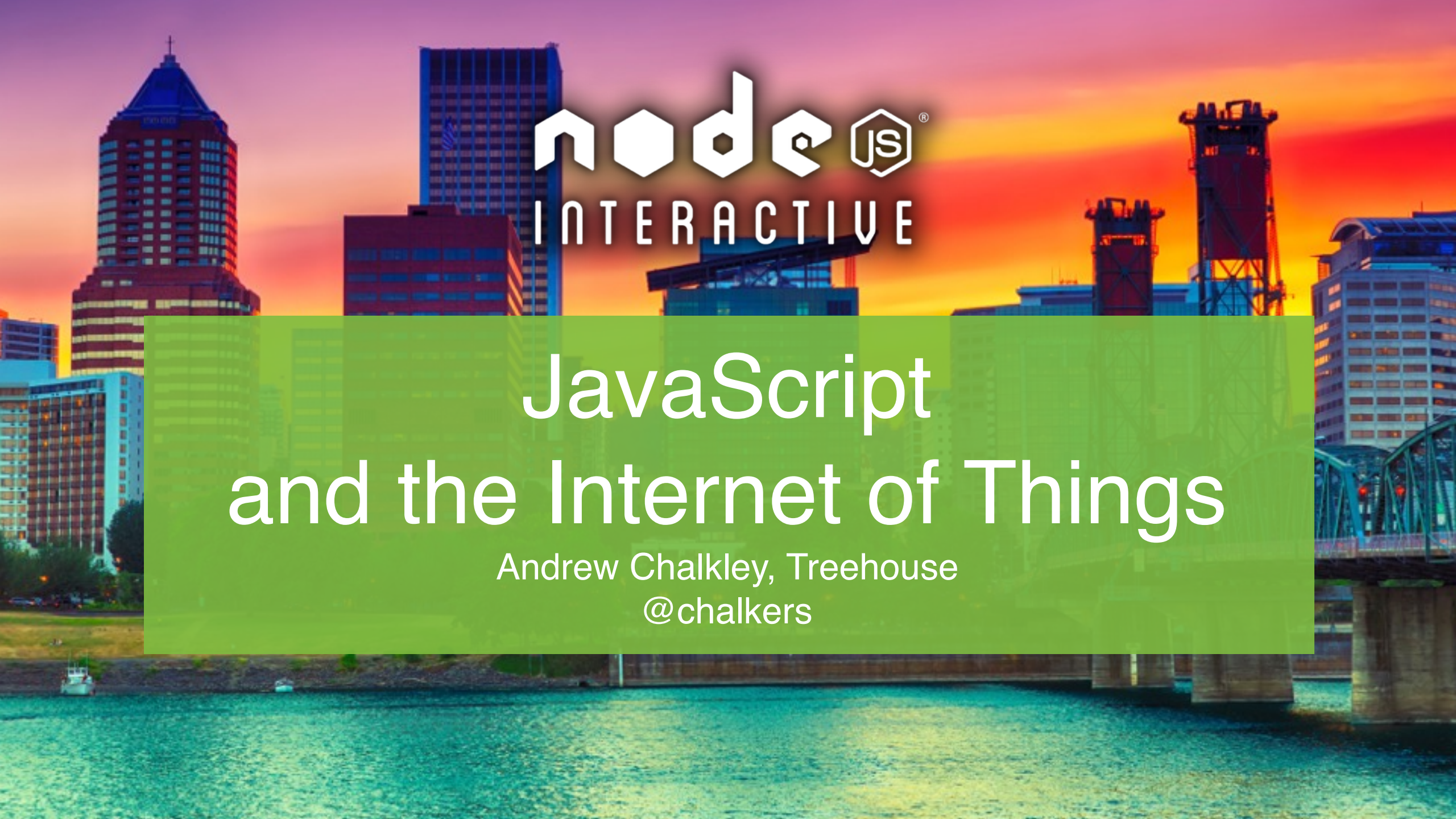

node JS
INTERACTIVE



JavaScript and the Internet of Things

Andrew Chalkley, Treehouse
@chalkers

What is the Internet of Things? (IoT)

Physical objects with embedded with electronics, sensors and software connected to the internet*.

IoT Examples

- Smart Thermostat
- Security Systems
- Smart Scales
- Health Monitor
- Fitness Tracker
- Smart Mirror

History of Hobbyist Electronics*

- Pre-Arduino Era
  - Expensive - 💰💰💰
- Arduino Era
  - Cheap(er) - 💰
- Today
  - Moore's Law Means Powerful Devices…

JavaScript

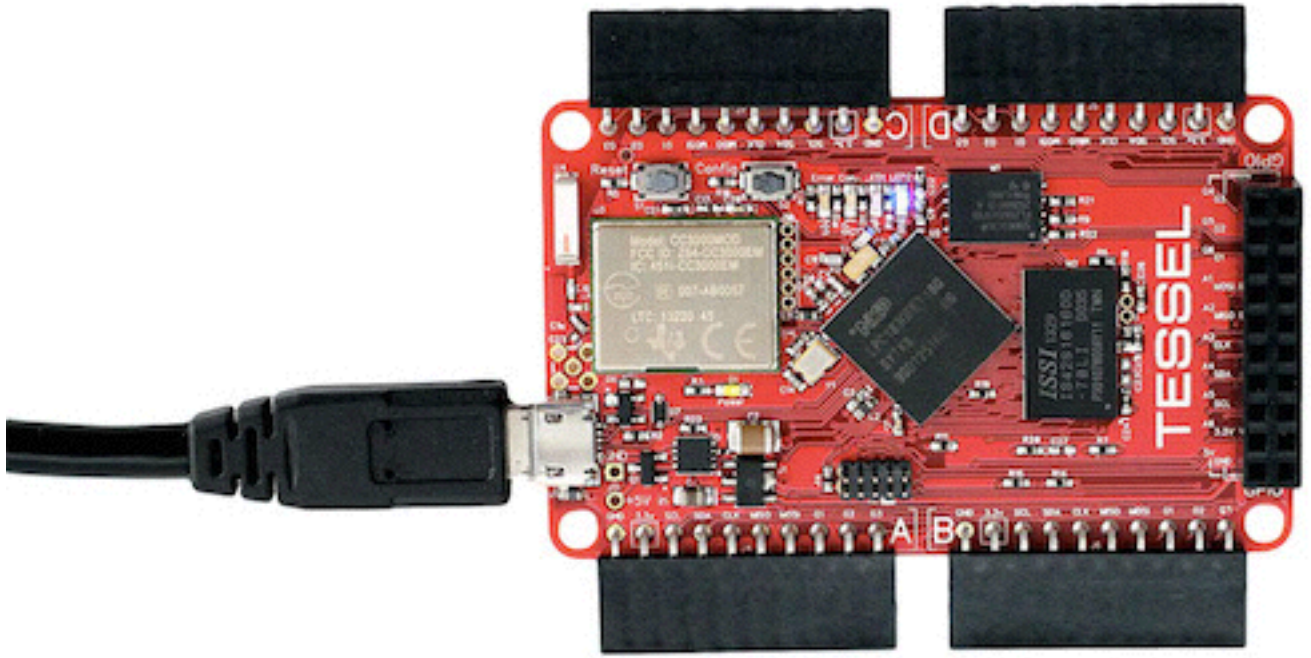
JavaScript IoT Strategies

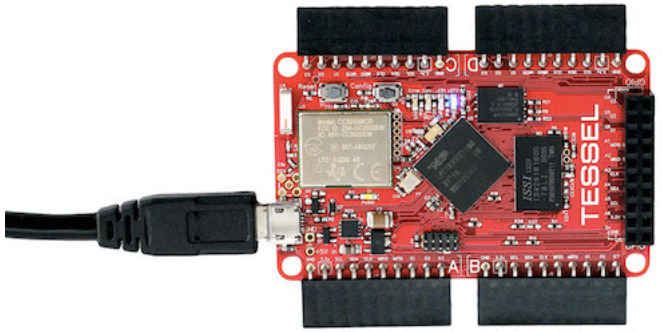
- JavaScript Only Microcontrollers
- Embedded Linux Devices
- Hybrid Solutions

JavaScript Only Microcontrollers

- Tessel 1
- Espruino / Espruino Pico
- ESP8266 / NodeMCU*

Tessel 1





Tessel 1

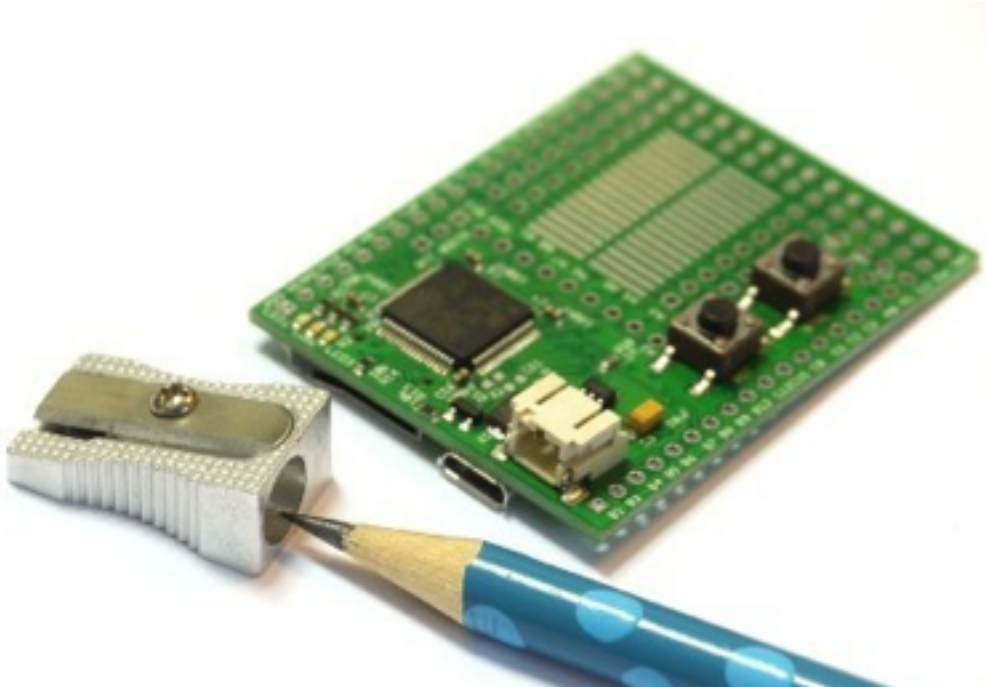
Pros

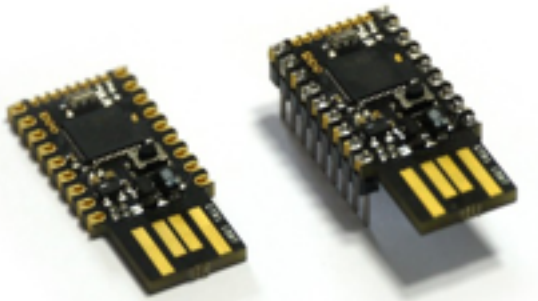
- Built-in Wireless
- Plug and play modules
- Node.js compatible*
- BYO Editor

Cons

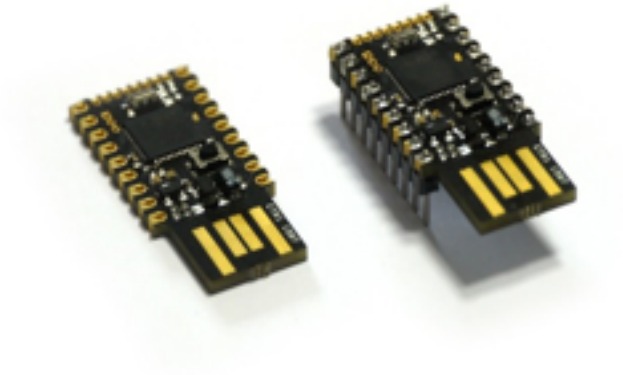
- It gets bulky
- Expensive
- It’s no longer available

Espruino / Espruino Pico





Espruino / Espruino Pico

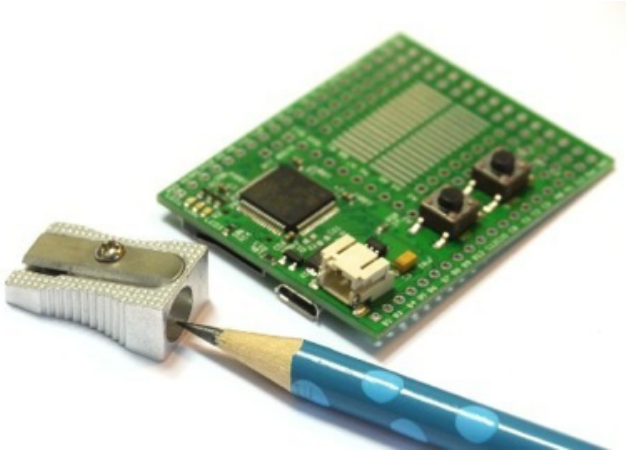


Pros

- Web IDE
- Small / easily embeddable
- Community Forum

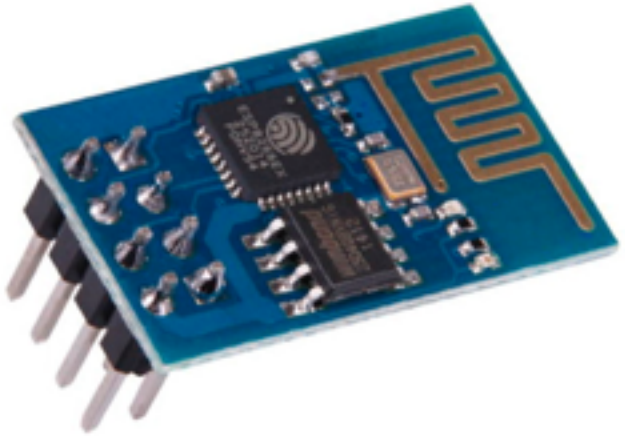
Cons

- Web IDE
- It's just a thing
- Lots of soldering
- Expensive
- Uncharted seas



wifigotchi.com

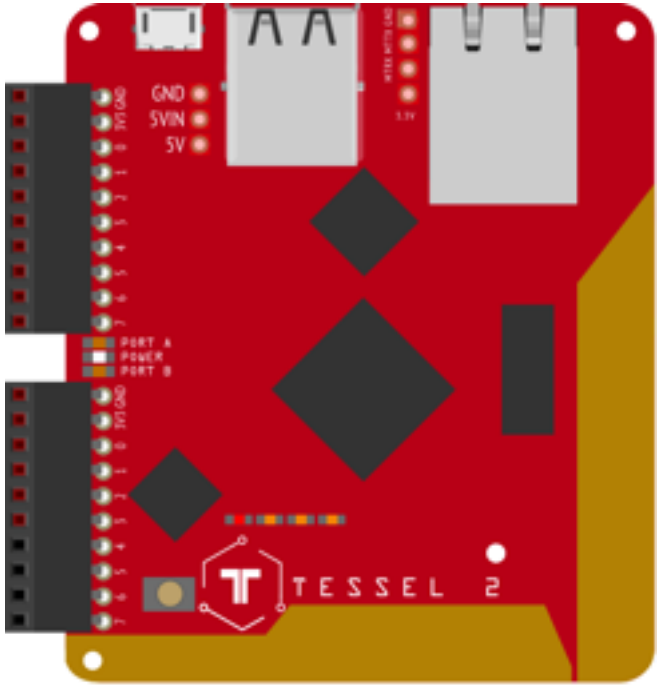
ESP8266 / NodeMCU



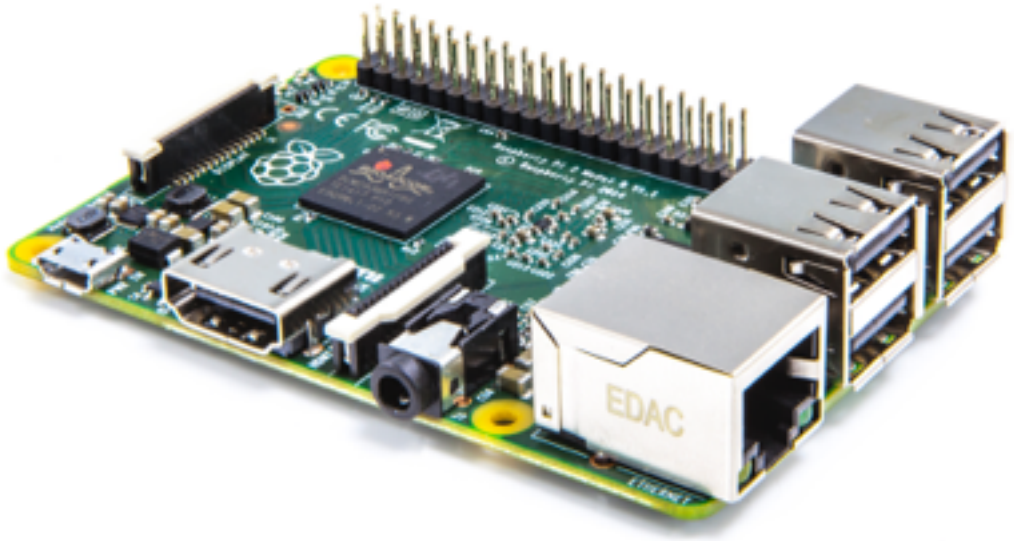
Embedded Linux Devices

- Tessel 2
- Raspberry Pi
- C.H.I.P.

Tessel 2

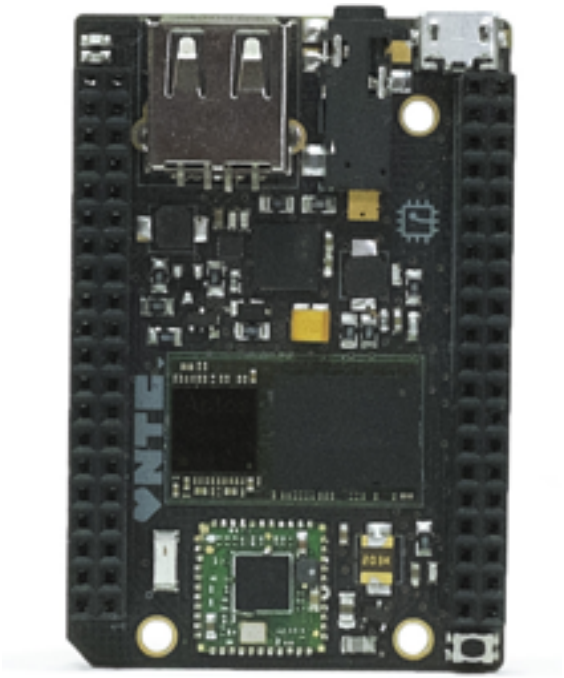


Raspberry Pi A+ / 2 B



Raspberry Pi Zero

C.H.I.P.



Embedded Linux Devices

Pros

- Runs any software
- Can be cheaper than microcontrollers
- Mature ecosystems

Cons

- Needs to boot up
- IO is not as responsive
- More points of failure and attack
- Expensive

Hybrid Solutions

Hybrid Solutions

Hybrid Solutions

Hybrid Solutions

Pros

- You can program at a high level
- Get the benefits of both worlds
  - modern platform
  - responsive IO

Cons

- You're dealing with more devices
- More hacky
- Even more points of failure / attack
- Most expensive

The Present (and Future) is Awesome!

- Cheaper Embedded Linux Computers EVERYWHERE
- Use Modern Full Stack JavaScript
- Any Stack!

- We need help to make it mature!

Questions

http://twitter.com/chalkers

http://vine.co/chalkers

http://forefront.io