RobustWealth built a hosted platform on AWS to help investment advisors optimize their practices. The platform seamlessly integrates an array of features into one suite. Those features include: automated rebalancing, billing/remittance, document vaults, electronic account opening, institutional quality goals-&-risk based investment portfolios, and the open architecture use of investment options.

The Challenge

RobustWealth approached Privo during a period of rapid growth for the company's online wealth management platform. The CTO, Chris Kerins, had a vision for building a secure, scalable, and high performance AWS infrastructure that would simultaneously reduce the administrative burden of managing the site and deploying new features. As is common during periods of rapid growth, however, Chris' team was unable to pause their software development efforts long enough to implement the changes he knew were required, and the longer they delayed implementing a solid foundation for their infrastructure, the more technical debt they would accrue and the harder it would be to get where they knew they ultimately needed to be.

The Solution

Privo worked closely with RobustWealth to build a new foundation for their AWS infrastructure. The project started in August of 2017 and concluded in February of 2018, however, continuous improvement are still being made to the infrastructure.

Specific solutions deployed included:

- Implemented a new code deployment process that starts with AWS CodeCommit. Developers commit small, incremental changes to a master branch in CodeCommit, the changes are automatically pushed to Staging where they are reviewed by the Quality Assurance (QA) team. Upon approval the code is deployed to the production environment. Throughout the process, health checks are validated and the deployed code is rolled back via CodeDeploy if there are any problems detected.
- The new environment is built entirely using AWS's Infrasructure-as-Code technology, CloudFormation, which ensures changes to the VPC are centrally managed and well-documented
- Implemented Auto-Scaling Groups to dynamically adapt to the load on the site.
- Upgrade the database tier, leveraging Aurora MySQL to create a resilient, multi-Availability Zone (AZ) configuration. To further improve performance, Privo implemented an Aurora Read Replica.
- Improved security by encrypting the database, baking Trend Micro's Deep Security-as-a-Service security agent into the CodeDeploy process. Furthermore, Privo implemented end-to-end encryption for all network traffic throughout the AWS infrastructure.
- Built a new multi-tenant website using Elastic Container Services (ECS) and a micro-services architecture
- Built a new single-tenant website which makes extensive use of AWS Lambda serverless functions
- Improved resilience by creating a warm Disaster Recovery (DR) site in another AWS region; and by configuring application servers to automatically re-spawn in the event of a failure, install the latest version of CodeDeploy, and download the latest version of the application code from the code repository.

The Result

As a result of this project the performance, cost efficiency, resilience, and manageability of the infrastructure was dramatically improved. Throughout the project and afterwards, RobustWealth has grown tremendously as their platform has soared in popularity. The new AWS infrastructure has resulted in faster code deployments and far fewer headaches. Chris Kerins' commented after the project,

"We're in a great spot now with our infrastructure. Privo did most of the heavy lifting which allowed us to stay focused on pushing out new features to our platform."

Lessons Learned

For Privo, we learned a tremendous amount the powerful integration between CodeDeploy and CodeCommit.

About Privo

Privo is an AWS consulting firm with offices near Boston and San Francisco. We liberate businesses from the ball and chain of traditional IT infrastructure, leveraging the transformational power of the AWS platforms to help them innovate faster. We help customers architect, migrate, manage, monitor, secure, and optimize their AWS infrastructure.

For more information about how Privo can help your company run faster on the AWS Cloud, see Privo's listing in the [AWS Partner Directory](#) or [visit our website](#).