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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