Experiment No 4

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AIM: To install Kubectl and execute Kubectl commands to manage the Kubernetes cluster and deploy Your First Kubernetes Application.

- **Running the application on the cluster**
  kubectl create deployment nginx --image=nginx

```
ubuntu@master:~$ kubectl create deployment nginx --image=nginx
deployment.apps/nginx created
ubuntu@master:~$
```

- **Verifying the deployment using command**
  kubectl get deployments

```
ubuntu@master:~$ kubectl get deployments
NAME    READY   UP-TO-DATE   AVAILABLE   AGE
nginx   1/1     1            1           47s
ubuntu@master:~$
```

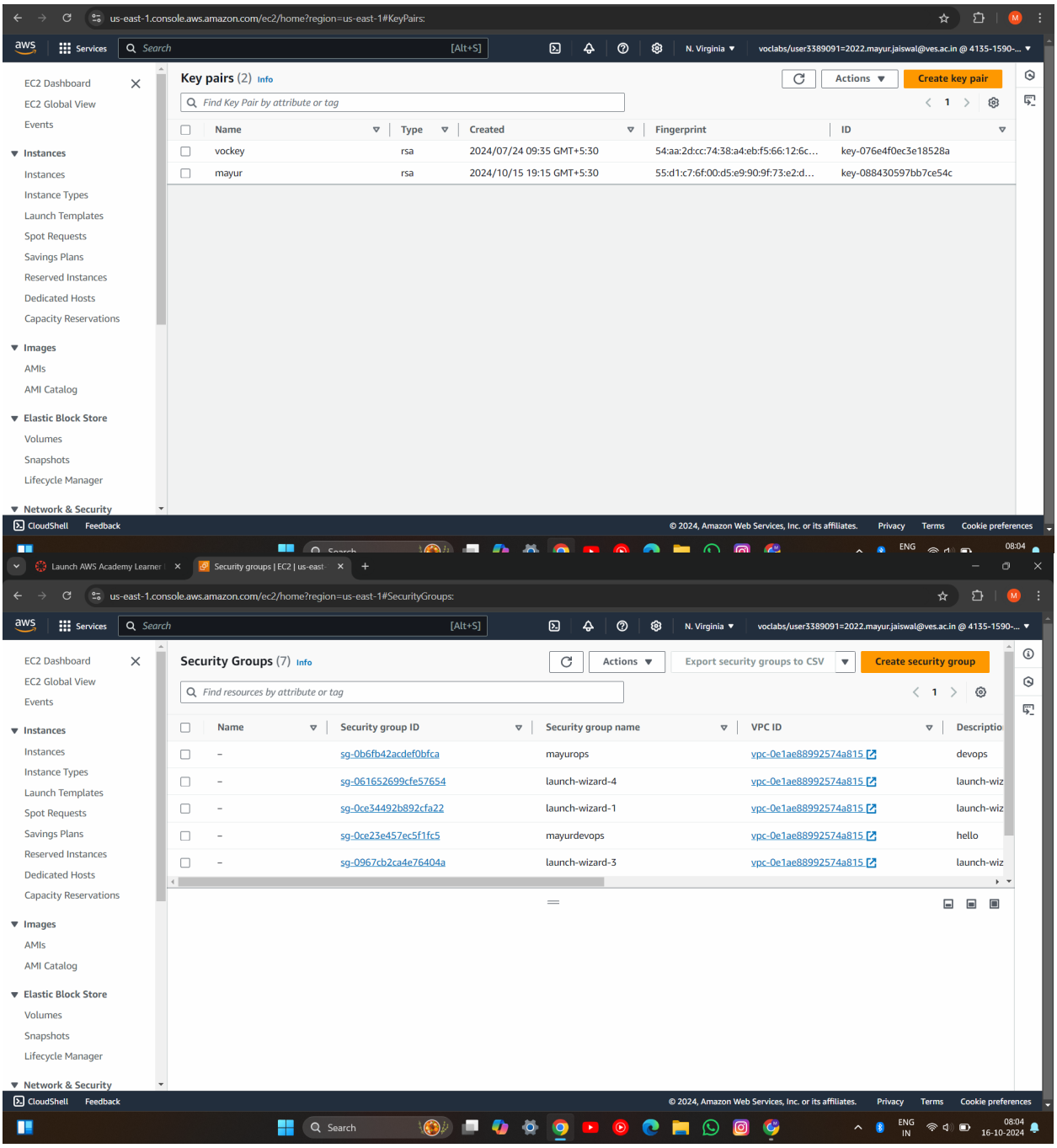
- **Run the following command to create a service named nginx that will expose the app publicly.**
  kubectl expose deploy nginx –port 80 –target-port 80 –type NodePort

```
ubuntu@master:~$ kubectl expose deploy nginx --port 80 --target-port 80 --type NodePort
service/nginx exposed
ubuntu@master:~$
```

- **Run this command to see the summary of the service and ports exposed.**
  kubectl get services

```
ubuntu@master:~$ kubectl get services
NAME         TYPE        CLUSTER-IP      EXTERNAL-IP   PORT(S)        AGE
kubernetes   ClusterIP   10.96.0.1       <none>        443/TCP        4d14h
nginx        NodePort    10.103.96.233   <none>        80:30816/TCP   67s
ubuntu@master:~$
```

- **Add the port which is displayed i.e 30816 (will differ for each device) in the inbound rules of the security group of the worker.**



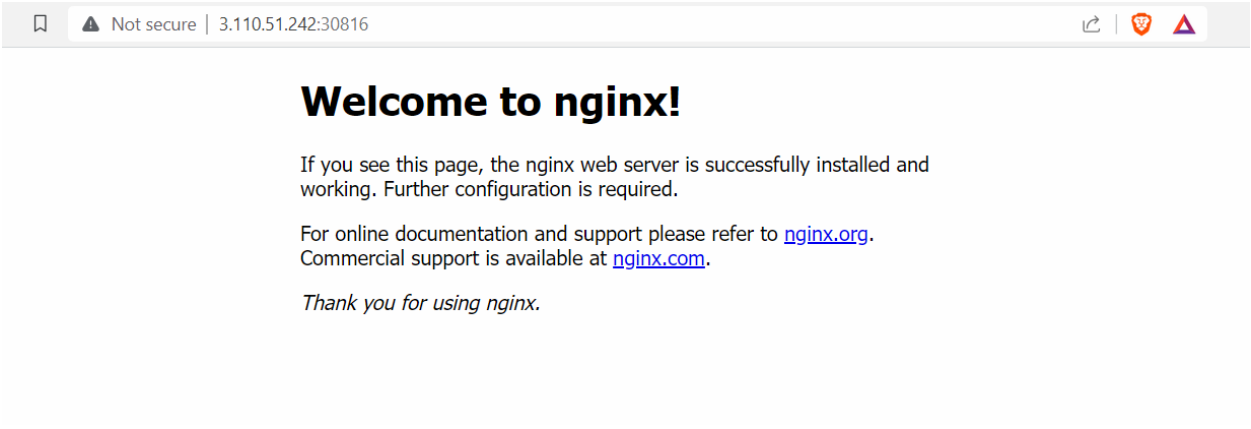
- **We can verify that the nginx page is accessible on all nodes using curl command(Worker)**
    1. sudo su
    2. curl worker:30816

```
ubuntu@worker:~$ sudo su
root@worker:/home/ubuntu# curl worker:30816
<!DOCTYPE html>
<html>
<head>
<title>Welcome to nginx!</title>
<style>
html { color-scheme: light dark; }
body { width: 35em; margin: 0 auto;
font-family: Tahoma, Verdana, Arial, sans-serif; }
</style>
</head>
<body>
<h1>Welcome to nginx!</h1>
<p>If you see this page, the nginx web server is successfully installed and
working. Further configuration is required.</p>

<p>For online documentation and support please refer to
<a href="http://nginx.org/">nginx.org</a>.<br/>
Commercial support is available at
<a href="http://nginx.com/">nginx.com</a>.</p>

<p><em>Thank you for using nginx.</em></p>
</body>
</html>
root@worker:/home/ubuntu#
```

Open a new tab in browser and paste the public IP address followed by :port number (30816 in my case)



Conclusion:

Thus, we have studied and implemented how to install Kubectl and execute Kubectl commands to manage the Kubernetes cluster and deploy.