



# **Restore files from Snapshot copies**

ONTAP 9

NetApp  
May 17, 2023

# Table of Contents

- Restore files from Snapshot copies ..... 1
  - Restore a file from a Snapshot copy on an NFS or SMB client ..... 1
  - Enable and disable NFS and SMB client access to Snapshot copy directory ..... 1
  - Restore a single file from a Snapshot copy ..... 2
  - Restore part of a file from a Snapshot copy ..... 3
  - Restore the contents of a volume from a Snapshot copy ..... 4

# Restore files from Snapshot copies

## Restore a file from a Snapshot copy on an NFS or SMB client

A user on an NFS or SMB client can restore a file directly from a Snapshot copy 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 Snapshot copies 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 copy. 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 Snapshot copy directory

To determine whether the Snapshot copy directory is visible to NFS and SMB clients to restore a file or LUN from a Snapshot copy, you can enable and disable access to the Snapshot copy directory using the `-snapdir-access` option of the `volume modify` command.

### Steps

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
```

## 2. Enable or disable the Snapshot copy directory access:

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

The following example enables Snapshot copy directory access on vol1:

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

# Restore a single file from a Snapshot copy

You can use the `volume snapshot restore-file` command to restore a single file or LUN from a Snapshot copy. You can restore the file to a different location in the parent read-write 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 copy. During the restore operation, you can read to and write from the LUN.

Files with streams are restored by default.

## Steps

1. List the Snapshot copies in a volume:

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

For complete command syntax, see the man page.

The following example shows the Snapshot copies in vol1:

```
clus1::> volume snapshot show -vserver vs1 -volume vol1
```

Vserver	Volume	Snapshot	State	Size	Total%	Used%
vs1	vol1	hourly.2013-01-25_0005	valid	224KB	0%	0%
		daily.2013-01-25_0010	valid	92KB	0%	0%
		hourly.2013-01-25_0105	valid	228KB	0%	0%
		hourly.2013-01-25_0205	valid	236KB	0%	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 copy:

```
volume snapshot restore-file -vserver SVM -volume volume -snapshot snapshot  
-path file_path -restore-path destination_path
```

For complete command syntax, see the man page.

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 a Snapshot copy

You can use the `volume snapshot partial-restore-file` command to restore a range of data from a Snapshot copy 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 in ONTAP 9.12.1, partial restore is available for volumes in an SM-BC relationship.

### Steps

1. List the Snapshot copies in a volume:

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

For complete command syntax, see the man page.

The following example shows the Snapshot copies in `vol1`:

```
clus1::> volume snapshot show -vserver vs1 -volume vol1
```

Vserver	Volume	Snapshot	State	Size	Total%	Used%
vs1	vol1	hourly.2013-01-25_0005	valid	224KB	0%	0%
		daily.2013-01-25_0010	valid	92KB	0%	0%
		hourly.2013-01-25_0105	valid	228KB	0%	0%
		hourly.2013-01-25_0205	valid	236KB	0%	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 part of a file from a Snapshot copy:

```
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 a Snapshot copy

You can use the `volume snapshot restore` command to restore the contents of a volume from a Snapshot copy.

## About this task

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

## 1. List the Snapshot copies in a volume:

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

The following example shows the Snapshot copies in `vol1`:

```
clus1::> volume snapshot show -vserver vs1 -volume vol1
```

Vserver	Volume	Snapshot	State	Size	Total%	Used%
vs1	vol1	hourly.2013-01-25_0005	valid	224KB	0%	0%
		daily.2013-01-25_0010	valid	92KB	0%	0%
		hourly.2013-01-25_0105	valid	228KB	0%	0%
		hourly.2013-01-25_0205	valid	236KB	0%	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 the contents of a volume from a Snapshot copy:

```
volume snapshot restore -vserver SVM -volume volume -snapshot snapshot
```

The following example restores the contents of vol1:

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

## Copyright information

Copyright © 2023 NetApp, Inc. All Rights Reserved. Printed in the U.S. No part of this document covered by copyright may be reproduced in any form or by any means—graphic, electronic, or mechanical, including photocopying, recording, taping, or storage in an electronic retrieval system—without prior written permission of the copyright owner.

Software derived from copyrighted NetApp material is subject to the following license and disclaimer:

THIS SOFTWARE IS PROVIDED BY NETAPP “AS IS” AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL NETAPP BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

NetApp reserves the right to change any products described herein at any time, and without notice. NetApp assumes no responsibility or liability arising from the use of products described herein, except as expressly agreed to in writing by NetApp. The use or purchase of this product does not convey a license under any patent rights, trademark rights, or any other intellectual property rights of NetApp.

The product described in this manual may be protected by one or more U.S. patents, foreign patents, or pending applications.

LIMITED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (b)(3) of the Rights in Technical Data -Noncommercial Items at DFARS 252.227-7013 (FEB 2014) and FAR 52.227-19 (DEC 2007).

Data contained herein pertains to a commercial product and/or commercial service (as defined in FAR 2.101) and is proprietary to NetApp, Inc. All NetApp technical data and computer software provided under this Agreement is commercial in nature and developed solely at private expense. The U.S. Government has a non-exclusive, non-transferrable, nonsublicensable, worldwide, limited irrevocable license to use the Data only in connection with and in support of the U.S. Government contract under which the Data was delivered. Except as provided herein, the Data may not be used, disclosed, reproduced, modified, performed, or displayed without the prior written approval of NetApp, Inc. United States Government license rights for the Department of Defense are limited to those rights identified in DFARS clause 252.227-7015(b) (FEB 2014).

## Trademark information

NETAPP, the NETAPP logo, and the marks listed at <http://www.netapp.com/TM> are trademarks of NetApp, Inc. Other company and product names may be trademarks of their respective owners.