

Xirrus Teaches Carnegie Mellon University How to Solve Density Issues



Carnegie Mellon is a global research university of more than 10,000 students, 70,000 alumni and 4,000 faculty and staff. Since its founding in 1900, Carnegie Mellon University (CMU) is consistently a top-ranked university. While technology is pervasive on its 144-acre Pittsburgh campus, Carnegie Mellon is also distinctive among leading research universities for the world-renowned programs in its College of Fine Arts. As a global university, Carnegie Mellon has campuses in Silicon Valley, Calif., and Qatar, and programs in Asia, Australia and Europe.

In order to maximize their technology investment, support faculty and prepare students for an increasingly mobile world, CMU needed to fully integrate wireless into their connectivity strategy. It was imperative for Carnegie Mellon to select a wireless network that would offer wired reliability to support their high bandwidth applications and enable online learning across their most demanding areas of campus. Recognized as a world-class learning institution, CMU knew they would need a wireless solution capable of achieving world-class reliability for hundreds of client devices.

Performance and Reliability for Dense Wireless Learning Environments

Carnegie Mellon University's Wireless Andrew network was one of the first campus-wide wireless networks in the world and has been in operation since 1994. Today, Wireless Andrew 2.0 provides service to over 14,000 students, faculty, and staff across the university's main campus. Carnegie Mellon continued its technical tradition of excellence by selecting Xirrus high performance wireless Arrays for their campus-wide wireless network. By selecting Xirrus, CMU can provide more reliable wireless access with fewer devices campus-wide, which significantly reduced the cost of wireless implementation and management.

Carnegie Mellon University

Founded in 1900, Carnegie Mellon is now a global university with more than 10,000 undergraduate and graduate students.

Infrastructure requirements included:

- Deliver reliable wireless connections throughout the dense lecture halls and dorm rooms
- Bandwidth to support high bandwidth applications and online learning
- Support for wireless-enabled notebooks, handhelds, and smartphones
- Easy installation and management from a central location

The Xirrus solution provided:

- Support for hundreds of client devices
- Improved device and user density and throughput with 4 to 16 radios per Array
- Greater coverage with high-gain directional antennas
- Distributed intelligence in each Array with no central controller
- A modular platform for simplified capacity expansion and field upgrades
- Easier installation and network integration with on-board switch, firewall and management
- Increased RF security with a dedicated threat sensor in each Array

Benefits

- Plenty of bandwidth and performance for thousands of students, faculty, and staff
- Ability to manage all devices from a central computer
- Automated management, RF spectrum, and security tools

Unlike other wireless network vendors, Xirrus architecture was designed to replace the wired network—delivering far better coverage, bandwidth, and throughput than anything else available on the market today. Compared to conventional thin APs plus closet controllers, Xirrus Arrays integrate 4 to 16 radios, high-grain directional antennas, a multi-gigabit switch, controller, firewall, and threat sensor into a single access device. Together this provides 4X the coverage and up to 8X the bandwidth and capacity. It's a perfect solution for high user density and throughput needs in auditoriums, classrooms and residence halls. And the Xirrus architecture is ideal for campus-wide applications where fewer Arrays mean less cabling, switching and general infrastructure expenditure.

As wireless networking grows, universities and colleges will begin to see a reduction in the use of wired network ports by students and faculty. In the case of Carnegie Mellon, servicing 14,000 students would break traditional controller-based wireless architectures; however with Xirrus, educational institutions can easily achieve greater performance under heavy loads, along with greater user density and coverage with up to 75% fewer devices.

"As the use of 802.11n grows, we expect a reduction in the use of wired network ports by our students and faculty, and even can foresee purchasing fewer 10/100 wired Ethernet switch ports. Xirrus has allowed us the ability to securely deliver data, voice, and video services to large user populations - and all at reduced deployment and ownership costs compared to traditional wired networks," said Dan McCarriar, director of network and production services at Carnegie Mellon University.

The Xirrus Advantage

With the explosion of smartphones and tablets, mobility has become ubiquitous. People expect to connect wirelessly. Organizations depend on high-bandwidth to send and receive voice, video and data, from any device to any one. And no one delivers better than Xirrus. Our array-based solutions are unique. They draw from cellular tower design principles to provide wired-like reliability, increased user density and capacity plus superior security. They perform under the most demanding conditions and have lower infrastructure requirements. When integrated with business and IT objectives, they help you do more than ever before.

At Xirrus, we apply the "best practices" of wired networking to wireless infrastructures by distributing the intelligence to the edge and outfitting the Array with dense multi-state radios in the same manner as a wired switch. That's how Xirrus delivers the best performing, most scalable wireless solutions in the industry. It's a strategic IT infrastructure advantage that fuels organizations. Because Xirrus does wireless networks right.



"We deployed Xirrus in the most demanding areas of our campus, where performance needs continually spike and the types of applications and devices vary greatly. Xirrus has allowed us to take the next leap in performance that will carry us forward for the years to come."

DAN McCARRIAR,
director of network and production
at Carnegie Mellon University



1.800.947.78.71 Toll Free in the US
+1.805.262.1600 Sales
+1.805.262.1601 Fax
2101 Corporate Center Drive
Thousand Oaks, CA 91320, USA

To learn more visit:
xirrus.com or
email info@xirrus.com