Team GR IoT Data Aggregation Project

Facility Diagram (Input)

Connection A (MQTTS)

- Upon connection to broker, a LWT is PUB to the LWT topic w/ a 1 minute timeout
- SUB to the Pulse Topic

- Upon recieving a pulse from the Pulse Topic, sensor data is PUB to the Data Topic

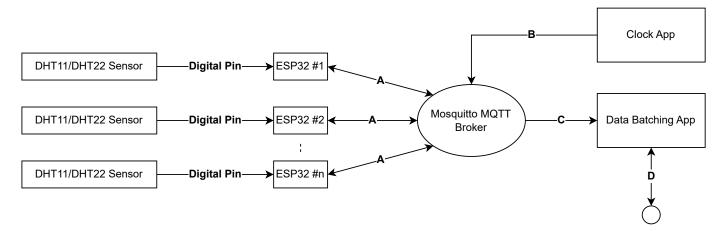- Message payload uses protobuf

Connection B (MQTT)

- PUB to Pulse Topic

- Clock pulse is sent every 15 min.

- Message payload is an empty string

Connection C (MQTT)

- SUB to the Data and LWT Queues

- Expects protobuf message

Connection D (SSL/HTTPS)

- Database connection over SSL and GroupMe chat bot POST request over HTTPS

- Sensor data is sent in batches of size n * 0.25
- Any remaining sensor data gets sent after a 1 minute timeout

- LWTs are sent in batches of size n * 0.05 OR get sent every hour

API Diagram (Output)

Connection A (SSL)

- Database connection

Connection B (TCP)

- TCP connection to a local Redis Cache
- API Token (JWT) information is cached here

- Tokens have a max TTL of 5 minutes before reauth is required

Connection C (HTTPS)

- User sends login credentials

- Upon successful login, an API Token is returned

- User sends query parameters via a JSON file. API Token must be inlcuded in headers

- Data is returned as CSV or HDF

API (TBD)

+ field: type

+ method(type): type