University of Bedfordshire: AIT Upgrades Wi-Fi for 'Eduroam' Access

AIT partnership group ltd

AIT implements Aerohive Wireless LAN across the University of Bedfordshire's five sites to resolve connectivity issues, extend network capacity and improve user experience.

Located near London in the UK, the University of Bedfordshire has over 24,000 students and 1,400 members of staff. The University has won numerous awards in recent years including the Queen's Anniversary Prize for Research 2013, and has a growing global reputation for high quality research and teaching in a supportive, multi-cultural environment. The University has ambitious growth plans and is currently investing £115m in new facilities across multiple campuses to support this expansion.

The Challenge

Today's tech savvy students increasingly use multiple wireless devices including smartphones and tablets. They wish to connect wherever they go within the University to access research and lecture material, as well as their own social and email accounts. As a result the ICT department have seen a huge year-on-year growth in mobile device related traffic which was putting the current system under strain.

"Wireless connectivity has become an essential part of University life as it aids the teaching and social environment which enhances the user's experience. Good coverage, reliability, speed, connectivity and compatibility are important factors to sustaining student satisfaction while at the university," said Minesh Chikniwala, Deputy CIO, University of Bedfordshire.

Analysis of the current wireless solution showed that, with the increased number of mobile devices, capacity and connectivity issues were occurring with the current solution. The existing solution used a centralised architecture which resulted in insufficient service system delivery at peak times. The University network team wanted an architecture that put layer 3 switching at the edge and avoided these bottlenecks, making it easier to support the bandwidth for heavy video and multimedia applications that students demand today. The Wifi network upgrade would also incorporate the latest 802.11ac standards for improved capacity.

The network also had to allow seamless connectivity across five different sites, and provide support for 'Eduroam', the higher education wireless network that allows users, staff and students from within the University to connect and gain access to services relevant to them as well as visitors from other institutions. The 'Eduroam' system also allows students from the University of Bedfordshire to instantly

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Minesh Chikniwala,
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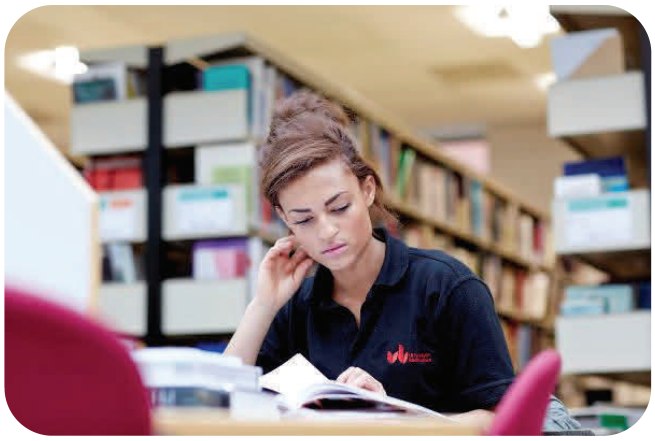
University of Bedfordshire

access internet services while visiting other universities across Europe. The network team required a single management interface in order to setup the various security policies and control user access to the network.

Solution

The team chose the Aerohive solution as its co-operative control architecture eliminated the capacity issues of the previous solution. Each access point works as part of a distributed control plane, allowing users direct access to pre-determined resources depending on their privileges with data forwarding and, importantly radio resource management handled at the edge. The new architecture allows layer 3 switching directly on the edge switches and removes the bandwidth bottlenecks caused by centralised controller architectures.

An additional benefit of the new system was self-service provisioning of the guest Wi-Fi access. The old system required manual issuing of guest Wi-Fi access codes which was managed by the ICT service desk. This benefit in turn freed up valuable ICT service desk time to allow the team to focus more on proactive service support for our end users.

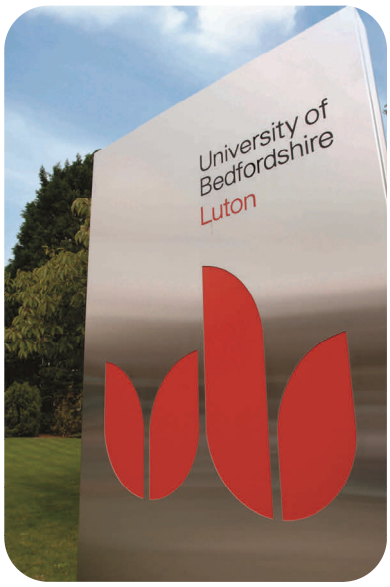


Over 500 access points were installed across the five main sites in Luton, Aylesbury, Butterfield, Putteridge Bury, and Milton Keynes, all working autonomously but managed from a single HiveManager console. The web based management console provides real time information to troubleshoot issues. The traffic light system and comprehensive logs instantly highlight issues and enable pro-active user support.

Result

The updated wireless network is already supporting staff and students at the University of Bedfordshire, wherever they want to connect. The network provides better coverage, with improved reliability of device connectivity and higher bandwidth for users, and improved troubleshooting tools for network staff should issues occur. Other improvements include future proofing 802.11ac for 5GHz connectivity, self-service guest access, and a single SSID to simplify user setup. The University now uses 802.1X for authentication, removing the use of older browser authentication methodologies.

"Aerohive was the perfect strategic choice as a long term partner. It gives us the scalability we need to support tens of thousands of devices across multiple sites," continued Minesh Chikniwala. "Aerohive's architecture is particularly suited to large deployments like ours as each access point can be deployed independently, yet is managed from a centralised management interface. AIT had the skills to install and configure the wireless network in a very short space of time. They have been a very professional partner throughout the project from start to finish, and we continue to work closely together on future strategic projects."



HiveManager allows the University network team to manage the network through a simple web based interface. It provides application visibility and control based on user identity and allows a unified configuration policy with contextual awareness for wireless, routing, switching, VPN, IP address management, and security policies.

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