

Tekton Project Update and Roadmap



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Agenda



Introduction

What's New

Roadmap

Q&A



Introduction



Tekton is an open-source framework for creating CI/CD systems

Cloud Native

Serveless,
Scalable
Pipelines

Security Oriented

SLSA Compliant
Pipelines

Standardization

Built In Best
Practices

Maximum
Flexibility

Core:

- Pipeline
- Triggers
- Chains

Tools:

- CLI,
- Dashboard
- Operator

Authoring:

- Catalog, Hub
- ArtifactHub

Add-ons:

- Results
- Workflows



At a Glance

- › 2018 Initial concept
- › 2019 Donated to CD Foundation
- › 2022 Graduated Project
 - LTS Releases
 - Adoptions
 - Best Practices
 - Security
- › 150+ Companies
- › Google, IBM, RedHat, VMWare & others

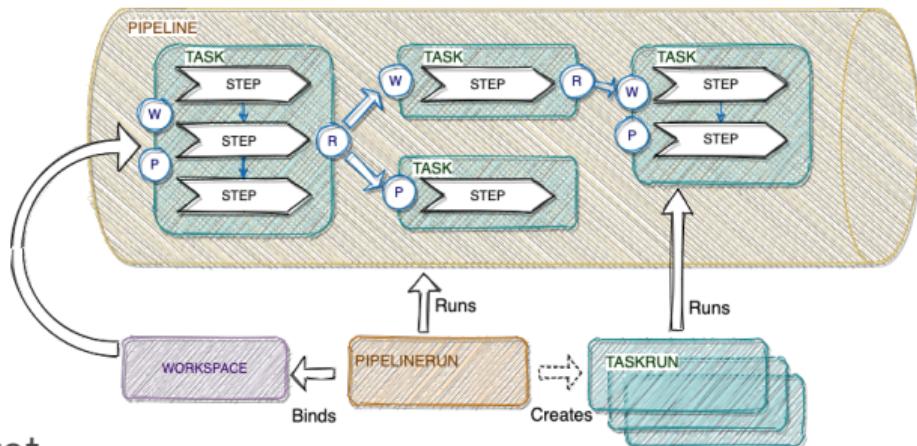


CD.FOUNDATION



Defining Pipelines

- › Extend the k8s API with CRDs
- › Definitions: Task, Pipeline
- › Execution: TaskRun, PipelineRun
- › Bindings:
 - Workspaces, Parameters, Results
- › TaskRun -> Pod
- › Step -> Container
- › Workspace -> Volume, Configmap, Secret



Launching Pipelines

- › Tekton Triggers
- › Webhooks, Events
- › Filter on branch
- › Filter on any payload condition
- › Start a pipeline execution



Securing Pipelines

Tekton Chains

- › Artifact signing
- › Artifact provenance
- › Sigstore integration

Some chains diagram here

Tekton Pipelines

- › Trusted Resources (alpha)
- › Non-falsifiable Provenance (alpha)
- › Hermetic Builds (alpha)
- › Working towards SLSA lvl3



What's New in Tekton



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New pipeline features

- › Two LTS releases v0.44 and v0.47
- › Remote resolution to beta, config source
- › Propagation to beta
- › Custom Task to beta
- › Array and Object Params and Results to beta
- › Trusted Resources as alpha
- › Larger Results via sidecar log as alpha
- › Artifact Hub support
- › Env variables in pod template
- › Distributed tracing for pipelines
- › Pipeline v1 API (v1beta1 stored by default)
- › Explicit params combinations in matrix



Removed pipeline features

- Pipeline Resources
- Embedded Status



Non-pipeline features

- Scheduled Runs
- Chains v1.0





Roadmap



What's coming in Pipeline

- › Pipeline v1.0
- › Planned LTS patch releases
- › Artifacts
- › Non falsifiable provenance
- › Multiple deployments per cluster
- › Better tracing
- › Conformance policy
- › Dedicated events controller, CDEvents



What's coming

- › Chains v1.0
- › Refreshed catalog
- › Scheduled Runs
- › Concurrency controller
- › Tekton Results



Roadmap & Vision

Mission:

- › Be the industry-standard, cloud-native CI/CD platform components and ecosystems

Vision:

- › A rich catalog of high quality, reusable Tasks which work with Tekton conformant systems

Vision:

- › Tekton API conformance across as many CI/CD platforms as possible

Roadmap 2023:

- › Tekton V1 API
- › Security Features
- › Observability
- › Workflows
- › User stories, Documentation



A photograph of a fast-moving stream flowing through a dense forest. The water is turbulent, creating white foam over dark, mossy rocks. Fallen logs and branches are scattered along the left bank. Bare trees stand on both sides, their branches reaching across the frame. The overall atmosphere is moody and misty.

Thank You! Questions?



References

- › Come and Join Us at Tekton!
- › Tekton community: github.com/tektoncd/community
- › Slides: github.com/afrittoli/zero_to_tekton
- › Tekton: tekton.dev
- › Tekton Docs: tekton.dev/docs
- › Tekton on GitHub: github.com/tektoncd
- › Tekton on Operator Hub:
<https://operatorhub.io/operator/tektoncd-operator>
- › Tekton Enhancement Proposals (TEPs):
github.com/tektoncd/community/tree/main/teps

