



Transitioning 7-Mode volumes using SnapMirror

ONTAP 7-Mode Transition

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Transitioning 7-Mode volumes using SnapMirror

Beginning with ONTAP 9.12.1, you can no longer transition 7-Mode volumes using SnapMirror technology.

However, for ONTAP 9.11.1 and earlier releases you can transition 7-Mode volumes in a NAS and SAN environment to clustered Data ONTAP volumes by using clustered Data ONTAP SnapMirror commands. You must then set up the protocols, services, and other configurations on the cluster after the transition is complete.

Recommendation: You should use the 7-Mode Transition Tool for copy-based transition to transition 7-Mode volumes for ONTAP 9.11.1 and earlier releases because the tool provides pre-checks to verify both 7-Mode and the cluster in every step of the migration process, which helps you to avoid many potential issues. The tool significantly simplifies the migration of all protocols, network, and service configurations along with the data migration.

[7-Mode Transition Tool Release Notes](#)

This procedure provides the high-level tasks you have to perform for transition using SnapMirror.

Before upgrading to ONTAP 9.12.1, you must do the following:

Steps



1. Run the following command to make the SnapMirror destination volume writable:
`snapmirror break`
2. Run the following command to delete all TDP SnapMirror relationships: `snapmirror delete`

1. [Verify that the volumes you plan to transition are supported for transition.](#)
2. [Prepare the 7-Mode system for transition.](#)
3. [Prepare the cluster for transition.](#)
4. [Create a transition peer relationship between the 7-Mode system as the source and the SVM as the destination.](#)
5. [Copy the data from the 7-Mode volume to the clustered Data ONTAP volume by creating a SnapMirror relationship between the two volumes.](#)

After data migration finishes, you must perform the following tasks:

- Optional: Create a data LIF on the SVM to enable client access.

[Network and LIF management](#)

- Configure protocols, networking, and services on the SVM.
 - [Network and LIF management](#)
 - [SMB/CIFS management](#)
 - [NFS management](#)
- Create igroups and map LUNs

[SAN administration](#)

- If you transition volumes with LUNs, you must perform the required post-transition tasks on the hosts before restoring access to the transitioned clustered Data ONTAP volumes.

[SAN host transition and remediation](#)

[NetApp Support](#)

Planning for transition

Before copying data from 7-Mode volumes to clustered ONTAP volumes, you must understand when to use SnapMirror to perform the transition and review the information for supported 7-Mode versions and supported volumes for transition. You must also be aware of certain transition considerations.

You should review the *Release Notes* for the transition target release in case there are any transition issues.

[ONTAP 9 Release Notes](#)

SnapMirror relationships between 7-Mode and clustered ONTAP volumes are supported in the following releases:

- ONTAP 9.8 and later releases
- ONTAP 9.7P2 and later 9.7 releases
- ONTAP 9.6P7 and later 9.6 releases
- ONTAP 9.0 to ONTAP 9.5
- ONTAP 9.9.1 and later releases
- ONTAP 9.10.1 and later releases

Beginning with ONTAP 9.12.1, you can no longer transition 7-Mode volumes using SnapMirror technology.

You can use SnapMirror to transition data in the following scenarios:

- The 7-Mode Transition Tool does not support your requirements for transition; for example, the 7-Mode Transition Tool requires a Windows or Linux host that might be unavailable in your environment.

Recommendation: You should use the 7-Mode Transition Tool to transition 7-Mode volumes because the tool provides prechecks to verify the feasibility of transition and migrates all protocol, network, and services configurations along with the data.

You can install and use the 7-Mode Transition Tool to perform the prechecks for transitioning and then use SnapMirror commands to perform the data migration from the 7-Mode volume to the clustered ONTAP volume.

- The cluster and storage virtual machine (SVM) are already configured and only the data has to be transitioned from the 7-Mode volumes to the clustered ONTAP volumes.

Features and volumes not supported for transition

You cannot transition certain 7-Mode volumes, such as traditional volumes, and certain 7-Mode features, such as synchronous SnapMirror relationships, because some features

might not be available in clustered Data ONTAP.

You can transition a 7-Mode volume only to an SVM.

You cannot transition the following 7-Mode volumes or configurations:

- Restricted or offline volumes
- Traditional volumes
- Volumes with NFS-to-CIFS character mapping (charmap)
- Volumes with Storage-Level Access Guard configurations
- Volumes that contain qtrees with Storage-Level Access Guard configurations

If the target cluster is running Data ONTAP 8.3.1 or later, you can transition volumes that contain qtrees with this configuration.

- Volumes with the `no_i2p` option enabled.
- FlexCache volumes
- 32-bit volumes and 64-bit volumes that have 32-bit Snapshot copies if the destination cluster is running Data ONTAP 8.3 or later
- FlexClone volumes

FlexClone volumes can be transitioned as FlexVol volumes, but the clone hierarchy and storage efficiency will be lost.

- Root volume of a vFiler unit, where the root volume is based on a qtree that belongs to the default vFiler unit
- Synchronous SnapMirror configuration
- Qtree SnapMirror relationships
- IPv6 configurations
- SnapVault relationships
- Network compression for SnapMirror
- Restoring the destination volume to a specific Snapshot copy (`SnapMirror break -s` command)
- Volume move operation

Features not supported for SAN transition

You should be aware of the 7-Mode SAN features that are not supported in clustered Data ONTAP so that you can take any necessary actions before the transition.

The following 7-Mode SAN features are not supported in clustered Data ONTAP:

- Snapshot copy-backed LUN clones

Snapshot copy-backed LUN clones present in the Snapshot copies are not supported for any restore operation. These LUNs are not accessible in clustered Data ONTAP. You must split or delete the 7-Mode Snapshot copy backed LUN clones before transition.

- LUNs with `ostype` of `vld`, `image`, or any user-defined string LUNs

You must either change the `ostype` of such LUNs or delete the LUNs before transition.

- LUN clone split

You must either wait for the active LUN clone split operations to complete or abort the LUN clone split and delete the LUN before transition.

- The `lun share` command

Sharing a LUN over NAS protocols is not supported in clustered Data ONTAP.

- SnapValidator

7-Mode version requirements for transition

You should be aware of the versions of Data ONTAP operating in 7-Mode that are supported for transitioning to clustered Data ONTAP 8.3 or later.

If the 7-Mode system has only 64-bit aggregates and volumes, you can transition volumes from systems running the following 7-Mode versions to clustered Data ONTAP 8.3 or later:

- Data ONTAP 8.0
- Data ONTAP 8.0.1
- Data ONTAP 8.0.2
- Data ONTAP 8.0.3
- Data ONTAP 8.0.4
- Data ONTAP 8.0.5
- Data ONTAP 8.1
- Data ONTAP 8.1.2
- Data ONTAP 8.1.3
- Data ONTAP 8.1.4
- Data ONTAP 8.2
- Data ONTAP 8.2.1
- Data ONTAP 8.2.2
- Data ONTAP 8.2.3
- Data ONTAP 8.2.4
- Data ONTAP 8.2.5

If the 7-Mode system is running Data ONTAP 8.0.x, 8.1.x, or 8.2 and has 32-bit aggregates or volumes with 32-bit Snapshot copies, you must upgrade to 8.1.4 P4 or 8.2.1. After upgrading, you must expand the 32-bit aggregates to 64-bit, and then find and remove any 32-bit data.

You must upgrade the following 7-Mode versions to Data ONTAP 8.1.4 P4 before transitioning to clustered Data ONTAP 8.3 or later:

- Data ONTAP 7.3.3

- Data ONTAP 7.3.4
- Data ONTAP 7.3.5
- Data ONTAP 7.3.6
- Data ONTAP 7.3.7

Considerations for using SnapMirror for transition

You must be aware of certain considerations when running transition operations simultaneously with SnapMirror or SnapVault operations occurring in the 7-Mode system, such as the maximum number of concurrent SnapMirror transfers, data copy schedules, and using multiple paths for transition.

Maximum number of concurrent SnapMirror transfers

During transition, the maximum number of concurrent SnapMirror transfers supported on the 7-Mode and ONTAP systems depend on the number of volume SnapMirror replication operations allowed for a specific storage system model.

For information about the maximum number of concurrent volume SnapMirror transfers for your system model, see the [Data ONTAP Data Protection Online Backup and Recovery Guide for 7-Mode](#).

Data copy schedules

Data copy schedules for transition operations should not overlap with the existing schedules for SnapMirror or SnapVault operations running on the 7-Mode system.

Using multiple paths for transition

You can specify two paths for transition by using a data copy IP address and a multipath IP address. However, both paths can be used only for load-balancing, not for failover.

Space considerations when transitioning SAN volumes

You must ensure that sufficient space is available in the volumes during transition. In addition to the space required for storing data and Snapshot copies, the transition process also requires 1 MB of space per LUN for updating certain filesystem metadata.

Before cutover, you can use the `df -h` command on the 7-Mode volume to verify whether free space of 1 MB per LUN is available in the volume. If the volume does not have sufficient free space available, the required amount of space must be added to the 7-Mode volume.

If the transition of LUNs fails due to lack of space on the destination volume, the following EMS message is generated: `LUN.vol.proc.fail.no.space: Processing for LUNs in volume vol1 failed due to lack of space.`

In this case, you must set the `filesys-size-fixed` attribute to false on the destination volume, and then add 1 MB per LUN of free space to the volume.

If there are volumes containing space-reserved LUNs, growing the volume by 1MB per LUN might not provide sufficient space. In such cases, the amount of additional space that has to be added is the size of the Snapshot reserve for the volume. After space is added to the destination volume, you can use the `lun transition`

start command to transition the LUNs.

Related information

[NetApp Documentation: ONTAP 9](#)

Guidelines for transitioning SnapLock volumes

To transition 7-Mode SnapLock volumes to ONTAP 9, you must be aware of these requirements and guidelines.

- Transition of 7-Mode SnapLock volumes is not supported if the SnapLock volumes contain LUNs.
- You can transition 7-Mode SnapLock Enterprise volumes to SnapLock Enterprise volumes in any ONTAP 9 release, except for ONTAP 9.6.
- You can transition 7-Mode SnapLock Compliance volumes to SnapLock Compliance volumes in any ONTAP 9 release, except for ONTAP 9.6.
- When transitioning a 7-Mode volume SnapMirror relationship, you can use staggered transition (transition secondary first and then primary) only for SnapLock Enterprise volumes.

SnapMirror disaster recovery (DR) relationship between 7-Mode primary volumes and ONTAP secondary volumes is supported only for SnapLock Enterprise volumes, but not for SnapLock Compliance volumes.

[Transitioning a volume SnapMirror relationship in a staggered configuration](#)

- You must transition a 7-Mode volume SnapMirror relationship between SnapLock Compliance volumes by transitioning the primary and secondary volumes in parallel.

[Transitioning a volume SnapMirror relationship in parallel](#)

- Starting with ONTAP 9.10.1, SnapLock and non-SnapLock volumes can be created in the same aggregate.

To transition 7-Mode SnapLock volumes to ONTAP 9.10.1 or later, you must manually create the ONTAP volumes with the `-snaplock-type {non-snaplock|compliance|enterprise}` flag. After manually creating the volumes, manage the transition with the 7-Mode Transition Tool.

If you use the 7-Mode Transition Tool to create a volume in ONTAP 9.10.1 or later, the volume is not created as a SnapLock volume and this results in a failed SnapMirror baseline.

Related information

[Archive and compliance using SnapLock technology](#)

Preparing for transition

Before you start the transition, you must prepare the 7-Mode storage system and cluster before transitioning 7-Mode volumes to clustered Data ONTAP. You must also create a transition peer relationship between the 7-Mode system and the storage virtual machine (SVM).

License requirements for transition

Before you transition a volume from 7-Mode to clustered Data ONTAP, you must ensure that SnapMirror is licensed on the 7-Mode storage system. If you are transitioning a 7-Mode volume SnapMirror relationship, SnapMirror licenses are also required on the source and destination clusters.

If SnapMirror is already licensed on your 7-Mode system, you can use the same license for transition. If you do not have the 7-Mode SnapMirror license, you can obtain a temporary SnapMirror license for transition from your sales representative.

Feature licenses that are enabled on the 7-Mode system must be added to the cluster. For information about obtaining feature licenses on the cluster, see the [System Administration Reference](#).

Preparing the 7-Mode system for transition

Before starting a transition, you must complete certain tasks on the 7-Mode system, such as adding the SnapMirror license and the 7-Mode system to communicate with the target cluster.

All the 7-Mode volumes that you want to transition must be online.

Steps

1. Add and enable the SnapMirror license on the 7-Mode system:

a. Add the SnapMirror license on the 7-Mode system:

```
license add license_code
```

license_code is the license code you purchased.

b. Enable the SnapMirror functionality:

```
options snapmirror.enable on
```

2. Configure the 7-Mode system and the target cluster to communicate with each other by choosing one of the following options:

- Set the `snapmirror.access` option to `all`.
- Set the value of the `snapmirror.access` option to the IP addresses of all the LIFs on the cluster.
- If the `snapmirror.access` option is `legacy` and the `snapmirror.checkip.enable` option is `off`, add the SVM name to the `/etc/snapmirror.allow` file.
- If the `snapmirror.access` option is `legacy` and the `snapmirror.checkip.enable` option is `on`, add the IP addresses of the LIFs to the `/etc/snapmirror.allow` file.

3. Depending on the Data ONTAP version of your 7-Mode system, perform the following steps:

a. Allow SnapMirror traffic on all the interfaces:

```
options interface.blocked.snapmirror ""
```

b. If you are running Data ONTAP version 7.3.7, 8.0.3, or 8.1 and you are using the IP address of the e0M

interface as the management IP address to interact with 7-Mode Transition Tool, allow data traffic on the e0M interface:

```
options interface.blocked.mgmt_data_traffic off
```

Preparing the cluster for transition

You must set up the cluster before transitioning a 7-Mode system and ensure that the cluster meets requirements such as setting up LIFs and verifying network connectivity for transition.

- The cluster and the SVM must already be set up.

Software setup

The target SVM must not be in an SVM disaster recovery relationship.

- The cluster must be reachable by using the cluster management LIF.
- The cluster must be healthy and none of the nodes must be in takeover mode.
- The target aggregates that will contain the transitioned volumes must have an SFO policy.
- The aggregates must be on nodes that have not reached the maximum volume limit.
- 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.
 - The name of the source 7-Mode system should not conflict with any of the local SVMs or SVMs that are already peered.

You can set up local LIFs that are in the default IPspace or intercluster LIFs on each node of the cluster to communicate between the cluster and 7-Mode systems. If you have set up local LIFs, then you do not have to set up intercluster LIFs. If you have set up both intercluster LIFs and local LIFs, then the local LIFs are preferred.

1. Create an intercluster LIF on each node of the cluster for communication between the cluster and 7-Mode system:

- a. Create an intercluster LIF:

```
network interface create -vserver svm_name -lif intercluster_lif -role intercluster -home-node home_node -home-port home_port -address ip_address -netmask netmask
```

```
cluster1::> network interface create -vserver cluster1 -lif intercluster_lif -role intercluster -home-node cluster1-01 -home-port e0c -address 192.0.2.130 -netmask 255.255.255.0
```

- b. Create a static route for the intercluster LIF:

```
network route create -vserver svm_name -destination IP_address/mask -gateway  
ip_address
```

```
cluster1::> network route create -vserver vs0 -destination 0.0.0.0/0  
-gateway 10.61.208.1
```

c. Verify that you can use the intercluster LIF to ping the 7-Mode system:

```
network ping -lif intercluster_lif -vserver svm_name -destination  
remote_inetaddress
```

```
cluster1::> network ping -lif intercluster_lif -vserver cluster1  
-destination system7mode  
system7mode is alive
```

For multipathing, you must have two intercluster LIFs on each node.

Network and LIF management

Related information

[Creating a transition peer relationship](#)

[NetApp Documentation: Product Library A-Z](#)

Creating a transition peer relationship

You must create a transition peer relationship before you can set up a SnapMirror relationship for transition between a 7-Mode system and a cluster. As a cluster administrator, you can create a transition peer relationship between an SVM and a 7-Mode system by using the `vserver peer transition create` command.

- You must have ensured that the name of the source 7-Mode system does not conflict with any of local SVMs or already peered SVMs.
- You must have created a clustered Data ONTAP volume of type DP to which the 7-Mode data must be transitioned.

The size of the clustered Data ONTAP volume must be equal to or greater than the size of the 7-Mode volume.

- You must have ensured that the SVM names do not contain a ":".
- If you are using local LIFs, you must have ensured the following:
 - Local LIFs are created in the default IPspace
 - Local LIFs are configured on the node on which the volume resides
 - LIF migration policy is same as the volume node, so that both can migrate to the same destination node

When creating a transition peer relationship, you can also specify a multipath FQDN or IP address for load balancing the data transfers.

Steps

1. Use the `vserver peer transition create` command to create a transition peer relationship.
2. Use the `vserver peer transition show` to verify that the transition peer relationship is created successfully.

Example of creating and viewing transition peer relationships

The following command creates a transition peer relationship between the SVM `vs1` and the 7-Mode system `src1` with the multipath address `src1-e0d` and local LIFs `lif1` and `lif2`:

```
cluster1::> vserver peer transition create -local-vserver vs1 -src-filer
-name src1 -multi-path-address src1-e0d -local-lifs lif1,lif2
```

The following examples show a transition peer relationship between a single SVM (`vs1`) and multiple 7-Mode systems:

```
cluster1::> vserver peer transition create -local-vserver vs1 -src-filer
-name src3
Transition peering created

cluster1::> vserver peer transition create -local-vserver vs1 -src-filer
-name src2
Transition peering created
```

The following output shows the transition peer relationships of the SVM `vs1`:

```
cluster1::> vserver peer transition show
Vserver  Source Filer  Multi Path Address  Local LIFs
-----  -----  -----  -----
vs1      src2      -          -
vs1      src3      -          -
```

Configuring a TCP window size for SnapMirror relationships

You can configure a TCP window size for SnapMirror relationships between the 7-Mode volume and the ONTAP volume to improve the SnapMirror transfer throughput so that the replication operations are completed faster.

The `window-size-for-tdp-mirror` option is provided with the `snapmirror policy` command to configure the TCP window size for SnapMirror relationships between the 7-Mode and ONTAP volumes (TDP). Using this option, you can configure a higher/lower TCP window size. You must be aware of the following considerations when setting this option:

- The `window-size-for-tdp-mirror` option can be configured only for policies of type `async-mirror`.
- The `window-size-for-tdp-mirror` option can be configured in the range of 256 KB to 7 MB. Otherwise configuration fails.
- The default value for the `window-size-for-tdp-mirror` option is 2 MB.



The `window-size-for-tdp-mirror` option is hidden and tab complete does not work. Make sure to type the full option to use it.

The following example displays how to configure a TCP window size of 5 MB for a SnapMirror relationship of type TDP:

Steps

1. Create a SnapMirror policy of type `async-mirror` that has a TCP window size of 5 MB:

```
snapmirror policy create
```

```
cluster01::> snapmirror policy create -vserver vserverA -policy
tdp_window_size_policy -window-size-for-tdp-mirror 5MB -type async-
mirror
```

2. Create a SnapMirror relationship of type TDP and apply the policy:

```
snapmirror create
```

```
cluster01::> snapmirror create -source-path filerA:volA -destination
-path vserverA:volA -type TDP -policy tdp_window_size_policy
```

3. View the configured window size in the SnapMirror policy:

```
snapmirror policy show
```

```
cluster01::> snapmirror policy show -vserver vserverA -policy
tdp_window_size_policy -fields window-size-for-tdp-mirror
```

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 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:dataProvider20
-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:dataProvider20
          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	<p>i. Use the <code>snapmirror update</code> command.</p> <pre data-bbox="943 270 1465 340">cluster1::> snapmirror update -destination-path vs1:dst_vol</pre> <p>ii. Use the <code>snapmirror show</code> command to monitor the data copy status.</p> <pre data-bbox="943 544 1465 614">cluster1::> snapmirror show -destination-path vs1:dst_vol</pre> <p>Source Path: system7mode: dataVol20</p> <p>Destination Path: vs1:dst_vol</p> <p>Relationship Type: TDP Relationship</p> <p>Group Type: none</p> <p>SnapMirror Schedule: - SnapMirror</p> <p>Policy Type: async-mirror</p> <p>SnapMirror Policy: DPDefault</p> <p>Tries Limit: -</p> <p>Throttle (KB/sec): unlimited</p> <p>Mirror State: Snapmirrored</p> <p>...</p> <p>Number of Failed Updates: 0</p> <p>Number of Successful Resyncs: 0</p> <p>Number of Failed Resyncs: 0</p> <p>Number of Successful Breaks: 0</p> <p>Number of Failed Breaks: 0</p> <p>Total Transfer Bytes: 278528</p> <p>Total Transfer Time in Seconds: 11</p>

If you want to...	Then...
Perform scheduled update transfers	<p>i. Use the <code>job schedule cron create</code> command to create a schedule for update transfers.</p> <div data-bbox="922 327 1468 432" style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <pre>cluster1::> job schedule cron create -name 15_minute_sched -minute 15</pre> </div> <p>ii. Use the <code>snapmirror modify</code> command to apply the schedule to the SnapMirror relationship.</p> <div data-bbox="922 686 1468 792" style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <pre>cluster1::> snapmirror modify -destination-path vs1:dst_vol -schedule 15_minute_sched</pre> </div> <p>iii. Use the <code>snapmirror show</code> command to monitor the data copy status.</p>

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 show
-destination-path vs1:dst_vol
```

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

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

```
Destination Path: vs1:dst_vol
```

```
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.

```
Group Type: none
snapmirror resume command to enable
SnapMirror Schedule:
15:00:00
```

```
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.

```
Number of
Failed Updates: 0
```

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

```
Number of
Successful Resyncs: 0
```

```
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.

```
Number of
Failed Breaks: 0
Total
```

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

```
Transfer Bytes: 278528
Total Transfer Time
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 anSVM 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...	Then...
Update transfers manually	<p>i. Use the <code>snapmirror update</code> command.</p> <div data-bbox="913 242 1493 411" style="border: 1px solid black; padding: 10px; margin-left: 20px;"> <pre>sec_cluster::> snapmirror update -destination-path dst_vserver:dst_c_vol</pre> </div> <p>ii. Use the <code>snapmirror show</code> command to monitor the data copy status.</p>

If you want to...	Then...
Perform scheduled update transfers	<p>i. Use the <code>job schedule cron create</code> command to create a schedule for update transfers.</p> <div data-bbox="913 295 1494 475" style="border: 1px solid #ccc; padding: 10px; background-color: #f9f9f9;"> <pre>sec_cluster::> job schedule cron create -name 15_minute_sched -minute 15</pre> </div> <p>ii. Use the <code>snapmirror modify</code> command to apply the schedule to the SnapMirror relationship.</p> <div data-bbox="913 654 1494 855" style="border: 1px solid #ccc; padding: 10px; background-color: #f9f9f9;"> <pre>sec_cluster::> snapmirror modify -destination-path dst_vserver:dst_c_vol -schedule 15_minute_sched</pre> </div> <p>iii. Use the <code>snapmirror show</code> command to monitor the data copy status.</p>

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

sec_cluster::> snapmirror show -destination-path

sec_cluster::> snapmirror quiesce -destination-path
dst_vserver:dst_vol

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

sec_system:dst_7_vol
Destination Path.

sec_cluster::> snapmirror modify -destination-path
dst_vserver:dst_vol -schedule ""

c. If you quiesced the SnapMirror transfers earlier, use the snapmirror resume 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 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.

Successful Updates: 1
Number of

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

Number of

Successful Breaks: 0

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.

Successful Breaks: 0
Number of

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

Total Transfer Bytes: 278528
Total Transfer Time

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

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

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...
Update transfers manually	<p>i. Use the <code>snapmirror update</code> command.</p> <div data-bbox="913 253 1387 380" style="border: 1px solid black; padding: 5px; margin-left: 20px;"> <pre>pri_cluster::> snapmirror update -destination-path src_vserver:src_c_vol</pre> </div> <p>ii. Use the <code>snapmirror show</code> command to monitor the data copy status.</p>

If you want to...	Then...
Perform scheduled update transfers	<p>i. Use the <code>job schedule cron create</code> command to create a schedule for update transfers.</p> <div data-bbox="922 327 1428 443" style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <pre>pri_cluster::> job schedule cron create -name 15_minute_sched -minute 15</pre> </div> <p>ii. Use the <code>snapmirror modify</code> command to apply the schedule to the SnapMirror relationship.</p> <div data-bbox="938 675 1387 834" style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <pre>pri_cluster::> snapmirror modify -destination-path src_vserver:src_c_vol -schedule 15_minute_sched</pre> </div> <p>iii. Use the <code>snapmirror show</code> command to monitor the data copy status.</p>

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

```
pri_cluster> snapmirror
           pri_cluster> show -destination-path
```

```
pri_cluster> snapmirror quiesce -destination-path
           src_vserver:src_c_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 ""
```

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

Relationship

Snapshot Type: None

```
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: *****

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

Successful Resyncs: 0

Number of

Failed Resyncs: 0

```
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.

Total Transfer Bytes: 473163808768

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:

- 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.
- 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
```

- 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.
```

- 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.

- Use the `snapmirror delete` command to delete the relationship.

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

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

```
system7mode> snapmirror release dataVol120 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 dataVol120 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

SnapMirrored.



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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