TEXAS A&M UNIVERSITY-KINGSVILLE INSTALLS WIRELESS IN A SNAP WITH MOTOROLA'S AP 6511 ACCESS POINTS

PHOTO: Mesquite Village West

Texas A&M-Kingsville completes an installation of **Motorola's AP 6511 802.11n Wallplate Access Points with Wireless Next Generation (WiNG) switch architecture featuring Motorola SMART RF technology** in the Mesquite Village West residence hall. It's designed to optimize network performance, ensuring students have 100% uptime for a range of mobile devices.

SITUATION

The $18 million, 98,000-square-foot Mesquite Village West (MVW) dormitory on the Texas A&M-Kingsville campus offers a new style of living for students. It also presented a challenge for the university's networking team: complete a fast-track installation of a low-cost wireless network that provides reliable connections for students arriving in the fall with smartphones, laptops, tablets, and other mobile devices—while leveraging the investment in existing cabling.

Accommodating the wireless needs of students in the MVW residence hall required a new wireless solution and configuration. When Robert Miller, Texas A&M-Kingsville's Associate CIO, arrived early in 2011, MVW was already being constructed. "The distribution of access points (APs) in the hallways was already designed," he said. Previously, wireless had been deployed with a more traditional model of APs located in hallways. Extensive RF surveys were done in

existing dorm rooms of similar construction where students complained of connectivity issues, but since building construction was already in progress, there was no way of performing a new survey. An earlier phase of dorm construction provided the necessary survey feedback used to create MVW's traditional deployment model.

"Even in a best-case scenario, an AP has three walls to navigate before providing service to any user—from the hallway wall to an interior great room wall to an actual bedroom wall and door," Miller said. "In the new buildings, the stick frame construction tends to absorb more signal than traditional brick and steel concrete structures. So, instead of getting 'bounce' we used to depend on, we're actually absorbing it."

CUSTOMER
Texas A&M
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INDUSTRY
Education

MOTOROLA SOLUTION
- AP 6511 802.11n
- Wallplate Access Point WiNG 5 operating system with built-in SMART RF technology

SOLUTION FEATURES
- Intelligent AP product design for quick, simple installation
- Supports a wide range of today's mobile devices, including laptops, tablets, and smartphones
- Uses existing CAT5/6 wires in the wall
- Motorola WiNG 5 software provides self-healing SMART RF technology
- Flexible architecture enables networks up to 25 AP 6511s with no additional controller

SOLUTION

With Motorola's AP 6511 802.11n Wallplate Access Points with WiNG 5 architecture and software, Texas A&M-Kingsville had a quick, cost-effective way to provide reliable wireless service without the cost and hassle of traditional LAN installations.

Texas A&M-Kingsville CIO Bob Paulson learned about Motorola's AP 6511 solution at an executive summit in Florida and turned over the information to Miller upon his return. When Ray Mungia, Senior Solutions Consultant at Motorola Solutions, approached Miller, he was ready to talk. "We were looking at a game-changing deployment," Miller says, "and the 6511 looked like a product that could take us in the direction we were heading."

Following an initial meeting with Mungia, Miller placed an order for five units with Motorola's Demo Depot. "We did the beta—plugged the units in and they worked," Miller said. "Users were able to authenticate to our backend solution." Miller placed an order for 150 units and the process moved very quickly after that. "From the first contact with Motorola to the time we placed our first unit in production was less than six weeks. Typically, in the education world, that would have been a six-month process."

Because the new installation represented a new approach to locating APs—from hallways to inside the dorm rooms—and because Motorola's WiNG 5 WLAN offered a new approach to network architecture, it was critical that Motorola provide resources and step-by-step guidance to help ensure a quick deployment.

"As we were deploying and configuring the network, the folks at Motorola Solutions made sure that we had all the support and resources we needed every step of the way," Miller said. "It's unheard of to have that kind of access to a manufacturer."

As it turned out, the collaboration with Motorola was paramount for Miller in making the decision to proceed with the AP 6511 deployment. "If we had not been able to communicate as often and as much—and with as many people during this accelerated process—we'd have abandoned the project."

The easy installation of the AP 6511 was another major factor in the decision. "We had planned on a crew of three to take three days," Miller says. "It actually took about three hours for deployment—a total of just nine man-hours."

RESULT

Students at MVW residence hall are now enjoying continuous, reliable, and secure wireless connections.

"Our objective was to provide better wireless connectivity for the devices that students are bringing to school today," Miller said. "We achieved that." In fact, Miller reports that of the thousand-plus help desk calls received during move in, there were very few calls from MVW about wireless service.

Today, students are enjoying reliable service with an AP 6511 Wallplate installed in every suite, while the Texas A&M-Kingsville Help Desk also has dashboard visibility to the AP enviroment. So, in addition to the initial savings on installation equipment and labor, the seamless connectivity provided by the new solution means that the university will be able to support the network with far fewer technical staff. "Now, students just have to turn on their devices and they work," Miller said. "And we have many more tools to troubleshoot and identify problems. It's been a game changer."

CONNECTING TODAY'S WIRELESS DEVICES

Today's college-bound students are bringing as many as four wireless devices to campus, which can include, among other things, a laptop, tablet, iPod, smartphone—even gaming systems. And they're demanding wireless connectivity everywhere they go on campus, including dorm rooms.

While universities have made significant investments in wiring dormitories and residence halls, many mobile devices today are exclusively wireless, with lower RF power than laptops, but still relying on 802.11n Wi-Fi for their connectivity. Placing the AP 6511s in the dorm suites addresses the connectivity issues, providing stronger connections to and from the mobile devices.

"If we had not been able to communicate as often and as much—and with as many people—during this accelerated process, we'd have abandoned the project and ordered our existing AP deployment. The support from the Motorola team was paramount in our decision to go with the AP 6511 solution."

*Robert Miller,
Associate CIO,
Texas A&M-Kingsville*

NEXT-LEVEL RF CAPACITY PLANNING

To meet the growing demand for mobility and wireless connectivity, many universities are installing costly CAT5/6 cabling to support 802.11n APs in dormitory hallways. This not only requires extensive RF surveys to ensure that APs are placed in the right locations, but it doesn't leverage the university's investment in existing wired infrastructure.

Miller's plan was to provide an isolated microcell hot spot in each one of the suites at the residence hall, at a point in the room with the lowest attenuation. The team used a static RJ-45 wired in the common area of each suite to mount the wallplate AP. "We provided an AP, plus a pass-through port at each of the original data drop locations," he said. "We were able to install the APs without any additional modification or wiring—and we didn't lose the additional wiring by placing an AP there."

Miller's team installed a single port in each room, as well as a single port and cable TV port in each family/living room. Today, the building has a total of 103 AP 6511s installed in the suites and common areas.

By deploying Motorola's AP 6511 inside student rooms, installation density is easy to control, performance per student is predictable, co-channel interference is greatly reduced, and location is easy to change.

"Three years ago, when the traditional deployment was put in place at Texas A&M-Kingsville, we were dealing with devices that had a lot more power than the devices today," Miller says. "When we considered the cost of doing a traditional deployment of APs in the hallway at Mesquite Village West, we determined that we would need to triple the AP deployment in order to provide coverage—not because of our product, but because of the end user device. Tripling the APs would have cost $150,000 to deploy in the new building. That was just not in the budget."

BLENDING WIRED AND WIRELESS

When Miller and his team arrived at MVW, cable had already been pulled. "We didn't replace anything," Miller says. "We were adding to an existing wired infrastructure."

Not only did Miller's team need to support the traditional wired infrastructure so students could plug in their devices, they also had to support a core wireless service. "We weren't looking at meshing any of the devices," Miller says. "If we were not able to roll out wireless in time at the new Mesquite Village West building, we were still providing the wired connection."

With the AP 6511, installation can include an Ethernet port on the AP to offer a wired connection in the room. The AP 6511 can also be upgraded with one or three Ethernet ports for additional services, such as wired LAN access or an IPTV set-top box.

INSTALLATION'S A SNAP. LITERALLY.

The intelligent design of the AP 6511 allows the network to be installed in hours, rather than days. The process is simple: remove the existing structured wiring plate, install the universal bracket, connect the pigtail RF45 cable from the AP to the structured cabling, and "hook and snap" the AP to the bracket.

MOTOROLA: THE RIGHT CHOICE.

"Thanks to Motorola's SMART RF, we can lose an AP and the adjacent AP will boost power so they can almost absorb the loss of that single AP. From our point of view, we can replace that AP on our schedule, rather than respond immediately."

SCALABLE MANAGEMENT = CONSISTENT CONNECTIONS.

Motorola's SMART RF technology is built into the innovative Wireless Next Generation (WiNG) switch architecture that gives network administrators the ability to automate complex wireless network optimization tasks. So, the network is self-healing, redundant, and always connected. Each AP 6511 can operate as a standalone or controller AP so that up to twenty-five AP 6511s can be managed without a single RF controller.

Motorola's SMART RF technology lets the network automatically adapt to changes in the RF environment and provide coverage in the event of interference, or if an AP fails. It also tracks users and automatically adjusts power levels to maintain consistent connections for any device.

WHAT'S NEXT

Thanks to the success of the AP 6511 deployment at MVW, Texas A&M-Kingsville will no longer have to worry about pre-surveying for wireless deployments in residence halls. "We can just look at the building plans and say 'I have 50 suites, so I'll need 50 APs,'" says Miller.

Their next project is deploying a wireless network at the new Mesquite Village East residence hall. In conjunction with Motorola Solutions and its next-generation technology, Miller will be able to take his game-changing network solution to the next level. "Because we're only going to provide wireless service there, we'll save the cost of 300 additional network drops. In order to do this, we needed a reliable network infrastructure, and Motorola's technology now allows us to do that with wireless."

In addition, Miller plans to work with Motorola to build a wireless enterprise throughout other areas on the Kingsville campus, including classroom and lecture halls with other Motorola products such as the AP 7131 802.11n Wireless Access Point—a solution that supports the use of video and other multimedia applications.

"I'm extremely impressed with the results. The product more than exceeded expectations"

Robert Miller,
Associate CIO,
Texas A&M-Kingsville

For more information about how Motorola can help you meet the wireless demands of your students, please visit us on the web at www.motorolasolutions.com/education