

Huntington Independent School District (ISD)

Small rural school district in Texas builds one of the fastest networks using RUCKUS



Customer

Huntington Independent School District (ISD)

Location

Huntington, Texas

Challenges

- Unreliable Wi-Fi® limited the use of online applications
- Network switches maxed at 1 GB
- Small IT staff
- Poor vendor support
- Maintaining separate wired and wireless networks took too much time
- Supports more online learning and better safety, security and emergency communications
- Simplified, single-pane-of-glass management across APs and switches
- Wi-Fi 6 certified APs and internet of things (IoT) equipped to future-proof network for years to come

Unexpected mishap turns into fortuitous opportunity

Several years ago, when 400 middle-school students logged onto the Edgenuity courseware, the Huntington Independent School District (ISD) network crashed—as in, the entire district lost all Wi-Fi capabilities.

When Jeff Baird, technical director for Huntington ISD, called his vendor to fix the problem, their response was as slow

as the network. To make matters worse, replacing APs or patching software didn't improve the situation. And, as the problems continued, the costs kept mounting.

Realizing that simply bandaging the current network wouldn't permanently solve the situation, Baird presented a plan to the administration to gut and replace the actual infrastructure. "Everyone agreed that trying to shore up the existing infrastructure was just throwing good money after bad," Baird explained.

Using this network failure as an opportunity to create a stronger and more stable network, Baird and the Huntington ISD sent out a number of requests for proposals. After intense scrutiny, they selected RUCKUS Networks as their preferred vendor.

Solution

- 43 stackable ICX® switches
- 195 indoor access points (APs)
- RUCKUS Virtual SmartZone™ network controller
- RUCKUS® IoT Suite software

Benefits

- Increased speed with an easy upgrade path



“Before, we were maxed out on bandwidth. Now, bandwidth is doubled and we have a clear and easy upgrade path to future higher speeds.”

Jeff Baird
Technical Director, Huntington ISD

Support and equipment that don't fail the users who depend on them

Before selecting his next network partner, Baird set out two criteria: First, he required technology that can take the district network far into the future. And second, he needed a partner offering reliable back-end support that enables them to respond quickly should anything go wrong. For Baird, RUCKUS Networks checked both boxes—and then some. For starters, RUCKUS simplified the school district IT by merging the wired and wireless networks into a single infrastructure, while tying it to a single vendor.

Once the contract was approved, Huntington ISD's network saw vast improvements. With the transition to RUCKUS stackable multigigabit ICX switches, Baird was immediately able to ramp up his network speed to 2 Gbps. What's more, because Baird deployed new RUCKUS APs, which are Wi-Fi 6 certified, the network's high-density performance went through the roof. Speed dramatically increased. Plus, by utilizing RUCKUS Virtual SmartZone network controller, Baird and his IT staff could also manage every AP and switch

from a single-pane-of-glass dashboard.

By deploying patent-filled RUCKUS switches and APs, Huntington ISD transitioned from a slow public education network to one of the fastest school networks in the state. “Before, we were maxed out on bandwidth. Now, bandwidth is doubled and we have a clear and easy upgrade path to future higher speeds,” said Baird.

Discovering a partner who's eager to help

Since Huntington is isolated in rural Texas, Baird faced limited options for possible vendors who could deploy and maintain his network. Nearly all full-turnkey network service vendors resided far away in the larger metropolitan areas. “If there's an issue, I can't wait three to four hours for someone to get on site to fix it,” said Baird. “That's why I've always been very much hands-on with this sort of thing.”

Baird's insistence on choosing a partner who can provide dependable support proved to be invaluable early in Huntington ISD's network rebuild. During the project's first phase, the budget didn't allow for replacing all the existing switches at once. So,

Baird relied on RUCKUS engineers who worked hands-on with Huntington's IT staff to integrate existing switches with RUCKUS ICX stackable switches—at least, until all switches could eventually be modernized.

Early in the network refresh, Baird upgraded the district's APs to RUCKUS R760 indoor APs using wired connectivity to 10 gigabits over copper Ethernet cabling. With these ultra-high-performance tri-radio Wi-Fi 6E APs, Huntington ISD can now support the faster 6 GHz Wi-Fi band, which provide more capacity and wider channels for staff and students.

By choosing RUCKUS as a partner who's fully versed in existing as well as future network technology, Baird was able to make the right choices during each phase of the refresh without needing to sacrifice network performance.

“We're currently working on our latest upgrade to ICX7850-48F switches, which will allow us to get 40 and 100 gig for our backbone,” said Baird. “It's been a process of where we started with 7150s and then upgraded to 7650s, and now the 7850s. It's just a matter of going faster and faster and pushing it out to further on the edge.”

Because RUCKUS was just a phone call or text away, Baird was able to get the help he needed with the installation and configuration of his new network. "RUCKUS engineers have been a lifesaver," explained Baird. "Having someone that you can reach out to via text, call or email—and have them respond very quickly each time—is awesome. When you have someone that you can call and speak to, [who] can guide you to where you need to go, it just makes a world of difference."

"RUCKUS was tremendously responsive and helpful. I never got a runaround. I could escalate any problem and get a call back with a resolution."

Jeff Baird
Technical Director, Huntington
ISD

Smooth and uncomplicated network management

In addition to deploying a sophisticated, new network, managing and updating it also became significantly easier. For example, when a new ICX switch was added to a stack, the network automatically inherited the stack's existing configurations. Moves, additions and changes became much simpler to perform compared to the old network.

"The [old] legacy switches required a lot of manual configuration," said Baird. "RUCKUS ICX switches simplified everything from initial setup to everyday management. Almost every configuration can be changed from the central dashboard without touching the switch."

A startling difference in network access performance

For Baird, swapping out the old

competitor APs with RUCKUS APs was also painless. RUCKUS APs with patented technologies like BeamFlex+™ adaptive antenna and ChannelFly® technology enabled the consolidation of some APs while still supporting the multigigabit Wi-Fi 6 capabilities and ICX switches. Because they utilized machine learning, RUCKUS APs created the strongest connections and highest throughput compared to competitive products. RUCKUS engineers also helped Baird's team discover how to maximize the AP's dual-band design to eliminate any co-channel interference.

"We can configure each AP for 2.4 GHz or 5 GHz and do it on the fly from the SmartZone console," reports Baird. "We can check the status of the Wi-Fi in every school with a glance at the dashboard. But, in terms of everyday operations, we pretty much ignore the Wi-Fi. It just works."

The new network also gave Huntington ISD's IT more options for strengthening network safety and security. The IT staff can now easily set up SSIDs on the Wi-Fi to open certain parts of the network for users or events. And by establishing a private network for guests, Baird can rest assured that student and school confidential information is safeguarded from prying eyes.

Back in the saddle again

Following the completion of the new network that now delivers rock-solid Wi-Fi performance, Baird was able to put district-wide online testing back on the table, which saved teachers a substantial amount of time. Moreover, when schools closed during the COVID-19 pandemic, the Huntington ISD was also able to bring distance learning online. During the pandemic, middle and high school students were able to interact with their teachers via the Google Classroom



learning platform. Even pre-kindergarten and elementary school students were online—engaging with teachers and parents via the Google Play Seesaw app. Much of the credit goes to Baird and his staff and the faster, more reliable and agile RUCKUS network.

Finding new ways to leverage the new network

With a new robust network now stable and performing better than expected, Baird is looking toward future technologies to enhance his district. "We think integrating IoT devices into our district network will be the next evolution," said Baird.

Working with local law enforcement, Baird and the Huntington ISD are exploring the idea of replacing their existing alarm system with IoT locks and sensors. "We currently have IoT sensors on all our exterior doors, which allow our security officers to know when a door is opened for too long," he explained. "By using the RUCKUS IoT Insights dashboard, we can not only track when exit doors are used, but also know which ones are used most often and anticipate future maintenance."

"We're also looking at options for improving emergency communications and surveillance, as well as locking down

the schools using more IoT-connected devices like door locks,” said Baird. “Since all RUCKUS access points feature built-in radios, onboarding new IoT devices is as simple as connecting them to the network and naming them in your dashboard.”

Baird also foresees replacing existing locks with IoT door locks as something that would pay for itself very quickly. “If we could install new IoT door locks and connect them to our network,” he said, “we would save thousands of dollars spent on our alarm system each year.”

The possibility of tying in environmental controls to the network through IoT devices is another avenue Baird hopes to explore. “We currently have temperature probes in our freezers and server rooms,” said Baird. “If we could tie those into our network and get alerted immediately when cooling malfunction, we could avoid possible expensive losses in the future.”

But this would just be the beginning. Baird also sees future cost savings by using IoT devices through the network as a way to control lights and adjust temperature controls throughout the district facilities in the near future.

As the network grows, Baird is also considering RUCKUS AI™, a cloud-based network monitoring service designed for RUCKUS networks. “We already get more information about network utilization than we’ve ever had in the past,” says Baird, “but RUCKUS AI should give us more ways to look at usage and optimize performance.”

Staying ahead of the curve

As periodic network refreshes are necessary to keep up with the rapidly evolving technology, Baird has relied on RUCKUS support to help determine future improvements and what technology to request on his E-Rate application. “Anytime we’re doing an upgrade on my network, I usually run it

by RUCKUS engineers just to make sure that what I’m planning fits in the scheme of my network,” said Baird. “This way I’m sure it’s going to give us the end result we’re looking for.”

By deploying RUCKUS technology, Baird and Huntington ISD have benefited from how easy and flexible it is to enhance a network. In most cases, upgrading switches and APs is as simple as plug-and-play. “Without question, the new network has given us the foundation for digital learning—wherever the future takes us,” says Baird.

“In terms of everyday operations, we pretty much ignore the Wi-Fi. It just works.”

Jeff Baird
Technical Director, Huntington ISD

About RUCKUS Networks

RUCKUS Networks builds and delivers purpose-driven networks that perform in the demanding environments of the industries we serve. Together with our network of trusted go-to-market partners, we empower our customers to deliver exceptional experiences to the guests, students, residents, citizens and employees who count on them.

www.ruckusnetworks.com

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