Iotivity Overview

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Basic Concepts

Devices

- A device which can provide **services** for other devices.
- **thin block device** or **unified block device**

Resources

- A component in a device which can be viewed and controlled by another device.
- A resource has a resource type: “light”, “garage door” – **i.e. standardized categorization of devices – prone to become messy but meaningful – see Amazon book categories.**

Operations

- Actions that a device can perform on attributes associated with a particular resource.
- Two operations: GET and PUT (semantics of ops are different based on the resource type)

Device Registration

Registration of a resource (e.g. “light” resource to some device) requires calling a C++ (or C) function.

```
// C++ code: OCPlatform::registerResource(...)
platform.registerResource(
  &handle,       // ptr to resource
  "/light/1",    // URI path
  "light",       // resource type
  "oc.mi.def",   // interface
  handler,       // function called from stack to process requests
  OC_DISCOVERABLE)
```

Device Discovery

```
// C++ code: OCPlatform::findResources(...)
platform.findResources(
  "",           // target host (all nodes when empty)
  "coap://224.0.1.187/oc/core?rt=alpha.light",
                // URI path
  findHandler)
```

Device Discovery (Cont.)

Over-The-Air Request

Field	Value	Notes
Address	224.0.1.187:5683	Multicast packet
Header	NON, GET, MID=0x7d40	Multicast discovery request should be non-confirmable
URI-path	oc/core	/oc/core?rt=alpha.light
URI-query	rt =alpha.light	
Accept	appliation/JSON	

Over-The-Air Response

Field	Value	Notes
Address	192.168.1.1:5683	Client address
Header	ACK, CONTENT, MID=0x7d40	Success w/ content
Content format	application/JSON	
Payload	[{“href”:”/light/1”, “rt”:[“alpha.light”], “if”, [“oc.mi.def”], “obs”:1}]	