Day11 容器进阶之Kubernetes 存储管理原理分析

1 打卡任务

作业：

1、部署一个statefulset应用，使用持久化卷，通过pvc声明所需的存储大小10G及访问模式为RWX。

Deployment的名称为< cce21days-app11-你的华为云id >

2、申请Istio公测权限，为后续课程提前开通公测权限

打卡：

将所用命令、创建的statefulset及pvc完整yaml截图上传

Istio公测审批截图

注意：本任务中创建的10G大小的EVS硬盘将产生使用费用，任务完成后尽快删除。

2 准备工作

1、 私有镜像仓库中已存在入门课程中的坦克大战镜像

2、 已拥有可运行的CCE集群

3 部署一个 statefulset 应用，使用持久化卷，通过 pvc 声明所需的存储大小 10G 及访问模式为 RWX

1、 登录day4已配置kubectl命令行的node节点

2、 PVC yaml文件如下所示(pvc.yaml)：

```
apiVersion: v1
```

```
kind: PersistentVolumeClaim

metadata:

  name: pvc-evs-auto-example

  namespace: default

  annotations:

    volume.beta.kubernetes.io/storage-class: sata

    volume.beta.kubernetes.io/storage-provisioner: flexvolume-

huawei.com/fuxivol

  labels:

    failure-domain.beta.kubernetes.io/region: cn-north-1

    failure-domain.beta.kubernetes.io/zone: cn-north-1a

spec:

  accessModes:

  - ReadWriteMany

  resources:

    requests:

      storage: 10Gi
```

statefulset的yaml文件如下(statefulset.yaml)：

```
apiVersion: apps/v1

kind: StatefulSet

metadata:

  name: cce21days-app11-huaweicloud

  namespace: default

spec:

  podManagementPolicy: OrderedReady

  replicas: 1

  revisionHistoryLimit: 10

  selector:
```

```
        matchLabels:

          app: cce21days-app11-huaweicloud

          failure-domain.beta.kubernetes.io/region: cn-north-1

          failure-domain.beta.kubernetes.io/zone: cn-north-1a

    template:

      metadata:

        labels:

          app: cce21days-app11-huaweicloud

          failure-domain.beta.kubernetes.io/region: cn-north-1

          failure-domain.beta.kubernetes.io/zone: cn-north-1a

      spec:

        affinity: {}

        containers:

        - image: 100.125.0.198:20202/xxxx/fc-tank:v1.1

          imagePullPolicy: IfNotPresent

          name: container-0

          resources: {}

          volumeMounts:

          - mountPath: /tmp

            name: pvc-evs-example

        dnsPolicy: ClusterFirst

        imagePullSecrets:

        - name: default-secret

        restartPolicy: Always

        schedulerName: default-scheduler

        securityContext: {}

        terminationGracePeriodSeconds: 30

        volumes:
```

```
        - name: pvc-evs-example

          persistentVolumeClaim:

            claimName: pvc-evs-auto-example

    updateStrategy:

      type: RollingUpdate
```

3、 创建命令如下：

kubectl create -f pvc.yaml

查看PVC状态：

kubectl get pvc

```
[root@cce-21days-cluster-98379 day11]# kubectl get pvc
NAME                   STATUS   VOLUME                                         CAPACITY   ACCESS MODES   STORAGECLASS   AGE
pvc-evs-auto-example   Bound    pvc-c2f1f5f8-e1bc-11e8-a260-fa163efe9363       10Gi       RWX            sata           34s
[root@cce-21days-cluster-98379 day11]#
```

创建**statefulset**:

kubectl create -f statefulset.yaml

查看**statefulset**状态：

kubectl get statefulset

kubectl get pods

```
[root@cce-21days-cluster-98379 day11]#
[root@cce-21days-cluster-98379 day11]# kubectl get statefulset
NAME                          DESIRED   CURRENT   AGE
cce21days-app11-huaweicloud   1         1         16s
[root@cce-21days-cluster-98379 day11]#
[root@cce-21days-cluster-98379 day11]# kubectl get pods
NAME                            READY   STATUS    RESTARTS   AGE
cce21days-app11-huaweicloud-0   1/1     Running   0          22s
[root@cce-21days-cluster-98379 day11]#
[root@cce-21days-cluster-98379 day11]#
```

4、 进入容器在挂载目录/tmp目录中写入数据，然后重启pod，再次查看挂载目录中的
数据：

kubectl exec cce21days-app11-huaweicloud-0 /bin/bash -ti

root@cce21days-app11-huaweicloud-0:/# **echo "this is a test" > /tmp/cce-test**

```
[root@cce-21days-cluster-98379 day11]#
[root@cce-21days-cluster-98379 day11]# kubectl exec cce21days-app11-huaweicloud-0 /bin/bash -ti
root@cce21days-app11-huaweicloud-0:/# echo "this is a test" > /tmp/cce-test
root@cce21days-app11-huaweicloud-0:/# ls -l /tmp/
total 20
-rw-r----- 1 root root    15 Nov  6 12:17 cce-test
drwxrwxrwx 2 root root 16384 Nov  6 12:10 lost+found
root@cce21days-app11-huaweicloud-0:/#
```
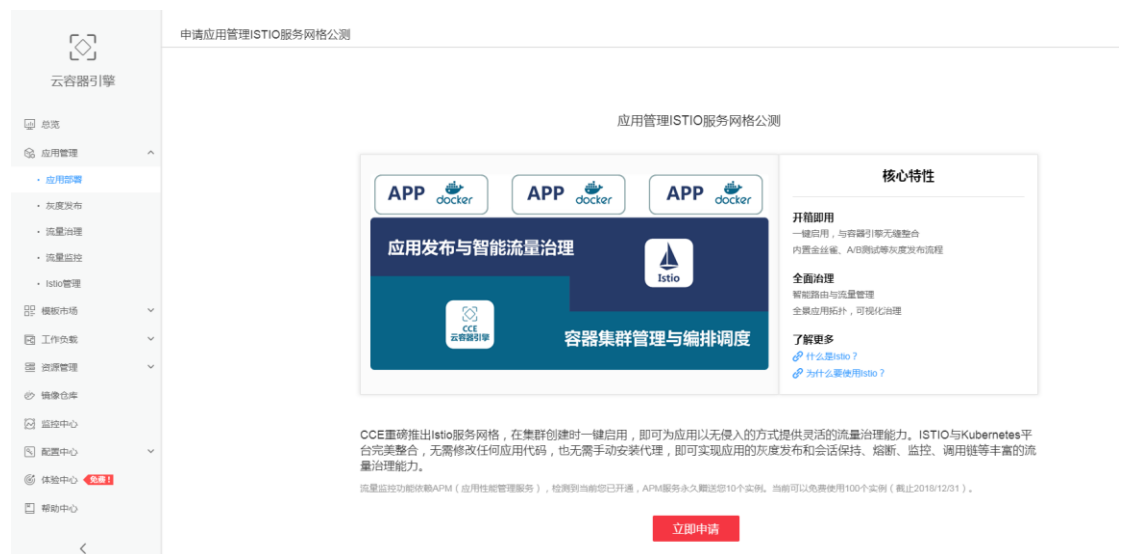
exit退出容器后重启pod:

kubectl delete pods cce21days-app11-huaweicloud-0

再次进入容器查看之前写入的数据：

kubectl exec cce21days-app11-huaweicloud-0 /bin/bash –ti

打卡截图如下：

```
cce21days-app11-huaweicloud-0   1/1       Running   0         2m
[root@cce-21days-cluster-98379 day11]# kubectl delete pods cce21days-app11-huaweicloud-0
pod "cce21days-app11-huaweicloud-0" deleted
[root@cce-21days-cluster-98379 day11]# kubectl get pods
NAME                            READY     STATUS    RESTARTS   AGE
cce21days-app11-huaweicloud-0   1/1       Running   0          41s
[root@cce-21days-cluster-98379 day11]#
[root@cce-21days-cluster-98379 day11]# kubectl exec cce21days-app11-huaweicloud-0 /bin/bash -ti
root@cce21days-app11-huaweicloud-0:/# ls -l /tmp
total 20
-rwxrwxrwx 1 root root    15 Nov  6 12:17 cce-test
drwxrwxrwx 2 root root 16384 Nov  6 12:10 lost+found
root@cce21days-app11-huaweicloud-0:/#
```

注意：完成任务后，请及时删除**pvc及statefulset**！

kubectl delete -f statefulset.yaml

kubectl delete -f pvc.yaml

4 开通 Istio 公测权限：

访问以下地址点击立即申请申请公测：

https://console.huaweicloud.com/cce2.0/?region=cn-north-1#/app/istio/istioPublicBeta

5 打卡截图