# **■** NetApp

## **Transitioning volumes**

**ONTAP 7-Mode Transition** 

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### Transitioning volumes

You can transition a stand-alone volume or volumes that are in data protection relationships (in volume SnapMirror relationships) by using SnapMirror technology.

If an ongoing scheduled update is aborted due to an NDO operation (takeover or aggregate relocation), then the update will automatically resume after the NDO operation is complete.

If you transition a stand-alone volume or a volume SnapMirror relationship with LUNs, you must create igroups and map LUNs. You must then perform the required post-transition tasks on the hosts before configuring access to the transitioned clustered Data ONTAP volumes.

SAN host transition and remediation

#### Related information

Transitioning 7-Mode volumes using SnapMirror

### Transitioning a stand-alone volume

Transitioning a stand-alone volume involves creating a SnapMirror relationship, performing a baseline transfer, performing incremental updates, monitoring the data copy operation, breaking the SnapMirror relationship, and moving client access from the 7-Mode volume to the clustered Data ONTAP volume.

- The cluster and SVM must already be set up.
- You must have reviewed the information about preparing for transition.

Preparing for transition

NetApp recommends you provision the destination ONTAP volume to match the attributes of the 7-mode source volume. Some of the attributes to match include:

- Volume size: The ONTAP volume must be at least the size of the 7-Mode volume.
- Language: The ONTAP volume setting should match the setting of the 7-Mode volume.

The 7-Mode Transition Tool automatically provisions the ONTAP volume with attributes that match the 7-Mode volume.

#### 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

```
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.
	<pre>cluster1::&gt; snapmirror update -destination-path vs1:dst_vol</pre>
	ii. Use the snapmirror show command to monitor the data copy status.
	<pre>cluster1::&gt; snapmirror show -destination-path vs1:dst_vol</pre>
	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

f you want to
Perform scheduled update transfers

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 supplate transfers pmirror show -destination-nath ws1.dst wol cluster1::> snapmirror quiesce -destination-path vs1:dst vol system7mode:dataVol20 b. Use the snapmirror modify command to delete the SnapMirror schedule. Destination Path vsl dst vol cluster1::> snapmirror modify -destination-path vs1:dst vol -schedule Group Type: none c. If you quiesced the SnapMirror transfers earlier, use the snapmirror resume command to enable SnapMirror transfers. SnapMirror Schedule: 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 SnapMirror Policy: DPDefault 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. Number of 5. Use the snapmirror show command to verify that the last transfer was successful. Failed Updates: 0 6. Use the snapmirror break command to break the SnapMirror relationship byetween the 7-Mode volume and the clustered Data ONTAP volume. Successful Resyncs: 0 cluster1::> snapmirror break -destination-path vs1:dst vol [Job 60] Job succeeded: SnapMirror Break Succeeded Number of 7. If your volumes have LUNs configured, at the advanced privilege level use the lun otransition 7mode 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 Total Transfer Time that were successfully transitioned. in Seconds: 11

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

You must delete the SVM peer relationship between the 7-Mode system and the SVM when all of the required volumes in the 7-Mode system are transitioned to the SVM.

#### Related information

Resuming a failed SnapMirror baseline transfer

Recovering from a failed LUN transition

Configuring a TCP window size for SnapMirror relationships

# Transitioning a volume SnapMirror relationship in a staggered configuration

You can transition a 7-Mode volume SnapMirror relationship and retain the data protection relationship by transitioning the secondary volume before the primary volume. In this method, you set up a staggered SnapMirror DR relationship between the 7-Mode primary volumes and clustered Data ONTAP secondary volumes.

- The primary and secondary clusters and SVMs must already be set up.
- For establishing an SVM peer relationship when transitioning a volume SnapMirror relationship, the following conditions must be met:
  - The secondary cluster should not have anSVM with the same name as that of the primary SVM.
  - The primary cluster should not have anSVM with the same name as that of the secondary SVM.
  - You must have reviewed the information about preparing for transition.

Preparing for transition

#### Related information

Resuming a failed SnapMirror baseline transfer

#### Transitioning a secondary volume

Transitioning a secondary volume involves creating a SnapMirror relationship, performing a baseline transfer, performing incremental updates, and setting up a SnapMirror relationship between the 7-Mode primary volume and the clustered Data ONTAP secondary volume.

The secondary cluster and storage virtual machine (SVM) must already be set up.

#### Steps

- 1. Copy data from the 7-Mode volume to the clustered Data ONTAP volume:
  - a. Use the snapmirror create command with the relationship type as TDP to create a SnapMirror relationship between the 7-Mode system and the SVM.

```
sec_cluster::> snapmirror create -source-path sec_system:dst_7_vol -destination-path dst_vserver:dst_c_vol -type TDP Operation succeeded: snapmirror create the relationship with destination dst_vserver:dst_c_vol.
```

b. Use the snapmirror initialize command to start the baseline transfer.

```
sec_cluster::> snapmirror initialize -destination-path
dst_vserver:dst_c_vol
Operation is queued: snapmirror initialize of destination
dst_vserver:dst_c_vol.
```

c. 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
Perform scheduled update transfers

- 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 snapmirror show -destination-nath sec cluster::> snapmirror quiesce -destination-path dst vserver:dst vol sec system:dst 7 vol b. Use the snapmirror modify command to delete the SnapMirror schedule. Destination Path. sec cluster::> snapmirror modify -destination-path dst vserver:dst vol -schedule "" Relationship c. If you quiesced the SnapMirror transfers earlier, use the snapphiproppes அளு command to enable SnapMirror transfers. sec cluster::> snapmirror resume -destination-path dst vserver:dst vol 3. Wait for any ongoing transfers between the 7-Mode volumes and the clustered Data ONTAP volumes to snapMirror Policy: DPDefault 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. sec cluster::> snapmirror update -destination-path dst\_vserver:dst\_vol Operation is queued: snapmirror update of destination dst vserver:dst vol. 5. Use the snapmirror show command to verify that the last transfer was successful.

  Number of 6. Use the snapmirror break command to break the SnapMirrox teletionshipsbetween the 7-Mode secondary volume and the clustered Data ONTAP secondary volume. Number of sec cluster::> snapmirror break -destination-path dst\_vserver:dst\_vol [Job 60] Job succeeded: SnapMirror Break Succeeded
- 7. If your volumes have LUNs configured, at the advanced privilege level, use the lun transcript 7-mode show command to verify that the LUNs were transitioned Failed Breaks: 0

  You can also use the lun show command on the clustered that were successfully transitioned.

  Total Transfer Time

  8. Use the snapmirror delete command to delete the SnapMirrorselationship between the 7-Mode
- 8. Use the snapmirror delete command to delete the SnapMtmorselationship between the 7-Mode secondary volume and the clustered Data ONTAP secondary volume.

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

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

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

- 10. Establish a disaster recovery relationship between the 7-Mode primary volume and clustered Data ONTAP secondary volume:
  - a. Use the vserver peer transition create command to create an SVM peer relationship between the 7-Mode primary volume and the clustered Data ONTAP secondary volume.

```
sec_cluster::> vserver peer transition create -local-vserver
dst_vserver -src-filer-name src_system
Transition peering created
```

b. Use the job schedule cron create command to create a job schedule that matches the schedule configured for the 7-Mode SnapMirror relationship.

```
sec_cluster::> job schedule cron create -name 15_minute_sched -minute
15
```

c. Use the snapmirror create command to create a SnapMirror relationship between the 7-Mode primary volume and the clustered Data ONTAP secondary volume.

```
sec_cluster::> snapmirror create -source-path src_system:src_7_vol
-destination-path dst_vserver:dst_c_vol -type TDP -schedule
15_minute_sched
Operation succeeded: snapmirror create the relationship with
destination dst_vserver:dst_c_vol.
```

d. Use the snapmirror resync command to resynchronize the clustered Data ONTAP secondary volume.

For successful resynchronization, a common 7-Mode Snapshot copy must exist between the 7-Mode primary volume and the clustered Data ONTAP secondary volume.

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

• If the target cluster is running Data ONTAP 8.3.2 or later, you must create the required igroups and map the LUNs manually.

- If the target cluster is running Data ONTAP 8.3.1 or earlier, you must map the secondary LUNs manually after completing the storage cutover of the primary volumes.
- You must delete the SVM peer relationship between the secondary 7-Mode system and the secondary SVM when all of the required volumes in the 7-Mode system are transitioned to the SVM.
- You must delete the SnapMirror relationship between the 7-Mode primary and the 7-Mode secondary systems.

#### Related information

Recovering from a failed LUN transition

Configuring a TCP window size for SnapMirror relationships

#### Transitioning a primary volume

Transitioning a primary volume involves copying data from the 7-Mode primary volumes to the clustered Data ONTAP primary volumes, deleting the disaster recovery relationship between the 7-Mode primary and clustered Data ONTAP secondary volumes, and establishing a SnapMirror relationship between the clustered Data ONTAP primary and secondary volumes.

The primary cluster and SVM must already be set up.

#### **Steps**

- 1. Copy the data from the 7-Mode primary volume to the clustered Data ONTAP primary volume:
  - a. Use the snapmirror create command with the relationship type as TDP to create a SnapMirror relationship between the 7-Mode system and the SVM.

```
pri_cluster::> snapmirror create -source-path src_system:finance
-destination-path src_vserver:src_c_vol -type TDP
Operation succeeded: snapmirror create the relationship with
destination src_vserver:src_c_vol.
```

b. Use the snapmirror initialize command to start the baseline transfer.

```
pri_cluster::> snapmirror initialize -destination-path
src_vserver:src_c_vol
Operation is queued: snapmirror initialize of destination
src_vserver:src_c_vol.
```

c. 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
Perform scheduled update transfers	i. Use the job schedule cron create command to create a schedule for update transfers.  pri_cluster::> job schedule cron create -name 15_minute_sched -minute 15  ii. Use the snapmirror modify command to apply the schedule to the SnapMirror relationship.  pri_cluster::> snapmirror modify -destination-path src_vserver:src_cvol -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 snapmirror

show -destination-nath

pri cluster::> snapmirror quiesce -destination-path src vserver:src c vol

pri system:src 7 vol

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

Destination Path.

```
pri cluster::> snapmirror modify -destination-path
src_vserver:src c vol -schedule ""
```

Relationship

c. If you quiesced the SnapMirror transfers earlier, use the snappiproppesymeneous to enable SnapMirror transfers.

```
pri cluster::> snapmirror resume -destination-path
src vserver:src c vol
```

- 3. Create an SVM peer relationship between the clustered Data ONTAP secondary and primary SVMs SnapMirror Policy: DPDefault
  - a. Use the cluster peer create command to create a cluster peer relationship.

Tries Limit: -

```
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: \*\*\*\*\*\*

Successful Resyncs: 0

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

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 Transfer Bytes: 473163808768 request and establish the SVM peer relationship.

Total Transfer Time

in Seconds: 43405

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

4. From the destination cluster, use the snapmirror quiesce command to suspend any data transfers between the 7-Mode primary volume and the clustered Data ONTAP secondary volume if a schedule is set up for update transfers.

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

- 5. Monitor the data copy operation and initiate cutover:
  - a. Wait for any ongoing transfers from the 7-Mode primary volumes to the clustered Data ONTAP primary and clustered Data ONTAP secondary volumes to finish, and then disconnect client access from the 7-Mode primary volume to start cutover.
  - b. Use the snapmirror update command to perform a final data update to the clustered Data ONTAP primary volume from the 7-Mode primary volume.

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

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

```
pri_cluster::> snapmirror break -destination-path
src_vserver:src_c_vol
[Job 1485] Job is queued: snapmirror break for destination
src_vserver:src_c_vol.
```

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

e. Use the snapmirror delete command to delete the relationship.

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

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

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

- 6. From the destination cluster, break and delete the disaster recovery relationship between the 7-Mode primary volume and clustered Data ONTAP secondary volume.
  - a. Use the snapmirror break command to break the disaster recovery relationship between the 7-Mode primary volume and clustered Data ONTAP secondary volume.

```
sec_cluster::> snapmirror break -destination-path
dst_vserver:dst_c_vol
[Job 1485] Job is queued: snapmirror break for destination
dst_vserver:dst_c_vol.
```

b. Use the snapmirror delete command to delete the relationship.

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

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

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

- 7. From the destination cluster, establish a SnapMirror relationship between the clustered Data ONTAP primary and secondary volumes:
  - a. Use the snapmirror create command to create a SnapMirror relationship between the clustered Data ONTAP primary and secondary volumes.

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

b. Use the snapmirror resync command to resynchronize the SnapMirror relationship between the clustered Data ONTAP volumes.

For successful resynchronization, a common Snapshot copy must exist between the clustered Data ONTAP primary and secondary volumes.

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

c. Use the snapmirror show command to verify that the status of SnapMirror resynchronization shows



You must ensure that the SnapMirror resynchronization is successful to make the clustered Data ONTAP secondary volume available for read-only access.

You must delete the SVM peer relationship between the 7-Mode system and the SVM when all the required volumes in the 7-Mode system are transitioned to the SVM.

#### Related information

Recovering from a failed LUN transition

Configuring a TCP window size for SnapMirror relationships

### Transitioning a volume SnapMirror relationship in parallel

You can transition the primary and secondary volumes of a 7-Mode SnapMirror relationship in parallel and in the same cutover window. You must then manually set up the volume SnapMirror relationship in the ONTAP clusters after transition. You must use this method for transitioning SnapLock Compliance volumes.

- You must have set up the primary and secondary clusters and SVMs.
- For establishing an SVM peer relationship when transitioning a volume SnapMirror relationship, the following conditions must be met:
  - The secondary cluster should not have an SVM with the same name as that of the primary SVM.
  - The primary cluster should not have an SVM with the same name as that of the secondary SVM.
  - You must have reviewed the information about preparing for transition.

#### Preparing for transition

A 7-Mode SnapMirror relationship between SnapLock Compliance volumes must be transitioned in parallel because SnapMirror resynchronization of a transition data protection (TDP) relationship with SnapLock Compliance volumes is not supported. Therefore, you cannot establish a SnapMirror disaster recovery (DR) relationship between 7-Mode primary volumes and ONTAP secondary volumes with SnapLock Compliance volumes.

1. Transition the secondary and primary volumes of the SnapMirror relationship by following the steps for transitioning a standalone volume.

Before transitioning the 7-Mode secondary volumes, no manual intervention is required for the 7-Mode SnapMirror relationships. This ensures that the 7-Mode secondary volumes are transitioned as read-only volumes to ONTAP.

Transitioning a stand-alone volume

2. Create an intercluster SVM peer relationship between the SVMs that contain the transitioned primary and secondary volumes.

System administration

3. Create a volume SnapMirror relationship between the transitioned primary and secondary volumes.

Volume disaster recovery express preparation

4. On the destination volume, resynchronize the source volume and destination volume of the SnapMirror relationship.



At least one common Snapshot copy must exist between the source and destination volumes.

5. Monitor the status of the SnapMirror data transfers.



You must not perform any operation, such as volume move or SnapMirror break, on the source and destination volumes until the resynchronization is completed successfully. You must ensure that the resynchronization is not aborted and completes successfully; otherwise, the volumes can change to an inconsistent state.

#### Related information

Guidelines for transitioning SnapLock volumes

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