TÜBİTAK

CLOUD NATIVE CI/CD VE TEKTON

TEKNOLOJİ BİRLİKLERİ

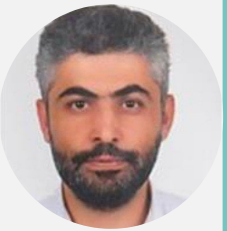
DevOps Kültürü

Ahmet
SAY

Alptekin
YANIK

Barış
ŞAHİN

Furkan Can
ÖZER



Muhsin
ÖZBEK

Yol Haritamız

CI/CD'nin Kısa Tarihi ve CN Yaklaşım

Tekton Temelleri &&
Çalışma Mekanizması

Tekton Avantajları

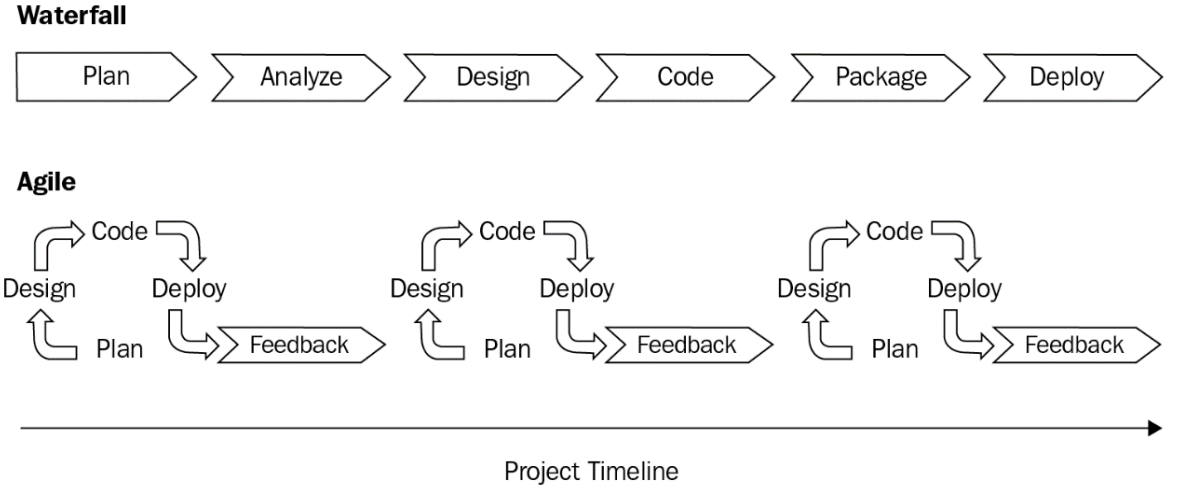
Tekton Dezavantajları

Tekton vs Jenkins

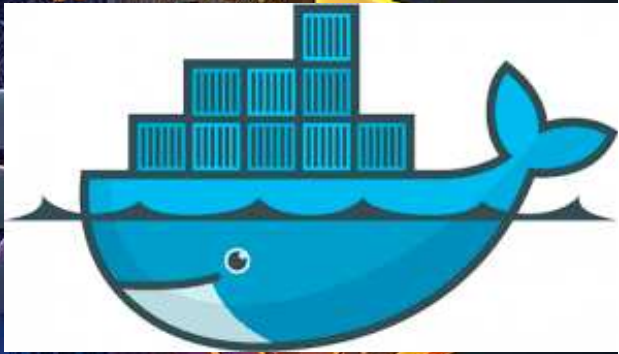
Demo

Sonuç ve Sorular

CI/CD'nin Kısa Tarihi ve Bulut Odaklı Yaklaşım



CI/CD'nin Kısa Tarihi ve Bulut Odaklı Yaklaşım



Makinemde çalışıyor problemi? → Konteyner Teknolojisi(Docker) →

CI/CD'nin Kısa Tarihi ve Bulut Odaklı Yaklaşım

Uygulama çalışma ortamları daha öngörülebilir ve tekrarlanabilir hale geldi,
Geliştiriciler && Sistem Yöneticileri

→ Network && Orchestration problems →

CI/CD'nin Kısa Tarihi ve Bulut Odaklı Yaklaşım

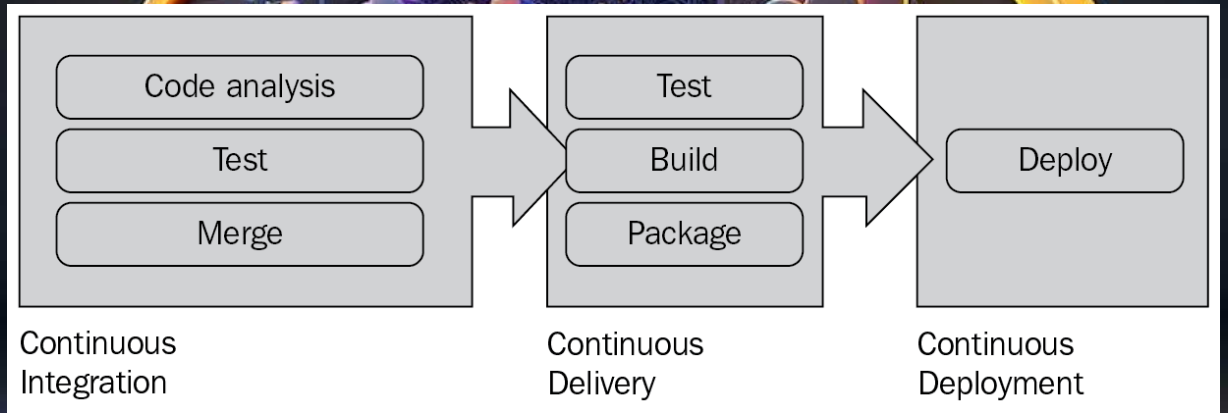
Cloud Native yazılım geliştirme dönemine geçildi/çilecek (Online IDE'ler)

-> yazılım sadece bulutta çalışmakla kalmayıp,

-> test edilip paketlendiği bir döneme girildi

CI/CD (Continuous Integration /Continuous Delivery)

CI/CD'nin Kısa Tarihi ve Bulut Odaklı Yaklaşım



CI/CD ARAÇLARI

CI/CD

Bamboo

TeamCity

Jenkins

circleci

AWS CodePipeline

Azure DevOps

Travis CI

CI/CD ARAÇLARI

JENKINS X

TEKTON

argo

BULUT-TABANLI CI/CD

üç prensibe dayanır:

- Konteynerler
  - Her şey isole konteynerler içinde çalışmalı
  - Her zaman aynı sonuçları elde etmeyi sağlar.
  - Stabil ve kararlı çalışır.
- Serverless
  - Servislerle değil, ihtiyaca bağlı çalışma ve ölçeklenme
  - Merkezi bir sistem yöneticisi gerekmemeli
- DevOps
  - DevOps uygulamaları gözetilerek inşa edilmelidir.
  - Her ekip kendi pipeline'nını yönetmeli

TEKTON NEDIR ?

- Bir input ile pipeline verilir. (git clone)
- Kubernetes
- Bulut-tabanlı standart bir dizi yapı taşı sağlar.
- Platform/dil/bulut sağlayıcı bağımsız
- Birleştirilebilir, deklaratif, tekrarlanabilir ve bulut-tabanlı bileşen oluşturur.
- Custom Resource Definitions (CRD)
- Open source, Red Hat, Google, IBM ....

TEKTON TEMELLERI

Alt projeler:

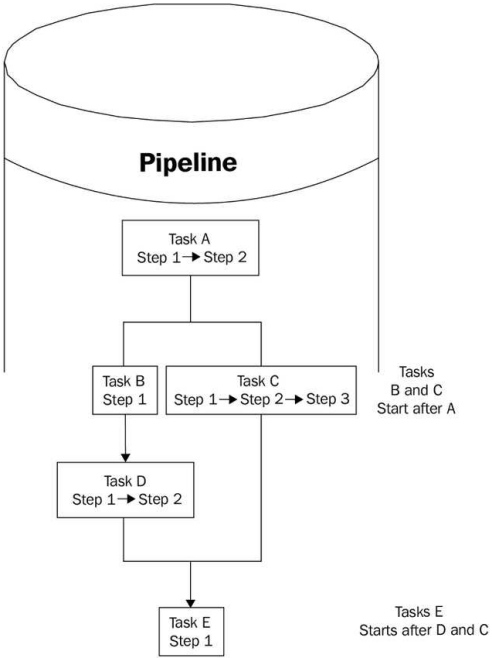
- Tekton CLI
- Tekton Triggers
- Tekton Catalog
- Dashboard

TEKTON TEMELLERI

- Steps

- Tasks

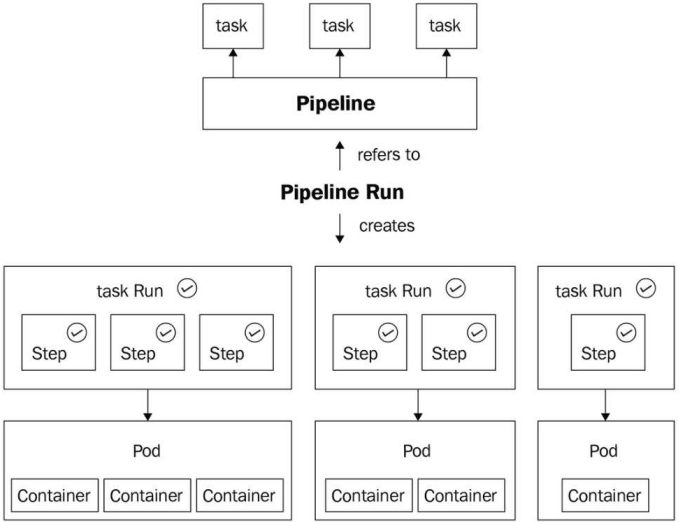
- Pipelines

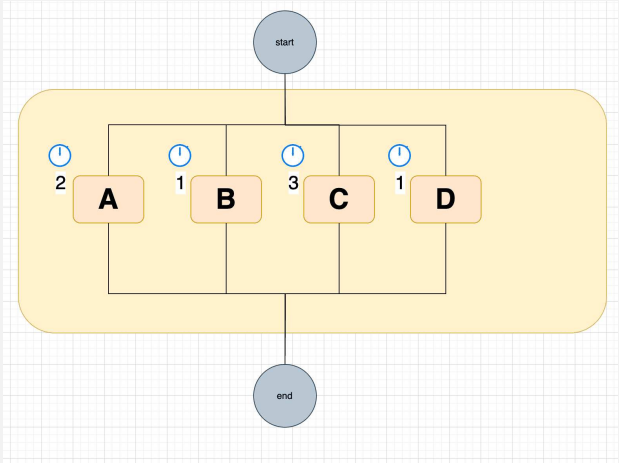


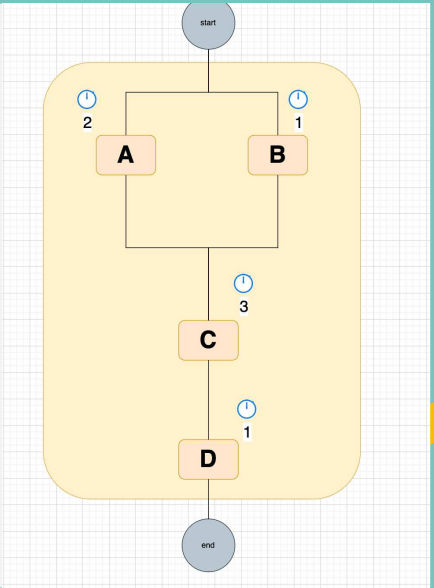
TEKTON TEMELLERI

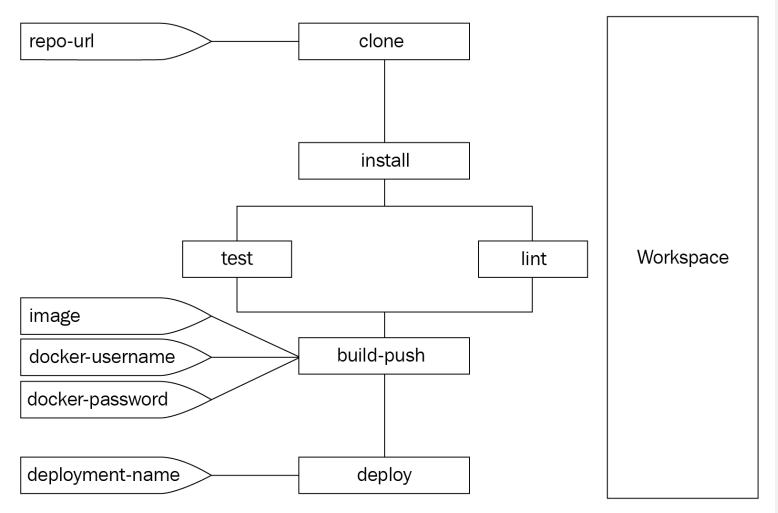
- TaskRun

- PipelineRuns



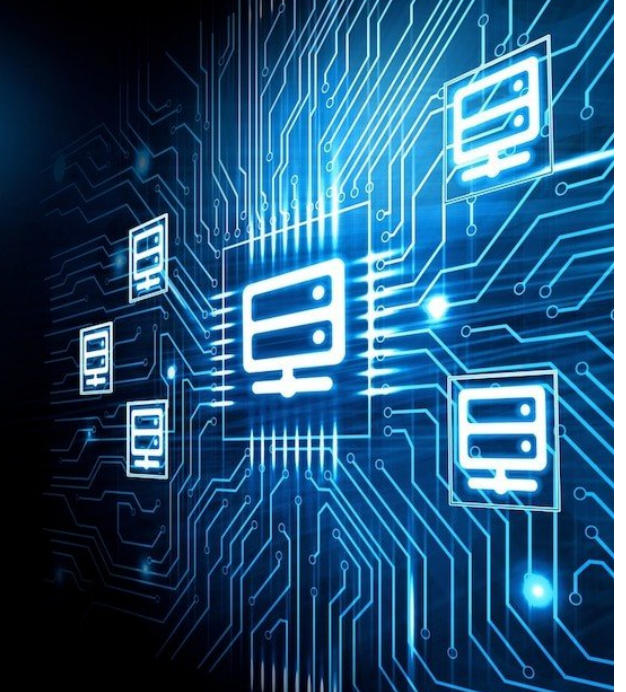

start
2
A
1
B
3
C
1
D
end


start
2
A
1
B
3
C
1
D
end


repo-url
clone
install
test
lint
Workspace
image
docker-username
docker-password
build-push
deployment-name
deploy

TEKTON TEMELLERI

- Workspaces
  - emptyDir (bir tasktaki stepler arası)
  - Persistent Volume Claim (Tasklar arası)
  - PVC, Pipelinelar arası (dependencies...)
- Triggers



AVANTAJLARI

- Cloud-native
- Configurable, Reusable
- Tekton Hub
- Modular Architecture

hub.tekton.dev

TEKTON HUB

Search for resou

Welcome to Tekton Hub

Discover, search and share reusable Tasks and Pipelines

Sort By

Kind
- Pipeline
- Task

Platform
- Linux/amd64
- Linux/ppc64le
- Linux/s390x
- Linux/arm64
- Linux/390x

Catalog
- Tekton

Category
- Automation
- Build Tools
- Cli
- Cloud
- Code Quality
- Continuous Integration
- Deployment
- Developer Tools
- Git
- Image Build
- Integration & Delivery
- Kubernetes
- Messaging
- Monitoring
- Networking
- Openshift
- Publishing

5

Buildpacks v0.2

The Buildpacks pipeline builds source from a Git repository into a container image and pushes it to a registry, using Cloud Native Buildpacks.

Updated a year ago

image-build

5

git cli v0.4

This task can be used to perform git operations. Git command that needs to be run can be passed as a script to the task. This task needs authentication to git in order to push

Updated a year ago

git

5

gogit v0.1

Send a build status to Gitlab/GitHub.

Updated a year ago

search

5

golang build v0.3

This Task is Golang task to build Go projects.

Updated 2 years ago

build-tool

5

jenkins operation v0.1

The following task can be used to interact with the the Jenkins REST API.

Updated 2 years ago

build jenkins

5

pull request v0.1

This Task allows a user to interact with an SCM (source control management) system through an abstracted interface This Task works with both public SCM instances and se

Updated 2 years ago

SCM

5

ssh remote commands v0.1

The following task can be used to execute commands on remote machine. The following task takes host and required credentials as input along with the script and execute

Updated 2 years ago

remote ssh

5

rsync v0.1

This task can be used to synchronize local and remote files.

Updated 2 years ago

files rsync sync

5

send-to-telegram v0.1

These tasks post a simple message to a telegram chat. This task uses the Bot API of telegram to send a message.

Updated 2 years ago

messaging

5

trigger jenkins job v0.1

The following task can be used to trigger a Jenkins job using CURL request from a Tekton Task.

Updated 2 years ago

build jenkins

5

YQ v0.4

This task can be used to replace fields in YAML files. For example for altering helm charts on GitOps repos.

Updated a year ago

yq

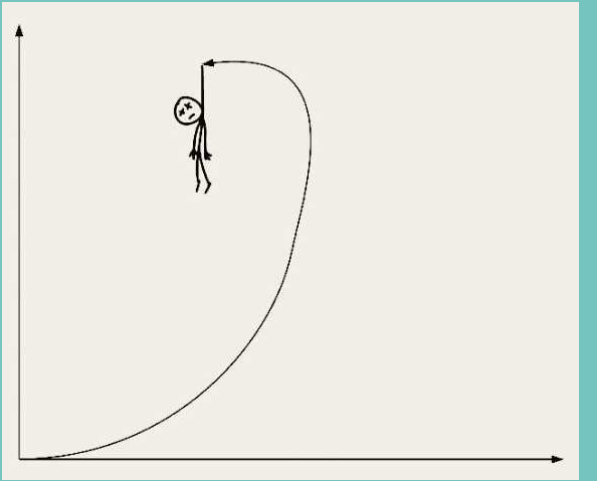
4.5

Buildpacks v0.6

The Buildpacks task builds source into a container image and pushes it to a registry, using Cloud Native Buildpacks.

Updated a year ago

image-build



Tekton Learning Curve

DEZAVANTAJLARI

- Learning Curve
- Plugins
- Dashboard

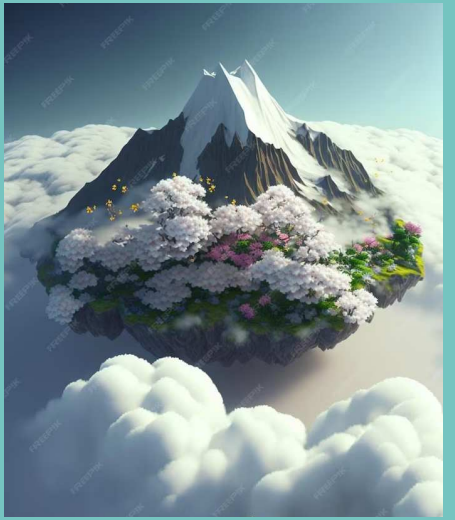
JENKINS VS TEKTON

Jenkins	Tekton
Pipeline	Pipeline and PipelineRun
Stage	Task
Step	A step in a task

TEKTON VS JENKINS

- Kubernetes Native
- Modular Architecture
- Composable Workflows
- Reusable Tasks
- Declarative Model

- Declarative Model
- Monolithic Jenkins File
- Runs on Server



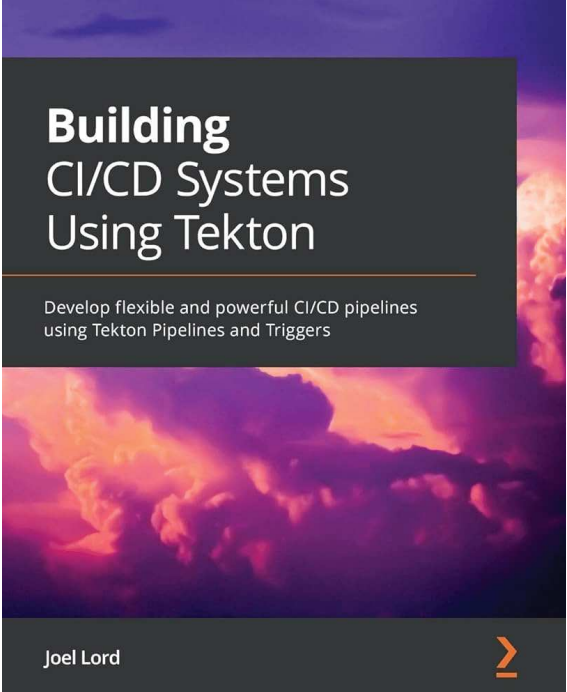
JENKINS X

- Extends tekton

DEMO

Q&A

Any questions?

REFERENCES

- https://tekton.dev/