

CASE STUDY



CHALLENGE:

Deploy high-performance LAN switches to support wireless, HD multimedia, and fast content delivery while delivering a superior user experience for teachers and students

SOLUTION:

- Ruckus ICX Switches for LAN

RESULTS:

- Reduced class content delivery times from 15 minutes to 20 seconds
- Achieved reliable high-speed access for wired and wireless devices everywhere on campus
- Elevated the classroom experience by improving teachers' confidence in using classroom technology

Founded in 1966, Mazenod College is a Catholic secondary college for boys in years 7-12, located in Lesmurdie, Western Australia. College founder, St. Eugene De Mazenod, originally called for students to "Leave nothing undared for the sake of the Kingdom." That same spirit prevails today, as Mazenod College uses technology to give its students every opportunity to achieve academic excellence.

SETTING A HIGH BAR FOR PERFORMANCE

With the transition to digital learning, the college's network runs everything for the school, from its wireless, Voice over IP, and Closed Circuit Television systems to learning, student, and content management solutions. With so many operations dependent upon it, it simply cannot fail. However, the aging LAN switches had reached their limits and could no longer cope with the growing demand of traffic from wireless, laptop, tablet, and interactive data projection devices.

The College uses Microsoft OneNote to organize work, deliver curriculum, and collaborate with students. Each of the 850 students has his own virtual folder with e-books and classwork. In class, teachers project content onto a white board, and as they write on the board, the content is instantly replicated to the students' laptops. For the network, that means delivering at least 4.5 gigabytes of data simultaneously to all students in the class. In the past, it would take up to 15 minutes to move content into students' work folders. And that was just for one class—there are 45 classes running simultaneously across the campus.

"If students can't get the content being taught, the entire lesson plan breaks down," said Hugo Van Niekerk, ICT Director at Mazenod College. "And when a teacher is afraid that the technology won't work, they won't use it. We're committed to academic excellence, and therefore, committed to making sure that the virtual classroom always provides an awesome, reliable experience."

For new LAN switches, Mazenod College had rigorous requirements. The IT team needed to deliver high-quality computing for every faculty member, department, and student. Each department has specific needs—from supporting in-class video camera use, to blogging and general Web access for one-to-one and one-to-many teaching approaches. This means that new LAN switches had to support Layer 2 and Layer 3 routing technology that would help deliver the high performance that students and staff required.

"We wanted an infrastructure capable of delivering 100 Mbps to every student on demand, scaling for different traffic loads through the day, and supporting changes on the fly," said Van Niekerk. "It also had to support highly mobile users with at least 1 Gbps speeds into the LAN."

As an educational institution, Mazenod College also wanted to get ahead of innovation curve. Van Niekerk said that the future will be software-defined and the College wants to be ready. Finally, the new LAN had to be affordable. After looking at its options, Mazenod College chose Ruckus® ICX® Switches. With Ruckus ICX Switches, the school gained up to 10 GbE capacity for its budget when alternative solutions offered 1 GbE capacity.

A CAMPUS NERVOUS SYSTEM

Today Ruckus ICX 7250 Switches are deployed across the campus. The school's 802.11ac wireless access points are connected to the LAN switches through dual 1 GbE ports combined into a 2 Gbps link aggregation group.

"Ruckus offered us a great solution in terms of technology, price, and support that integrates well with the rest of our infrastructure," Van Niekerk added. "It has enabled us to establish an advanced campus 'nervous system' that has already delivered tremendous improvements and created the foundation for us to deliver exciting innovations."



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LEARNING—FULL SPEED AHEAD

The new network scales network capacity and broadband delivery to the classroom and high-speed access everywhere across the campus to wired and wireless devices. High-speed connectivity makes it easy for teachers to incorporate locally hosted HD multimedia content into lessons without fear of network failure. In the future, each lesson can be captured in real time so that students can replay HD classes in on demand.

The College has been able to automate manual tasks, saving teachers time and effort. Teachers can share resources, scan and mark assignments, and file data automatically to each student's portfolio. Automation helps eliminate manual errors for reliable data that rolls into student reports and other documentation.

High-speed access benefits students as well. Each student can access up to 100 Mbps of bandwidth on the network at all times. They now receive Microsoft OneNote class updates in their work folders in just 20 seconds instead of 15 minutes.

EXPANDING THE POSSIBILITIES FOR EVERYONE

Van Niekerk says that fast, reliable network service leads to remarkable consequences. With near 100 percent uptime, staff and teachers feel more confident in using technology in the classroom. Now, instead of constantly focusing on daily technology performance problems, the ICT team becomes an enabler. They can scout for innovation and continually introduce advances to improve teachers' and students' experience with the technology.

"This is particularly important for education," said Van Niekerk. "Teachers have to focus on delivering content, engaging students, marking work, and talking to parents. We can focus on finding ways to help them save time or add value. Instead of teachers always having to relearn technology to accomplish a task in the classroom, our ICT team can learn it for them and tailor it to their needs. They just tell us what they want to be able to do, and in five minutes they're doing it. And it works every time."