

# atmosphere'22

## BELGIUM

# Application-aware SDWAN

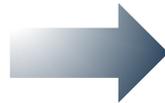
Jan-Willem Keinke, Sales Engineer WAN-Edge

September 2022

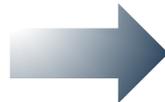
# Aruba Secure WAN Edge Portfolio

## Current Aruba Portfolio

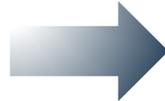
Aruba EdgeConnect  
(Silver Peak)



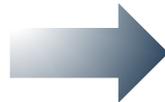
Aruba SD-Branch



Aruba IAP/RAP



Aruba VIA



## New Name

EdgeConnect Enterprise



EdgeConnect SD-Branch



EdgeConnect  
Microbranch



EdgeConnect Mobile



# Aruba Secure Wan Edge Portfolio

## Data Center and Branch App & Services



## Cloud Hosted Apps and Services (IaaS)

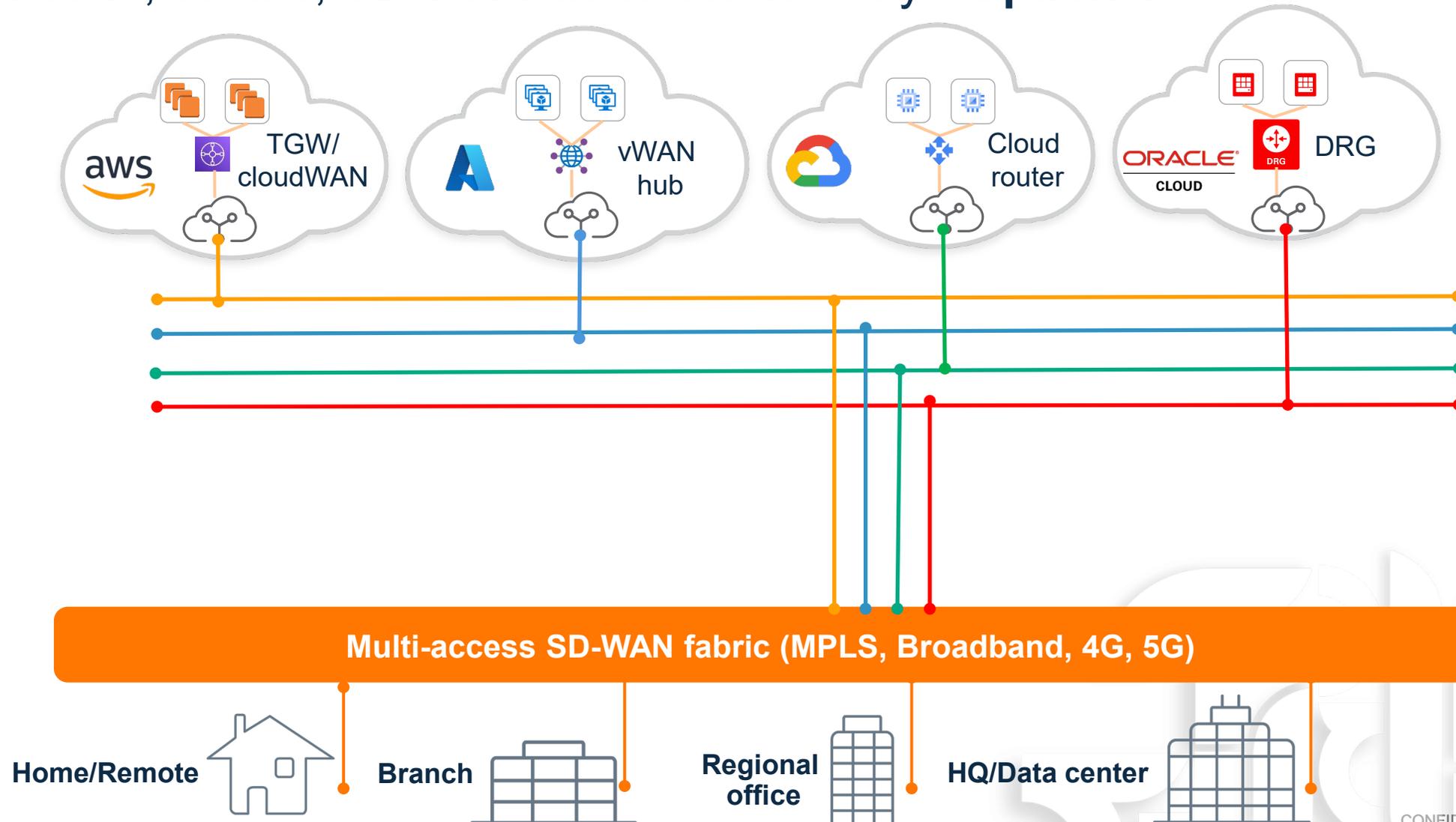


**Central/  
Orchestrator**

<p><b>EdgeConnect Mobile</b></p>	<p><b>EdgeConnect Microbranch</b></p>	<p><b>EdgeConnect SD-Branch</b></p>	<p><b>EdgeConnect Enterprise</b></p>
Mobile Users	Home Users	Branches, Campuses, Datacenters and Cloud	

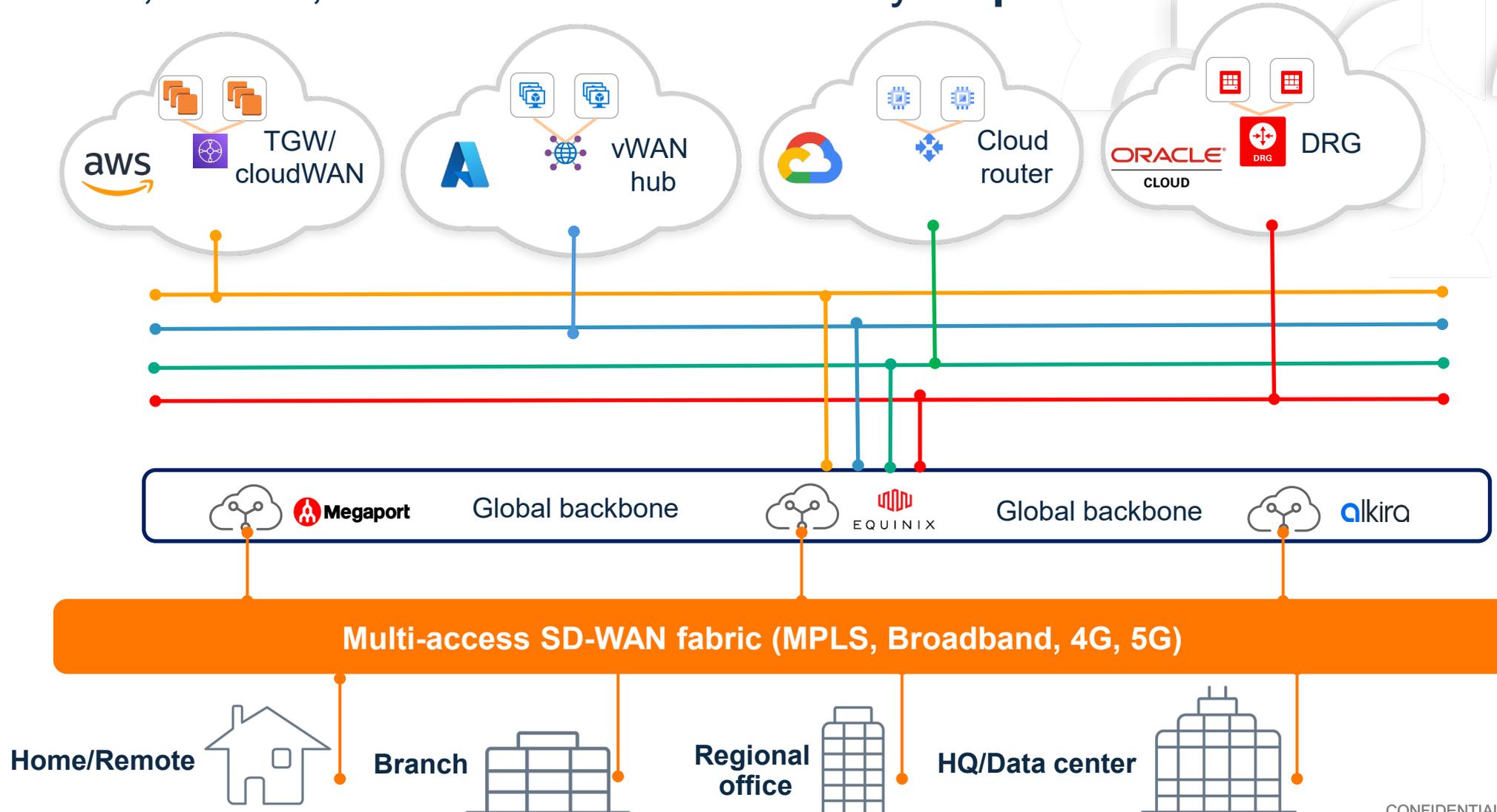
# Multi-cloud networking with Aruba EdgeConnect

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



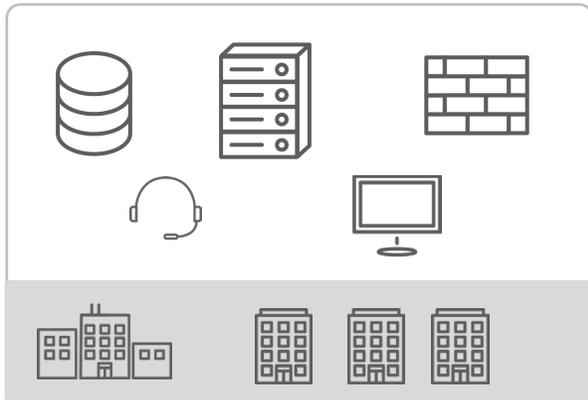
# Multi-cloud networking with Aruba EdgeConnect

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



# Aruba Secure WAN Edge Portfolio

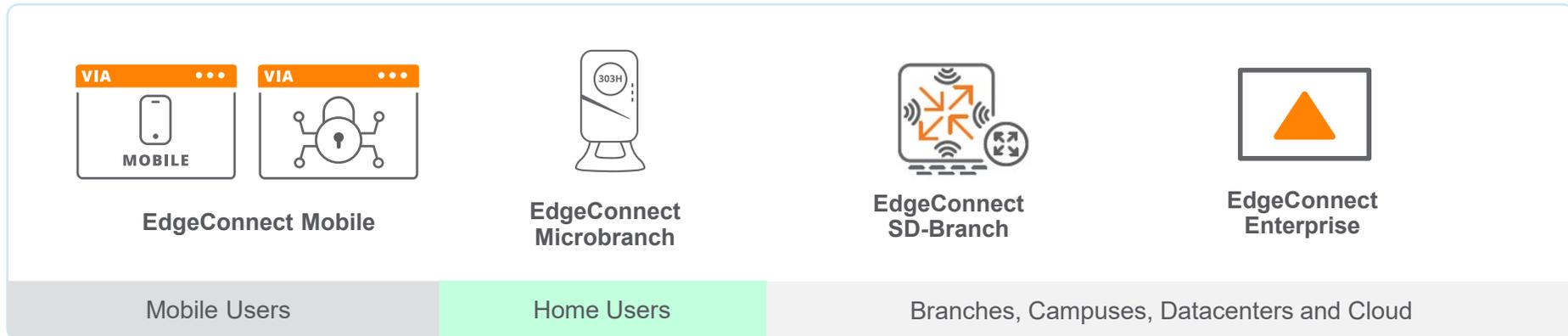
## Data Center and Branch App & Services



## Cloud Hosted Apps and Services (IaaS)



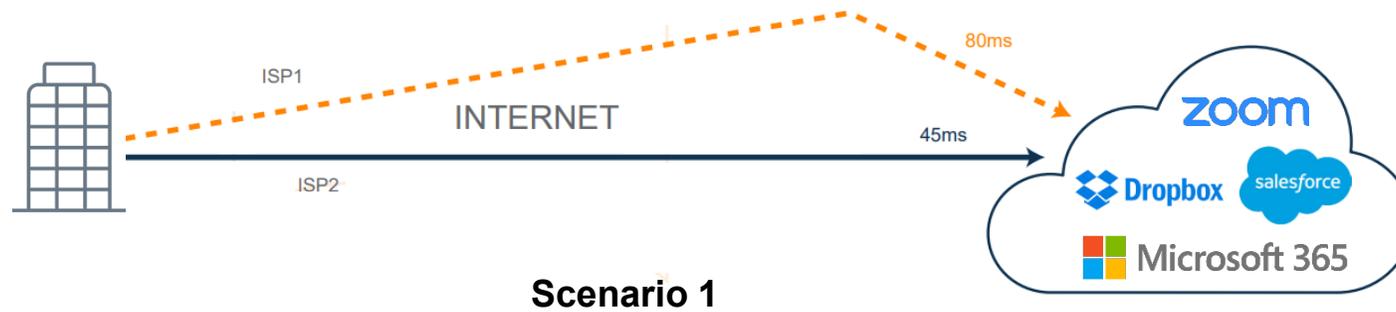
## SaaS, Cloud Based Services



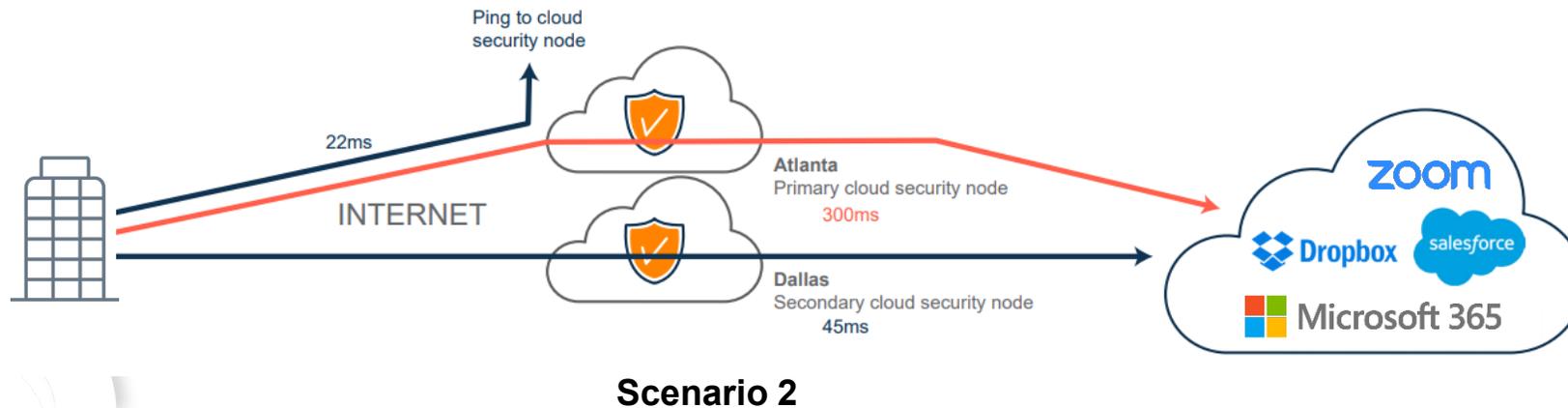
# SaaS Express

Best SaaS path every time

Microsoft 365  
Networking Partner



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

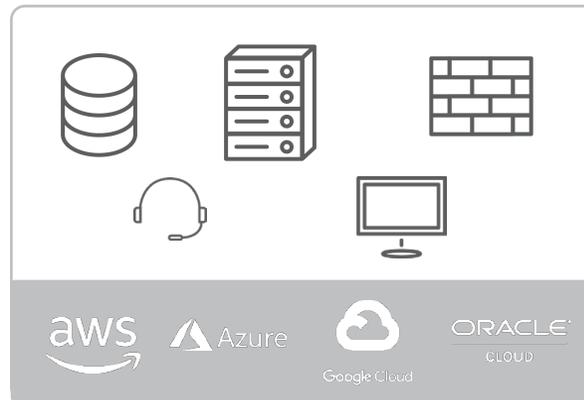


# Aruba Secure WAN Edge Portfolio

## Data Center and Branch App & Services



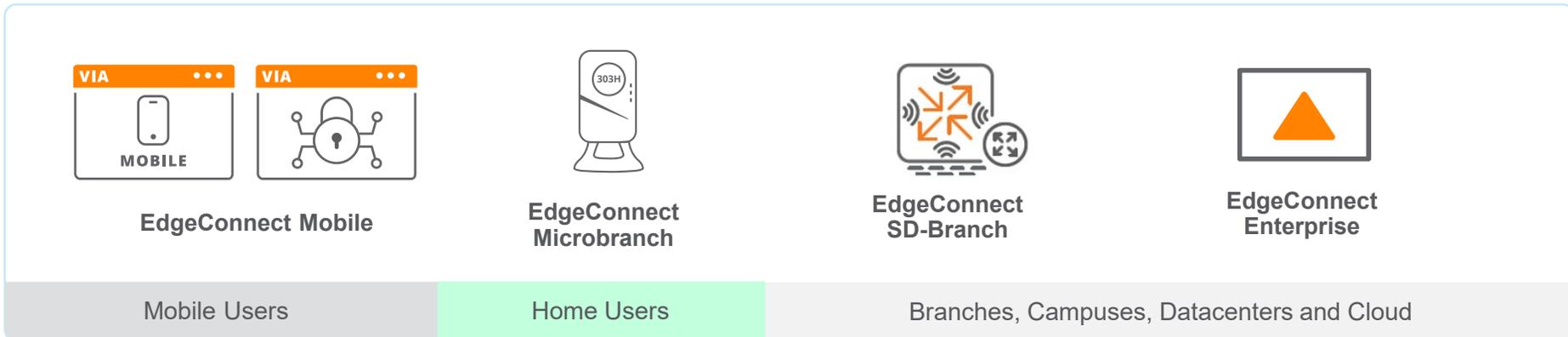
## Cloud Hosted Apps and Services (IaaS)



## SaaS, Cloud Based Services



**Central**



# Orchestrated Cloud Security Integration



netskope



## 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

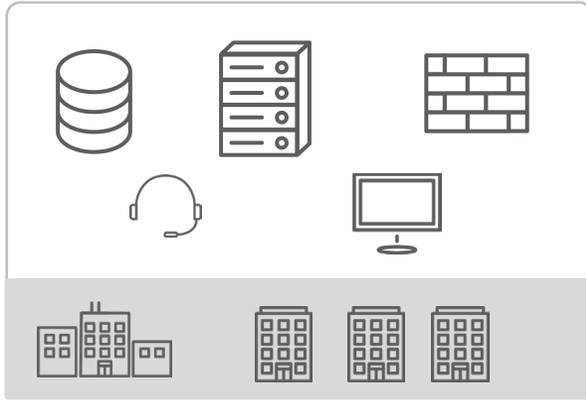
- Send traffic through the nearest node

## 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



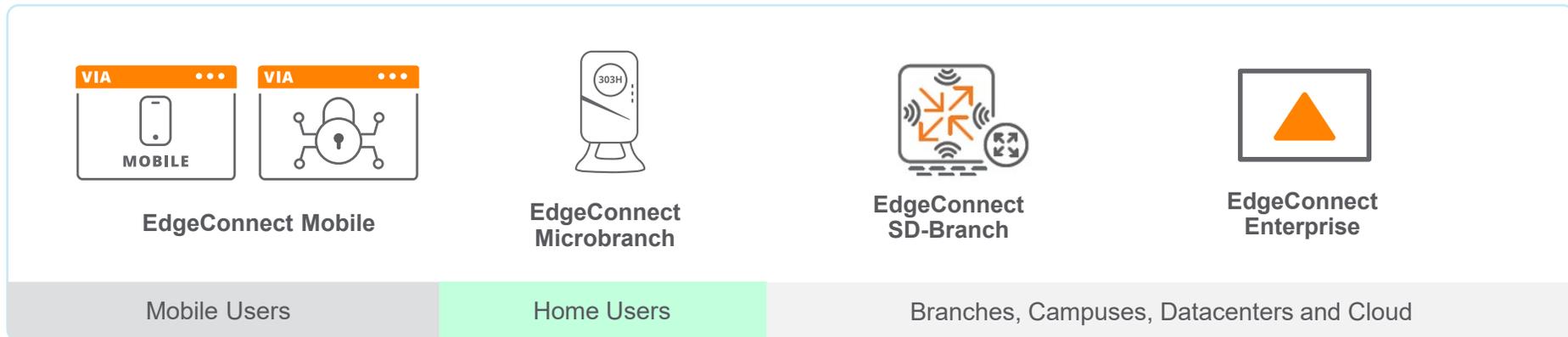
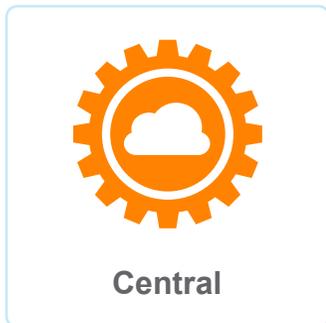
## Cloud Hosted Apps and Services (IaaS)



## 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



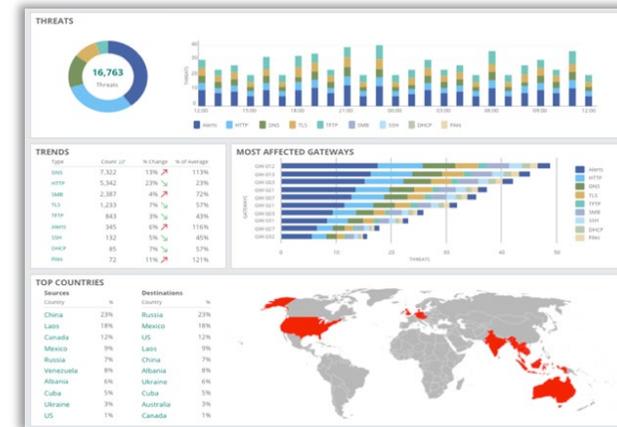
Web content & URL filtering



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

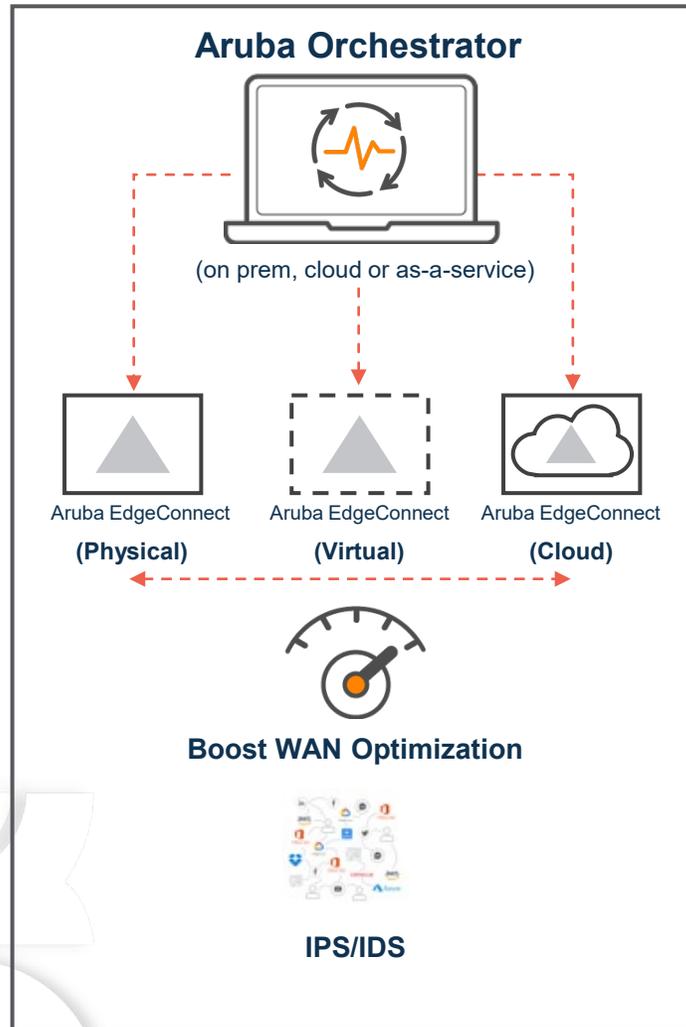


## EdgeConnect Enterprise

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



# EdgeConnect 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 IPS/IDS

Advance Security (Optional)

# Aruba Orchestrator



**KVM**

Microsoft Hyper-V

vmware

XenServer®



aws

Azure

Google Cloud

ORACLE® Cloud Infrastructure

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

**Orchestrator-as-a-Service**

**On-Premise, Private Cloud, IaaS**

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

**OR**

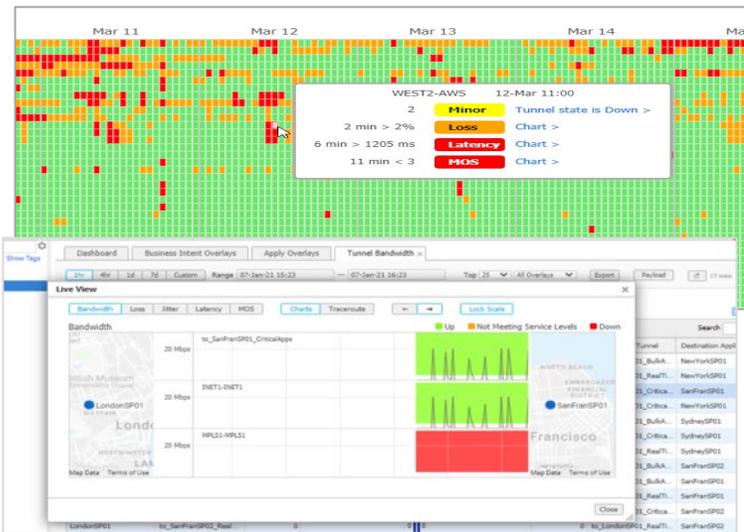
**Orchestrator As-a-Service**

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



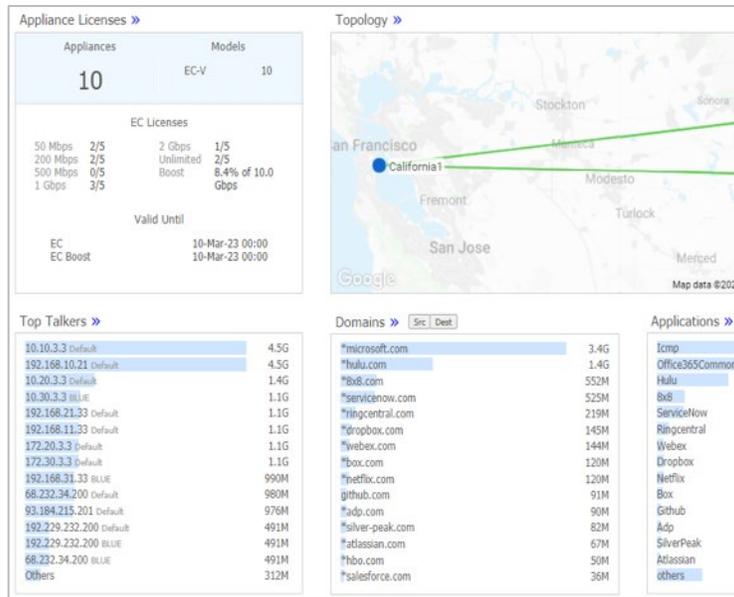
# Automation with Application/Network Visibility

## 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

## Dashboard



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

## Connection Level Visibility

Application	Proto.	Se...	IP1	Port1	IP2	Port2	Inbound Bytes	Outbound Bytes	St...	Info
ulu	tcp	D...	192.168.11...	39020	www.hulu...	443	1.8M	65K	15...	ThirdParty_Zsc...
ulu	tcp	D...	192.168.11...	38872	www.hulu...	443	2.6M	50K	15...	ThirdParty_Zsc...
ulu	tcp	D...	192.168.11...	35272	www.hulu...	443	2.1M	47K	15...	ThirdParty_Zsc...
ulu	tcp	D...	192.168.11...	35374	www.hulu...	443	1.4M	26K	15...	ThirdParty_Zsc...
ulu	tcp	D...	192.168.11...	34984	www.hulu...	443	1.2M	20K	15...	ThirdParty_Zsc...
ulu	tcp	D...	192.168.11...	35766	www.hulu...	443	806K	17K	15...	ThirdParty_Zsc...
ulu	tcp	D...	192.168.11...	49716	www.hulu...	443	358K	10K	15...	ThirdParty_Zsc...
ulu	tcp	D...	192.168.11...	49822	www.hulu...	443	178K	6K	15...	ThirdParty_Zsc...
apple	tcp	D...	192.168.11...	54962	www.apple...	443	75K	4K	15...	ThirdParty_Zsc...
loud	tcp	D...	192.168.11...	58374	www.icloud...	443	58K	3K	15...	ThirdParty_Zsc...
netflix	tcp	D...	192.168.11...	36184	www.netflix...	443	56K	3K	15...	ThirdParty_Zsc...
spotify	tcp	D...	192.168.11...	43286	www.spotify...	443	49K	3K	15...	ThirdParty_Zsc...
facebook	tcp	D...	192.168.11...	40564	www.facebook...	443	40K	3K	15...	ThirdParty_Zsc...
typeForBusine...	tcp	D...	192.168.11...	33354	www.skype...	443	8K	2K	15...	ThirdParty_Zsc...
concurolutions	tcp	D...	192.168.11...	35682	www.concu...	443	7K	5K	15...	ThirdParty_Zsc...
bo	tcp	D...	192.168.11...	44272	www.hbo.c...	443	7K	2K	15...	ThirdParty_Zsc...
Office365Comm...	tcp	B...	192.168.31...	50500	www.micro...	443	5K	1K	15...	Passthrough_LT
typeForBusine...	tcp	D...	192.168.11...	33288	skype.com	443	5K	3K	15...	ThirdParty_Zsc...
potp-dhcp	udp	D...	172.30.0.20	68	172.30.0.1	67	4K	6K	15...	Passthrough_MF
potp-dhcp	udp	D...	172.20.0.1	67	172.20.0.10	68	4K	0	15...	pass-through

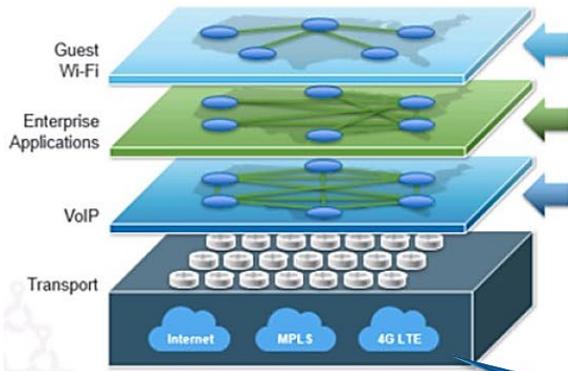
- Flow level statistics give total visibility into every connection on the network providing total visibility and control of applications and users



# Business Driven SD-WAN Policies

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

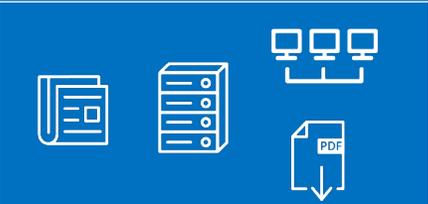
Apps, IaaS, PaaS	Circuits	Bonding + SLA	Topology	SaaS, Cloud, Internet Apps	Internet Policy & Firewall	Overlay Defaults
<b>Real Time Overlay</b>						
	<ul style="list-style-type: none"> <li>MPLS</li> <li>Internet</li> <li>LTE (Backup)</li> </ul>	<b>High Availability</b> Loss: 1% Latency: 400ms Jitter: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



Underlays:  
Physical Transport Networks



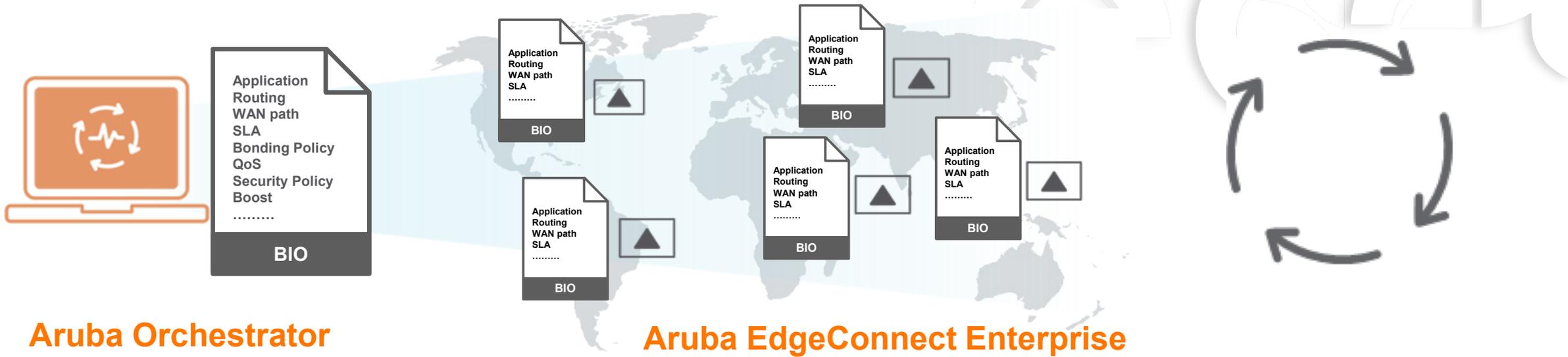
# Business Driven SD-WAN Policy's

Apps, IaaS, PaaS	Circuits	Bonding + SLA	Topology	SaaS, Cloud, Internet Apps	Internet Policy & Firewall	Overlay Defaults
<b>Real Time Overlay</b>						
	<ul style="list-style-type: none"> <li>MPLS</li> <li>Internet</li> <li>LTE (Backup)</li> </ul>	<b>High Availability</b> Loss: 1% Latency: 400ms Jitter: 200ms	 <b>Mesh</b>		<b>Best Circuit + Local Firewall</b> Local Firewall   Datacenter (Backup)	FW Zone: Real Time QoS: Real Time Boost: Disabled
<b>Enterprise Apps Overlay</b>						
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<b>Default Overlay</b>						
	<ul style="list-style-type: none"> <li>MPLS</li> <li>Internet</li> <li>LTE (Backup)</li> </ul>	<b>High Efficiency</b> Loss: 5% Latency: 800 ms Jitter: 500 ms	 <b>Hub &amp; Spoke</b>		<b>Load Balance + Cloud Firewall</b> Check Point CloudGuard   Datacenter (Backup)	FW Zone: Default QoS: Best Effort Boost: Disabled



# A Completely Automated Approach

– Standardize, Templatize & Automate Provisioning



**Aruba Orchestrator**

**Aruba EdgeConnect Enterprise**

**1** Create Business Intent Overlay (BIO)

**2** Push and Maintain Policies Globally

**3** Continuously Monitored and Updated

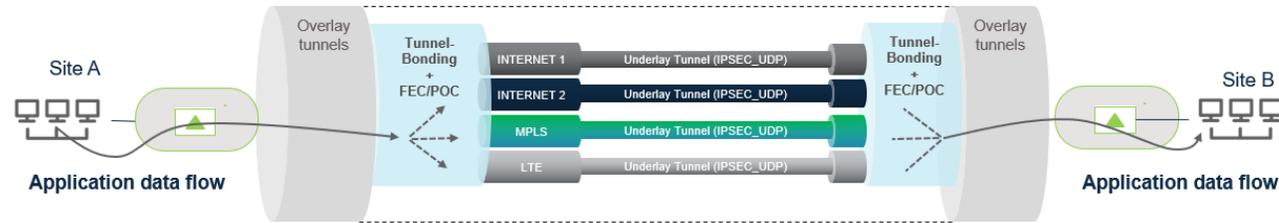


# Best Performance Over any Condition

Provides private-line-like performance over the public Internet

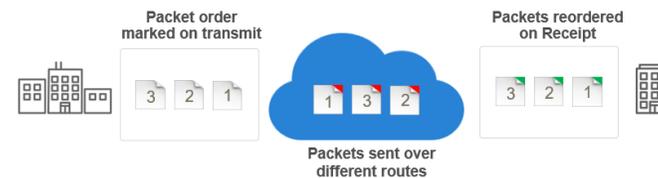
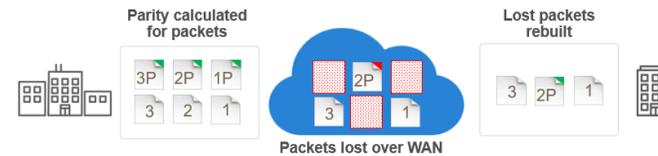
## WAN Link bonding

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



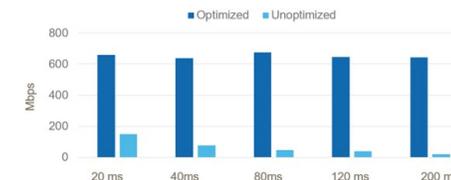
## Path conditioning

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



## WAN Opt (Boost)

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



# 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



Overlays & Breakout Policies for VRFs

Segment Name

Segment Name	Internet	Voice	Oracle		Video
Default	Include	Include	Skip	Skip	Skip
Business Entity #1 (VRF1)	Include	Include	Include	Skip	Include
Business Entity #2 (VRF2)	Include	Include	Skip	Skip	Include
Business Entity #3 (VRF3)	Skip	Include	Include	Include	Skip



## 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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## BELGIUM

Thank you !

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September 2022

# EdgeConnect Enterprise

## DEMO

# EdgeConnect Demo Topology

