

Tekton Project Update and Roadmap



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- › CDF Technical Oversight Committee
Governing Board



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

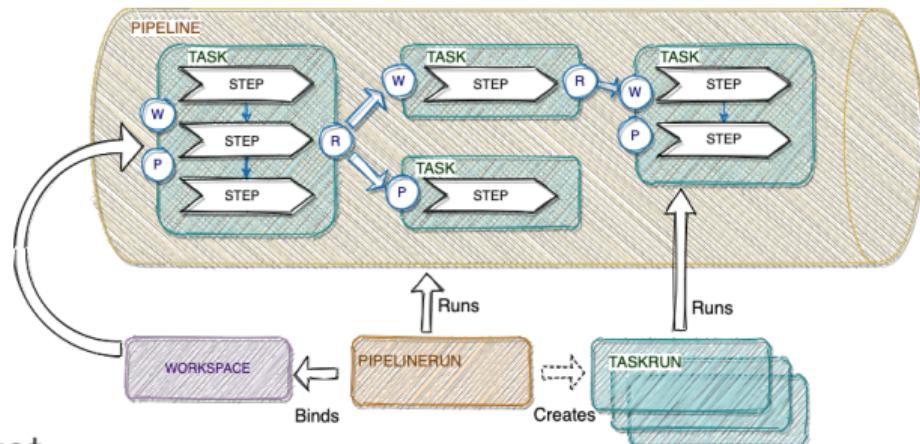


CD.FOUNDATION



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

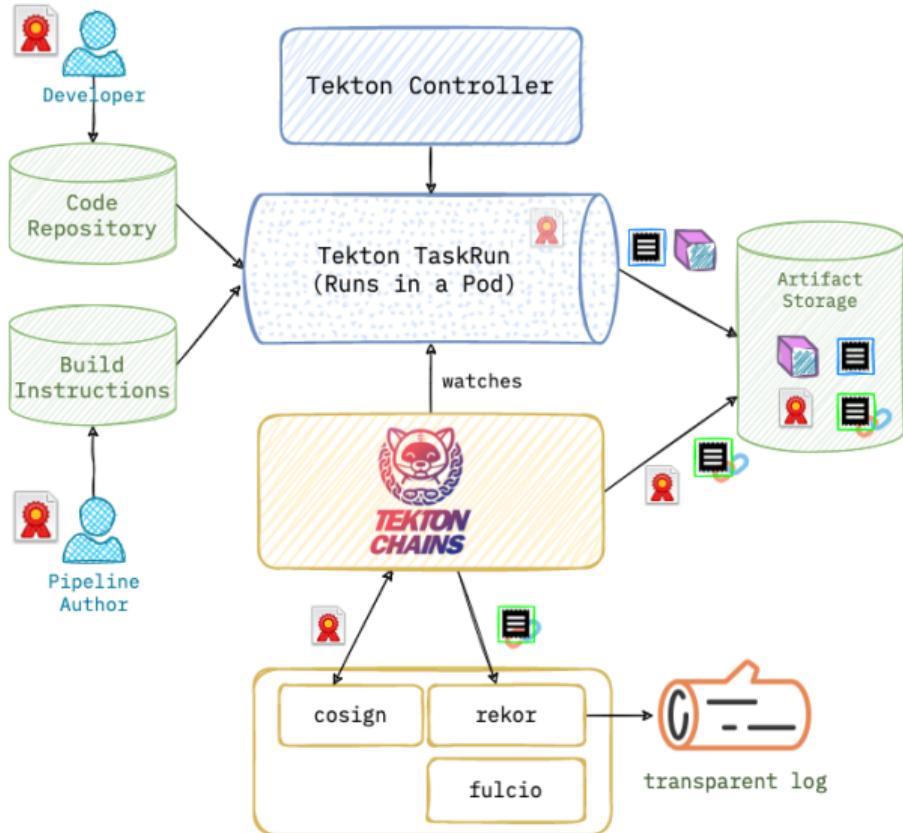


Launching Pipelines

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



Securing Pipelines



Tekton Chains

- Artifact signing
- Artifact provenance
- Sigstore integration

Tekton Pipelines

- Trusted Resources (alpha)
- Non-falsifiable Provenance (alpha)
- Hermetic Builds (alpha)



What's New in Tekton



Public domain photo, CC0



What's new in Pipeline

New Features:

- Remote resolution (beta), config source
- Artifact Hub support
- Trusted Resources (alpha)

Releases & Promotions:

- Two LTS v0.44 and v0.47
- Propagation to beta
- Custom Task to beta
- Array and Object Params and Results to beta

- Larger Results via sidecar log (alpha)
- Env variables in pod template
- Explicit params combinations in matrix
- Distributed tracing for pipelines

Documentation:

- Refreshed docs tekton.dev/docs/
- Tekton blog tekton.dev/blog/



A close-up photograph of a bee pollinating a white flower. The bee is covered in pollen and is shown from a side-on perspective, its wings partially visible. The background is a soft-focus green field.

API Changes

- v1 for Task and TaskRun
- v1 Pipeline and PipelineRun
- v1beta1 is stored switch before next LTS
- v1beta1 for CustomRun (was Run)

- Removed PipelineResources
- Removed Embedded Status



What's new in Tekton

Chains:

- Pipeline level attestations
- SLSA v1 compliance in attestations

Triggers:

- Enhanced GitHub interceptor
- Pipeline v1 Resources
- Support for CloudEvents

Dashboard:

- Performance Improvements
- Pipeline v1 Resources
- Edit resource UI

Results:

- Log storage
- Watcher high availability
- Record Summaries
- REST proxy





Roadmap



Releases

Releases:

- › Pipeline v1.0
- › Chains v1.0
- › Planned LTS patch releases
- › SLSA release infrastructure

- › Tekton Supply Chain Security:
Next at the theatre sched.co/1NOUL



**TEKTON
CHAINS**





Artifacts

- Improved Data API
- Native support for upload/download
- Trust data across Tasks
- Improved Provenance generation



Features

- › Beta and stable for several features
- › Non falsifiable provenance
- › Conformance policy

- › Multiple deployments per cluster
- › Dedicated events controller, CDEvents
- › Improved tracing

- › Scheduled Runs
- › Concurrency controller





Catalog

- New catalog org:
github.com/tektoncd-catalog
- One repo per group of resources
- Git based versioning
- Improved testing and support
- Community managed catalogs



Tekton Results

- › More integrations
- › New logo!
- › Talk at 3:30pm:
sched.co/1JpAX



Mission & 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

Mission:

- SLSA compliance through Tekton Tekton releases to be SLSA compliant

Vision:

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



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

