

CASE STUDY



OVERVIEW

For over 60 years, Capital Normal University (CNU) has been a leading educational center in Beijing, serving 30,000 students annually. It is also a leader in smart campus technology and digital learning programs. The existing Wi-Fi was not providing the coverage or stability that the CNU Smart Campus initiative required. The IT group wanted a strong wireless foundation to enable seamless access to courses and resources anywhere on campus and across its six urban campuses.

CHALLENGES

- The existing Wi-Fi network was unable to support the growing number of mobile devices and online applications
- The smart campus initiative required seamless connectivity across all campuses
- IT wanted simplified, unified network management across all CNU campuses

SOLUTION

- 10,000 indoor 802.11ac APs
- Ruckus SmartCell Gateways

BENEFITS

- Wi-Fi easily supports the growing number of mobile devices and the launch of applications like WeChat and the Star Teacher Classroom
- Students and teachers can access streaming video from anywhere, even when roaming across campus
- The expanding network is easy for IT to manage, reducing time and money
- Having a stable network enables CNU to participate in eduroam, a worldwide wireless network for the international research and education community

RUCKUS SATISFIES MOBILE-INTENSIVE DEMANDS ACROSS MULTI-CAMPUS URBAN UNIVERSITY

In higher education, a modern campus is synonymous with a smart campus. This means technology is woven into the fabric of learning, on-campus living, sports and more. The smart campus connects not only students, but also faculty and administration. In fact, technology within a smart campus infrastructure should enable connections that match a school's academic vision, now and in the future.

That's certainly the case with Capital Normal University (CNU), one of the most highly regarded public universities in Beijing. Since its founding in 1954, CNU has expanded to meet the educational needs of China's bustling capital. This expansion includes new programs, buildings and even campuses. CNU has 27 colleges and departments and offers over 50 majors. Over 30,000 students, including undergraduates, graduates and adult education students, attend annually. The university has six campuses, most of them located in downtown Beijing.

The sheer size of CNU, coupled with its forward-looking educational programs—presented significant challenges for its existing network infrastructure, according to Hu Yingbin, director of the Digital Campus Construction Center. "As part of our IT development plan, our goal was to create a fast, efficient and secure network infrastructure. In particular, we wanted seamless wireless coverage, enabling students and faculty to easily access digital applications anytime, from any personal device."

Over time, the university had moved more traffic to its wireless network. But demands on the existing Wi-Fi were growing. The number of mobile devices owned by students was increasing rapidly. In particular, the university was launching two important applications—CNU WeChat and Star Teacher Classroom. The existing Wi-Fi wasn't stable enough to support these growing demands. Interference problems affected connectivity and reliability.

Managing six campuses as a unified network was also a challenge. "We wanted visibility across all of the campuses as a single unified network, and the ability to manage our WLAN infrastructure as efficiently as possible," says Hu.

After an evaluation of several Wi-Fi vendors, Hu and his team selected Ruckus to provide the wireless infrastructure for the CNU Smart Campus program. They also chose Beijing TC-Technology Co., Ltd., a Ruckus partner, as the solution integrator.



“Ruckus Wi-Fi met all of the requirements for the CNU smart campus. Ruckus technology supports high-density, high-demand environments, which matched perfectly with the growing number of mobile devices on CNU’s campuses and development of exciting new online applications. The coverage, capacity and scalability will ensure that CNU meets the demands of today’s and tomorrow’s digital teaching environment.”

DONG HAOJING

General Manager
Beijing TC-Technology Co., Ltd

“Ruckus Wi-Fi met all of the requirements for the CNU smart campus,” says Dong Haojing, General Manager of Beijing TC-Technology. “Ruckus technology supports high-density, high-demand environments, which matched perfectly with the growing number of mobile devices on CNU’s campuses and the development of exciting new online applications. The coverage, capacity and scalability of Ruckus solutions ensure that CNU can meet the demands of today’s and tomorrow’s digital teaching environment.”

“Ruckus understands the challenges of large-scale campus wireless to support student life and digital learning,” said Kelvin Wang, Ruckus General Manager of China. “We are very pleased to provide a strong foundation for the CNU Smart Campus.”

STUDENTS AND TEACHERS ENJOY ANYTIME, ANYWHERE ACCESS TO COURSES AND RESOURCES

Beijing TC-Technology deployed over 10,000 indoor 802.11ac access points (APs) across the six campuses. Ruckus SmartCell Gateways connect the campuses and simplify management even as the network has expanded. “I can easily monitor the status of all 10,000 APs in real time from my office,” says Wu Jinxiang, Engineer, Network Department. “This visibility and ease of management saves time and money.”

“Ruckus smart antenna and dynamic channel selection technology solved our issues with signal quality,” says Su Lin, Director, Network Department, Digital Campus Construction Center. “Now our network allows seamless roaming and auto-authentication, even across campuses. Students and teachers can log onto the network anywhere, anytime. This is a much better experience for the students, who may be downloading and uploading course material even while they’re moving around and between buildings and in common areas like libraries.”

Su says the stability of the Wi-Fi is crucial for supporting high-bandwidth video. “The Ruckus Wi-Fi handles real-time video transmission between our multimedia classrooms. We can support cable television broadcasts over wireless. Students can watch live streaming video anywhere on campus on their mobile devices, even while roaming. We are very happy with the performance of the Ruckus network.”

CNU’s IT team is constantly working on new applications to support the student experience and innovative teaching models. One example is CNU WeChat, which provides a central repository of university information. From the first day at school, students can complete their registration on WeChat. Resources like Bulletin Board, Class Group Chat, My Campus Card and My Dormitory are all accessible via smartphones and tablets. Students can also receive university notifications through their mobile phones. Both teachers and students rely on their WeChat account for campus information, course arrangements and other information.

The Star Teacher Classroom application supports online learning, interactive classrooms, resource integration, and massive open online courses (MOOC). Grades, assignments, homework submissions and even online assessments can be accessed online.



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Director, Digital Campus Construction Center
Capital Normal University

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CNU’s wireless network serves about 25,000 teachers and students daily, with approximately 35,000 mobile devices connected at the same time. The network is expected to support 200,000 users in the future.

In addition to digital learning, the CNU’s network supports campus cards and security monitoring. Ruckus also supports reliable network performance during large-scale campus events, such as fresher weeks, sports meets and anniversary celebrations.

CNU is one of the first universities in China to join “eduroam,” a secure, worldwide roaming wireless network developed for the international research and education community. Over 80 countries and regions around the world have participated in eduroam, enabling their users to conveniently roam within alliance networks simply by using internal network usernames and passwords. Thanks to the robust Wi-Fi platform by Ruckus, eduroam members have a seamless online experience when visiting the CNU intranet.