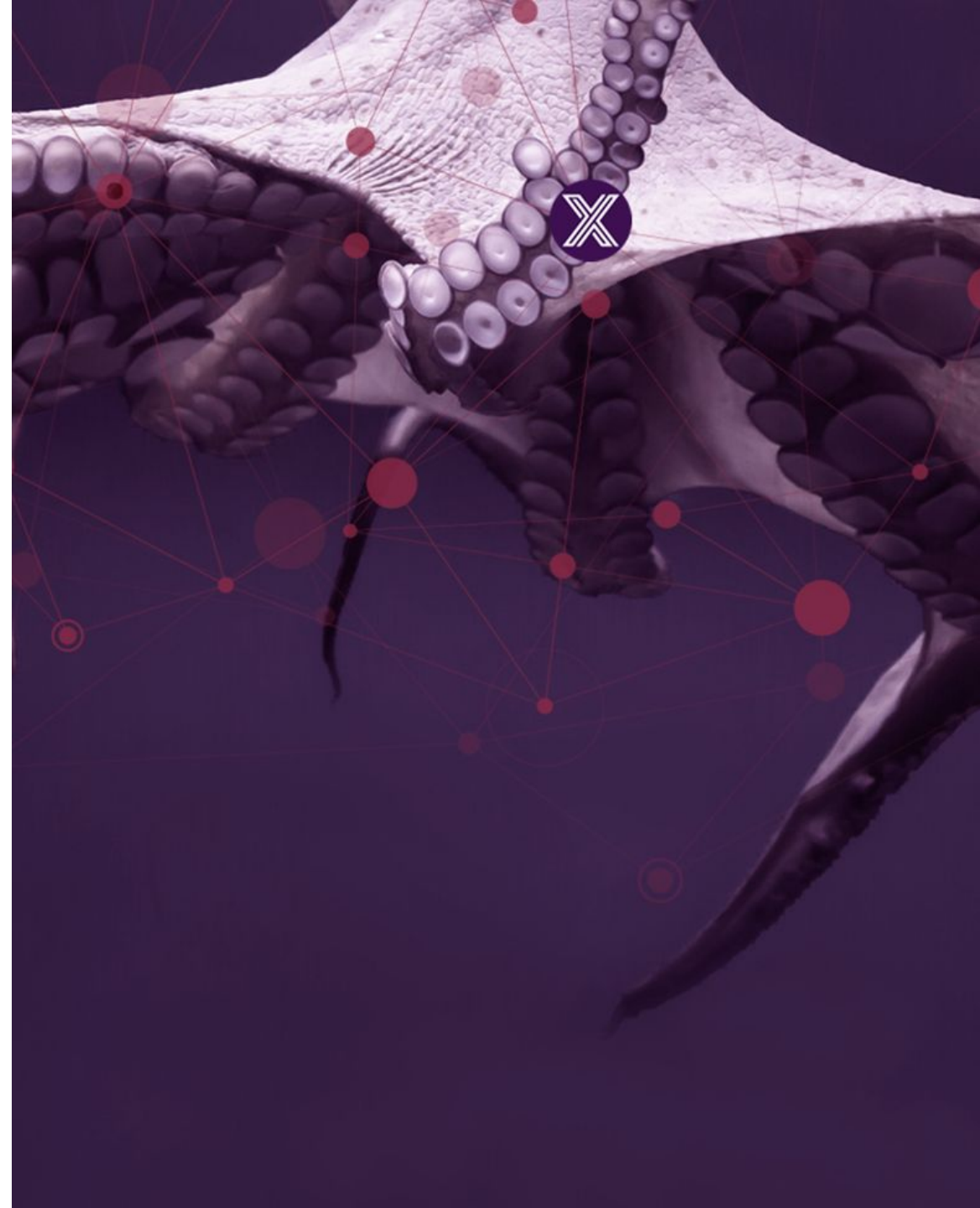


EDGE X FOUNDRY™

TSC Meeting

September 30, 2020



Antitrust Policy Notice

- › Linux Foundation meetings involve participation by industry competitors, and it is the intention of the Linux Foundation to conduct all of its activities in accordance with applicable antitrust and competition laws. It is therefore extremely important that attendees adhere to meeting agendas, and be aware of, and not participate in, any activities that are prohibited under applicable US state, federal or foreign antitrust and competition laws.
- › Examples of types of actions that are prohibited at Linux Foundation meetings and in connection with Linux Foundation activities are described in the Linux Foundation Antitrust Policy available at <http://www.linuxfoundation.org/antitrust-policy>. If you have questions about these matters, please contact your company counsel, or if you are a member of the Linux Foundation, feel free to contact Andrew Updegrave of the firm of Gesmer Updegrave LLP, which provides legal counsel to 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/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
- Rule for new committers
- Geneva Docs -> Hanoi Docs
- Ireland planning meetings
- Hanoi deliverables
- Upcoming Events (Dev Advocate)



EDGE X FOUNDRY™

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 (9/30/20)

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

In Progress (3, +1/-1)

- V2 Implementations
 - App Services APIs - Done
 - TAF testing App Services - Done
 - **Device SDK Go - WIP**
 - **Common APIs - Done**
 - Device Service APIs - WIP
 - **Core Data APIs - WIP**
 - AddEvent - Done
 - **Event by Id - Done**
 - Event queries - WIP
 - **Core MetaData APIs - WIP**
 - AddDeviceProfile - WIP
 - **GetDeviceProfile - WIP**
 - **TAF testing V2 APIs - WIP**
 - Core Data Event APIs - WIP
 - Core Metadata APIs - WIP
- **Conventional Commits for all**
 - **Core Service - WIP**
 - **App Services - Updates WIP**
 - **Device Services - WIP**
- Generate/Inject random passwords into Vault
 - ADR complete, **implementations TBD**

Backlog (1, 0)

- Message Bus from Device Service to App Services

Done (10, +2)

- 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
- EdgeX Go services move to Go 1.15
- Design metadata about the “gateway” or host platform (Tags)
- **Allow device services to be distributed to alternate hosts**
 - **SSH & Overlay network**
- **DependaBot for All**

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 (9/30/20)

ADR 007/010 Updates - Hanoi release artifact type definitions. (Snap / GitHub Release/Assets)

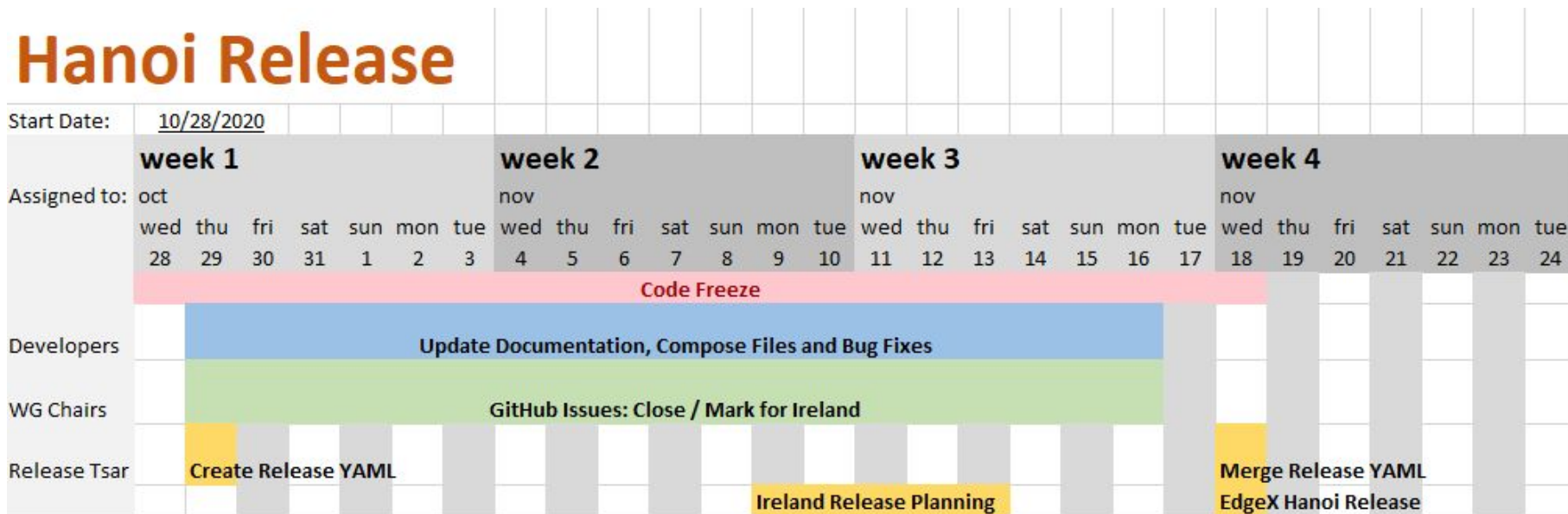
Release Activity:

9/21/2020 - device-bacnet-c - v1.2.0 released

Hanoi Release -

Code Freeze: October 28th (4 weeks away)

Release Date: November 18th (7 weeks away)



Applications WG Update (30-Sep-2020)

Completed

- Brainstorming session for Ireland topics
- Exposed RegistryClient on SDK

WIP

- Expose EdgeX Clients on SDK so they are accessible to custom endpoint handlers. (#446)

Upcoming

- Help Create ADR for Device Service to App Services via Message Bus (#241)

- Next meeting Oct 1st, 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 (30-Sep-20)

Device Services:

- GPIO, UART now in -holding

WIP: v2 API

- Go SDK: Common APIs done, Device APIs in progress
- C SDK: Common APIs in progress

Hanoi workpackage:

- 17 in backlog (=)
- 2 new issues (-2)

Next WG meeting October 5

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 C
- ONVIF Cameras in Go
- REST in Go (NEW!)
- Grove in C

Open Source connectors (Future):

- Bluetooth in C (summer 2020)
- OPC-UA in C (late 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 (29th September)

- Postman blackbox test - all tests passing
- TAF blackbox test - all tests passing
 - Fixed issues
 - Issue [developer-scripts#316](#), startup issue - Virtual Device bootstrapping
 - Issue [taf-common#20](#), needed curl inside taf-common docker container for V2 API concurrency test
 - Working issues
 - Issue [#107](#), Create Core Metadata V2 API Test Cases
 - Issue [#187](#), implement core data V2 API test cases
 - Issue [edgex-go#2702](#), Add Core Metadata V2 API Response Examples
 - Issue [device-sdk-go#555](#), Update V2 swagger file to consist with edgex-go
 - Issue [edgex-go#2727](#), examples need to be updated in V2 API swagger file
 - Issue [#137](#), Modbus scalability test - delayed by staff vacations
- Other Business
 - Snap progress - Haresh might be able to demo TAF on snap at next week's QA/Test meeting

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	0	0	0
arm64 / Ubuntu	Non Security	Redis	1309	0	0	0
arm64 / Ubuntu	Security	Redis	1339	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	69	0	0	0
x86_64 / CentOS	Security	Redis	69	0	0	0
arm64 / Ubuntu	Non Security	Redis	69	0	0	0
arm64 / Ubuntu	Security	Redis	69	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 (09-30-2020)

Pipeline Enhancements

- [#234](#) [Complete] Initial edgex-cli build pipeline
- [#252](#) [Watching] Build Snaps natively on Ubuntu
- [#78](#) [In Progress] Implement Functionality to rebuild artifacts during release/code freeze
- Update ADR10 and ADR07 to include changes for Snaps and GitHub releases
- [In Progress] Misc pipeline library tech debt and bug fixes for git-semver.

Next DevOps WG Call 10/01/20 @ 9:00AM PST

Security WG Update (Sept 30)

- Previous Meeting: Sept 23
- Next Meeting: After TSC and Oct 14 (skipping Oct 7)
- Security Board
 - 39 Done (+3)
 - 5 In Review (0)
 - 1 In Progress (0)
 - 10 Backlog (-1)
 - 1 New (0)

Outreach WG Updates (9/29/20)

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

- EdgeX Adopter Series: Intel - Next week, Tue Oct 6th 8AM Pacific
 - Register here: <https://bit.ly/2FNYS1z> or go to the EdgeX website to register

Marketing Team

- ONEs this week with EdgeX demo
- Evaluating changing Marketing meeting time from Tue 8AM Pacific to 9AM Pacific
 - Current cadence: Every other week. Next meeting Tue Oct 13th
- Kicked off planning for 2nd EdgeX topcoder challenge

Core Working Group (9-30-2020)

- Current Status
 - Backlog: 12(+4)
 - Bugs: 14 (+5)
 - In progress: 2 (-2)
 - Under review: 4 (+4)
 - Done: 91(+11)
- V2 API
 - Core data APIs
- Kubernetes Project Group - kicked off this Monday
 - Goals for Hanoi are in the minutes/recording on the Wiki
- For Hanoi, device wizard being looked at for UI
 - Document out for use case review
- Next call - 9/29/20 @ 10AM US/Central tomorrow
 - Conventional Commits final list review
 - Ireland planning/scope list review

Miscellaneous Issues/Topics

- Conventional Commits
 - WG chairs have lead for their repositories
- Security PRs need chopped off
 - PR 2574 - encryption of vault master key (few more comments from Ian/Lenny)
 - Docs ADR 140 - OCI container
 - Docc ADR 217 - secrets config util - appears approved
- Request for procedure change
 - Currently: takes requester TSC member and 2 other TSC to approve new committer
 - Requested: TSC member has unilateral rights to request committer without further TSC member approval
- Geneva Docs are in (I think)
 - Call to cut tag, branch, allow Hanoi 1.3 docs

Ireland Planning Needs

- For pre-wire: architectural issues to *possibly* address
- Business topics
- unconference topics (training, demos, new ideas, etc.)
- WG leads to complete their scoping lists (what's under consideration)
- How to best get adopter / user feedback



EDGE X FOUNDRY™

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”



EDGE X FOUNDRY™

Hanoi release deliverable tracking

Hanoi Progress - Good Progress/Looking to deliver

- Go 1.15
- V2 API core data, 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
- Overlay network how-to - *stretch*

Hanoi Progress - TBD / delivery not assured

- V2 API for core data (other core services a stretch)
- Msg bus between DS and appl srv (design only) - *impl stretch*
- Deployment / orchestration options (Kubernetes)

Hanoi Progress - Delivery in jeopardy

- Explore collapse of core command and metadata - *stretch*
- 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*
- Service mesh how-to - *stretch*
- Secure Kong admin port with TLS
- Bluetooth in C
- OPC-UA in C
- Binary data for device writes (new)

Hanoi Progress - Deferred to next release

- Remove Mongo
- Remove Logging



EDGE X FOUNDRY™

Upcoming Events & Dev Advocate Update

Aaron's updates

Call for Speakers for Co-located events

1. [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.
2. [ONES](#) on October 1, 2020 (tomorrow). Target speakers are service providers (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.

For more information visit the event wiki:

<https://wiki.lfedge.org/display/LE/2020+Fall+Kickoff+Virtual+Event+Series>



Upcoming External Events

- › [DevOps World](#): 22-24 September, 2020 - Virtual
 - › Featuring presentations about EdgeX Foundry (Lisa, Ernesto, Emilio)
 - › Anyone able to see the videos?
- › [Open Networking & Edge Summit North America](#): 28-30 September, 2020 - Virtual
 - › Demo pavilion and multiple sessions across LF Edge Projects
- › [Edge Computing World](#): 12-15 October, 2020 - Virtual
- › [Open Source Summit Europe](#): 26-29 October, 2020 - Virtual
- › [KubeCon/CloudNativeCon North America](#): 17-20 November, 2020 - Virtual
- › [Open Source Summit Japan](#): 2-4 December, 2020 - Virtual
- › [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

- › State of the Edge
 - › [State of the Edge: Exploring the Intersection of IoT, AI, 5G and Edge Computing](#)
 - › Scheduled for **Thursday, September 17 @ 9am PT**
 - › **RSVP at https://zoom.us/webinar/register/WN_4rt-MmP1RI6Vkzn3ULpiAA**
- › Akraino Edge Stack
 - › [Your Path to Edge Computing with Akraino Edge Stack](#)
 - › Held Thursday, April 2
 - › On-demand recording available at: https://zoom.us/webinar/register/WN_Zjdo4-5fTQSlqH7pL8iHrQ
- › EdgeX Foundry
 - › [EdgeX Foundry 101: Intro, Roadmap and Use Cases](#)
 - › Held Thursday, April 23
 - › On-demand recording available at: https://zoom.us/webinar/register/4515850788014/WN_xCd6YPjEQrCwLiFhBWPkug
- › Project EVE
 - › [Building the “Android of the IoT Edge”](#)
 - › Held Friday, May 29
 - › On-demand recording available at: https://zoom.us/webinar/register/6415888722675/WN_35oZJ3hrQE69snMaiJUTPg
- › White Paper
 - › Held Thursday, July 9 - [Demystifying the Edge with the new LF Edge Taxonomy and Framework](#)
 - › On-demand recording available at: https://zoom.us/webinar/register/WN_icv5h6wFTcuw9O0xvMpgLw
- › Fledge
 - › Held Thursday, August 13 - [How Google, OSIssoft, FLIR and Dianomic use Fledge to implement Industrial 4.0](#)
 - › On-demand recording available at: <https://www.youtube.com/watch?v=6JXNv3AJWog>

Upcoming Project Events

› [EdgeX Challenge Shanghai 2020](#)

- › Launch Date: July 3rd, 2020 / End Date: October, 2020
- › Location: Shanghai + Online
- › Organizer: Linux Foundation APAC and [Science & Technology Commission \(STCSM\) of Shanghai Municipal Government](#)
- › Sponsors: Intel, VMware, InnoSpace, Dell Technologies, Thundersoft
- › Supporting Organizations: CCFA (China Chain Store & Franchise Association), Tencent, IOTech
- › Tracks:
 - › Commercial (Retail, Hospitality, Banking, Education, etc.)
 - › Using EdgeX, based on IOT, AI and data analysis technologies, build innovative applications related to consumer, merchandise, and store.
 - › Use EdgeX to build multi-sensor correlated IoT applications.
 - › Use EdgeX to build applications beneficial to defeat COVID-19.
 - › Combine EdgeX with 5G, blockchain or service robot to build innovative applications
 - › Industrial (Factories, Power, Oil/Gas, Utilities)
 - › For the multi-edge node scenario, build an SDN + containerized IT solution based on EdgeX
 - › In discrete or process (with lower latency requirements) manufacturing, use EdgeX to achieve low latency fault detection and response on the production line
 - › In Discrete Manufacturing, use EdgeX to Detect Product Defects Online
 - › Using EdgeX to collect data, proceed with energy management of electric/gas/coal/oil, to improve energy efficiency. (Such as: building a thermodynamic model, completing heat meter data collection and automatic valve opening control to optimize heating efficiency)
 - › Using EdgeX to realize remote unmanned monitoring of multiple data sources and automatic control of the on-site environment.

Upcoming Project Events

- › [Akraino Technical Fall Meeting](#): 23 - 24, September, 2020 - Virtual
 - › Agenda: <https://wiki.akraino.org/pages/viewpage.action?pageId=28972052>
 - › Registration: <https://www.cvent.com/d/p7qztk/4W?ct=50221cf5-5496-4c34-9ec0-3b52b1bf1204>
 - › Subscribe to <https://lists.akraino.org/g/tsc> for the latest information
 - › Just finished, video will be posted soon

- › [EdgeX Foundry Ireland Release / Fall 2020 - Release Planning Conference - Virtual](#)
 - › Dates: 9 - 13, November, 2020
 - › Agenda + Registration: Coming Soon
 - › Subscribe to <https://lists.edgexfoundry.org/g/EdgeX-TSC> for the latest information



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/>





EDGE X FOUNDRY™

Thank You