

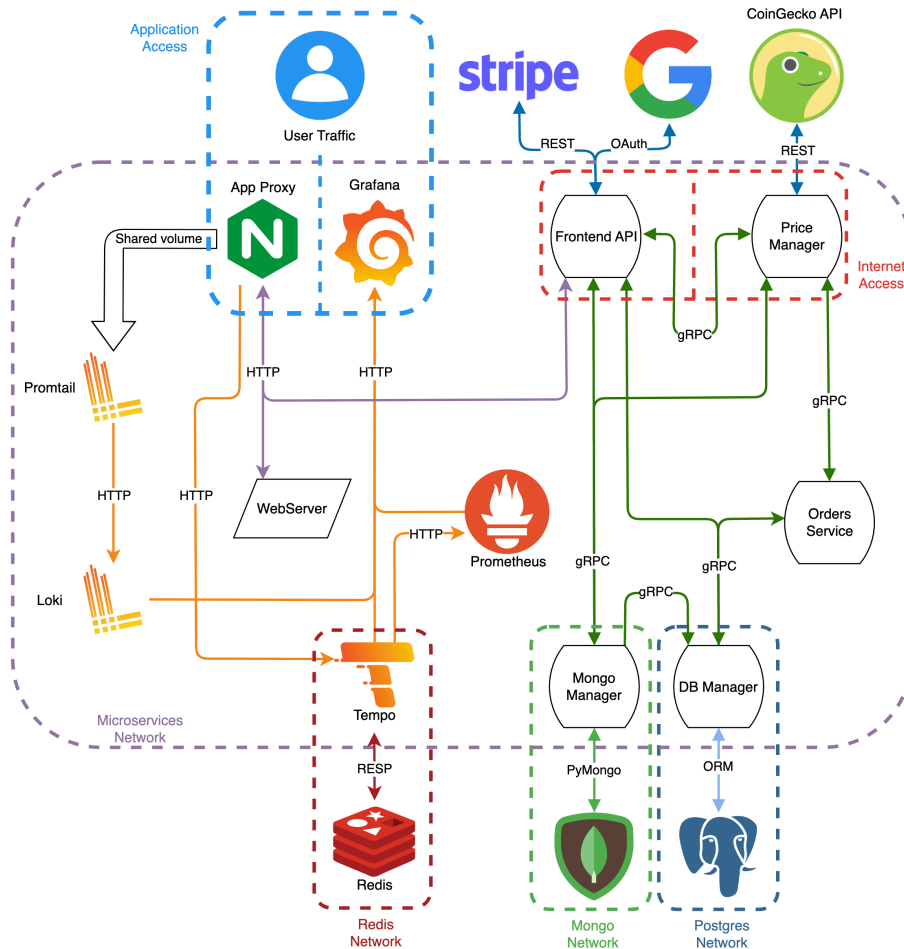
# The\_THDc\_App

## Microservices Application with Docker Compose

This repository contains a Docker Compose setup to deploy a microservices-based THD(C) application.

The system is designed with the following features:

- Microservices-based architecture for modular development.
- API integrations with external services such as Stripe, Google, and CoinGecko.
- Monitoring and observability using Prometheus, Grafana, Loki, and Tempo.
- Database management using MongoDB and PostgreSQL.



## Architecture Overview

The system is composed of the following key components:

### Application Access

- **App\_Proxy**: Acts as a reverse proxy to route traffic to the WebServer and Frontend\_API.
- **Grafana**: Provides dashboards for metrics visualization.

### Backend Services

- **Frontend\_API**: Provides REST and OAuth endpoints, integrating with external services like Stripe and Google.
- **Price\_Manager**: Fetches data from external APIs (e.g., CoinGecko).
- **Orders\_Service**: Manages orders placed by the users.

### Databases

- **MongoDB**: Used for NoSQL data storage.
- **PostgreSQL**: Used for SQL data storage.
- **DB\_Manager**: Interacts with PostgreSQL using an ORM and provides gRPC methods for other services.
- **Mongo\_Manager**: Interacts with MongoDB using PyMongo and provides gRPC methods for other services.

### Logging, Monitoring, and Tracing

- **Prometheus**: Collects metrics from services.
- **Loki**: Manages logs with the help of Promtail to track traffic going through **App\_Proxy**.
- **Tempo**: Handles distributed tracing, using Redis for cache.