

EDGE X FOUNDRY™

TSC Meeting

Oct 18th, 2023



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Meeting Logistics

Time: Wednesdays 8am PDT – 9am PDT (Alternate Weeks)

Join from PC, Mac, Linux, iOS or Android: <https://zoom.us/j/983155298>

Or iPhone one-tap (US Toll): +14086380968,983155298# or +16465588656,983155298#

Or Telephone:

Dial: +1 408 638 0968 (US Toll) or +1 646 558 8656 (US Toll)

+1 855 880 1246 (US Toll Free)

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Meeting ID: 983 155 298

International numbers available: <https://zoom.us/zoomconference?m=mkFexUxEcqHlvXHw53PqScTDRvS48PiQ>

** TSC calls are recorded and added to Wiki post-call



EdgeX TSC Members

Working Group Chairs:

- | | | |
|--------------------------|--|-----------------------------------|
| • Cloud Tsai (IOTech) | cloud@iotechsys.com | Core & Test/QA WG Chair |
| • Lenny Goodell (Intel) | leonard.goodell@intel.com | Applications & Analytics WG Chair |
| • Lindsey Cheng (IOTech) | lindsey@iotechsys.com | Device Services WG Chair |
| • Ernesto Ojeda (Intel) | ernesto.ojeda@intel.com | Dev Ops WG Chair |

At Large Members:

- Farshid Tavakolizadeh (Canonical)
- Tom Brennan (Eaton)
- Elizabeth Lee (Intel)
- Melvin Sun (Intel)
- James Butcher (IOTech)
- Darryl Mocek (Oracle)

Current quorum = 6 members

Note: Quorum for TSC meetings requires at least fifty percent of all voting members of the TSC to be present. The TSC may continue to meet if quorum is not met, but will be prevented from making any decisions at the meeting. Except as provided in Section 7.c. and 8.a, decisions by vote at a meeting require a majority vote of those in attendance, provided quorum is met. Decisions made by electronic vote without a meeting require a majority vote of all voting members of the TSC.



Today's Agenda

- Working Group Updates
- UCR & ADR Updates
- Doc Updates
- Other Business
 - Hashicorp License Model Change
 - Future of Snaps with EdgeX





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Work Group Updates

Chairs

Reminder: Napa Dates

- Freeze date: Wed Oct 25th (i.e. 7 days from now)
- Release date: Wed Nov 15th
- Odessa 3.2 Prewire: Thurs Nov 9th
 - 8am-11am PDT ok for people?
- Odessa 3.2 Planning: Mon Dec 4th - Wed Dec 7th
 - Mon 4 Dec: 7am-10am PDT? Kickoff and Main Architecture Discussions
 - Tues 5 Dec: 9am-12pm PDT? Architecture Discussions and Odessa Scoping
 - Wed 6 Dec: 7am-10am PDT? Complete Odessa Scoping, Business and Marketing Topics, Lessons Learnt

James to create the necessary EdgeX wiki pages etc



Working Group Chair Updates

- Around the working groups:
 - **Product Manager** - Lenny Goodell
 - **Applications** - Lenny Goodell (or co-chair Elizabeth Lee)
 - **Core** - Cloud Tsai (or co-chair Melody Liu)
 - **Device Services** - Lindsey Cheng (or co-chair Felix Ting)
 - **DevOps** - Ernesto Ojeda
 - **Release Czar** - Bill Mahoney
 - **Outreach and Marketing**
 - **Certification** - Rodney Hess
 - **China Updates** - Melvin Sun
 - **LF Edge TAC** - Jim White



Product Manager (10/18/23) - Napa

[Cross Cutting Issues](#)

Icebox (3)

- Lite Builds (no security features) via Build Tags
- **Docs Refactoring of individual Device Services and App LLRP**
- **URIs For Files - C services - Odessa**

Backlog (0)

-

In Progress (1)

- **Docs Refactoring - Napa**
 - Main layout - **Done**
 - Core Data - **Done**
 - Core Metadata - TBD
 - Core Command - TBD
 - Support Notifications - TBD
 - Support Scheduler - TBD
 - App Services general & SDK - **WIP**
 - App Service Configurable - **DONE**
 - App Record & Replay - **DONE**
 - Device Services general & SDK - TBD

Done (8)

- Better error handling when Common Config missing
- Move all the common API into go-mod-bootstrap
- Move common Middleware into go-mod-bootstrap
- pkg/errors replacement
- Go 1.21
- Gorilla/MUX replacement
- URIs For Files - Go services
- **Common Config - C SDK**



Applications WG Update (10/17/23) - Napa

Newly Completed (1)

- refactor: Rework the AP Record Replay docs into new standard structure #1243

Newly added (0)

-

WIP (2)

- refactor: Rework App SDK docs layout/structure - Phase 1 #1248
- Add ability to set MQTT Will options for external MQTT server connections #1117

Done for Napa (39)

Backlog (0) <https://github.com/orgs/edgexfoundry/projects/50/views/2>

ICE BOX (6)

Next

- Continue to enhance/refactor documentation

eKuiper

- Released 1.11.3 fix pack
 - <https://github.com/lf-edge/kuiper/releases/tag/1.11.3>
 - Napa will release with 1.11.3
- Working on 1.12 release for November 9th
 - <https://github.com/lf-edge/kuiper/milestone/22>
 - Beta available
 - <https://github.com/lf-edge/kuiper/releases/tag/1.12.0-alpha.2>

Project Board: <https://github.com/orgs/edgexfoundry/projects/50/views/2>



Application Services - Minnesota

Functions (built into SDK)

- Add Tags
- Batch
- Compression (GZIP & ZLIB)
- Conversion (XML & JSON)
- **EventWrapper - NEW**
- Encryption (AES256)
- Export
 - MQTT
 - HTTP POST & PUT
- Filtering
 - By Profile Name
 - By Device Name
 - By Source Name
 - By Resource Name
- JSONLogic
- Set Response Data
- **ToLineProtocol (transforms Metric DTO) - NEW**

Features

- Store and Forward
- Batch and Send
- Web Server
- Configurable App Service
- Vault Integration for Secrets
- MQTT Event triggers
- Filter by Topics
- Custom Triggers
- Publish Topics and URL Placeholders
- Structure Custom Configuration
- Background Publishing
- Received Topic
- Context Storage
- Service Metrics - **NEW**
- Clients
 - Logging, Event
 - Command
 - Device, DeviceService
 - DeviceProfile
 - Notification
 - Subscription
 - Registry

Reference/Example App Services

(built on top of SDK)

Released Services

- App Service Configurable
- App RFID LLRP Inventory

Examples

- Simple Filter
- Simple Filter and MQTT Export
- Simple Filter and HTTP Export
- Simple CBOR
- Cloud Export

- Cloud Event Transformation
- Secret Retrieval
- JsonLogic
- Send Command
- Convert & Publish
- Custom Target Type
- IBM Watson IoT (ASC Profile)
- Custom Trigger
- Influx DB & Flege Exports
- Camera Management - **NEW**



Core WG Update (Oct 18 2023)

[Core/QA Project Board](#)

- TAF
 - Functional tests:
 - Non-Security **612** tests - All pass / Security **612** tests - All pass
 - Integration tests
 - Non-Security **132** tests - All pass / Security **135** tests - All pass
 - Performance tests:
 - Non-Security **10** tests - All pass / Security **10** tests - All pass
- QA Progress
 - All clean up now
- Core Progress
 - Done: will focus on docs refactor in the following week
 - Code Freeze Date: Oct 25
 - Release Date: Nov 15



Device Services WG Update (18 Oct 2023)

- **Go Device Service update**

- [device-usb-camera]
 - fix: Get stream URI not picking up rtsp server address from config file [#288](#) - Done
 - fix: Config variable Path changed to Paths to support real sense cameras [#278](#) - Done

- **C Device Service update**

- [device-sdk-c]
 - Implement loading of common config from config provider [#481](#) - Done

- **New CAN device service**

- Initial [PR](#) merged in holding area -Acceptance TSC vote in progress

- **New S7 device service**

- Jieke Choo from YIQI Software proposes to contribute Siemens S7 device service to community
 - See EdgeX discussion [post](#)
 - [Repo](#) created in the holding area



Device Services - current/coming (as of v3.0)

Open Source connectors (Current):

- Modbus (TCP/RTU) in Go
- Virtual Device in Go
- SNMP in Go
- MQTT in Go
- BACnet (IP & MSTP) in C
- ONVIF and USB Cameras in Go
- REST in Go
- CoAP in C
- LLRP / RFID in Go
- GPIO in Go

Open Source connectors (Future):

- UART in Go

Commercial connectors (Current):

- BLE in C
- Zigbee in C
- GPS in C
- CAN in C
- CANOpen in C
- EtherCat in C
- EtherNet/IP in C
- PROFINET in C
- OPC-UA in C
- OPC-UA Pub/Sub in C
- Siemens S7 in C
- File reader in C
- WebSockets in Go

There are additional commercial MQTT (Go), Modbus (C), REST (Go), and BACnet (in C) that have added features over the community editions



DevOps WG Update (10/18/2023)

Pipeline Related

- [In Progress] [#438](#) Implement git-cliff, a git-chglog replacement
- [In Progress] [#376](#) Automate release branch creation

Other

- N/A

Next DevOps WG Meeting: Tuesday, November 14, 2023 @ 9AM PST



Release Czar (2023-10-18)

Napa (3.1)

Code Freeze - 2023-10-23 (1 week)

Release Date - 2023-11-15 (4 weeks)

Recent Release Activity:

- device-coap-c v3.0.1 (Aug 28th)
- device-bacnet-c v3.0.1 (Aug 28th)
- device-sdk-c v3.0.2 (Aug 10th)
- device-uart v3.0.0 (Aug 7th)

EdgeX Release Process: <https://wiki.edgexfoundry.org/display/FA/Release+Checklist>

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Outreach Update (10/3/23)

No update this week



EdgeX China Update

- Recent events proved very popular
 - Q3 meetup in Shenzhen
 - KubeCon, One Summit China
- EdgeX Worldwide university hackathon is complete
 - Results have been announced in China
 - Awaiting final result for other countries and the overall winners
 - Announcement and blog coming

- Website: <https://cn.edgexfoundry.org/>
- OSChina: <https://www.oschina.net/group/edgex-foundry>
- CSDN: <https://blog.csdn.net/edgexfoundry>
- Zhihu: <https://www.zhihu.com/people/edgex-foundry>
- Bilibili: <https://space.bilibili.com/550595847>



Quick Summary: EdgeX 3.1 High Level Plans

Info transferred to EdgeX wiki release page: <https://wiki.edgexfoundry.org/display/FA/Napa+Release>

Theme / Title	In Scope	Priority	T-Shirt	Notes
URIs for Files - done , except for C Device Service SDK	✓	High	M/L	Well-defined UCR and ADRs already. Owner: Lenny, Testing: Cherry
EdgeX V3 Docs Enhancements - ongoing, in progress	✓	High	M	Elizabeth (list issues) and Jim (perhaps ADR)
Zero Trust / Secure Distributed EdgeX (OpenZiti Integration) - in review	✓ (ADR)	High	S	ADR owner Bryon. Out of scope to implement for 3.1
Bring Your Own Vault - Hashicorp licensing may change this <ul style="list-style-type: none">See Devaultification of EdgeX	✓ (ADR)	High	S	ADR owner Jim. Out of scope to implement for 3.1
Common Config - Support for C Devices - done	✓	Med	M	Owner: Felix, support from Iain
Modelling & Relationships – Parent/Child Devices - slipped to 3.2	✓	Med	S	Limited to Metadata. Owner: Eaton
Modelling & Relationships – Virtual Device Resources - slipped to 3.2	✓	Med	S	Limited to Device SDKs and Metadata. Owner: Eaton
Modelling & Relationships – Device Metadata in Provision Watchers - slipped to 3.2	✓	Med	S/M	Limited to Device SDKs and Metadata. Owner: Eaton
Core Data Retention - done and tested	✓	Med	S	Limited to Core Data. Owner: Cloud (Core WG)
NanoMQ (Provide as Experimental Feature) - done available as an option	✓	Low	S	Adds option in compose-builder to obtain performance metrics, ahead of a decision for 3.2
Common Config - Design for addressing the limitation with removing settings from writable / code refactor	STRETCH (Design)	Low	S	Out of scope to implement for 3.1



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Other Topics

Hashicorp Licensing Model Changes

- Discussed on TSC meeting last week
- edgex-keeper now available to inspect (for IBM and others) in edgex holding repo
- <https://github.com/edgexfoundry-holding/edgex-core-keeper>

Recommendation

- Consul
 - Fork Consul now as a back up to any issues post 12/31/23
 - Update and review edgex-keeper during the next release cycle (Odessa)
 - Drop in replace Consul for Odessa or later
- Vault
 - Fork Vault now
 - Join other organizations in maintaining OpenVault for foreseeable future
 - Come to agreement about EdgeX effort in such a group
 - Get EdgeX member companies to agree to support OpenVault in addition to EdgeX
 - Setup a task force to design a Vault replacement during Odessa release
 - Using Bryon's feature set – establish requirements, outline architecture
 - Determine whether a single capability is needed or should it be multiple services
 - Examine “buy-vs-build” (buying other open source effort for some parts)
 - Monitor OpenVault



Future of Snaps

Query Poll posted to Discussions (input sought)

<https://github.com/orgs/edgexfoundry/discussions/183>

Current thinking

Discontinue creation of new EdgeX Snaps going forward

Document how to create Snaps in EdgeX Examples

Revisit this if adopter/contributor comes forth



UCR & ADR Review (as of 9/20/23)

UCR/ADR Name	Status	Owner	Work Group
Microservice auth based on end-to-end-encryption	[In Review] ADR for OpenZiti integration #935	Bryon	Security
Devaultification of EdgeX	[Draft] ADR for EdgeX to go Vault-less (needs a UCR to link to) #1222	Bryon	Security



Document work (as of 10/3/23)

Docs that should be done for Napa

- #1230 S [Last connect metric add to config] **new**
- ~~#1218 S [Pull Fuji from version drop down]~~ **completed**
- ~~#1217 M [use of core data and notification retentions]~~ **completed**
- #1197 M [explain insecure secrets]
- #1196 m [add secret API to docs]
- #1161 M [Protocol spec]
- #899/900 - L [why EdgeX security requirements are met]
- #855 - L [extend Go SDK API docs]
- #732 L [role based access for Mosquitto]
- #714 L [images to LFS]
- #667 L [how to build containers]
- #642 L [export to cloud]
- #489 M (with #121, #21) [consume/send binary]

Documentation refactor / overhaul

- 1st phase complete
- Working on 2nd phase
 - ~~• order of pages and naming~~
 - standardize service pages
 - tutorials
 - API in References
 - Diataxis organizing





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Thank You