



CASE STUDY: Aldinga Beach B-7 School

UniFi AC EDU APs Integrate Wi-Fi with PA System for Primary School in Australia

Ubiquiti Networks® UniFi® AC EDU APs integrate an intuitive broadcast system

UniFi EDU mobile app allows announcements from any iOS or Android mobile device

UniFi PoE Switches provide convenient data and PoE to the UniFi APs

Featuring 33 classrooms, the Aldinga Beach B-7 School is a primary school located in Aldinga, South Australia. 680 students are taught and supported by a team of 70 teachers and staff members.

UPGRADING OBSOLETE TECHNOLOGY

The school previously had a 2.4 GHz-only wireless system that used directional antennas. It could neither scale nor support the rapid rise of wireless usage. Spotty Wi-Fi and low throughput speeds hampered the learning process for students, who increasingly rely on technology since a new BYOD (Bring Your Own Device) policy focused on interactive learning went into effect.

The school also wanted to take advantage of the National Broadband Network (NBN), which is being built across Australia. The Government of the Commonwealth of Australia plans to offer high-speed broadband access to everyone in the country using the NBN and local service providers.

“Our initial PA requirement was to be able to rapidly communicate urgent and important information to the whole school; however, with the flexibility of the AC-EDU, we can easily broadcast to select individual rooms, buildings, or groups of speakers from anywhere using the phone app.”

Kieran Moors; Assistant Principal, Information and Computer Technology Director, Resource Centre Manager; Aldinga Beach B-7 School

To upgrade its communications infrastructure, the school sought both a Public Announcement (PA) system and a high-performance yet scalable wireless network solution to support the 80 computers, 160 tablets, and 130 laptops used on-campus, as well as growing wireless demands in the future.

Leader Computers is a technology distributor that has been serving Australia for over 20 years. Working with a tight budget, Leader provided a Ubiquiti solution that came in under budget and readied the school for the high throughput speeds available through the NBN. Additional advantages over a competitor’s solution included the following:

- 3x more APs to ensure greater wireless coverage
- Integrated PA system to save money
- Intuitive software for easy device management
- No software, licensing, or support fees



Entrance of the Aldinga Beach B-7 (formerly R-7) School



UNIFI NETWORK SOLUTION



Installation of a UniFi AC EDU AP



UniFi AC EDU AP Mounted in a Classroom Ceiling

UBIQUITI PRODUCT SELECTION

The following Ubiquiti products are installed at the Aldinga Beach B-7 School:

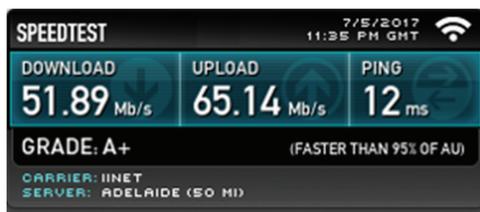
UniFi Model	Number	Purpose
UAP-AC-EDU	54	802.11ac wireless coverage with integrated PA system
UAP-Outdoor+	2	Outdoor wireless coverage
UAP-PRO	5	Wireless coverage
US-16-XG	1	10G aggregation switching
US-48-750W	2	Gigabit switching with 10G SFP+ Ports and PoE support
US-24-500W	2	Gigabit switching with PoE support

“Ubiquiti came in \$12,775 [AUD] under budget with 300% more devices and coverage.”

Ben Klason, National Enterprise Manager, Leader

WIRED DEPLOYMENT

The school’s backbone is gigabit fiber. The router links to the core switch, the UniFi 16-Port 10G Switch, which runs fiber to various servers and switches, including the four UniFi PoE Switches. These are located in different classroom buildings and conveniently provide both data and PoE to the UniFi APs. For greater throughput, each UniFi 48-Port PoE Switch uses an aggregated link connected via dual SFP+ ports.



Speed Test after Upgrade to UniFi Solution

WIRELESS DEPLOYMENT

Most of the UniFi APs took 10 minutes each to install. A few older classrooms that had been cleaned of asbestos also required a custom wall-mounting enclosure devised by Kieran Moors, who led the deployment.

Configuration via the UniFi Controller software took 10 more minutes. Two features in particular enhance Wi-Fi performance:

- The Band Steering feature helps to distribute the load on 2.4 GHz and 5 GHz networks by steering dual-band clients to the 5 GHz band when appropriate.
- The Minimum RSSI feature helps to optimize wireless performance. If a client device’s signal strength falls below the minimum threshold, then the AP drops the client device, allowing it to reconnect with a more suitable AP.

“With our flexible open plan and 1:1 student-to-device alignment, we can end up with hundreds of devices in the same area. The control software has been essential in supporting this, allowing us to steer devices to 5 GHz – freeing up the congested 2.4 GHz space – and forcing devices to other access points when their signal strength is too low and impacting other users of the access point.”

Kieran Moors; Assistant Principal, Information and Computer Technology Director, Resource Centre Manager; Aldinga Beach B-7 School

The school now provides superior wireless coverage and performance with a UniFi AP in each classroom and multiple UniFi APs in high-density areas where students assemble for events or collaborative work.



UNIFI IN ACTION



Library at Aldinga Beach B-7 School

UNIFI CONTROLLER SOFTWARE

The school uses the UniFi Controller software to monitor client device usage and location on the Dashboard, troubleshoot dead spots (also known as black spots) and interference issues, and optimize the placement of access points. IT personnel can disable connection for any client device using too much bandwidth.

COLLABORATIVE LEARNING

The Aldinga Beach B-7 School is one of the STEM (Science, Technology, Engineering, and Mathematics) Works schools. The Government of South Australia funds school improvements to modernize facilities and support the latest educational strategies, including the use of MakerSpaces, open learning areas designed to encourage creativity and collaboration.

High-performance, reliable Wi-Fi takes advantage of the high-speed NBN connection. Students and teachers don't waste time due to an intermittent internet connection; instead, they can focus on the learning process and subject at hand.

WI-FI AND PA SYSTEM INTEGRATION

The UniFi AC EDU AP conveniently integrates high-performance Wi-Fi, public address capabilities, and 802.3at PoE+ compatibility to simplify infrastructure support. It features simultaneous, dual-band, 802.11ac 3x3 MIMO technology that delivers the throughput needed for bandwidth-intensive applications, including interactive learning.

A mobile announcement app called the UniFi EDU app allows the broadcast of announcements with clarity from an iOS or Android-based device. Key personnel, including the school principal, were quickly trained to use the app.

"The experience was great as the software is simple to use."

Kieran Moors; Assistant Principal, Information and Computer Technology Director, Resource Centre Manager; Aldinga Beach B-7 School



Classroom at Aldinga Beach B-7 School

ANNOUNCEMENTS

The UniFi EDU app enables immediate or automated announcements by a single or multiple UniFi AC EDU APs, which provide high-quality sound with accurate voice reproduction. The school automates announcements on a per-speaker basis; for example, some students use the MakerSpaces during lunchtime, so a routine announcement is used to remind them to clean up five minutes before classes resume.

"Teachers can implement their own automated broadcasts within their classrooms, which some are using to automatically play a calm short tune to signal the end of a lesson or free time to provide a predictable and consistent structure for certain activities, such as reading time after the lunch break."

Kieran Moors; Assistant Principal, Information and Computer Technology Director, Resource Centre Manager; Aldinga Beach B-7 School

FUTURE PLANS

The Aldinga Beach B-7 School is undergoing building improvements and plans to upgrade its wired network with additional Ubiquiti switches that offer PoE support or 10G throughput after construction is finished.

Leader provides Ubiquiti training, both in-house and online, and encourages the use of Ubiquiti products to maximize performance/price value with innovative solutions for the education sector all across Australia.

Visit Leader at leader-online.com.au/ubiquiti/

Visit Aldinga Beach B-7 School at www.aldingaschool.org/

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