High Availability at 100µs Latency

Features

Key HA Features

- No single point of failure
- All hot swappable components
- Selectable RAID levels, up to dual-parity RAID
- Dual redundant internal high-speed PCIe Fabric
- Dual redundant out-of-band supervisor modules
- Fully active-active storage controllers
- 2x redundant fans and power supplies
- Dual redundant network interfaces for each controller
- NVMe-oF Multi-path IO

Pavilion Benefits

- 100 µs Latency
- 14TB - 1 PB in 4U
- Frictionless Deployment
- Data Resiliency & High Availability
- Space-Efficient, Instant Snapshots and Clones
- Thin Provisioning
- Scalability and Flexibility
- Scale Compute and Storage Seperately.
- Standard Ethernet
- **OPEN**CHOICE Storage

Pavilion delivers key availability features in an ultra-low-latency NVMe-oF Storage Platform

Server-Side Architectures Have Limitations

Today, modern applications rely on high availability by placing individual SSDs in separate servers. In the event an SSD fails, the application fails over to another node. Whilst this might seem simple, this has resulted in significant architectural drawbacks.

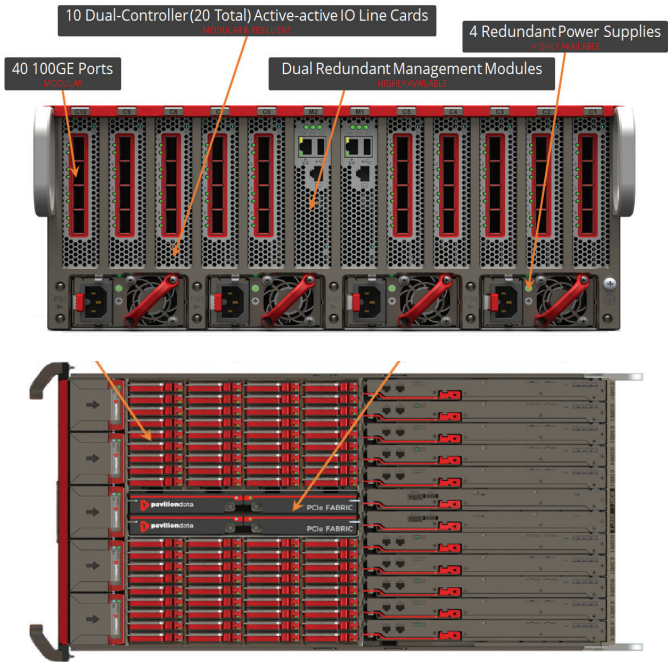
Organizations have huge amounts of stranded and under-utilized capacity that is either held captive in distributed servers or in additional copies distributed in the cluster in order to be able to fail over to another node. This need not be the case anymore.

Reliability at Scale with Pavilion's NVMe-oF Storage Platform

Innovations in both networking and storage technology now make it possible to deliver shared storage with the same performance as locally-attached SSDs for large-scale distributed applications. However, in order to take advantage of these new capabilities, a shared storage system must have critical availability features built in.

Pavilion allows multiple racks of application servers to simultaneously access storage over a high-speed low latency network at direct-attached SSD-class speeds. We deliver this to mission-critical applications with high availability and uptime. Just like other enterprise-class storage arrays, these availability features are self-contained within the array and do not require custom software on any application servers to achieve this level of reliability and availability.

Pavilion's NVMe-oF Storage Platform Overview



Pavilion's NVMe-oF High Availability Features

The Platform is designed from the ground up with key availability features in order to support maximum application uptime in cloud-scale environments. Specific features are listed below.

No Single Point of Failure

Every component is at least dual redundant, including network ports, SSDs, internal PCIe fabric, IO line cards, supervisor modules, power supplies and fans.

Hot-Swappable Components

All components in the chassis are hot swappable for maximum serviceability, including SSDs, IO line cards, supervisor modules, PCIe fabrics, fans and power supplies.

Dual-Parity RAID

By default, all user data volumes are provisioned from a drive group containing up to 18 NVMe SSDs in a RAID-6 configuration. This ensures that up to two drives can fail without interrupting application access to data. The entire system contains up to 4 zones of media, each with its own independent RAID group.

Redundant Supervisor Modules

All components are managed by redundant out-of-band management controllers, or supervisors. Management of the array is done independently of the controllers and the data paths, providing greater flexibility and consistent performance even during maintenance operations.

Redundant Internal PCIe Fabric

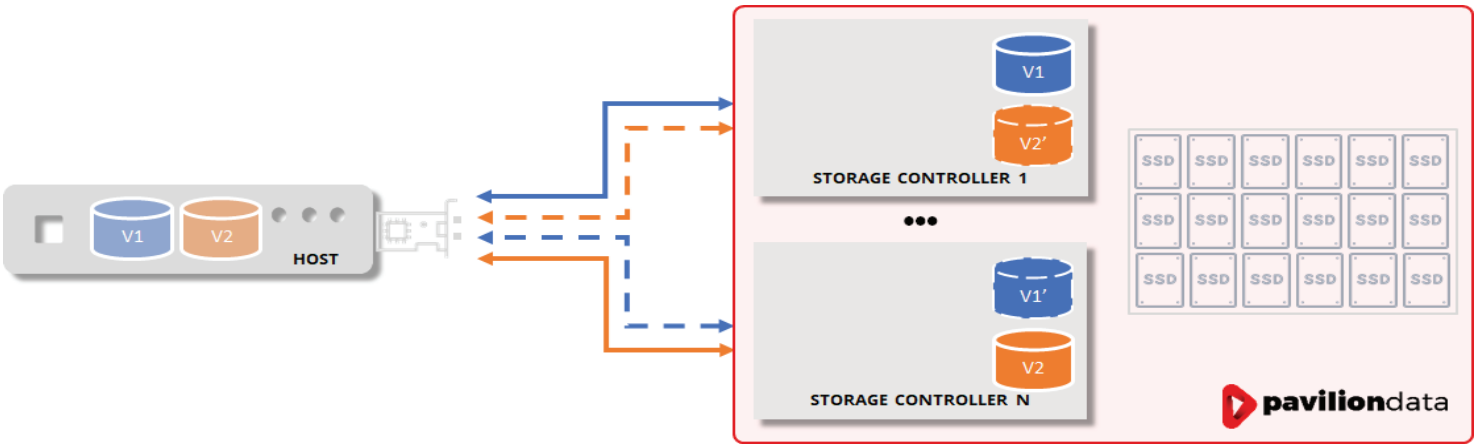
Pavilion's patented architecture employs a high-speed PCIe network to connect all of the internal components, including IO Line Cards, the NVMe Drive Array, and the Supervisor Modules. This fabric is fully-redundant and is implemented on dual-redundant swappable PCIe switch cards contained in the chassis.

Active-Active IO Controllers

All controllers can serve I/O operations simultaneously, providing linear performance improvement as you add controllers. Each volume is available through a redundant pair of controllers, providing full availability even in the event of controller failure and SSDs.

Multi-Path IO Support

Pavilion supports multi-path IO with the NVMe-Over-Fabrics protocol. HA is provided for multiple failure points, including port, path, NIC, and controllers using Pavilion's Active-Active controllers with MPIO. This will work in either a direct-connect scenario, or through a switch.



Pavilion makes the only self-contained, disaggregated NVMe-oF array that delivers enterprise availability features without requiring users to install proprietary software on application hosts, which compromises performance. As a result, users can enjoy the simple and seamless deployment that they get with traditional shared storage arrays, but now with the density and scalability to power multiple racks of servers with extremely low latency.

pavilion data

Pavilion Data Systems, Inc.
2560 N First St., Suite 220, San Jose, CA 95131
E-mail: info@paviliondata.io