CASE STUDY: THE MADEIRA SCHOOL

Manageable, Reliable, and Flexible Wireless Networking for Educational Institution Uses Cooperative Control Wireless LAN from Aerohive

Aerohive™

THE MADEIRA SCHOOL, FOUNDED IN 1906, IS AN ALL GIRLS BOARDING AND DAY SCHOOL, GRADES 9–12, located 12 miles outside Washington, D.C. in McLean, Virginia. Designed for girls who are bright, curious, and independent, Madeira is committed to providing an exemplary preparatory school education with a global emphasis and a unique Co-Curriculum program offering off-campus Washington, D.C. and Capitol Hill internship opportunities for every student. Approximately half of the school's 321 students board.

Madeira students, like most teenage girls, live on the Internet, exchanging emails, downloading movies, music, and on-line TV programs—their most popular Web destination is Facebook. To provide access to these, as well as academic applications like Blackboard, the school installed a wireless LAN some years ago. Beginning with two access points, the network grew organically over time to more than 30 autonomous access points.

Making it Easy to Upgrade the WLAN
From time to time, Jeff Dayton, Madeira's Director of Technology, had contemplated upgrading the wireless LAN. At the top of his wish list, a solution that could provide a high level of centralized control and management over access and bandwidth—something the legacy system lacked.

For example, Dayton had created policies in each of his access points that prevented network access in the dorms during the day when students' focus is on school work. If he wanted to allow access from dorms during the day when classes were not being held, such as holidays, he would need to individually reconfigure 15 different access points or servers. "I just didn't do it," says Dayton.

At one point he had invested some time into evaluating Cisco. "It was expensive to purchase, and too expensive to support," says Dayton. "It was just too much money for what we needed." Some time after that, a casual conversation with a representative from Computerware, a trusted, long-time supplier, led him to Aerohive. "I wasn't even looking for a new wireless network at the time," says Dayton.

He was, however, evaluating a Packeteer switch, deployed at the edge of the network to provide bandwidth control. "When I learned that Aerohive could control bandwidth right at the dorms, there were no other wireless vendors to consider. I began looking into the Aerohive solution and found it offered even more than I ever knew I wanted."

What Dayton wanted, in addition to control, was reliability, manageability, and flexibility to meet changing needs. Based on his evaluation, Dayton selected Aerohive to replace the legacy wireless network.

(A Single Point of) Failure is not an Option
One of the key features that helped Dayton decide on Aerohive was the cooperative control access points (HiveAPs) that require no network controllers or overlay networks. Instead, software in the HiveAPs enables them to self organize into groups called Hives. The result is enterprise-class network management and security without the cost, performance, and availability issues associated with controller deployments. "There's no single point of failure, which wasn't true of other systems," says Dayton.

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Up and Running within an Hour

Deployment of the Aerohive network took place in two stages. In early December 2008, Dayton and his team installed the first HiveAPs, reusing cabling and even the mounting holes from the old access points. Once the HiveAPs were plugged in, the HiveManager automatically discovered them. "A technician from Aerohive came out to train me," says Dayton. "Within an hour we had the HiveAPs configured and up and running."

Dayton's team installed and configured the remaining HiveAPs during a school break. The difference between installing Aerohive and the old access points was dramatic. "Before, I would have to drag out my laptop, plug it into an access point, change the IP address and configure each access point individually. It was a very laborious process. With Aerohive you just hang the access point and go."

The HiveManager provides a deep level of control over who is using the wireless network and what they are using it for. For example, the school's firewall notifies Dayton whenever it detects the use of illegal peer-to-peer software. "I don't have to pour through log files any more. The HiveManager allows me to grab

an IP address and trace it back to the access point and pull up the name of the offending computer and be there within minutes to confront someone."

HiveManager also provides Dayton with a great deal of flexibility to control bandwidth usage at the access point, limit what users can do on the wireless network by time of day, and group by dorm or by school house. "With HiveManager, I can change the schedule, push it out to all the access points—and I'm done."

The Wireless Future at Madeira

With most living and academic areas covered by the Aerohive network, the school is entertaining further expansion into outdoor areas at some point in the future. "We'd like to get people outside to enjoy this beautiful campus," says Dayton.

Madeira currently provides Internet access through a T1 circuit. In the near future, the school hopes to upgrade to a 20 Mbps circuit that will enable new applications, such as streaming video. "We can't say exactly what capabilities we'll need down the road, but I now feel that we have a wireless network that can support those requirements," says Dayton.

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