

EDGE X FOUNDRY™

TSC Meeting

August 23rd, 2023

edgexfoundry.org |  @edgexfoundry



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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

- Working Group Updates
- Gorilla Mux/Echo issue
- Alvarium update
- Doc refactor/redesign PR
- 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 (08/23/23) - Napa

[Cross Cutting Issues](#)

Icebox (1)

- Lite Builds (no security features) via Build Tags

Backlog (2)

- Go 1.21 (August 2023)

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
 - Documentation - **WIP**
 - C Device SDK files - TBD

- **Gorilla/MUX replacement**

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

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 (08/23/23) - Napa

Newly Completed (2)

- HTTPRequestHeaders parameter for ASC HTTP Export #1426
- feat: Doc update details for http request headers #1189

Newly added (0)

WIP (2)

- Record and Replay (<https://github.com/orgs/edgexfoundry/projects/54>)
 - Done (28)
 - In Progress (0)
 - Backlog (5)
- Replacement for Gorilla/MUX package #1436

Done for Napa (20)

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 (10)

Next

- More Record and Replay
- Gorilla/MUX replacement??

eKuiper

- 1.11 released last week
 - <https://github.com/lf-edge/kuiper/releases/tag/1.11.0>
 - Napa WIP is now using 1.11

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 (Aug 23 2023)

[Core/QA Project Board](#)

- TAF:
 - Functional tests:
 - Non-Security **606** tests - All pass / Security **607** tests - All pass
 - Integration tests
 - Non-Security **119** tests - All pass / Security **114** tests - All pass
 - Two test cases added: Test CORS support [#850](#)/ Update scripts for connecting secure MQTT to Commands via messaging [#848](#)
 - Performance tests:
 - Non-Security **10** tests - All pass / Security **10** tests - All pass
- QA Progress
 - WIP
 - Add TAF test scenarios for URI for Files [#863](#)
- Core Progress
 - Done: Fixed several bugs and refactored multiple docs
 - WIP
 - [edgex-go] Device name, profile name, resource name, and command name supports Chinese naming [#4053](#)



Device Services WG Update (23 Aug 2023)

• Go Device Service update

- Device UART
 - V3.0 released and compose file added
 - Add Docker Hub description [#22](#) - IN PROGRESS
- [device-modbus-go]
 - Add support for rawType Int32 with valueType Float64 [#493](#) - DONE
- [device-usb-camera]
 - Implement get/set pixel format commands. [#269](#) - DONE
- [edgex-docs]
 - Some Device Service out of data in list of Supported device services [#1185](#) - DONE

• Device-C-sdk

- C Device SDK 3.0.2 patch release tagged
- C Device Services 3.0.1 patch release - IN PROGRESS

• New CAN Device Service from HCL

- Initial design reviewed/discussed in Device WG meeting
- design discussion with HCL - 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 (8/23/2023)

Pipeline Related

- [Complete] Generate GitHub releases on tag creation via GitHub actions
- [Complete] Named/Vanity (i.e minor 3.x) tag automation on release
- [Complete] POC gotesttools/gotestfmt for better unit test output in Jenkins pipelines
- [In Progress] Review edgex-docs changes related to mkdocs 1.5 and mike plugin

Other

- Project Alvarium DevOps help needed for Jenkins integration

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



Release Czar (2023-7-25)

Release Activity:

- Minnesota Patch (3.0.1) - 2023-7-25
 - App-SDK, App Service Configurable, App Service LLRP
- Minnesota (3.0.0) - 2023-5-31

Upcoming:

- device-uart (first v3 release) - date TBC
- device-bacnet and device-coap (C Services) may need refresh following bugs found by Felix. date TBC

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



Outreach Update (8/21/23)

Social Media & Website

- Ongoing efforts to provide ~2 social media posts a week. Looking for content
- New FREE EdgeX class available through LF
<https://training.linuxfoundation.org/express-learning/creating-edge-iot-solutions-with-edgex-foundry-lfel1003/>
- Part of LF's new Express Learning Courses

Events

- Melvin Sun presenting at ONE Summit Regional Day at KubeCon China on September 26.
 - Sunny Kai reports: "We're still working on finalizing the agenda for the event. Here is the event link if you can encourage the China community to register: <https://kccncosschn2023.sched.com/event/1QR8E>"
- 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)

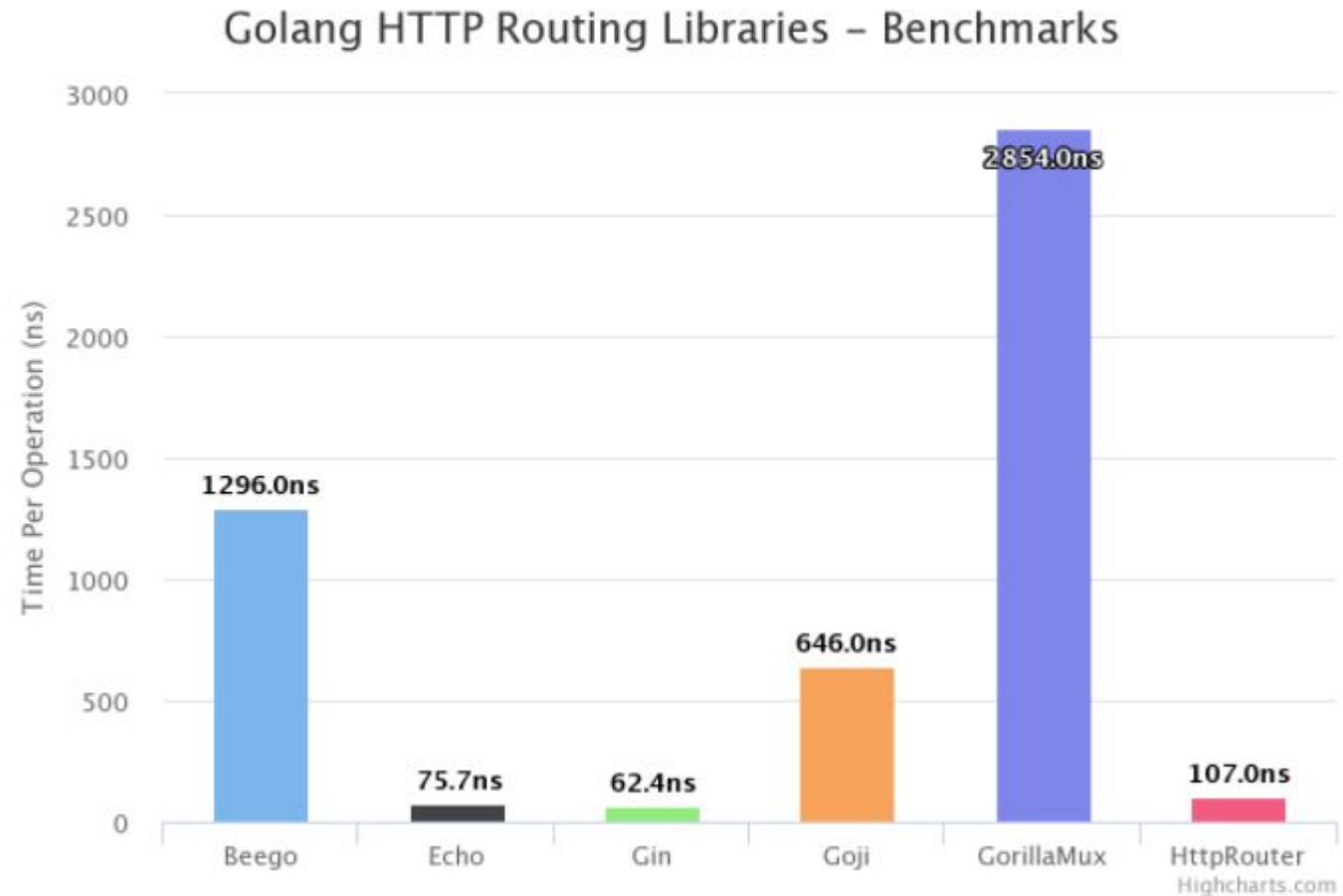


Gorilla Mux vs Echo discussion

- Per issue <https://github.com/edgexfoundry/edgex-go/issues/4247>
- Gorilla Mux was inactive and looking for a new maintainer until very recently
 - Looks like a new maintainer may have been found (there are new updates in the repo)
- The core team replaced Gorilla with Echo per our planning meeting decision
- Question for TSC: do we return to Gorilla or stay with Echo??
- Pros and Cons debated in forum emails
 - Echo (con) : Ideally this is not something to be done in a stabilization release.
 - Echo (con) : The API isn't as clean as Gorilla/Mux, but that is the API I have been used to using... 😊
 - Echo (con) : It's own unique HandlerFunc signature rather than using the one from the standard `http` module as MUX does
 - Echo (pro) : We already have the changes in place and robust TAF testing.
 - Echo (pro): Echo is more popular.
 - Echo's image size is larger
 - Echo's memory usage at runtime is smaller at runtime
 - Echo's response latency is shorter
 - Gorilla has more documentation; Echo has active Github discussions



Gorilla/Echo latency comparison



Alvarium / EdgeX Integration Update

- Meeting Aug 28 (Alvarium TSC) to discuss devops need
 - Need for EdgeX-like build/pipelines environment
 - Looking to use EdgeX sandbox
- No other immediate needs of EdgeX community at this time



Document Refactor Update

PR: <https://github.com/edgexfoundry/edgex-docs/pull/1171>

In draft, but ready to come out of draft?

Takes care of

- Menu bar/left side nav - reorganization
- New landing page
- Reposition version

To Do

- reorg / standardize micro service docs
- more tutorials/getting started guides



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

UCR/ADR Name	Status	Owner	Work Group
BYO Vault	UCR approve; working on ADR	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 8/21/23)

Documentation refactor / overhaul - as previously discussed

- <https://github.com/edgexfoundry/edgex-docs/issues/1151>
- [Prototype/Draft](#) now available

Docs that should be done for Napa

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

#1161 M [Protocol spec]

~~#1156 S [use of localhost ref in getting started hybrid]~~ **closed**

~~#1157 M [proxy env in ONVIF DS doc]~~ **closed**

#1037 S [Grove link broken]

#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]



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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Other Topics



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Thank You