



Chase Grammar School Accelerates Learning with BYOD



Chase Grammar School

Industry: Education

Location: Cannock, Staffordshire, England

Profile: Chase Grammar School is an independent school in Cannock, near Birmingham, right in the centre of England. It offers education from nursery, GCSE, right up to A Level.

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- Leo Li, Director for Administration at Chase Grammar School

Fast Facts

- 400+ connected clients
- Unlimited connected devices per access point
- Captive portal technology helps reinforce school internet policies
- Download speeds boosted from 20Mbps to 51Mbps throughout the campus
- Cluster function on EAP range simplifies network management and firmware updates

About Chase Grammar School

Founded in 1879, Chase Grammar School has a dedicated team of teachers and administration staff committed to nurturing children to reach their full potential. With 75 teachers and support staff, 330 pupils and class sizes of no more than 15, the school benefits from a caring culture, supporting local and overseas students from a range of backgrounds and cultures.

Technology is an essential part of the educational mix providing access to multimedia learning making the IT infrastructure and in particular wireless essential components of the learning journey. Many teaching resources are hosted on the web and teachers often access rich content from a variety of sources including Dropbox, TeacherTube and YouTube to enrich the learning process reinforcing critical curriculum topics. Most students use mobile devices including laptops and tablets to prepare homework and support learning. The web also provides valuable opportunities for self-driven learning, enabling pupils to be secure in their knowledge and develop the skills required to apply it to real-world scenarios.

Wireless Bottleneck

For the school to take full advantage of the facilities at its fingertips it invested in three 70Mbps fibre optic connections. With a theoretical 210Mbps available, bandwidth should not have posed a problem. However, the existing Edimax wireless G infrastructure and period buildings with thick, solid walls seriously limited the real world download and uploads speeds for staff and students alike. Registering a maximum download speed of 20Mbps there was plenty of scope for improvement. With 400 people on campus every day, 130 boarders and a further 120 day pupils carrying an average of two connected devices each, the existing infrastructure

was under a lot of strain. It was boarders who were most affected, the legacy access points would permit only 5 devices to connect simultaneously, and with an average of 12 students in each accommodation block should a 6th attempt to connect it would crash losing all connections. As a home away from home for boarders it's vital for Chase Grammar School to provide all the essentials, including WiFi. Foreign students in particular are heavy bandwidth consumers, regularly using VIOP 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 trying to access past papers from websites like AQA. It also rendered the intranet, developed by the school as a one stop revision too, redundant because resources took too long to download.

Learning in a Safe Environment

As an essential part of the school infrastructure it became clear that the wireless infrastructure and policies needed to be rethought and revamped. This provided the perfect opportunity to develop, roll out and enforce a BYOD policy which, amongst other things, which 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 which relies on a reliable, high speed internet connection whether it is wired or wireless," commented Leo Li, Director for Administration at Chase Grammar School.

"The TP-LINK team did a great job. They came to the school and mapped the wireless 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 maximise coverage and performance. It was a very valuable tool that helped me build a solid business case to secure budget."

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Network Site Survey

Before investing in additional hardware, the school needed a clear picture of the existing wireless landscape. Leo therefore organised a site wide network survey to assess the wireless coverage, strengths and weaknesses. Taking advantage of the free TP-LINK network site survey Leo organised a visit from the TP-LINK Team. Within a day the site survey team conducted a thorough analysis of the entire campus to build a clear picture of the current signal strength and 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 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 maximise coverage and performance. It was a very valuable tool that helped me build a solid business case to secure budget," reflected Leo.

As a result of the wireless survey and the emphasis on empowered learning, Chase Grammar School needed a single solution that would not require much precious time and resource to install and manage going forward. With this in mind, the TP-LINK EAP120 ceiling mounted access points provided the ideal solution, easy to install and packed with valuable features. Leo found the cluster function particularly useful enabling him to log on to any access point within the network making it the master providing real-time access to the rest of the access points. This feature enables him to change settings across the network or roll out firmware updates in real-time.

Solid Infrastructure for Learning

The EAP 120's captive portal function was a critical feature in the decision making process. It has been put to good use supporting the school's emphasis on empowered learning and BYOD. Students are required to log on to the network via the authentication page which reiterates the schools internet policy, restrictions and rules at the beginning of each session. This feature also

optimises data rates for each SSID to maximise bandwidth efficiency across the network for better Wi-Fi performance. In addition to providing better wireless, it also provides an added layer of security ensuring only authorised 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 and these access points do just that," commented Leo.

With a total of 15 EAP 120 deployed across the campus the results were instantaneous. From a patchy 20Mbps around the school, students, teachers and administrators were recording up to 51Mbps throughout the school buildings, plenty of bandwidth to access learning resources and stream rich 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 Developments

The next steps in wireless optimisation involve replacing the old switches currently limiting the overall network performance. Leo intends to use VLAN tagging to different ports, traffic management, bandwidth management and QoS to control bandwidth and prevent high intensity activities such as torrenting affecting performance across the rest of the school. To better track individual usage, Leo intends to roll out Active Directory giving each authorised user a unique username and password. Using Active Directory, the network administrator can identify individual users, how many devices they have connected to the network and track what they are doing, an important step in enforcing the school's internet policies and retain the focus on learning.

