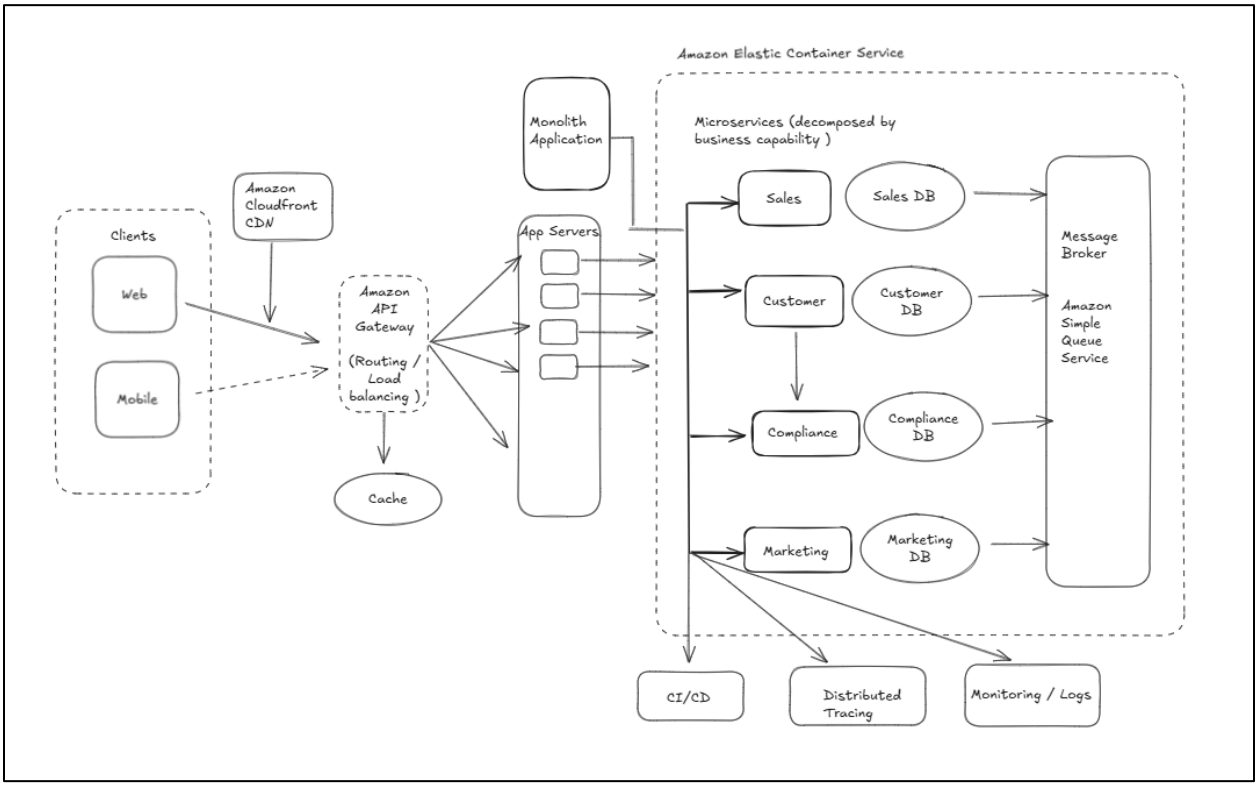
AWS Microservices Architecture For a Monolithic Service

Summary

This document captures high level architecture proposed for migrating a monolithic application into Microservices architecture using AWS cloud platform.

Architecture Diagram For Microservices



Description Of Main Components

Decompose Monolith Application Modules

Decompose the existing monolith application by business capability into separate microservices so that each microservice represents a different domain.

Implement API Gateway

Configure the Amazon API gateway layer to manage the API layer and which acts as the entry point to which the client requests (web & mobile) are directed to . This layer can provide functionalities like Application Load Balancer to direct the incoming requests to appropriate web server, API gateway that would forward the incoming request to a specific micro service and Cache to improve the performance of the application.

Application Web Servers

The pool of application web servers which are Amazon EC2 instances. They can be scaled as per the load of incoming requests.

Data Store

The data store is what the microservices use to store the data. Based on the consistency requirement, it can be Amazon Aurora like Postgres , MySQL etc. if consistency is important or Amazon DynamoDB service for NoSQL which scales well as compared to relational database services.

Message Bus Queue

The microservices communicate with each other via internal Rest APIs and message queues like Amazon Simple Queue Service

CI/CD

Implementing the CI/CD pipelines to deploy individual microservice independently without impacting the other services making the entire architecture fault tolerant.

Distributed Tracing

Distributed tracing to trace the distributed requests from end to end by a specific trace id which helps in troubleshooting.

Monitoring / Logging / Observability

Implement monitoring for microservices using services like AWS CloudTrail , Amazon CloudWatch.