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#Scotrug

Why?

- Internet of Things (IoT)
- Internet of Everything (IoE)
- Web 3.0?

- Robots
- Drones
- artificial intelligence
- self-driving cars
- GTD
- home automation
- Security
- Monitoring
- remote control
- Google Glass
- smart watches

- Self-driving cars?

- This is quite ambitious isn't it?

Messaging in reality

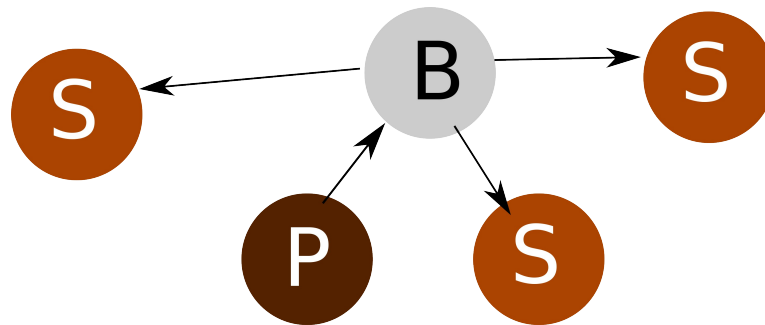
- No messaging standard
- Vendors using their own proprietary messaging system
- security issues
- IPV6 isn't mainstream yet

DIY

- The Internet of Things needs you
- Maker spirit
- Arduino, BeagleBone Black, Raspberry Pi etc.

SimplePubSub

- Experimental
- written by @jrobertson
- inspired by MQTT
- based on EventMachine + Websockets



What is MQTT?

MQTT

- light weight protocol designed for M2M messaging i.e. sensors
- Scalable
- Used by Facebook Messenger

SPS Testing and security

Given the SPS broker is running:

the client:

- should connect to the broker and "*subscribe to topic: light*"
- should publish "*light: on*"
- should "*subscribe to topic: #*"

... but first, testing websocket-
eventmachine-server + websocket-
eventmachine-client

- See
[A simple WebSocket-eventmachine example](#)
[jamesrobertson.eu]

Security

- anybody can publish a message
- anybody can subscribe to a message
- LAN messages are plain text
- See [tcpdump results](#)

What do I use SPS for?

SPS at @jrobertson's home

- audible hourly pips (time)
- motion detection
- notification of incoming telephone calls
- posting to social networking via XMPP
- monitoring sleep
- switching domestic appliances on or off
- Daily reminders (GTD)

Monitoring sleep

- See Motion detected in my bed this morning
- See
I wrote a motion detection logger last night

Reliability issues

- SPS broker runs without fail
- SPS client depends upon the code being expected within it

Live demo

- [Sps.jamesrobertson.eu](http://sps.jamesrobertson.eu) (SPS broker)
- IRB session: Local SPS client + arduino-firmata hooked up with an Arduino Nano with an LED
- IRB session: SPS proxy client (Drb server) using websocket-eventmachine-client
- IRB session: Drb client to publish adhoc messages through the SPS proxy

Resources

- [SimplePubSub](#) [rubygems.org]
- [Communicating with the Arduino ...](#)
[jamesrobertson.eu]

- #messaging
- #iot
- #mqtt
- #simplepubsub

