

BRIDGE TO THE FUTURE

CISCO AIRONET SERIES POWERS NEW ZEALAND'S FIRST WIRELESS COLLEGE



USING CISCO AIRONET® 340 AND 350 SERIES PRODUCTS TO AUGMENT A CISCO ETHERNET-BASED LOCAL AREA NETWORK (LAN), SAINT KENTIGERN COLLEGE HAS BECOME THE LARGEST WIRELESS COLLEGE CAMPUS IN NEW ZEALAND. THE INDEPENDENT COLLEGE IN AUCKLAND, THE NATION'S LARGEST CITY, HAS APPROXIMATELY 1,150 STUDENTS AGED 12 TO 18.

Most of the students have notebooks, which are in use approximately 50 percent of the time, according to Scott Bain, business development manager for Cisco Wireless in New Zealand. "Saint Kentigern College is no newcomer to the benefits of notebooks in the classroom and already has had a good LAN, with a number of Cisco Catalyst® 2900 Series switches, in its infrastructure. However, there were never enough Ethernet ports in the

rooms. Whenever a classroom was rearranged, the ports were invariably in inconvenient spots," he said.

"That wasn't all. Students would accidentally trip on cables, pulling notebooks to the floor and therefore causing damage," he said. "Wireless eliminates this hazard and simultaneously removes the need for all the additional cabling that an expansion of the wired system would require."

THE CHALLENGE

THE BIGGEST PROBLEM AT SAINT KENTIGERN COLLEGE WAS ACCESS. WITH THE WIRED SYSTEM, IT WAS DIFFICULT FOR EVERYONE WHO WANTED TO BROWSE THE COLLEGE'S INTRANET OR DO RESEARCH ON THE INTERNET TO GET ONLINE AT THE SAME TIME.

"That's the main reason that Saint Kentigern College wanted wireless," Bain said. "It allows everyone access when they need it. Additionally, it allows for easy and virtually unlimited expandability."

Thirty-one Cisco Aironet 340 Series Access Points were deployed among the college's 12 main buildings. The access points are the wireless transceivers that connect to the college's cabled backbone infrastructure. While Cisco Aironet products are fully 802.11b and WiFi-compliant, they also provide superior tiered security from 128-bit wired equivalent privacy (WEP) encryption to the dynamic 802.1X security framework developed in conjunction with Microsoft.

To ensure optimal wireless coverage for each classroom, a number of high-gain, directional Cisco antennae

were installed. The entire system was up in three days, following a two-day site survey.

For Internet connectivity, a Cisco Aironet 340 Series Wireless Bridge connects Saint Kentigern College's LAN to the Web via Walker Wireless, a local wireless broadband operator that teamed with Cisco in equipping the college with its wireless network.

The wireless bridge provides high-speed, long-range point-to-point and point-to-multipoint wireless connections between Ethernet networks. Standards-based direct-sequence-spread spectrum technology enables a data rate of up to 11 Mbps at distances up to 29 kilometres. Wireless bridges are not deterred by such physical barriers as freeways or bodies of water, and range and performance are unaffected by inclement weather.

THIS IS THE POWER OF THE NETWORK. **now.**

CISCO SYSTEMS



THE SOLUTION

TO ACCESS THE WIRELESS LAN, EACH STUDENT'S NOTEBOOK IS EQUIPPED WITH A CISCO AIRONET 350 SERIES CLIENT ADAPTOR CARD. THE CLIENT ADAPTORS SUPPORT DATA RATES UP TO 11 MBPS AND HAVE A NUMBER OF SECURITY FEATURES.

In addition to classrooms, much of the outdoor area within the campus is covered by the wireless system. The college's three dormitory blocks also have access to the WLAN.

Most of Saint Kentigern College's students live at home and commute daily to the college. Where home access to the college's LAN and the Internet is needed, Walker Wireless has developed a "Wireless Home Option." This option includes a Cisco Aironet 340 Series Base Station installed in the student's home. Wide, strong coverage has proven to be a key factor in the success

and popularity of the wireless system, according to Walter Chieng, Saint Kentigern College's director of information technology. "Through notebook computers connected to the wireless LAN, students are able to connect their notebooks from within 100 metres of any access point and can download their schoolwork for the day in seconds. Students – and staff – can now access resources on the intranet, communicate via e-mail, collaborate online, and access the Internet for research and other online resources without being restricted to where and when they can connect on the campus."

THE RESULT

THE TECHNOLOGY-SAVVY GENERATION OF STUDENTS AT THE COLLEGE DID NOT HAVE ANY PROBLEMS ADOPTING THE USE OF THE TECHNOLOGY, AND THEIR LEARNING HAS BEEN TRANSFORMED AS A RESULT OF BETTER AND EASIER ACCESS TO ONLINE RESOURCES AND TOOLS.

"Cisco Aironet was our product of choice," Chieng said, "because we believe that it is the best product on the market for delivering wireless to the students on the campus. Reliability and security were two major factors considered in making this decision. Furthermore, it gave us the opportunity to work with experts in the field from Cisco and Walker Wireless to build an effective wireless LAN to support a thousand users throughout the campus."

Cisco was named as a partner in building Saint Kentigern College's wireless system following a series of field tests. The range, quality of data transfer, unobtrusive installation, and tiered security features in the Cisco Aironet system were judged superior in bench tests against two competitive products.

Another factor in Cisco's favour was its reputation with the college. "They knew the kind of responsiveness they could expect from us. They also knew that we would help them upgrade any Cisco Aironet product as new features became available," Bain said.

The announcement by the IEEE of new 802.1X wireless security standards also weighed in Cisco Aironet's favour. "Saint Kentigern College was quite interested in all the new wireless LAN standards. We showed them how Cisco had co-developed authentication with Microsoft – called LEAP – that is understood by both a client and an authentication server. This framework is now being adopted by other vendors and really defines the cutting edge of dynamic per user, per session wireless security," Bain said.

"THE SECURITY FEATURES OFFERED BY THE CISCO WIRELESS SOLUTION CONTINUE TO PROVIDE US WITH THE FUNCTIONALITY THAT WE REQUIRE IN OUR NETWORK OPERATIONS. WE LOOK FORWARD TO FURTHER ENHANCEMENTS TO OUR NETWORK SECURITY BY ADOPTING NEW TECHNOLOGIES SUCH LEAP IN THE NEAR FUTURE."
**WALTER CHIENG, DIRECTOR OF INFORMATION TECHNOLOGY,
SAINT KENTIGERN COLLEGE**

"The security features offered by the Cisco wireless solution continue to provide us with the functionality that we require in our network operations," Chieng stated. "We look forward to further enhancements to our network security by adopting new technologies such as LEAP in the near future."

In reviewing the project, Chieng summarised his thoughts this way: "Saint Kentigern College implemented a wireless LAN so that it will increase mobility and connectivity. As we are a college where students come equipped with their own computer notebooks, increased mobility and connectivity has added another dimension to the way they learn, where and when they learn and what additional tools they can employ in their learning process. It has really made anytime anywhere learning a reality and cost effective."

Warren Peat, Saint Kentigern College's Executive Head, praised the new wireless system, stating that it has "proved exceptional from every perspective. It gives our students access to electronic resources on the college's local intranet and the Internet any time and anywhere. We truly are on the verge of a breakthrough in the way we will think, plan, and operate as the result of going wireless."



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