

EDGE X FOUNDRY™



TSC Meeting

Oct 26, 2022



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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
Intel	Bryon Nevis	bryon.nevis@intel.com	Security WG Chair
Intel	Lenny Goodell	leonard.goodell@intel.com	Applications & Analytics WG Chair
IOTech	Cloud Tsai	cloud@iotechsys.com	Core & Test/QA WG Chair

At Large Members:

Gavin Lu (VMWare), Farshid Tavakolizadeh (Canonical), Melvin Sun (Intel), James Butcher (IOTech), Tom Brennan (Eaton)

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

- Building System Integrators
 - Introduction to BSI's use of EdgeX
- WG updates
- ADR and UCR updates
- Doc updates
- Miscellaneous



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Building System Integrators

Overview of the use of EdgeX at BSI



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Work Group Updates

Chairs

Working Group Chair Updates

- Around the horn
 - Product Manager - Lenny Goodell
 - Applications - Lenny Goodell
 - Core - Cloud Tsai
 - Device Services - Iain Anderson
 - DevOps - Ernesto Ojeda
 - Release Czar - Bill Mahoney
 - Security - Bryon Nevis
 - PRC Updates - Melvin Sun and Gavin Lu
 - Outreach and Marketing
 - Certification - Rodney Hess
 - Vertical Solutions (and LF Edge TAC) - Henry Lau

Product Manager (10/26/22) - Levski

[Cross Cutting Issues](#)

Icebox (3)

- **Lite Builds (no security features) via Build Tags**
- Go 1.19 (<https://tip.golang.org/doc/go1.19>)
- Microservice Auth

Backlog (0)

•

In Progress (1)

- **Commands via MessageBus (aka N/S MessageBus)**
 - Go Device Services - **WIP**
 - C Device SDK - **DONE**
 - C Device Services - **TBD**
 - Clients Config (bootstrap) - **DONE**
 - App SDK - **DONE**
 - APP Services - **DONE**
 - Message Envelope - **DONE**
 - Core Command Service - **DONE**
 - go-mod-bootstrap - **DONE**
 - Go Device SDK - **DONE**
 - Command Client (go-mod-messaging) - **DONE**

Done (10)

- **Additional Metrics for Levski (more in Minnesota)**
 - App Services - **Done**
 - Device Services - **DONE**
 - Core - **Defined**
 - Security - **DONE**
- NATS Make targets and compose
- Secure MQTT MessageBus
- Request new Consul token on Auth failures
- System Events (aka CPE) (UC/ADR/Impl)
- Go 1.18
- NATs MessageBus
- Explore goweight to see impact of individual libs (nothing actionable)
- eclipse/paho.mqtt.golang 1.4.1 (License update to v2.0)
- [Securing Consul with Access Token](#)

Applications WG Update (10/26/22) - Levski

Newly Completed (3)

- Updated value of perTopicPipeline didn't enabled before restarting service [#1187](#)
- PipelineMessagesProcessed not report correctly [#1196](#)
- Commands via MessageBus (aka N/S MessageBus) [#1190](#)

New (0)

-

WIP (1)

- Client initialization breaks backward compatibility [#1206](#)

Done for Levski (43)

Backlog (8)

- <https://github.com/orgs/edgexfoundry/projects/50/views/2>

ICE BOX (5)

- Leftovers not planned for Levski and old low issues

Next

- **Fix Cloud Example**
- Record and Replay ADR implementation
 - New project board:
<https://github.com/orgs/edgexfoundry/projects/54/views/1>

eKuiper

- No update this week

New Project Board: <https://github.com/orgs/edgexfoundry/projects/50/views/2>

Application Services - Levski

Functions (built into SDK)

- Add Tags
- Batch
- Compression (GZIP & ZLIB)
- Conversion (XML & JSON)
- PushToCore ** **DEPRECATED****
- **EventWrapper - NEW**
- Encryption (AES256)
- Encryption (AES) ** **DEPRECATED****
- Export
 - MQTT
 - HTTP POST & PUT
- Filtering
 - By Profile Name
 - By Device Name
 - By Source Name
 - By Resource Name
- JSONLogic
- Set Response Data
- **ToLineProtocol (transforms Metric DTO) - NEW**

Features

- Store and Forward
- Batch and Send
- Web Server
- Configurable App Service
- Vault Integration for Secrets
- MQTT Event triggers
- Filter by Topics
- Custom Triggers
- Publish Topics and URL Placeholders
- Structure Custom Configuration
- Background Publishing
- Received Topic
- Context Storage
- Service Metrics - **NEW**
- Clients
 - Logging, Event
 - Command
 - Device, DeviceService
 - DeviceProfile
 - Notification
 - Subscription
 - Registry

Reference/Example App Services

(built on top of SDK)

Released Services

- App Service Configurable
- App RFID LLRP Inventory

Examples

- Simple Filter
- Simple Filter and MQTT Export
- Simple Filter and HTTP Export
- Simple CBOR
- Cloud Export

- Cloud Event Transformation
- Secret Retrieval
- JsonLogic
- Send Command
- Convert & Publish
- Custom Target Type
- IBM Watson IoT (ASC Profile)
- Custom Trigger
- Influx DB & Flege Exports
- Camera Management - **NEW**

Core WG Snapshot (18 Oct 2022)

- TAF:
 - Functional tests:
 - Non-Security 606 tests - all passed
 - Security 606 tests - all passed
 - Integration tests: cases failed by [#725](#) HttpExportSize metric didn't initialize when run by mqtt bus and [#726](#) Metrics InvalidMessagesReceived and PipelineProcessingErrors sometimes got 0 count
 - Non-Security 76 tests - x86 - 2 cases failed / arm64 - 4 cases failed
 - Security 79 tests - x86 - 3 cases failed / arm64 - 5 cases failed
 - Performance tests:
 - Non-Security 10 tests - x86 - all passed / arm64 - 1 case failed due to [#4005](#) Error occurs sometimes "couldn't create database client" when repeating to restart services
 - Security 10 tests - all passed

Core Project Board Status

- 6 New Issues (+5)
- 8 Release Backlog (-5)
- 0 In Progress/QA (+0)
- 98 Levski Done (+3)
- 23 Icebox (+3)

QA/Test Project Board Status

- 0 New Issues (+0)
- 0 Release Backlog (-4)
- 3 In Progress/QA (+0)
- 19 Done (+3)
- 1 Icebox (+1)

Next meeting: Tuesday November 1st @ 5 PM Pacific Daylight Time

Core WG Progress (18 Oct 2022)

- QA Progress

- Implemented tests for Device System Event
- Implementing tests for north-south messaging
- Backward compatibility test is pending, and we plan to perform manually during the code freeze

- Core Progress

- North-south messaging feature is done, and the document is under review

Device Services WG Update (26 October 2022)

Release status:

- Metrics for C: will land tomorrow
- 2 remaining high-priority bugs in usb-camera
- 3 low-priority issues - descope
- 3 documentation / examples issues
- Grove DS - will not ship

Next meeting: October 31st

Device Services - current/coming (as of v2.3)

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 and USB Cameras in Go
- REST in Go
- Grove in C (v1 only)
- CoAP in C
- LLRP / RFID in Go
- GPIO in Go

Open Source connectors (Future):

- UART in Go
- OPC-UA in Go

Commercial connectors (Current):

- BLE in C
- Zigbee in C
- GPS in C
- CAN in C
- CANOpen in C
- MEMS in C
- EtherCat in C
- EtherNet/IP in C
- PROFINET in C
- OPC-UA in C
- OPC-UA Pub/Sub in C
- Siemens S7 in C
- File reader in C
- WebSockets in Go

There are additional commercial MQTT (Go), Modbus (C), REST (Go), ONVIF (C) and BACnet (in C) that have added features over the community editions

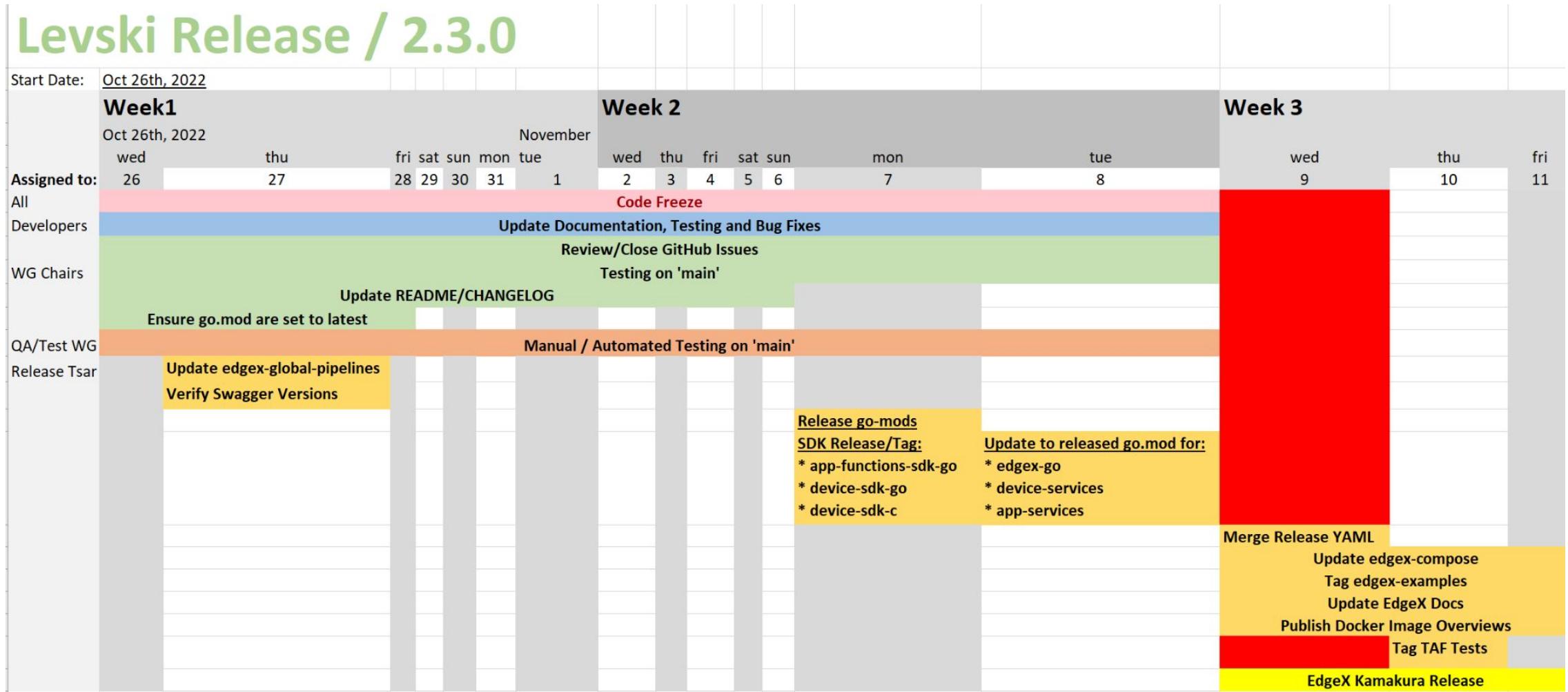
DevOps WG Update (10-26-2022)

Pipeline Related

- [#412](#) [Complete] Update edgeXReleaseDocs pipeline after latest changes
- [#413](#) [Complete] Update Swagger API version on release
- [#284](#) [Complete] Update edgexfoundry DockerHub Overviews for Kamakura

Next DevOps WG Meeting: Tuesday, November 1, 2022 @ 9AM PST

Release Czar (2022-10-26)



EdgeX Release Process: <https://wiki.edgexfoundry.org/display/FA/Release+Checklist>

Security WG Update

Next Meeting: 11/9 (propose cancel next three)

- Consul security refactoring expected done today.
- Helm chart example has been fixed to come up properly on a multi-node k8s cluster when security is enabled. Tested with hostPath and Rancher's local-path provisioners
- OpenZiti - lots of discussions on proposed solution architectures, converging...
- CVE-2022-32149 doesn't affect us, but recommend waiting for go-playground/validator fix

Security Project Board Status

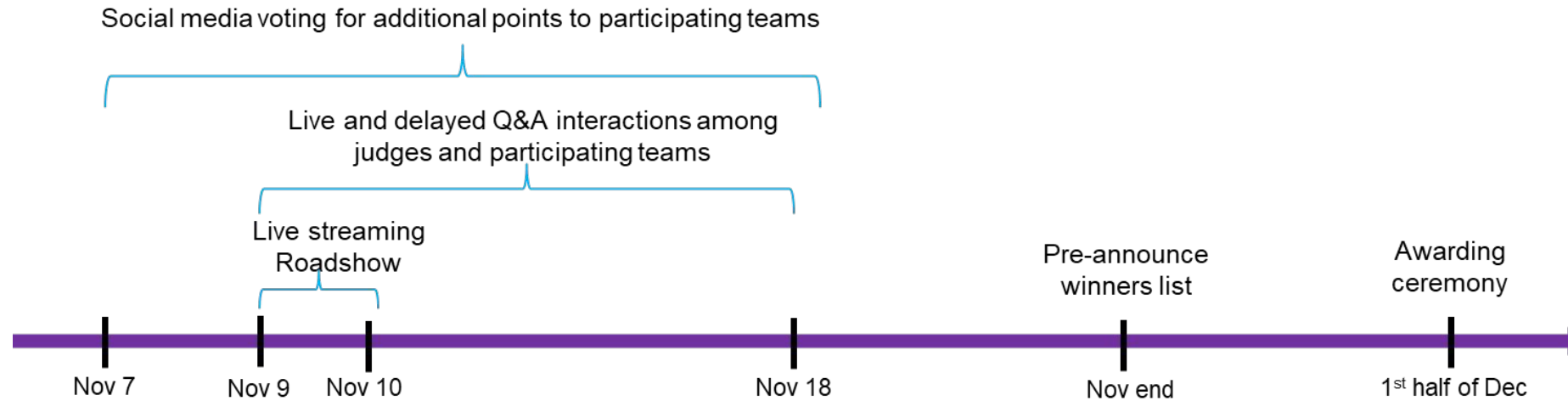
- 1 New Issues (0)
- 1 Release Backlog (0)
- 6 In Progress/QA (-1)
- 2 In review (0)
- 45 Done (+3)
-

Secure Consul Project Board Status

- 0 Phase 3 To-do (0)
- 0 In-progress (-1)
- 1 In-review (+1)

EdgeX China Update

●Timeline of EdgeX Challenge China 2022



●EdgeX invited to join COScon (China Open Source conference) 2022 on Oct 29th.

EdgeX China community channels:

- Website: <https://cn.edgexfoundry.org/>
- OSChina: <https://www.oschina.net/group/edgex-foundry>
- CSDN: <https://blog.csdn.net/edgexfoundry>
- Zhihu: <https://www.zhihu.com/people/edgex-foundry>
- Bilibili: <https://space.bilibili.com/550595847>

EdgeX China Challenge Accepted Use Cases

Health, Education and Consumer

h01	Animal behavior recognition in animal farm to analyze health information, through processing data collected from IPC, temperature sensors, infra imaging, noise detectors
h03	Patient recovery self-practicing & training
h06	5G SASE based capsule bank all-in-one station
h08	CV based medical aesthetics customer evaluation
h09	CV based eye disease screening and evaluation
h10	Interactive mobile robot for retail stores
h12	Facial recognition based smart campus management system (IPCam, access control, borrowing & returning books in Libraries, ...)
h13	CV based customer analytics in shopping mall
h15	Pest and disease identification and management in agriculture
h16	Indoor light & energy management for hospital and schools
h20	CV based heatmap analysis in Museum
h21	Photos taking and sharing system
h22	Smart kitchen management system
h23	CV based smart classroom management
h24	Smart ambulance
h27	Integrated device connector
h29	Video surveillance and security management in gasoline retail station (connecting IPCam, IP speaker)

Energy and Industrial

e04	Smart lighting
e07	Smart management system for oil & gas production
e09	Industrial product appearance inspection
e10	Energy management in smart cities
e12	Bridge & waterway monitoring
e13	5G MEC+AI based power equipment patrol inspection
e14	Video analytics on the edge
e15	EdgeX-based digital edge management system for production sites
e18	Smart energy management platform
e19	Smart energy management in office building
e20	Power Plant & mine Inspection
e26	Data-driven energy optimization services for building central air conditioning systems
e27	Campus fire warning
e30	Access & security management of office building
e31	Fire monitoring & alarm system
e32	Non-secure mode API gateway
e33	Timber storage management
e34	Smart city camera monitoring
e35	5G general edge platform
e36	Vibration monitoring platform

Outreach WG (10/18/22)

Ready/Certification

- No updates

Events

- Discussed events at the last meeting
 - Desire to have Edge F2F next spring (nice if it could be collocated with other LF event)
 - COVID policy not impacting travel, but budget restraints are
 - Will likely restrict travel to country of origin (no or little intl travel)
 - Based on outcome of PRC Hackathon, possibility to revisit in 2023 for US or Europe

WebSite Changes (order or priority)

- SEO work nearly complete
- Some Google Search Console work left
- Issue with docs search being addressed by LF

ADR & UCR PROCESS review (as of 10/18/22)

<i>ADR name and PR number</i>	<i>Status</i>	<i>owner</i>	<i>Work Group</i>
Hybrid App-Device Services (UCR)	https://github.com/edgexfoundry/edgex-docs/pull/809 under re-review	Tom-Eaton	DS
core data cache	https://github.com/edgexfoundry/edgex-docs/pull/723 https://github.com/edgexfoundry/edgex-docs/pull/884 Jim added UCR; need some reviewers	Jim White	Core
global configuration	EdgeX 3.0 item (not in scope now)	Lenny	Core
URI reference (profiles, config, etc.)	EdgeX 3.0 item (not in scope now; may be sub part of global config)	Lenny	Core

Document work (as of 10/18/22)

#731 M [V2 migration guide fix event/reading DTO]

#732 L [role based access for Mosquitto]

#781 L [Metrics docs]

#843 M [SE indexing old docs]

#855 - L [extend Go SDK API docs]

#859 - L [version warning popup]

#860 - L [update UI secty docs]

#864 - M [metadata population by DS at startup]

#866 - L [n-s messaging]

Nice to have

#392 M [timestamps]

#714 L [images to LFS]

#642 L [export to cloud]

#667 L [build containers]

#489 M (with #121, #21) [consume/send binary]

Miscellaneous

- Thanks for attending the [Minnesota Pre-Wire](#). The recording is now live on the wiki
- [Minnesota Planning Meeting](#) Schedule:
 - **Mon Nov 14th** 7am - 10am PT Business Topics and Architecture Tee up
 - **Tues Nov 15th** 9am - 12pm PT Cadence & Process Check, Architecture Topics
 - **Wed Nov 16th** 7am - 10am PT Minnesota Scoping Part 1
 - **Thurs Nov 17th** 9am - 12pm PT Minnesota Scoping Part 2 and Levski lessons learned
 - I will cancel all other EdgeX Calls that week
 - Registration page now live: <https://bit.ly/MinnesotaPlanning>
- EdgeX Web Site (and docs) statistics dashboard
 - <https://datastudio.google.com/reporting/4c1ac7f0-6e24-4eb7-9d1a-da497288bd2b>
 - or bit.ly/EdgeXWebStats



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Thank You