

Powering Modern Telecom Applications

Petabyte scale, distributed, real-time data platform with > five 9s uptime for AI/ML, OSS/BSS, 5G, MEC and IoT

The Telecom and Communications Services Provider Data Imperative

There is a massive amount of streaming data coming in from mobile, business usage, 5G, and IoT sensor applications, and in the very near future: AR/VR applications and driverless cars. The challenge is to manage, leverage, and analyze this data across silos, optimizing new investments in modern infrastructure and applications, and to provide the best customer experience - all at real-time speeds. The Telecom that provides the best experience will retain and grow their customer base and revenues.

Helping Telecom and Communication Service Providers overcome their data challenges

Aerospike provides a proven, next generation, real-time, NoSQL data platform for the Telecom industry which currently underpins Airtel's customer 360; Nokia's real-time cloud rating, charging, and billing; Amdocs' 5G policy control monitoring and online charging; Viettel's campaign management; and Jio's home subscriber system solutions.

Data Trends in Telecom

5B Users, 2.5EB of Daily Data

unique mobile phone users in the world today generating 2.5 exabytes daily¹

42B Devices, 79.4ZB Data by 2025

Worldwide number of IoT Devices generating nearly 80ZB data by 2025²

95% of businesses

cite the need to manage unstructured data as a problem for their business²

¹ Source: [How Much Data Is Created Every Day?](#)

² Source: [Big Data Statistics](#)

Benefits already realized with Aerospike in the Telecom industry

The patented Aerospike Hybrid Memory Architecture™ provides predictable performance at extreme scale, > five nines uptime, and simplified server operations. Aerospike is also the first NoSQL Database to eliminate tradeoffs in consistency and scale for always-on globally distributed business transactions with its multi-site clustering crossdatacenter replication (XDR) global data hub capabilities.

Leading Telcos worldwide are leveraging the Aerospike unique architecture and enjoying these following benefits today:

- Reduce data-centric hardware costs by 40-90%
- Industry-leading millisecond latency responsiveness and performance
- Experience 99.999% uptime for business applications
- Rapid-scaling to 10's to 100's of millions of subscribers per application
- Handling 300% application traffic growth with ease
- Reduction in customer churn through real-time usage analysis
- Increased cross-sell and up-sell through real-time personalization

Aerospike's Telecom Solutions

Fraud Prevention

Aerospike powers the ability to process streaming transactional data and combine it with historical data in real-time with AI/ML models to prevent fraud in your network, payment systems, and customer accounts. Our industry-leading clients avoid false positives while minimizing transactional friction to increase customer satisfaction while avoiding losses.

With Aerospike, you can enable prevention of unauthorized account access for TV, Internet, and mobile usage and services, cloning of TV and networking devices or payments.



Use Cases and Benefits

- Monitor the physical integrity, operational efficiency and real-time asset health of industrial machines and equipment
- Collect equipment sensor data to proactively identify maintenance issues, diagnose failures, and deploy fast solutions
- Optimize production capacity and planning with instant real-time warehouse and factory inventory monitoring
- Track vital assets such as parts and supplies and act on replenishment needs faster and with better accuracy
- Improve manufacturing safety with wearables and environmental sensors to identify potentially dangerous situations

Customer 360 & Churn Prevention

Aerospike enables the ability to intelligently and contextually design a personalized customer engagement model across channels to create a segment of one, allowing telco and service providers to identify customer events and patterns as they happen that can otherwise cause customers dissatisfaction and going to a competitor.

This combines complete customer profile and historical data (CDR, CRM, call center, applications logs, and web click stream) with AI/ML at scale to predict customer needs and behaviors to power all your customer real-time touchpoints (mobile app, IVR, and CSR). This allows a real-time decision for the next right offer - leading to increased revenue and stimulating new customer growth.



Use Cases and Benefits

- Combining previously siloed data from 350M users
- Ability to process more than 100 billion records in one day
- Resilient persistence of 15,000 -25,000 transactions per second
- Combining petabytes of phone/web/mobile device edge data into unified customer profile accessible in milliseconds

Real-time Charging & Policy Management

In order to digitally transform, charging and policy management systems need to access subscriber information in real-time. Such systems need to aggregate data from operational support systems and user portals to make any number of decisions on services. In order to have a responsive, flexible system, you will need a real-time, reliable data platform.

Today, Aerospike's technology is embedded with some of the leading telco solution providers delivering personalized customer experience for rating, discounting, promotions and settlements across networks.

Use Cases and Benefits

- Scaling to support 170 million subscribers in the midst of pandemic data surges
- Next gen OCS, combining traditional telecom systems with value-added services like broadcast television, online shopping, gaming, advertising, and bill-payment
- Provide less than 10 milliseconds latency
- 99.999% availability with more than 3,000 tariff packets/system
- 40% reduction in total cost of ownership over Oracle TimesTen In-Memory Database
- Reduced CAPEX/OPEX by 40-60% compared to any other NoSQL system
- Simplified integration with other OSSs/BSSs

Real-time Billing & Home Subscriber Server

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Use Cases and Benefits

- Predictable low latency and high throughput, high availability and reliability
- Failure-resistant system with global cross data center replication (XDR) support
- Fast data center build outs with dramatic TCO savings versus e.g. Oracle or home-grown solution

Network Optimization & Capacity Planning

With the rise of mobile data volume due to modern times, 5G and increased mobile app usage, network optimization and capacity planning together develop an elastic, self-healing and secure network that maximizes customer experience. Big data and network slicing are used to aggregate data by service group and accurately forecast and align network bandwidth and intelligent routing faster for current and future demand.



Use Cases and Benefits

- Aerospike powers AI and ML based network optimization to automatically discover network performance issues and learn how to automatically fix those issues continuously to maximize network performance and user experience.
- Accelerates network optimization TCO savings by managing and delivering the real-time data layer to help analyze bandwidth utilization, minimize latency, packet loss, congestion and jitter.
- Help deliver higher quality of service from analyzing network traffic in real time across SDN, NFV, MPLS, SD-WAN, O-RAN, V-RAN, and C-RAN.

About Aerospike

Aerospike is the global leader in next-generation, real-time NoSQL data solutions for any scale. Aerospike enterprises overcome seemingly impossible data bottlenecks to compete and win with a fraction of the infrastructure complexity and cost of legacy NoSQL databases. Aerospike's patent-ed Hybrid Memory Architecture™ delivers an unbreakable competitive advantage by unlocking the full potential of modern hardware, delivering previously 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. Aerospike customers include Airtel, European Central Bank, Experian, Nielsen, PayPal, Snap, Verizon Media and Wayfair. The company is headquartered in Mountain View, Calif., with additional locations in London; Bengaluru, India; and Tel Aviv, Israel.