The Eclipse Foundation
(and its Robotics Activities)
Eclipse Foundation

By the Numbers

- 350+ Projects
- 280+ Corporate Members
- 1500+ Committers
- 30+ Professional Staff
The Platform for Open Innovation and Collaboration
An Eclipse Project...

- Conforms to the EDP and Eclipse IP Policy;
- Calls itself an “Eclipse Project” and conforms to Eclipse Foundation Branding Guidelines;
- Operates independently from any specific vendor;
- Uses infrastructure provided by the Eclipse Foundation for core content.
Is publishing on GitHub enough?

31 M+ developers
building on GitHub—including more new users in 2018 than in our first six years combined.

2.1 M+ organizations
bringing people together. There are 40% more organizations on GitHub this year than last year.

96 M+ repositories
hosted on GitHub, 40% more than last year. Almost one third of all repositories were created in the last year.

200 M+ pull requests
created, ever. And you created more than one third of these in the last 12 months alone.
GitHub hosts more than 96 Million of repositories.
A business friendly ecosystem based on extensible platforms

- **Products**
- **Added Value**

**Open Source Common Platform**

- **Infrastructure**
- **Governance & Process**
- **Community Development**
- **IP Management & Licensing**

Compete on products & services

Collaborate with your competitors

Open, Vendor-neutral, Collaboration platform
Value Proposition of Eclipse Working Groups

• Open Collaboration through open source
• IP Management
• Joint Governance
• Co-Funding of development
• Anti-Trust Policy
• Specifications and “certification”
Transparency

Openness

Meritocracy
Open Source Foundations enable vendor-neutral open collaboration
Redis has a license to kill: Open-source database maker takes some code proprietary

It's 'cuz cloud giants use tools without giving anything back

By Thomas Claburn in San Francisco 23 Aug 2018 at 06:05

Database maker Redis Labs this week moved the Redis Modules developed by the company from the AGPL to a license that combines Apache v2.0 with Commons Clause, which restricts the sale of covered software.

The licensing change means that house-made Redis Modules – RediSearch, Redis Graph, ReJSON, ReBloom and Redis-ML – are no longer open-source software, as the term is generally defined. Instead, they become "source available."
Foundations ensure sustainability by...

Securing copyright

Ensuring diversity

https://projects.eclipse.org/projects/eclipse
Foundations ensure sustainability by community diversity

Contribution Activity:
Commits on this project (last 12 months).

Individual Contribution Activity:
Commits on this project by individuals over the last three months.

https://projects.eclipse.org/projects/eclipse/who
Open Source principles are beneficial to the ecosystem!

Transparency  Openness  Meritocracy
Robotics (and related) Activities
Eclipse IoT Mission

To provide a **forum** for individuals and organizations to **build and promote** open source software, open standards and open collaboration models **needed** to create a **scalable** Open Internet of Things
Eclipse IoT Community

2.8M lines of code
37 projects
350+ contributors
140K monthly visitors
“No company can realize the IoT on its own... Within the Eclipse Community, through the contribution of many IoT developers, tools and standards are created on an open platform that many companies can benefit from for their IoT applications.”

Stefan Ferber
CEO, Bosch Software Innovations
2015: Bosch becomes Strategic Member
Co-Develop end-2-end IoT Suite
The 3 IoT Software Stacks

**SECURITY**

- Field protocols
- IoT protocols
- Hardware Abstraction Layer (HAL)
- OS / RTOS

**ONTOLOGIES**

- Connectivity
- Application Runtime
- Remote Management

**TOOLS & SDKs**

- Data Management & Messaging
- Network Management
- IoT protocols
- Field protocols

**CONSTRUANODEVICES**

- Communication
- Remote Management

**GATEWAYS AND SMART DEVICES**

- Remote Management
- Application Runtime
- Data Management & Messaging
- OSI / RTOS

**IOT CLOUD PLATFORM**

- Connectivity
- Message Routing
- Application Enablement
- Event Management, Analytics & UI
- Data Management
- Device Management
- Device Registry
- OS / PaaS
Eclipse IoT Open Testbeds

Asset Tracking Management

Production Performance Management

redhat.

BOSCH
Invented for life

CONTACT Software

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Automotive

Eclipse
Sumo

OpenADx
Automated Drive Tools
Industry 4.0

Basys Research Project: Building the Platform for I40

I4.0 Standards: Agile Standardization DKE/DIN
• BaSys 4.0 — Basic System Industry 4.0
• "Operating System" for versatile production plants
• Developing products and plants in parallel
• Optimal interoperability thanks to standardised communication
• User-friendly interface
• Self-learning systems and digital twins
• Event-driven production control
• Bringing users and providers together
• Collaborative project: 15 German partners

• www.basys40.de
Eclipse BaSyx

Overview Downloads Who’s Involved Developer Resources Governance Contact Us

An essential goal of BaSyx 4.0 is the use of IT technology for production systems. It develops a middleware that integrates traditional production systems (e.g., PLC controllers), state-of-the-art IT technology (BPMN engine, SOA) to enable next generation changeable production.

Why BaSyx?

Industrie 4.0 is networked production. It transforms traditional automation systems into a cyber-physical system to address challenges of production systems:

Lot-size 1

Existent production lines are most efficient for large lot sizes of identical products. The Industrie 4.0 paradigm of mass customization propagates individually customized products that are manufactured in small lot sizes down to lot-size 1 with the same efficiency as current mass production. Lot-size 1 requires the ability to change production processes for each product. BaSyx supports efficient production with lot-size 1 by enabling multiple different products on the same production line.

Changeable production

Reconfiguration of a production system for the manufacturing of new products is time-consuming. Manufacturing of a new product requires significant changes in PLC controllers that control manufacturing devices. Even though devices might be sufficiently flexible to manufacture other products, the necessary adaptation of PLC software often limits the ability to change production. BaSyx supports changeable production with a BPMN based production control engine.

Changeable production lines

The integration of new devices is another significant challenge for plant operators. Product line changes become necessary because of the replacement of old devices, or of the extension of production lines. The BaSyx middleware enables the integration of different devices, and the development of Asset Administration Shells that provide unified interfaces to all production entities.

Adaptive manufacturing

The ability to react to unforeseen events is important; nevertheless, it is more important to predict events to react even better to them. With BaSyx, developers and automation engineers may create a middleware that connects and integrates all production entities and enables data aggregation and consolidation, which is an important prerequisite for predictive maintenance.

Eclipse BaSyx

Open Source results of the BaSys project

Published under EPL 1.0

Leader: Fraunhofer IESE

https://projects.eclipse.org/projects/technology.basyx

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Eclipse Foundation as a partner of RobMoSys

- Help promote the results of the project
- Recruit new technology in the robotics domain
- Connect the robotic ecosystem to Eclipse technologies in tooling and IoT
- Enable a platform for tooling in robotics
- Avoid re-inventing the wheel

Create a Working Group for
- Tools for Robotics

Ecosystem Tiers and groups of roles
Eclipse Foundation

Is a vendor neutral space for open collaboration in open source
Strong player in IoT and Industry 4.0
Drives RobMoSys open source community building
Will be happy to collaborate with you on more activities in robotics
Gaël Blondelle
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