

DEVOPS

DAY 3-TASK

DOCKER_COMPOSE SETUP:

- Install Docker and Docker Compose (sudo apt install docker-compose).
- Create a docker-compose.yml file with service definitions.
- Use docker-compose up -d to start services.
- Use docker-compose down to stop and remove services.

DOCKER_COMPOSE COMMANDS:

Install Docker Compose

```
sudo apt install docker-compose -y
```

Download the latest version of Docker Compose

```
sudo curl -L "https://github.com/docker/compose/releases/latest/download/docker-compose-$(uname -s)-$(uname -m)" -o /usr/local/bin/docker-compose
```

Make Docker Compose executable

```
sudo chmod +x /usr/local/bin/docker-compose
```

Check Docker Compose version

```
docker-compose --version
```

Example docker-compose.yml file

```
version: '3'
```

```
services:
```

```
  web:
```

```
    image: nginx:latest
```

ports:

- 80:80

db:

image: mysql:latest

environment:

- MYSQL_ROOT_PASSWORD=secret

Start services using Docker Compose

docker-compose up -d

Execute a shell inside the database container

docker exec -it david-db-1 /bin/bash

Access MySQL inside the container

mysql -u root -p

Minikube Installation & Setup:

Download Minikube

curl -LO <https://github.com/kubernetes/minikube/releases/latest/download/minikube-linux-amd64>

Install Minikube

sudo install minikube-linux-amd64 /usr/local/bin/minikube && rm minikube-linux-amd64

Start Minikube

minikube start

Check Minikube status

minikube status

Get running pods

kubectl get pod

Get deployments

kubectl get deploy

Get replicas

kubectl get replica

Get detailed pod information

kubectl get pod -o wide

```
chirinbanum@ChirinAnifa: ~  
my-replicaset-66chn      1/1   Running 0      155m  
my-replicaset-f4f48      1/1   Running 0      155m  
my-replicaset-jdw7r      1/1   Running 0      155m  
my-replicaset-tq7gs      1/1   Running 0      40m  
chirinbanum@ChirinAnifa:~$ kubectl apply -f deployment.yml  
deployment.apps/deployment configured  
chirinbanum@ChirinAnifa:~$ kubectl get deployments  
NAME      READY   UP-TO-DATE   AVAILABLE   AGE  
deployment 3/3     3            3           2m3s  
chirinbanum@ChirinAnifa:~$ kubectl get pods  
NAME      READY   STATUS    RESTARTS   AGE  
deployment-7678898557-68cjb 1/1     Running   0          15s  
deployment-7678898557-bwxpd 1/1     Running   0          2m14s  
deployment-7678898557-ngqcl 1/1     Running   0          15s  
deployment-7678898557-nzss5 1/1     Running   0          2m14s  
deployment-7678898557-v96j6 1/1     Running   0          2m14s  
my-app    1/1     Running   0          3h5m  
my-pod    1/1     Running   0          4h16m  
my-replicaset-66chn      1/1     Running   0          155m  
my-replicaset-f4f48      1/1     Running   0          155m  
my-replicaset-jdw7r      1/1     Running   0          155m  
my-replicaset-tq7gs      1/1     Running   0          41m  
chirinbanum@ChirinAnifa:~$ kubectl scale deployment deployment --replicas=3  
deployment.apps/deployment scaled  
chirinbanum@ChirinAnifa:~$ kubectl get deployments  
NAME      READY   UP-TO-DATE   AVAILABLE   AGE  
deployment 3/3     3            3           2m38s  
chirinbanum@ChirinAnifa:~$ kubectl get pods  
NAME      READY   STATUS    RESTARTS   AGE  
deployment-7678898557-bwxpd 1/1     Running   0          2m43s  
deployment-7678898557-nzss5 1/1     Running   0          2m43s  
deployment-7678898557-v96j6 1/1     Running   0          2m43s  
my-app    1/1     Running   0          3h6m  
my-pod    1/1     Running   0          4h16m  
my-replicaset-66chn      1/1     Running   0          156m  
my-replicaset-f4f48      1/1     Running   0          156m  
my-replicaset-jdw7r      1/1     Running   0          156m  
my-replicaset-tq7gs      1/1     Running   0          41m  
chirinbanum@ChirinAnifa:~$
```

```
chirinbanum@ChirinAnifa: ~  
error: unknown flag: --/bin/bash  
See 'kubectl exec --help' for usage.  
chirinbanum@ChirinAnifa:~$ kubectl exec -it my-replicaset-66chn -- /bin/bash  
root@my-replicaset-66chn:/usr/local/tomcat# exit  
exit  
chirinbanum@ChirinAnifa:~$ cd deployment  
-bash: cd: deployment: No such file or directory  
chirinbanum@ChirinAnifa:~$ ls  
DevOps_code Jenkins docker-compose.yml pod.yml replicaset.yml  
chirinbanum@ChirinAnifa:~$ sudo nano deployment.yml  
chirinbanum@ChirinAnifa:~$ kubectl get pod  
NAME      READY   STATUS    RESTARTS   AGE  
my-app    1/1     Running   0          161m  
my-pod    1/1     Running   0          3h51m  
my-replicaset-66chn      1/1     Running   0          139m  
my-replicaset-f4f48      1/1     Running   0          139m  
my-replicaset-jdw7r      1/1     Running   0          139m  
my-replicaset-tq7gs      1/1     Running   0          16m  
chirinbanum@ChirinAnifa:~$ kubectl get rs  
NAME      DESIRED   CURRENT   READY   AGE  
my-replicaset 4          4         4       131m  
chirinbanum@ChirinAnifa:~$ sudo nano deployment.yml  
chirinbanum@ChirinAnifa:~$ sudo nano deployment.yml  
chirinbanum@ChirinAnifa:~$ sudo nano deployment.yml  
chirinbanum@ChirinAnifa:~$ kubectl replace -f deployment.yml  
Error from server (NotFound): error when replacing "deployment.yml": deployments.apps "deployment" not found  
chirinbanum@ChirinAnifa:~$ kubectl replace -f deployment.yml  
Error from server (NotFound): error when replacing "deployment.yml": deployments.apps "deployment" not found  
chirinbanum@ChirinAnifa:~$ kubectl get pod  
NAME      READY   STATUS    RESTARTS   AGE  
my-app    1/1     Running   0          173m  
my-pod    1/1     Running   0          4h4m  
my-replicaset-66chn      1/1     Running   0          143m  
my-replicaset-f4f48      1/1     Running   0          143m  
my-replicaset-jdw7r      1/1     Running   0          143m  
my-replicaset-tq7gs      1/1     Running   0          28m  
chirinbanum@ChirinAnifa:~$ kubectl get rs  
NAME      DESIRED   CURRENT   READY   AGE  
my-replicaset 4          4         4       143m
```

```
chirinbanum@ChirinAnifa: ~$ sudo nano pod.yml
chirinbanum@ChirinAnifa: ~$ kubectl get pod
NAME      READY   STATUS    RESTARTS   AGE
my-pod    1/1     Running   0           66m
chirinbanum@ChirinAnifa: ~$ kubectl get pod
NAME      READY   STATUS    RESTARTS   AGE
my-pod    1/1     Running   0           66m
chirinbanum@ChirinAnifa: ~$ sudo nano pod.yml
chirinbanum@ChirinAnifa: ~$ kubectl get pod
NAME      READY   STATUS    RESTARTS   AGE
my-pod    1/1     Running   0           67m
chirinbanum@ChirinAnifa: ~$ sudo nano pod.yml
chirinbanum@ChirinAnifa: ~$ kubectl get pod
NAME      READY   STATUS    RESTARTS   AGE
my-pod    1/1     Running   0           68m
chirinbanum@ChirinAnifa: ~$ sudo nano pod.yml
chirinbanum@ChirinAnifa: ~$ kubectl apply -f pod.yml
pod/my-app created
chirinbanum@ChirinAnifa: ~$ kubectl get pod
NAME      READY   STATUS             RESTARTS   AGE
my-app    0/1     ContainerCreating   0           4s
my-pod    1/1     Running             0           70m
chirinbanum@ChirinAnifa: ~$ kubectl get pod
NAME      READY   STATUS             RESTARTS   AGE
my-app    0/1     ContainerCreating   0           35s
my-pod    1/1     Running             0           71m
chirinbanum@ChirinAnifa: ~$ sudo nano pod.yml
chirinbanum@ChirinAnifa: ~$ kubectl get pod
NAME      READY   STATUS             RESTARTS   AGE
my-app    0/1     ContainerCreating   0           48s
my-pod    1/1     Running             0           71m
chirinbanum@ChirinAnifa: ~$ kubectl get pod
NAME      READY   STATUS             RESTARTS   AGE
my-app    0/1     ContainerCreating   0           59s
my-pod    1/1     Running             0           71m
chirinbanum@ChirinAnifa: ~$ kubectl get pod
NAME      READY   STATUS             RESTARTS   AGE
my-app    1/1     Running             0           99s
my-pod    1/1     Running             0           72m
chirinbanum@ChirinAnifa: ~$ |
```

```
chirinbanum@ChirinAnifa: ~$ minikube service my-service
Opening service default/my-service in default browser...
http://127.0.0.1:45977
! Because you are using a Docker driver on linux, the terminal needs to be open to run it.
cd /path/to/your/file
^C Stopping tunnel for service my-service.
chirinbanum@ChirinAnifa: ~$ cd /path/to/your/file
-bash: cd: /path/to/your/file: No such file or directory
chirinbanum@ChirinAnifa: ~$ kubectl apply -f service.yml
service/my-service unchanged
chirinbanum@ChirinAnifa: ~$ kubectl apply -f service.yml -n myns
Error from server (NotFound): error when creating "service.yml": namespaces "myns" not found
chirinbanum@ChirinAnifa: ~$ nano service.yml

chirinbanum@ChirinAnifa: ~$ minikube service my-service
+-----+-----+-----+-----+
| NAMESPACE | NAME      | TARGET PORT | URL                               |
+-----+-----+-----+-----+
| default   | my-service | 80           | http://192.168.49.2:31130        |
+-----+-----+-----+-----+
* Starting tunnel for service my-service.
+-----+-----+-----+-----+
| NAMESPACE | NAME      | TARGET PORT | URL                               |
+-----+-----+-----+-----+
| default   | my-service |             | http://127.0.0.1:44079           |
+-----+-----+-----+-----+
Opening service default/my-service in default browser...
http://127.0.0.1:44079
! Because you are using a Docker driver on linux, the terminal needs to be open to run it.
^C Stopping tunnel for service my-service.
chirinbanum@ChirinAnifa: ~$ curl http://192.168.49.2:31130
<doctype html><html lang="en"><head><title>HTTP Status 404 - Not Found</title><style type="text/css">body {font-family:Tahoma,Arial,sans-serif;} h1, h2, h3
, b {color:white;background-color:#525D76;} h1 {font-size:22px;} h2 {font-size:16px;} h3 {font-size:14px;} p {font-size:12px;} a {color:black;} .line {height:1px;background-color:#525D76;border:none;}</style></head><body><h1>HTTP Status 404 - Not Found</h1><hr class="line" /><p><b>Status Report</b></p><p><b>Description</b> The origin server did not find a current representation for the target resource or is not willing to disclose that one exists.</p><hr clas
chirinbanum@ChirinAnifa: ~$ |
```