

Texas School District Enhances Network to Further Connected Learning



Austin Independent School District uses Cisco® Resilient Ethernet Protocol (REP) to provide students with high-speed network access to cloud and mobility services.

Executive Summary

Austin Independent School District

- **Industry:** K-12 Education
- **Location:** Austin, Texas
- **Students:** Approximately 85,000

CHALLENGE

- Improve student and teacher access to Internet resources with enhanced network capabilities
- Meet ConnectED initiative's goals to implement next-generation broadband and empower students with digital content
- Provide advanced services while operating within reduced state-funding constraints
- Provide bandwidth required to support access to new applications, cloud-based services, and state-mandated online testing

SOLUTION

- Updated campuswide networks with new energywise switching infrastructure
- Installed Cisco REP metropolitan fiber network for high-speed convergence
- Paired new technology with existing hardware

RESULTS

- Enhanced network connectivity and access with capabilities for next-generation wireless access
- Increased bandwidth to digital content, cloud services, and learning applications
- Introduced new cloud educational resources for students, faculty, staff, and the community
- Established foundation for the district's 2020 classroom

Challenge

According to census figures, Austin, Texas, is the fastest-growing big city in the United States with an area population of nearly two million and a growth rate of 2.9 percent. USA Today reported that it is estimated that 150 people are moving to the city every day largely due to an influx of young professionals. Much of this growth can be attributed to the city's well-known tech-savvy disposition. As a result, Austin Independent School District (ISD) has a large student population of approximately 85,000 students in 129 school communities. These learners need to be connected to technology to prosper in their local communities.

Austin ISD's student population also presents language barriers and economic inequalities. With a highly-diverse student body, Austin ISD strives to provide equally distributed public education, as well as specialized education.

In 2013, administrative leaders and decision makers in the district gathered to determine how Austin ISD could cut costs and provide specialized learning and a more collaborative environment. These goals were introduced to meet President Obama's ConnectED initiative, which was designed to enrich K-12 classrooms by empowering teachers and students with access to rich, digital content. These goals also support Austin ISD Vision 2020, an initiative aimed at creating classrooms where all students are producers and contributors rather than just consumers in the digital world. With ConnectED and Austin ISD's 2020 classroom, the district can create a community of connected learners that interact with each other as well as students in other communities.

However, due to the recapture and redistribution of taxpayer's money in Texas, the school district is required to return more money to the state annually than any other school district in the state. It's anticipated that in 2015, Austin ISD will be mandated to return \$175 million, and by 2018, a projected \$300 million will be recaptured by the state.

"The school district continues to face state-funding challenges, and looking into the future, we must find technology solutions with longer lifecycles and lower operational costs. These considerations are important to provide the most cost-effective technology solutions and learning environments for our students and our faculty," says Austin ISD director of Network Services, John Kohlmorgan.

With Internet bandwidth requirements for Austin ISD increasing by 50 percent annually, district leaders needed a solution that provides improved efficiency now and the capacity to support whatever future applications they choose or need.

To increase access to the latest educational resources for diverse learners, as well as find modern solutions that fit its budget and support the school district's vision for the future, Austin ISD decided to evaluate tools to enhance its existing network infrastructure.

Solution

Austin ISD leaders understood the challenge and the importance of selecting the right technology to support their vision for the 2020 classroom. Using this mission as the central guide, the district's technology leaders held meetings with networking specialists

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“Facing staffing limitations and state-funding reductions, we continue to look for the most cost-effective technology solutions to provide our students and staff with a 21st-century safe and secure learning environment.”

John Kohlmorgan, Director Network Services, Austin Independent School District

to discuss emerging technologies. These offerings were discussed within the scope of the district’s investment in the Greater Austin Area Telecommunications Network metropolitan fiber network.

“During our conversations with Cisco, we outlined a solution that would leverage the school district’s investment in our metropolitan fiber network,” says Kohlmorgan. “We needed to continue to provide high-bandwidth connectivity to our campuses in the district and to take advantage of emerging, cost-effective Metro Ethernet technologies.”

Austin ISD decided to move forward with deploying Cisco Resilient Ethernet Protocol (REP) technology, helping to ensure fast and reliable network convergence on the district’s already established fiber-optic infrastructure. Together, Austin ISD and Cisco designed the solution to connect the district’s 129 school communities. This cost-effective solution provides connectivity by offering each campus a converged set of network services. Ultimately, this creates a more effective, agile, and responsive organization that is better equipped to strategically leverage and use its resources.

“The three biggest advantages of deploying REP technology are low cost, high bandwidth, and high reliability,” says Justin Slocum, the network architect for Austin ISD. “We can now deploy multiple 10 gigabit-per-second links in a highly resilient architecture. In the event of a fiber cut, REP reroutes network traffic to an alternate path in less than 1 second.”

These capabilities help enable voice and video traffic to go uninterrupted while delivering a better experience to users. The technical deployment of the Cisco REP solution included a complete campuswide network update, as well as conversion from Resilient Packing Ring (RPR) to REP. The REP technology was built on existing hardware to reduce a significant portion of the installation costs and allow for easy network configuration. The Cisco solution also helped enable Austin ISD to quickly deploy cloud-based applications and services.

Results

Installing REP technology across the district has enhanced the speed of Austin ISD’s network significantly, which has improved connectivity for the entire school district. With its increased intercampus bandwidth, the district has achieved its goal of meeting ConnectED initiatives and laid the foundation to make the district’s 2020 classroom vision a reality. Today’s classrooms have access to multiple gigabit-per-second network ports, next-generation wireless access in each classroom, voice-over-IP (VoIP) service, and cutting-edge cloud services. These offerings reach all learners regardless of campus location.

“Our updated campus networks and REP technology have supported our education initiatives and provided convergence, allowing our students and teachers to use wireless as a part of learning,” says Kohlmorgan. “We are now concentrating on personalized learning experiences and implementing new, diverse portfolios of technology-rich instruction. This will ultimately create a community of students who are connected digitally and learning from one another.”

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Julie Hildebrand, Fourth Grade Teacher,
Austin Independent School District

Product List

ROUTING AND SWITCHING

- Cisco Resilient Ethernet Protocol
- Cisco EnergyWise® technology
- Cisco Catalyst 3850-X Series Switches
- Cisco Catalyst 2960-X Series Switches

VIDEO

- Cisco TelePresence solution
- Cisco WebEx solution

VOICE

- Cisco Unified Call Manager
- Cisco Unity Express VoiceMail

Today, Austin ISD runs on a dual 10-gigabit-powered core, as opposed to its prior RPR network of 2.5 gigabits per second. The enhanced intercampus bandwidth is now provided by redundant 10-gigabit links, and response time has improved significantly. This accomplishment illustrates the district’s commitment to implementing transformative technology while providing students with adequate opportunities to use technology in school and develop high-computer proficiency.

“Educational technology is about anytime, anywhere access at the most cost-effective price point,” says Kohlmorgan. “Our projects have ensured that we’ve achieved the best possible technology solutions for our school community and will help transform the way students are learning.”

Some of the programs that the new REP network has helped to enable include dual-language courses, early-college high schools, and online learning. By bringing in their own devices and having easy-to-use wireless access, students can collaborate more meaningfully with their peers, in addition to accessing cloud-based email. Even at home, students and parents can use the Austin ISD Cloud, a web-based portal, to access learning applications, as well as textbooks, grades, progress reports, assignments, and even financial programs, such as lunch balances.

“Our goal is to offer high-capacity, mobile, and flexible access to our students, staff, and parents,” says Kohlmorgan. “We are also evaluating ways to reduce costs, save more power and continue our reputation as the greenest K-12 district in the nation.”

The school district also plans to complete its migration to Cisco Unified Call Manager, Cisco Unity® Express VoiceMail, WebEx® and TelePresence® solutions. This dual investment in network and collaboration tools helps Austin ISD reinvent the school experience by ensuring students and instructors have high-capacity network availability, meet state-mandated online-testing requirements, and most importantly support the creation of persistent learners with flexible skillsets that help them thrive in a world that is connected and continuously changing.

Julie Hildebrand, a fourth grade teacher for Austin ISD, is already embracing 21st-century learning by giving her students the opportunity to use technology tools for different activities, ranging from research, content creation, and interactive sharing. “There is no doubt that technology engages kids, but it has to have a purpose and certain approach,” said Hildebrand. This approach encourages greater digital citizenship, communication, and creativity from students and aligns directly with the district’s 2020 classroom vision.

For More Information

For more information on Cisco Enterprise Network solutions go to:
<http://www.cisco.com/go/networks>.

