

Settle College delivers better learning environment across dual-campus setup

Summary

Company:

Settle College

Industry:

Education

Challenges:

- Upgrade a failing network to prepare for becoming a dual campus school and taking on more students
- Effectively deliver its media studies course including editing and encoding High Definition (HD) video reliably over the network with no impact on network performance
- Enable 'bring your own device' to become a reality
- Retain its reputation as a technology leader and attract sixth form students

Network Solution:

- Juniper Networks® EX4200 Ethernet Switches
- Juniper Networks EX2200 Ethernet Switches
- Juniper Networks Junos®

Results:

- Improved network reliability and provided zero downtime
- Introduced VLANs to enable a 'bring your own device' option for sixth formers
- Significantly reduced cost of ownership and maintenance cost
- Enabled better network management and planning
- Provided huge confidence the network and future requirements



A Reputation for Technology Leadership

Founded as a girls Grammar school, Settle College has been providing education in Yorkshire for over a century. In more recent years it became a specialist technology college taking students through the GCSE and A-Level stages. As a result of a change to the education system in the region from three-tier to two-tier, the college is facing an influx of students, now admitting 11-18 year olds, and will operate from two campuses separated by a public highway, instead of one. Settle College has a reputation to live up to. As a technology college, it is vital that it is seen to be leading the way with the technical content of its courses, with the role IT plays in its learning environment, and with its own network and telephony.

The existing network at the college had essentially reached the end of its life and was unable to meet the needs of the expanded school or deliver the technology courses offered. Finding itself in the uncomfortable position of being unable to deliver its media studies course online and having to resort to paper-based learning was untenable. The college had to do something about its ageing network—fast!

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John Smith, ICT Network Manager, Settle College

Network Under Pressure

Settle College is focused on attracting students to its school and in particular its sixth form, and retaining students to stay on for the sixth form. Its reputation as a technology leader and its ability to provide a technologically advanced course, including distance learning via Video Conferencing are vital to this and a priority for the school. The switching within its existing network was failing, causing major issues with network performance, reliability and staff access to the Management Information System that keeps track of grading, behavioural systems, special needs, gifted and talented pupils etc, required by Ofsted (the U.K. Office for Standards in Education, Children's Services and Skills) to be available to staff at all times.

The college also became unable to edit and encode video over the network and had to deliver its media studies course for a term using paper- and theory-based learning. In addition, it wanted to introduce a 'bring your own device' option for its sixth form students, which wasn't possible within its existing network as it couldn't enable VLAN management. As John Smith, ICT Network Manager at Settle College explains, "Our existing network had essentially reached the end of its life and was unable to support our needs without a large investment in the existing switches, which we didn't want to do as they couldn't offer the performance and functionality we needed. Add that to the demands that the new campus and student volumes will place on the network and we knew that we had to make a change to a higher quality product."

Aggressive Timeline

After consulting the local council and other schools, the team identified some key requirements for a new network switching solution. It needed to be able to support increasing throughput of traffic, and improve logon performance and general file access. It had to support HD video editing and encoding over the network, introduce VLAN management and provide a management overview. "Our spec was detailed and aggressive," says Smith. "We required all switching in gigabits, gigabits to the desktop, and it had to be configured, installed, tested and working reliably within one week so that we could deliver our media studies course at the beginning of the autumn term."

Settle College evaluated a number of proposals and selected Net-Ctrl, who proposed a Juniper Networks solution based on the EX Series Ethernet Switches. "We awarded the contract to Net-Ctrl with Juniper Networks switches as it ticked all the boxes and was the only proposal that was able to deliver within one week – all the others estimated two-three weeks."

Five Day Turnaround

Net-Ctrl configured, installed, and delivered the new switching network, and trained the Settle team, with just one engineer on site within five days. The college now has a new 22 switch network with a dedicated core spread across the two sites so that routing can be done at either site. It has a 10 gigabit link between the sites with single mode fibre, that would not have been possible with the previous switches. It has 4 Juniper Networks EX4200 Ethernet switches, two in the core at both sites to provide the links with the 10 gigabit connection. It has 18 Juniper Networks EX2200 Ethernet switches as its edge switches, and there is one spare EX2200 with a basic configuration to be used as a spare to ensure zero downtime should a switch fail.

"We were very impressed that Net-Ctrl delivered our new Juniper switching network within 5 days. We had a week to install the switches and prove that that we could run the media studies course ready for the students coming back. At the beginning of term, the media department was immediately able to set off 20 machines editing and encoding HD video across the network and it worked perfectly. The whole experience with Net-Ctrl and the Juniper technology has been wonderful," says a satisfied Smith.

The College is also benefiting from the Virtual Chassis technology within the EX4200 switches providing excellent uplink speed between the switches as well as the ability to manage all four switches from one interface. The backup routing engine within the chassis delivers excellent performance and gives some redundancy to all the switching.

The fact that all EX Series switches run the Juniper Networks Junos common operating system contributed considerably to the speed of implementation on the project as it enabled basic configuration on one switch to be duplicated across the others and it was quick and easy to use. "We found Junos very intuitive, easy to use and extremely logical and this contributed to the quick delivery by cutting down the amount of configuration required and virtually eliminating a need for training. It has also simplified maintenance significantly," says Smith.

Lower Total Cost of Ownership

The new switching network has enabled the college to edit HD video across the network, a huge relief for the media studies department that was able to run its media studies course from the first day of the new term. It has also been able to introduce the 'bring your own device' option for its sixth formers which has proved hugely popular. "Our students can now bring any device, iPads, apple laptops, windows laptops, and connect securely to the network, access email, virtual learning environments, files, and filtered Internet from anywhere on site using our campus-wide wireless," explains Smith.

The new switches have massively improved the performance of the network providing a higher level of throughput as well as a level of redundancy. From a management perspective, Smith can now monitor the performance of each switch and what bandwidth it is consuming to ensure that he has enough capacity around the network. This helps him plan for future enhancements to continue to improve throughput.

Settle College has also seen sizeable cost and efficiency improvements, "The Juniper Networks switches have definitely reduced our cost of ownership. Junos has simplified our maintenance significantly and enabled us to reduce maintenance cost and improve efficiency, as we no longer have to spend hours downloading 12 different pieces of firmware. The lifetime warranty that comes with the Juniper switches was a huge benefit and has given us confidence in the reliability of our network and decreased total cost of ownership," concludes Smith.

In addition, the new switches have a strong environmental impact. They are much quieter, nearly silent, and smaller, saving rack space and the new Power over Ethernet (PoE) functionality within the EX Series saves a huge amount of space and energy.

The college has a much more stable network which supports all of its needs and its future plans including the introduction of VOIP and IPCCTV. It already has an Ofsted rating of 'good with outstanding features' and hopes that its new network will help it to achieve a sought after 'outstanding' rating.

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About Juniper Networks

Juniper Networks is in the business of network innovation. From devices to data centers, from consumers to cloud providers, Juniper Networks delivers the software, silicon and systems that transform the experience and economics of networking. The company serves customers and partners worldwide. Additional information can be found at www.juniper.net.

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