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a Hewlett Packard  
Enterprise company

# Software Defined Branch

## Evolution of the Branch & SD-WAN

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# Challenges with Current Branch Architectures

Solve the Branch problem, not just the WAN problem ....

## LAN Side Challenges

- Complexity caused by increasing number of devices, VLANs connected at branch
- End points going mobile requires wireless refresh
- Poor visibility into clients/devices connected at the branch
- Lack of authentication of clients/devices connecting to the network
- Lack of common policy for users connecting to network via wired or wireless



## WAN Side Challenges

- Limited capacity & long setup times for MPLS transport, motivating upgrades with less expensive Internet
- 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

## Operation Challenges

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

# Aruba SD WAN Goals



## Simple

Drive simplicity and fewer boxes in branch solution



## Transport independency

Own your WAN policy



## Common Policy and Management

for Wired, WLAN and WAN



# Flexible Branch Deployment Options with Aruba

## Micro Branch with RAPs

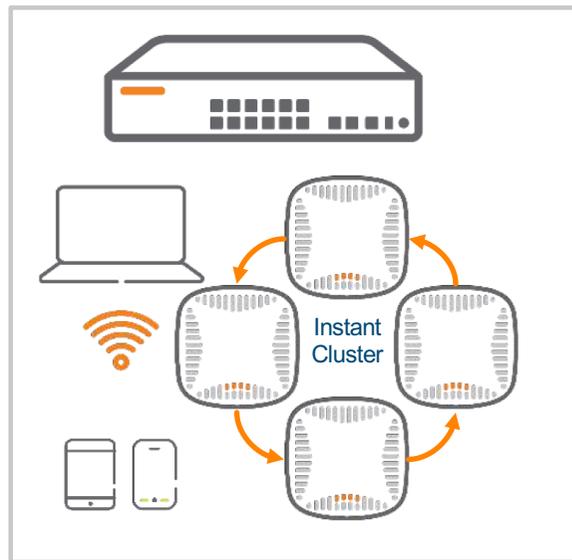
Basic WAN



RAP connected to WAN uplink

## Small to Mid Branch with IAPs

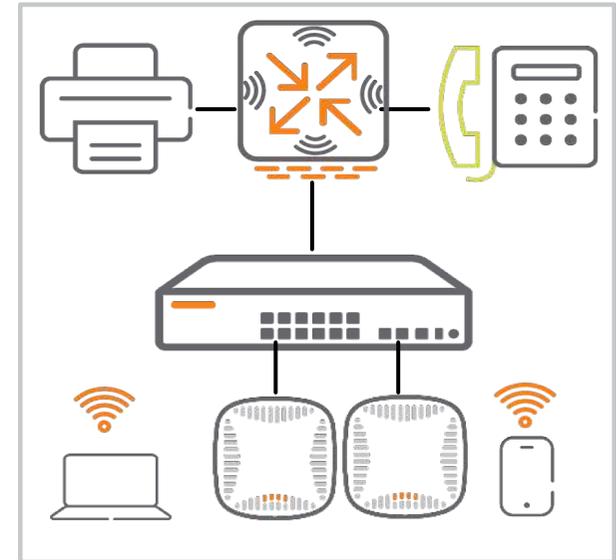
Basic WAN



Instant AP cluster connected to a  
Aruba access switch

## Large to Mid Branch with Gateway

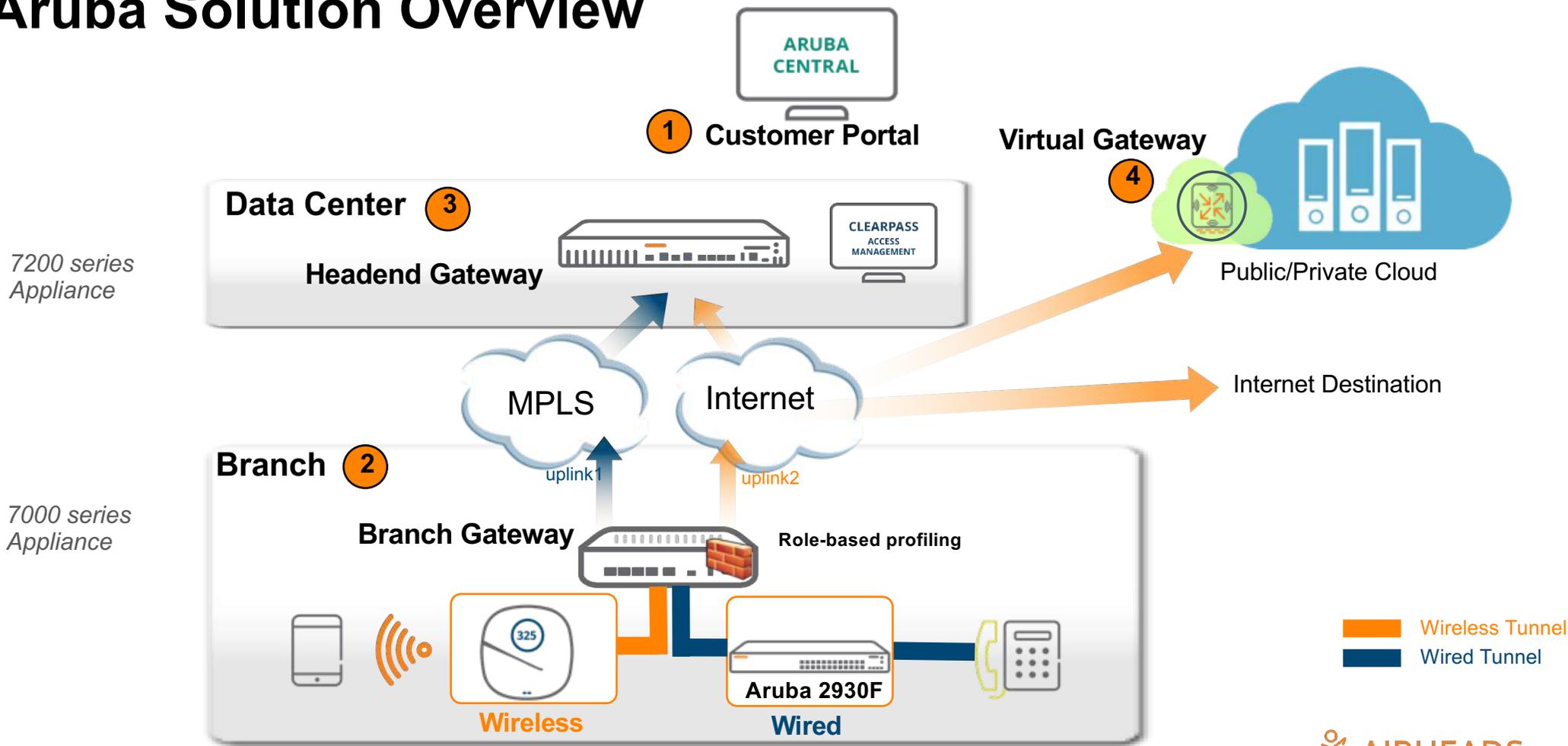
Advanced WAN



7000 Branch Controller connected to  
WAN uplinks, with Aruba switch and AP's

## Enterprise Class, One Network and Policy Management Platform

# Aruba Solution Overview



7200 series Appliance

7000 series Appliance

# Simple Onboarding

Provisioning tools for AP/Switch/Gateway

## Installer App

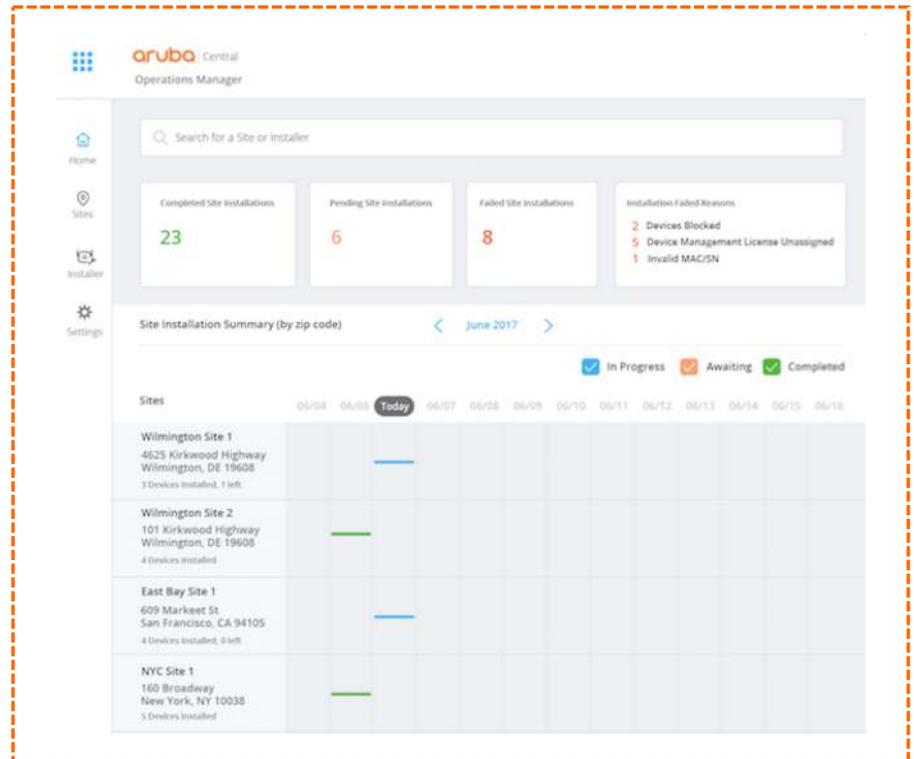


1. Scan

2. Power-on

3. Connect

## Ops Manager Dashboard



# Site Health Dashboard

## System Health Indicators

- Devices Disconnected
- CPU Utilization
- Memory Utilization

## RF Health Indicators

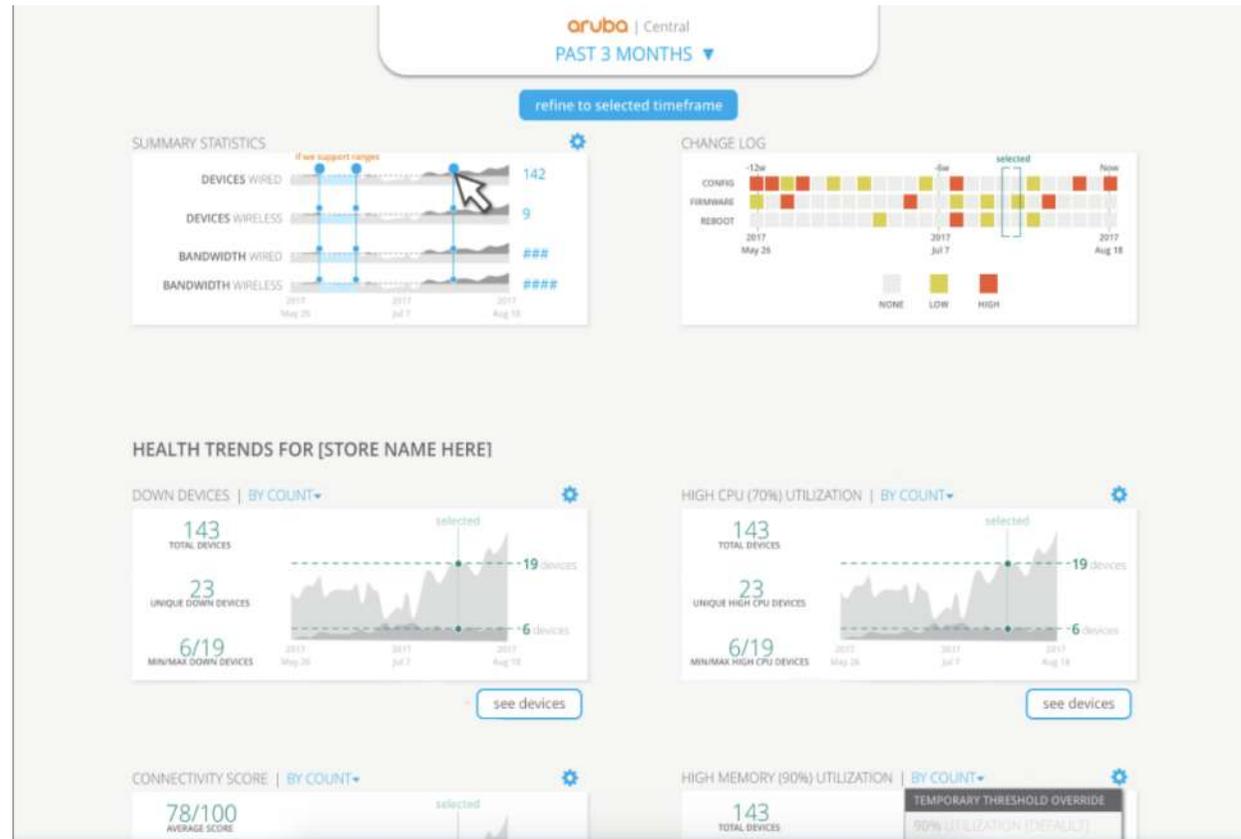
- Channel Utilization (5/2.4Ghz)
- Noise Floor (5/2.4Ghz)

## Client Health Indicators

- Client Health Score
- Connectivity Health Score

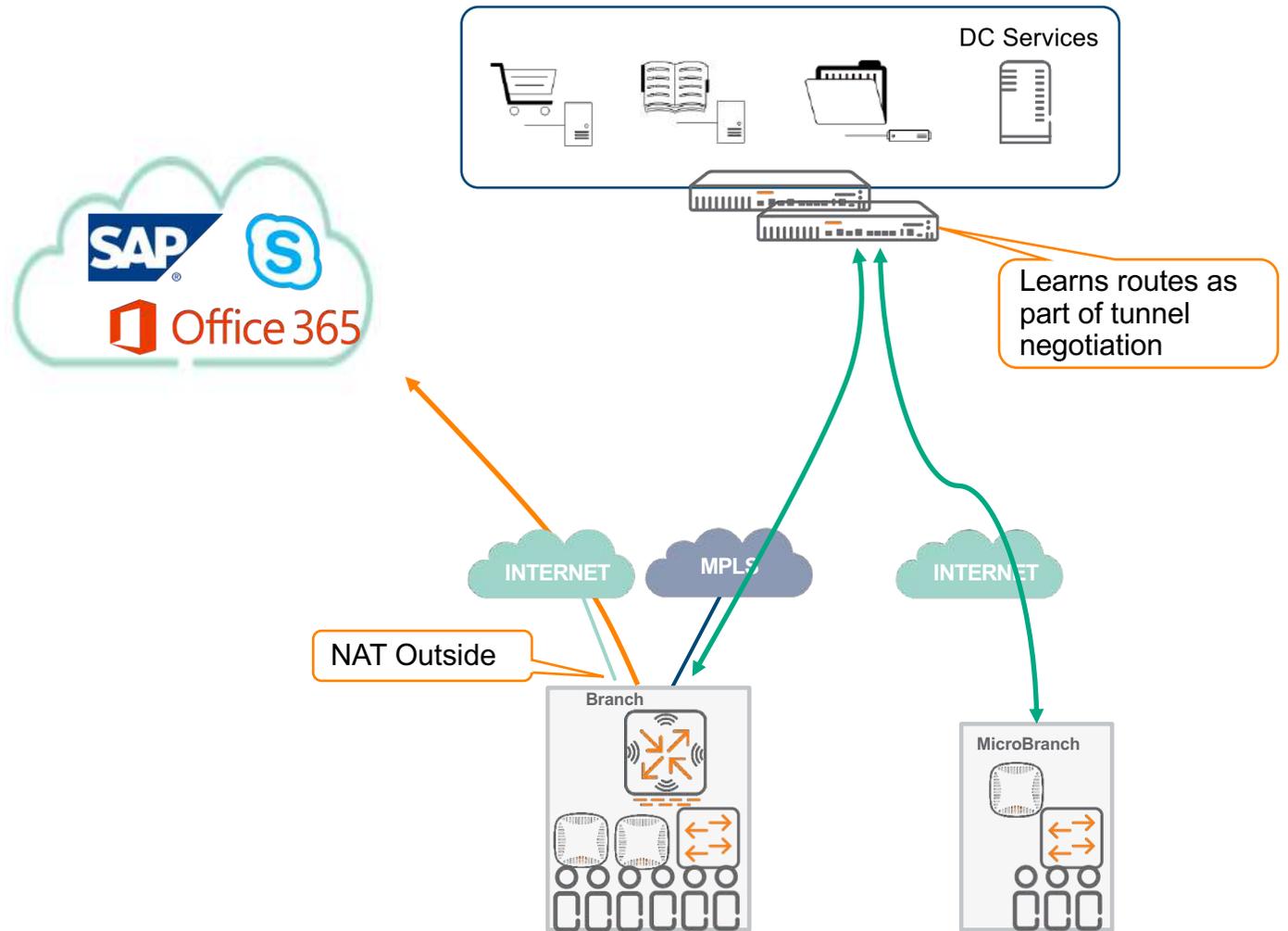
## WAN Health Indicators

- Network Latency, Loss
- Speedtest



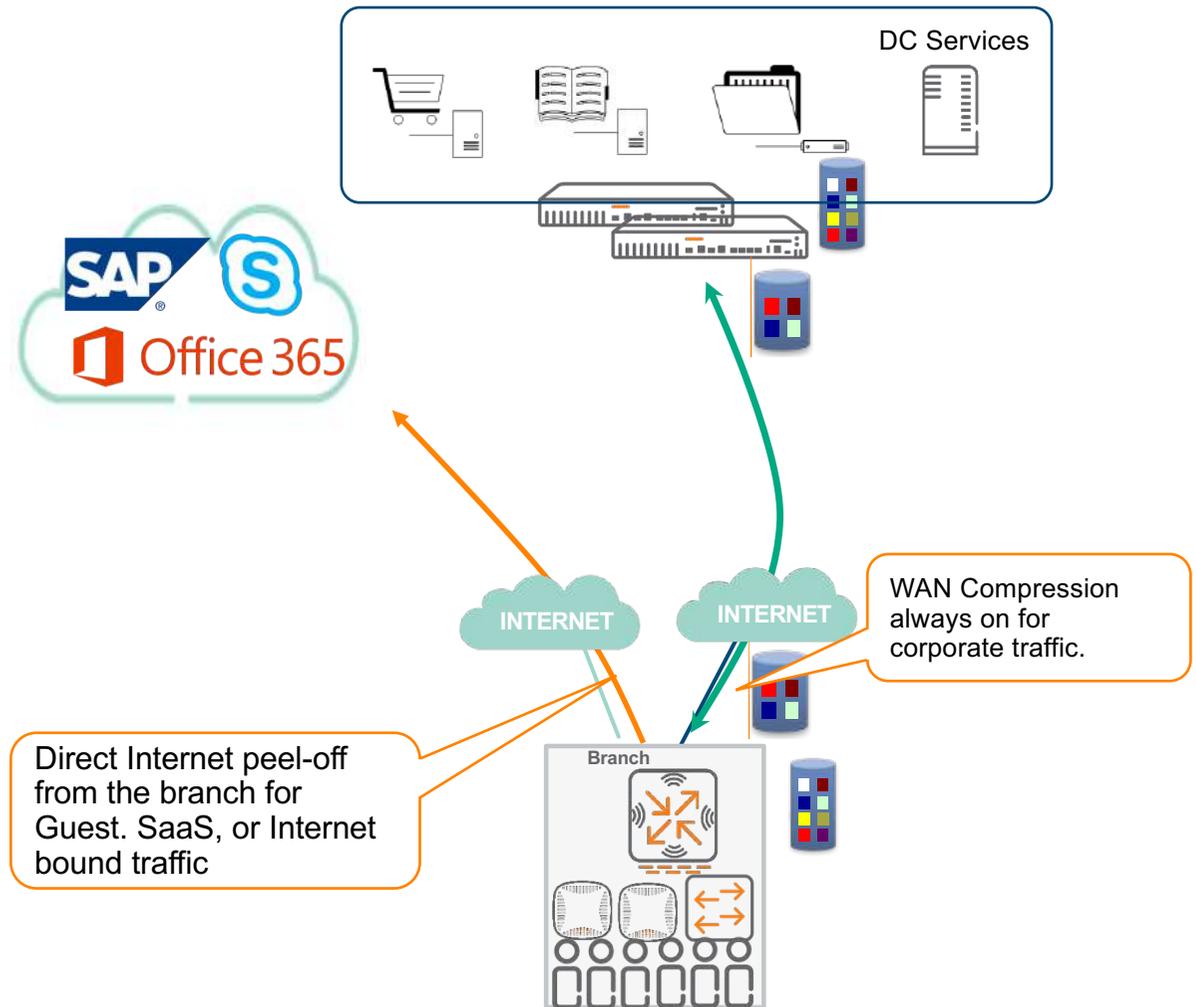
# SD-WAN

- ✓ Simple, Scalable routing



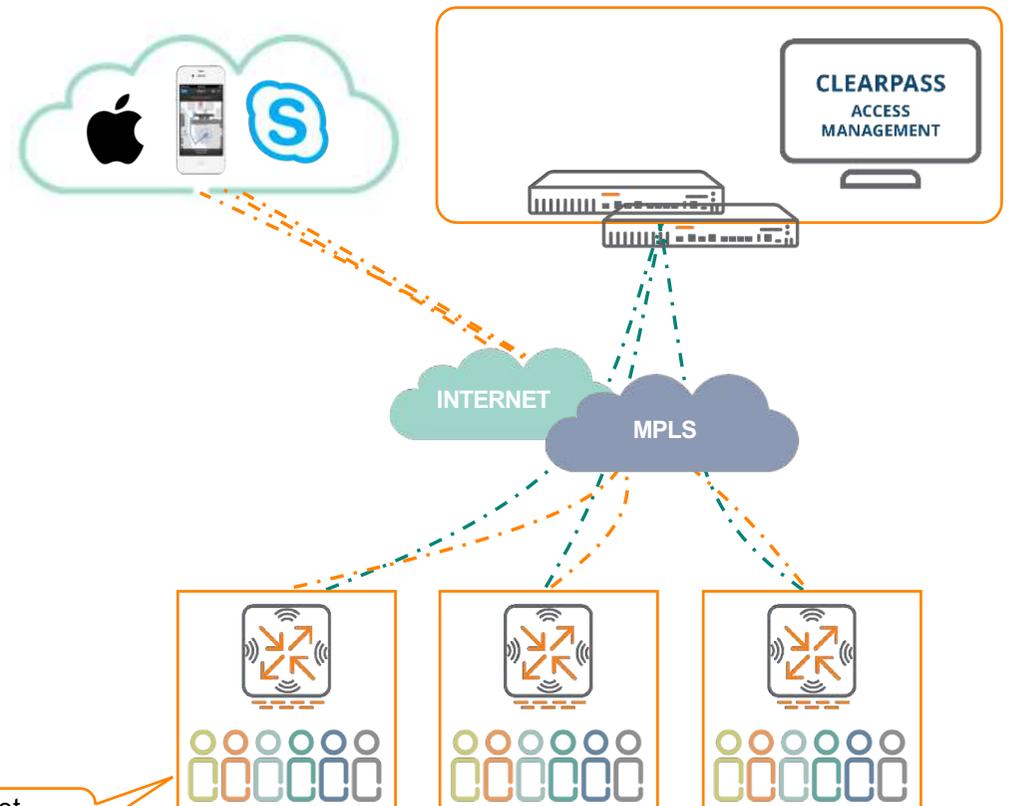
# SD-WAN

- ✓ Simple, Scalable routing
- ✓ Optimizing WAN usage
  - ✓ WAN Compression
  - ✓ Role based routing



# SD-WAN

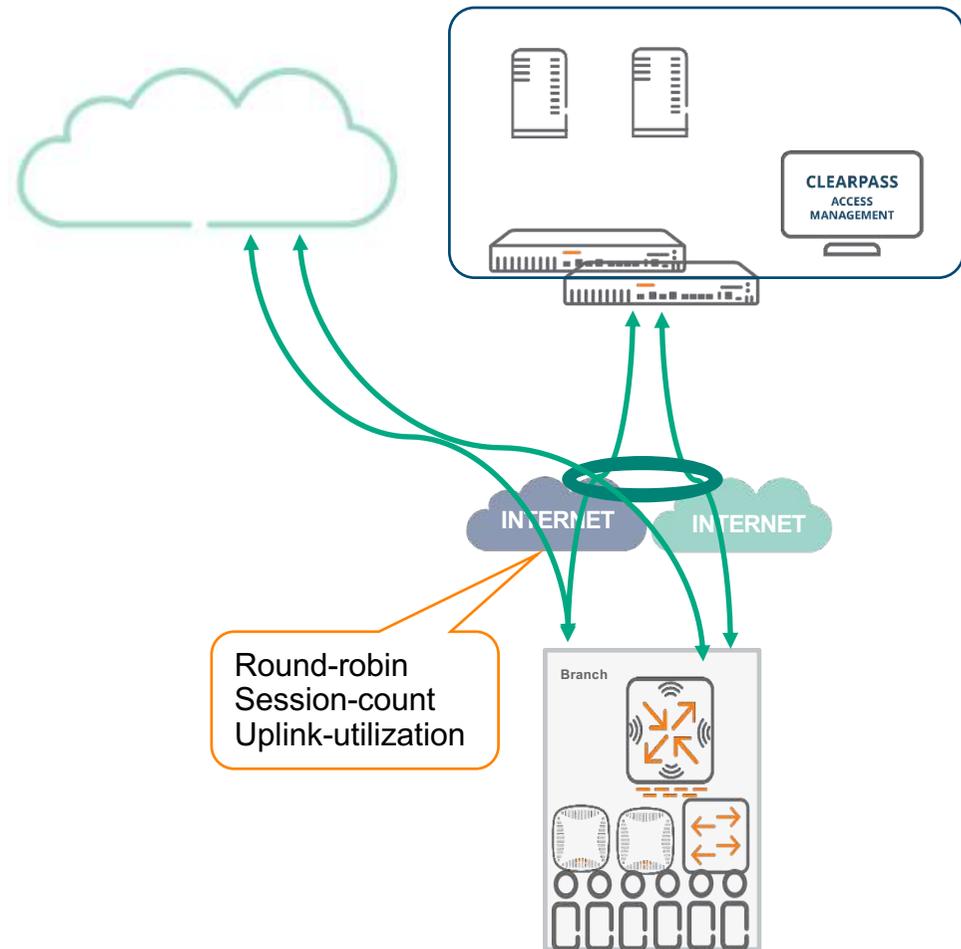
- ✓ Simple, Scalable routing
- ✓ Optimizing WAN usage
  - ✓ WAN Compression
  - ✓ Role based routing
- ✓ **User Centric Security and routing policies**



Different roles get different routing policies

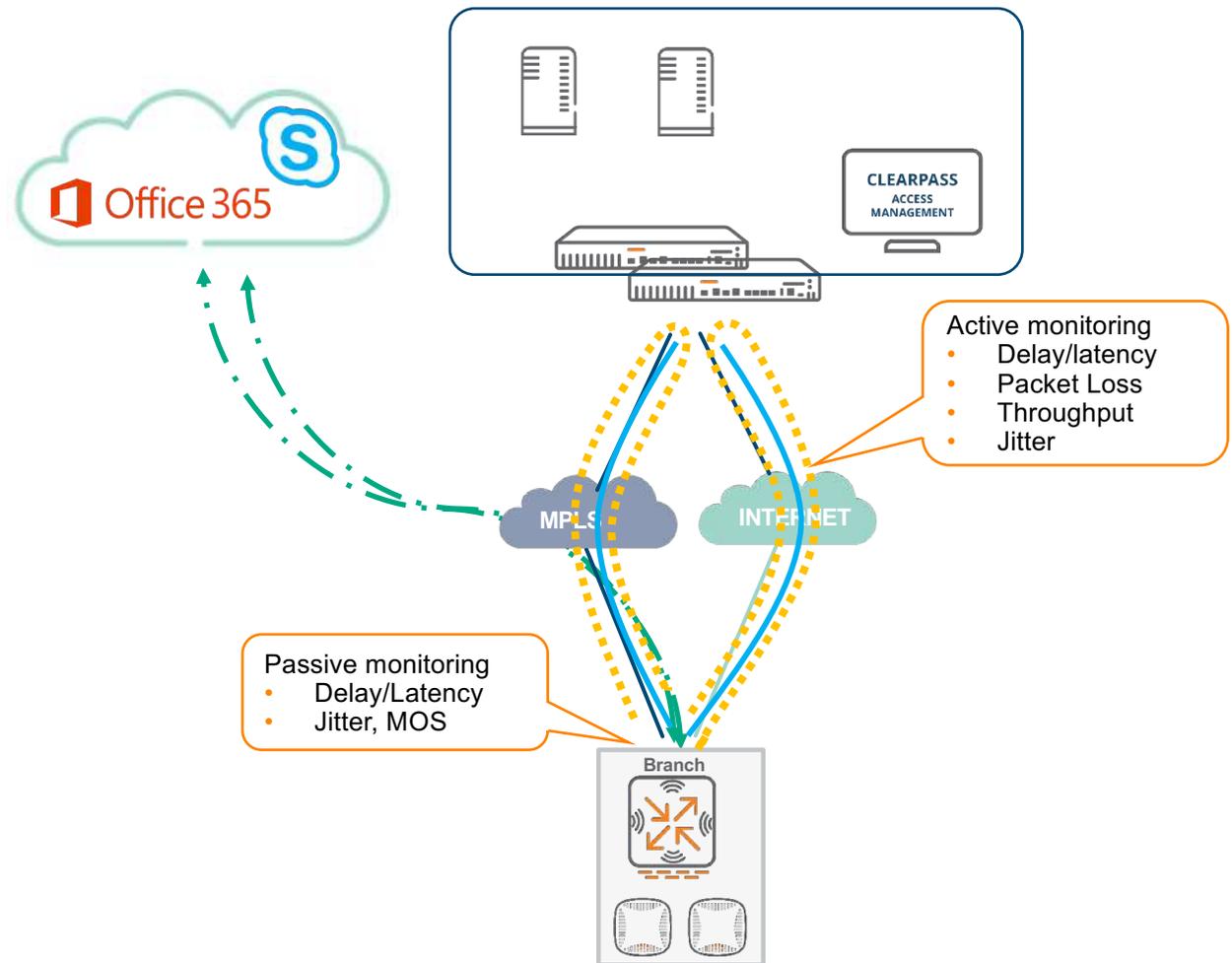
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- ✓ Simple, Scalable routing
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- ✓ Uplink aggregation (4 +1)



# SD-WAN - NEW!

- ✓ Simple, Scalable routing
- ✓ Optimizing WAN usage
  - ✓ WAN Compression
  - ✓ Role based routing
- ✓ User Centric Security and routing policies
- ✓ Uplink aggregation (4 +1)
- ✓ Context-aware Dynamic Path Steering



# DPS Monitoring

*Is the WAN link compliant to the application SLA?*

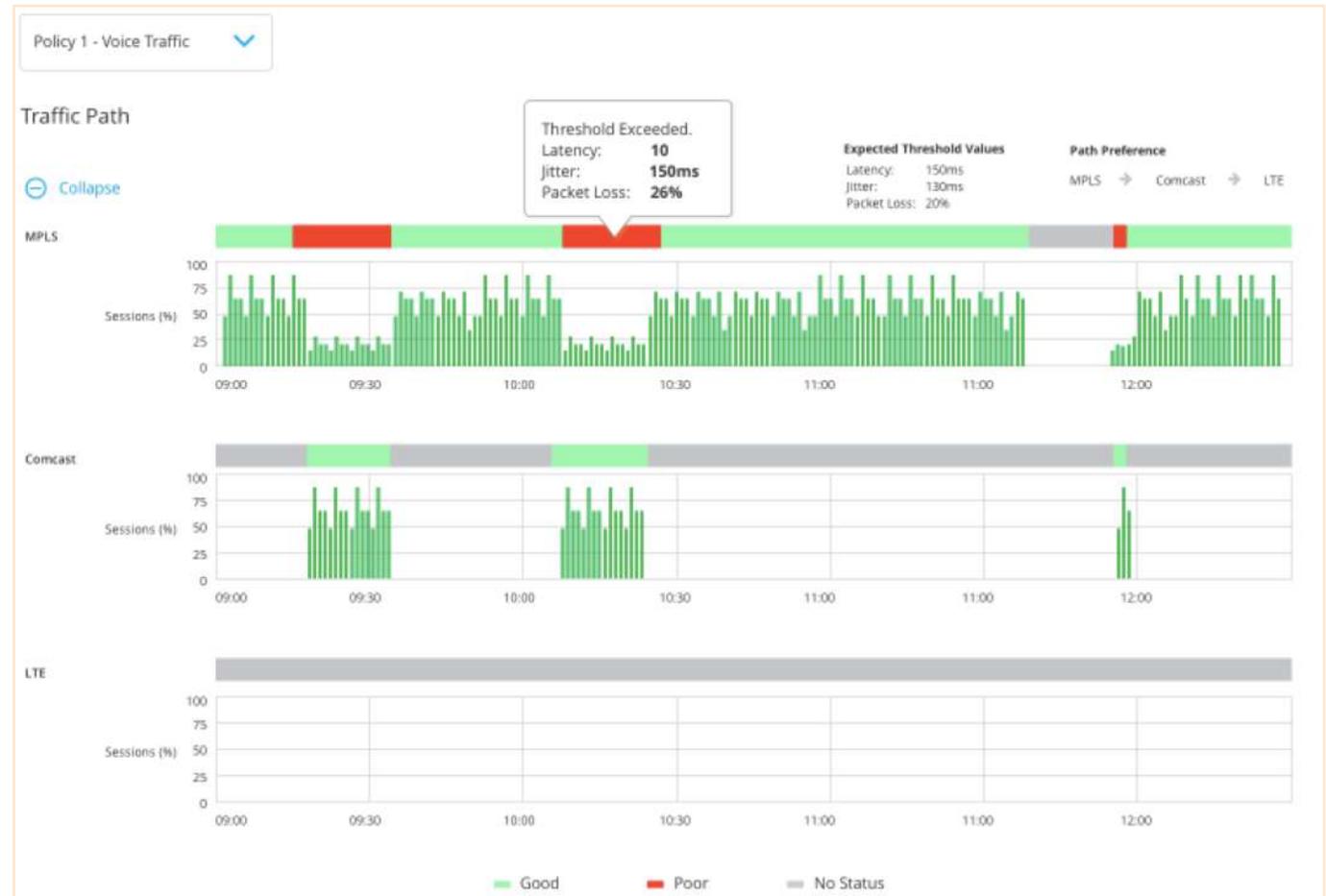
- View compliance per WAN link
- Highlight violations with specific reasons

*Is the policy honoring path preference?*

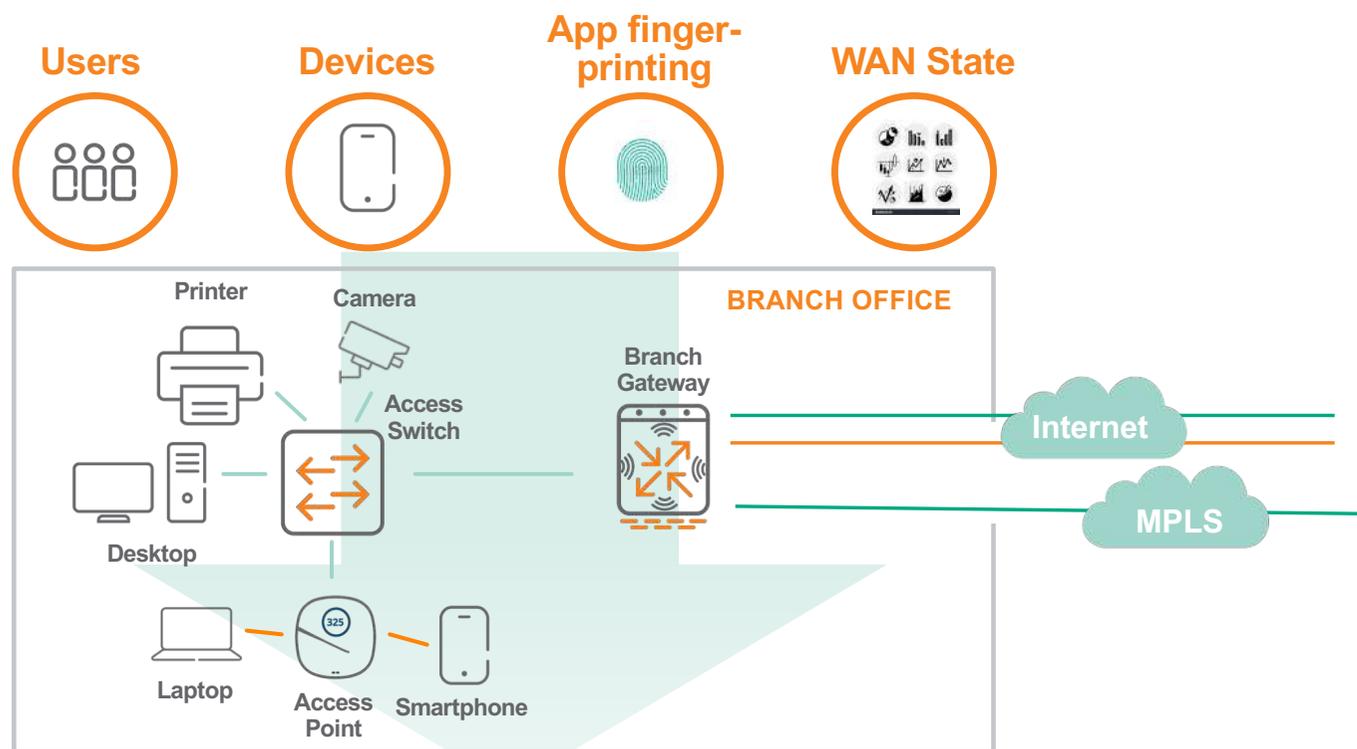
- View session distribution across active links

*Is DPS kicking in when there are WAN link SLA violations?*

- Quickly identify session movement between WAN links



# Role Based Polices for LAN, Security, WAN



## LAN Policies

WLAN and wired switching policies applied per role.  
E.g.: Guest SSID, QoS for PCI traffic

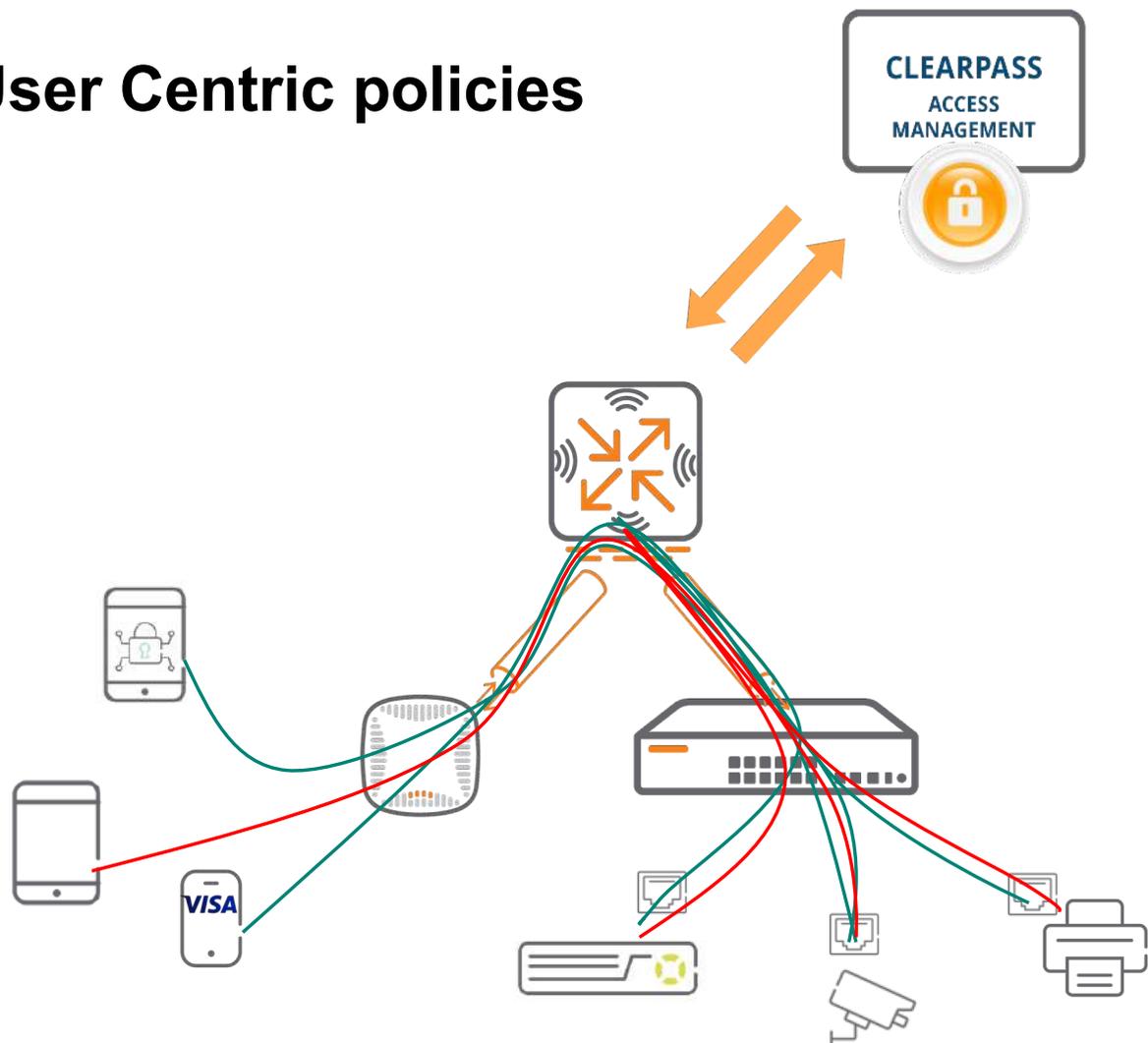
## Security Policies

Firewall and WebCC policies applied per role.  
E.g.: WebCC for Guest, PCI traffic isolation

## WAN Policies

Path steering policies applied per role.  
E.g.: Guest to Internet, PCI traffic to MPLS

# User Centric policies



- 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. Hence, only needs a single vlan.

# 7000 Series Branch Gateways



- L4-L7 Firewall CC EAL4+
- Routing – Dynamic Path Selection
- WAN compression
- Web Filtering
- WAN QoS
- WAN PBR (Policy Based Routing)
- AAA Survivability
- Crypto Engine (IPsec VPN)
- Application visibility and analytics

# Branch Gateway Portfolio

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

# Headend/ VPN Concentrator Portfolio

Features	7205	7210	7220	7240
IPSec Tunnels	4096	16384	24576	32768
Encryption throughput	4.5Gbps	5.9Gbps	20Gbps	30Gbps
Firewall throughput	12Gbps	20Gbps	40Gbps	40Gbps
GE ports	4 (1G Combo)	2 (1G Combo)	2 (1G Combo)	2 (1G Combo)
SFP/SFP+	2 10G SFP+	4 10G SFP+	4 10G SFP+	4 10G SFP+
Redundant Power Supply/Fan	No	Yes	Yes	Yes

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**Thank You.**

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