JavaScript for OCF Applications

Sakari Poussa, Intel
@spoussa
Vision

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

Not the only option but focus of this talk.
JavaScript...

IoT will not be built by embedded developers

9m mobile
8m web
600k embedded

$1.5bn IoT startup investment in 2015

© ARM 2015

VC investment and expected investment, Pitchbook.com and ARM estimates, 2015
The API

Same OCF JavaScript API for everything

• 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

<table>
<thead>
<tr>
<th>Client</th>
<th>Server</th>
</tr>
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<tbody>
<tr>
<td>Promise <code>findResources()</code>;</td>
<td>Promise <code>&lt;resource&gt;</code> <code>register</code>(data);</td>
</tr>
<tr>
<td>Promise <code>retrieve</code>(id);</td>
<td>Events:</td>
</tr>
<tr>
<td>Promise <code>update</code>(resource);</td>
<td>retrieverquest</td>
</tr>
<tr>
<td>Promise <code>observe</code>(id);</td>
<td>updaterequest</td>
</tr>
<tr>
<td>Events:</td>
<td>observerquest</td>
</tr>
<tr>
<td>resourcefound</td>
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<td>Events:</td>
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<td>update</td>
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<tr>
<td>delete</td>
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OCF and IoTivity

• Specifications
• Data models
• Certification
• Marketing
• uPnP

IoTivity

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

No JavaScript
**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
Develop with JavaScript

- 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

• 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

- 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`

* Available soon
Smart Home Demo

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

- Discover, retrieve and update a resource with JavaScript

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**Open Connectivity Foundation**

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**IoTivity**

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Summary
JavaScript for Everything
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/
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• https://github.com/poussa/js-iot