

NEWCASTLE UNIVERSITY

Huawei delivers first 100GE University Core Network in UK

Challenge

Located in Newcastle Upon Tyne, Newcastle University was established in 1834. It is a Russell Group University and was ranked 18th out of 121 in The Times and Sunday Times Good University Guide 2014 and third in the North East and Yorkshire. The University has over 20,000 students from 120 countries worldwide and enjoys one of the strongest EU Research portfolios in the UK, particularly in Medicine, Ageing and Sustainability.

Working within a very competitive marketplace and with specific focus on improving its student experience, one of the main areas to focus investment as part of its Digital Campus strategy is to deliver a leading IT infrastructure that protects what it has today, but well into the future. Given the dramatic increase in the number of mobile devices being used by students and increased requirement for Voice, Video and Data, Huawei were uniquely positioned to provide cost effective future proof solution.

The incumbent network had been starting to feel the pressure from the increasing demands for more bandwidth. Therefore as part of the University's substantial Digital Campus investment it decided that the Core Network and WiFi would be a good starting point for improving the student experience. Not only did it have to give careful consideration to replacing the incumbent Network with a superior one, it also had to consider a solution that would integrate with and work seamlessly alongside the incumbent during a planned and timely migration to prevent loss of critical services and continue a smooth trouble free transition.

The key challenge for Huawei was to deliver a timely and smooth migration whilst providing a consistent Fixed and Wireless service to over 20,000 students and 2,500 staff across a 50-acre Campus with over 40 buildings.

Solution

The Newcastle University Campus Network is unique in being the first UK University to deploy a 100GE Core Network utilising Huawei industry leading in performance and award winning CloudEngine 12800 Core switches. The CE12812 switches are highly scalable with backplane capacity of 128 Tbps with capacity for 192 x 100 GE, 384 x 40 GE, or 1,536 x 10 GE ports. The Aggregation to the Core was delivered using multiple S7700 Chassis switches utilizing 40GE ports 10GE out to the Access Layer with 10GE using S5700 switches.

The Education experience continues to change dramatically as do the expectations of the users. The students no longer accept or will tolerate just a wired network experience as the norm. All students today expect and indeed demand the same user experience as they would get at home. They carry numerous devices and expect to be able to connect those devices anywhere at any time. Huawei's WLAN solution has transformed the student experience from an educational and recreational perspective. High performance, free of charge WiFi is now available to

all students across campus and halls of residence as well as high density WiFi in public areas, sports arena and auditoriums. The Huawei WLAN solution is delivering maximum speeds of 1Gb per second with over 5,000 Access Points at completion driven by Huawei integrated Access Controller cards ACU2.

Value

The Huawei Core Network and WLAN solution has achieved the first priority of the University. It has dramatically improved student experience by providing seamless high speed wired and wireless Network availability at all times across the campus. It has exceeded the student's expectations and therefore been proved successful.

As well as delivering a strong user experience the Huawei solution has also enabled the University to roll out more of its campus network than expected for the initial budget. Therefore, it is now able to provide more services to more students with less budget.

At the same time the Huawei solution has also reduced the TCO (Total cost of ownership) of the Network as Huawei switching equipment utilises far less power than the incumbent equipment provider reducing the power cost of their Core Network and also delivering much improved port density. The solution is also SDN ready and has strong virtualization capability again saving cost and improving integration with their IT platform. The 100GE Core delivers a strong return on investment to the University as they can deliver the guaranteed bandwidth and user experience now whilst not having to invest in large forklift upgrades in future.

Overall the Huawei Core and WLAN solution puts Newcastle University at the forefront of Technology delivering improved student experience whilst meeting the Universities budget and business objectives for its five year Strategic Digital Campus plan.

