Hewlett Packard Enterprise

La importancia de la telemetría para la implementación de soluciones automatizadas

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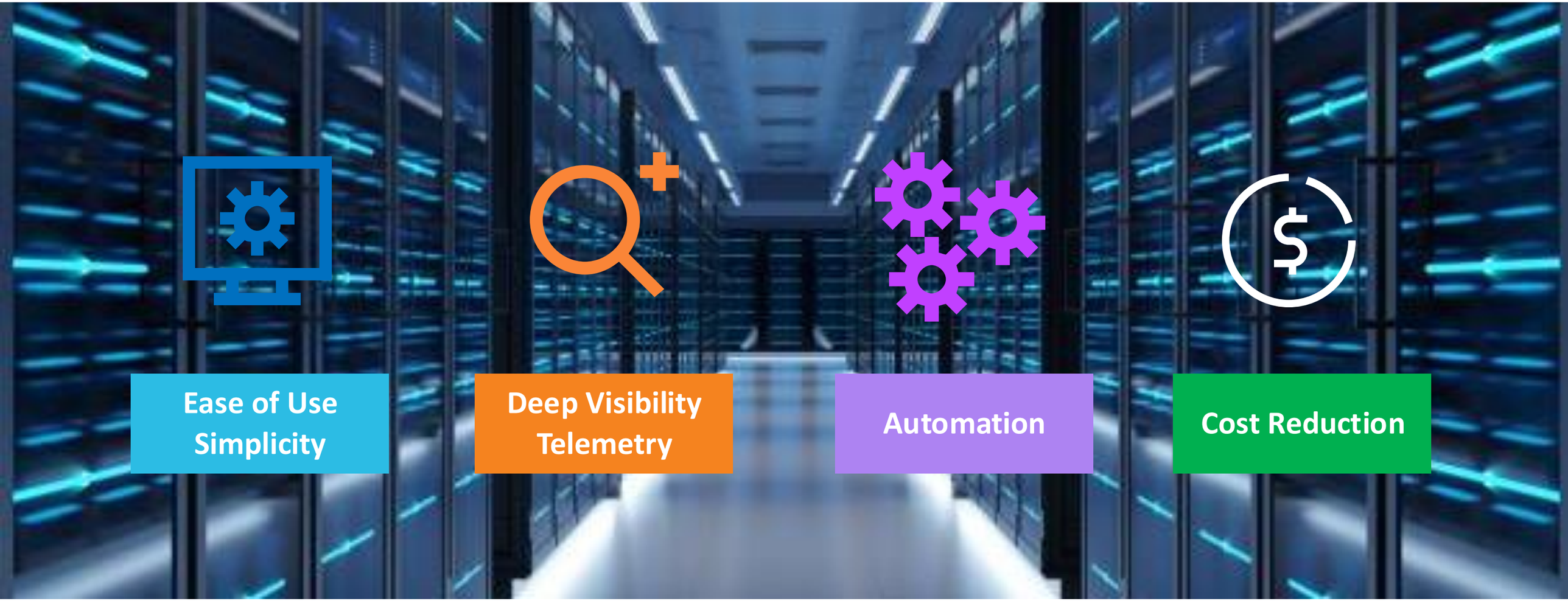
22 Mayo 2025

Trends in Data Centers



HPE Aruba Networking DataCenter basic pillars

HPE Aruba Networking delivers modern networking solutions for “Centers of Data” connectivity

Cloud native switching architecture

Software-defined fabric automation / orchestration

HPE aruba networking

Distributed services architecture

AMD PENSANDO

HPE Aruba Networking IT integration (compute, storage, HCI, SAP, HPE GreenLake …)

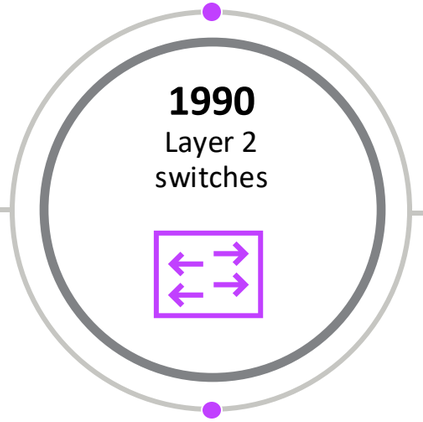
UP TO 35% LOWER TCO
optimized form-factors and licensing

UP TO 10X FASTER provisioning vs traditional manual CLI models

UP TO 100X SCALE vs traditional centralized DC designs

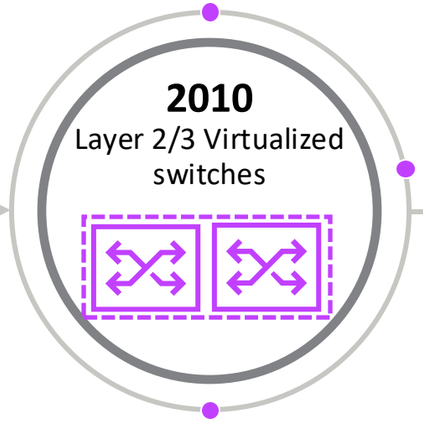
Data center network architecture evolution

1st generation



Flat networks, spanning tree, protocol agnostics

2nd generation



IP becomes the dominant protocol, L2/3 switching

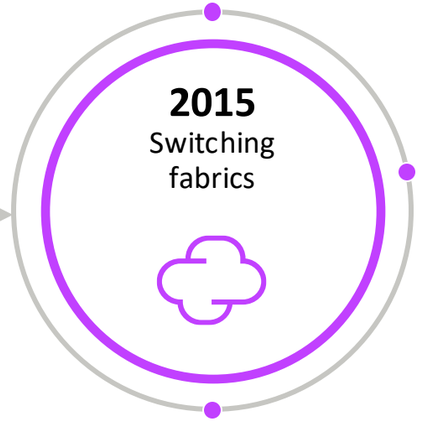
L2 Fabrics

Core-distro-access designs

Switch Virtualization

Mostly north/south traffic

3rd generation



Clos topology, spine-leaf underlay and overlay, VXLAN/VTEPs

Built for east/west traffic

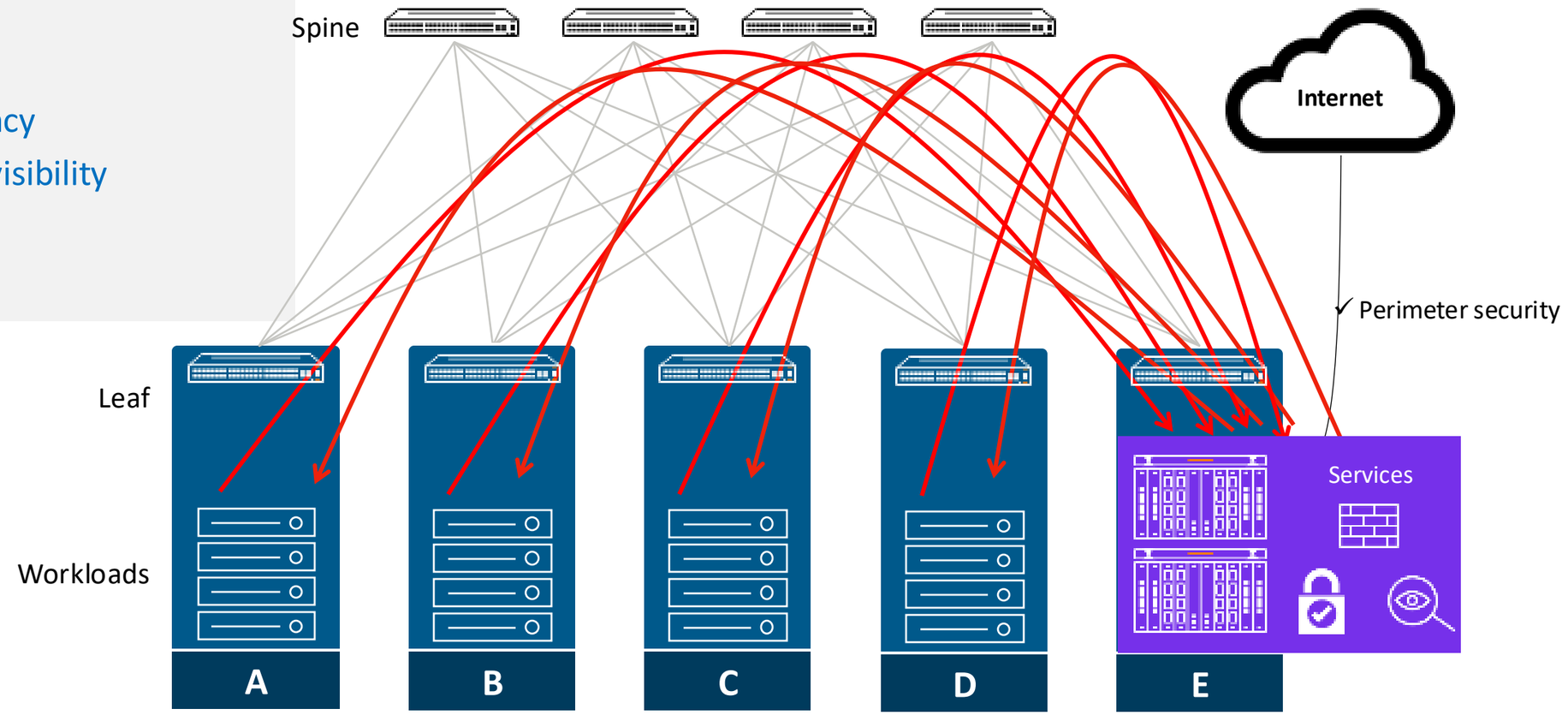
Centralized L4-7, security architecture

L3 Leaf & Spine DC

Security enforcement: Centralized Services Architecture

Centralized Services

- Waste of bandwidth
- Congestion & high latency
- Lack of detailed traffic visibility
- Very expensive

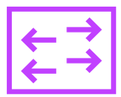


Centralized services architecture

Data center network architecture evolution

1st generation

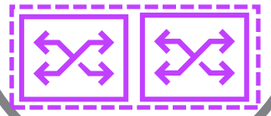
1990
Layer 2 switches



Flat networks, spanning tree, protocol agnostics

2nd generation

2010
Layer 2/3 Virtualized switches



IP becomes the dominant protocol, L2/3 switching

L2 Fabrics

Core-distro-access designs

Switch Virtualization

Mostly north/south traffic

3rd generation

2015
Switching fabrics

Clos topology, spine-leaf underlay and overlay, VXLAN/VTEPs

Built for east/west traffic

Centralized L4-7, security architecture

4th generation

2022
Distributed services

Spine-leaf underlay/overlay

Rich collection of wire rate stateful services

No scalability limitations

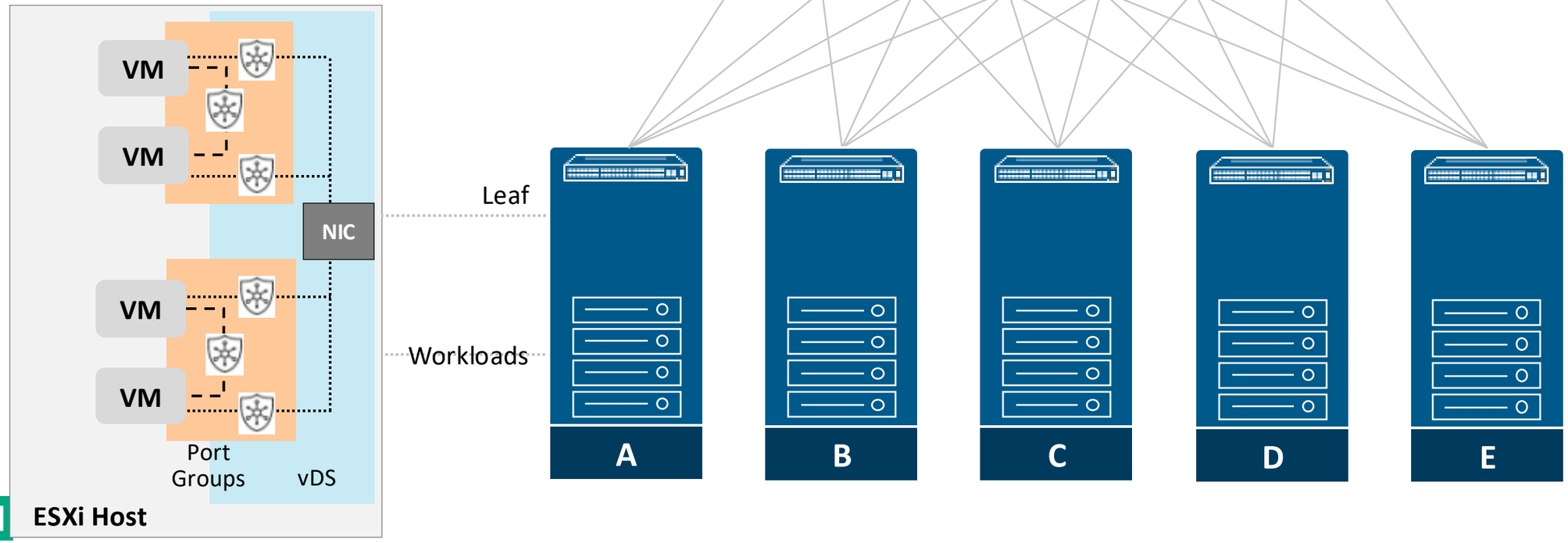
Security services collocated - delivered inline/per port

Distributed Services DC

Security enforcement today: Distributed Services Architecture

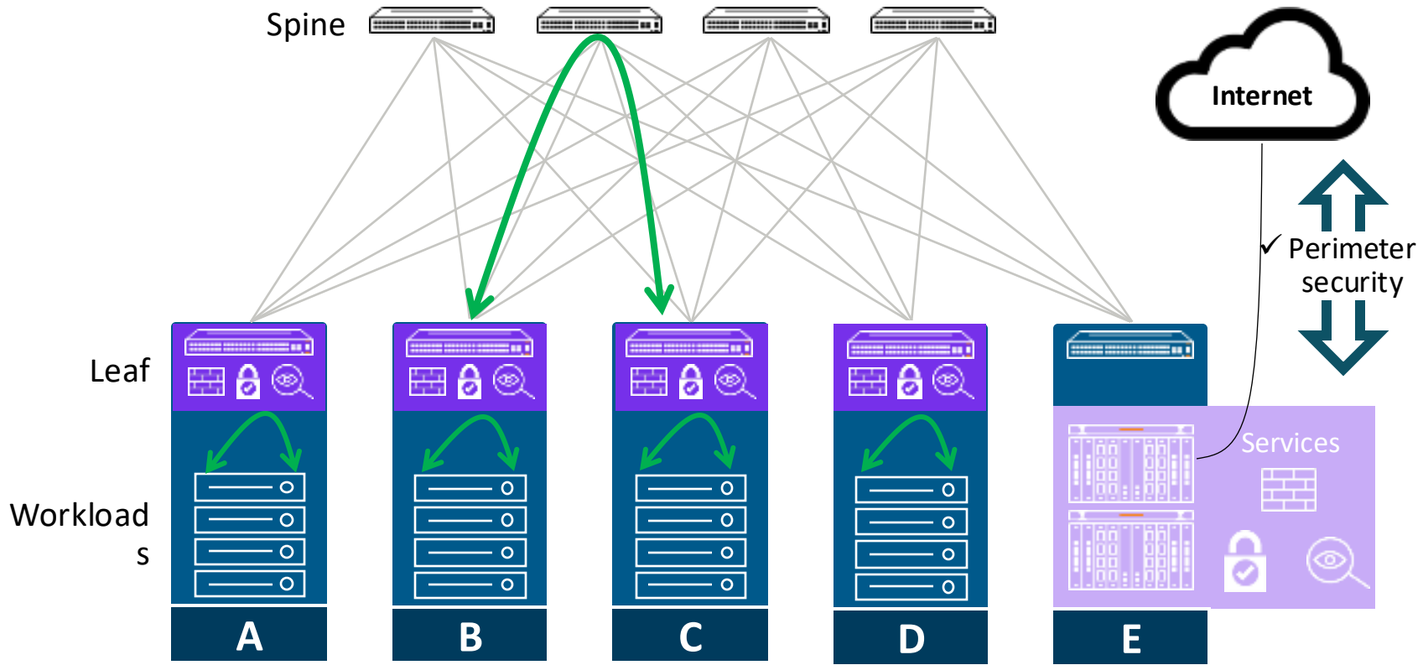
Software based Services

- High resource requirement on host (CPU/Memory)
- Congestion & high latency (ms)
- Complex to design & troubleshoot
- Very expensive (Licenses)



Distributed services architecture

Fourth gen: distributed services architecture



Distributed services architecture

Design advantages

- Better security posture—firewall on every leaf port
- Lower TCO, retire legacy appliances/software agents
- Real-time detailed telemetry
- Automated network and security policy and provisioning
- Improved app latency/perform

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HPE Aruba Networking CX 10000: Distributed services switch

A new switching category

HPE aruba networking + AMD PENSANDO

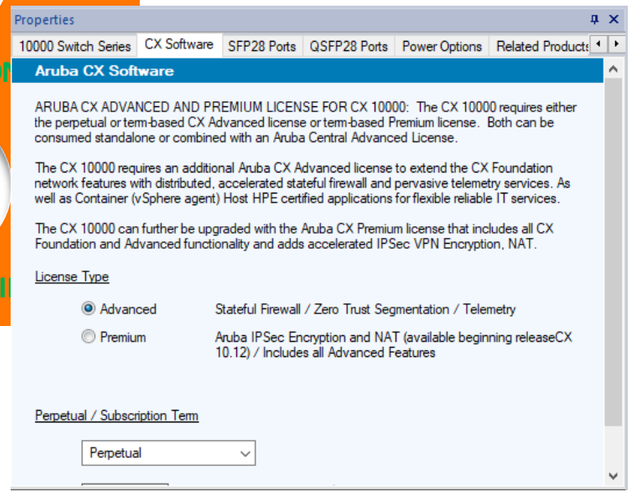
Aruba CX Routing and Switching

+

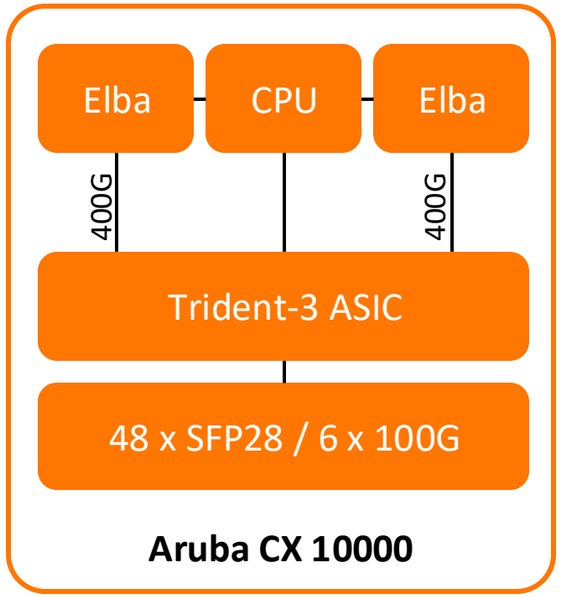
Pensando L4 Stateful Software Services

FIREWALL | DDoS | ENCRYPTION

NAT | LOAD BALANCER | FLOW LOGGI

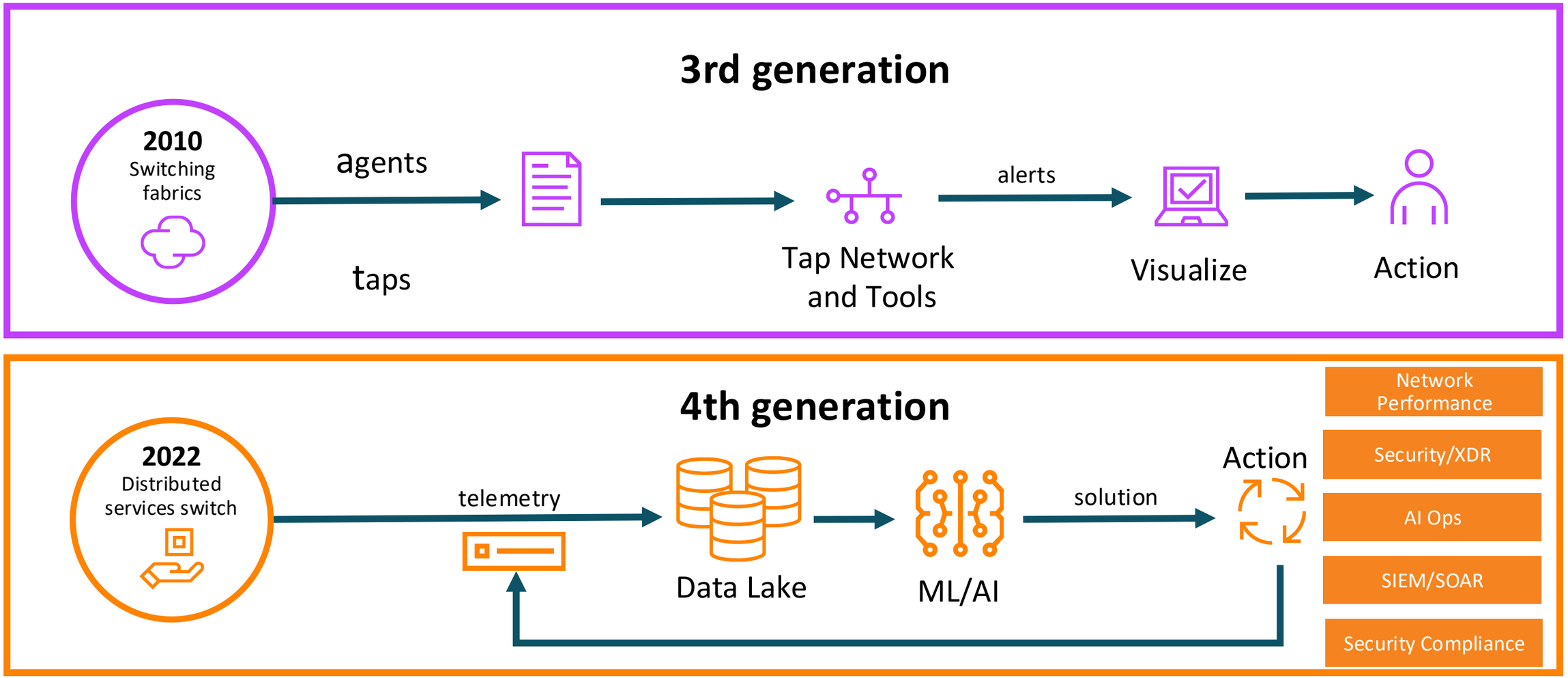


Hardware is capable



Stages of automation

In the evolution of data center operations



3rd Gen Data Center Visibility

Telemetry based on firewall for North/South traffic

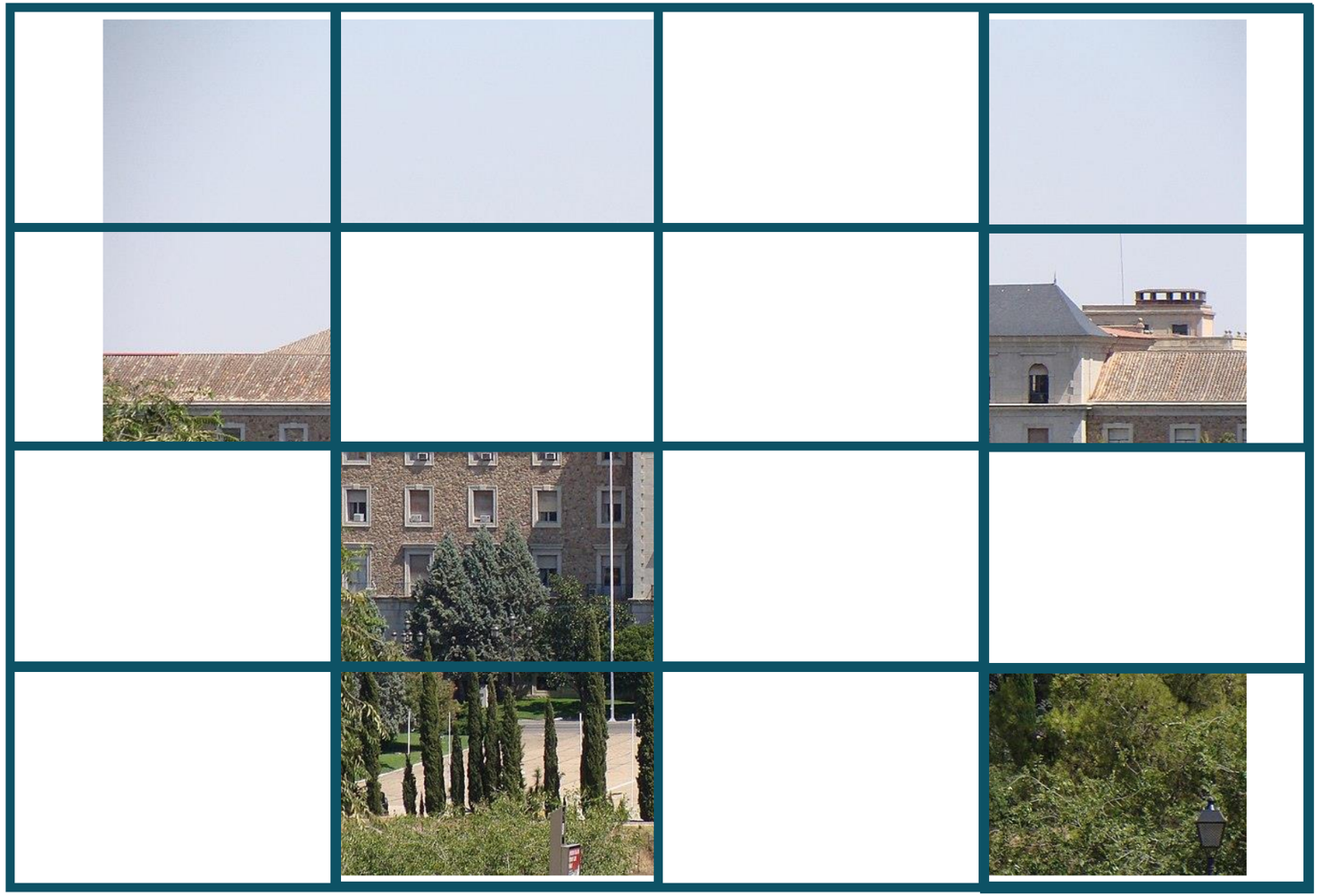
Only a small quantity of traffic is sampled

Telemetry based on probes connected to server or trunks

Only traffic passing through the probes is sampled

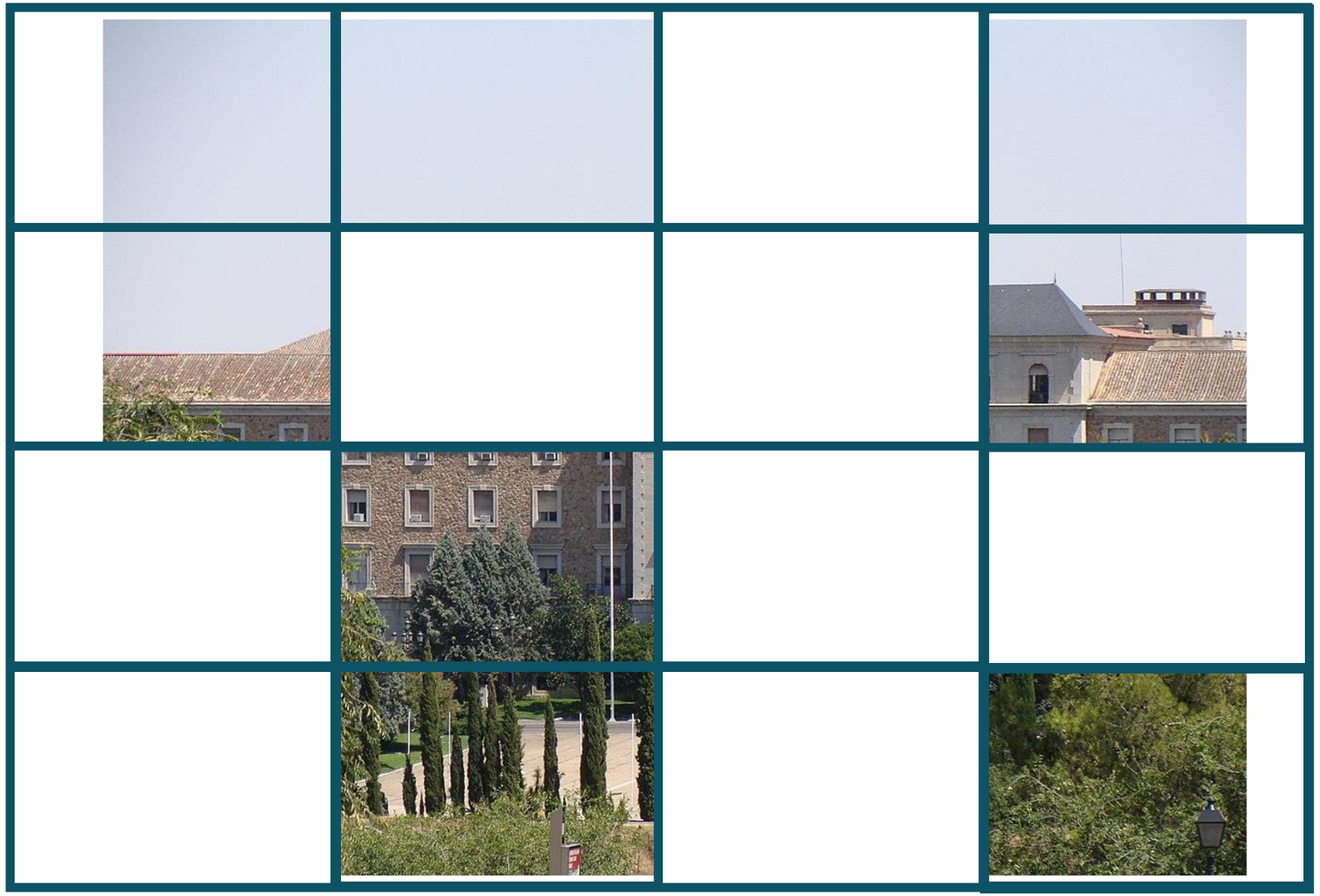
Telemetry based on agents associated to workloads

Highly fragmented information depending on deployed agents



4th Gen Data Center Visibility

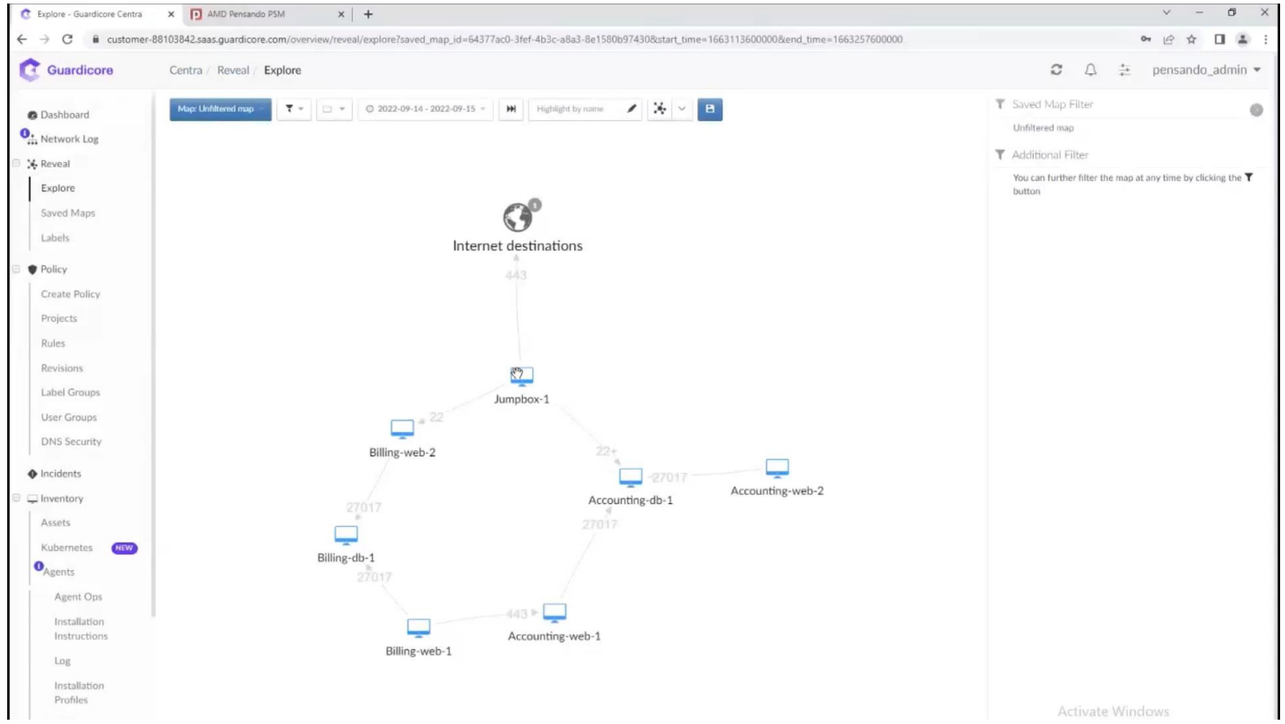
- ✓ Completely change the current operational model
- ✓ No longer moving probes/agents to find information after the fact…have all telemetry all the time!
- ✓ Don’t need a TAP/Agg network to simply generate telemetry (after the fact)—have the information at the time of the incident!
- ✓ The telemetry, processed by an AI/ML engine, now tells us where to focus if there is an issue that requires human intervention.

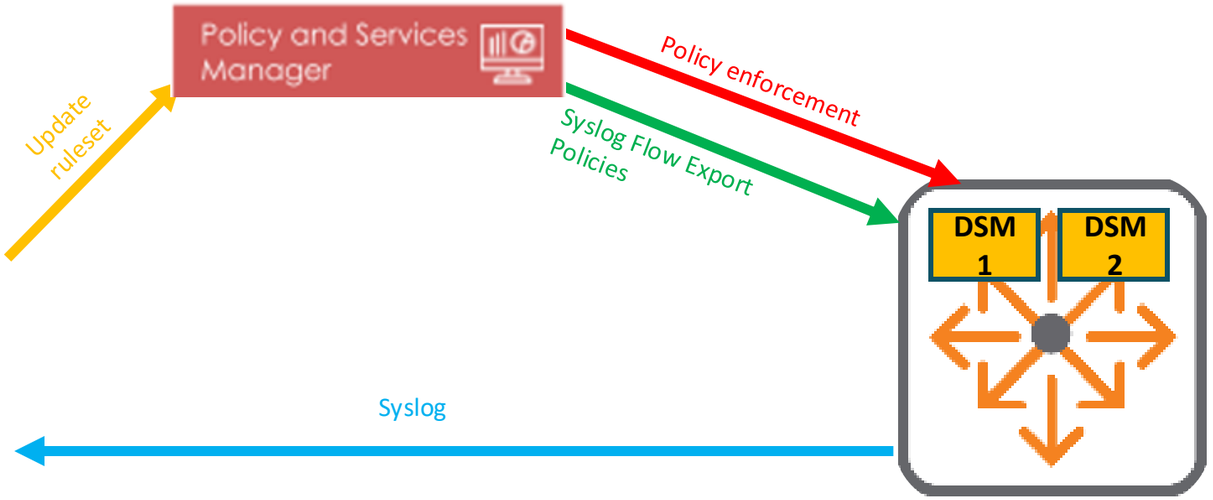


Non-sampled telemetry for all flows in the DC

Use case: Akamai Guardicore Centra

- Syslog Flow Export Policies are configured on PSM and pushed to the DSS
- Syslog telemetry from Aruba CX 10000 top-of-rack switches is streamed to Guardicore Segmentation
- Guardicore Segmentation visualizes communications based on combined flow and workload events from CX 10000
- Guardicore Segmentation suggests rules for security policy for relevant applications, sent to PSM
- Policies are pushed back to the CX 10000 via PSM



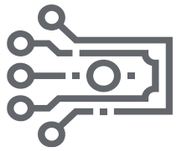


Why HPE Aruba Networking DCN Fabric

Micro and macro segmentation homogeneous for all types of workloads

Innovation with DSA based on Pensando DPU's for Security, IPSec, NAT

Full flows visibility and Network Analitycs for automation tasks



Strong Cost Reduction with less devices, power, licenses…

Hewlett Packard
Enterprise

Gracias