which we've used for secure remote access for the last several years," says Jerry Moore, director of client and network systems at Tulsa Tech. "We initially put in the Juniper SSL VPN to give our students access to more storage, and now the SSL VPN is facilitating access to new applications and virtual classrooms."

"Two years ago, students might have come to campus three days a week for a class. Now they can log on to complete coursework because we're providing them with a virtual classroom over an SSL VPN," says Moore. "They can easily launch a virtual machine session that replicates the same applications they would use if they were physically in the classroom."

Self-paced learning is even more critical with today's youth. "The Gen Z kids do not like the traditional one-room schoolhouse. They want to know what they have to accomplish, and they'll do it on their terms," says Moore.

Students can access coursework and other information on Tulsa Tech's servers from anywhere, at any time, using only a Web browser. "That sounds simple, but it's not," Moore says. "We moved from a tightly controlled, closed security model to an open model in which we gave students and staff access to their information from anywhere in the world and from any computer with a browser."

## Selection Criteria

Before selecting Juniper Networks® SA4000 SSL VPN Appliance, Moore evaluated several SSL VPN products. Ease of access was important, but security was paramount. "What set Juniper apart was its role-based security model, because we could move people into different roles depending on the environment they were in at the time," Moore says. "We wanted it to be as simple as possible for users. We don't want users to have to run the gauntlet before they gain access to the information and applications they need."

Moore liked that he could use set up intranets to give students and faculty access to the suite of applications they need, whether academic or administrative. "For instance, we have a personal absence request Web portal, so if a teacher's flight is delayed, he or she can log in from an airport kiosk and let us know."

Moore knew firsthand about Juniper's high-performance networking solutions. The school uses Juniper Networks best-in-class routers, Ethernet switches and application acceleration platforms. Moore worked with CBIZ, Tulsa Tech's longtime solutions provider, on the SSL VPN selection and purchase.

## Solution

About 6,000 students, teaching staff and IT staff at Tulsa Tech use the SA Series. The SA4000 gives medium and large businesses the ability to offer secure extranet, intranet and LAN access from a single unit. It delivers enterprise performance with SSL acceleration and compression, and simplified administration and can be used in a High Availability (HA) configuration.

Moore appreciates the power and flexibility of the SA Series authentication policies, which allow IT to manage access privileges by user identity, including user group and role, as well as by network, device and session attributes. "We didn't want to give cut-and-dried access to the network. We wanted access to depend on the environment and the role," he says. "Users can't get access if they don't have the right levels of virus protection or if they're using unsecured wireless in a public place. Users might still have access to their home drives and a remediation path for their laptops, but they don't have access to critical information."

Layered controls provide endpoint client, device, data and server controls. Integrated malware protection for endpoints can disable threats such as Trojans, keyloggers, remote controls and monitoring applications. Endpoints that do not meet the endpoint security requirement are prevented from entering the network until they are remediated.

Moore also likes the fine-grained auditing and logging capabilities of the SA Series. The auditing and logging capability is also useful to identify issues that may have cropped up after a change to an IT system.

With secure access to the network, the IT staff can provide extended support hours. "IT runs support 14 hours a day, but our staff is only there for 8 hours, so if a call comes in after hours, we can log in via SSL from home, get a terminal session and be on the network remotely," Moore says. "It's great for quality of life."

**"With virtual classrooms enabled by the Juniper SSL VPN appliance, high school students and adults can learn at the time and place they want to. The more tools we can give them, the better prepared they are for the future."**

Jerry Moore,  
Director of Client and Network Systems, Tulsa Tech

## The Results

Secure access is helping Tulsa Tech expand its educational reach into the community while reining in facility and environmental costs. "With virtual classrooms enabled by the Juniper's SA Series, high school students and adults can absorb information at the time and place they want to," he says. "The more tools we can give them, the better prepared they are for the future."

"The SA Series creates a huge opportunity to reduce the footprint of the school while expanding our educational reach," Moore says. "A teacher in a classroom may handle 40 students in an 8-hour day, but let students and teachers connect remotely using portals and collaboration tools, and they can connect at other times and places. They're able to time shift." A classroom may only seat 20 students, but Tulsa Tech can accommodate several times more through virtual classrooms.

Students gain expanded educational opportunities by not driving to school in addition to saving money on gasoline and helping to preserve the environment. Tulsa Tech saves on building additional facilities to accommodate more students and reduces its heating and cooling costs, leading to a smaller carbon footprint.

With virtual classrooms, students have greater flexibility with their schedules, which gives them new options. Students don't have to travel to Tulsa Tech—they can just log in to class. "The end users are happier since they don't have to drive as much," Moore says. "Time is the most precious commodity in America. We'd all buy time if we could."

## Next Steps and Lessons Learned

Now that Tulsa Tech has the concept of a virtual classroom in place, the next step is to develop online instructional delivery standards. In the works are plans to have an instructor in Tulsa teach computer classes for students in India and to have an instructor based in China teach Mandarin to high school students in Tulsa.

Moore is also expanding the capabilities of student accounts to be accessible even after the individuals have finished the coursework. "When a student comes into the Tulsa Tech login page, there will be an internal- and external-facing Web presence," Moore says. "On the external side, the broader community will be able to see a student's resumé or work samples, and on the internal side, a student will have access to the content and tools he or she needs to succeed for the career path."

Tulsa Tech is revamping its data center and network core with a Juniper Networks MX480 and an EX4200, Moore says. "Juniper listened to our input on the Ethernet switches and built a product that has the right features and isn't a feature-bloated show pony," he says. "The end result is we have a solution that I feel is custom built for what we need."

## 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](http://www.juniper.net).

## About Tulsa Tech

Tulsa Tech is the oldest and largest technology center school district in Oklahoma and is dedicated to the mission of preparing people for success in the work place. During 2007, they served over 200 businesses, 3,259 full-time students and 69,000 adults in our occupational training programs. Tulsa Tech reinvested tax dollars in the community by expanding their course offerings in area high schools and continuing to strengthen our relationship with local industries to help develop the economy and add jobs. Tulsa Tech's goal is to develop life-long relationships with their community and their students. They seek to provide appropriate high quality training, skill upgrades, career guidance and personal enrichment activities for students of all ages.

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