



Executive Summary

Industry

- Higher Education

Environment

- 2,200 students
- 500 faculty and staff members
- 46 buildings
- 2,700 users
- 422 acre campus

Technology Needs

- Stable and scalable infrastructure
- Wide range of coverage for mass amount of devices
- Efficient maintenance and management tasks
- Centralized management

Extreme Solution Components

- ExtremeCloud™ IQ
- ExtremeWireless™

Results

- Significantly improved wireless performance
- Wi-Fi 6 delivers a more stable video experience for remote learning and other activities
- Increased visibility into its infrastructure, devices, users, and traffic, and the health of those devices and quality of experiences
- Simplified management and maintenance



Lincoln University Takes Campus Wi-Fi to the Extreme

Founded in 1854, Lincoln University is the first historically black degree-granting college or university in the United States. The University has 2,200 students and 500 faculty and staff members on its 422-acre main campus in rural Chester County, Pennsylvania. Along with the 46 buildings on the main campus, the school also has a graduate center in University City in Philadelphia for some 300 students. Notable alumni include poet Langston Hughes; U.S. Supreme Court Justice Thurgood Marshall; Nnamdi Azikiwe, the first president of Nigeria; and Kwame Nkrumah, the first president of Ghana. The university is led by its 14th president and Lincoln University alumna Brenda Allen, Ph.D.

Lincoln University's Objectives

Lincoln University, like most schools and businesses, has had to adapt to a “new normal” regarding its campus activities and learning environment. While mobility and wireless access were already a must-have, the unique circumstances surrounding COVID-19 and new online learning strategies increased the need for a stable, reliable wireless network. University President Dr. Allen wanted to ensure all students – but particularly incoming freshmen, who reside on campus – had access to the full complement of University resources and a true college experience. She also understood that experience was increasingly moving online, fundamentally necessitating a ubiquitous wireless network that would enable both delivery and receipt of all curricula, along with enabling. This was even more critical in a synchronous remote environment where students would be accessing lectures and other course materials from their dorm rooms or other campus locations using their devices of choice.

Lincoln University wanted to make sure that, whenever people entered its campus, they would be able to access the internet and all University resources from any location. The goal was to create a truly wireless-ready environment with increased access and capacity across all its indoor and outdoor spaces to enable students, faculty, and staff to connect with any device anywhere on campus. That also meant modernizing its learning management system so it, too, could be accessed wirelessly, and redesigning the University website to be mobile-ready. It also included accommodating a new streaming reality – while traditional television usage has been on the decline, streaming services like Netflix, Hulu, and YouTube, have seen a significant uptick in usage.

The Challenges

The most significant challenge Lincoln University's small IT team faced was an unstable, older wireless infrastructure with 500 access points, which was poorly designed and delivered inadequate coverage in many areas of campus, making it impossible to accommodate evolving connectivity needs of 2,700 users. The existing infrastructure wasn't designed for newer devices with faster wireless adapters and simply could not support new end user technology and bandwidth demands. It didn't even cover the entire campus. Poor coverage and performance were among the most common student complaints, with performance varying from building to building and creating inconsistent experiences.

In addition, the legacy infrastructure required significant time and effort to update firmware, upgrade controllers, install patches, and perform other maintenance and management tasks. The IT team knew that, in addition to upgrading its wireless infrastructure, it also needed a new, centralized management solution that could be accessed from anywhere – on campus or off – particularly while most staff were working remotely.

The Solutions

Lincoln University considered several competitive solutions, but eventually opted to deploy a wireless solution from Extreme Networks. The school's IT team deployed the ExtremeCloud IQ wireless network management solution and Wi-Fi 6 access points across its campus.

The Extreme Networks solution had tremendous advantages in ease of use, deployment, and management – critical for such a small IT team serving an entire campus. In addition, ExtremeCloud IQ was simpler and didn't have the same steep learning curve as competitive solutions, while providing a full suite of performance, health, and security features.

The support from Extreme Networks and its local partner Howard Technology Solutions helped create a painless implementation process. The service delivery team from Howard helped bring Lincoln University's new network online quickly and showed McKenzie and his team how to use the management tools. Coupled with a responsive Extreme Networks support team, which ensured that any request or question was addressed quickly, the experience was second to none.

The Results

The biggest benefit Lincoln University gained from its upgrade is a higher performing, more stable network infrastructure to support its students and faculty. By replacing its legacy wireless infrastructure with the Extreme Networks solution, Lincoln University was able to increase its coverage area and performance with 25% fewer access points in areas most frequently occupied by students, including residence halls and classroom buildings.

Since rolling out the Extreme Networks infrastructure, wireless connections have been more stable and Wi-Fi-related complaints have been limited and are mainly related to areas where Extreme Networks access points haven't yet been deployed. The Wi-Fi 6 performance is significantly improved over the previous 802.11 a/b/c/g/n system and delivers a richer, smoother, more stable video experience for remote learning and other activities.

Notably, Lincoln University has experienced zero Wi-Fi downtime since upgrading its network. The Extreme infrastructure has also enabled increased security features for the University's network and its users, without any impact on performance.

With a single-pane-of-glass management features and credential-based access management, the IT team enjoys increased visibility into its infrastructure, devices, users, and traffic, and the health of those devices and quality of experiences. Simplified management and maintenance with the Extreme Networks solution has reduced the workload for the IT team, resulting in a reduction in operating costs of more than 30% and allowing the IT team to focus more effort on security and rolling out even more new infrastructure.

“The overall experience with Extreme Networks and Howard Technology Solutions has been phenomenal, I couldn't ask for more.”

Justin McKenzie, CIO, Lincoln University

“We strive to provide good experience for our users and that’s really the value the Extreme Networks solution has created,” said McKenzie. “Extreme Networks allowed us to deliver this more easily once we migrated from our existing high-maintenance on-premises solution to the new infrastructure that can be managed remotely. It’s all part of our student success scenario. We want to minimize any and all barriers to student success and new stable, secure infrastructure allows us to do that.”

Justin McKenzie, CIO, Lincoln University

Future Outlook

The next phase of Lincoln University’s rollout will extend coverage to additional areas, including athletic facilities, administrative buildings, and other indoor and outdoor spaces, many of which previously had no connectivity at all. It is also testing other Extreme Networks products, such as the ExtremeCloud A3 Network Access Control Solution, which enables management of all wired and wireless network assets.

Ultimately, the University will deploy a total of 600 access points covering the entire campus. Once complete, the school will have complete coverage across its entire campus and will be able to support not only its current campus activities, but any new initiatives it will roll out in the future. The University already plans on launching a competitive esports team and corresponding educational curriculum, which will benefit from the new wireless capabilities.



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