



PRIMARY EDUCATION

ELEVATE THE CLASSROOM EXPERIENCE

TRANSITION TO DIGITAL LEARNING

In many ways, the connectivity and access to the internet has transformed education at all levels. The ability for students to access learning materials on-line as well as for instructors to share lessons and collaborate has revolutionized teaching and learning. Where education used to be concentrated in school buildings, it can now be accessed by millions of people (almost) anywhere.



 **80%** Of schools can deliver common area access.



WIRED ONLY

ACCESS

- Lab-centric classrooms

USAGE

- Small files/PDFs

INFRASTRUCTURE

- Classroom switch
- 10/100Mbps edge
- 1Gbps backbone

PHASE
1



WIRELESS ACCESS POINTS

ACCESS

- Teacher-centric classrooms

USAGE

- Interactive E-Books
- Google Docs / Office 365

INFRASTRUCTURE

- 802.11ac (Cloud-managed)
- 1 Gbps edge with PoE+
- 10 Gbps backbone

PHASE
2



CAMPUS-WIDE WIRELESS/REMOTE

ACCESS

- Student-centric classrooms
- Secure campus / remote access

USAGE

- Courseware and denser files
- VR, video and gaming

INFRASTRUCTURE

- 2.5 Gbps 802.11ac
- 2.5 Gbps edge with 60W PoE
- 10/40 Gbps backbone

PHASE
3



SOCIAL/COMMUNITY

ACCESS

- Community and industry
- Collaboration between schools and nations

USAGE

- Pervasive video conferencing and streaming
- Big data analytics

INFRASTRUCTURE

- 802.11ax
- 5 Gbps edge with 90W PoE+
- 40 Gbps backbone

PHASE
4



HIGH DENSITY NET ECOSYSTEM

ACCESS

- Global / Internet of things

USAGE

- Virtual teaching
- Pervasive computing

INFRASTRUCTURE

- Machine learning/AI
- 802.11ax + LTE + IoT
- 5/10 Gbps edge
- 100 Gbps backbone

PHASE
5

5 Million
Households with school-aged children do not have access to the internet.

75% Of school systems surveyed do not have any off-campus strategies for providing connectivity to students at home and after school.

80% Of schools cite institution-wide network coverage—although it is inadequate for more advanced digital curricula and tools.

“Most instructors described their network as “unreliable.”

Sources: Learning Counsel Digital Curriculum Strategy Survey and Assessment Tool 2016; Pew Research Center, 2014

A FAST AND RELIABLE NETWORK IS NO LONGER OPTIONAL.

Don't let your campus network become a roadblock. Invest in a wired & wireless network that supports future ready technologies and delivers proven performance, reliability, and scale for K-12.

THE DIGITAL CLASSROOM OF TOMORROW PROMISES AN OUTSTANDING EDUCATION. IS YOUR NETWORK READY?

The classroom of tomorrow promises an outstanding education. Blended learning, digital curriculum and other modern learning models can better engage students and help educators be more effective.

With this digital transformation, lesson plans now depend on consistent, reliable connectivity to the school Wi-Fi network. Instead of leaving tools locked in the classroom, students walk in the door with their Chromebooks, tablets or other devices every morning, and take them home with them each night.

As such, there are three major concerns that IT administrators in K-12 school districts are currently facing:

NETWORK AND BROADBAND SCALING

THE TOP PRIORITY FOR IT IS BROADBAND AND NETWORK CAPACITY.

More devices are coming onto the network, stretching the limits of aging infrastructure. SETDA recommends 3000Mbps per 1000 students by 2018. Plan for growth, not rip-and-replace.

SECURITY AND STUDENT DATA PRIVACY

FACING THE TASK OF PROTECTING STUDENT DATA FROM MISUSE OR BREACH.

49 of 50 U.S. states have drafted legislation or enacted laws to protect student data.

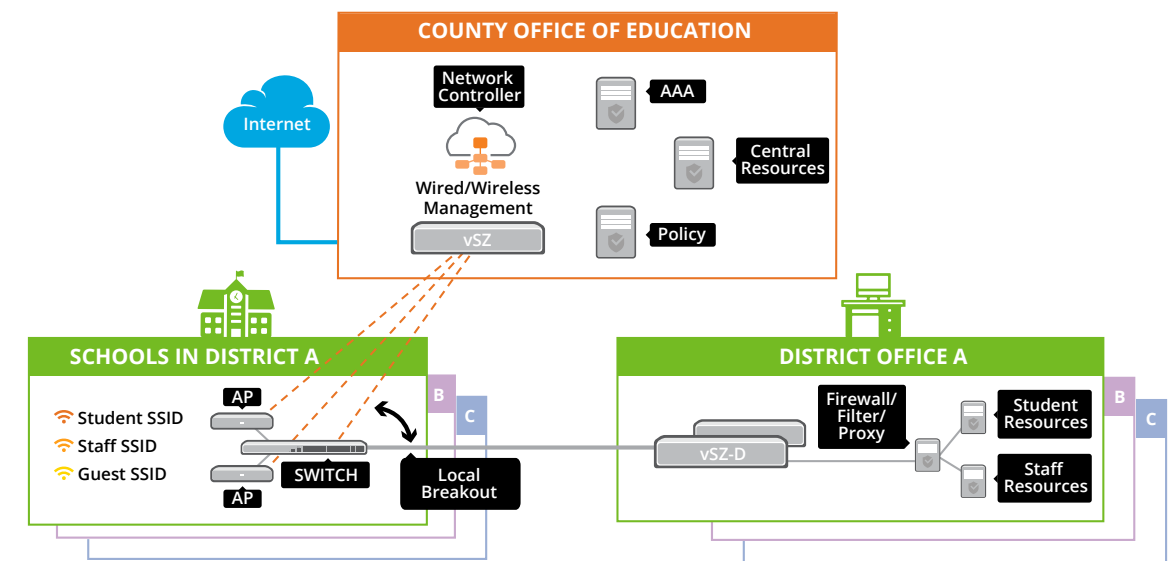
TRANSITION TO DIGITAL LEARNING

THE TRANSITION FROM TEXT-BASED CURRICULA TO BLENDED LEARNING

Avoid network down time. Even a three minute interruption can disrupt a 50 minute class.

HOW DOES THIS FIT IN MY SCHOOL

Whether you manage a single school building, a district, or an office of education, Ruckus has you covered. As the #1 Wi-Fi vendor to Service Providers, our solutions are designed to be centrally managed or offered as a service (including cloud-managed).



WHY CHOOSE RUCKUS FOR YOUR SCHOOL PROJECT

As your school continues its digital transformation to 1:1 mobile learning, Ruckus helps you address the top three challenges of school IT: network scaling, securing student data privacy, and network reliability for digital instruction. **Our goal is to help you provide a safe and reliable learning environment at an affordable price.**



RELIABLE WI-FI

Our passion is highlighted by **100+ RF patents** that provide the strongest wireless connections and enable our access points (APs) to automatically adapt to non-ideal placement or changing conditions. Moreover, it has been independently proven that only Ruckus can sustain **60 HD video streams** with just one AP*. Supporting more students with fewer APs means **significant savings** for your school.



SCALABLE SWITCHING

Our switches support long distance stacking between closets, floors and buildings, while Ruckus Campus Fabric allows up to **1,800 ports** to be managed under a single IP address. In addition, entry-level switch uplinks can be upgraded from **1GbE to 10GbE** with just a software license. Similarly, our high-performance access switch uplinks can be upgraded to **40GbE or 100GbE**.



SIMPLE SECURITY

We make securing every connection to your school network easy, with identity-based policies that facilitate **rapid guest access on-boarding**. This means an end to passwords and trouble tickets for Wi-Fi access. We also support **CIPA compliance** by allowing the restoration of **content filtering** for HTTPS traffic.



EASY CLOUD

Ruckus Wi-Fi is now in the cloud and easier than ever to manage. Plus, our intuitive smartphone app allows you to **deploy, monitor and manage APs on the go**. And even when your subscription expires, the APs are still able serve your clients.



OPTIMAL FOR CHROMEBOOKS

Our **Ruckus Cloudpath Chrome Extension** enables simple network provisioning with a single click – and verifies which Chromebooks are school property. Moreover, only Ruckus can sustain **60 HD video streams with just one AP***. We also support **CIPA compliance** by allowing the restoration of content filtering for HTTPS traffic.



FUTURE PROOF

Our ICX access switch uplinks can be upgraded without replacing the switch. We also support **stacking up to 12 switches**, while Campus Fabric supports up to **36 switches** with a single pane of glass. Our flexible switch deployment options include standalone, stacking and Campus Fabric (with the same switches). With Ruckus Cloud Wi-Fi, you can easily add APs, as well as **in-building LTE or Internet of Things (IoT)** infrastructure. For the latter two, simply plug into pre-existing APs – without ripping and replacing!



AFFORDABLE MULTI-GIGABIT

Our purpose-built **multi-gigabit APs** and **switches** are designed to work together. We offered the first entry-level multi-gigabit switch, with up to **16 multi-gigabit (2.5GbE)** ports per 48-port switch, and up to **8 x 10GbE uplinks** without over subscription. Our premium multi-gigabit access switch offers **24 x 1/2.5/5/10GbE** ports with **40/100 GbE** uplink ports. These multi-gigabit switches offer **full PoE/PoE+** on all ports (up to 90W per port).



BELLEVILLE SCHOOL DISTRICT

Belleville Township High School District 201 serves 4,700 students and 480 faculty and staff. The district covers 120 square miles in Belleville, Illinois. Belleville had been running the Ubiquiti Unifi solution for several years and faced significant challenges with client density.

"We have gone up to 100 clients on a single AP with no connectivity issues, and the cloud user interface makes management and control a snap."

CURTIS MCKAY

Network Administrator, Belleville

CHALLENGE

Belleville Township High School District 201 is located in Belleville, Illinois, with two high school campuses over 120 square miles, and serves 4,700 students and 480 faculty and staff. The district had been using the Ubiquiti Unifi solution for the past several years, and was plagued with density challenges from the beginning. If more than 30 clients connected to an access point (AP), it would stop functioning. Additionally, if there were several classrooms close together that were using smart devices, the signal overlap made the connection slow and unreliable. Both students and teachers were complaining: students because they couldn't utilize the cloud-based learning resources and teachers because their lesson plans were falling apart. It was clear that a future-proof network infrastructure was necessary to meet both student and faculty needs.

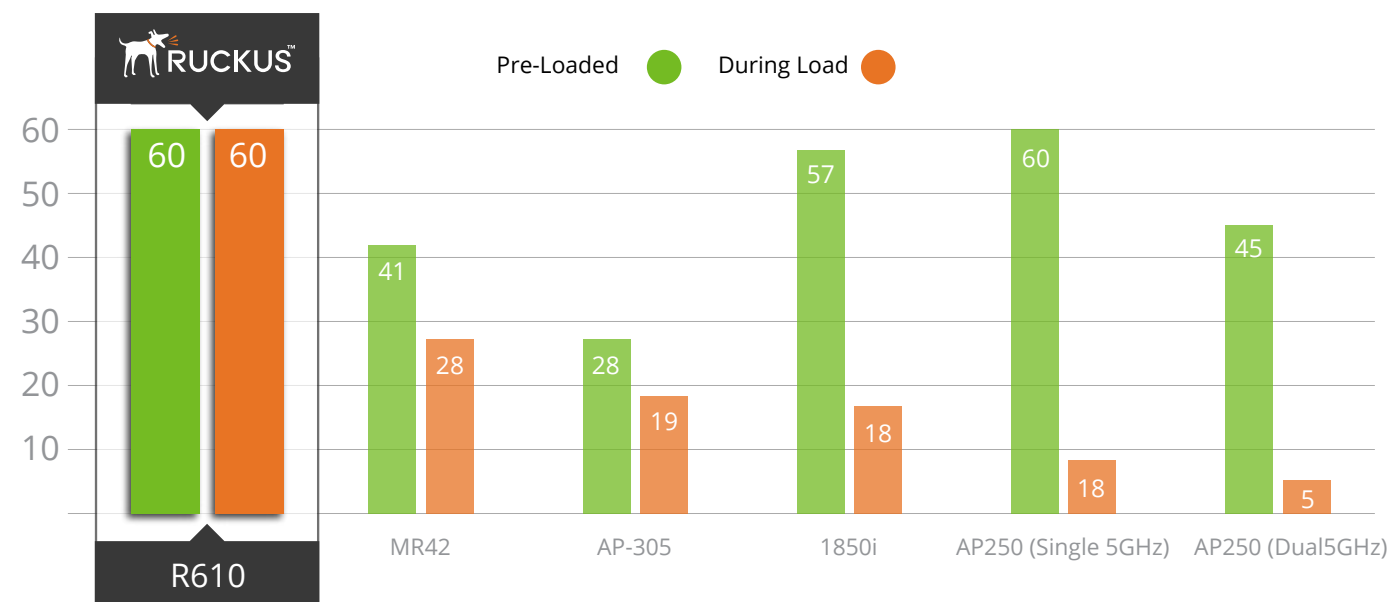
SOLUTION

Curtis McKay, the network administrator for Belleville, was interested in deploying an enterprise-grade solution with APs that were more intelligent and leveraged features such as channel selection and power bandwidth. The goal was to deploy a wireless infrastructure that could support high density in the classroom, easily connecting more than 30 clients at the same time.

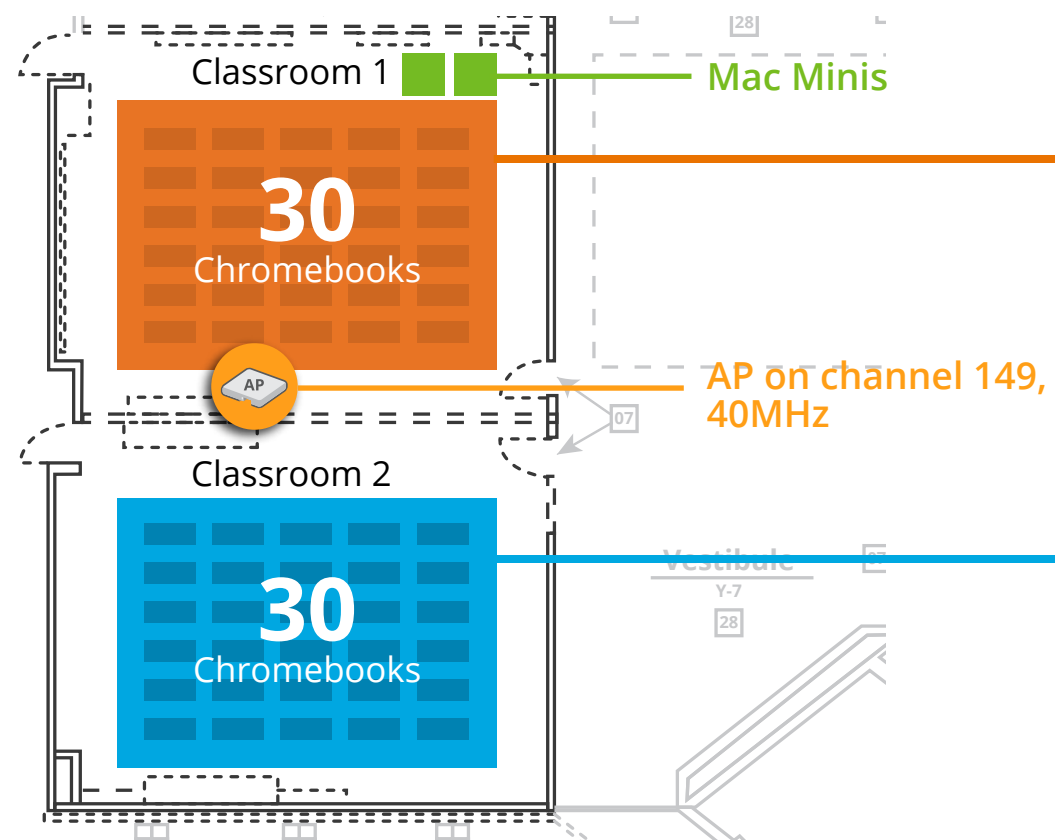
When it came to selecting a platform, Belleville preferred a cloud-managed infrastructure because it would not require any additional hardware at either high school campus. Ruckus partner Bytespeed Systems introduced McKay to the Ruckus Cloud Wi-Fi Early Access Program (EAP), offering him the opportunity to be one of the first to trial Ruckus Cloud Wi-Fi. He also spoke to other school districts who had tested both Ubiquiti Unifi and Ruckus Wireless APs.

WE BRING OUR "A" GAME

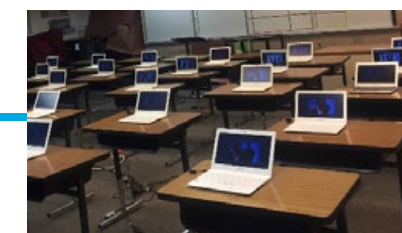
Ruckus was one of only two vendors able to deliver stall-free streaming video to 60 clients in an unloaded network scenario—and the only vendor able to do so in every scenario, both with and without simultaneous network data loading. No other vendor came close. Testing was conducted with the Ruckus R610.



Source: Divergent Dynamics independent test report



1 AP per 2 classrooms



Chromebooks (video clients)

WHAT DOES RUCKUS PROVIDE?

The Ruckus product portfolio of Wi-Fi, switching, IoT, LTE, software and SaaS lets you deliver a great end-user connectivity experience while reducing the amount of time you spend managing the network. And because Ruckus packs more capability into every network element, you can build that network at a lower cost per connection.

CLOUDPATH SOFTWARE

- Easy Chromebook on-boarding
- HTTPS inspection for CIPA
- Prevents password lockouts
- BYOD and 1:1 policies
- Dynamic PSK
- Granular policy guest access

SMARTZONE NETWORK CONTROLLER

- Wired/Wireless management
- Visual connection diagnostics
- Powerful new mapping tool
- COE as service provider
- Customization with Open APIs

CLOUD WI-FI

- Easy management saves time
- Scales with 1:1 deployments
- High reliability for digital learning
- Can manage from smartphone
- Ruckus APs, now in the cloud
- Long distance stackable

ACCESS POINTS

- All students connect reliably
- Fewer APs needed per school
- Non-stop VR, gaming and video streaming
- Multi-gigabit (2.5GbE) uplink

ICX SWITCHES

- Silent classroom switches
- Leading power density (up to 90W)
- Uplink scaling 1/10/40/100GbE
- Hitless failover & ISSU
- Multi-gigabit (1/2.5/5/10 GbE)
- Long distance stackable

RUCKUS IoT SUITE

- Add IoT during or after install
- Keep your AP investment
- Reduce IoT complexity and cost
- Great for STEM learning
- Go green, save green



Ruckus is partnering with Lenovo to bring VR learning to primary and secondary schools with the Lenovo Virtual Reality Classroom Kit.

These self-contained kits are packed with everything educators need to get VR quickly up and running, including Lenovo Mirage Solo VR headsets, Lenovo Tab 4 PLUS 10" touchscreen tablets and thousands of hours of digital curriculum – all linked through Ruckus Wi-Fi access points (APs).

"Teachers are already working hard to develop and deliver digital lesson plans so they don't have time to become an extension of their IT helpdesk. That's why Lenovo designed the Lenovo VR Classroom to be simple, scalable and durable," Nedwich told The Ruckus Room. "Each kit functions as a complete turnkey solution, with VR hardware, software, curriculum and Ruckus Wi-Fi all pre-configured and ready to go. There is no complex setup, or fiddling with settings to get and stay connected. You can just turn on the VR headsets, bring up today's lesson plan on the tablet and start engaging students."



A CLOUD WI-FI EXPERIENCE? IT'S AS EASY AS 1, 2, 3...

LET'S GET YOUR TRIAL STARTED

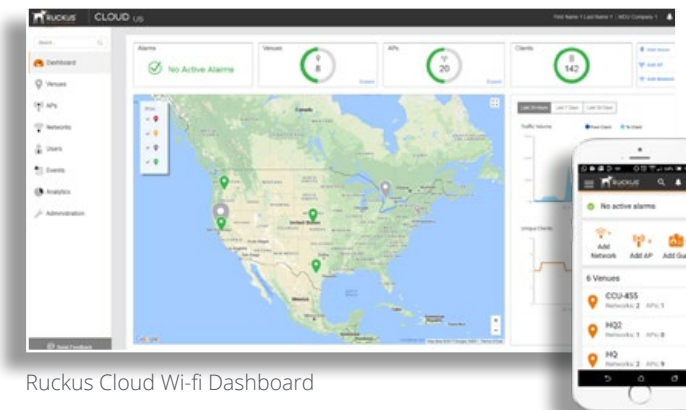
We told you that Ruckus Cloud Wi-Fi simplifies WLAN management. Try it for yourself. No obligation, no credit card required. See how easy it is to set up, monitor and manage.

Includes:

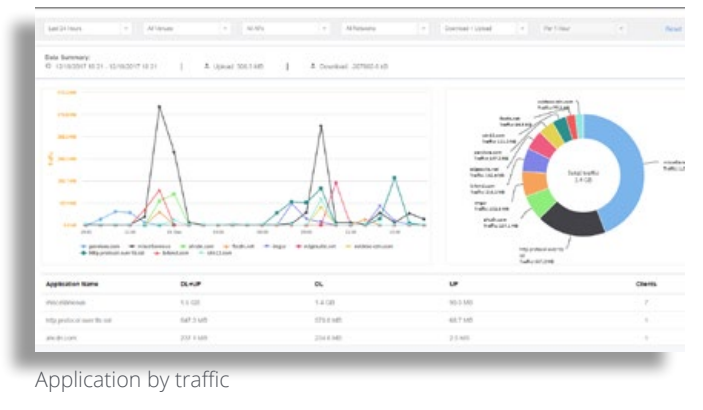


- 60-day trial of Ruckus Cloud Wi-Fi
- Ruckus 802.11ac access point*
- Ruckus Cloud mobile app for anywhere management
- Phone and chat support

*** FREE TRIAL AND AP TERMS AND CONDITIONS APPLY. SEE URL PROVIDED BELOW.**



Ruckus Cloud Wi-fi Dashboard



Application by traffic

"WISDOM BEGINS IN **WONDER**"
-SOCRATES

WANT TO TALK TO SOMEONE?

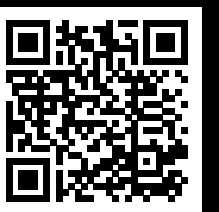
Email us:

cloud@ruckusnetworks.com

We'll get back to you within one business day.

Or Visit:

<https://info.ruckuswireless.com/cloud-trial.html?>





Copyright © 2018 Ruckus Networks, an ARRIS company. All rights reserved. No part of this content may be reproduced in any form or by any means or used to make any derivative work (such as translation, transformation, or adaptation) without written permission from Ruckus Networks (“Ruckus”). Ruckus reserves the right to revise or change this content from time to time without obligation on the part of Ruckus to provide notification of such revision or change.

The Ruckus, Ruckus Wireless, Ruckus logo, Big Dog design, BeamFlex, ChannelFly, Edgelron, FastIron, HyperEdge, ICX, IronPoint, OPENG, and Xclaim and trademarks are registered in the U.S. and other countries. Ruckus Networks, Dynamic PSK, MediaFlex, Simply Better Wireless, SmartCast, SmartCell, SmartMesh, SpeedFlex, Unleashed, and ZoneDirector are Ruckus trademarks worldwide. Other names and brands mentioned in these materials may be claimed as the property of others.

Ruckus provides this content without warranty of any kind, implied or expressed, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Ruckus may make improvements or changes in the products or services described in this content at any time. The capabilities, system requirements and/or compatibility with third-party products described herein are subject to change without notice.