



storage path commands

ONTAP 9.14.1 commands

NetApp
May 08, 2024

Table of Contents

- storage path commands 1
 - storage path quiesce 1
 - storage path resume 2
 - storage path show-by-initiator 3
 - storage path show 5

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 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](#)

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 (KB/s)	I/O 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
Port		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

```

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

```

Initiator Side	Target I/O (KB/s)	Initiator I/O (KB/s)	Target Side Initiator	Path I/O (KB/s)
Target Port		Switch Port		
Switch Port		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		vbc19124s2:1-7
vbc19124s2:1-3	4	4 Gb/S	0	0
vbv3170f2b-03	0a	50001fe1500a866d		vbbr300s1:7
vbbr300s1:3	1	2 Gb/S	4	1
vbv3170f2b-03	0c	50001fe1500a866f		vbc19124s2:1-8
vbc19124s2:1-4	4	4 Gb/S	4	1

5 entries were displayed.

Copyright information

Copyright © 2024 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.