A Cloud Scale IoT Server Platform

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Code, TV Shows, Cooking, Golf, Open Source, Agile Principles

Email    kai.hudalla@bosch-si.com
Website   projects.eclipse.org/projects/iot.hono
Source    github.com/eclipse/hono
Eclipse IoT
A Box full of Tools, Frameworks & Libraries
Greenhouse Tutorial

The Instructions guide you through the process of building ...

- Overall Architecture

- Approach for Sensor Integration
“It’s alive!”
“Great job, pumpkin!“  

but what about  

other protocols  
privacy  
scale out  
efficiency
€600+ *
lost/stolen/forgotten

* price of tool shown
≤4.5km
distance driven to find a parking space
1,000,000*

* number of things produced by Bosch (each day)
Eclipse IoT Working Group

A generic Blueprint for Cloud based IoT Applications

https://wiki.eclipse.org/IoT/IoTServerPlatform
Eclipse IoT Working Group

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Telemetry

Command & Control

Open Standards relevant for this:
- OMA-DM
- AMQP (?)
- MQTT
- LWM2M

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https://wiki.eclipse.org/IoT/IoTServerPlatform
Eclipse Hono: TPFA IoT Connector

Goals & Features

**Telemetry Data**
Hono can ingest and forward sensor readings from millions of devices with low latency.

**Transparent Device Access**
Applications can send messages to devices using a unique address provided by Hono.

**Privacy**
No sensor data is stored nor processed by Hono. Only meta-data is used for making routing decisions.

**Read-to-run**
Hono provides service components ready to be deployed and run on existing cloud platforms.

**Flexibility**
Hono can be extended with *Protocol Adapters* supporting arbitrary device communication protocols.
What you can do with Hono

Connect the „Greenhouse“

```
«Application»
Greenhouse

«Protocol Adapter»
MQTT
Mosquitto

AMQP 1.0

Hono

«Application»
Data Visualization
```

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What you can do with Hono
Add Lightweight M2M based Humidity Sensor

- «Application»
- Greenhouse
- LWM2M
- XDK

«Protocol Adapter»
- MQTT
- Mosquitto
- LWM2M
- Leshan

Hono
What you can do with Hono

Share Sensor Data with other Application(s)
Under the Hood

(Preliminary) High Level Architecture

- implements external AMQP 1.0 API (e.g. based on Proton)
- implements Hono’s other functionality (security, routing etc)

depending on scalability and throughput requirements this could also be implemented using a standard broker like ActiveMQ, RabbitMQ etc.

used as infrastructure for Hono’s
- "southbound" store-and-forward functionality

used as infrastructure for Hono’s
- "northbound" telemetry data channel
WILL WORK FOR FREE
Evaluate the Sessions

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