

4. Verify the update process quickly and remove the deployment after the update.

Bonus task. GitOps with AKS

Requirements:

1. Setup ArgoCD on Azure Kubernetes Services
2. Perform image update on cluster

Source:

<https://foxutech.medium.com/setup-argocd-on-azure-kubernetes-services-9c3fa543f4b6>

<https://learn.microsoft.com/en-us/azure/architecture/example-scenario/gitops-aks/gitops-blueprint-aks>

<https://araji.medium.com/embracing-gitops-setting-up-a-gitops-ready-cluster-on-azure-with-aks-argocd-and-terraform-0fd6f9121088>

Microsoft Azure

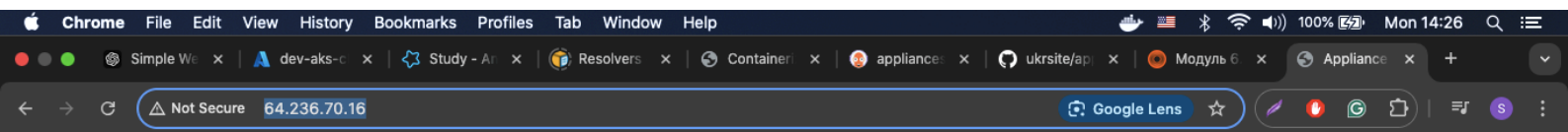
Search resources, services, and docs (G+)

Copilot


StanislavKostenich@dm...
DEFAULT DIRECTORY

Switch to PowerShellRestartManage filesNew sessionEditorWeb previewSettingsHelp

```
stanislav [ ~ ]$ kubectl get pods
NAME                                READY    STATUS    RESTARTS   AGE
appliances-store-57848f8f88-2zhwq  1/1      Running   0           6m56s
appliances-store-57848f8f88-vddv4  1/1      Running   0           6m56s
stanislav [ ~ ]$ kubectl get services
NAME                TYPE          CLUSTER-IP    EXTERNAL-IP    PORT(S)          AGE
appliances-store    LoadBalancer 10.0.90.185    64.236.70.16   80:31747/TCP     7m11s
kubernetes           ClusterIP      10.0.0.1       <none>          443/TCP           4d
stateless-app-service LoadBalancer 10.0.8.88      64.236.11.204  80:32570/TCP     3d
stanislav [ ~ ]$ kubectl get rs
NAME                DESIRED    CURRENT    READY    AGE
appliances-store-57848f8f88 2          2          2        7m27s
stanislav [ ~ ]$ kubectl get deployments
NAME                READY    UP-TO-DATE    AVAILABLE    AGE
appliances-store    2/2      2              2            8m2s
stanislav [ ~ ]$
```



Welcome to our updated V2 store , Anonymous User!

argo
v2.13.2+dc43124

←

Applications

Settings

User Info

Documentation


NAME

NAME


KINDS

KINDS

SYNC STATUS


☐  Synced

2


☐  OutOfSync

0


HEALTH STATUS

☐  Healthy


5

☐  Progressing

0

☐  Degraded

0


☐  Suspended

0

Appli

×

SUMMARY	PARAMETERS	MANIFEST	EVENTS	
REASON	MESSAGE	COUNT	FIRST OCCURRED	LAST OCCURRED
ResourceUpdated	Updated health status: Progressing -> Healthy	1	3m ago Today at 2:22 PM	3m ago Today at 2:22 PM
ResourceUpdated	Updated sync status: OutOfSync -> Synced	1	4m ago Today at 2:20 PM	4m ago Today at 2:20 PM
ResourceUpdated	Updated health status: Missing -> Progressing	1	4m ago Today at 2:20 PM	4m ago Today at 2:20 PM
OperationCompleted	Sync operation to 88aa8309dea8c0eedd1ca98df070d197056ffeea succeeded	1	4m ago Today at 2:20 PM	4m ago Today at 2:20 PM
ResourceCreated	admin created application	1	4m ago Today at 2:20 PM	4m ago Today at 2:20 PM
OperationStarted	Initiated automated sync to '88aa8309dea8c0eedd1ca98df070d197056ffeea'	1	4m ago Today at 2:20 PM	4m ago Today at 2:20 PM
ResourceUpdated	Updated sync status: -> OutOfSync	1	4m ago Today at 2:20 PM	4m ago Today at 2:20 PM

argo

v2.13.2+dc43124

←

App

1

APP

♥

...

Applications

Settings

User Info

Documentation


NAME


NAME

KINDS


KINDS


SYNC STATUS


☐  Synced 2


☐  OutOfSync 0

HEALTH STATUS

☐  Healthy 5

☐  Progressing 0

☐  Degraded 0

☐  Suspended 0

×

SUMMARYPARAMETERSMANIFESTEVENTS

HELM

EDIT

VALUES FILES

No values files selected

PARAMETERS

image.pullPolicy

IfNotPresent

image.repository

devregistry20250126.azurecr.io/appliances-store

image.tag

v1.1.5-03c41fb

replicaCount

2

resources.limits.cpu

400m

resources.limits.memory

512Mi

resources.requests.cpu

200m

resources.requests.memory


256Mi

service.port

80

service.targetPort

8080

argo
v2.13.2+dc43124

←

Applications

Settings

User Info

Documentation


NAME


NAME

KINDS


KINDS


SYNC STATUS


☐  Synced 2


☐  OutOfSync 0

HEALTH STATUS

☐  Healthy 5

☐  Progressing 0

☐  Degraded 0

☐  Suspended 0

Appli

×

SUMMARYPARAMETERSMANIFESTEVENTS


APPLIANCES-STORE

EDIT

PROJECTdefault

ANNOTATIONS

CLUSTERin-cluster (https://kubernetes.default.svc)

NAMESPACEdefault 

CREATED AT02/03/2025 14:20:20 (4 minutes ago)


REPO URLhttps://github.com/ukrsite/appliances-store.git


TARGET REVISIONHEAD


PATHhelm

SYNC OPTIONS

RETRY OPTIONSRetry disabled

STATUS Synced to HEAD (88aa830)

HEALTH Healthy

argo
v2.13.2+dc43124

←

Applications

Settings

User Info

Documentation

NAME

NAME

KINDS

KINDS

SYNC STATUS

☐ Synced 2

☐ OutOfSync 0

HEALTH STATUS

☐ Healthy 5

☐ Progressing 0

☐ Degraded 0

☐ Suspended 0

Applications / appliances-store

APPLICATION DETAILS TREE

DETAILS

DIFF

SYNC

SYNC STATUS

HISTORY AND ROLLBACK

DELETE

REFRESH

APP HEALTH

HEALTHY

SYNC STATUS

Synced to HEAD (88aa830)

Auto sync is enabled.
Author: github-actions[bot] <github-actions@github....
Comment: CI: Update to version v1.1.5-03c41fb

LAST SYNC

Sync OK to 88aa830

Succeeded 4 minutes ago (Mon Feb 03 2025 14:20:21 GMT+0200)
Author: github-actions[bot] <github-actions@github....
Comment: CI: Update to version v1.1.5-03c41fb

appliances-store

4 minutes

appliances-store

SVC

4 minutes

appliances-store

4 minutes

ep

4 minutes

appliances-store-zsckp

endpointslice

4 minutes

appliances-store-57848f8f88

rs

4 minutes

rev:1

🏠 Summary

Jobs

🟢 CI

🟢 CD

Run details

🕒 Usage

📄 Workflow file

CD

succeeded 1 minute ago in 4s

🔍 Search logs

🔄

⚙

> 🟢 Set up job

1s

> 🟢 Checkout Repository

0s

▼ 🟢 Get Version from Git

0s

1 ▶ Run TAG=\$(git describe --tags --abbrev=0 2>/dev/null || echo "v1.0.0")

12 Computed VERSION: v1.1.5-03c41fb

> 🟢 Update Helm Values.yaml

0s

> 🟢 Update Helm Chart Version

0s

> 🟢 Commit and Push Changes

0s

> 🟢 Post Checkout Repository

0s

> 🟢 Complete job

0s

Summary

Jobs

CI

CD

Run details

Usage

Workflow file

CI

succeeded now in 36s

Search logs

> Set up job3s

> Pre Azure Login (OIDC)3s

> Checkout Repository0s

> Azure Login (OIDC)2s

> Login to Azure Container Registry (ACR)1s

> Set Up Docker Buildx3s

> Get Version from Git0s

> Generate Docker Metadata0s

> Build & Push Docker Image19s

> Verify Docker Image Push2s

1 ▶ Run echo "Verifying image push to ACR"

34 Verifying image push to ACR

35 WARNING: The login server endpoint suffix '.azurecr.io' is automatically omitted.

36 Result

37

38 latest

39 v1.1.5-03c41fb

> Logout from Azure Container Registry (ACR)0s

> Post Build & Push Docker Image0s

> Post Set Up Docker Buildx0s

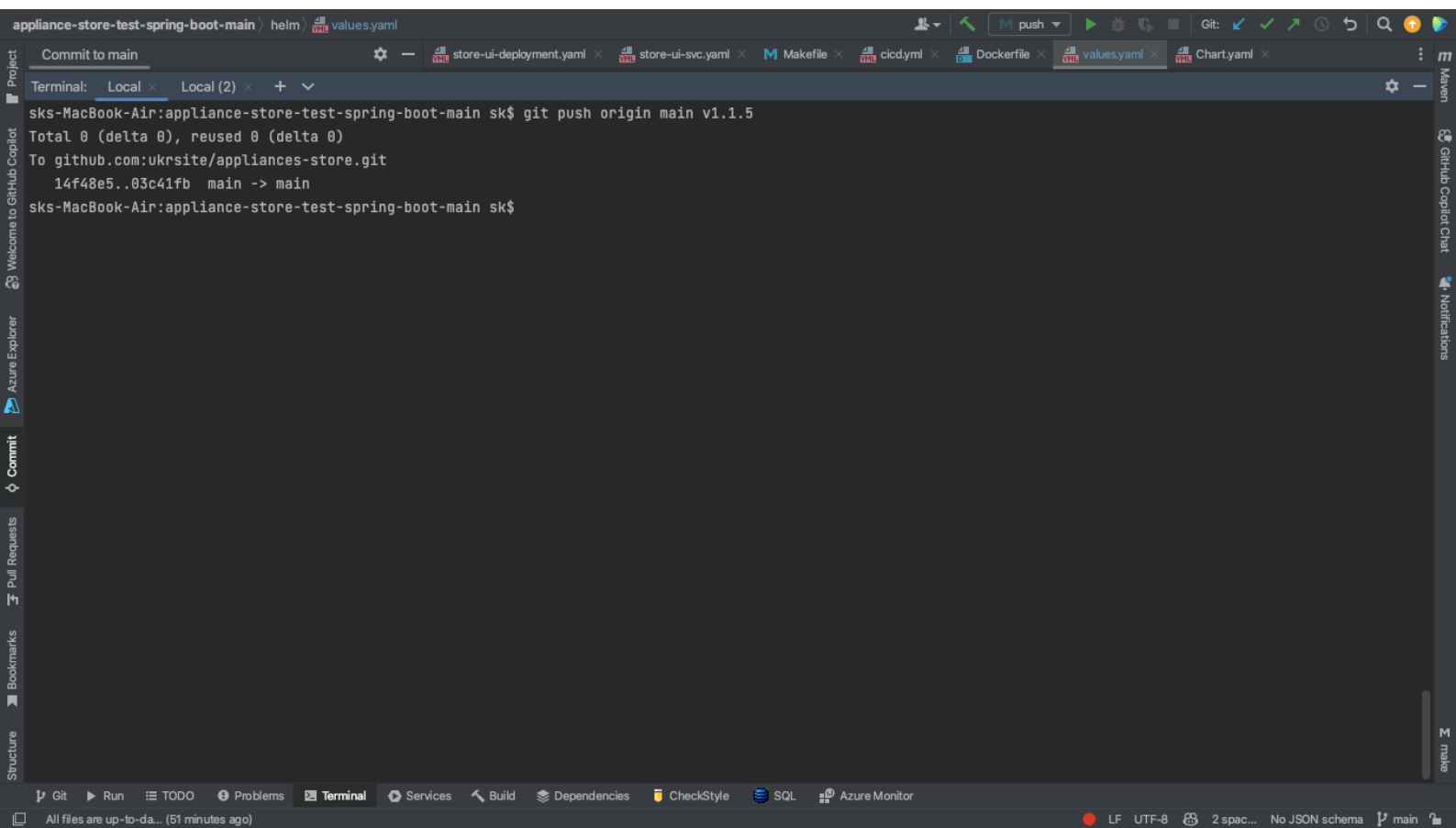
> Post Login to Azure Container Registry (ACR)0s

> Post Checkout Repository0s

> Post Azure Login (OIDC)0s

1 Post job cleanup.

2 Clearing azure cli accounts from the local cache.



```
appliance-store-test-spring-boot-main .github workflows cicd.yml
Project
Terminal: Local Local (2) +
To github.com:ukrsite/appliances-store.git
* [new tag] v1.0.0 -> v1.0.0
sks-MacBook-Air:appliance-store-test-spring-boot-main sk$ clear
sks-MacBook-Air:appliance-store-test-spring-boot-main sk$ git tag v1.1.3
sks-MacBook-Air:appliance-store-test-spring-boot-main sk$ git commit -m "Updated cicd.yml"
On branch main
Your branch is up to date with 'origin/main'.

Changes not staged for commit:
  modified:   .github/workflows/cicd.yml

Untracked files:
  .DS_Store
  logs/

no changes added to commit
sks-MacBook-Air:appliance-store-test-spring-boot-main sk$ clear
sks-MacBook-Air:appliance-store-test-spring-boot-main sk$ git tag v1.1.3
fatal: tag 'v1.1.3' already exists
sks-MacBook-Air:appliance-store-test-spring-boot-main sk$ git tag v1.1.4
sks-MacBook-Air:appliance-store-test-spring-boot-main sk$ git add .github/workflows/cicd.yml
sks-MacBook-Air:appliance-store-test-spring-boot-main sk$ git commit -m "Updated cicd.yml"
[main 03c41fb] Updated cicd.yml
 1 file changed, 3 insertions(+), 9 deletions(-)
sks-MacBook-Air:appliance-store-test-spring-boot-main sk$ git push origin v1.1.4
Total 0 (delta 0), reused 0 (delta 0)
To github.com:ukrsite/appliances-store.git
* [new tag] v1.1.4 -> v1.1.4
sks-MacBook-Air:appliance-store-test-spring-boot-main sk$
```

Git Run TODO Problems Terminal Services Build Dependencies CheckStyle SQL Azure Monitor

Rebase successful: Checked out main and rebased it on origin/main... (yesterday 23:47) 116:38 LF UTF-8 2 spac... Schema: github-workflow.json main

appliance-store-test-spring-boot-main .github workflows cicd.yml

Project

- appliance-store-test-spring-boot-main [Appliance-store-Sp
 - .github
 - workflows
 - cicd.yml

111 - name: Update Helm Values.yaml

112 run: yq eval -i '.image.tag=env(VERSION)' helm/values.yaml

113

114 - name: Update Helm Chart Version

115 run: |

116 yq eval -i '.version=strenv(VERSION)' helm/Chart.yaml

117 yq eval -i '.appVersion=strenv(VERSION)' helm/Chart.yaml

118

119 - name: Commit and Push Changes

120 env:

121 GITHUB_TOKEN: \${ secrets.GITHUB_TOKEN }

122 run: |

123 git config --global user.name "github-actions[bot]"

124 git config --global user.email "github-actions@github.com"

125

126 git fetch origin main # Fetch latest changes from remote

127 git reset --soft origin/main # Ensure our local changes are on top

128

129 git add helm/values.yaml helm/Chart.yaml

130 git diff-index --quiet HEAD || git commit -m "CI: Update to version \$VERSION"

131

132 # Pull latest changes before pushing

133 git pull --rebase origin main

134

135 # Push after rebasing

136 git push https://x-access-token:\${ secrets.GITHUB_TOKEN }@github.com/\${ github.repository }.g

137

Document 1/1 > jobs: > cd: > steps: > Item 5/5 > run: > git config --global ...

Rebase successful: Checked out main and rebased it on origin/main... (yesterday 23:47)

137:1 LF UTF-8 2 spac... Schema: github-workflow.json main

appliance-store-test-spring-boot-main .github workflows cicd.yml

Project

appliance-store-test-spring-boot-main [Appliance-store-Sp

.github

workflows

cicd.yml

.idea

helm

templates

Chart.yaml

values.yaml

logs

src

.gitignore

docker-compose.yml

Dockerfile

img.png

Makefile

mvnw

mvnw.cmd

pom.xml

README.md

External Libraries

Scratches and Consoles

store-ui-deployment.yaml

store-ui-svc.yaml

Makefile

cicd.yml

Dockerfile

values.yaml

Chart.yaml

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```
- name: Get Version from Git
  id: version
  run: |
    TAG=$(git describe --tags --abbrev=0 2>/dev/null || echo "v1.0.0")
    SHORT_SHA=$(git rev-parse --short HEAD)
    VERSION="${TAG}-${SHORT_SHA}"

    echo "VERSION=$VERSION" >> $GITHUB_ENV
    echo "SHORT_SHA=$SHORT_SHA" >> $GITHUB_ENV
    echo "Computed VERSION: $VERSION"

- name: Generate Docker Metadata
  id: meta
  uses: docker/metadata-action@v5
  with:
    images: |
      ${ env.REGISTRY }/${ env.IMAGE_NAME }
    tags: |
      type=raw,value=latest
      type=raw,value=${ env.VERSION }

- name: Build & Push Docker Image
  uses: docker/build-push-action@v5
  with:
    context: .
    file: Dockerfile
    push: true
    platforms: linux/amd64,linux/arm64
```

Document 1/1 > jobs: > ci: > steps: > Item 7/9 > with:

Git

Run

TODO

Problems

Terminal

Services

Build

Dependencies

CheckStyle

SQL

Azure Monitor

Rebase successful: Checked out main and rebased it on origin/main... (yesterday 23:47)

71:1 LF UTF-8 2 spac... Schema: github-workflow.json main

appliance-store-test-spring-boot-main Dockerfile

Project

appliance-store-test-spring-boot-main [Appliance-store-Sp

.github

workflows

cicd.yml

.idea

helm

templates

Chart.yaml

values.yaml

logs

src

.gitignore

docker-compose.yml

Dockerfile

img.png

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mvnw

mvnw.cmd

pom.xml

README.md

External Libraries

Scratches and Consoles

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19

🌟 Stage 1: Build the application

FROM maven:3.9.6-amazoncorretto-17 AS builder

WORKDIR /app

COPY pom.xml .

COPY src ./src

Build the application

RUN mvn clean package -DskipTests

🌟 Stage 2: Create a lightweight runtime image

FROM openjdk:17-jdk-slim

WORKDIR /app

COPY --from=builder /app/target/Appliance-store-Spring-0.0.1-SNAPSHOT.jar app.jar

Expose application port

EXPOSE 8080

Run the JAR file

ENTRYPOINT ["java", "-jar", "app.jar"]

Git

Run

TODO

Problems

Terminal

Services

Build

Dependencies

CheckStyle

SQL

Azure Monitor

Rebase successful: Checked out main and rebased it on origin/main... (yesterday 23:47)

6:1 LF UTF-8 4 spac... main

appliance-store-test-spring-boot-main / helm Chart.yaml

Project

appliance-store-test-spring-boot-main [Appliance-store-Sp

.github

workflows

cicd.yml

.idea

helm

templates

Chart.yaml

values.yaml

logs

src

.gitignore

docker-compose.yml

Dockerfile

img.png

Makefile

mvnw

mvnw.cmd

pom.xml

README.md

External Libraries

Scratches and Consoles

1

2

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6

apiVersion: v2

name: appliances-store

description: Helm chart for Appliances Store application

version: "v1.0.0-fd3d8e1"

appVersion: "v1-73219ab"

Document 1/1

appVersion:

Git

Run

TODO

Problems

Terminal

Services

Build

Dependencies

CheckStyle

SQL

Azure Monitor

5:11 (10 chars)

LF

UTF-8

2 spac...

Schema: chart.json

main

Rebase successful: Checked out main and rebased it on origin/main... (yesterday 23:47)

appliance-store-test-spring-boot-main | helm | values.yaml

Project

appliance-store-test-spring-boot-main [Appliance-store-Sp

> .github

> .idea

> helm

> templates

Chart.yaml

values.yaml

> logs

> src

.gitignore

docker-compose.yml

Dockerfile

img.png

Makefile

mvnw

mvnw.cmd

pom.xml

README.md

External Libraries

Scratches and Consoles

Structure

store-ui-deployment.yaml

store-ui-svc.yaml

Makefile

cicd.yml

values.yaml

```
1 image:
2   repository: devregistry20250126.azurecr.io/appliances-store
3   tag: v1.0.0-fd3d8e1
4   pullPolicy: IfNotPresent
5   replicaCount: 2
6 resources:
7   requests:
8     cpu: 200m
9     memory: 256Mi
10  limits:
11    cpu: 400m
12    memory: 512Mi
13  service:
14    type: LoadBalancer
15    port: 80
16    targetPort: 8080
17  strategy:
18    type: RollingUpdate
19    rollingUpdate:
20      maxUnavailable: 1
21      maxSurge: 1
22
```

Git

Run

TODO

Problems

Terminal

Services

Build

Dependencies

CheckStyle

SQL

Azure Monitor

Rebase successful: Checked out main and rebased it on origin/main... (yesterday 23:47)

22:1 LF UTF-8 2 spac... No JSON schema | main


```
Microsoft Azure Search resources, services, and docs (G+/) Copilot StanislawKostenich@dm...  
Switch to PowerShell Restart Manage files New session Editor Web preview Settings Help  
stanislaw [ ~ ]$ kubectl get nodes  
NAME STATUS ROLES AGE VERSION  
aks-agentpool-13218111-vmss000003 Ready <none> 2m31s v1.30.7  
stanislaw [ ~ ]$ kubectl create namespace argocd  
namespace/argocd created  
stanislaw [ ~ ]$ kubectl apply -n argocd -f https://raw.githubusercontent.com/argoproj/argo-cd/stable/manifests/install.yaml  
customresourcedefinition.apiextensions.k8s.io/applications.argoproj.io created  
customresourcedefinition.apiextensions.k8s.io/applicationsets.argoproj.io created  
customresourcedefinition.apiextensions.k8s.io/appprojects.argoproj.io created  
serviceaccount/argocd-application-controller created  
serviceaccount/argocd-applicationset-controller created  
serviceaccount/argocd-dex-server created  
serviceaccount/argocd-notifications-controller created  
serviceaccount/argocd-redis created  
serviceaccount/argocd-repo-server created  
serviceaccount/argocd-server created  
role.rbac.authorization.k8s.io/argocd-application-controller created  
role.rbac.authorization.k8s.io/argocd-applicationset-controller created  
role.rbac.authorization.k8s.io/argocd-dex-server created  
role.rbac.authorization.k8s.io/argocd-notifications-controller created
```

4. Verify the update process quickly and remove the deployment after the update.

Bonus task. GitOps with AKS

Requirements:

1. Setup ArgoCD on Azure Kubernetes Services
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Source:

<https://foxutech.medium.com/setup-argocd-on-azure-kubernetes-services-9c3fa543f4b6>

<https://learn.microsoft.com/en-us/azure/architecture/example-scenario/gitops-aks/gitops-blueprint-aks>

<https://araji.medium.com/embracing-gitops-setting-up-a-gitops-ready-cluster-on-azure-with-aks-argocd-and-terraform-0fd6f9121088>