



Solution Brief

NetApp E-Series Storage with IBM Spectrum Scale

Take your business to the next level with an HPC solution that helps you gain deeper data insights at a lower TCO

Key Benefits

Keep Pace with Your Extreme Workloads

- Eliminate bottlenecks with a parallel file system that spreads the load across all storage nodes.
- Accelerate performance with NetApp® E-Series storage that delivers up to 2M IOPS and ultra-low latency.
- Reduce downtime by relying on E-Series storage, which features 99.9999% availability.

Simplify Management at Scale

- Leverage a single management console to gain insight into all your systems across multiple storage environments and data centers.
- Take the pressure off your IT staff with automation and dynamic configuration.

Future-Proof Your Investment

- Quickly respond to changing workload demands and exponential data growth with a building-block architecture that enables you to seamlessly scale performance and capacity as needed.

Maximize Cost Efficiency

- Lower storage costs with a data-aware intelligence engine that automatically tiers storage pools based on performance, locality, or cost.
- Reduce operating costs with high-density drives and price/performance-optimized storage building blocks.

The Challenge

The Internet of Things, 3-D images, and artificial intelligence offer organizations massive amounts of data with which they can fuel insight and innovation. Companies that can deliver insights and innovations quickly are most likely to become leaders in their industry. That level of success requires a high-performance computing (HPC) infrastructure with an underlying storage architecture that is fast, reliable, and easily scalable—all while delivering cost benefits and operational efficiencies.

The Solution

With IBM Spectrum Scale and NetApp E-Series storage, your HPC workloads won't miss a beat. This proven, integrated solution makes it easy to manage data at scale to help you stay a step ahead of the competition.

IBM Spectrum Scale is an enterprise-grade parallel file system that spreads the workload across all storage nodes in a cluster, resulting in accelerated performance and better data access. It offers the distinctive ability to perform archive and analytics in place. Combined with high-performance NetApp E-Series storage, IBM Spectrum Scale delivers industry-leading performance, nonstop availability, and seamless scalability—all in an easy-to-manage, cost-optimized building block architecture.

Keep Pace with Your Extreme Workloads

In the highly competitive world of business, speed is everything. However, even the fastest supercomputer can't meet expectations if it doesn't have equally fast storage to support it.

NetApp E-Series storage with IBM Spectrum Scale gives you consistent, near-real-time access to your data. IBM Spectrum Scale transparently spreads your data across multiple servers and their back-end storage to prevent bottlenecks and to enable continuous high performance. E-Series storage systems can support any number of workloads simultaneously and can deliver up to 2 million random read IOPS and 24GBps sustained (maximum burst) write bandwidth per scalable building block. Optimized for both flash and spinning media, E-Series systems include built-in technology that monitors your workloads and automatically adjusts configurations to maximize performance. With the 99.9999% reliability of E-Series systems, your HPC environment will be available whenever and wherever you need it.

Simplify Management at Scale

HPC environments are inherently complex. In the largest environments, hundreds or even thousands of systems run in parallel to complete millions of jobs per day. Managing all of these compute nodes along with the network and storage components can be a daunting task. In an environment where complexity rules, simplicity is crucial.

Unlike other file systems that require multiple platforms and models to scale, the NetApp HPC and IBM solution is easy to install and support. The modular design enables you to nondisruptively add performance and capacity without complex deployments or migrations. On-the-fly replication lets you dynamically configure new systems for faster deployment. Tools allow you to automate common tasks for easier management. Integrated management tools with a single management console make it easy to gain insight into all your systems across multiple storage environments and data centers.

Future-Proof Your Investment

To make sure that the HPC environment you build today can handle tomorrow's requirements, you need a solution that can respond quickly to data growth.

Together, NetApp and IBM deliver an agile HPC solution that scales easily and seamlessly. The flexibility and scalability of the solution enable it to support and adapt to evolving workloads, making it a strong foundation for future storage requirements. Modular storage building blocks composed of E-Series hybrid flash arrays give you a granular, building-block approach to growth. By increasing the number of storage building blocks, you can scale up the performance and capacity of the file system, allowing it to seamlessly handle tens of thousands of clients, billions of files, and yottabytes of data.

Maximize Cost Efficiency

When you're considering the cost of an HPC solution, your initial investment in hardware and software is just the beginning. To accurately assess cost, you must look at the TCO for the solution. So in addition to the deployment costs, you must also consider the costs of operating the solution after you have deployed it.

With the NetApp and IBM solution, you get enterprise storage in price/performance-optimized building blocks that are built on the E-Series storage architecture and that make small to large configurations cost efficient. The data-aware intelligence engine in IBM Spectrum Scale automatically tiers storage pools based on performance, locality, or cost, on the premises and in the cloud.

NetApp E-Series storage leverages industry-leading density per megabyte, which lowers your power, cooling, and support costs. You also get the flexibility to support 100Gb InfiniBand (iSCSI Extensions for RDMA and SCSI RDMA Protocol), 100Gb NVMe over IB, 100Gb NVMe over RoCE, 32Gb NVMe over FC, 32Gb FC, 25Gb iSCSI, and 12Gb SAS connectivity. All these benefits add up to significantly lower TCO.

About IBM

Innovative technology, open standards, excellent performance, and a broad portfolio of proven storage software and hardware solutions offerings—all backed by recognized industry leadership—are just a few of the reasons to consider storage solutions from IBM. In addition, IBM delivers some of the best storage products, technologies, services and solutions in the industry without the complexity of dealing with different hardware and software vendors. To learn more about IBM Spectrum Scale, visit ibm.com/us-en/marketplace/scale-out-file-and-object-storage.

About NetApp

NetApp is the data authority for hybrid cloud. We provide a full range of hybrid cloud data services that simplify management of applications and data across cloud and on-premises environments to accelerate digital transformation. Together with our partners, we empower global organizations to unleash the full potential of their data to expand customer touchpoints, foster greater innovation and optimize their operations. For more information, visit www.netapp.com. #DataDriven