

POWERING HYPERSCALE ENTERPRISE DATA SOLUTIONS

Highlights

Powers Hyperscale Enterprise Use Cases

Aerospike's performance at scale, combined with its critical enterprise database features and integrations allows it to be utilized as System of Engagement (SOE), System of Record (SOR) and Query and Reporting Database. It is easily deployable on bare-metal, on-premises, in the cloud or any combination thereof.

Unmatched Reliability

Aerospike uniquely combines proven uptime, predictable high performance combined with strong consistency and durability

Performance at Scale

Aerospike's dynamic cluster management and unique flexible storage engine enable our database to reliably handle millions of transactions per second while efficiently scaling to meet petabytes range data volume needs.

Exceptionally Low TCO

Fueled by our patented Hybrid Memory Architecture™ and autonomic cluster management, Aerospike provides unmatched performance at 20% the total cost of ownership (TCO) of legacy NoSQL databases.

Overview

Changing customer expectations and industry disruptors are driving significant investments in digital transformation initiatives across multiple industries. To compete in today's real-time digital economy, companies must invest in the right hyperscale data architecture to enable the right decisions in the moments that matter. This is only possible by utilizing modern data architectures which support extreme performance at scale. These modern data architectures consist of the following components: System of Engagement (SOE) databases that capture real-time data from edge and near-edge devices; System of Record (SOR) databases which store both the real-time data from the SOE database and historical data and act as a single source of truth, and Query and Reporting Databases to leverage the combined data. High-speed data transfer between these components is required as it enables real-time decisioning.

Aerospike Hyperscale Data Architecture

Aerospike provides unmatched performance at hyperscale for all components of the end-to-end platform (Figure 1). The platform consists of the:

- 1 **Edge Database (SOE)** - Used for real-time decisioning based on local streaming and transactional data plus historical data pulled dynamically from the SOR.
- 2 **Real-time Core Database (SOR)** - Stores transactional and historical data and pushes data as needed to the SOEs also powering ML and AI-based applications.
- 3 **Query and Reporting Database** - Stores historical data primarily for reporting and visualization purposes, integrated via Aerospike Connect for Spark.
- 4 **Aerospike Cross Datacenter Replication (XDR)** - Enables companies to directly integrate the Aerospike Database with their existing Spark infrastructure
- 5 **Aerospike Connect for Spark** - Enables companies to directly integrate the Aerospike Database with their existing Spark infrastructure.
- 6 **Aerospike Connect for Kafka** - Makes it easy for enterprises to exchange data bi-directionally between the Aerospike Database and enterprise transactional systems and **Legacy Data Stores**.
- 7 **Aerospike Clients** - high performing clients offered and supported by Aerospike

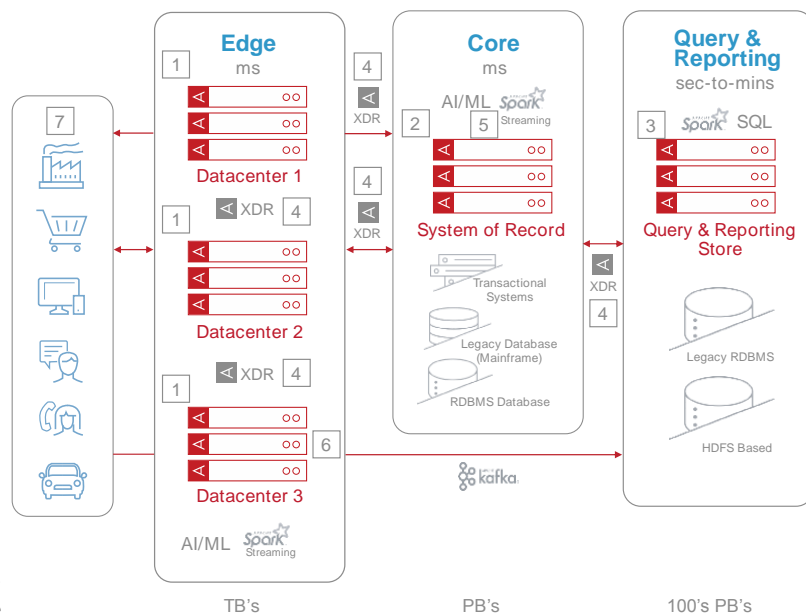


Figure 1.
 Aerospike Hyperscale
 Data Architecture

Meeting Hyperscale Enterprise Data Management Requirements

The Aerospike database delivers millisecond response times at scales of terabytes to petabytes for the strictest enterprise requirements:

Durability/Consistency

Durability - Data can be replicated asynchronously across geographies and synchronously written to other nodes in the cluster and to flash storage without disruption for the highest durability.

Consistency - Aerospike provides strong consistency on primary key access that has been confirmed through Jepsen test results. Data held in Aerospike is always guaranteed to be correct in all scenarios.

Extreme Performance

High Throughput and Low Latency - Multi-threaded parallel processing at the CPU combined with our patented Hybrid Memory Architecture (Figure 2) designed for flash storage devices uniquely deliver predictable high performance at scale.

Smart Client Architecture - Aerospike's smart client architecture ensures parallel access to multiple servers in a cluster for the highest possible performance.

Real-Time Data Transfer Between Edge and Core - Aerospike XDR enables multiple geographically dispersed data centers to stay in sync through high performance replication.

Support for Next-generation Memory - Aerospike is the first open database supporting the Intel® Optane™ DC persistent memory combining DRAM-like performance with flash-like persistence.

High Availability

Uptime and High Availability - Aerospike provides high availability and a demonstrated uptime of five 9s or more which is made possible by our unique cluster management and intelligent client technology in addition to local/remote replication.

Scalability

Scalability - The Aerospike Hybrid Memory Architecture with All Flash and Hybrid Flash options, coupled with Dynamic Cluster Management, allows the Aerospike database to scale to petabytes and store transactional/streaming/real-time data as well as historical data.

Compression - Aerospike's storage compression feature provides lossless compression of records written to persistent storage.

Enterprise Security

Encryption - Aerospike supports full transport encryption, as well as in-database transparent data encryption.

Authentication - LDAP and Kerberos authentication mechanisms are supported. Rich sets of access control options are available including ACLs.

Authorization - Aerospike provides a sophisticated role-based access control (RBAC) system.

Auditing - Aerospike can be configured to generate audit log messages on a wide variety of security events.

Developer Features

Aerospike Clients - a large number of high performing clients are offered and supported by Aerospike, including the REST Client which is a standard interface for the Aerospike database.

Complex Modeling - Basic Data Types supported: integers, strings (UTF-8), doubles, floating point, bytes, binary BLOBs, GeoJSON. Complex Data Types (CDTs) supported: sorted lists, lists, and maps, time series, graphs, geospatial and other complex data structures.

Change Notification Framework - It allows Aerospike servers to efficiently notify external agents of the changes, and provides an easy to build yet reliable and scalable system for complex event processing (CEP).

Integrations

Integration with Existing Data Stores and Systems - Aerospike Connect for Spark and Kafka allow SQL databases, NoSQL databases, and ML-based tools to integrate seamlessly and efficiently to other enterprise data stores and systems.

Deployment Options

In Data Centers and Private Clouds

In Public Cloud - Google Compute Platform, Amazon Web Services, Microsoft Azure, Alibaba Cloud and others

Via Orchestration Platforms - Kubernetes, Docker and Pivotal

As Managed Cloud Service - deployment and management of cloud-based Aerospike databases by Aerospike personnel

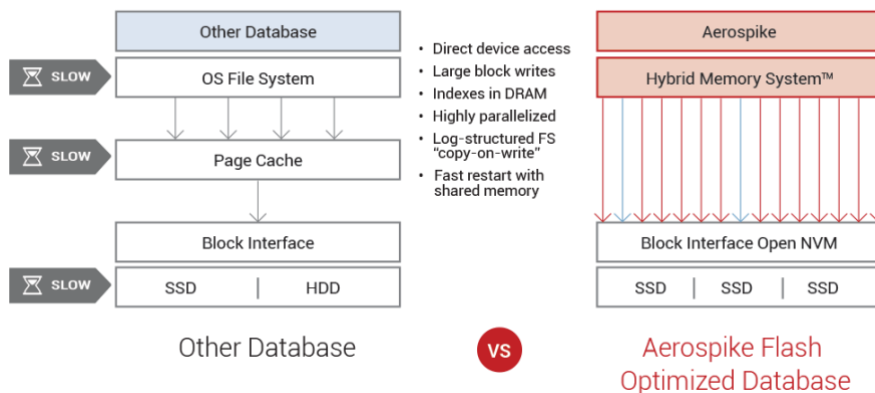


Figure 2: Aerospike's patented Hybrid Memory Architecture

Product Brief: Aerospike Enterprise Edition Database

Benefits

- High Performance - Aerospike's multi-thread parallel processing at the CPU, combined with its patented Hybrid Memory Architecture and Smart Client architecture, deliver predictable high performance at scale. This allows customers to maintain the strictest SLAs at an unprecedented scale.
- Hyperscale data platform- The Aerospike Hybrid Memory Architecture coupled with Dynamic Cluster Management allow the Aerospike database to scale to petabytes while maintaining high performance. This allows customers to manage billions of records in databases of 10s-100sTBs and PBs, and expand their business without limitations in their data infrastructure.
- Unmatched Reliability - Aerospike provides high availability and a demonstrated uptime of five 9s, enabled by its Dynamic Cluster Management and Smart Client technology. This allows customers to focus on their business instead of dealing with operational issues.
- Low TCO - Fueled by our Hybrid Memory Architecture, dynamic cluster management and compression, Aerospike provides improved performance and dramatic reduction in node count. This allows a significantly lower TCO compared to legacy No-SQL databases.

Aerospike Powers Real-time Solutions in these Industries

Financial Services and Payments: Fraud prevention, Identity resolution, Intraday/operational trade stores, Algorithmic trading, and Risk modeling & analysis solutions.

Ecommerce and Retail: Recommendation engine, Payment fraud prevention, Identity resolution, Dynamic pricing, Data access layer and Messaging/chat solutions.

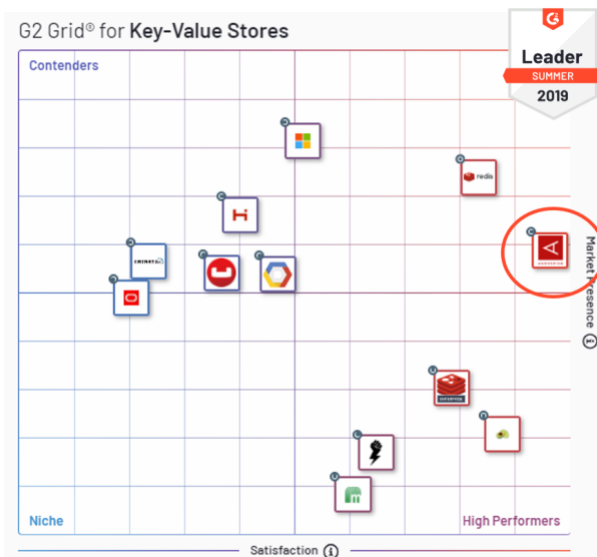
Ad Tech: Programmatic buying/real-time bidding, Ad serving & exchange, DMP, DSP and SSP solutions.

Telecommunications: Customer 360, Real-time billing, Least-cost routing, Subscriber management, Policy management, Authentication & authorization, and Fraud detection.

Online Gaming and Gambling: Fraud Prevention, In-App Advertising, Social Feeds, Personalization, Real-time Event Tracking.

Third Party-Reviews deem Aerospike an Industry Leader

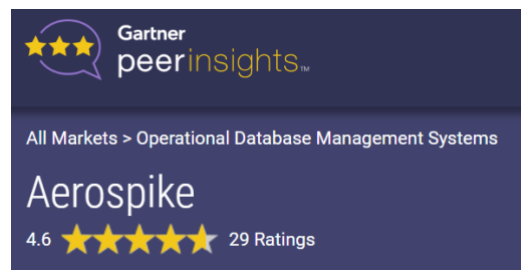
[G2 - Leader for Key-Value Stores](#)



[Bloor - Champion in Hybrid Real-Time Data Processing Market Report](#)



[Gartner Peer Insights - Overall Rating 4.6 out of 5 Stars](#)



Database Product Features

Aerospike Server License Type - Commercial License
Aerospike Client License Type - Apache v2
Binaries - Tested & Verified
Enterprise Production Support
Hot Patch Availability
Community Support
Queries
Geospatial Indexing & Storage
User-Defined Functions (UDFs)
Backup & Restore
Aerospike Management Console (AMC): Basic/Advanced Monitoring
Cross Datacenter Replication (XDR)
Strong Consistency 1
Change Notification
Uniform Balance
All Flash 1
Intel Optane DC Persistent Memory support 1
Compression 1
Fast Restart

Rapid Rebalance
Rack Awareness
Quiescence
Delay Fill Migrations
Durable Delete
Read Page Cache
IPv6
TLS Transport Encryption
Security: ACLs
Data Encryption-at-Rest 1
LDAP Authentication 1
Kerberos Authentication
Transactions or Queries per Second - Unlimited
Namespaces, 32
Objects per Namespace per Node, 32 Billion
Cost of Development Servers - Free with Commercial License
Licensed by volume of unique data managed and active production clusters
Aerospike Connect for Spark (Separate product/license)
Aerospike Connect for Kafka (Separate product/license)

1 Available with additional licensing

About Aerospike

Aerospike is the global leader in next-generation, hyperscale data solutions. Aerospike enterprises overcome seemingly impossible data bottlenecks to compete and win with a fraction of the infrastructure cost and complexity of legacy NoSQL databases. Aerospike's unique Hybrid Memory Architecture™ delivers an unbreakable competitive advantage by unlocking the full potential of modern hardware and eliminating all the friction that holds back companies from delivering unimaginable value from vast amounts of data at the edge, to the core and in the cloud. Aerospike empowers customers to instantly fight fraud, dramatically increase shopping cart size, deploy global digital payment networks and deliver instant, one-to-one personalization for millions of customers in the moments that matter. Aerospike customers include AirTel, Baidu, Banca D'Italia, Nielsen, PayPal, Snap and Wayfair. The company is headquartered in Mountain View, Calif.