



Vancouver School Board

Vancouver School Board Chooses Aerohive for Massive Network Solution to Enable Digital Learning

Challenges

- Overcome physical limitations with old building infrastructure to support new wireless networks
- Secure robust solution across a large, urban district with over 100 sites
- Plan for density instead of coverage, with future room for growth
- Require a secure enterprise network solution within a tight budget

Results

- Controller-less network solution achieves reliable connectivity and meets budget requirements
- Secure network solution in place across all schools and sites with centralized management
- Expertise from Aerohive helps VSB to overcome physical challenges
- Scalable solution can meet future needs and technology initiatives

About Vancouver School Board

The Vancouver School Board (VSB) is one of the most diverse and multicultural urban public school districts in Canada, with 117 schools serving more than 50,000 students. The VSB has a rich history, with its oldest school built in 1892. The Board serves both affluent and impoverished neighborhoods, which provides both opportunities and challenges, and makes access to technology critical for learning programs going forward.

Over 7,000 district staff provide education from kindergarten to grade 12, as well as adult education and continuing education programs. With a budget over \$500M, VSB strives to provide the optimal environment to meet the needs of its diverse district.

In particular, the VSB is committed to technology education, integrating tablets and other learning tools into classrooms. One particular school in the district, The John Oliver Mini School, has a specialty of computer technology and has a 1:1 student to device environment.

Challenge

The VSB was facing an outdated Wi-Fi solution that was comprised of a series of very limited hot spots and was not implemented in all schools in the district. With the existing solution at end of life, the VSB needed to look at its overall technology plan. Acknowledging the future was headed toward greater mobile connectivity, the VSB put a structure in place to enable goals for digital learning.

One of the biggest concerns was the underlying infrastructure. With many district buildings over 100 years old, the VSB faced physical challenges with regard to wiring, limited electricity, difficulty with pathways and spaces, as well as dealing with difficult materials. The VSB undertook a major infrastructure overhaul, with initial phases focused on cabling and wiring, before deploying a wireless network solution across all schools.

A controller-less architecture emerged as a key requirement from the beginning for many reasons. In a district the size of VSB, licensing issues were crucial. If one school had 12 access points and needed 14, an additional controller would be needed, driving up costs considerably.

“Simplicity is key for school districts and it makes complete sense to move network function as close to the edge as possible. IT teams have more than enough items to juggle, from support and management of the wireless network to the design and implementation. The wireless network from Aerohive allows us to focus on future technology initiatives, since we no longer have support and licensing burdens. Aerohive gives us a solid foundation for a long-term mobile education solution.”

—Peter Powell

Infrastructure Manager, Vancouver School Board

The need to match each controller to particular licenses would have created a management nightmare for the IT team. Space was also a consideration, as buildings were not originally designed for data communications, so there was little space allocation for additional controllers, fans, and hardware.

The VSB also wanted to control and assign traffic by device, allocating resources to visitors and students separately. A controller-less solution with simplified network management was a clear mandate.

The Solution

The VSB worked with 4th Utility, a local communications integrator, and after an extensive qualification process, chose Aerohive for its network solution. The VSB has installed just under 3,000 Aerohive access points across all schools, alternate program sites and administrative buildings. During peak times, the network has 15,000 devices, with up to 12,000 concurrent users and an average of 25,000 unique users per day. The VSB designed its network for density over coverage, recognizing that each user will likely have at least two devices. The VSB chose Aerohive AP121 access points and coverage extends to every teaching space, hallway and common area such as theaters and gymnasiums.

The VSB has set up three separate SSIDs, which are identity-based, with one network primarily for VSB-owned devices, a guest network, and network designated for devices or appliances such as printers, Apple TVs and projectors.

The VSB has approximately 3000 iPads and other tablet devices that are shared within the Board. The network is fairly open, with security controlled primarily through the district's firewall. Another level of security is achieved by dividing the network into separate SSIDs, segmenting individually owned Windows-based devices from phones and Mac tablets and laptops. Aerohive's Private Pre-Shared Key is used for all VSB-owned devices, allowing students to authenticate automatically.

The VSB uses HlveManager on site for network monitoring and control, as well as provisioning apps through the cloud. With a large district and an IT networking team of three, centralized management and control through HiveManager has been crucial for the success of the network.

Results

In the last several years leading up to the Wi-Fi deployment, the VSB has taken several steps to ensure success in integrating digital instruction, including hiring Audrey Van Alstyne as District Principal of Learning Technologies. Her team is tasked to engage with teachers and students to incorporate e-learning in the classroom. A critical goal for VSB over the last year has been to provide resources and tools to educators to support professional development for technology integration in the classroom.

Since the Aerohive deployment, VSB has acquired additional tablet devices and will also evaluate technologies like VoIP to enhance its programs. In addition, many classrooms have SmartBoards, projectors or other wireless devices, including mobile carts that enable entire classrooms to connect to the network as needed.

The Aerohive solution has provided VSB with a secure and reliable network, enabling the Board to focus on instruction and curriculum, without adding burden and expense to maintain the wireless network. With the Wi-Fi network in place, the Board can now embark on its plans to equip all teaching staff with laptops, and has begun the initial rollout to over 1000 teachers.

"Simplicity is key for school districts and it makes complete sense to move network function as close to the edge as possible," states Peter Powell, Infrastructure Manager at Vancouver School Board. "IT teams have more than enough items to juggle, from support and management of the wireless network to the design and implementation. The wireless network from Aerohive allows us to focus on future technology initiatives, since we no longer have support and licensing burdens. Aerohive gives us a solid foundation for a long-term mobile education solution."

Having Wi-Fi in place has also opened doors for greater creativity in the classroom using the wireless network. For example, John Oliver School has created a digital immersion program using tablets to boost literacy, and students engage in activities such as video editing and digital storytelling. The school's community garden even has QR tags attached to plants. Other creative digital endeavors throughout the VSB include e-portfolios, gaming for learning, and video production. The VSB also hosts digital fairs to bring students from all schools together to provide a cross-curricular showcase of digital student learning.

Interactive Education Ahead

Aerohive has enabled VSB to equip its schools with a robust and simplified wireless network, paving the way for greater technology integration in every classroom. It is not surprising that several teachers and schools have received awards for the use of technology in the classroom. By taking time to architect the network from the beginning to allow for security and reliability, as well as simplified management, the future for mobile technology at VSB is bright.



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

Aerohive Networks, Inc.
330 Gibraltar Drive
Sunnyvale, CA 94089

toll free 1-866-918-9918
phone 408-510-6100
fax 408-510-6199

www.aerohive.com
info@aerohive.com
CS-VSB 032515