由于缆线故障、导致Brocade交换机端口盖板

https://kb-cn.netapp.com/on-prem/Switches/Brocade-KBs/Brocade_switch_port_flaps_due_to_faulty_c…
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适用场景

Brocade 交换机上的端口

问题描述

- 交换机端口状态为**online** under **switchshow**

```
/fabos/bin/switchshow :
```

```
Index Slot Port Address Media  Speed     State    Proto
==========================================================
129   4    33   708100   id   N32     Online     FC  F-Port
 10:00:00:10:9b:xx:xx:xx
```

- 在**porterrshow**下， 报告多个**link failure**和**loss sync**错误以及其他介质错误，如**enc_out, crc err, crc g_eof, c3timeout Tx, pcs**和**uncorr**错误。

```
/fabos/cliexec/porterrshow :
      frames      enc    crc    crc    too    too    bad    enc   disc
  link   loss    loss   frjt   fbsy    c3timeout     pcs    uncor
     tx      rx     in     err    g_eof   shrt   long   eof    out   c3
   fail   sync   sig            tx     rx     err    err
100:   14.1k   5.8k   2.2k  964    932     0      0     32     3.9g  6
   12     0     4.4k   0      0      0      0      0      0
/fabos/cliexec/porterrshow :
          frames        enc     crc     crc     too     too     bad
    enc    disc    link   loss    loss   frjt    fbsy     c3timeout
    pcs      uncor
        tx       rx      in     err     g_eof   shrt    long    eof
    out    c3      fail   sync    sig                     tx      rx
     err     err
129:   20.6k   20.7k    0       0       0       0       0       0       0
      9       2.5k    0       7.2k    0       0       9       0       1.1k
  26.0k

/fabos/cliexec/porterrshow:
      frames      enc    crc    crc    too    too    bad    enc   disc
  link   loss    loss   frjt   fbsy    c3timeout     pcs    uncor
     tx      rx     in     err    g_eof   shrt   long   eof    out   c3
   fail   sync   sig            tx     rx     err    err
  37:   2.3g   6.4g   0      0      0      0      0      0      0     53     2
    0     4      0      0     53     0      0      0
```

- **sfpshow**报告Rx值过低。

```
RX Power:    -15.1   dBm (30.7 uW)
```

```
TX Power:     -1.7     dBm (678.9 uW)
```

- **portshow** 输出确认端口为Online 且处于In_Sync 状态、并且 Lr_In 大于Ols_out 、这表示问题描述是switchport外部端口。

```
portshow 37
portDisableReason: None
[..]
portState: 1     Online
Protocol: FC
portPhys:  6     In_Sync    portScn:   32     F_Port
FC Fastwrite: OFF
Interrupts:      48    Link_failure: 2    Frjt:       0
Unknown:         6     Loss_of_sync: 0    Fbsy:       0
Lli:           48     Loss_of_sig:  4
Proc_rqrd:       159   Protocol_err: 0
Timed_out:       0     Invalid_word: 0
Tx_unavail:      0     Invalid_crc:  0
Delim_err:       0     Address_err:  0
Lr_in:           6   Ols_in:      2
Lr_out:          2     Ols_out:     3
Cong_Prim_in:      0
```

- 在Fabriclog 下，可以看到这两个端口在闪烁。

```
Fabriclog:
Switch 0; Tue Oct 11 12:34:12 2022 IST (GMT+5:30)
12:34:12.020011 SCN Port Offline;rsn=0x2,g=0x530                D2,P0   D2,P0
 15     NA
12:34:12.020017 *Removing all nodes from port                   D2,P0   D2,P0
 15     NA
12:34:12.112102 SCN Port Offline;rsn=0x0,g=0x532                D2,P0   D2,P0
 127    NA
12:34:12.112108 *Removing all nodes from port                   D2,P0   D2,P0
 127    NA
12:36:40.840204 SCN LR_PORT(0);g=0x530                          D2,P0   D2,P0
 15     NA
12:36:40.860941 SCN Port Online; g=0x530,isolated=0             D2,P0   D2,P1
```

```
 15    NA
12:36:40.861044 Port Elp engaged                          D2,P1  D2,P0
 15    NA
12:36:40.861057 *Removing all nodes from port             D2,P0  D2,P0
 15    NA
```

- 根据**sfpshow**输出、交换机端的SFP光学值处于最佳范围-

```
RX Power:   -1.7   dBm (681.90uW)
TX Power:   -1.5   dBm (701.10 uW)
```

- 交换机记录了**C4-5040**消息-

```
2024/09/17-20:13:45:225851 (IST), [C4-5040], 2240091/0, SLOT 1 | CHASSIS |
PORT 3/11, INFO,  SWITCH, Link loss of sync debouncing event detected: Slot
3/Port 11(122)
```

- **c4-5040**当由于同步丢失而重置端口链路时、会记录-。将启动反跳计时器以清除同步信号的丢失。如果即使在上述计时器到期后仍未清除、则会发布C4-5040防抖动日志。
- 在fabriclog中、我们会看到端口脱机、并且 交换机上出现LR_in

```
Switch 0; Tue Sep 17 20:13:23 2024 IST (GMT+5:30)
20:13:23.722607 SCN Port Offline;rsn=0x2,g=0x16a       D2,P0  D2,P0  11   NA
20:13:23.722613 *Removing all nodes from port          D2,P0  D2,P0  11   NA
20:13:24.365532 SCN LR_PORT(0);g=0x16a            D2,P0  D2,P0  11   NA
20:13:24.423719 SCN Port Online; g=0x16a,isolated=0       D2,P0  D2,P1  11
  NA
20:13:24.423926 Port Elp engaged               D2,P1  D2,P0  11   NA
20:13:24.423938 *Removing all nodes from port          D2,P0  D2,P0  11   NA
20:13:24.424123 SCN Port F_PORT                D2,P1  D2,P0  11   NA
20:13:24.538573 SCN LR_PORT(0);g=0x16a LR_IN       D2,P0  D2,P0  11   NA
```

- **portstatsshow**下显示的错误计数器-

```
portstatsshow 11
er_bad_os         13
phy_stats_clear_ts    09-13-2024 IST Fri 03:01:23    Timestamp of phy_port
stats clear
lgc_stats_clear_ts    09-13-2024 IST Fri 03:01:23    Timestamp of lgc_port
stats clear
Lr_in       0       top_int : Number of link resets received
         1       bottom_int : Number of link resets received

Link_failure   0       top_int : Number of link failures
         1       bottom_int : Number of link failures

Loss_of_sig    0       top_int : Number of instances of signal loss detected
         1       bottom_int : Number of instances of signal loss detected
```

- 在**MAPS policy** 中 ，我们可以通过 `link fail ,loss sig` 和LR 报告：

映射端口3/11的警报：

```
LOSS_SYNC(SyncLoss) -
LF(LFs)        3/11(1)

LOSS_SIGNAL(LOS)    3/11(1)

PE(Errors)
STATE_CHG       3/11(2)

LR(LRs)        3/11(1)
```

- 在旧的supportsaves中查看`sfpshow` 端口时、 可以看到RX 电源 出现故障、但仍具有相当高的价值

```
Temperature: 51    Centigrade
Current:    7.786   mAmps
Voltage:    3329.70 mVolts
RX Power:   -1.7   dBm (681.90uW)
TX Power:   -1.5   dBm (701.10 uW)
```

```
12-SEP 2025 20h25
Current:    7.788   mAmps
Voltage:    3318.80 mVolts
RX Power:   -1.6    dBm (685.00uW)
TX Power:   -1.5    dBm (703.20 uW)

12-SEP 00h05
Current:    7.796   mAmps
Voltage:    3312.40 mVolts
RX Power:   -1.6    dBm (694.90uW)
TX Power:   -1.5    dBm (703.00 uW)
```

- 在**errdump**日志下触发的规则defALL_32GSWL_SFPRXP_63和defALL_OTHER_F_PORTSSTATE_CHG_5以及loss signal、link failures和frame timeout detected错误。

```
2022/10/11-12:41:00, [MAPS-1004], 46328, SLOT 1 | FID 128, INFO, XXX, SFP
3/15, Condition=ALL_32GSWL_SFP(RXP<=63), Current Value:[RXP, 0 uW],
RuleName=defALL_32GSWL_SFPRXP_63, Dashboard Category=Port Health.
2022/10/11-12:41:00, [MAPS-1004], 46329, SLOT 1 | FID 128, INFO, XXX, SFP
12/15, Condition=ALL_32GSWL_SFP(RXP<=63), Current Value:[RXP, 0 uW],
RuleName=defALL_32GSWL_SFPRXP_63, Dashboard Category=Port Health.
2022/10/11-12:43:00, [MAPS-1004], 46330, SLOT 1 | FID 128, INFO, XXX, SFP
3/15, Condition=ALL_32GSWL_SFP(RXP<=63), Current Value:[RXP, 0 uW],
RuleName=defALL_32GSWL_SFPRXP_63, Dashboard Category=Port Health.
2022/10/11-12:43:00, [MAPS-1004], 46331, SLOT 1 | FID 128, INFO, XXX, SFP
12/15, Condition=ALL_32GSWL_SFP(RXP<=63), Current Value:[RXP, 0 uW],
RuleName=defALL_32GSWL_SFPRXP_63, Dashboard Category=Port Health.

2023/02/20-16:42:20 (IST), [MAPS-1003], 9812, SLOT 2 | FID 128 | PORT 4/
33, WARNING, switch, slot4 port33, F-Port 4/33,
Condition=ALL_HOST_PORTS(STATE_CHG/min>5), Current Value:[STATE_CHG, 6],
RuleName=defALL_HOST_PORTSSTATE_CHG_5, Dashboard Category=Port Health,
Quiet Time=None.
2023/02/20-16:42:20 (IST), [MAPS-1003], 9813, SLOT 2 | FID 128 | PORT 4/
33, WARNING, switch, slot4 port33, F-Port 4/33,
Condition=ALL_OTHER_F_PORTS(STATE_CHG/min>5), Current Value:[STATE_CHG,
6], RuleName=defALL_OTHER_F_PORTSSTATE_CHG_5, Dashboard Category=Port
```

```
Health, Quiet Time=None.

2022/06/26-03:53:42, [MAPS-1003], 42403, SLOT 2 | FID 128, WARNING,
switch, slot6 port9, U-Port 6/9, Condition=ALL_PORTS(LOSS_SIGNAL/min>3),
Current Value:[LOSS_SIGNAL, 386 LOS], RuleName=defALL_PORTSLOSS_SIGNAL_3,
Dashboard Category=Port Health.
2022/06/26-03:54:42, [MAPS-1003], 42404, SLOT 2 | FID 128, WARNING,
switch, slot6 port9, U-Port 6/9, Condition=ALL_PORTS(LOSS_SIGNAL/min>3),
Current Value:[LOSS_SIGNAL, 378 LOS], RuleName=defALL_PORTSLOSS_SIGNAL_3,
Dashboard Health.

2021/10/23-23:38:47, [MAPS-1003], 55690, SLOT 1 | FID 128, WARNING,
Fabric1, slot10 port31, U-Port 10/31, Condition=ALL_PORTS(LF/min>3),
Current Value:[LF, 4], RuleName=defALL_PORTSLF_3, Dashboard Category=Port
Health.
2021/10/23-04:24:46, [PORT-1003], 53615, SLOT 1 | FID 128, WARNING,
Fabric1, Port 223 Faulted because of many Link Failures.

2020/04/08-21:35:56, [C3-1014], 2556, CHASSIS, WARNING, Brocade6510,  Link
Reset on Port S0,P8(12) vc_no=0 crd(s)lost=12 auto trigger.
2020/04/09-09:03:42, [C3-1014], 2557, CHASSIS, WARNING, Brocade6510,  Link
Reset on Port S0,P8(12) vc_no=0 crd(s)lost=12 auto trigger.

2023/10/15-01:03:18, [AN-1014], 589, FID 128, INFO, SWITCH, Frame timeout
detected, tx port 37 rx port 15, sid 650900, did 632501, timestamp
2023-10-15 01:03:18 .
2023/10/15-01:03:18, [LOG-1000], 594, FID 128, INFO, SWITCH, Previous
message repeated 5 time(s).
```

- **RuleName=defALL_32GSWL_SFPRXP_63**Rx电源开始降级时触发、表示上游问题描述I、e SFP或缆线出现故障
- 在存储 端、**EMS** 日志会报告link break 事件：

```
 [?]  Tue Sep 17 20:13:44 +0530 [NetApp-2: fct_tpd_work_thread_0:
scsitarget.slifct.linkBreak:error]: Link break detected on Fibre Channel
target HBA 3d with event status 1 , topology type 1, status1 0x0, status2
0x0.
```

```
 [?]  Tue Sep 17 20:13:45 +0530 [NetApp-2: fct_tpd_work_thread_0:
scsitarget.hwpfct.linkUp:notice]: Link up on Fibre Channel target adapter
3d.
```

- 涵盖问题描述Time **ITW errors** 和**loss of sync** 的性能归档同时进行。

Model: AFF-A800
Release: 9.10.1P5
Time Range: 2024-09-17 13:30:01.000+00:00 - 2024-09-17 16:30:00.002+00:00

start	end	instance	loss_of_signal	link_down	nvalid_transmission_word	link_up	write_ops (/s)	read_ops (/s)	total_ops (/s)	lr_sent_count	loss_of_sync
2024-09-17 13:35:01 +00:00	2024-09-17	port.3d	0	0	0	0	548.77	11.89	568.41	0	0
2024-09-17 13:40:01 +00:00	2024-09-17	port.3d	0	0	0	0	548.18	5.72	561.63	0	0
2024-09-17 13:45:01 +00:00	2024-09-17	port.3d	0	0	0	0	547.75	5.79	561.3	0	0
2024-09-17 13:50:01 +00:00	2024-09-17	port.3d	0	0	0	0	551.3	8.71	567.77	0	0
2024-09-17 13:55:01 +00:00	2024-09-17	port.3d	0	0	0	0	551.51	6.01	565.29	0	0
2024-09-17 14:00:01 +00:00	2024-09-17	port.3d	0	0	0	0	541.8	6.45	556.04	0	0
2024-09-17 14:05:01 +00:00	2024-09-17	port.3d	0	0	0	0	547.88	6.14	561.76	0	0
2024-09-17 14:10:01 +00:00	2024-09-17	port.3d	0	0	0	0	545.48	7.22	560.43	0	0
2024-09-17 14:15:01 +00:00	2024-09-17	port.3d	0	0	0	0	546.05	3.19	557.01	0	0
2024-09-17 14:20:01 +00:00	2024-09-17	port.3d	0	0	0	0	553.81	33.97	595.54	0	0
2024-09-17 14:25:01 +00:00	2024-09-17	port.3d	0	0	0	0	548.94	5.12	561.8	0	0
2024-09-17 14:30:01 +00:00	2024-09-17	port.3d	0	0	0	0	547.03	4.03	558.79	0	0
2024-09-17 14:35:01 +00:00	2024-09-17	port.3d	0	0	0	0	542.78	6.01	556.55	0	0
2024-09-17 14:40:01 +00:00	2024-09-17	port.3d	0	1	6	1	530.22	5.88	543.75	1	5
2024-09-17 14:45:01 +00:00	2024-09-17	port.3d	0	0	0	0	512.78	3.17	527.43	0	0
2024-09-17 14:50:01 +00:00	2024-09-17	port.3d	0	0	0	0	548.56	6.87	563.45	0	0
2024-09-17 14:55:01 +00:00	2024-09-17	port.3d	0	0	0	0	542.52	5.25	555.49	0	0

- 在交换机端、我们也可以看到loss of sig 错误。
- 这表示交换机和存储之间的链路上发生了一些loss of signal、因此、存储启动了链路重置以从这种情况中恢复。
- 这反过来又会触发ITW errors 、因为在此期间重置链路时、到达该链路的帧将被丢弃。
- ITW 错误指示电缆有故障。
- 要进一步隔离问题描述，请重新拔插电缆。
- 如果问题描述仍然存在、请重新拔插开机自检电缆、请继续执行解决方案。