Personalized Learning
Extreme Networks for Primary and Secondary (K-12) Education

Introduction

The current primary/secondary or K-12 learning model has adapted from traditional textbook-based teaching styles to now utilizing digital content, adaptive techniques, 1:1 computing, smart displays, and the latest developments in EdTech. This switch, which enables personalized learning has put an increased pressure on the network to perform at the utmost level of security and reliability. Schools can take advantage of emerging educational technology to meet the teaching needs while adhering to austere budgets.

As school districts integrate new 21st century learning styles into their curriculum, the network must just as easily integrate with the student directory and provide bandwidth where and when it is needed.

Critical Technology Issues

Delivering High-Speed Digital Content

eTextbooks and video present high quality learning content at lower cost than traditional textbooks, but require high speed, ubiquitous Wi-Fi to connect every mobile device. Edge switches provide backhaul from Wi-Fi access points and connect wired devices to the network. High availability or fault tolerance are important to insure uninterrupted teaching. To operate smoothly, there can be no bottlenecks from the Wi-Fi access points, back through the wired switches, and all the way to the broadband Internet connection and the data center.

Protecting Student Safety and Privacy

In the era of Bring Your Own Device (BYOD) and 1:1 computing, mobile student devices have an important role in personalized learning with digital content delivery, flipped classrooms, eTextbooks, adaptive learning, and the concept of competency-based education. The cloud-driven network must selectively connect authorized devices and block unauthorized ones. This requires comprehensive policy enforcement based on device type, user, location, time of day, and many more attributes. Network integration with web filters and firewalls is also important. The cloud-driven network must be capable of both controlling all devices and network activity.

Monitoring Network Activities and Guest Access

A constant risk to network, IT resources, and the school campus in general are unapproved applications and rogue devices that may appear on the network and either permit unauthorized access or interfere with other devices.

A means to monitor all devices and applications that operate across the network is vital. In addition to easy onboarding of district-owned devices, a simple method for onboarding guest devices and instilling them with the appropriate access to internet resources must be provided.

Application Insight

Visibility into cloud-based application usage, website access, bandwidth consumption, and patterns of activity are important for optimizing the user experience and verifying that digital educational content is adequately delivered. This is also vital for short- and long-term planning.

Comprehensive Service and Support

Access to a global technical access center (GTAC) on a 24x7 basis ensures that all support questions can be answered promptly to keep the network functioning at all times. Prior to installation, it is important to survey and assess the RF characteristics of the site to determine optimal placement of access points and switches. Depending on the network support resources available within the district, network training and managed services may be required.

Summary

Educational technology is enabling primary/secondary school districts to reshape how students are taught. New styles of more personalized learning increase the need for a cloud-driven, reliable, secure, and easy-to-manage network tenfold.

Extreme is only company in the industry that takes an architectural approach to bringing products to market from R&D to product release. As a result, all of our network products from wireless to wired are managed by a single Extreme Management Center network management console for easy administration by constrained IT teams. Our open, standards-based, and comprehensive SDN enables simple integration with third party technology such as web filters and firewalls.

With digital transformation and the transition to the smart campus, the need for hyper-reliable, easily-managed, cloud network infrastructure has never been greater. Higher education institutions need a reliable, secure, and cost-effective wired and wireless autonomous network that can accommodate the ever-growing usage of EdTech, IoT, BYOD, eSports, and high-performance computing.

Extreme Networks provides campuses with the solutions to create open, cloud-driven educational networking solutions that are intelligent, adaptive, and secure. Whether it's online testing, virtual and augmented reality, STEM and robotics, or flipped classroom initiatives, more than 17,000 schools and 4,500 campuses worldwide rely on autonomous networks from Extreme to improve their educational outcomes.

Additional Resources

To learn more please visit the Extreme Networks K-12 and Primary/Secondary Education Solution Center.

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