Kubernetes Advanced Assessment

1.Create an helm chart for mysql deployment. we are frequently updating the mysql image version using values.yml do the same

Creating heml charts for mysql

```
apiVersion: v2
name: mysql
description: A Helm chart for mysql
type: application
version: 0.1.0
appVersion: "1.1.0"
```

values.yaml

```
image: mysql:5.6
```

Deploying the helm chart

```
root@ansible:~/new/kubernetes-advanced-assessment/mysql# helm install mysql .
NAME: mysql
LAST DEPLOYED: Sun Jan 15 09:09:28 2023
NAMESPACE: default
STATUS: deployed
REVISION: 1
TEST SUITE: None
root@ansible:~/new/kubernetes-advanced-assessment/mysql# kubectl get pods
                                  READY
                                          STATUS
                                                                   AGE
                                                     RESTARTS
details-v1-5ffd6b64f7-s4xxt
                                                    4 (64s ago)
                                                                   2d23h
                                  2/2
                                          Running
my-nginx-f44495498-9h2k9
                                  1/1
                                                     3 (64s ago)
                                                                   11d
                                          Running
mysql-df7c58587-bhvt8
                                  0/2
                                          Pending
                                                                   13s
productpage-v1-979d4d9fc-llsd6
                                                    4 (64s ago)
                                  1/2
                                          Running
                                                                   2d23h
ratings-v1-5f9699cfdf-4rczf
                                  1/2
                                          Running
                                                    4 (64s ago)
                                                                   2d23h
                                  2/2
                                                    4 (64s ago)
reviews-v1-569db879f5-gn86n
                                          Running
                                                                   2d23h
reviews-v2-65c4dc6fdc-vdz9b
                                  1/2
                                          Running
                                                    4 (64s ago)
                                                                   2d23h
reviews-v3-c9c4fb987-9d6f6
                                  2/2
                                          Running
                                                     4 (64s ago)
                                                                   2d23h
root@ansible:~/new/kubernetes-advanced-assessment/mysql# kubectl get svc
                                                           PORT(S)
NAME
              TYPE
                          CLUSTER-IP
                                            EXTERNAL-IP
                                                                           AGE
                                                           9080/TCP
details
              ClusterIP
                          10.103.202.143
                                                                           2d23h
                                            <none>
              ClusterIP
                                                           443/TCP
                                                                          11d
kubernetes
                          10.96.0.1
                                            <none>
              NodePort
                          10.111.207.215
                                                                           11d
my-nginx
                                            <none>
                                                           80:30972/TCP
mysql
                                                                           20s
              ClusterIP
                          None
                                            <none>
                                                           3306/TCP
```

Updating image: helm upgrade mysql . --set image=mysql:8.0

2. Create another helm chart for frontend deployment. we are frequently updating the frontend service values.yml do the same. Try with load balancer nodeport and cluster ip

Creating helm chart for frontend

```
apiVersion: v2
name: frontend
description: A Helm chart for frontend app
type: application
version: 0.1.0
appVersion: "1.1.0"
```

values.yaml

```
service: LoadBalancer
```

Deploying charts

```
root@ansible:~/new/kubernetes-advanced-assessment/mysql# cd ..
root@ansible:~/new/kubernetes-advanced-assessment# cd frontend/
root@ansible:~/new/kubernetes-advanced-assessment/frontend# helm install frontend .
NAME: frontend
LAST DEPLOYED: Sun Jan 15 09:11:12 2023
NAMESPACE: default
STATUS: deployed
REVISION: 1
TEST SUITE: None
root@ansible:~/new/kubernetes-advanced-assessment/frontend#
root@ansible:~/new/kubernetes-advanced-assessment/frontend# kubectl get pods
                                   READY
                                            STATUS
                                                       RESTARTS
                                                                      AGE
details-v1-5ffd6b64f7-s4xxt
                                    2/2
                                            Running
                                                       4 (3m9s ago)
                                                                      2d23h
                                   1/1
my-nginx-f44495498-9h2k9
                                            Running
                                                       3 (3m9s ago)
                                                                      11d
                                   0/2
mysql-df7c58587-bhvt8
                                            Init:0/1
                                                                      2m18s
                                                       0
productpage-v1-979d4d9fc-llsd6
                                    2/2
                                            Running
                                                       4 (3m9s ago)
                                                                      2d23h
ratings-v1-5f9699cfdf-4rczf
                                    1/2
                                            Running
                                                       4 (3m9s ago)
                                                                      2d23h
reviews-v1-569db879f5-gn86n
                                    2/2
                                            Running
                                                       4 (3m9s ago)
                                                                      2d23h
                                    1/2
                                                       4 (3m9s ago)
reviews-v2-65c4dc6fdc-vdz9b
                                            Running
                                                                      2d23h
reviews-v3-c9c4fb987-9d6f6
                                                       4 (3m9s ago)
                                    2/2
                                                                      2d23h
                                            Running
usermgmt-webapp-5ddfc7d6d6-cwrrf
                                    0/2
                                            Pending
root@ansible:~/new/kubernetes-advanced-assessment/frontend# kubectl get svc
```

```
root@ansible:~/new/kubernetes-advanced-assessment/frontend# kubectl get svc
NAME
                           TYPE
                                          CLUSTER-IP
                                                             EXTERNAL-IP
                                                                            PORT(S)
                                                                                            AGE
details
                           ClusterIP
                                           10.103.202.143
                                                             <none>
                                                                            9080/TCP
                                                                                            2d23h
                           ClusterIP
kubernetes
                                           10.96.0.1
                                                             <none>
                                                                            443/TCP
                                                                                            11d
                           NodePort
                                           10.111.207.215
                                                                            80:30972/TCP
                                                                                            11d
my-nginx
                                                             <none>
                           ClusterIP
                                                                            3306/TCP
mysql
                                           None
                                                             <none>
                                                                                            10m
productpage
                           ClusterIP
                                           10.100.92.176
                                                             <none>
                                                                            9080/TCP
                                                                                            2d23h
                           ClusterIP
                                           10.109.248.40
                                                                            9080/TCP
                                                                                            2d23h
ratings
                                                             <none>
                                           10.96.95.19
10.100.36.33
                           ClusterIP
                                                             <none>
                                                                            9080/TCP
                                                                                            2d23h
reviews
                           LoadBalancer
                                                                            80:31771/TCP
                                                             <pending>
                                                                                            8m16s
usermgmt-webapp-service
```

Changing the service type to NodePort

```
root@ansible:~/new/kubernetes-advanced-assessment/fro
Release "frontend" has been upgraded. Happy Helming!
NAME: frontend
LAST DEPLOYED: Sun Jan 15 09:21:18 2023
  NAMESPACE: default
STATUS: deployed
    REVISION: 2
TEST SUITE: None
    REVISION: 2
TEST SUITE: None
root@ansible:~/new/kubernetes-advanced-assessment/frontend# kubectl get svc
root@ansible:~/new/kubectl get svc
root@a
                                                                                                                                                                    netes-advance
TYPE
ClusterIP
ClusterIP
NodePort
ClusterIP
ClusterIP
ClusterIP
ClusterIP
NodePort
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGE
2d23h
                                                                                                                                                                                                                                                        10.96.0.1
10.111.207.215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  443/TCP
80:30972/TCP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11d
11d
                                                                                                                                                                                                                                                                                                                                                                      <none>
    my-nginx
mysql
productpage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3306/TCP
9080/TCP
9080/TCP
9080/TCP
                                                                                                                                                                                                                                                        None
10.100.92.176
                                                                                                                                                                                                                                                                                                                                                                      <none>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12m
2d23h
                                                                                                                                                                                                                                                       10.109.248.40
10.96.95.19
10.100.36.33
     ratings
reviews
                                                                                                                                                                                                                                                                                                                                                                      <none>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2d23h
  reviews ClusterIP 10.96.95.19 <none> 9080/TCP 2d23h
usermgmt-webapp-service NodePort 10.100.36.33 <none> 80:31771/TCP 9m58s
root@ansible:~/new/kubernetes-advanced-assessment/frontend# helm list

NAME NAMESPACE REVISION UPDATED STATUS
frontend default 2 2023-01-15 09:21:18.874046152 +0000 UTC deployed
my-nginx default 5 2023-01-04 09:22:07.423893592 +0000 UTC deployed
mysql default 1 2023-01-15 09:09:28.84004778 +0000 UTC deployed
root@ansible:~/new/kubernetes-advanced-assessment/frontend# cd ...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CHART
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APP VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       frontend-0.1.0 1.1.0 my-nginx-0.2.0 1 mysql-0.1.0 1.1.0
       root@ansible:~/new/kubernetes-advanced-assessment# cd ..
```