

Milestone Migrates FinTech App to Aurora for Faster Scale at One-Third the Cost



Executive Summary

In financial services, verifying asset prices each day after trading is not only mandatory, it can also prevent costly mistakes and damaged reputations. Often, financial institutions leverage solutions like [Milestone Group's NAV Control](#) to correctly validate their portfolios across thousands of funds and assets. So, when Milestone brought on a new client that planned to validate eight times the number of funds as previous NAV Control users, the company sought a new database solution that could scale on a dime. Milestone migrated its SQL Server database running on [Amazon Elastic Compute Cloud](#) (Amazon EC2) to [Amazon Aurora](#) for PostgreSQL on Amazon Web Services (AWS).

Manually installed database was difficult to scale

The pControl platform that supports the NAV Control application relies on processing engines that determine pricing validations across assets. In order to accommodate the planned workload of their new client, the Milestone team had to increase the application's number of processing engines from 120 to roughly 1,000. But their existing setup of a SQL Server database—which was installed manually on an Amazon EC2 instance—was difficult to scale and required a dedicated resource to add new disks and tune for high performance. “The ability to fully scale up to the next level meant not only increasing its size, but also adding disks and restructuring how the database was spread across them,” said Head of Architecture at Milestone, Steve Rogers. “It was definitely a challenge to reach the input/output we needed.”

Amazon Aurora delivers faster scale at one-third the cost

Through a pilot version of Amazon Aurora on AWS, the team confirmed the new database could handle the increased volume of pricing validations while ensuring data accuracy and verified trades. Plus, as a fully managed service, migrating to Aurora eliminated the need for ongoing maintenance. “With just the click of a few buttons in Aurora, we had a much higher performing database across all dimensions of networks, CPU, diskettes, and memory,” Rogers said. “The I/O capability of Aurora was a significant step up from what we could achieve with our SQL Server instances.” Amazon Aurora enabled the Milestone team to spin up new environments faster, then scale out with reliable performance—all at one-third the cost for very large clients. “The gains we’ve made with Aurora in terms of price performance and flexibility for the deal size of these clients has been significant,” said Chief Development Officer at Milestone, Chris Loder.

Milestone worked closely with the database specialist team at AWS to set up its Aurora engine. The team helped with iterative testing, deploying specific tools, and providing custom patching to validate the new Aurora database against Milestone's requirements.



About Milestone

Milestone Group is in the investment automation business, serving fund managers, specialist investment managers such as OCIOs, retirement savings providers, and administrators of pooled investments.



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Fully managed with compliant environments ready in 30 minutes

In evaluating potential database options, the fact that Amazon Aurora handles hardware provisioning, software patching, setup, configuration, and backups was key. “We’ve removed the bottleneck of needing a particular resource to do that work,” Steve Rogers explained. “Before, we called on the SQL Server expert, and now anyone on our team can set up that instance because Aurora makes it so easy.” The fully managed aspect of Amazon Aurora has also led to big time savings. It used to take a day or two to set up and deploy new environments—now takes about 30 minutes. In addition, Milestone can more easily ensure data abstraction requirements are met for the highly regulated investment banks that NAV Control serves.

Performance Insights speeds configuration

The Milestone team worked closely with Amazon Aurora engineers to support performance tuning for better throughput. Using out-of-the-box monitoring via [Performance Insights](#), Milestone and the Amazon Aurora engineers were able to address challenges with read-replica scaling. “Performance Insights has been so accessible for our team—we just monitor through the console, without having to drill down into separate boxes like you have to do with other database platforms,” Chris Loder said. “Working with the lead Amazon Aurora engineers has been a very collaborative experience for us.”

Improved availability enables better user experience

As Milestone expands its client base, the +99.99% availability of Amazon Aurora helps ensure a better user experience. Its global availability—with six copies of data replicated across three Availability Zones—and instance failover of less than 30 seconds enables Milestone to serve worldwide markets. Both Recovery Time Objective (RTO) and Recovery Point Objective (RPO) have decreased for the database—from about 30 minutes to just seconds for RPO and one minute for RTO. “Being able to publish those sorts of recovery numbers has been a good win for us, especially in presales conversations,” Steve Rogers said.

Proven success lays the groundwork for future transformation

Running on AWS opens the door to a whole new level of service, speed, and innovation that the Milestone team can offer its clients. While this project marks the first time in 20 years that a client embraced this form of database, its success speaks volumes for the future.

“Going forward, we plan on migrating clients to Amazon Aurora for PostgreSQL from the existing database solutions when we perform normal scheduled upgrades of the solutions,” said Steve Rogers. “By moving our clients to AWS, we can offer them the same transformative opportunities demonstrated here.”