



edureka!
a Veranda Enterprise



From Classroom to Cloud:

REVOLUTIONIZING E-LEARNING EXPERIENCE

with Next-Gen Solutions



edureka!

India's fastest growing e-learning platform offers live, online training in the latest technologies like AI, Big Data, & Blockchain.

Edureka has the **highest course completion rate** in the world, by enabling learners to pick courses based on guidance from experts; with 24x7 lifetime support for each individual.



#2

**Fastest Growing
e-learning platform**

THE PROBLEM

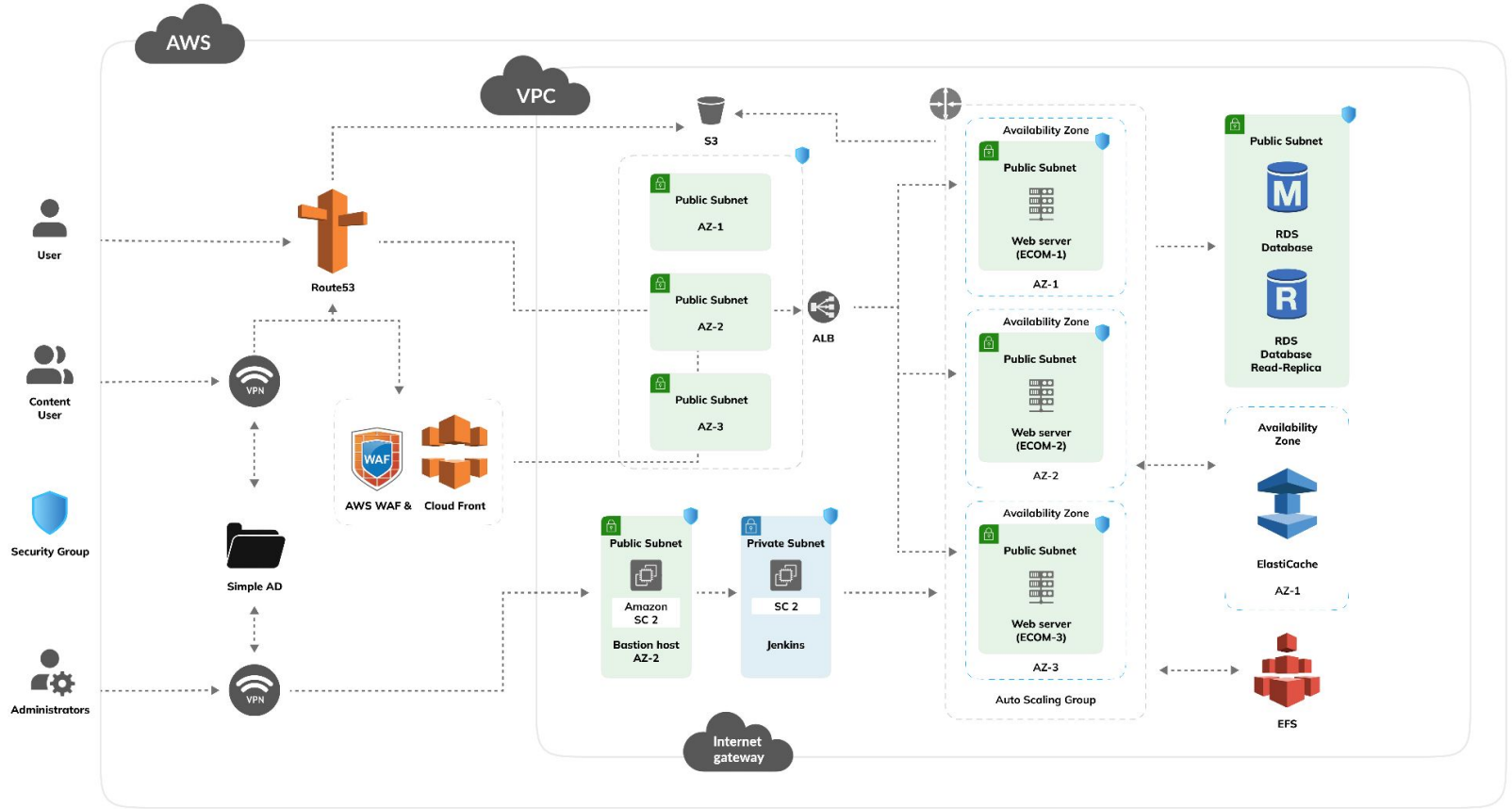
The initiative with Edureka started from the grounds-up and over the period of time, the need for improvement became evident.

The existing infrastructure had all the environmental resources operating on a single AWS account, resulting in various issues.



- **MANUAL DEPLOYMENT**
- **SCALABILITY**
- **TRACEABILITY**
- **SECURITY VULNERABILITY**

EXISTING ARCHITECTURE



THE OBJECTIVE



Edureka wanted to migrate the production environment to an independent AWS account and modernize their existing architecture.

They entrusted us to address the prevailing challenges and enhance the application's scalability and security. However, Edureka presented **2** significant constraints for the modernization process:

**CODE SHOULD NOT BE
RESTRUCTURED.**

**ARCHITECTURE SHOULD BE
COST-OPTIMIZED.**

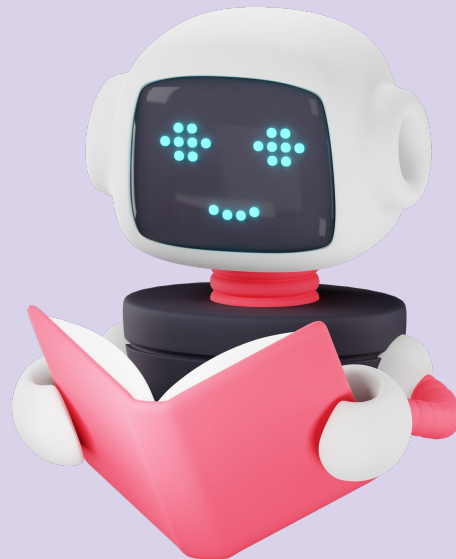


THE SOLUTION

Mantra leveraged its DevOps expertise and created a continuous delivery pipeline compatible with AWS cloud to **increase agility, reduce costs, improve security**, and **enhance the reliability** of their computing infrastructure.

While setting up the infrastructure and deploying the applications, Mantra resolved some of the critical problems and created a cloud formation template so that infrastructure can be built automatically from beginning to end.

DEV PROCESS



DEV PROCESS

1. Implemented **VPC** (Amazon Virtual Private Cloud) to provide a logically isolated area of the AWS cloud where we could launch AWS resources in a virtual network.

2. Created an **S3 bucket** to store **Lambda code** as it is a scalable, high-speed, web-based cloud storage service.

DEV PROCESS

3. Created a self-managed **Kube Cluster** using Kops for managing production-grade Kubernetes clusters. Used an S3 bucket for security to store secrets and KOPS cluster state files and implemented EC2 instances, auto-scaling, and load balancing.

4. Implemented **EFS FileSystem** for scalable, fully managed, cloud-native NFS file system for Linux workloads that could be used with AWS Cloud Services and on-premises resources.

5. Implemented **EFS FileSystem lambda functions** with event source mapping & lambda permission for code to run without provisioning or managing servers.

DEV PROCESS

6. Created **RDS DB Instances** for the database that are distributed relational databases.

7. Implemented **APIGateway** with resources & an authorizer for a fully managed service that makes it easy for developers to create, publish, maintain, monitor, and secure APIs at any scale.

8. Implemented **SNS and SES** services for sending emails and push notifications and **SQS** for queuing mechanisms.

DEV PROCESS

9. Implemented an **AWS VPN** for securely connecting on-premises network or branch office site to the VPC.

10. Implemented **CloudWatch logs** for monitoring, storing, and accessing log, and **CloudWatch alarms** for monitoring metrics over a specified time period.

11. Implemented **WAF** which protects applications and sites from common web attacks that could otherwise negatively affect application performance and availability.

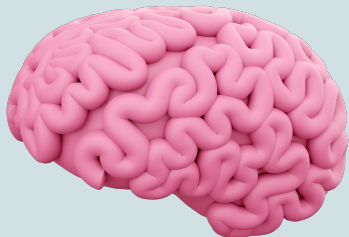
DEV PROCESS

13. Implemented **CloudFront** for high performance and security and **AWS code pipe** lines for the automated deployment.

12. Implemented the **ECS service** for microservices, a fully managed container orchestration service that helps you easily deploy, manage, and scale containerized applications with ECR and task definition services.

14. Created a **manual approval stage** for production code pipelines and **CloudFormation scripts** for creating end-to-end infrastructure.

SOLUTION ARCHITECTURE



- Created Cloud formation template to facilitate faster & automated development.
- Restored AMI images of EC2 instances to a new AWS account for seamless migration.
- Used S3 bucket for improving security.

INFRA- STRUCTURE



- Created S3 bucket to store lambda code and KOPS cluster state files.
- Enabled Auto scaling functionality to dynamically scale the system as per the demand.
- Established AWS codepipeline for faster & automated deployment.

THE IMPACT



65% ↓
In code
deployment time

2X
More ROI from
continuous
delivery

3X
Faster Release
cycle

25% ↓
In functional
defects

60% ↓
In storage server
costs through custom
server architectures

70%
Cost savings
through DevOps

WHY MANTRA

Mantra Labs is a global experience engineering and consulting firm that specializes in creating intelligent solutions and digital-first customer experiences for global enterprises.

Amongst other offerings, DevOps has been Mantra's forte which covers end-to-end delivery pipelines, continuous integration & deployments across all cloud platforms.

Our DevOps capabilities has led to **400% increase** in live deployment efficiency with fewer roll-back.



MANTRA LABS

Building Intelligent Experiences That Matter™.

150+
PROJECTS

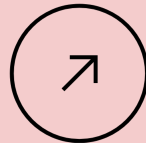
300+
GEEKS

03
OFFICES



Exp. Nov. 22, 2022 | Appraisal #5117

**SOUNDS
GOOD!**



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