

TechNote on High Disk Performance Utilization

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Introduction

This document describes a procedure when you experience disk performance utilization reaching 100% and the need to check whether it is an application issue or a hardware issue, you are required to run several commands to analyze the situation.

Prerequisites

Requirements

There are no specific requirements for this document.

Components Used

The information in this document is based on these software and hardware versions:

- Cisco Unified Computing System (UCS) Series
- Hewlett-Packard (HP) Servers

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Problem: High Disk Performance Utilization

The system works slow and is not stable. You experience disk performance utilization reaching 100%.

Troubleshoot

The fast and easy way is to access the management web interface and examine the storage hardware status.

When there is no access to Cisco Integrated Management Controller (CIMC) remote management for Unified Computing System (UCS) Series or Integrated Lights-Out (ILO) on HP servers, you can get the information about the RAID and disk(s) using this method:

For Cisco Unified Computing System (UCS) servers:

Debian distributions use a package named "megacli".

More information about this tool - <http://hwraid.le-vert.net/wiki/LSIMegaRAIDSAS>

Examples how to use the command - <http://www.mostlychris.com/blog/2009/07/29/check-raid-status-with-megacli/>

The package for debian can be [downloaded](#) and installed.

Note: It is tested with megacli_8.07.14-1_amd64.deb

In order to check which hardware controllers are used, run command: **sudo lspci -vv | grep -i RAID**

e.g.

82:00.0 RAID bus controller: LSI Logic / Symbios Logic **MegaRAID SAS 2208** [Thunderbolt] (rev 05)

Kernel driver in use: megaraid_sas

more information about this command can be found in:

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

Running it as root, run command: **sudo /usr/bin/megacli**

Cisco Unified Computing System (UCS) Series

Step 1. Find your RAID controller details, run command: **lspci -vv | grep -i RAID**.

The RAID controller is a device.

```
$ 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- TransPend-
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- CmplttTO- CmplttAbrt- UnxCmpltt- RxOF- MalfTLP- ECRC- UnsupReq-
ACSViol-
UEmsk: DLP- SDES- TLP- FCP- CmplttTO- CmplttAbrt- UnxCmpltt- RxOF- MalfTLP- ECRC- UnsupReq+
ACSViol-
UESvrt: DLP+ SDES+ TLP- FCP+ CmplttTO- CmplttAbrt- UnxCmpltt- 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

```

Step 2. Checking Unified Computing System Series (UCS) physical and virtual drive, run command: `sudo megacli -ldinfo -lALL -aAL`.

```
$ 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
```

You need to check value under - **Current Cache Policy**

WriteBack - OK

WriteThrough - BAD

This is an example for the same:

```
$ 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$
```

Step 3. Battery check, run command: 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

Step 4. Physical disk(s) info, run command: **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

Step 5. Consistency check, run command: `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 : 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

Step 6. Consistency check interval settings, run command: `sudo megacli -AdpCcSched -Info -aALL`.

The RAID controller performs a consistency check of the RAID every 7 days. The value delay 168 shown in here is in hours.

```
$ 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

Step 7. Get RAID event log, run command: `sudo megacli -AdpEventLog -GetEvents -f events.log -aALL && cat events.log | more`.

```
$ 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>
```

Issues as seen on Cisco Integrated Management web interface looking at storage Controller:

Battery check

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

You can save the log for later analysis.

Cisco Integrated Management Controller

Overall Server Status: **Moderate Fault**

Server | Admin | Storage

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

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	Applicatic
flashplayer20_ga_install	1/27/2016 12:11 AM	Applicatic
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	Applicatic
WindowsActivationUpdate	11/2/2015 1:37 PM	Applicatic
winscp576setup	2/4/2016 2:49 AM	Applicatic

File name: C240-FCH1902V2HC-20160223-203149.tar.gz
Save as type: All Files (*.*)

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

Hewlett-Packard (HP) Hardware

For HP there is a special package for Debian which needs to be installed in order to gain access to the RAID controller and physical disks. The package is named [hpacucli_9.40.1-1_amd64.deb](#)

Step 1. Installation:

- Login to your Linux system with your private account.
- Download the package to your Linux system: `wget http://downloads.linux.hpe.com/SDR/repo/mcp/debian/pool/non-free/hpacucli_9.40.1-1_amd64.deb`
- run command: `sudo dpkg -i hpacucli_9.40.1-1_amd64.deb`

When the installation is finished, you can work with the RAID manipulation by using the following CLI tool: `hpacucli`

The tool allows fetching appropriate information from the RAID controller as well as changing configuration with the RAID components.

Step 2. Display controller configuration details, run command: `hpacucli 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

Step 3. Show Controller status, run command: `hpacucli 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
```

Step 4. Show physical status, run command: `hpacucli 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
```

Step 5. Show Logical status, run command: `hpacucli 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
```

Solution

At times a bad battery in one of the servers can be the reason for it. You should replace it.

This solves the problem and reduces the high disk performance utilization.