

EDGE X FOUNDRY™

# TSC Meeting

July 24, 2019



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# Meeting Logistics

Time: July 24, 2019 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)

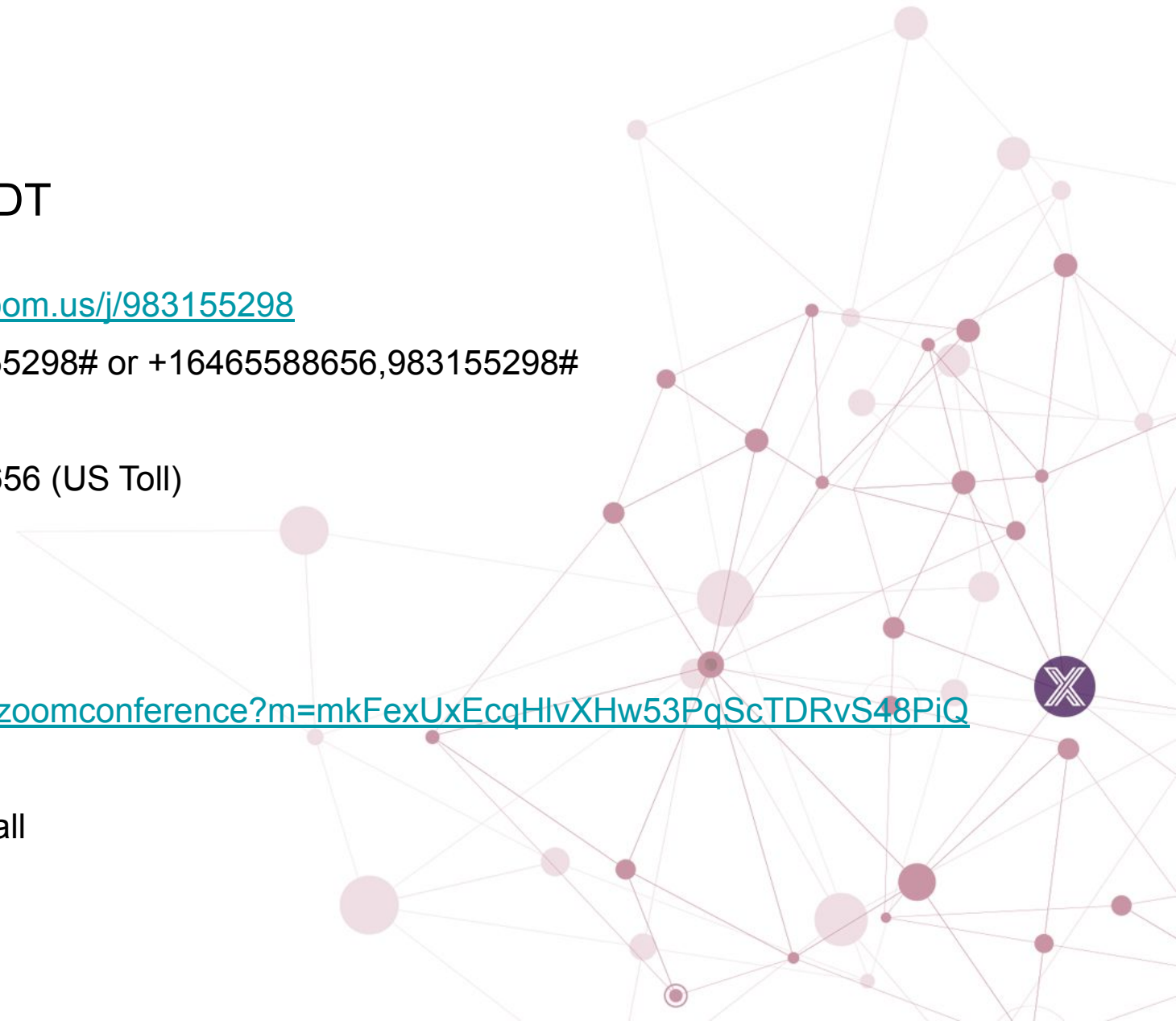
+1 855 880 1246 (US Toll Free)

+1 877 369 0926 (US Toll Free)

Meeting ID: 983 155 298

International numbers available: <https://zoom.us/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>
Intel	Brad Corrion	<a href="mailto:bradley.w.corrion@intel.com">bradley.w.corrion@intel.com</a>
IOTech	Iain Anderson	<a href="mailto:iain@iotechsys.com">iain@iotechsys.com</a>
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Dell	Jim White (TSC Vice Chair)	<a href="mailto:james.white2@dell.com">james.white2@dell.com</a>
IBM	Joe Pearson	<a href="mailto:joe.pearson@us.ibm.com">joe.pearson@us.ibm.com</a>
IOTech	Keith Steele (TSC Chair)	<a href="mailto:keith@iotechsys.com">keith@iotechsys.com</a>
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Canonical	Tony Espy	<a href="mailto:espy@canonical.com">espy@canonical.com</a>
Dell	Trevor Conn	<a href="mailto:Trevor.Conn@dell.com">Trevor.Conn@dell.com</a>

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

- Dot Release
- WG Updates
- Geneva Face-to-Face in Phoenix AZ
- Fuji Release Scope/Summary
- Deployment and Orchestration
- Upcoming Events
- AOB



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Edinburgh Dot Release (1.0.1)

# Need for Dot Release and schedule

- Thanks again to those contributing to finding, addressing and getting this release out - including our LF partners.
- Dot release artifacts now available
- Docker compose files being created today



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# Work Group Updates

Chairs



# Working Group Chair Updates

- Around the horn
  - Core/Supporting - Trevor Conn
  - Applications - Lenny for Mike Johanson
  - Device Services - Iain Anderson
  - Test/QA - Robin Chatterjee
  - DevOps - James Gregg
  - Security - Malini Bhandaru and Tingyu Zeng
  - System Management - Jim
  - Certification - Rodney Hess
  - Vertical Solutions - Brad Corrin

# Core Working Group (23-Jul-19)

- Value Descriptors
  - Working on timing of PRs with Device Service team
  - Discussion around possible mixed deployment scenario
    - Fuji Core Services w/ Edinburgh Device Service or vice versa
    - How to ensure we don't get a collision on Name when creating Descriptors
    - Email thread on device-service list
    - Looking at adding a /version API endpoint
- Security-Proxy-Setup Migration
  - Originally reviewed under PR 1537
  - Collaborating w/Tingyu on a new feature branch
  - Nearly all code comments addressed, still need to re-align unit tests
- Starting to create issues for Geneva workload
  - Advocate a major version rev
- Unit test coverage is now up to %26.8 from %17
  - Thanks to Anthony, Daniel, Diana and Brandon

# Applications WG Update (24-July-19)

- Currently Working On:
  - Configurations/Profile/Docker for App Service Configurable
    - We will have profiles for
      - default (example)
      - rules-engine
      - http-export
      - mqtt-export
  - Black Box Tests - Planning
    - REST based to start
    - Robot based once QA/Test WG has it working

# Application Services

## Functions (built into SDK)

Current/Complete:

### Fuji

- AES Encryption NEW!
- GZIP Compression NEW!
- ZLIB Compression NEW!

### Edinburgh

- Device Name Filter
- Value Descriptor Filter
- XML Conversion
- JSON Conversion
- MQTT(S) Export
- HTTP Post Export

Future:

- MQTTS (Fuji) + Vault integration
- HTTPS (Fuji) + Vault integration

## Reference App Services (Fuji)

(built on top of SDK)

- Azure IoT Hub (Fuji)
- Amazon IoT Core (Fuji)
- Configurable AS (Fuji) VALIDATING

# Device Services WG Update (17-7-19)

- GPS Device Service approaching readiness
- Proposed OPC UA Device Service demonstrated
  - Will be set up in edgexfoundry-holding
- Consideration of decoupling releases from core EdgeX
- Test plan
  - Black-box testing to be implemented using Robot framework
  - Device services will need to run against simulated devices

# Device Services - current/coming

## Open Source connectors (Current):

- Modbus (TCP/RTU)
- Virtual Device
- Random
- Grove C - ARM only
- SNMP
- MQTT

## Open Source connectors (Future):

- BACnet (IP & MSTP) (Aug)
- OPC UA (Aug)
- Bluetooth (Aug)
- ONVIF Cameras (Oct)

## Commercial connectors (Current):

- MQTT
- Modbus (TCP/RTU)
- BACnet (IP & MSTP)
- OPC UA

## Commercial connectors (Future):

- GPS (Aug)
- MEMS (Aug)
- CAN SocketCAN, CANopen (Sept)
- EtherNet/IP (Sept)
- EtherCat (Sept)
- PROFINET (Sept)
- Siemens s5/s7 (Sept)

# Test/QA WG Update (24-07-19)

- Performance Summary
  - Preparing automation script to collect data for performance summary report
    - Working on Redis and security supported cases
- Performance Test
  - Data lost issue - DevOps team is helping to investigate
    - There are some recommendations for TIG infrastructure
- Investigating RAML -> Swagger conversion
  - Adopt OAS 3.0 <https://swagger.io/specification/>
  - Preparing presentation of Swagger Hub account creation <https://swagger.io/tools/swaggerhub/>
  
- Next QA/Test WG meeting August 1st, 4pm PST

# DevOps WG Update (07-24-19)

## Fuji Scope

- Container Scanning (Clair Server landing request) has now been committed to by Linux Foundation with resources planned and funding approved for hosting on AWS.
  - Presented Clair reporting last week in DevOps WG
- Static Code Analysis Tools
  - Presented proposed tooling analysis in Security WG last week
  - Decision was to review the output of several tools and review in Security WG
  - Snyk demo scheduled 7/31 in Security WG
- Review of the Linux Foundation Infrastructure as Code re: Performance Testing Data Loss
  - Meeting with Jordan Conway / LF Infrastructure team (7/23)
    - Excellent collaboration - THANK YOU Jordan Conway!!!  
Jordan made some of the proposed changes to the EB hosted solution  
Based on the changes, we expect a minor increase in hosting costs (~\$30/month) due to the increase in compute (t3.medium > t3.xlarge)

Next DevOps WG meeting - 7/25/2019 Thursday 7AM PDT



# System Management WG Update (7-24-19)

- Open Horizon POC on-going
- Review and acceptance of CLI tool - ongoing
- Fuji Focus
  - Metrics collection implemented
  - Set configuration working
  - To Do
    - Start/stop/restart all done by the executor to include stop/restart of SMA
    - Safe shutdown

# Security WG Update (7-17-19)

Tingyu & Malini

- Merging API-Gateway project into EdgeX-Go in progress. ( Fuji release plan)
- James Gregg from DevOps made great presentation on static code tool evaluation during security WG meeting. Will invite a vendor (Snyk) for Demo & QA during next security WG meeting.
- PR for PKI-init project has been submitted by Jim Wang of Intel into EdgeX-Go and review is in progress ( part of Fuji release plan)
- August 1, 2019 Security F2 in Santa Clara at Intel
  - Host Jim Wang [yutsung.jim.wang@intel.com](mailto:yutsung.jim.wang@intel.com)
  - Location: SC-12/Intel, 3600 Juliette Ln, Santa Clara, CA 95054
  - Agenda: Hardware Security & possibly PKI, details shared in the security WG meeting last week.

# Certification WG Update (7-22-19)

- Reviewed external dependencies
  - Conversion of RAML to Swagger for API specification
  - Update to using the Robot Framework within QA/Test
- Next meeting Monday, August 6th, 10 a.m. EDT

# Vertical Solutions WG Update (7-17-19)

- Focused on “Edge X Games” (aka hackathon)
  - Working meetings underway, moving to Marketing Subteam forum
- Hot off the presses: Congratulations to Henry Lau who has graciously stepped up to chair the Commerce Project for the next year

# Miscellaneous

WG Leads - please attempt a committer/maintainers cleanup

Let me know of new committers that need to be added (security for example)

Please let James know of the need to delete/archive repos per his email



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Geneva F2F

# Registration now open

## EdgeX TSC Face-to-Face meeting (semi-annual)

- Planning for the Geneva release (and lessons learned on Fuji)
- Nov 4-7th
  - Nov 4th - Architects' topics must be a contributor (have at least one Git contribution) or have invitation of WG chair
  - Located @ Galvanize Phoenix at 515 E Grant St, Phoenix, AZ
  - Hotel and other logistical info available on the [Wiki](#)
- Register now at <http://www.cvent.com/d/b6qcr0>



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Fuji Release (anticipated scope)

Jim



# Fuji Summary

See:

<https://wiki.edgexfoundry.org/download/attachments/329436/Fuji%20Release.pdf?version=1&modificationDate=1562680294976&api=v2>



# Deployment/Orchestration/Management options

Jim/Jeremy

# Deployment/Orchestration/Management Survey

- Per Keith's request, bring deployment/orchestration and system management organizations in to present their capability

# Deployment/Orchestration/Management Survey

## Current list of requirements

- Can deploy EdgeX services to a host
- Can restart EdgeX services
- Can monitor EdgeX services
- Can gather and provide runtime metrics (CPU, memory usage, etc.) on EdgeX services natively
- Can gather and provide runtime metrics (CPU, memory usage, etc) on EdgeX services using SMA
- Can update OS
- Can update firmware, drivers
- Can control network
- Works with Docker containers
- Requires virtualization (to include Docker)
- Provision secrets
- Deploys/Serves secrets
- Cluster Aware
- Provides Host Virtualization
- Provides Service Virtualization

# Deployment/Orchestration/Management Survey

## Tools / technologies to be explored

- Nomad
- K8s (already being explored by Dell and others)
- K3s
- Terraform
- Ansible
- PKS (already being explored by Dell and others)
- Pulse IoT
- EDM
- Open Horizon (already working a POC)
- Vault (already included in stack)
- Let Encrypt
- Common Linux Utilities
- NSX
- Docker (already included in stack)
- ESXi
- Zededa/ Eve



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## Upcoming Events

# Upcoming External Events

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

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

- › [Open Source Summit Japan](#): 17-19 July, 2019 - Tokyo, Japan
  - › July 17: BoF - Getting the Edge in Edge Computing
  - › July 19: Tiejun Chen, VMware - Build Edge Computing with EdgeX Foundry over Kubernetes
  - › July 19: Hyde Sugiyama, Red Hat - Kubernetes Native Infrastructure and CoreOS Operator Framework for 5G Edge Cloud Computing
- › [Open Source Summit / Embedded Linux Conference](#) NA: 21-23 August, 2019 - San Diego
  - › LF Edge Members receive a 20% discount on registration. Email [info@lfedge.org](mailto:info@lfedge.org) for code.
  - › August 20: [LF Edge Mini-Summit](#) - Half-day, single-track event on the topic of IoT and Edge Computing
  - › August 21: Tingyu Zeng, Dell: An Agile Approach to Threat Modeling for Securing Open Source Project EdgeX Foundry
  - › August 22: Malini Bhandaru, VMware & Trevor Conn, Dell - IoT Action at the Edge - EdgeX Foundry 1.0 Released!
  - › August 23: Alexandre Courouble, VMware - Easy as a pi: EdgeX on Raspberry Pi for Automotive IoT
  - › August 23: Gavin Lu, VMware - Open and Neutral Edge Computing Architecture on Heterogeneous Devices
- › [Open Networking Summit EU](#): 23-25 September, 2019 - Antwerp, Belgium
  - › LF Edge Members receive a 20% discount on registration. Email [info@lfedge.org](mailto:info@lfedge.org) for code.
    - › Jim White's talk accepted

## Upcoming External Events continued

- › [Open Source Summit EU / ELC](#): 28-30 October, 2019 - Lyon, France
  - › October 31: LF Edge Mini-Summit - Half-day, single-track event on the topic of IoT and Edge Computing
  
- › Discussions around upcoming events occur in the LF Edge Outreach Committee
- › Members may subscribe at: <https://lists.lfedge.org/g/outreach-committee>



## Upcoming CFP Due Dates

- › [KubeCon + CloudNativeCon NA](#): Nov. 19-21, 2019, San Diego
  - › CFP Due: July 12
    - › <https://events.linuxfoundation.org/events/kubecon-cloudnativecon-north-america-2019/cfp/>

# EdgeX TSC F2F Meeting(s)

**4 November - 8 November, 2019** -- Location Phoenix, Arizona (USA) -- [Wiki page](#)

- Latest agenda available on the [Wiki](#)

## Venue

- Galvanize – 515 E. Grant Street, Phoenix, AZ 85004

## Coming Soon (before EoM June):

- **RSVP:** Links to register will be available on [Wiki](#). Will include registration for each section.
- **Hotel/Travel:** Recommended hotels



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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: June 26, 2019**

# Marketing

- **CTA:** If your company will be presenting EdgeX at an upcoming event/webinar/other, please email [pr@lfedge.org](mailto:pr@lfedge.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](mailto: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 Mike Woster at LF ([mwoster@linuxfoundation.org](mailto:mwoster@linuxfoundation.org))
  - First Priority is the MVP - potential contributors please contact [keith@iotechsys.com](mailto: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://slack.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 Slack

<https://slack.edgexfoundry.org/>

- [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](#)

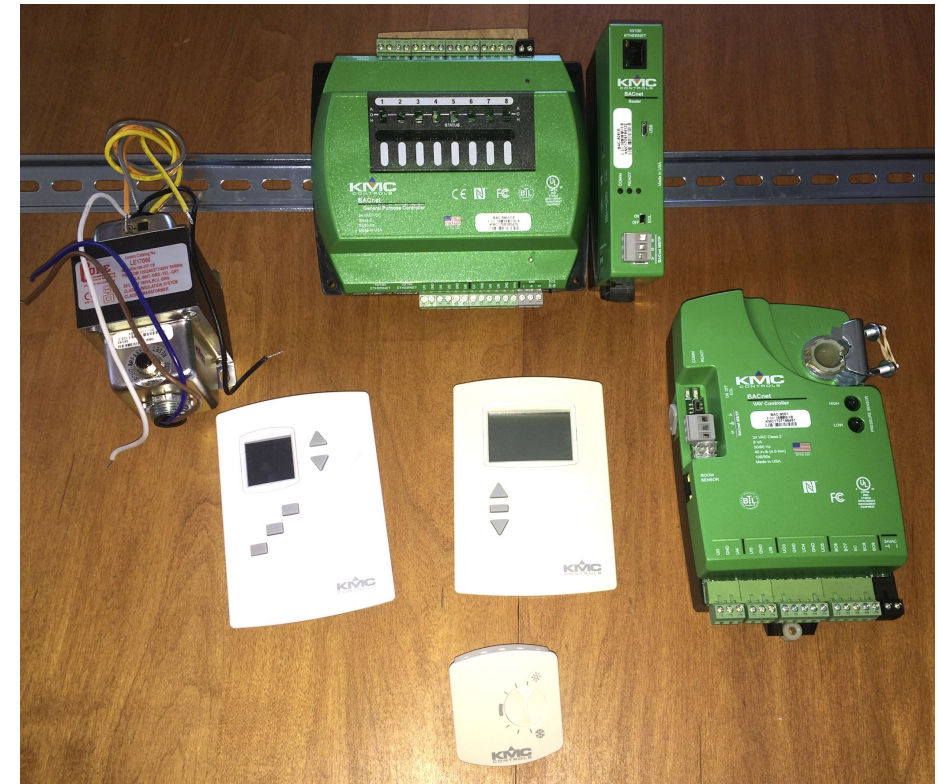
# What is the Device Exchange?

- 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](mailto: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@lfedge.org](mailto:pr@lfedge.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