AUSTRALIAN CATHOLIC EDUCATION OFFICE IN SYDNEY IMPLEMENTS LARGE 802.11AC WI-FI NETWORK

Technology plays a critical role at the Catholic Education Office (CEO) in Sydney, Australia, where the educational vision is enabling students, teachers and administrative staff to work and create content collaboratively across a range of learning mediums, including video, images, sound and text.

Responsible for effectively leading, operating and managing the expansive school system of the Archdiocese of Sydney, the CEO educates more than 65,000 students in 147 parish primary and regional secondary schools.

According to Milton Scott, CTO for the CEO, "Education has become a 24/7 environment, and the Australian government is focused on embedding technology throughout the school curriculum and even in examinations. Therefore, we must move with the times.

"The classroom will look a very different place in even five years' time," adds Scott. "The computer will be the hub for everything that students and teachers do."

Scott envisions that supporting the hub requires a fast, high-performance wireless network scalable to meet the expected explosion in demand. An ideal match for the CEO, Aruba Networks is in the business of optimizing Wi-Fi user experiences. This means high performance and high functionality for students and teachers, regardless of how many or what types of devices they use.

MOVING TO A FASTER, HIGHER PERFORMANCE NETWORK

The CEO's transition to an 802.11ac Wi-Fi network started five years ago in 2008, when the organization first embraced wireless access across its schools' network. At that time it used the 802.11n protocol.

NETWORK SIZE:

- 30,000 Students
- 39 Schools in Sydney, Australia
- 2,400 Wireless Network Access Points
- 40 Management Controllers

REQUIREMENTS:

- Ability to onboard any device type used by the students, teachers and staff — whether school-owned or BYOD — to enable individuals to connect multiple devices simultaneously
- Excellent value with minimal ongoing support requirements
- Seamless integration with the Novell Identity Management System

SOLUTION:

- Aruba AP225s 802.11ac
- Aruba 7210 Management Controllers
- AirWave Management Software 7.7
- ClearPass Access Management System, including ClearPass Policy Manager with Security Assertion Markup Language (SAML)

BENEFITS:

- A high-performance 802.11ac wireless network to support the demands at each school location
- Single sign-on to streamline user access
- Secure guest access
- Fast implementation, with an average installation time of three hours per school

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Since then, demands on the network from teachers and staff members who work collaboratively have increased exponentially, says Scott. "We have also seen a significant shift in both the type and number of devices seeking access to the network. So, in 2013 we initiated a tender process for a faster, high-performance wireless network spanning every secondary school in the Sydney Diocese to support the new technology coming into our schools."

The new network needed to meet four core criteria set by the CEO: the ability to onboard any device type used by the students and teachers, whether school-provided or BYOD; the ability to support individuals connecting with multiple device types on the network at any time; great value with minimal ongoing support requirements; and seamless integration with the Novell Identity Management System.

ARUBA NETWORKS 802.11AC: PROVEN AND READY NOW

Following an extensive network and vendor review, the CEO determined it could gain significant benefits by moving quickly to the 802.11ac wireless standard for its secondary schools.

"During our evaluations, we determined that Aruba Networks is the only provider with 802.11ac technology available now," says Scott. "Aruba was able to prove it could easily install its technology across our entire network, projecting to all corners of our school sites. In addition, Aruba could deliver the greater density required to provide network access to all of our secondary pupils.

"Aruba also stood out because their consulting team demonstrated that their solution was working and able to operate at full 802.11ac speeds," emphasizes Scott. "Beyond that, Aruba demonstrated an immediate performance improvement to our network for 802.11n clients. And it could connect any user via single sign-on to our Novell Identify Management System. Effectively, Aruba's competitors couldn't do any of that."

The new Aruba Networks–powered infrastructure includes 2,400 AP225s Access Points (APs), 40 7210 Controllers as well as AirWave Management Software 7.7 and the ClearPass Access Management System, including ClearPass Policy Manager with Security Assertion Markup Language (SAML). It brings next-generation, high-speed and high-performance Wi-Fi functionality to more than 30,000 users including students (grades 7–12), teachers and administrators spanning 39 secondary schools.

MANAGING ACCESS FOR MULTIPLE BYOD DEVICES

Across the CEO network, students as well as teachers commonly connect up to three devices, including Apple, Android and Windows-based smartphones, tablets and laptops to the Wi-Fi network – at any given time.

"We're now focused on empowering students and teachers to bring their own device," Scott says. To make that effective, we must give them the ability to use their device at home and then come back to school and seamlessly connect to the network."

"Today," he adds, "students are bringing in their school-provided laptop as well as their own personal smartphones, slates and tablets. Many of these client devices already feature 802.11ac capability, such as our MacBook Air fleet."

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– Milton Scott,
CTO for the CEO

CONNECTING 30,000 USERS VIA SINGLE SIGN-ON

With more than 30,000 students, teachers and administrative staff requiring constant access to the wireless network during school hours, the CEO required secure access via a single sign-on.

"One of the most critical and unique features of Aruba is its ClearPass with SAML, which allows us to securely connect any approved student or teacher via a single sign-on to the Novell Identity Management system we use," says Scott.

With ClearPass, the CEO can create and enforce policies that extend across the network to devices and applications, giving them total control over mobility services and a simpler way to deliver Wi-Fi network access to all users.

LETTING GO OF STICKY CLIENT DEVICES

For the CEO, an unexpected benefit of the new 802.11ac Aruba network has been a noticeable improvement in the performance of many 802.11n client devices. In addition to improved user satisfaction, the CEO support desk is receiving far fewer calls from students and teachers regarding Wi-Fi access issues.

One ongoing challenge for the CEO with its previous network was managing sticky clients, which affected iPad, MacBook Air and iPhone users in particular. The previous network struggled to allow students and teachers to move seamlessly around the school, as their devices remained locked to one AP and IP address – often one that was far away from where they needed to be at any given time on the school campus.

Now, thanks to Aruba's AirWave Management Software, students and teachers move around their school with ease.

"Devices easily let go of an IP address when carried from one access point to another," says Scott. "Our Aruba network automatically passes them to the nearest and most appropriate

AP, which means students can work collaboratively in the playground or field, close up their laptop, head back to the classroom, and easily re-establish a connection to the network."

RAPID TRANSITION TO HIGH-PERFORMANCE WIRELESS NETWORKING

The Aruba solution was initially rolled out to nine secondary schools and the Head Office over a five-day period. For 10 days in late September 2013, over the New South Wales school holiday, Aruba installed the network in another 30 secondary schools. The average installation time was a mere three hours per location.

"For this project, we had a great but small and nimble implementation team made up of our Catholic Education Office technical team as well as our partners, who all worked to a highly detailed project framework and timetable," Scott says.

"At the Catholic Education Office, we consider project management and network infrastructure management to be the two core competencies of our IT Services Team," adds Scott. "Nearly everything else we do from a technical services perspective revolves around these two areas.

"As a result," he continues, "the implementation process was really quite easy; in part because we had experience in rolling out this type of equipment before, but mostly because the Aruba Networks purpose-built APs are simple to set up. Also, the management controllers from Aruba are largely 'set and forget.' It's literally install, switch on and move to the next site."

Overall, Scott and his team are pleased with their choice of Aruba and the success of the project. According to Scott, "We felt confident adopting Aruba's purpose-built APs because our past experience with our 802.11n network showed that a modular approach was not justified.

"Our successful Aruba implementation has proven we're far better off upgrading immediately to purpose-built APs that feature the latest 802.11ac components, antennas and processors."

ARUBA NETWORKS: LEADING THE WAVE OF 802.11AC ADOPTION

According to Steve Coad, Managing Director Australia and New Zealand for Aruba Networks, "Many current corporate and education Wi-Fi networks are based on 802.11n technology, some of which are nearly five years old now and are due for their refresh. So, why replace old with old when Aruba Networks is able to deliver 802.11ac today featuring next-generation Wi-Fi with great user experiences, high speed, high performance and high functionality?"

ORGANIZATION OVERVIEW:

The Catholic Education Office (CEO) in Sydney is responsible for the leadership, efficient operation and management of a school system that educates more than 65,000 students in 147 parish primary and regional secondary schools served by the Archdiocese of Sydney, Australia.

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Aruba Networks is leading the way in the adoption of the new Wi-Fi standard 802.11ac with available and proven technology, generating significant interest among organizations of all sizes and types, says Coad. "Organizations wishing to upgrade can feel confident that an Aruba implementation will be successful. We're already seeing highly impressive results in Australia from those who have made the move."

The CEO deployment is an innovative example, says Coad. "They've deployed one of the world's largest Wi-Fi networks available today based on 802.11ac technology. At Aruba, we're proud to be a part of it."

ABOUT ARUBA NETWORKS

Aruba Networks is a leading provider of next-generation network access solutions for the mobile enterprise. The company's Mobile Virtual Enterprise (MOVE) architecture unifies wired and wireless network infrastructures into one seamless access solution for corporate headquarters, mobile business professionals, remote workers and guests. This unified approach to access networks enables IT organizations and users to securely address the Bring Your Own Device (BYOD) phenomenon, dramatically improving productivity and lowering capital and operational costs.

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