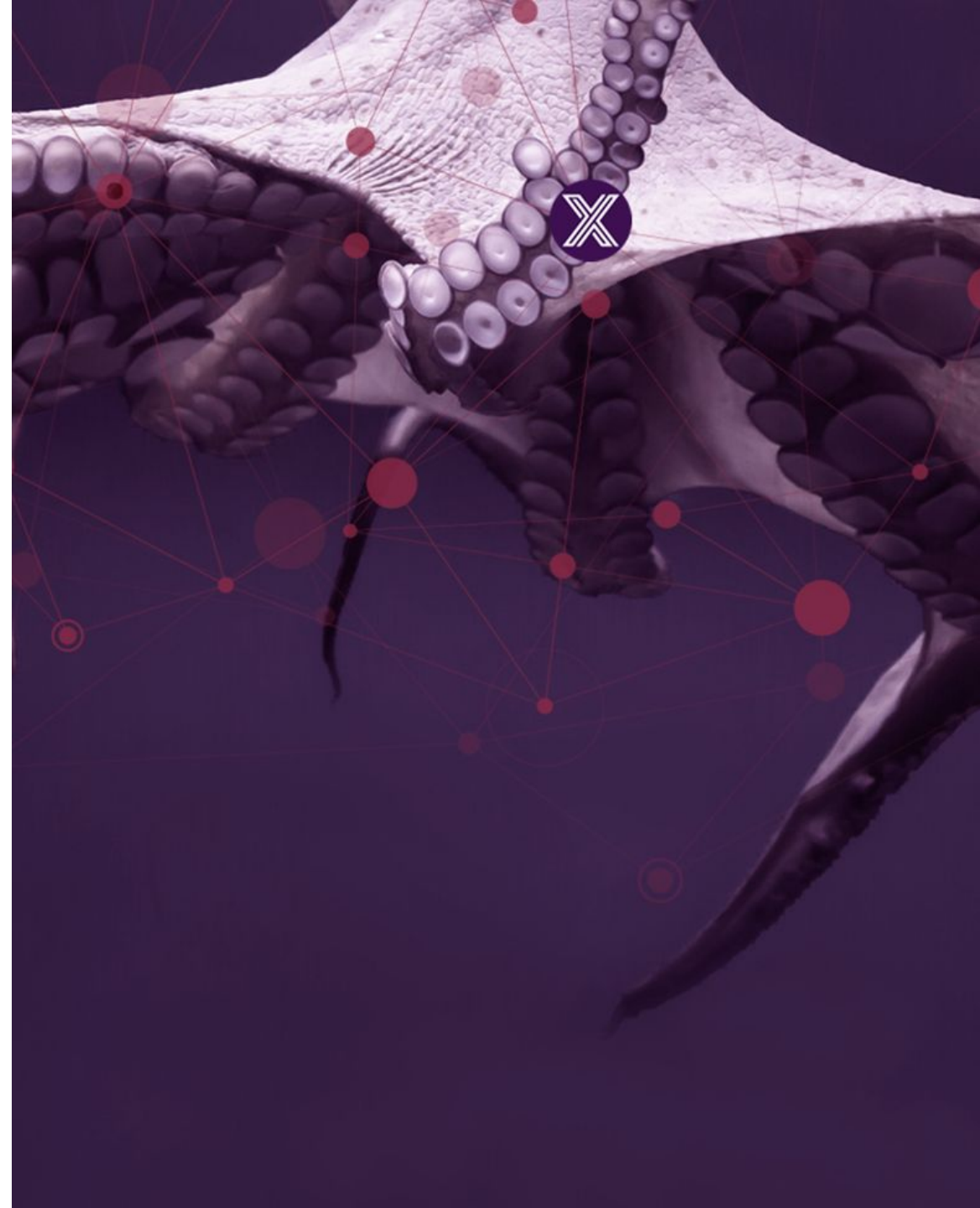


EDGE X FOUNDRY™

TSC Meeting

March 6th, 2024

edgexfoundry.org |  @edgexfoundry



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Meeting Logistics

Time: Wednesdays 8am- 9am Pacific Time (Alternate Weeks)

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



EdgeX TSC Members

Working Group Chairs:

- | | | |
|--------------------------|--|-----------------------------------|
| • Cloud Tsai (IOTech) | cloud@iotechsys.com | Core & Test/QA WG Chair |
| • Lenny Goodell (Intel) | leonard.goodell@intel.com | Applications & Analytics WG Chair |
| • Lindsey Cheng (IOTech) | lindsey@iotechsys.com | Device Services WG Chair |
| • Ernesto Ojeda (Intel) | ernesto.ojeda@intel.com | Dev Ops WG Chair |

At Large Members:

- Farshid Tavakolizadeh (Canonical)
- Corey Mutter (Eaton)
- Elizabeth Lee (Intel)
- Melvin Sun (Intel)
- James Butcher (IOTech)
- Darryl Mocek (Oracle)

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

- Working Group Updates
 - CVE update
- Odessa Deliveries Summary
- Miscellaneous
 - Architects Meeting
 - Updated EdgeX Architecture Diagram





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Work Group Updates

Chairs

Working Group Chair Updates

- Around the working groups:
 - **Product Manager** - Lenny Goodell
 - **Applications** - Lenny Goodell (co-chair Elizabeth Lee)
 - **Core** - Cloud Tsai (co-chair Melody Liu)
 - **Device Services** - Lindsey Cheng (co-chair Felix Ting)
 - **DevOps** - Ernesto Ojeda
 - **Release Czar** - Bill Mahoney
 - **Outreach and Marketing**
 - **Certification** - Rodney Hess
 - **China Updates** - Melvin Sun
 - **LF Edge TAC** - Brad Corrion



Product Manager (03/06/24) - Odessa

[Cross Cutting Issues](#)

Icebox (1)

- Lite Builds (no security features) via Build Tags

Backlog (3)

- **URIs For Files**
 - C services - **TBD**
- **OpenBao**
- **Go 1.22 (Feb'24) and Alpine 3.19**
 - **Released!!**
<https://tip.golang.org/doc/go1.22>

In Progress (4)

- **Odessa Doc Refactoring**
 - Device Services
 - Device Commands - **DONE**
 - Device Definitions - **DONE**
 - Auto Events - **DONE**
 - BacNet - **TBD**
 - COAP - **TBD**
 - RFID LLRP - **TBD**
 - SNMP - **TBD**
 - Virtual - **TBD**
 - Refactor APIs Section - **TBD**
 - Refactor Security Section - **TBD**
 - **Update EdgeX Diagram (see later slide)**

- **Compiler flags to Strip Debug Info**
 - edgex-go - **DONE**
 - edgex-ui - **TBD**
 - App SDK and ASC - **DONE**
 - App LLRP & App Record Replay - **TBD**
 - Device SDK and Device Services used by TAF - **DONE**
 - Remaining Device Service - **TBD**
- **Zero Trust (OpenZiti)**
 - go-mod-core-contracts - **DONE**
 - go-mod-bootstrap - **WIP PR**
 - edgex-go - **WIP PR**
 - edgex-ui - **WIP PR**
 - ekuiper - **WIP PR**
 - edgex-compose - **TBD**
 - edgex-helm - **TBD?**
- **Core Keeper - WIP**
 - go-mod-core-contracts - **WIP PR**
 - go-mod-registry - **WIP PR**
 - go-mod-configuration - **WIP PR**
 - edgex-go - **TBD**

Done (0)

-



Applications WG Update (02/21/24) - Odessa

Newly Completed (0)

Newly added (0)

WIP (0)

Done for Odessa (16)

Backlog (3) <https://github.com/orgs/edgexfoundry/projects/50/views/2>

ICE BOX (0)

Next

- Compiler flags to Strip Debug Info
- Document Commands via MessageBus for App Services

eKuiper

- Latest is 1.12.7
 - <https://github.com/lf-edge/kuiper/releases/tag/1.12.7>
- 1.13.0 releasing this week.
 - <https://github.com/lf-edge/kuiper/milestone/23>
 - zero-trust will land in patch of 1.13

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



Application Services - Napa

Functions (built into SDK)

- Add Tags
- Batch
- Compression (GZIP & ZLIB)
- Conversion (XML & JSON)
- EventWrapper
- Encryption (AES256)
- 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)

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~~
- Direct Publish to MessageBus
- Received Topic
- Context Storage
- Service Metrics
- 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
- App Record and Replay

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



Core WG Update (Mar 6 2024)

[Core/QA Project Board](#)

- TAF - All pass
- Core/QA Progress
 - Integrate edgex-core-keeper back to edgex-go
 - feat: Update UCR for parent-child to remove some requirements [#1337](#)
 - Check the auto events before adding or updating the Device [#4767](#)
- Note
 - Starting from the next week, meeting time will be rescheduled to 5PM Pacific
 - Planning for v3.1.1 patch release for the security update(no code changed) and Device-S7



Common Vulnerabilities and Exposures (CVE) Update

Cloud Tsai's analysis:

1. cJSON package issue from USB Camera Device Service.

<https://security.snyk.io/vuln/SNYK-ALPINE318-CJSON-6156886>

Remediation: Upgrade Alpine:3.18 cJSON to version 1.7.17-r0 or higher.

2. openssl issue and happens in several docker images.

<https://security.snyk.io/vuln/SNYK-ALPINE318-OPENSSL-6191692>

However, I don't know why it happens, because there is no openssl installed to those Docker images.

<https://github.com/edgexfoundry/edgex-go/blob/64231a640c2d3928f8098b6641f84e2829903aa1/cmd/security-secretstore-setup/Dockerfile#L35>

Remediation: Upgrade Alpine:3.18 openssl to version 3.1.4-r5 or higher.

3. mbedtls package issue from USB Camera Device Service

<https://security.snyk.io/vuln/SNYK-ALPINE318-MBEDTLS-6208087>

Remediation: Upgrade Alpine:3.18 mbedtls to version 2.28.7-r0 or higher.

4. expat package issue from the Coap Device Service

<https://security.snyk.io/vuln/SNYK-ALPINE318-EXPAT-6241039>

Remediation: Upgrade Alpine:3.18 expat to version 2.6.0-r0 or higher.

I just verified the container image will upgrade libssl3 to 3.1.4-r5, so all the security CVEs can be resolved after rebuilding the images.

We can schedule a 3.1.1 patch release



OpenBao Update

- Waiting to hear feedback from LF TAC about the submission to become a LF Edge Project
- Progress continuing with alpha release planned for late in March with tickets to include pre-built images
- RE: Vault compatibility:
 - At a minimum API compatible and plugin compatible with Vault 1.14
 - OpenBao has removed integrations with third parties that weren't OSI licensed themselves (cloud providers, databases, etc) <https://github.com/openbao/openbao/blob/main/website/content/docs/policies/plugins.mdx>
- OpenBao TSC asking if an EdgeX community member could provide a demonstration or comment of how we currently use Vault? Would help ensure continuity and EdgeX requirements are captured
- Can we also have a document of the parts of Vault that EdgeX uses (and does not use)?

- James acting as EdgeX contact for OpenBao and TSC member
- Nathan Phelps (IBM) voted as TSC Chair
- Project meetings are weekly (Thursday @ 8am Pacific Time for 30 mins)
- <https://wiki.lfedge.org/display/OH/Hashicorp+Vault+Replacement+Feature+Design+Candidate>



Device Services WG Update (6 March 2024)

- **New S7 device service**

- device-s7 [repo](#) moved to edgexfoundry
- Device s7 document [PR](#) - review in progress
- Plan to release device-s7 3.1.0

- **Device C SDK**

- [#504](#) - in progress



Device Services - current/coming (as of v3.1)

Open Source connectors:

- Modbus (TCP + RTU) in Go
- Virtual Device in Go
- SNMP in Go
- MQTT in Go
- BACnet (IP + MSTP) in C
- ONVIF Cameras in Go
- USB Cameras in Go
- REST in Go
- CoAP in C
- LLRP / RFID in Go
- GPIO in Go

Open Source connectors (Future):

- UART in Go
- Siemens S7 in Go

IOTech commercial connectors:

- Modbus (TCP + RTU)
- BACnet (IP + MSTP)
- OPC-UA
- BLE
- Zigbee
- GPS
- CAN (+ J1939 Extensions)
- EtherCat
- EtherNet/IP
- Siemens S7
- PROFINET
- WebSockets
- MQTT
- REST
- ONVIF
- USB Cameras



DevOps WG and Release Czar

- No Technical updates today
- As described last time, we are sorry to see Ernesto and Bill step away from the project and extremely grateful for their work with EdgeX
- Cherry Wang and Ginny Guan from the IOTech team have been added to the DevOps related repositories
- Suggesting Cherry is officially named as the EdgeX Release Czar - TSC vote required

Recent and Upcoming Releases

Napa (3.1)

- Release Date - 2023-11-15

Odessa (3.2)

- ~Spring 2024

Next DevOps WG Meeting: Tuesday, March 12, 2024 @ 9AM PST (TBC)



Outreach Update

Biweekly LF TAC meeting (ran just prior to this meeting)

-



EdgeX China Update

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>

- Intel and Alibaba cloud are co-hosting a “Hybrid AI” meetup that covers all things edge and AI
 - EdgeX, OpenVINO, Large Language Models (LLM) will be represented and promoted
 - March 16th in Hangzhou, China
 - Represented by Melvin and Alex from Intel in China
 - James to record introductory video from EdgeX perspective



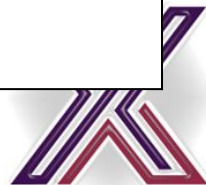


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Other Topics

Odessa Deliveries Summary

Theme / Title	In Scope	Priority	T-Shirt	Notes
Replace Hashicorp Consul with EdgeX-Core-Keeper WIP	✓	High	L	Work to update/review/approve core-edgex-keeper (code, docs, tests). Owner: IOTech and Eaton
Replace Hashicorp Vault with Open-Bao On Track and monitoring progress	✓	High	S	Liaise with Open-Bao group for delivery timing but expecting to be drop-in replacement. Only docker-compose changes needed
Zero Trust / Secure Distributed EdgeX (OpenZiti Integration) WIP	✓	High	M/L	ADR (now approved). Impl largely by Clint
Continue EdgeX Documentation redesign WIP	✓	High	M/L	Device Services, Security and API section
URI for Files - Parity for C Device Services SDK Likely to slip	✓	High	S	Implementation is clear. Owner: Felix. Assistance and reference impl from Elizabeth (Go)
Modelling & Relationships – Virtual Device Resources Deprioritised by Eaton	Now Out	Med	S	Limited to Device SDKs and Metadata. Owner: Eaton
Modelling & Relationships – Protocol Info in Device Definitions	✓ (UCR)	Med	S	UCR owner Oracle. ADR & Impl TBC
Modelling & Relationships – Device Functions	✓ (UCR)	Med	S	UCR owner Oracle. ADR & Impl TBC
Modelling & Relationships – Parent/Child Devices Eaton	✓ (STRETCH)	Low	S	Limited to Metadata. Owner: Eaton. Progress via attending Devices WG. Does a UCR need to be updated here?
Modelling & Relationships – Device Metadata in Provision Watchers	✓ (STRETCH)	Low	S/M	Limited to Device SDKs and Metadata. Owner: Eaton
NanoMQ – Add security to our NanoMQ option	✓ (STRETCH)	Low	S	Continue communication with EMQ team



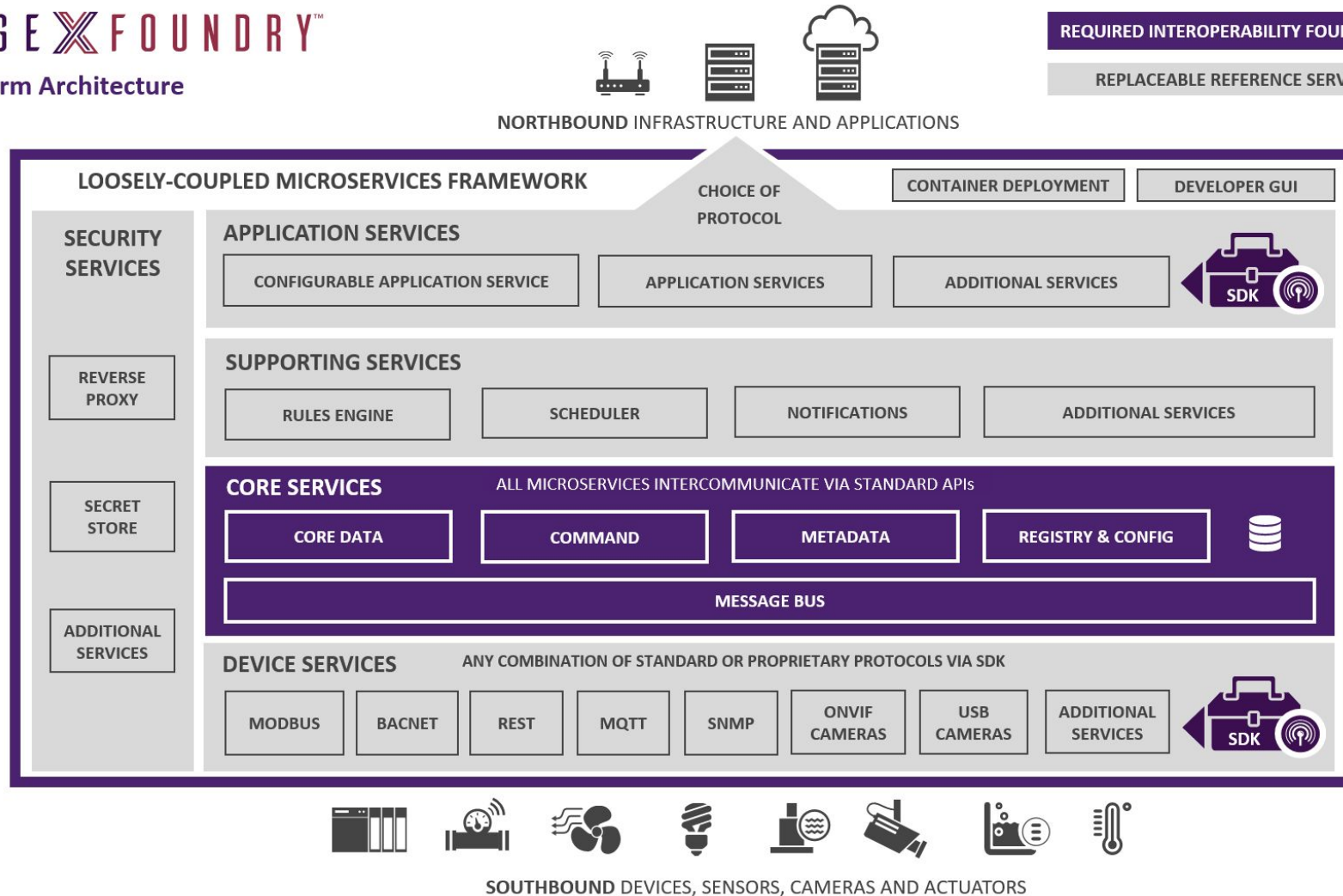
Miscellaneous

- Suggest to cancel Architect's Meetings for the immediate future and arrange ad-hoc meetings as needed (or talk through Working Group meetings)
- New EdgeX Architecture Diagram (next slide)



Diagram Update

- Addition of "Message Bus" and database as a part of the Core Services. I drew the Message Bus along the width of it all to try to suggest it is the common internal communication mechanism
- Removed the arrow suggesting that device data always goes to Core Data
- Removal of System Management panel, since the SMA was deprecated and removed in V3.0 (we no longer have a section for it in docs)
- Update the list of device services to the ones actually provided (it was a very old list before). Add camera logo.
- Rename "Alerts & Notifications" to just "Notifications" as per how it is now described in docs etc





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Thank You