With Amazon Aurora, 8x8 increases database transaction speed by 45%

8x8

Case Study

Executive Summary

8x8's multi-cloud storage (MCS) solution ensures data sovereignty across hundreds of data storage sources and locations through a metadata object storage retrieval system based on APIs. Built on Amazon Aurora, the solution leverages the database's scalability, performance, and global availability while meeting compliance regulations customers need, like GDPR, PCI, and HIPAA.

The Challenge

Communication relies on the exchange of data in the form of emails, texts, voice or video recordings, pictures, and more. Most governments have strict rules and regulations about data sovereignty to protect the privacy and safety of their constituents. In some cases, governing bodies require communication companies to store data close to where it is generated.

Given the mobile and global nature of communication today, local storage requirements can make it challenging to provide users with access to data in dozens, or even hundreds of locations. The 8x8 team needed a way to retrieve a user's relevant data from local data stores across the world that also complied with GDPR, HIPAA, and PCI standards.

The Solution

A trio of developers at 8x8 put their heads together and built a lightweight object locator, nicknamed multi-cloud storage (MCS), on Amazon Aurora. MCS is a globally distributed object storage abstraction service that works across private and public object storage services. It provides a system for tracking and locating objects within a given backing store, as well as dealing with a very small amount of user generated content (UGC) such as tags for searching, or opaque attributes. Before committing to build MCS on Amazon Aurora, the team pushed hard on load testing to ensure the database could achieve the performance required to unify a globally fractured storage system. The throughput, global availability, and scalability of Amazon Aurora exceeded their expectations.

About 8x8

8x8 is transforming the future of business communications as a leading Software-as-a-Service provider of voice, video, chat, contact center, and enterprise-class API solutions powered by one global cloud communications platform. 8x8 empowers workforces worldwide to connect individuals and teams, so they can collaborate faster and work smarter.

> "Our 8x8 phone system is kind of invisible because it just works. It's amazing how few problems we have and how few devices have failed. 8x8 is exceedingly reliable—no care or feeding required!"
>
> — Jay Daniel
> IT Consultant for McDonald's

Results and Benefits

MCS provided a nimble, lightweight solution for 8x8 to safely retrieve communication data from around the world. By building on Amazon Aurora, 8x8 was able to offload some the biggest challenges posed by the inherent nature of the solution including enabling high throughput speeds, global reach, and on-demand scaling.

Exceeded performance expectations

Before Amazon Aurora was PCI compliant, 8x8 tested other solutions for running MCS. When Amazon Aurora became eligible for MCS, the team load tested it and found it could handle 195,000 database transactions over 15 seconds. This was a 45% increase over other tested solutions, and Amazon Aurora accomplished it with little or no replication lag.

Caught the fast train to production

A small team of two developers and one DevOps engineer were able to bring MCS to production in record time. By building on the fully managed services of Amazon Aurora, "we were able to go from inception to a production-quality deployment system, which is still in use today, in four months," said Lance Johnson.

Eliminated scaling headaches

As a metadata store, MCS itself does not retrieve or transfer objects. It provides a unified interface in front of all the object stores and uses signed URLs to direct the client on storing or retrieving. By choosing serverless cloud infrastructure, 8x8 can leverage the scaling capabilities and capacity of AWS. "We knew we didn't want to be racking and stacking. On Amazon Aurora, the client can go get the storage directly, and we don't worry about scale anymore—that's Amazon's problem."

Enabled innovative, "black ops" approach

Innovation is part of the DNA at 8x8 as evidenced by the more than 200 patents they hold. Amazon Aurora helps them continue their rapid pace of innovation by providing a fully managed service on serverless infrastructure to support "black ops" projects like MCS. Johnson explained that it's natural for the "black ops team to use the best tool available and bring it into the mainstream for the rest of the business."

Learn more

Amazon Aurora is a MySQL and PostgreSQL-compatible relational database built for the cloud, that combines the performance and availability of traditional enterprise databases with the simplicity and cost-effectiveness of open source databases. Amazon Aurora is up to five times faster than standard MySQL databases and three times faster than standard PostgreSQL databases. It provides the security, availability, and reliability of commercial databases at 1/10th the cost.

> "Amazon Aurora allowed me to do something innovative. We didn't have to wait for infrastructure to be procured and provisioned, and we didn't have to free up DBA's."
>
> — Lance Johnson
>   Director of Engineering Cloud R&D