Offload storage processing to make Aerospike sing

More transactions, lower latency, same nodes

ÆEROSPIKE + **ScaleFlux**®

The Challenge

Aerospike is a NoSQL database, based on a KV-store structure, architected to efficiently enable expansion to PB scale by managing SSDs directly. Customers choose Aerospike when they need low latency access to relatively large datasets within a reasonable server footprint, making the predictable management of SSD latency a critical function.

To this end, necessary to maintain the health of the deployment the database regularly performs defragmentation, a form of garbage collection. To achieve the best latency profile, defragmentation requires double the storage capacity on top of the built-in over-provisioning of the SSD, significantly reducing the usable capacity of SSDs.

Key customer benefits

- Predictably meet latency targets with high TPS
- Optimize resources by extending usable capacity
- Reduce complexity with simple capacity planning

Additionally, Aerospike deployments can unpredictably become so heavy that latency increases faster than capacity utilized; requiring additional drives to distribute the workload and making capacity planning problematic.

For Aerospike customers who strive to meet latency goals at the highest transaction load possible while at the same time keeping node count under control, each of these challenges must be considered and overcome.

ScaleFlux®

The Solution

The CSD 2000 from ScaleFlux is a better SSD. Drives built with computational storage technology use embedded Computational Storage Engines (CSEs) to offload storage processing from the CPU. This is how customers predictably meet latency targets and improve capacity density, while achieving best-in-class transactions per second (TPS). Achieving aggressive latency targets during high transaction loads can be done using Transparent Compression, a unique Scaleflux feature that manages and optimizes data directly on the drive with the added benefits of both doubling the usable capacity and the lifespan of the drive. Transparent compression. SSDs from ScaleFlux can be deployed seamlessly into servers the addition of complexity or risk, freeing up server resources by intelligently optimizing the data pipeline while monitoring both performance and capacity.

Dominated by Scaleflux, the Aerospike ACT 5.2 mixed workload test highlights the CSD 2000 as the drive with the best performing latency profile compared to other industry leading NVMe options. As workload intensity increases, competing drives begin to fail the test, leaving the CSD 2000 as the sole device capable of fulfilling the most demanding workloads.

> " By using the all-Flash deployment of Aerospike Enterprise Edition with ScaleFlux Computational Storage Drive, we can achieve a 110-224% improvement in our deployment's performance, while providing storage with high IOPS and continuous low latency high-quality performance comparable to memory.
>
> -Tongdun Technology
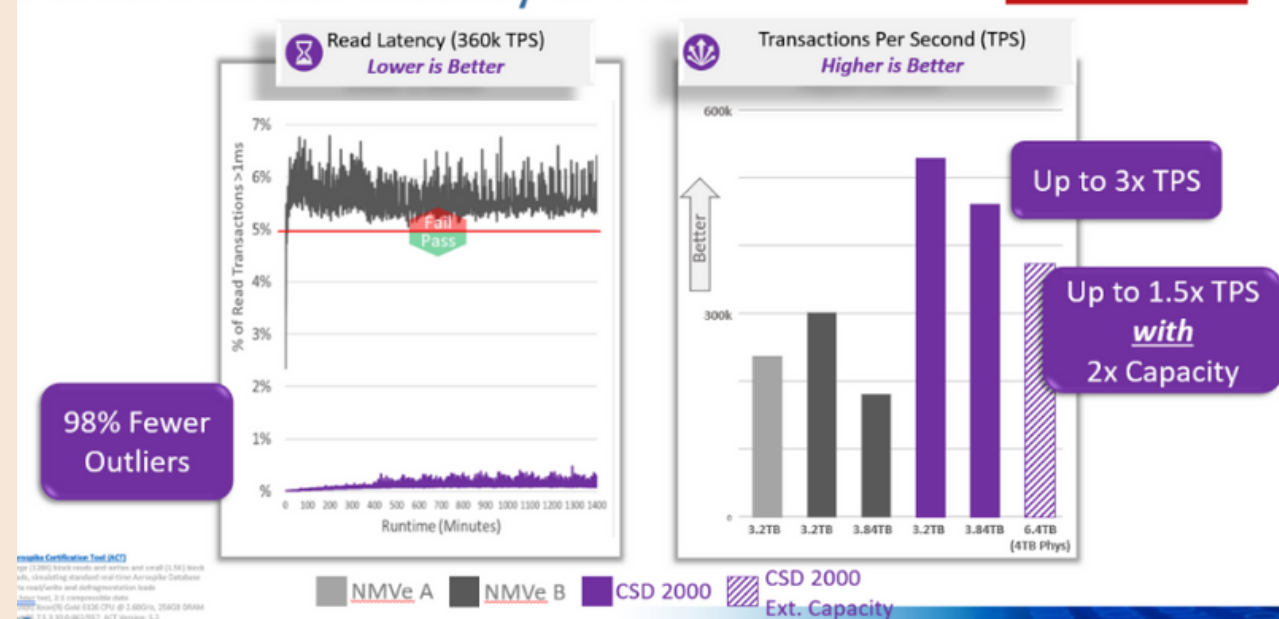
About ScaleFlux

ScaleFlux helps customers harness data growth as a competitive advantage by building products that reduce complexity and accelerate the creation of value from data. In our first phase of rethinking the data pipeline for the modern data center, ScaleFlux has built a better SSD by embedding computational storage technology into flash drives. Now, customers can gain an edge, optimizing their data center infrastructure by deploying storage intelligence for workloads like databases, analytics, IoT, and 5G.

For more information, visit www.scaleflux.com or follow us on LinkedIn.

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