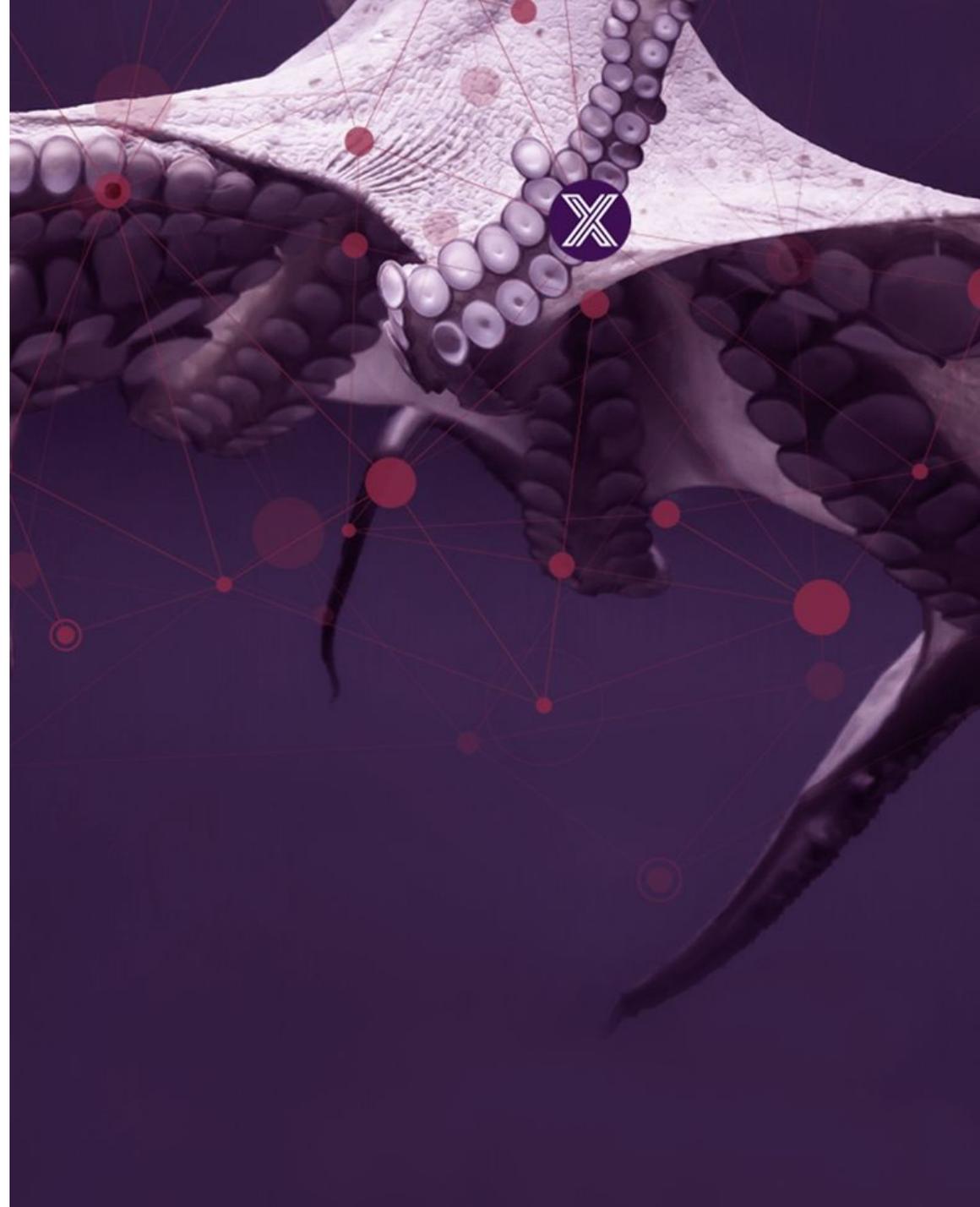


EDGE X FOUNDRY™

TSC Meeting

September 16, 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)

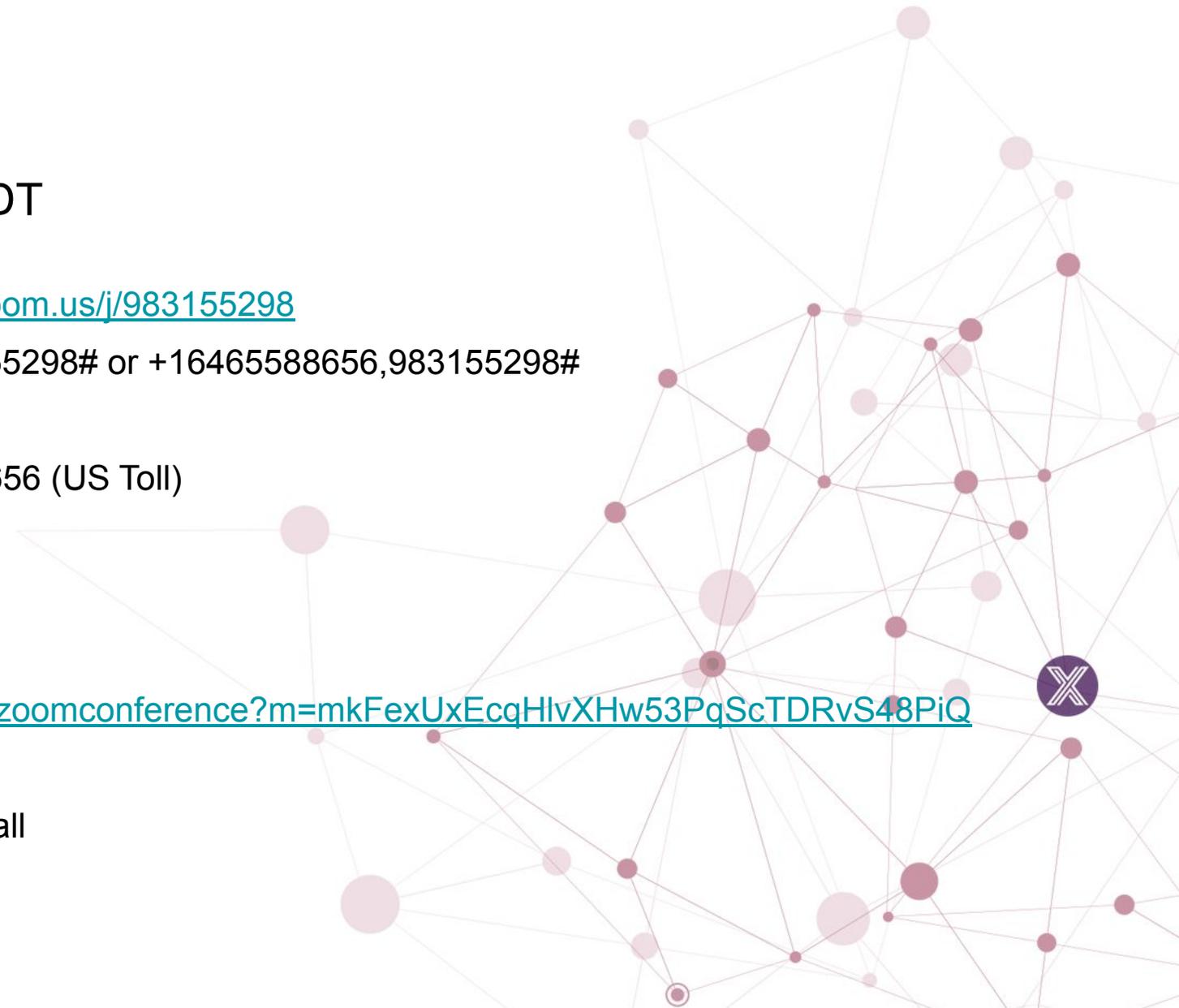
+1 855 880 1246 (US Toll Free)

+1 877 369 0926 (US Toll Free)

Meeting ID: 983 155 298

International numbers available: <https://zoom.us/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 1.15.2 status
- 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 (9/15/20)

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

In Progress (5, -1)

- V2 Implementations
 - Device Services V2 APIs - TBD
 - **Custom Error mechanism - DONE!**
 - **Device SDK Go - WIP**
 - **TAF testing App Services - WIP**
- Generate/Inject random passwords into Vault
 - ADR complete, Implementations TBD
- Allow device services to be distributed to alternate hosts
 - Service Mesh examples - TBD
- EdgeX Go services move to Go 1.15
 - Basic testing - Done!
 - **Most of the many issues created**
 - **edgex-go - Done!**
 - **go-mod's - Done!**
 - **App Service - WIP**
 - **Device Services - WIP**
- Design metadata about the “gateway” or host platform (Tags)
 - **Device SDK C - TBD**

Backlog (1, 0)

- Message Bus from Device Service to App Services

Done (6, +1)

- Refactored Compose files
- Remove Support Rules Engine (just from compose files)
- Remove Client Monitoring
- Dockerfiles incorrectly uses ENTRYPOINT
- Configurable address for ListenAndServe
- **Startup Configuration/Env does nothing**

Icebox (8, 0)

- 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 (9/16/20)

Hanoi Release -

Code Freeze: October 28th (6 weeks away)

Release Date: November 18th (9 weeks away)

Hanoi Release



Applications WG Update (16-Sep-2020)

Completed

- Fixed unit tests that fail when using Go 1.15 (that weren't failing in Go 1.14)
- Address unit test changes for Event DTO RequestID being optional
- Fix race condition in MQTT Exports
- **Mike completed his vacation (#999)**

WIP

- TAF test case for App Service V2 APIs
- Go 1.15.2
- Unit test data race for message bus

Upcoming

- MQTT Trigger to allow cloud data driven actions



- Next meeting Sep 17th, 2020 @ 4:30pm 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 (16-Sep-20)

V2 API: Now progressing on implementations

Issue list:

- 22 in backlog (-1)
- 2 new issues (-3)

BACnet service update in review

Next WG meeting September 21

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 (15th September)

- All tests passing again - Vault versioning issue corrected
 - Planning nightly tests kicked-off automatically when a developer-script PR lands, will coordinate with DevOps
- Postman blackbox test
 - Fixed issue
 - Issue [#467](#), Core-Data: Add Tags field into Event related tests
- TAF blackbox test
 - Fixed issues
 - Various V2 API fixes: [app-functions-sdk-go#469](#), [app-functions-sdk-go#470](#), [app-functions-sdk-go#472](#), [app-functions-sdk-go#473](#).
 - Issue [app-functions-sdk-go#471](#), MQTT concurrency error fixed so can now proceed with Modbus Scalability PR
 - 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)
 - Issue [app-functions-sdk-go#476](#), secrets V1/V2 API returns 503 Request timed out when `path` property is empty.
 - New issues
 - Issue [developer-script#316](#), Start app-service with error "unable to register with Registry in allotted time"
- A.O.B - Automated Snap testing status added to weekly QA/Test Meeting agenda

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	1309	0	0	0
x86_64 / CentOS	Security	Redis	1339	1338	0	1338
arm64 / Ubuntu	Non Security	Redis	1309	0	0	0
arm64 / Ubuntu	Security	Redis	1339	1338	0	1338

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	52	0	52
arm64 / Ubuntu	Non Security	Redis	52	0	0	0
arm64 / Ubuntu	Security	Redis	52	52	0	52

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	6	0	6
arm64 / Ubuntu	Non Security	Redis	6	0	0	0
arm64 / Ubuntu	Security	Redis	6	6	0	6

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

Jenkins Job: [performance-test](#)

DevOps WG Update (09-16-2020)

Pipeline Enhancements

- [#229](#) [Complete] Enable Snap build in edgex-go pipeline, remove legacy JJB jobs
- [#234](#) [In Progress] edgex-cli build pipeline
- [#195](#) [In Progress] Research auto-generation of documentation for edgex-global-pipelines
- [#244](#) [In Progress] GitHub Release automation
- Misc pipeline library tech debt and bug fixes for git-semver.

Next DevOps WG Call 9/17/20 @ 9:00AM PST

Security WG Update (9-16-2020)

- Hanoi release
 - Heavy lifts have begun and are progressing
 - Continue to push for feedback on [edgex-docs/pull/217](https://github.com/edgex-docs/pull/217)
- Previous Meeting: Sept 9
- Next Meeting: Sept 23 (No meeting Today)
- Security Board
 - 34 Done (+1)
 - 5 In Review (0)
 - 1 In Progress (0)
 - 12 Backlog (+1)
 - 1 New (+2)

Outreach WG Updates (9/16/20)

Certification Team

- Need volunteers: How-to guide when working with sample data
- Discussions on the workflow on how users join the Endorsement program

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 (9-15-2020)

- Current Status
 - Backlog: 9(-1)
 - Bugs: 5 (even)
 - In progress: 5 (even)
 - Under review: 4 (+3)
 - Done: 72(+8)
- V2 API
 - Event query APIs
 - Error handling
 - controllers and handlers for core and metadata
 - TAF testing
- UI - Hanoi work continues and prototyping device “wizard” under way (Ireland)
- CLI - work continues on Hanoi items
- Kubernetes high level strategy/roadmap - group meeting coming
- Next call - 9/16/20 @ 10AM US/Central tomorrow

Miscellaneous Issues/Topics

- Go 1.15.2 - a go.
- Conventional Commits - Meeting Sept 16 @ 12:30 central time (See TSC calendar for details)
- Push for review of Security PRs (PRs140& 217 docs; PRs 2574, 2659 edgex-go)
- <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?).
- Zoom policy changes
 - Starting September 27th Zoom is going to **enforce** all active accounts to have either a passcode or a waiting room for any active meetings
 - Brett's going to embed passcodes in calendar invites
 - Will probably be a bit disruptive for first weeks until people get the word and refresh their calendars

Miscellaneous Issues/Topics

- ADR for DS to AS comms. Who owns? Target delivery?
- MatterMost - a replacement for EdgeX that allows > 10000 messages
 - Offers Slack import
 - Trial by WG chairs channel??
- Architect's meeting Monday, Sept 21 @ noon central time
- **Call for Ireland...**
 - unconference topics
 - architecture topics
 - feature requests/tech debt you think should be addressed
 - etc.

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
- Chinese docs
- 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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Ireland Release Planning

formerly F2F meeting

Register NOW

- See Wiki for details:
<https://wiki.edgexfoundry.org/pages/viewpage.action?pageId=52330532>
- Initial agenda deck should be available sometime next week
- Registration sight now available - please register (its FREE)
 - <https://events.linuxfoundation.org/edgex-foundry-ireland-release-planning-conference-fall/>

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”



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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 (Kubernetes)
- Binary data for device writes (new)

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
- Bluetooth in C
- OPC-UA in C

Hanoi Progress - Deferred to next release

- Remove Mongo
- Remove Logging



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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

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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