


Case Study

Providing the foundations to embrace the digital age at RMIT with 10Gb/s VERNet WAN

Over the last two years RMIT University has undertaken a program of work to provide the technology foundations that prepare for the future requirements of RMIT's students, researchers and staff in today's digital environment. The result? A sophisticated infrastructure that has opened up a world of opportunity for technological innovation, and future-proofed the university for many years to come.

The Project – Network Standardisation – undertook a significant upgrade to the university's eight-year-old core network infrastructure, the alignment of existing data centre services with the new core network, an equipment refresh, and the decommissioning of a number of legacy services. The upgrade has provided RMIT with advanced, scalable wired and wireless networks that enable users to enjoy a seamless, highly available, secure experience – consistent highspeed performance across the university.

VERNet's engineering team worked with RMIT's engineering and project management teams to design an efficient, cost effective and future-proof solution to align the university's core network upgrades with critical paths between its main campus and its data centres. VERNet added three 10Gb/s diverse services to RMIT's WAN, between the university's two major CBD campuses and two data centres located here in Melbourne. An existing 10Gb/s service between two data centres was also renewed, and a temporary 10Gb/s service was provisioned for a few months to assist with the university's network migration.

A photograph of the RMIT University building in Melbourne, featuring a modern, angular facade with a grid of glass and metal panels. The building is situated in an urban environment with other buildings and streets visible in the background.

High performance networks, digital platforms and best in class campus technologies provide our students an amazing experience and flexibility to learn anytime, anywhere consistently and securely

Mr Sinan Erbay, Director University Operations RMIT

Challenges

- Network required more capacity & redesigning to support new services
- Massive growth in demand for wireless services
- Need for improved security, performance and risk minimisation



Solution

- Multiple 10Gb/s services between campus and Data centres
- Temporary 10Gb/s service provided to minimise downtime during complex migration
- Majority of production environment relocated to the cloud



Benefits

- Future proof capacity enables new services to be launched
- Highspeed, seamless roaming experience for students and staff

Challenges

With 30,000 concurrent wireless users and 60,000 individual devices connecting per day across the network - in Melbourne and also similar volumes in Vietnam - RMIT needed to ensure that both its wired and wireless networks would provide a seamless experience for students, staff and researchers; now and well into the future.

To achieve this, the university's eight-year-old core infrastructure needed to be upgraded and redesigned, requiring a high capacity, low latency solution that would provide secure services for users. With the dramatic increase in usage over the past few years set to continue, the new infrastructure needed to not only sustain its high performance now, but also be efficiently scalable to meet future demand as the university grows.

Solution

The network was redesigned to retire a number of legacy services and old infrastructure, and then be migrated to a new 10Gb/s core fibre-based network.

The complex migration component of the core upgrade required that all service upgrades be carefully project-managed and provisioned to minimise service disruption.

150 buildings across Melbourne, Vietnam and Barcelona were migrated to the new Network.

Benefits

RMIT has gained a 100% increase in network capacity and improved service uptime, now achieving 99.99%, 24x7, 365 days per year. The network is capable of supporting 10Gb/s throughput, supporting the digital demands expected by today's generation. The network is supporting 30,000 - 40,000 students and staff on campus on any given day. With spare capacity available to meet unplanned demand, enabling the university to manage events such as Open Days.

Another area that has seen significant benefit from the upgrade is the university's research sector - research data volumes are unpredictable, and bandwidth needs to be accessed immediately without causing degradation to other parts of the network. The upgraded infrastructure now manages these fluctuating volumes easily, without disrupting day-to-day operations.

Overall, the transformation has enabled RMIT to provide a much higher quality, more consistent experience for students, staff and researchers. The increased bandwidth has opened up new options for the university that weren't possible before. With plans to adopt innovative cloud-based technologies in the future, there's a lot more to come.

ABOUT RMIT: RMIT is a global university of technology, design and enterprise. Offering undergraduate, postgraduate and vocational programs and courses that are global in focus and practical in application. See more by visiting www.rmit.edu.au.

ABOUT VERNET PTY LTD: VERNet designs, builds, operates and manages a network that enables Educators, Researchers Students and Health professionals to exchange ideas and communicate faster. VERNet is the preferred supplier of high bandwidth connectivity to the research and education sector in Victoria providing customers leading edge technology and services for the best value for money. See more information by visiting www.vernet.com.au.