

# LOUISIANA STEM MAGNET SCHOOL ADVANCES TO 1:1 LEARNING WITH A UNIFIED NETWORK

**Company:** Patrick Taylor Academy, Jefferson parish Public School System

**Industry:** Education

**Challenges:** Deploy a wired and wireless network that would serve the needs of Patrick Taylor Academy, a science and technology magnet school, today and in the future.

**Selection Criteria:** The school needed a high-performance, high reliability, easy-to-manage unified network to support twenty-first century learning.

**Network Solution:**

-EX4200 and EX4550 Ethernet Switches

-WLA532 Wireless LAN Access Point

-WLC880 Wireless LAN Controller

-SmartPass Connect

-Ringmaster

**Results:**

-Deployed pervasive Wi-Fi in a very challenging RF environment

-Received no Wi-Fi support calls, even on the first day of school

-Simplified network operations and improved reliability

-Advanced 1:1 learning with a unified network

Louisiana's Jefferson Parish Public School System opened the doors on its new building for the Patrick F. Taylor Science and Technology Academy in September 2013. The \$22 million magnet school was built in public-private partnership with Patrick F. Taylor Foundation, the philanthropic organization established by the Louisiana oilman and education reformer. Patrick Taylor Academy is one of the top 10 schools in Louisiana, and was named a Blue Ribbon School by the Department of Education in 2010. The academy has 350 students, all of whom competed for admission.

## Challenge

The brand-new 100,000-square foot building is designed to support Patrick Taylor Academy's mission to engage students with research-based practices and collaborative learning. Wi-Fi is a prerequisite for twenty-first century learning, but designing the wireless LAN access for the new facility was highly challenging. The building has soaring ceilings, concrete walls, and an exposed infrastructure, designed to be an inspiration to students interested in science, technology, engineering, and math (STEM). The school supports a bring-your-own-device (BYOD) environment, so it needed to ensure that the students could quickly and easily connect their laptops and tablets while enforcing the district's strong security policies.

From a technology standpoint, the biggest challenge was being able to support the wireless environment so that the students would be connected regardless of where they roam on campus, said Vincent DiCarlo, Director of Technology at Jefferson Parish Public School System. "The facility was open with high ceilings, and that brought some unique challenges to designing and building the wireless LAN."

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## Selection Criteria

Jefferson Parish Public Schools issued a request for proposal that called for the creation of an inspirational technology model that would allow Patrick Taylor Academy to take full advantage of its STEM curriculum-and that would adapt gracefully over the next decade and beyond. After a rigorous competitive evaluation, Jefferson Parish Public School System chose Universal Data, Inc. (UDI) to deploy a Juniper Network Solution for its unified wired and wireless network based on UDI's vision and Juniper's groundbreaking technology. The school district worked with UDI to achieve its educational technology goals for Patrick Taylor Academy utilizing UDI's deep experience with data center, networking, and collaboration technologies, as well as with a broad set of IT vendors.

Patrick Taylor Academy, <http://www.pftsta.com/academics.html>

## Solution

Universal Data, Inc. deployed a wired and wireless network with Juniper Networks EX Series Ethernet Switches, Juniper Network WLC880 Wireless LAN Controllers, and Juniper Networks WLA532 Wireless LAN Access Points at Patrick Taylor Academy. The unified network supports the schools video-intensive curriculum, as well as classroom management, administrative applications, and an IP voice system. “UDI’s proposed Juniper solutions have the high reliability and performance that were necessary for the digital learning environment that we were seeking,” says DiCarlo. “We are very pleased with the Juniper infrastructure UDI has built.”

The Wi-Fi at Patrick Taylor Academy covers not only classrooms but also common areas and auditoriums. “UDI proved that they were up for the challenge to help us create the wireless coverage zones we needed across campus.” says DiCarlo.

Getting pervasive Wi-Fi coverage at Patrick Taylor Academy was challenging due to the school’s open architecture and exposed concrete walls. In addition, each classroom has a “cloud” box suspended from the ceiling that includes projectors and other equipment; given the placement of these media units, UDI needed to design custom mounting brackets for the wireless access points (APs).

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Patrick Taylor Academy uses Juniper Networks SmartPass Connect to provide student-and-employee-owned devices with quick and easy access to the network. SmartPass Connect uses both username/password-based 802.1X and certificate-based protocols. With SmartPass Connect, the school can ensure that classroom learning is not delayed by security measures while reducing the support cost for BYOD.

The WLA532 Wireless LAN Access Point delivers 802.11n wireless LAN access. The WLA532 AP integrates security, performance, and manageability and delivers great reliability. The design of the WLA532 also had a major appeal for the school, since the AP looks like a smoke detector, which deters tampering and curious hands. In addition, the WLA532 requires fewer AP’s per floor, which reduces CapEx, and its energy-efficient design and reliability delivers low OpEx.

The WLC880 Wireless LAN Controllers delivers and manages the wireless LAN service at Patrick Taylor Academy with the highest level of reliability, performance, and security. The WLC880 integrates the WLAN with the wired network to meet the requirements of demanding educational and administrative mobile applications for the students, teachers, and staff.

The district’s IT staff can remotely monitor and manage the academy’s Wi-Fi network using Juniper Networks RingMaster. “On the management side, RingMaster allows us to see the wireless

network and ensure that everything is functioning properly from our central office, without having to go to school.” says DiCarlo.

In the school’s virtualized data center, EX4200 Ethernet switches flatten the network to improve performance and increase operational efficiency. Juniper’s Virtual Chassis technology allows multiple interconnected EX Series switches to operate and be managed as a single, logical device, reducing OpEx and eliminating the need for Spanning Tree Protocol (STP). The school also uses EX4550 Ethernet switches for its distribution network, with each wiring closet running a Virtual Chassis configuration for simplified operations.

## Results

Patrick Taylor Academy is the first Jefferson Parish Public School to move to a 1:1 learning program. The network was deployed over the summer of 2013, so the students would be ready to learn from the first day of class. And when opening day came, the IT service desk didn’t receive a single call about network access. Network operations have been simplified with EX Series switches and Virtual Chassis technology, which is particularly critical as a small IT staff supports all 82 schools in the district. The IT administrators, which were new to using Juniper Networks Junos operating system, quickly learned the OS, which runs on Juniper switching, routing, and security platforms. Running Junos OS in a network improves the reliability, performance, and security of existing applications.

The IT staff also appreciates the ease of managing the Wi-Fi network with ringmaster software. With the school’s previous wireless LAN vendor, each wireless LAN controller had to be managed individually, which made management cumbersome and time-consuming. But with RingMaster, the IT staff can remotely monitor the real-time status of the entire wireless LAN including traffic patterns, client connectivity, access points and wireless controller status and alarms, as well as security alarms such as rogue APs.

The school has improved its network security posture taking advantage of Layer 2 security feature in EX Series switches, including Dynamic Host Configuration Protocol (DHCP) snooping and Spanning Tree media access control (MAC) limits. This has enabled the school to resolve long-standing issues with its previous vendor’s switches in which an entire wiring closet would go down if someone plugged a device directly into a switch.

## Next Steps and Lesson Learned

Based on the success of this project with Universal Data, Inc., the Patrick Taylor Academy’s Juniper infrastructure has become a model for other schools in the Jefferson Parish Public School System.

## For More Information

To find out more information about Universal Data, Inc. solutions, please visit [www.udi.com](http://www.udi.com).