DREW UNIVERSITY

Drew University Finds Campus-Wide 802.11n Migration Easier and Cheaper Than Existing 802.11g Network

Drew University wanted better Wi-Fi. The IT department at the 2500+ student private university had some experience with Wi-Fi, having sprinkled 90 Cisco 1200 Series 802.11g access points (APs) around some parts of campus. But the exiting solution was expensive, cumbersome and didn't scale. So Drew made the decision to blanket the entire campus with Wi-Fi and wanted to do it with the newest 802.11n technology. So they went looking for a smarter Wi-Fi solution.

Through Drew's 1:1 laptop program, all incoming students receive their own laptop. The newest laptops were now coming equipped with faster 802.11n technology. Thousands of Wi-Fi-enabled devices live on campus and must be supported by the wireless infrastructure. And with 95 percent of students living on campus, complete Wi-Fi coverage, consistent performance and stable connectivity were no longer negotiable options.

Founded in 1867, Drew University wanted to migrate from its existing 802.11g network to a campus-wide 802.11n network. But cost, compexity and coverage loomed as major issues.

Founded in 1867, Drew University has many old and historic buildings made of concrete, brick and other materials unfriendly to Wi-Fi. This increased cost, complexity and the time to configure and deploy each AP.

"Cisco gear was getting very expensive for us, and we were having to add external antennas to each of them to ensure good coverage," said Stave. "So moving forward, we began looking at alternatives that could provide better price/performance, simpler administration and systems designed and optimized for 802.11n technology," said Christopher Stave, Computing and Network Service Manager at Drew.

According to the university, each autonomous Cisco 802.11g AP was equipped with an external patch or omnidirectional antenna and ran about $1,200 or more. "And these things aren't pretty," said Stave. Configuration and administration of the APs was performed individually which took a considerable amount of time. The 90 Cisco APs were deployed only in academic spaces and some lounges - not campus-wide.

"The initial capital cost as well as the ongoing operational cost remain quite high for our existing system," commented Stave. "And with 802.11n being so much more expensive and complex, it looked nearly impossible for us to make the move given how much campus we needed to light up."

The IT staff at Drew also needed central management of their WLAN, support for 802.1x authentication, captive portal for guest access, advanced encryption and security and client troubleshooting features.

Like many higher education institutions, four major issues drove Drew to a change in Wi-Fi: 1) the need for expanded coverage indoors and out, 2) the move to higher speed 802.11n, 3) simplified deployment and administration and 3) lower total cost of ownership.

OVERVIEW
A private university founded by Daniel Drew and located in Madison, New Jersey, 30 miles west of Manhattan, Drew University is a liberal arts college established in 1867. Drew's campus consumes 187 acres with more than 35 multi-storey buildings for over 2500 students and 200 faculty and staff. Over 95 percent of the students live on campus.

PROBLEM
- Existing 802.11g APs to costly and cumbersome to deploy campus-wide
- Budget constraints prohibited migration to 802.11n
- No central Wi-Fi management
- Simpler configuration and deployment needed for campus-wide infrastructure
- Existing APs just plain ugly

SOLUTION
- 28 ZoneFlex 7942 single-band 802.11n Smart Wi-Fi APs
- 50 ZoneFlex 7962 dual-band 802.11n Smart Wi-Fi APs
- 3100 ZoneDirector Smart WLAN controller

BENEFITS
- Fewer Ruckus APs required to blanket campus
- Reduced deployment time per AP by 85 percent
- Simple central management for entire WLAN
- Ability to extend WLAN without running additional Ethernet cabling
- 802.11n APs could be deployed cheaper than existing 802.11g solution

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WIRELESS

After researching 802.11n WLAN systems from Colubris, Aruba, Cisco and Ruckus Wireless, Drew decided on the Ruckus ZoneFlex Smart WLAN system. Ease of management, total cost of ownership and signal range were the deciding factors in Drew's Wi-Fi decision.

With ZoneFlex APs, Drew no longer had to use external antennas because each AP integrates a high-gain directional antenna array that continuously finds the best signal path to each client, automatically routing signals around interference as it is encountered.

After installing the initial APs, Drew found the ZoneFlex system provided better coverage, reduced deployment cost, and provided more adaptive and automatic control over the RF domain. "We didn't find anyone really paying attention to the physical layer and felt that this is where most of the problems needed to be solved," said Stave.

"The ZoneFlex system gave us all the requisite central management but with a lot more value. The system requires fewer APs, provides a more consistent and adaptive signals without external antennas and is ridiculously simple to install and manage. It's hard not to like that."

With ZoneFlex, Drew has been able to cut deployment times per AP by 85 percent. According to Stave, configuring each AP used to take a "inordinate amount of time" and was prone to human error. Not anymore, it's minutes."

With the ZoneDirector, Drew now has a central point of AP control, user authentication and WLAN security and administration. Special tools integrated within the ZoneDirector, such as SpeedFlex, can be used by Drew to remotely check the speed of any client's wireless connection from a central point without any intervention by the user.

Multiple SSIDs map to discrete VLANs. In addition, with the ZoneDirector, Drew can now define groups of WLANs that will be shared by specific APs with the same WLAN mapped to different APs.

A captive portal authenticates guests and for students 802.1x with AES-WPA2 is now the standard.

"With Ruckus Wireless, we are able to deploy a very sophisticated, campus-wide 802.11n network that is much easier to deploy and manage, at 802.11g prices. No other vendor we found delivered such value."

"Migrating to a campus-wide 802.11n system looked to be a daunting task.

Most of the 802.11n systems out there are overkill, over-priced and over hyped.

The ZoneFlex system was the only WLAN solution we found to deliver a complete 802.11n solution at 802.11g prices - along with advanced RF controls that simply amazed us.

That combined with how simple this system is to manage, made our decision a non-decision."

Christopher Stave
Computing and Network Services Manager

Drew University sits of 187 acres with 35+ buildings to support 2500+ students, faculty and staff. Moving to a campus-wide 802.11n network was a challenge given the age and make-up of Drew's facilities.

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