





Helpshift is Full Speed Ahead after Migrating from NoSQL to Distributed SQL

Key Benefits And Lessons Learned From **YugabyteDB** Upgrade

Internet Publishing	Company Helpshift	Main Use Cases			
	Location San Francisco, CA				
	Website https://www.helpshift.com/	Database Modernization	Cloud Native Microservices	Geo-Distributed Apps	Edge / IoT

Executive Summary

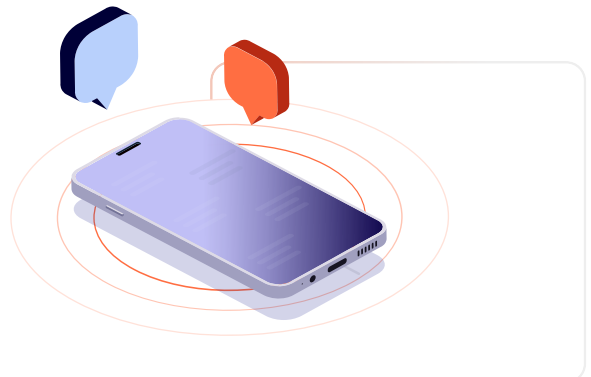
Helpshift, the established leader of in-app customer service and user support for mobile-first brands, faced a situation that most high-growth companies face at some point—outgrowing original IT systems. Given the importance of data in today’s world, the data layer plays a key role. Forward-looking companies realize it’s critical to adopt a modern database sooner than later to ensure a resilient, scalable and future-ready business.

As they started seeing challenges with their legacy NoSQL database and realizing that delaying a change would lead to more problems, Helpshift acted decisively and completed a seamless migration to **YugabyteDB**, a modern distributed SQL database from Yugabyte. During their journey to YugabyteDB, Helpshift made important decisions around normalization, migrating old data, implementing primary and secondary indexes, and handling anti-patterns. In the end, Helpshift not only had a better understanding of how to best harness their valuable data but they now had a modern data layer in place that provided them rapid scaling on demand, strong data consistency and high performance for the best end user experience.

About Helpshift

Helpshift is a mobile-first customer service platform that delivers a great in-app help experience for many of the world's top mobile apps and mobile games. Whenever users need help they can get it right in the app with an always-on help experience that delivers immediate, automated solutions to many issues.

Companies such as Zynga, Microsoft, Viacom, and hundreds of other leading brands use the Helpshift platform to provide messaging-first customer support. Helpshift is installed on two billion devices worldwide and serves more than 820 million active consumers monthly.



Challenges

Like more and more companies today, Helpshift is a data-centric company. Capturing, storing and providing rapid access to data is at the heart of what Helpshift does as a leading provider of in-app customer service and user support solutions. In order to ensure a seamless experience for both the end user and their clients through their two-sided platform, Helpshift stores a variety of data that needs to be consistent and always reflect the accurate order that actions happen.

For years, Helpshift relied on MongoDB, a NoSQL (non-relational) database, to support their offering; however, as their business scaled they faced issues scaling their database to keep up with the demand. Seeing the number of active monthly users grow closer and closer to one billion, further amplified their problems.

The key challenges Helpshift needed to address in its next-generation database solution included:



Scalability limitations

Helpshift did not have a sharded infrastructure so scaling the environment was a very manual and time consuming process.



Data consistency

The existing implementation made it challenging to maintain consistent conversation data in one place that accurately reflected when actions happened and when information was shared.



Data integrity

The lack of ACID guarantees of the existing datastore left the platform at risk of partially committed information at times.

As a result of these challenges, Helpshift could not wait anymore to make a change. They knew the longer they waited, the harder the change would be—and in the meantime, they would consume the time of valuable resources to create temporary fixes.

Solution

Faced with ongoing scalability problems, Helpshift decided to make a change. Helpshift explored options with its existing solution, MongoDB, as well as with a variety of distributed SQL offerings, including CockroachDB, Scylla, and YugabyteDB. After an extensive evaluation, YugabyteDB emerged as the natural solution for this use case with the necessary feature sets bundled to power their growing platform and user base.

Helpshift took a phased approach to their implementation of YugabyteDB. Given they had to shift from a NoSQL mindset, they spent time normalizing their data and identifying the right schema to build for their new RDBMS approach. After careful evaluation of multiple options with their pros and cons, Helpshift decided to go in with an option that brings the best of both worlds to keep the migration impact as minimal as possible. Thanks to YugabyteDB's Postgres compatibility, they were able to design a normalized structure with additional support for semi-structured capability through JSONB data type. In preparation for adopting YugabyteDB, Helpshift also spent time reviewing the migration plans for the existing data, analyzing the best options for secondary indexes to avoid hotspots, and examining potential anti-patterns in a distributed SQL world.

The new distributed SQL database delivered all the core capabilities the team needed to confidently grow their business. The major benefits that Helpshift has now enjoyed with YugabyteDB include:



Infinite Scalability

Helpshift never knows when customer usage may surge, so YugabyteDB gives them the ability to easily scale on demand while maintaining low latency.



Built-in Availability

The native resilience capabilities of the distributed database allow Helpshift to confidently grow their business and provide assurances to their customers that the service will remain available.

Helpshift now enjoys:



800M

active consumers
monthly



200x

scale increase need
to be ready to support

“ If tomorrow our scale increases 200x, we can provide that to our customers without any failures thanks to our new solutions like YugabyteDB.

“ We contemplated the different databases that we currently had in production and some of the common distributed SQL databases. In the end, we determined that YugabyteDB provided us with the best solution.

Somya Maithani,
Software Developer, Helpshift



ACID Transactions

YugabyteDB delivers the ACID guarantees of traditional SQL systems while still providing the horizontal scalability of NoSQL systems.



Geo-Distribution

With users all over the world, Helpshift can leverage a single logical database that can span the world with automatic sharding and intelligent rebalancing.

Results & Benefits

Helpshift gladly put aside their 10+ years of experience with NoSQL as they adopted YugabyteDB and saw the benefits of a natively distributed SQL database. Two lead engineers from Helpshift discussed their migration to YugabyteDB and their lessons learned at the Distributed SQL Summit (DSS) Asia 2022, which you can [watch on-demand](#). Helpshift has now turned their attention back to growing their business with the confidence that their data is secure and they can react and grow their business as needed.

About Yugabyte

Yugabyte is the company behind YugabyteDB, the open source, high-performance distributed SQL database for building global, cloud-native applications. YugabyteDB serves business-critical applications with SQL query flexibility, high performance and cloud-native agility, thus allowing enterprises to focus on business growth instead of complex data infrastructure management. It is trusted by companies in cybersecurity, financial markets, IoT, retail, e-commerce, and other verticals. Founded in 2016 by former Facebook and Oracle engineers, Yugabyte is backed by Lightspeed Venture Partners, 8VC, Dell Technologies Capital, Sapphire Ventures, and others.
www.yugabyte.com



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