Building a Resilient Network to Transform Education

7 critical steps to building a resilient network for a school's classroom

RUCKUS®
COMMSCOPE

INTRODUCTION

Technology is transforming education, and we're seeing its impact at every level.

K-12 schools are eager to adopt new technologies, exploring everything from remote and online learning to gamification, collaborative learning, and the Internet of Things (IoT). Educators are also looking ahead to a new wave of innovation, as generative artificial intelligence (AI) tools emerge. Technologies can also play an important role in fostering a safer campus environment, strengthening cybersecurity and student safety.

What do these groundbreaking developments have in common?

They all require dependable, secure, high-speed connectivity, on campus and everywhere students are learning. It's up to campus technology teams to give students and instructors nonstop access to the tools and information they need anywhere, anytime, on any device.

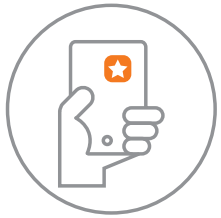
A RUCKUS® network provides a solid foundation for every stage of a school's digital transition,

providing the access that every student needs to move forward in life with confidence.

Indoor and outdoor Wi-Fi®

Wired and wireless connectivity

IoT integration



Secure onboarding of students and devices

Cloud-based services

Analytics

Security and safety

Like any strategic project, good planning is key to delivering the educational outcomes you're looking to achieve. In this eBook, we'll walk through the steps to building a resilient network for a school's classroom using RUCKUS products.

1. Assess Current Network Infrastructure

Before you can make progress in improving your campus environment, you need to understand your current capabilities and limitations. The first step in building a resilient network is to assess the current network infrastructure.

Consider your current network environment to gain visibility and insight into the instructional, administrative, and school safety activities that most depend on it. This includes:

- **Understanding the existing network layout, and potential connectivity and Wi-Fi coverage challenges**
- **The number of devices connected, including IoT devices such as tablets, cameras, lab instruments, and smart phones**
- **Bandwidth requirements, from basic email and instructional applications to more demanding applications such as video streaming, augmented reality, and esports**

RUCKUS offers a range of network assessment tools that can help in this process.

2. Design a Robust Network Architecture

Once you've taken the time to understand your network infrastructure, the next step is to design a robust network architecture. Some essential steps include:

- **Determining the number of access points needed to support the planned number of users and types of applications**
- **Access point placement to deliver the performance and availability you need, while considering any floorplan or environmental challenges**
- **The type of network (wired or wireless) that will best serve the needs of the classroom, and the anticipated bandwidth needs**

RUCKUS's design tools, such as RUCKUS One™, can help in creating a robust network architecture.
This AI-driven network assurance and business intelligence platform enables educators to easily manage a converged multi-access public and private network and deliver exceptional user experiences.

3. Select the Right Hardware

As you evaluate the specific solutions you'll put in place, the next step is to select the right hardware, such as switches, routers, and wireless access points. To support the applications and devices that best align with your educational needs, choose a vendor with a variety of offerings and proven leadership.

RUCKUS offers a wide range of hardware options, including RUCKUS ICX® Switches

which are designed to handle the demands of a modern classroom. Designed with flexible scalability and simplified management, they help schools minimize troubleshooting, strengthen, and easily support future upgrades. RUCKUS ICX Switches feature a low-latency, non-blocking architecture that provides excellent throughput for demanding education applications.

4. Implement Network Security Measures

Protecting sensitive student information is essential, especially in a constantly evolving threat landscape. This makes network security a critical aspect of any network design. A comprehensive approach to campus security should include:

- **Firewalls to provide capabilities like URL filtering, signature-based threat detection, virtual private networks (VPNs), application control and more**
- **Intrusion detection systems to help protect the network from external threats**
- **Secure access controls to ensure that only authorized users have access to the network**

RUCKUS's network security solutions, such as RUCKUS Cloudpath®, can help keep your network secure.

This cloud service or on- premises software delivers secure network access for any user, and any device, on any network. It provides visibility and control over which devices are on the network, and checks the security posture of devices during onboarding to ensure they comply with the school's security policies.

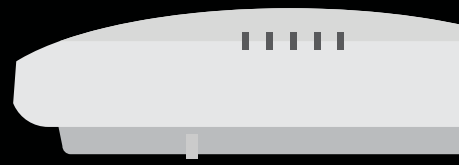
5. Deploy Access Points

Wireless access points are a critical component, connecting students, faculty, and their devices to the resources they need—from any location. The next step in your deployment is installing the access points in the locations determined during the network design phase and configuring them to provide optimal coverage.

Consider access points that provide:

- **Support for multiple simultaneous connections**
- **High-density performance in large classroom settings and auditoriums**
- **Multigigabit access speeds to accommodate rich media streaming and other high-bandwidth educational applications**
- **Secure access controls to ensure that only authorized users have access to the network**

RUCKUS's access points, such as the RUCKUS R770, are designed to provide high-performance Wi-Fi coverage in high-density environments like classrooms.



These premium multi-band, multi-link access points are designed to support the advanced capabilities of Wi-Fi 7, and come equipped with built-in IoT radios, offering onboard Bluetooth® Low Energy and Zigbee® functionalities for enhanced connectivity options.

6. Implement Network Management Tools

Once the network is set up, it's important to implement network management tools. These tools help in monitoring the network, identifying any issues, and resolving them quickly.

RUCKUS's network management solutions, such as RUCKUS One™, can provide insights into the network's performance and help in maintaining its health.

Powered by artificial intelligence (AI) and machine learning (ML) algorithms, this cloud service helps simplify tasks for IT teams by automatically classifying service incidents by severity, tracing root causes and recommending steps for remediation.

7. Train Staff

Even the most advanced network infrastructure won't deliver the educational outcomes you require without informed support. The final step in deployment is to train staff on how to use the new network infrastructure. This includes training them on how to connect to the network, how to troubleshoot common issues, and how to use the network management tools.

RUCKUS offers a range of training and support resources that can help bring your staff fully up to speed on your new devices and their capabilities, to enable you—and your students—to unlock the full value of your investment.

Learn more about how RUCKUS products can help your school take a major step forward on its digital transformation journey.

Contact your RUCKUS representative, or fill out this form , for more information.

About RUCKUS: RUCKUS® Networks builds and delivers purpose-driven networks that perform in the tough, unique environments of the industries we serve. Leveraging network assurance and enterprise-wide automation driven by AI and machine learning (ML), we empower our customers to deliver exceptional experiences for every employee, guest, customer, student and resident who counts on those networks to connect with their digital lives. Discover more at ruckusnetworks.com.

www.ruckusnetworks.com

Visit our website or contact your local RUCKUS representative for more information.

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