Case Study

How a Health Information Technology Leader Migrated to AWS

The Project

The company in this case study is a non-profit organization that delivers IT services, project management, and strategic guidance to health providers across the United States. As part of its work with clients, the company needs to process and analyze massive quantities of data—up to 10 terabytes per day.

With an aging on-premises data management solution, the company realized that its IT infrastructure was becoming inadequate in terms of capabilities, security, availability, and disaster recovery. These concerns, as well as the need for greater flexibility and scalability, finally pushed the company to migrate its on-premises Microsoft SQL Server databases to Amazon Web Services (AWS) in the cloud.

The Partner

Although the decision to migrate to AWS was obvious, the company's choice of providers was not. Any potential migration partner would need specific knowledge of the health care industry, including data privacy and security laws such as HIPAA.

With this consideration in mind, Datavail became a natural choice for the cloud database migration partnership. Datavail has helped dozens of customers in the health care industry migrate their data and workflows to the cloud, all while remaining compliant with HIPAA and PCI regulations.

From Microsoft SQL Server and Oracle to MySQL and Amazon Aurora, Datavail offers its services across a variety of database platforms.

Datavail stood out not only for its cloud migration expertise, but for its cloud optimization and maintenance services once the migration is complete. Datavail's team of skilled DBAs can implement best practices in cloud environments and provide operational managed services, including 24x7 monitoring, incident response, and software updates.

As the customer put it:

"Datavail brought in the specific Microsoft SQL Server database experience that we needed. We had large volumes of data in a production environment, with clients accessing and using that data in real time. Datavail could accommodate our needs, allowing clients to keep using that data during the migration."

From On-Premises to AWS

Before moving to the cloud, the customer was running Microsoft SQL Server 2008 R2 Enterprise Edition on Windows Server 2012 Datacenter. Because SQL Server 2008 will soon reach its end of life with Microsoft, Datavail and the customer agreed that the AWS migration would also include an upgrade to SQL Server 2016.

During the migration, Datavail had to address two key questions: how to migrate the customer's data to AWS, and how to place the data inside a HA/DR (high availability/disaster response) environment.

First, Datavail realized that due to the customer's large amounts of data, the AWS Direct Connect feature would be cost-prohibitive for the migration. Instead, Datavail decided to ship the customer's full backups to the AWS cloud environments using AWS Snowball.

Datavail helped the customer migrate its data to AWS while remaining compliant with HIPAA requirements for encrypting information at rest. By using Microsoft SQL Server's Transparent Data Encryption feature, Datavail ensured that protected health information (PHI) would remain under wraps inside the database. The customer's data was also encrypted in transit using SSL, fully complying with HIPAA requirements.

Second, the customer was maintaining multiple standalone on-premises servers, each one segregated into staging, testing, and development environments. These servers had no HA/DR solution in place, making them highly dependent on its backups in the event of a catastrophe.

Once the data was inside AWS, Datavail synced the AWS database with the legacy production database on-premises so that there would be minimal downtime during the migration. In addition, Datavail configured a high-performance database mirroring site that would help improve the availability of the customer's databases in the cloud.

Finally, Datavail helped the customer choose the Amazon EC2 templates that were the right size for running its database servers. Datavail selected the R4 memory-optimized Amazon EC2 instances, and then tested them in production using an on-demand model to be sure that it was the right configuration in terms of CPU, memory, and storage. Once these tests were complete, Datavail purchased Amazon EC2 Reserved Instances for the client to further bring down the costs.

Current Status

After migrating the customer's data to AWS, Datavail also installed a custom monitoring tool on their servers that provides 24x7 incident response. Datavail's round-the-clock team of DBAs can now pick up alerts generated by the customer's databases and respond to them immediately. In addition, Datavail handles recurring responsibilities for the customer such as performance tuning, including SQL query optimization and TempDB database optimization.

Thanks to the collaboration with Datavail, the customer has been able to reduce the expenses of maintaining its complex database infrastructure. Since moving to AWS, the customer has benefited from better security, availability, performance, and scalability, and is committed to working with Datavail as a long-term IT partner.