ADVANCE DEVOPS EXP-3

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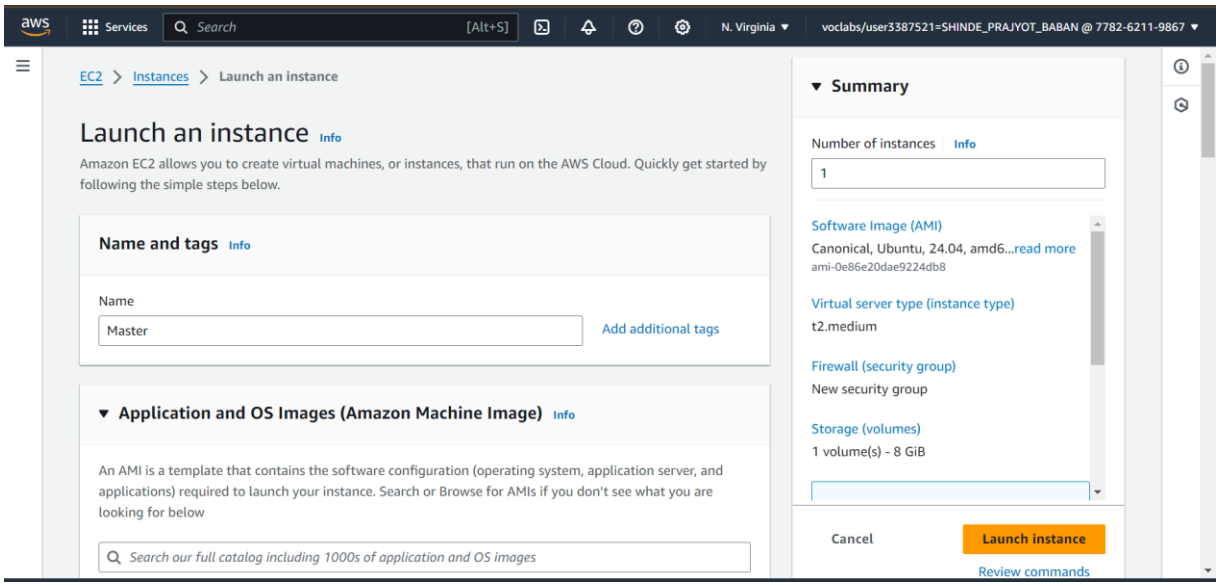
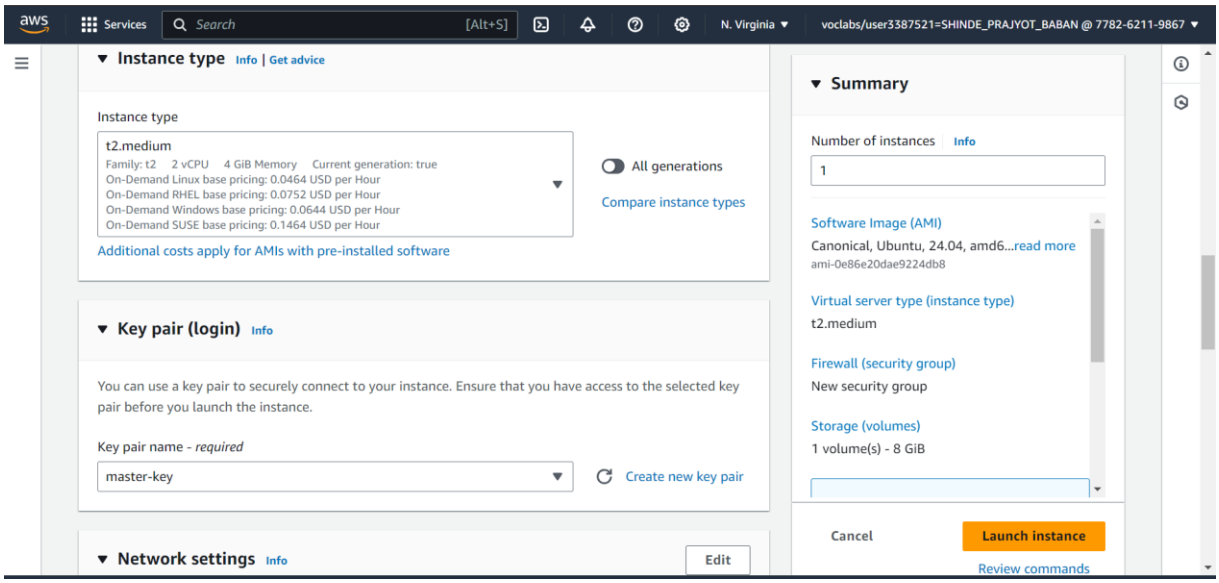
Roll No : 57

Aim: To understand the Kubernetes Cluster Architecture, install and Spin Up a Kubernetes Cluster on Linux Machines/Cloud Platforms.

Step 1: Create 2 Security Groups for Master and Nodes and add the following inbound rules in those groups:

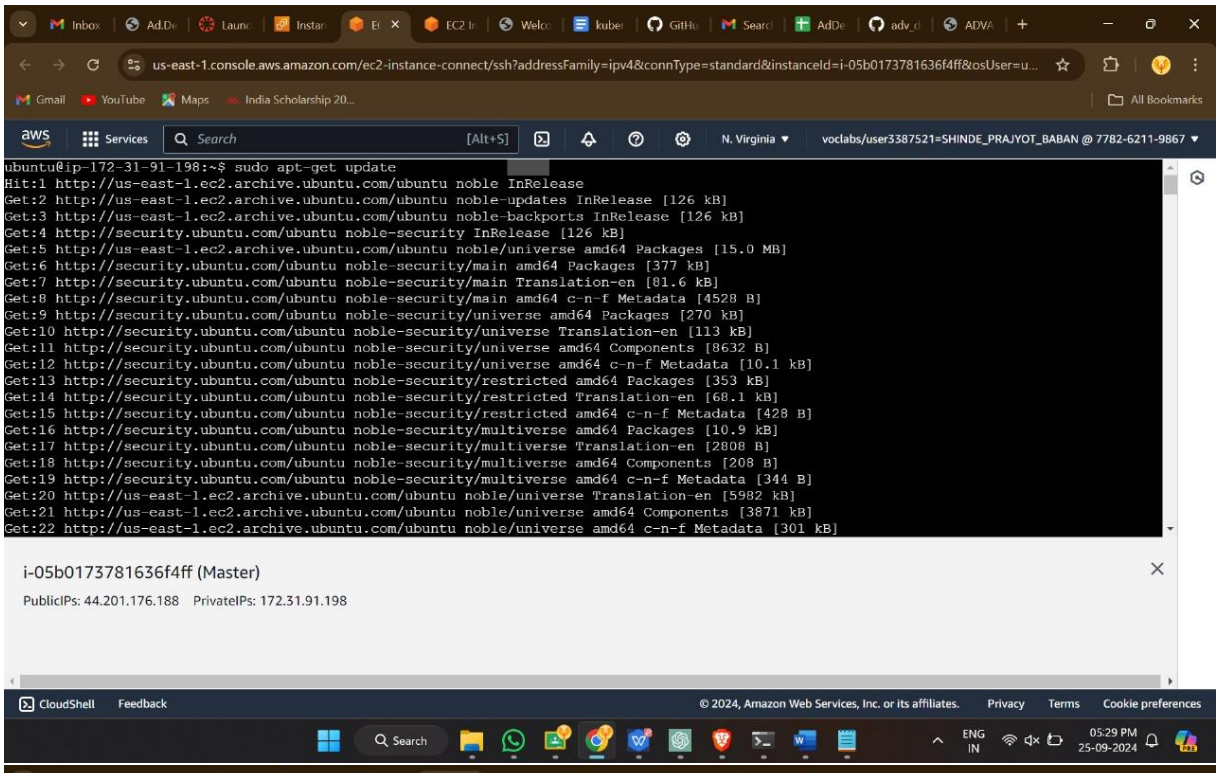


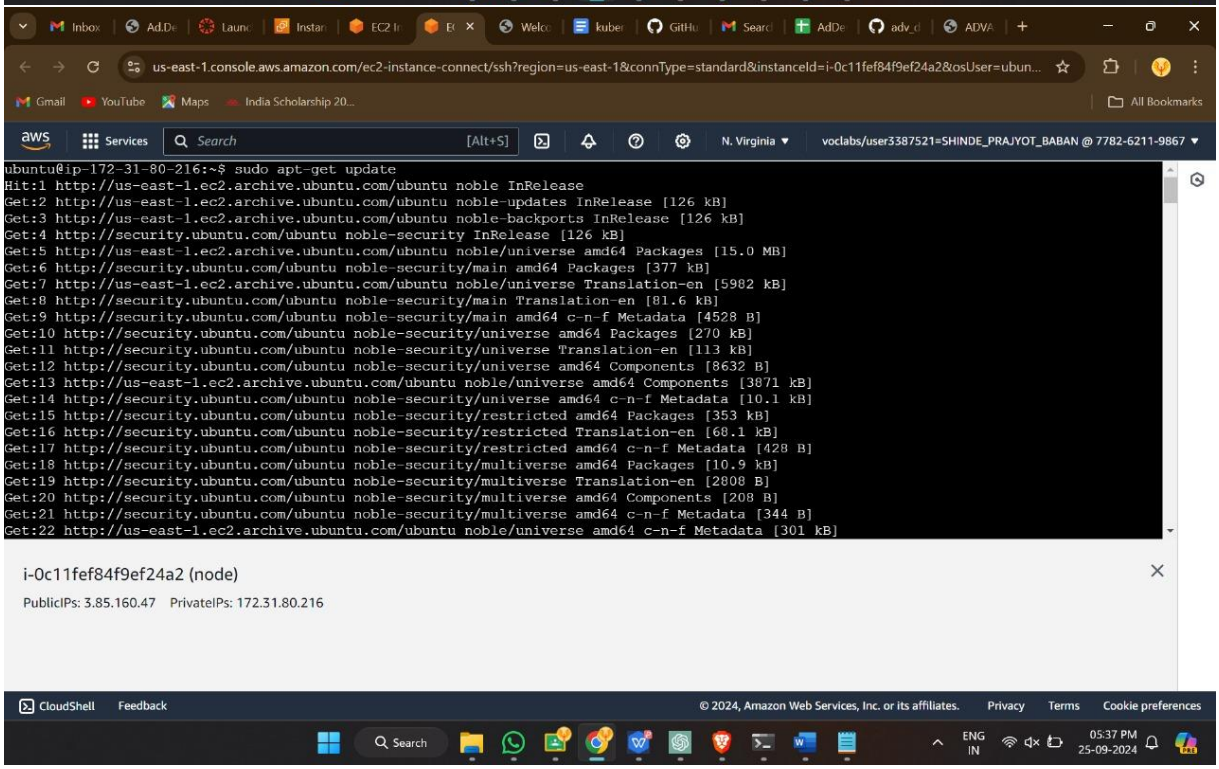
Generate a key pair for the same:



Step2:

Open Master and node on EC2 terminal:

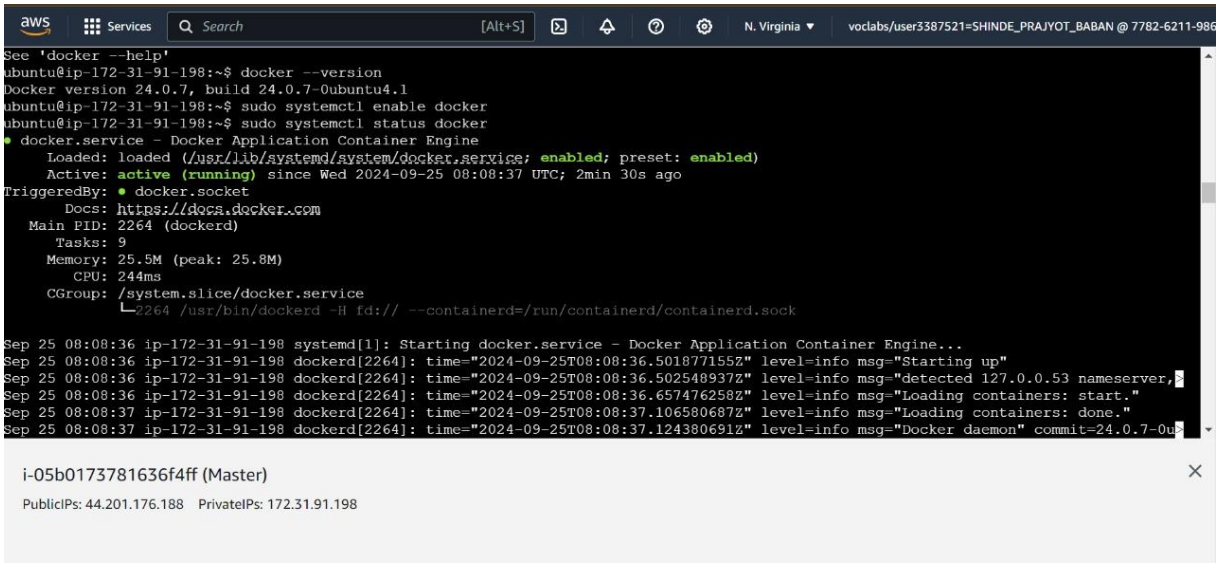




Step 3:

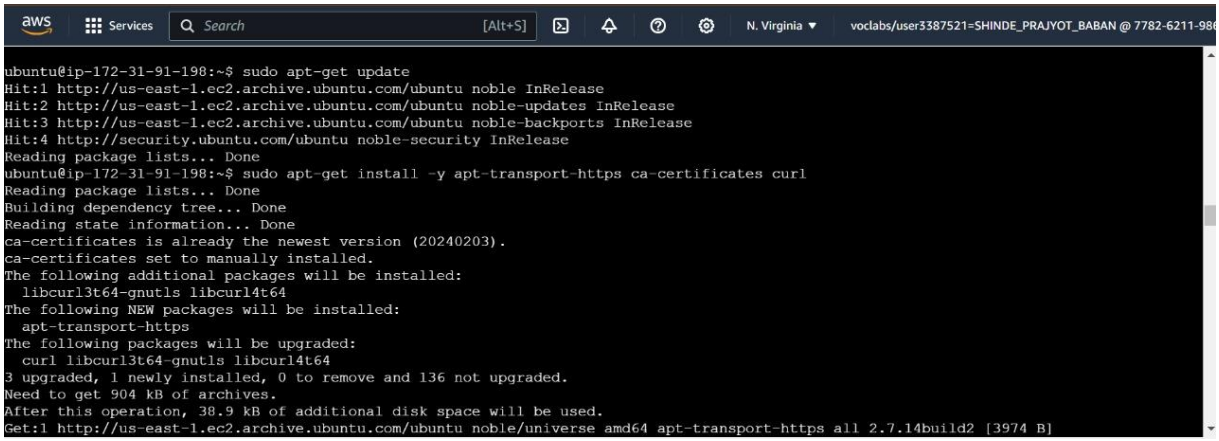
Install Docker

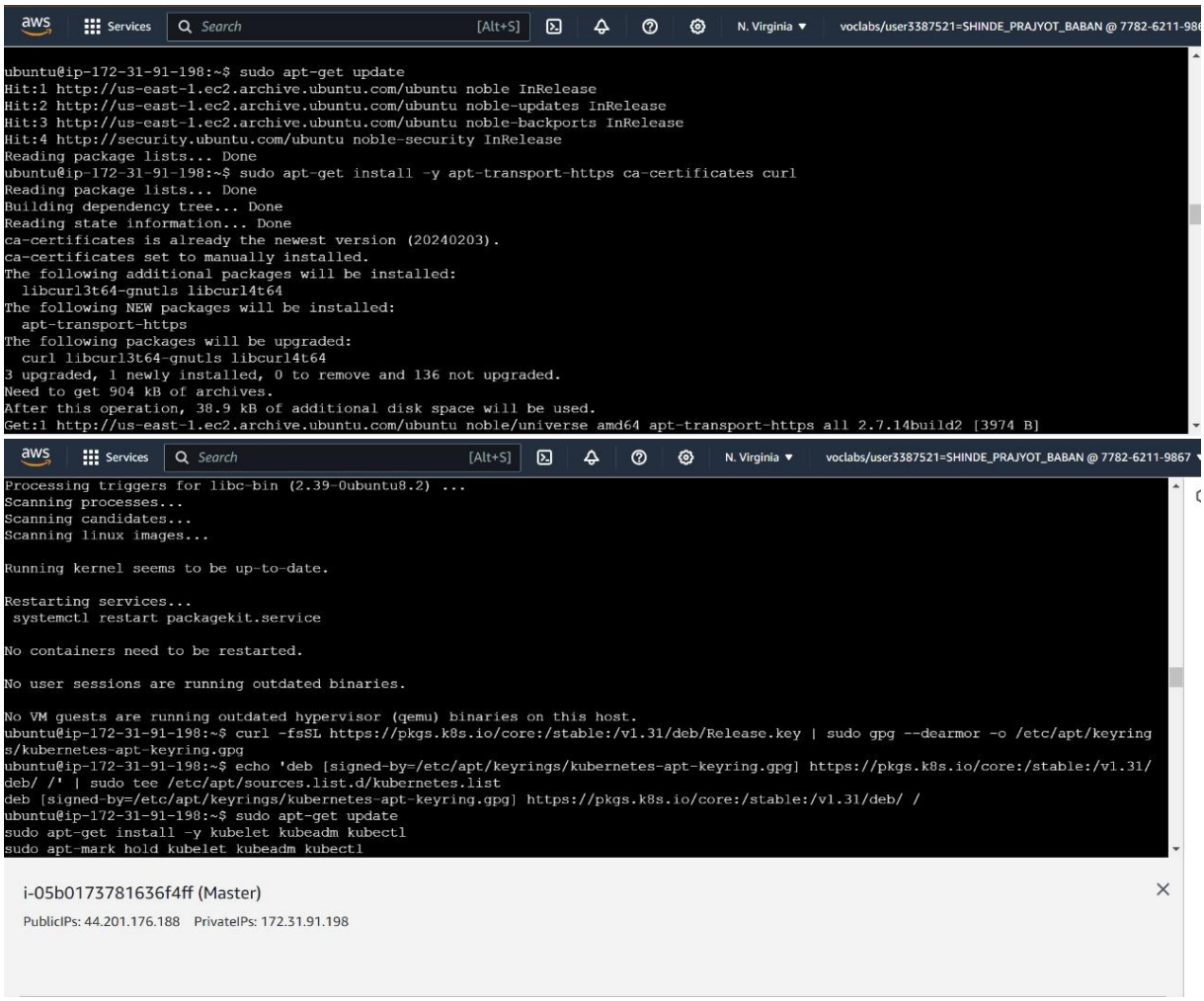
```
ubuntu@ip-172-31-91-198:~$ sudo apt-get install docker.io
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  bridge-utils containerd dns-root-data dnsmasq-base pigz runc ubuntu-fan
Suggested packages:
  ifupdown aufs-tools cgroupfs-mount | cgroup-lite debootstrap docker-buildx docker-compose-v2 docker-doc rinse zfs-fuse | zfsutils
The following NEW packages will be installed:
  bridge-utils containerd dns-root-data dnsmasq-base docker.io pigz runc ubuntu-fan
0 upgraded, 8 newly installed, 0 to remove and 139 not upgraded.
Need to get 76.8 MB of archives.
After this operation, 289 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
```



Step 4:

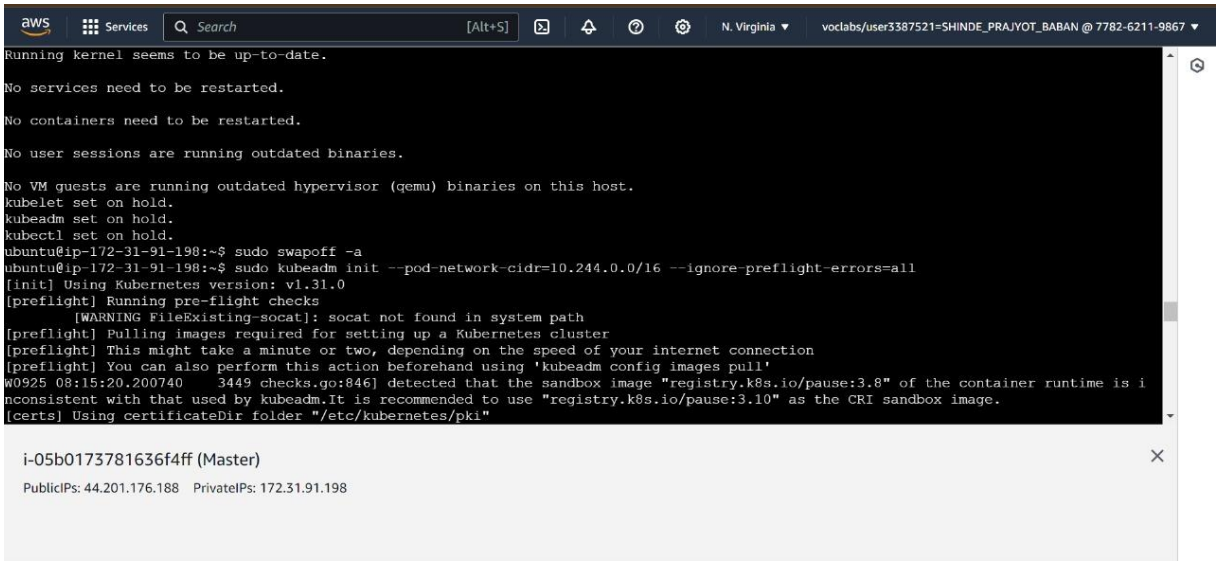
Install kubeadm, kubelet, kubectl:





Step5:

Disable Swap (Kubernetes requires swap to be off):



Step 6:

Initialize the Kubernetes Cluster on Master Node On the master node: sudo

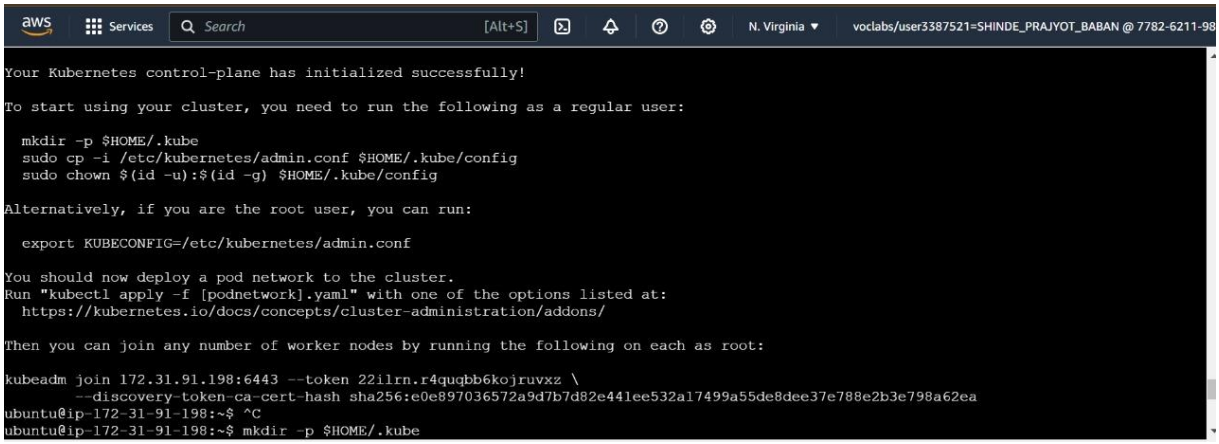
kubeadm init --pod-network-cidr=10.244.0.0/16

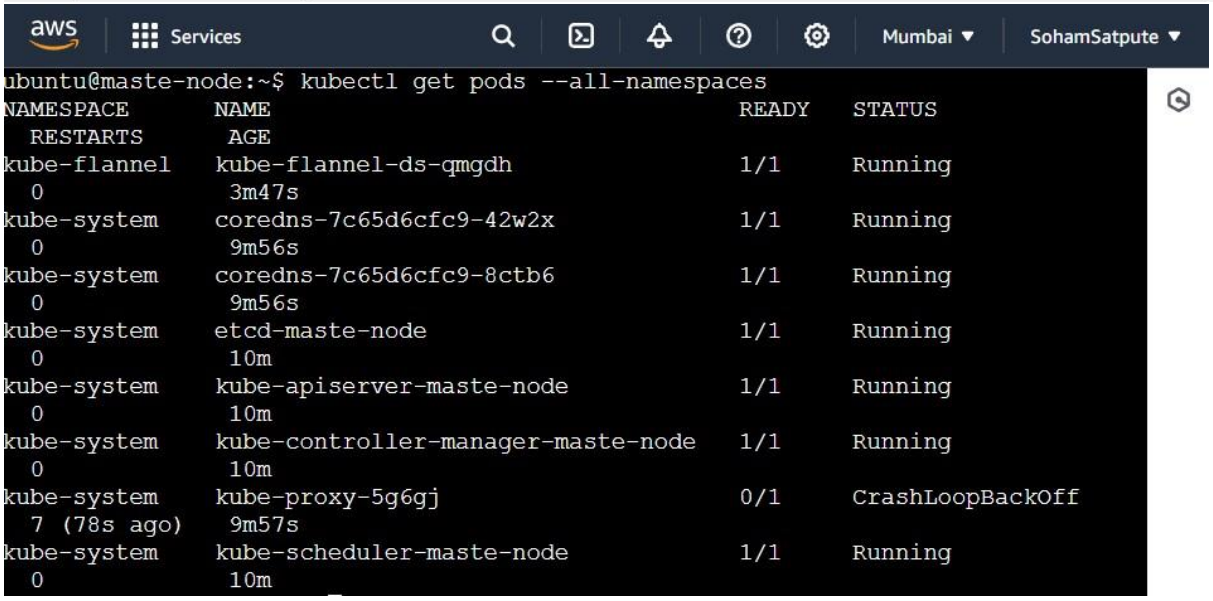
Set up kubectl on the master node:

mkdir -p $HOME/.kube sudo cp -i

/etc/kubernetes/admin.conf $HOME/.kube/config sudo

chown $(id -u):$(id -g) $HOME/.kube/config





Step 7:

Join Worker Nodes to the Cluster On the worker nodes, run the command provided by the master node during initialization:

Step 8:

Verify the Cluster Once the worker node joins, check the status on the master node