



# Hacking Project EVE for fun and profit

Roman Shaposhnik and Erik Nordmark

# Governance process

- Linux Foundation's charter
  - <https://wiki.lfedge.org/display/EVE/Community>
- We answer to the LF Edge board of directors
- Down on the ground, “The Apache Way” principles apply
  - Technical Steering Committee (TSC) does day-to-day governance
  - Code gets merged by maintainers
  - <https://github.com/lf-edge/eve/blob/master/CONTRIBUTING.md>
- Community dashboards
  - <https://insights.lfx.linuxfoundation.org/projects/lfedge%2Fproject-eve/dashboard>

# Where are the bits?

- Development/collaboration is on GitHub under LF Edge: [github.com/lf-edge](https://github.com/lf-edge)
  - Project EVE – main codebase is at <https://github.com/lf-edge/eve>
  - Adam – reference implementation of a controller <https://github.com/lf-edge/adam>
  - Eden – developer tooling, tests <https://github.com/lf-edge/eden>
- Binary artifacts (including user-facing) are on DockerHub under LF Edge
  - The final user-facing container image at <https://hub.docker.com/r/lfedge/eve>
- Collaboration
  - <https://projecteve.dev>
  - Mailing lists, slack channels, LF Edge wiki

# Development process

- Remember LF Edge wiki at <https://wiki.lfedge.org/display/EVE/EVE> ?
  - Significant architecture proposals. E.g.  
<https://wiki.lfedge.org/display/EVE/Next+generation+storage+architecture>
  - EVE hardware compatibility list  
<https://wiki.lfedge.org/display/EVE/EVE+in+the+Market>
- Mailing list
  - [eve-tsc@lists.lfedge.org](mailto:eve-tsc@lists.lfedge.org)
- Slack channels (channel names start with #eve-)
  - <https://lfedge.slack.com/>
- GitHub PRs
  - <https://github.com/lf-edge/eve/pulls>

# CI/CD pipeline

- Almost exclusively built around GitHub Actions
  - <https://github.com/lf-edge/eve/actions>
- Every PR has a number of “checks” run against it (on both ARM and x86)
  - This is where Eden tests kick-in
- Test infrastructure
  - GitHub Actions VMs
  - Google Compute Platform (GCP) VMs with support for nested virtualization
  - 22 hardware configurations on Packet.net (nowadays Equinix Metal)
    - Dell, HP, Supermicro
    - Huawei, Foxcon
  - ZEVEDA’s own hardware lab

# Major upstream dependencies

- Alpine Linux
  - currently 3.13.2, bespoke Linux distribution bits
- linuxkit
  - basis for Linux distro assembly, init system
- Linux kernel
- Xen
- Qemu

# Project Structure

- api/ - EVE <-> controller API specs (proto) and implementations (Go, python)
- build-tools/ - linuxkit &co
- docs/ - pretty extensive documentation
- images/ - linuxkit-based, .yaml image definitions
- conf/ - initial configuration that is baked into an installer image
- pkg/ - where all the code lives
- boards/ - BSP bits (mostly for ARM)
- .folders/ - mostly for CI/CD systems
  - .github, .circleci, .yetus