Eclipse IoT Community Status Update

EclipseCon Europe 2014

Happy Birthday Eclipse IoT!

CoAP in Java.

Californium is a powerful CoAP framework targetting back-end services and stronger Internet of Things devices. It provides a convenient API for RESTful Web services that support all of CoAP's features.

Californium (Cf) core

The project is divided into five sub-projects. The Californium (Cf) core provides the central framework with the protocol implementation to build your Internet of Things applications. This repository also includes example projects to get you started. All Californium sources are hosted on GitHub, so you can easily contribute through pull

Scandium (Sc)

The Scandium (Sc) sub-project provides security for Californium. It implements DTLS 1.2 to secure your application through ECC with pre-shared keys, certificates, or raw public keys.

Repository »

Actinium (Ac)

Actinium (Ac) is the app-server for Californium to realize IoT mashups! Your JavaScript apps become available as RESTful resources and can directly talk to IoT devices using our CoapRequest object API.

Repository »

OM2M
Connecting things

WHAT IS OM2M?

The OM2M project, initiated by LAAS-CNRS, is an open source implementation of the ETSI M2M standard. It provides a horizontal M2M service platform for developing services independently of the underlying network, with the aim to facilitate the deployment of vertical applications and heterogeneous devices.

1. Download
2. Configure
3. Startup
4. Web Interface
5. REST API

Standardized Platform

OM2M implements the ETSI M2M standard. It provides a horizontal Service Capability Layer (SCL) that can be deployed in an M2M network, a gateway, or a device. Each SCL provides Application Enablement, Generic Communication, Reachability, Addressing and Repository, Interworking proxy, Entity Management, etc.

RESTful API

OM2M exposes a RESTful API providing primitive procedures for machines authentication, resources discovery, applications registration, containers management, synchronous and asynchronous communications, access rights authorization, groups organisation, and re-targeting.

Modularity & Extensibility

OM2M is a Java implementation running on top of an OSGi Equinox runtime, making it highly extensible via plugins. It is built as an Eclipse product using Maven and Tycho. Each plugin offers specific functionalities, and can be remotely installed, started, stopped, updated, and uninstalled without requiring a reboot.

Get and use OM2M

You can get OM2M by cloning the repository, build it and get started following the OM2M Get Started.

For all documentation, you can take a look at the OM2M Eclipse Wiki.

New and Noteworthy

New and Noteworthy is here to describe the new features of each release from the previous one, you can choose directly from the list (Will be available soon).

Prerequisites

- "JAVA 1.7" is required to run OM2M.
- "Apache Maven 3" is required to build OM2M.

ponte

Connecting Things to Developers

Subscribe to the Mailing List »

Install »

Protocols

Ponte allows you to publish and receive the data using any protocol: HTTP, MQTT and CoAP. You can mix and match: submit with CoAP and subscribe via MQTT. Thanks to MQTT subscribes and CoAP observe, your devices can get updated in real-time. Thanks to MQTT-over-Websockets, your users can too!

Learn more »

Data Formats

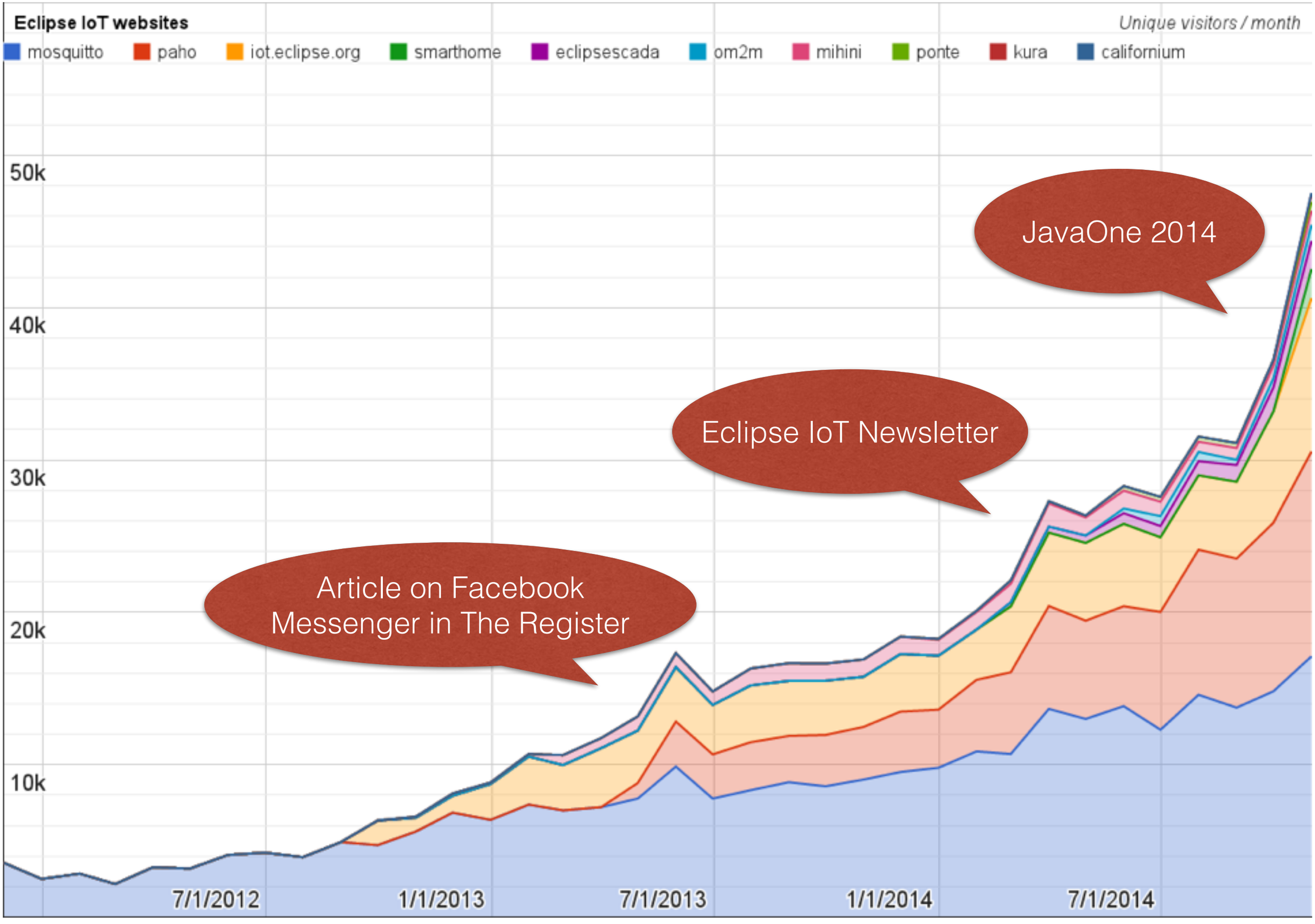
Ponte aims to convert multiple data formats, you will be able to publish your data in JSON, MsgPack, Byson, BSON and XML. Need another one? Use HTTP accept queries to get another version.

We are building it..

Security and Privacy

Ponte will help you, the developer, in building a user-driven security solution to support the communication between all these devices. Thanks to Ponte, there will be no need to prepare a custom authentication for your things, and another for your users.

We are building it..

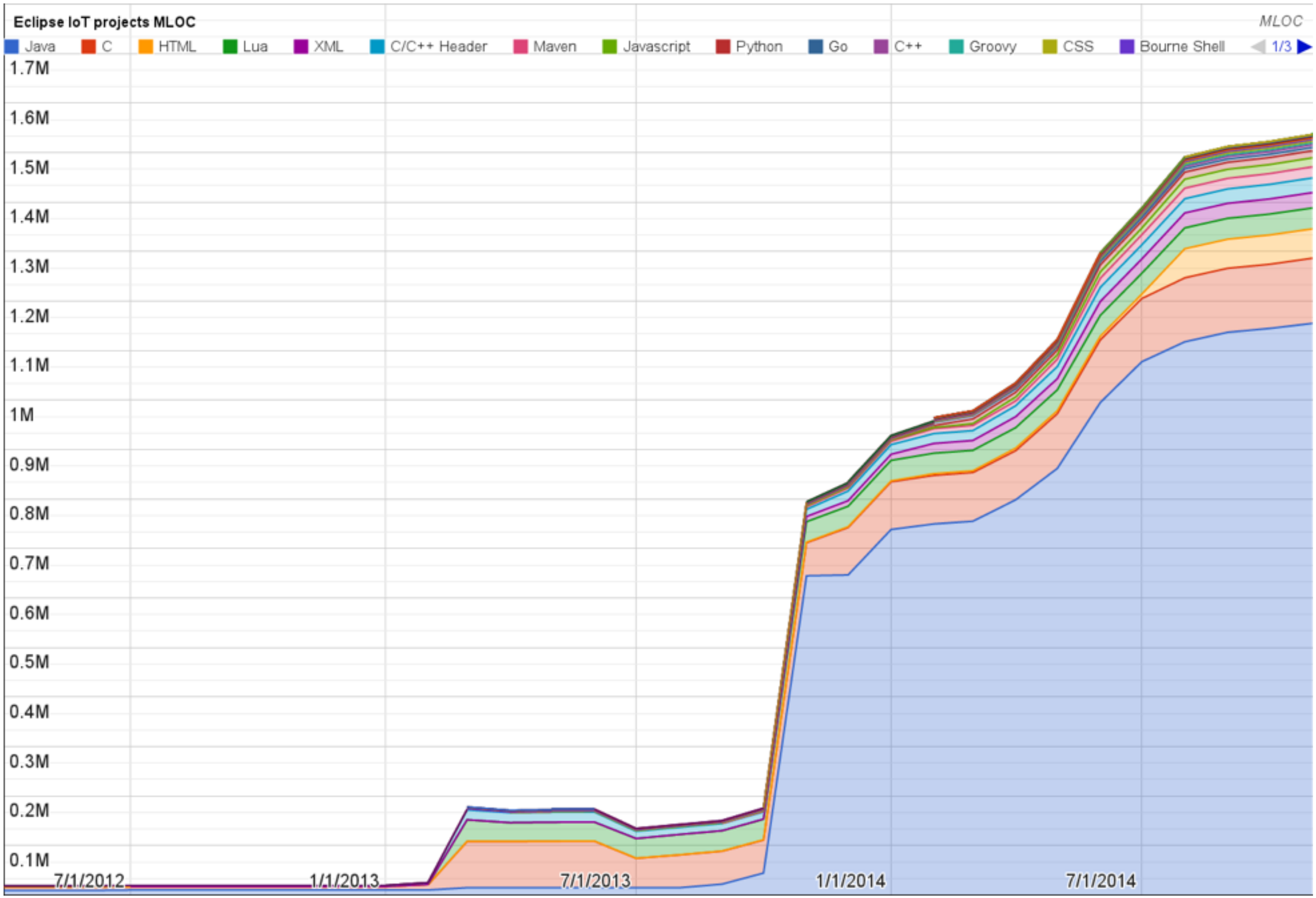

Eclipse IoT websites
Unique visitors / month
mosquitto
paho
iot.eclipse.org
smarthome
eclipsescada
om2m
mihini
ponte
kura
californium
50k
40k
30k
20k
10k
7/1/2012
1/1/2013
7/1/2013
1/1/2014
7/1/2014
JavaOne 2014
Eclipse IoT Newsletter
Article on Facebook Messenger in The Register

Downloads

- **1000+ downloads / month***
  - **EclipseSCADA**: 560 downloads / month
  - **Paho**: 300 downloads / month
  - **Ponte**: 125 downloads / month
  - **Kura**: 60 downloads / month

*__Important__: Most Eclipse IoT projects are consumed as Git repos, for which we don't have clone stats

Not listed here? Consider serving your project deliverables through the Mirror Script (see https://wiki.eclipse.org/IT_Infrastructure_Doc)


Eclipse IoT projects MLOC
MLOC
Java
C
HTML
Lua
XML
C/C++ Header
Maven
Javascript
Python
Go
C++
Groovy
CSS
Bourne Shell
1/3
1.7M
1.6M
1.5M
1.4M
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1.1M
1M
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0.1M
7/1/2012
1/1/2013
7/1/2013
1/1/2014
7/1/2014

IoT sandboxes usage statistics

- See BIRT dashboard for MQTT
- Next: monitor CoAP and LWM2M sandboxes

What could we do better?

- **Release**!
  Provide downloads and p2 repos!

- Do you have a « **Hello World** » for your project

- Make sure each project's website clearly links to **Eclipse IoT portal**