



2023/04/18

# Bulut Biliřimciler

## Kubernetes ve ArgoCD Workshop



[bulutbilisimciler.com](https://bulutbilisimciler.com)

# Biz Kimiz?



**Alper Reha YAZGAN**

Türk Telekom (2022/01 - Halen)  
Bulut Altyapı Sanallaştırma Operasyonları  
Full Stack Developer



**Hilal ERKAN**

Türk Telekom (2022/01 - Halen)  
Bulut Altyapı Sanallaştırma Operasyonları  
DevOps Engineer



**Bulut Bilişimciler - (2022/04)**

Devops & Full Stack Developer

# İçerik

5 dk

## **Bulut Bilişimciler:**

- Hakkında, Tarihçesi 😊
- Bulut Bilişim Kavram ve Uygulamaları

10 dk

## **DevOps, K8S ve GitOps:**

- Container, Kubernetes, Deployment
- GitOps, ArgoCD

20 dk

## **Demo: (K8S Go Application Deployment with ArgoCD)**

- Go Application Development.
- 3 Node K8S Cluster Setup
- ArgoCD Setup, Config ve App Deployment
- (Bonus) Istio

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**Oturum**

Aşağıdaki linkten demo Github adresine gidebilirsiniz:

<https://github.com/AlperRehaYAZGAN/cn-turkey-workshop-demo>

**Bağımsız**

Bulutbilisimciler.com adresine gidip üye olarak demoları kendiniz deneyebilirsiniz.

# Bulut Biliřimciler Platformu

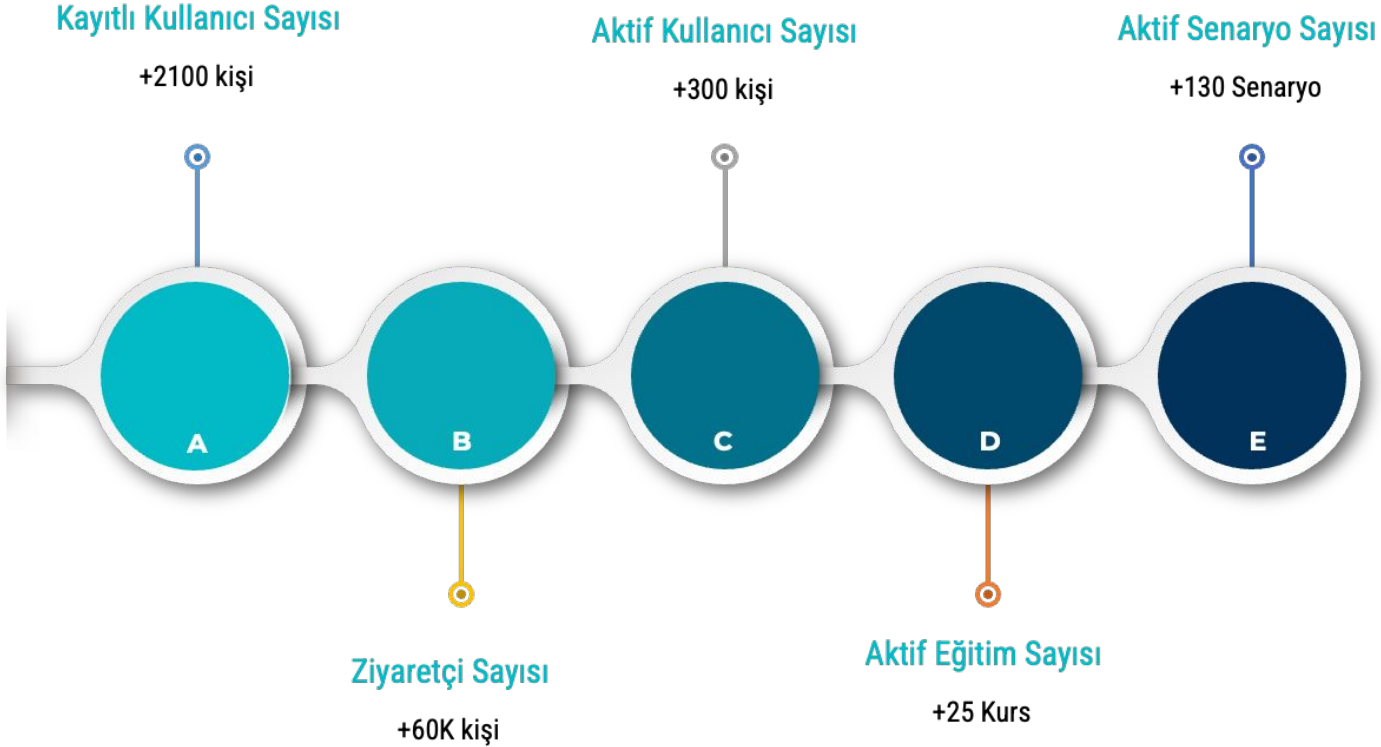


Bulut Biliřim kavramlarının ğrenilebileceęi donanım kaynak talep sorunlarının özöldüęü bir platform ile bir ekosistem oluřturmak.

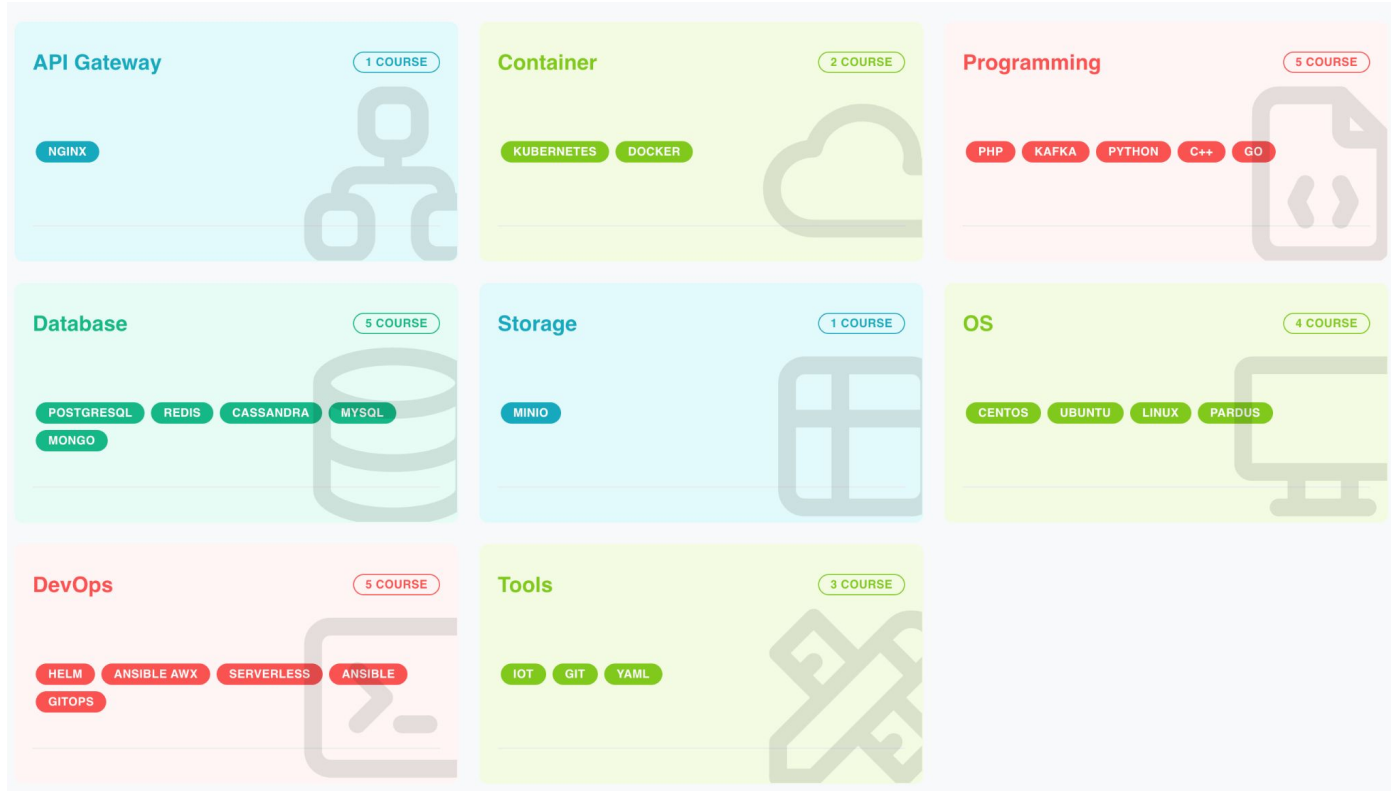
- 2021/10 – BB Kampı 2021
- 2022/03 – Proje Bařlangıcı
- 2022/05 – Prototip ve Üniversite Gezileri
- 2022/10 – Bulut Biliřim Kampı 2022 ve BB Duyuru
- 2023/01 – Sertifika ve İerik Üretimi
- 2023/03 – Üniversite Etkinlikleri ve Buluřmalar



# Bulut Biliřimciler Ekosistemi



# Eğitim Katalogu



# Bulut Biliřim Kavram ve Uygulamaları

# Temel Bulut Bilişim Kavram ve Çözümleri



## Sorun

- Kontrolsüz Talep & Artan Hizmet Portföyü
- Versiyonlama ve Uygulama Gereksinimleri
- Kaynak Artışı ve Yönetimi
- Ürün Ortamına Geçiş Süreci
- Büyük Projeler ve Standardizasyon
- Çalışan Uygulama Felaket Senaryoları

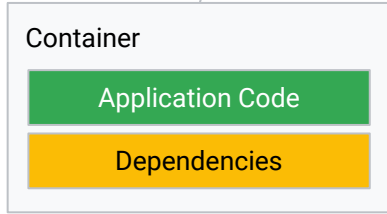
## Çözüm

- Load Balancer & API Gateways
- Git - Version Control System
- Sanallaştırma, Docker, Kubernetes
- DevOps, CI/CD Pipeline
- SoC, SOLID, Microservice
- Backup, Snapshot, Replication, Recovery



# Bulut Bilişim Sistemleri Özetle

## Koddan paket üretimi



### Container Image

- Uygulama binary
- İşletim sistemleri
- Araçlar ve kütüphaneler

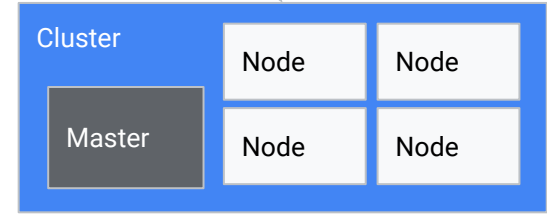
## Çalıştırılabilir paketin saklanması ve taşınması



### Package Registry

- Container Image'lerinizi saklamak için özel veya halka açık bir saklama mağazası

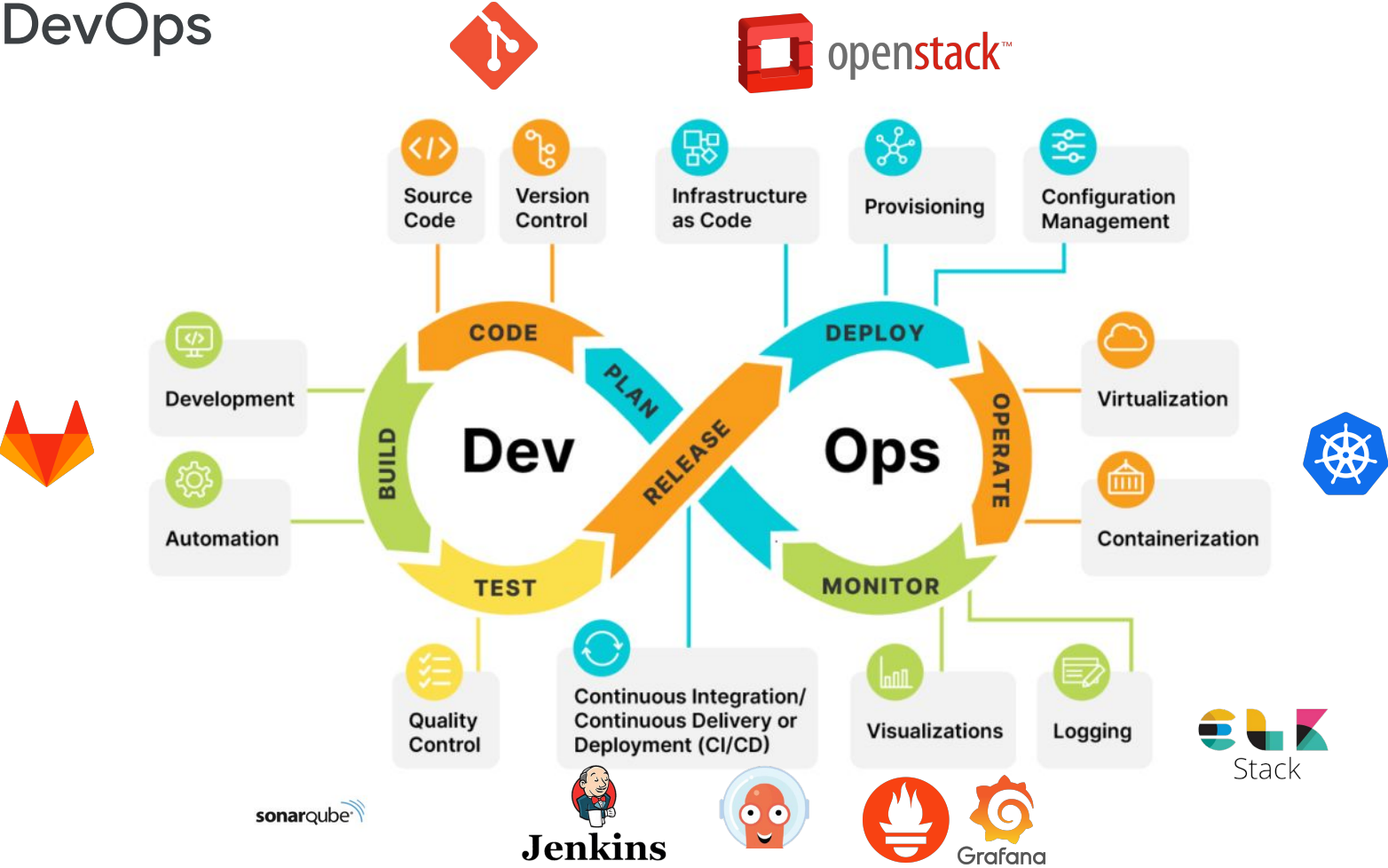
## Paketin sunucuda ayağa kaldırılması ve çalıştırılması



### Deploy App and Orchestration

- Container Orkestrasyon araçları ile (Kubernetes) uygulamanın yaşamına devam etmesi

# DevOps



# GitOps



**Git - Single Source of Truth**

CI Süreçleri

## Continuous Integration

- Source Code
- CI YAML
- Containerization

CD Süreçleri

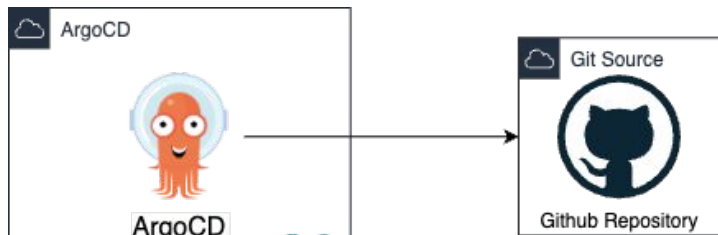
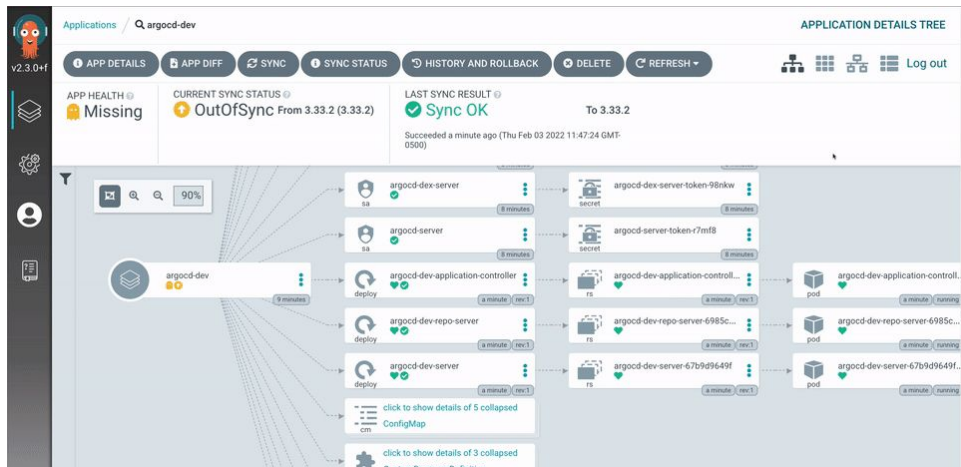
## Continuous Delivery

- Versioning
- Rollout & Rollback
- K8S Config YAML



# ArgoCD

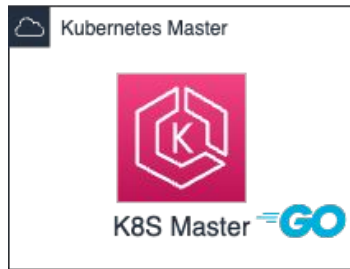
Argo CD is a declarative, GitOps continuous delivery tool for Kubernetes



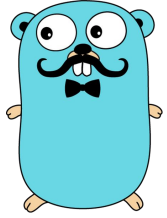
## Config YAML

Uygulama K8S Config YAML'ları için ortak bir referans yerini alarak yöneten araçtır.

Admin API Calls



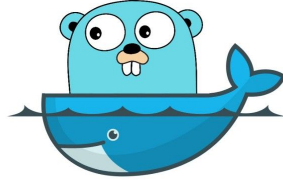
# Bulut Biliřimciler - Demo



1

## Coding

Go uygulama  
kodunun yazılması



2

## Containerization

Kodun alıřtırılabilir paket  
haline getirilmesi



3

## Deployment & Orchestration

Uygulama paketinin  
sunucularda alıřtırılması



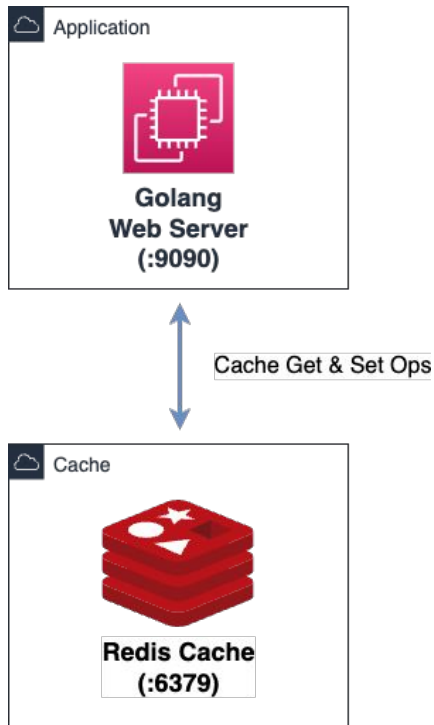
4

## GitOps & ArgoCD

Uygulama orchestration Git  
zerinde tutulması ve  
ArgoCD ile deployment

# Bulut Bilişimciler - Demo : Coding

1



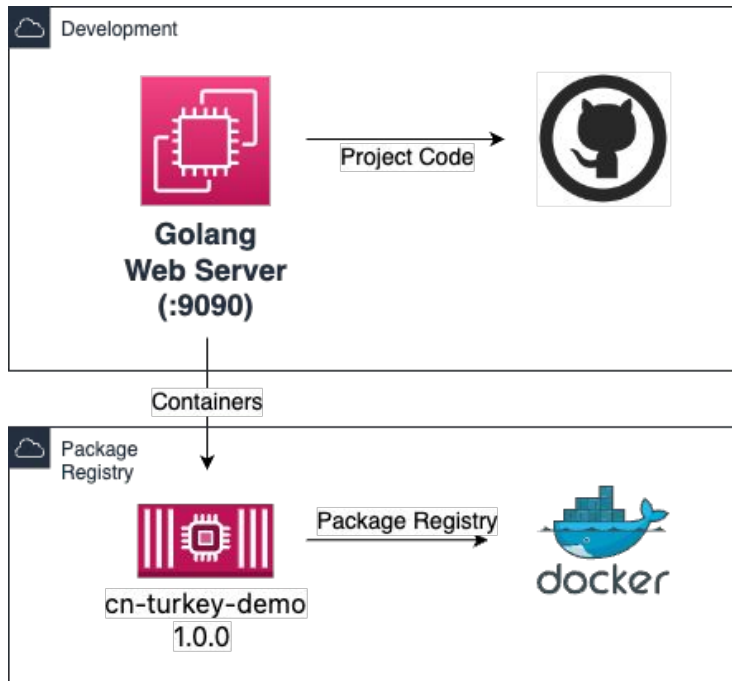
```
// http handler
http.HandleFunc("/", func(w http.ResponseWriter, r *http.Request) {
    // increment counter, render index.html with "Counter"
    counter, _ := rdb.Incr(rContext, "counter").Result()
    t.Execute(w, map[string]interface{}{
        "Counter": counter,
    })
})
```

Kodun detayları için

[github.com/AlperRehaYAZGAN/cn-turkey-workshop-demo](https://github.com/AlperRehaYAZGAN/cn-turkey-workshop-demo)

# Bulut Bilişimciler - Demo : Containerization

2



```
# STAGE-1: build stage
FROM golang:1.17-alpine3.15 AS build-env
RUN apk add build-base
WORKDIR /src
COPY . .
RUN CGO_ENABLED=0 \
    GOOS=linux \
    GOARCH=amd64 \
    go build -o main .

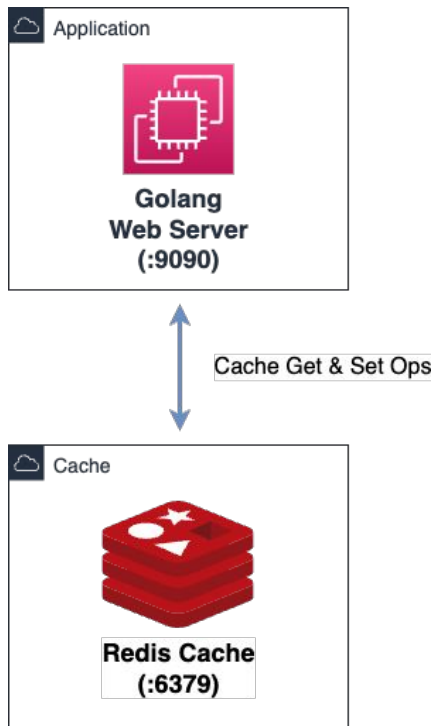
# STAGE-2: deploy stage
FROM alpine
WORKDIR /app
COPY --from=build-env /src/templates /app/templates
COPY --from=build-env /src/main /app/
RUN addgroup -S appgroup && adduser -S appuser -G appgroup
RUN chown -R appuser:appgroup /app
USER appuser

ENTRYPOINT ./main
```

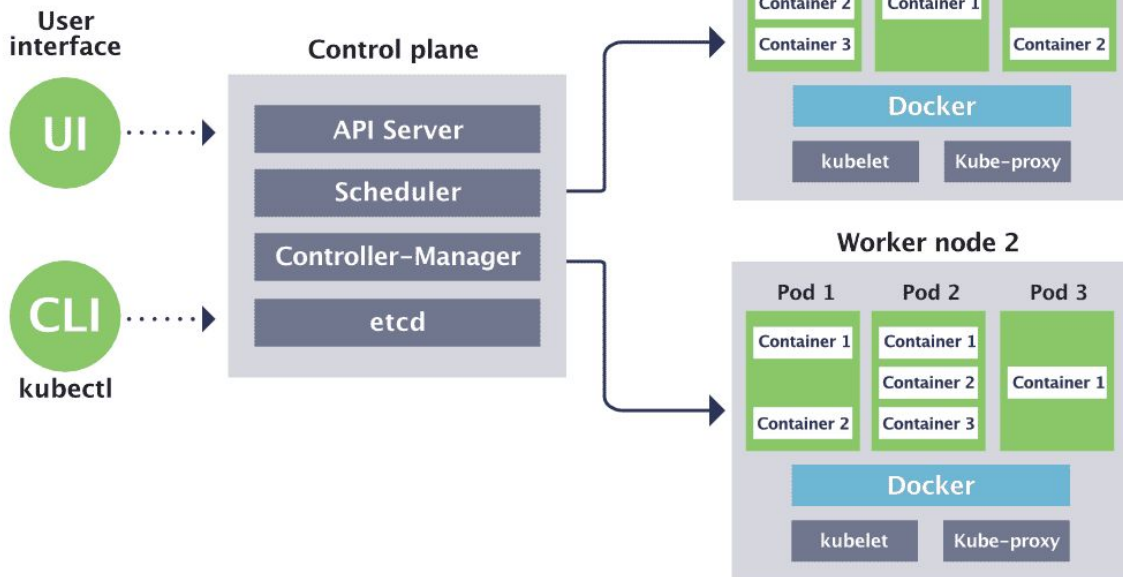
Kodun detayları için  
[github.com/AlperRehaYAZGAN/cn-turkey-workshop-demo](https://github.com/AlperRehaYAZGAN/cn-turkey-workshop-demo)

# Bulut Bilişimciler - Demo : K8S 1/2

3



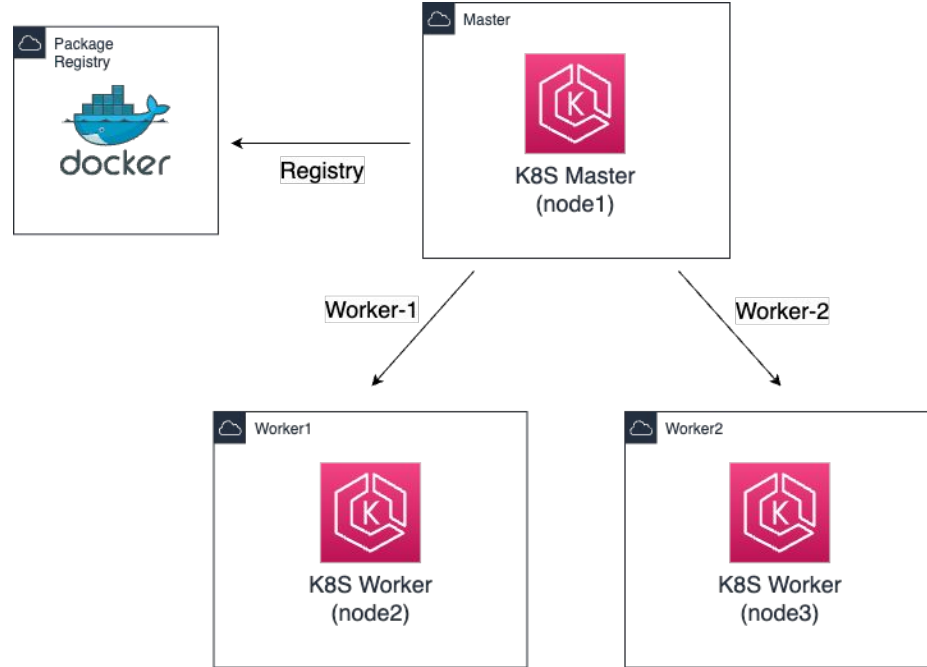
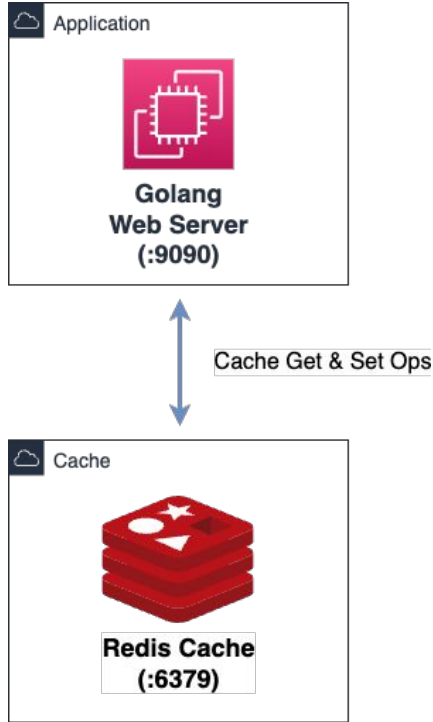
## Kubernetes architecture





# Bulut Bilişimciler - Demo : K8S 2/2

3



**Secrets & Configmap**  
Pod Environment  
Management

**Deployment & Replicaset**  
Pod Runtime Management

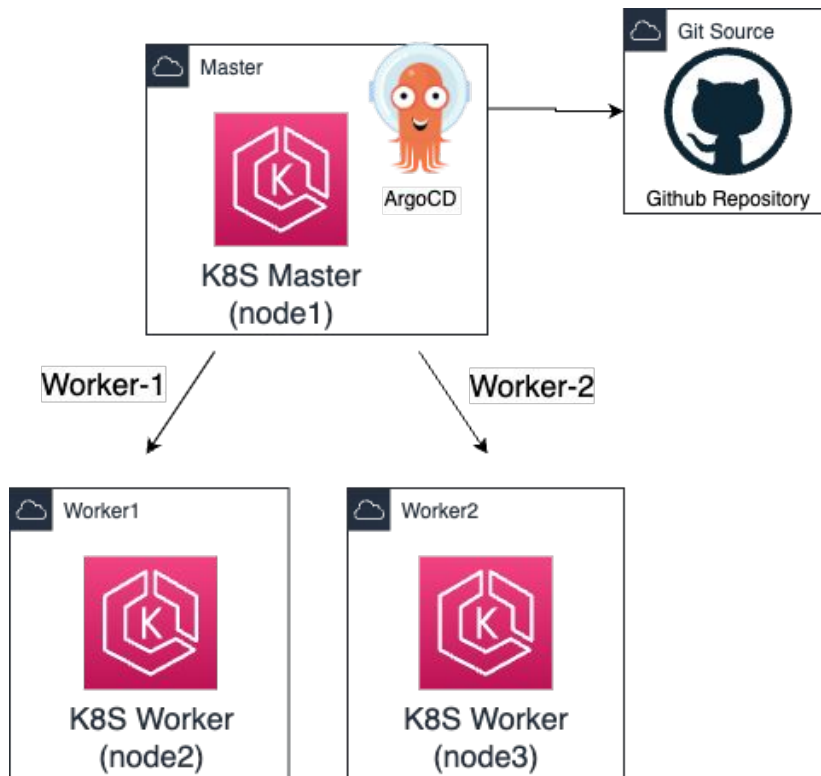
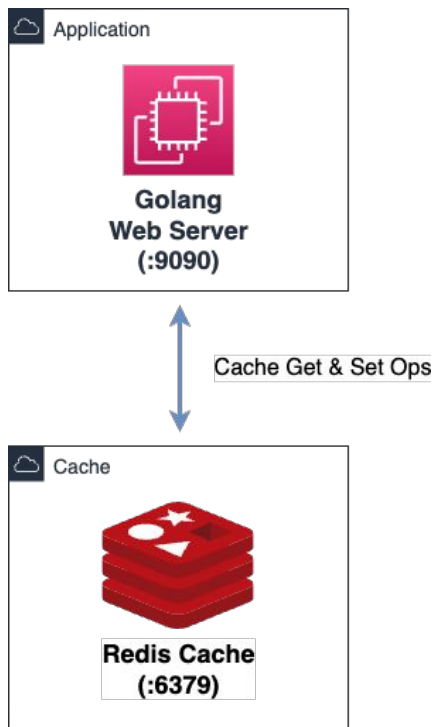
**Service & Ingress**  
Pod Routing  
Management

**Kodun detayları için**

[github.com/AlperRehaYAZGAN/cn-turkey-workshop-demo](https://github.com/AlperRehaYAZGAN/cn-turkey-workshop-demo)

# Bulut Bilişimciler - Demo : ArgoCD

4



## Concepts



### Traffic Management

Deploy capabilities like inter-service routing, failure recovery and load balancing.



### Observability

Provide an end-to-end view of traffic flow and service performance.

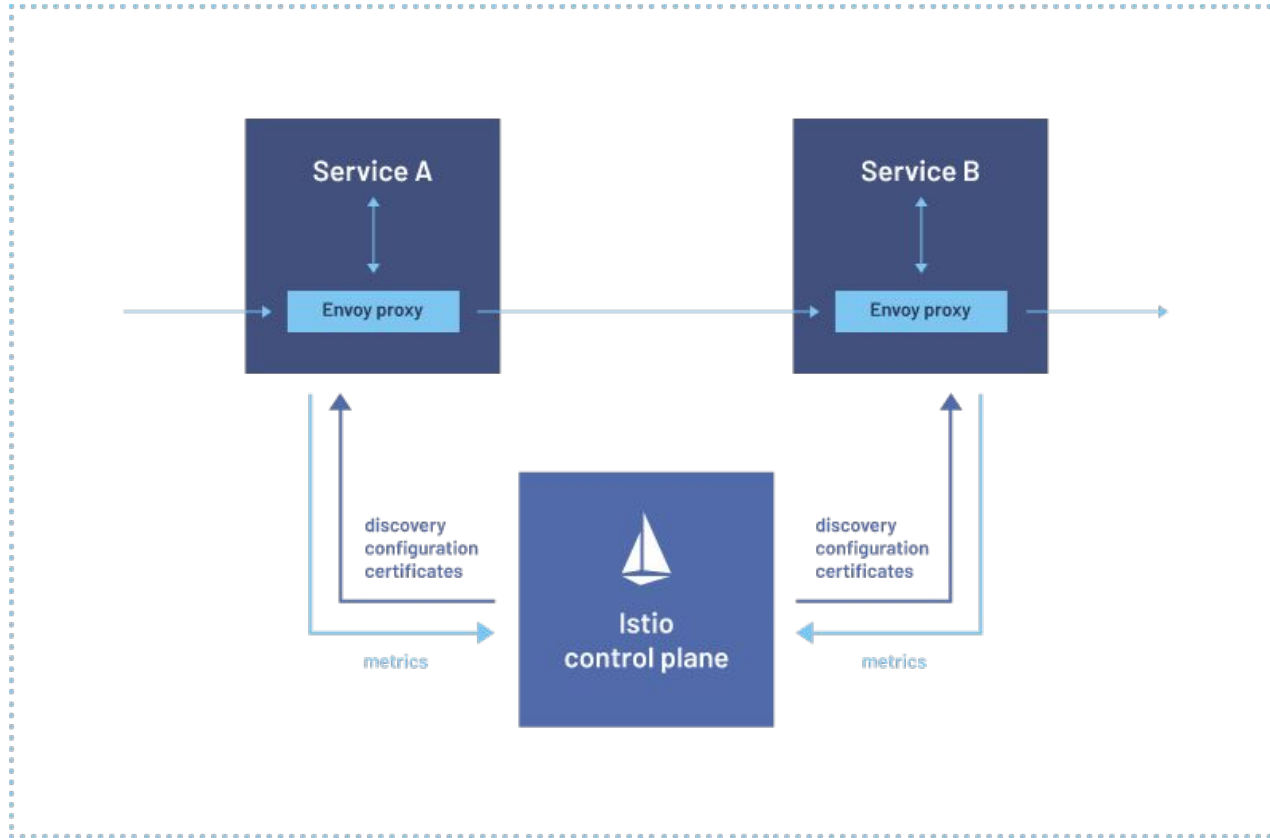


### Security

Engage encryption, role-based access, and authentication across services.

# Bulut Bilişimciler - Demo : Bonus (Istio)

4



# Teşekkürler!

**Alper Reha YAZGAN**  
Türk Telekom  
Full Stack Developer



**Hilal ERKAN**  
Türk Telekom  
DevOps Engineer



## API Gateway

1 COURSE

NGINX



## Container

2 COURSE

KUBERNETES

DOCKER



## Programming

5 COURSE

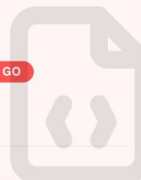
PHP

KAFKA

PYTHON

C++

GO



## Database

5 COURSE

POSTGRESQL

REDIS

CASSANDRA

MYSQL

MONGO



## Storage

1 COURSE

MINIO



## OS

4 COURSE

CENTOS

UBUNTU

LINUX

PARDUS



## DevOps

5 COURSE

HELM

ANSIBLE AWX

SERVERLESS

ANSIBLE

GITOPS



## Tools

3 COURSE

IOT

GIT

YAML

