METRO Uses DataStax as Its Core Data Management Platform for Microservices

METRO companies are integrating forward-thinking IT solutions across their organization with DataStax Enterprise.

METRO is a leading international wholesale and retail food specialist company. It operates in 35 countries, employs more than 150,000 people worldwide, and generated sales of €36.5bn for fiscal year 2017/18. METRONOM GmbH is METRO's IT company and provides customized IT services and IT solutions for all METRO companies worldwide, including consulting on business processes, introducing business solutions and providing support, operating data centers as well as networks, and purchasing IT equipment for its companies.

Over the past few years, METRO initiated a complete digital transformation to redesign existing technologies and do away with old-fashioned legacy systems. In an effort to improve internal operations and better serve its customers around the globe, METRO has begun to use NoSQL and migrate parts of its legacy systems to a microservices architecture, especially for customer-facing applications, based on DataStax Enterprise (DSE) for seamless upgrade, expansion, and integration.

METRO|NOM

USE CASE:
eCommerce and Logistics

INDUSTRY:
Food & Wholesale Operations

OPPORTUNITY:

- Update or remove legacy systems to improve internal processes
- Migrate parts of legacy systems to microservices platform based on DSE
- Scale up to 165 clusters at data centers around the globe

SOLUTION:

- DSE serves a stable and secure data management platform across multiple divisions
- DSE supports successful migration to the cloud as METRO manages its growing hybrid cloud database

RESULTS:

- Real-time data availability for delivery, fulfillment, and product management applications
- Improved communication between departments with data accessibility and availability in the cloud
- Increased response times and fewer support tickets
- Successful migration to the cloud and initial use of Google Cloud native services to interact with Cassandra

REPLACING LEGACY SYSTEMS TO IMPROVE EFFICIENCY

METRO is heavily dependent on microservices architecture throughout its organization and uses multiple cloud providers, including Google Cloud Platform, OpenStack (private cloud), and another cloud provider in the UK, for different applications.

METRO wanted to adopt newer technologies and move away from legacy systems that were preventing ease of scalability and also driving up costs. The company's primary goals were to streamline development and make new businesses more scalable.

"In the past, the company started using NoSQL solutions and we were all about relational databases…we are present in 35 countries and have stores in 25 countries, so the idea was to consolidate to be more effective," explains Gilberto Müller, Product Owner NoSQL at METRONOM GmbH.

METRO wanted to consolidate development and top management believed Apache Cassandra™ would be a good starting point. "Our team started as a Cassandra team and later evolved, adding more technologies to the portfolio…DataStax Enterprise is one of them," says Gilberto Müller.

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DSE APPLICATIONS AT WORK

METRO relies on several applications to manage many different services, including delivery, fulfillment, checkout, and call centers. All of these applications perform independently, and METRO recognized that these applications needed to communicate with one another.

For example, a customer that calls in to the call center or places an order online creates a transaction log that needs to be easily accessible by employees. Since the call center might not be in the same physical location as the fulfillment center, there's a risk of poor data management and slow communication between departments.

Having access to real-time data across all departments is also a priority for METRO. For example, if traffic or bad weather affects the delivery schedule, warehouses, or fulfillment centers, customers need to be notified about delays in a timely manner. Allowing applications to access this type of data in real time can improve the fulfillment process and ensure customers are kept up to date on the status of their order.

METRO uses its proprietary Driver App, a delivery app to calculate the best route for the driver, in real time, to prevent unnecessary delays. They also use an inventory and articles application to keep track of different types of products and their differentiators. For example, there is a brand of soda in one country sweetened with sugar cane, while the same soda in other countries is sweetened with other products such as corn syrup. This application ensures accurate recording and data management.

Newer, updated features made available through DataStax allow for increased response times to resolve issues and the ability to reduce the number of support tickets as the company grows.

Via DSE, METRO has also implemented a successful migration to another cloud provider and is currently running in a mixed mode of private, public, and hybrid cloud environments. The entire platform has been migrated and teams are beginning to use native services from Google Cloud to interact with Cassandra effectively. They now have a mix of new applications that interact with existing applications as well as brand new applications being developed as the business grows.

FUTURE PLANS FOR EXPANSION WITH DSE

Using DSE, METRO has deployed more than 150 clusters using 300 terabytes of data and growing, along with more than 15 instances of DSE OpsCenter. It's on track to achieve its expansion goals through the end of the year, with an estimated increase on the amount of clusters to over six data centers around the globe, including China and Russia.

The IT team at METRO chose DSE for two key reasons: support for software in a microservices architecture and improved manageability with DataStax OpsCenter. METRO is continuing to scale at a steady pace to reduce inefficiencies and increase cost savings. Future plans include streamlining even more release upgrades, on top of Infrastructure as a Code, and quickly onboarding more teams as the demand increases, while also reducing the toll on operations.

Last Update: FEB2019

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