

# NETGEAR® Infrastructure Makes the Grade with Inner-City School



## Profile

SECTOR: Education

Headquartered in Minneapolis, Minnesota, Tech-Shield Consulting specializes in computer networking, hardware maintenance, repair, installation, and support for small business owners and non-profit organizations. Tech-Shield, which initially opened in 2002 as a computer repair company, now provides a full host of managed services and solutions for businesses that have from 10 to 150 PCs.

## Background

Dan Kuhlman, Principal at Tech-Shield, took charge of an aggressive project in late 2009 to provide network connectivity for a K-8 charter school in the Minneapolis area. They were working with a charter school that had recently moved into a new building and required a new network infrastructure. According to Kuhlman, the new building increased the size of the school from about 75,000 square feet to around 150,000 square feet.

## THE CHALLENGE

### A COMPLETE RELIABLE, AFFORDABLE, AND SIMPLE INFRASTRUCTURE TO SUPPORT A BANDWIDTH-INTENSIVE EDUCATIONAL ENVIRONMENT

The budget was one of the primary challenges of this project. "This was an inner-city school that didn't have a lot of funding for network and infrastructure technology. We assisted them with the grant process and helped them to secure some government funding which would enable us to implement an entirely new network infrastructure," explained Kuhlman.

According to Kuhlman, the old network utilized outdated 10/100 Fast Ethernet switches and there was no wireless connectivity in the building which was insufficient to support the variety of network-connected applications that were to be implemented in the learning environment. "The teachers incorporate a lot of streaming video from the Internet into their lesson plans and technology is used fairly extensively in the classroom setting. The school has a large computer lab that is heavily used. The faculty also uses math and reading software to supplement their classroom lessons.

Kuhlman explained that all of these applications combined on the network are bandwidth-intensive and required a network infrastructure that could deliver a combination of performance, scalability, reliability, and affordability that is also easy to manage. While they often turned to Cisco for its switching solutions, this budget-critical project would require Tech Shield to find a different solution for this large-scale implementation.

## THE SOLUTION

### AN ALL-NETGEAR WIRED AND WIRELESS NETWORKING INFRASTRUCTURE

After evaluating a number of possible vendor solutions, Tech Shield chose to implement an all-NETGEAR infrastructure for this extensive project. For the wireless infrastructure, Tech Shield selected NETGEAR ProSafe Smart Wireless Controllers (WFS709TP) and ProSafe 802.11g Light Wireless Access Points. At the heart of the network are NETGEAR ProSafe 48-Port Gigabit L3 Managed Stackable Switches (GSM7352S), equipped with ProSafe 10 Gigabit Ethernet XFP Adapter Modules (AX741), ProSafe 24 Gigabit Stacking Kits (AX742) and ProSafe 10GBASE-SR SFP Optics Modules (AXM751), and ProSafe 48-Port 10/100/1000 Gigabit PoE Smart Switches (GS748TP).

During the process to identify the perfect solution for the project, Tech Shield evaluated products from a variety of different vendors before choosing NETGEAR. "NETGEAR gave us the most bang for the buck," explained Kuhlman. "It wasn't the cheapest solution we could find, but it was the best solution for the money that we could find.

This is a school that doesn't have a lot of money for technology so we had to find a complete wired and wireless solution that was going to provide the performance that we needed within our budget constraints."

"We needed a cost-effective switch that delivered Gigabit to every port," Kuhlman continued. "In addition, we needed lots of PoE ports to support the deployment of the wireless access points and NETGEAR had the solutions that we needed."

Kuhlman explained that because the building had two floors, the management features offered in the NETGEAR switches were also very important. "We were able to stack the switches on each floor into one single manageable unit enabling us to easily manage the stack and reduce the amount of required administration."

## THE RESULTS

### NETGEAR DELIVERS RELIABLE, AFFORDABLE, AND SIMPLE SOLUTION

According to Kuhlman, the network implementation, which includes multiple networks to support access by the public as well as the internal staff, went smoothly and the infrastructure is performing well. "We deployed a network of PoE-enabled wireless access points and now have almost 100 percent wireless coverage. We have Gigabit to every drop. We've got the switches stacked with the 24 GB modules between the switches and we've got 10-Gig fiber running between the floors, eliminating any bottlenecks and speeding up the network. Performance-wise, it's at least 100 percent better than what the school had with the old network."

"We normally deal with Cisco, but I think we got a lot more bang from the buck with NETGEAR," explained Kuhlman. "We bought the top of the line NETGEAR switches which are about a third of the cost of the comparable Cisco switches and, from what I can tell, the NETGEAR switches actually perform equal to or better than the Cisco switches. The amount of value that we got from the NETGEAR solution was outstanding."

"We've worked with NETGEAR in the past, but not on this scale," said Kuhlman. "We've never designed and deployed a complete NETGEAR solution from the ground up like this and I think that it went really well."

\*The Lifetime Hardware Warranty only covers hardware, fans, and internal power supplies, and does not include external power supplies or software. Hardware modifications or customization void the warranty. The warranty is only valid for the original purchaser and cannot be transferred.

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