



# K-12 Education

Reliable school networks made simple and secure



# 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.



**58%**

Of schools say that they are in Phase 3



## LAB

CURRENT 1%  
DESIRED 0%

### ACCESS

- Lab-centric classrooms

### USAGE

- Small files/PDFs

### INFRASTRUCTURE

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

PHASE  
**1**



## TEACHER

CURRENT 26%  
DESIRED 2%

### ACCESS

- Teacher-centric classrooms

### USAGE

- Interactive E-Books
- Google Docs / Office 365

### INFRASTRUCTURE

- Wi-Fi 5 (Cloud-managed)
- 1 Gbps edge with PoE
- 10 Gbps backbone

PHASE  
**2**



## STUDENT

CURRENT 58%  
DESIRED 32%

### ACCESS

- Student-centric classrooms
- Secure campus / remote access

### USAGE

- Courseware and denser files
- VR, video and gaming

### INFRASTRUCTURE

- 2.5 Gbps Wi-Fi 5
- 2.5 Gbps edge with 60W PoE
- 10/40 Gbps backbone

PHASE  
**3**



## COMMUNITY

CURRENT 11%  
DESIRED 40%

### ACCESS

- Community and industry (Smart Cities)
- Collaboration between schools and nations
- Outdoor Connectivity (School bus Wi-Fi)

### USAGE

- Video conferencing and streaming
- Synchronous and Asynchronous learning
- E-Sports

### INFRASTRUCTURE

- Wi-Fi 6 and CBRS (indoor & outdoor)
- 5 Gbps edge with 90W PoE+
- 40 Gbps backbone
- Cat 6A & Fiber

PHASE  
**4**



## GLOBAL

CURRENT 4%  
DESIRED 13%

### ACCESS

- Global / Internet of things

### USAGE

- Virtual classrooms
- Pervasive computing

### INFRASTRUCTURE

- Cloud Analytics
- Wi-Fi 6 + LTE + IoT
- 5/10 Gbps edge
- 100 Gbps backbone
- Cat 6A & Powered Fiber

PHASE  
**5**

**9.4 Million**

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

(NCES: National Center for Education Statistics)

**96%**

96% of IT Leaders consider digital equity a priority.

(CoSN: The State of Edtech Leadership in 2020)

**49%**

Only 49% of districts are meeting the FCC long-term goal of 1 Gbps per 1,000 students.

(CoSN's 2018-2019 Annual Infrastructure Report)

**17%**

17% of students can't finish their homework because they do not have reliable access to a computer or the internet.

(Pew Research Center Fact Tank)

# 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 10Gbps per 1000 students by 2020-21. Plan for growth, not rip-and-replace.

### SECURITY AND STUDENT DATA PRIVACY

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

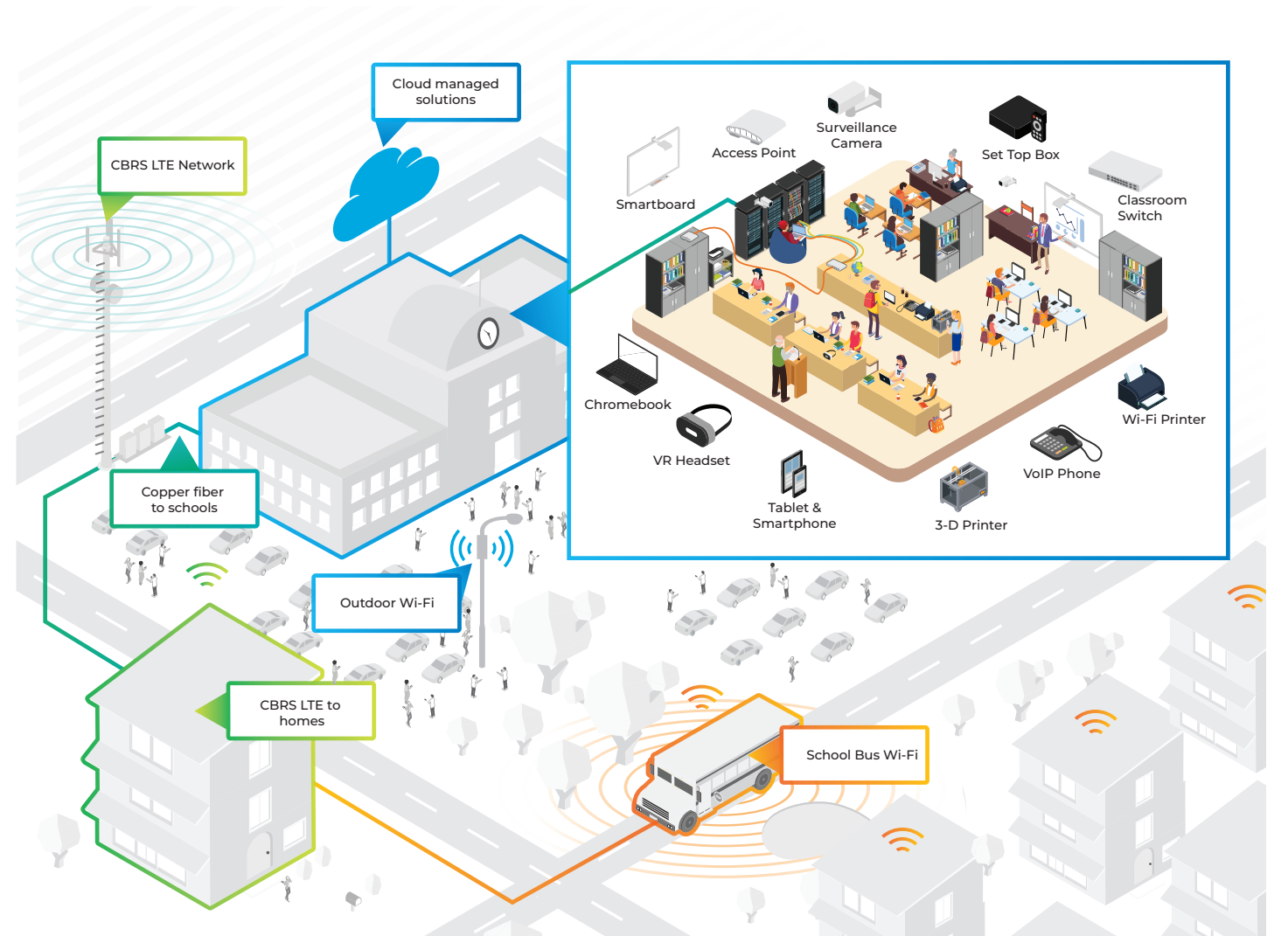
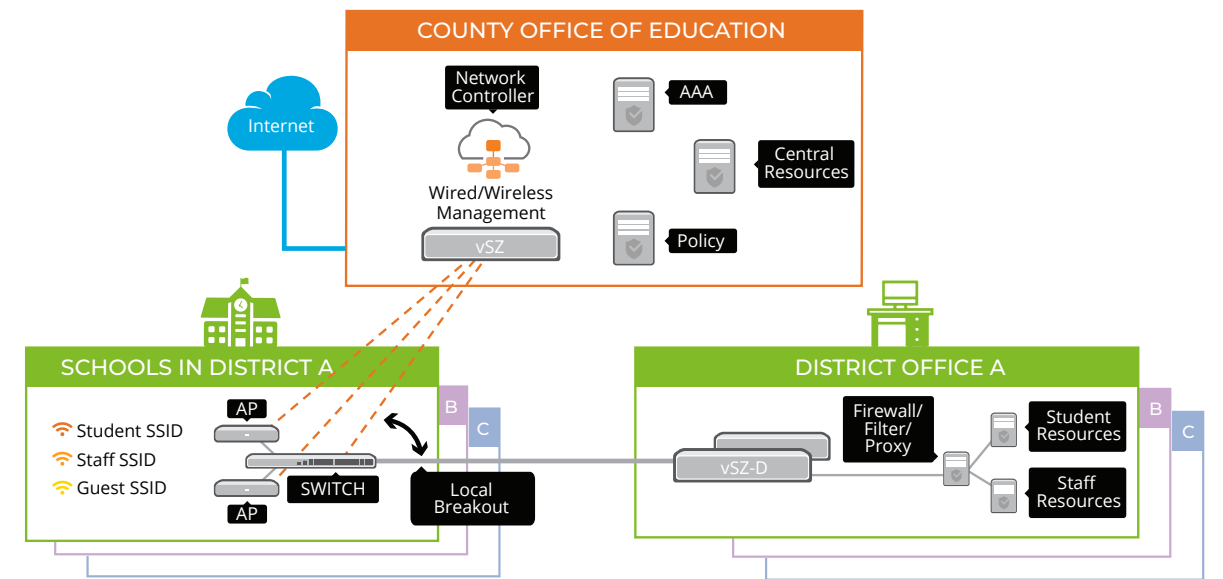
Buying or receiving 1:1 computers for digital learning will require schools to securely on-board devices for student data privacy.

### TRANSITION TO DIGITAL LEARNING

THE TRANSITION FROM TEXT-BASED CURRICULA TO BLENDED LEARNING.

Buying or receiving 1:1 computers for digital learning will require schools to securely on-board devices for student data privacy.

## HOW DOES THIS FIT IN MY SCHOOL

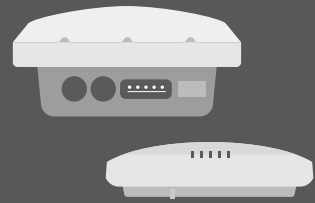


# WHY CHOOSE COMMSCOPE FOR YOUR SCHOOL PROJECT

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 (indoor & outdoor)



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.

Combined with the outdoor APs, which provides not just connectivity outdoors, but also security when combined with solutions like Soter and AXIS.

School Bus Wi-Fi provides a mobile hotspot solution for students on and off the bus.

## 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



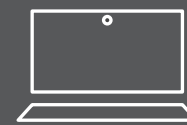
We make securing every connection to your school network easy, with identity-based policies that facilitate rapid guest access on-boarding. This means an end to passwords and trouble tickets for Wi-Fi access.

## Easy Cloud



RUCKUS Wi-Fi and ICX switching are 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



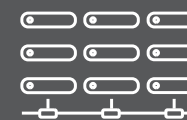
Our ICX access switch uplinks can be upgraded without replacing the switch. We also support stacking up to 12 switches, while Campus Fabric supports up to 36 switches with a single pane of glass. Our flexible switch deployment options include standalone, stacking and Campus Fabric (with the same switches). 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).

## High Performance Network Cabling



Foundational to high performance networks is the structured cabling to support your networks bandwidth, capacity and power requirements. CommScope Cat 6A copper cabling ensures your access layer foundation is ready and able with up to 10G speeds and support for High Power PoE. CommScope's fiber solutions provide the scalable bandwidth you need for your network backbone and for high performance applications like eSports, VR and Wi-Fi 6 APs.

## Fixed Wireless Access

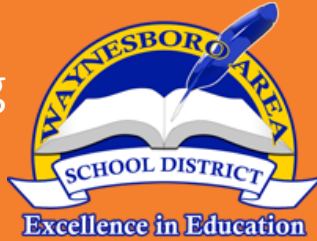


CBRS networks for private LTE allows school districts to share broadband to nearby homes without monthly data charges.

# WAYNESBORO AREA SCHOOL DISTRICT

"The ICX switches were technically superior to anything else we evaluated. So, we ended up with the best of both worlds with RUCKUS APs and switches."

**NICHOLAS ERICKSON**  
Director of Technology Services for the Waynesboro Area School District



Waynesboro Area School District in Pennsylvania educates about 4,400 K-12 students. The district views technology as an integral part of its instruction models. Every Wednesday, the IT team, administration and faculty leaders meet to discuss current and future educational initiatives that depend on technology. For over a decade, Waynesboro has used RUCKUS, now part of CommScope, to provide reliable, high-performance Wi-Fi across the district. But its switch vendor failed to live up to the same standard. After evaluating other vendors, IT chose RUCKUS ICX switches, which met all of its requirements for reliability, flexibility and redundancy.

## CHALLENGE

- IT, administration and faculty agreed that a reliable network infrastructure was vital for supporting a wide variety of digital curriculum projects
- The existing edge switches suffered from spotty performance and lacked redundancy
- Network management was too resource-intensive for a small IT teams

## SOLUTION


- 150 RUCKUS indoor APs
- 100 RUCKUS ICX switches
- 2 RUCKUS SmartZone network controllers

## BENEFITS

- The RUCKUS edge network supports cutting-edge programs, such as a mobile robot with telepresence and Kerbal Space Program flight simulator
- RUCKUS switches deliver flexible capacity to schools and redundancy across the district
- The IT team now has end-to-end visibility and unified management across APs and switches
- The district can investigate integrating operational and informational technology, such as running building automation systems over the RUCKUS edge network

## COMMSCOPE INDUSTRY RECOGNITION

CommScope has long been an active participant of leading standards committees and alliance organizations. Participating in these groups has allowed CommScope to develop solutions that drive benefits to our customers today while ensuring the same solutions are a sound investment for tomorrow. By upholding these values and commitments, CommScope's portfolio of products and services have been recognized among the best in the industry.

- 
- 2022** 2022 CRN Awards CommScope receives 5-Star rating and Women of the Channel  
2022 CommScope named operator's "Supplier of the Year" and "Outstanding Technology Performance" awards at Vodafone Partner Awards Arch 2022
  - 2020** 2020 Technology and Engineering Emmy® Awards recognize CommScope's IP Video Ad Insertion portfolio leadership  
(2020) CommScope is the IoT Sensor Company of the Year  
CommScope named a Wi-Fi Alliance 2020 Industry Impact Award Recipient
  - 2019** (2019) 3rd consecutive year, CommScope achieved a Gold level Corporate Social Responsibility (CSR) rating from EcoVadis  
RUCKUS Wi-Fi 6 R730 AP scores WBA Award 2019  
CommScope's RUCKUS ICX 7850 switch wins CRN's "2019 Product of the Year" award
  - 2018** 2018 Top 100 Global Tech Leader by Thomson Reuters
  - 2017** CommScope receives AT&T 2017 Supplier Diversity Crystal Award
  - 2016** RUCKUS Wireless recognized as a Best-in-Class Channel Provider on CRN's 2016 Annual Report Card

# RELIABLE SCHOOL CONNECTIVITY: COMMSCOPE RUCKUS

The CommScope RUCKUS product portfolio of Wi-Fi, switching, IoT, LTE, powered fiber, Cat 6A solutions, 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 CommScope RUCKUS packs more capability into every network element, you can build that network at a lower cost per connection.



## SMARTZONE NETWORK CONTROLLER



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

## CLOUDPATH SOFTWARE



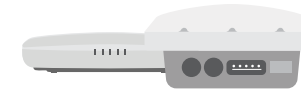
- Easy Chromebook on-boarding
- HTTPS inspection for CIPA
- Prevents password lockouts
- BYOD and 1:1 policies
- Dynamic PSK
- Granular policy guest access

## CLOUD SOLUTIONS



- 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 (INDOOR & OUTDOOR)



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

## 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

## CBRS SOLUTIONS



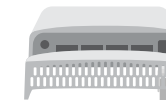
- Secure, wide-area, high-definition video surveillance
- More secure connectivity than Wi-Fi and at high speeds and quality of an LTE wireless network
- Utilizing the 3.5 GHz radio band, districts can build a highly reliability wireless network that offers cost-effective fixed wireless access with low latency and delivers real-time communications to all their sensors, cameras, and industrial IoT

## COMMSCOPE STRUCTURED CABLING



- Comprehensive Category 6A & Category 6 Solutions
- High performance Multimode and Singlemode fiber optic cables in various constructions
- Standard and high density fibre optic connecting hardware
- 25 Year Warranty
- Highly Skilled Certified Installer Network
- Powered Fiber with hybrid cabling

## 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

## SCHOOL BUS WI-FI SOLUTIONS



- Superior in-bus or outdoor Wi-Fi performance up to 1,200 feet
- Centralized management to extend the school network
- LTE backhaul access point creates a mobile hotspot



# STUDENT SAFETY AND WELLNESS

Vaping Detection and IP Video Indexing on CommScope's RUCKUS WLAN Infrastructure

## Push back against the youth E-cigarette epidemic

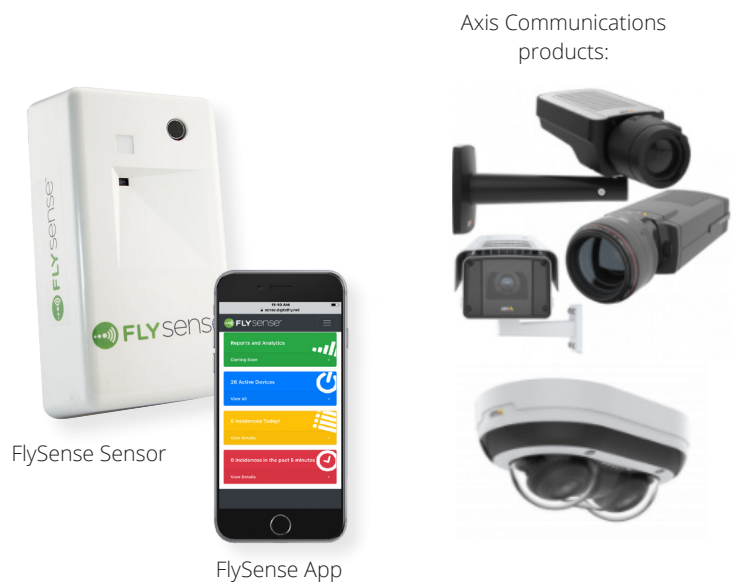
Vaping is a difficult behavior to target. Its odor is easily overlooked, it's easy to conceal visually, and it's often done in private areas like bathrooms and locker rooms where human and electronic monitoring is weakest.



## The Soter Technologies FlySense detector

This IoT device detects vaping mist in the air and also flags raised voices in a room without actually recording them—all in real time. It can quickly alert administrators and hall monitors with customized alerts sent to their mobile devices if illicit vaping or bully confrontations are detected where video surveillance is not used, such as bathrooms, locker rooms or anywhere else conditions prohibit video.

Riding on CommScope's RUCKUS portfolio of Wi-Fi solutions, it's a school's best defense against vaping by students.



## Axis Communications networked cameras

This powerful, flexible, IoT-driven camera provides exceptional image quality, panoramic views, remote zoom, and low-light performance. Combined with FlySense sensors, they can capture actionable, time-stamped footage around vape detection locations.



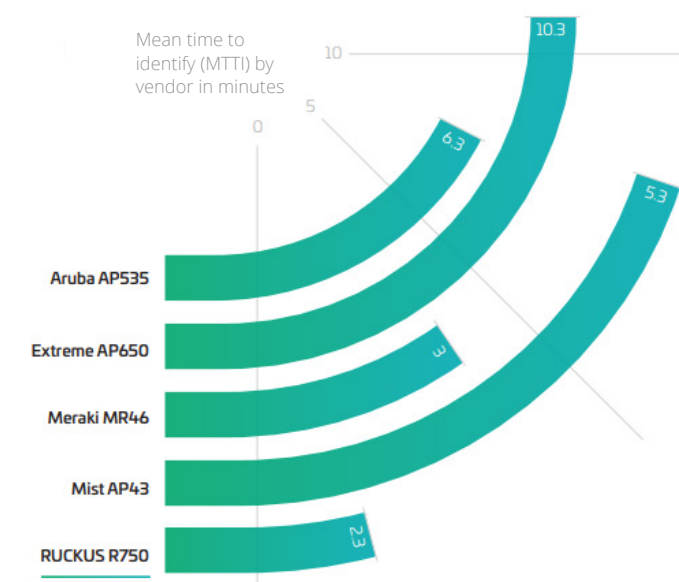
# RUCKUS ANALYTICS DELIVERS THE LOWEST MTTI

## Troubleshooting with network analytics tools

Mean time to identify (MTTI) is the time a network administrator needs to determine the root cause of a network issue or incident. A shorter average MTTI reduces the trouble-shooting burden on IT while improving user experience by allowing IT to more effectively limit incident duration and impact.

RUCKUS Analytics is a cloud service for network intelligence and service assurance. Powered by machine learning and artificial intelligence, it gives IT comprehensive visibility into network operations. If you are a current SmartZone customer, you can also opt for a free trial of RUCKUS Analytics.

Want to learn more? Send an email to [ruckuscloud@commscope.com](mailto:ruckuscloud@commscope.com) and someone will get back to you within one business day.



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

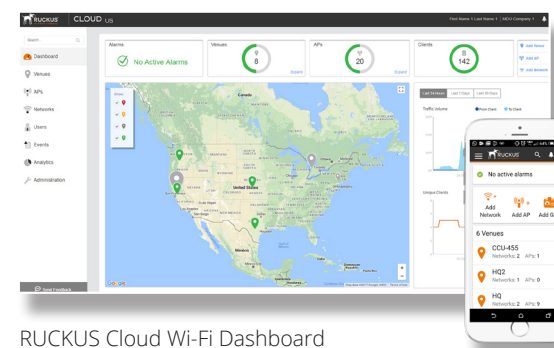
## LET'S GET YOUR TRIAL STARTED

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.

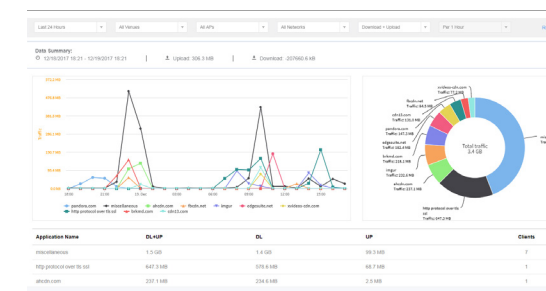
Free trial includes:

- Free RUCKUS 802.11ac Wi-Fi access point
- Up to 10 Wi-Fi AP management licenses for 60 days
- Up to 20 RUCKUS Analytics licenses for 60 days
- RUCKUS Cloud mobile app for anywhere management

**FREE TRIAL AND AP TERMS AND CONDITIONS APPLY.**  
[www.commscope.com/cloud-trial/](http://www.commscope.com/cloud-trial/)



RUCKUS Cloud Wi-Fi Dashboard



Application by traffic





## About RUCKUS Networks

RUCKUS Networks builds and delivers purpose-driven networks that perform in the demanding environments of the industries we serve. Together with our network of trusted go-to-market partners, we empower our customers to deliver exceptional experiences to the guests, students, residents, citizens and employees who count on them.

[www.ruckusnetworks.com](http://www.ruckusnetworks.com)

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

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