Kubernetes - 5

You have been asked to:

- **Use the previous deployment**
- **Deploy an nginx deployment of 3 replicas**
- **Create an nginx service of type clusterip**
- **Create an ingress service /apache to apache service /nginx to nginx service**

1) To deploy an Nginx deployment with 3 replicas, create a file named nginx-deployment.yaml with the following content:

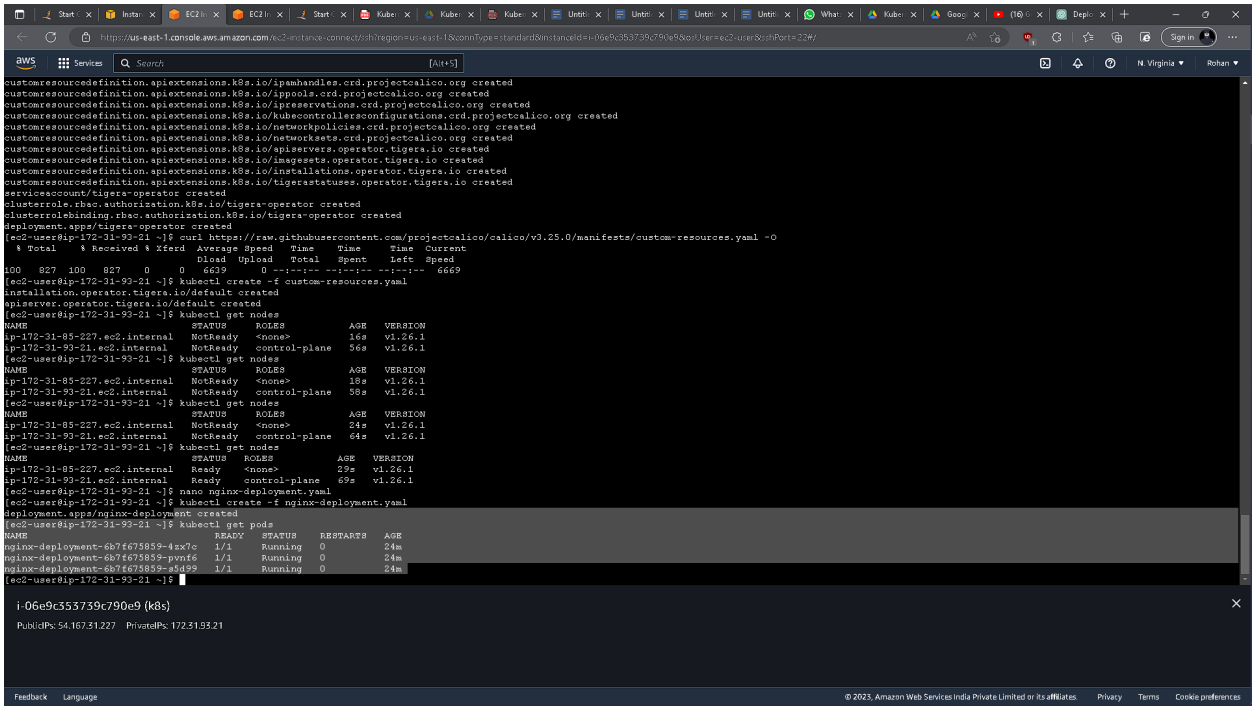
```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: nginx-deployment
spec:
  replicas: 3
  selector:
    matchLabels:
      app: nginx
  template:
    metadata:
      labels:
        app: nginx
    spec:
      containers:
      - name: nginx
        image: nginx:latest
        ports:
        - containerPort: 80
```

2) To create an Nginx service of type ClusterIP, create a file named nginx-service.yaml with the following content:

```
apiVersion: v1
kind: Service
metadata:
  name: nginx-service
spec:
  selector:
    app: nginx
  ports:
  - name: http
    port: 80
    targetPort: 80
  type: ClusterIP
```

3) To create an ingress that routes traffic to /apache to an Apache service and traffic to /nginx to the Nginx service, create a file named ingress.yaml with the following content:

```
apiVersion: networking.k8s.io/v1
kind: Ingress
metadata:
  name: my-ingress
  annotations:
    nginx.ingress.kubernetes.io/rewrite-target: /
spec:
  rules:
  - http:
      paths:
      - path: /apache
        pathType: Prefix
        backend:
          service:
            name: apache-service
            port:
              name: http
      - path: /nginx
        pathType: Prefix
        backend:
          service:
            name: nginx-service
            port:
              name: http
```


customresourcedefinition.apiextensions.k8s.io/ipamhandles.crd.projectcalico.org created
customresourcedefinition.apiextensions.k8s.io/ippools.crd.projectcalico.org created
customresourcedefinition.apiextensions.k8s.io/ipreservations.crd.projectcalico.org created
customresourcedefinition.apiextensions.k8s.io/kubecontrollersconfigurations.crd.projectcalico.org created
customresourcedefinition.apiextensions.k8s.io/networkpolicies.crd.projectcalico.org created
customresourcedefinition.apiextensions.k8s.io/networksets.crd.projectcalico.org created
customresourcedefinition.apiextensions.k8s.io/apiservers.operator.tigera.io created
customresourcedefinition.apiextensions.k8s.io/imagesets.operator.tigera.io created
customresourcedefinition.apiextensions.k8s.io/installations.operator.tigera.io created
customresourcedefinition.apiextensions.k8s.io/tigerastatuses.operator.tigera.io created
serviceaccount/tigera-operator created
clusterrole.rbac.authorization.k8s.io/tigera-operator created
clusterrolebinding.rbac.authorization.k8s.io/tigera-operator created
deployment.apps/tigera-operator created
[ec2-user@ip-172-31-93-21 ~]$ curl https://raw.githubusercontent.com/projectcalico/calico/v3.25.0/manifests/custom-resources.yaml -O
  % Total   % Received % Xferd Average Speed   Time   Time   Time Current
                                 Dload Upload   Total   Spent   Left Speed
100   827 100   827   0   0   6639   0 --:--:-- --:--:-- --:--:-- 6669
[ec2-user@ip-172-31-93-21 ~]$ kubectl create -f custom-resources.yaml
installation.operator.tigera.io/default created
apiserver.operator.tigera.io/default created
[ec2-user@ip-172-31-93-21 ~]$ kubectl get nodes
NAME   STATUS   ROLES   AGE   VERSION
ip-172-31-85-227.ec2.internal   NotReady   <none>   16s   v1.26.1
ip-172-31-93-21.ec2.internal   NotReady   control-plane   56s   v1.26.1
[ec2-user@ip-172-31-93-21 ~]$ kubectl get nodes
NAME   STATUS   ROLES   AGE   VERSION
ip-172-31-85-227.ec2.internal   NotReady   <none>   18s   v1.26.1
ip-172-31-93-21.ec2.internal   NotReady   control-plane   58s   v1.26.1
[ec2-user@ip-172-31-93-21 ~]$ kubectl get nodes
NAME   STATUS   ROLES   AGE   VERSION
ip-172-31-85-227.ec2.internal   NotReady   <none>   24s   v1.26.1
ip-172-31-93-21.ec2.internal   NotReady   control-plane   64s   v1.26.1
[ec2-user@ip-172-31-93-21 ~]$ kubectl get nodes
NAME   STATUS   ROLES   AGE   VERSION
ip-172-31-85-227.ec2.internal   Ready   <none>   29s   v1.26.1
ip-172-31-93-21.ec2.internal   Ready   control-plane   69s   v1.26.1
[ec2-user@ip-172-31-93-21 ~]$ nano nginx-deployment.yaml
[ec2-user@ip-172-31-93-21 ~]$ kubectl create -f nginx-deployment.yaml
deployment.apps/nginx-deployment created
[ec2-user@ip-172-31-93-21 ~]$ kubectl get pods
NAME   READY   STATUS   RESTARTS   AGE
nginx-deployment-6b7f675859-4zx7c   1/1   Running   0   24m
nginx-deployment-6b7f675859-pvnf6   1/1   Running   0   24m
nginx-deployment-6b7f675859-s5d99   1/1   Running   0   24m
[ec2-user@ip-172-31-93-21 ~]$
i-06e9c353739c790e9 (k8s)
PublicIPs: 54.167.31.227 PrivateIPs: 172.31.93.21
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Language
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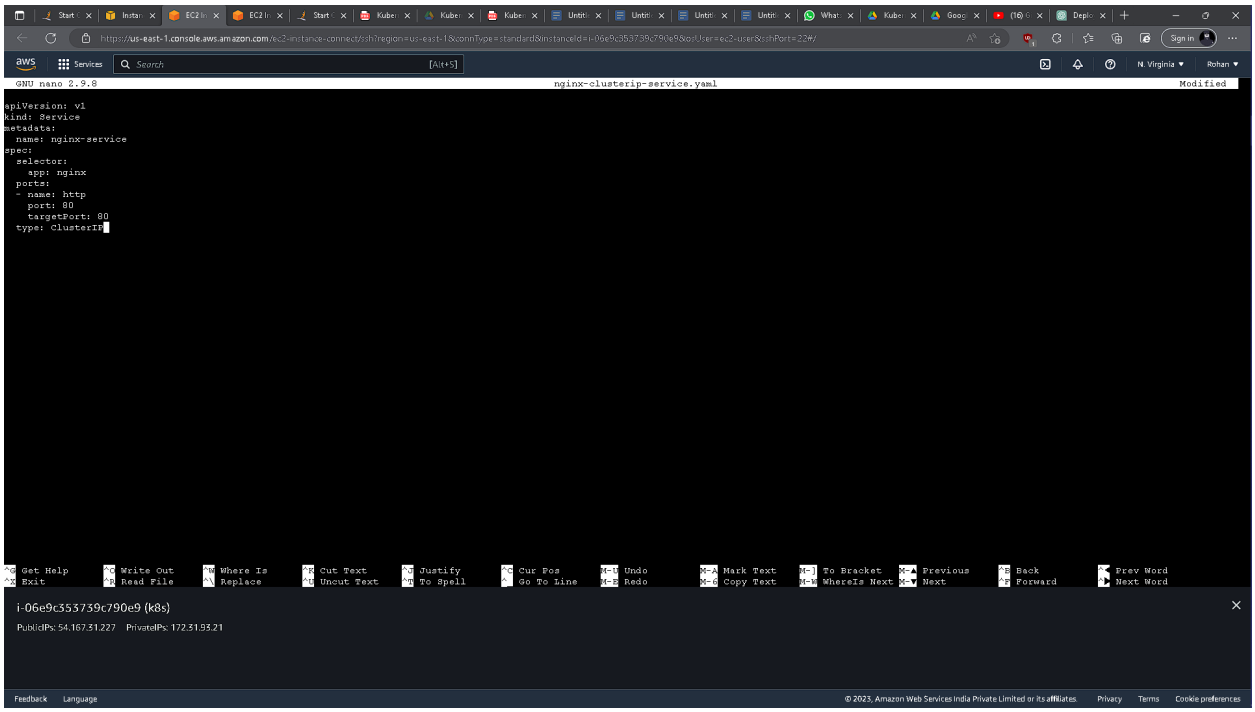
GNU nano 2.9.8
nginx-clusterip-service.yaml
Modified
apiVersion: v1
kind: Service
metadata:
  name: nginx-service
spec:
  selector:
    app: nginx
  ports:
  - name: http
    port: 80
    targetPort: 80
  type: ClusterIP
^G Get Help
^O Write Out
^W Where Is
^K Cut Text
^J Justify
^C Cur Pos
M-U Undo
M-A Mark Text
M-] To Bracket
M-▲ Previous
^B Back
^◀ Prev Word
^X Exit
^R Read File
^\ Replace
^U Uncut Text
^T To Spell
^_ Go To Line
M-E Redo
M-6 Copy Text
M-W WhereIs Next
M-▼ Next
^F Forward
^▶ Next Word
i-06e9c353739c790e9 (k8s)
PublicIPs: 54.167.31.227 PrivateIPs: 172.31.93.21
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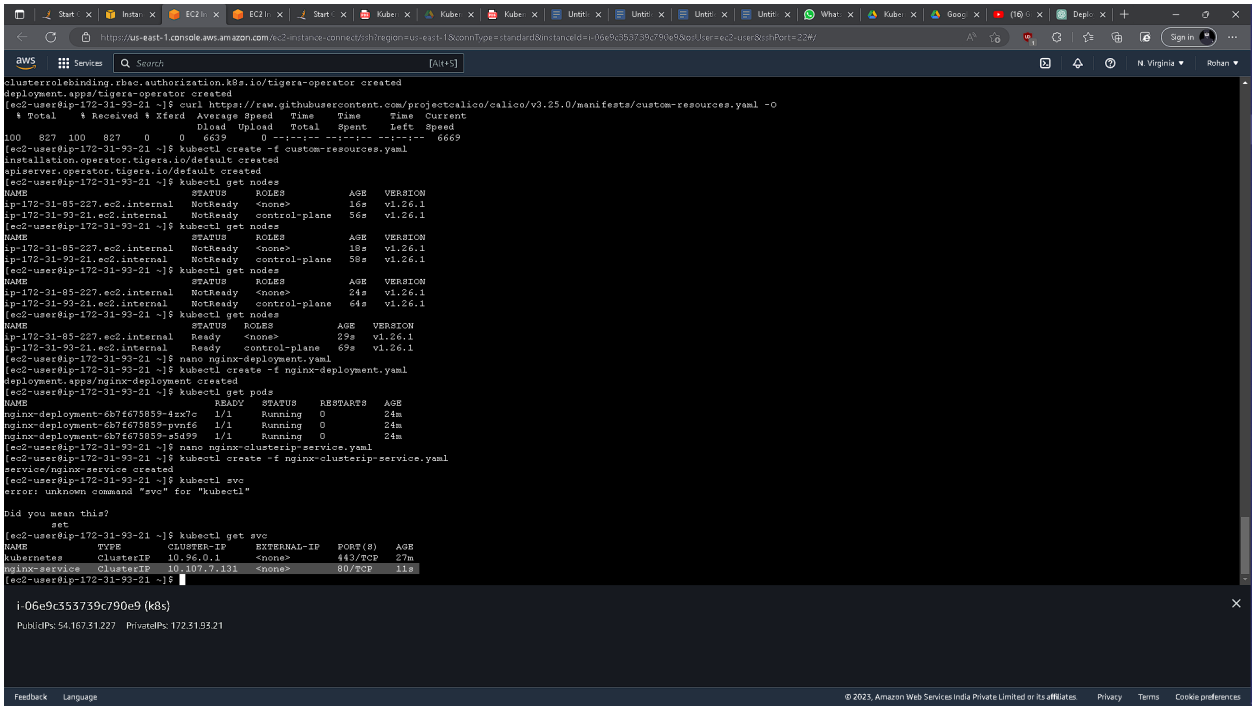
clusterrolebinding.rbac.authorization.k8s.io/tigera-operator created
deployment.apps/tigera-operator created
[ec2-user@ip-172-31-93-21 ~]$ curl https://raw.githubusercontent.com/projectcalico/calico/v3.25.0/manifests/custom-resources.yaml -O
% Total % Received % Xferd Average Speed Time Time Time Current
Dload Upload Total Spent Left Speed
100 827 100 827 0 0 6639 0 --:--:-- --:--:-- --:--:-- 6669
[ec2-user@ip-172-31-93-21 ~]$ kubectl create -f custom-resources.yaml
installation.operator.tigera.io/default created
apiserver.operator.tigera.io/default created
[ec2-user@ip-172-31-93-21 ~]$ kubectl get nodes
NAME STATUS ROLES AGE VERSION
ip-172-31-85-227.ec2.internal NotReady <none> 16s v1.26.1
ip-172-31-93-21.ec2.internal NotReady control-plane 56s v1.26.1
[ec2-user@ip-172-31-93-21 ~]$ kubectl get nodes
NAME STATUS ROLES AGE VERSION
ip-172-31-85-227.ec2.internal NotReady <none> 18s v1.26.1
ip-172-31-93-21.ec2.internal NotReady control-plane 58s v1.26.1
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ip-172-31-85-227.ec2.internal NotReady <none> 24s v1.26.1
ip-172-31-93-21.ec2.internal NotReady control-plane 64s v1.26.1
[ec2-user@ip-172-31-93-21 ~]$ kubectl get nodes
NAME STATUS ROLES AGE VERSION
ip-172-31-85-227.ec2.internal Ready <none> 29s v1.26.1
ip-172-31-93-21.ec2.internal Ready control-plane 69s v1.26.1
[ec2-user@ip-172-31-93-21 ~]$ nano nginx-deployment.yaml
[ec2-user@ip-172-31-93-21 ~]$ kubectl create -f nginx-deployment.yaml
deployment.apps/nginx-deployment created
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NAME READY STATUS RESTARTS AGE
nginx-deployment-6b7f675859-4zx7c 1/1 Running 0 24m
nginx-deployment-6b7f675859-pvnf6 1/1 Running 0 24m
nginx-deployment-6b7f675859-s5d99 1/1 Running 0 24m
[ec2-user@ip-172-31-93-21 ~]$ nano nginx-clusterip-service.yaml
[ec2-user@ip-172-31-93-21 ~]$ kubectl create -f nginx-clusterip-service.yaml
service/nginx-service created
[ec2-user@ip-172-31-93-21 ~]$ kubectl svc
error: unknown command "svc" for "kubectl"
Did you mean this?
set
[ec2-user@ip-172-31-93-21 ~]$ kubectl get svc
NAME TYPE CLUSTER-IP EXTERNAL-IP PORT(S) AGE
kubernetes ClusterIP 10.96.0.1 <none> 443/TCP 27m
nginx-service ClusterIP 10.107.7.131 <none> 80/TCP 11s
[ec2-user@ip-172-31-93-21 ~]$
i-06e9c353739c790e9 (k8s)
PublicIPs: 54.167.31.227 PrivateIPs: 172.31.93.21
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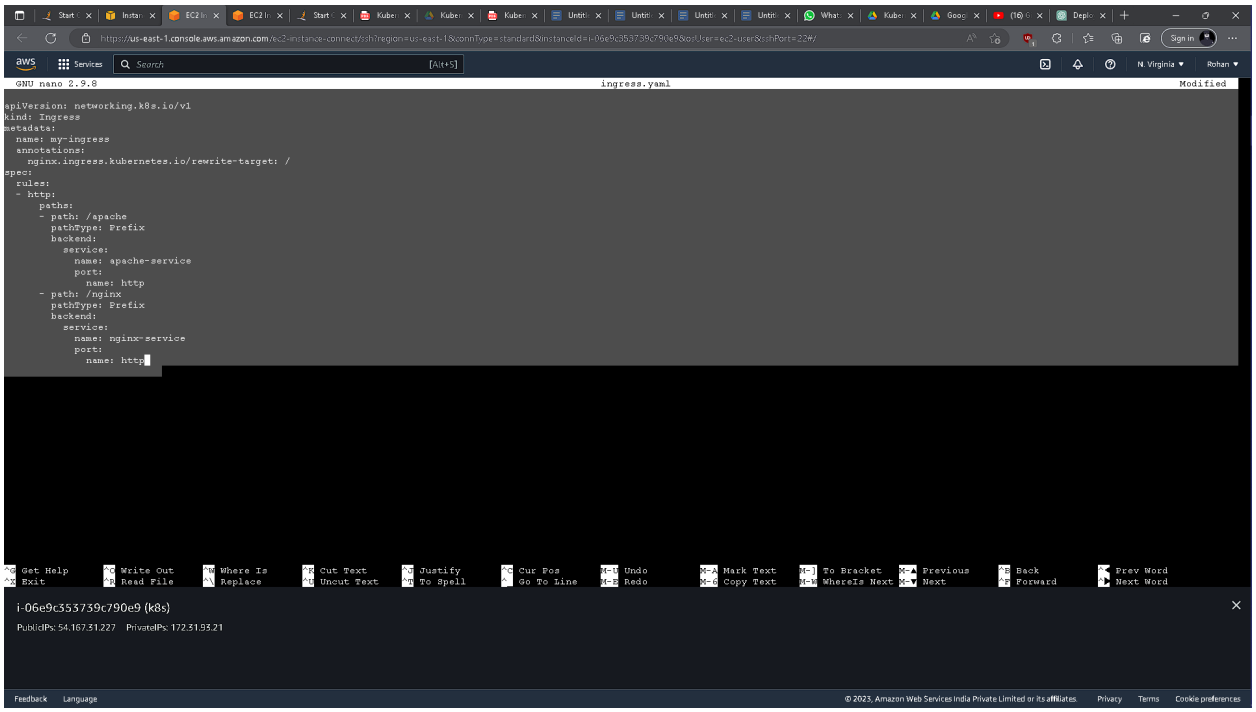
GNU nano 2.9.8 ingress.yaml Modified
apiVersion: networking.k8s.io/v1
kind: Ingress
metadata:
name: my-ingress
annotations:
nginx.ingress.kubernetes.io/rewrite-target: /
spec:
rules:
- http:
paths:
- path: /apache
pathType: Prefix
backend:
service:
name: apache-service
port:
name: http
- path: /nginx
pathType: Prefix
backend:
service:
name: nginx-service
port:
name: http
^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos M-U Undo M-A Mark Text M-] To Bracket M-▲ Previous ^◀ Back ^◀ Prev Word
^X Exit ^R Read File ^\ Replace ^U Uncut Text ^T To Spell ^_ Go To Line M-E Redo M-6 Copy Text M-W WhereIs Next M-▼ Next ^▶ Forward ^▶ Next Word
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