

Links

Edison Hardware Docs (PDF)

http://download.intel.com/support/edison/sb/edisonarduino_hg_331191007.pdf

Mosquitto Commands

brew install mosquitto (or apt-get)

mosquitto_pub -h ec2-35-161-110-220.us-west-2.compute.amazonaws.com -t /test -m "hello"

mosquitto_sub -h ec2-35-161-110-220.us-west-2.compute.amazonaws.com -t /test

MQTT Topics

HouseController: 110Main, 120Main, 130Main

Devices (per HouseController):

AirConditioner:

MessageId: 'state'

Value: 'on' | 'off'

Usage: Device periodically publishes its state.

HouseController publishes if it wants a specific state.

Heater:

... same as AirConditioner

Stove::

... same as AirConditioner

WashingMachine:

... same as AirConditioner

ThermostatTemp:

MessageId: 'temp'

Value: # (Fahrenheit temperature. No decimal)

Usage: Device periodically publishes current house temperature. For this demo, the house controller will subscribe to the scenario controller to get the scripted temperature.

HouseLights:

MessageId: 'state'

Value: 0.0 to 1.0

Usage: Device periodically publishes its state.

HouseController publishes if it wants a specific state.

Clock:

MessageId: 'time'

Value: HH:MM (24 hour clock)

Usage: The house controller will publish the standard time for all the devices in the house. The house controller will subscribe time from the scenario controller

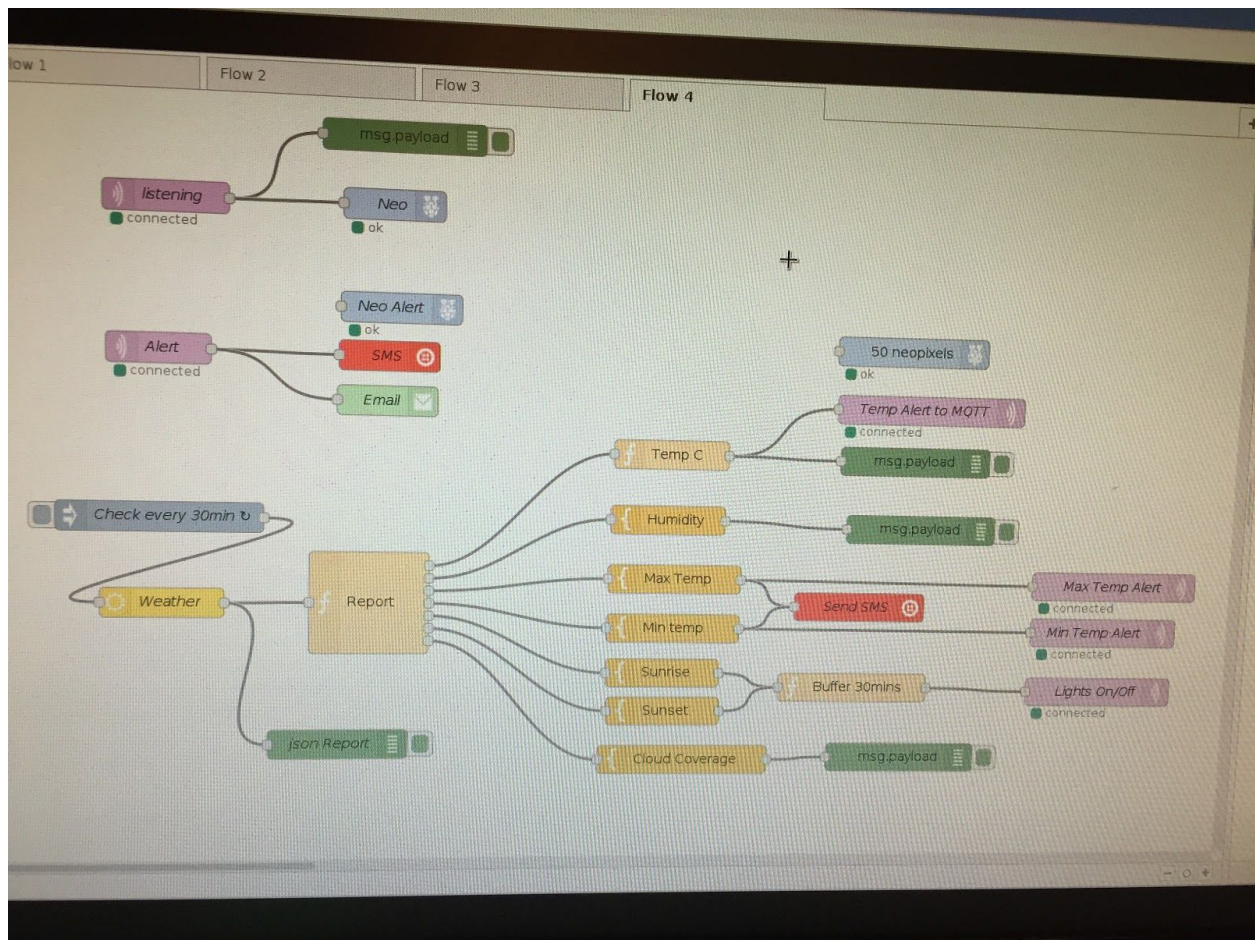
House Controller:

- Each house has a central controller for all devices
- Devices may have individual control panels, but they are actually convenience screens for the House Controller which centralizes all knowledge and convenience settings.
- For this demo, the house controller emulates the device controllers.
- The actual devices in demo house
 - DC Motor with fan, simulates blower of A/C and Heater. Drive with ULN2803. Physical pin ???
 - RGB LED on two digital IO, position behind fan, red for heater, blue for A/C
 - Servo - simulate washing machine - back / forth motion
 - Bright LED on PWM - house lights
 - Red LED simulates stove

Scenario Controller:

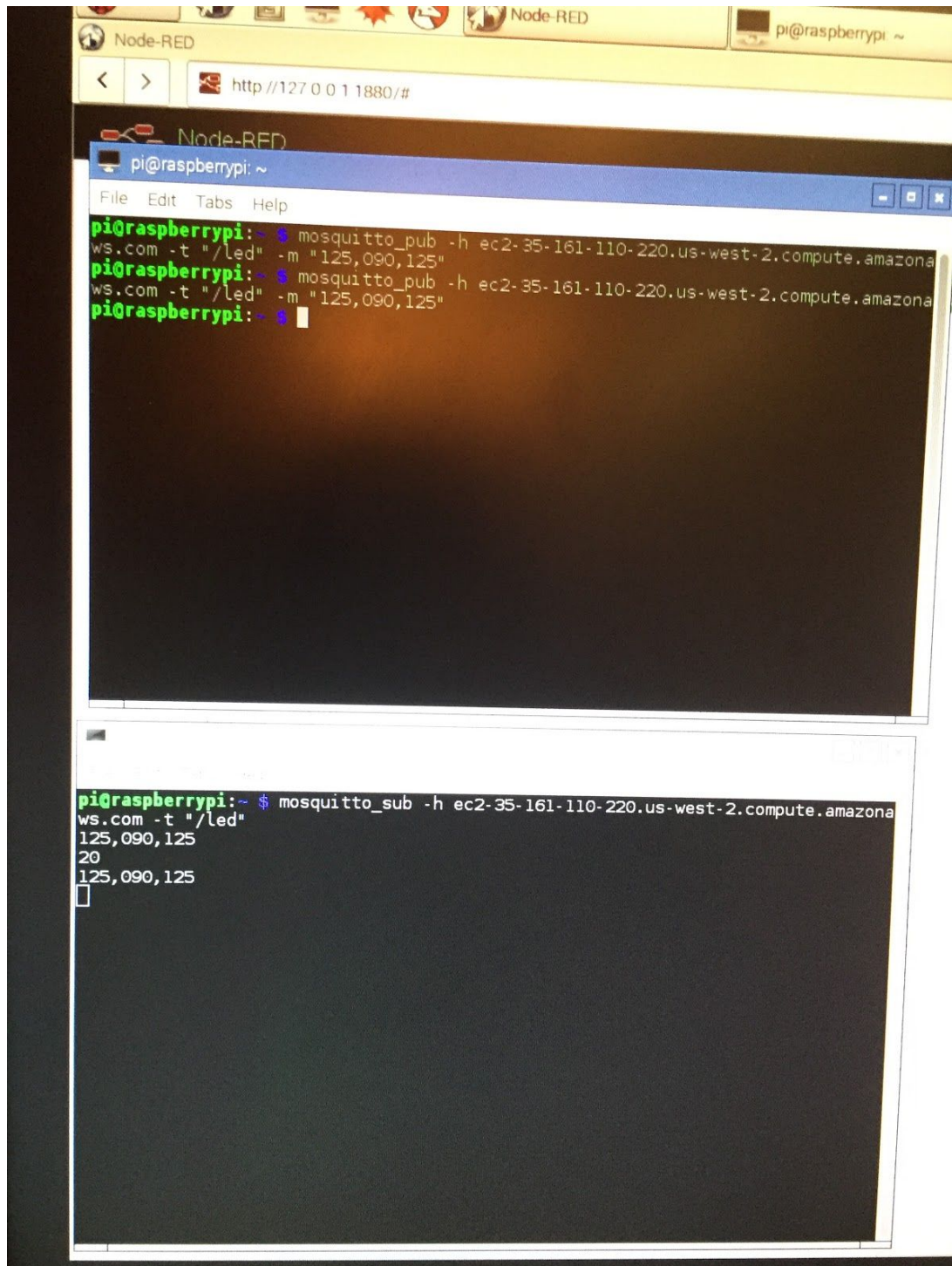
Scripts time and environment sensors. Runs through time with a fast clock.

Node-Red: Live monitoring of weather with the help of [Open Weather Map](#) to adjust the temperature and lighting of the house. MQTT server auto sets the intensity of light.

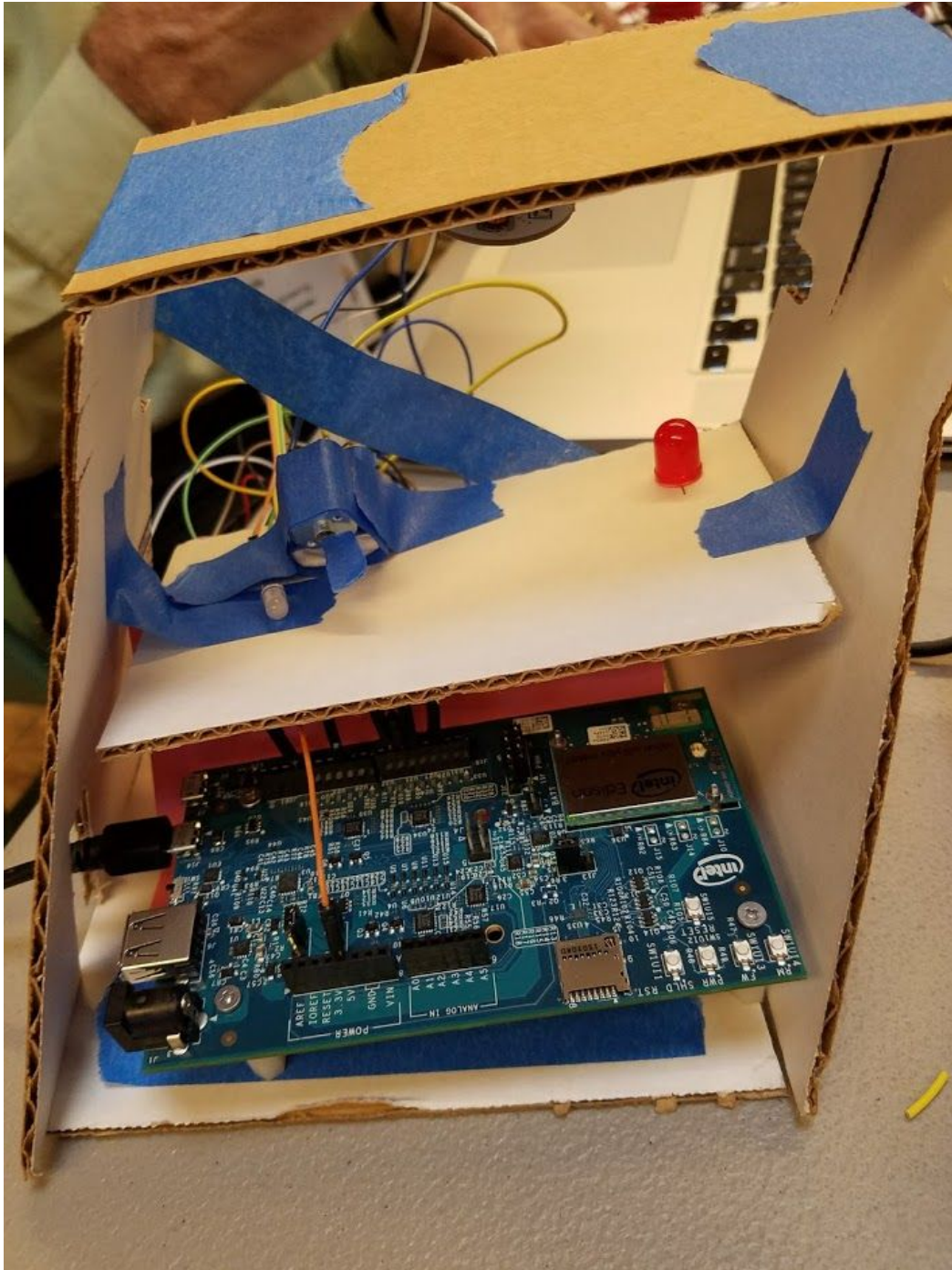


Debugging:

The below image is the screenshot of mosquito publisher and subscriber.



Scratch setup:



Laser cut house for final demo:

