CASE STUDY
MySQL HeatWave helps Tetris.co triple revenues

Cloud simplicity helps AdTech SaaS player focus on core business

Executive Summary

Trigger

Tetris.co, a Brazilian-based provider of AdTech SaaS solutions, hit the speed bumps that are all too typical for small but fast growing online businesses. Their solutions, which analyze the effectiveness of digital marketing campaigns, bottlenecked due to a reliance on separate transaction and analytic databases from their cloud provider, AWS. The need to move data using batch extract-transform-load (ETL) processes from the Amazon Aurora transaction database to the Amazon Redshift data warehouse led to long cycle times, sometimes up to several hours. In the world of AdTech, where ad placement decisions are made in split seconds, such latencies became a threat to future growth of the business.

Our Take

Tetris.co addressed growing pains by replatforming the data platform underlying its SaaS service. It migrated from Amazon Aurora and Redshift to Oracle MySQL HeatWave, cutting its out-of-pocket costs in half, while improving performance and gaining the opportunity to scale and develop new value-added services. On the new Oracle service, Tetris.co was able to onboard far more data (and new customers) while improving query speed and reducing costs. The result was that Tetris.co could perform more complex analytics faster. Customers grew more engaged with Tetris.co's services, tripling traffic, with the results showing up on the bottom line, as the company tripled its revenues. With HeatWave AutoML capabilities democratizing access to machine learning, Tetris.co is now planning to further buttress its SaaS offering by adding new smart predictive services to help customers improve ad placement decisions.

Targeting the full digital marketing user journey

Tetris.co was formed as the spinoff of a consulting business whose partners had extensive experience helping digital commerce firms analyze the effectiveness of their advertising and promotion campaigns. They developed a pair of complementary offerings that provided analytics tailored for digital advertising, and a management service that enabled clients to make those insights actionable. Tetris.co brings together a cloud-based service based on its engagements with AdTech clients that understands the entire user journey and all of their touch points with advertisers. They service clients such as The Iberdrola Group, L'Oreal, and Dutyfree with modeled data and visualizations that help them to understand the effectiveness of their digital marketing campaigns.

The company originally ran its service on AWS using a traditional three-tiered data stack for processing transactions, data warehousing, and performing the necessary extract-transform-load (ETL) operations for feeding the warehouse. This stack came of age when data

warehouses emerged to offload complex query processing to avoid imposing overhead that would cause resource contention on transaction systems.

Tetris.co relied on Amazon Aurora for MySQL for transaction processing of digital ad placements, Amazon Redshift for campaign analytics, and custom code for ETL processing. As a proven set of platforms, the three-tiered architecture helped Tetris.co rapidly launch its SaaS business. However, as the customer base and data grew, the company found itself hitting a wall when it came to controlling costs and meeting the performance requirements for enabling clients to optimize their digital online ad spending in real-time.

AdTech places huge demand on cloud analytics

There are few businesses that have more stringent real-time processing requirements than AdTech. The AdTech space is highly dynamic; placement of ads is decided at run time when the customer connects to a website and must be completed almost instantly to keep the customer's eyes from leaving the site or abandoning their shopping carts. Backing the process is a highly complex value chain that starts with the demand-side platform that helps advertisers manage their purchases; the ad exchange where ads are bought; and a supply-side platform for enabling publishers to monetize their ad inventory. For advertisers, the demand-side platform is where advertisers manage their ad placements, which are executed in the exchange.

The volatile nature of digital ad buying and placement puts a premium on cycle time. In the B2C world, consumer sentiment and buying preferences can be highly event-driven, such as when a sports team wins a crucial playoff game. Managing ad campaigns requires feedback loops that are as close to real-time as possible, and with its original cloud data platform, that is where Tetris.co's business hit bottlenecks. The challenge was the complexity of the technology stack that was designed around batch processing. While, on the grand scale of things, Tetris.co's data volume totaled only about 500 GBytes, it still encountered delays – sometimes measured in hours – before it could deliver analytics to its customers on the effectiveness of their digital ad campaigns. Tetris.co had to rethink its underlying cloud data platform if it was to continue growing its business.

Making the cloud more responsive

After evaluating several alternatives, Tetris.co chose to migrate to a new cloud platform designed with a more compact, optimized architecture for delivering near real-time performance. It moved to Oracle MySQL HeatWave, Oracle's reimagined implementation of MySQL that consolidates transaction processing, analytics, and machine learning within the

same database, all implemented on Oracle Cloud Infrastructure (HeatWave is now also available on AWS and Azure).

HeatWave includes several key design optimizations that accelerate analytic performance. First, it adds an in-memory, distributed hybrid column store sitting alongside the popular MySQL InnoDB row store used for transaction processing. In place of ETL, a lightweight change data capture process automatically propagates data to the hybrid in-memory column store in real time. Furthermore, the design of the column store eliminates the need for indexes and facilitates advanced compression techniques that not only shrink the footprint (and storage cost) of the database, but also speeds processing. HeatWave also micro-partitions the data for supporting parallel processing for analytic queries, and it applies vector processing for queries that hit the row store.

And with HeatWave Autopilot, the service applies machine learning under the hood to continually optimize the running of the service, which further reduces TCO (total cost of ownership) and accelerates query performance. Specifically, Autopilot optimizes and automates system setup with auto provisioning, and applies similar benefits with parallel data loading and data placement, error recovery, along with query planning and execution.

All this runs atop OCI, Oracle's cloud infrastructure, which was designed with a flat topology that minimizes network hops between distributed compute and storage nodes, further enhancing performance.

The result is that analytic data is available almost immediately, eliminating the overhead and lag associated with running batch ETL processes and building or updating indexes. Prior to HeatWave, MySQL was rarely utilized for analytics. According to Oracle's benchmarks, HeatWave's design accelerates analytic query processing compared to traditional "vanilla" MySQL implementations by 400x. At Tetris.co, queries that used to stretch out over minutes now executed in milliseconds, and that drew attention from C-level executives within its customer base, which in turn, made the service not only more essential to its clientele but also attracted new business.

Takeaways

Having gone live on MySQL HeatWave in early 2021, Tetris.co has been on the platform for roughly 2 years. And since then, there have been clear results to the bottom line. Existing customers – at that point Tetris.co's primary focus – tripled their use of the SaaS service, which has resulted in a tripling of revenues. Customer loyalty jumped as retention rates increased from 70% with AWS to 85% after implementing HeatWave. The key to Tetris.co's bottom line results was that with HeatWave, the operational simplification of consolidating

OLTP and OLAP databases and eliminating the burden of developing, running, and maintaining custom ETL routines enabled the company to cut its cloud database costs in half.

Operational simplification yielded an additional dividend; without the headaches of maintaining and running a complex data stack, the company could focus on its core business: enriching the service that it delivers to customers. That drew more engagement. Furthermore, with improved performance, where queries that formerly took minutes now executed in fractions of a second, Tetris.co increased engagement with C-level executives at its clients, which in turn deepened engagement, helped improve customer loyalty, and attracted new customers.

Next on tap, Tetris.co is starting to take advantage of the HeatWave AutoML features that will further enrich its portfolio. With AutoML, developers will not require any specialized knowledge of machine learning algorithms as the automation will guide analysts and data scientists in algorithm and feature selection. HeatWave AutoML extensibility will allow experienced Python developers to further refine and customize these models. The results should help Tetris.co further cement customer loyalty as its services are more readily able to evolve with customer needs.

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Tony Baer, the founder and principal of dbInsight, is a recognized industry expert on data-driven transformation. *Onalytica* named him as a Top Cloud Influencer for 2022 for the fourth straight year. *Analytics Insight* named him one of the 2019 Top 100 Artificial Intelligence and Big Data Influencers. His combined expertise in both legacy database technologies and emerging cloud and analytics technologies shapes how technology providers go to market in an industry undergoing significant transformation.

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