

JANUARY 2026

# Transforming Block Storage for the Modern Era With NetApp

Simon Robinson, Principal Analyst

**Abstract:** Organizations worldwide depend on block storage as the backbone of their IT infrastructure, supporting critical applications like transactional systems, real-time analytics, and virtualized environments. However, legacy block storage approaches are struggling to keep up with the demands of modern applications due to fragmented infrastructure, performance bottlenecks, and increasing security threats. With 30 years of industry leadership, NetApp’s innovative block storage portfolio addresses these challenges with a range of solutions designed to meet any customer requirement, along with comprehensive data services, industry-leading security capabilities, and flexible consumption models. NetApp’s block storage portfolio enables enterprises to modernize their storage environments while enhancing resilience, security, and operational efficiency.

## Overview – The Problem

Organizations of all sizes and across all industries globally rely on their block storage environment as the backbone of their IT infrastructure, providing a reliable and performant data tier that supports their most demanding and critical applications, including transactional processing systems, real-time data analytics, virtualized applications, and more.

However, as the market continues to evolve rapidly, the demands placed on block storage infrastructure are also increasing. Enterprise Strategy Group (now Omdia) research shows organizations are struggling with multiple aspects of their legacy block storage environments (see Figure 1).<sup>1</sup>

Priority issues for customers include the following:

- **Fragmented storage infrastructure drives up IT complexity and costs.** As noted in Figure 1, the top system-related challenge with on-premises block storage is integrating it with the broader environment. For many, the SAN is an infrastructure “island” that is difficult or complex to manage and scale, requires specialist skills to deploy and operate, and lacks automation. Combined, these issues push up costs, increase risk through inconsistent management, and require IT staff to spend more time on low-ROI tasks.
- **Performance issues have real-world business impacts—and the definition of performance is expanding.** It’s no longer only about meeting the fundamental requirements of an application; it’s about how quickly data can be replicated, restored, and protected to maintain business continuity. Demands are rising across a growing range of workloads, including mission-critical databases, real-time and predictive analytics, AI-driven applications, and consolidated virtualized environments. For many

---

<sup>1</sup> Source: Enterprise Strategy Group (now Omdia) Complete Survey Results, [The Critical Role of Storage in Building an Enterprise AI Infrastructure](#), September 2025.

organizations, storage remains a performance bottleneck, slowing applications, delaying recovery, and ultimately impacting customer experience and operational resilience.

Additionally, block storage supports a broad spectrum of workloads, each with distinct requirements. Some demand extreme performance—low latency and high IOPS—while others prioritize cost or capacity. Increasingly, organizations also seek unified solutions that combine file and block storage to reduce infrastructure complexity. The challenge with many legacy approaches is that meeting these diverse needs often requires multiple storage systems built on different architectures, creating operational silos. Research shows IT and storage teams are under growing pressure to manage more responsibilities,<sup>2</sup> making simplicity and ease of management essential. Fragmentation at the storage layer further complicates gaining a holistic view of the environment, which, in turn, hinders efforts to build agile, integrated data pipelines—critical for emerging AI-driven use cases.

- **Growing security demands.** As the cyberthreat landscape evolves rapidly, organizations are increasingly looking to the storage environment to help. Ransomware, in particular, has emerged as a top threat. Omdia research indicates it's no longer a question of if an organization will be attacked but when. Moreover, the impacts of these attacks continue to grow. According to Omdia research, 99% of organizations that experienced a ransomware attack lost data, with 45% of victims recovering half or less of their data.<sup>3</sup> To mitigate these risks, resiliency must be built into the storage layer to enable early detection and rapid recovery, minimizing impact when an attack occurs.

A consequence of these challenges is that it further compounds IT complexity. The majority of organizations (60%) said their IT environment has become more complex over the last two years, with over one in five saying this complexity increase has been substantial.<sup>4</sup> Infrastructure complexity is highlighted as a key issue with real-world consequences; research found 68% of organizations said the complexity of their IT environment slows operations and digital initiatives.<sup>5</sup>

All of this highlights the growing need for IT organizations to deploy modern block storage solutions capable of meeting these challenges.

---

<sup>2</sup> Source: Enterprise Strategy Group (now Omdia) Research Report, [Navigating the Cloud and AI Revolution: The State of Enterprise Storage and HCI](#), March 2024.

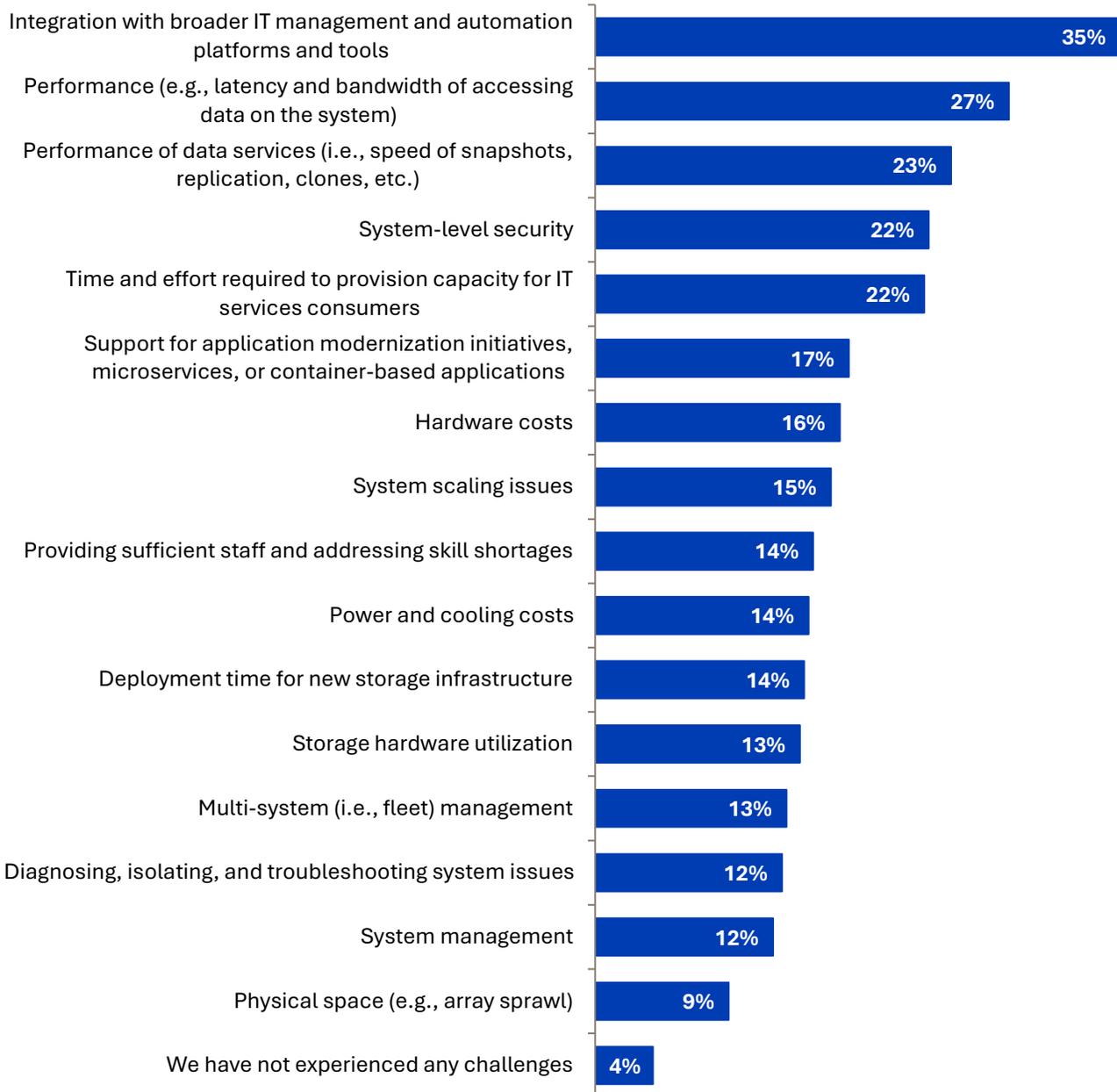
<sup>3</sup> Source: Omdia Research Report, [The Ransomware Reality: Cyber Resilience, Data Resilience, and Data Protection](#), November 2025.

<sup>4</sup> Source: Enterprise Strategy Group (now Omdia) Research Report, [2025 Technology Spending Intentions Survey](#), December 2024.

<sup>5</sup> Source: Enterprise Strategy Group (now Omdia) Research Report, [Navigating the Cloud and AI Revolution: The State of Enterprise Storage and HCI](#), March 2024.

Figure 1. Top Challenges With On-premises Block Storage Systems

**Which of the following, if any, are your organization’s top system-related challenges with on-premises block storage? (Percent of respondents, N=343, three responses accepted)**



Source: Omdia

## Differentiation Through Innovation: NetApp's Comprehensive Block Storage Portfolio

Over the last 30 years, NetApp has established itself as a leader in the enterprise storage market, with thousands of customers, across every industry globally, trusting the company's storage systems to run their most critical applications and workloads.

Though NetApp is perhaps best known as the company that invented NAS, it has evolved far beyond its origins. NetApp's strategy centers on delivering the NetApp data platform, which enables customers to build an intelligent data infrastructure, an end-to-end integrated portfolio that modernizes environments and reduces complexity across the board. To that end, NetApp has invested considerably over the years in building a broad portfolio of block-based storage capabilities, including:

- High-performance, all-flash SAN solutions with ASA, purpose-built for mission-critical block workloads requiring ultra-low latency and high IOPS.
- Unified storage platforms such as AFF for performance-intensive workloads and FAS for general-purpose workloads, combining block, file, and object capabilities to streamline management.
- Cloud storage capabilities, offered across all major hyperscale clouds, including block storage services.
- A comprehensive suite of enterprise-grade data services for protection, recovery, business continuity, and intelligent data management, ensuring resilience and operational agility.

### [NetApp's Block Portfolio Differentiation](#)

NetApp's commitment to groundbreaking, block storage innovation that enables customers to meet modern requirements shows no sign of slowing. While many storage providers offer a wide range of capabilities to suit different workload requirements, NetApp approaches the block storage market with a unique philosophy that drives continual innovation across the entire portfolio. Key aspects of the company's differentiation include:

- **Unrivaled data security.** NetApp ONTAP delivers industry-leading security and resiliency, embedding protection at every layer of the storage stack. With capabilities such as immutable snapshots, AI-driven anomaly detection, and integrated ransomware protection, ONTAP enables early threat identification and rapid recovery to minimize business impact. Its zero-trust architecture, end-to-end encryption, and compliance-ready features ensure data remains secure whether on premises, in the cloud, or across hybrid environments. By combining advanced security with enterprise-grade performance and simplicity, ONTAP empowers IT teams to safeguard critical workloads without adding complexity, leading NetApp to describe it as the most secure storage solution on the planet.
- **Comprehensive, consistent data management.** NetApp's block-optimized ASA and unified AFF systems are powered by the comprehensive ONTAP operating system, delivering scalability, consistent performance, rich data services, and application-consistent recovery that keep enterprises of all sizes running smoothly. Comprehensive support is offered across a range of key databases like Oracle, Microsoft SQL Server, and SAP. Smaller organizations appreciate simplicity of management and integrated capabilities such as backup-as-a-service, which improve operational efficiency. Integrated, state-of-the-art observability capabilities delivered via Data Infrastructure Insights provide visibility and insights across SAN infrastructure, enabling performance optimization and quick troubleshooting.

- **Block storage your way.** NetApp’s strategic approach to block storage gives customers the flexibility to run their critical block workloads anywhere, on premises in a dedicated SAN; within a unified, multi-protocol environment; or even in the public cloud. Powered by ONTAP, customers benefit from a consistent approach across all deployment models with tools and capabilities they are familiar with. Customers also have the flexibility to purchase NetApp block storage through NetApp Keystone Storage-as-a-Service (STaaS). This consumption-based subscription model enables customers to transform storage costs into predictable operational expenses, delivering greater financial control and cloud-like agility with pay-as-you-go pricing. Keystone simplifies hybrid cloud management, offers on-demand scalability, and reduces IT overhead, empowering customers to modernize their infrastructure without the complexity of traditional ownership.

## Conclusion

Block storage remains a critical and foundational component of the modern IT stack, but as enterprise demands increase and expand, so must the capabilities of the underlying infrastructure.

NetApp’s response to this challenge was the development of one of the most comprehensive block storage portfolios in the industry, designed to meet the full spectrum of enterprise requirements—from high-performance, low-latency workloads to cost-optimized capacity tiers and unified environments that support block, file, and object.

This portfolio offers unmatched flexibility, enabling customers to deploy block storage on dedicated SAN systems, within converged infrastructures, or seamlessly in the cloud—all with a consistent management and security model.

What truly sets NetApp apart is its relentless innovation: advanced data services such as application-consistent snapshots and replication, integrated ransomware protection, AI-driven observability, and automation capabilities that simplify operations while enhancing resiliency. Customers also have the flexibility to purchase NetApp block storage through NetApp Keystone STaaS. This consumption-based subscription model enables customers to transform storage costs into predictable operational expenses, delivering greater financial control and cloud-like agility with pay-as-you-go pricing. Keystone simplifies hybrid cloud management, offers on-demand scalability, and reduces IT overhead, empowering customers to modernize their infrastructure without the complexity of traditional ownership.

NetApp empowers organizations to modernize their storage strategy without sacrificing performance, security, or simplicity.

Join NetApp’s [SAN acceleration workshops](#) and get actionable recommendations for modernizing your SAN workloads.

#### Copyright notice and disclaimer

The Omdia research, data, and information referenced herein (the “Omdia Materials”) are the copyrighted property of TechTarget, Inc. and its subsidiaries or affiliates (together “Informa TechTarget”) or its third-party data providers and represent data, research, opinions, or viewpoints published by Informa TechTarget and are not representations of fact.

The Omdia Materials reflect information and opinions from the original publication date and not from the date of this document. The information and opinions expressed in the Omdia Materials are subject to change without notice, and Informa TechTarget does not have any duty or responsibility to update the Omdia Materials or this publication as a result.

Omdia Materials are delivered on an “as-is” and “as-available” basis. No representation or warranty, express or implied, is made as to the fairness, accuracy, completeness, or correctness of the information, opinions, and conclusions contained in Omdia Materials.

To the maximum extent permitted by law, Informa TechTarget and its affiliates, officers, directors, employees, agents, and third-party data providers disclaim any liability (including, without limitation, any liability arising from fault or negligence) as to the accuracy or completeness or use of the Omdia Materials. Informa TechTarget will not, under any circumstance whatsoever, be liable for any trading, investment, commercial, or other decisions based on or made in reliance of the Omdia Materials.

**Get in touch:** [www.omdia.com](http://www.omdia.com) [askananalyst@omdia.com](mailto:askananalyst@omdia.com)

