



Reliable network with centralised management

Georges River Grammar chose HP to provide a complete wired and wireless network, including switches, controllers and access points. This delivers fast, reliable access for students and staff, including those using their own devices. HP Intelligent Management Center (IMC) provides centralised management, saving time for the school's IT team.

CHALLENGE

REFRESH WIRED AND WIRELESS INFRASTRUCTURE

In schools around the world, technology is creating new opportunities for learning – and new challenges for IT staff.

One school meeting these challenges is Georges River Grammar in Australia. The school has around 800 pupils, covering an age range from five to eighteen years old, as well as nearly 100 staff. Recently, it needed to upgrade its ageing wired and wireless network to support more access by students.

"The model that everyone is going to is Bring Your Own Device (BYOD) and 1:1, where kids bring their own laptops or tablets," says Matthew Gebran, network manager at Georges River Grammar School. "We needed a complete wireless infrastructure that would have an access point in every single room to provide coverage, and the backbone and switches to handle moving all that data around."

Georges River looked at possible solutions from four different companies, and as part of this activity it talked to HP's partner **VIRTUNET** and met HP engineers at their office in Sydney to discuss its requirements.

Following this process, it chose a solution from HP that includes switches, access points and wireless controllers. The new network provides access for staff, students and guests, with temporary guest usernames and passwords that automatically expire.

"Our decision was influenced by our past good experience with HP, the solution's attractive price, and HP's strength in education," says Gebran.

SOLUTION

COMPLETE NETWORK

The wireless solution is based around an HP MSM760 access controller, with 66 HP MSM460 dual radio 802.11n access points used to provide WiFi in each classroom. A further four HP MSM466-R dual radio outdoor 802.11n access points are used to provide access in the playground for students that want to work outside.

Pupils use the system to access homework, quizzes and other resources posted by teachers, and can log in from home to the Moodle e-learning system. Students have their own email address, which are used by teachers to communicate with them. The school also has 20 Apple TV devices that enable children to share their screens on a classroom projector.

Two HP E5406 PoE+ switches provide a highly available, redundant core and 18 HP 2920 switches are used for the network edge, including providing wired network access for around 30 devices in three computer labs. The edge switches have Power over Ethernet (PoE) capability, simplifying the network rollout.

While the school considered getting the switches and wireless components from different vendors, in the end it chose HP for the complete solution. Gebran comments, "It's a lot easier to manage a solution from one vendor, with a single point of contact and it also speed up implementation."

SPEEDY ROLLOUT

Fast implementation was important to Georges River, because it could only roll out the solution within a two-week school holiday. According to Gebran, the IT team needed to install the system in the first week and test in the second, so they had to plan correctly to leave enough time for testing.

HP Networking provided the network design and Virtunet also visited the school in advance to help it plan its network and the structure of 11 virtual LANs (VLANs), which help to segregate the infrastructure and provide more control.

HP engineers undertook all of the configuration work. Gebran comments, "Everything was done on time and HP knew exactly what to do and helped us with planning – both HP and Virtunet were great."

BENEFITS

TWENTY TIMES FASTER

Instead of its previous 1Gbps connection, the new network provides 20Gbps bandwidth, which gives every student fast access to the educational resources on the network. Georges River has also upgraded its internet connection to 200Mbps for both upload and download, compared to the previous 10Mbps.

For pupils using their own devices, the school manages their access to the network and the public internet, as Gebran explains, "We use access control lists on the HP switches – when someone connects to the wireless they get put on a VLAN we have created for BYOD devices and this limits them to certain areas of the network."

The HP solution does not require any software running on the student devices, as Gebran comments, "We tested a Mobile Device Management (MDM) solution that needed software installed on devices, but we had no need for it. With the HP network, the students can just connect with authentication handled through a browser, which makes it a lot easier for them."

CENTRALISED MANAGEMENT SAVES TIME

The school uses HP Intelligent Management Center (IMC) software to provide a single 'pane of glass' management for the entire network. Gebran comments, "HP IMC is a great software: we can see straightaway if power goes down in one part of the school, or if someone unplugs something we get emailed immediately."

The school's IT team uses a large screen on which HP IMC shows information on the network, how it is running and data on areas such as throughput and the number of users per access point.

"With nearly 1000 users in a complex school it gets extremely busy at times, especially with helpdesk and the usual interruptions schools require," continues Gebran. "IMC is easy to use, and has really cut down time spent searching for issues – we save about 30 per cent of troubleshooting time because we don't have to run around and figure out what's going on."

"HP IMC software is easy to use and has really cut down time spent searching for issues – we save about 30 per cent of troubleshooting time."

"The central management of HP IMC is great – if we want to make a change on a switch, there are a lot of Simple Network Management Protocol (SNMP) features and we can manage multiple devices from one area," says Gebran. "We can plug in new machines or IP

phones and we just log on to HP IMC and make the necessary changes on a switch – it's a lot easier to do that than having to log into each device separately and remember IP addresses, usernames and passwords; HP IMC does all that for us."

HP IMC enables the school to automatically back up its entire configuration from a central point, which makes it easier to restore. According to Gebran, HP IMC's reporting capabilities are strong. Since the software unifies device management, with the ability to fully integrate resources from over 6,000 vendors, IMC can provide Gebran with analysis on all the school's equipment, regardless of the manufacturer.

RELIABLE INFRASTRUCTURE

"The network has been very reliable and we run the two core switches in a redundant arrangement so if one fails the other can take over," says Gebran. "Even pushing out of configurations to the wireless access points has been seamless."

"The students say the system is working well," says Gebran. "When many people connect in one room, we don't receive as many logon failures as we used to with our old system and that has also cut management time considerably."

The HP lifetime warranty is important for Georges River, as Gebran explains, "Schools don't have a lot of money to update equipment every few years, so the HP lifetime guarantee is excellent – it means we can run products as long as we can afford to."

SCALABLE FOR FUTURE GROWTH

Student numbers are increasing steadily at Georges River and it is responding by building more classrooms. It also has funding for more IT equipment and is adding another computer room with HP PCs and printers. The HP solution provides future-proof flexibility so the network can be scaled up as the school grows.

"Scalability of the wireless solution was an important factor for us and the HP switches give us multiple ports where we can add extra 10G links when needed," says Gebran. Also, the HP wireless controller can be upgraded to the new 802.11ac standard with a firmware upgrade, which will enable the school to add 802.11ac access points with higher data rates.

"Overall, we're very happy with the HP wireless and switch solution and it's enabled us to be ready for BYOD and 1:1," concludes Gebran. "HP has expertise in education and when we talked to them, they knew exactly where we wanted to go."

Learn more at hp.com/go/networking