

## **Restore files from snapshots**

ONTAP 9

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## Restore files from snapshots

# Restore a file from an ONTAP snapshot on an NFS or SMB client

A user on an NFS or SMB client can restore a file directly from a snapshot without the intervention of a storage system administrator.

Every directory in the file system contains a subdirectory named .snapshot accessible to NFS and SMB users. The .snapshot subdirectory contains subdirectories corresponding to the snapshots of the volume:

```
$ ls .snapshot
daily.2017-05-14_0013/ hourly.2017-05-15_1106/
daily.2017-05-15_0012/ hourly.2017-05-15_1206/
hourly.2017-05-15_1006/ hourly.2017-05-15_1306/
```

Each subdirectory contains the files referenced by the snapshot. If users accidentally delete or overwrite a file, they can restore the file to the parent read-write directory by copying the file from the snapshot subdirectory to the read-write directory:

```
$ ls my.txt
ls: my.txt: No such file or directory
$ ls .snapshot
daily.2017-05-14_0013/ hourly.2017-05-15_1106/
daily.2017-05-15_0012/ hourly.2017-05-15_1206/
hourly.2017-05-15_1006/ hourly.2017-05-15_1306/
$ ls .snapshot/hourly.2017-05-15_1306/my.txt
my.txt
$ cp .snapshot/hourly.2017-05-15_1306/my.txt .
$ ls my.txt
my.txt
```

# **Enable and disable NFS and SMB client access to ONTAP snapshot directory**

You can enable and disable access to the snapshot directory using the ONTAP CLI -snapdir-access option of the volume modify command, and beginning with ONTAP 9.10.1, you can use System Manager to enable or disable client systems to access to a snapshot directory on a volume. Enabling access makes the snapshot directory visible to clients and allows Windows clients to map a drive to the snapshot directory to view and access its contents. NFS and SMB clients can then restore a file or LUN from a snapshot.

You can enable or disable access to a volume's snapshot directory by editing the volume settings or by editing the volume's share settings.

### Enable or disable client access to snapshot directory by editing a volume

#### Steps

You can enable and disable client snapshot directory access by using ONTAP System Manager or the ONTAP CLI. The snapshot directory on a volume is accessible to clients by default.

#### **System Manager**

- 1. Click **Storage > Volumes**.
- 2. Select the volume containing the snapshots directory you want to either show or hide.
- 3. Click and select Edit.
- 4. In the Snapshot (Local) Settings section, select or deselect Show the Snapshot directory to clients.
- 5. Click Save.

#### CLI

1. Check the snapshot directory access status:

```
volume show -vserver <SVM_name> -volume <vol_name> -fields snapdir-
access
```

#### Example:

```
clus1::> volume show -vserver vs0 -volume vol1 -fields snapdir-
access
vserver volume snapdir-access
------
vs0 vol1 false
```

Learn more about volume show in the ONTAP command reference.

2. Enable or disable the snapshot directory access:

```
volume modify -vserver <SVM_name> -volume <vol_name> -snapdir-access
<true|false>
```

The following example enables snapshot directory access on vol1:

```
clus1::> volume modify -vserver vs0 -volume vol1 -snapdir-access
true
Volume modify successful on volume vol1 of Vserver vs0.
```

Learn more about volume modify in the ONTAP command reference.

### Enable or disable client access to snapshot directory by editing a share

The snapshot directory on a volume is accessible to clients by default.

#### **Steps**

- 1. Click Storage > Shares.
- 2. Select the volume containing the snapshots directory you want to either show or hide.
- Click and select Edit.
- In the Share Properties section, select or deselect Allow clients to access snapshots directory.
- Click Save.

## Restore a single file from an ONTAP snapshot

You can use the volume snapshot restore-file command to restore a single file or LUN from a snapshot. You can restore the file to a different location in the parent readwrite volume if you do not want to replace an existing file.

#### About this task

If you are restoring an existing LUN, a LUN clone is created and backed up in the form of a snapshot. During the restore operation, you can read from and write to the LUN.

Files with streams are restored by default.

#### **Steps**

1. List the snapshots in a volume:

```
volume snapshot show -vserver SVM -volume volume
```

Learn more about volume snapshot show in the ONTAP command reference.

The following example shows the snapshots in vol1:

```
clus1::> volume snapshot show -vserver vs1 -volume vol1
Vserver Volume Snapshot
                                   State
                                           Size Total% Used%
  ---- ----- ------ ------
             hourly.2013-01-25 0005 valid
                                                   0%
                                                         0%
                                          224KB
vs1
       vol1
                                                         0%
             daily.2013-01-25 0010 valid 92KB
                                                   0%
             hourly.2013-01-25 0105 valid 228KB
                                                   0 응
                                                         0%
             hourly.2013-01-25 0205 valid 236KB
                                                   0 응
                                                        0%
             hourly.2013-01-25 0305 valid 244KB
                                                   0%
                                                         0%
             hourly.2013-01-25 0405 valid 244KB
                                                    0%
                                                         0%
             hourly.2013-01-25 0505 valid
                                          244KB
                                                    0 %
                                                         0 %
7 entries were displayed.
```

#### 2. Restore a file from a snapshot:

volume snapshot restore-file -vserver  $\it SVM$  -volume volume -snapshot  $\it snapshot$  -path  $\it file\_path$  -restore-path  $\it destination\_path$ 

Learn more about volume snapshot restore-file in the ONTAP command reference.

The following example restores the file myfile.txt:

```
cluster1::> volume snapshot restore-file -vserver vs0 -volume vol1
-snapshot daily.2013-01-25_0010 -path /myfile.txt
```

## Restore part of a file from an ONTAP snapshot

You can use the volume snapshot partial-restore-file command to restore a range of data from a snapshot to a LUN or to an NFS or SMB container file, assuming you know the starting byte offset of the data and the byte count. You might use this command to restore one of the databases on a host that stores multiple databases in the same LUN.

Beginning with ONTAP 9.12.1, partial restore is available for volumes using SnapMirror active sync.

#### **Steps**

1. List the snapshots in a volume:

```
volume snapshot show -vserver SVM -volume volume
```

Learn more about volume snapshot show in the ONTAP command reference.

The following example shows the snapshots in vol1:

```
clus1::> volume snapshot show -vserver vs1 -volume vol1
Vserver Volume Snapshot
                                            Size Total% Used%
                                    State
      vol1 hourly.2013-01-25 0005 valid 224KB
                                                     0 응
                                                           0 %
vs1
              daily.2013-01-25 0010 valid 92KB
                                                     0%
                                                          0 응
              hourly.2013-01-25 0105 valid 228KB
                                                     0%
                                                          0 응
              hourly.2013-01-25 0205 valid 236KB
                                                     0%
                                                          0%
              hourly.2013-01-25 0305 valid 244KB
                                                     0 응
                                                          0 %
              hourly.2013-01-25 0405 valid 244KB
                                                     0%
                                                           0 %
              hourly.2013-01-25 0505 valid 244KB
                                                     0%
                                                           0%
7 entries were displayed.
```

2. Restore part of a file from a snapshot:

volume snapshot partial-restore-file -vserver SVM -volume volume -snapshot snapshot -path file path -start-byte starting byte -byte-count byte count

The starting byte offset and byte count must be multiples of 4,096.

The following example restores the first 4,096 bytes of the file myfile.txt:

cluster1::> volume snapshot partial-restore-file -vserver vs0 -volume
vol1 -snapshot daily.2013-01-25\_0010 -path /myfile.txt -start-byte 0
-byte-count 4096

## Restore the contents of a volume from an ONTAP snapshot

You can recover a volume to an earlier point in time by restoring from a snapshot. You can use System Manager or the volume snapshot restore command to restore the contents of a volume from a snapshot. Learn more about volume snapshot restore in the ONTAP command reference.

#### About this task

If the volume has SnapMirror relationships, manually replicate all mirror copies of the volume immediately after you restore from a snapshot. Not doing so can result in unusable mirror copies that must be deleted and recreated.

#### **Steps**

You can use System Manager or the ONTAP CLI to restore from an earlier snapshot.

#### **System Manager**

- 1. Click **Storage** and select a volume.
- 2. Under **Snapshot copies**, click inext to the snapshot you want to restore, and select **Restore**.

#### CLI

1. List the snapshots in a volume:

```
volume snapshot show -vserver <SVM> -volume <volume>
```

The following example shows the snapshot in vol1:

```
clus1::> volume snapshot show -vserver vs1 -volume vol1
Vserver Volume Snapshot
                                      Size Total% Used%
                               State
_____ ____
                                      _____
     vol1 hourly.2013-01-25 0005 valid 224KB
                                              0%
                                                   0%
vs1
            daily.2013-01-25 0010 valid 92KB
                                                  0 응
                                             0%
            hourly.2013-01-25 0105 valid 228KB
                                             0%
                                                  0%
            hourly.2013-01-25 0205 valid 236KB
                                             0%
                                                   0 응
            hourly.2013-01-25 0305 valid 244KB
                                             0%
                                                   0%
            hourly.2013-01-25 0405 valid 244KB
                                             0 응
                                                   0 응
            hourly.2013-01-25_0505 valid 244KB 0%
                                                   0%
7 entries were displayed.
```

2. Restore the contents of a volume from a snapshot:

```
\label{eq:colume_volume} \mbox{volume snapshot restore -vserver} < \mbox{SVM} > -\mbox{volume} > -\mbox{snapshot} > \\ < \mbox{snapshot} > \mbox{volume} > -\mbox{snapshot} > \\ < \mbox{snapshot} > \mbox{volume} > -\mbox{snapshot} > \\ < \mbox{snapshot} > -\mbox{snapshot} > -\mbox{snapshot} > \\ < \mbox{snapshot} > -\mbox{snapshot} > -\mbox{
```

The following example restores the contents of vol1:

```
cluster1::> volume snapshot restore -vserver vs0 -volume vol1
-snapshot daily.2013-01-25_0010
```

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