E-Commerce Platform Architecture

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Contents

1 Introduction

This document provides an overview of the architecture for an E-Commerce platform. The architecture is represented in the form of a diagram, which includes the main components such as clients, API Gateway, microservices, and databases.

2 Architecture Diagram

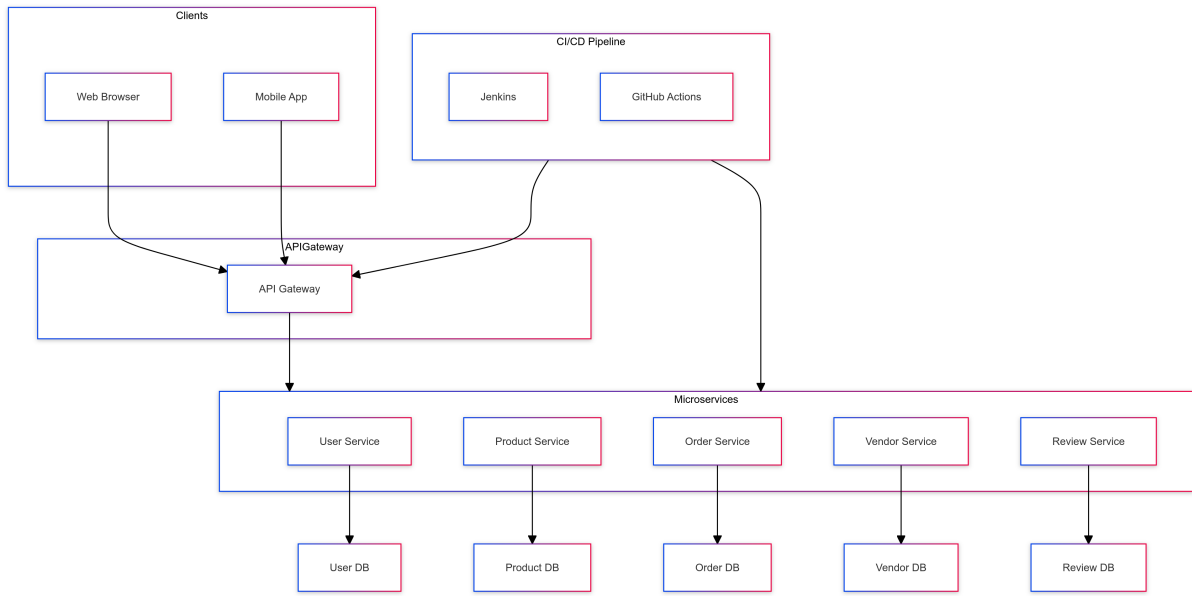The following diagram illustrates the overall architecture of the E-Commerce platform:

Figure 1: Architecture diagram of the Local Business Platform

3 Components

3.1 Clients

The clients include both a Web Browser and a Mobile App. These clients interact with the platform through the API Gateway.

3.2 API Gateway

The API Gateway serves as the entry point for all client requests. It routes these requests to the appropriate microservices, ensuring that the clients interact with the correct service.

3.3 Microservices

The platform is composed of several microservices, each responsible for a specific functionality:

- **User Service**: Handles all user-related operations such as registration, login, and profile management. It connects to the **User DB**.

- **Product Service**: Manages product data including cataloging, pricing, and availability. It connects to the **Product DB**.

- **Order Service**: Responsible for managing customer orders, including order creation, tracking, and history. It connects to the **Order DB**.

- **Vendor Service**: Manages vendor-related operations, allowing vendors to manage their products and orders. It connects to the **Vendor DB**.

- **Review Service**: Handles customer reviews, including the submission and display of reviews for products. It connects to the **Review DB**.

3.4 CI/CD Pipeline

The CI/CD pipeline is an integral part of the development and deployment process. It consists of:

- **Jenkins**: Automates the build, test, and deployment processes, ensuring continuous integration and continuous deployment.

- **GitHub Actions**: Provides additional automation for workflows directly from the code repository, facilitating smoother and faster deployments.

4 Conclusion

The architecture of this E-Commerce platform is designed to be scalable, modular, and efficient. By utilizing microservices, the platform is able to isolate different business functions into independent services, each with its own database. The API Gateway acts as a centralized entry point, directing client requests to the appropriate services. Continuous Integration and Continuous Deployment (CI/CD) pipelines ensure that the platform can be updated and maintained with minimal downtime, making the platform reliable and resilient.