



kubernetes

CONTRIBUTOR SUMMIT
SAN DIEGO 2019



New Contributor Workshop

Welcome on board!



Workshop Facilitators

101 Beginner Content

Marky Jackson, SIG ContribEx

Bob Killen, SIG ContribEx

Chris Short, SIG ContribEx

Tutors

Arnaud Meukam

Jeremy Rickard

Eduar Tua

201 Intermediate Content

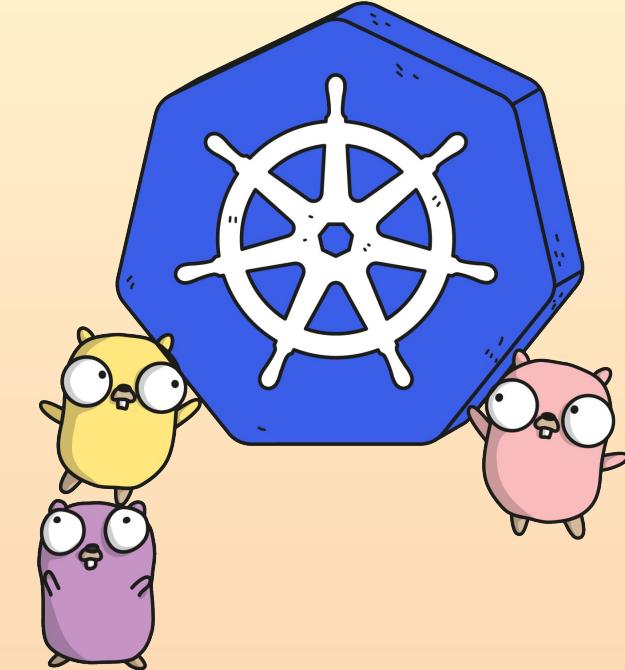
Guinevere Saenger, SIG Release

Alison Dowdney, SIG ContribEx



Order of operations - Combined session

1. Welcome and PR Demo
2. Contributing: Who/Where/How
3. How We Communicate
4. Repo and SIG Tour



Credit Ashley McNamara and github.com/ashleymcnamara/gophers for Kubernetes Gophers image.
Credit Renee French for the original gopher concept and design.

Demo

kubernetes / kubernetes

Watch 3.1k Star 59.5k Fork 20.9k

Code Issues 2,270 Pull requests 1,076 Actions Projects 9 Security Insights

Production-Grade Container Scheduling and Management <https://kubernetes.io>

84,874 commits 40 branches 0 packages 576 releases 1 environment 2,339 contributors Apache-2.0

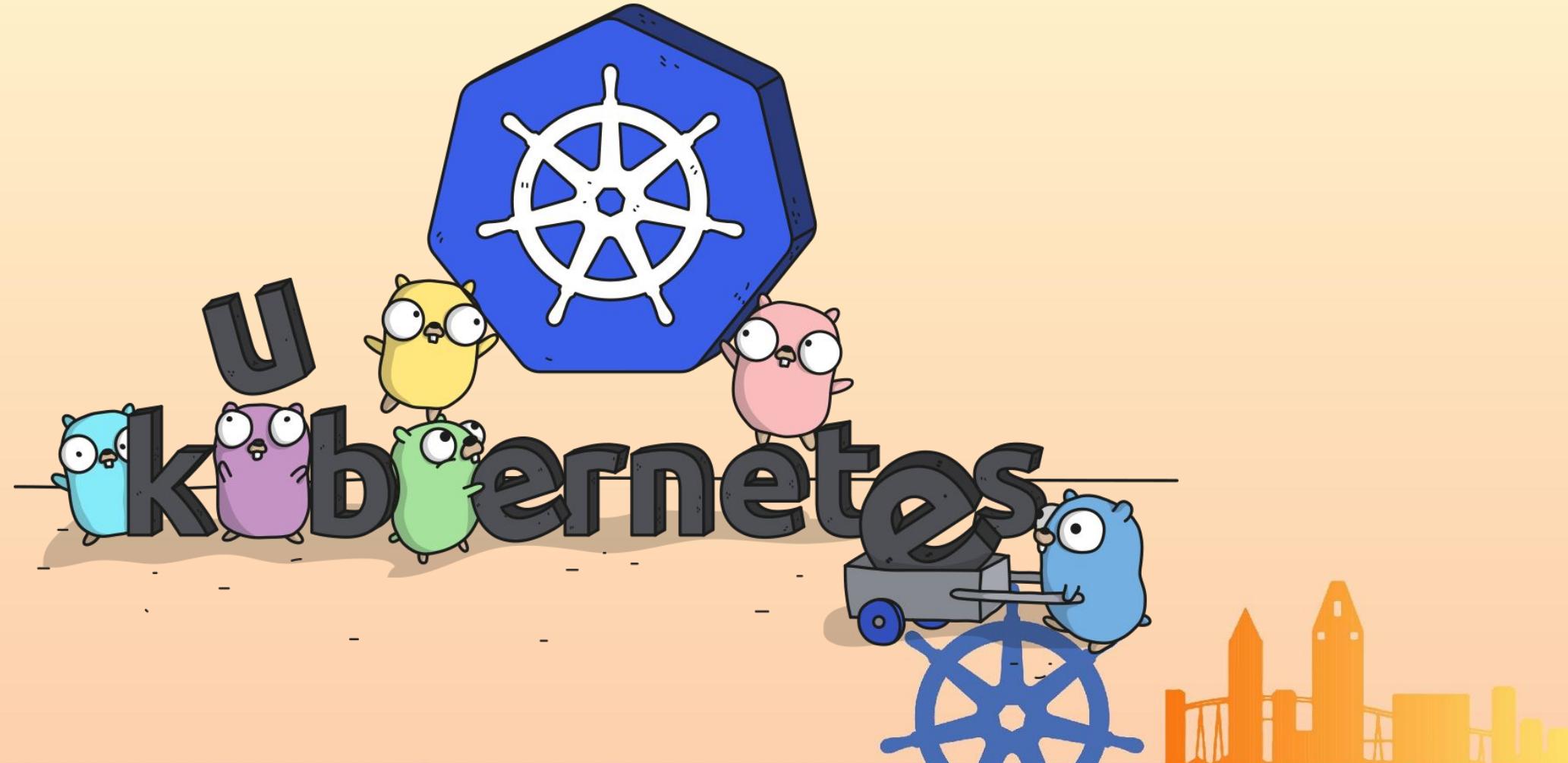
Branch: master New pull request Create new file Upload files Find file Clone or download

k8s-ci-robot Merge pull request #84572 from davidz627/fix/owner ... ✓ Latest commit 0ded535 1 hour ago

.github	Fix incorrect whitespaces plural	7 days ago
Godeps	Pin dependencies and update vendors	7 days ago
api	Merge pull request #84481 from robscott/endpointslice-port-validation	18 hours ago
build	Merge pull request #84540 from seans3/kubectl-get-staging	18 hours ago
cluster	Merge pull request #84538 from yliaog/windows	18 hours ago
cmd	Merge pull request #84286 from bart0sh/PR0083-kubeadm-Token-remove-Ob...	5 hours ago
docs	Updated OWNERS files to include link to docs	9 months ago
hack	Merge pull request #84593 from mm4tt/benchmark_dockerized_gopath	8 hours ago
logo	Correct URL	6 months ago
pkg	Merge pull request #84572 from davidz627/fix/owner	1 hour ago



Who can contribute to Kubernetes?



Credit Ashley McNamara and github.com/ashleymcnamara/gophers for Kubernetes Gophers image.
Credit Renee French for the original gopher concept and design.

Why contribute to Kubernetes?



The Kubernetes Contributor Patch

\$1,000⁰⁰

Quantity

-	1	+
---	---	---

 Add to Cart

This is an exclusive item only recognized contributors can earn. You must be awarded a purchase code to get this badge of honor.

Fitting Contributions Into Your Job

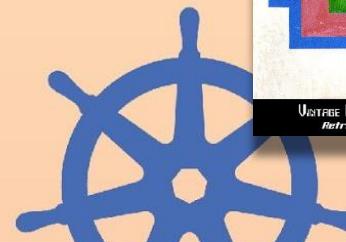
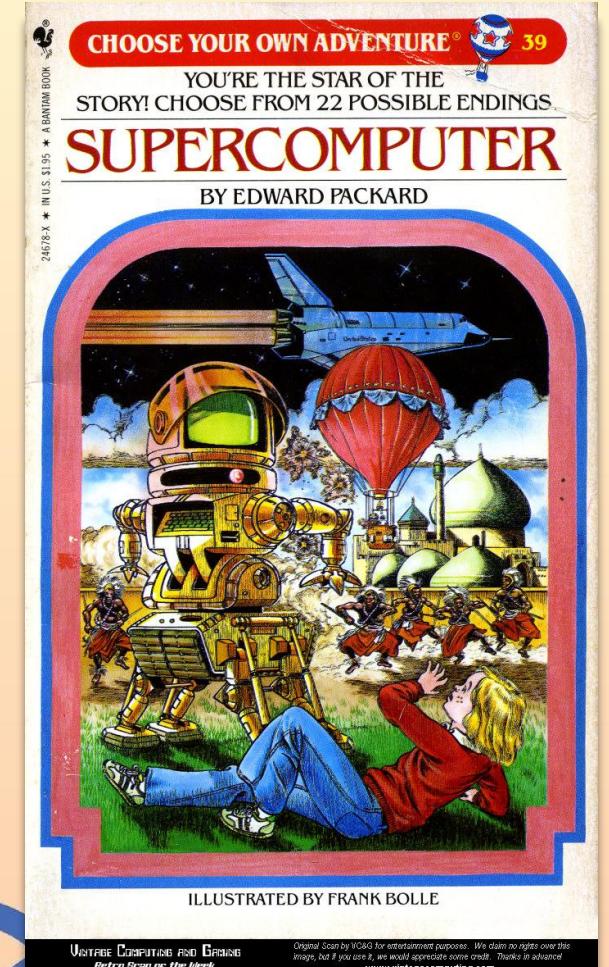




github.com/kubernetes/community/issues/1334

Choose Your Own Adventure

Figuring out
where
to contribute



kubernetes

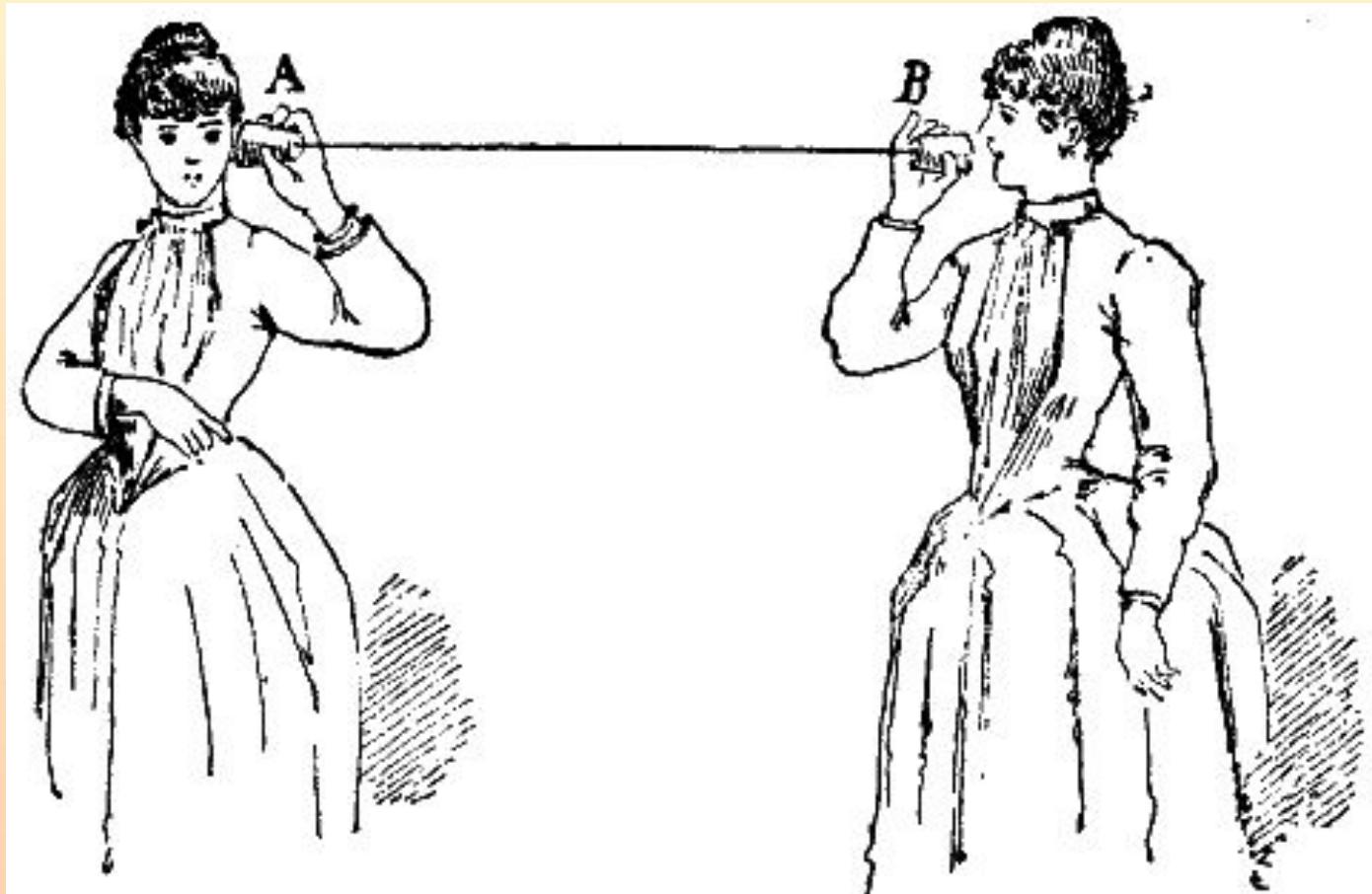
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Find Your Topic Exercise

As a group...

1. Explain your background, job, interests, or what motivates you.
2. Use your group to help figure out what you think you want to do in the Kubernetes community

Let's Talk



Communication in the Kubernetes Community





When you're chill with everyone

Standards of Communication

aka: Why is everyone so nice?

We believe that mutual respect is a prerequisite for healthy collaboration.

git.k8s.io/community/code-of-conduct.md



Where to ask Technical Questions

Slack

Register here: slack.k8s.io



User Focused

- [#kubernetes-users](#)
- [#kubernetes-novice](#)
- [#office-hours](#)

Contributor Focused

- [#kubernetes-dev](#)
- [#meet-our-contributors](#)
- [#pr-reviews](#)
- [#sig-contribex](#)

Discuss

 **kubernetes**

Do you want live notifications when people reply to your posts? [Enable Notifications.](#)

This site is governed by the [CNCF Code of Conduct](#). Check out our [quick tutorial video](#) on how to effectively subscribe to topics.

[all categories](#) [Categories](#) [Latest](#) [New \(10\)](#) [Top](#) [+ New Topic](#)

Category	Topics
Announcements Announcements from around the Kubernetes community. Posts here must be Kubernetes related, commercial products and services are also welcome, please keep it classy.	5 / week 3 new
General Discussions Got something to say about Kubernetes? Hop in here. Links to interesting cloud-native blog posts encouraged. Technical support questions are better off posted on StackOverflow .	14 / week 7 new
Regional Discussions The Regional Discussions Category is intended for those users that belong to a specific region or share a common language to openly interact and connect with each other in their native language. If you are interested in establishing a new regional board, please reach out to one of the admins .	1 / week
Chinese Ukrainian Italian German	
Contributors	6 / week

Latest

-  [Welcome to Discuss Kubernetes](#) 0 Aug 21
-  [Service discovery in eks cluster](#) • [General Discussions](#) 1 1h
-  [Boomi in kubernetes](#) • [General Discussions](#) 0 4h
development
-  [One year of Weave Flux](#) • [General Discussions](#) 0 6h
gitops
-  [\[Book\] Getting Started with Kubernetes - Third Edition](#) • [Announcements](#) 0 7h

Want more long-form discussions?

Head over to:
discuss.kubernetes.io





Planning and Discussion

Mailing lists

- One per SIG/WG
 - Some have more for large subprojects.
- Run on Google Groups
- You need to join:
 - [kubernetes-dev](#)
 - Required for Org Membership!





Issues Features Pull requests



Break up and Refactor test/e2e/framework/utils.go #77095

[Open](#) andrewsykim opened this issue 4 days ago · 21 comments

andrewsykim commented 4 days ago • edited

What would you like to be added:
There are a lot of methods in `test/e2e/framework/util.go` that can be cleaned up or moved into its own package for easier consumption/discovery. In #76206 there were some discussions for how to break up this file. The proposed package structure was:

`test/e2e/framework/`

- `kubectl/ (@alejandrox1)`
 - `builder.go`
 - `runner.go`
- `log/ (@WanLinghao)`
 - `logger.go`
- `pod/ (@alejandrox1)`
 - `wait.go`
 - `resource.go`
- `node/ (@alejandrox1)`
 - `wait.go`
 - `resource.go`
- `service/ (@draveness)`
 - `resource.go`
- `endpoints/ (@draveness)`
 - `resource.go`
- `resource/ (@draveness)`
 - `runtime.go`
- `lifecycle/ (@WanLinghao)`
 - `versions.go`
 - `state.go`
 - `restart`
- `wrappers.go (@MorrisLaw)`
- `providers.go (@MorrisLaw)`

I think each package & top level file can be it's own task. Pick a package above, go through each method in `test/e2e/framework/util.go` and move it to that package/file if it makes sense. The above is just a guideline, feel free to introduce new packages/files where it makes sense.

Why is this needed:
This is a part of #76206 & #75601

Assignees
No one assigned

Labels
`area/e2e-test-framework`
`kind/feature`
`sig/testing`

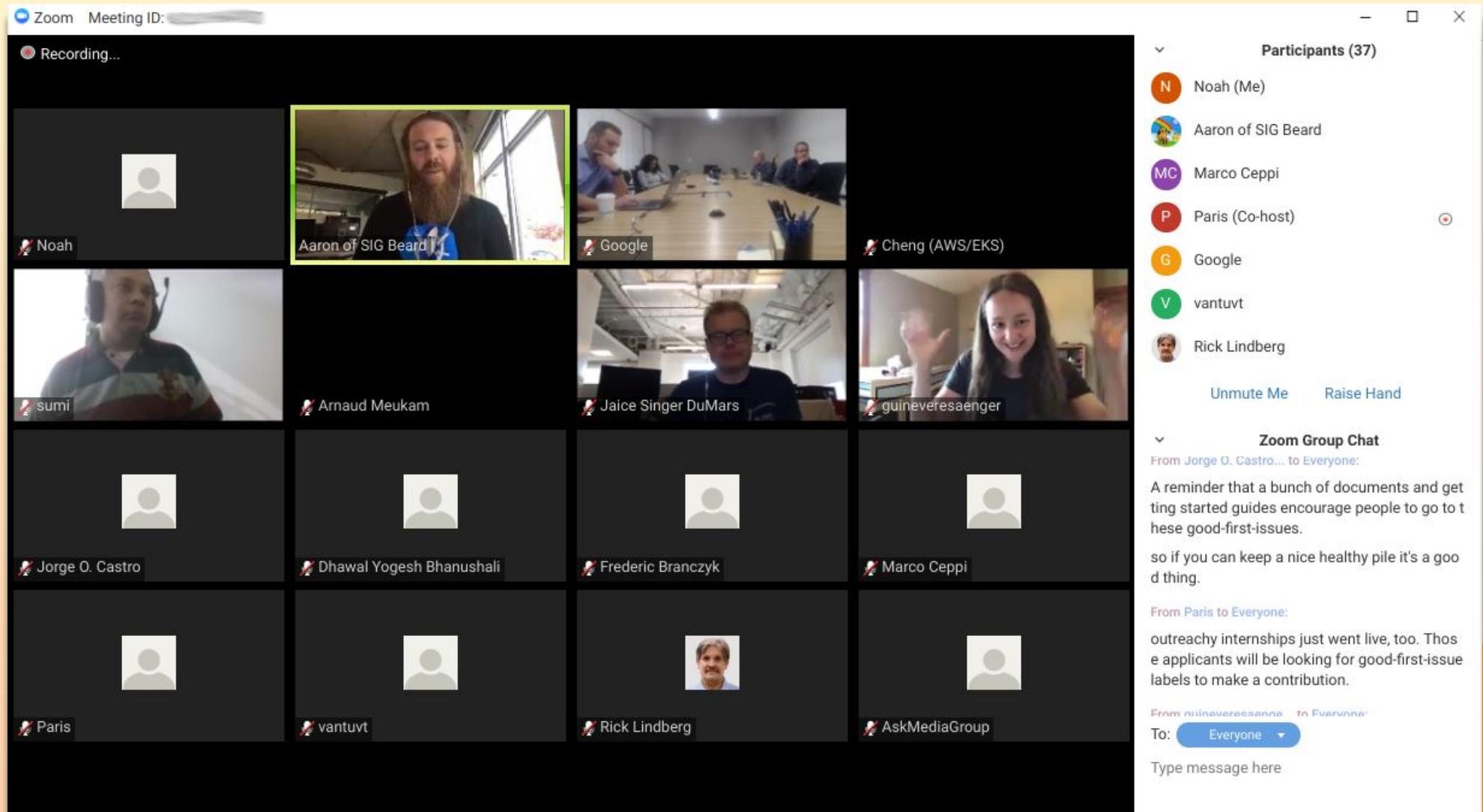
Projects
None yet

Milestone
No milestone

Notifications
[Subscribe](#)
You're not receiving notifications from this thread.

8 participants

Zoom Meetings



Zoom Meetings

Schedule is on the [community calendar](#)

- SIG Meetings
- [Kubernetes Weekly Community Meeting](#)
 - Overview of community activities, release info, and governance updates.
- Special meetings
- Code of Conduct always applies

Other Communications

- kubernetes.io/community
 - Links to everything community related can be found here
- [Meet Our Contributors](#)
 - Monthly live video discussion with contributors
- [Office Hours](#)
 - Monthly live video panel to ask technical questions
- KubeCon + CloudNativeCon
- Face-to-Face SIG meetings
- [Meetups](#)



Attend a Meetup



Collected links

- kubernetes.io/community
- discuss.kubernetes.io
- slack.k8s.io
- groups.google.com/forum/#!forum/kubernetes-dev
- git.k8s.io/community/events/community-meeting.md
- git.k8s.io/community/events/office-hours.md
- git.k8s.io/community/mentoring/meet-our-contributors.md



Community Values

Community Values

Distribution is better than centralization

Automation over process

Community over product or company

Inclusive is better than exclusive

Evolution is better than stagnation

"Culture eats strategy for breakfast."
-- Peter Drucker



Community Groups

Community Group Types

Special Interest Groups (SIGs)

Persistent open groups that focus on a part of the project.

Working Groups (WGs)

Temporary groups that are formed to address issues that cross SIG boundaries.

User Groups (UGs)

Groups for facilitating communication and discovery of information

Committees

Sets of people that are chartered to take on sensitive topics.



Community Governance

- Special Interest Groups (SIGs)
 - Primary organizational unit
 - Topic specific (Networking, Doc, etc.)
- Subprojects
 - Work in SIGs divided into one or more subprojects
 - Every part of Kubernetes must be owned by subproject
- Working Groups (WGs)
 - Short-lived rallying point
 - Work spanning multiple SIGs



Community Governance

- User Groups
 - Facilitate communication between users and contributors
 - Topics include usage of, extension of, and integration with Kubernetes and Kubernetes subprojects
 - Examples:
 - Big Data
 - Cloud Providers
 - Machine Learning



Community Governance

- Committees
 - Don't have open membership
 - Don't always operate in the open (Security or Code of Conduct)
 - Formed by Steering Committee
 - Committees:
 - Steering
 - Product Security
 - Code of Conduct

Special Interest Group

Kubernetes is a big project

2000 contributors in one pool would be too noisy

A SIG is a sub-community;
these are you K8s people



Special Interest Group

Charter:

- Code ownership
 - Scope/area
 - Binaries
- Governing processes
- Subprojects
- Working Groups

Mailing List:

- Communications with SIG members

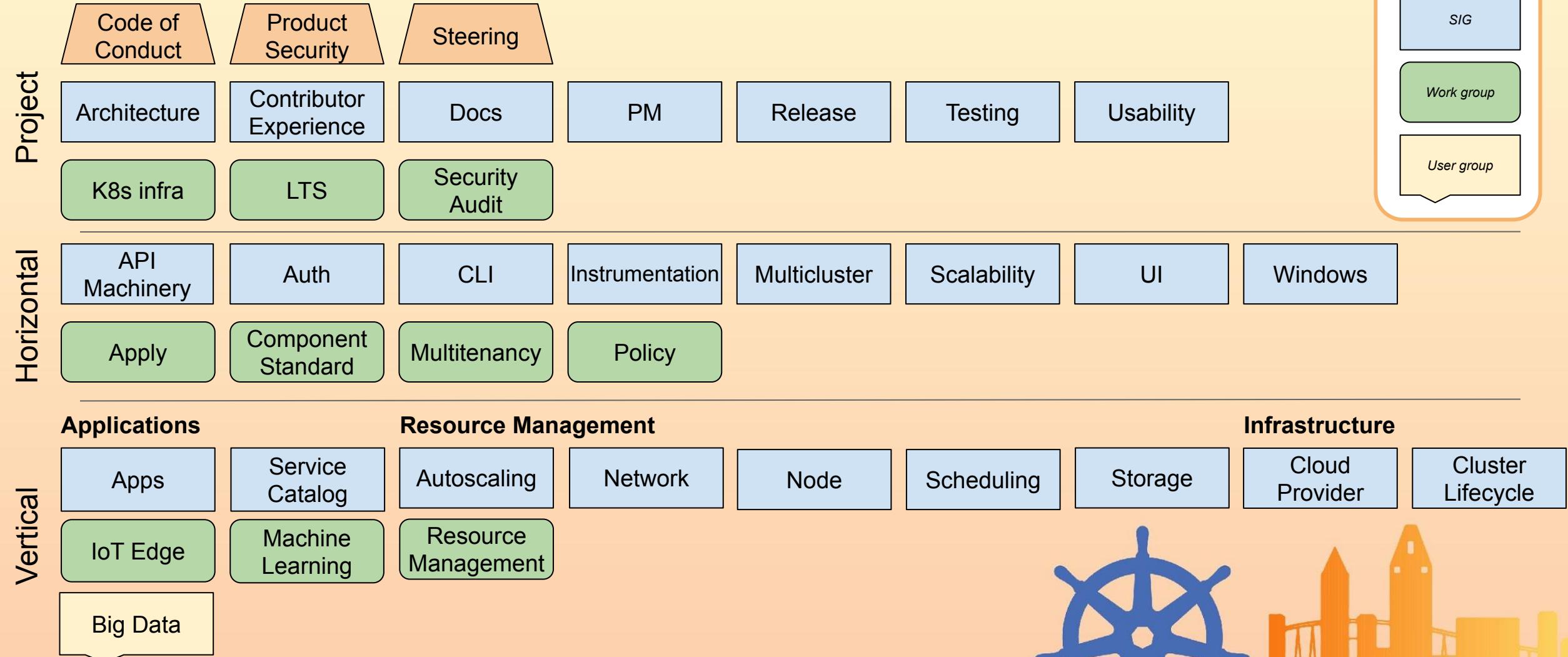


Types of SIGs

- Project
- Horizontal
- Vertical
 - Applications
 - Resource Management
 - Infrastructure



Community Groups Overview



Project SIGs

sig-architecture

sig-contribex

sig-docs

sig-pm

sig-release

sig-testing

sig-usability

Horizontal SIGs

sig-api-machinery

sig-auth

sig-cli

sig-instrumentation

sig-multicloud

sig-scalability

sig-ui

sig-windows

Vertical SIGs: Applications

sig-apps

sig-service-catalog



Vertical SIGs: Resource Management

sig-autoscaling

sig-network

sig-node

sig-scheduling

sig-storage



Vertical SIGs: Infrastructure

sig-cloud-provider

sig-cluster-lifecycle



Subprojects

- Focus areas for SIGS
- Own Code, Issues

The screenshot shows a GitHub repository interface for the `kubernetes / sig-release` project. The repository has 48 issues, 4 pull requests, 0 projects, and 151 forks. The latest commit was made 12 days ago by `hasheddan`. The commit message is: "ci signal handbook: update failing and flaky test issue naming strategy". Below the commit list, there is a section titled "Kubernetes Release Team" with a bulleted list of responsibilities:

- Overview
- Specific responsibilities
- Kubernetes Release Team roles
- Other activities of the Release Team
- Release Team Selection
- Milestone Maintainers

Working Groups

Working Groups: Inter-SIG efforts

For specific:

- Goals (ex. Code Cleanup)
- Areas (ex. multi tenancy)



Project Working Groups

wg-security-audit

wg-k8s-infra

wg-LTS



Horizontal Working Groups

wg-apply

wg-component-standard

wg-multitenancy

wg-policy



Vertical Working Groups

Applications

wg-machine-learning

wg-io-edge

Resource Management

wg-resource-management



Picking the right community group

Find a specific project/area
to work on



Picking the right community group

Find out which SIG (or working group) owns your topic

- a. Look on the [SIG list](#) to find SIG info and charters
- b. Ask on #sig-contribex
- c. Attend the SIG Meet-and-Greet later today
- d. Go to the SIG intros at this conference

How Do I Join A Community Group?

1. Join the specific mailing list.
(This is open to anyone.)
2. That's it! You've joined!
You will get a calendar invite to the meeting.



Quick reference

Governance reference

git.k8s.io/community/governance.md

Project Group List

git.k8s.io/community/sig-list.md



Tour of Repositories



Core Repository

[kubernetes/kubernetes](https://github.com/kubernetes/kubernetes)

Most SIGs are stakeholders in the monolith.

Areas of SIG ownership can be found in

<https://git.k8s.io/community/sigs.yaml>

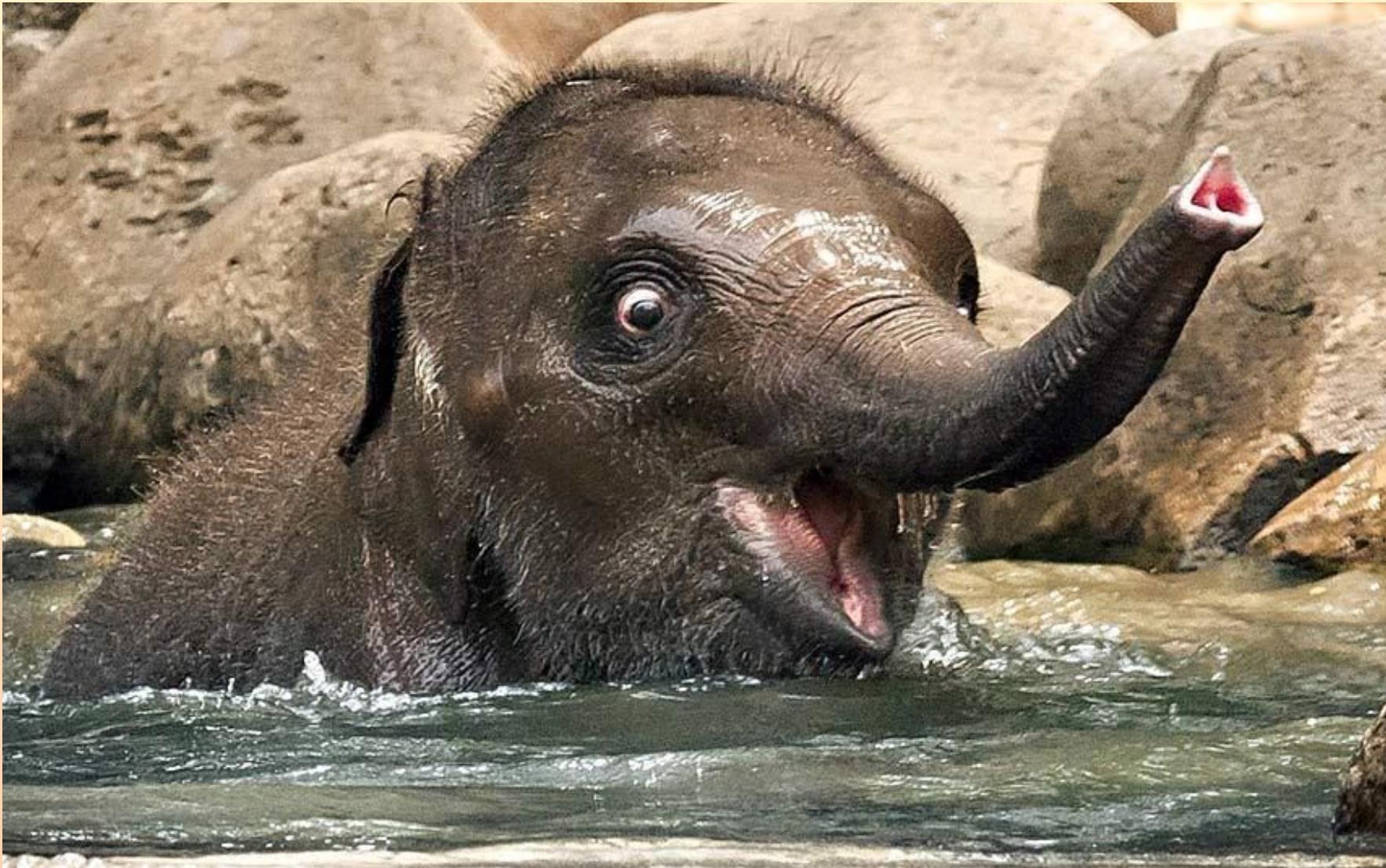
My repository, my rules

Repos can have different:

- Ownership
- Approval workflows
- Merge workflows
- Release cycles



Ready to jump right in?



Reference links, again

- kubernetes.io/community
- discuss.kubernetes.io
- slack.k8s.io
- groups.google.com/forum/#!forum/kubernetes-dev
- git.k8s.io/community/events/community-meeting.md
- git.k8s.io/community/events/office-hours.md
- git.k8s.io/community/mentoring/meet-our-contributors.md



Beginner Session

Split session

NCW 101 Agenda

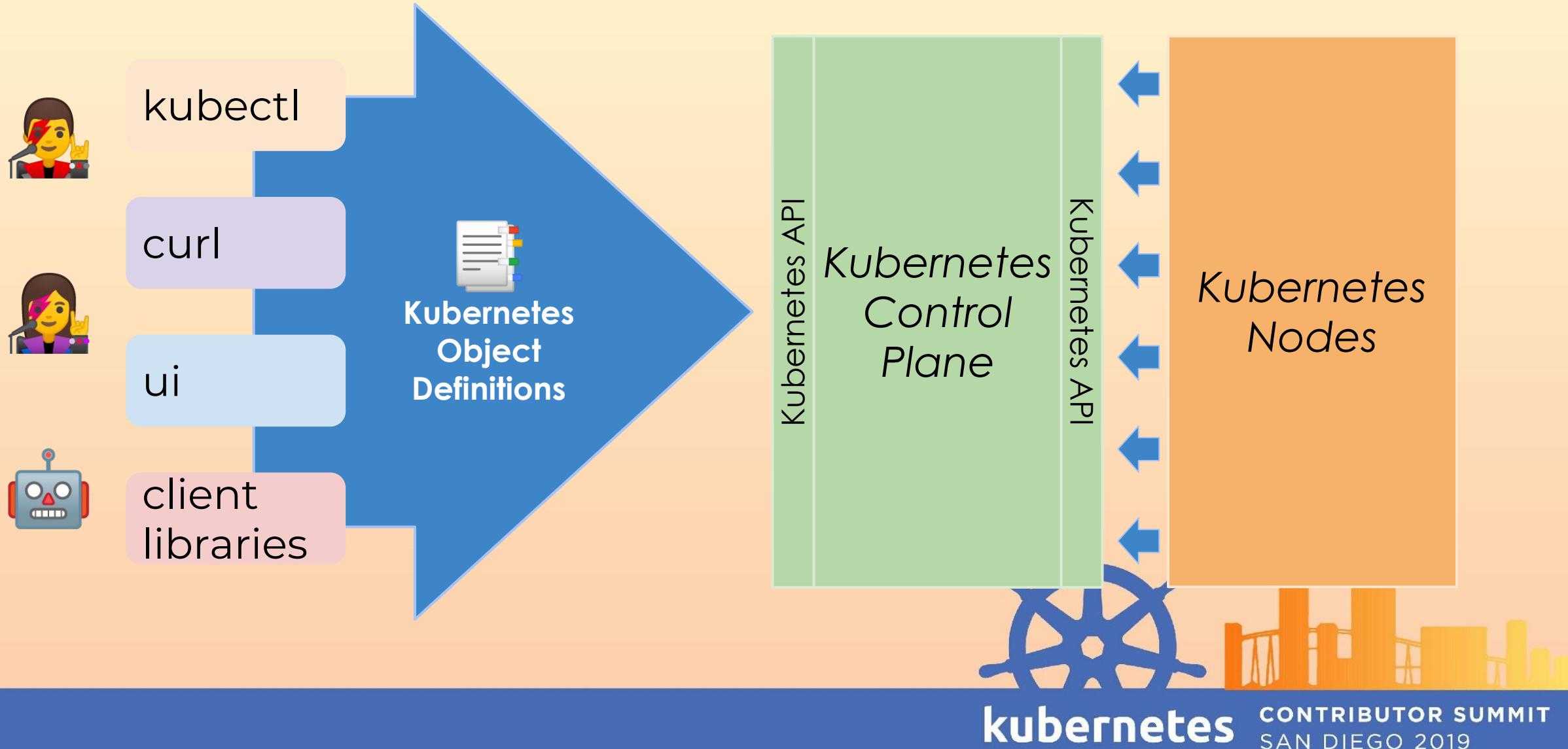
Morning

- Kubernetes Quick Overview
- Basic Repo/Code Tour
- Dev Env: Pre-Requisites
- SIGs, Labels, Issues: Overview
- Open Source Interactions
- PRs and Bots
- Playground Exercise
- Dev Env: Status Check

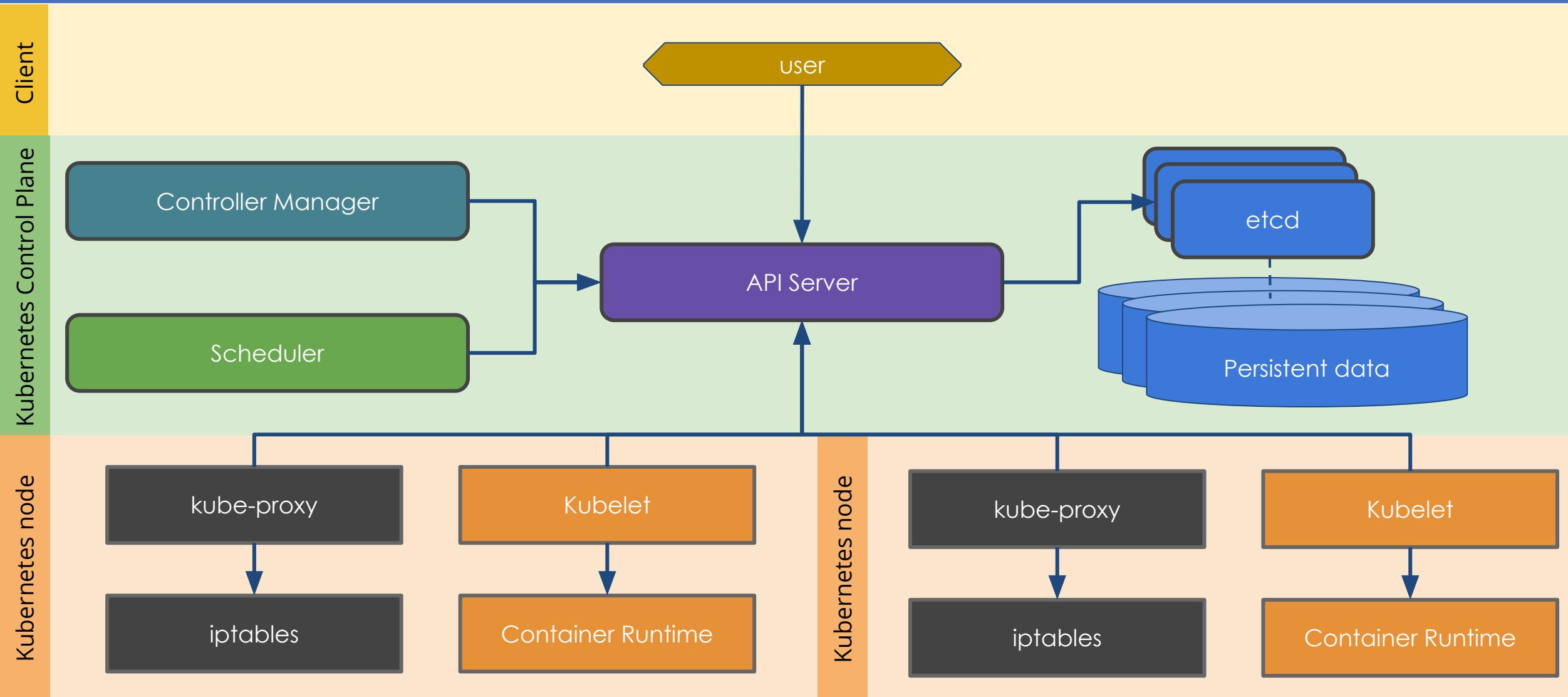
Afternoon

- Dev Env: Final Check
- Build System(s)
- Make Targets
- Build kubectl
- Testing
- SIGs, Areas, Issues: Engaging
- Help Wanted: First PR Ideas

Kubernetes Architecture Overview



Kubernetes Primitives



Basic Repo/Code Tour

kubernetes / kubernetes

Watch 3.1k Unstar 59.4k Fork 20.9k

Code Issues 2,278 Pull requests 1,076 Actions Projects 9 Security Insights

Production-Grade Container Scheduling and Management <https://kubernetes.io>

kubernetes go cncf containers

84,806 commits 40 branches 0 packages 576 releases 2,339 contributors Apache-2.0

Branch: master New pull request Create new file Upload files Find file Clone or download

Commit	Message	Time
	k8s-ci-robot Merge pull request #84553 from ahg-g/ahg-nodeinfo ...	Latest commit b6bf0d6 1 hour ago
	.github Fix incorrect whitespaces plural	6 days ago
	Godeps Pin dependencies and update vendors	6 days ago
	api Kubernetes version v1.18.0-alpha.0 openapi-spec file updates	yesterday
	build Merge pull request #84329 from jingyih/update_etcd_server_to_3.4	7 hours ago
	cluster Merge pull request #84329 from jingyih/update_etcd_server_to_3.4	7 hours ago
	cmd Merge pull request #84329 from jingyih/update_etcd_server_to_3.4	7 hours ago

kubernetes

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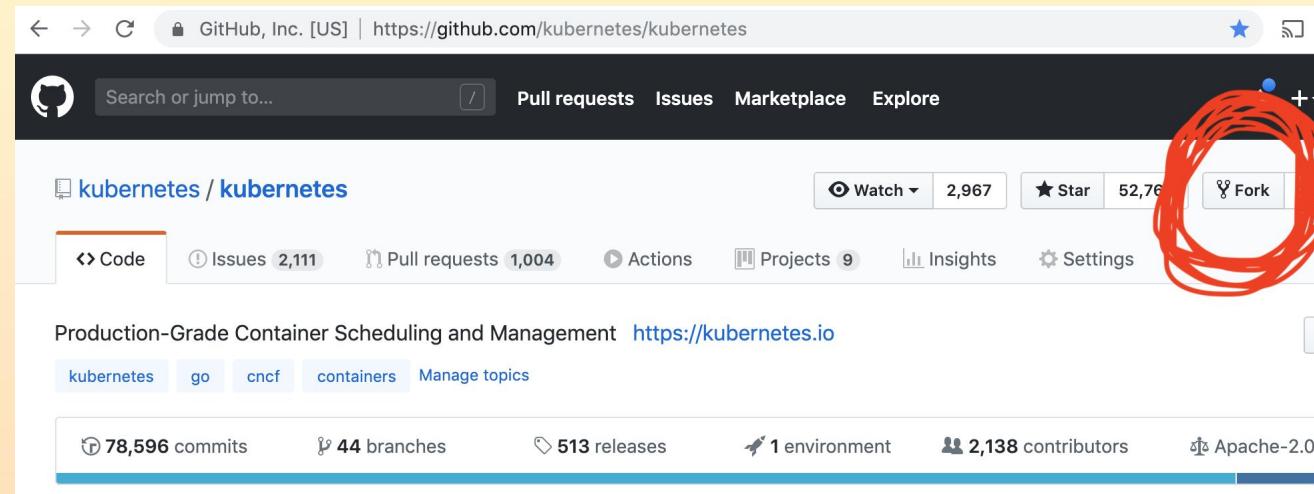
Dev Environment: Pre-Requisites

- Lots of RAM/Disk/CPU
- Linux, Mac, Windows basic dev tools
- Docker (for Mac/Win dedicate **6GB RAM**)
- Golang 1.13 latest and \$GOPATH set
- GitHub:
 - Account and SSH key configured
 - Fork github.com/kubernetes/kubernetes

<https://www.flickr.com/photos/vestman/3900877043/>
By Vestman (vestman) [CC BY 2.0], via flickr



Dev Environment: Initialization



- mkdir -p \$GOPATH/src/k8s.io/ && cd \$GOPATH/src/k8s.io/
- git clone git@github.com:\$YOUR_USER/kubernetes.git && cd kubernetes
- git remote add upstream https://github.com/kubernetes/kubernetes.git
- git fetch upstream
- git checkout v1.16.3 or git checkout upstream/release-1.16



kubernetes

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Dev Environment: Container Images

We're using a local [Harbor](#) instance to serve up the majority of the container images you'll need for this:

```
docker pull kubecon.goharbor.io/contribsummit/debian-base-amd64:0.4.1
```

```
docker pull kubecon.goharbor.io/contribsummit/debian-hyperkube-base-amd64:0.12.1
```

```
docker pull kubecon.goharbor.io/contribsummit/debian-iptables-amd64:v11.0.2
```

```
docker pull kubecon.goharbor.io/contribsummit/kindest/node:v1.16.3
```

```
docker pull kubecon.goharbor.io/contribsummit/kube-cross:v1.12.5-1
```

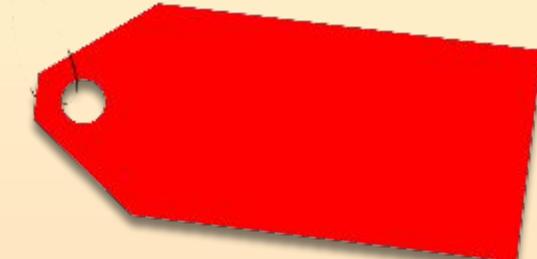
```
docker pull kubecon.goharbor.io/contribsummit/etcd:latest
```

```
docker pull kubecon.goharbor.io/contribsummit/alpine/socat:latest
```

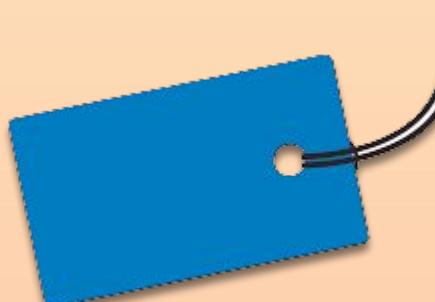


HARBOR

SIGs, Labels, Issues: Overview



How to talk to the Kubernetes
community and automation



 k8s-ci-robot commented 14 days ago

Owner + 

Thanks for your pull request. Before we can look at your pull request, you'll need to sign a Contributor License Agreement (CLA).

 Please follow instructions at <https://git.k8s.io/community/CLA.md#the-contributor-license-agreement> to sign the CLA.

It may take a couple minutes for the CLA signature to be fully registered; after that, please reply here with a new comment and we'll verify. Thanks.

- If you've already signed a CLA, it's possible we don't have your GitHub username or you're using a different email address. Check your existing CLA data and verify that your [email is set on your git commits](#).
- If you signed the CLA as a corporation, please sign in with your organization's credentials at <https://identity.linuxfoundation.org/projects/cncf> to be authorized.
- If you have done the above and are still having issues with the CLA being reported as unsigned, please email the CNCF helpdesk: helpdesk@rt.linuxfoundation.org

► Details

 k8s-ci-robot added the **cncf-cla: no** label 14 days ago

 k8s-ci-robot requested review from **idvoretskyi** and **tpepper** 14 days ago

 k8s-ci-robot added the **needs-ok-to-test** label 14 days ago

guineveresaenger

Labels

approved
area/contributor-guide
cncf-cla: no
lgtm
needs-rebase
sig/contributor-experience
size/XS

Projects

None yet

Milestone

No milestone

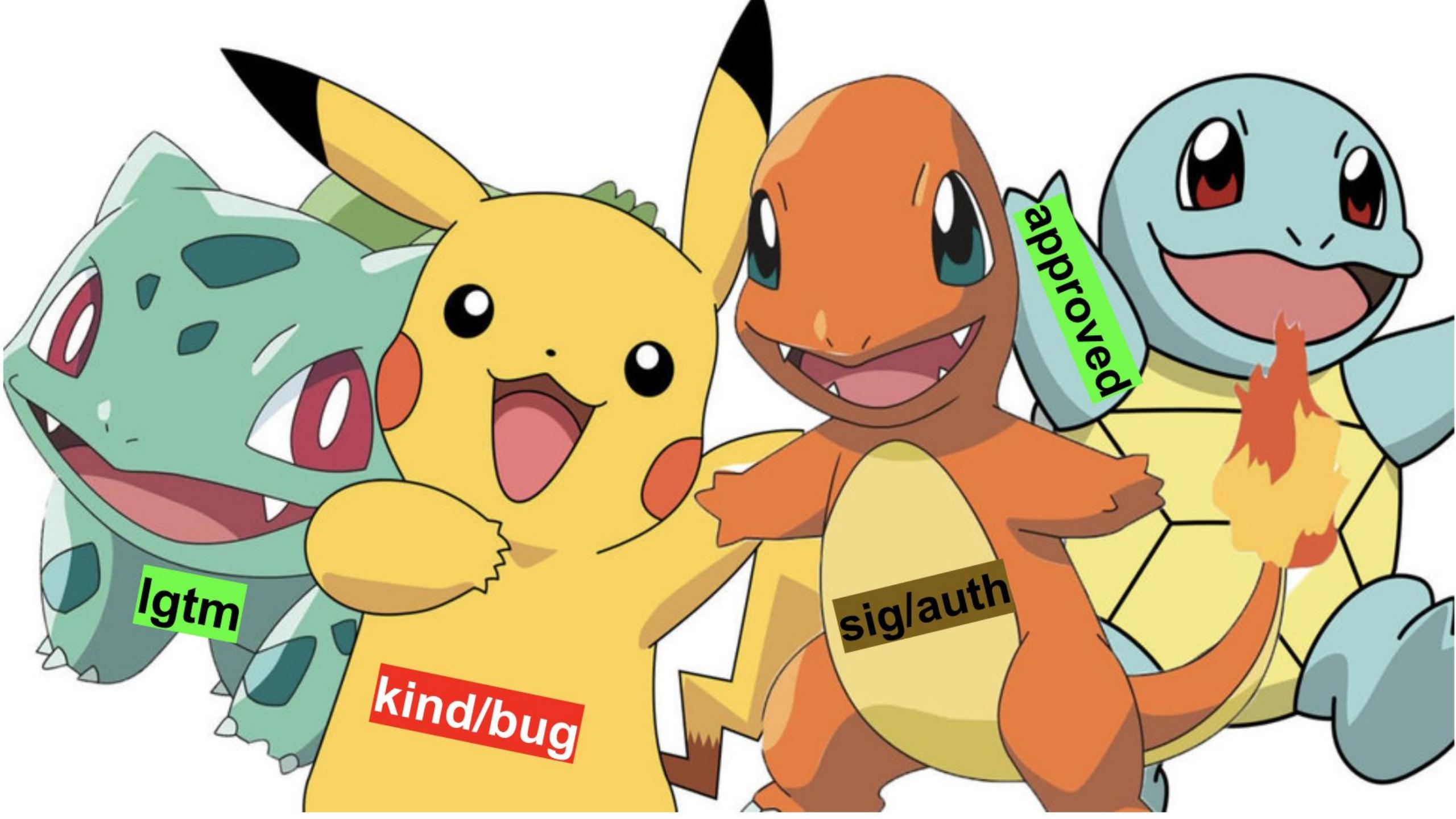
Notifications

 [Unsubscribe](#)

You're receiving notifications because you were mentioned.

7 participants





lgtm

kind/bug

sig/auth

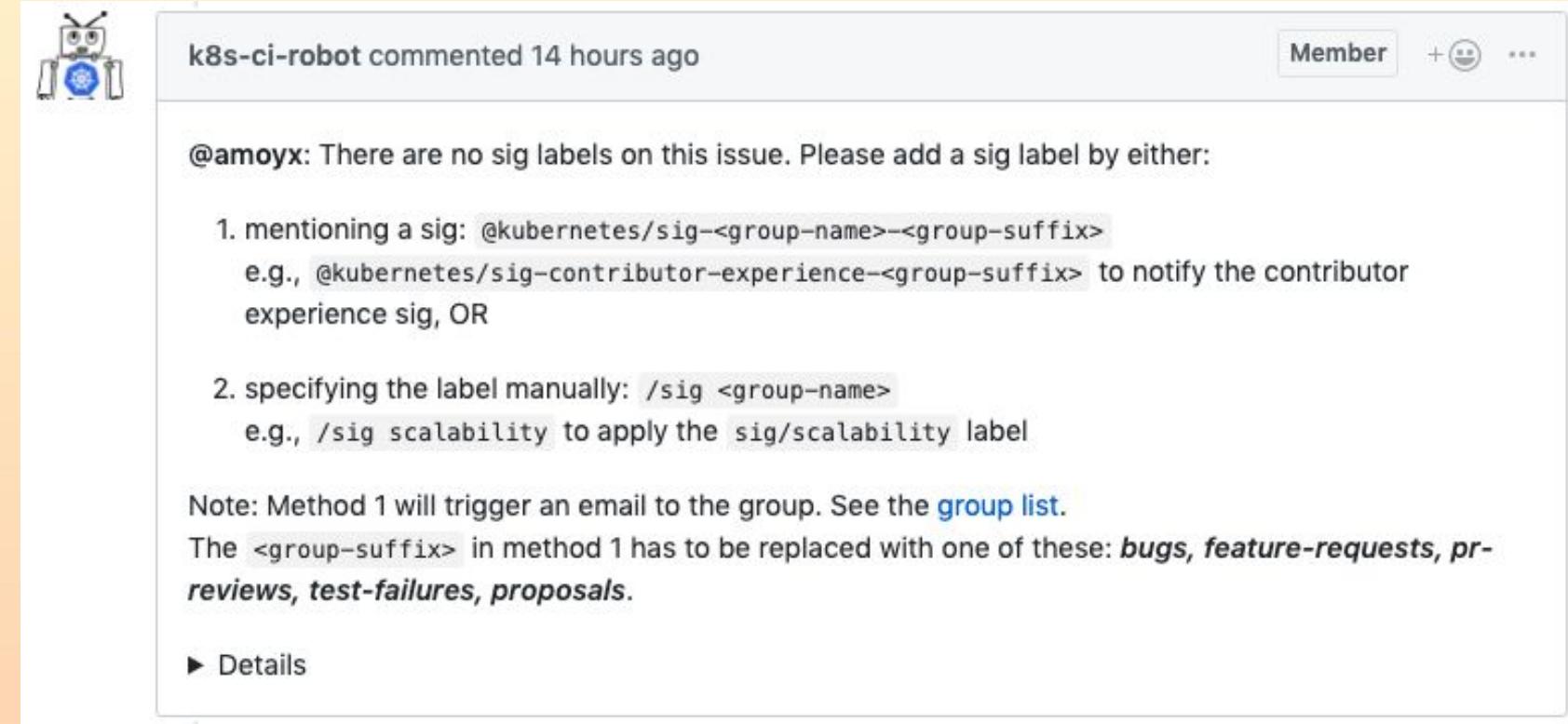
approved

WIP

Required Labels for Issues

On creation:

sig/
kind/



A screenshot of a GitHub issue comment. The comment is from a user named "k8s-ci-robot" and was posted 14 hours ago. The comment text reads: "@amoyx: There are no sig labels on this issue. Please add a sig label by either:

- mentioning a sig: @kubernetes/sig-<group-name>-<group-suffix>
e.g., @kubernetes/sig-contributor-experience-<group-suffix> to notify the contributor experience sig, OR
- specifying the label manually: /sig <group-name>
e.g., /sig scalability to apply the sig/scalability label

Note: Method 1 will trigger an email to the group. See the [group list](#). The <group-suffix> in method 1 has to be replaced with one of these: *bugs, feature-requests, pr-reviews, test-failures, proposals*.

<https://go.k8s.io/bot-commands>

The SIG Label

Label

sig/auth

sig/testing

sig/api-machinery

sig/node

Bot command

/sig auth

/sig testing

/sig api-machinery

/sig node

Adding a label



guineveresaenger commented on Dec 14, 2017

Member



/sig contributor-experience



The Kind Label

kind/bug

kind/feature

kind/documentation

kind/design

kind/failing-test

kind/flake

kind/cleanup

Example bot command: /kind feature



The Priority Label

priority/critical-urgent

priority/important-soon

priority/important-longterm

priority/backlog

priority/awaiting-evidence

Example bot command: /priority critical-urgent

The Area Label

area/kubectl

area/api

area/dns

area/platform/gce

Often, the area label is
the name of a SIG
subproject.

The Triage Label

triage/duplicate

triage/needs-information

triage/support

triage/unreproduceable

triage/unresolved

Open Source Interactions

me
implementation
centralized
implicit
assumptions



Open Source Interactions

me
~~implementation~~
~~centralized~~
~~implicit~~
~~assumptions~~

we
collaboration
decentralized
explicit
shared theories

Open Source Interactions

functionality
code



Open Source Interactions

functionality
code

docs
tests
integrations
releases
security



Open Source Interactions

HUMAN / SOCIAL:



functionality
code
docs
tests
integrations
releases
security

Open Source Interactions

Be good people!

Mutual respect is a prerequisite for healthy collaboration.

git.k8s.io/community/code-of-conduct.md

Open Source Interactions

Goal: Get a change into project



Open Source Interactions

Goal: Get a change into project

Path:

- Visibility, transparency, proactive communication
- Code, plus documentation, plus test cases
- Presence in meetings, Slack, mailing list
- Reviewable code

Open Source Interactions

Reviewable code:

- demonstrates sound *IDEA*...through words
- demonstrates reasonably architected solution...through words
- polished implementation
 - coding style
 - quality standards
 - <https://chris.beams.io/posts/git-commit/>

Open Source Interactions

Reviewable code:

- demonstrates sound ***IDEA***...through words
- demonstrates reasonably architected solution...through words
- polished implementation
 - coding style
 - quality standards
 - <https://chris.beams.io/posts/git-commit/>

Make the reviewer's job easy:

- commit subject line **summarizes**
- commit body details **what & why**



Open Source Interactions

Timing:

- expect things you **CARE** about to take time
- quality vs. speed
- decentralized consensus forming
- conversations wrap the globe
- is it code freeze right now or merge time?

Open source is fast in aggregate, but:

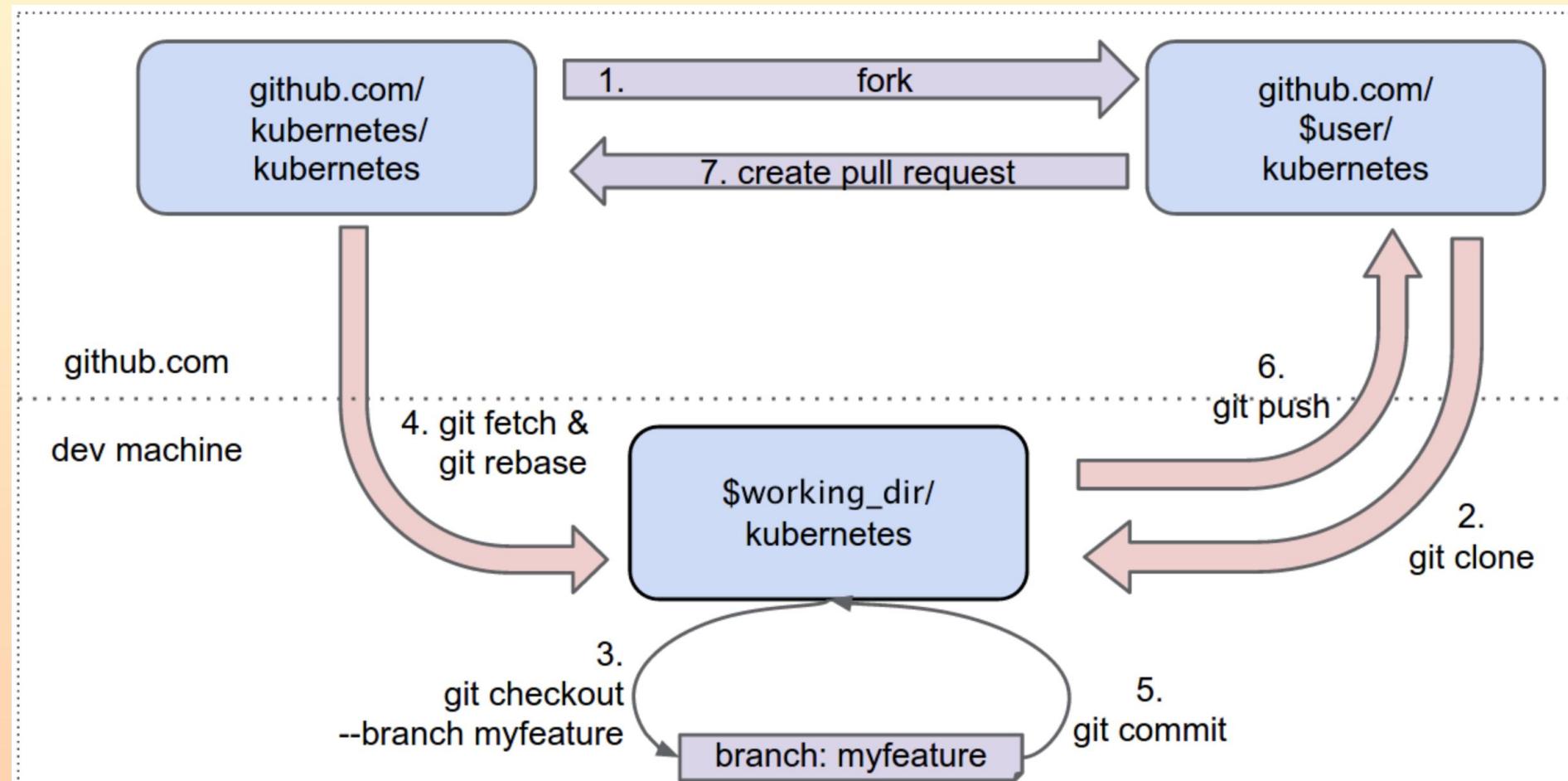
- **idea → months → alpha → 1+ release → beta → 1+ release → stable**
- ...**9-24 months**



Open Source Interactions



PRs and Bots: GitHub PR Flow



PRs and Bots: Kubernetes PR Flow

1. You submit Pull Request (PR)
2. You add labels & notes
3. Bots validate and comment on the PR
`release-note` `cncf-cla: no` `needs-ok-to-test` `needs-kind` `needs-sig`
4. You add more labels & notes & resolve review comments
5. SIGs & OWNERS review and /approve → `approved`
6. Other contributors /lgtm → `lgtm`
7. Tests pass
8. *Tide* merges the PR

<https://prow.k8s.io/command-help>



PRs and Bots: Useful Commands

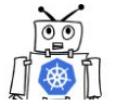
Command

/assign @username
/retest
/close
/cc @username

Result

Assigns a Reviewer
Reruns failed tests
Closes PR
Tags a user

PRs and Bots: Reviewers/Approvers



k8s-ci-robot commented 7 minutes ago

Member + 😊 ...

[APPROVALNOTIFIER] This PR is NOT APPROVED

This pull-request has been approved by: [ksubrmnn](#)

To fully approve this pull request, please assign additional approvers.

We suggest the following additional approver: [rosti](#)

If they are not already assigned, you can assign the PR to them by writing `/assign @rosti` in a comment when ready.

The full list of commands accepted by this bot can be found [here](#).

The pull request process is described [here](#)

▼ Details

Needs approval from an approver in each of these files:

- [cmd/kubeadm/OWNERS](#)

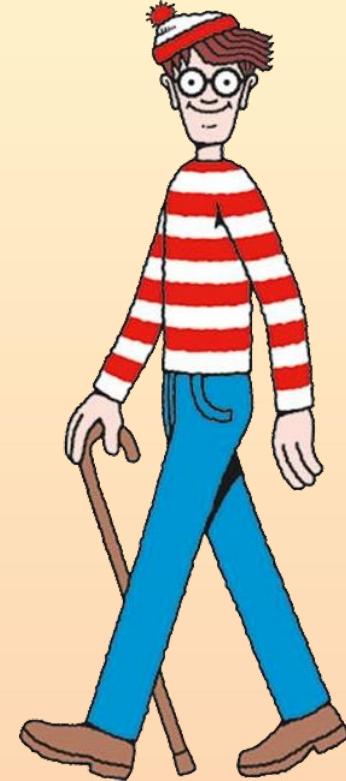
Approvers can indicate their approval by writing `/approve` in a comment

Approvers can cancel approval by writing `/approve cancel` in a comment

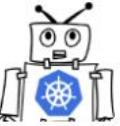


PRs and Bots: Reviewers/Approvers

- Attach /sig label
- Contact the SIG
 - attend SIG meeting
 - ask Slack
 - send email to list
- Contact OWNERS



PRs and Bots: Test Results

 k8s-ci-robot commented 2 minutes ago

Member + 😊 ...

@ksubrmnn: The following tests failed, say `/retest` to rerun them all:

Test name	Commit	Details	Rerun command
pull-kubernetes-e2e-gce	0a1251a	link	<code>/test pull-kubernetes-e2e-gce</code>
pull-kubernetes-e2e-gce-device-plugin-gpu	0a1251a	link	<code>/test pull-kubernetes-e2e-gce-device-plugin-gpu</code>

[Full PR test history.](#) [Your PR dashboard.](#) Please help us cut down on flakes by [linking to an open issue](#) when you hit one in your PR.

► Details

PRs and Bots: Following Up

Answer questions
Resolve:
Bot messages
Code comments
Test failures



Contributor Ladder

Subproject
Owner

Set priorities and approve proposals for subproject
Responsibility and leadership for entire
repository/directory

Approver

Approve contributions for acceptance
Highly experienced reviewer and contributor in
subproject

Reviewer

History of reviewing; reviews frequently
Authorship in subproject

Member

Active contributor to the project
Sponsored by two Reviewers

Non-member Contributors



kubernetes

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Contributor Ladder: Membership

A screenshot of a GitHub pull request comment. The comment is from a bot named "k8s-ci-robot" and was posted on December 14, 2017. The comment text reads:

Hi @guineveresaenger. Thanks for your PR.

I'm waiting for a [kubernetes](#) member to verify that this patch is reasonable to test. If it is, they should reply with `/ok-to-test` on its own line. Until that is done, I will not automatically test new commits in this PR, but the usual testing commands by org members will still work. Regular contributors should [join the org](#) to skip this step.

I understand the commands that are listed [here](#).

▶ Details

Below the comment, there is a note indicating that the "needs-ok-to-test" label was added by the bot on December 14, 2017.



Contributor Ladder: Membership

<http://git.k8s.io/community/community-membership.md>



Contributor Ladder

Role	Responsibilities	Requirements	Defined by
member	active contributor in the community	sponsored by 2 reviewers. multiple contributions to the project.	Kubernetes GitHub org member.
reviewer	review contributions from other members	history of review and authorship in a subproject	OWNERS file reviewer entry.
approver	approve accepting contributions	highly experienced and active reviewer + contributor to a subproject	OWNERS file approver entry
subproject owner	set direction and priorities for a subproject	demonstrated responsibility and excellent technical judgement for the subproject	sigs.yaml subproject OWNERS file owners entry

OWNERS

YAML files sprinkled all through the repos, eg:

<http://git.k8s.io/community/contributors/guide/owners.md>

[Kubernetes Core OWNERS file](#)

Playground Exercise

Your turn!!!

<https://sigs.k8s.io/contributor-playground>



Playground Exercise

<https://sigs.k8s.io/contributor-playground>

1. Fork and clone
2. Make changes in “sandiego” directory
3. Pull request
4. Review/comment/rebase
5. Pay attention to labels and bot prompts

Dev Environment: Status Check

- Have you downloaded the things?
- Have you installed the things?
- Do you have k/k forked and cloned?
- Can you “make”?





Lunch Break

Let us know if you need any additional hands on help with your laptop configuration...

Dev Environment: Final Check

“make” should work now...

Build System(s)

- local OS
 - or
- container based
- go build
- make
- bazel build

<https://git.k8s.io/kubernetes/build/README.md>



Make Targets

- ‘**make**’: go build of host OS/arch-specific core binaries
- ‘**make release**’: (don’t do this)
 - containerized build of client/server/node binaries
 - Window, MacOS, Linux
 - x86/386, x86_64/amd64, arm, arm64, ppc64le, s390x
- ‘**make quick-release**’:
 - containerized build of core binaries
 - defaults to linux/amd64

Make Targets

- ‘make WHAT=cmd/kubectl’
 - build kubectl for your host OS/arch
- ‘KUBE_BUILD_PLATFORMS=windows/amd64 \
 make WHAT=cmd/kubectl’
 - build kubectl for windows/amd64
- ‘make help’: info on make targets

Make Targets: Try it...build kubectl!

1. Edit cmd/kubectl/kubectl.go
2. Add a “hello world” print out in “func main()”, eg:
`fmt.Println("Hello San Diego!")`
3. Build:
`make WHAT=cmd/kubectl`
4. New binary?
`ls -al _output/local/go/bin/kubectl`
5. Run your binary:
`cd ._output/local/go/bin`
`./kubectl version`



Testing

- **Unit:** test via native golang
- **Integration:** test package or component interactions
- **End-to-end (“e2e”):** tests overall system behavior and coherence on a fully integrated cluster
- **Conformance:** subset of e2e, tests SIG Architecture approved to define the core set of interoperable features

<https://bit.ly/k8s-ncw-testing>

Testing: Unit Tests

- Simple native golang
- Example: run kubectl's unit tests
- `cd pkg/kubectl; go test ./...`

```
ok     k8s.io/kubernetes/pkg/kubectl    5.525s
?      k8s.io/kubernetes/pkg/kubectl/apply [no test files]
ok     k8s.io/kubernetes/pkg/kubectl/apply/parse  0.442s
ok     k8s.io/kubernetes/pkg/kubectl/apply/strategy 2.916s
ok     k8s.io/kubernetes/pkg/kubectl/apps   0.251s
:
:
```

Testing: Integration

- Package or component interactions
- Requires dependency management
- Example: run a test of k8s code + etcd
- `hack/install-etcd.sh; make test-integration`

Testing: End-to-End (e2e)

- Cluster interactions
- Requires ... a cluster
- Example: run a focused e2e test (requires Linux)

```
sudo PATH=$PATH hack/local-up-cluster.sh
export KUBECONFIG=/path/to/kubeconfig
kubetest --provider=local --test --test_args="--minStartupPods=1
--ginkgo.focus=Secrets"
```

Testing: Conformance

- Subset of e2e
- SIG Architecture approved tests
- Represent core set of interoperable features
- Example: run the conformance tests

(see previous on local-cluster-up.sh)

```
make WHAT="test/e2e/e2e.test vendor/github.com/onsi/ginkgo/ginkgo cmd/kubectl"  
kubetest --provider=skeleton --test --test_args="--ginkgo.focus=\[Conformance\]"
```

Testing: Minikube

- <https://github.com/kubernetes/minikube/>
- Kubernetes **cluster-in-a-VM** on your local machine!
- Requirements:
 - Host machine with kubectl
 - Guest VM ability
 - Host<->Guest networking and internet connectivity

Testing: KinD

- <https://github.com/kubernetes-sigs/kind/>
- Kubernetes **cluster-in-a-container** on your local machine!
- Requirements:
 - Docker runtime
 - Internet connectivity
- Get KinD, build k8s from source, start cluster:
 - `GO111MODULE="on" go get -u sigs.k8s.io/kind@master`
 - `kind build node-image`
 - `kind create cluster --image kindest/node:latest`

SIGs, Areas, Issues: Engaging

What's next for you?



SIGs, Areas, Issues: Engaging

Community Contributions

- Filing Issues
- Answering Questions on StackOverflow
- Github Repo Management
- Blogging, Evangelism, and Promotion
- Event Management and Volunteering
- Visual Communication
- User Experience Feedback and Surveys
- Helping Manage Youtube Recordings
- ...and more!

SIGs, Areas, Issues: Engaging

Mentoring Opportunities

- Meet-Our-Contributors
- Group Mentoring
- Release Team Shadow
- 1-on-1 ad-hoc mentoring
- GSOC/Outreachy/KubeCon Speed Mentoring

SIGs, Areas, Issues: Engaging

Kubernetes Tutorials

- As an operator
- As an app developer
- As a kubernetes developer

<https://kubernetes.io/docs/tutorials/>



SIGs, Areas, Issues: Engaging

Mentoring Links

<https://git.k8s.io/community/mentoring/meet-our-contributors.md>

<https://git.k8s.io/community/mentoring/google-summer-of-code.md>

<https://git.k8s.io/community/mentoring/outreachy.md>

<https://git.k8s.io/community/mentoring/>

Technical Help and Tutorials

<https://git.k8s.io/community/events/office-hours.md>

<https://kubernetes.io/docs/tutorials/>

Contributor Guide

<https://git.k8s.io/community/contributors/guide/README.md>

Developer Guide

<https://git.k8s.io/community/contributors-devel/README.md>



SIGs, Areas, Issues: Engaging

Right here at KubeCon!

- Sessions
- SIG Intros
- SIG Deep Dives
- Hallway Track

Type: Maintainer Track Sessions [[Clear Filter](#)]

Tuesday, November 19

10:55am

CNCF SIG-Security Intro - Sarah Allen, CNCF SIG-Security & Dan Shaw, PayPal

ROOM LOCATION TO BE ADDED IN NOVEMBER

Intro to gRPC - Jayant Kolhe, Google

ROOM LOCATION TO BE ADDED IN NOVEMBER

Intro: Brigade - Radu Matei, Microsoft & Matt Butcher, Microsoft

ROOM LOCATION TO BE ADDED IN NOVEMBER

Intro: Kubernetes SIG PM - Stephen Augustus, VMware

ROOM LOCATION TO BE ADDED IN NOVEMBER

KubeEdge - Kubernetes Native Edge Computing Framework - Zefeng(Kevin) Wang, Huawei

ROOM LOCATION TO BE ADDED IN NOVEMBER

OPA Introduction & Community Update - Rita Zhang, Microsoft & Patrick East, Styra

ROOM LOCATION TO BE ADDED IN NOVEMBER

Securing the Software Supply Chain with in-toto - Santiago Torres-Arias & Justin Cappos, NYU

ROOM LOCATION TO BE ADDED IN NOVEMBER

SIG Cloud Provider Intro - Fabio Rapposelli, VMware & Chris Hoge, GitLab

ROOM LOCATION TO BE ADDED IN NOVEMBER

The Release Team Shadow Program - Mentoring For the Future - Guinevere Saenger, GitHub

& Lachlan Evenson, Microsoft

ROOM LOCATION TO BE ADDED IN NOVEMBER

kubernetes

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Help Wanted: First PR Ideas

- Search for **good first issue** & **help wanted** issues
- Search by SIG & Area labels to match your interest
- Discuss at tables ideas for contributing

...carry this discussion into the SIG Meet & Greet

END BEGINNER

**BEGIN
INTERMEDIATE**



Intermediate Session



The Kubernetes Monolith



Core Repository

[kubernetes/kubernetes](#)



Additional Repositories



website

kind

test-infra

...totaling
~190 repos

kubernetes

```
@guin:kubernetes (master) 🐧 tree -d -L 1
.
├── Godeps
└── _output
├── _tmp
├── api
├── build
├── cluster
├── cmd
├── docs
├── hack
├── logo
├── pkg
├── plugin
├── staging
├── test
├── third_party
├── translations
└── vendor
```



kubernetes

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SAN DIEGO 2019

kubernetes

```
@guin:kubernetes (master) 🐧 tree -d -L 1
.
├── Godeps
├── _output
├── _tmp
└── api
    └── ...
  ├── build
  ├── cluster
  ├── cmd
  ├── docs
  ├── hack
  ├── logo
  ├── pkg
  ├── plugin
  ├── staging
  ├── test
  └── third_party
```



kubernetes CONTRIBUTOR SUMMIT
SAN DIEGO 2019

kubernetes

```
[@guin:kubernetes (master) 🐧 tree -d -L 1
```

```
.
├── Godeps
├── _output
├── _tmp
├── api
└── build
    └── cluster
    └── cmd
    └── docs
    └── hack
    └── logo
    └── pkg
    └── plugin
    └── staging
    └── test
    └── third_party
    └── translations
    └── vendor
```



kubernetes CONTRIBUTOR SUMMIT
SAN DIEGO 2019

kubernetes

```
[@guin:kubernetes (master) 🐧 tree -d -L 1
```

```
.  
├── Godeps  
├── _output  
├── _tmp  
├── api  
├── build  
├── cluster  
└── cmd  
├── docs  
├── hack  
├── logo  
├── pkg  
├── plugin  
├── staging  
├── test  
├── third_party  
├── translations  
└── vendor
```



kubernetes

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kubernetes

```
[@guin:kubernetes (master) 🐧 tree -d -L 1
```

```
.  
├── Godeps  
├── _output  
├── _tmp  
├── api  
├── build  
├── cluster  
└── cmd  
    └── docs  
    └── hack  
    └── logo  
    └── pkg  
    └── plugin  
    └── staging  
    └── test  
    └── third_party  
    └── translations  
    └── vendor
```



kubernetes

```
[@guin:kubernetes (master) 🐧 tree -d -L 1
```

```
.
├── Godeps
├── _output
├── _tmp
├── api
├── build
├── cluster
├── cmd
└── docs
  └── ...
├── hack
├── logo
├── pkg
├── plugin
├── staging
├── test
├── third_party
├── translations
└── vendor
```



kubernetes CONTRIBUTOR SUMMIT
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kubernetes

```
[@guin:kubernetes (master) 🐧 tree -d -L 1
```

```
.
├── Godeps
├── _output
├── _tmp
├── api
└── build
├── cluster
├── cmd
├── docs
└── hack
├── logo
├── pkg
├── plugin
├── staging
├── test
├── third_party
├── translations
└── vendor
```



kubernetes

CONTRIBUTOR SUMMIT
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kubernetes

```
[@guin:kubernetes (master) 🐧 tree -d -L 1
```

```
.
├── Godeps
├── _output
├── _tmp
├── api
├── build
├── cluster
├── cmd
├── docs
├── hack
└── logo
    └── kubernetes
        ├── logo
        └── logo.svg
```



kubernetes CONTRIBUTOR SUMMIT
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kubernetes

```
[@guin:kubernetes (master) 🐧 tree -d -L 1
```

```
.
├── Godeps
├── _output
├── _tmp
├── api
├── build
├── cluster
├── cmd
├── docs
├── hack
├── logo
└── pkg
    └── red circle
    └── plugin
    └── staging
    └── test
    └── third_party
    └── translations
    └── vendor
```



kubernetes

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kubernetes/pkg

- .
- └── BUILD
- └── OWNERS
- └── **api**
- └── **apis**
- └── auth
- └── capabilities
- └── client
- └── cloudprovider
- └── controller
- └── credentialprovider
- └── features
- └── fieldpath
- └── generated
- └── kubeapiserver
- └── kubectl
- └── kubelet
- └── kubemark
- └── master

A Shortcut To /staging



kubernetes

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A Shortcut To /staging

/pkg:

- /api
- /apis

/staging/src/k8s.io

- /api/core/v1
- api

/pkg/apis vs /staging/src/k8s.io/api

```
@guin:apis (master) 🐧 tree -L 1
```

```
.  
--- OWNERS  
--- abac  
--- admission  
--- admissionregistration  
--- apps  
--- auditregistration  
--- authentication  
--- authorization  
--- autoscaling  
--- batch  
--- certificates  
--- coordination  
--- core  
--- events  
--- extensions  
--- imagepolicy  
--- networking  
--- node  
--- policy  
--- rbac  
--- scheduling  
--- settings  
--- storage
```

```
@guin:api (master) 🐧 tree -d -L 1
```

```
.  
--- Godeps  
--- admission  
--- admissionregistration  
--- apps  
--- auditregistration  
--- authentication  
--- authorization  
--- autoscaling  
--- batch  
--- certificates  
--- coordination  
--- core  
--- events  
--- extensions  
--- imagepolicy  
--- networking  
--- node  
--- policy  
--- rbac  
--- scheduling  
--- settings  
--- storage  
--- testdata
```



kubernetes/pkg

- .
- └── BUILD
- └── OWNERS
- └── **api**
- └── **apis**
- └── auth
- └── capabilities
- └── client
- └── cloudprovider
- └── controller
- └── credentialprovider
- └── features
- └── fieldpath
- └── generated
- └── kubeapiserver
- └── kubectl
- └── kubelet
- └── kubemark
- └── master

kubernetes/pkg

- .
- └── BUILD
- └── OWNERS
- └── api
- └── apis
- └── auth
- └── capabilities
- └── client
- └── cloudprovider
- └── controller
- └── credentialprovider
- └── features
- └── fieldpath
- └── generated
- └── kubeapiserver
- └── kubectl
- └── kubelet
- └── kubemark
- └── master

kubernetes/pkg

- .
- └── BUILD
- └── OWNERS
- └── api
- └── apis
- └── auth
- └── capabilities
- └── client
- └── **cloudprovider**
- └── controller
- └── credentialprovider
- └── features
- └── fieldpath
- └── generated
- └── kubeapiserver
- └── kubectl
- └── kubelet
- └── kubemark
- └── master

kubernetes/pkg

- .
- └── BUILD
- └── OWNERS
- └── api
- └── apis
- └── auth
- └── capabilities
- └── client
- └── cloudprovider
- └── **controller**
- └── credentialprovider
- └── features
- └── fieldpath
- └── generated
- └── kubeapiserver
- └── kubectl
- └── kubelet
- └── kubemark
- └── master

kubernetes/pkg/controller

Here lives the code that runs all the
Kubernetes objects.

kubernetes/pkg

- .
- └── BUILD
- └── OWNERS
- └── api
- └── apis
- └── auth
- └── capabilities
- └── client
- └── cloudprovider
- └── controller
- └── credentialprovider
- └── features
- └── fieldpath
- └── generated
- └── kubeapiserver
- └── kubectl
- └── kubelet
- └── kubemark
- └── master

kubernetes/pkg

- .
- └── BUILD
- └── OWNERS
- └── api
- └── apis
- └── auth
- └── capabilities
- └── client
- └── cloudprovider
- └── controller
- └── credentialprovider
- └── **features**
- └── fieldpath
- └── generated
- └── kubeapiserver
- └── kubectl
- └── kubelet
- └── kubemark
- └── master

kubernetes/pkg

- .
- └── BUILD
- └── OWNERS
- └── api
- └── apis
- └── auth
- └── capabilities
- └── client
- └── cloudprovider
- └── controller
- └── credentialprovider
- └── features
- └── fieldpath
- └── generated
- └── **kubeapiserver**
- └── kubectl
- └── kubelet
- └── kubemark
- └── master

kubernetes/pkg

- .
- └── BUILD
- └── OWNERS
- └── api
- └── apis
- └── auth
- └── capabilities
- └── client
- └── cloudprovider
- └── controller
- └── credentialprovider
- └── features
- └── fieldpath
- └── generated
- └── kubeapiserver
- └── **kubectl** *(circled)*
- └── kubelet
- └── kubemark
- └── master

kubernetes/pkg

- .
- └── BUILD
- └── OWNERS
- └── api
- └── apis
- └── auth
- └── capabilities
- └── client
- └── cloudprovider
- └── controller
- └── credentialprovider
- └── features
- └── fieldpath
- └── generated
- └── kubeapiserver
- └── kubectl
- └── **kubelet**
- └── kubemark
- └── master

kubernetes/pkg

- .
- └── BUILD
- └── OWNERS
- └── api
- └── apis
- └── auth
- └── capabilities
- └── client
- └── cloudprovider
- └── controller
- └── credentialprovider
- └── features
- └── fieldpath
- └── generated
- └── kubeapiserver
- └── kubectl
- └── kubelet
- └── **kubemark**
- └── master

kubernetes/pkg

- .
- └── BUILD
- └── OWNERS
- └── api
- └── apis
- └── auth
- └── capabilities
- └── client
- └── cloudprovider
- └── controller
- └── credentialprovider
- └── features
- └── fieldpath
- └── generated
- └── kubeapiserver
- └── kubectl
- └── kubelet
- └── kubemark
- └── master

kubernetes/pkg

- kubelet
- kubemark
- master
- **printers**
- probe
- proxy
- quota
- registry
- routes
- scheduler
- security
- securitycontext
- serviceaccount
- ssh
- util
- volume
- watch
- windows



kubernetes/pkg

```
└── kubelet
└── kubemark
└── master
└── printers
└── probe
    └── proxy
└── quota
└── registry
└── routes
└── scheduler
└── security
└── securitycontext
└── serviceaccount
└── ssh
└── util
└── volume
└── watch
└── windows
```

kubernetes/pkg

```
└── kubelet
└── kubemark
└── master
└── printers
└── probe
└── proxy
└── quota
    quota
└── registry
└── routes
└── scheduler
└── security
└── securitycontext
└── serviceaccount
└── ssh
└── util
└── volume
└── watch
└── windows
```

kubernetes/pkg

- kubelet
- kubemark
- master
- printers
- probe
- proxy
- quota
- **registry**
- routes
- scheduler
- security
- securitycontext
- serviceaccount
- ssh
- util
- volume
- watch
- windows



kubernetes/pkg

- kubelet
- kubemark
- master
- printers
- probe
- proxy
- quota
- registry
- routes
- **scheduler**
- security
- securitycontext
- serviceaccount
- ssh
- util
- volume
- watch
- windows



kubernetes/pkg

```
└── kubelet
└── kubemark
└── master
└── printers
└── probe
└── proxy
└── quota
└── registry
└── routes
└── scheduler
└── security (1)
└── securitycontext
└── serviceaccount
└── ssh
└── util
└── volume
└── watch
└── windows
```

kubernetes/pkg

```
└── kubelet
└── kubemark
└── master
└── printers
└── probe
└── proxy
└── quota
└── registry
└── routes
└── scheduler
└── security
└── securitycontext
└── serviceaccount
└── ssh
└── util
└── volume
└── watch
└── windows
```

kubernetes/pkg

```
└── kubelet
└── kubemark
└── master
└── printers
└── probe
└── proxy
└── quota
└── registry
└── routes
└── scheduler
└── security
└── securitycontext
└── serviceaccount
└── ssh
└── util
└── volume
└── watch
└── windows
```

kubernetes/pkg

```
└── kubelet
└── kubemark
└── master
└── printers
└── probe
└── proxy
└── quota
└── registry
└── routes
└── scheduler
└── security
└── securitycontext
└── serviceaccount
└── ssh
└── util
└── volume
└── watch
└── windows
```

kubernetes/pkg

- kubelet
- kubemark
- master
- printers
- probe
- proxy
- quota
- registry
- routes
- scheduler
- security
- securitycontext
- serviceaccount
- ssh
- util
- volume
- watch
- windows

kubernetes/pkg

```
└── kubelet
└── kubemark
└── master
└── printers
└── probe
└── proxy
└── quota
└── registry
└── routes
└── scheduler
└── security
└── securitycontext
└── serviceaccount
└── ssh
└── util
└── volume
└── watch
└── windows
```

kubernetes/pkg

- kubelet
- kubemark
- master
- printers
- probe
- proxy
- quota
- registry
- routes
- scheduler
- security
- securitycontext
- serviceaccount
- ssh
- util
- volume
- watch
- windows

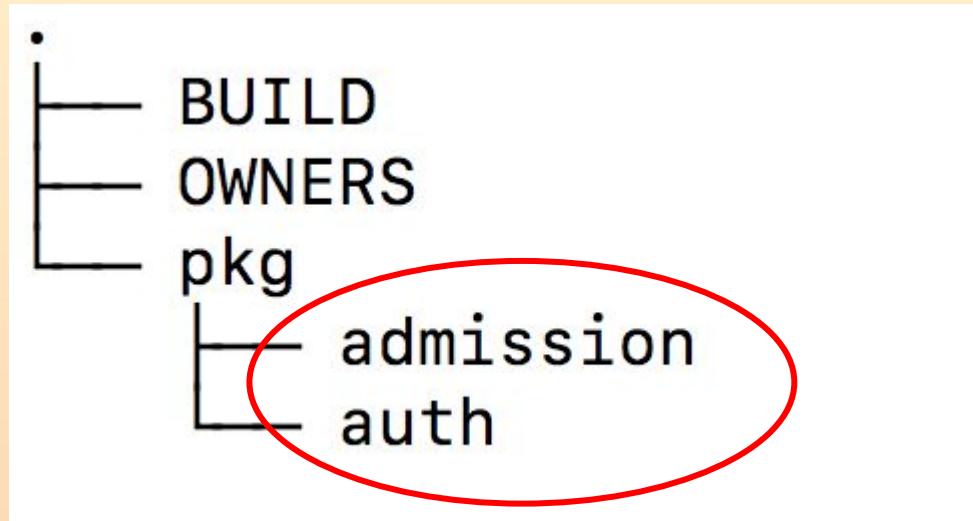
kubernetes

```
[@guin:kubernetes (master) 🐧 tree -d -L 1
```

```
.
├── Godeps
├── _output
├── _tmp
├── api
├── build
├── cluster
├── cmd
├── docs
├── hack
├── logo
├── pkg
└── plugin  
├── staging
├── test
├── third_party
├── translations
└── vendor
```



kubernetes/plugin



kubernetes

```
[@guin:kubernetes (master) 🐧 tree -d -L 1
```

```
.  
├── Godeps  
├── _output  
├── _tmp  
├── api  
├── build  
├── cluster  
├── cmd  
├── docs  
├── hack  
├── logo  
├── pkg  
├── plugin  
└── staging  
    └── test  
├── third_party  
├── translations  
└── vendor
```



kubernetes

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kubernetes/staging/src/k8s.io

```
.  
+- api  
+- apiextensions-apiserver    
+- apimachinery  
+- apiserver  
+- cli-runtime  
+- client-go  
+- cloud-provider  
+- cluster-bootstrap  
+- code-generator  
+- component-base  
+- cri-api  
+- csi-translation-lib  
+- kube-aggregator  
+- kube-controller-manager  
+- kube-proxy  
+- kube-scheduler  
+- kubectl  
+- kubelet  
+- legacy-cloud-providers  
+- metrics  
+- node-api  
+- sample-apiserver  
+- sample-cli-plugin  
+- sample-controller
```



kubernetes/staging/src/k8s.io

```
.  
  api  
  apiextensions-apiserver  
  apimachinery (red circle)  
  apiserver  
  cli-runtime  
  client-go  
  cloud-provider  
  cluster-bootstrap  
  code-generator  
  component-base  
  cri-api  
  csi-translation-lib  
  kube-aggregator  
  kube-controller-manager  
  kube-proxy  
  kube-scheduler  
  kubectl  
  kubelet  
  legacy-cloud-providers  
  metrics  
  node-api  
  sample-apiserver  
  sample-cli-plugin  
  sample-controller
```

kubernetes/staging/src/k8s.io

```
.  
|- api  
|- apiextensions-apiserver  
|- apimachinery  
|- apiserver  
|- cli-runtime    
|- client-go  
|- cloud-provider  
|- cluster-bootstrap  
|- code-generator  
|- component-base  
|- cri-api  
|- csi-translation-lib  
|- kube-aggregator  
|- kube-controller-manager  
|- kube-proxy  
|- kube-scheduler  
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|- kubelet  
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|- metrics  
|- node-api  
|- sample-apiserver  
|- sample-cli-plugin  
|- sample-controller
```



kubernetes

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kubernetes/staging/src/k8s.io

```
.  
|- api  
|- apiextensions-apiserver  
|- apimachinery  
|- apiserver  
|- cli-runtime  
|- client-go    
|- cloud-provider  
|- cluster-bootstrap  
|- code-generator  
|- component-base  
|- cri-api  
|- csi-translation-lib  
|- kube-aggregator  
|- kube-controller-manager  
|- kube-proxy  
|- kube-scheduler  
|- kubectl  
|- kubelet  
|- legacy-cloud-providers  
|- metrics  
|- node-api  
|- sample-apiserver  
|- sample-cli-plugin  
|- sample-controller
```



kubernetes

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kubernetes/staging/src/k8s.io

```
.  
|- api  
|- apiextensions-apiserver  
|- apimachinery  
|- apiserver  
|- cli-runtime  
|- client-go  
|- cloud-provider    
|- cluster-bootstrap  
|- code-generator  
|- component-base  
|- cri-api  
|- csi-translation-lib  
|- kube-aggregator  
|- kube-controller-manager  
|- kube-proxy  
|- kube-scheduler  
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|- kubelet  
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|- metrics  
|- node-api  
|- sample-apiserver  
|- sample-cli-plugin  
|- sample-controller
```



kubernetes/staging/src/k8s.io

```
.  
|- api  
|- apiextensions-apiserver  
|- apimachinery  
|- apiserver  
|- cli-runtime  
|- client-go  
|- cloud-provider  
|- cluster-bootstrap (red circle)  
|- code generator  
|- component-base  
|- cri-api  
|- csi-translation-lib  
|- kube-aggregator  
|- kube-controller-manager  
|- kube-proxy  
|- kube-scheduler  
|- kubectl  
|- kubelet  
|- legacy-cloud-providers  
|- metrics  
|- node-api  
|- sample-apiserver  
|- sample-cli-plugin  
|- sample-controller
```

kubernetes/staging/src/k8s.io

```
.
```

- |-- api
- |-- apiextensions-apiserver
- |-- apimachinery
- |-- apiserver
- |-- cli-runtime
- |-- client-go
- |-- cloud-provider
- |-- cluster-bootstrap
- | └── **code-generator**
- |-- component-base
- |-- cri-api
- |-- csi-translation-lib
- |-- kube-aggregator
- |-- kube-controller-manager
- |-- kube-proxy
- |-- kube-scheduler
- |-- kubectl
- |-- kubelet
- |-- legacy-cloud-providers
- |-- metrics
- |-- node-api
- |-- sample-apiserver
- |-- sample-cli-plugin
- |-- sample-controller

kubernetes/staging/src/k8s.io

```
.
```

- |-- api
- |-- apiextensions-apiserver
- |-- apimachinery
- |-- apiserver
- |-- cli-runtime
- |-- client-go
- |-- cloud-provider
- |-- cluster-bootstrap
- |-- code-generator
- | └── component-base | |
- |-- cri-api
- |-- csi-translation-lib
- |-- kube-aggregator
- |-- kube-controller-manager
- |-- kube-proxy
- |-- kube-scheduler
- |-- kubectl
- |-- kubelet
- |-- legacy-cloud-providers
- |-- metrics
- |-- node-api
- |-- sample-apiserver
- |-- sample-cli-plugin
- |-- sample-controller

kubernetes/staging/src/k8s.io

```
.
```

- └── api
- └── apiextensions-apiserver
- └── apimachinery
- └── apiserver
- └── cli-runtime
- └── client-go
- └── cloud-provider
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- └── cri-api
- └── csi-translation-lib
- └── kube-aggregator
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- └── kube-proxy
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kubernetes/staging/src/k8s.io

```
.
```

- └── api
- └── apiextensions-apiserver
- └── apimachinery
- └── apiserver
- └── cli-runtime
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- └── kube-proxy
- └── kube-scheduler
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- └── legacy-cloud-providers
- └── metrics
- └── node-api
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- └── sample-cli-plugin
- └── sample-controller

kubernetes/staging/src/k8s.io

```
.
```

- └── api
- └── apiextensions-apiserver
- └── apimachinery
- └── apiserver
- └── cli-runtime
- └── client-go
- └── cloud-provider
- └── cluster-bootstrap
- └── code-generator
- └── component-base
- └── cri-api
- └── csi-translation-lib
- └── **kube-aggregator**
- └── kube-controller-manager
- └── kube-proxy
- └── kube-scheduler
- └── kubectl
- └── kubelet
- └── legacy-cloud-providers
- └── metrics
- └── node-api
- └── sample-apiserver
- └── sample-cli-plugin
- └── sample-controller

kubernetes/staging/src/k8s.io

```
.
```

- └── api
- └── apiextensions-apiserver
- └── apimachinery
- └── apiserver
- └── cli-runtime
- └── client-go
- └── cloud-provider
- └── cluster-bootstrap
- └── code-generator
- └── component-base
- └── cri-api
- └── csi-translation-lib
- └── kube-aggregator
- └── **kube-controller-manager**
- └── kube-proxy
- └── kube-scheduler
- └── kubectl
- └── kubelet
- └── legacy-cloud-providers
- └── metrics
- └── node-api
- └── sample-apiserver
- └── sample-cli-plugin
- └── sample-controller

kubernetes/staging/src/k8s.io

```
.  
|- api  
|- apiextensions-apiserver  
|- apimachinery  
|- apiserver  
|- cli-runtime  
|- client-go  
|- cloud-provider  
|- cluster-bootstrap  
|- code-generator  
|- component-base  
|- cri-api  
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|- kube-controller-manager  
|- kube-proxy  
|- kube-scheduler  
|- kubectl  
|- kubelet  
|- legacy-cloud-providers  
|- metrics  
|- node-api  
|- sample-apiserver  
|- sample-cli-plugin  
|- sample-controller
```

kubernetes/staging/src/k8s.io

```
.
```

- |-- api
- |-- apiextensions-apiserver
- |-- apimachinery
- |-- apiserver
- |-- cli-runtime
- |-- client-go
- |-- cloud-provider
- |-- cluster-bootstrap
- |-- code-generator
- |-- component-base
- |-- cri-api
- |-- csi-translation-lib
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- |-- kube-proxy
- |-- kube-scheduler
- |-- kubectl
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- | └── metrics
- |-- node-api
- |-- sample-apiserver
- |-- sample-cli-plugin
- |-- sample-controller

kubernetes/staging/src/k8s.io

```
.
```

- |-- api
- |-- apiextensions-apiserver
- |-- apimachinery
- |-- apiserver
- |-- cli-runtime
- |-- client-go
- |-- cloud-provider
- |-- cluster-bootstrap
- |-- code-generator
- |-- component-base
- |-- cri-api
- |-- csi-translation-lib
- |-- kube-aggregator
- |-- kube-controller-manager
- |-- kube-proxy
- |-- kube-scheduler
- |-- kubectl
- |-- kubelet
- |-- legacy-cloud-providers
- |-- metrics
- | └── node-api
- |-- sample-apiserver
- |-- sample-cli-plugin
- |-- sample-controller

kubernetes/staging/src/k8s.io

```
.
```

- api
- apiextensions-apiserver
- apimachinery
- apiserver
- cli-runtime
- client-go
- cloud-provider
- cluster-bootstrap
- code-generator
- component-base
- cri-api
- csi-translation-lib
- kube-aggregator
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- kube-proxy
- kube-scheduler
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- legacy-cloud-providers
- metrics
- node-api
- sample-apiserver
- sample-cli-plugin
- sample-controller



kubernetes

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kubernetes

```
[@guin:kubernetes (master) 🐧 tree -d -L 1
```

```
.
├── Godeps
├── _output
├── _tmp
├── api
├── build
├── cluster
├── cmd
├── docs
├── hack
├── logo
├── pkg
├── plugin
├── staging
└── test  
├── third_party
├── translations
└── vendor
```



A Side Tour To Test-Infra

README.md



Prow is a Kubernetes based CI/CD system. Jobs can be triggered by various types of events and report their status to many different services. In addition to job execution, Prow provides GitHub automation in the form of policy enforcement, chat-ops via `/foo` style commands, and automatic PR merging.

See the [GoDoc](#) for library docs. Please note that these libraries are intended for use by prow only, and we do not make any attempt to preserve backwards compatibility.

For a brief overview of how Prow runs jobs take a look at "[Life of a Prow Job](#)".

To see common Prow usage and interactions flow, see the pull request interactions [sequence diagram](#).

kubernetes

```
[@guin:kubernetes (master) 🐧 tree -d -L 1
```

```
•
├── Godeps
├── _output
├── _tmp
├── api
├── build
├── cluster
├── cmd
├── docs
├── hack
├── logo
├── pkg
├── plugin
├── staging
├── test
└── third_party
    └── translations
└── vendor
```



kubernetes

```
[@guin:kubernetes (master) 🐧 tree -d -L 1
```

```
•
├── Godeps
├── _output
├── _tmp
├── api
├── build
├── cluster
├── cmd
├── docs
├── hack
├── logo
├── pkg
├── plugin
├── staging
├── test
├── third_party
└── translations
    └── vendor
```



kubernetes

```
[@guin:kubernetes (master) 🐧 tree -d -L 1
```

```
.
├── Godeps
├── _output
├── _tmp
├── api
├── build
├── cluster
├── cmd
├── docs
├── hack
├── logo
├── pkg
├── plugin
├── staging
├── test
├── third_party
└── translations
    └── vendor
```



kubernetes

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LUNCH BREAK!



WELCOME BACK



kubectl



Kube Control Kube Cuddle

Credit: [@datamattsson](#) on twitter

Building Binaries

Build and modify the kubectl binary, and use it against a locally deployed cluster



Building Binaries: Prerequisites

[go1.13.4 or later](#)

[kubernetes/kubernetes repo](#)

KinD

```
GO111MODULE="on"; go get sigs.k8s.io/kind@v0.6.0  
export PATH=$PATH:$GOPATH/bin
```

Modifying Kubectl

Open the file

cmd/kubectl/kubectl.go

with your preferred text editor.

Add “fmt” to the imports

After ~line 38

```
command := cmd.NewDefaultKubectlCommand()
```

add a print statement

```
fmt.Println("Alpacas are fluffy")
```

Building the modified kubectl

```
$make WHAT=cmd/kubectl
```

Using The Binary

Deploy a cluster using KinD

```
kind create cluster \  
--image=kubecon.goharbor.io/contribsummit/kindest/node:v1.16.3
```

Run the binary you built against the cluster!

```
./_output/bin/kubectl get po
```

Using The Binary

```
usage: kubectl [options] <cmd> [args...]
alison@MacBook-Pro ~% kubectl get po
o hallo
No resources found in default namespace.
```



Opening A Pull Request, Revisited



Richard Schneeman 🤠
@schneems

"Sorry for the delay"

- Ancient Open Source Issue Greeting

2:26 PM · Nov 5, 2019 · [Twitter Web App](#)

Find an Issue



kubernetes / kubernetes

Watch 3.1k Star 59.9k Fork 21.1k

Code Issues 2,245 Pull requests 1,108 Actions Projects 9 Security Insights

Filters ▾ Labels 187 Milestones 9 New issue

Clear current search query, filters, and sorts

16 Open 32 Closed Author ▾ Labels ▾ Projects ▾ Milestones ▾ Assignee ▾ Sort ▾

ⓘ Port parsing can overflow (TOB-K8S-015: Overflows when using strconv.Atoi and downcasting the result) [area/security](#) [good first issue](#) [help wanted](#) [kind/bug](#) priority/important-soon sig/cli sig/network wg/security-audit
#81121 opened on Aug 7 by cji

ⓘ Add unit tests for Scheduler framework [good first issue](#) [help wanted](#) [kind/feature](#) sig/scheduling
#80272 opened on Jul 17 by liu-cong

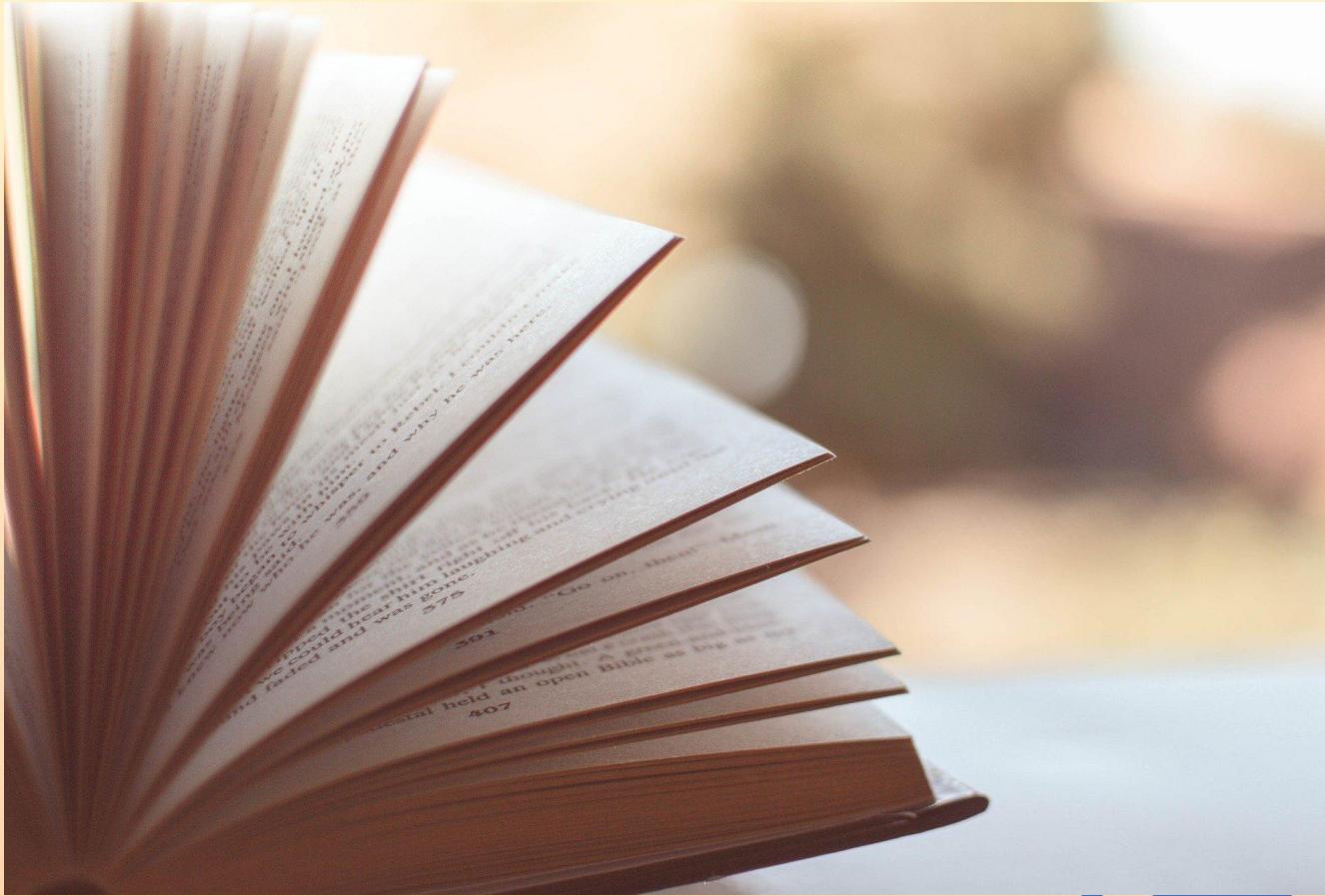
ⓘ Different Webhook with same name have same label-value in metric webhook_admission_duration_seconds [good first issue](#) [help wanted](#) [kind/bug](#) lifecycle/rotten sig/api-machinery sig/instrumentation
#79832 opened on Jul 5 by answer1991

ⓘ Support UDP with AWS NLB [area/provider/aws](#) [good first issue](#) [help wanted](#) [kind/feature](#) sig/cloud-provider
#79523 opened on Jun 28 by kirrmann v1.17

ⓘ Connect lower level traces to surrounding request handling trace [good first issue](#) [help wanted](#) [kind/feature](#) sig/api-machinery
#79209 opened on Jun 19 by jpbezt

- good first issue
- help wanted

Refer to the contributor guide



<http://git.k8s.io/community/contributors/guide>



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Do Not Boil The Ocean

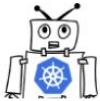


Smaller is
better

Write good
commit
messages



The Bot Will Talk To You



k8s-ci-robot commented 7 minutes ago Member + ...

[APPROVALNOTIFIER] This PR is NOT APPROVED

This pull-request has been approved by: [ksubrmnn](#)

To fully approve this pull request, please assign additional approvers.

We suggest the following additional approver: [rosti](#)

If they are not already assigned, you can assign the PR to them by writing `/assign @rosti` in a comment when ready.

The full list of commands accepted by this bot can be found [here](#).

The pull request process is described [here](#)

▼ Details

Needs approval from an approver in each of these files:

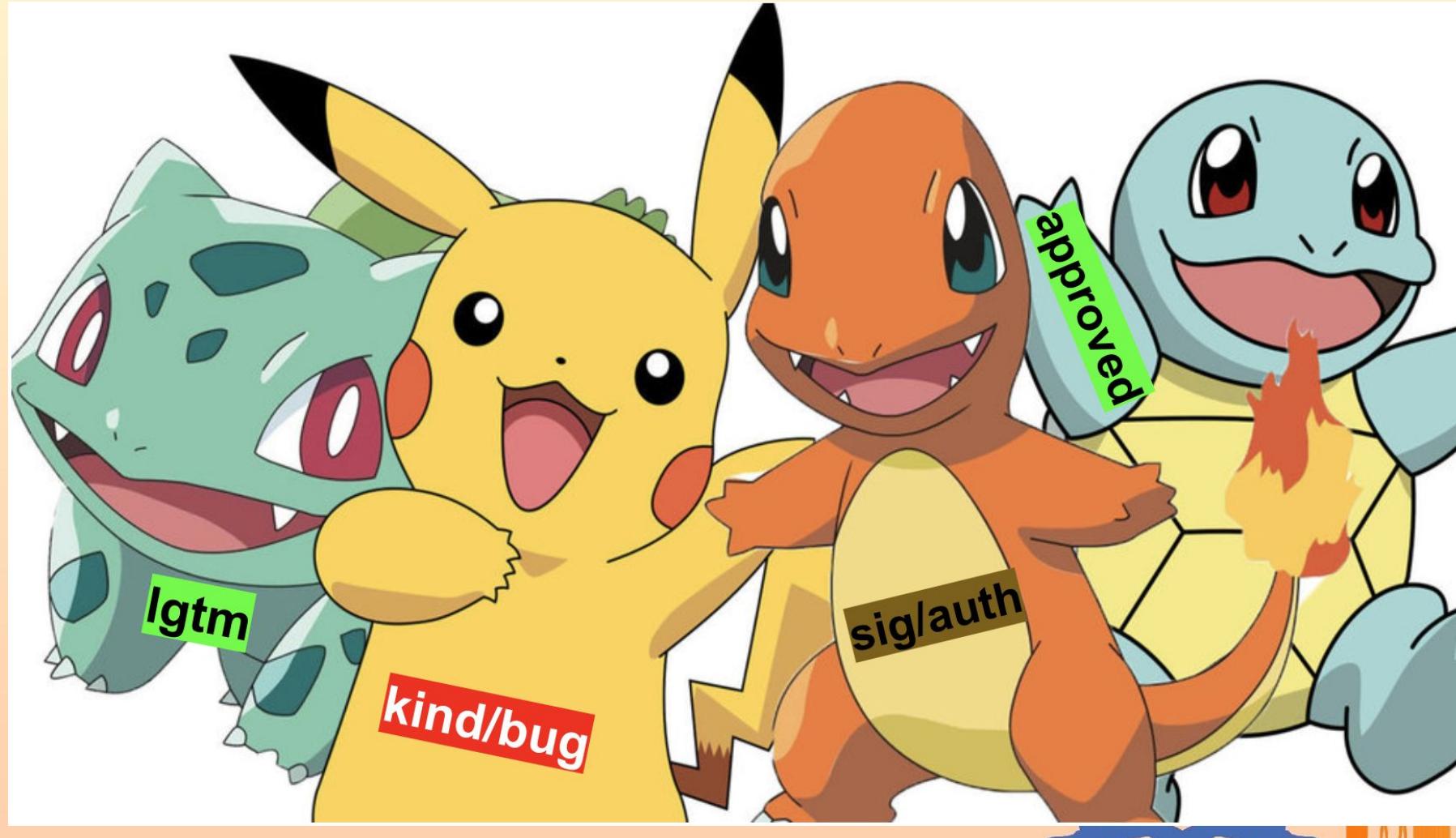
- [cmd/kubeadm/OWNERS](#)

Approvers can indicate their approval by writing `/approve` in a comment

Approvers can cancel approval by writing `/approve cancel` in a comment

Do what it says.

Labels and Bot Commands



kubernetes

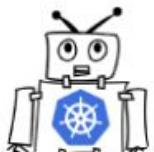
CONTRIBUTOR SUMMIT
SAN DIEGO 2019

Bot Commands

<https://prow.k8s.io/command-help>



Watch Tests



k8s-ci-robot commented 2 minutes ago

Member



...

@ksubrmnn: The following tests failed, say `/retest` to rerun them all:

Test name	Commit	Details	Rerun command
pull-kubernetes-e2e-gce	0a1251a	link	<code>/test pull-kubernetes-e2e-gce</code>
pull-kubernetes-e2e-gce-device-plugin-gpu	0a1251a	link	<code>/test pull-kubernetes-e2e-gce-device-plugin-gpu</code>

[Full PR test history](#). [Your PR dashboard](#). Please help us cut down on flakes by [linking to an open issue](#) when you hit one in your PR.

► Details

Ask For Help



Finding A Reviewer



- Follow Bot Prompts
- Ping Issue author
- OWNERS file
- [sigs.yaml](#)
- #pr-reviews on k8s Slack

PR Workflow, Recap

1. You submit Pull Request (PR) using the template
2. You add labels & notes
3. Bots validate and comment on the PR
`release-note` `cncf-cla: no` `needs-ok-to-test` `needs-kind` `needs-sig`
4. You add more labels & notes & resolve review comments
5. SIGs & OWNERS review and /approve → **approved**
6. Other contributors /lgtm → **lgtm**
7. Tests pass
8. *Tide* merges the PR

<https://prow.k8s.io/command-help>



A Beautiful First-Time Pull Request



Let token create help with joining a master #84591

[Edit](#)**Merged**k8s-ci-robot merged 1 commit into [kubernetes:master](#) from [TheLastProject:feature/print-join-as-admin-command](#) 5 days ago[Conversation 30](#)[Commits 1](#)[Checks 0](#)[Files changed 2](#)[+26 -9](#)

TheLastProject commented 13 days ago • edited

[Contributor](#) + ...**What type of PR is this?**

/kind feature

What this PR does / why we need it:

The kubeadm token create --print-join-command command is very helpful, but doesn't help with adding more masters to your cluster. This adds a --for-master flag which does setup and gives instructions for letting a master join.

Special notes for your reviewer:

This is the first time I am writing any Go code and I am still pretty new to Kubernetes, so this may be very ugly. I am also having trouble actually building Kubernetes on my device:

```
$ make WHAT=cmd/kubeadm
go/build: importGo k8s.io/kubernetes: exit status 1
can't load package: package k8s.io/kubernetes: cannot find module providing package k8s.
```

```
+++ [1031 12:54:41] Building go targets for darwin/amd64:
./vendor/k8s.io/code-generator/cmd/deepcopy-gen
go: finding k8s.io/kubernetes/vendor/k8s.io/code-generator/cmd/deepcopy-gen latest
go: finding k8s.io/kubernetes/vendor/k8s.io/code-generator/cmd latest
go: finding k8s.io/kubernetes/vendor/k8s.io/code-generator latest
go: finding k8s.io/kubernetes/vendor/k8s.io/code-generator latest
```

Reviewers

neolit123

ereslibre

fabriziopandini

Assignees

ereslibre

Labels

approved

area/kubeadm

cncf-cla: yes

kind/feature

lgtm

ok-to-test

priority/backlog

release-note

sig/cluster-lifecycle

size/M

The Contributor Playground

<https://sigs.k8s.io/contributor-playground>



Membership

Community Groups

Code Contributions

reviewing

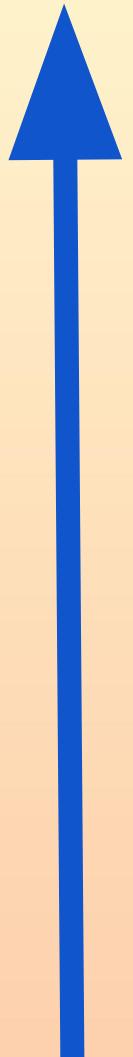
Docs

Mentorship



<http://git.k8s.io/community/community-membership.md>

Contributor Ladder



Owner

Set priorities and approve proposals for subproject
Responsibility and leadership for entire repository/directory

Approver

Approve contributions for acceptance
Highly experienced reviewer and contributor in subproject

Reviewer

History of reviewing; reviews frequently
Authorship in subproject

Member

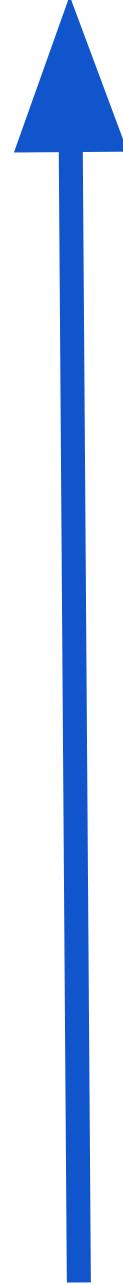
Active contributor to the project
Sponsored by two Reviewers

Non-member Contributors



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Owner

Set priorities and approve proposals for subproject
Responsibility and leadership for entire repository

Approver

Approve contributions for acceptance
Highly experienced reviewer and contributor in subproject

Reviewer

History of reviewing; reviews frequently
Authorship in subproject

Member

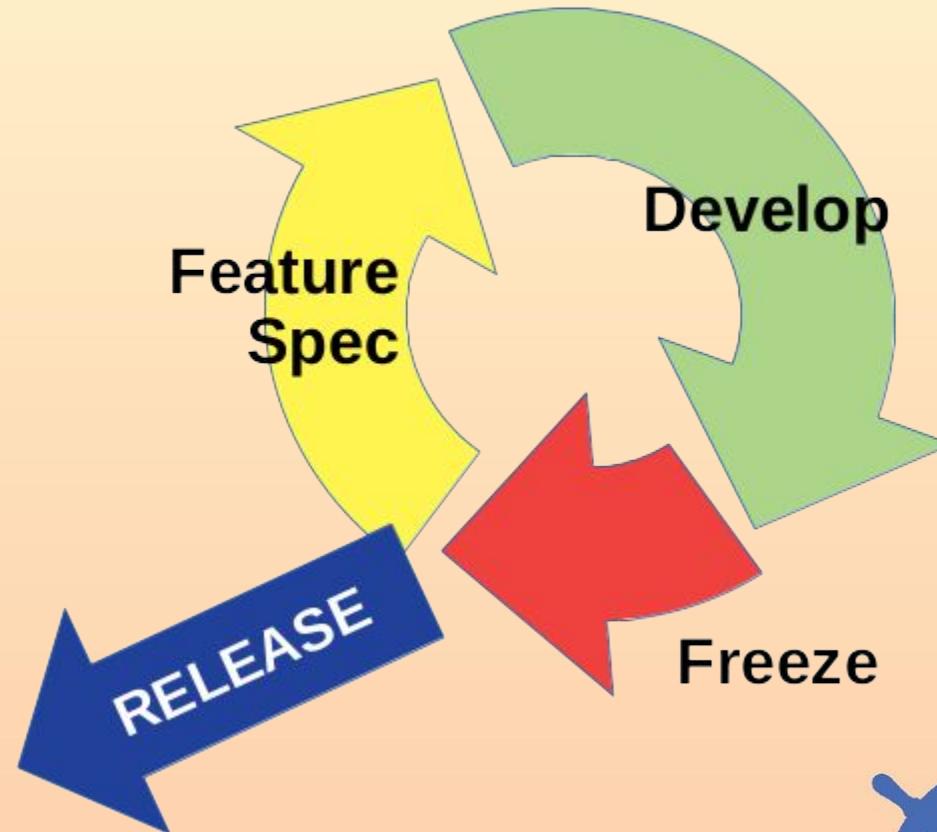
Active contributor to the project
Sponsored by two Reviewers

Non-member Contributors

Releases



The 3-month Release Cycle



Release Process

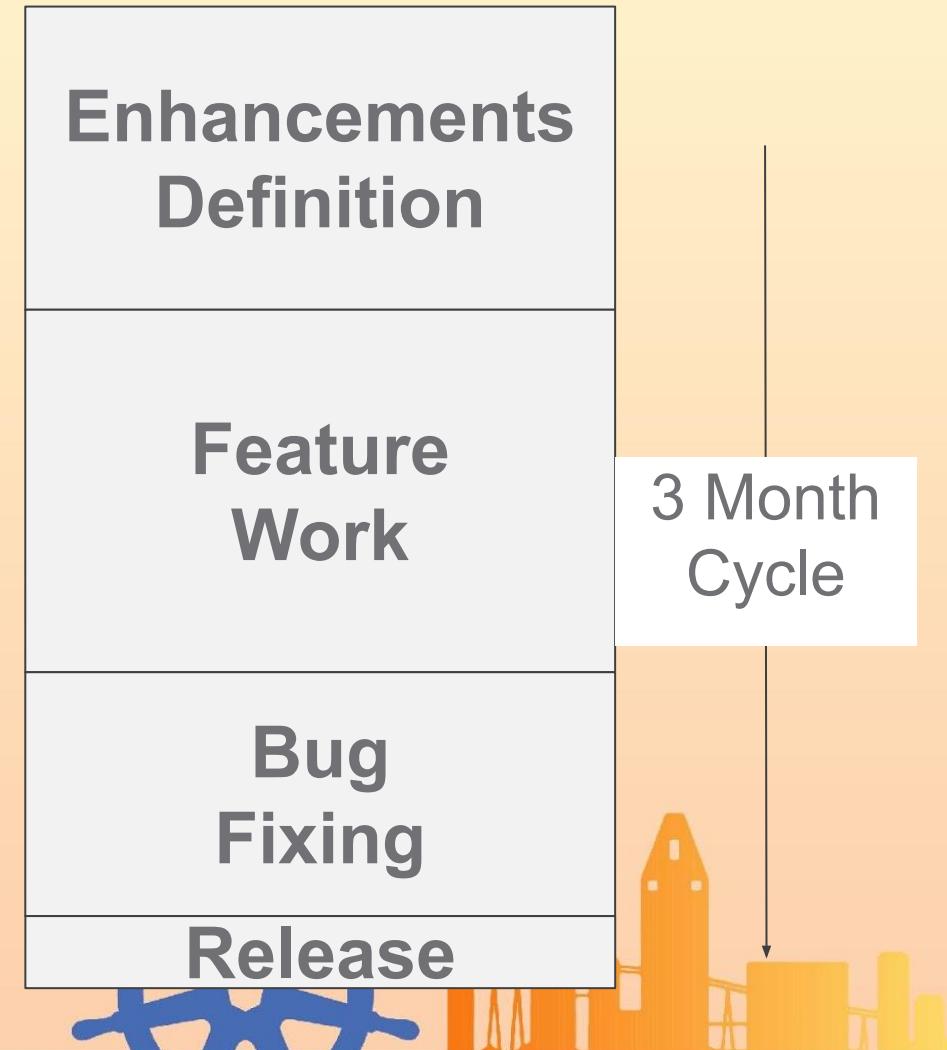
Enhancements Discussion (per SIG): ongoing

Enhancements Freeze: week ~4

Release Branch Creation: week ~7

Code Freeze: week ~8

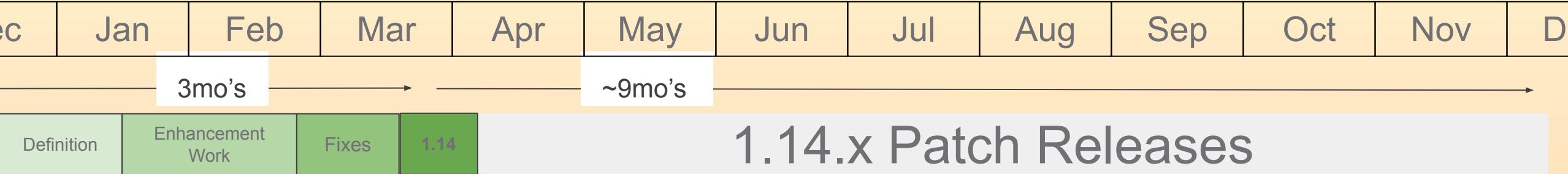
...bugs, testing, bugs, fixing, bugs, ...iterating



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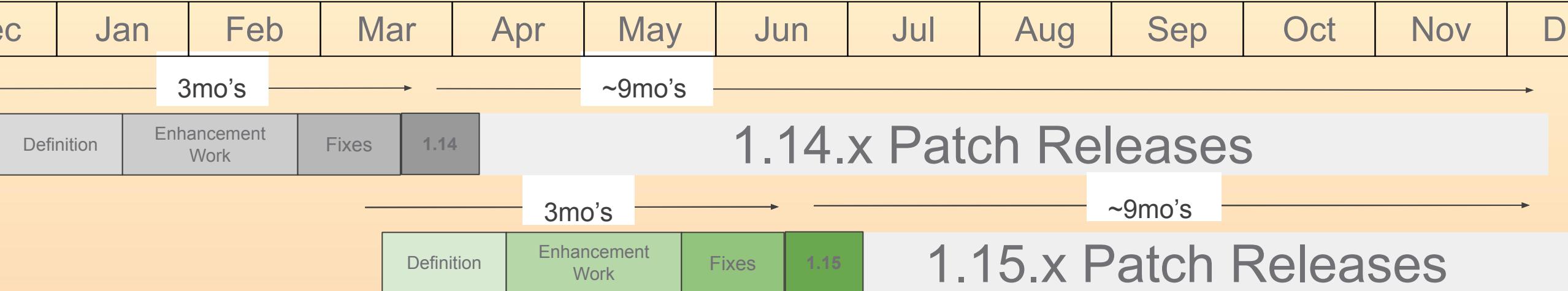
Release Lifecycle



K8s
Releases



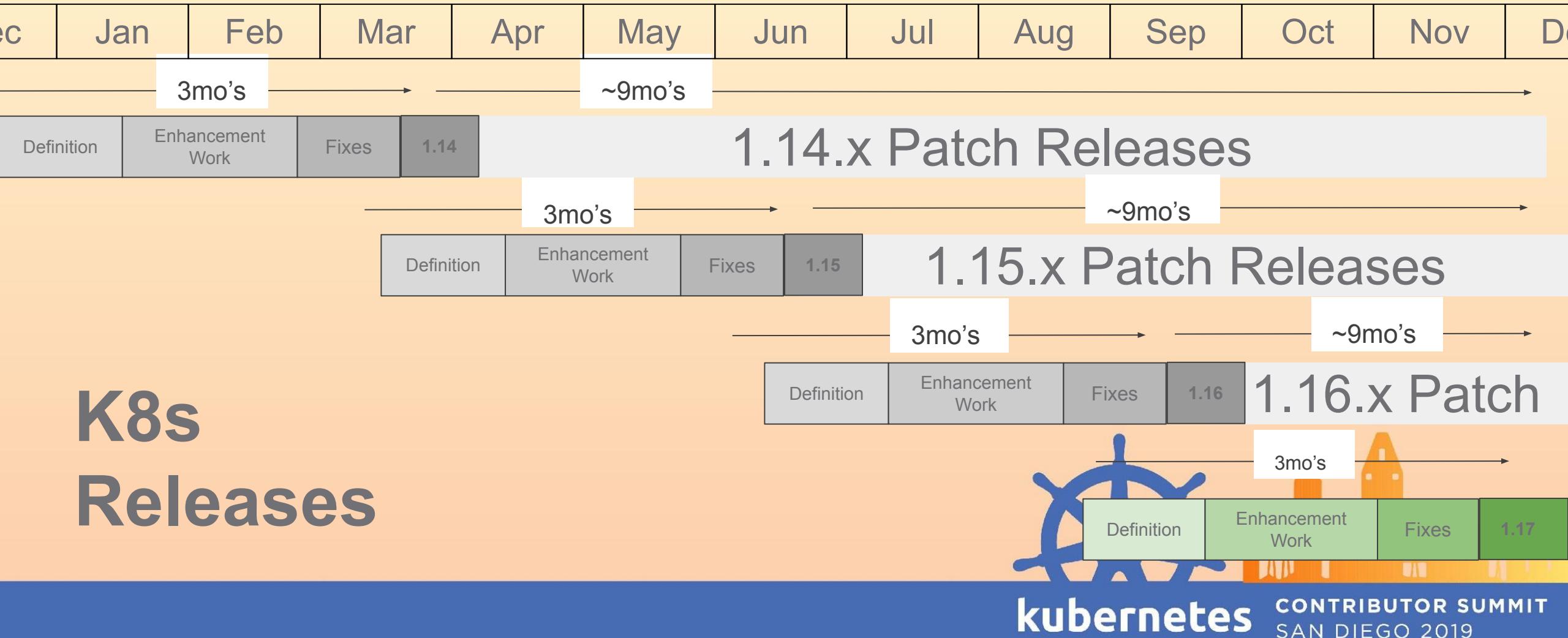
Release Lifecycle



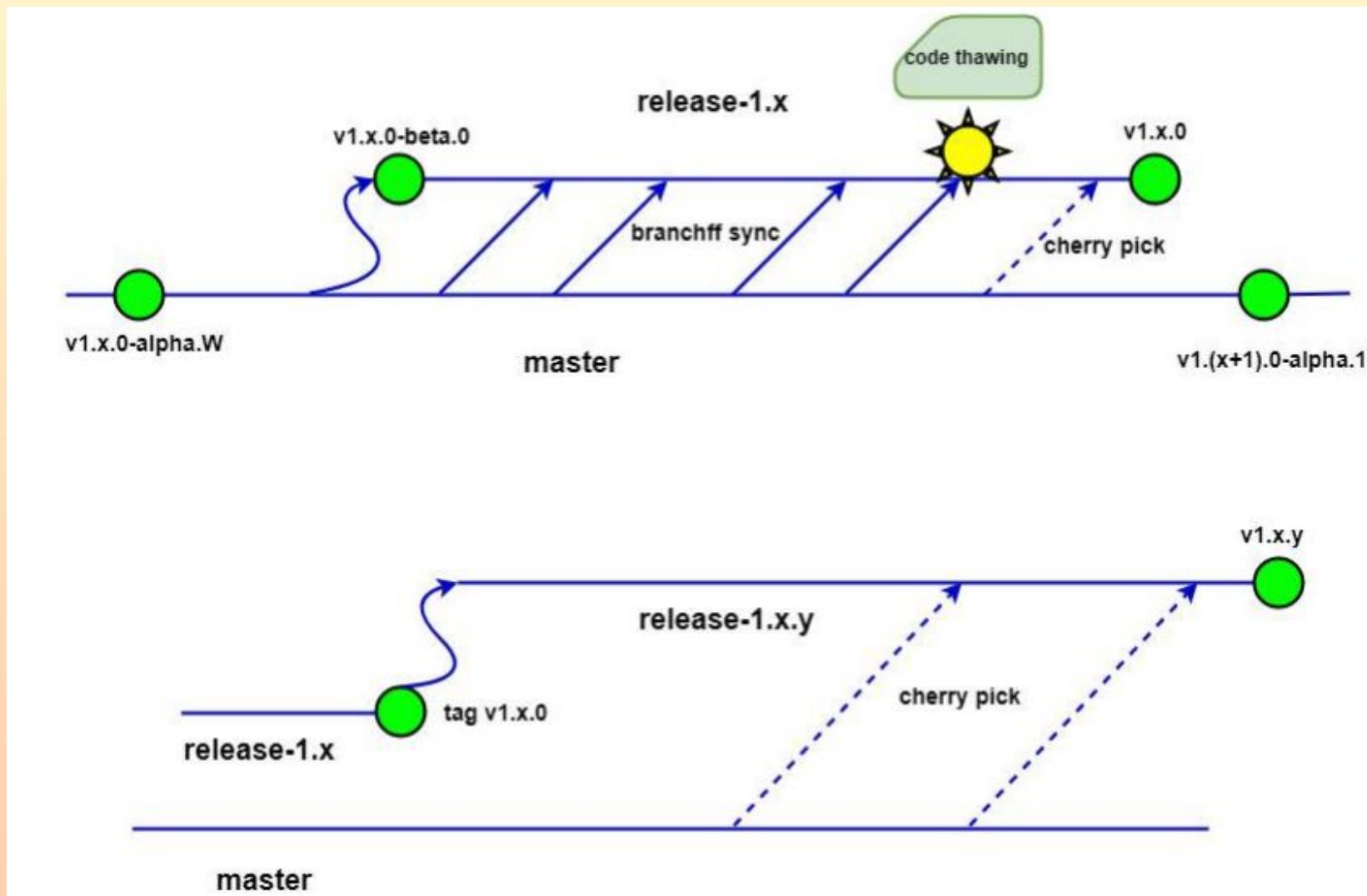
K8s
Releases



Release Lifecycle



Branch Management



Questions?



Coming Up Next:

Monday, November 18

3:30pm

- Resolving Conflict on GitHub - Paul Oliver
- TestGrid and You - Michelle Shepardson, Sean Chase
- Unconference

4:00pm

- Practical Git for Kubernetes Contributors - Christoph Blecker

4:30pm

- Brad Childs Memorial and Contributor Awards - Steering Committee, Claire Laurence, Tim Pepper

5:00pm

- SIG Meet & Greet - Dawn Foster, Jason DeTiberus

+ more
on
sched

<https://kcsna2019.sched.com>



Thank you, and
welcome aboard!



END INTERMEDIATE



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Title

Speaker Name

Content Title



Content Title

