

## System Management WG Meeting: 10/2/18

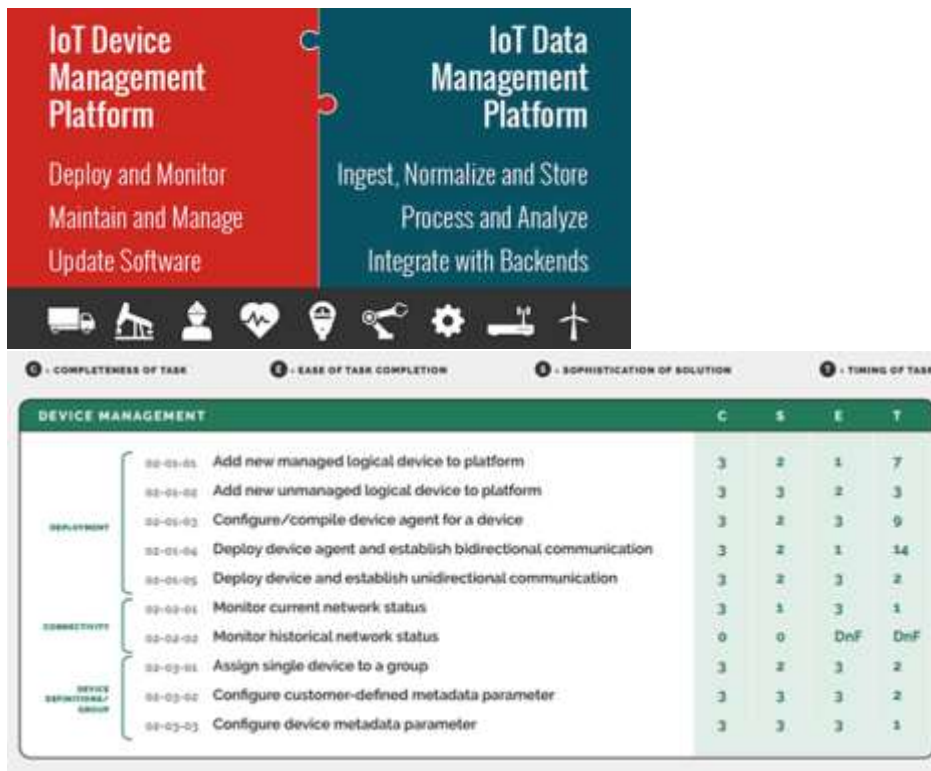
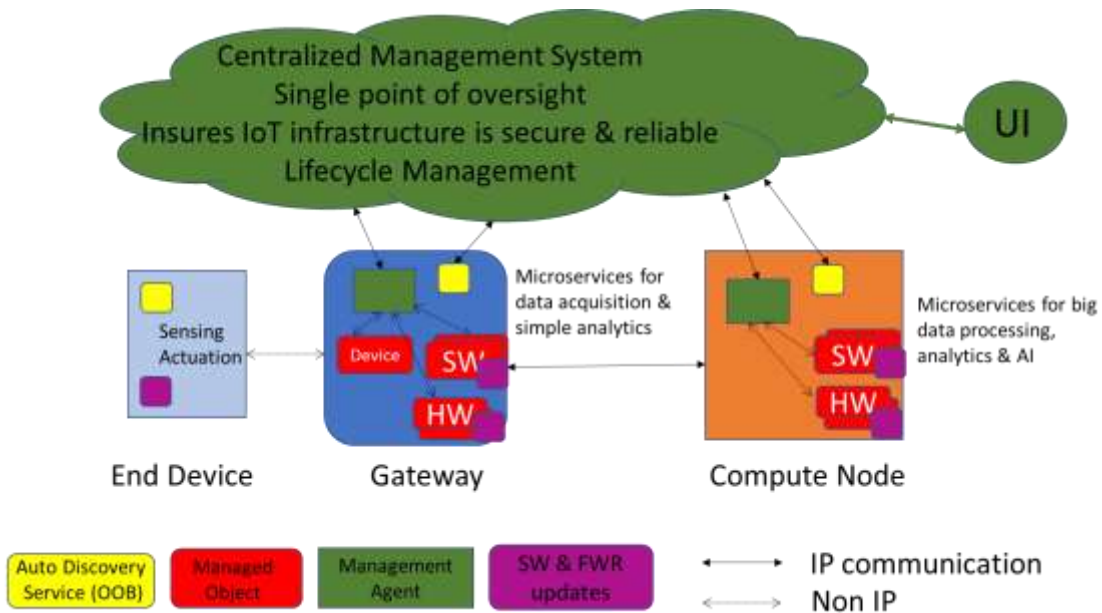
**Attendees:** Rodney (Beechwood), Jim, Akram, Trevor (Dell), Emad, Justin (Intel) . Attendees that may have joined after the start of the meeting may not have been captured and listed.

Discussion and action items as a result of meeting in RED

### Old Business

- Progress report from Akram Ahmed on the Delhi system management implementation (SMA and MSM API)
  - Function complete (PR Pending)
  - Need to replicate across all services and SDK (only support notifications at this time)
  - Discussion around start/stop/restart operations
    - What was done and options for consideration - reaction/opinion.
    - OS level or Docker level
  - Are there audit trail/log of start/stop/restart
    - There is a log entry for audit trail
  - Akram to provide API/how to use review at next meeting.
- Jim still has the action item to start to look at types and number of metrics we want to cover post Delhi (Edinburgh)
  - Next meeting
- Jim has action item to scope out options that should be explored for translation layers in Edinburgh and beyond. Document on some options to be uploaded.
  - We don't want to make one monolithic SMA that does all translations; we want more of a plugin model.
  - We don't want to facilitate control plane to control plane protocols (like LWM2M to OMA DM)
  - Any clear winners – Not yet?
  - Protocols
    - DMTF's Redfish is a standard API designed to deliver simple and secure management for converged, hybrid IT and the Software Defined Data Center
    - OMA Lightweight M2M is a protocol from the Open Mobile Alliance for M2M or IoT device management. The OMA Lightweight M2M enabler includes device management and service enablement for LWM2M Devices. The target LWM2M Devices for this enabler are mainly resource constrained devices.
    - OMA Device Management is a device management protocol specified by the Open Mobile Alliance (OMA) Device Management (DM) Working Group and the Data Synchronization (DS) Working Group. OMA DM specification is designed for management of mobile devices such as mobile phones, PDAs, and tablet computers.
    - SNMP
  - Cloud APIs
    - Since each is very specific, no need to address since everyone could implement the MQTT interface on top of SMA
    -

- Azure IoT Hub: Azure IoT Hub natively supports communication over the MQTT, AMQP, and HTTPS protocols. In some cases, devices or field gateways might not be able to use one of these standard protocols and require protocol adaptation. In such cases, you can use a custom gateway. A custom gateway enables protocol adaptation for IoT Hub endpoints by bridging the traffic to and from IoT Hub.
    - AWS IoT Device Management makes it easy to securely onboard, organize, monitor, and remotely manage IoT devices at scale.
    - In order for a device to connect, it must first be registered in the Google IoT device manager. The device manager lets you create and configure device registries and the devices within them. The device manager can be used through the Cloud Platform Console, gcloud commands, or the REST-style API.
    - The IBM Watson™ IoT Platform recognizes devices and gateways as the two classes of device. The device class is identified by using the "classId" field. Devices in the device class can be managed devices or unmanaged devices. Managed devices are defined as devices that contain a device management agent. A device management agent is a set of logic that allows the device to interact with the Watson IoT Platform Device Management service by using the Device Management Protocol. The Device Management Protocol is built on top of the MQTT messaging protocol.
  - Other
    - AllJoyn defines some services for onboarding devices and control/manage a device remotely via virtual control panel.
      - Really OCF – since AllJoyn
      - Has some of this work still being done or been abandoned
    - CPE WAN Management Protocol or TR-069 (Technical Report 069) is a technical specification of the Broadband Forum that defines an application layer protocol for remote management of customer-premises equipment (CPE) connected to an Internet Protocol (IP) network.
    - Hypercat (PAS 212) defines automatic resource discovery for the Internet of Things. The specification, which will make it much easier to discover Internet of Things data, has been developed in conjunction with the Hypercat Alliance
- Edinburgh Architect's day (Tuesday Oct 23<sup>rd</sup>) will include discussion on scope of EdgeX system management going forward. What parts are EdgeX, what is handled by other system and gap identification for a broader community?



<https://www.i-scoop.eu/internet-of-things-guide/iot-device-management/>

### New Business

- Justin – Intel; working on Kubernetes / Helm – create organize and manage manifests for Kubernetes
- Working with Helm chart and EdgeX; translated EdgeX docker-compose to Helm chart

- Some scripts, Helm charts – will think about putting in to EdgeX Foundry Holding
- CNCF – starting Kubernetes/Edge IoT project we need to keep an eye on
- We need to revisit and figure out how to support or use Kubernetes. Jim to add to the topic list for upcoming meetings and F2F