POWERING ENTERPRISE DIGITAL TRANSFORMATION

Highlights

- Powers enterprise digital transformation by enabling business moments to be acted upon in real-time
- Combines strong consistency with high performance
- Easily supports both systems of engagement and systems of record
- Eliminates complex, costly caching layers commonly used in NoSQL and in-memory solutions
- Delivers elastic, predictable performance at internet scale via patented Hybrid Memory Architecture
- Supports high-fidelity uses where data loss is unacceptable
- Supports strong consistency as validated by Jepsen

High Performance, Enterprise-Grade Key-Value Store Database

Business processes can be transformed by a superior ability to gather intelligence, make decisions and act in real-time. Systems of engagement (SoEs) that customers and prospects directly engage with require extreme speed and throughput. Systems of record (SoRs) that store and act directly on client records, financials and fixed resources require complete accuracy / strong consistency across the entire database.
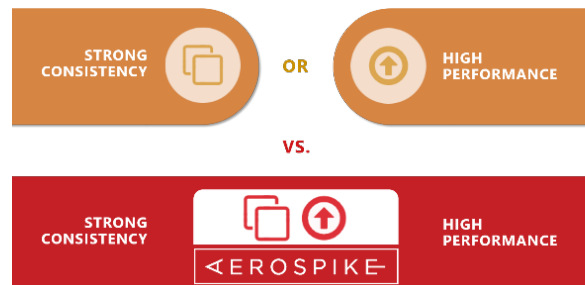
Unfortunately, the database solutions in current use for SoRs have their limitations. Traditional relational databases provide strong consistency but don't offer the high performance to support new application requirements. Mainframes absolutely offer strong consistency and high performance, but at great cost.

Traditional NoSQL databases in use for SoEs have prioritized performance over consistency. Thus, they are clearly not suitable for "sources of truth" nor for high fidelity analysis (e.g. risk computations).

Aerospike 4.0 combines Strong Consistency and High Performance

The patented Aerospike Hybrid Memory Architecture™ achieves strong consistency simultaneously with high performance and thus can be used at the core of any data architecture.

Aerospike 4.0 powers SoRs where correctness is required at internet scale, for predictive analysis and data agility, as well as SoEs where performance is paramount. Plus, the Aerospike database can serve as the foundation for modern applications – including those based on microservices.

Aerospike Hybrid Memory Architecture™ (HMA) is game-changing

To foster and embrace the enterprise transformation needed to capture business moments in real-time, a new, elastic, powerful data architecture is needed. Traditional architectures call for a large DRAM-based cache in front of a persistent store for high throughput and extremely low latency over large volumes of data. By contrast, Aerospike's Hybrid Memory Architecture offers a fundamentally different approach. By persisting data on fast SSD devices and leveraging primary key indexes (typically in DRAM), many advantages are realized without compromising performance while adding strong consistency.

Benefits with Aerospike HMA

- **Performance is predictable and constant at scale** – as all data is accessed in the same way, avoiding cache issues altogether.
- **Applications become simpler, more maintainable and faster to market** – by avoiding the inherent complexities in maintaining caches and by avoiding data integrity issues.
- **Self-healing clusters with identical nodes gives high availability** – Data is automatically evenly distributed; rebalancing is automatic and even - without disruption.
- **SSD optimization yields massive performance benefits** – taking full advantage of SSD characteristics, yielding performance gains far exceeding those resulting from porting existing storage technologies from rotational drives to SSDs.
- **Massively parallel architecture allows linear scalability** –scaling is as easy as adding nodes or adding hardware within existing nodes and latency is unaffected as the cluster scales.
- **Low Total Cost of Ownership (TCO)** – requires significantly lower quantities of DRAM, always accessing the information from SSDs resulting in node reductions of 4x-10x.
- **Save money through mainframe offloading** – Aerospike with strong consistency and high performance can serve as a high speed "system of truth" and handle workloads typically reserved for high-cost mainframes.
- **Simplify your database architectures** – Aerospike's HMA with strong consistency and high performance can serve as a SoR and SoE, reducing database heterogeneity while eliminating sprawling operational/analytical caching layers.

Aerospike 4.0 Powers Digital Transformation

Enterprises embarking on digital transformation initiatives recognize that IT and business need to have the same goals and objectives, shared governance, and accountability for results. Re-platforming can deliver application ecosystems that:

- Support real-time decision analysis by combining the transactional systems with analytics systems to drive profitable business outcomes
- Bring data to apps by eliminating roadblocks to data access, creating architectural simplicity that accelerates time to market
- Enable the science of intentions by prediction and planning through mathematical models, applying AI/ML for improved outcomes in a fast, consistent and reliable manner.

neustar. "To be effective, we need a real-time database that can support billions of daily operations with high consistency, low latency and fantastic throughput. Aerospike is the only technology we've found that is capable of meeting our needs in a cost effective and dependable manner…"
– Peter Burke, SVP Technology, Neustar

ThreatMetrix "Working with Aerospike helps us analyze data faster than ever—evaluating billions of data points, across 75 million daily transactions, all in real time. As a result, digital business can quickly and accurately distinguish between genuine users and fraudsters, making a true consumer's online experience secure and friction-free…"
– Phil Steffora, Chief Security Officer, ThreatMetrix

airtel "We are extremely delighted to partner with Aerospike to deploy a high-performance data layer between our digital channels and core telecom systems to help us manage the massive scale of data with best performance. This layer also acts as a cushion for our core telecom platforms and optimizes the need to scale our core telecom platforms, resulting in an improved customer experience."
– Harmeen Mehta, Global CIO and Director of Engineering, Bharti Airtel