

The Aruba logo is displayed in a white, lowercase, sans-serif font. The background of the slide features a complex digital theme with binary code (0s and 1s) in red and blue, glowing circuit traces, and a large, stylized padlock in the center-left. The padlock is yellow with a blue keyhole and is surrounded by a red circular glow. The right side of the slide is a dark, geometric shape that serves as a backdrop for the text.

aruba

a Hewlett Packard
Enterprise company

Aruba 360 Secure Fabric

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CWNA, CWSP, ACCA, ACSA, ACEAP, ACMX #377, ACDX #380
System Engineer – Quebec Region

Paul Gallant, Eng.

CWNA, CWSP, ACCA, ACSA, ACMX #377, ACDX #380

- More than 20 years of experience in telecommunications
- Experiences:
 - Banking system integration
 - Embedded software development in security appliances (firewall, VPN)
 - Numerous wired and wireless deployments at national and international scale
 - Passionate trainer



AGENDA

Current state

- Devices
- Applications
- Threats

Solutions

- Visibility and control
- Automation and Agility
- Solution Portfolio



Aruba Networks + HP = HPE

And This is Only **The Beginning**

Same Aruba...
but with greater
resources

Access to a broader
portfolio of
networking
products

Global service
delivery for
customers and
partners



HPE and Aruba... Better Together!



Source: Gartner Magic Quadrant for the Wired and Wireless LAN Access Infrastructure October 2017. Tim Zimmerman, Bill Menezes, Andrew Lerner, ID Number: G00277052 This Magic Quadrant graphic was published by Gartner Inc. as part of a larger research note and should be evaluated in the context of the entire report. The Gartner report is available upon request from HP. The Magic Quadrant is a graphical representation of a marketplace at and for a specific time period. It depicts Gartner's analysis of how certain vendors measure against criteria for that marketplace, as defined by Gartner. Gartner does not endorse any vendor, product or service depicted in the Magic Quadrant, and does not advise technology users to select only those vendors placed in the "Leaders" quadrant. The Magic Quadrant is intended solely as a research tool, and is not meant to be a specific guide to action. Gartner disclaims all warranties, express or implied, with respect to this research, including any warranties of merchantability or fitness for a particular purpose.

Rapidly Changing Security Landscape



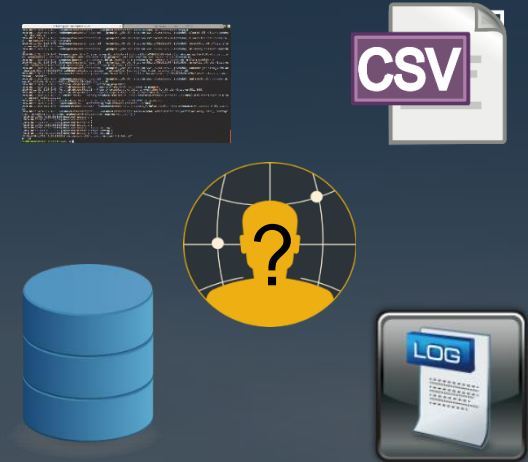
Focused, Targeted Attacks

Attacks change more rapidly than traditional defenses can combat. Digital assets continue to increase in value and vulnerability.



Expanding Points of Vulnerability

Mobile, cloud, BYOD breaking down traditional perimeter. Some attacks inevitably will get to inside of network.



Security Team Under Stress

Security teams understaffed with inefficient tools. Need analytics-driven insights to focus on right threats before damage is done.

Object Assisted Intelligence



Smart Buildings



Smart Retail



Smart Manufacturing



Smart Hospitals

Manufacturing IoT Integration



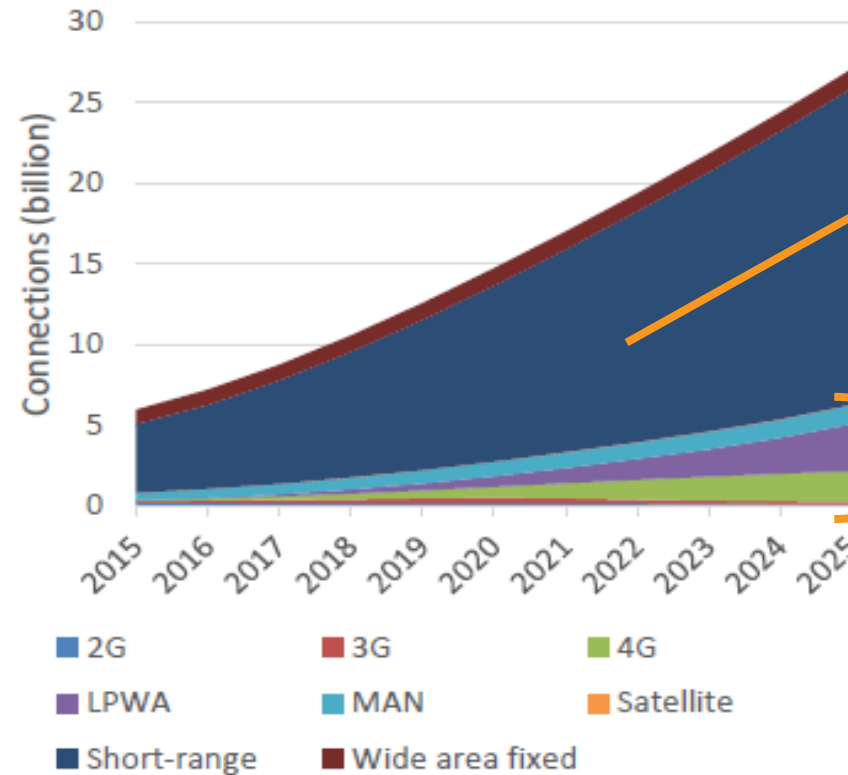
Smart Manufacturing

IoT Connectivity Types

72%

of connections will be
short range 2025

Source: Machina Research 2016



Wi-Fi, Ethernet,
BLE, Zigbee...



Lora, Sigfox, 5G Backhaul



DYN Attack – Video surveillance



XiongMai Technologies



LifeCare PCA™ Infusion System - Hospira



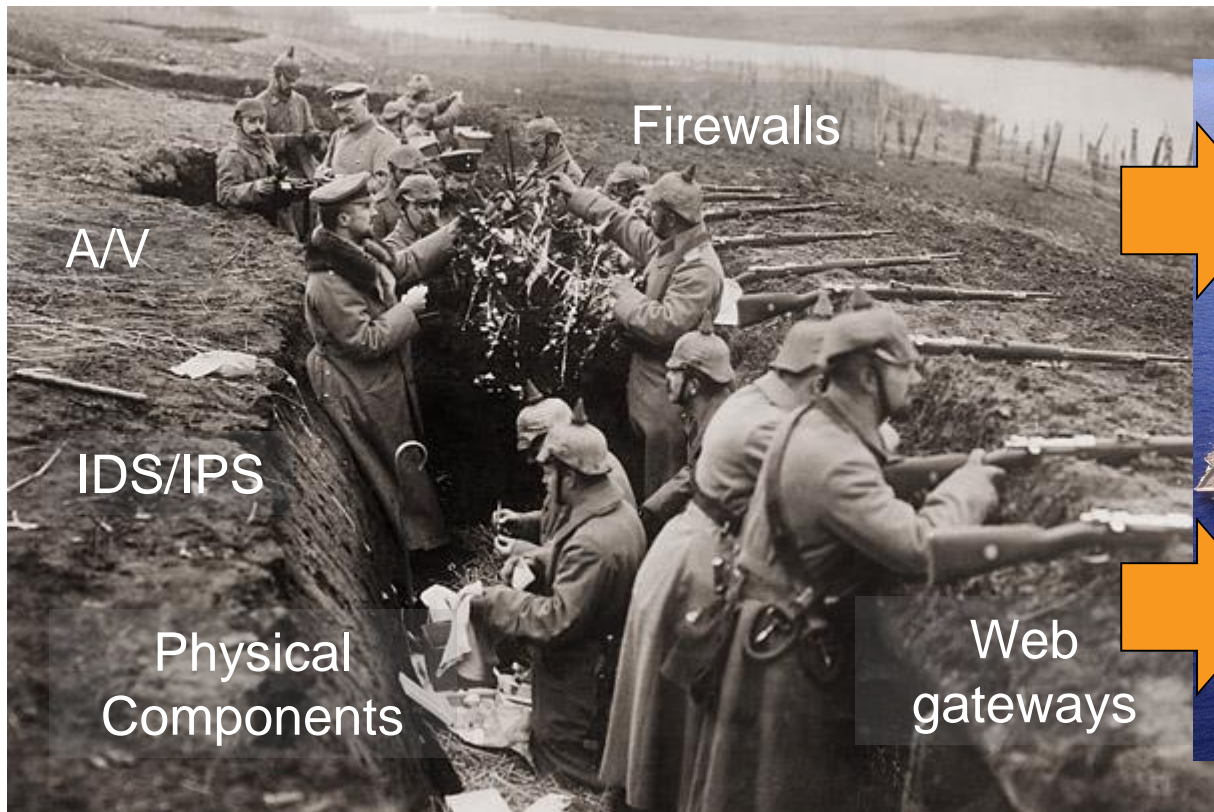
Drug Infusion Pump Is the "Least Secure IP Device"
he's ever seen

<https://ics-cert.us-cert.gov/advisories/ICSA-15-090-03>

A new defense model is required

Static perimeter defense

Adaptive Trust – Zero Tolerance



Aruba 360 Secure Fabric

Simplifies Digital Enterprise Security

Aruba 360 Secure Fabric

ClearPass | IntroSpect

Integrated Threat response

Aruba Secure Core

Secure Boot | Encryption | DPI | VPN | IPS | Firewall

**Aruba
360 Secure
Exchange**

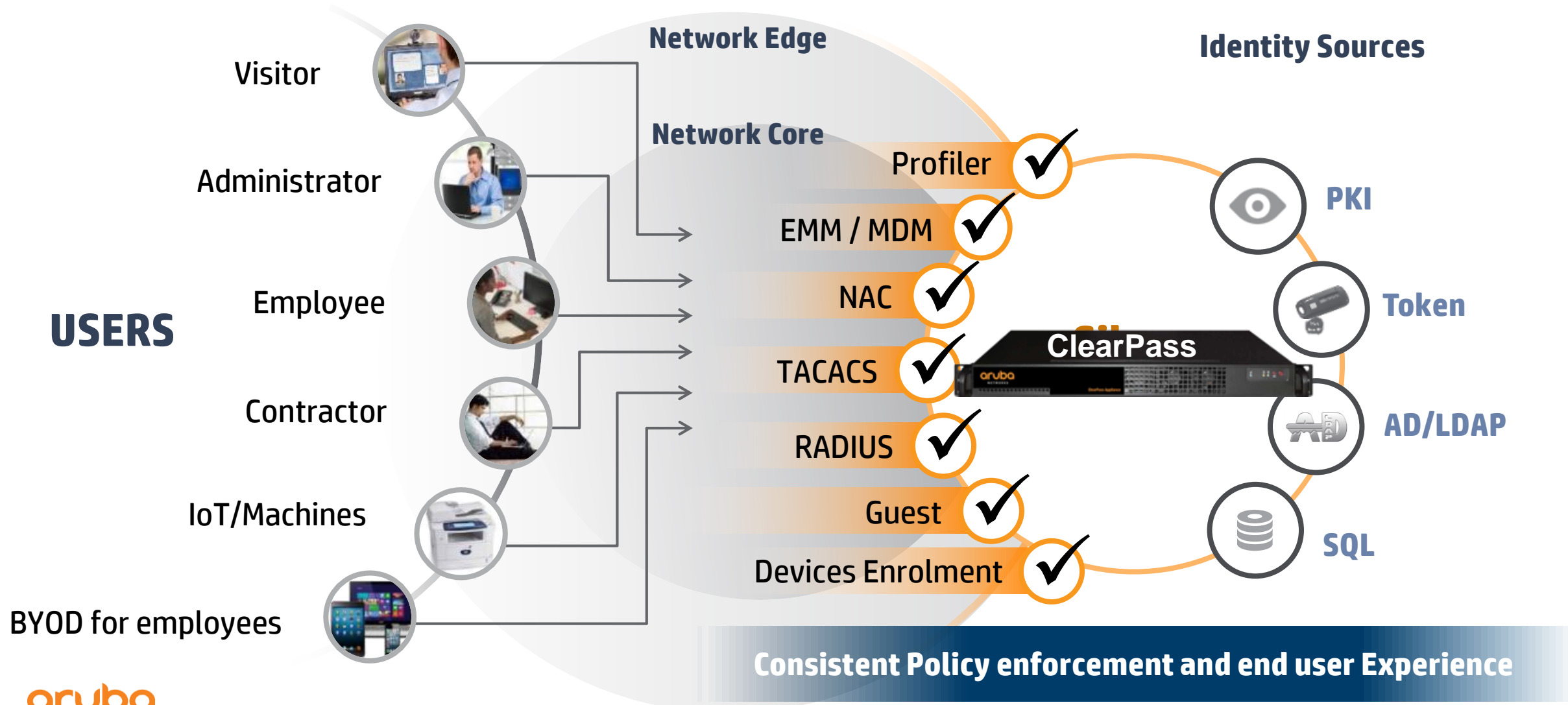


McAfee



Active Cyber-protection and 360° secure access
From Access, Core, WAN and cloud – covers all networks

Need for a Unified Access Policy Management



Visibility and Control



Embedded DPI
Layer 7 Analysis



**REPUTATION BASED WEB
CONTENT FILTERING**
Filter inappropriate WEB content

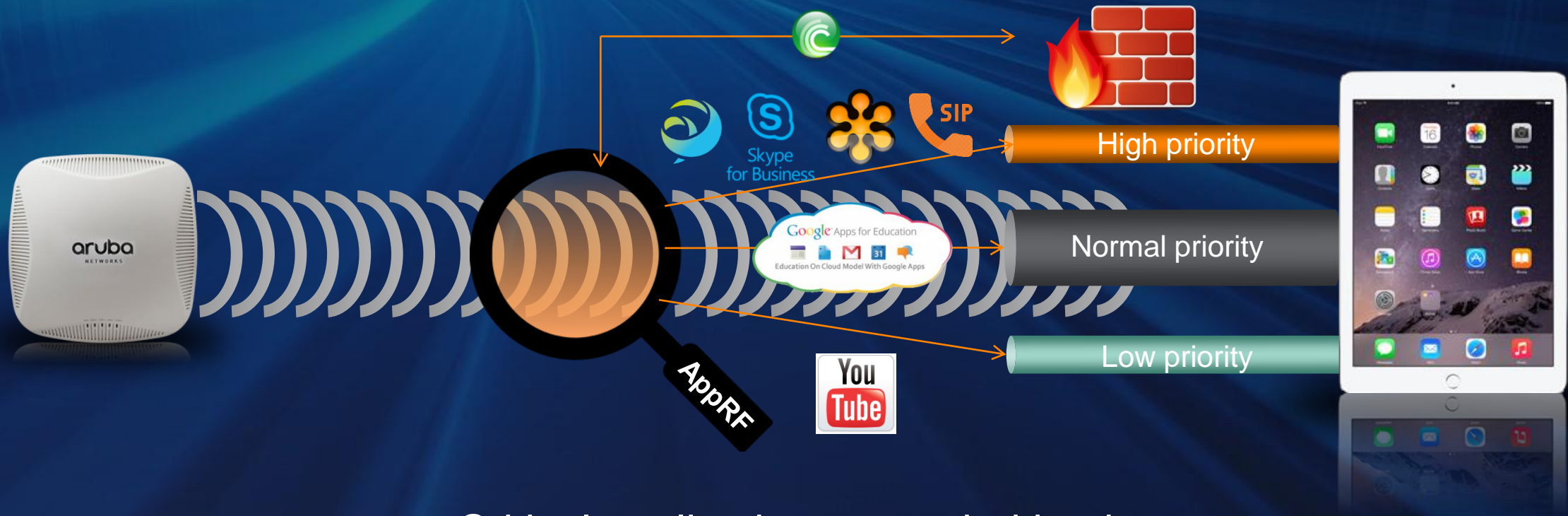
Prioritize cloud applications
Block inappropriate content

RBAC – Role-Based Access Control

Enforce a security context based on
user / device / location



Intelligent traffic control with AppRF™

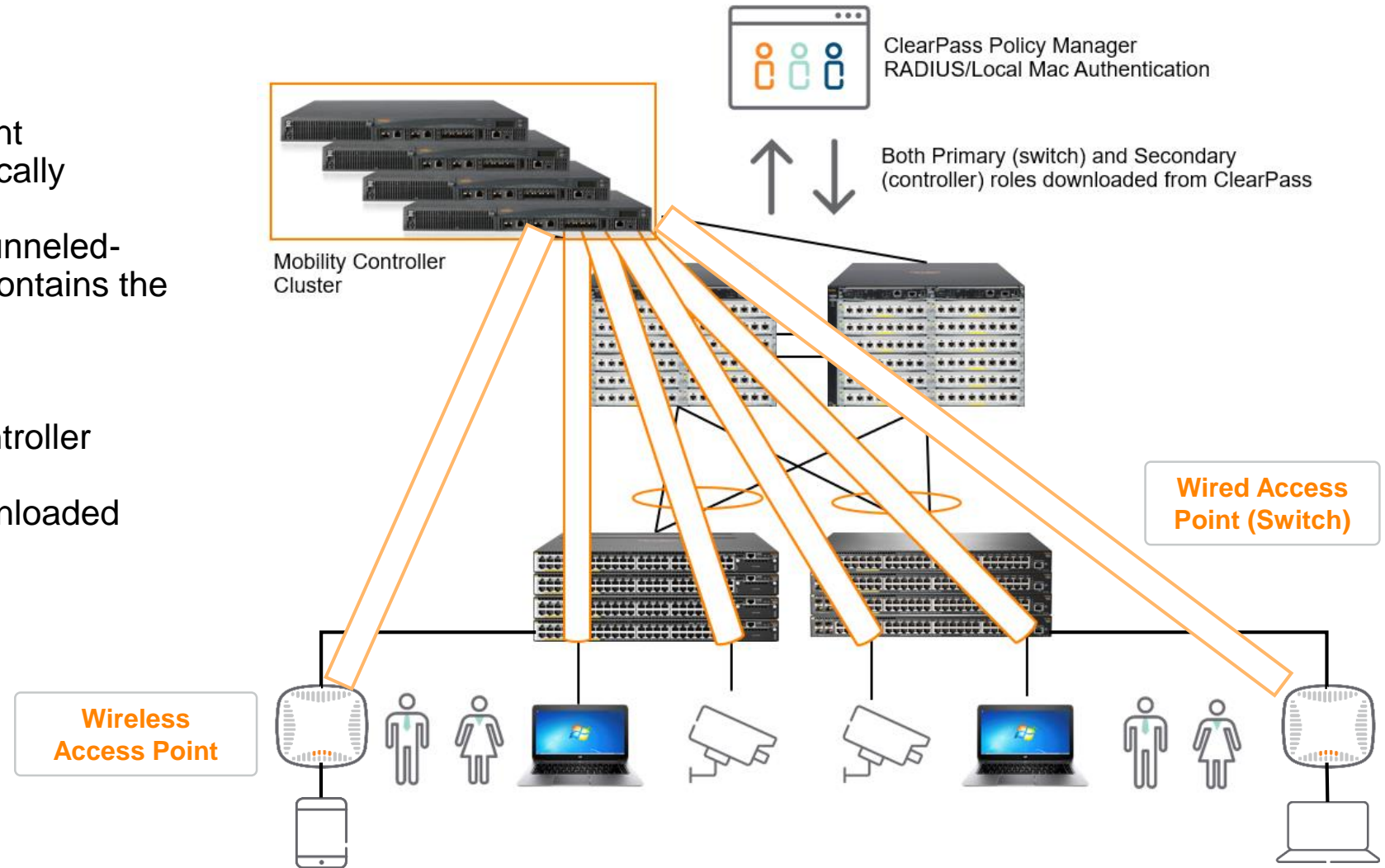


Critical applications are prioritized
Applications allocated bandwidth are based on the
organization's productivity goals

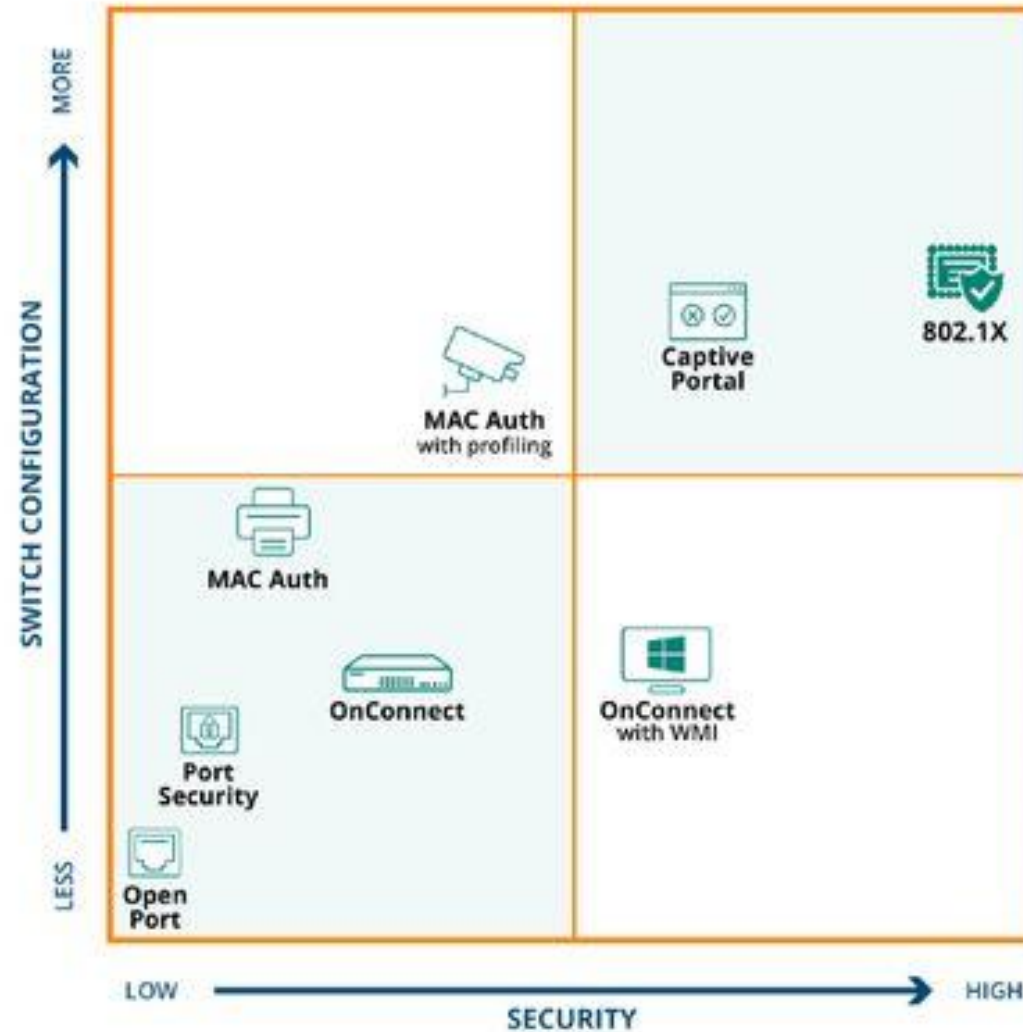
Identity-based Dynamic Segmentation

Per User Tunneled Node

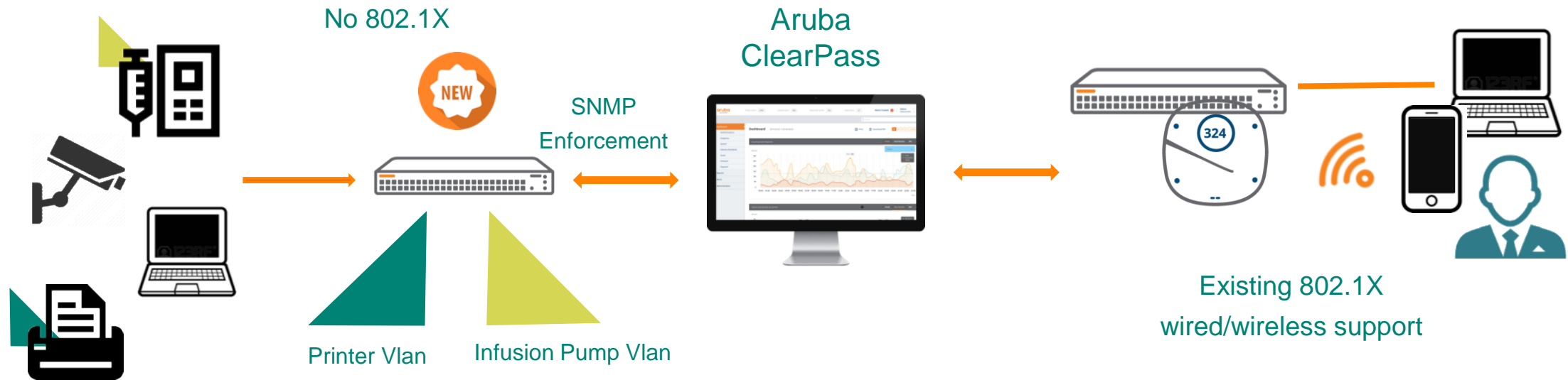
- Primary User Role (Switch)
 - User/Device VLAN assignment
 - Access Policy can be dynamically downloaded from ClearPass
 - Initialize a user tunnel with “tunneled-node-server-redirect” which contains the secondary user role
- Secondary Role (Controller)
 - Assigns firewall rules and controller based access policy
 - Can also be dynamically downloaded from ClearPass



ClearPass for wired and wireless security Enforcement



ClearPass OnConnect for Easy Wired NAC Enforcement



- Built-in device-centric security for all non-AAA ready customers
- Easy to configure on legacy multivendor switches
- Leverages ClearPass profiling for wired/wireless - IoT, laptops, mobile phones.

Profiling Methods

Ensures proper device visibility

Passive Profiling

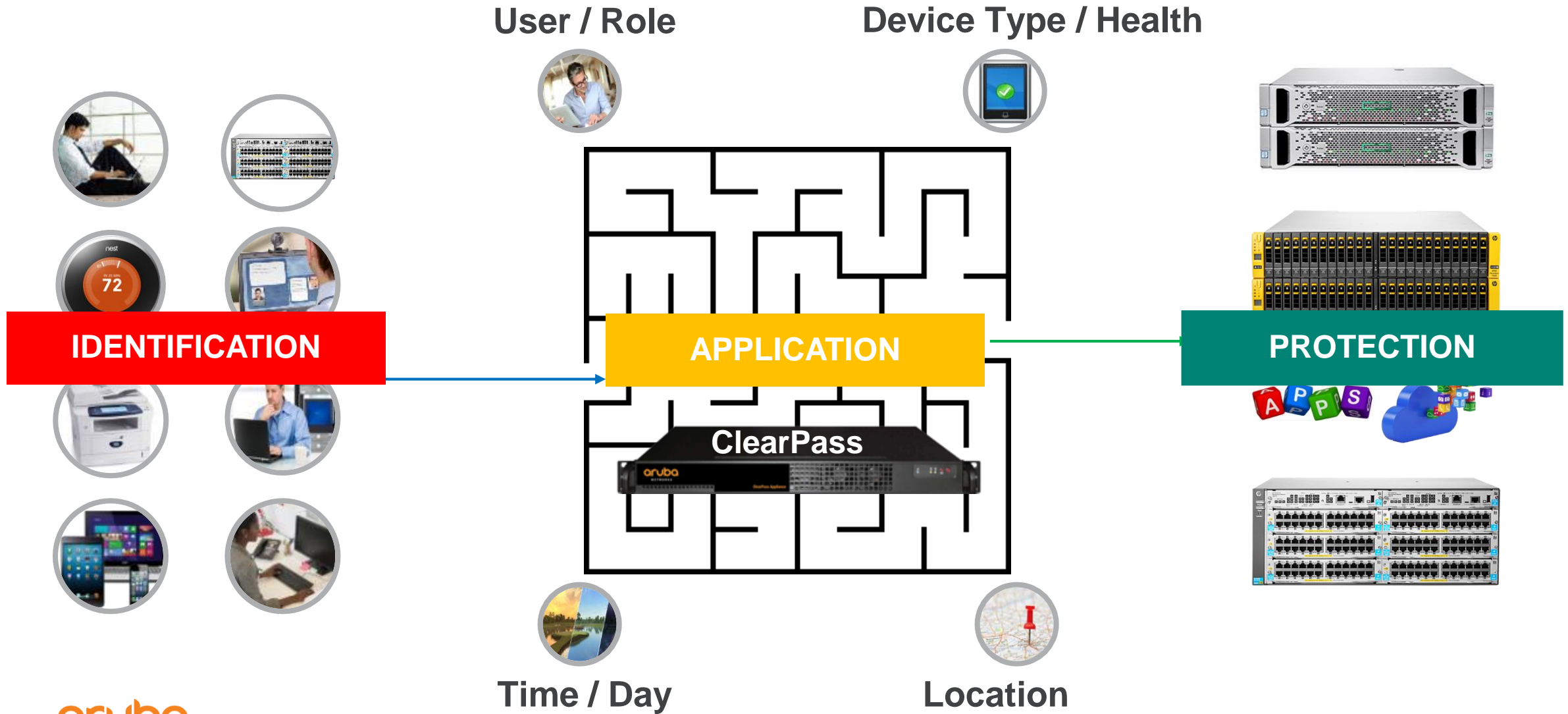
- DHCP Fingerprinting (MAC OUI & Certain Options)
 - DHCP Relay or SPAN
- HTTP User-Agent
 - AOS IF-MAP Interface, Guest and Onboard Workflows
- TCP Fingerprinting (SYN, SYN/ACK)
 - SPAN
- ARP
 - SPAN
- Cisco Device Sensor
- Netflow/IPFIX
 - Identifies open ports

Active Profiling

- Windows Management Instrumentation (WMI)
- Nmap
- MDM/EMM
- SSH
- ARP Table
 - SNMP
- MAC/Interface Table
 - SNMP
- CDP/LLDP Table
 - SNMP

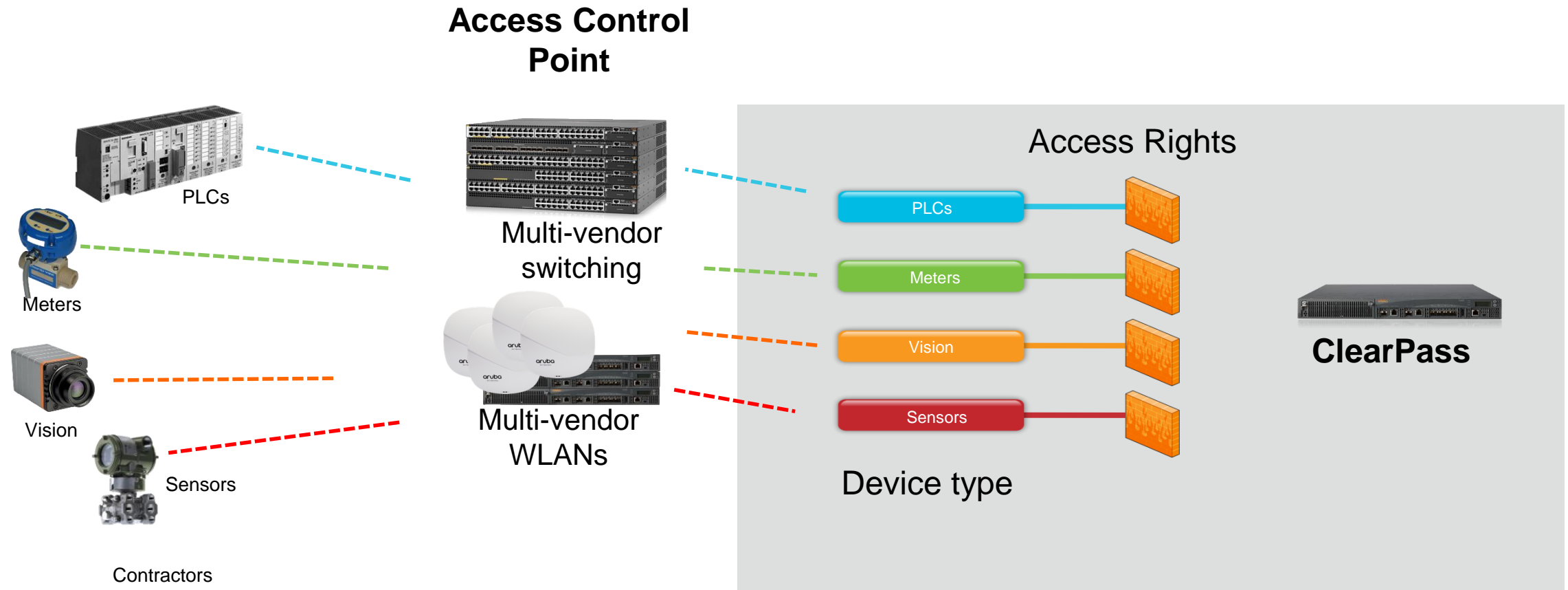


Device based security strategy



IoT

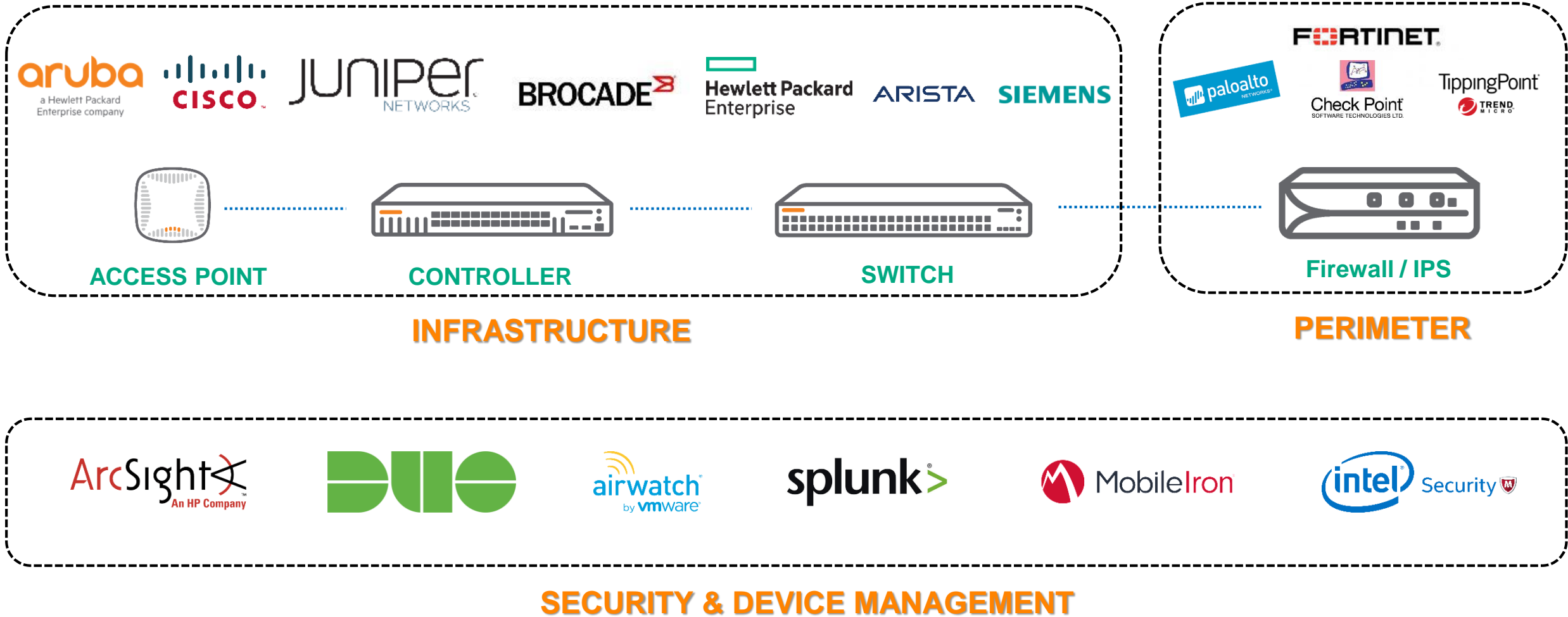
For IoT it's all about visibility



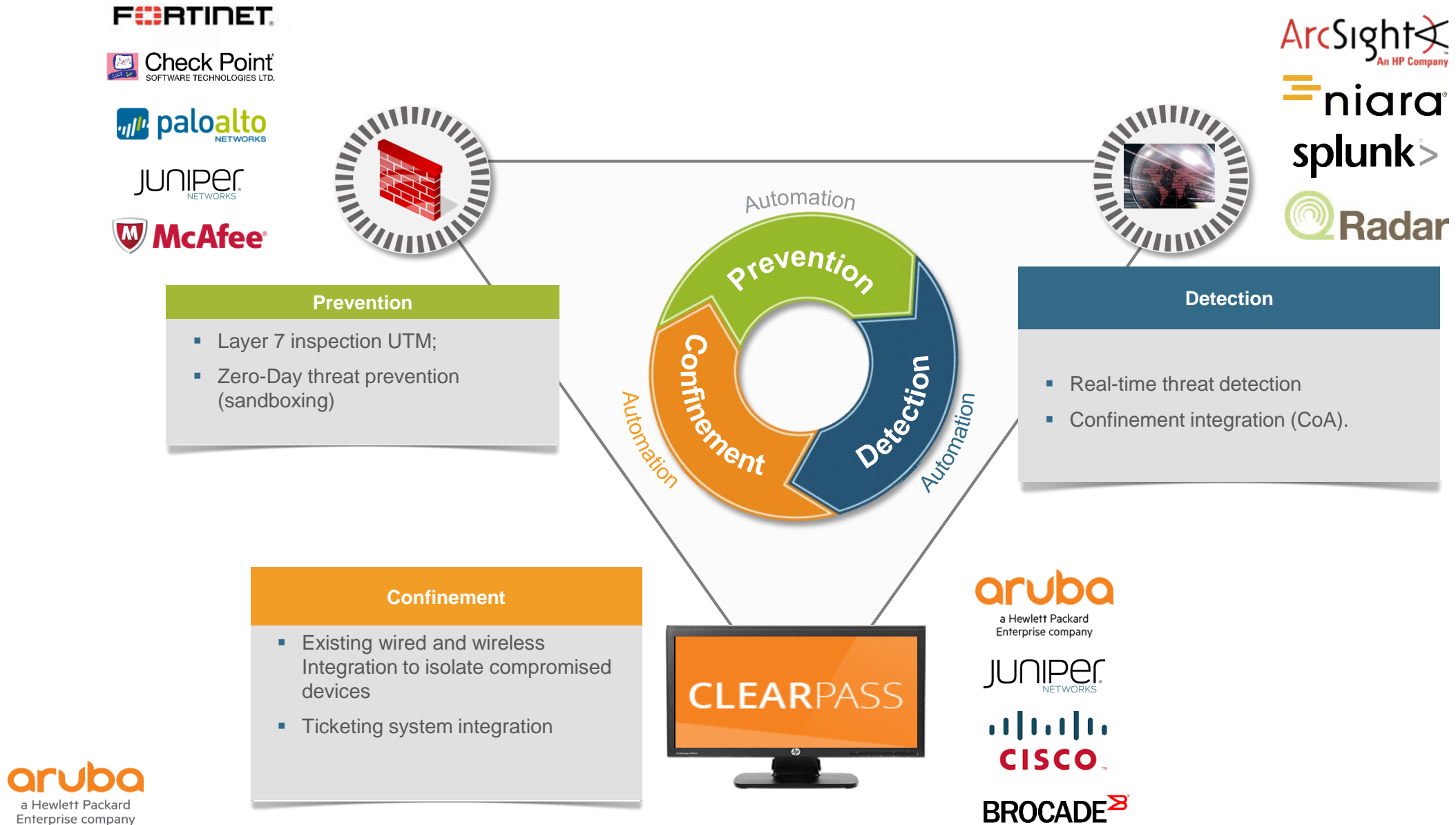
End-to-End coordinated access control



ClearPass Exchange – Inter-Operability



Automated Access Control: Instant Security Enforcement



Automated Access Control: User Entity Behavior Analytics

4 Machine Learning

1 Device/User Authentication

3 Device Context



2 Device/User Profiling

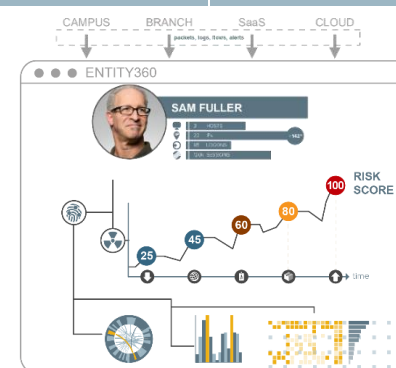
6 Actions

7 Real-time access policies modifications

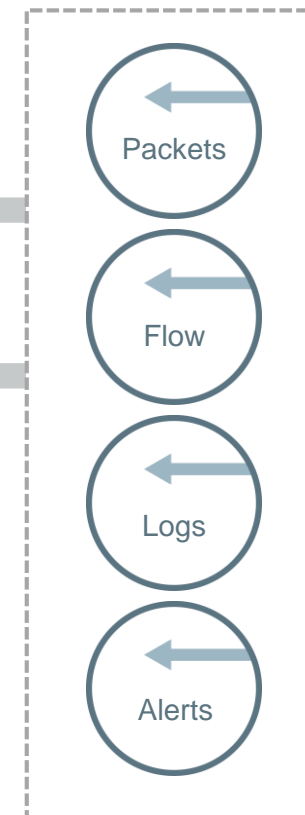
- Real-time quarantine
- Bandwidth contract
- Black list
- Dynamic role change



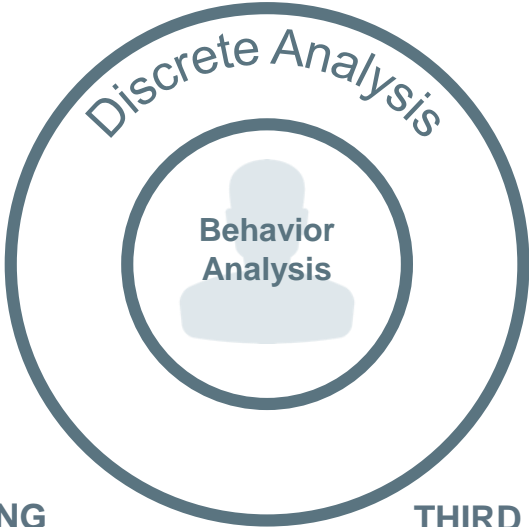
UEBA



5 Risk Profile



Finding the malicious event among all anomalies

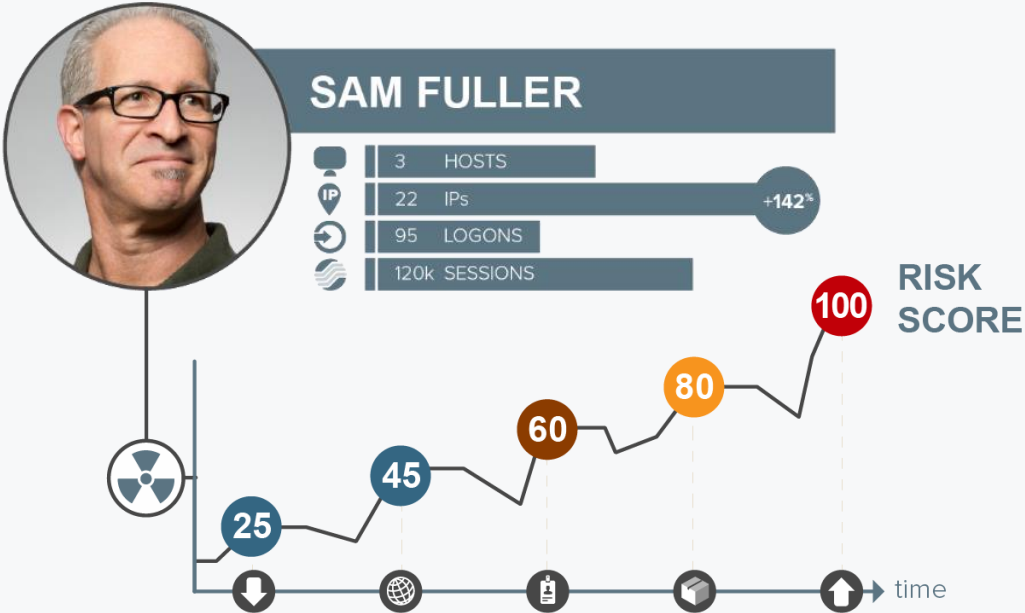
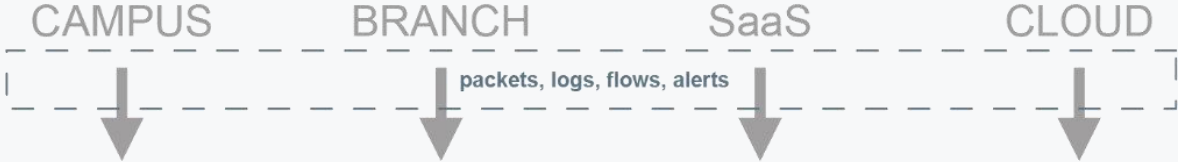


MACHINE LEARNING







SUPERVISED
NON-SUPERVISED

THIRD PARTIES ALERTS

DLP
Sandbox
Firewalls
STIX
Rules
Etc.



Portfolio 802.11ac wave 2

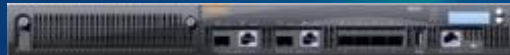
	Model		Performance	Density	Location type
	300 Series	Indoor	Moderate	Moderate (50 active devices)	Classes
	310 Series	Indoor	High	Moderate (75 active devices)	Administrative Zones
	320 Series	Indoor	High	High (125 active devices)	Cafeterias Amphitheaters
	340 Series	Indoor	Extreme	Very High (150+ active devices)	Amphitheaters
	360 Series	Outdoor	High	Moderate (50 active devices)	Outdoor
	370 Series	Outdoor	Extreme	High (125 active devices)	Outdoor

ARUBA CONTROLLERS

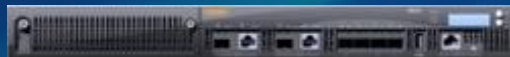
SCALE FROM BRANCH TO CAMPUS, APPLIANCE TO VM



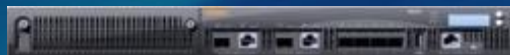
7280 



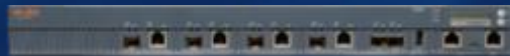
7240



7220



7210



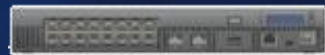
7205



7030



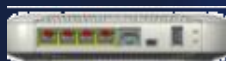
7024 (24 PoE+)



7010 (12 PoE+)



VMC-TACT (8/16 AP)



7005/7008 (16 AP)



Large Campus

High performance, redundant power/fan
512 – 2048 APs, up to 80Gbps throughput



Midsize Campus

High performance, fixed form factor
Up to 256 APs, 12 Gbps throughput



Large branch

Up to 64 APs and up to 8Gbps throughput



Midsize branch with integrated switch

12 or 24 ports of PoE+ for unified branches
Up to 32 APs



Small branch

Virtualized or PoE-powered controllers

Branch
Campus

Portfolio HPE Aruba Switches

ArubaOS-CX

Core/DC



8320



8400

Aggregation



Aruba 3810



Aruba 5400R

Access



Aruba 2930F



Aruba 2930M



Aruba 2540



Aruba 2530

Rightsized Switching with **the lowest TCO**

Gigabit Access

With POE+



HPE Aruba 2930

Multi-Gigabit Access

With SmartRate technology



HPE Aruba 5400R zl2

Lifetime warranty
Lifetime firmware upgrades
Lifetime support

Aruba allows Flexible deployment

WITHOUT CONTROLLER USING
ARUBA INSTANT



Simplified Sites
using embedded controller

Network Management Platform

MOBILITY CONTROLLER



Centralized encryption with
advanced services

Unique Policy Platform

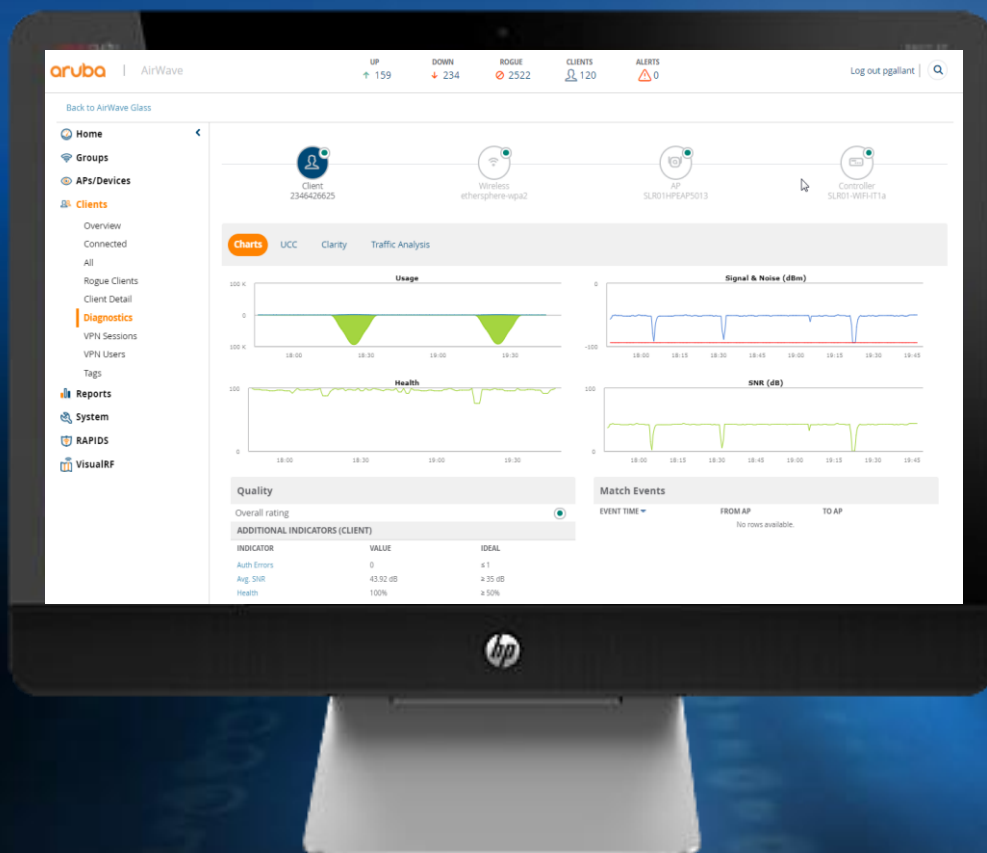
Unique Architecture for all sites

Double personality Access Points

Enterprise class

Complete visibility with **Aruba AirWave**

Unified heterogeneous network management



End to end Client
to network visibility

Visual RF

Historical Reports

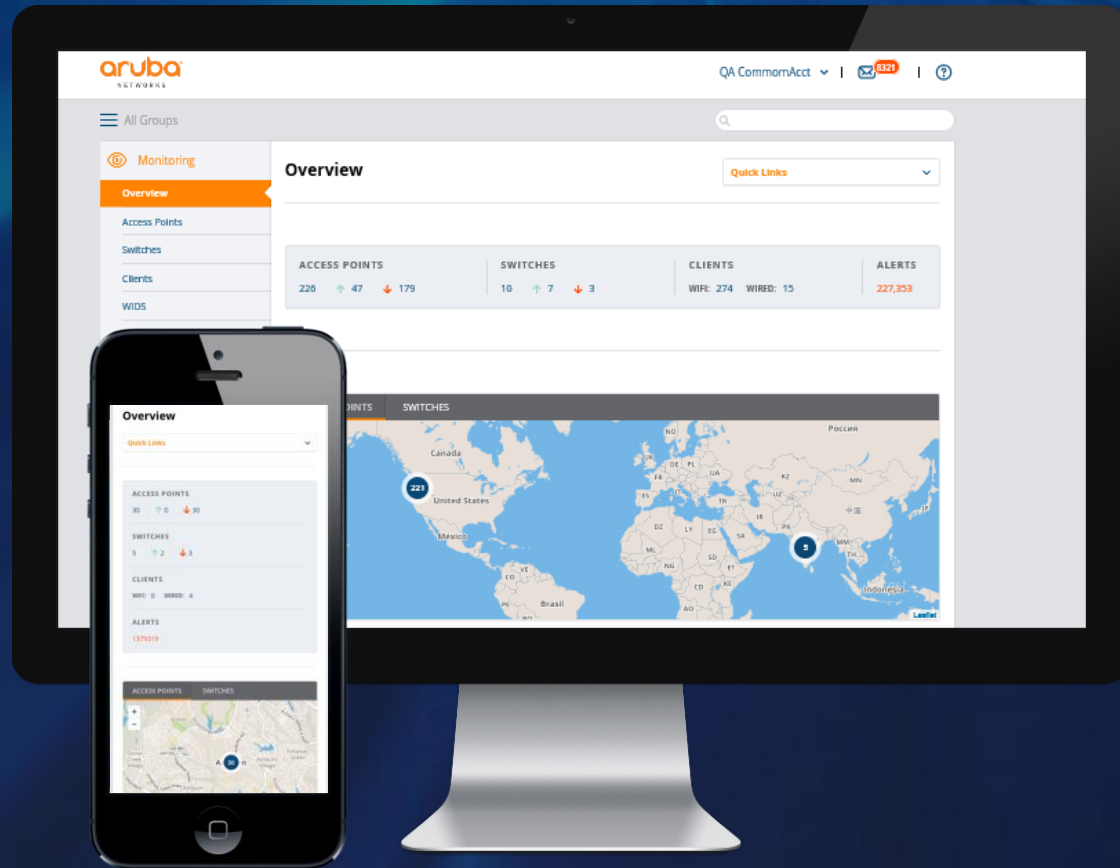
Automatic Configuration
Configurations management

Online monitoring: critical
services RADIUS,
DHCP, DNS

Predictive Wi-Fi coverage
Visualization of Wi-Fi
problems

Aruba Central

Cloud visibility and management



CENTRALIZED MANAGEMENT
Aruba Instant + Switches + SD-WAN

ENTERPRISE CLASS
High Availability, Reports, Guest Access,
Zero-Touch Provisioning

AFFORDABLE
Subscription 1/3/5 years, Technical Support
included with Central

THE ARUBA DIFFERENCE

“Customer First, Customer Last” Culture



**Trusted
Innovators**



**Thousands of
Partners**

Mobile First Architecture



**Unified approach and
architecture for all
deployments**



**Open
multi-vendor**

Complete Portfolio



**Enterprise Class
Leader**
integrated wired and
wireless



Security First
Complete policy engine,
behavior analysis and
dynamic segmentation



**Complete
Indoor
location
Solution**

**Global Reach and Go-to-Market,
Fortune 100 Customer Base backed by**


**Hewlett Packard
Enterprise**



**Become a
mobility Hero
with
Aruba!**



Thank you!