

The Dell Technologies logo is positioned in the top left corner. It features the word "DELL" in a bold, white, sans-serif font, with a stylized "E" that has a diagonal line through it. To the right of "DELL" is the word "Technologies" in a smaller, white, sans-serif font. The background of the entire image is a dark, blue-tinted photograph of a server room. On the right side, there are rows of server racks with numerous green indicator lights glowing. On the left side, there is a large window that looks out onto a lush green landscape with trees. The overall atmosphere is professional and tech-oriented.

DELL Technologies

# Leading the AI Gold Rush Amid Supply Pressures

*How Dell Technologies wins the storage supply chain battle with Dell PowerScale*

# Powering the New Era of Data Infrastructure

The demands on data infrastructure are accelerating faster than ever. As AI, analytics, and data-driven innovation move to the core of business strategy, organizations need environments that deliver high performance, flexibility, and results— now. This isn't just about keeping up; it's about delivering the foundation for what's next.

At the same time, global supply constraints are putting unprecedented pressure on IT teams. Surging demand for advanced hardware, especially for AI and high-performance workloads, has outpaced supply, leaving many vendors unable to deliver on time. For organizations investing in multi-million-dollar data centers, delays and compromises can become costly.

Dell PowerScale is engineered to meet this moment head-on. With media flexibility, intelligent data placement, and the strength of the Dell global supply chain designed to deliver when others can't, PowerScale helps ensure supply constraints don't slow your innovation. Coupled with flexible procurement options that let you avoid over-provisioning and only pay for what you use, PowerScale empowers you to optimize resources and stay agile. In this eBook, we'll explore the advantages that set Dell apart—enabling you to move ahead while others face 18–24-month delays.

SECTION 1

## The Landscape

SECTION 2

## Key Market Challenges

SECTION 3

## Vendor Methods

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## The Dell Advantage

# The AI Gold Rush Hits Supply Chain Pressures

The rise of artificial intelligence represents one of the most significant economic opportunities of our time. Analysts project that the AI market could add trillions of dollars to the global economy as it transforms industries from healthcare and finance to manufacturing and entertainment. This isn't just about smarter software, it's about a complete re-imagining of how businesses operate, innovate, and create value.

At the heart of this revolution is a massive need for advanced infrastructure. AI models, especially large language models and generative AI, require immense computational power and high-performance storage engines that keeps data moving faster to GPUs. This translates into an increase in demand for specialized hardware. The surge in demand for this hardware is unprecedented. Companies are racing to build out their AI capabilities, leading to a modern-day gold rush for the picks and shovels of the digital age. Across the tech industry, supply chains are straining to meet demand.

“ AI infrastructure demand is growing several times faster than available capacity.<sup>1</sup>



Extended Lead Times



Cost Volatility



Delayed Innovation

# Beyond GPUs: Meeting the AI Infrastructure Storage Demand

While much attention has been given to GPU shortages, a quieter crisis is emerging for another critical component: all-flash storage. As businesses race to build AI capabilities, the need for high-performance, all-flash storage is surging. AI operations depend on moving massive amounts of data quickly and reliably. GPUs drive intelligence but require a steady data flow from storage to function efficiently. Without fast storage, GPUs sit idle, wasting expensive resources. The faster data moves from storage to GPUs, the better AI workloads perform — making storage a cornerstone of AI progress.

This demand surge is straining the global supply chain market, driving up prices and extending lead times. **Shortages are expected to continue through at least 2027, with prices climbing an additional 60-120% this year alone.**<sup>1</sup> A powerful AI server is incomplete without equally powerful storage. Understanding this storage crunch is vital for businesses navigating the next wave of technological progress.

## Key Takeaways



Data storage is as critical as GPUs in AI infrastructure



Rising demand and supply issues are driving up storage costs



All-flash only providers are likely having have trouble with supply

<sup>1</sup> "Flash Storage Prices Are Surging – Auto-Tiering Is Now Essential." *Information Age*, December 8, 2025.

# A Moment of Desperation from Flash-Only Vendors

Some all-flash vendors, including VAST Data and Everpure, have adopted a focused approach that relies heavily on specific flash technologies. However, this strategy is encountering challenges as vendors work to meet customer demand amidst tightening supply conditions. In response, VAST Data is even encouraging customers to explore options like reusing or reclaiming existing flash media to maintain capacity through its VAST Amplify program. While this can provide a temporary solution, it may introduce complexities in environments that require consistent performance and high availability.

Flash media has inherent endurance limitations, and as devices age, wear can accumulate, potentially impacting performance and increasing the likelihood of failures or downtime. These risks can become more pronounced as data volumes grow. Additionally, architectures that depend on specialized, single-sourced all-flash tiers may face constraints in terms of component availability, which could limit deployment flexibility and slow expansion efforts.

Given these considerations, enterprises may benefit from exploring platforms that prioritize media flexibility and architectural resilience to better navigate evolving demands and ensure long-term scalability.



## ✘ WRONG APPROACH:

Reusing or claiming existing flash media exposes you to failures, downtime and data unavailability.

## ✘ WRONG APPROACH:

Choosing a flash-only vendor could result in a delay of innovation while they search for components. 18 month+ delays are common – what is the opportunity cost of waiting?

## ✘ WRONG APPROACH:

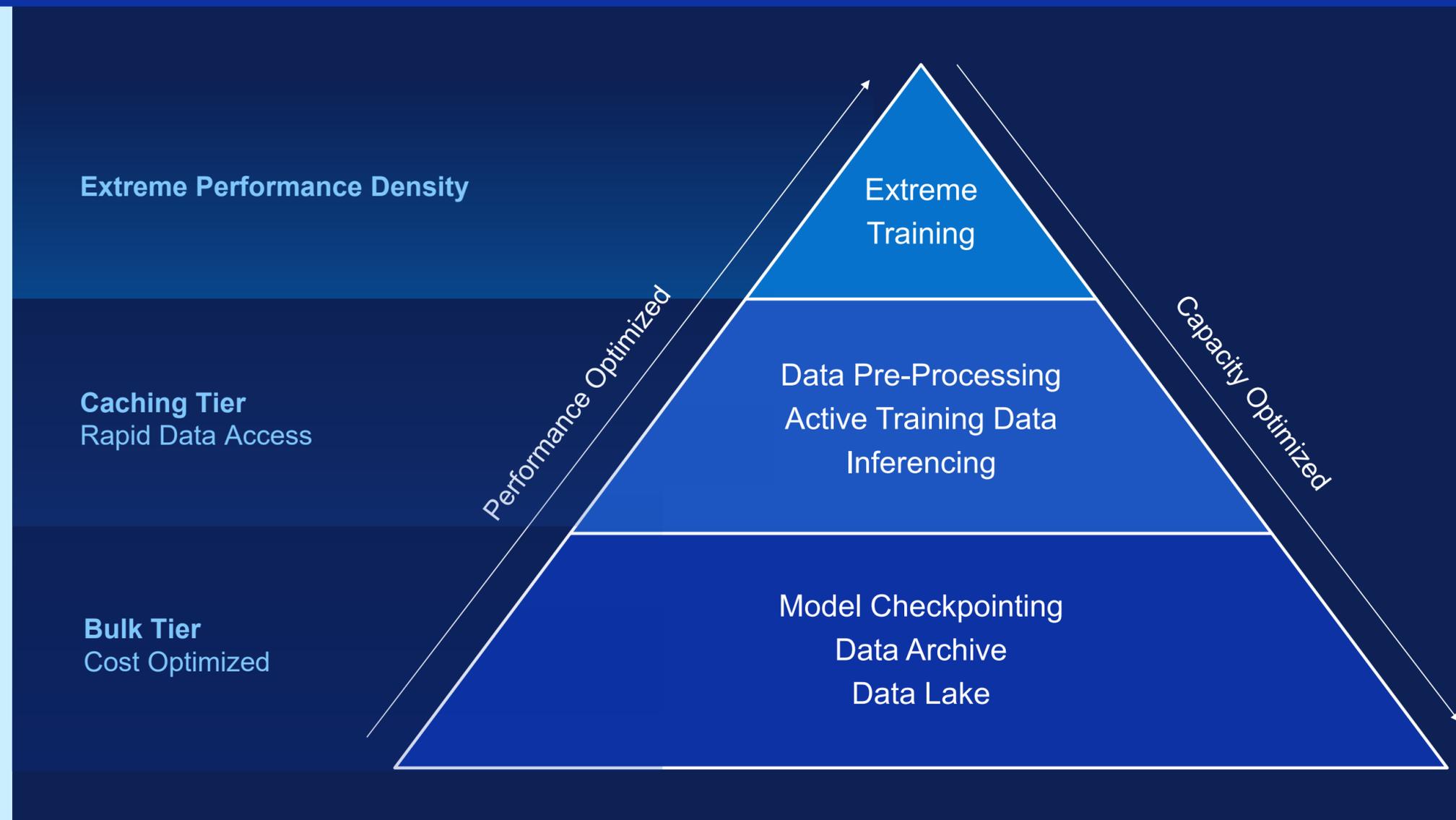
Not all data is created equal. Why force less critical or less accessed data onto expensive flash, especially during a supply shortage?

# Architecture Matters in the Age of AI

Dell PowerScale redefines data placement with automated tiering and intelligent design, tackling performance, scalability, and supply challenges head-on. Critical, high-performance data is automatically placed on all-flash storage closest to GPUs, ensuring AI and mission-critical workloads run at peak efficiency. This precision eliminates costly bottlenecks and maximizes GPU utilization.

For less time-sensitive data, PowerScale intelligently tiers to cost-efficient hybrid and archive storage—all within a unified global namespace. This dynamic architecture ensures data is always where it needs to be, balancing high-performance with optimized costs.

**Bottom line:** Dell PowerScale maximizes performance with all-flash where it matters and leverages hard disk drives (HDDs) to cut costs where it doesn't – giving you flexibility of choice amid supply chain challenges.



The price gap between HDD and all-flash drives have reached over 16x.<sup>1</sup>  
You need the flexibility to choose where your data is placed.

<sup>1</sup> "SSDs Now Cost 16x More Than HDDs Due to AI Supply Chain Crisis." [Tom's Hardware](#) January 22, 2026.

# Efficiency without compromise

Dell PowerScale redefines efficiency in data storage, especially under the constraints of real-world AI demands. **With its industry-leading 2:1 Data Reduction Guarantee<sup>1</sup>**, PowerScale ensures a minimum of 200% capacity efficiency, reducing and optimizing physical storage needs through advanced inline data reduction techniques like compression and deduplication. Its "no node left behind" architecture extends the lifecycle of infrastructure, allowing seamless integration of new nodes without disruptive upgrades.

Across industries and workload profiles, customers consistently achieve substantial real-world data reduction, including:

High-Frequency Trading Firm

**5:4:1**

Data Reduction



Global Telco Provider

**16:1**

Data Reduction



Top Global SaaS Provider

**11:1**

Data Reduction



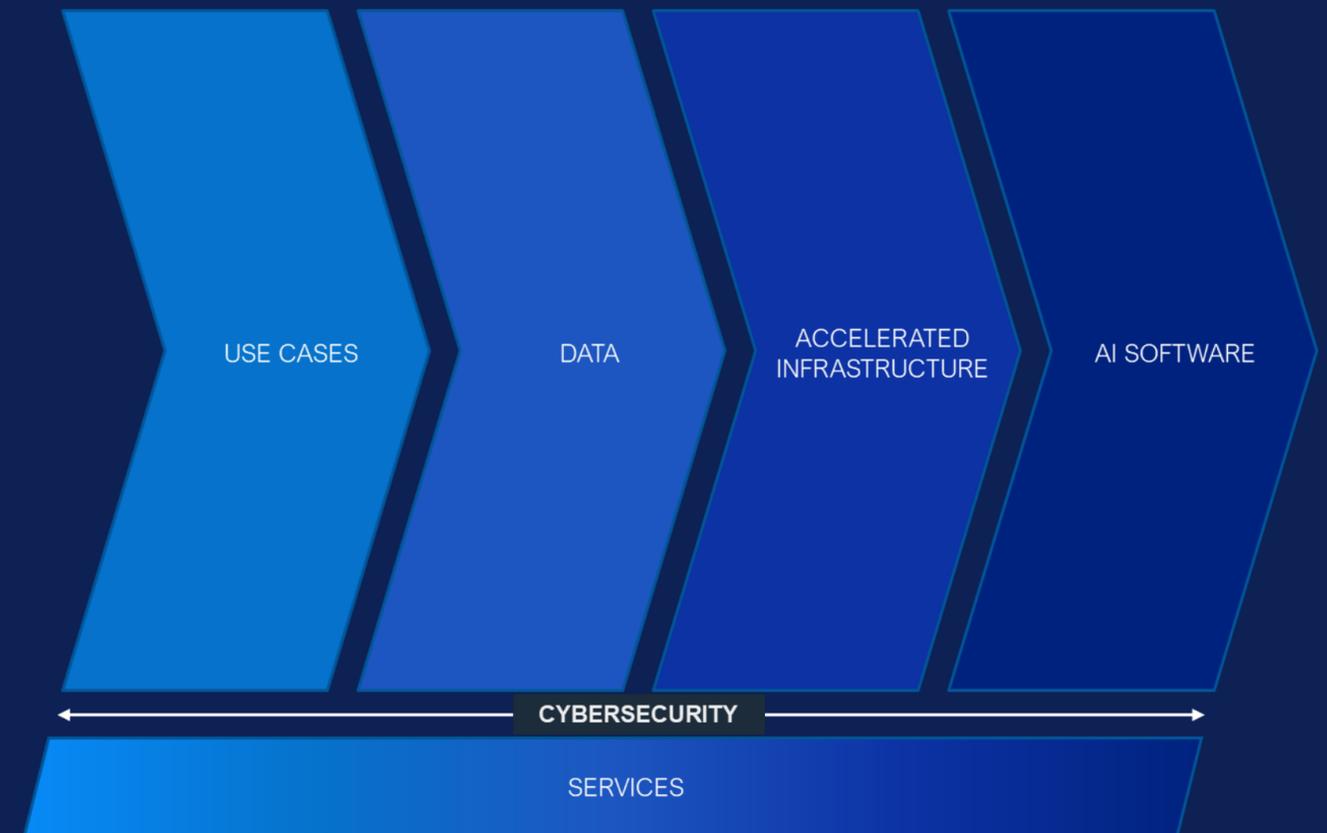
<sup>1</sup> Based on Dell analysis of public information on data reduction guarantees and efficiency-related features including data reduction, storage capacity, data protection, hardware, space, lifecycle management efficiency, and ENERGY STAR- certified configurations, March 2025. Actual data reduction results will vary. [drr-guarantee-tc-powerscale.pdf](#)

# Your Fully Validated, Ready-to-Deploy Blueprint

Dell Technologies and NVIDIA have joined forces to deliver a turnkey AI Factory that accelerates your journey from AI planning to production—with less risk and more confidence.

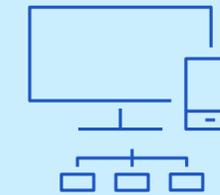
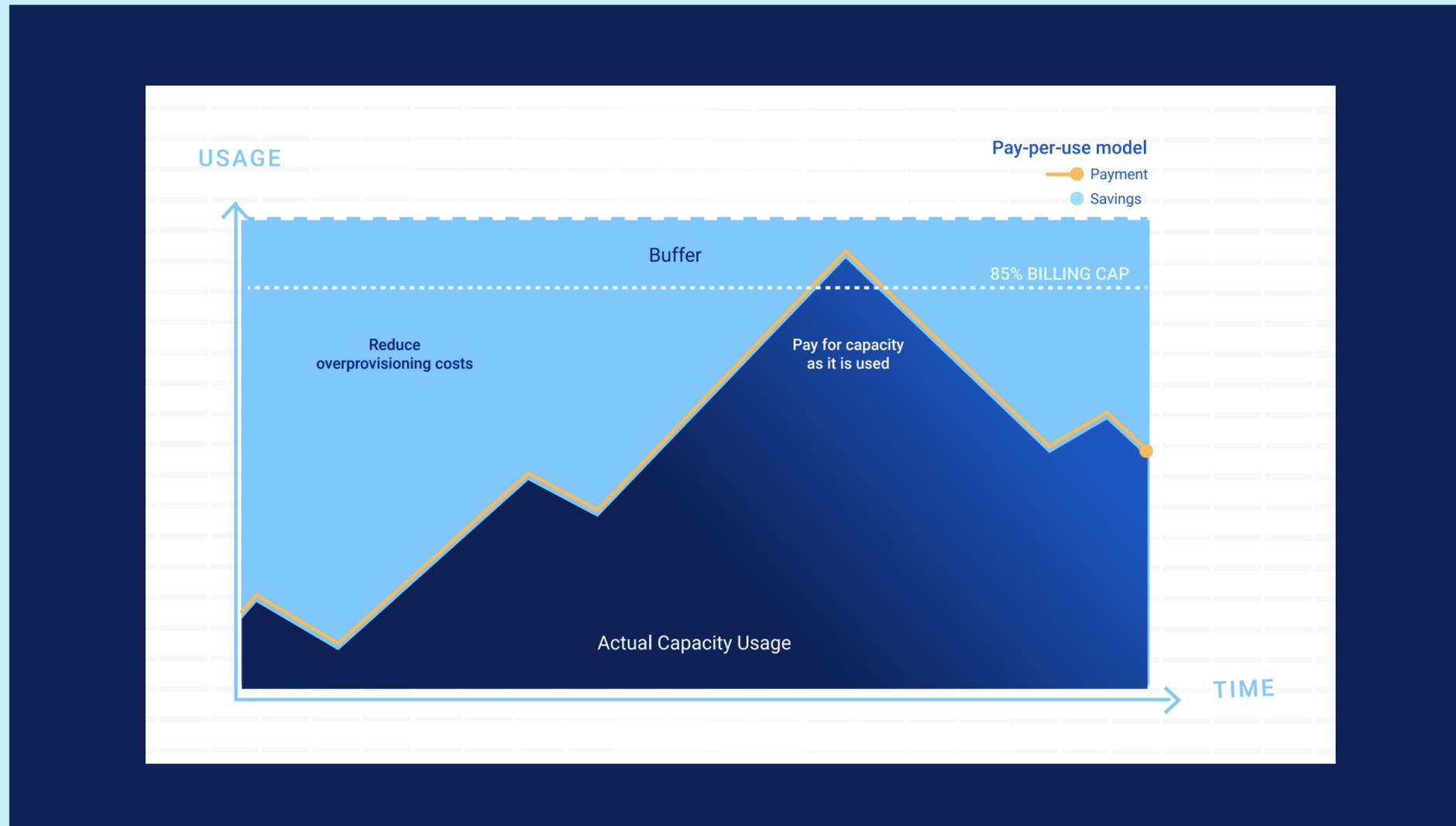
Leveraging Dell’s resilient global supply chain, this fully integrated, validated solution combines compute, networking, storage, and data management into a seamless turnkey platform. Designed for enterprise-grade performance, it scales effortlessly from single use cases to large-scale AI workloads, ensuring you’re ready for whatever comes next.

With NVIDIA-certified designs, including NVIDIA Cloud Partner Validation, this platform is fast to deploy and easy to operate, reducing deployment timelines from months to weeks. Whether you’re running on-premises, hybrid, or cloud-connected environments, our flexible consumption models align with your evolving AI priorities—empowering you to innovate faster and stay ahead of the competition.



# Optimize your AI budget with Dell APEX Infrastructure

With Dell APEX Infrastructure, you can deploy the capacity you need today and for the future, align payments with actual usage, and reduce your exposure to supply constraint risks.



**Lock in capacity now at today's prices**

Get all the headroom and performance you need up front, hedge against supply constraints and price increases



**Accelerate time to value when supply is tight**

No up-front capital expense. Reserve capacity is pre-deployed, so you can add new workloads immediately instead of waiting on supply and slow procurement.



**Scale with flexible configurations**

Choose your PowerScale configuration, services, optional NVIDIA software, term length, and capacity commitment. Expand and extend contract at any time.

# How Dell's Supply Chain Delivers When Others Can't

At any given moment, Dell has over 5,000 employees dedicated to managing and optimizing our global supply chain, helping ensure seamless operations on a massive scale. As one of the largest purchasers of GPUs, CPUs, memory, and flash in the world, we utilize unmatched buying power to deliver cutting-edge technology to our customers. Our leadership extends across the industry, where we proudly hold the #1 position in client, server, and storage solutions, solidifying Dell as a global powerhouse in innovation, resilience and execution.

One of the

## Largest

GPU purchasers  
in the world

## #1

in client, server and  
storage

One of the

## Largest

purchasers of CPU, memory  
and flash in the world

# Designed for flexibility. Built for scale. Ready to ship.

Learn more about Dell PowerScale at [Dell.com/PowerScale](https://Dell.com/PowerScale)

**DELL**Technologies



POWERSCALE

Dell PowerScale: Architecture Matters in the Age of AI



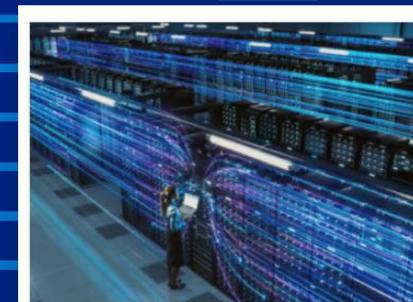
AI SOLUTIONS

Dell PowerScale: Designed for Efficiency Under Real-World AI Constraints



ARTIFICIAL INTELLIGENCE

Dell PowerScale: Scaling With Confidence Amid Supply Constraints



POWERSCALE

Do More with Less: PowerScale's Efficiency Advantage in NVIDIA Benchmarks