NetApp

storage path commands

ONTAP 9.5 commands

NetApp
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storage path commands

storage path quiesce

Quiesce I/O on a path to array

Availability: This command is available to *cluster* administrators at the *admin* privilege level.

Description

The `storage path quiesce` command quiesces I/O on one path to a LUN. It also quiesces the given entire path immediately or can monitor the given path for error threshold before quiesce. After the I/O has been quiesced, no new I/O is sent on the path unless the storage path resume command is issued to continue I/O.

Parameters

`-node {<nodename>|local}` - Node name

The name of the clustered node for which information is being displayed.

`-initiator <initiator name>` - Initiator Port

Initiator port that the clustered node uses.

`-target-wwpn <wwpn name>` - Target Port

Target World Wide Port Name. Port on the storage array that is being used.

`{ [-lun-number <integer>]` - LUN Number

Logical Unit number. The range is: [0…65535]. If this parameter is not specified, Data ONTAP resumes the entire path to an array.

`| [-path-failure-threshold <integer>]` - Max Number of Path Failures Acceptable During wait-duration

The path failure count, exceeding this value within wait duration will quiesce the path.

`[-wait-duration <integer>]` - Wait Duration in minutes }

The time duration(minutes) in which path is monitored for path failures.

Examples

The following example suspends I/O between node vbv3170f1b, port 0a and the array port 50001fe1500a8669, LUN 1.

```
node::> storage path quiesce -node vbv3170f1b -initiator 0a -target-wwpn
50001fe1500a8669 -lun-number 1
```

The following example suspends I/O immediately between node vbv3170f1b, port 0a and the array port 50001fe1500a8669.

```
node::> storage path quiesce -node vbv3170f1b -initiator 0a -target-wwpn
50001fe1500a8669
```

The following example suspends I/O between node vbv3170f1b, port 0a and the array port 50001fe1500a8669 after reaching 10 or more errors in duration of 5 mins.

```
node::> storage path quiesce -node vbv3170f1b -initiator 0a -target-wwpn
50001fe1500a8669 -path-failure-threshold 10 -wait-duration 5
```

Related Links

- storage path resume

storage path resume

Resume I/O on a path to array

Availability: This command is available to *cluster* administrators at the *admin* privilege level.

Description

The `storage path resume` command continues I/O flow to an array LUN on a path or the entire path that was previously quiesced. It also disables the path failures monitoring feature, if it was enabled using the storage path quiesce`-path-failure-threshold`*count* command.

Parameters

-node {<nodename>|local} - Node name
    The name of the clustered node for which information is being displayed.

-initiator <initiator name> - Initiator Port
    Initiator port that the clustered node uses.

-target-wwpn <wwpn name> - Target Port
    Target World Wide Port Name. Port on the storage array that is being used.

[-lun-number <integer>] - LUN Number
    Logical Unit number. The range is: [0…65535]. If this parameter is not specified, Data ONTAP resumes the entire path to an array.

Examples

The following example resumes I/O between node vbv3170f1b, port 0a and the array port 50001fe1500a8669, LUN 1

```
node::> storage path resume -node vbv3170f1b -initiator 0a -target-wwpn
50001fe1500a8669 -lun-number 1
```

The following example resumes I/O between node vbv3170f1b, port 0a and the array port 50001fe1500a8669

```
node::> storage path resume -node vbv3170f1b -initiator 0a -target-wwpn
50001fe1500a8669
```

Related Links

- storage path quiesce

storage path show-by-initiator

Display a list of paths to attached arrays from the initiator's perspective

Availability: This command is available to *cluster* administrators at the *admin* privilege level.

Description

The `storage path show-by-initiator` command displays path based statistics. The output is similar to the storage path show command but the output is listed by initiator.

Parameters

{ [-fields <fieldname>,…]

If you specify the `-fields <fieldname>`, … parameter, the command output also includes the specified field or fields. You can use '-fields ?' to display the fields to specify.

| [-instance] }

If you specify the `-instance` parameter, the command displays detailed information about all fields.

[-node {<nodename>|local}] - Controller name

The name of the clustered node for which information is being displayed.

[-initiator <text>] - Initiator Port

Initiator port that the clustered node uses.

[-target-wwpn <text>] - Target Port

Target World Wide Port Name. Port on the storage array that is being used.

[-initiator-side-switch-port <text>] - Initiator Side Switch Port

Switch port connected to the clustered node.

[-target-side-switch-port <text>] - Target Side Switch Port

Switch port connected to the array.

`[-array-name <array name>]` - Array Name

    Name of the storage array that is connected to the cluster.

`[-tpgn <integer>]` - Target Port Group Number

    TPGN refers to the target port group to which the target port belongs. A target port group is a set of target ports which share the same LUN access characteristics and failover behaviors.

`[-port-speed <text>]` - Port Speed

    Port Speed of the specified port.

`[-path-io-kbps <integer>]` - Kbytes of I/O per second on Path (Rolling Average)

    Rolling average of I/O per second on the path.

`[-path-iops <integer>]` - Number of IOPS on Path (Rolling Average)

    Rolling average of Kbytes of I/O per second on the path

`[-initiator-io-kbps <integer>]` - Kbytes of I/O per second on Initiator (Rolling Average)

    Rolling average of I/O per second on the initiator port.

`[-initiator-iops <integer>]` - Number of IOPS on Initiator (Rolling Average)

    Rolling average of Kbytes of I/O per second on the initiator port.

`[-target-io-kbps <integer>]` - Kbytes of I/O per second to Target (Rolling Average)

    Rolling average of I/O per second on the target port.

`[-target-iops <integer>]` - Number of IOPS to Target (Rolling Average)

    Rolling average of Kbytes of I/O per second on the target port.

Examples

```
vnv3070f20b::> storage path show-by-initiator
Node: vnv3070f20b
         Initiator I/O        Initiator Side      Path I/O            Target
Side    Target I/O
Initiator         (KB/s)              Switch Port         (KB/s)              Switch
Port        (KB/s)        Target Port Array Name
--------- ------------- ------------------- ------------
------------------- ----------- --------------- ---------------
0a                    3 vnbr3850s4:4                      3
vnbr3850s5:15             3 200600a0b819e16f IBM_1722_1
                                                        0
vnbr3850s5:12            0 50060e80004291c0 HITACHI_DF600F_1
0c                   35 vnci9124s54:1-6                  35
vnci9124s54:1-24         35 200700a0b819e16f IBM_1722_1
                                                        0
vnci9124s54:1-22         0 50060e80004291c2 HITACHI_DF600F_1
4 entries were displayed.
```

Related Links

-

storage path show

Display a list of paths to attached arrays.

Availability: This command is available to *cluster* administrators at the *admin* privilege level.

Description

The `storage path show` command displays path based statistics. The default command shows:

- Node name
- Initiator port
- Target port
- Target IQN
- TPGN
- Port speeds
- Path I/O in Kbytes/sec
- IOPs

Parameters

{ [-fields <fieldname>,…]

If you specify the `-fields <fieldname>,` … parameter, the command output also includes the specified field or fields. You can use '-fields ?' to display the fields to specify.

| [-array]

Using this option displays:

- Array name
- Target port
- Target IQN
- Target I/O in Kbytes/sec
- Target side switch port
- Path I/O in Kbytes/sec
- Initiator side switch port
- Initiator I/O in Kbytes/sec
- Initiator port

| [-by-target]

Using this option displays the same information as the array option, but grouped by target port.

| [-detail]

Using this option displays the same information as the array and by-target options, but adds the following:

- Target IOPs
- Target LUNs
- Path IOPs
- Path errors
- Path quality
- Path LUNs
- Initiator IOPs
- Initiator LUNs

| [-switch]

Using this option adds switch port information to the default display.

| [-instance] }

If you specify the `-instance` parameter, the command displays detailed information about all fields.

[-node {<nodename>|local}] - Controller name

The name of the clustered node for which information is being displayed.

[-array-name <array name>] - Array Name

Name of the storage array that is connected to the cluster.

`[-target-wwpn <text>]` - Target Port

Target World Wide Port Name. Port on the storage array that is being used.

`[-initiator <text>]` - Initiator Port

Initiator port that the clustered node uses.

`[-initiator-side-switch-port <text>]` - Initiator Side Switch Port

Switch port connected to the clustered node.

`[-tpgn <integer>]` - Target Port Group Number

TPGN refers to the target port group to which the target port belongs. A target port group is a set of target ports which share the same LUN access characteristics and failover behaviors.

`[-port-speed <text>]` - Port Speed

Port Speed of the specified port.

`[-path-io-kbps <integer>]` - Kbytes of I/O per second on Path (Rolling Average)

Rolling average of I/O per second on the path.

`[-path-iops <integer>]` - Number of IOPS on Path (Rolling Average)

Rolling average of Kbytes of I/O per second on the path

`[-initiator-io-kbps <integer>]` - Kbytes of I/O per second on Initiator (Rolling Average)

Rolling average of I/O per second on the initiator port.

`[-initiator-iops <integer>]` - Number of IOPS on Initiator (Rolling Average)

Rolling average of Kbytes of I/O per second on the initiator port.

`[-target-io-kbps <integer>]` - Kbytes of I/O per second to Target (Rolling Average)

Rolling average of I/O per second on the target port.

`[-target-iops <integer>]` - Number of IOPS to Target (Rolling Average)

Rolling average of Kbytes of I/O per second on the target port.

`[-target-side-switch-port <text>]` - Target Side Switch Port

Switch port connected to the array.

`[-path-link-errors <integer>]` - Link Error count on path

Fibre Channel link error count.

`[-path-quality <integer>]` - Percentage of weighted error threshold

A number representing the threshold of errors that is allowed on the path. Path quality is a weighted error value. When the error weight of a path exceeds the threshold, I/O is routed to a different path.

`[-path-lun-in-use-count <integer>]` - Number of LUNs in the in-use state on this path

Number of LUNs on this path.

`[-initiator-lun-in-use-count <integer>]` - Number of LUNs in the in-use state on this initiator

Number of LUNs on this initiator.

`[-target-lun-in-use-count <integer>]` - Number of LUNs in the in-use state on this target

Number of LUNs on this target.

`[-vmdisk-device-id <integer>]` - Virtual disk device ID

Common device identifier, shared by a VM and its hypervisor, of a virtual disk. On ESX servers, this is the Disk ID component of a virtual device node, with a value of 0 to 15.

`[-path-failure-threshold <integer>]` - Max number of path failures acceptable in wait-duration

The path failure count, exceeding this value within wait duration will quiesce the path.

`[-wait-duration <integer>]` - Wait Duration in minutes

The time duration(minutes) in which path is monitored for path failures.

Examples

The following example shows the default display.

```
vbv3170f2a::> storage path show

Path I/O
Node                    Initiator  Array Target Port          TPGN    Speed
(KB/s)          IOPS
--------------------    ---------  -----------------------    ------  -------
------------    ------------
vbv3170f2a-01           0b         50001fe1500a866c                2   2 Gb/S
6               2
vbv3170f2a-01           0b         50001fe1500a866d                2   2 Gb/S
0               0
vbv3170f2a-01           0c         50001fe1500a866e                4   4 Gb/S
0               0
vbv3170f2b-03           0a         50001fe1500a866d                1   2 Gb/S
3               1
vbv3170f2b-03           0c         50001fe1500a866f                4   4 Gb/S
3               1
5 entries were displayed.
```

The following example shows how the information is displayed with the array option.

```
vnv3070f20b::> storage path show -array
Node: vnv3070f20b
                                  Target I/O           Target Side
Path I/O        Initiator Side Initiator I/O Initiator
Array Name       Target Port           (KB/s)          Switch Port
(KB/s)          Switch Port        (KB/s)      Port
---------------- ---------------- ----------- --------------------
------------ -------------------- ------------- ---------
HITACHI_DF600F_1 50060e80004291c0           0         vnbr3850s5:12
0        vnbr3850s4:4           3       0a
               50060e80004291c2           0      vnci9124s54:1-22
0      vnci9124s54:1-6          26       0c
IBM_1722_1       200600a0b819e16f           3         vnbr3850s5:15
3        vnbr3850s4:4           3       0a
               200700a0b819e16f          26      vnci9124s54:1-24
26      vnci9124s54:1-6          26       0c
4 entries were displayed.
```

The following example shows how the information is displayed when grouped by target.

```
vnv3070f20b::> storage path show -by-target
Node: vnv3070f20b
Array Name: HITACHI_DF600F_1
                 Target I/O          Target Side      Path I/O
Initiator Side Initiator I/O Initiator
Target Port             (KB/s)          Switch Port       (KB/s)
Switch Port       (KB/s)       Port
--------------- ------------ -------------------- ------------
------------------- ------------- ---------
50060e80004291c0            0         vnbr3850s5:12            0
vnbr3850s4:4              3        0a
50060e80004291c2            0      vnci9124s54:1-22            0
vnci9124s54:1-6           26        0c
Node: vnv3070f20b
Array Name: IBM_1722_1
                 Target I/O          Target Side      Path I/O
Initiator Side Initiator I/O Initiator
Target Port             (KB/s)          Switch Port       (KB/s)
Switch Port       (KB/s)       Port
--------------- ------------ -------------------- ------------
------------------- ------------- ---------
200600a0b819e16f            3         vnbr3850s5:15            3
vnbr3850s4:4              3        0a
200700a0b819e16f           26      vnci9124s54:1-24           26
vnci9124s54:1-6           26        0c
4 entries were displayed.
```

The following example shows how the information is displayed with the switch option.

```
vbv3170f2b::> storage path show -switch

                                                          Target Side
Initiator Side                         Path I/O
Node                   Initiator  Array Target Port       Switch Port
Switch Port            TPGN     Speed          (KB/s)       IOPS
--------------------   ---------  -----------------------
-------------------- ------------------  ------  -------  ------------
------------
vbv3170f2a-01          0b          50001fe1500a866c        vbbr300s1:6
vbbr300s1:2                2    2 Gb/S             9            3
vbv3170f2a-01          0b          50001fe1500a866d        vbbr300s1:7
vbbr300s1:2                2    2 Gb/S             0            0
vbv3170f2a-01          0c          50001fe1500a866e        vbci9124s2:1-7
vbci9124s2:1-3             4    4 Gb/S             0            0
vbv3170f2b-03          0a          50001fe1500a866d        vbbr300s1:7
vbbr300s1:3                1    2 Gb/S             4            1
vbv3170f2b-03          0c          50001fe1500a866f        vbci9124s2:1-8
vbci9124s2:1-4            4    4 Gb/S             4            1
5 entries were displayed.
```