Eclipse IoT

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THE NUMBER OF IOT DEVELOPERS 2014-2020

Source: VisionMobile estimates, 2014

Report: IoT: Breaking Free From Internet And Things | vmob.me/IoT
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Open Source for IoT

IoT needs open source to be successful. Eclipse IoT simplifies IoT development.

Technology

Eclipse IoT provides open source implementations of the standards, services and frameworks that enable an Open Internet of Things.

Standards
Implementation of IoT standards like MQTT, CoAP, LWM2M and OneM2M

Getting Started
Step-by-step guide to getting started on IoT development

Services & Frameworks
Building blocks to accelerate IoT development

All projects
Check out all our IoT open source projects
Founded in November 2011
IBM, Eurotech, Sierra Wireless
18 open-source projects*
29 members*
Java – but also C, C++, Python, etc.

→ IoT Standards
→ Services & Frameworks

* and counting!
Protocols

MQTT

OASIS standard
Client and server implementations in **Paho & Mosquitto**
Wide commercial adoption: IBM MessageSight, Facebook Messenger, Eurotech ESF, Sierra Wireless AirVantage, HiveMQ, …
Protocols

CoAP

IETF standard
Java implementation in **Californium**
Lots of traction in the WSN space (Thingsquare, Everything, …)
Foundation for **LWM2M** – supported by
Sierra Wireless, Bosch SI, Zebra Technologies
Frameworks

Application framework for IoT: Kura
Built on top of Java and OSGi
Foundation for Eurotech’s Everyware Software Framework

ETSI SmartM2M and oneM2M implementation: OM2M
Summary information about the current hardware and software configuration of this device.

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<th>Value</th>
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Frameworks

Device Management

**LWM2M** is an Open Mobile Alliance Standard Device Management on top of CoAP. Eclipse **Leshan** and **Wakaama** are two implementations.
Frameworks

Software Provisioning

Eclipse hawkBit
Back end solution for rolling out software updates to constrained edge devices or via IP-enabled gateways
Device management usually have basic update capabilities but lack the capability to organize more complex roll outs
Runtimes

Secured Service Discovery

Eclipse Tiaki
Leveraging DNS-SEC and DNS-SD for retrieving a device configuration parameter, or its public key for establishing secured communications
Solutions

Home Automation: Eclipse SmartHome
Based on Java and OSGi
Very active community with ~100 home automation driver implementations
Foundation for Deutsche Telekom’s QIVICON

IoT network management: Krikkit
Rules engine for IoT devices
Powering Cisco’s Data in Motion.

Industrial control: EclipseSCADA
Tools and Repositories

Eclipse Vorto
- Information model for « things » + code generators
- Creation of a flexible meta information model for generating specific representations
- Bosch SI leading
Eclipse IoT is also...

**Industrial IoT**

Open source implementations of IEC standards
Eclipse **SCADA**, 4DIAC, Rise V2G, ...
Eclipse IoT = 1.8 MLOC
Eclipse IoT in Numbers

1.8 Million Lines of Code

18 projects

125 developers from 20+ organizations

Eurotech, IBM, Sierra Wireless, LAAS-CNRS & Deutsche Telekom leading

Dashboard available at:
http://dashboard.eclipse.org/project.html?project=iot