

SQUARE HELPS MERCHANTS GROW AND AVOID RISK WITH SNOWFLAKE

TECHNOLOGY



COMPANY Square, Inc.
LOCATION San Francisco, California

SNOWFLAKE WORKLOADS USED



Square designs and builds tools that empower sellers to start, run, and grow their businesses. Since pioneering an easier way for merchants to accept credit cards, Square has expanded its offering to include solutions that simplify commerce, marketing, operations, and banking. To promote merchant success and reduce risk, Square ingests and analyzes large amounts of structured and semi-structured data.

STORY HIGHLIGHTS:

Multi-cluster shared data architecture with near-infinite scalability

Square stores and analyzes more than one petabyte of data in Snowflake to identify product opportunities for merchants and protect them from fraud.

Single, seamless experience across multiple public clouds

With Snowflake, Square is able to work with data across multiple public clouds as if they were one.

Elevating merchant and customer success

From equipping merchants with the right tools to adapt during COVID-19 to protecting customers from fraudsters, Snowflake enables the team to do it all.

“At Square, we have an incredibly diverse amount of tools we leverage, and with Snowflake’s multi-cloud ability, we’ve gained so many product insights by mining data in Snowflake.”

—JOIR-DAN GUMBS,
Senior Manager of Data Foundations (Infrastructure), Square

CHALLENGE:

Keeping pace with rapid data volume growth

Data analysts were content using Square’s Vertica instance, but rapidly expanding data volumes led to system outages and time-consuming maintenance.

Defining and committing to data SLAs was not possible due to Square’s data infrastructure challenges. Only Square’s reconciliation team was permitted to query data at month’s end due to concerns about resource contention, which delayed access to insights for users across the organization.

Despite internal requests for additional hardware upgrades, Square’s Senior Director, Platform Infrastructure Engineering, Randy Wigginton, began planning Square’s cloud migration strategy. Multiple data warehouse vendors were considered, but none seemed capable of handling Square’s massive semi-structured data volumes.

SOLUTION:

A scalable platform for product insights

Realizing the need for a modern data environment, Square turned to Snowflake.

Snowflake’s multi-cluster shared data architecture scaled to virtually eliminate resource contention at Square. Snowflake’s affordable cloud rates made it possible for Square to store more than one petabyte of data, including large amounts of semi-structured ecommerce data. “Pulling JSON data into Snowflake as a first-class citizen allows us to easily build models without spending so much time tweaking data structures,” Square’s Senior Manager of Data Foundations (Infrastructure), Joir-dan Gumbs, said.

1 petabyte

Amount of data stored and analyzed in Snowflake

95%+

On-time delivery of critical financial data

Snowflake's ability to provide a single and seamless experience across multiple public clouds aligned with Square's multi-cloud strategy. Unifying data in Snowflake created a single source of truth that accelerated innovation. According to Gumbs, "We've gained many product insights by mining data in Snowflake."

Snowflake's Object Tagging, Dynamic Data Masking, and Row Access Policies features simplified Square's ongoing data governance and compliance initiatives. "Based on access controls that we control, we're able to guarantee that only permissioned users can see sensitive data," Gumbs said.

RESULTS:

Elevating merchant success during COVID-19

Mining data in Snowflake enables Square to recommend products and services that keep merchant revenue flowing.

Square also uses Snowflake to search for and cultivate partnership opportunities that benefit merchants. For example, Square leveraged Snowflake to plan an innovative gift card program that enabled consumers to support their favorite businesses during pandemic-related closures.

“At Square our purpose of economic empowerment drives everything we do and for our team this means protecting our customers so they can continue to run and grow their businesses - our work with Snowflake helps us do just that.”

—RANDY WIGGINTON,
Senior Director, Platform Infrastructure Engineering, Square

Protecting merchants from fraud and risk

Powering fraud prevention models with Snowflake increases Square's ability to identify bad actors, detect attack vectors, and block account takeover attempts.

Self-service access to semi-structured data empowers Square's analysts to build additional models that protect merchants. "We're saving so much time for analysts to perform risk and fraud analysis," Gumbs said.

“Snowflake has been one of the only tools powerful enough to correlate all of the data and help us identify difficult-to-find fraud that may be occurring.”

—RANDY WIGGINTON,
Senior Director, Platform Infrastructure Engineering, Square

Advancing data governance

Enabling secure, governed access to data with Snowflake has led to a healthier understanding of data governance at Square. According to Gumbs, "The mindset has pivoted toward data governance being more than just an information security topic." Square's data platform team relies on Snowflake to answer complex questions about data lineage, data accessibility, and data versioning. Anomaly detection algorithms monitor Square's data lifecycle to avoid bad data and ensure data quality.

FUTURE:

Striving for self-service data governance and industry collaboration

Progressing toward self-service data governance is a top priority for Square. According to Gumbs, "We want the platform to be self-service so data customers can take care of their own data instead of waiting on a data governance team." Allowing more users to apply tags to Snowflake objects will expedite the realization of this vision.

Snowflake Secure Data Sharing could help Square build a consortium of leading ecommerce and financial brands to fight fraud. "Aggregating all of that data will allow us to identify fraudsters quicker, and Snowflake's data sharing will help make it possible," Wigginton said.

ABOUT SNOWFLAKE

Snowflake delivers the Data Cloud—a global network where thousands of organizations mobilize data with near-unlimited scale, concurrency, and performance. Inside the Data Cloud, organizations unite their siloed data, easily discover and securely share governed data, and execute diverse analytic workloads. Wherever data or users live, Snowflake delivers a single and seamless experience across multiple public clouds. Join Snowflake customers, partners, and data providers already taking their businesses to new frontiers in the Data Cloud. snowflake.com