



INSIGHTS | **TECH BRIEF**

The Hidden Cost of Coupled Storage: Why Disaggregated Architecture Is Winning

Moving Beyond the Limitations of Traditional Scale-Out Storage

Organizations are generating and retaining more data than ever before. IT leaders are simultaneously being asked to support analytics initiatives, strengthen cyber resilience, protect critical data, and prepare infrastructure for AI-driven workloads, all while controlling costs and improving how teams get work done.

Balancing those priorities has become increasingly difficult. Infrastructure teams need storage environments that can accommodate growing workloads without adding unnecessary overhead or expense.

Traditional storage platforms were largely designed for structured data environments covering databases, virtual machines, and other business-critical applications. While those workloads remain essential, unstructured data from analytics, machine learning, and AI initiatives places entirely new demands on infrastructure. Data volumes expand, performance expectations shift, and storage environments often need to scale in ways that legacy architectures were never built to support.

Many IT teams are now discovering real limitations in traditional scale-out architectures, particularly when storage capacity and performance needs grow at different rates.

Why Traditional Scale-Out Architectures Increase Costs

Most scale-out architectures rely on a straightforward expansion model: when additional resources are required, another node is added to the environment.

Each node typically includes both storage capacity and performance resources, regardless of which resource is actually needed. That fixed relationship between performance and capacity creates inefficiencies as environments grow. Infrastructure teams often end up purchasing compute, storage, and networking resources they do not immediately need, simply to address a single requirement in one area.

31%

lower storage costs for organizations deploying HPE Alletra Storage MP B10000.¹



HPE

The consequences extend beyond acquisition costs:

- Additional nodes consume valuable rack space
- Power and cooling requirements increase
- More systems must be monitored and maintained
- Operating expenses and capital planning are directly affected
- The challenge is especially visible in analytics, machine learning, and AI environments, where data growth and performance requirements rarely evolve together:
- A growing data lake may require significantly more capacity without any additional performance demand
- An analytics initiative may demand faster processing while storage consumption stays relatively flat
- In either scenario, tightly coupled architectures produce unnecessary spending and underutilized resources

What Is Disaggregated Storage?

Disaggregated storage addresses this challenge by separating performance resources from storage capacity, allowing each to scale independently based on workload requirements.

Rather than purchasing fixed-ratio nodes that bundle compute and storage together, IT teams can add only the resources needed to support shifting business priorities. That creates greater control and helps align infrastructure investments with actual utilization.

What separates HPE's approach from others entering this space is that disaggregation was not added as an afterthought. HPE standardized on this architecture deliberately, recognizing that legacy storage designs could not support the scale that modern AI factory environments demand. Some platforms evolved from tightly coupled storage architectures and have introduced disaggregation over time. HPE Alletra Storage MP was designed around a disaggregated model from inception, allowing performance and capacity resources to scale independently. That distinction matters when evaluating platforms that will need to scale alongside AI workloads for years to come.

It is also worth noting that for IT leaders who have not evaluated HPE storage recently, this is a fundamentally different organization than it was even a few years ago. The current platform reflects years of deliberate reinvention built around one central goal: delivering a single common storage platform capable of supporting both operational IT environments and emerging AI workloads under one unified operating environment.

HPE Alletra Storage MP10000, built on the HPE Alletra Storage MP architecture, was designed around this disaggregated model from the outset. Independent pools of performance and capacity resources communicate through high-speed networking, making it possible to expand independently as priorities shift. For many enterprises, the result is a more adaptable storage environment that supports growth without adding unnecessary cost or overhead.

Building a More Efficient Infrastructure

Infrastructure expansion is no longer driven by capacity alone. Resource utilization, power consumption, cooling demand, and long-term growth potential have become equally important considerations.

Scaling storage and performance resources independently gives IT teams greater control over how infrastructure investments are made. Expansion efforts align with actual workload demands rather than predetermined hardware configurations.

Key efficiency benefits include:

- Lower rack space requirements
- Decreased power and cooling consumption
- Streamlined day-to-day infrastructure management
- Reduced administrative overhead at scale

HPE reports that customers using the Alletra Storage MP architecture can realize up to 40% lower costs through more efficient scaling and reduced overprovisioning. Additional gains come from data deduplication and compression, which reduce the physical storage required to support growing datasets and help postpone future expansion projects.

Why Storage Now Influences Business Performance

Enterprise storage is being asked to support a broader range of workloads than most legacy platforms were originally designed to handle.

Transactional databases, virtual machines, and core business applications remain essential. At the same time, unstructured data from analytics pipelines, machine learning models, and AI initiatives is increasingly creating a fundamentally different set of infrastructure demands, ones that require fast, reliable access to large and often unpredictable volumes of information.

Storage plays a much larger role in overall business performance than it did even five years ago. It directly affects how quickly teams can:

- Access and prepare datasets
- Support analytics pipelines
- Scale AI-driven initiatives
- Retain training data, media assets, and historical information

Storage architectures that allow resources to scale according to actual demand give IT teams the ability to support these evolving workloads while keeping infrastructure investments aligned with business objectives. HPE Alletra Storage MP was designed with exactly these workload demands in mind, providing a platform built to meet both today's requirements and tomorrow's AI-driven initiatives.

Cyber Resilience Has Become a Storage Requirement

Ransomware attacks and other cyber threats have raised the stakes around rapid recovery, data integrity, and business continuity. Many legacy platforms were not originally designed with security as a core requirement, which often means security capabilities get added on top of existing architecture rather than built into it. Purpose-built platforms are better positioned to embed these capabilities natively, making resilience part of the foundation rather than something layered on afterward.

Common evaluation criteria include:

- Real-time threat detection
- Automated response workflows
- Immutable recovery points
- Secure recovery processes
- Integration with security operations platforms

How quickly critical applications, data, and services can be restored has a direct bearing on downtime, operational disruption, and recovery costs. According to ITIC's 2024 Hourly Cost of Downtime Survey, 97% of large enterprises report that a single hour of downtime costs more than \$100,000, while 41% report hourly downtime costs between \$1 million and more than \$5 million.²

HPE has integrated cyber resilience capabilities directly into the Alletra Storage MP platform, including:

- Ransomware detection
- Automated response workflows
- Immutable recovery capabilities
- SIEM/XDR integration

Take Work Out of Storage Management

Adding storage resources is only part of the challenge. Infrastructure teams must manage those resources across applications, business units, and locations.

As environments grow, day-to-day administration becomes more demanding. Identifying resource constraints, planning for expansion, and balancing workload demands requires visibility across multiple systems and tools.

HPE GreenLake and the Data Services Cloud Console address this directly by providing:

- Centralized management across hybrid environments
- AI-driven operational insights
- Consolidated visibility into utilization trends
- Early identification of potential bottlenecks

According to Enterprise Strategy Group, organizations deploying HPE Alletra Storage MP B10000 reported a 43% reduction in storage administration effort, freeing IT staff to focus on strategic initiatives rather than routine management tasks.³



What the Numbers Actually Show

The same research points to measurable improvements across storage efficiency, administrative workload, and overall infrastructure costs:

- Up to 31% lower storage costs
- Up to 30% lower total cost of ownership
- 30% reduction in data footprint
- 43% reduction in storage administration effort

How WEI Helps Organizations Modernize Storage for AI and Beyond

Storage modernization decisions carry implications that go well beyond capacity planning. Architecture, cyber resilience, administrative efficiency, and AI readiness all shape long-term infrastructure outcomes.

For enterprises pursuing analytics, AI, hybrid cloud, or broader modernization initiatives, understanding the limitations of the current environment is often the first step toward building a more effective storage strategy. That conversation is also an opportunity to reassess assumptions about vendors and platforms that may not reflect what is available today.

As an HPE Triple Platinum Plus Partner, the highest tier in HPE's partner program, WEI brings a level of technical depth, early access to HPE solutions, and implementation expertise that few organizations can match. Customers working with WEI benefit not just from HPE's platform, but from a partner with the deepest possible knowledge of how to deploy and optimize it.

Sources:

1. Enterprise Strategy Group, Analyzing the Economic Impact of HPE Alletra Storage MP B10000, 2024.
2. Hewlett Packard Enterprise, HPE Alletra Storage MP B10000, 2025.
3. Information Technology Intelligence Consulting (ITIC), 2024 Hourly Cost of Downtime Survey, 2024.

About WEI

WEI is an innovative, full service, customer centric IT solutions provider.

Why WEI? Because we care. We go further.

WEI is an expert in business technology improvement, helping clients optimize their technology environments and work efficiently. WEI works with clients to understand goals, integrate strategy with technology solutions, and leverage their current IT environment into one company-wide model to increase utilization and efficiencies around their unique business processes.

Talk to WEI Today

The decision to modernize storage is also a decision about how your organization will compete over the next several years. Infrastructure that cannot scale efficiently, recover quickly, or support AI-driven workloads becomes a constraint rather than an asset.

Disaggregated storage architectures such as HPE Alletra Storage MP provide a foundation for moving forward, allowing performance and capacity resources to scale independently while reducing administrative burden and strengthening recovery readiness.

WEI partners with organizations to evaluate their current environment and develop a practical modernization roadmap aligned to long-term business goals.

Contact WEI to learn how HPE Alletra Storage MP B10000 can support a more efficient, scalable, and cyber-resilient storage strategy.