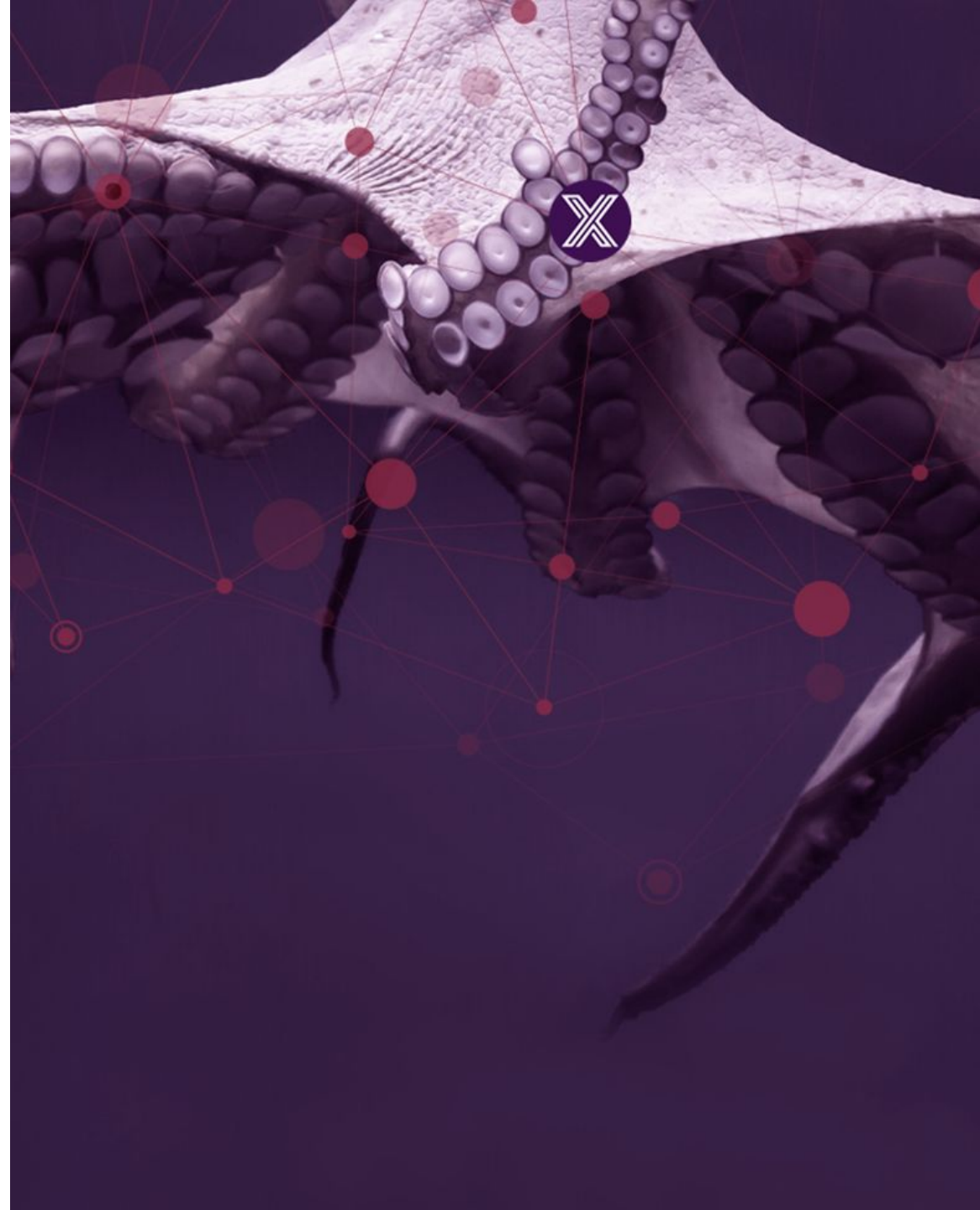


EDGE X FOUNDRY™

TSC Meeting

February 27, 2019



LF Antitrust Policy Notice

EdgeX Foundry 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 EdgeX Foundry 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 Updegrove of the firm of Gesmer Updegrove LLP, which provides legal counsel to the Linux Foundation.

Meeting Logistics

Time: February 27, 2019 7am PST – 8am PST

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)

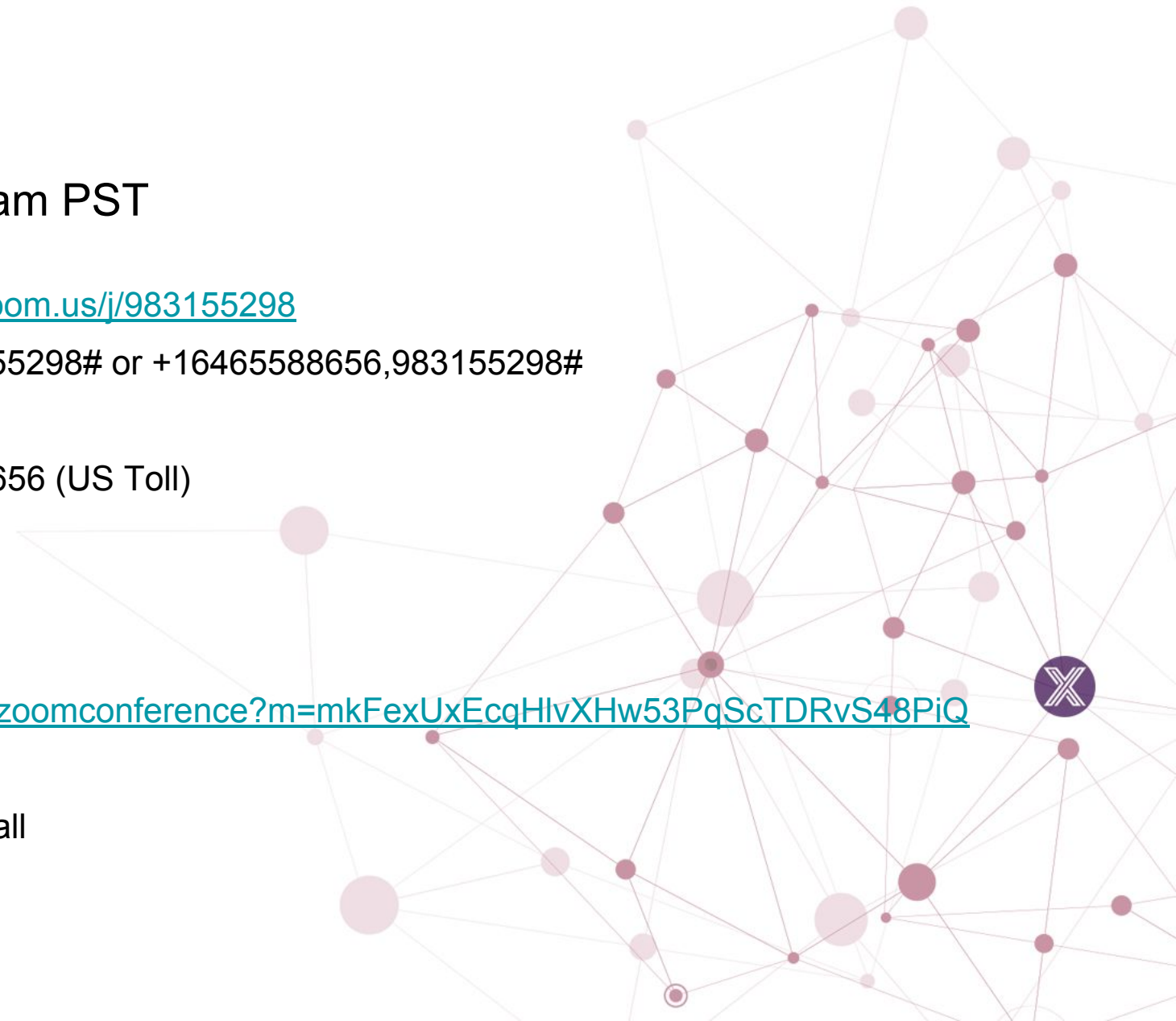
+1 855 880 1246 (US Toll Free)

+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>
IOTech	Andy Foster	andy@iotechsys.com
ForgeRock	David Ferriera	david.ferriera@forgerock.com
Mainflux	Drasko Draskovic	drasko@mainflux.com
Intel	James Gregg	james.r.gregg@intel.com
Mainflux	Janko Isidorovic	janko@mainflux.com
Dell	Jim White (TSC Vice Chair)	james.white2@dell.com
IOTech	Keith Steele (TSC Chair)	keith@iotechsys.com
Samsung	Moonki Hong	moonki1.hong@samsung.com
Dell	Randy Thompson	Randy.T@dell.com
IOTech	Steve Osselton	steve@iotechsys.com
Canonical	Tony Espy	espy@canonical.com
Dell	Trevor Conn	Trevor.Conn@dell.com

Current quorum = 6 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
- Application WG votes needed (as part of WG update)
 - InfluxDB needs/removal
 - Move functions SDK to EdgeX Org
 - CBOR/Binary support - pending Toby work; help to update export services
- LTS review and vote
 - DevOps WG approved
- Edinburgh deliverables, in-jeopardy, & misses
- Next TSC F2F
- Upcoming Events
- AOB



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Work Group Updates

Chairs

Working Group Chair Updates

- Around the horn
 - Core/Supporting - Trevor
 - Applications - Janko
 - Device Services - Steve
 - Test/QA - Andy
 - DevOps - James
 - Security - David
 - System Management - Jim
 - Certification - Randy
 - Vertical Solutions - Moonki
 - Developer Outreach - Michael


Core Working Group (27-Feb-19) Slide 1


- Registry Abstraction Usage PR 1133 (Intel)
- Newly merged go-mod-core-contracts PR #15
 - Facilitates the following within Core Services
 - Multiple protocol support per device, no longer one unique addressable (issue 1101)
 - Device SDK integration with “AutoEvents” (issue 946)
 - These are auto-generated events from devices themselves, akin to an internal scheduler
- Follow-on work within edgex-go for issues 1101 and 946 complete
 - PR will be created this morning
 - Several endpoints within metadata have been removed
 - Request/Response schemas are different.
 - RAML has been updated
 - Blackbox test issue #169 related to the above
 - Cloud has volunteered a resource from his team to work on this
- Next, need to remove legacy metadata/scheduler endpoints

Core Working Group (27-Feb-19) Slide 2

- Would like to remove InfluxDB support from export-distro
 - See email from yesterday sent to edgex-devel
 - Very easy to do
 - List of deps <https://github.com/influxdata/influxdb/blob/ef77e72f435b71b1ad6da7d6a6a4c4a262439379/Godeps>

Tree: ef77e72f43 **influxdb** / Godeps

 gshif chore: update revisions of flux and influxql (#10443)

11 contributors 

50 lines (49 sloc) | 3.23 KB

```
1 collectd.org 2ce144541b8903101fb8f1483cc0497a68798122
2 github.com/BurntSushi/toml a368813c5e648fee92e5f6c30e3944ff9d5e8895
3 github.com/beorn7/perks 4c0e84591b9aa9e6dcfdf3e020114cd81f89d5f9
4 github.com/bmizerany/pat 6226ea591a40176dd3ff9cd8eff81ed6ca721a00
5 github.com/boltdb/bolt 2f1ce7a837dcb8da3ec595b1dac9d0632f0f99e8
```

Applications WG Update (26-Feb-19)

Work on the Application Function SDK is progressing according to plan.

- App Functions SDK Go Rev 2 #19 - This pull request includes:
 - Simple HTTP POST (#16)
 - Switching to TOML config format and adding support for registry (#11, #18)
 - Adding/Updating simple examples of SDK Usage (#6)
 - Filter by Device ID and Value Descriptor (#2, #17)
 - Format EdgeX Event as JSON and XML (#3, and #4)
 - Pulled in core-contracts
 - Initial Logging support
- Update diction for describing transforms in SDK #20
 - Read me fix
- More logging #21
 - Logging
- Current Development
 - Message bus abstraction
 - Integration with SMA

Contribution Process - <https://wiki.edgexfoundry.org/display/FA/Contributor%27s+Process>

Moving from edgexfoundry-holding to edgexfoundry projects requires:

- a committee's review (Jim, Trevor, Drasko, Janko, anyone else?)
- vote on TSC
- DevOps chair to move repo to the edgexfoundry – app-functions-sdk-go

Applications WG Update (26-Feb-19)

Preparing for Edinburgh Release:

- Remove InfluxDB from EdgeX Export Services -
 - This tight integration requires us to pull in all of InfluxDB's dependencies
List here <https://github.com/influxdata/influxdb/blob/ef77e72f435b71b1ad6da7d6a6a4c4a262439379/Godeps>
 - Removing these dependencies will improve our build times in the CI-CD pipeline.
- Clean up existing documentation on Export Services.
- Create documentation on Application Functions SDK
 - Filter data
 - Export data
 - Update the Arch. diagram to reflect Application Functions
- Prepare examples/demos/tutorials – not all have to be done before the release

New Business:

- CBOR – Update Export Services to work with CBOR – Need volunteers

Device Services WG Update (25-2-19)

- Agreed new representation of device addressable with Core team
- More services now integrated with new Go Core Contracts
- Vote to be held on default encoding of floating point values
- New virtual device service moved into holding repository
- C SDK issue list aligned with Go SDK issue list
- Auto Events last SDK change requiring changes to Core Contracts

Test/QA WG Update (02-27-19)

- Fixed black box test issues [#134](#), [#164](#)
- Merged PR [#153](#), [#160](#), [#163](#), [#165](#)
- There is only one failed test case yesterday, team will continue to ensure dashboards are clean
 - <https://jenkins.edgexfoundry.org/view/blackbox-testing/job/blackbox-testing-security-centos7-blackbox-4c-2g-master/lastSuccessfulBuild/allure/#>
- Merged PR [#171](#) to add new security tests to Jenkins scheduled blackbox test runs
- About to modify black box test scripts for the new Device Profile changes and create new blackbox tests for Go Virtual Device Service

- Edinburgh objectives
 - Better visualization/dashboarding (Allure) of test results (complete)
 - Automated capture of resource metrics to monitor performance - resolved TIG stack deployment with LF (on track)
 - Security test automation - implemented by Security WG (on track)
 - Code contributors will now be required to supply additional or updated blackbox tests (complete)

- Next QA/Test meeting Thursday 7th March, 4pm PST

DevOps WG Update (02-27-19)

Several User Stories currently being worked in current sprint.

- Two new Intel contributors - Eric Wright / Jacob Blain Christen (vote was recorded offline but mentioning here today)
- Docker Hub Cleanup of old images completed
- Change to base build image to use go version 1.11.5
- Completed conversion of several device services (mqtt / modbus/ device-random)
- Starting work to figure out the automation required for release versioning (i.e. tagging) go modules
- LF Infrastructure team decided to support the original request for a dedicated EdgeX TIG stack. Work is currently assigned in this sprint with planned completion date end of next week.
- Need to coordinate with QA-Testing WG on the configuration of the telegraf container for blackbox testing with additional work to figure out the secrets handling for telegraf container.
- Sigul is slated to be used for signing release artifacts using Jenkins. Additional work is planned to figure out how to use this for EdgeX build automation.

Next DevOps WG meeting - Thursday 7AM PST

Security WG Update (02-20-19)

Feature	Status for Edinburgh
Automated Testing	Green
Delhi fixes	Green
Vault/Kong Documentation	Green
Vault paths/policies	Yellow
HW based secret storage	Red
Service to service authn/authz design proposal	Red
Kong/Vault upgrade	Yellow

System Management WG Update (2-27-19)

- Current work
 - Executor code clean up
 - Add CPU usage metrics - code for review on CPU branch of edgex-go
 - Platform dependent
 - Demo impl next meeting
 - Go & C SDK (and device services) incorporation work to be done
 - Demo impl next meeting
 - Additionally need to look at adding to application services (functions SDK)
 - Add health/status check of the services to the SMA
 - ~~Stretch goal~~ provide a translation layer (with abstraction) to offer SMA API via other protocol (like LWM2M, SNMP, etc.)

Certification WG Update (2-25-19)

- Project definition document in progress (Google docs)
 - Targeting TSC F2F in Seoul to present plan
 - Need more participation from developers/QA experts on technical aspects of Certification eval tests
-
- Meetings are on Mon at 7am PST
 - Link to doc, minutes, and recording available on wiki

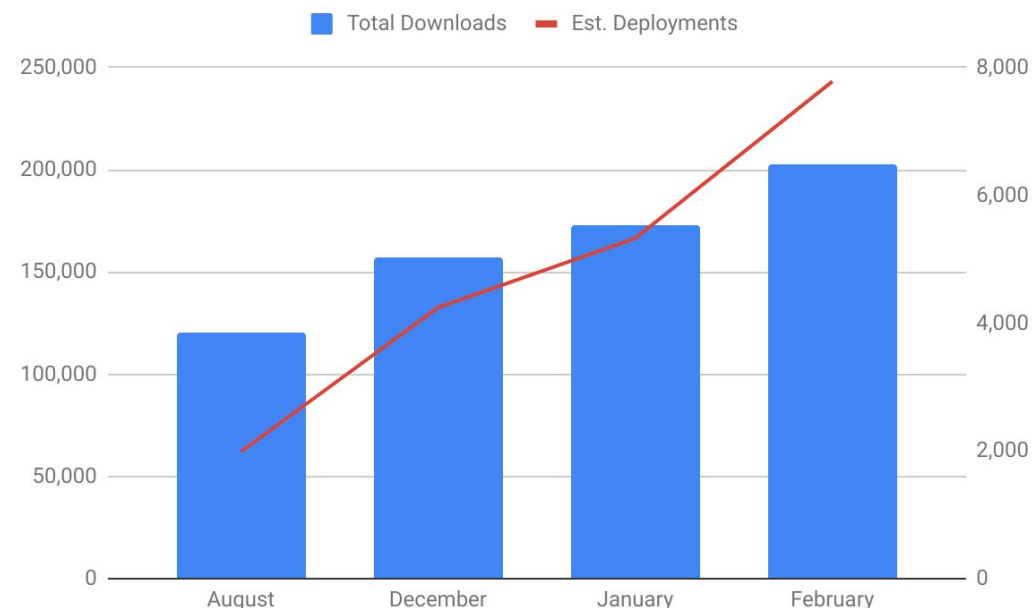
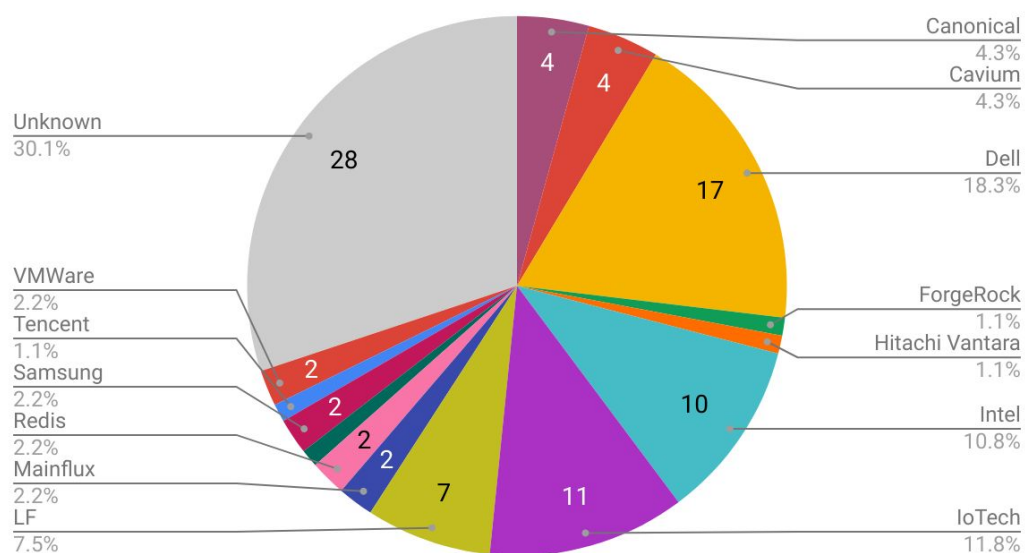
Vertical Solutions WG Update (2-27-19)

- 3pm PST Commerce Project Bi-Weekly Meeting (Mar. 5th)
 - <https://www.edgexfoundry.org/calendar/>

Developer Project Metrics (02-27-19)

- 15 active repos, 25 contributors, 111 commits, 3600 LoC
- 6 new contributors (plus Jeremy under a new email)
- 30,000 Docker Hub downloads (4,500 for each of the core srvs)

Authors by Company



Developer Website Report (02-27-19)

- 6,270 users in the past month
 - ~50% of website traffic from organic search
 - ~30% from referrals (mostly LF sites, some member sites)
 - ~19% direct
 - ~ 1% from social media (Twitter, LinkedIn, Facebook, Youtube)
- ~6% of viewers start on the QuickStart page
 - Increased proportion of new users

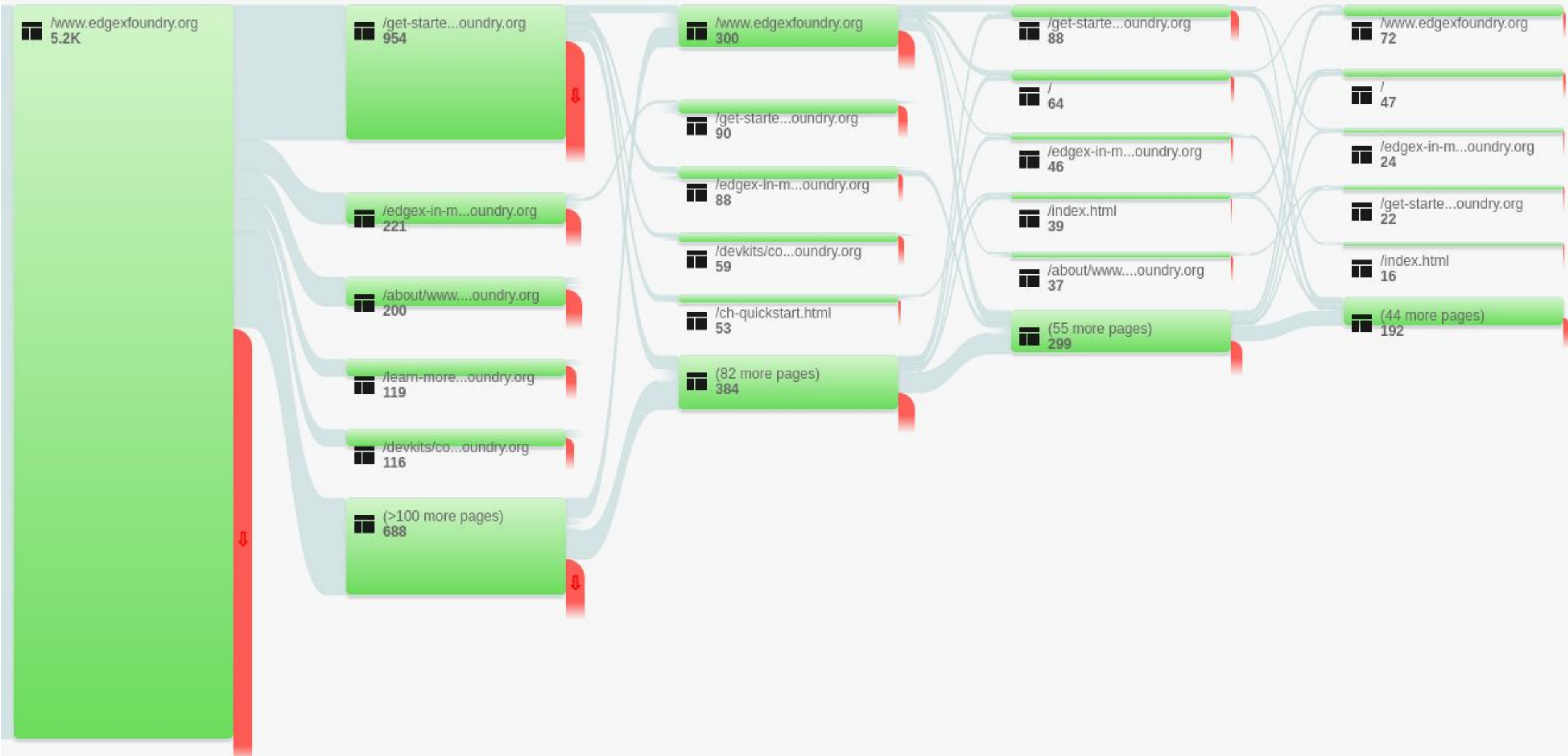
» Landing Page : /www.edgexfoundry.org
Starting pages
5.2K sessions, 2.9K drop-offs

1st Interaction
2.3K sessions, 1.3K drop-offs

2nd Interaction
974 sessions, 401 drop-offs

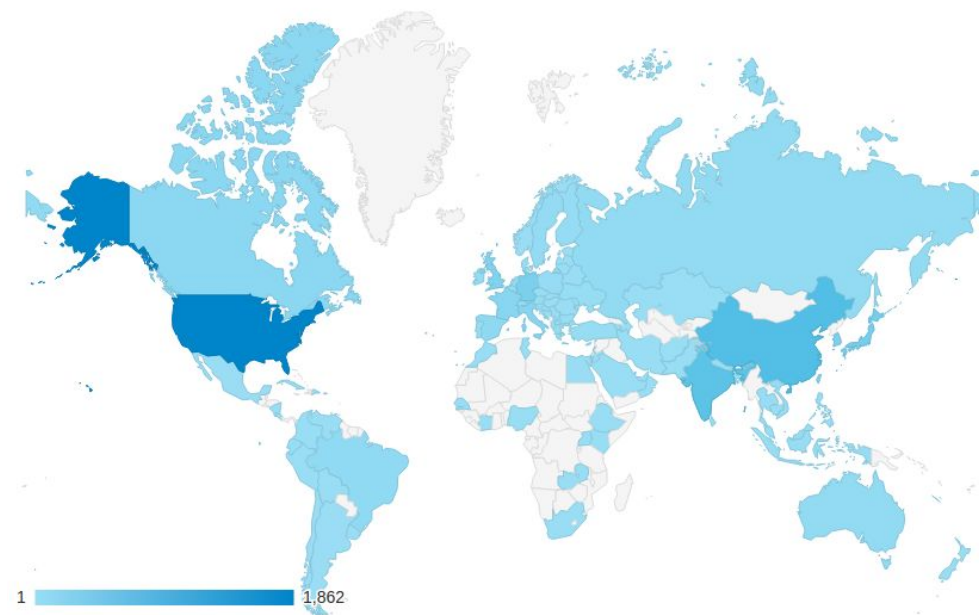
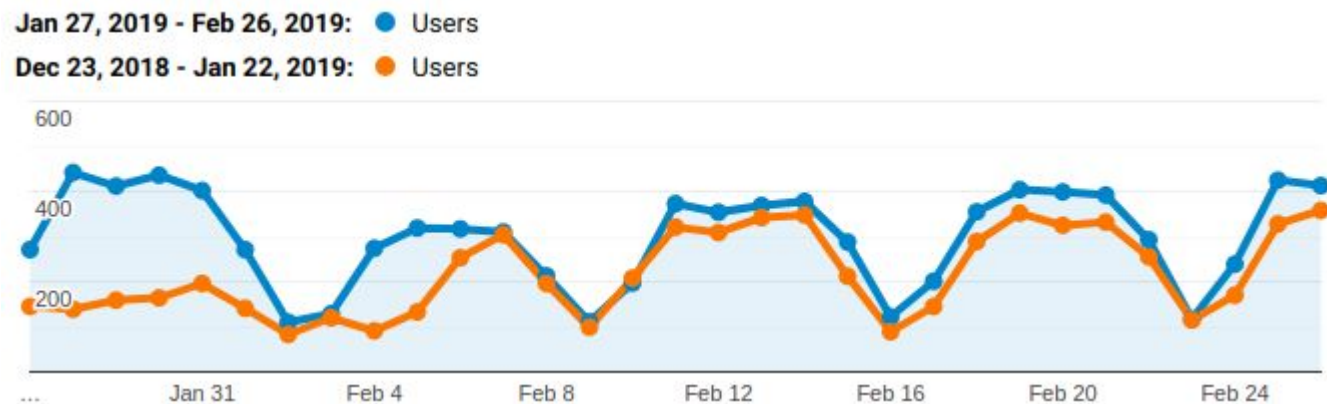
3rd Interaction
573 sessions, 200 drop-offs

4th Interaction
373 sessions, 107 drop-offs



Developer Website Report (02-27-19)

- 25% of traffic from US, 10% China, 8% India, 5% Japan & Germany
- 55% en-us, 10% zh-cn, 7% en-gb, 4% ko-kr
- 55% Windows, 20% Mac, 10% Linux





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LTS Policy - for TSC Vote

LTS Policy

Approved by DevOps WG (2/21)

Located: <https://wiki.edgexfoundry.org/pages/viewpage.action?pageId=25297015>

Main points:

- EdgeX Foundry offers a new long-term support (LTS) release every two (2) years
- TSC will select the release (major or minor) for the LTS release
- No new functionality will be added to an LTS release. Only significant security and bug fixes will be added to the LTS
- EdgeX LTS release will reach end of its maintenance commitment ("end of life") after two and a half (2.5) years
- Support defined as:
 - Community members best effort and development priority to fix a security or system bug or major flaw
 - Availability of the source code, test code and artifacts, and program artifacts through the support period
 - Availability of the platform documentation through the support period
- Will not offer support around 3rd party products
- Additional support may be provided by other members of the community



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Edinburgh Release

Proposed timeline

- Freeze: April 1
 - Create new branch; update version numbers on master, etc.
 - Testing and bug fixes between 4/1 and 4/22 (21 days)
- Release date: April 22 (Monday)
- EdgeX F2F: April 29 - May2
 - Fuji planning

Edinburgh Deliverables

•General

- Improved on-boarding for EdgeX users
- Move to Modules v. Glide
- EdgeX database-using services are refactored to be more loosely coupled to the persistence mechanism
- Redis implementation for all database using services
- Poor-mans tracing; correlation ID in place

•Scheduler service refactor

•Config / config seed refactors

- R/W properties
- Config seed preservation on restart
- Update to Consul 1.2.3

•Application services first implementation

- Export Service replacements long term

•Partial Device Profile refactor

•Move to Go 1.11 (actually now 1.12)

•Move to Slack

•Security documentation (API Gateway & secret store)

•Device Services

- Devices Services with Delhi SDKs: Modbus, MQTT, & SNMP
- SDK tutorials and examples (device-random and more)
- Support for local auto events

•Certification process definition

•System Management v2

- Addition of CPU metric
- System management start/stop/restart of services via executor
- SMA APIs in all services and SDKs
- Service health status checks

•Addressable relook

- Separate DS addressable; making it embedded

•Visualization/dashboard of test results

•Automated security blackbox tests

•Support/contract via LTS and release/version policy

Beyond Edinburgh Deliverables (expectations +)

- Installment of new DevOps chairman
- Hundreds of bug fixes and improvements
- Code coverage analysis (exceeding Edinburgh expectations)
- DevKit release
- Grove DS and tutorial/demo
- EdgeX booth Demonstrator
- Several developer outreach initiatives
 - Discourse channel
 - Better docs and getting started guide organization
 - More getting started guides
- RP3 tutorial
- Usage and views stats
- New videos
- Inclusion in LF Edge

Edinburgh Deliverables in-jeopardy

- Support the ingestion, use and export of binary data in CBOR format.
- An automated performance framework to continually check the performance
 - Elk v TIG stacks
- Load/stress tests (stretch)
- Kong upgrade
- Vault upgrade

Edinburgh Misses

- DS and DS SDKs

- BACNet, BLE and Virtual Device Device Service implementations using the Delhi SDKs.
- Reading cache (in SDKs)
- Dynamic discovery

- A new rules engine to replace Java/Drools ref implementation

- Metadata blacklist (Whitelist)

- For use with device service & device delete

- Full Device Profile refactor & simplification

- Some refactoring was completed

- Security

- Vault implementation design (namespaces)
- DB Secrets in Vault
- Service to service AuthN/AuthZ requirements documented along with a preliminary design
- HW based secret storage

- Release Manager

- Policies in place but role not filled

- Swagger documentation (stretch)

- Sys Management translator (stretch)

- 12 Factor apps

- Loss of Security WG chairman and 2/3 of the work force in Security WG



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EdgeX TSC F2F Meetings

EdgeX TSC F2F Meeting(s)

- **29 April - 2 May, 2019** -- Location Seoul, South Korea -- [Wiki page](#)
 - Technical Business Discussions + EdgeX 101 on Monday, April 29
 - Architect's Day / WG Breakout Sessions + Social Event on Tuesday, April 30
 - Technical F2F - Day 1 + Dinner Reception on Wednesday, May 1
 - Technical F2F - Day 2 on Thursday, May 2
 - **RSVP at <https://goo.gl/forms/oMptkNU90RRxhK5g1>**
 - RSVP by EOD April 12
 - Current registration count: 18 in-person; 0 dial-in
 - Hotel/Travel: Recommended hotels listed on [Wiki](#)
-
- **4 November - 8 November, 2019** -- Location Chandler, Arizona (USA) @ hosted by Intel



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Upcoming Events

Full list of LF events available at
<https://events.linuxfoundation.org/upcoming-events/>

Additional LF Edge events available at
<https://www.lfedge.org/events/>

Upcoming Events

- [Hannover Messe, April 1-5, 2019](#) | Hannover, Germany
 - EdgeX will have a presence in the Dell booth, including the EdgeX Community Demo
- [Open Networking Summit, April 3-5, 2019](#) | San Jose, CA
 - LF Edge will have a booth
- [Internet of Things World, May 13-16, 2019](#) | Santa Clara, CA
 - EdgeX will have a booth

Full list of LF events available at
<https://events.linuxfoundation.org/upcoming-events/>

Additional LF Edge events available at
<https://www.lfedge.org/events/>

Upcoming CFPs

CFP Upcoming Deadlines:

- [Open Source Summit China, June 24-26, 2019](#) | Shanghai, China
 - CFP Status: Extended -- Closes **February 22, 2019**
 - https://linuxfoundation.smapply.io/prog/open_source_summit_china_2019/



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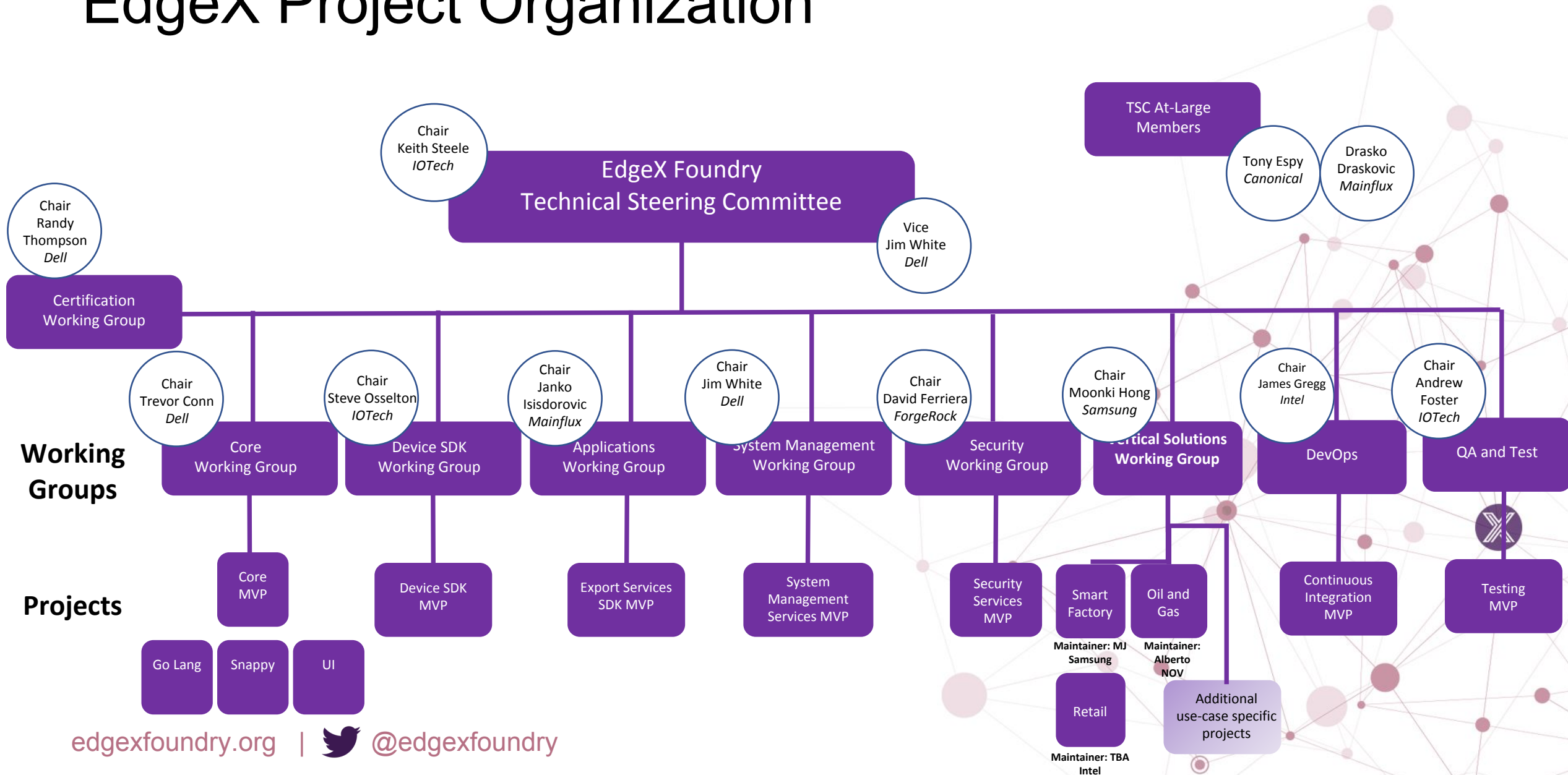
AOB / Reminders

AOB/Cadence

- Meeting Cadence Reminder
 - Currently held weekly at 7am PST on Wednesday's
 - Calls without TSC quorum will still be used to review issues

- **Next Meeting: February 20, 2019**

EdgeX Project Organization



Marketing

- **CTA:** If your company will be presenting EdgeX at an upcoming event/webinar/other, please email pr@edgexfoundry.org so that we can help promote

EdgeX in Market

- Page showcases momentum in the project, including solutions already available
- <https://www.edgexfoundry.org/edgex-in-market/>
- Email info@edgexfoundry.org if you have any additions

Project Contributions Welcome!

- Our objective is to make EdgeX use & deployment pervasive!
- EdgeX success is 100% dependent on the vibrancy of a proactive community
- Getting Involved
 - Project membership growing - want to join contact Brett Preston at LF (bpreston@linuxfoundation.org)
 - First Priority is the MVP - potential contributors please contact keith@iotechsys.com (people, equipment, technology)
 - If interested in adding new projects please contact the relevant working group chair

Project Resources

Quick links to most commonly used Community Resources

- Code: <https://github.com/edgexfoundry>
- Documentation: <https://wiki.edgexfoundry.org/>
- Discussion: <https://chat.edgexfoundry.org/>
- Mail Lists: <https://lists.edgexfoundry.org/mailman/listinfo>
- Twitter: <https://twitter.com/EdgeXFoundry>
- LinkedIn: <https://www.linkedin.com/company/22298339/>
- YouTube: <https://www.youtube.com/c/EdgeXFoundry>

EdgeX - Where to learn more

- EdgeX Foundry Wiki

<https://wiki.edgexfoundry.org/display/FA/EdgeX+Foundry+Project+Wiki>

- EdgeX Foundry Rocket Chat

<https://chat.edgexfoundry.org/home>

- [Weekly EXF Technical Spin up calls](#)

30 minute deep-dive topics followed by 30 minute open Q&A

Call recordings are available on the [Wiki](#)

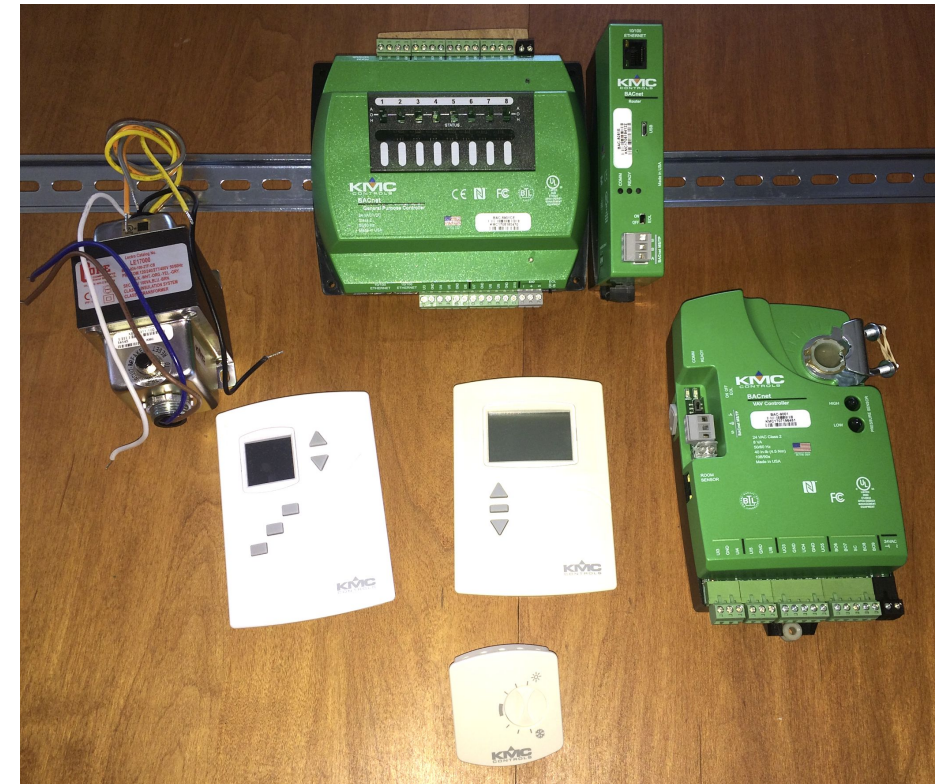
What is the Device Exchange?

- A great way to put your products in the hands of other members so they can help build a better EdgeX!

• <https://wiki.edgexfoundry.org/display/FA/Device+Exchange>



Special thanks to [Dave Bohlman](#) and [KMC Controls](#) for making this awesome kit and how-to guide available to members!!



Meetups

- Help us grow awareness!
- Present, and Tag, EdgeX in your local IoT Meetups
- <https://www.meetup.com/topics/edgex/>
- Email info@edgexfoundry.org for assistance

Related topics

New Technology Open Source Interoperability Smart Home Internet of Things

Open Standards Mobile Development Internet of Everything EdgeX

EdgeX ▾

Find out what's happening in EdgeX Meetup groups around the world and start meeting up with the ones near you.

Related topics:



Meetups: Reimbursement Program

- <https://wiki.edgexfoundry.org/pages/viewpage.action?pageId=7602724>
- Wiki page built for the community to leverage
- Encourage community to begin introducing EdgeX in your local Meetup groups
- EdgeX Foundry will fund/sponsor the talk in which EdgeX is scheduled to be presented
 - Up to \$250 for F&B, once per Meetup group, per quarter
- Let us help drive traffic to your event! Email pr@edgexfoundry.org once Meetup has been scheduled
- Post-event, please consider doing a blog about the event

Hackathons: How can you help?

- <https://wiki.edgexfoundry.org/display/FA/Hackathons>
- Provide any local volunteers onsite to help with technical work, potentially help judge, etc. (see list below of known hackathons coming up and locations)
- Sponsor breakfast/lunch/dinner for the participants (usually things like donuts/coffee, pizza lunch or cater sandwiches)
- Sponsor \$ rewards (incentives) for teams that successfully implement projects (these could even be projects that particular sponsors want to see accomplished - we just need them scoped appropriately so as to be something that can be accomplished in a 2 day period)
- Help provide or resource hackathon winner prizes
- Sponsor or provide any swag (t-shirts, mugs, etc.)
- Provide marketing assistance



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Thank You