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From Review to Renewal: Health-e-MedRecord's Comprehensive AWS Cloud Optimization by ClearScale

Health & MedRecord

Executive Summary

Health-e-MedRecord (HEMR) is a patient-centered, cloud-based healthcare platform that enables all stakeholders – patients, physicians, first responders, and facilities – to deliver the best possible health care. HEMR offers a suite of applications that address major workflows and integrations between various provider teams and administrators.

After receiving a Well Architected Review, Health-e-MedRecord decided to move forward with making many important changes to its cloud infrastructure. The company brought in ClearScale to help address security vulnerabilities, achieve cost optimization, and implement cloud best practices.

> "We knew where we wanted to go but weren't sure the best way to get there. ClearScale was a great guide and partner for us in making changes to our AWS architecture that will allow us to continue promoting exceptional health care for our users."
>
> **Carlo Reyes MD JD,** Chief Executive Officer, Health-e-MedRecord

The Challenge

Health-e-MedRecord received a comprehensive Well Architected Review (WAR) of its AWS cloud infrastructure to discern where it could improve IT performance. The purpose of a WAR is to identify shortcomings in existing cloud architectures in relation to current industry best practices. On AWS, these best practices fall into six categories (AKA "pillars") within the AWS Well-Architected framework:

- Operational Excellence
- Security
- Reliability
- Performance Efficiency
- Cost Optimization
- Sustainability

HEMR found that it could upgrade its cloud architecture across these pillars but didn't know the best way to proceed. The company decided to bring in an AWS partner who could help prioritize initiatives highlighted by the WAR and make recommendations on how to maximize long-term value.

As an AWS Premier Tier Services Partner with 11 competencies, ClearScale was well-positioned to meet Health-e-MedRecords' needs. ClearScale's cloud engineers and architects understand how to leverage the AWS platform to meet complex business challenges. ClearScale is especially adept at taking WAR findings and moving quickly to optimize legacy cloud architectures for clients in the healthcare sector.

The ClearScale Solution

ClearScale first evaluated Health-e-MedRecords' Well-Architected Review results and then built a plan. One of the areas with the most room to improve was in the cost optimization category. ClearScale removed unused resources from the AWS account and enabled AWS Cost Explorer, a service that allows users to create budgets and receive automated emails when costs exceed predefined thresholds. The ClearScale team also created a Cost and Usage Report for HEMR and activated Cost Allocation tags so that the company could track resource utilization more closely.

Additionally, ClearScale implemented AWS Security Hub, which will allow HEMR to monitor cloud security in greater detail. AWS Security Hub serves as a centralized place to collect security alerts and create automated remediation workflows to fix security problems. Furthermore, ClearScale added Amazon GuardDuty, an intelligent threat detection tool that uses machine learning to detect potential threats across AWS accounts. Amazon Inspector was also valuable on the vulnerability management front.

On the cloud configuration side, ClearScale implemented AWS Config for HEMR so that the business had one place to manage configuration settings across its many AWS resources. ClearScale also created an Amazon S3 bucket for recording purposes. Beyond these improvements, the ClearScale team gave HEMR a list of recommendations to make its cloud infrastructure more secure and scalable.

These included:
- Reviewing Security Hub findings and remediating Critical and High issues first
- Creating one SSO user instead of individual IAM users for customers and using IAM users only for system users
- Leveraging autoscaling with a load balancer to keep up with application traffic
- Creating a record in Amazon Route53 to automatically route traffic through the load balancer
- Creating scale-down and scale-up policies that align with the HEMR's needs
- Preventing public access to Amazon RDS databases by placing them in private subnets and using VPN connections
- Creating fine-grained IAM policies instead of giving all users the FullAccessPolicy setting

The Benefits

ClearScale's optimizations helped Health-e-MedRecord in a number of ways. First, HEMR's monthly billing came down by more than 80%, simply by eliminating unused resources. The company can also track spending more closely and make sure that resource utilization remains in line with demand.

What's more, the company's in-house security team can now address vulnerabilities and security concerns more quickly. After implementing ClearScale's additional recommendations, HEMR is now better positioned to grow and innovate, further enhancing the capabilities of healthcare professionals and benefiting patients.