

Initialize database on Kubernetes

The purpose of this tutorial is to show how to initialize a **MariaDB** database required for Soffid IAM installation on Kubernetes.

MySQL/MariaDB

To initialize MariaDB on Kubernetes first of all you must create a Persistent Volume. Storage in the cluster will be provisioned using Storage Classes.

```
apiVersion: v1
kind: PersistentVolume
metadata:
  name: local-pv
spec:
  capacity:
    storage: 10Gi
  accessModes:
    - ReadWriteOnce
  persistentVolumeReclaimPolicy: Retain
  storageClassName: local-storage
  local:
    path: /home/ulocal/kubernetes-disk
  nodeAffinity:
    required:
      nodeSelectorTerms:
        - matchExpressions:
            - key: kubernetes.io/hostname
              operator: In
          values:
            - soffid1234
```

```
apiVersion: v1
kind: PersistentVolumeClaim
metadata:
  name: mariadb-claim
spec:
  storageClassName: local-storage
  accessModes:
    - ReadWriteOnce
resources:
  requests:
    storage: 5Gi
```

Path `"/home/ulocal/kubernetes-disk"` must be exists.

Then you must define the MariaDB deployment:

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: mariadb
labels:
  app: soffid
  instance: "Soffid"
  type: database
spec:
  strategy:
    rollingUpdate:
      maxSurge: 0
      maxUnavailable: 1
    type: RollingUpdate
  replicas: 1
  selector:
    matchLabels:
      app: soffid
      instance: "Soffid"
      type: database
  template:
    metadata:
      labels:
```

app: soffid
instance: "Soffid"
type: database

spec:

restartPolicy: Always

containers:

- name: mariadb
image: mariadb

resources:

limits:

memory: 2Gi

requests:

memory: 400Mi

args:

- "--max-allowed-packet=175M"
- "--innodb-log-file-size=256M"
- "--character-set-server=utf8"
- "--collation-server=utf8_bin"
- "--net-read-timeout=3600"
- "--net-write-timeout=3600"
- "--innodb-buffer-pool-size=100M"

ports:

- containerPort: 3306
name: db-port

env:

- name: MYSQL_ROOT_PASSWORD

valueFrom:

secretKeyRef:

name: mariadb

key: root_password

- name: MYSQL_USER

valueFrom:

secretKeyRef:

name: mariadb

key: username

- name: MYSQL_PASSWORD

valueFrom:

secretKeyRef:

name: mariadb

key: password

```
- name: MYSQL_DATABASE
  value: soffid
volumeMounts:
- name: mysql-persistent-storage
  mountPath: /var/lib/mysql

volumes:
- name: mysql-persistent-storage
  persistentVolumeClaim:
    claimName: mariadb-claim
---
apiVersion: v1
kind: Service
metadata:
  name: mariadb-service
  namespace: default
spec:
  clusterIP: None
  ports:
  - name: mariadb
    port: 3306
    protocol: TCP
    targetPort: 3306
  selector:
    app: soffid
    instance: "Soffid"
    type: database
  type: ClusterIP
```

Finally you must create resources in a cluster:

```
kubectl apply -f mariadb-pv-file.yaml
kubectl apply -f mariadb-deployment-file.yaml
```

Video Tutorial

MariaDB initialization in Kubernetes

<https://www.youtube.com/embed/F6p8JlurXs?rel=0>

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