

Setup minikube at your local and explore creating namespaces (Go through official documentation)

```
ubuntu@ip-172-31-42-194:~$ sudo apt install -y curl wget apt-transport-https
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
wget is already the newest version (1.21.2-2ubuntu1).
wget set to manually installed.
curl is already the newest version (7.81.0-1ubuntu1.16).
curl set to manually installed.
The following NEW packages will be installed:
  apt-transport-https
0 upgraded, 1 newly installed, 0 to remove and 28 not upgraded.
Need to get 1510 B of archives.
After this operation, 170 kB of additional disk space will be used.
Get:1 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 apt-transport-https all 2.4.12 [1510 B]
Fetched 1510 B in 0s (87.0 kB/s)
Selecting previously unselected package apt-transport-https.
(Reading database ... 65283 files and directories currently installed.)
Preparing to unpack .../apt-transport-https_2.4.12_all.deb ...
Unpacking apt-transport-https (2.4.12) ...
Setting up apt-transport-https (2.4.12) ...
Scanning processes... [
```

```
ubuntu@ip-172-31-42-194:~$ sudo apt install -y 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-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 28 not upgraded.
Need to get 69.8 MB of archives.
After this operation, 267 MB of additional disk space will be used.
Get:1 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 pigz amd64 2.6-1 [63.6 kB]
Get:2 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 bridge-utils amd64 1.7-1ubuntu3 [34.4 kB]
Get:3 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 runc amd64 1.1.7-0ubuntu1~22.04.2 [4267 kB]
Get:4 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 containerd amd64 1.7.2-0ubuntu1~22.04.1 [36.0 MB]
Get:5 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 dns-root-data all 2023112702-ubuntu0.22.04.1 [5136 B]
Get:6 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 dnsmasq-base amd64 2.90-0ubuntu0.22.04.1 [374 kB]
Get:7 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 docker.io amd64 24.0.5-0ubuntu1~22.04.1 [28.9 MB]
Get:8 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 ubuntu-fan all 0.12.16 [35.2 kB]
Fetched 69.8 MB in 1s (50.0 MB/s)
Preconfiguring packages ...
Selecting previously unselected package pigz.
(Reading database ... 65287 files and directories currently installed.)
Preparing to unpack .../0-pigz_2.6-1_amd64.deb ...
Unpacking pigz (2.6-1) ...
Selecting previously unselected package bridge-utils.
Preparing to unpack .../1-bridge-utils_1.7-1ubuntu3_amd64.deb ...
Unpacking bridge-utils (1.7-1ubuntu3) ...
Selecting previously unselected package runc.
Preparing to unpack .../2-runc_1.1.7-0ubuntu1~22.04.2_amd64.deb ...
Unpacking runc (1.1.7-0ubuntu1~22.04.2) ...
Selecting previously unselected package containerd.
Preparing to unpack .../3-containerd_1.7.2-0ubuntu1~22.04.1_amd64.deb ...
Unpacking containerd (1.7.2-0ubuntu1~22.04.1) .....
```

```
ubuntu@ip-172-31-42-194:~$ sudo systemctl enable --now docker
ubuntu@ip-172-31-42-194:~$ sudo usermod -aG docker $USER && newgrp docker
ubuntu@ip-172-31-42-194:~$ curl -LO minikube https://storage.googleapis.com/minikube/releases/latest/minikube-linux-amd64
% Total % Received % Xferd Average Speed Time Time Time Current
Dload Upload Total Spent Left Speed
100 91.1M 100 91.1M 0 0 12.0M 0 0:00:07 0:00:07 --:--:-- 16.8M
ubuntu@ip-172-31-42-194:~$ chmod +x minikube
sudo mv minikube /usr/local/bin/
ubuntu@ip-172-31-42-194:~$ curl -LO "https://dl.k8s.io/release/${curl -L -s https://dl.k8s.io/release/stable.txt}/bin/linux/amd64/kubectl"
% Total % Received % Xferd Average Speed Time Time Time Current
Dload Upload Total Spent Left Speed
100 138 100 138 0 0 402 0 --:--:-- --:--:-- --:--:-- 403
100 49.0M 100 49.0M 0 0 59.8M 0 --:--:-- --:--:-- --:--:-- 88.3M
ubuntu@ip-172-31-42-194:~$ chmod +x kubectl
sudo mv kubectl /usr/local/bin/
```

```
ubuntu@ip-172-31-42-194:~$ minikube start --driver=docker
* minikube v1.33.1 on Ubuntu 22.04 (xen/amd64)
* Using the docker driver based on user configuration
* Using Docker driver with root privileges
* Starting "minikube" primary control-plane node in "minikube" cluster
* Pulling base image v0.0.44 ...
* Downloading Kubernetes v1.30.0 preload ...
  > preloaded-images-k8s-v18-v1...: 342.90 MiB / 342.90 MiB 100.00% 15.74 M
  > gcr.io/k8s-minikube/kicbase...: 481.58 MiB / 481.58 MiB 100.00% 16.23 M
* Creating docker container (CPUs=2, Memory=2200MB) ...
* Preparing Kubernetes v1.30.0 on Docker 26.1.1 ...
  - Generating certificates and keys ...
  - Booting up control plane ...
  - Configuring RBAC rules ...
* Configuring bridge CNI (Container Networking Interface) ...
* Verifying Kubernetes components...
  - Using image gcr.io/k8s-minikube/storage-provisioner:v5
* Enabled addons: storage-provisioner, default-storageclass
* Done! kubectl is now configured to use "minikube" cluster and "default" namespace by default
ubuntu@ip-172-31-42-194:~$
```

```
ubuntu@ip-172-31-42-194:~$ minikube status
minikube
type: Control Plane
host: Running
kubelet: Running
apiserver: Running
kubeconfig: Configured
```

```
ubuntu@ip-172-31-42-194:~$ minikube delete
* Deleting "minikube" in docker ...
* Deleting container "minikube" ...
* Removing /home/ubuntu/.minikube/machines/minikube ...
* Removed all traces of the "minikube" cluster.
ubuntu@ip-172-31-42-194:~$
```

```
ubuntu@ip-172-31-45-164:~$ kubectl get namespaces
NAME                STATUS    AGE
default             Active    17m
kube-node-lease     Active    17m
kube-public         Active    17m
kube-system         Active    17m
my-namespace        Active    15s
ubuntu@ip-172-31-45-164:~$ vi namespace.yaml
ubuntu@ip-172-31-45-164:~$ cat namespace.yaml
apiVersion: v1
kind: Namespace
metadata:
  name: my-namespace

ubuntu@ip-172-31-45-164:~$
```

```
ubuntu@ip-172-31-45-164:~$ vi deploy.yaml
ubuntu@ip-172-31-45-164:~$ vi service.yaml
ubuntu@ip-172-31-45-164:~$ kubectl apply -f deploy.yaml
deployment.apps/nginx-deployment created
ubuntu@ip-172-31-45-164:~$ kubectl apply -f service.yaml
service/nginx-svc created
ubuntu@ip-172-31-45-164:~$ kubectl get namespaces
NAME                STATUS    AGE
default             Active    25m
kube-node-lease     Active    25m
kube-public         Active    25m
kube-system         Active    25m
my-namespace        Active    7m53s
ubuntu@ip-172-31-45-164:~$
```

```
ubuntu@ip-172-31-45-164:~$ cat deploy.yaml
```

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: nginx-deployment
  namespace: my-namespace
spec:
  replicas: 2
  selector:
    matchLabels:
      app: web
  template:
    metadata:
      labels:
        app: web
    spec:
      containers:
        - name: nginxcontainer
          image: nginx:latest
          ports:
            - containerPort: 80
```

```
ubuntu@ip-172-31-45-164:~$ cat service.yaml
```

```
apiVersion: v1
kind: Service
metadata:
  name: nginx-svc
  namespace: my-namespace
spec:
  selector:
    app: web
  ports:
    - protocol: TCP
      port: 80
      targetPort: 80
  type: LoadBalancer
```