

CASE STUDY

BRINGING DOWN CLASSROOM WALLS: TECHNOLOGY PROVES PIVOTAL FOR CALIFORNIA SCHOOL DISTRICT



Like many K-12 districts nationwide, Elk Grove Unified School District (EGUSD) is continuously pursuing educational equity, knowing it's indispensable to student success. And classroom technology plays a starring role in helping achieve those goals.

In recent years, the District added 50,000 Chromebooks in an effort to improve equity, as well as to support objectives for curriculum adoptions, digital citizenship, media literacy and state online testing requirements.

On top of 63,000 students, the IT team at EGUSD supports 6,210 employees, nearly all of which rely on the wireless network. In fact, it's tough to think of a department that doesn't depend on wireless.

"We often joke about what isn't coming on to the network," says Scott Blaney, Senior Network Administrator. "Everything from students in the classroom to VoIP phones to maintenance and operations using it for alarms and HVAC. Even the electricians and bus mechanics...it's getting to the point where they can't do their jobs without a laptop anymore."

Given wireless growth, performance issues with the District's older access points quickly moved a network upgrade to the top of the IT team's wish list. In addition, the team needed tools to remain on top of performance and security, as well

REQUIREMENTS

- Simple, secure Wi-Fi deployment for district-wide e-learning and testing
- Always-on network connectivity for increasing mobile device and app usage
- Meets "Classrooms without Walls" digital initiative with limited IT staff

SOLUTION

- [802.11ac Wave 2 Instant Access Points](#)
- [ClearPass for policy-based security and greater visibility](#)
- [AirWave for fast, centralized district-wide troubleshooting](#)

OUTCOMES

- Deployed 3,000 Instant APs in two months, versus a year or more, freeing the team to focus on strategic priorities
- Simplified and improved IT operations with a fully integrated network, including security and management solutions
- Automated and secure device onboarding minimizes IT intervention, saves time
- Expedited troubleshooting and time-to-resolution boosts IT operations' efficiencies
- Measurable writing improvements in Title I schools

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When it was time to replace our wireless network, we needed an infrastructure that could handle the demands of our current systems, and evolve as the district grows. We also had to do this with limited personnel, dollars and downtime. Aruba was able to do all of this. ”

STEVE MATE

CTO, ELK GROVE UNIFIED SCHOOL DISTRICT

as support for faster wireless based on 802.11ac APs.

TIME-SAVINGS FOR A STRETCHED IT TEAM

Elk Grove's IT team moved forward with an RFP and the plan to use E-rate funds to complete a network full replacement. They compared 5 to 10 vendors before selecting Aruba for time-saving benefits and a suite of integrated network and management solutions.

"Aruba delivered a one-two punch for deploying its Instant access points, and solutions such as ClearPass and AirWave," Blaney says. "The way it all integrates together allowed my small team to deploy and manage the system more efficiently."

In choosing Aruba Instant APs, it was all about control and high availability.

"When we compared dedicated controllers versus Aruba Instant, our team preferred the Instant access points," Blaney adds. "We get centralized control while sites remain relatively independent."

3,000 APs IN JUST TWO MONTHS

While the District chose Instant APs largely for high availability, deployment speed quickly emerged as a major benefit. From June to August, the team rolled out more than 3,000 APs with the help of Aruba partner, CDW.



"We were expecting it to take a year or more to deploy nearly 3,000 Instant APs, but we ended up getting it done in two months," Blaney says.

Shortcutting the schedule by more than a year erased the worry associated with the District's previously

unstable controllers, and eased the spring testing season considerably. Instead, they could focus on other priorities.

After the migration, Blaney noticed a surprising number of laptops connecting at 802.11ac speeds. He anticipates Chromebooks to show similar performance gains when using web-based applications.

HANDS-OFF TRAFFIC SEGMENTATION

At the same time, Elk Grove deployed Aruba ClearPass to fortify Wi-Fi security and improve visibility. By setting policies for usage, access control has become easier for IT and getting end users online. The new guest portal enables guests to access the Internet easily while ClearPass-defined policies protect the network by dynamically segmenting guest traffic from school traffic.

"If a teacher brings a laptop from home, the profile recognizes the user but not the device. The teacher can login but is segmented from the rest of the network," Blaney explained. "Someone with a District-owned laptop will go on another segment while guests are on yet another."

That's notable progress in the pursuit of Blaney's ultimate goal: secure, automatic access for any device on the network – without intervention from the IT team. End users are free to innovate without worrying about whether an application is approved.

Blaney says they now envision a dozen or more VLANs per site, given the ability to segment that traffic intelligently.

Since adding ClearPass, the team can likewise respond more quickly to alerts. When someone calls regarding an account lockout, ClearPass helps the team pinpoint the reason. Looking ahead, Blaney foresees ClearPass being even more valuable for BYOD and as they extend it to cover full MAC-based, wired authentication as well.

ISOLATING ISSUES FASTER

With Aruba AirWave, the team knows immediately when APs go down, can monitor signal quality, and see who's logged on via which APs to pinpoint problems. They also use the solution to manage Aruba switches.

"AirWave reduces the time to isolate and troubleshoot problems and allows us to do more with the wireless network because we have better visibility into what's going on," Blaney says.

Blaney finds that ClearPass and AirWave, together, deliver unprecedented visibility. In particular, they have aided with user account lockouts by pinpointing the specific device and where it's located – saving major time. With just a user's login name, they unlock all related activity, which significantly cuts troubleshooting time.

"With the AirWave/ClearPass combination, we now have ways to measure network service that just was not possible with the old system," he said.

TECHNOLOGY BRINGS DOWN CLASSROOM WALLS

The impact of connectivity has spread fast and far at EGUSD. Classrooms now go on "virtual field trips," where hearing from a park ranger about the Gold Rush or listening to an author read and discuss his or her book is the new normal. Ninth graders recently spoke by Skype for Business with Carl Wilkens, the last American to remain in Rwanda during that country's genocide crisis.



"We were able to bring down classroom walls and connect with experts anywhere in ways not possible before," said Gail Desler, Technology Integration Specialist and a digital citizenship coordinator. "The world is now open to us for learning."

Videoconferencing with Skype has brought a dramatic change. Before, teachers had to bring in heavy and expensive camera equipment to do something of this nature.

Desler points out that students go well beyond consuming information online; they now create, collaborate and share – just as they will in the workplace someday. For one example, students recorded themselves telling and sharing stories with each other for feedback. The teacher then took the opportunity to deliver an in-context lesson on intellectual property and copyright law.

In three Title I schools, EGUSD studied the use of technology to improve student writing. A professor from nearby UC Davis measured results.

"When we measured students' writing, those who used technology made substantial gains," Desler said. "We know we're making progress on our efforts at improving equity in education."

As Desler and others pursue their vision of getting more technology into the hands of teachers and students, Aruba has become an essential partner.

"We've pushed very hard to get technology into the classrooms, from Chromebooks to applications for teachers," Blaney says. "Aruba is helping us get there faster, more securely, and with less of a burden on our team."

