



## About Beverly High

Beverly High School is a public high school educating 1200 students on north shore of Boston, Mass. The school recently moved into a new building, instituted a 1-to-1 Laptop Learning Initiative and has a strong commitment to energy efficiency.

## The Challenge

With the move to a new building, the school wanted an energy efficient network solution to support extensive Wi-Fi usage from the entire school of 1200 students and over 100 faculty and staff members.

## The Solution

Beverly High School selected ADTRAN's vWLAN to install in the new building because of the software-based virtual control and management, ability to cost-effectively accommodate high volume of users and the seamless scalability while being environmentally friendly.

## The Benefit

Because the vWLAN network can handle high volume traffic and users without sacrificing reliability or security, the teachers are able to more effectively integrate technology into the curriculum and deploy a learning management system. Since vWLAN eliminated the controller hardware, the school reduced CAPEX, OPEX and WLAN energy usage costs.

# vWLAN® Brings Green Connectivity to Every Student at Beverly High School



Beverly High School provides a quality and innovative education to over 1200 students in metropolitan Boston, Mass. The public high school recently moved into a new school building that uses the latest wireless technology and green technology, including a wind turbine and a rooftop solar photovoltaic.

Previously, teachers were limited in their integration of online resources and technology into the curriculum because they had to rely on a handful of laptop carts available for classroom use. After installing ADTRAN®'s Virtual Wireless LAN (vWLAN) into their new school building, the school has been able to provide true collaborative learning opportunities for their students through their 1-to-1 Laptop Learning Initiative and improved efficiency for teachers with a new learning management system.

## Real Wireless

In the old building, teachers had to check out laptop carts with 15 laptops when they wanted to share a resource online with their class or use computers for assignments. However, a cart was not always available and valuable instruction time was spent checking out the cart, distributing the computers and then returning the laptops. When a cart was available, students usually had to share a computer with a classmate.

The network consisted of a wired infrastructure with a few small wireless routers to provide connectivity for the laptop carts and was often unreliable.

**"We wanted to provide teachers and students with resources that they needed, when they needed it."**

**Dr. Paul Cohen, Technical Operations Manager at Beverly High School**

During the design phase for the new building, a needs assessment showed that the school needed a technology solution that provided on-demand connectivity for the students and school staff in order to better utilize technology in the classroom. The school also wanted the network solution to contribute to the green school environment.

"We wanted to provide teachers and students with resources that they needed, when they needed it," said Dr. Paul Cohen, Technical Operations Manager at Beverly High School.

The school was planning a rollout of the 1-to-1 Laptop Learning Initiative for the 2011/2012 school year. Each student would have a laptop so the infrastructure needed to support 1300 unique clients, efficiently process the high volume of network traffic and be environmentally friendly. Cohen also wanted an authenticated log in each time a student was active on the network and the ability to monitor both network traffic as well as a student's presence online.



Bluesocket 1800



Bluesocket 1840

## Configurability and Monitoring a Big Selling Point

After looking at several solutions, Beverly High decided to go with ADTRAN's vWLAN solution with the network integrated into the building design. The vWLAN architecture eliminates the wireless controller hardware thereby maximizing network control and scalability, and reducing wireless LAN energy usage by 80%.

ADTRAN's vWLAN solution offers companies in education, healthcare, hospitality, government and retail an excellent solution for wireless that is completely scalable to future technologies. ADTRAN's vWLAN virtualizes the centralized management and control function on software thereby removing 100% of the controller hardware. In addition, the vWLAN enables customers to dramatically reduce the cost of deploying and operating large-scale Wi-Fi networks while providing wired-equivalent performance to wireless users, with seamless roaming and enterprise-class security and policy management.

"When we were looking, we looked at other solutions and they were more expensive. We actually saved money with ADTRAN and we think it's a better implementation," said Cohen. The reduced hardware requirements also translate into decreased energy use and CO2 emissions which supports Beverly High's commitment to energy efficiency.

The configurability of the vWLAN was a big selling point for Beverly High. "When the wireless access changes in a few years, we can easily upgrade the system to handle any new protocols," said Cohen.

The scalability of the vWLAN network allows up to a 10x increase in network capacity without additional controller infrastructure and transparently accommodates more users as the student body grows. The security and monitoring features were also factors in the school's decision to implement the vWLAN. Additionally the school was impressed by the comprehensive warranty and customer support offered by ADTRAN.

## Connectivity for Each Student

When the 2011 school year began, each Beverly High School student had a laptop to use for the year, either leased by the family or on loan from the school. Inside the new building, the vWLAN network was up and running, ready to provide the critical wireless access needed for the Laptop Learning Initiative rollout to be a success.

The deployed vWLAN and the laptop program enabled teachers to improve the quality of the instruction. Cohen said that after moving to the laptop program teachers can have the entire class of students access a relevant website at the same time. "Before they could never depend on all kids having access," said Cohen.

Cohen and his staff use the ADTRAN vWLAN management software to analyze and troubleshoot the network. They utilize the monitoring features to track network use, number of users online and make necessary adjustments when needed. At most points during the day, 600 to 800 students are online at a given time. "We can tell that the students really like it by seeing how much they use it," said Cohen. "When you go into the cafeteria, there are laptops open, and they are all using the network."

**"When we were looking, we looked at other solutions and they were more expensive. We actually saved money with ADTRAN and we think it's a better implementation"**

Now that each student has network accessibility and a computer, the school has also implemented a learning management system for all courses, which also helps reduce paper usage at the school. All course materials are now available online and teachers use the system to collect assignments.

"The feedback that I have gotten from teachers is that the learning management system has really made their life easier," said Cohen. He said the previous network and laptop cart system would not have provided the connectivity or reliability necessary for the learning management system to be effective.

## Upgrading and Moving Forward to a Green Wireless Environment

Because of the ease of use and success with the vWLAN implementation, Beverly High is considering transitioning their wired computers on to the vWLAN network since it can provide seamless support of wireless and wired users. Cohen said he has been very pleased with the customer support. "The engineers and technical support have been responsive and helpful," said Cohen. "The support we have gotten has been terrific."

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