Documentation

This is a simple laravel application deployed in Google Kubernetes Engine, a managed Kubernetes service on the cloud. The application is packed using a Dockerfile and uploaded in an image registry - Google container registry.

The application is deployed using a deployment manifest file with an external loadbalancer. The loadbalancer routes traffic from the internet into the cluster

Setup GCP

- Login to the GCP console
- Create a bucket with a unique name. This bucket will hold the terraform state file.
- Clone the git repository:
 https://github.com/Chinweoke18/k8-gcp.git/
- cd into the k8-gcp directory
- Open the "variable.tf" file, and replace the "project_id" with your project ID. (Project ID can be obtained from the GCP console)

Deploying the GKE cluster

- Run the following command
- cd k8-gcp
- terraform init
- terraform fmt
- terraform apply

This creates the GKE cluster as well as the image repository

Building the image

Access the folder named "microservice" inside the k8-gcp folder

- Copy the files "Dockerfile" and "000.default.conf"
- Place the files inside the root folder of your application (https://github.com/kennedy-osaze/abc-article-api.git) in our case
- Inside the root folder, run the following commands:
- docker build -t gcr.io/PROJECT_ID/article-api:latest .
- docker push gcr.io/PROJECT ID/article-api:latest

This pushes your image to the image repository created

NOTE: replace "PROJECT_ID" with your project ID.

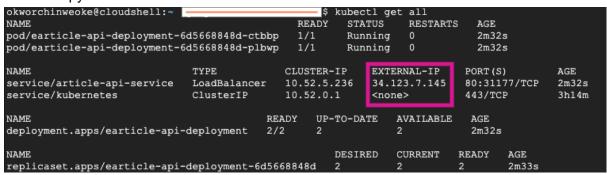
Deploying the microservice in Kubernetes

Access the "microservice" folder inside the "k8-gcp" folder Run the command:

- kubectl apply -f deployment.yaml

Testing the application

- Obtain the loadbalancer URL/IP Address of the application kubectl get services
 - Copy the loadbalancer URL/IP Address



- Paste it on your browser and hit enter. You will be able to hit the application endpoint

Infrastructure Diagram

The infrastructure diagram is in the "microservices" folder inside the "k8-gcp" folder. File name: *infra-diagram.png*