D-Link®

Case Study

Business Class Wireless

Customer Profile:

Saint Francis Borgia Regional High School is a Catholic, coeducational high school in Washington, Missouri with approximately 550 students and 50 faculty. Borgia offers value-based education to as many students as possible, regardless of socio-economic level or intellectual ability. The school provides 150 wired desktops and 100 wireless laptops that can be checked out from the library. Most of the teachers and about 50% of students use their own laptops on the network. A large portion of the network bandwidth is used for streaming educational audio-video content from Discovery Channel's unitedstreaming service.

Stefan Adams of Cogent Innovators – a D-Link Value Added Reseller (VAR) – acts as IT director at Borgia. His company installed their wireless network and was responsible for the successful upgrade this year. Cogent also provides consulting, IT support and ongoing IT maintenance for Borgia.

"All the network equipment and switches we used are 100% D-Link. This couldn't be a more textbook-perfect, picture-perfect, network. It's just been absolutely phenomenal."

- Stefan Adams
  IT Director St. Francis Borgia Regional High School/VAR
  Cogent Innovators

St. Francis Borgia High School Improves Wireless Reliability, Manageability and Security with D-Link Wi-Fi ® Upgrade

Solution Eliminates Dropped Connections and Delivers Robust Campus-Wide Coverage

The Challenge

St. Francis Borgia High School students and faculty were getting bumped off their old wireless network regularly. They needed a comprehensive wireless upgrade to satisfy day-to-day needs and maintain sanity amongst the user population. Connection reliability was their main concern, but they also needed enhanced manageability and security.

"Last year, heavy usage would bump people off the network all the time, and they'd constantly complain,"said Stefan Adams, Borgia's IT director. "So, our number one goal was to have consistency." The prior architecture broke down once multiple connected students started gathering in certain areas. "Basically, we needed more access points," said Adams.

Unique file transfers brought down network performance, as well. For example, one class was creating Windows Movie Maker videos – files 25MB to 50MB each – and saving them to the server over the wireless network. "The existing wireless network wasn't going to support that," said Adams.

Borgia also needed enhanced security. Last year, the network was open and all the wireless traffic was unencrypted. "Security was definitely a big concern to the administration of the school," said Adams. "They specifically stated that they do not want to allow guest access onto our wireless network."

Seamless wireless networking provides students with the tools they need to succeed in today's high-tech classrooms

Borgia High School chooses D-Link for all their networking needs

As both the VAR and the support staff on site, Adams also wanted the upgrade to improve manageability. "Last year, we would have to connect to each access point individually, input the settings and then try to keep them all in sync," he said. "For example, if I changed one setting on an access point, I'd have to manually reset all the others. That was very time-consuming."

VAR Committed to D-Link

Adams' company, Cogent Innovators, knew they were going to recommend D-Link wireless routers from the get-go. "We're familiar with D-Link, we know they're reliable, and similar options were just ridiculously overpriced," said Adams. "Why use something else when D-Link will accomplish exactly the same thing for a quarter of the cost? The router interface is extremely easy and intuitive. D-Link offers a huge range of products, so it's a one-stop shop. It just makes sense to go with D-Link."

The Solution

D-Link technician Brad Bester helped Adams map the network and survey the site with a wireless network sniffer. They installed two D-Link DXS-3227P 24-Port PoE Gigabit Wireless switches and forty-eight D-Link DWL-2230AP access points.

"We just flooded the campus with access points and let the switch automatically manage the radios," said Adams. The APs are installed in every room. Automatic power level settings establish maximum bandwidth on each radio, without creating conflicts between radios. "It's working amazingly well, and there's excellent coverage everywhere."

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DXS-3227P 24-Port PoE Gigabit Wireless Switch + (4) Combo SFP Ports + (1) Fixed XFP Port + (2) Optional 10-Gig Copper/Fiber Uplinks

- Wireless Switching for Seamless Roaming and Centralized AP Management
- 24 10/100/1000 Ports with 4 Combo SFP in 1RU Chassis
- Built-in XFP Interface and Optional 10-Gigabit Stacking/ Uplinks
- Preconfigured ACLs Protect against Trojans, Worms, and More
- 24 Ports of 802.3af PoE

DWL-2230AP - 802.11g Access Point with PoE for DWS-3200 Series Wireless Switches

- Designed for Use with xStack 3200 Series Wireless Switches
- Supports WPA2 Encryption
- Supports 802.11b, 802.11g Standards
- Supports Power over Ethernet for Use with DXS/DWS-3227P

Configuration for all forty-eight APs is performed on the two switches. Adams manages the two switches with a program, which automatically generates and uploads configuration data to each switch. "I send one command and it keeps both switches in sync automatically. Configuration is a breeze this way," said Adams. "If we want to add a new wireless network, I just type in a change on the command line and push that script out the switch."

"We utilize these products to their fullest," continued Adams. "We're using approximately forty SSIDs and approximately five VLANS to separate faculty, student, and departmental networks." The network uses one open security SSID which has no network access except for a single Web page explaining how to connect. They implemented WPA2 encryption, and use 802.1x and a Radius server for log-in authentication. There is no guest access, so outsiders no longer have access to the school network. All wireless users are required to authenticate with their Windows Domain credentials. They also restrict access to certain SSIDs/VLANs based on the supplied username, password, domain and the requested SSID. The separate VLANs enable the IT staff to establish traffic and access rules. The faculty network has more bandwidth than the students, for example, and faculty has more open access to outside sites.

"The school year just started up again, and there have been zero complaints. Last year, complaints

D-Link DWL-2230AP access point provides seamless mobility for faculty and students

Borgia is among the growing numbers of schools now empowering their students with the latest networking technology to facilitate learning

started coming in at 8:00 A.M. on the first day school and never stopped from that point on. The upgraded equipment has made a huge difference" said Adams.

"The new equipment solved everything for us. We've improved coverage, established robust security and streamlined management processes."

Keys to Success: PoE, Radius Server and Blanket Coverage

Adams recommends the D-Link DXS-3227P and DWL-2230AP - 802.11g Access Point combination, a Radius server for authentication and the Power over Ethernet capability.

"You want to put these access points everywhere," said Adams. "They're so well managed, they don't conflict. It's so easy. And go with PoE. It costs a little more, but you'll save time trying to figure out how to reach power outlets. Most of ours are in ceilings, away from available powerlines."

Call or visit the web address below for more information on the complete line of business products:
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