

# Create user In k8s

## 1. Generate certificates for the user.

```
root@FARDIN:/mnt/f/k8s_security# openssl genpkey -out fardin.key -algorithm Ed25519
root@FARDIN:/mnt/f/k8s_security# cat fardin.key
-----BEGIN PRIVATE KEY-----
MC4CAQAwBQYDK2VwBCIEIMKzGLPYp18YoQReTGCsqLRwiU/zMjbsTSxBQvCAJFaU
-----END PRIVATE KEY-----
```

```
root@FARDIN:/mnt/f/k8s_security# openssl req -new -key fardin.key -out fardin.csr -subj "/CN=fardin,/O=edit"
root@FARDIN:/mnt/f/k8s_security# ll
total 0
drwxrwxrwx 1 root root 512 Feb 29 11:32 ./
drwxrwxrwx 1 root root 512 Feb 29 11:12 ../
-rwxrwxrwx 1 root root 294 Feb 29 11:32 fardin.csr*
-rwxrwxrwx 1 root root 119 Feb 29 11:12 fardin.key*
```

## 2.Create a certificate signing request (CSR).

```
root@FARDIN:/mnt/f/k8s_security# cat fardin.csr | base64 | tr -d "\n"
LS0tLS1CRUdJTiBDRVJUSUZJQ0FURSBzRVFVRVNVNULS0tLS0KTU1HZ01GUUNBUUF3SVRFU1BNEdBMVVFQXd3SFptRnlaR2x1TERFTk1Bc0dBMVVFQ2d3RVpXUnBkREFxTUUVR
wpBeXRsY0FNaEFNVnR4c0V6SXhjVXF5REJ0NVJib1RyYjdvYWRDTnhBbGZVMC9mVXBFaGRvb0FBd0JRWURLMLZ3CkEwRUFsOHA0Y0haRE9zenVLUUtIQdTdHR2N1RkR1JDSm
ZUWU8yWUzbyVYxVC8yOENENjZKRmImZmZ4WjdSYm0KdEE3cHlqSituZFLZQjBQTVAvQ3I2RGLKREE9PQotLS0tLUVORCBDRVJUSUZJQ0FURSBzRVFVRVNVNULS0tLS0Kroot@FA
```

```
root@FARDIN:/mnt/f/k8s_security# vim user_cert.yaml
root@FARDIN:/mnt/f/k8s_security# ll
total 1
drwxrwxrwx 1 root root 512 Feb 29 11:36 ./
drwxrwxrwx 1 root root 512 Feb 29 11:12 ../
-rwxrwxrwx 1 root root 294 Feb 29 11:32 fardin.csr*
-rwxrwxrwx 1 root root 119 Feb 29 11:12 fardin.key*
-rwxrwxrwx 1 root root 616 Feb 29 11:36 user_cert.yaml*
```

```
apiVersion: certificates.k8s.io/v1
kind: CertificateSigningRequest
metadata:
  name: fardin
spec:
  request: LS0tLS1CRUdJTiBDRVJUSUZJQ0FURSBzRVFVRVNVNULS0tLS0KTU1HZ01GUUNBUUF3SVRFU1BNEdBMVVFQXd3SFptRnlaR2x1TERFTk1Bc0dBMVVFQ2d3RVpXUnBkREFxTUUVR
BkREFxTUUVRwpBeXRsY0FNaEFNVnR4c0V6SXhjVXF5REJ0NVJib1RyYjdvYWRDTnhBbGZVMC9mVXBFaGRvb0FBd0JRWURLMLZ3CkEwRUFsOHA0Y0haRE9zenVLUUtIQdTdHR
2N1RkR1JDSmZUWU8yWUzbyVYxVC8yOENENjZKRmImZmZ4WjdSYm0KdEE3cHlqSituZFLZQjBQTVAvQ3I2RGLKREE9PQotLS0tLUVORCBDRVJUSUZJQ0FURSBzRVFVRVNVNULS0t
LS0K
  signerName: kubernetes.io/kube-apiserver-client
  expirationSeconds: 86400 # one day
  usages:
    - client auth
user_cert.yaml (END)
```

## 3. Sign the certificate using the cluster certificate authority.

```
root@FARDIN:/mnt/f/k8s_security# kaf user_cert.yaml
certificatesigningrequest.certificates.k8s.io/fardin created
root@FARDIN:/mnt/f/k8s_security# kubectl certificate approve fardin
certificatesigningrequest.certificates.k8s.io/fardin approved
```

#### 4. Create a configuration specific to the user.

```
root@FARDIN:/mnt/f/k8s_security# cp /mnt/f/k8sCluster_kubeadm_terraform/brave-elephant.conf fardin-kube-config
root@FARDIN:/mnt/f/k8s_security# ll
total 13
drwxrwxrwx 1 root root 512 Feb 29 11:40 ./
drwxrwxrwx 1 root root 512 Feb 29 11:12 ../
-rwxrwxrwx 1 root root 5644 Feb 29 11:40 fardin-kube-config*
-rwxrwxrwx 1 root root 769 Feb 29 11:39 fardin.crt*
-rwxrwxrwx 1 root root 294 Feb 29 11:32 fardin.csr*
-rwxrwxrwx 1 root root 119 Feb 29 11:12 fardin.key*
-rwxrwxrwx 1 root root 616 Feb 29 11:36 user_cert.vaml*
```

## 5. Add RBAC rules for the user or their group.

## Create a Role for John to manage pods in the default namespace:

```
root@FARDIN:~# kgn
Unable to connect to the server: dial tcp: lookup 0412A72FEB560AB29394EEAB1C4CA9E2.gr7.us-east-1.eks.amazonaws.com on 172.31.240.1:53: no such host
root@FARDIN:~#
```

```
root@FARDIN:/mnt/f/k8s_security# realpath fardin-kube-config
/mnt/f/k8s_security/fardin-kube-config
root@FARDIN:/mnt/f/k8s_security# export KUBECONFIG=/mnt/f/k8s_security/fardin-kube-config
root@FARDIN:/mnt/f/k8s_security# kgn
```

NAME	STATUS	ROLES	AGE	VERSION
master	Ready	control-plane	62m	v1.28.2
worker-0	Ready	<none>	61m	v1.28.2
worker-1	Ready	<none>	61m	v1.28.2

```
root@FARDIN:/mnt/f/k8s_security# mkdir pod
root@FARDIN:/mnt/f/k8s_security# cd pod/
root@FARDIN:/mnt/f/k8s_security/pod# vim pod.yaml
root@FARDIN:/mnt/f/k8s_security/pod# kaf .
pod/nginx created
root@FARDIN:/mnt/f/k8s_security/pod# kgp
```

NAME	READY	STATUS	RESTARTS	AGE
nginx	0/1	ContainerCreating	0	3s

```
root@FARDIN:/mnt/f/k8s_security/pod# kgp
```

NAME	READY	STATUS	RESTARTS	AGE
nginx	1/1	Running	0	5s

```
root@FARDIN:/mnt/f/k8s_security/pod# █
```