![Extreme networks logo]

MANUKAU INSTITUTE OF TECHNOLOGY
Te Whare Takiura o Manukau

Executive Summary

Industry

- Education

Environment

- 14,000 students
- 1,300 staff
- BYOD policies in place for students and staff
- Five campuses throughout the wider Auckland region of NZ

Technology Needs

- Reliable, high-performance wired and wireless networking
- Ease of onboarding and management of devices and users
- Ability to support smart infrastructure and digital workplace solutions

Extreme Solution Components

- ExtremeCloud™ IQ
- ExtremeXOS Switching
- ExtremeWireless™ AP510 and AP650 series
- ExtremeWireless™ AP250, AP230 and AP1130 series

Results

- Secure and seamless online and remote user access to services and applications
- Reduction in overall network management costs and resources
- Enabling MIT's rollout of digital transformation and business innovation initiatives

Manukau Institute of Technology Brings Digital Transformation Vision to Life for Staff and Students

Manukau Institute of Technology delivers vocationally focused tertiary education, research, and technology transfer that ensures Auckland's economy, graduates, employers, and communities have the capability and skills to achieve their potential. In 2020, Manukau Institute of Technology celebrated its 50th year of operation with the opening of its newest campus, TechPark, which will bring all of the institute's trades and engineering schools under one roof. TechPark is Manukau Institute of Technology's fifth campus and embodies the institute's digital transformation vision with state-of-the-art facilities for learning in ways that reflect modern industry and engineering practice.

In 2015, Manukau Institute of Technology embarked on a long-term consolidation and standardization strategy designed to create a seamless and enhanced teaching and learning experience for staff and students. The strategy also provides the organization with more efficient and effective processes, and reduces risks through better management of information.

For the in-house IT team looking to transform its current mode of operation, they were challenged with a network environment comprising more than 12 different technology vendors and brands.

"As a higher education institute, our funding differs greatly compared to that of a corporate organization of a similar size so we need to invest in IT tools that are simple, easy to use and deliver maximum value to our users. In the past we had an ad hoc compilation of networking technologies that were not all compatible. In fact, many were counter-productive, and required a number of different skill sets, making it complicated and expensive to run."

Jenna Woolley, Executive General Manager, Technology at Manukau Institute of Technology.

"For our network journey, we knew exactly what we needed. We wanted our staff and students to be able to access the systems they needed, anytime, anywhere. We also needed our network to do more than just enable people to connect. To do that, we required a single pane of glass for management; to troubleshoot, configure, validate, automate ,and authenticate."

Standardising on Extreme

After completing a successful proof of concept with Extreme in 2015 for its edge switching, Manukau Institute of Technology has now standardized its entire wired and wireless networking infrastructure on Extreme. Manukau Institute of Technology has also actioned its Campus Master Plan and reduced its overall property footprint from eight campuses to five, including the brand new, purpose-built TechPark. This strategic plan allowed the institute to increase its property utilization and increase investment in its facilities to make them more modern, fit for purpose, aligned to industry, and emerging technologies, and to support Manukau Institute of Technology's vision to be a world-class vocational education provider.

Manukau Institute of Technology is using Extreme's 4th generation cloud management platform, ExtremeCloud IQ, to streamline end-to-end network operations. As a result, the institute has effectively reduced its overall network maintenance and management costs whilst managing the network internally with three network engineers who are able to do all troubleshooting and configuration remotely.

"The real power is in the granularity of the reporting and visibility with Extreme," said Woolley. "One of the most common issues amongst our users are reports that the Wi-Fi is not working. With ExtremeCloud IQ we can easily see when and where each login attempt was made, the status of the network, and the signal at each location, plus we can identify the user's device and its compatibility. We often find it's a device issue for the user."

Manukau Institute of Technology also uses ExtremeCloud IQ's machine learning capabilities to undertake trend analysis to determine when issues are occurring through the day, to understand usage patterns and find correlations with specific courses or student activity. The Client 360 view helps build an understanding of any associated improvements as a result of ExtremeCloud IQ's machines learning capabilities. These actionable insights are used to sort out 'bottle necks' more quickly, and prioritize specific applications that are being used or that are needed by staff and students at certain times or in certain classes.

Cloud to Create a Seamless User Experience

Manukau Institute of Technology's network standardisation has assisted the institute's adoption of more cloud-based applications and services by facilitating single sign-on (SSO) to Wi-Fi and other applications via Microsoft Active Directory – or Citrix when accessing remotely. Manukau Institute of Technology has migrated to Microsoft Office 365 A5 across all campuses for staff and students – including OneDrive, SharePoint, and Teams, as well as using Canvas LMS, Gmail and Google Classroom. Cloud has become the preferred platform for new software acquisition and syncing the experience through SSO has become the norm. On-premise data center infrastructure has been replaced with Nutanix to manage a hyperconverged, high-availability, and fully redundant environment.

On each campus, Manukau Institute of Technology offers an 'Ask Me!' Student Services Centre, which is the first point of contact for all program and study-related enquiries. The first time a student accesses the Wi-Fi on campus, that student is prompted to change the default password on their device before they can access any applications or services, with experienced advisors available online to assist with any problems. The student's updated credentials are then automatically authenticated, allowing them to access any secured Wi-Fi network across the Manukau Institute of Technology campuses. SSO allows access to all other services and applications they need.

The improvements made to user access for staff and students have been critical during New Zealand's first COVID-19 lockdown, which came into effect in March 2020.

"We had very few issues with our COVID-19 response. We were in good shape thanks to our infrastructure – our staff and students could access whatever they needed from wherever they were. We were able to get 82% of our courses either completely or partly online within a 10-day period. For any courses that absolutely needed practical lessons, we were able to provide the theory component online up front, then the practical classes controlled in a 'bubble' on campus."

Jenna Woolley, Executive General Manager, Technology at Manukau Institute of Technology.

A Platform for Digital Transformation and Innovation

Extreme's role as an enabler for Manukau Institute of Technology's digital transformation and innovation is embodied in the newly-opened TechPark campus, a 9000m^2 facility housing New Zealand's only air conditioning and refrigeration school, the country's largest industry training school for plumbing, the biggest polytechnic-based electrical trades school, and training for building and civil construction, engineering, and automotive trades.

"TechPark will be our proving ground for new ways of working. We will be able to use the network for access control – not just for printers, doors, and gateways, but also potentially dangerous equipment," said Woolley. "For example, we can start to use the network for proximity-based authentication to only allow authorized users to power-over-ethernet [PoE] for connected devices."

With the coronavirus pandemic a continuing concern, Manukau Institute of Technology is also looking to use the network to support contact tracing, social distancing, and capacity controls.

"We've got multiple buildings and facilities across each of our campuses – using Extreme, we can accurately track and store users' movements and locations based on their registered devices. This has the potential to help us meet our ongoing obligations for the health and safety of our staff and students in response to COVID-19," said Woolley.

"With a stable network in place, less downtime, and easier management and deployment, our team is able to focus on delivering incremental improvements and innovation across the institute to demonstrate significant benefits throughout our organization – especially our staff and students," Woolley concluded.