Building Open Source Project Infrastructures

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- Author of *The Official Ubuntu Book* and *Common OpenStack Deployments*
Thank You

- FreeCode (Freshmeat)
- SourceForge
- Google Code
- GitHub
Benefits of Proprietary Hosting

- Low administrative overhead
- Familiar workflow for contributors
- Ecosystem of other tools that hook into it
But you also have...

- Vendor lock-in
- Potential for costs as your project grows
- Lack of flexibility
There is another way: Build an open source infrastructure.
Definition time!

What’s an open source infrastructure?
An infrastructure that is, in whole or in part, managed in the open by a team of community members.
Who is doing it?
What to open source in your infrastructure?

Everything! But that may be a bit ambitious. Start out with:

- Documentation
- Project website
- Continuous integration system
- Build system
- Services that developers interact with: chat bots, wikis, planet, ticketing system...
Most projects are doing this already, well done! But if you’re not…

- Drive-by contributions from users who found and fixed a piece of your documentation
- Documentation is often the first way a user interacts with your project, makes it welcoming and collaborative from the start
- Sense of ownership by your community instead of a black box that only special people have access to
What you get: Project website

Even if the specific web server configuration isn’t open source, open source the site.

- Help from less invested contributors regarding changes that can improve it and fix bugs, particularly across browsers and devices
- Community ownership of a resource that has historically been static and incredibly restricted to a chosen few
When you are running a CI system, it’s essential the developers know what’s being tested

- Creates a sense of ownership by developers in the QA pipeline
- Causes developers to be mindful about writing tests for their own code
- Allows the community of users to provide input into what tests are important to how they’re using the system
How your software is being built matters

- Allows users and developers alike to recompile your code with the same environment that your project uses, reducing potential for further bugs
- Ability to more easily work with projects advocating for things like a series of best practices for Reproducible Builds [https://reproducible-builds.org/](https://reproducible-builds.org/)
What you get: Services that developers interact with

- Allows for your project to address bugs and feature requests
- Empowering contributors to improve existing tooling, and fix things when they break or are not functioning optimally
- Gives your community the ability to add tooling within your project infrastructure when they see a need, which increases their sense of ownership
Getting started

1. Talent
2. Hosting
3. Funding
Step 1: Talent

- Systems administrators exist in open source communities (I’m one of them!)
- It can be difficult to break into the practice of systems administration, there are people eager to participate and learn
- Create tasks for your budding administrators
  - Evaluate appropriate open source software for the project
  - Develop maintenance plan
  - Create a ticket queue of administrative tasks
- Maintain a focus on maintainability, openness and documentation so future administrators can learn quickly
Step 2: Hosting

Once you have determined what you wish to host for your project, evaluate hosting options:

- Will a hosted version of an open source platform work for you? (GitLab, Jenkins)
- Do you need a full Virtual Private Server?
- Where will you host your code? (both project and infrastructure)
Step 3: Funding

- Ask for resources from companies you know are using your project
- Talk to your employer, and encourage fellow project participants to do the same
- Reach out to infrastructure vendors who have been friendly to open source projects in the past
- If you’re OK with using hosted open source software, research and reach out to them about their support of open source projects
Fiscal sponsorship and other options

Non-profit status is frequently not required to accept in-kind contributions, but if it is:

- Work with an existing non-profit in your space for fiscal sponsorship
- Talk with tangential projects and your community about joining their organization
- Apply to join the Software Freedom Conservancy [https://sfconservancy.org/](https://sfconservancy.org/)
- Apply to join the Apache Software Foundation [http://apache.org/](http://apache.org/)
Funding tips from Cat Allman, Google OSPO

Scope your needs
Do a project budget
Set your goals: quarterly, annual, long term
Develop materials

Have a cushion
Decide what you're willing to sell
Consider your resources
Assign responsibilities

Prearrange how the money will be accepted and managed
 Decide on record keeping and activities tracker

And more in Fundraising 101 (or "Free as in Freedom So Who Pays for the Beer"), OSCON 2011, Cat Allman
Some Final Wisdom from Cat

FOSS Projects: want corporate sponsorship? Put a link on your site to a payment mechanism or contact email. Please. I'm begging....

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Case Study

OpenStack
OpenStack: Open sourced resources

- Continuous Integration System (Gerrit, Jenkins, Zuul, Nodepool)
- Git cluster (git server and cgit)
- Metrics (Cacti, Grafana)
- ELK stack
- Mailing lists, chat bots
- Wiki, Etherpad
- And much more at https://docs.openstack.org/infra/system-config/
Case Study

Ubuntu and Xubuntu
Ubuntu: Open sourced resources

- Launchpad.net: code hosting, mailing lists, SSO, etc
- Configuration for various community projects hosted, including WordPress themes, proxies, Drupal: https://code.launchpad.net/~canonical-sysadmins
- A collection of open source Juju Charms which are also used internally
- Continuous Delivery system for Juju: https://mojo.canonical.com/
Xubuntu: Open sourced resources

- Collaboratively maintained server at [https://dev.xubuntu.org/](https://dev.xubuntu.org/)
- Fully open sourced WordPress theme so that the site can be replicated
- Collaboratively maintained documentation, along with releasing of that documentation
Questions?

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