Clearscale

Case Study

Building a Cloud-First Future for Education

Clearscale designed a cloud environment that protected student services and ensured a smooth transition to AWS.

Client Profile

Industry Education

Technology Migration and Modernization

Education   DevOps

Overview

An education provider needed to migrate its applications and databases from a legacy hosting environment to AWS. With student services on the line, downtime or data loss wasn't an option. Clearscale executed a secure, well-orchestrated migration that used containerization, automation, and database replication to keep services online and ensure data integrity throughout the transition.

Meet Our Hero:

This organization provides online learning and support services to students across the U.S. Reliability is crucial: if systems go down, students lose access to the resources they depend on.

The institution's legacy infrastructure created risks around scalability, security, and resiliency. As the demands on its platform increased, leadership recognized it was time to modernize. The challenge was clear: migrate to AWS without disrupting access to mission-critical education services.

The Goal

- Migrate applications and databases to AWS
- Achieve minimal downtime and preserve data integrity
- Containerize applications to improve scalability
- Establish secure connections to Azure Data Lake
- Automate infrastructure provisioning with Terraform

The Challenge

Challenge 01

Legacy hosting environment created risk for scalability and security

Challenge 02

Applications and databases had to be migrated without downtime

Challenge 03

Maintaining data integrity during migration was critical

Challenge 04

Needed secure connectivity to an Azure Data Lake

Challenge 05

Required rollback safeguards to minimize risk

The Solution

Clearscale executed a comprehensive migration strategy with AWS services.

Step 01: Infrastructure & Automation

- Used Terraform to provision cloud infrastructure
- Built automated workflows to streamline deployment

Step 02: Database Replication

- Migrated databases to Amazon RDS (MariaDB)
- Used AWS Secrets Manager and SSH tunnels for secure replication

Step 03: Data Transfer

- Leveraged AWS DataSync and Amazon S3 to migrate file data

Step 04: Application Modernization

- Containerized applications on Amazon ECS (Fargate)
- Improved scalability and simplified operations

Step 05: Secure Connectivity

- Configured a Network Load Balancer (NLB) with HAProxy for secure links to Azure Data Lake

Step 06: Testing & Cutover

- Conducted rigorous testing
- Performed DNS cutover using Amazon Route 53
- Designed rollback strategies for added protection

GA AWS Web infrastructure diagram

Created by Mikolaj Matuszny, 10/07/2024
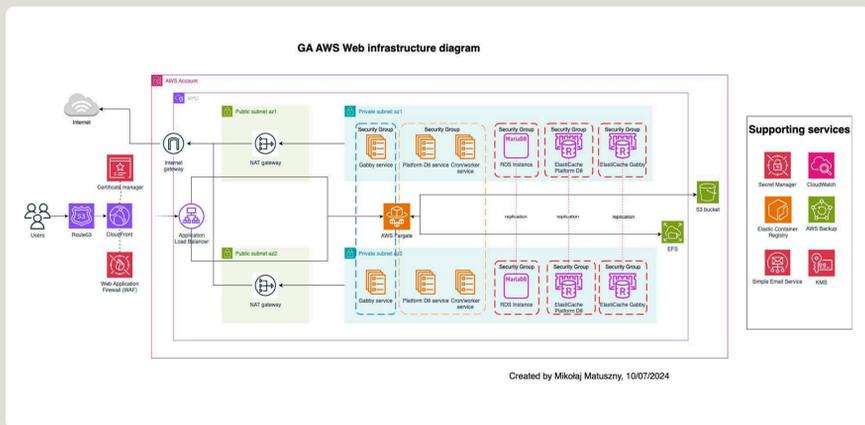
The Impact

Completed migration to AWS with minimal disruption.

Established a secure, scalable, and automated cloud environment.

Improved application performance and reduced operational overhead.

Created a secure, reliable pipeline into Azure for advanced analytics.

Positioned the organization for future innovation and growth.

Turn Cloud Chaos Into Clear Results On AWS

Clearscale helps education providers break free from cloud chaos and experience clear results on AWS. If your systems are holding you back from serving students effectively, let's talk.

Talk to an Engineer