

TechNote의 디스크 성능 사용률 향상

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소개

이 문서에서는 디스크 성능 활용률이 100%에 도달하고 애플리케이션 문제인지 하드웨어 문제인지 확인해야 하는 경우 상황을 분석하기 위해 여러 명령을 실행해야 하는 절차에 대해 설명합니다.

사전 요구 사항

요구 사항

이 문서에 대한 특정 요건이 없습니다.

사용되는 구성 요소

이 문서의 정보는 다음 소프트웨어 및 하드웨어 버전을 기반으로 합니다.

- Cisco UCS(Unified Computing System) 시리즈
- Hewlett-Packard(HP) 서버

이 문서의 정보는 특정 랩 환경의 디바이스를 토대로 작성되었습니다.이 문서에 사용된 모든 디바이스는 초기화된(기본) 컨피그레이션으로 시작되었습니다.현재 네트워크가 작동 중인 경우, 모든 명령어의 잠재적인 영향을 미리 숙지하시기 바랍니다.

문제/장애:높은 디스크 성능 사용률

시스템이 느리게 작동하며 안정적이지 않습니다.디스크 성능 활용률이 100%에 달합니다.

문제 해결

빠르고 쉬운 방법은 관리 웹 인터페이스에 액세스하고 스토리지 하드웨어 상태를 검사하는 것입니다.

Cisco CIMC(Integrated Management Controller)에 액세스할 수 없는 경우 HP 서버의 UCS(Unified Computing System) Series 또는 ILO(Integrated Lights-Out)에 대한 원격 관리를 통해 다음 방법을 사용하여 RAID 및 디스크에 대한 정보를 얻을 수 있습니다.

Cisco UCS(Unified Computing System) 서버의 경우:

Debian 배포에서는 "megacli"라는 패키지를 사용합니다.

이 도구에 대한 자세한 정보 - <http://hwraid.le-vert.net/wiki/LSIMegaRAIDSAS>

명령 사용 방법 예 - <http://www.mostlychris.com/blog/2009/07/29/check-raid-status-with-megacli/>

Debian용 패키지를 [다운로드하여](#) 설치할 수 있습니다.

참고:megacli_8.07.14-1_amd64.deb로 테스트되었습니다.

사용할 하드웨어 컨트롤러를 확인하려면 sudo lspci -vv 명령을 실행합니다. | grep -i RAID

예:

```
82:00.0 RAID 버스 컨트롤러:LSI Logic / Symbios Logic MegaRAID SAS 2208 [Thunderbolt] (수정 05)
```

사용 중인 커널 드라이버:mega_sas

이 명령에 대한 자세한 내용은 다음에서 확인할 수 있습니다.

<http://www.cisco.com/c/en/us/support/docs/servers-unified-computing/ucs-c-series-rack-servers/115020-intro-lsi-megacli-00.html>

root로 실행, 명령 실행: **sudo /usr/bin/megacli**

Cisco UCS(Unified Computing System) 시리즈

1단계. RAID 컨트롤러 세부 정보를 찾아 다음 명령을 실행합니다.**lspci -vv | grep -i RAID.**

RAID 컨트롤러는 디바이스입니다.

```
$ lspci -vv | grep -i RAID
82:00.0 RAID bus controller: LSI Logic / Symbios Logic MegaRAID SAS 2208 [Thunderbolt] (rev 05)
    Kernel driver in use: megaraid_sas
```

```
$ sudo lspci -vv | grep -A60 -i RAID
82:00.0 RAID bus controller: LSI Logic / Symbios Logic MegaRAID SAS 2208 [Thunderbolt] (rev 05)
Subsystem: LSI Logic / Symbios Logic Device 9271
Control: I/O+ Mem+ BusMaster+ SpecCycle- MemWINV- VGASnoop- ParErr+ Stepping- SERR+ FastB2B-
DisINTx+
Status: Cap+ 66MHz- UDF- FastB2B- ParErr- DEVSEL=fast >TAbort- <TAbort- <MAbort- >SERR- <PERR-
INTx-
Latency: 0, Cache Line Size: 64 bytes
```

```

Interrupt: pin A routed to IRQ 56
Region 0: I/O ports at f000 [size=256]
Region 1: Memory at fbe60000 (64-bit, non-prefetchable) [size=16K]
Region 3: Memory at fbe00000 (64-bit, non-prefetchable) [size=256K]
Expansion ROM at fbe40000 [disabled] [size=128K]
Capabilities: [50] Power Management version 3
Flags: PMEClk- DSI- D1+ D2+ AuxCurrent=0mA PME(D0-,D1-,D2-,D3hot-,D3cold-)
Status: D0 NoSoftRst+ PME-Enable- DSel=0 DScale=0 PME-
Capabilities: [68] Express (v2) Endpoint, MSI 00
DevCap: MaxPayload 4096 bytes, PhantFunc 0, Latency L0s <64ns, L1 <1us
ExtTag+ AttnBtn- AttnInd- PwrInd- RBE+ FLReset+
DevCtl: Report errors: Correctable- Non-Fatal+ Fatal+ Unsupported-
RlxdOrd- ExtTag- PhantFunc- AuxPwr- NoSnoop+ FLReset-
MaxPayload 256 bytes, MaxReadReq 512 bytes
DevSta: CorrErr+ UncorrErr- FatalErr- UnsuppReq+ AuxPwr- TransPnd-
LnkCap: Port #0, Speed 8GT/s, Width x8, ASPM L0s, Latency L0 <64ns, L1 <1us
ClockPM- Surprise- LLActRep- BwNot-
LnkCtl: ASPM Disabled; RCB 64 bytes Disabled- Retrain- CommClk+
ExtSynch- ClockPM- AutWidDis- BWInt- AutBWInt-
LnkSta: Speed 8GT/s, Width x8, TrErr- Train- SlotClk+ DLActive- BWMgmt- ABWMgmt-
DevCap2: Completion Timeout: Range BC, TimeoutDis+
DevCtl2: Completion Timeout: 65ms to 210ms, TimeoutDis-
LnkCtl2: Target Link Speed: 8GT/s, EnterCompliance- SpeedDis-, Selectable De-emphasis: -6dB
Transmit Margin: Normal Operating Range, EnterModifiedCompliance- ComplianceSOS-
Compliance De-emphasis: -6dB
LnkSta2: Current De-emphasis Level: -6dB, EqualizationComplete+, EqualizationPhase1+
EqualizationPhase2+, EqualizationPhase3+, LinkEqualizationRequest+
Capabilities: [d0] Vital Product Data
Unknown small resource type 00, will not decode more.
Capabilities: [a8] MSI: Enable- Count=1/1 Maskable- 64bit+
Address: 0000000000000000 Data&colon; 0000
Capabilities: [c0] MSI-X: Enable+ Count=16 Masked-
Vector table: BAR=1 offset=00002000
PBA: BAR=1 offset=00003000
Capabilities: [100 v2] Advanced Error Reporting
UESta: DLP- SDES- TLP- FCP- CmpltTO- CmpltAbrt- UnxCmplt- RxOF- MalfTLP- ECRC- UnsupReq-
ACSViol-
UEmsk: DLP- SDES- TLP- FCP- CmpltTO- CmpltAbrt- UnxCmplt- RxOF- MalfTLP- ECRC- UnsupReq+
ACSViol-
UESvrt: DLP+ SDES+ TLP- FCP+ CmpltTO- CmpltAbrt- UnxCmplt- RxOF+ MalfTLP+ ECRC- UnsupReq-
ACSViol-
CESta: RxErr- BadTLP- BadDLLP- Rollover- Timeout- NonFatalErr+
CEmsk: RxErr- BadTLP- BadDLLP- Rollover- Timeout- NonFatalErr+
AERCap: First Error Pointer: 00, GenCap- CGenEn- ChkCap- ChkEn-
Capabilities: [1e0 v1] #19
Capabilities: [1c0 v1] Power Budgeting <?>
Capabilities: [190 v1] #16
Capabilities: [148 v1] Alternative Routing-ID Interpretation (ARI)
ARICap: MFVC- ACS-, Next Function: 0
ARICtl: MFVC- ACS-, Function Group: 0
Kernel driver in use: megaraid_sas

```

2단계. UCS(Unified Computing System Series) 물리적 및 가상 드라이브를 확인하고 명령을 실행합니다. **sudo megacli -ldinfo -lALL -aALL.**

```
$ sudo megacli -ldinfo -lALL -aALL
```

```

Adapter 0 -- Virtual Drive Information:
Virtual Drive: 0 (Target Id: 0)
Name                :RAID10_1234
RAID Level          : Primary-1, Secondary-0, RAID Level Qualifier-0
Size                : 1.088 TB
Sector Size         : 512

```

```
Is VD emulated      : No
Mirror Data         &colon; 1.088 TB
State              : Optimal
Strip Size          : 64 KB
Number Of Drives per span:2
Span Depth          : 2
Default Cache Policy: WriteBack, ReadAdaptive, Direct, No Write Cache if Bad BBU
Current Cache Policy: WriteThrough, ReadAdaptive, Direct, No Write Cache if Bad BBU
Default Access Policy: Read/Write
Current Access Policy: Read/Write
Disk Cache Policy   : Disk's Default
Encryption Type     : None
PI type: No PI

Is VD Cached: No
```

Exit Code: 0x00

- 현재 캐시 정책에서 값을 확인해야 합니다.

다시 쓰기 - 확인

WriteThrough - BAD

다음은 동일한 항목의 예입니다.

```
$ sudo megacli -ldinfo -lALL -aALL
```

```
Adapter 0 -- Virtual Drive Information:
Virtual Drive: 0 (Target Id: 0)
Name           :RAID10_1234
RAID Level     : Primary-1, Secondary-0, RAID Level Qualifier-0
Size           : 1.088 TB
Sector Size    : 512
Is VD emulated : No
Mirror Data    : 1.088 TB
State          : Optimal
Strip Size     : 64 KB
Number Of Drives per span:2
Span Depth     : 2
Default Cache Policy: WriteBack, ReadAdaptive, Direct, No Write Cache if Bad BBU
Current Cache Policy: WriteBack, ReadAdaptive, Direct, No Write Cache if Bad BBU
Default Access Policy: Read/Write
Disk Cache Policy : Disk's Default
Disk Cache Policy : Disk's Default
Encryption Type  : None
PI type: No PI
Is VD Cached: No
```

Exit Code: 0x00

```
intucell@deb017:/intucell/maintenance_portal_6$
```

3단계. 배터리 검사, 명령 실행: `sudo megacli -AdpBbuCmd -GetBbuStatus -aALL -NoLog.`

```
$ sudo megacli -AdpBbuCmd -GetBbuStatus -aALL -NoLog
```

```
BBU status for Adapter: 0
```

```
BatteryType: CVPM02
```

```
Voltage: 9849 mV
```

```
Current: 0 mA
```

```
Temperature: 25 C
```

```
Battery State: Optimal
```

```
BBU Firmware Status:
```

```
Charging Status           : None
Voltage                   : OK
Temperature                : OK
Learn Cycle Requested     : No
Learn Cycle Active        : No
Learn Cycle Status        : OK
Learn Cycle Timeout       : No
I2c Errors Detected      : No
Battery Pack Missing      : No
Battery Replacement required : No
Remaining Capacity Low    : No
Periodic Learn Required   : No
Transparent Learn         : No
No space to cache offload : No
Pack is about to fail & should be replaced : No
Cache Offload premium feature required : No
Module microcode update required : No
```

```
BBU GasGauge Status: 0x654e
```

```
Pack energy           : 334 J
```

```
Capacitance          : 101
```

```
Remaining reserve space : 93
```

```
Exit Code: 0x00
```

4단계. 물리적 디스크 정보, 명령 실행: **sudo megacli -AdpAllInfo -aALL.**

```
$ sudo megacli -AdpAllInfo -aALL
```

```
Adapter #0
```

```
=====
                        Versions
                        =====
Product Name       : LSI MegaRAID SAS 9271-8i
Serial No         : SV50206143
FW Package Build  : 23.29.0-0014

                        Mfg. Data
                        =====
Mfg. Date         : 01/04/15
Rework Date       : 00/00/00
Revision No       : 33B
Battery FRU       : N/A

                        Image Versions in Flash:
                        =====
BIOS Version       : 5.47.05.0_4.16.08.00_0x06080500
WebBIOS Version    : 6.1-71-e_71-Rel
Preboot CLI Version: 05.07-00:##00011
```

FW Version : 3.410.05-3484
NVDATA Version : 2.1406.03-0134
Boot Block Version : 2.05.00.00-0010
BOOT Version : 07.26.26.219

Pending Images in Flash
=====

None

PCI Info
=====

Controller Id : 0000
Vendor Id : 1000
Device Id : 005b
SubVendorId : 1000
SubDeviceId : 9271

Host Interface : PCIE

ChipRevision : D1

Link Speed : 0
Number of Frontend Port: 0
Device Interface : PCIE

Number of Backend Port: 8

Port	Address
0	74a2e6a2b23600bf
1	0000000000000000
2	0000000000000000
3	0000000000000000
4	0000000000000000
5	0000000000000000
6	0000000000000000
7	0000000000000000

HW Configuration
=====

SAS Address : 500605b009f61dd0
BBU : Present
Alarm : Present
NVRAM : Present
Serial Debugger : Present
Memory : Present
Flash : Present
Memory Size : 1024MB
TPM : Absent
On board Expander: Absent
Upgrade Key : Absent
Temperature sensor for ROC : Present
Temperature sensor for controller : Absent

ROC temperature : 74 degree Celsius

Settings
=====

Current Time : 7:3:27 2/19, 2016
Predictive Fail Poll Interval : 300sec
Interrupt Throttle Active Count : 16
Interrupt Throttle Completion : 50us
Rebuild Rate : 30%
PR Rate : 30%
BGI Rate : 30%
Check Consistency Rate : 30%

Reconstruction Rate : 30%
Cache Flush Interval : 4s
Max Drives to Spinup at One Time : 2
Delay Among Spinup Groups : 12s
Physical Drive Coercion Mode : 1GB
Cluster Mode : Disabled
Alarm : Enabled
Auto Rebuild : Enabled
Battery Warning : Enabled
Ecc Bucket Size : 15
Ecc Bucket Leak Rate : 1440 Minutes
Restore HotSpare on Insertion : Disabled
Expose Enclosure Devices : Enabled
Maintain PD Fail History : Disabled
Host Request Reordering : Enabled
Auto Detect BackPlane Enabled : SGPIO/i2c SEP
Load Balance Mode : Auto
Use FDE Only : Yes
Security Key Assigned : No
Security Key Failed : No
Security Key Not Backedup : No
Default LD PowerSave Policy : Automatic
Maximum number of direct attached drives to spin up in 1 min : 10
Auto Enhanced Import : Yes
Any Offline VD Cache Preserved : No
Allow Boot with Preserved Cache : No
Disable Online Controller Reset : No
PFK in NVRAM : Yes
Use disk activity for locate : No
POST delay : 90 seconds
BIOS Error Handling : Pause on Errors
Current Boot Mode :Normal

Capabilities

=====

RAID Level Supported : RAID0, RAID1, RAID5, RAID6, RAID00, RAID10, RAID50, RAID60,
PRL 11, PRL 11 with spanning, SRL 3 supported, PRL11-RLQ0 DDF layout with no span, PRL11-RLQ0
DDF layout with span
Supported Drives : SAS, SATA

Allowed Mixing:

Mix in Enclosure Allowed
Mix of SAS/SATA of HDD type in VD Allowed
Mix of SAS/SATA of SSD type in VD Allowed

Status

=====

ECC Bucket Count : 0

Limitations

=====

Max Arms Per VD : 32
Max Spans Per VD : 8
Max Arrays : 128
Max Number of VDs : 64
Max Parallel Commands : 1008
Max SGE Count : 60
Max Data Transfer Size : 8192 sectors
Max Strips PerIO : 42
Max LD per array : 64
Min Strip Size : 8 KB
Max Strip Size : 1.0 MB
Max Configurable CacheCade Size: 0 GB
Current Size of CacheCade : 0 GB

Current Size of FW Cache : 866 MB

Device Present

=====

Virtual Drives : 1
Degraded : 0
Offline : 0
Physical Devices : 6
Disks : 4
Critical Disks : 0
Failed Disks : 0

Supported Adapter Operations

=====

Rebuild Rate : Yes
CC Rate : Yes
BGI Rate : Yes
Reconstruct Rate : Yes
Patrol Read Rate : Yes
Alarm Control : Yes
Cluster Support : No
BBU : Yes
Spanning : Yes
Dedicated Hot Spare : Yes
Revertible Hot Spares : Yes
Foreign Config Import : Yes
Self Diagnostic : Yes
Allow Mixed Redundancy on Array : No
Global Hot Spares : Yes
Deny SCSI Passthrough : No
Deny SMP Passthrough : No
Deny STP Passthrough : No
Support Security : No
Snapshot Enabled : No
Support the OCE without adding drives : Yes
Support PFK : Yes
Support PI : Yes
Support Boot Time PFK Change : No
Disable Online PFK Change : No
Support LDPI Type1 : No
Support LDPI Type2 : No
Support LDPI Type3 : No
PFK TrailTime Remaining : 0 days 0 hours
Support Shield State : Yes
Block SSD Write Disk Cache Change: No
Support Online FW Update : Yes

Supported VD Operations

=====

Read Policy : Yes
Write Policy : Yes
IO Policy : Yes
Access Policy : Yes
Disk Cache Policy : Yes
Reconstruction : Yes
Deny Locate : No
Deny CC : No
Allow Ctrl Encryption: No
Enable LDBBM : No
Support Breakmirror : No
Power Savings : No

Supported PD Operations

=====

Force Online : Yes
Force Offline : Yes
Force Rebuild : Yes
Deny Force Failed : No
Deny Force Good/Bad : No
Deny Missing Replace : No
Deny Clear : No
Deny Locate : No
Support Temperature : Yes
NCQ : Yes
Disable Copyback : No
Enable JBOD : No
Enable Copyback on SMART : No
Enable Copyback to SSD on SMART Error : Yes
Enable SSD Patrol Read : No
PR Correct Unconfigured Areas : Yes
Enable Spin Down of UnConfigured Drives : Yes
Disable Spin Down of hot spares : No
Spin Down time : 30
T10 Power State : No

Error Counters

=====

Memory Correctable Errors : 0
Memory Uncorrectable Errors : 0

Cluster Information

=====

Cluster Permitted : No
Cluster Active : No

Default Settings

=====

Phy Polarity : 0
Phy PolaritySplit : 0
Background Rate : 30
Strip Size : 64kB
Flush Time : 4 seconds
Write Policy : WB
Read Policy : Adaptive
Cache When BBU Bad : Disabled
Cached IO : No
SMART Mode : Mode 6
Alarm Disable : Yes
Coercion Mode : 1GB
ZCR Config : Unknown
Dirty LED Shows Drive Activity : No
BIOS Continue on Error : 1
Spin Down Mode : Internal Only
Allowed Device Type : SAS/SATA Mix
Allow Mix in Enclosure : Yes
Allow HDD SAS/SATA Mix in VD : Yes
Allow SSD SAS/SATA Mix in VD : Yes
Allow HDD/SSD Mix in VD : No
Allow SATA in Cluster : No
Max Chained Enclosures : 16
Disable Ctrl-R : Yes
Enable Web BIOS : Yes
Direct PD Mapping : No
BIOS Enumerate VDs : Yes
Restore Hot Spare on Insertion : No
Expose Enclosure Devices : Yes
Maintain PD Fail History : No
Disable Puncturing : No
Zero Based Enclosure Enumeration : No

```
PreBoot CLI Enabled           : Yes
LED Show Drive Activity      : No
Cluster Disable              : Yes
SAS Disable                   : No
Auto Detect BackPlane Enable : SGPIO/i2c SEP
Use FDE Only                  : Yes
Enable Led Header             : No
Delay during POST             : 0
EnableCrashDump               : No
Disable Online Controller Reset : No
EnableLDBBM                   : No
Un-Certified Hard Disk Drives : Allow
Treat Single span R1E as R10 : No
Max LD per array              : 64
Power Saving option           : All power saving options are enabled
Default spin down time in minutes: 30
Enable JBOD                   : No
TTY Log In Flash              : Yes
Auto Enhanced Import         : Yes
BreakMirror RAID Support     : No
Disable Join Mirror           : No
Enable Shield State           : No
Time taken to detect CME      : 60s
```

Exit Code: 0x00

5단계. 일관성 검사, 명령 실행: sudo megacli -ldinfo -lALL -aALL.

```
$ sudo megacli -ldinfo -lALL -aALL
```

Adapter 0 -- Virtual Drive Information:

```
Virtual Drive: 0 (Target Id: 0)
Name           :RAID10_1234
RAID Level     : Primary-1, Secondary-0, RAID Level Qualifier-0
Size           : 1.088 TB
Sector Size   : 512
Is VD emulated : No
Mirror Data    &colon; 1.088 TB
State          : Optimal
Strip Size     : 64 KB
Number Of Drives per span:2
Span Depth     : 2
Default Cache Policy: WriteBack, ReadAdaptive, Direct, No Write Cache if Bad BBU
Current Cache Policy: WriteBack, ReadAdaptive, Direct, No Write Cache if Bad BBU
Default Access Policy: Read/Write
Current Access Policy: Read/Write
Disk Cache Policy : Disk's Default
```

Ongoing Progresses:

```
  Check Consistency           : Completed 43%, Taken 11 min.
Encryption Type              : None
PI type: No PI
```

Is VD Cached: No

Exit Code: 0x00

6단계. 일관성 검사 간격 설정, 명령 실행: sudo megacli -AdpSched -Info -aALL.

RAID 컨트롤러는 7일마다 RAID의 일관성 검사를 수행합니다.여기에 표시된 값 지연 168은 시간 단위입니다.

```
$ sudo megacli -AdpCcSched -Info -aALL
```

```
Adapter #0
```

```
Operation Mode: Concurrent
```

```
Execution Delay: 168
```

```
Next start time: 02/20/2016, 03:00:00
```

```
Current State: Active
```

```
Number of iterations: 43
```

```
Number of VD completed: 0
```

```
Excluded VDs : None
```

```
Exit Code: 0x00
```

7단계. RAID 이벤트 로그를 가져오고 명령을 실행합니다. **sudo megacli -AdpEventLog -GetEvents -f events.log -aALL && cat events.log | 더 많습니다.**

```
$ sudo megacli -AdpEventLog -GetEvents -f events.log -aALL && cat events.log | more
```

```
Success in AdpEventLog
```

```
Exit Code: 0x00
```

```
Adapter: 0 - Number of Events : 1404
```

```
seqNum: 0x00000002
```

```
Seconds since last reboot: 78
```

```
Code: 0x0000001e
```

```
Class: 0
```

```
Locale: 0x20
```

```
Event Description: Event log cleared
```

```
Event Data&colon;
```

```
=====
```

```
None
```

```
seqNum: 0x00000003
```

```
Seconds since last reboot: 78
```

```
Code: 0x0000002b
```

```
Class: 0
```

```
Locale: 0x20
```

```
Event Description: Test event: 'Event log adjusted, possibly due Firmware version incompatibility'
```

```
Event Data&colon;
```

```
=====
```

```
String: Event log adjusted, possibly due Firmware version incompatibility
```

```
seqNum: 0x00000004
```

```
Seconds since last reboot: 4
```

```
Code: 0x00000000
```

```
Class: 0
```

```
Locale: 0x20
```

```
Event Description: Firmware initialization started (PCI ID 005b/1000/9271/1000)
```

```
Event Data&colon;
```

```
<Snip>
```

Cisco Integrated Management 웹 인터페이스에서 스토리지 컨트롤러를 살펴보는 문제:

배터리 검사

LSI MegaRAID SAS 9271-8i (SLOT-4)

Controller Info | Physical Drive Info | Virtual Drive Info | **Battery Backup Unit** | Storage Log

Actions

- Disable Auto Learn Mode
- Start Learn Cycle

General

Controller: **SLOT-4**
 Battery Type: **TMM-C SuperCap**
 Health: **⚠ Moderate Fault**
 Status: **Learn Cycle Active**
 Battery Present: **true**
 Temperature: **24 degrees C**
 Temperature High: **false**
 Capacitance: **97 %**
 Charging Status: **N/A**

Advanced

Manufacturer: **LSI**
 Serial Number: **19365**
 Date of Manufacture: **2014-10-26**
 Firmware Version: **25849-03**
 Design Voltage: **9.411 V**
 Voltage: **10.415 V**
 Current: **0.000 A**
 Design Capacity: **283 Joules**
 Pack Energy: **357 Joules**
 Learn Mode: **Auto**
 Learn Cycle Status: **Active**
 Learn Cycle Requested: **true**
 Next Learn Cycle: **2015-11-19 02:39**

Fault Entries

<<Newest <Newer Fault Entries 1 to 2 (2) Older> Oldest>> Entries Per Page: 50

Time	Severity	Code	DN	Description
2015-11-19T02:07:12	Warning	F1008	sys/rack-unit-1/board/storage-SAS-SLOT-4/vd-0	Storage Virtual Drive 0 Degraded: please check the storage controller, or reset the
2015-11-19T02:05:55	Minor	F0997	sys/rack-unit-1/board/storage-SAS-SLOT-4/raid-ba	Storage Raid Battery SLOT-4 Degraded: please check the battery or the storage cor

나중에 분석할 로그를 저장할 수 있습니다.

Cisco Integrated Management Controller

Overall Server Status: **Moderate Fault**

Server | Admin | Storage

User Management
Network
Communications Services
Certificate Management
Event Management
Firmware Management
Utilities

Actions

- Export Technical Support Data to Remote Server
- Download Technical Support Data to Local File**
- Export Cisco IMC Configuration
- Import Cisco IMC Configuration
- Reset Cisco IMC to Factory Default Configuration
- Reboot Cisco IMC
- Generate NMI to Host

Last Technical Support Data Export

Status: **Completed (100%)**

Cisco IMC Configuration Import/Export

Action: **N/A**
 Status: **N/A**
 Diagnostic Message: **NONE**

Select location for download by 127.0.0.1

Save in: Downloads

Name	Date modified	Type
C240-FCH1902V2HC-20160223-184634.tar.gz	2/23/2016 6:47 PM	GZ File
FirefoxSetup	9/16/2015 12:03 AM	Applicatio
flashplayer20_ga_install	1/27/2016 12:11 AM	Applicatio
megacli_8.07.14-1_amd64.deb	2/22/2016 9:40 PM	DEB File
platform_event.csv	2/23/2016 3:41 PM	CSV File
VMware-viclient	10/1/2015 9:21 PM	Applicatio
WindowsActivationUpdate	11/2/2015 1:37 PM	Applicatio
winscp576setup	2/4/2016 2:49 AM	Applicatio

File name: C240-FCH1902V2HC-20160223-2031491a...
 Save as type: All Files (*.*)

Warning: This file may be an executable program or contain malicious content, use caution before saving or opening.

Save Changes | Reset Values

HP(Hewlett-Packard) 하드웨어

HP의 경우 RAID 컨트롤러 및 물리적 디스크에 액세스하기 위해 설치해야 하는 Debian용 특별 패키지가 있습니다. 패키지의 이름은 [hpacucli 9.40.1-1. amd64.deb](http://downloads.linux.hpe.com/SDR./repo/mcp/debian/pool/non-free/hpacucli_9.40.1-1_amd64.deb)입니다.

1단계. 설치:

- 개인 계정으로 Linux 시스템에 로그인합니다.
- Linux 시스템에 패키지를 다운로드합니다. wget
[http://downloads.linux.hpe.com/SDR./repo/mcp/debian/pool/non-free/hpacucli_9.40.1-1. amd64.deb](http://downloads.linux.hpe.com/SDR./repo/mcp/debian/pool/non-free/hpacucli_9.40.1-1_amd64.deb)
- 실행 명령: `sudo dpkg -i hpacucli_9.40.1-1. amd64.deb`

설치가 완료되면 다음 CLI 툴을 사용하여 RAID 조작을 수행할 수 있습니다. 허파쿠리

이 도구를 사용하면 RAID 컨트롤러에서 적절한 정보를 가져오고 RAID 구성 요소를 사용하여 구성을 변경할 수 있습니다.

2단계. 컨트롤러 컨피그레이션 세부사항을 표시하고 명령을 실행합니다. `hpaculi ctrl all show config detail`.

```
# hpacucli ctrl all show config detail

Smart Array P410i in Slot 0 (Embedded)
  Bus Interface: PCI
  Slot: 0
  Serial Number: 50123456789ABCDE
  Cache Serial Number: PACCQ9SY9NUH
  RAID 6 (ADG) Status: Disabled
  Controller Status: OK
  Hardware Revision: C
  Firmware Version: 2.50
  Rebuild Priority: Medium
  Expand Priority: Medium
  Surface Scan Delay: 15 secs
  Surface Scan Mode: Idle
  Queue Depth: Automatic
  Monitor and Performance Delay: 60 min
  Elevator Sort: Enabled
  Degraded Performance Optimization: Disabled
  Inconsistency Repair Policy: Disabled
  Wait for Cache Room: Disabled
  Surface Analysis Inconsistency Notification: Disabled
  Post Prompt Timeout: 0 secs
  Cache Board Present: True
  Cache Status: OK
  Cache Ratio: 25% Read / 75% Write
  Drive Write Cache: Disabled
  Total Cache Size: 256 MB
  Total Cache Memory Available: 144 MB
  No-Battery Write Cache: Disabled
  Cache Backup Power Source: Batteries
  Battery/Capacitor Count: 1
  Battery/Capacitor Status: OK
  SATA NCQ Supported: True

Array: A
  Interface Type: SAS
  Unused Space: 0 MB
  Status: OK
```


Array Type: Data

Logical Drive: 1

Size: 136.7 GB
Fault Tolerance: 1
Heads: 255
Sectors Per Track: 32
Cylinders: 35132
Strip Size: 128 KB
Full Stripe Size: 128 KB
Status: OK
Caching: Enabled
Unique Identifier: 600508B10010373839414243444450E00
Disk Name: /dev/cciss/c0d0
Mount Points: /boot 243 MB
OS Status: LOCKED
Logical Drive Label: A00F9DBE50123456789ABCDEA8A8
Mirror Group 0:
 physicaldrive 1I:1:1 (port 1I:box 1:bay 1, SAS, 146 GB, OK)
Mirror Group 1:
 physicaldrive 1I:1:2 (port 1I:box 1:bay 2, SAS, 146 GB, OK)
Drive Type: Data

physicaldrive 1I:1:1

Port: 1I
Box: 1
Bay: 1
Status: OK
Drive Type: Data Drive
Interface Type: SAS
Size: 146 GB
Rotational Speed: 10000
Firmware Revision: HPD5
Serial Number: D0A1P9B09YJW0949
Model: HP EG0146FARTR
Current Temperature (C): 18
Maximum Temperature (C): 39
PHY Count: 2
PHY Transfer Rate: 6.0Gbps, Unknown

physicaldrive 1I:1:2

Port: 1I
Box: 1
Bay: 2
Status: OK
Drive Type: Data Drive
Interface Type: SAS
Size: 146 GB
Rotational Speed: 10000
Firmware Revision: HPD5
Serial Number: D0A1P9B09YKM0949
Model: HP EG0146FARTR
Current Temperature (C): 17
Maximum Temperature (C): 47
PHY Count: 2
PHY Transfer Rate: 6.0Gbps, Unknown

SEP (Vendor ID PMCSIERA, Model SRC 8x6G) 250
Device Number: 250
Firmware Version: RevC
WWID: 50123456789ABCEd

Vendor ID: PMCSIERA
Model: SRC 8x6G

3단계. 컨트롤러 상태를 표시하고 명령을 실행합니다. **hpaculi ctrl all show status.**

```
# hpacucli ctrl all show status

Smart Array P410i in Slot 0 (Embedded)
  Controller Status: OK
  Cache Status: OK
  Battery/Capacitor Status: OK
```

4단계. 물리적 상태를 표시하고 명령을 실행합니다. **hpaculi ctrl slot=0 pd all show status.**

```
# hpacucli ctrl slot=0 pd all show status

physicaldrive 1I:1:1 (port 1I:box 1:bay 1, 146 GB): OK
physicaldrive 1I:1:2 (port 1I:box 1:bay 2, 146 GB): OK
```

5단계. 논리적 상태 표시, 명령 실행: **hpaculi ctrl slot=0 ld all show status.**

```
# hpacucli ctrl slot=0 pd all show status

physicaldrive 1I:1:1 (port 1I:box 1:bay 1, 146 GB): OK
physicaldrive 1I:1:2 (port 1I:box 1:bay 2, 146 GB): OK

root@deb011:/intucell# hpacucli ctrl slot=0 ld all show status

logicaldrive 1 (136.7 GB, 1): OK
```

솔루션

서버 중 하나에 불량 배터리가 있는 경우가 있습니다. 교체하셔야 합니다

이를 통해 문제를 해결하고 높은 디스크 성능 활용도를 줄일 수 있습니다.