

Kubernetes Assignment-3

Exercise 5: Create and Use a Secret

Step 1: Create a Secret for database credentials

- `kubectl create secret generic db-secret --from-literal=DB_USER=admin --from-literal=DB_PASS=password123`

Step 2: Verify the Secret

- `kubectl get secrets`
- `kubectl describe secret db-secret`

Step 3: Create a Pod that uses the Secret (`nginx-secret-pod.yaml`):

Step 4: Deploy the pod

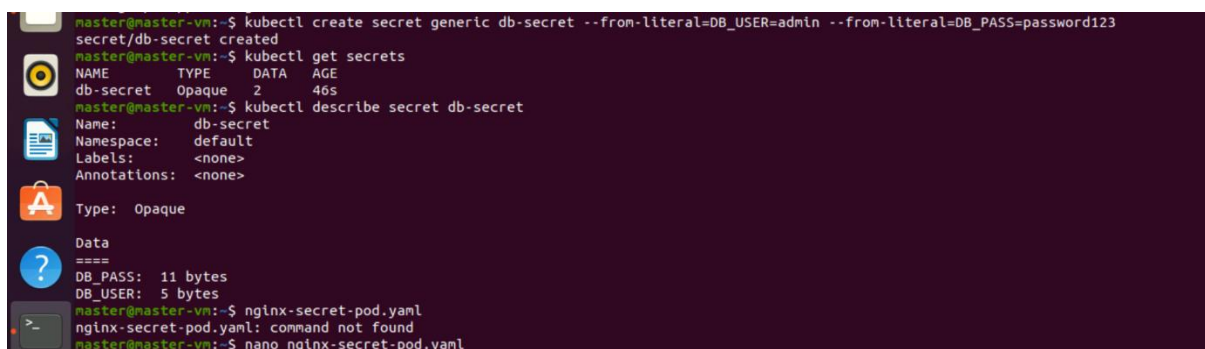
- `kubectl apply -f nginx-secret-pod.yaml`

Step 5: Check the pod and logs

- `kubectl get pods`
- `kubectl logs nginx-secret-pod`

Step 6: Delete the pod and Secret

- `kubectl delete -f nginx-secret-pod.yaml`
- `kubectl delete secret db-secret`



```
master@master-vn:~$ kubectl create secret generic db-secret --from-literal=DB_USER=admin --from-literal=DB_PASS=password123
secret/db-secret created
master@master-vn:~$ kubectl get secrets
NAME      TYPE      DATA   AGE
db-secret  Opaque    2       46s
master@master-vn:~$ kubectl describe secret db-secret
Name:      db-secret
Namespace: default
Labels:    <none>
Annotations: <none>
Type:      Opaque
Data
====
DB_PASS:  11 bytes
DB_USER:  5 bytes
master@master-vn:~$ kubectl apply -f nginx-secret-pod.yaml
nginx-secret-pod.yaml: command not found
master@master-vn:~$ nano nginx-secret-pod.yaml
```

```
GNU nano 4.8 nginx-secret-pod.yaml Modified
apiVersion: v1
kind: Pod
metadata:
  name: nginx-secret-pod
spec:
  containers:
  - name: nginx
    image: nginx
    env:
    - name: DB_USER
      valueFrom:
        secretKeyRef:
          name: db-secret
          key: DB_USER
    - name: DB_PASS
      valueFrom:
        secretKeyRef:
          name: db-secret
          key: DB_PASS

master@master-vm:~$ kubectl apply -f nginx-secret-pod.yaml
error: error parsing nginx-secret-pod.yaml: error converting YAML to JSON: yaml: line 3: could not find expected ':'
master@master-vm:~$ kubectl apply -f nginx-secret-pod.yaml
error: error parsing nginx-secret-pod.yaml: error converting YAML to JSON: yaml: line 3: could not find expected ':'
master@master-vm:~$ nano nginx-secret-pod.yaml
master@master-vm:~$ kubectl apply -f nginx-secret-pod.yaml
pod/nginx-secret-pod created
master@master-vm:~$ kubectl get pods
NAME          READY   STATUS    RESTARTS   AGE
nginx-secret-pod 1/1     Running   0           52s
master@master-vm:~$ kubectl logs nginx-secret-pod
/docker-entrypoint.sh: /docker-entrypoint.d/ is not empty, will attempt to perform configuration
/docker-entrypoint.sh: Looking for shell scripts in /docker-entrypoint.d/
/docker-entrypoint.sh: Launching /docker-entrypoint.d/10-listen-on-ipv6-by-default.sh
10-listen-on-ipv6-by-default.sh: info: Getting the checksum of /etc/nginx/conf.d/default.conf
10-listen-on-ipv6-by-default.sh: info: Enabled listen on IPv6 in /etc/nginx/conf.d/default.conf
/docker-entrypoint.sh: Sourcing /docker-entrypoint.d/15-local-resolvers.envsh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/20-envsubst-on-templates.sh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/30-tune-worker-processes.sh
/docker-entrypoint.sh: Configuration complete; ready for start up
2025/03/13 11:02:07 [notice] 1#1: using the "epoll" event method
2025/03/13 11:02:07 [notice] 1#1: nginx/1.27.4
2025/03/13 11:02:07 [notice] 1#1: built by gcc 12.2.0 (Debian 12.2.0-14)
2025/03/13 11:02:07 [notice] 1#1: OS: Linux 5.15.0-134-generic
2025/03/13 11:02:07 [notice] 1#1: getrlimit(RLIMIT_NOFILE): 1048576:1048576
2025/03/13 11:02:07 [notice] 1#1: start worker processes
2025/03/13 11:02:07 [notice] 1#1: start worker process 29
2025/03/13 11:02:07 [notice] 1#1: start worker process 30
master@master-vm:~$ kubectl delete -f nginx-secret-pod.yaml
pod "nginx-secret-pod" deleted
master@master-vm:~$ kubectl delete secret db-secret
secret "db-secret" deleted
master@master-vm:~$
```

Exercise 6: Create and Expose a Service

Step 1: Create a deployment

- kubectl create deployment webapp --image=nginx

Step 2: Expose the deployment using a service

- kubectl expose deployment webapp --type=NodePort --port=80

Step 3: Get service details

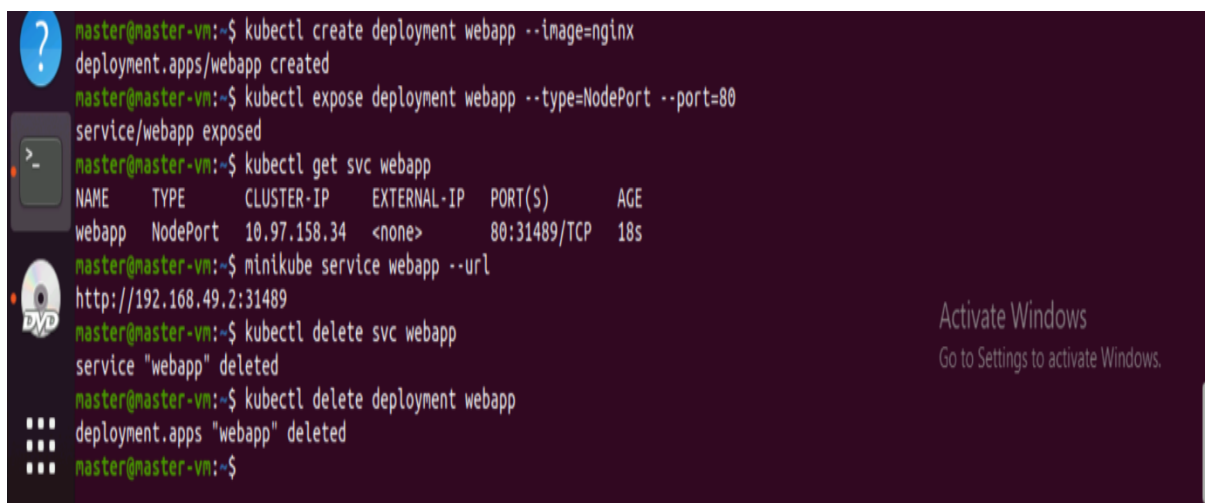
- `kubectl get svc webapp`

Step 4: Access the service (Minikube users):

- `minikube service webapp --url`

Step 5: Delete the service and deployment:

- `kubectl delete svc webapp`
- `kubectl delete deployment webapp`



```
naster@master-vn:~$ kubectl create deployment webapp --image=nginx
deployment.apps/webapp created
naster@master-vn:~$ kubectl expose deployment webapp --type=NodePort --port=80
service/webapp exposed
naster@master-vn:~$ kubectl get svc webapp
NAME      TYPE        CLUSTER-IP   EXTERNAL-IP   PORT(S)          AGE
webapp    NodePort    10.97.158.34  <none>        80:31489/TCP     18s
naster@master-vn:~$ minikube service webapp --url
http://192.168.49.2:31489
naster@master-vn:~$ kubectl delete svc webapp
service "webapp" deleted
naster@master-vn:~$ kubectl delete deployment webapp
deployment.apps "webapp" deleted
naster@master-vn:~$
```

Activate Windows
Go to Settings to activate Windows.