Eclipse IoT and Eclipse Edge Native: Making Sense of the Puzzle

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Internet of Things

Internet of Things

Internet of Things

A physical object which can:

- Collect and send information
- Receive and act on information

Internet of Things

Internet of Things

Internet of Things

- Connectivity is a given, but stability and reliability are not
- Use of the public internet is optional

Internet of Things

Things

Defined by constraints

- Power
- Bandwidth
- Compute
- Environmental (temperature, etc)

Internet of Things

Things

- **Abstract Hardware**
  - MRAA & UPM (on Zephyr RTOS)
- **Manage & Update**
  - Leshan
  - hawkBit & Hara
  - Kapua
  - Wakaama
- **Develop**
  - Embedded CDT (C/C++ Development Tools)

Internet of Things

Cloud

Internet of Things

- On-demand resources
  - Storage, compute, networking...
- No direct active management by devops
- Anywhere and everywhere

Cloud

Internet of Things

- **Digital Twins**
  - Ditto
  - Vorto
- **Connectivity (brokers & servers)**
  - Californium (CoAP)
  - Mosquitto (MQTT)
- **Message Routing**
  - Hono
- **Analytics**
  - Streamsheets

Cloud

Internet of Things

Internet of Things

Things

Protocols

- CoAP: Californium (client)
- DDS: Cyclone DDS
- MQTT: Paho
- OPC UA: Milo
- PPMP: Unide
- Zenoh

Cloud

Sparkplug

Interoperability for MQTT-based Industrial IoT solutions

Standard Payloads

Standard
Topic Structures

Session Management

Sparkplug Working Group

- A working group to steward the Eclipse Sparkplug specification and its implementations, such as Eclipse Tahu
- Launched on February 3, 2020
- More information: sparkplug.eclipse.org

Canary

Chevron

Cirrus Link SOLUTIONS

inductive automation

HIVEMQ

ORing

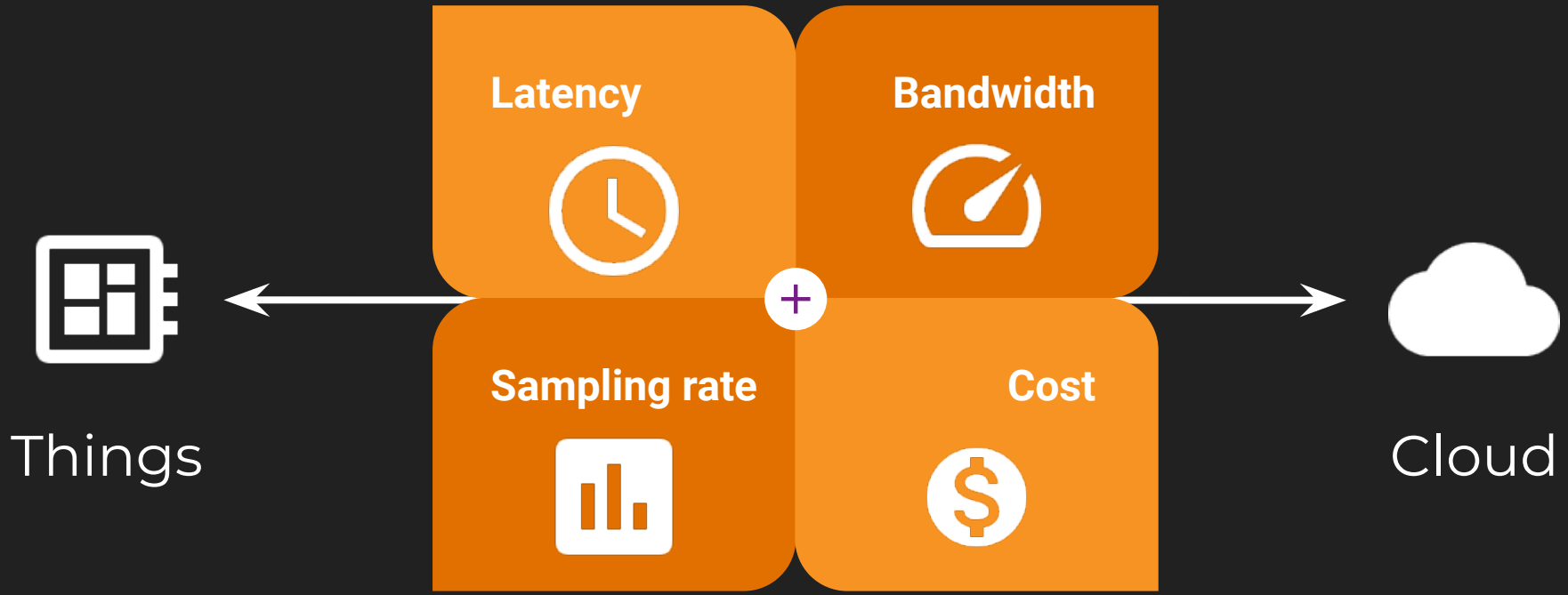
eclipse iot

Internet of Things

Things

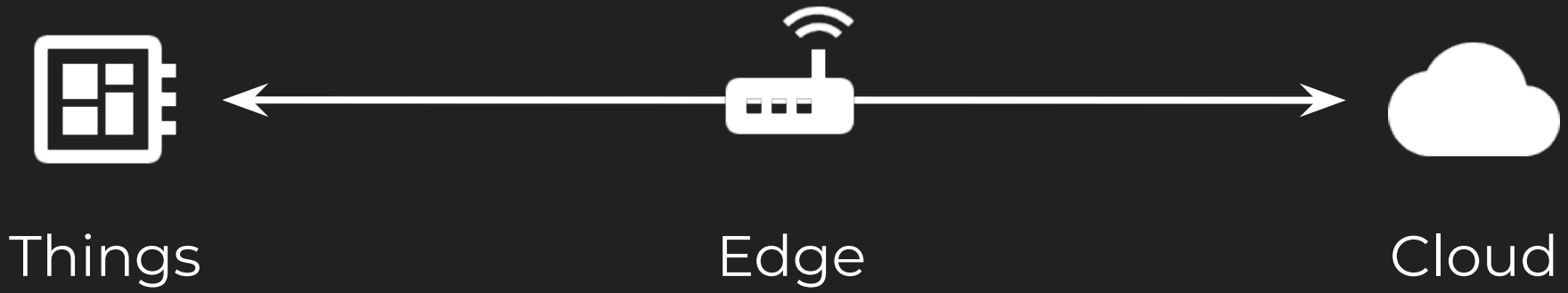
Cloud

Four horsemen of Cloudapocalypse



Internet of Things

Internet of Things



EDGE | NATIVE

Delivering Open Source Edge Platforms. Now.

Code first

Simplify and streamline
Edge mass deployments

Edge Native DevOps

Innovative members

ADLINK Leading EDGE COMPUTING

BOSCH Invented for life

edgeworx

EUROTECH Imagine. Build. Succeed.

HUAWEI

intel

kynetics enjoy the art of coding

SIEMENS

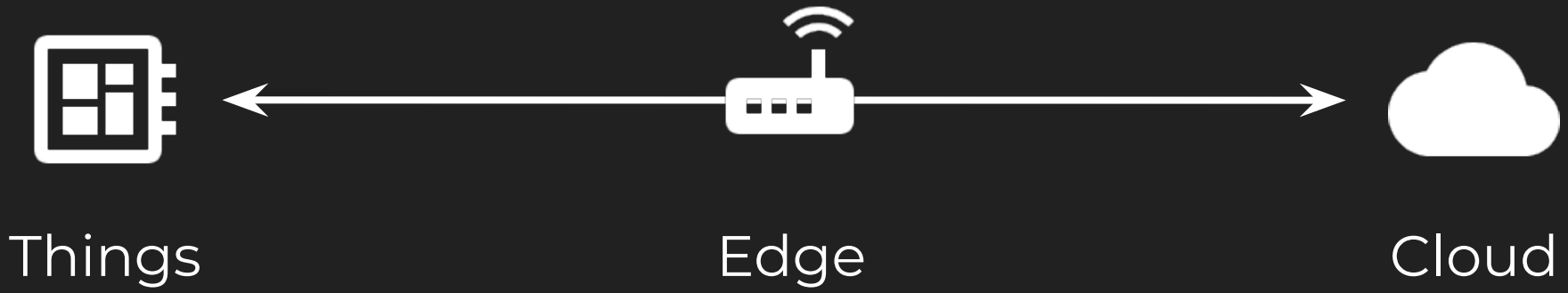
Production quality

code

ioFog

fog05

Internet of Things



Internet of Things

4diac

Infrastructure for distributed industrial process measurement and control systems

Keyple

Open Source API for contactless ticketing

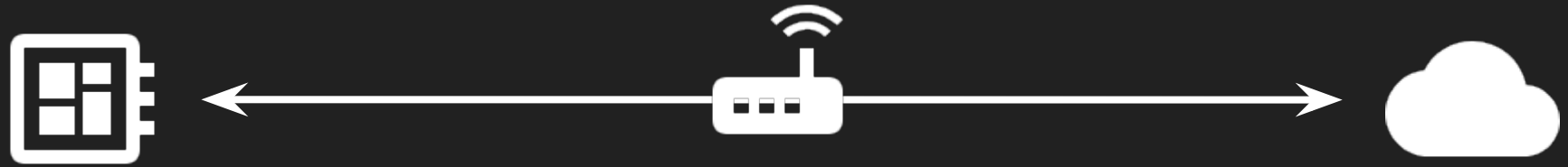
Kuksa

Connected vehicle platform

VOLTTRON

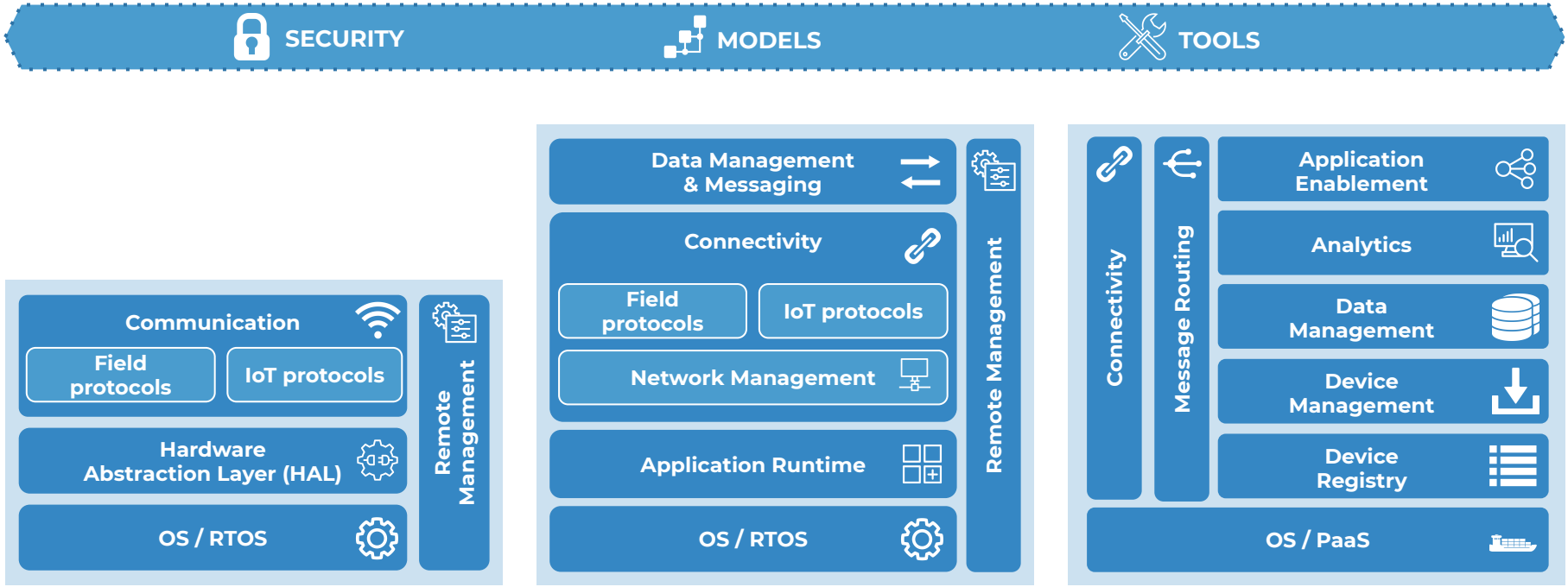
Distributed control and sensing software platform for energy management

Vertical applications



Things Edge Cloud

IoT Functional Concerns

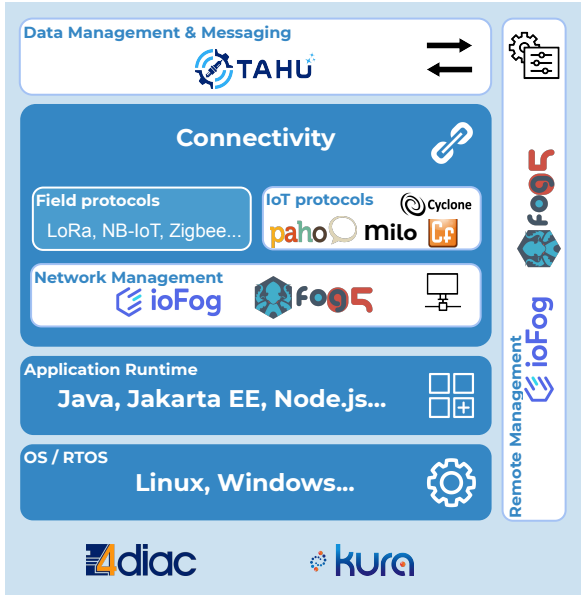


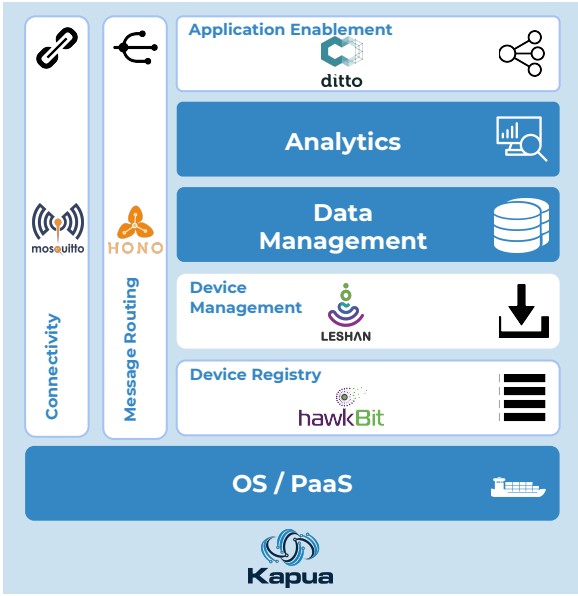
CONSTRAINED DEVICES

EDGE NODES / GATEWAYS

IOT CLOUD PLATFORM

Where Eclipse Projects Fit



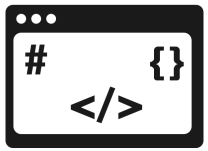


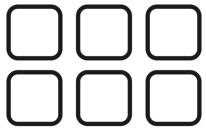
CONSTRAINED DEVICES

EDGE NODES / GATEWAYS

IOT CLOUD PLATFORM

Eclipse IoT Community





3.9M
lines of code

43
projects

350+
contributors

40+
member organizations

IoT Working Group Member Organizations

Strategic members

BOSCH
Invented for life

EUROTECH
Imagine. Build. Succeed.

Red Hat

ADLINK
Leading EDGE COMPUTING

aloxy

AZUL SYSTEMS

ca technologies

Calypso
Networks Association

CANONICAL

list
c2a tech

cedalo

Cirrus Link
SOLUTIONS

COMPEX

CONTACT
Software

DB

EclipseSource

edgeworx

ENGINEERING
proud sponsor of KNOWAGE

FONDAZIONE
BRUNO KESSLER

fortiss

GENERATIVE
SOFTWARE

HIVEMQ

HUAWEI

IBM

IncQueryLabs Ltd

inductive
automation

intel

itemis

kichwa
coders

kynetics
enjoy the art of coding

LAAS-CNRS

THE
LINUX
FOUNDATION

m2m
alliance

MICROEJ

NOKIA

PNNL

SIEMENS

Sterwen
Technology

eclipse iot

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- Join our Virtual IoT Meetup

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Join the IoT Working Group as a Strategic Member

Contribute to strategic open source IoT projects

Thank you

Questions?

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sparkplug.eclipse.org