



Volume backup using SnapVault

System Manager Classic

NetApp
January 13, 2022

Table of Contents

- Volume backup using SnapVault 1
- Volume backup using SnapVault overview 1
- SnapVault backup configuration workflow 1

Volume backup using SnapVault

Volume backup using SnapVault overview

This content describes how to quickly configure SnapVault backup relationships between volumes that are located in different clusters. The SnapVault backup contains a set of read-only backup copies, which are located on a destination volume that you can use for restoring data when data is corrupted or lost.

You should use this content if you want to create SnapVault backup relationships for volumes in the following way:

- You are working with clusters running ONTAP 9.
- You are a cluster administrator.
- You have configured the cluster peer relationship and the SVM peer relationship.

[Cluster and SVM peering configuration](#)

- You must have enabled either the SnapMirror or SnapVault license, after all of the nodes in the cluster have been upgraded to the same version of ONTAP 9.
- You want to use default protection policies and schedules, and not create custom policies.
- You do not want to back up data for a single file or LUN restore.
- You want to use best practices, not explore every available option.
- You do not want to read a lot of conceptual background.
- You want to use System Manager, not the ONTAP command-line interface or an automated scripting tool.
- You want to use the *Classic* System Manager UI for ONTAP 9.7 and earlier releases, not the ONTAP System Manager UI for ONTAP 9.7 and later.

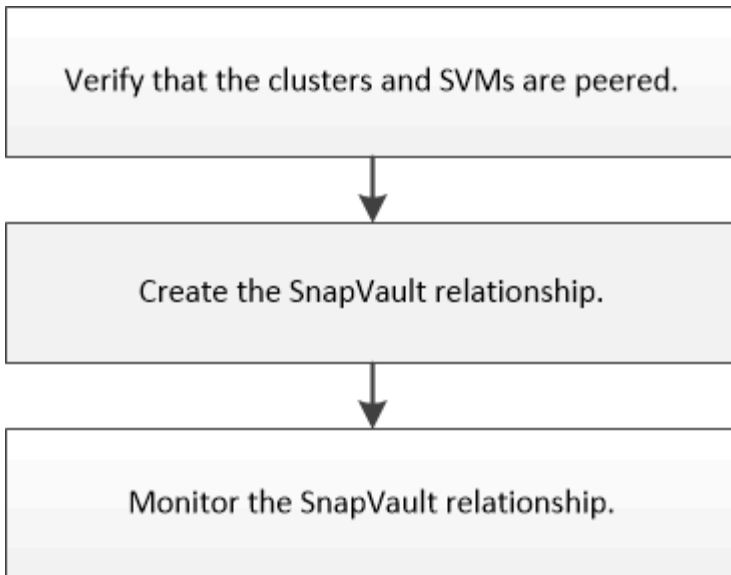
[ONTAP System Manager documentation](#)

If these assumptions are not correct for your situation, or if you want more conceptual background information, you should see the following resources:

- [Data protection](#)
- [NetApp Technical Report 4015: SnapMirror Configuration and Best Practices for ONTAP 9.1, 9.2](#)
- [NetApp Technical Report 4183: SnapVault Best Practices](#)

SnapVault backup configuration workflow

Configuring a SnapVault backup relationship includes verifying the cluster peer relationship, creating the SnapVault relationship between the source and the destination volumes, and monitoring the SnapVault relationship.



Verify cluster peer relationship and SVM peer relationship

Before you set up a volume for data protection by using SnapVault technology, you must verify that the source cluster and destination cluster are peered and are communicating with each other through the peer relationship. You must also verify that the source SVM and destination SVM are peered and are communicating with each other through the peer relationship.

About this task

You must perform this task from the **source** cluster.

Procedure

- If you are running ONTAP 9.3 or later, perform the following steps to verify the cluster peer relationship and SVM peer relationship:
 - a. Click **Configuration > Cluster Peers**.
 - b. Verify that the peered cluster is authenticated and is available.

<input checked="" type="checkbox"/>	Peer Cluster	Availability	Authentication Status	Local Cluster IPspace	Peer Cluster Intercluster IP Addresses	Last Updated Time
<input checked="" type="checkbox"/>	cluster2	Available	OK	Default	10.237.213.119, 10.237.213.127	Nov 27, 2017, 2:13 PM

- c. Click **Configuration > SVM Peers**.
 - d. Verify that the destination SVM is peered with the source SVM.
- If you are running ONTAP 9.2 or earlier, perform the following steps to verify the cluster peer relationship and SVM peer relationship:
 - a. Click the **Configurations** tab.
 - b. In the **Cluster Details** pane, click **Cluster Peers**.
 - c. Verify that the peered cluster is authenticated and available.

'Availability' and 'Authentication Status' information might be stale for up to several minutes.		
Create Modify Passphrase Modify Peer Network Parameters Delete Refresh		
Peer Cluster	Availability	Authentication Status
cluster-1	available	ok

- d. Click the **SVMs** tab and select the source SVM.
- e. In the **Peer Storage Virtual Machines** area, verify the destination SVM is peered with the source SVM.

If you do not see any peered SVM in this area, you can create the SVM peer relationship when creating the SnapVault relationship.

Creating the SnapVault relationship (ONTAP 9.2 or earlier)

Create a SnapVault relationship (starting with ONTAP 9.3)

You must create a SnapVault relationship between the source volume on one cluster and the destination volume on the peered cluster to create a SnapVault backup.

Before you begin

- You must have the cluster administrator user name and password for the destination cluster.
- The destination aggregate must have available space.

About this task

You must perform this task from the **source** cluster.

Steps

1. Click **Storage > Volumes**.
2. Select the volume that you want to back up, and then click **Actions > Protect**.

You can also select multiple source volumes, and then create SnapVault relationships with a single destination volume.

3. In the **Volumes: Protect Volumes** page, provide the following information:
 - a. Select **Vault** from the **Relationship Type** drop-down list.
 - b. Select the destination cluster, destination SVM, and the suffix for the destination volume.

Only peered SVMs and permitted SVMs are listed under destination SVMs.

The destination volume is automatically created. The name of the destination volume is the source volume name appended with the suffix.

- c. Click .
- d. In the **Advanced Options** dialog box, verify that the **Protection Policy** is set as XDPDefault.
- e. Select the **Protection Schedule**.

By default, the `daily` schedule is selected.

f. Verify that **Yes** is selected for initializing the SnapVault relationship.

All data protection relationships are initialized by default.

g. Click **Apply** to save the changes.

Advanced Options



Protection Policy XDPDefault

SnapMirror Labels	Retention Count
daily	7
weekly	52

Protection Schedule daily

Every Night at 0:10 AM

i Initialize Protection Yes No

i SnapLock for SnapVault There are no SnapLock aggregates assigned to the destination SVM.

i FabricPool There is no FabricPool assigned to the destination SVM.

Apply

4. In the **Volumes: Protect Volumes** page, click **Validate** to verify whether the volumes have matching SnapMirror labels.

5. Click **Save** to create the SnapVault relationship.

6. Verify that the status of the SnapVault relationship is in the `SnapshotMirrored` state.

a. Navigate to the **Volumes** window, and then select the volume that is backed up.

b. Expand the volume and click **PROTECTION** to view the data protection status of the volume.



Create the SnapVault relationship (ONTAP 9.2 or earlier)

You must create a SnapVault relationship between the source volume on one cluster and the destination volume on the peered cluster to create a SnapVault backup.

Before you begin

- You must have the cluster administrator user name and password for the destination cluster.
- The destination aggregate must have available space.

About this task

You must perform this task from the **source** cluster.

Steps

1. Click **Storage > SVMs**.
2. Select the SVM, and then click **SVM Settings**.
3. Click the **Volumes** tab.
4. Select the volume that you want to back up, and then click **Protect**.
5. In the **Create Protection Relationship** dialog box, select **Vault** from the **Relationship Type** drop-down list.
6. In the **Destination Volume** section, select the peered cluster.
7. Specify the SVM for the destination volume:

If the SVM is...	Then...
Peered	Select the peered SVM from the list.
Not peered	<ol style="list-style-type: none">a. Select the SVM.b. Click Authenticate.c. Enter the cluster administrator's credentials of the peered cluster, and then click Create.

8. Create a new destination volume:
 - a. Select the **New Volume** option.
 - b. Use the default volume name or enter a new volume name.
 - c. Select the destination aggregate.
 - d. Ensure that the **Enable dedupe** check box is selected.

Destination Volume

The screenshot shows the 'Destination Volume' configuration section of a software interface. It includes the following fields and controls:

- Cluster:** A dropdown menu with 'cluster.1' selected.
- Storage Virtual Machine:** A text input field containing 'vs0(peered)' and a 'Browse...' button with a help icon.
- Volume:** Radio buttons for 'New Volume' (selected) and 'Select Volume'.
- Volume name:** A text input field containing 'svm1_vol_2_vault'.
- Aggregate:** A text input field containing 'aggr1' and a 'Browse...' button.
- Enable dedupe:** A checked checkbox.
- Availability:** Text indicating '70.13 GB available (of 70.14 GB)'.

9. In the **Configuration Details** section, select `XDPDefault` as the protection policy.
10. Select a protection schedule from the list of schedules.
11. Ensure that the **Initialize Relationship** check box is selected to transfer the base Snapshot copy, and then click **Create**

Configuration Details

Snapshot with labels matching: daily, weekly

Every Sun at 0:15 am

None

Initialize Relationship

The wizard creates the relationship with the specified vault policy and schedule. The relationship is initialized by starting a baseline transfer of data from the source volume to the destination volume.

The Status section shows the status of each job.

Create Protection Relationship [X]

Source Volume

Cluster: cluster-1
 Storage Virtual Machine: svm1
 Volume: vol_2 { Used space 292 KB }

Destination Volume

Cluster: cluster-1
 Storage Virtual Machine: vs0
 Volume: svm1_vol_2_vault

Configuration Details

Vault Policy: XDPDefault
 Schedule: weekly

Status

Create volume	✓ Completed successfully
Enable dedupe	✓ Completed successfully
Create relationship	✓ Completed successfully
Initialize relationship	✓ Started successfully

12. Verify that the relationship status of the SnapVault relationship is in the `Snapmirrored` state.
 - a. Select the volume from the Volumes list, and then click **Data Protection**.
 - b. In the **Data Protection** bottom tab, verify that the SnapMirror relationship you created is listed and the

relationship state is Snapmirrored and type is Vault.

Name	Aggregate	Status	Thin Provi...	% Used	Available ...	Total Space	Storage Et...	Is Volume ...	Encrypted
svm1_root	aggr1	Online	No	5	979.56 MB	1 GB	Disabled	No	No
svm2_svm1_...	aggr2	Online	No	5	121.36 MB	128.02 MB	Enabled	No	No
vol1	aggr2	Online	No	0	1017.7 MB	1 GB	Disabled	No	No
vol123	aggr1	Online	Yes	5	1.9 GB	2 GB	Disabled	Yes	No

Destination Store...	Destination Volu...	Is Healthy	Relationship State	Transfer Status	Type	Lag Time	Policy
svm2	svm1_vol123_vault	Yes	Snapmirrored	Idle	Vault	4 h(s) 21 min(s)	XDPDefault

Monitor the SnapVault relationship

You should periodically monitor the status of the SnapVault relationships to ensure that the data is backed up on the destination volume per the specified schedule.

About this task

You must perform this task from the **destination** cluster.

Steps

- Depending on the System Manager version that you are running, perform one of the following steps:
 - ONTAP 9.4 or earlier: Click **Protection > Relationships**.
 - Starting with ONTAP 9.5: Click **Protection > Volume Relationships**.
- Select the SnapVault relationship between the source and the destination volumes, and then verify the status in the **Details** bottom tab.

The health status of the SnapVault relationship, any transfer errors, and the lag time are displayed:

- The Is Healthy field must display **Yes**.

For most data transfer failures, the field displays **No**. In some failure cases, however, the field continues to display **Yes**. You must check the transfer errors in the Details section to ensure that no data transfer failure occurred.

- The Relationship State field must display **Snapmirrored**.
- The Lag Time must be not more than the transfer schedule interval.

For example, if the transfer schedule is daily, then the lag time must not be more than a day.

You should troubleshoot any issues in the SnapVault relationships. The troubleshooting procedures for SnapMirror relationships are also applicable to SnapVault relationships.

[NetApp Technical Report 4015: SnapMirror Configuration and Best Practices for ONTAP 9.1, 9.2](#)

Relationships										
Source St...	Source V...	Destinati...	Destinati...	Is Healthy	Relations...	Transfer ...	Relationshi...	Lag Time	Policy Na...	Policy Type
svm1	svm1_root	svm1_svm1...	svm2	Yes	Snapmirror...	Idle	Mirror	33 min(s)	DPDefault	Asynchronous Mirr...
svm1	vol123	svm1_vol12...	svm2	Yes	Snapmirror...	Idle	Vault	4 hr(s) 28 m...	XDPDefault	Vault

Source Location:	svm1:vol123	Is Healthy:	Yes	Transfer Status:	Idle
Destination Location:	svm2:svm1_vol123_vault	Relationship State:	Snapmirrored	Current Transfer Type:	None
Source Cluster:	cluster-1	Network Compression Ratio:	Not Applicable	Current Transfer Error:	None
Destination Cluster:	cluster-1			Last Transfer Error:	None
Transfer Schedule:	daily			Last Transfer Type:	Update
Data Transfer Rate:	Unlimited			Latest Snapshot Timestamp:	02/28/2017 00:10:00
Lag Time:	4 hr(s) 28 min(s)			Latest Snapshot Copy:	daily 2017-02-28_0010

Where to find additional information

Additional documentation is available to help you restore data from a destination volume to test the backed-up data or when the source volume is lost.

- [Volume restore management using SnapVault](#)

Describes how to quickly restore a volume from a SnapVault backup in ONTAP

- [ONTAP concepts](#)

Describes conceptual information about disaster recovery and disk-to-disk backup of clustered systems

Copyright Information

Copyright © 2022 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.

RESTRICTED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.277-7103 (October 1988) and FAR 52-227-19 (June 1987).

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.