



Enarx Project Review 2022

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About

- Enarx is a deployment framework for running applications in TEE instances.
- It provides a WebAssembly runtime, based on wasmtime.
- It is designed to work across silicon architectures transparently to the user.
- It currently supports Intel's SGX and AMD's SEV.
- It's in the incubation stage at the CCC.

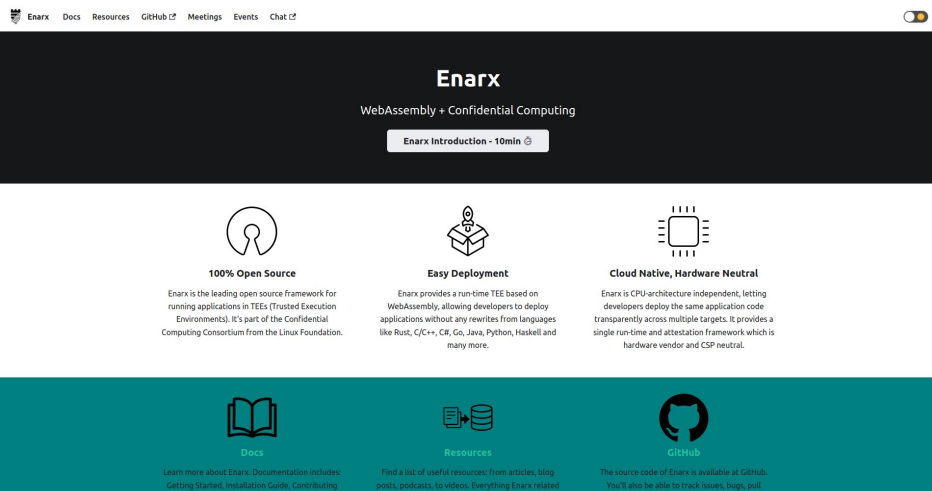
1. Changes to project's submission template

- Review whether any answers to the project's submission template or Technical Charter have changed, and if so, review the new answers. A representative from the project is responsible for presenting any deltas to the template answers since the last review, if any. If there are no changes, there is nothing to review here.

1. Changes to project's submission template

Official communication channels:

- Renewed website: <https://enarx.dev/>
- New blog: <https://blog.enarx.dev/>



The screenshot shows the Enarx website homepage. The header is dark with navigation links: Enarx, Docs, Resources, GitHub, Meetings, Events, Chat. A toggle switch is on the right. The main section has a dark background with the Enarx logo and tagline "WebAssembly + Confidential Computing". Below this is a button for "Enarx Introduction - 10min". The content area features three columns with icons and text: "100% Open Source" (key icon), "Easy Deployment" (rocket icon), and "Cloud Native, Hardware Neutral" (chip icon). The footer has three columns with icons and text: "Docs" (book icon), "Resources" (document icon), and "GitHub" (GitHub logo icon).

Enarx
WebAssembly + Confidential Computing

Enarx Introduction - 10min

100% Open Source
Enarx is the leading open source framework for running applications in TEEs (Trusted Execution Environments). It's part of the Confidential Computing Consortium from the Linux Foundation.

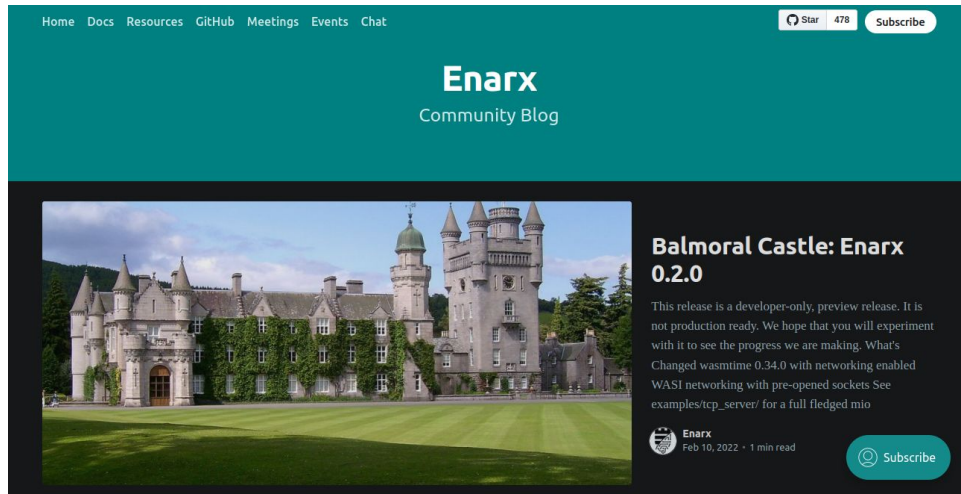
Easy Deployment
Enarx provides a run-time TEE based on WebAssembly, allowing developers to deploy applications without any rewrites from languages like Rust, C/C++, C#, Go, Java, Python, Haskell and many more.

Cloud Native, Hardware Neutral
Enarx is CPU-architecture independent, letting developers deploy the same application code transparently across multiple targets. It provides a single run-time and attestation framework which is hardware vendor and CSP neutral.

Docs
Learn more about Enarx. Documentation includes: Getting Started, Installation Guide, Contributing.

Resources
Find a list of useful resources from articles, blog posts, podcasts, to videos. Everything Enarx related.

GitHub
The source code of Enarx is available at GitHub. You'll also be able to track issues, bugs, pull requests.



The screenshot shows the Enarx Community Blog. The header is teal with navigation links: Home, Docs, Resources, GitHub, Meetings, Events, Chat. A toggle switch is on the right. The main section has a teal background with the Enarx logo and tagline "Community Blog". Below this is a button for "Star 478" and a "Subscribe" button. The content area features a large image of Balmoral Castle and a blog post titled "Balmoral Castle: Enarx 0.2.0". The post text states: "This release is a developer-only, preview release. It is not production ready. We hope that you will experiment with it to see the progress we are making. What's Changed wasmtime 0.34.0 with networking enabled WASI networking with pre-opened sockets See examples/tcp_server/ for a full fledged mio". The footer has the Enarx logo, date "Feb 10, 2022", and a "1 min read" indicator, along with a "Subscribe" button.

Home Docs Resources GitHub Meetings Events Chat

Star 478 Subscribe

Enarx
Community Blog

Balmoral Castle: Enarx 0.2.0

This release is a developer-only, preview release. It is not production ready. We hope that you will experiment with it to see the progress we are making. What's Changed wasmtime 0.34.0 with networking enabled WASI networking with pre-opened sockets See examples/tcp_server/ for a full fledged mio

Enarx
Feb 10, 2022 · 1 min read

Subscribe

1. Changes to project's submission template

List of new third party dependencies:

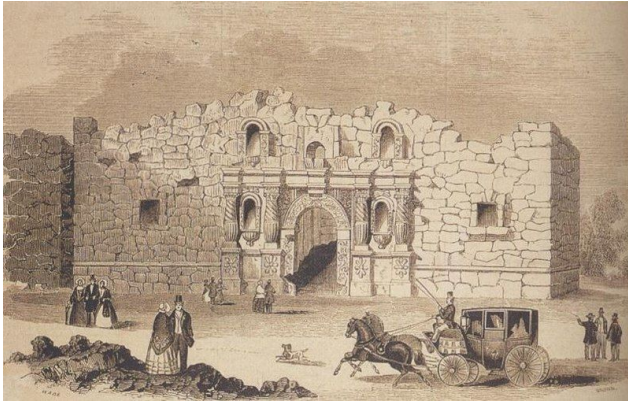
- OpenSSL: TLS and crypto library.
- wasmtime: WebAssembly runtime.
- tokio: Async for Rust.
- mio: Metal IO library for Rust.
- <https://docs.google.com/spreadsheets/d/1UKnbbGWXYLjnPZsox3zmYo59nv3XSXjePfas5E2fER0/edit#gid=0>



1. Changes to project's submission template

Release methodology:

- Enarx 0.1.0 “Alamo” (first release): October 26, 2021.
- Enarx 0.2.0 “Balmoral”: February 10, 2022.
- Enarx 0.3.0: March, 2022.
- Release methodology: <https://github.com/enarx/enarx.github.io/pull/83>



2. Review project's progression status

- Review the project's progression status to determine whether the project is in the stage that accurately reflects its needs and goals. For example, is it already ready to move to another progression level? Is it on track at the current level? Is any action needed from the TAC (e.g., change in or addition to any project mentor(s))? If nothing has changed significantly, there may be nothing to review here.

2. Review project's progression status

Governance:

- Enarx's founders (Mike and Nathaniel) launched Profian and reaffirmed their commitment to keep Enarx open (open source code, open collaboration):
<https://blog.enarx.dev/enarx-and-a-new-custodian/>
- Continued collaboration with Red Hat.
- Working towards a defined governing body of 5 or more members, of which no more than $\frac{1}{3}$ is affiliated with the same employer.



2. Review project's progression status

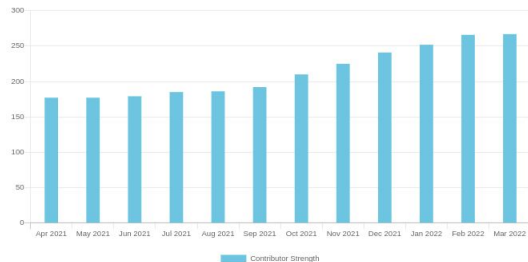
Community Growth:

- The contributor strength increased by 50% during the last 1 year.
- Increased upstream contributions, including WASI, wasmtime (e.g. `socket_accept`), and Rust.
- Number of GitHub stars approaching 500.



Contributor Strength

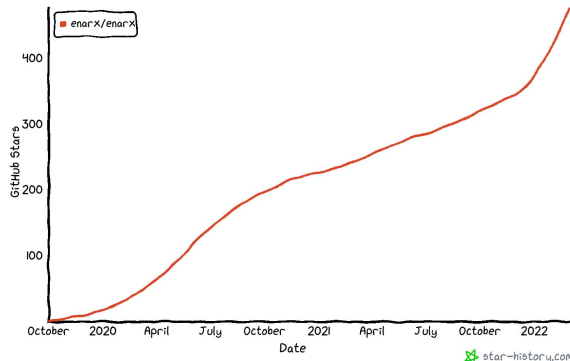
The growth in the aggregated count of unique contributors analyzed during the selected time period. A contributor is anyone who is associated to the project by means of any code activity (commits/PRs/changesets) or helping to find and resolve bugs.



The contributor strength increased by 50% during the last 1 Year.

QLFX insights

Star history



star-history.com

2. Review project's progression status

Graduation Stage:

- At this point, Enarx is not ready to request a vote from the TAC to move to the Graduation stage.

3. Review project's budget

- Review any budget allocations relevant to the project, and whether any adjustments are needed.

3. Review project's budget

New hardware:

- Thinkmate Server - Intel Xeon Gold 5318S (acquired December 2021. Price \$8,679 capped at \$7,500)



3. Review project's budget

Mentorship:

- Three Outreachy interns (started December 2021. Stipend of \$7,000)
- Successfully built demos and presented at OC3 (Open Confidential Computing Conference). Will also present at Open Source Festival Africa and FOSSASIA.
- Confidential Computing Fellowship Guide:
<https://enarx.dev/docs/Fellowship/Introduction>



4. Review project's license scans

- Review license scans provided by the Linux Foundation. Provide feedback on any outstanding issues and evaluate the scanning service from the project's perspective.

4. Review project's license scans

LFX Security:

- No license issues: all OSI Approved.
- No code issues: LFX Security doesn't support Rust (yet), so no issues found.
- 5 code secret issues: private keys for testing purposes.
- Majority of GitHub repos now using main branch (instead of master).
- Non-inclusive language: few instances of master, whitelist, abort.
- OpenSSF Best practices: passing

<https://bestpractices.coreinfrastructure.org/en/projects/5414>



openssf best practices **passing**