D-Link Equips Gretna School District with 10 Gigabit Network Infrastructure

Network Solutions from D-Link Provide Rapidly Growing School System With Technological Advances; Boosts Efficiency and Lowers Costs

D-Link Benefits at the Gretna School District

- Eliminates need for monthly ISP costs
- Allows use of network software
- Supports additional services such as VoIP phones and video conferencing
- Allows for centralized management
- Offers secure VPN
- Fast and easy implementation
- Affordable, dependable solution
- Improves efficiencies, reduces bottleneck
- Local D-Link support
- Local authorized Value Added Reseller

"By building our own network we were able to save on monthly costs, around $500 a month, by eliminating the need for an Internet Service Provider (ISP). Our Internet access has dramatically improved and this has had a very positive aspect in both the classrooms and at the administrative level,"

-Dr. Richard Beran
 Assistant superintendent,
 Gretna School District.

Challenge: Implement Centralized, District-Wide Network to Enhance Internet Access and Support Management Efficiencies
Nestled just 10 miles outside of Omaha, Neb., Gretna is a quiet community of established families. It is known for its small town atmosphere and its exceptional school district, which has gained national recognition for its educational opportunities.

It is also an area that has experienced enormous growth in the past five years, doubling class sizes and prompting expansion of classroom and administration buildings, and stretching the boundaries of the school district's computer network.

Last year, Gretna citizens voted to approve a $1 million bond measure to upgrade the public school system's network infrastructure to facilitate technological advances that would increase computer access for both students and administrators. This ambitious project required physically linking five school buildings using underground fiber cable buried 15 feet deep and sometimes more than one mile apart.

Once the cable was in place, the challenge was to implement a school-wide network infrastructure to support growth, boost performance and provide efficiencies across the district.

"The system was slow. It seemed like whenever we would be in the middle of doing something, or the students were involved in a project, the Internet would come to a crawl. We were unable to use networked software, we had to use local software, which was costly and time-consuming." said Dr. Richard Beran, assistant superintendent, Gretna School District. "We needed to connect all of our buildings with a fiber line and improve the speed of the network."

"Our goal was to implement a system that would allow us to expand and grow efficiently and add reliability and speed to our network structure," Beran said. "And we wanted the ability to support and implement new facets of technology for our school system, such as Voice-Over-Internet Protocol (VoIP) phones and video-conferencing."

D-Link Implements 10 Gigabit Fiber Ethernet Backbone

Solution: D-Link® xStack™ Gigabit Stackable Switches
D-Link Delivers Affordable, Reliable and Scalable Network Infrastructure
To find the right network solution, Dr. Beran turned to Patrick O'Neill, education consultant, Computer Hardware Inc., an authorized D-Link reseller based in nearby Kearny, Neb. He recommended a series of cost-efficient D-Link solutions to replace the school district's previous wireless network, including the D-Link DXS-3250, to serve as the hub at the Administration building, four DXS-3350SR units to serve as the main distribution frame (MDF) for the district, and nine DXS-3227P units to serve as the main switch in each closet.

"The D-Link switches, paired with the fiber cable, solved most of the major management issues for the Gretna School District," said O'Neill. "Now the servers are centrally located instead of being at each individual building, and we've enabled remote access between the buildings."

"Network traffic, speed and reliability have increased dramatically with a 10 Gigabit transfer rate between buildings. And we've eliminated a T1 line and a wireless 10 Megabit connection between buildings," he said. "The new switches are opening the possibility of future add-ons such as new VoIP phone systems and a district-wide network based video system"

D-Link Offers Support and Price
While D-Link's exceptional speed and efficiency were important, its affordability and customer support cinched the deal.

DXS-3350SR -48-Port 10/100/1000 Switch+ 4 combo SFP + 2 10GbE ports

DXS-3250 -48-Port Gigabit Wireless-Ready Switch + (4) Combo SFP Ports + (2) Optional 10-Gig Copper/Fiber Uplinks

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

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

"The biggest part of the story is support and price," said O'Neill. "I was able to bring in a D-Link engineer and an area sales rep to meet with the Gretna School District's technology team and discuss their needs and possible long-term solutions."
"Also, Gretna had a certain budget to work with and it was our job to work within that budget to accommodate their needs," he said. "When the discussion of price rolled around it turned out that the D-Link solution was close to $30k less than HP and $40k less than 3Com. That was certainly a factor in their decision to go with D-Link products."

"On the support side, our D-Link engineer Chris White was great. He was available for every main question the Gretna School District had and helped with the decision making process, advising how the various products should be utilized to maximize every dollar spent."

D-Link Addresses Specific Needs
"D-Link was able to address our specific needs," said O'Neill. "At the middle school, where we've added new construction, we were able to upgrade to a 10 Gigabit network inside the building and added more Gigabit ports for the individual end-user."

"At the high school, the DXS-3227P switches allowed them to upgrade the network connection to a speed of 1 Gigabit, giving them more ports for individual end-users. And the system also has enabled the district to use several Virtual Private Networks (VPNs) at each building level, offering managed access and securing the district's technology hub."

"Gretna is a great example of a school district that was able to take advantage of the D-Link product line to move from the 1 Gigabit backbone proposed by their current network hardware vendor to a 10 Gigabit Ethernet backbone that also provides a Layer 3 redundant ring core," said Chris White, D-Link Engineer. " Gretna chose switch products that allow for features such as the addition of wireless APs that can be controlled by the switch infrastructure, virus and worm protection, and products that are fully capable of supporting future VoIP and video distance learning applications."

"By building our own network we were able to save on monthly costs, about $500 a month, by eliminating the need for an Internet Service Provider (ISP). Our Internet access has dramatically improved and this has had a very positive aspect in both the classrooms and at the administrative level," Dr. Beran said. "Our goal is to add a VoIP phone system and take advantage of its intercom and 4-digit dialing features. We now can use network software and that brings a lot to the system and lowers costs. Eventually we'd also like to offer our teachers and students video conferencing capabilities."

Result #1: D-Link Offers Speed and Performance
"They were accustomed to dealing with speed and compatibility issues," O'Neill said. "Now the performance is unbelievable. They are able to move a 6.8 Gigabyte file between two buildings in less than four minutes."

"There is no more crashing or running slow. The D-Link solutions have added reliability to their network structure and eliminated the dependency on individual servers. They can now perform many more activities over their network with ease."

Result #2: D-Link Provides Centralized Management
"With centrally located servers, the entire network can be managed from a central location with ease, which eliminates the need for travel between buildings. Before D-Link set up the network we needed an Information Technology (IT) person at each location. Now we can have two IT professionals overseeing the entire infrastructure," Dr. Beran said. "When you have 800 to 1,000 computers, this is a big advantage and cost savings."

Result #3: D-Link Offers Seamless Implementation
"The D-Link engineer was onsite for the implementation to offer support. The deployment went quickly and easily and took only two to three days to install. I don't even know if most people knew we switched, it was that seamless," Dr. Beran said.

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