Executive Summary

Over 15 years ago, MasterStream revolutionized telecom quoting by launching a unique Configure Price Quote (CPQ) solution that leverages their in-depth industry expertise. In 2017, the company decided to migrate to AWS for efficient cloud-based solutions to support their industry-leading CPQ offerings. Yet, as many SaaS organizations experience, years of monolithic application design and on-prem server architecture was limiting growth.

MasterStream began exploring serverless to make this migration process easier. They found that Stackery's serverless confidence tools, infrastructure automation, and use of AWS best practices were part of an ideal recipe to go from monolith to serverless.

The monolith challenge

By the time they began to prioritize digital transformation, MasterStream had reached a point where their on-prem server architecture was limiting the rapid growth of their CPQ solutions. As their network of interconnected telecom agents, providers, and carriers expanded, quoting volumes outpaced the capacity of on-prem servers. This resulted in long setup times and growing expense. The need for automated server scalability became increasingly clear.

As team MasterStream evaluated their options, they reasoned that, if executed correctly, auto-scaled architecture would dramatically increase reliability and performance and potentially keep costs at a reasonable level.

But after well over a decade of business, migrating legacy systems to an auto-scaled, cloud architecture, surfaced many nested challenges for their software engineers. How could the team unlock lower maintenance costs, greater agility and crucially, a consistent user experience despite these hurdles?

AWS' cloud-based solutions

The team decided to start the process by "lifting and shifting" their servers to an AWS Elastic Compute Cloud (EC2) platform. This approach immediately provided insight into how they could unlock scalability without a total rewrite of their software app.

While AWS EC2 helped MasterStream explore Amazon's proven computing environment, the experience also uncovered some natural complexities in pivoting toward auto-scaling architecture. They discovered that the health of their software relied on slowly adopting more of AWS' game-changing cloud computing resources in order to break up their preexisting monolithic application. With the adoption of Amazon's newly released Aurora relational database service, the team immediately experienced gains in performance, scalability, availability, and durability.

Serverless promised to do this by mitigating the management of server infrastructure, reducing cost, and allowing their team to focus on software development entirely. But how could the serverless onboarding process be made smoother and more comprehensible for their engineers?

Turning to Stackery

While the use of AWS EC2 and Aurora set MasterStream off on the right path towards

About MasterStream

MasterStream ERP is committed to becoming the leading provider of quote-to-cash software solutions for the telecom industry and eliminating the time-consuming processes, complexity, and errors associated with the telecom supply chain. This commitment continues to be the driving force behind all new development of the MasterStream automation system and sustains their position as the leading provider of automation solutions within the telecom industry.

microservices, the team needed to find a way to lessen the time it was taking them to provision and maintain server infrastructure.

They discovered and began utilizing AWS Lambda, which initiated a major philosophical shift on the engineering team towards serverless. In order to utilize all the ease of development, improved flexibility, and lower resourcespend that serverless provides, MasterStream prioritized laying a solid foundation of serverless understanding on their team. They found a solution in Stackery.

Stackery's answer

MasterStream utilizes Stackery to help their team get a better grasp on starting out with serverless. Stackery's approach of bridging the gap between cloudside and local development while automating safeguards, best practices from AWS, and curating CloudWatch metrics allowed them to begin gradually replacing functionalities with a few new serverless applications.

In addition, MasterStream used Epsagon's serverless observability tooling to gain more insight into their system. They were able to uncover obscured areas with Epsagon's blend of monitoring and troubleshooting solutions.

Results and benefits

The combination of Stackery and Epsagon made it much easier for MasterStream to see how their applications were working without having to examine internal code or add debugging. As features from the legacy system were replaced with serverless, the new system could begin to replace its old features. This allowed them to put its dismantlement on the horizon and true, modern cloud migration front and center.

"Even though we experienced considerable growing pains, many enhancements were realized throughout this migration", said Matthew Witt, MasterStream's VP of Engineering. "In this new cloud world, not only could we scale our application servers but our database servers as well."

With the adoption of AWS Lambda, MasterStream rapidly experienced gains in performance, scalability, availability, and durability. Soon, all database management responsibilities such as hardware provisioning, software patching, setups, configuration, or backups were no longer required. Tools like Stackery enabled MasterStream to undergo a major transformation from monolith to serverless in a fraction of the time, with minimal friction and maximized understanding of this new approach to development.

Stackery continues to enable MasterStream's developers to focus on the business logic of their new AWS serverless applications without the impasse of infrastructure challenges. After 15 years of monolithic development, MasterStream was able to use Stackery to kick off the major philosophical and practical shift to serverless, conserving hours of valuable time they owed an interconnected network of telecom agents, providers, and carriers.

About Stackery

Stackery was founded by former New Relic and Github leaders to enable software developers and operations teams to quickly and confidently compose, deploy, and manage applications built on managed cloud services. The company was named a "2019 Company to Watch" by SDTimes, is an Amazon Advanced Technology Partner, and is backed by Hummer Winblad Ventures and Voyager Capital. Learn more at Stackery.io or on Twitter at @stackeryio