



Nanjing University Enhances the Learning Experience with Campus-wide WLAN Coverage



"With its high performance and scalability, Motorola's wireless LAN solutions will provide the university with reliable, end-to-end coverage, security and manageability both outdoors and inside academic and administrative buildings, hostels, and canteens. Motorola is helping us realize our goal of managing and teaching through the WLAN network to provide convenience to the lecturers and enhance the students' learning experiences."

- Jian-Zheng Xu, campus network manager,
Nanjing University

Company Overview

Nanjing University of Posts and Telecommunications (NJUPT) is a multi-level academic institute of higher learning specializing in the core disciplines of engineering, science and management studies. Located in Nanjing city in Jiangsu Province, NJUPT serves as one of China's core public universities under the Ministry of Posts and Telecommunications. The university combines 16 colleges, 2 independently established research academies, 7 research institutes and 4 research centers. NJUPT has two campuses in Nanjing — Sanpailou and Xianlin — which enroll more than 20,000 students each year.

The Challenge : Extending the network to all corners of the campus

NJUPT has built a high-speed broadband fiber-based campus network connected to the Internet via Cernet and Chinanet. But this network was unable to guarantee coverage throughout the entire campus — wireless connectivity was only available in certain areas of the 4.5 million square foot campus. NJUPT sought a true digital campus that would provide secure and rich wireless voice and data services to all areas within its campus — including all teaching buildings, housing areas, eating places, sports venues, outdoor common areas and more. Solution requirements included the ability to ensure peak performance for the most demanding multimedia applications, easy network access, robust network security and easy management.



Customer Profile



Company

Nanjing University of Posts and Telecommunications (NJUPT)

Location

Jiangsu Province, China

Industry

Education

Products

RFS7000 RF Switch,
AP300 Wireless Access Port
and AP-5131 Wireless Access Point

Partner

Nanjing Standard

Application(s)

Motorola proposed and implemented a campus-wide wireless LAN (WLAN) designed to address the key technical requirements of bandwidth, coverage, security and management while providing complete wireless coverage throughout the campus — to every square centimeter of every building and all outdoor spaces.

Benefits

1. Provides an enhanced learning environment and infrastructure
 - faster access to information anywhere on campus
 - inside and outside
2. Provides superior investment protection through support for future wireless technologies
3. Substantially reduced the cost of networking the campus environment

The Solution : Motorola's indoor outdoor enterprise wireless infrastructure

NJUPT wanted to set the standard for campus networking in higher educational institutions and deliver a truly new wireless experience to students, faculty and visitors. To achieve this goal, the University sought the best solution and the best technology. Motorola was the trusted technology partner of choice, chosen for industry leadership and its well-proven highly advanced and forward-thinking technologies that would allow the University to achieve its objectives.

Nearly 600 access ports and access points blanket the NJUPT campus, providing wireless connectivity throughout an area of more than 1.4 million square meters. Approximately 450 'thin' AP300 Access Ports provide very cost-effective in-building wireless coverage. Remote management of the AP300s enabled the University to configure and deploy the access ports in record time — the ability to send configuration files to all access ports eliminated the need for IT personnel to physically configure each device. To enable outdoor network access,

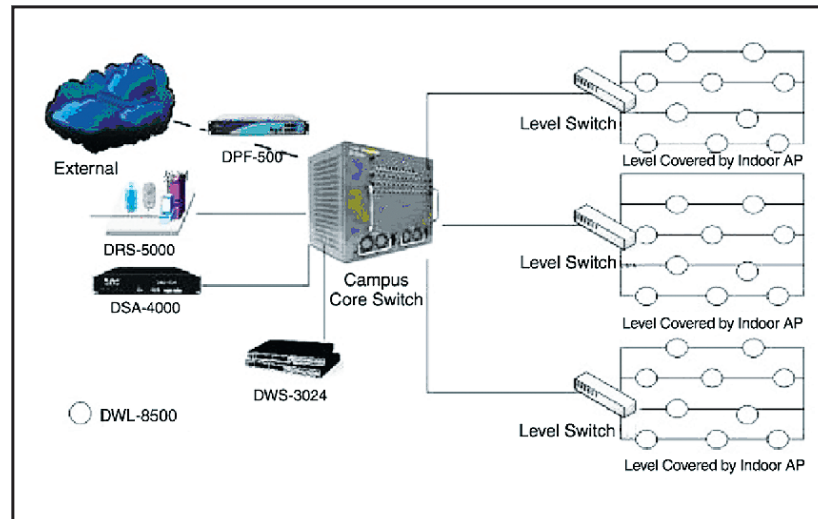


Diagram 1: Indoor Wireless Network Planning in NJUPT Campus

Motorola proposed and implemented a campus-wide wireless LAN (WLAN) designed to address the key technical requirements of bandwidth, coverage, security and management while providing complete wireless coverage throughout the campus — to every square centimeter of every building and all outdoor spaces.

Motorola's RFS7000 Wireless Switch is at the center of the network. Based on Motorola's Wireless Next Generation (Wi-NG) operating system, the RFS7000 provides a comprehensive feature set that offers unmatched security, resiliency, mobility and manageability for large scale, high bandwidth and high performance networks.

Next-generation self-healing is just one of the many features of the RFS7000 that provides extraordinary resilience by enabling the WLAN to automatically and intelligently adapt to changes in the RF environment. For example, if an access port or access point should power down, the RFS7000 will not only recognize and report the issue, but also automatically and intelligently adjust the power and channels of the surrounding access ports and points to compensate. The result? Only IT staff is aware of a network issue — students and faculty only experience continuity of the wireless connection.

the University deployed 150 Motorola mesh-enabled AP-5131 Access Points, extending network coverage to virtually every open space across the university.

NJUPT also choose Motorola's RF Management System (RFMS) for end-to-end management of the entire wireless LAN network. This fully featured management solution provides extraordinary control over the network and security — from planning and deployment through day-to-day monitoring and troubleshooting of infrastructure. The system provides instant access to over 200 statistics, allowing administrators to easily, rapidly and accurately assess the health of the WLAN. The result is the immediate discovery, troubleshooting and correction of issues as they occur, ensuring outstanding network performance and uptime. And RFMS can support thousands of access ports and points, providing the scalability required to meet the University's needs today and in the future.

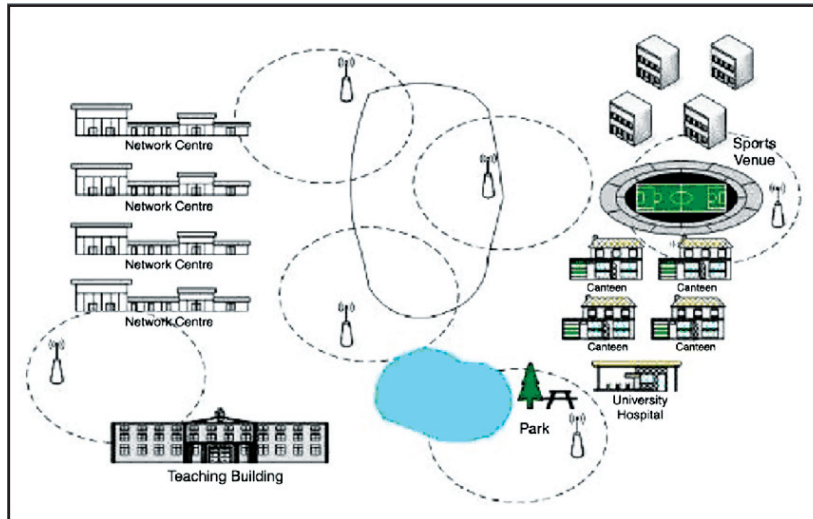


Diagram 2: Outdoor Wireless Network Planning in NJUPT Campus

The Benefits: Full network coverage campus-wide

By choosing Motorola as a trusted technology partner, NJUPT has been able to achieve one of its primary objectives — the ability to teach through the University network. With the completion of its wireless campus project, NJUPT now boasts the largest and most resilient wireless coverage area of any higher education institution in China, achieving the status as a true pioneer in the country's education system. By extending network access throughout all teaching and office buildings, housing areas, canteens and other outdoor areas, NJUPT's teachers, students and visiting staff can now access the Internet and campus Intranet more conveniently at any location on campus.

The new network delivers a number of key benefits:

- **Improved quality of teaching and research.** True anywhere and anytime access to the NJUPT network and the Internet will enable multimedia Internet-based teaching, long-distance teaching and other services, enhancing the standard and quality of teaching and research initiatives.
- **Reduced networking costs.** The wireless network reduced the cost of providing network access throughout the campus environment by eliminating the high cost associated with running cabling and power throughout and between buildings. In addition, centralized and remote management of this distributed wireless LAN significantly reduces the associated IT personnel requirements, reducing staffing costs.

- **Flexible access control.** Granular network control enables the creation of different classifications of users. The University can grant teachers longer hours of access, while student access can be restricted to ensure that students have ample time to work and rest.
- **Extraordinary investment protection.** NJUPT enjoys the advantages of a truly future-proof wireless network. The WLAN can scale as needed to support additional users. And the RFS7000 is a truly unified voice, data and RF platform. Built in support for Wi-Fi as well as RFID, Wi-MAX and Real Time Locating System (RTLS) and other locating solutions provides the foundation for the University to deploy many new future applications — without requiring a forklift upgrade of the wireless LAN.

Additional resources

For more information on how Motorola's wireless network solutions can help your organization, please visit us on the web at www.motorola.com/enterprise



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