pavilion data

Solution Brief

kubernetes

NVME-OF STORAGE FOR PRIVATE CLOUD

Features

Kubernetes Benefits

- Scale Container Environments to new levels
- Increase operational Flexibility
- Improve Performance of Containerized Applications
- Deliver more container density per rack
- Reduce costs by transforming infrastructure.

Pavilion Benefits

- 40 µs Latency
- 14TB - 1 PB in 4U
- Frictionless Deployment
- Scalability and Flexibility
- High Performance and High Availability.
- Management Ease
- Scale Compute and Storage Seperately.
- Lower TCO by leveraging scale-out architecture
- Data Resiliency & High Availability
- Space-Efficient, Instant Snapshots and Clones
- Thin Provisioning
- Standard Ethernet
- **OPEN**CHOICE Storage

Deliver Containers-as-a-Service with NVMe-oF

Containers enable you to develop applications fast, but running containerized apps in production results in organizations being held back by legacy infrastructure and an unproven container stack.

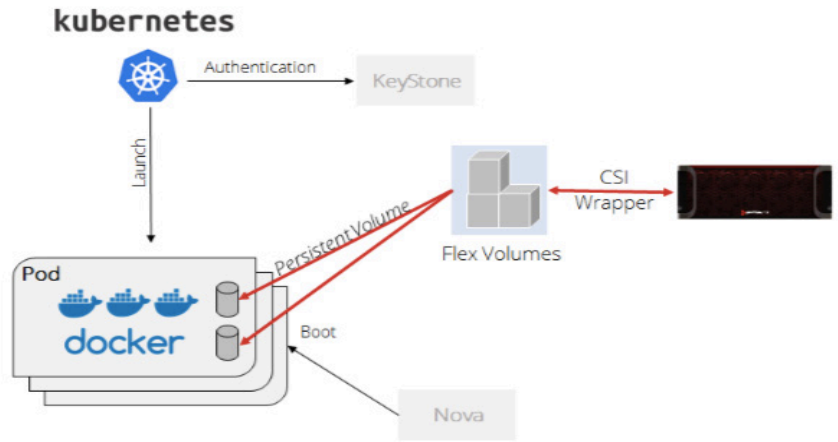
In the new paradigm of composable, disaggregated infrastructure, resources need to be readily available and deployed so that the ever-changing requirements can be satisfied on a minute-by-minute basis. This means that compute, network, and storage resources all need to scale independently to meet an ever-increasing and diverse set of application requirements.

Pavilion's NVMe-oF Storage Array

- Improve the performance of a wide range of containerized applications, such micro-services, containerized databases, payment services, etc.
- Independently scale compute and storage using a Pavilion array as centralized rack scale storage for Kubernetes Clusters
- Deploy more containers per rack with flexible and dynamic storage volume assignment
- Flexible, pluggable, high-performance storage platform that easily integrates into the
- DevOps management and operational environment
- Data Management services allow for new levels of operational efficiency
- Speed up go-to-market by enabling rapid development and QA cycles

Seamless Integration

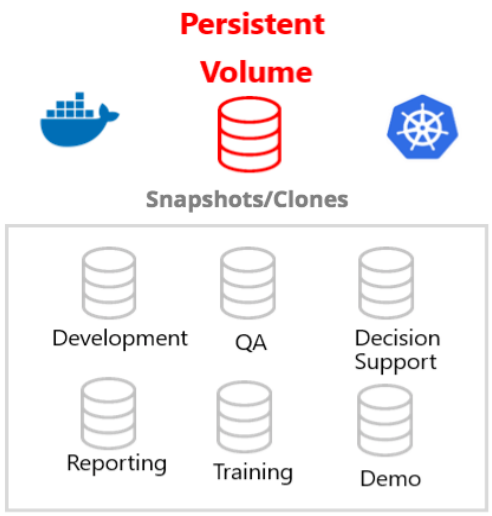
- Easily integrating into Infrastructure-as-Code deployments
- Enable DevOps Container Infrastructure and Deployment (CI/CD) using REST APIs
- Rapid provisioning of Persistent Volumes to your Kubernetes infrastructure

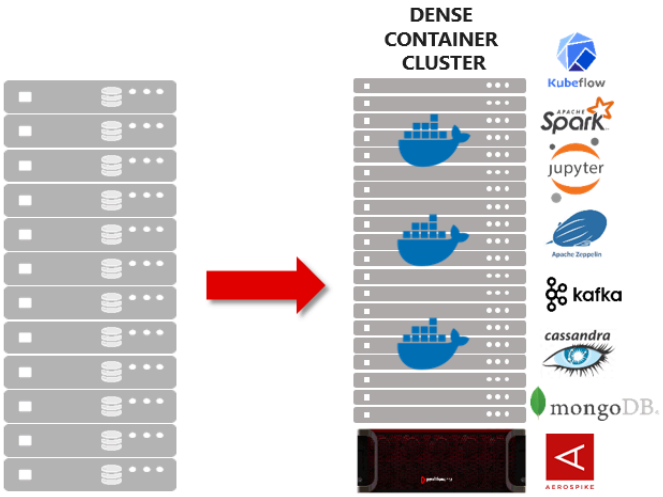


Pavilion Native Integration into Kubernetes Environments

Operational Benefits

- Pavilion's instant, zero-space Snapshots and clones can be used to create additional containers
- Accelerate Go-To-Market activities by rapidly deploying copies of containers to QA and other stakeholders
- Reduce management complexity by moving storage to a composable, disagregated state when the storage pool can be centrally managed
- Isolate data back-up and snapshot management. Create zero-space instant back ups and entire volumes
- Manage the NVMe platform through a easy-to-use UI interface, and/or supported by REST API, including an OpenStack login





Infrastructure Benefits

- Simplify the environment by leveraging a single, high-speed storage platform to deliver Containers-as-a-Service (CaaS)
- Deploy 'storage-less' servers to deliver more container density per rack
- Reduce IT expenditure in several areas inclding hardware acquisition, rack-space, power and cooling
- Thin provisionning allows for less raw flash capacity to be installed
- Transition to Disaggregated infrastructure and achieve optimized levels of processing, storage and network bandwidth that can be scaled independently

Pavilion's Storage platform provides the following key benefits to Kubernetes:

Deploy up to 4X+ less flash:

You can decide at application deployment time how much storage to provision to any node and are no longer are constrained by the size of the SSDs that were purchased and installed in any given server. Thin Provisioning provides the required amount of storage as needed, reducing the amount of raw flash storage deployed in these cloud-scale environments.

Simplify data protection and reduce server overhead:

Our platform provides no single point of failure, ensuring maximum application uptime and data availability. It removes the need for multiple copies of each node's data on other nodes, which lowers the storage capacity requirements whilst also reducing the application and network processing overhead required to distribute that data to additional nodes.

Increased Compute Density per Rack by deploying Disk-less server nodes:

By provisioning high-speed logical flash storage volumes to each server in a rack, you no longer need to purchase servers that accommodate SSDs. This provides the ability to increase the compute density of a rack by leveraging 1U servers instead of 2U servers with front-loading drive bays. Pavilion also requires no custom software to be installed on database nodes, allowing the applications to take full advantage of the host processing resources as well as simplifying deployment complexity.

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