AEROSPIKE

Achieving Higher Levels of Autonomy for Advanced Battle Management

USE CASE

Evolving trends in warfare require new operational concepts ensuring our nation remains competitive against adversaries. Despite the tremendous technological advances made in the last decade, achieving high levels of autonomy in uncertain, unstructured, and dynamic environments remains challenging and somewhat controversial.

As greater amounts of computing and network power are deployed at the tactical edge, key capabilities such as anomaly detection, entity tracking, real-time alerting, predictive classification, and historical analysis must maintain a common operating picture (COP) for greater situational awareness (SA). However, this involves large-scale data filtering of events, entities, and transactions to develop understanding through spatial and temporal correlation across multiple data sets.

By taking data from multiple sources and processing transactions to develop deep understanding in real-time, Aerospike creates an advanced battlefield through enhanced situational awareness, providing warfighters clear visibility of operations in the battlespace.

A new breed of data analysis

Processing this data requires a real-time analytics platform that can ingest, analyze, and visualize massive data sets to combine historical and streaming data analysis for powerful location intelligence and AI. This new breed of data analysis makes it possible to drive a COP using pattern of life (POL) analysis capabilities from rapidly increasing deployments of autonomous vehicles. Even more advantageous, when deployed in mobile cloud replication systems, local data can be combined with cloud-based data, and the same cloud-based processing can be supported in degraded, disconnected, intermittent, low bandwidth and high-latency (D-DILL) scenarios.

Aerospike's advanced processing, real-time platform enables the type of large-scale, real-time data filtering needed to bring this scenario to life.

By taking data from multiple sources and processing transactions to develop deep understanding in real-time, Aerospike creates an advanced battlefield through enhanced situational awareness, providing warfighters clear visibility of operations in the battlespace.

Whether centralized or at the edge, defense units must maintain a COP across relevant data sets to maintain key capabilities such as anomaly detection, entity tracking, real-time alerting, predictive classification, and historical analysis to achieve greater situational awareness.

Aerospike: When milliseconds matter

Advanced learning technologies have become more critical within unmanned systems due to the increased needs for rapid development. For DOD, this means having fast and affordable access to best-in-class technologies. For the warfighter, it means increased intelligence and decision-making abilities during a mission.

Uniquely designed to unify scalable data with sub-millisecond processing speeds, Aerospike's real-time data platform rapidly moves enormous volumes of data to where it is needed for AI/ML processing, storing, and governing. Aerospike optimally serves the military's varied autonomous vehicle operations at the edge by:

- Enabling lightning-fast ingestion, fusion, and transport of data across domains
- Supporting faster decision making
- Creating dynamic tasking and retasking environments

Reimagine your mission with Aerospike

Aerospike brings together mission expertise with proven innovation to aid federal agencies in creating a better and safer future for us all. It is our mission to partner with clients, creating enduring change for our country and our fellow citizens. The Aerospike Real-time Data Platform enables agencies to extend their AI and ML capabilities across multi-cloud environments or at the edge to increase the availability and quality of data collection in the most mission-critical situations with predictable, sub-millisecond performance.

In this way, Aerospike accelerates decisions and triggering actions up to the point of events. Whether those apps power autonomous vehicles, fight fraud, enable global digital payments, provide cyberthreat awareness, increase battlefield advantage for warfighters, or predict the next big weather event, Aerospike processes data at the point of need to dramatically accelerate federal mission outcomes.

Delivering unprecedented value and advantage that lasts

- Defeating uncertainty with scalability
  - » Easily add or remove database nodes to adjust input or storage capacity with linear scalability, even while under production load
  - » Massive device connectivity across highly distributed networks.
- Reduced server footprint
- Low total cost of ownership (TCO)
- Superior reliability: five-nines — 99.999% — availability to support even the most mission-critical federal applications and networks
- Ultra low latency
- Data integrity: ability to capture all data generated during temporary loss of connectivity
- Fine-grain data control of hyperscale global workloads:
  - » Cross-Datacenter Replication (XDR) capability dynamically routes data captured at the edge to where it is needed – with improved accuracy and reduced overhead.
- Improved cyber resiliency: Data can be distributed rapidly to multiple nodes across the data architecture, delivering greater failover capability and reducing the impact of a cyber outage or intrusion.

To learn more about how Aerospike can support your agency's autonomous vehicle operations, please go to aerospike.com/solutions/industry/public-sector/.

Aerospike unleashes the power of real-time data to meet the demands of The Right Now Economy. Global innovators and builders choose the Aerospike real-time, multi-model, NoSQL data platform for its predictable sub-millisecond performance at unlimited scale with dramatically reduced infrastructure costs. With support for strong consistency and globally distributed, multi-cloud environments, Aerospike is an essential part of the modern data stack for Adobe, Airtel, Criteo, DBS Bank, Experian, PayPal, Snap, Sony Interactive Entertainment, The Trade Desk, and Wayfair. A global company, Aerospike is headquartered in Mountain View, California, with offices in London, Bangalore, and Tel Aviv.

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