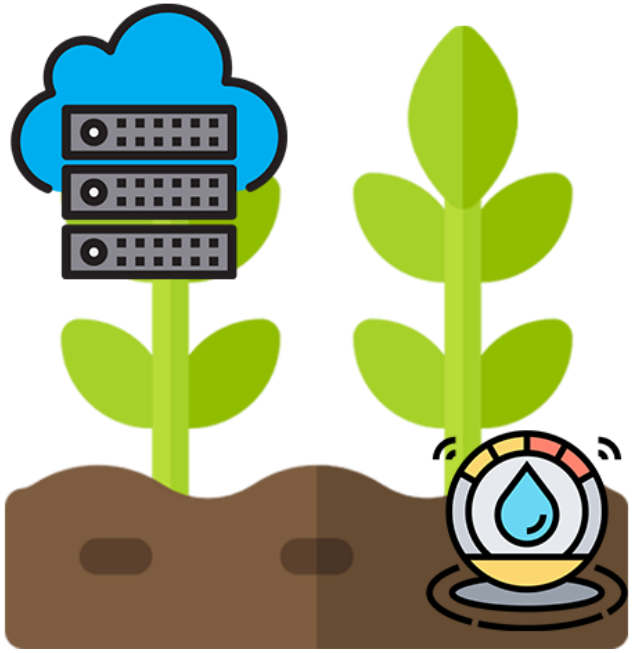
Autonomous Gardener

Semesterprojekt IoT – HS 2020



Pascal Hauser

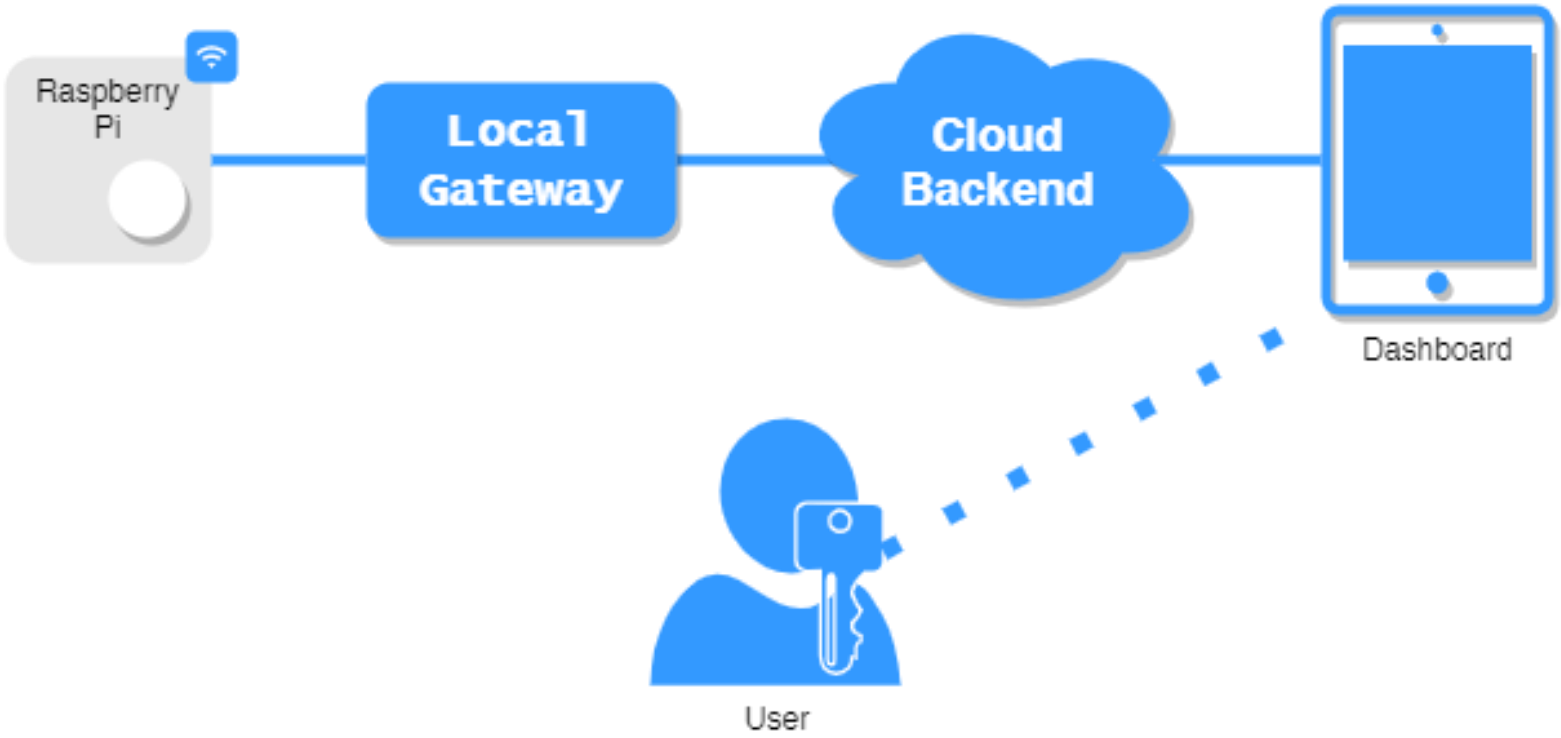
Kevin Buman

Use Case

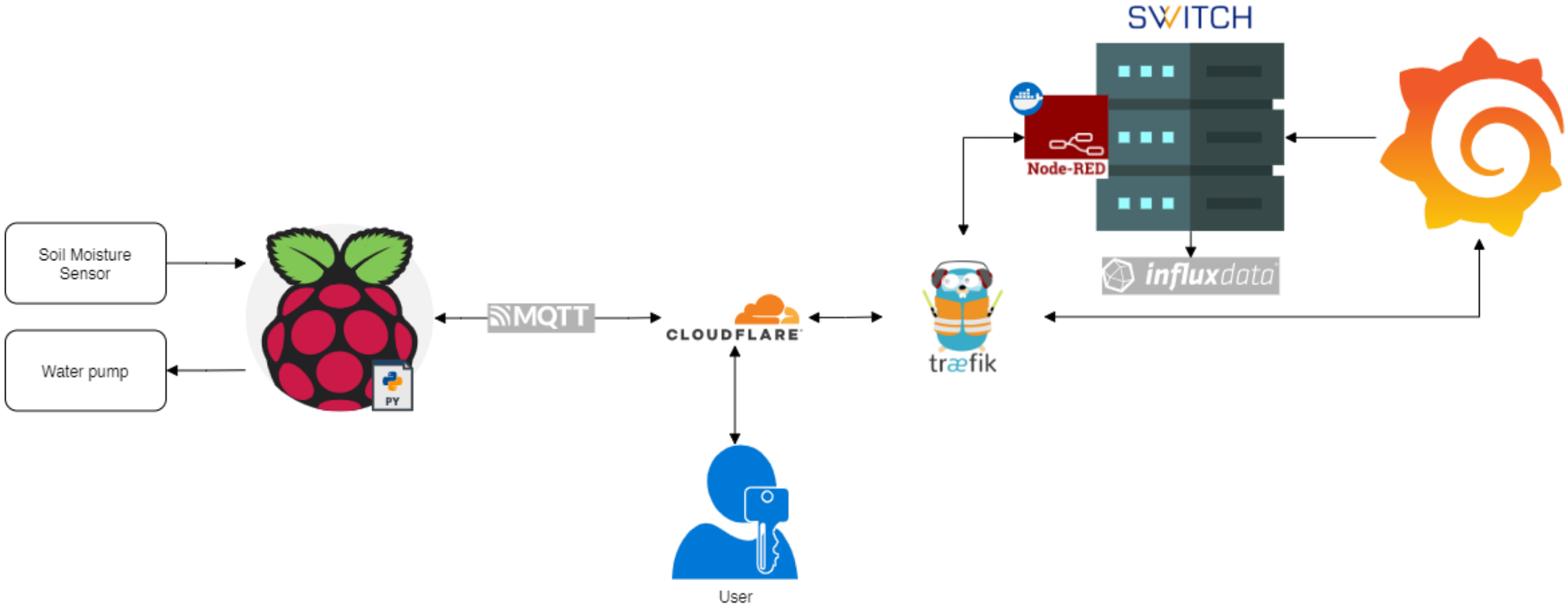
- Optimize plant watering systems:
  - Define custom watering schedules using
    - Time
    - Numeric thresholds

- Runs automatically, ideal for people who travel regularly
- Optimize water usage by providing the right amount for each plant.
- Easy scaling to multiple plants and even multiple pumps
- 24 / 7 monitoring with clean interface and easy access over any web browser

Reference Model



Setup


SWITCH
Node-RED
influxdata
Soil Moisture Sensor
Water pump
PY
MQTT
CLOUDFLARE
træfik
User

Issues

- Sensor values volatile
- Sensor is used during watering events
  - non deterministic
  - hard to get right

Possible Solutions

- Deliver predefined amount of water over time.
  - This way, we do not depend on the volatile sensor readings and only use the sensor for monitoring
- Try with a different Sensor and experiment with sensor positioning