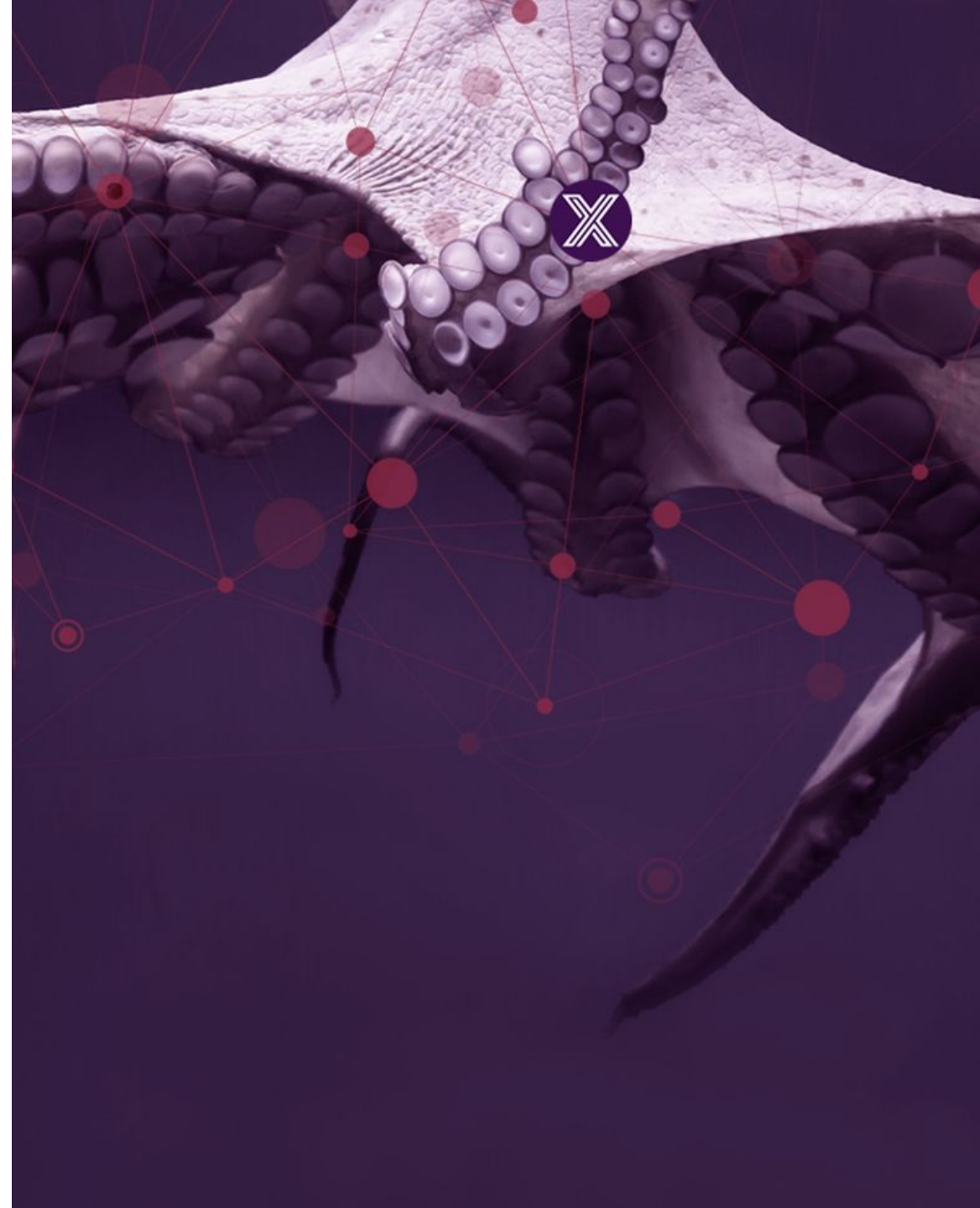


EDGE X FOUNDRY™

TSC Meeting

September 9, 2020

APJ Friendly time



Antitrust Policy Notice

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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)

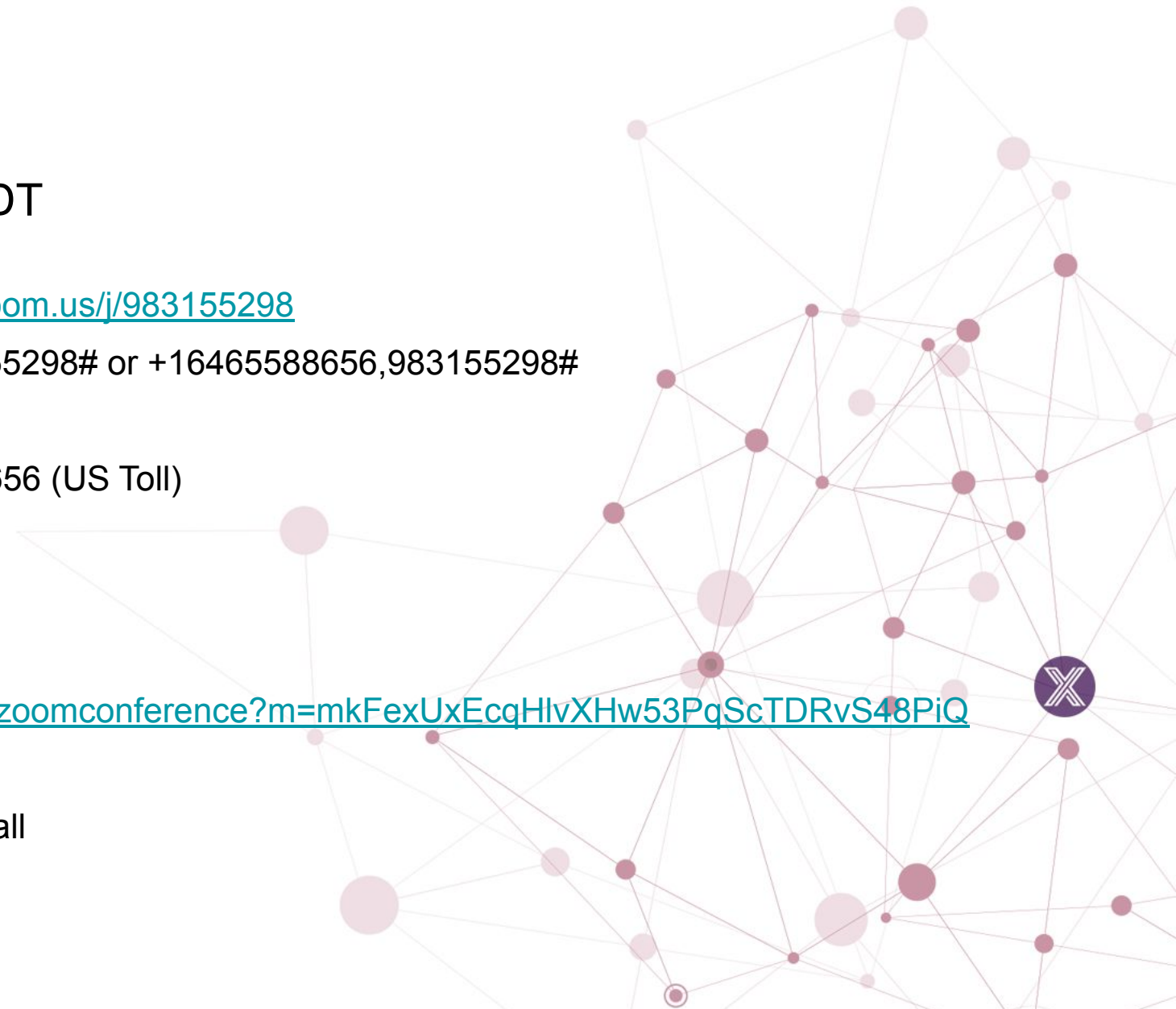
+1 855 880 1246 (US Toll Free)

+1 877 369 0926 (US Toll Free)

Meeting ID: 983 155 298

International numbers available: <https://zoom.us/join?j=983155298>

** TSC calls are recorded and added to Wiki post-call



TSC – Members Present Today

<u>Company</u>	<u>Name</u>	<u>Email</u>	<u>Position</u>
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 1.15.1 status
- Infrastructure upgrades (Kong, Redis, Consul, Vault)
- LF Edge Board Budget/Direction briefing
- Hanoi deliverables
- Upcoming Events (Dev Advocate)



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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 (9/9/20)

Cross Cutting Issues (<https://github.com/orgs/edgexfoundry/projects/35>)

In Progress (6, -1)

- V2 Implementations
 - Device Services V2 APIs - WIP!
 - **Custom Error mechanism - WIP!**
- Generate/Inject random passwords into Vault
 - ADR complete, Implementations TBD
- Allow device services to be distributed to alternate hosts
 - Service Mesh examples - TBD
- Startup Configuration/Env does nothing
 - C Device SDK - TBD
 - Device Services - TBD next release
- EdgeX Go services move to Go 1.15 - **On-Hold again??**
 - Basic testing - Done!
 - **Most of the many issues created**
 - **edgex-go - WIP!**
- Design metadata about the “gateway” or host platform (Tags)
 - **New AddTags Function for App Services - Done!**
 - **AddTags documentation - Done!**
 - **Device SDK C - TBD**

Backlog (1, -2)

- Message Bus from Device Service to App Services

Done (5, +1)

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

Icebox (8, +2)

- 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
- **Secure Message Bus connection**
- **Secret Provider abstraction for all**

Release Czar (9/9/20)

Hanoi Release -

Code Freeze: October 28th (7 weeks away)

Release Date: November 18th (10 weeks away)

Applications WG Update (9-Sep-2020)

Completed

- Asynchronous Background Publishing to MessageBus
- AddTags function and documentation
 - Adds configured tags to Events
 - This is our solution for “metadata about gateway”
- Race condition in Batch function
- Bug in V2 Metrics Response scheme (did not match swagger)
- Bug in Secrets request requiring requestId (swagger was also updated)
- Bug where ASC was not up-to-date with latest SDK for new V2 APIs
- Fixed links in App Services documentation (ASC Functions -> SDK details for functions)

WIP

- Race condition in MQTT Exports
- TAF test case for App Service V2 APIs

Upcoming

- MQTT Trigger to allow cloud data driven actions
- Go 1.15.1??

- Next meeting Sep 11th, 2020 @ 8:00am PDT

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
- Amazon IoT Core
- IBM Watson IoT
- Cloud Event Transformation
- Secret Retrieval Example

AVAILABLE

AVAILABLE

NEW!

Device Services WG Update (9-Sep-20)

No update this week

Issue list:

- 23 in backlog (=)
- 5 new issues (-4)

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 (8th September)

- Test with Security enabled are all currently failing:[developer-scripts#313](#) (Vault)
- Postman blackbox test
 - Working issue
 - Issue [#467](#), Core-Data: Add Tags field into Event related tests. (ready for review)
- TAF blackbox test
 - Fixed issues
 - Issue [#179](#), Performance metrics report need to generate, even fail to compare with threshold.
 - Issue [taf-common#18](#), add lib to collect system metrics for scalability test.
 - Issue [taf-pipelines#38](#), weekly run for performance metrics collection.
 - Working issues
 - Issue [#137](#), Modbus scalability test. (ready for review)
 - Issue [#155](#), add TAF Tests for App Service V2 endpoints. (blocked by the following app-sdk issues)
 - New issues
 - Issue [app-functions-sdk-go#469](#), secrets v2 API returns RequestID field needs a uuid.
 - Issue [app-functions-sdk-go#470](#), metrics v2 API returns unexpected schema.
 - Issue [app-functions-sdk-go#472](#), trigger v2 API always returns 200 when the request body contains device.
 - Issue [app-functions-sdk-go#473](#), trigger v2 API needs a description of when to return 400 and 422 status code.
 - Issue [app-functions-sdk-go#471](#), MQTT sending concurrency err.

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

TAF Performance test

Performance test Number Count

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	10	0	1	0
arm64 / Ubuntu	Non Security	Redis	10	0	0	0

Jenkins Job: [performance-test](#)

DevOps WG Update (09-09-2020)

Pipeline Enhancements

- [#229](#) [In Progress] Enable Snap build in edgex-go pipeline, remove legacy JJB jobs
- [#234](#) [In Progress] edgex-cli build pipeline
- [#238](#) [In Progress] Go 1.15 pipeline changes. Global library updated, just need to update individual repo Jenkinsfiles.

```
Test - 29s
✓ > Checks if running on a Unix-like node
✓ > Shell Script
✓ ▾ go version -- Shell Script
1 [2020-09-04T19:12:35.022Z] + go version
2 [2020-09-04T19:12:35.022Z] go version go1.15.1 linux/amd64
✓ > Shell Script
✓ > coverage-report -- Stash some files to be used later in the build
```

- [#238](#) -global-pipelines
- Misc pipeline library tech debt and bug fixes for git-semver.

Other

- 9/3/20 Sigul outage caused build failures and certain unsigned git tags to be pushed to Github.

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

Security WG Update (9-9-2020)

- Hanoi release
 - Items in Good shape: the heavy lifts have begun
 - Items that are at risk:
<https://github.com/edgexfoundry/edgex-docs/pull/217>
 - Security WG meeting
 - Next Meeting: Earlier Today & Sept 23 (No meeting Sept 16)
- Security Board
 - 33 Done (+4)
 - 5 In Review (0)
 - 1 In Progress (0)
 - 12 Backlog (+1)
 - 0 New (-1)

Outreach WG Updates (9/9/20)

Certification Team

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

Vertical Solutions Team

- look for upcoming adopter presentations soon

Marketing Team

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

Core Working Group (9-9-2020)

- Current Status

- Backlog: 10 (+2)

- Bugs: 5 (even)

- In progress: 5 (even)

- Under review: 1 (+1)

- Done: 64 (+6)

- V2 API

- Event query APIs

- Error handling

- controllers and handlers for core and metadata

- TAF testing

- Gateway ID: tags added to event and populated by apps function

- UI Roadmap established (working with VMWare team on review/scheduling)

- Kubernetes high level strategy/roadmap

- Setting up new sub-group meeting to discuss and work

- Next call - 9/9/20 @ 10AM US/Central tomorrow

Miscellaneous Issues/Topics

- Go 1.15.1 - still an issue for snapd. Wait for Go 1.15.2
- Approval to bump infrastructure to the latest?

component	current version	latest version
Vault	1.3.1	1.5.2 (issue - now 1.5.3??)
Kong	2.0.1	2.1 (issue - now 2.0.5)
Redis	5.0.8	6.0.6
Consul	1.7.2	1.8.3 (need update to docker repos)

- Going forward, infrastructure bumps handled by issue/PR by WG
- Conventional Commits - 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?).

Misc continued

- Push for review of Security PRs (PRs140& 217 docs; PRs 2574, 2659 edgex-go)
- New Device Service and DS examples coming
 - Jiangxing Intelligence & RFRain
 - I will have them put DS or example DS in holding first (per rules)
 - We'll let DS go through DS work group
 - Can I get a few volunteers to look at the examples (assume the same rigor is not applied to examples)

LF Edge Board Priorities/Budget Planning

Business/Marketing

- Continue Adopter Series to highlight project adoption and use
- Create and grow the Edge “market”: a list of companies providing EdgeX solutions, extensions, tools, services, connectors (north and south), analytics integration, and supporting hardware (sensors, devices, platforms, etc.).
- Find virtual venues to best address project awareness and marketing opportunities
- Develop virtual hackathon forums to grow developer adoption and awareness
- Get at least one fortune 1000 company to join EdgeX efforts – becoming one of the top 5 contributing companies to the project (replacing Dell Technologies)

Technical

- Deliver EdgeX Foundry 2.0 (revamped and improved APIs, more messaging support, stronger security, etc.)
- Improve usability – better documentation, increased examples, more tooling, and training.
- Facilitate Kubernetes (in crawl, walk, run manner – simple deployment files to start, but working up to things like Helm Charts and Operator support; eventually working toward high availability services that can utilize K8s capability).
- Facilitate distributed EdgeX Foundry; secured communications for services that live on different hosts, easy to configure service location, etc..
- Implement control plane metrics and eventing – EdgeX services provide metrics and alert notifications on its use of resources, critical events, status, etc.
- Operational guidance through testing – performance and scale testing resulting in guidance of platform needs, device connectivity constraints, service configuration, etc.

Collaboration Requested

- EdgeX Deployment/orchestration/management via Eve and Open Horizons – documented and demonstrated
- Continued support to Home Edge as embedded infrastructure
- Definition of common edge APIs through the Akraino project

Resource Requests

- Existing tooling to carry over
- EdgeX Website improvements specially to address endorsement program and ecosystem marketplace (estimate \$10K)
- Endorsement cloud tooling hosting for device profile editor and example library, and endorsement testing (estimate \$300-500/month)
- Bare metal ARM server for CI/CD and performance testing (estimate ???)
- UX expert consulting to address getting started guides and example code – how to improve onboarding (estimate \$8k)
- Slack Archive/FAQ creation implementation/tooling (estimate ???)



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APJ Topics

?? any opens ??



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Ireland Release Planning

formerly F2F meeting

Register NOW

- See Wiki for details:
<https://wiki.edgexfoundry.org/pages/viewpage.action?pageId=52330532>
- Registration sight now available - please register (its FREE)
 - <https://www.cvent.com/d/x7qsz4/4W?ct=50221cf5-5496-4c34-9ec0-3b52b1bf1204>

Ireland Release Planning Meeting

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

Evening time to accommodate APJ

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

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?



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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
- Secure message bus connection
- 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



Upcoming Events & Dev Advocate Update

Aaron's updates

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 Closed
 - › <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/>





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Thank You