



# Dell Technologies Partner Webinar Series: Legacy to Cloud-Ready Infrastructure

Dell Technologies  
Merging Data Center  
& Cloud Native  
powered by  
Dell's Modernized Data  
Center

Stephen Tuomey  
Datacenter Account Executive – Federal Distribution  
[stephen\\_tuomey@federal.dell.com](mailto:stephen_tuomey@federal.dell.com)



carahsoft®

For more information, contact Carahsoft or our reseller partners:  
[Dellgroup@carahsoft.com](mailto:Dellgroup@carahsoft.com) | 866-Dell-2-Go

# Dell Technologies Merging Data Center & Cloud Native powered by Dell's Modernized Data Center

Stephen Tuomey  
Datacenter Account Executive – Federal Distribution  
[stephen\\_tuomey@federal.dell.com](mailto:stephen_tuomey@federal.dell.com)

**DELL**Technologies



# Dell Technologies Advantage

One-stop-shop AND best-of-breed



## Modern Workplace

- World's smallest,<sup>1</sup> thinnest, most powerful commercial AI PCs<sup>2</sup>
- World's #1 monitors<sup>3</sup>
- Most manageable and secure commercial PCs<sup>4</sup>
- Leading in use of sustainable materials



## Modern Data Center & Multicloud

- #1 servers<sup>5</sup>
- #1 external storage<sup>6</sup>
- #1 storage software<sup>7</sup>
- #1 Purpose-Built Backup Appliances<sup>8</sup>



## Artificial Intelligence

- The world's broadest AI solutions<sup>9</sup>
- Open ecosystem that continues to grow with proven, validated solutions
- World's best management consulting firms – Forbes 2024



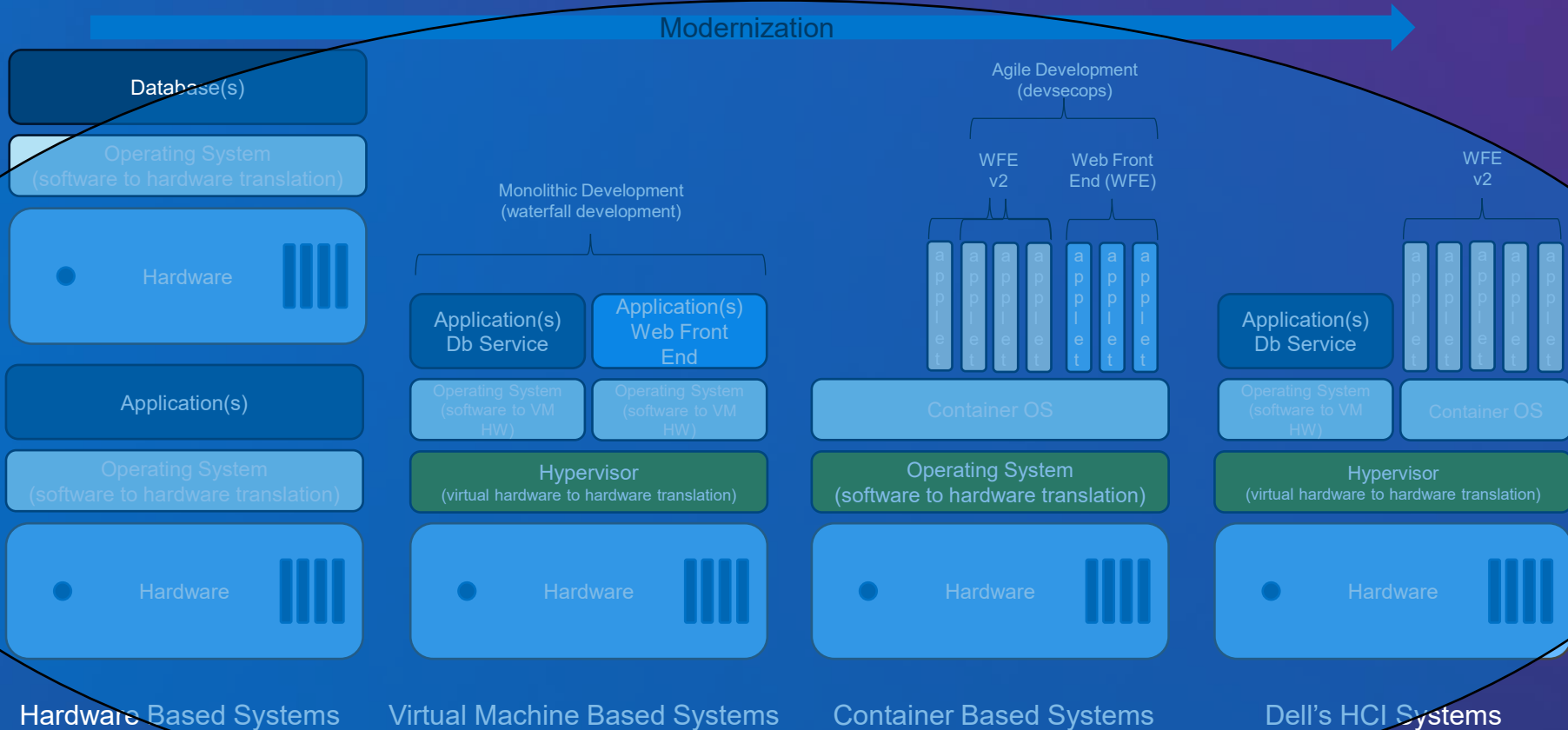
## Security / Resilience

Industries most secure supply chain

## Sustainability

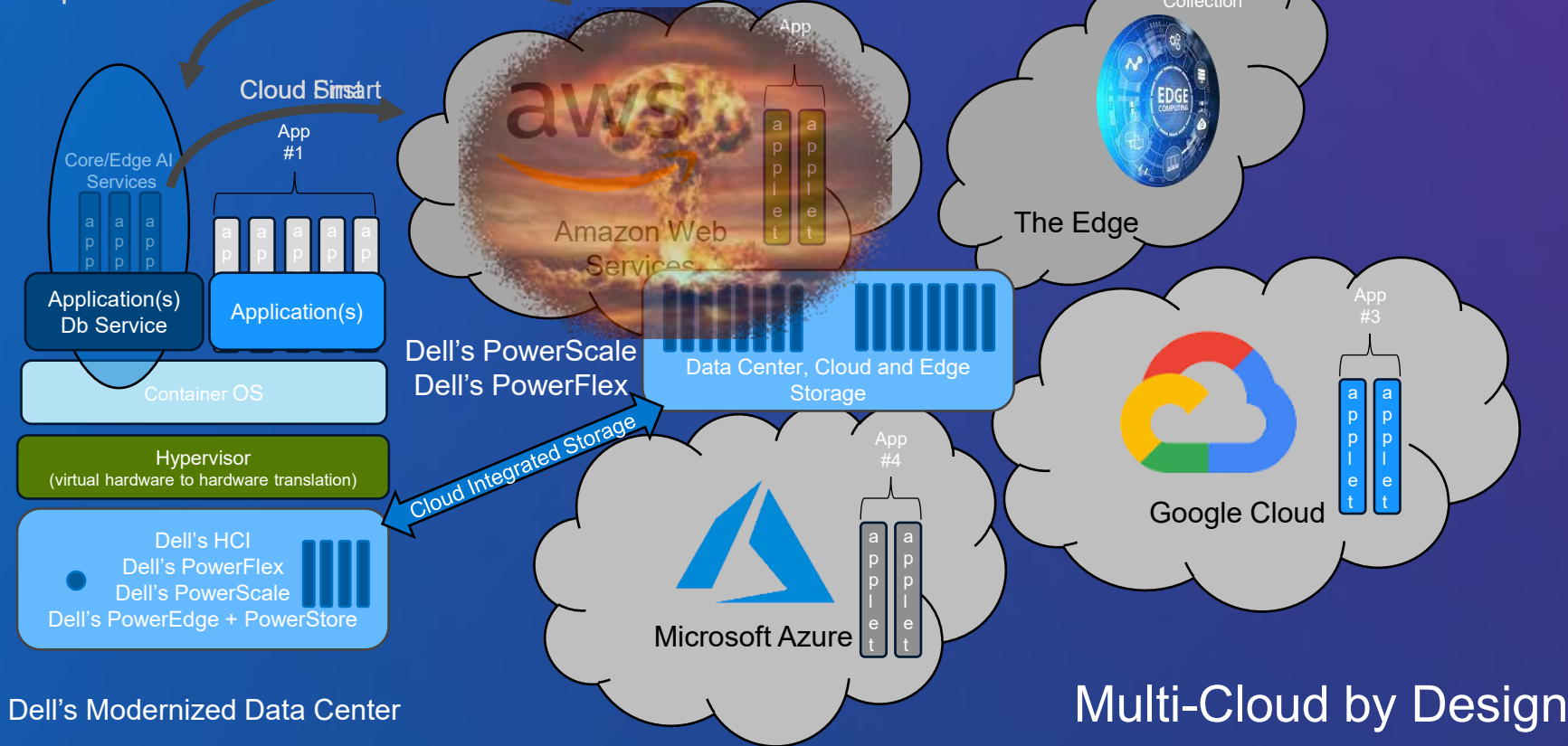
An industry leader in sustainable materials and packaging

# Information Systems – Physical to Virtual to Cloud



# Cloud Native Applications (AI + Security + Compliance)

Re-patriotization



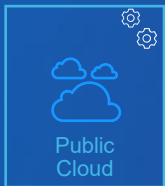
# Dell's Vision – The Power of Choice: Deployment Models

## All-In Public Cloud

When good enough works

### STANDARD WORKLOADS

- Mobile applications
- Web / content hosting
- Analytics
- Software Development / DevOps



Application interdependencies across multicloud workload deployments, re-platforming costs, vendor lock-in risks

## Multicloud

It's all about the workload



### HEAVY WORKLOADS

- Traditional Workloads
- OLTP, DBMS, HPC
- Interdependent Workloads
- Repatriation Targets

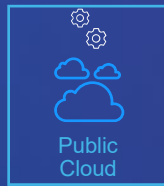


### STANDARD WORKLOADS

- Mobile applications
- Web / content hosting
- Analytics
- Software Development / DevOps



Network



Control SLAs and control costs through dedicated – or sovereign - infrastructure. But application interdependencies, data egress, and network challenges drive risk

- Cost containment
- Performance, latency
- Security, compliance issues

## Multicloud Sovereign-Adjacent

It's all about Interconnection & Locality



### WORKLOAD OPTIMIZED

- Put the right workloads, in the right place, at the right time, without fear of crippling application interdependencies



SaaS  
Providers  
Partners  
Suppliers

Solving for

- Performance, Latency
- Security, Compliance
- ...while reducing costs



# Overcoming the Challenges

## COMPLEX

Hyperscalers don't typically advocate for multi-cloud

## CHAOTIC

Repatriation is a reality if rising costs outweigh benefits

## RISKY

Scattered data expands the attack surface

## UNGOVERNABLE

Inability to meet compliance requirements

## SLOW

Some critical apps not ideal for public cloud

Moving to **Multi-Cloud by default** creates

# CHALLENGES

## LIMITED

No vendor can be best at everything

## SILOED

Public clouds are closed ecosystems

## INCOMPATIBLE

Interoperability issues lead to lock-in

## CUMBERSOME

Traditional models don't measure up to new expectations

## UNPRODUCTIVE

Lengthy planning and overprovisioning

## SUBOPTIMAL

On-premises vs. public cloud tradeoffs

## COST INEFFICIENT

CAPEX rigidity or data gravity issues

## SIMPLICITY

Take advantage of cloud experiences everywhere

### CHOICE

Achieve better outcomes

### CONSISTENCY

Simplify IT operations

### FREEDOM

Avoid vendor lock-in

## AGILITY

React quickly to capture new opportunities

### ADAPTABILITY

Align technology with needs

### FLEXIBILITY

Deploy resources in more ways

### PREDICTABILITY

Pay-as-you-go transparency

# Dell APEX delivers multicloud by design

MODERN  
CLOUD



MODERN  
CONSUMPTION

## CONTROL

Minimize risk and maximize performance on your terms

### SECURITY

Protect against cyberattacks

### GOVERNANCE

Ease compliance obligations

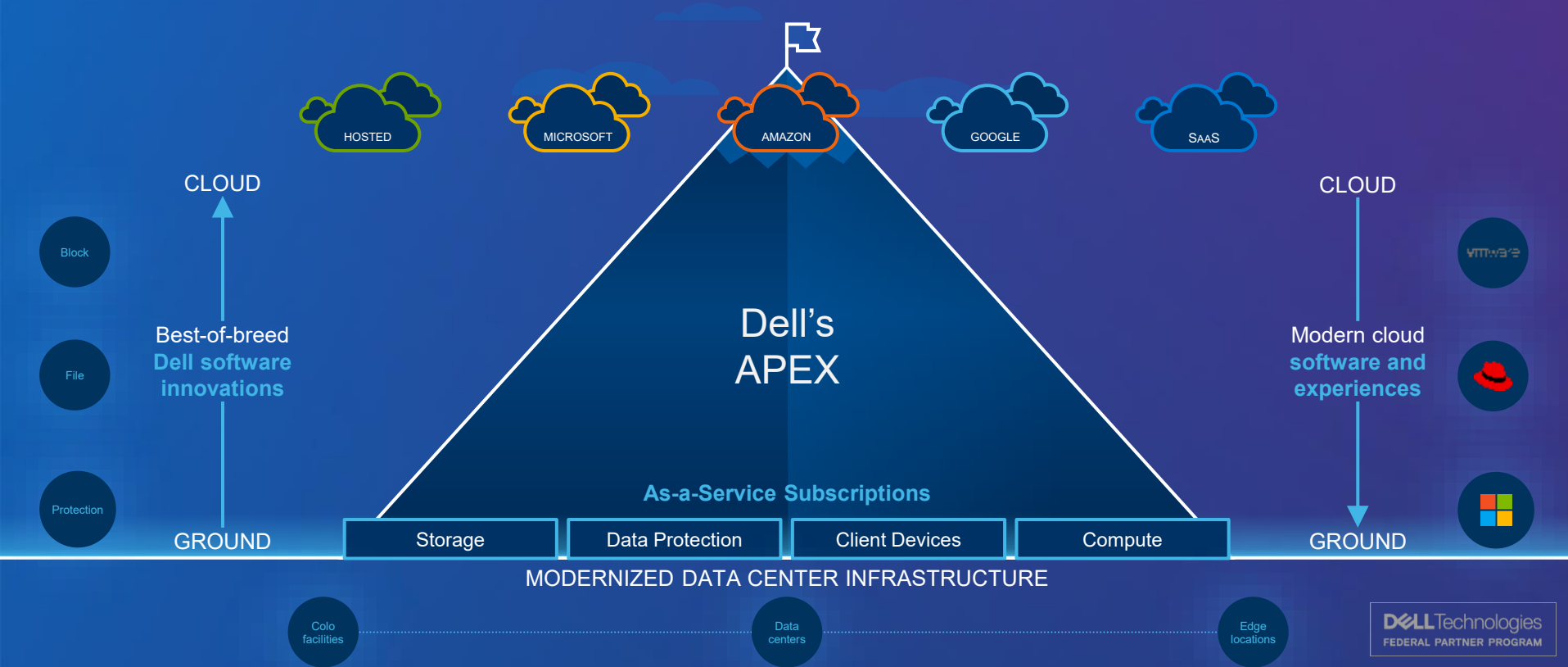
### PERFORMANCE

Achieve the speed you need



# DELLTechnologies | A P E X

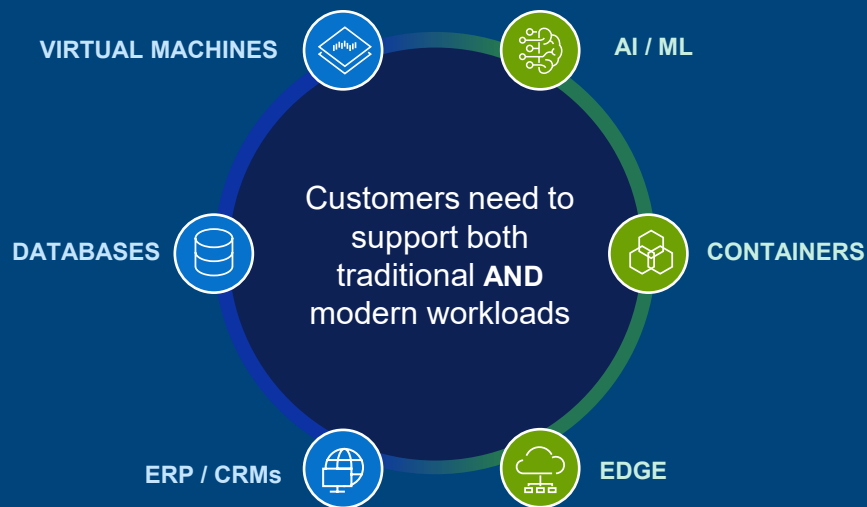
Take advantage of multicloud by design.  
Get simplified cloud experiences with technology you trust.



# Customer workload mix is evolving at a rapid pace

Evolving workload mix...

TRADITIONAL and MODERN



... leading to evolving mission needs



Avoid vendor lock-in



Support for VM, Containers, and Bare Metal



Efficient resource utilization



Consistent, shared data layer



Independent resource scaling to dynamically match needs of each workload

# HCI may **NOT** be optimal for evolving customer needs

## Hyperconverged

Interlocked Hypervisor,  
Compute, Networking & Storage



- ✗ Locked into a single ecosystem
- ✗ Not optimal for AI
- ✗ More servers required to scale
- ✗ Higher SW licensing costs



- ✗ More network ports required



- ✗ Low storage utilization
- ✗ Higher storage \$/GB
- ✗ Lower storage availability
- ✗ Creates more silos



< 20%

Average **CPU**  
Utilization\*

< 35%

Average **RAM**  
Utilization\*

< 45%

Average **Storage**  
Utilization\*

\*based on 9,095 HCI Clusters dialing home to Dell

# Disaggregated infrastructure is the **right choice** for customers

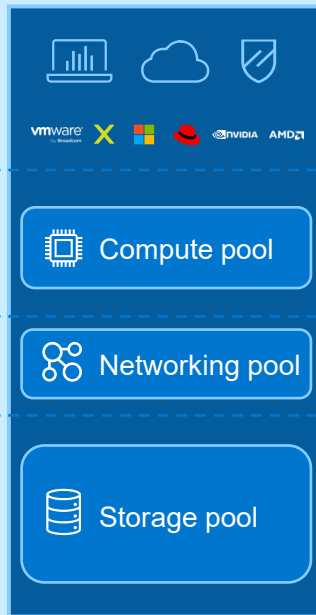
## Disaggregated

Open, Simple and Flexible  
Compute, Networking and Storage

- ✓ No vendor lock-in
- ✓ Fewer servers required
- ✓ Lower SW licensing costs

- ✓ Fewer network ports

- ✓ Higher utilization
- ✓ Lower \$/GB with 5:1 DRR
- ✓ Better storage availability, easier patching and LCM
- ✓ Reduces siloed stacks



Up  
to

32%

Lower cost than  
hyperconverged  
infrastructure<sup>1</sup>

<sup>1</sup>Dell internal analysis – calculations based on comparisons between vSAN Ready Nodes (HCI) and PowerEdge + PowerStore



# Benefits of Dell's disaggregated infrastructure

Open and Flexible Compute, Networking and Storage

- ✓ Open ecosystem
- ✓ Fewer servers required
- ✓ Lower SW licensing costs

- ✓ Fewer network ports
- ✓ Lower \$/port

- ✓ Higher utilization
- ✓ Easier patching and LCM
- ✓ Lower \$/GB
- ✓ Better storage availability
- ✓ Reduces siloed stacks



Compute pool



Networking pool



Storage pool

powered by  
PowerEdge servers

powered by  
PowerSwitch networking

powered by  
PowerStore storage  
PowerFlex SDS

# PowerFlex – Universal Infrastructure

Flexibility unleashed



## Harness Software



Fluidity



Performance



Scale

## Embrace Change



Platform  
Support



Consumption  
Options



Deployment  
Architectures



Public Cloud  
Offerings

## Deliver Predictability



Data  
Services

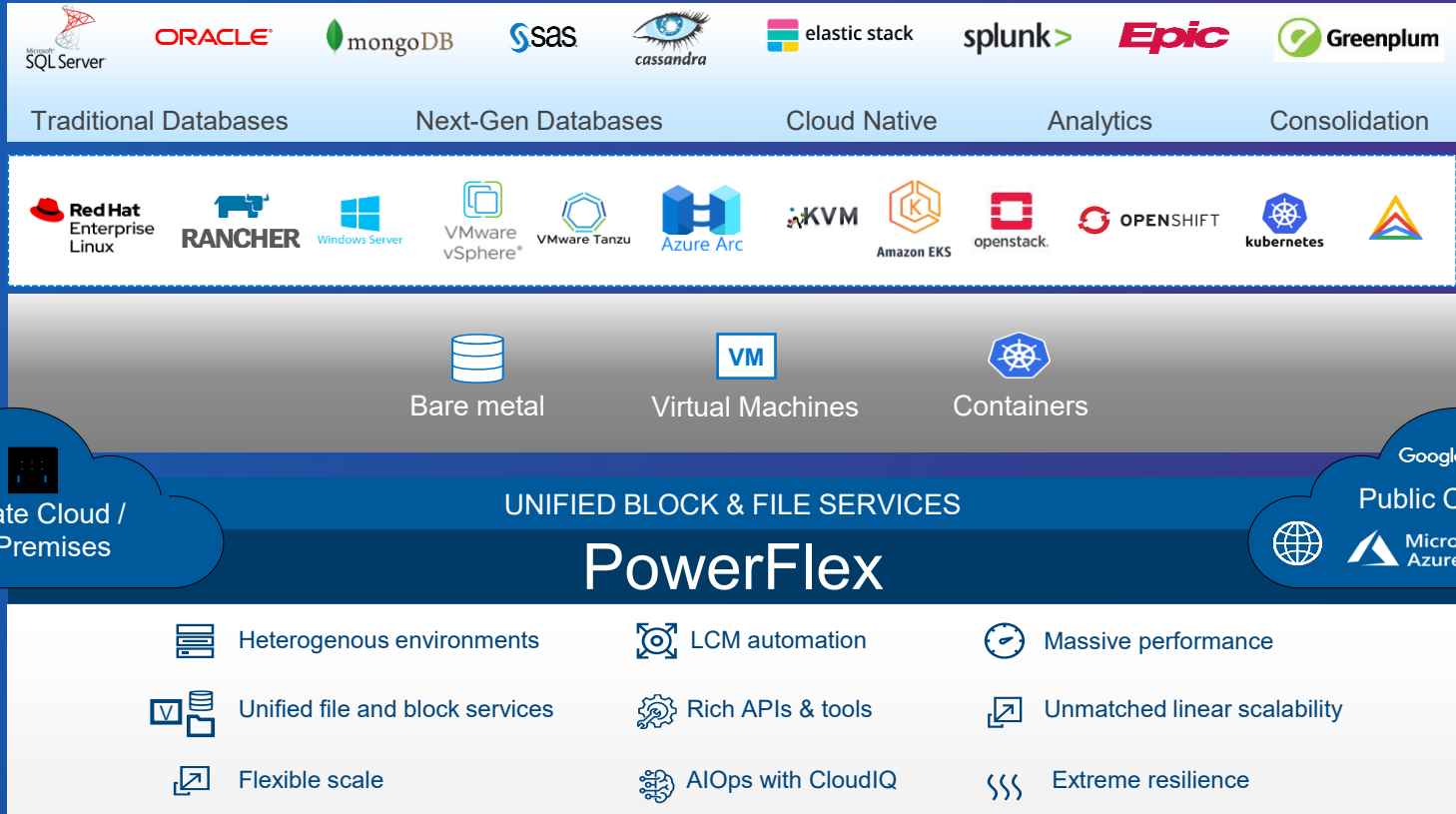


Automation



Workload  
Execution

# PowerFlex is the Universal Infrastructure Platform



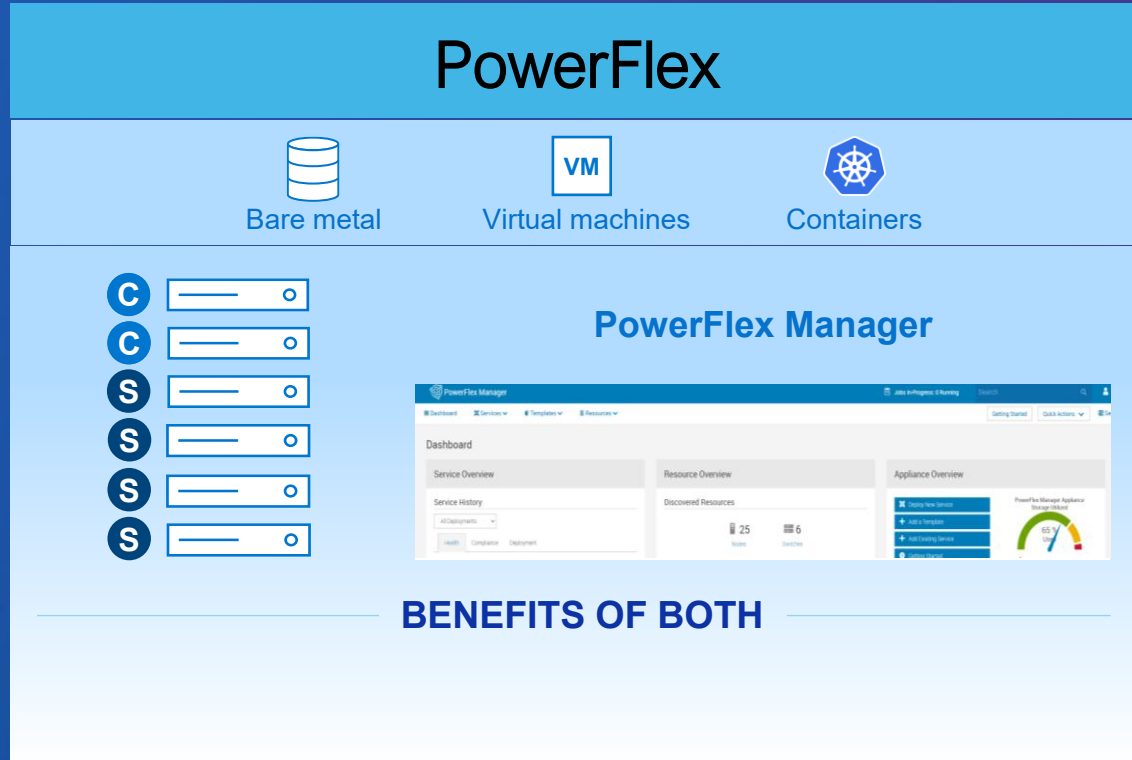


# PowerFlex Unique Architecture

## Three tier infrastructure

Independent scaling of compute and storage

Support for both virtual and physical



## HCI

Scale out node based architecture

Lifecycle management



# PowerStore

Data-centric



Intelligent



Adaptable



## Designed for the Data Era



### Any Workload

Physical and virtual Apps and DBs, Containers and File



### Performance Optimized

Scale up and scale out with end-to-end NVMe\*



### Efficiency Without Compromise

Always-on inline data reduction



### Programmable Infrastructure

Streamlines development and automates workflows



### Autonomous Appliance

Built-in automation and ML optimizes system resources



### Flexible Architecture

Enables speed and application mobility



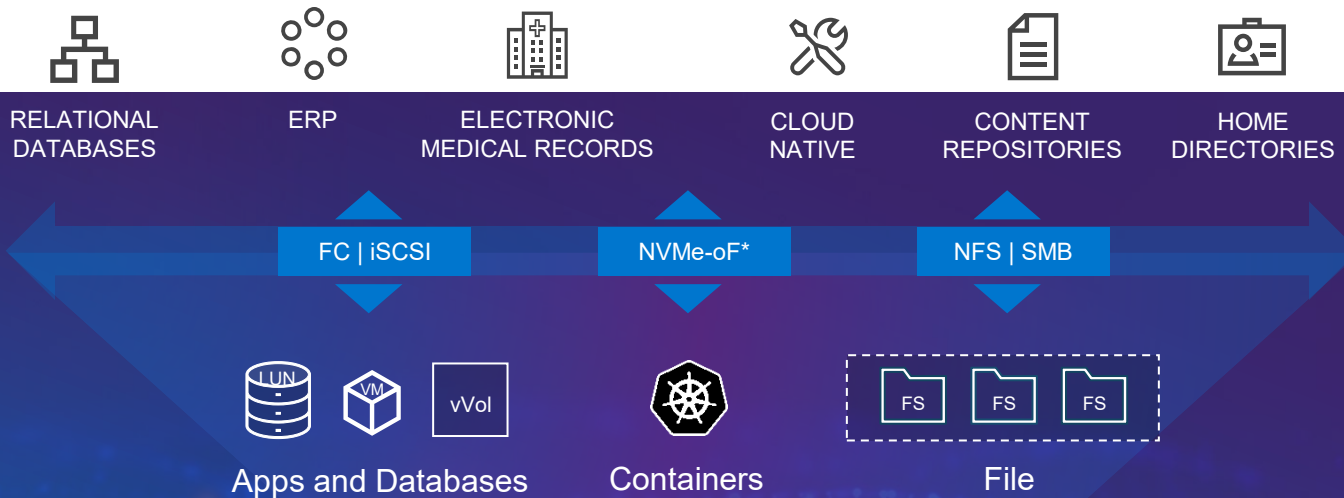
### Flexible Deployment

Modernize the core, edge, and cloud without disruption

# PowerStore – Any workload



## Traditional and modern workloads



EDGE

# PowerStore

CORE

CLOUD



Edge applications

Data Replication

Data-intensive applications

Block @ Equinix



PowerStore



Streaming data



PowerStore



Small footprint,  
easy to deploy

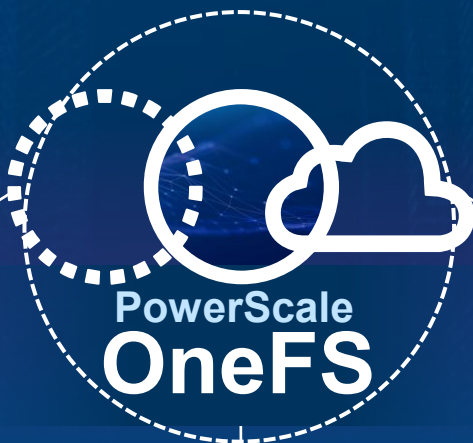
Optimized for data  
retention and flexibility

Data can be replicated  
to core data center



# PowerScale: Any data, anywhere

- Uniting the Core, the Cloud and the Edge



## EDGE

Streaming data, real-time analytics



IoT, Surveillance, AI/ML workloads

## CORE

Growth industries; GPU-powered



Healthcare, education, government, media

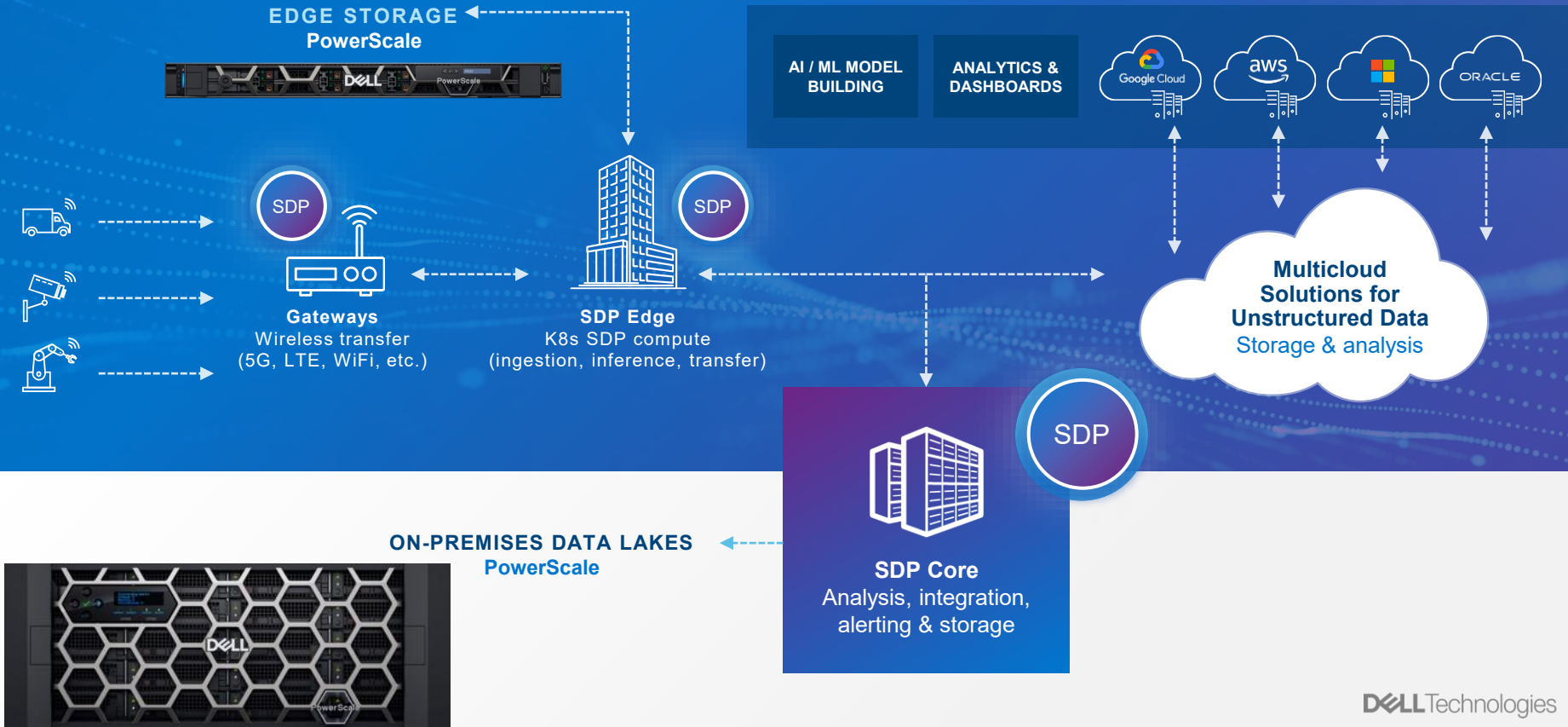
## CLOUD

Extending file services in cloud



Cloud development, archives & DR

# From edge, multi-cloud and to the core





# PowerEdge Servers

Purpose-built | Intelligent | Cyber Resilient



**Purpose-  
built**

**Scale AI, Edge &  
Performance  
Anywhere**



**Intelligent**

**Accomplish more  
with Automation &  
Improve Operational  
Efficiencies**



**Cyber  
Resilient**

**Accelerate Zero  
Trust Adoption**

# Dell PowerEdge 17<sup>th</sup> Generation - Purpose-built

## XR-Series

Engineered for Extreme  
Environments



## R-Series

The Ultimate Data Center  
Workhorse



## XE-Series

AI Powerhouse for Extreme  
Acceleration



## T-Series

Enterprise-Class Computing,  
Anywhere



# PowerEdge R770 / R7725

## Support for up to 28 Drives

- Up to 40 x EDSFF E3.S Gen5 NVMe
- Gen5 NVMe\* & SAS4 support
- Rear Hot-Plug BOSS-N1 (2 x M.2 NVMe) for boot
- Next-gen hardware NVMe RAID

## Support for high-speed and memory capacity

- Up to 32 DDR5 DIMMs
- Up to 6TB



## 2 Socket Capable

- Intel / AMD processors
- High-bandwidth memory CPUs

## Support for GPU

- 2 x 450W (DW) or 6 x 75W (SW)

## Flexible I/O

- Up to 8 x PCIe Slots
- Optional 2x OCP 3.0 slot

- Smart Cooling
- Designed for growing scale-out solutions and air-cooled support
- Industry-leading manageability and security

MAINSTREAM

## Data Center (private cloud)

### TARGET WORKLOADS



#### High Performance Scale-Out Databases

Architect for growth and scalability using high core count CPUs with the latest DDR5 memory technology, high-bandwidth networking and Gen5 based NVMe storage.



#### Next Level of Virtualization

6TB of memory combined with >192 cores of the latest generation Intel/AMD CPUs enables high-density virtualization in a 2S server..



#### AI Training

With the latest Gen5 PCIe enabled AMD GPUs and NVMe drives designed to offer the highest throughput on the largest datasets, customers benefit from reduced training cycles and faster AI deployments.

# PowerEdge XE9780 / XE9785



8-way H100 SXM or  
8-way B300 SXM



Intel / AMD  
CPU



PCIe  
Gen5



DDR5



NVMe  
Gen5



**8-way SXM GPU server that provides leading AI performance in a dense air-cooled design**

**Purpose-built** for the most demanding AI – ML/DL training, modeling and simulation workloads

**7U air-cooled** design chassis supports the highest wattage next-gen technologies in up to 35C ambient

Massive flexibility with 8-way B300 SXM or A100 SXM, 10 Gen5 x16 PCIe slots, and up to 16 drives

## Data Center (private cloud)

### TARGET WORKLOADS



#### High Performance Computing

Architect for growth and scalability using high core count, 8x CPU Capable, CPUs with the latest DDR5 memory technology, high-bandwidth networking and Gen5 based NVMe storage.



#### Accelerated AI Training

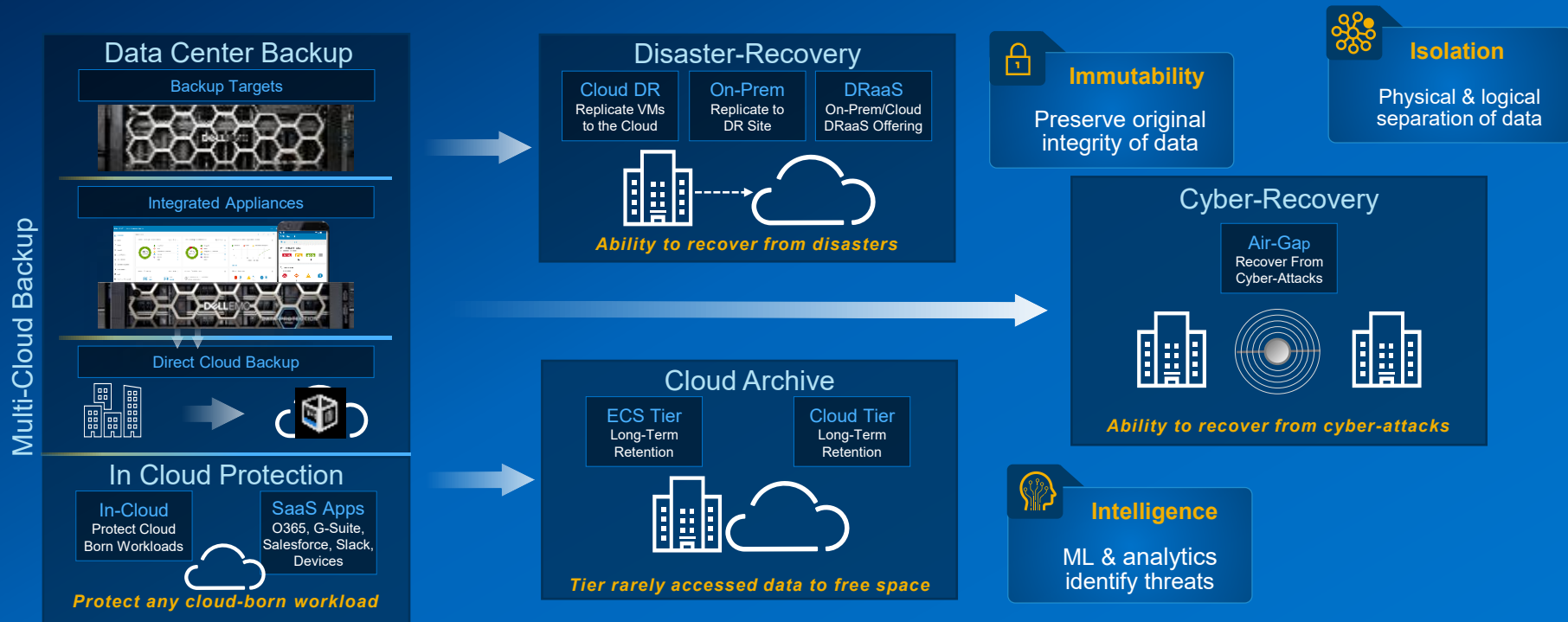
With the latest Gen5 PCIe enabled NVIDIA GPUs and NVMe drives designed to offer the highest throughput on the largest datasets, customers benefit from reduced training cycles and faster AI deployments.

AI / ML & HPC



# Dell Technologies Data Protection Solutions

Comprehensive portfolio built to protect proven & modern workloads



# Modernize your data center with Dell Infrastructure Solutions

Accelerate innovation with  
intelligent & efficient systems

Power any workload across the  
edge, data center & public cloud

Deliver comprehensive data  
protection everywhere

## AIOps — Virtualization — NativeEdge — Dell APEX

### Kubernetes distributions



VMware Tanzu



Amazon EKS



Azure Kubernetes  
Service (AKS)



Anthos

### Cloud platforms



### Silicon partners



NVIDIA

Qualcomm

AMD

### Colocation partners

Rackspace  
technology

Equinix

Digital Realty

Switch

Databank

Flexential

CyrusOne



Storage & Data Protection



Server



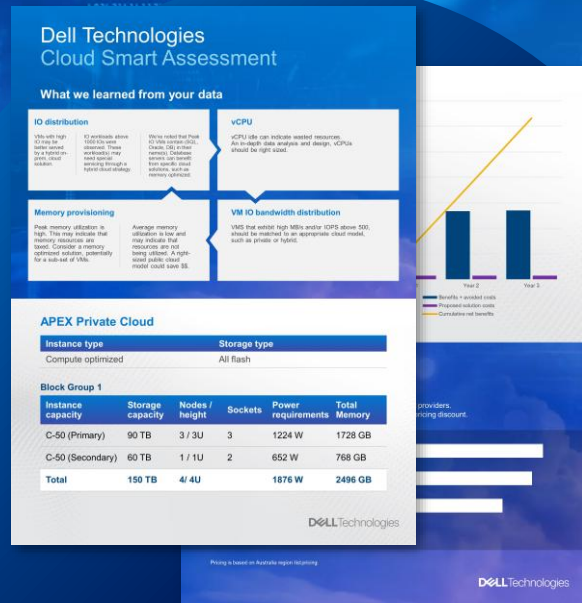
Networking



# Cloud Smart Discovery

Using data to make intelligent decisions about your cloud strategy

- IO distribution
- Memory provisioning
- xCPU provisioning
- VM IO bandwidth
- Compare cost – private cloud vs. public cloud



Move from multicloud by default to multicloud by design

# Next Steps and Q & A

Architect your solutions to achieve  
and assist your customer's missions

- Devices
- Applications
- Multi-Clouds
- Infrastructure

## Next Steps

- Schedule a Test Drive
- Contact your Dell team



---

Thank you for viewing this Dell Technologies presentation! Carahsoft is the distributor for Dell Technologies public sector solutions available via GSA, ITES-SW, MHEC, and other contract vehicles.

To learn how to take the next step toward acquiring Dell Technologies' solutions, please check out the following resources and information:



For additional resources:  
[carah.io/DellResources](https://carah.io/DellResources)



For additional Dell Technologies solutions:  
[carah.io/DellSolutions](https://carah.io/DellSolutions)



To purchase, check out the contract vehicles available for procurement:  
[carah.io/DellContracts](https://carah.io/DellContracts)



For upcoming events:  
[carah.io/DellEvents](https://carah.io/DellEvents)



For additional public sector solutions:  
[carah.io/DellSolutions](https://carah.io/DellSolutions)



To set up a meeting:  
[Dellgroup@carahsoft.com](mailto:Dellgroup@carahsoft.com) or 866-Dell-2-Go