

Case Study

Novus Modernizes Databases on AWS

Achieving Improved Performance, Availability & Cost



About Novus

Novus coined the term "portfolio intelligence" when they were founded in 2007. Ever since, Novus has been one of the world's leading portfolio intelligence platforms, serving both capital allocators and managers. With the Novus Platform, institutional investors can digitize their Investment Book of Records and automate their workflows. Novus helps investors enrich and manage their data, extract actionable investment insights, and improve stakeholder communication via visualization and a customizable reporting suite.

The Challenge

Novus' service offering requires the management of many terabytes of data, coming from a multitude of sources. Data extracted from multiple data sources resides in a monolithic SQL Server database that is running on an EC2 instance in AWS. Novus and Datavail had previously worked together in migrating these SQL Server databases from their data center to AWS. As the size of the data that needs to be managed grew exponentially, Novus had to come up with a solution to address the increased scalability, reliability and also the licensing cost of running Windows and SQL Server in AWS. It was critical for Novus to solve these challenges as they directly affected the customer-facing applications and also the total cost of ownership.

Why Amazon Web Services

Novus considered various options from an architectural, infrastructure and the database platform perspective to mitigate challenges. Running the applications in AWS has only made it easier for Novus to take advantage of the various compute, storage, database and data migration options provided by AWS. AWS offers Relational Database Services (RDS) for open source database engines like MySQL and PostgreSQL and they with come various compute, memory and storage options that can be chosen based on a workload. RDS also offers Multi-AZ capabilities in most of the AWS regions to provide automatic failover and increased availability of the applications. These RDS open source database engines offered by AWS come at approximately one tenth of the cost of SQL Server, and at the same time provide enterprise class availability, scalability and security.



Migrating the databases from SQL Server to open source databases is no simple feat and fortunately AWS provides various services and tools for the schema, code conversion and the data migration. AWS offers Schema Conversion Tool (AWS SCT) and Database Migration Services (AWS DMS) which can be used respectively for schema/code conversions and data migrations.

The Results

Datavail and Novus worked together and chose to use RDS MySQL as a target database platform. As a subsequent step, the databases and the respective database objects (tables, stored procedures, queries etc.) that needed to be converted from SQL Server were also identified. They were identified by taking various parameters into consideration. These parameters included database size, volume of transactions, data access, table partition requirements etc.

The database objects were converted from SQL Server to MySQL using the AWS Schema Conversion Tool and by a manual process. The degree of manual conversion that is needed depends on the complexity of the code in the source database. Custom scripts were written to migrate the data from SQL Server to the MySQL database. Once the data was migrated, Datavail partnered with Novus in doing several rounds of performance and functional testing of the application before going live.

By moving to RDS MySQL, Novus was able to successfully segregate some of the functionalities that were associated with the monolithic SQL Server database. At the same time, they were also able to lower their licensing cost associated with SQL Server and achieve the same or better performance and availability of this application.