



# **storage path commands**

## ONTAP 9.8 commands

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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

```

vnx3070f20b::> storage path show-by-initiator
Node: vnx3070f20b
      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 vnxi9124s54:1-6          35
vnxi9124s54:1-24          35 200700a0b819e16f IBM_1722_1
                                0
vnxi9124s54:1-22          0 50060e80004291c2 HITACHI_DF600F_1
4 entries were displayed.

```

## Related Links

- [storage path show](#)

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

5 entries were displayed.

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

```
vnv3070f20b::> storage path show -array
```

```
Node: vnv3070f20b
```

Path I/O	Initiator Side	Target I/O	Target Side
Array Name	Target Port	Initiator I/O	Initiator
(KB/s)	Switch Port	(KB/s)	Switch 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
```

Initiator Side		Path I/O			Target Side
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		vbc9124s2:1-7
vbc9124s2:1-3	4	4 Gb/S		0	0
vbv3170f2b-03	0a		50001fe1500a866d		vbbr300s1:7
vbbr300s1:3	1	2 Gb/S		4	1
vbv3170f2b-03	0c		50001fe1500a866f		vbc9124s2:1-8
vbc9124s2:1-4	4	4 Gb/S		4	1

```
5 entries were displayed.
```

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