Ruckus
Simply Better Wireless.

case study

OVERVIEW

Located in Reynoldsburg, Ohio, Reynoldsburg City Schools serves 7,000 students and 650 staff across 15 K-12 schools and uses Wi-Fi technology as a strategic tool for improving the educational experience and operational efficiencies for students and staff.

WHAT THEY NEEDED

- An 802.11ac Wi-Fi infrastructure that provides enough performance to support the long term mobile computing requirements of each school
- An intuitive, centralized and robust WLAN management platform
- Higher capacity client support per AP
- Seamless integration with its iBoss content filtering system
- Easy, secure onboarding that required minimal IT involvement
- Stable Wi-Fi connectivity to support online student assessments and testing as well as their student information system

WHAT THEY DID

- Replaced its legacy Aruba 802.11n infrastructure with 450 ZoneFlex R700 802.11ac Smart Wi-Fi access points
- Centralized WLAN management with redundant, high capacity ZoneDirector 5000 controllers
- Simplified BYOD device provisioning and automated the enforcement of user policies
- Increased Wi-Fi coverage, tripled client throughput and improved signal strength and wireless reliability

Reynoldsburg City Schools

K-12 Education

FEELING THE NEED FOR SPEED AND CAPACITY, REYNOLDSBURG CITY SCHOOLS MAKES WHOLESALE MOVE TO RUCKUS 802.11AC SMART WI-FI

Just east of Columbus, Ohio covering 14 square miles, Reynoldsburg City School District serves over 7,000 students with 650 staff across 15 K-12 schools, using technology as a key enabler for delivering a 21st century education.

Reynoldsburg uses blended learning strategies to best meet the needs of individual students. Teachers leverage online access and digital tools to deliver targeted lessons for various students while simultaneously working directly with other small groups or individual students. “At any given time, every student will access digital curriculum or content that is cloud based, so reliable wireless access has become as important as chairs and desks,” said Will Kerr, IT Director for Reynoldsburg City Schools.

ABOVE: Reynoldsburg’s 1:1 initiative provides Chromebooks to students causing increased pressure for more reliable and higher density Wi-Fi connectivity.

Like many schools, Reynoldsburg had launched 1:1 initiatives that provide students with Chromebooks and tablets. Consequently, reliable, fast and pervasive wireless connectivity quickly became a central issue for the district as more users and devices were accessing the network. But while their blended learning approach was delivering great results, the existing Wi-Fi network wasn’t.

Reynoldsburg’s legacy Aruba network was originally designed for basic coverage and suffered from the inability to keep up with higher concurrent client connections. Random AP reboots were commonplace if more than 50 clients connected to any given AP. The original design also called for Aruba Controllers in every school, which was overkill and expensive for Reynoldsburg. Finally, there were “painful” licensing disparities showing up in the controllers that caused APs to constantly reboot and immediately shut down.

K-12 Education

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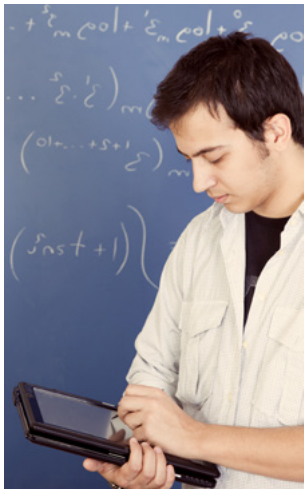

ABOVE: With the Ruckus Smart Wi-Fi system now in place, Reynoldsburg Public Schools has tripled its concurrent client capacities to support the influx of smart mobile devices hitting its network.

"It was insanely frustrating and the entire process was so convoluted because their management system just wasn't user friendly," said Kerr. "We had so many problems managing and tuning our legacy infrastructure to support our growing Wi-Fi device population, it just became unmanageable, and we didn't have the manpower to babysit it."

Combined with the capacity and reliability issues being experienced, Reynoldsburg knew they wanted to move to a better class of Wi-Fi system that allowed them to cost-effectively upgrade to higher speed 802.11ac technology. This would give them the headroom and the future proofing they needed to avoid another wireless upgrade for years to come.

Reynoldsburg also needed seamless integration of the Wi-Fi system with its iBoss content filter system. As wireless users were successfully authenticated through RADIUS, the Wi-Fi network needed to feed RADIUS accounting information to the iBoss system so it could know what group polices should be applied to each user.

Given the struggles with its legacy Wi-Fi infrastructure, Reynoldsburg insisted on a simpler to use and more intuitive WLAN management interface. But most important to Reynoldsburg was the performance and reliability of the wireless infrastructure, as more devices, applications and users had come to expect reliable wireless connectivity everywhere throughout the district. So Reynoldsburg began evaluating a range of suppliers from Cisco to Meraki and HP to Ruckus Wireless.

While Reynoldsburg evaluated and tested a number of conventional and cloud-based WLAN solutions that had simpler management consoles than their legacy infrastructure, the access points that came with these alternatives just didn't deliver the performance or capacity needed to support their 1:1 initiative.They also lacked sophisticated RF controls that Reynoldsburg believed were essential to delivering pervasive performance and a rock-solid Wi-Fi connection experience. Total cost of ownership was another major issue.

According to Reynoldsburg, many cloud-based Wi-Fi service offerings required more access points and recurring subscriptions fees. This made the total cost of ownership cost-prohibitive with access points not designed for capacity.

"When we put together our wireless plan with a competitive alternative, based on their recommendations and costs, it was a two-year plan, from a budget perspective," said Kerr. "But when we took the same amount of APs and management functionality as suggested by other suppliers and looked at how we would deploy the network if it was all Ruckus, our two year plan turned into a one year plan, with the added benefit of better Wi-Fi access points," said Kerr.

"We were stunned that with Ruckus we were able get complete coverage to support our 1:1 initiative at a lower total cost using the same number or fewer access points.Ruckus provides stronger and more pervasive performance at a much lower total cost of ownership than any of the other WLAN solutions we evaluated."

Ultimately Reynoldsburg chose to replace its entire legacy infrastructure with 400+ Ruckus ZoneFlex R700 802.11ac access points managed remotely by redundant ZoneDirector 5000 controllers, one at is its data center and the other at one of its high schools.

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Director of Technology

Reynoldsburg Public Schools

Now Reynoldsburg has a unified indoor and outdoor infrastructure all managed through a simple and centralized management interface and seamless integration with its existing systems. Reynoldsburg was able to easily specify different VLANs per SSID to isolate different groups and schools, and configure the ZoneDirector to automatically send RADIUS accounting information to the RADIUS server so the iBoss content filter was able to apply distinct user, group, and device policies. Reynoldsburg uses client isolation to prohibit peer-to-peer traffic and rate limiting on the guest network to control bandwidth consumption.

ABOVE: For better performance, reliabilty and coverage, Reynoldsburg replaced its entire Aruba legacy Wi-Fi infrastructure with Ruckus R700 802.11ac access points across all its schools, mananaging them all centrally through redundant ZoneDirector 5000 WLAN controllers.

A welcome surprise for Reynoldsburg was that with the ZoneFlex system, they didn't have to deploy an access point in every classroom as specified by other suppliers. This lowered both CAPEX and OPEX while still delivering better performance and supporting higher client densities versus competitive alternatives.

Saving time and money, Reynoldsburg has also been able to deploy wireless in locations not planned or budgeted such as their football fields, gyms, auditoriums, theaters and other outdoor "green spaces" around school campuses. Stadium and outdoor wireless was never part of the design or something that was planned.

"With the savings from going with Ruckus we were able to light up areas that we didn't even plan for," said Kerr. With the added wireless capacity, delivered by Ruckus dual band, three stream 802.11n ZoneFlex 7782 outdoor access points, Reynoldsburg also anticipates using the Wi-Fi network to support IP-based Wi-Fi security cameras which will give them a lot more flexibility and deployment options. "Given our troubled history with Wi-Fi, we never anticipated the migration to 802.11ac to be as painless and affordable as it has been, in fact, we thought it would be just the opposite," concluded Kerr.

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