



CASE STUDY



OVERVIEW

Forest Hills Public School District (FH) is located in Grand Rapids, Michigan. FH is one of the largest geographic districts in Michigan, as it encompasses approximately 68 square miles. FH serves over 10,000 students in grades K through 12 and 1200 faculty and staff. Its legacy network could not keep up with the bandwidth requirements of an ever-increasing population of wireless devices so the need for a reliable, secure and fast network was a must.

WHAT THEY NEEDED

- A secure and easy to manage network
- Ubiquitous Wi-Fi coverage and strong signal strength to deliver high data rates to thousands of concurrent clients
- Higher capacity client support per access point (AP)
- A future-proof network that could grow as the district's needs grow

SOLUTION

- Deployed close to 1,000 indoor APs throughout the district with Ruckus' 802.11ac Wave 2 R500, H500 and R700 4 ZoneDirector 3000
- Installed the Ruckus virtual SmartZone (vSZ) for redundancy to deliver the high availability needed for online learning
- Installed Cloudpath for secure onboarding of BYOD devices

BENEFITS

- Equipped FH students and staff with a reliable and secure infrastructure
- Increased the number of concurrent clients supported per AP while improving signal strength and wireless reliability
- Future-proof network to grow as their district grows

Digital learning is on the rise. Blended learning, flipped classrooms and digital curricula engage students and help instructors to be more effective. Textbooks are being digitized and open educational resources (OER) are available online for mobile devices to provide rich and interactive content. Bring your own device (BYOD) and 1:1 computing initiatives are replacing wired computer labs, as most students now have consistent access to a laptop, tablet or Chromebook computer. With this advancement, schools need to be prepared with a reliable network that ensures students and teachers have anytime, anywhere access for uninterrupted teaching and learning. Importantly, as schools transition to more screen-based learning, they also need to protect student data privacy through secure network access.

THE CHALLENGE

Forest Hills' legacy network could not keep up with the bandwidth requirements of an ever-increasing population of wireless devices. Built in 1956, the twenty-four buildings were built with "RF unfriendly" materials, such as cinder block and brick, making it difficult to deliver fast and reliable wireless service.

"With the expansion of Chromebooks into the schools, we were finding that once you introduced more than 25-30 wireless devices on an access point, it would start to bog down and become a point of contention," states Chris Alger, systems engineer at Forest Hills Public School District.

Having bandwidth constraints led to daily help desk tickets, and so the IT department was struggling to keep up with the ever-increasing demands.

The secondary schools were looking to launch a BYOD initiative, and Alger felt it was time to find a solution that could support the dense environment. The district needed Wi-Fi infrastructure that could support the demands of mobile devices in the hands of all students, and the bandwidth-hungry applications running on them. The network needed to ensure high performance and connectivity through high-capacity access points (APs) that were easy for IT to manage. Additionally, the district needed a way to securely onboard and secure BYOD computers in order to protect students from harmful content on the internet, unacceptable use in school and secure data privacy.

THE SOLUTION

Looking for the right solution to fit the district's needs, FH turned to partner Vector Tech Group for guidance. Looking at several requests for proposal (RFPs), FH started the vetting process. Vendors were put to the test to identify the solution that best met their requirements. Already having experience with Ruckus from a previous district, Alger wasn't surprised when Ruckus came out on top.



Building the wireless classroom requires reliable 802.11ac Wi-Fi to boost student achievement. The deployment consists of close to 1,000 indoor APs throughout the district. The Ruckus R500 family of APs (2x2:2 802.11ac) were deployed in the secondary schools, the H500 family of APs (wall-mounted 802.11ac) were placed in smaller areas such as offices and the R700 family of APs (4x4:4 802.11ac) were placed across the elementary schools.

Managing these APs are two virtual SmartZone (vSZ) controllers for centralized management and redundancy to deliver the high availability needed for online learning. The vSZ platform future proofs the network to grow as demands increase across the school district.

FH chose Ruckus Cloudpath Enrollment System (ES) software for secure onboarding of BYOD devices. This secure network access management platform provides users with easy, self-service onboarding for student, faculty, and staff devices. The system automatically installs a digital certificate onto user devices when they connect for the first time using their existing network credentials. Users don't need to re-enter login credentials to connect again later, and this certificate-based approach secures every connection with WPA2-Enterprise encryption. Once a device is authenticated using Cloudpath ES, it automatically connects to the network regardless of which campus the student or faculty member visits.

"Cloudpath gives us an easy way to attach devices to our wireless network securely, without manual intervention by IT," stated Alger.

The right network infrastructure empowers teachers and students to leverage the latest technology in devices and applications for a rich digital learning experience. The new network has made a huge difference across the district. Students are no longer experiencing interrupted learning. The district has experienced solid coverage and reliability with very few IT tickets. The network provides fast Wi-Fi with increased concurrent client capacities per AP.

"Since the deployment, we have seen over 100 users on each access point, great reliability and no calls," claimed Alger. "We feel that Ruckus just does wireless better."

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CHRIS ALGER

Systems Engineer, Forest Hills Public School District

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350 West Java Dr., Sunnyvale, CA 94089 USA

www.ruckusnetworks.com