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CASE STUDY

Simility Speeds Fraud Detection with Redis[e] Pack

Executive Summary

Simility is a cloud-based fraud prevention software solution that processes billions of transactions each day. Due to the massive customer workloads, the company's IT team was finding it difficult to meet end user latency requirements. Simility selected Redis[e] Pack to enable faster caching and reduce latencies. They are now using Redis[e] Pack for many other use cases, including high speed transactions, job and queue management, and real-time data ingest. By using Redis[e] Pack, Simility was able to reduce application latencies by 90%, cut operational expenses by 30%, and reduce system downtime by upto 20%.

Simility: Fraud Detection that Adapts and Scales

Fraud and abuse—including fake accounts, payment fraud, scams, fake reviews, and account take-overs —are constant challenges for today's businesses. While there are many third-party solutions targeting only credit card fraud prevention, companies have to sacrifice their time and resources to build their own systems for holistic user and transaction fraud and abuse management.

Simility is a highly scalable, cloud-based fraud prevention software solution that combines the power of machine learning and human analysis to protect SMBs and enterprise clients from the most sophisticated types of fraud. The Simility solution empowers analysts to quickly adapt to fraudsters' evolving tactics—all without having to write code.

Processing Billions of Transactions Each Day

Simility has grown rapidly since its founding in 2014. Its fraud detection systems now process several hundreds of millions of transactions each day for its cloud customers, and billions of transactions every day in its on-premises deployments. Simility had been using DataStax for its main datastores, however, given the extremely high volume of transactions, the IT team was finding it difficult to meet end-user latency requirements.

Choosing Redis[e] Pack

Simility made the decision to use Redis[e] Pack initially for caching and found immediate relief for its throughput and latency challenges. Since Redis[e] Pack scales easily with very little overhead, Simility's IT team was then able to extend the solution effortlessly to other use cases, including high speed transactions, job and queue management, and real-time data ingest.

"While writing to the Cassandra database is fast, reads do not always show the latest data because Cassandra replicas are eventually consistent and slow," explained Ravi Sandepudi, Head of Engineering at Simility. "So we write to both Cassandra and Redis, but read only from Redis since it delivers much higher performance. Redis provides different types of real-time analytics, such as various types of counts and aggregations, including how many users and distinct users by IP addresses."

"Using Redis[e] Pack in our fraud detection service was an excellent decision for our organization. It is enabling us to easily manage billions of transactions per day, keep pace with our exponential growth rate, and speed fraud detection for all of our clients."

Ravi Sandepudi, Head of Engineering
SIMILITY

Simility's Requirements

Simility was looking for a higher performing database that would enable them to lower application latencies, using fewer internal IT resources.

Simility is now storing many different types of data in Redis[e] Pack—some persistent and some transient. The application architecture includes several replicas of servers in containers, processing data in parallel. Since Simility utilizes real-time data from many sources, the application is subject to hundreds and thousands of connections. Before Redis, handling millions of connections was a challenge. Redis[e] Pack handles the company's high throughput low latency needs gracefully. Simility also uses several of Redis' signature features, including built-in key expiry features, TTL, and Hyperloglog for probabilistic estimates of counts.

Results

By using Redis[e] Pack, Simility was able to cut IT costs by up to 30%, achieve up to 30% faster delivery of application functionality, reduce system downtime by upto 20%, and improve application performance by nearly 90%—all while reducing the need for specialized internal IT resources substantially.

"We really like the ability to seamlessly scale up and down using Redis[e] Pack," noted Sandepudi. "The built-in high availability reduces the amount of operational effort required in-house to run the solution, enabling our technical resources to focus on other, more strategic projects. Before moving to Redis[e] Pack, our IT team constantly worried about how to handle millions of connections and billions of transactions each day, and whether we would have to build and handle queues. We are now able to handle this huge workload without breaking a sweat."

Future Plans

Simility is continually increasing its usage of Redis[e] Pack as its clients' data volumes and processing needs rapidly expand. They are now planning to move additional workloads from DataStax over to Redis[e] Pack to obtain the ability to easily scale the environment to multiple sites and serve clients' fraud detection needs faster and more efficiently. "Moving our fraud detection service to Redis[e] Pack was an excellent decision for our organization," concluded Sandepudi. "It is enabling us to easily manage billions of transactions per day, keep pace with our exponential growth rate, and speed fraud detection for all of our clients."

Redis[e] Pack Benefits

- Zero operational hassle, no maintenance worries
- True high availability—no outages, no latency issues
- Faster and more up to date with latest Redis functionality

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