

Lab Exercise 9- Create Service in Kubernetes

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B2 DevOps

Objective:

- Understand the syntax and structure of a Kubernetes Service definition file (YAML).

Prerequisites

- Kubernetes Cluster: Have a running Kubernetes cluster (locally using Minikube or kind, or a cloud-based service).
- kubectl: Install and configure kubectl to interact with your Kubernetes cluster.
- Basic Knowledge of YAML: Familiarity with YAML format will be helpful for understanding Kubernetes resource definitions.

Step-by-Step Guide

NodePort Service

To expose the Service on a port on each Node in the cluster, modify the Service type to NodePort.

Create a YAML file named ***service.yaml*** with the following content:

service.yaml

```
apiVersion: v1
kind: Service
metadata:
  name: nodeport-service
spec:
  selector:
    app: web
  ports:
    - protocol: TCP
      port: 80
      targetPort: 80
      nodePort: 30007 # A specific port in the range 30000-32767
  type: NodePort
```

A screenshot of a code editor window with a dark theme. The window has a menu bar with 'File', 'Edit', and 'View'. On the right side of the menu bar, there are icons for a color palette, a dropdown menu, a user profile, and a settings gear. The main area of the editor displays the same YAML content as the previous block, formatted with syntax highlighting: 'apiVersion: v1', 'kind: Service', 'metadata:' with 'name: nodeport-service' indented, 'spec:' with 'selector:' and 'ports:' indented. The 'ports:' list contains one item with 'protocol: TCP', 'port: 80', 'targetPort: 80', and 'nodePort: 30007' indented. The final line is 'type: NodePort'.

```
apiVersion: v1
kind: Service
metadata:
  name: nodeport-service
spec:
  selector:
    app: web
  ports:
    - protocol: TCP
      port: 80
      targetPort: 80
      nodePort: 30007
  type: NodePort
```

Explanation:

- The primary difference from the ClusterIP Service is the addition of nodePort, which specifies the static port on each Node.
- type: Set to NodePort, exposing the Service on a specific port across all Nodes.

Apply this YAML to create the NodePort Service:

```
kubectl apply -f nodeport-service.yaml
```

```
PS C:\Users\ASUS\Desktop> kubectl apply -f nodeport-service.yaml
service/nodeport-service created
```

Verify the Service:

```
kubectl get services
```

```
PS C:\Users\ASUS\Desktop> kubectl get services
NAME                TYPE        CLUSTER-IP    EXTERNAL-IP    PORT(S)
AGE
kubernetes           ClusterIP   10.96.0.1     <none>         443/TCP
46m
nodeport-service     NodePort    10.108.246.39 <none>         80:30007/TCP
23s
```

You should see the nodeport-service listed with a NodePort and details about the port exposed.