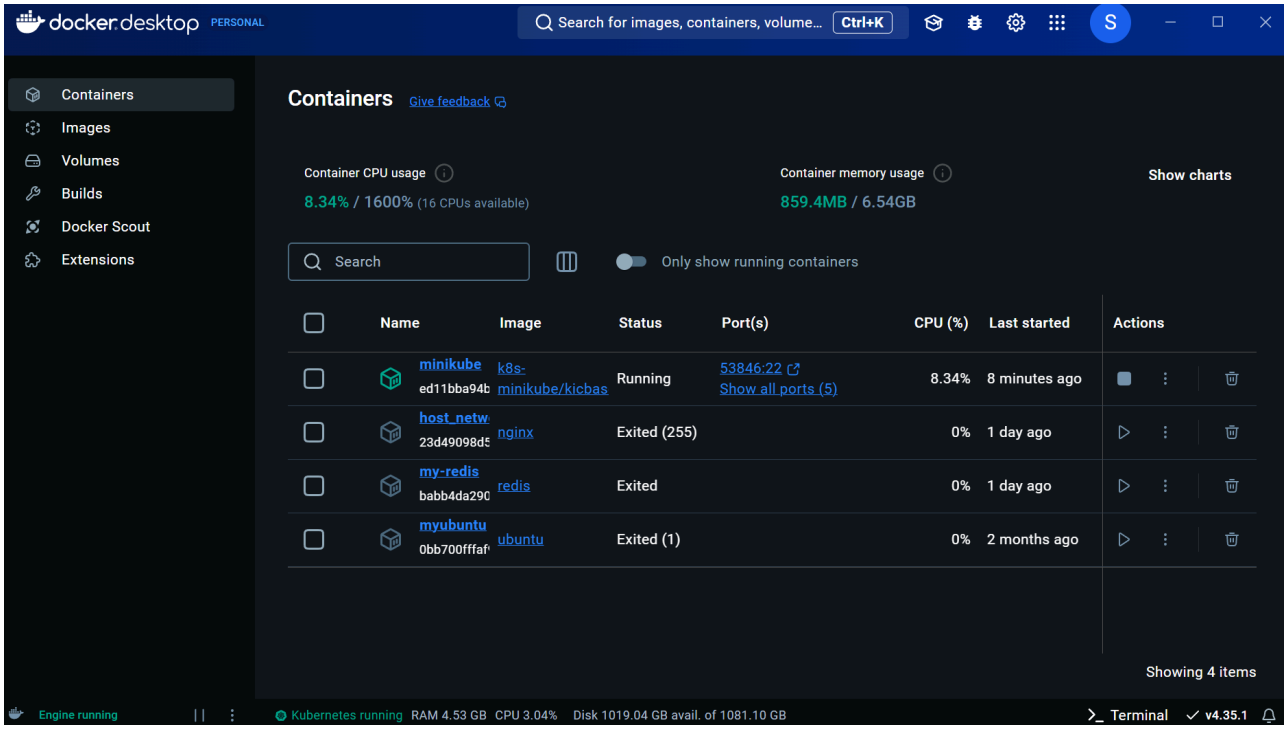
Experiment: 7
Create Service in Kubernetes

Objective:

- Understand the syntax and structure of a Kubernetes Service definition file (YAML).
- Learn to create different types of Services: ClusterIP, NodePort, and LoadBalancer.
- Comprehend how Services operate independently of specific Pods.

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 nodeport-service.yaml with the following content:

apiVersion: v1

kind: Service

metadata:

name: nodeport-service

spec:

selector:

app: my-app

ports:

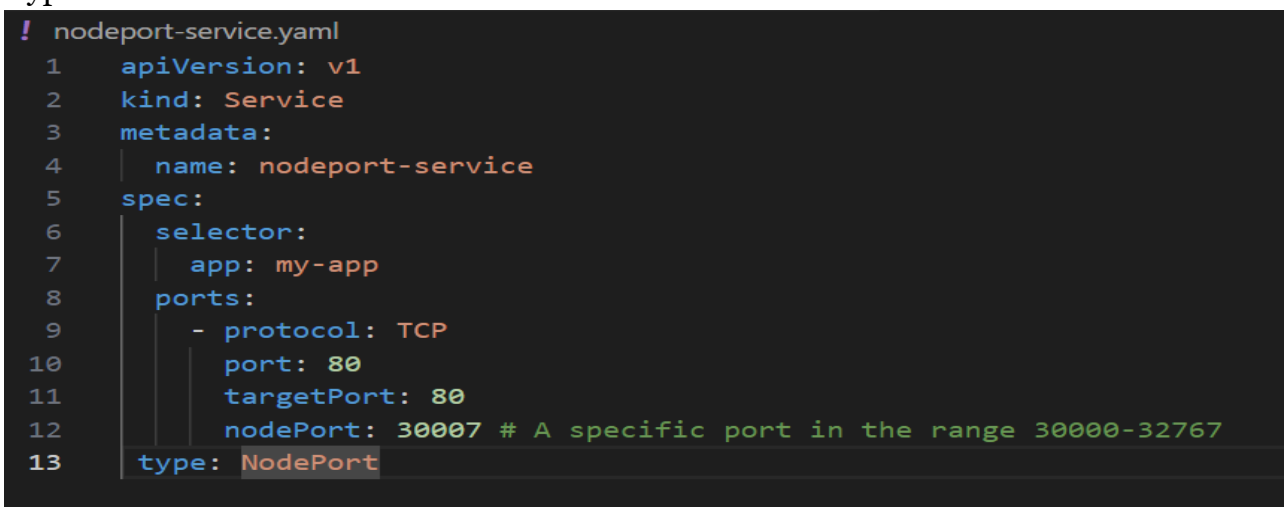
- protocol: TCP

port: 80

targetPort: 80

nodePort: 30007 # A specific port in the range 30000-32767

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

```
C:\Users\Slayer\nginx-html-app>code .

C:\Users\Slayer\nginx-html-app>kubectl apply -f nodeport-service.yaml
service/nodeport-service created
```

Verify the Service:

kubectl get services

```
C:\Users\Slayer\nginx-html-app>kubectl get services
NAME               TYPE        CLUSTER-IP      EXTERNAL-IP   PORT(S)        AGE
kubernetes         ClusterIP   10.96.0.1       <none>        443/TCP        8h
nodeport-service   NodePort    10.111.237.71   <none>        80:30007/TCP   2m38s
```

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