Cape Technical Test

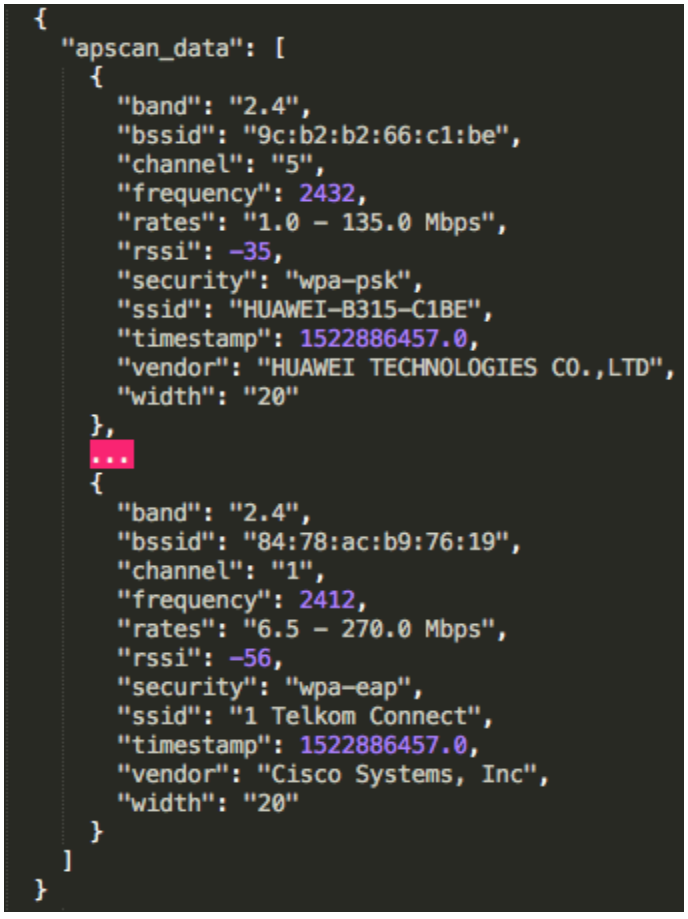
Wi-Fi access point based geolocation

Outline

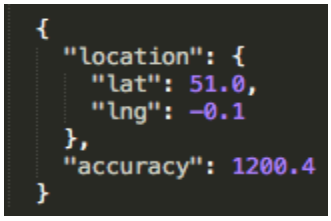
We would like you to create a service that accepts Wi-Fi access point (AP) scan result data and returns the latitude and longitude of the location at which the AP scan was performed. This is a real service that currently exists within our architecture.

Requirements

We would like the solution to be a REST API (use any language you want). It needs to accept a single batch of AP scan data of the format:



And it needs to return a response in the format:



Note: please design your solution to be production-ready.

Geolocation

Geolocation should be performed using Google's geolocation API, documented here: https://developers.google.com/maps/documentation/geolocation/intro

Please use the following API Key:
`AIzaSyCCK6hPzvUI1_XbDCV4pC1HN_6bneUejYc`

Input

We will supply a zip file containing JSON AP scan results. These are real AP scan results obtained by a sensor deployed at a customer site. We will use this same dataset as well as other similar datasets to test the service. Each "apscan_data" item is a separate scan, performed at a different point in time, by the same sensor. Each scan contains a list of APs observed by the sensor during the scan.

Bonus: Caching

There is a cost associated with performing the geolocation using the API above. As a result the service should cache the results so that calls to Google are reduced. The caching needs to take into account the variability of the input. AP scan results can vary because of Wi-Fi APs with very low signal strength that may be visible temporarily. These APs appearing and disappearing shouldn't cause a new lookup to be performed, but a very different set of APs appearing should do so, because this would indicate the sensor has been moved to a new location.