

A background graphic featuring a network of glowing blue lines connecting various yellow circular nodes, set against a dark blue gradient background.

LF IT Core Projects

Decentralized collaboration services

 THE **LINUX** FOUNDATION

Overview of LF IT Core Projects

- We host established FLOSS projects with histories spanning decades:
 - Linux Kernel (and friends)
 - Yocto Project
 - (formerly) Code Aurora Forum
- Decentralized
- End-to-end attested
- Project-driven
- Using open platforms
 - or keeping it vendor-independent

LF IT Core Projects Team

- Dedicated ops professionals with decades of experience supporting free software communities
- Working across multiple countries and time zones
 - US (West)
 - Canada (East)
 - India (APAC)
- Using best tools for the purpose, with free software always given first choice
- Closely interoperating with the rest of LF IT team

Decentralized development model

- “Patches sent to mailing lists”
 - clonable, searchable, scalable archives using public-inbox
 - see <https://lore.kernel.org/>
 - subscription-free mail delivery
 - using public-inbox and lei
 - tooling to streamline maintainer tasks (b4 am)
 - see https://youtu.be/wTpQYM08_Yg
 - tooling to streamline submitter tasks (b4 prep)
 - make it easier for newbies to create, reroll, track patch series
 - provide a web submission endpoint that doesn't require a compliant SMTP server
 - writes to a public-inbox feed first before sending mail
 - (Note: “b4 prep” is a work in progress)
- Patchwork and CI integration

End-to-end provenance attestation

- Cryptographically signed patches
 - using “patatt”
 - see <https://pypi.org/project/patatt/>
- Ensures that patches are identical between sender and reviewer
 - including archives
- Cryptographically signed git objects
 - tags, commits, pull requests
- keys.git: managing committer keys using git repositories
 - PGP keys, openssh keys, ed25519 keys
 - not any worse than any other approach
 - requires a trusted introducer
 - “trust but verify” using the web of trust (PGP keys only)

Project-driven

- LF IT works with technical advisory boards
 - we may offer solutions that worked for other projects
 - but it's ultimately the project's decision
 - Kernel: prefers full-metal hosting to cloud (for important things)
 - Yocto: uses Buildbot as opposed to Jenkins
 - CAF: needed git hosting in mainland China
 - we ended up writing our own git replication framework
- Tell us what you need, and we'll find a way to make it work
 - unless we've tried it before and it was a terrible idea
 - or super expensive
 - in which case we'll work to find some other way forward

Open Platforms for Free Software

- Gitolite, Git, Cgit
- Public-inbox
- Patchwork
- Jenkins, Buildbot
- Bugzilla
- Steering clear of proprietary solutions
 - or at least avoiding vendor lock-in
 - we use AWS, Google Compute, but we're not beholden to them
 - when it makes sense, we may use proprietary tools for infrastructure uptime/backend performance monitoring, etc
 - when it makes sense, we may accelerate traffic using commercial CDN platforms
 - when it makes sense, we may outsource to commercial providers
 - e.g. mailbox hosting, website hosting, etc

Transparent infrastructure governance

- No need to trust us
 - the goal is to make all development end-to-end attestable
- Transparency logs are available
 - e.g. see <https://tlog.linderud.dev/>
- You can always clone (most of) your project data
 - no easy way to easily export some of it, yet:
 - patchwork CI results
 - bugzilla
 - but we're working on that

Migrating GTI infrastructure

Direct forklifting

- Gitolite
- Bugzilla
- Mail server
- Mailing lists
 - with addition of public-inbox archives
- Patchwork
 - with patchwork-bot integration

Some work required

- Direct git hooks
 - to indirect triggers
 - (for security reasons)
- Wikis
 - to read-the-docs style documentation
 - (wikis are so 2001)
- Websites
 - (analysis pending)

Q&A

Questions?

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