

PES2UG23CS678_VarunNamboodiri _Lab5

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Section: K

SRN: PES2UG23CS678

Subject: Cloud Computing Lab (Kubernetes)

SSN 1:-

```
pes2ug23cs678@pes2ug23cs678:~$ kubectl create namespace pes2ug23cs678-alpha
namespace/pes2ug23cs678-alpha created
pes2ug23cs678@pes2ug23cs678:~$ kubectl create namespace pes2ug23cs678-beta
namespace/pes2ug23cs678-beta created
pes2ug23cs678@pes2ug23cs678:~$ kubectl get namespaces
NAME           STATUS   AGE
default        Active   63s
kube-node-lease Active   63s
kube-public    Active   63s
kube-system    Active   63s
pes2ug23cs678-alpha  Active   21s
pes2ug23cs678-beta   Active   16s
```

SSN 2:-

```

pes2ug23cs678@pes2ug23cs678:~$ kubectl run citizen --image=nginx --restart=Never
pod/citizen created
pes2ug23cs678@pes2ug23cs678:~$ kubectl get pods
NAME      READY   STATUS        RESTARTS   AGE
citizen   0/1     ContainerCreating   0          11s
pes2ug23cs678@pes2ug23cs678:~$ kubectl describe pod citizen
Name:           citizen
Namespace:      pes2ug23cs678-alpha
Priority:       0
Service Account: default
Node:           minikube/192.168.49.2
Start Time:     Tue, 10 Feb 2026 20:42:30 +0530
Labels:         run=citizen
Annotations:    <none>
Status:         Pending
IP:
IPs:           <none>
Containers:
  citizen:
    Container ID:   docker://c4a2a2f3-4a2d-4a2d-8a2d-4a2d4a2d4a2d
    Image:          nginx
    Image ID:       docker://nginx:latest
    Port:          <none>
    Host Port:     <none>
    State:         Waiting
      Reason:      ContainerCreating
    Ready:         False
    Restart Count: 0
    Environment:   <none>
    Mounts:
      /var/run/secrets/kubernetes.io/serviceaccount from kube-api-access-52c74 (ro)
Conditions:
  Type          Status
  PodReadyToStartContainers  False
  Initialized   True
  Ready         False
  ContainersReady  False
  PodScheduled  True
Volumes:
  kube-api-access-52c74:
    Type:          Projected (a volume that contains injected data from multiple sources)
    TokenExpirationSeconds: 3607
    ConfigMapName:   kube-root-ca.crt
    Optional:       false
    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  23s    default-scheduler  Successfully assigned pes2ug23cs678-alpha/citizen to minikube
  Normal    Pulling    22s    kubelet            spec.containers{citizen}: Pulling image "nginx"

```

SSN3:-

```

pes2ug23cs678@pes2ug23cs678:~$ kubectl get pods -n pes2ug23cs678-alpha -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     1/1     Running      0          5s
temp     1/1     Terminating   0          10s
temp     1/1     Terminating   0          10s
temp     0/1     Completed    0          11s
temp     0/1     Completed    0          12s
temp     0/1     Completed    0          12s
temp     0/1     Completed    0          12s

```

SSN4:-

```
pes2ug23cs678@pes2ug23cs678:~$ kubectl logs citizen -n pes2ug23cs678-alpha
/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/
/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
2026/02/10 15:19:04 [notice] 1#1: using the "epoll" event method
2026/02/10 15:19:04 [notice] 1#1: nginx/1.29.5
2026/02/10 15:19:04 [notice] 1#1: built by gcc 14.2.0 (Debian 14.2.0-19)
2026/02/10 15:19:04 [notice] 1#1: OS: Linux 6.8.0-94-generic
2026/02/10 15:19:04 [notice] 1#1: getrlimit(RLIMIT_NOFILE): 1048576:1048576
2026/02/10 15:19:04 [notice] 1#1: start worker processes
2026/02/10 15:19:04 [notice] 1#1: start worker process 29
2026/02/10 15:19:04 [notice] 1#1: start worker process 30
2026/02/10 15:19:04 [notice] 1#1: start worker process 31
2026/02/10 15:19:04 [notice] 1#1: start worker process 32
2026/02/10 15:19:04 [notice] 1#1: start worker process 33
2026/02/10 15:19:04 [notice] 1#1: start worker process 34
2026/02/10 15:19:04 [notice] 1#1: start worker process 35
2026/02/10 15:19:04 [notice] 1#1: start worker process 36
```

SSN5:-

```
pes2ug23cs678@pes2ug23cs678: $ kubectl run broken \ --image=busybox \ --restart=Never \ --command -- sh -c "echo 'CRASH: something went wrong' >&2; exit 1"
pod/broken created
pes2ug23cs678@pes2ug23cs678: $ kubectl logs broken
```

SSN6:-

```
pes2ug23cs678@pes2ug23cs678:~$ kubectl create deployment pes2ug23cs678 --image=nginx
deployment.apps/pes2ug23cs678 created
pes2ug23cs678@pes2ug23cs678:~$ kubectl get deployments -n pes2ug23cs678-alpha
NAME          READY   UP-TO-DATE   AVAILABLE   AGE
pes2ug23cs678  1/1     1           1           22s
pes2ug23cs678@pes2ug23cs678:~$ kubectl get pods -n pes2ug23cs678-alpha
NAME          READY   STATUS      RESTARTS   AGE
broken        0/1     ContainerCannotRun   0          3m36s
citizen       1/1     Running     0          4m44s
pes2ug23cs678-5d8cfdc5f9-tbshm  1/1     Running     0          38s
```

SSN7:-

```

pes2ug23cs678@pes2ug23cs678:~$ kubectl scale deployment pes2ug23cs678 --replicas=5
deployment.apps/pes2ug23cs678 scaled
pes2ug23cs678@pes2ug23cs678:~$ kubectl get pods
NAME READY STATUS RESTARTS AGE
broken 0/1 ContainerCannotRun 0 5m6s
citizen 1/1 Running 0 6m14s
pes2ug23cs678-5d8cfdc5f9-4gqhd 1/1 Running 0 5s
pes2ug23cs678-5d8cfdc5f9-7hvtk 0/1 ContainerCreating 0 5s
pes2ug23cs678-5d8cfdc5f9-bfjgn 0/1 ContainerCreating 0 5s
pes2ug23cs678-5d8cfdc5f9-q4qtf 0/1 ContainerCreating 0 5s
pes2ug23cs678-5d8cfdc5f9-tbshm 1/1 Running 0 2m8s
pes2ug23cs678@pes2ug23cs678:~$ kubectl scale deployment pes2ug23cs678 --replicas=3
deployment.apps/pes2ug23cs678 scaled
pes2ug23cs678@pes2ug23cs678:~$ kubectl get pods
NAME READY STATUS RESTARTS AGE
broken 0/1 ContainerCannotRun 0 5m36s
citizen 1/1 Running 0 6m44s
pes2ug23cs678-5d8cfdc5f9-4gqhd 1/1 Running 0 35s
pes2ug23cs678-5d8cfdc5f9-q4qtf 1/1 Running 0 35s
pes2ug23cs678-5d8cfdc5f9-tbshm 1/1 Running 0 2m38s

```

SSN8:-

```

pes2ug23cs678@pes2ug23cs678:~$ kubectl get rs,po
NAME DESIRED CURRENT READY AGE
replicaset.apps/pes2ug23cs678-5d8cfdc5f9 3 3 3 4m2s

NAME READY STATUS RESTARTS AGE
pod/broken 0/1 ContainerCannotRun 0 7m
pod/citizen 1/1 Running 0 8m8s
pod/pes2ug23cs678-5d8cfdc5f9-4gqhd 1/1 Running 0 119s
pod/pes2ug23cs678-5d8cfdc5f9-q4qtf 1/1 Running 0 119s
pod/pes2ug23cs678-5d8cfdc5f9-tbshm 1/1 Running 0 4m2s
pes2ug23cs678@pes2ug23cs678:~$ kubectl set image deployment/pes2ug23cs678 \nginx=nginx:1.25
deployment.apps/pes2ug23cs678 image updated
pes2ug23cs678@pes2ug23cs678:~$ kubectl get rs,po
NAME DESIRED CURRENT READY AGE
replicaset.apps/pes2ug23cs678-5d8cfdc5f9 3 3 3 4m37s
replicaset.apps/pes2ug23cs678-6986956ff5 1 1 0 3s

NAME READY STATUS RESTARTS AGE
pod/broken 0/1 ContainerCannotRun 0 7m35s
pod/citizen 1/1 Running 0 8m43s
pod/pes2ug23cs678-5d8cfdc5f9-4gqhd 1/1 Running 0 2m34s
pod/pes2ug23cs678-5d8cfdc5f9-q4qtf 1/1 Running 0 2m34s
pod/pes2ug23cs678-5d8cfdc5f9-tbshm 1/1 Running 0 4m37s
pod/pes2ug23cs678-6986956ff5-wtqpn 0/1 ContainerCreating 0 3s

```

SSN9:-

```

pes2ug23cs678@pes2ug23cs678:~$ kubectl get rs,po
NAME                                DESIRED   CURRENT   READY   AGE
replicaset.apps/pes2ug23cs678-5d8cfdc5f9   3         3         3      4m37s
replicaset.apps/pes2ug23cs678-6986956ff5   1         1         0      3s

NAME                               READY   STATUS            RESTARTS   AGE
pod/broken                         0/1    ContainerCannotRun   0          7m35s
pod/citizen                         1/1    Running           0          8m43s
pod/pes2ug23cs678-5d8cfdc5f9-4gqhd   1/1    Running           0          2m34s
pod/pes2ug23cs678-5d8cfdc5f9-q4qtf   1/1    Running           0          2m34s
pod/pes2ug23cs678-5d8cfdc5f9-tbshm   1/1    Running           0          4m37s
pod/pes2ug23cs678-6986956ff5-wtgpn   0/1    ContainerCreating   0          3s
pes2ug23cs678@pes2ug23cs678:~$ kubectl rollout undo deployment/pes2ug23cs678
deployment.apps/pes2ug23cs678 rolled back
pes2ug23cs678@pes2ug23cs678:~$ kubectl rollout history deployment pes2ug23cs678
deployment.apps/pes2ug23cs678
REVISION  CHANGE-CAUSE
2        <none>
3        <none>

pes2ug23cs678@pes2ug23cs678:~$ kubectl rollout history deployment pes2ug23cs678 --revision=2
deployment.apps/pes2ug23cs678 with revision #2
Pod Template:
  Labels:      app=pes2ug23cs678
                pod-template-hash=6986956ff5
  Containers:
    nginx:
      Image:      nginx:1.25
      Port:       <none>
      Host Port: <none>
      Environment: <none>
      Mounts:     <none>
      Volumes:    <none>
      Node-Selectors: <none>
      Tolerations: <none>

pes2ug23cs678@pes2ug23cs678:~$ kubectl rollout history deployment pes2ug23cs678 --revision=3
deployment.apps/pes2ug23cs678 with revision #3
Pod Template:
  Labels:      app=pes2ug23cs678
                pod-template-hash=5d8cfdc5f9
  Containers:
    nginx:
      Image:      nginx
      Port:       <none>
      Host Port: <none>
      Environment: <none>
      Mounts:     <none>
      Volumes:    <none>
      Node-Selectors: <none>
      Tolerations: <none>

```

SSN10:-

```

pes2ug23cs678@pes2ug23cs678:~/PES2UG23CS678$ kubectl apply -f nginx-pes2ug23cs678.yaml -n pes2ug23cs678-beta
deployment.apps/nginx-pes2ug23cs678 created
pes2ug23cs678@pes2ug23cs678:~/PES2UG23CS678$ kubectl config set-context --current --namespace=pes2ug23cs678-beta
Context "minikube" modified.
pes2ug23cs678@pes2ug23cs678:~/PES2UG23CS678$ kubectl get deployments
No resources found in namespace=pes2ug23cs678-beta namespace.
pes2ug23cs678@pes2ug23cs678:~/PES2UG23CS678$ kubectl get deployments -n pes2ug23cs678-beta
NAME          READY   UP-TO-DATE   AVAILABLE   AGE
nginx-pes2ug23cs678   0/3     3           0          77s

```

SSN11:-

```

pes2ug23cs678@pes2ug23cs678:~/PES2UG23CS678$ kubectl apply -f pes2ug23cs678-service.yaml
service/pes2ug23cs678-service created
pes2ug23cs678@pes2ug23cs678:~/PES2UG23CS678$ kubectl get services
No resources found in amespace=pes2ug23cs678-beta namespace.
pes2ug23cs678@pes2ug23cs678:~/PES2UG23CS678$ kubectl get services -n pes2ug23cs678-beta
NAME           TYPE      CLUSTER-IP    EXTERNAL-IP   PORT(S)    AGE
pes2ug23cs678-service   ClusterIP  10.102.58.232 <none>        80/TCP     28s
pes2ug23cs678@pes2ug23cs678:~/PES2UG23CS678$ kubectl describe service pes2ug23cs678-service
Error from server (NotFound): namespaces "amespace=pes2ug23cs678-beta" not found
pes2ug23cs678@pes2ug23cs678:~/PES2UG23CS678$ gedit pes2ug23cs678-service.yaml
pes2ug23cs678@pes2ug23cs678:~/PES2UG23CS678$ gedit pes2ug23cs678-service -n pes2ug23cs678-beta
Unknown option -n
pes2ug23cs678@pes2ug23cs678:~/PES2UG23CS678$ kubectl describe service pes2ug23cs678-service -n pes2ug23cs678-beta
Name:           pes2ug23cs678-service
Namespace:      pes2ug23cs678-beta
Labels:         <none>
Annotations:   <none>
Selector:       app=nginx
Type:          ClusterIP
IP Family Policy: SingleStack
IP Families:   IPv4
IP:             10.102.58.232
IPs:            10.102.58.232
Port:           <unset>  80/TCP
TargetPort:     80/TCP
Endpoints:     80/TCP
Session Affinity: None
Internal Traffic Policy: Cluster
Events:        <none>
pes2ug23cs678@pes2ug23cs678:~/PES2UG23CS678$ kubectl get endpoints pes2ug23cs678-service -n pes2ug23cs678-beta
Warning: v1 Endpoints is deprecated in v1.33+; use discovery.k8s.io/v1 EndpointSlice
NAME           ENDPOINTS   AGE
pes2ug23cs678-service   2m43s

```

SSN12:-

```

pes2ug23cs678@pes2ug23cs678:~/PES2UG23CS678$ kubectl delete pod -l app=nginx
No resources found
pes2ug23cs678@pes2ug23cs678:~/PES2UG23CS678$ kubectl get endpoints pes2ug23cs678-service
Warning: v1 Endpoints is deprecated in v1.33+; use discovery.k8s.io/v1 EndpointSlice
Error from server (NotFound): namespaces "amespace=pes2ug23cs678-beta" not found
pes2ug23cs678@pes2ug23cs678:~/PES2UG23CS678$ kubectl delete pod -l app=nginx -n pes2ug23cs678-beta
pod "nginx-pes2ug23cs678-64858585-qp8pk" deleted from pes2ug23cs678-beta namespace
pod "nginx-pes2ug23cs678-64858585-t895g" deleted from pes2ug23cs678-beta namespace
pod "nginx-pes2ug23cs678-64858585-xajnx" deleted from pes2ug23cs678-beta namespace
pes2ug23cs678@pes2ug23cs678:~/PES2UG23CS678$ kubectl get endpoints pes2ug23cs678-service -n pes2ug23cs678-beta
Warning: v1 Endpoints is deprecated in v1.33+; use discovery.k8s.io/v1 EndpointSlice
NAME           ENDPOINTS   AGE
pes2ug23cs678-service   4m42s
pes2ug23cs678@pes2ug23cs678:~/PES2UG23CS678$ kubectl describe service pes2ug23cs678-service -n pes2ug23cs678-beta
Name:           pes2ug23cs678-service
Namespace:      pes2ug23cs678-beta
Labels:         <none>
Annotations:   <none>
Selector:       app=nginx
Type:          ClusterIP
IP Family Policy: SingleStack
IP Families:   IPv4
IP:             10.102.58.232
IPs:            10.102.58.232
Port:           <unset>  80/TCP
TargetPort:     80/TCP
Endpoints:     80/TCP
Session Affinity: None
Internal Traffic Policy: Cluster
Events:        <none>

```

SSN13:-

```

pes2ug23cs678@pes2ug23cs678:~/PES2UG23CS678$ kubectl delete pod -l app=nginx -n pes2ug23cs678-beta
pod "nginx-pes2ug23cs678-64858585-gp8pk" deleted from pes2ug23cs678-beta namespace
pod "nginx-pes2ug23cs678-64858585-t895g" deleted from pes2ug23cs678-beta namespace
pod "nginx-pes2ug23cs678-64858585-x4jnx" deleted from pes2ug23cs678-beta namespace
pes2ug23cs678@pes2ug23cs678:~/PES2UG23CS678$ kubectl get endpoints pes2ug23cs678-service -n pes2ug23cs678-beta
Warning: v1 Endpoints is deprecated in v1.33+; use discovery.k8s.io/v1 EndpointSlice
NAME           ENDPOINTS   AGE
pes2ug23cs678-service   4m42s

pes2ug23cs678@pes2ug23cs678:~/PES2UG23CS678$ kubectl describe service pes2ug23cs678-service -n pes2ug23cs678-beta
Name:           pes2ug23cs678-service
Namespace:      pes2ug23cs678-beta
Labels:         <none>
Annotations:   <none>
Selector:       app=nginx
Type:          ClusterIP
IP Family Policy: SingleStack
IP Families:   IPv4
IP:            10.102.58.232
IPs:           10.102.58.232
Port:          <unset>  80/TCP
TargetPort:    80/TCP
Endpoints:     None
Session Affinity: None
Internal Traffic Policy: Cluster
Events:        <none>

```

SSN14:-

```

pes2ug23cs678@pes2ug23cs678:~$ kubectl delete namespace pes2ug23cs678-alpha
namespace "pes2ug23cs678-alpha" deleted
pes2ug23cs678@pes2ug23cs678:~$ kubectl delete namespace pes2ug23cs678-beta
namespace "pes2ug23cs678-beta" deleted
pes2ug23cs678@pes2ug23cs678:~$ kubectl get ns
NAME      STATUS   AGE
default   Active   50m
kube-node-lease Active   50m
kube-public  Active   50m
kube-system Active   50m

```