



Planning for transition

ONTAP 7-Mode Transition

NetApp

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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](#)

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