Global Collaboration and Maintenance of Top Cloud Computing Open Source Projects

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Goals & Non-Goals

Part 1

Goals & Non-Goals

We will talk :

- Cloud Computing Projects
- Managed on github.com (this is important)
- > 10000 stars (e.g. Docker, Kubernetes)

We will not talk:

- Linux
- Apache Foundation projects
- OpenStack

Why?

Github + Community = Modern Software

Traditional open source

- **Open** the **source** code of something
- Don't believe the contributor
- Sell tools, distros, & service

The "Open Source Revolution"

- **Create** the **community** of something
- Encourage contributor
- Fans Economy & **Selling yourself**

Why cloud?

Cloud computing projects

- No UI
- System level programming
  - Network, storage, OS, hardware ...
- Complex project
- Multiple components

Other top projects

- Web, APP
- Programming
  - data structure, algorithm
- Simple project
- Few components

At First Glance

Part 2

Docker

- Core Idea: Replace VMs with Linux containers
  - cgroup + ns + rootfs image
- The **most** successful open source project in cloud/system area on Github
  - stars: **33000+**
  - contributors: 1444+
  - commits: 25787+
  - LOC: 58000+
  - **Docker, Inc. D round 95M**

Kubernetes

Container Scheduling and Management Framework by Google

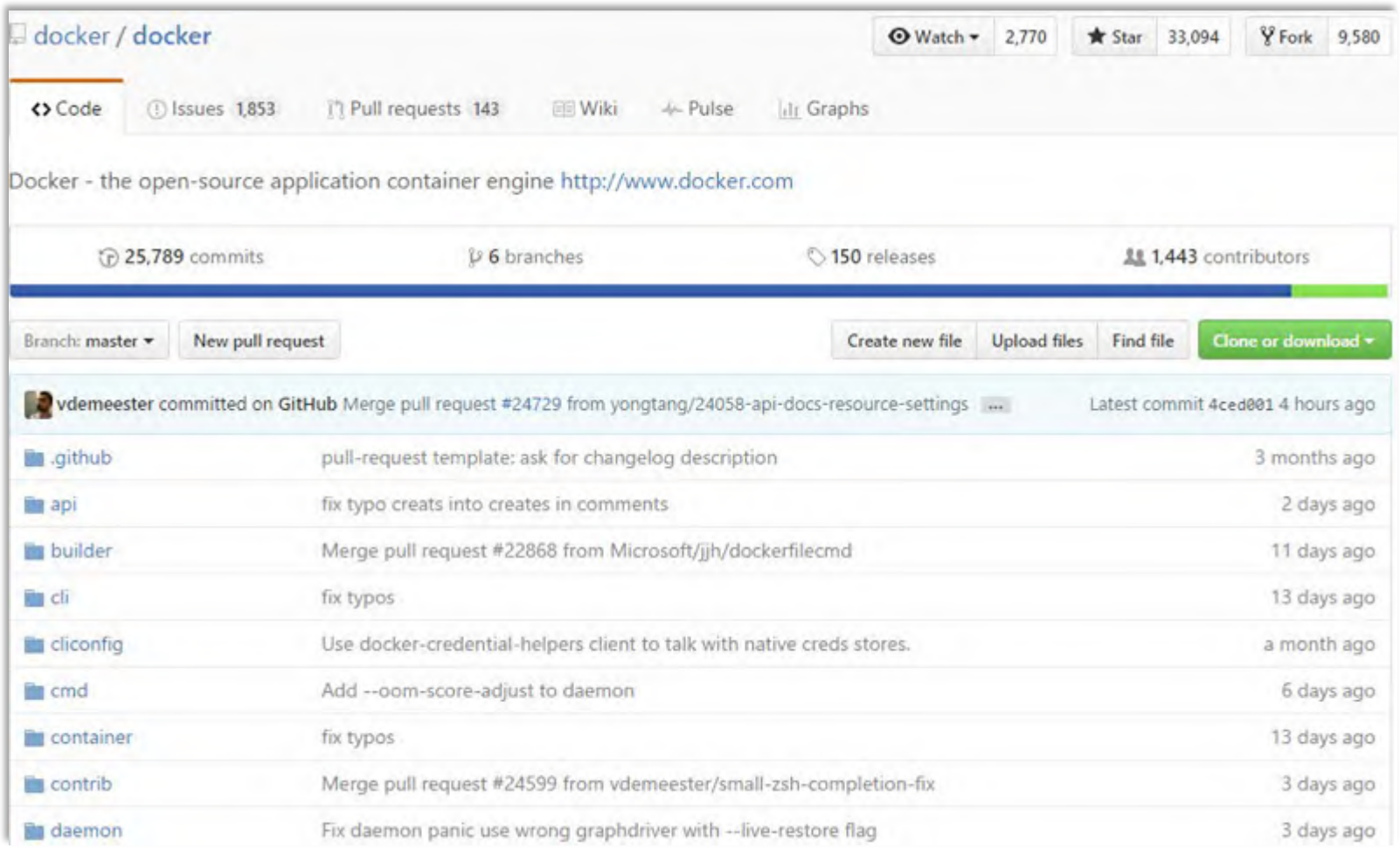
Stats

- stars: **15500+**
- contributors: 824+
- commits: 32099+
- LOC: 390893+
- **Google, Inc**. Now Linux Foundation

Part 3

Collaboration

The Key Concept Of These Software?

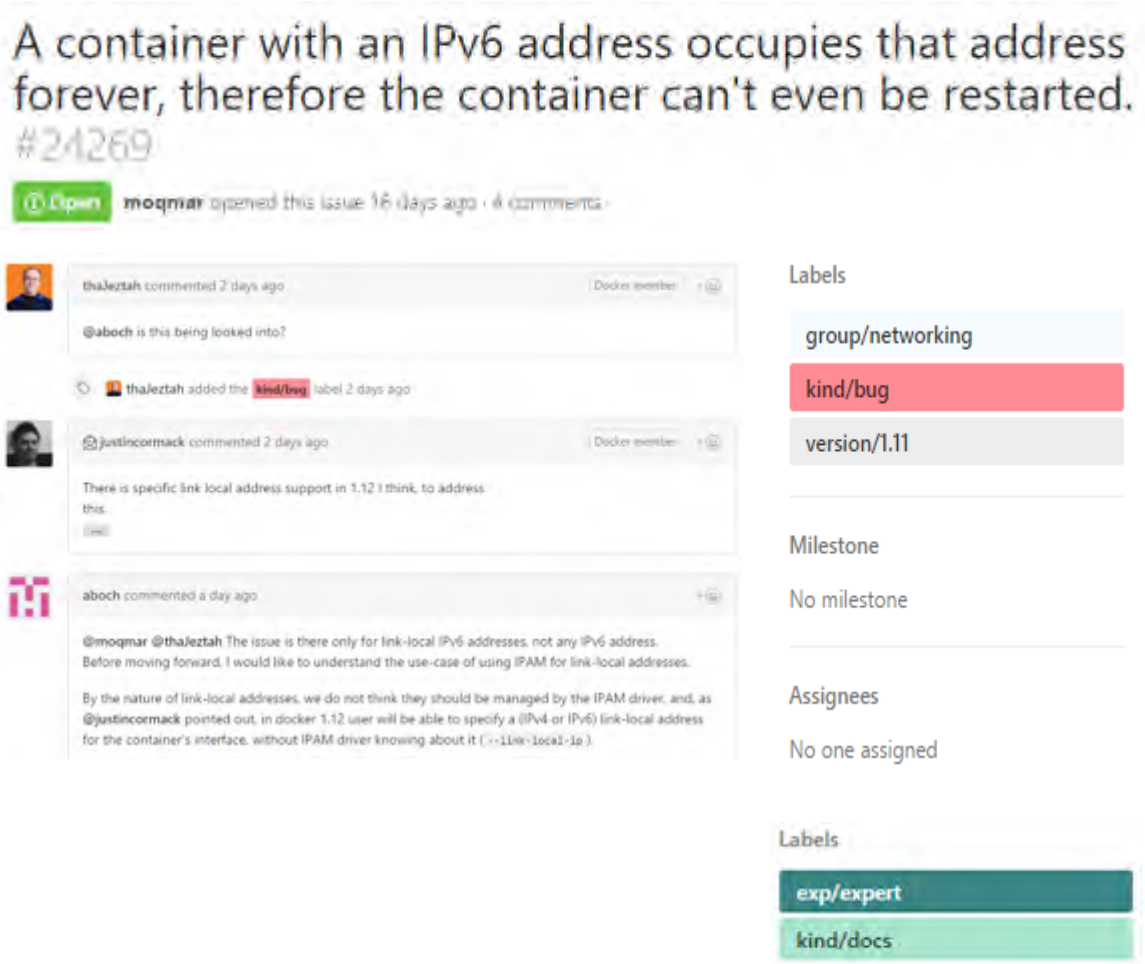


Issue

Issue can be:

- feature
- bug
- question
- proposal
- ...
- anything!

Issue is labeled

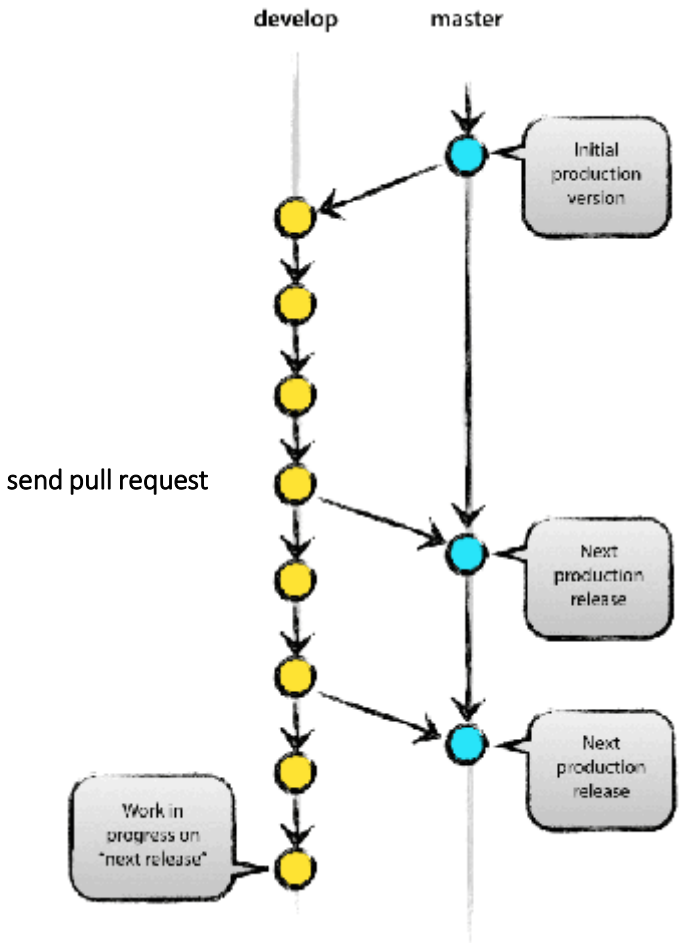


Github Issue VS Old Ways

- Old ways
  - Mailing List
    - *Linux, Apache Foundation*
  - Bug tracker
    - *OpenStack*
- It’s like wechat VS e-mail
  - Quick response
  - Real interaction
  - Brain storm
  - Better community

To Fix Issue: Pull Request

git workflow

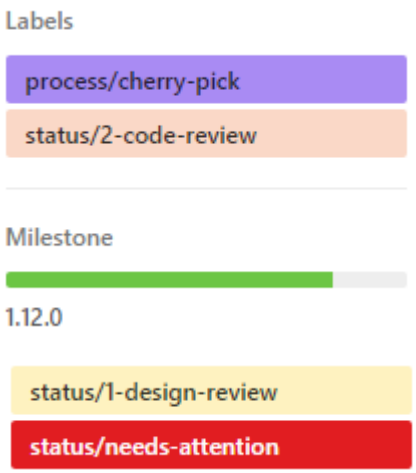


To Fix Issue: Pull Request

PR

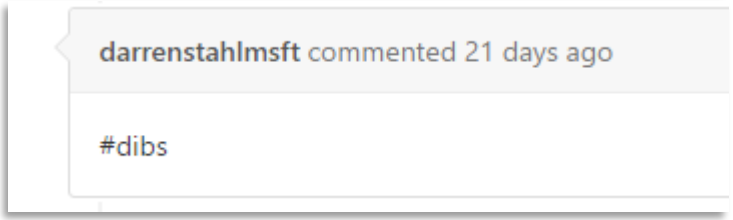
a patch of commits

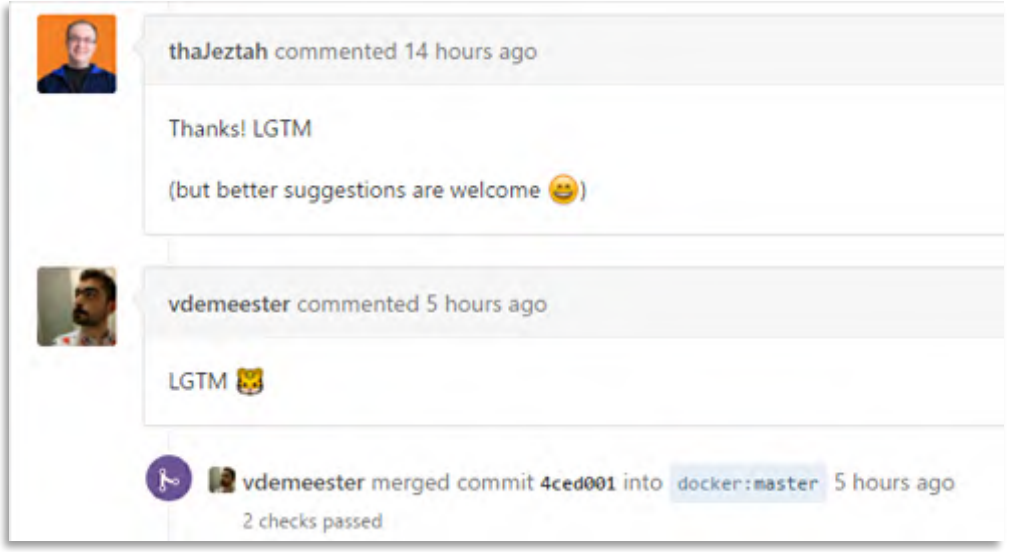
also labeled

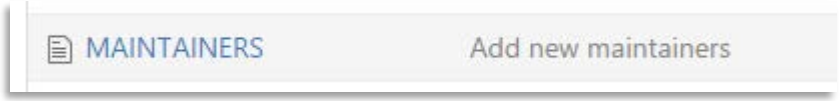


Encourage

A friendly workflow







Maintenance

Part 4

Kubernetes VS Docker?

More complex

- OpenStack VS VM

More components

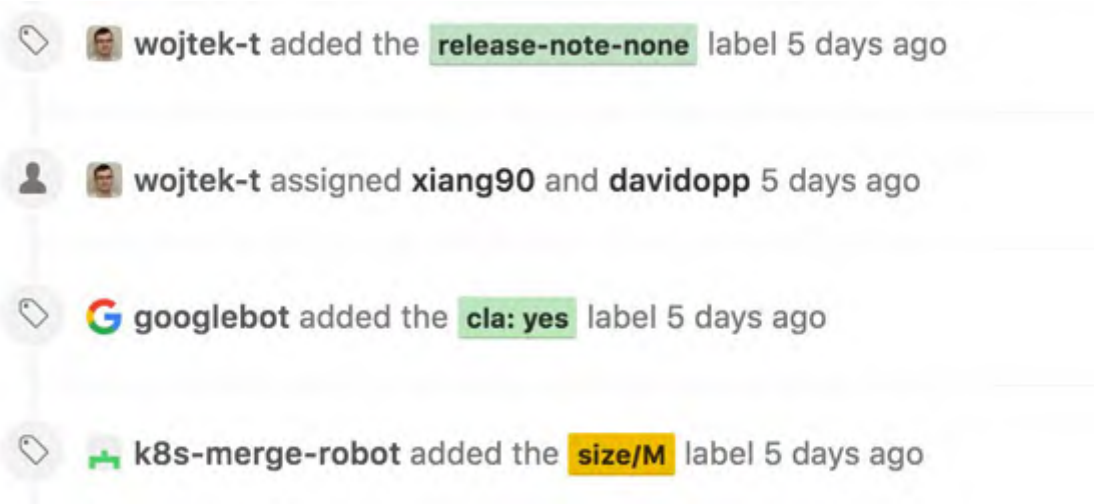
More code

Google style

automation

Robots in Workflow

robots

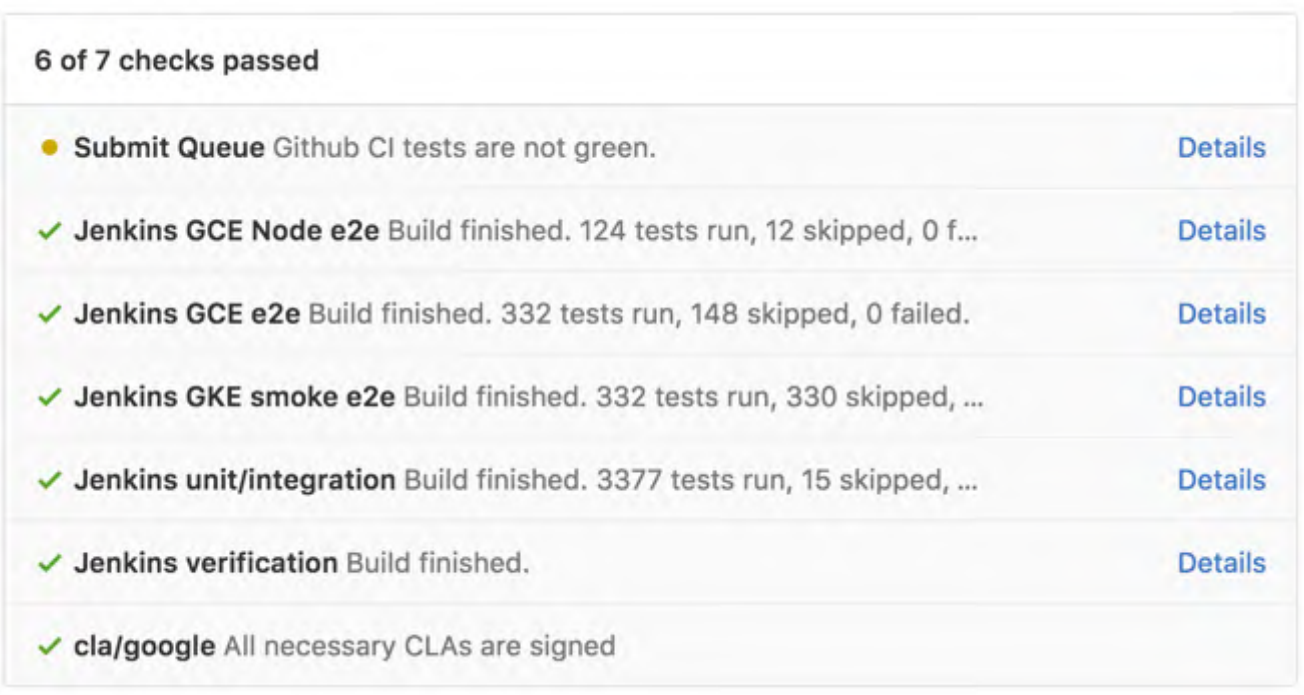


Automatic CI

$ git push origin my-fix

Open a new Pull Request

CI will be triggered



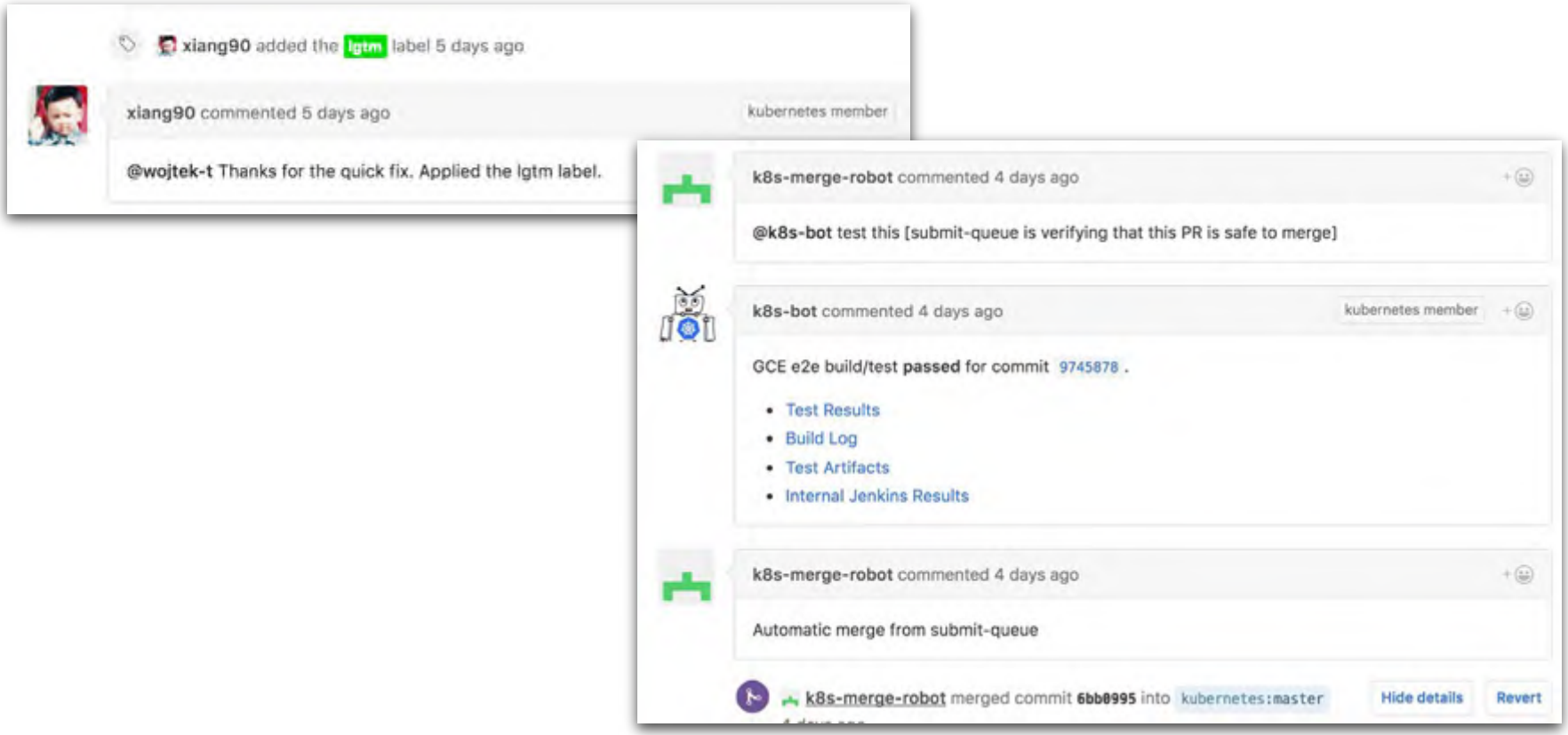
Generated Code

*_generated.go

- Deep copy
- Conversion
- Protobuf protocols
- Docs
- …
- Anything Googlers don’t want to write

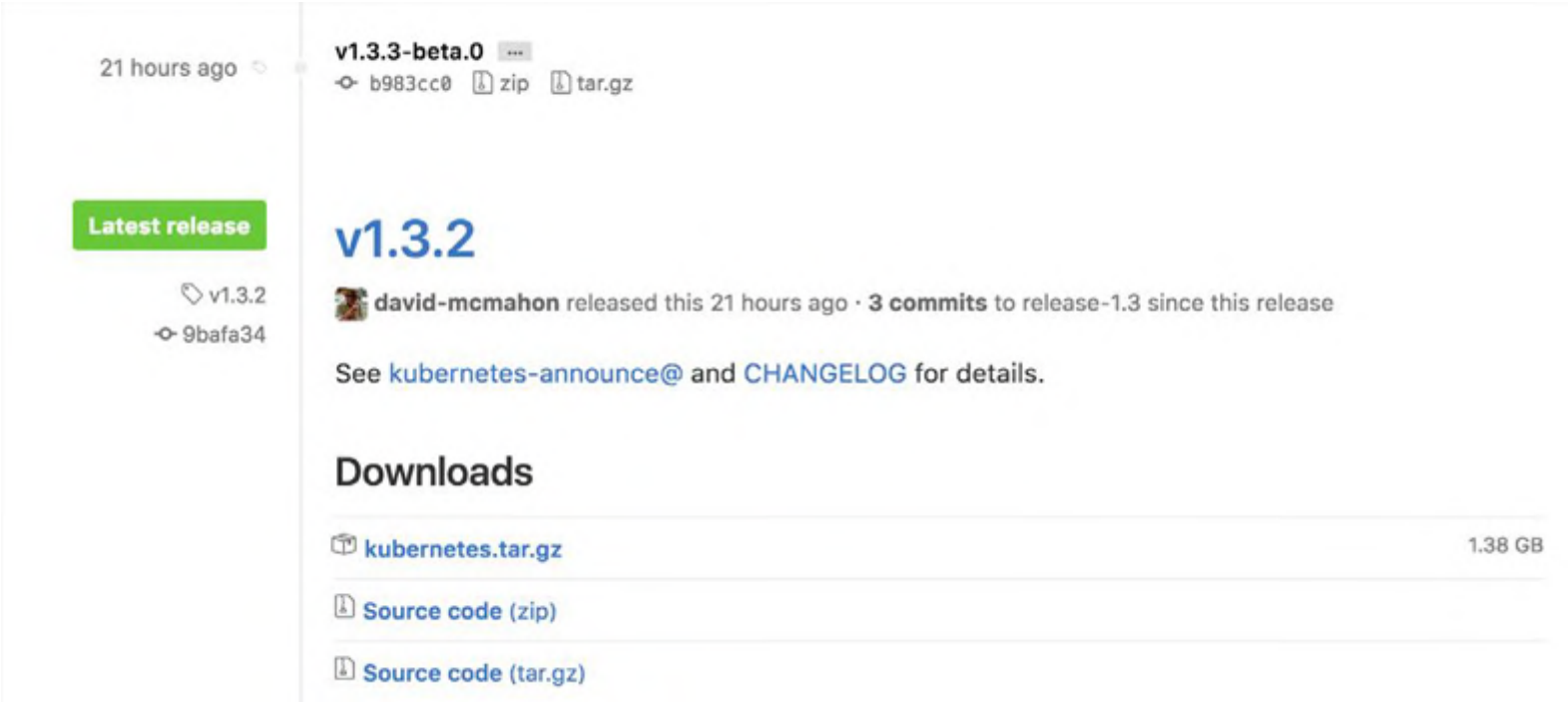
Automatic Merge

Apply lgtm will trigger merge robot



Automated Cherry Pick

Pick commits from master branch into release branch

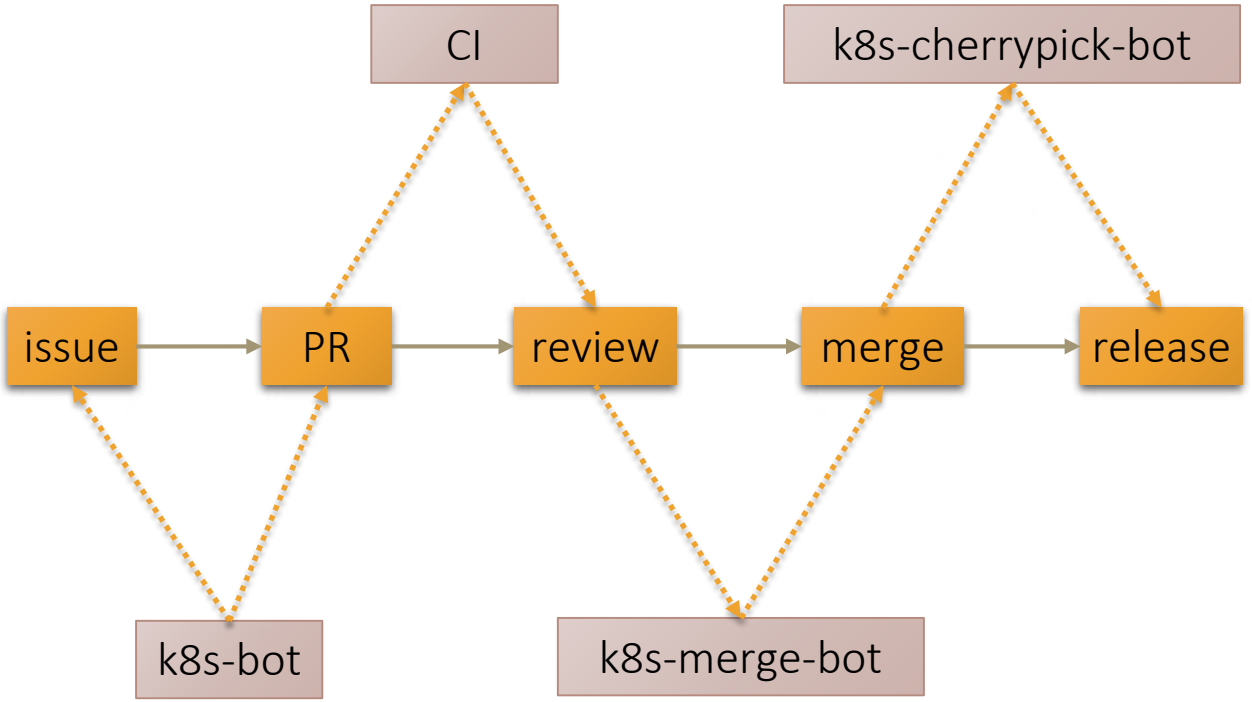


Summary

Comment driven

Event driven

Robot



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