UNIVERSITI MALAYA IMPROVES MOBILITY AND SAVES $1.4 MILLION WITH NETWORK RIGHTSIZING
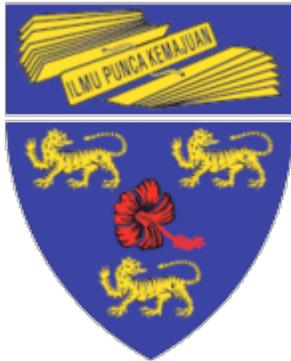
Universiti Malaya (UM), a renowned research university, depends for almost every aspect of its academic mission on digitally connecting its 30,000 students and staff. In 2008 the university's Ethernet switches were approaching the end of their service life and an edge refresh was needed. However, users increasingly sought expanded wireless access. University Malaya's IT team realized that paying for system-wide upgrade and expansion of redundant wired and wireless networks was incompatible with their cost reduction goals, thus a dilemma loomed large.

Continued reliance on Ethernet as the primary form of network access would require the replacement of more than 250 Ethernet switches, the addition of another 300 switches to support the growing number of users, and the installation of 7,200 new cables just to provide basic campus coverage. The total cost was expected to exceed $1.97 million, and once completed it still would not address the growing need for mobility. In addition to being costly, Ethernet was students' stated last choice for network access. Moreover, pending voice over Wi-Fi and wireless closed circuit television projects mandated some level of expansion of the wireless network.

In the tradition of great research organizations, UM undertook a thorough investigation of the current and future requirements for network access. Topping the list were high network availability and security. Performance needed to equal or exceed the broadband experience users had at home, even as the network scaled to serve more than 30,000 users. Network security included protection of the main campus as well as several additional remote sites. Both security and management needed to be centralized in order to efficiently deliver robust service level agreements. The university also wanted a single SSID for its wireless users, having already discovered that too many SSIDs tended to confuse users and overwhelm the Help Desk. The conclusion? UM determined that only an adaptive wireless LAN could meet their needs.

That question settled, the next logical question was how much of the Ethernet network was still required. Not much, it turned out. An adaptive wireless LAN would have sufficient bandwidth, and provide the necessary stability, to meet the needs of most users. Students had demonstrated their preference for wireless, leaving

REQUIREMENTS:

- Secure, scalable, centrally managed pervasive wireless LAN
- Needs-based quality of service policy for diverse academic community
- Support voice over Wi-Fi and data on a single campus SSID

SOLUTION:

- Aruba 6000 Multi-Service Mobility Controller
- Aruba AP 125 802.11n and AP-70 Access Points
- AirWave Management Suite
- Policy Enforcement Firewall

BENEFITS:

- Saved more than US $1.42 million in first year by eliminating ports, cables, switches, and labor costs associated with the campus-wide closet refresh and network expansion
- Eliminated 80% of ports in classrooms and staff areas
- Provided high network availability and security
- Reduced IT overhead by centralizing network management and providing remote diagnostics and updates

"Network rightsizing with Aruba wireless LANs reduced our wiring closet refresh costs by more than 70%, and will save approximately US $1.4 million dollars as we complete the second phase of our campus-wide network expansion."

Mr. Ng
Head of Networking
Universiti Malaya's campus-wide wireless project

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ports assigned for their use largely unused. UM's IT staff realized that the deployment of a pervasive wireless network would further accelerate the migration away from Ethernet, making it unnecessary to replace most of the aging switches.

Since wireless access points cost roughly one-third to one-sixth as much as the switches they replace, there was an added incentive to replace as many switches as possible with wireless access points. Using wired Ethernet only where absolutely necessary and wireless LANs everywhere else defines the essence of network rightsizing.

The next step was selecting the wireless LAN. For this decision, UM had previously deployed a wireless network, but realized it was insufficient to meet their new objectives. "We were looking for a wireless LAN that could provide a single SSID for both data and voice applications, set privilege levels based on device or user identity and roles, and centrally manage everything with powerful, easy-to-use tools," said Mr. Ng, Head of Networking for Universiti Malaya's campus-wide wireless project. "Only Aruba Networks could deliver the reliability, security, and manageability we required to rightsize our network with a new campus-wide WLAN. And Aruba saved us more than US$1.4 million in the process."

To meet the university's network management requirements, the Aruba wireless controllers are centralized in a single data center serving all campuses. Aruba's AirWave Wireless Management Suite was selected as the primary management tool, and provides visibility into every network and device, automates most management functions, and tracks users and usage history. The increased level of control and efficiency afforded by the tool have lowered IT overhead while increasing network uptime.

In addition to top-notch encryption and authentication services, the new network features secure guest access and automated rogue detection to address UM's security concerns . Aruba's policy enforcement firewall monitors and controls bandwidth utilization on a per application, device, location, time of day, user, or group basis – ensuring that the network is available at all times for essential applications.

Looking forward, UM believes the Aruba wireless LAN will spark new innovations simply by virtue of the unfettered network access it provides. "Currently, voice, video and data are the most important applications, but we expect that the availability of pervasive connectivity will spawn the development of new collaborative, research, and learning applications," said Mr. Ng. While network edge rightsizing provided the original incentive to deploy a wireless LAN, the network itself may soon become the foundation for a new generation of technology innovations.

ORGANIZATION OVERVIEW:

Established in 1904 in Kuala Lumpur, Universiti Malaya has more than 30,000 students, staff and faculty from more than 90 countries. The university has 17 research centers that cover the Arts, Sciences, and Humanities. Universiti Malaya has frequently been ranked one of the world's top 200 universities, and counts many prime ministers and presidents among its alumni. University researchers have been honored with awards in many fields, and continue a strong tradition of research and innovation.