Modern Analytics for 3M Healthcare Information Systems

aws partner network

Customer Challenge

3M Health Information Systems needed its data moved from datacenter to AWS to take advantage of Databricks for more rapid data discovery, machine learning and data science to develop new and better insights for doctors, hospitals and patients.

Background - Delivering Cost Savings and Improved Patient Healthcare

3M Health Information Systems delivers innovative software and consulting services designed to raise the bar for clinical documentation improvement, computer-assisted coding, mobile physician applications and quality outcomes reporting. Its robust healthcare data dictionary and terminology services also support the expansion and accuracy of electronic health record (EHR) systems. 3M HIS needed help to move its big data infrastructure to Amazon Web Services (AWS) and needed a solution to perform predictive analytics that would lead to cost savings, health care delivery improvements and more. Predictive analytics in healthcare is used to search through massive amounts of information and analyze it to predict outcomes for patients, predict potential negative responses to medications, and even prevent hospital readmissions. It is useful for hospitals and clinics in patient care and cost savings.

Why did the customer choose AWS and Cloudwick as an AWS partner?

The AWS migration meant increase agility, scalability, flexibility and cost savings. Like most global enterprises focused on scaling its core business, the company did not have the technology specialists on staff to handle the cloud migration, which is where Cloudwick came in. Cloudwick has rich experience providing solutions to Global 1000 enterprises, helping them meet the demands of BI and analytics modernization.

Modernizing Medicine turned to Cloudwick to support this goal. Cloudwick provided the company with its AWS Modern Analytics QuickStart services, aiding with data ingestion from MySQL to Cloudera CDH, integrating the company's applications for predictive analytics, and providing professional services to ensure Health Insurance Portability and Accountability Act (HIPAA) and Protected Health Information (PHI) compliance.

Cloudwick Solution

Cloudwick provided the company with its AWS Modern Analytics QuickStart services, migrating the data and infrastructure from on-premises to AWS, secured the cluster to meet HIPAA compliance, and integrated the Databricks spark platform for the data science team to use for predictive analytics.

About 3M Health Information Systems

3M Science. Applied to Life.™

3M Health Information Systems provides intelligent tools to help compile and use health information for better clinical and financial performance. Best known for market-leading coding system and ICD-10 expertise, 3M Health Information Systems also delivers innovative software and consulting services.

Security in the Cloud

Cloudwick's primary aim was to set up a HIPAA and Protected Health Information (PHI) compliant cluster running Databricks spark platform on AWS for 3M HIS. Cloudwick chose Amazon Simple Storage Service (Amazon S3) for storing the PHI information, and Amazon Elastic Compute Cloud (Amazon EC2) for resizable compute capacity. To achieve HIPAA compliance, Cloudwick set up a Virtual Private Cloud with sub-nets and implemented the network access control list. In addition, Cloudwick defined the route tables and security groups, and implemented Identity and Access Management (IAM) users and rules, provided fine-grained control for accessing the data using S3 bucket policies and Access Lists. AWS CloudTrail records the company's AWS API calls and delivers log files, which includes the identity of the API caller, the time of the API call, the source IP address of the API caller, the request parameters, and the response elements returned by the AWS service. Other AWS capabilities rounded out the HIPAA compliance setup and the production cluster successfully met the requirements upon testing. Finally, Cloudwick deployed a Databricks spark platform for 3M HIS for predictive analytics. The Databricks spark platform provides a framework for advanced analytics and includes a tool for faster queries, a machine learning library, and a streaming analytics engine. Spark provides results quickly, allowing 3M HIS to reach more precise and accurate answers.

AWS Services Used

- Virtual Private Cloud (VPN)
- Identity and Access Management (IAM)
- Amazon Simple Storage Service (Amazon S3)
- Config
- Cloudtrail

Ready for Prime Time

With the new solution provided by Cloudwick, 3M HIS enjoys a modernized business intelligence and analytics infrastructure, eliminating a costly enterprise infrastructure. The company can now focus on data science using a modern self-service Databricks analytics platform built on AWS, managed by Cloudwick. With real-time predictive analytics, it can more rapidly develop new insights, products and services for doctors and hospitals to improve patient care. Ultimately, the company has exchanged its previous solution for a modern business infrastructure - one that provides a more efficient predictive analytics platform for precise answers quickly that is flexible, agile, and scalable.

Results and Benefits

The company now has a modernized cloud-based, HIPAA-compliant BI and analytics infrastructure. Data scientists can rapidly develop new insights, products and services for doctors and hospitals to improve patient care.
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