EDGEXFOUNDRY™

TSC Meeting

October 10, 2018

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Meeting Logistics

Time: October 10, 2018 7am PDT – 8am 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
IOTech	**Andy Foster**	andy@iotechsys.com
ForgeRock	**David Ferriera**	david.ferriera@forgerock.com
Analog Devices	**Doug Gardner**	doug.gardner@analog.com
Mainflux	**Drasko Draskovic**	drasko@mainflux.com
Mainflux	**Janko Isidorovic**	janko@mainflux.com
The Linux Foundation	**Jeremy Phelps**	jphelps@linuxfoundation.org
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
IOTech	**Steve Osselton**	steve@iotechsys.com
Canonical	**Tony Espy**	espy@canonical.com
Dell	**Trevor Conn**	Trevor.Conn@dell.com

Current quorum = 8 members

*Note: TSC meetings shall require a **quorum of two-thirds of the TSC total members to take a vote or make a decision.** If a TSC meeting fails to meet the quorum requirement, discussions may proceed, however there shall be no voting or decisions.*

Today's Agenda

- WG Updates
- Looking for DevOps assistance
- Edinburgh F2F Planning
  - Agenda items and topics
  - Logistics
- EdgeX Community Demo Update
- EdgeX DevKits
- Upcoming Events
- AOB

Delhi Release Work Group Updates

Jim White

Working Group Chair Updates

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

Core Working Group (10-Oct-18)

- System Mgmt Agent
  - Continuing review of PR (#620)
- Support-Scheduler
  - Review of PR (#616) nearly complete
- Redis
  - Still awaiting PR. Hoping to connect w/Andre today.
- A big "thank you!" to Jeremy for the ARM builders on LF Infra
- No Core Working Group call tomorrow (11-Oct)

Applications WG Update (10-Oct-18)

- Application WG started weekly meetings - Tuesdays 11am PDT
- Applications WG Meeting on 09-Oct-18
  - Discussion on Message buss and FAAS/Lambda/Serverless architecture for Application Services.
- Next Applications WG Meeting will be on 16-Oct-18.
- Two Issues (bugs) are fixed - Thanks Jim and Trevor

Device Services WG Update (10-OCT-18)

- Go SDK
  - Major PR from Cloud due this week
  - Pre PR review on IOTech repository fork
- C SDK
  - Scheduling support added
  - Work started on Device/Profile management APIs
- General
  - Agreed that reading transformations cannot change reading type
  - Confirmed that double/float values to use base64 encoding

Device Services Priorities? (3-Oct-18)

Ethernet – Industrial and Building Automation:

- Modbus TCP
- BacNet/IP
- OPC DA
- OPC UA
- EtherNer/IP
- EtherCat
- Profinet
- Zigbee
- DALI
- KNX
- IOTivity

Ethernet – General Purpose

- MQTT
- GRPC

Serial Industrial

- Modbus RTU
- BACnet/MSTP
- Profibus
- DNP3
- CAN

QA/Test WG Update (Oct-10-18)

- Closed blackbox testing issues 83, 81, 76 and merged PRs 85, 82 and 80
- Device Service SDK blackbox testing - updating existing tests to support new SDKs
- Updating black tests to support Delhi API changes - issue 86
- Reviewing performance testing tools and frameworks and developing performance testing strategy to be discussed at Edinburgh F2F

DevOps WG (10-OCT-18)

- TODAY:
  - EdgeX DevOps: JJB and Jenkins; CI systems walkthrough
  - 1pm - 2:30pm PDT
  - email info@edgexfoundry.org to be added directly to invite

Join from PC, Mac, Linux, iOS or Android: https://zoom.us/j/434117642

Or iPhone one-tap :

  US: +16465588656,,434117642# or +16699006833,,434117642#

Or Telephone:

  Dial(for higher quality, dial a number based on your current location):

    US: +1 646 558 8656 or +1 669 900 6833 or +1 855 880 1246 (Toll Free) or +1 877 369 0926 (Toll Free)

Meeting ID: 434 117 642

International numbers available: https://zoom.us/u/aezxX1KV9M

Security (10-Oct-18)

- Delhi work continues
  - Status of 7 proposed features: 4 green, 2 yellow, 1 red (automated testing)
- Finalize Edinburgh deliverables today
- **Request:** Present IIC Security presentation at an upcoming TSC call
  - Scheduled for 10-Oct-2018

System Management WG (10-OCT-18)

- Implementation update
  - PR for Delhi Release code in; working through cleanup and applying API to other services
  - Documentation/video work to do
- Next Sys Mngmt WG meeting topics
  - Edinburgh release metrics collection

Developer Outreach (03-OCT-18)

- Complete
  - [Developer Survey](#)

- In Progress
  - Get Started, phase 2 revisions
  - Coordinating Snap release announcement
  - Developer Survey report
  - Edinburgh Face-to-Face prep

- Coming up
  - Security Services documentation
  - Developer activity metrics

New Management GUI

- IOTech Contribution
- Based on Clojure
- Uploaded to Open Source Repo

EDGE X FOUNDRY™

Seeking Volunteers!

DevOps WG Chairperson needed!

- Ever wanted to be a leader in an open source community?
- Wished you had a vote in the EdgeX TSC?
- Now's your chance - we are seeking nominations for DevOps WG chair
- We also need more volunteers to help with current and ongoing DevOps work
- Contact Keith, Jim, or Brett

Our thanks to Jeremy Phelps who has led us through 3 public releases.

We could not have done it without him.

Edinburgh F2F Planning

Jim W & Brett

Project & Architecture Introduction Options

Thanks to Doug Gardner for the suggestion

Decision:

A. Hold a quick 1 hour tutorial at 7:30am on Tuesday, Oct 23 in Edinburgh

In future F2F, we will include room in the schedule

Agenda and Topics List finalized

Please see the Wiki for the full agenda, topics list, schedule

The agenda is quite full - please connect with Jim or Keith on any topics you want to get into the agenda

Oct 23 - Architect's Day Schedule

• Morning Topics *(IoTech arriving at ~ 10am)*

A. System Management WG

• What is EdgeX system management versus gateway management

• Scoping future system management capabilities

B. Security WG

• HW based security discussion

• Where are the system management/security overlaps?

C. Application Services Design
The new export services; more scalable; more configurable & loosely coupled

• Afternoon Topics

D. Device Service/SDK

• Device onboarding; DS callbacks; adding device through metadata and next iteration of SDK

E. Test/QA

• Performance testing strategy

• Test with multiple configuration(s) strategy (edge case testing)

•

F2F Agenda

- Day 1 – Edinburgh planning day
- Welcome and intro by Keith Steele (IoTech): 9-9:30am
- Architecture issues tee-up: 9:30-11am
- Review and explanation of upcoming items of discussion for day 2
- Edinburgh Planning – what's in/out: 11-2:30pm
- Scope definition
- Future Release Roadmaps - Fuji and beyond: 2:30-3:00pm
- Long range scoping and roadmap review
- Developer Advocate Perspective: 3:00-3:30pm
- Release manager
- Better onboarding
- DevOps Changes – 4-5pm
- Developer involvement, new WG chair needed, etc.

- Day 2 – Architecture issues day
- Architecture discussion and decisions: 9am-2:30pm
- Action items for TSC Face-to-Face: 2:30-3pm
Business Issues/Discussion: 3-5pm

Architecture Issues Tee-up – Technical Debt

Edinburgh (Priority Topics)

1) Database Abstraction/Alternatives
   - Plugin architecture
   - Reference implementation (Mongo v. Redis)
   - EOL drivers

2) Device services and SDK in mono repo

3) Use of a Go framework
   - To improve isolation, help instrument new features (logging, authorization, tracing, etc.)
   - Pros/Cons
   - Costs & length of time needed to convert
   - Is now the time? Blocks what other development?
   - Options
     - GoKit
     - Macaron
     - https://go.libhunt.com/kit-alternatives

Fuji or later (Secondary Topics)

10) Windows developer support
   - The 0MQ issue

11) ARM 32 support

12) Device Hierarchy
   - Supporting devices owning / managing other devices
   - Mesh networks of devices

13) API Documentation
   - Automate generation of API documentation (RAML)
   - Replacement of RAML or alternate to RAML (Swagger)

Architecture Issues Tee-up - Enhancements

Edinburgh (Priority Topics)

4) Upgrades?
   * Move to Go 1.11
   * Consul to 1.2.3
   * MongoDB to 4.0
   * Vault or Kong?

5) Versioning
   * Modules / vgo

6) Tracing
   * Following an event or API request through all services to allow better debugging and support

7) Automated security testing

8) Improved resiliency
   * What do we need to do next? Services now are more resilient to timing issues

9) Support for distribution
   * What do we need to do to better support truly distributed EdgeX

Fuji or later (Secondary Topics)

14) Config and Metadata changes
   * Using callback/watchers

15) Alternate deployment / orchestration
   * ex: adding Kubernetes support

16) Facilitating commands from the North
   * How to supply command information to the north side systems
   * Ex: how to give Azure IoT the ability to command devices?

17) Artifact signing
   * Exe/JAR/etc. artifacts
   * Docker containers

18) Downsampling @ device service level

19) Command Parameter Check
   * Min/Max values (or other checks) on command parameters

20) Message infrastructure
   * Time to consider message bus intercommunications between more micro services.

21) Configuration versioning

Carry over issues from Architect's Day

- System management issues
  - Scoping
- Security issues
  - HWRoT
  - System management/Security overlap
- Application Services
- Device Services and SDK
  - Device provisioning
  - Callbacks
- Test/QA
  - Performance/Scale Testing
  - Configuration Testing

EdgeX TSC F2F Meeting(s)

- Wednesday & Thursday 24th/25th October -- Location Edinburgh, UK -- [Wiki page](#)
  - Working Group technical meetups on Tuesday, October 23
- **RSVP at https://goo.gl/forms/QR3WgP4ybB5KUT3w2**
  - **RSVP by EOD October 10 (sooner the better)**
  - Current registration count: 37 in-person; 7 dial-in (3 are Tuesday only)
  - Tuesday Working Group Counts
    - Security: 7
    - Systems Mgmt: 3
    - Applications: 6
    - Device: 13
    - QA/Test: 2
- Hotel/Travel: https://events.linuxfoundation.org/events/elc-openiot-europe-2018/attend/venue-travel/
- For Wednesday night dinner/activity, Scotch whisky tasting!!
  - RSVP is required. RSVP as part of TSC registration above.
  - Current dinner count: 33

- April 22-25, 2019 -- Location Seoul (South Korea) @ Samsung offices

CANCELED

EdgeX Community Demo Update

Andy Foster

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Upcoming Events

Upcoming Events

- IOT Solutions World Congress, October 16-18, 2018, Barcelona
  - Exhibiting: Booth location - Gran Via, Hall 2, Level 0, Street B, Stand 271
  - Community Demo debut (built by IOTech, Basking Automation)
  - Member kiosks: CloudPlugs, Redis Labs, ZEDEDA, Community kiosk (RSA, VMware)
- Open Source Summit Europe / ELC / OpenIoT Summit Europe, October 22 - 24, 2018, Edinburgh, UK
  - Community Partner: Save 15% on Attendee Registration with discount code OSSEU18COM15
  - Schedule announced
    - EdgeX Sessions:
      - Getting Started with EdgeX Foundry Workshop, Sunday October 21 at 1:30-5:15 pm, Jim White, Dell
      - Extending Cloud-Native Principles to the Edge to Enable Scalable IoT Solutions, October 23 at 9-9:40 am, Jason Shepherd, Dell
      - Building an Open IoT Solution with EdgeX Foundry and the Zephyr Project, October 23 at 12:20-1pm, Michael Hall, EdgeX Foundry and Thea Aldrich, Zephyr Project
      - Getting Lean and Distributed at the Edge, October 24 at 5:05-5:45 pm, Jim White, Dell
      - Lunch and Learn, led by Jeroen Mackenbach (Dell), integrating EdgeX
  - Member sessions (for amplification)
    - Can we Build a Safety Integrity Level System with Linux? October 22 at 11:15-11:55 am, Tiejun Chen, VMware
    - A Hybrid Solution to Address Real Time Virtualization, October 22 at 5:05-5:45 pm, Tiejun Chen, VMware
    - Any other member presentations?

Upcoming Events (continued)

- EdgeX Edinburgh Technical Meetings, October 23 - 25, 2018, Edinburgh, UK
- Internet of Things Congress, October 24, 2018, Nuremberg, Germany
  - 2pm: Matthias Schorer - EdgeX presented in session on how to use microservice approach to IoT edge computing.
- Symposium on Securing the IoT, October 29-31, Boston
  - Brad Kemp - EdgeX Foundry Overview (TBD)
- Advantech IoT Co-Creation Summit, November 1-2, Suzhou, China
  - Jijun Ma - Nov 2: Workshop ""智联网趋势解读" held by物聯網智庫彭昭

CFP Upcoming Deadlines:

- Internet of Things World, May 13-16, Santa Clara, CA (USA)
  - Deadline - November 16, 2018
  - https://get.knect365.com/iot-world/speaking-submission-2019/?_ga=2.218061782.1372769890.1536769581-2081958547.1534262136

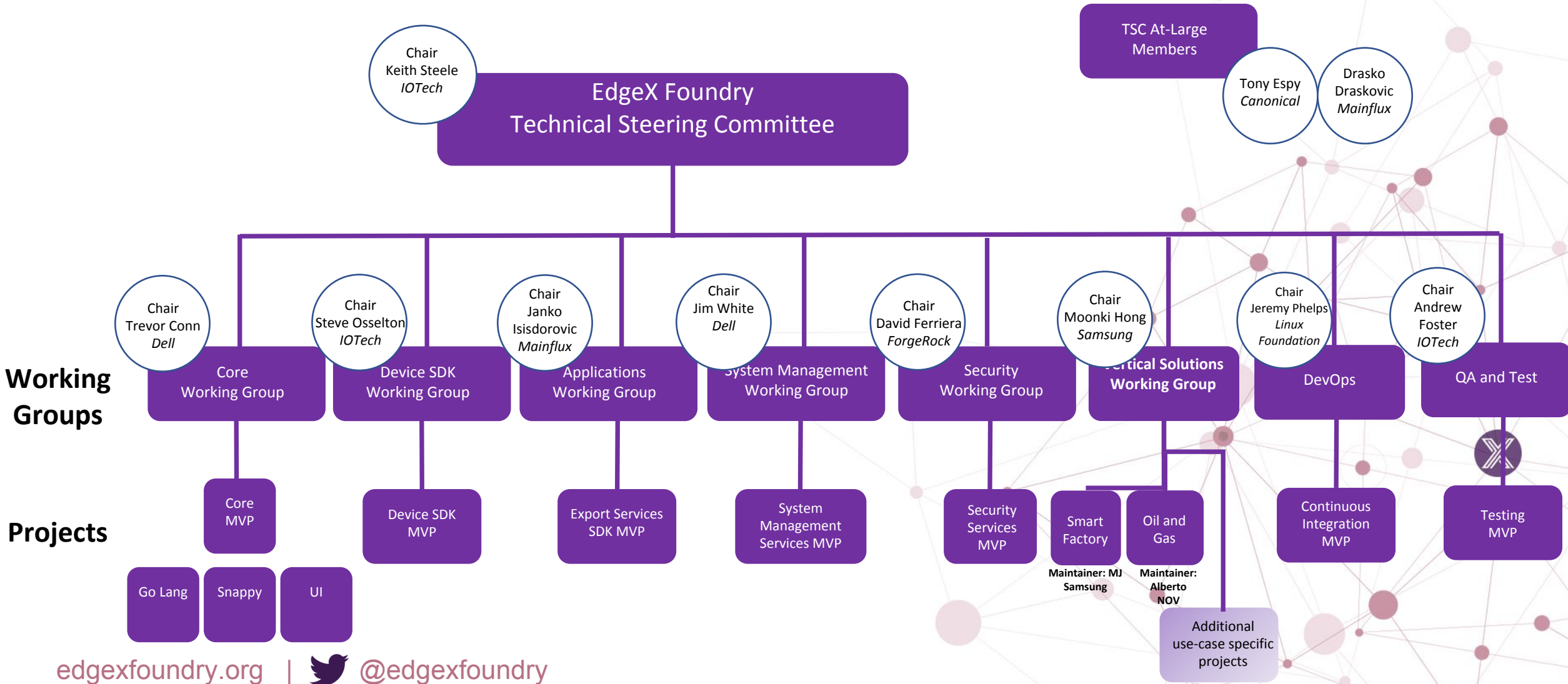- Members interested in joining the EdgeX Speakers Bureau, please email pr@edgexfoundry.org

AOB / Reminders

AOB/Cadence

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

- **Next Meeting: October 24-25, 2018 (F2F with dial-in available)**
  - **WG Chairs:** Please let Brett know any meetings to cancel the week of October 15 (IOT SWC) and/or October 22 (ELC EU)

EdgeX Project Organization

EDGE X FOUNDRY™

EdgeX Foundry Technical Steering Committee

Chair
Keith Steele
IOTech

TSC At-Large Members

Tony Espy
Canonical

Drasko
Draskovic
Mainflux

Working Groups

Chair
Trevor Conn
Dell

Chair
Steve Osselton
IOTech

Chair
Janko
Isisdorovic
Mainflux

Chair
Jim White
Dell

Chair
David Ferriera
ForgeRock

Chair
Moonki Hong
Samsung

Chair
Jeremy Phelps
*Linux
Foundation*

Chair
Andrew
Foster
IOTech

Core
Working Group

Device SDK
Working Group

Applications
Working Group

System Management
Working Group

Security
Working Group

Vertical Solutions
Working Group

DevOps

QA and Test

Projects

Core
MVP

Device SDK
MVP

Export Services
SDK MVP

System
Management
Services MVP

Security
Services
MVP

Smart
Factory

Oil and
Gas

Continuous
Integration
MVP

Testing
MVP

Go Lang

Snappy

UI

Maintainer: MJ
Samsung

Maintainer:
Alberto
NOV

Additional
use-case specific
projects

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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
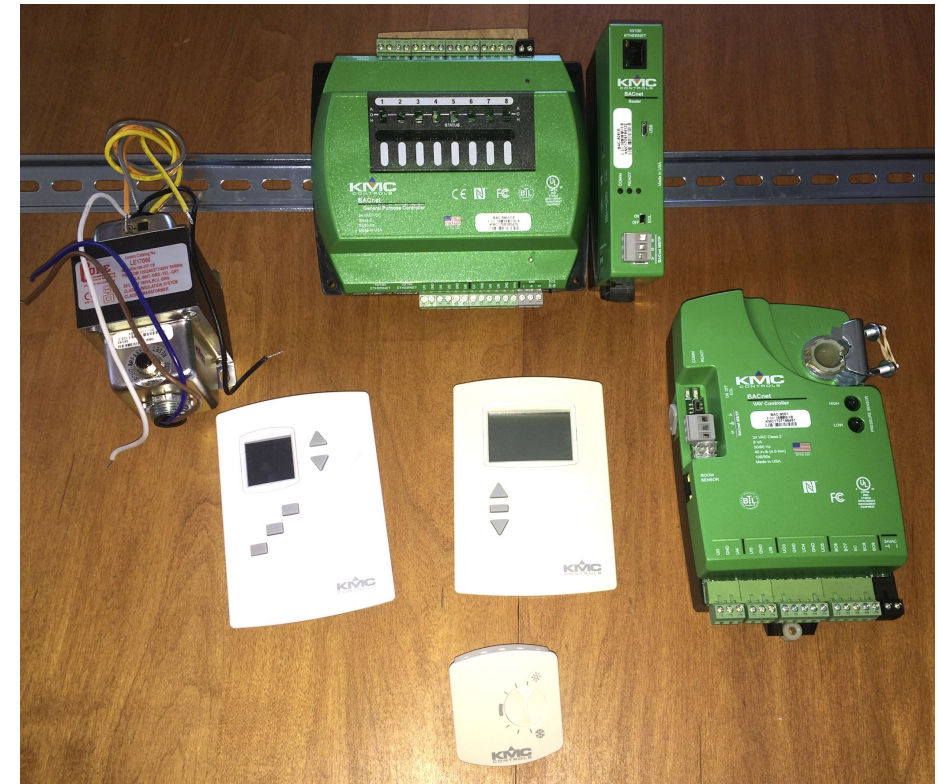
    Call recordings are available on the Wiki

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

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

Thank You