NETGEAR®

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>
> Dale Briggs, President/General Manager
> Xcelitek

CUSTOMER NAME:
Stargate School

SIZE: 1,200+ Students

INDUSTRY: K–12 Education

COMPANY WEBSITE:
community.stargateschool.org

GEOGRAPHIC REGION:
Thornton, Colorado

PARTNER NAME:
Xcelitek

INDUSTRY: IT and Managed
Services Provider

COMPANY WEBSITE:
www.xcelitek.com

GEOGRAPHIC REGION:
Westminster, Colorado

CASE STUDY: K–12 EDUCATION

CHARTER SCHOOL USES NETGEAR® PROSAFE® WIRELESS SYSTEM TO FACILITATE THEIR GROWING TECHNOLOGY NEEDS

BACKGROUND

Founded in 1994, Stargate School is a parent-run charter school for intellectually gifted learners. Originally serving children from Kindergarten through the eighth grade, last year the school expanded its charter to also include a high school. In addition, the student population has grown from 550 students to its current enrollment of 1,200 and is forecast to reach 1,600 students in the next few years. To facilitate this growth, Stargate recently constructed a new 3-building campus; one to serve its Kindergarten through fifth grade students and two for its sixth through twelfth grade students. While this growth has provided exciting changes for the school as well as its parent community, it has also highlighted some gaps and presented challenges when it comes to serving the school's connectivity requirements. As Stargate began planning its campus expansion, the school called Xcelitek, an IT and Managed Service Provider that has supported their existing IT environment since 2004, to help them configure a wireless system that would fit their needs, as well as their budget.

PROBLEM/OBJECTIVE

OUTDATED SYSTEM IS INADEQUATE AND UNRELIABLE

The growing student population, widespread use of technology-based instruction in the classroom, and the school's bring-your-own-device (BYOD) policy had stretched beyond the capabilities of Stargate's existing physical infrastructure; it was incapable of supporting more than 10/100 Mbps and wireless was spotty at best. "One of the primary challenges is that the school had an outdated network that simply wasn't capable of supporting the performance and capacity requirements of a modern wireless system," says Dale Briggs, President/General Manager at Xcelitek. "In addition, many of the network components had been donated over the years, so we were also contending with a lot of mismatched hardware."

Stargate's network was plagued with constant bottlenecks, which was a continuous source of frustration for faculty and students. "Schools are highly regimented and scheduled," says Dale. "Everybody starts and moves at the same time, so the potential for traffic bottlenecks is huge. Every 90 minutes the entire student population would take their devices and move to a different location, simultaneously transferring the traffic load from one access point to another."

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Stargate's continued growth, coupled with its use of technology, implementation of state mandated online student testing and only 17 access points located throughout the entire school, connectivity and coverage had become significant issues. Each access point had to serve four to five classrooms and they were unable to keep pace with the growing number of devices joining the network. "They simply couldn't handle the kind of load that was put on them every day, and it's an insufficient number to provide adequate coverage," says Dale. "Also, since everybody starts class at the same time, each morning there was a 'race to the finish' mentality to see who would get the limited number of connections. The first several students would get on the network and everybody else was just out of luck."

SOLUTION

ABILITY TO MEET CURRENT AND FUTURE REQUIREMENTS

As construction was getting underway, Dale began planning the technology package to support the expanded environment. To facilitate the assessment of potential solutions, Dale and his team shortlisted the key requirements to handle the school's existing needs, as well as plan for future requirements.

They knew they would require a significantly higher number of access points to deliver 100 percent coverage across all three buildings, as well as the ability to easily manage all of them from a central location. In addition, they would need the ability to support more than 600 BYOD clients on a daily basis and 802.11ac would be required to handle higher density classroom traffic. 10-Gigabit link aggregation (LAG) to support the capacity requirements of a large number of simultaneous data transfers was also highly desirable. "We needed to build a system that could handle the current and emerging needs of a technology savvy student population and a state-of-the-art educational facility," says Dale. "We also knew that we needed to plan for a level of capacity that would be capable of facilitating future growth without running into more bottlenecks." Dale and his team determined that a NETGEAR wireless system would best fit the school's needs, as well as their limited budget.

RESULTS

NETGEAR® PROSAFE® DELIVERS THE IDEAL SOLUTION

Based on Dale's recommendation, Stargate School purchased 100 NETGEAR WAC730 ProSAFE Wireless Access Points to ensure 100 percent coverage campus-wide and support the school's BYOD requirements; and a WC9500 ProSAFE High Capacity Wireless Controller to facilitate efficient configuration and ongoing management across the entire system. The switch solution, comprised of NETGEAR ProSAFE M7100s/M7300s in the core, with NETGEAR ProSAFE S3300 switch stacks, allowed them to connect stacks at multiple 10G to ensure that they would avoid running into bottlenecks. "NETGEAR checked all the boxes, and did it within budget," says Dale, "We were able to get everything on the school's list of needs without having to make compromises."

Due to construction timelines, the building was not ready for the NETGEAR installation until the last minute. Two weeks before the start of school, Dale and his team had to move quickly to get everything set up. Despite the tight timeframe and the additional stress of starting school without the opportunity to fully test the new system, everything was ready in time, and both Xcelitek and Stargate are pleased with the results. "Since we installed the new NETGEAR system, they haven't had any performance issues and the faculty and students now enjoy uninterrupted high performance wireless every day," says Dale. "For me, that's the greatest news I can have. To walk in on the first day of school with a new system, and therefore not fully knowing what to expect, it was a huge relief that it just worked. I consider that an overwhelming success!"

ProSAFE® WC9500

ProSAFE® WAC730

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CASE STUDY:
Stargate School

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