Recovering from a disaster at the 7-Mode site during transition

ONTAP 7-Mode Transition

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If you have established a SnapMirror disaster recovery (DR) relationship between the 7-Mode primary volume and the clustered Data ONTAP secondary volume and if a disaster occurs at the 7-Mode primary site, you can direct client access to the clustered Data ONTAP secondary volume. After the 7-Mode primary volume is brought back online, you have to perform additional steps to redirect the clients to the clustered Data ONTAP primary volume.

To retain any data written on the clustered Data ONTAP secondary volume after the disaster, you must transition the 7-Mode primary volume after the 7-Mode primary volume is back online and establish a SnapMirror relationship between the clustered Data ONTAP primary and secondary volumes. You can then redirect the clients to the clustered Data ONTAP primary volumes.

SnapMirror resynchronization from clustered Data ONTAP volumes to the 7-Mode volumes is not supported. Therefore, if you reestablish the DR relationship between the 7-Mode primary volume and the clustered Data ONTAP secondary volume after the disaster, any data written on the secondary clustered Data ONTAP will be lost.

Redirecting clients to the clustered Data ONTAP secondary volume after a disaster

If you have established a SnapMirror disaster recovery (DR) relationship between the 7-Mode primary volume and the clustered Data ONTAP secondary volume and if a disaster occurs at the 7-Mode primary site, you must redirect client access to the clustered Data ONTAP secondary volume.

Steps

1. From the secondary cluster, use the `snapmirror break` command to break the SnapMirror relationship between the 7-Mode primary volume and the clustered Data ONTAP secondary volume.

   ```
   sec_cluster::> snapmirror break -destination-path dst_vserver:dst_c_vol
   ```

2. From the secondary cluster, use the `snapmirror delete` command to delete the SnapMirror relationship between the 7-Mode primary volume and the clustered Data ONTAP secondary volume.

   ```
   sec_cluster::> snapmirror delete -destination-path dst_vserver:dst_c_vol
   ```

3. Redirect client access to the clustered Data ONTAP secondary volume.

   For more information about setting up client access in clustered Data ONTAP, see the Clustered Data ONTAP File Access and Protocols Management Guide.

Transitioning the 7-Mode primary as a stand-alone volume

After the 7-Mode primary volume is back online after a disaster, you must transition the 7-Mode primary volume. Because all SnapMirror relationships to the 7-Mode primary volume are broken and deleted at this stage, you can transition a stand-alone volume for this type of transition.

Steps

1. Copy data from the 7-Mode volume to the clustered Data ONTAP volume:

   a. If you want to configure the TCP window size for the SnapMirror relationship between the 7-Mode system and the SVM, create a SnapMirror policy of type `async-mirror` with the `window-size-for-tdp-mirror` option.

      You must then apply this policy to the TDP SnapMirror relationship between the 7-Mode system and the SVM.

      You can configure the TCP window size in the range of 256 KB to 7 MB for improving the SnapMirror transfer throughput so that the transition copy operations get completed faster. The default value of TCP window size is 2 MB.

      ```
      cluster1::> snapmirror policy create -vserver vs1 –policy tdp_policy
      -window-size-for-tdp-mirror 5MB -type async-mirror
      ```

   b. Use the `snapmirror create` command with the relationship type as TDP to create a SnapMirror relationship between the 7-Mode system and the SVM.

      If you have created a SnapMirror policy to configure the TCP window size, you must apply the policy to this SnapMirror relationship.

      ```
      cluster1::> snapmirror create -source-path system7mode:dataVol20
      -destination-path vs1:dst_vol -type TDP -policy tdp_policy
      Operation succeeded: snapmirror create the relationship with
      destination vs1:dst_vol.
      ```

   c. Use the `snapmirror initialize` command to start the baseline transfer.

      ```
      cluster1::> snapmirror initialize -destination-path vs1:dst_vol
      Operation is queued: snapmirror initialize of destination
      vs1:dst_vol.
      ```

   d. Use the `snapmirror show` command to monitor the status.

      ```
      cluster1::>snapmirror show -destination-path vs1:dst_vol

                                  Source Path: system7mode:dataVol20
      ```

```
                      Destination Path: vs1:dst_vol
                    Relationship Type: TDP
                Relationship Group Type: none
                    SnapMirror Schedule: -
                 SnapMirror Policy Type: async-mirror
                    SnapMirror Policy: DPDefault
                          Tries Limit: -
                    Throttle (KB/sec): unlimited
                         **Mirror State: Snapmirrored**
                    Relationship Status: Idle
                File Restore File Count: -
                 File Restore File List: -
                    Transfer Snapshot: -
                    Snapshot Progress: -
                       Total Progress: -
              Network Compression Ratio: -
                    Snapshot Checkpoint: -
                       Newest Snapshot: vs1(4080431166)_dst_vol.1
              Newest Snapshot Timestamp: 10/16 02:49:03
                    Exported Snapshot: vs1(4080431166)_dst_vol.1
            Exported Snapshot Timestamp: 10/16 02:49:03
                                Healthy: true
                      Unhealthy Reason: -
               Constituent Relationship: false
                Destination Volume Node: cluster1-01
                       Relationship ID: 97b205a1-54ff-11e4-9f30-
005056a68289
                  Current Operation ID: -
                         Transfer Type: -
                        Transfer Error: -
                      Current Throttle: -
              Current Transfer Priority: -
                     Last Transfer Type: initialize
                    Last Transfer Error: -
                     Last Transfer Size: 152KB
Last Transfer Network Compression Ratio: 1:1
                  Last Transfer Duration: 0:0:6
                     Last Transfer From: system7mode:dataVol20
            Last Transfer End Timestamp: 10/16 02:43:53
                  Progress Last Updated: -
                Relationship Capability: 8.2 and above
                                Lag Time: -
           Number of Successful Updates: 0
               Number of Failed Updates: 0
           Number of Successful Resyncs: 0
               Number of Failed Resyncs: 0
```

```
            Number of Successful Breaks: 0
                Number of Failed Breaks: 0
                   Total Transfer Bytes: 155648
         Total Transfer Time in Seconds: 6
```

e. Depending on whether you want to update the clustered Data ONTAP volume manually or by setting up a SnapMirror schedule, perform the appropriate action:

If you want to…	Then…

Update transfers manually	i. Use the `snapmirror update` command.
	
	`cluster1::> snapmirror update -destination-path vs1:dst_vol`
	
	ii. Use the `snapmirror show` command to monitor the data copy status.
	
	`cluster1::> snapmirror show -destination-path vs1:dst_vol`
	
	`Source Path: system7mode:dataVol20`
	
	`Destination Path: vs1:dst_vol`
	
	`Relationship Type: TDP`
	`Relationship Group Type: none`
	
	`SnapMirror Schedule: -`
	`SnapMirror Policy Type: async-mirror`
	
	`SnapMirror Policy: DPDefault`
	
	`Tries Limit: -`
	
	`Throttle (KB/sec): unlimited`
	
	`Mirror State: Snapmirrored`
	`...`
	`Number of Failed Updates: 0`
	`Number of Successful Resyncs: 0`
	`Number of Failed Resyncs: 0`
	`Number of Successful Breaks: 0`
	`Number of Failed Breaks: 0`
	`Total Transfer Bytes: 278528`
	`Total Transfer Time in Seconds: 11`

If you want to…	Then…

Perform scheduled update transfers	i. Use the `job schedule cron create` command to create a schedule for update transfers.
	
	`cluster1::> job schedule cron create -name 15_minute_sched -minute 15`
	
	ii. Use the `snapmirror modify` command to apply the schedule to the SnapMirror relationship.
	
	`cluster1::> snapmirror modify -destination-path vs1:dst_vol -schedule 15_minute_sched`
	
	iii. Use the `snapmirror show` command to monitor the data copy status.

2. If you have a schedule for incremental transfers, perform the following steps when you are ready to perform cutover:

   a. Use the `snapmirror quiesce` command to disable all future update transfers.

   ```
   cluster1::> snapmirror quiesce -destination-path vs1:dst_vol
   ```

   b. Use the `snapmirror modify` command to delete the SnapMirror schedule.

   ```
   cluster1::> snapmirror modify -destination-path vs1:dst_vol -schedule
   ""
   ```

   c. If you quiesced the SnapMirror transfers earlier, use the `snapmirror resume` command to enable SnapMirror transfers.

   ```
   cluster1::> snapmirror resume -destination-path vs1:dst_vol
   ```

3. Wait for any ongoing transfers between the 7-Mode volumes and the clustered Data ONTAP volumes to finish, and then disconnect client access from the 7-Mode volumes to start cutover.

4. Use the `snapmirror update` command to perform a final data update to the clustered Data ONTAP volume.

   ```
   cluster1::> snapmirror update -destination-path vs1:dst_vol
   Operation is queued: snapmirror update of destination vs1:dst_vol.
   ```

5. Use the `snapmirror show` command to verify that the last transfer was successful.

6. Use the `snapmirror break` command to break the SnapMirror relationship between the 7-Mode volume and the clustered Data ONTAP volume.

   ```
   cluster1::> snapmirror break -destination-path vs1:dst_vol
   [Job 60] Job succeeded: SnapMirror Break Succeeded
   ```

7. If your volumes have LUNs configured, at the advanced privilege level, use the `lun transition 7-mode show` command to verify that the LUNs were transitioned.

   You can also use the `lun show` command on the clustered Data ONTAP volume to view all of the LUNs that were successfully transitioned.

8. Use the `snapmirror delete` command to delete the SnapMirror relationship between the 7-Mode volume and the clustered Data ONTAP volume.

   ```
   cluster1::> snapmirror delete -destination-path vs1:dst_vol
   ```

9. Use the `snapmirror release` command to remove the SnapMirror relationship information from the 7-Mode system.

```
system7mode> snapmirror release dataVol20 vs1:dst_vol
```

Redirecting clients to the clustered Data ONTAP primary volume

After the 7-Mode primary volume comes back online, you can transition the 7-Mode primary volume, establish a SnapMirror relationship with the clustered Data ONTAP secondary volume, and redirect client access to the clustered Data ONTAP primary volume.

Steps

1. Create the SVM peer relationship between the primary and secondary SVMs.

   a. Use the `cluster peer create` command to create the cluster peer relationship.

   ```
   pri_cluster::> cluster peer create -peer-addrs cluster2-d2,
   10.98.234.246 -timeout 60

   Notice: Choose a passphrase of 8 or more characters. To ensure the
   authenticity of the peering relationship, use a phrase or sequence of
   characters that would be hard to guess.

   Enter the passphrase: ********
   Confirm the passphrase: ********
   ```

   b. From the source cluster, use the `vserver peer create` command to create anSVM peer relationship between the clustered Data ONTAP primary volume and clustered Data ONTAP secondary volume.

   ```
   pri_cluster::> vserver peer create -vserver src_vserver -peervserver
   src_c_vserver -applications snapmirror -peer-cluster sec_cluster
   ```

   c. From the destination cluster, use the `vserver peer accept` command to accept the SVM peer request and establish the SVM peer relationship.

   ```
   sec_cluster::> vserver peer accept -vserver dst_vserver -peervserver
   src_vserver
   ```

2. Use the `snapmirror create` command to create a SnapMirror relationship with the clustered Data ONTAP secondary volume as the source and the clustered Data ONTAP primary volume as destination.

```
pri_cluster::> snapmirror create -source-path dst_vserver:dst_c_vol
-destination-path src_vserver:src_c_vol
```

3. From the primary cluster, use the `snapmirror resync` command to resynchronize the clustered Data ONTAP secondary volume.

```
pri_cluster::> snapmirror resync -source-path dst_vserver:dst_c_vol
-destination-path src_vserver:src_c_vol
```

   You must wait till the resynchronization finishes. The SnapMirror state changes to `SnapMirrored` when resynchronization is complete.

4. When you are ready to switch over to the clustered Data ONTAP primary volume, disconnect client access from the clustered Data ONTAP secondary volume.
5. From the primary cluster, use the `snapmirror update` command to update the primary volume.

```
pri_cluster::> snapmirror update -destination-path src_vserver:src_c_vol
```

6. From the primary cluster, use the `snapmirror break` command to break the SnapMirror relationship between the clustered Data ONTAP primary and secondary volumes.

```
pri_cluster::> snapmirror break -destination-path src_vserver:src_c_vol
```

7. Enable client access to the clustered Data ONTAP primary volume.
8. From the primary cluster, use the `snapmirror delete` command to delete the SnapMirror relationship between the clustered Data ONTAP primary and secondary volumes.

```
pri_cluster::> snapmirror delete -destination-path src_vserver:src_c_vol
```

9. From the secondary cluster, use the `snapmirror create` command to create a SnapMirror relationship with the clustered Data ONTAP primary volume as the source and the clustered Data ONTAP secondary volume as destination, with a schedule similar to the previous schedule between the 7-Mode primary volume and clustered Data ONTAP secondary volume.

```
sec_cluster::> snapmirror create -source-path src_vserver:src_c_vol
-destination-path dst_vserver:dst_c_vol -schedule 15_minute_sched
```

10. From the secondary cluster, use the `snapmirror resync` command to resynchronize the clustered Data ONTAP primary volume.

```
sec_cluster::> snapmirror resync -source-path src_vserver:src_c_vol
-destination-path dst_vserver:dst_c_vol
```