

Powering Ad Tech solutions with real-time data

Increasing personalization and accuracy at scale with a real-time data platform

SOLUTION BRIEF

The Ad Tech real-time data imperative

The race to compete for online ad bidding, placement and delivery is being waged on display, video, mobile and in-app. As a result, both speed and accuracy are at a premium, lest your customer go to your competitor for better results. Plus, with online cookie technology on its way out, and regional regulations on their way in, ad tech players must now leverage multiple additional sources of data just to rebuild online profiles, globally, for precise marketing and targeting, while controlling for new compliance needs. In short, the ad tech industry's insatiable appetite for more data, faster has only grown in recent years, with the need for a real-time data platform.

Data intensive challenges that Ad Tech is facing today

Omnichannel advertising – Brands are racing to find new ways to re-engage their customers in unique ways so out-of-home (OOH) advertising is growing rapidly. Ad Tech is working to offer seamless personalized advertising on new formats like on mobile phones and devices.

TV and streaming platforms – Many advertisers have considered TV a dying channel. However, the reality is that TV continues to show up and deliver eyeballs and a more engaged audience than many other digital advertising channels. That, coupled with what's happening on the digital front with rising cost per clicks, make TV and streaming platforms more ripe for advertising.

Benefits of Aerospike for your Ad Tech business

- **Fast look-up** - Aerospike enables fast look-ups to enrich ad requests with information about the mobile consumer.
- **Rich user profiles** - Aerospike stores rich user profiles to leverage and build context when serving ads with speed and low latency.
- **Enrich streaming Data** - Aerospike enables very fast look-ups for real-time bidding to enrich streaming data in the pipeline.
- **Data Synchronization** - Aerospike provides consistent data across geographically dispersed data centers so you can act in real time.
- **Reduce footprint, grow business** - Customers typically reduce server footprint by 80% even as business and data grows.

Header bidding – Header bidding, also referred to as advance bidding or pre-bidding, offers publishers a way to simultaneously offer ad space out to numerous supply-side platforms or ad exchanges at once. Although this raises concerns about latency and infrastructure costs, this equal access offers advertisers significant advantages and increased transparency, and better inventory as a result.

Graph Databases – Graph databases are designed to treat the relationships between data as equally important to the data itself. A graph database stores connections alongside the data in the model - showing how each individual entity connects with or is related to others. As a result, graph databases excel at managing highly-connected data and complex queries.

Aerospike at the core of Ad Tech

The Aerospike Real-time Data Platform increases advertisement personalization and accuracy at scale. Aerospike powers Ad Tech applications including:

- **Real-time bidding**
- **Ad exchanges**
- **Ad serving**
- **Data management platforms (DMPs)**
- **Demand-side platforms (DSPs)**
- **Supply-side platforms (SSPs)**
- **Identity graphs**
- **Mobile and streaming media.**

Aerospike technology differences

Faster

Treats SSDs like DRAM with patented technology.

Performance at Scale

Performance does not degrade from terabytes to petabytes.

Reduce Server Footprint

Grow business while reducing server footprint up to 80%.

Aerospike enables Ad Tech companies to act instantly across billions of data transactions while keeping server footprints small, across clouds, with predictable sub-millisecond performance from terabytes up to petabytes of data with five-nines uptime with globally distributed, strongly consistent data.

Some of the largest and most successful companies in Ad Tech across the globe rely on Aerospike as their foundation for the future.

Transform your Ad Tech solutions with the Aerospike Real-time Data Platform

Real-time bidding

Allowing buyers and sellers to use complex delivery rules, targeting and optimization algorithms to serve the right ad for every request

[The Trade Desk achieves hyperscale for real-time bidding](#)

The Trade Desk (TTD) is an advertising technology company that provides a self-service omni-channel platform for media buyers to purchase digital advertising. TTD uses Aerospike for real-time bidding. The company has grown 10x while using Aerospike and conducted an Initial Public Offering. They literally put a PB of data to work to get bids they never before thought they could get. In addition to capturing bids they previously missed, they also access PBs of cold storage in under 8ms and are growing 50% faster than the rest of the industry.



“Aerospike is by far the best for what we do... It makes a real big difference for our ability to execute when we’re trying to follow a customer along the customer journey and they’re transitioning between states. If you’re an extra 50 milliseconds behind, it can cost you putting the right message in front of them.”

Dave Pickles, Founder and CTO, The Trade Desk

Ad exchange

Platform for selling and buying online ad inventories between advertisers, media agencies, ad networks and app developers and publishers.

[Aerospike NoSQL powers Rubicon Project Ad Exchange](#)

Rubicon Project provides a digital advertising technology platform and related services that connects advertising buyers (advertisers) with sellers (publishers) of advertising inventory. Aerospike powers their ad exchange. With Aerospike they have exceeded their latency requirements. They now return many queries in under one millisecond. Aerospike has made it easy for them to scale while simultaneously offering a low total cost of ownership.



Ad serving

Technology used to place ads in apps allowing publishers to sell, manage and deliver their ad inventory to demand sources in real-time.



[When Five Nines Is Not Enough: What 100% Uptime Looks Like](#)

A subsidiary of AT&T's Xandr, AppNexus was Aerospike's first customer. A substantial portion of the world's internet advertising flows through AppNexus. Their global cookie store runs on Aerospike. They have 6 datacenters, 10's of billions of objects and have experienced 10 years uptime with Aerospike.

Data management platform (DMP)

A warehouse used to store and analyze data generated from ad campaigns and impressions.

Demand-side platform (DSP)

Allowing buyers to manage their campaigns and run them automatically on multiple ad exchanges through one interface.

Real-time business intelligence with big data: Edge-to-Core in milliseconds



Adform is a European Ad Tech company that provides an integrated advertising platform for sell and buy-side users. Adform uses Aerospike for its demand side platform (DSP) and its data management platform (DMP). They have achieved 9x server reduction by moving from Cassandra to Aerospike.

“Aerospike is Adform’s secret weapon. It is the enabling data store that allows us to do real-time bidding and make money. We use Aerospike for user profiles, for real-time bidding, profiles for advertisers, profiles for publishers, and the huge, huge amount of data that we process for data providers in our data management platform.”

Peter Milne, Head of Technology Architecture, Adform

Supply-side platform (SSP)

Manage and optimize monetization strategies by tapping multiple sources of advertising demand.

Lessons Learned Rebuilding a Large Scale Real-time Feature Store

Proponents of a free and open internet, Quantcast creates a new and innovative intelligent audience platform that empowers brands, agencies, and publishers to know and grow their audiences, reaching people in the right place at the right moment. They are using Aerospike to replace one of their legacy systems which helps with storage features. With Aerospike, they can make more datasets available at bid time to make better decisions about who to target ads to and which sites are valuable to different marketers. We also got them up and running with a scalable, maintainable key-value store.



“We’re going to be able to make more datasets available at bid time (with Aerospike) so that we can make better decisions about who to target ads to and which sites are valuable to different marketers.”

Kristi Tsukida, Sr. Software Engineer, Quantcast.

Mobile and streaming media

Engage consumers through contextual mobile advertising, capture streaming data, enhance it, and push either up/downstream for mobile ad attribution at scale.

Aerospike Powers InMobi's mobile advertising platform

InMobi is the world's leading independent mobile ad network. Its mobile-first platform (powered by Aerospike) allows brands, developers, and publishers to engage consumers through contextual mobile advertising. Aerospike beat out Cassandra and Hbase (which had initially been deployed as their key-value store.) With Aerospike, InMobi serves 1.5+ billion active users with 138+ billion ad impressions per month. They process 150,000 requests per second and achieve 5ms responses while meeting a 20ms SLA - all with zero downtime.



gets the job done in less than five milliseconds. This, in turn, allows us to serve more targeted ads within our 20-millisecond SLA."

Mohit Saxena, Co-founder, and CTO, InMobi



"The thing I like most in Aerospike is that it just works. And that's not trivial."

Ido Barkan, Software Architect, AppsFlyer

Large scale NoSQL DB migration under fire

AppsFlyer, a global Ad tech leader, has a 150TB data platform that captures streaming data, enhances it, and pushes either up/downstream for mobile ad attribution at scale. They are running on Aerospike Cloud Managed Service, having beat out AWS DynamoDB.

The Aerospike Real-time Data Platform enables organizations to act instantly across billions of transactions while reducing server footprint by up to 80 percent. The Aerospike multi-cloud platform powers real-time applications with predictable sub-millisecond performance up to petabyte scale with five-nines uptime and globally distributed, strongly consistent data. Applications built on the Aerospike Real-time Data Platform fight fraud, provide recommendations that dramatically increase shopping cart size, enable global digital payments, and deliver hyper-personalized user experiences to tens of millions of customers. Customers such as Airtel, Experian, Nielsen, PayPal, Snap, Wayfair and Yahoo rely on Aerospike as their data foundation for the future. Headquartered in Mountain View, California, the company also has offices in London, Bangalore and Tel Aviv.