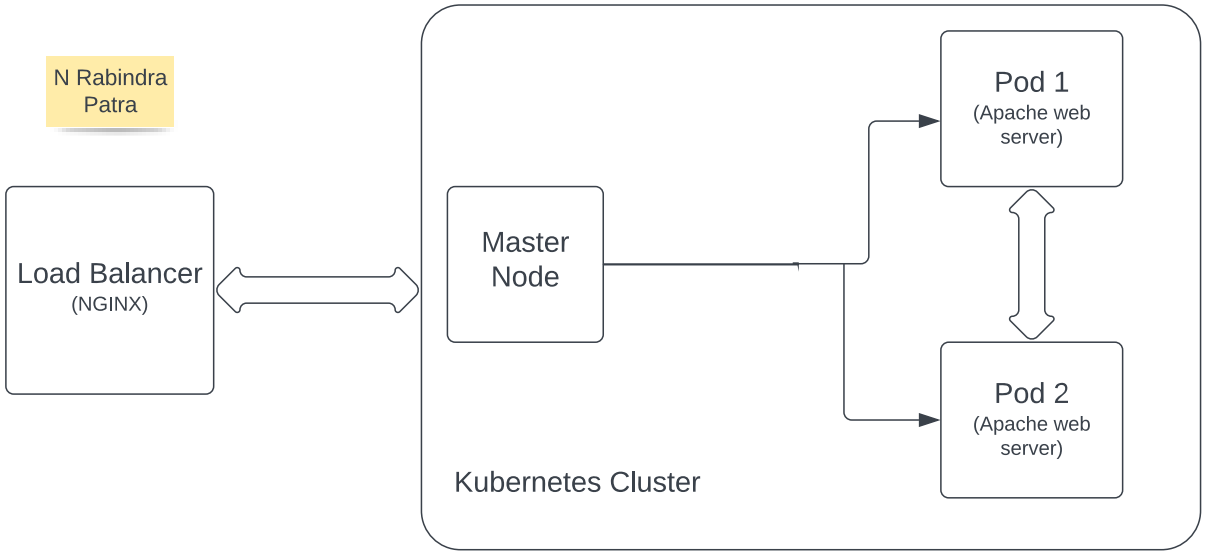
Cloud Assignment

N Rabindra Patra

Block Diagram(Lucid Chart): HA cluster



WRITHING THE DEPLOYMENT CONFIGURATION YML FILE:

For this I am writing two YAML files

1. Deployment (nginx-deployment.yaml)
2. Services (nginx-service.yaml)

Deployment (nginx-deployment.yaml):

YAML CODE:

```yaml
apiVersion: apps/v1

kind: Deployment

metadata:
```

```
  name: nginx
  labels:
    app: nginx
spec:
  replicas: 2
  selector:
    matchLabels:
      app: nginx
  template:
    metadata:
      labels:
        app: nginx
    spec:
      containers:
      - name: nginx
        image: nginx
        ports:
        - containerPort: 80
```

In this I have created two pods (replicas)

Services (nginx-service.yaml):

YAML CODE:

```
apiVersion: v1
kind: Service
metadata:
  name: ngnix-service
spec:
  selector:
    app: nginx
  type: NodePort
```

```
ports:
- protocol: TCP
  port: 80
  targetPort: 80
```

command: kubectl apply -f nginx-deployment.yaml

command: kubectl get deployment webserver

command: kubectl get service webserver

command: kubectl get pods

As I am trying to run this command it shows me error and I am working on that errors.

- Using Load Balancer at the entry point, the incoming traffic is distributed among multiple Kubernetes clusters.
- Kubernetes cluster is a group of nodes that run containerized applications and it also provides container orchestration.
- A simple Kubernetes cluster contains a Master Node and multiple Worker Nodes.
- Master Node is responsible for managing Kubernetes processing and other Worker Nodes present in the cluster.
- Worker Node is responsible for executing the containers and applications in the cluster. A Pod always runs in the worker node.
- A Pod is the smallest deployable unit in Kubernetes. It is basically a Kubernetes wrapper around the container. Each Pod can contain one or multiple containers depending on use case.
- Here, there are two instances of Apache Web Server running in two different Pods.
- Kubernetes provides High Availability of application by scaling the number of replicas of Pods. Also, if any failure occurs in any of the Pods, then another Pod takes over.

Note: Till now I have done this much only. After returning to the office on 3rd march I will be continuing this task, currently I am in my college to attend my exams.