Using DEPLOYMENT ,We have to create PODS and SERVICES

```
ubuntu@ip-172-31-2-140:~$ cat deployment.yaml
apiVersion: apps/v1
kind: Deployment
metadata:
  name: nginx
spec:
  replicas: 2
  selector:
    matchLabels:
      app: web
  template:
    metadata:
      labels:
        app: web
    spec:
      containers:
      - name: nginxcontainer
        image: nginx
        ports:
        - containerPort: 80

ubuntu@ip-172-31-2-140:~$
```

```
ubuntu@ip-172-31-2-140:~$ cat service.yaml
apiVersion: v1
kind: Service
metadata:
  name: python-svc
spec:
 selector:
   app: web
 ports:
  - protocol: TCP
    port: 80
    targetPort: 80
 type: LoadBalancer
```

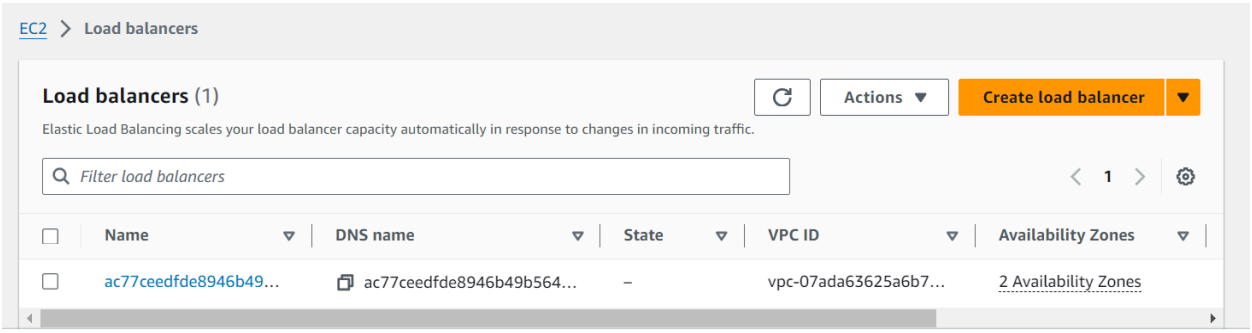
WORKING NODES: 2
DEFAULT CLUSTER IP SERVICE
DEPLOYMENT -APP NGINX
REPLICASET- APP NGINX

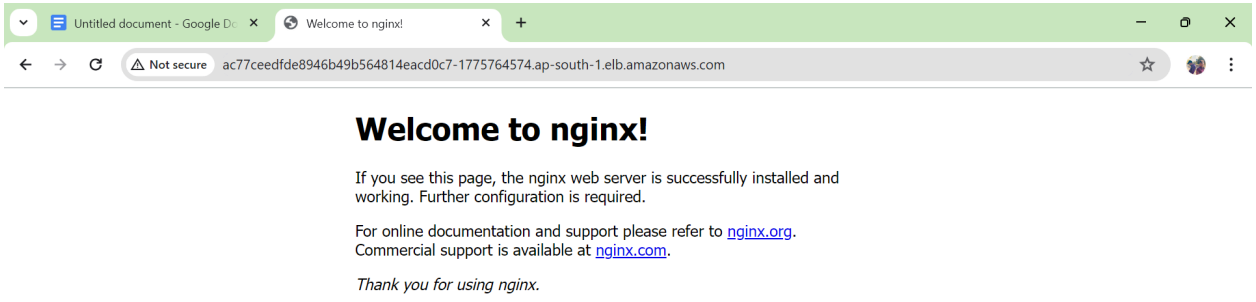
```
ubuntu@ip-172-31-2-140:~$ vi deployment.yaml
ubuntu@ip-172-31-2-140:~$ vi service.yaml
ubuntu@ip-172-31-2-140:~$ kubectl create -f deployment.yaml
deployment.apps/nginx created
ubuntu@ip-172-31-2-140:~$ kubectl get deployment
NAME    READY   UP-TO-DATE   AVAILABLE   AGE
nginx   2/2     2            2           40s
ubuntu@ip-172-31-2-140:~$ kubectl get all
NAME                            READY   STATUS    RESTARTS   AGE
pod/nginx-7464df655-j25n6       1/1     Running   0          71s
pod/nginx-7464df655-tcr7l       1/1     Running   0          71s

NAME                 TYPE        CLUSTER-IP    EXTERNAL-IP   PORT(S)   AGE
service/kubernetes   ClusterIP   10.100.0.1    <none>        443/TCP   11m

NAME                    READY   UP-TO-DATE   AVAILABLE   AGE
deployment.apps/nginx   2/2     2            2           72s

NAME                                  DESIRED   CURRENT   READY   AGE
replicaset.apps/nginx-7464df655       2         2         2       72s
```

```
ubuntu@ip-172-31-2-140:~$ kubectl describe deployment
Name:                   nginx
Namespace:              default
CreationTimestamp:      Mon, 20 May 2024 05:25:02 +0000
Labels:                 <none>
Annotations:            deployment.kubernetes.io/revision: 1
Selector:               app=web
Replicas:               2 desired | 2 updated | 2 total | 2 available | 0 unavailable
StrategyType:           RollingUpdate
MinReadySeconds:        0
RollingUpdateStrategy:  25% max unavailable, 25% max surge
Pod Template:
  Labels:  app=web
  Containers:
   nginxcontainer:
    Image:        nginx
    Port:         80/TCP
    Host Port:    0/TCP
    Environment:  <none>
    Mounts:       <none>
  Volumes:        <none>
Conditions:
  Type           Status  Reason
  ----           ------  ------
  Available      True    MinimumReplicasAvailable
  Progressing    True    NewReplicaSetAvailable
OldReplicaSets:  <none>
NewReplicaSet:   nginx-7464df655 (2/2 replicas created)
Events:
  Type    Reason             Age   From                   Message
  ----    ------             ----  ----                   -------
  Normal  ScalingReplicaSet  4m5s  deployment-controller  Scaled up replica set nginx-7464df655 to 2
```

```
ubuntu@ip-172-31-2-140:~$ kubectl apply -f service.yaml
service/python-svc created
ubuntu@ip-172-31-2-140:~$ kubectl get services
NAME         TYPE           CLUSTER-IP       EXTERNAL-IP                                                              PORT(S)
 AGE
kubernetes   ClusterIP      10.100.0.1       <none>                                                                   443/TCP
 17m
python-svc   LoadBalancer   10.100.124.254   ac77ceedfde8946b49b564814eacd0c7-1775764574.ap-south-1.elb.amazonaws.com   80:31834/TCP
 83s
ubuntu@ip-172-31-2-140:~$
```

SERVICE-LOAD BALANCER





```
ubuntu@ip-172-31-2-140:~$ kubectl get all
NAME                         READY   STATUS    RESTARTS   AGE
pod/nginx-7464df655-j25n6    1/1     Running   0          12m
pod/nginx-7464df655-tcr7l    1/1     Running   0          12m

NAME                 TYPE           CLUSTER-IP       EXTERNAL-IP                                                              PORT(S
)        AGE
service/kubernetes   ClusterIP      10.100.0.1       <none>                                                                   443/TC
P        22m
service/python-svc   LoadBalancer   10.100.124.254   ac77ceedfde8946b49b564814eacd0c7-1775764574.ap-south-1.elb.amazonaws.com   80:318
34/TCP   6m25s

NAME                    READY   UP-TO-DATE   AVAILABLE   AGE
deployment.apps/nginx   2/2     2            2           12m

NAME                               DESIRED   CURRENT   READY   AGE
replicaset.apps/nginx-7464df655    2         2         2       12m
```

PODS DETAIL

```
ubuntu@ip-172-31-2-140:~$ kubectl get pod -o wide
NAME                     READY   STATUS    RESTARTS   AGE   IP              NODE                                          NOMINATED
NODE   READINESS GATES
nginx-7464df655-j25n6    1/1     Running   0          15m   192.168.31.172  ip-192-168-13-246.ap-south-1.compute.internal  <none>
       <none>
nginx-7464df655-tcr7l    1/1     Running   0          15m   192.168.58.224  ip-192-168-45-18.ap-south-1.compute.internal   <none>
       <none>
ubuntu@ip-172-31-2-140:~$
```

SERVICE DETAIL

```
ubuntu@ip-172-31-2-140:~$ kubectl describe svc
Name:              kubernetes
Namespace:         default
Labels:            component=apiserver
                   provider=kubernetes
Annotations:       <none>
Selector:          <none>
Type:              ClusterIP
IP:                10.100.0.1
Port:              https  443/TCP
TargetPort:        443/TCP
Endpoints:         192.168.107.248:443,192.168.87.183:443
Session Affinity:  None
Events:            <none>


Name:                     python-svc
Namespace:                default
Labels:                   <none>
Annotations:              <none>
Selector:                 app=web
Type:                     LoadBalancer
IP:                       10.100.124.254
LoadBalancer Ingress:     ac77ceedfde8946b49b564814eacd0c7-1775764574.ap-south-1.elb.amazonaws.com
Port:                     <unset>  80/TCP
TargetPort:               80/TCP
NodePort:                 <unset>  31834/TCP
Endpoints:                192.168.31.172:80,192.168.58.224:80
Session Affinity:         None
External Traffic Policy:  Cluster
Events:
  Type    Reason                Age   From                Message
  ----    ------                ----  ----                -------
  Normal  EnsuringLoadBalancer  15m   service-controller  Ensuring load balancer
  Normal  EnsuredLoadBalancer   15m   service-controller  Ensured load balancer
```