

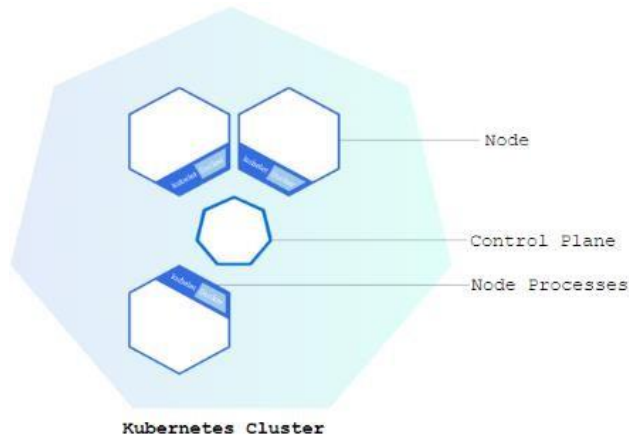


**minikube**

## ➤ **MINIKUBE:**

- Minikube is a utility you can use to run Kubernetes (k8s) on your local machine.
- It is a lightweight Kubernetes implementation that creates a VM on your local machine and deploys a simple cluster containing only one node.
- Minikube CLI provides basic bootstrapping operations for your cluster, including start, stop, status, and delete.
- Minikube is available for Linux, macOS, and Windows systems.

## **MINIKUBE ARCHITECTURE:**



## **CONTROL PLANE:**

- It is responsible for managing the cluster. The control plane coordinates all activities in your cluster, such as scheduling applications, maintaining applications' desired state, scaling applications, and rolling out new updates.

## **NODE:**

- Node is a VM or a physical computer that serves as a worker machine in a Kubernetes cluster.
- Each node has a Kubelet and container run time for managing the node and handling container application

## ➤ **MINIKUBE INSTALLATION:**

### **PRE-REQUISITES:**

- 2 CPUs or more
- 2GB of free memory
- 20GB of free disk space
- Good Internet connection
- Container or virtual machine manager (Docker, Hyper-V, KVM, VirtualBox, or VMware...etc.)

### **STEP 1: Setting Up Hostname:**

```
#hostname Minikube
```

```
#vim /etc/hostname
```

```
Minikube
```

```
#bash
```

### **STEP 2: Download & Install Minikube:**

```
#curl -LO https://storage.googleapis.com/minikube/releases/latest/minikube-linux-amd64
```

```
#install minikube-linux-amd64 /usr/local/bin/minikube
```

```
#minikube start
```

### **STEP 3: Interact with your cluster:**

```
#kubectl get po -A
```

```
#minikube kubectl -- get po -A
```

```
#alias kubectl="minikube kubectl -
```

```
-"#minikube dashboard
```

### **STEP 4: Deploy applications:**

```
#kubectl create deployment hello-minikube image  
image=k8s.gcr.io/echoserver:1.4
```

```
#kubectl expose deployment hello-minikube --type=NodePort --port=8080
#kubectl get services hello-minikube

#minikube service hello-minikube

#kubectl port-forward service/hello-minikube 7080:8080

Application is now available at http://localhost:7080
```

### **STEP 5: Manage your cluster:**

#### **Pause Kubernetes without impacting deployed applications:**

```
#minikube pause
```

#### **Unpause a paused instance:**

```
#minikube unpause
```

#### **Halt the cluster:**

```
#minikube stop
```

#### **Change the default memory limit (requires a restart):**

```
#minikube config set memory 9001
```

#### **Browse the catalog of easily installed Kubernetes services:**

```
#minikube addons list
```

#### **Create a second cluster running an older Kubernetes release:**

```
#minikube start -p aged --kubernetes-version=v1.16.1
```

#### **Delete all of the minikube clusters:**

```
#minikube delete --all
```