

スーパーキャパシタ障害によるASR5500 FSCの障害

内容

[概要](#)

[問題 : Hd-raidが低下したFSC 16の障害が報告されています](#)

[トラブルシュート](#)

[解決方法](#)

[シングルFSCドライブのスーパーキャパシタ障害](#)

概要

このドキュメントでは、Ciscoアグリゲーションサービスルータ(ASR)5500のファブリックおよびストレージカード(FSC)に関する特定のハードウェア問題について説明します。

問題 : Hd-raidが低下したFSC 16の障害が報告されています

```
***** Show alarm outstanding verbose *****
```

Severity	Object	Timestamp	Alarm ID
----------	--------	-----------	----------

Alarm Details

Minor	Card 14	Sunday August 21 07:16:34 A	3610743104839221248
-------	---------	-----------------------------	---------------------

The Fabric & 2x200GB Storage Card in slot 14 is a single point of failure. Another Fabric & 2x200GB Storage Card of the same type is needed.

Minor	Card 15	Sunday August 21 07:16:34 A	3610743104839221249
-------	---------	-----------------------------	---------------------

The Fabric & 2x200GB Storage Card in slot 15 is a single point of failure. Another Fabric & 2x200GB Storage Card of the same type is needed.

Minor	Card 17	Sunday August 21 07:16:34 A	3610743104839221250
-------	---------	-----------------------------	---------------------

The Fabric & 2x200GB Storage Card in slot 17 is a single point of failure. Another Fabric & 2x200GB Storage Card of the same type is needed.

```
***** show card table all *****
```

Slot	Card Type	Oper State	SPOF	Attach
------	-----------	------------	------	--------

1: DPC	Data Processing Card	Active	No	
--------	----------------------	--------	----	--


```
Events                : 0

Model                 : STEC Z16IZF2E-200UCU E4TC

Serial Number         : STM000171E75

Size                  : 200GB (200049647616 bytes)

Disk hd16b

State                 : In-sync component

Created               : Fri May 23 23:05:53 2014

Updated               : Fri May 23 23:05:53 2014

Events                : 0

Model                 : STEC Z16IZF2E-200UCU E4TC

Serial Number         : STM000171E8B

Size                  : 200GB (200049647616 bytes)
```

トラブルシューティング

これらのエラーは、syslogでトラブルシューティングを開始すると報告されます。

```
[local-60sec34.188] [hdctrl 132011 critical] [5/0/7135 <hdctrl:0> rl_fsm_mirror.c:5938]
[software internal system critical-info syslog] hd16, FSC16 SAD17160089 failed from RAID
59a7ebf0:7f798af6:68869614:3210b2c6, MIO5 SAD1716021N.
```

```
[local-60sec34.188] [hdctrl 132016 error] [5/0/7135 <hdctrl:0> rl_fsm_mirror.c:3399] [software
internal system critical-info syslog] Error detected on hd16a (STEC Z16IZF2E-200UCU E4TC
STM000171E75), FSC16 SAD17160089: ioerr_cnt increased from 25 to 27
```

```
[local-60sec34.221] [alarmctrl 65201 info] [5/0/7072 <evlogd:0> alarmctrl.c:192] [software
internal system critical-info syslog] Alarm condition: id 321befb92b220000 (Minor): The Fabric &
2x200GB Storage Card in slot 14 is a single point of failure. Another Fabric & 2x200GB Storage
Card of the same type is needed.
```

```
[local-60sec34.222] [alarmctrl 65201 info] [5/0/7072 <evlogd:0> alarmctrl.c:192] [software
internal system critical-info syslog] Alarm condition: id 321befb92b220002 (Minor): The Fabric &
2x200GB Storage Card in slot 17 is a single point of failure. Another Fabric & 2x200GB Storage
Card of the same type is needed.
```

```
[local-60sec34.222] [alarmctrl 65201 info] [5/0/7072 <evlogd:0> alarmctrl.c:192] [software
```

internal system critical-info syslog] Alarm condition: id 321befb92b220001 (Minor): The Fabric & 2x200GB Storage Card in slot 15 is a single point of failure. Another Fabric & 2x200GB Storage Card of the same type is needed.

次のエラーログが表示される場合：

```
Aug 21 07:16:34 evlogd: [local-60sec34.188] [hdctrl 132016 error] [5/0/7135 <hdctrl:0>
rl_fsm_mirror.c:3399] [software internal system critical-info syslog] Error detected on hd16a
(STEC Z16IZF2E-200UCU E4TC STM000171E75), FSC16 SAD17160089: ioerr_cnt increased from 25 to 27
```

常にスマートテストを実行し、この問題が高温に関連していないかどうかを確認することをお勧めします。

```
[local]# show hd smart hd16a
```

```
smartctl 6.1 2013-03-16 r3800 [x86_64-linux-2.6.38-staros-v3-hw-64] (local build)
```

```
Copyright (C) 2002-13, Bruce Allen, Christian Franke, www.smartmontools.org
```

```
=== START OF INFORMATION SECTION ===
```

```
Vendor:                STEC
Product:               Z16IZF2E-200UCU
Revision:              E4TC
User Capacity:         200,049,647,616 bytes [200 GB]
Logical block size:    512 bytes
LU is resource provisioned, LBPRZ=1
Rotation Rate:         Solid State Device
Form Factor:           2.5 inches
Logical Unit id:       0x5000a72030079304
Serial number:         STM000171E75
Device type:           disk
Transport protocol:    SAS
Local Time is:         Mon Aug 22 16:49:11 2016 AST
SMART support is:      Available - device has SMART capability.
SMART support is:      Enabled
Temperature Warning:   Enabled
```

```
=== START OF READ SMART DATA SECTION ===
```

```
SMART Health Status: OK
```

SS Media used endurance indicator: 0%

Current Drive Temperature: 52 C

Drive Trip Temperature: 75 C

local]SAE-G168A-1# show hd smart hd16b

smartctl 6.1 2013-03-16 r3800 [x86_64-linux-2.6.38-staros-v3-hw-64] (local build)

Copyright (C) 2002-13, Bruce Allen, Christian Franke, www.smartmontools.org

=== START OF INFORMATION SECTION ===

Vendor: XXXX

Product: Z16IZF2E-200UCU

Revision: E4TC

User Capacity: 200,049,647,616 bytes [200 GB]

Logical block size: 512 bytes

LU is resource provisioned, LBPRZ=1

Rotation Rate: Solid State Device

Form Factor: 2.5 inches

Logical Unit id: 0x5000a7203007932c

Serial number: STM000171E8B

Device type: disk

Transport protocol: SAS

Local Time is: Mon Aug 22 16:49:21 2016 AST

SMART support is: Available - device has SMART capability.

SMART support is: Enabled

Temperature Warning: Enabled

=== START OF READ SMART DATA SECTION ===

SMART Health Status: OK

SS Media used endurance indicator: 0%

Current Drive Temperature: 50 C

Drive Trip Temperature: 75 C

スマートテストは正常であるため、高温の問題とは関係ないと結論付けることができます。

解決方法

シングルFSCドライブのスーパーキャパシタ障害

単一のFSC上のドライブの1つまたは両方が無効なパーティションまたはイメージの状態に移行する場合があります。

これは、1つのFSCのドライブにあるスーパーコンデンサに障害が発生した場合に発生する可能性があります。この障害は、ドライブを交換するかFSCを交換する永続的なドライブ障害であるため、回復できません。

詳細については、Cisco TACにお問い合わせください。

いずれかのドライブで表示される場合は、そのドライブにスーパーキャパシタ障害があります。

これらのログは、アクティブな管理入出力(MIO)カードのデバッグコンソールログに表示されます。

```
2016-Aug-21+07:16:34.038 card 5-cpu0: [974499.606697] sd 0:0:2:0: [sde] Unhandled sense code^M
2016-Aug-21+07:16:34.139 card 5-cpu0: [974499.611565] sd 0:0:2:0: [sde] Result: hostbyte=DID_OK
driverbyte=DRIVER_SENSE^M
2016-Aug-21+07:16:34.139 card 5-cpu0: [974499.618877] sd 0:0:2:0: [sde] Sense Key : Data
Protect [current] ^M
2016-Aug-21+07:16:34.139 card 5-cpu0: [974499.625214] sd 0:0:2:0: [sde] Add. Sense: Write
protected^M
2016-Aug-21+07:16:34.139 card 5-cpu0: [974499.630840] sd 0:0:2:0: [sde] CDB: Write(10): 2a 00 00
00 08 08 00 00 08 00^M
2016-Aug-21+07:16:34.139 card 5-cpu0: [974499.638173] end_request: I/O error, dev sde, sector
2056^M
2016-Aug-21+07:16:34.139 card 5-cpu0: [974499.643558] md: super_written gets error=-5,
uptodate=0^M
2016-Aug-21+07:16:34.139 card 5-cpu0: [974499.648872] md/raid:md0: Disk failure on md16,
disabling device.^M
2016-Aug-21+07:16:34.139 card 5-cpu0: [974499.648873] md/raid:md0: Operation continuing on 3
devices.^M
2016-Aug-21+07:16:34.238 card 5-cpu0: [974499.712047] sd 0:0:2:0: [sde] Sense Key : Recovered
Error [current] ^M
2016-Aug-21+07:16:34.238 card 5-cpu0: [974499.718637] sd 0:0:2:0: [sde] <<vendor>> ASC=0x80
ASCQ=0x0ASC=0x80 ASCQ=0x0^M
2016-Aug-21+07:21:37.112 card 5-cpu0: [974802.605115] sd 0:0:2:0: [sde] Sense Key : Recovered
```

Error [current] ^M

```
2016-Aug-21+07:21:37.112 card 5-cpu0: [974802.611712] sd 0:0:2:0: [sde] <<vendor>> ASC=0x80
ASCQ=0x0ASC=0x80 ASCQ=0x0^M
```

```
2016-Aug-21+07:26:37.099 card 5-cpu0: [975102.612464] sd 0:0:2:0: [sde] Sense Key : Recovered
Error [current] ^M
```

特定のエラーログを

1. アクティブなMIOカードのコンソール出力のデバッグ
2. Debug hdctrl mapping
3. Debug hdctrl history

これにより、スーパーコンデンサの障害が確認されます。

```
**** debug console card <Active MIO card> cpu 0 tail 10000 only ****
```

```
[sde] <> ASC=0x80 ASCQ=0x0ASC=0x80 ASCQ=0x0
```

```
***** debug hdctrl history *****
Thursday March 31 02:29:03 EDT 2016
```

Primary HDCTRL:

```
2016-Mar-31+02:13:38.632 move fsm=hd15#6 src=DISK_CHECK dst=DISK_FAILED arg=disk I/O error #
hdctrl/hdctrl_fsm_disk.c : 4354 @ disk_fsm_enter()
```

Below is the mapping of the disks to device name:

```
***** debug hdctrl mapping ***** Local card (5): Disk Device Number SCSI Size ----- --
----- ----- hd14a sdb 8:16 0:0:0:0 186 GB hd15a sdd 8:48 0:0:1:0 186 GB hd16a sde
8:64 0:0:2:0 186 GB hd17a sdg 8:96 0:0:3:0 186 GB hd14b sda 8:0 1:0:0:0 186 GB hd15b sdc 8:32
1:0:1:0 186 GB hd16b sdf 8:80 1:0:2:0 186 GB hd17b sdh 8:112 1:0:3:0 186 GB
```

Below highlited logs indicating a failure of the super capacitor on the solid state drive of FSC card disk 16a.

```
hd16a <==>sde
-----
```

```
2016-Aug-21+07:21:37.112 card 5-cpu0: [974802.611712] sd 0:0:2:0: [sde] <<vendor>> ASC=0x80
ASCQ=0x0ASC=0x80 ASCQ=0x0^M
```

```
2016-Aug-21+07:26:37.099 card 5-cpu0: [975102.612464] sd 0:0:2:0: [sde] Sense Key : Recovered
Error [current] ^M
```