

# MIND leveraged AWS DevOps best practices to transform the Genius Corner portal to enhanced Uptime & Reliability with overall performance



## Client Overview

Genius Corner (GC) is an online learning platform for kids to practice and learn Maths. They offer comprehensive, personalized learning program for students of all grades. They combine web technology with education and help transform the learning process with their engaging learning platform for kids.

## Business Challenge

Genius Corner is running 3-tier Java based application backed with MYSQL RDS. On daily basis they have around (6k-10K) users accessing their portal and services. They were facing following challenges

The deployment and scaling issues was resulting in compromised performance and higher downtime.

Moreover, the infrastructure, storage and operational costs were high. They sought an automated deployment pipeline and on-demand scaling solution with seamlessly secured infrastructure to ensure credibility of their learning platform.

## Business Outcome

MIND has accelerated the digital transformation journey of Genius Corner, resulting in enhanced agility and technical excellence.

Client's development team is now able to leverage AWS CodePipeline tools in their regular sprint cycles to create repeatable and Fault tolerant deployments. This allows them to focus more on the services used by their customers and maintain a competitive edge in the marketplace.

They have also achieved more than 50% reduction in deployment time along with that there is no manual effort is required for releasing a new feature/code.

## Our Proposed Solution

MIND envisioned a digital-ready environment and architecture that support the best-in-class customer experience. To reach that goal, MIND recommended the AWS infrastructure leveraging DevOps and enabling the client to manage operational activity without worrying about underlying infrastructure management. The scope of our engagement included the following set of actions:

- MIND implemented continuous integration and delivery pipelines (CI/CD) with Blue/Green deployment to release infrastructure and applications rapidly, efficiently, and reliably. Leveraged AWS Developer tools services, including **AWS CodePipeline**, **AWS CodeBuild**, **AWS CodeDeploy**, and **GitHub** for CI/CD implementation. Also, automated the provisioning of frontend pipeline with Terraform template.
- Configured serverless automation of operational activities with Lambda and used **AWS SSM** for **EC2 SSH** and unified Patch Management. Enabled **ELB** to deliver the backend by autoscaling and migrated them to **AWS Aurora MySQL** with Read Replica for better performance. MIND leveraged **Amazon CloudFront** to deliver UI and website hosted on S3.
- MIND have used **AWS Inspector** security assessments to check for unintended network accessibility of Amazon EC2 instances and for vulnerabilities on those EC2 instances. According to its findings MIND have harden the Base AMI to **Golden AMI**.
- MIND have also achieved automated security auditing with help of **AWS config**. MIND have also utilized **AWS security hub** for comprehensive view of security alerts and security posture across their AWS accounts.
- Apart from this **GuardDuty** is also enabled for threat detection. **CloudWatch** is used for monitoring and logging purpose with SNS alerts enabled for High Severity errors.

## AWS services used

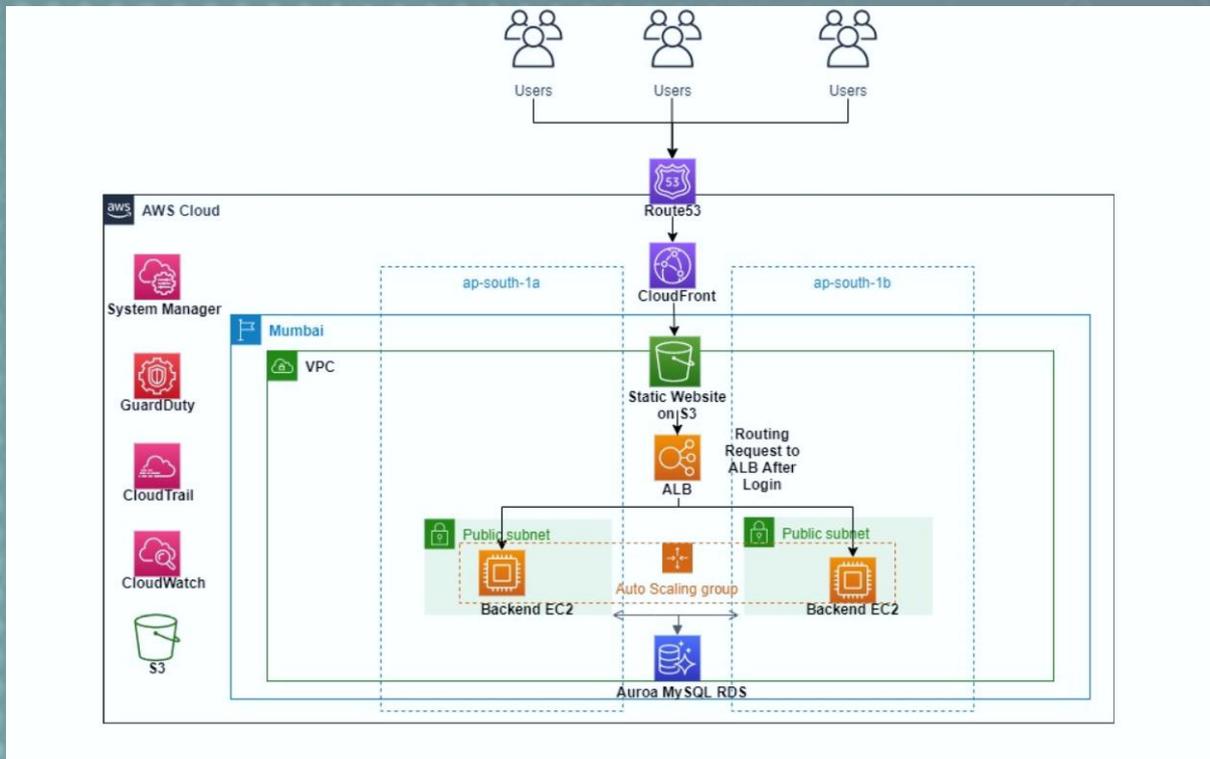


## Third party services used

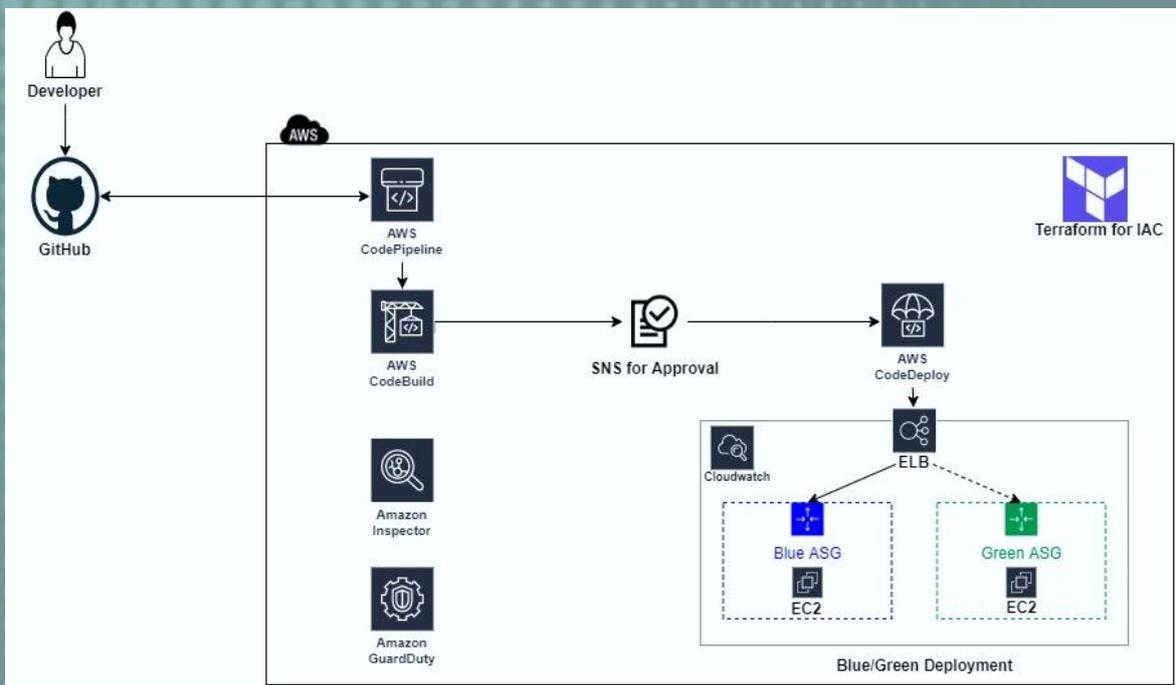


# Architecture Diagram

## System Architecture



## DevOps Architecture



## Key Benefits Delivered

MIND helped Genius Corner to improve their overall build cycle. With the help of DevOps and fully automated CI/CD pipeline implementation, their development team can now release their code on sorted frequencies.

- The **uptime of their platform increased** due to decoupling of resources like backend and frontend, also help them to cater more workload without any overprovisioned resources.
- With **Blue-Green deployment** model, we helped Genius Corner in **quicker release and rollback** for any failed deployments, that too with a near zero-downtime.
- MIND has **enhanced their security standards and overall governance** by enabling services like AWS Config, Security Hub and GuardDuty.
- MIND has also used **CloudHealth monitoring for strategic evaluation** in order to get right sizing, cost reports and utilization of AWS resources.

## About the Partner

### MotherSumi INFotech & Designs Ltd.



MotherSumi INFotech & Designs Limited (MIND), a SEI CMMI Level 5 IT services company and the IT back bone of MotherSumi group. MIND is a trusted technology partner to over 200 clients globally. Our value proposition is in our strength in specific Industry segments and years of experience in the areas of intelligent warehousing, Supply chain enablement, software application development, smart ERP customization, infra managed services, cloud, IoT & Analytics. MIND is serving customers in 41+ countries with a strong team of 1500+ professionals.