



Example Kubernetes StorageClasses for ONTAP AI Deployments

NetApp Solutions

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Example Kubernetes StorageClasses for ONTAP AI Deployments

Before you can use Trident to dynamically provision storage resources within your Kubernetes cluster, you must create one or more Kubernetes StorageClasses. The examples that follow represent different types of StorageClasses that you might want to create if you are deploying the NetApp AI Control Plane solution on an ONTAP AI pod. For more information about StorageClasses, see the [Trident documentation](#).

1. NetApp recommends creating a separate StorageClass for each FlexGroup-enabled Trident Backend that you created in the section [Example Trident Backends for ONTAP AI Deployments](#), step 1. These granular StorageClasses enable you to add NFS mounts that correspond to specific LIFs (the LIFs that you specified when you created the Trident Backends) as a particular Backend that is specified in the StorageClass spec file. The example commands that follow show the creation of two StorageClasses that correspond to the two example Backends that were created in the section [Example Trident Backends for ONTAP AI Deployments](#), step 1. For more information about StorageClasses, see the [Trident documentation](#).

So that a persistent volume isn't deleted when the corresponding PersistentVolumeClaim (PVC) is deleted, the following example uses a `reclaimPolicy` value of `Retain`. For more information about the `reclaimPolicy` field, see the official [Kubernetes documentation](#).

```

$ cat << EOF > ./storage-class-ontap-ai-flexgroups-retain-iface1.yaml
apiVersion: storage.k8s.io/v1
kind: StorageClass
metadata:
  name: ontap-ai-flexgroups-retain-iface1
provisioner: netapp.io/trident
parameters:
  backendType: "ontap-nas-flexgroup"
  storagePools: "ontap-ai-flexgroups-iface1:.*"
reclaimPolicy: Retain
EOF
$ kubectl create -f ./storage-class-ontap-ai-flexgroups-retain-
iface1.yaml
storageclass.storage.k8s.io/ontap-ai-flexgroups-retain-iface1 created
$ cat << EOF > ./storage-class-ontap-ai-flexgroups-retain-iface2.yaml
apiVersion: storage.k8s.io/v1
kind: StorageClass
metadata:
  name: ontap-ai-flexgroups-retain-iface2
provisioner: netapp.io/trident
parameters:
  backendType: "ontap-nas-flexgroup"
  storagePools: "ontap-ai-flexgroups-iface2:.*"
reclaimPolicy: Retain
EOF
$ kubectl create -f ./storage-class-ontap-ai-flexgroups-retain-
iface2.yaml
storageclass.storage.k8s.io/ontap-ai-flexgroups-retain-iface2 created
$ kubectl get storageclass

```

NAME	PROVISIONER	AGE
ontap-ai-flexgroups-retain-iface1	netapp.io/trident	0m
ontap-ai-flexgroups-retain-iface2	netapp.io/trident	0m

2. NetApp also recommends creating a StorageClass that corresponds to the FlexVol-enabled Trident Backend that you created in the section [Example Trident Backends for ONTAP AI Deployments](#), step 2. The example commands that follow show the creation of a single StorageClass for FlexVol volumes.

In the following example, a particular Backend is not specified in the StorageClass definition file because only one FlexVol-enabled Trident backend was created. When you use Kubernetes to administer volumes that use this StorageClass, Trident attempts to use any available backend that uses the `ontap-nas` driver.

```
$ cat << EOF > ./storage-class-ontap-ai-flexvols-retain.yaml
apiVersion: storage.k8s.io/v1
kind: StorageClass
metadata:
  name: ontap-ai-flexvols-retain
provisioner: netapp.io/trident
parameters:
  backendType: "ontap-nas"
reclaimPolicy: Retain
EOF
$ kubectl create -f ./storage-class-ontap-ai-flexvols-retain.yaml
storageclass.storage.k8s.io/ontap-ai-flexvols-retain created
$ kubectl get storageclass
```

NAME	PROVISIONER	AGE
ontap-ai-flexgroups-retain-iface1	netapp.io/trident	1m
ontap-ai-flexgroups-retain-iface2	netapp.io/trident	1m
ontap-ai-flexvols-retain	netapp.io/trident	0m

3. NetApp also recommends creating a generic StorageClass for FlexGroup volumes. The following example commands show the creation of a single generic StorageClass for FlexGroup volumes.

Note that a particular backend is not specified in the StorageClass definition file. Therefore, when you use Kubernetes to administer volumes that use this StorageClass, Trident attempts to use any available backend that uses the `ontap-nas-flexgroup` driver.

```
$ cat << EOF > ./storage-class-ontap-ai-flexgroups-retain.yaml
apiVersion: storage.k8s.io/v1
kind: StorageClass
metadata:
  name: ontap-ai-flexgroups-retain
provisioner: netapp.io/trident
parameters:
  backendType: "ontap-nas-flexgroup"
reclaimPolicy: Retain
EOF
$ kubectl create -f ./storage-class-ontap-ai-flexgroups-retain.yaml
storageclass.storage.k8s.io/ontap-ai-flexgroups-retain created
$ kubectl get storageclass
```

NAME	PROVISIONER	AGE
ontap-ai-flexgroups-retain	netapp.io/trident	0m
ontap-ai-flexgroups-retain-iface1	netapp.io/trident	2m
ontap-ai-flexgroups-retain-iface2	netapp.io/trident	2m
ontap-ai-flexvols-retain	netapp.io/trident	1m

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