

## KUBERNETES ASSIGNMENT -3

### Exercise 5: Create and Use a Secret

**Objective:** Store sensitive data using Secrets and use it in a pod.

#### Steps & Commands:

**1. Create a Secret for database credentials:**

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

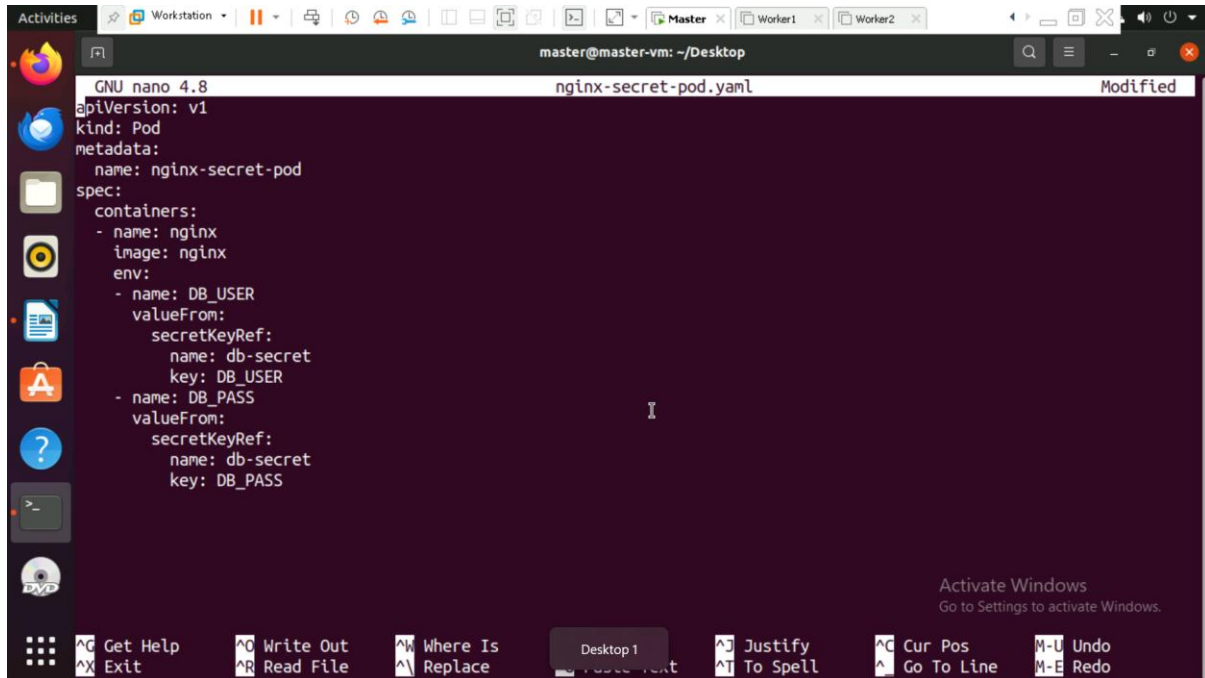
**2. Verify the Secret:**

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

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

```
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
```



```
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
```

#### 4. Deploy the pod:

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

#### 5. Check the pod and logs:

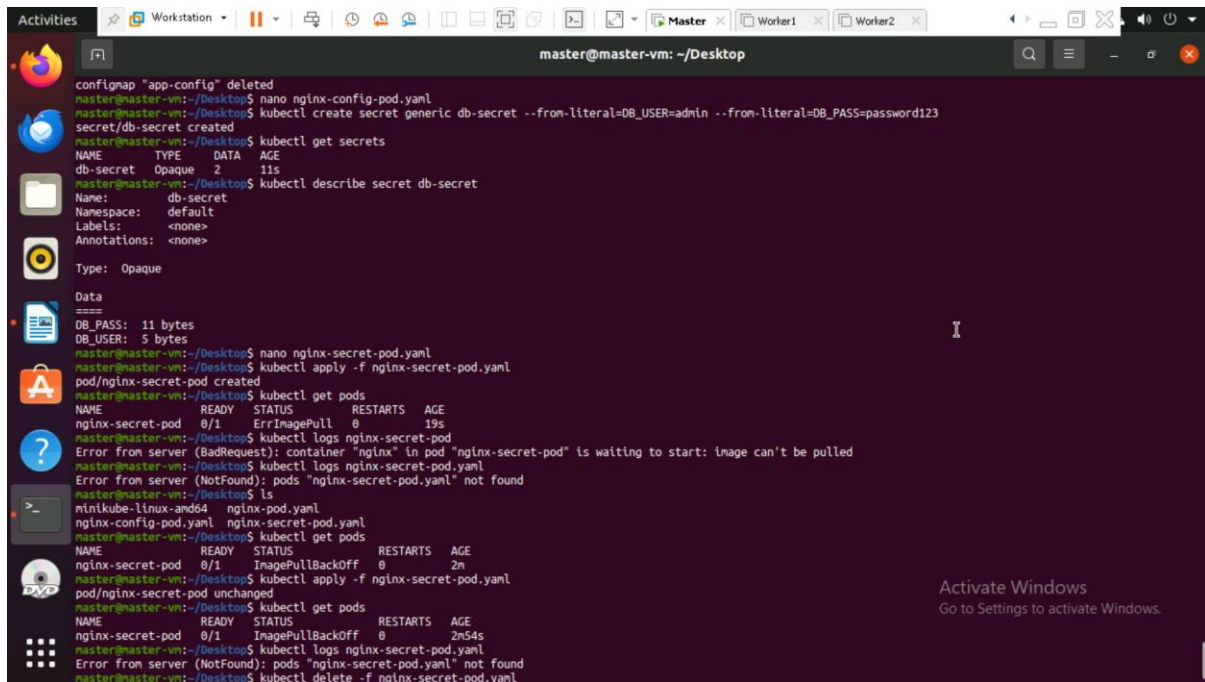
```
kubectl get pods
```

```
kubectl logs nginx-secret-pod
```

#### 6. Delete the pod and Secret:

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

```
kubectl delete secret db-secret
```



```
configmap "app-config" deleted
master@master-vm:~/Desktop$ nano nginx-config-pod.yaml
master@master-vm:~/Desktop$ kubectl create secret generic db-secret --from-literal=DB_USER=admin --from-literal=DB_PASS=password123
secret/db-secret created
master@master-vm:~/Desktop$ kubectl get secrets
NAME      TYPE      DATA      AGE
db-secret  Opaque    2          11s
master@master-vm:~/Desktop$ 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-vm:~/Desktop$ nano nginx-secret-pod.yaml
master@master-vm:~/Desktop$ kubectl apply -f nginx-secret-pod.yaml
pod/nginx-secret-pod created
master@master-vm:~/Desktop$ kubectl get pods
NAME          READY   STATUS    RESTARTS   AGE
nginx-secret-pod 0/1     ErrImagePull 0          19s
master@master-vm:~/Desktop$ kubectl logs nginx-secret-pod
Error from server (BadRequest): container "nginx" in pod "nginx-secret-pod" is waiting to start: image can't be pulled
master@master-vm:~/Desktop$ kubectl logs nginx-secret-pod.yaml
Error from server (NotFound): pods "nginx-secret-pod.yaml" not found
master@master-vm:~/Desktop$ ls
minikube-linux-amd64  nginx-pod.yaml
nginx-config-pod.yaml nginx-secret-pod.yaml
master@master-vm:~/Desktop$ kubectl get pods
NAME          READY   STATUS    RESTARTS   AGE
nginx-secret-pod 0/1     ImagePullBackOff 0          2m
master@master-vm:~/Desktop$ kubectl apply -f nginx-secret-pod.yaml
pod/nginx-secret-pod unchanged
master@master-vm:~/Desktop$ kubectl get pods
NAME          READY   STATUS    RESTARTS   AGE
nginx-secret-pod 0/1     ImagePullBackOff 0          2m54s
master@master-vm:~/Desktop$ kubectl logs nginx-secret-pod.yaml
Error from server (NotFound): pods "nginx-secret-pod.yaml" not found
master@master-vm:~/Desktop$ kubectl delete -f nginx-secret-pod.yaml
```

## Exercise 6: Create and Expose a Service

**Objective:** Deploy an application and expose it using a service.

### Steps & Commands:

**1. Create a deployment:**

```
kubectl create deployment webapp --image=nginx
```

**2. Expose the deployment using a service:**

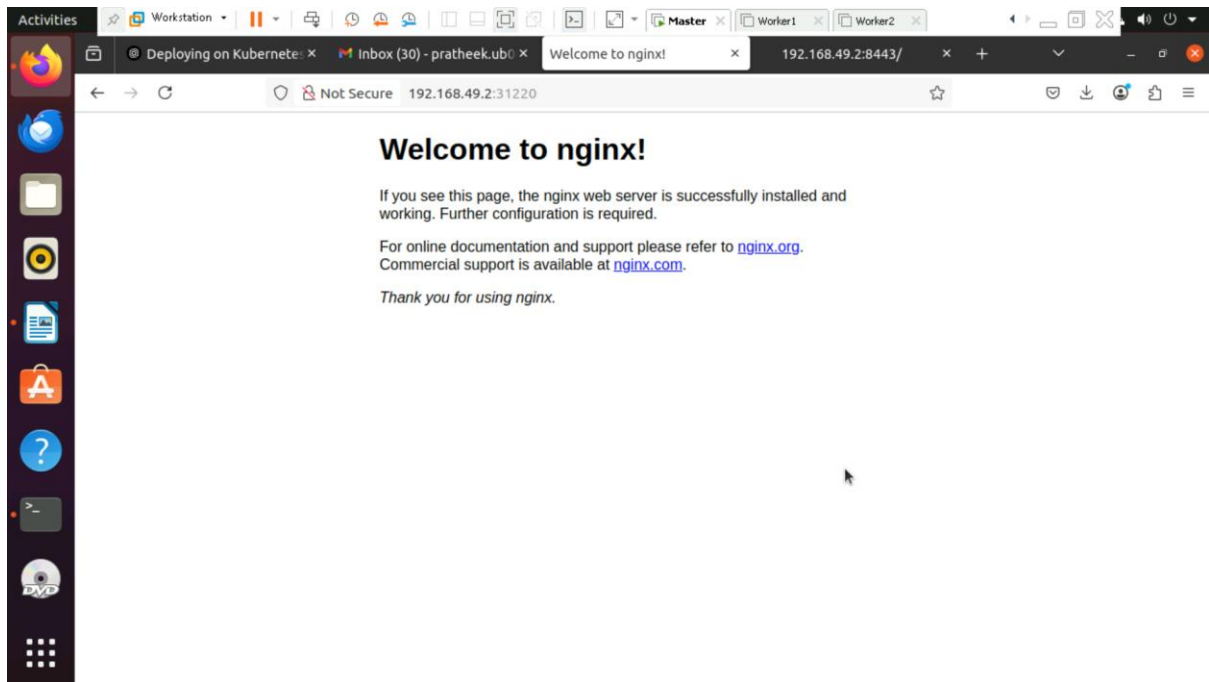
```
kubectl expose deployment webapp --type=NodePort --port=80
```

**3. Get service details:**

```
kubectl get svc webapp
```

**4. Access the service (Minikube users):**

```
minikube service webapp --url
```



##### 5. Delete the service and deployment:

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