Refactoring Web Application on AWS

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Introduction

This document provides an in-depth overview of the refactoring and enhancement project for the existing website hosting infrastructure on AWS. The project focuses on improving performance, scalability, and security while optimizing costs.

Project Overview

The project involves analyzing the current website hosting infrastructure, identifying areas for improvement, and proposing architectural changes to address identified challenges.

Architecture Overview

The proposed architecture leverages modern AWS services such as Route 53, CloudFront, Elastic Beanstalk, CloudWatch, Amazon MQ, ElastiCache, and RDS for MySQL to achieve scalability, reliability, and cost-efficiency.

AWS Services Used

The project utilizes a comprehensive set of AWS services including:

- Amazon Route 53
- Amazon CloudFront
- AWS Elastic Beanstalk
- Amazon CloudWatch
- Amazon MQ
- Amazon ElastiCache
- Amazon RDS for MySQL

Implementation Steps

1. **Current Infrastructure Analysis**: Conducted a thorough analysis of the existing infrastructure, identifying pain points and areas for improvement.
2. **Architecture Redesign**: Proposed a redesigned architecture based on modern AWS services, considering factors such as scalability, reliability, and cost-efficiency.
3. **Service Configuration**: Configured AWS services according to the proposed architecture, including setting up Route 53 for DNS routing, CloudFront for content delivery, Elastic Beanstalk with Application Load Balancer, and CloudWatch for monitoring.
4. **Data Migration and Integration**: Migrated existing data to Amazon RDS for MySQL, ensuring data integrity and compatibility with the new architecture. Integrated backend services such as Amazon MQ for messaging and Amazon ElastiCache for caching.
5. **Security Configuration**: Implemented security measures such as SSL certificates from AWS Certificate Manager, security groups, and IAM roles to ensure secure communication and access control.
6. **Automation and Scripting**: Developed automation scripts and configuration templates using AWS CloudFormation or Infrastructure as Code (IaC) tools like AWS CDK to automate deployment and configuration tasks.
7. **Testing and Validation**: Conducted extensive testing, including unit testing, integration testing, and performance testing, to validate the functionality, performance, and scalability of the refactored infrastructure.

Testing and Validation

A rigorous testing process is conducted to validate the functionality and performance of the refactored infrastructure. This includes unit testing, integration testing, and performance testing to ensure the system meets predefined success criteria.

Deployment Process

A robust deployment process is implemented, incorporating deployment strategies, rollback procedures, and automation techniques to ensure seamless and efficient deployments.

Conclusion

The refactoring and enhancement project has successfully achieved its objectives of improving performance, scalability, and security while optimizing costs. The utilization of modern AWS services has enabled the deployment of a resilient and efficient website hosting infrastructure.
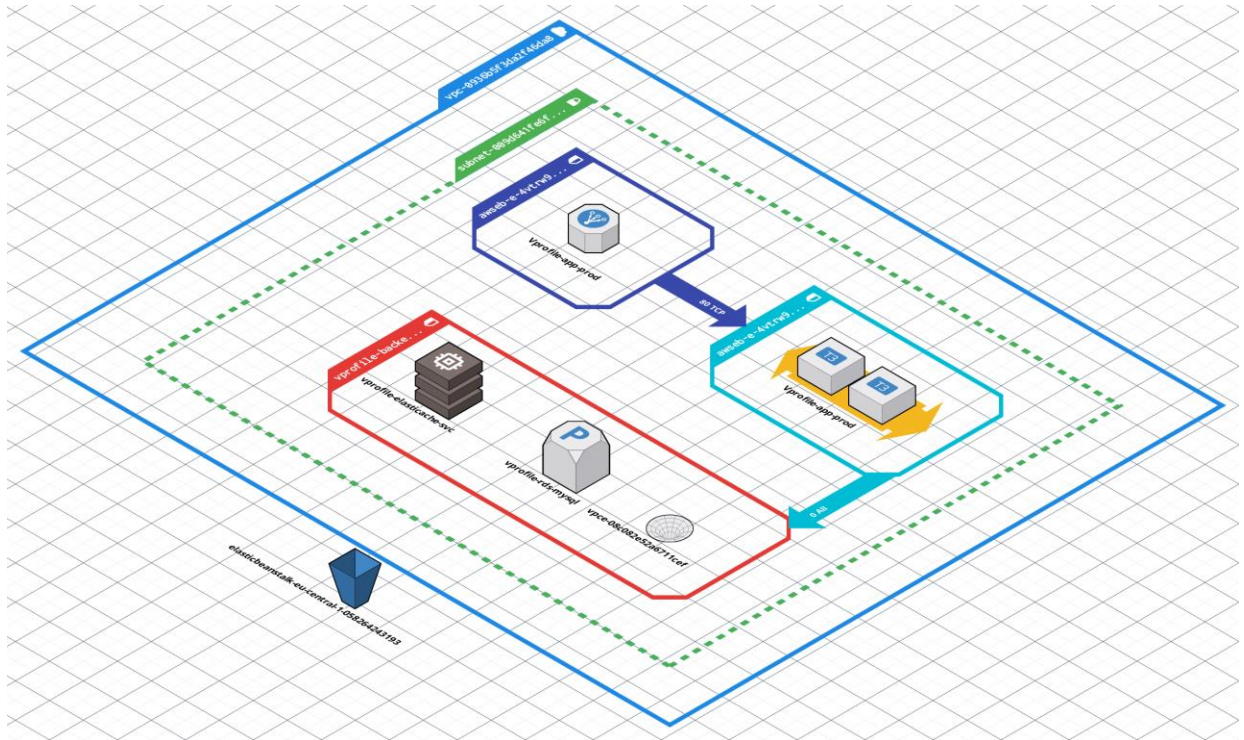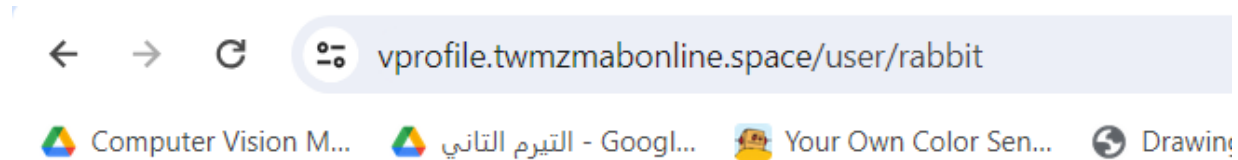
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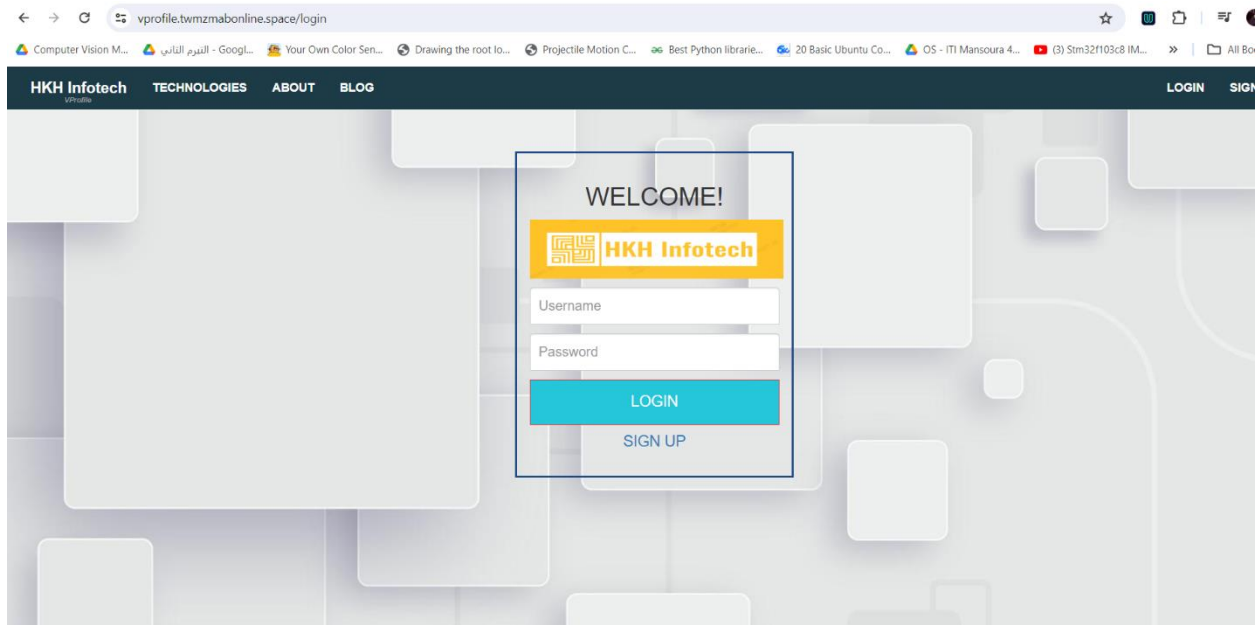
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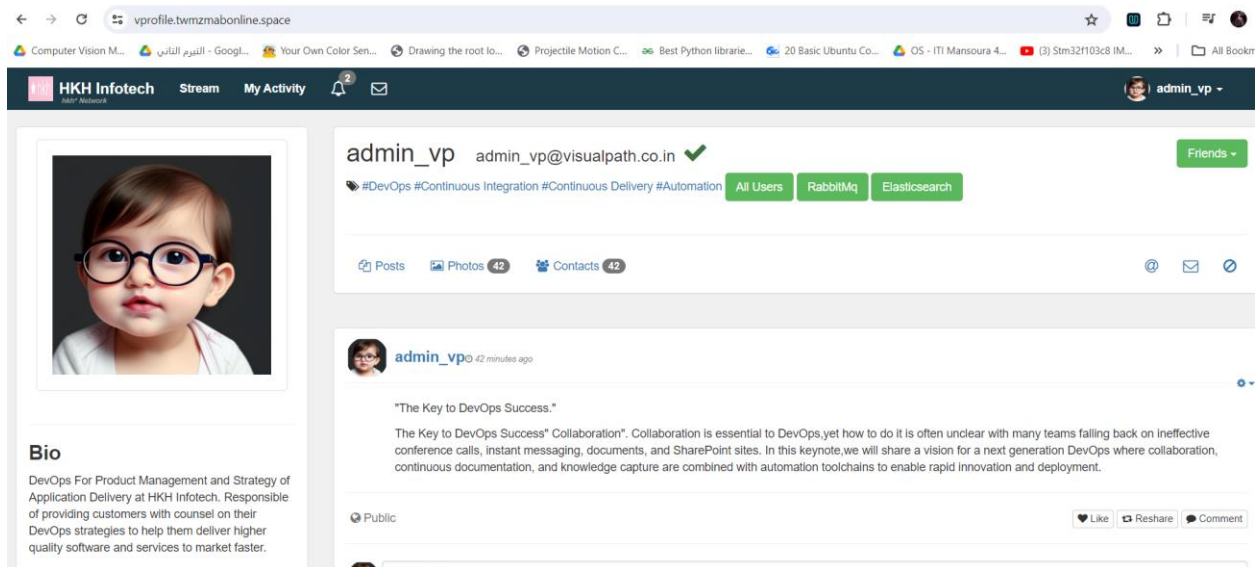
Testing Amazon MQ functionality.

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Testing Elasticache functionality

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User Primary Details

Id	Name	Father's Name	Mother's Name	Email	Phone Number
10	Aron	M nirban	R nirban	aron.DSilva@gmail.com	7777777777

User Extra Details

Date Of Birth	Gender	Marital Status	Permanent Address	Temporary Address	Primary Occupation	Secondary Occupation	Skills	Secondary PhoneNumber	Nationality	Language	Working Experience
27/01/2002	male	unMarried	Dubai,UAE	Dubai,UAE	Software Engineer	Software Engineer	Java HTML CSS	777777777	India	english	7