Manage FabricPool mirrors

ONTAP 9

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Manage FabricPool mirrors overview

To ensure data is accessible in data stores in the event of a disaster, and to enable you to replace a data store, you can configure a FabricPool mirror by adding a second data store to synchronously tier data to two data stores . You can add a second data store to new or existing FabricPool configurations, monitor the mirror status, display FabricPool mirror details, promote a mirror, and remove a mirror. You must be running ONTAP 9.7 or later.

Create a FabricPool mirror

To create a FabricPool mirror, you attach two object stores to a single FabricPool. You can create a FabricPool mirror either by attaching a second object store to an existing, single object store FabricPool configuration, or you can create a new, single object store FabricPool configuration and then attach a second object store to it. You can also create FabricPool mirrors on MetroCluster configurations.

What you'll need

- You must have already created the two object stores using the `storage aggregate object-store config` command.
- If you are creating FabricPool mirrors on MetroCluster configurations:
  - You must have already set up and configured the MetroCluster
  - You must have created the object store configurations on the selected cluster.

    If you are creating FabricPool mirrors on both clusters in a MetroCluster configuration, you must have created object store configurations on both of the clusters.

  - If you are not using on premises object stores for MetroCluster configurations, you should ensure that one of the following scenarios exists:
    - Object stores are in different availability zones
    - Object stores are configured to keep copies of objects in multiple availability zones

      Setting up object stores for FabricPool in a MetroCluster configuration

About this task

The object store you use for the FabricPool mirror must be different from the primary object store.

The procedure for creating a FabricPool mirror is the same for both MetroCluster and non-MetroCluster configurations.

Steps

1. If you are not using an existing FabricPool configuration, create a new one by attaching an object store to an aggregate using the `storage aggregate object-store attach` command.

This example creates a new FabricPool by attaching an object store to an aggregate.

```
cluster1::> storage aggregate object-store attach -aggregate aggr1 -name
my-store-1
```

2. Attach a second object store to the aggregate using the `storage aggregate object-store mirror` command.

   This example attaches a second object store to an aggregate to create a FabricPool mirror.

```
cluster1::> storage aggregate object-store mirror -aggregate aggr1 -name
my-store-2
```

Monitor FabricPool mirror resync status

When you replace a primary object store with a mirror, you might have to wait for the mirror to resync with the primary data store.

About this task

If the FabricPool mirror is in sync, no entries are displayed.

Step

1. Monitor mirror resync status using the `storage aggregate object-store show-resync-status` command.

```
aggregate1::> storage aggregate object-store show-resync-status
-aggregate aggr1
```

```
                                          Complete
Aggregate    Primary       Mirror         Percentage
---------    -----------   ----------     ----------
aggr1        my-store-1     my-store-2      40%
```

Display FabricPool mirror details

You can display details about a FabricPool mirror to see what object stores are in the configuration and whether the object store mirror is in sync with the primary object store.

Step

1. Display information about a FabricPool mirror using the `storage aggregate object-store show` command.

This example displays the details about the primary and mirror object stores in a FabricPool mirror.

```
cluster1::> storage aggregate object-store show
```

```
Aggregate      Object Store Name Availability    Mirror Type
-------------- ----------------- -------------   ----------
aggr1          my-store-1        available       primary
               my-store-2        available       mirror
```

This example displays details about the FabricPool mirror, including whether the mirror is degraded due to a resync operation.

```
cluster1::> storage aggregate object-store show -fields mirror-type,is-
mirror-degraded
```

```
aggregate      object-store-name mirror-type     is-mirror-degraded
-------------- ----------------- ------------- ------------------
aggr1          my-store-1        primary           -
               my-store-2        mirror          false
```

Promote a FabricPool mirror

You can reassign the object store mirror as the primary object store by promoting it. When the object store mirror becomes the primary, the original primary automatically becomes the mirror.

What you'll need

- The FabricPool mirror must be in sync
- The object store must be operational

About this task

You can replace the original object store with an object store from a different cloud provider. For instance, your original mirror might be an AWS object store, but you can replace it with an Azure object store.

Step

1. Promote an object store mirror by using the `storage aggregate object-store modify -aggregate` command.

```
cluster1::> storage aggregate object-store modify -aggregate aggr1 -name
my-store-2 -mirror-type primary
```

Remove a FabricPool mirror

You can remove a FabricPool mirror if you no longer need to replicate an object store.

What you'll need

The primary object store must be operational, otherwise, the command fails.

Step

1. Remove an object store mirror in a FabricPool by using the `storage aggregate object-store unmirror -aggregate` command.

```
cluster1::> storage aggregate object-store unmirror -aggregate aggr1
```

Replace an existing object store using a FabricPool mirror

You can use FabricPool mirror technology to replace one object store with another one. The new object store does not have to use the same cloud provider as the original object store.

About this task

You can replace the original object store with an object store that uses a different cloud provider. For instance, your original object store might use AWS as the cloud provider, but you can replace it with an object store that uses Azure as the cloud provider, and vice versa. However, the new object store must retain the same object size as the original.

Steps

1. Create a FabricPool mirror by adding a new object store to an existing FabricPool using the `storage aggregate object-store mirror` command.

```
cluster1::> storage aggregate object-store mirror -aggregate aggr1 -name
my-AZURE-store
```

2. Monitor the mirror resync status using the `storage aggregate object-store show-resync-status` command.

```
cluster1::> storage aggregate object-store show-resync-status -aggregate
aggr1
```

```
                                                Complete
      Aggregate    Primary          Mirror       Percentage
      ---------    -----------      ----------   ----------
      aggr1        my-AWS-store     my-AZURE-store     40%
```

3. Verify the mirror is in sync using the `storage aggregate object-store> show -fields mirror-type,is-mirror-degraded` command.

```
cluster1::> storage aggregate object-store show -fields mirror-type,is-
mirror-degraded
```

```
aggregate      object-store-name mirror-type     is-mirror-degraded
-------------- ----------------- ------------- ------------------
aggr1          my-AWS-store        primary           -
               my-AZURE-store      mirror          false
```

4. Swap the primary object store with the mirror object store using the `storage aggregate object-store modify` command.

```
cluster1::> storage aggregate object-store modify -aggregate aggr1 -name
my-AZURE-store -mirror-type primary
```

5. Display details about the FabricPool mirror using the `storage aggregate object-store show -fields mirror-type,is-mirror-degraded` command.

   This example displays the information about the FabricPool mirror, including whether the mirror is degraded (not in sync).

```
cluster1::> storage aggregate object-store show -fields mirror-type, is-
mirror-degraded
```

```
aggregate      object-store-name mirror-type     is-mirror-degraded
-------------- ----------------- ------------- ------------------
aggr1          my-AZURE-store      primary           -
               my-AWS-store        mirror          false
```

6. Remove the FabricPool mirror using the `storage aggregate object-store unmirror` command.

```
cluster1::> storage aggregate object-store unmirror -aggregate aggr1
```

7. Verify that the FabricPool is back in a single object store configuration using the `storage aggregate object-store show -fields mirror-type,is-mirror-degraded` command.

```
cluster1::> storage aggregate object-store show -fields mirror-type,is-
mirror-degraded
```

```
aggregate      object-store-name mirror-type     is-mirror-degraded
-------------- ----------------- ------------- ------------------
aggr1          my-AZURE-store      primary           -
```

Replace a FabricPool mirror on a MetroCluster configuration

If one of the object stores in a FabricPool mirror is destroyed or becomes permanently unavailable on a MetroCluster configuration, you can make the object store the mirror if it is not the mirror already, remove the damaged object store from FabricPool mirror, and then add a new object store mirror to the FabricPool.

Steps

1. If the damaged object store is not already the mirror, make the object store the mirror with the `storage aggregate object-store modify` command.

   ```
   storage aggregate object-store modify -aggregate -aggregate fp_aggr1_A01
   -name mcc1_ostore1 -mirror-type mirror
   ```

2. Remove the object store mirror from the FabricPool by using the `storage aggregate object-store unmirror` command.

   ```
   storage aggregate object-store unmirror -aggregate <aggregate name>
   -name mcc1_ostore1
   ```

3. You can force tiering to resume on the primary data store after you remove the mirror data store by using the `storage aggregate object-store modify` with the `-force-tiering-on-metrocluster true` option.

   The absence of a mirror interferes with the replication requirements of a MetroCluster configuration.

   ```
   storage aggregate object-store modify -aggregate <aggregate name> -name
   mcc1_ostore1 -force-tiering-on-metrocluster true
   ```

4. Create a replacement object store by using the `storage aggregate object-store config create` command.

```
storage aggregate object-store config create -object-store-name
mcc1_ostore3 -cluster clusterA -provider-type SGWS -server <SGWS-server-
1> -container-name <SGWS-bucket-1> -access-key <key> -secret-password
<password> -encrypt <true|false> -provider <provider-type> -is-ssl
-enabled <true|false> ipspace <IPSpace>
```

5. Add the object store mirror to the FabricPool mirror using the `storage aggregate object-store mirror` command.

```
storage aggregate object-store mirror -aggregate aggr1 -name
mcc1_ostore3-mc
```

6. Display the object store information using the `storage aggregate object-store show` command.

```
storage aggregate object-store show -fields mirror-type,is-mirror-
degraded
```

```
aggregate      object-store-name mirror-type     is-mirror-degraded
-------------- ----------------- ------------- ------------------
aggr1          mcc1_ostore1-mc    primary           -
               mcc1_ostore3-mc    mirror          true
```

7. Monitor the mirror resync status using the `storage aggregate object-store show-resync-status` command.

```
storage aggregate object-store show-resync-status -aggregate aggr1
```

```
                                                Complete
     Aggregate    Primary        Mirror          Percentage
     ---------    -----------    ----------      ----------
     aggr1        mcc1_ostore1-mc mcc1_ostore3-mc   40%
```