# Cluster Networking and Services

# Lab 5: Cluster Networking and Services

## 🎯 Objective:

- Understand how Kubernetes networking and Services work by exposing Pods and accessing them.

## 🛠️ Steps

1. **Create a Sample Pod**

```
kubectl run webserver --image=nginx --port=80 --expose
```

This creates both a Pod and a Service.

2. **View the Pod and Service**

```
kubectl get pods
kubectl get svc
```

3. **Describe the Service**

```
kubectl describe svc webserver
```

Note the `ClusterIP` and exposed port.

4. **Access the Pod Internally**

Start a temporary Pod:

```
kubectl run busybox --image=busybox --rm -it --restart=Never -- sh
```

Inside the container, test connectivity:

```
wget -O- http://webserver
```

Type `exit` to leave the shell.

## 5. **Change to NodePort**

```
kubectl expose pod webserver --port=80 --target-port=80 --type=NodePort --name=webserver-np
kubectl get svc webserver-np
# Open a new terminal and access the service using:
minikube service webserver-np
```

## 6. **Clean Up**

```
kubectl delete pod webserver
kubectl delete svc webserver webserver-np
```