

NVMe-oF STORAGE FOR



Features

Benefits

- IBM Spectrum Scale™ compatible
- Consolidate racks into a single 4U system
- Petabyte scalability, high-performance, *and* low-latency
- Hyperparallel NVMe architecture accelerates video operations
- Tier-0 flash storage with high throughput boosts Spectrum Scale's policy-based tiering
- Consistent video playback
- Multiple 4K/8K streams
- Global collaboration with faster video editing
- Enhances media asset integrity and security
- Continuous operations
- Transform data economics and avoid vendor-lock in



Accelerate media and entertainment projects

Save Space, Time and Money

Media and entertainment (M&E) organizations need to produce videos for a variety of different formats and delivery mediums. Developing and delivering content that reaches audiences whenever and wherever they are has increased in importance. Workflows grow in complexity daily and time-to-market windows continue to shrink. When the Pavilion NVMe-oF storage array is combined with IBM Spectrum Scale, users can tier their infrastructure to meet the needs of the project.

M&E projects need high performance and low latency. Traditionally, this was achieved by using storage arrays and disks (HDDs or SSDs) from multiple vendors. The result was multiple storage silos with up to 75% excess capacity for the various media assets, increasing production cost. Pavilion uses NVMe-oF to harness the power of NVMe storage, to consolidate storage silos, reducing copy and rendering time. When combined with Spectrum Scale the result is that multiple editors work at full productivity, reducing costs and completion time, enabling employees to move on to their next project.

The last thing an M&E production house wants is to lose content, so the Pavilion NVMe-oF storage array is fault-tolerant with built-in high availability and encryption. It also includes instantaneous zero-footprint snapshots to make instant copies of a project. Move this copy along the production workflow without impacting network traffic generated by post-production workers.

The Pavilion Hyperparallel Flash Array with GPFS

The Pavilion NVMe-oF array delivers 120 GB/s throughput, 40µs of latency, and 1.1 PB of storage. Its hyperparallel architecture unlocks the power of NVMe to enhance the performance of latency-sensitive video workflows that replaces racks of storage with a compact 4U form factor.

IBM named it Spectrum Scale for a reason. The Pavilion NVMe-oF storage array lets Spectrum Scale...well, scale. Until now, the only way to unlock the low latency and parallelism of NVMe with IBM Spectrum Scale was to use an all-flash array, which is typically limited to a pair of active-active controllers, or to use software-defined storage, which adds processing overhead and management challenges to every server. The combination of Pavilion and Spectrum Scale streamlines demanding video production workflows and improves productivity by creating a shared repository that supports flexible, high-performance streaming, even with high-bit-rate media content.

The Pavilion array requires no proprietary software to be installed on a server farm and uses standard Ethernet, InfiniBand, and NVMe-oF drivers, freeing up host resources for processing and eliminating deployment complexity.

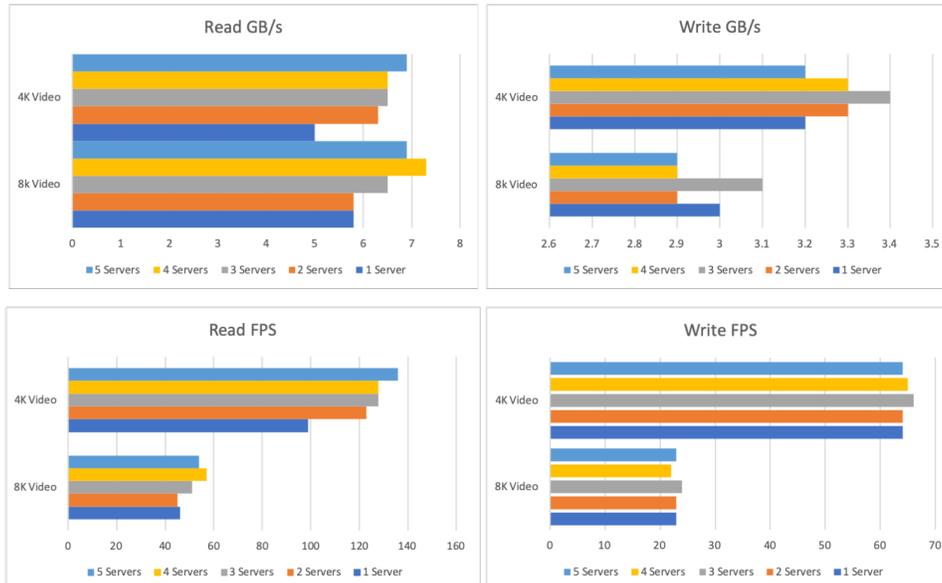
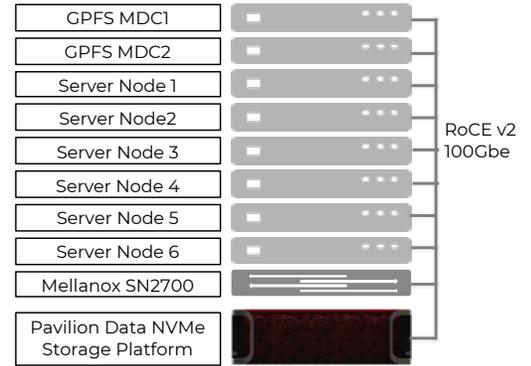
Proven High-Performance Media

Pavilion tested media frames per second and throughput using the IBM Spectrum Scale V5.0 (5.0.1.0) with two meta-data controllers in high-availability mode using six server nodes with four 4K/8K streams per server node.

To test performance, the Frametest utility was used, which simulates reads and writes. It was set to generate 10,000 frames at 4K and 8K resolutions. Frametest emulates raw still frames or frames generated by post-processing or 3D rendering software.

Through these tests, the Pavilion NVMe-oF storage array with IBM Spectrum Scale delivered more frames and had higher throughput than any vendor's published results. During read testing, an I/O pattern similar to that of video playback, the Pavilion NVMe-oF storage array with IBM Spectrum Scale produced 124 4K and 327 8K frames per second with 29.6 GB/sec. 4K frame and 27.8 GB/sec. 8K frame throughput with 24 4K and 8K streams on the six servers. During write testing, an I/O pattern similar to that of video capture or ingestion, the combined solution delivered 137 4K and 386 8K frames per second with 25.9 GB/sec. 4K frame and 23 GB/sec. 8K frame throughput with 24 4K/8K streams on the six servers.

GPFS Layout



Optimize transcode, versions, and delivery

Scale-out multi-threaded transcoding operations. Combining the Pavilion NVMe-oF storage array with Spectrum Scale results in transcoding operations taking place in parallel, turbo-charges operations and significantly increasing billable hours per server. Perform translations and closed-caption assets independent of the original uncompressed asset without moving large files across the network and impacting production workers.

Today's high-resolution uncompressed media overwhelms legacy fibre channel SANs and scale-out NAS storage. Combine the Pavilion NVMe-oF storage array with IBM Spectrum Scale and get ultra-high performance with ultra-low latency that future-proofs storage and assures a consistent, low-cost growth path as 3D, VFX, and AR/VR requirements expand. The combined solution provides plenty of space to edit, translate and stream compressed and uncompressed media assets large and small from the same array.

Pavilion Data is defining the future of disaggregated NVMe-oF. Our system is an ideal part of a complete Media and Entertainment workflow. Our expertise is in simplifying and optimizing NVMe to make the impossible, possible. When storage is business-critical, there's no substitute for the guaranteed performance, functionality, high availability, and professional software support of the Pavilion Data NVMe-oF.