



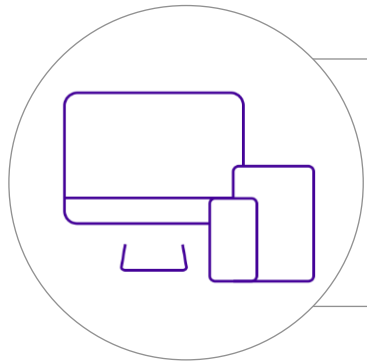
# 雲端管理實現自動化及高安全性的校園網路環境

Extreme Networks, Taiwan

陳瑞建

Oct. 2020

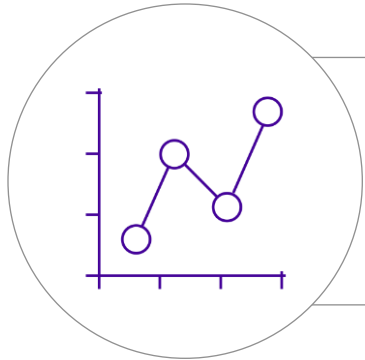
# EXPLOSIVE GROWTH IN DATA



**75B**  
Devices by 2025  
(10X the number of people)

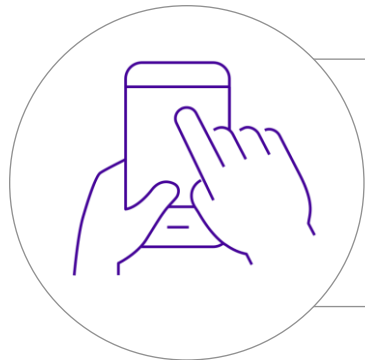
Less than  **$\frac{1}{2}$**   
of IT teams will get  
more headcount

**>100M**  
number of IoT **ATTACKS**  
detected in 2019



**463EB**  
Data generated  
per day

**68%**  
of **TECHNOLOGY \$**  
is outside of the CIO's budget



**5.1B**  
Mobile Users

**40%**  
of CIOs state **SECURITY** is  
**their #1 investment**



CENTRALIZED MANAGEMENT



VISIBILITY AND ANALYTICS

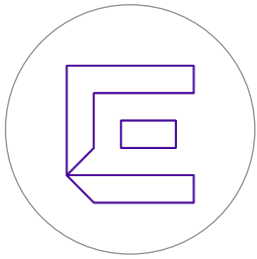


NEW AUTOMATION TOOLS



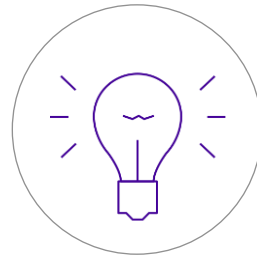


## WHO WE ARE



- Founded **1996**
- Revenue: **\$1.1 Billion**
- **2800** employees
- NASDAQ: **EXTR**
- HQ in **San Jose, CA**

## WHAT WE DO



- **20+** years of networking innovation
- **1000+** active patents
- Cloud-Driven End-to-End Networking **Solutions**

## WHO WE SERVE

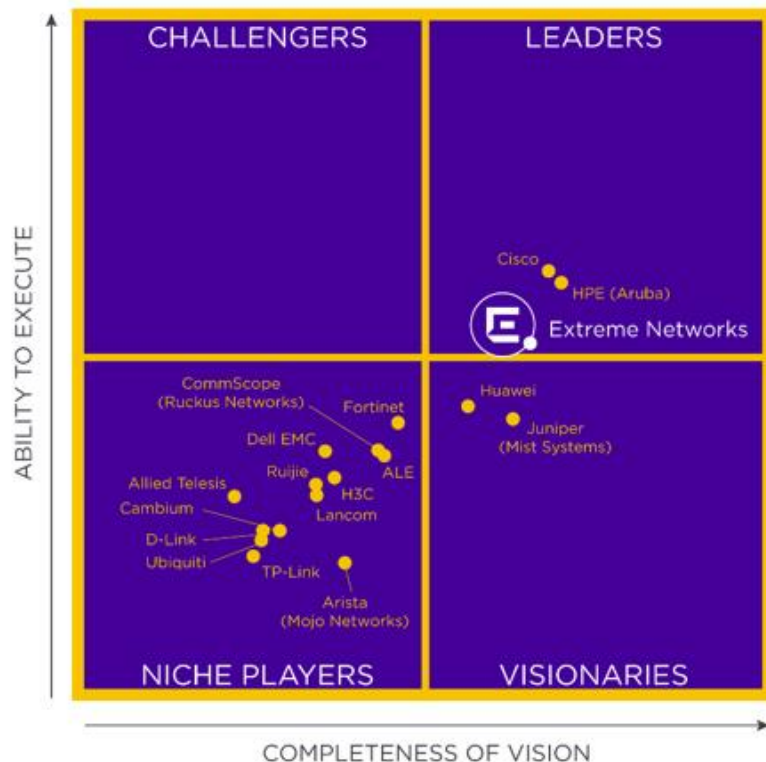


- **~50,000** Customers
- **9,000+** Partners
- Business in **80+** countries
- **100% Insourced** Service and Support

ADVANCE WITH US

- 自 1999 年以來就是 Wi-Fi 聯盟的早期成員，開發並銷售全世界第一台商用 Wi-Fi 基地台
- 2019 年發表 Wi-Fi 6 AP
- Gartner Magic Quadrant LAN/WLAN 連續兩年領導者象限

## 2019 LAN/WLAN Magic Quadrant



1999 WECA (*Founding Member*)  
Spectrum 24 - Symbol Technologies

The Spectrum24 High Rate 4131 Access Point, 11b and transmitting data **at 11 Mbps** then automatically scaling to 5.5 Mbps, 2 Mbps, and 1 Mbps to ensure best range and throughput.



2019 WFA (*Participating Member*)  
AP510i - Extreme Networks

The AP510i is setting the standards with AI-Infused Wi-Fi 6 Access Points data rate up **to 4.8 Gbps** with dual 5Ghz capabilities to ensure the highest level of wireless service.

# TRUSTED BY OVER 50% OF THE FORTUNE 50



## HEALTHCARE



## GOVERNMENT



## EDUCATION



## HOSPITALITY



## MANUFACTURING



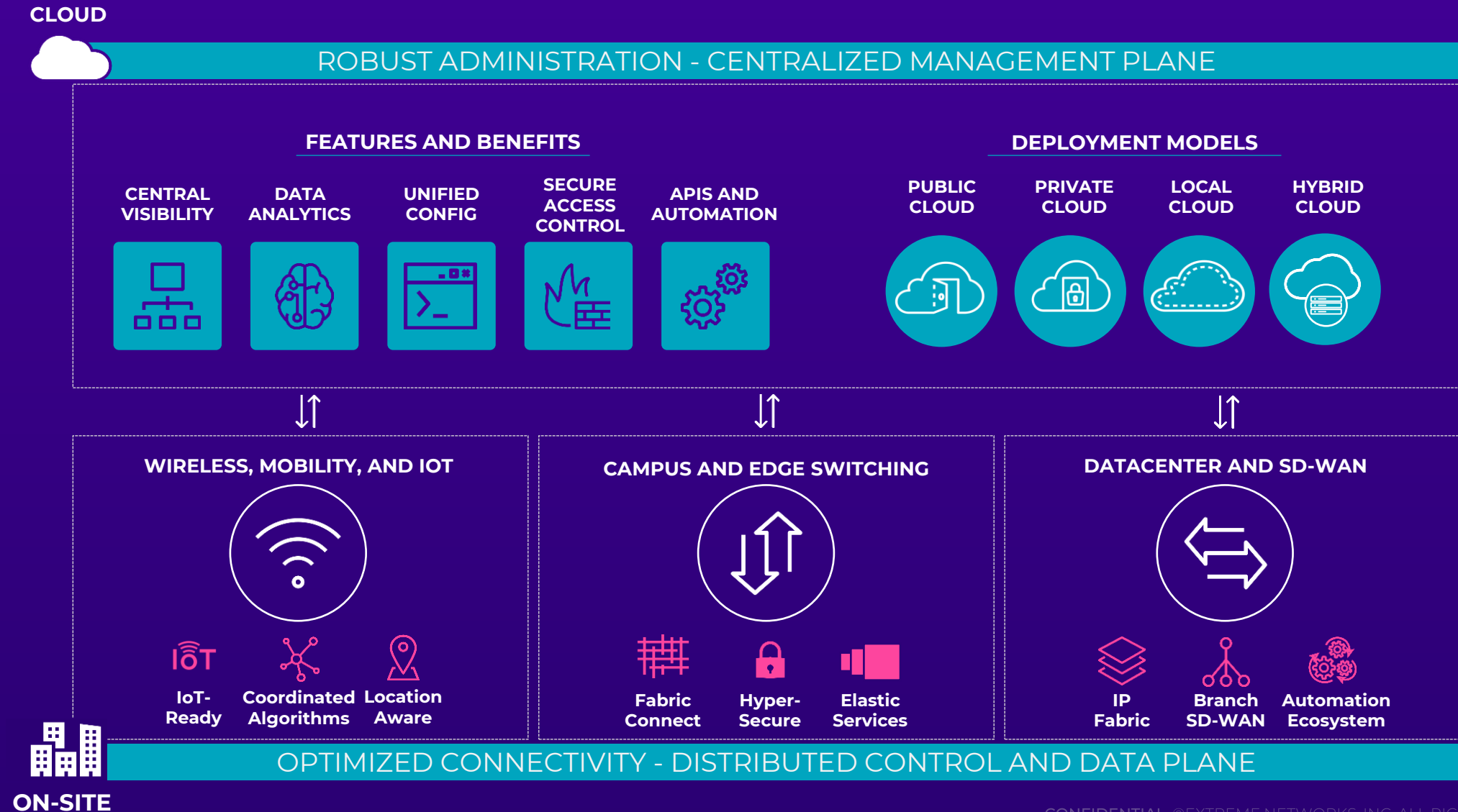
## TRANSPORTATION AND LOGISTICS



## RETAIL

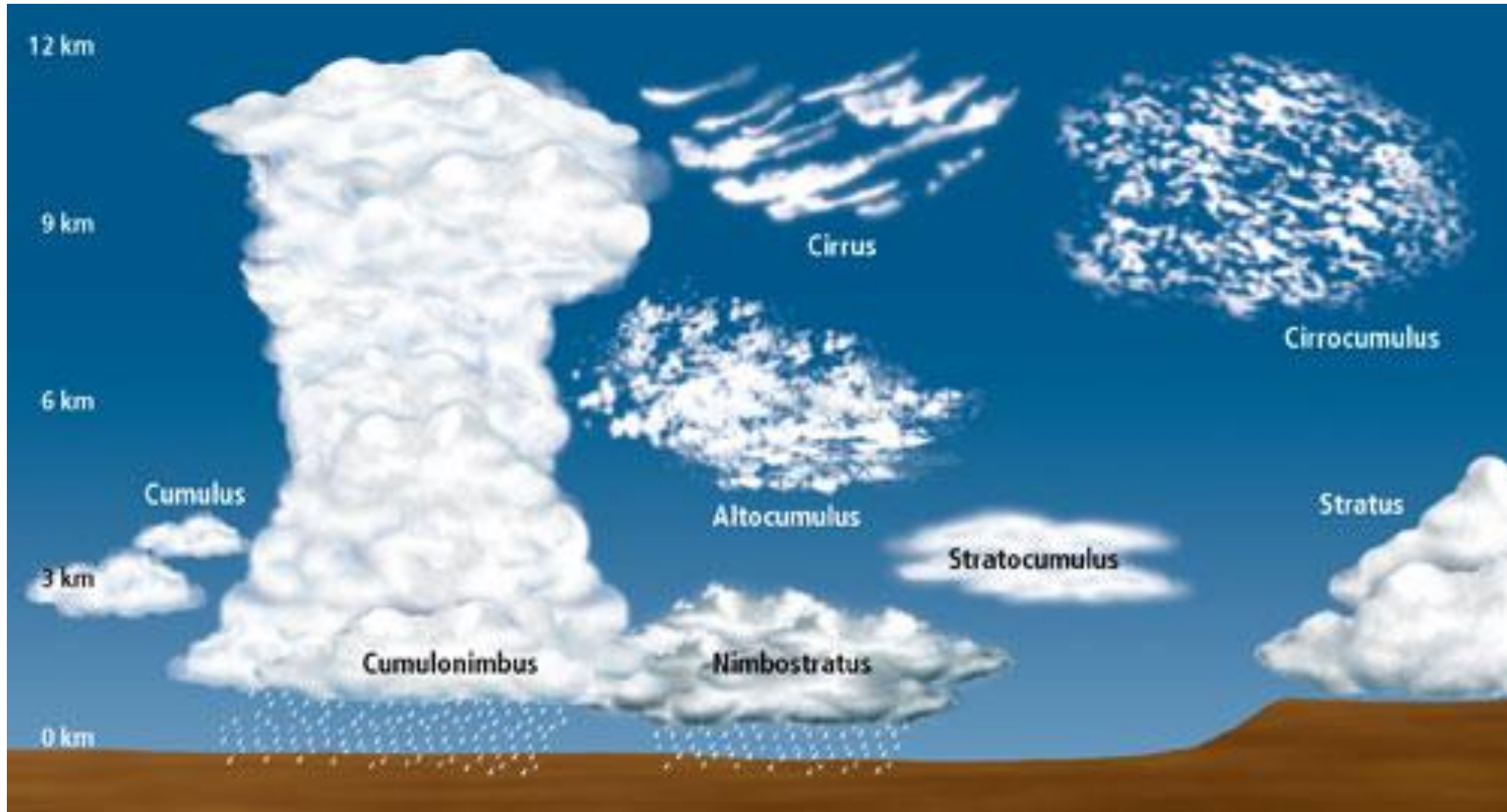


# End-to-End Cloud-Managed, Cloud-Driven Networking



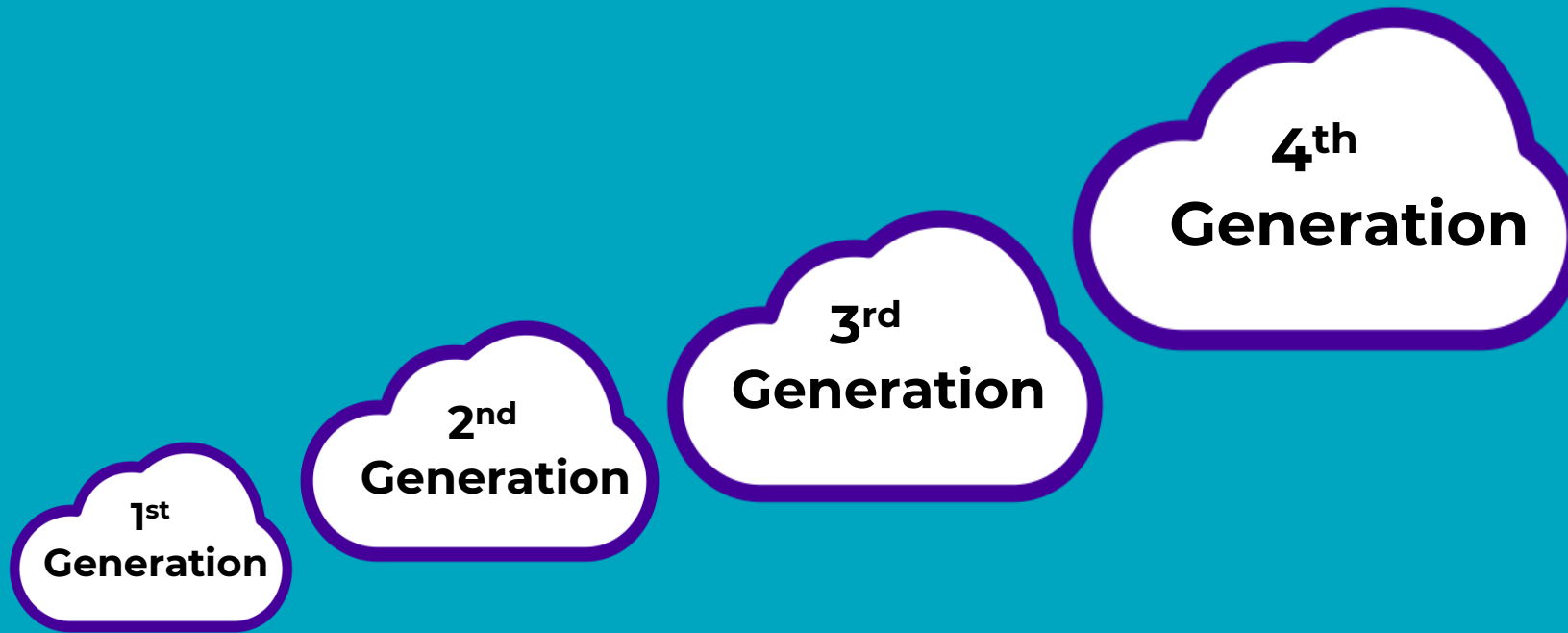


# Not All Clouds Are the Same: In Nature

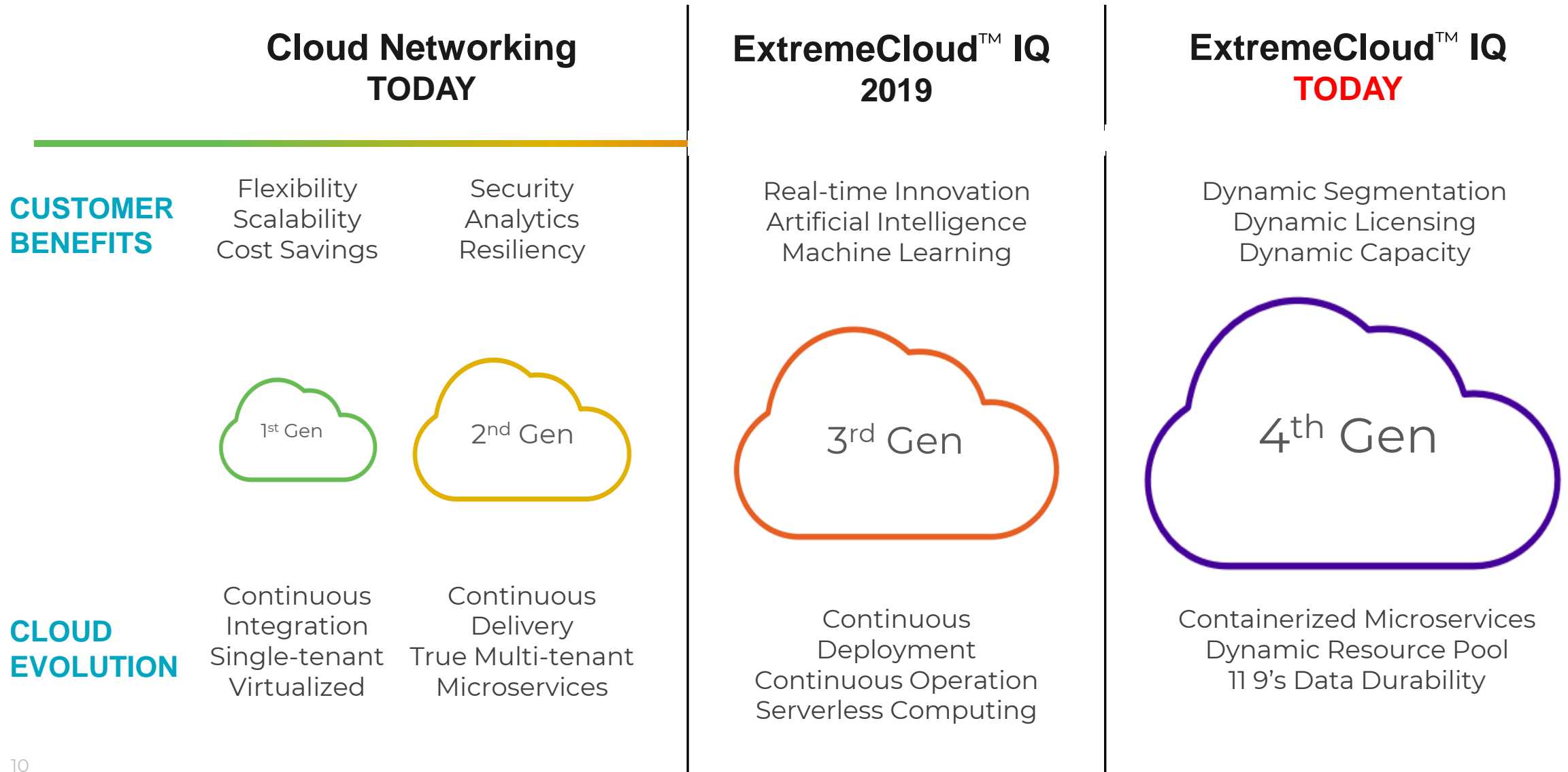




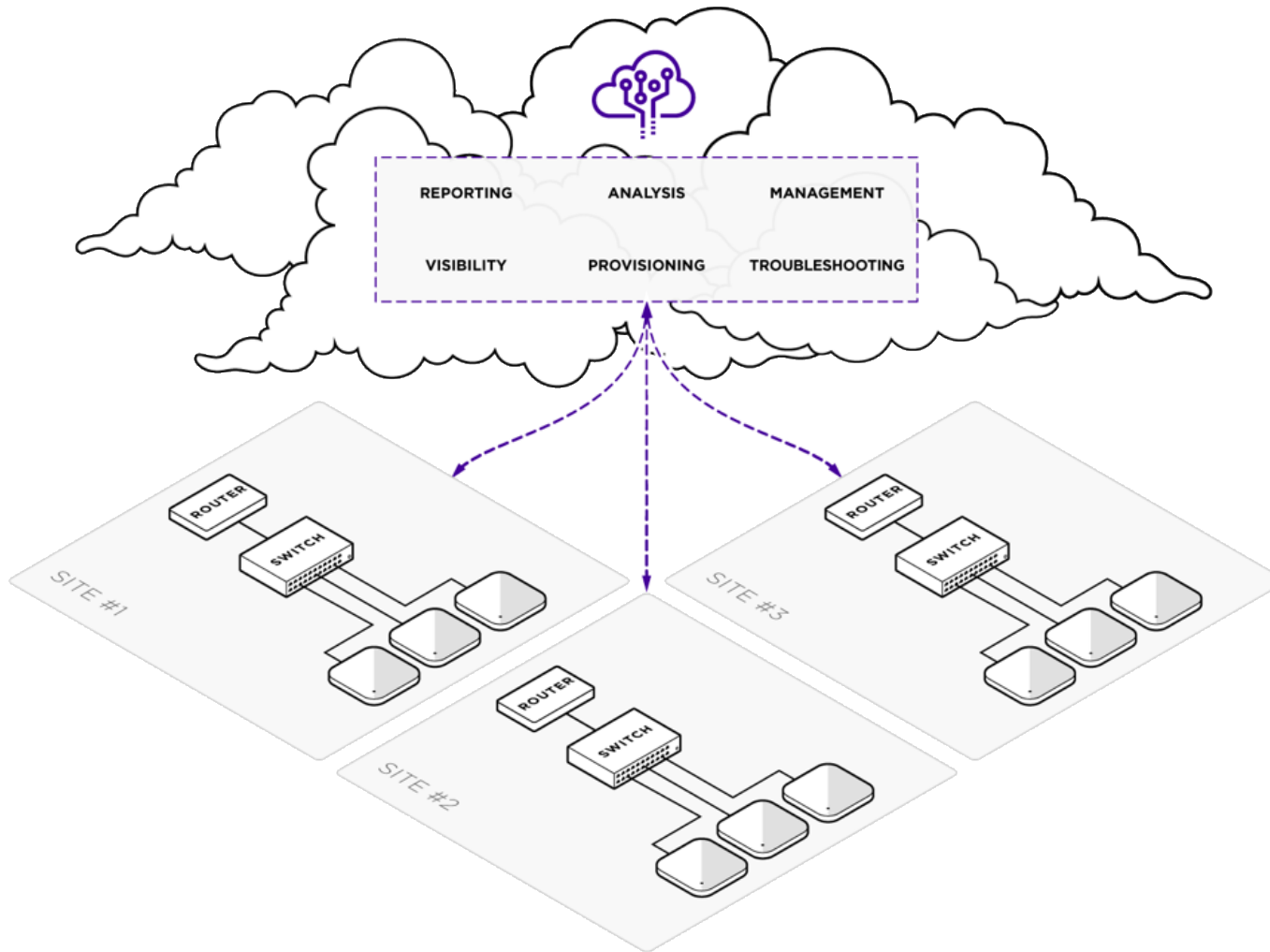
# Not All Clouds Are the Same: Or In Networking



# Extreme - Accelerating at Cloud Speed



# CLOUD DRIVES EFFORTLESS

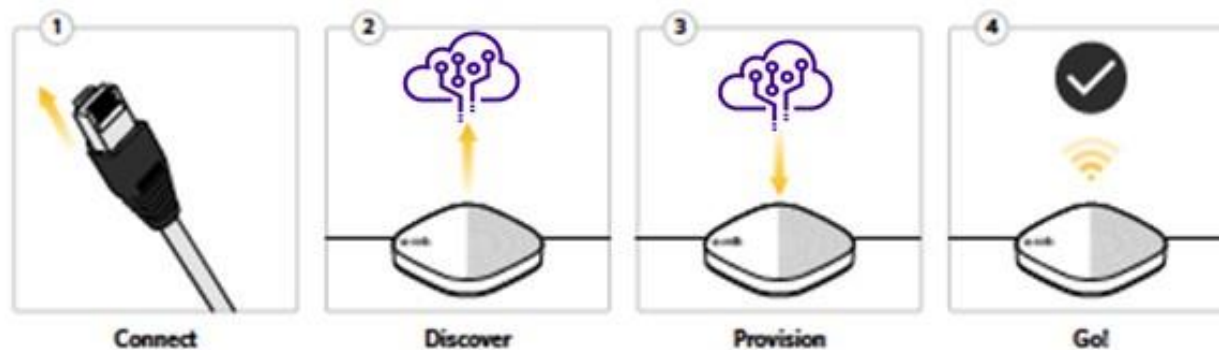


**SIMPLE** way to deploy and scale complex networks

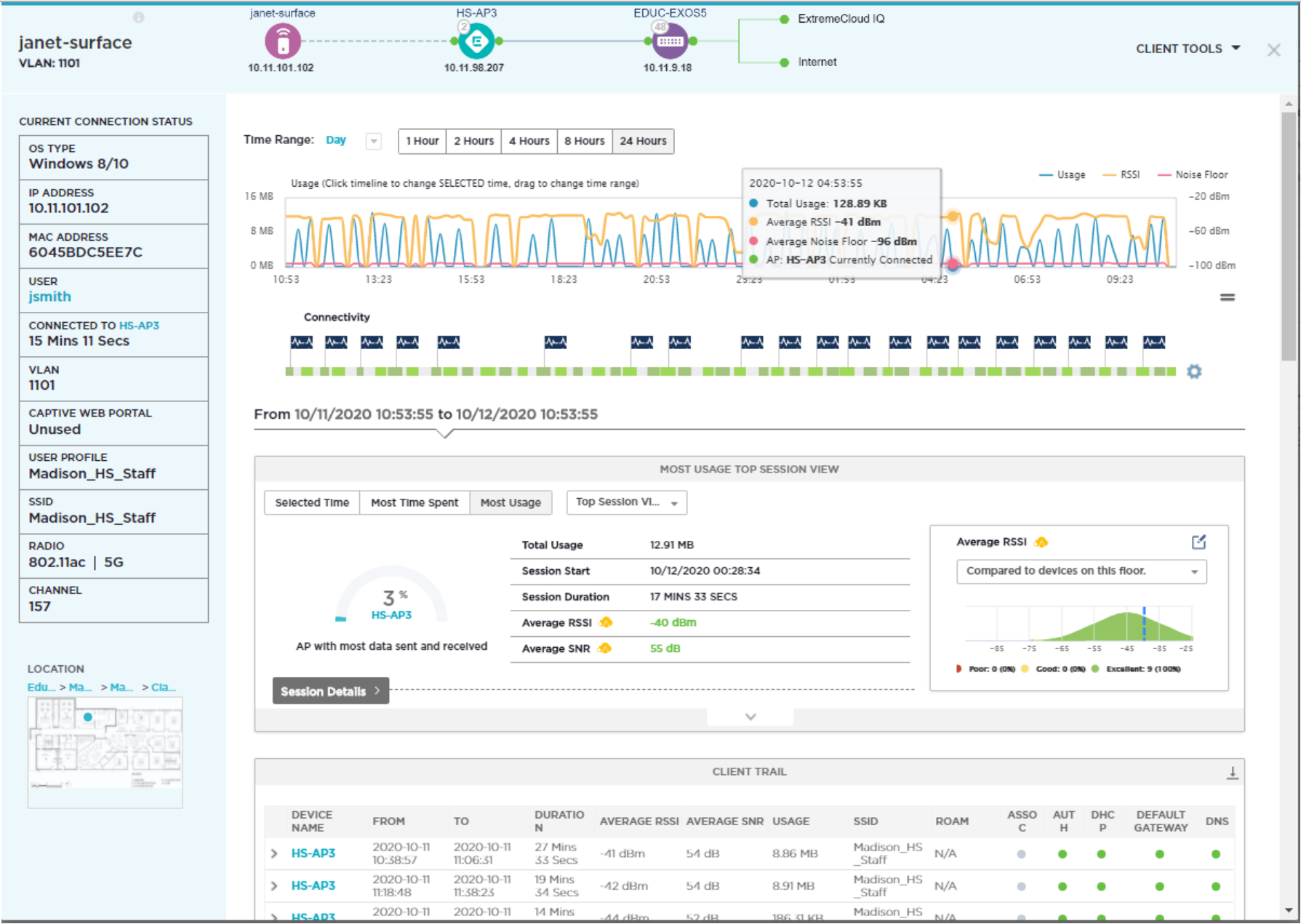
**SMART** delivery of new insights and analytics using ML and AI

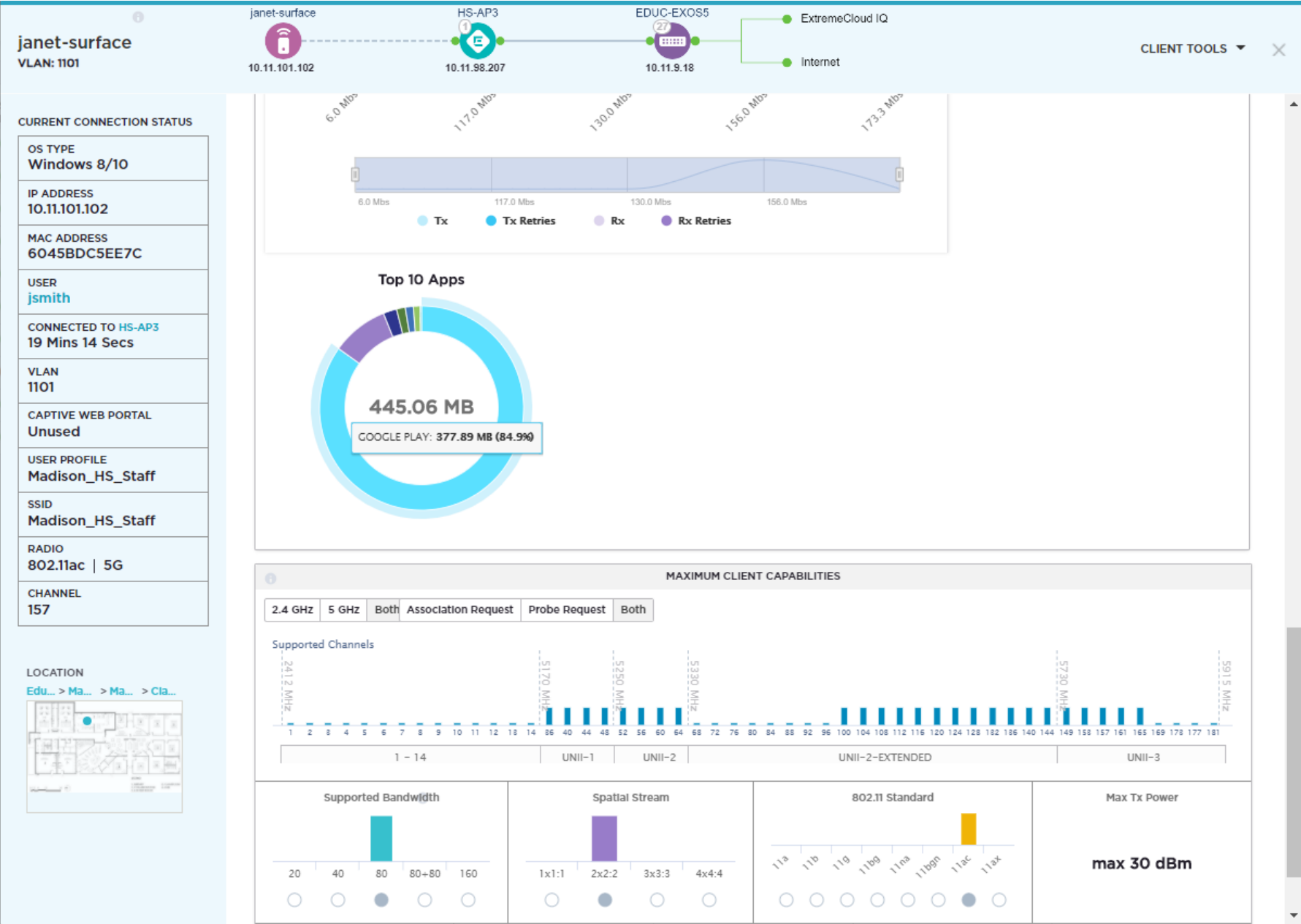
**SECURE** assurance of user, device, and IoT access

- Scalable to **any business size** and growth velocity
- Continuous Software updates
  - **No install and maintenance** of local servers and software
  - **No downtime** and upgrade planning required
  - **Continuous delivery of new features**, capabilities, improvements and fixes
- Data storage for the **entire length** of the subscription
- **Workflows for onboarding devices**, building network policies, guest access, device templates, routing policies



- Big Data Analytics that can be collected, processed, displayed and stored for ML driven insights and comparative analytics with a path to AI
- Complete Network/Device/Client Visibility
  - Client360 allows drill-down to client specific data over specified time period
    - Compare it to the rest of the network (RSSI, SNR, etc.)
    - Health Score, Radio info
    - Network and Authentication details
    - Roaming history (Client Trail)
    - Application usage
    - Max client capabilities

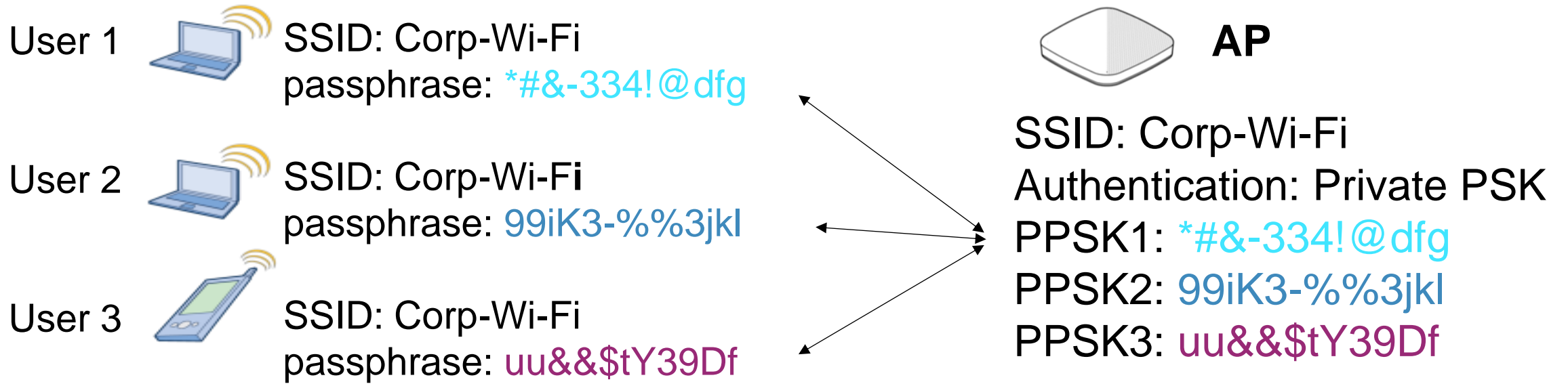






- FIRST cloud-managed networking vendor to attain ISO/IEC 27001 certification for its Information Security Management Systems (ISMS)
- APs support stateful L2-L7 DPI firewall for context-based access security
- Last Wi-Fi Alliance WPA3 security certification and Management Frame Protection for users and IoT devices.
- Onboarding and Guest Management
  - Cloud-based PPSK and credential delivery
  - Employee sponsorship for guests
  - Customize email and text message templates
  - Social Logins (Facebook, LinkedIn, Google)
  - Self-Registration Portal

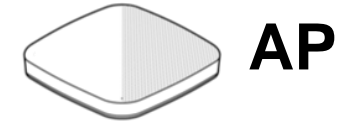
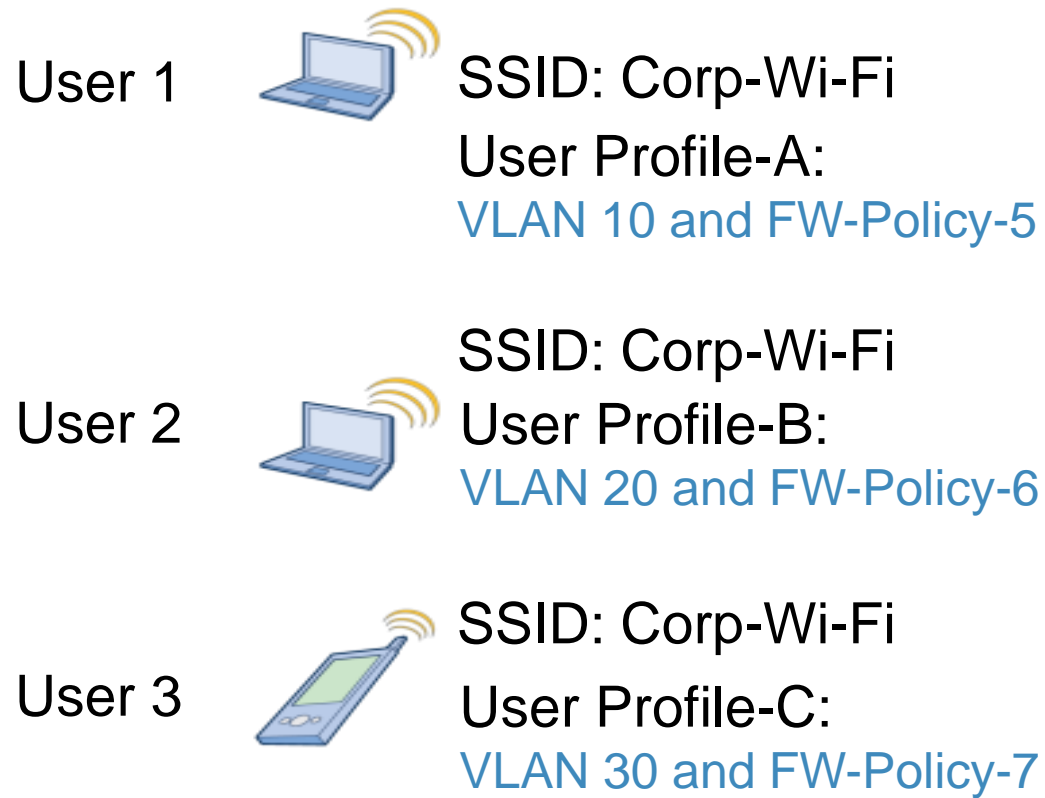
# Private Pre-Shared Key (PPSK)



All users and devices have **unique credentials**

If a user leaves or device is lost, the PPSK credential is simply **changed for that one user or device**

# Private Pre-Shared Key (PPSK)



**AP**

SSID: Corp-Wi-Fi  
Authentication: Private PSK

User Profile-A:  
VLAN 10 and FW-Policy-5

User Profile-B:  
VLAN 20 and FW-Policy-6

User Profile-C:  
VLAN 30 and FW-Policy-7

Multiple user profiles can be linked to a single SSID

PPSK User Groups can be leveraged to assign different groups of users or devices to different user traffic settings

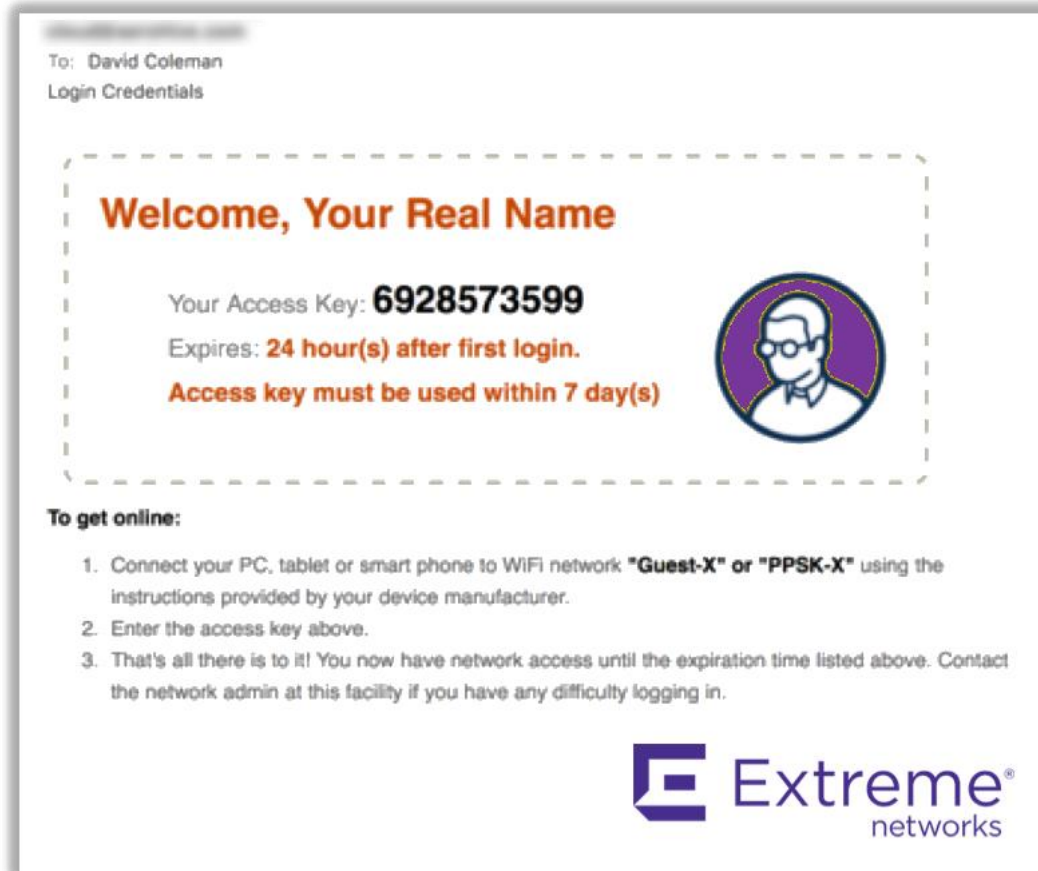
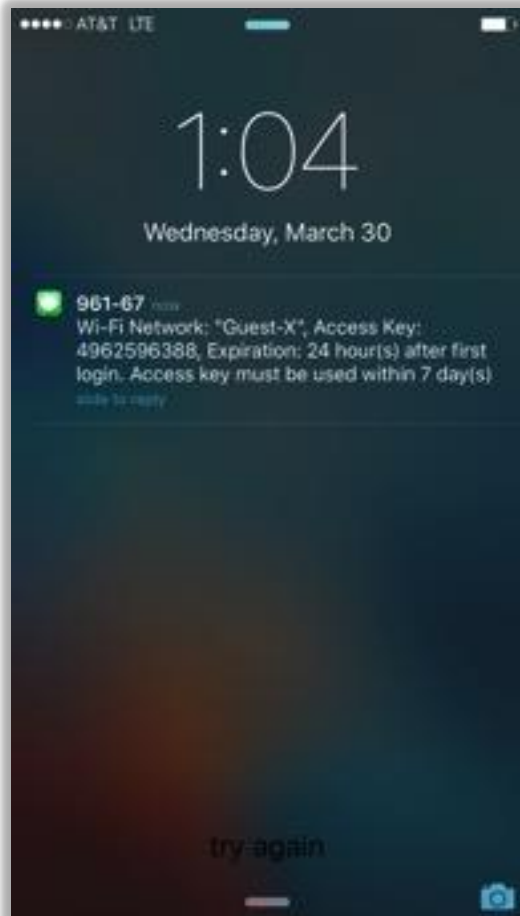
# Private Pre-Shared Key (PPSK)



- Multiple per-user and per-device PSKs assigned to a single SSID
- Easy to deploy
- No need for PKI, certificates or RADIUS servers
- Can be time-based credentials
- Solves the “static” PSK problem

<input type="checkbox"/>	<a href="#">Coleman-Mac</a>	Private PSK-Manual	ZTe079<'&gHo669)?%OI
<input type="checkbox"/>	<a href="#">Coleman - MacBook</a>	Private PSK-Manual	QLS655:>-IQC929#_[PK
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<input type="checkbox"/>	<a href="#">Coleman - iPhone</a>	Private PSK-Manual	Vns938#}?eiB396:_&Jh
<input type="checkbox"/>	<a href="#">Coleman-Kindle</a>	Private PSK-Manual	bDx635?;;Pus901_\;kD
<input type="checkbox"/>	<a href="#">Coleman-Surface-Pro3</a>	Private PSK-Manual	fUx564.>}QhJ650I"_an

# PPSK Credential Onboarding



- Time based guest credentials
- PPSK credential delivery printed receipt, email, SMS
- Self-service kiosks and applications
- Employee sponsorship



- **Identity APIs** can be used to create your own custom applications to onboard PPSK credentials
- Example: **PPSK Kiosk**

- 新一代的AP及交換器都內建第七層應用的分析能力，AP並可以支援Stateful firewall的功能，以提供深層的可視性及進階的安全防護能力
- 完整的可視性可以協助除錯、增進網路安全性及優化使用者的體驗
- 單一有線及無線的管理平台及多種設備及使用者自動登錄的程序，可以簡化人員訓練及維運面的負擔並兼具安全性管控的能力
- 雲管理平台是提供ML及AI的關鍵技術，讓網路架構及管理具備全自動的效能優化、安全防護、存取控制智能，並能簡化安裝、維護及提供售後服務的便利性



