MODERNIZED IT FOR THE K-12 CAMPUS

Nurturing student creativity with ubiquitous connectivity and resilient networks

Introduction

Digital resources provide limitless opportunities to inspire and engage students. At the same time, school IT managers are challenged with providing fast, reliable network access across an expanding campus footprint while keeping costs and management requirements to a minimum. Dell EMC has a long history of delivering solutions that are future-ready, flexible and cost-competitive, and we

bring this same approach into the school networking arena. We offer a common, software-driven platform for wired and wireless connectivity for both traditional and new architectures — with customizable solutions for your network.

Schools and school districts come in all shapes and sizes. Does your district have a large IT department looking to scale or consolidate

your existing network and deploy flexible new solutions? Do you have a dedicated IT staff managing a multi-site network, and need an easily managed, secure solution that scales with your needs? Or is yours a small organization that requires a cost-effective, secure network with very little troubleshooting or maintenance?

Dell EMC has you covered.

Solution requirements and paths

To meet the demands of today's and tomorrow's technologies, schools require K-12 campus networking solutions that provide:

◆ **Scalability**, with secure, high-speed 1GbE and 10GbE platforms and higher-performing 802.11ac-capable wireless systems

◆ **Simplicity**, using pretested and validated reference architectures with multi-vendor–capable network management tools and intuitive UIs

◆ **Flexibility**, including the ability to expand wireless capability in the classroom while reducing costs and preparing for a software-defined networking (SDN)-ready open architecture

Schools have competing paths available to acquire solutions, each with its own trade-offs. Monolithic legacy solutions are expensive to purchase and maintain, and may not allow organizations to take advantage of all the latest innovations in the industry. Commodity systems offer a path that is less expensive from an acquisition standpoint, but places all deployment responsibilities on the organization and involves costly ongoing maintenance.

Dell EMC offers a unique path that is designed to deliver maximum value, flexibility and choice as campus networking needs evolve. Key design tenets enable organizations to strike a balance between initial and ongoing costs while lowering total cost of ownership (TCO). These design tenets include a standards-based approach,open architecture and modular systems that let you flexibly scale on demand. The result is a high-performing network that helps enable future-ready schools.

Universal Service Program for Schools and Libraries (E-rate)

The E-rate program provides a fantastic opportunity for schools to update their aging networks with the latest wired and wireless technologies. While E-rate is focused on basic network functionality, Dell EMC offers a range of cost-effective and highly scalable networking solutions —good, better and best — all of which are made even more affordable with E-rate.

Dell EMC's K-12 campus networking vision is based on unified management across network tiers, security and wireless, providing a single point of network control. For large networks, Dell EMC takes this a step further, unifying the campus layers in a single logical layer, with the C9010 network director at the core, controlling C1048P rapid access nodes at the network edges. You can upgrade at your own pace, leveraging existing Dell EMC N-Series investments with software upgrades. This architecture merges access and core layers to simplify delivery and management of mission-critical wired and wireless applications.

Once you have a solid wired network, it is time to choose a wireless network. The E-rate program provides for basic wireless connectivity within your campus network. Dell EMC offers a choice of solutions for wireless networking, either of which can be tailored to the needs and budget of your school:

Aerohive and Ruckus wireless solutions are designed for the next-generation campus network. Aerohive access points integrate a wealth of robust BYOD and security features, and can be managed remotely or on-site through the cloud-based HiveManager network management utility. Ruckus wireless delivers reliable, better, simple, seamless and secure connectivity even in the most challenging indoor and outdoor environments. With a choice of hardware, software, site survey and analytical tools, Ruckus products help K12 customers get the most out of their wireless investments.

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For basic networking with the maximum E-rate funding coverage:

• Dell EMC Networking N3000E-series switches for core switching and routing
• Dell EMC Networking N2000/N1500/N1100-series and multi-gig N3132PX-ON and N2128PX-ON switches for end-user access and PoE-powered access points (APs)
• SonicWALL NSA Series firewall to ensure a safe, secure network
• Aerohive or Ruckus wireless networking

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Adding redundancy to the core and firewall will ensure more reliable networking in the event of single point failures:

• 2x Dell EMC Networking N3000E-series switches with multi-chassis link aggregation (MLAG) for core switching and routing
Dell EMC Networking N2000/N1500/N1100-series and multi-gig N3132PX-ON and N2128PX-ON switches for end-user access and PoE-powered APs
• 2x SonicWALL NSA Series firewalls to ensure a safe, secure network
• Aerohive or Ruckus wireless networking

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For the most secure and resilient network, Dell EMC recommends our new unified networking architecture built around the C9000 family:

• 2x Dell EMC Networking C9010 Networking Directors for core switching and routing
• Dell EMC Networking C1048P Rapid Access Nodes for end-user access and PoE-powered APs
• 2x SonicWALL NSA Series firewalls to ensure a safe, secure network
• Aerohive or Ruckus wireless networking

Right-sized solutions for different sized needs

Dell EMC has designed high-performing unified campus solutions for different requirements, with management solutions for each. All of the solutions are intended to provide energy-efficient operation, compatibility with existing networking equipment and client devices, and wireless choice based on open standards for interoperability.

Delivering important IT and educational benefits

Dell EMC's unique design philosophy — combining open and standards-based systems with modularity and a modern approach — gives organizations compelling benefits: investment assurance, scalability on demand and access to the latest innovations. These qualities are the hallmarks of a future-ready approach to IT and networking that can grow with and help transform a district.

Investment assurance

Schools can tailor Dell EMC solutions to their needs today and then adapt them to whatever needs they have in the future, without risking the investment they have already made. For example, you can simplify your transition to software-defined models and reduce risks commonly associated with software-defined deployments by using a variety of Dell EMC SDN solutions.

These solutions have been mutually developed, tested and validated with leading software providers and are fully supported by Dell EMC. And because Dell EMC focuses on engineering solutions for the lowest TCO, investment continues to pay dividends in terms of simplification, time savings and reduced costs over time. These reduced costs help schools get the most benefit from every dollar.

Scalability on demand

Dell EMC solutions are intended to grow with you so they can scale up, down or out with the same predictable conomics and ease. There is no need to overbuy networking at the outset or rip-andreplace when growth occurs.

Access to innovation

With Dell EMC standards-based and open architectures, you have access to the latest innovations wherever they come from; you are not locked into proprietary solutions that may be slower to innovate. Dell EMC focuses on driving out inefficiencies and driving down complexity, so innovations are within reach of every school district, regardless of size. This focus includes offering flexible paths to integrating new in-classroom tools such as interactive whiteboards and student response systems.

Providing key advantages in a changing world

Dell EMC is leading the market with an open networking foundation that allows customers to deploy new technologies with greater ease and affordability to drive better use of technology assets, reduced complexity, and ultimately, improved student outcomes. Dell EMC understands the pain points of schools today, and works closely with you to help achieve your educational goals. The Dell EMC portfolio enables you to evolve on your own terms while protecting investments.

The streamlined, integrated Dell EMC switching approach is well-suited to modern, virtual era workloads and applications. Dell EMC makes networking simple and economical, removing barriers to adopting the capabilities schools need to be successful. Unified management across network tiers, security and wireless makes networking easier than ever. Dell EMC also offers supply-chain and logistic simplicity with one-stop shopping, from initial consultation and design to financing, installation and lifetime support from a single, reliable source.

Learn More

To learn more about Dell EMC campus networking, contact your Dell EMC representative or visit DellEMC.com/Networking.

For more information about E-rate, visit Dell.com/erate.

IT Lifecycle Services for Networking

Experts, insights and ease
Our highly trained experts, with innovative tools and proven processes, help you transform your IT investments into strategic advantages.

Plan & Design
Let us analyze your multivendor environment and deliver a comprehensive report and action plan to build upon the existing network and improve performance.

Deploy & Integrate
Get new wired or wireless network technology installed and configured with ProDeploy. Reduce costs, save time, and get up and running fast.

Educate
Ensure your staff builds the right skills for long-term success. Get certified on Dell EMC Networking technology and learn how to increase performance and optimize infrastructure.

Manage & Support
Gain access to technical experts and quickly resolve multivendor networking challenges with ProSupport. Spend less time resolving network issues and more time innovating.

Optimize
Maximize performance for dynamic IT environments with Dell EMC Optimize. Benefit from in-depth predictive analysis, remote monitoring and a dedicated systems analyst for your network.

Retire
We can help you resell or retire excess hardware while meeting local regulatory guidelines and acting in an environmentally responsible way.

Learn more at
DellEMC.com/Services

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