CAPITAL ONE ANSWERS "WHAT'S IN YOUR WALLET?" WITH DATASTAX ENTERPRISE

Best known for its credit cards and Samuel L. Jackson-hosted "What's in your wallet?" commercials, Capital One is a diversified bank that offers a broad array of financial products and services to consumers, small businesses, and commercial clients. A Fortune 500 company, Capital One is one of the most recognized brands in the United States.

USE CASE:

Real-Time Personalization

INDUSTRY:

Financial Services

CHALLENGES:

- ⊘ Fast data requirements for same-day financial decision-making
- ⊘ Near real-time platform that can scale linearly and reliably
- ⊘ The need for multiple data sources, data destinations, and reporting tools
- ⊘ Requirement of fast time to market with ability to quickly add new features

SOLUTIONS:

- ⊘ DataStax Enterprise with the best distribution of Apache Cassandra™- for multi-data center replication and linear scalability
- ⊘ Ability to tune consistency for specific queries
- ⊘ Deployed in the cloud on AWS
- ⊘ DataStax Enterprise Search for data query flexibility

THE CHALLENGE

A financial industry leader as famous for its credit cards as its Samuel L. Jackson-starring "What's in your wallet?" commercials, Capital One's applications generate huge amounts of data, the mining of which has become of paramount importance for making critical business decisions.

Capital One was storing this data in multiple warehouses and databases and using traditional batch analysis for decision making.

Needing to be able to more quickly process and analyze its data to make much faster decisions in near real time, Capital One sought to quickly build a new, real-time reporting and analytics platform.

"It's a challenge that the business is going through from thinking about batch analysis to a near real-time platform", said Javed Roshan, Director of Data Services at Capital One.

The new platform also needed to have almost continuous availability with an SLA of 99.99% uptime.

DATASTAX

The power behind the moment.

THE SOLUTION

The stringent service level agreement (SLA) requirement and need to quickly process large amounts of data made DataStax Enterprise a natural choice for Capital One.

Capital One attained a distributed environment out of the box with multi-data center replication. This environment is also extremely flexible and able to handle incredibly fast writes, which Capital One required, and has tunable consistency for different types of queries.

Furthermore, reliable scalability makes it easy to grow data clusters and support new features, and DSE Search allows for extremely flexible and customized querying.

"Along with scalability, availability and real-time capabilities, DSE Search provides many options to query data like range queries, regular expression and non-equality," said Roshan. "These features are very tempting to use."

THE RESULTS

The new platform was able to kick-start Capital One's big data intelligence by quickly and easily incorporating a year's worth of data – 450 million rows – from a legacy Oracle database, consolidating this into far less rows (11.5 million), all handled on a six-node cluster at the lightning-fast rate of 21,000 transactions per second, and meeting Capital One's 99.99% uptime requirement.

"We pulled in one year of data from Oracle and once we got it into DataStax Enterprise, built on the best distribution of Apache Cassandra, it was smooth ride and it was processing at a very high rate," said Mukram Aziz, Senior Manager of Data Services at Capital One.

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>
> —*Javed Roshan, Director of Data Services, Capital One*

WHAT'S NEXT

How do these architectural and technological benefits translate into business benefits. The real-time analytics platform has already led to significant innovation and positive revenue impact for the company. For example, Capital One has been able to use internal profiling data along with third party data from credit risk agencies to determine their customers' creditworthiness when it comes to financing auto loans. This led to the creation of their Auto Navigator tool, a web application that allows consumers to configure a vehicle they want to buy, and then provides a pre-approved, personalized loan and financing program based on their credit score. This score is calculated from the data in the real-time analytics platform, powered by DataStax Enterprise.

And the benefits of this modern architecture don't stop there. "Auto Navigator has created a snowball effect inside Capital One", explains Ray Bajaj, head of architecture, shared services, and garage engineering, Capital One. "There's a lot of things that can be learned from the building of this product. How small, nimble, cross-functional teams can come together – product managers, designers, and software engineers – and create a magical product. This has been a catalyst for our entire organization."

And the market can look forward to more and more innovative products from Cap, as Bajaj indicates, "Now we are creating many other digital products that are creating irresistible customer experiences. We are learning from our customers. We are going to market faster. This turbo-charged the culture inside our organization."

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