

November 2022

Aruba EdgeConnect Fabric

Andreas Häggander, Systems
Engineer WAN-Edge

Challenges driving SD-WAN/WAN Edge adoption?



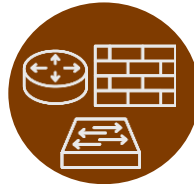
Increased Demand for Application Performance

Inconsistent SaaS application performance, expensive backhauling



Managing Multicloud Connectivity

Struggling to keep up with connectivity to public clouds, cloud-delivered security services and IoT



Branch Infrastructure Sprawl

Routers, FWs, WAN Optimization, Multiple operating systems



Total Lack of Automation

Manual configurations and device-by-device changes, delays



Consistent Edge-to-Cloud Security

Limiting lateral movement of viruses, end-to-end segmentation, best-of-breed SASE architecture, and IoT protection

Aruba Secure WAN Edge Portfolio

Current Aruba Portfolio

New Name

Aruba EdgeConnect
(Silver Peak)



EdgeConnect Enterprise



Aruba SD-Branch



EdgeConnect SD-Branch



Aruba IAP/RAP



EdgeConnect
Microbranch



Aruba VIA



EdgeConnect Mobile



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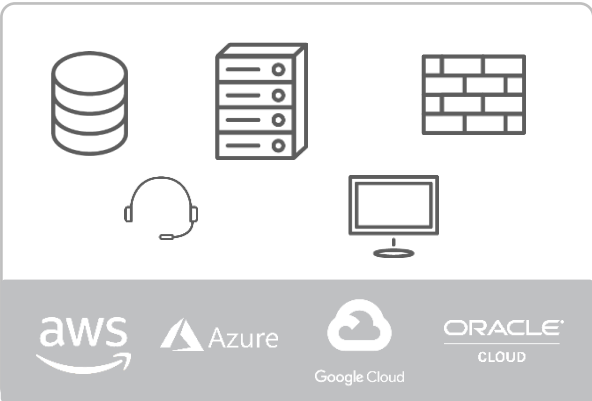
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Aruba Secure Wan Edge Portfolio

Data Center and Branch App & Services



Cloud Hosted Apps and Services (IaaS)



Central/
Orchestrator



EdgeConnect Mobile

Mobile Users



EdgeConnect
Microbranch

Home Users



EdgeConnect
SD-Branch

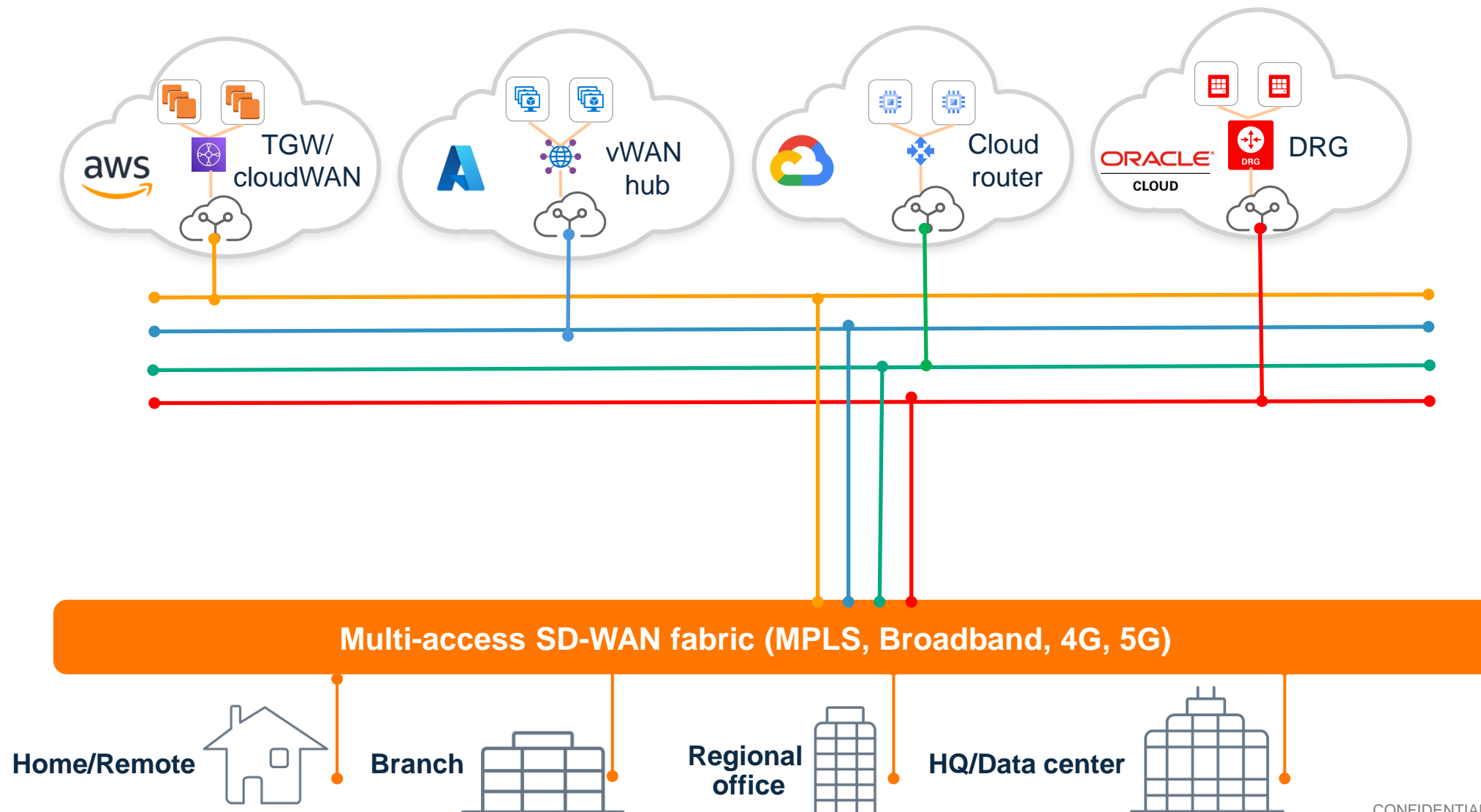
Branches, Campuses, Datacenters and Cloud



EdgeConnect
Enterprise

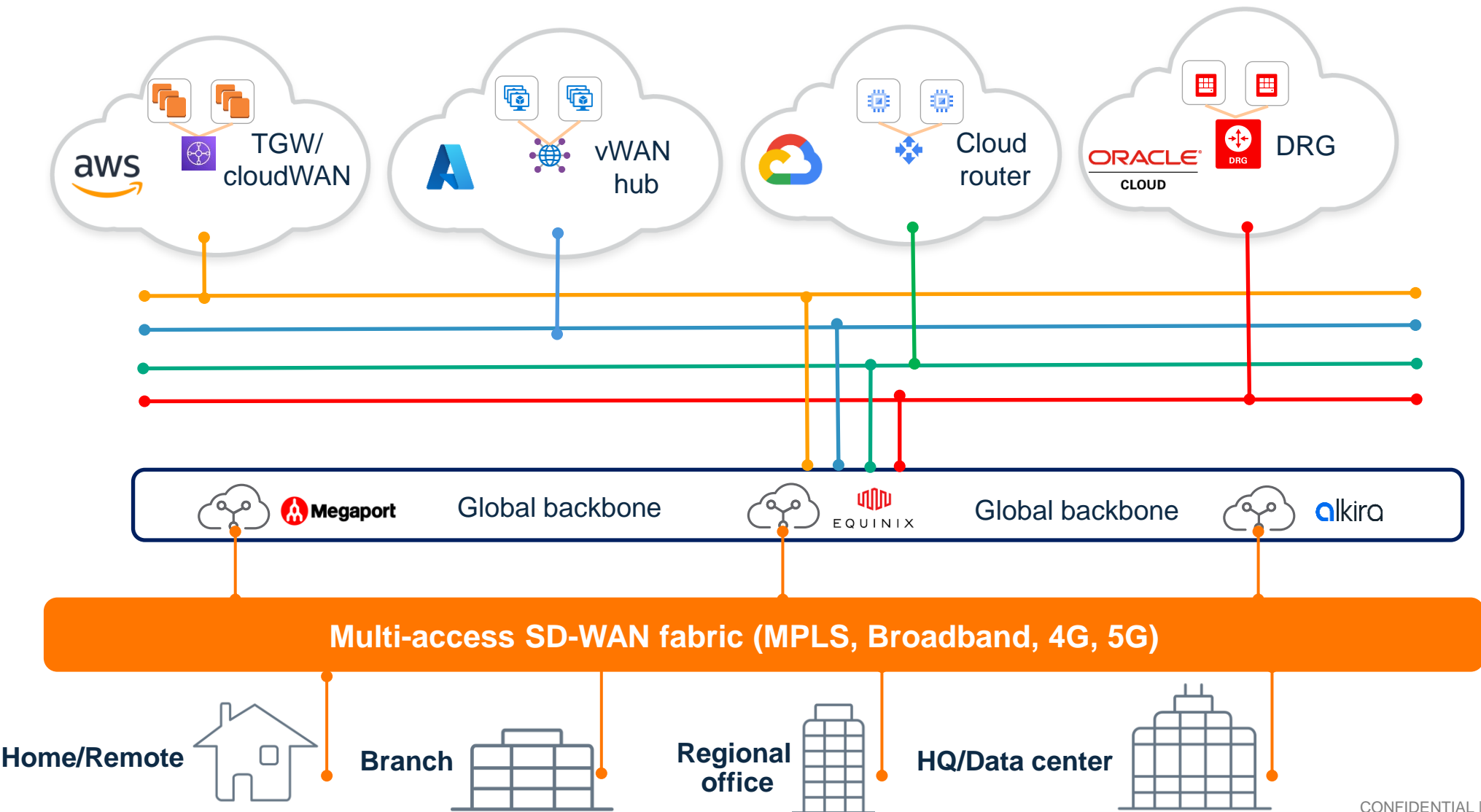
Multi-cloud networking with Aruba EdgeConnect

Flexible, secure, SD-WAN cloud connectivity - **Option 1**



Multi-cloud networking with Aruba EdgeConnect

Flexible, secure, SD-WAN cloud connectivity - **Option 2**



Aruba Secure WAN Edge Portfolio

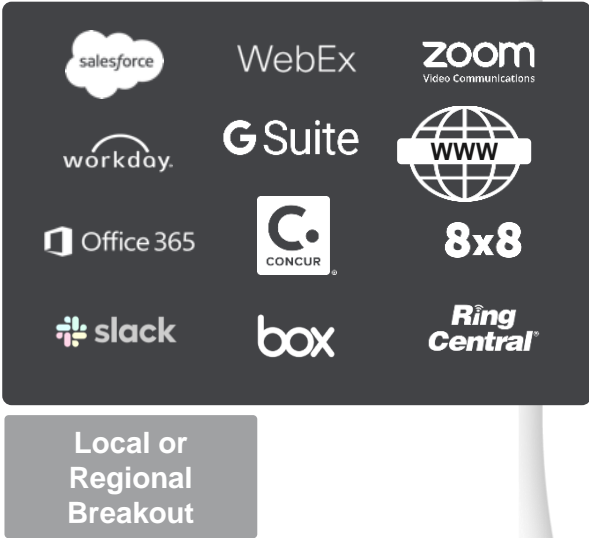
Data Center and Branch App & Services



Cloud Hosted Apps and Services (IaaS)



SaaS, Cloud Based Services



Central



EdgeConnect Mobile

Mobile Users



EdgeConnect Microbranch

Home Users



EdgeConnect SD-Branch

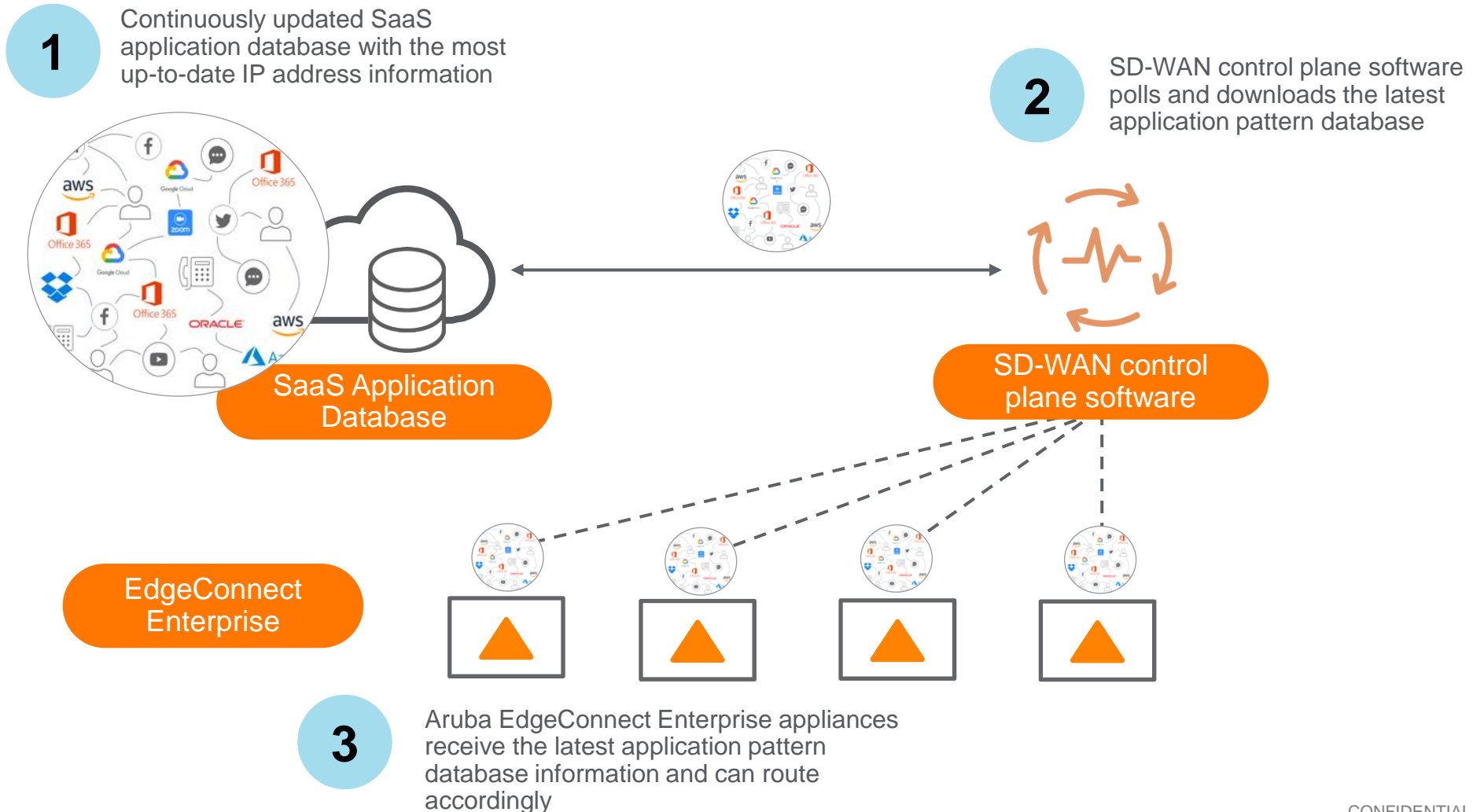
Branches, Campuses, Datacenters and Cloud



EdgeConnect Enterprise

SaaS Express

Automated daily SaaS app updates with most up-to-date IP address information



SaaS Express

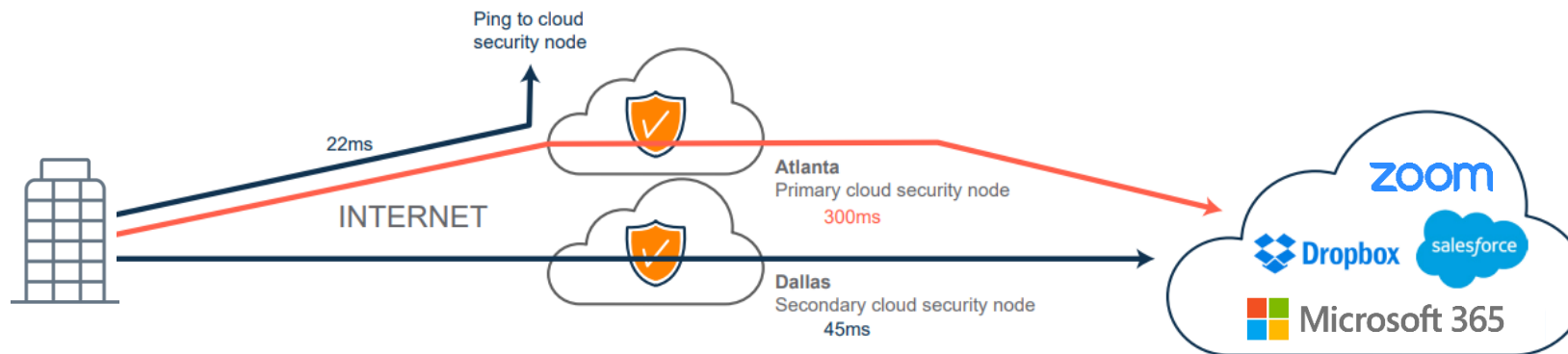
Best SaaS path every time

Microsoft 365
Networking Partner



Scenario 1

SaaS Express uses synthetic polling reinforced by actual packet observations to continuously identify the best path to reach a given SaaS application



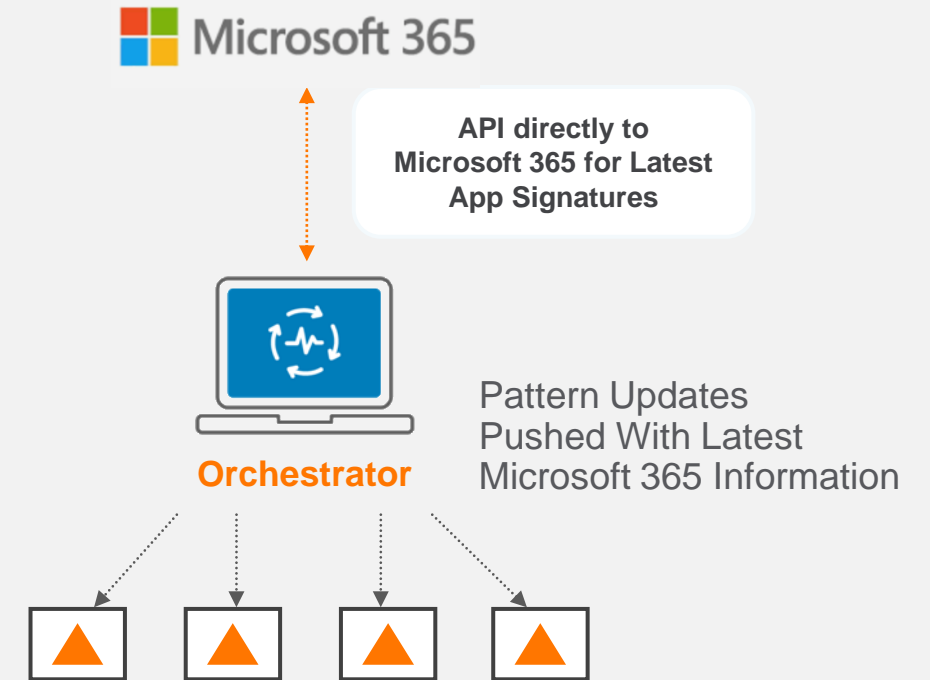
Scenario 2

Microsoft 365 Integration

100% Accurate Microsoft 365 Application Identification, regardless of changes to their network and infrastructure

Continuously and automatically updated across the entire WAN environment

EdgeConnect is Microsoft 365 certified



Aruba Secure WAN Edge Portfolio

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Central



EdgeConnect Mobile

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Branches, Campuses, Datacenters and Cloud



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Orchestrated Cloud Security Integration

One-Click Cloud Security Integration

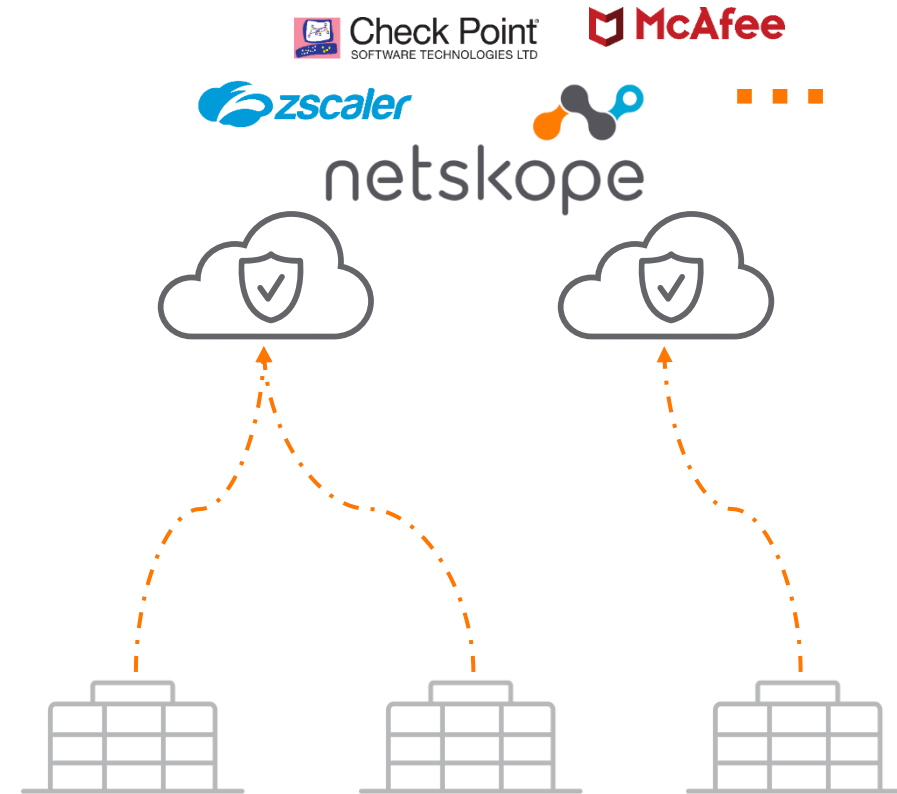
- Orchestration to create and define locations in the cloud security provider

Find the nearest Cloud Security Edge

- Geo-location of nearest cloud security edge to optimize traffic path

Policy-based enforcement

- Role/application-aware routing policies enable more granular integration



Reduce deployment time

- Cloud Security integration deployed from a central point. No manual overrides needed.

Optimize traffic flow

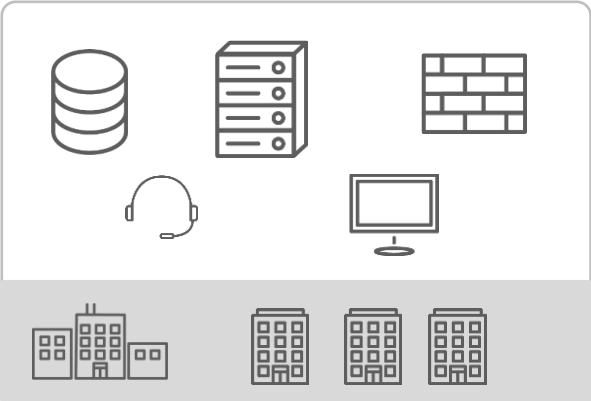
- Send traffic through the nearest node

Only send the necessary traffic

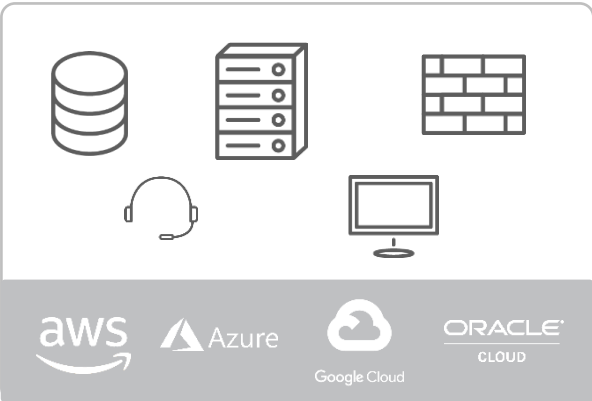
- Real-time traffic or traffic from non-critical users (guest) can selectively be routed through the local-breakout

Aruba Secure WAN Edge Portfolio

Data Center and Branch App & Services



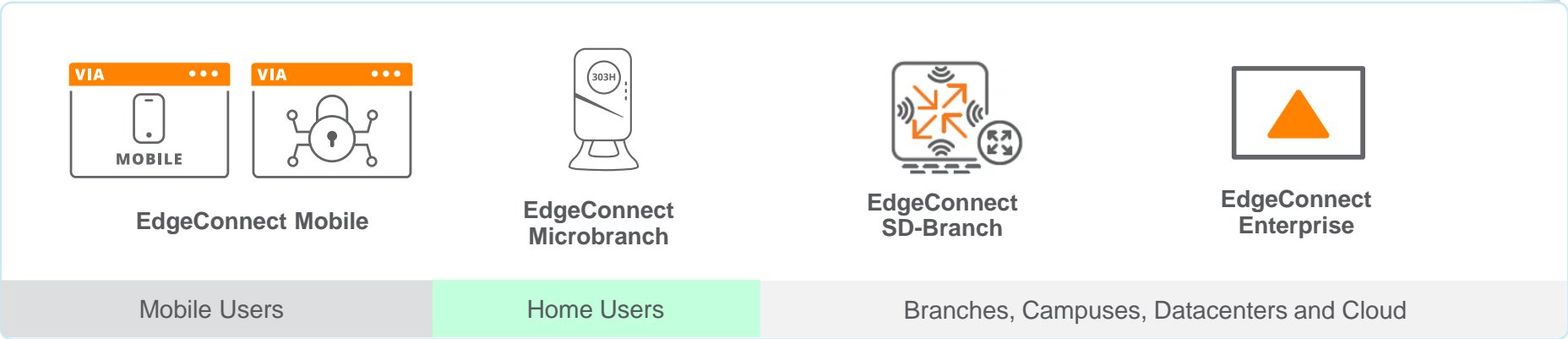
Cloud Hosted Apps and Services (IaaS)



SaaS, Cloud Based Services



Secure, Optimized, Protected SD-WAN Fabric



Unified Branch Security



App-user aware firewall



Deep packet inspection



Endpoint Profiling



Intrusion detection & prevention system



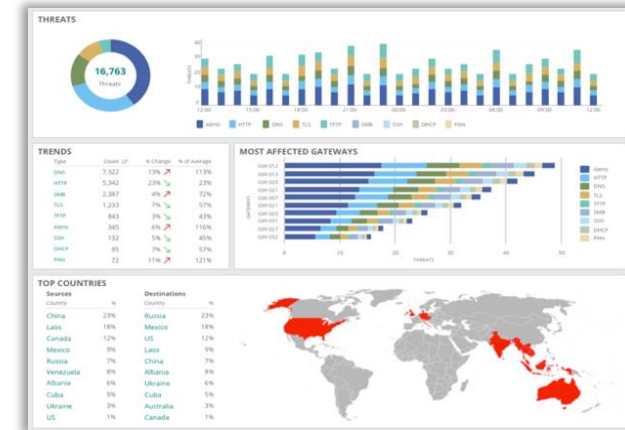
Web content & URL filtering



Zero Trust – Dynamic Segmentation



VRF – Advanced Segmentation



Threat visibility

- Threat trending over time
- Overlay with app/user launch and network direction
- Threat source and impact

Policy-driven enforcement

- Out of box IDS / IPS policies
- User defined whitelisting
- False positive management flow
- Segmentation (Dynamic & VRFs)

ICSA Secure SD-WAN Certification

Aruba EdgeConnect SD-WAN has earned ICSA Labs Secure SD-WAN certification based on a comprehensive and robust set of SD-WAN functionality and platform security requirements

– ICSA Labs Secure SD-WAN certification requirements include:

- **Advanced SD-WAN features**
- **Native support (or via service chaining) for advanced security functions**
- **Encryption of sensitive data**
- **Network-wide policy enforcements**
- **Security events logging**



ICSA Labs provides third-party testing and certification of security and health IT products, as well as network-connected devices, to measure product compliance, reliability and performance.

- ✓ Simplify network architecture by replacing branch firewalls with Aruba EdgeConnect Enterprise
- ✓ Use a secure SD-WAN solution certified by a recognized global, third-party organization

EdgeConnect Secure WAN Edge

Right-sized based upon use case and location



EdgeConnect Enterprise

- Advanced SD-WAN with Business Intent Overlays
- Max network and app performance



EdgeConnect SD-Branch

- Integrated management for Wired, Wi-Fi, Security and SD-WAN
- End-to-end user-centric security



EdgeConnect Microbranch

- Small office / work from home “branch of one”
- SD-WAN features including cloud-delivered security



EdgeConnect Mobile

- Work from anywhere on laptops, phones or tablets
- Role-based security taken to a VPN client!



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EdgeConnect Secure WAN Edge

Right-sized based upon use case and location



EdgeConnect Enterprise

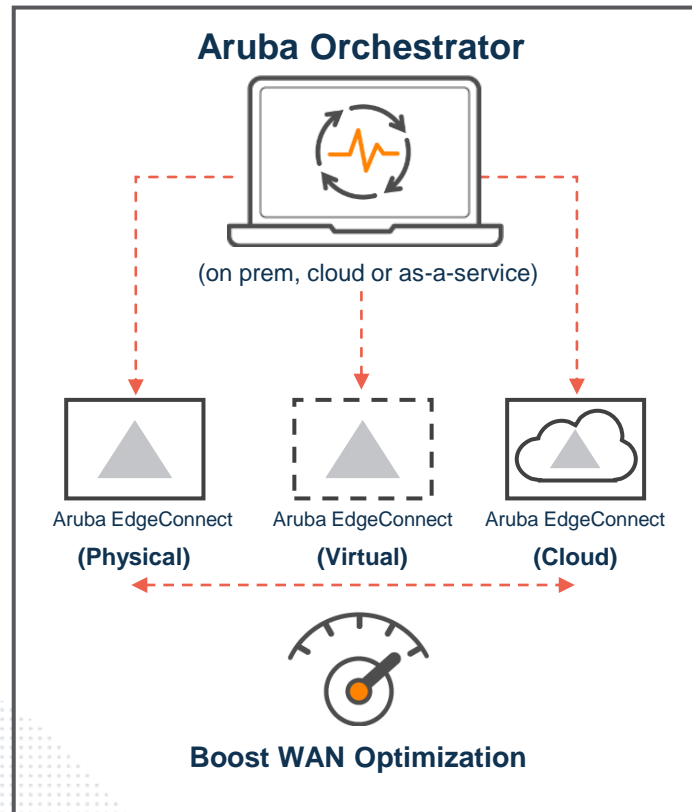
- **Advanced SD-WAN with Business Intent Overlays**
- **Max network and app performance**



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EdgeConnect Enterprise - Architecture



Aruba Orchestrator

Centralized policy orchestration, monitoring and reporting

EdgeConnect Enterprise


Unified SD-WAN edge platform: routing, security, SD-WAN and WAN Optimization

Aruba Boost WAN Optimization

On-demand WAN Optimization (Optional)

Aruba Orchestrator



Type Single Tenant Or <u>Global Enterprise (Multi-Tenant)</u>	Small Up to 50 Appliances	Region United States Frankfurt	Term 1 Year 2 Years 3 Years 4 Years 5 Years
	Medium Up to 200 Appliances		
	Large More than 200 Appliances		
<div> Orchestrator-as-a-Service</div>			

On-Premise, Private Cloud, IaaS

Orchestrator license is included with EdgeConnect subscription. No SKU required for on-premises Orchestrator.

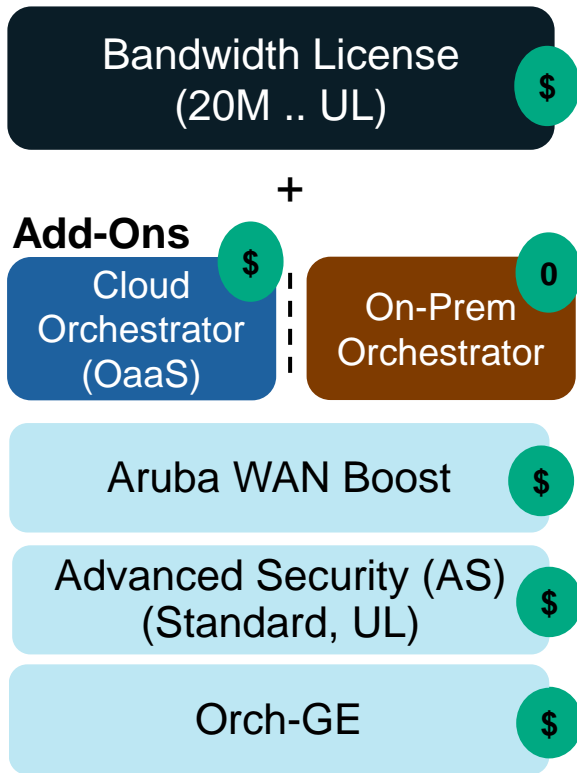
OR

Orchestrator As-a-Service

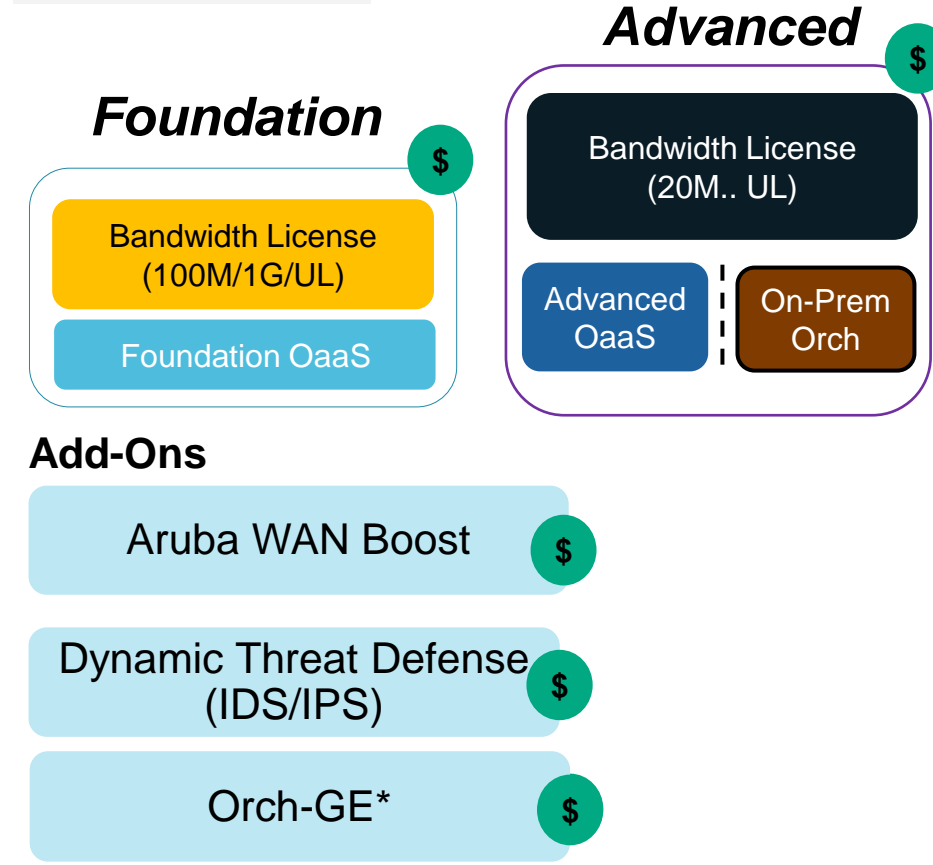
Fully hosted by Aruba as-a-service. Single tenant is the most frequently used.

Tiered Subscription Licensing Overview

Existing Model



New Model



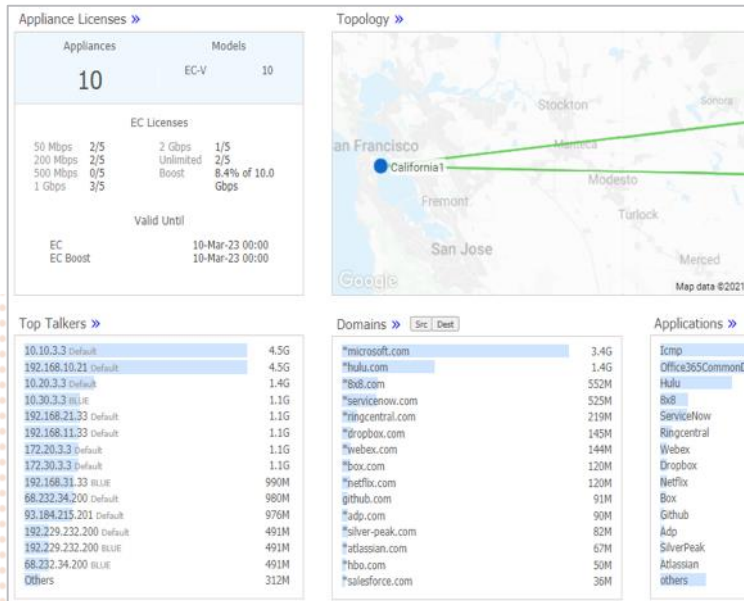
Key Takeaways

1. Differentiated solution to enable new market segment, i.e., Right sized solution for each customer
2. Orchestrator is integrated into every subscription tier, and not an incremental SKU.
3. Two subscription tiers, three SKU sets

Will co-exist with the new licensing model

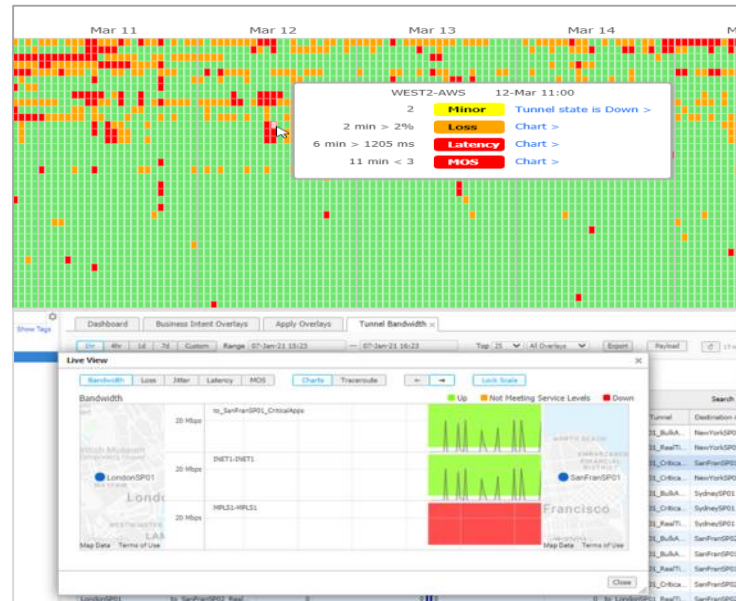
Automation with Application/Network Visibility

Dashboard



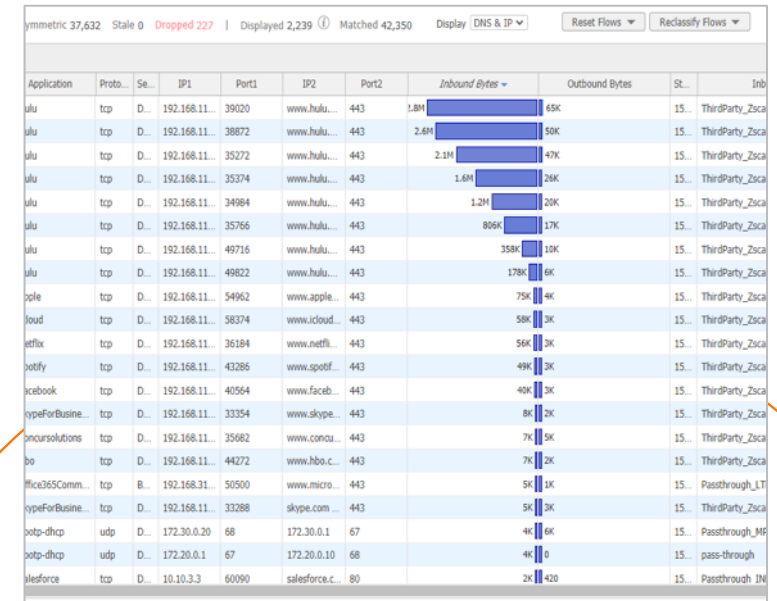
Comprehensive dashboard highlights key network and application attributes, and places focus on critical issues

Real-time Health Map



Network health is visualized in real-time and correlated across all locations. Alarms, network health and configuration issues are all easily diagnosed

Connection Level Visibility

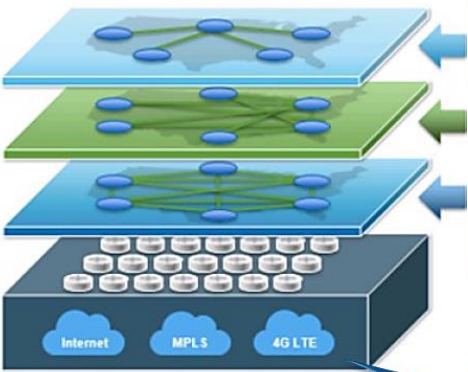


Flow level statistics give total visibility into every connection on the network providing total visibility and control of applications and users

Business Driven SD-WAN Policies

























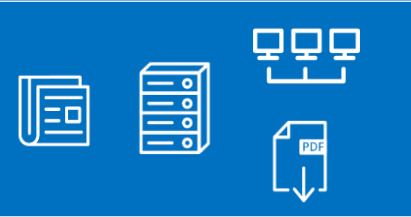










Business Intent Overlays (BIOs) are logical networks that are individually customized to your applications and requirements within your network

Apps, IaaS, PaaS	Circuits	Bonding + SLA	Topology	SaaS, Cloud, Internet Apps	Internet Policy & Firewall	Overlay Defaults
Real Time Overlay						
	<ul style="list-style-type: none">MPLSInternetLTE (Backup)	High Availability Loss: 1% Latency: 400ms Jitter: 200ms	 Mesh	WebEx, zoom, Ring Central, 8x8	Best Circuit + Local Firewall Local Firewall Datacenter (Backup)	FW Zone: Real Time QoS: Real Time Boost: Disabled
Enterprise Apps Overlay						
	<ul style="list-style-type: none">MPLSInternetLTE (Backup)	High Quality Loss: 2% Latency: 600ms Jitter: 300ms	 Hub & Spoke	Office 365, box, salesforce, workday, slack	Best Circuit + Cloud Firewall zscaler Datacenter (Backup)	FW Zone: Restrict QoS: Enterprise Boost: Enabled
Default Overlay						
	<ul style="list-style-type: none">MPLSInternetLTE (Backup)	High Efficiency Loss: 5% Latency: 800 ms Jitter: 500 ms	 Hub & Spoke	f YouTube	Load Balance + Cloud Firewall CloudGuard Datacenter (Backup)	FW Zone: Default QoS: Best Effort Boost: Disabled



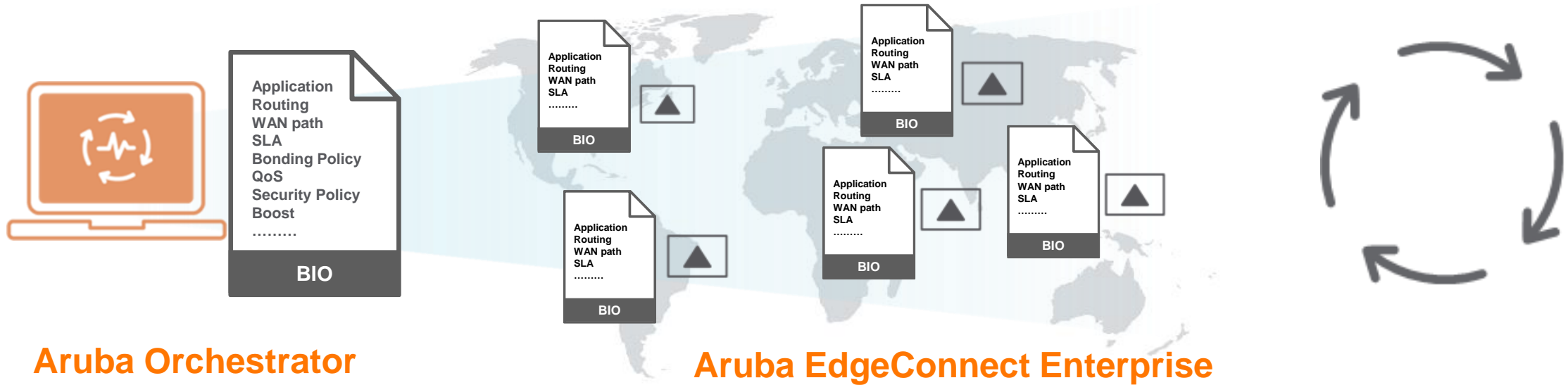
Underlays:
Physical Transport Networks

Business Driven SD-WAN Policy's

Apps, IaaS, PaaS	Circuits	Bonding + SLA	Topology	SaaS, Cloud, Internet Apps	Internet Policy & Firewall	Overlay Defaults
Real Time Overlay						
	<div> MPLS</div> <div> Internet</div> <div> LTE (Backup)</div>	<div>High Availability</div> <div>Loss: 1%</div> <div>Latency: 400ms</div> <div>Jitter: 200ms</div>	<div></div> <div>Mesh</div>	<div> </div> <div>  </div>	<div>Best Circuit + Local Firewall</div> <div> Local Firewall  Datacenter (Backup)</div>	<div>FW Zone: Real Time</div> <div>QoS: Real Time</div> <div>Boost: Disabled</div>
Enterprise Apps Overlay						
	<div> MPLS</div> <div> Internet</div> <div> LTE (Backup)</div>	<div>High Quality</div> <div>Loss: 2%</div> <div>Latency: 600ms</div> <div>Jitter: 300ms</div>	<div></div> <div>Hub & Spoke</div>	<div> </div> <div> </div> <div></div>	<div>Best Circuit + Cloud Firewall</div> <div>  Datacenter (Backup)</div>	<div>FW Zone: Restrict</div> <div>QoS: Enterprise</div> <div>Boost: Enabled</div>
Default Overlay						
	<div> MPLS</div> <div> Internet</div> <div> LTE (Backup)</div>	<div>High Efficiency</div> <div>Loss: 5%</div> <div>Latency: 800 ms</div> <div>Jitter: 500 ms</div>	<div></div> <div>Hub & Spoke</div>	<div> </div> <div> </div>	<div>Load Balance + Cloud Firewall</div> <div>  Datacenter (Backup)</div>	<div>FW Zone: Default</div> <div>QoS: Best Effort</div> <div>Boost: Disabled</div>

A COMPLETELY AUTOMATED APPROACH

Standardize, Templatize & Automate Provisioning



1 Create Business Intent Overlay (BIO)

2 Push and Maintain Policies Globally

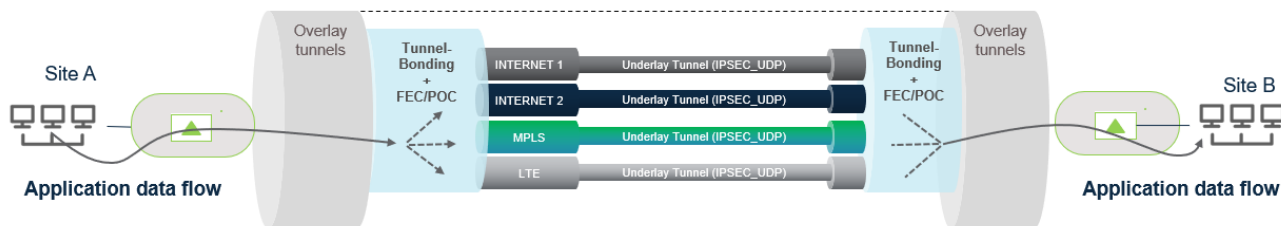
3 Continuously Monitored and Updated

Best Performance Over any Condition

Provides private-line-like performance over the public Internet

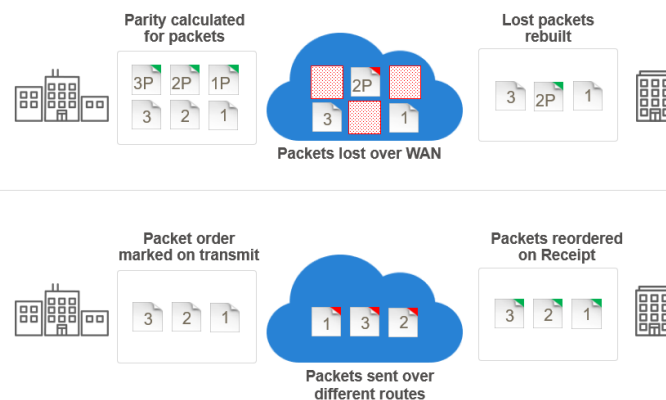
WAN Link bonding

- Packet-based load sharing
- Constant monitoring
- Zero second failover



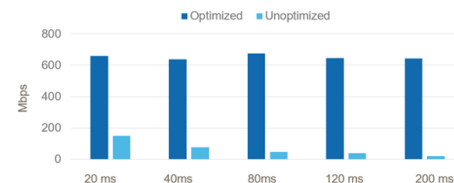
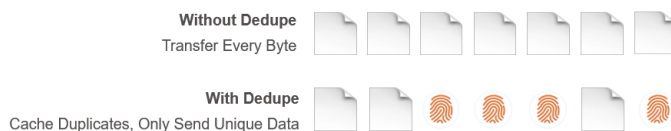
Path conditioning

- **FEC** (Advanced packet loss correction)
- **POC** (Packet order correction)



WAN Opt (Boost)

- **TCP Acceleration**
- **Data Reduction**



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SaaS Optimization

Adaptive internet breakout

Steer apps intelligently

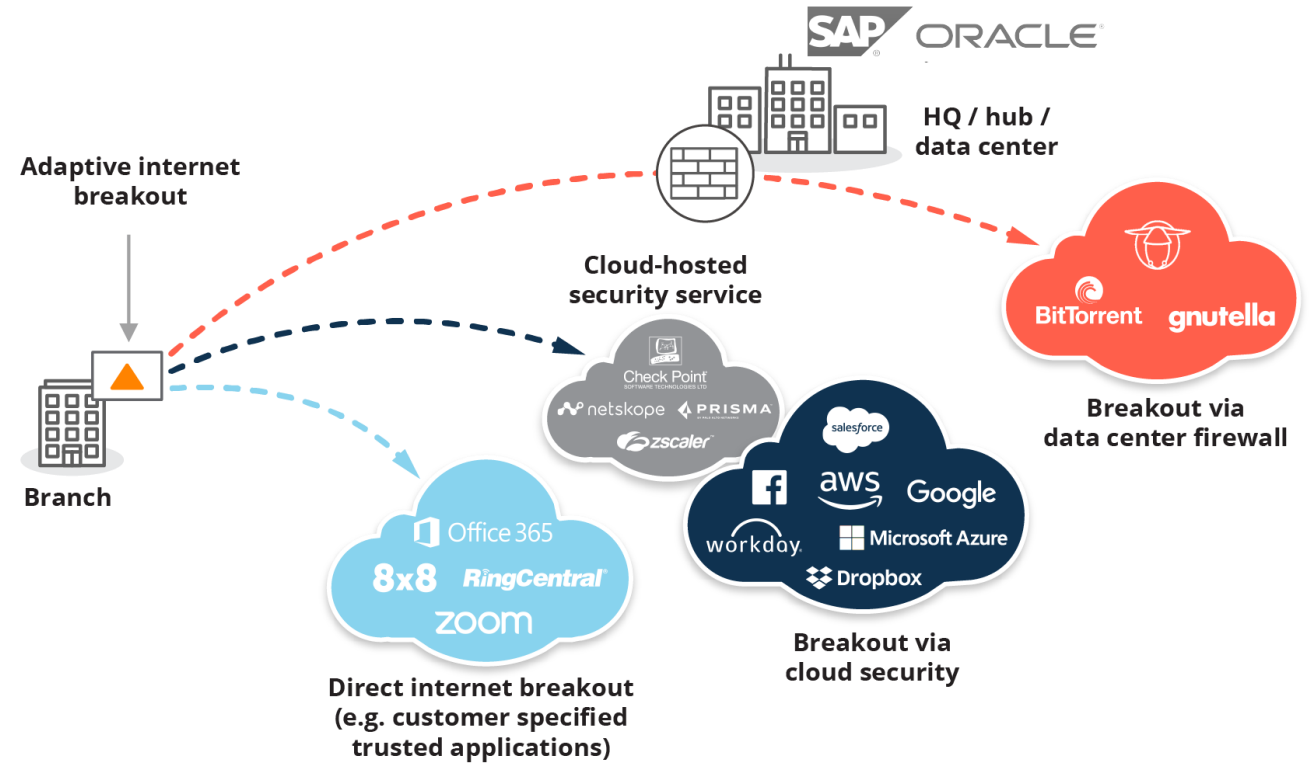
- Intelligent breakout of SaaS and trusted internet-bound traffic directly from the branch

Transform security model at your own pace

- Application-driven steering enables security transformation

Implement consistent network-wide security policies

- Eliminate tradeoffs between application security and performance



Improve app response time

- Avoid added latency by utilizing the shortest network path to apps

Reduce backhaul

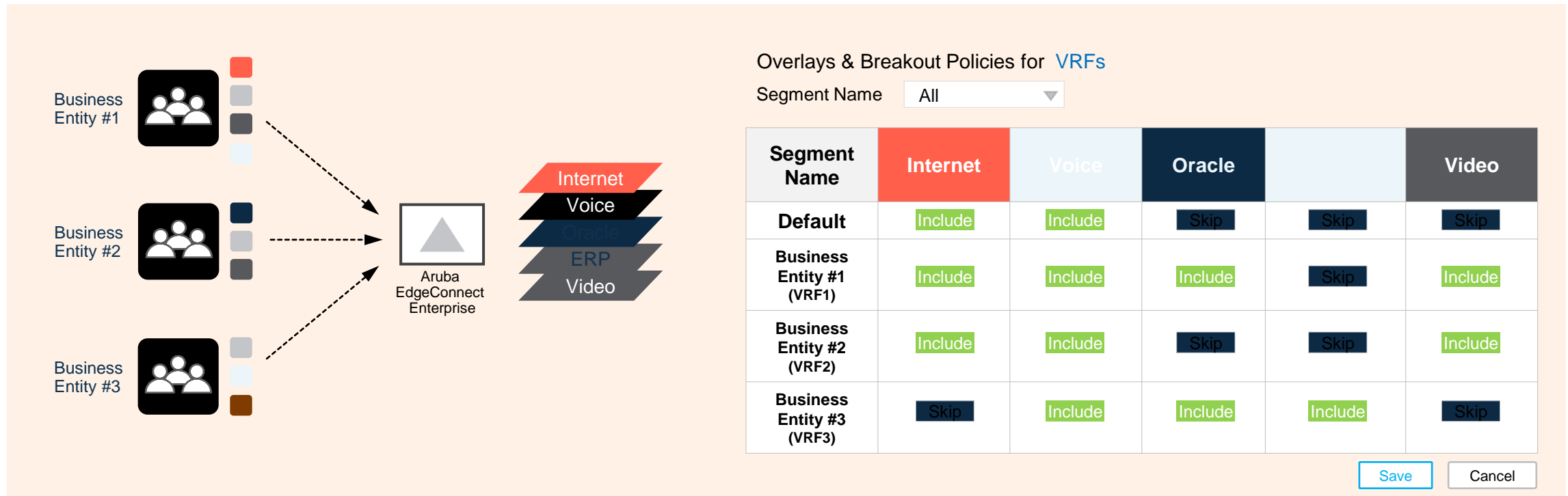
- Backhaul only untrusted traffic to corporate FW

Save valuable WAN bandwidth

- Avoid consumption of expensive MPLS circuits where not necessary

Advanced Segmentation

- Establish granular policies across the network; reduce attack surface
- Configure microsegments: separate business entities share the same applications and WAN infrastructure
- Eliminate overlapping IP address conflicts - no service disruptions



EdgeConnect Enterprise – Out of the box

Ready for use after installation. Only a few adjustments needed. Only customer specific details needed. Standard applications are already there, mapped according to many years of experience.

Simple to manage, no advanced skills to add/change policy's, just drag and drop. Reduced OPEX

Visibility, all information in one place. All flows in the fabric can be seen in real time. Built in reports.



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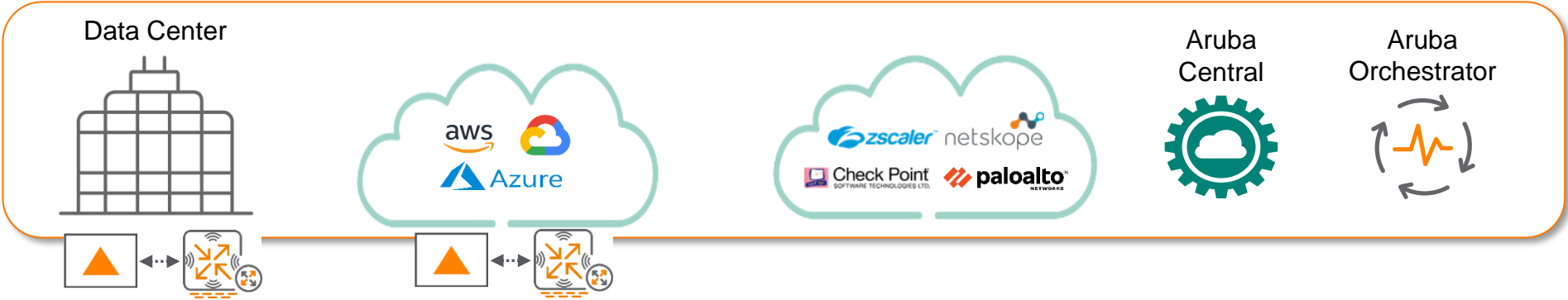
Aruba Edgeconnect Unified Fabric

Optional subtitle

Available today!

Aruba EdgeConnect SD-WAN Fabric

Simplifies provisioning, managing, securing, and operating WAN infrastructure across locations of any size



Converging management

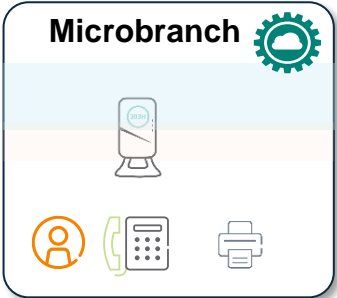
Aruba Central w/EdgeConnect site view

Joint Strategy

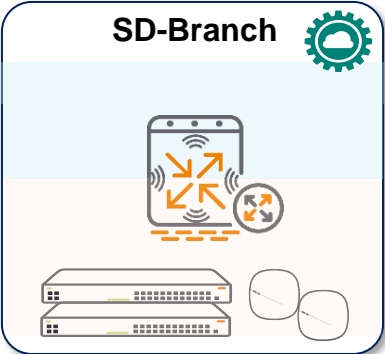
- Role Based Policies
- Dynamic Segmentation
- Aruba Threat Defense
- Cloud IaaS Integration
- Cloud security partners



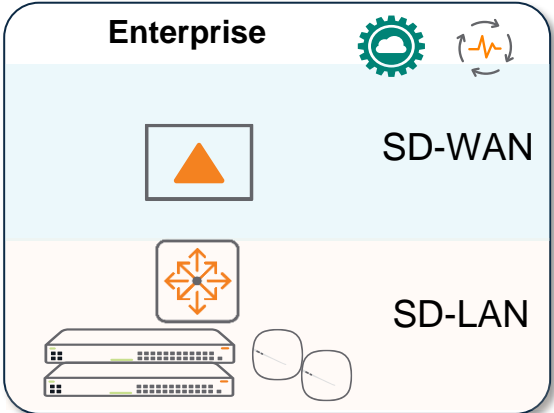
Max Mobility



Min Footprint



Max Integration



Optimal QoE



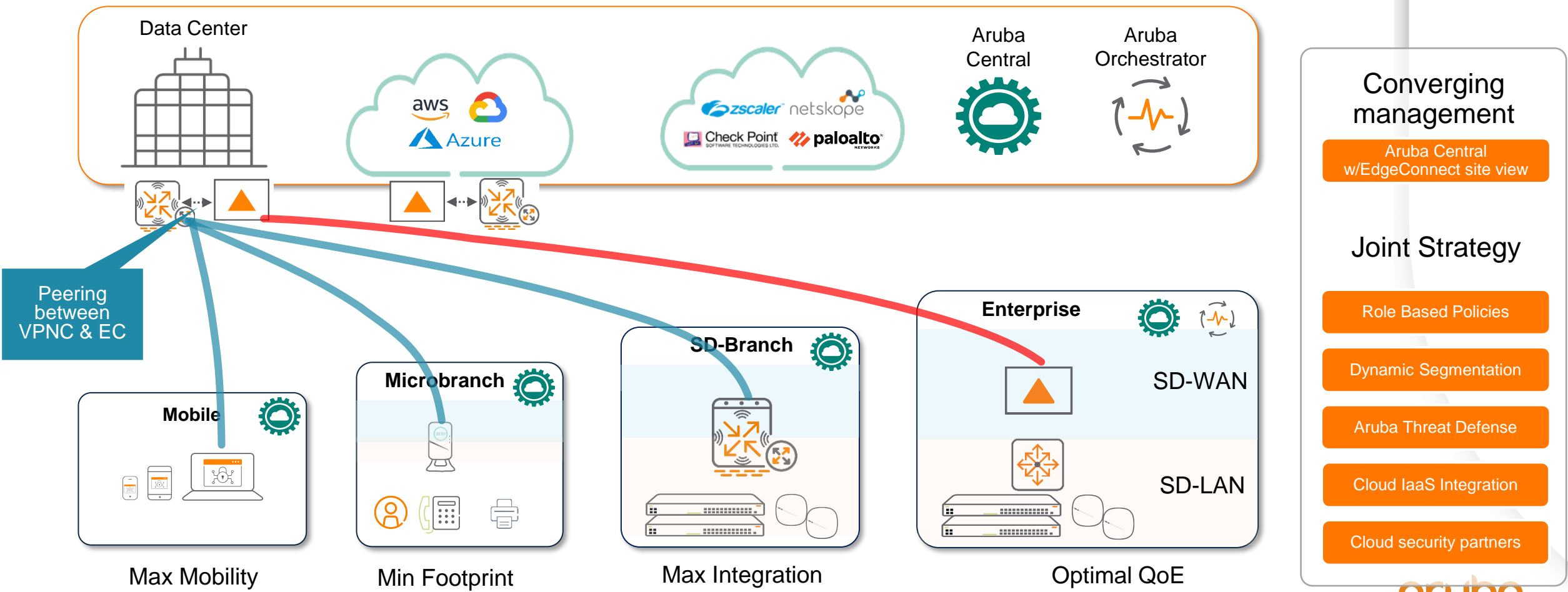
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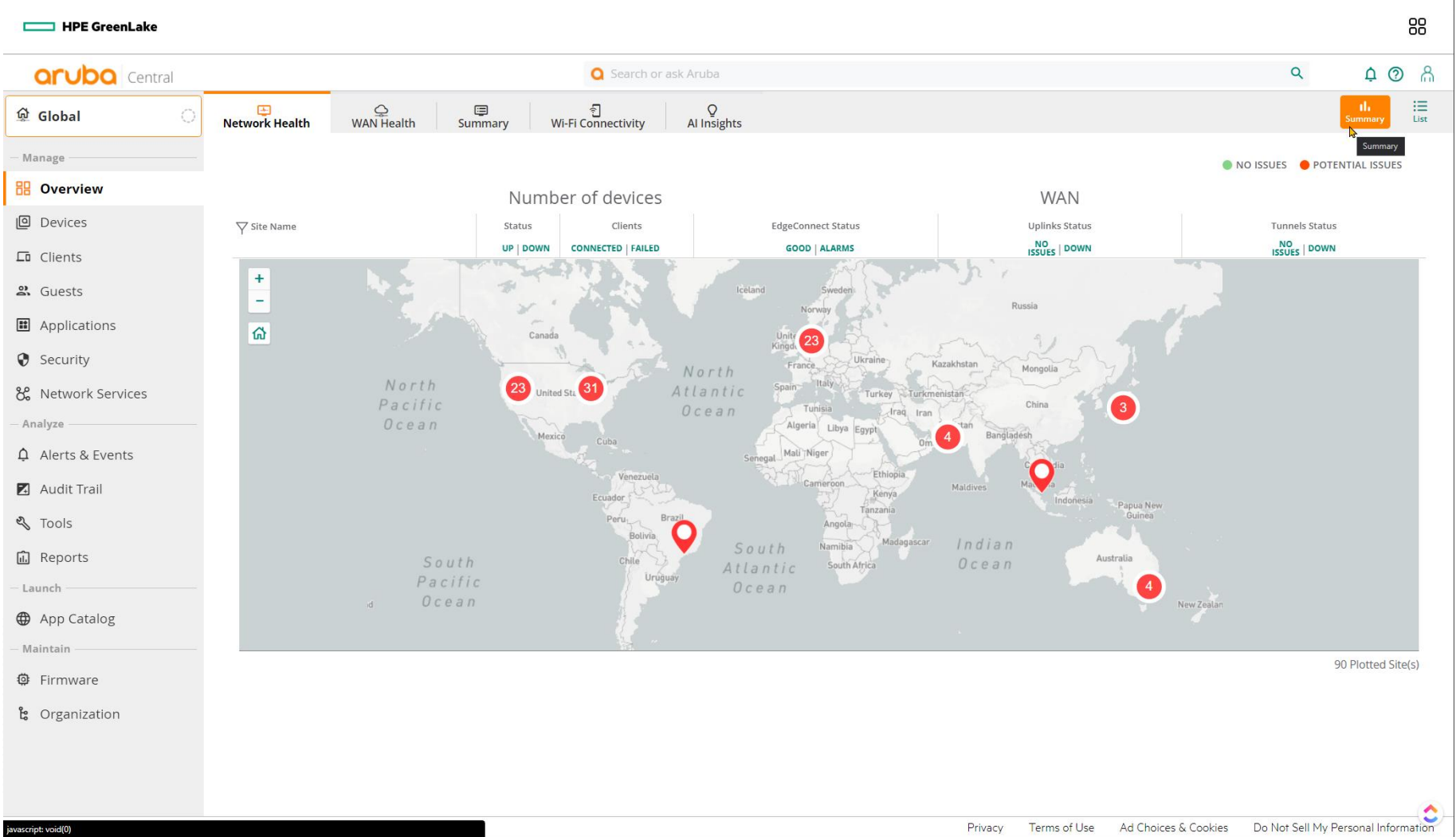
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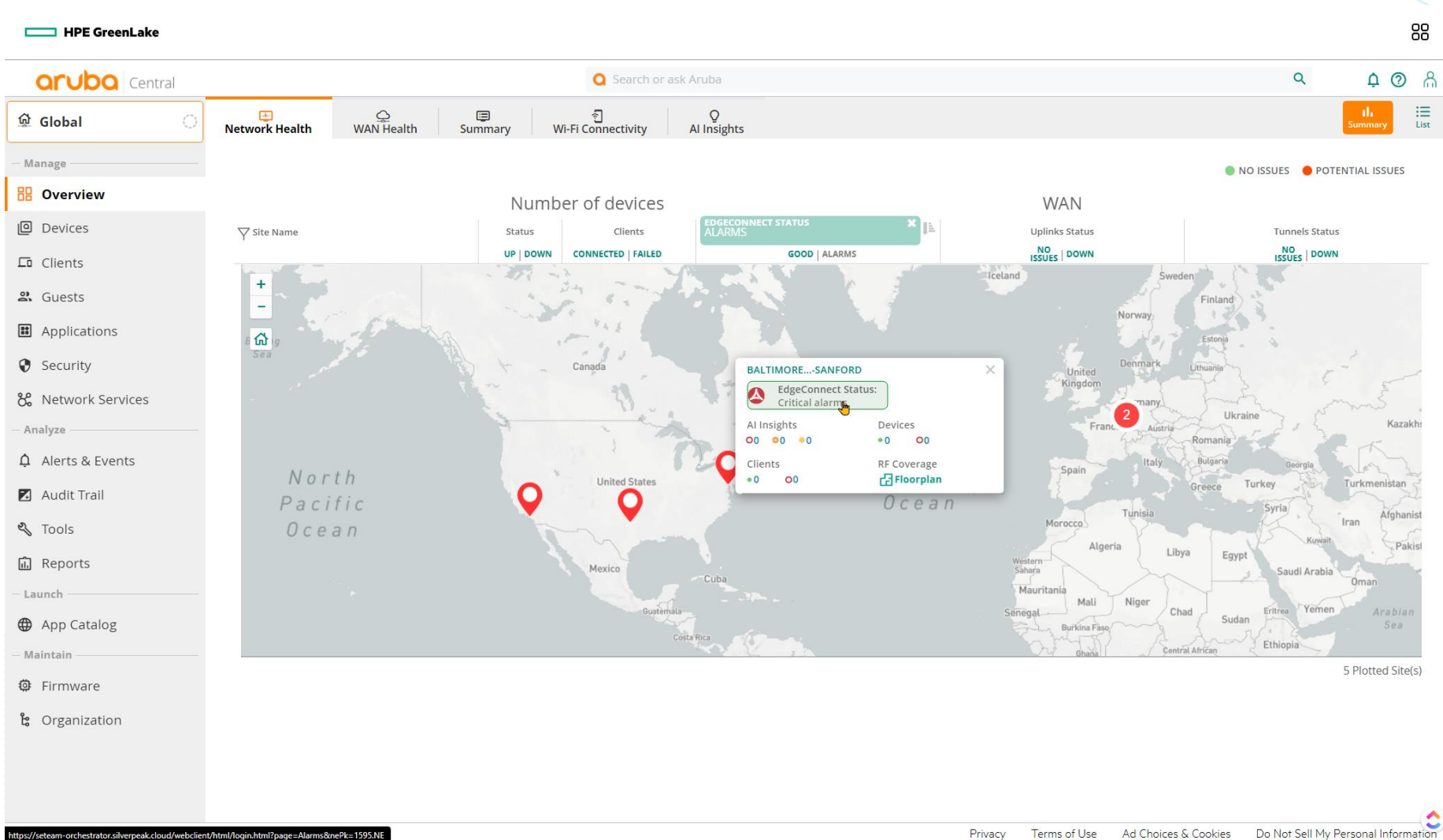
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Aruba Central Summary View with EdgeConnect Enterprise



Aruba Central View of EdgeConnect Enterprise Alarms

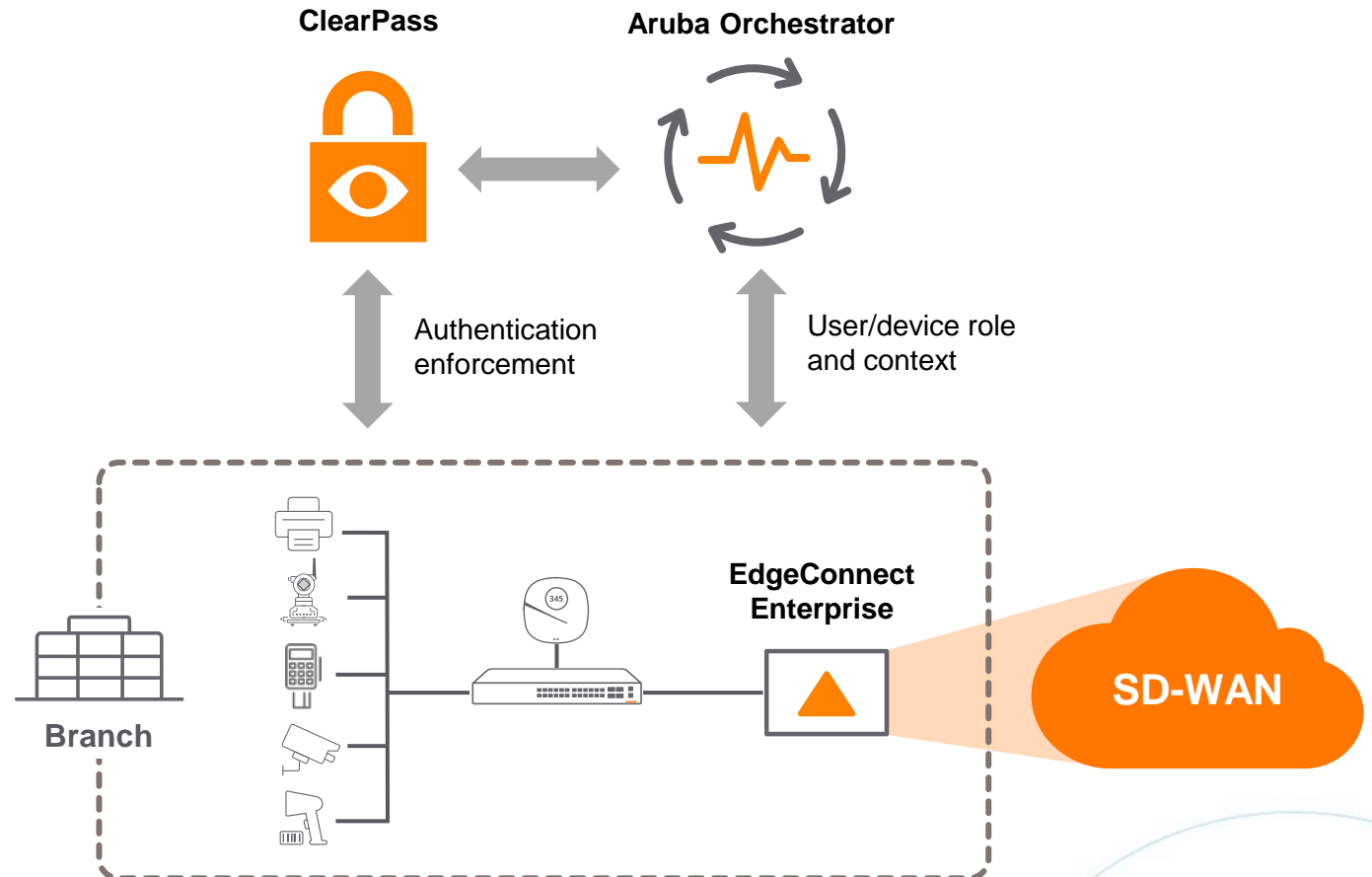


Aruba ClearPass Integration

Visibility, control, response

Single platform automates enterprise-wide context-aware, role-based policy

- **Visibility and automation:**
 - Built-in discovery, profiling and dashboards
 - Multi-vendor wired, wireless and VPN
- **Control:**
 - Access control of users/devices
- **Response:**
 - Adaptive response and dynamic segmentation
- **360 Security integrations:**
 - Ecosystem of 150+ security partners
- **Leverage multiple identity stores:**
 - Support for AD, LDAP, SQL, Internal dB, BYOD, third party integration



Visibility into User/device Identity and Role

Flows ? Active 393 Pass-Through 185 Asymmetric 251 Stale 0 Dropped 43 | Displayed 241 Matched 241 Display DNS & IP Reset Flows Reclassify Flows Export LAN WAN

241 Rows Search

Host Nam...	Detail	Chart	Uptime	Overlay	Applicatio...	Protocol	IP1	Port1	IP2	Port2	Inbound Bytes	Identity	Role	Inbound T...	Outbound ...	From Zon...	To Zone	DSCP LAN...
Los-Angeles	i	MMV		DefaultOv...	Windows...	tcp	10.18.203...	55683	sls.update...	443	0	jhendricks	Dev	None	Passthrou...	Default	Default	be (ecn:0)
Los-Angeles	i	MMV	30m 11s	DefaultOv...	Windows...	tcp	10.18.203...	52766	sls.update...	443	0	camera220	Camera	None	Passthrou...	Default	Default	be (ecn:0)
Los-Angeles	i	MMV	30m 1s									a224	Camera	None	Passthrou...	Default	Default	be (ecn:0)
Los-Angeles	i	MMV	30m 1s									ks	Dev	None	Passthrou...	Default	Default	be (ecn:0)
Los-Angeles	i	MMV	29m 54s									to	Dev	None	Passthrou...	Default	Default	be (ecn:0)
Los-Angeles	i	MMV	29m 54s									i	Dev	None	Passthrou...	Default	Default	be (ecn:0)
Los-Angeles	i	MMV	29m 50s									ks	Dev	None	Passthrou...	Default	Default	be (ecn:0)
Los-Angeles	i	MMV	29m 47s									to	Dev	None	Passthrou...	Default	Default	be (ecn:0)
Los-Angeles	i	MMV	29m 47s									i	Dev	None	Passthrou...	Default	Default	be (ecn:0)
Los-Angeles	i	MMV	29m 46s									ks	Dev	None	Passthrou...	Default	Default	be (ecn:0)
Los-Angeles	i	MMV	29m 40s									to	Dev	None	Passthrou...	Default	Default	be (ecn:0)
Los-Angeles	i	MMV	29m 33s									i	Dev	None	Passthrou...	Default	Default	be (ecn:0)
Los-Angeles	i	MMV	29m 29s									to	Dev	None	Passthrou...	Default	Default	be (ecn:0)

Flow details for IP1: 10.17.10.1 Port1: 0 IP2: 10.18.203.12 and Port2: 0

General Identity Optimization TCP NAT

User/Device jhendricks
Role Dev
Group ENGINEERING
Domain SPEAK
MAC 00:00:00:a1:2b:cc
OS Windows10
Posture HEALTHY

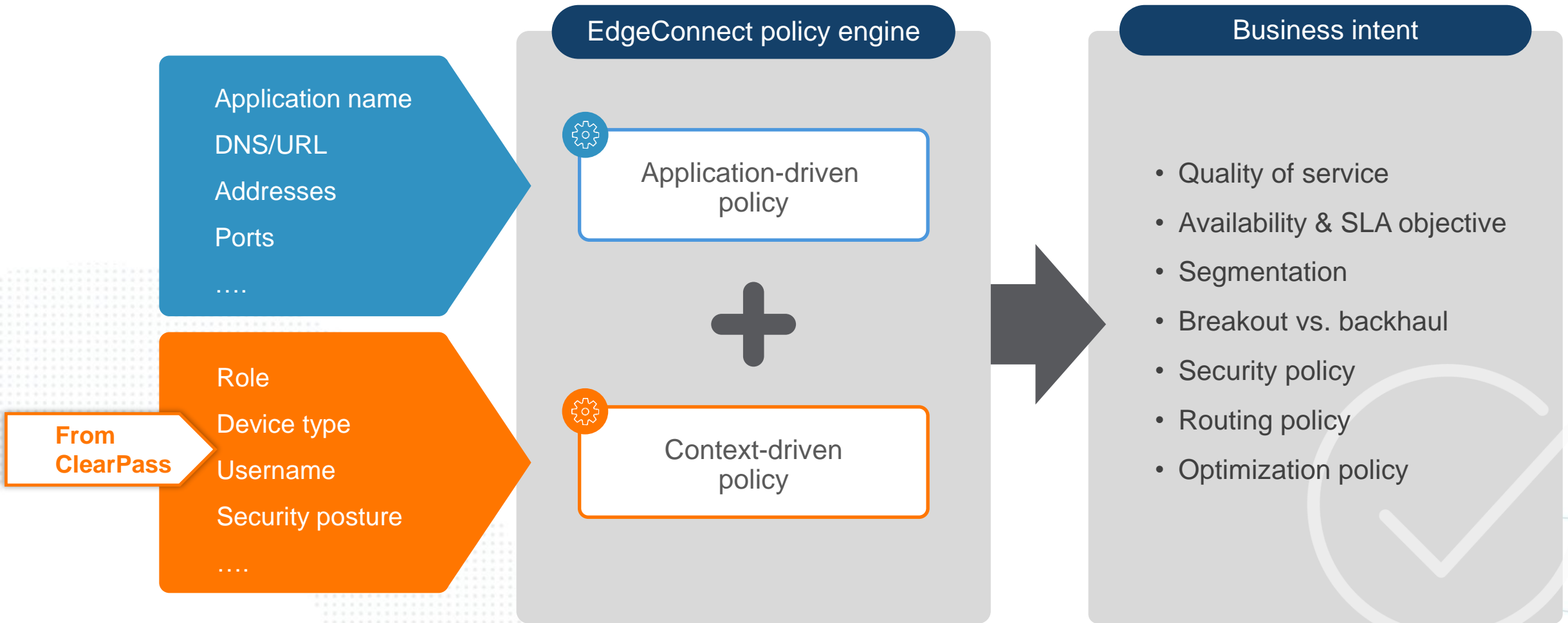
aruba central

Network Activity

- Detailed identity information for every single flow
- Enables new reports based on identity, role, security posture

Augmenting Application Intelligence with Role-based Policy

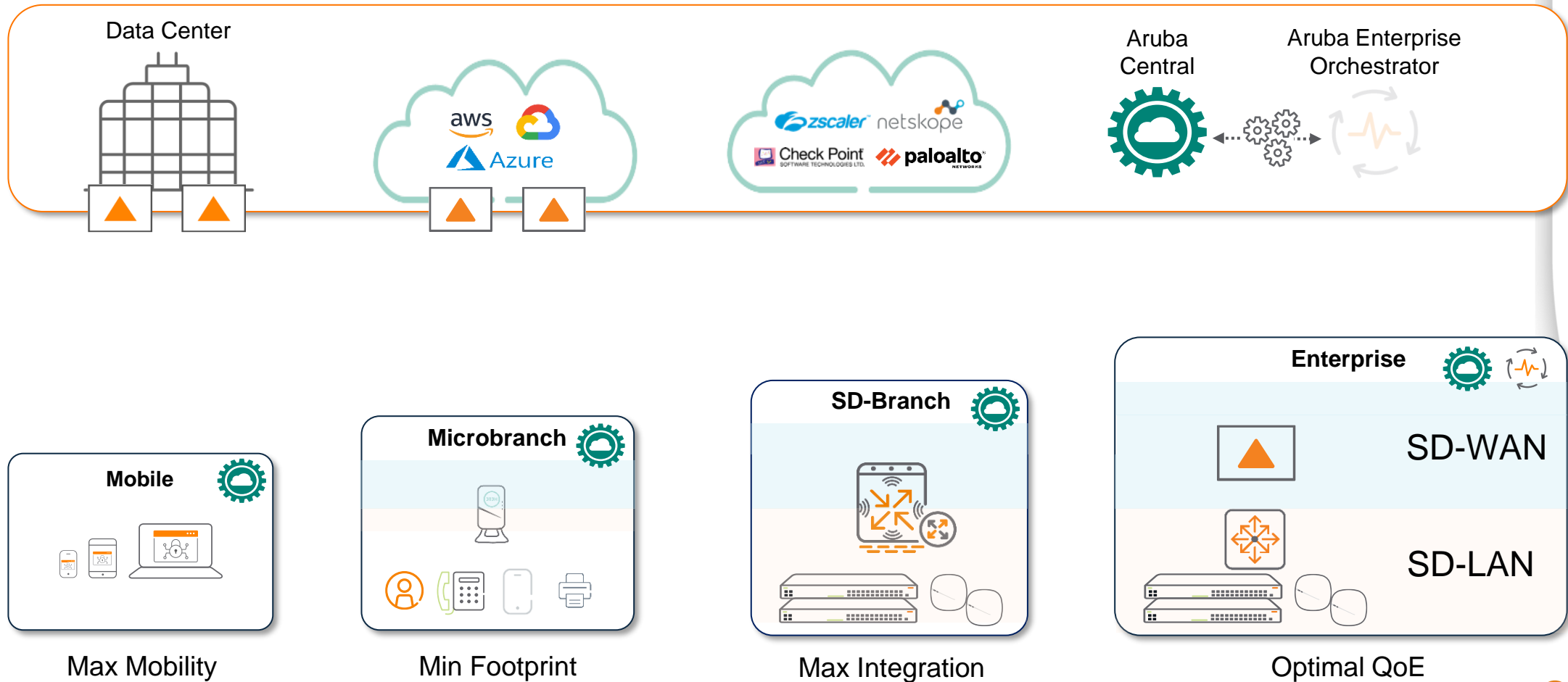
“Who, what, where and when”



Coming soon!

Aruba EdgeConnect SD-WAN Fabric

Simplifies provisioning, managing, securing, and operating WAN infrastructure across locations of any size



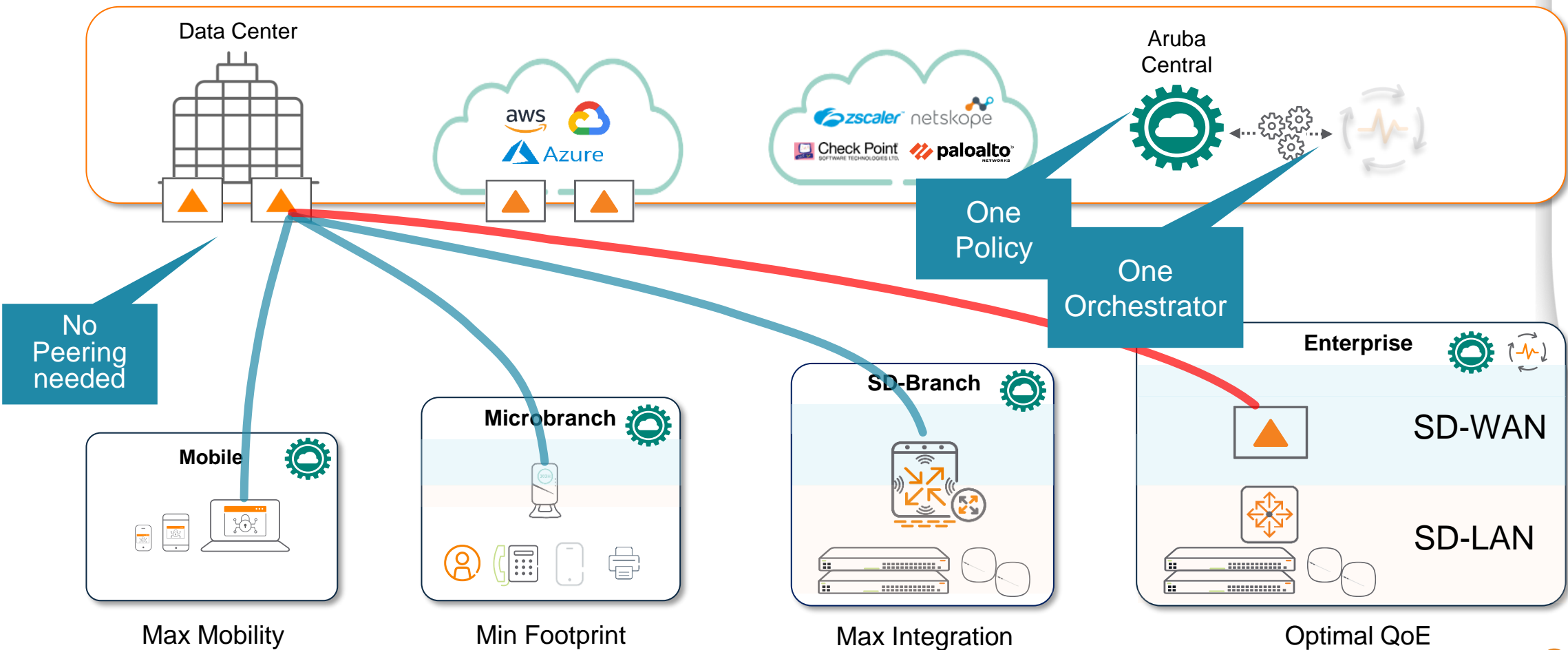
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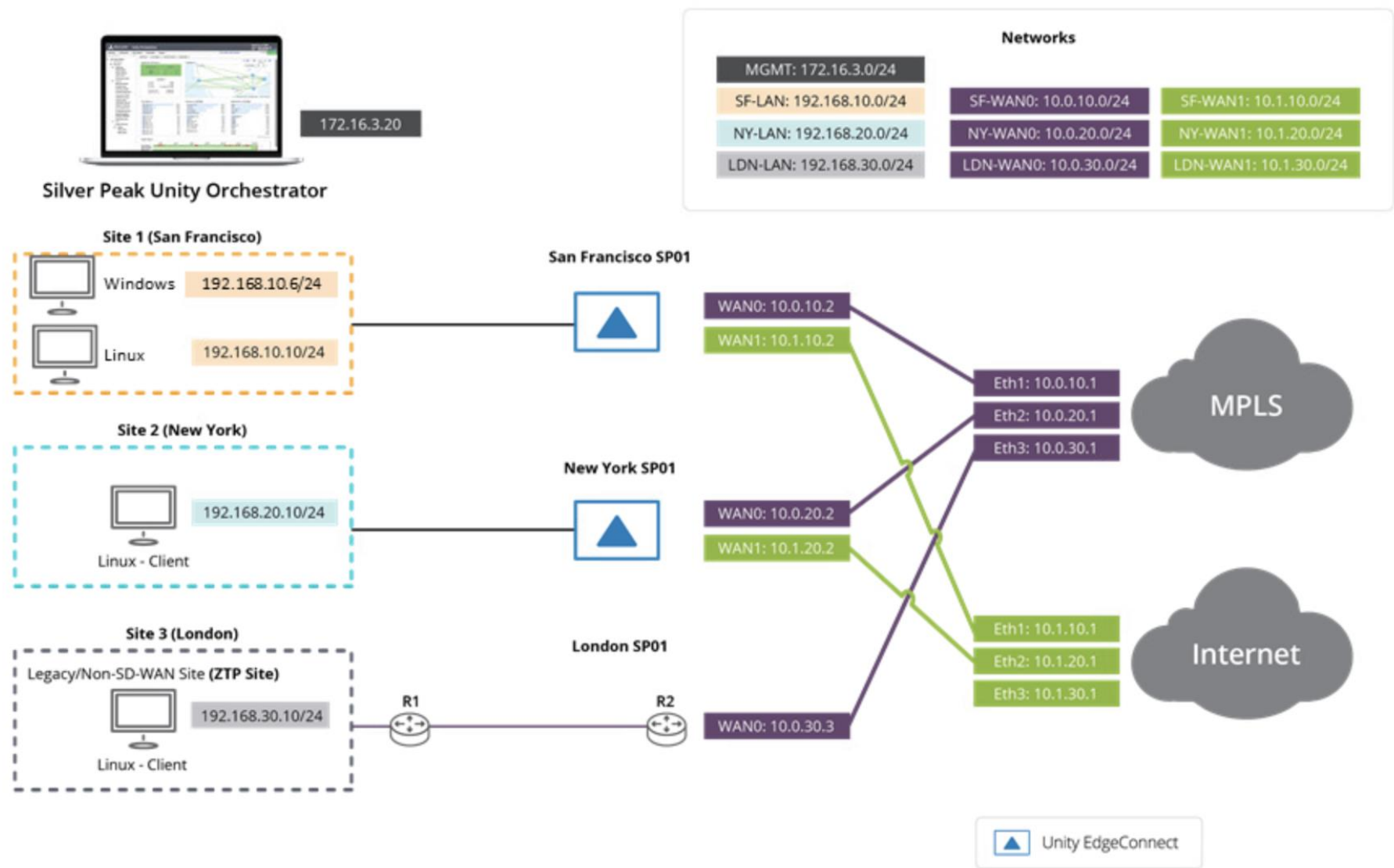
Simplifies provisioning, managing, securing, and operating WAN infrastructure across locations of any size



EdgeConnect Enterprise DEMO

Optional subtitle

EdgeConnect Demo Topology



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