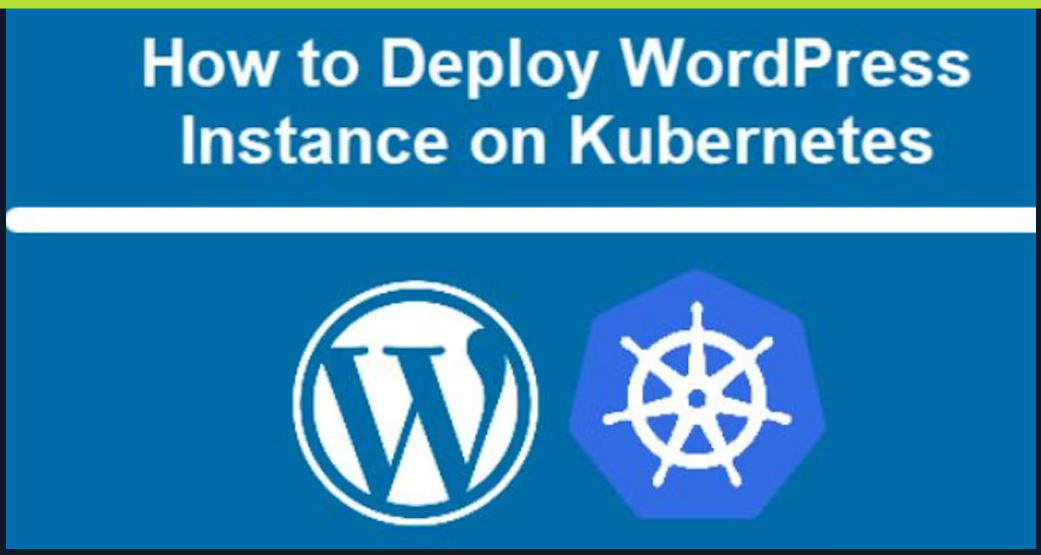

Deploying WordPress and MySQL with Persistent Volumes

SHEIKH KAMRAN MUNEER · May 19, 2023 · 1 min read

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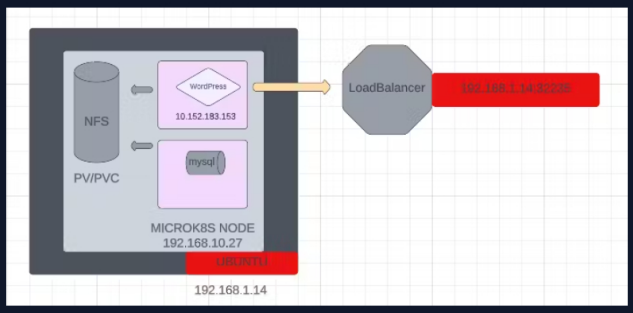
Lab link:

https://kubernetes.io/docs/tutorials/stateful-application/mysql-wordpress-persistent-volume/

LAB SCENARIO:




```
19/05/2023  09:03.44  /home/mobaxterm  ssh generic@192.168.1.14
generic@192.168.1.14's password:
Welcome to Ubuntu 22.04.2 LTS (GNU/Linux 5.15.0-72-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

  System information as of Fri May 19 04:06:12 AM UTC 2023

  System load:  0.9228515625      Processes:              118
  Usage of /:   28.5% of 9.75GB   Users logged in:        0
  Memory usage: 5%                IPv4 address for enp0s3: 192.168.1.14
  Swap usage:   0%                IPv4 address for enp0s8: 192.168.10.27
```

```
root@microk8s2:~# microk8s kubectl get svc
NAME              TYPE           CLUSTER-IP       EXTERNAL-IP   PORT(S)        AGE
kubernetes        ClusterIP      10.152.183.1     <none>        443/TCP        9h
wordpress-mysql   ClusterIP      None             <none>        3306/TCP       29m
wordpress         LoadBalancer   10.152.183.153   <pending>     80:32235/TCP   24m
root@microk8s2:~# microk8s kubectl get deployment
NAME              READY   UP-TO-DATE   AVAILABLE   AGE
wordpress-mysql   1/1     1            1           31m
wordpress         1/1     1            1           25m
```

```
root@microk8s2:~# microk8s kubectl get ns
NAME              STATUS   AGE
kube-system       Active   9h
kube-public       Active   9h
kube-node-lease   Active   9h
default           Active   9h
ingress           Active   9h
```

Create the Secret:

```
echo -n 'administrator' | base64
```

```
echo -n 'Admin123@@@' | base64
```

```
root@microk8s2:~#
root@microk8s2:~# echo -n 'administrator' | base64
echo -n 'Admin123@@@' | base64
YWRtaW5pc3RyYXRvcg==
QWRtaW4xMjNAQEA=
root@microk8s2:~#
```

```
vim secret.yml
```

```
apiVersion: v1
kind: Secret
metadata:
    name: mysecret
type: Opaque
data:
  username: YWRtaW5pc3RyYXRvcg==
  password: QWRtaW4xMjNAQEA=
~
~
~
```

```
microk8s kubectl apply -f secret.yml
```

```
microk8s kubectl get secret
```

```
root@microk8s2:~# vim secret.yml
root@microk8s2:~#
root@microk8s2:~# microk8s kubectl apply -f secret.yml
secret/mysecret created
root@microk8s2:~#
root@microk8s2:~# microk8s kubectl get secret
NAME       TYPE     DATA   AGE
mysecret   Opaque   2      53s
root@microk8s2:~#
```

Download the MySQL/WordPress deployment configuration file.

```
curl -LO https://k8s.io/examples/application/wordpress/mysql-deployment.yaml
```

```
curl -LO https://k8s.io/examples/application/wordpress/wordpress-deployment.yaml
```

```
root@microk8s2:~# curl -LO https://k8s.io/examples/application/wordpress/mysql-deployment.yaml
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100   162  100   162    0     0    139      0  0:00:01  0:00:01 --:--:--   139
100  1193  100  1193    0     0    565      0  0:00:02  0:00:02 --:--:--  3020
root@microk8s2:~# curl -LO https://k8s.io/examples/application/wordpress/wordpress-deployment.yaml
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100   162  100   162    0     0    196      0 --:--:-- --:--:-- --:--:--   197
100  1278  100  1278    0     0    642      0  0:00:01  0:00:01 --:--:-- 30428
root@microk8s2:~#
```

```
root@microk8s2:~# ls -l
total 16
-rw-r--r-- 1 root root 1193 May 19 12:13 mysql-deployment.yaml
drwxr-xr-x 2 root root 4096 May 19 07:11 nfs
drwx------ 4 root root 4096 May 19 04:10 snap
-rw-r--r-- 1 root root 1278 May 19 12:14 wordpress-deployment.yaml
root@microk8s2:~#
```

```
    requests:
      storage: 1Gi
---
apiVersion: apps/v1
kind: Deployment
metadata:
  name: wordpress-mysql
  labels:
    app: wordpress
spec:
  selector:
    matchLabels:
      app: wordpress
      tier: mysql
  strategy:
    type: Recreate
  template:
    metadata:
      labels:
        app: wordpress
        tier: mysql
    spec:
```

```
      containers:
      - image: mysql:5.6
        name: mysql
        env:
        - name: MYSQL_ROOT_PASSWORD
          valueFrom:
            secretKeyRef:
              name: mysecret
              key: password
        ports:
        - containerPort: 3306
          name: mysql
        volumeMounts:
        - name: mysql-persistent-storage
          mountPath: /var/lib/mysql
      volumes:
      - name: mysql-persistent-storage
        persistentVolumeClaim:
          claimName: mysql-pv-claim
```

secret file name

```
2. root@microk8s2: ~   4. root@microk8s2: ~
  labels:
    app: wordpress
spec:
  accessModes:
    - ReadWriteOnce
  resources:
    requests:
      storage: 1Gi
---
apiVersion: apps/v1
kind: Deployment
metadata:
  name: wordpress-mysql
  labels:
    app: wordpress
spec:
  selector:
    matchLabels:
      app: wordpress
      tier: mysql
  strategy:
    type: Recreate
  template:
    metadata:
      labels:
        app: wordpress
        tier: mysql
    spec:
      containers:
      - image: mysql:5.6
        name: mysql
        env:
        - name: MYSQL_ROOT_PASSWORD
          valueFrom:
            secretKeyRef:
              name: mysecret
              key: password
        ports:
        - containerPort: 3306
          name: mysql
        volumeMounts:
"mysql-deployment.yaml" 65L, 1190B
```

must use secret file name

Apply Deployment Files:

```
microk8s kubectl apply -f mysql-deployment.yaml
```

```
root@microk8s2:~# microk8s kubectl apply -f mysql-deployment.yaml
service/wordpress-mysql created
persistentvolumeclaim/mysql-pv-claim created
deployment.apps/wordpress-mysql created
```

```
microk8s kubectl apply -f wordpress-deployment.yaml
```

```
root@microk8s2:~# microk8s kubectl apply -f wordpress-deployment.yaml
service/wordpress created
persistentvolumeclaim/wp-pv-claim created
deployment.apps/wordpress created
```

```
microk8s kubectl get po
```

```
microk8s kubectl get po -o wide
```

```
root@microk8s2:~# microk8s kubectl get po
NAME                               READY   STATUS    RESTARTS   AGE
wordpress-mysql-d9cff8c5c-gcvwd    1/1     Running   0          23m
wordpress-74b556c54c-fp5t2         1/1     Running   0          10m
root@microk8s2:~# microk8s kubectl get po -o wide
NAME                               READY   STATUS    RESTARTS   AGE   IP            NODE        NOMINATED NODE   READINESS GATES
wordpress-mysql-d9cff8c5c-gcvwd    1/1     Running   0          24m   10.1.101.35   microk8s2   <none>           <none>
wordpress-74b556c54c-fp5t2         1/1     Running   0          10m   10.1.101.37   microk8s2   <none>           <none>
root@microk8s2:~# 1
```

Persistent Volume Claim for both deployments:

```
microk8s kubectl get pvc
```

```
root@microk8s2:~# microk8s kubectl get pvc
NAME             STATUS   VOLUME                                     CAPACITY   ACCESS MODES   STORAGECLASS        AGE
my-pvc           Bound    pvc-c628e7d6-a23d-4c45-b3cb-b770ae0adb61   1Gi        RWO            nfs-csi             6h28m
mysql-pv-claim   Bound    pvc-80217d79-4c81-472a-9050-45da16550e71   1Gi        RWO            microk8s-hostpath   15m
wp-pv-claim      Bound    pvc-978303a3-60d6-4b3a-9972-7899e133caec   1Gi        RWO            microk8s-hostpath   9m38s
```

Service configured with Load Balance: