MEDICI™

Why Aerospike NoSQL for Financial Services

The Aerospike NoSQL Data Platform for Financial Services

The digitization of financial services has been an ongoing process for the past few decades and Aerospike is at the forefront offering a next-generation, real-time NoSQL data platform.

Traditional databases as well as legacy NoSQL systems struggle to cope with the massive influx of data from multiple sources and multiple formats. It will become uneconomical for firms to spend on scaling mainframes vertically or to add countless nodes horizontally.

By contrast, the **Aerospike data platform has a Hybrid Memory Architecture™ and an All-Flash storage engine, each of which can access from disk virtually as fast as in-memory requiring a fraction of the server footprint. Aerospike has also partnered with Intel, optimizing on Intel Optane® DC Persistent Memory,** a new high density, high performance memory tier. On top of its hardware efficiency, Aerospike has single-record ACID transactions with strong consistency at still great speed and scale – including across data centers. **Thus, by providing multiple high performance storage options and distributed strong consistency, Aerospike combines the best aspects of relational and in-memory systems.**

The Aerospike NoSQL data platform brings immense value when an enterprise has to access and analyze massive amounts of unstructured data or data that is stored remotely on virtual servers within the cloud. Aerospike is able to help financial institutions consume data from multiple sources inside and outside the enterprise. These include structured data from sources like enterprise systems, market systems, and government databases, as well as unstructured data from social networks and media.

Aerospike customers in financial service have seen 90% reduction in payment and identity fraud, and 60% reduction in infrastructure costs. Our clients also use us to power their customer 360, pre-trade risk reduction, recommendation engines, as well cache layer consolidation and mainframe offloading.

Our customers' ability to harness data their architectures enabling their infrastructures to be both more agile and resilient. The Aerospike NoSQL data platform can help meet the growth in online transactions and web applications and meet the new digital imperative that requires new thinking on how data is stored, managed, and processed.

Aerospike is a global leader in next-generation, real-time NoSQL data solutions.

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™ (HMA) offers a fundamentally different approach**. By persisting data on fast SSD devices and leveraging primary key indexes (whether in DRAM, SSD, or Intel® Optane™ DC Persistent Memory), many advantages are realized without compromising performance while adding persistence, correctness, and security.

Aerospike empowers customers to **fight fraud instantly, increase shopping cart size, deploy global digital payment networks**, and deliver one-to-one personalization for millions of customers.

Aerospike's global line-up of **customers includes Barclays, a Top 3 Global Brokerage Firm, DBS Bank, European Central Bank, LexisNexis Risk Solutions, and a Top 3 Global Payments System**. The company is headquartered in Mountain View, Calif., with additional locations in London, Bengaluru, and Tel Aviv.

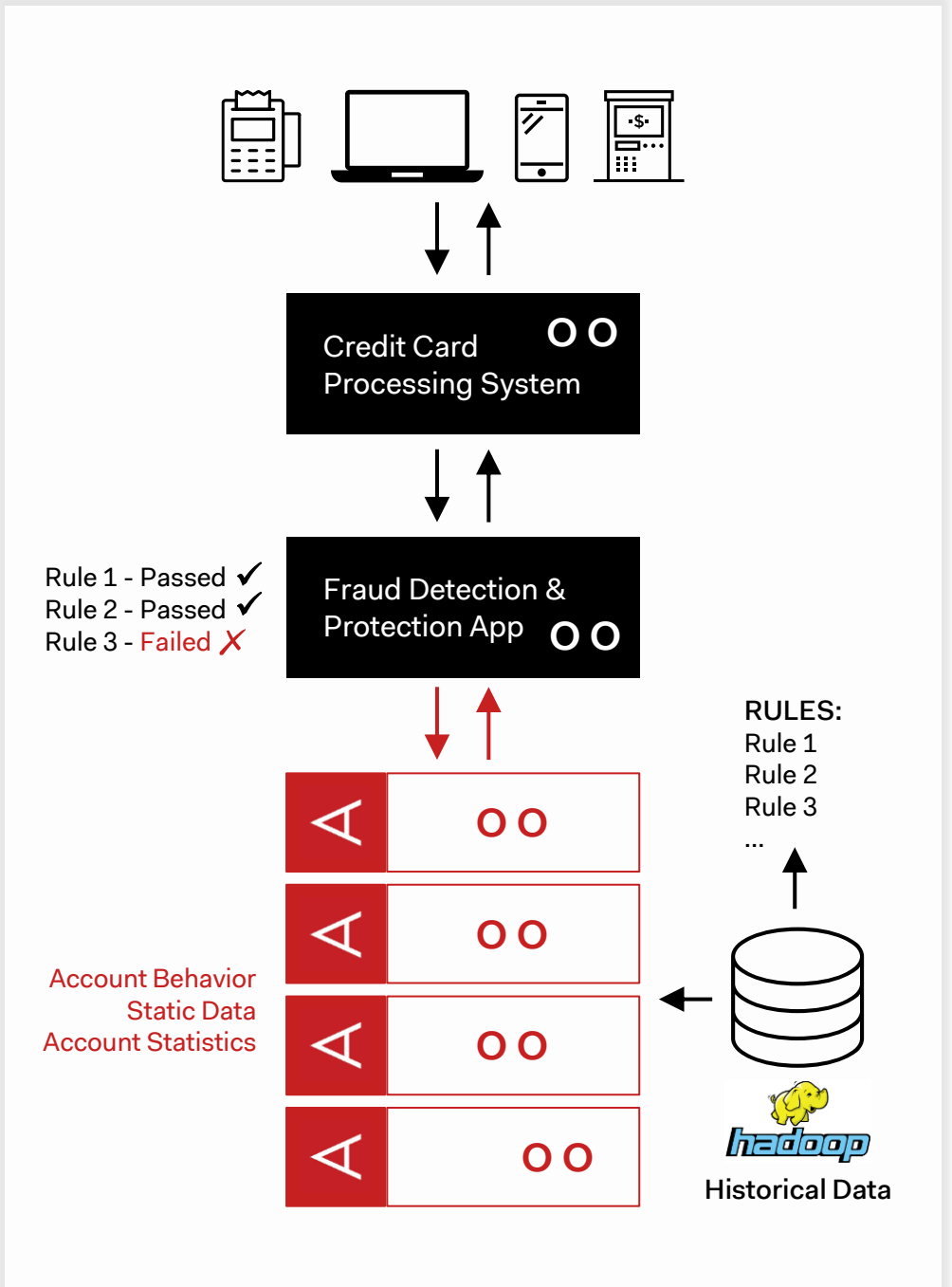
Aerospike's Hybrid Memory Architecture has made a significant difference in financial services.

Top 3 Global Payments System: Fraud detection for digital payments

One of the leading global payments providers, is minimizing its annual fraud losses by improving its **fraud detection algorithm SLAs by a factor of 30x with Aerospike**.

The firm moved from a 2-layer architecture consisting of Oracle RAC and 360 Terracotta servers to a 20-node Aerospike cluster. Now it runs fraud detection rules against 99.95% of its transactions within its target SLA of 750 milliseconds. The figure here illustrates the firm's fraud detection infrastructure with Aerospike.

For more information, click here.

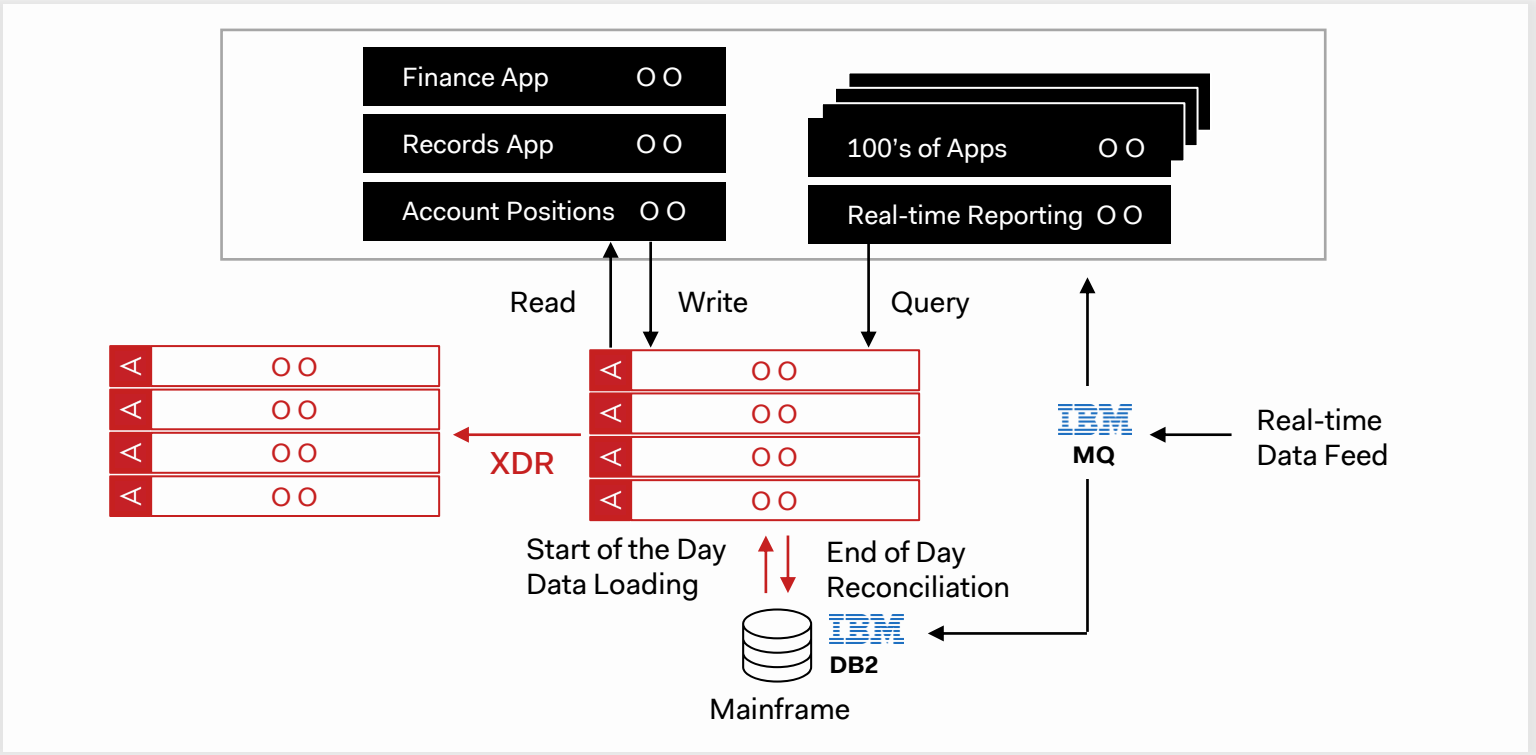


Top 3 Global Brokerage: Intra-day trading for financial services

One of the largest asset managers in the world, with over $3 trillion in client assets, uses Aerospike to offload work from its mainframe solution for financial trades.

Initially, it used a caching layer over its mainframe DBMS to improve response time. When the firm determined that the cache would need to grow from 150 to 1000 nodes to meet future business needs, it turned to Aerospike. Today, a 12-node Aerospike cluster serves as the record system for intra-day trades, replacing the cache and offloading some work previously done on the mainframe. The mainframe continues to serve existing applications, and the firm regularly transfers data between the two systems, so each can fulfill application-specific needs.

With its modernized infrastructure (shown below), the firm now enjoys a five-fold increase in processing speeds. Database access times dropped to sub-millisecond even though the database size increased from 4 to 14TB. Furthermore, **Aerospike enabled the firm to accomplish this with 90% fewer servers deployed, saving an estimated $10,000 per trading day**.



For more information, click here.

LexisNexis® RISK SOLUTIONS | ThreatMetrix®

LexisNexis Risk Solutions/ThreatMetrix: Tracking digital identity

ThreatMetrix, a global solution for digital identity intelligence and authentication, uses Aerospike to handle over 130 million transactions a day to manage real-time customer trust decisions.

The firm was processing more than 50 million transactions per day globally, focusing on false positive reduction and fraud prevention (payment) using a custom SQLite clustered solution from which they migrated to Cassandra. However, they were facing highly unpredictable SLAs—with 130bn+ records and growing, leading to significant latencies in cross data center synchronization and very high per API cost of operations.

After shifting from a 96-node Cassandra cluster to a **28-node Aerospike cluster, they were able to triple the performance leading to predictable SLAs and a two-third reduction in response time**. ThreatMetrix is projected to save $3.32 million in three years with the move to Aerospike.

For more information, click here.

About MEDICI

Since 2013, MEDICI has been pioneering the definition and organization of the new global FinTech industry for the benefit of financial institutions, startups, and investors.

Over the years, it has been a story of numerous Firsts in FinTech!

We were the first independent source of data-driven research dedicated to covering FinTech innovation globally, published every day since August 25th, 2013, now offering an archive of 5000+ insights for the benefit of this new industry.

We built the industry's first content curation and ecosystem collaboration platform in 2015. Today, this proprietary technology supports the world's largest FinTech community of 200,000+ globally across 1000+ enterprises, 13,000+ startups across 65+ sub-segments covering every hub of innovation in every continent.

Website: www.goMEDICI.com | **Twitter:** @gomedici

Thank You

Aditya Khurjekar
CEO & Founder
ak@goMEDICI.com
@khurjekar

Amit Goel
CSO & Founder
amit@goMEDICI.com
@amitTwitr

Global Contacts

Salil Ravindran
Head, Digital Banking
salil@gomedici.com

Giuseppe Marchese
Head of Business Development, Europe
giuseppe@gomedici.com

Subhagini Chaudhary
Head of Sales, Southeast Asia
subhagini@gomedici.com