

GitOps

Activity 4: GitHub CI/CD Manifest ArgoCD workflow – deploying application to Kubernetes.

Version	Revision Date	Description	Author	Reviewed by	Approved by
V1.0	21-Apr-23	Initial Version	Rakhi Parashar	Rathna Perumalsamy	CPCL, Sreenivasa Rao

This Activity demonstrates how to make use of Actions and using configuration files creating CICD workflow.

1

Prerequisite: 1. Account in github needs to be created and signup .
2. Sign up to hub.docker.com and create your account.

2

First check minikube is running or not by executing the below command

Minikube status

Part 2: Install ArgoCD:

1. Open Terminal in your VM remote desktop.
2. Run sudo su command to switch to root user.
3. Run Setup script given by Trainer to install Docker, Kubernetes, kubectl.
4. Run below commands to create namespace for argocd and install it.

Note – Install with the latest version of ArgoCD

minikube kubectl create namespace argocd

minikube kubectl -- apply -n argocd -f <https://raw.githubusercontent.com/argoproj/argo-cd/stable/manifests/install.yaml>

[root@ip-172-32-15-46 ~]# kubectl create namespace argocd namespace/argocd created [root@ip-172-32-15-46 ~]# 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

minikube kubectl -- get all -n argocd

minikube kubectl -- -n argocd get secret argocd-initial-admin-secret -o jsonpath="{.data.password}" | base64 -d

[root@ip-172-32-15-46 ~]# kubectl -n argocd get secret argocd-initial-admin-secret -o jsonpath="{.data.password}" | base64 -d S-CVJUzkajq-xLK7[root@ip-172-32-15-46 ~]# █

You can copy the argocd password and save it to login to argocd using username as “admin” and above password.

Run below command to get the argocd-server service IP and login.

minikube kubectl -- get all -n argocd

[root@ip-172-32-15-46 ~]# kubectl get all -n argocd

NAME	READY	STATUS	RESTARTS	AGE
pod/argocd-application-controller-0	1/1	Running	0	2m24s
pod/argocd-applicationset-controller-695df5687d-gjdtm	1/1	Running	0	2m24s
pod/argocd-dex-server-54c99dd844-t8c6m	1/1	Running	0	2m24s
pod/argocd-notifications-controller-7d7568845c-s27fj	1/1	Running	0	2m24s
pod/argocd-redis-6d8cffcc47-77pv7	1/1	Running	0	2m24s
pod/argocd-repo-server-647c6568c9-fsklb	1/1	Running	0	2m24s
pod/argocd-server-8bdf66d5-frwcw	1/1	Running	0	2m24s

NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT(S)	AGE
service/argocd-applicationset-controller	ClusterIP	10.102.252.215	<none>	7000/TCP,8080/TCP	2m25s
service/argocd-dex-server	ClusterIP	10.98.135.111	<none>	5556/TCP,5557/TCP,5558/TCP	2m25s
service/argocd-metrics	ClusterIP	10.102.134.154	<none>	8082/TCP	2m25s
service/argocd-notifications-controller-metrics	ClusterIP	10.108.57.155	<none>	9001/TCP	2m25s
service/argocd-redis	ClusterIP	10.107.163.99	<none>	6379/TCP	2m25s
service/argocd-repo-server	ClusterIP	10.105.117.00	<none>	8081/TCP,8084/TCP	2m25s
service/argocd-server	ClusterIP	10.99.181.89	<none>	80/TCP,443/TCP	2m25s
service/argocd-server-metrics	ClusterIP	10.103.80.41	<none>	8083/TCP	2m24s

The image is a composite of two screenshots from the Argo CD web interface. The top screenshot shows the login page with the text "Let's get stuff deployed!" and a large octopus mascot. A purple box highlights the login form, which includes fields for "Username" (with "admin" entered) and "Password" (with masked characters). A purple arrow points to the "SIGN IN" button. The bottom screenshot shows the "Applications" page with a message: "No applications available to you just yet. Create new application to start managing resources in your cluster." A purple box highlights the "+ NEW APP" button. Below this, the "CREATE APPLICATION" form is shown, with the "CREATE" button highlighted. The form includes sections for "GENERAL" (Application Name, Project Name), "SYNC POLICY" (Manual), "SYNC OPTIONS" (checkboxes for SET DELETION FINALIZER, SKIP SCHEMA VALIDATION, PRUNE LAST, RESPECT IGNORE DIFFERENCES), and "PRUNE PROPAGATION POLICY" (foreground).

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← → ↻ <https://10.99.181.89/applications?showFavorites=false>

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Argo CD
v2.6.4+7be094f

Applications

Settings

User Info

Documentation

←

FILTERS

☐ ★ Favorites Only

SYNC STATUS

☐ ○ Unknown 0

Applications

+ NEW APP SYNC APPS REFRESH APPS

flaskdemo

Project: default

Labels:

Status: ○ Progressing ✓ Synced

Repository: <https://github.com/rakhar/GitOpskubernetes...>

Target Re... HEAD

Path: ./

Destinati... in-cluster

Namespa... default

Created At: 03/09/2023 09:47:46 (a few seconds ago)

SYNC REFRESH DELETE

← → ↻ <https://10.99.181.89/applications/argocd/flaskdemo?view=tree&resource=>

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Applications

Settings

User Info

Documentation

←

FILTERS

NAME

KINDS

SYNC STATUS

Applications / flaskdemo

APP DETAILS APP DIFF SYNC SYNC STATUS HISTORY AND ROLLBACK DELETE REFRESH

APP HEALTH ○ Progressing

CURRENT SYNC STATUS ✓ Synced

Author: rakhar <rakhi.parashar@accenture.com>
Comment: Auto sync is enabled.

LAST SYNC RESULT ✓ Sync OK

Succeeded 26 minutes ago (Mon Mar 13 2023 08:11:27 GMT+0000)

Author: rakhar <rakhi.parashar@accenture.com>
Comment: Update deployment.yaml

flaskdemo

flaskdemo

flaskdemo-dcbcbcf5f-49s2x

flaskdemo-dcbcbcf5f-bn6jg

flaskdemo-dcbcbcf5f-n66kh

```
[root@ip-172-32-15-46 gitopsdemocoderakhi]# minikube kubectl -- get pods -A
```

NAMESPACE	NAME	READY	STATUS	RESTARTS	AGE
argocd	argocd-application-controller-0	1/1	Running	4	4d
argocd	argocd-applicationset-controller-695df5687d-gjdt	1/1	Running	4	4d
argocd	argocd-dex-server-54c99dd844-t8c6m	1/1	Running	4	4d
argocd	argocd-notifications-controller-7d7568845c-s27fj	1/1	Running	4	4d
argocd	argocd-redis-6d8cfffcc47-77pv7	1/1	Running	4	4d
argocd	argocd-repo-server-647c6568c9-fsklb	1/1	Running	4	4d
argocd	argocd-server-8bdf66d5-frwcw	1/1	Running	4	4d
default	flaskdemo-dcbcbcf5f-49s2x	1/1	Running	0	29m
default	flaskdemo-dcbcbcf5f-bn6jg	1/1	Running	0	29m
default	flaskdemo-dcbcbcf5f-n66kh	1/1	Running	0	29m
default	testing-5dcd69ccd7-484nt	0/1	CrashLoopBackOff	24	99m
default	testrakhi-68d9795c49-vbvrr	1/1	Running	0	82m
kube-system	coredns-558bd4d5db-qsqdx	1/1	Running	5	6d23h
kube-system	etcd-ip-172-32-15-46.ap-south-1.compute.internal	1/1	Running	5	6d23h
kube-system	kube-apiserver-ip-172-32-15-46.ap-south-1.compute.internal	1/1	Running	5	6d23h
kube-system	kube-controller-manager-ip-172-32-15-46.ap-south-1.compute.internal	1/1	Running	5	6d23h
kube-system	kube-proxy-xpl9q	1/1	Running	5	6d23h
kube-system	kube-scheduler-ip-172-32-15-46.ap-south-1.compute.internal	1/1	Running	5	6d23h
kube-system	storage-provisioner	1/1	Running	9	6d23h

```
[root@ip-172-32-15-46 gitopsdemocoderakhi]#
```

GitOps School

```
[root@ip-172-32-15-46 gitopsdemocoderakhi]# minikube kubectl -- get svc -A
```

NAMESPACE	NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT(S)	AGE
argocd	argocd-applicationset-controller	ClusterIP	10.102.252.215	<none>	7000/TCP,8080/TCP	4d
argocd	argocd-dex-server	ClusterIP	10.98.135.111	<none>	5556/TCP,5557/TCP,5558/TCP	4d
argocd	argocd-metrics	ClusterIP	10.102.134.154	<none>	8082/TCP	4d
argocd	argocd-notifications-controller-metrics	ClusterIP	10.108.57.155	<none>	9001/TCP	4d
argocd	argocd-redis	ClusterIP	10.107.163.99	<none>	6379/TCP	4d
argocd	argocd-repo-server	ClusterIP	10.105.117.90	<none>	8081/TCP,8084/TCP	4d
argocd	argocd-server	ClusterIP	10.99.181.89	<none>	80/TCP,443/TCP	4d
argocd	argocd-server-metrics	ClusterIP	10.103.80.41	<none>	8083/TCP	4d
default	kubernetes	ClusterIP	10.96.0.1	<none>	443/TCP	6d23h
default	lb-service	LoadBalancer	10.105.67.194	<pending>	8000:31727/TCP	27m
kube-system	kube-dns	ClusterIP	10.96.0.10	<none>	53/UDP,53/TCP,9153/TCP	6d23h

```
[root@ip-172-32-15-46 gitopsdemocoderakhi]#
```

172.32.15.46 - Remote Desktop Connection

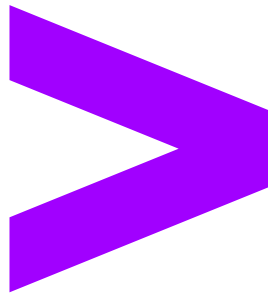
Applications Places Firefox

notepad.pw / rakhi | The x gitopsdemocoderakhi/Jen x GitOpskubernetesmanifest x Dashboard [Jenkins] x flaskdemo - Application D x rakhi12345/test Tags | D x 172.32.15.46:31727/ x +

← → ↻ 172.32.15.46:31727

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Hello World! from Rakhi !!!!!



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