Module 7: Kubernetes Assignment -5

Tasks To Be Performed:

1. Use the previous deployment

2. Deploy an NGINX deployment of 3 replicas

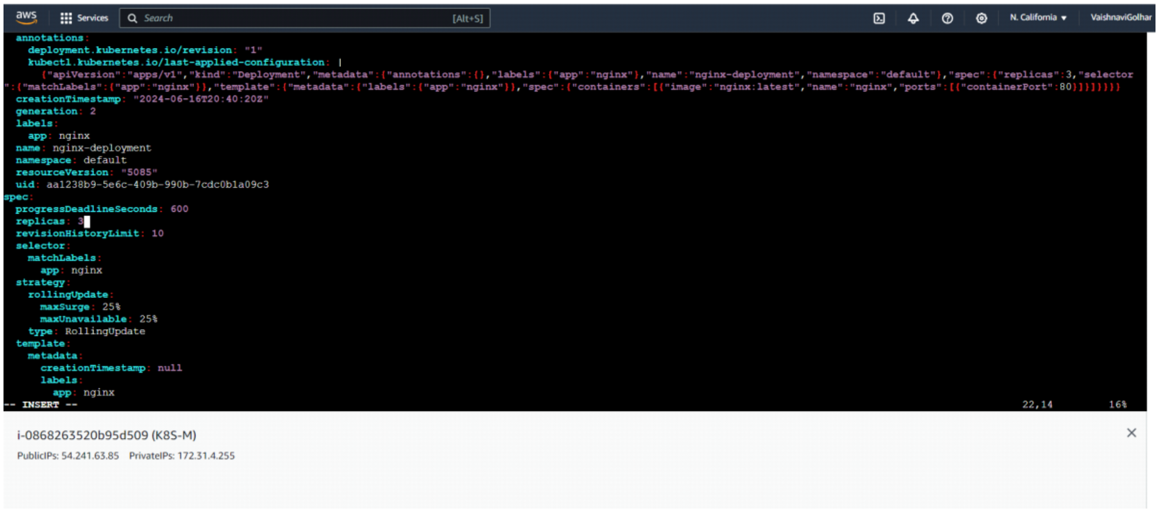
3. Create an NGINX service of type ClusterIP

4. Create an ingress service/ Apache to Apache service/ NGINX to NGINX service

Solution:

1. Use the previous deployment

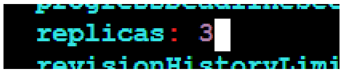
2. Deploy an NGINX deployment of 3 replicas



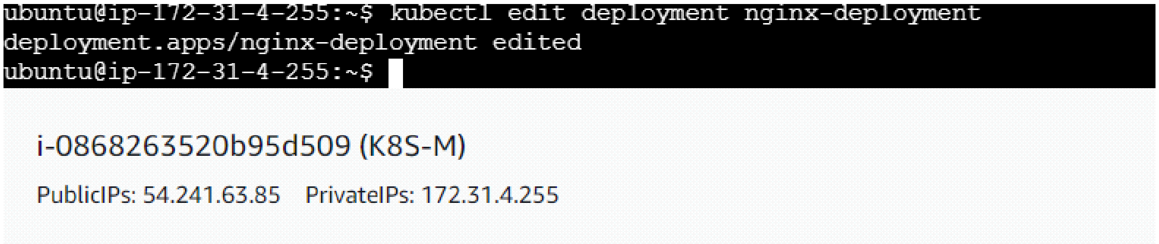
```
  annotations:
    deployment.kubernetes.io/revision: "1"
    kubectl.kubernetes.io/last-applied-configuration: |
      {"apiVersion":"apps/v1","kind":"Deployment","metadata":{"annotations":{},"labels":{"app":"nginx"},"name":"nginx-deployment","namespace":"default"},"spec":{"replicas":3,"selector
":{"matchLabels":{"app":"nginx"}},"template":{"metadata":{"labels":{"app":"nginx"}},"spec":{"containers":[{"image":"nginx:latest","name":"nginx","ports":[{"containerPort":80}]}]}}}}
  creationTimestamp: "2024-06-16T20:40:20Z"
  generation: 2
  labels:
    app: nginx
  name: nginx-deployment
  namespace: default
  resourceVersion: "5085"
  uid: aa1238b9-5e6c-409b-990b-7cdc0b1a09c3
spec:
  progressDeadlineSeconds: 600
  replicas: 3
  revisionHistoryLimit: 10
  selector:
    matchLabels:
      app: nginx
  strategy:
    rollingUpdate:
      maxSurge: 25%
      maxUnavailable: 25%
    type: RollingUpdate
  template:
    metadata:
      creationTimestamp: null
      labels:
        app: nginx
-- INSERT --                                                                                   22,14          16%
```

i-0868263520b95d509 (K8S-M)

PublicIPs: 54.241.63.85   PrivateIPs: 172.31.4.255



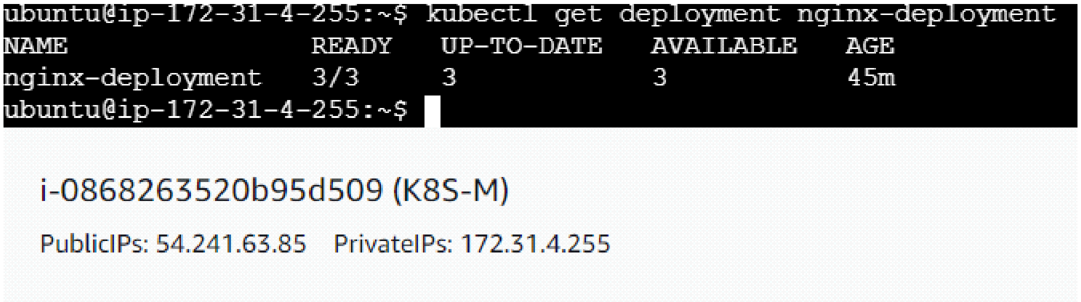
```
  replicas: 3
```



```
ubuntu@ip-172-31-4-255:~$ kubectl edit deployment nginx-deployment
deployment.apps/nginx-deployment edited
ubuntu@ip-172-31-4-255:~$
```

i-0868263520b95d509 (K8S-M)

PublicIPs: 54.241.63.85   PrivateIPs: 172.31.4.255



```
ubuntu@ip-172-31-4-255:~$ kubectl get deployment nginx-deployment
NAME               READY   UP-TO-DATE   AVAILABLE   AGE
nginx-deployment   3/3     3            3           45m
ubuntu@ip-172-31-4-255:~$
```

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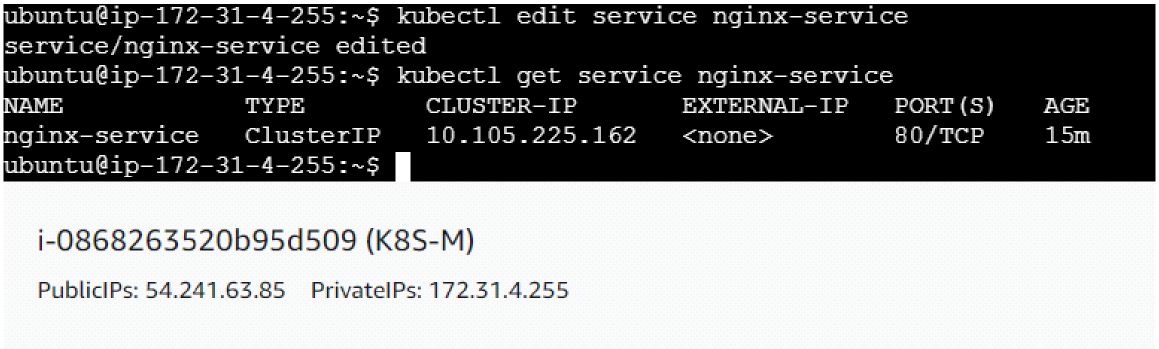
3. Create an NGINX service of type ClusterIP



```
ubuntu@ip-172-31-4-255:~$ kubectl edit service nginx-service
service/nginx-service edited
ubuntu@ip-172-31-4-255:~$ kubectl get service nginx-service
NAME            TYPE        CLUSTER-IP       EXTERNAL-IP   PORT(S)   AGE
nginx-service   ClusterIP   10.105.225.162   <none>        80/TCP    15m
ubuntu@ip-172-31-4-255:~$
```

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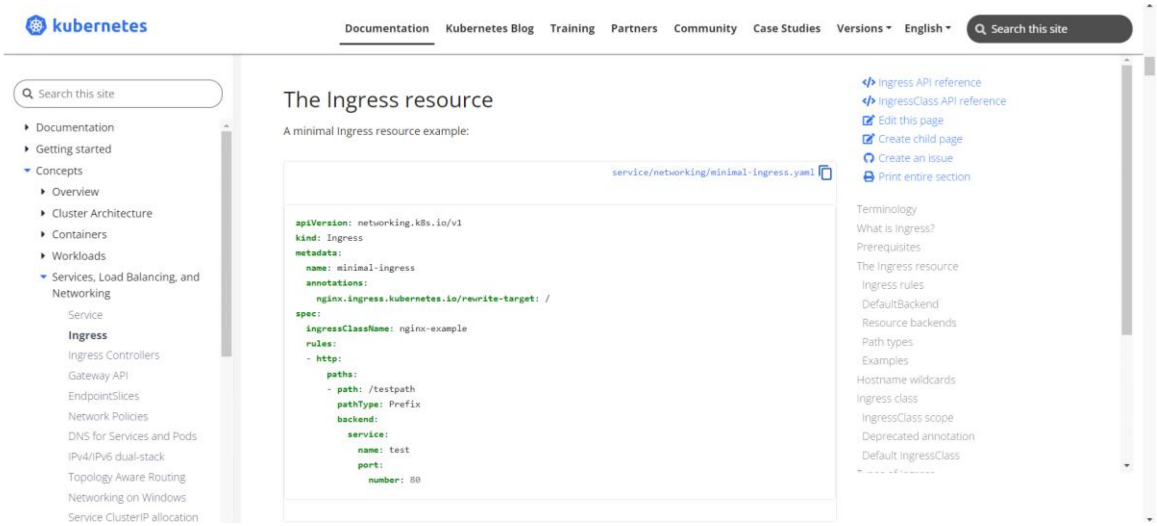
4. Create an ingress service/ Apache to Apache service/ NGINX to NGINX service

A} Create an ingress service

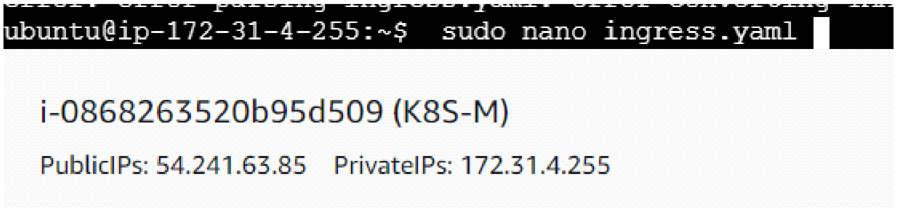


The Ingress resource

A minimal Ingress resource example:

service/networking/minimal-ingress.yaml

```
apiVersion: networking.k8s.io/v1
kind: Ingress
metadata:
  name: minimal-ingress
  annotations:
    nginx.ingress.kubernetes.io/rewrite-target: /
spec:
  ingressClassName: nginx-example
  rules:
  - http:
      paths:
      - path: /testpath
        pathType: Prefix
        backend:
          service:
            name: test
            port:
              number: 80
```



```
error: error parsing ingress.yaml: error converting
ubuntu@ip-172-31-4-255:~$  sudo nano ingress.yaml
```

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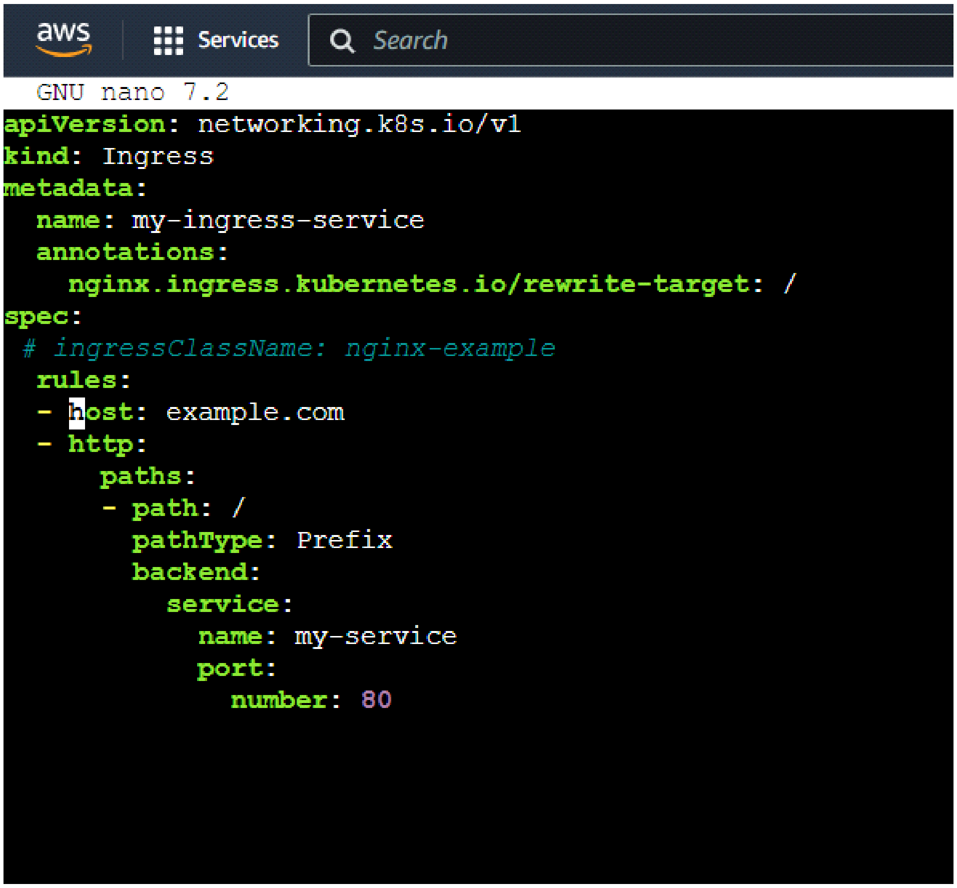
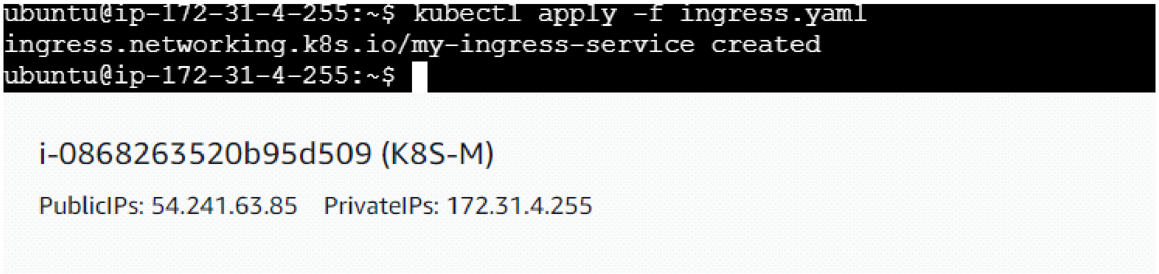


```
  GNU nano 7.2
apiVersion: networking.k8s.io/v1
kind: Ingress
metadata:
  name: my-ingress-service
  annotations:
    nginx.ingress.kubernetes.io/rewrite-target: /
spec:
 # ingressClassName: nginx-example
  rules:
  - host: example.com
  - http:
      paths:
      - path: /
        pathType: Prefix
        backend:
          service:
            name: my-service
            port:
              number: 80
```



```
ubuntu@ip-172-31-4-255:~$ kubectl apply -f ingress.yaml
ingress.networking.k8s.io/my-ingress-service created
ubuntu@ip-172-31-4-255:~$
```

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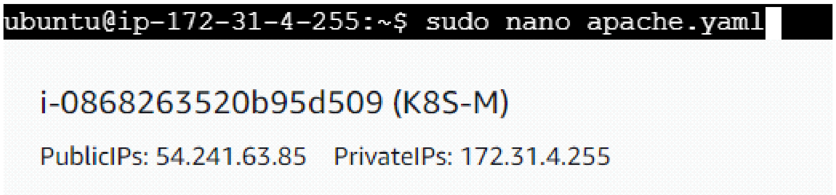
B} Apache to Apache service



```
ubuntu@ip-172-31-4-255:~$ sudo nano apache.yaml
```

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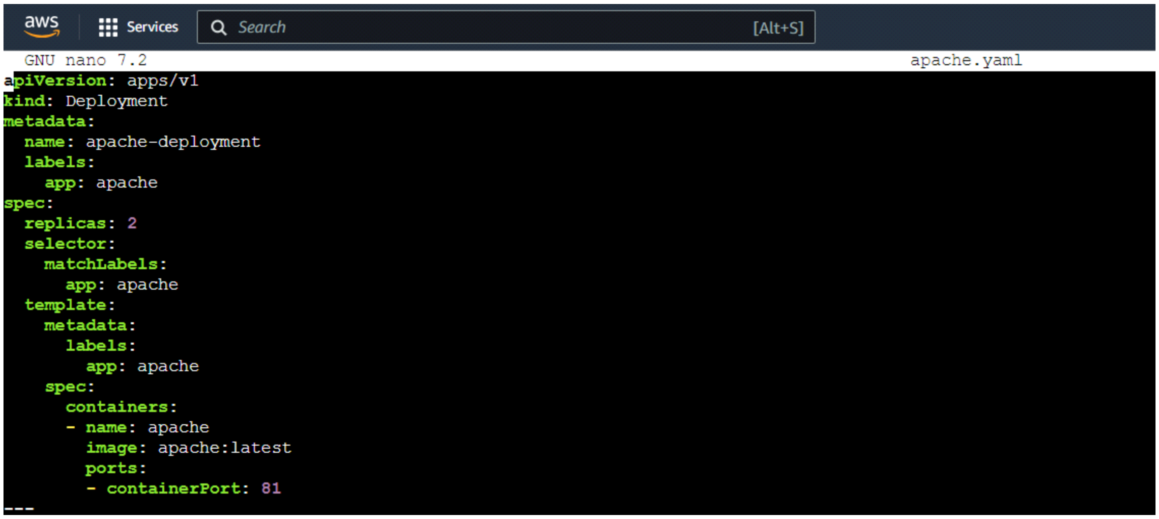
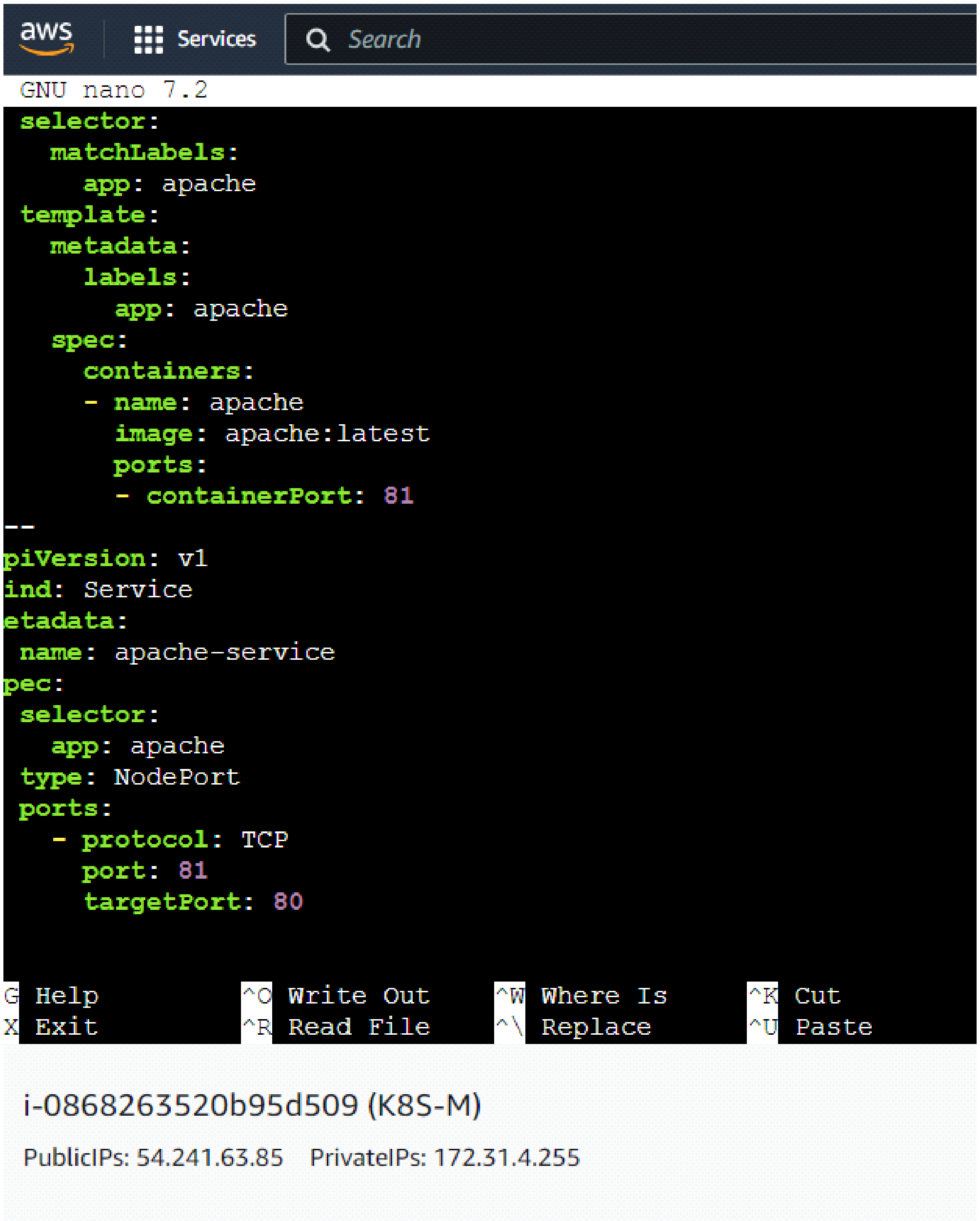


```
  GNU nano 7.2                                                                         apache.yaml
apiVersion: apps/v1
kind: Deployment
metadata:
  name: apache-deployment
  labels:
    app: apache
spec:
  replicas: 2
  selector:
    matchLabels:
      app: apache
  template:
    metadata:
      labels:
        app: apache
    spec:
      containers:
      - name: apache
        image: apache:latest
        ports:
        - containerPort: 81
---
```



```
 GNU nano 7.2
 selector:
  matchLabels:
   app: apache
 template:
  metadata:
   labels:
    app: apache
  spec:
   containers:
   - name: apache
    image: apache:latest
    ports:
    - containerPort: 81
--
piVersion: v1
ind: Service
etadata:
 name: apache-service
pec:
 selector:
  app: apache
 type: NodePort
 ports:
  - protocol: TCP
   port: 81
   targetPort: 80
```

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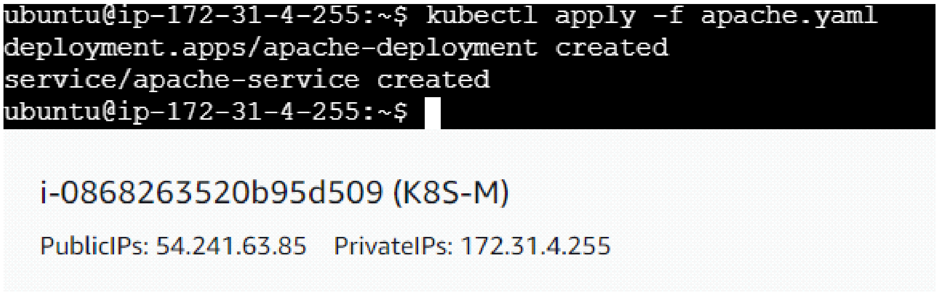
PublicIPs: 54.241.63.85 PrivateIPs: 172.31.4.255



```
ubuntu@ip-172-31-4-255:~$ kubectl apply -f apache.yaml
deployment.apps/apache-deployment created
service/apache-service created
ubuntu@ip-172-31-4-255:~$
```

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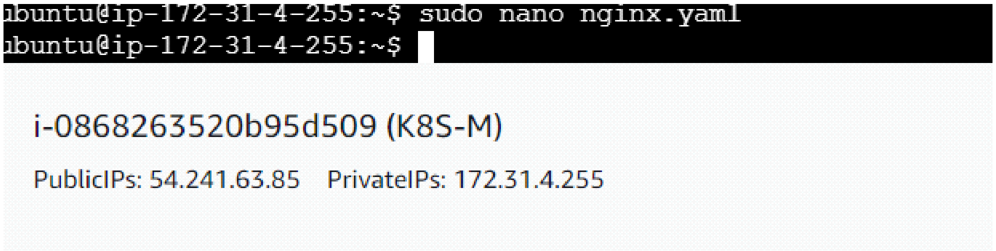
PublicIPs: 54.241.63.85 PrivateIPs: 172.31.4.255

3} NGINX to NGINX service



```
ubuntu@ip-172-31-4-255:~$ sudo nano nginx.yaml
ubuntu@ip-172-31-4-255:~$
```

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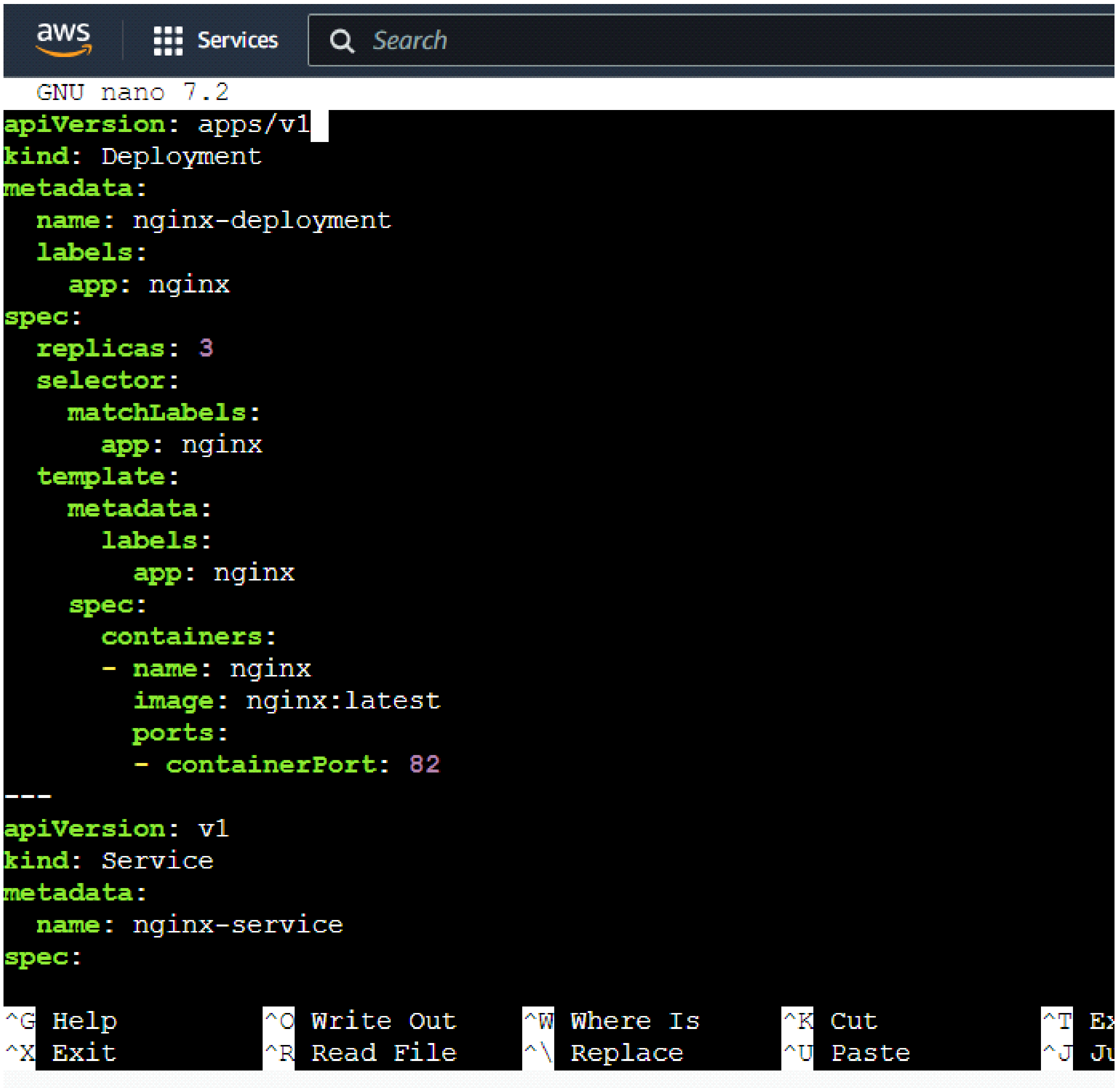
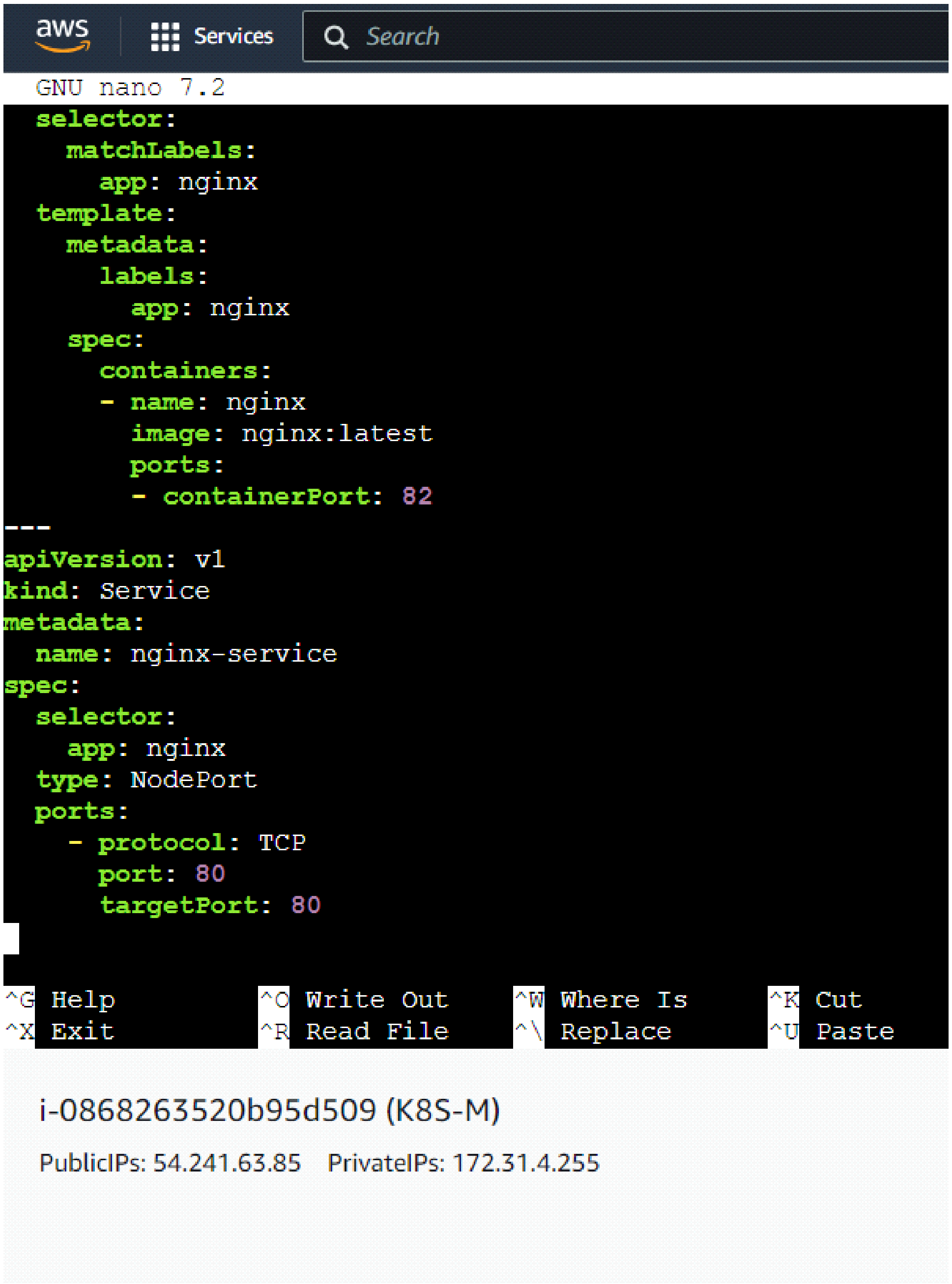


```
  GNU nano 7.2
apiVersion: apps/v1
kind: Deployment
metadata:
  name: nginx-deployment
  labels:
    app: nginx
spec:
  replicas: 3
  selector:
    matchLabels:
      app: nginx
  template:
    metadata:
      labels:
        app: nginx
    spec:
      containers:
      - name: nginx
        image: nginx:latest
        ports:
        - containerPort: 82
---
apiVersion: v1
kind: Service
metadata:
  name: nginx-service
spec:

^G Help          ^O Write Out     ^W Where Is      ^K Cut           ^T Ex
^X Exit          ^R Read File     ^\ Replace       ^U Paste         ^J Ju
```



```
  GNU nano 7.2
  selector:
    matchLabels:
      app: nginx
  template:
    metadata:
      labels:
        app: nginx
    spec:
      containers:
      - name: nginx
        image: nginx:latest
        ports:
        - containerPort: 82
---
apiVersion: v1
kind: Service
metadata:
  name: nginx-service
spec:
  selector:
    app: nginx
  type: NodePort
  ports:
    - protocol: TCP
      port: 80
      targetPort: 80

^G Help          ^O Write Out     ^W Where Is      ^K Cut
^X Exit          ^R Read File     ^\ Replace       ^U Paste
```

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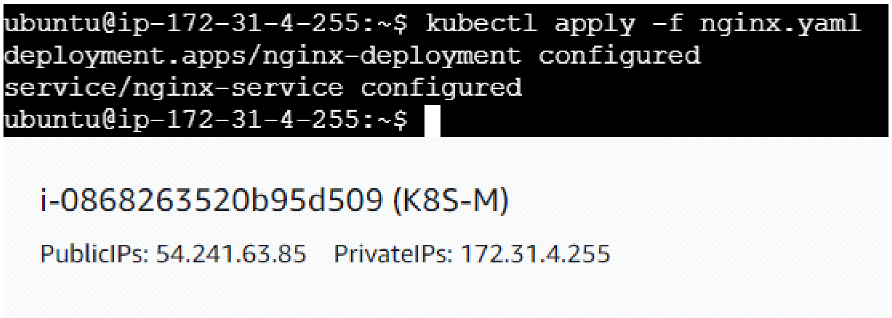

```
ubuntu@ip-172-31-4-255:~$ kubectl apply -f nginx.yaml
deployment.apps/nginx-deployment configured
service/nginx-service configured
ubuntu@ip-172-31-4-255:~$
```

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PublicIPs: 54.241.63.85   PrivateIPs: 172.31.4.255