

## CASE STUDY

# LOS ANGELES USD GETS A CLEARPASS FOR SECURING DISTRICT-WIDE WI-FI

After announcing a one-to-one computing initiative for its over 650,000 K-12 students, LAUSD selects Aruba solutions to help unify, manage and secure its multi-vendor Wi-Fi infrastructure.



How do you keep information flowing seamlessly to over two million mobile teaching and learning devices every day?

If you're the technology staff at the second largest school district in the U.S., you invest in the right wireless networking and security tools for the job.

"For several years we envisioned, and began planning for, an optimized learning environment focused on the individualized potential of each student," explains Shahryar Khazei, Deputy Chief Information Officer of the 650,000-student Los Angeles Unified School District. "In addition to engaging students in this mission, it would draw in our other three stakeholder groups — students' families, teachers/principals and central/local administrators."

Called the Virtual Learning Complex, the environment would enable anytime, anyplace learning for LAUSD students, says Khazei. "Among other things, this meant not only putting powerful tools in the hands of our students and teachers, but also building the appropriate infrastructure, including campus Wi-Fi, to support their use."

## BENEFITS

- Supports a secure enterprise Wi-Fi network with 84,000 multi-vendor APs for millions of district-issued and BYOD-allowed endpoints.
- Enables 21st Century teaching and learning, including meeting Common Core requirements.
- Includes secure, vendor-agnostic Aruba ClearPass Access Management System for centralized, comprehensive policy establishment and enforcement.
- Provides industry-leading mobile device management (MDM) integration.
- Utilizes vendor-agnostic Aruba AirWave Network Management for centralized, granular visibility to optimize wireless performance.



**"Since we have a multi-vendor Wi-Fi infrastructure designed to support millions of devices, the ability to effectively secure and manage such a large-scale environment is paramount."**

**Shahryar Khazei**

Deputy CIO, Los Angeles Unified School District

When LAUSD Board of Education approved the first phase of a one-to-one computing initiative in February of 2013, the Virtual Learning Complex vision started to become a reality.

To be successful, Khazei and other district technology leaders knew the initiative would require a number of unseen technical accommodations, such as easy user access, guaranteed user safety, data security and the capability to efficiently monitor and manage the technology.

“In a nutshell,” Khazei says, “no matter what type of device, or how many devices our students and teachers come to school with – whether district-issued or BYOD – we want to supply the same high-quality teaching and learning experience.”

What’s more, LAUSD is committed to maintaining a wireless environment that contains a mixture of brands and product lines for both networking infrastructure and mobile devices. “We’re constantly evaluating infrastructure technologies and end-user devices to ensure we have the best, most cost-effective solutions,” says Khazei. “As a public entity, we’re not exclusive to one brand or product line.”

For example, 30,000 iPads were deployed to 47 schools as part of Phase 1 of LAUSD’s one-to-one computing initiative. To enable this, the district added thousands of new wireless access points (APs) to ensure the targeted campuses met new device and Wi-Fi mobility standards.

Planned subsequent phases include distributing iPads to students and staff at an additional 38 schools, plus issuing 15,000 non-Apple tablets and/or laptops at the high school level. “High school devices may include any of several platforms: Windows, Android or Chrome,” Khazei says. “Once our users have some experience with these devices, we’ll evaluate the program to determine what direction we’ll take with devices moving forward.”

### **VENDOR-NEUTRAL SOLUTIONS ARE THE KEY TO SUCCESS**

LAUSD began its one-to-one initiative by compiling a comprehensive requirements list, collecting bids and examining offerings from various enterprise technology manufacturers. “We intentionally developed stringent specifications that only enterprise manufacturers could meet,” says Jim Del Nostro, Director of IT Security for the district. “That way, we could adopt technology that’s appropriate for our size and scale of organization.”



Among the vendors chosen to contribute to LAUSD’s Virtual Learning Complex was Aruba Networks. In addition to providing over 10,000 indoor and outdoor APs and enterprise mobility controllers, Aruba has supplied two key network infrastructure management solutions capable of optimizing and securing LAUSD’s multi-vendor environment.

The first solution handles network access authentication, ensuring that each device connecting to the wireless network has the appropriate credentials based on district-defined policies. For example, user-owned devices can be limited to Internet-only access while district-issued devices can access various internal eLearning resources.

“This is a critical security feature,” says Khazei. “We need the full flexibility to differentiate student access from that of employees and teachers. It’s also important for us to have the ability to differentiate devices by location, such as a classroom, versus a hallway or a playground.”

“For instance,” he continues, “during assessment periods students may be taking tests on iPads or tablets. So we need Wi-Fi and network access solutions that are intelligent enough to differentiate and prioritize traffic in a manner that is efficient and easy to use. For example, a tablet being used in a hallway may be slowed or denied access to give full bandwidth to the classroom devices participating in the exam.”

After evaluating all of the options, LAUSD chose Aruba's ClearPass Access Management System for its combination of security, functionality and vendor-agnostic operation.

"ClearPass offered all of the features we needed, plus it works with any mobile device over any vendors' wireless infrastructure," says Khazei. "Since we adhere to a multi-vendor model, these capabilities are essential."

### CENTRALIZED, GRANULAR MANAGEMENT OPTIMIZES PERFORMANCE

The second management solution chosen by the district enables Wi-Fi network performance optimization from a centralized dashboard. This solution provides LAUSD's IT staff with the ability to not only view the district's entire network, but also drill-down to individual APs. Such capabilities permit tuning and adjusting the network to meet user needs, enable fast troubleshooting and allow for quick resolution of performance bottlenecks.

"In order to provide high-quality teaching and learning experiences, we need to know specifics," says Del Nostro. "This includes the total number of devices on our network at any given time and the exact APs to which the devices are connected. It's also very important to know the amount of bandwidth each device is consuming."

Similar to device access, a rich feature set and vendor-neutrality played a role in LAUSD's selection of Aruba's AirWave Network Management optimization suite. "Using AirWave, we can manage our entire wireless environment, including the APs from all of the various brands," says Del Nostro.

In addition, AirWave offers granular visibility into which eLearning and mobile applications are being used and how much bandwidth each one requires. With this information, LAUSD can throttle usage of specific applications to ensure digital learning apps receive priority.

Also, AirWave provides pinpoint visibility into how each connection is performing, resulting in faster troubleshooting. "This frees up our IT team to concentrate on education-centric projects while maximizing the connectivity experience for educators and students," Del Nostro says.

“ClearPass offered all of the features we needed”

### CLASSROOM BENEFITS AND BEYOND

When completed, the LAUSD wireless network will span across 750 schools and 84,000 APs, all managed by Aruba ClearPass and AirWave. "We expect to see over two million devices riding on our network at any given time," Khazei says.

At the classroom level, educators and students will appreciate the seamless process of getting on the district's intelligent Wi-Fi network.

"Because our teacher accounts authenticate against Microsoft Active Directory at the server level, our device access management tool, ClearPass, will enable teacher devices to automatically access internal resources," says Del Nostro. "For example, teachers can securely access our learning management system on any approved device, regardless whether it's district-issued or BYOD."

Over time, student accounts will also be tied to Active Directory, says Del Nostro. However, the internal resources students can access will be different than those available to teachers and administrators.

Building such a robust and pervasive Wi-Fi network supports the 21st Century teaching and learning needs set out by the district's Office of Curriculum, Instruction and School Support.

"We're ensuring the technology is available to meet our instructional requirements, including the Common Core State Standards and the Smarter Balanced Assessment Consortium online testing," says Khazei. "Our goal is to provide reliable wireless access that's like electricity or any other utility — teachers and students should just expect secure Wi-Fi to be there, ready for them to use."

Another benefit of the new Wi-Fi infrastructure is the capability to cost-effectively adopt new classroom technologies, like Apple TVs.



“ Using AirWave, we can manage our entire wireless environment ”

“At LAUSD,” Khazei adds, “we want full visibility over who is using our network, as well as when and how they are using it. That’s why seven percent of our network infrastructure modernization cost has been spent on network monitoring and management tools. To create a secure and optimized wireless environment, visibility is very important to us.”

#### ABOUT ARUBA NETWORKS, INC.

Aruba Networks (NASDAQ:ARUN) is a leading provider of next-generation network access solutions for the mobile enterprise. The company designs and delivers Mobility-Defined Networks that empower IT departments and #GenMobile, a new generation of tech-savvy users who rely on their mobile devices for every aspect of work and personal communication.

To create a mobility experience that #GenMobile and IT can rely upon, Aruba Mobility-Defined Networks™ automate infrastructure-wide performance optimization and trigger security actions that used to require manual IT intervention. The results are dramatically improved productivity and lower operational costs.

Based in Sunnyvale, California, Aruba has operations throughout the Americas, Europe, Middle East, Africa and Asia Pacific regions.

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“For every 20 iPads the district purchases, we receive an Apple TV,” explains Khazei. “So managing Apple TVs is becoming more important every day. With Aruba, we receive a built-in tool for utilizing Apple TVs, called AirGroup, which means we gain that functionality without additional costs.”

In addition to teaching and learning apps, the network will provide connectivity for other significant purposes, such as enabling anywhere, anytime computing for non-teaching staff. Other options include streamlining LAUSD’s cafeteria management system (CMS) and point-of-sale devices. “We’re in the process of exploring how ClearPass can help us reduce management tasks for CMS devices,” Del Nostro says.

No matter how a district uses Wi-Fi, robust management tools are a must, Khazei points out. “Before jumping into mobile devices, step back and consider what tools are needed to provide a secure environment,” he says.



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