
Speaking at SCaLE!
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General:
Open Source in
Closed Ecosystems
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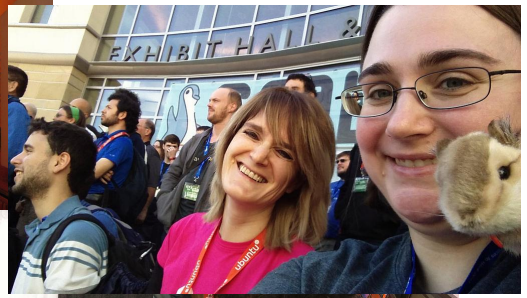
Who I am, presented to you via SCaLE talks

- 9x: Finding Help in Ubuntu (LinuxForce)
- 10x: Bringing Linux into Public Schools and Community Centers (Partimus)
- 11x: Ubuntu in the Cloud (HP)
- 12x: Code Review for Systems Administrators (HP)
- 14x: Open Source tools for distributed systems administration (HP)
- 15x: Listening to the Needs of Your Global Open Source Community (Startup)
- 16x: Advanced Continuous Delivery Strategies for Containerized Applications Using DC/OS (Startup)
- 18x: We put Kubernetes on a Mainframe! (IBM)
- 21x: Will your open source project run on a mainframe? And beyond! (IBM)



Today I work on mainframes

Joined IBM in 2019

Became an Open Mainframe Project Ambassador in 2022

Launched the Open Source Program Office for IBM Z & LinuxONE in 2023

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What is a “Closed Ecosystem”?

- Historically, or in recent years, has relied primarily on proprietary software
- Does most of their development in-house
- May have dabbled in releasing open source software, but hasn’t engaged with external contributions

In this talk, I’m drawing examples from the mainframe industry (hello!), the motion picture industry, and the automotive industry.

Key Concerns

- Competitive Advantage
- Security
- Support
- Expertise

Competitive Advantage

Will my industry benefit from being more collaborative? Where?

- The Motion Picture Industry: Focus on standardization around formats and related tooling, including libraries, VFX Reference Platform helps keep OSS versions aligned.
- The Mainframe Industry: Make the mainframe easier to access and around supporting free and open learning opportunities.
- The Automotive Industry: Keep pace with innovation by standardizing on single software platform.

Competitive Advantage

Codify the agreement of what areas your industry partners wish to collaborate on and build an official, vendor neutral space for that work.

- Academy Software Foundation (ASWF)
- The Open Mainframe Project
- Automotive Grade Linux (AGL) & Eclipse SDV (Software-Defined Vehicle)

Competitive Advantage

Standards bodies are common in a lot of industries, and industries are aware that failure to adhere to these could mean they’re left behind.

Open source can be approached a bit like a standards body for an industry, one that’s increasingly important today.

Competitive Advantage

Continuously re-iterate to leadership in your organization why you're working together

- Development efforts saved by using a core utility developed by the project that does not contribute to competitive advantage
  - Plus, product or process success your company was able to demonstrate when building on top of that
- Training time saved by team members using open tooling used across the industry
  - In the Motion Picture industry, they also noted that many studios hire people with rare skill sets who regularly move between studios
- Cross-industry collaboration done to save a key project abandoned by its maintainer

Tip: Document everything your company is doing related to open source to help support above.

Security

“Everyone seeing source code makes it more vulnerable”

We’ve heard this before, dust off those old rebuttals!

But open source has gotten better too.

Security

Continuous integration testing has become standard in open source projects in the past 10 years.

Security tests are increasingly being integrated into these workflows, some of which are a requirement for progressing through project stages in major open source software foundations.

Security

More major companies are involved with open source today.

Many of these companies are running their own internal testing infrastructure for open source software, and contributing security fixes back to the community.

These companies also dedicate security engineers to positions on security teams of projects they invest in.

Security

More projects have established private mechanisms for reporting and discussing vulnerabilities with a dedicated security team.

The ASF Security Team guides projects on security issues and coordinates the handling of all security vulnerabilities.

The Linux Foundation provides guidance for submitting security vulnerabilities to projects within their ecosystem. They also provide direct support, scanners, and other tooling to member projects.

Security

Early technical vulnerabilities like Heartbleed woke us all up to the potential for serious problems, and the need for increased funding in these areas.

- This includes the establishment of *The Core Infrastructure Initiative* in 2014.

Recent incidents like the XZ Utils backdoor have inspired communities to be more diligent about social engineering and trust.

Security

The Open Source Security Foundation (OpenSSF) was founded in 2020 to centralize discussions around best practices and projects related to open source software security

- OpenSSF took over the duties of its predecessor, the Core Infrastructure Initiative
- The Linux Foundation encourages adoption of the OpenSSF Best Practices Badge Program

Support

“We need a support contract, but no one will support open source software.”

With the growth of open source in enterprise, with strong companies backing open source, this myth is increasingly untrue.

- Avoid the chicken-and-egg problem by proactively approaching companies who may be able to provide support.
  - Still see a gap? Ask these companies if they have a solution.
- Approach large companies you already have a tech business relationship with - can they provide support, or influence (even fund?) smaller OSS companies?

Support

Also, take a step back. Do you really need a support contract these days?

Technology user groups are stronger than ever, and technologists heavily leverage these communities, along with Google, StackExchange, and increasingly competent AI.

Over time, you will also build up expertise in your organization.

So, how important is a service contract for open source software to your modern workforce?

Expertise: Foundations

“We’re not a technology company, we don’t know how to do open source. Don’t we need to protect ourselves?”

Leverage OSS Foundations

- The Linux Foundation
- The ASF

Additionally, many of these have foundations for specific industries like finance, energy, etc.

See if something aligns with your organizational goals first.

Expertise: Foundations

Foundations can provide what is essentially “a foundation in a box”:

- Proven governance structures
- Technology frameworks
- Assistance with community growth

And dozens of other resources for running a project, including established programs for your contributors, like mentorships programs, sponsorships, and DEI toolkits.

Expertise: Foundations

Foundations can may also provide some guidance when it comes to licensing and Intellectual Property.

Many organizations lack this expertise, but foundations can help assemble a legal team across your industry to develop this expertise.

This leads to a higher chance of success, as licensings and IP decisions are agreed upon by stakeholders and not over-complicated by unnecessary contributor agreements.

Expertise: LF Example

OPEN MAINFRAME PROJECT
Software Discovery Tool

Project initiation assistance & logo

Production hosting environment

Hosted project on The Open Mainframe Project's GitHub Organization

Channel on Slack, mailing list, calendar and meeting system

Access to security scanning tooling and processes, including regular reports and fundamental security training

Paid summer mentorships (financed by member companies)

Featured opportunities on: blogs, podcasts, in speaking slots

Expertise: OSPOs and the TODO Group

Many companies also start an Open Source Program Office (OSPO) to manage the approach to open source software in their organization.

The TODO Group has put together a wealth of information regarding the role of an OSPO, including:

https://todogroup.org/resources/book/

https://github.com/todogroup/ospodefinition.org

Expertise: OSPOs and your developers

Contributing to open source software development may also be a new experience for your developers.

Your developers and your organization will benefit from training and guidance, where you can leverage the expertise of the whole community through materials such as:

https://www.linuxfoundation.org/resources/open-source-guides/participating-in-open-source-communities

Expertise: Organizational reputation

Want to hire the best talent? By training your developers to be good open source citizens, the word will spread that you're a desirable company to work with.

Developers who have flexibility to work on open source projects will also tend to be happier

Conclusion: The Checklist

- ❑ Identify the open source need in your industry
- ❑ Continuously address security concerns with your industry peers
- ❑ Foster development of and leverage support in the ecosystem
- ❑ Support building open source expertise in your organization

Credits & References

John Mertic, The Linux Foundation

Alison Chaiken, Automotive Grade Linux

Emily Olin, The Linux Foundation

Nithya Ruff

Open Source in Business: The Transformation of an Industry: Open Source in Film: https://www.youtube.com/watch?v=DDfD3uvsjtA with Carol Payne & Larry Gritz

Accelerating Software Defined Vehicles Through Open Source Software: https://www.youtube.com/watch?v=k9w7OQKtKA8 with Dan Cauchy

Open Source in Entertainment report: https://www.linuxfoundation.org/research/open-source-in-entertainment

Vision Paper: Open Source Software in the Automotive Industry: https://outreach.eclipse.foundation/oss-auto-vision

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