基于 Edge-X 的开放零售架构

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IOT
Group

The future of store digitalization

Immersive and Engaging

Curated and stocked

Convenient and frictionless
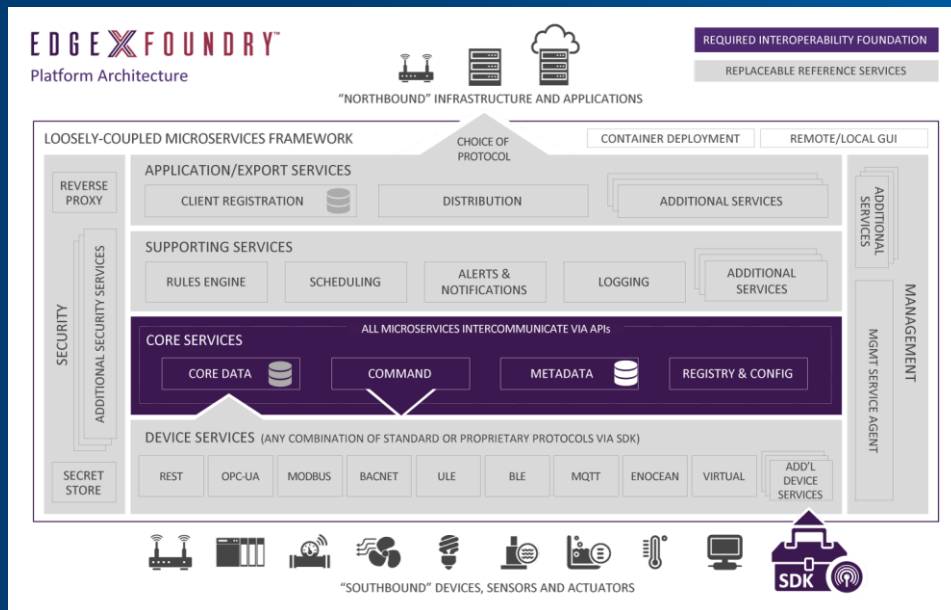
Timely and insightful service

Pillars of experiential retail

Focuses of Open Retail Initiative with Edge-X

| Challenge	Focus
Integration	Middleware
Simplification	Future Ready Compute
Innovation	AI Ready

The framework for our work is focused on three challenges that focus on specific components of technology.

Why EdgeX Foundry

- **Truly open, full transparency**
- **Long-term durability** to address scale and growth needs
- **EdgeX Foundry momentum continues** for IoT interoperability across multiple industries
- **Linux Foundation mindshare and infrastructure** – largest and most pervasive open source software project
- **Marathon vs. Short Sprint** – learn, leverage and lead

The Store Room
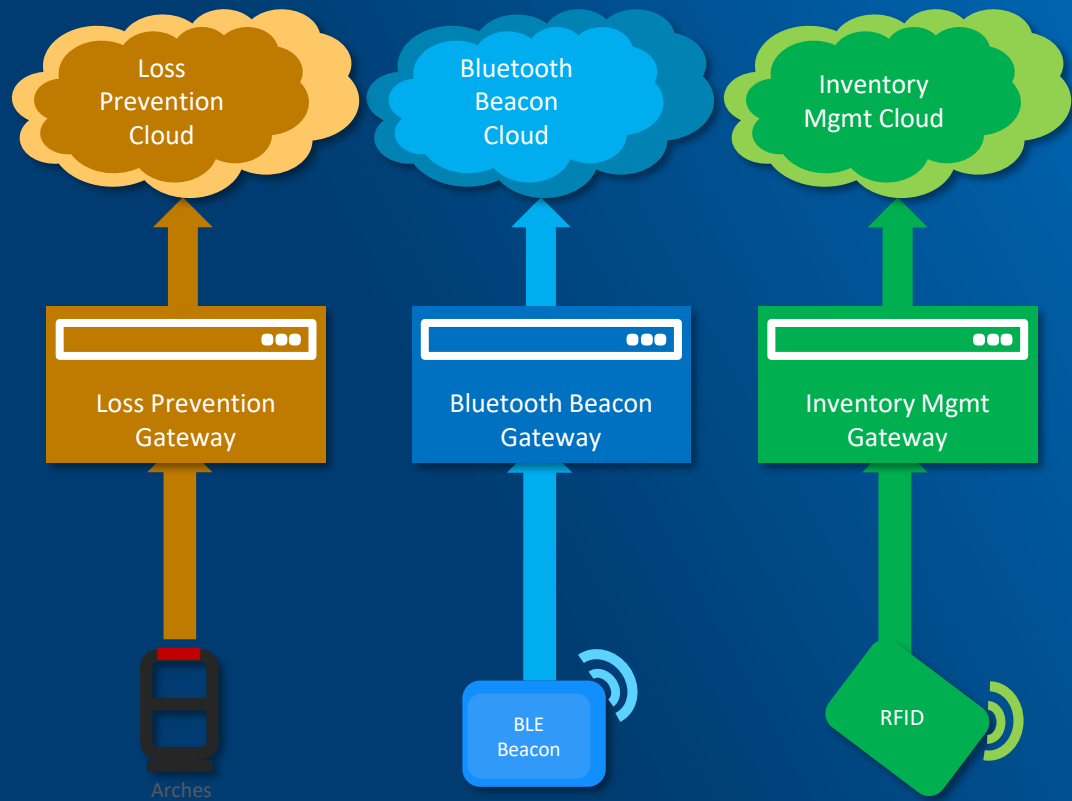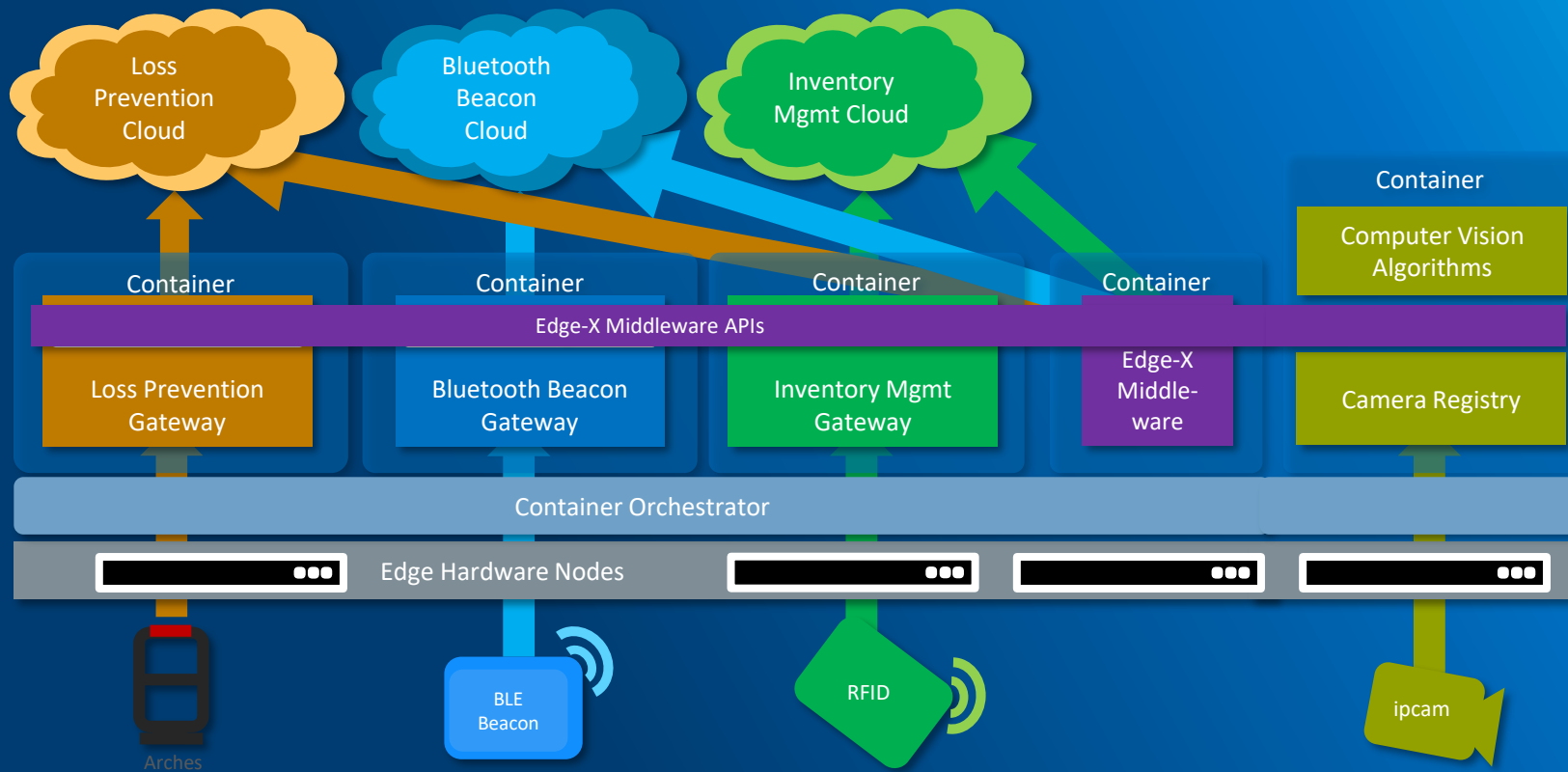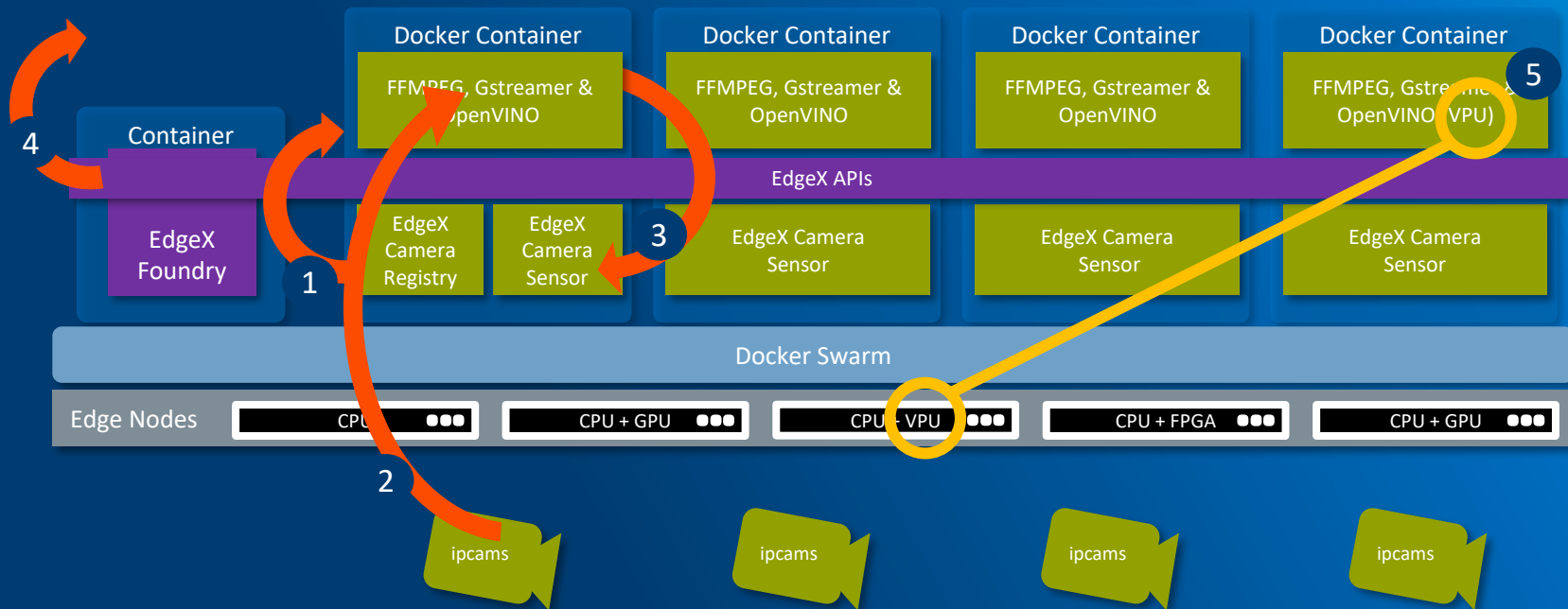
Example 1: Computer Vision

1. Gstreamer pipelines are spun up based on camera tags
2. IP cameras stream data to Gstreamer pipelines
3. Inference events are published to EdgeX
4. EdgeX makes inference available for apps and export
5. Containers utilize accelerators when available

Docker Container — FFMPEG, Gstreamer & OpenVINO

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Docker Container — FFMPEG, Gstreamer & OpenVINO (VPU)

Container — EdgeX Foundry

EdgeX APIs

EdgeX Camera Registry

EdgeX Camera Sensor

EdgeX Camera Sensor

EdgeX Camera Sensor

EdgeX Camera Sensor

Docker Swarm

Edge Nodes

CPU

CPU + GPU

CPU + VPU

CPU + FPGA

CPU + GPU

ipcams

ipcams

ipcams

ipcams

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Example 2: Data Fusion

Docker Containers

Customer Display & Application (uses GPU)

Android VM

Container

EdgeX Foundry

Docker Container

FFMPEG, Gstreamer & OpenVINO

EdgeX Camera Registry

EdgeX Camera Sensor

Docker Container

Basket Validation Application Service

EdgeX APIs

Scale Device Service

Docker Container

Sensor Device

POS Txn Log Device Service

Docker Swarm

Edge Nodes

| CPU | CPU + GPU | CPU + VPU | CPU + FPGA | CPU + GPU |

1. Cameras are used as virtual sensors in the experience

2. Sensors such as scales and scanners feed the basket validation algorithms

3. Data from separate sources, separate vendors, are utilized to guide the customer experience

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EdgeX roadmap

Oct 2019 ● **Fuji**
Distribution support / east-west support, more management capability

Jun 2019 ● **Edinburgh**
Support binary data, certification program, improved and more scalable northbound connectors / application services, additional southbound connectors to common protocols and devices

Oct 2018 ● **Delhi**
First manageability capabilities, Go / C device service SDKs & sample devices services, EdgeX UI

JUN 2018 ● **California**
First integration of security, Java to Go code base, run in <256MB RAM, come up in < 10 sec

Oct 2017 ● **Barcelona**
Improved fit and finish, formalized Core Service APIs, additional Device and Export Services, test apparatus

OEMs / ODMs

- Innovation use cases drive demand for Premium
- **Easily scale up to Premium**
- Scale into brownfield and greenfield opportunities

ISVs and SIs

- Modularized
- Simplified
- Able to easily sell additional capabilities
- **Focus more on value add and less on commodity components**

RETAILERS

- Efficient
- Future ready
- Simplification across full enterprise
- **Modular and nimble**
- **Flexible**
- **Speed of deployment**

Open Retail Initiative with EDGEX
CREATE VALUE FOR ECO-SYSTEM

EdgeX Community members

Choose Your Participation

Commit
to the initiative

- Join and follow the progress
- Promote to your networks

Collaborate
on the Commerce Project

- Attend Commerce Project meetings
- Collaborate on project deliverables
- Promote to your networks

1. Code for the greater good
2. Use cases, components (and code)

Contribute
to EdgeX Foundry

- Become an EdgeX Foundry member and vote to shape standards
- On behalf of your company, contribute code and/or developer resources
- Promote to your networks

1. Code for the greater good
2. Use cases, components (and code)
3. Influence industry standards aligned to EdgeX

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CALL FOR ACTION

1. Sign up for a free Linux Foundation account

   a. Create an account at: https://identity.linuxfoundation.org/

2. Subscribe to the Commerce Project calendar meetings

   a. Browse to: https://wiki.edgexfoundry.org/display/FA/EdgeX+TSC+Group+Calendar

   b. Under the "Subscriptions" header, click on the "elipses"(…) that appears when you hover over the purple item labelled "EdgeX-TSC-Vertic…"

   c. Choose "Subscribe" or "Export to iCalendar" depending on your preferred method of adding appointments to your calendar

3. Subscribe to the Commerce Project mailing list

   a. Enroll at: https://lists.edgexfoundry.org/g/EdgeX-TSC-Vertical-Solutions/

   b. Click on "+ Join this group"