



Success Story

Zyxel Builds New Cloud-Managed, Faster and Secure Network To UK School



Education



Boudica
Schools Trust



COUNTRY

UK



SOLUTION

Zyxel
Nebula
Solution

Overview

Challenges

- Existing network comprised various brands of networking equipment and proved difficult to manage with no centralized control provision
- Performance issues were making it difficult for students to log on the network
- Problematic cabling infrastructure built on a mix of network backbone links with OM1, OM2 and OM3 fiber optic cables and Cat 5 cables
- All cabling running only 1 Gbps and some sub-cabinets switched from previous cabinets causing bottlenecks
- Increased student and teacher demand for network connectivity resulted in a slow network

Results

- Seamless digital teaching and learning experiences supported by the stable and high-speed network
- New 10GbE switches provided efficient data management and enhanced data transfer rate up to 10 Gbps
- Secure e-learning environment with cloud-based web filtering
- Easy network management with a high level of visibility of data and network usage
- Centralized cloud management to minimize on-site visits

Solution

- Zyxel Nebula Solution

"The network has become an important tool for both our teachers and students because technology helps us provide engaging and powerful learning experiences and content. The new network offers greater efficiency and security, especially implementing a new cloud-based web filtering software that controls the types of content that can be accessed by pupils. The new network system also creates better learning opportunities and standards, while reducing costs."

Jonathan Lumb, IT Manager, Boudica Schools Trust

Background

The Boudica Schools Trust oversees the operational activities of several educational programs and institutions, including the Sprowston Community Academy in north Norwich. The Trust prides itself on an ethos where pupils and staff feel secure and safe within the learning environment. This includes the responsibility to provide an effectively managed access control system to all entrances and exits to the Trust's academies.

The network has become an important tool for the 1,500 pupils and the teachers looking to engage them with a first-class education. However, with increased demand for connectivity, there are now high expectations for seamless digital teaching and learning experiences. In fact, the school's network proved particularly challenging with its low speed, which subsequently resulted in disruption to classes.

Challenges

To manage the extensive IT network comprising Chrome books, PCs, laptops, phone systems, broadband/leased line connectivity, CCTV systems, and automated gates, the Trust reached out to Eastern Voice and Data to carry out the installation and maintenance across more than 10 sites, including Sprowston. Soon it became apparent that the school's networking infrastructure was not living up to the expectations of both staff and pupils. Sprowston Community Academy had been struggling with a slow network and this was restricting productivity related to lessons and admin.

After conducting onsite surveys, Eastern Voice and Data identified problems with the school's cabling infrastructure as both OM1 and OM2 fiber optic cabling was in serious need of replacing. The audit found that the wrong OM patch leads were being used across the site and also multiple sub-cabinets were linked via the switch of the previous cabinet. As a result, if the switch in the first cabinet had an issue, it would take all the following cabinets offline. This was also causing a bottleneck on the network as the most densely IT populated rooms were running from sub-cabinets at the end of the chain.

Solutions and Benefits

The installation of the new and improved network system took place over the summer holiday period when Eastern Voice and Data was upgrading the school's network with a centralized cloud-based solution. The Zyxel Nebula cloud network can be managed remotely, minimizing on-site visits from Eastern Voice and Data. Nebula provided a high level of visibility of data and network usage including both wireless and hard-wired connection to enable easy management. Also, new 10GbE switches replaced old 1GbE switches and each cabinet has a direct 10Gbps fiber link to the main cabinet, helping to manage the data more efficiently and improving speeds across the network.

Andrew Mash at Eastern Voice and Data said, "To ensure faster network speeds and high security, we implemented 40 network switches, 70 NWA1123-AC HD PoE access points, USG210 firewall and Nebula cloud networking management solution. The new switches provide greater control and performance to ensure that data is managed more efficiently. In fact, Zyxel Nebula solution is easy to use and provides real-time monitoring and configuration changes via the Nebula Control Center (NCC) online web portal and accompanying smartphone app. The products

are also affordable but still offer high performance for schools aiming to meet high network infrastructure demands."

Mash adds that Zyxel has given the resources to provide users with truly high-speed WiFi. "In addition to improved user satisfaction, we have also seen great progress with Sprowston Community Academy's overall network performance and we're looking forward to working with the Trust to help build a reliable and safe networking infrastructure at its other school sites."

Jonathan Lumb, IT Manager at Boudica Schools Trust says: "The network has become an important tool for both our teachers and students because technology helps us provide engaging and powerful learning experiences and content. The new network offers greater efficiency and security, especially implementing a new cloud-based web filtering software that controls the types of content that can be accessed by pupils. The new network system also creates better learning opportunities and standards, while reducing costs".

Products Used

NWA1123-AC HD • 802.11ac Wave 2 Dual-Radio PoE Access Point



- NebulaFlex gives you the flexibility to switch between standalone and Nebula cloud management
- Nebula cloud management allows easy deployment, real-time configurations, and access to all your APs at any time
- Achieve reliable connectivity, support for more connected clients, and better wireless coverage with the latest Wave 2 WiFi standard
- Up to 300% more performance from MU-MIMO technology
- Robust build quality, including solid-state capacitors and advanced heat dissipation design, to ensure long life and operational reliability
- Protect against 3G/4G cellular network interference with ZyXel advanced cellular mitigation design

USG210 • Unified Security Gateway



- High-performance, high-value Next Generation Firewall (NGFW) for small and medium-sized businesses
- Complete network protection with firewall, Anti-Virus, AntiSpam, Content Filtering 2.0, IDP, Application Patrol
- Robust SSL, IPSec and L2TP over IPSec VPN connectivity and VPN high availability (HA)
- Built-in WLAN controller for centralized AP management and effortless WLAN scalability of up to 18 Aps
- Comprehensive mobile broadband USB modem compatibility and multi-WAN load-balancing, failover and fall back support
- ZyXel One Network is supported

XS3800-28 • 28-port 10GbE L2+ Managed Switch



- NebulaFlex Pro allows users to switch between standalone management and intuitive Nebula cloud managed mode with 1-YEAR Pro Pack bundled
- Unique port combination brings maximum flexibility to network diversity
- Supports Multi-Gigabit for 100M/1G/2.5G/5G/10G connections
- Provides high-bandwidth with true physical stacking of up to 4 units
- Designed with "Restore to last custom default" button and redundant power supply to deliver high resiliency and availability

Products Used

XGS2210-28HP/52HP • 24/48-port GbE L2 Switch with 10GbE Uplink



- Physical stacking up to 2 units and 96 Gigabit ports
- Gigabit connectivity plus four (4) SFP+ ports
- VLAN communication through access switch by static routing feature
- Supports sFlow that analyzes client behavior
- PoE models comply with IEEE 802.3at PoE Plus with high power budget up to 375 W

Nebula Control Center (NCC)



- Responsive web design and intuitive user interface
- Multi-tenant, multi-site view
- First time setup wizard
- Role-based administration privileges
- Real-time and historical monitoring/reporting
- Rich site-wide management tools
- Powerful organization-wide management tools
- Configuration changing alerts
- Misconfigure protection against disconnecting NCC
- Configure login auditing

About Zyxel Networks

Focused on innovation and customer-centricity, Zyxel has been connecting people to the Internet for over 30 years. Our ability to adapt and innovate with networking technology places us at the forefront of creating connectivity for business and home users. We're building the networks of tomorrow, unlocking potential, and meeting the needs of the modern workplace — powering people at work, life, and play. Zyxel, Your Networking Ally.

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