

JavaScript for OCF Applications

Sakari Poussa, Intel

@spoussa



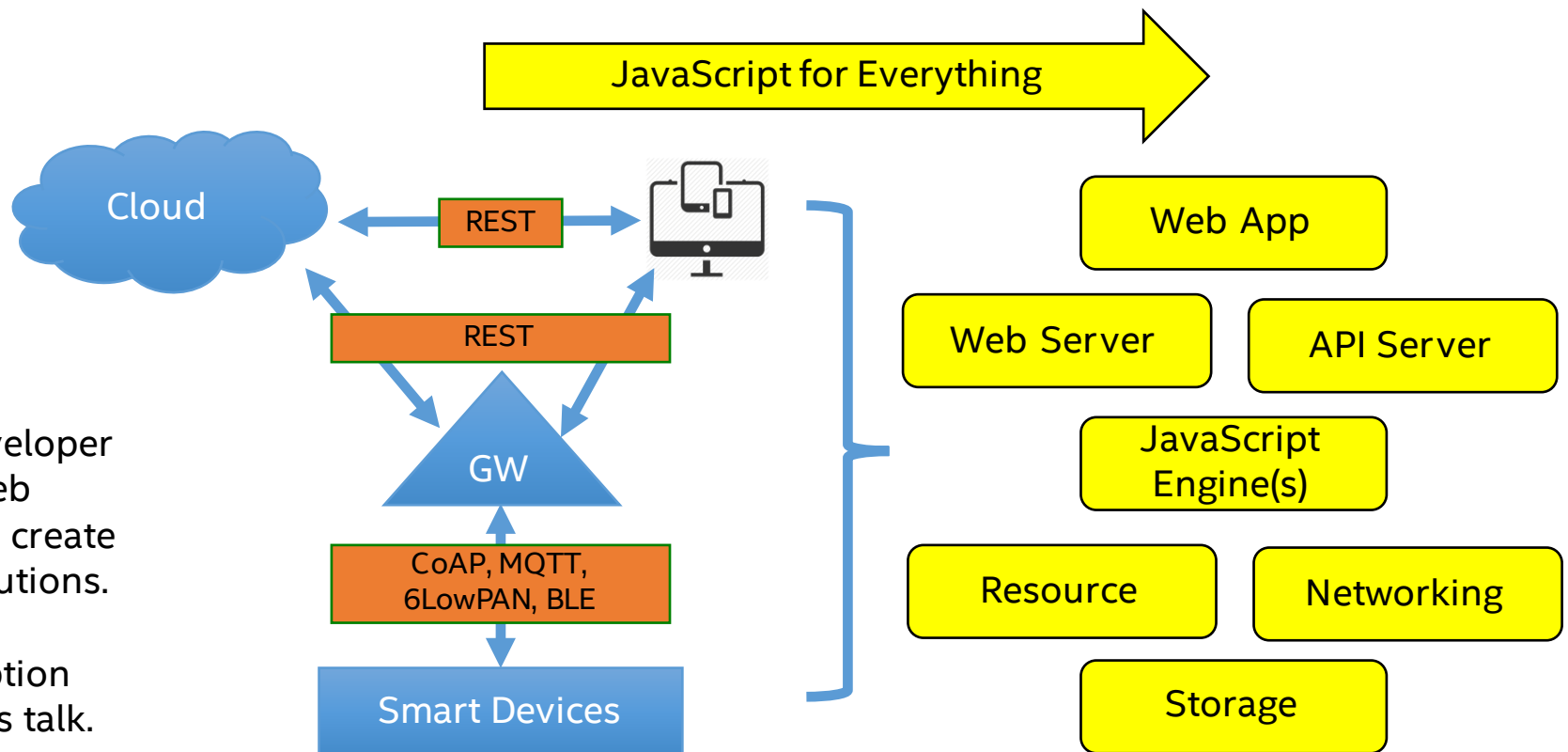
Agenda



Vision

Application developer can use only web technologies to create end-to-end solutions.

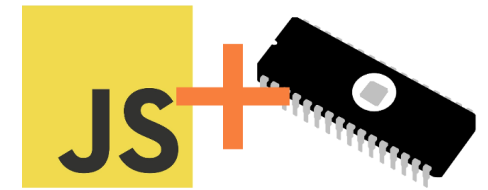
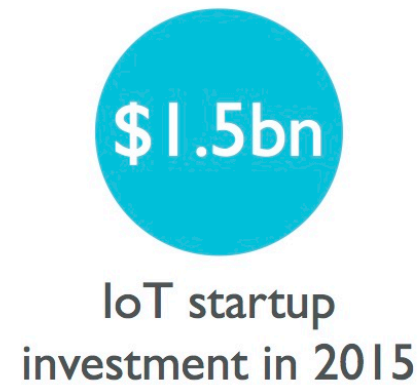
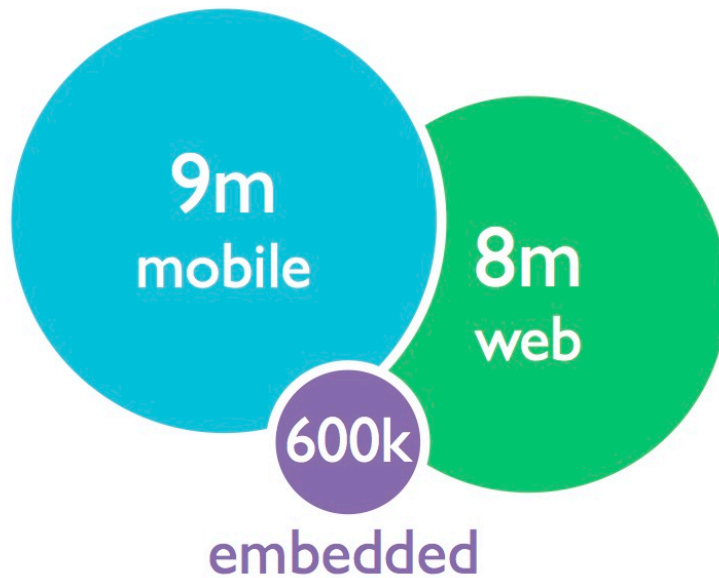
Not the only option but focus of this talk.



JavaScript...

OPEN
CONNECTIVITY
FOUNDATION™

IoT will not be built by embedded developers



© ARM 2015

VC investment and expected investment, Pitchbook.com and ARM estimates, 2015 **ARM**



The API

Same OCF JavaScript API for everything



OPEN
CONNECTIVITY
FOUNDATION™

- Great API makes a difference
- Iterative design process
- Real usage
- Web IDL specifications
- Examples
- The same **OCF JS API**
 - Node.JS
 - Cordova and Crosswalk
 - Tizen
 - Soletta

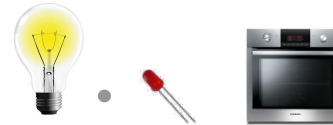


OCF JS API

Highlights



OPEN
CONNECTIVITY
FOUNDATION™



Client

```
Promise findResources ();  
Promise retrieve (id) ;  
Promise update (resource) ;  
Promise observe (id) ;  
  
Events:  
    resourcefound
```

Server

```
Promise<resource> register (data) ;  
  
Events:  
    retrieverrequest  
    updaterequest  
    observerequest
```

Resource

```
Events:  
    update  
    delete
```



OCF and IoTivity

OPEN
CONNECTIVITY
FOUNDATION™

- Specifications
- Data models
- Certification
- Marketing
- uPnP

IoTivity

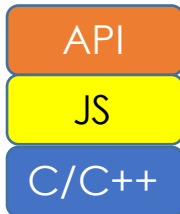
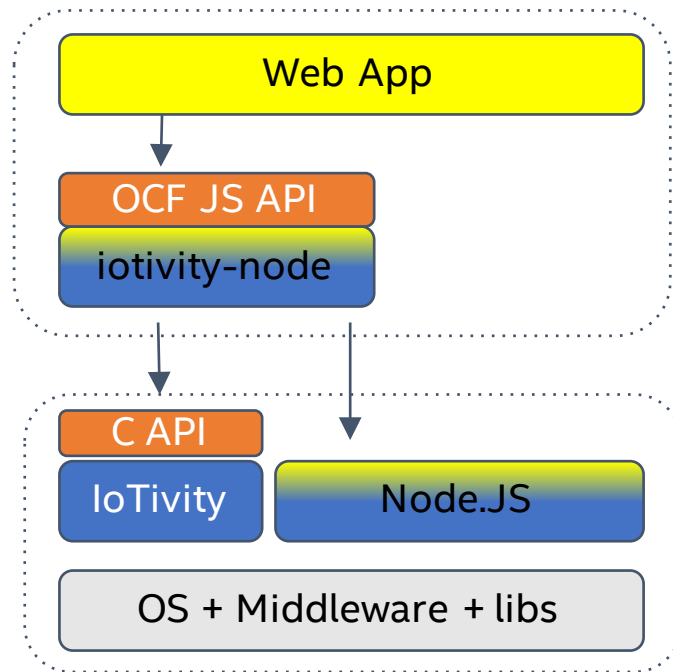
- Open Source implementation
- Apache 2.0
- QA
- API bindings



No JavaScript

IoTivity

iotivity-node



- IoTivity CSDK features except security
- Native NPM module
- Works with Node.JS 0.10, 0.12, 4.x, 5.x
- Linux, Ostro, OS X support
- `npm install iotivity-node`
- Moving repository to iotivity.org !
- Apache 2.0

JavaScript on Ostro

Develop with JavaScript



OPEN
CONNECTIVITY
FOUNDATION™

- Node.JS 4.2 and NPM
- IoTivity
- iotivity-node
- **OCF API**
- Express, mraa, MQTT and CoAP modules
- Rest API Server
 - with systemd socket activation and firewall rules
- Soletta JS bindings



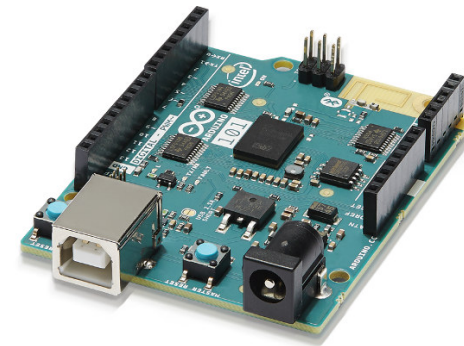
JavaScript on Zephyr

Develop with JavaScript



OPEN
CONNECTIVITY
FOUNDATION™

- Scale JS development down to MCU
- Micro JavaScript runtime
- JerryScript, Duktape, libtuv, IoT.JS and friends
- JavaScript APIs
 - Node.js subset
 - **OCF JS API**
 - BLE, NFC, GPIO, I2C, UART, PWM

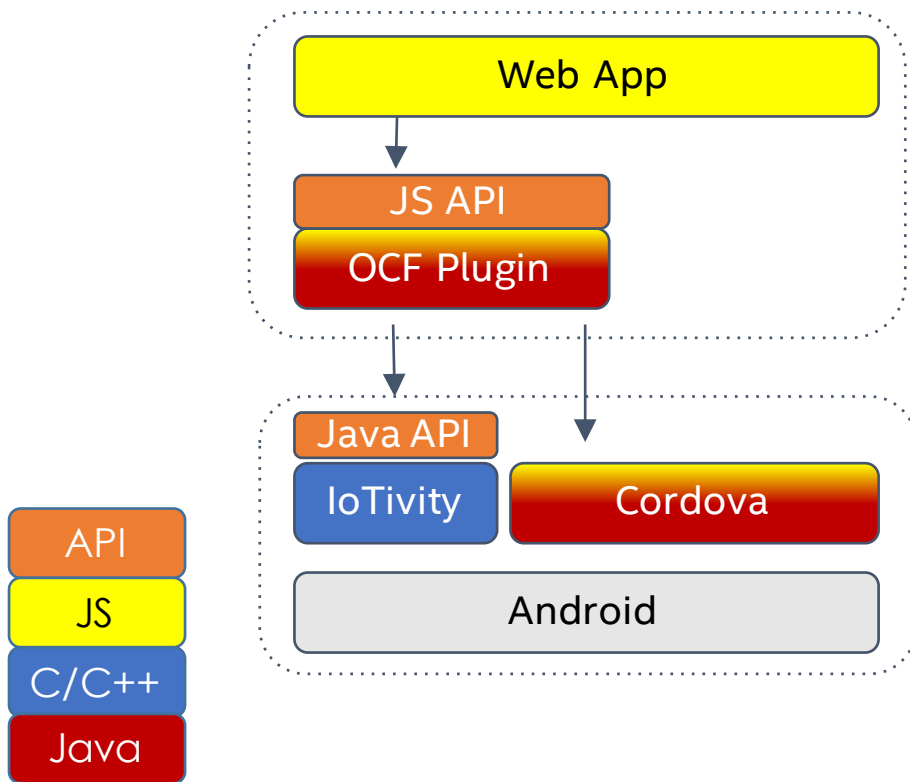


Cordova OCF Plugin



APACHE
CORDOVA™

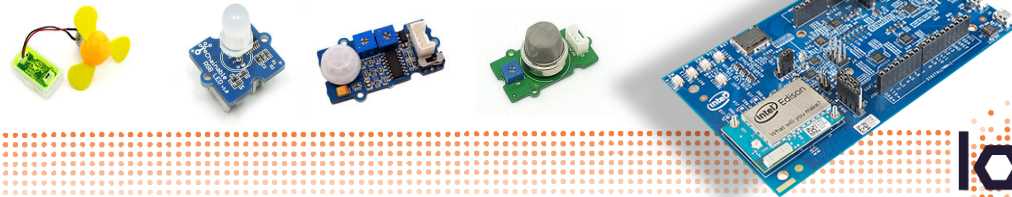
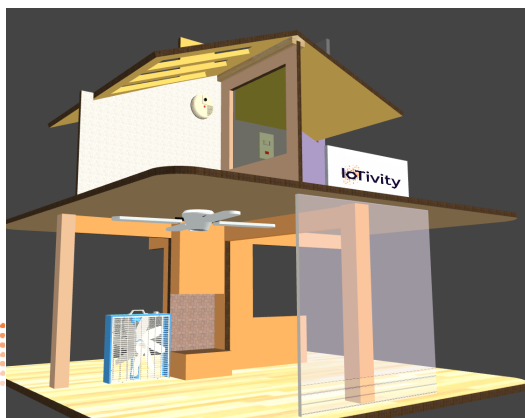
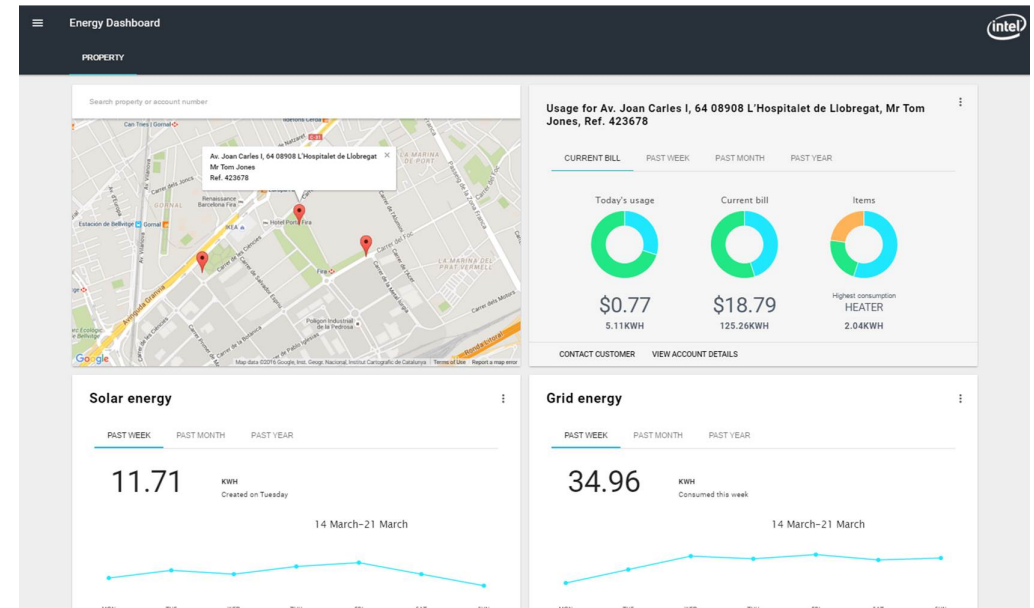
OPEN
CONNECTIVITY
FOUNDATION™



- HTML, CSS and JS Apps on Android
- Crosswalk or WebView
- **OCF JS API**
- Open Source *
- Available in Cordova registry *
- `npm i cordova-android-crosswalk`
- `npm i cordova-ocf-plugin`

Smart Home Demo

- Iotivity-node, REST APIs
- Cloud Integration
- All Application code in JavaScript
- End-to-End OCF
- Visit Intel Booth to see



loTivity

Demo Time

- Discover, retrieve and update a resource with JavaScript

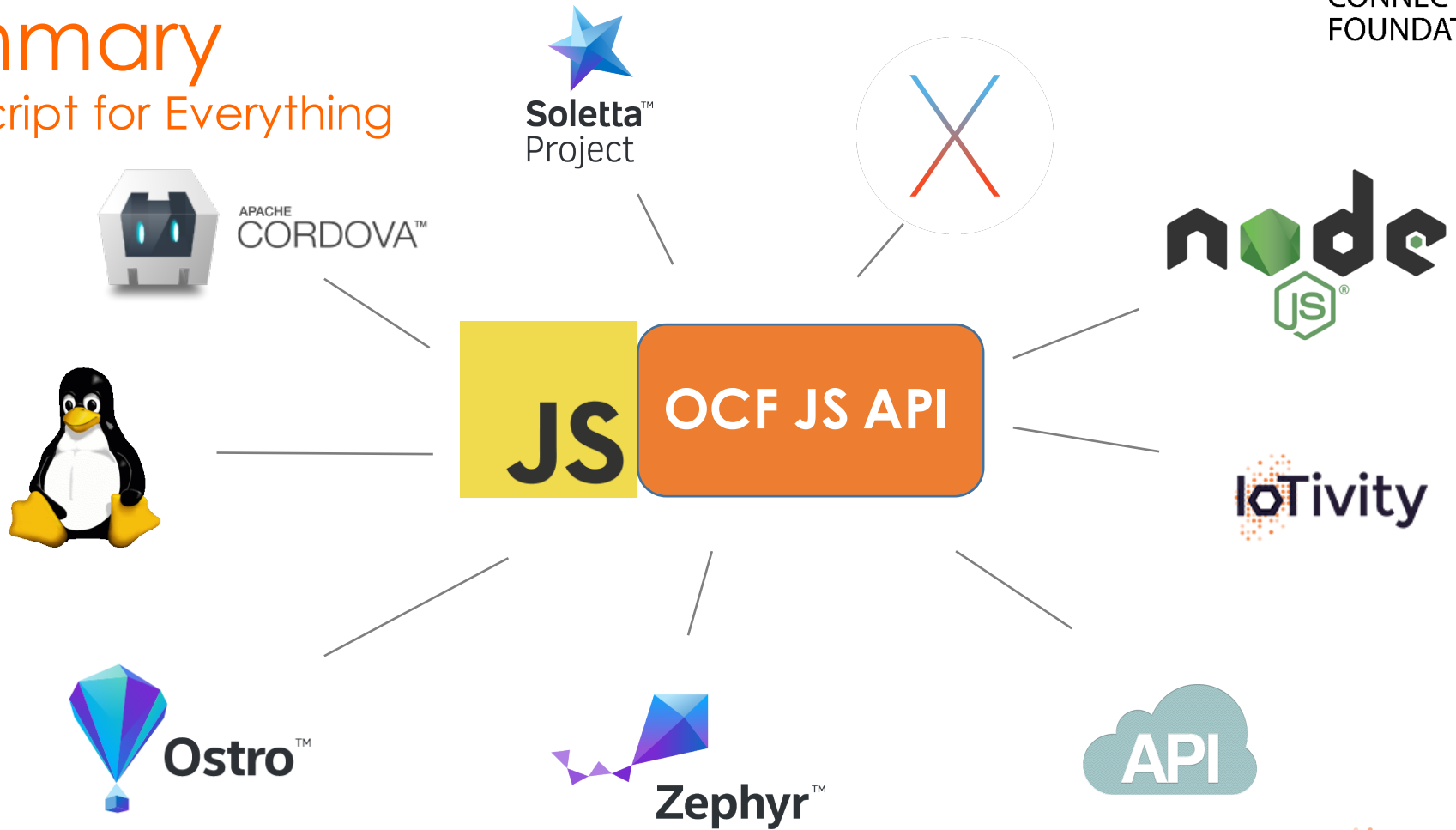
Client
<pre> Promise findResources (); Promise retrieve (id); Promise update (resource); Promise observe (id); Events: resourcefound </pre>

Server
<pre> Promise<resource> register (data); Events: retrieverrequest updaterequest observerequest </pre>

Summary

JavaScript for Everything

OPEN
CONNECTIVITY
FOUNDATION™



loTivity

Questions?





References

- <https://gerrit.iotivity.org/gerrit/p/iotivity-node.git>
- <https://github.com/solettaproject/soletta/blob/master/doc/js-spec/oic.md>
- <https://github.com/01org/iot-rest-api-server>
- <https://ostroproject.org/>
- <https://www.zephyrproject.org/>
- <https://github.com/01org/cordova-plugin-ocf>
- <https://github.com/01org/SmartHome-Demo/dollhouse>
- <https://github.com/poussa/js-iot>