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## University Wi-Fi

**XIRRUS**®

High Performance Wireless Networks

# Teaching higher education how to do smarter wireless

Colleges and universities see value in intelligent wireless networking.

Mobility is the new norm. Faculty and students expect to connect without wires. They depend on it. The explosion of smartphones and tablets has seen to that. According to ABI Research, there were 1.5 billion Wi-Fi enabled devices shipped in 2012. Students are early adopters of technology. So those devices are finding their way into dorms and classrooms first. To support faculty and to prepare students for an increasingly mobile world, educational organizations must fully integrate wireless into their connectivity strategy.

Higher education is on the forefront of the mobile evolution with its high density of users and devices all over campus—and it shows no signs of abating. Students are bringing multiple wireless devices to campus beyond just a laptop, including smartphones, tablets, game consoles, printers, and more—tripling the number of wireless devices on some campuses over the period of just a few years. Within such a competitive marketplace as higher education, colleges and universities cannot realistically limit device proliferation—it just needs to support them.

While some enterprises have pushed broad Wi-Fi upgrades off into the future, this is not an option in higher education. College and university IT administrators need to be addressing today, how they will support device growth that will only rise semester by semester. Administrators want Wi-Fi to attract applicants, educators want to use it to teach, and students want it because their generation sees wireless as a fundamental utility.

At Xirrus, we understood the challenges, and engineered for it. When we improve wireless support in the lecture halls, teachers can engage connected students in new ways and enhance learning. When we provide more reliable campus-wide wireless access with less network equipment, the cost of wireless implementation and management is reduced. And when we deliver flawless wireless access in busy residence halls, student satisfaction rises. Wireless isn't a nice to have anymore. Done



right, it's a strategic IT infrastructure advantage that accelerates learning and lets colleges do more than ever before. And Xirrus does it right.

Xirrus' solutions were developed from the ground up for a wireless world and designed to deliver wired-like performance. And Xirrus solutions support the unique requirements of higher education—particularly in terms of device density, application visibility, and the ability to scale on demand.

## The Xirrus Advantage for Higher Education:

- Identify and prioritize critical education applications such as Moodle, Blackboard and Learning Management Systems to ensure teaching progresses uninterrupted
- Deploy faster and easier with significantly less equipment and supporting infrastructure
- Speed up and simplify onboarding new student and faculty BYOD devices with full-featured access management
- Deploy wireless capacity where it is needed—from dorms, to offices, to lecture halls—with a range of performance-scaled solutions
- Future proof your network with technology upgrade path to 802.11ac and other wireless technologies without replacing any equipment
- Simplify operations with zero touch provisioning and turn up of new equipment via automated online activation

# Xirrus wireless solutions are decidedly different.

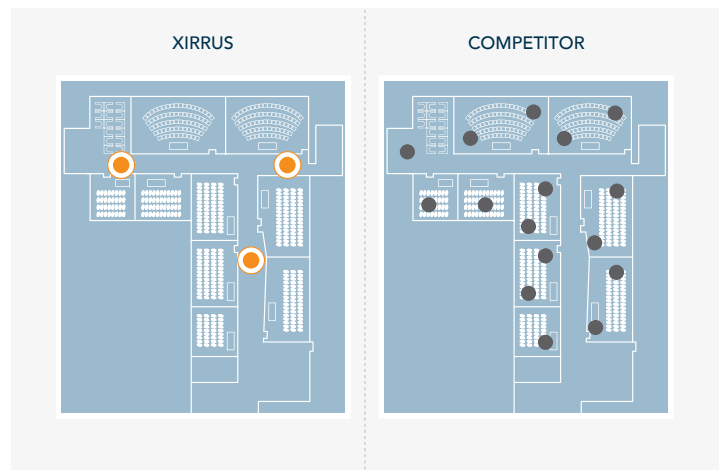
Xirrus provides a broad range of wireless solutions—from a 2 radio AP up to a 16 radio Array—to match the requirements of a broad range of use cases found in higher education. The Xirrus wireless architecture is unique. Instead of central controllers and multitudes of access points, everything needed for a secure, high performance wireless LAN is built into each Xirrus wireless product: from 2 to 16 radios, integrated antennas, switch, controller, firewall, threat sensor, and spectrum analyzer.

This integrated architecture reduces equipment and infrastructure requirements, simplifying nearly every aspect of the deployment. This frees up the bulk of your budget to deploy the wireless capacity needed to deliver a good user experience, and not the wired infrastructure needed to support all your access points.

The result is greater coverage and capacity from a Xirrus wireless network compared to traditional solutions, with fewer Wi-Fi and wired devices, much faster installation through zero touch provisioning and a scalable, future proof network.

## Lowest cost

- Up to 75% less equipment to deploy and maintain
- Up to 75% fewer cable pulls and switch ports
- Up to 75% less installation time
- Lower total cost of ownership compared to other wired and wireless solutions



A typical school space covered with 3 Xirrus Wi-Fi Arrays versus 16 traditional access points

## Highest performance

- Multi-radio design with 2 to 16 radios to provide scalable wireless capacity
- Distributed intelligence with multi-core processing in each Array/AP
- Integrated services operating directly at the network edge, not centrally
- Directional antennas for greater range meaning less equipment to deploy

## Example of Higher Education Clients

MARINE CORPS UNIVERSITY :: COLORADO STATE UNIVERSITY :: CHAPMAN UNIVERSITY

OSNABRUCK UNIVERSITY :: UNIVERSITY OF TORONTO :: MONASH UNIVERSITY

CARNEGIE MELLON UNIVERSITY :: LAWRENCE TECHNOLOGICAL UNIVERSITY

PEPPERDINE UNIVERSITY :: COLLEGE OF CHARLESTON :: IESE BUSINESS SCHOOL

REGIS UNIVERSITY :: NEW COLLEGE SWINDON

“ We chose Xirrus to be deployed in the most demanding areas of our campus, including the residence halls and buildings housing a variety of engineering and computer science programs, where performance needs continually spike and the types of applications and devices vary greatly.”

DAN MCCARRIAR — Director of Network and Production Services, Carnegie Mellon University

Carnegie Mellon is a global research university of more than 10,000 students, 70,000 alumni, and 4,000 faculty and staff. The university deployed one of the world's first campus-wide wireless networks in 1994 and was looking to upgrade to the latest 802.11n wireless technology to support high-bandwidth applications and enable online learning.

### Requirements

- High reliability for lecture halls and dorm rooms
- Bandwidth to support evolving educational applications
- Support for notebooks, tablets, iPhones, and whatever comes next
- A simple installation and central management
- A solution designed to be upgraded, not replaced

### Implementation

- Xirrus 8 radio 802.11n Arrays
- 65% less equipment to deploy compared to traditional APs and controllers
- 65% fewer cable runs (1,050 total)
- 65% fewer GigE switch ports deployed (1,050 total)
- 15% average power savings per year (59,130 kWh total)

## The benefits of smarter wireless:

### BYOD-optimized

Xirrus wireless solutions seamlessly support the massive proliferation of mobile devices with guest access and onboarding services to automate the process of bringing new devices and users onto the campus wireless network. Xirrus ensures all these devices can get onto the network and operate with a good end user experience.

### Application Control

Xirrus wireless solutions are the industry's first and only wireless solution to integrate next-generation application recognition and control directly at the network edge where it is needed most. Incorporating a complete Layer 7 deep packet inspection engine with associated policy control in every Xirrus Array or AP, educational applications can be prioritized to ensure the best classroom experience for your faculty and students.

### Superior scalability

No other vendor matches the investment protection offered by Xirrus Arrays. The modular chassis design allows capacity scaling by simply adding modules, incurring no waste and no rip-and-replace. Software programmable radios can be switched from 2.4GHz to 5GHz when needed as the client base evolves to 5GHz. More radios may be added to existing Arrays, and older radios can be upgraded to newer standards such as 802.11ac.

### Complete security

Xirrus implements multi-level security for comprehensive wireless network protection. Each Array and AP integrates a stateful firewall and dedicated threat sensor radio for 24/7 RF security protection without compromising user servicing resources. Xirrus Application Control enables application detection and application policy control on the network.

### High reliability

Xirrus distributes intelligence across the network into each Array and AP, eliminating the single point of failure and performance bottleneck of centralized controllers in legacy wireless architectures. Redundant radio, uplink, and device features ensure seamless wireless network operation.

### More economical

Directional antennas on Xirrus Arrays provide greater coverage, and with no central controller, a Xirrus network can be deployed with up to 75% less equipment. With far fewer components to install and cables to pull, a Xirrus wireless network can be installed faster and more economically than traditional solutions to accelerate ROI. Cloud-hosted network management and automatic activation simplifies network installation and reduces the resources required to manage and maintain the network.

