GIRLS' DAY SCHOOL TRUST (GDST) OPTIMIZES LEARNING WITH A ROBUST WIRELESS LAN INFRASTRUCTURE

Summary

Company: Girls' Day School Trust

Industry: Education

Challenges:

- Provide a cost-effective and scalable enterprise wireless network for 25 of its schools, plus its Head Office
- Enrich the teaching and learning environments through reliable and high-performance wireless access
- Enable secure guest access to support "bring your own device" (BYOD)
- Minimize disruption and footprint in each school while delivering a seamless, high-speed wireless experience

Selection Criteria: After a thorough investigation of the market, the GDST team selected Toranet as its technology partner to help implement a comprehensive Juniper Networks solution for its schools and Head Office.

Network Solution:

- WLC2800 Wireless LAN Controller
- WLA522 Wireless LAN Access Point
- WLM1200 Wireless LAN Management Appliance
- RingMaster and SmartPass

Results:

- Created a stimulating teaching/learning environment and enabled BYOD for seamless guest access
- Achieved tighter cost control and savings through centralized network management
- Introduced consistency and standards, making it easy to scale

For many commercial organizations, wireless access is regarded as a given, rather than the luxury it once was. Similarly, in the education sector, both staff and students expect a seamless wireless experience in their teaching and learning environments. This proves to be a challenge for many educational organizations, however, as the budget implications for providing this can be substantial. Also, sometimes the physical infrastructure of a school doesn't lend itself particularly well to providing this much needed access. Consider for instance schools housed in older buildings with thick walls where connectivity can be difficult to achieve.

As one of the largest groups of independent schools in the UK, the GDST was facing this challenge not for one school, but for 25 schools and academies, some spread over multiple sites, and for its Head Office.

Challenge

With a 140-year history of pioneering innovative education for girls, the GDST is a major player within independent education in the UK and has an outstanding track record of helping students achieve their full potential in every aspect of their lives. It has an obligation to its staff and students to remain at the forefront of technology and recognizes the educational benefits which can be realized by a reliable wireless service. Curtis Fray, technical operations manager at the GDST, comments on the situation he was facing: "The wireless coverage in some schools was better than others, but in most cases the wireless was delivered by the standalone access points resulting in patchy coverage. There was little consistency in wireless configuration between the schools and none of them could cater for secure guest access. Performance could be unreliable and would differ wildly between different parts of the school."

Having such a distributed approach also came with its own price tag, as the local networks were expensive to maintain. Whenever there was a change in configuration such as a new wireless password, all access points had to be changed manually, a time-consuming and tedious job. The need for an enterprise wireless solution which could be scaled and centrally managed became more pressing as time went on.

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>
> - Curtis Fray,
> Technical Operations Manager, GDST

Selection Criteria

After a thorough investigation of the market, the GDST team met with Toranet, who presented a comprehensive Juniper Networks solution to them. Toranet has worked with a number of the UK's independent schools, and it was clear to the GDST that Toranet and Juniper could help realize the benefits of excellent network facilities within its schools.

Toranet undertook a comprehensive site survey of each GDST school to assess the current situation and physical structure as well as calculate the number of access points required to provide a seamless wireless service. To determine the bandwidth requirements, Toranet conducted tests on each site. The main testing criterion was that 30 laptops had to be booted simultaneously, in a timely manner, within any given learning area (e.g., a classroom). For non-learning areas, the requirement was that 15 laptops needed to be booted simultaneously. Roaming capabilities were tested using streaming media to ensure an uninterrupted service when moving throughout the school and designated outdoor areas. As a failover measure, each device had to be able to connect to at least two access points in any one area in case one should fail.

Following the site surveys, Toranet and the GDST worked together on the design and configuration of the network. This would be comprised of over 1,800 access points spread over 25 of its schools as well as the Head Office, linking back via an MPLS network to its UK data center to provide maximum resilience.

Solution

With all the sites being working schools, disruption had to be kept to a minimum. It was also key that the local school team was supportive and enthusiastic about the change. As Fray explains: "Each individual school had control over its own WLAN and, although the downsides to this approach were obvious to us, we had to offer clear advantages to the local teams. The facility for each school to have its own wireless identity, whilst still supporting central control and management, made the Juniper WLAN the best choice for us."

The GDST has implemented an 802.11n wireless network using Juniper Network's portfolio of wireless products. The network is centrally controlled and administered from two locations, each with four clustered Juniper Networks® WLC2800 Wireless LAN Controllers to minimize downtime. These are designed to provide seamless failover between each other and control over 1,800 Juniper Networks WLA522 Wireless LAN Access Points at its sites, serving nearly 20,000 students and 3,700 staff. The network is controlled and maintained by Juniper Networks RingMaster software running on Juniper Networks WLM1200 Wireless LAN Management Appliance.

Guest access was a key requirement for the GDST. This allows staff and students to bring their own device to school (BYOD) and seamlessly logon to the network with it. For all schools, this is provided by Juniper Networks SmartPass guest access software, allowing each individual school to issue guest access according to its own specific requirements.

> **"Overall, we are delighted with the Juniper Networks solution and the implementation support we've received from Toranet. We are regarded as thought leaders in independent education and our network has given us an enhanced teaching and learning environment from which everyone is benefiting."**
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> - Curtis Fray,
> Technical Operations Manager, GDST

Results

The GDST needs its wireless network infrastructure to be flexible and scalable, which this system provides. Fray sums up the benefits the Juniper wireless network has already realized for the GDST: "We are able to add wireless into our schools easily, using the Juniper wireless controllers. We wanted a minimal footprint on each site and needed to maintain central control over each school for both management and guest access. Because the controllers are deployed in centralized locations, this works perfectly for us. At the same time, we needed to provide an always-on access facility for staff and students, as well as guests. Overall, we are delighted with the Juniper Networks solution and the implementation support we've received from Toranet. We are regarded as thought leaders in independent education and our wireless network has given us an enhanced teaching and learning environment from which everyone is benefiting."

For More Information

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