



Brocade® ClearLink and QLogic® StorFusion™ D_Port Test with QLogic Fibre Channel Adapters

Applicable Products

QLogic Model	Description
2600 Series	Gen5 and Enhanced Gen5 16Gb Fibre Channel Adapters

1 Introduction

This application note provides instructions to system administrators for using the Brocade® ClearLink diagnostic port (D_Port) test feature on QLogic® StorFusion™-enabled Fibre Channel Host Bus Adapters and Brocade switches. The D_Port test allows a SAN administrator to quickly verify and validate all physical connections between hosts and switches, including cabling, SFPs, and latency.

The D_Port integrated test uses both Brocade ClearLink and QLogic StorFusion technology. When enabled, the D_Port feature tests and measures electrical and optical loopback, link traffic, roundtrip link latency, and the estimated cable distance and buffers required.

2 Prerequisites

Before you begin, ensure that the following components are installed:

- Brocade® Gen5 16Gb Fibre Channel switch with a Fabric Vision™ license enabled and Fabric OS® (FOS) 7.3 or later
- QLogic 2600 Series Fibre Channel Host Bus Adapters with firmware version 8.2.1 or later installed in the server and connected to one or more Brocade switches
- 16Gbps optics on both sides of the connection
- Access to a remote desktop or Telnet session

3 Validating Ports with D_Port Test

To validate the functionality and latency of a port, access the Brocade switch from a remote desktop or Telnet session and issue the `switchshow` and various `port` commands. To perform the diagnostics, follow these steps:

1. Log in to the Brocade switch.
2. Choose the ports to test.
3. Disable the Fibre Channel port (F_Port) and enable the D_Port.
4. Run the D_Port test.
5. Disable D_Port and re-enable F_Port.

Port Validation Details

1. Log in to the Brocade switch.

To access the Brocade switch and use the `switchshow` command to view ports and status, follow these steps:

- a. Open a remote desktop or Telnet session.
- b. Enter the Brocade switch IP address.
- c. Log in and enter the username and password.
- d. At the command prompt, issue the `switchshow` command, and then press the ENTER key.

The `switchshow` command output shows the status of all ports on the switch. For example:

```
SW6505_SW1_bottom:admin> switchshow
switchName:      SW6505_SW1_bottom
switchType:      118.1
switchState:     Online
switchMode:      Native
switchRole:      Principal
switchDomain:    1
switchId:        fffc01
switchWwn:       10:00:00:27:f8:c8:65:1b
zoning:          ON (Zone2Config)
switchBeacon:    OFF

Index Port Address Media Speed      State      Proto
=====
  0   0   010000   id    N16    No_Light   FC
  1   1   010100   id    N16    No_Light   FC
  2   2   010200   id    N16    No_Light   FC
  3   3   010300   id    N16    No_Light   FC
  4   4   010400   --    N16    No_Module  FC
  5   5   010500   --    N16    No_Module  FC
  6   6   010600   --    N16    No_Module  FC
```

```

 7  7  010700  --  N16  No_Module  FC
 8  8  010800  id   N16  No_Light  FC
 9  9  010900  id   N16  Online    FC  F-Port  50:01:43:80:23:1c:4e:2e
10 10  010a00  id   N4   Online    FC  F-Port  24:70:00:c0:ff:d7:81:73
11 11  010b00  id   N8   No_Light  FC
12 12  010b00  --  N16  No_Module  FC

```

. . .

2. Choose the ports to test.

Write down the port numbers that you want to test.

3. Disable the Fibre Channel port (F_Port) and enable the D_Port.

To run a D_Port test, the F_Port must be disabled and then re-enabled as a D_Port as follows:

- a. At the command prompt, issue the `portdisable x` command (where `x` indicates the port number), and then press ENTER.
- b. Issue the `portcfgdport --enable x` command, and then press ENTER.
- c. Issue the `portenable x` command, and then press ENTER.

For example:

```

SW6505_SW1_bottom:admin>
SW6505_SW1_bottom:admin> portdisable 9
SW6505_SW1_bottom:admin> portcfgdport --enable 9

```

Caution: D_Port functionality is only available on 16G-capable platforms with 16Gb FC SFPs, 10Gb FC SFPs, 8Gb LWL/ELWL FC SFPs, QSFPs or QSFP+.

```

SW6505_SW1_bottom:admin> portenable 9
SW6505_SW1_bottom:admin> _

```

- d. To verify that the D_Port is enabled, issue the `switchshow` command, and then press ENTER. For example:

```

SW6505_SW1_bottom:admin> switchshow
switchName:      SW6505_SW1_bottom
switchType:      118.1
switchState:     Online
switchMode:      Native
switchRole:      Principal
switchDomain:     1
switchId:        fffc01
switchWwn:       10:00:00:27:f8:c8:65:1b
zoning:          ON (Zone2Config)
switchBeacon:    OFF

```

```

Index Port Address Media Speed      State  Proto
=====
 0  0  010000  id   N16  No_Light  FC
 1  1  010100  id   N16  No_Light  FC
 2  2  010200  id   N16  No_Light  FC
 3  3  010300  id   N16  No_Light  FC

```

4	4	010400	--	N16	No_Module	FC			
5	5	010500	--	N16	No_Module	FC			
6	6	010600	--	N16	No_Module	FC			
7	7	010700	--	N16	No_Module	FC			
8	8	010800	id	N16	No_Light	FC			
9	9	010900	id	N16	Online	FC	D-Port	F-Port	50:01:43:80:23:1c:4e:2e
10	10	010a00	id	N4	Online	FC	F-Port	24:70:00:c0:ff:d7:81:73	
11	11	010b00	id	N8	No_Light	FC			
12	12	010c00	--	N16	No_Module	FC			

. . .

- e. To configure additional ports, repeat the preceding steps.

4. Run the D_Port test.

- a. At the command prompt, issue the `portdporttest --show x` command (where `x` indicates the port number), and then press ENTER.

The following example shows the results of the D_Port test.

```
SW6505_SW1_bottom:admin> portdporttest --show 9
D-Port Information
=====
Port:                               9
Remote WWPN:                         50:01:43:80:23:1c:4e:2e
Mode:                                 Automatic
No. of test frames:                  1 Million
Test frame size:                     1024 Bytes
FEC (enabled/option/active):         Yes/No/No
CR (enabled/option/active):          Yes/No/No
Start time:                           Thu Jan 21 21:45:00 2016
End time:                             Thu Jan 21 21:45:42 2016
Status:                               PASSED
=====
Test                               Start time    Result        EST (HH:MM:SS)  Comments
=====
Electrical loopback                 21:45:16     PASSED        -----
--
Optical loopback                    21:45:32     PASSED        -----
--
Link traffic test                   -----      SKIPPED       -----
--
=====
Roundtrip link latency:              136 nano-seconds
Estimated cable distance:            1 meters
Buffers required:                    1 (for 2112 byte frames at 16Gbps speed)
SW6505_SW1_bottom:admin> _
```

If the port does not pass, check the optics, cabling, and connections and repeat the preceding steps; otherwise, continue to [Step b](#).

- b. To test other ports that have been configured as D_Ports, repeat [Step a](#).

5. Disable D_Port and re-enable F_Port.

To disable a D_Port and then re-enable it as an F_Port, follow these steps:

- a. At the command prompt, issue the `portdisable x` command (where `x` indicates the port number), and then press ENTER.
- b. Issue the `portcfgdport --disable x` command, and then press ENTER.
- c. Issue the `portenable x` command, and then press ENTER.

For example:

```
SW6505_SW1_bottom:admin>  
SW6505_SW1_bottom:admin> portdisable 9  
SW6505_SW1_bottom:admin> portcfgdport --disable 9  
SW6505_SW1_bottom:admin> portenable 9  
SW6505_SW1_bottom:admin> _
```

- d. To verify that the F_Port is enabled, issue the `switchshow` command, and then press ENTER. In the command output, confirm the enabled F_Port.

For example:

```
. . .  
 8  8  010800  id  N16  No_Light  FC  
 9  9  010900  id  N16  Online    FC  F-Port  50:01:43:80:23:1c:4e:2e  
10 10  010a00  id  N4   Online    FC  F-Port  24:70:00:c0:ff:d7:81:73  
11 11  010b00  id  N8   No_Light  FC  
12 12  010c00  --  N16  No_Module FC  
. . .
```

- e. To re-enable additional F_Ports, repeat the preceding steps.

The D_Port test is complete.



Document Revision History	
Revision A, February 9, 2016	
Changes	
Initial release of new application note.	



Corporate Headquarters QLogic Corporation 26650 Aliso Viejo Parkway Aliso Viejo, CA 92656 949.389.6000 www.qlogic.com

International Offices UK | Ireland | Germany | France | India | Japan | China | Hong Kong | Singapore | Taiwan | Israel

© 2016 QLogic Corporation. All rights reserved worldwide. QLogic, the QLogic logo, and StorFusion are trademarks or registered trademarks of QLogic Corporation. Brocade, Fabric OS, and Fabric Vision are trademarks or registered trademarks of Brocade Communications Systems, Inc. All other brand and product names are trademarks or registered trademarks of their respective owners.

This document is provided for informational purposes only and may contain errors. QLogic reserves the right, without notice, to make changes to this document or in product design or specifications. QLogic disclaims any warranty of any kind, expressed or implied, and does not guarantee that any results or performance described in the document will be achieved by you. All statements regarding QLogic's future direction and intent are subject to change or withdrawal without notice and represent goals and objectives only.

