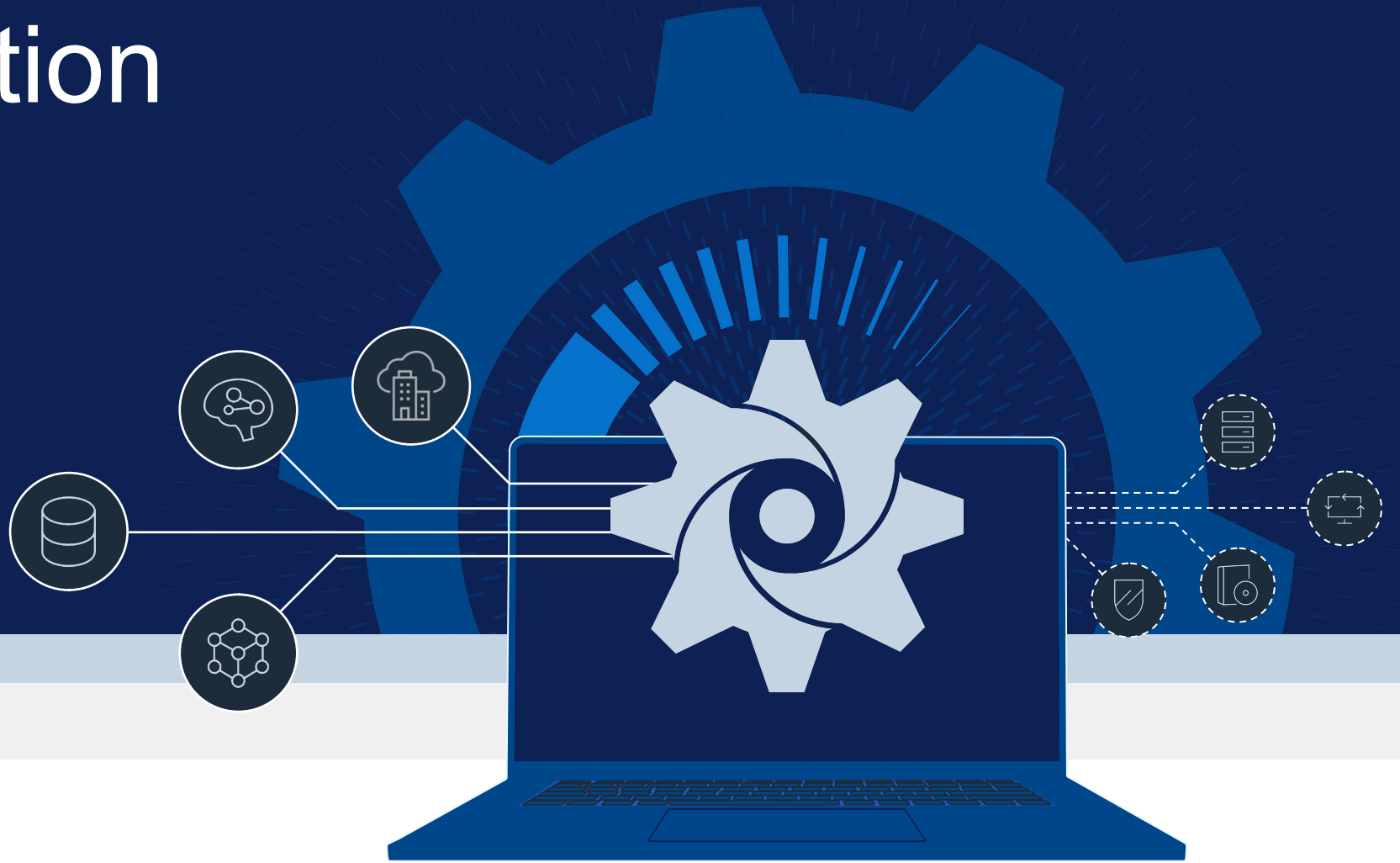
Dell Automation Platform



DELL Technologies

Customers tell us they have competing strategic imperatives…

AI

41%

say employee **expertise or skill is a challenge** to implement AI, the most common response[1]

Private Cloud

89%

of organizations say usage / evaluation of **multiple hypervisor options is a strategic imperative**[2]

Edge

91%

would benefit from **more consistent edge** application and infrastructure **management**[3]

1 Enterprise Strategy Group, "The State of the Generative AI Market: Widespread Transformation Continues," September 2024.
2 Enterprise Strategy Group Complete Survey Results, Navigating the Cloud and AI Revolution: The State of Enterprise Storage and HCI, February 2024.
3 Enterprise Strategy Group, "Unleashing the Edge: Use Cases, Challenges, and Requirements in Edge Infrastructure and Environments," March 2024 (n=374)

DELL Technologies

…that need to bridge traditional and modern workloads.

VMs

AI

Databases

90% say their overall IT environment has **become more complex** the past 2 years[1]

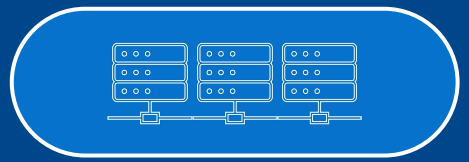
Traditional workloads

Modern workloads

Containers

VDI

Edge



Storage

1 Enterprise Strategy Group Complete Survey Results, 2024 Technology Spending Intentions Survey, February 2024

DELL Technologies

Existing approaches **require compromise**

DELL Technologies

What if you could realize the benefits, **without compromise**

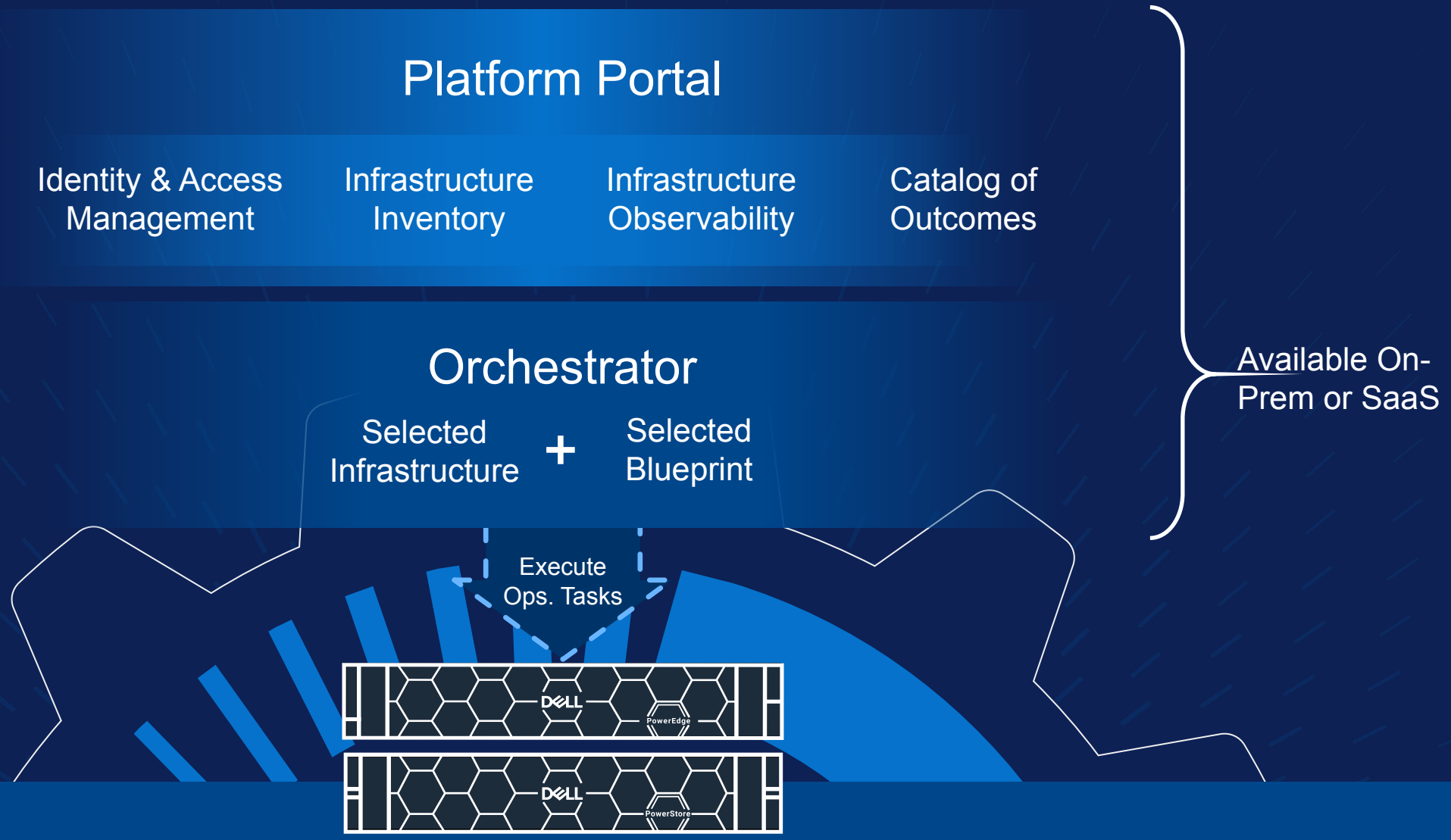
- Established skill sets ✓
- Enterprise maturity ✓

- ✓ Ultimate flexibility
- ✓ Lower software costs
- ✓ Open, shared storage

- ✓ Fast time to value
- ✓ Developer experience

DELL Technologies

Dell Automation Platform Architecture



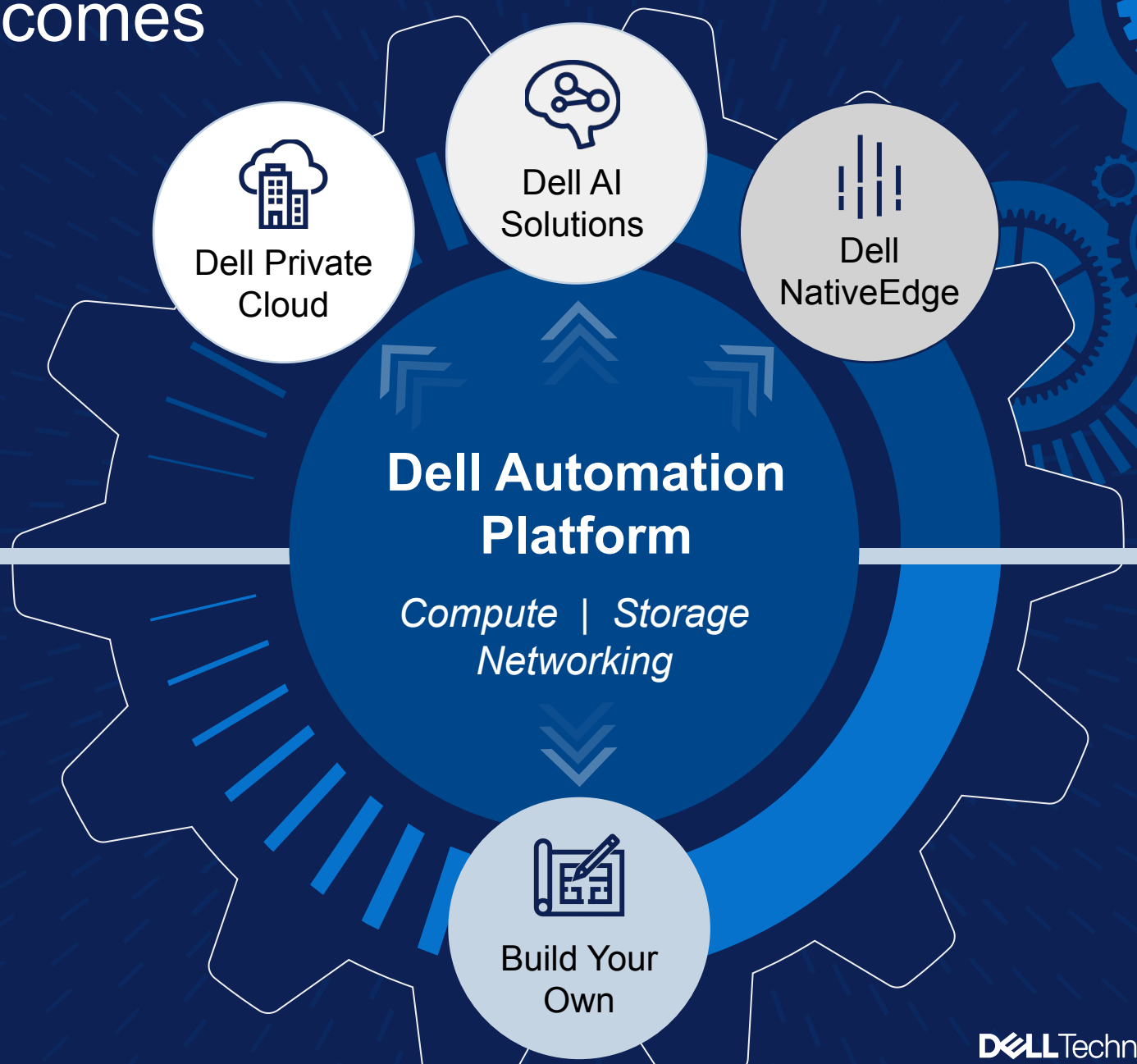
Enabling you across outcomes

Curated and Validated

Deploy and manage outcomes on your Dell infrastructure, tested and validated by Dell's experts

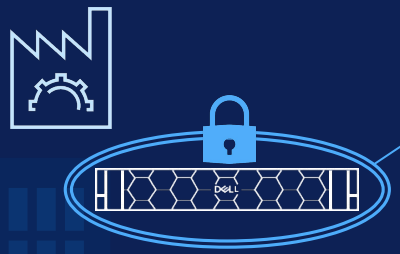
Customizable and Flexible

Build on validated blueprints or start from scratch using open source tools and software on orchestrated infrastructure



Secure, Zero Touch onboarding

1 **Dell Manufacturing**



secure initialization at the factory

2 **Customer Procurement**

ownership assigned digitally

3 **Installation and Onboarding**

Dell Automation Platform

Hardware connects, attests, and is ready for provisioning

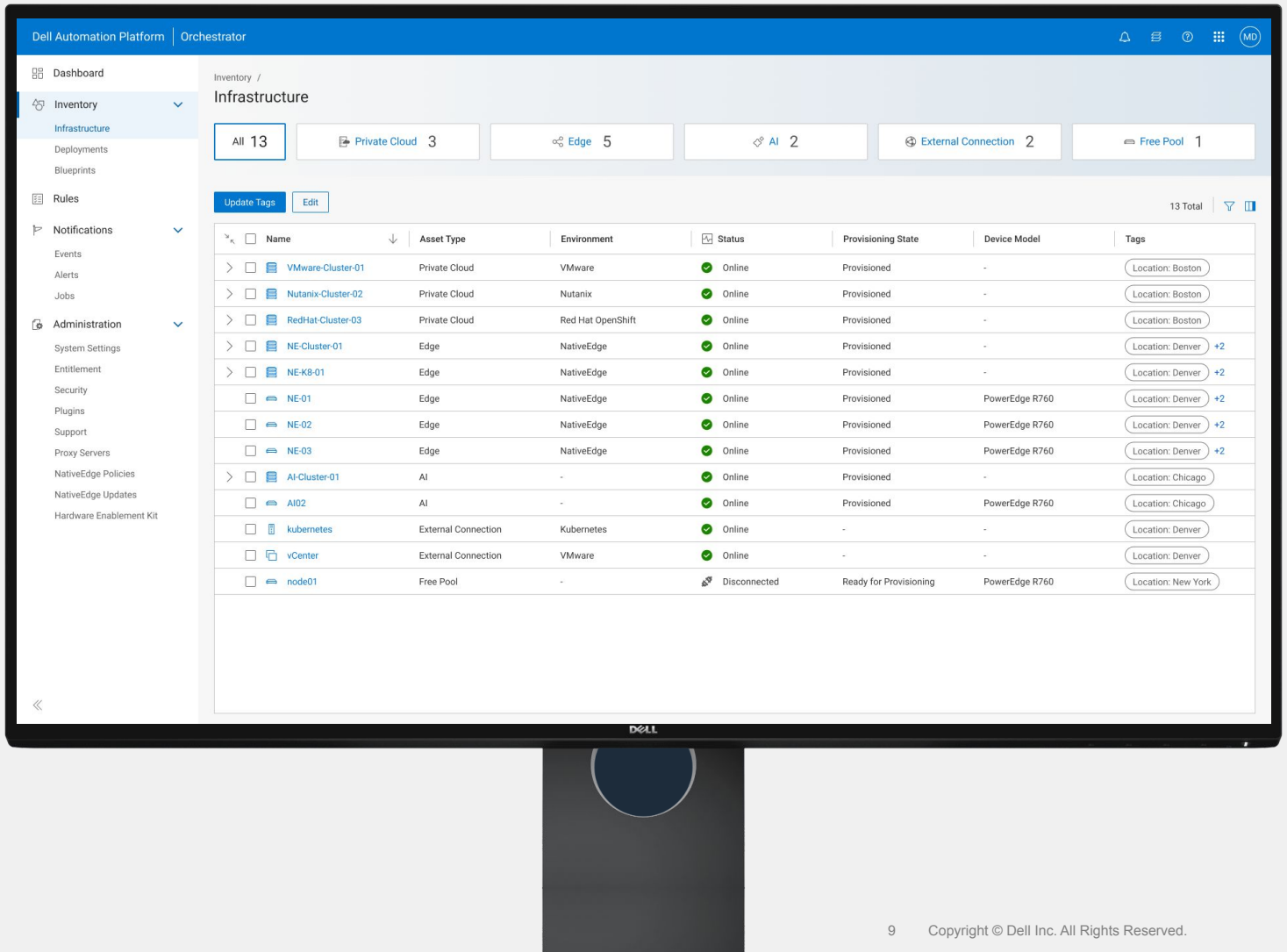
Secure from the factory

- Secure onboarding for new infrastructure built on a Zero Trust framework
- Automated device onboarding for Zero Touch provisioning of new Dell infrastructure
- Low touch onboarding of existing Dell infrastructure

<2 minutes to onboard nodes at scale[1]

[1] Based on internal Dell testing. Manual steps automated through a single Dell Private Cloud blueprint. Actual results may vary. May 2025. CLM-014260.

Orchestrator



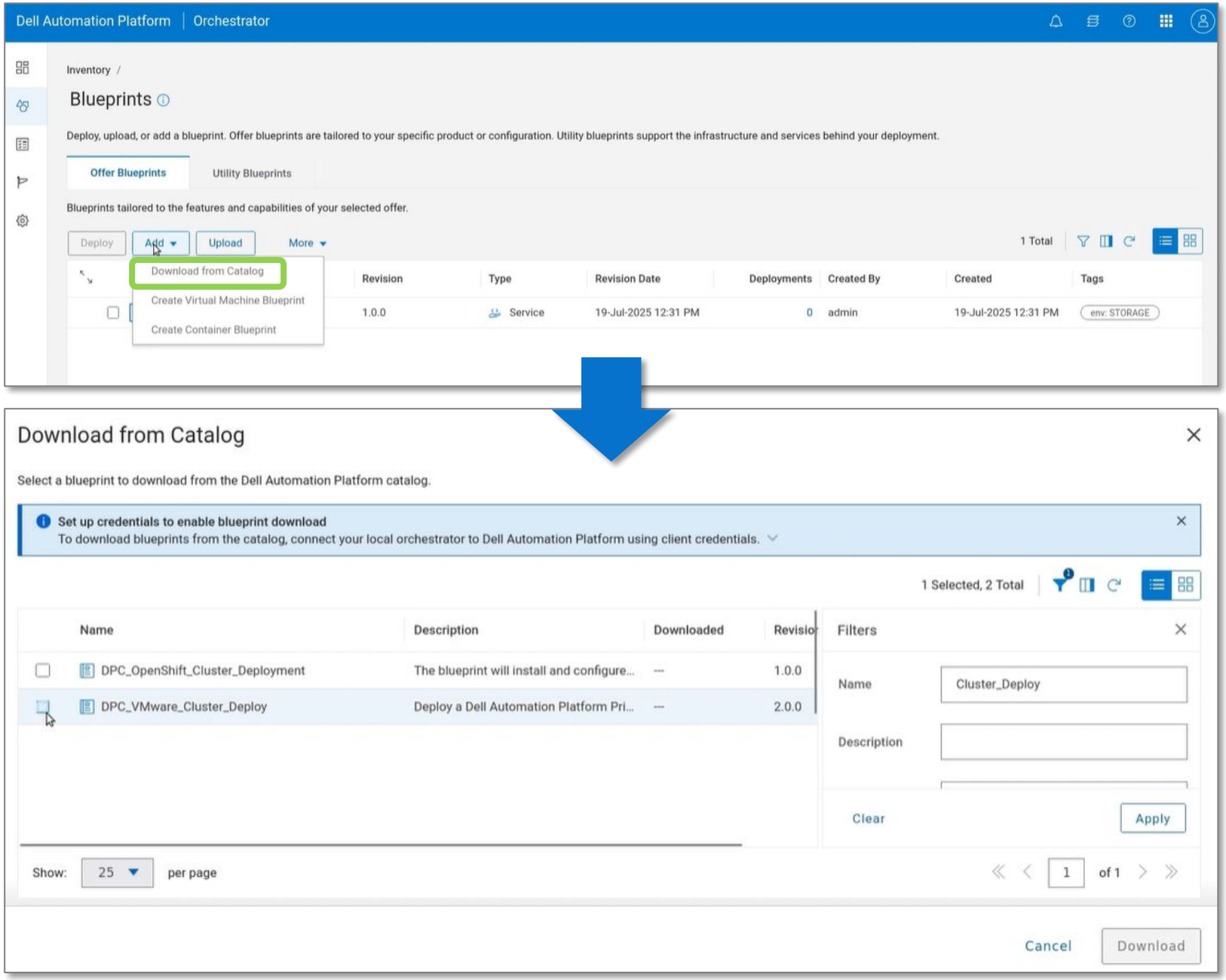
Operate with ease, execute with confidence

- Available via secure SaaS or customer-hosted on-premises
- Central place to execute blueprints
- Management experience for servers, storage, software and applications across your deployments
- Extensions for common management tools like VMware vCenter and Red Hat OpenShift Console

Catalog

Downloading offer package onto orchestrator

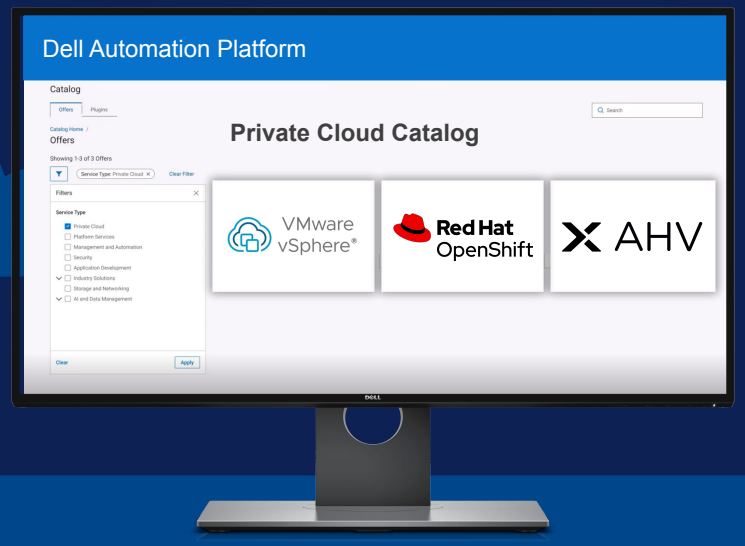
For Dell Automation Platform that is deployed on-premise connected



Dell Private Cloud

Introducing Dell Private Cloud

Freedom and flexibility to evolve on your terms



Dell Automation Platform

Compute — Networking — Storage

Fully transferable and reusable infrastructure

- Protect investments with disaggregated and adaptable infrastructure
- Bring your own cloud OS licenses for ultimate flexibility
- Simplify operations with full lifecycle management and automated integration with Dell PowerStore
- Ensure continuity by leveraging existing skills and access to familiar tools
- Rely on Dell as the primary source of system-level support for hardware and system software

Validated with

45,000+

hours of testing[1]

Over

90%

fewer steps to provision vs. manual deployment[2]

Workload-ready clusters in

2.5

hours, **zero** manual effort[3]

[1] Based on internal Dell testing. Dell Private Cloud deploying VMware vSphere and Red Hat. August 2025. Actual results may vary. CLM-014261.
[2] Based on internal Dell testing. Manual steps automated through a single Dell Private Cloud blueprint. May 2025. Actual results may vary. CLM-014260.
[3] Based on internal Dell testing. After hardware installation, configuration and platform onboarding. No manual interaction required after initiation. Actual results may vary. CLM-014262.

DELL Technologies

Dell Private Cloud High-Level Architecture

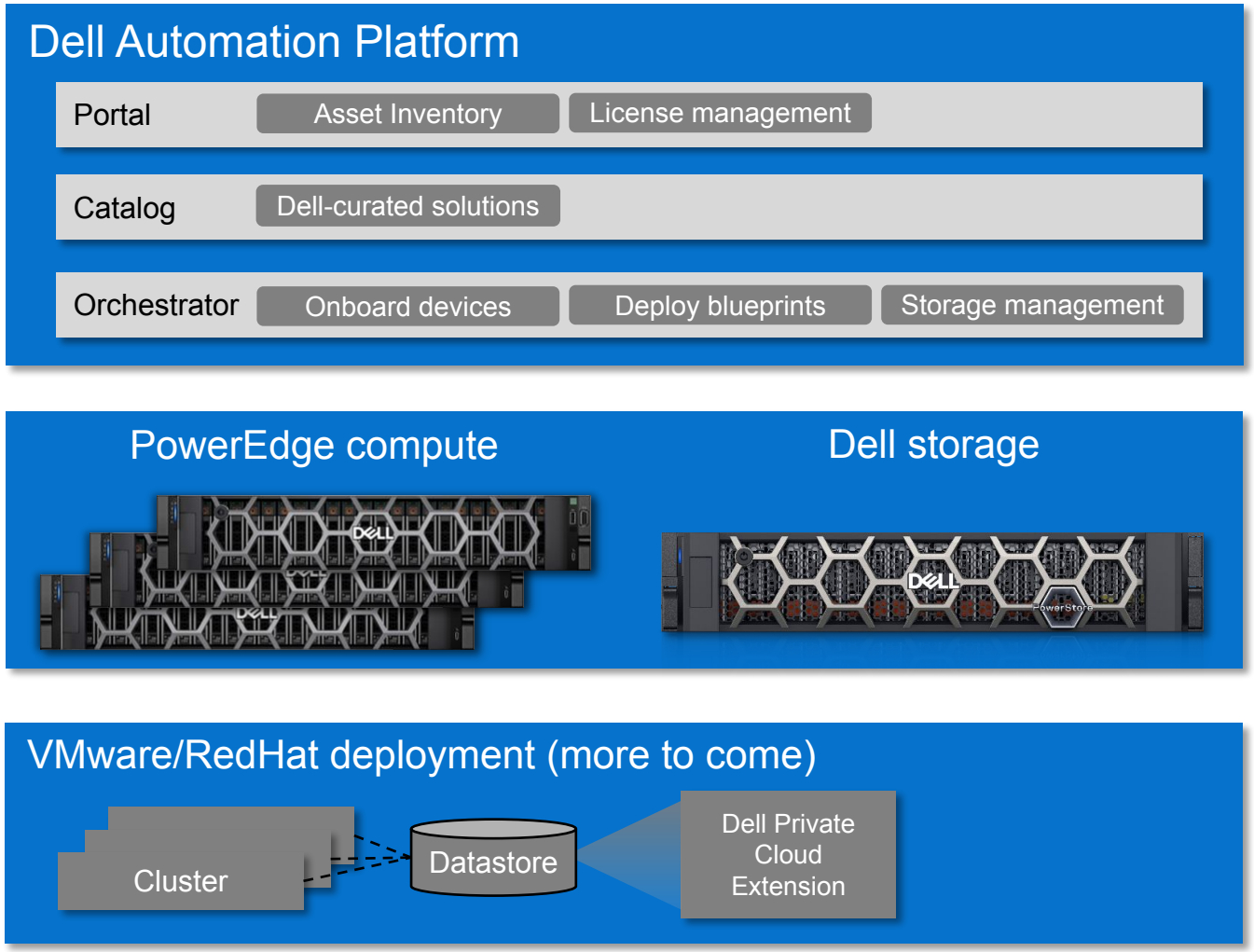
Delivered through Dell Automation Platform

Dell Automation Platform

- Log into Portal UI to add devices to inventory
- Catalog to browse and download blueprints
- Orchestrator
  - Onboard Dell infrastructure
  - Store and run blueprints
  - Storage management (pre-checks, updates)

Dell Private Cloud

- Tested and validated blueprints
  - Cluster deployment, cluster expansion, cluster node removal, node restore
- Continuously validated states
- Dell Private Cloud Extension to management console including:
  - Physical View of infrastructure
  - Full stack (hardware and software) updates



Dell Private Cloud deploying Red Hat OpenShift ecosystem

Solution specifications

New!

Dell Automation Platform

On-premises
Customer-hosted platform as a virtual appliance
or
Customer-hosted platform as Kubernetes cluster

Disaggregated infrastructure

PowerEdge
R660 or R760
1 or 2 socket Intel Xeon Scalable CPUs (16+ cores)
BOSS-N1 (2x 960GB M.2 configured for RAID 1)
Redundant power supplies
iDRAC Enterprise or Data Center license
OCP 3.0 and PCIe
GPU support

Platform-Integrated Storage
PowerStore OS version 3.6 or later
Unallocated block storage >1TB
Fibre Channel or iSCSI

Platform-Compatible Storage
PowerStore, PowerFlex, PowerMax, Unity/XT*, VMAX

Bring Your Own Networking

OpenShift deployment

OpenShift cluster requirements
Cluster size – 3 to 2,000 nodes
Cluster deployment– control plane nodes have homogeneous hardware configuration
Cluster expansion – only physical NIC configuration needs to match cluster; mixed platforms supported
Networking – 10GbE minimum
Software – OpenShift 4.19
Customer-managed image registry

*Not supported with OpenShift Virtualization

DELL Technologies

Dell Private Cloud

Storage support

New!

Platform-Integrated

Fully onboarded and deeply integrated with Dell Private Cloud automation, enabling lifecycle workflows like deployment, expansion and updates.

	OpenShift
PowerStore	✓ FC, iSCSI

Both Greenfield and Brownfield storage supported

Platform-Compatible

Validated with Dell Private Cloud but managed through native storage element managers without integrated storage automation workflows. Some storage will transition to platform-integrated when functionality is available in future releases.

	OpenShift
PowerStore	✓ FC, iSCSI
PowerScale	
PowerFlex	✓ SDS/SDC
PowerMax	✓ FC, iSCSI
PowerVault	
Unity/XT*	✓ FC, iSCSI
VMAX	✓ FC, iSCSI

Both Greenfield and Brownfield storage supported

*Not supported with OpenShift Virtualization

DELL Technologies

Example deployment scenarios

For Dell Private Cloud deploying Red Hat OpenShift

New!

- **Greenfield**
  - New PowerEdge servers
    - Dell Private Cloud subscription license per server
    - iDRAC Datacenter or Enterprise license
  - New PowerStore system
    - PowerStore OS and capacity license
  - Dell Automation Platform
    - No-cost license for Orchestrator
- **Brownfield**
  - Existing PowerEdge servers
    - Must meet PowerEdge minimum specifications; factory reset required
    - Dell Private Cloud subscription license per server
    - iDRAC Datacenter or Enterprise license
  - Existing PowerStore system
    - No additional licensing
  - Dell Automation Platform
    - No-cost license for Orchestrator

Licensing specifications

New!

Dell Automation Platform

Orchestrator	No-cost license added to sales order; only one instance required
Management host	Customer-provided vSphere or Kubernetes cluster

Disaggregated infrastructure

PowerEdge	Dell Private Cloud license per node iDRAC Enterprise or Datacenter license per node
PowerStore	Standard PowerStore licenses

OpenShift deployment

OpenShift cluster	Bring your own subscription – any OpenShift subscription (OVE, OKE, OCP, OPP)

New!

Seamless operations for multiple workloads

Red Hat OpenShift

Bare Metal deployment of OpenShift Platform Plus

Constant management regardless where the platform is installed – on-prem, in the cloud, or at the edge.

Simplify operations so your teams can focus on innovation.

Red Hat OpenShift Serverless

Deploy and manage modern serverless workloads

OpenShift Serverless leverages the **power of Knative** to deliver serverless, event-driven applications **that scale on demand.**

Red Hat OpenShift Virtualization

Single platform for managing both VMs and containers

Migration tooling to support streamlined migration of **virtual machines at scale**.

Use existing VM roles and responsibilities, maintain application components that are business critical and modernize skill sets over time.

Red Hat OpenShift AI

Enterprise-Ready AI application platform

Develop, train, serve, monitor, and manage the lifecycle of AI/ML models and applications from experiments to production.

Red Hat tracks, integrates, tests, and supports common AI/ML tooling and model serving.

DELL Technologies

Red Hat OpenShift Editions

Understanding the differences between:

- OpenShift Virtualization Engine (OVE)
- OpenShift Kubernetes Engine (OKE)
- OpenShift Container Platform (OCP)
- OpenShift Platform Plus (OPP)

New!

Edition	VM Workloads	RHEL Guest VM Subs	Container Workloads	Developer Tools	Multi-Cluster Management
OVE	✓				✓*
OKE	✓	✓	✓		
OCP	✓	✓	✓	✓	
OPP	✓	✓	✓	✓	✓

- For a detailed comparison between the OpenShift editions broken down by specific feature, please use the following Red Hat guide - https://www.redhat.com/en/resources/self-managed-openshift-subscription-guide

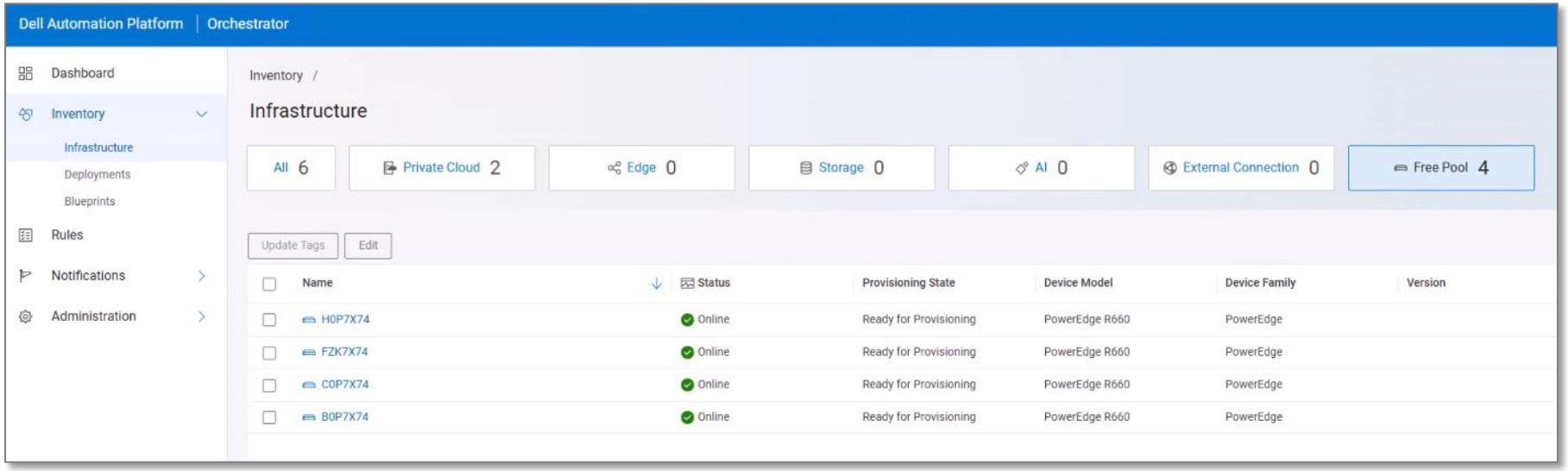
*Virtual Machine Use Only

DELL Technologies

Inventory > Infrastructure

The Free Pool tab shows 4 PowerEdge R660 servers that are ready for provisioning

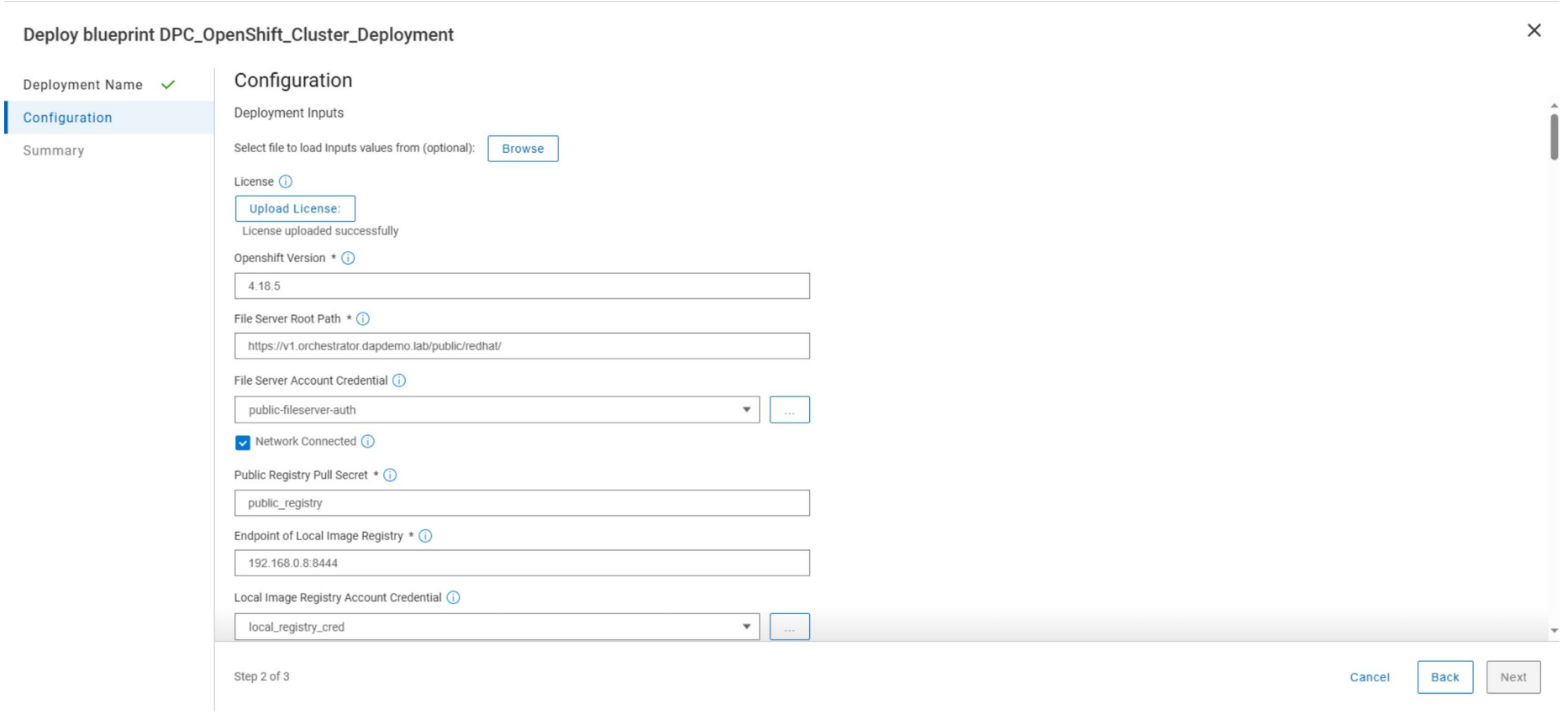
New!



Initiating a cluster deployment blueprint

Wizard steps user through the inputs required to run a cluster deployment blueprint

New!

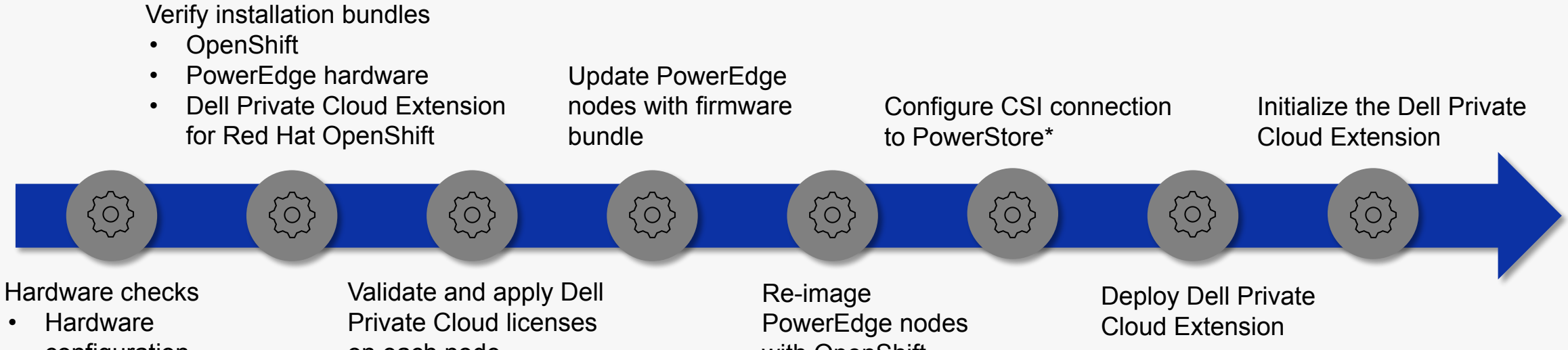


Input values can be saved in JSON file and uploaded to auto-populate fields

- Inputs can be prepared ahead of time
- JSON file can be used as a template for future cluster deployment to ensure consistency

What the cluster deploy blueprint automates

New!



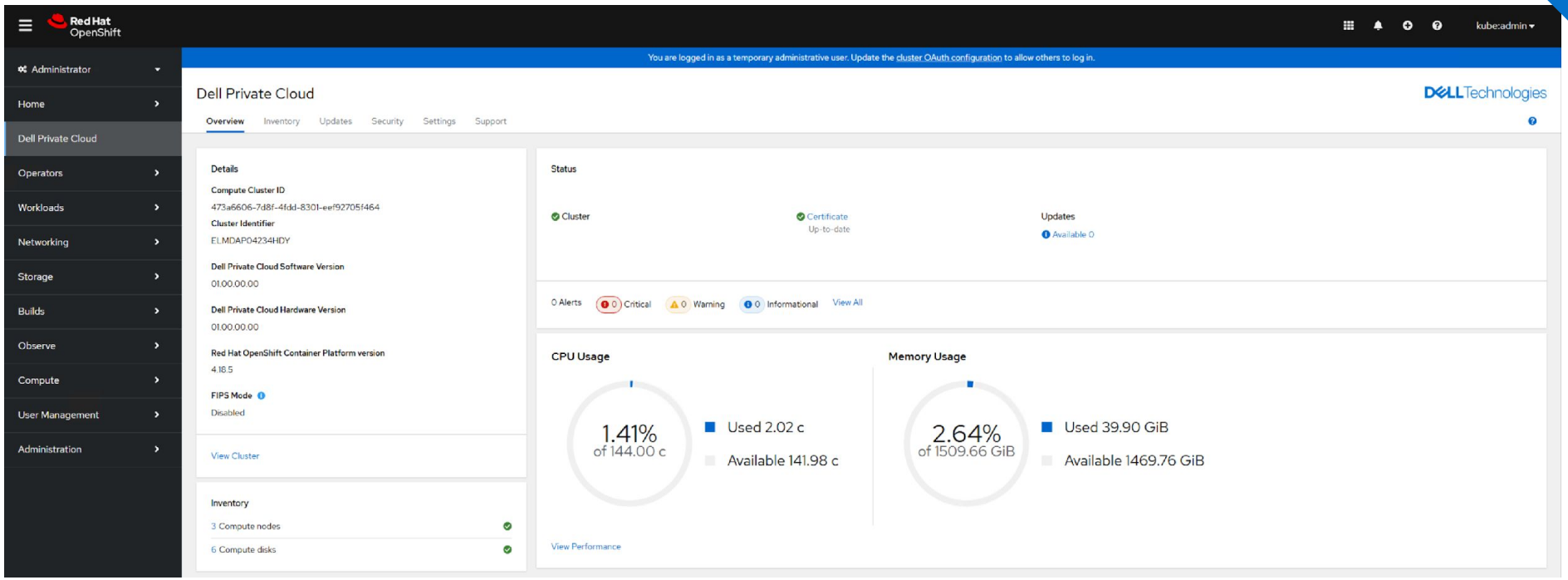
Note: not all tasks are captured on this slide
* If PowerStore is used for the cluster deployment

Dell Private Cloud Extension

Dell Private Cloud plugin to OpenShift web console

Integrated management capabilities found at Dell Private Cloud menu

New!



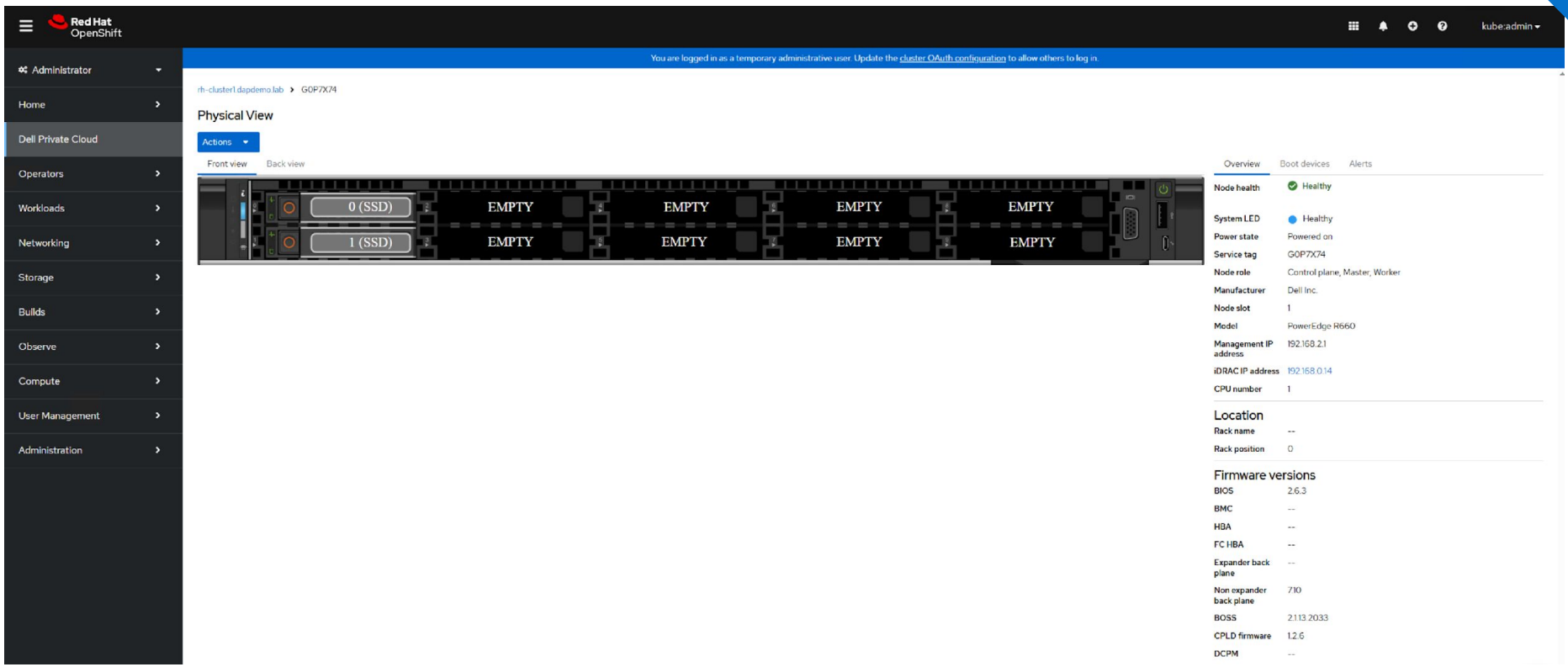
- System – Cluster status with versions of software and hardware bundles running on cluster
- Physical view – View hardware components in the nodes and associated firmware and driver versions
- Settings – Proxy server, automated update bundle download setup
- Updates – Lifecycle management
- Security – Certificate management
- Support – Connectivity to Dell Secure Remote Support, log bundle management, service ticket request

Physical View – node view

OpenShift web console > Dell Private Cloud > Inventory tab

Navigate to Dell Private Cloud menu

New!

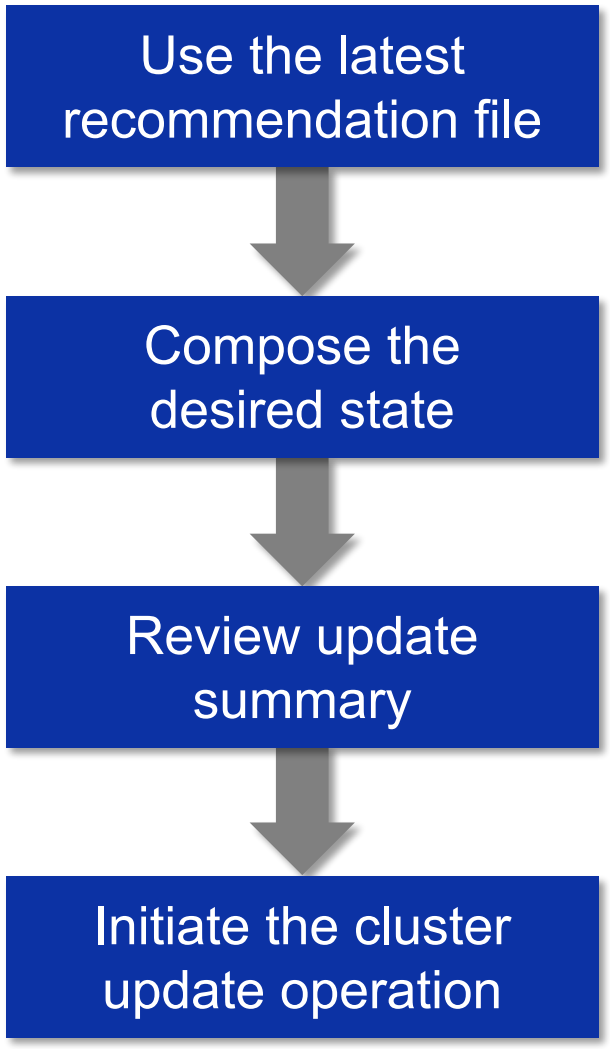


Node view

- Front view
- Back view
- Individual component information
- Side panel with additional information including firmware versions, boot device, and alerts
- Actions button to turn on node LED, shutdown node, and edit node location

Cluster update workflow

New!



Recommendation file is the electronic compatibility matrix
- Record of all the validated states
- Used to determine cluster's update paths

User composes the desired state which is made up of two components
- PowerEdge hardware (Dell-provided)
- Dell Private Cloud software (Dell-provided)

Update review is made up of the following sections
- Update summary
- Change report

Upload the installation files for the desired state
Initiate the cluster update operation now or do it later
Customize cluster update with customer-managed component updates

DELL Technologies

Maintaining a Known Good State

New!

Drift

- Minor deviation from a validated state that will not impact support

Non-Compliance

- Major deviation from a validated state that will impact support

Critical security or express patch

- Customers can apply OpenShift z-stream updates without drifting from the validated state

Minor Version Release (y-stream)

- Some Dell updates may update the recommendation file to expect a newer minor release of OpenShift
- Warning is displayed in Dell Private Cloud Update tab that drift is detected, but does not impact cluster support status
- Moving OpenShift past the currently validated minor release will put the cluster in a Non-compliant state and is not recommended in production

Path back to validated state

- Warning continues to show after Dell update completes
- Once the OpenShift software is updated to the expected version, the cluster is back in compliance and the warning is removed

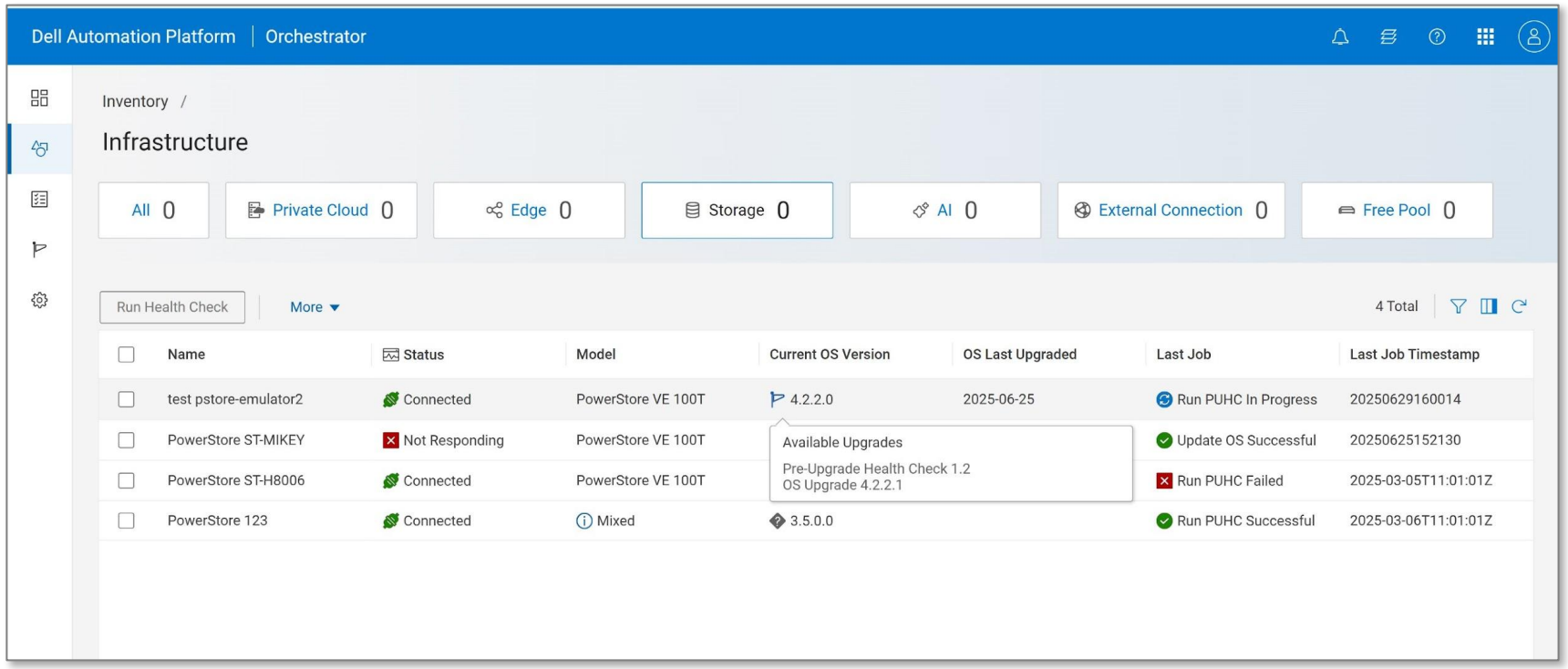
DELL Technologies

Infrastructure > Storage tab

Show available upgrades

Packages are already downloaded on PowerStore Manager

New!



Dell Private Cloud

Freedom and flexibility to evolve on your terms

Adaptable

Protect your investments with disaggregated infrastructure, an open software ecosystem, and the ability to repurpose hardware.

Proven

Confidently run workloads on a validated, automated solution with intelligent lifecycle management and full stack support.

Consistent

Leverage existing skills and access familiar tools for a streamlined experience.

DELL Technologies