

The Ultimate Knowledge adopts AWS DevOps services to transform Digital learning experience worldwide in secured manner



Client Overview

The Ultimate Knowledge is an e-learning portal which serves as a dynamic encyclopedia and aims to develop awareness in the minds of the children right from an early age. They provide a daily dose of knowledge in the form of finely written articles supplemented by illustrations and videos across varied knowledge spectrums and geographies.

Business Challenge

Being a rapidly growing startup EduTech, The Ultimate Knowledge (TUK) was facing challenges to keep up with their dynamic business demand

 TUK was facing challenge with frequent code deployments being conducted manually

 They wanted interruption-free user experience on their portal for which they wanted highly available, scalable tech environment that may help them seamlessly deliver their e-learning content over various geographical locations

 With their existing setup, TUK was unable to manage requests/user workload during peak hours.

Business Outcome

Leveraging MIND's DevOps solutions on AWS, TUK was able to speed up their deployment process can now make changes to their e-learning portal according to their business requirement;

 Minimize the deployment time significantly for frequent release after implementing automated blue/green deployment strategy

 High availability, minimum downtime ensuring a smooth e-learning experience

 Enhanced agility and scalability resulted in improved ROI

 Advanced security & compliance services helped in preventing unauthorized root login

Our Proposed Solution

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

- MIND moved their application server in a private subnet with optimized architecture and went for the application server, operating system level, and Apache Tomcat server tuning. Further, implemented **Amazon CloudFront**, the content delivery network service to ensure better performance. We had implemented **CI/CD pipeline** in order to automate the frequent deployments as per the business requirement.
- MIND leveraged **AWS WAF** for security and implemented **AWS GuardDuty** to prevent the e-learning platform from malicious or unauthorized activities. **CloudWatch** setup for monitoring and logging purpose with SNS alerts enabled for High Severity errors.
- MIND also used **AWS GuardDuty** for continuously monitoring for malicious activity and unauthorized behaviour via **AWS CloudTrail event logs**, **Amazon VPC Flow Logs**, and **DNS logs**.
- Used **AWS SSM** for EC2 SSH and unified Patch Management.
- MIND have used **AWS Inspector** security assessments check for unintended network accessibility of **Amazon EC2** instances and for vulnerabilities on those EC2 instances. And as per its findings we have harden the **base AMI** and created **Golden AMI**

AWS services used

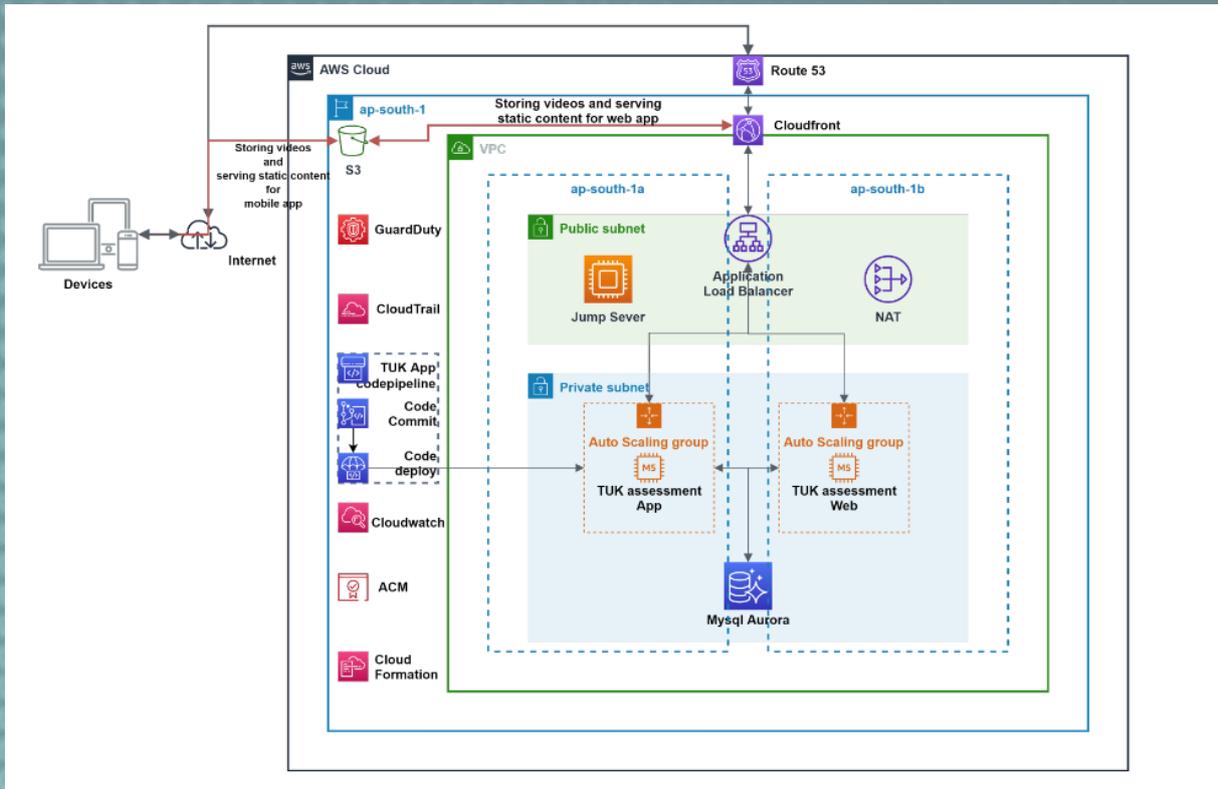


Third party services used

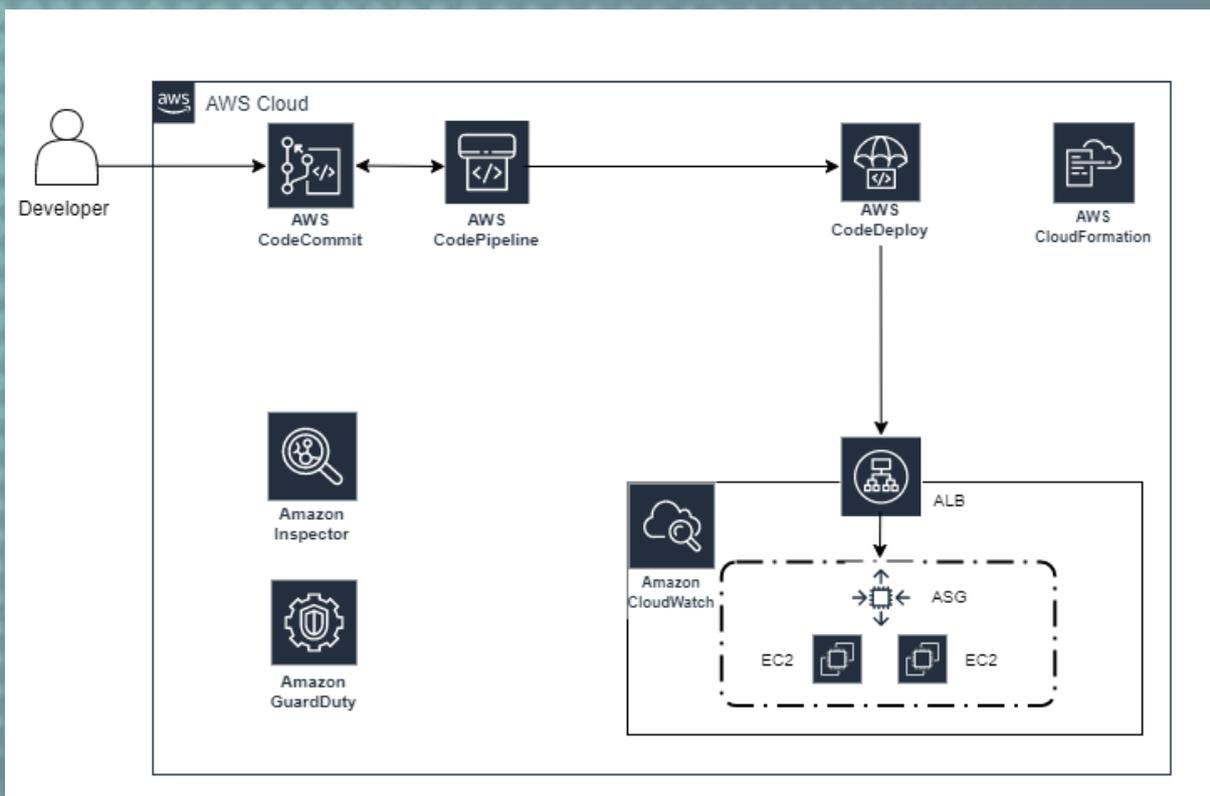
CloudHealth[®]

Architecture Diagram

Deployment Architecture



DevOps Architecture



Key Benefits Delivered

Working with AWS, MIND created a flexible and scalable infrastructure for TUK which provided a seamless e-learning experience to their users. AWS's agile platform scales with application programming interface-based business services and has no single point of failure, which helped us serve them with the continuous delivery model. We made TUK development team get benefitted by leveraging AWS services in following ways.

- AWS Lambda enabled our client to manage operational activity without worrying about server management.
- MIND have helped TUK to **minimize the deployment time of frequent release** after implementing automated blue/green deployment strategy. This has **significantly improved the uptime of application** as resources are provisioned by autoscaling as per the load requirements.
- CloudWatch setup for **proactive monitoring and logging** purpose helped TUK to quickly find and diagnose issues.
- We have **improved security standards** across their AWS account by implementing AWS GuardDuty, Inspector.
- MIND has also used **Cloud health for right sizing , cost reports and utilization monitoring** of AWS resources.

About the Partner

MothersonSumi **IN**fotech & **D**esigns Ltd.



MothersonSumi INfotech & Designs Limited (MIND), a SEI CMMI Level 5 IT services company and the IT back bone of Motherson 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.