

CC LAB 5

ARYAN SAPROO

PES2UG23CS099

SS1

```
minikube ready control plane 13s v1.23.0
onlypros@onlypros-Legion-5-Pro-16ACH6H:~$ kubectl create namespace pes2ug23cs099-alpha
namespace/pes2ug23cs099-alpha created
onlypros@onlypros-Legion-5-Pro-16ACH6H:~$ kubectl create namespace pes2ug23cs099-beta
namespace/pes2ug23cs099-beta created
onlypros@onlypros-Legion-5-Pro-16ACH6H:~$ kubectl get namespaces
NAME          STATUS   AGE
default       Active   71s
kube-node-lease   Active   71s
kube-public    Active   71s
kube-system    Active   71s
pes2ug23cs099-alpha Active   33s
pes2ug23cs099-beta  Active   12s
onlypros@onlypros-Legion-5-Pro-16ACH6H:~$ 
```

SS2

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onlypros@onlypros-Legion-5-Pro-16ACH6H:~$ kubectl get pods -n pes2ug23cs099-alpha
NAME      READY   STATUS            RESTARTS   AGE
citizen   0/1    ErrImageNeverPull   0          92s
onlypros@onlypros-Legion-5-Pro-16ACH6H:~$ kubectl describe pod citizen -n pes2ug23cs099-alpha
Name:           citizen
Namespace:      pes2ug23cs099-alpha
Priority:       0
Service Account: default
Node:          minikube/192.168.49.2
Start Time:     Thu, 19 Feb 2026 14:34:44 +0530
Labels:         run=citizen
Annotations:    <none>
Status:         Pending
IP:             10.244.0.3
IPs:
  IP:  10.244.0.3
Containers:
  citizen:
    Container ID:      docker://f8a2a2a2-4a2d-4a2d-4a2d-4a2d4a2d4a2d
    Image:              nginx
    Image ID:           docker://f8a2a2a2-4a2d-4a2d-4a2d-4a2d4a2d4a2d
    Port:               <none>
    Host Port:          <none>
    State:              Waiting
      Reason:           ErrImageNeverPull
    Ready:              False
    Restart Count:      0
    Environment:        <none>
    Mounts:
      /var/run/secrets/kubernetes.io/serviceaccount from kube-api-access-99thg (ro)
Conditions:
  Type        Status
  PodReadyToStartContainers  True
  Initialized  True
  Ready        False
  ContainersReady  False
  PodScheduled  True
Volumes:
  kube-api-access-99thg:

```

SS3

```

everPULL
onlypros@onlypros-Legion-5-Pro-16ACH6H:~$ kubectl delete pod citizen
pod "citizen" deleted from pes2ug23cs099-alpha namespace
onlypros@onlypros-Legion-5-Pro-16ACH6H:~$ kubectl get pods -w
NAME      READY   STATUS            RESTARTS   AGE
temp     0/1    Pending   0          0s
temp     0/1    Pending   0          0s
temp     0/1    ContainerCreating 0          0s
temp     0/1    Terminating   0          0s
temp     0/1    Terminating   0          1s
temp     0/1    ContainerStatusUnknown 0          2s
temp     0/1    ContainerStatusUnknown 0          2s
temp     0/1    ContainerStatusUnknown 0          2s

```

SS4

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onlypros@onlypros-Legion-5-Pro-16ACH6H:~$ kubectl logs citizen
/docker-entrypoint.sh: /docker-entrypoint.d/ is not empty, will attempt to perform configuration
/docker-entrypoint.sh: Looking for shell scripts in /docker-entrypoint.d/
1/docker-entrypoint.sh: Launching /docker-entrypoint.d/10-listen-on-ipv6-by-default.sh
10-listen-on-ipv6-by-default.sh: info: Getting the checksum of /etc/nginx/conf.d/default.conf
10-listen-on-ipv6-by-default.sh: info: Enabled listen on IPv6 in /etc/nginx/conf.d/default.conf
/docker-entrypoint.sh: Sourcing /docker-entrypoint.d/15-local-resolvers.envsh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/20-envsubst-on-templates.sh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/30-tune-worker-processes.sh
/docker-entrypoint.sh: Configuration complete; ready for start up
2026/02/19 09:23:43 [notice] 1#1: using the "epoll" event method
na2026/02/19 09:23:43 [notice] 1#1: nginx/1.29.5
2026/02/19 09:23:43 [notice] 1#1: built by gcc 14.2.0 (Debian 14.2.0-19)
2026/02/19 09:23:43 [notice] 1#1: OS: Linux 6.14.0-37-generic
2026/02/19 09:23:43 [notice] 1#1: getrlimit(RLIMIT_NOFILE): 1048576:1048576
2026/02/19 09:23:43 [notice] 1#1: start worker processes
2026/02/19 09:23:43 [notice] 1#1: start worker process 29
et2026/02/19 09:23:43 [notice] 1#1: start worker process 30
2026/02/19 09:23:43 [notice] 1#1: start worker process 31
2026/02/19 09:23:43 [notice] 1#1: start worker process 32
2026/02/19 09:23:43 [notice] 1#1: start worker process 33
2026/02/19 09:23:43 [notice] 1#1: start worker process 34
2026/02/19 09:23:43 [notice] 1#1: start worker process 35
2026/02/19 09:23:43 [notice] 1#1: start worker process 36
un2026/02/19 09:23:43 [notice] 1#1: start worker process 37
el2026/02/19 09:23:43 [notice] 1#1: start worker process 38
2026/02/19 09:23:43 [notice] 1#1: start worker process 39
2026/02/19 09:23:43 [notice] 1#1: start worker process 40
2026/02/19 09:23:43 [notice] 1#1: start worker process 41
2026/02/19 09:23:43 [notice] 1#1: start worker process 42
2026/02/19 09:23:43 [notice] 1#1: start worker process 43
no2026/02/19 09:23:43 [notice] 1#1: start worker process 44
onlypros@onlypros-Legion-5-Pro-16ACH6H:~$ 
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SS5

```
onlypros@onlypros-Legion-5-Pro-16ACH6H:~$ kubectl run broken \
--image=busybox \
--image-pull-policy=Never \
--restart=Never \
--command -- sh -c "echo 'CRASH: something went wrong' >&2; exit 1"
pod/broken created
onlypros@onlypros-Legion-5-Pro-16ACH6H:~$ kubectl logs broken
CRASH: something went wrong
onlypros@onlypros-Legion-5-Pro-16ACH6H:~$ 
```

SS6

```
onlypros@onlypros-Legion-5-Pro-16ACH6H:~$ kubectl create deployment pes2ug23cs099
9 \
  --image=nginx
deployment.apps/pes2ug23cs099 created
onlypros@onlypros-Legion-5-Pro-16ACH6H:~$ kubectl patch deployment pes2ug23cs099
 \
 -p '{"spec": {"template": {"spec": {"containers": [{"name": "nginx", "imagePullPolicy": "Never"}]}}}}'
deployment.apps/pes2ug23cs099 patched
onlypros@onlypros-Legion-5-Pro-16ACH6H:~$ kubectl get pods
NAME          READY   STATUS    RESTARTS   AGE
broken        0/1     Error     0          2m22s
citizen       1/1     Running   0          11m
pes2ug23cs099-549dd5544f-pr2vn 1/1     Running   0          4s
onlypros@onlypros-Legion-5-Pro-16ACH6H:~$ 
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SS7

```
onlypros@onlypros-Legion-5-Pro-16ACH6H:~$ kubectl scale deployment pes2ug23cs099
--replicas=5
deployment.apps/pes2ug23cs099 scaled
onlypros@onlypros-Legion-5-Pro-16ACH6H:~$ kubectl get pods
NAME          READY   STATUS    RESTARTS   AGE
broken        0/1     Error     0          3m19s
citizen       1/1     Running   0          12m
pes2ug23cs099-549dd5544f-4f6lg 1/1     Running   0          10s
pes2ug23cs099-549dd5544f-6cs9f 1/1     Running   0          10s
pes2ug23cs099-549dd5544f-8nrzc 1/1     Running   0          10s
pes2ug23cs099-549dd5544f-bnbg7 1/1     Running   0          10s
pes2ug23cs099-549dd5544f-pr2vn 1/1     Running   0          61s
onlypros@onlypros-Legion-5-Pro-16ACH6H:~$ kubectl scale deployment pes2ug23cs099
--replicas=3
deployment.apps/pes2ug23cs099 scaled
onlypros@onlypros-Legion-5-Pro-16ACH6H:~$ kubectl get pods
NAME          READY   STATUS    RESTARTS   AGE
broken        0/1     Error     0          3m26s
citizen       1/1     Running   0          12m
pes2ug23cs099-549dd5544f-6cs9f 1/1     Running   0          17s
pes2ug23cs099-549dd5544f-bnbg7 1/1     Running   0          17s
pes2ug23cs099-549dd5544f-pr2vn 1/1     Running   0          68s
onlypros@onlypros-Legion-5-Pro-16ACH6H:~$ 
```

SS8

```

onlypros@onlypros-Legion-5-Pro-16ACH6H:~$ kubectl get rs,po
NAME                                DESIRED   CURRENT   READY   AGE
replicaset.apps/pes2ug23cs099-549dd5544f   3         3         3      97s
replicaset.apps/pes2ug23cs099-587d69c4d8   0         0         0     101s

NAME          READY   STATUS    RESTARTS   AGE
pod/broken    0/1     Error     0          3m55s
pod/citizen   1/1     Running   0          12m
pod/pes2ug23cs099-549dd5544f-6cs9f   1/1     Running   0          46s
pod/pes2ug23cs099-549dd5544f-bnbg7    1/1     Running   0          46s
pod/pes2ug23cs099-549dd5544f-pr2vn   1/1     Running   0          97s
onlypros@onlypros-Legion-5-Pro-16ACH6H:~$ kubectl set image deployment/pes2ug23cs099=nginx:1.25
deployment.apps/pes2ug23cs099 image updated
onlypros@onlypros-Legion-5-Pro-16ACH6H:~$ kubectl get rs,po
NAME                                DESIRED   CURRENT   READY   AGE
replicaset.apps/pes2ug23cs099-549dd5544f   3         3         3      105s
replicaset.apps/pes2ug23cs099-587d69c4d8   0         0         0     109s
replicaset.apps/pes2ug23cs099-fbdd9dd95    1         1         0      3s

NAME          READY   STATUS    RESTARTS   AGE
pod/broken    0/1     Error     0          4m3s
pod/citizen   1/1     Running   0          13m
pod/pes2ug23cs099-549dd5544f-6cs9f   1/1     Running   0          54s
pod/pes2ug23cs099-549dd5544f-bnbg7    1/1     Running   0          54s
pod/pes2ug23cs099-549dd5544f-pr2vn   1/1     Running   0          105s
pod/pes2ug23cs099-fbdd9dd95-x4xjd    0/1     ErrImageNeverPull 0          3s
onlypros@onlypros-Legion-5-Pro-16ACH6H:~$ 

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SS9

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onlypros@onlypros-Legion-5-Pro-16ACH6H:~$ kubectl rollout undo deployment/pes2ug23cs099
deployment.apps/pes2ug23cs099 rolled back
onlypros@onlypros-Legion-5-Pro-16ACH6H:~$ kubectl rollout history deployment pes2ug23cs099
deployment.apps/pes2ug23cs099
REVISION  CHANGE-CAUSE
1          <none>
3          <none>
4          <none>

onlypros@onlypros-Legion-5-Pro-16ACH6H:~$ kubectl rollout history deployment pes2ug23cs099 --revision=2
deployment.apps/pes2ug23cs099
REVISION  CHANGE-CAUSE
1          <none>
3          <none>
4          <none>

Error from server (NotFound): deployments.apps "-revision=2" not found
onlypros@onlypros-Legion-5-Pro-16ACH6H:~$ kubectl rollout history deployment pes2ug23cs099 --revision=3
deployment.apps/pes2ug23cs099 with revision #3
Pod Template:
  Labels:      app=pes2ug23cs099
               pod-template-hash=fbdd9dd95
  Containers:
    nginx:
      Image:      nginx:1.25
      Port:       <none>
      Host Port:  <none>
      Environment: <none>
      Mounts:     <none>
      Volumes:    <none>
      Node-Selectors: <none>
      Tolerations:  <none>

```

SS10

```

Error from server (AlreadyExists): namespaces "pes2ug23cs099-beta" already exists
onlypros@onlypros-Legion-5-Pro-16ACH6H:~/PES2UG23CS099$ kubectl apply -f nginx.yaml -n pes2ug23cs099-beta
deployment.apps/nginx-pes2ug23cs099 created
onlypros@onlypros-Legion-5-Pro-16ACH6H:~/PES2UG23CS099$ kubectl get deployments -n pes2ug23cs099-beta
kubectl get pods -n pes2ug23cs099-beta
NAME           READY   UP-TO-DATE   AVAILABLE   AGE
nginx-pes2ug23cs099   3/3     3           3           5s
NAME                  READY   STATUS    RESTARTS   AGE
nginx-pes2ug23cs099-774967b988-4dfjs   1/1     Running   0          5s
nginx-pes2ug23cs099-774967b988-prf2q   1/1     Running   0          5s
nginx-pes2ug23cs099-774967b988-sgh85   1/1     Running   0          5s
onlypros@onlypros-Legion-5-Pro-16ACH6H:~/PES2UG23CS099$ 

```

SS11-12

```

onlypros@onlypros-Legion-5-Pro-16ACH6H:~/PES2UG23CS099$ kubectl get services -n pes2ug23cs099-beta
kubectl describe service pes2ug23cs099-service -n pes2ug23cs099-beta
kubectl get endpoints -n pes2ug23cs099-beta
NAME           TYPE      CLUSTER-IP    EXTERNAL-IP   PORT(S)    AGE
pes2ug23cs099-service  ClusterIP  10.107.225.60 <none>       80/TCP    3s
Name:          pes2ug23cs099-service
Namespace:     pes2ug23cs099-beta
Labels:        <none>
Annotations:   <none>
Selector:     app=nginx
Type:         ClusterIP
IP Family Policy: SingleStack
IP Families:  IPv4
IP:            10.107.225.60
IPs:           10.107.225.60
Port:          <unset>  80/TCP
TargetPort:    80/TCP
Endpoints:    10.244.0.19:80,10.244.0.18:80,10.244.0.20:80
Session Affinity: None
Internal Traffic Policy: Cluster
Events:        <none>
Warning: v1 Endpoints is deprecated in v1.33+; use discovery.k8s.io/v1 EndpointSlice
NAME           ENDPOINTS          AGE
pes2ug23cs099-service  10.244.0.18:80,10.244.0.19:80,10.244.0.20:80  4s
onlypros@onlypros-Legion-5-Pro-16ACH6H:~/PES2UG23CS099$ kubectl delete pod -l app=nginx -n pes2ug23cs099-beta
pod "nginx-pes2ug23cs099-774967b988-4dfjs" deleted from pes2ug23cs099-beta namespace
pod "nginx-pes2ug23cs099-774967b988-prf2q" deleted from pes2ug23cs099-beta namespace
pod "nginx-pes2ug23cs099-774967b988-sgh85" deleted from pes2ug23cs099-beta namespace
onlypros@onlypros-Legion-5-Pro-16ACH6H:~/PES2UG23CS099$ kubectl get endpoints -n pes2ug23cs099-beta
Warning: v1 Endpoints is deprecated in v1.33+; use discovery.k8s.io/v1 EndpointSlice
NAME           ENDPOINTS          AGE
pes2ug23cs099-service  10.244.0.21:80,10.244.0.22:80,10.244.0.23:80  34s
onlypros@onlypros-Legion-5-Pro-16ACH6H:~/PES2UG23CS099$ 

```

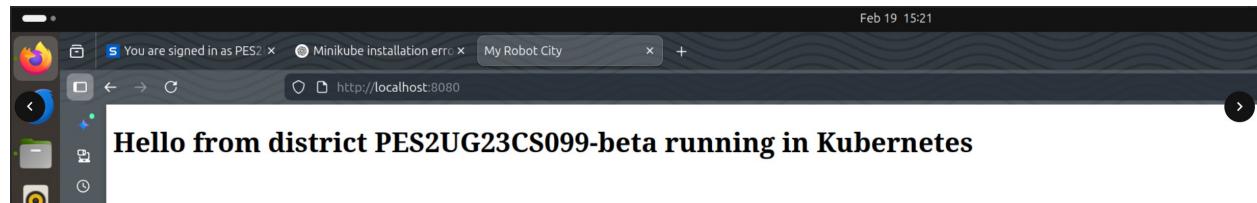
SS13

```

onlypros@onlypros-Legion-5-Pro-16ACH6H:~/PES2UG23CS099$ kubectl port-forward deployment/nginx-pes2ug23cs099 8080:80 -n pes2ug23cs099-beta
Forwarding from 127.0.0.1:8080 -> 80
Forwarding from [::1]:8080 -> 80
Handling connection for 8080

```

SS14



SS15

```
onlypros@onlypros-Legion-5-Pro-16ACH6H:~/PES2UG23CS099$ kubectl delete namespace pes2ug23cs099-alpha
kubectl delete namespace pes2ug23cs099-beta
namespace "pes2ug23cs099-alpha" deleted
kubectl get ns
namespace "pes2ug23cs099-beta" deleted
onlypros@onlypros-Legion-5-Pro-16ACH6H:~/PES2UG23CS099$ kubectl get ns
NAME      STATUS  AGE
default   Active  31m
kube-node-lease  Active  31m
kube-public  Active  31m
kube-system  Active  31m
onlypros@onlypros-Legion-5-Pro-16ACH6H:~/PES2UG23CS099$ kubectl get ns
NAME      STATUS  AGE
default   Active  31m
kube-node-lease  Active  31m
kube-public  Active  31m
kube-system  Active  31m
onlypros@onlypros-Legion-5-Pro-16ACH6H:~/PES2UG23CS099$ 
```