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THE RUCKUS ADVANTAGE VS. CISCO

# THE RUCKUS ADVANTAGE VS. CISCO

## WHAT SETS RUCKUS APART FROM CISCO

**PERFORMANCE APs:** RUCKUS Access Points (APs) provide secure and reliable connections in challenging RF environments, indoors or outdoors. RUCKUS' patented BeamFlex™ adaptive antenna technology selects best antenna combination for any client location, provides extended coverage and improves AP to client link reliability. ChannelFly, another RUCKUS' RF innovation, helps to find the least congested Wi-Fi channels for the APs based on real-use statistics, increasing overall system throughput. Whether it is an AP with 2x2, 3x3 or 4x4 MIMO technology RUCKUS products deliver industry-leading performance.

**Switches:** RUCKUS is first to market with 100 GbE uplinks for the campus and offers multigigabit speed at the entry level. Cisco multigigabit switches are oversubscribed.

**SCALABILITY:** RUCKUS SmartZone can manage 150K clients per controller, while 3+1 active clustering increases capacity to 450K clients. SmartZone trumps Cisco mobility controllers in terms of scalability, multi-tenancy, and virtual platforms. This explains why RUCKUS is #1 in Service Provider in Wi-Fi and #1 in Hospitality (Dell'Oro).

**IT EXPERIENCE:** Whether you choose Cloud Wi-Fi, SmartZone or Unleashed, you are guaranteed a great user experience. RUCKUS offers enterprise level features with consumer level ease of use! Cisco's offerings come at a higher cost and complexity and promote vendor lock-in. The Cisco Prime Infrastructure and DNA are too complex for all businesses, except the largest organisation that require a dedicated staff to monitor and manage.

**DEPLOYMENT SIMPLICITY APs:** Whether you choose Cloud Wi-Fi, SmartZone or Unleashed, all your APs will call home and register themselves with the management platform. Cisco APs and switches discovery and registration processes requires more hand holding.

**Switches:** Every switch can be repurposed to suit standalone, stacking, or Campus Fabric modes. SmartZone 5.0 introduces integrated wired + wireless management from a single touch-point.

**CAPEX/OPEX APs:** Because RUCKUS APs are more advanced, you don't need to deploy as many (from 30 to 50% less than Cisco APs). That's fewer APs to buy, install and manage.

**Switches:** Every ICX switch is designed to be upgradable, you can simply upgrade uplink ports speed. Cisco entry level switches do not support stacking, uplink speed cannot be upgraded with a simple license.

**INNOVATION:** With the help of RUCKUS OpenG™ LTE portfolio, you can deploy and manage a private LTE network as easily as you deploy Wi-Fi today. Cisco does not offer products in that category. RUCKUS is one of the first vendors to ship 802.11ax for revenue. Cisco often relies on its market share instead of innovation.

## CISCO WEAK POINTS

### LIMITED UPGRADABILITY

- Cisco's entry level switches cannot be upgraded to support stacking and switches with fixed uplinks ports cannot be upgraded to the next uplink speed. Entry level switches cannot be upgraded to support advanced L3 features.

- Cisco's Instant Access architecture is complex to deploy and only supported on dedicated switches. In contrast RUCKUS Campus Fabric is supported on all ICX 7000 switches and is plug and play.

- Cisco offers a plethora of switching lines many of them legacy products like the Catalyst 3K, 4K and 6K lines and yet to be consolidated with limited upgradeability and limited life prospect.

### PROPRIETARY COMPLEXITY

- Proprietary stacking ports/short cables, does not offer long distance stacking options.

- Wireless controllers locked into Cisco switches.

- Proprietary programmability (Cisco ACI) vs. RUCKUS support for OpenFlow standards.

- Cisco promotes vendor lockup with offerings like CCX and Apple Fast Lane.

- Proprietary monitoring protocols.

- Extra hardware required for stacking only supported on higher end switches.

- Cisco products requires a substantial commitment to training to use. RUCKUS' focus is to reduce complexity without sacrificing features or performance.

### HIGH COST OF OWNERSHIP

- Cisco DNA recurring licensing cost required for the most basic features on some products.

- Cisco SMARTnet support fees are among the highest in the industry.

- Gaining expertise in Cisco products is expensive.

- Planning for growth requires over-purchasing or over-provisioning, or rip-and-replace.

- Built-in constraints designed to make customers buy more products (licensing, analytics).

- Standby controller redundancy scheme doubles the cost of deployment without adding capacity.

- Campus Core/Aggregation solutions based on expensive chassis design.

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## ENTRY LEVEL SWITCH MAPPING

| Cisco                                   | RUCKUS            |
|-----------------------------------------|-------------------|
| Catalyst 2960-L<br>Catalyst 2960-X (1G) | ICX 7150          |
| Catalyst 2960-XR<br>(2 PSU)             | ICX 7150 Z Series |
| Catalyst 2960-X (10G)                   | ICX 7250          |

## MID-RANGE SWITCH MAPPING

| Cisco                                                              | RUCKUS            |
|--------------------------------------------------------------------|-------------------|
| Catalyst 3650<br>(MultiGigabit)                                    | ICX 7150 Z series |
| Catalyst 3650<br>Catalyst 3750-X<br>Catalyst 3850<br>Catalyst 4500 | ICX 7450          |

## HIGH-END SWITCH MAPPING

| Cisco                            | RUCKUS            |
|----------------------------------|-------------------|
| Catalyst 3850<br>(MultiGigabit)  | ICX 7650 Z Series |
| Catalyst C9300<br>Catalyst C9400 | ICX 7650          |
| Catalyst 4500X<br>Catalyst 6800  | ICX 7750          |
| Catalyst C9500                   | ICX 7850          |

## ENTRY LEVEL AP MAPPING

| Cisco                | RUCKUS       |
|----------------------|--------------|
| Aironet WAP361       | H320         |
| Aironet 1810W        | H510         |
| Aironet 1815 Series1 | R310<br>R510 |

## MID-RANGE AP MAPPING

| Cisco        | RUCKUS |
|--------------|--------|
| Aironet 1830 | R610   |

## HIGH-END AP MAPPING

| Cisco                        | RUCKUS |
|------------------------------|--------|
| Aironet 1850<br>Aironet 2800 | R710   |
| Aironet 3800<br>Aironet 4800 | R720   |
| -                            | R730   |

## OUTDOOR AP MAPPING

| Cisco               | RUCKUS  |
|---------------------|---------|
| Aironet 1540 Series | T301    |
| Aironet 1560 Series | T610    |
| Aironet 1570 Series | T811-CM |

## NETWORK MANAGEMENT AND CONTROL

| Cisco Product                                                            | RUCKUS Solution                           |
|--------------------------------------------------------------------------|-------------------------------------------|
| Cisco Instant Access                                                     | RUCKUS Campus Fabric                      |
| Cisco Mobility Express                                                   | RUCKUS Unleashed                          |
| Cisco Mobility Express +<br>Cisco Prime Infrastructure<br>(Managing APs) | RUCKUS Unleashed + UMM,<br>or Cloud Wi-Fi |
| Cisco Wireless<br>LAN Controller<br>(Centralised/tunnel mode)            | RUCKUS SZ100/300 or vSZ +<br>vDP          |
| Cisco Wireless<br>LAN Controller<br>(FlexConnect mode only)              | RUCKUS SmartZone (all)                    |
| IOS converged access<br>(Centralised mode only)                          | RUCKUS SmartZone (all)                    |
| Cisco DNA (Analytics, ML) +<br>Cisco Prime (reporting)                   | SmartZone + SCI                           |

## SECURITY, ON-BOARDING, LOCATION SERVICES

| Cisco Product                               | RUCKUS Solution |
|---------------------------------------------|-----------------|
| Identity Services Engine<br>(ISE)           | Cloudpath       |
| CISCO Connected Mobile<br>Experiences (CMX) | SPoT            |

# THE RUCKUS ADVANTAGE VS. CISCO

## Product Positioning

### RUCKUS SOLUTION

**RUCKUS ZoneDirector**, SmartZone, and Virtual SmartZone incorporates many of the solutions that customers need without requiring additional platform and licensing purchases. Virtual SmartZone incorporates reliability and functionality unmatched in any Cisco product offering.

**RUCKUS Unleashed** is a controller-less solution that provides a controller level feature set and deploys in minutes. Unleashed Multi-Site Manager (UMM) scales Unleashed further with a lightweight application that doesn't require heavy resources or a dedicated master console for larger deployments.

**The RUCKUS SmartZone platform** provides most customers the needed management functionality without additional cost required by DNACenter.

**SmartCell Insight (SCI)** brings any additional features not covered by SmartZone, and **RUCKUS Analytics** provides a machine learning engine and analytics as required without needing to purchase more than needed.

**RUCKUS Cloud** combines reliability and ease of use to provide networks you can count on in even the most challenging environments with integrated analytics. Easy configuration with wizard guided steps.

**RUCKUS Cloudpath** provides on-boarding and RADIUS services in a platform that is simple to deploy and operate, which is a stark contrast to the Cisco platform. **RUCKUS SPoT** is available on all newer AP's, RUCKUS offers the same functionality without the complexity inherent in a competitor's solution.



### CISCO PRODUCTS

Cisco Wireless is migrating from legacy Aironet to the new Catalyst platform but is still relying on physical controllers. Whether it's the Aironet or new Catalyst line, Cisco controllers lack many of the features available on RUCKUS controllers.

**The Cisco 9800-CL** is positioned as a cloud solution but is a virtual controller lacking the hallmarks of a true cloud solution like subscription-based service.

**Cisco Mobility Express/Embedded Wireless** uses existing hardware as the controller, but only certain model APs or switches can be used as controllers. For any multi-site management or reporting, additional products are required at significant expense and licensing.

**Cisco DNA** is the new "all thing's management" platform. Cisco DNA is an umbrella term for three separate products:

- DNA-Center focuses on management
- DNA-Assurance is the analytics and Machine Learning (ML) engine
- DNA Spaces is the on-premises virtual server that acts as the gateway to the Cisco cloud to do resource intensive tasks

The DNA platform runs on an onsite appliance and includes a licensing scheme that is expensive and confusing. Prime Infrastructure is the system still used for Aironet platforms.

**Identify Services Engine (ISE) for RADIUS and NAC** requires intensive training and licensing while **Connected Mobile Experience (CMX)** for location services has never fully materialized as a viable product.

# THE RUCKUS ADVANTAGE VS. CISCO

## CONTROLLER-BASED ARCHITECTURES

### RUCKUS SmartZone

Focused on cost-efficient and easy to use solutions that scale from small to massive. On-site or remote controllers, standalone or clustered, user friendly, all-in-one design with built-in historical reporting, troubleshooting, multi-tenancy, and tunneling. Includes an integrated management of RUCKUS ICX switches.

## CONTROLLER-LESS ARCHITECTURES

### RUCKUS Unleashed

Affordable, user-friendly solution with a rich feature set. Includes a free mobile app that can manage up to 10 Unleashed networks. Deploys in minutes. Unleashed is appropriate for single SMB/SME deployments up to multi-site with Unleashed Multi-site Manager (UMM), a simple, lightweight management system which can monitor and manage both wired and wireless RUCKUS Equipment.

## CLOUD-MANAGED ARCHITECTURES

### RUCKUS Cloud

Simplified WLAN management with a consistently great user and IT experience. Provision, monitor and troubleshoot your entire Wi-Fi network through a single web dashboard or mobile app.

## SECURE DEVICE ACCESS SOFTWARE

### RUCKUS Cloudpath

Cloudpath Enrollment System is a software/SaaS platform that delivers secure, policy-based wireless and wired network access for every user and every device on any network, including guest and BYOD. It can be installed on-premise as a VM or used as a public cloud service.



## CONTROLLER-BASED ARCHITECTURES

### Cisco Wireless LAN Controllers

Focused on large enterprises, Cisco's offerings come at a higher cost and complexity and promote vendor lock-in. The Cisco Prime Infrastructure and DNA are too complex for all businesses, except the largest organisation that require a dedicated staff to monitor and manage. Requires a substantial commitment to training to use.

## CONTROLLER-LESS ARCHITECTURES

### Cisco Mobility Express/Embedded Wireless Controller

The most common solution proposed for SMBs by Cisco. In classic Cisco style, ME and EWC-Switch/AP has some limited advanced features but lacks many simpler features that SMB customers desire like per-client rate limiting, ease of enabling Peer-to-Peer blocking etc. Limited functionality offered in ME management by the Cisco wireless mobile app. Expensive Cisco Prime / DNA Center must be purchased for multi-site AP management.

## CLOUD-MANAGED ARCHITECTURES

### Cisco Product

Cisco markets their Catalyst 9800-CL as a cloud solution but as noted in other sections of this document, it is really a virtual controller and should be compared to a Virtual SmartZone instead.

## SECURE DEVICE ACCESS SOFTWARE

### Cisco Identity Services Engine (ISE)

Cisco ISE, which partially came about with Perfigo acquisition (Clean Access), provides secure network access and visibility to users and devices. Available as a physical or virtual appliance. It is now integrated with DNA Center, Cisco's analytics platform.

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## RUCKUS ARCHITECTURE: RUCKUS IoT Suite

Is purpose-built to securely transport IoT traffic from an open eco-system of IoT devices and cloud partners without an overlay IoT network.

- IoT controller aggregates and displays IoT sensor and gateway information and interfaces securely with 3rd party IoT services including location-based services, connected entry, security, energy management, condition monitoring and more.
- The IoT controller supports BLE, Zigbee, LoRaWAN, and wired or Wi-Fi IoT solutions for a true converged network.
- RUCKUS AP's with integrated BLE and Zigbee or RUCKUS i100 IoT plug-in AP modules with multi-protocol support.

## SWITCH PORTFOLIO: RUCKUS ICX Switches

The ICX portfolio provides a broad range of stackable switches to meet the needs of even the most demanding networks from the edge to the core of the network. The ICX switch family provides the building blocks for a complete enterprise-campus or data-center network. All based on stackable 1RU switches. From entry-level to high-performance switches that can provide the performance and features previously only available from a large, expensive chassis. RUCKUS ICX switches provide customers with the ability to easily and flexibly scale-out their network by adding more switches as they're needed.

## WLAN PERFORMANCE: RUCKUS Access Points

RUCKUS Access Points (APs) provide secure and reliable connections in challenging RF environments, indoors or outdoors. RUCKUS' patented BeamFlex+™ adaptive antenna technology selects best antenna combination for any client location, provides extended coverage and improves AP-to-client link reliability. ChannelFly, another RUCKUS' RF innovation, helps to find the least congested Wi-Fi channels for the APs based on real-use statistics, increasing overall system throughput. Whether it is an AP with 2x2, 3x3 or 4x4 MIMO technology RUCKUS products deliver industry-leading performance. High-end RUCKUS R750 Wi-Fi CERTIFIED 6™ AP supports 8 spatial streams (4x4:4 in 5GHz and 4x4:4 in 2.4 GHz) and can support up to 1024 client connections in ultra-high density environment.



## RUCKUS ARCHITECTURE: Cisco Indoor IoT

Cisco's indoor IoT offering includes:

- APs with integrated BLE ,Zigbee, Thread or with Cisco module with BLE support
- Hyperlocation solution – combination of the Aironet x800 AP, Cisco DNA Spaces, CMX location engine, CMX SDK, and MSE
- Cisco DNA spaces (with CMX under its umbrella)
- Location services, asset tracking, wayfinding

## SWITCH PORTFOLIO: Cisco Catalyst Switches

Cisco has a broad portfolio of networking hardware and software that spans virtually any networking requirements.

- The Cisco Catalyst family is targeted to the Campus LAN from access/edge to aggregation and core switches. These are generally the most comparable to the RUCKUS ICX switches.
- Over the past 2 years, Cisco has introduced the Catalyst 9000 families to replace (update) the Catalyst 2000, 3000, and 6000 switch families except for the compact switch segment which still has the 1000, 2960, and 3560 series.
- Cisco also sells families of switches and routers for numerous use cases including data-center deployments, Storage Area Networking (SAN), WAN Routers and others, as well as related network software.

## WLAN PERFORMANCE: Cisco Access Points

APs are marketed with unique innovations at the chip level. This does not translate to consistent superior performance across their access point portfolio. Cisco's ClientLink, a chip-based beam forming with implicit client feedback, provides limited benefits and does not support polarization diversity in Cisco APs. Many innovations are limited to specific models. Cisco ClientLink is a proprietary form of implicit Transmit Beamforming (Tx BF) that attempts to phase-align transmitted signals without explicit client calibration or feedback.