

CASE STUDY

Installing a network to serve 200+ schools in under two years




Industry

 K-12 Education

Location

 Orange County, Florida

Products

 Wireless LAN (MR)

Highlights

- 9th largest school district in the US with 208,000 students and 200 schools
- Needed remote management capabilities so engineers could focus on 1:1 program
- Meraki access points and switches being rolled out district-wide

Overview

With 208,000 students in more than 200 schools, Orange County Public Schools (OCPS) in central Florida is the 9th largest school district in the country. The district's size has not stopped it from leading the way for schools across the nation in implementing a 1:1 program. The goal: to turn every school into a digital-curriculum school, equipping students from kindergarten to high school with their own school-issued laptops. Physical textbooks, lockers, and paper tests will be a thing of the past, as students move toward only participating in content that is delivered online. But before this 1:1 model can be implemented, the district needs a robust and secure network that give students and teachers continuous access to the Internet for learning to take place.

Boots on the ground = time lost

When David Overton, Senior Director of Information Security, joined OCPS a couple years ago, he found a reactive and time-strapped team of network engineers and operators. Not only did the inconvenience of traveling to each school to solve network issues bring down the team, but the time lost took away from their other important projects. Even though there are technical support reps (TSR) stationed at each school, they don't have the expertise needed to configure a switch or set up a router when the network goes down. Overton added, "With the legacy infrastructure, we had to put a lot more boots on the ground. We had to get the engineers out to each individual school, and that was a logistical nightmare."

A solution that maximizes effort

The search for a solution that would provide centralized, remote management commenced. Only one vendor offered remote management capabilities as well as the robust technology required to support a 1:1 program: Cisco Meraki. To accommodate the increase in devices, the district needed more access points, which in turn called for better, faster, and stronger switches. Therefore, the team decided to deploy Meraki MR access points and MS switches district-wide. With new schools coming online every week, the district is on pace to deploy 100% Meraki networks at all of the schools in the district in less than two years.

With the help of Meraki reps and a third-party technology vendor, the deployment team can easily flip an entire school in four hours. Starting at one o'clock, the team walks the school to make sure the deployment design is ready to go. At 3:30 p.m., they start hanging up the access points, about one access point per classroom, with multiple in larger classrooms, gyms, and common areas. When the final bell rings at 4:30, and the remaining students head home for the day, the team begins uncracking and uninstalling the legacy equipment, and installing the new Meraki gear. They then test the network, making sure everything is working properly, and that the intrusion detection system and security cameras are online. A couple of weeks after installation, the team then looks at the location heat map feature in the Meraki dashboard to double-check that there is complete coverage, and they continue to use the tool to optimize layouts as needed. The team also receives weekly summary reports to make sure no access points are overloaded. The ease of installation and deployment is putting OCPS ahead of schedule to turn traditional schools into digital-curriculum schools.

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They completed a school on Friday in four hours. Switches, routers, and access points. Completely transitioned.”

DAVID OVERTON

Senior Director of Information Security, Orange County Public Schools

OCPS is standardizing their SSID availability across the district down to three: one for administration, students, and guests. Each SSID has its own rules set up to make sure that teachers and students have access to the resources they need. With every student averaging three devices, the team works to ensure there is enough bandwidth across the district. Through the Meraki dashboard, the team can easily identify anomalous traffic or throttle back bandwidth when needed. For example, when the students are participating in state-mandated testing, the team can make sure that the testing application has as much bandwidth as it needs to run correctly.

With the first wave of OCPS schools now transitioned over to Meraki, the centralized, remote management has saved the team countless hours of driving between schools and manual troubleshooting. Before, the network engineers would have to go to each school, find the problem switch or access point, and manually troubleshoot. And with 200 schools, this was not efficient, and sometimes not feasible, leaving long gaps in coverage. Now, the team can just log into the dashboard from their office, and easily see what the problem is.

“I can’t say enough good stuff about the dashboard,” Overton said. “It gives me an idea of what is going on; if there is an issue at the school, the network folks are able to get in there and pinpoint the issue much faster than if they had to go out to each switch and troubleshoot.” If they do need to change something on the equipment, a TSR can plug in or reseed a cable, without an engineer needing to go onsite. Thanks to this improved resource utilization, the engineering team can spend their time looking for anomalies in the network environment, being proactive, and focusing on a network redesign project.

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There is a big difference in the maintenance and upkeep. For the schools that are not transitioned, we have to go there and spend hours trying to troubleshoot. Whereas with Meraki, we just go in and look at the dashboard and it tells you what’s going on

DAVID OVERTON
*Senior Director of Information
Security, Orange County
Public Schools*

100% digital curriculum is the future

The digital-curriculum schools provide significant advantages for students and teachers. With every student having their own laptop, teachers can use new and creative applications to provide a more personalized learning experience. From YouTube to Khan Academy, students can digest information in different ways, leading to more effective lessons and a better learning experience. Students no longer need to lug textbooks back and forth between home and school, and time spent at their lockers is quickly dwindling, since everything they need is electronic. OCPS is setting the example for school districts across the nation, with a model in place that will enable every student to succeed in a digital economy.

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