

EDGE X FOUNDRY™



TSC Meeting

Sep 6th, 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)

+1 877 369 0926 (US Toll Free)

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

- ~~EdgeX Awards Presentation~~ - deferred to next time, apologies by James
- Working Group Updates
- Hashicorp License Model Change
- Future of Snaps with EdgeX
- UCR & ADR Updates
- Doc Updates
- Other Business





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Work Group Updates

Chairs

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 (09/06/23) - Napa

[Cross Cutting Issues](#)

Icebox (1)

- Lite Builds (no security features) via Build Tags

Backlog (0)

-

In Progress (3)

- **Common Config**
 - C SDK/Services - TBD
- **URIs For Files**
 - go-mod-bootstrap function - **DONE**
 - go-mod-bootstrap Config - **DONE**
 - Core Metadata (UoM) - **DONE**
 - Go Device SDK files - **DONE**
 - Enhance Device SDK index file - **TBD**
 - go-mod-bootstrap more unit tests - **TBD**
 - Documentation - **DONE**
 - C Device SDK files - TBD
- **Go 1.21**
 - Smoke Test - **DONE**
 - Refactor Spiffy/Spire - **DONE**
 - DevOps build image - **WIP**

• Gorilla/MUX replacement

- go-mod-bootstrap - **DONE**
- edgex-go - **DONE**
- Go Device SDK - **DONE**
- Go Device Services - **DONE**
- App SDK - **DONE**
- App Services - **WIP**

Done (4)

- 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



Applications WG Update (09/06/23) - Napa

Newly Completed (4)

- Replacement for Gorilla/MUX package #1436
- docs: Update repo links in the readme #591
- docs: Update repo links to point to latest docs #1471
- feat: Add structure for available application services docs #1205

Newly added (0)

WIP (1)

- Record and Replay (<https://github.com/orgs/edgexfoundry/projects/54>)
 - Done (33)
 - In Progress (1)
 - Backlog (2)

Done for Napa (24)

Backlog (1) <https://github.com/orgs/edgexfoundry/projects/50/views/2>

- Add ability to set MQTT Will options for external MQTT server connections #1117

ICE BOX (6)

Next

- Wrap up Record and Replay
- Enhance/refactor documentation

eKuiper

- Enhancing docs for 1.11
- Released fix pack 1.11.1
 - <https://github.com/lf-edge/ekuiper/releases/tag/1.11.1>
- Next release is 1.12 in November.
 - Just getting started on planning.

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 (Sep 6 2023)

[Core/QA Project Board](#)

- TAF:
 - Functional tests:
 - Non-Security **606** tests - **73 failed** / Security **607** tests - **73 failed**
 - Integration tests
 - Non-Security **121** tests - **68 failed** / Security **124** tests - **66 failed**

Due to: [edgex-go] Device name, profile name, resource name, and command name supports Chinese naming [#4053](#)

- Performance tests:
 - Non-Security **10** tests - All pass / Security **10** tests - All pass
- QA Progress
 - WIP
 - Test CORS support for security mode [#850](#)
- Core Progress
 - Done
 - [edgex-go] Device name, profile name, resource name, and command name supports Chinese naming [#4053](#)
 - [edgex-go] refactor: Remove old InsecureSecrets backward compatibility elements [#4672](#)



Device Services WG Update (6 Sep 2023)

• Go Device Service update

- [device-usb-camera]
 - disable RTSP server on startup via configuration #[268](#) - DONE
 - Replace gorilla/mux with echo library #[275](#) - DONE
- [device-onvif-camera]
 - Replace gorilla/mux with echo library #[378](#) - DONE
- [device-rest-go]
 - Replace gorilla/mux with echo library #[333](#) - DONE

• Device-C-sdk

- Update examples to v3 #[472](#) - DONE
- bug fix: edgex_device_runput2 only supports string value #[479](#) - DONE
- Implement loading of common config from config provider #[481](#) - In Progress
- bug fix: device custom protocol contains '&', '<', '>' characters #[465](#) - In Progress

• Device-Go-sdk

- Url escape in API path #[1495](#) - DONE
- Profiles didn't be created when setting URI for files with secure credentials on Device #[1504](#) - In Progress



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 (9/6/2023)

Pipeline Related

- [In Progress] Review edgex-docs changes related to mkdocs 1.5 and mike plugin
- [In Progress] [#440](#) Fully Automate DockerHub description/overview updates
- [In Progress] [#443](#) Go v1.21 edgex-global-pipeline update

Other

- Project Alvarium DevOps help needed for Jenkins integration

Next DevOps WG Meeting: Tuesday, September 12, 2023 @ 9AM PST



Release Czar (2023-9-6)

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)

Future Releases:

- Napa (~November 2023)

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

edgexfoundry.org |  [@edgexfoundry](https://twitter.com/edgexfoundry)



Outreach Update (9/5/23)

Social Media & Website

- Ongoing efforts to provide ~2 social media posts a week. Looking for content

Events

- Melvin Sun presenting at ONE Summit Regional Day at KubeCon China on September 26.
 - <https://lfnetworking.org/event/one-summit-regional-day-china/>
- Intel Student Hackathon wrapping up/ judging phase
 - See <https://edgex-hackathon.com/>

Ready/Certification

-

Next meeting: Sept 18th @ 10am PDT



EdgeX China Update

- 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>

- Intel EdgeX Coding Competition is underway
- EdgeX Adoption Updates
 - Working with Lenovo to adopt EdgeX in its Edge.AI solution.
 - Working with [Daocloud](#) to enrich its Edge Computing solution with EdgeX
- Upcoming events in China
 - Sep 9th: Q3'23 EdgeX meetup in Shenzhen
 - Sep 26-28th, KubeCon China, ONE summit China (a speech has been reserved for EdgeX)





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Other Topics

Hashicorp Licensing Model Changes - Impact to EdgeX...

- Hashicorp has decided to abandon Mozilla to Business Source License (BSL)
 - See <https://www.hashicorp.com/license-faq>
 - This is a common path many corporations are taking (MongoDB, Redis, Couchbase, among others)
- Consul/Vault to be affected
 - WG's think we are probably ok for Napa so long as we don't have to upgrade this release cycle
 - Future releases will have to move off these products or we leave a huge issue for adopters
- Option for Consul already exist
 - IOTech/Eaton developed alternative edgex-keeper (but we need to shepherd this through a review process)
- Vault - not a lot of great alternatives
 - OpenTF is cloud centric
- At this time
 - Collecting facts, ideas for alternatives, etc.
 - Will be a major point of discussion for the TSC going forward - and especially for future releases



Future of Snaps



UCR & ADR Review (as of 8/21/23)

UCR/ADR Name	Status	Owner	Work Group
BYO Vault	UCR approve; working on ADR ON hold pending Vault discussions/decisions	Jim	Security
Microservice auth based on end-to-end-encryption	ADR need to pave way for OpenZiti integration - in draft https://github.com/edgexfoundry/edgex-docs/pull/935	Bryon	Security



Document work (as of 9/5/23)

Docs that should be done for Napa

#1197 M [explain insecure secrets] **new**

#1196 m [add secret API to docs]

~~#1185 S [supported device services out of date]~~ **closed**

#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

- PR for refactor complete
- See <https://github.com/edgexfoundry/edgex-docs/pull/1212>
 - Closed #1171 due to number of changes in mkdocs nav menu and other pages that have changed since refactor testing began
- On to microservice documentation refactor
 - Topic for next week's Arch mtg



Miscellaneous / Other Topics

- Zededa is setting up a “sandbox” for LF Edge projects
 - Allows LF Edge applications to be started on Eve from a free Zededa managed marketplace
 - EdgeX will also be mentioned in the PR
 - EdgeX to participate and be an example project
 - Contact Jim White if you want more info/participate
- EdgeX completed its required LF Edge annual review this morning
- Bruce/Cloud report no issues in smoke test of Go Lang 1.21
 - Except for issues with Spire services (which can be bypassed for now)



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 - in progress	✓	High	M/L	Well-defined UCR and ADRs already. Owner: Lenny, Testing: Cherry
EdgeX V3 Docs Enhancements - in progress	✓	High	M	Elizabeth (list issues) and Jim (perhaps ADR)
Zero Trust / Secure Distributed EdgeX (OpenZiti Integration)	✓ (ADR)	High	S	ADR owner Bryon. Out of scope to implement for 3.1
Bring Your Own Vault	✓ (ADR)	High	S	ADR owner Jim. Out of scope to implement for 3.1
Common Config - Support for C Devices	✓	Med	M	Owner: Felix, support from Iain
Modelling & Relationships – Parent/Child Devices	✓	Med	S	Limited to Metadata. Owner: Eaton
Modelling & Relationships – Virtual Device Resources	✓	Med	S	Limited to Device SDKs and Metadata. Owner: Eaton
Modelling & Relationships – Device Metadata in Provision Watchers	✓	Med	S/M	Limited to Device SDKs and Metadata. Owner: Eaton
Core Data Retention	✓	Med	S	Limited to Core Data. Owner: Cloud (Core WG)
NanoMQ (Provide as Experimental Feature)	✓	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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Thank You