The way forward

HPE aruba networking

Beat the Competition with Aruba's New Data Center Switching Solutions

John P. Gray, Sr. Global Product Marketing Manager
Scott Stevens, AMD Pensando Field CTO
Rick Hawkins, WW DCN Channel SE Manager
Tony Low, Data Center Sales
Thuy Diem Pham, TME
Priyaa Arumugam, Product Marketing Manager

Before we begin…

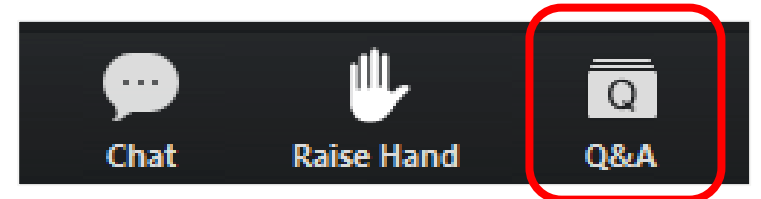- Listen by computer audio or dial-in

- All lines are muted during the webinar

- Ask *questions by selecting "Q&A"* and to report any webinar difficulties

- Webinar is being recorded & will be emailed to all attendees

Partner Sales Webinar Series
Win More Deals with HPE Aruba Networking's Next-Gen Data Center Switching Portfolio

Session 1: Data Center Switching Sales Play and Opportunities
Tuesday, March 12th at 11 AM PT / 2 PM

Session 2: Beat the Competition with Aruba's New Data Center Switching Solutions
Tuesday, April 9th at 11 AM PT / 2 PM ET

Session 3: Win More Data Center Switching Deals with Unique Differentiation and Best Practices from the Field
Tuesday, May 7th at 11 AM PT / 2 PM ET

(Click here) to register for the webinar series

Today's Agenda

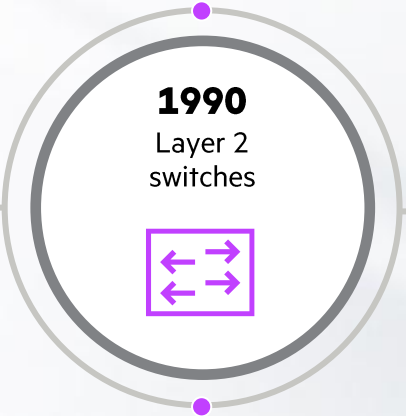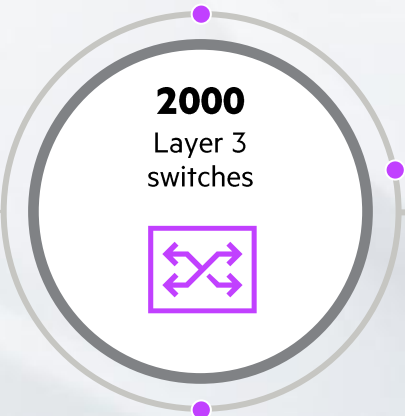|	
1	Fourth-Gen, Data Center Network Architecture
2	AI-Enabled Operations (AIOps)
3	Building an Automated Network and Security Fabric
4	AI Switching Networks, Lossless Fabrics
5	VMware Sales Play and Sales Support and Resources

Data Center Network Architecture Evolution

1st generation

1990
Layer 2
switches

2nd generation

2000
Layer 3
switches

3rd generation

2010
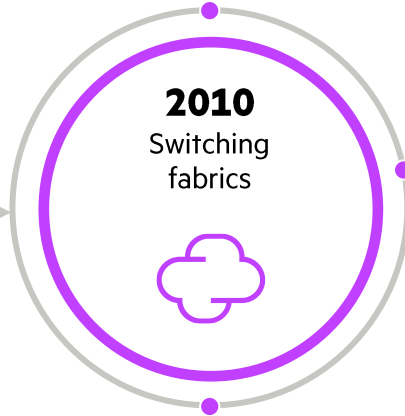Switching
fabrics

4th generation

2024+
Distributed
services

Flat networks, spanning tree, protocol agnostics

IP becomes the dominant protocol, L3 switching

Core-distro-access designs

Mostly north/south traffic

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

Built for east/west traffic

Centralized L4 Architecture

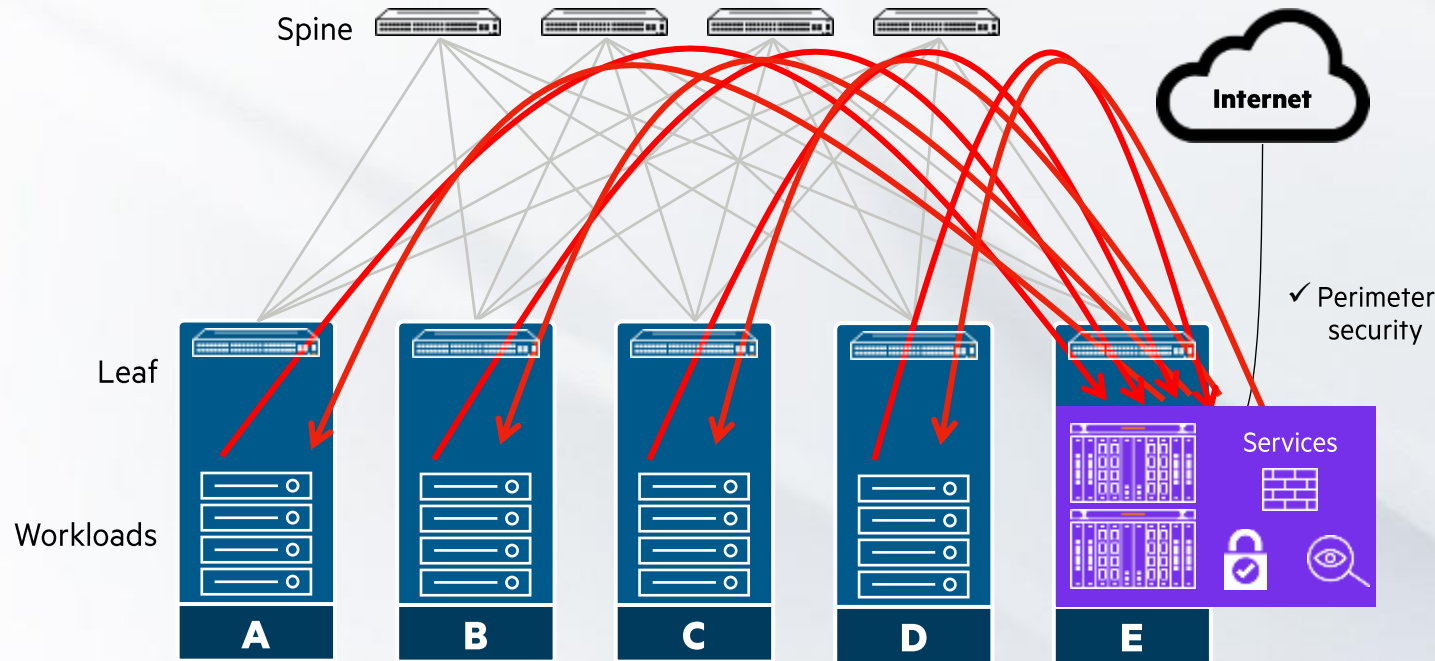**Spine-leaf underlay/overlay**

Rich collection of wire rate stateful services

No scalability limitations

Security services collocated - delivered inline/per port

5

Third gen: centralized services architecture

Spine

Internet

Leaf

✓ Perimeter security
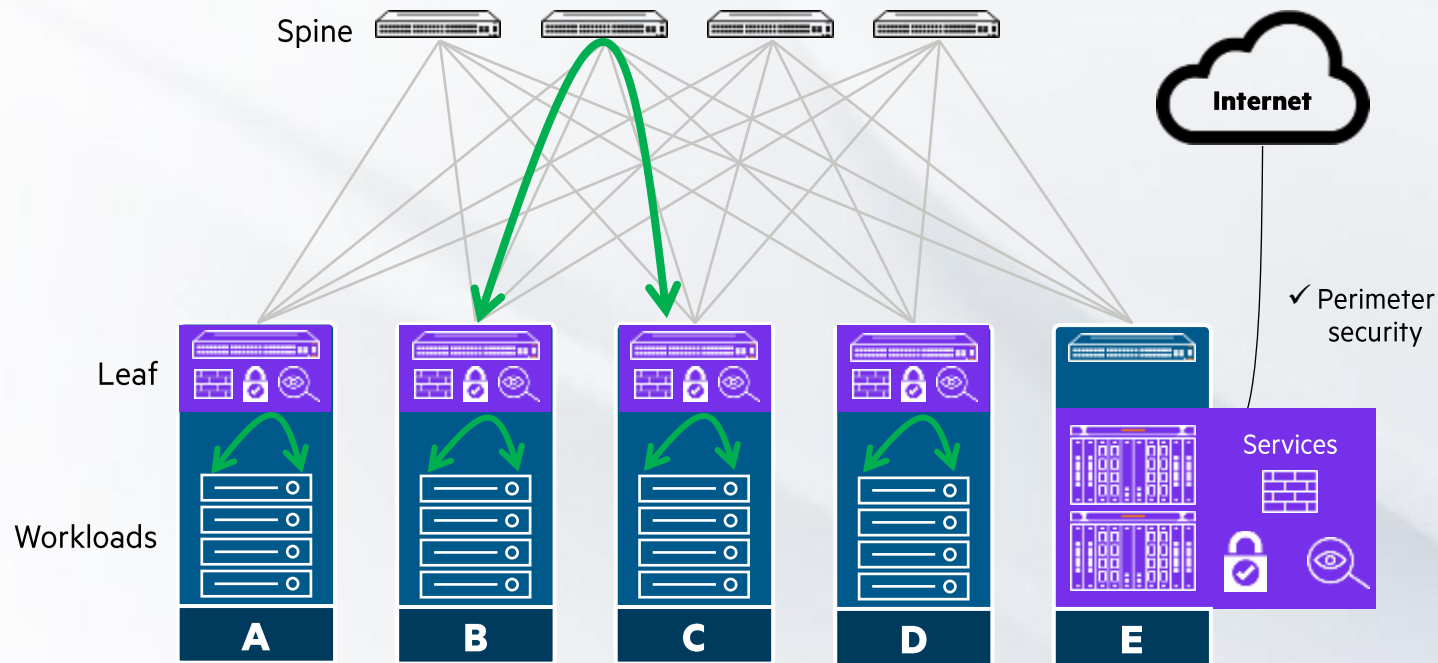
Workloads

Services

A   B   C   D   E

Centralized services architecture

Design challenges

- Traffic having to hairpin to L4-7 services leaf/rack

- Unable to scale to match volume/velocity e-w traffic

- High and cost complexity (appliance sprawl, licensing)

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 telemetry

- Automated network and security policy and provisioning

- Improved app latency/perform

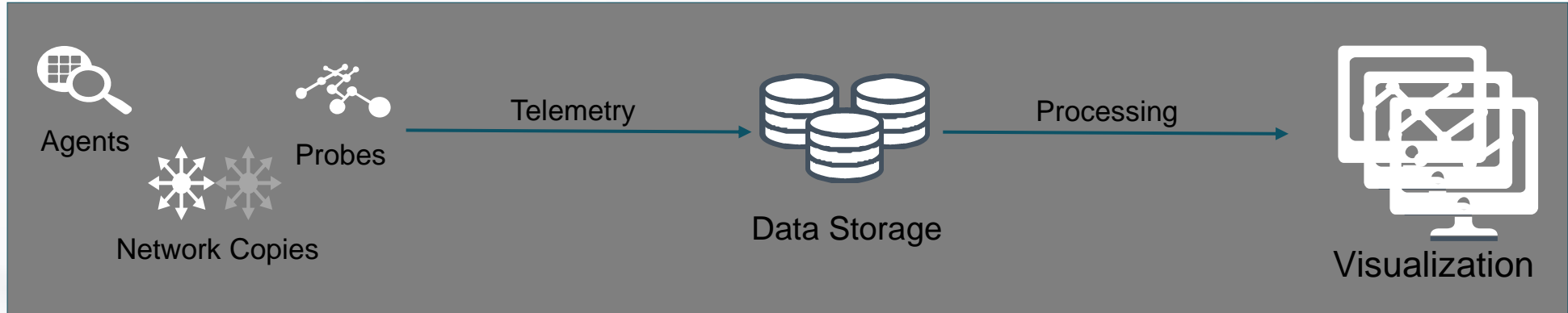# **Data Center Telemetry & Visibility** - *Enabling an Automation Framework*

Telemetry provides the "fuel" that AI requires

Telemetry Integration: Enabling an Automation Framework

Legacy 3rd Gen Click Ops

Agents
Probes
Network Copies
Telemetry
Data Storage
Processing
Visualization

4th Generation Automation

Feedback Loop
HPE Aruba CX10000
Telemetry
AI/ML
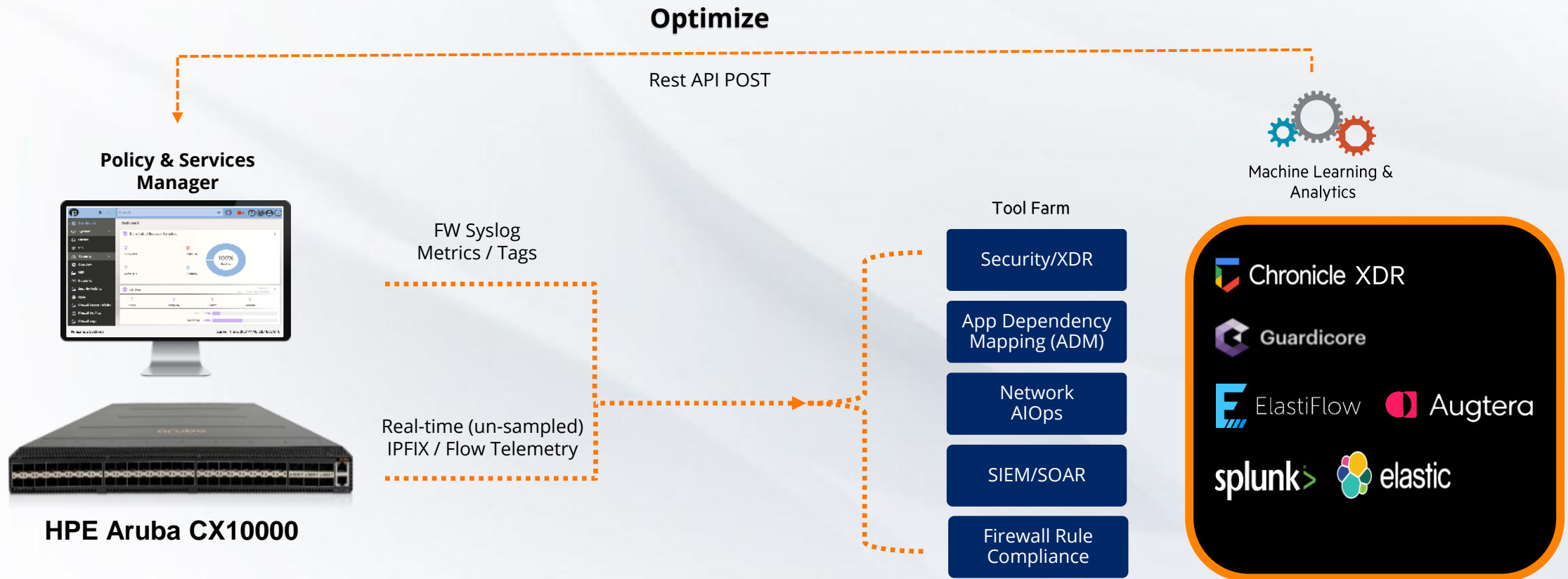Outcomes
Automated Update
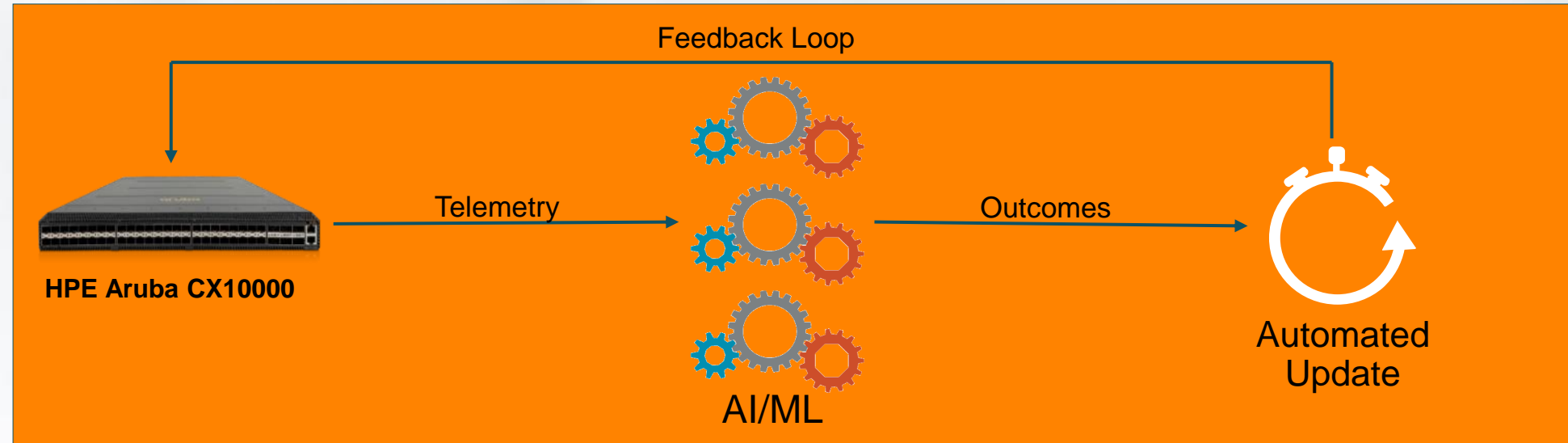
Source of Service is the Source of Telemetry is the Target of Enforcement for the feedback loop
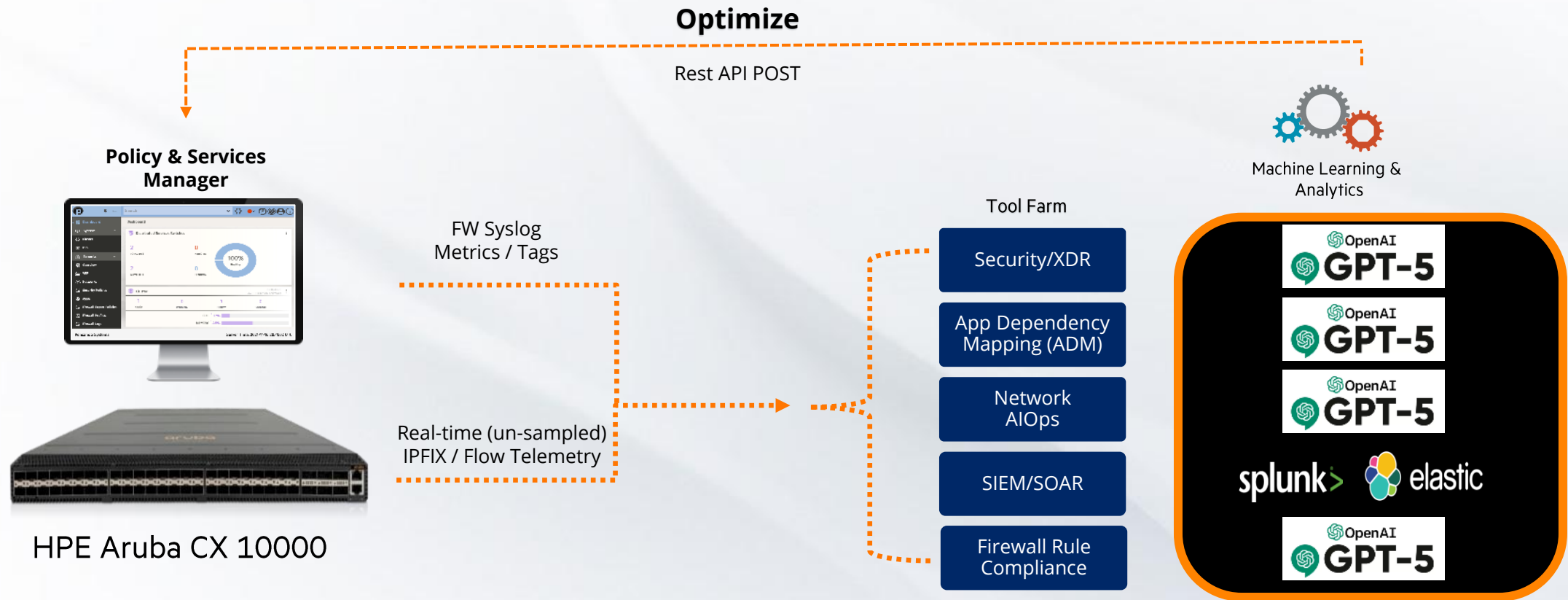
9

Telemetry Integration: Enabling an Automation Framework

- Automation requires ML to determine what should be automated

- Accurate Machine Learning requires granular telemetry data –and lots of it

- Tools are only as good as the information provided to them

Optimize

Rest API POST

Policy & Services Manager

Machine Learning & Analytics

Tool Farm

FW Syslog
Metrics / Tags

Security/XDR

App Dependency Mapping (ADM)

Network AIOps

Real-time (un-sampled)
IPFIX / Flow Telemetry

SIEM/SOAR

Firewall Rule Compliance

HPE Aruba CX10000

Chronicle XDR

Guardicore

ElastiFlow   Augtera

splunk>   elastic

AI/ML AND VISUALIZATION INTEGRATIONS

Empower existing toolsets already in use & design a solution that can feed "what comes next"

Optimize

Rest API POST

Policy & Services Manager

Machine Learning & Analytics

FW Syslog Metrics / Tags

Tool Farm

Real-time (un-sampled) IPFIX / Flow Telemetry

Security/XDR

App Dependency Mapping (ADM)

Network AIOps

SIEM/SOAR

Firewall Rule Compliance

OpenAI GPT-5
OpenAI GPT-5
OpenAI GPT-5
splunk> elastic
OpenAI GPT-5

HPE Aruba CX 10000

Deployment lasts 5-7 Years ...

... Technology will change monthly / annually

Building an automated event driven Network and Security fabric

HPE Aruba Data Center Networking
Building an automated event driven Network and Security fabric

NUTANIX

vmware vSphere

3. Easy integration

Element Harvesting
Event Monitoring

Automated Fabric deployment
Day-2 network operations
vCenter & Nutanix Integration Packs
Physical & Virtual visualization
Centralized policy orchestration
Single API integration point

aruba | Fabric Composer

Centralized Network & Security
Operations

Maintain, Monitor & Optimize

2. Central Orchestration

Policy

1. Common Operating Model Flexible Architectures

8. Brownfield friendly
(not a forklift)

Spin

VXLAN Overlay

Leaf

FW Policy

VSX   VSX   VSX   VSX

Virtual Distributed Switch

4. Physical & Virtual Visibility

5. Distributed Services Architecture
- Pervasive security
- Workload agnostic
- Centrally orchestrated
- Increased efficiencies
- Cost savings

Stateful policies distributed across TORs
(no FW hair-pining, no software agents, no taps)

Flow telemetry
(IPFIX & Packet captures)

6. Flow telemetry & Visibility

FW Syslog Metrics / Tags →

← REST API Post

Machine Learning & Analytics

Toolsets
Security/XDR
App Dependency Map (ADM)
Perf Monitoring
SEIM/SOAR
Firewall Compliance

7. AI/ML Automated feedback

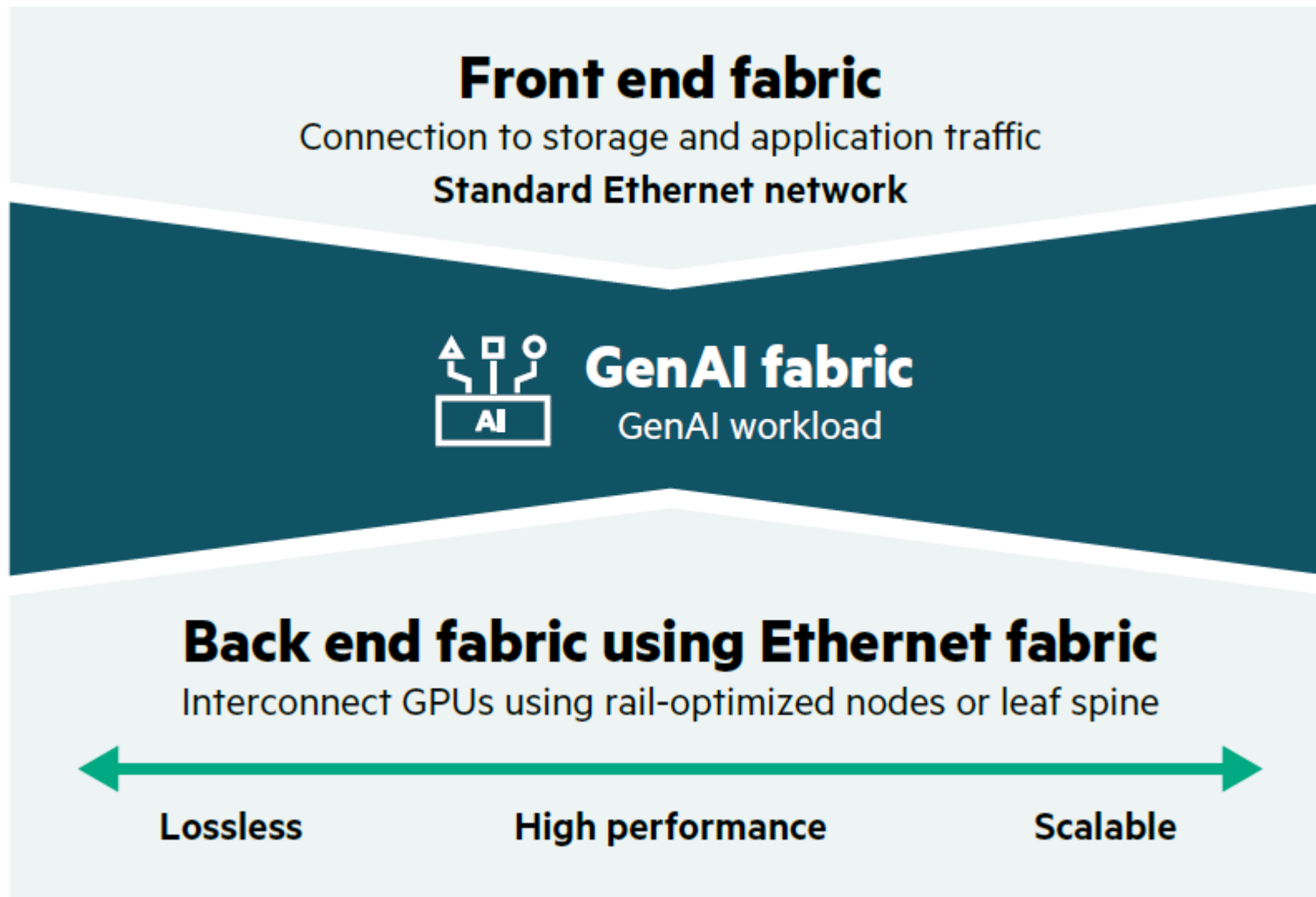*Simplification – Visibility – Security – Cost Savings*

GPU accelerated compute, driving need for faster, lossless fabrics

Evercore Sees a $6B AI networking TAM by '27
Incremental to $23B in traditional DC switching TAM

AI Networking TAM (B)

Training infrastructure: Dominant use case today and is networked by InfiniBand, but Ethernet will play a larger role in 2025 and beyond

Inference infrastructure: Smaller today but will be the largest use case. Ethernet will be preferred in most cases

Front end to back end connections: Ethernet is used to connect front-end and back-end networks. This is the main use case for Ethernet to benefit from AI demand

Year	2023	2024	2025	2026	2027	CAGR
Total	$1.7	$2.3	$3.6	$4.5	$5.7	35%
Back end - front end connections	$0.3	$0.5	$1.0	$1.2	$1.5	50%
Inference	$0.4	$0.7	$1.3	$1.8	$2.3	135%
Training	$1.0	$1.1	$1.3	$1.5	$1.9	18%

Legend: Training | Inference | Back end - front end connections

Source: Evercore

AI back end vs. front end networks

Front end fabric
Connection to storage and application traffic
Standard Ethernet network

GenAI fabric
GenAI workload

Back end fabric using Ethernet fabric
Interconnect GPUs using rail-optimized nodes or leaf spine

Lossless   High performance   Scalable

GPU accelerated compute, driving need for faster, lossless fabrics

GPU support
- Up to 4 double-wide GPUs or 8 single-wide GPUs
- Accelerates graphic-intense workloads
- NVLink™ High-Speed GPU Interconnect

HPE ProLiant DL380 Gen11 (any x86 server)

100's of servers, 1,000's of GPUs

HPE Aruba CX 9300-32D Switch

25.6Tbps, 32-ports of 100/200/400GbE
high-density 400GbE networking for lossless server, storage HPC/AL and intra-fabric connectivity

AI Cluster Sweet Spot
- Small/Med AI (backend) Fabrics (64/128/256 GPU)
- Frontend / feeder networks to AI Clusters

High Performance
Enterprise Data Center Switch

HPE Aruba Networking CX 9300S-32C8D

High performance 8Tbps switching
6.4 Tbps MACsec, 4.8 Tbps IPsec/VXLANsec

100G/200G access for AI/ML deployments

Secure encrypted DC and secure DCI

Large scale 100G access fabrics

Flexible, cost-effective, high-density 10-100GbE connectivity server, storage, and 400GbE intra-fabric connectivity

High speed connectivity
32-port 10/25/100 for Access and 8-port 400G for Spine with 2-port of 1/10G for Telemetry

End-to-End L2/3 encryption flexibility across shared IP infrastructure - DCI and Co-locations
MACSEC, IPSEC, VXLANSEC*

Support 32x100G-NRZ, or 48x100G-PAM4 (200G to 100G breakout), 24x200G*

*Phy based MACSEC 10.14.1000 (July'24), ASIC based MACSEC – 10.15 (Roadmap), IPSEC - 10.15 (Roadmap)

Unified Infrastructure, edge-to-cloud

**Data center—leaf-spine, 25/100/400G,
On premises, private cloud, colocation**

HPE Aruba Networking CX 9300 -32D

HPE Aruba Networking CX 10000

HPE Aruba Networking CX 9300S-32C8D

HPE Aruba Networking
CX 8400

HPE Aruba Networking CX 8360/8100

HPE Aruba Networking CX 8325

HPE Aruba Networking
CX 6400

HPE Aruba Networking CX 6300M

HPE Aruba Networking
CX 6X00

Core

Aggregation

Access

HPE Aruba Central and AOS CX

Common operating model - campus edge to DC, cloud managed

VMware NSX (FW Server-Agent) Alternative Sales Play

VMware by Broadcom: the first 100 days - Hock Tan, CEO blog - March 14, 2024

M&A PAINS —

After 114 days of change, Broadcom CEO acknowledges VMware-related "unease"

"There's more to come."

SCHARON HARDING - 3/15/2024, 3:14 PM

ars TECHNICA

https://arstechnica.com/information-technology/2024/03/broadcom-ceo-admits-vmware-changes-have-brought-unease-to-customers-partners/

... after buying VMware, Broadcom took over the top 2,000 VMware accounts from VMware channel partners... Broadcom has been focused on **upselling customers**.

... ended the VMware partner program, making the primary path to reselling VMware an **invite-only** Broadcom program

... ended VMware perpetual licensing - **upended financials** for businesses.

... VMware users complaining about ... **"price rises of 500 and 600 percent,"** during a March "User Group Town Hall,"

VMware Sales Play

Compelling Event: Significant Increase VWware License Cost, CX 10K Opportunity

Market discontinuity creates opportunity

- Broadcom acquisition & 2024 licensing changes causing significant customer disruption – *VMware used in ~80% of all data centers*
- New **vSphere Foundation** license <u>doesn't</u> include NSX micro-seg or distributed firewall (DFW) capabilities anymore
- Customers must now purchase **VMware Cloud Foundation** license to get NSX security features, <u>~200-300% + license renewal cost</u>
- Customers opting to deploy lower cost vSphere option are seeking a micro-seg/firewall alternative

HPE Aruba Networking alternative

- CX 10000 provides a superior micro-seg/firewall alternative;
  - Higher performing (800G stateful firewall) with <u>ZERO</u> CPU server impact
  - Hypervisor agnostic and seamless deployment
  - Additional high performance security services; 400G IPsec, TAP and telemetry

VMware Cloud Foundation™

VMware vSphere®
+

HPE Aruba Networking CX 10000

Value proposition:
50% less TCO, 8-month ROI, returning ~$1.6M to the yearly IT budget
5-year TCO analysis with 500 servers

Optimize Your Licensing Costs Micro-segmentation

Deploy a new data center – Greenfield deployment

VMware Cloud Foundation (VCF) + Distributed Firewall License

$18.8M
5-year cost VMWare VCF +
Distributed Firewall License

+

$1.4M
5-year cost Classic Network

=

$20.2M
5-year cost

VMware vSphere Foundation (VVF) + CX10K (DSA)

$5.4M
5-year cost VMWare VVF

+

$1.6M
5-year cost DSA

=

$7.0M
5-year cost

*Data based on a five-year TCO analysis for greenfield data center deployments of **500 servers per site, single socket 16 cores***
Core cost per solution: $350 – VCF, $135 – VVF

***HPE Aruba Networking Distributed Services Architecture** is 65% more cost-effective, DSA network pays for itself in 5 months and returns ~US$2.6M to the yearly budget*

Sales Support,
Resources to help you sell

HPE Aruba Networking DCN Teams – Here to Help!

DCN PLM

TODD MCDOLE
DC Networking PLM Leader

VAL OLIVA
8325, 8400, 9300, modular

DHIMAN CHOWDHURY
CX 10000, security, L4-7

ASHWINI DAHIYA
9300, 8100, VXLAN, IPv6

MARTY MA
DCN Strategy, multi-cloud

STEVE SMITH
8325, L3, Edge DC, AI/ML

JIM CAPOBIANCO
Telemetry, visibility, ecosystem

Hari Anil Kumar
CNX, AFC, DCN Management

Tarunesh Ahuja
DCNM Strategy, CNX integ.

DCN EXECUTIVE LEADERSHIP

PAUL GOODRIDGE
HPE DCN Global Sales

MARK BERLEY
DCN CTO

DCN SALES

Let's win together!

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Engineering Support

THOMAS SKOCZLAS
CSE - Northeast

NICK COOK
CSE - Southeast

MATTHEW ROSEBURY
DCN UK

RASHID AHMED
CSE – South Central

JOHN BECK
CSE – North Central

JAY BHAGAT
CSE - Southwest

JOHN GRAY
DCN Marketing Lead

YASH NAGARAJU
Director TME Switching

ANDREA RODRIGUEZ
DCN Sales Enablement

Distinguished Technologist
- Ubaidali Abdul Razack, APJ
- Daryl Wan, NA
- Vincent Giles, EMEA

Bill Xiang
H3C Comware

March 2024

Helping to Prepare the Market for You! *Data Center Marketing Campaign 2024*

Primary assets: Four new DCN video ads

Video 1: Data center modernization

Video 2: Intelligent data center switching

...cure data center networking

Video 4: Reduce data center complexity

New primary assets

Five design principles for a smarter data center

**IDC: Achieve performance and security through a modern data center fabric**

ESG: The benefits of fourth-generation, secure data center fabrics
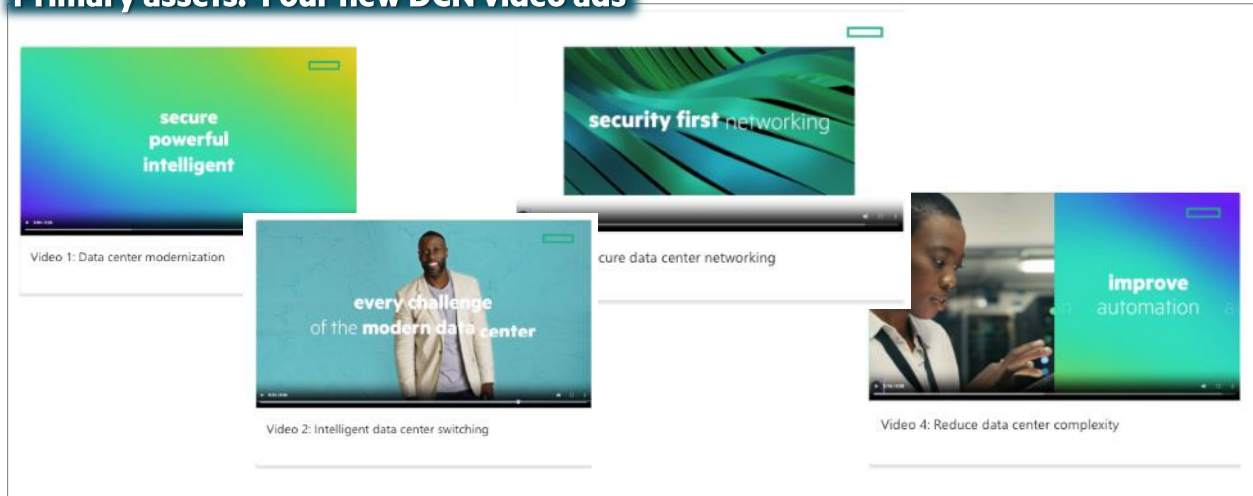
Secondary content

Vertical brochures
- A new era of intelligent data center networks for healthcare
- A simplified data center architecture for retailers
- Harnessing data center networks for manufacturing intelligence
- Financial services (coming soon)

Blogs
- Data is at the heart of your business success (Network World)
- Five design principles to get your data center out of first gear *by William Choe*
- Bringing the data processing unit (DPU) revolution to your data center *by Mark Berly*
- From outdated to outstanding—revolutionizing manufacturing data centers *by Vinnie Strey*
- Get rich data center telemetry with DPU-powered switches *by Scott Stevens (AMD)*
- Modernized data centers for retail—secure, efficient, and automated *by Ryan McCarthy*

Customer stories: Altorfer Cat, Canterbury Christ Church University, PQR

Glossary pages: What is a data center? What is data center security? What is an enterprise data center?

Airheads Premium Tech Corner: Switching and Data Center Networking

Leader Ranking in GigaOm Radar for Data Center Switching 2024

Share this!

"One of HPE Aruba's differentiating features is its Distributed Services Switch, which provides stateful firewall services at every top-of-rack configuration ..."

QR - Get the Reprint

https://gigaom.com/reprint/gigaom-radar-for-data-center-switching-hpe/
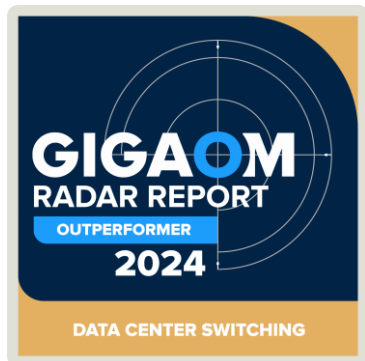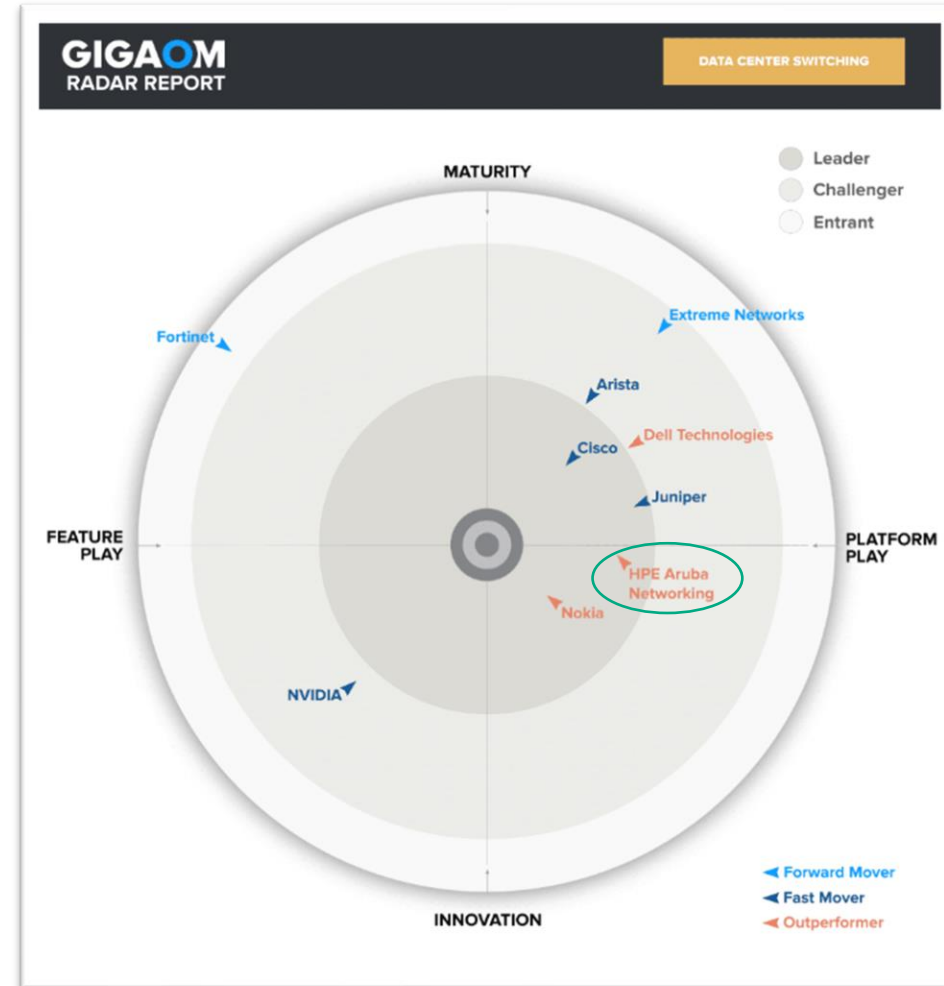
HPE Aruba Networking DCN *CX Switch Trade-Up Program*

Apply HERE: www.hpe.com/partners/dcncxtradeup   **Learn More!** (DCN WinBook on SalesEdge)

Questions

Resources

For YOU

HPE aruba networking

SalesEdge

- Aruba Data Center Networking WinBook

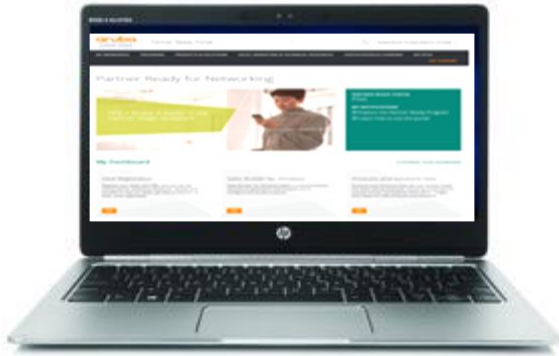## Share with CUSTOMERS

HPE aruba networking

arubanetworks.com

- Modern data center networking

YouTube

- 4th Generation Data Center Fabric (4 mins)
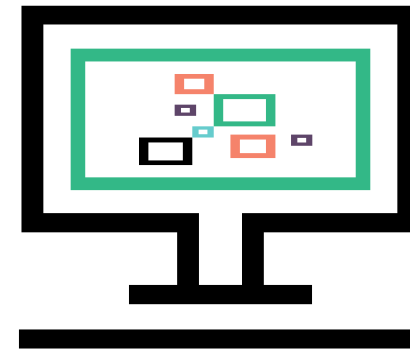- 4th Generation Data Center Fabric (10 mins)

RESOURCES

**Partner Ready for Networking portal
(Click here)**

Ask Questions
Get Answers

**Channel Account Managers (CAMs)
Regional channel support**

**My Learning / The Learning Center
(Click here)**

**Arubapedia for Partners
(Click here)**

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Thank You!!!