Streamlined Data Management Task of world's largest furniture manufacturer by building a Customer Data Platform

Krish Compusoft Services

Industry:	Manufacturing
Technology:	Microsoft Azure Kubernetes, Apache Accumulo, Spring Boot Java Microservices, Apache Zookeeper, Apache Nifi, Microsoft Azure Services, Python Machine Learning
Country:	USA

Client Profile:

Founded in 1945, the client's company is the leading furniture manufactures in the world.

Challenges:

▌ Previously, the client was using a traditional system in order to execute data management tasks

▌ In our analysis phase, we found that the previous system was outdated and needed a complete revamp

▌ The client also faced various issues like scalability, high-availability, data security, and performance with the previous system

▌ As the previous system was old, it lacked modern technology integration such as Artificial Intelligence, Machine Learning, Big Data, Cloud, etc.

▌ Also, the previous system was static and worked on pre-defined fixed conditions

Solution

▌ Using modern technologies such as Microsoft Azure Kubernetes, Apache Accumulo, Spring Boot Java Microservices, Apache Zookeeper, Apache Nifi, Microsoft Azure Services, Python Machine Learning, we developed a cutting-edge Customer Data Platform for client

▌ The Customer Data Platform will help the client in merging customer's data for analysis and follow-up by making all the information available

▌ Based on the available data, the client can conduct more targeted marketing campaigns

- This Customer Data Platform is capable of loading the data from the third-party service providers so that it can be merged with the client's server

- The platform also contains a method of de-duplicating the customer information from multiple internal and external sources

- A unique ID is assigned to each customer or prospective customers in the Customer Data Platform

- The platform will crosswalk a table of customer ID information that maps and updates the unique, global ID to each of the customer's IDs within the various source systems

- The Customer Data Platform aims to be customer-centric and data-driven to provide an Omni-channel customer experience and influence purchase decisions earlier in the sales cycle

- Our solution uses unique Global Customer IDs generated using Machine Learning data modeling techniques to reference customer activity data clusters in near-real-time

- This portal will help the company to look for customer details with having different search options to get more idea about customer history and customer buying pattern observations

- We also developed various microservices using Java Spring Boot framework to fetch data from Apache Accumulo to display in various portal for different kinds of actions such as Customer search, Data Statistics, Transaction Data, and Customer Query

- For analytics, it has Microsoft Power BI Reports implementation on which the client can select customer Id and all the related data and see with different charts so that helps an organization to generate revenue

- Apache Accumulo stores relational rows of data as a collection of key/value pairs, which are sorted on their keys

- Accumulo provides fast retrieval of data when specifying either an individual key or a small range of keys

- Apache Spark empowers the Customer Data Platform to process and analyze a large amount of data

- Azkaban Hadoop resolves the ordering through job dependencies and provides an easy-to-use web user interface to maintain and track your workflows

- We also used Apache Nifi that gives out-of-the-box tools to ingest several data sources in a secure and governed manner

- NiFi accelerates data availability in the data lake and hence accelerates the Customer Data Platform and business value extraction

- Azure Kubernetes Services will provide flexibility, automation, and reduced management overhead for administrators and developers

- It aids in simplifying cluster maintenance with automated upgrades and scaling

KCS Approach

Leveraging modern technologies, experts at KCS developed a cutting-edge Customer Data Platform that streamlined all the data management tasks of the client. Azure Kubernetes Services simplified cluster maintenance along with automated upgrades and scaling. Azkaban Hadoop resolved the ordering via job dependencies and provides an easy-to-use web user interface to maintain and track your workflows. Apache Accumulo provided fast retrieval of data when specifying either an individual key or a small range of keys.

Outcomes

- The Customer Data Project is the initial focus of a larger Big Data initiative to help the client become a data-driven enterprise

- The portal showcases and measures each Customer Journey evaluating the nature of transactions and purchase patterns

- It will provide an Omni Channel Experience for all the customers enhancing buying experience which will influence purchase decisions earlier in the sales cycle

- The Customer Data Project will create one central repository for all the customer-related data avoiding fragmented data

- The platform is capable to achieve customer data analytics at a larger scale in near real-time

- It can also achieve CCPA compliance by protecting Personally Identifiable Information (PII) of each customer

- The client can get 360 Degree Customer view using the deduplication process with Machine Learning

Tech Stack