Esher College
Adding value with a simple, smooth transition to eduroam

Situated near Hampton Court in Surrey, Esher College prides itself on creating a “friendly, vibrant and purposeful atmosphere” for all its students. As a traditional sixth form college, Esher offers an extensive range of AS and A-level courses to around 1,900 16 to 19-year-old students from 100 different schools. At its one campus, the College also has over 2,000 adult evening students and 175 members of staff.

As IT Director, Daniel Loughlin, deals with everything from strategy, through to day-to-day technology matters. In 2014 he led the successful deployment of eduroam and is an advocate not only of the benefits eduroam has brought to the College, students and staff, but also the ease of its implementation.

Growing requirement for access

Daniel joined Esher College in 2009 as Network Manager. At that time, the wireless network was based on 2.4GHz 802.11g Aruba equipment. In the last five years the number of devices using the network each day has increased 10 fold to over 2000. Only about 4% of these are owned by the college.

Daniel says, “By 2012 our Aruba network could no longer cope with the number of devices due to only having 38 radios as well as the lack of 5GHz and 802.11n support. We looked at a number of different technologies and decided on Xirrus as we liked the controller-less architecture and ability to have up to 16 radios in each array. We now have 168 802.11n radios spread across both bands.”
A swift transition

The transition to eduroam was surprisingly smooth and easy, with no disruption to processes and, importantly, no additional cost to the College.

“We had been wanting to deploy eduroam for some time and were very pleased that once we started it only took around three to four weeks to be completely up and running. The technical work took no more than an afternoon. It helped that we had the infrastructure in place and didn’t need to buy any new equipment. Having installed the Xirrus network ourselves we were comfortable with how it worked and how to configure it” says Daniel. “The documentation from eduroam(UK) was great, with excellent guides, the portal and support staff helping us through it all. The rest of the time was used communicating to staff and students, putting guides together, obtaining access to the eduroam portal etc.”

The College’s eduroam deployment now extends to over 53 wireless access points across the campus. The most complex element of the project was designing the rules and regex expression to block RADIUS requests with invalid realms being forwarded to the National RADIUS Proxy Servers (NRPSs) – there’s now lots of great info on the Janet community site, along with complete regex examples that can almost be used off the peg.

The problem of filtering content

The College used to have separate networks which allowed them to apply different levels of filtering to staff and students – student access was very strictly controlled (pornography, sex, gambling, hacking, games etc were all blocked). With the deployment of eduroam, filtering was removed and filtering on college computers is now minimal – pornography only.

"With 4G, internet access at home and everywhere else, blocking content on our networks is somewhat futile. We find it much better to focus on education and trusting the students. We have very few problems now with access to legitimate content being affected by filtering or students accessing content they shouldn’t – although we still monitor traffic and intervene when necessary,” said Daniel. "16-19 is a difficult age when it comes to content filtering. Many of the subjects they deal with at college require access to sites that you would normally find blocked at primary and secondary level, such as terrorism, rape, drugs, sex (sexual health, biology), gambling etc. We block pornography, and monitor everything else. The students deal with and discuss the issues in lessons and through our tutorial programme". 
eduroam has been welcomed by the College’s IT staff as it has reduced the time spent managing provision of guest access credentials and dealing with issues.

“It’s far more straightforward, as guests can now just walk into the building and they’re on the network. It’s a non-issue now for staff visiting other places and when students go off to see friends at university they’re online straight away,” Daniel says.

Staff and students alike now benefit from a far easier process, with one logon and password, wherever they are.

“We used to have different networks for staff and students,” says Daniel. “Now it’s one network, one logon, everywhere. It’s so nice and easy, with no need for various passwords, you can even go on holiday and use it on all devices from mobiles to tablets. The Principal of the College came to me shortly after we implemented eduroam, singing its praises. He was in Portsmouth watching a football match and could even get on it there!

Staff, students and eduroam visitors all use the eduroam network – all the users end up on the same VLAN and get a NAT’d IPv4 and IPv6 address – only port 25 is blocked. We now also have a true visitor network that uses WPA PSK for the very infrequent non-eduroam visitors.”

Value add

Having eduroam is a real selling point for the College – it’s one of the College’s facilities that is covered in the prospectus and on their website, and it’s publicised in the IT Services Guide. The college recognise that connectivity is a good service to ‘sell’ to people as it makes a real difference these days. “Seamless, wireless connectivity is something everyone wants,” he says. “It’s a service like water – people want it to just ‘be there’.”
Deploying eduroam – what should institutions consider?

Anyone implementing eduroam will need to know:

» How to administer their wireless network and setup an SSID with RADIUS authentication.

» How to create a VLAN/network that’s firewalled off from their main institution network – you really don’t want guests on your internal network!

» How to configure their firewall to allow RADIUS requests from the NRPSs to their internal RADIUS server(s)... i.e. making their RADIUS accessible from the Internet

Final word from Daniel,

“I would really encourage others to deploy eduroam. Don’t be put off if you’re running Windows software, like we were, as it’s very straightforward. It’s so simple, for the immense extra value you get out of it – why would you not?”