

NVMe-oF Storage for Splunk

Accelerating Splunk with no-compromises

Splunk's Storage Problem

Today, Splunk storage uses legacy networked storage arrays in the hot and warm storage tiers. As data grows, applications begin to crawl and customers turn to direct-attached SSDs inside the indexer nodes to satisfy performance.

This approach has resulted in stranded storage capacity in each indexer node, leading to inflexibility and severe under-utilization of storage resources. When there is a need for growth in storage capacity, it requires additional indexer nodes even when additional indexer performance is not required.

A more efficient and cost-effective solution is needed, one with the low latency offered by direct-attached SSDs but with the economics and flexibility of networked storage.

The Pavilion Hyperparallel Flash Array

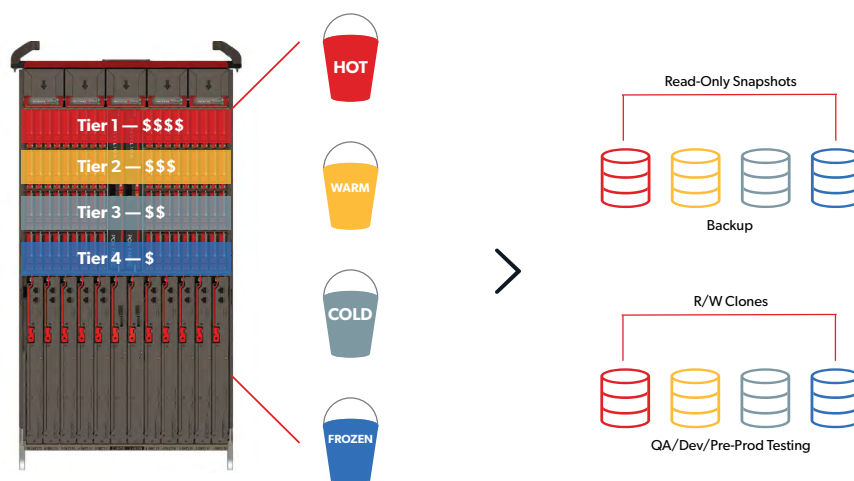
The Pavilion HFA delivers never before seen NVMe performance (90 GB/s throughput, 40µs of latency, and 20M IOPS) and density (1.1 Petabyte) in a compact 4U form factor. It provides Spark applications with the performance of locally attached NVMe SSDs, enabling Splunk operations to move to a Composable, Disaggregated Infrastructure (CDI) infrastructure, where application resources are readily available. The Pavilion HFA uses NVMe SSDs and supports multiple block and file protocols with NVMe-oF/RDMA, NVMe-oF/TCP, iSCSI, and NFS.

The Pavilion HFA requires no proprietary software to be installed on a server farm and uses standard NVMe, NVMe-oF, Ethernet, and InfiniBand drivers, freeing up host resources for processing and reducing deployment risk.



Benefits

- Increases density 2X
- Petabyte scalability, high-performance, low-latency, and linear scaling maximizes Splunk efficiency
- Protect for your data and your business. Meet evolving requirements for data security and compliance
- Double indexing rate and reduce indexer footprint by up to 40%
- Deployment flexibility using concurrent protocols
- Enterprise design and data integrity validation ensure reliable access to data
- Rack scale/CDI management via Web GUI, vCenter, Kubernetes, RESTful API, OpenStack, DTMF/Redfish, and Swordfish



Benefits of Disaggregation

The Pavilion HFA delivers high performance and low latency to Splunk applications.

Scalable & Flexible



The Pavilion HFA provides up to 1.1 Petabytes to Splunk deployments, which can simultaneously use its NVMe/RDMA (Ethernet, IB), NVMe/TCP, iSCSI, and NFS interfaces. Splunk says that disk I/O and throughput are the most common limitation for Splunk infrastructures and the ultra-high performance and ultra-low latency of the Pavilion HFA can power even the largest deployment. The array scalability allows Splunk users to focus on the needs for compute instead of storage.

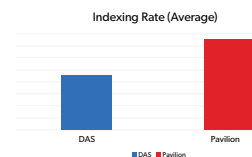
Pavilion HFA's thin provisioning feature provides Splunk with significantly better utilization than DAS, since the Pavilion array will only allocate physical space when the Splunk application needs it. This results in physical space savings vs. DAS of up to 75% per server. No wasted capacity, no time spent messing with volume managers or file systems. Just set and forget.

Economical



Pavilion's composable, disaggregated storage is ideal for Splunk and for organizations deploying a few indexers to hundreds. By deploying the platform, we deliver thinly provisioned shared pools with the same or better latency as direct-attached SSDs.

If more CPU and memory is needed, administrators can seamlessly deploy additional indexers to handle the search traffic, with the hot and warm tier using only the needed capacity. The storage capacity and performance can be independently scaled to expand the size of the hot and warm tiers.



The Pavilion HFA's ultra-low latency removes storage as the indexing bottleneck. Lab testing shows that Splunk Enterprise can index 67% more transactions using the Pavilion HFA than with direct-attached SSDs. Testing also showed that 40% fewer indexers were required to support the same ingest volume reducing TCO.

With Pavilion, you are no longer constrained by the size of the SSDs. Thin provisioning allows the application to use the required amount of storage at any given time, regardless of how much capacity has been advertised to that specific Splunk server. No more extra copies of data, the Pavilion HFA reduces the amount of raw flash storage deployed in a Splunk environment, by up to 3X, reducing TCO. At 50% less expensive than a DAS SSD in terms of GB/s, the Pavilion HFA is designed not just for exotic applications, but is the one platform for all your Splunk needs.

Fast & Dense



The ultra-high performance, extreme low latency, and multiple storage controllers of the Pavilion HFA accelerates Splunk workflows and boosts time to results. The Pavilion HFA lets Splunk applications search terabytes of structured and unstructured data over 20 times faster than a DAS NVMe SSD.

Safe & Secure



Protect the SSDs with Pavilion's RAID-6 erasure coding and its 12% overhead. Its "Swarm Recovery" rebuilds a failed SSD ten times quicker than a DAS or an AFA. The Pavilion HFA ensures that the failure of an SSD does not impact Splunk operations.

Keep data and snapshots safe with a FIPS-compliant data at rest encryption, the Pavilion HFA's always-on encryption keeps data secure without impacting Splunk performance.

The Pavilion Data Assurance feature works with the RAID feature to provide self-healing bit-rot support for data, assuring every workflow gets uncorrupted data. Take consistent, instant, zero-footprint, and uncorrupted snapshots, encrypt them and provide them to backup and disaster recovery processes to speed operations and ensure consistency.

Enterprise Strength & Enterprise Support



Get 24/7 proactive support, end-to-end data integrity, a modular chassis, and redundancy throughout the storage array to protect your Splunk applications as infrastructures grow. With the Pavilion HFA, all the features come in-the-box, including thin provisioning, snapshots, clones, data at rest encryption and more.

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Disaggregating flash storage from each server in a rack means no longer requires dedicating resources to managing local SSDs. Using servers that don't have to support DAS storage can increase the compute density of a rack by 2X and reduce power and cooling requirements. No custom software needs to be installed on Splunk servers, enabling them to take full advantage of host processing resources and reduce risk. The result? The power, simplicity, and density offered by the Pavilion HFA provides Splunk deployments increased agility, flexibility, and lower TCO.

Find Out More

Pavilion is defining the future of disaggregated NVMe-oF. Splunk applications can be disrupted by the Pavilion HFA and its unprecedented availability, performance and versatility to future-proof the storage infrastructure.

Our expertise is in simplifying and optimizing NVMe to make the impossible, possible. When storage is business-critical, there's no substitute for the guaranteed performance, functionality, high availability, and OpenChoice Storage™ support of a Pavilion NVMe-oF storage array. Use the Pavilion Hyperparallel Flash Array with its NVMe over fabrics support and make better decisions, faster! Contact us to learn more.