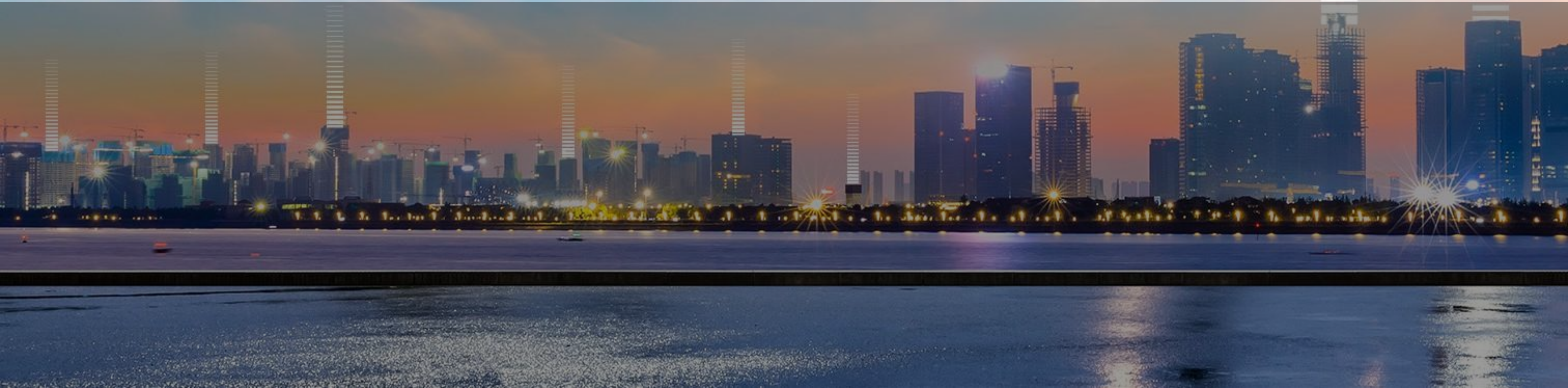


Architecture Matters

PowerProtect – Economically efficient cyber resilience

Read this eBook to learn how Dell PowerProtect's efficient architecture delivers superior scale and economics compared to scale-out platforms like Rubrik and Cohesity in an era of AI-driven data growth and rising flash costs.



Welcome to your Dell Architecture Matters guide

With the rise of AI, organizations are generating and protecting more data than ever before. At the same time, the infrastructure required to protect that data—memory, flash, power, networking, and data center capacity—is becoming more expensive and harder to scale. Many modern data protection platforms promise simple scale-out growth, but in practice these architectures often lead to infrastructure sprawl, inefficient resource utilization, and rising operational complexity as environments expand.

Overcoming these challenges requires a new architectural approach.

This eBook explores why architecture matters in modern cyber resilience. It examines how different design choices impact efficiency, scalability, and long-term economics—and shows how Dell PowerProtect’s purpose-built architecture protects more data with significantly less infrastructure than scale-out alternatives from vendors such as Rubrik and Cohesity.

SECTION 1

Architectural Efficiency

SECTION 2

Why Architecture Matters

SECTION 3

Architectural Advantages

SECTION 4

Architecture Outcomes



Architectural Efficiency

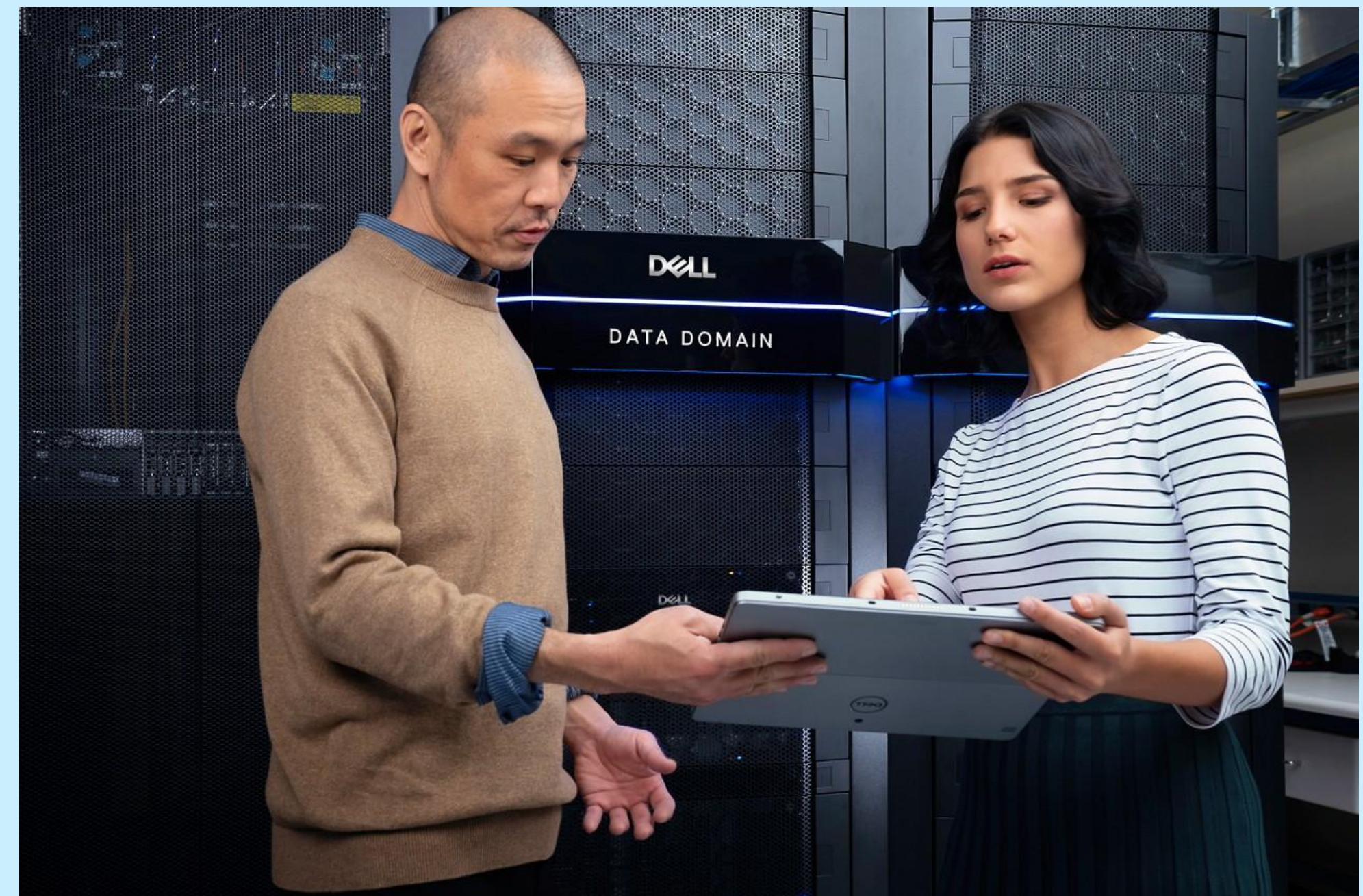


PowerProtect: CPU-Optimized Deduplication Engine

Modern cyber resilience platforms must protect exponentially growing data volumes without driving proportional increases in infrastructure. Dell PowerProtect Data Domain addresses this challenge through an architecture designed to maximize efficiency at every stage of the data protection process.

Up to 75:1 data reduction. Achieved through purpose-built inline deduplication that eliminates redundant data as it is ingested, significantly reducing the storage required to protect growing datasets. This approach minimizes memory overhead while maintaining consistent performance, enabling the architecture to scale efficiently as data grows.

By dramatically reducing the amount of data that must be stored, this architecture allows organizations to protect more data while controlling infrastructure growth, cost, and complexity, all without compromising the speed or confidence of recovery.





PowerProtect: Memory Efficient Architecture

Modern data protection architectures often rely heavily on flash and memory to scale capacity, increasing cost and infrastructure dependency over time. PowerProtect Data Domain takes a different approach—using DRAM and flash to accelerate performance rather than as the primary mechanism for growth.

Memory and flash accelerate metadata processing, caching, and data movement rather than serving as the main mechanism for capacity expansion. This design maximizes performance while minimizing dependency on expensive flash resources, enabling the system to scale efficiently as data volumes increase.



PowerProtect: Network Efficient

As data volumes grow, moving and storing large datasets can place increasing strain on network bandwidth and system resources. PowerProtect Data Domain addresses this challenge by reducing data before it ever leaves the source.

Inline deduplication identifies and eliminates redundant data before it moves across the network, significantly reducing the amount of data that must be transmitted and stored. This network-efficient approach also reduces the overall cost of storage, making it an ideal solution for businesses of all sizes.

With PowerProtect Data Domain, you can feel confident in your ability to efficiently manage large amounts of data without worrying about crippling network bandwidth or storage costs.





Why Architecture Matters



Market dynamics are changing the economics of infrastructure

Architecture matters more than ever because the market environment has changed. AI workloads are consuming a growing share of global flash and memory supply, and manufacturers are prioritizing those workloads. The resulting cost and supply pressure shows up most in SSD-heavy architectures, because they rely on the same components that AI infrastructure is competing for—and this is not a short-term cycle.

Architectures that use memory and flash more efficiently—and move less data across the network—can significantly reduce infrastructure costs and resource demands. Given these realities, how comfortable are you being architecturally dependent on flash and memory as your environment grows?



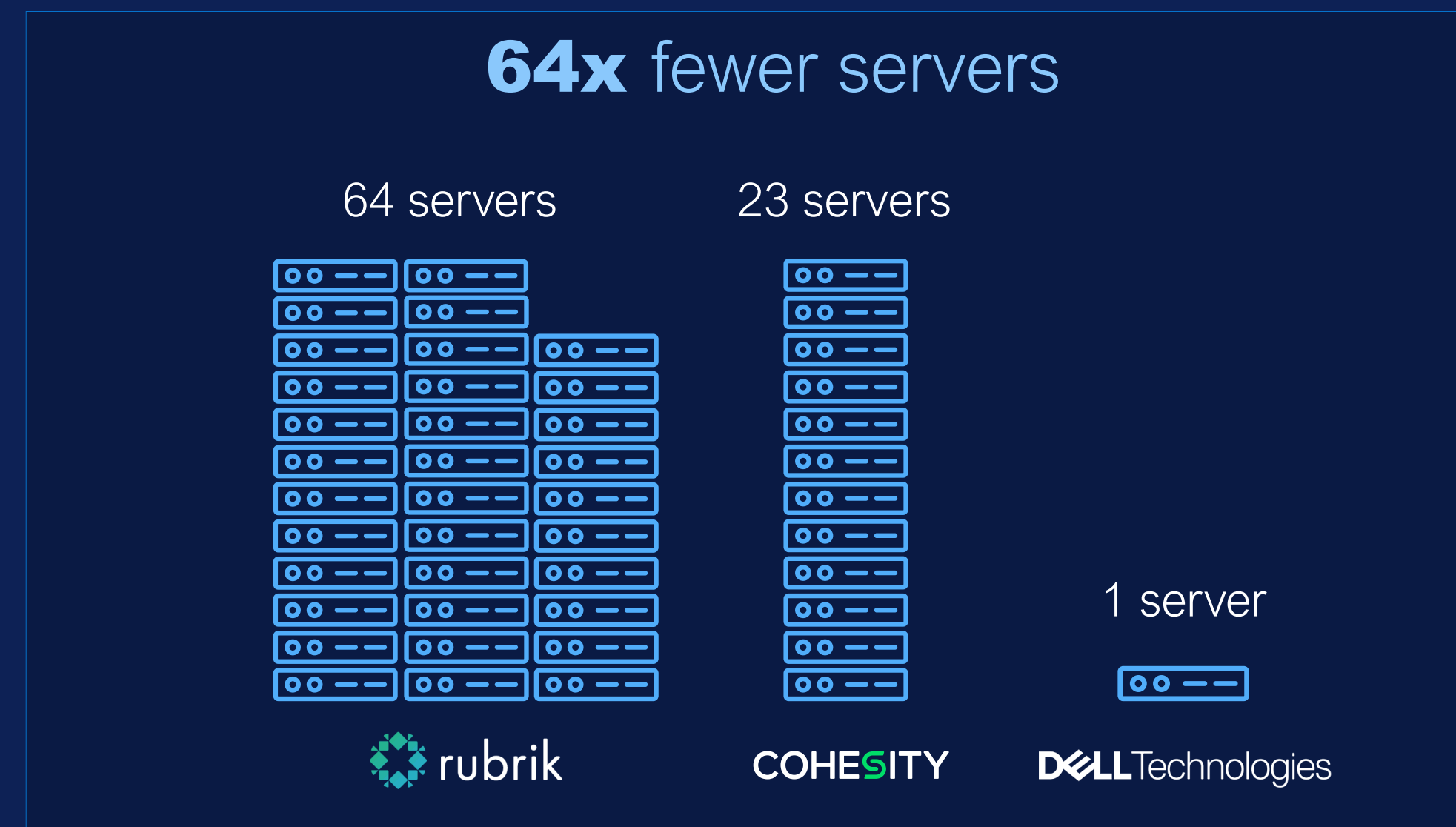
Why It Matters: IDC expects memory supply growth to be only 16% and 17% year-on-year respectively, far below demand – meaning high prices aren't going away. ¹



Architectural Advantages

To deliver a cyber resilience architecture, that protects 2.1PB of mixed workloads, including virtual machines, file systems and databases, here's what the infrastructure looks like for Dell Technologies, Rubrik and Cohesity.

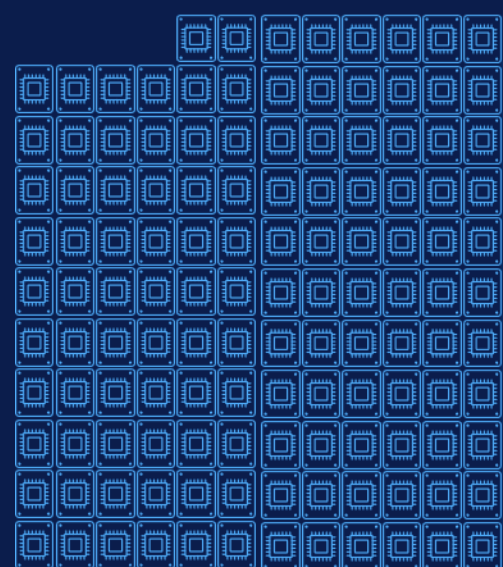
PowerProtect needs far fewer servers.²



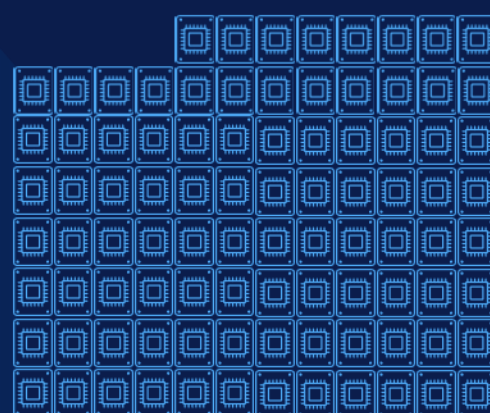


84% fewer SSDs

128 SSDs

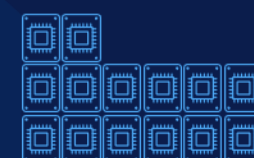


92 SSDs



COHESITY

14 SSDs



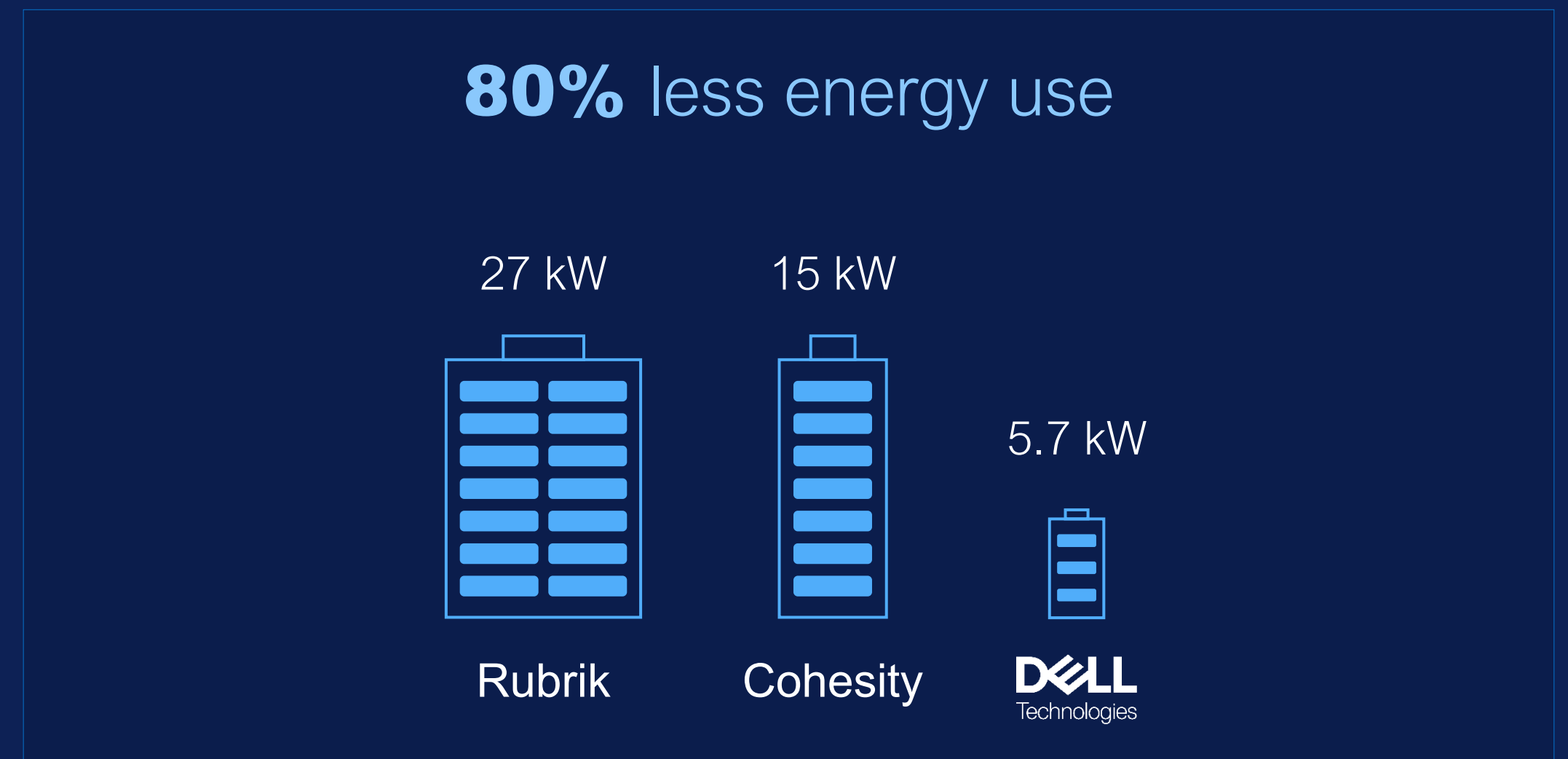
DELLTechnologies

PowerProtect needs far fewer SSDs.³

SSDs are exactly where the market price and supply pressure is. Fewer SSDs means fewer refresh events, fewer procurement issues, and fewer things to troubleshoot.

PowerProtect uses less power.⁴

Power is the downstream tax. When architectures consume more flash and compute, they also consume more power and cooling. This is one of the fastest ‘silent’ costs in a datacenter.





64x fewer ports

256
Uplinks



Rubrik

92
Uplinks



Cohesity

4
Uplinks



Dell
Technologies

PowerProtect uses less network ports.⁵

This is where customers feel operational drag: ports drive switching, optics, cabling, configuration, and change risk. When you go from 8 uplinks to 100+ uplinks, you're scaling infrastructure complexity.



Architecture Outcomes

Architecture determines cost, risk, scale

Platform design is the driver of enhanced efficiencies

The Stakes are Higher than Ever



AI is driving SSD supply & pricing pressure
Scale-out magnifies infrastructure costs

The Real Cost of Scale-Out



Cohesity and Rubrik consume
more SSDs, ports and power

PowerProtect: Scale Capacity Not
Compute



PowerProtect delivers unmatched
efficiency and simpler operations



Key Resources and Links

Key Assets

- [PowerProtect Data Manager](#)
- [PowerProtect Data Domain](#)
- [PowerProtect Cyber Recovery](#)
- [Cyber Resilience Insights](#)

Customer Stories

- [RHB Customer Story](#)
- [Emirates NBD Customer Story](#)
- [LUS Customer Story](#)
- [Palladium Customer Story](#)
- [Kauai Customer Story](#)

Whitepapers

- [Cyber Resilience for the Modern Data Center](#)
- [Omdia Economic Value Report](#)

1. IDC — DRAM and NAND supply growth outlook and sustained pricing pressure
2. Based on internal Dell analysis
3. Based on internal Dell analysis
4. Based on internal Dell analysis
5. Based on internal Dell analysis

Build Cyber Resilience with Dell PowerProtect

Discover more at Dell.com/CyberResilience

