



- 1 Responsive web app based on bootstrap and JavaScript MVC framework
- 2 Provide RESTful API to Web APP or Mobile APPs
- 3 Use Mosquitto to implement the MQTT protocol for distributing real-time messages

- 7 Persistent storage for facilities, devices, historian data, rules, identity, users, roles
- 8 Long running service to monitor rules in database, trigger actions to field controllers and publish alert messages to MQTT broker
- 9 Fetch real-time device status and alerts from Modbus-MQTT Gateway and publish messages to the MQTT broker

- 10 Subscribe real-time control messages from MQTT broker and then send to field controllers via Modbus
- 11 Store real-time alerts and control messages to the MySQL database
- 12 Convert data between Modbus and MQTT
- 13 An industrial computer that contains a minimal Linux operating system and a fully configured application stack