Cluster Networking and Services

Lab 6: Using ConfigMaps and Secrets

🎯 Objective:

- Learn how to externalize application configuration using ConfigMaps and Secrets in Kubernetes.

🛠️ Steps

1. **Create a ConfigMap**

```
kubectl create configmap app-config \
  --from-literal=APP_ENV=development \
  --from-literal=APP_DEBUG=true
```

Check it:

```
kubectl get configmap app-config -o yaml
```

2. **Create a Secret**

```
kubectl create secret generic app-secret \
  --from-literal=DB_USER=admin \
  --from-literal=DB_PASS=s3cr3t
```

Check it:

```
kubectl get secret app-secret -o yaml
```

3. Create YAML file: `config-demo.yaml` to deploy a Pod Using ConfigMap and Secret

```yaml
apiVersion: v1
kind: Pod
metadata:
  name: config-demo
spec:
  containers:
  - name: busybox
    image: busybox:musl
    command: ["sh", "-c", "env; sleep 3600"]
    env:
    - name: APP_ENV
      valueFrom:
        configMapKeyRef:
          name: app-config
          key: APP_ENV
    - name: APP_DEBUG
      valueFrom:
        configMapKeyRef:
          name: app-config
          key: APP_DEBUG
    - name: DB_USER
      valueFrom:
        secretKeyRef:
          name: app-secret
          key: DB_USER
    - name: DB_PASS
      valueFrom:
        secretKeyRef:
          name: app-secret
          key: DB_PASS
```

```
kubectl apply -f config-demo.yaml
```

4. **Check the Environment Variables**

```
kubectl exec -it config-demo -- printenv | grep -E 'APP_|DB_'
```

You should see all 4 values populated.

5. **Clean Up**

```
kubectl delete pod config-demo
kubectl delete configmap app-config
kubectl delete secret app-secret
```