

# Hyperparallel Flash Storage for Classified Agencies

## Real-time performance at scale

### Get unmatched storage performance and density without the cost and complexity

Facial recognition, event correlation, and high-fidelity surveillance demand storage performance that simply cannot be delivered by traditional SAN or NAS storage. Artificial intelligence and big data analytics are game-changing technologies, yet achieving real-time insights across petabytes of images, video, text, and social media feeds in a shared file system is often described as impossible.

Pavilion redefines performance at scale with seamless integration into architectures like IBM's Spectrum Scale™ by leveraging NVMe-oF into a system designed from the ground up for NVMe. Previously, attempting to use NVMe technology for anything other than metadata access was unheard of. However, data processing and storage architectures have evolved rapidly, and Pavilion is at the forefront of classified agency transformation.

Traditional SAN or NAS architectures based on monolithic architectures have reached their limits for big data and fast data analytics. In fact, it is rare to find leading internet and consumer-facing for-profit firms using anything except modern, scale-out storage solutions for massively parallel applications. Not only do the applications and systems not scale for correlation of images, videos, and structured queries, the sheer throughput requirements cannot be delivered by shared storage systems.

Pavilion's technology and partnership with leading classified solutions providers offer a better way. The Hyperparallel Flash Array (HFA) offers the consistent, predictable, high performance and ultra-low latency that organizations need for modern, rack-scale applications.

## Unprecedented High Performance, Low Latency, and Density

Pavilion is leading the way in government transformation. Whether it is the logical evolution of a global file system to improve storage utilization, shatter backup windows and achieve compliance, or a wholesale replacement of your infrastructure with Spectrum Scale, Apache HDFS with Spark™, Lustre, or other HPC solution, the HFA provides unprecedented performance, availability and management features to future-proof your storage infrastructure as you bring insights to your big data analytics.

Pavilion has the industry's highest performance and lowest latency storage array. The HFA is capable of 120GB/s throughput and offers latency as low as 25µs from a host, all in a compact 4RU solution. To achieve results similar to what the HFA does in just 4 rack units of space, competing alternatives consume as much as 80 RU, or two full racks, and as much as 14TB of DRAM at 10 times the acquisition cost.

## Benefits

- Consolidate racks into a single 4U system
- Petabyte scalability, high performance, and low-latency
- iSCSI, NFS, and S3 protocols allow for easy migration from legacy systems to modern, scale-out applications
- 2X increase compute density
- Operate with nearline storage as a complete solution to existing backup and archive systems with 67% faster indexing
- Enhance asset integrity and security
- Optimize the performance of mixed file sizes
- Advanced security and always-on encryption

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## The Performance of DAS with the Benefits of Fabric Attach

The Pavilion HFA provides high performance and low latency to all applications.

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### Scalable & Flexible



The Pavilion HFA provides up to 1.1 Petabytes and simultaneously uses the NVMe/RDMA(Ethernet, IB), NVMe/TCP, iSCSI, NFS or S3 interfaces to accelerate applications.

Pavilion reduces the amount of raw flash storage deployed for applications by up to 3X, and is 50% less expensive than DAS in terms of \$/GB/sec, the Pavilion HFA is the one platform for all your environments.

Start with as few 4 controllers and linearly scale performance up to as many as 20 controllers with 40 Ethernet or InfiniBand fabric connections fully non-blocking at 100Gb/s. Independently scale capacity beginning with 18 NVMe SSDs and expand to 72 drives for over a PB of capacity in a 4RU solution.

### Safe & Secure



Agencies demand no single points of failure, standards-based hardware and protocols as well as redundancy throughout a storage array. The Pavilion HFA features a completely fault tolerant design from controllers, power supplies, fans, management controllers, even dual PCIe switching fabrics. Using standard distribution NVMe-oF operating system drivers, multi-pathing to our 20 controllers assures fail-over in the event a network link or storage controller is unavailable.

Protect your data with Pavilion RAID-6 and “Swarm Recovery”, which rebuilds a failed SSD twelve-times quicker than a DAS or an AFA. The Pavilion Data Assurance feature works with the RAID feature to provide self-healing bit-rot support for data, assuring every process gets uncorrupted data. Its zero-footprint snapshot with its consistency group features speed backup and disaster recovery operations.

### Enterprise Strength & Flexible Management



Get 24/7 proactive support, end-to-end data integrity, a modular chassis, and redundancy throughout the storage array to protect your trading applications as the infrastructure grows. All Pavilion HFA features are included at no extra charge, such as thin provisioning, snapshots, clones, data at rest encryption and more.

Use NVMe SSDs for all trading systems and boost operations. Access the Pavilion HFA with its Web GUI or integrate with various management frameworks including: vCenter, Kubernetes, RESTful API, OpenStack, DTMF/Redfish, Swordfish, and more.

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## About Pavilion

Pavilion Data Systems is the leader in the third wave of storage, delivering unmatched performance, density, and ultra-low latency at scale, without the cost and complexity of traditional storage. Pavilion enables global customers to shatter expectations today, tomorrow, and beyond by deploying storage solutions that scale linearly utilizing NVMe and NVMe-oF technology. Visit [www.pavilion.io](http://www.pavilion.io) or follow the company twitter at <https://twitter.com/PavilionData>