

Pavilion NVMe-oF Storage for Spectrum Scale

Accelerate Media and Entertainment Projects

Save Space, Time and Money with No-Compromises

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 Hyperparallel Flash Array (HFA) is combined with IBM Spectrum Scale, users can tier their infrastructure to meet the needs of their 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. The Pavilion HFA harnesses 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 HFA 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.

Meet evolving enterprise storage needs with Pavilion's all-inclusive, cloud-like subscription storage model. The user chooses the NVMe drives they need based on the performance, capacity, and endurance, avoiding vendor lock-in. Improve purchasing power by repurposing existing drives, or sourcing drives from a preferred manufacturer, or Pavilion instead of paying up to four times the \$/GB to a vendor.

The Pavilion HFA with Spectrum Scale

The Pavilion HFA delivers 90 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 HFA 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.



IBM
Spectrum
Scale

Benefits

- IBM Spectrum Scale™ compatible
- Doubles compute density
- Hyperparallel NVMe architecture increases video operations
- Petabyte scalability, high-performance, and low-latency accelerates workflows
- 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
- Transforms data economics and avoids vendor-lock in high-performance streaming, even with high-bit-rate media content

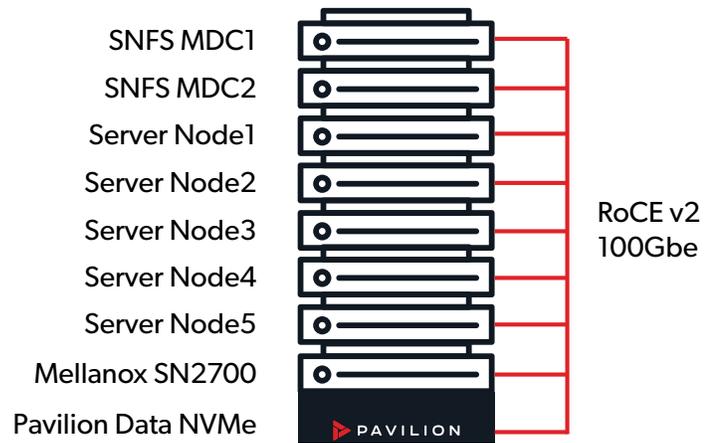


The Pavilion array requires no proprietary software to be installed on a server farm and uses standard Ethernet, InfiniBand, and NVMe-oF drivers, freeing up host resources for processing and eliminating deployment complexity.

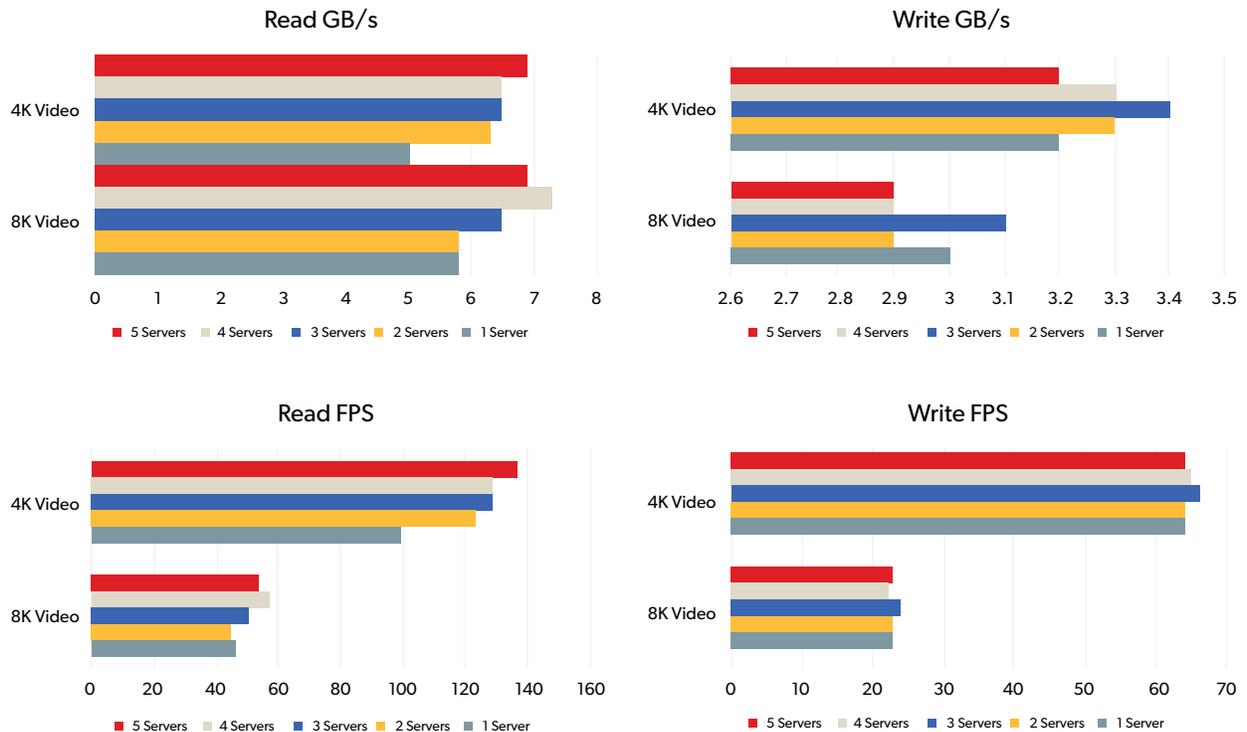
Proven High-Performance Media Performance

Pavilion tested media frames per second and throughput using the IBM Spectrum Scale (previously known as GPFS) V5.0 (5.0.1.0) with two meta-data controllers in high-availability mode and 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 HFA with IBM Spectrum Scale delivered more frames and higher throughput than any vendor's published results. During read testing, an I/O pattern similar to that of video playback, the combined solution produced 124 4K and 327 8K frames per second with 29.6 GB/sec. of 4K frames and 27.8 GB/sec. of 8K frames of 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.



Optimize Transcode, Versions and Delivery

Scale-out multi-threaded transcoding operations. Combining the Pavilion HFA with Spectrum Scale results in transcoding operations taking place in parallel, turbocharged operations, and significantly increased 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 HFA 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.

Find Out More

Pavilion is defining the future of composable disaggregated NVMe-oF. Our system is an ideal part of a complete 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 HFA.