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Write the YAML manifest files to deploy an Nginx web server in a Kubernetes cluster and expose it via a Service.

Contents

1. Manifest Files

nginx-deployment.yaml

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: nginx-deployment
  labels:
    app: nginx
spec:
  replicas: 2
  selector:
    matchLabels:
      app: nginx
  template:
    metadata:
      labels:
        app: nginx
    spec:
      containers:
      - name: nginx
        image: nginx:latest
        ports:
          - containerPort: 80
```

nginx-service.yaml

```
apiVersion: v1
kind: Service
metadata:
  name: nginx-service
spec:
  selector:
    app: nginx
  type: LoadBalancer
  ports:
  - protocol: TCP
    port: 80
    targetPort: 80
```

2. Terminal Commands

Terminal 1	Terminal 2
01 minikube start 02 minikube status 04 kubectl apply -f nginx-deployment.yaml 05 kubectl apply -f nginx-service.yaml 06 kubectl get svc nginx-service 07 sudo socat TCP-LISTEN:8080,fork TCP:<External_IP>:80	03 minikube tunnel

Access via: http://<EC2_IP>:8080

Other commands to verify if everything is running as expected

- kubectl get pods
- kubectl get svc
- kubectl get deployment
- kubectl get replicaset
- curl $(minikube service nginx-service --url) ← does not require external IP or minikube tunnel to run in background