



Hewlett Packard
Enterprise

HPE 3PAR OS 3.2.2 MU1 Patch 12 Release Notes

This release notes document is for Patch 12 and intended for HPE 3PAR Operating System Software 3.2.2.326 (MU1).

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Documentation

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1 Purpose

HPE 3PAR OS 3.2.2 MU1 P12 prevents an unexpected loss of host connectivity due to an FW issue.

Guidance

This patch applies to 3PAR OS 3.2.2 MU1. This is a recommended patch that is only required for StoreServ 7000 and 10000 systems.

Prerequisites

- **SP:** 4.4.0.GA-22 plus the latest SP patch (if any)
- **OS:** OS-3.2.2.326-MU1

Details

- **Affected packages:** tpd-kernelpatch, tpd-prerevert
 - **Obsoletes:** None
 - **Build version:** 3.2.2.394
- Revertible:** Yes

Warnings, cautions and notes

NOTE:

- Patch 12 is only required for StoreServ 7000 and 10000 systems.
 - Applying this patch to the 3PAR OS might restart the affected OS components. With these restarts, events and alerts might be generated and this is an expected behavior. The system continues to serve data, but existing CLI or SSMC sessions might be interrupted.
 - Hewlett Packard Enterprise recommends installing patches in the same sequence as they are released, unless instructed otherwise.
 - When displaying the `showversion` command output from the SP, the CLI Client version is fixed in the SP code, and might differ from the output displayed from any other system.
-

Related documentation

For information about supported browsers for SP, see the Single Point of Connectivity Knowledge (SPOCK) website: <http://www.hpe.com/storage/spock>

Affected components

Component	Version
TPD Kernel Patch	3.2.2.394 (P12)

Modifications

This patch includes the following modifications to 3PAR OS 3.2.2 MU1:

- Prevents loss of host connectivity due to command timeouts caused by exhaustion of array port resources.

Verification

The installation of Patch 12 can be verified from an interactive CLI session. Issue the CLI command `showversion -a -b` to verify that Patch 12 is listed.

```
cli% showversion -a -b
Release version 3.2.2.326 (MU1)
Patches: P12
CLI Server                3.2.2.326 (MU1)
CLI Client                 3.2.2.178
System Manager             3.2.2.326 (MU1)
Kernel                    3.2.2.326 (MU1)
TPD Kernel Code            3.2.2.326 (MU1)
TPD Kernel Patch           3.2.2.394 (P12)
.
.
.
```

Post-installation Instructions

After applying Patch 12, there are resources that must be freed. This can be completed online. Only 8 GB Fibre Channel (FC) ports must be reset. The following instructions are only required for 3PAR StoreServ 7000 and 10000 systems.

1. Check the array for all FC 8 GB ports. There are two HBA models, LPe12002 (Storeserv 7000 integrated HBA, two ports) and LPe12004 (4 port PCIe HBA). In the example below, the LPe models from the cli “showport -i” are the models of interest:

```
cli% showport -i
N:S:P Brand Model Rev Firmware Serial HWType
0:0:1 LSI 9205-8e 01 17.11.00.00 Onboard SAS
0:0:2 LSI 9205-8e 01 17.11.00.00 Onboard SAS
0:1:1 EMULEX LPe12002 03 2.03.X.2 Onboard FC
0:1:2 EMULEX LPe12002 03 2.03.X.2 Onboard FC
0:2:1 EMULEX LPe12004 03 2.03.X.2 5CF44605D1 FC
0:2:2 EMULEX LPe12004 03 2.03.X.2 5CF44605D1 FC
-----
32
```

2. Before resetting any port, check the state of the port and the load on the port before executing the reset command. Using the `showport` command along with the output of the `showport -i` to create a list of the ports which are target-mode ports (in this example, ports 0:1:1, 0:2:2):

```
cli% showport
N:S:P Mode State ----Node_WWN---- -Port_WWN/HW_Addr- Type Protocol Label Partner FailoverState
0:0:1 initiator ready 50002ACFF7002BC6 50002AC001002BC6 disk SAS DP-1 - -
0:0:2 initiator ready 50002ACFF7002BC6 50002AC002002BC6 disk SAS DP-2 - -
0:1:1 target ready 2FF70002AC002BC6 20110002AC002BC6 host FC - 1:1:1 none
0:1:2 initiator ready 2FF70002AC002BC6 20120002AC002BC6 rcfc FC - - -
0:2:1 initiator ready 2FF70002AC002BC6 20210002AC002BC6 rcfc FC - - -
0:2:2 target ready 2FF70002AC002BC6 20220002AC002BC6 free FC - 1:2:2 none
-----
32
```

- Confirm all ports from Step 2 are port-type “host.” Repeat Step 3 for all ports identified in Step 2:

```
cli% showport 0:1:1
N:S:P   Mode State ----Node WWN---- -Port WWN/HW Addr- Type Protocol Label Partner FailoverState
0:1:1 target ready 2FF70002AC002BC6 20110002AC002BC6 host FC - 1:1:1 none
-----
1
```

- Using the `statport` command shown below, ensure the load can safely be failed over. In the case of “Persistent ports” the partner port must also be checked for handling the load during the port reset. Examine the columns I/O Cur, Kbytes Cur, and Qlen to ensure the needed bandwidth is available before performing the port reset. The maximum values are listed in Table 1. The load should be less than half of the maximum for safe failover:

```
cli% statport -host -nodes 0,1 -ports 1 -iter 5 -d 5
10:37:56 03/03/2016 r/w I/O per second KBytes per sec Svt ms IOSz KB
Port D/C Cur Avg Max Cur Avg Max Cur Avg Cur Avg Qlen
0:1:1 Data t 0 1 1 1 1 1 0.47 0.47 1.0 1.0 0
1:1:1 Data t 0 0 0 0 0 0 0.00 0.00 0.0 0.0 0
-----
.
.
.
```

Table 1

Array	Component		I/O per sec (8K Blocks)	KBytes per sec (256K Blocks)	Max Qlen
3PAR V-class and 7000	8 GB FC Port	3PAR HBA 8G	60000	737280	3276 per HBA

- Only after confirming the bandwidth is available to safely reset the host port, use the following command:

```
cli% controlport offline 0:1:1

WARNING: Port 0:1:1 has active hosts that may be disrupted.

Are you sure you want to run controlport offline on port 0:1:1?
select q=quit y=yes n=no: y
```

Use “showport” to indicate port state is offline:

```
cli% showport 0:1:1
N:S:P   Mode State ----Node WWN---- -Port WWN/HW Addr- Type Protocol Label Partner FailoverState
0:1:1 target offline 2FF70002AC002BC6 20110002AC002BC6 free FC - 1:1:1 none
-----
1
```

- Wait 1 minute before bringing the port back online using the `controlport rst` command.

```
cli% controlport rst 0:1:1
Are you sure you want to run controlport rst on port 0:1:1?
select q=quit y=yes n=no: y

A. Use "showport" to indicate port state is "offline"

cli% showport 0:1:1
N:S:P Mode State ----Node_WWN---- -Port_WWN/HW_Addr- Type Protocol Label Partner FailoverState
0:1:1 target ready 2FF70002AC002BC6 20110002AC002BC6 host FC - 1:1:1 none
-----
1
```

7. Wait 15 seconds for the host port to return to the ready state.
8. Check the load on the port after the reset to ensure I/O resumes on the port:

```
cli% statport -host -nodes 0,1 -ports 1 -iter 5 -d 5
11:05:40 03/03/2016 r/w I/O per second KBytes per sec Svt ms IOSz KB
Port D/C Cur Avg Max Cur Avg Max Cur Avg Cur Avg Qlen
0:1:1 Data t 0 0 0 0 0 0 0.00 0.00 0.0 0.0 0
1:1:1 Data t 1 1 1 1 1 1 0.46 0.46 1.0 1.0 0
-----
2 Data t 1 1 1 1 1 0.46 0.46 1.0 1.0 0
```

⚠ CAUTION: If the port does not return to the ready state or does not resume I/O, examine the event log to determine the issue. If the problem persists, contact your authorized Hewlett Packard Enterprise support provider. Do not proceed with any further port resets until the issue is corrected.

9. Repeat this process for all host ports until they have all been reset.