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Singapore education group builds highly-connected campus

RafflesEducationCorp ensures secure campus-wide network and internet connectivity with Dell

Business need

Moving to a new permanent premises provided Raffles Education Corporation Limited and its Singapore campus with the opportunity to design a network optimized for staff and student connectivity and protection against cyber threats.

Solution

Raffles Education Corporation Limited selected Dell to design and deploy a high-speed network built on Dell Networking connectivity and SonicWall next-generation firewalls.

Benefits

- Staff and student connectivity improves through optimized network design
- Threat protection enables safe network environment for online learning requirements
- Flexibility increases through granular level of network control
- Seamless and stable network ensures reliable network and internet connection for students and staff

Solutions at a glance

- Networking
- Network Security
- Support Services

"We provide our students with seamless, high-speed network and internet access throughout the whole campus. This means that the network must cope with high bandwidth demands across all locations serving high concentration of wireless user connections. Dell designed a network that was easy to understand and took into account specific usage patterns within each area of the campus, which optimized our network deployment in terms of cost and performance."

Mohamed Faisal, IT Manager, RafflesEducationCorp

Raffles Education Corporation Limited (RafflesEducationCorp) is the largest private education group in Asia Pacific, operating 34 colleges in 31 cities across 12 countries. Recently, RafflesEducationCorp headquarters and its Singapore campus, Raffles College of Higher Education (RCHE) moved to a new building at Raffles Education Square in downtown Singapore.

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>
> *Mohamed Faisal, IT Manager, RafflesEducationCorp*

The new premises connects over 2,000 combined staff and students to their computers, phones, tablets and other devices across an area of more than 77,500 square feet of creative learning space. To meet bandwidth demands and security concerns, the organization required high-speed network and internet access with threat protection together with uninterrupted student access to internet-based learning tools and resources.

The move to a bigger space presented the challenge of designing a 21st century campus that would meet the future demands of online learning. Mohamed Faisal, IT Manager, RafflesEducationCorp, says, "Delivering a network to an educational institution has its own set of requirements. A robust and reliable internet connection is critical in today's education industry to enable and enhance student learning. To keep up with such requirements, we needed a highly scalable network infrastructure that could support a high concentration of students and provide high-speed network and internet access at any given location within the campus."

Staff and student connectivity improves with network customized for a campus environment

To protect its systems and control network traffic at its previous campus, RafflesEducationCorp and RCHE segregated its students, faculty and support staff into separate networks. The previous network consisted of a hybrid of technologies and products from various vendors, thereby requiring individual management of networked devices and monitoring of network traffic which proved inefficient.

A clear goal for RafflesEducationCorp and RCHE when moving to the new campus was to prioritize network connectivity and scalability. After considering proposals from several solution partners, RafflesEducationCorp selected Dell as its project partner to manage the move to Raffles Education Square and the infrastructure implementation. Faisal says, "With an optimized network infrastructure, we can successfully cater to the growth of both student numbers and our organization. To support our future plans, Dell was able to propose and deliver end-to-end solutions, and the project team provided a single point of contact for every aspect of the migration and infrastructure implementation at our new campus."

Products & Services
Services
Dell Support Services
– Dell ProSupport with Mission Critical 4-Hour Onsite Response
Hardware
SonicWall NSA E6500 next-generation firewalls
Dell Networking 8132F switches
Dell Networking 7024 switches
Dell Networking 5548P switches
Dell Networking W-Series 3600 Controller
Dell Networking W-Series W-AP105 access points

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Robust and stable connectivity through optimized network design

RafflesEducationCorp's IT team worked with Dell in determining locations to place the campus wireless access points, and made cost-effective decisions to optimize the distribution based on pre-defined user activities. With the core requirement that the campus infrastructure be highly scalable to account for steady student growth, the network design was critical. "Dell implemented a design for the structured cabling that ensures we can scale to run a 10-Gigabit Ethernet without incurring extra costs. This means that the campus has the flexibility to run certain processes across the network without any degradation of performance in the future. Applications that require HD quality streaming as part of lesson delivery and 3D rendering processes with large file transfers from workstations to servers are good examples where students and staff at the campus and office in Singapore benefit from this implementation," says Faisal.

Raffles Education Square comprises three buildings, and Dell Networking 5548P and Dell Networking 7024 switches are distributed on the floors of each building and connected to Dell Networking 8132F core switches in the server room. A fiber backbone connects the entire campus, and a Dell Networking W-Series 3600 Controller provides high-performance, secure and reliable wireless access and management for 78 Dell W-series W-AP105 access points located throughout the institution. Faisal says, "We provide our students with seamless, high-speed network and internet access throughout the whole campus. This means that the network must cope with high bandwidth demands across all locations serving a high concentration of wireless user connections. Dell designed a network that was easy to understand and took into account specific usage patterns within each area of the campus, which optimized our network deployment in terms of cost and performance."

Cyber threat protection enhances student learning

Running a campus and education enterprise means that threats to the network can occur both internally and from outside the institution. A pair of SonicWall Network Security Appliance (NSA) E6500 next-generation firewalls provide protection for the entire network. "Threat protection is ensured within the network thanks to the SonicWall firewall appliance. The appliance also restricts access to selected websites and internet resources to ensure that students remain focused on their learning," says Faisal.

Flexibility increases through granular level of network control

RafflesEducationCorp and RCHE have the flexibility of real-time insight and control over network traffic. With each individual having multiple devices connected to the network, the IT team can monitor and isolate issues down to the individual users, while enabling a greater range of learning content because of the level of intrusion protection and application control provided by the next-generation firewall. "As an educational institution, we have limited control over owned devices connected to our network. The anti-virus protection at gateway level will serve as a first line of defense to protect our network. In addition, with the granular level of control provided by the SonicWall next-generation firewall, we can detect anomalies fast, improving the time taken to resolve network-related issues. The appliance has content-filtering options enabled with no degradation in performance, while maintaining high-speed access to the network and internet for both staff and students," explains Faisal.

Next-generation student learning experience

RafflesEducationCorp is increasingly delivering student learning content via the Internet through its learning management system. This demands reliable and high-speed internet access, as well as access to other online resources and research materials. The campus provides access to externally hosted services while protecting the network through gateway anti-virus, anti-spyware and intrusion prevention. Faisal says, "We have upgraded the level of support we can offer our staff and students by delivering stable, high-performing connectivity within any area of the campus through the network supported by Dell."

Support ensures high-availability

While staff and students enjoy high-speed connectivity for work and learning, they are protected from network downtime by Dell ProSupport with Mission Critical 4-Hour Onsite Response service. "We have the assurance of four-hour onsite support, which means that at any time should the network go down, we are assured that we can have the network back up in less than five hours. By the time we escalate the problem to Dell, it would have already been isolated and Dell can immediately fix the issue," concludes Faisal.

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