

VoltDB Enables TripleLift to Meet Publisher & Advertiser Needs for Real-time Actionable Data

Increasing Performance, Volume, and Accuracy

TripleLift, an advertising technology company and market leader in native programmatic advertisements, transforms video and photo content into engaging, in-feed native ads that match the unique look-and-feel of a publisher's website. Accessible through the industry's first and largest real-time, native programmatic exchange, TripleLift enables marketers to reach millions of consumers across any device at scale and manages massive amounts of data streams daily. With VoltDB, TripleLift can now process more than 9 billion events a day — stitched into more than 700 million unique data sets — all while ensuring the accurate results its customers demand.

Addressing the Demands of Real-time Native Programmatic Advertising

Native programmatic advertising technology provides in-feed native ads that match the visual design of the online destination and the look-and-feel of natural content. It enables efficient scalability of native advertisements that are relevant to the content displayed. Native programmatic advertising allows publishers to tailor advertising content to the way people actually read content online.

TripleLift has gone a step further by creating a Real-Time Bidding (RTB)-enabled native ad exchange to allow advertisers buying media programmatically to leverage their existing platforms to access premium, in-feed native ads. TripleLift's Native Ad Exchange (TLX) was the first RTB native ad exchange. TripleLift processes hundreds of bids in concurrent, real-time

auctions while tracking rich data like user interactions and conversions. It allows content publishers to leverage native placements on their websites to unlock untapped revenue opportunities. TripleLift goes beyond traditional programmatic approaches by offering RTB auctions that enable buyers and sellers to leverage unique data, bidding algorithms, and real-time insights.

According to Jared Skolnick, TripleLift's Head of Publisher Marketing, "We're able to deliver beautiful, native ads at scale. Our technology automatically turns existing assets into thousands of unique ads that match the appearance of each website. Publishers can nativize their sites and unlock previously untapped revenue opportunities, and advertisers can present highly targeted and relevant content to build brands and drive sales. But we needed to enhance our real-time infrastructure to provide the market with the accurate and up-to-date information they need to enable informed real-time bidding. The speed at which we can respond to changes or detect anomalies directly impacts our revenue, so increasing our real-time capabilities was crucial."

The company had been relying on Apache Storm for simple real-time data processing and Apache Spark for batch processing and reporting, with the Druid data store providing reporting and analytics for both real-time and batch pipelines. "We were analyzing our streaming data on a per-batch basis with Spark, but this introduced a latency that fell above the real-time requirements needed for us and our customers," explained Michael Harroun, Head of Backend Engineering at TripleLift. "We knew we needed a database refresh, so we started looking for a tool that could integrate with our current stack while supporting increasing volumes of real-time traffic."

VoltDB Deployed Within Weeks

TripleLift wanted a fast and highly scalable solution that could be deployed quickly and efficiently with its existing infrastructure. After a careful search, TripleLift selected the VoltDB in-memory transactional database, which is designed for applications that require a combination of data scale, volume, and accuracy. After a two-week proof of concept, TripleLift implemented an end-to-end production rollout within four to six weeks. According to Harroun, “The VoltDB Fast Data platform has not only reduced our footprint, but also has provided us with the ability to meet the real-time demands of ad placements on every consumer device while ensuring the accuracy of a growing number of transactions to keep our clients’ ad budgets and actual spend aligned.”

VoltDB was integrated directly with TripleLift’s data processing infrastructure, and during TripleLift’s busiest periods, VoltDB processes 250,000 transactions per second. It allows TripleLift to ingest events in real-time and automatically make decisions on a per-event basis. Integration with VoltDB has allowed TripleLift to add real-time capabilities to its legacy systems. The company has four datacenters supporting the eastern United States, western United States, Europe, and Asia, and VoltDB has initially been deployed in its eastern United States datacenter. “Within two weeks we were up and running, and we plan to expand the deployment to support our three other datacenters in the future,” said Harroun.

Managing Native Advertisements at Scale

VoltDB supports rapid ingestion and streaming analysis of data on hundreds of thousands of concurrent events. With latencies in milliseconds, VoltDB offers the ideal platform for managing advertising transactions at scale. According to Skolnick, “By providing the market with better and more timely data, we’re able to attract more customers and encourage more repeat business.”

Harroun added, “With VoltDB, our hardware and processing costs are much lower than they were with our Spark streaming solution. The support VoltDB provides helped us accelerate our deployment and addressed the big data challenges of structuring extremely high volumes of information to support real-time buying and selling. We’re able to get instantaneous feedback through our chats with support staff, and we’ve been able to quickly complete our migration and realize significant results, even as we continue to scale the volume of data we process daily.”

Among the greatest challenges today in digital advertising are delivering the right content to the right audience at the right moment, and then accurately billing the publisher and advertiser for that content. This requires the ability to consistently ingest, analyze, and automatically take actions on live data streams. “TripleLift recognized the need to go beyond batch analysis to satisfy the real-time demands of our business,” said Harroun. “The VoltDB Fast Data platform enables digital advertising platforms like TripleLift to more efficiently and effectively harness the power of real-time insights to deliver differentiated offerings that meet the evolving needs of both publishers and advertisers.”

About VoltDB

VoltDB is an in-memory transactional database for modern applications that require the ability to manage data at unprecedented scale and volume, with 100% accuracy.

Unlike OLTP, Big Data, and NoSQL offerings that force users to compromise, only VoltDB supports all three modern application data requirements:

Millions — VoltDB processes relentless volumes of data from users, devices and sources.

Milliseconds — VoltDB ingests, analyzes, and acts on data instantaneously.

100% — Data managed by VoltDB is always accurate, all the time, for all decisions.

Telcos, Financial Services, Ad Tech, Gaming and other companies (including IoT technologies) use VoltDB to modernize revenue-critical applications. VoltDB was founded by a team of world-class database experts, including Dr. Michael Stonebraker, winner of the coveted ACM Turing award.

