救恩學校

The Wireless LAN That Doesn't Care About 'Neighborhood' Noise

In the midst of a densely populated residential district in Hong Kong, a leading school is using a WLAN that doesn't care one bit about the noise from over a hundred WiFi networks in nearby buildings, all just a stone's throw from Hong Kong's central business district.

Under the leadership of Mrs. Gloria Chan, Kau Yan School is one of Hong Kong's most dynamic primary school institutions, and one that is constantly leveraging every means at its disposal to further the education and achievements of its children.

Campus-Scale LAN Coverage

Well equipped with teaching and learning facilities, the school building is built on a campus of some 60,000 square feet. It accommodates 30 air-conditioned primary classrooms, a 9-class kindergarten, spacious activity areas, a covered playground, an outdoor basketball court, library, computer rooms, audio-visual lecture rooms and a large school kitchen to keep the school's 700 children and staff well fed. Since the summer of 2010, most of these areas provide a single, contiguous domain of wireless network for hundreds of devices in the school.

Maximizing the Powers of Student Computing

Kau Yan School has been quick to adapt to the changing face of education and makes good use of computer-based educational programs. Mrs. Chan and her staff found that the existing cable network infrastructure was a limiting factor in further expansion of the in-school e-learning process, and so decided to implement a wireless network in the school.

Issues to be Overcome

A number of issues needed to be overcome if the network was going to succeed. Firstly, the LAN would have to maintain continuous mobility across 35,000 square feet of the total campus area, through seven stories including kindergarten, primary school and a roof-top garden. Secondly, WiFi interference was a major concern as the school was set in the heart of a densely populated area and severe RF interference had been monitored

from neighboring residential buildings; over 100 neighboring SSIDs were detected in a site survey done on the premises.

Next, quick deployment was essential to get the system up and running ready for the new year and finally, minimal maintenance was a really important factor for Mrs. Chan.

It was Leapa Ltd., Kau Yan school's wireless network consultants who suggested the Extricom WLAN solution. It seemed to fit the bill by guaranteeing performance over such a scope of multiple stories and wide floor space and claiming a virtually maintenance-free solution. The school manager recalls, "Simplicity of management was essential. We use both 2.4Ghz and 5Ghz bands. The result was even better than I'd hoped for and it has proved to be very easy to maintain."

Homework

Mrs. Chan and her staff had done their own homework and recognized the Extricom solution as one standing out from the others they had looked at. Its unique blanket architecture, as opposed to the common cell-based approach, appealed to the school management right from the start. It simplified the whole planning process of the access points and contributed to wireless signal continuity at the same time.

"I knew from my research that the roaming characteristic in LANs would be a major obstacle to moving around the campus without breaks in the connection", recalls Mrs. Chan.
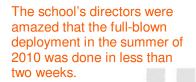
> "
> Simplicity of management was essential. We use both 2.4Ghz and 5Ghz bands. The result was even better than I'd hoped for and it has proved to be very easy to maintain.
> "

Mrs. Gloria Chan, Principal, Kau Yan School

Project Scope

To turn a 7-floor school campus into reliable continuous 2.4Ghz/5Ghz WLAN for next-generation in-school e-learning amidst intense WLAN interference from neighboring buildings.

Solution

8 channels on 802.11 via 4 channel blankets. Two Extricom switches, EXSW 1200/2400, 33 EXRP-40 access points (one external) provide the hardware infrastructure for both 2.4Ghz and 5Ghz bands.

Results

Primary school learning techniques on the next step. Unrestricted computer-based learning on 100 concurrent devices (60 notebooks, 30 netbooks and the rest wireless desktops), with plans to introduce e-book readers in the coming months.

Deployment

The deployment was carried out by Leapa Ltd., one of Hong Kong's leading network consultancies. Leapa's Ray Cheng explained. "Mrs. Chan wanted to deploy first on one complete floor of the main school building". This was done in the summer of 2009 and if the WAN worked to school's satisfaction, they would expand it later.

Mrs. Chan described her impressions after the summer of 2009. "We saw in the first stage that Extricom's LAN gave us true continuity, just as Leapa had claimed. This was what made us decide to cover the whole campus with WLAN the following summer".

The full solution was deployed a year later, the following summer, but not without some apprehension on the part of the management that it would be up and running at the start of the school year. The third floor was one thing, but the rest of the school was another – or so they thought. "Mrs. Chan and the school's directors were amazed that the full-blown deployment in the summer of 2010 was done in less than two weeks" says Ray.

A total of 8 channels were implemented on 802.11, via 4 channel blankets. Two Extricom switches and 33 access points (including one external) provide the hardware infrastructure. Both the 2.4Ghz and 5Ghz bands are used.

Excitement

The Extricom WLAN was adopted with great excitement in the school. E-learning and self-learning applications are now used by some 100 end-points concurrently and this is expected to grow in the near future. A guest portal and 2 separate private networks are operated too and the fears the management once had, of the impact of interference from neighboring buildings, have long since dissolved.

Today the devices used are made up of around 60 notebooks, 30 netbooks and wireless desktops. The school has plans to introduce e-book readers like iPads in the coming months.

Kau Yan School's proud principal, Mrs. Gloria Chan sums up the move to the Extricom wireless LAN system. "It has given us the infrastructure we needed to advance our educational program as planned, to provide unlimited mobility of wireless devices anywhere on our campus".

Wireless that Works