

Techolution Helps a Healthcare Technology Company Migrate Monolithic SaaS to the Cloud in 30 Days

CASE STUDY

Overview

New York-based a healthcare technology company is a proven leader in healthcare technology solutions for patient engagement and communication. Hundreds of leading healthcare organizations (HCOs) across the country use their SaaS-based portfolio of patient engagement and care-coordination solutions. These help HCOs increase care access and experiences by creating a minimal friction care communication journey to improve healthcare outcomes.

Company's software solutions have led to clinically proven customer results in lower readmissions, HCAHPS improvement, harm rate reduction, and appointment completions. These **award-winning patient engagement applications** have led to unprecedented customer base growth that has revealed its major horizontal scaling limitations in their on-prem data center. To deliver the scalability and cost savings they needed. This healthcare technology company partnered with Techolution to collaborate on migrating their monolithic application to a customized GCP environment.

Challenges

As the leader in the patient engagement software space, it was growing fast, which led to the challenge of scalability for their monolithic SaaS-based applications running in an on-premise data center. The startup was struggling with technical debt from two origination points:

-  The monolithic Ruby on Rails language framework app limited scalability
-  They housed their vast and growing application customer data stores in a massive MongoDB SQL relational database instances in an on-prem data center that further contributed to scalability problems

The company had been using IBM Power8 and Power9 mainframe servers to run the MongoDB databases to meet the immense need for cores and compute power. Their scalability challenges stemmed from an inability to cost-effectively provision new MongoDB instances to accommodate customer growth.

Increasing hardware CAPEX and escalating MongoDB licensing costs and Power8/9 maintenance OPEX were unsustainable. With cost reductions and scalability as their competing goals, the IT leadership turned to Techolution to help them migrate their workloads and monolithic applications to the cloud. This would get them out of the data center business and into the cloud via full GCP utilization where they could start modernizing their applications.

Results

Techolution had completed most of the Terraform by early January 2021. Their CI/CD pipeline development used GitLab web-based DevOps tools with SonarQube for code quality inspection. The two teams had agreed on an all-in approach on the use of GCP platform tools Pub/Sub for asynchronous messaging communication among others.

GCP's historic ability to save upwards of 20 percent in cloud costs met company's primary goal. But they also saw unique advantages down the road to use of Google's healthcare API. This will be critical as they embark on the much larger and long-term project of breaking up the monolithic application into containers and microservices.

Techolution has provided some preliminary planning support based on their success with large-scale containerization and microservices project architectures involving monolithic applications and extensive technical debt. The success of this project and the easy collaboration between this healthcare technology company and Techolution has led to a long-term partnership. This sets the stage for the broader digital transformation of creating a cloud architecture based on asynchronous events and serverless technology.

Strategy

Initial meetings between a healthcare technology company IT leadership, Techolution, and a GCP FSR took place at their New York City headquarters in January 2020, just before the pandemic. COVID-19 triggered company's budget and hiring freeze, which delayed the project until September. The healthcare crisis simultaneously escalated HCO demand for their SaaS-based solutions, which increased the startups urgency in moving forward with the cloud migration project.

The project was in full swing by December 2020 with a healthcare technology company and Techolution teams in weekly communications and project planning via slack. Techolution's daily internal project standups reflected the milestones challenges and architectural design issue meeting updates with the stakeholders and engineers.

Prior to the start of the project, MongoDB had suggested them move to their Mongo Atlas managed cloud services offering which runs on GCP. The original plan had been to containerize their monolithic application in the cloud that could then talk to the MongoDB Atlas database.

As with many companies, this healthcare technology company lacked the in-house capabilities to modernize their application stack and make the giant leap to a containerized GKE application in the cloud. They chose the alternative of using Google's App Engine managed cloud application service.

Techolution advised them that App Engine brought its own limitations because of an impending end-of-life retirement, making it a temporary means to getting their monolithic application into the cloud. This would provide a managed services approach for their compute on GCP while providing a steppingstone to the long-term goal of containerization and microservices that would break up the monolithic application. The overall project for full migration of the application into the new GCP environment would include:

-  Terraforming the environment based on an infrastructure as code architecture allowing them to easily spin up and create new environments
-  Setting up the GCP environment to be HIPAA compliant and making sure that it follows best practices
-  Developing and implementing the CI/CD pipeline to support deploying applications in the cloud into Google App Engine
-  Transposing and migrating data and workloads from a subset of customers from the on-prem into the cloud

Techolution began the project process by providing guidance and educational support for primary architecting decisions of projects or folders design for the GCP environment Terraform process. As the Techolution team developed the CI/CD pipeline, they shared the evolving pipeline as code with their team. This sharing of changes, commits, and best practices to the CI/CD became a major knowledge transfer and process education point for their team.

Techolution also provided educational support for GCP and the use of its suite of big data platforms for maximizing use of the cloud. This included those associated with data mining and analytics (Tools listed here) which was crucial to company's ability to serve its customers through their cloud-based application using predictive decision support.

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