Aerohive NETWORKS

case study

Siena Heights University

University Gets Major Campus Wi-Fi Upgrade with Aerohive Deployment

WLAN Network Challenges

- Existing WLAN of autonomous APs deemed inadequate for new requirements
- Needed to keep up with Wi-Fi enabled mobile device explosion
- Needed an enterprise wireless networking architecture that was easier to manage
- Needed a more reliable enterprise wireless networking architecture

Aerohive Wi-Fi Solution Benefits

- Managing WLAN using HiveManager Network Management System (NMS)
- Stateful firewall in every AP enabling granular control of traffic within VLANS
- Using RADIUS server in HiveAPs to serve as authenticator
- Integrating with Active Directory

With six campuses located throughout Michigan, and courses offered online, Siena Heights University prides itself on its ability to make a private education affordable as well as its desire to embrace emerging technologies. The 100-year-old university, originally a liberal arts college for women, today boasts a co-education environment, a student population comprised of both traditional-age and working adult students, an expanded curriculum, a full range of extra curriculars, including top ranked athletic teams, and an ongoing main campus expansion of new facilities.

Siena, as a leader in technology, was the first university in Michigan to offer complete wireless coverage across the main campus. However, as a result, its current wireless system was showing its age. The IT department realized that it had a pressing need to step up its game by embracing the newer Wi-Fi standards and finding a more robust and management friendly system that would meet the expectations of today's users as well as the challenges of the future.

WLAN Network Challenges

In an attempt to stay current with changes to wireless networking standards, Siena's over ten year old Cisco 1200 wireless deployment had already undergone numerous upgrades. Not surprisingly it was beginning to show signs of undependability, and there was the obvious need to upgrade to the 802.11n wireless standard to keep pace with the explosion of Wi-Fi enabled mobile devices. Additionally, the time involved in managing over seventy autonomous access points was becoming a problem. The bottom line: the access points needed to be replaced, and it was time for a major review of what was needed and what was currently available.

"We realized that the Cisco access points we had were getting old, and it was just a matter of time before our expected level of service would be affected," says Robert Metz, Director of the Computer Services and Systems Division of Siena Heights University. Metz added "The other big thing was that, in line with the university's aggressive stance toward technology, we needed to move forward to 802.11n. Our first Wi-Fi efforts had been successful, so we were ready to take a step forward." He, along with the Network Administrator, Alan Ballenberger, who directly oversees the wireless network, view their department as "leading edge" when it comes to considering new technology and both were anxious to make sure that the replacement solution was truly next generation.

As they looked at new wireless systems, Ballenberger was especially interested in management capabilities, while Metz was anxious to control costs, particularly those associated with the purchase of expensive WLAN controllers. The ideal solution would be a system that offered powerful and easily managed access points while eliminating costly controllers from the WLAN architecture equation.

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Director of the Computer Services and Systems Division of Siena Heights University

Another important element for Siena was maintaining and improving the existing Wi-Fi coverage in the students' living quarters. The residence halls are packed with students who are heavy users of iPads and other Wi-Fi-enabled mobile devices, and whose lives revolve around online educational applications as well as streaming video, YouTube, Skype and Facebook. "We needed a robust wireless network that could handle that density," said Metz. This was especially critical since wireless access is the only university supplied student network connectivity in the residence halls.

The Aerohive Wi-Fi Solution

Ballenberger and Metz had already done some preliminary research and were having difficulty finding a solution that met all of their criteria. The problem was that the major players in the market all use expensive controllers as part of their system. They mentioned their frustration while working with their partner AmeriNet on another project, and the AmeriNet representative immediately introduced them to the Aerohive product line. "There was no other credible vendor that offered a controller-less architecture, and we immediately saw that Aerohive's solution was superior," said Metz. Ballenberger was impressed by the optional Hive Manager that could manage "at arm's length" powerful, yet essentially autonomous, access points. Metz was struck by the "bottom line savings" as well as how Aerohive solved problems by thinking "out of the box." "We liked how Aerohive looks at technology – they aren't stuck in present-day technology. They are looking to the future."

Aerohive's Cooperative Control access points ("HiveAPs") provide secure fast roaming, ease of management, and state-of-the-art security without network controllers or overlay networks. Instead, software in the HiveAPs enables them to self-organize into groups called "hives", to share network control information, and to deliver QoS, identity-based policy enforcement and other advanced functionality.

Eliminating controllers from the network substantially reduces the cost of Aerohive solutions. Aerohive's cooperative control networks are also more reliable than controller-based networks since controllers' "single points of failure" are eliminated. Removing controllers from the network also creates an ideal platform for demanding applications, such as streaming video, by eliminating the bandwidth bottlenecks, latency, and jitter that result from backhauling traffic through a controller.

AmeriNet provided Siena with superior pre- and post-sale support, and together with the Aerohive team made the deployment of over eighty Aerohive's HiveAP 340 access points as smooth as possible. "Aerohive worked directly with us and made us feel like we were their only customer, serving to instill confidence going forward with our deployment," said Metz. "Installation was incredibly easy," according to Ballenberger. "I appreciated working with the Aerohive techs to take advantage of some of the more advanced capabilities of their system. Their tech support was friendly, easy to understand, and extremely knowledgeable."

Aerohive WLAN Solution Benefits

Siena is utilizing Aerohive's HiveManager Network Management System (NMS) in order to manage its entire wireless network. Based on their experience with the previous deployment of Cisco autonomous access points, ease-of-management and self-healing were important to both Ballenberger and Metz. "HiveManager allows us to do things we couldn't do with our network of autonomous Cisco APs, which were expensive, cumbersome and miserable to manage," said Metz. Ballenberger is quick to add, "HiveManager is easy to learn to use, and is extremely efficient as far as managing all of our APs. I can take the HiveManger completely off line and the access points just keep talking to each other and working normally. The brains are in the access points. The HiveManager just helps me work with the brains. It is the best of both worlds."

He also appreciates the stateful firewall that resides in every HiveAP. This allows for very granular control of traffic within the various VLANS as they are assigned to the SSIDs. "The wealth of options beyond the default settings is amazing and allows me to really custom fit the system to our needs."

Metz happily points out another significant money saving feature of the Aerohive system. "An Aerohive HiveAP has a built in RADIUS server which can serve as an authenticator for the WLAN, including integration with Active Directory. This was a huge cost savings for us since our Cisco radius solution was an expensive product with yearly support and costly upgrades."

Siena is extremely pleased with the success of its Wi-Fi deployment in the residence halls. "Aerohive has worked well in the residence halls, especially when you consider the density of the population and the fact that we had to retrofit the APs in less than optimal positions," said Metz. "Overall there are often 200-300 users on the WLAN at one time, and given the broad range of client systems, the performance of the Aerohive APs has been extremely good."

Aerohive's meshing capability has been put to good use at Siena, particularly for the softball field, located at an extreme edge of the campus, far from any hard line connectivity. An Aerohive 340 AP atop the scoreboard is put into mesh mode along with another unit across campus that has a roof antenna, and the wireless coverage is excellent, even for video streaming. Metz reflects on the setup, "I love the flexibility Aerohive gives us, and how it again saves us money. When softball season is over, we turn it off, move it and use it as a regular, non-meshed AP. I like the Green element of that approach."

No matter how old a university's roots are, and how steeped in tradition, it still needs to have the vision and courage to change in order to meet its students' needs for technology and communication, and yet spend its funds wisely. While looking to the future, it also has to make sure that its decisions allow its staff to be able to support today's technologies. The implementation of a new state of the art wireless network with Aerohive has allowed Siena to accomplish both. It has truly earned its place as a leader among tech-savvy schools.

Aerohive NETWORKS

Contact us today to learn how your organization can benefit from Aerohive wireless LAN architecture.

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