System Management WG Meeting: 9/4/18

Attendees: 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

No meeting next week 9/11 due to IIC meeting

Meeting the following week will include presentation from Intel on device provisioning

Old Business

- Updates on implementation of SMA and micro service management API (MSM API) from Akram
- Edinburgh Release
    - Add metrics (not all of these would be in Edinburgh – TBD)
        - #Objects detected, inferences per second, time per inference (@ analytics level/AI)
        - Some metrics would be service specific (like above) some would be generic (ex: memory, CPU)
        - Need, potentially, to think about resolution of metric data (but don't want to impact service performance itself)
        - Data flow metrics: events per second, readings per second ideas
        - Other metrics: I/O per second (probably using other tool)
        - We may need to split metrics by those collected by the micro service and those collected external to the micro service
    - Storing metrics collected locally
        - Addressing these questions
            - How to push data/metrics to other systems (REST v message)
            - How to allow for pull of data/metrics
            - Type of storage (time series, SQL, NoSQL, etc.)
            - How to support with in-memory or disk storage databases
    - SMA Translation layer (to talk LWM2M, OMADM, Redfish, etc.)
        - How to push data/metrics to other systems (REST v message)
        - How to allow for pull of data/metrics
- Fuji Release (Oct 2019)
    - Setting config (what is read only vs. writable property)
    - Callback (alerts on changes config/metrics)
    - Add actuation based on metric change (control plane level rules engine/analytics)
        - Ex: Stop or restart a service if we see CPU rise to a certain level
        - Anomaly detection at system level
    - Ability to deploy the containers – an installation process/orchestration tool
        - What is optimal deployment/orchestration tool of choice?
        - Perhaps sys management agent would be independent of other containers and pull down EdgeX to box
- Wish list beyond two releases

- o Software update of micro services
  - ▪ Vs hardware/BIOS/etc.
  - ▪ How to do with various containers (Docker, Snap, Kubernetes, etc.)
- o Talk about broader "standard" for system management & system management APIs
  - ▪ Prescriptive guidance
  - ▪ Using EdgeX sys management as example implementation of
- o Test bed potential with consortia/standard groups
- Pre-cursor to Edinburgh meeting – what is EdgeX management versus broader gateway management (what in Salim's diagram is part of EdgeX?)
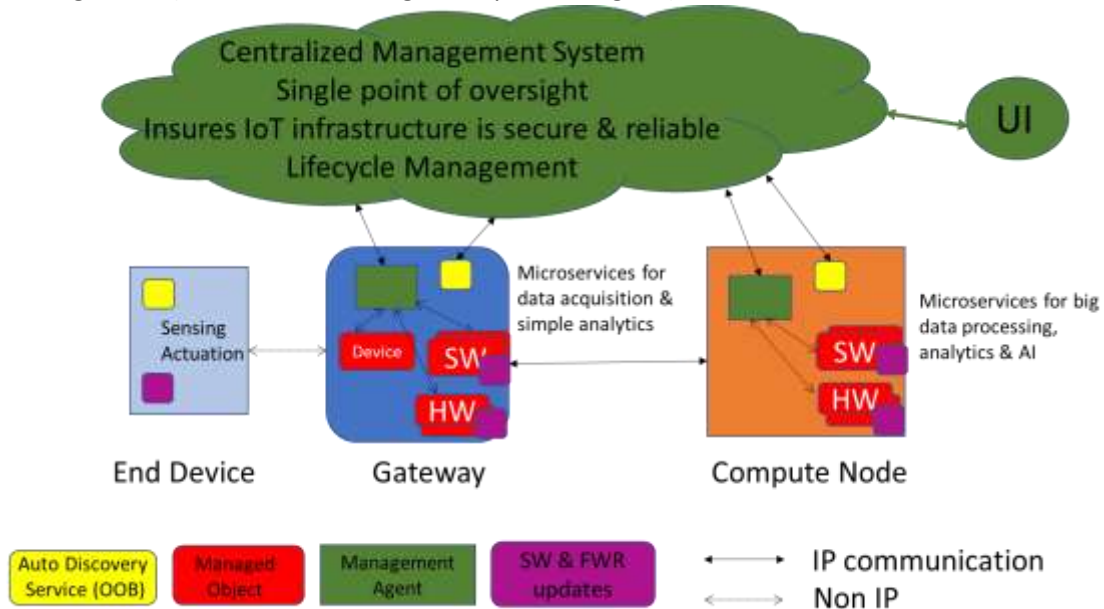
- Device level
  - o OOB comms
  - o OS updates
  - o Firmware updates
- "Gateway" or Edge level
  - o OOB comms
  - o OS updates
  - o Firmware updates
  - o Application set orchestration/updates(EdgeX) – potentially using containers
- IoT Compute Node level
  - o OOB comms
  - o OS updates
  - o Firmware updates
  - o Application set orchestration/updates – potentially using containers
- Generically
  - o Configuration of each compute platform
  - o Networking setup/configuration
  - o Store of secrets (certificates, keys, etc.)

- - o Configuration of certificates for use externally (like with connectivity with AWS)
  - Distribution of containers on a node
  - Onboarding of gateway or other compute nodes (securely)
  - Onboarding of sensors/devices (securely)
  - Description language – needs inside of system management (do we need thoughts about such for management concerns?)
    - o How to have self-describing management objects

New Business
- Any??