Manage tape drives

ONTAP 9

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Manage tape drives overview

You can verify tape library connections and view tape drive information before performing a tape backup or restore operation. You can use a nonqualified tape drive by emulating this to a qualified tape drive. You can also assign and remove tape aliases in addition to viewing existing aliases.

When you back up data to tape, the data is stored in tape files. File marks separate the tape files, and the files have no names. You specify a tape file by its position on the tape. You write a tape file by using a tape device. When you read the tape file, you must specify a device that has the same compression type that you used to write that tape file.

Commands for managing tape drives, media changers, and tape drive operations

There are commands for viewing information about tape drives and media changers in a cluster, bringing a tape drive online and taking it offline, modifying the tape drive cartridge position, setting and clearing tape drive alias name, and resetting a tape drive. You can also view and reset tape drive statistics.

If you want to…	Use this command…
Bring a tape drive online	`storage tape online`
Clear an alias name for tape drive or media changer	`storage tape alias clear`
Enable or disable a tape trace operation for a tape drive	`storage tape trace`
Modify the tape drive cartridge position	`storage tape position`
Reset a tape drive	`storage tape reset` This command is available only at the advanced privilege level.
Set an alias name for tape drive or media changer	`storage tape alias set`
Take a tape drive offline	`storage tape offline`
View information about all tape drives and media changers	`storage tape show`

If you want to…	Use this command…
View information about tape drives attached to the cluster	• `storage tape show-tape-drive` • `system node hardware tape drive show`
View information about media changers attached to the cluster	`storage tape show-media-changer`
View error information about tape drives attached to the cluster	`storage tape show-errors`
View all ONTAP qualified and supported tape drives attached to each node in the cluster	`storage tape show-supported-status`
View aliases of all tape drives and media changers attached to each node in the cluster	`storage tape alias show`
Reset the statistics reading of a tape drive to zero	`storage stats tape zero tape_name` You must use this command at the nodeshell.
View tape drives supported by ONTAP	`storage show tape supported [-v]` You must use this command at the nodeshell. You can use the `-v` option to view more details about each tape drive.
View tape device statistics to understand tape performance and check usage pattern	`storage stats tape tape_name` You must use this command at the nodeshell.

For more information about these commands, see the man pages.

Use a nonqualified tape drive

You can use a nonqualified tape drive on a storage system if it can emulate a qualified tape drive. It is then treated like a qualified tape drive. To use a nonqualified tape drive, you must first determine whether it emulates any of the qualified tape drives.

About this task

A nonqualified tape drive is one that is attached to the storage system, but not supported or recognized by ONTAP.

Steps

1. View the nonqualified tape drives attached to a storage system by using the `storage tape show-supported-status` command.

   The following command displays tape drives attached to the storage system and the support and

qualification status of each tape drive. The nonqualified tape drives are also listed. “`tape_drive_vendor_name`” is a nonqualified tape drive attached to the storage system, but not supported by ONTAP.

```
cluster1::> storage tape show-supported-status -node Node1

          Node: Node1
                                    Is
          Tape Drive                Supported  Support Status
          --------------------      ---------  --------------
          "tape_drive_vendor_name"  false      Nonqualified tape drive
          Hewlett-Packard C1533A    true       Qualified
          Hewlett-Packard C1553A    true       Qualified
          Hewlett-Packard Ultrium 1 true       Qualified
          Sony SDX-300C             true       Qualified
          Sony SDX-500C             true       Qualified
          StorageTek T9840C         true       Dynamically Qualified
          StorageTek T9840D         true       Dynamically Qualified
          Tandberg LTO-2 HH         true       Dynamically Qualified
```

2. Emulate the qualified tape drive.

   NetApp Downloads: Tape Device Configuration Files

Related information

What qualified tape drives are

Assign tape aliases

For easy device identification, you can assign tape aliases to a tape drive or medium changer. Aliases provide a correspondence between the logical names of backup devices and a name permanently assigned to the tape drive or medium changer.

Steps

1. Assign an alias to a tape drive or medium changer by using the `storage tape alias set` command.

   For more information about this command, see the man pages.

   You can view the serial number (SN) information about the tape drives by using the `system node hardware tape drive show` command and about tape libraries by using the `system node hardware tape library show` commands.

   The following command sets an alias name to a tape drive with serial number SN[123456]L4 attached to the node, cluster1-01:

```
cluster-01::> storage tape alias set  -node cluster-01 -name st3
-mapping SN[123456]L4
```

The following command sets an alias name to a media changer with serial number SN[65432] attached to the node, cluster1-01:

```
cluster-01::> storage tape alias set  -node cluster-01 -name mc1
-mapping SN[65432]
```

Related information

What tape aliasing is

Removing tape aliases

Remove tape aliases

You can remove aliases by using the `storage tape alias clear` command when persistent aliases are no longer required for a tape drive or medium changer.

Steps

1. Remove an alias from a tape drive or medium changer by using the `storage tape alias clear` command.

   For more information about this command, see the man pages.

   The following command removes the aliases of all tape drives by specifying the scope of the alias clear operation to `tape`:

   ```
   cluster-01::>storage tape alias clear -node cluster-01 -clear-scope tape
   ```

After you finish

If you are performing a tape backup or restore operation using NDMP, then after you remove an alias from a tape drive or medium changer, you must assign a new alias name to the tape drive or medium changer to continue access to the tape device.

Related information

What tape aliasing is

Assigning tape aliases

Enabling or disabling tape reservations

You can control how ONTAP manages tape device reservations by using the `tape.reservations` option. By default, tape reservation is turned off.

About this task

Enabling the tape reservations option can cause problems if tape drives, medium changers, bridges, or libraries do not work properly. If tape commands report that the device is reserved when no other storage systems are using the device, this option should be disabled.

Steps

1. To use either the SCSI Reserve/Release mechanism or SCSI Persistent Reservationsor to disable tape reservations, enter the following commandat the clustershell:

   `options -option-name tape.reservations -option-value {scsi | persistent | off}`

   `scsi` selects the SCSI Reserve/Release mechanism.

   `persistent` selects SCSI Persistent Reservations.

   `off` disables tape reservations.

Related information

What tape reservations are

Commands for verifying tape library connections

You can view information about the connection path between a storage system and a tape library configuration attached to the storage system. You can use this information to verify the connection path to the tape library configuration or for troubleshooting issues related to the connection paths.

You can view the following tape library details to verify the tape library connections after adding or creating a new tape library, or after restoring a failed path in a single-path or multipath access to a tape library. You can also use this information while troubleshooting path-related errors or if access to a tape library fails.

- Node to which the tape library is attached
- Device ID
- NDMP path
- Tape library name
- Target port and initiator port IDs
- Single-path or multipath access to a tape library for every target or FC initiator port
- Path-related data integrity details, such as “Path Errors” and “Path Qual”
- LUN groups and LUN counts

If you want to…	Use this command…
View information about a tape library in a cluster	`system node hardware tape library show`
View path information for a tape library	`storage tape library path show`

If you want to…	Use this command…
View path information for a tape library for every initiator port	`storage tape library path show-by-initiator`
View connectivity information between a storage tape library and cluster	`storage tape library config show`

For more information about these commands, see the man pages.