Community Bridge

Shubhra Kar– VP Product & Tech, The Linux Foundation

@Shubhrakar
Agenda

- Vision
- Architecture
- Roadmap
- Sneak peeks
The LF needs to scale

• New **member**: EVERY DAY.
• 20+ New **projects** every year
  – LF Deep Learning, CDF, Akraino, GraphQL, etc
• International **community** growth – particularly in China.
• Do more and **more with less**
  – DevOps, IT, Legal, Security, Governance, Events, Training, Community Relations, Finance
Deeper Engagement to enhance value

We need ways to more deeply engage with community and enhance value, providing solutions to:

- Create Metrics to recognize key people, companies and their contributions
- Ensure sustainability and growth of key projects
- Enhance security both upstream and downstream
- Conduct research and share knowledge
- Train new community members and create related job opportunities
- Enhance documentation and test coverage
- Propagate best practices and standards
- Evangelize compliance and legal guardrails
- Scale shared Infrastructure, release management and tooling
How do we deliver higher value at scale with limited resources?
OSS needs a platform
OSS Needs a Platform

Aren’t there platforms in use today already?

Yes! many - Github, Atlassian, Heroku, Force.com, AWS, GCP, GitLab…

But we need a neutral ecosystem solution tailormade for our communities
An Ecosystem platform, powered by APIs

Documentation, Training, Certification, IT, Monitoring, Events, Marketing, Jobs, Community, Legal, Research, Security, Standards, Ethics

- Build
  - API
  - Gerrit
  - npm
  - eclipse
- Deploy
  - API
  - circleci
  - xen
  - docker
  - aws
- Manage
  - API
  - JIRA
  - Confluence
  - Nagios
- Share
  - API
  - zoom
  - slack
  - IRC

- Preserves Choice
- Integrates and Extends with API
- Enriches with Context
- 100% Open

The Linux Foundation
Introducing the CommunityBridge Platform
Cloud Services

Value added services
- Crowd Funding
- Dev Analytics
- Vulnerability Detection
- Document Catalogs
- Compliance Scanning/CII
- Mentorships
- Bug Bounties
- Meeting Management
- Marketing Automation
- Project Management

Core services
- IAM
- Email List and Groups
- Governance and Voting
- Member Management
- CI/CD

APIs
- Gerrit
- Github
- Gitlab
- Jira
- Confluence
- Jenkins
- AWS
- Auth0
- SFDC
- NetSuite
- Docusign
- Faraday
- WordPress
- cEvents
Build Strategy

• Build and launch Standalone Services
• Build core Platform Middleware, Identity and Portal
• Consolidate all services into Platform Portal
• Co-relate services and provide context rich data
Orchestration Architecture (simplified)
How it works?
Who is using it?

- ASWF
- CDF
- gRPC
- OSQUERY
- ONAP
- Tungsten Fabric

Who is adopting shortly?

- Cloud Foundry
- JanusGraph
- Libra
- OPNFV
- ORAN-SC
How’s it going?

12,533

CLA Signatures

573
Participating Companies

475
Repositories checking for CLA signatures
Project Managers

- **Login**
  - Login to the PM Console

- **Create Groups**
  - Setup your project with a CLA group, choose a template, and provide inputs for the templates

- **Install EasyCLA**
  - Provide the privileges to the EasyCLA so it can perform checks for each PR.

- **Configure Repos**
  - Indicate which repos require a CLA for contribution.
<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Login</td>
<td>Login to the Corporate Console</td>
</tr>
<tr>
<td>Add or Join</td>
<td>Add your company or join a company that’s already added</td>
</tr>
<tr>
<td>Sign CLA</td>
<td>Choose a project and sign the CLA associated</td>
</tr>
<tr>
<td>Whitelist</td>
<td>Cover your team by your signed CLA</td>
</tr>
<tr>
<td>Contributors</td>
<td></td>
</tr>
<tr>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td><strong>Pull Request</strong></td>
<td></td>
</tr>
<tr>
<td>Project contributors will make pull requests like they do now.</td>
<td></td>
</tr>
<tr>
<td><strong>Check for CLA</strong></td>
<td></td>
</tr>
<tr>
<td>EasyCLA will check the user against its list of users covered by a signed CLA.</td>
<td></td>
</tr>
<tr>
<td><strong>Pass or Get Covered</strong></td>
<td></td>
</tr>
<tr>
<td>Users with signed CLAs will get a response on GitHub indicating they’ve passed the check.</td>
<td></td>
</tr>
<tr>
<td>Users without a signed CLA will see a link to get themselves covered.</td>
<td></td>
</tr>
</tbody>
</table>
Domain Whitelist

- linuxfoundation.org

Email Whitelist

- vanidu@linuxfoundation.org

GitHub Whitelist

- kriva03

Github Org Whitelist

- LF-Engineering

Employee Acknowledgements

<table>
<thead>
<tr>
<th>Name</th>
<th>Agreement</th>
<th>Date</th>
</tr>
</thead>
</table>

CLA Managers

- Vasu Krishnappanaidu
  - vnaidu@linuxfoundation.org
<table>
<thead>
<tr>
<th>Entity Type</th>
<th>Name</th>
<th>Company</th>
<th>GitHub ID</th>
<th>Version</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual</td>
<td>Will Stevens</td>
<td></td>
<td></td>
<td>v1.1</td>
<td>2019-05-08T18:55:35.450911+0000</td>
</tr>
<tr>
<td>Company</td>
<td>Edward Ting</td>
<td>Lenovo</td>
<td></td>
<td>v1.1</td>
<td>2019-04-19T19:37:04.941071+0000</td>
</tr>
<tr>
<td>Company</td>
<td>Sergey Kreys</td>
<td>Mirantis</td>
<td></td>
<td>v1.1</td>
<td>2019-04-19T19:37:04.941071+0000</td>
</tr>
<tr>
<td>Company</td>
<td>Valentin Sinitsyn</td>
<td>Yandex LLC</td>
<td></td>
<td>v1.1</td>
<td>2019-04-19T19:37:04.941071+0000</td>
</tr>
<tr>
<td>Company</td>
<td>Rajesh Gadiyar</td>
<td>Intel Corp</td>
<td></td>
<td>v1.1</td>
<td>2019-04-19T19:37:04.941071+0000</td>
</tr>
</tbody>
</table>
What is it?

Understand and drill-into the health of your open source projects:

› Measure and improve **velocity** of your project
› Measure and address **security** through vulnerabilities metrics
› Gauge the **happiness** of the project through sentiment analysis and collaboration
What does it do?

1. Monitor and report development activities
   › Unique Contributors, Commits, PRs
   › Participating Organizations Attribution
   › Jira Issues opened, closed, assigned, etc
   › CI pipelines, nodes, jobs, releases
   › Confluence and documentation velocity and attribution
   › Chat history, email activity, trending topics, et al

2. Get a high level, as well as, a very detailed view of what your community is talking about

3. See how the amount of activities within the code and communications change over time
What does it support?

- GitHub
- Confluence
- Slack
- Mailman
- Jira
- Jenkins
- Patchwork
- Gerrit
- Bugzilla
Who is adopting it?

- Akraino
- CNCF
- EdgeX
- Hyperledger
- Linux Kernel
- ONAP
- OPNFV
- Yocto
- Zephyr
What’s on the horizon? Data Sourcing from:

- Rocket.Chat
- IRC
- GitLab
- Twitter
- MeetUp
- groups.io
- mediawiki
COMMUNITY BRIDGE
DEVELOPMENT ANALYTICS

Dev Analytics - Project Data Overview - Committer Data
Dev Analytics - Project Data Overview - Issue Data
COMMUNITY BRIDGE
DEV ANALYTICS

Dev Analytics - Project Data Overview - Communication Data
COMMUNITY BRIDGE
DEV ANALYTICS

Dev Analytics - Project Management Data Visualizations
Reduce vulnerabilities and improve license usage compliance:

› Ensure license compliance through visibility and verification of packages
› Accelerate security patching by generating a fix pull request with one-click
› Find vulnerabilities in all open source dependencies
Vul Det - Overview - Dependency Issues
Project Name

Details

 Ardinary File Overwrite  HIGH

Overview

tar is a full-featured Tar for Node.js.

Affected versions of this package are vulnerable to Arbitrary File Overwrite. Extracting tarballs containing a hard-link to a file that already exists in the system, and a file that matches the hard-link may overwrite system's files with the contents of the extracted file.

Remediation

Upgrade tar to version 2.2.2, 4.4.2 or higher.

References
### Project Name

<table>
<thead>
<tr>
<th>Dependency</th>
<th>Version</th>
<th>Vulnerabilities</th>
<th>License</th>
<th>CommunityBridge Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>abbrev</td>
<td>1.3.1</td>
<td>0 0 0</td>
<td>ISC</td>
<td></td>
</tr>
<tr>
<td>accepts</td>
<td>1.3.5</td>
<td>0 0 0</td>
<td>MIT</td>
<td></td>
</tr>
<tr>
<td>agent-base</td>
<td>4.2.0</td>
<td>0 0 0</td>
<td>MIT</td>
<td></td>
</tr>
<tr>
<td>agent-base</td>
<td>4.2.1</td>
<td>0 0 0</td>
<td>MIT</td>
<td></td>
</tr>
<tr>
<td>ajv</td>
<td>6.10.0</td>
<td>0 0 0</td>
<td>MIT</td>
<td></td>
</tr>
<tr>
<td>json</td>
<td>4.0.2</td>
<td>0 0 0</td>
<td>MIT</td>
<td></td>
</tr>
<tr>
<td>License</td>
<td>Dependencies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------</td>
<td>--------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apache-2.0</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BSD-2-Clause</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BSD-3-Clause</td>
<td>16</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CC0-1.0</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CC-BY-3.0</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ISC</td>
<td>72</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Security History

<table>
<thead>
<tr>
<th>Scan Date</th>
<th>Repository</th>
<th>Dependencies</th>
<th>Known issues</th>
<th>Severity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aug 18, 2019</td>
<td>express-gateway</td>
<td>dependencies</td>
<td>issues</td>
<td>HIGH</td>
</tr>
<tr>
<td>Aug 17, 2019</td>
<td>express-gateway</td>
<td>dependencies</td>
<td>issues</td>
<td>HIGH</td>
</tr>
<tr>
<td>Aug 16, 2019</td>
<td>express-gateway</td>
<td>dependencies</td>
<td>issues</td>
<td>HIGH</td>
</tr>
<tr>
<td>Aug 15, 2019</td>
<td>express-gateway</td>
<td>dependencies</td>
<td>issues</td>
<td>HIGH</td>
</tr>
<tr>
<td>Aug 14, 2019</td>
<td>express-gateway</td>
<td>dependencies</td>
<td>issues</td>
<td>HIGH</td>
</tr>
</tbody>
</table>
Funding
Agile fundraising for your projects

Support the projects you depend upon, admire or love with a few clicks:

› Sustain and grow your projects by transparently paying for development, events, or infrastructure
› Donate as an individual or an organization
› Increase trust through transparency and oversight from an established non-profit
Projects on Funding

Apache OpenWhisk
OpenWhisk is an enterprise-grade platform for serverless computing with Functions and Containers, backed by IBM and Adobe I/O among others.

- **Serverless**
- $0 /year
- 0

BowlerStudio
BowlerStudio is a robot development application that combines scripting and device management, powerful control and processing features and

- 3D CAD
- $0 /year
- 0

CHAOSS
The CHAOSS community develops metrics, methodologies, and software for expressing open source project health and sustainability. By measuring

- Open Source Project Health
- $19,018 /year
- 7

Cloud Foundry Mentorship
Cloud Foundry makes it faster and easier to build, test, deploy and scale applications, providing a choice of clouds, developer frameworks, and

- Other
- $10,000 /year

CoreDNS
CoreDNS is a cloud-native, authoritative DNS server written in Go. It provides dynamic service discovery backed by different data sources,

- Cloud Native
- $5,500 /year

excelize
Excelize is a library written in pure Go providing a set of functions that allow you to write to and read from XLSX files. Supports reading and writing XLSX file

- GO
- $6,000 /year

- $5,500 /year
The CHA OSS community develops metrics, methodologies, and software for expressing open source project health and sustainability. By measuring open source project health and sustainability, CHA OSS seeks to improve the transparency and actionability of open source project health.

Code of Conduct
## Project Funding P&L

### Available Balance
- **$18,813**

### Donations
- **+$19,016**

### Expenses
- **-$203**

### Project Funding Distribution

<table>
<thead>
<tr>
<th>Category</th>
<th>Donations</th>
<th>Expenses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketing</td>
<td>$151</td>
<td>$151 ~ 0</td>
</tr>
<tr>
<td>Mentorship</td>
<td>$13,508</td>
<td>$13,508 ~ 0</td>
</tr>
<tr>
<td>Meetups</td>
<td>$1,154</td>
<td>$1,357 ~ 203</td>
</tr>
<tr>
<td>Travel</td>
<td>$4,000</td>
<td>$4,000 ~ 0</td>
</tr>
</tbody>
</table>

### Goals Breakdown

- **Annual Goal**: $20k
  - Marketing: $1,000.00 (5%)
  - Meetups: $9,000.00 (45%)
  - Mentorship: $10,000.00 (50%)
# CHA OSS Transactions

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Name</th>
<th>Type</th>
<th>Amount</th>
<th>Fees</th>
<th>Credit</th>
<th>Running Balance</th>
</tr>
</thead>
</table>
| 7/6/19     | 5:00:00 PM | StickerMule - For CHA OSScon 2019 | Meetups   | - $94.16 | + $7.13 | - $7.13 | $18,812.84 (
- $94.16) |
| 7/6/19     | 5:00:00 PM | ChipLab - For CHA OSScon 2019 | Meetups   | - $100.00 | + $8.31 | - $8.31 | $18,907.00 (
- $108.00) |
| 7/1/19     | 10:49:38 AM| Bitergia                   | Donation  | + $1,000.00 | - $79.30 | + $79.30 | $16,016.00 (+
$1,000.00) |
| 6/3/19     | 12:32:05 PM| Red Hat                    | Donation  | + $2,000.00 | - $158.30 | + $158.30 | $18,016.00 (+
$2,000.00) |
| 5/21/19    | 0:51:28 AM | Matt Snell                 | Donation  | + $6.00 | - $0.77 | + $0.77 | $16,016.00 (+
$0.77) |
| 5/8/19     | 11:38:03 AM| Linux Foundation           | Donation  | + $4,000.00 | - $316.30 | + $316.30 | $16,010.00 (+
$4,000.00) |
| 5/8/19     | 11:38:03 AM| Linux Foundation           | Donation  | + $12,000.00 | - $948.30 | + $948.30 | $12,010.00 (+
$12,000.00) |
| 5/7/19     | 0:51:01 AM | Kevin Lombard              | Donation  | + $5.00 | - $0.69 | + $0.69 | $10.00 (+
$5.00) |
| 4/30/19    | 11:31:25 AM| Goerg Link                 | Donation  | + $5.00 | - $0.69 | + $0.69 | $5.00 (+
$5.00) |
Mentorship

Talent development through open source

Accelerate the development of open source projects you depend on:
› Expand your community of skilled, diverse, and committed developers
› Improve the capability, leadership abilities, and engagement of your own developers
› Learn from and connect with vetted, experienced mentors
Connecting projects and stakeholders

Projects
1. Raise money for Apprenticeships using FS
2. Volunteer contributors to be mentors
3. Specify skill sets needed for the project
4. Once raised enough funds to sponsor, accept applications

Mentors
1. Setup tasks for the candidates
2. Evaluate the tasks and select final candidates winning the apprenticeship
3. Guide candidates during the program
4. Refer candidates to Jobs posted by Corporates

Apprentices
1. Create profiles listing their experience and skills
2. Get matched for Apprentice opportunities
3. Take a qualification test with Mentors
4. Undergo the apprenticeship program

Companies
1. Fund Apprentice programs for projects they are involved in
2. Provide Job Interview opportunities to candidates graduating from the program
3. Volunteer Mentors for projects

LF Matchmaking

The Linux Foundation Board Confidential
Linux Kernel Mentorship

Mentees For Summer

The program is targeted towards adding well trained and educated diverse talent to areas of the project that could benefit from extra help. The primary goal is building a strong, sustainable, and diverse kernel community with focus on improving security and quality of Linux.
Mentorship – Mentors

Mentors

Lukas Bulwahn
I am working on Enabling Linux in Safety Applications. I am interested in software quality analysis, measurement and improvement of the Linux kernel and its development process.

Mauro Carvalho Chehab
I’m a Linux Kernel maintainer with diversified experience in telecommunications and security. I have MS on Electrical Engineering and technical background on Information Technology and Telecommunications, including management. I’m an active Linux kernel developer, maintaining drivers for multimedia capture devices (analog/digital TV, remote controllers, webcams, and radio receiver devices). I also taught network and security related disciplines for BS, MBA and MS courses.

Hans Verkuil
I started contributing patches to the MPEG encoder/decoder ivtv driver in early 2004 and it snowballed from there. Since 2013 I am a video4linux co-maintainer responsible for V4L2 bridge drivers, video receivers/transmitters and codecs. Since 2018, I also maintain the HDMI CEC framework.
Hello, my name is Jiunn. Nice to meet you. My career has been spent in IT, and now I am seeking new opportunities in FOSS. I have been using Linux for awhile now, and I want to give back. My goal is to contribute, to share, and to learn about the Linux kernel and the people in the Linux community. Thank you.

About ~11 years of experience debugging customer reported issues, bugs and performance problems for Windows kernel and OS. The highest education I have received is a post graduate degree in computer science (2005). Comfortable - with reading/understanding foreign code. - with usermode and kernelmode software in C on the Linux environment. - with aarch64, x86_64 and to some extent, ppc64, architectures.
Mentorship – Supporting Companies

**Companies**

**Linux Foundation**
The Linux Foundation supports the creation of sustainable open source ecosystems by providing financial and intellectual resources, infrastructure, etc.

- Total Funding: $500,000
- Opportunities: 3

**Twitter**
Twitter, Inc. (NYSE: TWTR) is what's happening in the world and what people are talking about right now. For more information, visit about.twitter.c...

- Total Funding: $0
- Opportunities: 3

**Xilinx Inc**
We Are Building the Adaptable, Intelligent World Xilinx is the inventor of the FPGA, programmable SoCs, and now, the ACAP. Our highly-flexible progra...

- Total Funding: $10,000
- Opportunities: 2
Product Roadmap - 2019

Unified Products with Portal based Uls/Ux, Comprehensive IAM, connected to SFDC and Marketing Automation

1. CLA (v2)
2. Funding (v2)
3. Mentorships (v2)
4. Vulnerability Detection (v2)
5. Dev Analytics (v2)
6. IAM (alpha)
7. Automated Member Management (alpha)
8. ITx (alpha)
9. Automated Project Mgmt including ITx (alpha)
10. CB Unified Portal (alpha)
11. ClaaS (Prototype)