Convert FlexVol volumes to FlexGroup volumes

ONTAP 9

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Converting FlexVol volumes to FlexGroup volumes overview

If you want to expand a FlexVol volume beyond its space limit, you can convert the FlexVol volume to a FlexGroup volume. Beginning with ONTAP 9.7, you can convert standalone FlexVol volumes or FlexVol volumes that are in a SnapMirror relationship to FlexGroup volumes.

Considerations for converting FlexVol volumes to FlexGroup volumes

You should be aware of the features and operations that are supported before you decide to convert FlexVol volumes to FlexGroup volumes.

Operations not supported during conversion

The following operations are not allowed when volume conversion is in progress:

- Volume move
- Aggregate autobalance
- Aggregate relocation
- Planned takeover and giveback in a high-availability configuration
- Manual and automatic giveback in an high-availability configuration
- Cluster upgrade and revert
- FlexClone volume split
- Volume rehost
- Volume modify and autosize
- Volume rename
- Attaching an object store to an aggregate
- Negotiated switchover in MetroCluster configuration
- SnapMirror operations
- Restoring from a Snapshot copy
- Quota operations
- Storage efficiency operations

You can perform these operations on the FlexGroup volume after successful conversion.

Configurations that are not supported with FlexGroup volumes

- Offline or restricted volume
- SVM root volume
- SnapLock volumes

- SAN
- SMB 1.0
- NVMe namespaces
- Remote Volume Shadow Copy Service (VSS)

Convert a FlexVol volume to a FlexGroup volume

Beginning with ONTAP 9.7, you can perform an in-place conversion of a FlexVol volume to a FlexGroup volume without requiring a data copy or additional disk space.

What you'll need

- Transitioned volumes can be converted to FlexGroup volumes.

  Converting transitioned volumes to FlexGroup volumes requires diag mode and should be performed only under NetApp Support supervision. It is highly recommended that you contact NetApp Support before you proceed with the conversion process.

- The FlexVol volume that is being converted must be online.
- The operations and configurations on the FlexVol volume must be compatible with the conversion process.

  An error message is generated if the FlexVol volume has any incompatibility and the volume conversion is aborted. You can take corrective actions and retry the conversion.

Steps

1. Verify that the FlexVol volume is online: `volume show vol_name -volume-style-extended,state`

```
cluster-1::> volume show my_volume -fields volume-style-extended,state
vserver volume    state  volume-style-extended
------- --------- ------ ---------------------
vs0     my_volume online flexvol
```

2. Verify whether the FlexVol volume can be converted without issues:
   a. Log in to the advance privilege mode: `set -privilege advanced`
   b. Verify the conversion process: `volume conversion start -vserver vs1 -volume flexvol -check-only true`

      You must rectify all errors before converting the volume.

      > You cannot convert a FlexGroup volume back to a FlexVol volume. If you want to do so, you should contact support.

3. Start the conversion: `volume conversion start -vserver svm_name -volume vol_name`

```
cluster-1::*> volume conversion start -vserver vs0 -volume my_volume

Warning: Converting flexible volume "my_volume" in Vserver "vs0" to a
FlexGroup
         will cause the state of all Snapshot copies from the volume to
be set
         to "pre-conversion". Pre-conversion Snapshot copies cannot be
         restored.
Do you want to continue? {y|n}: y
[Job 57] Job succeeded: success
```

4. Verify that the conversion is successful: `volume show vol_name -fields -volume-style -extended,state`

```
cluster-1::*> volume show my_volume -fields volume-style-extended,state
vserver volume    state  volume-style-extended
------- --------- ------ --------------------
vs0     my_volume online flexgroup
```

Results

The FlexVol volume is converted to a single-member FlexGroup volume.

After you finish

You can expand the FlexGroup volume, as required.

Convert a FlexVol volume SnapMirror relationship to a FlexGroup volume SnapMirror relationship

To convert a FlexVol volume SnapMirror relationship to a FlexGroup volume SnapMirror relationship in ONTAP, you must first convert the destination FlexVol volume followed by the source FlexVol volume.

What you'll need

- The FlexVol volume that is being converted must be online.
- The source FlexVol volume in the SnapMirror relationship must not be the source volume for multiple SnapMirror relationships.

  Fan-out SnapMirror relationships are not supported for FlexGroup volumes.

- The operations and configurations on the FlexVol volume must be compatible with the conversion process.

  An error message is generated if the FlexVol volume has any incompatibility and the volume conversion is aborted. You can take corrective actions and retry the conversion.

About this task

FlexGroup conversion is supported only for asynchronous SnapMirror relationships.

Steps

1. Verify that the SnapMirror relationship is healthy: `snapmirror show`

   Only XDP type mirror relationships can be converted.

```
cluster2::> snapmirror show

Progress
Source            Destination Mirror  Relationship   Total
Last
Path        Type  Path        State   Status         Progress  Healthy
Updated
----------- ---- ------------ ------- -------------- --------- -------
--------
vs0:src_dpv DP   vs2:dst_dpv  Snapmirrored
                                     Idle           -         true    -
vs0:src_xdp XDP  vs2:dst_xdp  Snapmirrored
                                     Idle           -         true    -
```

2. Verify whether the source volume is compatible for conversion:
   a. Log in to the advance privilege mode: `set -privilege advanced`
   b. Verify the conversion process: `volume conversion start -vserver vs1 -volume src_vol -check-only true`

      You must rectify all errors before converting the volume.

3. Convert the destination FlexVol volume to FlexGroup volume.
   a. Quiesce the FlexVol SnapMirror relationship: `snapmirror quiesce -destination-path dest_svm:dest_volume`

```
cluster2::> snapmirror quiesce -destination-path vs2:dst_xdp
```

   b. Start the conversion: `volume conversion start -vserver dest_svm -volume dest_volume`

```
cluster-1::> volume conversion start -vserver vs2 -volume dst_xdp

Warning: After the volume is converted to a FlexGroup, it will not be
possible
to change it back to a flexible volume.
Do you want to continue? {y|n}: y

[Job 510] Job succeeded: SnapMirror destination volume "dst_xdp" has
been successfully converted to a FlexGroup volume.
You must now convert the relationship's source volume, "vs0:src_xdp",
to a FlexGroup.
Then, re-establish the SnapMirror relationship using the "snapmirror
resync" command.
```

4. Convert the source FlexVol volume to FlexGroup volume: `volume conversion start -vserver src_svm_name -volume src_vol_name`

```
cluster-1::> volume conversion start -vserver vs0 -volume src_xdp

Warning: Converting flexible volume "src_xdp" in Vserver "vs0" to a
FlexGroup
         will cause the state of all Snapshot copies from the volume to
be set
         to "pre-conversion". Pre-conversion Snapshot copies cannot be
         restored.
Do you want to continue? {y|n}: y
[Job 57] Job succeeded: success
```

5. Resync the relationship: `snapmirror resync -destination-path dest_svm_name:dest_volume`

```
cluster2::> snapmirror resync -destination-path vs2:dst_xdp
```

After you finish

You must ensure that when the source FlexGroup volume is expanded to include more constituents, the destination volume is also expanded.