

# From Automation to Community: A Deep Dive Into SIG Contributor Experience

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Europe 2023

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Remember the **Golden Rule**: Treat others as you would want to be treated - with kindness and respect

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### Who Are We?



Priyanka Saggu @\_psaggu



Madhav Jivrajani @MadhavJivrajani



Kaslin Fields @kaslinfields



### **Before We Start...**



# registry.k8s.io is GA!



More info on <a href="https://k8s.io/image-registry-redirect">https://k8s.io/image-registry-redirect</a>

Also see: k8s.gcr.io Redirect to registry.k8s.io - What You Need to Know

### **How Does ContribEx... ContribEx?**



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Subprojects!



• **Community** - Owns and manages overall community repo, including community group documentation and operations.



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- **Community Management** Manages operations and policy for upstream community group communication platforms.



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- **Devstats** Maintains and updates <a href="https://k8s.devstats.cncf.io">https://k8s.devstats.cncf.io</a>, including taking requests for new charts.



Elections - New subproject! Oversees running elections in the community. Maintains
documentation and software for elections.



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- Slack Infra Creates and maintains tools and automation for Kubernetes Slack.
- Contributor Comms Amplifying the success of and distributing information to Kubernetes contributors.

### **Mentoring Prereq - The 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

### **Mentoring**



- Programs / Initiatives:
  - Group Mentoring Cohorts Semi-structured group mentoring initiative with a small group of people
    - We need more SIGs/WGs to do this!
      - We are happy to help more groups kick this off, reach out to us on the #sig-contribex slack channel.
  - Shadow Programs (Building Teams) Scalable apprenticeship program
    - The folks presenting here as shadows for SIG Contribex leadership positions!

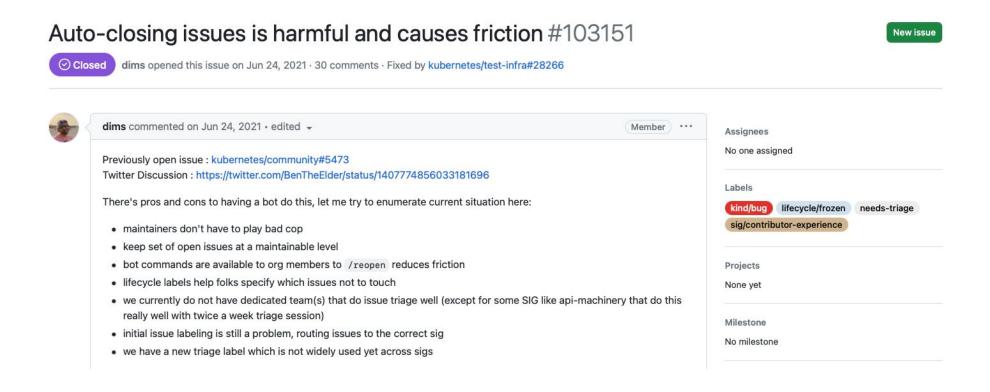
### **Mentoring**



- Few projects submitted for Google Summer of Code (GSoC)
- Others programs put on hold based on interest in the community:
  - Outreachy
  - Meet Our Contributors (merged with Office Hours)
- Need more approvers/subproject owners with bandwidth to be able to assist in mentoring efforts



#### Changes In Lifecycle and Triage Flow of Issues





#### Previous Issue Triage and Lifecycle Flow

needs-triage — /triage accepted

triage/accepted



#### Previous Issue Triage and Lifecycle Flow



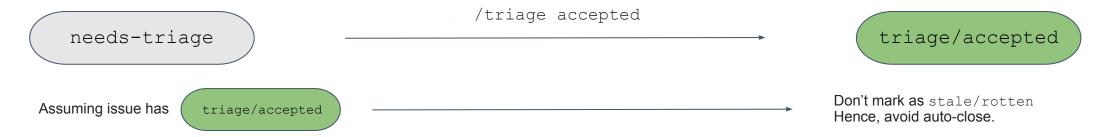




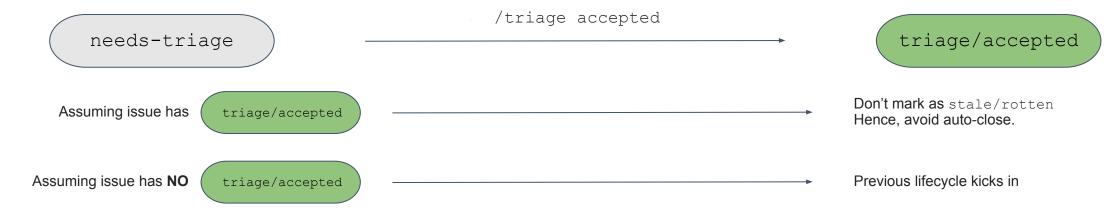
#### New Issue Triage and Lifecycle Flow

needs-triage — /triage accepted — triage/accepted





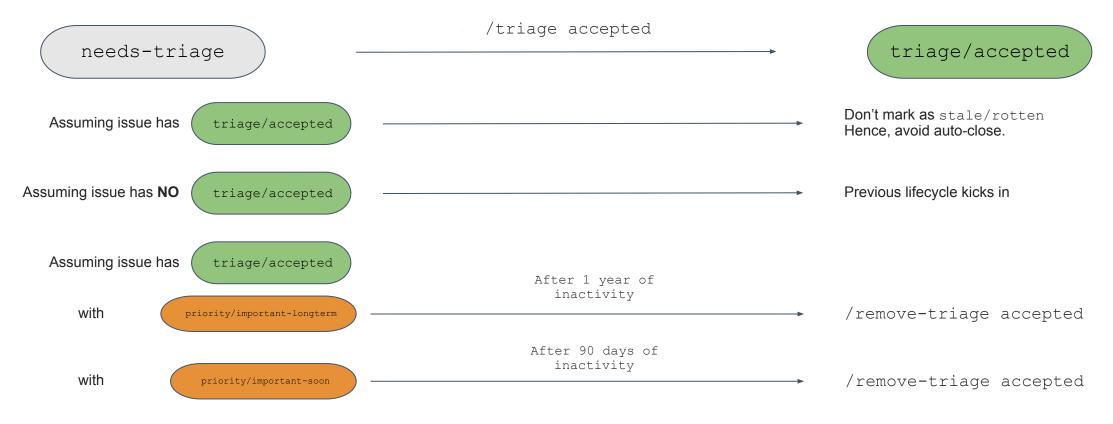




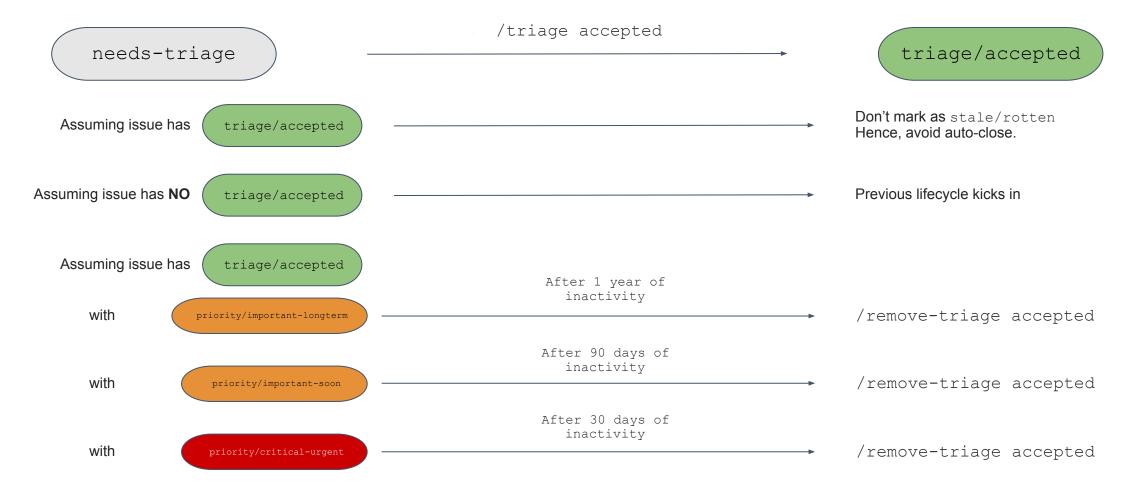




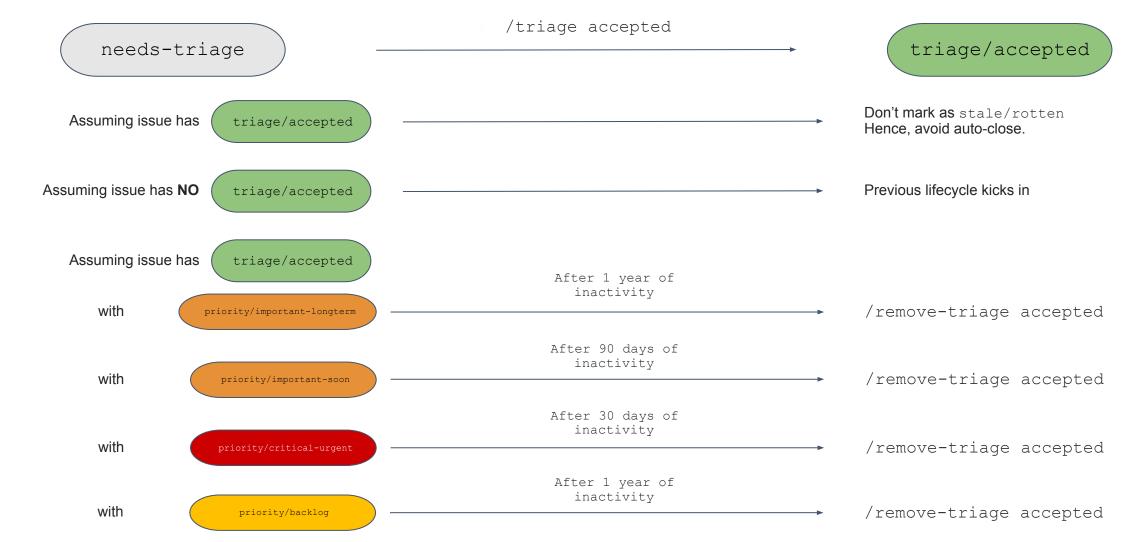




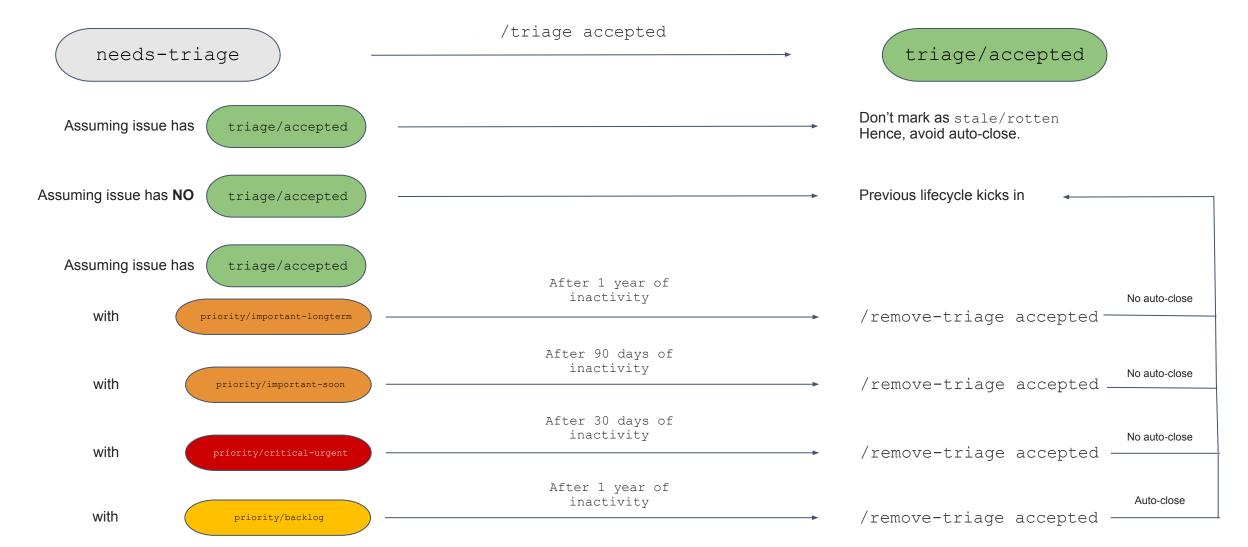














#### New Issue Triage and Lifecycle Flow

Note: Additionally, if issues have good first issue and/or help wanted labels, we exclude them from the entire lifecycle process.



Thank you @tallclair and @BenTheElder for these changes! 🐥

### **Deep Dive: Annual Reports**



#### What Are Annual Reports?

- The Kubernetes Annual Report is a document worked on and produced by the Kubernetes community to succinctly describe what the community has been upto in the past year.
- This document covers details from what each SIG/WG has been upto, to broader topics of community health and calls for action.



#### Why Are Annual Reports Important?

- Among other important things, it breaks down these updates by SIGs/WGs.
- And each of these have a Help Wanted section.
  - Use this to see what areas need most help in a SIG
  - You can also use this to aid conversations with your employer!



#### Current Process for Generating Annual Reports

```
> git clone <a href="https://github.com/kubernetes/community.git">https://github.com/kubernetes/community.git</a>
> cd community/
```

) make ANNUAL REPORT=true

https://git.k8s.io/community/generator#how-to-use

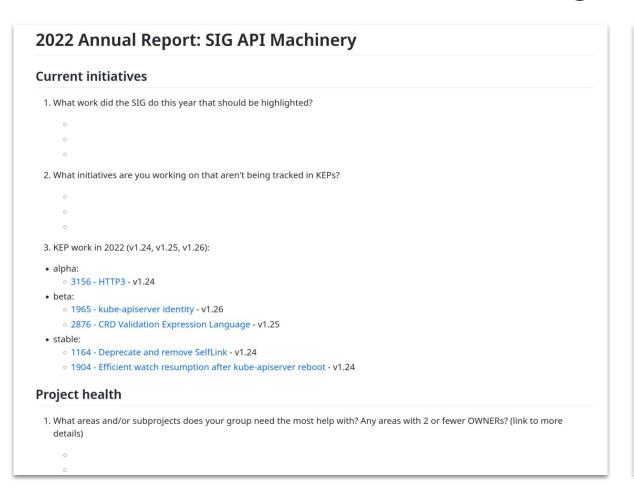


### Current Process for Generating Annual Reports

```
make ANNUAL_REPORT=true
go run ./generator/app.go
Generating annual reports
Generating generator/generated/2022 sig-docs.md
Generating sig-api-machinery/annual-report-2022.md
                                                                               Generated Annual
. . .
                                                                             Report templates for
Generating
                                                                               SIG(s) and WG(s)
generator/generated/2022 sig-instrumentation.md
Generating wg-api-expression/annual-report-2022.md
Finished generation!
```



#### Current Process for Generating Annual Reports



## 2022 Annual Report: WG API Expression **Current initiatives** 1. What work did the WG do this year that should be highlighted? For example, artifacts, reports, white papers produced this year. 2. What initiatives are you working on that aren't being tracked in KEPs? **Project health** 1. What's the current roadmap until completion of the working group? 2. Does the group have contributors from multiple companies/affiliations? 3. Are there ways end users/companies can contribute that they currently are not? If one of those ways is more full time support, what would they work on and why?



### **Current Process for Generating Annual Reports**

```
make ANNUAL REPORT=true
go run ./generator/app.go
Generating annual reports
Generating generator/generated/2022 sig-docs.md
                                                                                  Generated GitHub
                                                                                   Issue Templates
Generating sig-api-machinery/annual-report-2022.md
                                                                                   for SIG(s) and
                                                                                        WG(s)
Generating generator/generated/2022_sig-instrumentation.md
. . .
Generating wg-api-expression/annual-report-2022.md
Finished generation!
```



#### Current Process for Generating Annual Reports

```
for i in $(ls -1 generator/generated/*.md); do hub issue create -F $i && rm $i; done
```



### Current Process for Generating Annual Reports

for i in \$(ls -1 generator/generated/\*.md); do hub issue create -F \$i && rm \$i; done







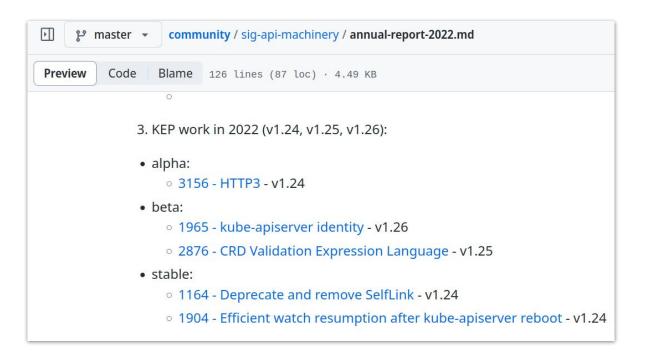
#### Sprinkling Some Automation On Annual Reports

Auto generating list of KEPs worked on by SIG(s) or WG(s) during the Annual Report year



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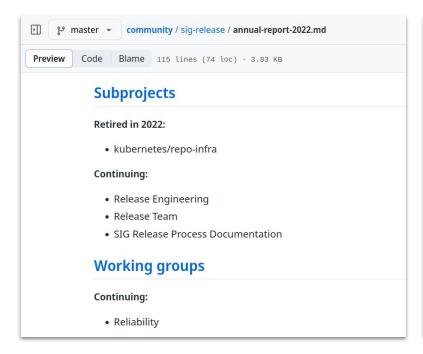
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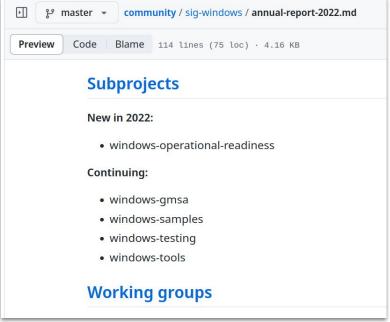
Auto-generating new, retired & continuing subprojects & working groups during the Annual Report year

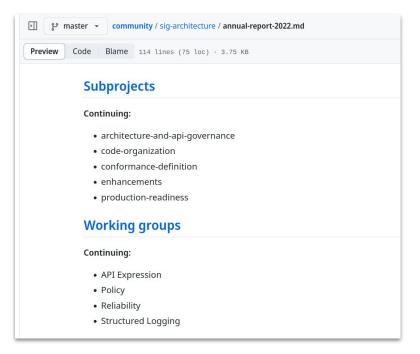


### Sprinkling Some Automation On Annual Reports

Auto-generating new, retired & continuing subprojects & working groups during the Annual Report year









### What is "Approval" and how does it work currently?

- Reviewers
- Approvers
- OWNERS file

#### An OWNERS file:

reviewers:

- X

- у

approvers:

**–** Z



```
pkg/api/OWNERS = x, y, z (approvers)
pkg/registry/OWNERS = a, b, c (approvers)
```



```
pkg/
├─ api/
    --- OWNERS
- registry/
   - OWNERS
   - apps/
pkg/api/OWNERS = x, y, z (approvers)
pkg/registry/OWNERS = a, b, c (approvers)
```



```
pkg/
├─ api/
   --- OWNERS
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   - OWNERS
   - apps/
pkg/api/OWNERS = x, y, z (approvers)
pkg/registry/OWNERS = a, b, c (approvers)
```

```
x comments: /approve
      pkg
      — api
         — first.go
         first test.go
      — registry
          - apps
         one.go
           └─ one test.go
         — first.go
```



```
pkg/
├─ api/
   --- OWNERS
- registry/
   - OWNERS
   - apps/
pkg/api/OWNERS = x, y, z (approvers)
pkg/registry/OWNERS = a, b, c (approvers)
```

```
x comments: /approve
     pkg
      — api ✓
      first.go 🗸
        └─ first test.go ✓
      — registry
         - apps
        one.go
          └─ one_test.go
        └─ first.go
```



```
pkg/
├ api/
OWNERS
- registry/
   - OWNERS
   - apps/
pkg/api/OWNERS = x, y, z (approvers)
pkg/registry/OWNERS = a, b, c (approvers)
```

```
b comments: /approve
     pkq 🗸
     — api ✓
     first.go 🗸
      └─ first test.go 🗸
     └── registry ✓
       — apps
       — one.go ✓
       └── first.go ✓
```



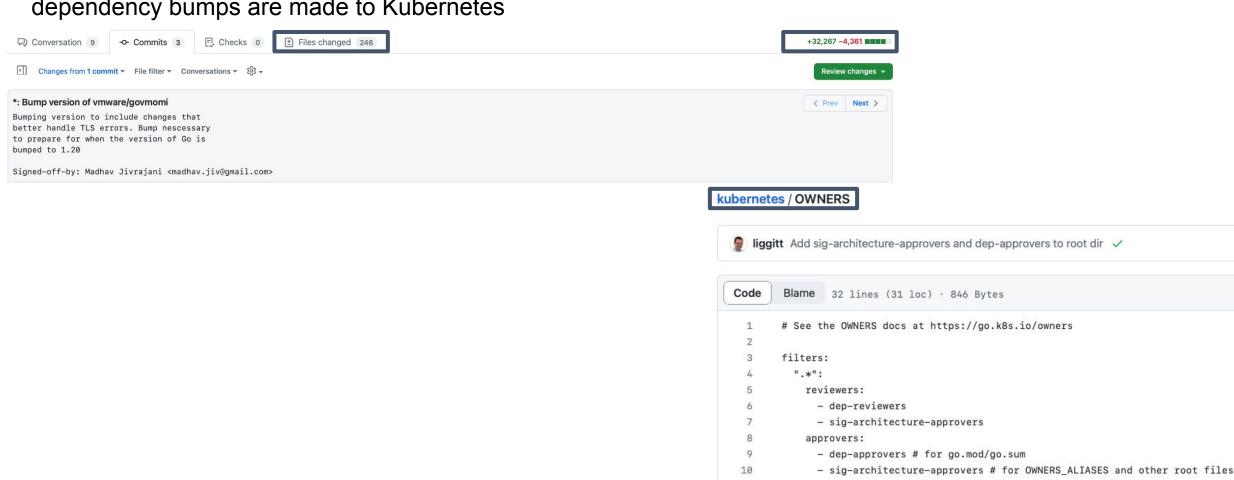
#### **Current Approval Process: The Problem**

```
pkq/
                                                 b comments: /approve
├─ api/
                                                        pkq 🗸
   --- OWNERS
                                                         — api ✓
- registry/
                                                         first.go 🗸
   - OWNERS
                                                            └─ first test.go ✓
   - apps/
                                                          — registry ✓
                                b only has expertise on testing,
                               remaining expertise lies with c, a.
                                                             - apps
                                                            — one.go ✓
pkg/api/OWNERS = x, y, z (approvers)
                                                             one test.go 🗸
pkg/registry/OWNERS = a, b, c (approvers)
                                                            └─ first.go ✓
```



#### Current Approval Process: The Problem

The problem becomes more elaborate when changes like dependency bumps are made to Kubernetes





### **Granular Approval**

This work allows approvers to approve files granularly:

- /approve files <path-to-a-single-file>
- /approve files <path-with-wild-card>
- /approve files <regex matching files>

This helps distribute approval privileges among approvers and approvers no longer have to (unavoidably) approve files they do not have confidence over.



```
b comments: /approve *_test.go
pkg/
├─ api/
                                                  pkg
  --- OWNERS
                                                   — api ✓
- registry/
                                                   first.go 🗸
   - OWNERS
                                                     └─ first test.go ✓
   - apps/
                                                   — registry
                                                      -- apps
                                                     one.go
pkg/api/OWNERS = x, y, z (approvers)
                                                      one test.go
pkg/registry/OWNERS = a, b, c (approvers)
                                                     └─ first.go
```



```
b comments: /approve *_test.go
pkq/
--- api/
                                                  pkg
  - OWNERS
                                                   — api ✓
- registry/
                                                   first.go 🗸
   - OWNERS
                                                     first test.go 🗸
   - apps/
                                                   — registry
                                                      -- apps
                                                     — one.go
pkg/api/OWNERS = x, y, z (approvers)
                                                     └─ one test.go ✓
pkg/registry/OWNERS = a, b, c (approvers)
                                                     └─ first.go
```



```
b comments: /approve * test.go
pkq/
├─ api/
- registry/
   - OWNERS
   - apps/
pkg/api/OWNERS = x, y, z (approvers)
pkg/registry/OWNERS = a, b, c (approvers)
```

```
c comments: /approve pkg/registry/apps/*
               pkq
               — api ✓
               — first.go ✓
                first test.go 🗸
                — registry
                  — apps ✓
                  — one.go ✓
                  one test.go 🗸
                  └─ first.go
```



```
pkg/api/OWNERS = x, y, z (approvers)
pkg/registry/OWNERS = a, b, c (approvers)
```

```
b comments: /approve * test.go
c comments: /approve pkg/registry/apps/*
a comments: /approve
                 pkq 🗸
                 — api ✓
                 — first.go ✓
                 first test.go 🗸
                 └─ registry ✓
                   — apps ✓
                   — one.go ✓
                    └─ one test.go ✓
                   └── first.go ✓
```

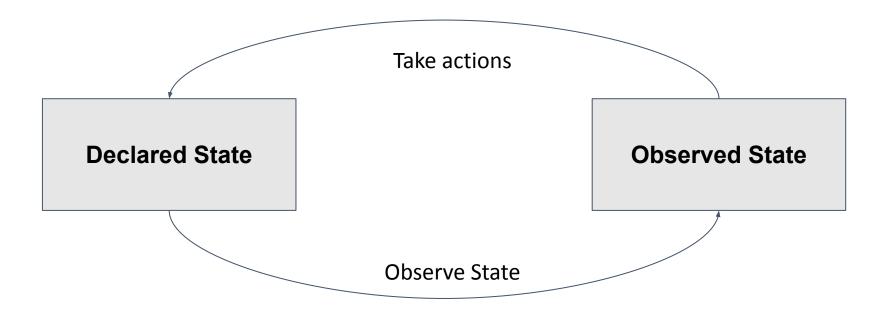
## Deep Dive: Peribolos Team Management CloudNativeCon Cloud Cloud CloudNativeCon Cloud Cl





#### What is "Peribolos"?

#### **Kubernetes Reconciliation Loop**



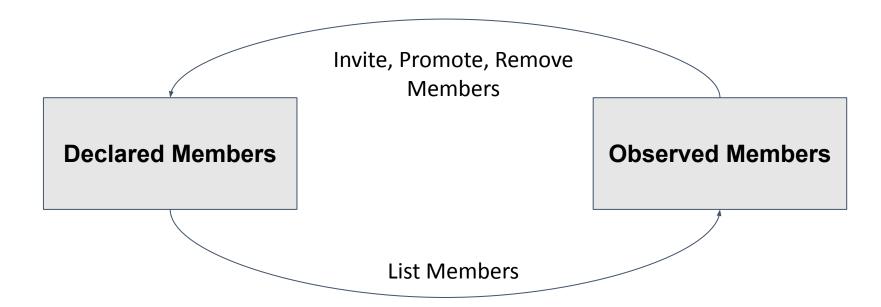
## Deep Dive: Peribolos Team Management CloudNativeCon CloudNativeCon





#### What is "Peribolos"?

#### **Org Reconciliation Loop**



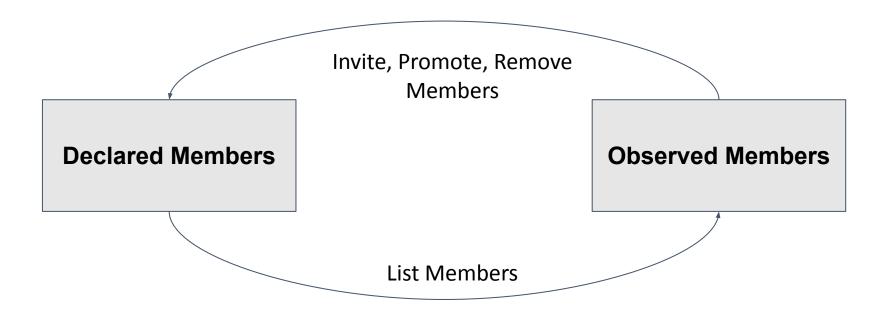
## Deep Dive: Peribolos Team Management CloudNativeCon CloudNativeCon CloudNativeCon





#### What is "Peribolos"?

#### **Org Reconciliation Loop**



Repeat for metadata, teams, et. al.

# Deep Dive: Peribolos Team Management CloudNativeCon



#### How Does Peribolos Work?

- Peribolos enables the declaration of GitHub org settings, teams, and memberships in yaml format.
- GitHub is then updated to match the declared Org configuration.

## Deep Dive: Peribolos Team Management CloudNativeCon Cloud Cloud





#### How Does Peribolos Work?

```
→ Top Level Key
orqs:
                             Name of GitHub Organisation ("kubernetes", "kubernetes-sigs", etc)
  this-org:
    company: foo
   email: foo
   name: foo
   description: foo
                                               Org Settings
   has organization projects: true
   has repository projects: true
   default repository permission: read
   members can create repositories: false
   members:
    - anne
    - bob
               Org Member Settings
    admins:
    - carl
```

## Deep Dive: Peribolos Team Management CloudNativeCon Cloud Cloud





#### How Does Peribolos Work?

```
orqs:
  this-org:
    teams:
                  → Teams Settings
        team-one:
            description: people working on team-one
            privacy: closed
            previously:
            - old-team-one
            members:
            - anne
                            Team Members
            maintainers:
            - jane
            repos:
            some-repo: admin
                                  Ensure Team has Listed Permissions Levels on Repos in Org
            other-repo: read
        team-two:
  that-org:
```

# Deep Dive: Peribolos Team Management CloudNativeCon





#### How Does Peribolos Work?

Peribolos can dump the current configuration of a GitHub org into a yaml format.

```
} go run ./prow/cmd/peribolos --dump kubernetes-sigs \
  --github-token-path ~/github-token > org-config.yaml
```

# Deep Dive: Peribolos Team Management CloudNativeCon





#### How Does Peribolos Work?

Peribolos can dump the current configuration of a GitHub org into a yaml format.

```
} go run ./prow/cmd/peribolos --dump kubernetes-sigs \
  --github-token-path ~/github-token > org-config.yaml
```

 Edit the `org-config.yaml` file before applying the org config, to remove any unwanted metadata that Peribolos shouldn't handle.

```
(use `org-config.yaml` for dry-run first!)
```

```
go run ./prow/cmd/peribolos --config-path org.yaml \

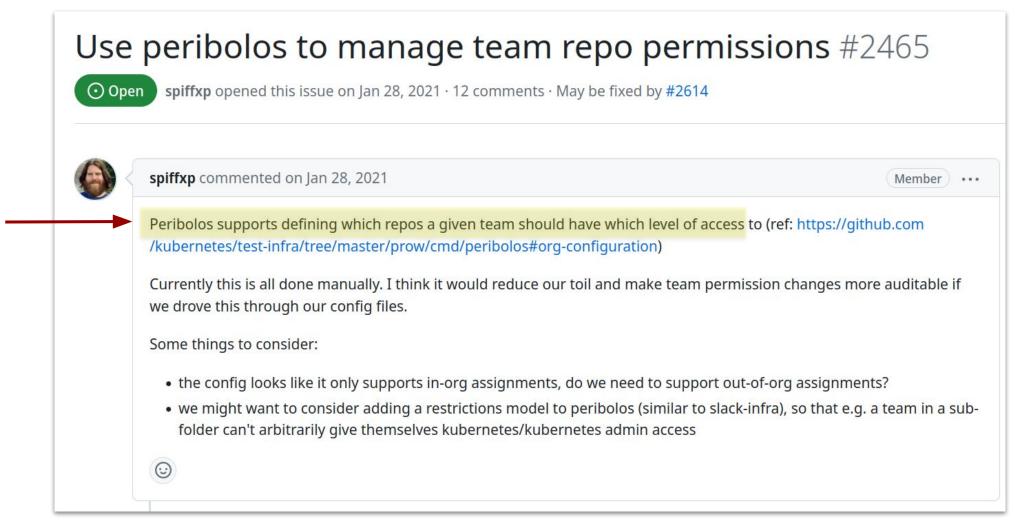
  --github-token-path ~/github-token # --confirm
```

## Deep Dive: Peribolos Team Management CloudNativeCon CloudNativeCon





#### The Present State!

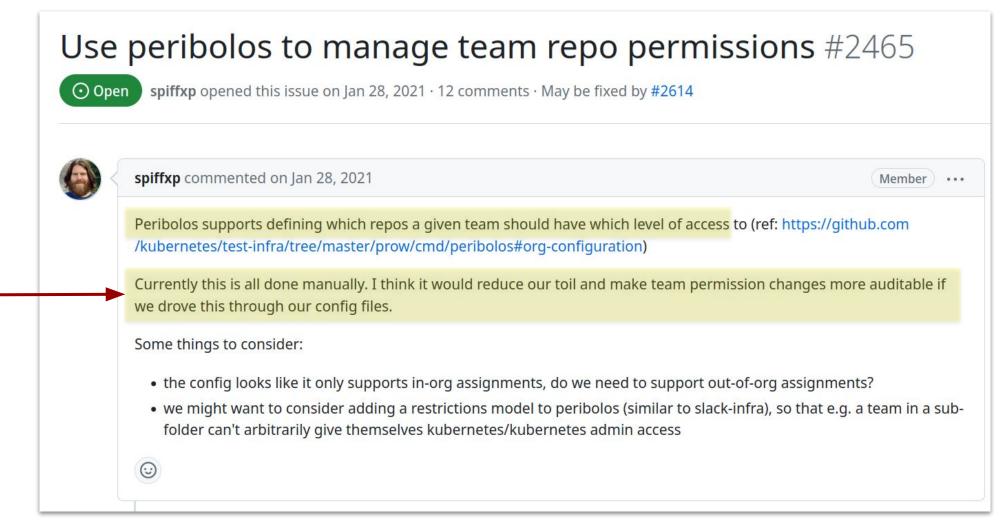


## Deep Dive: Peribolos Team Management CloudNativeCon CloudNativeCon





#### The Present State!

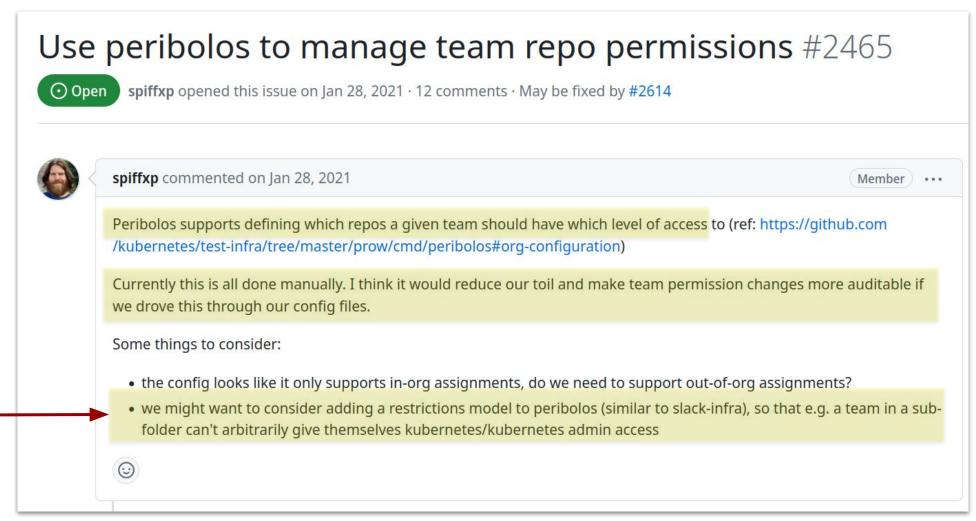


## Deep Dive: Peribolos Team Management CloudNative





#### The Present State!

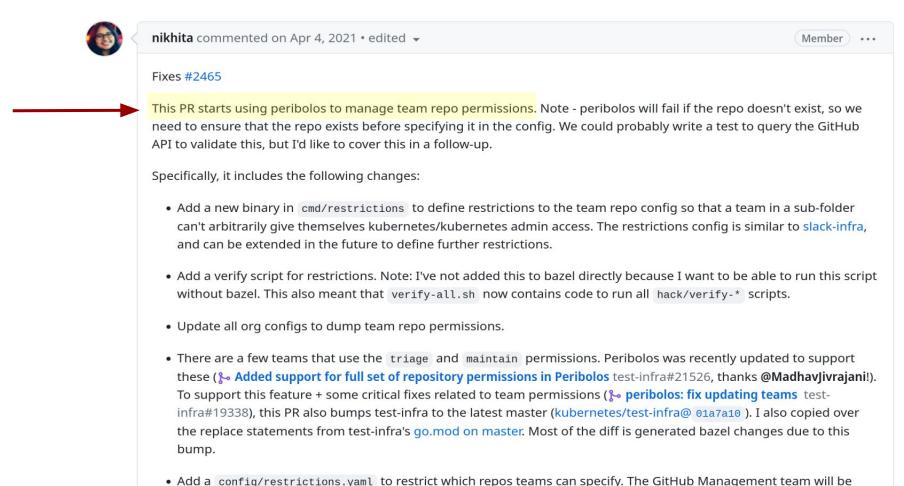


## Deep Dive: Peribolos Team Management CloudNativeCon Cloud Cloud CloudNativeCon Cloud Cl





### (WIP) Solution!



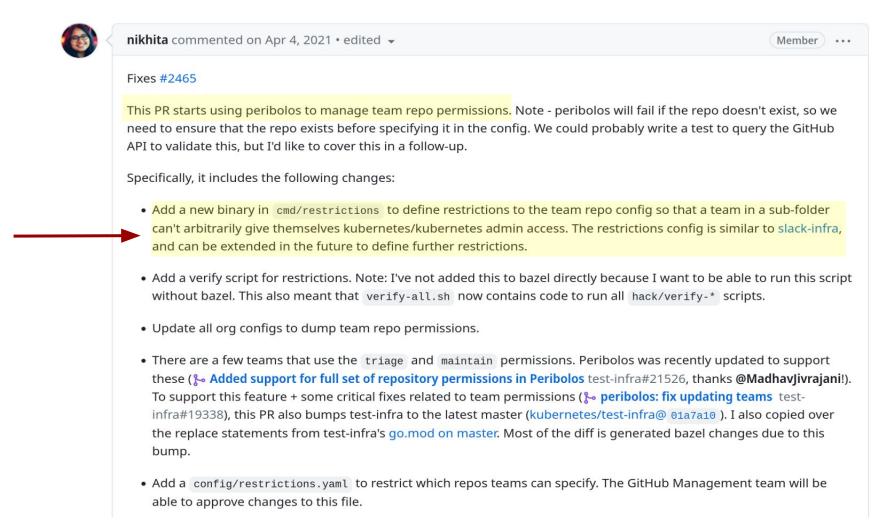
able to approve changes to this file.

## Deep Dive: Peribolos Team Management CloudNativeCon Cloud Cloud CloudNativeCon Cloud Cl





#### (WIP) Solution!



## Deep Dive: Peribolos Team Management CloudNativeCon Cloud Cloud CloudNativeCon Cloud Cl





#### (WIP) Solution!



nikhita commented on Apr 4, 2021 • edited -

Member · · ·

Fixes #2465

This PR starts using peribolos to manage team repo permissions. Note - peribolos will fail if the repo doesn't exist, so we need to ensure that the repo exists before specifying it in the config. We could probably write a test to guery the GitHub API to validate this, but I'd like to cover this in a follow-up.

Specifically, it includes the following changes:

- Add a new binary in cmd/restrictions to define restrictions to the team repo config so that a team in a sub-folder can't arbitrarily give themselves kubernetes/kubernetes admin access. The restrictions config is similar to slack-infra, and can be extended in the future to define further restrictions.
- Add a verify script for restrictions. Note: I've not added this to bazel directly because I want to be able to run this script without bazel. This also meant that verify-all.sh now contains code to run all hack/verify-\* scripts.
- Update all org configs to dump team repo permissions.
- There are a few teams that use the triage and maintain permissions. Peribolos was recently updated to support these (% Added support for full set of repository permissions in Peribolos test-infra#21526, thanks @Madhay|ivrajani!). To support this feature + some critical fixes related to team permissions (% peribolos: fix updating teams testinfra#19338), this PR also bumps test-infra to the latest master (kubernetes/test-infra@ 01a7a10 ). I also copied over the replace statements from test-infra's go, mod on master. Most of the diff is generated bazel changes due to this bump.
- Add a config/restrictions.yaml to restrict which repos teams can specify. The GitHub Management team will be able to approve changes to this file.

## Deep Dive: Peribolos Team Management CloudNativeCon Cloud Cloud





#### (WIP) Solution!

```
# restrictions.yaml
restrictions:
    . . .
  - path: "kubernetes/sigs-docs/teams.yaml"
    allowedRepos:
    - "^website"
    . . .
  - path: "kubernetes/sig-testing/teams.yaml"
    allowedRepos:
    - "^test-infra"
    - "^publishing-bot"
```

```
# kubernetes/sig-docs/teams.yaml
teams:
  website-admins:
    description: Admin access to the website
repo
    previously:
    - kubernetes-website-admins
    members:
    - divya-mohan0209
    - jimangel
    - natalisucks
    - reylejano
    privacy: closed
    repos:
      website: admin
      test-infra: admin
```

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#### (WIP) Solution!

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    members:
    - divya-mohan0209
    - jimangel
    - natalisucks
    - reylejano
   privacy: closed
    repos:
      website: admin ✓
      test-infra: admin
```



> make verify

INFO[0000] Validating restrictions for kubernetes org

"kubernetes/sig-docs/teams.yaml": cannot define repo "test-infra" for team "website-admins" FATA[0000] restriction violation(s) detected. exit status 1

## Deep Dive: Peribolos Team Management CloudNativeCon Cloud Cloud





#### (WIP) Solution!

```
# restrictions.yaml
restrictions:
    . . .
  - path: "kubernetes/sigs-docs/teams.yaml"
    allowedRepos:
    - "^website"
    . . .
   path: "kubernetes/sig-testing/teams.yaml"
    allowedRepos:
    - "^test-infra"
    - "^publishing-bot"
```

```
# kubernetes/sig-docs/teams.yaml
teams:
  website-admins:
    description: Admin access to the website
repo
    previously:
    - kubernetes-website-admins
    members:
    - divya-mohan0209
    - jimangel
    - natalisucks
    - reylejano
   privacy: closed
    repos:
      website: admin /
```

) make verify INFO[0000] Validating restrictions for kubernetes org SUCCESS verify-restrictions.sh



#### **Get Involved!**



- Every SIG/WG/UG has regularly scheduled meetings
- All meetings are uploaded to the <u>Kubernetes Community</u>
   <u>YouTube Channel</u>
- SIG ContribEx Mailing List

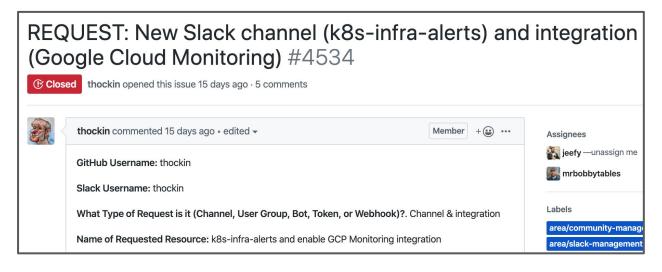
### Tips on your first SIG Meeting

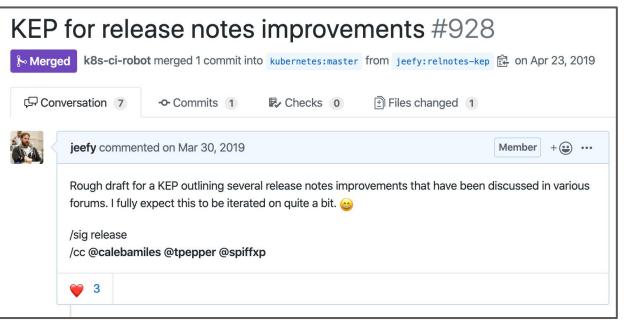


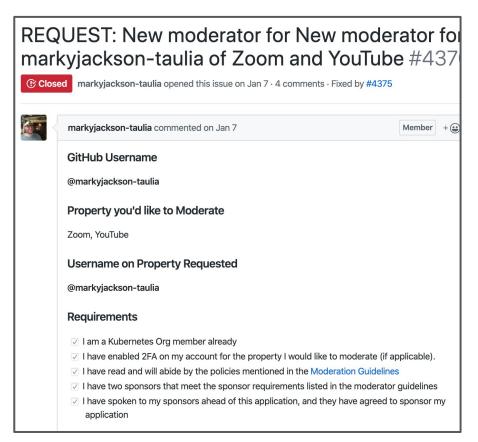
- Find a buddy
- Volunteer to take notes
- Attend regularly
  - o Be stubborn!
- Small, dependable contributions > volunteering for the world
- SIGs should have a list of "good first issues" for you to chew on, if they don't then ... start with issue triaging

#### There are non-code related paths available









If you're interested in having a non-code contributions meeting on a recurring meeting, please reach out on the #sig-contribex slack channel!

# What are the most important areas that you can help with?



- Mentoring Mentoring!
  - Get involved with the reorganization of mentoring, in any area!
    - Mentoring co-lead
    - Group Mentoring Coordinator
    - Outreachy, GSoC and/or LFX coordinator
    - SIG Lead Mentoring Coordinator

#### Where to find us



- Chairs
  - @mrbobbytables
  - o @jberkus
  - @kaslin
  - @palnabarun
  - o you?
- Technical Leads
  - @cblecker
  - o @nikhita
  - @MadhavJivrajani
  - @Priyankasaggu11929
  - o you?
- Home page: <u>README link</u>
- Slack channel: <a href="https://kubernetes.slack.com/messages/sig-contribex">https://kubernetes.slack.com/messages/sig-contribex</a>
- List: <a href="https://groups.google.com/forum/#!forum/kubernetes-sig-contribex">https://groups.google.com/forum/#!forum/kubernetes-sig-contribex</a>

### **Session Q+A**



- Virtual attendees may submit questions to speakers through the CNCF Slack channel: #2-Kubecon-sessions
- Please create a thread and tag the speaker(s) with questions about their talk.
- Questions will be answered by the speaker and/or other community members after the session concludes.





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## Thank you!