pavilion data

Data Sheet

NVME-oF STORAGE ARRAY

Features

Performance
- 120 GB/s Read, 90 GB/s Write Throughput
- 40 µs Latency
- 20M 4K Random Read IOPS

Resiliency
- High-Availability and no single point of failure for continuous operations

Capacity
- Support for 72 U.2 SSDs in 4U
- 1.1PB RAW capacity using 15.36 TB SSD's

Modular
- 40 100 Gb Ethernet or Infiniband Ports
- 20 Active/Active controllers

Data Management
- Dual-Parity RAID with rapid rebuild
- Thin Provisioning, Snapshots & Clones
- Data at Rest Encryption

100% Standards Compliant
- NVMe-oF/TCP & NVMe-oF/RDMA, iSCSI, Ethernet, NFS and Inifiniband

Standard Components
- x86 Processors
- No FPGAs or custom ASICs

Management
- Web-based GUI, CLI, Restful API, Redfish, and Swordfish
- 24/7 Proactive Support

Delivering the true benefits of NVMe flash for today's modern massively-parallel data applications

Pavilion Data is the industry's leading NVMe-oF Storage Array. It is an end-to-end NVMe solution, from the host to the media. The array is 100% standards compliant with zero host-side presence and is designed for massively parallel clustered web and analytics applications.

The Power of Parallelism

NVMe is a new storage technology and it is inherently parallel. It is 250 times more parallel than SAS and 2000 times more parallel than SATA. Today, Modern web (transactional) and Machine Learning/AI (real-time analytics) applications are built on massively parallel clustered databases and filesystems because of their high-performance requirements. Examples include Cassandra, MongoDB, HDFS, GPFS and others.

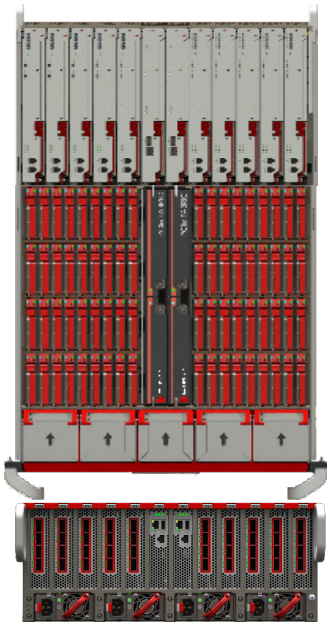
Pavilion's storage array dissagregates storage by separating from computing resources to allow both to scale independently. In rack-scale environments it allows customers to become more agile by delivering the exact amount of resources at any given time.

The 3rd Wave of NVMe

To take advantage and deliver the massive parallelism in NVMe SSD's, and to deliver its parallel performance to modern data applications, Pavilion had to depart from legacy scale-up or scale-out storage architectures. We redesigned the storage architecture from the ground up to let applications take advantage of the low latency and high bandwidth of NVMe SSDs using NVMe-oF, NVMe-TCP, iSCSI, and NFS.

NVMe protocol vastly simplifies the host stack and it results in a massive reduction in host CPU utilization. To deliver on NVMe's promise, we knew we needed to rely on the standards-based NVMe-oF protocol that is native and inbox to most modern server OSes. Unlike other designs, we deliver the true performance of NVMe without encumbering the host with additional proprietary drivers or software.

The result? And ultra-modular 4U Chassis Array that provides seamless, independent performance and capacity expansion. We realize that an Enterprise AFA is not a JBOF or an appliance. That's why, when designing our array, data availability and resiliency was of paramount importance. With no single point of failure, true redundant controllers, dual-parity RAID, snapshots and clones, data at rest encryption, and thin provisioning, our customers now reap the benefits of shared storage but with the performance of DAS at scale.



OPENCHOICE Storage

Pavilion OPENCHOICE Storage provides customers the option to use their own SSDs with the Pavilion Array and enjoy several benefits from this approach

- Freedom to Innovate by embracing and upgrading to next-generation SSDs at their own pace business needs
- Freedom to Repurpose by enabling storage media to move from a consumable to a reusable asset in your environment, as often as needed.
- Freedom to Save by leveraging direct NVMe SSD supplier relationships.

OPENCHOICE Supported SSD's				
Micron 9200, 9300	HGST SN200	Samsung 1725b	Intel P4800X, P4510, P4610	Toshiba CM5

*Dual-Ported drives not required

	RF108	RF116	RF120	RF140
Raw Capacity (TB)	14 TB - 230 TB	230 TB - 1.1 PB	230 TB - 460 TB	460 TB - 1.1 PB
Usable Capacity (TB, post-RAID6)	12 TB - 202TB	202 TB - 978 TB	202 TB - 404 TB	404 TB - 978 TB
IO Line Cards	2	4	5	10
Storage Controllers	4	8	10	20
100 Gb Ethernet or Infiniband Ports	8	16	20	40
System Read Bandwidth (GB/s)*	20	48	60	120
System Write Bandwidth (GB/s)*	16	40	50	90
4K Random Read IOPS*	4,000,000	8,000,000	10,000,000	20,000,000
Mixed 4K Random IOPS (70:30)*	1,600,000	3,200,000	4,000,000	8,000,000
Power Consumption (Nominal - Max)	870 - 1050 W	1760 - 2600 W	1440 - 1800 W	2480 - 3200 W
Heat Dissipation (Max BTU)	3584	8874	6143	10922
System Height (Rack Units)	4			
Protocol and Transport Support	NVMe-oF (block) over RoCE v2-Ethernet / NVMe-oF over TCP / Infiniband / NFS v3/v4			
Operating Temperature Range	10C to 35C			
Non-Operating Temperature Range	-40 to 70C			
Humidity Range	8 to 90% (non-condensing)			
Non-Operating Humidity Range	5 to 95% (non-condensing)			
Dimensions	17.5 in W x 31.1 in D x 6.9 in H			
Weight	Full System - 147 lbs. (66.7 kg); Half System - 116 lbs. (52.6 kg)			
Agency Approvals				
Safety	IEC/EN 60950, CB Certificate, UL60950-1 CAN/USA-C22.2 No. 60950-1, CE Mark			

*All performance measurements taken in fully sustained mode with RAID6 enabled using NVMe-oF block protocol over Ethernet.

OPENCHOICE includes Next Business Day support but does not provide warranty on customer owned SSDs. Pavilion simply licenses the populated NVMe drive slots (per year) and customers purchase a variable number of controllers and network ports depending upon their application requirements.

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Pavilion Data Systems, Inc.
2550 N First St., Suite 250, San Jose, CA 95131
E-mail: info@paviliondata.io