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Europe 2026

#KubeCon #CloudNativeCon

Jenkins to Tekton

Our Journey Toward a Kubernetes-Native CI/CD with ArgoCD



Agenda



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- Who We Are
- Where Our Journey Began: Managing Chaos
- Evolving the CI Factory & How we met Tekton?
- Kubernetes way of CI/CD
- The Technical Strategy: “One Pipeline to Rule Them All”
- The CI Architecture - Tekton Deep Dive
- The CD Architecture - ArgoCD and Image Updater
- Cultural Challenge: Winning Trust
- Lesson Learned
- The Retrospective
- Demo
- Thank You!



Jenkins



argo

Who We Are?



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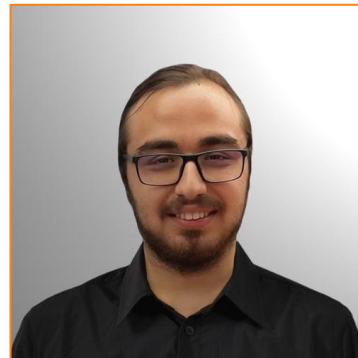


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Where Our Journey Began: Managing Chaos

The Classic Setup:

- Centralized Jenkins Master
- Fixed-Capacity Static Agents
- Containerized Workloads in Kubernetes
- Manual Release Approvals



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The Friction

- ✗ **Scalability:** Static agents couldn't handle burst loads efficiently.
- ✗ **Management:** "Plugin hell" made updates difficult, managing agent became a full time job.
- ✗ **Consistency:** Configuration drift and a sprawl of custom Jenkinsfiles across many microservices.

Evolving the CI Factory & How We Met Tekton



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- ✓ **Declarative:** Infrastructure and pipelines defined as code
- ✓ **Ephemeral execution:** Zero waste, pods should spin up for the job and vanish immediately after.
- ✓ **Kubernetes API controlled:** The tool integrate natively with the Kubernetes API, not sitting on top of it
- ✓ **GitOps compatible:** Fully driven by git state to ensure a single source of truth.



Kubernetes way of CI/CD



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Security

Kubernetes native secrets and RBAC.

Unified pipeline architecture

1 pipeline, 1 webhook



Efficiency

Ephemeral execution, zero resource waste when idle.

Decoupled Logic

Pipeline logic is separated from implementation details.

Scalable and Event Driven

The CI Architecture - Tekton Deep Dive

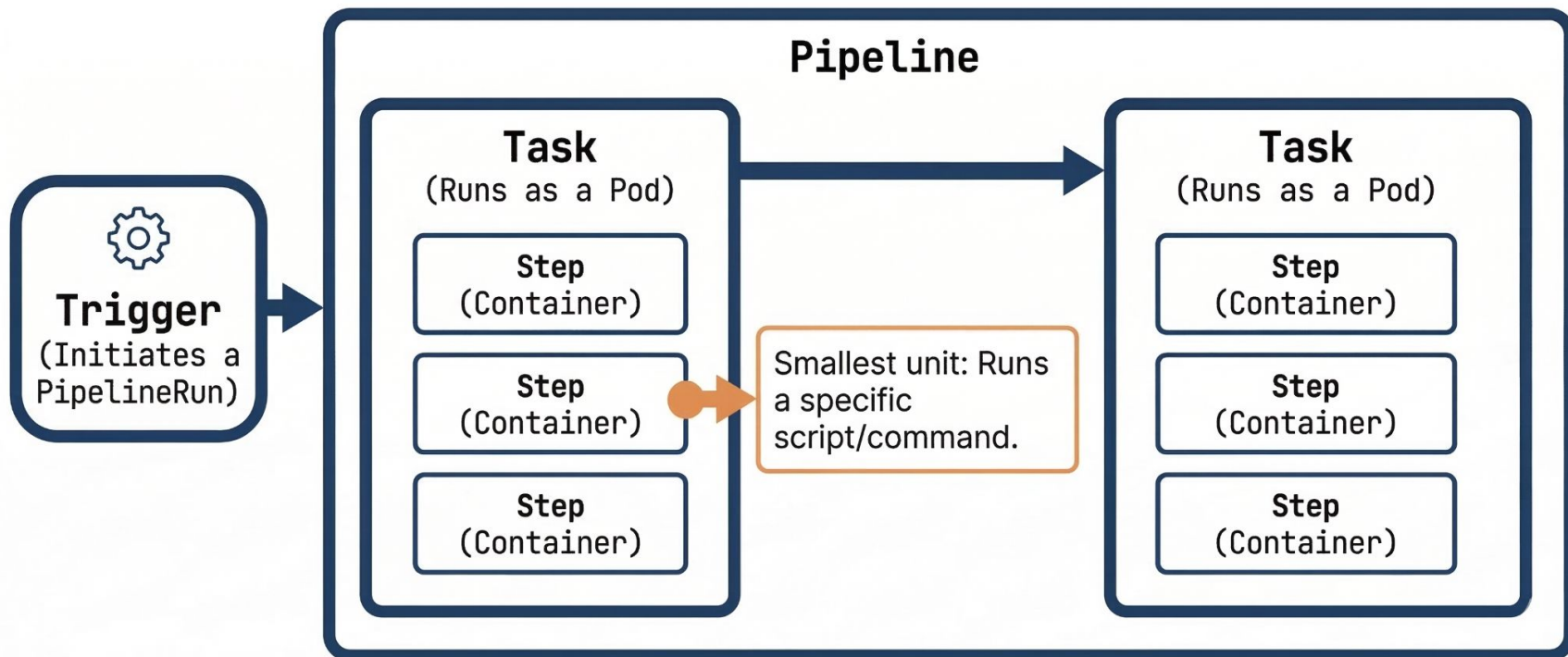


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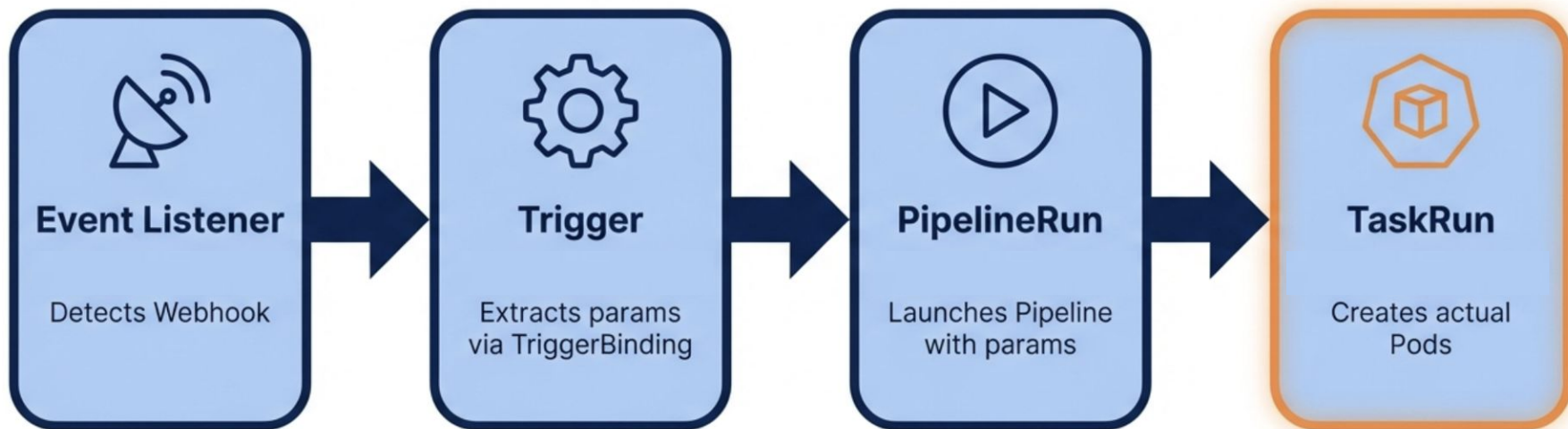


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The CI Architecture - Tekton Deep Dive



The Technical Strategy: “One Pipeline to Rule Them All”



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The “Container Task” Approach

- Daemonless builds with Kaniko
- Dockerfile logic fixed
- Specific task for including lots of dependency

Universal Adoption

Non-Kubernetes project can be built in Tekton

The Trade-off

- Lost: every team has the same pipeline script
- Gained: massive standardization



The Technical Strategy: “One Pipeline to Rule Them All”

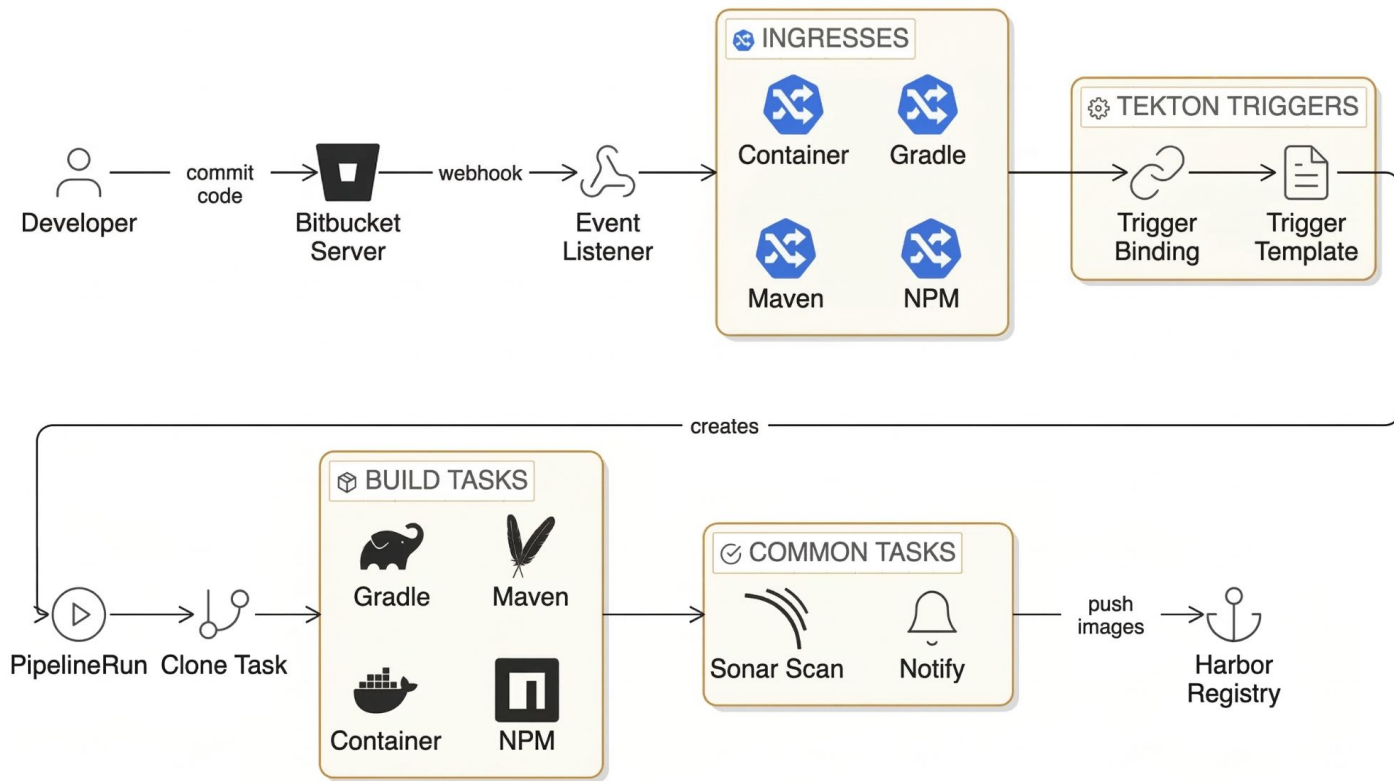


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The CD Architecture - ArgoCD and Image Updater

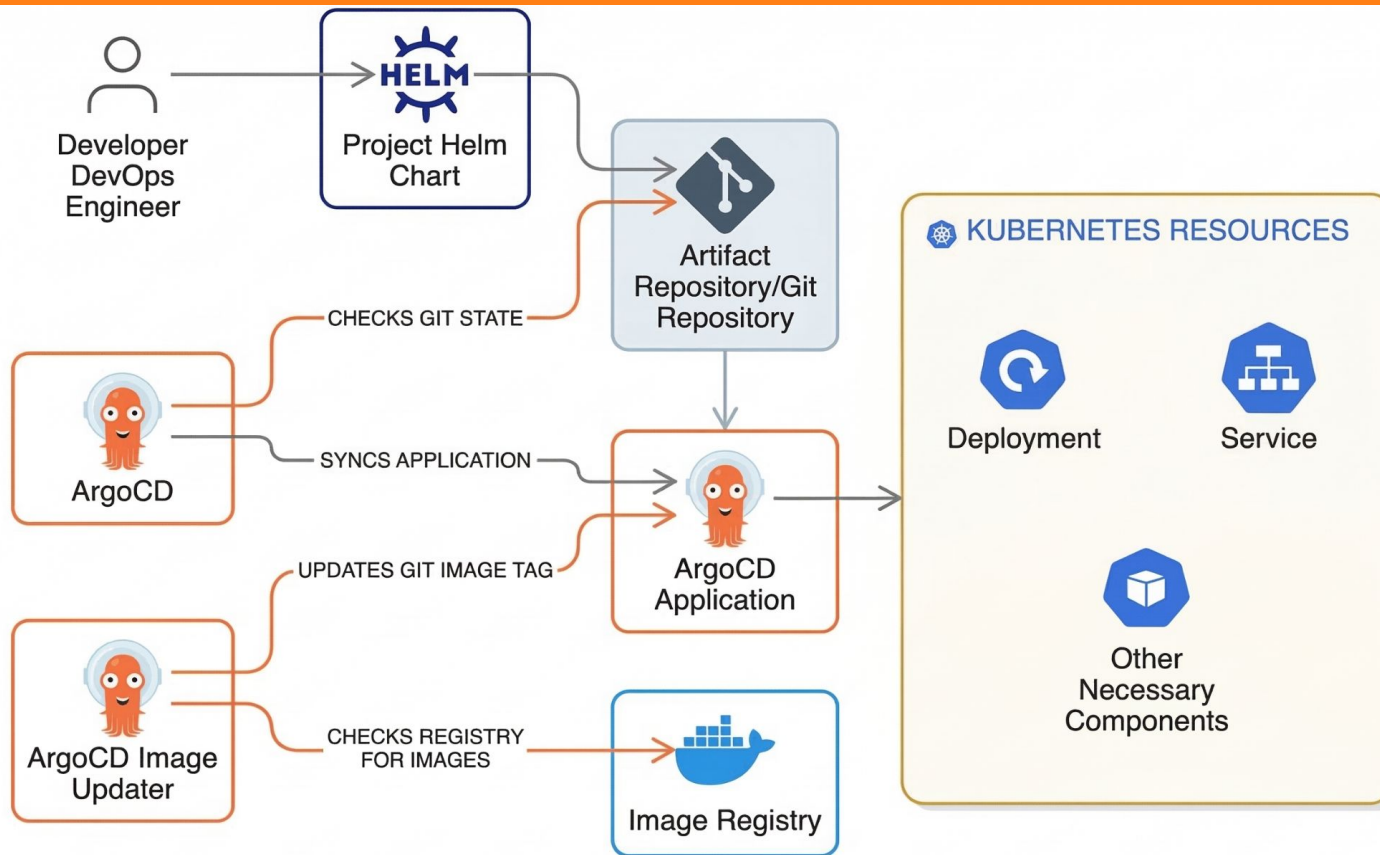


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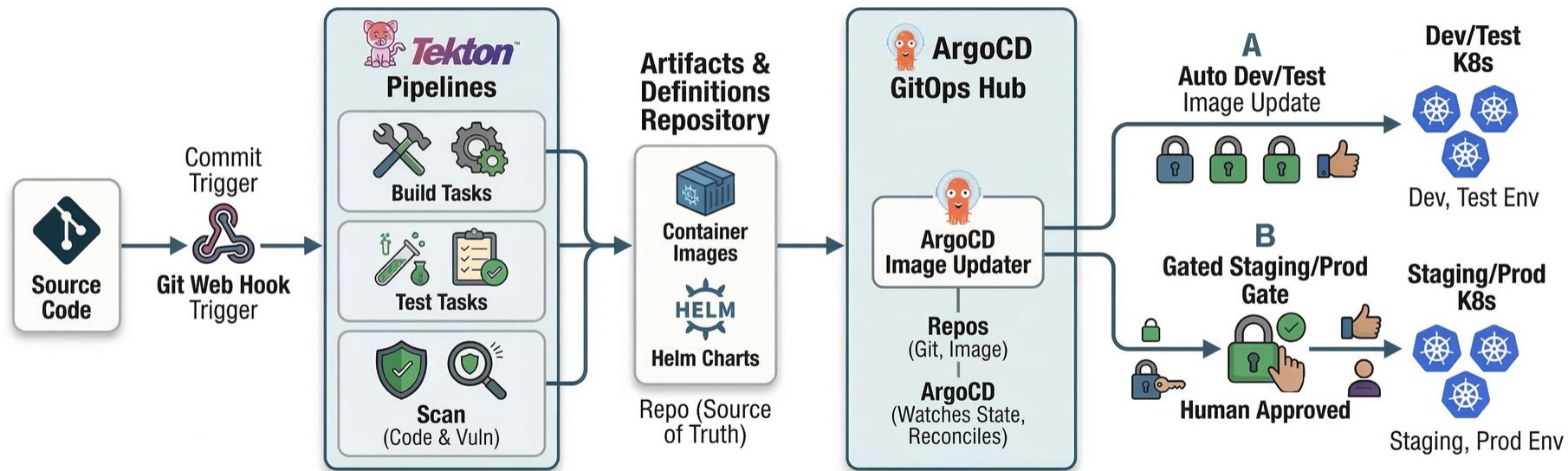


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Architecture Summary



Cultural Challenge: Winning Trust



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The Pushback

- ! Losing control the build script
- ! What if we want to do “something else”



Solution



Shift in responsibility:

DevOps team has the responsibility of the pipeline stability.



Edge Cases: create custom tasks for special needs

The Scheduling Trap (Affinity Assistant)

Problem

Affinity Assistant stalling pipelines on busy nodes.

Fix

Disabled affinity to allow free-floating Pods.

The Caching Conundrum (Kaniko vs. PVCs)



Kaniko Cache:

Built-in Kaniko image layer caching proved unreliable, yielding high failure and low hit rates.



Result:

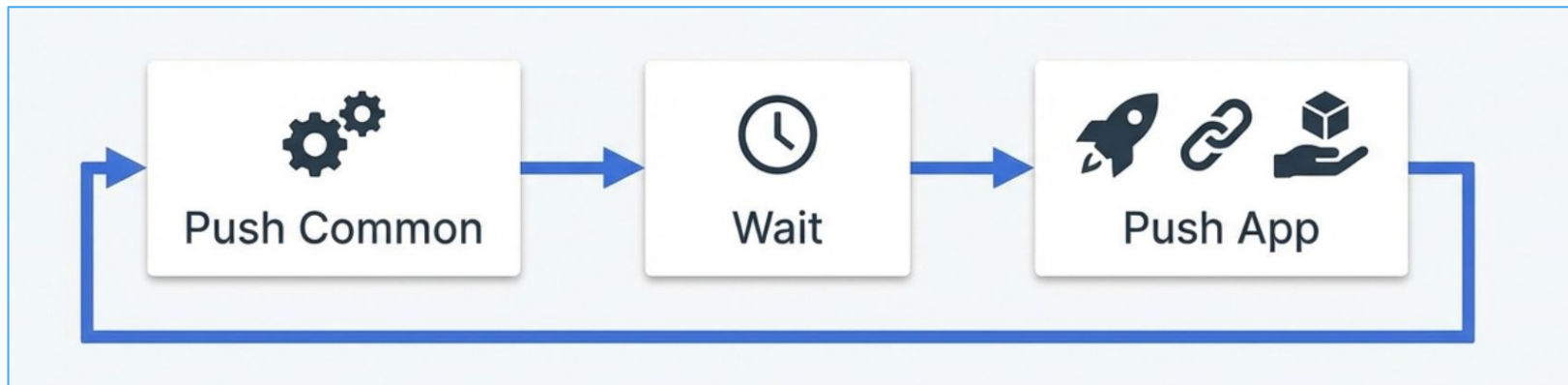
Introducing stateful PVC caching resolves previous performance bottlenecks and drastically reduces build durations.

The Common Package Problem



Problem: The "Push Common → Wait → Push App" race condition.

Takeaway: CI tools don't fix architecture. Communication > YAML.



The Retrospective



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Expectations vs Reality:

- **Planned:** Distinct pipelines for every possible path.
- **Built:** A single, unified pipeline for everything.
- **Thought:** One day we will be "finished."
- **Reality:** The destination keeps moving.

The Unfinished Success:

- The goal is **not** a perfect, static state.
- The goal is a **manageable, scalable path**.

- **The Environment:** Local Minikube cluster.
- **The App:** `kubecon-demo` Version 1 is currently live.
- **The Triggers:** Tekton EventListener is actively watching.
- **The Sync:** ArgoCD is monitoring the registry.



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Thank You!

