Growing in Your Kubernetes Contributor Role

Tim Pepper <tpepper@vmware.com>
VMware - Open Source Technology Center
SCaLE 17x – March 8, 2019


Kubernetes logo:
https://github.com/kubernetes/kubernetes/blob/master/logo/usage_guidelines.md

Adding kittens will make everything better!
Growing in Your Kubernetes Contributor Role
De-Mystified

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Nyan cat: https://giphy.com/gifs/nyan-cat-sl1hZliB2McAo

Kubernetes logo:
https://github.com/kubernetes/kubernetes/blob/master/logo/usage_guidelines.md

Adding kittens will make everything better!
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Kubernetes logo: https://github.com/kubernetes/kubernetes/blob/master/logo/usage_guidelines.md
SCaLE logo: https://www.socallinuxexpo.org/scale/17x/schedule/friday
A story about a large, high velocity, open source software project which started inside one company and has graduated out into a public phenomenon.
A story about a large, high velocity, open source software project which started inside one company and has graduated out into a public phenomenon.

Too buzzwordy? I agree. But bear with me…

Image source: Flickr user cuatrok77
https://www.flickr.com/photos/cuatrok77/9019854067/ (CC BY SA 2.0)
A story about a large, high velocity, open source software project which started inside one company and has graduated out into a public phenomenon.

KUBERNETES NEEDS YOU!!!

This talk is a bit different from most on the schedule (oriented towards describing a given tech’s functionality and how to deploy/use/manage some tech).

If you rely on open source, you should get involved and give back too.
Agenda

A story about a large, high velocity, open source software project which started inside one company and has graduated out into a public phenomenon.

Narrated by…

@pythomit

tpepper

tpepper@vmware.com
Prior to just a couple years ago cloud was all buzzword hype to me. I didn’t get it.

Then I got it, got involved in k8s community ~1.5 years ago…
A story about a large, high velocity, open source software project which started inside one company and has graduated out into a public phenomenon.

Narrated by…K8s newbie
- Got involved in 2017
- Org member since early 2018
- 1.10 release team "issue triage" shadow
- 1.11 release team “issue triage” lead
- 1.12 release team lead

And my contributions progressed…
A story about a large, high velocity, open source software project which started inside one company and has graduated out into a public phenomenon.

Narrated by…K8s newbie
Got involved in 2017
Org member since early 2018
1.10 release team "issue triage" shadow
1.11 release team “issue triage” lead
1.12 release team lead
SIG Release co-chair
WG LTS co-organizer

And then somebody put me in charge of stuff
A story about a large, high velocity, open source software project which started inside one company and has graduated out into a public phenomenon.

Narrated by…K8s newbie

1.12 release team lead
SIG Release co-chair
WG LTS co-organizer

But...

Wait…how’d that happen so quick?
A story about a large, high velocity, open source software project which started inside one company and has graduated out into a public phenomenon.

Narrated by... Experienced software engineer
20yrs experience, basically all open source dev
VMware OSPO, Intel OTC, IBM LTC
Drivers, kernel, distro, s/w update, storage, security, HPC, etc.,... systems s/w

cloud orchestration == systems software

Kubernetes and distributed cloud software is the next generation of systems software. It’s amazingly complex and full of fascinating technical challenges.

Every aspect of this complexity can be a unique area where you can get involved or grow:
...as a new dev or experienced dev
...as somebody new to k8s or already familiar with parts of k8s
What is Kubernetes

**Kubernetes** is an open-source system for automating deployment, scaling, and management of containerized applications.

You probably know this
What is Kubernetes

Started as...

But we lose sight of it having originally been “Kubernetes by Google”

Which means Google-isms baked in here and there. And this has been particularly prevalent in parts of the project most adjacent to release.
What is Kubernetes
And now is…

Community driven!

Just plain Kubernetes.

Almost 5 years in the open.

Almost 5 years of iteratively shifting towards a community driven release process.
Community driven!

Just plain Kubernetes.

Now under the auspices of Cloud Native Computing Foundation

Because everybody wants to have a foundation too.

But how does governance happen now that things are open and on a neutral playing field?
What are Kubernetes SIGs
Governance – Special Interest Groups (SIGs)

Yeah it’s open source, but organizationally how does it work?
What are Kubernetes SIGs
Governance – Special Interest Groups (SIGs)

Yeah it’s open source,
but organizationally how does it work?

Special Interest Groups (SIGs)
What are Kubernetes SIGs
Governance – Special Interest Groups (SIGs)

Yeah it's open source,
but organizationally how does it work?

Special Interest Groups (SIGs)

Collaboration forums where folks are doing their shared technical thing

• Vertical: Network, Storage, Node, Scheduling, Big Data
• Horizontal: Scalability, Architecture
• Project: Testing, Release, Docs, PM, Contributor Experience

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Bullet text from
https://github.com/kubernetes/community/blob/master/governance.md
What are Kubernetes SIGs

Governance – Special Interest Groups (SIGs)

<table>
<thead>
<tr>
<th>Name</th>
<th>Label</th>
<th>Chairs</th>
<th>Contact</th>
<th>Meetings</th>
</tr>
</thead>
<tbody>
<tr>
<td>API Machinery</td>
<td>api-machinery</td>
<td>* Daniel Smith, Google  * David Eads, Red Hat</td>
<td>Slack Mailing List</td>
<td>* Regular SIG Meeting: Wednesdays at 11:00 PT (Pacific Time) (biweekly)</td>
</tr>
<tr>
<td>Apps</td>
<td>apps</td>
<td>* Matt Farina, Samsung SDS  * Arman Abdulsaleem, Bitnami  * Kenneth Owens, Google</td>
<td>Slack Mailing List</td>
<td>* Regular SIG Meeting: Mondays at 9:00 PT (Pacific Time) (weekly)</td>
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<tr>
<td>Architecture</td>
<td>architecture</td>
<td>* Brian Grant, Google  * Juice Singer Duhner, Google  * Matt Farina, Samsung SDS</td>
<td>Slack Mailing List</td>
<td>* Regular SIG Meeting: Thursdays at 19:00 UTC (biweekly)</td>
</tr>
<tr>
<td>Auth</td>
<td>auth</td>
<td>* Mike Danese, Google  * Mo Khan, Red Hat  * Tim Alciati, Google</td>
<td>Slack Mailing List</td>
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Yeah it’s open source, but organizationally how does it work?

Special Interest Groups … topical focus areas where folks are doing their technical thing.
### What are Kubernetes SIGs

#### Governance – Special Interest Groups (SIGs)

<table>
<thead>
<tr>
<th>Autoscaling</th>
<th>autoscaling</th>
<th>Martin Wielgos, Google</th>
<th>Slack</th>
<th>Mailing List</th>
<th>Regular SIG Meeting: Mondays at 14:00 UTC (biweekly/weekly)</th>
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<tbody>
<tr>
<td>AWS</td>
<td>aws</td>
<td>Justin Santa Barbara,</td>
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<td>Slack</td>
<td>Regular SIG Meeting: Fridays at 9:00 PT (Pacific Time) (biweekly 2019 start date: Jan. 11th)</td>
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<td>K/3 Nova, VMware</td>
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<td>&amp; Nick Davidson, AWS</td>
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<td>Azure</td>
<td>azure</td>
<td>Stephen Augustus, VMware</td>
<td>Slack</td>
<td>Mailing List</td>
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<td>&amp; Dave Strible,</td>
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<td>Microsoft</td>
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<td>Big Data</td>
<td>big-data</td>
<td>Anirudh Ramanathan,</td>
<td>Slack</td>
<td>Mailing List</td>
<td>Regular SIG Meeting: Wednesdays at 17:00 UTC (biweekly)</td>
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<td>&amp; Erik Erfurth, Red</td>
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<td>Yinan Li, Google</td>
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<td>CLI</td>
<td>ci</td>
<td>Mackie Sruil, Red Hat,</td>
<td>Slack</td>
<td>Mailing List</td>
<td>Regular SIG Meeting: Wednesdays at 09:00 PT (Pacific Time) (biweekly)</td>
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<td></td>
<td></td>
<td>&amp; Sean Sullivan,</td>
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<td></td>
<td></td>
<td>Google</td>
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</table>

...there are a looooot of SIGs
## What are Kubernetes SIGs

### Governance – Special Interest Groups (SIGs)

| Cloud Provider | cloud-provider | * Andrew Sy Kim, VMware  
| * Chris Hoge, OpenStack Foundation  
| * Jago Macleod, Google | * Slack  
| * Mailing List | * Regular SIG Meeting: Wednesdays at 1:00 PT (Pacific Time) (biweekly)  
| * (cloud-provider-extraction-migration) Weekly Sync removing the in-tree cloud providers led by @chefutako and @andrewkylem: Thursdays at 13:30 PT (Pacific Time) (weekly) |

| Cluster Lifecycle | cluster-lifecycle | * Robert Bailey, Google  
| * Lucas Källström, Lucas Labs (occasionally contracting for Weaveworks)  
| * Timothy St. Clair, VMware | * Slack  
| * Mailing List | * Regular SIG Meeting: Tuesdays at 09:00 PT (Pacific Time) (biweekly)  
| * kubeadmin Office Hours: Wednesdays at 09:00 PT (Pacific Time) (weekly)  
| * Cluster API office hours: Wednesdays at 10:00 PT (Pacific Time) (weekly)  
| * Cluster API Provider Implementers office hours (EMEA): Wednesdays at 15:00 CEST (Central European Summer Time) (weekly)  
| * Cluster API Provider Implementers office hours (US West Coast): Tuesdays at 12:00 PT (Pacific Time) (weekly)  
| * Cluster API (AWS implementation) office hours: Mondays at 19:00 PT (Pacific Time) (biweekly)  
| * kops Office Hours: Fridays at 09:00 PT (Pacific Time) (biweekly)  
| * Kubespray Office Hours: Wednesdays at 08:00 PT (Pacific Time) (biweekly) |

| Contributor Experience | contributor-experience | * Elsie Phillips, CoreOS  
| * Paris Pittman | * Slack  
| * Mailing List | * Regular SIG Meeting: Wednesdays at 9:30 PT (Pacific Time) (weekly)  
| * (contributors-documentation) Non-Code Contributors Meeting: Wednesdays at 11:00 PT (Pacific Time) (biweekly) |

…there are a looooot of SIGs
What are Kubernetes SIGs
Governance – Special Interest Groups (SIGs)

| Docs | docs | * Andrew Chen, Google  
|      |      | * Zach Carlesan, Linux Foundation  
|      |      | * Jennifer Rondeau, VMware  
|      |      | * Slack  
|      |      | * Mailing List  
| GCP | gcp | * Adam Worrall, Google  
|      |      | * Slack  
|      |      | * Mailing List  
| IBMCloud | ibmcloud | * Khalid Ahmed, IBM  
|      |      | * Richard Theis, IBM  
|      |      | * Sahdev Zala, IBM  
|      |      | * Slack  
|      |      | * Mailing List  
| Instrumentation | instrumentation | * Floret Szczepanik, Google  
|      |      | * Frederic Branczyk, Red Hat  
|      |      | * Slack  
|      |      | * Mailing List  
| Multicluster | multicluster | * Christian Bell, Google  
|      |      | * Quinton Hoole, Huawei  
|      |      | * Slack  
|      |      | * Mailing List  

* Regular SIG Meeting: Tuesdays at 17:30 UTC (weekly - except fourth Tuesday every month)  
* APAC SIG Meeting: Wednesdays at 02:00 UTC (monthly - fourth Wednesday every month)

...there are a looooot of SIGs

Oh wait I said there’d be kittens too!

Image source: Flickr user jit bag https://www.flickr.com/photos/jitbag/4482493864/ (CC BY 2.0)
| Network | network | * Tim Hockin, Google  
  * Dan Williams, Red Hat  
  * Casey Davenport, Tigora | * Slack  
  * Mailing List | * Regular SIG Meeting: Thursdays at 14:00 PT (Pacific Time) (biweekly) |
|---|---|---|---|---|
| Node | node | * Dawn Chen, Google  
  * Derek Carr, Red Hat | * Slack  
  * Mailing List | * Regular SIG Meeting: Tuesdays at 10:00 PT (Pacific Time) (weekly) |
| OpenStack | openstack | * Chris Hoge, OpenStack Foundation | * Slack  
  * Mailing List | * Regular SIG Meeting: Wednesdays at 16:00 PT (Pacific Time) (biweekly) |
| PM | pm | * Aparna Sinha, Google  
  * Ivar Drønetsky, CNCF  
  * Caleb Miles, Google | * Slack  
  * Mailing List | * Regular SIG Meeting: Tuesdays at 18:30 UTC (biweekly) |
| Release | release | * Caleb Miles, Google  
  * Stephen Augustus, VMware  
  * Tim Pepper, VMware | * Slack  
  * Mailing List | * Regular SIG Meeting: Tuesdays at 21:00 UTC (biweekly) |
## What are Kubernetes SIGs

**Governance – Special Interest Groups (SIGs)**

| Scalability   | scalability | * Wojciech Tyczynski, Google  
|              |            | * Shyam Jedigunta, AWS  
| Scheduling   | scheduling | * Bobby (Babak) Salamat, Google  
|              |            | * Klaus Ma, Huawei  
| Service Catalog | service-catalog | * Carolyn Van Slyck, Microsoft  
|              |            | * Michael Kibbe, Google  
|              |            | * Jonathan Banth, IBM  
|              |            | * Jay Boyd, Red Hat  
| Storage      | storage    | * Saad Ali, Google  
|              |            | * Bradley Childs, Red Hat  

- **Slack**  
- **Mailing List**  

| **Regular SIG Meeting: Thursdays at 17:30 UTC (bi-weekly)**  
| **10AM PT Meeting: Thursdays at 17:00 UTC (bi-weekly starting Thursday June 7, 2018)**  
| **8PM PT Meeting: Thursdays at 24:00 UTC (bi-weekly starting Thursday June 14, 2018)**  
| **Regular SIG Meeting: Mondays at 13:00 PT (Pacific Time) (weekly)**  
| **Regular SIG Meeting: Thursdays at 9:00 PT (Pacific Time) (bi-weekly)**  

<table>
<thead>
<tr>
<th>SIG</th>
<th>Meeting Time and Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Testing</td>
<td>Tuesdays at 13:00 PT (Pacific Time) (weekly)</td>
</tr>
<tr>
<td>UI</td>
<td>Thursdays at 18:00 CET (Central European Time) (bi-weekly)</td>
</tr>
<tr>
<td>VMware</td>
<td>Thursdays at 11:00 PT (Pacific Time) (bi-weekly)</td>
</tr>
<tr>
<td>Windows</td>
<td>Tuesdays at 12:30 Eastern Standard Time (EST) (weekly)</td>
</tr>
</tbody>
</table>

What are Kubernetes SIGs

Governance – Special Interest Groups (SIGs)

- **Testing**
  - Aaron Crickenberger, Google
  - Erick Felis, Google
  - Steve Kuznetsov, Red Hat
  - Timothy St. Clair, VMware

- **UI**
  - Sebastian Florek, Loodse
  - Marcin Matiaszczyk, Loodse
  - Dan Romain, Google
  - Jeffrey Sica, University of Michigan

- **VMware**
  - Fabio Rapposelli, VMware
  - Steve Wang, VMware

- **Windows**
  - Michael Michael, VMware
  - Patrick Lang, Microsoft

- **Slack**
- **Mailing List**
What are Kubernetes SIGs
Governance – Special Interest Groups (SIGs)

- Testing
  - Testing

- UI
  - UI

- VMware
  - VMware

- Windows
  - Windows

* Aaron Crickenberger, Google
  * Erik Felis, Google
  * Steve Kuznetsov, Red Hat

* Regular SIG Meeting: Tuesdays at 13:00 PT (Pacific Time) (weekly).
* (kind) slgi-k8s.io/kind weekly meeting: Mondays at 11:00 PT (Pacific Time)
  (weekly).
* (testing-commons) Testing Commons: Thursdays at 12:00 PT (Pacific Time) (bi-
  weekly).

* Slack
  * Mailing List

Wow that’s a lot of special interest groups!

Also there are:

- Subprojects
- Working Groups
- Committees

There must be a strong project management ethic tightly governing how these work together right?

…not so much!
SIGs aren’t project governance really

https://git.k8s.io/community/governance.md

Doesn’t say a lot on mechanism or policy, but rather sets the tone of the community.

Policies and mechanisms implicitly characterized in
• shared source code, infrastructure, and automation
• SIG charter documents
• Steering Committee

Steering Committee is a defers-mostly, lazy-consensus group

Committees -> There’s a Steering Committee

Image source: Flickr user Bryan Alexander
https://www.flickr.com/photos/bryanalexander/5653716580/ (CC BY 2.0)
Large and Rapidly Growing Project!!!

In past year alone:
- 2088 commit authors generated
  - 24714 commits
- 14146 contributors generated
  - 583898 GitHub contribution events

Big community, high velocity, need more than just functional organization around compute, storage, networking, and hosting providers. (devstats screen caps on new/episodic contributions, overall contributors, development velocity)

Image source DevStats.k8s.io:
https://k8s.devstats.cncf.io/d/18/new-and-episodic-pr-contributors?orgId=1&var-period=w&var-repgroup_name=All&from=1440729073984&to=1532745073984
What is Kubernetes

Large and Rapidly Growing Project!!!

In past year alone:

- 877 authors generated
  - 6841 (non-merge) commits
- 16405 contributors generated
  - 395933 GitHub contribution events

Kubernetes internal developers, cluster operators, end users all need “…high quality releases on a reliable schedule”

SIG-Release mission statement http://git.k8s.io/sig-release

Could make for a wild ride!

Image source: Flickr user ElGatoPescado
https://www.flickr.com/photos/11897810@N02/1204596631/ (CC BY SA 2.0)

Data sources:

Past year info from
https://k8s.devstats.cncf.io/d/24/overall-project-statistics?orgId=1&var-period_name=Last%20year&var-repgroup_name=All on March 7, 2019

And raw git info from git.k8s.io/kubernetes/kubernetes via

```
git log --since=2018-03-08 --before=2019-03-08 --no-merges --pretty=format:"%an %ae" | sort | uniq | wc -l
```
Cross-functional needs met by cross-functional SIGs

AGAIN every one of these SIGs is a unique area where you can get involved or grow:
…as a new dev or experienced dev
…as somebody new to k8s or already familiar with parts of k8s
## Kubernetes Dev Model

**Contributor Ladder**

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

How do we do high quality releases on a reliable schedule? Through involvement of people with broad skills.

AGAIN…every one of these SIGs is a unique area where you can get involved or grow:
…as a new dev or experienced dev
…as somebody new to k8s or already familiar with parts of k8s
### Kubernetes Dev Model

**The Release Cycle**

- **Enhancement Discussion (per SIG):** ongoing
- **Enhancement Freeze:** week ~4
- **Release Branch Creation:** week ~7
- **Code Freeze:** week ~9
- **...bugs, testing, bugs, fixing, bugs, ...iterating**
- **End Code Freeze:** week ~12
- **Release:** week ~13

---

A first hiccup for folks can be “why isn’t anybody talking to me or looking at my code…often this is due to the specific timing of the release…folks are busy because of a deadline.

Three key components of the release cycle:

1. **Identifying features targeted to the release milestone**
2. **Getting those done**
3. **Insuring quality**
Kubernetes Enhancement Proposals (KEPs)

- KEPs are more than GitHub projects
- KEP PR process captures history, rationale, design-thinking
- Required since 1.14...this is good!

(eg: Python PEPs and OpenStack Blueprints)

Image source: Flickr user 1970 Lincoln Continental
https://www.flickr.com/photos/39311243@N05/11973866593/ (CC BY 2.0)
Mostly looks like normal Git/GitHub workflow

…plus Prow
  • more than GitHub labels
  • automates GitHub events -> jobs
    – RBAC-like review and approvals layer
    – CI Testing
    – process label checks
    – … automerges PRs when ready

See also:
http://velodrome.k8s.io/
http://git.k8s.io/test-infra/prow/README.md
https://bentheelder.io/posts/prow

This is a common stumbling block for newcomers (as with any project)….how do I get my stuff merged?

Labels, CI, bot comments, active review & approval
Kubernetes Dev Model
How do we manage stability?

Dev’s run unit and e2e tests locally
Prow runs tests against PRs
Time-based testing against master & release branches

This is HUGE … we build and test run dozens (hundreds?) of clusters a day

https://testgrid.k8s.io

Continuous feedback on the health of release and master branches. Aim is to keep signal always green and be always ready to release.
Speaking of release branches...

Lest you get the impression this seems waterfall, let’s add a few more waterfall like iterations. Really this is more like a continuous flow. I’ve overaccentuated the distinctions between feature definitions, development and stabilization. Our code freeze is currently two weeks out of the cycle. VERY liberal.

9 months support lifetime per release

Image source: Flickr user Russel Smith
https://www.flickr.com/photos/rasmithuk/468899776/ (CC BY 2.0)
Kubernetes Dev Model
The Release Lifecycle

1.14.x Patch Releases

K8S Releases

1.15.x Patch Releases
Kubernetes Dev Model
The Release Lifecycle

<table>
<thead>
<tr>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
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<th>Jan</th>
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<th>Mar</th>
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</thead>
<tbody>
<tr>
<td>1.14.x Patch Releases</td>
<td>1.15.x Patch Releases</td>
<td>1.16.x Patch Releases</td>
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</table>

K8S Releases
Kubernetes Dev Model
The Release Lifecycle

9 months support lifetime per release

3 supported release streams in parallel
Kubernetes Dev Model
Release branching

From:
@xiangpengzhao Peter Zhao
Kubernetes Dev Model
The Release Process Aspirations & Possibilities

Good
Kubernetes Dev Model
The Release Process Aspirations & Possibilities

Bad
Kubernetes Dev Model
The Release Process Aspirations & Possibilities

Consistent Consumption
- Creation automated
- Creation consistent
- Testing everywhere

Good
Old, dated architectural diagram of k8s control plane. Especially with most of the component code in one repo, it’s easy to imagine validating this as an integrated cluster unit.

Image source: https://en.wikipedia.org/wiki/Kubernetes#/media/File:Kubernetes.png (CC BY-SA 4.0)
But what k8s presentation is complete without the CNCF eye chart?

Image source: https://raw.githubusercontent.com/cncf/landscape/master/landscape/CloudNativeLandscape_v20180525.png

In a way splitting the k/k monolith is just adding a few more icons here.

How do we do integration testing here? How much do we need to do?

This makes my brain go...
Kubernetes Dev Model
Splitting the Monolith vs Stability

Image source: Flickr user Tambako The Jaguar
https://www.flickr.com/photos/tambako/494118044/ (CC BY 2.0)

Roar!

Sooooooo many interesting technical challenges here to conquer!

Given this future task...who wants to join the 1.15+ release teams?
SIG Release
The Release Team

- Volunteer leads, plus shadows
- Meets regularly to assess state of dev, weigh risks
- We generate focus where we feel more is needed
- Meetings meetings meetings with SIGs SIGs SIGs
- Contacting people on Slack
- Attempting to follow GitHub status across multiple repos and 100s of issues and PRs

Mostly toothless: doesn’t do “the real work” rather watches, worries, spots gaps and issues, finds the right owning party, tracks critical work to completion on timeline

Mostly thankless: Servant leadership, but we have fun ;0

Image source: Flickr user Andy Miccone
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There’s a token dog in the presentation, ironically from Aaron @spiffxp Crickenberger’s slack icon.
## SIG Release Release Team Roles

<table>
<thead>
<tr>
<th>Role</th>
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</tr>
<tr>
<td>Features</td>
<td>Stephen Augustus (@jtaugustus)</td>
<td>Kendrick Coleman (@kacole2), Robert Sandoval (@robertsandoval), Rajendar Talatam (@rajendar3B), Michael Singh (@wadadi)</td>
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<td>Mohammed Zeeshan Ahmed (@mohammedzeee10000)</td>
<td>Christian Hernandez (@christianh814), Sauraj Narwade (@surajnarwade)</td>
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<td>Test Infra</td>
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<td>Kathryn Barnard (@kbarnard10)</td>
<td>Kerri Dell (@kerriydell), Kristen Evans (@kristenevans)</td>
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<td>Cheryl Fong (@bubblemelon), Melinda Hunter (@melindah), Nikhil Manchanda (@stickknr)</td>
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<td>Natasha Woods (@nmwoods3)</td>
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Get stuck in
1.15+

Maybe you’re here at the conference to learn about some specific tech’s and maybe it’s just about using some existing features in those. Cool. Good.

But look at where you can give back to the project. There’s a lot more to open source development than just implementing a feature and submitting a pull request for it. There are all these aspects of broader project health.

Image source: Flickr user Jeffrey
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SIG Contributor Experience
Community growth and quality software engineering

Do you have project management, documentation, testing, release management, communications, etc. skills?

Do you employ people with ^^^^ skills?

Call to action:
• There is real opportunity here for individuals (and employers) who want to collaborate in support of this open source project.
• We don’t have all the answers, but iterate/evolve and are a humble/inclusive community
• We try to have to have fun (see or wild emoji usage on Slack)
• JOIN US!!

A lot of this talk showed the project BREADTH via examples from the SIG Release side of my brain, but…SIG Contributor Experience is actually why I’m here.

I could focus on a few technical implementation tasks which are interesting and challenging to me. But open source is not a zero sum game. I can do more if I help others too.

And if you were to ask “Is kubernetes done yet?” Answer is very clearly, Not by a long stretch. Need more people, especially DevOps minded people passionate about helping insure stability in a wildly complex distributed system software stack.

We’re really only just getting started. So much needs build, trialed, decided, and abstracted.

Most of this should have seemed like normal s/w engr. The specific implementation details might be k8s-specific, but the concepts are not.

This periphery of “non-code” development activities needs more volunteers.
Image source: Flickr user Jassim msahri
https://www.flickr.com/photos/61192342@N03/9496463918/ (CC BY 2.0)
Thank You
…and questions?

Thank you VMware

Thank you CNCF, LF, kubernetes community

@pythomit

tpepper

tpepper@vmware.com

DM’s open, there are no “dumb questions”, Ask Me Anything
In honor of yesterday’s code freeze for 1.14

https://www.youtube.com/watch?v=62Au2SNgd8w