Tape aliasing

ONTAP 9

NetApp
February 15, 2023

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Tape aliasing overview

Aliasing simplifies the process of device identification. Aliasing binds a physical path name (PPN) or a serial number (SN) of a tape or a medium changer to a persistent, but modifiable alias name.

The following table describes how tape aliasing enables you to ensure that a tape drive (or tape library or medium changer) is always associated with a single alias name:

Scenario	Reassigning of the alias
When the system reboots	The tape drive is automatically reassigned its previous alias.
When a tape device moves to another port	The alias can be adjusted to point to the new address.
When more than one system uses a particular tape device	The user can set the alias to be the same for all the systems.

When you upgrade from Data ONTAP 8.1.x to Data ONTAP 8.2.x, the tape alias feature of Data ONTAP 8.2.x modifies the existing tape alias names. In such a case you might have to update the tape alias names in the backup application.

Assigning tape aliases provides a correspondence between the logical names of backup devices (for example, st0 or mc1) and a name permanently assigned to a port, a tape drive, or a medium changer.

st0 and st00 are different logical names.

Logical names and serial numbers are used only to access a device. After the device is accessed, it returns all error messages by using the physical path name.

There are two types of names available for aliasing: physical path name and serial number.

What physical path names are

Physical path names (PPNs) are the numerical address sequences that ONTAP assigns to tape drives and tape libraries based on the SCSI-2/3 adapter or switch (specific location) they are connected to the storage system. PPNs are also known as electrical names.

PPNs of direct-attached devices use the following format: `host_adapter`. `device_id_lun`

The LUN value is displayed only for tape and medium changer devices whose LUN values are not zero; that is, if the LUN value is zero the `lun` part of the PPN is not displayed.

For example, the PPN 8.6 indicates that the host adapter number is 8, the device ID is 6, and the logical unit number (LUN) is 0.

SAS tape devices are also direct-attached devices. For example, the PPN 5c.4 indicates that in a storage system, the SAS HBA is connected in slot 5, SAS tape is connected to port C of the SAS HBA, and the device ID is 4.

PPNs of Fibre Channel switch-attached devices use the following format: `switch:port_id.device_id_lun`

For example, the PPN MY_SWITCH:5.3L2 indicates that the tape drive connected to port 5 of a switch called MY_SWITCH is set with device ID 3 and has the LUN 2.

The LUN (logical unit number) is determined by the drive. Fibre Channel, SCSI tape drives and libraries, and disks have PPNs.

PPNs of tape drives and libraries do not change unless the name of the switch changes, the tape drive or library moves, or the tape drive or library is reconfigured. PPNs remain unchanged after reboot. For example, if a tape drive named MY_SWITCH:5.3L2 is removed and a new tape drive with the same device ID and LUN is connected to port 5 of the switch MY_SWITCH, the new tape drive would be accessible by using MY_SWITCH:5.3L2.

What serial numbers are

A serial number (SN) is a unique identifier for a tape drive or a medium changer. ONTAP generates aliases based on SN instead of the WWN.

Since the SN is a unique identifier for a tape drive or a medium changer, the alias remains the same regardless of the multiple connection paths to the tape drive or medium changer. This helps storage systems to track the same tape drive or medium changer in a tape library configuration.

The SN of a tape drive or a medium changer does not change even if you rename the Fibre Channel switch to which the tape drive or medium changer is connected. However, in a tape library if you replace an existing tape drive with a new one, then ONTAP generates new aliases because the SN of the tape drive changes. Also, if you move an existing tape drive to a new slot in a tape library or remap the tape drive's LUN, ONTAP generates a new alias for that tape drive.

You must update the backup applications with the newly generated aliases.

The SN of a tape device uses the following format: `SN[xxxxxxxxxx]L[X]`

`x` is an alphanumeric character and L`X` is the LUN of the tape device. If the LUN is 0, the L`X` part of the string is not displayed.

Each SN consists of up to 32 characters; the format for the SN is not case-sensitive.

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