EDGEXFOUNDRY™

TSC Meeting

Jan 10, 2024

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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#

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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)
- 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

- Odessa Plan Summary
- Working Group Updates
- Miscellaneous

Odessa Planning Summary

Odessa Planning Summary

- Odessa will be EdgeX version 3.2 and so backwardly compatible with V3. No breaking changes
- Odessa will not be an LTS release. LTS will remain at version 3.1 and supported until Nov 2025
- Successful planning sessions - see next slide for big ticket items
- EdgeX marketing push for use cases and more adopters to come forward
- Melvin Sun and China dev team named "R" release as Rizhao (likely 2025)
- WG meetings refined to cover both Core and Device WGs in same session (Wed 4pm Pacific time)

Full details including 1-page summary document:

https://wiki.edgexfoundry.org/display/FA/Dec+4-6%2C+2023%3A+Odessa+Planning+Conference

Odessa Planning Summary

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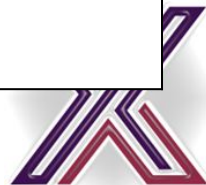
Work Group Updates

Chairs

Working Group Chair Updates

- Around the working groups:
  - **Product Manager** - Lenny Goodell
  - **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** - Bill Mahoney
  - **Outreach and Marketing**
    - **Certification** - Rodney Hess
    - **China Updates** - Melvin Sun
    - **LF Edge TAC** - James Butcher (acting)

Product Manager (01/10/24) - Odessa

[Cross Cutting Issues](#)

Icebox (1)
- Lite Builds (no security features) via Build Tags

Backlog (3)
- **URIs For Files**
  - C services - **TBD**

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

- **Go 1.22 (Feb'24) and Alpine 3.19**

In Progress (1)
- **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**

Done (0)
-

Applications WG Update (01/10/24) - Odessa

Newly Completed (<mark>8</mark>)

- [Performance] App service our of memory when the function process is slower than receiving events #1516
- [App LLRP] Replace use of Gorilla/Mux with Echo #251
- feat: [SDK] Document new MQTT Export Pre-connect capability #1326
- feat: [ASC] Add MQTT Export preconnect settings to profiles #633
- fix: Address CVE in Alpine base image in App Template #1515
- build: [SDK] Add ldflags to strip debug info from binary #1523
- build: [ASC] Add ldflags to strip debug info from binary #628
- docs: Update version in swagger docs #1535

Newly added (0)

WIP (<mark>1</mark>)

- Trigger Store & Forward retry after successful send #1526

Done for Odessa (<mark>8</mark>)

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

ICE BOX (<mark>0</mark>)

Next

- Trigger Store & Forward retry after successful send
- Store & Forward metric for queue size

eKuiper

- Released 1.12.0
  - https://github.com/lf-edge/ekuiper/releases/tag/1.12.0
- Released 1.12.3
  - https://github.com/lf-edge/ekuiper/releases/tag/1.12.3
- Now working on 1.13
  - https://github.com/lf-edge/ekuiper/milestone/23
  - Adding javaScript plugin for rules
    - We could do something similar for function in ASC

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

Next meeting **Jan 23rd, 2023 @ <mark>3:30pm AZ</mark>**

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 (Jan 10 2024)

- 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 - 1 failed case is under investigation now
  - Performance tests:
    - Non-Security **10** tests - All pass / Security **10** tests - All pass
- Core Progress
  - Create UCR for performance test harness [#1317](#) is ready for review/ whether needs to add ADR for it
  - Start working on adding core-keeper as an alternative for consul
- Note
  - Bryon officially left security WG and need to find a new maintainer, same as [edgex-helm repo](#)
  - Device WG and Core/QA WG are now combined, and will take turns every two weeks

Next meeting: Tuesday Jan 23 2024 @ 4 PM Pacific Time

Device Services WG Update (10 January 2024)

- **Triage issues for Odessa release**

- **C Device SDK Bug fixes**
  - Program crashed because edgex_autoimpl released before asynchronous task execution - [#494](#)
  - The slash of a string cannot be removed using json_serialize_to_string - [#492](#)

- **New CAN device service**

  - [Repository](#) moved to edgexfoundry github organization

- **New S7 device service**
  - Initial [PR](#) review in progress in the holding area

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 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

IOTech commercial connectors:

- Modbus in C
- BACnet in C
- OPC-UA in C
- BLE in C
- Zigbee in C
- GPS in C
- CAN in C (+ J1939 Extensions)
- CANOpen in C
- EtherCat in C
- EtherNet/IP in C
- Siemens S7 in C
- PROFINET in C
- WebSockets in Go
- MQTT in Go
- REST in Go

DevOps WG Update (1/10/2024)

Pipeline Related

- N/A

Other

- N/A

Next DevOps WG Meeting: Tuesday, February 13, 2024 @ 9AM PST

Release Czar (2024-1-10)

Napa (3.1)
- Release Date - 2023-11-15

Odessa (3.2)
- ~Spring 2024

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

Outreach Update

Surveys results as discussed during Odessa Planning Meeting:

https://docs.google.com/presentation/d/1dxYwYrq5yeRtV8I-QYfKDH6liBE_G3kw/edit?usp=sharing&ouid=101070661881756528287&rtpof=true&sd=true

Biweekly LF TAC meeting (ran just prior to this meeting)

- Two new LF Edge projects currently being proposed:
    - Project AI Edge (presentation today)
    - FIDO Device Onboarding (vote required)

EdgeX China Update

- EdgeX Worldwide university hackathon is complete with the overall winners announced
  - Announcement and blog coming
  - Winner is a group named BitSpace
  - Intel has sponsored Jiangxing Intelligence to work out first release of open-source code
    https://github.com/MrMichael/device-matter-go
- Alex Zhang (Intel) is interested in becoming an official EdgeX evangelist to help further promote the technology
  - Previously co-hosted 3 EdgeX+OpenVINO developer conferences
  - Instructed PRC Intel Innovator to create 90+ Edge AI tech blogs with 300k+ organic reads/likes
  - Organize opinion leaders from EdgeX, OpenYurt, OpenVINO, AliCloud to make a Hybrid AI solution video based on EdgeX+OpenVINO+OpenYurt+AliCloud

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Other Topics

OpenBao Update

- James acting as EdgeX contact for OpenBao
- https://wiki.lfedge.org/display/OH/OpenBao+%28Hashicorp+Vault+Fork+effort%29+support
  - Companies/Orgs publicly backing OpenBao effort include IBM (+NS1 an IBM company), IOTech, ZEDEDA, Viaccess-Orce (owned by Orange), WALLIX
  - Five companies is the gate-point at which LF / LF Edge would consider a project proposal
  - Would then require an official Technical Leadership Team (TSC)
  - Looking for volunteers for an EdgeX representative
- Initial meetings are weekly (Thursday 8am Pacific Time) restarting from Jan 11th (tomorrow)
- All info on the wiki:

  https://wiki.lfedge.org/display/OH/Hashicorp+Vault+Replacement+Feature+Design+Candidate

Thank You

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