EDGE X FOUNDRY™

TSC Meeting

May 30, 2018

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Meeting Logistics

Time: May 30, 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

EDGE**X**FOUNDRY™

Company	Name	Email
IOTech	Andy Foster	andy@iotechsys.com
Analog Devices	Doug Gardner	doug.gardner@analog.com
Mainflux	Janko Isidorovic	janko@mainflux.com
Dell	Jason Shepherd	Jason.A.Shepherd@dell.com
The Linux Foundation	Jeremy Phelps	jphelps@linuxfoundation.org
Dell	Jim White	james.white2@dell.com
IOTech	Keith Steele (TSC Chair)	keith@iotechsys.com
Samsung	Moonki Hong	moonki1.hong@samsung.com
Samsung	MyeongGi Jeong	myeong.jeong@samsung.com
VMware	Salim AbiEzzi	salim@vmware.com
Canonical	Tony Espy	espy@canonical.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.*

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Today's Agenda

- Working Group Updates
- Next TSC F2F Meetings
- TSC Elections Updates
- IIC Liaison Updates & Opportunities
- EdgeX Developer Advocate & Project Evangelist
- EdgeX Test Beds
- Upcoming Events
- AOB

Working Group Updates

Jim White

Working Group Updates

- UI Project Group met May 24
  - https://wiki.edgexfoundry.org/display/FA/UI+Project+Group
  - UI Prototype video: https://www.youtube.com/watch?v=2EOHR_gUeic&list=PLih1NL_0jlJPR3iSbmt_XvJgt95IIcfTx
- Snappy Deployment Project Group meets bi-weekly on Tuesdays at 11am PDT
  - Email info@edgexfoundry.org to be added directly to meeting invite
  - https://wiki.edgexfoundry.org/display/FA/Snappy+Deployment+Project+Group

- Tech Talk scheduled: Creating and Updating EdgeX Documentation
  - Training for all EdgeX Contributors who may have to create or update EdgeX product documentation
  - Email info@edgexfoundry.org to be added directly to meeting invite
  - https://wiki.edgexfoundry.org/display/FA/EdgeX+Tech+Talks

Other Working Group Chair Updates

- Around the horn
  - Applications - Janko
  - Device Services - Tony
  - Test/QA - Andy
  - DevOps - Jeremy
  - Security - Doug
  - System Management - Salim
  - Vertical Solutions - Moonki
  - Core - Jim
- Others

Application WG Update

- New Application Services design being presented (see Core Working Group for deck) - more @ F2F
- Looks like we will have more export connectors than planned for California Release:
  - Azure IoT export connector - Dejan Mainflux working
  - XMPP export connector - WIP - Contribution is merged
  - ThingsBoard IoT export connector - WIP - Contribution is merged
  - Brightics IoT export connector - development to start in June 2018.
  - Google IoT export connector - Dejan Mainflux working

DS/SDK WG Update

- Requirements doc nearing completion
- Design meeting June 4

QA/Test Working Group Updates

Blackbox Testing
- Currently running blackbox tests against both Java and Go services – tests are finding bugs and differences between implementations that we are in the process of fixing
- Need to decide whether we change RAML and update Java code to be consistent for California
- Have created new blackbox tests for Logging and Rules Engine
- Still need to add tests for Notifications, Scheduling, Export Client and Device Service

Security Functionality Testing
- Still need to create test plan/strategy and identify resources to implement tests for California Security functionality

Documentation
- Additional updates/improvements made to new documentation and merged changes into repo

DevOps Working Group Updates

1. License and Copyright built into images now for distribution.
2. Full publishing of go bins and images from edgex-go.
3. Made contribution to blackbox-testing (fetch images from nexus).
4. Email notifications from blackbox-testing failures (subscribe).

TO DO:

1. Copy attribution files from edgex-go into image and bin tar.
2. California branch cutting and final release (are we releasing Java services?)

Security WG Update

- Kong work nearing completion
- Vault work nearing completion
- To Be Done
  - Merge with the rest of EdgeX (complete common docker-compose)
  - Firewall configuration
  - Documentation

Core WG Update

- Support Notifications micro service in Go completed (see edgexfoundry-holding)
- Ongoing work
  - Naming & availability work on all services - including export - per earlier design doc
  - Config-seed-go - process TOML & update with Go configs from all services
- Stretch
  - Scheduler contribution reviewed and integrated

Next TSC F2F Meetings

Jim White

EdgeX TSC F2F Meeting(s)

- Tuesday & Wednesday 5th/6th June -- Location VMWare Palo Alto, California
  - **RSVP by June 1 at https://goo.gl/forms/fzunofabMiliT5Ht1**
    - Current registration count: 30 in-person; 5 dial-in
  - Hotel Options: https://wiki.edgexfoundry.org/download/attachments/12124391/vmw-pa-hotels.pdf?version=1&modificationDate=1522861814000&api=v2
- Tuesday & Wednesday 23rd/24th October -- Location Edinburgh, UK
  - Rather than booth, target CFP submissions (CFP closes July 1)
  - **RSVP at https://goo.gl/forms/QR3WgP4ybB5KUT3w2**
    - Current registration count: 2 in-person; 0 dial-in
  - Hotel/Travel: https://events.linuxfoundation.org/events/elc-openiot-europe-2018/attend/venue-travel/
- April 2018 -- Location Seoul or Suwon (South Korea)

F2F meeting

Final agenda and topic details @
https://wiki.edgexfoundry.org/download/attachments/12124391/EdgeX-F2F-PaloAlto.pdf?version=4&modificationDate=1527534561000&api=v2

Current attendance #'s: 30 in attendance + 5 dial-ins

Agenda

Day 1 - Delhi planning day

- **Welcome and intro by Mike McDonough (VMWare)**: 9-9:45am
- **Architecture day tee-up**: 10-noon
  - Review and explanation of upcoming items
- **Delhi Planning – what's in/out**: 1-3:30pm
  - Scope definition
- Testbeds and organization liaising: 3:30-4:30pm
- **TSC & WG chair upcoming voting**: 4:30-5pm
  - LF review of rules and procedures for upcoming voting

Day 2 – Architecture issues day

- **Architecture discussion and decisions**: 9am-2:30pm
- **Business Issues/Discussion**: 2:30-3:30pm
- **Wrap up and action items**: 3:30-4:30pm

Dinner 6pm Tue Night

Focus of meeting: Scope Delhi

- 4 main implementation targets
  - Initial System Management APIs and agent
  - DS SDKs (Go/C) & some replacement DSs
  - Next wave of security features
    - Suggest ACL, secure non-HTTP comms
  - Improve testing
    - Better/more unit, complete black box and performance

High level Delhi Scope

What's In

-System management API in all services
-Sys mgmt agent
-Base service (started with refactor)
 Service naming
 Availability
 Common config/reg
 Service tracing (OpenTracing API)
-Service outage & notifications
 Resiliency in face of non-availability of
services

-ACL (for reverse proxy use)
-Secure non-Http comms
 MQTT outbound/inbound
 0MQ outbound

-Complete the initial SDKs (Go & C)
 Complete new virtual device service
-Refactor some existing DS
 Modbus
 BACNet
 MQTT

High level Delhi Scope (cont.)

-Unit tests coverage of a majority of the code
    Core/support service refactors as
examples
-Blackbox testing for all services
    Integrate in CI
    Reporting on failed tests
-Performance Tests
    Meeting RP3 targets

-Replace any remaining Java services
    Scheduler
-Configuration categorized/grouped
-Review and incorporate all the outstanding
code contributions
    UI
    Scheduler
    Samsung code
    …

Architectural Discussions

- Focus on Delhi release work
  - Address other architecture items if time permits
- Divide the discussion into two sections
  - Technical Debt - what code in the existing system needs fixed or refactored in Delhi
  - Enhancements - what can we add to improve EdgeX for Delhi

Architecture Issues Tee-up – Technical Debt

- Technical Debt (things that need fixed)
  - Rearchitect Go Export Distro – Move to Application Services concept(s)
  - Protecting micro service secrets with Vault (export distro, others?)
  - Upgrade Consul & master/slave configuration
  - Automate API documentation (move to alternate format?)
  - Search for Mongo replacements/alternatives (offer for Edinburg)
  - Steps toward truly distributed EdgeX (multiple machines, reverse proxy impact, commands across hosts, etc.)
  - Device discovery, onboarding and removal
  - Renew threat modeling

Architecture Issues Tee-up - Enhancements

• ARM 32 support

• Device services that downsample (scale back readings sent when data is pumped to fast)

• Min/Max limit on accepting command

• Data transformation and/or filtering at DS level

• Additional DS connectivity (ex: CANBus, Profinet, …)

• Alternate deployment / orchestration (ex: adding Kubernetes support)

• User Interface (review/adopt for Delhi)

• How to deal with device security

• Load balancing of requests to multiple service instances

• Support for an alternate message bus (Point to point between services or at large)

• Introduce new category for microservices: "Sharing Services" for East/West data exchange with non-Edgex entities

• Protobuf or lighter weight messaging (Hitachi submission)

• Address data privacy concerns (GDPR, HIP-A, …)

• Additional export connectors (ex: Greengrass, …)

• Scheduling – service or library approach?

Business Issues

- Marketplace for value-add microservices and its implications
  - Will we need a new EdgeX microservice acting as license server?
- Certification process
  - When do we start to outline?
  - Levels
  - What does it incorporate?
  - Security certification

Upcoming WG Chair/TSC Elections

- WG Chair terms scheduled to end June 24, 2018
- Steady State TSC composition includes:
  - Working Group Chairs
  - Three (3) TSC at-large representatives
  - Platinum member representatives (when not otherwise represented above)
- Voting members of the TSC must be Contributors or Maintainers in the Project
- Contributor definition: Anyone in the technical community that contributes code, documentation or other technical artifacts to the EdgeX Foundry Project codebase.
- Target is to have WG Chairs identified prior to the F2F meeting in Palo Alto (June 5 - June 6)

Upcoming WG Chair/TSC Elections - Timeline

- Now - Monday, June 4: Establish list of Contributors, WG Chair Nominations and Voting
- Friday, June 1 - Friday, June 8: TSC At-large Nominations
- Monday, June 4: WG Chairs for new term named
- Tuesday, June 5 - Wednesday, June 6: TSC F2F Meeting (Palo Alto)
- Friday, June 8 - Friday, June 15: TSC At-large Elections
- Monday, June 18 - Friday, June 22: TSC Chair Nominations
- Sunday, June 24: End of current TSC term
- Monday, June 25: 1st day of new TSC
- Monday, June 25 - Friday, June 29: TSC Chair Voting

Current WG Chair Nominees

- Applications Working Group Chair: Janko Isidorovic (Mainflux)
- Core WG Chair: Trevor Conn (Dell)
- DevOps WG Chair: Jeremy Phelps (LF)
- DS/SDK WG Chair: Steve Osselton (IOTech)
- Security WG Chair: David Ferriera (ForgeRock), Rodney Hess (Beechwoods)
- System Management WG Chair: Jim White (Dell)
- Test/QA WG Chair: Andy Foster (IOTech)
- Vertical Solutions WG Chair: Moonki Hong (Samsung)

IIC Updates & Opportunities

James Clardy

IIC Latest News

Riaz attended last week's IIC member meeting & can provide updates

Topics of interest to EdgeX (including the current state on the IIC/EdgeX workshop planning)

IIC Liaison Updates and Opportunities

- Chicago F2F - September 12, 2018
  - Hosted by IIC Security WG (Email sven.schrecker@intel.com, wael.william.diab@huawei.com)
  - EdgeX Liaison: James Clardy
  - If you'd like to contribute, please email info@edgexfoundry.org to be added to EdgeX-IIC liaison mail list
  - Need to propose Agenda Topics/Speakers
    - Example: http://www.iiconsortium.org/liaison-workshop.htm
    - Primary goal: Educate people about EdgeX, align to IIC Member goals / needs
    - Potential Agenda Items:
      - 1. Introductory presentation EdgeX (including architecture overview)
      - 2. IIC Reference Architecture
      - 3. System Management, Security - How does this align to IISF and IIC Endpoint Security Best Practices?
      - 4. Overview of Vertical Activities - alignment to IIC testbeds?
      - 5. Presentations from IIC - what's desired by EdgeX Members?
      - 6. Representatives from member companies to present use cases; how they fit in, what they are contributing (examples: Samsung, RSA)
      - 7. Map EdgeX to IIC
    - Session length? TBD - (IIC/oneM2M workshop was 3.15 hours)
  - Indicated interest in participating (as of May 20): Keith Steele, Doug Gardner, Riaz Zolfonoon, Salim AbiEzzi
    - Email info@edgexfoundry.org to register interest

Evangelist Hiring

Brett Preston

EdgeX Developer Advocate & Project Evangelist

- The EdgeX Foundry Project (EdgeX) is seeking a project evangelist and developer advocate to help grow and support the global EdgeX community
- Technical skills include: You are hands-on with EdgeX and Embedded technologies
- If you know of anyone, send them our way (link below)
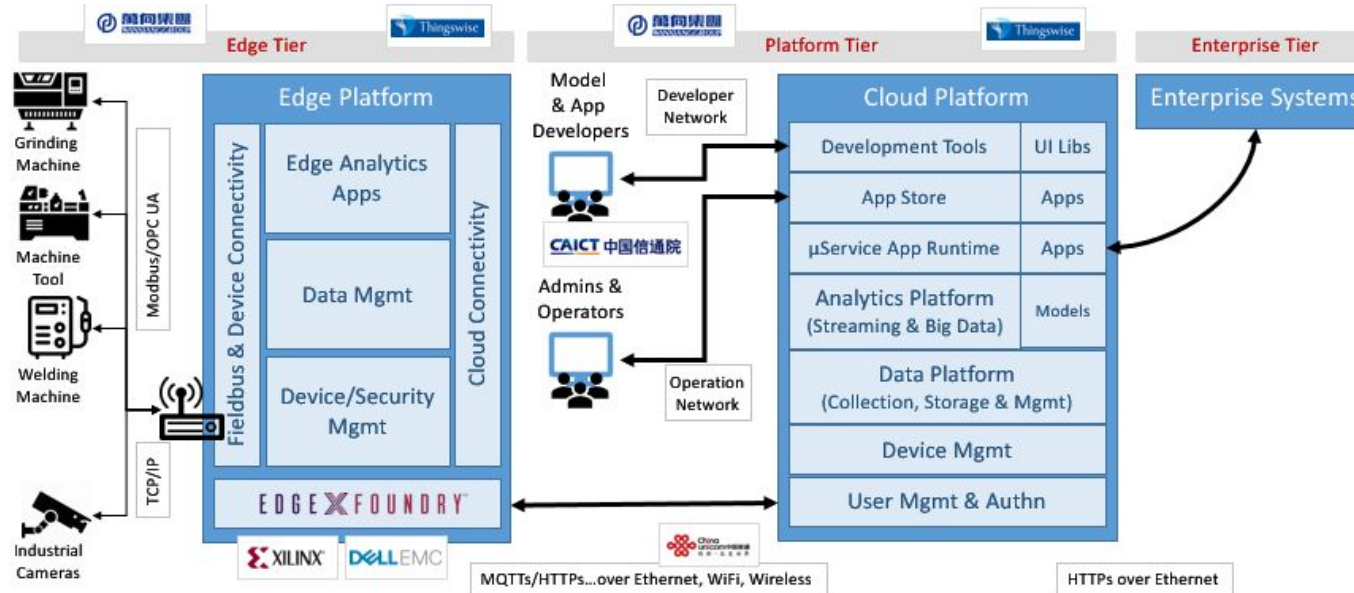- Full information available at https://www.edgexfoundry.org/jobs/

EdgeX Test Beds

Keith Steele

EdgeX Test Beds

- Discussion on EdgeX Test Beds
- Test Bed Collaboration
- Wanxiang submitted a testbed in IIC, using EdgeX as edge computing platform - OMPAI http://www.iiconsortium.org/optimizing-manufacturing-processes.htm

Upcoming Events

Brett Preston

Upcoming Events - Confirmed

- LinuxCon + ContainerCon + CloudOpen China, June 25 - 27, 2018, Beijing
  - Community Partner: Save 15% on Attendee Registration with discount code LC318COM15
  - Meetup being planned. RSVP at: https://www.bagevent.com/event/1491965
- Open Source Summit North America, August 29 - 31, 2018, Vancouver, Canada
  - Community Partner: Save 15% on Attendee Registration with discount code OSSNA18COM15
- EdgeX / IIC Workshop, September 12, 2018, Chicago, IL
  - Hosted jointly by:
    - IIC Security (Chair: Sven Schrecker, Intel)
    - Liaison Working Group (Chair: Wael William Diab, Huawei)
  - EdgeX Liaisons: James Clardy, NetFoundry, Riaz, Salim AbiEzzi VMware
- Open Networking Summit Europe, September 25 - 27, 2018, Amsterdam, Netherlands
  - Community Partner: Save 15% on Attendee Registration with discount code ONSEU18COM15
  - CFP open through June 24 / Submit your EdgeX talk here

Upcoming Events - Confirmed (continued)

- Open Source Summit Europe, October 22 - 24, 2018, Edinburgh, UK
  - Community Partner: Save 15% on Attendee Registration with discount code OSSEU18COM15
  - CFP open through July 1 / Submit your EdgeX talk here
- ELC / OpenIoT Summit Europe, October 22 - 24, 2018, Edinburgh, UK
  - CFP open through July 1 / Submit your EdgeX talk here

Event Participation Opportunities

IOT Solutions World Congress

- http://www.iotsworldcongress.com/
- October 16-18, 2018
- Barcelona
- Call For Papers (CFP closed April 30)
  - EdgeX Submitted:
    - Security issues and practices in the IoT Edge Computing Era
    - How to build open source IoT ecosystems
    - Jim White submitted a response
- Call For Testbeds (Call for Testbeds closes June 11)
  - Submitted: ---
- Email info@edgexfoundry.org if you submit for CFP or Testbeds so that we can track

AOB / Reminders

Brett Preston

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: June 5-6, 2018 ([face to face in Palo Alto, CA](#))**

EdgeX Project Organization

EDGE X FOUNDRY™

Chair
Keith Steele
IOTech

**EdgeX Foundry
Technical Steering Committee**

Working Groups

Chair
Jim White
Dell

Chair
Tony Espy
Canonical

Chair
Janko
Isisdorovic
Mainflux

Chair
Sallim
AbiEzzi
VMware

Chair
Doug Gardner
ADI

Chair
Moonki Hong
Samsung

Chair
Jeremy Phelps
Linux F

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 Use Case Campaign
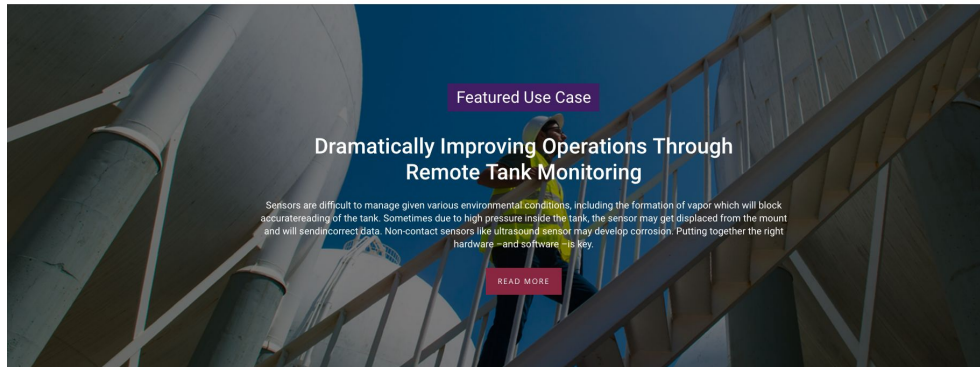
1. Draft site is available for review:
   - https://www.edgexfoundry.org/use-cases/
   - all passwords set to UseCase!
2. Seeking volunteers to help work in EdgeX connection
   - EdgeX specific use cases
   - examples of how EdgeX helps with a use case; which can include how a third party applies their commercial value add
   - email usecases@edgexfoundry.org to sign up

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

  Next call scheduled:

  Thursday, May 31 at 7am PDT (Creating and Updating Documentation)
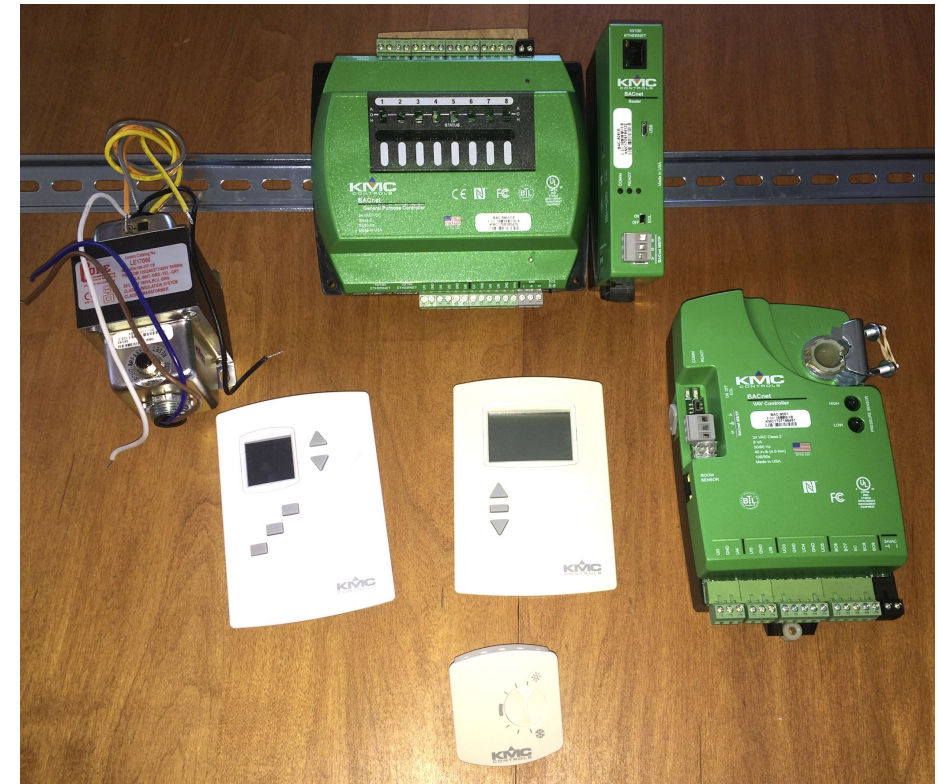
  Targeting additional talks in mid-June

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
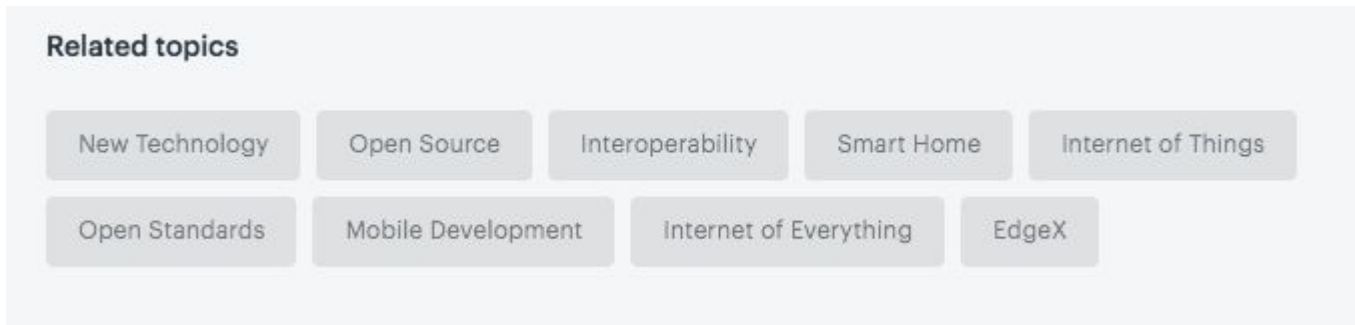
Meetups: Reimbursement Program

- 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

China Presence / Beijing Meetup

WeChat:
- Email info@edgexfoundry.org for invite to EdgeX WeChat group

Beijing Meetup:
- June 26, 6PM - 9PM
- Hosted by VMware
- In collaboration with Zephyr Project
- RSVP/Registration: https://www.bagevent.com/event/1491965

Agenda (tentative)
- Opening Address (Alan Ren - VMware, Kate Stewart - Linux Foundation, Gavin Lu - VMware)
- Keynote: Introducing Zephyr (Wei Ren - Synopsys, Jianghao Qiao - NXP)
- Keynote: Introduction to EdgeX (Jim White - Dell, Tiejun Chen - VMware)
- Keynote: BUPT Presentations and demos on both EdgeX and Zephyr (Professor Li - BUPT)
- Keynote: VMware EdgeX Explorations (Tiejun Chen - VMware, Huaqiao Zhang - VMware)
- Keynote: Using EdgeX in optimization of manufacturing processes (Jijun Ma - Wanxiang)
- Keynote: A fast way to deploy IoT application based on EdgeX (Xiao Shen - Quarkdata)
- Roundtable Discussion + Q&A

Thank You