

OpenAg™ Cloud Description

v4 Design (as of 2019-05-30 by rbaynes)

- App Engine flex environment deployments
 - MQTT / PubSub service to validate and store messages.
 - Notification service, manages notifications on a schedule.
 - ReactJS web EDU UI.
 - Flask API for EDU UI.
- EDU UI
 - Our educator and student focused UI which can display data and images from the devices associated with their user account.
 - User can send a recipe to the device.
 - User can view the notifications acknowledge them.
 - User can store horticulture measurements of their plant.
- Notification service
 - Manages scheduled and recurring notifications per device.
 - Tracks runs (of recipes) for use by the UI data display.
- MQTT / PubSub IoT messaging
 - Secure data publishing from all devices and individual device control.
- IoT Core device registry
 - Manages our IoT devices.
- Firebase cloud function
 - Open function to accept IoT device public key and save to Firestore collection
 - Open function to accept a POSTed image from a device and save it.
- Firestore
 - IoT device public key collection.
- BigQuery
 - Research data, recipes, long term data warehouse.
- Datastore
 - Realtime cache of user and device data. Anything the UI renders is cached and stored here.
- Storage
 - Images, timelapses
 - Backups

Future Additions

- App Engine
 - Image time lapse creation task (Dataflow)

- ML for CV tasks
- Data analytics
- Memcached