

# IP Geo-location Dashboard

Milind Kamath

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## 1 Idea

Let's say I have a website that I just designed, unique in its use case and is getting attention quickly. I now want insights about the users who hit the website url, in order to scale it to handle multiple requests, make it available in different regions through CDN, make note of users who access the website for threat mitigation, provide content based on the location, currency type, timezone information. I can get insights by IP geo-location. IP geo-location will convert the ip addresses of the users who access the website into information containing the region till the lowest grain for the address, the security type, the timezone information, the currency used and the connection type. Different visualization charts and maps can be created to find useful insights to scale the wesbite, incorporate different levels of protection and provide content based on the region.

## 2 Deliverables

The end result of the project will output different insights through visualization of the data converted from the ip address. The dashboard will be created using Google Data studio.

## 3 Pipeline

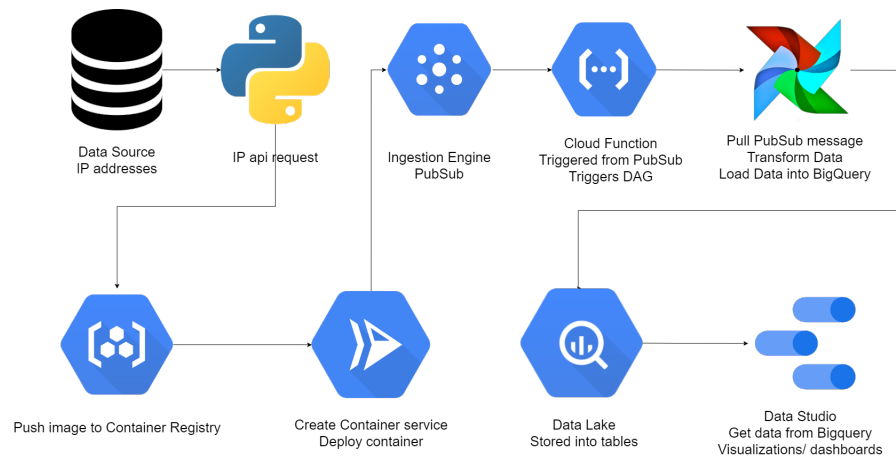


Figure 1: Pipeline

## 4 Explanation

As per the pipeline the data source consists of the IP addresses of users who visit a certain website. This is simulated by creating random ipv4 addresses using python. The next phase is a docker container that takes the IP address and converts into geo-location information. This container is pushed to the google container registry and deployed on google cloud run.

The container passes the data to the ingestion engine which is google pubsub topic. This triggers a cloud function which will trigger apache airflow dag to pull message from the pubsub topic, clean and transform, wrap into dataframes and save into the bigquery tables. Data studio will then be used to get data from the big query tables and provide useful insights through different charts.

## **5 Use cases**

- Scale Website based on amount of hits according to region.
- Improve levels of protection.
- Provide contents based on region, timeline.
- Improve UX based on the consensus of users by mobile/computers.

**Thank You**