**StatefulSet With Sync Enabled, Automatic Failover Measures , Data Persistence Enabled**

**Add Percona Helm repo**

helm repo add percona https://percona.github.io/percona-helm-charts/

helm repo update

**Create Namespace Webapps**

kubectl create ns webapps

**Setup Storage Class For The Project**

# StorageClass for AWS EBS

apiVersion: storage.k8s.io/v1

kind: StorageClass

metadata:

name: ebs-sc

provisioner: ebs.csi.aws.com

parameters:

type: gp3

fsType: ext4

reclaimPolicy: Retain

volumeBindingMode: WaitForFirstConsumer

**Install Required CRDs (MANDATORY)**

kubectl apply -f <https://raw.githubusercontent.com/percona/percona-xtradb-cluster-operator/main/deploy/crd.yaml>

kubectl apply -f <https://raw.githubusercontent.com/percona/percona-xtradb-cluster-operator/main/deploy/bundle.yaml> -n webapps

**Install the Percona Operator (MANDATORY)**

Run the following:

**🔹 Step 1: Install Operator (Helm Method)**

helm install percona-operator percona/pxc-operator --namespace webapps

This installs the Kubernetes **controller/operator** which watches for PerconaXtraDBCluster resources and spawns the actual pods.

**🔹 Step 2: Verify Operator Is Running**

kubectl get pods -n webapps

**Create Values Yaml For Percona DB Cluster**

---

crVersion: 1.10.0

secrets:

name: my-db-secrets

ssl:

enabled: false

pxc:

size: 3

image:

repository: percona/percona-xtradb-cluster

tag: 8.0.41-32.1

persistence:

enabled: true

accessMode: ReadWriteOnce

storageClass: ebs-sc

size: 5Gi

haproxy:

enabled: true

proxysql:

enabled: false

logcollector:

enabled: false

backup:

enabled: false

**# Install Percona DB Cluster Using Helm**

helm install percona-db percona/pxc-db -n webapps -f pxc-values.yaml

**# Get Mysql Root Password**

ROOT\_PASSWORD=$(kubectl -n webapps get secret percona-db-pxc-db-secrets -o jsonpath="{.data.root}" | base64 --decode)

echo $ROOT\_PASSWORD

kubectl exec -it <PODNAME> -n webapps – bash

mysql -u root -p

CREATE DATABASE bankappdb;

CREATE USER 'appuser'@'%' IDENTIFIED BY 'appuser123';

GRANT ALL PRIVILEGES ON bankappdb.\* TO 'appuser'@'%';

FLUSH PRIVILEGES;

**STATUS CHECK**

#!/bin/bash

NAMESPACE="webapps"

PODS=("percona-db-pxc-db-pxc-0" "percona-db-pxc-db-pxc-1" "percona-db-pxc-db-pxc-2")

# Get root password

ROOT\_PASSWORD=$(kubectl get secret percona-db-pxc-db-secrets -n $NAMESPACE -o jsonpath="{.data.root}" | base64 --decode)

for POD in "${PODS[@]}"; do

echo "🔹 Checking: $POD"

kubectl exec -n $NAMESPACE -i $POD -c pxc -- mysql -uroot -p"$ROOT\_PASSWORD" -e "

SELECT 'Hostname' AS Metric, @@hostname AS Value;

SHOW STATUS LIKE 'wsrep\_cluster\_status';

SHOW STATUS LIKE 'wsrep\_cluster\_size';

SHOW STATUS LIKE 'wsrep\_cluster\_state\_uuid';

SHOW STATUS LIKE 'wsrep\_local\_index';

SHOW STATUS LIKE 'wsrep\_local\_state\_comment';

"

echo "--------------------------------------------------"

done

**BANKAPP YAML MANIFEST**

---

apiVersion: v1

kind: Secret

metadata:

name: mysql-secret

namespace: webapps

type: Opaque

stringData:

MYSQL\_USERNAME: appuser

MYSQL\_PASSWORD: appuser123

---

apiVersion: apps/v1

kind: Deployment

metadata:

name: bankapp

namespace: webapps

spec:

replicas: 1

selector:

matchLabels:

app: bankapp

template:

metadata:

labels:

app: bankapp

spec:

containers:

- name: bankapp

image: adijaiswal/bankapp:v6

ports:

- containerPort: 8080

env:

- name: SPRING\_DATASOURCE\_URL

value: jdbc:mysql://percona-db-pxc-db-haproxy.webapps.svc.cluster.local:3306/bankappdb?allowPublicKeyRetrieval=true&useSSL=false&serverTimezone=UTC

- name: SPRING\_DATASOURCE\_USERNAME

valueFrom:

secretKeyRef:

name: mysql-secret

key: MYSQL\_USERNAME

- name: SPRING\_DATASOURCE\_PASSWORD

valueFrom:

secretKeyRef:

name: mysql-secret

key: MYSQL\_PASSWORD

---

apiVersion: v1

kind: Service

metadata:

name: bankapp-service

namespace: webapps

spec:

type: LoadBalancer

selector:

app: bankapp

ports:

- port: 80

targetPort: 8080

