



Mountain View Whisman School District

Silicon Valley School District Enables 1:1 Deployment with Aerohive

Challenges

- Unreliable network connectivity and limited coverage
- No central network management system in place
- 1:1 deployment deadline required rapid implementation

Results

- Robust cloud-enabled enterprise Wi-Fi seamlessly deployed across entire district with features to control and monitor network use
- HiveSchool from Aerohive allows teachers to monitor and observe classroom activities
- Aerohive switches create efficiency, cost savings and a mobility optimized access layer

About Mountain View Whisman School District

Mountain View Whisman School District (MVWSD) is located in the heart of Silicon Valley and serves over 5,000 students in Mountain View, California. The District operates 10 schools, including eight elementary schools and two middle schools, with more than 500 employees. In addition to these 10 schools, the District has administration and transportation offices, as well as a separate preschool site.

MVWSD has a diverse student population and its schools have received numerous accolades including National Blue Ribbon School, California Distinguished School and California Gold Ribbon School awards. With tremendous community and volunteer support, the

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—Jon Aker
Director of Technology
Mountain View Whisman School District

District is committed to provide a wide range of support and enrichment for all students to improve student outcomes and learning experiences.

The Challenge

Several years ago MVWSD was at a turning point in integrating technology into the classroom, including plans for a 1:1 Chromebook deployment for all students in grades 3-8. Prior to implementing forward-looking technology upgrades and deploying personal devices, MVWSD was a minimal user of a consumer-grade wireless 802.11g network, with ad hoc HP access points in place used primarily by teachers to check email and for occasional Web browsing via laptops in classrooms. Students were using desktop computers and all wireless access points operated separately, including the limited installation at the district administrative office.

At the same time the District was putting plans in place to enable digital learning and cutting-edge technology in every classroom, the District received early prototype Chromebooks from Google to pilot in classrooms, as well as additional bond funding to upgrade the network to 802.11n/ac connectivity. MVWSD began to evaluate enterprise-class Wi-Fi solutions that could accommodate greater density for an eventual 1:1 deployment across all schools, as well as identify a solution that was flexible and adaptable to expansion and growth. A network architecture with distributed control was mandatory to ensure a seamless and reliable network across all school and administrative sites. In addition, the District was

undergoing multiple new construction and renovation projects, moving away from physical data ports to enabling Wi-Fi as the primary access layer.

The Solution

Nearly five years ago, MVWSD received early prototype Chromebooks from Google which were initially deployed in the middle schools on roaming carts to share among classrooms. Today, the District has more Chromebooks than students, and has positioned its classrooms for high density with continued plans for expansion and upgrades.

MVWSD initially evaluated Meraki and Aerohive, selecting Aerohive for its adaptive architecture that enabled superior levels of availability and resiliency. Aerohive's Cooperative Control enabled wireless mesh network redundancy, allowing the WLAN to route around wired network failures and ensuring no single point of failure.

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MVWSD initially deployed Aerohive AP330, AP370, AP170 and now Wi-Fi runs primarily with Aerohive 802.11ac Wave 2 AP250 access points with MU MIMO capability. In addition, the District uses Aerohive SR2148 switches at its middle schools and administrative offices, with plans for additional future upgrades once new construction projects are complete. HiveManager On-Premises with VMware virtualization allows the IT team to have a complete view of the network and to troubleshoot remotely. Multiple SSIDs are setup for printers, staff, guests and students, directing traffic for optimal connectivity for 5GHz devices.

The Results

MVWSD is a vibrant blended learning environment. Students use technology in a multitude of ways including the use of Google Classroom, Teach to One math curriculum, Google Docs, Edutyping, Khan Academy, Educreations, and ST Math, among many others. Students design presentations and videos and broadcast content via AppleTVs or other devices. Apart from Chromebooks, iPads are used in many classrooms, including unique applications for special education classrooms and outdoor PE classes.

The Aerohive architecture and features have created efficiency, cost savings and greater reliability across the entire district. "Before Aerohive, our network was more difficult to manage. To add additional computers in a classroom we would have to install small 5-port switches. These would often be lost over the summer requiring us to replace them every year. This increased cost and maintenance and was a headache. Now, our network is much easier to manage. With

Aerohive, we have complete visibility into our clients, performance testing is seamless, and we've never again had to purchase those switches for a temporary fix," states Aker. Aerohive switches allow centralized management and visibility, and the District hopes to eventually manage both the wired and wireless network through HiveManager.

MVWSD is a big fan of Aerohive's Private Pre-Shared Key (PPSK), enabling the IT Team to control which VLAN users connect to regardless of what SSID they are assigned and reduce the overall number of SSIDs. Now, IT staff can assign different passwords for the same SSID, with users accessing different VLANs depending on the password. It is possible for guests, students and staff to be on the same SSID but with three different networks with different access restrictions. Spectrum analysis also allows the District to detect and identify sources of interferences to 2.4GHz or 5GHz. Some access points are also configured for RADIUS server active directory authentication. Mapping and surveying tools have provided insight on frequencies, with the ability to turn down power during times of severe interference and allowing the IT team to identify the AP location on maps within HiveManager.

MVWSD uses Aerohive's HiveSchool, a connected learning application to allow teachers to observe student activity and better monitor the classroom. This is gaining momentum within the district and the IT staff anticipates more elementary and middle school teachers will adopt this powerful tool in additional classrooms.

Outdoor Wi-Fi is used by employees at the transportation building, as well as for PE classes where teachers take attendance on iPads. Once new school buildings are complete, outdoor APs will enable Wi-Fi connection in outdoor courtyard and common areas.

Education for the World Ahead

Due to delayed construction plans, the initial middle school deployment had to be completed the weekend before school started producing a baptism by fire in order to get a new solution up and running. With HiveManager's intuitive network management system and pre-configured switches, MVWSD was not only able to meet its aggressive deadline, but set a secure and reliable foundation for network growth and scalability in the months and years to come.

Now with over 6,000 Chromebooks and a 90 percent increase in the number of users and devices from the early network design, Mountain View Whisman School District is positioned for success, and has a strong infrastructure in place to support additional 1:1 programs for lower elementary classrooms.



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

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