

RUCKUS Solution Overview

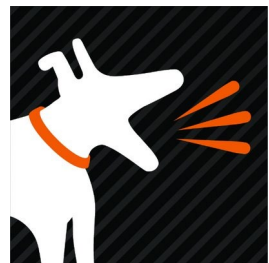
尤勒行 Ray Yu
技術顧問 Technical





Always be
Innovating



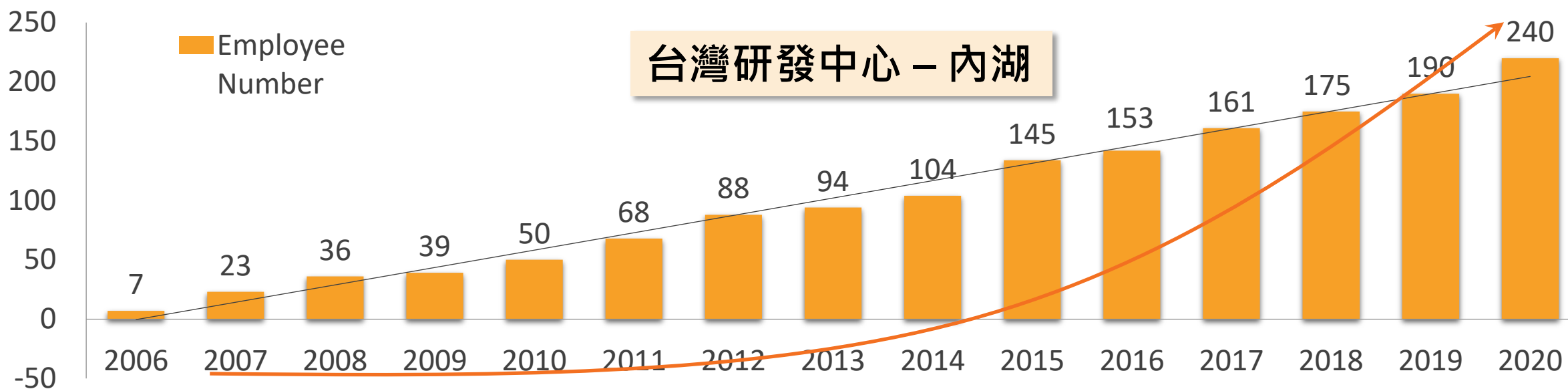


COMMSCOPE®
RUCKUS®

穩健成長網路技術公司

Ruckus 成立於 **2004 年 6 月**，是全世界成長最快速的網路技術公司之一，營收成長極為快速。從 2009 年到 2015 年，Ruckus 的**零複合成長率為 49%**。

快速
成長

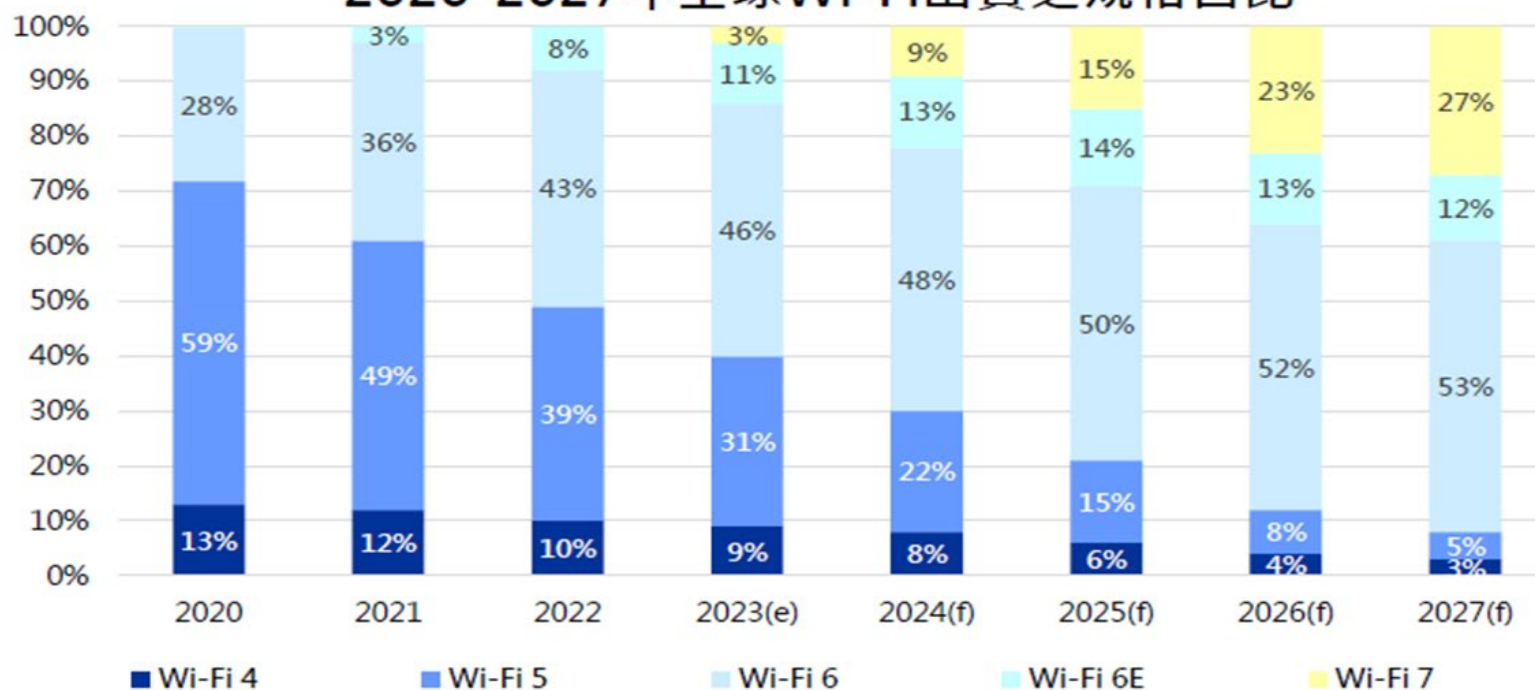


New WiFi 7 - next 5 years



Wi-Fi 7即將正式發表，未來幾年將持續 被導入於各型應用產品

2020-2027年全球Wi-Fi出貨之規格占比



- 在智慧型手機、PC/NB等主要消費性電子產品採用，並持續擴大搭載於各類寬頻/IoT裝置下，Wi-Fi應用設備市場持續成長；標準部分，**Wi-Fi 6/6E標準已在2022年取得出貨主流的地位**，新一代Wi-Fi 7則預計從2023年起有少量商用產品陸續上市



網通大廠運用Wi-Fi的策略：把握電信服務商對Wi-Fi的熱衷，積極開發各種關聯產品

行動通訊系統業者



5G推廣下，大廠將Wi-Fi納入整體無線接取方案的一環，針對專網等客群推廣，除**WLAN AP**整套傳輸方案，並含各種感測裝置

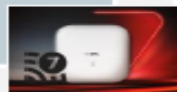
無論是5G或光纖接取網路，大廠開發搭載主流或最新標準的**Wi-Fi數據機與路由器**產品，與系統搭售或於零售通路推廣



WLAN AP品牌廠



導入主流與**新Wi-Fi標準**推出新產品，對一般企業與特定垂直市場進行推廣



針對新興的**大型場域Wi-Fi**網路建置需求，以最新標準加上**AI**技術訴求對龐大流量數據的支援能力



加入開源聯盟並開發相關標準之產品，與各國SI合作將產品推向當地市場

品牌廠與ODM終端業者



導入主流與**新Wi-Fi標準**於有線以及5G寬頻開道器中，向寬頻服務商推廣



針對寬頻服務商無縫連網服務需求，推出**Wi-Fi Mesh**路由器並整合管理軟體



爭取進入寬頻服務商智慧家庭供應商清單，開發**支援Wi-Fi的IoT設備**



- 電信服務商對無線網路建置熱絡，系統商與終端業者在現有產品上整合最新Wi-Fi標準進行推廣，終端廠商並導入第三方Wi-Fi裝置管理軟體，增加硬體賣點

RUCKUS Networks

Purpose-driven enterprise networks



www.commscope.com/ruckus

ACCESS POINTS

SWITCHES

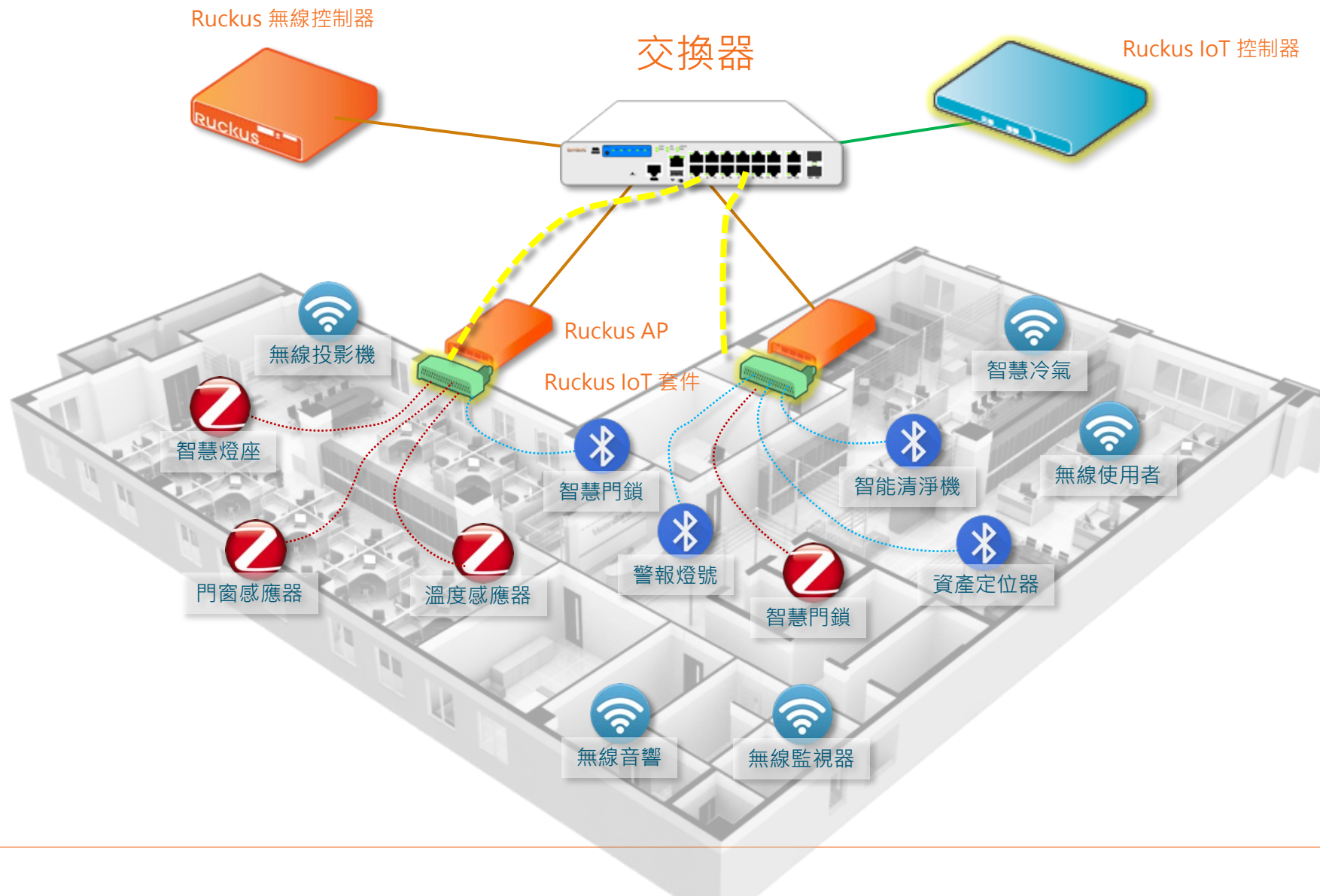
IoT NETWORKING

ANALYTICS & ASSURANCE












CONTROL & MANAGEMENT

SECURE NETWORK ACCESS

RUCKUS AP 是 IoT GW，讓您應用千變萬化



An Access Point for Every Occasion

	Good	Better			Best		
Indoor	 R350 Wi-Fi 6 CERT 2x2:2 IoT Ready	 R550 Wi-Fi 6 CERT 2x2:2 IoT Onboard	 R560 Wi-Fi 6E CERT 2x2:2 5GbE IoT Onboard	 R650 Wi-Fi 6 CERT 4x4:4/2x2:2 IoT Onboard	 R750 Wi-Fi 6 CERT 4x4:4 2.5GbE IoT Onboard	 R850 Wi-Fi 6 CERT 8x8:8 5GbE IoT Onboard	 R760 Wi-Fi 6E CERT 4x4:4 10GbE IoT Onboard
Outdoor	 T350/T350se Wi-Fi 6 CERT 2x2:2 IoT Onboard				 T750/T750se Wi-Fi 6 CERT 4x4:4 2.5GbE IoT Onboard		
Specialty	 H350 Wi-Fi 6 CERT 2x2:2, 2 Port Switch IoT Onboard	 H550 Wi-Fi 6 CERT 2x2:2, 4 Port Switch IoT Onboard Dual Concurrent					

Ruckus BeamFlex：提升連線效能和可靠度



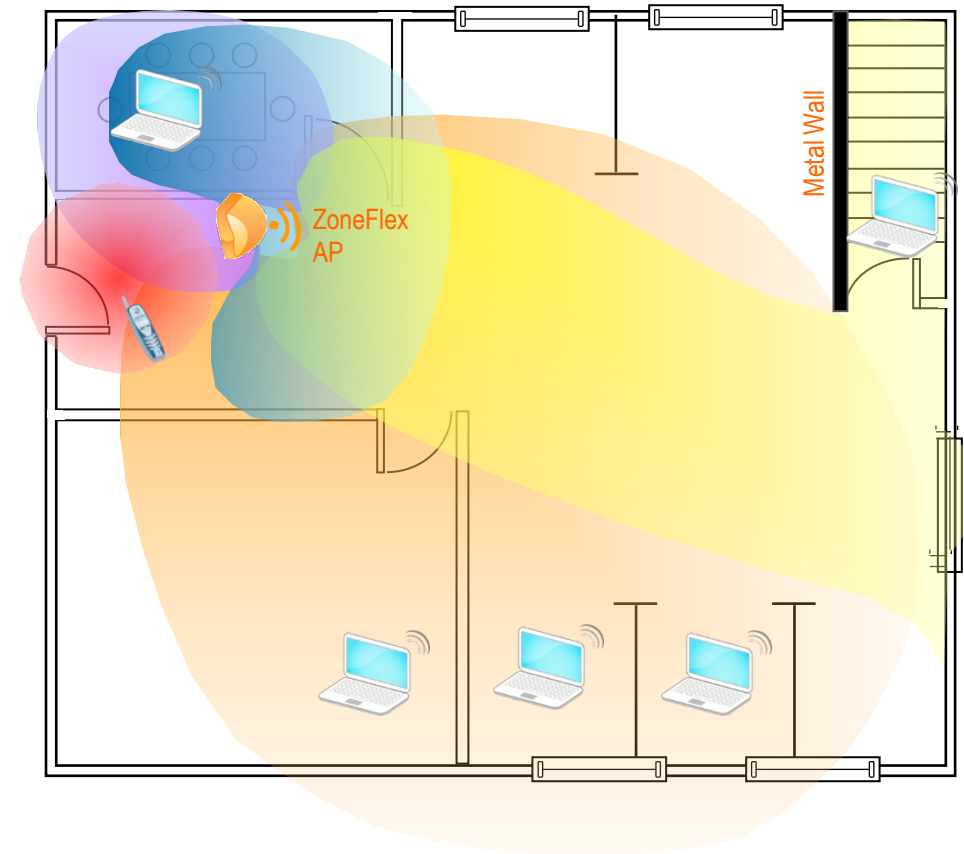
他牌



Ruckus



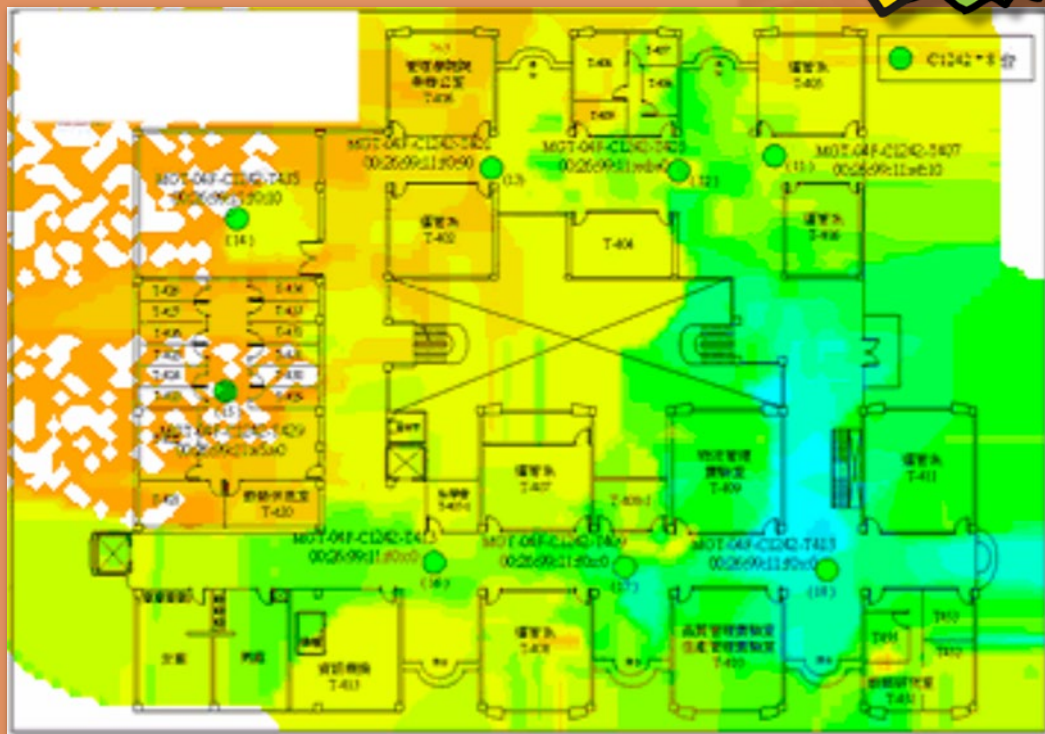
- 智慧天線將無線訊號指向用戶端設備
- 自動依據用戶端狀況（移動，加入，變化）進行最佳訊號調適
- 自動迴避干擾源
- 操控訊號繞過無法穿越的區域
- 智慧天線能夠讓基地台之間更加協調
- 自動化調整指定方向發射功率及頻道切換



Ruckus 給您涵蓋範圍更大的無線連線

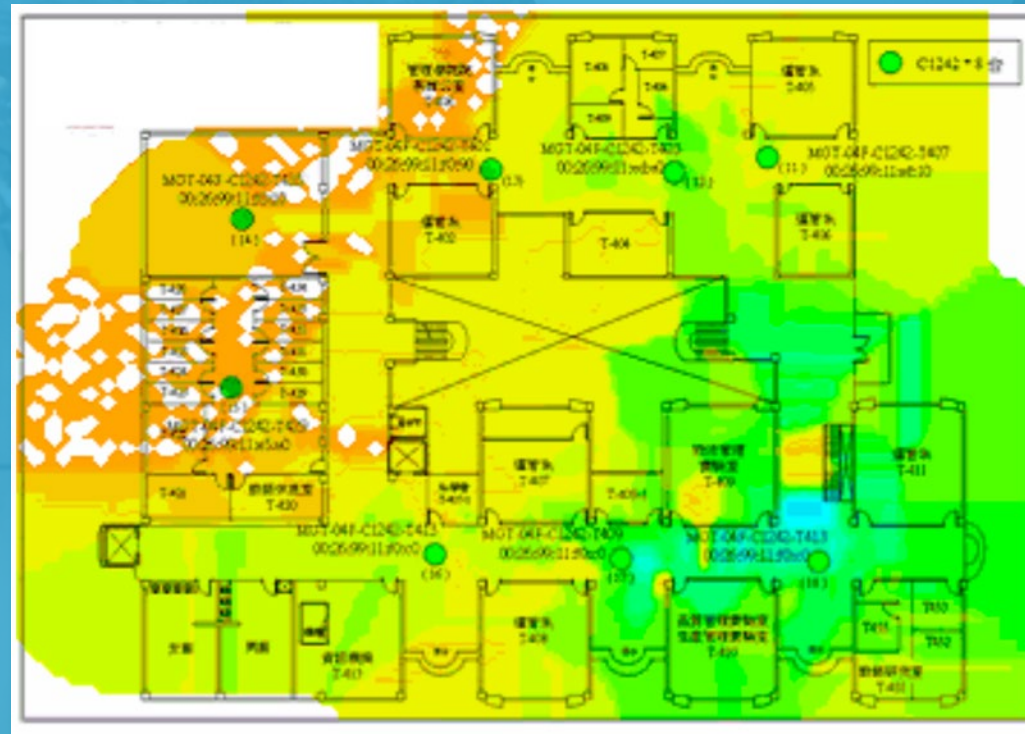
實際大樓平面涵蓋分佈測試

Ruckus 涵蓋範圍



V.S

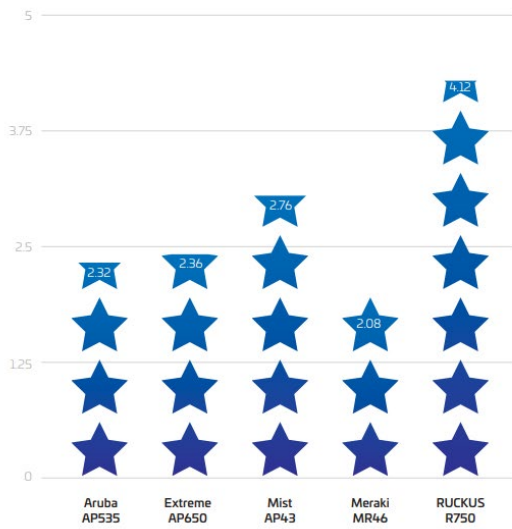
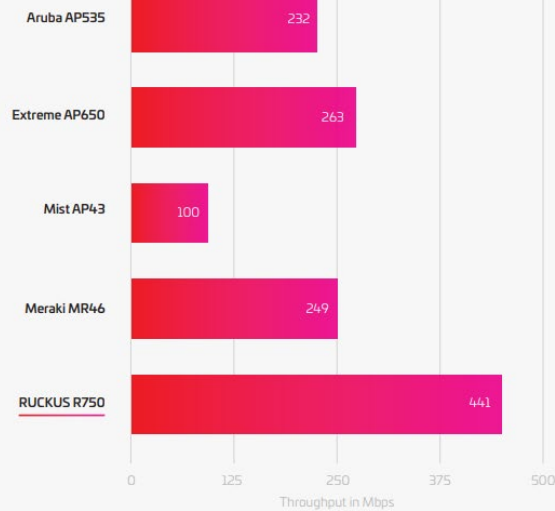
企業級 他牌 涵蓋範圍



RUCKUS Wi-Fi APs outperformed everyone!

Network throughput

Throughput is a measure of the aggregate data traffic flowing between the AP and all of the clients in the network. A higher number is better, as it indicates that the AP can accommodate more users, devices and applications.



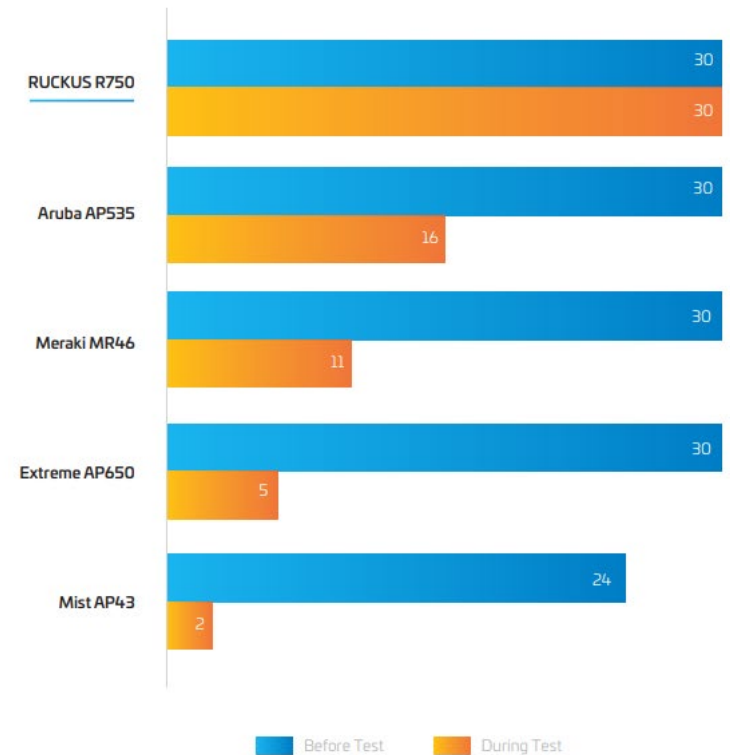
Voice MOS

Voice mean opinion score (MOS) is a commonly used measure of user-perceived voice quality during a PSTN or VoIP call. The higher the score, the higher the call quality. A high-performing network prioritizes voice traffic over other data traffic to ensure good call quality.

Stall-free streaming video

Streaming video and other video formats are common in work and school environments. When videos stall, it creates a poor user experience and may result in extra IT work. The score indicates the number of videos, out of 30, that were delivered without stalling.

PACKET6



Packet6: Wi-Fi Stress Test



Many organizations are now trying to support a combination of streaming media, VoIP and data downloads on their Wi-Fi networks, and they're considering upgrading to Wi-Fi 6 access points (APs) to improve performance. We've seen the marketing language of Wi-Fi 6 promising multi-gigabit throughput, so it seems that any AP with the Wi-Fi 6 designation should easily support various high-load scenarios found in enterprises, schools, hotels, hospitals and other organizations.



Our Takeaway: Test Before You Buy

The RUCKUS AP significantly outperformed all of the other access points in every test. It was the only access point capable of meeting real-world success criteria—maintaining a “good” MOS score while simultaneously delivering stall-free HD video streams to 30 clients and maintaining “high” throughput for all data clients.

As they say, your mileage may vary; but this test points out that different Wi-Fi 6 APs perform differently in high-demand environments. We strongly recommend that you stress-test multiple vendor APs in your own environment before deciding on a Wi-Fi 6 upgrade.

<https://packet6.com/wifi6-ap-stress-test/>

<http://www.wifi6stresstest.com>



RUCKUS Wi-Fi 6E AP update

RUCKUS WIFI6E AP vs competitors



- R560

- Aruba AP615 and Extreme AP3000
 - Missing 3rd radio , only 2/5 , or 5/6
- Our PHY rate 4.71 Gbps , is the highest among Cisco/Aruba/Extreme/MIST
- 5Gbps POE beats Cisco/aruba/Extreme
- R560 works for 0°C to 50° C, blocking Cisco and Mist (0°C to 40° C)

- R760

- Support both 2-5-5 / 2-5-6 Radio mode, for countries where 6GHz not approved for unlicensed use.
 - Block Aruba/MIST/Extreme/Cisco 9164 (Only Cisco CW9166 can do 2-5-5/2-5-6)
- PHY Rate 8.35 Gbps – block Cisco/Aruba/MIST
- 10G POE block Cisco/Aruba/Extreme /MIST
- R760 works for -10°C to 50° C , block other competitors (0°C to 50° C)

Ruckus R560

Medium Density Tri-Band Wi-Fi
6E Indoor Wireless Services
Platform with Multigigabit
Backhaul



GA now

* contingent on AFC rule ratification



2.4GHz

2x2:2

591 Mbps



5GHz

2x2:2

1237.5 Mbps



6GHz

2x2:2

2882 Mbps[#]

[#] - 2400 Mbps (MCS11), 2882 Mbps (MCS13) max PHY rate

- ✧ Dual Ethernet Ports
 - ✧ 1x 100/1000/2500/5000Base-T PoE In Port,
 - ✧ 1x10/100/1000Base-T (RJ-45)
- ✧ IoT radios
 - ✧ Onboard BLE & ZigBee (selectable)
 - ✧ 1x USB 2.0 Port for IoT extension
- ✧ Control & Management
 - ✧ RUCKUS SmartZone
 - ✧ RUCKUS Cloud
- ✧ Up to 512 client associations per radio
- ✧ Multi-User MIMO and OFDMA support
- ✧ 802.3bt PoE input, 48VDC input



BeamFlex adaptive antennas



SmartMesh
Zero Touch Mesh



ChannelFly RRM
algorithm



5Gbps
uplink



Cloud
& OnPrem



Ruckus R760

Highest Capacity Tri-Band Wi-Fi
6E Indoor Wireless Services
Platform with Multigigabit
Backhaul



* contingent on AFC rule ratification



2.4GHz

4x4:4

1148 Mbps



5GHz

4x4:4

2400 Mbps



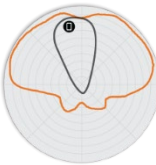
6GHz

4x4:4

4800 Mbps[#]

[#] - 2400 Mbps (MCS11), 2882 Mbps (MCS13) max PHY rate

- ✧ Dual Ethernet Ports
 - ✧ 1x 100/1000/2500/5000/10000Base-T PoE In Port,
 - ✧ 1x10/100/1000Base-T (RJ-45)
- ✧ IoT radios
 - ✧ Onboard BLE & ZigBee (selectable)
 - ✧ 1x USB 2.0 Port for IoT extension
- ✧ Control & Management
 - ✧ RUCKUS SmartZone
 - ✧ RUCKUS Cloud
- ✧ Up to 1536 clients per AP
- ✧ Multi-User MIMO and OFDMA support
- ✧ 802.3bt PoE input, 38.8 W DC input



BeamFlex adaptive antennas



SmartMesh Zero Touch Mesh



ChannelFly RRM algorithm



5Gbps
uplink



Cloud
& OnPrem





RUCKUS Wi-Fi 7 APs

First Wi-Fi 7 Indoor AP – R770



- Target date : Q4 2023 (subject to change)
- Single LED
- Tri-band (2+5+6): 2x2 (2.4GHz) + 4x4 (5GHz) + 2x2 (6GHz)
 - Dual-band options: 2+5, 5+6
 - No software-configurable 2+5+5 mode
- 1 x 10Gbps & 1 x 1GbE
- PoE-in (802.3bt) or 802.3at with reduced functionality
- concurrent BLE and Zigbee
 - 3 modes: BLE + Zigbee, BLE + BLE, Zigbee + Zigbee
 - 1 USB 2.0 port for additional IoT radios and containers (future)
- In-built GPS for Indoor Geolocation
 - Geolocator cloud service with GPS, 802.11mc, and Mobile App



Major Wi-Fi 7 Enhancements

Extremely High Throughput

Standard	Wi-Fi 6/6E	Wi-Fi 7
Max Speed with 1 Spatial Stream	1.2 Gbps	2.9 Gbps
Max Speed with 2 Spatial Streams	2.5 Gbps	5.8 Gbps
Max Speed with Max # of Spatial Streams	9.6 Gbps	46.4 Gbps

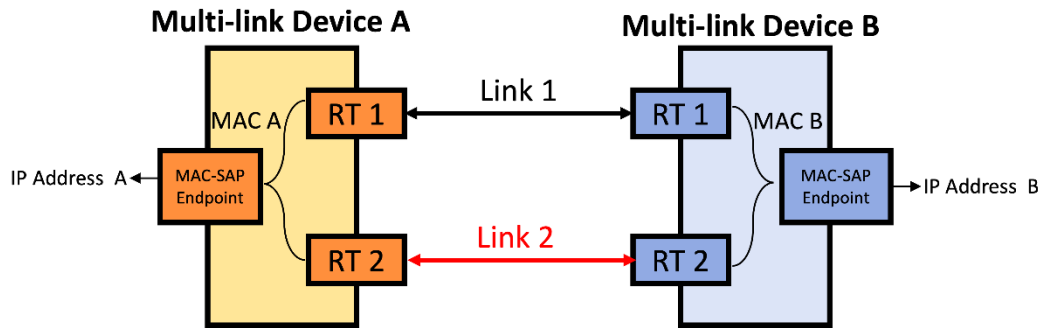
Punctured Transmission

- Increased channel availability
- Better throughput
- Lower latency



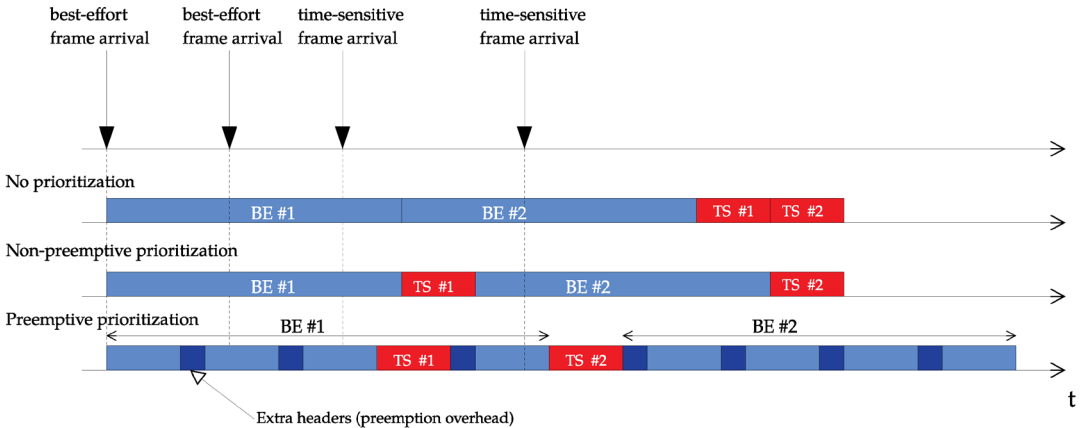
Multi-Link Operation

- Link redundancy (resilience)
- Link aggregation (throughput)
- Link selection (latency)



Enhanced Quality of Service

- Time Sensitive Networking (TSN)
- Deterministic Low Latency



Use Case for Wi-Fi 6E/7

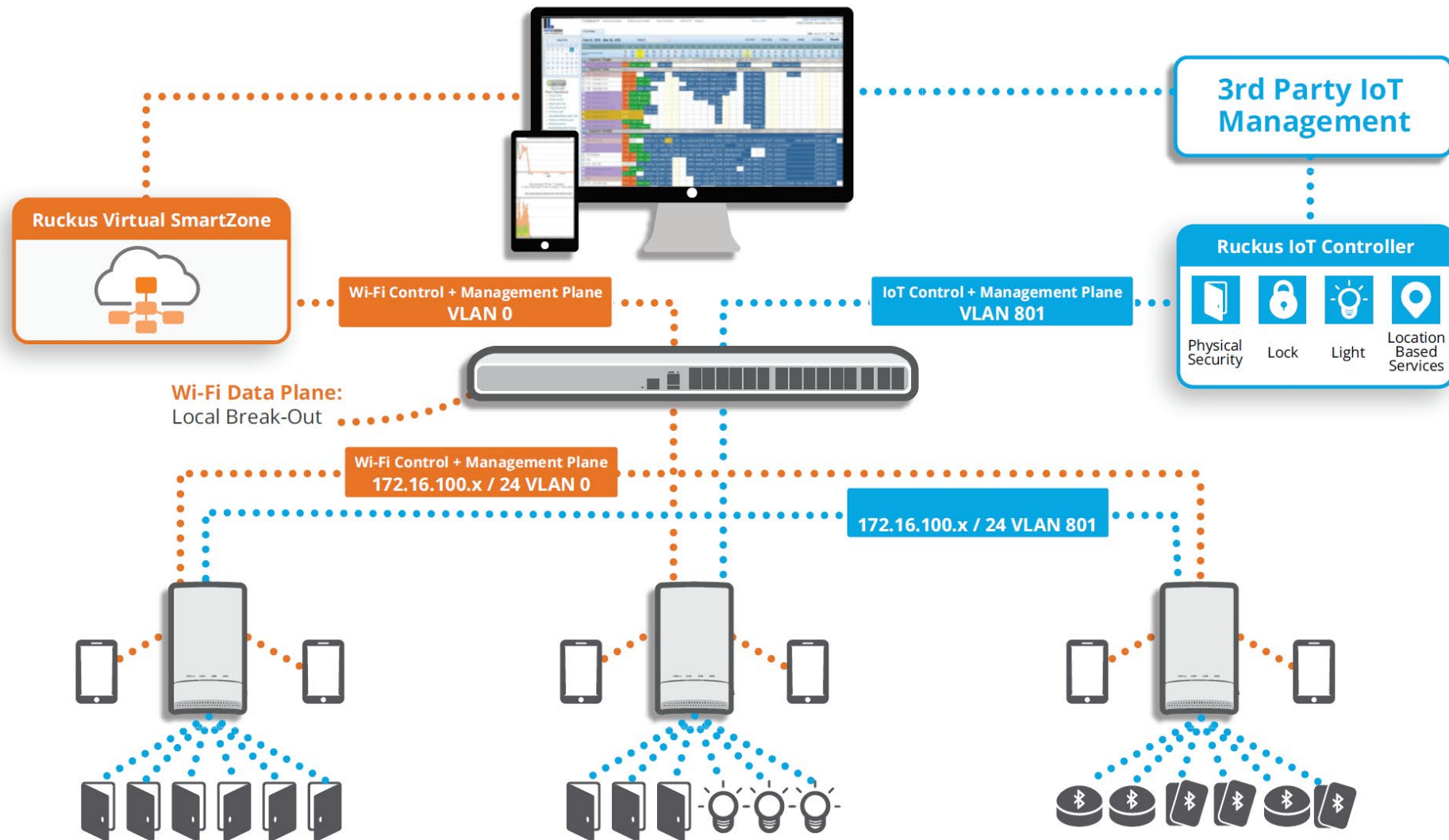
- Critical Application
- High Density
- VR and AR applications





Ruckus IoT Solution deployment

..... Wi-Fi
..... IoT



Insights Solutions

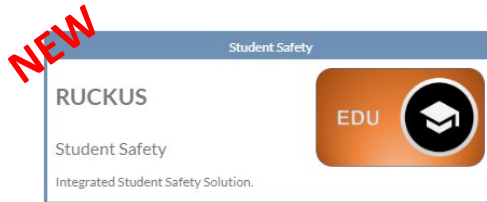
• Free Inclusive Solutions



- Environmental
- Environment Racal & Graphing



- Analytics
- Any Event Search and Display



- Student Safety
- Vape/Bullying Monitoring and Notification

• Licensed Solutions



- Video
- Event Recall & Playback



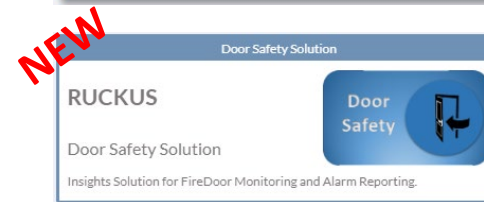
- Occupancy
- Space utilization/occupancy



- Staff Safety
- Panic/Safety Monitor & Notification Alerting



- Building
- Environment/Power monitoring and projection



- Door Safety
- Door Monitoring and Notification Alerting



- Reporting
- Report Generation and custom Document writing

IoT Solutions

COMMScope
RUCKUS

IoT Insights

OPERATION

Dashboard

Devices

Event Log

Floorplan

SERVICES

Service Panel

ADMIN

System Log

Configuration

IoT Insights

version 2.0.0.100

Developed by RUCKUS
IoT Solutions Engineering

User
administrator

0

17:06:05
Europe/London

Search....

Video Service

ID	Device	Type	Time	Camera
1085439	LoRa-Desk01	occupancy	07/02/2022, 17:05:57	F44-Office
1085438	RKSUK01-Office-PIR01	motion	07/02/2022, 17:05:56	F44-Office
1085436	PIR02	motion	07/02/2022, 17:05:50	F44-Lab
1085435	zwavepir01	motion	07/02/2022, 17:05:48	F44-Office
1085432	RKSUK01-Office-PIR01	motion	07/02/2022, 17:05:40	F44-Office
1085431	DOOR04	contact	07/02/2022, 17:05:39	F44-Office
1085430	zwavepir01	motion	07/02/2022, 17:05:17	F44-Office
1085429	PIR02	motion	07/02/2022, 17:05:17	F44-Lab
1085428	RKSUK01-BLE-Door01	contact	07/02/2022, 17:05:16	F44-Office
1085424	CICTHERMO01	motion	07/02/2022, 17:05:15	Hall_Cam
1085423	PIR02	motion	07/02/2022, 17:05:15	F44-Lab
1085421	CICTHERMO01	motion	07/02/2022, 17:05:01	Hall_Cam
1085419	PIRTEST02	motion	07/02/2022, 17:04:50	F44-Office
1085418	zwavepir01	motion	07/02/2022, 17:04:47	F44-Office
1085416	PIR02	motion	07/02/2022, 17:04:30	F44-Lab
1085415	PIR02	motion	07/02/2022, 17:04:28	F44-Lab
1085414	RKSUK01-Office-PIR01	motion	07/02/2022, 17:04:25	F44-Office
1085413	RKSUK01-BLE-Door01	contact	07/02/2022, 17:04:16	F44-Office
1085409	CICTHERMO01	motion	07/02/2022, 17:04:14	Hall_Cam
1085407	zwavepir01	motion	07/02/2022, 17:04:14	F44-Office

Location: RKSUK01 : Office

Event ID: 1085439

Camera: F44-Office

Device: LoRa-Desk01

value: occupied


Event Time: 07/02/2022, 17:05:57

Preview: 5 Seconds

Type: occupancy

Comment: Office LoRa-Desk01 Event from Insights2.0 Service

F44-Office



1X

⏮

⏪

⏸

⏩

⏭

02:00

17:03:00

17:04:00

17:05:00

17:06:00

17:07:00

17:08:00

17:09:00

⏮

📅

👤

▶ Playback Video

■ End Playback Video

A Growing IoT Ecosystem

Building Management & Control

Lights
Locks
Thermostat
Wall light switch
Switched outlets (smart plug)
Blinds/Shades
Cameras
CO₂ sensor
Motion
Door Contact
Water Leak

 **telkonet**
ENERGY MANAGEMENT



AXIS
COMMUNICATIONS
IPCONFIGURE
VIDEO / VMS



 **SmartThings**
HOME AUTOMATION



ASSA ABLOY
CONNECTED ENTRY



dormakaba
CONNECTED ENTRY



 
STANDARD BLE / ZIGBEE



Safety and Security

Locks
Cameras
Panic Button / Staff Safety
Siren Alarm

 **TraknProtect**
PANIC BUTTON



 **AVSYSTEM**
 **kontakt.io**
LOCATION SERVICES



Location Based Services

Staff Safety / Panic Button
Location Based Services
BLE Beacons
Asset Tracking

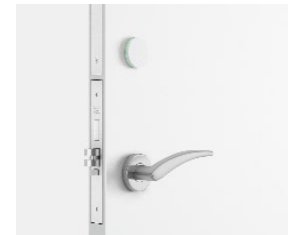
 **REACT**
mobile
PANIC BUTTON



somfy
MOTORISED WINDOW COVERING



SALTO
CONNECTED ENTRY



Insight Marketplace

Configuration Management

Insights Marketplace

ALL Applications ☐ Solutions Only ☐

RUCKUS

Remote Device Installer Tool

External Tool/Interface to allow Localized Device Installation with a Phone and QR Tagged Devices.

AssaAblay

Online Connector

Application and Access connector for AssaAblay Online Lock Server & Ruckus IOT Controller.

RUCKUS/Rigado

Gateway Connector

Application to provide connectivity of Edge-connect BLE Containers to the EdgeDirect Cloud Services & Insights Solutions.

CircuitMeter

Power Meter Cloud Connector

API Interface for CircuitMeter connected Power Meters and Devices

Configure Inc

Samsung

SmartThings Connector

Application and Access connector for Samsung SmartThings Enabled Access Points and Cloud Services.

Axis Communications

ACAP Camera Connector

Application and Access connector for Axis Communications range of IP cameras with Axis ACAP Application Interface.

RUCKUS

IOT Gateway Connector

Application Service providing connection to RUCKUS (Development) IOT Gateway Platforms using the IOT-GW SDK

CThings

CThings Cloud Connector

API Interface for CThings Cloud connected LoRa Devices

Vonage Inc

dormakaba

Ambiance Connector

Application and Access connector for dormakaba Ambiance Online Lock Server & Ruckus IOT Controller.

Rachio

Sprinkler Connector

Application to provide IOT Connector Monitoring connectivity to an Rachio Sprinkler Systems and Rachio Cloud Controller.

TraknProtect

Staff Safety Buttons

Support for TnP Series of Panic Buttons and Lock Service Devices

IPConfigure Inc

Orchid VMS Connector

Application Interface for IPConfigure Orchid Cloud Video Management System for Video event playback

SMTP

SMTP

SMTP E-MAIL API

General SMTP connector service for 3rd parties supporting SMTP authentication and interfaces to send e-mail messages.

Google Inc

Google Maps API

Settings and Connector for Google Mapping API Interface.

RUCKUS

Staff Safety Solution

Integrated Staff Panic Button & Safety Monitoring Solution

RUCKUS

Building Management Solution

Integrated Building Management Analytics Solution.

RUCKUS

MQTTClient

MQTT Client Connector

MQTTClient 1.0.0

SystemUpdate

Insights Online Upgrade

SystemUpdate 1.0.0

SMTPemail

SMTP E-MAIL API

SMTPemail 1.0.1

SaaSVideo

Video Solution

SaaSVideo 1.0.6

SaaSOccupancy

Occupancy/Utilization

SaaSOccupancy 1.0.3

RuckusIoT

IOT Controller Connector

RuckusIoT 1.0.0

WebHooks

API Endpoint Security

WebHooks 1.0.0

APPInterface

Marketplace Solution

APPInterface 1.0.1

SaaSEnvironment

Environmental Monitoring





















































































SaaSEnvironment 1.0.0

SaaSAnalytics

Analytics Monitoring

SaaSAnalytics 1.1.1

IoT Device Sensor

IoT Devices									
Search....									
Name	Site	Location	Protocol	Manufacturer	Model	Value	State	Alarms	Environment
AB-Office-Temperature01	RKSUK01	Office		LUMI	lumi.sensor_ht				
AB-Office-DOOR01	RKSUK01	Office		LUMI	undefined	Alarm			
AB-Office-Temperature02	RKSUK01	Office		LUMI	lumi.weather				
AB-Lab-DOOR01	RKSUK01	Garage		LUMI	lumi.sensor_magnet.aq2				
AB-Office-CO2	RKSUK01	Office		Titan Products Ltd	TPZRCO2HT-Z3				
AB-Office-BUTTON01	RKSUK01	Office		Samjin	button	temperature			
AB-Office-WATER01	RKSUK01	Office		Samjin	water	temperature			
AB-Office-Light01	RKSUK01	Office		OSRAM	CLA60 RGBW OSRAM				
AB-Office-Power02	RKSUK01	Office		OSRAM	Plug 01				
AB-Office-POWER-STRIP01	RKSUK01	Office		_TZ3000_hktqahrq	TS0001				
Garage PIR01	RKSUK01	Garage		TABS	TBMS100				
DOOR10	RKSUK01	Garage		TABS	TBDW100				
ENVIRO01	RKSUK01	Garage		TABS	TBTH100				
soter-B8:27:EB:D6:F8:08	RKSUK01	Office		Soter Sensor	FS275				
Andys BLE Tag	RKSUK01	Office		Apple, Inc.	BLE Sensor				
BLE-PIR01	RKSUK01	Office		rigado	RS40_Occupancy_Sensor				
BLE-PIR02	RKSUK01	Office		rigado	RS40_Occupancy_Sensor				
BLE-DOOR01	RKSUK01	Office		rigado	minewS4				
BLE-Enviro01	RKSUK01	Office		rigado	S1_Sensor				
TAG0001	RKSUK01	Office		Apple, Inc.	BLE Sensor				
TAG0002	RKSUK01	Office		Apple, Inc.	BLE Sensor				

IoT Solution Config

Configuration Management

New RuckusRule

? IF

Device
RKSUK01 : AB-Office-DOOR01

Type
contact

Condition
=

Value
open

LOCK

i THEN

✓ DO

Device.

ID	Device	command	eye	trash
----	--------	---------	-----	-------

SMS.

ID	To	eye	trash
----	----	-----	-------

e-Mail.

ID	To	eye	trash
----	----	-----	-------

REST.

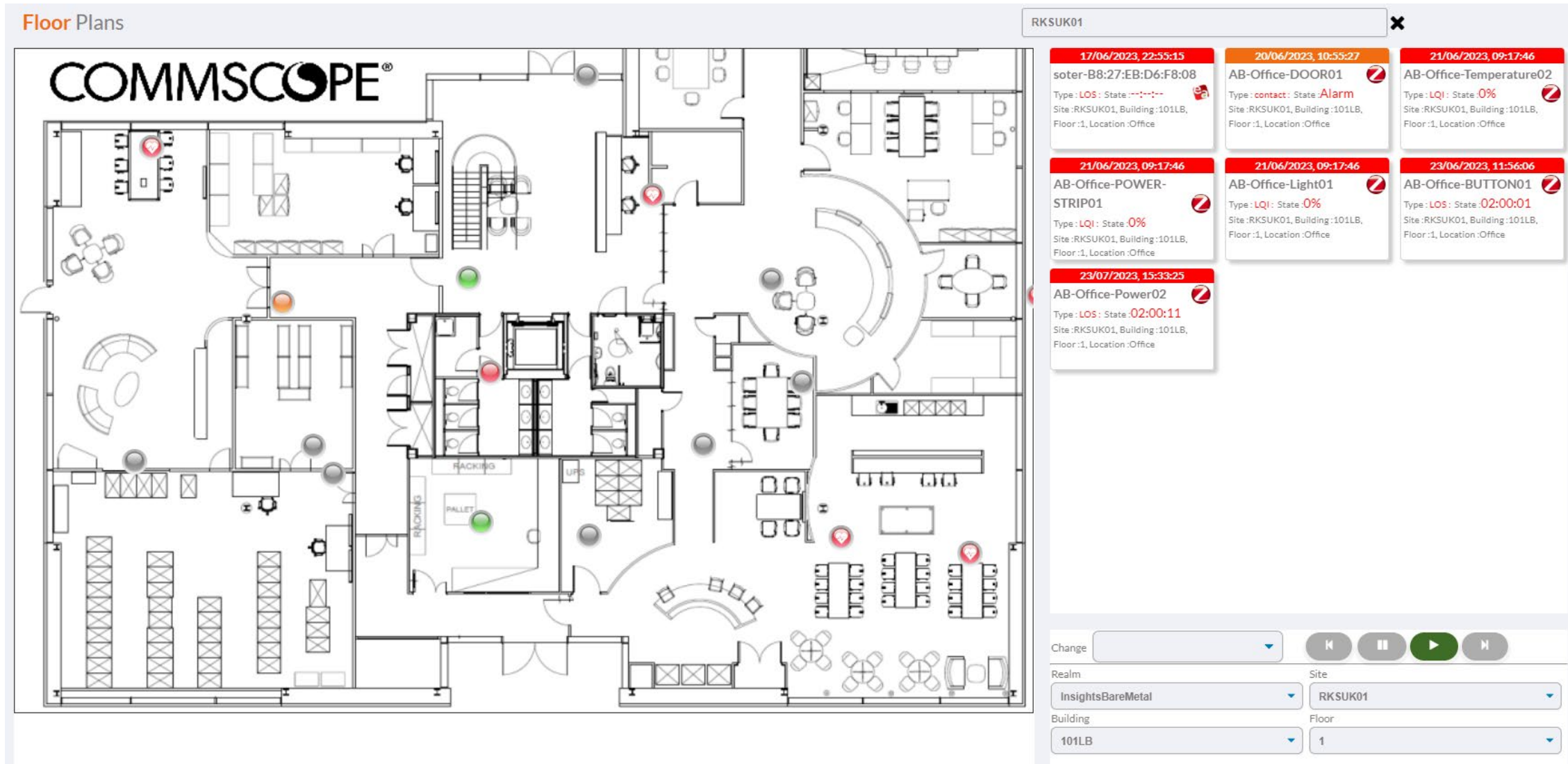
ID	url	eye	trash
----	-----	-----	-------

MQTT.























ID	Topic	eye	trash
----	-------	-----	-------

UPLOAD

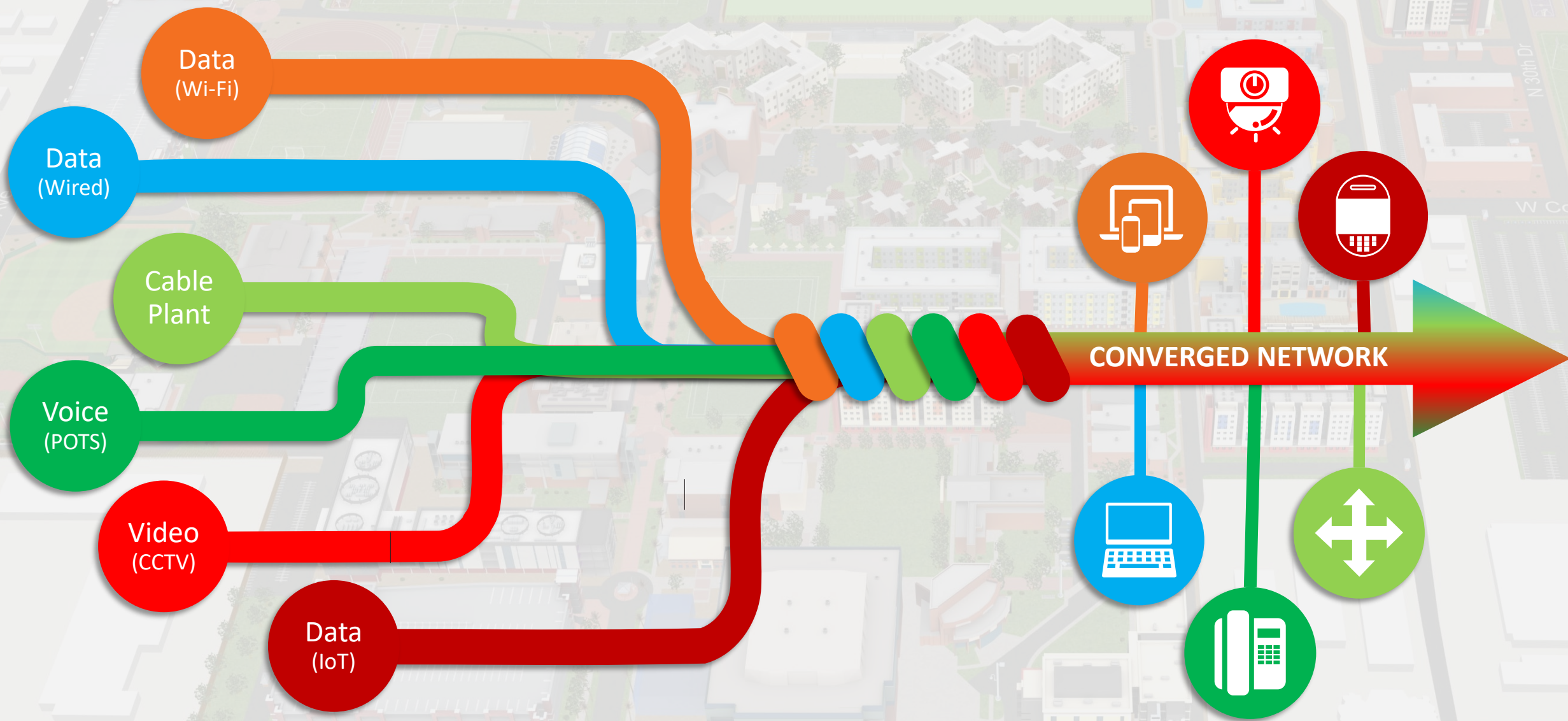
根據平面圖定位



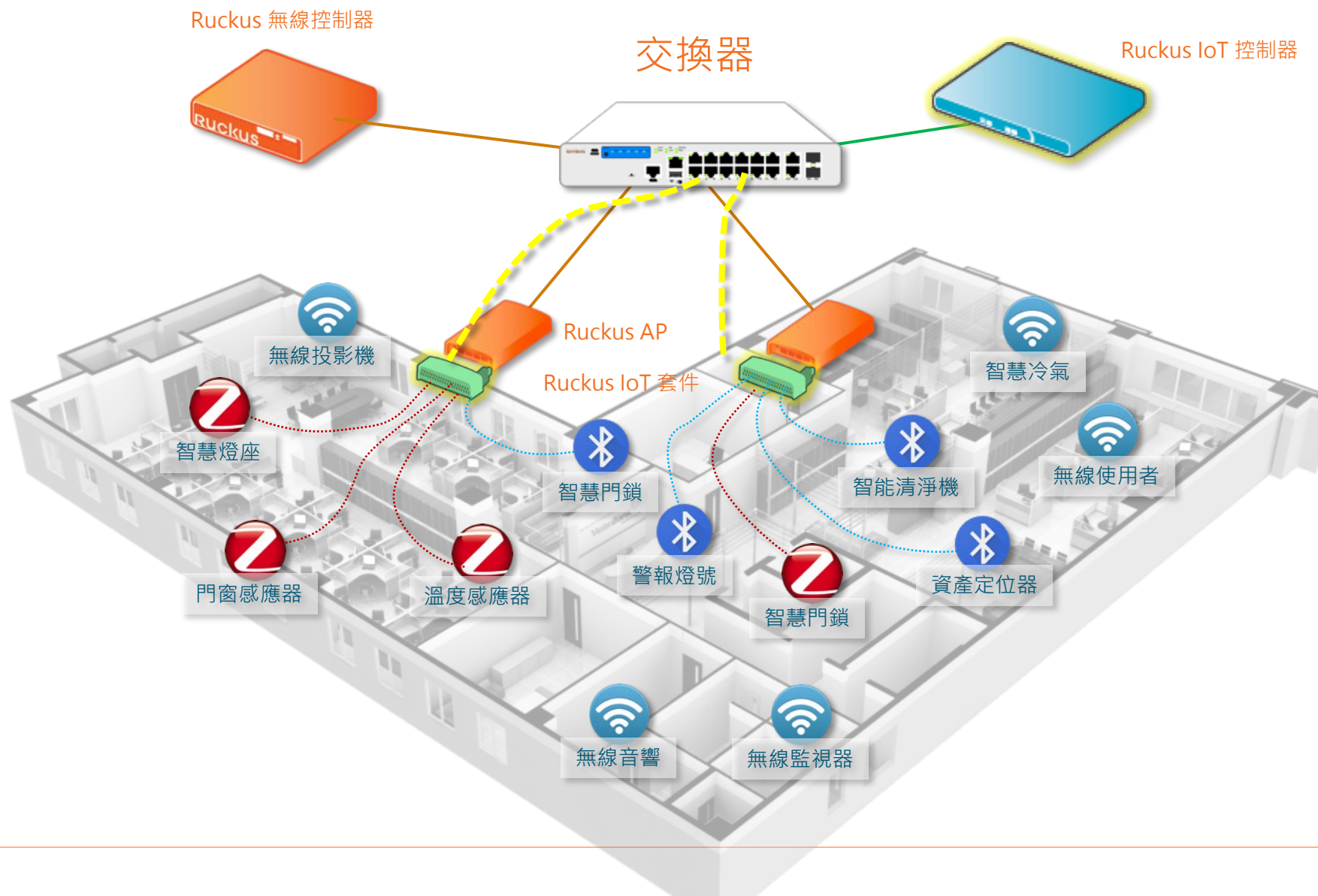
任何Sensor Log

Event Log										
										Search....
ID	Site	Location	Device	Type	Event Time	Action	Camera	Stream	Preview	Video
621501	RKSUK01	Office	AB-Office-PIR02	motion	27/07/2023, 17:33:38	unoccupied	F44-GoodsIn	27	5 Seconds	
621500	RKSUK01	Office	AB-Office-PIR03	motion	27/07/2023, 17:33:37	unoccupied	F44-GoodsIn	27	5 Seconds	
621499	RKSUK01	Office	AB-Office-PIR02	motion	27/07/2023, 17:33:17	occupied	F44-GoodsIn	27	5 Seconds	
621498	RKSUK01	Office	AB-Office-PIR03	motion	27/07/2023, 17:33:15	occupied	F44-GoodsIn	27	5 Seconds	
621497	RKSUK01	Office	AB-Office-PIR03	motion	27/07/2023, 17:30:00	unoccupied	F44-GoodsIn	27	5 Seconds	
621496	RKSUK01	Office	AB-Office-PIR03	motion	27/07/2023, 17:29:49	occupied	F44-GoodsIn	27	5 Seconds	
621495	RKSUK01	Office	AB-Office-PIR03	motion	27/07/2023, 17:24:51	unoccupied	F44-GoodsIn	27	5 Seconds	
621494	RKSUK01	Office	AB-Office-PIR03	motion	27/07/2023, 17:24:40	occupied	F44-GoodsIn	27	5 Seconds	
621493	RKSUK01	Office	AB-Office-PIR03	motion	27/07/2023, 17:24:39	unoccupied	F44-GoodsIn	27	5 Seconds	
621492	RKSUK01	Office	AB-Office-PIR02	motion	27/07/2023, 17:24:23	unoccupied	F44-GoodsIn	27	5 Seconds	
621491	RKSUK01	Office	AB-Office-PIR02	motion	27/07/2023, 17:24:14	occupied	F44-GoodsIn	27	5 Seconds	
621490	RKSUK01	Office	AB-Office-PIR03	motion	27/07/2023, 17:23:59	occupied	F44-GoodsIn	27	5 Seconds	
621489	RKSUK01	Office	AB-Office-PIR03	motion	27/07/2023, 17:19:51	unoccupied	F44-GoodsIn	27	5 Seconds	
621488	RKSUK01	Office	AB-Office-PIR02	motion	27/07/2023, 17:19:49	unoccupied	F44-GoodsIn	27	5 Seconds	
621487	RKSUK01	Office	AB-Office-PIR02	motion	27/07/2023, 17:19:40	occupied	F44-GoodsIn	27	5 Seconds	
621486	RKSUK01	Office	AB-Office-PIR03	motion	27/07/2023, 17:19:37	occupied	F44-GoodsIn	27	5 Seconds	
621485	RKSUK01	Office	AB-Office-PIR03	motion	27/07/2023, 17:15:45	unoccupied	F44-GoodsIn	27	5 Seconds	
621484	RKSUK01	Office	AB-Office-PIR03	motion	27/07/2023, 17:15:35	occupied	F44-GoodsIn	27	5 Seconds	
621483	RKSUK01	Office	AB-Office-PIR03	motion	27/07/2023, 17:15:23	unoccupied	F44-GoodsIn	27	5 Seconds	
621482	RKSUK01	Office	AB-Office-PIR03	motion	27/07/2023, 17:15:11	occupied	F44-GoodsIn	27	5 Seconds	
621481	RKSUK01	Office	AB-Office-PIR03	motion	27/07/2023, 17:15:00	unoccupied	F44-GoodsIn	27	5 Seconds	
621480	RKSUK01	Office	AB-Office-PIR03	motion	27/07/2023, 17:14:39	occupied	F44-GoodsIn	27	5 Seconds	

RUCKUS讓您所有設備只要一條



全新契機來臨，但是交換器準備好了嗎



全新世代規格交換器

Advanced Functionality

- Uplink Port 25GE SFP28
- VXLAN

Next Generation SPEC

- More MGig Port
- POE : 802.3bt , 90W
- **MADE IN TAIWAN**

High Value Features Included

- Stacking 12 x
- 3 Years TAC Support



升級25G的優點

- **投資保障**：SFP28可相容1G/10G/25G，客戶可依需求選擇符合的Optics。
- **效能提升**：25G比傳統10G Uplink還快上2.5倍，提供更高速的上行通道或堆疊頻寬。
- **節省成本**：25G的Optics相較40G的Optics便宜，25G Optics也較省電和低發熱。
- **符合趨勢**：新的Server已經有25G的網卡。



E25G-SFP28-SR
E25G-SFP28-LR
E25G-SFP28-AOC-1001
E25G-SFP28-TWX-P-0501
E25G-SFP28-TWX-P-0101
E25G-SFP28-TWX-P-0301




ICX8200 SKUs – Phase 1

No.	Model	Phase	User Port	Stacking	POE	Existing Model
1	ICX8200-24	1	RJ45 24-port 10/100/1000Mbps	SFP28 4-port 1/10/25G	None	ICX7150-24
2	ICX8200-48	1	RJ45 48-port 10/100/1000Mbps	SFP28 4-port 1/10/25G	None	ICX7150-48
3	ICX8200-24P	1	RJ45 24-port 10/100/1000Mbps	SFP28 4-port 1/10/25G	IEEE 802.3af/at 370W	ICX7150-24P
4	ICX8200-48P	1	RJ45 48-port 10/100/1000Mbps	SFP28 4-port 1/10/25G	IEEE 802.3af/at 370W	ICX7150-48P
5	ICX8200-48PF	1	RJ45 48-port 10/100/1000Mbps	SFP28 4-port 1/10/25G	IEEE 802.3af/at 740W	ICX7150-48PF
6	ICX8200-48PF2	1	RJ45 48-port 10/100/1000Mbps	SFP28 4-port 1/10/25G	IEEE 802.3af/at 1440W	None
7	ICX8200-C08PF	1	RJ45 8-port 10/100/1000Mbps	SFP+ 2-port 1/10G	IEEE 802.3af/at 124W	ICX7150-C12P

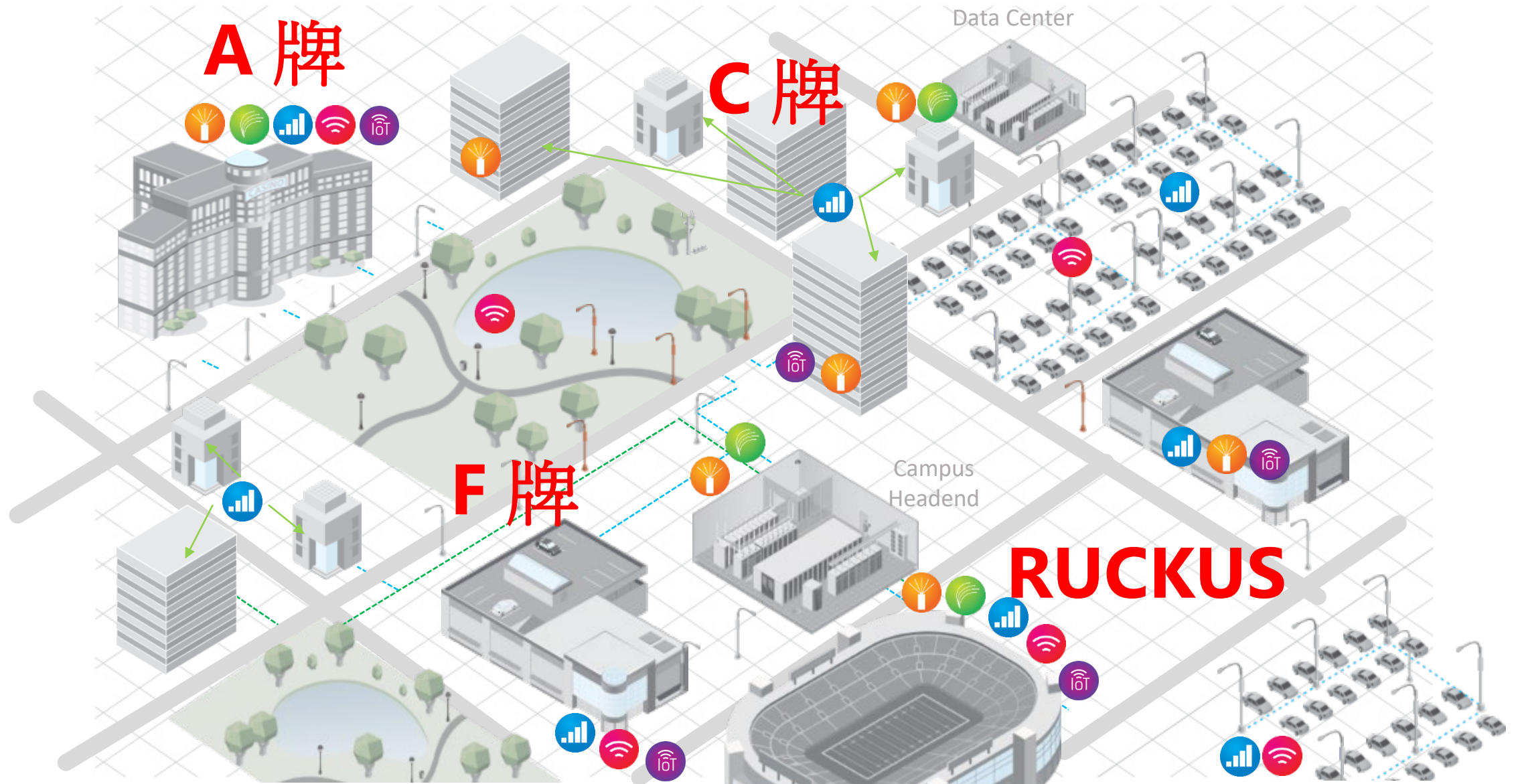
ICX 8200 Phase 2: MultiGigabit Access

Part Number, Description	Port Config	
ICX8200-24ZP 24 Port Multigigabit Ethernet PoE	24 10/100/1000/2.5 802.3bt Class 8 PoE, 740W budget 4 1/10/25GbE SFP28	
ICX8200-48ZP2-E 48 Port Multigigabit PoE Dual FRU PSU & Fan (with 1 PSU & Fan)	32 10/100/1000 802.3at Class 4, 16 10/100/1000/2.5 802.3bt Class 8 PoE, 740W budget 4 1/10/25G SFP28	
ICX8200-48ZP2-E2 48 Port Multigigabit PoE Dual FRU PSU & Fan (with 2 PSU & Fan)	32 10/100/1000 802.3at Class 4, 16 10/100/1000/2.5 802.3bt Class 8 PoE, 1480W budget 4 1/10/25G SFP28	
ICX8200-C08ZP 8 Port Compact Multigigabit PoE	4 10/100/1000/2.5 802.3bt Class 8, 4 1/2.5/5/10 802.3bt Class 8 PoE, 240W budget 2 1/10/25GbE SFP28	

ICX 8200 Phase 2: Fiber Access

Part Number, Description	Port Config	
ICX8200-24F 24 Port 1GE Fiber	24 1G SFP 4 1/10/25GbE SFP28	
ICX8200-48F 48 Port 1GE Fiber	48 1G SFP 4 1/10/25GbE SFP28	
ICX8200-24FX 24 Port 10GE Fiber	16 1/10G SFP+ 8 1/10/25GbE SFP28	

現今客戶環境





Any User

Any Device

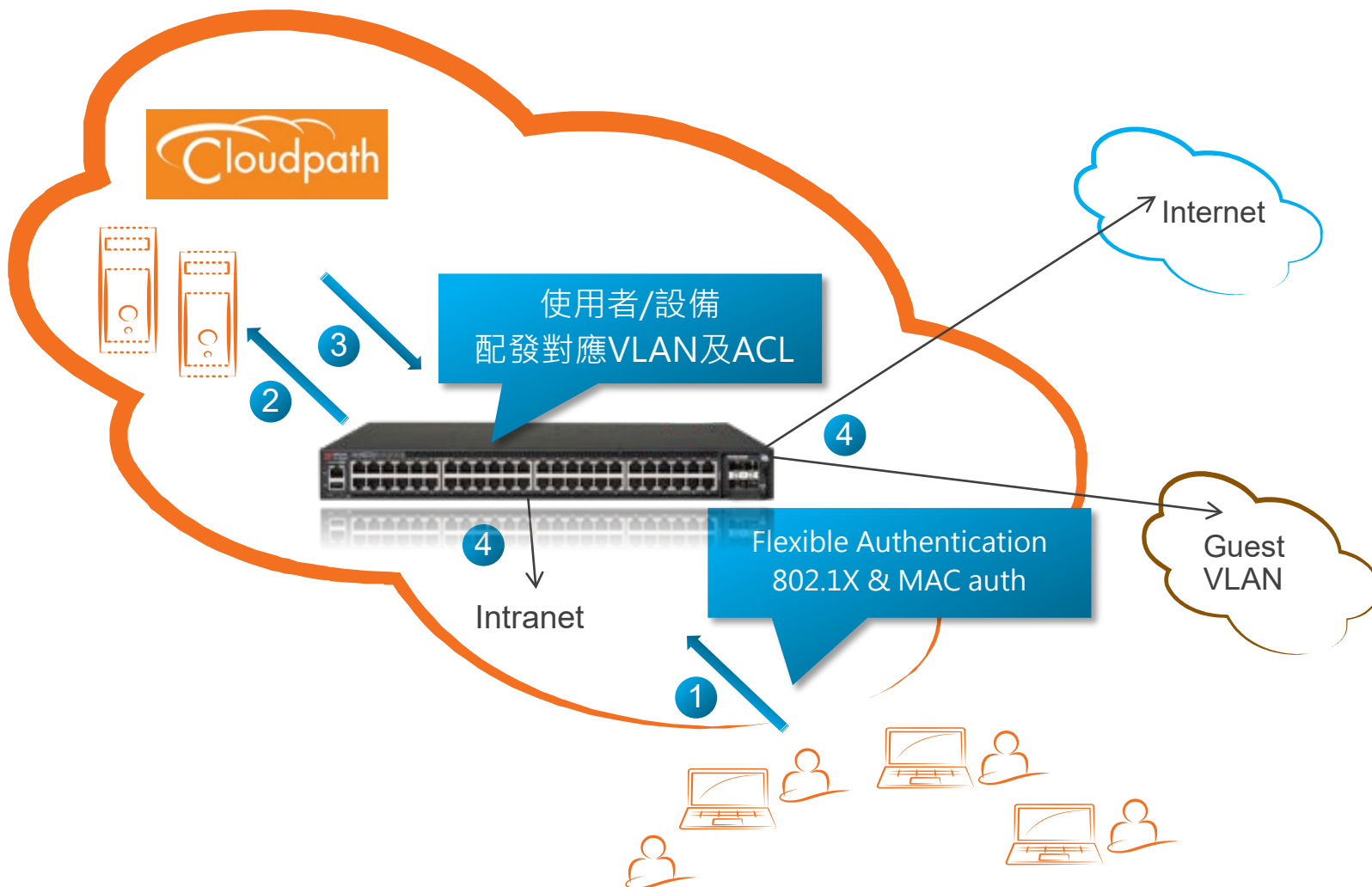




Any Network



CloudPath 提供集中認證及安全政策管理



支援功能:

- 802.1X 認證
- MAC 認證
- Web 網頁認證
- 提供多重認證機制 (802.1X, MAC auth)
- 隔離未通過認證設備
- CoA (Change of Authorization)



一個 SSID 完成所有事情

Day 1

BYOD Devices



- Employees
- Students/faculty
- Contractors

Guest Devices



- Partners
- Customers
- Any visitor

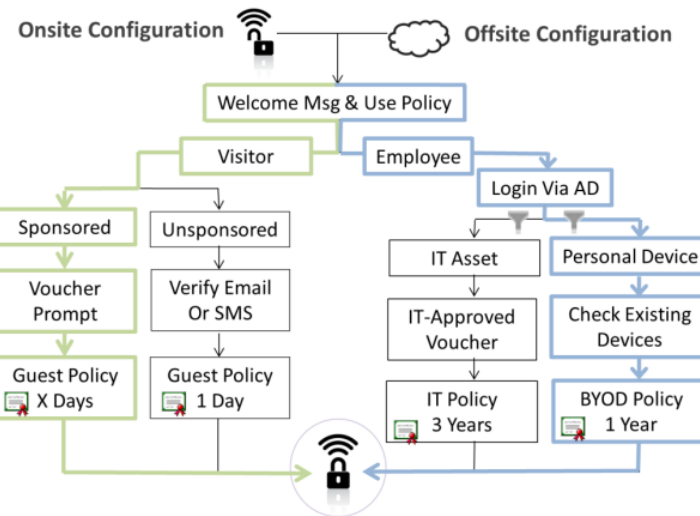
IT-owned Devices



- IT-owned laptops, mobile, and IoT
- Scanners
- Printers



Self-Service Onboarding Portal for All Users and All Devices



Day 2+



Effortless Connectivity

- Automatically connects
- No splash page
- Fully authenticated
- Role-based policies
- Encrypted session



使用者自註冊





彈性佈建與Per-User授權

Cloud

On
Premises
(VM)

Subscription

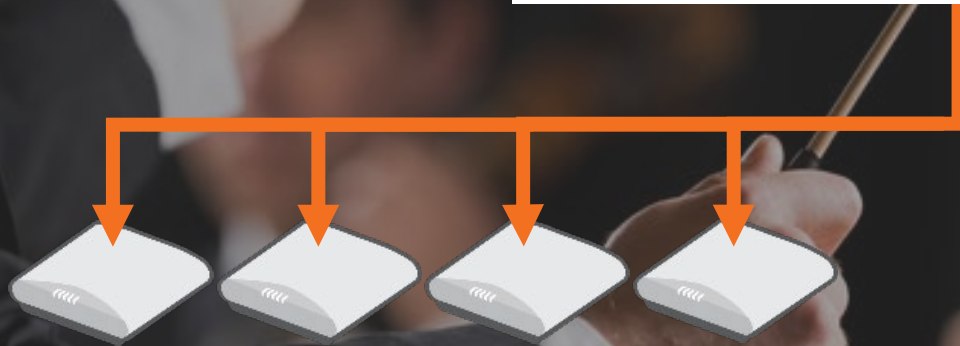
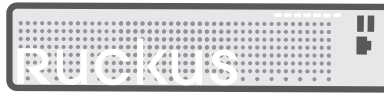
Subscription

Perpetual

	Cloudpath Enrollment System	Cisco ISE	Aruba ClearPass
Secure network access for BYOD, guests, and IT-owned devices	✓	✓	✓
Vendor agnostic	✓	✓	✓
Choice of on-premises or cloud-based deployment	✓	—	—
Easiest to deploy and manage	✓	—	—
Superior cost-effectiveness—with all-in-one user-based licensing	✓	—	—

RUCKUS All in One Managed

SmartZone Network Controller

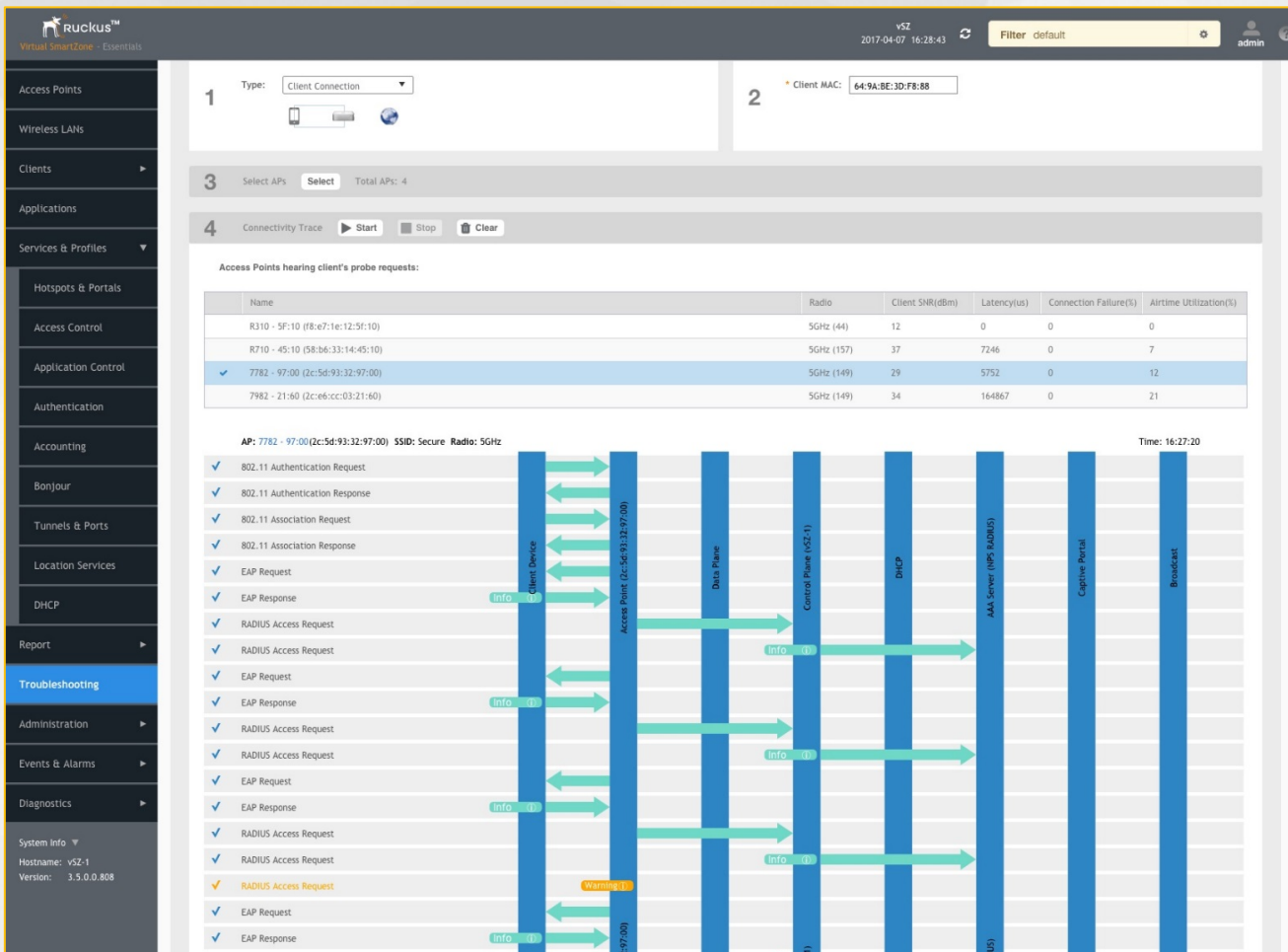


Access Points



Switches

One network element: A SmartZone network controller



Visual Connection Diagnostics for remote troubleshooting

1. IT ships pre-provisioned AP to employee

- SmartZone controller address
- Dual SSID
- Split tunnel configuration
- QoS settings for voice

2. Employee connects AP to home router and powers up

- AP connects to pre-provisioned SmartZone controller

3. IT approves AP and moves to appropriate Zone

- This can be automated using SmartZone REST API or by using Ruckus Network Director

4. Employee connects devices to the AP using appropriate SSID

- Corporate SSID for encrypted tunneled traffic. No VPN required on client.
- Home SSID for other devices

任何節點 立即找到問題點->減輕管理者負擔

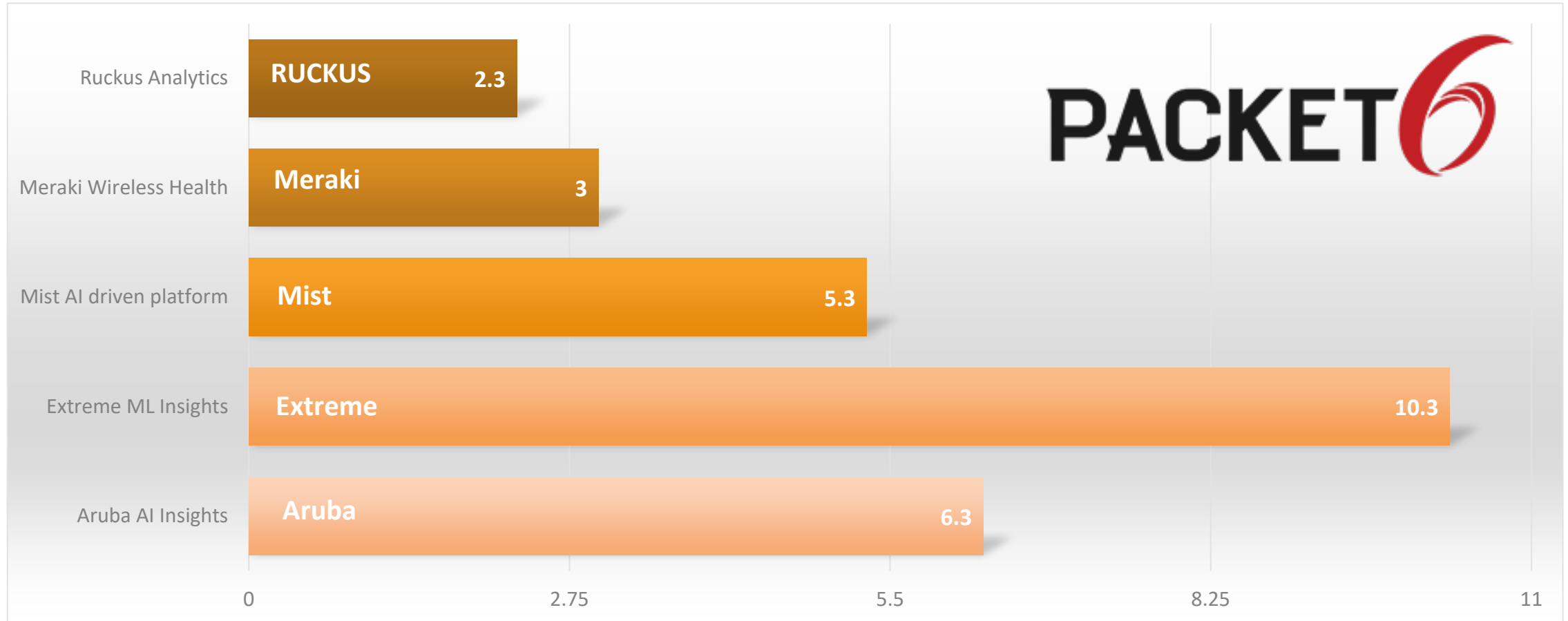
COMMScope®
RUCKUS®



Ruckus Analytics



Great AI/ML - Verified



Mean Time To Identification (MTTI) in minutes

Data Retention on RUCKUS Analytics

Dashboard data display

Up to 1 week

Configuration Change

Up to 30 days

Incidents, Client Troubleshooting, AI
Recommendations, Health SLA

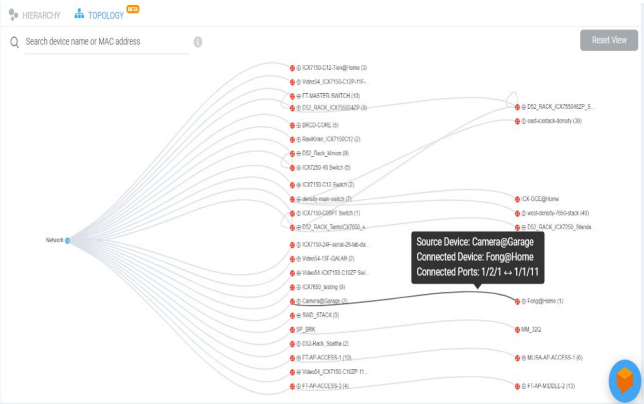
Up to 90 days

Occupancy, Service Validation, Reports
and Data Studio

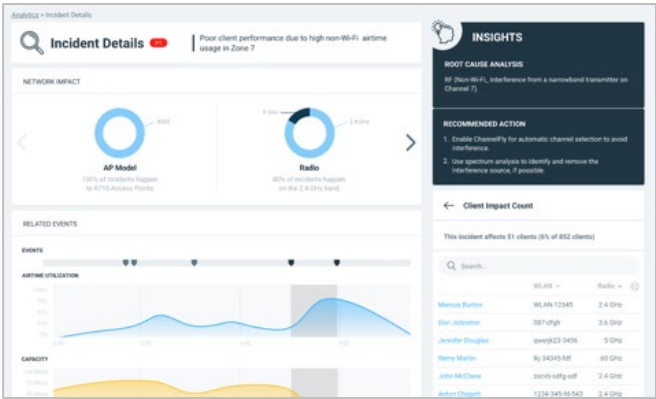
12 months



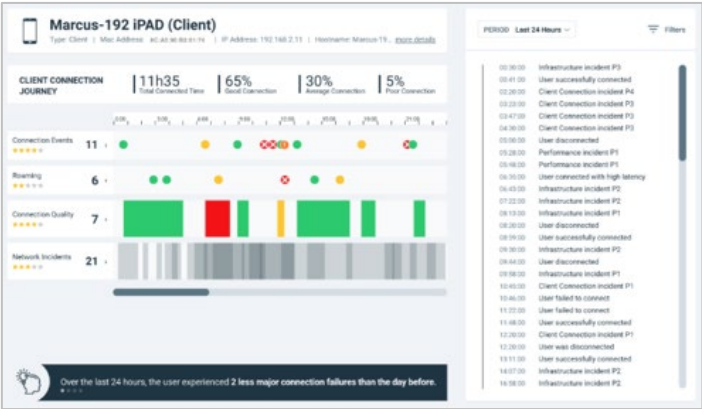
RUCKUS Analytics Features – Part 1



Network Topology



Incident Analytics



Client Troubleshooting



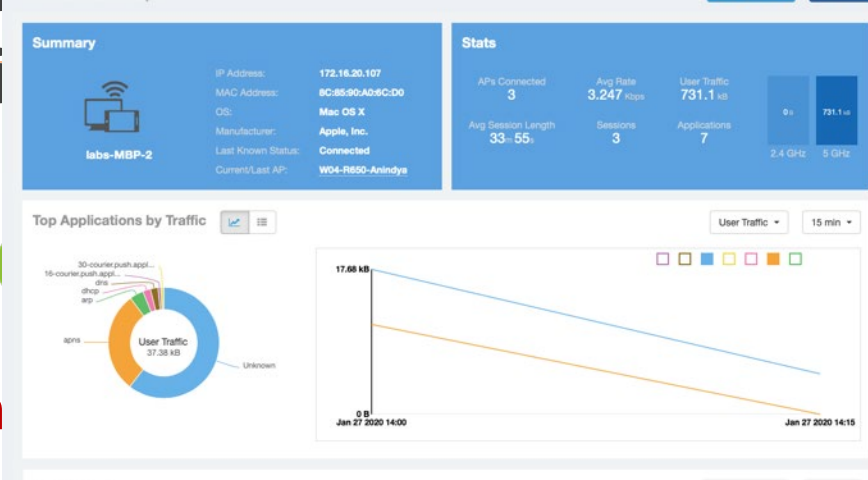
Network Health SLA



Reports

Incident Details

Client Details Report



Incident Details

Incident Details P4

EAP failures are unusually high in Zone: Real-AP-Zone2

Root cause and recommendations.

INSIGHTS

ROOT CAUSE ANALYSIS

Clients are failing authentication because the passphrase (PSK) does not match the AP/SSID configuration.

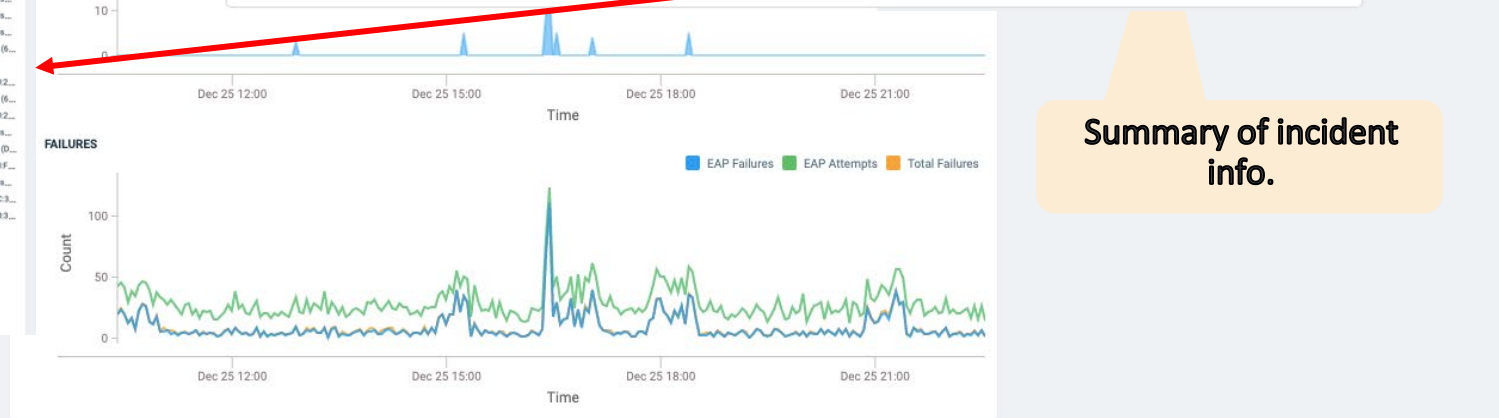
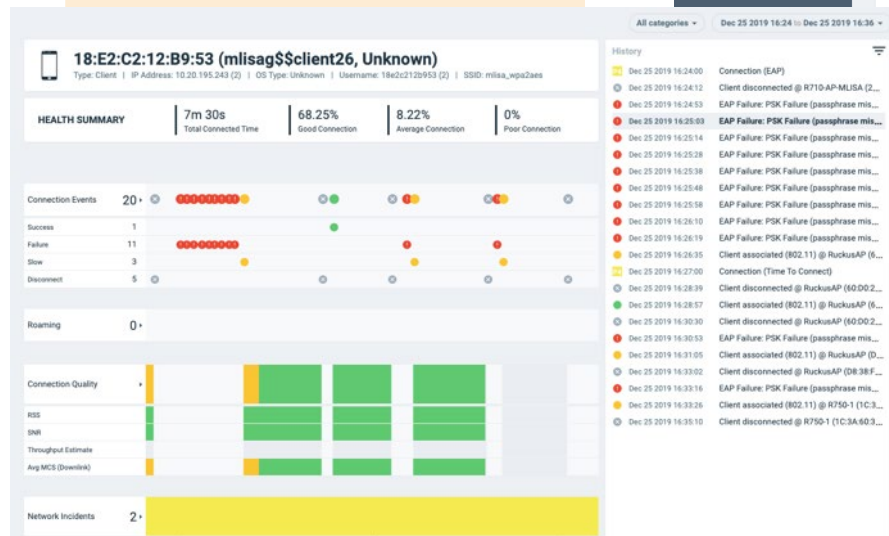
RECOMMENDED ACTION

This is a common problem in networks where passphrase

17 Impacted Clients

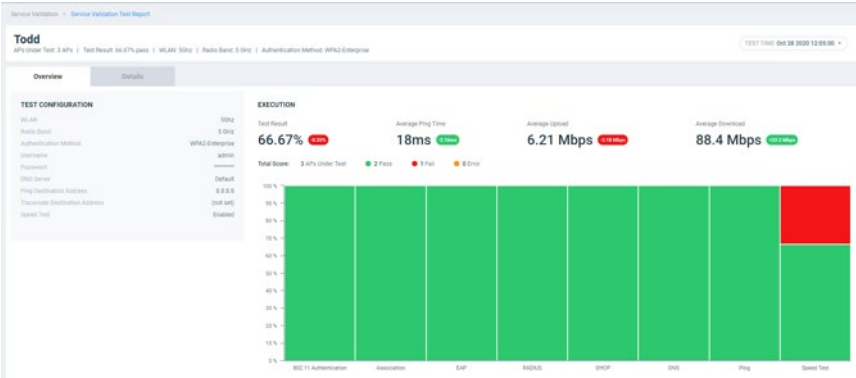
Client MAC	Manufacturer	SSID	Username	Hostname	Links
00:03:93:4F:0E:69	Apple, Inc.		0003934f0e69 (2)	mlisag\$\$client25 (2)	View Details
00:03:93:94:8E:49	Apple, Inc.		000393948e49	mlisag\$\$client8 (2)	View Details
00:03:93:AF:33:44	Apple, Inc.		000393af3344 (2)	mlisag\$\$client7 (2)	View Details
00:03:93:F7:F0:0D	Apple, Inc.		000393f7f00d	mlisag\$\$client27 (2)	View Details
00:12:5A:1F:E3:82	Microsoft Corporation		00125a1fe382	mlisag\$\$client36 (2)	View Details
00:12:5A:2B:10:C4	Microsoft Corporation		00125a2b10c4 (2)	mlisag\$\$client2 (2)	View Details
00:12:5A:61:DA:A1	Microsoft Corporation		00125a61daa1	mlisag\$\$client14 (2)	View Details
00:12:5A:76:CD:C5	Microsoft Corporation		00125a76cdc5	mlisag\$\$client39 (2)	View Details
00:12:5A:8B:2E:34	Microsoft Corporation		00125a8b2e34	mlisag\$\$client37 (2)	View Details
00:12:5A:95:9C:C4	Microsoft Corporation		00125a959cc4	mlisag\$\$client1 (2)	View Details

Carousel of 4 related pie charts.

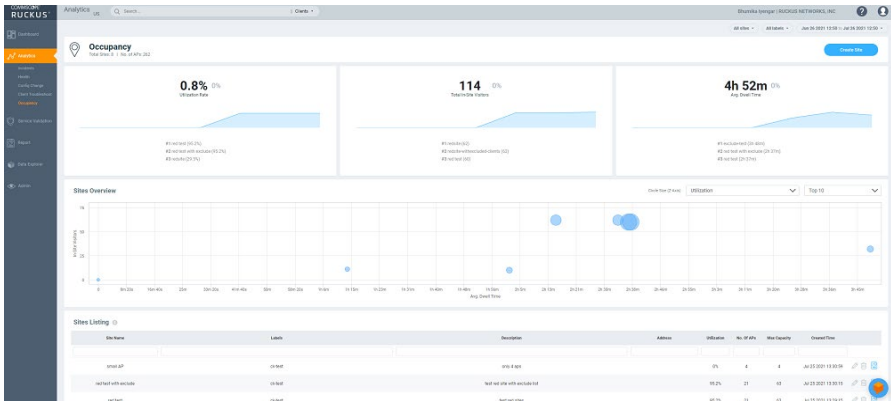


Summary of incident info.

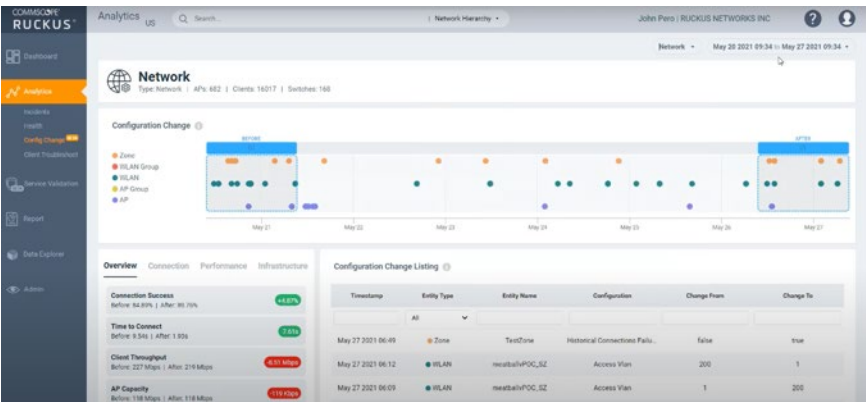
RUCKUS Analytics Features – Part 2



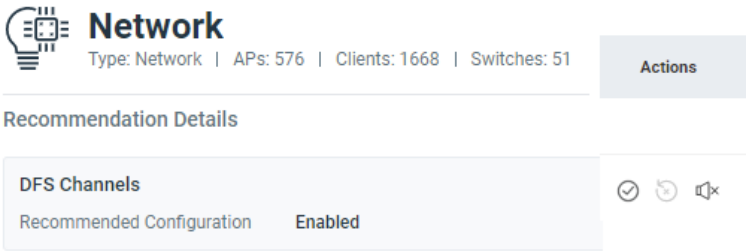
Service Validation



Occupancy Analytics



Configuration Change Analysis



AI Recommendations

Service Validation - Virtual Wireless Client

Analytics US

Network Health > Network Health Test Report

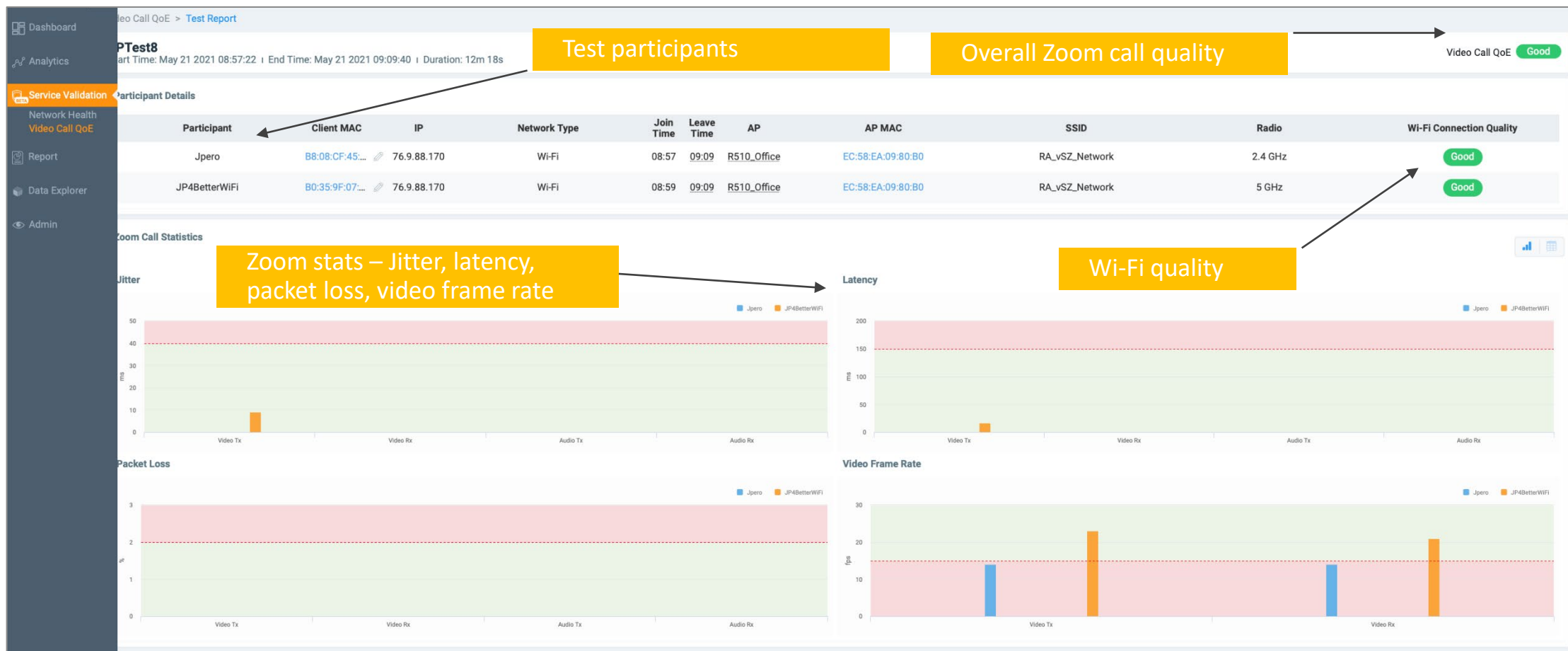
tingan-test RE-RUN TEST TEST TIME Oct 15 2021 03:19:35

APs Under Test: 3 APs | Test Result: 33.33% pass | WLAN: OTA-JASON | Radio Band: 5 GHz | Authentication Method: WPA2-Personal

Overview		Details									
Target AP Name	Target AP MAC	Station AP Name	Station AP MAC	Station AP SNR	802.11 Auth	Association	PSK	DHCP	DNS	Ping	Traceroute
710-196	0C:F4:D5:10:EB:00	730-76	70:CA:97:0B:6E:00	67 dB	Error	Error	Error	Error	Error	Error	Error
720-99	18:4B:00:24:5F:50	730-76	70:CA:97:0B:6E:00	65 dB	Pass	Pass	Pass	Fail	N/A	N/A	N/A
730-76	70:CA:97:0B:6E:00	610-93	B4:79:C8:04:DA:E0	78 dB	Pass	Pass	Pass	Pass	Pass	26.3ms	

- AP Firmware required – SZ 6.0.0.0.3067 or later
- Test any AP for wireless performance. This AP is the Target AP.
- Admin selects Target AP from the workflow
- RA selects the closest neighbor with strongest signal strength and marks that as station AP
- Caution - Station AP drops its regular client connection
- Station AP tests connectivity to Target AP

What is Service Validation: Video Call QoE?

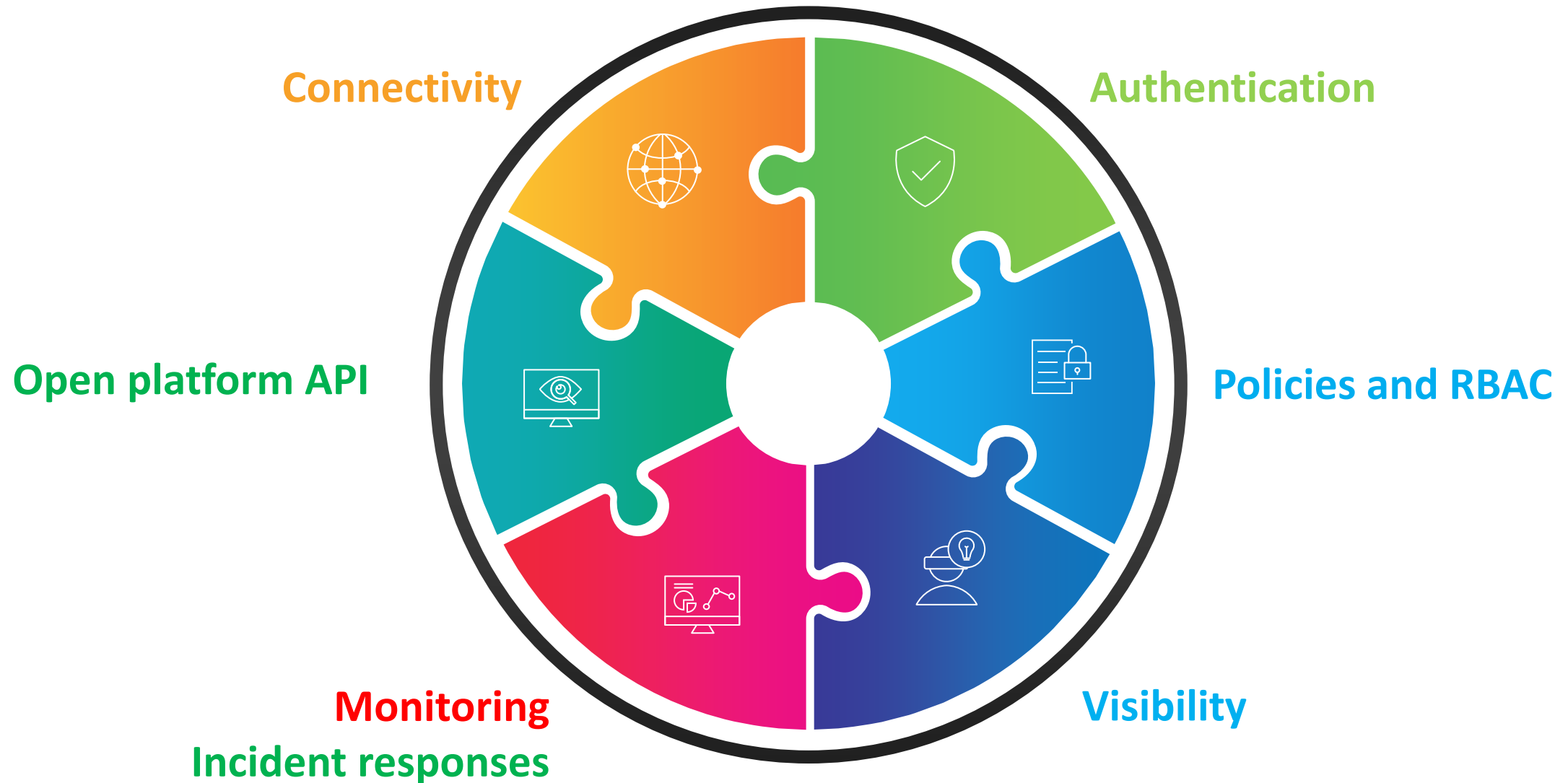


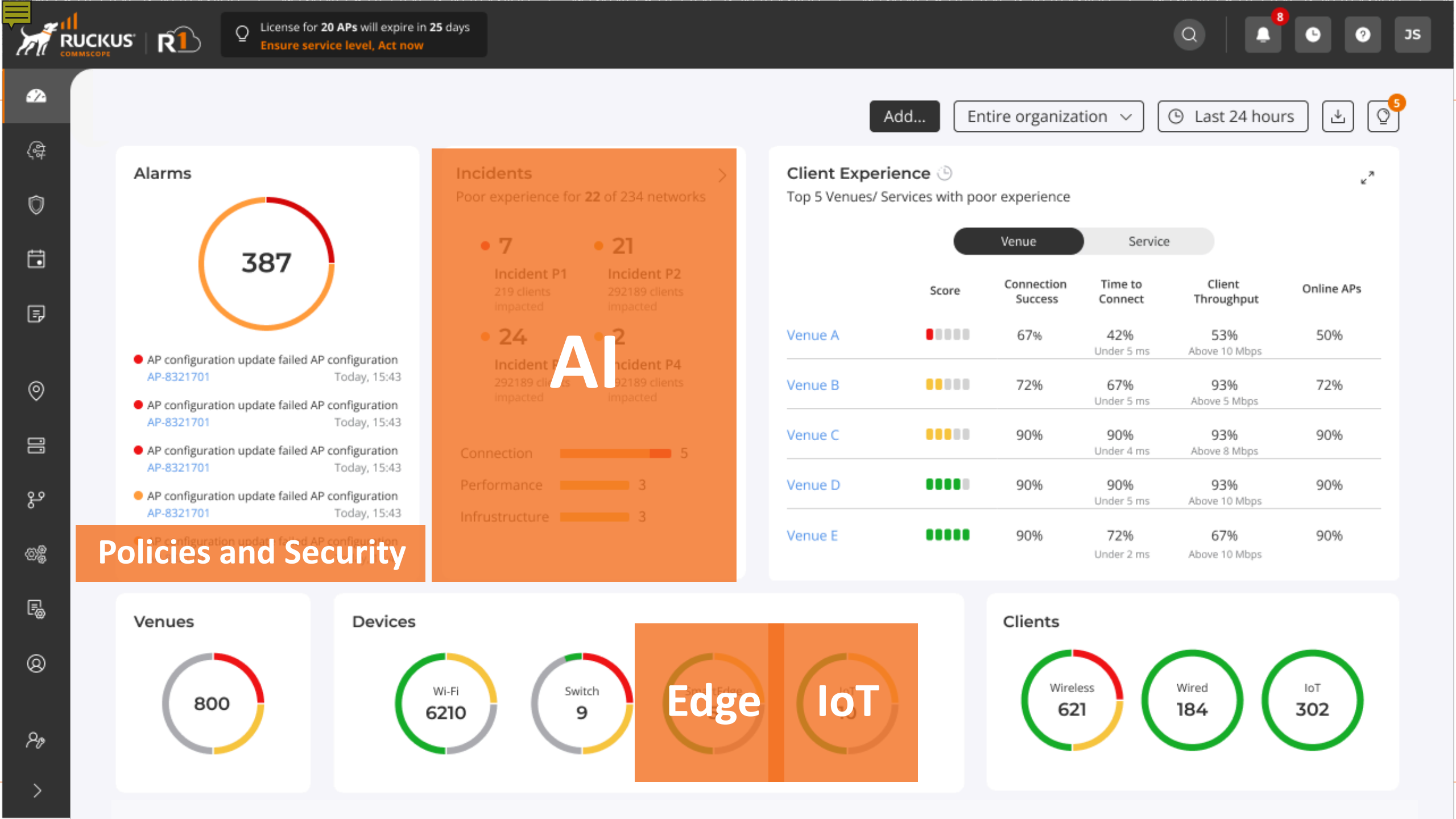
What is RUCKUS One?

**AI-Driven
Converged
Network Assurance
and
Business Intelligence
Platform**



Ruckus offers Whole Pie under single management

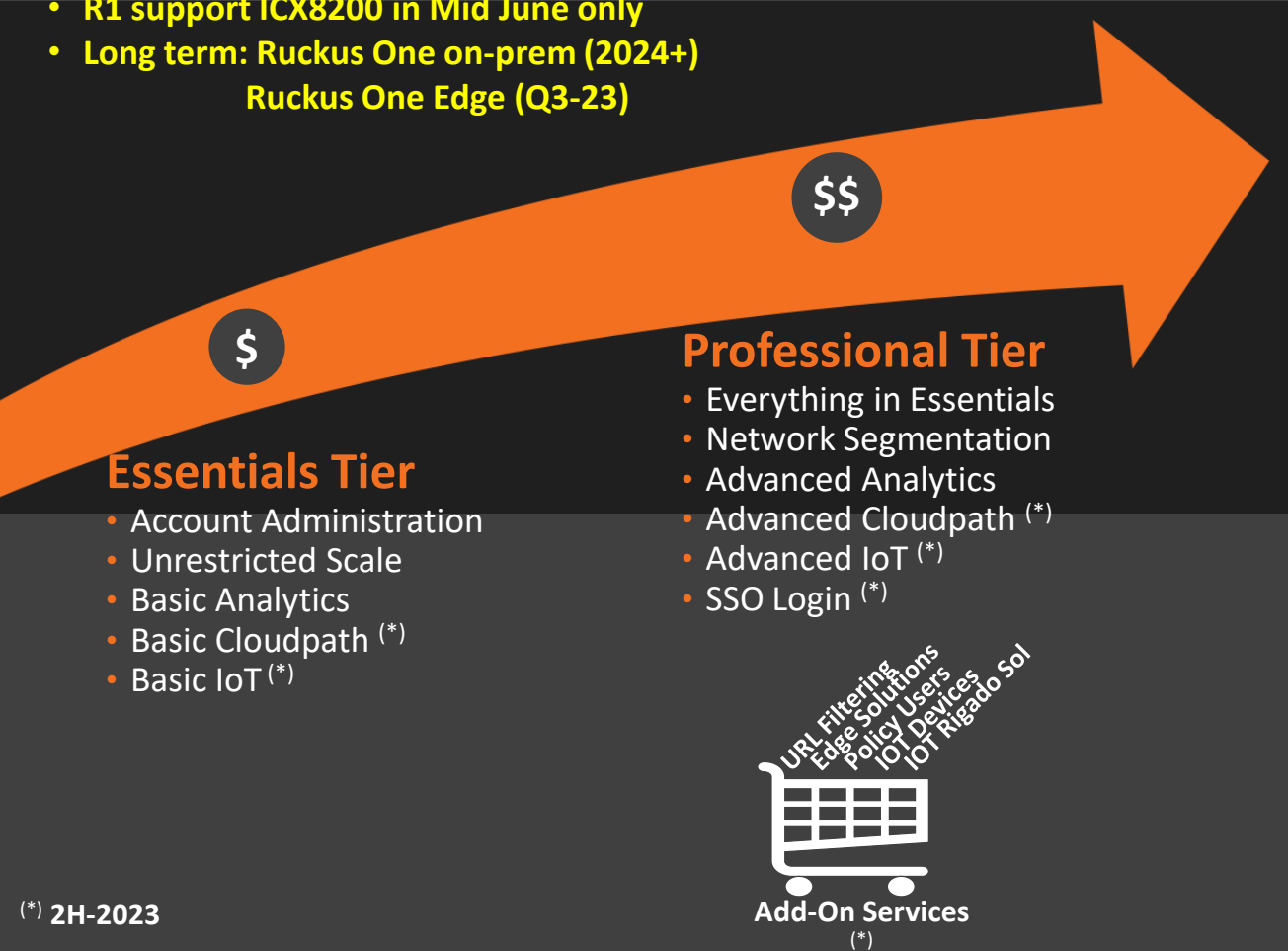




RUCKUS One Commercial



- Ruckus One GA in Mid June
 - Pricing in May price book
 - Today Beta3.0 already support WIFI6E (request on demand for early adopter)
 - 180-Day Grace Activation Period
 - R1 support ICX8200 in Mid June only
 - Long term: Ruckus One on-prem (2024+)
- Ruckus One Edge (Q3-23)



(*) 2H-2023

SKUs	Description
CLD-ESNT-REC1	Essentials AP/Switch/Edge Device 1-Year for End Customers
CLD-ESNT-REC3	Essentials AP/Switch/Edge Device 3-Year for End Customers
CLD-ESNT-REC5	Essentials AP/Switch/Edge Device 5-Year for End Customers
CLD-ESNT-EDU3	Essentials AP/Switch/Edge Device 3-Year for Education
CLD-ESNT-EDU5	Essentials AP/Switch/Edge Device 5-Year for Education
CLD-PROF-REC1	Professional AP/Switch/Edge Device 1-Year for End Customers
CLD-PROF-REC3	Professional AP/Switch/Edge Device 3-Year for End Customers
CLD-PROF-REC5	Professional AP/Switch/Edge Device 5-Year for End Customers
CLD-PROF-EDU3	Professional AP/Switch/Edge Device 3-Year for Education
CLD-PROF-EDU5	Professional AP/Switch/Edge Device 5-Year for Education
CLD-PROF-MSP1	Professional AP/Switch/Edge Device 1-Year for MSP
CLD-PROF-MSP3	Professional AP/Switch/Edge Device 3-Year for MSP
CLD-PROF-MSP5	Professional AP/Switch/Edge Device 5-Year for MSP
• 2H- Ability to Pause Usage within an Extended Term	
CLD-R1-TMP090-REC	RUCKUS One Trial 90-Day for End Customers
CLD-R1-TMP090-MSP	RUCKUS One Trial 90-Day for MSP

Essentials Vs Professional

Essentials

- 1 month data retention for RA
- Incidents and Insights
- Client Troubleshooting
- AI Health
- SLA's
- Built-in Reporting
- Scheduled Reporting
- Data Studio
- Graph QL APIs (post-GA)
- Each Essentials Device license incl. 20 CP Users

Professional

- **Everything in Essentials plus:**
- 12 months data retention for RA
- Service Validation virtual client
- Service Validation virtual wireless client
- Video Call QoE
- Config Analysis (post-GA)
- AI Recommendation (post-GA)
- AI-driven Cloud RRM (post-GA)
- AI-driven Predictions (post-GA)
- Brand 360 (post-GA)
- Webhooks (post-GA)
- Each Professional Device license incl. 30 CP Users



RUCKUS WAN GATEWAY

RWG

COMMSCOPE



rgNets
RG
software

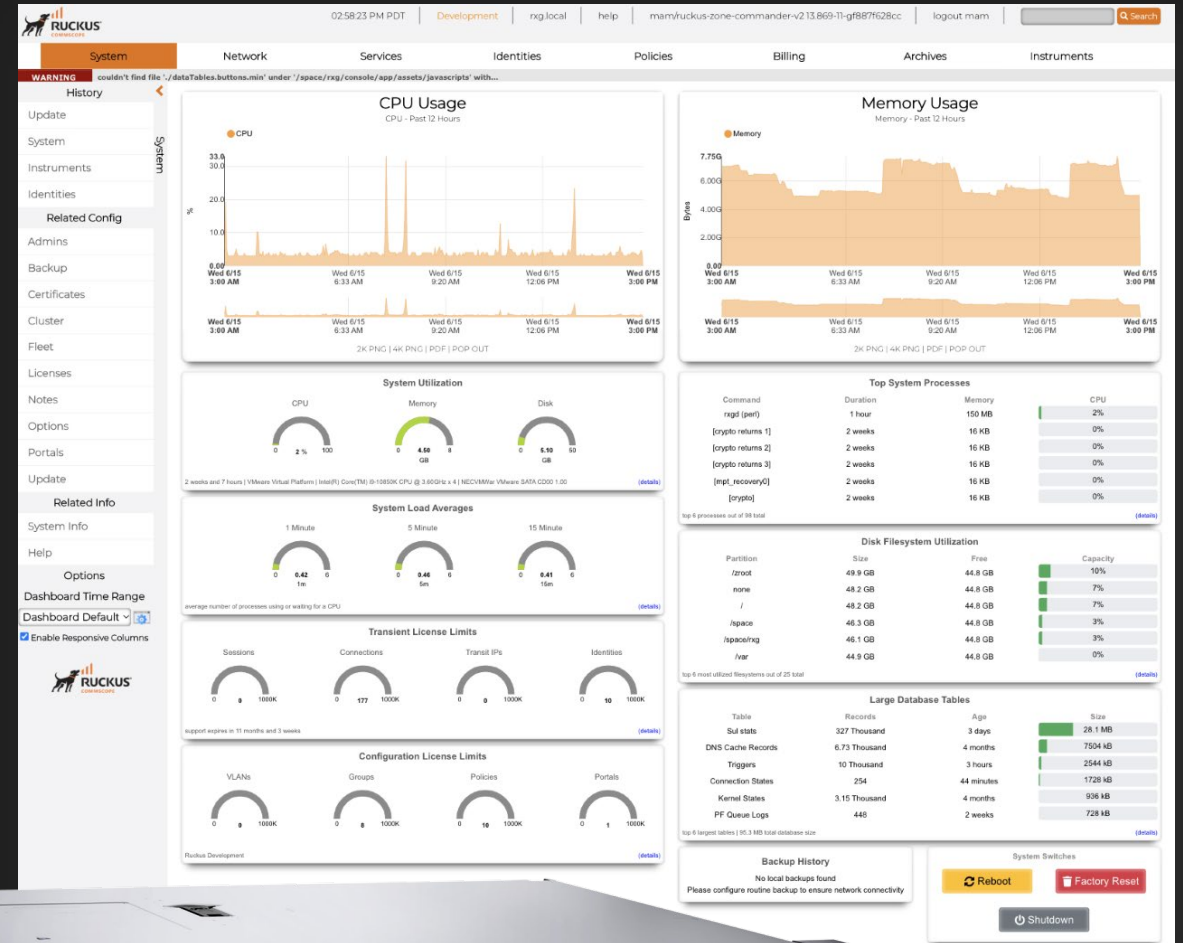


DELL™



hardware

RUCKUS WAN GATEWAY
RWG®
COMMSCOPE





所有服務都在 RWG

- All required services are tightly integrated in RWG.
- SmartZone Controllers and ICX switches can be adopted by RWG, greatly increasing the deployment speed for large and complex networks.
- RWG also offers a northbound REST API for configuration and monitoring.



Data Plane

routing - micro segmentation - traffic shaping
firewall - content filtering - cgNAT - SD-WAN DHCP
- DNS - BNG - BGP

Control Plane

captive portal - instant subscriber self-provisioning
billing - eDPSK - venue portal - NAC - location
services - vulnerability assessment

Management Plane

wired and wireless auto-configuration - zero touch
provisioning - test & measurement automation -
data warehousing - reporting

Adoption of ICX Switches and SmartZone configurations

- RWG adopts ICX switches in sync with its SmartZone configurations
- When required, RWG uses SSH to change configuration changes (using SSH).
- RWG creates templates for LLDP.

Switches		
<input type="checkbox"/>	Name	Online
<input type="checkbox"/>	ICX 7150-C-12	
<input type="checkbox"/>	ICX 7850	

2 Found

WLAN Controllers		
<input type="checkbox"/>	Name	Online
<input type="checkbox"/>	vSZ-e-sandbox	

1 Found

✓ RUCKUS ICX Switch

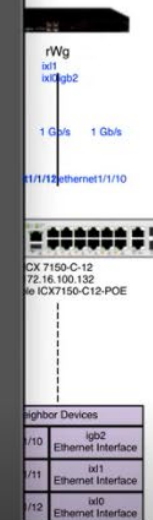
ADTRAN G.fast DPU
ADTRAN NetVanta
Cambium cnMatrix
Cisco IOS Switch
Dell S3100 Series
Extreme ERS Switch
Extreme EXOS Switch
Extreme VSP Switch
FS Switch
Generic Switch
HP Switch
Juniper EX (+ELS)
Positron
TP-Link

✓ RUCKUS Cloud

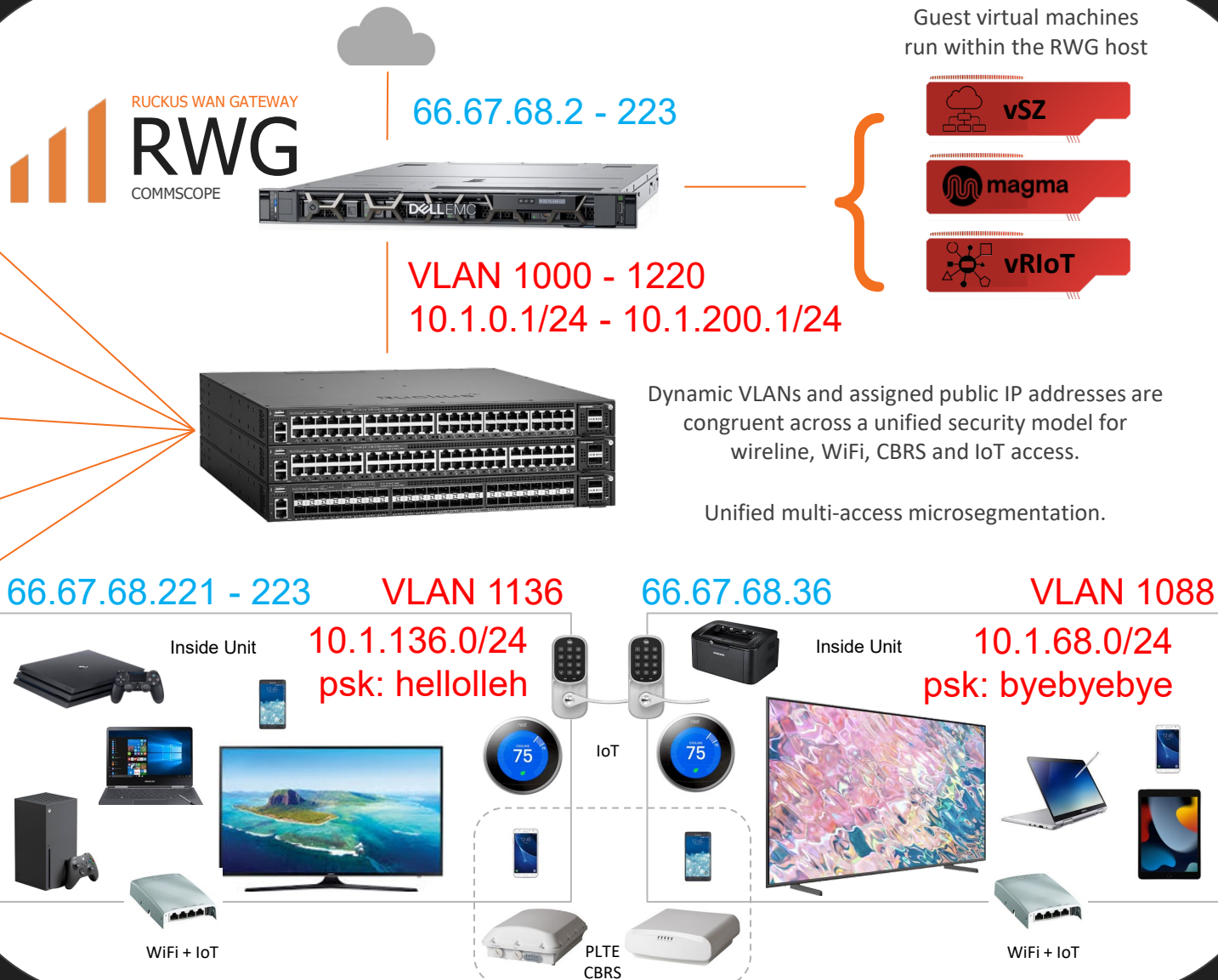
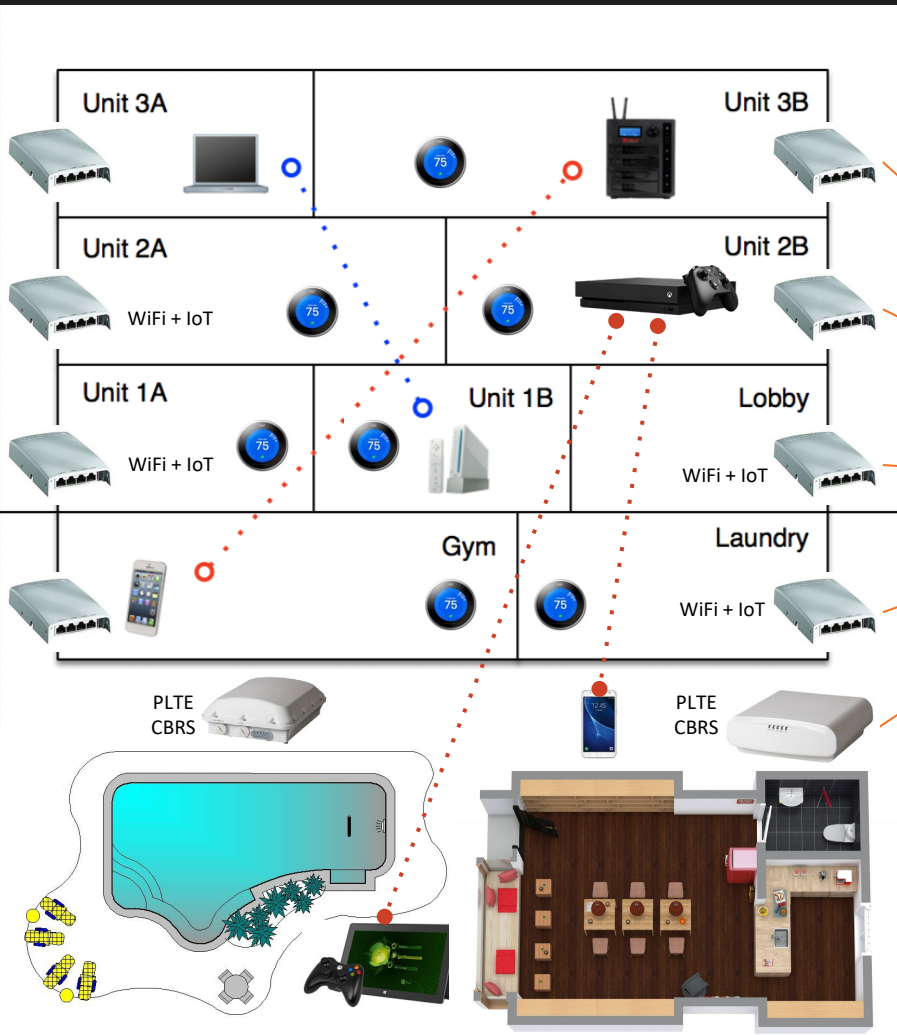
RUCKUS SmartZone
RUCKUS Unleashed/ZoneDirector
ADTRAN vWLAN
Aerohive AP Hive
Aruba IAP
ArubaOS
Cambium cnMaestro
Cisco Catalyst IOS-XE WLC
Cisco WLC/WiSM
Extreme WiNG VX/NX
Extreme XCA/XCC
Generic Controller
Generic Controllerless
Meraki
Mist
Piglet
Samsung WEC



Configurations
(cells) and ICX



同一管理平台





RUCKUS ONE

All in One 管理平台

RA

服務保障
節省人力

CloudPath

彈性佈建
有效整合不同廠牌認證

IoT Insight

多元應用
不需更換設備
迎接未來

AP & SW

突破不斷
創新技術規格



PURPOSE-DRIVEN
ENTERPRISE NETWORKS