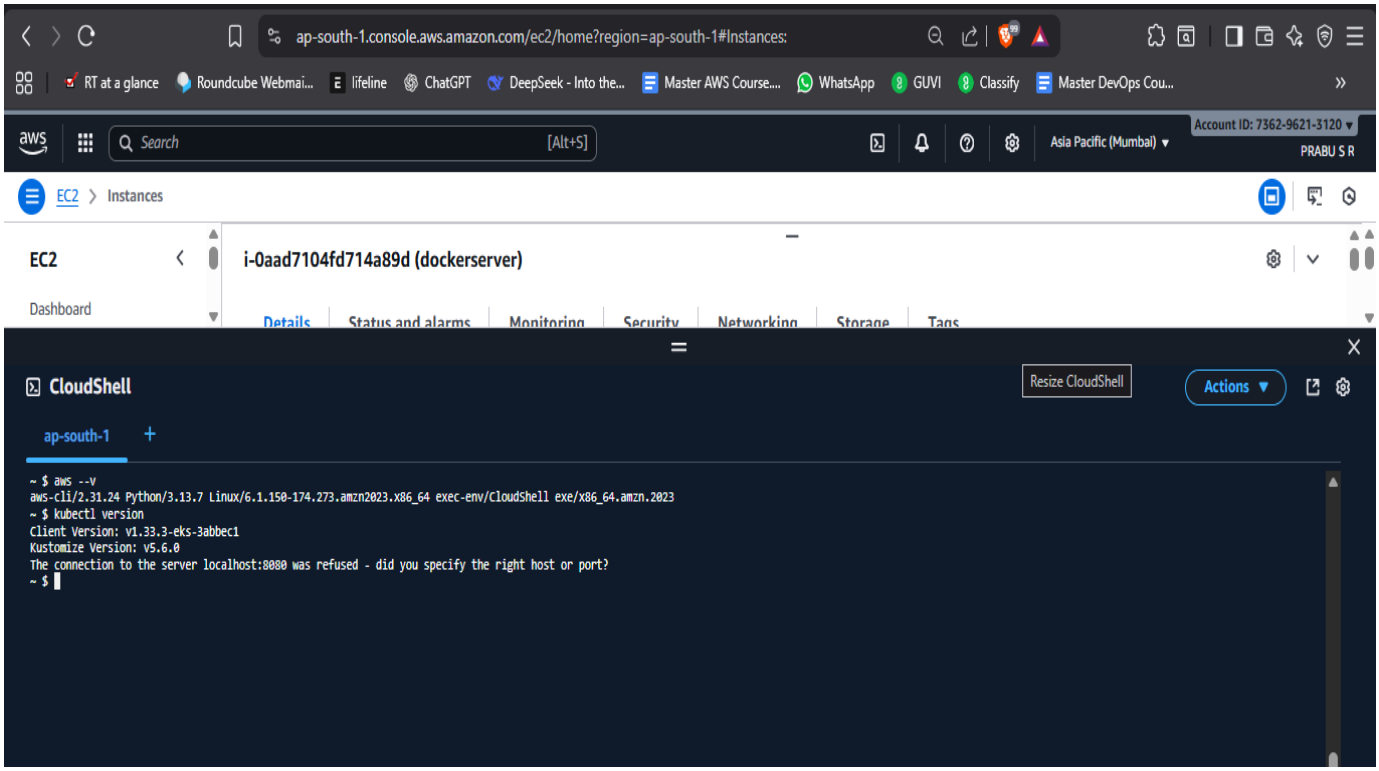
Kubernetes Task-2

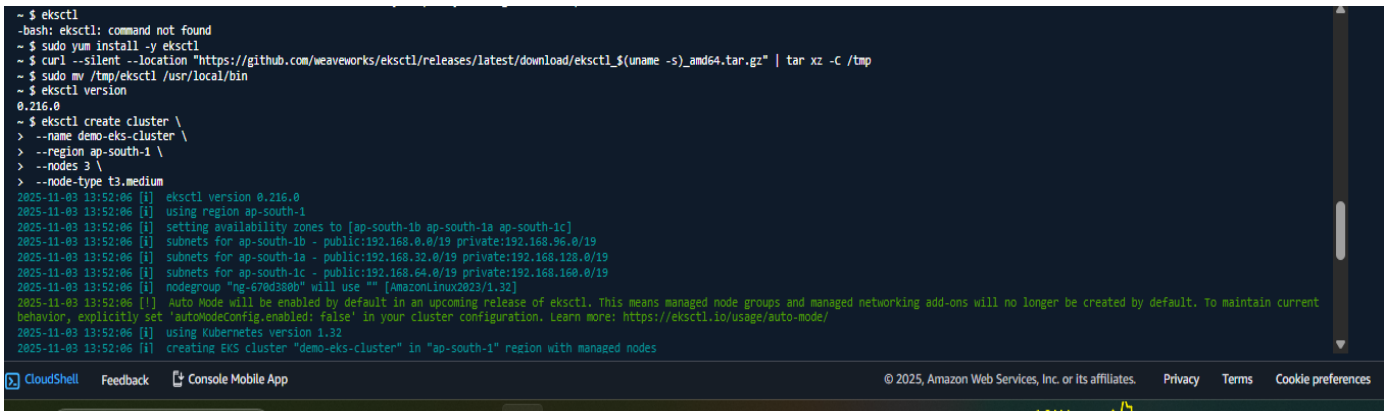
Task Description:

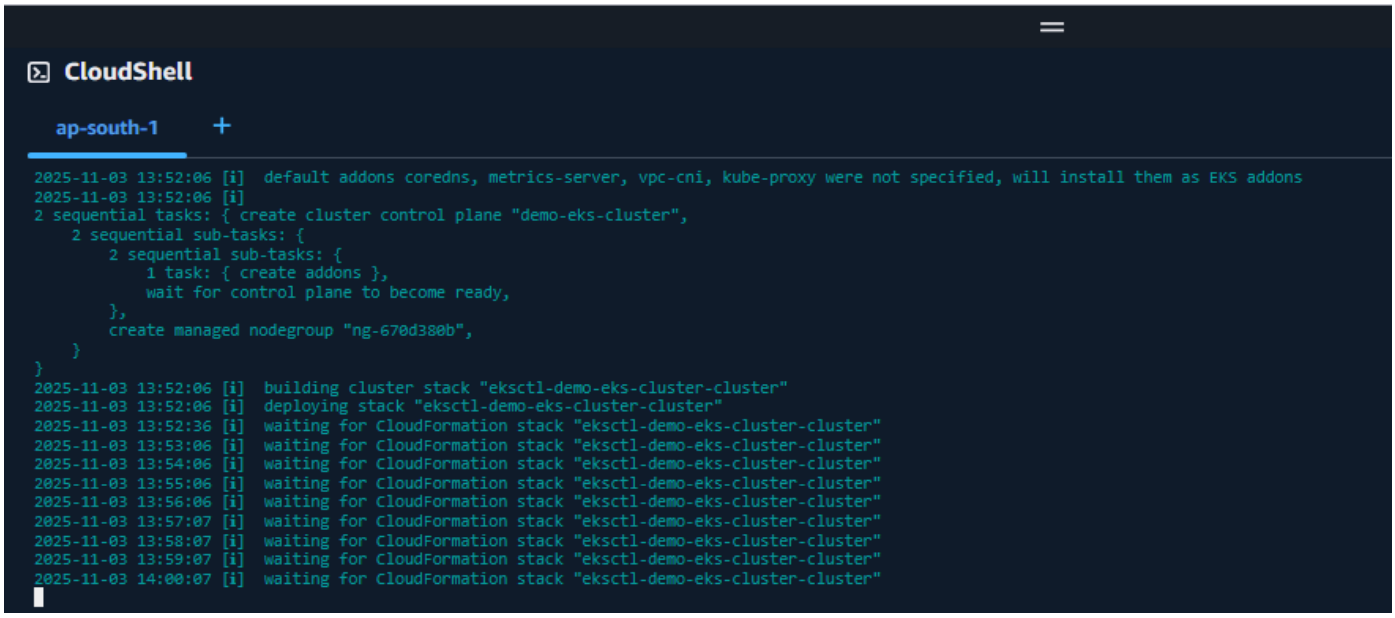
Create the K8s EKS,further you have to do the deployment of the Nginx application and access the application outside the cluster.

Kubernetes version check



eksclt version check and if not found , download manually and move to bin location and create cluster with 3 nodes, here t3.medium (free aws: t3.small only supported) i have given t3.small




CloudShell
ap-south-1
2025-11-03 13:52:06 [i] default addons coredns, metrics-server, vpc-cni, kube-proxy were not specified, will install them as EKS addons
2025-11-03 13:52:06 [i]
2 sequential tasks: { create cluster control plane "demo-eks-cluster",
2 sequential sub-tasks: {
2 sequential sub-tasks: {
1 task: { create addons },
wait for control plane to become ready,
},
create managed nodegroup "ng-670d380b",
}
}
2025-11-03 13:52:06 [i] building cluster stack "eksctl-demo-eks-cluster-cluster"
2025-11-03 13:52:06 [i] deploying stack "eksctl-demo-eks-cluster-cluster"
2025-11-03 13:52:36 [i] waiting for CloudFormation stack "eksctl-demo-eks-cluster-cluster"
2025-11-03 13:53:06 [i] waiting for CloudFormation stack "eksctl-demo-eks-cluster-cluster"
2025-11-03 13:54:06 [i] waiting for CloudFormation stack "eksctl-demo-eks-cluster-cluster"
2025-11-03 13:55:06 [i] waiting for CloudFormation stack "eksctl-demo-eks-cluster-cluster"
2025-11-03 13:56:06 [i] waiting for CloudFormation stack "eksctl-demo-eks-cluster-cluster"
2025-11-03 13:57:07 [i] waiting for CloudFormation stack "eksctl-demo-eks-cluster-cluster"
2025-11-03 13:58:07 [i] waiting for CloudFormation stack "eksctl-demo-eks-cluster-cluster"
2025-11-03 13:59:07 [i] waiting for CloudFormation stack "eksctl-demo-eks-cluster-cluster"
2025-11-03 14:00:07 [i] waiting for CloudFormation stack "eksctl-demo-eks-cluster-cluster"


CloudShell
Actions
ap-south-1
2025-11-03 14:44:48 [i] no tasks
2025-11-03 14:44:48 [✓] all EKS cluster resources for "demo-eks-cluster" have been created
2025-11-03 14:44:49 [i] nodegroup "ng-bc9e0219" has 3 node(s)
2025-11-03 14:44:49 [i] node "ip-192-168-19-38.ap-south-1.compute.internal" is ready
2025-11-03 14:44:49 [i] node "ip-192-168-48-43.ap-south-1.compute.internal" is ready
2025-11-03 14:44:49 [i] node "ip-192-168-87-82.ap-south-1.compute.internal" is ready
2025-11-03 14:44:49 [i] waiting for at least 3 node(s) to become ready in "ng-bc9e0219"
2025-11-03 14:44:49 [i] nodegroup "ng-bc9e0219" has 3 node(s)
2025-11-03 14:44:49 [i] node "ip-192-168-19-38.ap-south-1.compute.internal" is ready
2025-11-03 14:44:49 [i] node "ip-192-168-48-43.ap-south-1.compute.internal" is ready
2025-11-03 14:44:49 [i] node "ip-192-168-87-82.ap-south-1.compute.internal" is ready
2025-11-03 14:44:49 [✓] created 1 managed nodegroup(s) in cluster "demo-eks-cluster"
2025-11-03 14:44:49 [i] creating addon: metrics-server
2025-11-03 14:44:49 [i] successfully created addon: metrics-server
2025-11-03 14:44:50 [i] kubectl command should work with "/home/cloudshell-user/.kube/config", try 'kubectl get nodes'
2025-11-03 14:44:50 [✓] EKS cluster "demo-eks-cluster" in "ap-south-1" region is ready
~ $
CloudShell
Feedback
Console Mobile App
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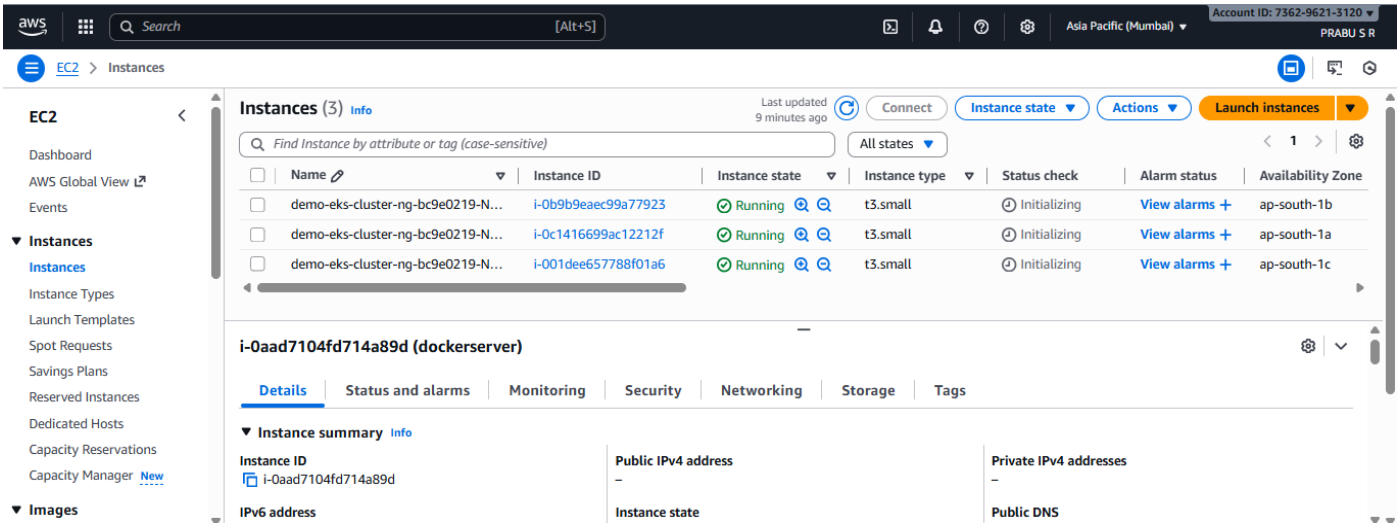
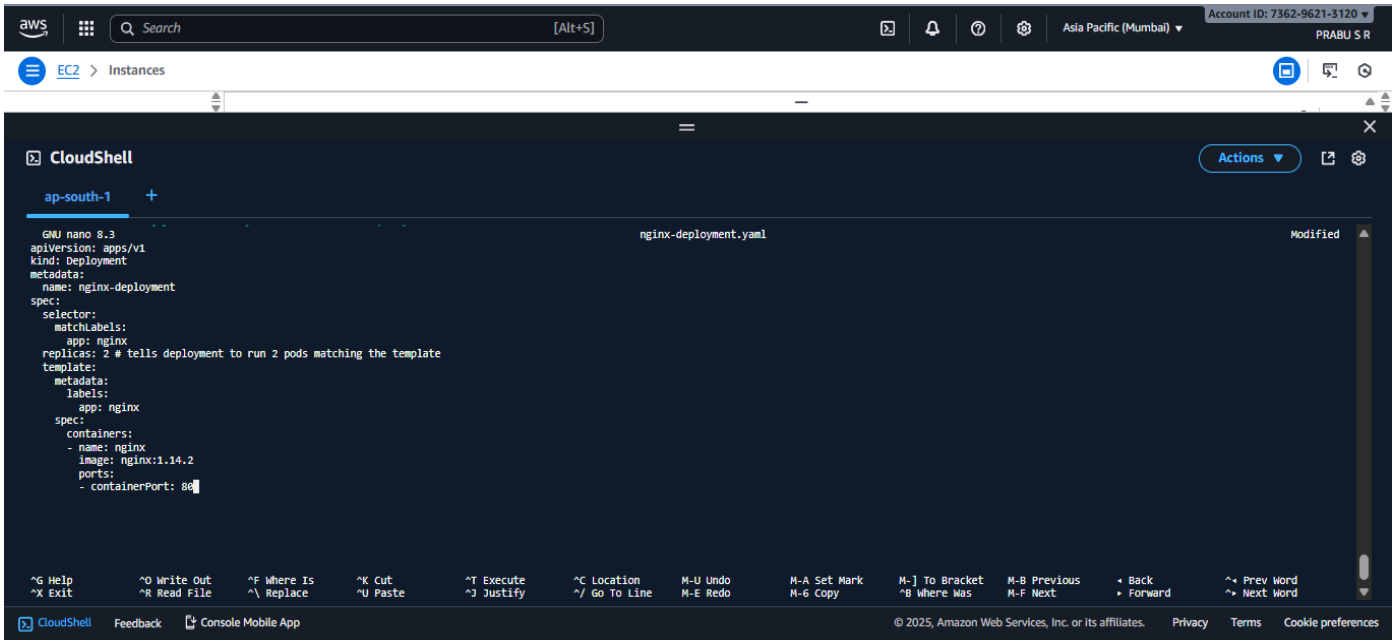
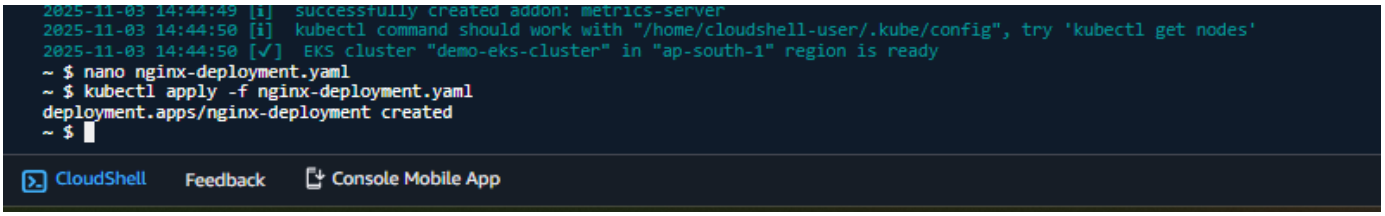
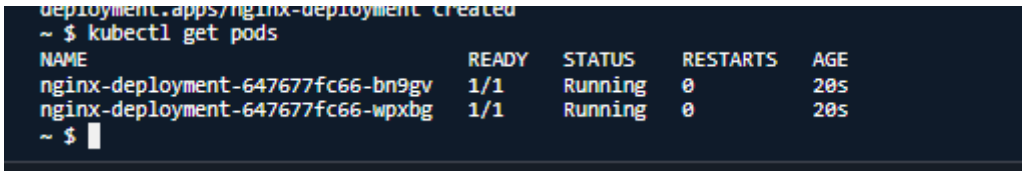


create nginx-deployment.yaml file



a





create nginx-service.yaml

```
~ $ kubectl apply -f nginx-service.yaml
error: error parsing nginx-service.yaml: error converting YAML to JSON: yaml: line 12: found a tab character that violates indentation
~ $ nano nginx-service.yaml
~ $ kubectl apply -f nginx-service.yaml
service/nginx-service created
~ $
```

CloudShell Feedback Console Mobile App © 2025, Amazon Web Service

run the service url(external ip)

```
~ $ kubectl get svc nginx-service --watch
NAME            TYPE           CLUSTER-IP       EXTERNAL-IP                                                                PORT(S)        AGE
nginx-service   LoadBalancer   10.100.199.108   aab08f07ba3eb4741aa47f2270a136f6-1440742731.ap-south-1.elb.amazonaws.com   80:30911/TCP   58s
```

paste in brower and see nginx webpage

Not secure aab08f07ba3eb4741aa47f2270a136f6-1440742731.ap-south-1.elb.amazonaws.com

RT at a glance | Roundcube Webmai... | lifeline | ChatGPT | DeepSeek - Into the... | Master AWS Course.... | WhatsApp | GUVI | Classify | Master DevOps Cou...

Welcome to nginx!

If you see this page, the nginx web server is successfully installed and working. Further configuration is required.

For online documentation and support please refer to nginx.org.
Commercial support is available at nginx.com.

Thank you for using nginx.

comman cmds to check logs and datas inside clusters

```
^C~ $ kubectl get pods -o wide
NAME                                READY   STATUS    RESTARTS   AGE     IP               NODE                                            NOMINATED NODE   READINESS GATES
nginx-deployment-647677fc66-bn9gv   1/1     Running   0          6m21s   192.168.74.59    ip-192-168-87-82.ap-south-1.compute.internal    <none>           <none>
nginx-deployment-647677fc66-wpxbg   1/1     Running   0          6m21s   192.168.20.211   ip-192-168-19-38.ap-south-1.compute.internal    <none>           <none>
~ $
```

```
~ $ kubectl get all
NAME                                    READY   STATUS    RESTARTS   AGE
pod/nginx-deployment-647677fc66-bn9gv   1/1     Running   0          6m53s
pod/nginx-deployment-647677fc66-wpxbg   1/1     Running   0          6m53s

NAME                    TYPE           CLUSTER-IP       EXTERNAL-IP                                                                PORT(S)        AGE
service/kubernetes      ClusterIP      10.100.0.1       <none>                                                                     443/TCP        27m
service/nginx-service   LoadBalancer   10.100.199.108   aab08f07ba3eb4741aa47f2270a136f6-1440742731.ap-south-1.elb.amazonaws.com   80:30911/TCP   3m14s

NAME                               READY   UP-TO-DATE   AVAILABLE   AGE
deployment.apps/nginx-deployment   2/2     2            2           6m53s

NAME                                          DESIRED   CURRENT   READY   AGE
replicaset.apps/nginx-deployment-647677fc66   2         2         2       6m53s
~ $
```

```
~ $ kubectl describe svc nginx-service
Name:                     nginx-service
Namespace:                default
Labels:                   <none>
Annotations:              <none>
Selector:                 app=nginx
Type:                     LoadBalancer
IP Family Policy:         SingleStack
IP Families:              IPv4
IP:                       10.100.199.108
IPs:                      10.100.199.108
LoadBalancer Ingress:     aab08f07ba3eb4741aa47f2270a136f6-1440742731.ap-south-1.elb.amazonaws.com
Port:                     <unset>  80/TCP
TargetPort:               80/TCP
NodePort:                 <unset>  30911/TCP
Endpoints:                192.168.20.211:80,192.168.74.59:80
Session Affinity:         None
External Traffic Policy:  Cluster
Internal Traffic Policy:  Cluster
Events:
  Type    Reason                Age    From                Message
  ----    ------                ----   ----                -------
  Normal  EnsuringLoadBalancer  4m2s   service-controller  Ensuring load balancer
  Normal  EnsuredLoadBalancer   3m59s  service-controller  Ensured load balancer
~ $
```

resource cleanup process