



Edmonds Community College

Local College Gets Smart with Wireless Network from Aerohive for High Performance and Advanced Security

Challenges

- Upgrade aging wireless solution to accommodate high density environment
- Allow network management with application-level visibility and robust monitoring
- Identify cost-effective solution to meet current and future Wi-Fi demands
- Design network architecture with greater understanding of physical constraints, including access to heat mapping tools

Results

- Simplified, cloud-based network management of wireless network
- Advanced radio functionality maximizes performance and ROI for 5GHz and 2.4GHz channels
- RADIUS integration from Aerohive allows seamless user authentication
- HiveManager NG provides network visibility and insights to better understand use of Wi-Fi across the college

About Edmonds Community College

Edmonds Community College (Edmonds CC), a two-year public college in Lynwood, Washington, located in the Seattle metropolitan area, welcomes more than 20,000 students each year to its 50-acre campus. Founded in 1967 and accredited by the Northwest Commission of Colleges and Universities, Edmonds CC offers the first two years of bachelor's degrees, career training degrees and professional certificates. The college will soon offer its first Bachelor of Applied Science in Child, Youth and Family Studies, along with classes in 61 associate degree and 63 professional certificate programs.

Edmonds CC is a satellite campus for Central Washington University and also provides administrative support for local Head Start programs in Snohomish County. Edmonds CC is part of the 'Achieving the Dream' network to strive for better achievement and economic opportunity for students. The college has also received numerous awards, including 12 National Science Foundation grants and a Service Learning and Civic Engagement Collaboration Award. The college offers more than 200 classes available online, employs more than 1,600 faculty and staff, and has the largest grants and programs contracts in the state.

The Challenge

For nearly a decade, the college had a wireless network in place, but with coverage only in common areas such as libraries, computer labs, cafeterias, and primary education buildings. The wireless infrastructure was originally scoped to enable the greatest coverage with the least number of wireless access points, and was based on a much smaller estimate of devices, and not at all mapped for an evolving high-density environment.

The existing HP solution was outdated and experiencing slow connectivity and was often unavailable or could not handle the data requirements. Students and faculty complaints rose, while at the same time needs for wireless connection were growing due to an increased number of devices, higher density requirements, and the demands for ubiquitous Wi-Fi for classroom and education operations.

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—**Scott Farrand**
Senior Network Analyst
Edmonds Community College

With the existing network, there was poor visibility and constraints in network system management. Without a robust cloud-based solution, Edmonds CC did not have intelligence or insight into network operations, making it difficult for the IT team to plan, troubleshoot, or make strategic adjustments. With nearly 30 buildings on campus and eventual support of seven remote locations, Edmonds CC needed to look at a comprehensive solution for the network going forward.

The Solution

The IT team approached the student government association to help arrive at a cost-effective upgrade solution in order to meeting growing demands. Funding for network infrastructure was offset by student technology fees and mitigating costs was a key priority. To upgrade the existing network, the IT team began to look at numerous solution providers including Aruba, Cisco, HP and Ruckus, along with a number of smaller players.

The agile networking IT team looked for a cost-effective wireless solution with application identification and control, robust connectivity, and the ability to manage devices and users securely and for optimal network accessibility. An undeniable reason Aerohive was chosen was because many of these features were automatically built-in to the overall solution, without additional associated costs. Edmonds CC worked directly with Dell for the Aerohive solution, and was a natural choice as an established partner with an existing state master contract, that could also provide installation services.

Edmonds CC deployed Aerohive AP250, AP230 and AP1130 access points across the entire campus and remote sites, and made the jump to the cloud with HiveManager NG network management. The IT team invested considerable time in uploading building drawings and maps, especially for buildings with multiple floors where determining access point placement was key. HiveManager NG allowed Edmonds CC to see the frequency coverage for 5GHz and 2.4GHz devices and was the guiding force for mapping out the network to optimize the available spectrum. Where other providers tacked on additional costs for heat mapping, these tools were built in to the Aerohive solution and were crucial in architecting the overall network design and better understanding the RF environment.

Another key feature used by the college was Aerohive's Private Pre-Shared Key (PPSK) solution that became much more meaningful as the deployment evolved and rolled out, and enabled unique and secure connection without complexity for every user and device on the network, even allowing groups of users to connect on a single SSID.

The Results

Last year, Edmonds Community College rolled out the Aerohive solution across its entire campus, realizing immediate results, with plans to expand and evolve the network to meet future demands as needed.

The IT team has a single network for staff and students, and based on authentication credentials users are provided access to authorized areas of the network. The student VLAN connects to the Internet only, and all college-owned devices, such as Chromebooks

students can check out at the library, log in using student credentials. iPads are used in many parts of the campus and at Head Start locations, for giving presentations and as part of digital curriculum.

With up to 9,000 unique devices connected to the network, the IT team is no longer fielding complaints from students or staff, and any troubleshooting is greatly simplified with HiveManager NG cloud management. Integrated RADIUS server capability allows staff and students to securely and locally authenticate, even if the WAN connection is down.

With Aerohive access points, dynamic airtime scheduling and automatic channel selection and power are built in protocols to allow and enable either dual band or dual 5GHz modes using software configurable radios. "Aerohive blew all the competition out of the water," states Farrand. "It's a win-win in a high-density environment like Edmonds Community College to enable auto configuration for channel selection to provide the best throughput, ease congestion, and maximize ROI. By directing particular users to the 5GHz band, we're getting more utilization out of the 5GHz band and relieving the 2.4GHz band for legacy clients. Switching to Aerohive made me rethink our entire wireless strategy and as a result made our network much simpler."

Because Edmonds CC was planning on a 5GHz-based deployment, the ability to switch from 2.4GHz/5GHz to 5GHz/5GHz factored greatly into the decision for purchasing Aerohive as it made sense for the density of its radio deployment. In many cases dual radio access points are deployed and every other 2.4GHz radio is simply turned off to reduce co-channel radio interference. Farrand adds, "With Aerohive we were able to simply switch the 2.4GHz radios that would have been turned off over to 5GHz, providing additional radio coverage to the classrooms involved without increasing the co-channel radio interference. Some of the areas that previously posed challenges have benefitted from the 5GHz configuration and reported significant improvement in network availability."

While all this is happening on the back end behind the scenes, students and staff are simply experiencing what the IT team describes as 'fire and forget', with robust wireless connectivity and the ability to develop more digital classroom and campus tools. The ball field will soon have outdoor Wi-Fi, allowing reporters in the press box to upload stories and coaches to upload video footage from the field, and providing a guest network for fans. Aerohive's PPSK feature is used for a guest network, giving vendors at job fairs the ability to power presentations and allowing campus visitors a simple and secure Wi-Fi connection.

Intelligence at the Edge

With the Aerohive network up and running, staff and students are enjoying a seamless network connection, while the IT team takes advantage of Aerohive's enterprise features to make the Wi-Fi experience as smooth as possible. The innovation of Aerohive's solution and the intelligence features for optimizing high-density will carry Edmonds CC into the future and ensure maximum coverage and return on investment. We'd say that makes the grade.



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

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