









System Management Working Group – March 27, 2020

Attendees

-  Michael Estrin (Me)
-  David Booz
-  Ike Alisson
-  Jim White
-  Joe Pearson
-  Lenny Goodell (Intel)
-  Mike
-  Trevor Conn

Old Business

1. System Management Service
 - a. Kanban Review (<https://github.com/orgs/edgexfoundry/projects/29>)

Items to Follow Up

1. CLI Review Follow Up (Diana/Malini, VMware / Mike, Intel)
 - a. Mike reviewed PR. Some changes were made but there are additional items from his initial review that have not been addressed. Still appears to be a work-in-progress.
 - b. Mike's ask is for Malini/Diana to review comments and address intended disposition (if not the request the individual comment has made).
 - c. Jim to reach out to Malini/Diana to find out what ownership is and intent for VMware to support longer term. Follow on conversation with Mike to identify which of the comments should be addressed prior to considering moving from holding.
2. EdgeX-specific system-wide metrics follow-up (Jim White, IOTech)
 - a. <https://github.com/edgexfoundry/edgex-docs/pull/104>
 - b. Jim made additional changes within the past week to support pre-wire conversation.
 - c. Lenny has some outstanding review comments.
 - d. Defer further conversation for pre-wire; possible post-pre-wire merge of ADR.

New Business

1. Hanoi release planning discussion
 - a. See notes below

2. Discuss Metrics Communication Options
 - a. Goes back to target deployment types – should address that first and this will fall out from that discussion. (Trevor)
 - b. Will metrics be used for diagnosis purposes? If so, we probably want to push that data through some alternate pipeline so it's separated from the data and isn't affected by issues with the data pipeline. (David) Architectural approach should provide for different communications path for control vs data.
 - c. Demo of metrics visualization cited. May be different implementations based on target deployment.
 - d. Defer further conversation on design/implementation until we work through deployment themes.
 3. Other new business?
 - a. Open Horizon integration project – services they're deploying does not currently deploy the SMA. Who is the SME if he runs into issues integrating? (Joe) Michael is probably the correct point of contact – if he can't help directly, he can likely point you to someone who can.
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Hanoi Release Planning Discussion

New features

- CLI improvements (do we have idea of what these might be)
- Metrics collection per ADR 0006
- System management
 - storing system metrics locally
- System management
 - actuation based on metric change (a "rules engine" for control plane data)
- System management
 - add alerts and notifications (service down, metric above threshold, etc.)
- SMA support for other control plane protocols
- Helm charts or other Kubernetes "facilitation"

Tech Debt

- Improving system management capabilities to include providing an asynchronous set of APIs, offering more EdgeX specific APIs, storing

management metrics (for store and forward) and exporting management data to 3rd party systems

- Look at Driving "Default Services List" via Configuration
- Refactor to enable operations against agent via executor
- Capture CPU metrics data for macOS

General Discussion

- What do we keep and what do we remove?
- What is the target deployment topology? Project needs to identify and advocate for a typical deployment footprint so we can develop towards it – this theme runs across working groups and subdomains. Need to unpack this to identify core tenets to guide future development. (Trevor)
- Could be not just one but a couple of targets – thin edge vs. HA environment with large compute capability. (Jim)
- Potential deployment targets by architecture and ability (VM vs. bare metal vs. HA cluster). How to tackle capabilities like orchestration may naturally fall out. (Joe)
- Lots of grey area between what is a device, what is running at the edge, and what their capabilities are. Will have to figure out how to deploy into all of these grey areas – to be able to decompose EdgeX into different pieces to suit the deployment need. (David)
- Theme should be discussed at pre-wire; use that to help drive deliverables and priorities. (Trevor)
- Up to this point, we've resisted supporting HA environments. That is changing. To what extent does EdgeX start to facilitate HA/clustered deployment options? (Jim)
- Open Horizon adding capabilities to deploy to Kubernetes running at the edge to more broadly cover the grey areas. (David)
- HA support should be implemented generically – maybe use Open Horizon as reference example. (Joe)
- Refactoring services to include 12 factor support may be bulk of work to generically support HA environments. (Michael)
- IMEI or PEI (personal equipment identity) in cellular; uniqueness enabling configuration, usage, and OTA (over-the-air) config/deployment of capabilities. Quick protocol substitute for TCP/IP; usage based on mobility of device. (Ike)

- May be off topic for this group, but agree that we need to drill down into this and pursue it. Not sure what the right venue is. (Joe)
- App services – integrate with AWS Greengrass or Azure IoT – system management? (Mike) May be relevant for control plane – requirement has been out there for a while. (Jim)