atmosphere '22
BELGIUM

ArubaOS 10

Aruba Central

Ken Van Campenhout
Aruba BeLux – Technical enablement
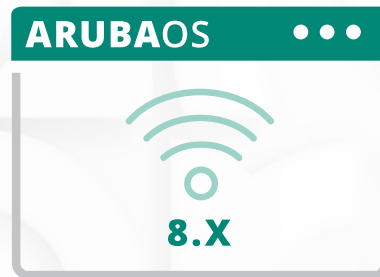
29 September 2022

aruba
a Hewlett Packard
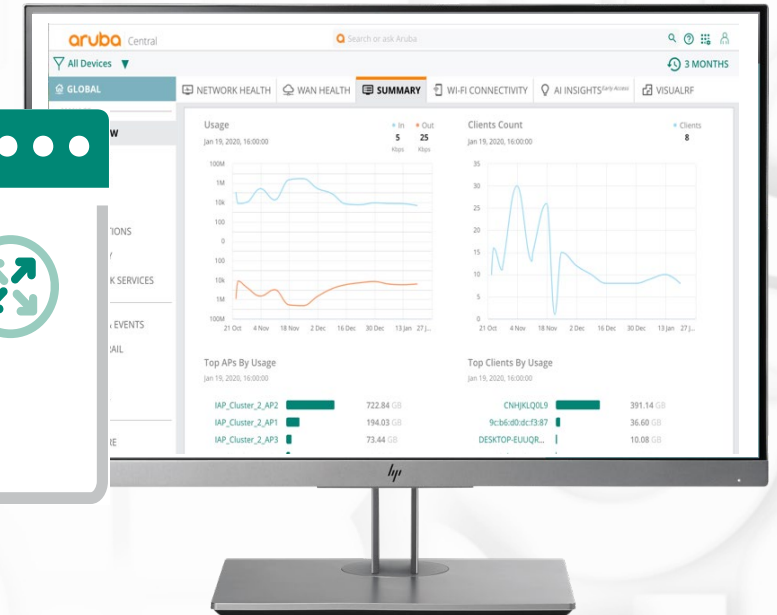Enterprise company

Cloud-native ArubaOS 10

Aruba Instant (Controller-less WLANs)

INSTANT
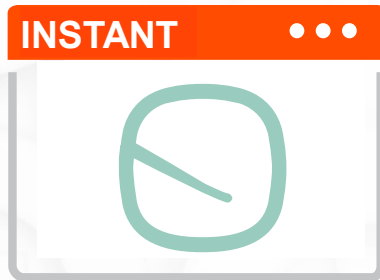
Mobility Conductor and Controller-based WLANs

ARUBAOS

8.X

Branch and Headend Gateways

SD-BRANCH

GATEWAY

CENTRAL

AOS10

Where are we in the AOS10 journey

ArubaOS 10.3.1
Central 2.5.5

General Availability
Readiness

Early Access

ArubaOS 10.3
Central 2.5.4

Early Access

ArubaOS 10.2 (2021)
Central 2.5.3

ArubaOS 10.1 (2020)
Central 2.5.2

Full SD-Branch + AOS 10
GreenLake Integration
Improved Workflows
Hardened Services

SD-Branch + AOS 10
Microbranch Phase 1
Improved Workflows

Introduction of AI Insights & Assist

Dynamic Segmentation Support
for Wired Users

More Advanced Services such as
ClientMatch, MultiZone & Secure
Mesh

New Licensing
SD-Branch + AOS 10 PoC
Aruba AirSlice
MPSK & MPSK-Local
Cloud Guest Support (Overlay)

Underlay Scale: 500 AP / 5K Clients
Mixed Scale: 6K AP / 60K Clients

Increased AP/Client Gateway Scale
Underlay Scale: 2K AP / 20K Clients
Mixed Scale: 20K AP / 250K Clients
Microbranch: 10K AP
SD-Branch: 16K Gateways

Journey to GA has been SUCCESSFUL

4 YEARS

R&D DEVELOPMENT EFFORT

2 YEARS

WORKING WITH CUSTOMERS & PARTNERS

250+ PARTICIPANTS

HAVE WORKED WITH US ON EARLY ACCESS

SCALABLE

AP ONLY: 2,000 APs
WITH GATEWAY: 20,000 APs
MICROBRANCH: 10,000 AP
SD-BRANCH: 16,000 GATEWAYS

What ArubaOS 10 means for you

Simplifying Operations and Enhancing User Experience

SCALABILITY
Scale to Meet Enterprise Needs

CLOUD-NATIVE
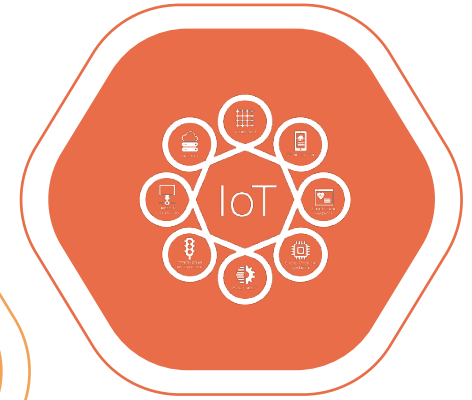Better align with Enterprise Cloud Strategy

UNIFIED MANAGEMENT
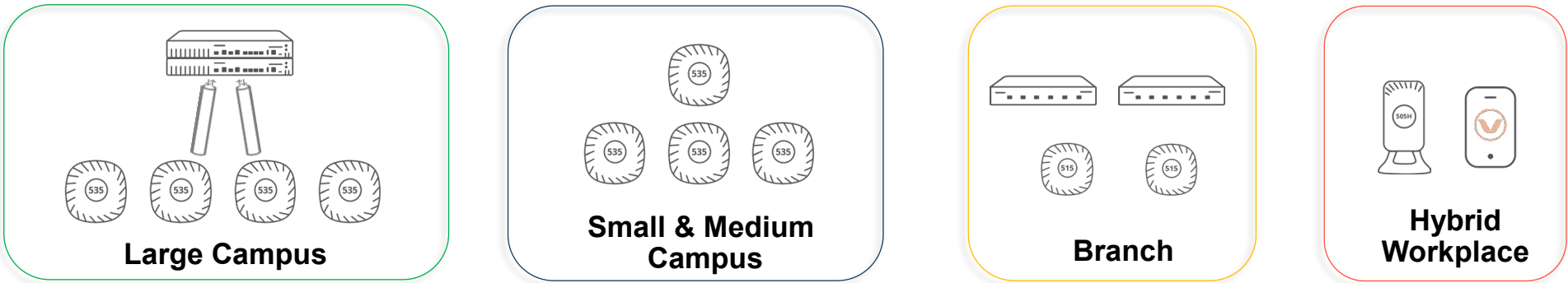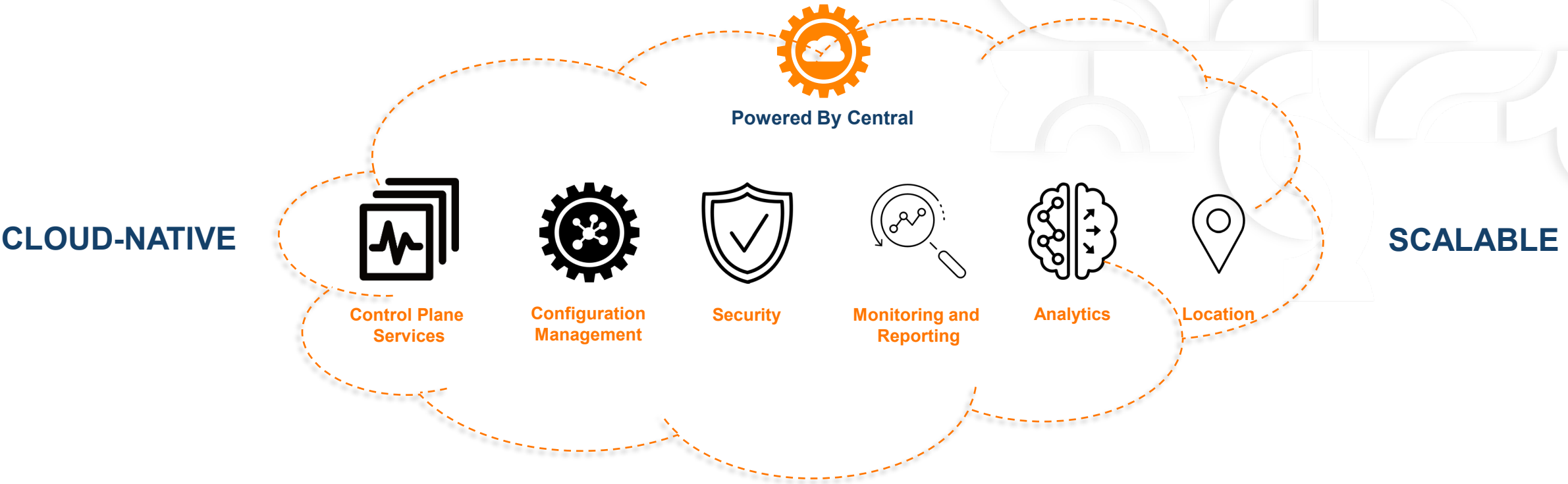Unified Wi-Fi and SD-WAN Architecture

REMOTE CONNECTIVITY
Simplifies how IT deploys, secures, and monitors connectivity for the hybrid workforce

IoT ADOPTION
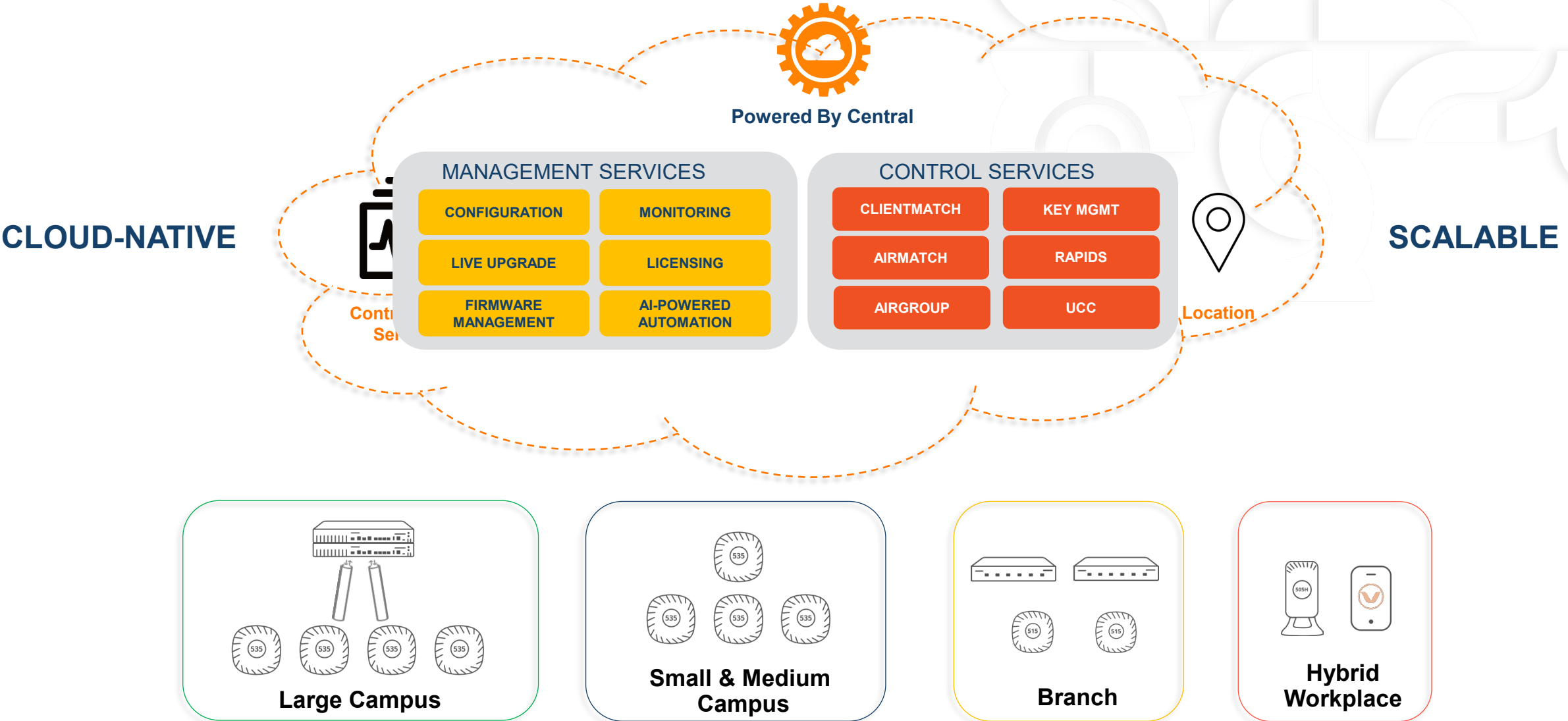Allows customers to leverage APs as an IoT platform

ArubaOS 10 Overview

Powered By Central

CLOUD-NATIVE

SCALABLE

Control Plane Services

Configuration Management

Security

Monitoring and Reporting

Analytics

Location

Large Campus

Small & Medium Campus

Branch

Hybrid Workplace

UNIFIED ARCHITECTURE FOR REMOTE, BRANCH, CAMPUS AND HYBRID WORKPLACE

ArubaOS 10 Overview

Powered By Central

CLOUD-NATIVE

SCALABLE

MANAGEMENT SERVICES

CONFIGURATION	MONITORING
LIVE UPGRADE	LICENSING
FIRMWARE MANAGEMENT	AI-POWERED AUTOMATION

CONTROL SERVICES

CLIENTMATCH	KEY MGMT
AIRMATCH	RAPIDS
AIRGROUP	UCC

Location

Large Campus

Small & Medium Campus

Branch

Hybrid Workplace

UNIFIED ARCHITECTURE FOR REMOTE, BRANCH, CAMPUS AND HYBRID WORKPLACE

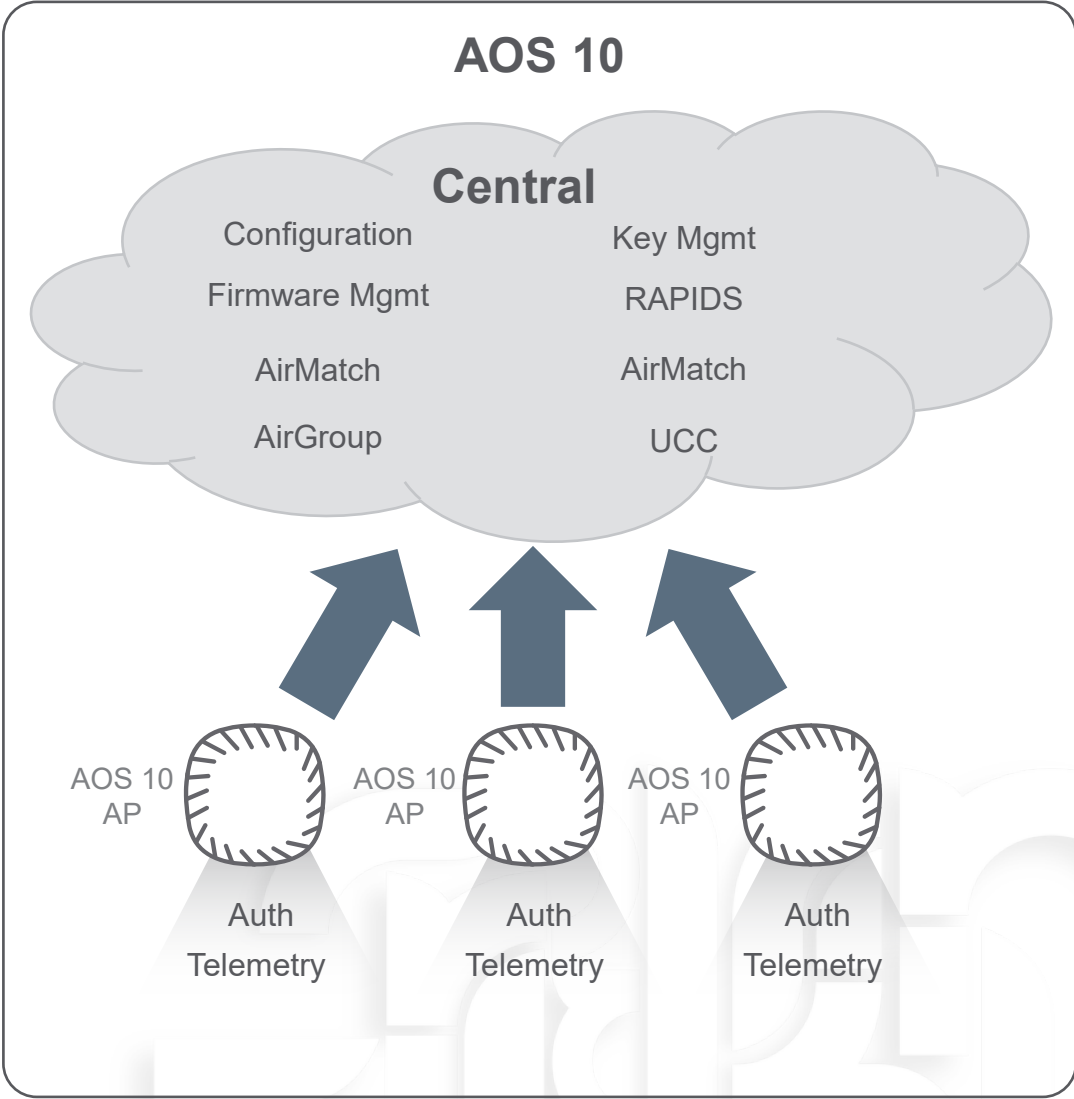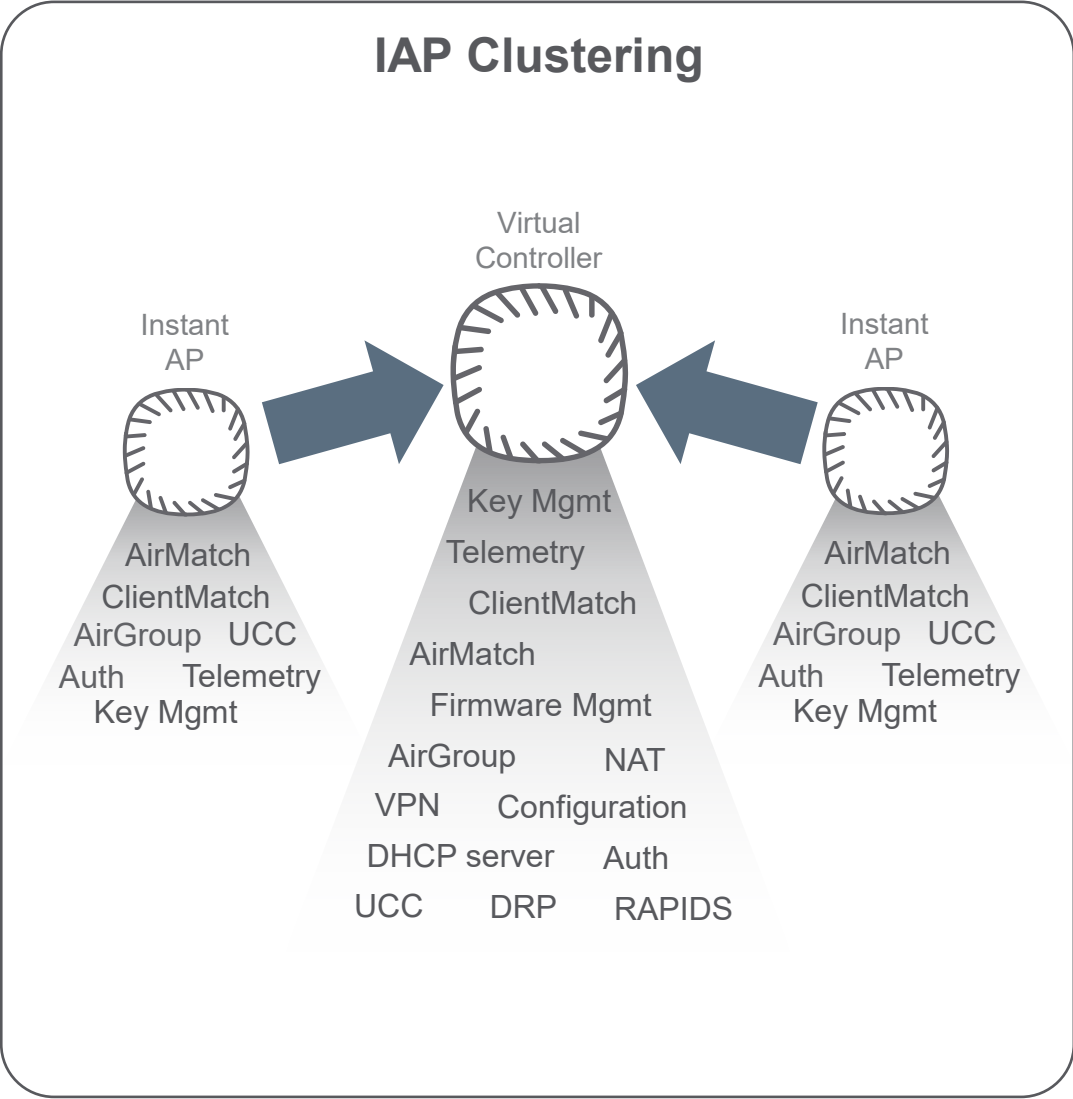# AOS 10 Hardware Compatibility

	1xx/2xx Series APs	3xx* Series APs	5xx Series APs	630 Series (6E) AP	650 Series (6E) AP	7xxx Series Gateway	9004 Series Gateway	9012 Series Gateway	9240 Series Gateway
AOS 10.3 (DEC)		Yes	Yes			Yes	Yes	Yes	
AOS 10.3.1 GA (APRIL)		Yes	Yes			Yes	Yes	Yes	
AOS 10.4		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

* Early AP-32x Campus AP are not supported

AOS 10 in the Campus

Instant AP Compared to AOS 10

IAP Clustering

Instant AP

Virtual Controller

Instant AP

AirMatch
ClientMatch
AirGroup   UCC
Auth   Telemetry
Key Mgmt

Key Mgmt
Telemetry
ClientMatch
AirMatch
Firmware Mgmt
AirGroup   NAT
VPN   Configuration
DHCP server   Auth
UCC   DRP   RAPIDS

AirMatch
ClientMatch
AirGroup   UCC
Auth   Telemetry
Key Mgmt

AOS 10

Central

Configuration   Key Mgmt

Firmware Mgmt   RAPIDS

AirMatch   AirMatch

AirGroup   UCC

AOS 10 AP   AOS 10 AP   AOS 10 AP

Auth   Auth   Auth
Telemetry   Telemetry   Telemetry

AOS 8 Compared to AOS 10
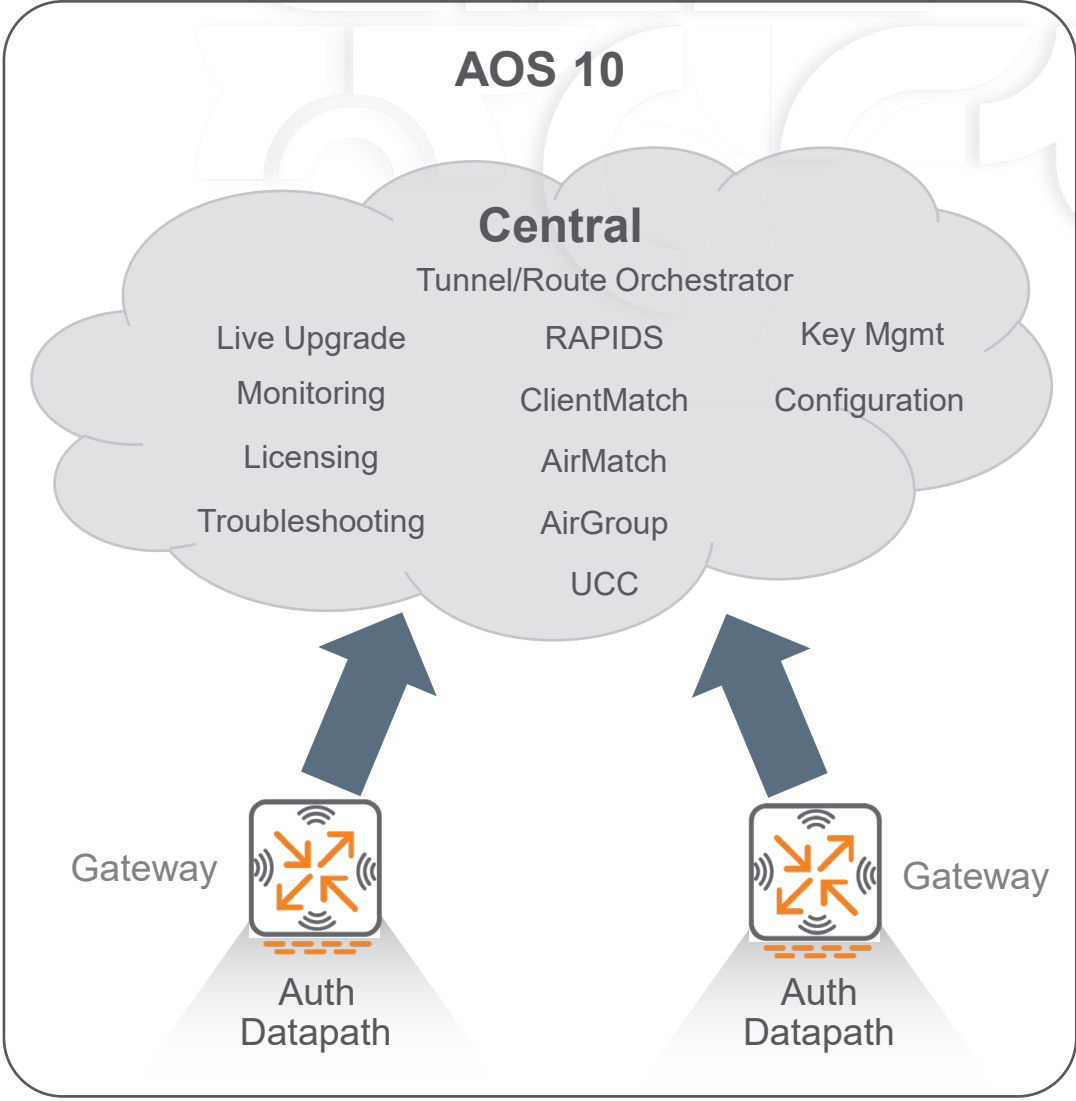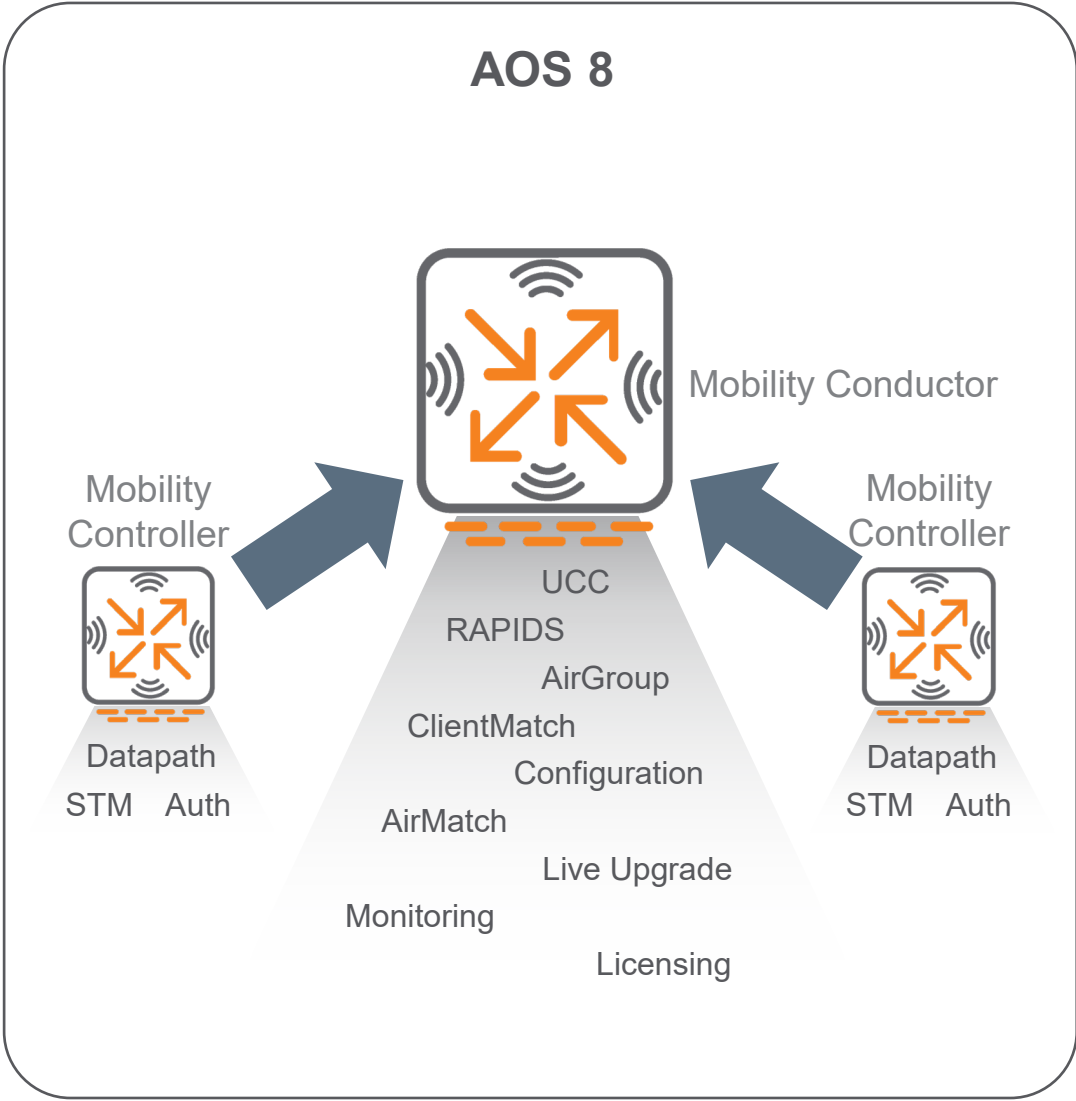
AOS 10 Clustered

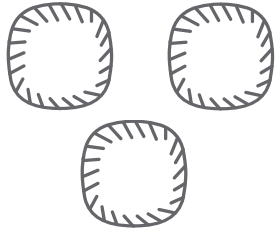## What are the big changes?

- APs with orchestrated tunnels to GW Clusters
  - No more CAP vs IAP > AP
- UBT on AOS-SW / AOS-CX to GW Cluster

How does it help me?

- Cleaner/simpler deployment
  - No more IAP connected to PBT ports
  - No more stateful-dot1X to keep track of user-role
- More flexibility
  - Mixed mode (tunneled/bridged) SSIDs
  - User Based Tunnels (tunnel/bridge roles)
- Increased uptime
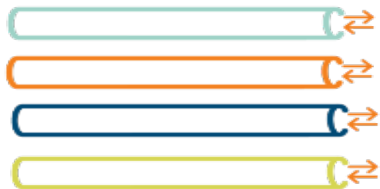 - VIP uses cluster keepalives > Faster failover (<1s)
  - Live Upgrades!

Contractor   IoT   BYOD

Aruba Central Management and Control

Corporate

Switches

APs
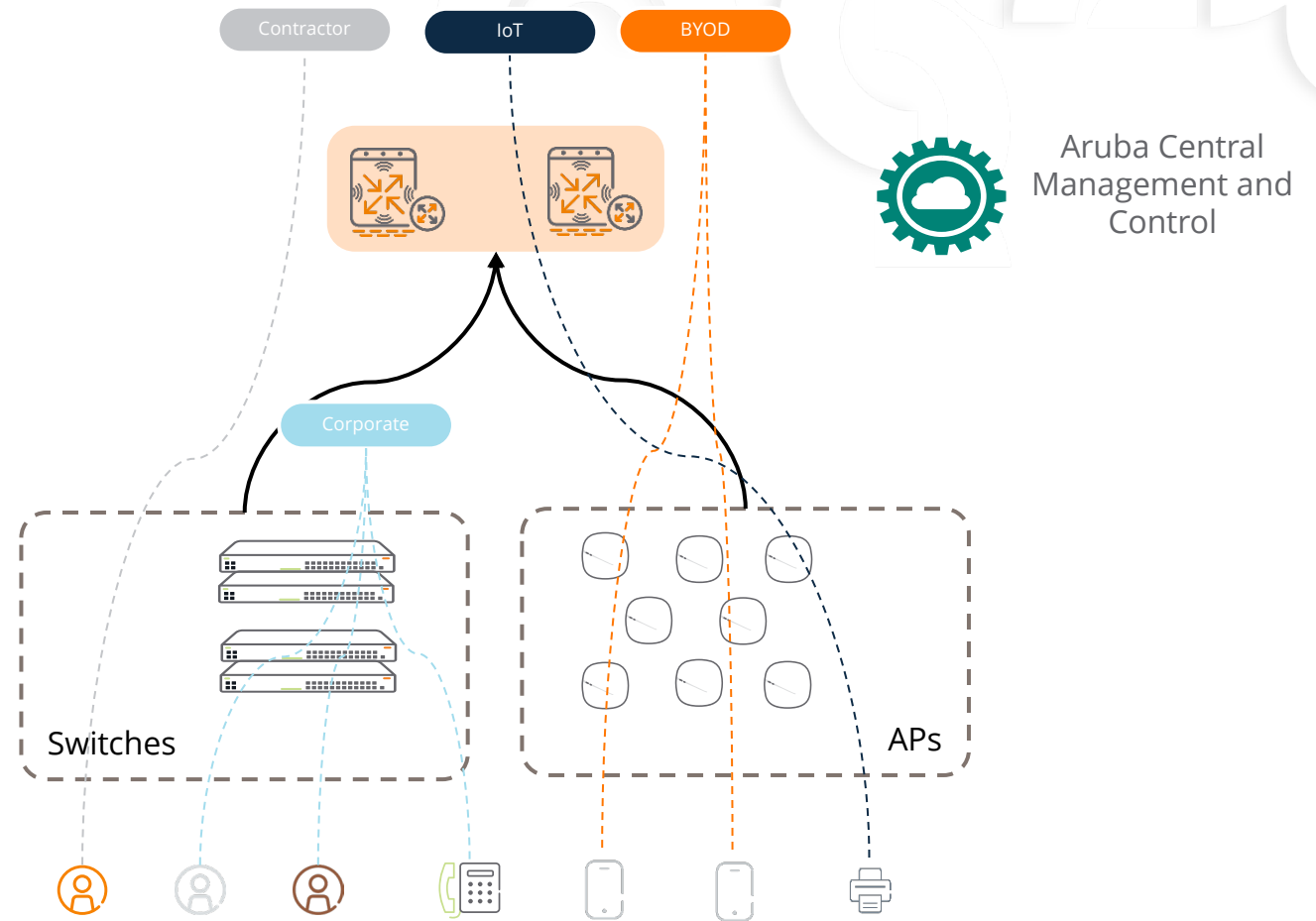
Cluster Scaling

- 10,000 Max APs

- 12 Node Max in Cluster

- 100,000 Max Clients

- +98,000 Max Tunnels

AOS10 in the Microbranch

AOS 10 Microbranch

AP behaving like a mini-Branch Gateway

Microbranch enhancements

– Orchestrated tunnels and routes (hub & spoke)
  – **VPNC Clustering (APs tunnel to clusters!)**

– PBR for local-breakout (incl. 1st packet classif.)

– GW-Like WAN Monitoring

– Cloud Security Orchestration (Zscaler)

DC

Cloud Orchestration

SD-WAN Orchestration

ISP1

ISP2

Enhanced Quality of Experience
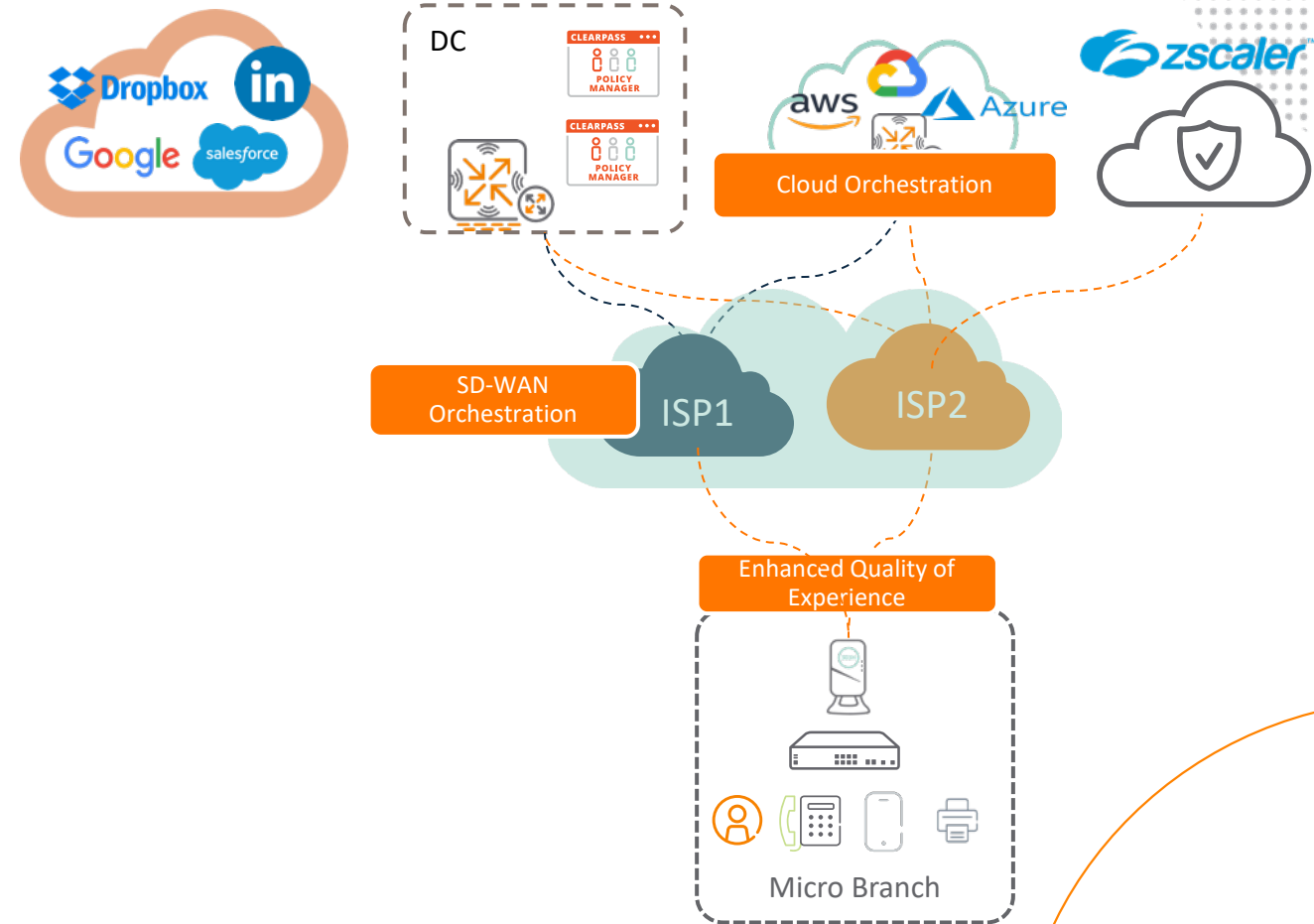
Micro Branch

# Orchestrated Micro-Branch

L2 Mode

Modern-day RAP

– Orchestrated tunnels to all members in cluster(s)

– Behaves like modern RAP > L2 extension of a DC VLAN

– Traffic is forwarded through the tunnel or src-NAT based on PBR policy

– VPNC Clustering

  – Client-based load-balancing

  – Live-upgrades
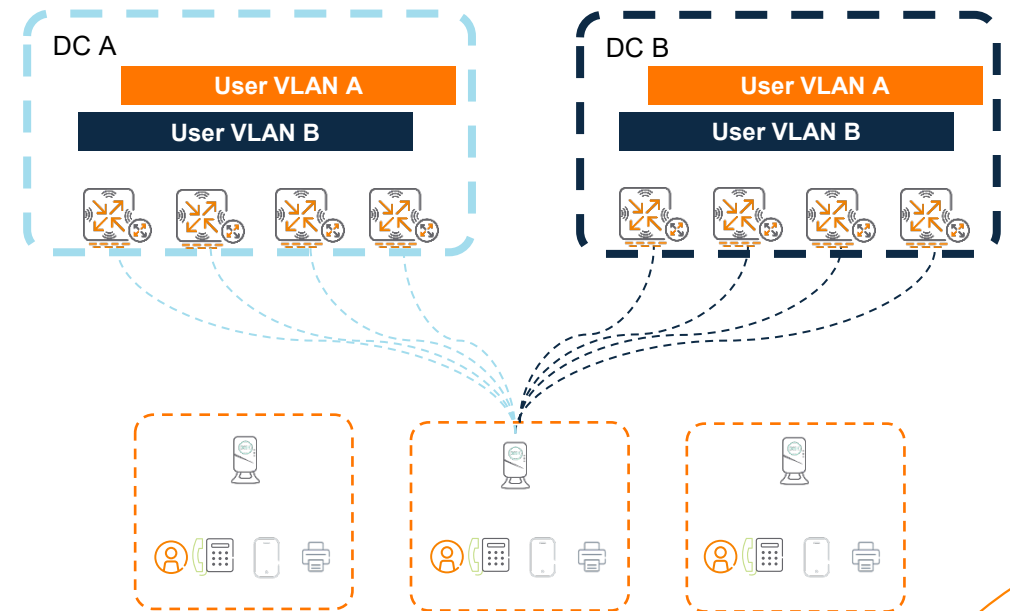
Orchestrated Microbranch!

Layer 3 Mode

Route Orchestrator

Global DCs

DC Region A

DC Region B

Micro-Branch Subnets
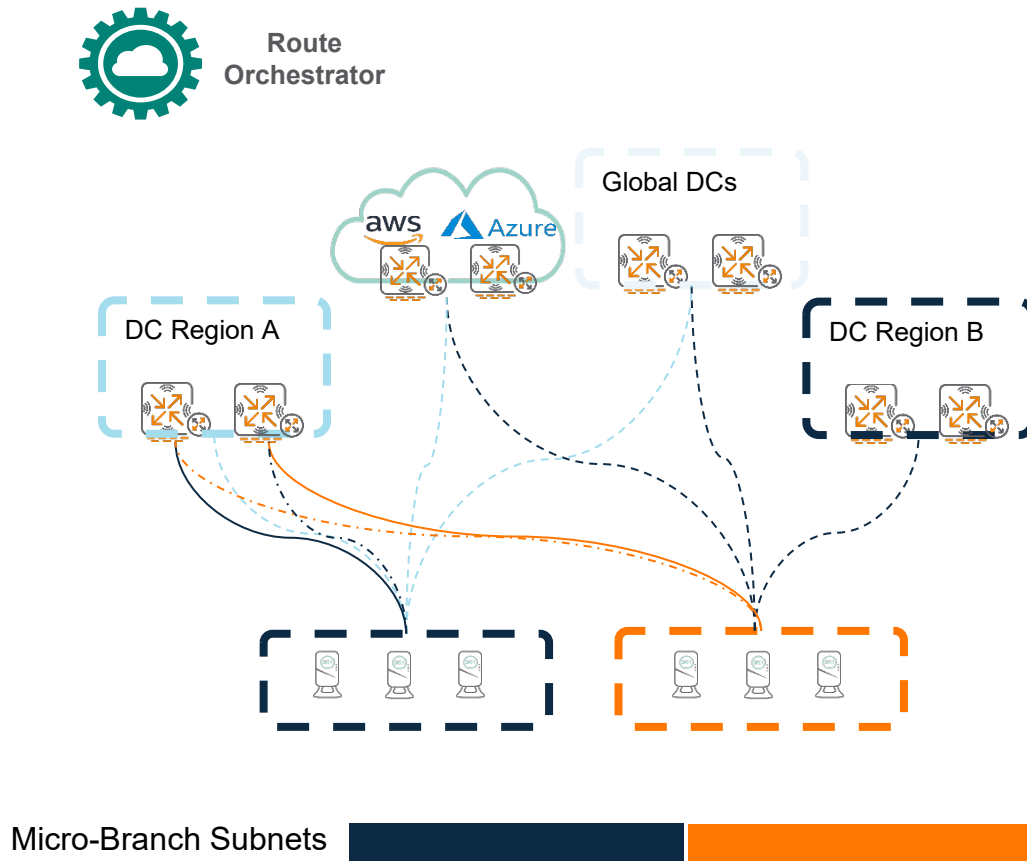
AP behaves like a mini SD-Branch GW

– AP behaves like a miniature SD-Branch Gateway, with route and tunnel orchestration, PBR, etc.

– Clusters in every DC. Up to 5 Active DCs

– All tunnels are active. Traffic is forwarded based on routing cost (coming from ORO)

– **The AP can only support 500 routes…Summarize!!!**

– **VPNC Clustering**

  – AP-based load-balancing by adjusting routing cost between VPNCs in the same cluster (ORO does this automagically)

  – Live-upgrades

  – **Remember to summarize**. An AP does not have the routing table size of a 9004 (only 500 routes). Options:

    – **DC Aggregate**

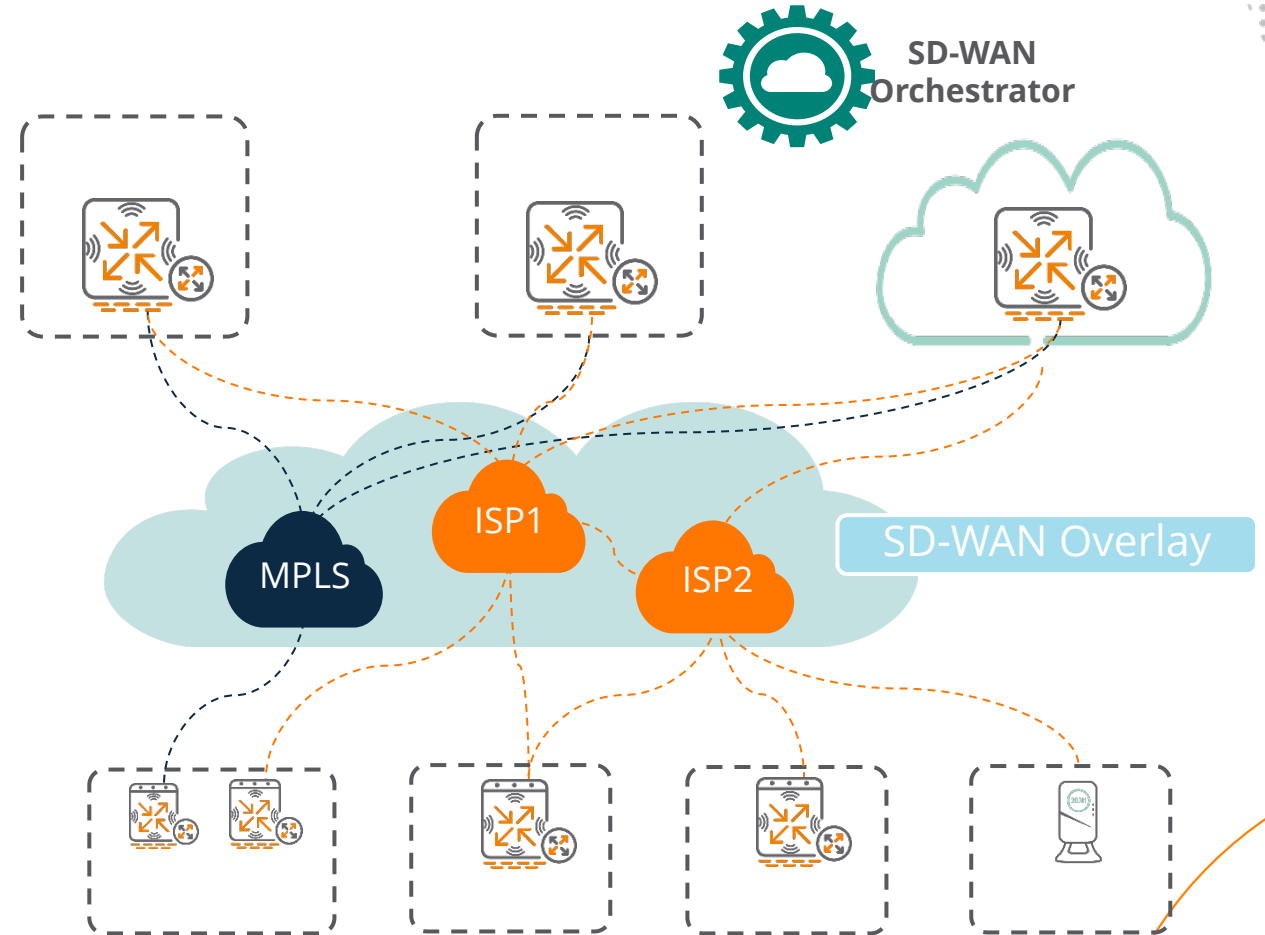   – **Branch Aggregate**

AOS10 in the Branch

Security

SD-Branch = SD-LAN + SD-WAN

SD-WAN Orchestration

Route and Tunnel Orchestrator for seamless connectivity

- Centralized, cloud-native control plane
  - Centralized key management (with tunnel survivability)
  - **Horizontally scalable** architecture
- Policy driven SD-WAN overlay
  - Auto-discovers WAN links across the network
  - **Orchestrates tunnels** based on configured topology
  - **Orchestrates routes** across the entire SD-WAN network
- Multiple Topologies
  - Hub & Spoke
  - Hub MESH
  - **Branch MESH**
  - **Microbranch**

SD-WAN Orchestrator

MPLS

ISP1

ISP2

SD-WAN Overlay

Cloud Connectivity

Make the Cloud part of SD-WAN

1 Discover Cloud Environment

2 Orchestrate vGWs and connectivity

- Pick VM from Market
- Create ENIs and Subnets
- Request Elastic IP
- Spin up VM
- Handle Subscription
- Connect to VPC subnets
- Handle HA
- ...
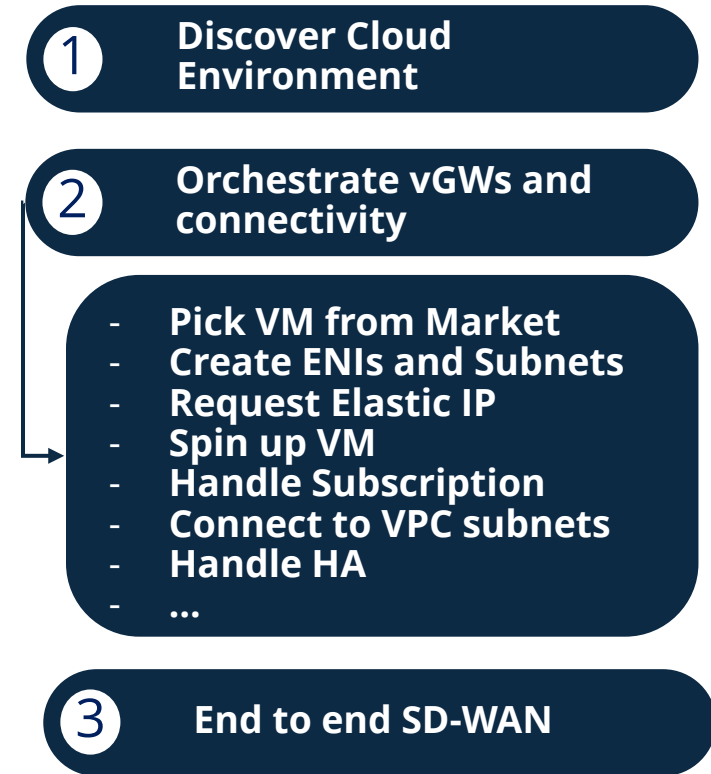
3 End to end SD-WAN

AOS 10 SD-Branch

– SD-Branch, with SD-WAN and SD-LAN converging into the same gateway

– End-to-end role-based security with integrated UTM

– All operations (management, control, AI, etc) delivered as-a-Service from Aruba Central

QoE Optimization (DPS, FEC, SaaS Express...)

Route & Tunnel Orchestration

UTM, CPDI Integration

Role-Based Security

AAA Survivability

Dynamic Segmentation (PBT)

Branch Gateway Clustering

Live Upgrades

Dynamic Segmentation (UBT)

Orchestrated WLAN Overlay

AirMatch, AirSlice, Client Match, AirGroup, UCC...
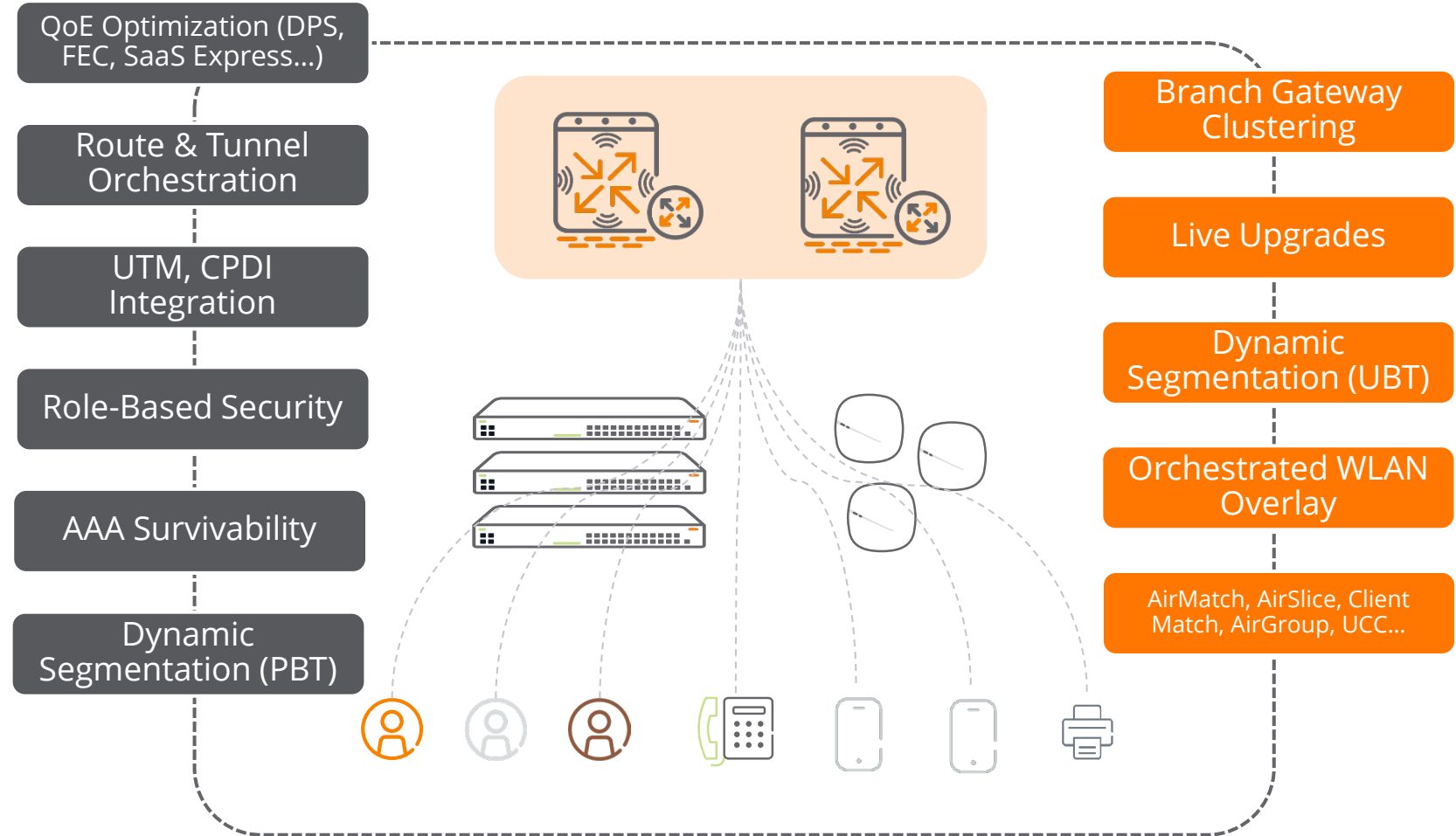
Why Dynamic Segmentation in SD-Branch

Simplify branch security!

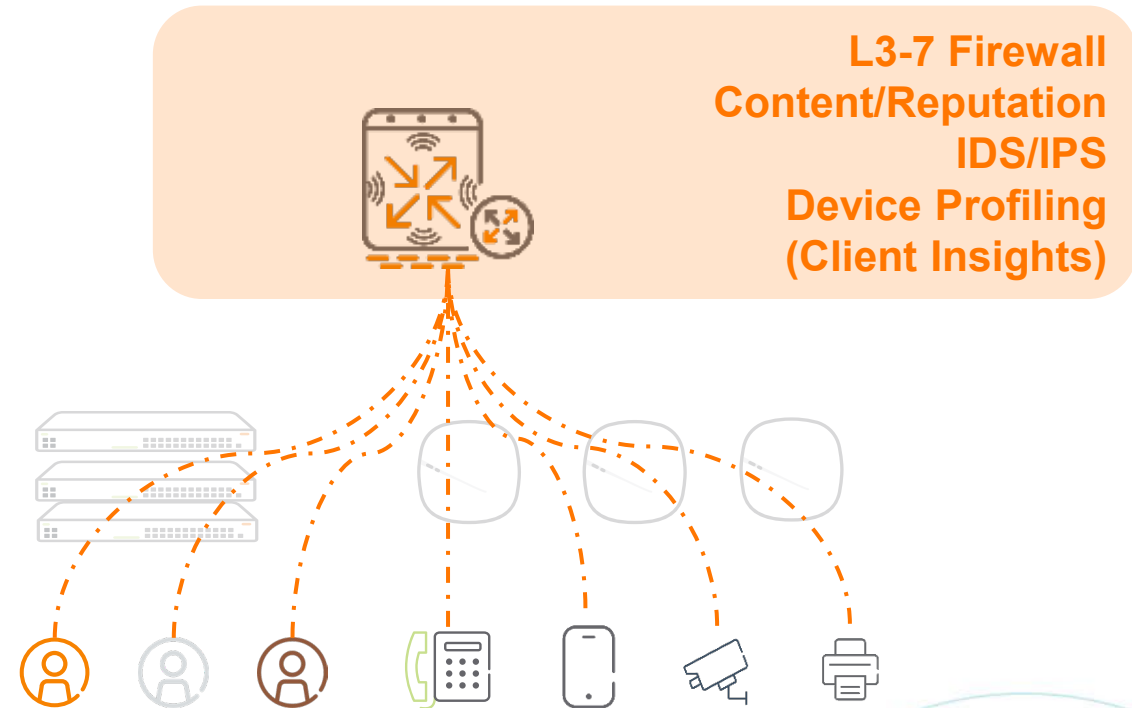**Role-assignment based on AAA and device Profiling**
through DPI-based discovery and profiling of devices

Secure all traffic
role-based security policies can be applied to east-west traffic and north—south traffic
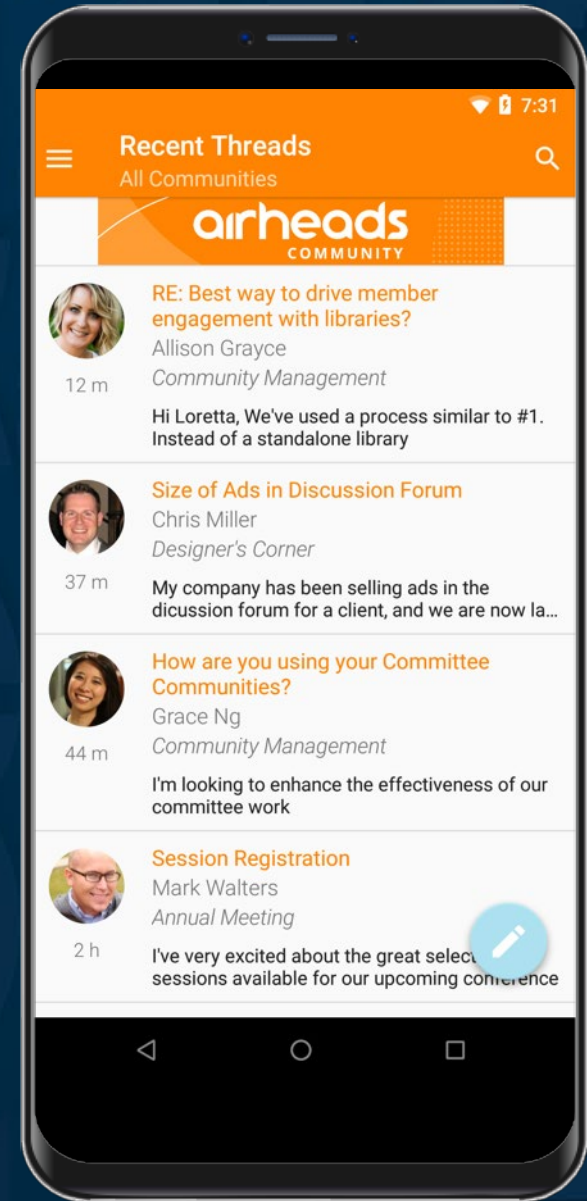
Simplify the network
as you no longer need VLANs to segment devices

L3-7 Firewall
Content/Reputation
IDS/IPS
Device Profiling
(Client Insights)

airheads

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All Communities

airheads
COMMUNITY

RE: Best way to drive member engagement with libraries?
Allison Grayce
Community Management

12 m　Hi Loretta, We've used a process similar to #1. Instead of a standalone library

Size of Ads in Discussion Forum
Chris Miller
Designer's Corner

37 m　My company has been selling ads in the dicussion forum for a client, and we are now la...

How are you using your Committee Communities?
Grace Ng
Community Management

44 m　I'm looking to enhance the effectiveness of our committee work

Session Registration
Mark Walters
Annual Meeting

2 h　I've very excited about the great selec... sessions available for our upcoming conference