

IOT Ingestion

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Overview

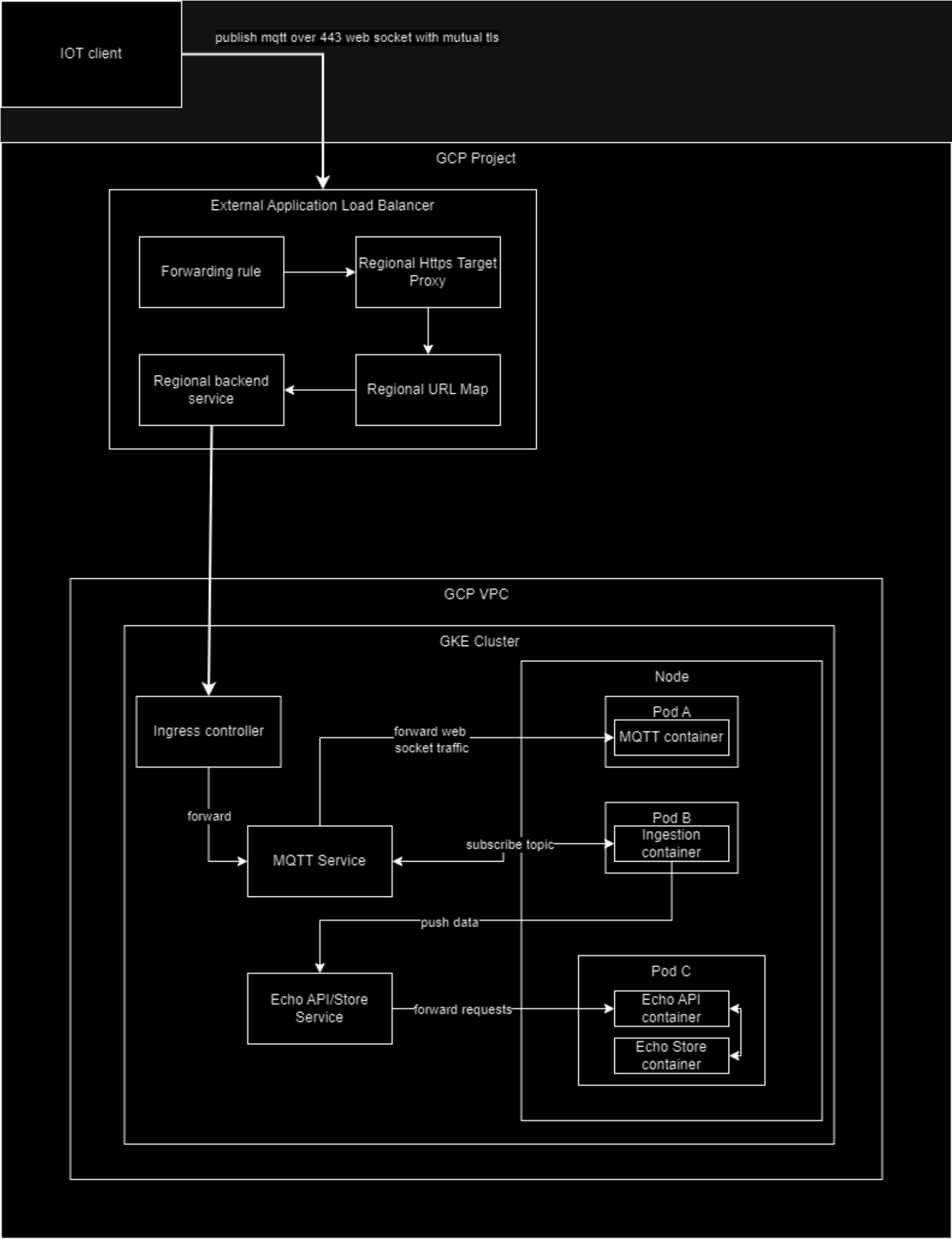
Problem statement

Considerations

Security

Proposed Design

Flow



Sequence

1.

Reference Architecture

GCP External Load Balancer

This is used to expose the service externally and provide for mutual TLS. Requests from it are forwarded on to the GKE cluster which has an Ingress Controller configured to handle the traffic.

Google Kubernetes Engine

Project Echo is using Google Kubernetes Engine (GKE) to run its services including Echo Store, Echo API, so the MQTT and ingestion containers can run here.

HiveMQ Docker Image

This provides the MQTT broker service running as a container within a Kubernetes pod.

<https://hub.docker.com/r/hivemq/hivemq4/>

Python / Paho MQTT client library

Paho mqtt library can be used to subscribe to the MQTT topic ran by the MQTT broker and httpx / requests can be used to perform requests to send data Echo API to be put into Echo Store; these will be the building blocks for the ingestion service/container written in Python.

Reference Links

<https://cloud.google.com/load-balancing/docs/https#component>

<https://hub.docker.com/r/hivemq/hivemq4/>

<https://pypi.org/project/paho-mqtt/>