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Designing on AWS: Creating a Two-Tier Application

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# Overview

In this project, we will design and deploy a two-tier web application on Amazon Web Services (AWS) using Virtual Private Cloud (VPC), Elastic Compute Cloud (EC2) instances, Relational Database Service (RDS), and Load Balancing. The application will consist of a frontend layer hosted on EC2 instances and a backend database hosted on RDS. Load balancing will ensure high availability and scalability of the application.

# Goals

The primary goals of this project are to design and deploy a resilient two-tier application architecture on AWS, utilizing VPC, EC2 instances, RDS database, and Load Balancing. The project aims to ensure high availability and scalability by implementing Load Balancing for the frontend, while establishing a secure and well-optimized backend database environment.

# Specifications

This project entails the creation of a two-tier application infrastructure on AWS, involving the deployment of frontend components on EC2 instances within a VPC's public subnet, employing Load Balancing for traffic distribution. The backend will consist of a fault-tolerant RDS database deployed in a private subnet. Security measures will include IAM roles, security groups, and encryption, while monitoring will be managed through Amazon CloudWatch. The project's overarching focus is on ensuring availability, scalability, security, and efficient management of the application while adhering to best practices and documentation standards.

Implementation

Our project repository on GitHub offers a comprehensive architectural diagram illustrating the two-tier application deployment on AWS. Additionally, we provide Infrastructure as Code (IaC) solutions using AWS CloudFormation templates, enabling automated provisioning and management of the entire infrastructure stack. These templates encapsulate the configuration of Virtual Private Cloud (VPC), subnets, EC2 instances, RDS databases, Load Balancing, security groups, and related resources. This integration of architectural visualization and CloudFormation templates empowers seamless collaboration, version control, and reproducibility, promoting efficient development, deployment, and maintenance of the application environment.

Github Repository