



# Manage volume relationships

Element Software

NetApp  
June 10, 2024

# Table of Contents

- Manage volume relationships . . . . . 1
  - Find more information . . . . . 1
  - Pause replication . . . . . 1
  - Change the mode of replication . . . . . 1
  - Delete volume pairs . . . . . 2
  - Delete a cluster pair . . . . . 2
  - Cluster pair details . . . . . 2
  - Volume pair details . . . . . 3

# Manage volume relationships

You can manage volume relationships in many ways, such as pausing replication, reversing volume pairing, changing the mode of replication, deleting a volume pair, or deleting a cluster pair.

## Find more information

- [Pause replication](#)
- [Change the mode of replication](#)
- [Delete volume pairs](#)

## Pause replication

You can manually pause replication if you need to stop I/O processing for a short time. You might want to pause replication if there is a surge in I/O processing and you want to reduce the processing load.

1. Select **Data Protection > Volume Pairs**.
2. Click the Actions icon for the volume pair.
3. Click **Edit**.
4. In the **Edit Volume Pair** pane, manually pause the replication process.



Pausing or resuming volume replication manually causes the transmission of data to cease or resume. Be sure that you have coordinated these changes at both sites.

5. Click **Save Changes**.

## Change the mode of replication

You can edit volume pair properties to change the replication mode of the volume pair relationship.

1. Select **Data Protection > Volume Pairs**.
2. Click the Actions icon for the volume pair.
3. Click **Edit**.
4. In the **Edit Volume Pair** pane, select a new replication mode:
  - **Real-time (Asynchronous)**: Writes are acknowledged to the client after they are committed on the source cluster.
  - **Real-time (Synchronous)**: Writes are acknowledged to the client after they are committed on both the source and target clusters.
  - **Snapshots Only**: Only snapshots created on the source cluster are replicated. Active writes from the source volume are not replicated. **Attention:** Changing the mode of replication changes the mode immediately. Be sure that you have coordinated these changes at both sites.

5. Click **Save Changes**.

## Delete volume pairs

You can delete a volume pair if you want to remove a pair association between two volumes.

1. Select **Data Protection > Volume Pairs**.
2. Click the Actions icon for the volume pair you want to delete.
3. Click **Delete**.
4. Confirm the message.

## Delete a cluster pair

You can delete a cluster pair from the Element UI of either of the clusters in the pair.

1. Click **Data Protection > Cluster Pairs**.
2. Click the Actions icon for a cluster pair.
3. In the resulting menu, click **Delete**.
4. Confirm the action.
5. Perform the steps again from the second cluster in the cluster pairing.

## Cluster pair details

The Cluster Pairs page on the Data Protection tab provides information about clusters that have been paired or are in the process of being paired. The system displays pairing and progress messages in the Status column.

- **ID**

A system-generated ID given to each cluster pair.

- **Remote Cluster Name**

The name of the other cluster in the pair.

- **Remote MVIP**

The management virtual IP address of the other cluster in the pair.

- **Status**

Replication status of the remote cluster

- **Replicating Volumes**

The number of volumes contained by the cluster that are paired for replication.

- **UUID**

A unique ID given to each cluster in the pair.

## Volume pair details

The Volume Pairs page on the Data Protection tab provides information about volumes that have been paired or are in the process of being paired. The system displays pairing and progress messages in the Volume Status column.

- **ID**

System-generated ID for the volume.

- **Name**

The name given to the volume when it was created. Volume names can be up to 223 characters and contain a-z, 0-9, and dash (-).

- **Account**

Name of the account assigned to the volume.

- **Volume Status**

Replication status of the volume

- **Snapshot Status**

Status of the snapshot volume.

- **Mode**

The client write replication method. Possible values are as follows:

- Async
- Snapshot-Only
- Sync

- **Direction**

The direction of the volume data:

- Source volume icon (➔) indicates data is being written to a target outside the cluster.
- Target volume icon (←) indicates data is being written to the local volume from an outside source.

- **Async Delay**

Length of time since the volume was last synced with the remote cluster. If the volume is not paired, the value is null.

- **Remote Cluster**

Name of the remote cluster on which the volume resides.

- **Remote Volume ID**

Volume ID of the volume on the remote cluster.

- **Remote Volume Name**

Name given to the remote volume when it was created.

## Volume pairing messages

You can view volume pairing messages during the initial pairing process from the Volume Pairs page under the Data Protection tab. These messages can display on both source and target ends of the pair in the Replicating Volumes list view.

- **PausedDisconnected**

Source replication or sync RPCs timed out. Connection to the remote cluster has been lost. Check network connections to the cluster.

- **ResumingConnected**

The remote replication sync is now active. Beginning the sync process and waiting for data.

- **ResumingRRSync**

A single helix copy of the volume metadata is being made to the paired cluster.

- **ResumingLocalSync**

A double helix copy of the volume metadata is being made to the paired cluster.

- **ResumingDataTransfer**

Data transfer has resumed.

- **Active**

Volumes are paired and data is being sent from the source to the target volume and the data is in sync.

- **Idle**

No replication activity is occurring.

## Volume pairing warnings

The Volume Pairs page on the Data Protection tab provides these messages after you pair volumes. These messages can display on both source and target ends of the pair (unless otherwise indicated) in the Replicating Volumes list view.

- **PausedClusterFull**

Because the target cluster is full, source replication and bulk data transfer cannot proceed. The message displays on the source end of the pair only.

- **PausedExceededMaxSnapshotCount**

The target volume already has the maximum number of snapshots and cannot replicate additional snapshots.

- **PausedManual**

Local volume has been manually paused. It must be unpaused before replication resumes.

- **PausedManualRemote**

Remote volume is in manual paused mode. Manual intervention required to unpause the remote volume before replication resumes.

- **PausedMisconfigured**

Waiting for an active source and target. Manual intervention required to resume replication.

- **PausedQoS**

Target QoS could not sustain incoming IO. Replication auto-resumes. The message displays on the source end of the pair only.

- **PausedSlowLink**

Slow link detected and stopped replication. Replication auto-resumes. The message displays on the source end of the pair only.

- **PausedVolumeSizeMismatch**

Target volume is not the same size as the source volume.

- **PausedXCopy**

A SCSI XCOPY command is being issued to a source volume. The command must complete before replication can resume. The message displays on the source end of the pair only.

- **StoppedMisconfigured**

A permanent configuration error has been detected. The remote volume has been purged or unpaired. No corrective action is possible; a new pairing must be established.

## Copyright information

Copyright © 2024 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.