

# WIRELESS

## BRISBANE BOYS' COLLEGE IMPLEMENTS A HIGH-SPEED 802.11A WIRELESS NETWORK

**BRISBANE BOYS' COLLEGE IS A DAY AND BOARDING SCHOOL CATERING FOR BOYS IN YEARS 4 TO 12, AND HAS BEEN PREPARING STUDENTS FOR THE CHALLENGES OF LIFE SINCE 1902.**

Originally opening its doors with four students, BBC today has more than 1400 students in its Junior, Middle and Senior Schools. Nestled in the hillside at Toowong, four kilometres from the City, its idyllic location and extensive grounds cover 12 hectares. While the school and campus are steeped in

tradition, the IT facilities are state-of-the-art. As well as computer labs for student use, a new initiative enables staff and students to use wireless-enabled laptops across a high-speed network to support their teaching across the campus.

### THE CHALLENGE

**WHEN SEEKING TO EXPAND NETWORK ACCESS ACROSS THE CAMPUS AND INTRODUCE COMPUTER NOTEBOOKS TO STAFF, AFZAL SHARIFF, IT DIRECTOR, WAS ANXIOUS TO ALLOW FOR MAXIMUM FLEXIBILITY WITH MINIMUM IMPACT ON THE FACILITIES.**

"There are several reasons why wireless networking appealed," he said. "From a practical perspective, wireless networks reduce infrastructure costs, are easy to set up and can rapidly accommodate the needs of new teaching staff, relocations and office or classroom reconfigurations. Another compelling reason was that our heritage listed main building was largely 'cable-free', preventing teachers from using their notebooks to connect to the network in order to access data and files on the school's server. Once I realised that wireless technology was the most practical, cost-effective choice, I had two main selection criteria for the product: speed and security."

With teachers wishing to use more innovative teaching methods including accessing the Internet, streaming video and demonstrating software in real time, Shariff wanted to ensure the Wireless Local Area Network (WLAN) had the greatest bandwidth available. He also needed to be confident that it could provide the same level of security, manageability and scalability offered by wired LANs.



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## THE SOLUTION

**THE JUNIOR SCHOOL CAMPUS HAD ALREADY SUCCESSFULLY INSTALLED AN 802.11B WIRELESS NETWORK, WHICH OFFERED ACCESS SPEEDS OF 11MBPS. FOR THE SENIOR SCHOOL, SHARIFF INVESTIGATED THE EMERGING 802.11A WIRELESS STANDARD AS A SENSIBLE LONG-TERM OPTION. THE TECHNOLOGY IS NOW A STABLE, ACCEPTED STANDARD AND THE HIGH-SPEED 54 MBPS TRANSFER SPEEDS ARE IDEAL FOR THE TEACHERS REQUIREMENTS.**

After careful research, Shariff chose Cisco Aironet 1200 Series wireless Access Points (APs) as a smart scalable solution. He explains: "The 1200 series APs support both 802.11b and 802.11a and feature a 5GHz radio delivering up to 54 Mbps on all eight channels, allowing the network to accommodate a large number of users as the school's needs grow, down the track.

"We also wanted a solution that could accommodate future technology requirements and Cisco's 1200 series Access Point allows for future standards. For example, the 802.11g standard will be supported via a field upgrade and the APs have more than 4 times the amount of storage required to allow for future upgrades.

"The Access Points are easy to administer using Cisco IOS software. They can manage up to 16 Virtual Local Area Networks (VLANs) which allows network managers to differentiate LAN policies and services, such as security and QoS for different users."

Cisco Aironet products support 802.1p Quality of Service (QoS) enabling traffic prioritisation for packets travelling to and from the access point over Ethernet. This keeps the network traffic flowing smoothly. Additionally they feature Proxy mobile IP enabling users to maintain seamless connectivity as they roam across subnets.

Shariff's second concern, security, was addressed by the Cisco Wireless Security Suite, which for the Cisco Aironet series provides robust security services that closely parallel the security available in a wired LAN.

He comments: "It's a 802.1X based solution which provides scalable, centralised security management and supports dynamic per-user, per session WEP encryption keys to protect the privacy of transmitted data.

"This allows encryption keys to be dynamically rotated as opposed to static keys, which are more vulnerable to hackers.

**"OTHER FEATURES INCLUDE AUTHENTICATION, MESSAGE INTEGRITY CHECKING, AND PER PACKET KEYING TO ENSURE THAT EVERY DATA PACKAGE IS ENCRYPTED WITH A DIFFERENT KEY. WE ARE NOW CONFIGURING AND ACTIVATING THESE FEATURES TO PROVIDE ROBUST SECURITY FOR SCHOOL DATA."**

**AFZAL SHARIFF, IT DIRECTOR, BRISBANE BOYS' COLLEGE.**



# THE RESULT

**THE DEPLOYMENT OF THE CISCO WIRELESS ACCESS POINTS ACROSS THE SCHOOL CAMPUS IS IN KEEPING WITH THE SCHOOL'S VISION TO BE AT THE FOREFRONT OF EDUCATION. AS A RESULT, BRISBANE BOYS' COLLEGE HAS AN IT PROGRAM WHICH IS INTEGRATED ACROSS ITS' CURRICULUM.**

Shariff said: "Staff with notebooks can access the network from anywhere in the school including the cable-free buildings. Once connected, they can print, access and retrieve assignments, data and files and send and receive emails. The 54Mbps connection ensures that downloading and uploading of data is very fast – an important feature when you have 45-minute lessons.

Afzal Shariff recommends that schools looking to deploy wireless technology should make speed and security their first priorities.

"Investigate your options thoroughly and think about your future requirements as well as your current needs," he said.

"It's also important to select a company that understands your environment and is prepared to offer the right level of support. No other vendor could match Cisco's offering and their service and support were excellent, based on our previous experience," he said.

**"THE WIRELESS LAN HAS MADE IT MORE PRACTICAL FOR TEACHERS TO CONDUCT CLASSES AND EASILY CARRY OUT ONLINE SEARCHES AND DEMONSTRATIONS AS DAY-TO-DAY ACTIVITIES."**  
**AFZAL SHARIFF, IT DIRECTOR, BRISBANE BOYS' COLLEGE.**



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