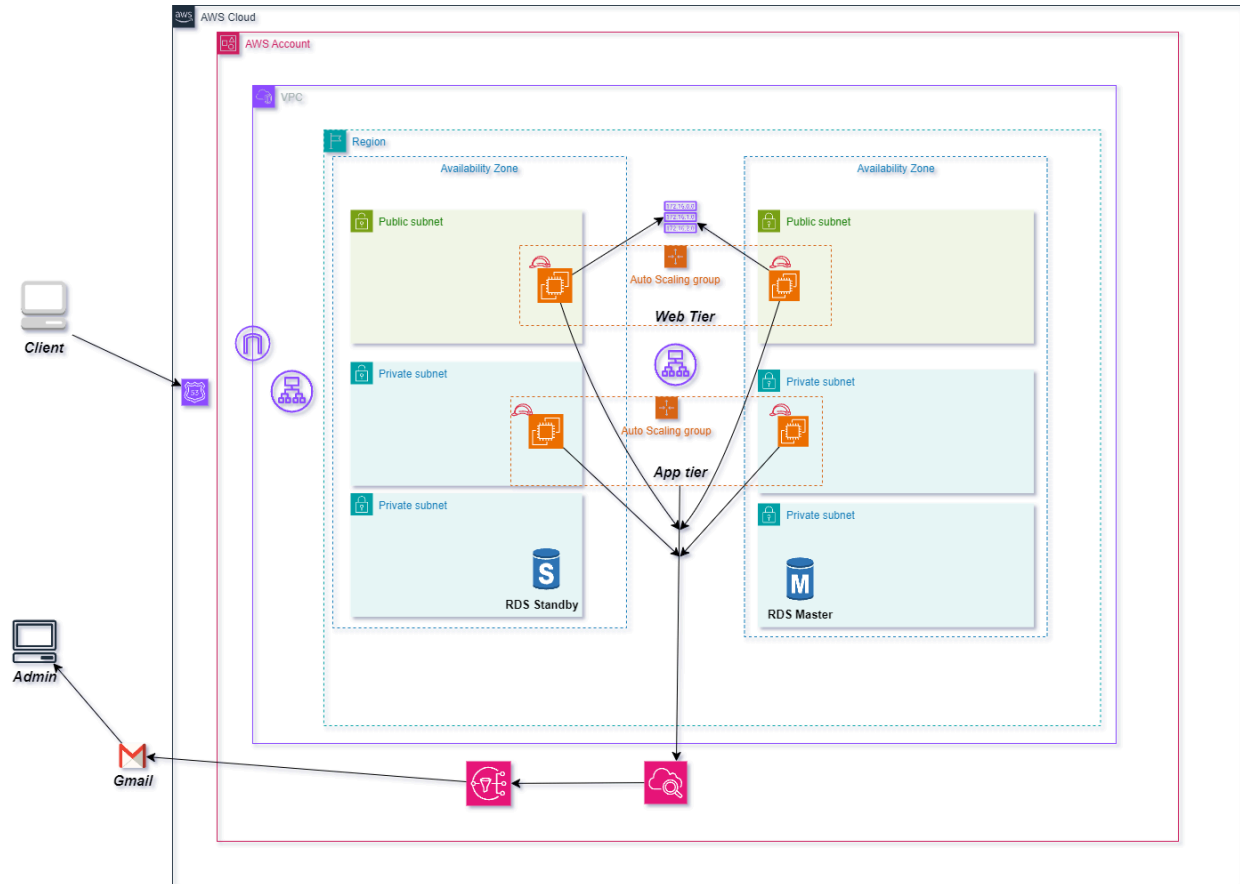


# Project Title: Highly Available and Scalable Web Application Architecture on AWS



## Project Overview

This project showcases how to architect and deploy a **resilient, scalable, and secure web application** on Amazon Web Services (AWS). The goal is to simulate a real-world production-grade infrastructure where uptime, performance, and reliability are critical. Using **EC2, ALB, ASG, RDS, IAM, CloudWatch, and SNS**, this architecture ensures the application automatically scales based on demand, withstands system failures, and maintains secure access policies.

## Key AWS Services Utilized

- **Amazon EC2:** Hosts the web application with flexibility and control over compute resources.
- **Application Load Balancer (ALB):** Efficiently routes incoming traffic to healthy EC2 instances.
- **Auto Scaling Group (ASG):** Dynamically adjusts the number of instances based on traffic.
- **Amazon RDS (Multi-AZ):** Provides a fault-tolerant relational database backend.
- **IAM:** Enforces secure, role-based access to AWS resources.
- **CloudWatch + SNS:** Monitors system health and notifies stakeholders in real-time.

## Core Benefits

- **High Availability:** Using ALB and ASG ensures continuous uptime and fault tolerance.
- **Scalability:** Auto Scaling keeps performance consistent even under variable traffic loads.
- **Security:** IAM roles safeguard your infrastructure with fine-grained access control.