

PES2UG23CS678_VarunNamboodiri

_Lab5

Name: Varun Namboodiri

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:        <none>
IPs:       <none>
Containers:
  citizen:
    Container ID:
    Image:        nginx
    Image ID:
    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-wtgn      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 mginx-pes2ug23cs678.yaml -n pes2ug23cs678-beta
deployment.apps/mginx-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
mginx-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:                           <none>
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 "mginx-pes2ug23cs678-64858585-gp8pk" deleted from pes2ug23cs678-beta namespace
pod "mginx-pes2ug23cs678-64858585-t895g" deleted from pes2ug23cs678-beta namespace
pod "mginx-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>

```

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

```