



# **Tape devices overview**

ONTAP 9

NetApp  
April 11, 2023

# Table of Contents

- Tape devices overview . . . . . 1
  - Tape devices overview . . . . . 1
  - Tape device name format . . . . . 1
  - Supported number of simultaneous tape devices . . . . . 3

# Tape devices overview

## Tape devices overview

A tape device is a representation of a tape drive. It is a specific combination of rewind type and compression capability of a tape drive.

A tape device is created for each combination of rewind type and compression capability. Therefore, a tape drive or tape library can have several tape devices associated with it. You must specify a tape device to move, write, or read tapes.

When you install a tape drive or tape library on a storage system, ONTAP creates tape devices associated with the tape drive or tape library.

ONTAP detects tape drives and tape libraries and assigns logical numbers and tape devices to them. ONTAP detects the Fibre Channel, SAS, and parallel SCSI tape drives and libraries when they are connected to the interface ports. ONTAP detects these drives when their interfaces are enabled.

## Tape device name format

Each tape device has an associated name that appears in a defined format. The format includes information about the type of device, rewind type, alias, and compression type.

The format of a tape device name is as follows:

```
rewind_type st alias_number compression_type
```

`rewind_type` is the rewind type.

The following list describes the various rewind type values:

- **r**

ONTAP rewinds the tape after it finishes writing the tape file.

- **nr**

ONTAP does not rewind the tape after it finishes writing the tape file. You must use this rewind type when you want to write multiple tape files on the same tape.

- **ur**

This is the unload/reload rewind type. When you use this rewind type, the tape library unloads the tape when it reaches the end of a tape file, and then loads the next tape, if there is one.

You must use this rewind type only under the following circumstances:

- The tape drive associated with this device is in a tape library or is in a medium changer that is in the library mode.
- The tape drive associated with this device is attached to a storage system.
- Sufficient tapes for the operation that you are performing are available in the library tape sequence

defined for this tape drive.



If you record a tape using a no-rewind device, you must rewind the tape before you read it.

`st` is the standard designation for a tape drive.

`alias_number` is the alias that ONTAP assigns to the tape drive. When ONTAP detects a new tape drive, ONTAP assigns an alias to the tape drive.

`compression_type` is a drive-specific code for the density of data on the tape and the type of compression.

The following list describes the various values for `compression_type`:

- **a**  
Highest compression
- **h**  
High compression
- **m**  
Medium compression
- **l**  
Low compression

## Examples

`nrst0a` specifies a no-rewind device on tape drive 0 using the highest compression.

### Example of a listing of tape devices

The following example shows the tape devices associated with HP Ultrium 2-SCSI:

```

Tape drive (fc202_6:2.126L1)  HP      Ultrium 2-SCSI
rst0l - rewind device,          format is: HP (200GB)
nrst0l - no rewind device,      format is: HP (200GB)
urst0l - unload/reload device, format is: HP (200GB)
rst0m - rewind device,          format is: HP (200GB)
nrst0m - no rewind device,      format is: HP (200GB)
urst0m - unload/reload device, format is: HP (200GB)
rst0h - rewind device,          format is: HP (200GB)
nrst0h - no rewind device,      format is: HP (200GB)
urst0h - unload/reload device, format is: HP (200GB)
rst0a - rewind device,          format is: HP (400GB w/comp)
nrst0a - no rewind device,      format is: HP (400GB w/comp)
urst0a - unload/reload device, format is: HP (400GB w/comp)
```

The following list describes the abbreviations in the preceding example:

- GB—Gigabytes; this is the capacity of the tape.
- w/comp—With compression; this shows the tape capacity with compression.

## Supported number of simultaneous tape devices

ONTAP supports a maximum of 64 simultaneous tape drive connections, 16 medium changers, and 16 bridge or router devices for each storage system (per node) in any mix of Fibre Channel, SCSI, or SAS attachments.

Tape drives or medium changers can be devices in physical or virtual tape libraries or stand-alone devices.



Although a storage system can detect 64 tape drive connections, the maximum number of backup and restore sessions that can be performed simultaneously depends upon the scalability limits of the backup engine.

### Related information

[Scalability limits for dump backup and restore sessions](#)

## 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.