

Case Study

Building a High-Performance Adserver for a Global DOOH Marketplace

To Power Real-Time Bidding, Creative Syncing, and Proof-of-Play Compliance



PROJECT OVERVIEW

A global DOOH supply-side platform operating in 19 markets faced challenges from manual creative approvals, lack of real-time bidding, and one-off DSP integrations. These issues slowed down campaign activation and made it hard to scale efficiently. As campaign volumes grew and compliance demands increased, their outdated platform couldn't keep up. While common for fast-growing companies, these problems intensified the need for a more unified and automated solution to meet modern buyer expectations. That's when they approached Rishabh Software to architect an Ad server platform that would deliver real-time programmatic capabilities, automate creative delivery, support 24/7 global operations, and ensure full transparency through Proof-of-Play reporting.



Capability

Programmatic
AdTech Engineering



Industry

Digital Out-of-
Home Advertising



Country

United Kingdom
(Deployed Globally)

KEY FEATURES

We delivered a microservices-based Ad server platform optimized for modularity, performance, and scale. Designed to handle real-time ad delivery and intelligent deal workflows, the platform ensures smooth campaign execution across global screens.

Unified Inventory & Deal Management

Implemented a Unified Inventory & Deal Management system that centralizes the management of frames, tags, and location data. This system is integrated into an easy-to-use interface for creating deals, targeting audiences, and monetizing inventory across different regions and devices.

Automated Creative Workflow

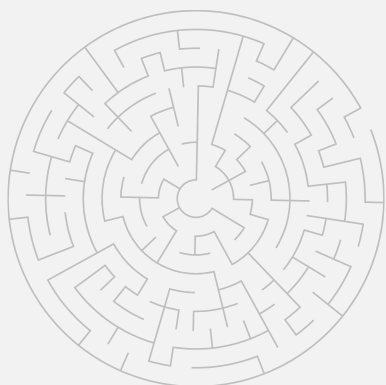
This solution streamlines the secure upload, approval & assignment of creatives with automated syncing to player devices. SmartSync enhances offline resilience to ensure uninterrupted playback even without network connection.

Real-Time Auction Engine with DSP Integration

Developed an Auctioneer component that integrates with DSPs to run high-speed bid requests, process responses, and select winners instantly. This enables last-minute inventory monetization and facilitates global ad trading.

Proof-of-Play Compliance Dashboard

Implemented a post-delivery tracking system that generates detailed Proof-of-Play (POP) reports. Essential for contract fulfillment, brand safety, and third-party validation.



CHALLENGES

- Existing infrastructure couldn't meet real-time bidding demands, causing delays and missed delivery windows.
- Fragmented creative workflows required excessive manual intervention, slowing down campaign activation and increasing errors.
- Operations across 19 markets lacked consistent deal visibility, centralized inventory targeting, and timezone synchronization.
- The absence of an automated Proof-of-Play system left media owners vulnerable to disputes and unable to verify ad delivery.

SOLUTION

We engineered a purpose-built Ad server platform with a distributed, cloud-native architecture. It combined global scalability, real-time performance, and system resilience to enable programmatic DOOH at enterprise scale. The key deliverables of the project included:

Microservices-Based Architecture

The entire solution was architected as independent services including inventory, deal, creative, and player modules with each component built for horizontal scalability and faster deployments across regions.

High-Speed Real-Time Auction Engine

Our custom Auctioneer system enabled low-latency bidding by connecting with multiple DSPs in milliseconds. The core Adserver processed available slots, evaluated eligibility, and served the winning creative instantly.

SmartSync Content Delivery

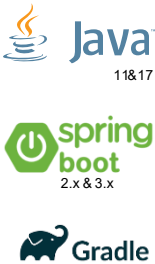
SmartSync ensured that the latest approved creatives were always available on the player, even during network outages. This guaranteed content integrity and uninterrupted delivery at the edge.

POP Reporting Suite

We developed a Proof-of-Play tracking layer that fed verified playback logs into a Compliance Dashboard to allow media owners to generate on-demand POP reports and monitor campaign performance in real time.

TECHNOLOGIES & TOOLS

Languages/ Frameworks



Infrastructure



Tools



Security & Monitoring



Outcomes

Zero

missed playback events
on players

4× Faster

campaign activation with
automated creative workflows

24/7

global operations with centralized
deal targeting and real-time bidding

ABOUT RISHABH SOFTWARE

As a Digital Engineering and Enterprise Transformation leader, we empower businesses to scale, innovate, and thrive in today's digital-first world through technology rooted in trust and transparency. We leverage emerging capabilities such as Cloud, Data Engineering & Analytics, AI, Automation and Application Engineering to drive digital transformation and unlock new opportunities. We have successfully served across 25+ countries, and we work towards customer delight as "WE CARE."

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