TP-LINK Helps Chase Grammar School Accelerates Learning with BYOD

CUSTOMER PROFILE

Name: Chase Grammar School

Industry: Education

Location: Cannock, Staffordshire, England

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— Leo Li, Director for Administration at Chase Grammar School

BACKGROUND

Founded in 1879, Chase Grammar School is home to a dedicated team of teachers and administrators who are committed to nurturing children and helping them reach their full potential. With 75 teachers and support staff, 330 pupils, and class sizes of no more than 15, the school fosters a caring culture that strives to support local and overseas students from a variety of different backgrounds and cultures.

CHALLENGE

Technology is an essential part of the educational philosophy. The goal of providing access to multimedia learning makes IT infrastructure, and wireless

connectivity in particular, essential to the learning process. Many teachers often access rich online content from a variety of sources, including Dropbox, TeacherTube, and YouTube to enrich their lessons and reinforce critical aspects of the curriculum. Most students use mobile devices, including laptops and tablets, to prepare homework and access the vast world of online information. The web provides countless valuable opportunities for self-driven learning, enabling pupils to be secure in their knowledge and develop the skills they need to apply their knowledge in the real world.

• Wireless Bottleneck

In order to take full advantage of the opportunities afforded by the modern internet, the school purchased three 70Mbps fiber optic connections.

The availability of 210Mbps of theoretical bandwidth should have been more than sufficient to meet the needs of the campus. However, the existing old wireless infrastructure and the thick, solid walls of the buildings on campus seriously limited the real world download and upload speeds that staff and students experienced. The old network provided a maximum download speed of 20Mbps, leaving plenty of room for improvement.

With 400 people on campus every day, including 130 boarding students and an additional 120 day students, each carrying an average of two connected devices, the existing infrastructure experienced a lot of strain. It was the boarders who were most affected, as the outdated access points could only support five devices at a time. With an average of 12 students in each accommodation block, all connections would be disrupted whenever someone attempted to connect a sixth device. As a home away from home, it is essential that Chase Grammar School provide the basic necessities for its boarding students, including Wi-Fi. Foreign students in particular are heavy bandwidth consumers, regularly using VoIP solutions like Skype, FaceTime, and Google Hangouts to stay in touch with friends and family back home. This led to issues with bandwidth hogging, to the extent that some pupils struggled to load webpages before the browser timed out. This was a major cause of frustration, especially amongst students preparing for exams or trying to access past papers from websites like AQA. It also rendered the intranet, developed by the school as a one-stop revision tool, essentially useless because resources took too long to download.

• A Safe Learning Environment

As an essential part of the educational environment, it became clear that the wireless infrastructure and policies needed to be rethought and revamped. This provided the perfect opportunity to develop, implement, and enforce a new BYOD policy that, among other things, prohibited P2P sharing and downloading.

"You can't underestimate the importance of rich and varied content in the learning landscape. Pupils are digital natives who thrive in a multi-media environment that relies on a stable high speed internet connection, whether it is wired or wireless," commented Leo Li, Director for Administration at Chase Grammar School.

▪ SOLUTION

• A Safe Learning Environment

Before investing in additional hardware, the school needed a clear picture of the existing wireless landscape. Leo therefore organized a site-wide network survey to assess the strengths and weaknesses of the wireless network. Taking advantage of the free TP-LINK site survey, Leo organized a visit from the TP-LINK Team. Within a day, the site survey team conducted a thorough analysis of the entire campus that provided a clear representation of the current signal strength and a map of the current IT infrastructure, including physical barriers.

"The TP-LINK team did a great job. They came to the school and mapped the wireless signal and current infrastructure. They were very discrete, so lessons weren't disrupted. Then they prepared a thorough report detailing their findings and providing practical recommendations to maximize coverage and performance. It was a very valuable tool that helped me build a solid business case to secure a budget," reflected Leo.

As a result of the wireless survey and the emphasis on empowered learning, Chase Grammar School expressed a desire for a single solution that would not require too much time or resources to install and manage. Given these demands, it was determined that the TP-LINK EAP120 ceiling-mounted access points would be the ideal solution, as it is easy to install and packed with valuable features. Leo found the cluster function particularly useful, enabling him to log on to any access point to review real-time data and control the entire network. This allows him to change the settings for all network devices or roll out firmware updates efficiently.

• Solid Infrastructure for Learning

The EAP 120's captive portal function played a critical role in the decision making process. It supports the school's emphasis on empowered learning and BYOD. Students are required to log on to the network via an authentication page that outlines the school's internet policies, restrictions, and rules at the beginning of each session. This feature also optimizes data rates for each SSID to maximize bandwidth

efficiency across the network and ensure better Wi-Fi performance. In addition to promoting better wireless performance, it also provides an added layer of security, ensuring that only authorized students and staff can access the network.

"*Kids are smart and will exploit an opportunity to download the latest films and games, it's our responsibility at Chase Grammar School to focus on the quality of education and, therefore, develop and enforce responsible Internet policies. These access points allow us to do just that,*" commented Leo.

RESULT

After 15 EAP 120s had been deployed on campus, the results were instantaneous. The patchy 20Mpbs connection had been replaced by a stable 51Mbps connection that was available throughout the campus, allowing students, teachers, and administrators to access learning resources and rich streaming content to the classroom.

Leo Li commented, *"The installation was extremely straightforward. It was a simple matter of plug and play. The cluster function in particular saved me many hours configuring each access point. On a*

day-to-day basis I can log into the closest access point to see how the whole network is performing and make any tweaks necessary."

FUTURE DEVELOPMENT

The next step in wireless optimization involves replacing the old switches that are currently limiting the overall network performance. Leo intends to use VLAN tagging, traffic management, bandwidth management, and QoS to control bandwidth and prevent high intensity activities such as torrenting, which affect performance for other users. To better track individual usage, Leo intends to roll out an Active Directory, giving each authorized user a unique username and password. Using Active Directory, the network administrator can identify individual users, determine how many devices they have connected to the network, and track what they are doing, which is an important step in enforcing the school's internet policies and keeping the students focused on learning.