EDGEXFOUNDRY™

TSC Meeting

September 2, 2020

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http://bit.ly/HowToMockIt

How to Mock it?
September 22, 2020

Open Source Examples of Unit Tests for a Jenkins Shared Library

Lisa Ranjbar, Emilio Reyes, Ernesto Ojeda

DEVOPS
WORLD
by CloudBees

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:

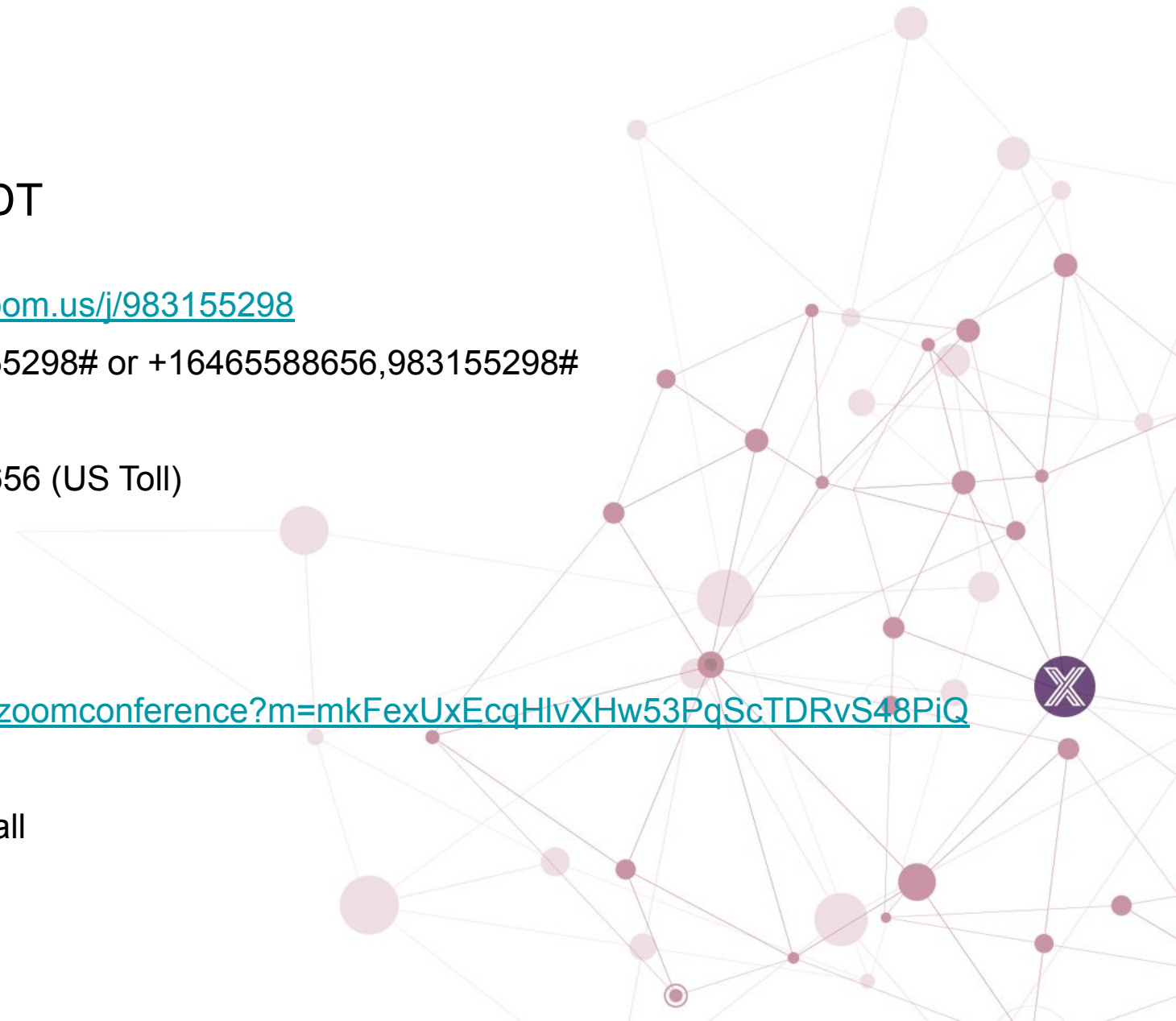Dial: +1 408 638 0968 (US Toll) or +1 646 558 8656 (US Toll)

+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	Keith Steele	keith@iotechsys.com	Outreach WG Chair
Kong	Colin Hutchinson	colin@konghq.com	Security WG Chair
Intel	Mike Johanson	michael.johanson@intel.com	Applications & Analytics WG Chair
IOTech	James Butcher	james@iotechsys.com	Test/QA WG Chair
IOTech	Jim White	jim@iotechsys.com	Core WG Chair

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

- WG Updates
- Go 1.15
- Infrastructure upgrades (Kong, Redis, Consul, Vault)
- November release planning meeting (formerly "F2F" meeting)
  - Held virtually
- Aug metrics
- Hanoi deliverables
- Upcoming Events (Dev Advocate)

Work Group Updates

Chairs

Working Group Chair Updates

- Around the horn
  - Product Manager - Lenny Goodell
  - Release Czar - Bill Mahoney
  - Applications - Mike Johanson
  - Device Services - Iain Anderson
  - Test/QA - James Butcher
  - DevOps - Ernesto Ojeda
  - Security - Colin Hutchinson
  - Outreach - Keith Steele
    - Certification - Rodney Hess
    - Marketing - Camilo Dennis
    - Vertical Solutions (and LF Edge TAC) - Henry Lau
  - Core/Supporting - Jim White

Product Manager (9/2/20)

Cross Cutting Issues

In Progress (7)

- V2 Implementations
  - **Core Data V2 Get Event API - TBD!**
  - **Device Services V2 APIs - WIP!**

- Generate/Inject random passwords into Vault
  - ADR complete, Implementations TBD

- Allow device services to be distributed to alternate hosts
  - **Overlay Network - Done!**
  - Service Mesh examples - TBD

- Startup Configuration/Env does nothing
  - **Go Device SDK - Done!**
  - **C Device SDK - TBD**
  - **Device Services - TBD next release**

- EdgeX Go services move to Go 1.15 - On-Hold
  - **Basic testing - Done!**

- Design metadata about the "gateway" or host platform (Tags)
  - **Add tags property to Event Models - Done!**
  - **Update DB layer to persist Tags - WIP**

- Configurable address for ListenAndServe
  - Bac-net-c DS remaining (TBD on next release).

Backlog (3)

- Message Bus from Device Service to App Services
- Secure Message Bus connection
- Secret Provider abstraction for all

Done (4)

- Refactored Compose files
- Remove Support Rules Engine (just from compose files)
- Remove Client Monitoring
- **Dockerfiles incorrectly uses ENTRYPOINT**

Icebox (6)

- V2 API Consumption
- Explore possible collapse of core command and metadata
- EdgeX Metrics Collection & Control Plane Event Handling
- Drop Logging Service completely (Revert WIP)
- Remove Mongo code (Revert WIP)
- Update config.Clients usage for new naming scheme
- ~~Multiple arch docker images support~~

Release Czar (8/26/20)

Device services released last week:

1. device-grove-c   (-> v1.2.1)
2. device-camera-go   (-> v1.1.2)
3. device-modbus-go   (-> v1.2.2)
4. device-mqtt-go   (-> v1.2.2)
5. device-random   (-> v1.2.2)
6. device-rest-go   (-> v1.1.2)
7. device-snmp-go   (-> v1.2.2)
8. device-virtual-go   (-> v1.2.3)

Hanoi Release - Code Freeze and Release Dates.

Applications WG Update (2-Sep-2020)

Completed
- TAF test case definitions for App Service V2 APIs

WIP
- Resolving various data races

Upcoming
- Tags Transform to add Tags to Events (Enables adding Gateway ID prior to Export)
- MQTT Trigger to allow cloud data driven actions
- TAF test implementation for App Service V2 API

App Working Group Meeting Schedule update:
- Next meeting Sep 3, 2020 @ 4:30PDT

Application Services

Functions (built into SDK)

Current/Complete:

- AES Encryption
- GZIP Compression
- ZLIB Compression
- MarkAsPushed
- PushToCore
- Device Name Filter
- Value Descriptor Filter
- Batch
- JSONLogic Filtering
- XML Conversion
- JSON Conversion
- MQTT(S) Export
- HTTP(S) POST Export

Features

- Store and Forward
- Web Server
- Configurable App Service
- Vault Integration for Secrets
- MQTT Event triggers (via go-mod-messaging)

Reference/Example App Services (Geneva)
(built on top of SDK)

- Azure IoT Hub   AVAILABLE

- Amazon IoT Core   AVAILABLE

- IBM Watson IoT
- Cloud Event Transformation   NEW!
- Secret Retrieval Example

Device Services WG Update (26-Aug-20)

In progress:

- Documentation updates
- Technical debt / bugfixes
- v2 API

Issue list:

- 23 in backlog (+1)
- 9 new issues (+6)

Next WG meeting September 14

Device Services - current/coming (as of 5/7/20)

Open Source connectors (Current):

- Modbus (TCP/RTU) in Go
- Virtual Device in Go
- SNMP in Go
- MQTT in Go
- BACnet (IP & MSTP) in Go
- ONVIF Cameras in Go
- REST in Go (NEW!)
- Grove in C

Open Source connectors (Future):
- Bluetooth in C (summer 2020)
- BACnet (IP & MSTP) in C (summer 2020)
- OPC-UA in C (summer 2020)

Commercial connectors (Current):

- File Exporter in C
- BLE in C
- Zigbee in C
- GPS in C
- CAN in C
- MEMS in C
- EtherCat in C
- Profinet in C

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

Commercial connectors (Future):

- EtherNet/IP in C (summer 2020)
- CanOpen in C (summer 2020)
- OPC-UA Pub/Sub in C (summer 2020)
- ONVIF in C (summer 2020)

QA/Test WG Update (1st September)

- Postman blackbox test - all tests passing
- TAF blackbox test - all tests passing
  - Fixed issues
    - Issue [#140](), [Implement Performance Metrics] Report
    - Issue [#142](), [Implement Performance Metrics] Ping API Latency
    - Issue [#143](), [Implement Performance Metrics] Measure event's exported time
    - Issue [#170](), fail to start scheduler and notifications with error "unable to register with Registry in allotted time"
    - Issue [#175](), remove unused configuration.toml from profile directory
  - Working issues
    - Performance summary script is complete, setting up the weekly metrics collection [taf-pipelines#38]()
    - Issue [#155](), add TAF Tests for App Service V2 endpoints - PR open
    - Issue [#137](), Modbus scalability test - some initial results, can support 300 Modbus devices on a Dell 5000 GW
- Other Business
  - Adding Haresh Kainth of Canonical to approved committers and project board - more Snap testing capability
  - In next weeks, would like to present perf test updates and device scalability testing from Modbus simulators

Postman Blackbox Test Cases

OS		DB	Total TCs No.	Failed TCs No. of Past Week	Failed TCs No. of This Week	Fixed TCs No.
x86_64 / CentOS	Non Security	Redis	1308	0	0	0
x86_64 / CentOS	Security	Redis	1338	0	0	0
arm64 / Ubuntu	Non Security	Redis	1308	0	0	0
arm64 / Ubuntu	Security	Redis	1338	0	0	0

TAF Functional Blackbox Test Cases

OS		DB	Total TCs No.	Failed TCs No. of Past Week	Failed TCs No. of This Week	Fixed TCs No.
x86_64 / CentOS	Non Security	Redis	52	0	0	0
x86_64 / CentOS	Security	Redis	52	0	0	0
arm64 / Ubuntu	Non Security	Redis	52	0	0	0
arm64 / Ubuntu	Security	Redis	52	0	0	0

TAF Integration Test Cases

Integration tests

OS		DB	Total TCs No.	Failed TCs No. of Past Week	Failed TCs No. of This Week	Fixed TCs No.
x86_64 / CentOS	Non Security	Redis	6	0	0	0
x86_64 / CentOS	Security	Redis	6	0	0	0
arm64 / Ubuntu	Non Security	Redis	6	0	0	0
arm64 / Ubuntu	Security	Redis	6	0	0	0

Compatibility tests

OS		DB	Total TCs No.	Failed TCs No. of Past Week	Failed TCs No. of This Week	Fixed TCs No.
x86_64 / CentOS	Security	Redis	12	0	0	0
arm64 / Ubuntu	Security	Redis	12	0	0	0

DevOps WG Update (09-02-2020)

Hanoi

Pipeline Enhancements

- [Complete] Update ENTRYPOINT across Dockerfiles (8 device services)
- #64 [Complete] SPIKE Research Functionality to rebuild artifacts.
- #43 [Complete] Rewrite sample-service to better facilitate testing of DevOps services.
- #229 [In Progress] Enable Snap build in edgex-go pipeline, remove legacy JJB jobs
- #234 [Backlog] edgex-cli build pipeline
- [Hold?] Go 1.15 pipeline changes. 1.15.1 released yesterday.
- Misc pipeline library tech debt and bug fixes.

Other

Tomorrow's 9/3/20 DevOps WG meeting is cancelled.

Next DevOps WG Call 9/10/20 @ 9:00AM PST

Security WG Update (9-2-2020)

- Hanoi release
  - Items in Good shape: the heavy lifts have begun
  - Items that are at risk: edgex-go/issues/1955
- Security WG meeting
  - Next Meeting: Today & Sept 9
- Security Board
  - 29 Done (+3)
  - 5 In Review (+1)
  - 1 In Progress (-2)
  - 11 Backlog (-1)
  - 1 New (+1)

Outreach WG Updates (9/2/20)

Certification Team

- Need volunteers: How-to guide when working with sample data

Vertical Solutions Team

- 8/25: Successful session with Tibco going over Project Air and their use of EdgeX

Marketing Team

- Web site progress
- Kicking off next week planning for 2nd topcoder challenge targeted for the fall

Core Working Group (9-1-2020)

- Current Status
  - Backlog: 8 (-6)   In progress: 5 (+2)   Done: 58 (+10)
  - Bugs: 5 (even)   Under review: 0 (-1)
- V2 API
  - Event query APIs
  - controllers and handlers for core and metadata
  - TAF testing
- Event UUID for V2
- Gateway ID: tags added to event and populated by apps function
- CLI Hanoi release defined
- Next call - 9/3/20 @ 10AM US/Central tomorrow
  - EdgeX UI Roadmapping
  - Kubernetes Strategy

Miscellaneous Issues/Topics

- Move to Go 1.15
  - Delayed as we wait for dot release (issue discovered with Linux file command and Go dot release forthcoming - this issue would break in security feature use)
- Should we bump infrastructure to the lastest or to the latest compatible minor release?

component	current version	lastest version
Vault	1.3.1	1.5.2
Kong	2.0.1	2.1
Redis	5.0.8	6.0.6
Consul	1.7.2	1.8.3 (need update to docker repos)

- Dependabot - Meeting Sept 16 @ 12:30 central time (See TSC calendar for details)
- https://github.com/edgexfoundry/edgex-docs/pull/204 - Legacy DS requirements doc
  - Needs TSC approval (or does it as it is legacy and not an ADR?).

Next week

Budget for LF Edge spends (due Sep 21 to LF)

General project objectives for 2021 (due Sep 21 to LF)

August Metrics

Slide deck available on TSC Wiki page

7 million container downloads

Contribution numbers off for August (typical vacation slowdown)

Ireland Release Planning

formerly F2F meeting

Ireland Release Planning Meeting

- Global pandemic still requires this event to be virtual at least one more time
- With almost all events now being held virtually or cancelled, timelines becomes a bit more flexible. Considerations:
  - Nov 3 Election day in the US
  - Nov 11 Veteran's day in the US??
  - Nov 26 Thanksgiving in the US
- Proposed dates
  - Architect's PreWire Meetings: Oct 13-14 (2 x ½ days)
  - Hanoi Freeze: Oct 28th
  - Ireland Planning Meeting: Nov 9-13th (5 x ½ days)
  - Hanoi Release: Nov 18

Proposed Schedule

Day 1: Business Topics and Architecture Tee up

Day 2: Cadence & Process Check, Architecture Topics

Day 3: Ireland Scoping Part 1

Day 4: Ireland and beyond Scoping Part 2 & Adopter reaction

Allow anyone that is adopting EdgeX to weigh in on priorities and roadmap

Day 5: lessons learned, training and "un-conference"

Conference Questions

- How best to address global community timezones?
  - Last time: 9-noon except one day that was held in the evening to accommodate APJ
- LF Edge matters
  - Do we set aside anytime for cross-project efforts?

Hanoi release deliverable tracking

Hanoi Progress - Good Progress/Looking to deliver

- Go 1.15
- V2 API core, DS, App Srv
- Allow DS to be distributed
- SSH tunnel how to guide
- Abstraction and pluggable mechanism to provide generation of secrets
- Design secure subsystem launch/bootstrap dependencies
- Design enablement of Vault PKI secret engine
- Address container security
- Vetting of 3rd party packages
- Design of HRT
- DevOps perf improvements
- Restructure of compose files - *stretch*
  - overrides/remove dupes
- Snap build improvements

- Roadmap for CLI
- Roadmap for UI
- Gateway identification
- Drools removal
- Kuiper enhancements
- LLRP RFID DS - *new*
- TAF blackbox testing
- Performance metrics testing
- Scalability (modbus) testing for user guidance - *stretch*
- Endorsement program
- Web site refresh
- Topcoder challenge, next steps

Hanoi Progress - TBD / delivery not assured

- Explore collapse of core command and metadata - *stretch*

- Msg bus between DS and appl srv - *impl stretch*

- Deployment / orchestration options
- Binary data for device writes (new)
- Bluetooth in C
- OPC-UA in C

Hanoi Progress - Delivery in jeopardy

- SMA - Service list fix

- ADR 0006 - metrics collection
- Secret Provider Abstraction
  - go-mod-secrets abstraction
- DS data filter design
- Protect the device fro harmful commands
- Bound checking design - *stretch*
- Overlay network how-to - *stretch*
- Service mesh how-to - *stretch*
- Secure Kong admin port with TLS

Hanoi Progress - Deferred to next release

- Remove Mongo
- Remove Logging

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Upcoming Events & Dev Advocate Update

Aaron's updates

edgexfoundry.org | @edgexfoundry

Call for Speakers for Co-located events

› ONES on October 1, 2020. Target speakers are service provider (e.g. telco, cable operator) or an end user organization. The submission deadline for this session is September 15 and the agenda will be finalized on September 18.

2. Edge Computing World on October 20, 2020. Target speakers is are current or potential consumers of code from any LF Edge project. These can be end user organizations or OEMs that build solutions for their own customer base. The submission deadline for this session is October 6 and the agenda will be finalized on October 9.

For more information visit the event wiki:
https://wiki.lfedge.org/display/LE/2020+Fall+Kickoff+Virtual+Event+Series

Upcoming External Events

› Open Source Summit Japan: 15-16 September, 2020 - Tokyo, Japan
  › CFP Closesd
  › https://events.linuxfoundation.org/open-source-summit-japan/program/cfp/
› **Open Networking & Edge Summit North America: 28-29 September, 2020 - Virtual**
  › **ONES Unconference Track**
› Open Source Summit Europe: 26-28 October, 2020 - Dublin, Ireland
  › CFP Closes July 26:
    https://events.linuxfoundation.org/open-source-summit-europe/program/cfp/
› KubeCon/CloudNativeCon North America: 17-20 November, 2020 - Boston, MA
› IoT Solutions World Congress: 11-13 May, 2021 - Barcelona, Spain

› Discussions around upcoming events occur in the LF Edge Outreach Committee
› Members may subscribe at: https://lists.lfedge.org/g/outreach-committee

LF Edge Webinar Series

Mark your calendar for upcoming webinars:

- State of the Edge
    - Thursday, September 17 - 9 am PT
    - More details to come
- Home Edge
    - Thursday, October 15 - 7:30 am PT
    - More details to come

Watch past webinars (**Akraino, EdgeX Foundry, Project EVE, LF Edge Taxonomy**) on-demand on the "On the Edge with LF Edge" playlist on Youtube - https://bit.ly/3kmUciC

›

Upcoming/Recent Project Releases and Whitepapers

Akraino R3

● August 2020- https://www.lfedge.org/projects/release-3/

Recent & Upcoming LF Edge Publications:

● (Recent) White Paper: Linux Foundation Edge: Taxonomy & Framework
● (Recent) White Paper: "Akraino Edge Stack APIs"
● (Recent) Solution Brief: "Edge Networking: An Introduction" (co-produced with LF Networking)
● (Upcoming) White Paper: Akraino APIs (September, before ONES), Part 2
  ›

Linux Foundation edX Course

› Business Considerations for Edge Computing: https://www.edx.org/course/business-considerations-for-edge-computing

› Official EdgeX Training at LF
› https://training.linuxfoundation.org/training/getting-started-with-edgex-foundry-lfd213/

Thank You