

Open Source Culture at Scale



SIEMENS

Our community is all over Siemens

Users:

84 494 accounts



People from

77 countries,
including China



Open Source at the core,

0 license fees



Projects:

57 791 (internal)

249 986 (private)



Merge requests:

4 798 758

Over 1 million per year



CI/CD:

53 956 458

(pipelines)

314 074 652 (builds)

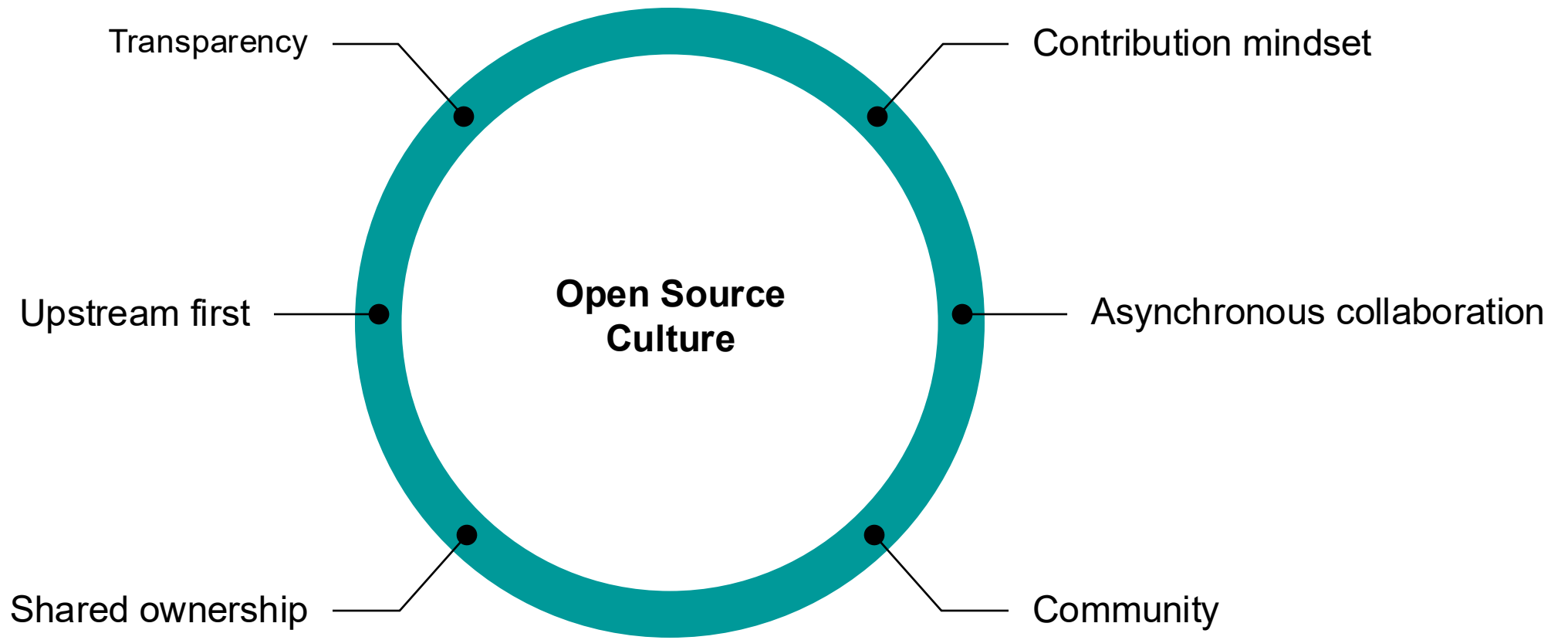


Thanks to the **community approach**, self-service and high-profile team we can run and scale the platform **super-efficiently**.

- From a department tool to the **largest platform at Siemens** with the **highest security level**
- On average we have **> 4 commits per day** on our main Infrastructure as Code (IaC) repo
- Teams across the globe **co-create with customers**, contractors, suppliers, researchers on specific projects

What defines Open Source culture?





How did we bring these principles into Siemens?

Our thesis

**Open Source
Culture does not
scale through
policy alone**

**People must
practice it
everyday!**

1

Shared platforms

2

Transparent operations

3

Self-service by default

4

Contribution paths

5

Community support

6

Upstream-first mindset



Large enterprises do not lack code. They lack flow.

- many teams, tools, rules
- local optimizations
- invisible boundaries

Scaling collaboration

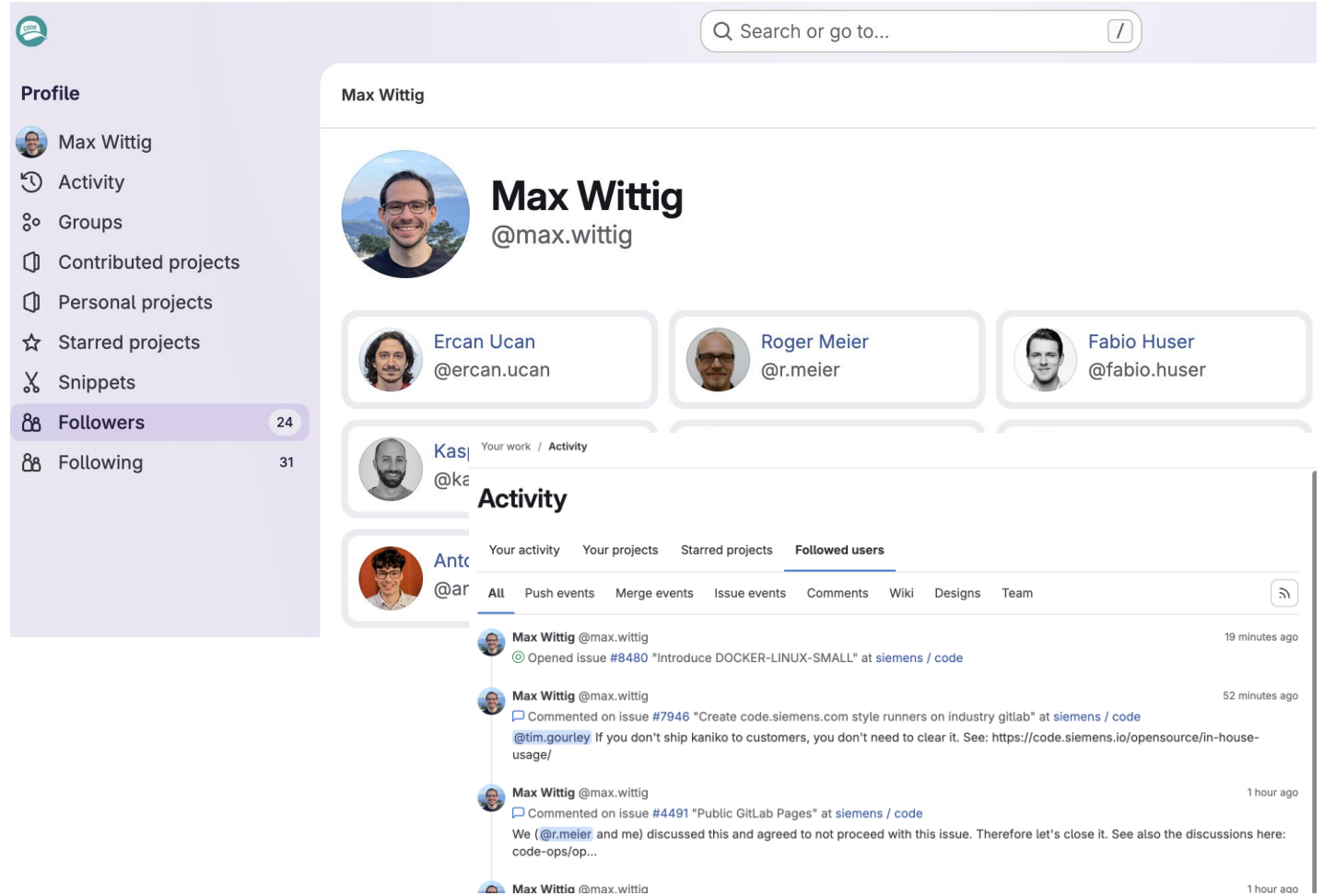
Inner Source as a training ground

Contribution mindset

- open collaboration across organizational boundaries
- visible issues and merge requests
- Reusable projects

Shared ownership

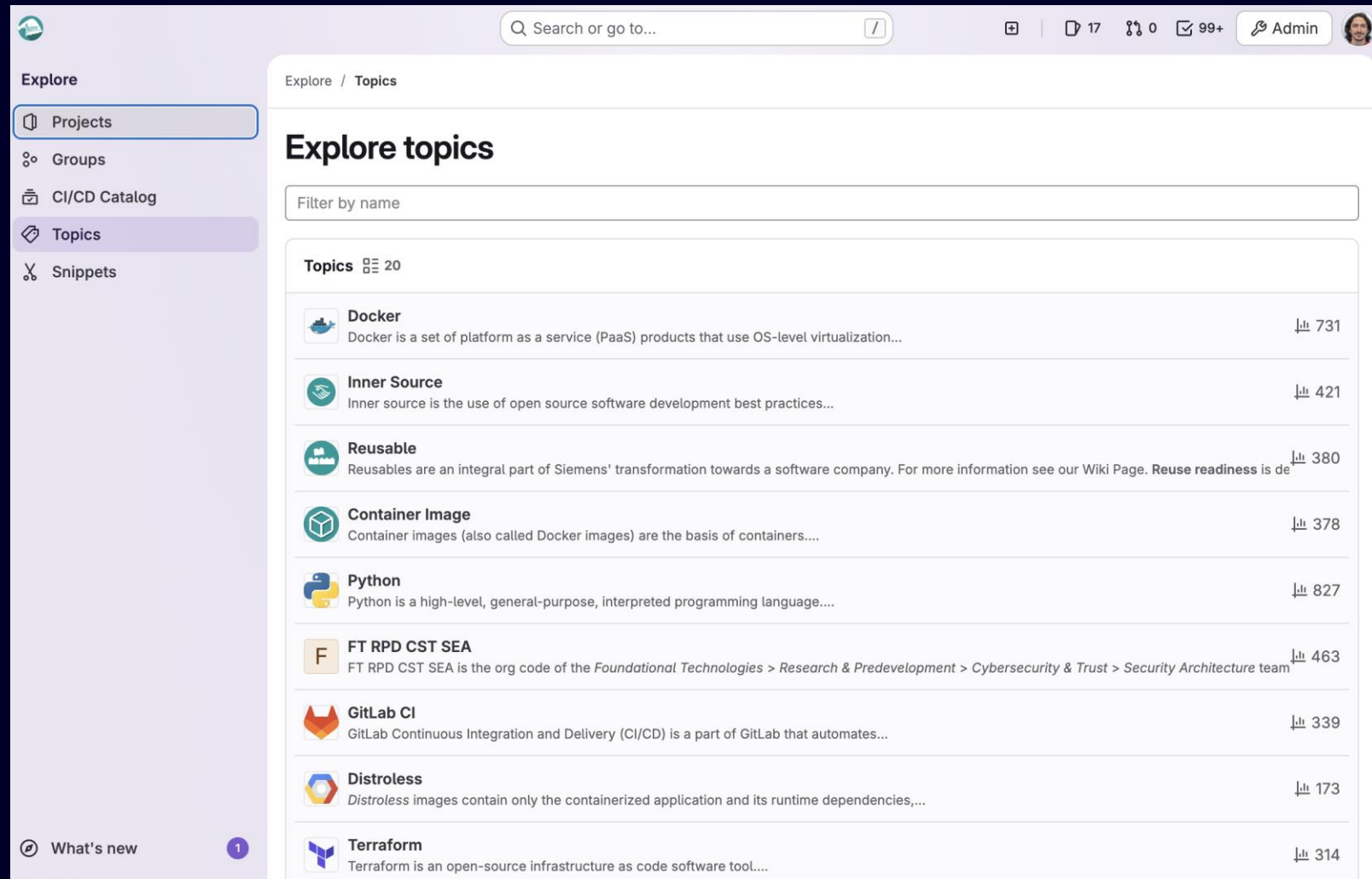
- Internal projects with over 2000+ reuses
- Features contributed to Gitlab to make collaboration easier
 - Topic
 - Follow feature by Roger



The screenshot shows a GitLab profile page for Max Wittig (@max.wittig). The profile includes a search bar at the top, a navigation menu on the left with options like Profile, Activity, Groups, Contributed projects, Personal projects, Starred projects, Snippets, Followers (24), and Following (31). The main content area displays Max Wittig's profile picture, name, and handle. Below this are three featured users: Ercan Ucan (@ercan.ucan), Roger Meier (@r.meier), and Fabio Huser (@fabio.huser). The 'Activity' section is active, showing a list of recent actions: opening issue #8480, commenting on issue #7946, and commenting on issue #4491. The page also features tabs for 'Your work / Activity' and 'Followed users'.

How to scale collaboration across our developers?

- The topics explorer



The screenshot displays the Siemens Topics Explorer interface. On the left, a navigation sidebar includes 'Projects', 'Groups', 'CI/CD Catalog', 'Topics' (highlighted), and 'Snippets'. The main content area is titled 'Explore / Topics' and features a search bar labeled 'Filter by name'. Below the search bar, a list of 20 topics is shown, each with an icon, a title, a brief description, and a view count. The topics listed are Docker (731), Inner Source (421), Reusable (380), Container Image (378), Python (827), FT RPD CST SEA (463), GitLab CI (339), Distroless (173), and Terraform (314). At the bottom left of the interface, there is a 'What's new' section with a notification badge showing '1'.

Topic	Description	Views
Docker	Docker is a set of platform as a service (PaaS) products that use OS-level virtualization...	731
Inner Source	Inner source is the use of open source software development best practices...	421
Reusable	Reusables are an integral part of Siemens' transformation towards a software company. For more information see our Wiki Page. Reuse readiness is de...	380
Container Image	Container images (also called Docker images) are the basis of containers...	378
Python	Python is a high-level, general-purpose, interpreted programming language....	827
FT RPD CST SEA	FT RPD CST SEA is the org code of the <i>Foundational Technologies > Research & Predevelopment > Cybersecurity & Trust > Security Architecture</i> team	463
GitLab CI	GitLab Continuous Integration and Delivery (CI/CD) is a part of GitLab that automates...	339
Distroless	<i>Distroless</i> images contain only the containerized application and its runtime dependencies,...	173
Terraform	Terraform is an open-source infrastructure as code software tool....	314

Scaling transparency

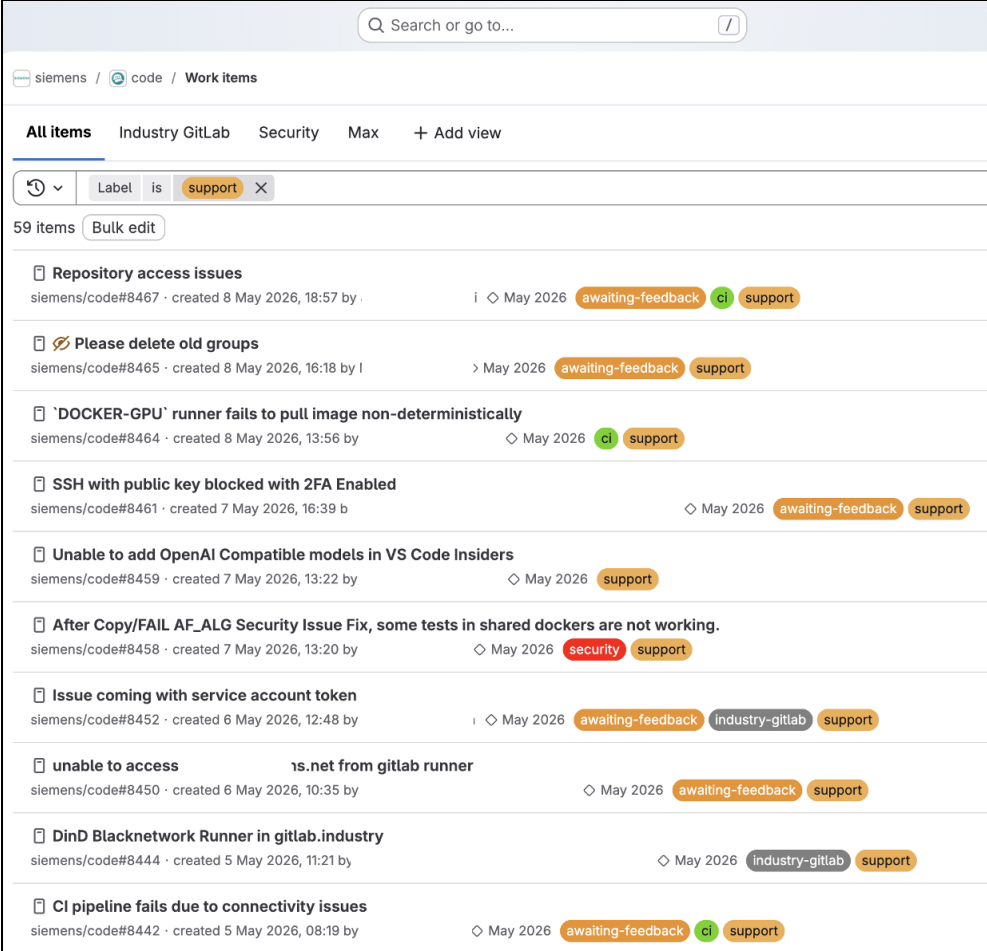
How did we scale transparency?

Transparency

- Internal issue tracker to view plans
- Postmortem reports for outages / slow-downs

Community

- Keep close contact to our users
- Make them part of the decision process (up and down votes)
- Respond to requests in a timely manner

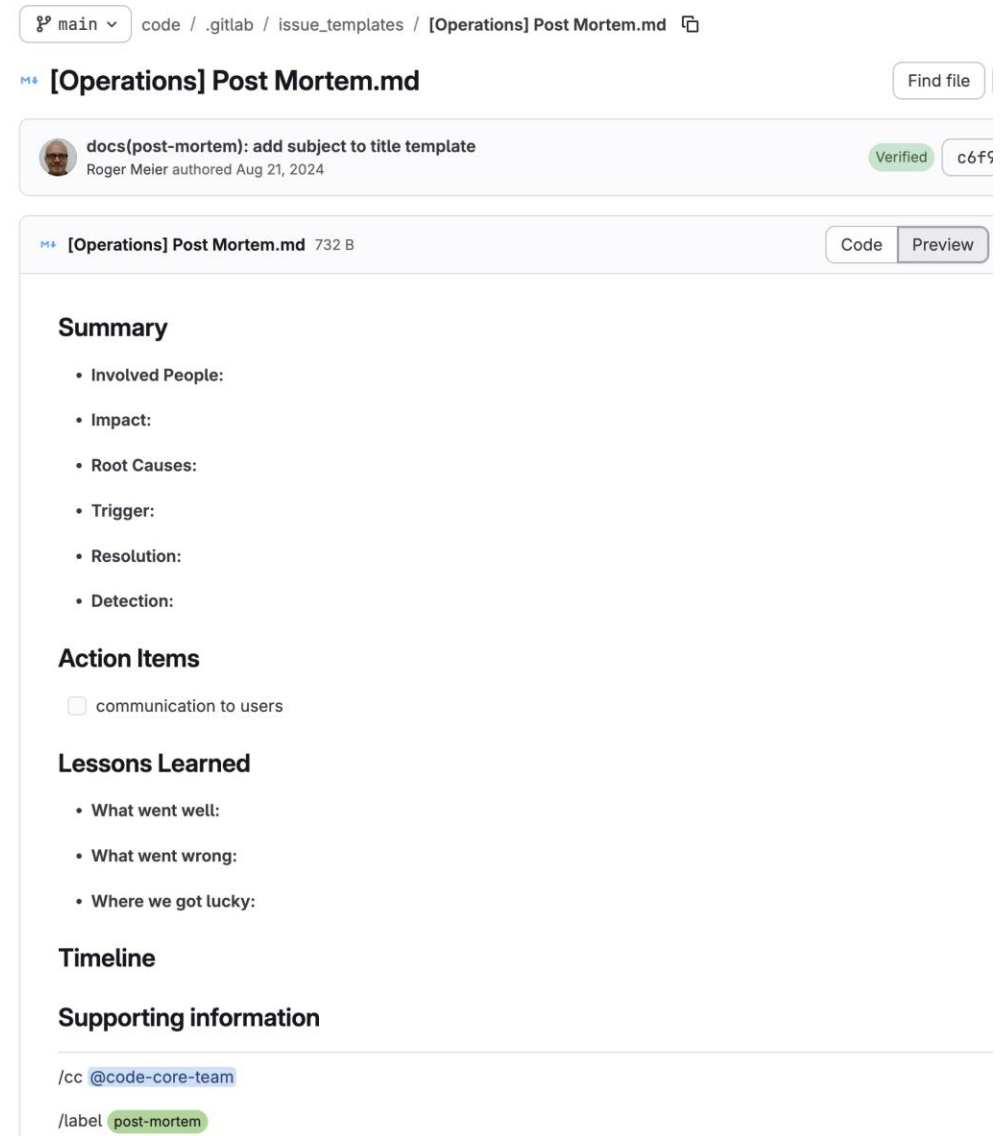


The screenshot displays a GitLab issue tracker interface for the 'siemens/code' repository. The page shows a list of 59 issues, with a search bar at the top and a filter for 'support' issues. The issues listed include:

- Repository access issues** (siemens/code#8467) - created 8 May 2026, 18:57 by [user] - labels: awaiting-feedback, ci, support
- Please delete old groups** (siemens/code#8465) - created 8 May 2026, 16:18 by [user] - labels: awaiting-feedback, support
- 'DOCKER-GPU' runner fails to pull image non-deterministically** (siemens/code#8464) - created 8 May 2026, 13:56 by [user] - labels: ci, support
- SSH with public key blocked with 2FA Enabled** (siemens/code#8461) - created 7 May 2026, 16:39 by [user] - labels: awaiting-feedback, support
- Unable to add OpenAI Compatible models in VS Code Insiders** (siemens/code#8459) - created 7 May 2026, 13:22 by [user] - labels: support
- After Copy/FAIL AF_ALG Security Issue Fix, some tests in shared dockers are not working.** (siemens/code#8458) - created 7 May 2026, 13:20 by [user] - labels: security, support
- Issue coming with service account token** (siemens/code#8452) - created 6 May 2026, 12:48 by [user] - labels: awaiting-feedback, industry-gitlab, support
- unable to access [url] from gitlab runner** (siemens/code#8450) - created 6 May 2026, 10:35 by [user] - labels: awaiting-feedback, support
- DinD Blacknetwork Runner in gitlab.industry** (siemens/code#8444) - created 5 May 2026, 11:21 by [user] - labels: industry-gitlab, support
- CI pipeline fails due to connectivity issues** (siemens/code#8442) - created 5 May 2026, 08:19 by [user] - labels: awaiting-feedback, ci, support

How did we scale transparency?

- Transparency is key also about failures
- Create post-mortem reports
- Communicate and inform users in a timely manner



The screenshot shows a GitHub commit interface for a file named "[Operations] Post Mortem.md". The commit was made by Roger Meier on August 21, 2024, and is marked as "Verified". The commit message is "docs(post-mortem): add subject to title template". The file size is 732 B. The commit includes a "Summary" section with the following items:

- Involved People:
- Impact:
- Root Causes:
- Trigger:
- Resolution:
- Detection:

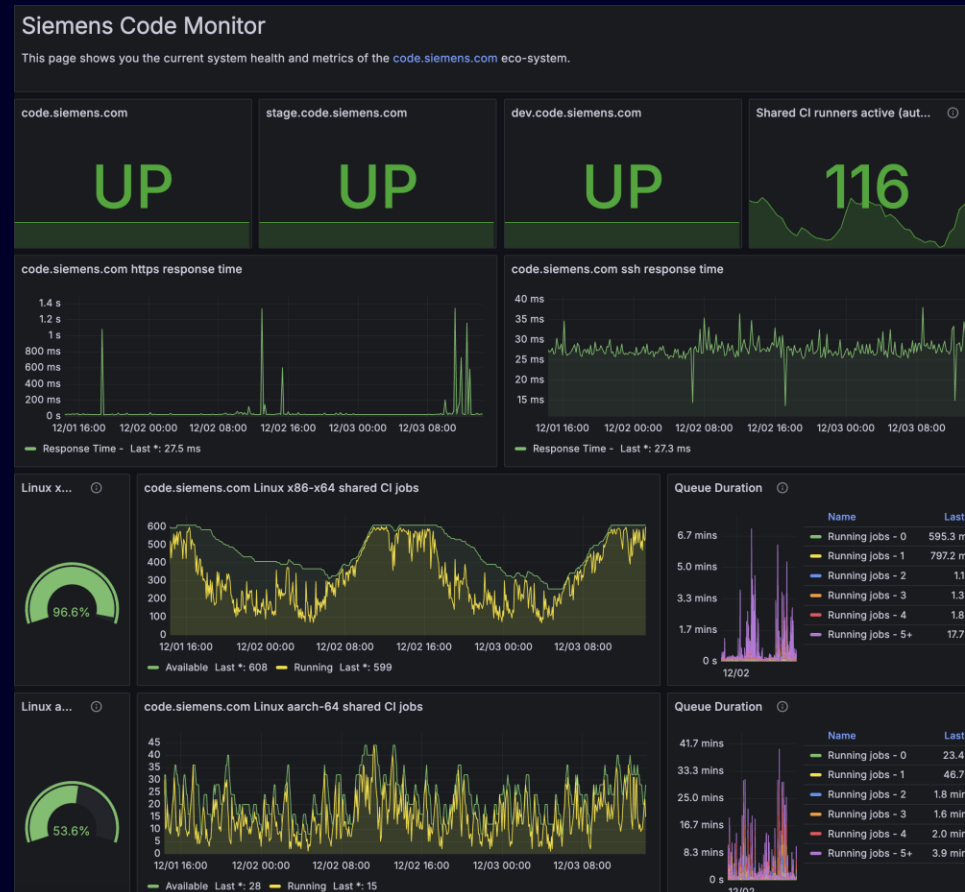
The "Action Items" section contains one item: "communication to users". The "Lessons Learned" section includes:

- What went well:
- What went wrong:
- Where we got lucky:

The "Timeline" and "Supporting information" sections are currently empty. The commit also includes a "/cc @code-core-team" tag and a "/label post-mortem" tag.

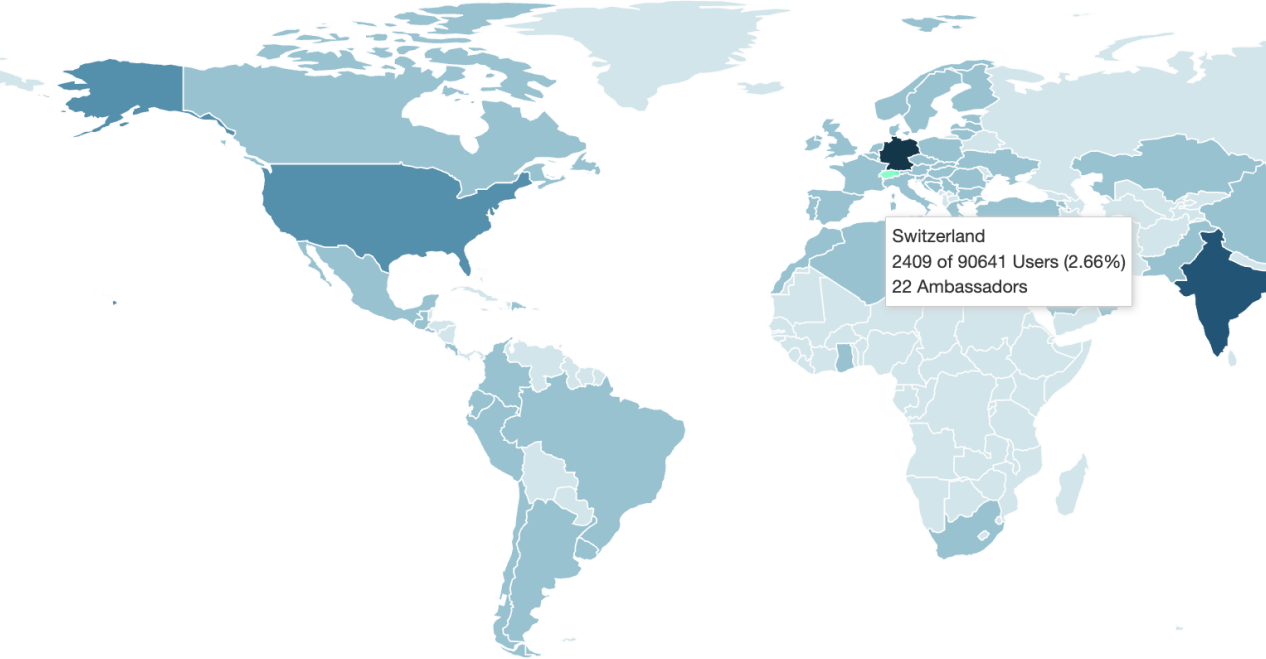
How did we scale transparency?

- **Transparency is key** on all aspects of running a platform, this is a community approach!
- e.g. monitoring, dashboards
- Relevant parts available to all users



How do we spread those
learnings?

Scaling learnings: Social coding ambassadors



The screenshot shows a GitLab merge request for the file `Ambassador Requirements.md`. The commit message is `docs(ambassadors): add admission process details to MR template` by Fabio Huser, dated 11 Oct 2025, 09:05. The merge request is verified with commit hash `0a5f933b`. The content of the file includes:

Thanks for your submitting your application as Social Coding Ambassador.

An ambassador coaches people on best practices with Inner/Open Source development and the code.siemens.com ecosystem, like Workflows, Conventional Changelog, Git, GitLab CI, etc., has talks or does presentations within their organization and location.

Social Coding Ambassadors who provides a `github.com` handle will also automatically be added to the GitHub Siemens organization.

You're nearly there 🍀

To be accepted as ambassador, you need to complete the remaining steps:

- Describe the following in your **commit message**:
 - why you want to apply as ambassador in a few words
 - your Open Source or Inner Source background
- Specify your skills according to <https://code.siemens.com/siemens/code/-/blob/main/docs/ambassadors.md#adding-your-skills>.
- Make sure that the CI pipeline of your branch passed and that you've read <https://code.siemens.com/siemens/code/-/blob/main/CONTRIBUTING.md>.

Use a **feature branch** in your fork instead of `main` to submit your changes or the pipeline will fail

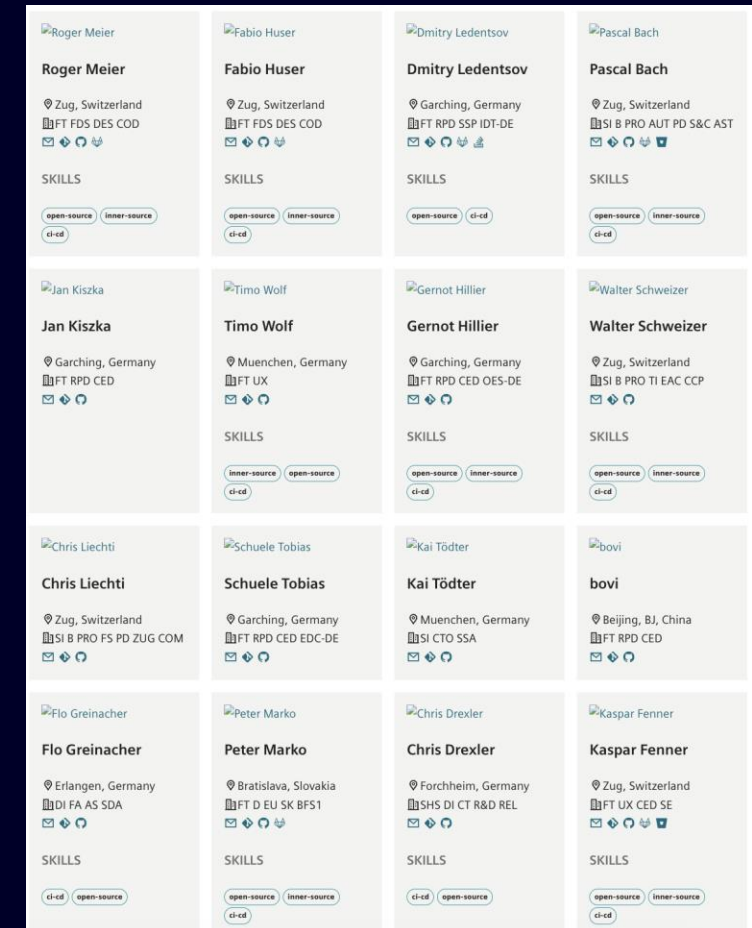
- Also make sure to enable the following settings of the MR:
 - `Remove source branch when merge request is accepted`. - this keeps your fork clean.
 - `Allow commits from members who can merge to the target branch`. - this allows us to update your branch before merging if needed.

Tasks before merging:

- Review by the `@code-ambassadors-admission-team` based on the admission process:
 - At least 50% of the `@code-ambassadors-admission-team` has to upvote this MR.
 - The `@code-ambassadors-admission-team` has at least 7 week time to provide feedback or ask questions.
 - If needed, the MR can be rebased at the end of the review process.

Scaling collaboration: The social coding ambassadors

- Drive the adoption of Inner Source development by coaching
- "Walk the talk" demonstrating best practices (e.g., GitLab CI, Conventional Changelog)
- Strong knowledge of the Open Source, Inner Source and Siemens-specific OSS compliance processes
- Applicants join by submitting a Merge Request and getting voted in
- Monthly community calls



How do we scale feedback?



Keep the issue tracker internally available and subscribe to new entries

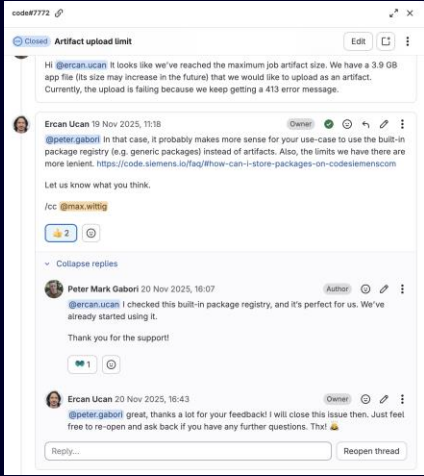
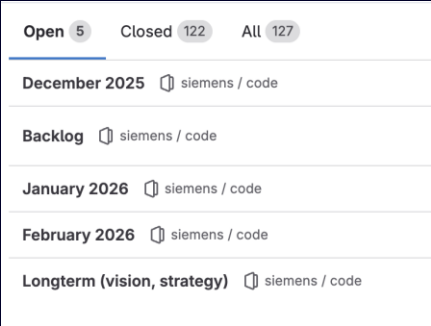
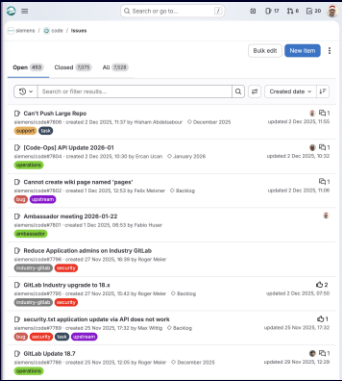
Prioritize and assign it to a milestone

- Respond to user(s)
- Get feedback

If needed, analyze further or implement requested feature

Fix the issue wherever it is

- Gitlab upstream
- Open-Source projects
- Local configuration
- IT issues → file ticket!
- Zscaler → hope and pray for a fix



Example: Listening to our users

Gatekeeper for Gitlab API/Git that only allows project/group tokens

Issue created Nov 8, 2023 by Max Wittig

Use Cases

- 1 Access git repositories via HTTPS read-only
- 2 Access git repositories via HTTPS read-write
- 3 Access project specific API endpoints read-only
- 4 Access project specific API endpoints read-write
- 5 Access group specific API endpoints read-only
- 6 Access group specific API endpoints read-write

Implementation Plan

Conceptional Ideas

- use a simple yaml file per project within `code-ops/gatekeeper` that is then consumed by `code-ops/gatekeeper-git` and others li
- add fear text to MR template for `code-ops/gatekeeper`
- use feature flag concept as interface between `gatekeeper` and `code-apps/cse`
- config file as json is compiled by `code-ops/gatekeeper` and served to `code-ops/gatekeeper-git`
- define a yaml schema to validate properly
- one file per project named with the project id to avoid merge conflicts, e.g. `projects/1.yaml`:

```
---
git:
  write: true # default is false
  allowlist:
    - 10.1.55.0/16 # my super lab network within AWS account xyz
    - 10.1.44.0/16 # my super lab network within Azure account xyz
```

Security Considerations

- we can't open up for all projects by default
- it must be a decision by the project owners to allow access
- only allow project access tokens as they have limited scope
- add pre-flight check if it is a project access token

/cc @andre.bossert

Edited Jul 10, 2024 by Roger Meier

47 0 1 7 2 7 3 2 4 2 5 1 6 2

29 Apr 2026, 13:09

Thanks so much to the entire team, you are doing the lords work! 🙏🙏

Edited 29 Apr 2026, 13:09 by [redacted]

4 🍎 😊

22 Apr 2026, 15:44

Qwen-3.6-27b released

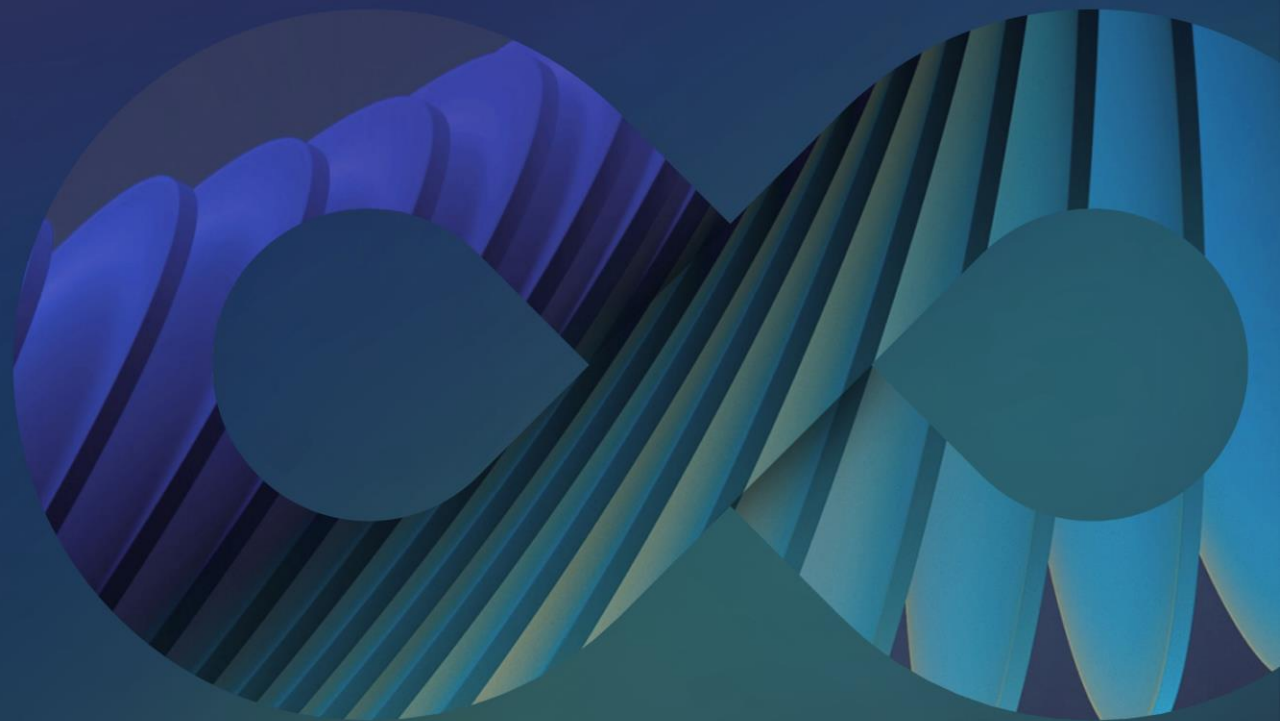
1 🍎 😊

23 Apr 2026, 09:59

Contributor

Damn I was about to request the new model and came to see it's already added. My goodness...

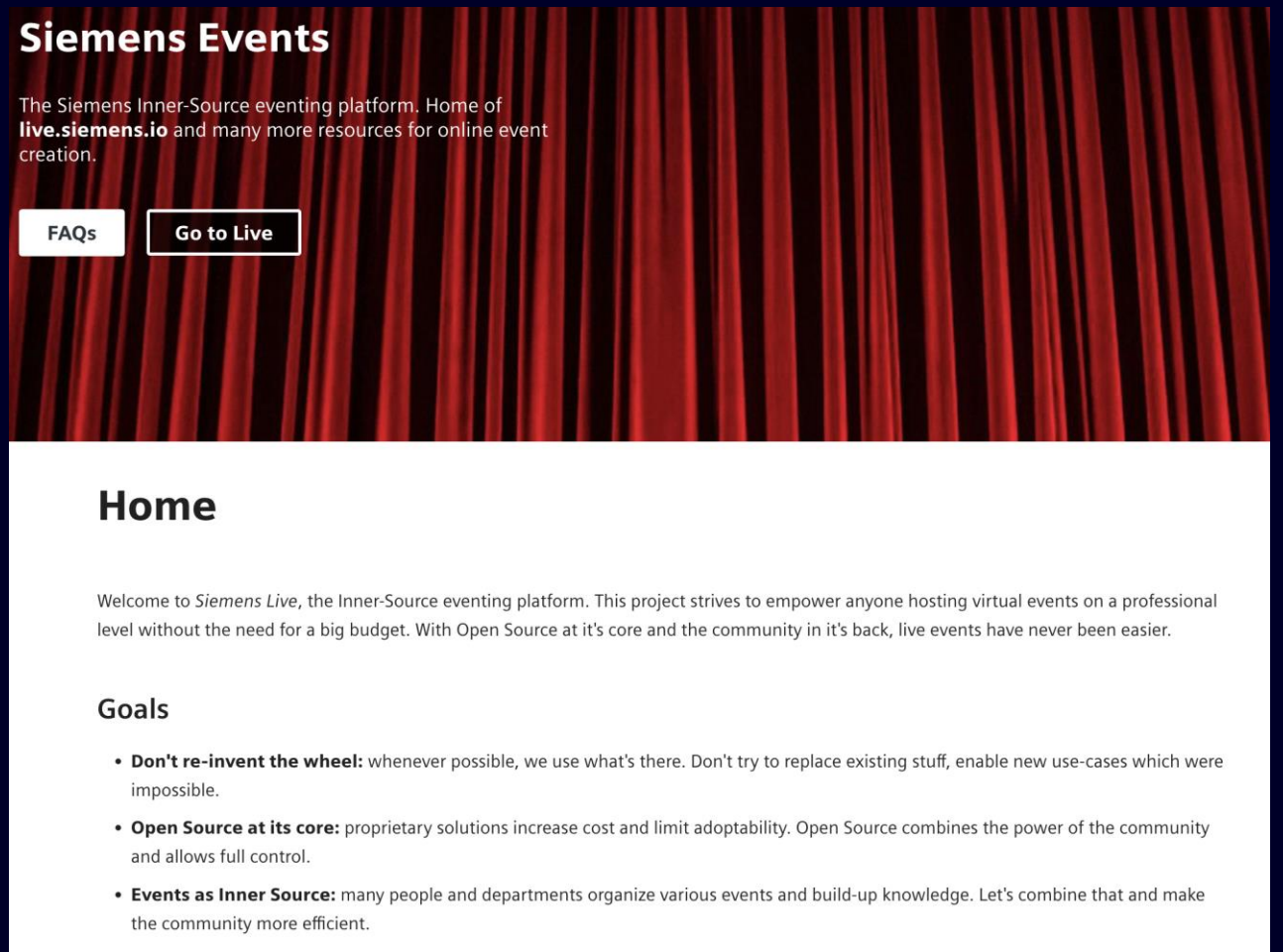
Scaling communities



How to scale internal communities?

Inner-source eventing platform and live.siemens.io

- Internal live streaming event platform
- Enables community knowledge-sharing
- Create an MR and host your event
- OSS event on this platform as well!



Siemens Events

The Siemens Inner-Source eventing platform. Home of live.siemens.io and many more resources for online event creation.

[FAQs](#) [Go to Live](#)

Home

Welcome to *Siemens Live*, the Inner-Source eventing platform. This project strives to empower anyone hosting virtual events on a professional level without the need for a big budget. With Open Source at its core and the community in its back, live events have never been easier.

Goals

- **Don't re-invent the wheel:** whenever possible, we use what's there. Don't try to replace existing stuff, enable new use-cases which were impossible.
- **Open Source at its core:** proprietary solutions increase cost and limit adoptability. Open Source combines the power of the community and allows full control.
- **Events as Inner Source:** many people and departments organize various events and build-up knowledge. Let's combine that and make the community more efficient.

How to scale OSS communities?

- github.com/siemens & github.com/siemens-research

The screenshot shows the GitHub profile for the organization 'siemens'. At the top, there are navigation tabs for Overview, Repositories (213), Projects (1), Packages, Teams (24), People (136), and Security and quality. A notification banner indicates that the sponsorship balance is low. The profile header includes the Siemens logo, the name 'Siemens', the tagline 'Technology to transform the everyday.', a 'Verified' badge, and statistics for 1.3k followers, the website 'https://opensource.siemens.com', and the email 'opensource@siemens.com'. Below this is a 'README.md' section with the heading 'Siemens ❤️ Open Source'. The text describes Siemens as a technology company in industry, infrastructure, transport, and healthcare, and lists several open source projects with GitHub badges: `iot2050`, `industrial edge`, `mendix`, `industrial iot`, `tia portal`, and `simatic ax`. A 'Pinned' section at the bottom features two repositories: `linux-entra-ss0` (Public, JavaScript, 198 stars, 20 forks) and `efibootguard` (Public, C, 128 stars, 41 forks).

The screenshot shows the GitHub profile for the organization 'siemens-research'. It features navigation tabs for Overview, Repositories (5), Projects, Packages, Teams, People (8), and Insights. The profile header includes the Siemens logo, the name 'Siemens Research', the tagline 'A place for research projects by Siemens', a 'Verified' badge, and statistics for 8 followers, the website 'https://opensource.siemens.com', and the email 'opensource@siemens.com'. Below this is a 'README.md' section with the heading 'Siemens Research'. The text states that the organization hosts research projects and lists several open source projects with GitHub badges: `industrial edge`, `industrial iot`, `iot2050`, `mendix`, `siemens`, `simatic ax`, and `tia portal`. A 'Popular repositories' section at the bottom lists three repositories: `lion` (Public, Python, 3 stars), `industrial-mlm-benchmark` (Public, Python, 1 star, 1 fork), and `genai-for-sw-architecture` (Public, Python, 1 star).

How to scale OSS communities?

- Yearly GitHub OSS project sponsoring (this year 30k)

The image displays three overlapping screenshots of the GitHub Sponsors interface, specifically the 'Past Sponsorships' section. Each screenshot shows a list of users who have sponsored the organization, with columns for Name, Visibility, Start date, and Amount. Each entry includes a 'Manage' button.

Top Screenshot (siemens's sponsorships): Shows 10 users. The first user is @jgm with a sponsorship of \$500.00 one time on Aug 15, 2024. The last user is @antelle with a sponsorship of \$500.00 one time on Sep 7, 2023. The page shows '1-10 of 30' items.

Middle Screenshot (siemens's sponsorships): Shows 10 users. The first user is @jgm with a sponsorship of \$500.00 one time on Aug 15, 2024. The last user is @wixtoolset with a sponsorship of \$1000.00 one time on Oct 17, 2025. The page shows '21-30 of 30' items.

Bottom Screenshot (siemens's sponsorships): Shows 10 users. The first user is @eslint with a sponsorship of \$1000.00 one time on Oct 17, 2025. The page shows '11-20 of 30' items.

The platform was
technology. The
product was culture.

Thank You!

Questions & answers



Contact

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ercan.ucan@siemens.com

