Chesterfield County Public Schools of Virginia

Chesterfield County Public Schools of Virginia Chooses Aerohive's Enterprise WLAN to Manage Influx of Mobile Devices and Computer-Based Testing

Challenges

- The school district needed a WLAN that was resilient, centrally administered, easy to manage, secure and cost-effective.
- The existing consumer-grade wireless access points were unreliable, difficult to manage and unable to handle the influx in BYOD.
- A robust enterprise-class wireless system was needed to administer state-mandated computer-based testing to almost 60,000 students in the district.

Results

- Using HiveManager to monitor the wireless network and all client activity gives staff more time to do their work while traveling about the campus.
- Aerohive has provided the school district with a highly resilient wireless network that's both easy to manage and cost-effective, with flawless connectivity to conduct online state testing for all students.
- The new WLAN removed the need for costly redundant hardware controllers and redundant licensing fees.

About Chesterfield County Public Schools

School administrators across the country would do well to learn from the Chesterfield County Public Schools of Virginia. In a 2010 survey, nearly 86 percent of residents rated Chesterfield schools as excellent or good. Is it any wonder that —for the fifth time — Chesterfield was named one of the 100 Best Communities for Young People by America's Promise Alliance?

Guided by a long-term strategic plan, the school district is working to achieve its vision of providing an engaging and relevant education that prepares students to thrive in a rapidly changing world.

The large district encompasses 62 schools — 38 elementary schools, 12 middle schools, 11 high schools — (11 specialty centers within high schools), and one technical center. Some 58,764 students attend Chesterfield schools, and the district employs 7,815 full-time and part-time positions.

> "I've used Aerohive successfully in two fairly large school districts now, and it's one of the few things I don't worry about."
>
> **—Adam Seldow, Ed.D**
> Executive Director of Technology, Chesterfield County Public Schools

The Challenge

Like any sprawling, cutting-edge school district, an enterprise-class wireless network is absolutely vital. All school districts are facing a massive influx brought by the BYOD trend, and on top of that, most districts must do more of their annual state tests via computer. This computer-based-testing emphasis means that most school districts have outgrown their computer labs.

Before implementing Aerohive, Chesterfield County Public Schools didn't have a proper wireless network. The few wireless computers they did have were for faculty only – no student access — and they weren't centrally managed.

"We held out on wireless until the solutions met our needs," said Achim Purdy, Network Manager at Chesterfield County Public Schools.

Considering the Alternatives

Chesterfield had a "bake-off" with three vendors on its short list: Aerohive, Aruba and Cisco. They considered many factors including cost, ease of management, the underlying infrastructure required to maintain the APs, and scalability. "And then we just boiled that down to what met our needs," Purdy said.

There were some technology considerations in the school district that led his team to wanting a controller-less network that has "APs with the knowledge on the edge," Purdy said.

"Our WAN circuits were somewhat suspect back in those days," he said. "So going with a controller module just didn't fit our needs."

Ultimately, Chesterfield schools chose Aerohive because of the following reasons: scalability, flexibility, cost, security, the ease of setup and management and the cooperative control of the APs.

Deployment / HiveManager

Chesterfield has so far deployed more than 2,000 Aerohive APs. These include AP121s (cost-effective, enterprise-grade 2x2 MIMO solution, ideal for education) AP350s (high-performance, 3 stream, 802.11n Access Point with external antennas designed for challenging indoor environments) and the AP170s (high-performance outdoor Access Points).

The wireless project started about two years ago, and all schools in the district now have coverage, Purdy said. Several years have passed since the initial deployment, and the district began to recognize the need for a density upgrade. With over 31,000 devices connecting to the network, and the availability of guest access at each school, and more and more requirements for BYOD, it was necessary to increase the number of Access Points, which will number over 4,000 by the end of the upgrade.

For command and control, Purdy and his team are using the HiveManager. "It's very intuitive," he said. "We can take guys on the network team that may not be as familiar as they should be with wireless, and we introduce them to an interface that is very intuitive. You don't have to be a wireless specialist in order to navigate through and troubleshoot and see statuses."

"The real-time information you get with HiveManager — showing you the health of your network — is very nice," he said.

Purdy's boss also benefits with HiveManager. "It's something that I can launch and immediately get a comprehensive view of the wireless network, and what areas have the heavy users," said Adam Seldow, Ed.D. Executive Director of Technology, Chesterfield County Public Schools. "I can gain a better appreciation of network saturation and just by popping into the HiveManager. I use it to make decisions."

Results & Recommendations

One Aerohive feature Purdy finds particularly useful is "the settings of how far we extend our signal in order to manage our throughput based on signal strength." He then keeps tabs on that throughput. "We tell the APs not to accept any beacon request under a certain data rate. So if a weak connection is associated or attempted, we send you to another AP that might be able to service you better. So the clients that are in the data throughput range don't have to wait for you. They don't have to wait for the slower clients to respond."

"What that means from the classroom perspective is you're guaranteed better coverage," Seldow said.

Over the last year, the state of Virginia has been one of the first states to require all state testing in grades three and above be completed online, and the Aerohive WLAN has proved to be flawless. With all students taking the state mandated Standards of Learning tests online, the district has had to use mobile carts and set up ad hoc computer labs in cafeterias or classrooms, and a wireless network was the only way this was possible. It is particularly important that students have no interruptions during testing and the network has not only been extraordinarily resilient, but can scale at a moment's notice.

Cost and Scalability Are Two Attributes That Seldow and Purdy Praise.

"From my perspective, Aerohive's wireless is one of the few things where we know the exact cost," Seldow said. "And we know that we can buy as many or as few units as we need at any point in time. It's one of those rare things in technology where any bit of funding you can use towards it will help make your network more robust. If you had to buy big switches or anything else there's certainly a large fixed cost involved. We can scale up quickly and at different rates just by simply buying APs."

When asked if he'd recommend Aerohive to others, Seldow that he already has done so. "I've used Aerohive successfully in two fairly large school districts now, and it's one of the few things that just works."