



Tamperproof Snapshot copy locking

ONTAP 9

NetApp
November 28, 2022

Table of Contents

- Tamperproof Snapshot copy locking 1
 - Tamperproof Snapshot copy locking overview..... 1
 - Enable Snapshot copy locking 2
 - Create a locked Snapshot copy 3

Tamperproof Snapshot copy locking

Tamperproof Snapshot copy locking overview

Beginning with ONTAP 9.12.1, you can lock a Snapshot copy on a non-SnapLock volume to provide protection from ransomware attacks. Locking Snapshot copies ensures that they can't be deleted accidentally or maliciously.

You use the SnapLock compliance clock feature to lock Snapshot copies for a specified period so that they cannot be deleted until the expiration time is reached. Locking Snapshot copies makes them tamperproof, protecting them from ransomware threats. You can use locked Snapshot copies to recover data if a volume is compromised by a ransomware attack.

Tamperproof Snapshot copy requirements and considerations

- All nodes in the cluster must be running ONTAP 9.12.1 or later.
- The SnapLock license must be installed on the cluster.

For details, see [Installing the SnapLock license](#)

- The compliance clock on the cluster must be initialized.

For details, see [Initialize the Compliance Clock](#)

- When Snapshot locking is enabled on a volume, you can upgrade the clusters to a version of ONTAP later than ONTAP 9.12.1; however, you cannot revert to an earlier version of ONTAP until all locked Snapshot copies have reached their expiration date and are deleted and Snapshot copy locking is disabled.
- When a Snapshot is locked, the volume expiry time is set to the expiry time of the Snapshot copy. If more than one Snapshot copy is locked, the volume expiry time reflects the largest expiry time among all Snapshot copies.
- The retention period for locked Snapshot copies takes precedence over the Snapshot copy keep count, which means the keep count limit is not honored if the Snapshot copy retention period for locked Snapshot copies has not expired.
- In a SnapMirror relationship, you can set a retention period on a mirror-vault policy rule, and the retention period is applied for Snapshot copies replicated to the destination if the destination volume has Snapshot copy locking enabled. The retention period takes precedence over keep count; for example, Snapshot copies that have not passed their expiry will be retained even if the keep count is exceeded.
- You can rename a Snapshot copy on a non-SnapLock volume. Snapshot rename operations on the primary volume of a SnapMirror relationship are reflected on the secondary volume only if the policy is MirrorAllSnapshots. For other policy types, the renamed Snapshot copy is not propagated during updates.
- You can restore a locked Snapshot copy with the `volume snapshot restore` command only if the locked Snapshot copy is the most recent. If there are any unexpired Snapshot copies later than the one being restored, the Snapshot copy restore operation fails.

Features supported with tamperproof Snapshot copies

- FlexGroup volumes

Snapshot copy locking is supported on FlexGroup volumes. Snapshot locking occurs only on the root

constituent Snapshot copy. Deleting the FlexGroup volume is allowed only if the root constituent expiration time has passed.

- FlexVol to FlexGroup conversion

You can convert a FlexVol volume with locked Snapshot copies to a FlexGroup volume. Snapshot copies remain locked after the conversion.

- FabricPool

Snapshot copy locking is supported on FabricPool volumes only if the volume does not have any blocks tiered to the cloud and the tiering policy is set to “none”. When the Snapshot copy locking feature is enabled, setting the tiering policy on the volume to a policy other than “none” is not allowed.

Unsupported features

The following features currently are not supported with tamperproof Snapshot copies:

- Consistency groups
- FlexCache volumes
- SMtape
- SnapMirror Business Continuity (SM-BC)
- SnapMirror Synchronous

Enable Snapshot copy locking

Beginning with ONTAP 9.12.1, you can enable Snapshot copy locking when you create a new volume or when you modify an existing volume by using the `-snapshot-locking-enabled` option with the `volume create` and `volume modify` commands.

Enable Snapshot copy locking when creating a volume

1. To create a new volume and enable Snapshot copy locking, enter the following command:

```
volume create -vserver vs1 -volume vol1 -snapshot-locking-enabled true
```

The following command enables Snapshot copy locking on a new volume named vol1:

```
> volume create -volume vol1 -aggregate aggr1 -size 100m -snapshot-locking-enabled true
Warning: Snapshot copy locking is being enabled on volume "vol1" in Vserver "vs1". It cannot be disabled until all locked Snapshot copies are past their expiry time. A volume with unexpired locked Snapshot copies cannot be deleted.
Do you want to continue: {yes|no}: y
[Job 32] Job succeeded: Successful
```

Enable Snapshot copy locking on an existing volume

1. To modify an existing volume to enable Snapshot copy locking, enter the following command:

```
volume modify -vserver vs1 -volume vol1 -snapshot-locking
-enabled true
```

Create a locked Snapshot copy

Beginning with ONTAP 9.12.1, you can create Snapshot copy policies to apply a Snapshot copy retention period and apply the policy to a volume to lock Snapshot copies for the specified period. You can also lock a Snapshot copy by manually setting a retention period.

Create a Snapshot copy locking policy

1. To create a Snapshot copy policy, enter the following command:

```
volume snapshot policy create -policy policy_name -enabled true -schedule1
schedule1_name -count1 maximum_Snapshot_copies -retention-period1
_retention_period
```

The following command creates a Snapshot copy locking policy:

```
cluster1> volume snapshot policy create -policy policy_name -enabled
true -schedule1 5min -count1 5 -retention-period1 "1 months"
```

Apply a locking policy to a volume

1. To apply a Snapshot copy locking policy to an existing volume, enter the following command:

```
volume modify -volume volume_name -vserver vs1 -snapshot-policy
policy_name
```

Apply retention period during manual Snapshot copy creation

1. To create a Snapshot copy manually and apply a locking retention period, enter the following command:

```
volume snapshot create -volume volume_name -snapshot snapshot_copy_name
-expiry-time expiration_date_time
```

The following command creates a new Snapshot copy and sets the retention period:

```
cluster1> volume snapshot create -vserver vs1 -volume vol1 -snapshot
snap1 -snaplock-expiry-time "11/10/2022 09:00:00"
```

Apply retention period to an existing Snapshot copy

1. To manually apply a retention period to an existing Snapshot copy, enter the following command:

```
volume snapshot modify-snaplock-expiry-time -volume volume_name -snapshot  
snapshot_copy_name -expiry-time expiration_date_time
```

The following example applies a retention period to an existing Snapshot copy:

```
cluster1> volume snapshot modify-snaplock-expiry-time -volume vol1  
-snapshot snap2 -expiry-time "11/10/2022 09:00:00"
```

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.

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.