COMMSCOPE®

Rapid expansion and high expectations demand more connectivity

Customer

Al Qasimia University

Country

United Arab Emirates

About the customer

Al Qasimia University, located in Sharjah's University Academic City in the United Arab Emirates, has grown steadily since its founding in 2014. The private university had about 1,200 students enrolled and had embarked upon a major facilities expansion program across its 1.4 km2 campus, an initiative that would include a new academic building and student residences.

The University was proud of its strong commitment to meeting student and staff expectations, not only in the quality of the rich educational content the provided, but also in the modern, wireless applications they used to deliver that content and learning management applications.

The challenge

To accommodate growing enrolment, the University recognized that its campus-wide infrastructure wasn't capable of keeping up with increase in Wi-Fi demand – from both in number of users and devices.

Anas Abu Ghoush, IT Director for the University, says: "Today's young adults are digital natives, meaning they have grown up with technology. Students expect to wirelessly access educational material and submit assignments wherever they are on campus. We want to provide optimal connectivity and bandwidth to ensure the best possible service to our students and staff."

With the University's growth plans, IT had a long list of requirements for the new high-performance physical infrastructure needed to support its the campus in the future. This list included the ability to handle high-density environments, provide campus-wide Wi-Fi access, and deliver consistently high quality of service.

"We found CommScope to be one of the best in the market. It is also cost-effective and has the capacity, coverage and scalability to grow to meet our growing future needs," says Abu Ghoush.

The CommScope solution

The University turned to CommScope's Ruckus portfolio of advanced Wi-Fi solutions to meet the challenge. Over the course of three years, the IT department worked with CommScope to deploy about 1,000 indoor and outdoor wireless access points (APs) featuring BeamFlex technology.

BeamFlex enables each AP's antenna to continually monitor its environment and adapt the antenna's configuration to create the optimal pattern for each device, as well as increase the range of its operation. BeamFlex also helps mitigate interference, which helps ensure reliable performance in all types of environments. The proprietary inclusion of polarization, diversity and maximal ratio combining (PD-MRC) technology enables BeamFlex APs to adjust the connection to each user's device location, optimizing signal from moment to moment in order to best meet its current orientation – that is, the direction the user is holding their device.

"This will give us the capacity for the new buildings and also expand the network to cover all of the campus, including outdoor locations and the car park," says Abu Ghoush.

In addition to the installation of the APs, Al Qasimia University also relied upon CommScope to update its cabling infrastructure. CommScope installed more than 10,000 Category 6A outlets wired with SYSTIMAX GigaSPEED X10D cabling across nine of the University's 17 buildings to support ultra-high-speed Wi-Fi connection. The cables have been specified out to 500 MHz to support high-bandwidth applications operating at 10 Gbps. GigaSPEED X10D cables are easy to handle and terminate and are also available in predetermined configurations to speed and simplify deployments even more.

"When the university planned for the WI-FI implementation, we wanted to make sure that we have the right infrastructure to support it, being either Wi-Fi 5 or Wi-Fi 6. To ensure the optimal performance, we positioned the SYSTIMAX Category 6A cables to guarantee that infrastructure supports the massive flow of data and applications running over it," Says Feras Hani, Infrastructure Systems Engineer, Middle East at CommScope.

He adds, "More important than just the data today is the Power-Over-Ethernet (PoE) challenge, so with having Category 6A installed, the Wi-Fi APs and all connected devices can use the full potential of 802.3bt PoE up-to 90 watts."

In total, the deployment included 800km of cabling, linked back to 40 distribution frames via multiple distribution points on each floor for easier reconfiguration as necessary. The modern infrastructure

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allows Al Qasimia University to continuously support new applications and increased demand.

Al Agha says, "We believe that connection reliability happens at the mobile edge, where the speed of connection to the device is the most vital element in the performance equation. CommScope excels in delivering best-in-breed performance with its patented technologies. Students are able to connect reliably from anywhere."

The results

In addition to connectivity requirements, the new infrastructure serves high-density and high-capacity demands. The University has as many as 1,700 users overall (including students, faculty, administration and other staff). At peak times in the busiest locations, the connected network has to handle hundreds of concurrent users. The traffic can be bandwidth-intensive, as students may be uploading or downloading hundreds of mBs of academic content and assignments.

Abu Ghoush says, "A single AP can manage hundreds of client connections simultaneously. The technologies built into the APs ensure great performance for even our busiest areas. CommScope also supports the wide range of mobile devices that our students use."

BeamFlex helps supports the demands of video and voice communications.

"We also use Ruckus SmartCast, a dedicated Quality of Service engine that further optimizes performance for video and voice applications," says Abu Ghoush. SmartCast combines capabilities like packet inspection, automatic traffic classification and advanced queuing and scheduling.

"CommScope is meeting the performance expectations that are important to our students and educators from A to Z," says Abu Ghoush. "Their connectivity solutions also support our growth plans without requiring us to add new investments."

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technology with game-changing ideas and ground-breaking
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