

## Kubernetes - 2

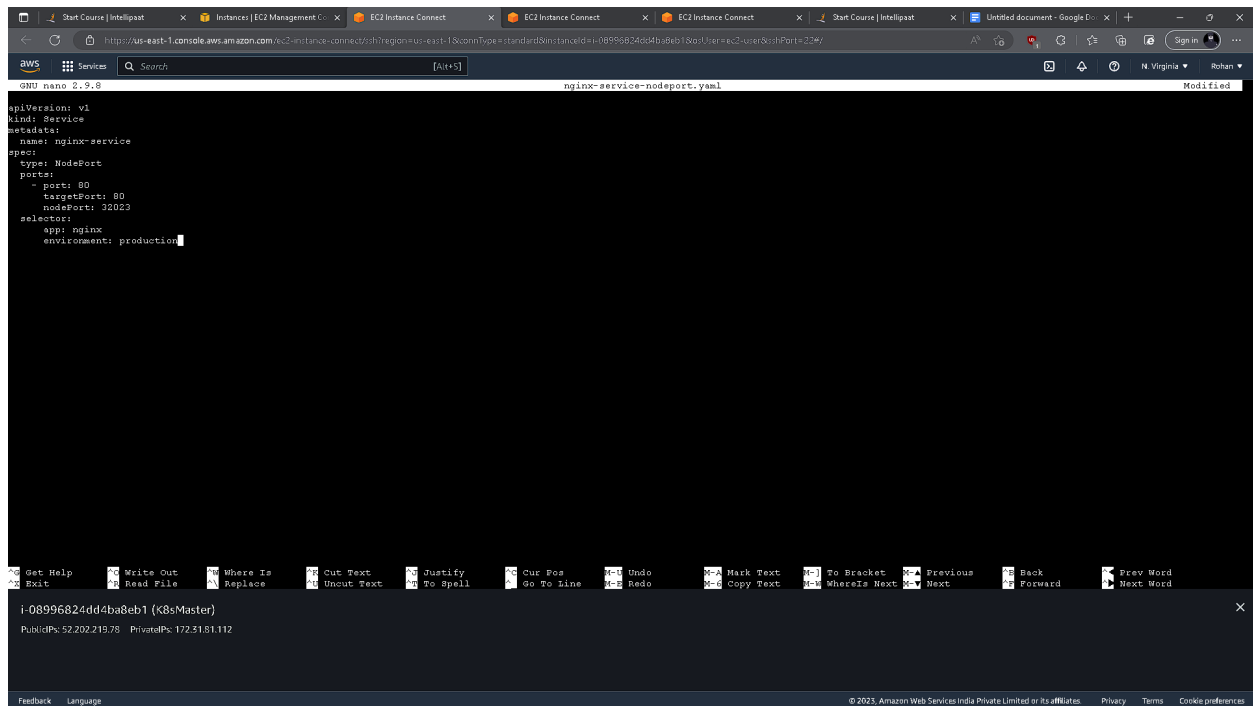
You have been asked to:

- Use the previous deployment
- Create a service of type NodePort for nginx deployment
- Check the nodeport service on a browser to verify

Nano nginx-nodeport-service.yaml

Paste this:

```
apiVersion: v1
kind: Service
metadata:
  name: nginx-service
spec:
  type: NodePort
  ports:
    - port: 80
      targetPort: 80
      nodePort: 32023
  selector:
    app: nginx
    environment: production
```



The screenshot shows a web browser window with the AWS Management Console open. The browser's address bar shows the URL: <https://aws-east-1.console.aws.amazon.com/ec2-instance-connect/sh?region=us-east-1&connType=standard&instanceId=i-08996824dd4ba8eb1&roleUser=ec2-user&sshPort=22&...>. The browser's tabs include "Start Course | Intellipast", "Instances | EC2 Management Console", and several "EC2 Instance Connect" tabs. The browser's address bar also shows "Sign in" and "Rohan".

The terminal window, titled "nginx-service-nodeport.yaml", displays the following YAML configuration:

```
apiVersion: v1
kind: Service
metadata:
  name: nginx-service
spec:
  type: NodePort
  ports:
    - port: 80
      targetPort: 80
      nodePort: 32023
  selector:
    app: nginx
    environment: production
```

The terminal window also shows the command prompt "GNU nano 2.9.8" and the file name "nginx-service-nodeport.yaml". The terminal's status bar at the bottom shows the instance ID "i-08996824dd4ba8eb1 (K8sMaster)" and the public IP address "PublicIPs: 52.202.219.78".

# Kubectl create -f nginx-nodeport-service.yaml

```
ip-172-31-31-112.ec2.internal Ready control-plane 7m46s v1.26.1
ip-172-31-86-163.ec2.internal Ready <none> 97s v1.26.1
ip-172-31-92-211.ec2.internal Ready <none> 108s v1.26.1
[ec2-user@ip-172-31-81-112 ~]$ nano nginx-deployment
[ec2-user@ip-172-31-81-112 ~]$ nano nginx-deployment.yaml
[ec2-user@ip-172-31-81-112 ~]$ kubectl create -f nginxdeployment.yaml
error: the path "nginxdeployment.yaml" does not exist
[ec2-user@ip-172-31-81-112 ~]$ kubectl create -f nginx-deployment.yaml
replicaset.apps/nginx-replicaset created
[ec2-user@ip-172-31-81-112 ~]$ kubectl get deploy
No resources found in default namespace.
[ec2-user@ip-172-31-81-112 ~]$ kubectl get deploy
No resources found in default namespace.
[ec2-user@ip-172-31-81-112 ~]$ kubectl get deployments
No resources found in default namespace.
[ec2-user@ip-172-31-81-112 ~]$ kubectl get po
NAME READY STATUS RESTARTS AGE
nginx-replicaset-2nc45 1/1 Running 0 38s
nginx-replicaset-t5m69 1/1 Running 0 38s
nginx-replicaset-zn6jg 1/1 Running 0 38s
[ec2-user@ip-172-31-81-112 ~]$ kubectl get deploy nginx-deployment.yaml
Error from server (NotFound): deployments.apps "nginx-deployment.yaml" not found
[ec2-user@ip-172-31-81-112 ~]$ kubectl get deploy nginx-replicaset
Error from server (NotFound): deployments.apps "nginx-replicaset" not found
[ec2-user@ip-172-31-81-112 ~]$ kubectl get po
NAME READY STATUS RESTARTS AGE
nginx-replicaset-2nc45 1/1 Running 0 75s
nginx-replicaset-t5m69 1/1 Running 0 75s
nginx-replicaset-zn6jg 1/1 Running 0 75s
[ec2-user@ip-172-31-81-112 ~]$ kubectl get rs
NAME DESIRED CURRENT READY AGE
nginx-replicaset 3 3 3 97s
[ec2-user@ip-172-31-81-112 ~]$ kubectl delete rs nginx-replicaset
replicaset.apps "nginx-replicaset" deleted
[ec2-user@ip-172-31-81-112 ~]$ kubectl get po
No resources found in default namespace.
[ec2-user@ip-172-31-81-112 ~]$ nano nginx-service-nodeport.yaml
[ec2-user@ip-172-31-81-112 ~]$ kubectl -f create nginx-service-nodeport.yaml
-bash: kubectl: command not found
[ec2-user@ip-172-31-81-112 ~]$ kubectl create -f nginx-service-nodeport.yaml
-bash: kubectl: command not found
[ec2-user@ip-172-31-81-112 ~]$ kubectl create -f nginx-service-nodeport.yaml
service/nginx-service created
[ec2-user@ip-172-31-81-112 ~]$
```

In previous deployment make sure the labels are same as that of mentioned in nodeport service.

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: nginx-deployment
  labels:
    app: nginx
spec:
  replicas: 3
  strategy:
    type: Recreate
  selector:
    matchLabels:
      app: nginx
      environment: production
  template:
    metadata:
      labels:
        app: nginx
        environment: production
    spec:
      containers:
        - name: nginx-container
          image: nginx
```

## kubectl get svc #to check the service running

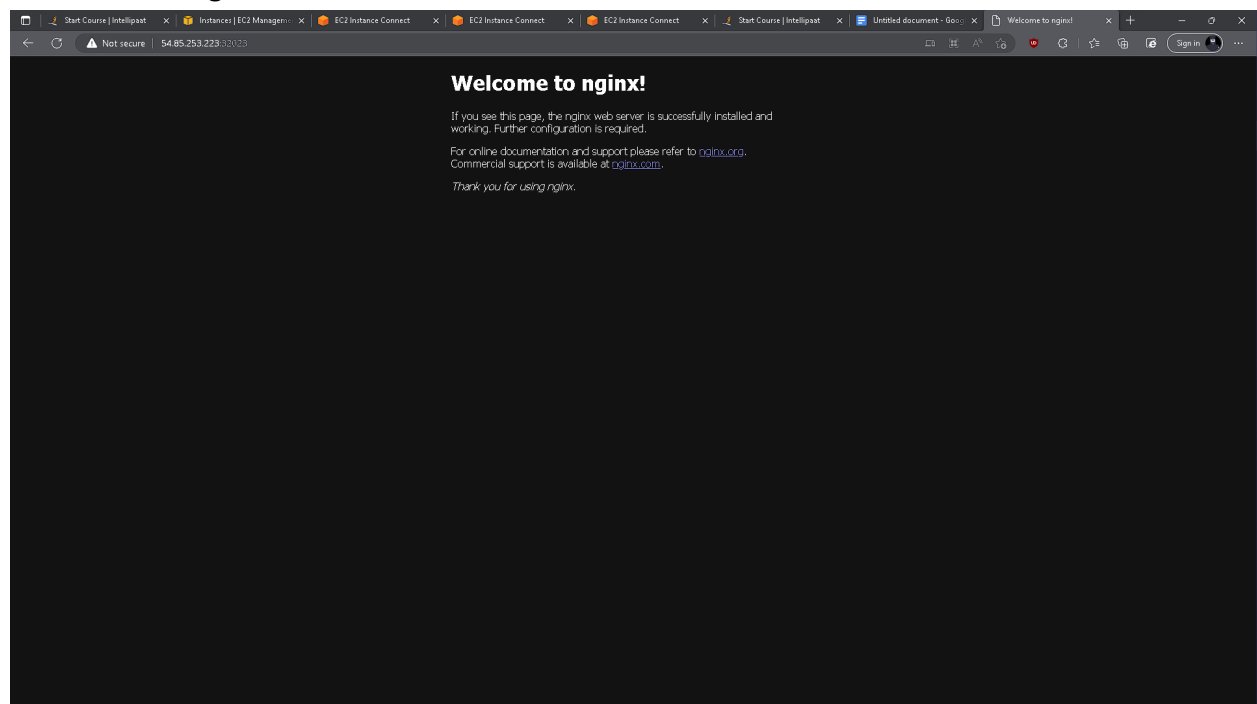
```
aws
Services
Search
[Alt+S]

[ec2-user@ip-172-31-81-112 ~]$ kubectl get deploy
No resources found in default namespace.
[ec2-user@ip-172-31-81-112 ~]$ kubectl get deployments
No resources found in default namespace.
[ec2-user@ip-172-31-81-112 ~]$ kubectl get po
NAME          READY   STATUS    RESTARTS   AGE
nginx-replicaset-2nc45    1/1     Running   0           38s
nginx-replicaset-t25m9    1/1     Running   0           38s
[ec2-user@ip-172-31-81-112 ~]$ kubectl get deploy nginx-deployment.yaml
Error from server (NotFound): deployments.apps "nginx-deployment.yaml" not found
[ec2-user@ip-172-31-81-112 ~]$ kubectl get deploy nginx-replicaset
Error from server (NotFound): deployments.apps "nginx-replicaset" not found
[ec2-user@ip-172-31-81-112 ~]$ kubectl get po
NAME          READY   STATUS    RESTARTS   AGE
nginx-replicaset-2nc45    1/1     Running   0           75s
nginx-replicaset-t25m9    1/1     Running   0           75s
nginx-replicaset-zn6jg    1/1     Running   0           75s
[ec2-user@ip-172-31-81-112 ~]$ kubectl get rs
> kubectl get rs/vc
[ec2-user@ip-172-31-81-112 ~]$ kubectl get rs
NAME          DESIRED   CURRENT   READY   AGE
nginx-replicaset    3          3          3       97s
[ec2-user@ip-172-31-81-112 ~]$ kubectl delete rs nginx-replicaset
replicaset.apps "nginx-replicaset" deleted
[ec2-user@ip-172-31-81-112 ~]$ kubectl get po
No resources found in default namespace.
[ec2-user@ip-172-31-81-112 ~]$ nano nginx-service-nodeport.yaml
[ec2-user@ip-172-31-81-112 ~]$ kubectl -f create nginx-service-nodeport.yaml
-bash: kubectl: command not found
[ec2-user@ip-172-31-81-112 ~]$ kubectl create -f nginx-service-nodeport.yaml
-bash: kubectl: command not found
[ec2-user@ip-172-31-81-112 ~]$ kubectl create -f nginx-service-nodeport.yaml
service/nginx-service created
[ec2-user@ip-172-31-81-112 ~]$ kubectl get ep
NAME          ENDPOINTS          AGE
kubernetes    172.31.81.112:6443 41m
nginx-service  <none>              53s
[ec2-user@ip-172-31-81-112 ~]$ nano nginx-deployment.yaml
[ec2-user@ip-172-31-81-112 ~]$ kubectl create -f nginx-deployment.yaml
deployment.apps/nginx-deployment created
[ec2-user@ip-172-31-81-112 ~]$ kubectl get ep
NAME          ENDPOINTS          AGE
kubernetes    172.31.81.112:6443 43m
nginx-service  192.168.1.98:80,192.168.245.69:80,192.168.245.70:80 4m37s
[ec2-user@ip-172-31-81-112 ~]$
```

i-08996824dd4ba8eb1 (K8sMaster)  
PublicIPs: 52.202.219.78 PrivateIPs: 172.31.81.112

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Copy paste Client node public ip with node specified in nodeport and you can see service running.



```
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http://us-east-1.console.aws.amazon.com/ec2-instance-connect/?d=region=us-east-1&connType=standard&instanceId=i-0b7a110ec62363db3&src=ec2-user&sshPort=22#/
AWS Services Search [All+5] N. Virginia Rohan
Verifying : libnetfilter_timeout-1.0.0-6.amzn2.1.x86_64 2/11
Verifying : socat-1.7.3.2-2.amzn2.0.1.x86_64 3/11
Verifying : kubernetes-cni-1.2.0-0.x86_64 4/11
Verifying : ebttables-2.0.10-16.amzn2.0.1.x86_64 5/11
Verifying : kubelet-1.26.1-0.x86_64 6/11
Verifying : libnetfilter_queue-1.0.2-2.amzn2.0.2.x86_64 7/11
Verifying : conntrack-tools-1.4.4-5.amzn2.2.x86_64 8/11
Verifying : kubeadm-1.26.1-0.x86_64 9/11
Verifying : cri-tools-1.25.0-1.amzn2.0.1.x86_64 10/11
Verifying : libnetfilter_etherp-1.0.0-10.amzn2.1.x86_64 11/11

Installed:
  kubeadm.x86_64 0:1.26.1-0 kubelet.x86_64 0:1.26.1-0 kubelet.x86_64 0:1.26.1-0

Dependency Installed:
  conntrack-tools.x86_64 0:1.4.4-5.amzn2.2 cri-tools.x86_64 0:1.25.0-1.amzn2.0.1 ebttables.x86_64 0:2.0.10-16.amzn2.0.1 kubernetes-cni.x86_64 0:1.2.0-0
  libnetfilter_etherp.x86_64 0:1.0.0-10.amzn2.1 libnetfilter_cttimeout.x86_64 0:1.0.0-6.amzn2.1 libnetfilter_queue.x86_64 0:1.0.2-2.amzn2.0.2 socat.x86_64 0:1.7.3.2-2.amzn2.0.1

Complete!
[ec2-user@ip-172-31-86-163 ~]$ sudo systemctl enable --now kubelet
Created symlink from /etc/systemd/system/multi-user.target.wants/kubelet.service to /usr/lib/systemd/system/kubelet.service.
[ec2-user@ip-172-31-86-163 ~]$ kubeadm join 172.31.81.112:6443 --token 0b8cui.idavy4uyptj1looa \
> --discovery-token-ca-cert-hash sha256:57a5d7a8bc2b8e4acb4c26f8c87c4f2fa32ad7ce3b26c75adbab40421386c375
[preflight] Running pre-flight checks
error execution phase preflight: [preflight] Some fatal errors occurred:
  (ERROR IsPrivilegedUser): user is not running as root
[preflight] If you know what you are doing, you can make a check non-fatal with '--ignore-preflight-errors=...'
To see the stack trace of this error execute with '--v=5 or higher'
[ec2-user@ip-172-31-86-163 ~]$ sudo kubeadm join 172.31.81.112:6443 --token 0b8cui.idavy4uyptj1looa \
> --discovery-token-ca-cert-hash sha256:57a5d7a8bc2b8e4acb4c26f8c87c4f2fa32ad7ce3b26c75adbab40421386c375
[preflight] Running pre-flight checks
(WARNING FileExisting-etc): to not found in system path
[preflight] Reading configuration from the cluster...
[preflight] PTF: You can look at this config file with 'kubectl -n kube-system get cm kubeadm-config -o yaml'
[kubelet-start] Writing kubelet configuration to file "/var/lib/kubelet/config.yaml"
[kubelet-start] Writing kubelet environment file with flags to file "/var/lib/kubelet/kubeadm-flags.env"
[kubelet-start] Starting the kubelet
[kubelet-start] Waiting for the kubelet to perform the TLS Bootstrap...

This node has joined the cluster:
* Certificate signing request was sent to apiservert and a response was received.
* The Kubelet was informed of the new secure connection details.

Run 'kubectl get nodes' on the control-plane to see this node join the cluster.

[ec2-user@ip-172-31-86-163 ~]$
```

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