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CloudNativeCon

North America 2023





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What's New with Kubectl and Kustomize ... and How You Can Help!

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Leads



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What



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Development and standardization of the **CLI framework**

Improving **user experience and usability**

git.k8s.io/community/sig-cli#cli-special-interest-group

What



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Subprojects:

- [kubectl](#)
- [kustomize](#)
- [krew](#) + [krew index](#)
- [kui](#)
- [cli-runtime](#) + [cli-experimental](#)
- [krm-functions](#)

git.k8s.io/community/sig-cli#subprojects

Where



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Slack:

[#sig-cli](#)

Mailing list:

<https://groups.google.com/g/kubernetes-sig-cli>

git.k8s.io/community/sig-cli#contact

When



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Biweekly meeting:

Wednesday at 12:00 PM EDT / 09:00 AM PDT / 06:00 PM CEST

Biweekly alternate Kustomize/Kubectl bug scrubs:

Wednesday at 12:00 PM EDT / 09:00 AM PDT / 06:00 PM CEST

git.k8s.io/community/sig-cli#meetings

Release 1.27 enhancements



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[STABLE] [default container annotation to be used by kubectl #2227](#)

[BETA] [Add subresource support to kubectl #2590](#)

[BETA] [Aggregated Discovery #3352](#)

[BETA] [OpenAPI v3 for kubectl explain #3515](#)

[NEW] [ApplySet: kubectl apply --prune redesign #3659](#)

[NEW] [kubectl create sub-plugins #3638](#)

Release 1.27 highlights



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- `kubectl debug`: Added "general", "baseline", and "restricted" debugging profiles ([#114280](#), [@sding3](#)), as well as "netadmin" debugging profile ([#115712](#), [@wedaly](#)).
- Upgrade kubectl kustomize to v5.0.1 ([#116598](#), [@natasha41575](#))
- Promoted `kubectl alpha auth whoami` to `kubectl auth whoami`. ([#116510](#), [@nabokihms](#))
- Make `kubectl diff --prune` behave correctly with the `--selector/-l` flag ([#114863](#), [@danlenar](#)) (also backported to v1.24)

Release 1.28 highlights



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[STABLE] [kubectl events #1440](#)

[NEW] [kubectl delete: Add interactive\(-i\) flag #3895](#)

kubectl port-forward: Pick a running pod rather than terminating ([#119256](#), [@brianpursley](#))

kubectl diff: Add --concurrency flag ([#118810](#), [@brancz](#))

kubectl wait: in --for=jsonpath='{expression}'[=value] value is now optional ([#118160](#), [@minherz](#))

Release 1.29 enhancements



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[BETA] [kubectl delete: Add interactive\(-i\) flag #3895](#)

[BETA] [kubectl create sub-plugins #3638](#)

`kubectl help`: Display basic details for subcommands from plugins ([#116752](#), [@xvzf](#))

`kubectl wait`: Support simple filter expressions to match field's content ([#118748](#), [@andreaskaris](#))

Future items



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In Progress

- Transition from SPDY to WebSockets KEP #4006
- Separating cluster configuration from user preferences KEP #3104

Exploring

- A new version of apply that is server side by default
- JSONPath improvements or alternatives
- **Please no more flags**

Kustomize - major themes



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Kustomize **v5.0.0** released earlier this year

New **sortOptions** field controlling resource order in the output

Significant **performance** improvements

Maintainer training cohort

New maintainers (**@annasong20** and **@koba1t**)



Latest release is **v5.2.1**

Roadmap (more contributors, extensions experience, docs, UX bugs, alpha promotions)

Krew - major themes



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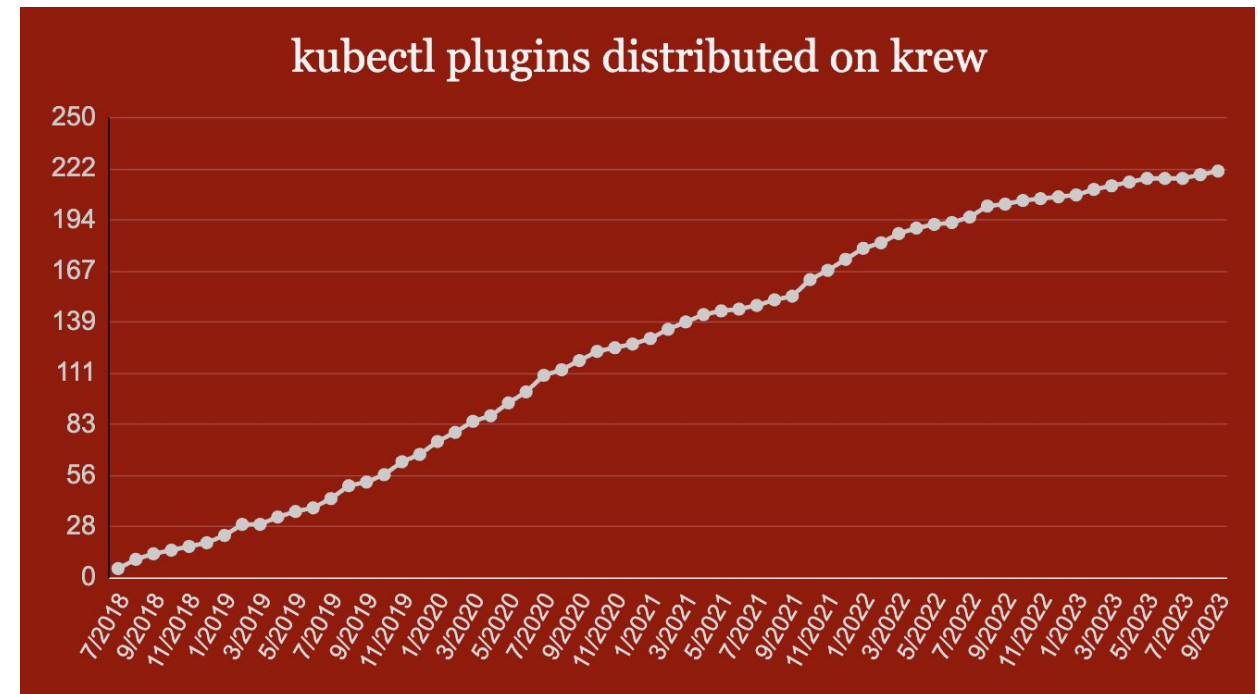
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Krew is continuing to **grow**, and passed **220 plugins**!

Shell completions for plugins on Krew coming soon.

Recruiting **new contributors** to review plugin submissions and enforce a high bar of quality for the community (talk to [@ahmetb](#))





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PSA: Declarative vs. Imperative Workflows



Management techniques

Warning: A Kubernetes object should be managed using only one technique. Mixing and matching techniques for the same object results in undefined behavior.

Imperative commands

- `kubectl create`
- `kubectl run`
- `kubectl expose`
- `kubectl autoscale`
- `kubectl replace`
- `kubectl rollout undo`
- `kubectl edit`
- `kubectl set`
- `kubectl patch`
- `kubectl scale`
- ...



Declarative commands

- `kubectl apply`

→ development cat namespace.yaml

apiVersion: v1

kind: Namespace

metadata:

name: development

labels:

name: development

Our solution scales to thousands of
with organizational standards like se
governance, and compliance baked

→ development

→ development kubectl create -f namespace.yaml

type NamespaceExtrasReconciler struct {

client.Client

Scheme *runtime.Scheme

clusterName string

NamespaceConfig discover.NamespaceConfig

- identity and access management
- secrets management
- monitoring and observability

Object management techniques



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Warning: Mixing `kubectl apply` with the imperative object configuration commands `create` and `replace` is not supported. This is because `create` and `replace` do not retain the `kubectl.kubernetes.io/last-applied-configuration` that `kubectl apply` uses to compute updates.

Warning: A Kubernetes object should be managed using only one technique. Mixing and matching techniques for the same object results in undefined behavior.

Please use apply

<https://kubernetes.io/docs/tasks/manage-kubernetes-objects/declarative-config/>

Q&A time



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