

## Lab: Exposing Applications using ClusterIP Services

```
root@AnushaKubernetes: ~/kubernetes
Last login: Sat Aug 17 10:15:40 2024 from 60.243.121.58
anusha954@AnushaKubernetes:~$ sudo su -
root@AnushaKubernetes:~# mkdir -p ~/kubernetes
root@AnushaKubernetes:~# cd ~/kubernetes
root@AnushaKubernetes:~/kubernetes# nano service-first-pod.yml
root@AnushaKubernetes:~/kubernetes# cat -n ~/kubernetes/service-first-pod.yml
1  apiVersion: v1
2  kind: Pod
3  metadata:
4    name: first-pod
5    labels:
6      app: hello-world-app
7  spec:
8    containers:
9      - name: first
10      image: "gcr.io/google-samples/hello-app:2.0"
root@AnushaKubernetes:~/kubernetes# nano service-second-pod.yml
root@AnushaKubernetes:~/kubernetes# cat -n ~/kubernetes/service-second-pod.yml
1  apiVersion: v1
2  kind: Pod
3  metadata:
4    name: second-pod
5    labels:
6      app: hello-world-app
7  spec:
8    containers:
9      - name: second
10      image: "gcr.io/google-samples/hello-app:2.0"
11
root@AnushaKubernetes:~/kubernetes# kubectl create -f ~/kubernetes/service-first-pod.yml
error: error validating "/root/kubernetes/service-first-pod.yml":
error validating data: failed to download openapi: Get "https://192.168.49.2:8443/openapi/v2?timeout=32s": dial tcp 192.168.49.2:8443: connect: no route to host; if you choose to ignore these errors, turn validation off with --validate=false
```

```
root@AnushaKubernetes: ~/kubernetes
root@AnushaKubernetes:~/kubernetes# minikube status
minikube
type: Control Plane
host: Stopped
kubelet: Stopped
apiserver: Stopped
kubeconfig: Stopped

root@AnushaKubernetes:~/kubernetes# minikube start
* minikube v1.33.1 on Ubuntu 24.04
* Using the docker driver based on existing profile
* The "docker" driver should not be used with root privileges. If you wish to continue as root, use --force.
* If you are running minikube within a VM, consider using --driver=none:
*   https://minikube.sigs.k8s.io/docs/reference/drivers/none/
* Tip: To remove this root owned cluster, run: sudo minikube delete

X Exiting due to DRV_AS_ROOT: The "docker" driver should not be used with root privileges.

root@AnushaKubernetes:~/kubernetes# minikube start --driver=docker --force
* minikube v1.33.1 on Ubuntu 24.04
! minikube skips various validations when --force is supplied; this may lead to unexpected behavior
* Using the docker driver based on existing profile
* The "docker" driver should not be used with root privileges. If you wish to continue as root, use --force.
* If you are running minikube within a VM, consider using --driver=none:
*   https://minikube.sigs.k8s.io/docs/reference/drivers/none/
* Tip: To remove this root owned cluster, run: sudo minikube delete
* Starting "minikube" primary control-plane node in "minikube" cluster
* Pulling base image v0.0.44 ...
* Restarting existing docker container for "minikube" ...
```

```
root@AnushaKubernetes: ~/kubernetes# sudo minikube delete
* Deleting "minikube" in docker ...
* Deleting container "minikube" ...
* Removing /root/.minikube/machines/minikube ...
* Removed all traces of the "minikube" cluster.
root@AnushaKubernetes:~/kubernetes# minikube start --driver=docker
--force
* minikube v1.33.1 on Ubuntu 24.04
! minikube skips various validations when --force is supplied; this
  may lead to unexpected behavior
* Using the docker driver based on user configuration
* The "docker" driver should not be used with root privileges. If
  you wish to continue as root, use --force.
* If you are running minikube within a VM, consider using --driver
  =none:
  * https://minikube.sigs.k8s.io/docs/reference/drivers/none/
* Using Docker driver with root privileges
* Starting "minikube" primary control-plane node in "minikube" clu
  ster
* Pulling base image v0.0.44 ...
* 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
root@AnushaKubernetes:~/kubernetes# minikube status
minikube
type: Control Plane
host: Running
kubelet: Running
apiserver: Running
kubeconfig: Configured
root@AnushaKubernetes:~/kubernetes# kubectl create -f ~/kubernetes
```

```
root@AnushaKubernetes: ~/kubernetes# kubectl create -f ~/kubernetes
/service-first-pod.yml
pod/first-pod created
root@AnushaKubernetes:~/kubernetes# kubectl create -f ~/kubernetes
/service-second-pod.yml
error: error parsing /root/kubernetes/service-second-pod.yml: erro
r converting YAML to JSON: yaml: line 5: mapping values are not al
lowed in this context
root@AnushaKubernetes:~/kubernetes# nano service-second-pod.yml
root@AnushaKubernetes:~/kubernetes# cat -n ~/kubernetes/service-se
cond-pod.yml
 1  apiVersion: v1
 2  kind: Pod
 3  metadata:
 4    name: second-pod
 5    labels:
 6      app: hello-world-app
 7  spec:
 8    containers:
 9      - name: second
10        image: "gcr.io/google-samples/hello-app:2.0"
root@AnushaKubernetes:~/kubernetes# kubectl create -f ~/kubernete
s/service-second-pod.yml
pod/second-pod created
root@AnushaKubernetes:~/kubernetes# kubectl get pods -o wide
NAME          READY   STATUS    RESTARTS   AGE   IP            NODE
first-pod     1/1     Running   0          22m   10.244.0.3    mini
kube          <none>   <none>    <none>     <none>
second-pod    1/1     Running   0          9m5s  10.244.0.4    mini
kube          <none>   <none>    <none>     <none>
root@AnushaKubernetes:~/kubernetes# podIP1=$(kubectl get pod first
-pod -o
  jsonpath='{.status.podIP}')
error: flag needs an argument: 'o' in -o
See 'kubectl get --help' for usage.
root@AnushaKubernetes:~/kubernetes# echo $podIP1
root@AnushaKubernetes:~/kubernetes# curl $podIP1:8080
```

```
root@AnushaKubernetes: ~/kubernetes
root@AnushaKubernetes:~/kubernetes# curl $podIP1:8080
curl: (3) URL rejected: No host part in the URL
root@AnushaKubernetes:~/kubernetes# minikube status
minikube
type: Control Plane
host: Running
kubelet: Running
apiserver: Running
kubeconfig: Configured

root@AnushaKubernetes:~/kubernetes# ^C
root@AnushaKubernetes:~/kubernetes# podIP1=$(kubectl get pod first
-pod -o jsonpath='{.status.podIP}')
root@AnushaKubernetes:~/kubernetes# echo $podIP1
10.244.0.3
root@AnushaKubernetes:~/kubernetes# curl http://$podIP1:8080
curl: (28) Failed to connect to 10.244.0.3 port 8080 after 133367
ms: Couldn't connect to server
root@AnushaKubernetes:~/kubernetes# podIP2=$(kubectl get pod second-pod -o
jsonpath='{.status.podIP}')
error: flag needs an argument: 'o' in -o
See 'kubectl get --help' for usage.
root@AnushaKubernetes:~/kubernetes# podIP2=$(kubectl get pod secon
d-pod -o jsonpath='{.status.podIP}')
root@AnushaKubernetes:~/kubernetes# echo $podIP2
10.244.0.4
root@AnushaKubernetes:~/kubernetes# curl $podIP2:8080
curl: (28) Failed to connect to 10.244.0.4 port 8080 after 134476 ms: Couldn't connect to server
root@AnushaKubernetes:~/kubernetes# cat -n ~/kubernetes/service-c
ip.yml
cat: /root/kubernetes/service-cip.yml: No such file or directory
root@AnushaKubernetes:~/kubernetes# ^C
root@AnushaKubernetes:~/kubernetes# kubectl get pods
NAME          READY   STATUS    RESTARTS   AGE
first-pod     1/1    Running   0           33m
second-pod    1/1    Running   0           20m
root@AnushaKubernetes:~/kubernetes# kubectl describe pod first-pod
Name:         first-pod
Namespace:    default
```

```
root@AnushaKubernetes: ~/kubernetes
Name:         first-pod
Namespace:    default
Priority:      0
Service Account: default
Node:         minikube/192.168.49.2
Start Time:   Sat, 17 Aug 2024 11:43:32 +0000
Labels:       app=hello-world-app
Annotations:  <none>
Status:       Running
IP:           10.244.0.3
IPs:
  IP: 10.244.0.3
Containers:
  first:
    Container ID:  docker://e4c2534c27a0c4a73fa0d146316d3dbacc19e
f6be41d553f0f34c76d624fbd77
    Image:         gcr.io/google-samples/hello-app:2.0
    Image ID:      docker-pullable://gcr.io/google-samples/hello-
app@sha256:7104356ed4e3476a96a23b96f8d7c04dfa7a1881aa97d66a76217f6
bc8a370d0
    Port:          <none>
    Host Port:     <none>
    State:         Running
      Started:     Sat, 17 Aug 2024 11:43:41 +0000
    Ready:         True
    Restart Count:  0
    Environment:   <none>
    Mounts:
      /var/run/secrets/kubernetes.io/serviceaccount from kube-api-
access-f7z8v (ro)
Conditions:
  Type              Status
  PodReadyToStartContainers  True
  Initialized         True
  Ready               True
  ContainersReady      True
  PodScheduled        True
Volumes:
  kube-api-access-f7z8v:
```

```
root@AnushaKubernetes: ~/kubernetes
kube-api-access-f7z8v:
  Type:          Projected (a volume that contains injected data from multiple sources)
  TokenExpirationSeconds: 3607
  ConfigMapName:  kube-root-ca.crt
  ConfigMapOptional: <nil>
  DownwardAPI:    true
QoS Class:       BestEffort
Node-Selectors:  <none>
Tolerations:     node.kubernetes.io/not-ready:NoExecute op=Exists for 300s
                 node.kubernetes.io/unreachable:NoExecute op=Exists for 300s
Events:
  Type     Reason      Age   From          Message
  ----     -
Normal    Scheduled   33m   default-scheduler   Successfully assigned default/first-pod to minikube
Normal    Pulling     33m   kubelet          Pulling image "gcr.io/google-samples/hello-app:2.0"
Normal    Pulled      33m   kubelet          Successfully pulled image "gcr.io/google-samples/hello-app:2.0" in 7.795s (7.795s including waiting). Image size: 27164284 bytes.
Normal    Created    33m   kubelet          Created container first
Normal    Started    33m   kubelet          Started container first
root@AnushaKubernetes:~/kubernetes# kubectl describe pod second-pod
Name:          second-pod
Namespace:     default
Priority:       0
Service Account: default
Node:          minikube/192.168.49.2
Start Time:    Sat, 17 Aug 2024 11:56:40 +0000
Labels:        app=hello-world-app
Annotations:    <none>
Status:        Running
IP:            10.244.0.4
IPs:           10.244.0.4
```

```
root@AnushaKubernetes: ~/kubernetes
IP:            10.244.0.4
IPs:           10.244.0.4
Containers:
  second:
    Container ID:  docker://b770f596c730e3893765e57ae7cd9d1d80eb7377f19a770e469e453bc8b2c23b
    Image:         gcr.io/google-samples/hello-app:2.0
    Image ID:      docker-pullable://gcr.io/google-samples/hello-app@sha256:7104356ed4e3476a96a23b96f8d7c04dfa7a1881aa97d66a76217f6bc8a370d0
    Port:          <none>
    Host Port:     <none>
    State:         Running
      Started:     Sat, 17 Aug 2024 11:56:41 +0000
    Ready:         True
    Restart Count:  0
    Environment:   <none>
    Mounts:
      /var/run/secrets/kubernetes.io/serviceaccount from kube-api-access-gsrdd (ro)
Conditions:
  Type             Status
  PodReadyToStartContainers  True
  Initialized        True
  Ready              True
  ContainersReady    True
  PodScheduled       True
Volumes:
  kube-api-access-gsrdd:
    Type:          Projected (a volume that contains injected data from multiple sources)
    TokenExpirationSeconds: 3607
    ConfigMapName:  kube-root-ca.crt
    ConfigMapOptional: <nil>
    DownwardAPI:    true
QoS Class:       BestEffort
Node-Selectors:  <none>
Tolerations:     node.kubernetes.io/not-ready:NoExecute op=Exists for 300s
                 node.kubernetes.io/unreachable:NoExecute op=Exists for 300s
Events:
  Type     Reason      Age   From          Message
  ----     -
Normal    Scheduled   33m   default-scheduler   Successfully assigned default/second-pod to minikube
Normal    Pulling     33m   kubelet          Pulling image "gcr.io/google-samples/hello-app:2.0"
Normal    Pulled      33m   kubelet          Successfully pulled image "gcr.io/google-samples/hello-app:2.0" in 7.795s (7.795s including waiting). Image size: 27164284 bytes.
Normal    Created    33m   kubelet          Created container second
Normal    Started    33m   kubelet          Started container second
```

```
root@AnushaKubernetes: ~/kubernetes
Type      Reason      Age      From      Message
----      -
Normal    Scheduled   20m      default-scheduler    Successfully assigned default/second-pod to minikube
Normal    Pulled      20m      kubelet    Container image "gcr.io/google-samples/hello-app:2.0" already present on machine
Normal    Created     20m      kubelet    Created container second
Normal    Started     20m      kubelet    Started container second
root@AnushaKubernetes:~/kubernetes# kubectl get pod first-pod -o y
aml
apiVersion: v1
kind: Pod
metadata:
  creationTimestamp: "2024-08-17T11:43:32Z"
  labels:
    app: hello-world-app
  name: first-pod
  namespace: default
  resourceVersion: "443"
  uid: 07838a18-75e9-4bd9-a70b-e919310e9855
spec:
  containers:
  - image: gcr.io/google-samples/hello-app:2.0
    imagePullPolicy: IfNotPresent
    name: first
    resources: {}
    terminationMessagePath: /dev/termination-log
    terminationMessagePolicy: File
    volumeMounts:
    - mountPath: /var/run/secrets/kubernetes.io/serviceaccount
      name: kube-api-access-f7z8v
      readOnly: true
  dnsPolicy: ClusterFirst
  enableServiceLinks: true
  nodeName: minikube
  preemptionPolicy: PreemptLowerPriority
  priority: 0
  restartPolicy: Always
  schedulerName: default-scheduler
  securityContext: {}
  serviceAccount: default
```

```
root@AnushaKubernetes: ~/kubernetes
Type      Reason      Age      From      Message
----      -
Normal    Scheduled   20m      default-scheduler    Successfully assigned default/second-pod to minikube
Normal    Pulled      20m      kubelet    Container image "gcr.io/google-samples/hello-app:2.0" already present on machine
Normal    Created     20m      kubelet    Created container second
Normal    Started     20m      kubelet    Started container second
root@AnushaKubernetes:~/kubernetes# kubectl get pod first-pod -o y
aml
apiVersion: v1
kind: Pod
metadata:
  creationTimestamp: "2024-08-17T11:43:32Z"
  labels:
    app: hello-world-app
  name: first-pod
  namespace: default
  resourceVersion: "443"
  uid: 07838a18-75e9-4bd9-a70b-e919310e9855
spec:
  containers:
  - image: gcr.io/google-samples/hello-app:2.0
    imagePullPolicy: IfNotPresent
    name: first
    resources: {}
    terminationMessagePath: /dev/termination-log
    terminationMessagePolicy: File
    volumeMounts:
    - mountPath: /var/run/secrets/kubernetes.io/serviceaccount
      name: kube-api-access-f7z8v
      readOnly: true
  dnsPolicy: ClusterFirst
  enableServiceLinks: true
  nodeName: minikube
  preemptionPolicy: PreemptLowerPriority
  priority: 0
  restartPolicy: Always
  schedulerName: default-scheduler
  securityContext: {}
  serviceAccount: default
```

```
root@AnushaKubernetes: ~/kubernetes
securityContext: {}
serviceAccount: default
serviceAccountName: default
terminationGracePeriodSeconds: 30
tolerations:
- effect: NoExecute
  key: node.kubernetes.io/not-ready
  operator: Exists
  tolerationSeconds: 300
- effect: NoExecute
  key: node.kubernetes.io/unreachable
  operator: Exists
  tolerationSeconds: 300
volumes:
- name: kube-api-access-f7z8v
  projected:
    defaultMode: 420
    sources:
    - serviceAccountToken:
        expirationSeconds: 3607
        path: token
    - configMap:
        items:
        - key: ca.crt
          path: ca.crt
          name: kube-root-ca.crt
    - downwardAPI:
        items:
        - fieldRef:
            apiVersion: v1
            fieldPath: metadata.namespace
          path: namespace
status:
  conditions:
  - lastProbeTime: null
    lastTransitionTime: "2024-08-17T11:43:42Z"
    status: "True"
    type: PodReadyToStartContainers
  - lastProbeTime: null
```

```
root@AnushaKubernetes: ~/kubernetes
- lastProbeTime: null
  lastTransitionTime: "2024-08-17T11:43:42Z"
  status: "True"
  type: PodReadyToStartContainers
- lastProbeTime: null
  lastTransitionTime: "2024-08-17T11:43:32Z"
  status: "True"
  type: Initialized
- lastProbeTime: null
  lastTransitionTime: "2024-08-17T11:43:42Z"
  status: "True"
  type: Ready
- lastProbeTime: null
  lastTransitionTime: "2024-08-17T11:43:42Z"
  status: "True"
  type: ContainersReady
- lastProbeTime: null
  lastTransitionTime: "2024-08-17T11:43:32Z"
  status: "True"
  type: PodScheduled
containerStatuses:
- containerID: docker://e4c2534c27a0c4a73fa0d146316d3dbacc19ef6b
  e41d553f0f34c76d624fbd77
  image: gcr.io/google-samples/hello-app:2.0
  imageID: docker-pullable://gcr.io/google-samples/hello-app@sha
  256:7104356ed4e3476a96a23b96f8d7c04dfa7a1881aa97d66a76217f6bc8a370
  d0
  lastState: {}
  name: first
  ready: true
  restartCount: 0
  started: true
  state:
    running:
      startedAt: "2024-08-17T11:43:41Z"
  hostIP: 192.168.49.2
  hostIPs:
  - ip: 192.168.49.2
  phase: Running
```

```
root@AnushaKubernetes: ~/kubernetes
phase: Running
podIP: 10.244.0.3
podIPs:
- ip: 10.244.0.3
qosClass: BestEffort
startTime: "2024-08-17T11:43:32Z"
root@AnushaKubernetes:~/kubernetes# kubectl get pod second-pod -o
yaml
apiVersion: v1
kind: Pod
metadata:
  creationTimestamp: "2024-08-17T11:56:40Z"
  labels:
    app: hello-world-app
  name: second-pod
  namespace: default
  resourceVersion: "1074"
  uid: ac91c688-625a-47f4-be67-78812ff7d0c3
spec:
  containers:
  - image: gcr.io/google-samples/hello-app:2.0
    imagePullPolicy: IfNotPresent
    name: second
    resources: {}
    terminationMessagePath: /dev/termination-log
    terminationMessagePolicy: File
    volumeMounts:
    - mountPath: /var/run/secrets/kubernetes.io/serviceaccount
      name: kube-api-access-gsrdd
      readOnly: true
  dnsPolicy: ClusterFirst
  enableServiceLinks: true
  nodeName: minikube
  preemptionPolicy: PreemptLowerPriority
  priority: 0
  restartPolicy: Always
  schedulerName: default-scheduler
  securityContext: {}
  serviceAccount: default
```

```
root@AnushaKubernetes: ~/kubernetes
securityContext: {}
serviceAccount: default
serviceAccountName: default
terminationGracePeriodSeconds: 30
tolerations:
- effect: NoExecute
  key: node.kubernetes.io/not-ready
  operator: Exists
  tolerationSeconds: 300
- effect: NoExecute
  key: node.kubernetes.io/unreachable
  operator: Exists
  tolerationSeconds: 300
volumes:
- name: kube-api-access-gsrdd
  projected:
    defaultMode: 420
    sources:
    - serviceAccountToken:
        expirationSeconds: 3607
        path: token
    - configMap:
        items:
        - key: ca.crt
          path: ca.crt
          name: kube-root-ca.crt
    - downwardAPI:
        items:
        - fieldRef:
            apiVersion: v1
            fieldPath: metadata.namespace
          path: namespace
status:
  conditions:
  - lastProbeTime: null
    lastTransitionTime: "2024-08-17T11:56:42Z"
    status: "True"
    type: PodReadyToStartContainers
  - lastProbeTime: null
```

```
root@AnushaKubernetes: ~/kubernetes
lastTransitionTime: "2024-08-17T11:56:42Z"
status: "True"
type: PodReadyToStartContainers
- lastProbeTime: null
  lastTransitionTime: "2024-08-17T11:56:40Z"
  status: "True"
  type: Initialized
- lastProbeTime: null
  lastTransitionTime: "2024-08-17T11:56:42Z"
  status: "True"
  type: Ready
- lastProbeTime: null
  lastTransitionTime: "2024-08-17T11:56:42Z"
  status: "True"
  type: ContainersReady
- lastProbeTime: null
  lastTransitionTime: "2024-08-17T11:56:40Z"
  status: "True"
  type: PodScheduled
containerStatuses:
- containerID: docker://b770f596c730e3893765e57ae7cd9d1d80eb7377
  f19a770e469e453bc8b2c23b
  image: gcr.io/google-samples/hello-app:2.0
  imageID: docker-pullable://gcr.io/google-samples/hello-app@sha
  256:710435ed4e3476a96a23b96f8d7c04dfa7a1881aa97d66a76217f6bc8a370
  d0
  lastState: {}
  name: second
  ready: true
  restartCount: 0
  started: true
  state:
    running:
      startedAt: "2024-08-17T11:56:41Z"
hostIP: 192.168.49.2
hostIPs:
- ip: 192.168.49.2
phase: Running
podIP: 10.244.0.4
```

```
root@AnushaKubernetes: ~/kubernetes
phase: Running
podIP: 10.244.0.4
podIPs:
- ip: 10.244.0.4
qosClass: BestEffort
startTime: "2024-08-17T11:56:40Z"
root@AnushaKubernetes:~/kubernetes# kubectl exec -it first-pod --
curl http://localhost:8080
OCI runtime exec failed: exec failed: unable to start container pr
ocess: exec: "curl": executable file not found in $PATH: unknown
command terminated with exit code 126
root@AnushaKubernetes:~/kubernetes# kubectl exec -it first-pod -- curl http://localhost:8080
OCI runtime exec failed: exec failed: unable to start container process: exec: "curl": executable file not found in $PATH: unknown
command terminated with exit code 126
root@AnushaKubernetes:~/kubernetes# ^C
root@AnushaKubernetes:~/kubernetes# nano service-cip.yaml
root@AnushaKubernetes:~/kubernetes# cat -n ~/kubernetes/service-ci
p.yaml
cat: /root/kubernetes/service-cip.yaml: No such file or directory
root@AnushaKubernetes:~/kubernetes# nano service-cip.yaml
root@AnushaKubernetes:~/kubernetes# cat -n ~/kubernetes/service-cip.yaml
1  apiVersion: v1
2  kind: Service
3  metadata:
4    name: cip-service
5  spec:
6    type: ClusterIP
7    selector:
8      app: hello-world-app
9    ports:
10     - protocol: TCP
11       port: 80
12       targetPort: 8080
root@AnushaKubernetes:~/kubernetes# kubectl apply -f ~/kubernetes/
service-cip.yaml
service/cip-service created
root@AnushaKubernetes:~/kubernetes# kubectl get service cip-servic
e
NAME          TYPE          CLUSTER-IP    EXTERNAL-IP    PORT(S)
```



```
root@AnushaKubernetes: ~/kubernetes
5 spec:
6   type: ClusterIP
7   selector:
8     app: hello-world-app
9   ports:
10  - protocol: TCP
11    port: 80
12    targetPort: 8080
root@AnushaKubernetes:~/kubernetes# kubectl apply -f ~/kubernetes/
service-cip.yml
service/cip-service created
root@AnushaKubernetes:~/kubernetes# kubectl get service cip-service
NAME          TYPE          CLUSTER-IP      EXTERNAL-IP      PORT(S)
cip-service   ClusterIP     10.110.96.141    <none>           80/TCP
root@AnushaKubernetes:~/kubernetes# kubectl get ep cip-service
NAME          ENDPOINTS          AGE
cip-service   10.244.0.3:8080,10.244.0.4:8080   20s
root@AnushaKubernetes:~/kubernetes# CLUSTER_IP=$(kubectl get svc cip-service -o
jsonpath='{.spec.clusterIP}')
error: flag needs an argument: 'o' in -o
See 'kubectl get --help' for usage.
root@AnushaKubernetes:~/kubernetes# CLUSTER_IP=$(kubectl get svc cip-service -o jsonpath='{.spec.clusterIP}')
root@AnushaKubernetes:~/kubernetes# curl $CLUSTER_IP
curl: (28) Failed to connect to 10.110.96.141 port 80 after 134116 ms: Couldn't connect to server
root@AnushaKubernetes:~/kubernetes# kubectl delete services cip-s
service
service "cip-service" deleted
root@AnushaKubernetes:~/kubernetes# kubectl delete pods first-pod
second-pod
pod "first-pod" deleted
pod "second-pod" deleted
root@AnushaKubernetes:~/kubernetes# kubectl create service cluster
ip svc-nginx01 --tcp=8080:80
service/svc-nginx01 created
root@AnushaKubernetes:~/kubernetes# kubectl get service
NAME          TYPE          CLUSTER-IP      EXTERNAL-IP      PORT(S)
cip-service   ClusterIP     10.110.96.141    <none>           80/TCP
svc-nginx01   ClusterIP     10.105.131.165   <none>           8080/TCP
```

```
root@AnushaKubernetes: ~/kubernetes
service/svc-nginx01 created
root@AnushaKubernetes:~/kubernetes# kubectl get service
NAME          TYPE          CLUSTER-IP      EXTERNAL-IP      PORT(S)
cip-service   ClusterIP     10.110.96.141    <none>           80/TCP
svc-nginx01   ClusterIP     10.105.131.165   <none>           8080/TCP
root@AnushaKubernetes:~/kubernetes# kubectl create service clusterip svc-nginx02 --tcp=8080:80 \
--dry-run=client
service/svc-nginx02 created (dry run)
root@AnushaKubernetes:~/kubernetes# kubectl create service clusterip svc-nginx02 --tcp=8080:80 \
--dry-run=client -o yaml
apiVersion: v1
kind: Service
metadata:
  creationTimestamp: null
  labels:
    app: svc-nginx02
  name: svc-nginx02
spec:
  ports:
    - name: 8080-80
      port: 8080
      protocol: TCP
      targetPort: 80
  selector:
    app: svc-nginx02
  type: ClusterIP
status: {}
root@AnushaKubernetes:~/kubernetes# kubectl create service clusterip svc-nginx02 --tcp=8080:80 \
--dry-run=client -o yaml | tee svc-nginx02.yml
apiVersion: v1
kind: Service
metadata:
  creationTimestamp: null
  labels:
    app: svc-nginx02
```

```
root@AnushaKubernetes: ~/kubernetes
loadBalancer: {}
root@AnushaKubernetes:~/kubernetes# kubectl create service clusterip svc-nginx02 --tcp=8080:80 \
--dry-run=client -o yaml | tee svc-nginx02.yaml
apiVersion: v1
kind: Service
metadata:
  creationTimestamp: null
  labels:
    app: svc-nginx02
    name: svc-nginx02
spec:
  ports:
  - name: 8080-80
    port: 8080
    protocol: TCP
    targetPort: 80
  selector:
    app: svc-nginx02
  type: ClusterIP
status: {}
loadBalancer: {}
root@AnushaKubernetes:~/kubernetes# kubectl create -f svc-nginx02.
yaml
service/svc-nginx02 created
root@AnushaKubernetes:~/kubernetes# kubectl get svc
NAME          TYPE          CLUSTER-IP    EXTERNAL-IP    PORT(S)
AGE
kubernetes    ClusterIP     10.96.0.1      <none>          443/TCP
74m
svc-nginx01   ClusterIP     10.105.131.165 <none>          8080/TCP
93s
svc-nginx02   ClusterIP     10.99.58.95     <none>          8080/TCP
10s
root@AnushaKubernetes:~/kubernetes# kubectl delete svc svc-nginx01
service "svc-nginx01" deleted
root@AnushaKubernetes:~/kubernetes# kubectl delete -f svc-nginx02.
yaml
service "svc-nginx02" deleted
root@AnushaKubernetes:~/kubernetes#
```