

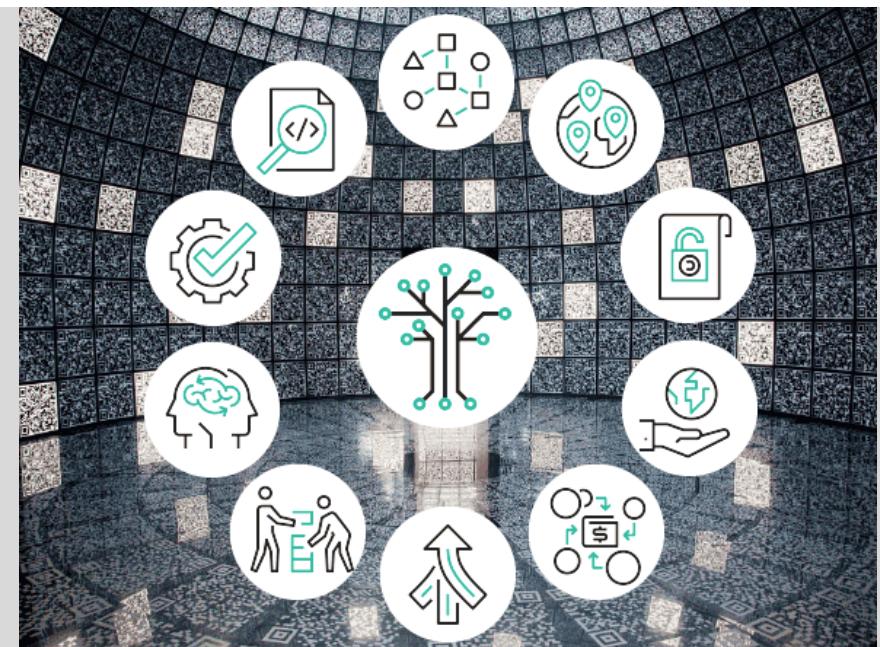
Vorlesung Digitale Nachhaltigkeit

Termin 9: Open Source Communities

16. November 2022

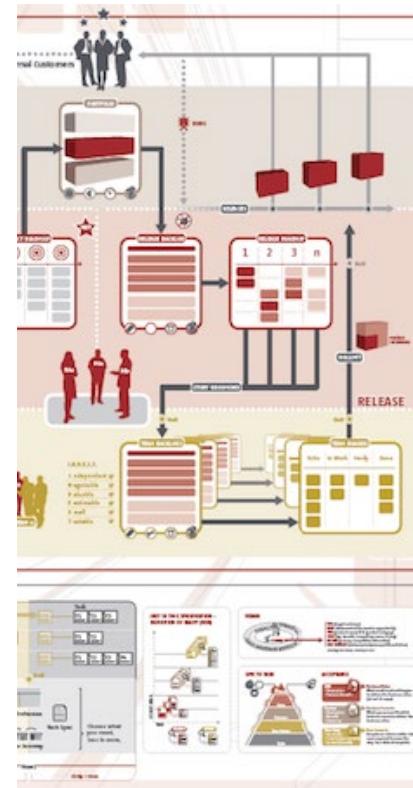
PD Dr. Matthias Stürmer

Forschungsstelle Digitale Nachhaltigkeit
Institut für Informatik
Universität Bern



Termine

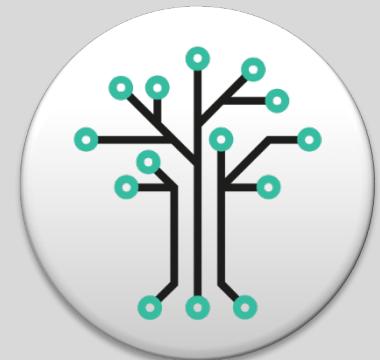
1. **21. September 2022:** Einführung und Überblick
2. **28. September 2022:** Ökologische Nachhaltigkeit und Digitalisierung
3. **5. Oktober 2022:** Soziale Nachhaltigkeit und Digitalisierung
4. **12. Oktober 2022:** Konzept der digitalen Nachhaltigkeit
5. **19. Oktober 2022:** Datenschutz und Privatsphäre
6. **26. Oktober 2022:** Ethische Fragestellungen bei KI
7. **2. November 2022:** Urheberrecht und Lizenzen
8. **9. November 2022:** Open Source Software Lizenzen
9. **16. November 2022:** Open Source Communities
10. **23. November 2022:** Geschäftsmodelle in der IT-Branche
11. **30. November 2022:** Digital nachhaltige Unternehmens-IT
12. **7. Dezember 2022:** Digitale Transformation in der Schweiz
13. **14. Dezember 2022:** Mündliche Präsentationen Teil 1
14. **21. Dezember 2022:** Mündliche Präsentationen Teil 2



Agenda

1. Einige historische Meilensteine
2. Statistiken auf GitHub und OpenHub
3. Open Source Communities

Informationen zur mündlichen Präsentation



Pionier-Phase

- 1985** Richard Stallman gründet die Free Software Foundation (FSF) und erfindet den Begriff “Free Software”
- 1989** FSF veröffentlicht Version 1 der GNU General Public License (GPL)
- 1991** Linus Torvalds veröffentlicht erste Version des Linux Kernels unter der GPL Version 2
- 1993** Ian Murdock gründet die Linux Distribution Debian



 **FREE SOFTWARE FOUNDATION**



 **debian**

Business-Phase

- 1998** Christine Peterson schafft der Begriff "Open Source Software" (OSS) und Eric Raymond, Bruce Perens und Tim O'Reilly gründen die Open Source Initiative (OSI)
- 1999** Netscape veröffentlicht den Navigator als OSS
- 1999** Red Hat geht an die NASDAQ Börse
- 2000** IBM will eine Milliarde USD in Linux investieren
- 2001** IBM veröffentlicht die Eclipse IDE als OSS mit einem geschätzten Wert von 40 Millionen USD



Mainstream-Phase

- 2001** Apple baut OS X basierend auf BSD
- 2004** Canonical startet Linux-Distribution Ubuntu
- 2008** Google startet das Linux-basierte Mobile Betriebssystem Android als OSS
- 2011** The Document Foundation (TDF) startet LibreOffice als Fork von OpenOffice.org
- 2018** IBM kauft Red Hat für 34 Milliarden USD
- 2018** Microsoft kauft GitHub und übergibt 60'000 Software-Patente ans Open Invention Network



Open source software strategy

The European Commission will further encourage and leverage the transformative, innovative and collaborative potential of open source. The renewed 2020-2023 strategy puts a special emphasis on the sharing and reuse of software solutions, knowledge and expertise as well as on increasing the use of open source in information technologies and other strategic areas.

PAGE CONTENTS

**Open source software strategy
2020-2023**

**Open source software strategy
2014-2017**

**EU-FOSSA - Free and Open
Source Software Auditing**

Open source software strategy 2020-2023

On October 21st, the European Commission approved the new Open Source Software Strategy 2020-2023 of the Commission. This is an important step towards achieving the goals of the overarching [Digital Strategy of the Commission](#) and contributing to the Digital Europe programme.

The internal strategy, under the theme "Think Open", sets out a vision for encouraging and leveraging the transformative, innovative and collaborative power of open source, its principles and development practices. It promotes the sharing and reuse of software solutions, knowledge and expertise, to deliver better European services that benefit society and lower costs to that society. The Commission commits to increasing its use of open source not only in practical areas such as IT, but also in areas where it can be strategic.

Shaping Europe's digital future

[Home](#) [Policies](#) [Activities](#) [News](#) [Library](#) [Funding](#) [Calendar](#) [Consultations](#)

[Home](#) > [Library](#) >

Study about the impact of open source software and hardware on technological independence, competitiveness and innovation in the EU economy

REPORT / STUDY | Publication 06 September 2021

Study about the impact of open source software and hardware on technological independence, competitiveness and innovation in the EU economy

This study aims to investigate the economic impact of Open Source Software and Hardware on the EU economy.

Open Source is increasingly used in digital technologies. This required an in-depth analysis of its current role, position and potential for the European economy. Open Source Software (OSS) has become mainstream across all sectors of the software industry over the past decade. Conversely, the level of maturity of Open Source Hardware (OSH) currently appears far lower. However, the business ecosystem for OSH is developing fast. If OSH is to follow the same development as OSS, it could constitute a cornerstone of the future Internet of Things (IoT), the future of computing and the digital transformation of the European industry at the end of the digital decade.

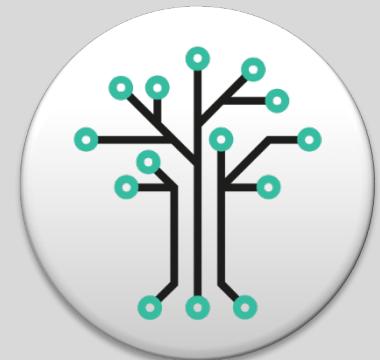
The objective of the study was to investigate and quantify the economic impact of OSS and OSH on the European economy. The study also identified strengths, weaknesses, opportunities and challenges of open source in relevant ICT policies, such as cybersecurity, artificial intelligence (AI), digitising European industry, the connected car, high performance computing, big data, distributed



Agenda

1. Einige historische Meilensteine
2. **Statistiken auf GitHub und OpenHub**
3. Open Source Communities

Informationen zur mündlichen Präsentation



MUST READ: American Airlines is quietly bringing back the 737 Max. Here's why that's disturbing

Microsoft finalizes its \$7.5 billion GitHub acquisition

Microsoft's acquisition of GitHub has passed regulatory approval and is now official.



in



f



t



e-mail



bell



By Mary Jo Foley for All About Microsoft | October 26, 2018 -- 13:22 GMT (14:22 BST) | Topic: Open Source

Microsoft's acquisition of GitHub has received regulatory approval and is now official. [Microsoft announced the completion of its \\$7.5 billion acquisition of the GitHub hosting and development service on October 26.](#)



European Union regulators approved Microsoft's GitHub acquisition on October 19.

[Microsoft announced intentions to buy GitHub](#) on June 4, 2018. At that time, officials said Microsoft's CEO of Xamarin, Nat Friedman, would become CEO of the San Francisco-based development platform. GitHub CEO Chris Wanstrath agreed to become a Microsoft Technical Fellow as part of the arrangement.

Reaction by developers to Microsoft becoming the steward of GitHub has been mixed. Some, noting changes happening at the company since Satya Nadella became CEO in 2014, said they believed Microsoft would provide a good home for GitHub. Others have said they are still wary of Microsoft and are considering moving away from the platform once Microsoft takes it over.

Microsoft officials have said the company's intent is to keep GitHub platform- and language-independent. Microsoft officials have said they intend to treat the GitHub acquisition largely like [it has acted with LinkedIn, meaning it will let it run mostly independently.](#)

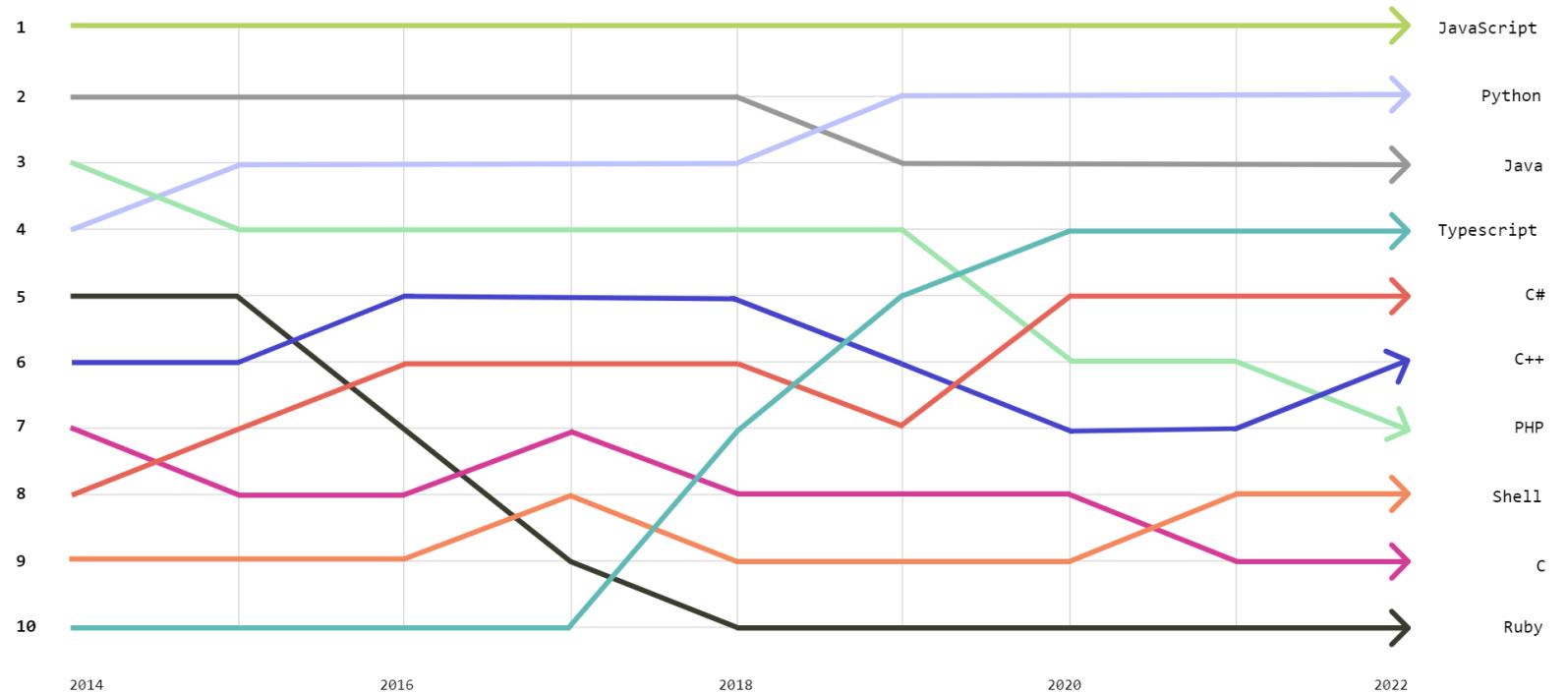
Statistiken auf GitHub

Einige Zahlen von GitHub:

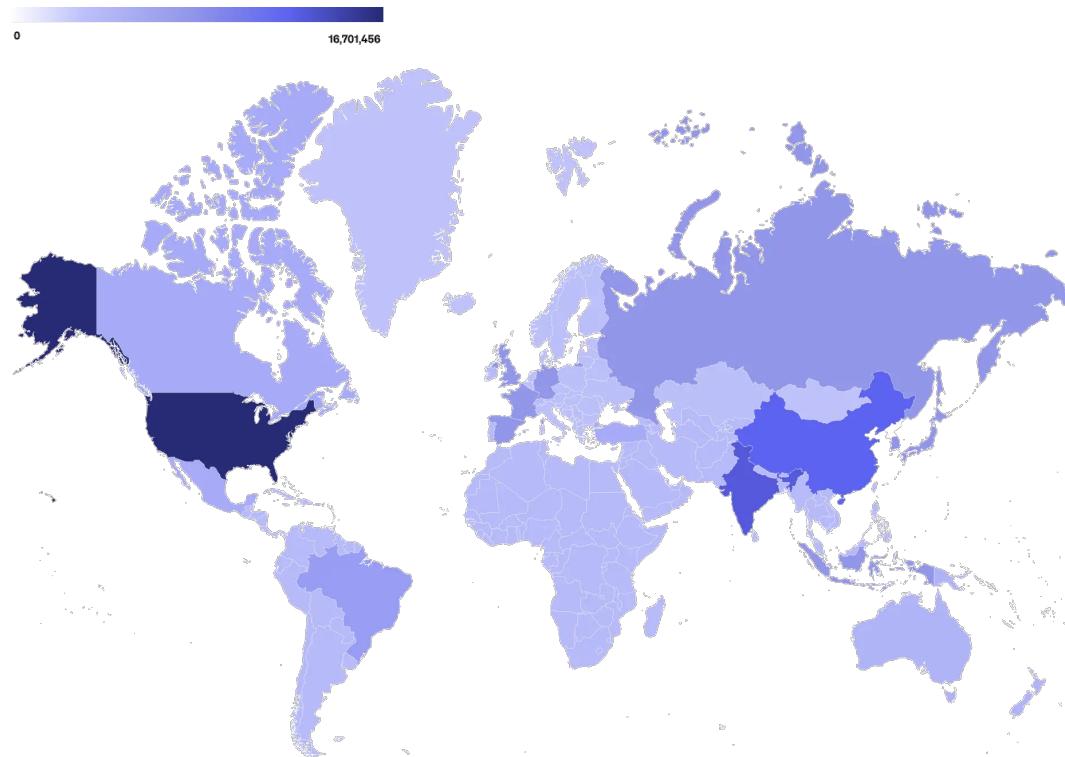
- Mehr als **200 Mio.** Repositories
(Open Source Projekte)
- Über **94 Mio.** Developers
- Über **413 Mio.** Contributions
im 2022



Meist verwendete Programmiersprachen



Geografische Verteilung der Users



Projekt-Statistiken mittels GitHub

[tensorflow / tensorflow](#) Public

[Code](#) [Issues 2.9k](#) [Pull requests 188](#) [Actions](#) [Projects 1](#) [Security 201](#) [Insights](#)

[Watch](#) 8k [Star](#) 160k [Fork](#) 85.7k

Pulse

Contributors

Community

Commits

Code frequency

Dependency graph

Network

Forks

September 24, 2021 – October 24, 2021

Period: 1 month ▾

Overview

287 Active Pull Requests 529 Active Issues

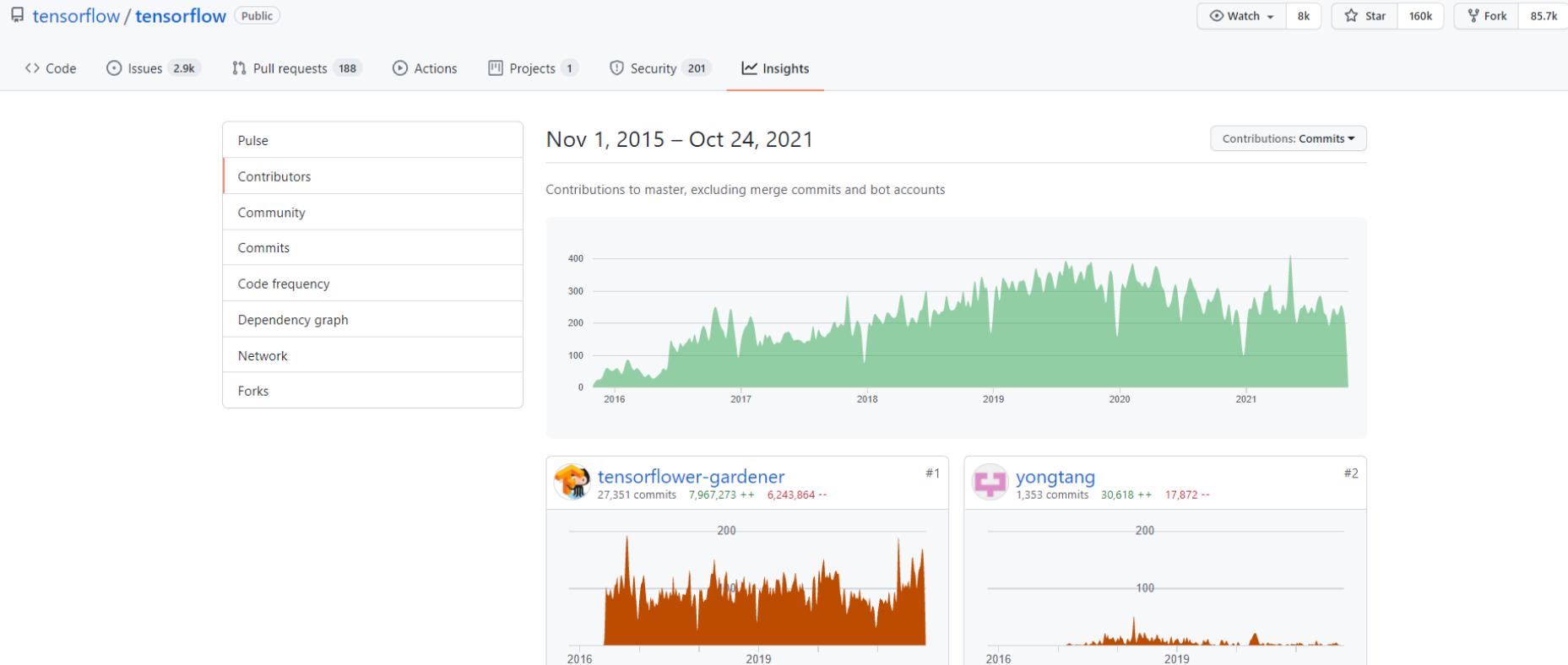
207 Merged Pull Requests 80 Open Pull Requests 382 Closed Issues 147 New Issues

Excluding merges, 173 authors have pushed 1,557 commits to master and 1,590 commits to all branches. On master, 4,515 files have changed and there have been 79,532 additions and 55,361 deletions.

2 Releases published by 1 person

<https://github.com/tensorflow/tensorflow/pulse/monthly>

Projekt-Statistiken mittels GitHub



OSS Benchmark

Swiss OSS Benchmark Institution Ranking Repository Ranking People Ranking

Ranking of 153 Swiss Institutions Releasing Open Source Software

Search Sector Include forks

Information on OSS Benchmark updated:

Institution	Number of repositories	Sector	Location	Created at
Camp Tocamp	878	IT	Lausanne Switzerland / Chambéry France / München Germany	October 8, 2014 at 14:18
European Organization for Nuclear Research (CERN)	360	Research and education	Geneva, Switzerland	July 2, 2010 at 11:25
Puzzle ITC	330	IT	Bern Switzerland	May 19, 2010 at 10:54
Lip	301	IT	Zurich, Fribourg, Lausanne, Bern, St. Gallen	December 1, 2009 at 13:33
Adfinis AG	288	IT	Switzerland, Netherlands & Australia	November 1, 2009 at 14:35
VSHN AG	288	IT	Zürich, Switzerland	November 3, 2014 at 15:55
4teamwork AG	274	IT	Bern, Switzerland	March 21, 2011 at 15:58
Exoscale	268	IT	Switzerland	July 22, 2012 at 22:02

Swiss OSS Benchmark Institution Ranking Repository Ranking People Ranking

Ranking of 11905 Repositories.

Search Include forks

Name	Institution	Github Organization	Comments	Issues	Pull requests	Commits ↓	Contributors	Forks	Stars	Own commits	Created at
opengever.core	4teamwork	4teamwork	112	7449	4883	25091	33	5	9	0	May 1, 2013 at 10:28
awx	amazee	amazeeio	0	7	7	19924	136	5	1	0	May 11, 2019 at 0:27
awx	amazee	amazeeio	0	7	7	19924	136	5	1	0	May 11, 2019 at 0:27
cvmfs	cern	cern	0	7	7	19924	136	5	1	0	May 11, 2019 at 0:27
c2cgeoportal	camp tocamp	c2cgeoportal	0	7	7	19924	136	5	1	0	May 11, 2019 at 0:27
geocat	swisstopo	geocat	0	7	7	19924	136	5	1	0	May 11, 2019 at 0:27

Ranking of 69813 users.

Search

Name	Github user	Company	Location	Twitter	Contributions	Public repos	Public gists	Followers	Created at
Linus Torvalds	torvalds	Linux Foundation	Portland, OR		32405	6	0	157279	September 3, 2011 at 17:26
Evan You	yxy990803	vuejs	Singapore		4	180	71	85523	November 28, 2010 at 2:05
dan	gaaaron	@facebook			643	262	77	73886	May 25, 2011 at 20:18
Jake Wharton	JakeWharton	@cashapp / @square	Pittsburgh, PA, USA	@JakeWharton	1	124	54	62626	March 24, 2009 at 17:09
Sindre Sorhus	sindresorhus				428	1047	93	48266	December 20, 2009 at 23:57
TJ Holowaychuk	tj	Apex	London, UK	@tjholowaychuk	979	297	551	48174	September 19, 2008 at 0:37
Addy Osmani	addyosmani	Google	Mountain View, California	@addyosmani	65	313	176	38894	August 1, 2009 at 20:39
Kyle Simpson	getify	Getify Solutions	Austin, TX		3	64	391	36202	November 8, 2009 at 7:56

Bspw. Baloise



Baloise Group

Open Source @ Baloise Group

📍 Aeschengraben 21, 4002 Basel, Switz...

🔗 <https://baloise.github.io>

✉️ Group.CH_Open-Source@baloise.ch

🏠 Overview

💻 Repositories 110

📦 Packages

👤 People 22

/projects 1

Pinned

rocket-chat-rest-client

Public

Java REST client API for Rocket.Chat

Java ⭐ 42 🏷 27

gitopscli

Public

GitOps CLI - a command line interface (CLI) to perform operations on git repositories with yaml files

Python ⭐ 24 🏷 8

open-source

Public

Open Source @ Baloise

⭐ 20 🏷 2

design-system

Public

The Baloise Design System consists of

vue-keycloak

Public

Keycloak plugin for Vue3 and

corellia

Public

B2B-interface (Web-API) specification

People



View all

Bspw. Details von Baloise

Swiss OSS Benchmark  Institution Ranking  Repository Ranking  People Ranking  Source Code

Ranking of 153 Swiss Institutions

Search

Information on OSS Benchmark updated:

Institution
 Campocamp
 European Organization for Nuclear Research (CERN)
 Puzzle ITC
 Lip
 Adfinis AG
 VSHN AG
 4teamwork AG
 Exoscale
 Universität Bern
 Paul Scherrer Institut

Baloise

GitHub Organizations:

- baloise**
- baloise-incubator**

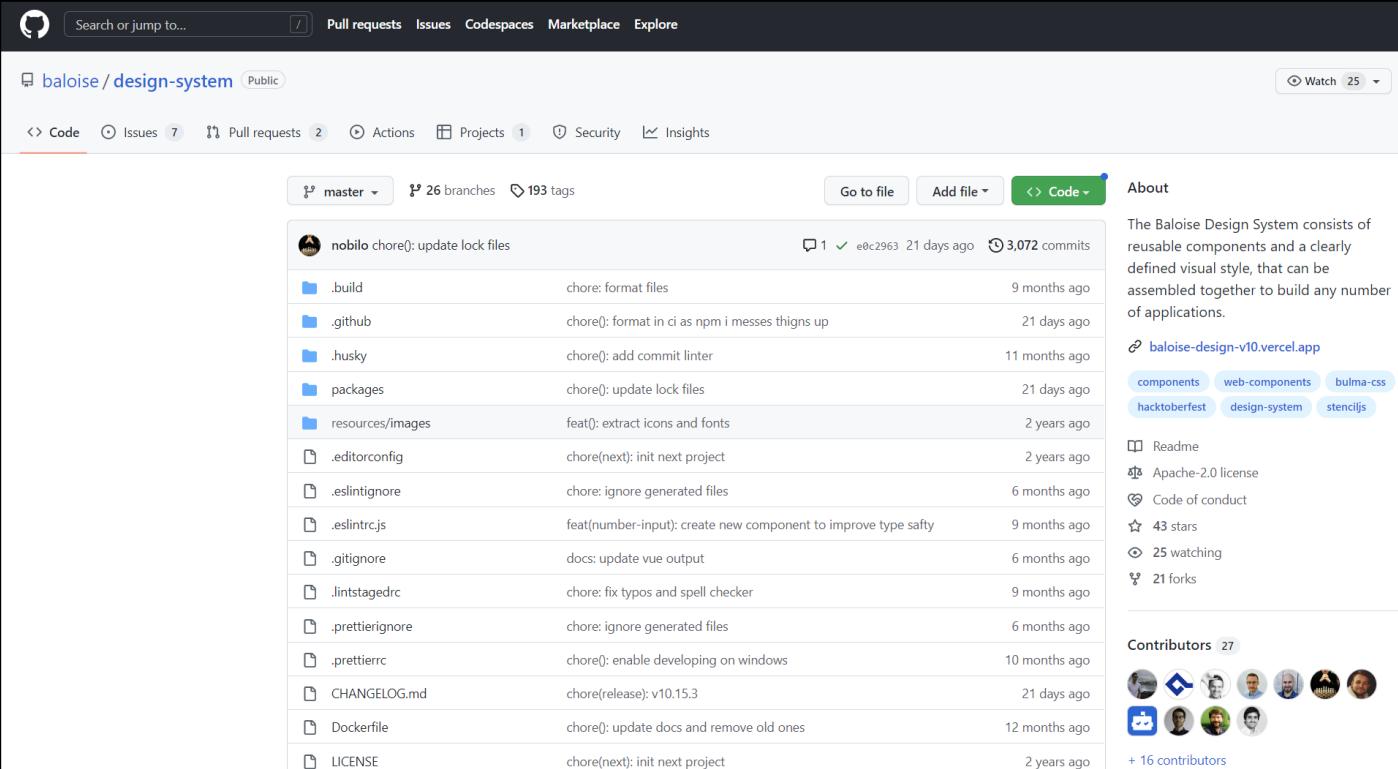
Sector: Insurances	Repositories: 162	Members: 29
Contributors: 505	Own repositories forks: 291	Forks in repositories: 0
Commits: 14917	Pull requests: 0	Issues: 0
Stars: 318	Watchers: 1886	Commits last year:
Total pull requests: 1750	Total closed pull requests: 1628	Total issues: 3145
Total closed issues: 2653	Comments: 1176	Organisations: 2

Repos:

Include forks

Name	Organization	Commits ↓	Contributors	Watchers	Is fork?	Stars	Forks	Created at	Updated at
design system	baloise	3042	27	24		37	18		
okd 4 cluster infra apps	baloise-incubator	1066	8	2		9	4		
Paul Scherrer Institut	205	Research and education	Bern, Switzerland	January 18, 2013 at 14:08	13	dockerfiles, label-map-warping, BrainMaterialOptimizationFenics, qam, atracsysswrapper, pathways...			
				September 20, 2013 at 9:38	9	jcae, QtAD, asynPythonDriver, ADZMQ, ch.psi.imagej.hdf5, slsDetector...			

Bspw. Details von einem Baloise Repository



The screenshot shows the GitHub repository page for `baloise / design-system`. The repository has 26 branches and 193 tags. The master branch is selected, showing a list of recent commits:

Commit Message	Author	Date	Commits
<code>nobilob chore(): update lock files</code>	e0c2963	21 days ago	3,072
<code>.build chore: format files</code>		9 months ago	
<code>.github chore(): format ci as npm i messes things up</code>		21 days ago	
<code>.husky chore(): add commit linter</code>		11 months ago	
<code>packages chore(): update lock files</code>		21 days ago	
<code>resources/images feat(): extract icons and fonts</code>		2 years ago	
<code>.editorconfig chore(next): init next project</code>		2 years ago	
<code>.eslintignore chore: ignore generated files</code>		6 months ago	
<code>.eslintrc.js feat(number-input): create new component to improve type safety</code>		9 months ago	
<code>.gitignore docs: update vue output</code>		6 months ago	
<code>.lintstagedrc chore: fix typos and spell checker</code>		9 months ago	
<code>.prettierignore chore: ignore generated files</code>		6 months ago	
<code>.prettierrc chore(): enable developing on windows</code>		10 months ago	
<code>CHANGELOG.md chore(release): v10.15.3</code>		21 days ago	
<code>Dockerfile chore(): update docs and remove old ones</code>		12 months ago	
<code>LICENSE chore(next): init next project</code>		2 years ago	

On the right side, there is an **About** section with the following text:

The Baloise Design System consists of reusable components and a clearly defined visual style, that can be assembled together to build any number of applications.

Tags associated with the repository include: `components`, `web-components`, `bulma-css`, `hacktoberfest`, `design-system`, `stenciljs`.

Repository statistics:

- Readme
- Apache-2.0 license
- Code of conduct
- 43 stars
- 25 watching
- 21 forks

Contributors section:

Contributors 27



+ 16 contributors

Bspw. Details von einem Baloise Repository

Swiss OSS Benchmark  Institution Ranking  Repository Ranking  People Ranking

Ranking of 148 Repositories

design-system

The Baloise Design System consists of reusable components and a clearly defined visual style, that can be assembled together to build any number of applications.

Information on OSS Benchmark updated: April 29, 2022 at 13:29

Archived:

Issues: 640

Commits: 3042

Stars: 37

Closed pull requests: 516

Repo updated on GitHub:

Institution: baloise

Closed issues: 622

Contributors: 27

Watchers: 24

License: Apache License 2.0

Organization: baloise

Commits last year:

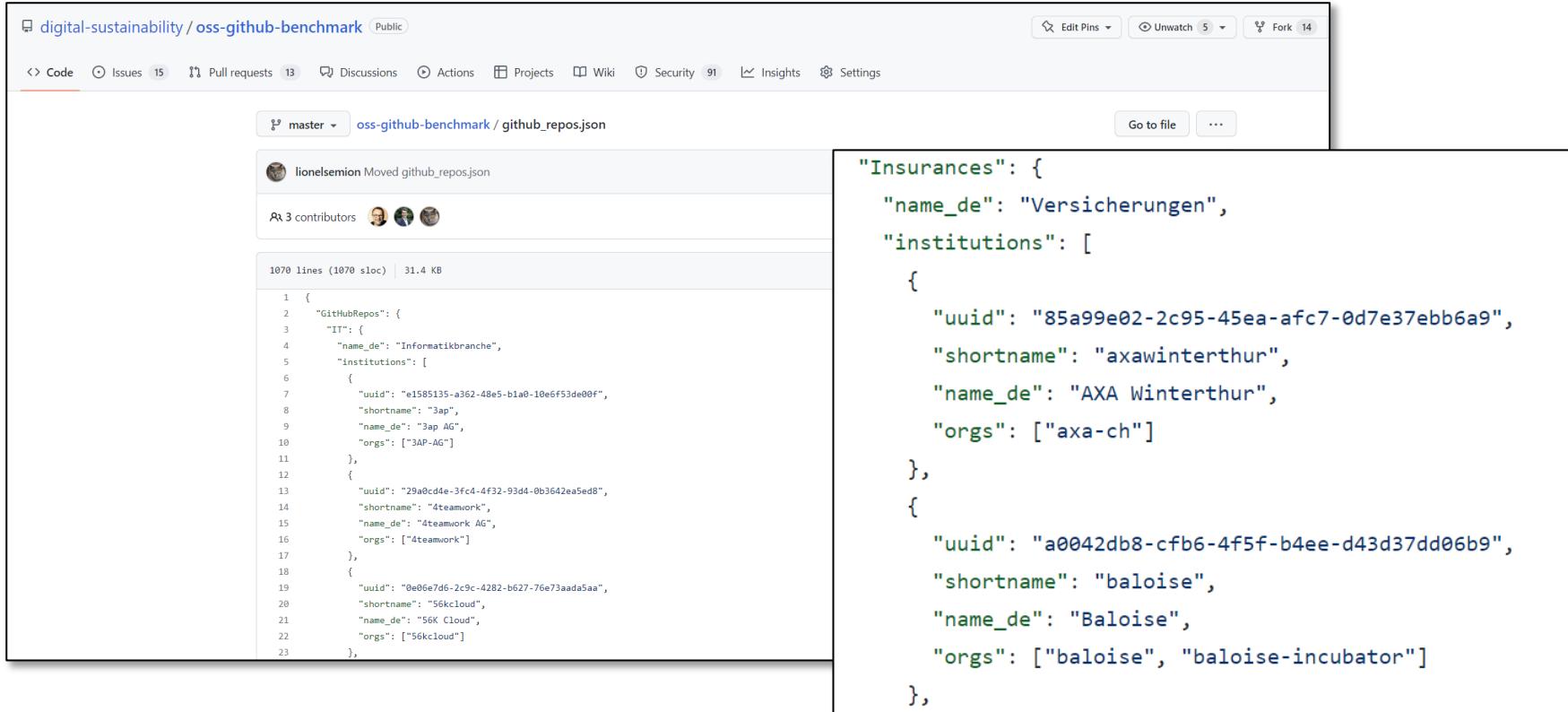
Forks: 18

Pull requests: 529

Repo created on GitHub:

Name	Institution
design-system	 baloise
okd4-cluster-infra-apps	 baloise
open-source	 baloise

JSON File für alle Schweizer «Institutions»



The screenshot shows a GitHub repository page for 'digital-sustainability / oss-github-benchmark'. The repository has 15 issues, 13 pull requests, and 91 security vulnerabilities. The 'Code' tab is selected, showing the 'github_repos.json' file. The file contains a JSON object with two main keys: 'Insurances' and 'institutions'. The 'Insurances' key points to a single object with the name 'Versicherungen'. The 'institutions' key points to an array of two objects. The first object represents AXA Winterthur, with fields like 'uuid', 'shortname', 'name_de', and 'orgs'. The second object represents Baloise, also with similar fields. The JSON code is as follows:

```
"Insurances": {  
    "name_de": "Versicherungen",  
    "institutions": [  
        {  
            "uuid": "85a99e02-2c95-45ea-afc7-0d7e37ebb6a9",  
            "shortname": "axawinterthur",  
            "name_de": "AXA Winterthur",  
            "orgs": ["axa-ch"]  
        },  
        {  
            "uuid": "a0042db8-cfb6-4f5f-b4ee-d43d37dd06b9",  
            "shortname": "baloise",  
            "name_de": "Baloise",  
            "orgs": ["baloise", "baloise-incubator"]  
        }  
    ]  
},  
"name_de": "Informatikbranche",  
"institutions": [  
    {  
        "uuid": "e1585135-a362-48e5-b1a0-10e6f53de00f",  
        "shortname": "3ap",  
        "name_de": "3ap AG",  
        "orgs": ["3AP-AG"]  
    },  
    {  
        "uuid": "29a0cd4e-3fc4-4f32-93d4-0b3642ea5ed8",  
        "shortname": "4teamwork",  
        "name_de": "4teamwork AG",  
        "orgs": ["4teamwork"]  
    },  
    {  
        "uuid": "0e06e7d6-2c9c-4282-b627-76e73aaada5aa",  
        "shortname": "56kcloud",  
        "name_de": "56K Cloud",  
        "orgs": ["56kcloud"]  
    }  
]
```

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Counting 29,359,512,128 lines of code

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- ◆ Highlight your use of FOSS

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Synopsys kauft Black Duck für 565 Millionen Dollar

Peter Marwan, 10.11.2017, 12:27 Uhr

[ENTERPRISE](#) [ÜBERNAHME](#)

Black Duck Software ist auf Automatisierung und Sicherheitsmanagement von Open-Source-Software spezialisiert. Synopsis kann bereits Sicherheits-Checks an Software allgemein sowie an integrierten Schaltungen vornehmen. Mit einem Umsatz von 2,4 Milliarden Dollar und gut 11.000 Mitarbeitern ist er eine allerdings vielfach unbekannte Größe.

Statistiken zu Open Source auf OpenHub

Aktuelle Zahlen (15.11.2022):

- Identifizierte **Open Source Contributors**:
6'082'962
- Indexierte **Open Source Projekte**:
499'631
- Untersuchte **Source Control Repos**:
1,413,224
- Analysierte **Lines of Code**:
31,925,065,708

Most Popular Projects

	Mozilla Firefox	13501 users
	Apache HTTP Server	9696 users
	MySQL	9440 users
	Apache Subversion	8511 users
	PHP	7985 users
	Linux Kernel	7591 users
	Bash	6748 users
	Firebug	5914 users
	Git	5434 users
	Ubuntu	5285 users

Most Active Projects

	Android	300992 commits
	Apache Maven 3	148537 commits
	PLD Linux	76999 commits
	OpenStack	66980 commits
	Cloud Foundry	61538 commits
	CXF	51493 commits
	KDE Localization	41377 commits
	Fedora Packages	40890 commits
	KDE	35697 commits
	KEXI	33219 commits

Projekt-Statistiken mittels OpenHub



Linux Kernel

Settings | Report Duplicate

Project Summary

The Linux kernel is a Unix-like computer operating system kernel. It is used world-wide: the Linux operating system is based on it and deployed on both traditional computer systems such as personal computers and servers, usually in the form of Linux distributions, and on various embedded devices such as routers, wireless access points, PBXes, set-top boxes, FTA receivers, smart TVs, PVRs and NAS appliances. The Android operating system for tablet computers, smartphones and smartwatches is also based atop the Linux kernel.

(from Wikipedia)

Tags

arm arm64 c #acl ia64 kernel linux linuxkernel
operating_system os posix #sacl unix x64 x86 x86_64

In a Nutshell, Linux Kernel...

...has had 1,137,675 commits made by 25,788 contributors representing 33,479,469 lines of code

...is mostly written in C with a low number of source code comments

...has a well established, mature codebase maintained by a very large development team with decreasing Y-O-Y commits

...took an estimated 11,295 years of effort (COCOMO model) starting with its first commit in April, 2005 ending with its most recent commit 1 day ago



Very High Activity

7,591

I Use This!

Analyzed about 14 hours ago, based on code collected about 22 hours ago.

Quick Reference

Organization: The Linux Foundation

Project Links: Homepage (2 Links)

Documentation

Download

Forums

Issue Trackers

Mailing Lists

Code Locations: <https://github.com/torvalds/linux>



Similar Projects: Quarn OS



Managers: Ramkumar Ramachandra

Projekt-Statistiken mittels OpenHub



Linux Kernel

[Settings](#) | [Report Duplicate](#)

30 Day Summary

Oct 15 2022 — Nov 14 2022

1124 Commits

420 Contributors

including 34 new contributors

12 Month Summary

Nov 14 2021 — Nov 14 2022

75499 Commits

Down -10348 (12%) from previous 12 months

4688 Contributors

Down -70 (1%) from previous 12 months

Linux Kernel

[Settings](#) | [Report Duplicate](#)

Analyzed about 15 hours ago, based on code collected about 22 hours ago.

7,591 Very High Activity [I Use This!](#)

Contributors: Listing

Showing page 1 of 1,290 Search / Filter on: Sort by: Recently Active

Name	Kudos	12 Month Commits	All Time Commits	5 Year Trend	Primary Language	First Commit	Last Commit
Linus Torvalds (Fellow)	9	2489	36114		C	over 17 years ago	1 day ago
Takashi Iwai	8	319	8627		C	over 17 years ago	3 days ago
Pavel Begunkov	8	316	1298		C	over 3 years ago	4 days ago
Jakub Kicinski	8	966	3208		C	over 10 years ago	4 days ago
airlied	9	254	4437		C	over 17 years ago	4 days ago
Sean Christopherson	8	587	1998		C	over 5 years ago	4 days ago
Jens Axboe	9	316	3048		C	over 17 years ago	4 days ago
Ye Bin	8	39	119		C	over 2 years ago	5 days ago
Paolo Abeni	8	156	666		C	about 7 years ago	5 days ago
Ard Biesheuvel	8	169	1725		C	over 9 years ago	5 days ago

Projekt-Statistiken mittels OpenHub

 Linux Kernel

 Settings |  Report Duplicate

 7,591
Very High Activity

I Use This!

⌚ Analyzed about 14 hours ago, based on code collected about 22 hours ago.

Languages

Total Lines :	44,148,181	Code Lines :	33,560,406	Percent Code Lines :	76.0%
Number of Languages :	17	Total Comment Lines :	5,066,809	Percent Comment Lines :	11.5%
		Total Blank Lines :	5,520,966	Percent Blank Lines :	12.5%

Language Breakdown

Language	Code Lines	Comment Lines	Comment Ratio	Blank Lines	Total Lines	Total Percentage
C	32,385,232	4,707,321	12.7%	5,286,713	42,379,266	<div style="width: 96.0%;"></div> 96.0%
C++	527,435	234,978	30.8%	95,714	858,127	<div style="width: 1.9%;"></div> 1.9%
Assembly	260,680	50,723	16.3%	48,020	359,423	<div style="width: 0.8%;"></div> 0.8%
shell script	199,429	35,988	15.3%	52,859	288,276	<div style="width: 0.7%;"></div> 0.7%
Make	67,427	14,685	17.9%	14,021	96,133	<div style="width: 0.2%;"></div> 0.2%
Python	58,654	11,261	16.1%	12,046	81,961	<div style="width: 0.2%;"></div> 0.2%
Perl	52,849	6,524	11.0%	10,149	69,522	<div style="width: 0.2%;"></div> 0.2%
Rust	4,868	4,674	49.0%	801	10,343	<div style="width: 0.0%;"></div> 0.0%

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Angular vs React vs Vue: Which Framework to Choose in 2021

by  [Shaumik Daitary](#) / march 15, 2021 / [web & app frameworks](#)

This post is a comprehensive guide on which is perhaps the right solution for you: **Angular vs React vs Vue**.

Just a couple of years ago, developers were mainly debating whether they should be using Angular vs React for their projects. But over the course of the last couple of years, we've seen a growth of interest in a third player called Vue.js.

If you are a [developer starting out](#) on a project and cannot decide on which JavaScript framework to use, this guide should help you make a decision.



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General

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All Time Statistics

[Contributors \(All Time\)](#)[3385 developers](#)[1657 developers](#)[349 developers](#)[View as graph](#)[Commits \(All Time\)](#)[31461 commits](#)[14261 commits](#)[3213 commits](#)[View as graph](#)[Initial Commit](#)[almost 12 years ago](#)[over 8 years ago](#)[over 5 years ago](#)[Most Recent Commit](#)[about 2 months ago](#)[5 months ago](#)[about 16 hours ago](#)

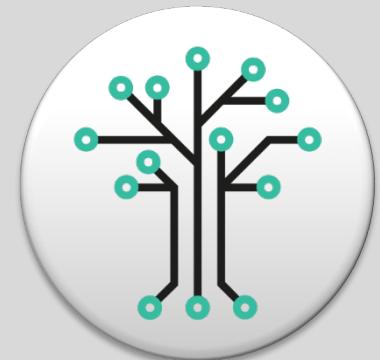
12 Month Statistics

[Contributors \(Past 12 Months\)](#)[297 developers](#)[107 developers](#)[31 developers](#)[Commits \(Past 12 Months\)](#)[2,926 commits](#)[876 commits](#)[85 commits](#)

Agenda

1. Einige historische Meilensteine
2. Statistiken auf GitHub und OpenHub
3. **Open Source Communities**

Informationen zur mündlichen Präsentation



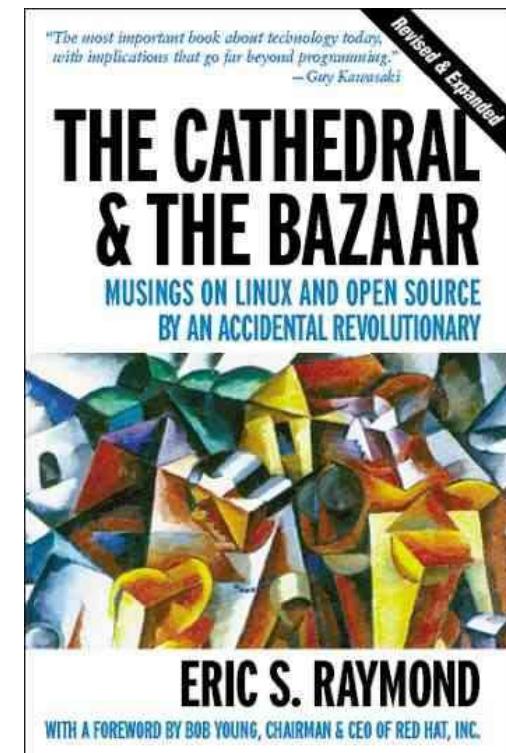
Eric Raymond

**Hauptmotivation ein neues
Open Source Projekt zu starten:**

- “Every good work of software starts by scratching a developer's personal itch.”

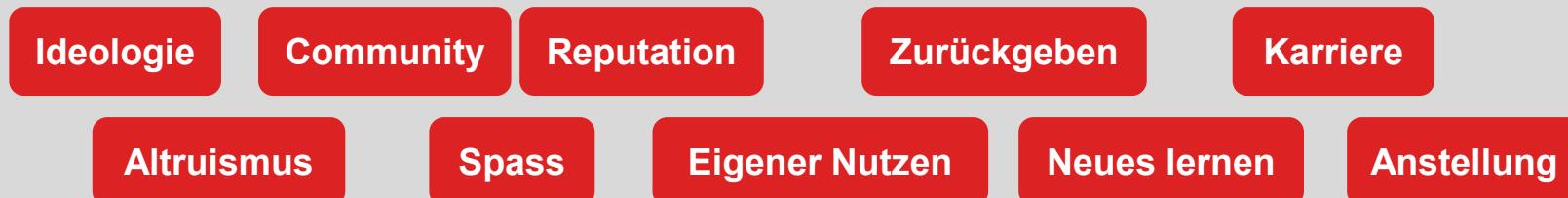
Weitere bekannte Zitate aus dem Buch:

- “Release early, release often”
- “Given enough eyeballs, all bugs are shallow.” (Linus Torvalds)



Motivation von Open Source Entwicklern

10 unterschiedliche Gründe, warum Software-Entwickler bei Open Source Projekten mitmachen:



Intrinsische
Motivation

Extrinsische
Motivation

Schalenmodell der Communities

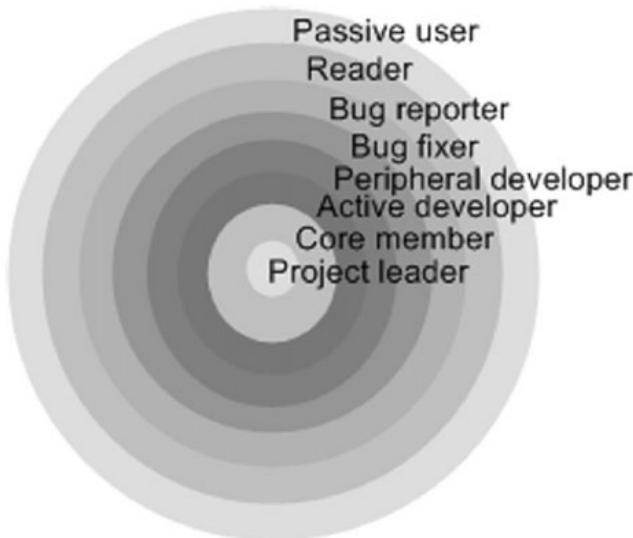


Fig. 1. Onion model of open source communities.

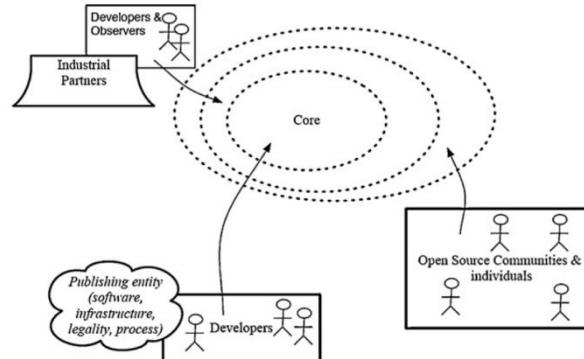


Fig. 4. Ecosystem stakeholders.



Fig. 2. Community building dimensions.

Governance von Open Source Communities

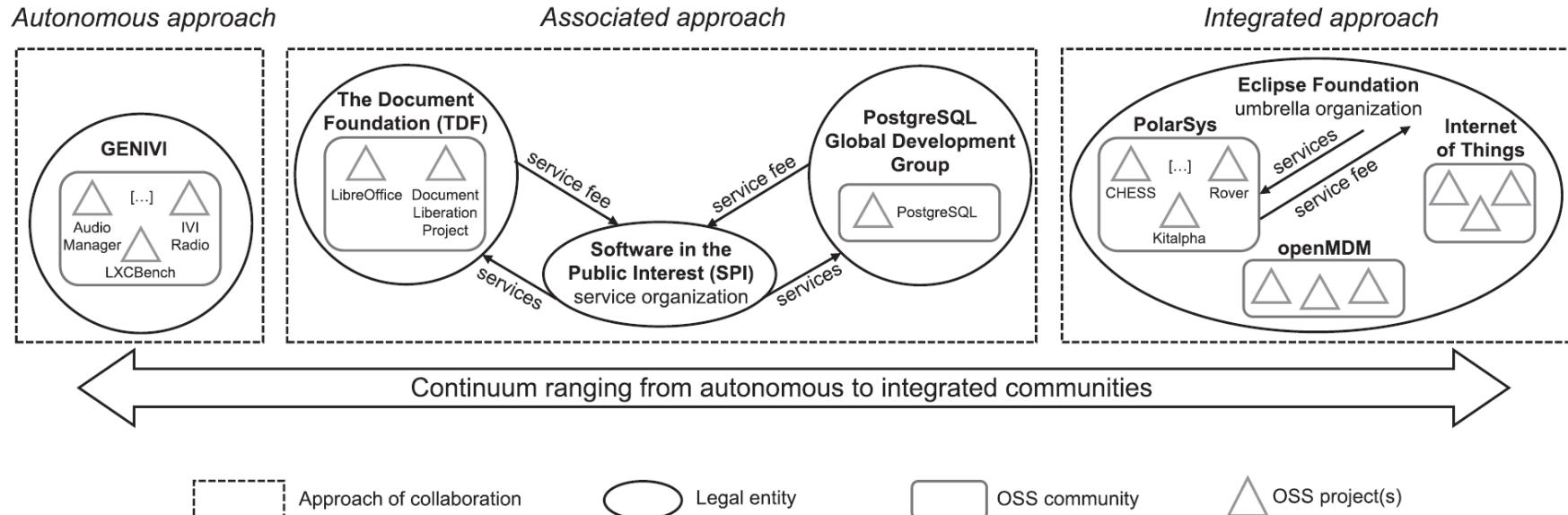
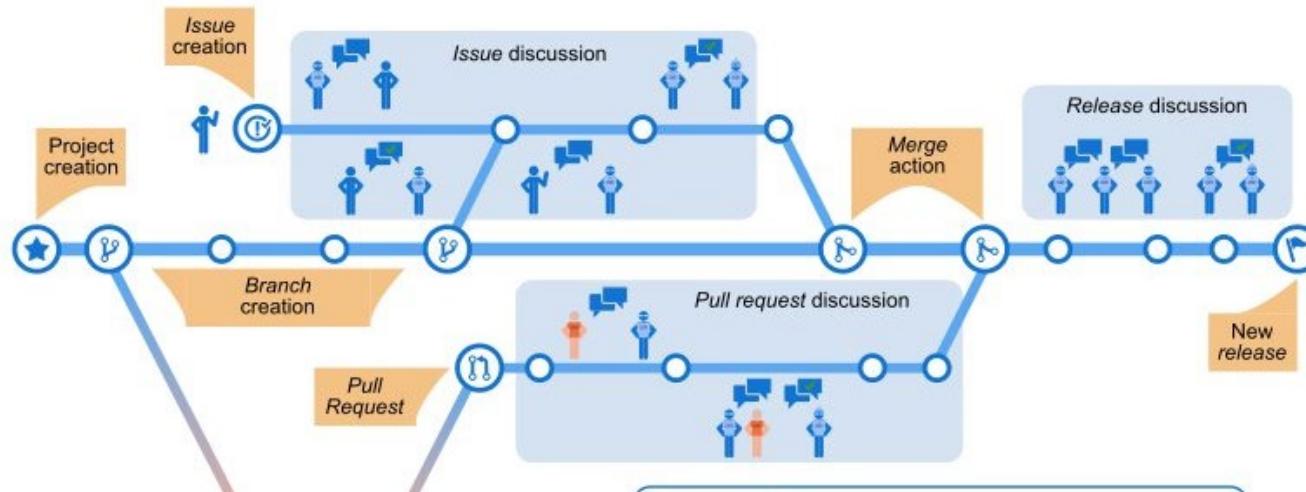


Fig. 1. Varying inter-organizational affiliation of the four communities studied.

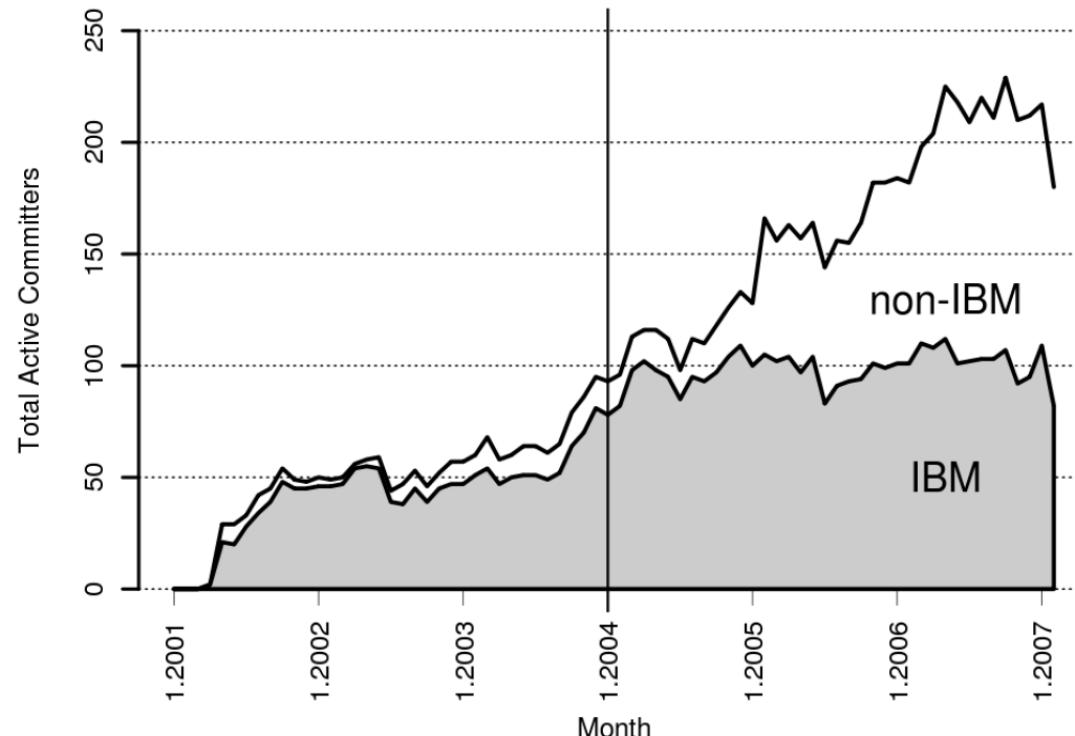
Workflows bei Open Source Projekten



- | | |
|---------------------|--|
| Project | Contains the source code of a software application |
| Issue | Change request (bug or improvement) for an application |
| Commit | Set of changes of the source code of an application |
| Branch | Set of commits usually addressing an application's feature |
| Fork | Creation of a new branch |
| Pull Request | Request to join two branches |
| Merge | Action of joining two branches |
| Release | Publication of a new version of an application |

Wachstum einer Open Source Community

*Active committers
per month*



Wachstum einer Open Source Community

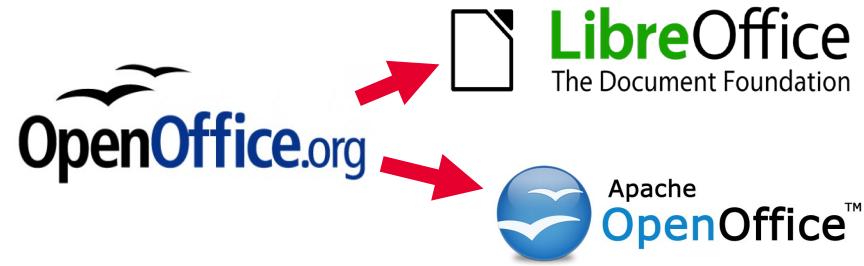
Table 3 LOC from IBM and non-IBM developers

	<i>LOCs before Foundation (4.01–12.03: 33 months)</i>	<i>LOCs after Foundation (1.04–2.07: 37 months)</i>	
IBM	8,410,972	73.94%	31,346,054
Non-IBM	2,042,365	17.95%	19,507,145
Unidentified	922,488	8.11%	1,027,085
Total	11,375,825	100.00%	51,880,284
<i>Total LOCs (4.01–2.07: 70 months)</i>			
IBM	39,757,026	62.85%	313 committers
Non-IBM	21,549,510	34.07%	252 committers
Unidentified	1,949,573	3.08%	40 committers
Total	63,256,109	100.00%	605 committers

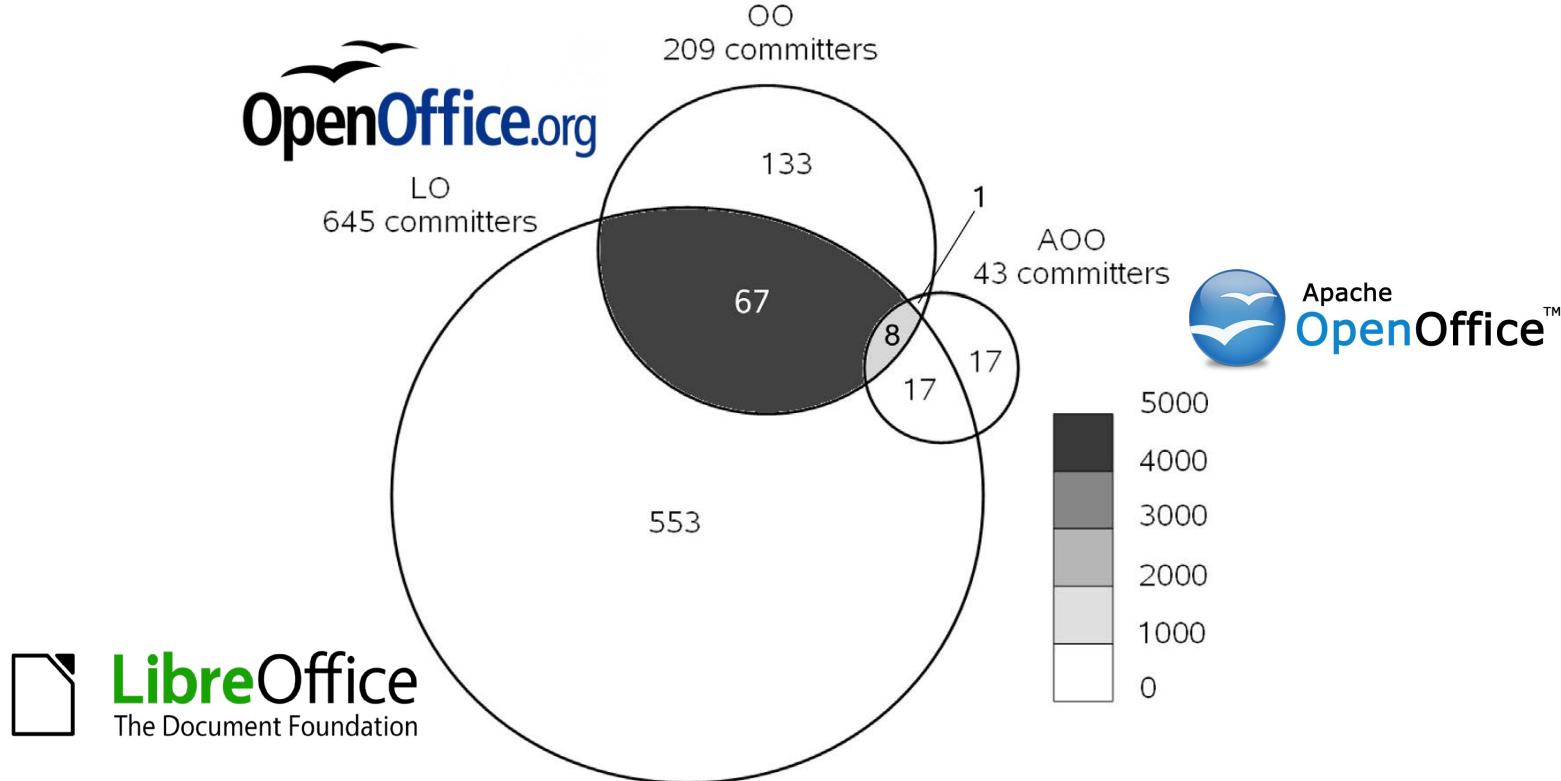
Unfriendly Forkings

“The ability to fork code – a central freedom of open source software – is what keeps communities vibrant and companies honest.

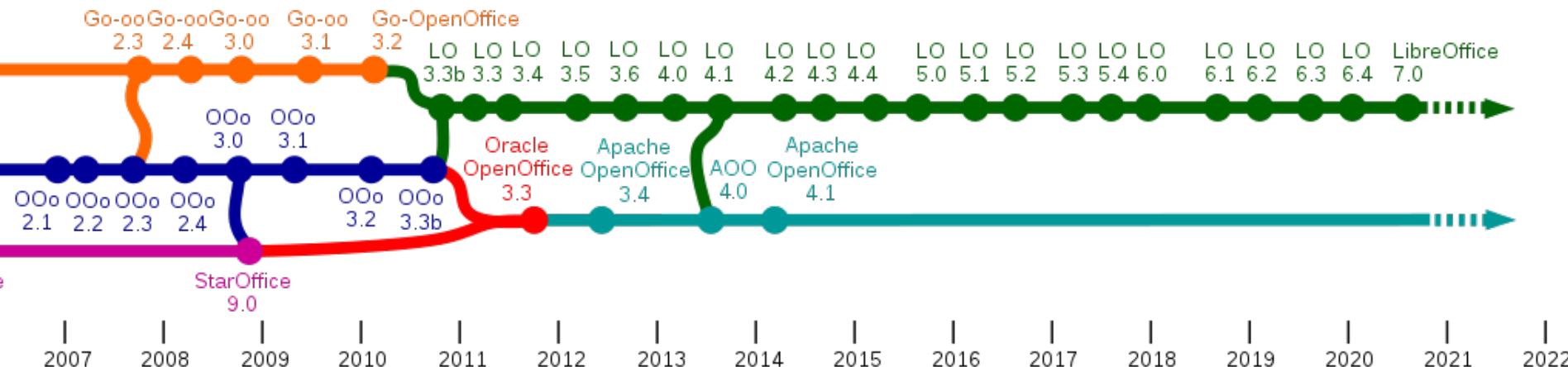
Glyn Moody
Technology writer and journalist



Forking von OpenOffice.org



Forking von OpenOffice.org

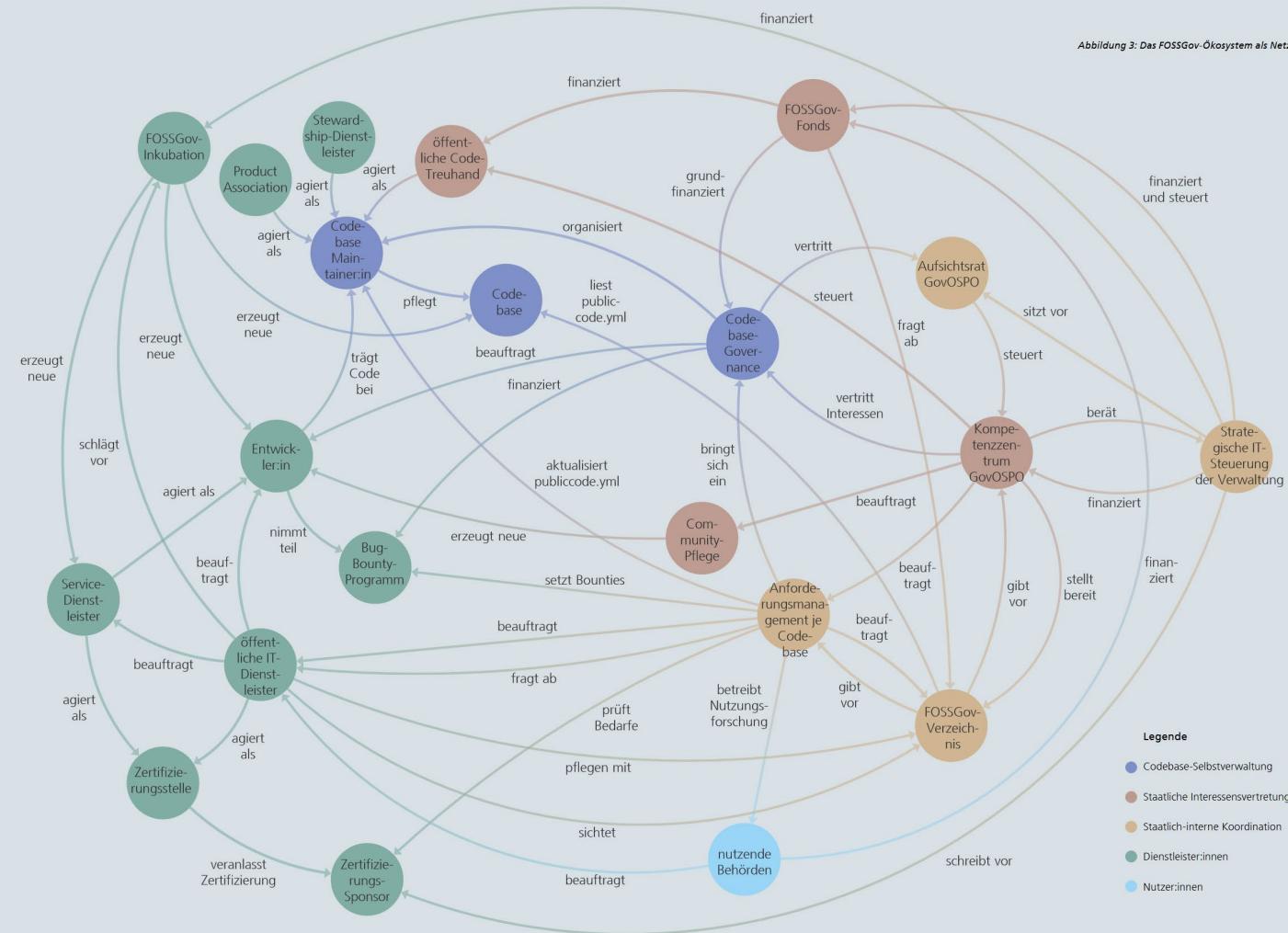


Open Source Communities der Verwaltung

- Publikation im **August 2022** vom «**Kompetenzzentrum Öffentliche IT**» am Fraunhofer-Institut für Offene Kommunikationssysteme FOKUS
- Beschreibt, wie Ökosystem einer Open Source Community mit **staatlicher Finanzierung** und Einflussnahme zusammen mit **IT-Dienstleistern** aus Wirtschaft sowie **Zivilgesellschaft** aufgebaut und langfristig erfolgreich gesteuert wird



Abbildung 3: Das FOSSGov-Ökosystem als Netzwerk



Open Source Plattform in Deutschland

[Open CoDE](#) Software Diskussion Gitlab | Login Registrieren



[Über Open CoDE](#) [Community](#) [News](#) [FAQ](#)

// Open Source Code für die Öffentliche Verwaltung

Open CoDE ist die gemeinsame Plattform der Öffentlichen Verwaltung für den Austausch von Open Source Software. Durch die zentrale Ablage von offenen Quellcodes soll die Wiederverwendung und gemeinsame Arbeit an Softwarelösungen der Öffentlichen Verwaltung zwischen Verwaltung, Industrie und Gesellschaft gefördert werden.

[JETZT MITMACHEN](#)



Sichtbarkeit

Transparenz über bestehende Open Source-Lösungen und -Projekte von und für die Öffentliche Verwaltung



Zusammenarbeit

Mitarbeit an verwaltungsrelevanten Projekten und Möglichkeit der gemeinschaftlichen Entwicklung



Wiederverwendung

Sicherheit durch klare Richtlinien, Hilfestellungen und eindeutige lizenzirechtliche Anforderungen

Open CoDE Softwareverzeichnis

Open Source Code für die Öffentliche Verwaltung. Diese Seite erlaubt die Filterung und Anzeige von PubliCode.Yaml Seiten.

ZULETZT BEARBEITET VON
Tobias Gurtzick
07.11.2022



Suche...

kein Filter

Entwicklungsstatus ▾

Plattform ▾

Kategorien und Themenklassen ▾

34

CoDE-OSR

Open Source Repository

BayernID-Plugin

Plugin für Keycloak/RH-SSO zur Anbindung der BayernID (Bürgerkonto und Organisationskonto).

Konformitätstest

IG BvC - Konformitätstest

CICD-Signed-Commit-Tests

IG BvC - CICD-signed-commit-tests

Signature PoC

IG BvC - Signatur PoC

PostgreSQL

PostgreSQL - Geprüfte Artefakte für die Installation

OpenCoDE-Feedback

OpenCoDE-Feedback

Debian

Basis-Image Debian

CentOS

Basis-Image CentOS

Terminfinder SH

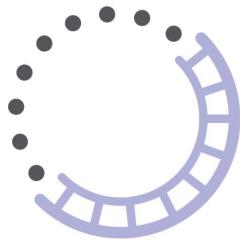
Terminfinder-SH - Deployment Artefakte

Nextcloud

Geprüfte Installationsartefakte für Nextcloud

Alpine

Basis-Image alpine (Linux)



OPEN RAIL

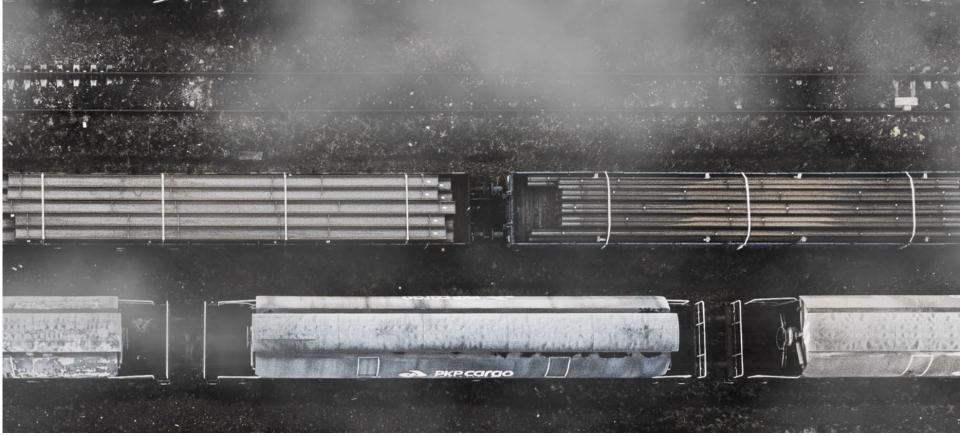
FOUNDATION

an Open Source initiative for Railways

The OpenRail Foundation initiative aims to create an open,
autonomous and collaborative innovation space.

Its mission is to promote the development of open source software
projects in the railway sector, as it already exists in numerous other
industrial sectors like telecommunication, automotive, energy, ...

Let's solve problems together !



Current Supporters

Companies below have agreed on the principles and believe in the benefits of building an Open Source Foundation for Railways.

We are people from these companies, strongly convinced that Open Source is a great opportunity for Railways.

We would be very pleased to accept new supporters and make our community grow !



UIC

<https://uic.org>



Deutsche Bahn

<https://deutschebahn.com>



SNCF

<https://snfc.com>



SBB CFF FFS - <https://www.sbb.ch>



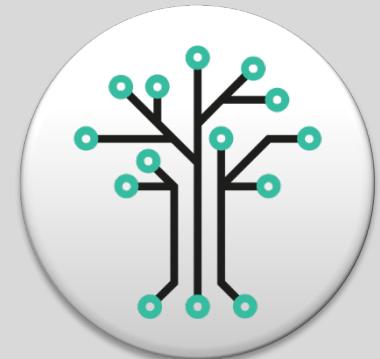
And how about you ?

GET IN TOUCH

Agenda

1. Einige historische Meilensteine
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3. Open Source Communities

Informationen zur mündlichen Präsentation



Informationen zur mündlichen Präsentation

- **Titel und Thema bis 23. November 2022** in die Gruppenbeschreibung schreiben: *Vortragstitel – Vorlesungs-Thema*
https://ilias.unibe.ch/goto_ilias3_unibe_fold_2516179.html
Beispiele: https://www.digitale-nachhaltigkeit.unibe.ch/studium/digitale_nachhaltigkeit/praesentationen/
- **PowerPoint-Vorlage** (LibreOffice unterstützt das auch ;) muss verwendet werden, keine auf Animationen und eingebettete Videos
→ In BigBlueButton können nur PDFs präsentiert werden
https://ilias.unibe.ch/goto_ilias3_unibe_file_2588047_download.html
- **Abgabe per Email** an Joel und Lena bis **7. Dezember 2022** als .pptx-Datei → andere Formate könnten die Vorlage verzerren
- Weitere Infos: siehe **Vorlesung vom 19. Oktober 2022**