CASE STUDY

WLAN

EDUCATION

WLAN

University of Tennessee Wireless

The University of Tennessee at Knoxville offers undergraduate, graduate and professional education to over 27,000 students and employs more than 4,000 faculty and staff. As one of the premier universities in the state, the University is at the forefront of using technology and has recently deployed a campus wireless network using Proxim's ORiNOCO AP-2000 dual slot access point to provide students and faculty with easy access to high-speed Internet and the wired campus network.

Over 4,500 students and faculty are registered to use the wireless network and about 1,200 use it on a daily basis to wirelessly connect from their laptop computers. Many programs, including the Business School and Architecture School, require students to have a laptop since many classes use the wireless network for online instruction and for conducting quizzes and exams online. In addition, students use the wireless network to access email, conduct web research and to download course documents. Faculty and staff also employ the network for online meetings and conferences, as well as for email and web research.

With a budget of around $2.5 million, the entire campus wireless network was installed and was up and running in a period of about twelve months. This included site surveys to determine optimal placement of access points, as well as the actual installation and fine-tuning of the network.

The University's wireless network uses over 1,200 ORiNOCO AP-2000 dual slot access points, deployed with an 802.11b radio in one of the two available radio slots. The University selected the AP-2000 because of its dual slot architecture, which enables easy upgrades to the new and faster 802.11a or 802.11g technologies by simply adding an 802.11a or 802.11g card to the second slot of the access point. No other vendor offers access points that provide the flexibility, real-world reliability, and the required network management capabilities.

The campus is composed of nearly 130 buildings, over one hundred of which offer wireless connectivity via Proxim's AP-2000 access points. Only the dorms do not have access, as each dorm room has its own 100 Mbps Ethernet connection for a direct network connection. When students are in class or studying in the library, they can access the network using either a Wi-Fi PC card or a Wi-Fi radio embedded in their laptop.

Additionally, although the University has not yet mounted antennas on roofs and outdoor structures to provide outdoor connectivity, in many places the wireless coverage extends beyond the walls of the buildings themselves, enabling students to connect in outdoor and public areas.

"The architecture is simple: one main-campus subnet (one VLAN with 920 APs), one Agricultural Campus subnet, and multiple smaller subnets for buildings off campus (on T-1s or DSL connections), " said Philippe Hanset, the campus wireless-network manager. "We saved a lot of money by using Proxim's Power over Ethernet feature. Instead of installing separate power outlets for each access point,

we are able to feed DC power to the access points over the same Ethernet cables that supply the data connection."

The University network administrator also wanted to make it easy for students and faculty to use the network, without sacrificing security. Students and faculty simply go to a registration page that prompts them for their ID and password and they are joined to the network.

The University if Tennessee network was engineered with higher speed wireless in mind. Currently, using just one radio in the dual slot AP-2000 access points, there is plenty of wireless coverage campus-wide. If they wanted to use a second 2.4 GHz radio in the access points, they would have to re-engineer the radio space because the available 2.4 GHz is saturated.

"We are leaving the second slot available for the next wireless technology," according to Hanset. "We are doing test pilots with 802.11a, but are waiting to settle on the next technology, which is not obvious yet. The AP-2000 gives us that flexibility as it supports both 802.11a and 802.11g, so we don't have to make a decision today."

Proxim WIRELESS NETWORKS

Proxim Corporation
935 Stewart Drive
Sunnyvale, California 94085

tel: 800.229.1630
tel: 408.731.2700
www.proxim.com