

Benefits

- Unifies block, file, and object storage
- Ideal platform for High Performance Computing
- 5X faster and 2X smaller than the leading vendor
- Superior scale and uptime for AI/ ML workflows
- Unmatched GPU virtualization and GPUDirect performance
- Modern cloud storage with simultaneous block, file, and object (S3) protocols
- Enhance 3rd-party file systems like Spectrum Scale, Gluster, and BeeGFS

Features

- Unifies block, file, and object storage services
- Block performance at 120GB/sec Read and 90GB/s Write
- File system performance of up to 78GB/sec Read and 56GB/sec Write
- Object storage performance up to 52GB/sec Read and 28GB/sec Write
- Ultra-low latency for uninterrupted analytics workflows
- Capacity to handle multiple petabytes in a highly dense 4RU footprint
- Scale with near-linear performance across chassis as demands increase
- Multi-Platform
- Certified NVMe/TCP and NVMe/RDMA (RoCE v2) for Windows and VMware 7
- Client connectivity for NVMe/TCP, NVMe/RDMA, NFS v3, v4, NFS RDMA, pNFS, SMB, Gluster, Spark, Hadoop
- Intuitive management via Web GUI, vCenter, Kubernetes, REST API, OpenStack, DTMF/Redfish, and Swordfish

Pavilion HyperParallel File System

Unify, Consolidate and Share with Hybrid-Cloud NVMe-oF

Enterprises are increasing their investment in hybrid cloud configurations. However, many traditional arrays can lead to inconsistency in on-premises and public cloud infrastructure, restricting the ability to have a cloud-like experience. Traditional arrays that support NFS or Amazon Simple Storage Services (S3) protocols provide easy-to-use functionality for enterprise work groups and even certain data center workloads where shared storage is required.


However, some arrays require you to scale up (add expansion shelves for more capacity) or scale out (add multiple chassis) to achieve higher throughput with more capacity. Additionally, traditional storage systems don't unlock the full performance of NVMe, restricting the SSDs with their legacy architecture or a dual controller design. These storage systems just don't have the performance, density, scalability and flexibility to keep up with today's workloads, increasing time-to-results.

The Pavilion HyperParallel Flash Array™ (HFA), powered by HyperOS™ uses NVMe and NVMe-oF technology and provides an on-premises cloud experience. It boosts performance while unifying block, file, and object technologies with its unrivaled enterprise features, and management.

The Pavilion HyperParallel Flash Array


The Pavilion HFA Pavilion brings together block, file and object storage into a single unified data platform. It delivers unmatched performance in every class (Block, File, and Object). Linearly scaling performance numbers as the storage array grows and your needs grow. Its 20 independent storage controllers that efficiently connect any client to the shared namespace. It linearly scales up and out for shared databases, data lakes, applications and industry-specific workflows all in a compact platform that has been proven by the largest organizations in the world.

Pavilion leads the industry in its support of NVMe-oF and holds the initial patent for NVMe over Ethernet. It is built for NVMe from the ground up and is the only storage vendor to achieve certification on both VMware and Windows for its NVMe/TCP and NVMe/RDMA drivers. Pavilion enables external file systems by exposing block storage via NVMe-oF. Pavilion supports NVMe-oF with RDMA over converged Ethernet (RoCE), TCP, and RDMA, it also supports the iSCSI and SMB interfaces for legacy applications. This gives customers complete choice and control over the most desired method for access. Typically, in high-performance scenarios, many customers use Ethernet, so RoCE is the preferred choice. However, HPC customers that use InfiniBand can use InfiniBand NVMe/RDMA to leverage existing investments.



R/W Throughput

Block	120/90 GB/s
File	78/56 GB/s
Object	52/28 GB/s




Density

Dense 4RU Platform
2.2 PB/72 NVMe SSDs
40 x 100 Gb ports or
10 x 200 Gb ports
20 independent controllers
SCM/SLC/MLC/TLC NVMe SSDs



Scalability

Start small, grow big
Independent, linear scale of
capacity or performance
Scale S3 & NFS across an
unlimited number of systems
with a global namespace



Flexibility

World leading performance
Unified block, file, and object
NVMe/TCP, NVMe/RDMA, iSCSI,
NFS RDMA, NFS v3/v4, pNFS, S3,
Gluster, Spark, Hadoop, SMB
Unified data types & protocols
Ethernet or InfiniBand

Internal File System

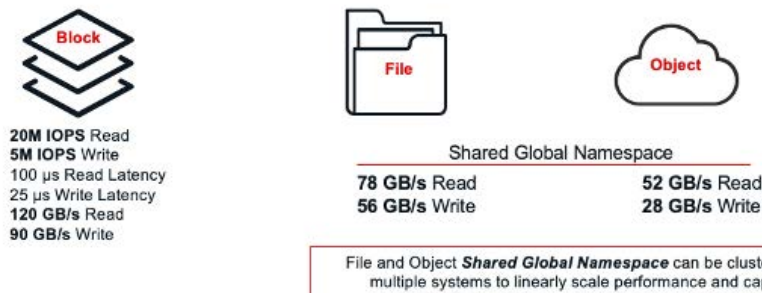
The Pavilion HFA is 5x faster and twice as small as the leading competitor. This means that shared databases and S3 applications run faster. Data Lakes scale with ease. HPC workloads, are never IO-bound, and you don't have to wait for GPU, HPC, AI/ML, and other data analysis workloads. The Pavilion HFA's S3 and NFS interfaces include a global namespace that spans multiple chassis, allowing an application to scale out to over 20PB in a near linear fashion across multiple chassis. It offers an intuitive GUI to configure clients across Ethernet or InfiniBand networks.

Enterprise data lake customers can consolidate operations by accessing NAS with traditional file system clients as well as Spark or HDFS clients. Unique to Pavilion is the ability to intermix clients in the same namespace with high availability and high performance. For HPC and AI workflows, Pavilion offers seamless integration, extreme throughput and flexible storage protocols for on-premises and hybrid cloud deployments.

External File Systems

By boosting performance and unifying block, file, and object storage services with a single platform, Pavilion offers unified storage for enterprise data consolidation at unmatched scale and performance. It provides these services to applications natively (such as via NVMe/TCP or GPUDirect). It also supports 3rd party file systems, for example, it can be the performance tier when combined with HDDs or cloud storage and an external file system like IBM Spectrum Scale (GPFS), Lustre, or BeeGFS. The Pavilion HFA boosts these 3rd party file systems with its industry-leading performance. An additional benefit is that when Spectrum Scale is used, customers can host the NSD server function directly on Pavilion's storage controllers. This dramatically reduces network traffic and latency, and by eliminating these physical NSD Servers it will reduce NSD server CapEx and OpEx.

Single Storage Platform Unit = 4 Rack Units up to 2.2PB
Flexibility to support **multiple STORAGE types** on a single platform



Hybrid Clouds

Object storage represents the most widely deployed hybrid cloud connectivity. The Pavilion HFA has S3 cloud support to help meet this demand. S3 is an object storage provided by many major cloud providers including Amazon Web Services™ and is well suited for storing unstructured data from things such as data lakes, websites, mobile applications, enterprise applications, IoT devices, and big data analytics. The Pavilion HFA runs object storage as a native service, allowing HFA storage to act as an S3 storage target with standard S3 APIs. The Pavilion HFA's exceptional throughput characteristics make it the fastest S3 storage on the market. Its inline RAID 6-like erasure code and bit-rot protection is CPU-optimized to deliver maximum data protection with minimal overhead. The result is an unheard-of level of protection vs replication which requires at least you to double or triple the amount of storage IT must acquire.

When an application uses the Pavilion HFA to hold S3 object data, the application becomes elastic, containerized and lightweight - the hallmarks of a cloud native application. Add Kubernetes-powered automation (through our REST-based management API) and enterprises become more operationally efficient without sacrificing performance. The result is less time managing infrastructure and more time "in the data" finding the insights that drive the business.

S3 object storage, block storage and file system storage can be deployed in the same chassis. With the Pavilion architecture, storage controllers can be dedicated to each protocol and to unique clients on the network providing the ultimate flexibility and scale.

Universal NAS and S3

NAS customers can rest assured that Pavilion's NFS & SMB support is compatible with all leading applications, while Gluster customers will find the fastest data streaming in the market. Data Lake admins need never worry about sharing of structured and unstructured data being accessed and shared from a single namespace. The Pavilion HFA and its NVMe technology and ultra-high performance brings it all together.

Learn More

Pavilion shatters customer expectations and resulting organizational outcomes by revolutionizing data processing for modern AI/ML, HPC, Analytics, Enterprise Edge, and other data-driven applications. The Pavilion HyperParallel Flash Array, powered by Pavilion HyperOS™, delivers unmatched performance and density, ultra-low latency, unlimited scale, and flexibility, providing customers unmatched choice and control. Learn why Fortune 500 companies and federal government agencies choose Pavilion. To schedule a demo, visit www.pavilion.io, email us at info@pavilion.io, or follow the company on LinkedIn.