

System Management WG Meeting: 9/4/18

Attendees: Jim, Trevor (Dell), Michael (LF), Rodney (Beechwoods), Tony (Canoncial), Doug (ADI).

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

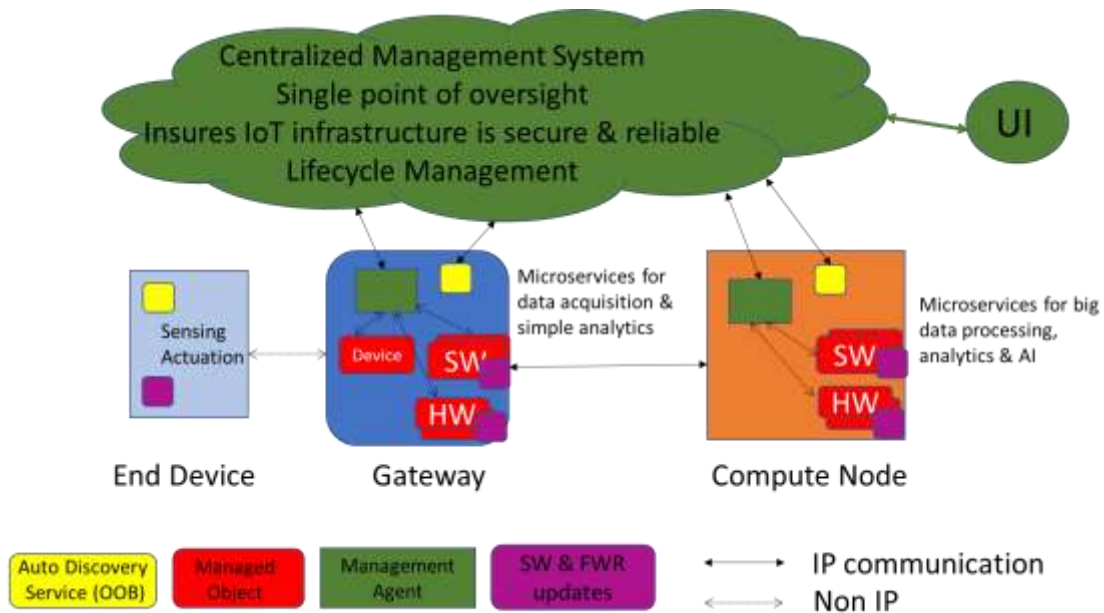
No meeting next week 9/11 due to IIC meeting

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
 - **We need metrics on service interaction – tracing**
 - Numbers of messages
 - What are the hot paths to the system (see telemetry of service calls when someone takes an action)
 - Should be configurable to turn on/off to reduce hit on performance; or run as separate offline process
 - Look at things like Jaeger / Zipkin (Open Tracing specification)
 - Look at Go Kit again – easy to integrate with tracking packages
 - Moving to Go Kit non-trivial (per Drasko/Trevor)
 - Would require decoupling biz logic from router
 - Suggest decoupling be a topic in Edinburgh F2F meeting
 - **Jim action item to start to look at types and numbers of metrics we want to cover**
 - **Trevor to tee up conversation on decoupling in Core WG.**
 - **Jim to add time to Edinburgh F2F to cover decoupling ideas**
 - 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
 - We should start to look at which ones (pick two for Edinburgh for compare/contrast to current APIs)
 - Identify challenges
 - What would translation look like
 - Talk to companies that do management to get their input/opinions
 - Telco's using OMADM (may not be open source)
 - IoT using LWM2M
 - Jim Action Item – scope what options should we explore and which would be part of an EdgeX implementation (versus which would be community or 3rd party provided)
- 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
 - Software update of micro services
 - Vs hardware/BIOS/etc.
 - How to do with various containers (Docker, Snap, Kubernetes, etc.)
 - Talk about broader “standard” for system management & system management APIs
 - Prescriptive guidance
 - Using EdgeX sys management as example implementation of
 - 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
 - OOB comms
 - OS updates
 - Firmware updates
- “Gateway” or Edge level
 - OOB comms
 - OS updates
 - Firmware updates
 - Application set orchestration/updates(EdgeX) – potentially using containers
- IoT Compute Node level
 - OOB comms
 - OS updates
 - Firmware updates
 - Application set orchestration/updates – potentially using containers
- Generically
 - Configuration of each compute platform
 - Networking setup/configuration
 - Store of secrets (certificates, keys, etc.)
 - 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?)
 - How to have self-describing management objects

New Business

- Motion to make this a bi-weekly meeting until Delhi release

- No objections – motion carries. Next meeting will be the 11th of Sept. Meet every two weeks from there on out.