Dell PowerStore

Intelligent all-flash storage for the enterprise

PowerStore is #1 in customer satisfaction

Preferred by more IT decision makers than Pure, HPE and NetApp.[1]

PowerStore is the only storage system with a certified NPS® scoring methodology by Bain & Company (the inventors of the Net Promoter System℠.)[2]

ESSENTIALS

- ✓ Enterprise performance and flexibility for today's diverse, distributed workloads
- ✓ Simplified operations with AI-driven management and automation
- ✓ Built to evolve with your business needs

Adaptable

- **Any workload** – Single platform supports block, enterprise file, vVols and container-based apps.
- **Built for performance** – End-to-end NVMe design (media, expansion, network) delivers high IOPS and sub-millisecond latency.
- **Scale up and scale out** – Easy, plug-and-play expansion to over 18 PBe per cluster.[3]
- **Cyber resiliency** – Built for 6 9s availability[4] and Zero Trust cybersecurity. Native metro replication, multi-cloud backup integration

Intelligent

- **Self-optimizing** – Built-in machine learning optimizes environment without manual effort.
- **Efficient** – Guaranteed 4:1 data reduction,[5] 60% more power efficient,[6] Energy Star certs
- **Proactive health analytics** – Smart monitoring reduces risk and predicts needs.
- **Programmable infrastructure** – Streamline DevOps, automate end-to-end workflows, innovate with multi-cloud.

Continuously modern

- **All-inclusive software subscription** – No license fees, non-stop PowerStore innovation.
- **Non-disruptive hardware updates** – Protect investments and ensure your workloads are always running on the latest technology.
- **Anytime Upgrade advantage** – Modernize your entire platform on demand, makes even hardware refreshes feel like software

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Welcome to the next phase of software-driven, continuously modern storage

The current period of unprecedented change across the global business and technology landscapes has been particularly impactful for storage, where IT managers are dealing with an explosion in both the amount and the distribution of data. No longer confined to a centralized location, today's applications are powered by data that is now captured and stored *everywhere*, residing in diverse formats both inside and outside the core data center.

To keep pace with this rapid transformation, companies have adopted new distributed IT strategies such as multi-cloud and edge computing. Many of these deployments are well underway – and businesses that have not transitioned to a modern approach are realizing they need to catch up fast! But as solution scope and diversity increases, companies also know they can't afford to add complexity. Today's infrastructure must be future-proof *and* simple. As plans change (and change again), IT managers want storage that will adapt seamlessly. Storage that just works.

PowerStore's software-driven architecture is designed to give you a permanent agility advantage while eliminating management complexity. It can simplify your operations for the long term, helping you achieve both today's goals – and the ones you have yet to set.

Adaptable architecture

The PowerStore advantage begins with a comprehensive lineup of enterprise capabilities that provide maximum headroom and flexibility for change.

Any workload

PowerStore's unified design consolidates block, enterprise file, and vVols storage formats in a single high-density footprint, providing a convenient, easy-to-manage platform for broad innovation. Ideal for both general purpose and specialized workloads, PowerStore supports applications as diverse as large-scale databases, cloud native apps, edge-based IoT analytics, and file-based content repositories.
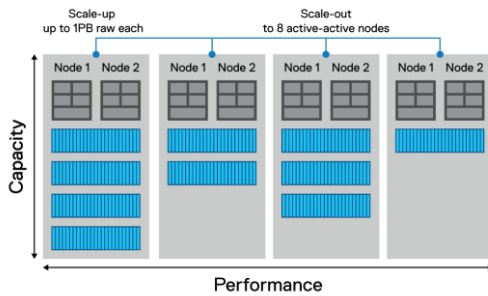
The platform fits seamlessly into existing infrastructures, with multi-protocol physical network support (including 32Gb FC and 100Gb Ethernet) and options to meet specialized industry requirements, such as DC/low-line-power, NEBS-ready solutions or government compliance. No matter where your business strategy takes you, PowerStore's full-featured, adaptable design can help you build your unique breakthrough.
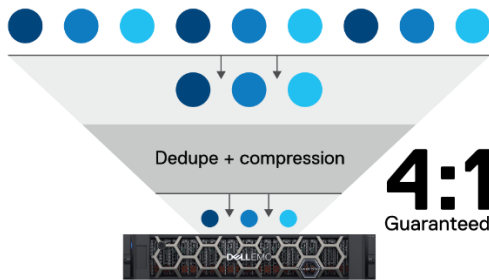
Built for performance

Consistent, predictable performance has long been a baseline for workload success – but the new key requirement for distributed IT is performance that can expand and grow with your needs.

Built from the ground up for NVMe technology, PowerStore leverages dual-port Intel® Optane™ NVMe SSDs both within the appliance base chassis and expansion enclosures, plus NVMe/TCP and NVMe/FC in the external network. This end-to-end NVMe ecosystem delivers extremely high IOPS and low latency, ensuring long-lasting value through multiple solution lifecycles.
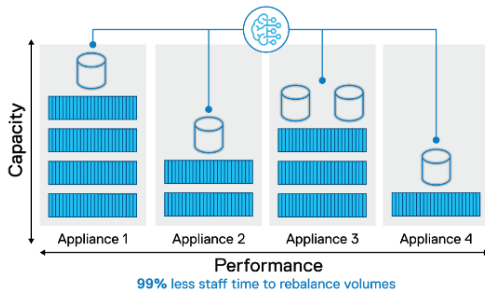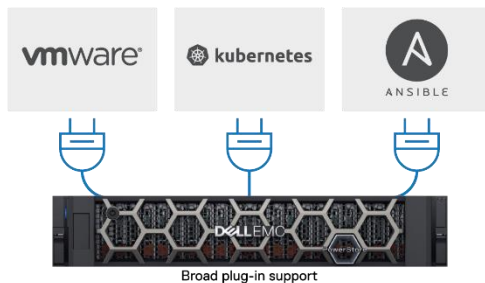
Next-gen performance, advanced clustering

Scale-up
up to 1PB raw each

Scale-out
to 8 active-active nodes

Capacity

Node 1 | Node 2 | Node 1 | Node 2 | Node 1 | Node 2 | Node 1 | Node 2

Performance

Intelligent, "always on" data reduction

Dedupe + compression

4:1
Guaranteed

Machine learning engine

Capacity

Appliance 1 | Appliance 2 | Appliance 3 | Appliance 4

Performance
99% less staff time to rebalance volumes

Automated, end-to-end workflows

vmware | **kubernetes** | **ANSIBLE**

Broad plug-in support

Scale up and scale out

Expanding the capabilities of your initial PowerStore configuration is simple and efficient, as performance and capacity may be scaled independently. Each PowerStore appliance features dual active-active nodes, and can grow with single-drive granularity to over 4.7 PBe NVMe capacity.[3] Multiple appliances can be clustered in a federated configuration for increased processing power and capacities exceeding 18 PBe NVMe capacity.

Enterprise availability

No matter how you grow, PowerStore's patented Dynamic Resiliency Engine (DRE) safeguards business-critical data, leveraging advanced virtualization methods to protect against simultaneous drive failures while maintaining high levels of efficiency and cost savings.

In multi-appliance environments, native file, block and vVols replication provides data mobility and policy-based immutable snapshot protection for any workload. Across larger distances (up to 60 miles), native metro synchronous replication gives you a software-only, zero RTO/RPO high availability solution, configurable in as few as six clicks[7] – for no extra cost!

PowerStore's PowerProtect DD integration even lets you set up and manage remote or multi-cloud backups directly from PowerStore Manager UI, using the included Instant Access feature for easy, granular restores.

Cybersecurity

PowerStore keeps you ahead of evolving cybersecurity threats with capabilities like Secure Snapshots, Data-at-Rest Encryption, Multi-Factor Authentication, File Level Retention (FLR), Hardware Root of Trust, security analytics and new STIG mode for US Federal/DoD environments.[8] Data security is fundamental to PowerStore's DNA, and the platform's NIST-aligned development helps organizations of all kinds accelerate Zero Trust adoption to protect, prevent and recover from attacks more quickly and easily than ever.

Built-in intelligence makes change EASY

But just having the *capability* to respond to change isn't enough – you need change to be simple and non-disruptive.

Self-optimizing appliance

PowerStore's integrated intelligence auto-tunes efficiency, performance and availability without manual intervention on your part, even when you make rapid strategy shifts. All storage services are configured automatically, as soon as you insert a new drive. As the solution evolves, costs remain consistently low, with always-on intelligent data reduction providing a guaranteed average 4:1 DRR[5] without compromising performance.

AI/ML processes eliminate dozens of labor-intensive tasks and decision points, for both individual and clustered appliances. From volume placement to migrations, resource balancing and issue resolution, PowerStore enables faster delivery of applications and services with up to 99% less management interaction.[9] Additional intelligence handles metadata tiering and QoS, and the included SmartFabric Storage Software even eliminates manual effort in the network with the industry's first automated end-to-end NVMe deployment.[10]
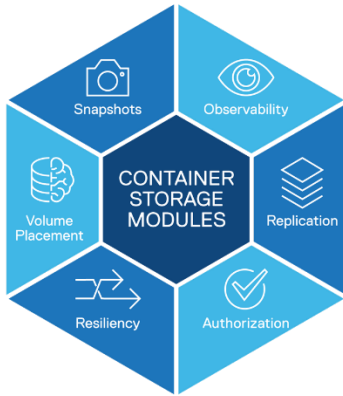
Proactive health analytics

When you do need to make decisions, PowerStore lets you move forward quickly with intelligent analysis and connected insights across multiple infrastructure categories – including servers, storage, networking and cloud. PowerStore's AIOps application, CloudIQ, helps resolve issues up to 10x faster,[11] reduce cybersecurity risk, improve staff productivity and forecast future needs – with convenient cloud-based access from any mobile device.
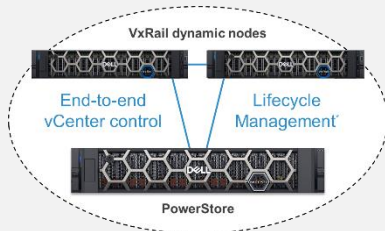
Programmable infrastructure

PowerStore intelligence simplifies your overall ecosystem, streamlining application development and automating storage workflows via a powerful

Dynamic AppsON

Flexible compute + storage solution

Dynamic AppsON combines compute-only VxRail dynamic nodes with PowerStore T model appliances in a tightly integrated solution that allows users to scale compute or storage *independently*. It increases flexibility for both platforms, giving VxRail environments access to PowerStores's enterprise efficiency, data protection and resiliency features, and helping PowerStore environments quickly expand compute for CPU-intensive workloads – all while simplifying operations with end-to-end automation and management integration.

Flexible consumption models

You choose how to deploy and purchase

Deploy PowerStore as a standalone appliance complementing existing infrastructure, or as a storage option within Dell VxBlock for CI, our all-in-one autonomous infrastructure cloud platform.

No matter which model you choose, flexible purchase options simplify storage acquisition to match the needs of your organization. From traditional CAPEX to APEX Custom Solutions pay-per-use offerings that align spending with usage, PowerStore optimizes both technological and financial outcomes. Whether you're adding storage only, or launching an end-to-end solution involving multiple product categories, we'll make sure you get the best possible return on your IT spend – both at the start and as you expand your environment.

REST API and integrations with leading orchestration frameworks. DevOps users can shorten deployments from days to seconds,[12] provisioning PowerStore directly from Kubernetes using the platform's Ansible, Terraform and Container Storage Interface (CSI) plug-in integrations. Dell Container Storage Modules (CSMs) bring additional enterprise storage functions to Kubernetes, facilitating cloud native workloads, and Amazon EKS support lets you run container orchestration across public and on-premises clouds.

Two-way VMware integrations

PowerStore offers both end-to-end VMware visibility within the PowerStore Manager interface and the ability to provision VM-level PowerStore services directly from vSphere. No matter which management perspective you prefer, these integrations help you analyze and control how PowerStore resources are consumed in a VMware environment, minimizing effort and risk, and providing quicker time to solution.

Additional integrations include vRO, VAAI and VASA support with the VSI plugins, native block, vVols, and file datastores, vVols-over-NVMe networks and native vVols replication. These capabilities make PowerStore well-suited for both standalone VMware storage deployments as well as a complement to HCI solutions such as Dell VxRail nodes. *(See Dynamic AppsON sidebar.)*

Hybrid and Multi-cloud

PowerStore's software-driven architecture offers additional flexibility with support for a range of hybrid cloud and multi-cloud services. From VMware Cloud Foundation (VCF) solutions that extend on-prem vSphere management to the cloud, to hyper-efficient encrypted backup with PowerProtect DD Virtual Edition Cloud Tier or fully-managed Cloud Data Services environments, PowerStore helps you leverage the strengths of individual cloud providers while reducing overall cost and maintaining complete control of your data.

Continuously modern

If the advantages stopped here, this powerful lineup of enterprise features would already offer incredible future-proofing value. But the platform is also designed to simplify transitions when PowerStore technology *itself* evolves.

Non-stop innovation

PowerStore's container-based software architecture, known as PowerStoreOS, improves performance, fault tolerance and security by isolating individual OS components as microservices. This unique flexibility also allows the PowerStore engineering team to deliver new features and enhancements at an unprecedented pace, passing the innovations quickly to customers in the form of non-disruptive upgrades.

All-inclusive software subscription

All array software is included with the hardware purchase – both the initial OS version and the ongoing performance and feature upgrades. There are no licenses to buy and maintain, and all software enhancements are provided without cost, for the life of the product.[13]

Seamless hardware upgrades

PowerStore's modular hardware platform is also designed to remain continuously modern. For example, Gen 1 customers can upgrade the performance of their current appliance to a Gen 2 equivalent (or higher model) via a simple node/controller swap – keeping their existing drives, base chassis and any expansion enclosures. These data-in-place upgrades are accomplished without downtime or application impact.

Anytime Upgrade

PowerStore's non-disruptive hardware upgrades are very cost-effective when purchased as add-on options – but Dell takes the benefit one step farther with the industry-leading Anytime Upgrade program.[14]

Moving to PowerStore

Native migration tools

PowerStore offers more ways to migrate than ever, including native tools that let you automate entire block *or* file migrations directly from the PowerStore Manager wizard. If you have an existing Dell storage platform, you can complete a non-disruptive array-to-array transfer in as few as seven clicks.[16]   Hosts are remapped transparently, and completely offloaded, keeping workload performance high throughout the process.

DobiMigrate file migration software

PowerStore now includes advanced DataDobi's DobiMigrate file migration software with every new appliance purchase. DobiMigrate simplifies large, complex migration projects and is trusted by IT teams around the world. The software is free of charge for PowerStore customers, even for the largest migrations.[17]

Dell Technologies Services

Choice and flexibility throughout the life of your appliance

End-to-end ProSupport and ProDeploy services help you configure, support and optimize PowerStore, making your new infrastructure solution easy to adopt and manage.

Plan Deploy Manage Support Educate Renew

Maximum value, worry-free results

FUTURE-PROOF
PROGRAM

Guarantee Outcomes   Maximize Investments   Navigate IT Futures

PowerStore is OEM-Ready. If you would like to OEM PowerStore and make it part of your solution, with Dell branding or un-branded, we can support you.

Anytime Upgrade is the simplest, most cost-effective way to take advantage of PowerStore's adaptable architecture. Unlike other programs, Anytime Upgrade provides true flexibility, both in the number of ways you can transform your infrastructure and the flexible "no-lock-in" terms.

- **Non-disruptive Next Gen upgrade:** Upgrade your existing appliance to the equivalent Next Gen model – or one model higher.[15]
- **Scale-out upgrade:** Receive a discount credit to expand your PowerStore cluster with a second system.[15]

You don't need to decide which upgrade you want until you redeem your benefit.[15] Upgrades may be executed at any time during your maintenance contract, and you are not required to renew your contract to receive the upgrade.[15] Professional deployment services are fully covered for node upgrades, allowing you to modernize your entire solution effortlessly.[15] No need to re-budget for a new appliance – just choose when to upgrade, and Dell handles the rest. It's the closest thing you can get to a cloud-like experience with on-prem storage, ensuring your workloads are always running on the latest technology.

Trust your flexible future to Dell

And of course, we're talking about a Dell Technologies platform, which means you get all the advantages of working with a trusted world-class infrastructure provider. You'll never be limited to a single solution or deployment template. Dell has the broad business experience and deep workload knowledge to help you keep your options open in a rapidly changing world.

From top-tier ProSupport and ProDeploy services, supply chain excellence, and CAPEX-to-OPEX finance flexibility to FutureProof program guarantees and assurances, the Dell Technologies advantage is another fundamental strength of the overall PowerStore experience.

Get ready for a no-limits future. As PowerStore helps you build your next breakthrough – and the one after that – you can trust this continuously modern platform will be a long-term enabler of your business success.

See PowerStore Spec Sheet for additional details.

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1 – Based on Dell Technologies analysis in January 2022 comparing among Top 3 storage providers globally using double-blinded, competitive benchmark Net Promoter Score (NPS) data gathered by third-party commissioned by Dell for 2H FY22

2 – Based on Dell analysis comparing midrange storage providers as of January 2023. Dell technologies was accredited with 2-star rating by NPSxSM by Bain & Company for the period of October 2022 to October 2023. Note: CX Accreditation is a proprietary rating of Bain & Company, Inc. ("Bain"). Bain does not certify or endorse any Dell product or service.

3 – Assumes 4:1 average data reduction. Single appliance max for PowerStore 500 is 4.71PBe. Max for other PowerStore models is 4.52PBe. Actual results may vary, depending on data types.

4 – 99.9999% system availability in customer environments, running target code levels, as measured April 2022. Actual results vary.

5 – 4:1 average rate guaranteed across customer applications. Rates for individual applications may vary. See Future-Proof program terms and conditions for details.

6 – Based on Dell analysis comparing maximum IOPS per Watt for PowerStore 1200 base appliance configurations with PowerStoreOS 3.0 vs. PowerStore 1000 base appliance configuration with PowerStoreOS 2.0. Actual results vary.

7 – Based on minimum steps and timeframe required to configure synchronous replication between two previously installed PowerStore appliances across a metro area distance. Actual steps vary by solution.

8 – With PowerStoreOS 3.5, PowerStore is hardened to meet the security requirements of the US Federal Government. DoDIN Approved Product List (APL) listing in process.

9 – Based on Dell analysis of staff time required to maintain balanced PowerStore cluster vs. traditional multi-array deployment, March 2020. Factors in effort required to monitor, plan, define and execute volume migrations. Actual results will vary.

10 – Based on Dell analysis comparing NVMe/TCP discovery and registration with PowerMax/PowerStore using SmartFabric Storage Software vs competitive storage solutions, March 2022.

11 – Based on CloudIQ user survey conducted by Dell Technologies, May-June 2021. Actual results may vary.

12 – Based on Dell analysis of effort required to deploy workloads with and without Ansible and vRO orchestration integrations, March 2020. Factors in effort required to monitor, plan, define and execute volume migrations. Actual results will vary.

13 – See Future-Proof program terms and conditions for details.

14 – Industry's most flexible controller upgrade program. Based on Dell analysis, April 2020 using publicly available data to compare the highest available program/subscription offers for controller upgrades. Requires purchase of Anytime Upgrade Standard or Select option and minimum 3-year ProSupport or ProSupport Plus contract at point of sale to qualify. Upgrade eligibility begins 180 days after invoice.

15 - Anytime Upgrade is available for purchase with PowerStore at POS only, and requires a ProSupport or ProSupport Plus contract with a 3, 4 or 5-year term. Upgrades available 180 days after program purchase. The Anytime Upgrade STANDARD offer provides an upgrade to Next Gen nodes when available. Anytime Upgrade SELECT adds "Next Gen + Higher Model" and "Scale-out" upgrade options. See rep for details

16 – Based on Dell analysis of minimum effort required to execute non-disruptive migration of volume group using PowerStore's built-in migration tools for Unity, SC Series, PS Series and VNX arrays, March 2020. Actual results will vary.

17 – 50TB raw capacity minimum migration required. See Terms and Conditions for details.

Learn More about PowerStore

Contact a Dell Technologies Expert

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