
aruba
a Hewlett Packard
Enterprise company
SD-Branch in THE
Wild
Mitchell Pompe

THE EXPERIENCE EDGE

The places in a **mobile-first** world, **enabled by IoT**.
Where people work, stay, visit, and go.
Where experiences are becoming smart and digital.


WORKPLACES


HOTELS


STORES


SCHOOLS


CARE FACILITIES


FACTORIES

aruba
a Hewlett Packard Enterprise company

Challenges with Current Branch Architectures

LAN Challenges

- Complexity caused by increasing number of devices, VLAN proliferation
- End points going mobile
- Poor visibility into clients/devices
- Lack of authentication of clients/devices
- Lack of common policy for users connecting to network via wired or wireless

WAN Challenges

- Limited capacity & long setup times for MPLS
- Lack of control and visibility into WAN traffic
- Complex management of the WAN and routing policy
- More SaaS traffic (O365, Box, SFDC, …) directed over Internet.

  Lack security measures and control to safeguard the network

Operational Challenges

- Multiple management platforms, Multiple operating models, Multiple vendors, Policy is distributed

Goal: Solve the Branch problem, not just the WAN

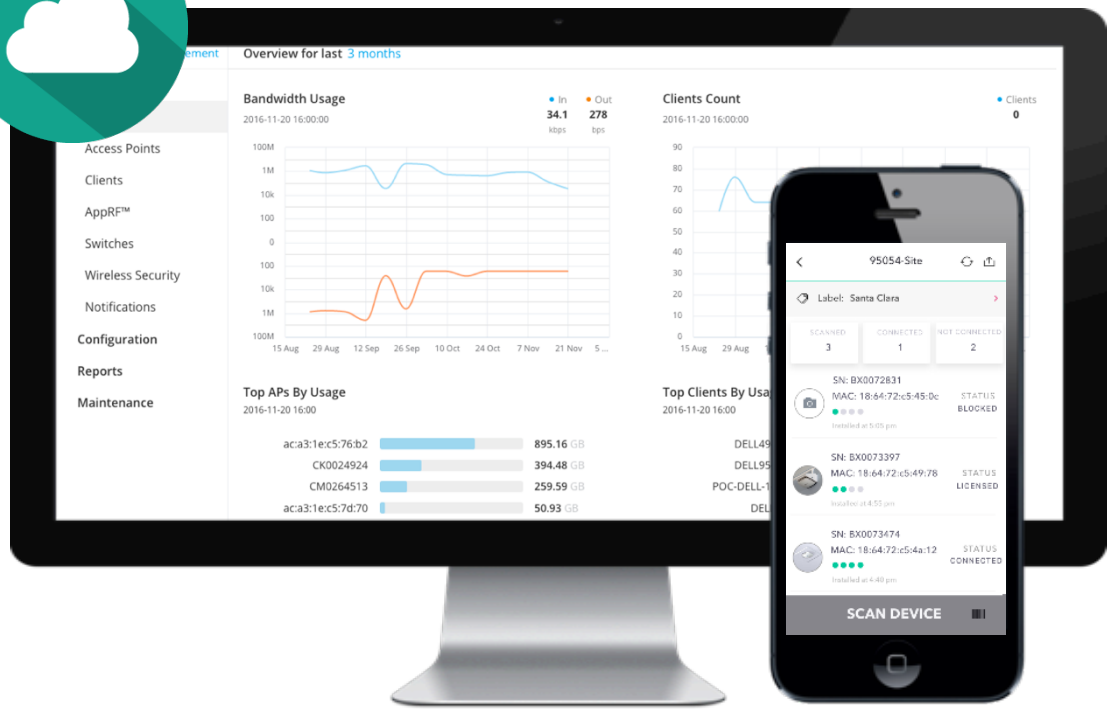
Simple (at Enterprise scale)
Drive simplicity and fewer boxes in branch solution

Transport Independency
Own your WAN policy

Common Policy and Management for Wired, WLAN and WAN

Software driven branch networks

CLOUD MANAGEMENT



NETWORK INFRASTRUCTURE

INSTANT ACCESS POINTS

ARUBA-OS SWITCHES

BRANCH GATEWAY

SERVICES

GUEST WI-FI

NETWORK ANALYTICS

PRESENCE ANALYTICS

SD-WAN

SECURITY

SD-Branch Overview

Cloud-based Services

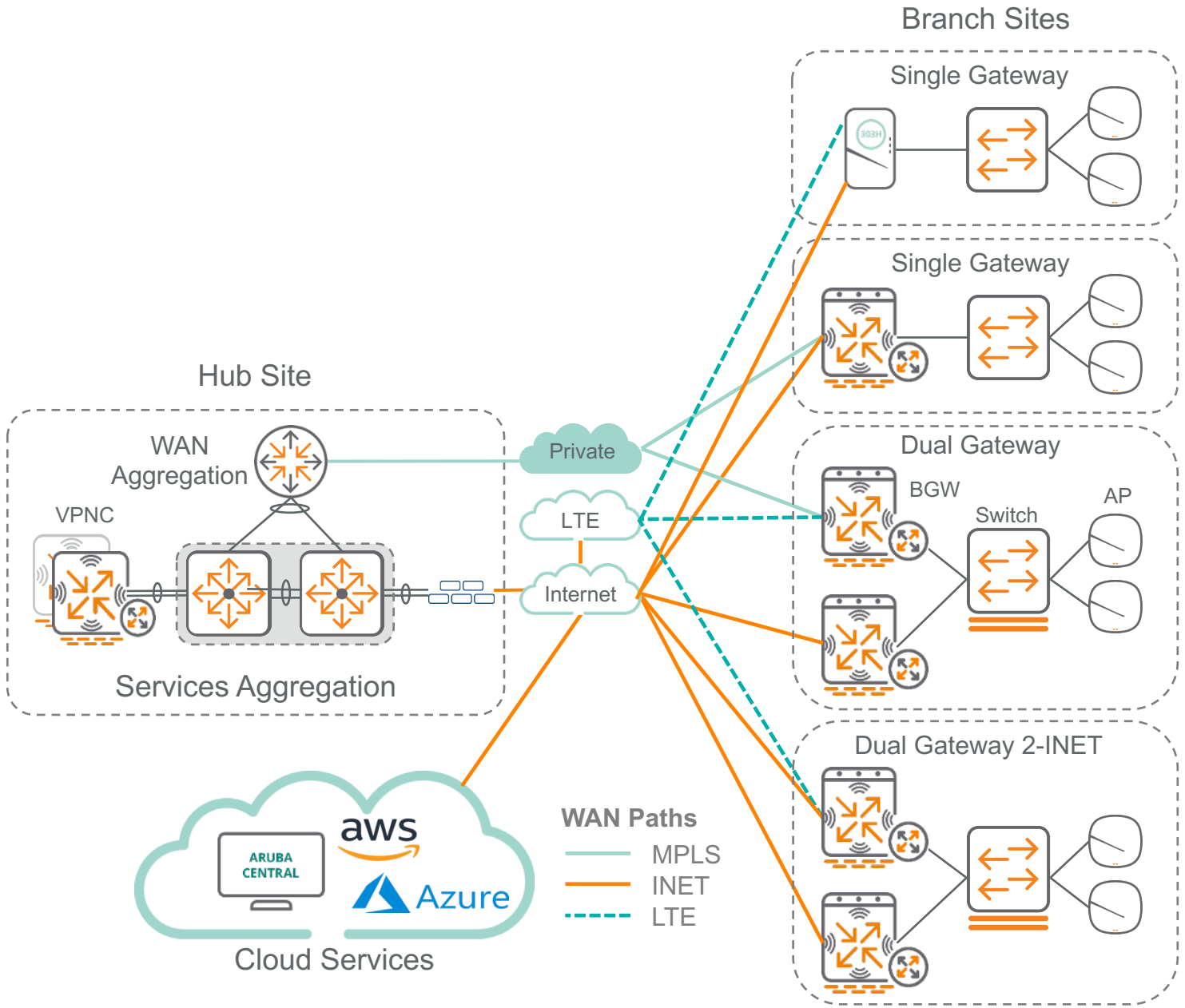
- Aruba Central for management
- VPNC's in AWS/Azure/GPC

Hub Site

- Headend gateway (VPNC)
- WAN aggregation
- Internet firewall

Branch Sites

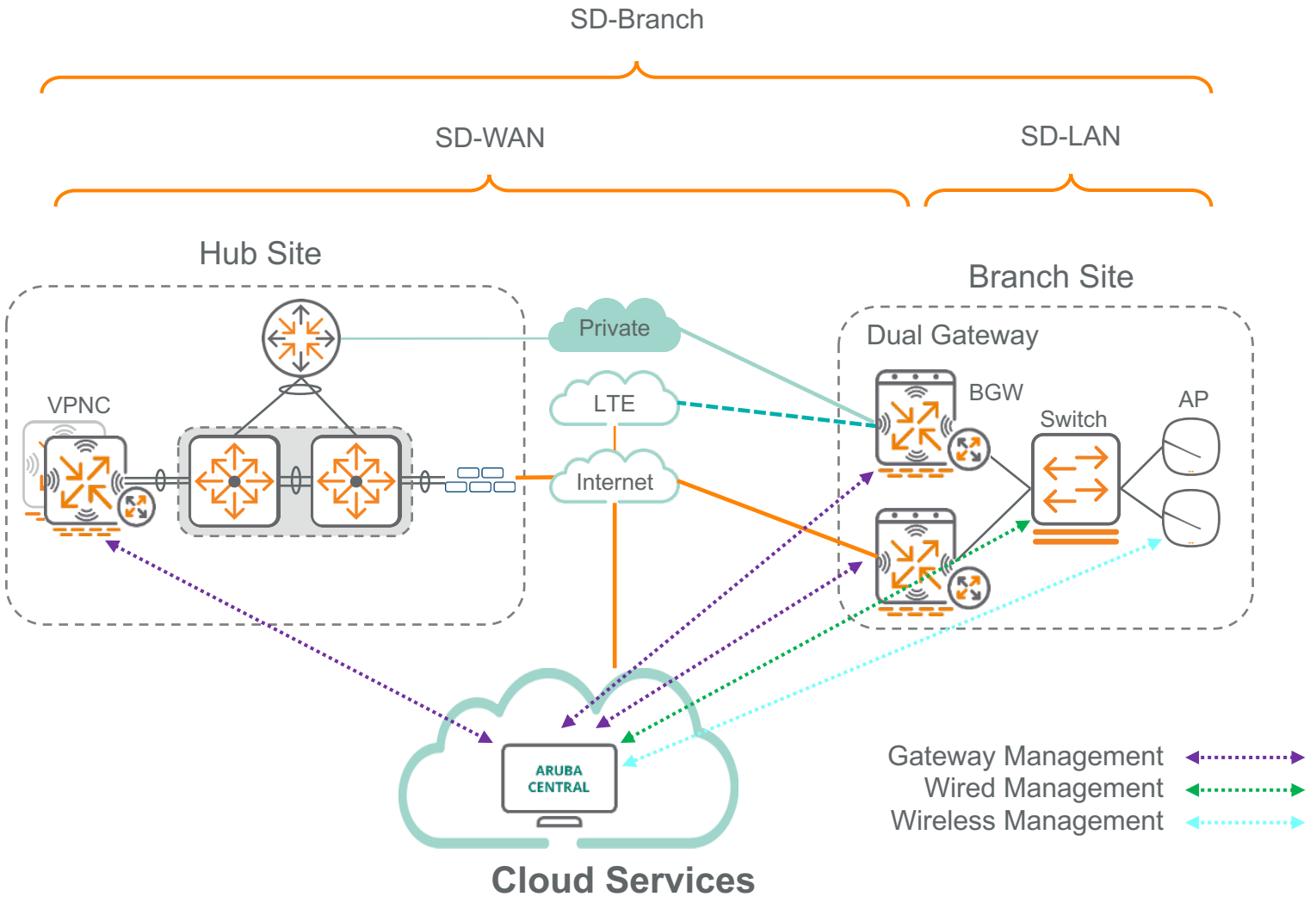
- ZTP to deploy and configure
- Single or dual Micro-branch gateways
- Single or dual branch gateways (BGW)
- Single or dual WAN interfaces on BGW
- Single or stacked access switches
- Instant APs for employee and guest



Cloud-based Management

Aruba Central

- Global Settings
  - Device inventory
  - Subscription key management
  - Group management
  - Site management
- **Gateway management**
- **Wired management**
- **Wireless management**
- Monitoring and reporting
- Maintenance



Central Groups

Groups are the primary configuration container for all devices managed in Central

VPNC Groups

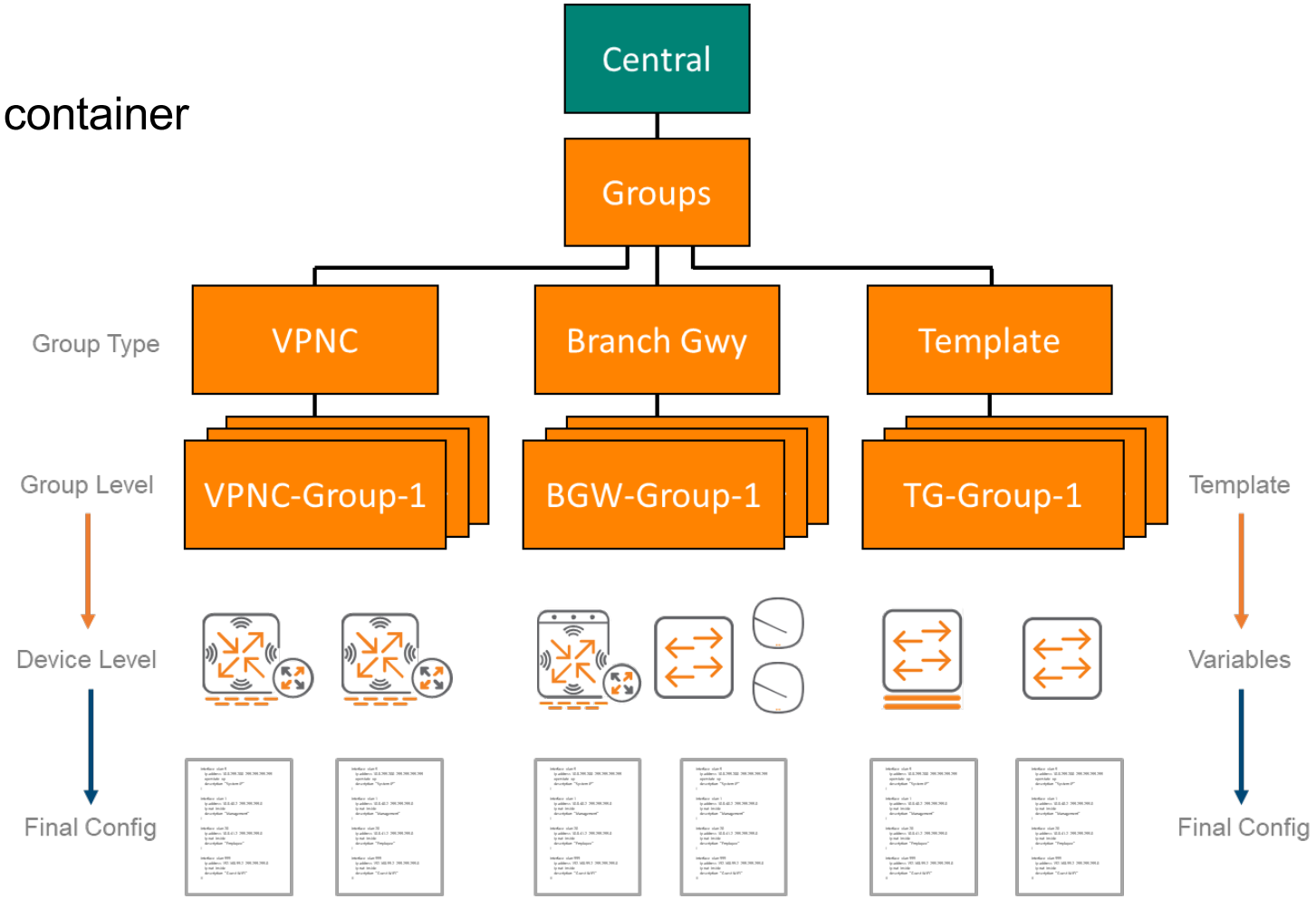
- VPNC Gateways

Branch Gateway Groups

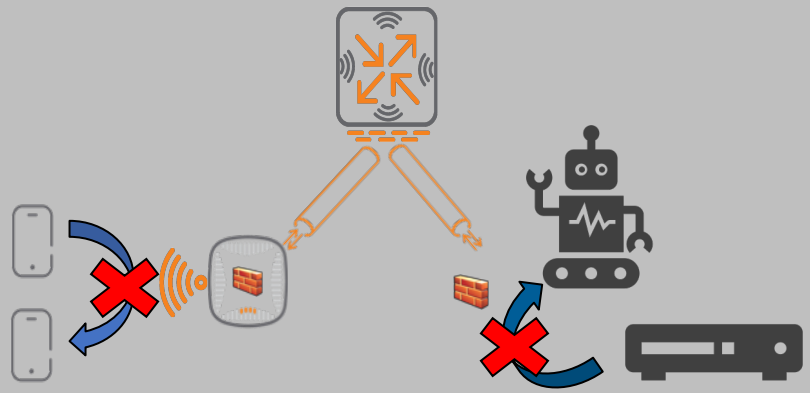
- Branch Gateways
- Switches
- IAP VCs

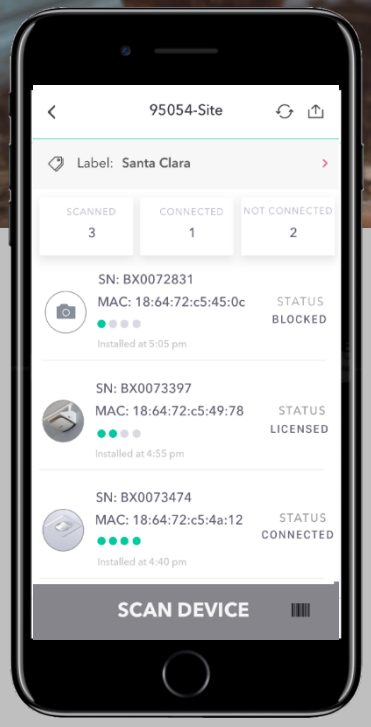
Template Groups

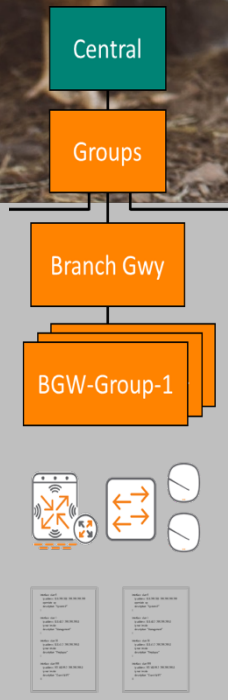
- Switches
- Switch Stacks

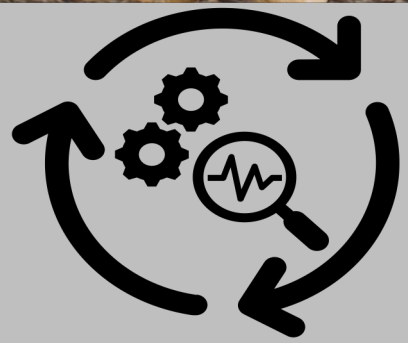


Chicken to Cloud
C2C



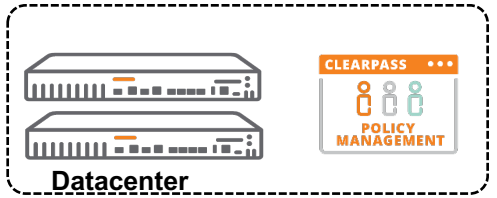


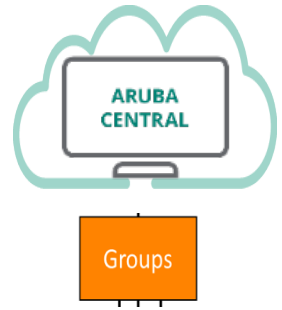


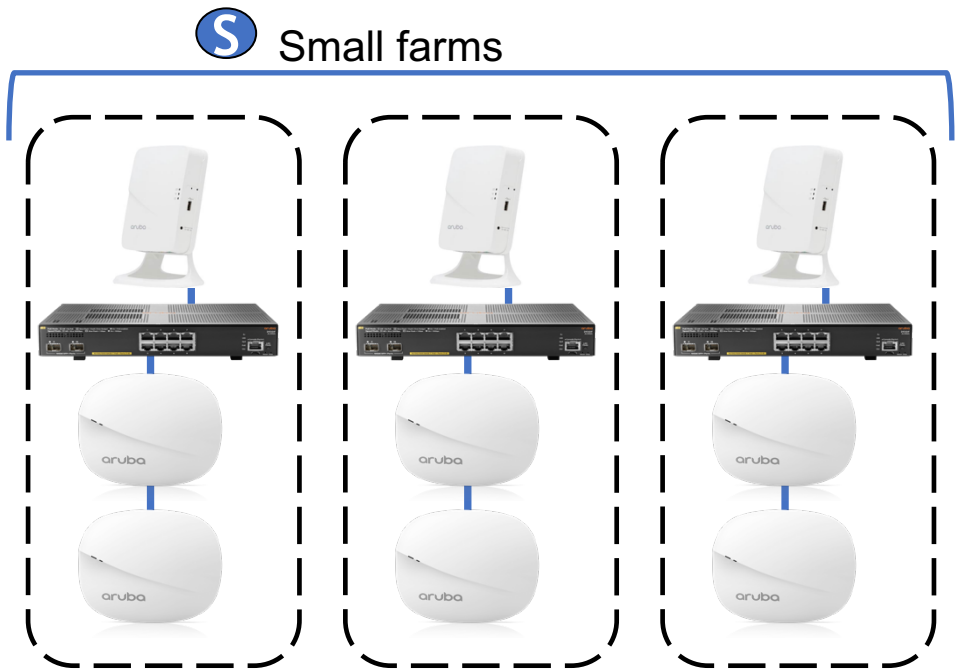


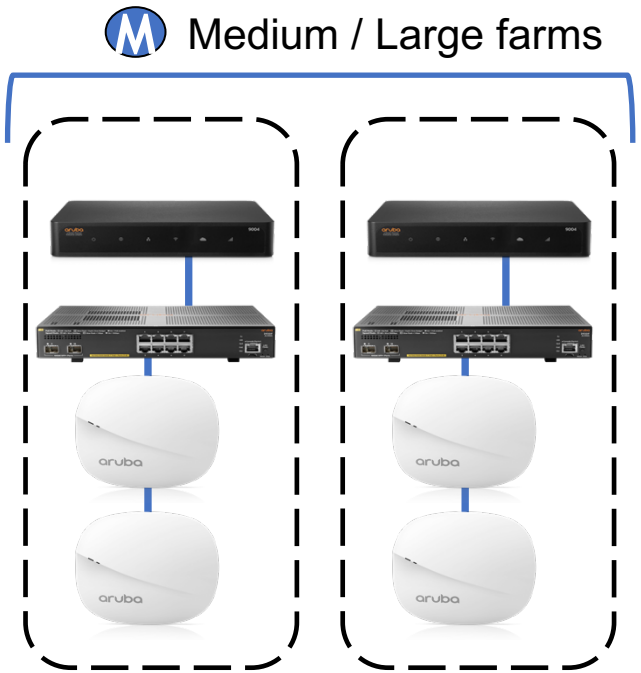
Zigbee
WiFi 6
MultiGig
Piggyback Power
Integrated
directional antennas
SFP / Ruggedized


aws
Azure


CLEARPASS
POLICY MANAGEMENT
Datacenter


ARUBA CENTRAL
Groups


S
Small farms


M
Medium / Large farms

Branch Offices


300 Locations
ROUTER: VRF, VPN, SUBNET, ACL
FIREWALL: ZONE, TRUST, ACL
WAN OPT: THROTTLING, COMPRESSION
VLAN 201
LAN: VLAN, ACL, SUBNET
VLAN 103

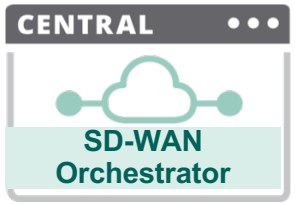
300 Locations

CLEARPASS
POLICY MANAGEMENT

Role-Based

ELIMINATE
VLAN SPRAWL

SD–WAN Orchestrator



What is it ?

Policy driven SD-WAN overlay management using Centralized Control plane

WAN links are auto-discovered and SD-WAN tunnels are orchestrated based on topology needs

No need for legacy routing protocols in overlay SD-WAN Fabric

Route distribution is orchestrated based on Policy

Why?

Centralized Key Management for tunnels

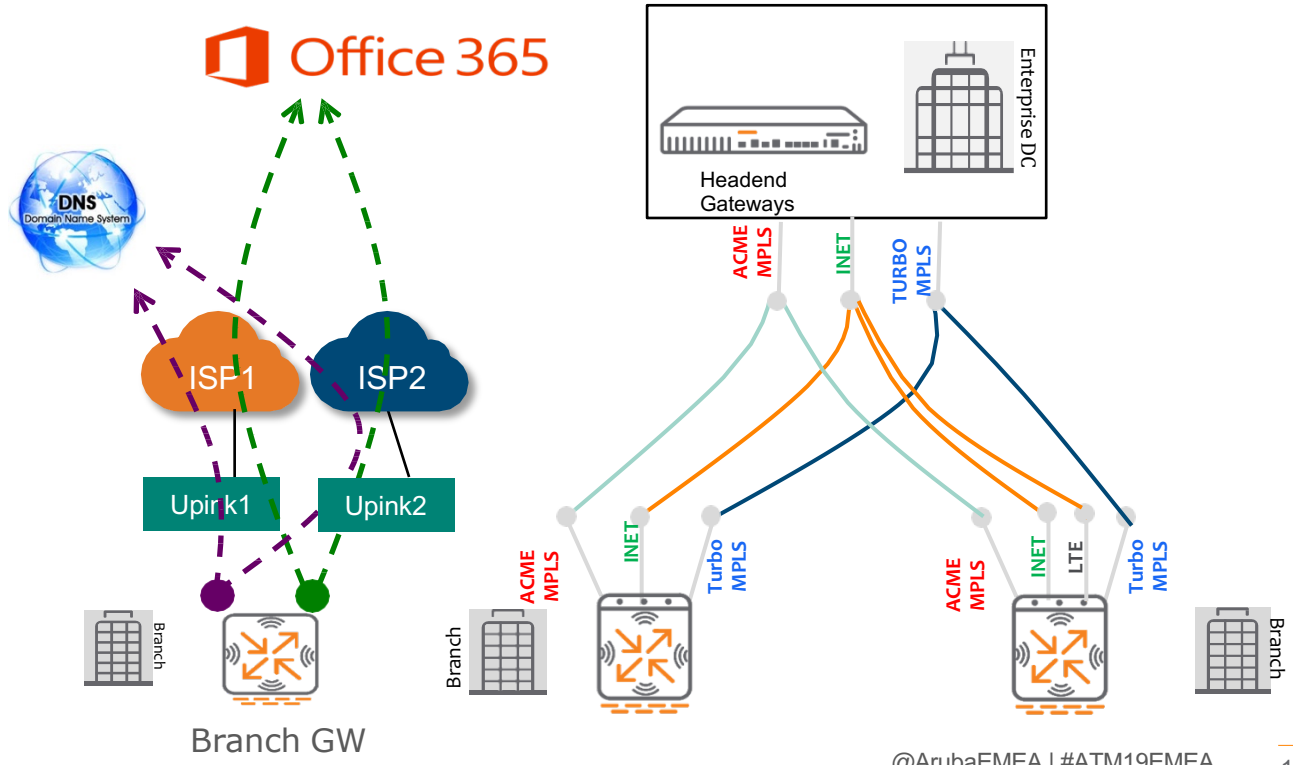
Centralized routing policies

Scalable and Resilient

Support flexible overlay topologies

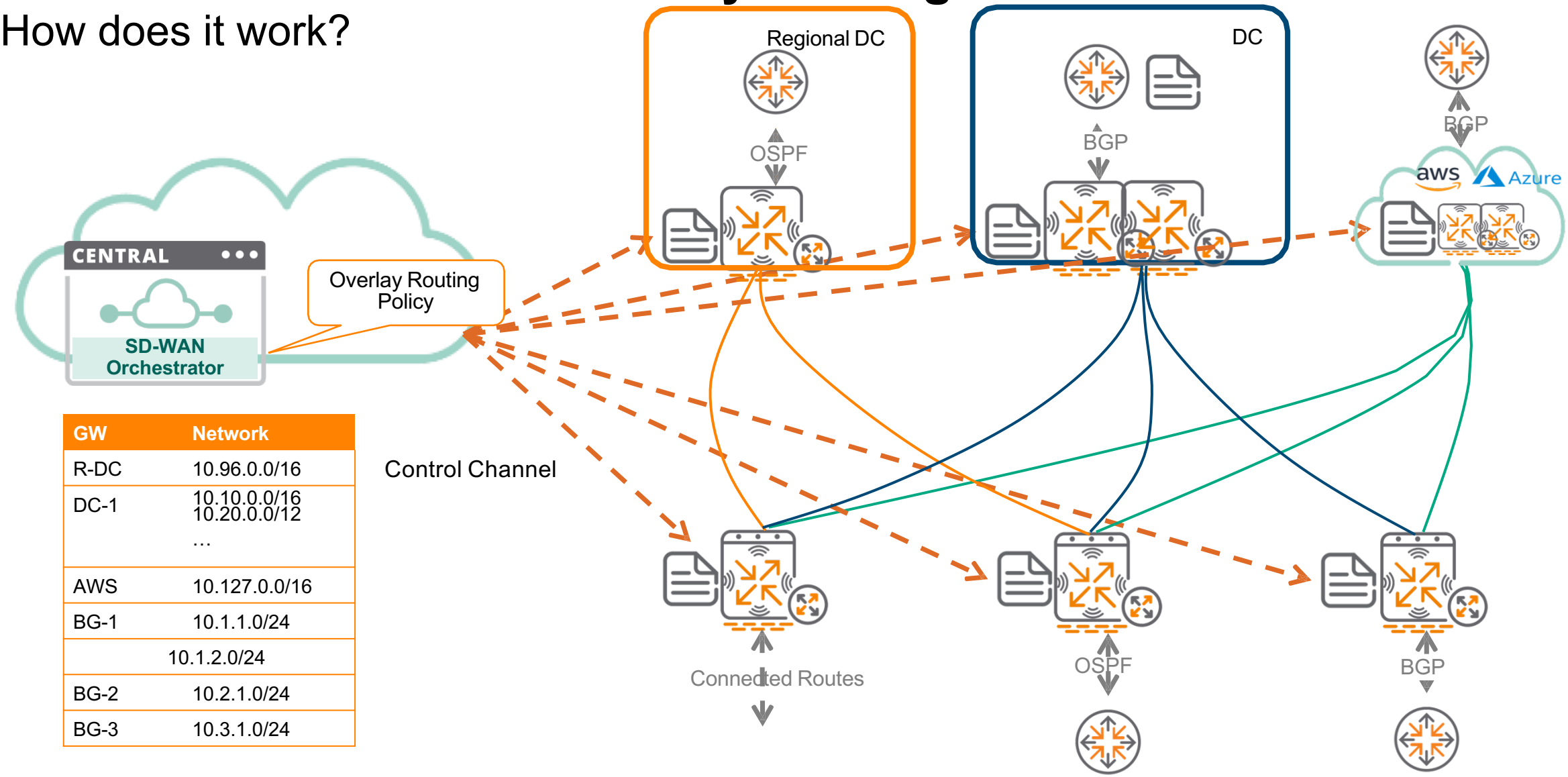
Ease of Management

Intent driven policies



SD-WAN Orchestrator - Overlay Routing

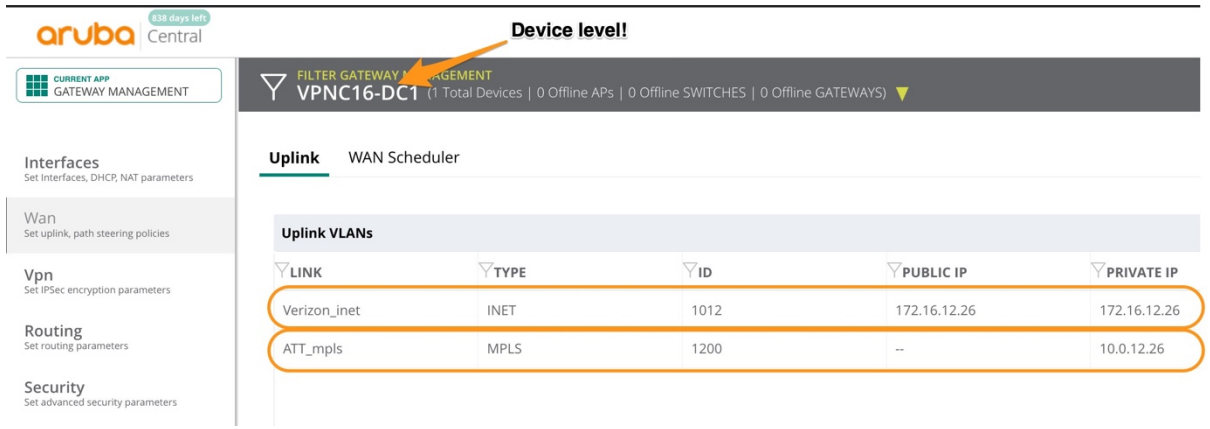
How does it work?



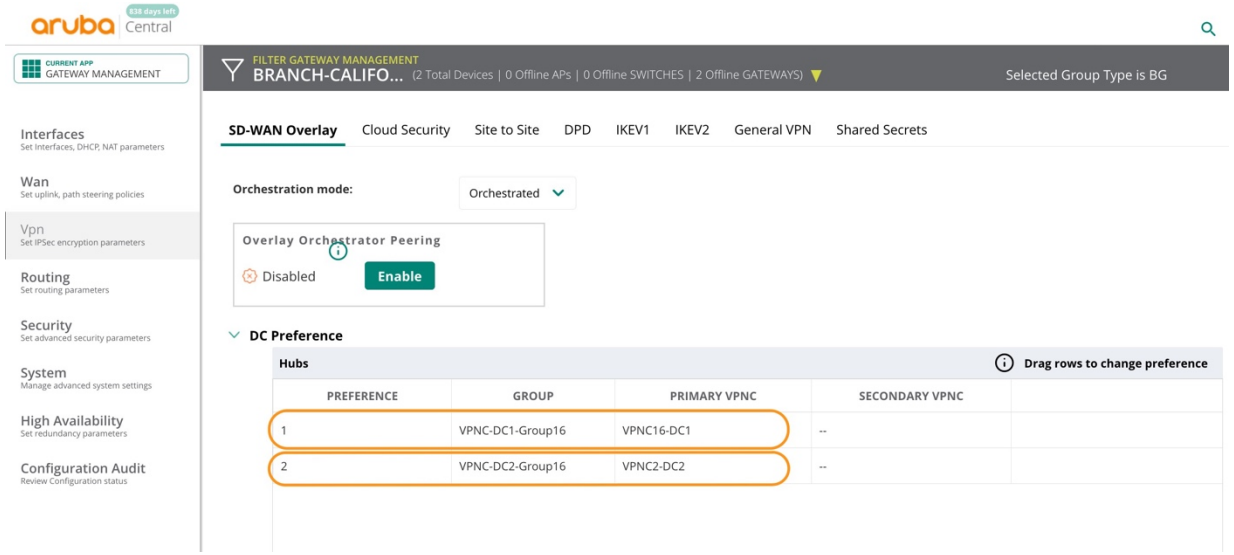
GW	Network
R-DC	10.96.0.0/16
DC-1	10.10.0.0/16 10.20.0.0/12 …
AWS	10.127.0.0/16
BG-1	10.1.1.0/24
	10.1.2.0/24
BG-2	10.2.1.0/24
BG-3	10.3.1.0/24

SD-WAN Orchestrator - Overlay Tunnels
Configuration

Headend Gateways – Configure WAN



Branch Gateways – Set DC Preference

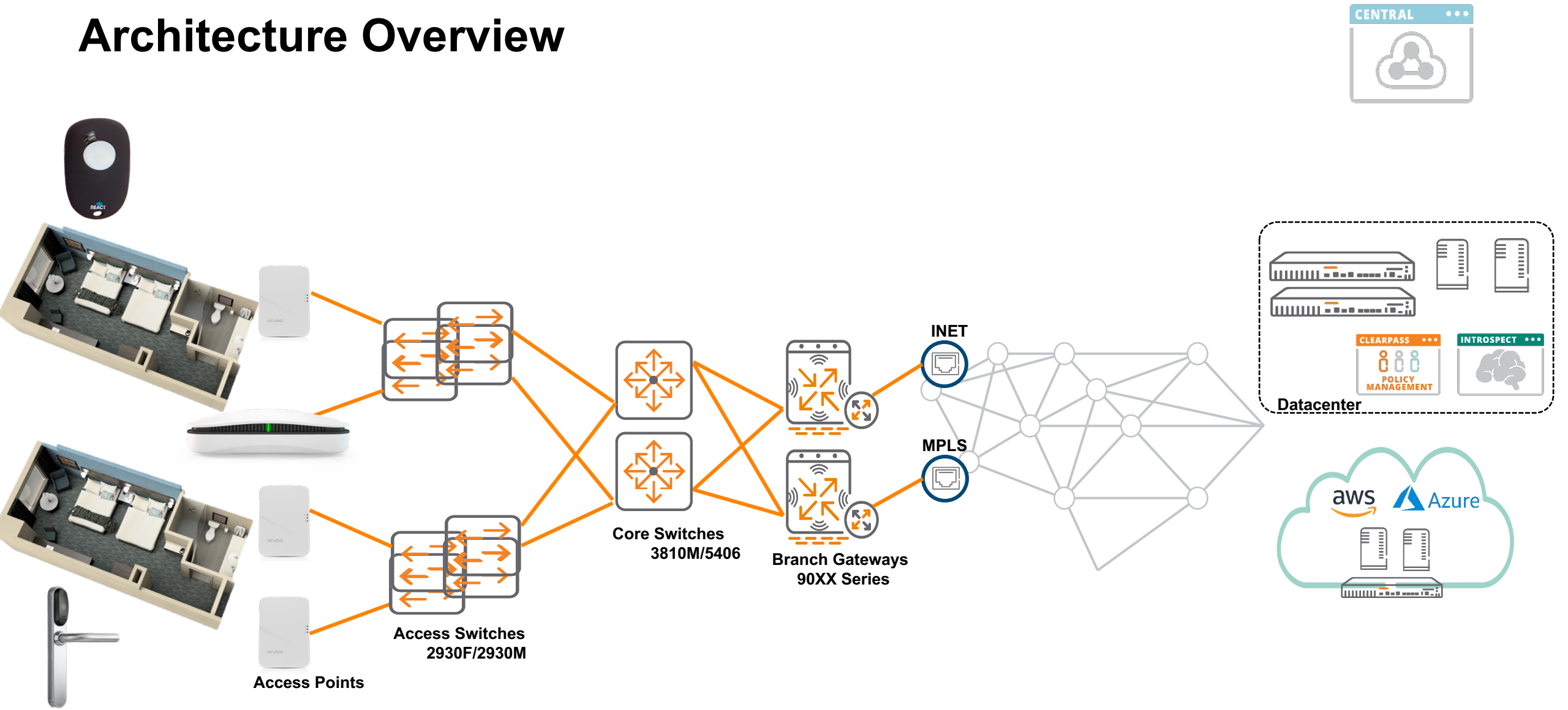



HOTEL

Personalized Rooms

- Personal in-room experience
- Monitor the experience
- Differentiated hospitality cases
  - Hotel rooms
  - Multi-tenant area’s
  - Housing
- Segmenting guest between corporate devices

Architecture Overview



aruba
a Hewlett Packard Enterprise company

LAN Policies	Security Policies	WAN Policies
WLAN and wired switching policies applied per role. E.g.: Guest SSID, QoS for PCI traffic	Firewall and WebCC policies applied per role. E.g.: WebCC for Guest, PCI traffic isolation	Path steering policies applied per role. E.g.: Guest to Internet, PCI traffic to MPLS

Enabling private rooms

The places in a **mobile-first** world, **enabled by IoT**.
Where guests work, stay, visit, and go – all connected and isolated to your room.
Where experiences are becoming smart and digital.

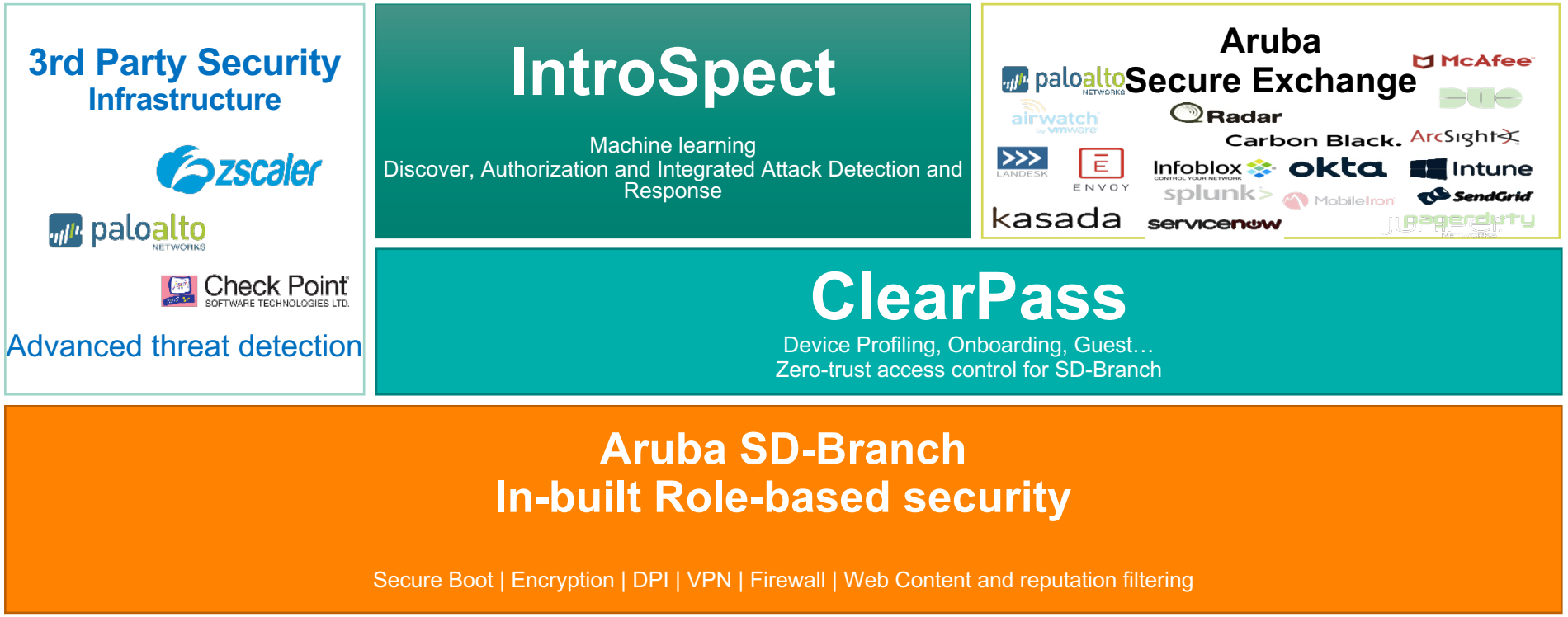
HOTELS
Internet Access only with Hotel branding

HOTELS
Internet Access with in-room Experience

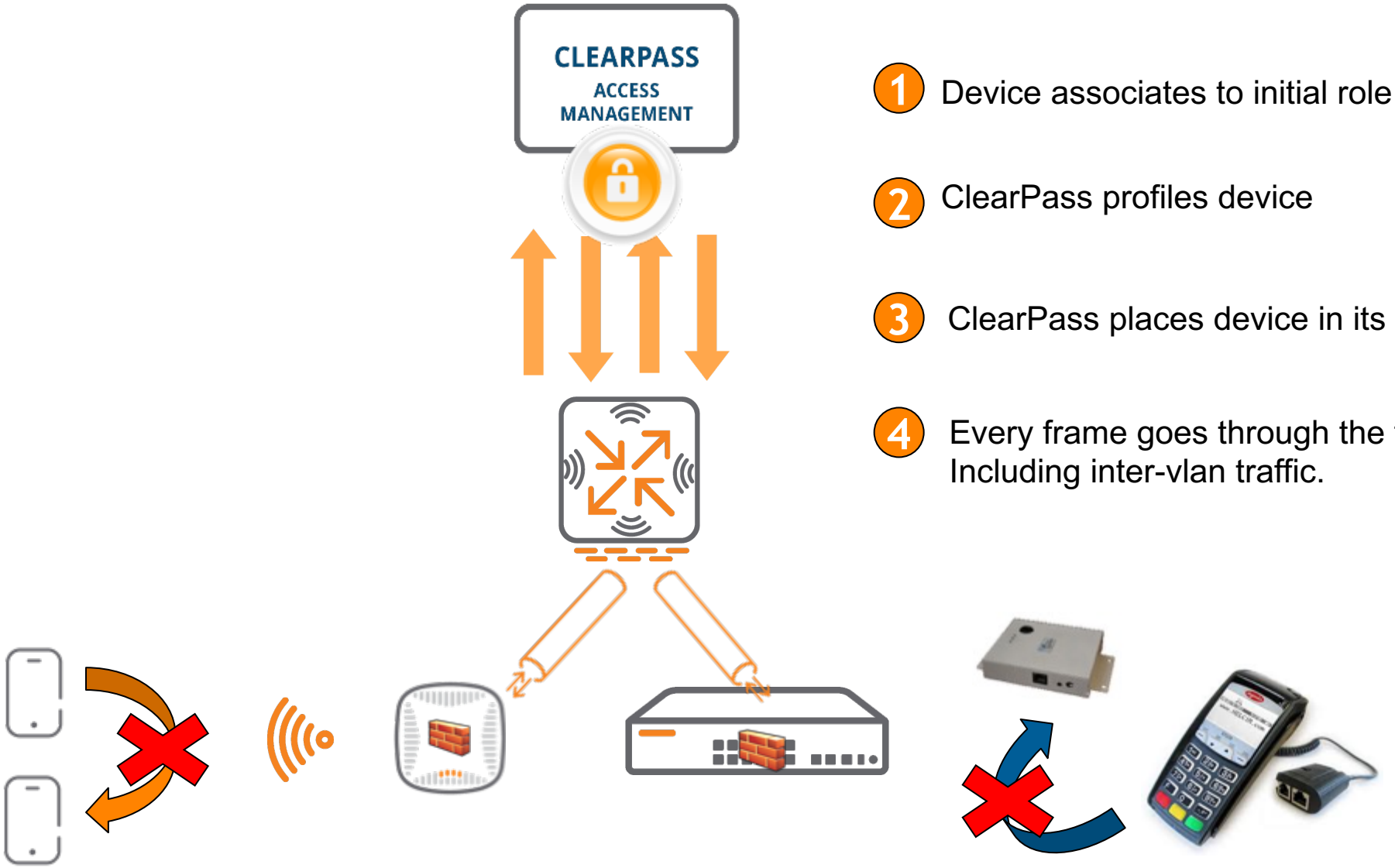
aruba
a Hewlett Packard Enterprise company

Secure Enterprise

Integrating with existing Security Layers

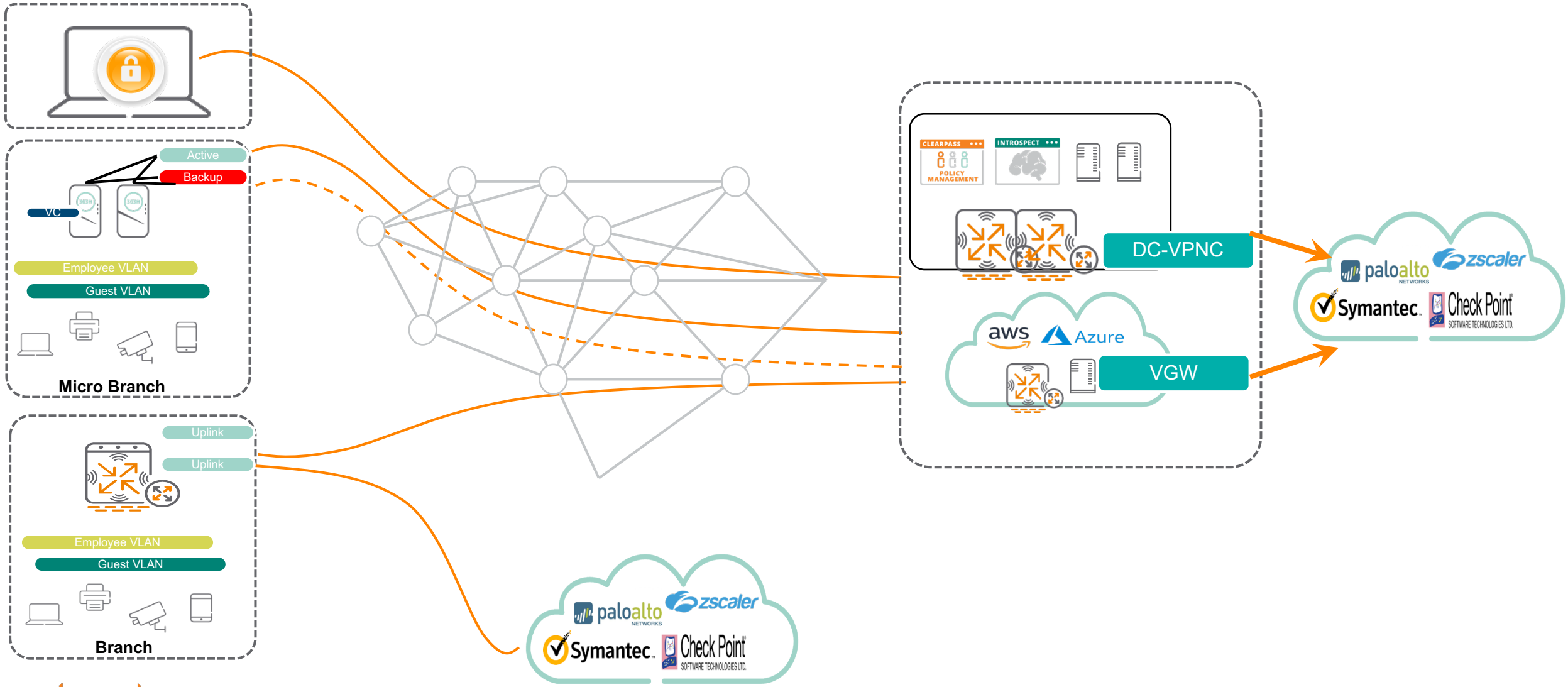


Classify User and Devices into Roles



1. Device associates to initial role
2. ClearPass profiles device
3. ClearPass places device in its role
4. Every frame goes through the firewall. Including inter-vlan traffic.

Integrating from different locations



Flexible Branch Deployment Options

Micro Branch

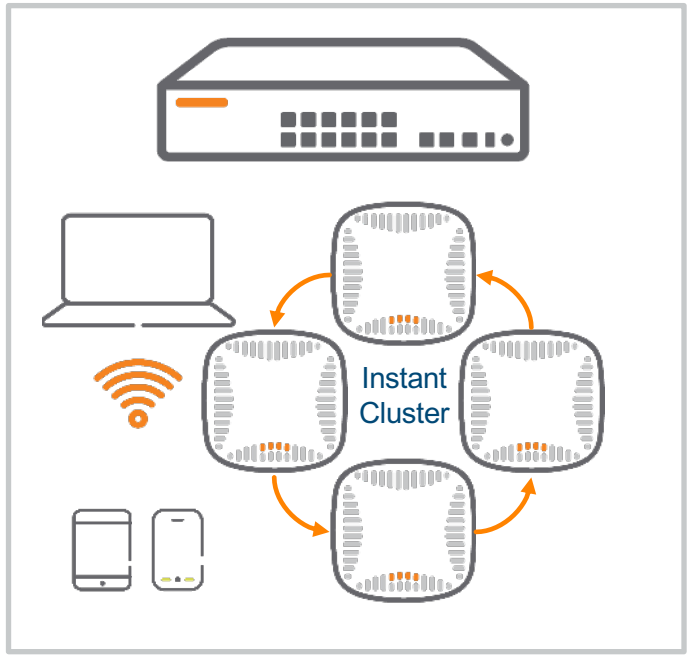
Basic WAN

Verticals: Healthcare, Retail (MSP), Enterprise

Use Cases: Satellite Clinics, Mom-Pop Retail, Teleworker

Small-Mid Branch

Basic WAN

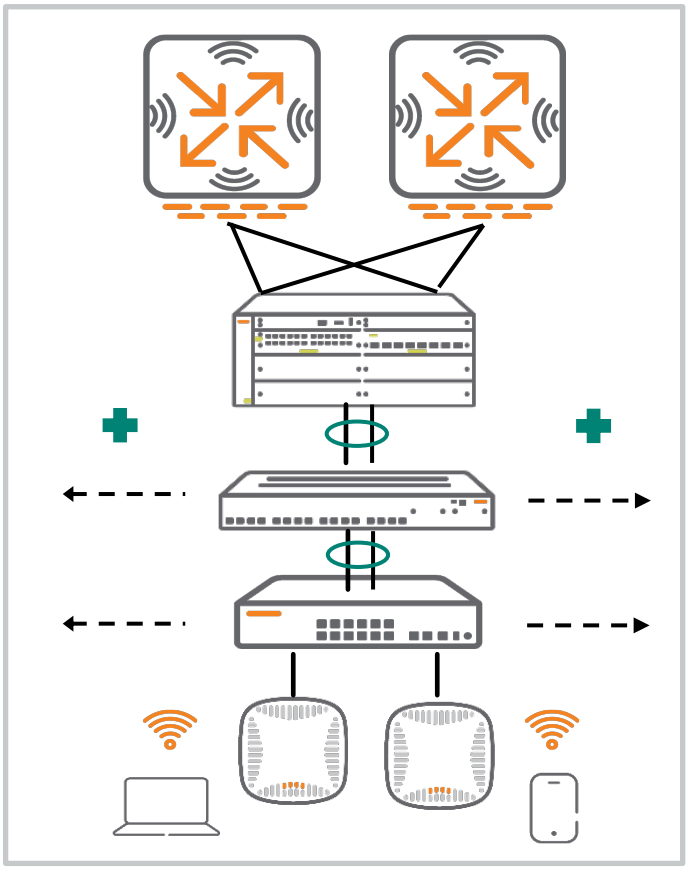


Verticals: Healthcare, Retail, Hospitality, Enterprise

Use Cases: Guest Access, Outdoor

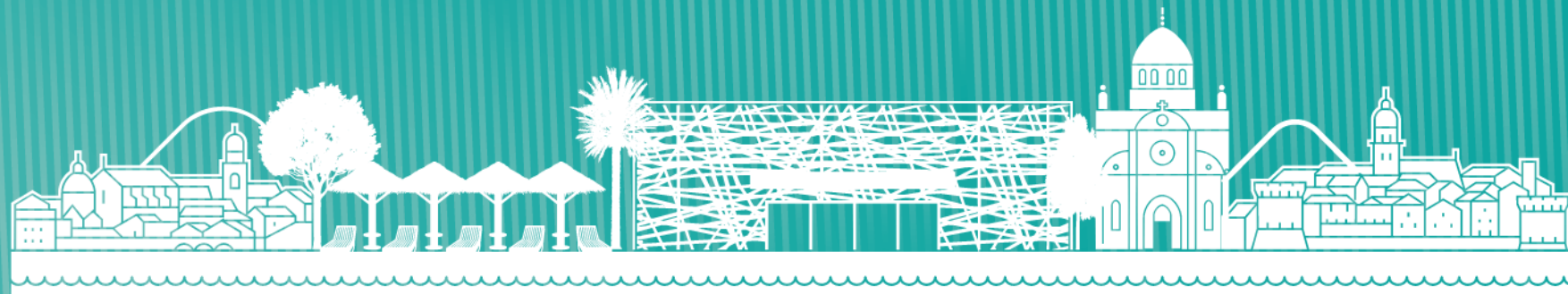
Mid-Large Branch

Advanced WAN (SD)



Enterprise Class, Unified Network and Policy Management Platform

Designing the solution

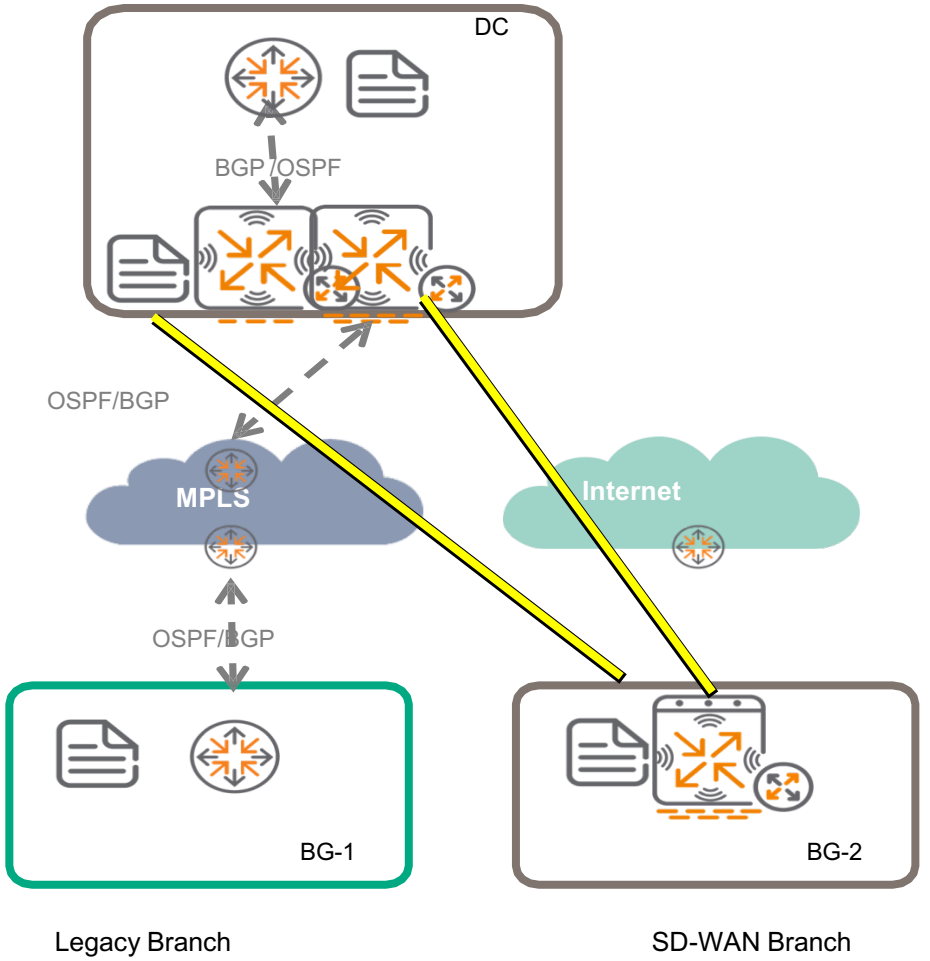


Migratiepaden

INSTANT
ACCESS POINTS

ARUBA-OS
SWITCHES

BRANCH
GATEWAY



Branch

Features	7005	7008	9004	7010	7024	7030
Firewall throughput	2Gbps	2Gbps	2Gbps	4Gbps	4Gbps	8Gbps
Encryption throughput	1.2Gbps	1.2Gbps	2Gbps	2.4Gbps	2.4Gbps	2.4Gbps
GE ports	4	8	4	16	24	8
PoE support	Can be PoE powered	8 Ports can provide POE	No	12 ports can provide PoE	24 ports can provide PoE	No
Concurrent IPSec Tunnels	512	512	2048	1024	1024	1024
Active Firewall sessions	16K	16K	32K	32K	32K	64K

Datacenter VPNC

Features	7210	7220	7240
IPSec Tunnels	16384	24576	32768
Encryption throughput	5.9Gbps	20Gbps	30Gbps
Firewall throughput	20Gbps	40Gbps	40Gbps
GE ports	2 (1G Combo)	2 (1G Combo)	2 (1G Combo)
SFP/SFP+	4 10G SFP+	4 10G SFP+	4 10G SFP+
Redundant Power Supply/Fan	Yes	Yes	Yes

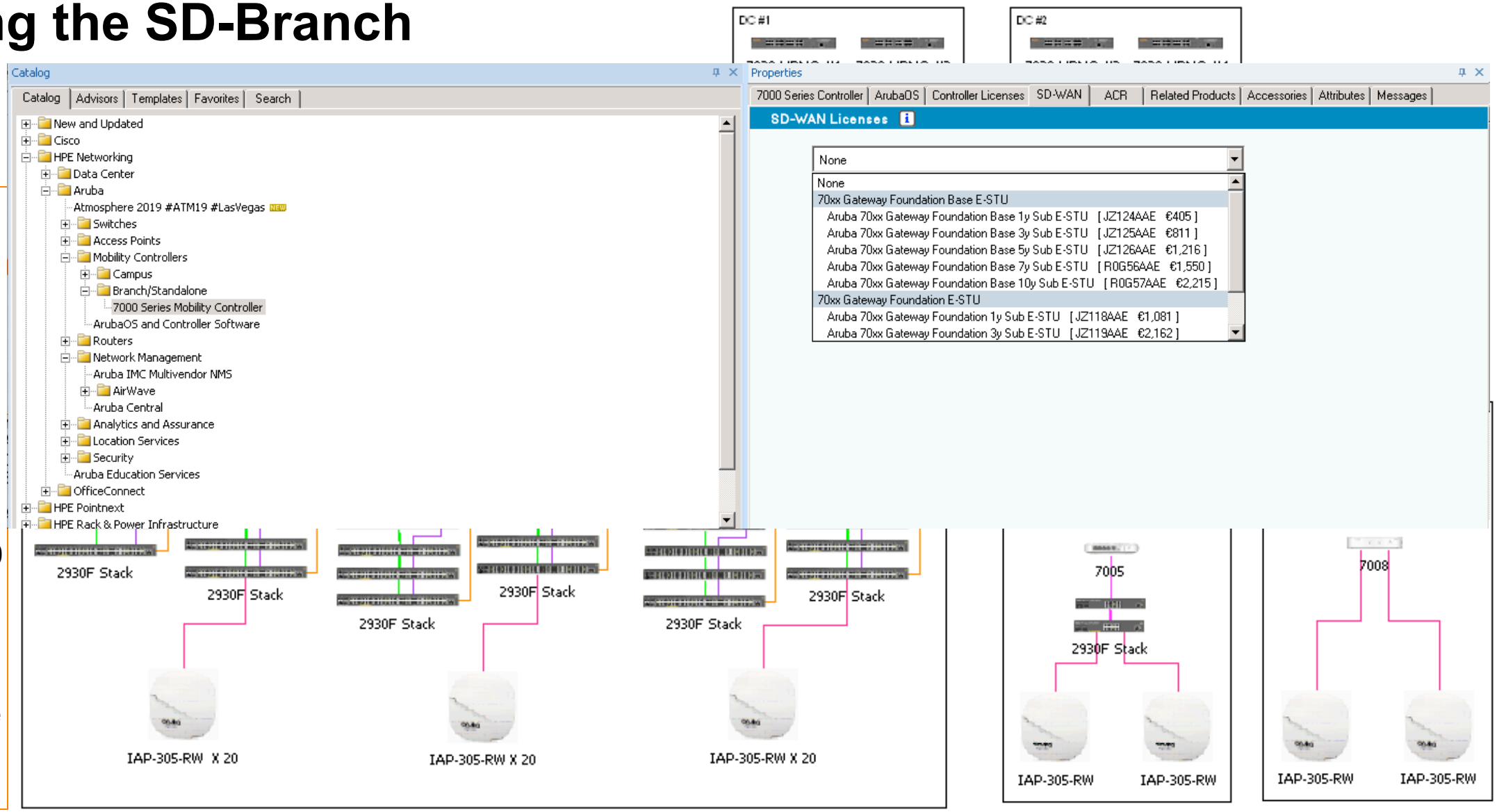
Ordering the SD-Branch

Central
- Aruba Central Device mgmt. Sub.

- Aruba Central Services Subscriptions

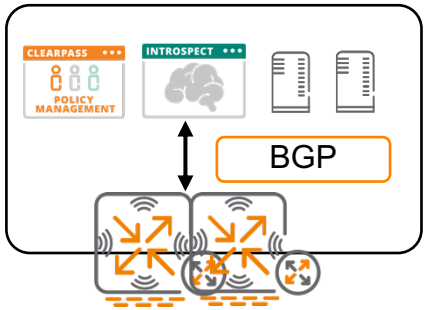
SDWAN:
- Gateway Foundation 7X00
- Gateway Foundation 72xx

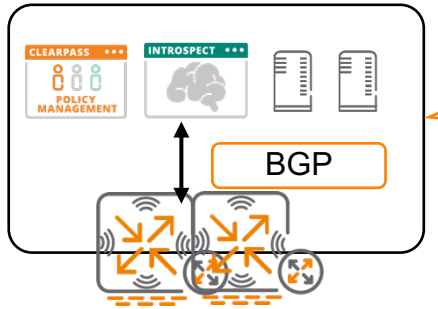
- Gateway Foundation Base 7X00



Support
- 90 Days -> Foundatation / HW SKU

SD-Branch Architectures (1.5)





Multiple active hubs

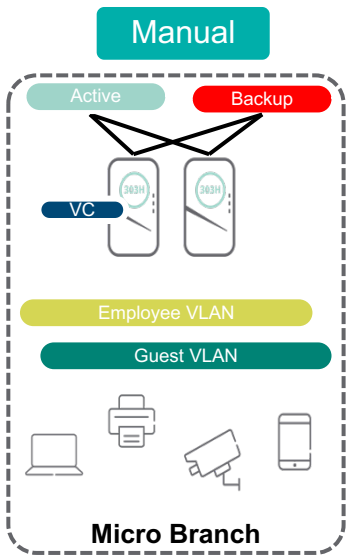
CENTRAL

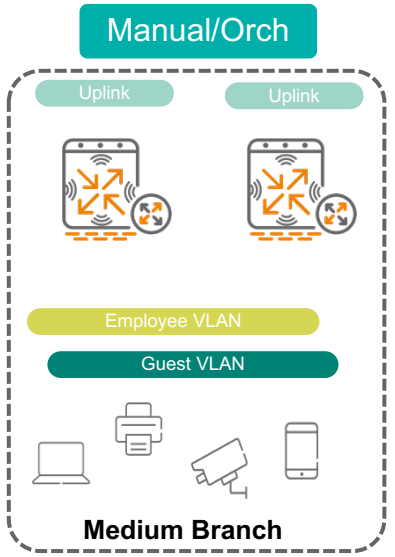
SD-WAN FOUNDATION

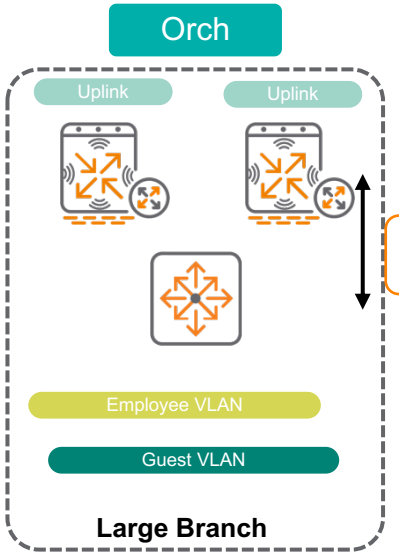
SD-WAN Orchestrator

SD-WAN Overlay

Transport-Independent WAN Overlay







Dynamic Routing

Vragen