



Jigsaw Increases Concurrency by 900% with SingleStoreDB on AWS

Executive Summary

Jigsaw dating app, the premier dating partner of the Dallas Cowboys, offers a unique experience for users by hiding each profile face behind 16 puzzle pieces. To unveil the face of their match, users must take a step beyond likes and swipes, and engage in back-and-forth messaging. However, when Jigsaw launched in the U.S., it encountered issues with high latency and low concurrency due to the sudden influx of users. By migrating its database to SingleStoreDB on AWS, Jigsaw was able to decrease latency by 50 percent and increase concurrency by 900 percent, significantly improving the user experience.

Overcoming Latency and Concurrency on the Road to Scalability

Headquartered in Manchester, UK, [Jigsaw](#) stands out as a distinctive dating app on a mission to foster authentic human connections by prioritizing personality and encouraging meaningful conversation, creating deeper connections in the dating world. Jigsaw's ingenious approach revolves around incentivizing and encouraging meaningful interactions between users. In a strategic leap into the U.S. market, Jigsaw debuted in Texas. The expansion included partnering with the internationally renowned NFL team, the Dallas Cowboys. Impressively, this is the first time the NFL has partnered with a dating app, making Jigsaw a top scorer for U.S. daters.



About customer

Jigsaw is a unique dating app, aiming to make human connection easier and less superficial by prioritizing personality and encouraging conversation between users.

AWS services used

- [Amazon ElastiCache](#)
- [AWS Lambda](#)
- [Amazon S3](#)

Benefits

- Increased concurrency by 900% for a better performing app and user experience
- Decreased latency by 50% resulting in more efficient querying
- Gained a robust and scalable approach to data usage, storage, and access

The most significant challenge was identifying a way to scale and accommodate the new flood of users. This required migrating from a MySQL database to an entirely new database system hosted on Amazon Web Services (AWS). Overcoming this challenge meant guaranteeing an uninterrupted transition for users with no disruptions to the application's functionality. Jack Chamberlain, engineering manager at Jigsaw, describes it this way, "The hundreds of writes, thousands of reads per second, and thousands of active users, caused problems with concurrency, and resulted in slow response times and long loading durations for users."

With the company's long-term growth strategies hindered by the limitations of its MySQL database system, Jigsaw reached a critical turning point.

Completing the Puzzle for Uninterrupted Connections

Jigsaw needed a database solution that could integrate with its existing infrastructure on AWS but offered a more robust and scalable approach to data usage, storage, and access. The company chose [SingleStoreDB](#), an all-in-one HTAP database for operational and analytical workloads powering applications that require fast data ingestion and high performance.

"SingleStore's standout feature lies in effortlessly handling large data volumes and facilitating rapid analytics, making it ideal for building robust applications atop databases," explains Dushyant Jha, manager of technology partnerships at SingleStoreDB.

The seamless integration of SingleStoreDB with AWS services such as [Amazon ElastiCache](#), [AWS Lambda](#), and [Amazon Simple Storage Service](#) (Amazon S3), was an important factor in deciding to migrate to SingleStoreDB on AWS. Chamberlain emphasizes, "Our whole network is powered by AWS, and by collaborating with SingleStore it's so easy to integrate with our existing infrastructure." Within a month of their collaboration, Jigsaw had successfully implemented SingleStoreDB, with no negative impact on the experience of users. "The shift to SingleStoreDB was a model of excellence and seamlessness. SingleStore provided active support throughout the transition, aiding with post-transition optimization assistance, as we moved forward," says Chamberlain.

"A major relief for Jigsaw is how SingleStoreDB addresses any concerns we have about slowdowns, maintenance, and scaling, giving us the most comprehensive solution available."

Jack Chamberlain
Engineering Manager, Jigsaw

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Dushyant Jha
Manager of Technology Partnerships, SingleStoreDB



Enhancing Human Connection by Reducing Latency by 50%

SingleStoreDB proved invaluable for scaling Jigsaw's database from the onset. When Jigsaw launched in Texas, it initially relied solely on horizontal scaling—adding more nodes to meet demand. But Jigsaw struggled to scale vertically and meet the higher-than-expected CPU utilization. Without enough processing power, users experienced higher latency. SingleStoreDB's pipelines allowed for parallel loading, real-time file streaming, de-duplication of data, as well as support for several data formats and sources including Amazon S3. As a high-performance, real-time distributed SQL database, SingleStoreDB is designed to handle large volumes of data with ease, as well as complex queries that require real-time analysis.

When Jigsaw ran its initial tests with SingleStoreDB's solution, it demonstrated its power by halving the query execution time, enhancing users' experience by eliminating disruptions. "A major relief for Jigsaw is how SingleStoreDB addresses any concerns we have about slowdowns, maintenance, and scaling, giving us the most comprehensive solution available," says Chamberlain.

Increasing Concurrency by 900% for Improved User Experience

Upon initial release, Jigsaw experienced a substantial surge in user engagement. This heightened usage resulted in multitude of users simultaneously performing similar actions, leading to concurrency issues.

SingleStoreDB not only reduced latency for Jigsaw, but it also increased concurrency tenfold or 900 percent. It did this by providing Jigsaw with a distributed and scalable architecture that allows multiple users and applications to work concurrently without compromising performance. Additionally, SingleStoreDB can span across multiple nodes and servers, allowing for data to be partitioned and distributed for parallel processing of queries and transactions. And when traffic increases, SingleStoreDB can be scaled horizontally by adding more nodes to the cluster. SingleStoreDB is also optimized for handling read and write operations, making it the ideal match for Jigsaw's business goals.

Making Future Matches with Analytics and Gen AI

As Jigsaw continues providing a space for people to connect, the company will continue working with SingleStoreDB to improve its algorithms. This includes implementing new functionality and analytics as the dating app looks to incorporate machine learning and generative AI through SingleStore's offerings.

About the Partner

SingleStoreDB is a partner in the [AWS ISV Workload Migration Program](#), designed to accelerate and simplify customer migrations to the cloud. SingleStoreDB brings transactions and analytics together to accelerate access to large datasets with unparalleled performance. The solution is built on a cloud-native data platform that can be scaled to keep pace with customer growth. Using innovation to simplify architecture and processes, SingleStore's database solution offers transformative speed that delivers real-time insights.

