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Nutanix Cloud Platform with Dell PowerStore: Modernizing Enterprise Infrastructure with Dell Private Cloud

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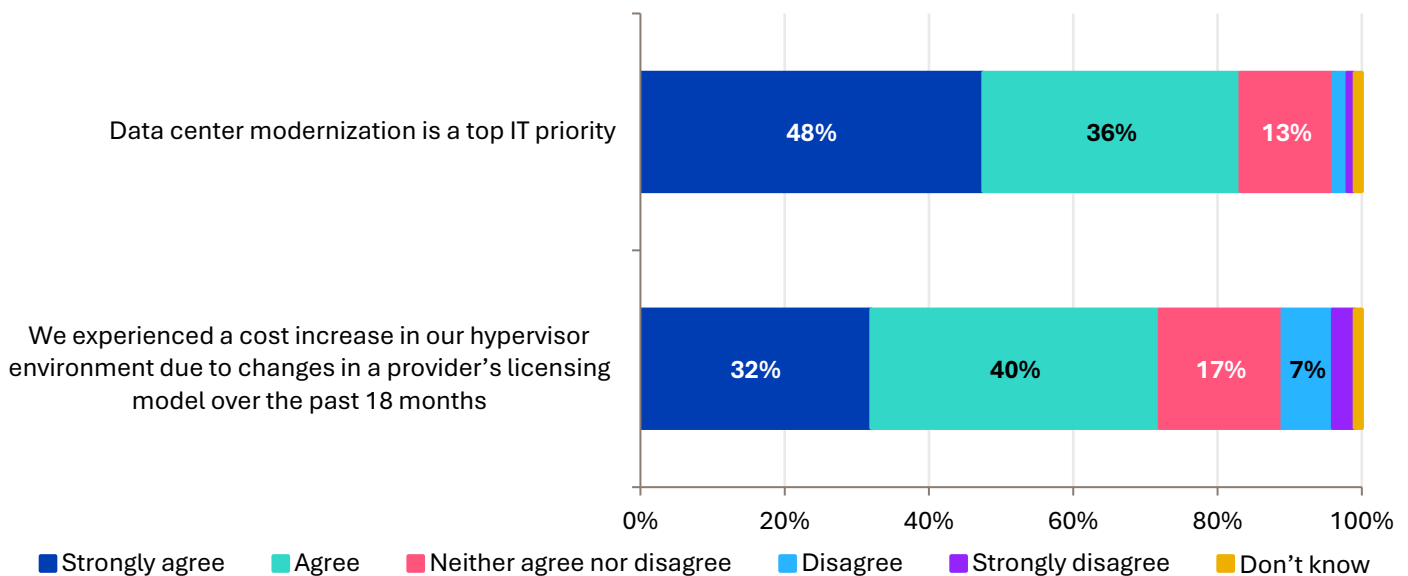
Infrastructure modernization challenges

Organizations today face mounting pressure to modernize their virtualization infrastructure while managing rising hardware costs, supply chain disruption, complexity, and the need for operational agility in the face of rapidly growing AI workload demands. Research shows that data center modernization has emerged as a top IT priority, with 84% of organizations agreeing or strongly agreeing that it represents a critical focus area.¹

The hypervisor landscape is also undergoing significant transformation, with 72% of organizations confirming that their hypervisor costs have increased due to changes in a provider's licensing mode over the prior 18 months.² It's no surprise that organizations are looking to avoid vendor lock-in and maximize ROI on their infrastructure investments while maintaining enterprise-grade performance and minimizing risk.

Figure 1. Data center modernization and cost concerns are front and center

Please rate your level of agreement with the following statements. (Percent of respondents, n=380)



Source: Omdia

¹ Source: Enterprise Strategy Group (now Omdia) Research Report, [Private AI, Virtualization, and Cloud: Transforming the Future of Infrastructure Modernization](#), July 2025.

² Ibid.

Modern applications and workloads demand infrastructure that can be managed independently and deliver consistent, high-performance storage while maximizing utilization. Organizations need solutions that eliminate the rigid coupling of compute and storage resources, enabling them to avoid overprovisioning scenarios and scale each dimension based on actual workload requirements. This approach also minimizes risk, as security updates and patches are becoming more frequent. Additionally, disaggregated architecture reduces maintenance windows/blast radius and enables better compliance.

Organizations must balance multiple competing priorities when justifying IT investments. The top considerations for 2026 include improving cybersecurity and resilience (32%), improving return on investment (32%), and improving business processes and workflows (30%).³ Infrastructure solutions must deliver measurable value across these dimensions while providing the flexibility to adapt to evolving business requirements.

Nutanix Cloud Platform with Dell PowerStore

Dell and Nutanix share strong history and have been close partners for more than 14 years. In May 2025, Dell PowerFlex became the first external storage system both supported and integrated with Nutanix Cloud Platform (NCP), a significant industry milestone. In 2026, Dell was recognized as the Nutanix Global OEM Partner of the Year. The co-engineered integration of PowerStore with NCP is the natural next step in a proven, deepening partnership designed to deliver a disaggregated infrastructure solution that combines enterprise-grade storage capabilities with the operational simplicity of the Nutanix management experience. When deployed through Dell Private Cloud, organizations gain automated AHV deployment, blueprint-driven lifecycle management, and Dell system-level hardware support designed to deliver a complete, validated experience for Nutanix Cloud Platform with Dell PowerStore.

The NCP is a hybrid multi-cloud software solution designed to consolidate compute, storage, virtualization, and networking resources across distributed environments, including on-premises data centers, edge deployments, and cloud infrastructure. The platform employs a software-defined approach intended to address limitations associated with hardware-dependent legacy infrastructure models.

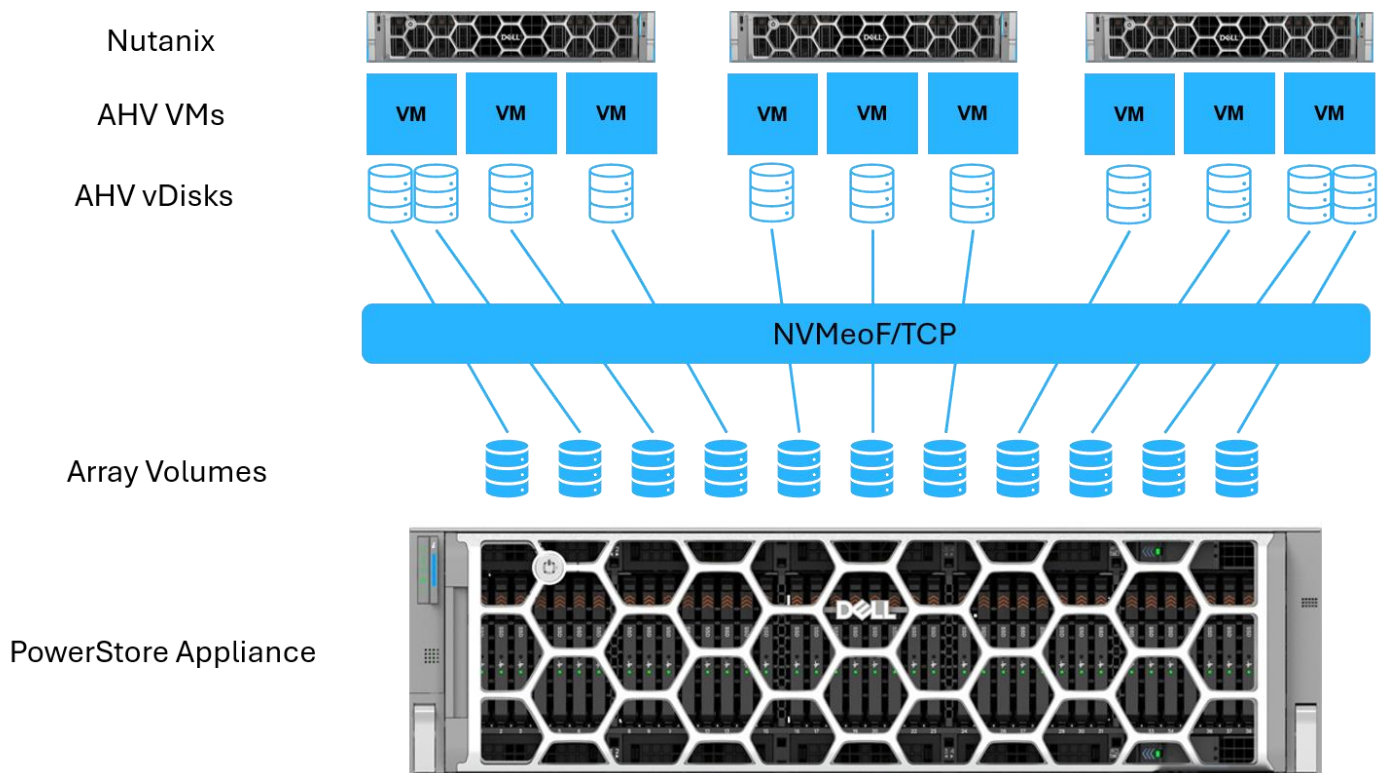
Nutanix positions NCP as bridging public and private cloud operational models, offering organizations deployment flexibility across on-premises and hybrid configurations. Key architectural features include centralized management interfaces, automated provisioning capabilities, and high-availability mechanisms designed to reduce operational complexity while maintaining enterprise-grade performance and security controls.

The disaggregated architecture of the joint solution, as shown in **Figure 2**, is comprised of a compute layer enabled by a Nutanix Cloud Infrastructure (NCI) Compute cluster. This cluster is composed of industry-standard servers and installed with NCI software: Nutanix AOS operating system and AHV virtualization.

³ Source: Omdia Research Report, [2026 Technology Spending Insights: The Race for Success as AI Spans the Globe](#), March 2026.

When using Dell's flagship PowerEdge industry-standard servers for the compute cluster, the integration of Nutanix with Dell Private Cloud greatly simplifies administration by providing automated deployment, full-stack lifecycle management, and Dell system-level hardware support across compute, storage, and networking. The storage for the virtualized compute clusters in the solution is enabled with Dell PowerStore unified all-flash enterprise storage for diverse workloads.

Figure 2. Nutanix Cloud Platform with Dell PowerStore



Source: Nutanix and Omdia

Key capabilities and architecture

Modern software-defined data center

- **Enterprise-grade compute virtualization** with Nutanix AHV virtualization platform and Nutanix Kubernetes Platform (NKP). Omdia has been tracking the evolution of AHV for more than a decade, repeatedly verifying through multiple validations the maturity and comprehensive features of AHV. NKP addresses common Kubernetes operational challenges, including security management, observability, reliability assurance, upgrade processes, backup and recovery procedures, policy administration, and governance frameworks.
- **Software-defined data center:** Nutanix Cloud Manager, Flow, and Prism Central are designed to deliver a hybrid cloud platform for both traditional enterprise and modern applications. The Nutanix stack provides a complete set of software-defined services for compute, storage, network, container and cloud management.

- **Reuse existing investments** in servers and Dell PowerStore while modernizing the hypervisor environment to achieve cost efficiencies without compromising software-defined data center capabilities.
- **Operational flexibility:** A disaggregated infrastructure that enables independent planning and administration of compute and storage infrastructure.

Accelerating deployment and lifecycle management with Dell Private Cloud

Dell Private Cloud is a software solution that provides a comprehensive disaggregated infrastructure management framework designed to address the operational complexity of managing infrastructure through automation and validated blueprints.

At its core, Dell Private Cloud leverages the Dell Automation Platform as a no-cost control plane and orchestrator that automates both hardware and software deployment and management. This platform onboards Dell infrastructure resources and provides centralized access to inventory through a catalog of Dell-tested and validated blueprints written in TOSCA-based YAML files. These blueprints serve as declarative representations of environments, enabling automated activities, including cluster deployment, expansion, and lifecycle operations.

The platform delivers full-stack lifecycle management encompassing Dell hardware components—compute and storage—alongside the private cloud software stack, designed to provide hyperconverged infrastructure (HCI)-like functionality in a three-tier architecture, providing a smooth transition for traditional HCI customers to see the value and cost savings of external storage with Nutanix. This includes automated patching, updating, expansion, and component replacement through blueprint-driven, validated update routines. Organizations can define their desired state, combining hypervisor/OS images, Dell Private Cloud software, and PowerEdge hardware firmware, with the system continuously checking compliance against validated configurations.

Dell Private Cloud integrates directly with Nutanix Prism through extensions, providing physical and virtual management views, lifecycle management workflows, and serviceability features within familiar management tools. This integration enables administrators to manage Day 2 activities that sit outside Nutanix management, including but not limited to cluster updates; node addition, expansion, or removal; node factory resets; and storage system updates, all coordinated through a central orchestrator to reduce manual effort while preserving validated system states as the infrastructure evolves.

The Dell Private Cloud plugin is designed to provide an HCI-like experience by bringing health, alert, firmware update, and support management for Dell PowerEdge directly into Nutanix Prism, enabling administrators to manage everything from one interface. This integration provides holistic visibility with consistent topology views across the entire private cloud infrastructure. Storage volumes are automatically provisioned and mapped to Nutanix clusters, with per-VM policy controls that translate directly to PowerStore backing volumes.

Dell Private Cloud supports PowerEdge 16G and 17G servers as compute nodes for Nutanix clusters, with requirements, including Dell BOSS cards (960GB or greater), 10GbE/25GbE/100GbE networking, and no

internal capacity drives. This flexibility enables organizations to leverage existing server infrastructure or deploy new hardware based on their specific requirements.

Enterprise-grade storage services, powered by Dell PowerStore

- **Always-on data reduction:** Guaranteed data reduction ratio for reducible data—6:1 on Gen 3 systems—across customer applications, with no assessment required.
- **Autonomous active/active architecture:** Dynamic Node Affinity provides intelligent, automated performance-based load balancing.
- **Dynamic Resiliency Engine:** Enables granular scaling. Organizations can add storage capacity one drive at a time rather than in large increments, providing precise capacity management.
- **Offloaded storage operations:** Nutanix manages snapshots and clones, and PowerStore offloads the work at the array level, reducing the burden on compute resources and providing rapid data protection and dev/test environment provisioning.
- **Zero-trust security:** PowerStore includes always-on data-at-rest encryption, immutable hardware root of trust, FIPS 140-2/3-validated drives (optional), and secure boot chain of trust, delivering end-to-end security.

Unified management through Nutanix Prism

Nutanix Prism Central provides a consistent, single-pane management experience across both converged and disaggregated deployment models.

Modern, automated storage networking

NVMe over TCP connectivity delivers ultra-low latency, all-flash performance while standardizing on IP-based networking to reduce overall TCO. Nutanix AHV natively supports NVMe over TCP connectivity to external arrays, which unifies the data center network without proprietary hardware dependencies.

The solution is designed to deliver fully automated deployment and provisioning with zero-touch setup for the NVMe/TCP connection to the array, automatically discovering and configuring the optimal network paths from the Nutanix cluster to the Dell PowerStore array.

Virtual machine (VM) centric comprehensive data protection

- **AHV Metro, synchronous, and asynchronous replication:** Organizations can protect VMs with flexible policies, including zero RPO with automatic failover (Metro), zero RPO replication (synchronous), and scheduled replication intervals (asynchronous), managed directly from Prism Central.
- **Remote backups:** Long-term retention integrates seamlessly with PowerProtect backup environments, providing image-based backups, replication to DR sites, and cloud archival with retention lock.
- **Business continuity and disaster recovery (BCDR):** NCP has a natively integrated BCDR solution that combines disaster recovery (DR) and data protection (DP) under one umbrella.

Simplified deployment and lifecycle management

Nutanix Foundation Central automates AHV deployment on industry-standard servers. Advanced Mode enables the installation of NCI software—both the AHV Hypervisor and the AOS storage controller—on a variety of recent, previous generations of industry-standard servers from major vendors.

When using Dell PowerEdge, the Dell Private Cloud, with its Dell Automation Platform, offers validated blueprints leveraging Nutanix Foundation Central for automated AHV installation. Additionally, Dell Private Cloud automates the full deployment and lifecycle management process for Dell PowerEdge environments with PowerStore. This ensures systems are PowerStore-ready from day zero while maintaining a continuously validated infrastructure state through full-stack lifecycle management across compute, storage, and networking.

Workload migration

For organizations prioritizing migration from existing virtualization platforms, Nutanix Move provides an enterprise migration tool that enables seamless, transparent workload migration to the PowerStore and Nutanix platform.

Operational flexibility

If a customer is already using Nutanix AHV, they can leverage On-demand Cross-Cluster Live Migration (OD-CCLM) to live migrate VMs and their data across infrastructure, supporting agile data center operations. The AHV VMs can also be moved across deployments with different solution architectures. AHV VMs deployed in NCP with Dell PowerStore clusters can be live migrated with no downtime to and from a Nutanix HCI cluster.

Omdia First Look

This Technical First Look examines the integration of Dell PowerStore as external storage with the Nutanix Cloud Platform on Dell Private Cloud, validating how this disaggregated architecture delivers enterprise-class performance, operational simplicity, and cost optimization for modern data center environments.

Deployment architecture and automation

The deployment process begins with Nutanix Foundation Central, which automates the installation of AHV on any industry-standard server⁴ in a variety of boot solutions. This fully automated setup ensures the Nutanix compute-cluster connection to PowerStore is optimal, eliminating manual configuration steps.

When using Dell PowerEdge servers for the compute cluster, the solution leverages Dell Private Cloud's blueprint-driven deployment model to streamline infrastructure provisioning, delivering added value. Through the Dell Automation Platform, organizations can deploy Nutanix compute clusters with PowerStore storage, using fully curated and validated templates. According to Dell's internal testing, this approach enables organizations to deploy workload-ready clusters in approximately 2.5 hours, with zero manual effort needed after hardware installation, representing over 90% fewer steps compared to manual deployment methods.

⁴ Source: Nutanix, [Unlocking the Full Potential of Your Datacenter](#).

Unified management and operations

Once deployed, the infrastructure presents a consolidated management experience through Nutanix Prism Central. Administrators can manage virtual machines, storage volumes, and protection policies from a single interface without needing to access PowerStore Manager directly for routine VM operations. This transparent provisioning model means that Nutanix simplifies storage administration while maintaining full visibility across both hyperconverged and external storage resources.

Lifecycle management and compliance

Nutanix Life Cycle Manager (LCM) fully automates non-disruptive updates of NCI software in the solution. For lifecycle management of firmware and BIOS on industry-standard servers, users can continue to use their existing vendor-supplied tools and retain their existing data center operating procedures without major changes.

The Dell PowerStore storage lifecycle is managed through Dell Private Cloud's Dell Automation Platform or through Dell PowerStore Manager.

For deployments using Dell PowerEdge servers managed by Dell Private Cloud, PowerStore OS Software and PowerEdge firmware updates across the entire stack are automated through integration with Dell Support Site. Organizations can perform non-disruptive upgrades to PowerStore controllers and scale storage capacity by adding drives individually, up to petabytes of total capacity, without impacting running workloads. The platform manages update recommendation files and service data bundles, ensuring that compute nodes, storage arrays, and networking components remain current with validated firmware combinations. The solution supports Day 0 through Day 2 operations, covering initial deployment, ongoing management, and infrastructure evolution.

The Dell Private Cloud automated approach is designed to reduce operational overhead while maintaining compliance with Dell's tested and supported configurations, closing potential security gaps left open by solutions without this level of integration and lifecycle management support.

Migration capabilities and hardware flexibility

For organizations transitioning from existing alternative hypervisor-based environments, the solution incorporates Nutanix Move as an enterprise migration tool. Move enables transparent migration of virtual machines from hypervisors such as ESXi and Hyper-V to Nutanix AHV. In addition, Dell Private Cloud provides automated blueprints to migrate physical assets from other hypervisors to Nutanix. This capability enables organizations to repurpose existing PowerEdge hardware investments while adopting new virtualization platforms.

Storage architecture and services

The PowerStore integration provides unified enterprise storage with all-flash NVMe performance delivered over NVMe/TCP fabric. PowerStore's architecture features autonomous active/active controllers with Dynamic Node Affinity for real-time IOPS and latency optimization, single-drive expansion, and a Dynamic Resiliency Engine that provides faster rebuilds through distributed sparing.

The platform delivers advanced data services, including intelligent inline deduplication and compression, with Dell guaranteeing a 6:1 data reduction rate for PowerStore Gen 3 appliances. Additional capabilities include VM-level snapshot and thin clone management directly from Prism Central, data-at-rest encryption with key rotation, and support for FIPS 140-2/3 validated drives.

This disaggregated architecture enables organizations to independently plan and budget for compute and storage resources. It also enables efficient sharing of storage resources across infrastructure, and advanced AHV VM mobility features lead to improved utilization of both compute and storage resources.

Conclusion

The convergence of AI adoption, hypervisor licensing pressures, and evolving infrastructure requirements is reshaping enterprise data center strategies, and the need for integrated solutions that simplify operations while maintaining flexibility has never been greater.

Nutanix Cloud Platform with Dell PowerStore combines enterprise-grade storage capabilities with the operational simplicity of the Nutanix management experience that enables organizations to maximize the usefulness of existing server hardware, and the solution spans traditional three-tier configurations through fully disaggregated models, providing flexibility for different organizational needs.

The Nutanix Cloud Platform with Dell PowerStore solution consolidates and virtualizes compute, storage, and networking resources while enabling independent compute and storage infrastructure components. This approach enables organizations to balance capital expenditure optimization with operational efficiency requirements across hybrid environments.

Dell Private Cloud deployment of Nutanix with Dell PowerStore addresses multiple key modernization requirements through blueprint-driven automation, unified management capabilities, and support for multiple deployment architectures.

The combination of Nutanix hybrid multi-cloud software-defined data center technologies with Dell PowerStore storage capabilities, along with the automation of Dell Private Cloud, positions IT teams to support current workloads with a sophisticated, enterprise-scale solution while preparing for AI-driven transformation. For organizations seeking to modernize existing infrastructures and evaluating alternatives to traditional architectures, while remaining agile and avoiding vendor lock-in, Dell Private Cloud on Nutanix Cloud Platform with Dell PowerStore is worth serious consideration.

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