以 AI、混合雲與網路技術，驅動企業 IT 現代化

Gary Huang, Senior Solution Manager

October 16, 2025

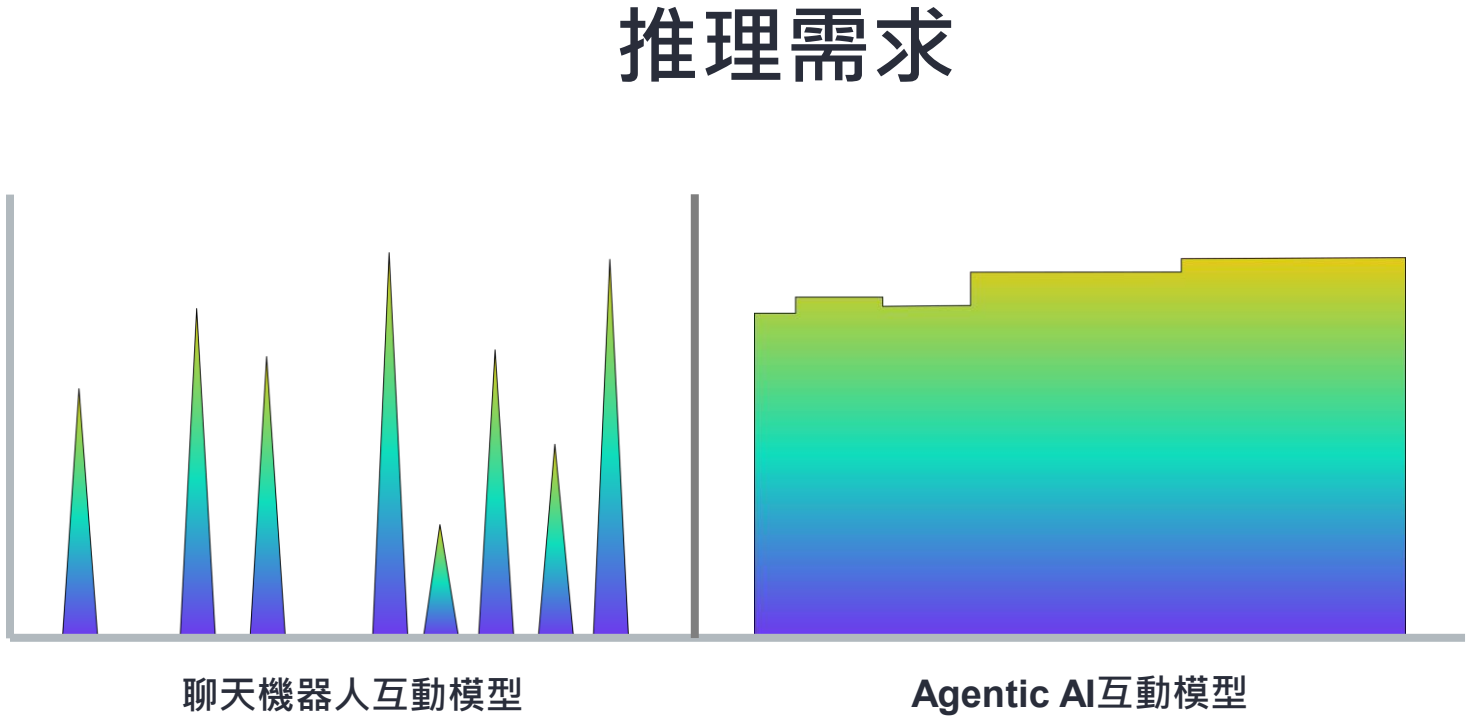
Unlock value across your connected enterprise

AI

Networking

“AI is driving fundamental architectural shifts”

而“**Agentic AI**”正在將推理需求從零星轉變為持續。



Antonia Nearly – a live example of Inference AI Solution

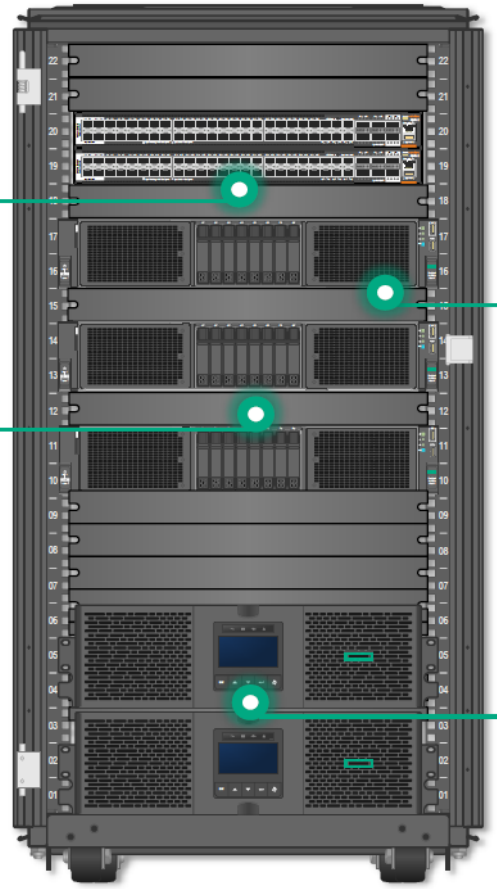
2X HPE Aruba CX9300
400GbE switch

HPE aruba networking

2X HPE ProLiant DL385 gen11
Avatar and speech engine

Hewlett Packard Enterprise

Accelerated by NVIDIA



HPE ProLiant DL380a gen11
Guardrails, vector DB, LLM,
MLDM, MLDE

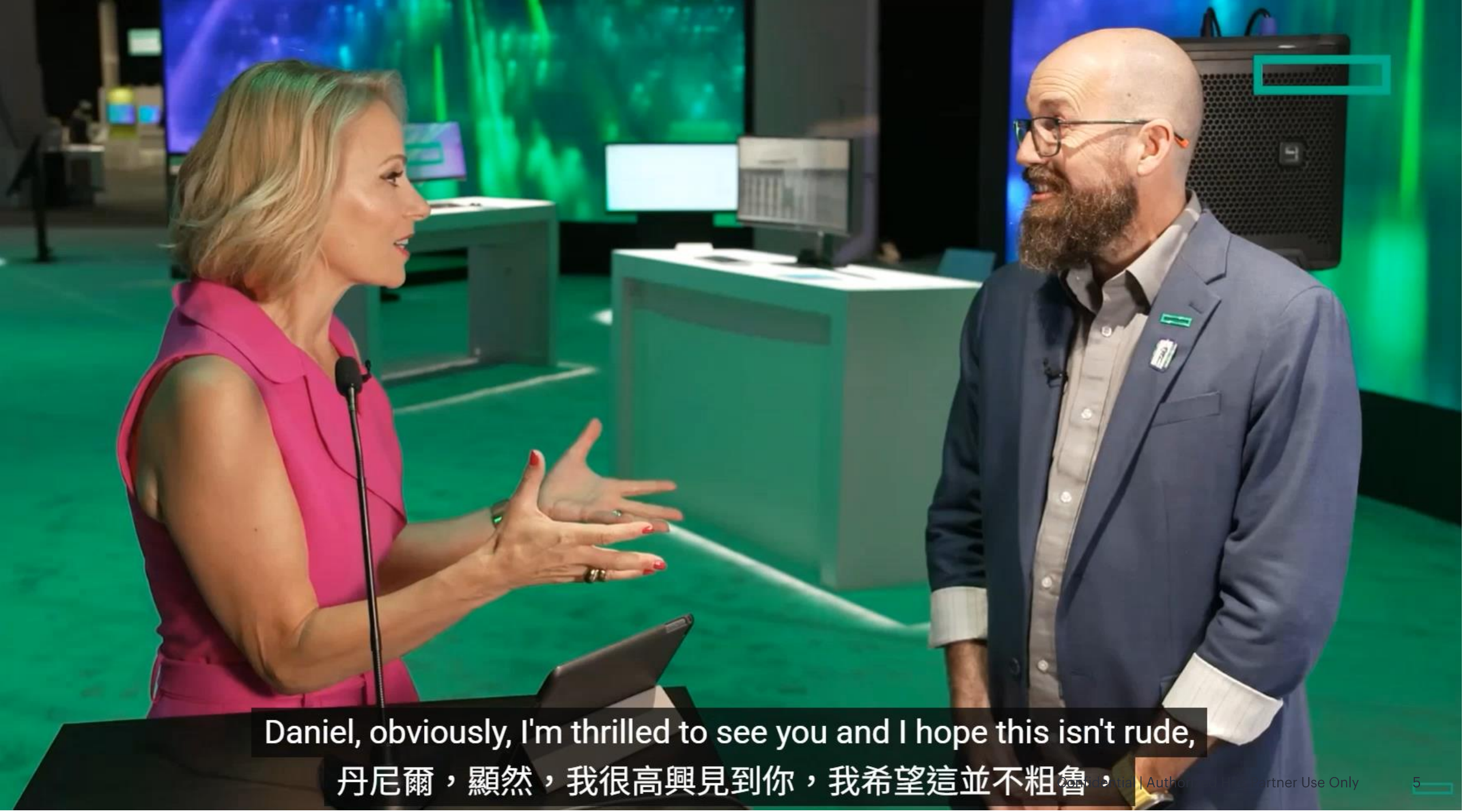
Hewlett Packard Enterprise

Accelerated by NVIDIA

HPE Uninterruptible Power
System (UPS)

Hewlett Packard Enterprise

HPE 22U portable rack to power the AI stack and 3D digital hologram

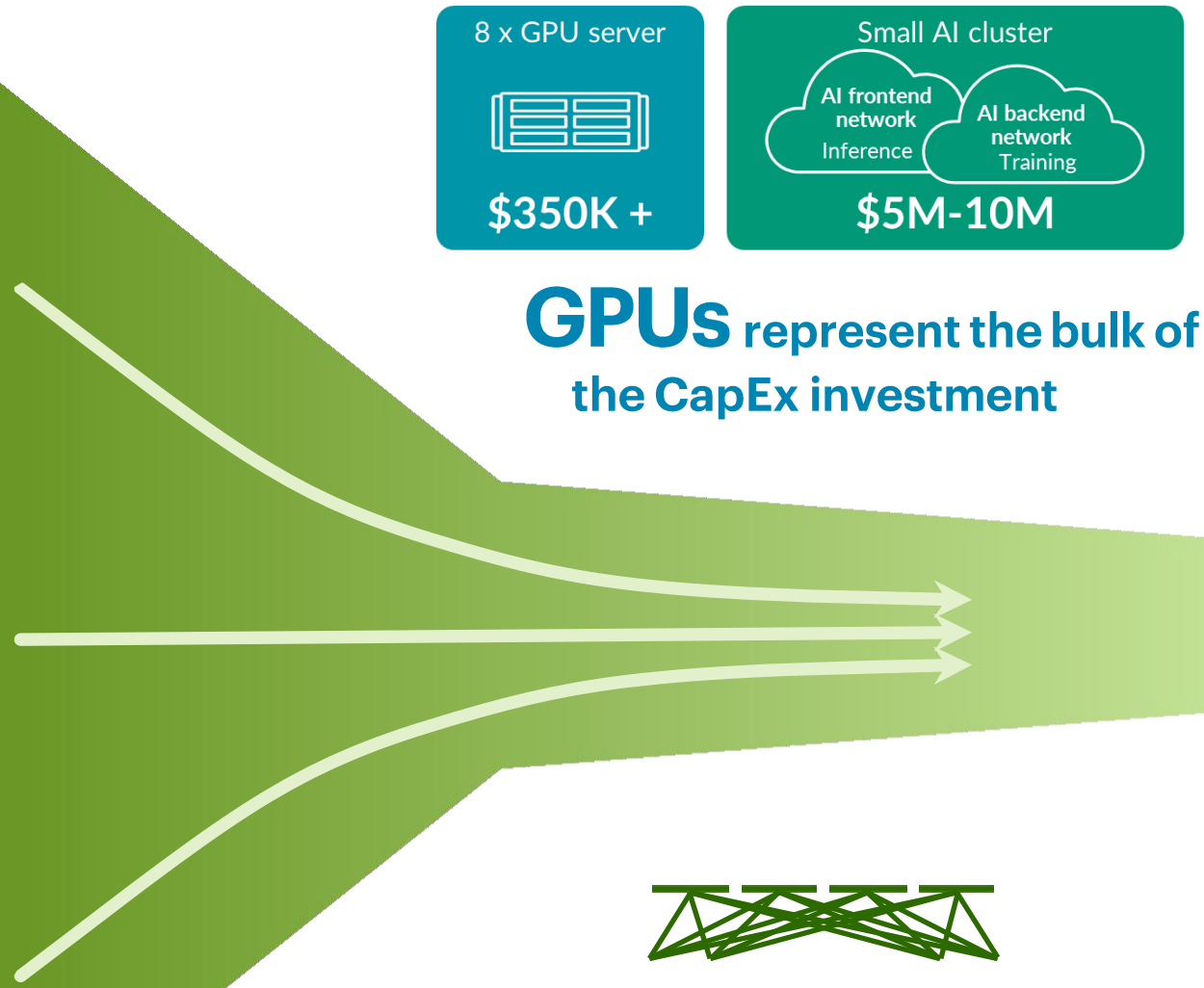

Daniel, obviously, I'm thrilled to see you and I hope this isn't rude,
丹尼爾，顯然，我很高興見到你，我希望這並不粗魯，

Avoid an Infrastructure Bottleneck

If the network is a bottleneck that delays training job completion, expensive GPU time is wasted, and training becomes network-bound instead of compute-bound

HPE Networking Mission for AI Data Centers

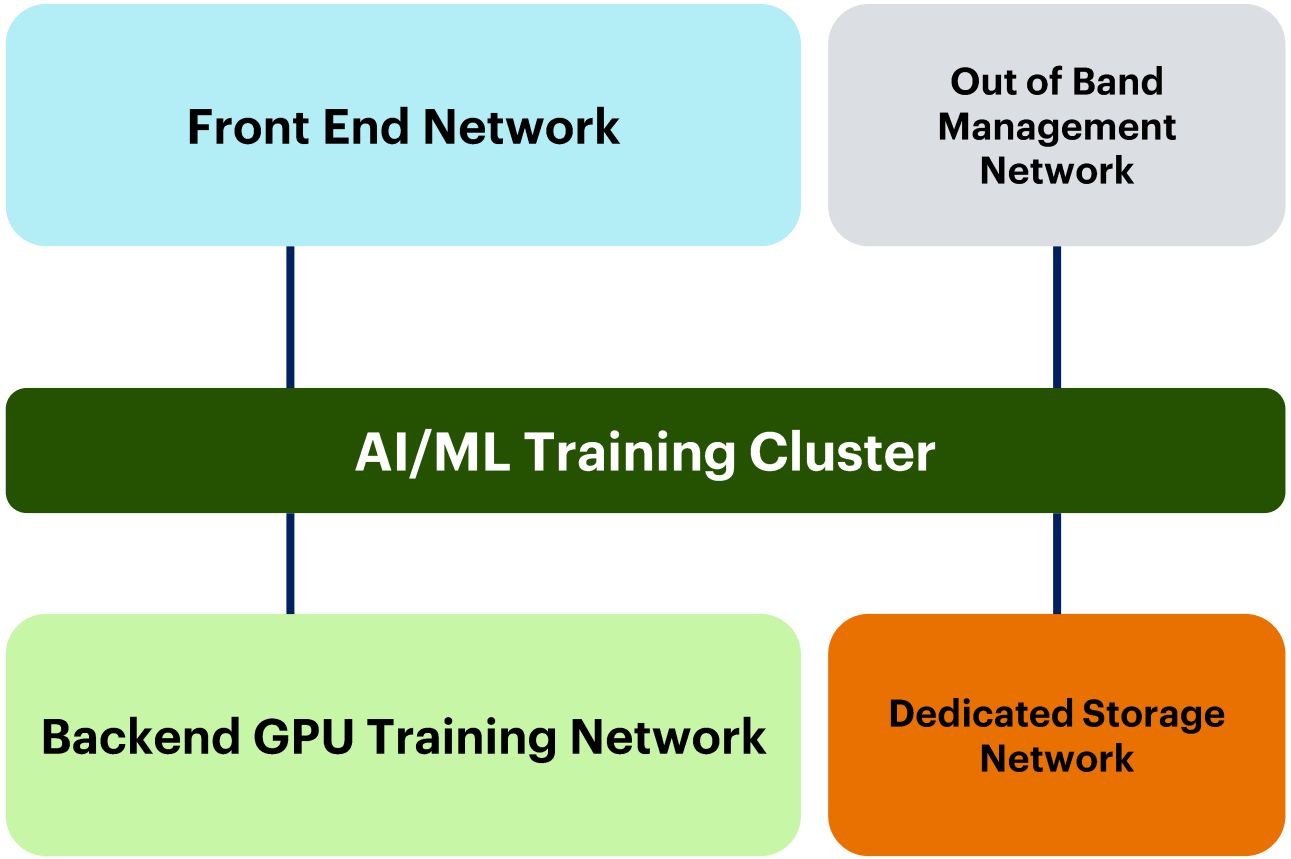
Unlocking the full potential of AI with unparalleled network performance and ease of operations



GPUs represent the bulk of the CapEx investment

The network connects GPUs in distributed training

AI / ML Training Infra: Networks Requirements



Front End Network Requirements

- 100G/200G to Host
- Gateway for external access
- Multi Tenancy

Backend GPU Network Requirements

- 200G/400G to each GPU
- Congestion Avoidance (1:1 non-blocking, Advanced Load Balancing) to handle elephant flows
- Congestion Management (DCQCN)

Backend Storage Network Requirements

- 100G/200G to Host
- Congestion Management

There are typically 4 networks in an AI training cluster. Each has unique requirements

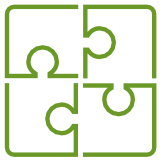
HPE Networking Core Differentiators

Openness

To avoid vendor lock-in

Operations

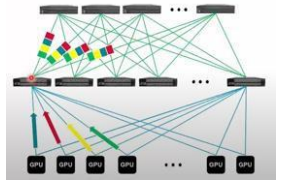
“Power is nothing without control”



End to End Solutions

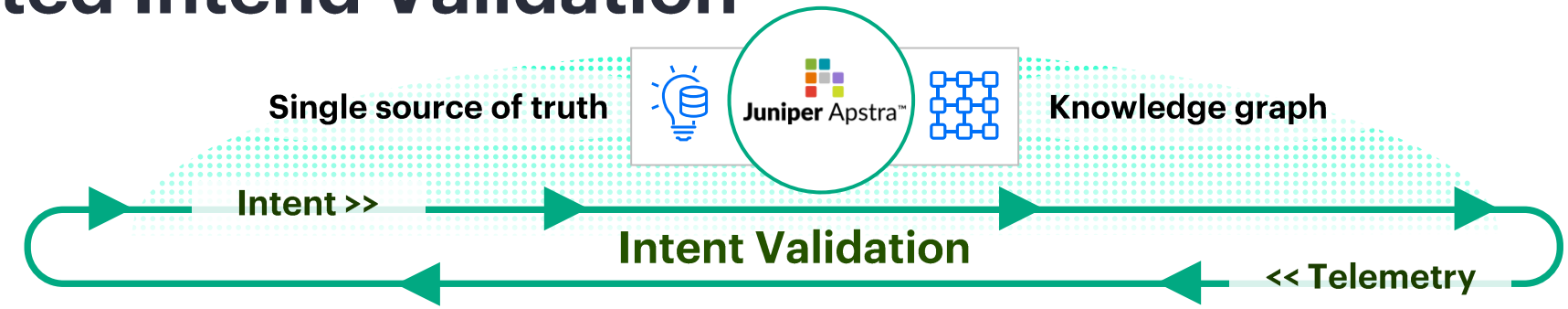
Focus on customer outcomes

Open Ethernet offer best TCO with performance



	InfiniBand Propriety Mellanox NICs and Switches	AI Optimized Ethernet Shallow Buffer, Deep Buffer across leaf and spine	Scheduled Fabric Cell or Ethernet-based disaggregated chassis
Vendor Lock-In	Yes	No	Yes
Operational Consistency	No	Yes	No
Cost	Higher	Lower	Higher
Scale	Central/Limited	Distributed/Higher	Central/Limited
Performance for AI workloads	Yes	Yes	Yes

Operations: Apstra Data Center Director Automated Intend Validation



Design

- Vendor-agnostic
- Multiple fabrics
- Multiple pods, racks, servers
- DC & DCI EVPN-VXLAN/IP

Build

- Vendor-specific blueprints
- Render cabling plan
- App/service modelling
- Architecture validations

Deploy

- Easy network ZTP/configs
- Time voyager rollback
- Upgrade/maintenance mode
- Fabric multi-tenancy

Operate

- Continuous validation
- Root-cause identification
- Service-level monitoring
- Recommendation engine

Day0 **Day1** **Day2** **DayN**

End to End Solutions: Comprehensive Spine-Leaf Portfolio for AI DC @800G

Capacity and scale to outpace model parameter and AI cluster growth

Juniper Apstra™

400G	800G	800G	800G	800G / 400G
QFX5230-64CD	QFX5240-64OD	QFX5240-64QD	PTX10002-36QDD	LC1301-36QD, LC1201-36CD, PTX10K Modular

AI fabric: Leaf/Spine | AI fabric: Spine or collapsed Leaf/Spine

Shallow buffer | High Radix – deep buffers

Frame-based Ethernet fabric | Non-blocking internal cell-based switch fabric

RoCEv2 +ECN +PFC +DCQCN

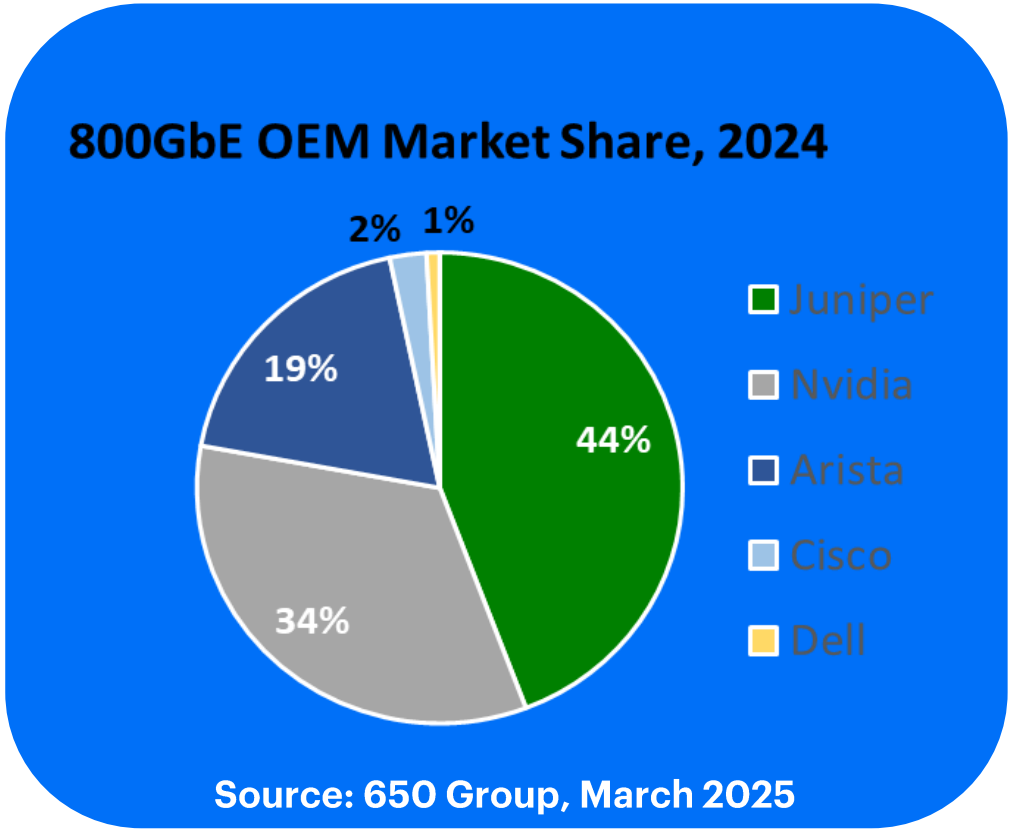
DAC, AEC, AOC, and optical transceivers

Juniper AI Validated Designs (JVDs)

JUNOS EVOLVED

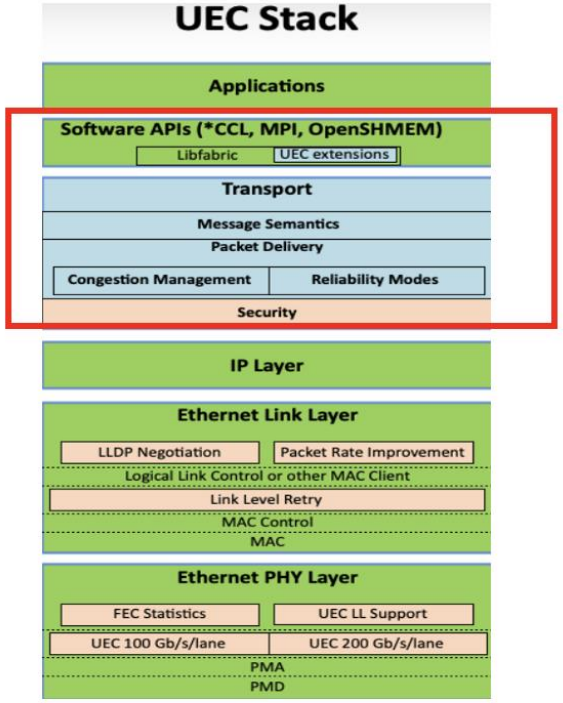
HPE Networking is the Market Leader in 800GE

- High Bandwidth & Low Latency in the AI DC
  - Juniper holds 44% Market share in the AI DC (800GE)
- Juniper Validated Designs w/ the AI Infrastructure Ecosystem
  - Nvidia, AMD, Vast Data, Weka, Broadcom
  - Ops4AI lab for white glove service
    - Juniper AI Test-Labs in Sunnyvale is open to all customers
- Wide Range of AI Customer Deployments
  - Large Enterprise
  - Cloud Providers
  - Government Agencies



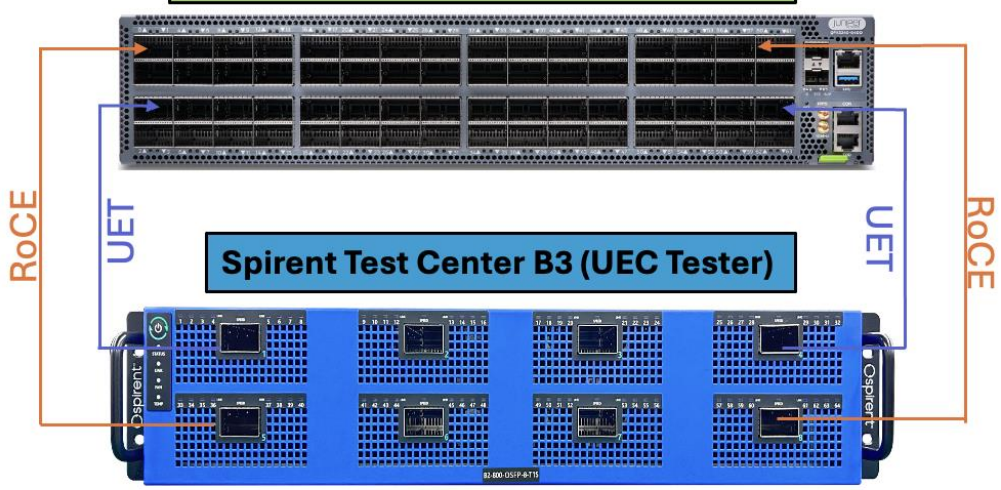
Tokyo Interop 2025 – AI Data Center

World's first Ultra Ethernet Transport (UET) Test Solution



Ultra Ethernet

JUNIPER's QFX 5240-64OD (64x800G)



Spirent™ Interop 25 Tokyo JUNIPER NETWORKS

Unlock value across your connected enterprise

Hybrid cloud

Networking

Today's Realities Are Paralyzing Virtually Every Enterprise

3 to 5x cost increase
due to lock-in, forced bundling, and VM sprawl

Forcing new strategic plans
need to support current workloads and new runtimes

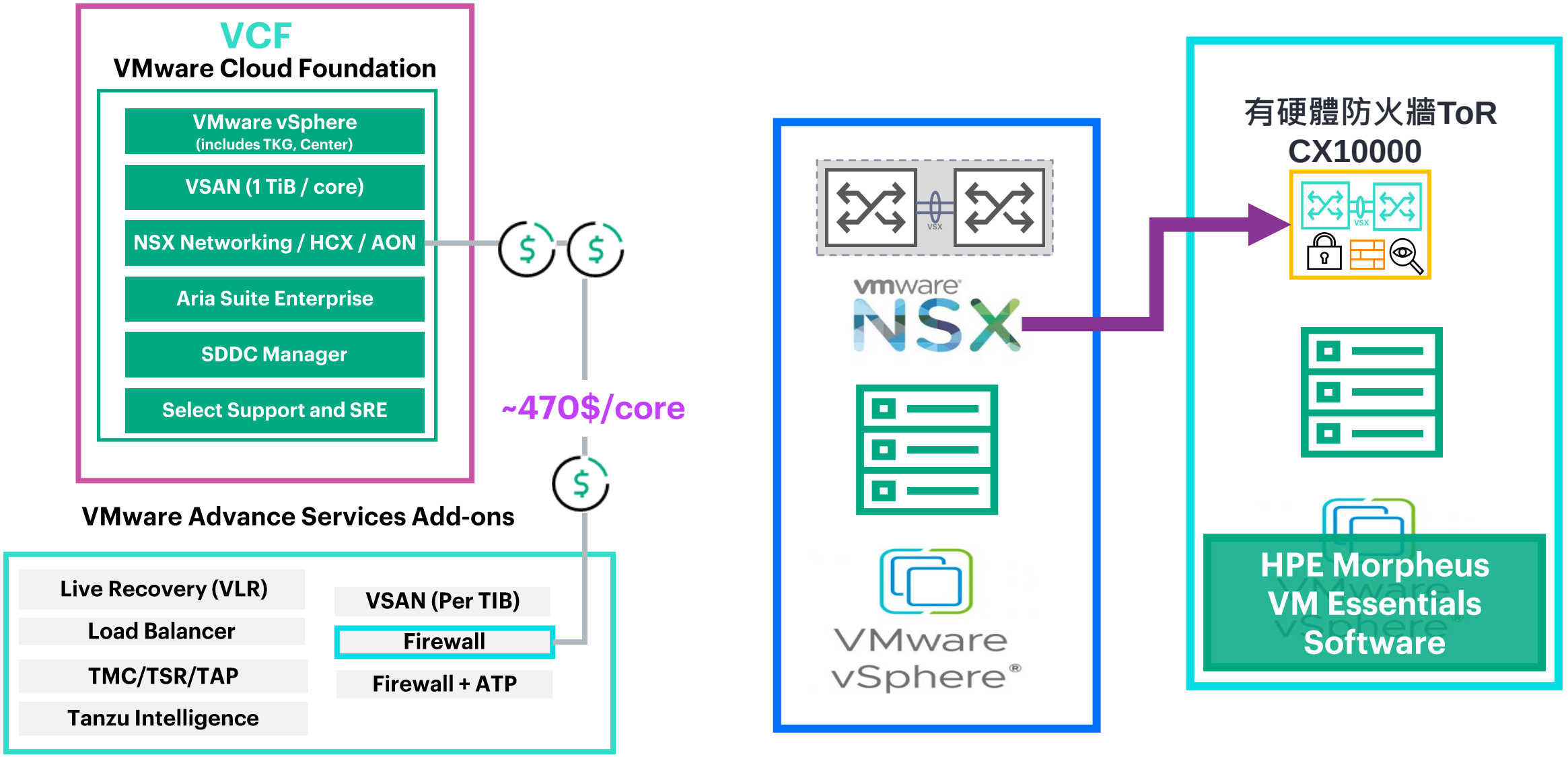
Causing more complexity
more apps, more formats, more places… same team

"I'm evaluating options, but it will take 2 years to deal with VMware while I also adjust our container strategy, figure out AI, and re-evaluate public cloud, Oh yeah… and I'm not getting any new people to help."

Optimise

to reduce the costs of established virtualization deployments and enable focus on what's next

Alternative to Vmware NSX Firewall Service



HPE Aruba Networking CX 10000 Series

Leading the 4th Generation Data Center

Industry-First Leadership in Distributed Services Switch – 2022

25G/100G
800G L4 Firewall

Firewall · DDoS · Telemetry · IPSec · NAT · Central Cloud · AFC · PSM

AOS-CX

THE CHANNEL CO. CRN Products of the YEAR 2022

HPE aruba networking | AMD PENSANDO

Higher Speed, Scale, & Performance
Improved Security and Enhanced Features

Industry Leading Distributed Services Switch – 2025

100G/400G
1.6T L4 Firewall

Firewall · DDoS · Telemetry · IPSec · NAT · Central Cloud · AFC · PSM

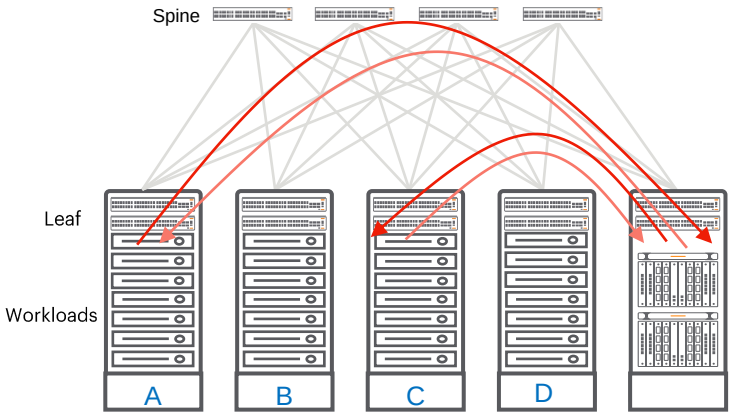
AOS-CX · MACSec · Precision Timing Interfaces including GNSS

Traditional Approaches to Securing East-West Traffic

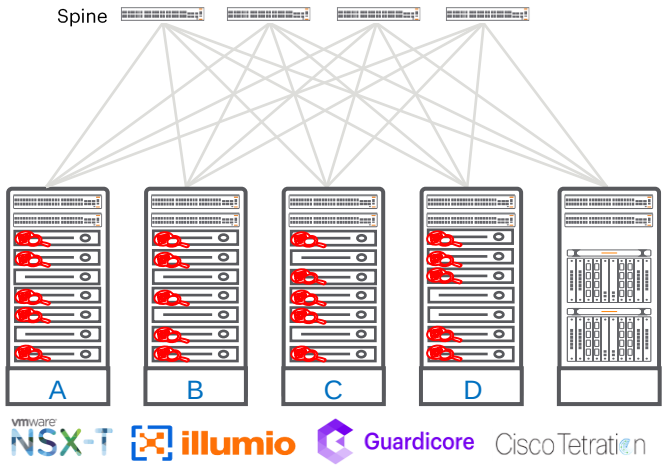
Versus a more modern approach

3rd generation

Centralized Services Model

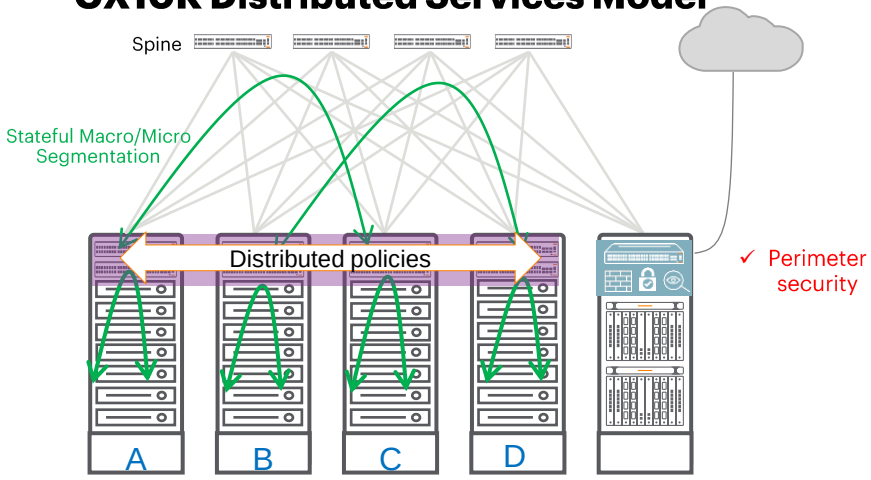


Software Agent Model



4th generation

CX10K Distributed Services Model



Issues with Centralized Services Model:

- Limited protection and visibility (Zone based)
- Inefficient use of bandwidth and increased latency
- Application performance issues and scaling complexities
- Very expensive – Priced a 1.6Tb FW lately?

Issues with Software Agent Model:

- Complex to deploy and operate
- Deployment limitations lead to inconsistent visibility
- Consumes x86 resources - 10-30%
- Exceedingly high licensing cost.

Distributed Architecture advantages:

- Integrated 1.6Tb stateful F/W in every rack
- Workload agnostic
- Improved traffic flows & application performance
- Reduces complexity by managing less
- Significantly reduces costs

Why high-solution telemetry is essential for today's modern enterprises

Manual, complex, poor reliability, unsafe

Traditional NPU tools, sampling and monitoring

Automated, performant, reliable and safe

4th Gen NPU/GPU distributed services architecture

High resolution telemetry is imperative for automation, AIOps and security

Servers

Storage

Network components

Databases

Multi-cloud

Virtualization

Cloud-native

Websites and transactions

Applications

Opensource Tooling

I. ecosystem integration

HPE aruba networking

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

Session state awareness

AI/ML, network, security analytic tools

Tooling
Network AIOps
App Depend. Mapping (ADM)
Security/XDR
SIEM/SOAR
Firewall Rule Compliance

OpsRamp

HPE aruba networking

elastic

ElastiFlow

Guardicore Now part of Akamai

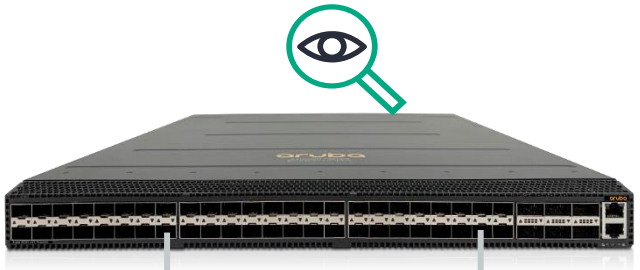
SELECTOR

tufin The Security Policy Company.

High-resolution telemetry → Actionable insights, predictability, automation

Total Visibility

Telemetry Data



Syslog/IPFIX

Machine Learning

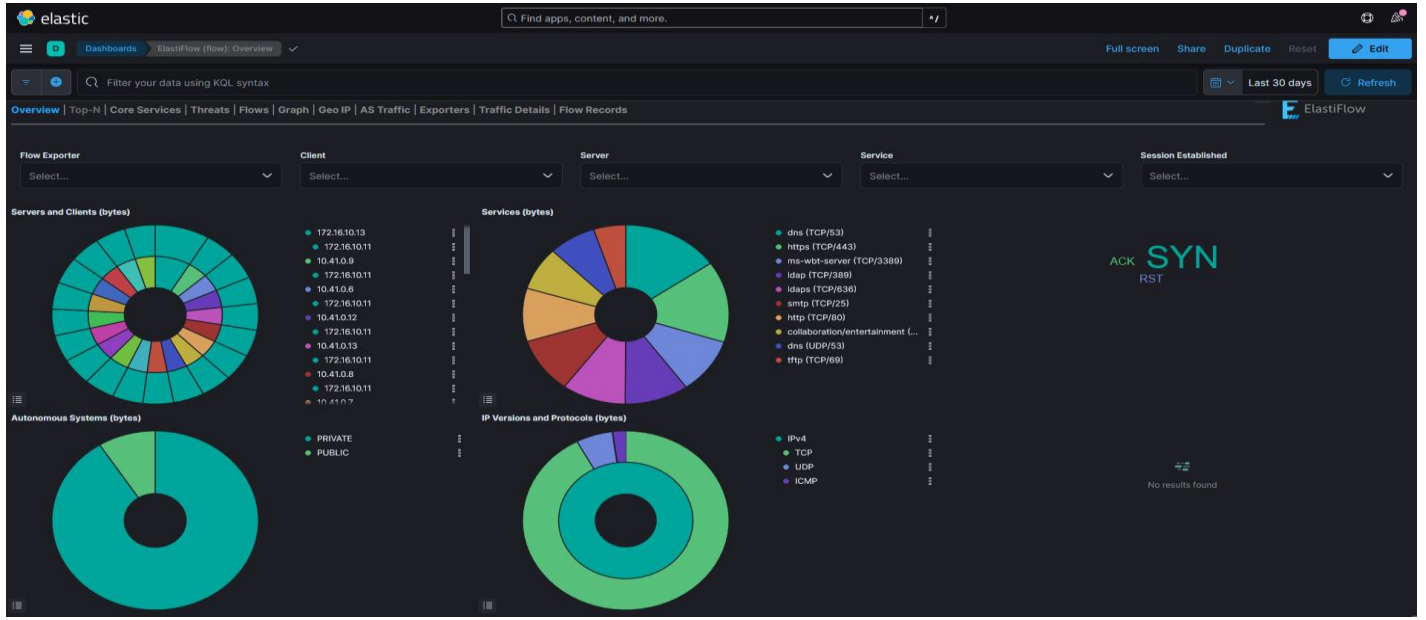
APP1

Network-A

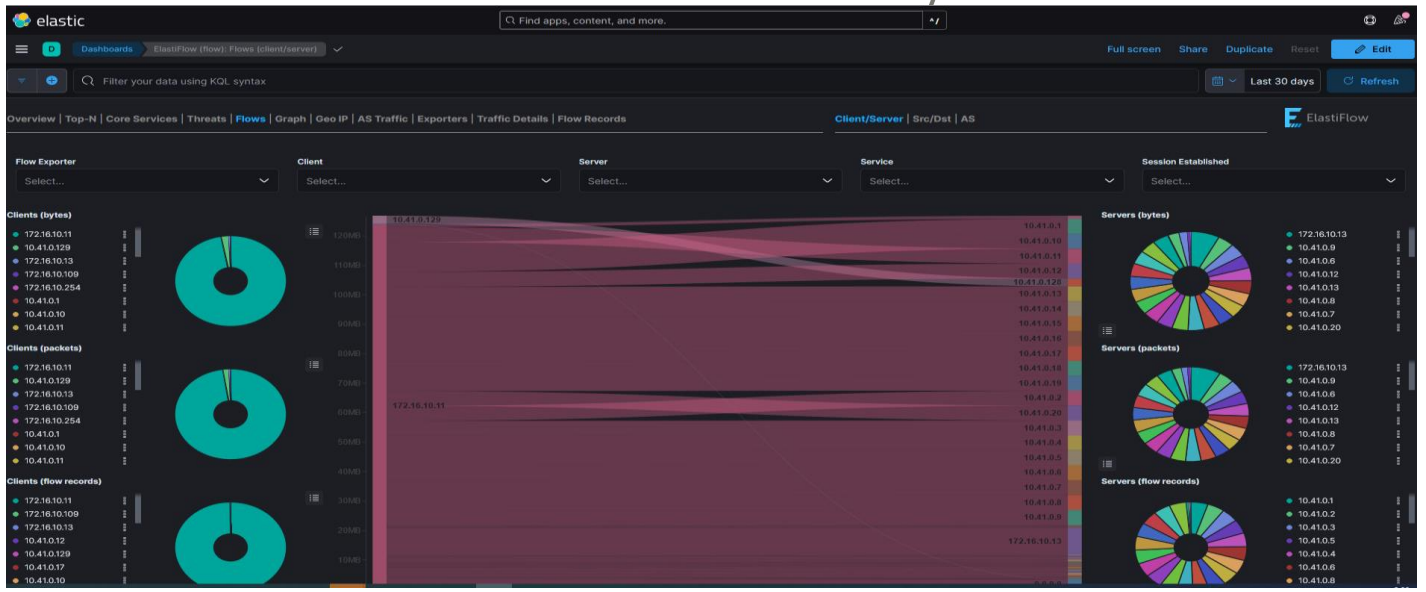
DB1

Network-B

ELK: Overview of the Traffic Visibility



ELK: Client & Server Traffic Visibility



SecOps

Telemetry Data

Syslog/IPFIX

Machine Learning

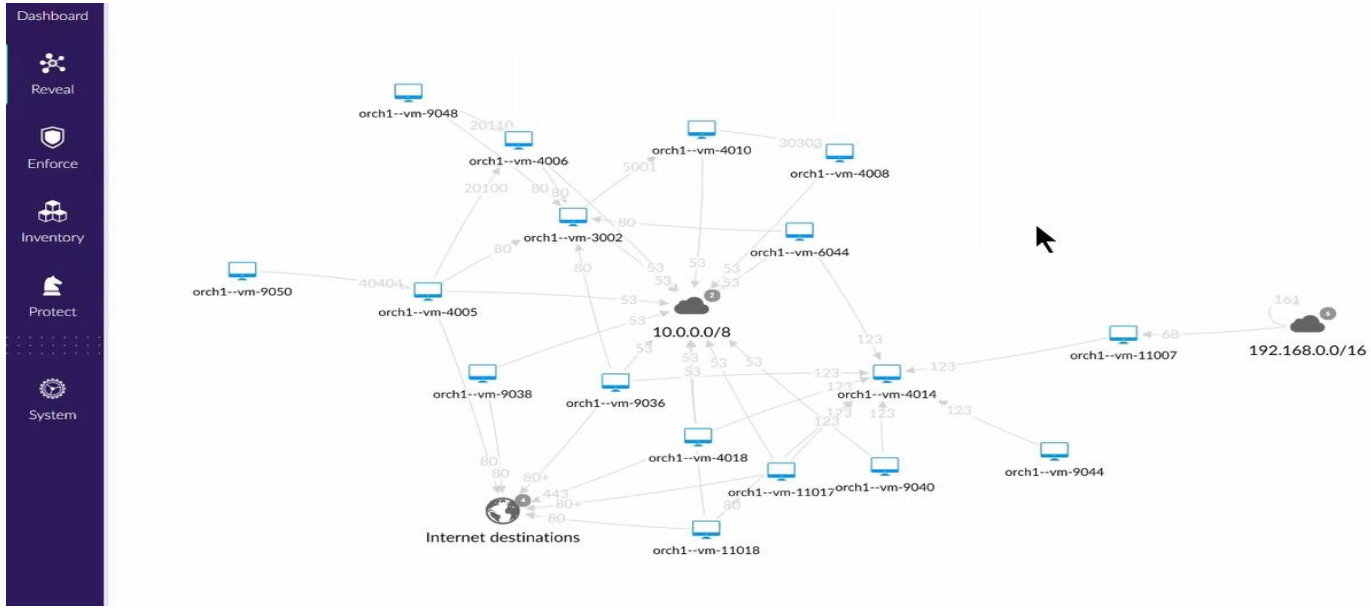
APP1

Network-A

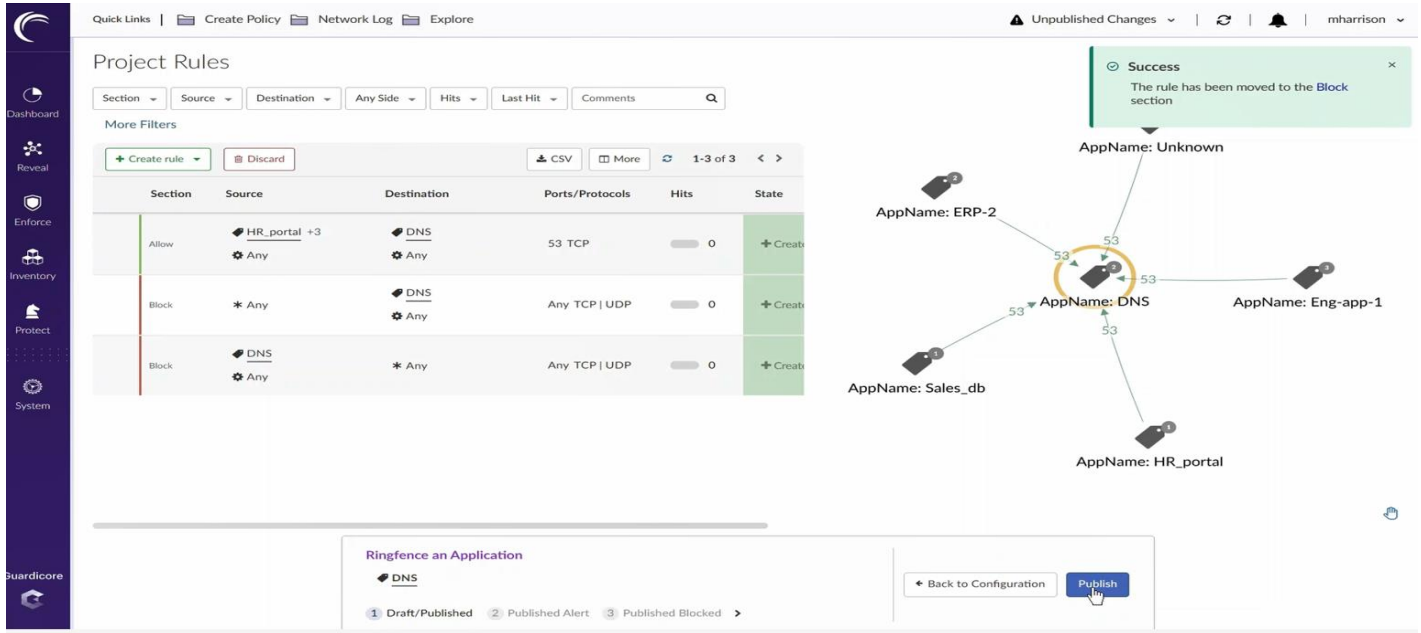
DB1

Network-B

Guadicore: Application Dependency Mapping



Gaudicore : AI driven proposed Firewall rules for CX-1000 Switch Firewall

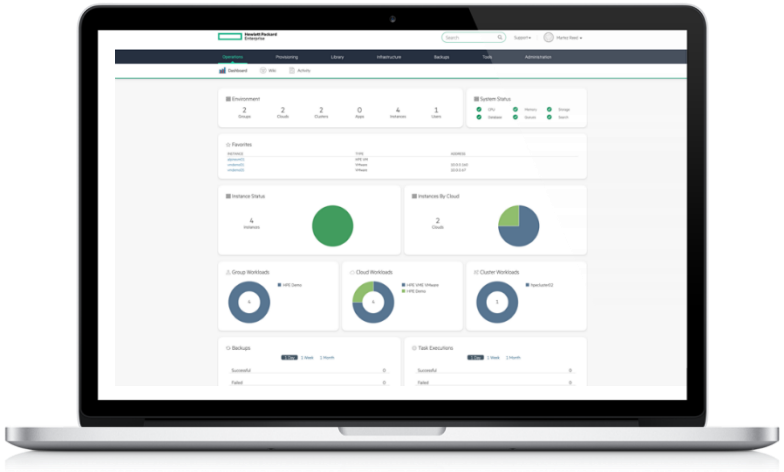


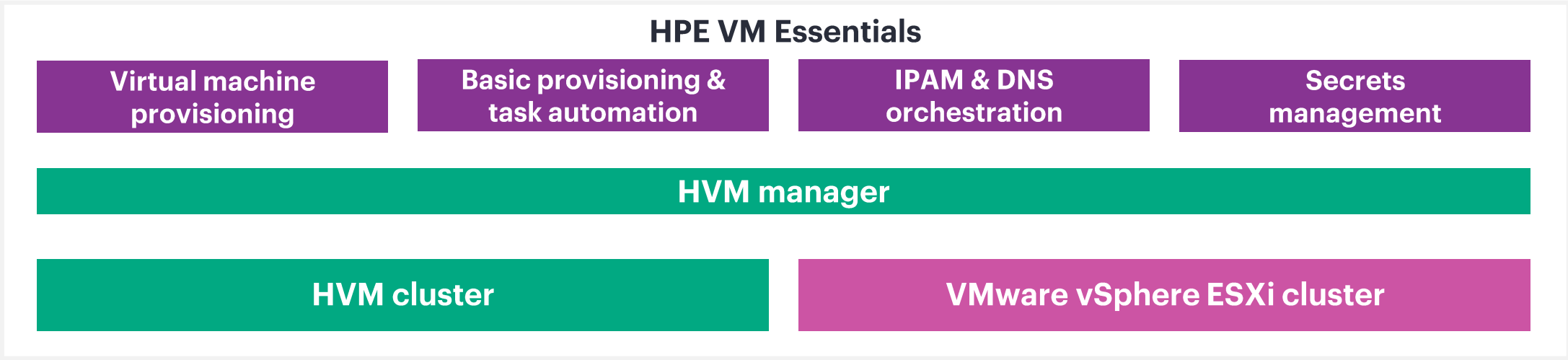
Modernise

to the best infrastructure & runtime for traditional and emerging workloads

Unify & Simplify VM Operations with HPE Morpheus VM Essentials（VME)

- 透過整合式**HPE VM Essentials**降低費用
- 簡化 **VMware** 與 **HPE VME** 之間的管理
- 未來導向 **IT**，支援靈活消費與升級路徑
- 企業級支援與生態系統降低風險





HPE VM Essentials – HPE Aruba Distributed Service Architecture

Best of Breed Infrastructure Virtualization from a SINGLE VENDOR

HPE Morpheus VM Essentials

- Virtual machine provisioning
- Basic provisioning & task automation
- IPAM & DNS orchestration
- Secrets management
- VM Essentials manager — DSA Plug-In
- HVM hypervisor
- VMware vSphere

AMD PENSANDO — Pensando Policy Manager

HPE aruba networking — Fabric Composer

CX 10000 (25G/100G)

HPE aruba networking

Distributed Service Switches

CX 10040 (100G/400G)

Broadcom licensing changes have caused significant disruption for customers

- **Bundles only:** VCF, VVF, vSphere Standard
- **No more perpetual licenses**
- **No more ELAs**
- **Lower discounting**
- **Extra charges** (e.g., vSAN)

Effective price increase of

2-4x

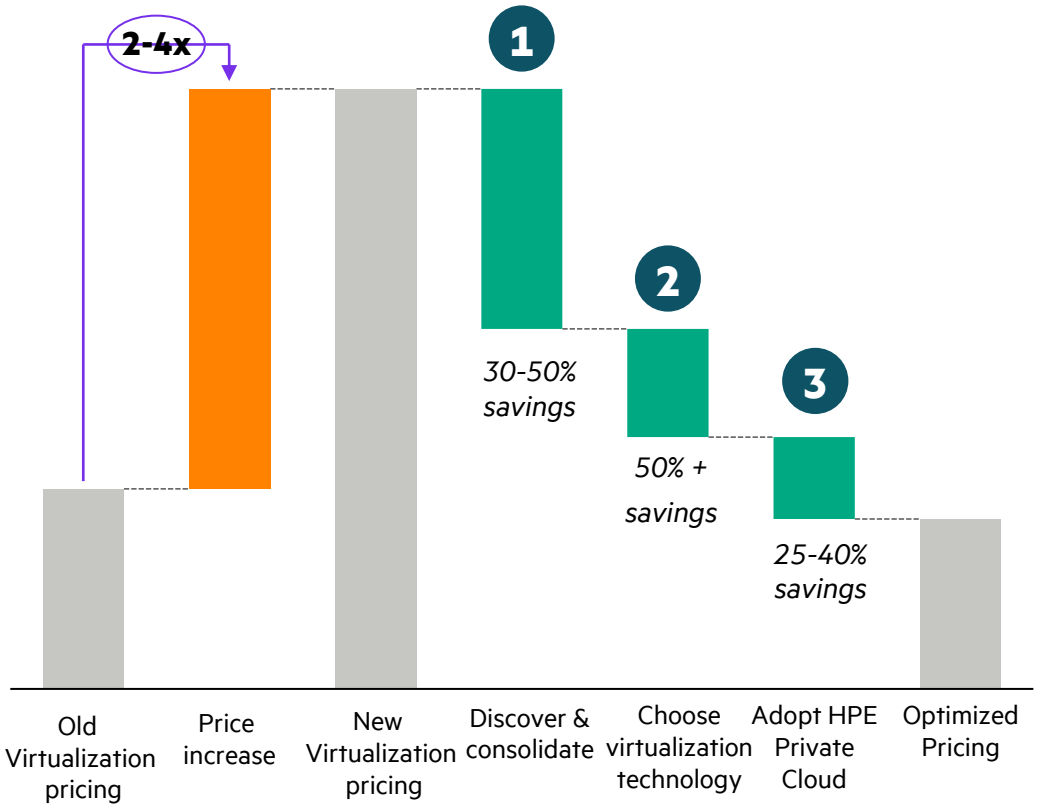
for most customers*

Note: *Some customers experience effective price increases of 15x or more

HPE has a proven playbook for customers to reduce virtualization TCO

TCO reduction playbook	Savings
1 Assess VM use and utilization through **HPE CloudPhysics**, and consolidate VMs	**30 – 50%**
2 Select **Virtualization technology** that best fits your needs	**50% +**
3 Adopt **HPE Private Cloud solutions** and independently scalable HPE Alletra Storage to minimize VMware licenses	**25 – 40+%**
Reduction in virtualization costs	**Up to 80%+**

3 steps to dramatically reduce VMware spend



HPE Financial Services

Do more and move fast

with **HPE Financial Services**

Maximize budget flexibility with **financing and leasing** solutions tailored to your business goals.

Boost capacity, stay tech-ready, and recover value from aging assets through end-to-end **IT lifecycle services** — including resale, sale-leaseback programs, secure decommissioning, and recycling.

$1B

Put back into customer budgets over the last 3 years through IT asset lifecycle services

SOURCE: HPE Technology Resource Center Data Report, FY24

Plan for, acquire, consume and responsibly retire tech

Adaptable financing programs and IT lifecycle services that can help you overcome budget constraints and optimize project economics

Financing Programs

- Financing and leasing
- Payment Relief Program
- Payment Deferral Program
- HPE Extended Deployment Services
- Special programs aligned to HPE solutions

IT Lifecycle Services

- HPE Asset Upcycling Services (ITAD)
- HPE Accelerated Migration Services (Sale-Leaseback)
- HPE Certified Pre-owned Technology Services
- Decommissioning services
- Logistics - pack and ship services (PASS)
- Short-term rentals

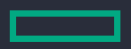
IT Sustainability

- HPE Circular Economy Estimator Tool
- HPE Circular Economy Report
- HPE Technology Renewal Center (Andover, MA, USA & Erskine, Scotland)

Not all services are available/offered in all regions. Please consult with your HPEFS account manager on availability.

Visit HPE Networking booths to learn more

Thank You



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