

EDGE X FOUNDRY™

## TSC Meeting

April 17th, 2024

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# Meeting Logistics

Time: Wednesdays 8am- 9am Pacific Time (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)    | <a href="mailto:cloud@iotechsys.com">cloud@iotechsys.com</a>             | Core & Test/QA WG Chair           |
| • Lenny Goodell (Intel)  | <a href="mailto:leonard.goodell@intel.com">leonard.goodell@intel.com</a> | Applications & Analytics WG Chair |
| • Lindsey Cheng (IOTech) | <a href="mailto:lindsey@iotechsys.com">lindsey@iotechsys.com</a>         | Device Services WG Chair          |
| • Ernesto Ojeda (Intel)  | <a href="mailto:ernesto.ojeda@intel.com">ernesto.ojeda@intel.com</a>     | Dev Ops WG Chair                  |

## At Large Members:

- Farshid Tavakolizadeh (Canonical)
- Corey Mutter (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
- Odessa Deliveries Summary





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## Work Group Updates

Chairs

# Working Group Chair Updates

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





# Product Manager (04/17/24) - Odessa

[Cross Cutting Issues](#)

## Icebox (1)

- Lite Builds (no security features) via Build Tags

## Backlog (3)

- **URIs For Files**
  - C services - **TBD**
- **OpenBao**
- **Go 1.22 (Feb'24) and Alpine 3.19**
  - **Released!!**  
<https://tip.golang.org/doc/go1.22>

## In Progress (4)

- **Odessa Doc Refactoring**
  - Device Services
    - Device Commands - **DONE**
    - Device Definitions - **DONE**
    - Auto Events - **DONE**
    - BacNet - **TBD**
    - COAP - **TBD**
    - RFID LLRP - **TBD**
    - SNMP - **TBD**
    - Virtual - **TBD**
  - Refactor APIs Section - **TBD**
  - Refactor Security Section - **TBD**
  - Update EdgeX Diagram - **DONE**

- **Compiler flags to Strip Debug Info**
  - edgex-go - **DONE**
  - edgex-ui - **TBD**
  - App SDK and ASC - **DONE**
  - App LLRP & App Record Replay - **TBD**
  - Device SDK and Device Services used by TAF - **DONE**
  - Remaining Device Service - **TBD**
- **Zero Trust (OpenZiti)**
  - go-mod-core-contracts - **DONE**
  - go-mod-bootstrap - **DONE**
  - edgex-go - **DONE**
  - edgex-ui - **DONE**
  - ekuiper - **DONE**
  - edgex-compose - **WIP PR waiting for smoke test**
  - docs - **TBD**
  - edgex-helm - **TBD?**
- **Core Keeper - WIP**
  - go-mod-core-contracts - **DONE**
  - go-mod-registry - **DONE**
  - go-mod-configuration - **DONE**
  - edgex-go - **WIP PR waiting for review**
  - edgex-compose - **TBD**
  - docs - **TBD**

## Done (0)

- 





# Applications WG Update (02/21/24) - Odessa

Newly Completed (0)

Newly added (0)

WIP (0)

Done for Odessa (16)

Backlog (3) <https://github.com/orgs/edgexfoundry/projects/50/views/2>

ICE BOX (0)

Next

- Compiler flags to Strip Debug Info
- Document Commands via MessageBus for App Services

eKuiper

- Latest is 1.12.7
  - <https://github.com/lf-edge/ekuiper/releases/tag/1.12.7>
- 1.13.0 releasing this week.
  - <https://github.com/lf-edge/ekuiper/milestone/23>
  - zero-trust will land in patch of 1.13

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



# Application Services - Napa

## Functions (built into SDK)

- Add Tags
- Batch
- Compression (GZIP & ZLIB )
- Conversion (XML & JSON)
- EventWrapper
- 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)

## 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~~
- Direct Publish to MessageBus
- Received Topic
- Context Storage
- Service Metrics
- 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
- App Record and Replay

### 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



# Core WG Update (Apr 17 2024)

[Core/QA Project Board](#)

- TAF - Performance test failed - Now we're still observing and calculating the range of image increase, so can decide how to modify the performance test script later.
- Core/QA Progress
  - Update the main EdgeX diagram [#1343](#)
  - WIP
    - [Core Metadata] Add "parent" field to Device objects [#4769](#)
    - Add Core Keeper Service [#4783](#)
  - New: add option to bypass validation for POST Device API [#4789](#)
- Note
  - Clints will share OpenZiti integration in the next meeting (on Apr 23th)



# Common Vulnerabilities and Exposures (CVE) Update

Cloud Tsai's analysis:

1. cJSON package issue from USB Camera Device Service.

<https://security.snyk.io/vuln/SNYK-ALPINE318-CJSON-6156886>

Remediation: Upgrade Alpine:3.18 cJSON to version 1.7.17-r0 or higher.

2. openssl issue and happens in several docker images.

<https://security.snyk.io/vuln/SNYK-ALPINE318-OPENSSL-6191692>

However, I don't know why it happens, because there is no openssl installed to those Docker images.

<https://github.com/edgexfoundry/edgex-go/blob/64231a640c2d3928f8098b6641f84e2829903aa1/cmd/security-secretstore-setup/Dockerfile#L35>

Remediation: Upgrade Alpine:3.18 openssl to version 3.1.4-r5 or higher.

3. mbedtls package issue from USB Camera Device Service

<https://security.snyk.io/vuln/SNYK-ALPINE318-MBEDTLS-6208087>

Remediation: Upgrade Alpine:3.18 mbedtls to version 2.28.7-r0 or higher.

4. expat package issue from the Coap Device Service

<https://security.snyk.io/vuln/SNYK-ALPINE318-EXPAT-6241039>

Remediation: Upgrade Alpine:3.18 expat to version 2.6.0-r0 or higher.

**I just verified the container image will upgrade libssl3 to 3.1.4-r5, so all the security CVEs can be resolved after rebuilding the images. We can schedule a 3.1.1 patch release**

- **This is currently in progress in DevOps**



# OpenBao Project (Vault Replacement for EdgeX)

- OpenBao's acceptance as an LF project will be announced at the upcoming LF ONE Summit conference
- Alpha release available: <https://github.com/openbao/openbao/releases/tag/v2.0.0-alpha20240329>
- Update: Thanks to Ginny Guan for successfully verifying the alpha release works with EdgeX
  - ✔ Obtain the Vault root token and view secrets from Vault web UI
  - ✔ Call edge service REST APIs with JWT
  - ✔ Create secrets by POST /secret API
    - As a result, we are confident that EdgeX 3.2 can use OpenBao
    - Next to check on the OpenBao official release

- James is EdgeX contact for OpenBao and TSC member
- Nathan Phelps (IBM) voted as TSC Chair
- Project meetings are weekly (Thursday @ 8am Pacific Time for 30 mins)
- <https://wiki.lfedge.org/display/OH/Hashicorp+Vault+Replacement+Feature+Design+Candidate>



# Device Services WG Update (17 April 2024)

- **Some questions under discussion**
  - device-onvif-camera - DiscoverySubnets are empty [#432](#)
  - device-mqtt-go - jpeg images send to edgex [#670](#)
- **No in progress issue**



# Device Services - current/coming (as of v3.1)

## Open Source connectors:

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

## Open Source connectors (Future):

- UART in Go
- Siemens S7 in Go

## IOTech commercial connectors:

- Modbus (TCP + RTU)
- BACnet (IP + MSTP)
- OPC-UA
- BLE
- Zigbee
- GPS
- CAN (+ J1939 Extensions)
- EtherCat
- EtherNet/IP
- Siemens S7
- PROFINET
- WebSockets
- MQTT
- REST
- ONVIF
- USB Cameras





# DevOps WG and Release Czar

- After Bill Mahoney stepped down, Cherry Wang now named as EdgeX Release Czar
- We need to make a decision on a potential 3.2 release date...
- v3.1.1 patch release for resolving CVE is working in progress
  - initial test PRs:  
<https://github.com/edgexfoundry/cd-management/pull/399>  
<https://github.com/edgexfoundry/sample-service/pull/163>

## Recent and Upcoming Releases

Napa (3.1)

- Release Date - 2023-11-15

Napa patch (3.1.1)

- Release Date - 2024-04-30

Odessa (3.2)

- ~Spring 2024



# Odessa Deliveries Summary

Theme / Title	In Scope	Priority	T-Shirt	Notes
Replace Hashicorp Consul with EdgeX-Core-Keeper <b>WIP</b>	✓	High	L	Work to update/review/approve core-edgex-keeper (code, docs, tests). Owner: IOTech and Eaton
Replace Hashicorp Vault with Open-Bao <b>Alpha looks good. Need surety on full preview and requires testing and documentation time</b>	✓	High	S	Liaise with Open-Bao group for delivery timing but expecting to be drop-in replacement. Only docker-compose changes needed
Zero Trust / Secure Distributed EdgeX (OpenZiti Integration) <b>WIP</b>	✓	High	M/L	ADR (now approved). Impl largely by Clint
Continue EdgeX Documentation redesign <b>WIP</b>	✓	High	M/L	Device Services, Security and API section
URI for Files - Parity for C Device Services SDK <b>Out</b>	✓	High	S	Implementation is clear. Owner: Felix. Assistance and reference impl from Elizabeth (Go)
Modelling & Relationships – Virtual Device Resources <b>Deprioritised by Eaton</b>	Now Out	Med	S	Limited to Device SDKs and Metadata. Owner: Eaton
Modelling & Relationships – Protocol Info in Device Definitions <b>Out</b>	✓ (UCR)	Med	S	UCR owner Oracle. ADR & Impl TBC
Modelling & Relationships – Device Functions <b>Out</b>	✓ (UCR)	Med	S	UCR owner Oracle. ADR & Impl TBC
Modelling & Relationships – Parent/Child Devices <b>Eaton WIP</b>	✓ (STRETCH)	Low	S	Limited to Metadata. Owner: Eaton. Progress via attending Devices WG. Does a UCR need to be updated here?
Modelling & Relationships – Device Metadata in Provision Watchers <b>Out</b>	✓ (STRETCH)	Low	S/M	Limited to Device SDKs and Metadata. Owner: Eaton
NanoMQ – Add security to our NanoMQ option <b>Out</b>	✓ (STRETCH)	Low	S	Continue communication with EMQ team

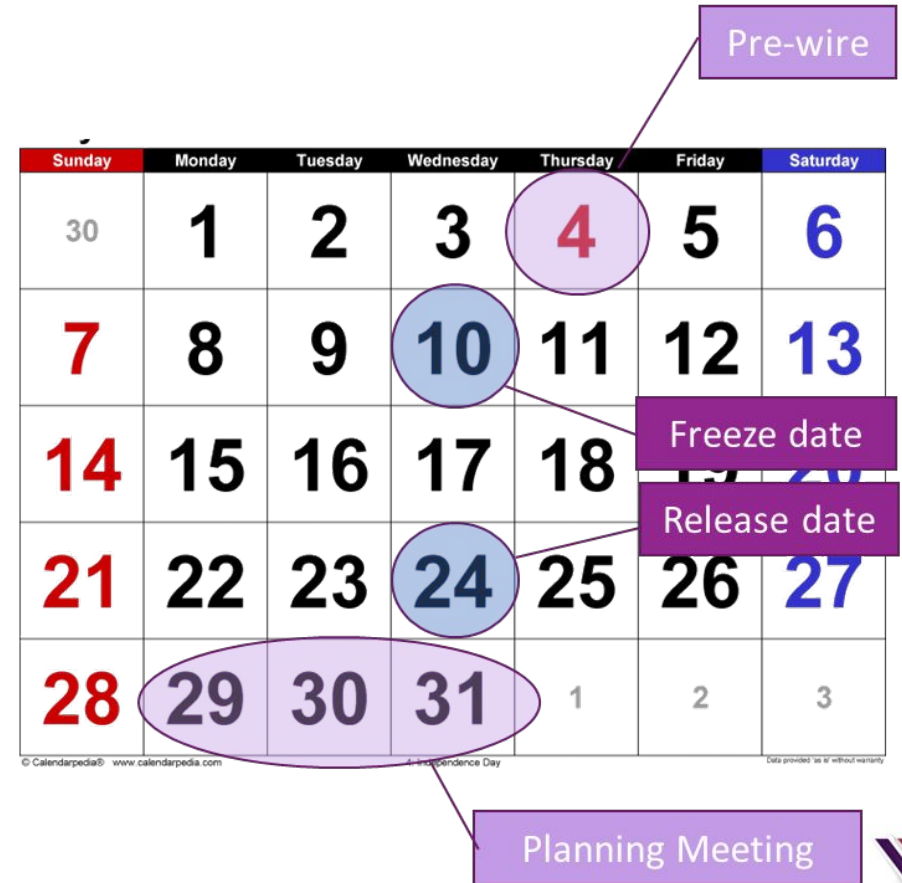


# 3.2 Odessa Release Planning

Example Calendar for Major/LTS Release



Example Calendar for Minor Release



# Outreach Update

- No news today



# EdgeX China Update

- No new info today

EdgeX China community channels:

- 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>





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Thank You