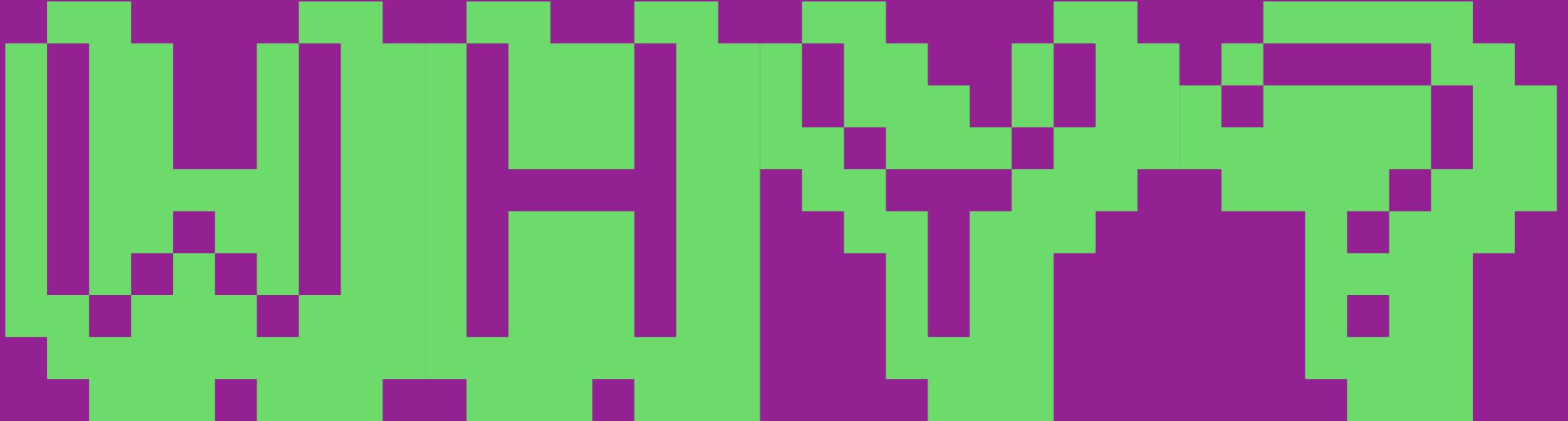




building the  
**Boat of Thunder**



- ▲ make hacking  
the boat  
easier
- ▲ another story  
to tell clients
- ▲ iot is so hot  
right now

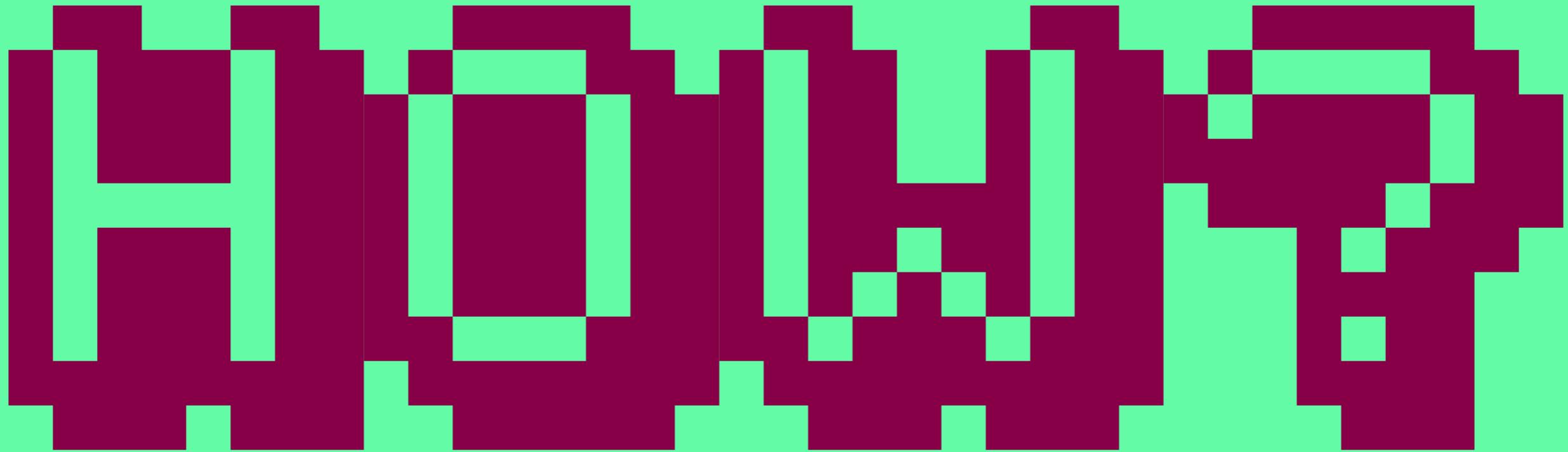


does the internet

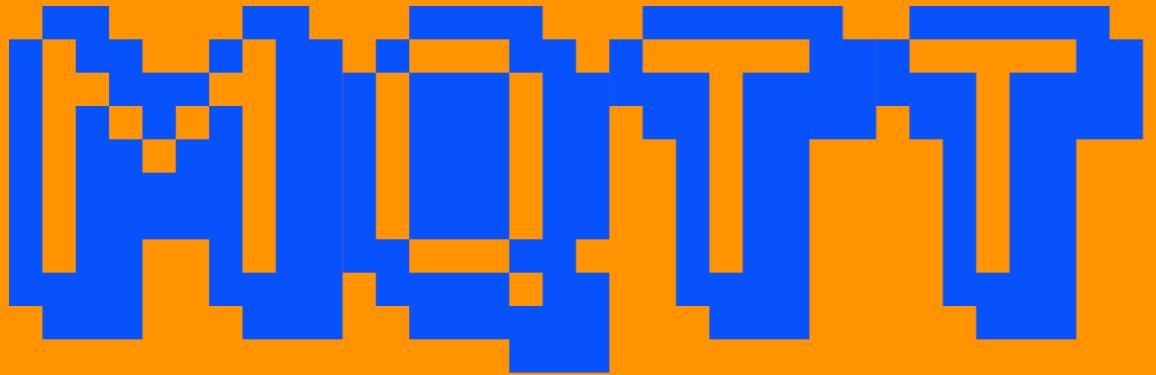
**NEED MORE THINGS?**



- i don't know
- Probably not
- who cares  
let's do it



- "message queue telemetry transport"
- light-weight, Protocol over TCP/IP
- Powers a lot of iot stuff
- clients for js, Python, ruby, .NET, Java, embedded C, etc etc etc



subscribe and publish to topics  
a topic looks like this:

/boat/studio/music/now\_Playing

data can be any string, is generally JSON

```
/boat/studio/music/now_playing {"song": "Ego Tripping At The Gates Of Hell", "artist": "The Flaming Lips", "c  
.pandora.com/images/public/rovi/albumart/2/2/1/4/093624814122_500W_500H.jpg"}  
/boat/studio/music/stations {"stations": ["90s, 2000s, Today's Hits Radio", "A Tribe Called Quest Radio", "A  
stie Boys Radio", "Bootsy Collins (Holiday) Radio", "Cajun and Zydeco Radio", "Chance The Rapper Radio", "Chi  
ana (At The Copa) Radio", "Cypress Hill Radio", "Daft Punk Radio", "Dan Auerbach Radio", "Dan The Automator R  
adio", "Erykah Badu Radio", "Frank Sinatra Radio", "Frankie Yankovic And His Yanks Radio", "Guster Radio", "Ho  
nt Radio", "Huey Lewis And The News Radio", "Jimmy Buffett Radio", "Journey Radio", "JR JR Radio", "K-OS Radic  
p Of Horrors (1986 Movie Soundtrack) Radio", "Meat Loaf Radio", "Meghan Trainor Radio", "Michael McDonald R  
ay) Radio", "Nathaniel Rateliff & The Night Sweats Radio", "Norah Jones Radio", "Pink Floyd Radio", "Polka", "  
Rock", "Saxophone Radio", "Sierra Leone Radio", "Soda Stereo Radio", "Sonic Youth Radio", "Tame Impala Radio", "T  
he Beach Boys Radio", "The Black Keys Radio", "The Killers Radio", "The Strokes Radio", "The White Stripes Radio", "T  
he Who Radio", "Tina Turner Radio", "Tom Petty Radio", "U2 Radio", "Van Halen Radio", "Weezer Radio", "Whitney H  
ouston Radio", "ZZ Top Radio"]}
```

# PUBLISH A TOPIC

## Using MQTT.js

```
1 var mqtt = require('mqtt');
2
3 var mqttClient = mqtt.connect('mqtt://otis.leandog.com:52122', {username:
4
5 function publishUpdate() {
6   var fridgeState = {'temp':35, 'door_open':false};
7   var stateJson = JSON.stringify(fridgeState);
8
9   mqttClient.publish('/boat/kitchen/fridge/state', stateJson, {qos: 1, re
10 }
```

# Subscribing to topics using MQTT.js

```
1 var mqtt = require('mqtt');
2
3 var mqttClient = mqtt.connect('mqtt://otis.leandog.com:52122', {username:USERNAME,
4
5 mqttClient.on('connect', function () {
6   mqttClient.subscribe('/+/+/fridge/state');
7 });
8
9 mqttClient.on('message', function (topic, message) {
10   var fridgeState = JSON.parse(message.toString());
11   //do stuff
12 });
13
```

# TOPOLGY

studio-music



Mosquitto  
(ec2)



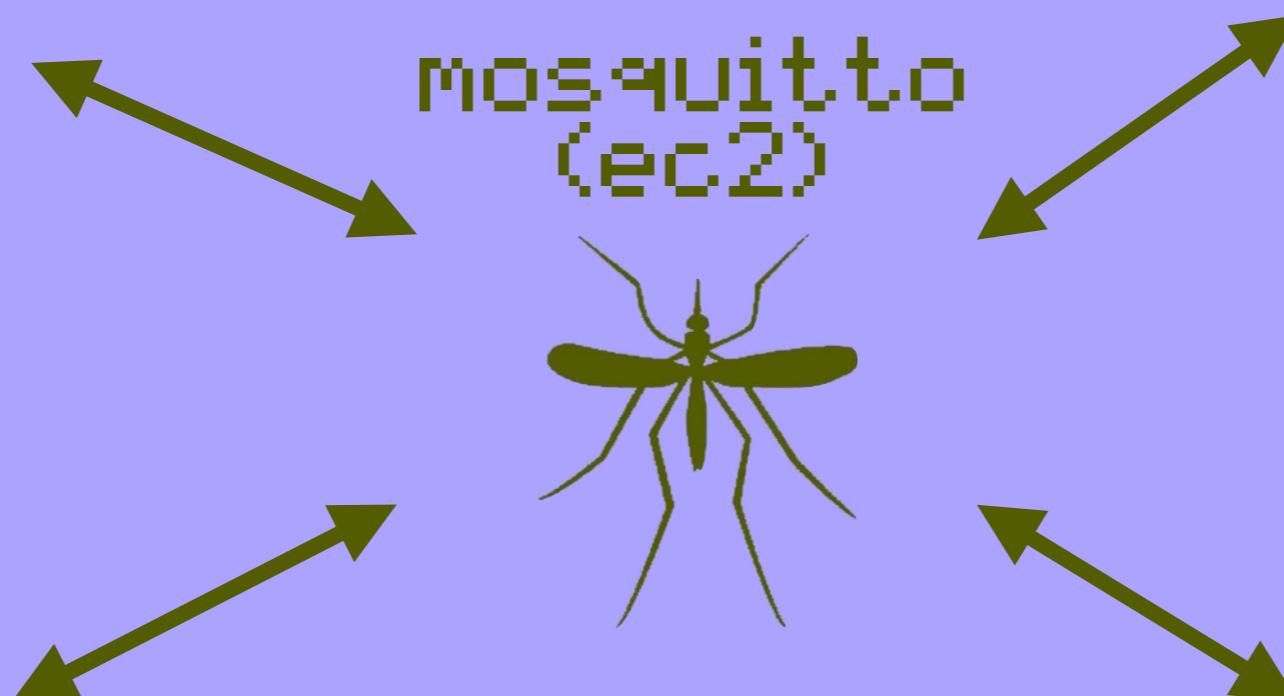
fridge



otis slack  
(ec2)



otis echo  
(lambda)



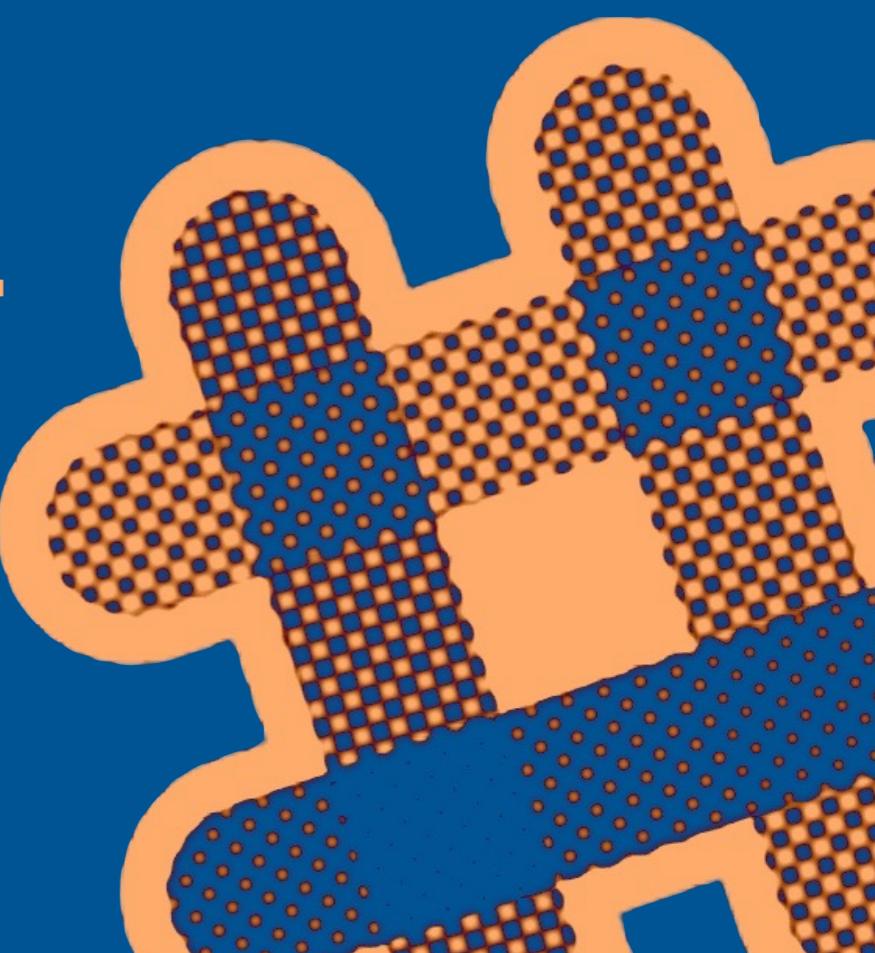
- ec2 instance
- running  
mosquitto
- that's it



ONLINEBANDOG.COM

# Otto's Solution

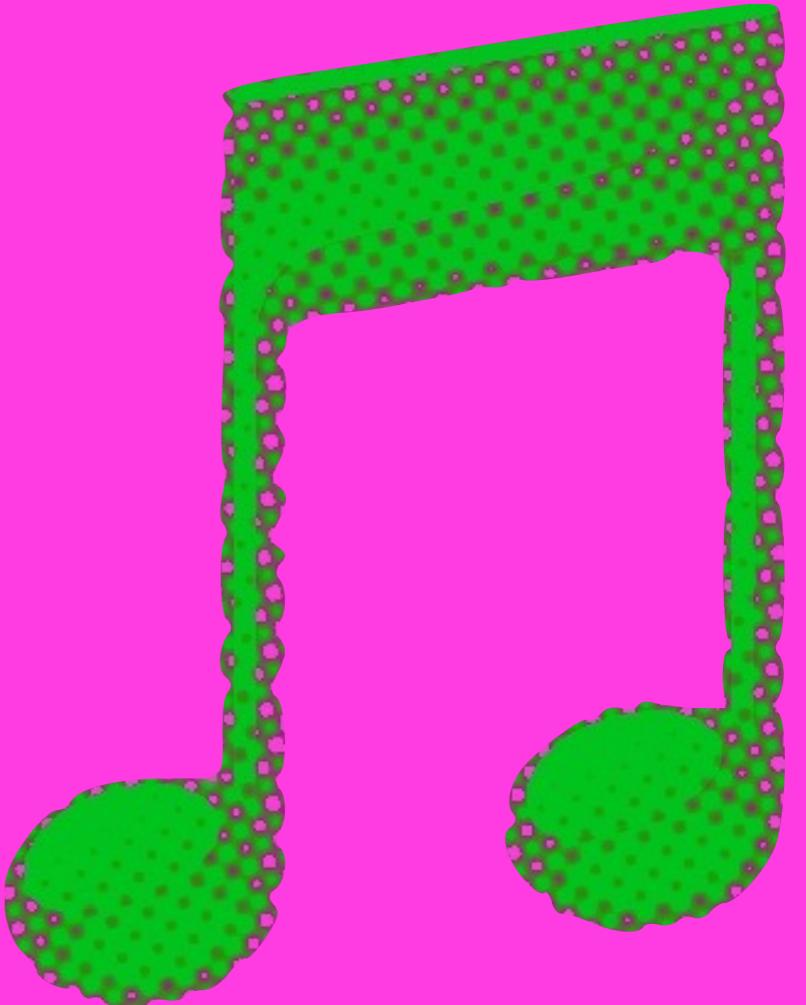
- \* node app running in ec2
- \* using botkit
- \* connects to matt
- \* i probably did this wrong



- ♪ chrome extension

- ♪ connects to Matt via web sockets

- ♪ screen scraping



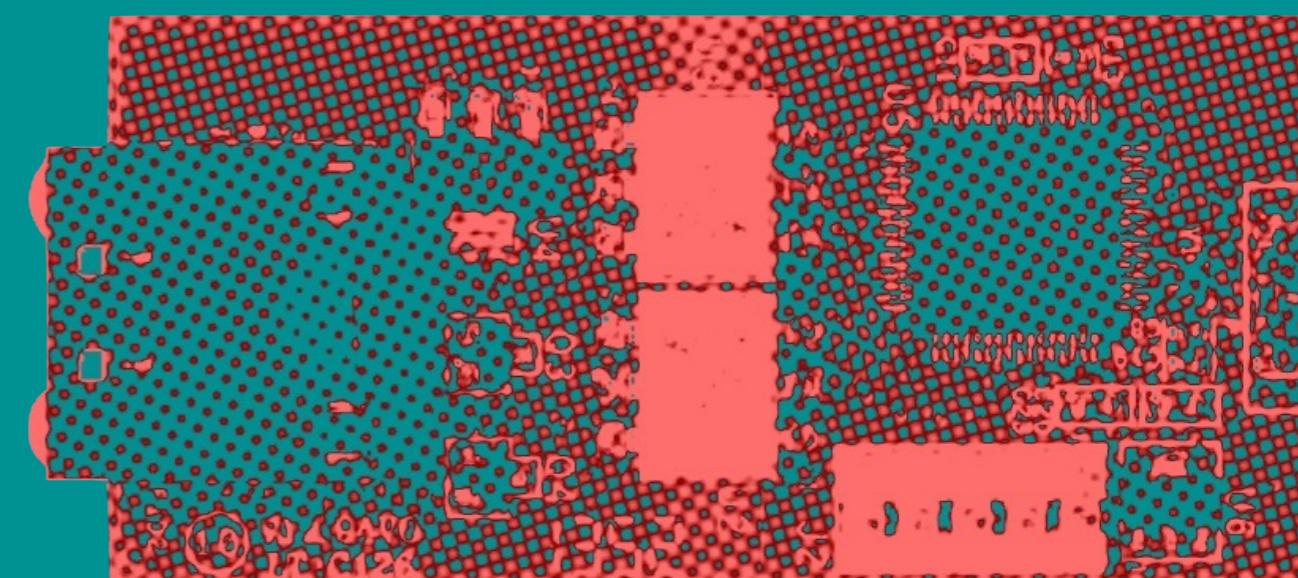
Snood-a-doo!

# RadioNode

node app running  
on raspberry pi

Get Green bean

enables some  
scary  
scenarios



- Cmdline utils for Playing with otis:
- mosquito\_sub
- mosquito\_pub
- live demo!



PROGRAM OTIS

# Protocol Options With Goode

- Paho (c, java, android, Python, js, c++, .net, winrt)
- MQTT.js (js)
- ruby-mqtt (ruby)
- adafruit MQTT (embedded c)
- mqtt-go (golang)



# WHAT'S NEXT

## ON PROGRESS

- Publish ci data
- ci screen shows now Playing and custom messages
- Make echo integration match slack

## OTHER STUFF

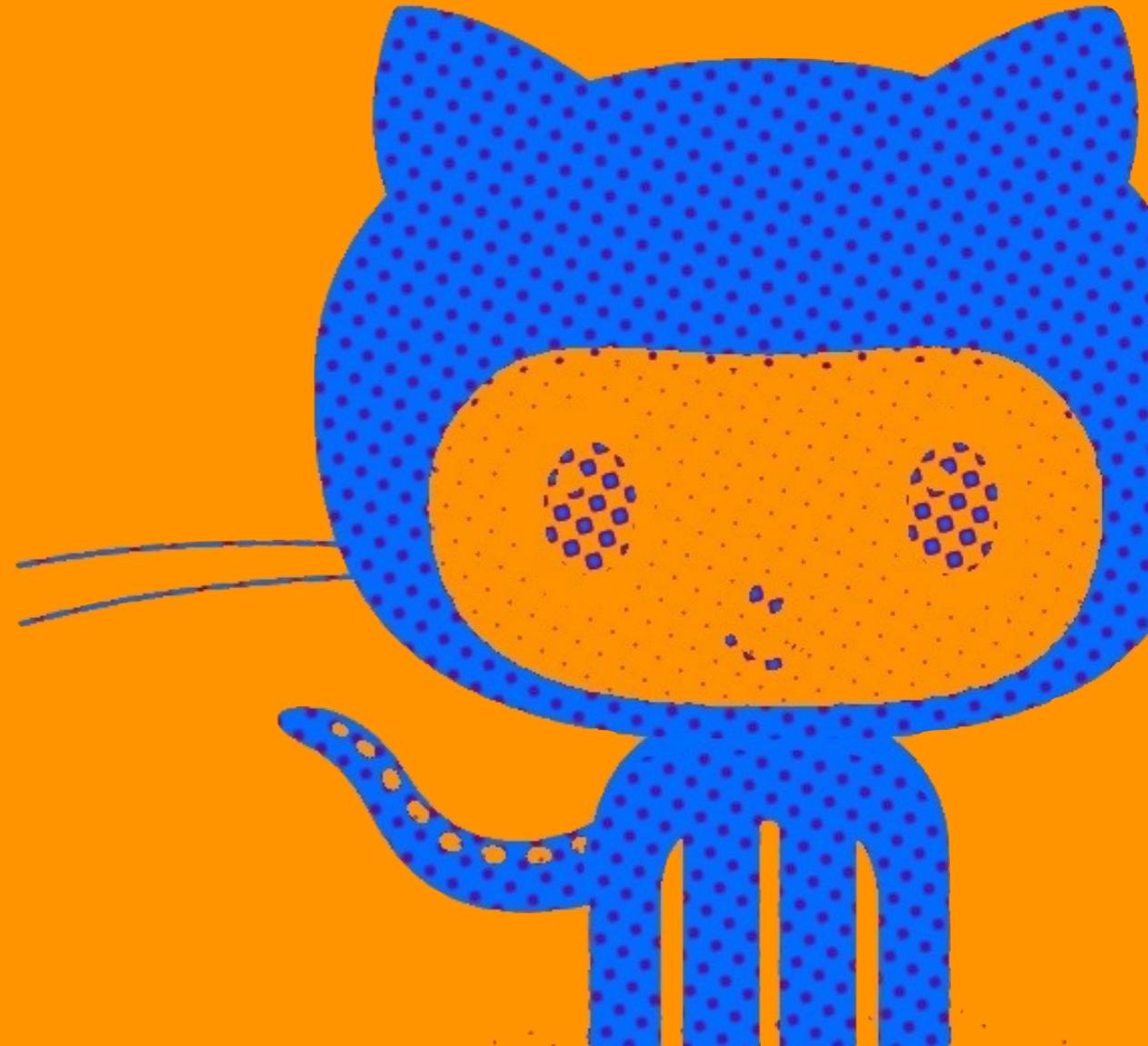
- dropcam and august locks
- vending machine
- helm / wheel
- 3d printer
- google calendar
- apple tvs



# INTEGRATED

[github.com/leandog/boat-of-things](https://github.com/leandog/boat-of-things)

- lots of functional examples
- easy to spin new integrations
- individual pieces of the system take a few hours



THANX