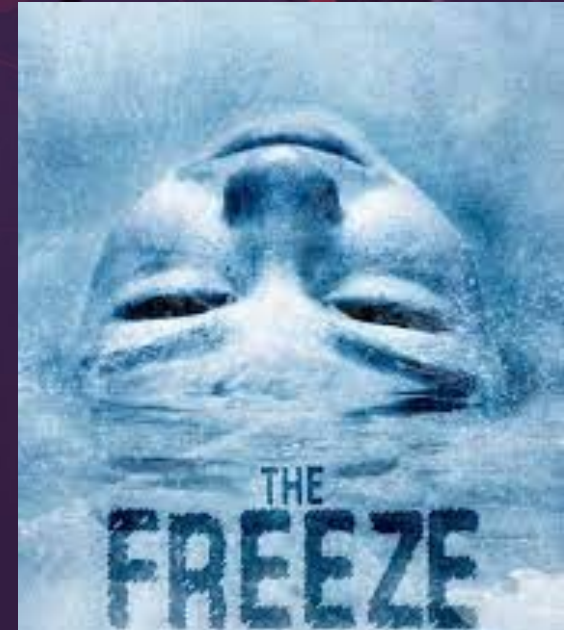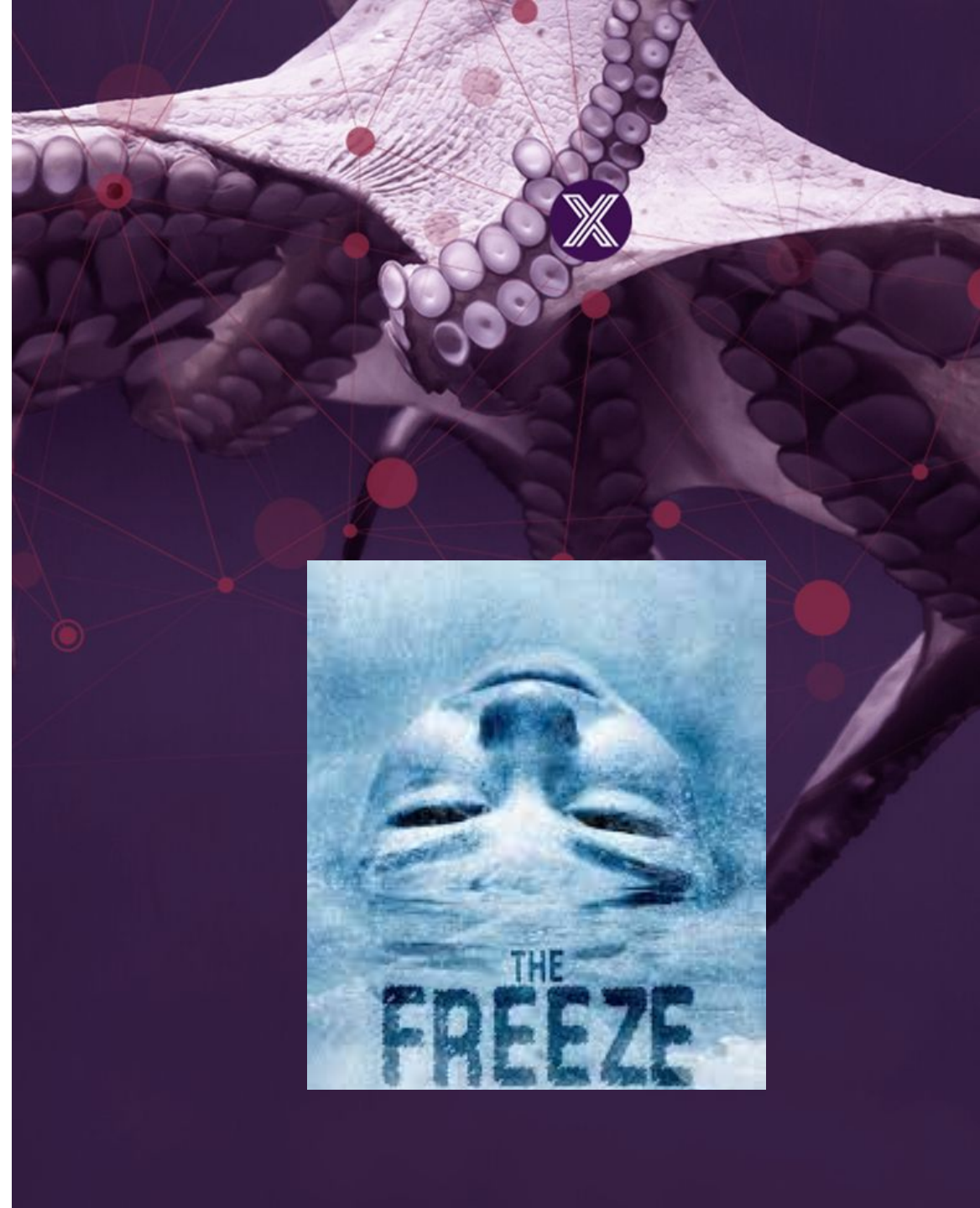# EDGE X FOUNDRY™

TSC Meeting

April 27th, 2022

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THE **LINUX** FOUNDATION

Meeting Logistics

Time: Wednesdays 8am PDT – 9am PDT

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

TSC – Members Present Today

Company	Name	Email	Position
IOTech	Iain Anderson	iain@iotechsys.com	Device Services WG Chair
Intel	Ernesto Ojeda	ernesto.ojeda@intel.com	Dev Ops WG Chair
IOTech	Jim White	jim@iotechsys.com	Outreach WG Chair
Intel	Bryon Nevis	bryon.nevis@intel.com	Security WG Chair
Intel	Lenny Goodell	leonard.goodell@intel.com	Applications & Analytics WG Chair
IOTech	James Butcher	james@iotechsys.com	Core/Test/QA WG Chair

Gavin Lu (VMWare), Tony Espy (Canonical), Melvin Sun (Intel)

Current quorum = 7 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 Award Nominees
- WG Updates
- ADR updates
- Miscellaneous
  - Library approvals
  - Levski Planning
  - Docs updates

Congratulations - EdgeX Award Nominees

Contribution Award

Huaqiao Zhang (VMWare)

Siggi Skulason (Canonical)

Iain Anderson (IOTech Systems)

Bill Mahoney (Intel)

Rodney Hess (Beechwoods Software)

Innovation Award

Farshid Tavakolizadeh (Canonical)

Tony Espy (Canonical)

Bryon Nevis & Jim Wang (Intel)

Emilio Reyes (Intel)

Siggi Skulason (Canonical)

Anthony Casagrande and Marc Fuller (Intel)

Jaron Bauers (Intel)

James Butcher (IOTech Systems)

TSC voting now, winners announced during the Levski Planning Meeting

Work Group Updates

Chairs

edgexfoundry.org | @edgexfoundry

Spring Schedule approved

- Per our new [planning schedule policy](#)
- Release on May 11th (Wednesday)

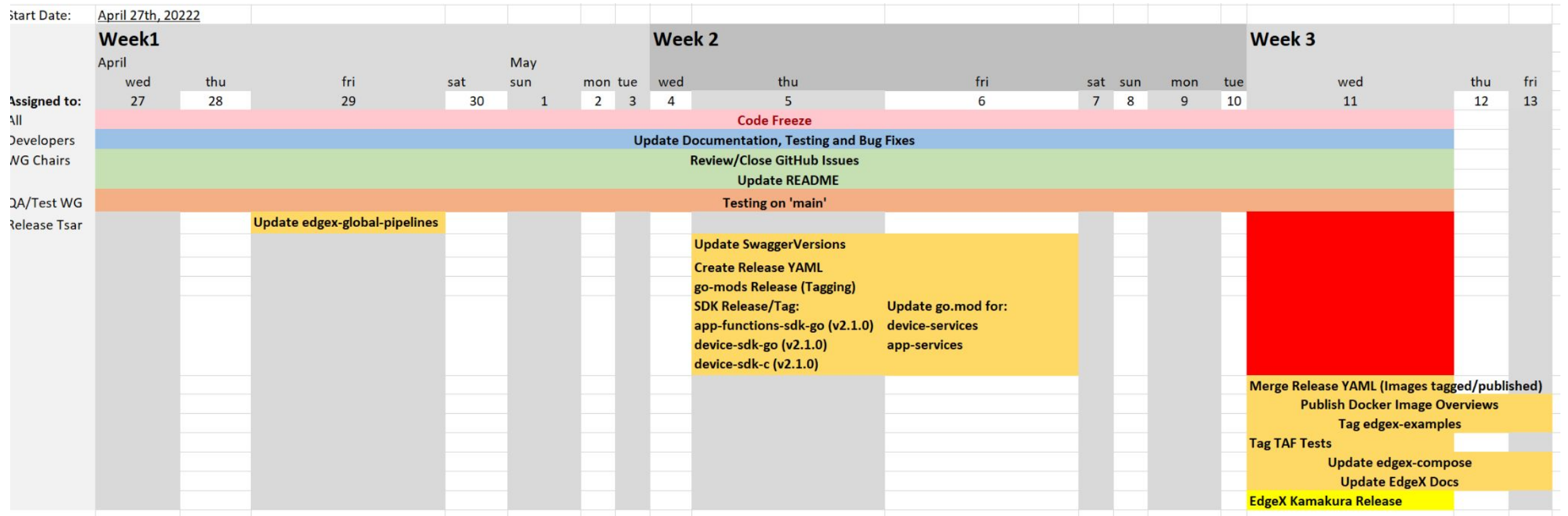| |
|---|
| Freeze: Apr 27th, Wednesday |
| Pre Wire: Apr 20th, Wednesday |
| Planning: May 16-19, Monday-Thursday |

Release Czar (2022-4-27)

Kamakura (2.2.0): In Freeze 🥶

- Update README.MD for released repositories ([Link](#))
- Limit changes to documentation updates, bug fixes
- WG Chairs, update boards accordingly

Pending:

Releases of GPIO and LLRP App / Device Services (2.1.0)

Start Date:	April 27th, 20222																
	Week1								**Week 2**								**Week 3**
	April					May											
	wed	thu		fri	sat	sun	mon	tue	wed	thu		fri	sat	sun	mon	tue	wed	thu	fri
Assigned to:	27	28		29	30	1	2	3	4	5		6	7	8	9	10	11	12	13
All									Code Freeze										
Developers									Update Documentation, Testing and Bug Fixes										
WG Chairs									Review/Close GitHub Issues										
									Update README										
QA/Test WG									Testing on 'main'										
Release Tsar			Update edgex-global-pipelines																

Release Tsar Week 2 (wed/thu):
- Update SwaggerVersions
- Create Release YAML
- go-mods Release (Tagging)
- SDK Release/Tag:
  app-functions-sdk-go (v2.1.0)
  device-sdk-go (v2.1.0)
  device-sdk-c (v2.1.0)
- Update go.mod for: device-services, app-services

Week 3:
- Merge Release YAML (Images tagged/published)
- Publish Docker Image Overviews
- Tag edgex-examples
- Tag TAF Tests
- Update edgex-compose
- Update EdgeX Docs
- EdgeX Kamakura Release

Working Group Chair Updates

- Around the horn
  - Product Manager - Lenny Goodell
  - Applications - Lenny Goodell
  - Core - James Butcher
  - Device Services - Iain Anderson
  - DevOps - Ernesto Ojeda
  - Release Czar - Bill Mahoney
  - Security - Bryon Nevis
  - PRC Updates
  - Outreach - Jim White
    - Certification - Rodney Hess
    - Marketing - Camilo Dennis
    - Vertical Solutions (and LF Edge TAC) - Henry Lau

Product Manager (04/27/22) - Kamakura

Icebox (0)

Backlog (1)

- **Generate security credential from Mosquitto broker**

In Progress (5)

- **Securing Consul with Access Token**
  - C SDK/Services - **WIP**

- **Request new Consul token on Auth failures**
  - C SDK/Services - **WIP**

- **Service Metrics**
  - go-mod-core-contracts - **DONE**
  - go-mod-bootstrap - **DONE**
  - Core Data - **DONE**
  - APP SDK **- DONE, DONE, WIP**
  - ASC **- DONE, WIP**
  - Go Device SDK - TBD
  - Go Device Services - TBD

- **Security: Implement CGO binary hardening**
  - edgex-go - DONE
  - Device SDK - DONE
  - App SDK - DONE
  - App Services - DONE except **LLRP**
  - Device Services - DONE except **LLRP**

- **Delay Start Services**
  - edgex-go - **DONE**
  - Compose - DONE
  - App Services - **DONE (except LLRP)**
  - Go Device Services - **DONE (except LLRP)**
  - C Device Services - **TBD**

Done (13)

- Add a "make lint" target
- Implement Generate/Inject passwords into Vault (C SDK/DS)
- CORS for all (secure and non-secure) (C SDK/DS)
- Secure Message Bus connection (C SDK/DS)
- Metrics ADR - Approved
- Use latest Redis (redigo) version (ignore bad v2.0.0 tag)
- Use of Registry when init Clients
- Secret Provider for All - C Device Services - DONE (COAP)
- Add service name to common response DTOs
- Switch to Go 1.17
- Update Swagger publishing to use version 2.2.0 (docs to point to 2.2.0)
- No ZMQ on Windows
- Secret store tokens for delayed-start services ADR

Applications WG Update (04/27/22)

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Completed (5)
- [App SDK] Enable Delayed Start Services #1089
- [ASC] Enable Delayed Start Services #401
- [SDK] Enable basic Metrics capability #1092
- [SDK] Add Metrics support for Custom Application Services #1084
- feat: Document new Custom Application Service Metrics capability #739
- [SDK] Add Service metrics collected by SDK #1085
- [ASC] Enable Metrics collection
- /api/v2/config doesn't return Custom Config sections #1035
- [SDK] Add transform for Metrics DTO to LineProtocol syntax #1086

WIP (1)
- [ASC] Add LineProtocol Metrics export profile #400

Backlog (4)
- https://github.com/orgs/edgexfoundry/projects/23

New (0)

ICE BOX (6)

Next
- LLRP Released for Jakarta
- LLRP updates for Kamakura
    - Delay Start, Metrics, etc.

eKuiper
- Working on 1.5 for release end of April
- Kamakura will use 1.4.4
    - 1.5.0 doesn't have anything new for EdgeX users

Project Board: https://github.com/orgs/edgexfoundry/projects/23
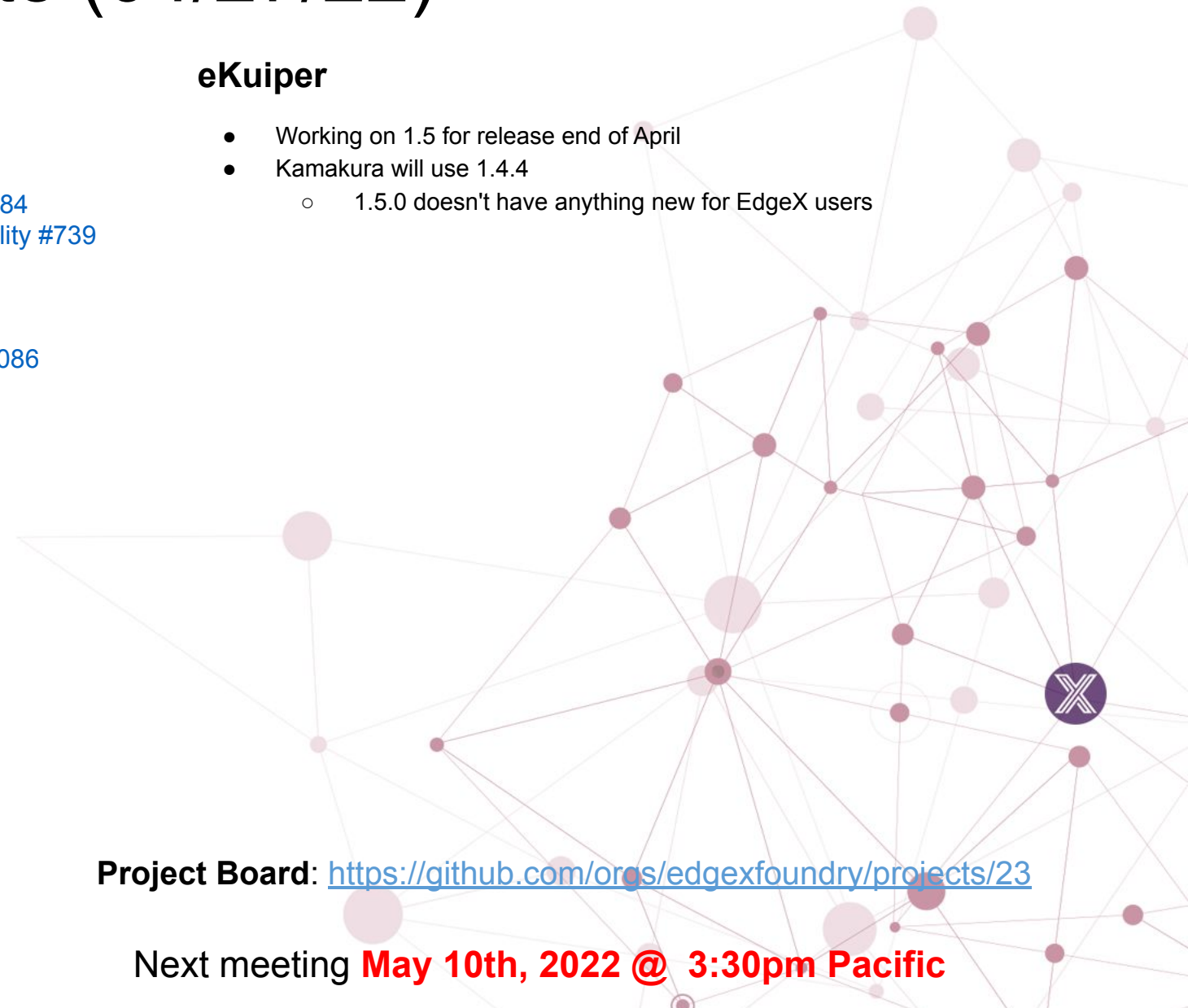
Next meeting **May 10th, 2022 @ 3:30pm Pacific**

Application Services - Kamakura

Functions (built into SDK)

- Add Tags
- Batch
- Compression (GZIP & ZLIB)
- Conversion (XML & JSON)
- PushToCore ** DEPRECATED**
- MarkAsPushed
- Encryption (AES256)
- Encryption (AES) ** DEPRECATED**
- 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

- Received Topic
- Context Storage
- 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

Core WG Snapshot (27 April 2022)

- Kamakura:
  - TAF
    - Functional tests: 548 - all passing
    - Integration tests: 45 - all passing
    - Performance tests: 10 - all passing

  - Conditional compilation of Spiffe has reduced footprint of Core Service images
  - Dynamic Device Profiles and Metrics both complete for Kamakura
    - Believe some TAF tests being added for profiles

Core Project Board Status

- 10 New Issues (-2)
- 0 Release Backlog (-4)
- 0 Bug Backlog (+0)
- 2 In Progress/QA (+2)
- 77 Done (+6)
- 2 Kamakura Stretch (+0)
- 20 Icebox (+7)

QA/Test Project Board Status

- 11 New Issues (+10)
- 1 Release Backlog (+0)
- 1 In Progress/QA (+1)
- 13 Done (+2)
- 0 Icebox (+0)

Next meeting: **Tomorrow** Thursday April 28 @ 8am Pacific Time

Device Services WG Update (27 Apr 2022)

New Services

- GPIO
- LLRP / RFID
- Camera (USB)
  - Requires approval of dependencies
- Camera (ONVIF)
  - Two remaining issues

C SDK / Services

- To be released separately

Documentation

- Some items missing / unclear : issue #598

Next meeting: May 9th

Device Services - current/coming (as of v2.1)

Open Source connectors (Current):

- Modbus (TCP/RTU) in Go
- Virtual Device in Go
- SNMP in Go
- MQTT in Go
- BACnet (IP & MSTP) in C (v1 only)
- ONVIF Cameras in Go
- REST in Go
- Grove in C
- CoAP in C
- LLRP / RFID in Go
- GPIO in Go

Open Source connectors (Future):

- UART in Go
- OPC-UA in Go

Commercial connectors (Current):

- BLE in C
- Zigbee in C
- GPS in C
- CAN in C
- CANOpen in C
- MEMS 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

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

DevOps WG Update (04-27-2022)

Pipeline Related

- [Complete] edgex-docs release automation.
- [Complete] git-semver functional testing before cutover.
- [In Progress] edgex-compose automation cleanup.

Other

- [In Progress] edgex-global-pipelines documentation

Next DevOps WG Meeting: Thursday, May 5, 2022 @ 9AM PST

Security WG Update

Next Meeting: Today, next

- Delayed start status update
  - configuration.toml updates rolled out in edgex-go
  - Conditional compilation updates working their way through
  - Plan in place to update snap

Security Project Board Status

- 11 New Issues (-3)
- 3 Release Backlog (n/c)
- 3 In Progress/QA (+1)
- 1 In review (-4)
- 45 Done (+a lot)

Secure Consul Project Board Status

- 0 In-review
- 0 In-progress
- 2 Phase 1 To-do
- 1 Phase 2 To-do
- 4 Phase 3 To-do

Updates on EdgeX China Project

- No updates this week.

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

Outreach WG (4/26/22)

Ready/Certification

- Rodney working on Wiki update
- Fixing wording around device profile use

Kamakura Release Workstream

- Blog post draft for review
- News release draft for review

Events

Return to events in the fall? - WG considering a plan

Tech Talks - mid-May through June

- Revising the old tech talks
- May 24 - Getting started (Jim)
- June 7 - Build an AS (Lenny)
- June 14 - Build a DS (IOTech)
- June 21 - Build a Device Profile w/ mention of Ready program (Jim)
- June 28 - Getting started with Snaps (Canonical)

Hackathon

- Looking at worldwide event - fall 2022
- WG considering a plan
- Some onsite element/ some virtual element
- Possibly expand to LF Edge

ADR review

ADR name and PR number	Status	owner	Work Group
North-south message bus / #656	Hopefully ready for TSC vote - pending items below	Jim White	Core
control plane events	Underway (not for this release cycle)	Jim White	Core
core data cache	Underway (not for this release cycle)	Jim White	Core

N/S review issues remaining

https://github.com/edgexfoundry/edgex-docs/pull/656#discussion_r858122956
https://github.com/edgexfoundry/edgex-docs/pull/656#discussion_r856643861

Document Issues to address this release

~~#719 S~~ [Slack refs]

~~#718 S~~ [App Config override bug]

~~#715 S~~ [walkthrough Json]

~~#702 M~~ [supported archs in getting started]

~~#692 M~~ [ADR0002 clean up]

#685 L [build/run ARM32]

#673 L [build/run outside of Docker]

#641 L [EdgeX w/ K8s]

#599 L [build/run on Windows]

~~#479 L~~ [CLI v2]

Nice to have

#643 M

#642 L

#598 L

#489 M (with #121, #21)

~~#392 S~~ [better docs on lastconnected and reported]

documenting native build and runs #685, #673, #599

Miscellaneous

- Alex Ullrich presenting on NATs @ 5/5 Core Working Group
- NetFoundry presenting on Ziti @ 5/11 Security Working Group
- Library approvals
  - see next slide
- Web Site security issues - Jim working with web site group and LF
  - Certificate expires
  - CSP
  - upgrade TLS protocol
  - securityheaders.com and ssllabs.com to both pass with an A grade
- Jakarta Security issue
  - Medium level - not rising to level of new dot release

New Libs

- github.com/vladimirvivien/go4vl - in USB device service
  - working with the Video for Linux 2 API for real-time video
  - 70 stars, 5 watching, 11 forks, 2 contributors
  - 2 tagged releases, updated 4 months ago
  - MIT License
  - Not imported by others yet
- github.com/xfrr/goffmpeg
  - FFMPEG wrapper written in GO which allows to obtain the progress
  - 592 stars, 10 watching, 112 forks, 50 contributors
  - 11 tagged releases, updated 2 years ago
  - MIT license
  - imported by 24 others
- github.com/IOTechSystems/onvif v0.0.2-0.20220301065030-7cf2dd734897 (for ONVIF service)
  - fork from: use-go/onvif
    - Simple management of onvif IP-devices cameras.
    - 160 stars, 6 watching, 84 forks, 7 contributors
    - 1 release, last updated 6 months ago
    - MIT License
    - Imported by 21 others

Levski planning/scoping

Pre-Wire: was completed on April 20th

See the Wiki for details, recording and results ([deck with possible scope](#))

Topics left to cover (see next slides)

- Snaps
- Miscellaneous

Planning Meeting: May 16-19

- Please register: https://bit.ly/LevskiPlanning
- [Planning deck](#) (with scope from the PreWire)

Snap Scope

In Scope

- Upgrade snaps base to core22 (built from Ubuntu 22.04 LTS)
- Guide on headless deployment of EdgeX on Ubuntu Core
- Add support for SPIFFE/SPIRE
- Standalone device-virtual snap
- "Under the hood work"
  - Set env vars via Snap CLI (today we map between env names to snap lowercase names)
  - Research – separate eKuiper into separate snap (eKuiper not actively maintaining their snap)

Miscellaneous Levski Scope

- GUI - automate testing
- Tool/script to create new device or application services
- Examples
  - Cloud export – more explicit for Azure, AWS, Google
  - Update cloud templates
  - RP4
- Docs
  - Any new sections or features?

Thank You