

CASE STUDY



OVERVIEW:

Chico Unified School District is located in Chico, California. The district covers 322 square miles, with 21 schools serving over 12K students.

REQUIREMENTS:

- Ubiquitous Wi-Fi coverage and strong signal strength to deliver high data rates to many concurrent clients
- Higher performance, higher capacity district-wide indoor/outdoor Wi-Fi infrastructure at low cost of ownership
- Reliable Wi-Fi connectivity to meet mission critical testing and digital curriculum needs
- Simple and easy to use command-and-control application from a single platform

SOLUTION:

- Increased the number of concurrent clients supported per AP while improving signal strength and wireless reliability
- Deployed over 400 ZoneFlex access points creating a huge increase in efficiency and increasing WLAN capacity
- Deployed 2 redundant ZoneDirector 5000 controllers for a single, easy-to-use platform
- Implemented 120 ICX switches offering the highest stacking density and performance
- Future-proofed infrastructure with an integrated, open, scalable, high-performing network

PREPARING THE NEXT GENERATION FOR DYNAMIC LEARNING

Nobody wants to be behind the curve especially when it comes to education. The future generation relies on being provided with the best education possible. Many school districts are weaving more digital learning into their curriculums to help keep up with the Common Core Standards. With more powerful mobile devices and an overflow of traffic hitting the networks, school districts are finding that their legacy infrastructure is failing. Upgrades to the network are necessary to the entire teaching and learning domain. Ruckus provided industrial strength mobility solutions to support a 21st century digital learning platform.

CHALLENGE

Located in California's lush Sacramento Valley, the Chico Unified School District covers 322 square miles, with 21 schools serving over 12K students. Like so many school districts, Chico USD was facing a rapid increase of mobile devices against an aging mixed environment network infrastructure. Providing for over 2,500 students, including 500 iPads and 2,000 Chromebooks, with the intention of adding 2,000 more Chromebooks for the school year, Chico needed a reliable infrastructure.

Their existing network only allowed for 40 clients per access point before losing all useful performance. With more media-rich applications being used in and out of the classroom, Chico needed to upgrade and expand its three year old infrastructure.

"We realized that with the growth in end-user devices and in-class applications, the network needed to support a very high user density in addition to providing fence-to fence coverage," states John Vincent, Director of Technology at Chico Unified School District.

Further driving the district to a network upgrade was the Common Core State Standards Initiative which aims to unify and clarify students and teachers expectations across the nation. Looking for a solution, Chico turned to Ruckus, who is known for supporting the most demanding customer requirements.

SOLUTION

Helping Chico USD with the upgrade to their network was partner NWN IT. After looking at Cisco, Meraki, HP, Aruba, which was the County Office of Education (CoE) standard, and Ruckus, Chico USD decided to rely on Ruckus to create a state-of-the-art infrastructure.



“The Ruckus solution has met or exceeded every expectation we had when we planned this deployment”

JOHN VINCENT

Chico Unified School District, Director of Technology

“We did our research and got our hands on the gear, and Ruckus offered the highest performance while still being affordable, said Vincent. “We liked their recommendation to use one AP for every two classrooms in order to reduce interference and improve wireless performance. In one early pilot site using Chromebooks, they liked the Ruckus wireless so much that they ripped out all the wired PCs,” says Vincent.

With scalability being the key tenet of Ruckus Campus Networks, Chico implemented 120 of the ICX switches to provide the highest stacking density and performance. These switches also route traffic access with 10 Gbps linking between schools and the County Office of Education.

With funding from E-Rate, Chico USD made the decision to move to 802.11ac to future proof their network. Connecting to the ICX switches are over 400 ZoneFlex access points, including the 7982 and R710 indoor access points. Covering the stadiums, parking lots, and sports fields is the Ruckus 7782 outdoor access point. With the combination of 802.11n with the new 802.11ac, Chico USD now has a unified indoor/outdoor WLAN to meet wireless connectivity. Moving to 802.11ac deployment provides for a big increase in efficiency allowing more clients to get on and off the network at faster rates, therefore increasing WLAN capacity.

The Ruckus BeamFlex antenna is integrated in each access point controlled by specialized software that selects the optimum signal path for each connected device in real time to actively reduce interference and minimize noise. Hence, delivering a cleaner and stronger signal compared to conventional access points. This provides coverage needed across the entire district.

The wireless network is managed by two redundant Ruckus ZoneDirector 5000 controllers providing six times the processing power and twice the capacity and redundancy. The ZD 5000 can support up to 20K clients and 1K access points within a single, easy-to-use platform. With a limited IT staff, the ZD 5000 combines power, simplicity, and scalability into a single, affordable system.

Ruckus was able to deliver an integrated, open, scalable, and the highest-performance enterprise network solutions. In today’s fast-paced world, networks are mission critical and require fast, responsive support. School districts are looking to future proof their network at low cost of ownership. Ruckus provides the best in class infrastructure delivering the education world with an innovative learning environment.

“With Ruckus, we are able to fully meet user requirements using one access point for every two classrooms. They impressed us with their record of strong innovation in switching products instead of just buying other companies or developing me-too offerings. The Ruckus solution has met or exceeded every expectation we had when we planned this deployment,” concludes Vincent.