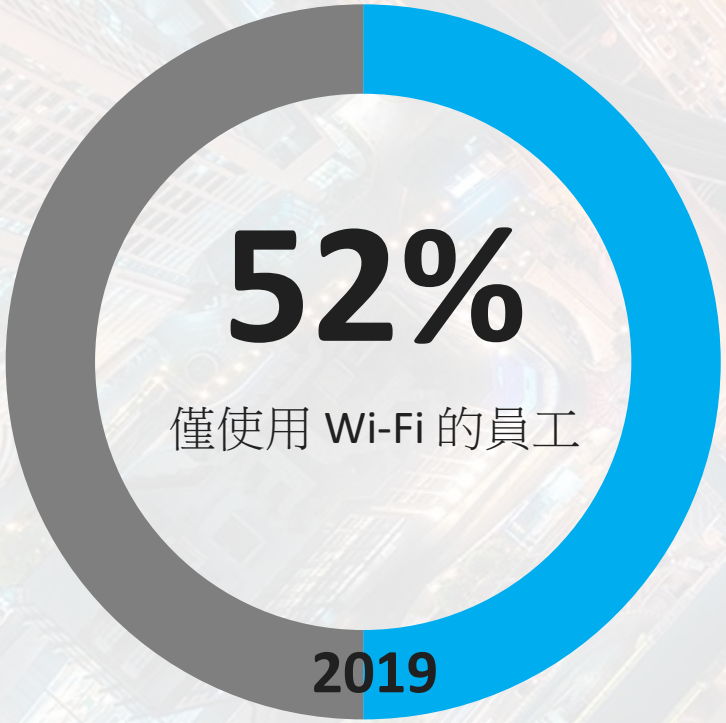
Ruckus AI 如何重新定義網路維運

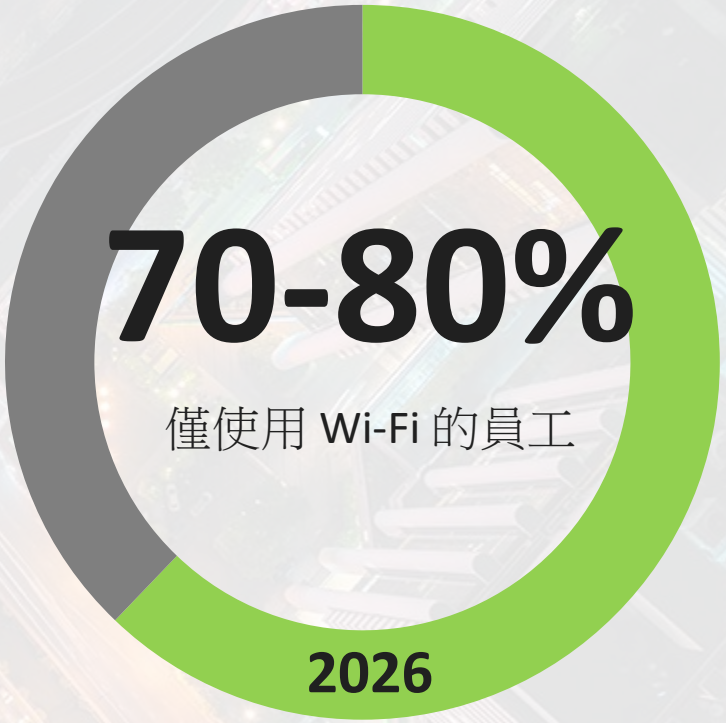
18 Sep

Calvin Su

Technical Consultant

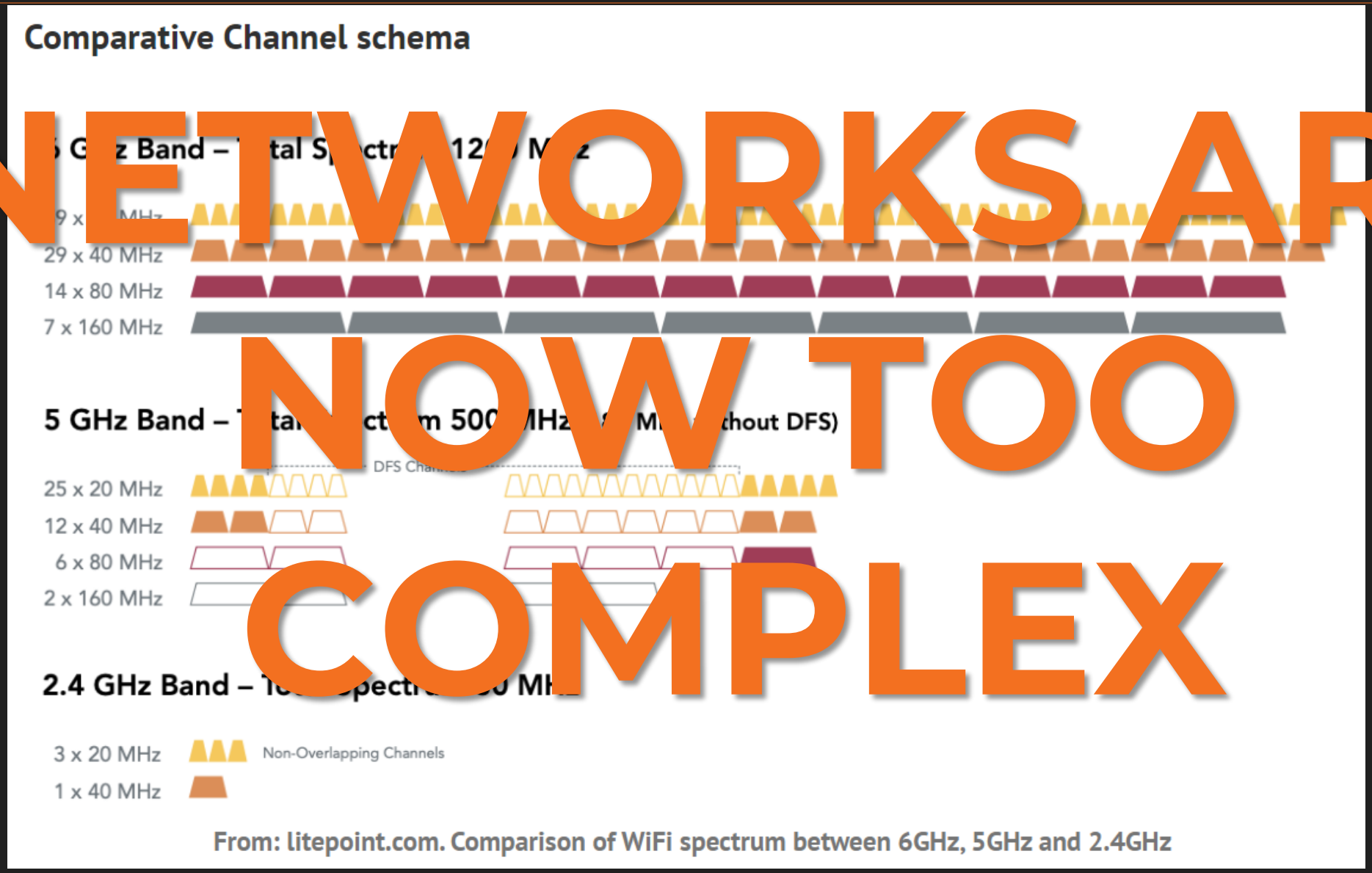
Wi-Fi 連線使用場景越來越多





Source: IHS Markit WLAN strategies North American enterprise survey

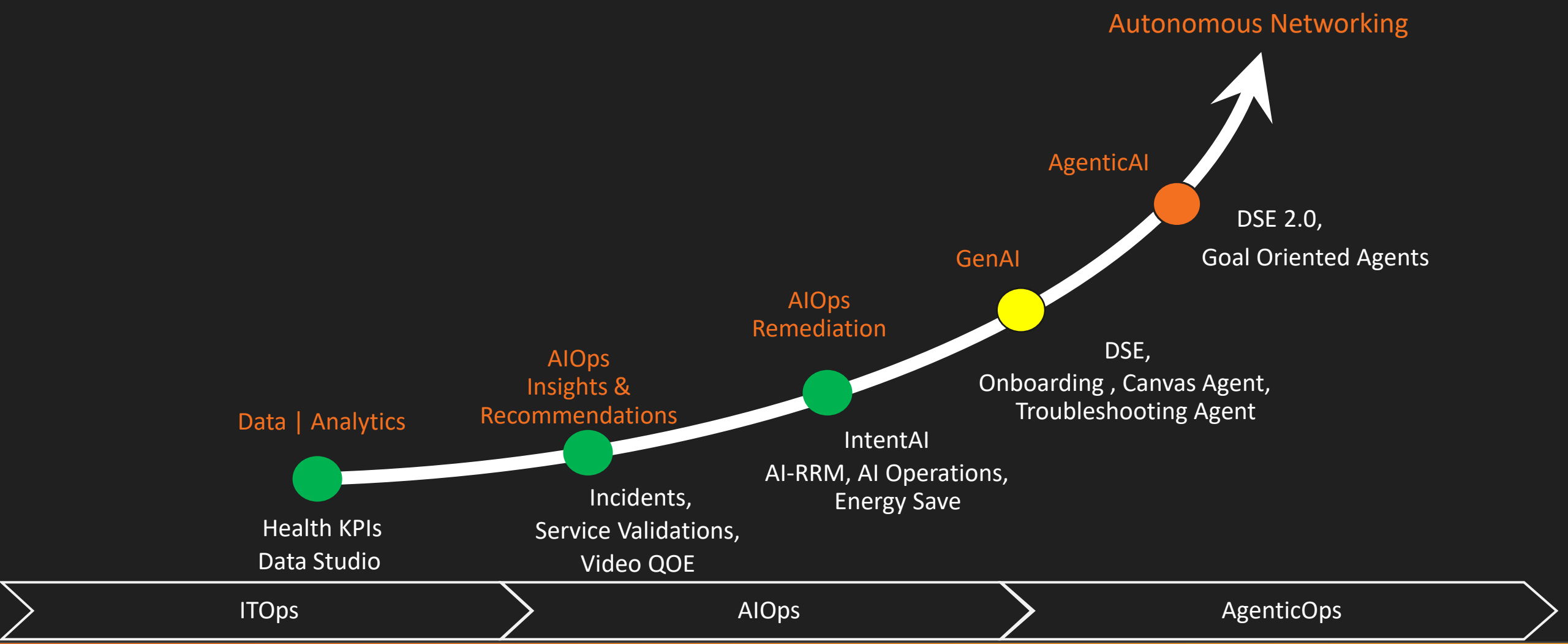
信道選擇變得極度複雜



NETWORKS ARE NOW TOO COMPLEX

AI 未來的願景

RUCKUS AI – 發展歷程與未來願景



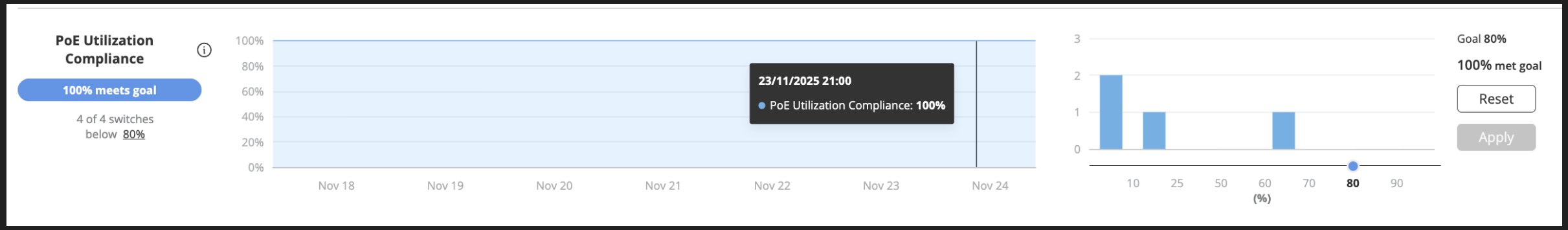
RUCKUS Data & Analytics

Health Monitoring, KPIs & Reporting

Health Monitoring for Wired/Wireless Networks

- Streaming Telemetry – Wired and Wireless
- 13 Wi-Fi KPIs, 10 Wired KPIs
- Monitor up to 30 Days
- Custom threshold levels, Track Non-Compliance

Example of a KPI – POE Compliance



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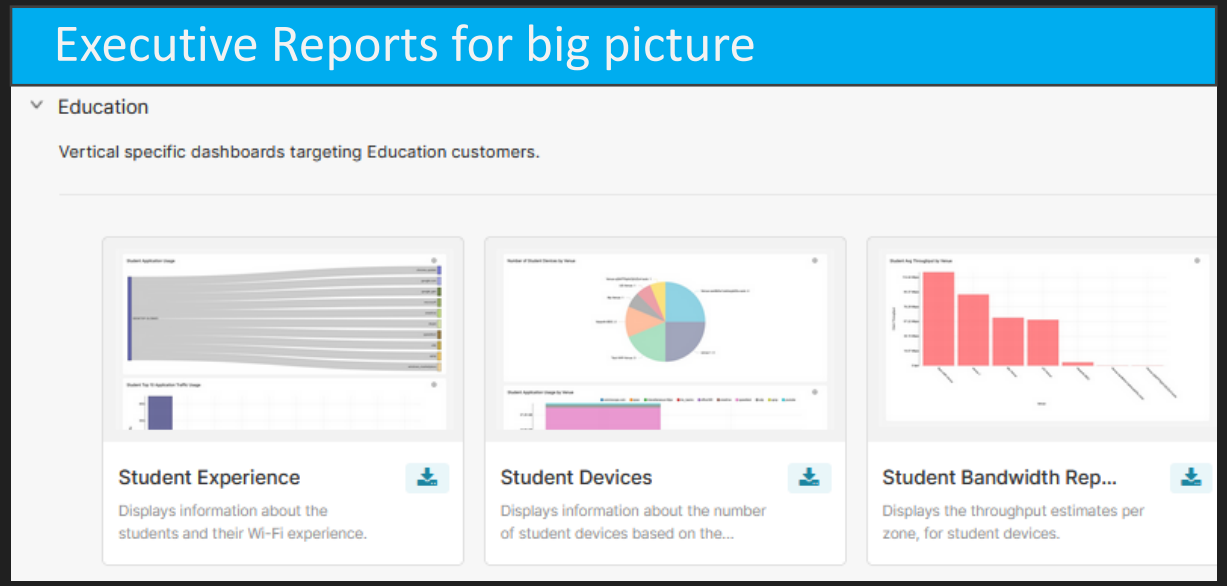
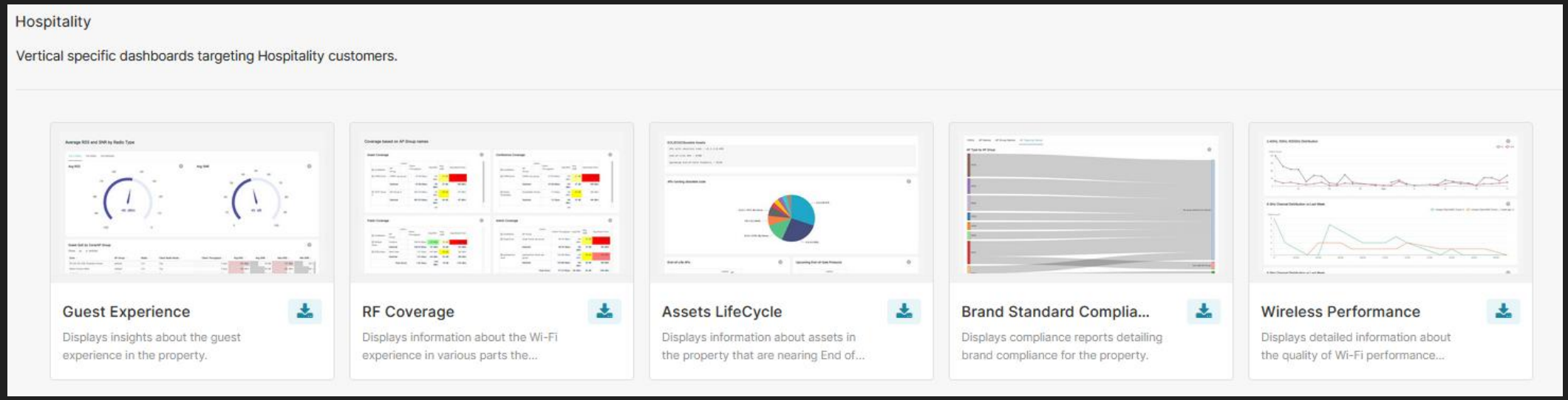
Business Data Studio

- 12 Months Historic Analytics
- Out of the Box / Custom Dashboards / Vertical Templates
- Scheduled Delivery / Data Connector
- Data Studio with Statistical & Predictive Models

Executive Reports for big picture



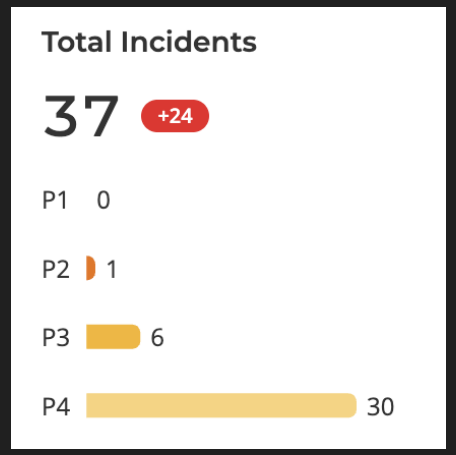


RUCKUS AI Ops

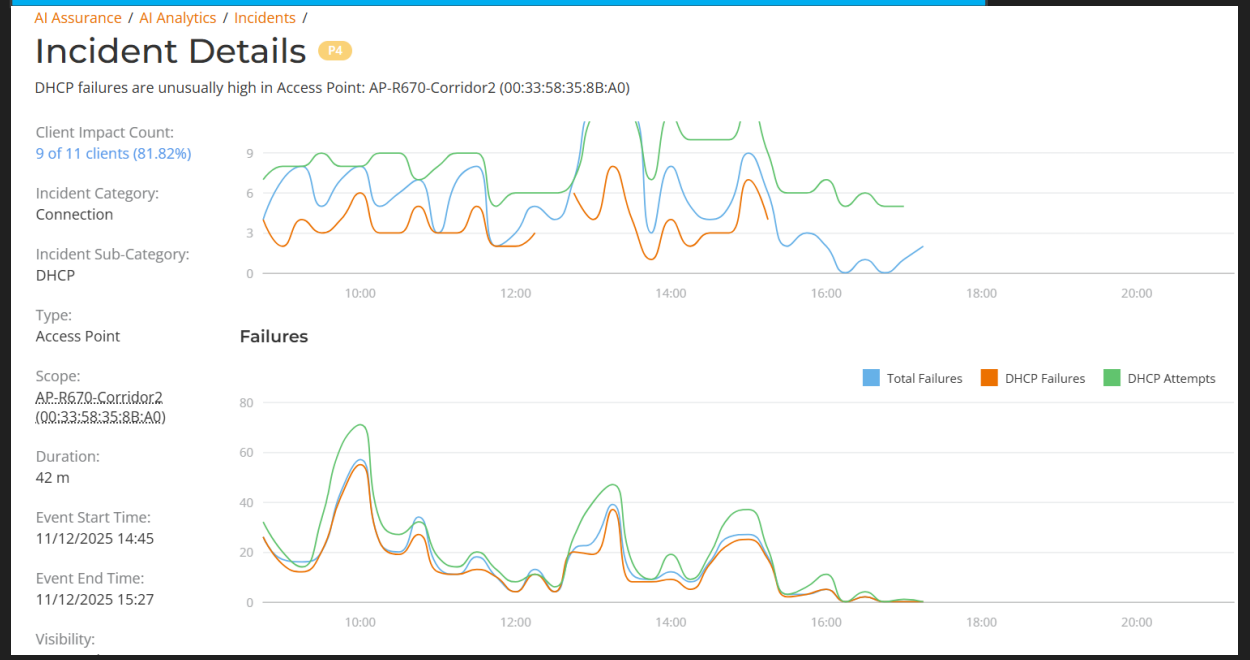
Insights & Recommendations

AI Incidents for Wired/Wireless Networks

- High Efficacy Network Impacting Incidents
- Patented AD – Temporal, Spatial, Clustering
- Triaging, RCA, Scope of Impact & Recommendations
- 20 Wi-Fi, 9 Wired Incidents



DHCP Failure Incident saved a POC!



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有線/無線網路異常事件

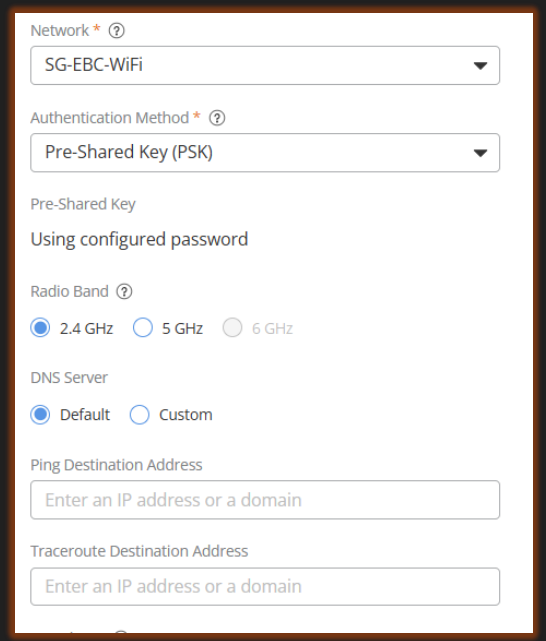
	Wi-Fi	Wired
連線	1. 802.11 Authentication 2. DHCP 3. RADIUS 4. Association 5. EAP 6. Time to Connect	1. Bad Cable* 2. DHCP* 3. Negotiation Mismatch*
效能	1. Coverage issues 2. Channel Issues 3. Load issues	1. Memory 2. Port Congestion 3. Uplink Port Congestion
架構	1. Controller Cluster Timestamp issues 2. AP – Smartzone connection 3. AP Reboots	1. VLAN Mismatch 2. POE Power Denied 3. Speed/Duplex Mismatch on Link 4. L2 Loop Detected 5. LLDP Status 6. Port Flap 7. MTU Mismatch*

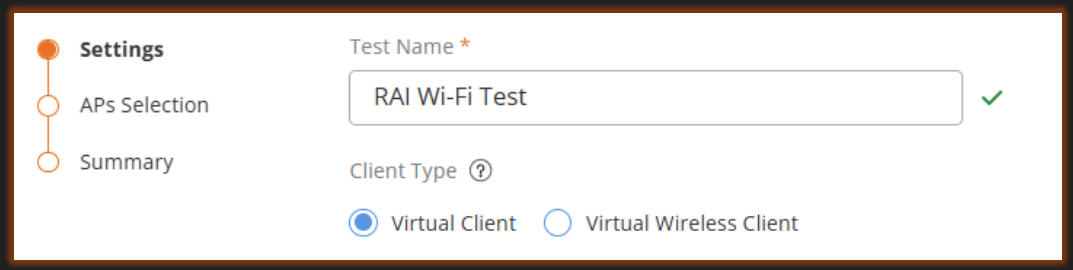
Service Validation: Wi-Fi / Wired Services

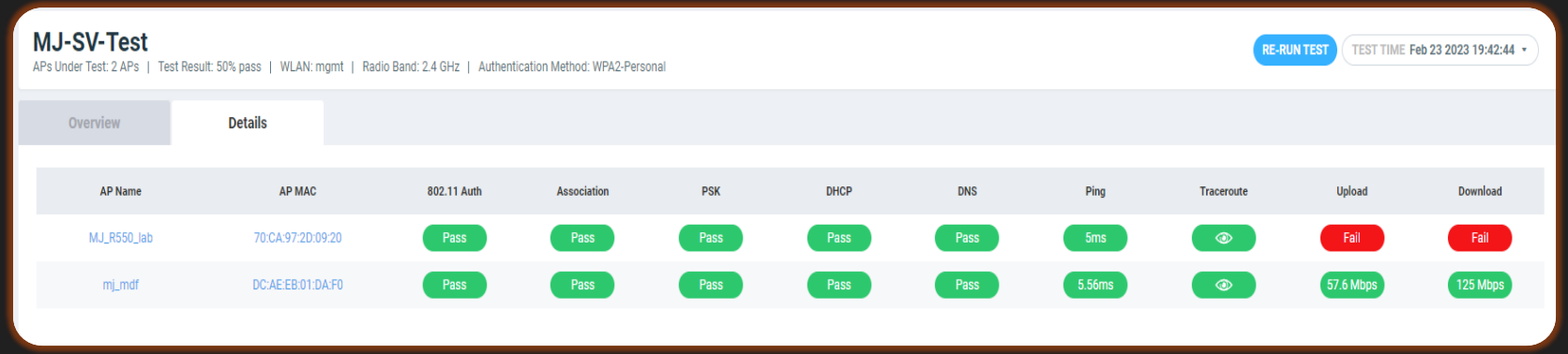
Catch issues even without the clients!

Wireless & Wired*

Virtual Wireless Clients; Extensive test Suites







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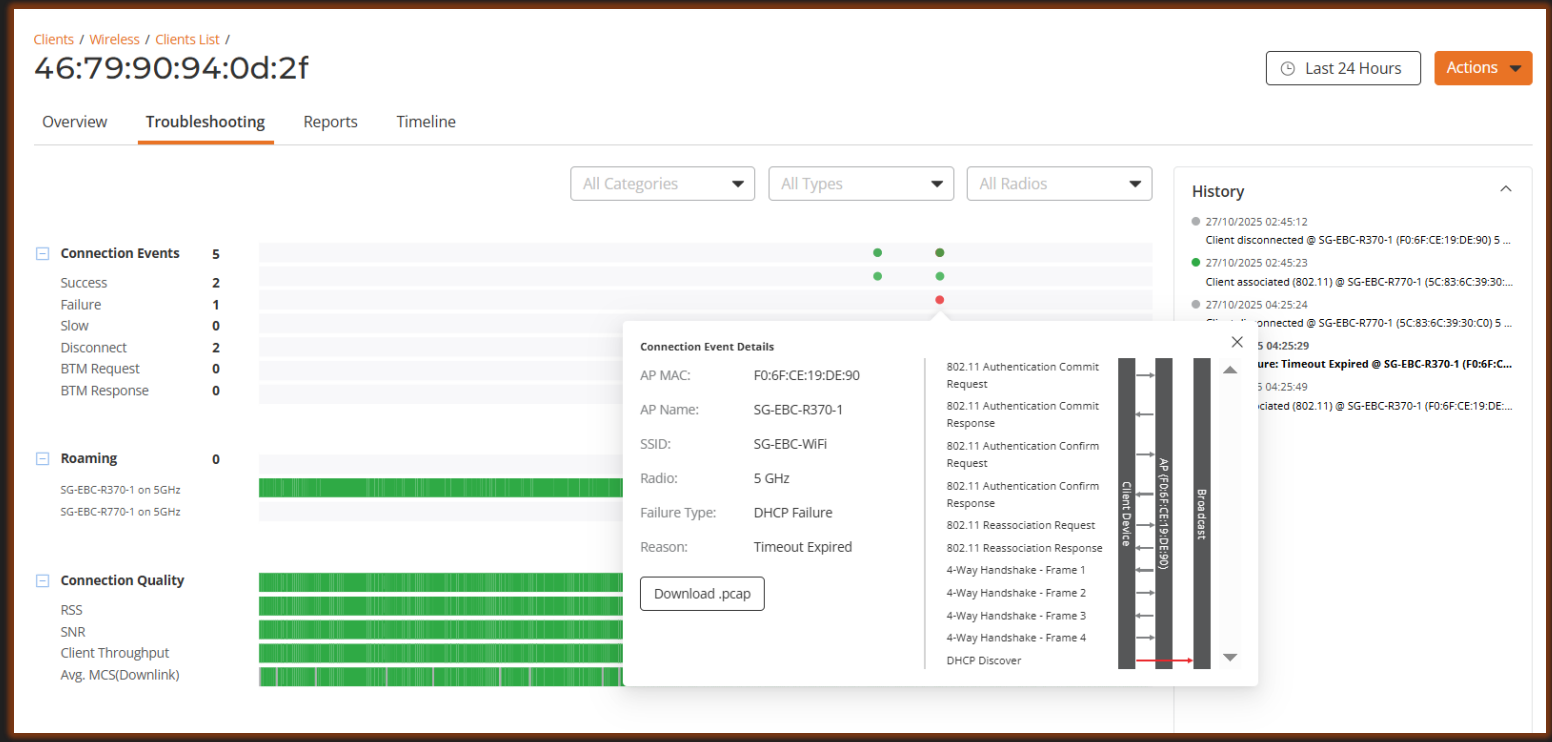
Client Troubleshooting

30 Days of historic Client troubleshooting

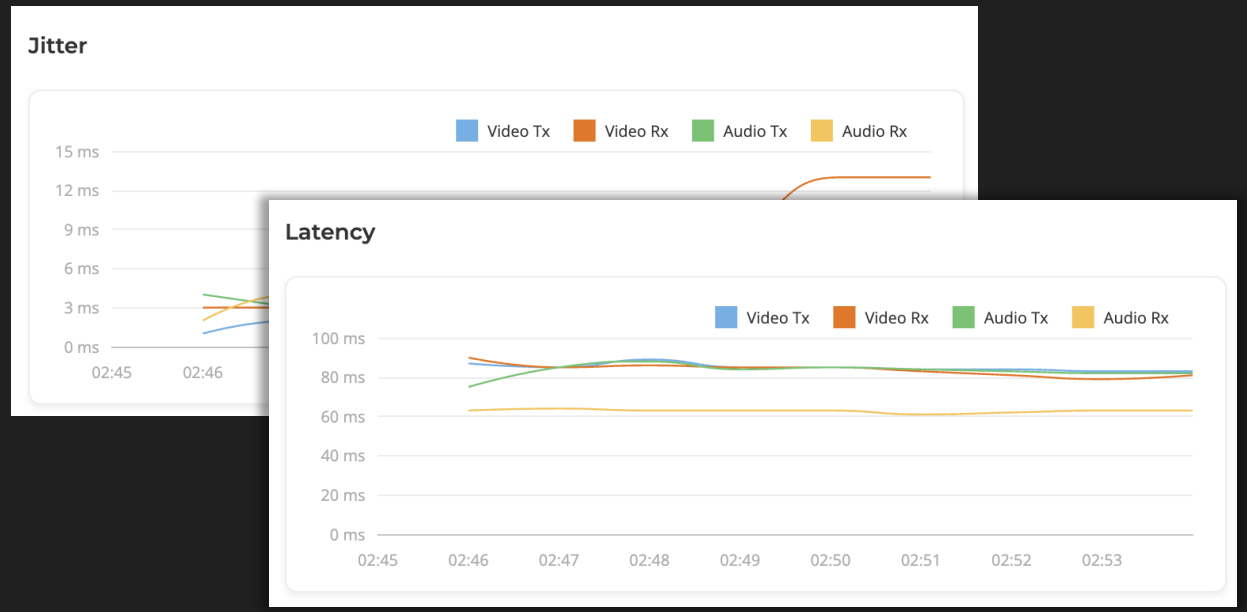
Dynamic Packet Captures

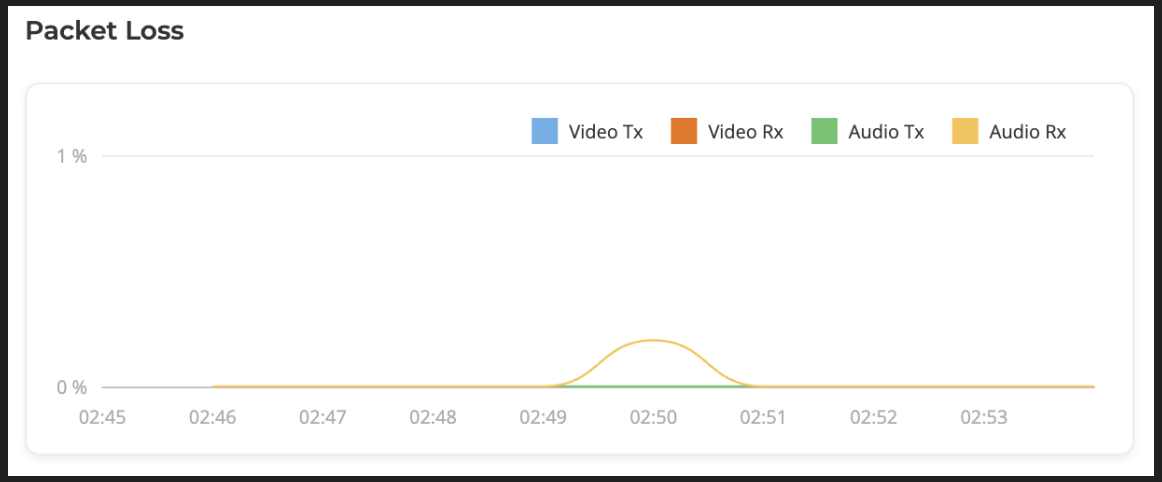
No Site Visits, No waiting for issue recreation

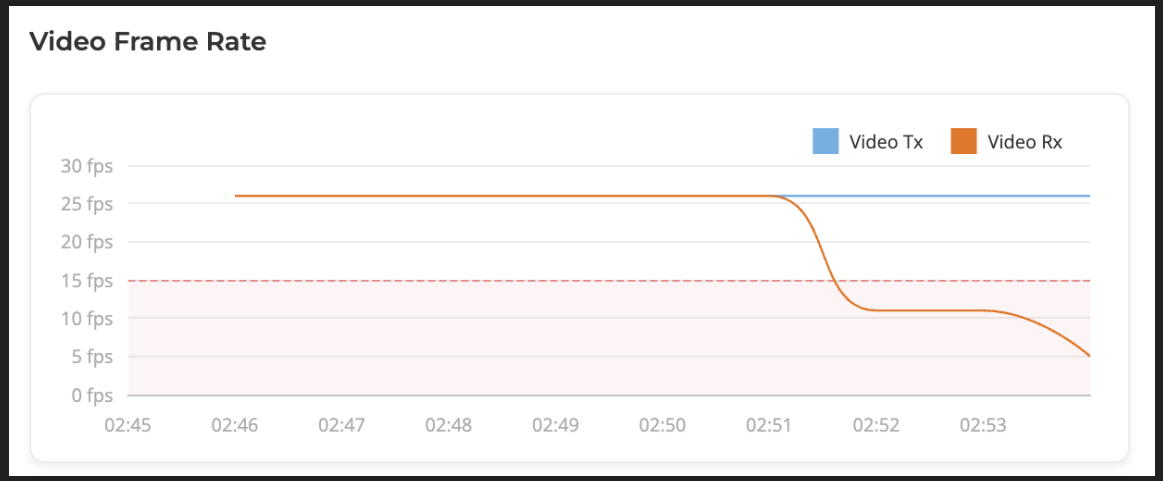


Video Call QOE

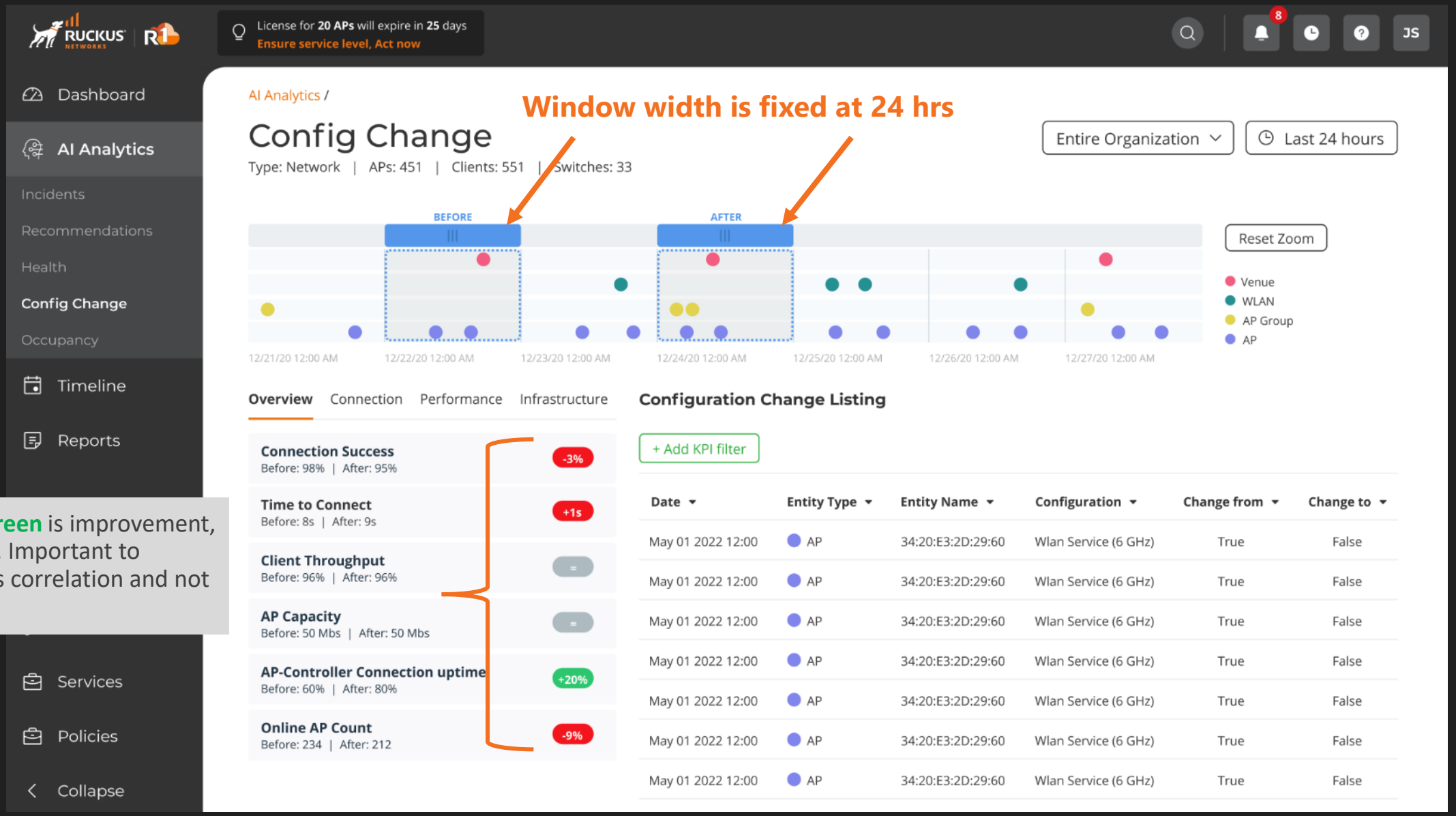
- On-Demand tool
- Measure Zoom call performance
- Validate network readiness for Voice & Video







Configuration Change Analysis



Red is degradation, **Green** is improvement, **Grey** is not significant. Important to understand that this is correlation and not causation.

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RUCKUS AI Ops

Remediation

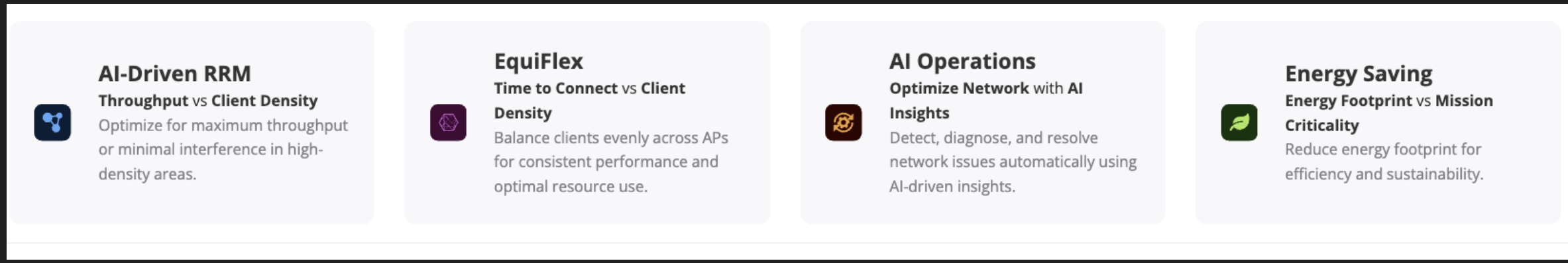
Intent AI

意圖導向的自主運作

無線射頻效能自動最佳化

涵蓋範圍與承載能力的平衡；DFS 與非 DFS 頻道的智慧調度等

三大核心意圖，更多功能即將推出



Intent AI - AI Driven RRM

Digital Twin based pre validation to prevent trial & Errors

Proactive, Tx Power Management

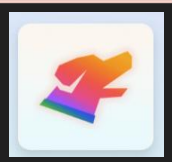
Optimized, Network Performance

RUCKUS AI

GenAI & Agentic AI

GenAI & Agentic AI

Gen AI	AI Agents	Agentic AI
•內容生成 •僅需一次 LLM 呼叫 •瞬間即時生成回應	•可執行多個由 LLM 驅動的處理步驟 •能自我檢討並持續優化輸出結果 •可串接與呼叫各種工具，完成超越單純文字生成的複雜工作	•負責管理與協調 AI 智能代理群組 •支援超大容量上下文，輕鬆應對各種高難度的複雜工作



Digital System Engineer (DSE)

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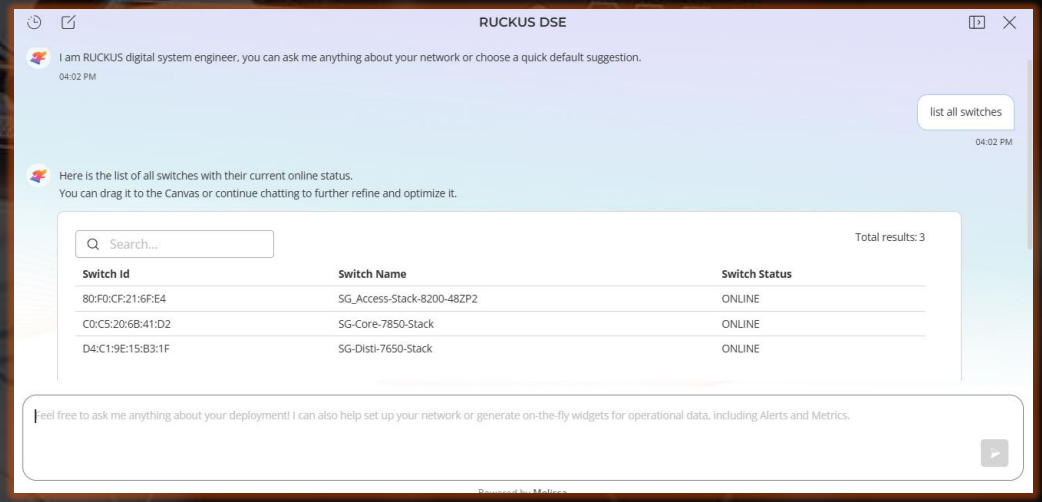
RUCKUS DSE: 網路自動化的未來趨勢

DSE是什麼?

- RUCKUS 數位系統工程師 (DSE)： 內建於 RUCKUS One 的 AI 對話式助理。能通曉您的 RUCKUS 網路全貌，並持續學習您的網路運作模式.
- 智慧直覺，人人皆可上手 – 將複雜的網路維運任務，轉化為直白的自然語言互動
- 分析與儀表板建立 的 Canvas 智能代理
- 故障排除 智能代理*

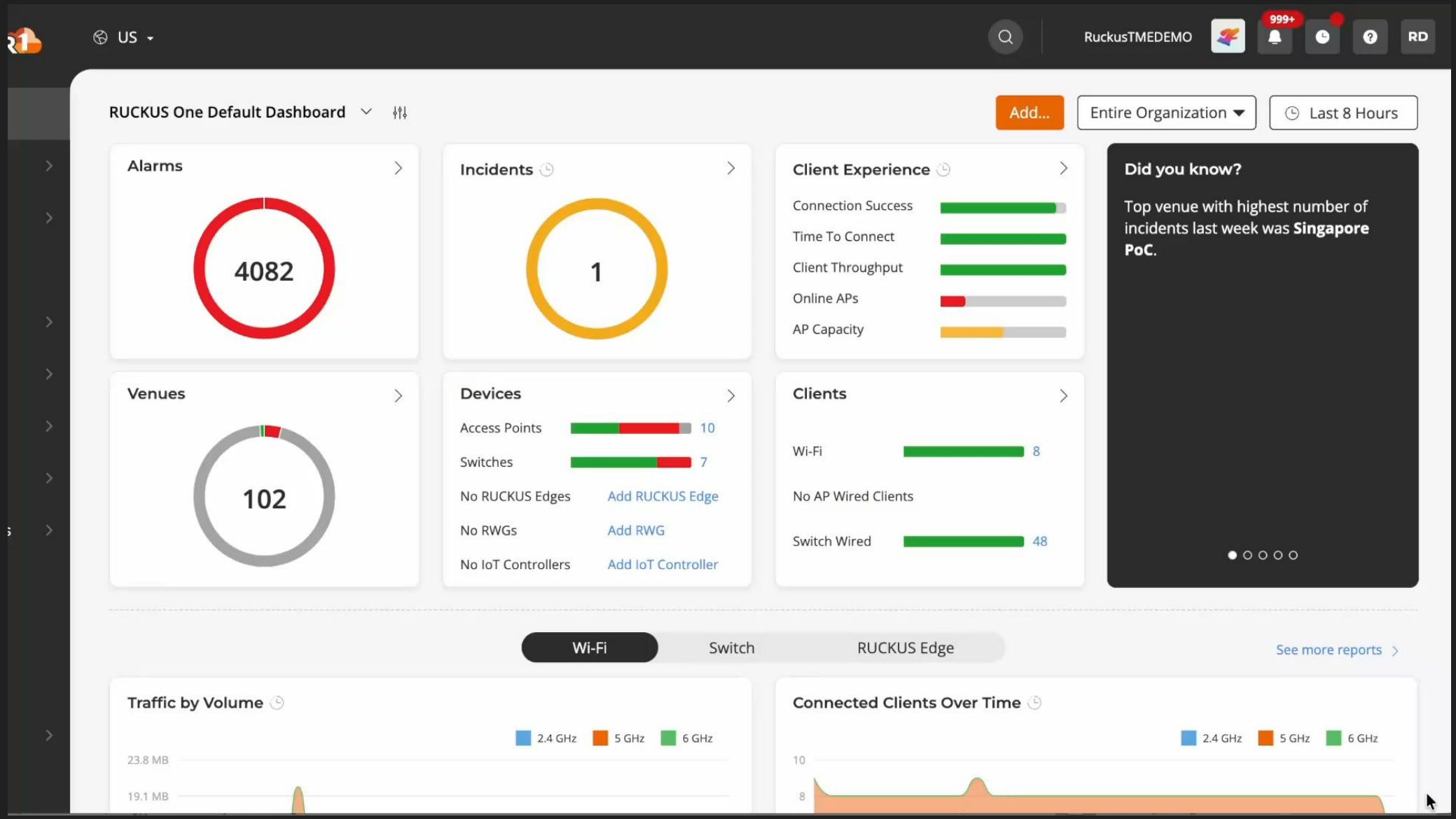
效益與優勢

- 無須具備專業網路技術
- 加速故障排除與數據分析
- 簡化網路部署與上線流程
- 直接給予處理建議，不必自行解讀資料



* Coming soon

DSE – Canvas Agent Demo



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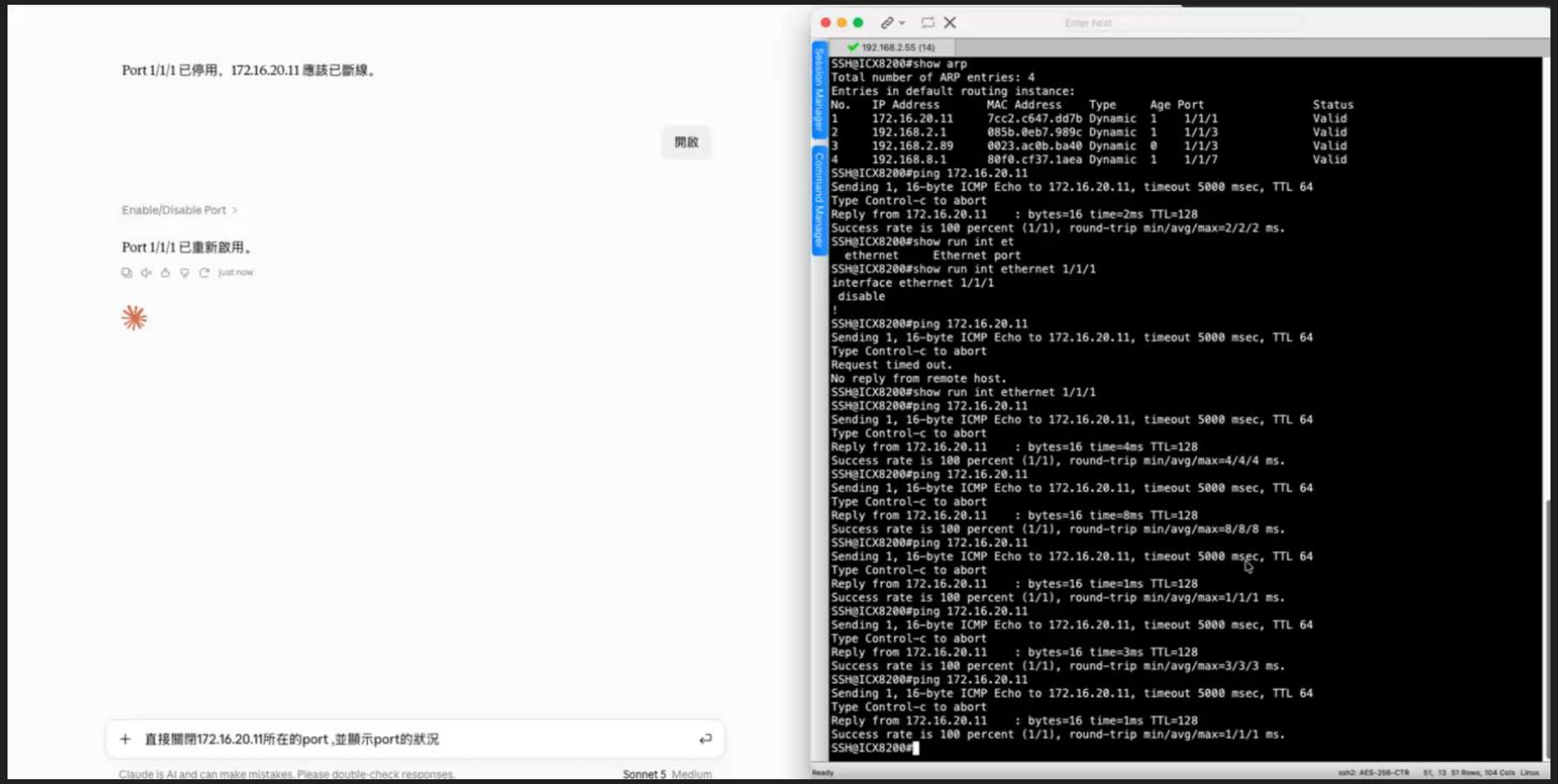
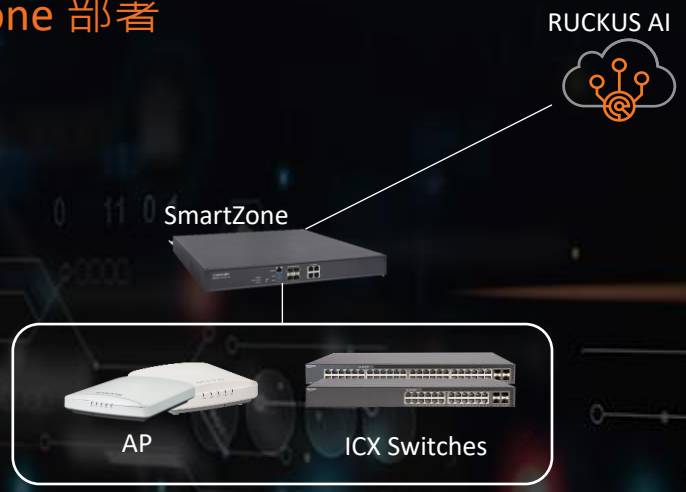
DSE – Client Troubleshoot Agent Demo

MCP – Agent Demo



AI 訂閱服務

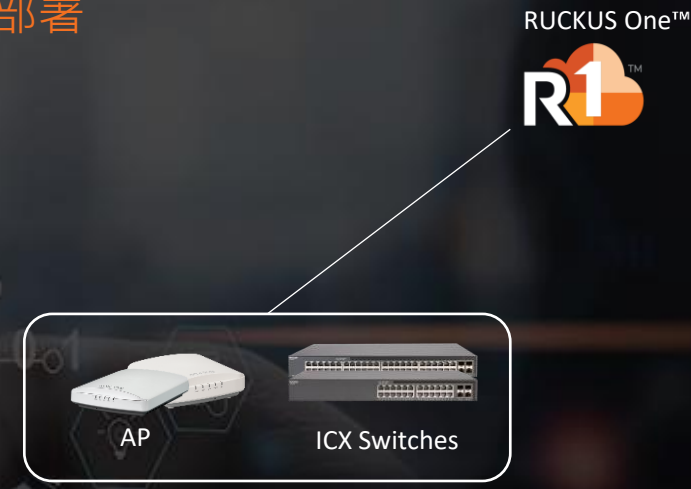
SmartZone 部署



- AI is a bolt on cloud-service
- ‘RAI’ subscription
  - ~90% of AI (No DSE)

- https://docs.vistancenetworks.com/bundle/ruckusai-licensing-guide/page/GUID-DA2BA274-F313-43A8-A198-2E8176377C64-homepage.html

R1 Cloud 部署

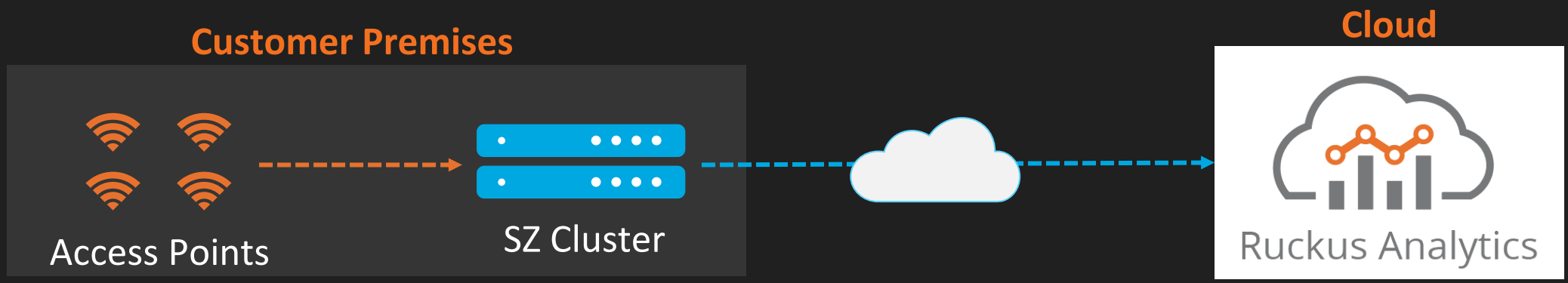


- AI is integrated into R1
- R1 Subscriptions
  - Essentials : 80% of AI
  - Professional : 100% of AI

- https://docs.vistancenetworks.com/bundle/ruckusone-licenseguide/page/GUID-1D8E7BF7-6E24-4A23-BF88-B183C8D55FDE-homepage.html

* Coming soon

雲端頻寬需求



AP to SZ

- ~1-4 Kbps per AP

SZ to Ruckus Analytics

- Based on fully loaded SZ
- ~4-10 Mbps per SZ node
- ~10-20 Mbps per SZ Cluster

Notes

[1] Based on 2-node vSZ-H cluster with 10K APs and 100K clients

[2] Data volume will vary based on environmental variables (AP/client count, SZ-H vs SZ-E, client transience, failure rate, event rate, etc)

Thank You