

Pavilion NVMe-Over-Fabrics Storage Platform

Highlights

Performance

- 120 GB/s
- 100 us Latency
- 20m 4K Read IOPS

Resiliency

- Up to 20 Active/Active controllers

Capacity

- 14 TB - 1 PB in 4U

Modular

- Up to 40 100 Gbe Ports

Data Management

- Dual-Parity RAID
- Thin Provisioning
- Snapshots & Clones

100% Standards Compliant

- Up to 72 U.2 NVMe SSDs
- Inbox NVMeOF Support
- NVMe-Over-TCP Support
- NVMe-Over-ROCE Support

Standard Components

- x86 Processors
- No FPGAs
- No Custom ASICs

Disruptive Economics

- Lowest \$/IOPS

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

The First and Only NVMe-Over-Fabrics Storage Platform

Pavilion Data is Industry's only NVMe Over Fabrics Storage Platform. It is a true end-to-end NVMe solution, from host all the way down to the media. The platform is 100% standards compliant with zero host-side presence or dependencies. It is built for the modern massively parallel and 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. In addition, modern web (transactional) and Machine Learning/AI (real-time analytics) applications are also built upon massively parallel and clustered databases and filesystems because of the performance requirements of these applications. Examples include Cassandra, MongoDB, HDFS, GPFS, etc.

The Pavilion Memory Array can power the next generation of cloud era infrastructure by disaggregating storage so that compute and storage resources can scale and grow independently, allowing today's large-scale environments to become much more agile by delivering the exact amount of resources required flexibly and dynamically as needs change.

An New Type of Data Platform

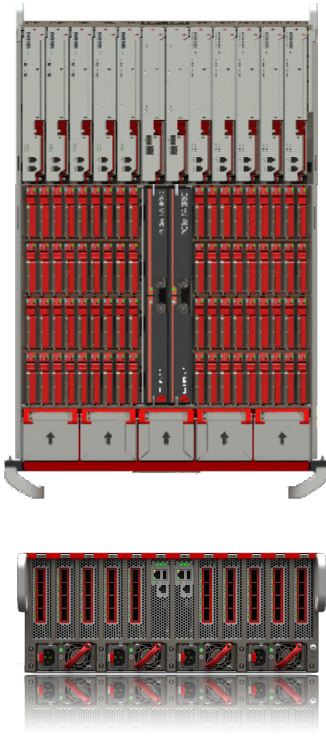
To take advantage of this massive parallelism of the storage media, and to deliver this raw, parallel performance to modern data applications, Pavilion had to completely challenge the decades old scale-up or scale-out enterprise storage architectures. We had to rethink how storage platforms of tomorrow should be built, with not just the technology but also the applications of tomorrow in mind. We had to design a new platform, from ground up, one that can exploit this parallelism and then provide that natively to the modern data applications.

NVMe protocol vastly simplifies host stack and that leads to massive reduction in host CPU utilization. So we wanted to make sure we are able to provide that performance, without encumbering the host with additional proprietary drivers or SW. Doing so would negate this key advantage of NVMe technology. We therefore needed to rely on standards based NVMeOF protocol that is native and inbox to most modern server OSes.

The result was an ultra-modular 4 Rack Unit Chassis platform which enables seamless and independent performance and storage capacity expansion. Of course, we realize that an Enterprise storage array is not a JBOF or an appliance and data availability and resiliency and availability was of paramount importance to us while designing this. The platform burnishes its enterprise credentials with no single point of failure design, true N:1 redundant controllers, Dual-Parity RAID, Redirect-on-block-write Snapshots and clones, and thin provisioning.

PAVILIONDATA.COM

©2017 Pavilion Data Systems, Inc. All rights reserved. These products and technologies are protected by U.S. and international copyright and intellectual property laws. Pavilion Data Systems is a registered trademark of Pavilion Data Systems, Inc. in the United States and/or other jurisdictions.



Enterprise Features

The Pavilion Storage Platform is the first shared storage system to deliver both record-breaking performance and latency, as well as enterprise management features that today's customers expect in their networked storage arrays, including:

- Active-Active Controller support for HA and load-balancing. Parallel access to data volumes through multiple storage controllers and network ports.
- Instant space-efficient snapshots and clones, allowing the effective capacity of the array to grow significantly, and data to be easily backed up and/or leveraged for multiple uses.
- Data recovery in the event of drive failures by using dual-parity RAID across
- Thin Provisioning, allowing for increased utilization and flexibility

Frictionless Deployment

Pavilion is the only low-latency storage array that doesn't require users to install either custom hardware or software on application servers, or deploy non-standard networks or protocols in order to use the system. The only host components required include:

- Standard RDMA-capable Ethernetwith In-Box NVMe-Over-Fabrics Host Driver
- Standard Ethernet (NVMe-Over-TCP)

Using these standard components, logical NVMe volumes can be provisioned on any host.

	RF108	RF120	RF140
Raw Capacity (TB)	14 - 57 TB	28 - 115 TB	115 - 920 TB
Usable Capacity (TB, post-RAID6)	12 - 50 TB	24 - 101 TB	101 - 810 TB
IO Line Cards	2	5	10
Storage Controllers	4	10	20
100 Gbe Network Ports	8	20	40
System Bandwidth (GB/s)	20	60	120
4K Read IOPS	4,000,000	9,000,000	20,000,000
Mixed 4K IOPS (70:30)	1,600,000	3,200,000	8,000,000
Power Consumption (Nominal-Max)	870-1050 W	1440-1800 W	2480-3200 W
Heat Dissipation (Max BTU)	3584	6143	10922
System Height (Rack Units)	4		
Expansion Options	Single IO Line Cards, 9-Drive Capacity Packs		
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		
Emissions	EN55022/CISPR 22, FCC Part 15 Class A, ICES--003 Issue 5 Class A, VCCI Class A, AS/NZS CISPR22:2009 Class A BSMI CNS 13438 Class A		