# How do you use LSI commands?

## KB0011217 (Review)

☆ ☆ ☆ ☆ ☆ 2 views

## Answer

IBM Cloud provides the Bare Metal server and this server normally has a local LSI storage controller. This document will show how to manage a LSI raid controller on IBM Cloud servers using using StorCLI.

There are two ways to configure and check raid status:

- RAID BIOS: It requires a reboot of the server. When the server is powered on, you need to type Crtl + R.
- Using StorCLI: Without shutting down the server, you can configure and check it.

This document will focus on using StorCLI from command-line interface.

## **StorCLI Installation**

If your servers do not have the StorCLI software installed especially for ESXi hosts, <u>download the software</u> (<u>http://www.avagotech.com/support/download-search</u>) and install it. For example, you can use the following installation syntax:

# esxcli software vib install -v <installation\_path> --no-sig-check

To verify that installation is success, run the following command from the storcli directory:

# ./storcli show

Generally, here are the installation paths StorCLI:

- Linux: /opt/MegaRAID/storcli/
- Windows: C:\Program Files (x86)\MegaRAID Storage Manager\

## How do you check the current configuration and drive status?

To show the virtual disk status, run the following command:
 # storcli64 /c0 /vall show

The following screen shot shows the results of the command:



• To show the physical disk status, run the following command:

# storcli /c0 /eall /sall show

The following screen shot shows the results of the command:

[root@ad	25-E0	aid-ls	hin	stor	cl	1]	# ./s	cord	1164	/c	) /ea:	11 /sall show		
Status :	SIL													
Descrint	tion	= Shot	u D	+ive	In	too	marti	an Si	incer	eder	÷			
Dessay		- 5115		1110			L 100 U L	24. 51	4999C	cuici				
Drive In	for	mation												
EID:Slt	DID	State	DG		51	ze	Intf	Med	SED	PI	SeSz	Model	Sp	
8:0	19	Onln	0	931.	0	GB	SATA	HDD	N	N	512B	ST1000NM0033-9ZM173	U	
8:1	17	Onin	0	931.		GB	SATA	HDD	N	27	512B	5T1000NM0033-9ZM173		
8:2	18	UGood		931.		GB	SATA	HDD	24	N	512B	ST1000NM0033-9ZM173	D	
8:3	15	UGood		931.		GB	SATA	HDD	N	N	512B	ST1000NM0033-9ZM173	D	
8:4	20	UGood		931.		GB	SATA	HDD	N	N	512B	ST1000NM0033-9ZM173	D	
8:5	16	UGood		931.		GB	SATA	HDD	N	N	512B	ST1000NM0033-9ZM173	D	
8:6	14	UGood		931.		GB	SATA	HDD	N	N	5128	ST1000NM0033-9ZM173	D	
8:7	10	UGood		931.		GB	SATA	HDD	N	N	512B	ST1000NM0033-9ZM173	D	
8:8	11	UGood		931.		G8	SATA	HDD	N	N	512B	ST1000NM0033-92M173	D	
8:9	13	UGood		931.		GB	SATA	HDD	N	N	512B	ST1000NM0033-9ZM173	Ð	
8:10	9	UGood		931.		GB	SATA	HDD	N	24	5128	ST1000NM0033-92M173	D	
8:11	12	UGood		931.	0	GB	SATA	HDD	N	N	512B	ST1000NM0033-92M173	D	
EID-Encl DHS-DedJ UBad-Und Med-MedJ SeSz-Sed UGUnsp-U CFShld-(	losus loate confi la Ty tor Jusug Confi	re Dev, ed Hot igured ype SE Size): pporte igured	ice Sp Ba D-S Sp- d U sh	ID S are U d Onl elf E Spun] GShld ielde	It Go n- U- U- d	-Si od- Oni Typ Dpi nCo	lot No -Uncor line ( ptive (D-Do onfigu	o.[D] offin Driv Vn]T- ured	ID-D ured h-Of: ve[P. -Tra: shi	evic Goo flin I-P: nsit elde	ce ID od GH ne In rotect tion I ed HS	DG-DriveGroup 5-Global Hotspare tf-Interface tion Info F-Foreign PShld-Hotspare shiel(	ded	
[root@ad	23-10	aid-1s	hin	stor	cl	1]	ŧ. 📙							

• To show more detail about the disk status, such as any errors, serial, temperature, and firmware version, run the following command:

# storcli /c0 /eall /sall show all

The following screen shot shows the results of the command:



• When there is a faulty disk, IBM Support requires the serial number for replacement. Thus, it is good idea to backup serial number information. To obtain the information, run the following command:

# storcli /c0 /eall /sall show all | grep -P '(Det|Cou|S\.M|^SN)

```
(?!.*\s(No|0)$)'
```

The following screen shot shows the results:

```
[root@acs-raid-lshin storcli]# ./storcli64 /c0 /eall /sall show all | grep -P '(Det[Cou[$\.M|^SN) (?!.*\s(No[0)$)')
Drive /c0/e8/s0 - Decailed Information :
M = Z1W4X34W
Drive /c0/e8/s1 - Detailed Information :
= Z1W26066
Drive /c0/e8/s2 - Detailed Information :
N = 21W21VWX
Drive /c0/e8/s3 - Detailed Information :
N = 21W261BP
Drive /c0/e8/s4 - Detailed Information :
I = 21W260EF
Drive /c0/e8/s5 - Detailed Information :
M = Z1W251WC
Drive /c0/e8/s6 - Detailed Information :
I = Z1W4XMPM
Drive /c0/e8/s7 - Detailed Information :
# = Z1W25D07
Drive /c0/e8/s8 - Detailed Information :
 = 21W24RLG
Drive /c0/e8/s9 - Detailed Information :
M = 21W377N5
Drive /c0/e8/s10 - Detailed Information :
 = 21W35DPC
Drive /c0/e8/s11 - Detailed Information :
  = Z1W4T5P7
root@acs-raid-lshin storcli]#
```

• To show the raid controller logs, run the following command:

# storcli /c0 show termlog

The following screen shot shows the results:

[roo	ot@acs-raid-lshin storcli]# ./storcli64 /c0 show TermLog   more	
Fizz	ware Term Log Information on controller 0:	
10:	CO:TtyInit: FlashLog 8 Oxfc480000 Size = 0x200000	
TO:	CO:TtyInit: FlashTty 0 Oxfc680000 Size = 0x80000	
T0:	C0:AVAGO ROC firmware	
TO:	CO:Copyright(C) AVAGO Technologies, 2014	
T0:	CO:Firmware version 4.650.00-6383 built on May 10 2016 at 03:54:14	
T0:	C0:supported dgbflags:	
T0:	C0: biosDisable: 0	
TO:	CO: ddrDisable: 0	
T0:	CO: *** HW Encryption Disabled : dcrReg=ad294319	
TO:	CO:Reading Detroit Cache enable at DCR cache config register: 0x0	
T0:	CO:Reading Detroit Cache init at DCR cache control/status register: (	0x0
I0:	CO:TreeVelleInit Complete (Velle Config register 103ff)	
TO:	CO:RegionLockMaroInit Complete (Maro config register c00103ff	
T0:	CO:DRAM_LOCAL_BASE: 40000000	
T0:	CO:MEM_FIXED_SIZE: 1900000	
T0:	C0:MEM_FIXED_END: 41900000	
TO:	CO:FW_DRAM_REGION_START: 41900000	
T0:	CO:FW_DRAM_REGION_SIZE: 2b00000	
TG:	C0:MEM_POOL_BASE: 43c35aa0	
TQ:	CO:Initializing memory pool size=007CA560 bytes	
10:	C0:I2C 0 reset?	
10:	CO:I2Chandle obtained for MUX [0]0x0	
TO:	CO:I2C 1 reset!	
T0:	CO:I2Chandle obtained for MUX [1]0x10	
10:	CO:12C 5 reset!	
10:	CU:12Chandle obtained for MUX [5]0x50	
10:	CU:12C 2 reset!	
10:	CU:12Chandle obtained for MUX [2]0x20	
10:	CO:I2C 3 reset!	
10:	CU:12Chandle obtained for MUX [3]0X30	
10:	CO:12C 4 reset:	
101	cutizunandie obtained for MUX [4]0x40	

## Creating the virtual disk: Raid group

Here as an example we have 1 virtual disk already configured for OS disk and 10 un-used disks

Virtu	al Driv	ves :								
DG/VD	TYPE	State	Access	Consist	Cache	Cac	acc	5	ize	Name
0/0	RAID1	Optl	RW	No	RWBD		ON	931.0	GB	RAIDI

Drive In	nforr	nation										
EID:Slt	DID	State	DG	5	ize	Intf	Med	SED	FI	SeSz	Model	Sp
8:0	19	Onln	0	931.0	GB	SATA	HDD	Ň	N	512B	ST1000NM0033-9ZM173	U
8:1	17	Onln		931.0	GB	SATA	HDD	N	N	512B	ST1000NM0033-9ZM173	
8:2	18	UGood		931.0	GB	SATA	HDD	N	N	512B	ST1000NM0033-92M173	D
8:3	15	UGood		931.0	GB	SATA	HDD	N	N	512B	ST1000NM0033-9ZM173	D
8:4	20	UGood		931.0	GB	SATA	HDD	N	N	512B	ST1000NM0033-9ZM173	D
8:5	16	UGood		931.0	GB	SATA	HDD	N	N	512B	ST1000NM0033-92M173	D
8:6	14	UGood		931.0	GB	SATA	HDD	N	N	5128	ST1000NM0033-9ZM173	D
8:7	10	UGood		931.0	GB.	SATA	HDD	N	N	5128	ST1000NM0033-9ZM173	Ð
8:8	11	UGood		931.0	GB.	SATA	HDD	N	24	512B	ST1000NM0033-92M173	
8:9	13	UGood		931.0	GB	SATA	HDD	N	27	512B	ST1000NM0033-9ZM173	D
8:10		UGood		931.0	GB	SATA	HDD	N	N	512B	ST1000NM0033-9ZM173	Ð
8:11	12	UGood		931.0	GB	SATA	HDD	N	N	512B	ST1000NM0033-9ZM173	D

1. Create a JBOD Virtual disk: RAID 0 disk

# storcli /c0 add vd type=raid0 name=JBOD-A drives=8:2



1. Create a Raid1 virtual disk

# storcli /c0 add vd type=raid1 name=RAID1-B drives=8:3-4

[root] Contro Statu: Descri	acs-ro oller s = Suc option	aid-ls) = 0 ccess = Add	VD Suce	rcli]# . ceeded	(store)	1164	/c0	add vo	i ti	ype=raidl	name=RA	ID1-8	driv	res=l	9:3-	- 4		
[rooti Contro Status Descri	lacs-ro bller s = Suc lption	aid-ls) = 0 ccess = None	hin sto: e	rcli]‡ .	/store)	1164	/c0	/vall	aho	3¥								
Virtu	1 Driv	ves :																
DG/VD	TYPE	State	Access	Consist	Cache	Cac	acc	51	ize	Name								
0/0	RAIDI	Optl	RW	No	RWBD	-	ON	931.0	GB	RAID1-A								
1/1	RAIDO	Opt1	RW	Yes	RWBD	-	ON	931.0	GB	JBOD-A								
Cac=Ca Opt1=0 R=Read	icheCar Optimal i Ahear Iways 1	de Rec 1 RO=R d Alway WriteB	=Recove: ead Only ys NR=Ne ack WT=5	ry OfLn= y RW=Rea o Read A WriteThr	OffLine d Write head Wi ough C	e Pd e B=1 B=Wr =Cacl	jd=P Bloc iteB hed	artial) ked[Cor ack] IO[D=Di	ly l isi: irea	Degraded( st=Consis ct IO(sCC	dgrd=Deg tent  =Schedul	raded ed						

1. Create a RAID5 virtual disk

# storcli /c0 add vd type=raid5 name=RAID5-A drives=8:5-9

= Suc	= 0 :cess = Add	VD Suce	rcli]≇ ., ceeded	(store)	1164	/c0	add vd	ty	rpe≕raid5	ame=RAID5-A drives=8	:5-9
cs-ra ler = = Suc tion	id-1s) = 0 :cess = None	nin sto: N	ccli]‡ .	store)	1164	/c0	/vall	sho	W.		
Driv	/es :										
YPE	State	Access	Consist	Cache	Cac	acc	S1	ze	Name		
AID1	Opt1	RW	No	RWBD	-	ON	931.0	GB	RAID1-A		
AIDO	Optl	RW	Yes	RWBD		ON	931.0	GB	JBOD-A		
ATDS	Opt1	RW	No	RWBD		ON	3.637	TR	RAIDI-D		
	Driv Driv TPE	S-raid-lsh ler = 0 Success tion = None Drives : TPE State ADD Opt1 ADD Opt1 ADD Opt1 ADD Opt1 ADD Opt1	Approximation of the second se	rs-raid-lshin storcli]# ler = 0 = Success tion = None Drives : TPE State Access Consist ALD1 Opt1 RW No ALD0 Opt1 RW Yes ALD1 Opt1 RW No ALD0 Opt1 RW No ALD0 Opt1 RW No	rs-raid-lshin storcli]# ./storcl ler = 0 = Success tion = None Drives : TPE State Access Consist Cache ALD1 Opt1 RW No RWBD ALD0 Opt1 RW Yes RNBD ALD1 Opt1 RW No RWBD ALD5 Opt1 RW No RWBD	rs-raid-lshin storcli)# ./storcli64 ler = 0 = Success ion = None Drives : 	rs-raid-lshin storcli]# ./storcli64 /c0 er = 0 = Success tion = None Prives : PE State Access Consist Cache Cac sCC LD1 Opt1 RW No RWBD - ON LD0 Opt1 RW Yes RNBD - ON LD0 Opt1 RW No RWBD - ON LD1 Opt1 RW No RWBD - ON	rs-raid-lshin storcli]# ./storcli64 /c0 /vall er = 0 = Success tion = None Prives : PE State Access Consist Cache Cac sCC Si LD1 Opt1 RW No RWBD - ON 931.0 LD0 Opt1 RW Yes RWBD - ON 931.0 LD0 Opt1 RW No RWBD - ON 931.0 LD1 Opt1 RW No RWBD - ON 931.0 LD1 Opt1 RW No RWBD - ON 931.0	rs-raid-lshin storcli}‡ ./storcli64 /c0 /vall sho ler = 0 = Success iion = None Drives : TPE State Access Consist Cache Cac sCC Size MID1 Opt1 RW No RWBD - ON 931.0 GB MID0 Opt1 RW Yes RWBD - ON 931.0 GB MID1 Opt1 RW No RWBD - ON 931.0 GB MID1 Opt1 RW No RWBD - ON 931.0 GB MID1 Opt1 RW No RWBD - ON 931.0 GB	rs-raid-lshin storcli}# ./storcli64 /c0 /vall show ler = 0 = Success lion = None Drives : TPE State Access Consist Cache Cac sCC Size Name MD1 Opt1 RW No RWBD - ON 931.0 GB RAID1-A LID0 Opt1 RW Yes RWBD - ON 931.0 GB RAID1-A LID0 Opt1 RW Yes RWBD - ON 931.0 GB RAID1-B LID5 Opt1 RW No RWBD - ON 931.0 GB RAID1-B LID5 Opt1 RW No RWBD - ON 931.0 GB RAID1-B	rs-raid-lshin storcli}# ./storcli64 /c0 /vall show ler = 0 = Success lion = None Drives : TPE State Access Consist Cache Cac SCC Size Name ND1 Opt1 RW No RWBD - ON 931.0 GB RAID1-A ND0 Opt1 RW Yes RWBD - ON 931.0 GB JBOD-A ND1 Opt1 RW Yes RWBD - ON 931.0 GB JBOD-A ND1 Opt1 RW No RWBD - ON 931.0 GB RAID1-B ND5 Opt1 RW No RWBD - ON 931.0 GB RAID1-B

1. Create a spare disk

We still have two un-used disks and we are creating two global spares as all disk are 1TB.

PD LIST												
EID:Slt	DID	State	DG	s	ize	Intf	Med	SED	PI	SeSz	Model	Sp
8:0	19	Onln	.0	931.0	GB	SATA	HDD	N	N	512B	ST1000NM0033-92M173	
8:1	17	Onln	0	931.0	GB	SATA	HDD	N	N	512B	ST1000NM0033-92M173	U
8:2	18	Onln		931.0	GB	SATA	HDD	21	ы	512B	ST1000NM0033-9ZM173	
8:3	15	Onln		931.0	GB	SATA	HDD	N	N	512B	ST1000NM0033-92M173	
8:4	20	Onln	2	931.0	GB	SATA	HDD	м	N	512B	ST1000NM0033-92M173	υ
8:5	16	Onln		931.0	GB	SATA	HDD	N	N	512B	ST1000NM0033-9ZM173	
8:6	14	Onln	3	931.0	GB	SATA	HDD	N	N	512B	ST1000NM0033-9ZM173	
8:7	10	Onln		931.0	GB	SATA	HDD	N	Ν	512B	ST1000NM0033-9ZM173	
8:8	11	Onln		931.0	GB	SATA	HDD	N	N	512B	ST1000NM0033-92M173	
8:9	13	Onln	-3	931.0	GB	SATA	HDD	N	N	512B	ST1000NM0033-9ZM173	U
8:10	9	UGood	-	931.0	GB	SATA	HDD	N	N	512B	ST1000NM0033-92M173	D
8:11	12	UGood		931.0	GB	SATA	HDD	M	N	512B	ST1000NM0033-9ZM173	D

Note. This space disk will work for raid1 volume not for raid0 volume as raid0 doesn't have parity disk for redundancy.

To add Global Hot spare: This will work for all raid1 and raid5 virtual disks

# storcli /c0 /e8/s10,11 add hotsparedrive

	C.9-21	aid-ls	hin	stor	cli	1 ./3	tore	1164	/c	0/e8/	s10,11 add hotspared	:ive
Control.	ler	- 0										
Status	- 50	ccess	12				de d					
Descript	cion	= Add	no	c spa	re.	succee	aea.					
[root@ad	cs-r	aid-1s	hin	stor	cli	# ./s	tore	1164	/c	) /ea:	11 /sall show	
Status .	= Su	ccess										
Descript	cion	= Sho	w D	rive	Inf	ormati	on S	acce	ede	±.		
Drive In	nfor	mation										
EID:Slt	DID	State	DG		Siz	e Intf	Med	SED	PI	SeSz	Model	Sp
8:0	19	OnIn		931.	0 6	SATA	HDD	28	N	512B	ST1000NM0033-92M173	
8:1	17	Onin		931.	0 G	3 SATA	HDD	N	N	512B	ST1000NM0033-9ZM173	
8:2	18	Onln	1	931.	0 G	SATA	HDD	N	N	512B	ST1000NM0033-9ZM173	
8:3	15	Onln	2	931.	0 G	SATA	HDD	N	N	512B	ST1000NM0033-9ZM173	
8:4	20	Onln	2	931.	0 G	SATA	HDD	N	N	512B	ST1000NM0033-9ZM173	
8:5	16	Onin	3	931.	0 G	SATA	HDD	N	N	512B	ST1000NM0033-9ZM173	
8:6	14	Onin		931.	0 G	SATA	HDD	N	N	512B	ST1000NM0033-9ZM173	
8:7	10	Onln	3	931.	0 G	SATA	HDD	N	ы	512B	ST1000NM0033-9ZM173	
8:8	11	Onln	3	931.	0 G	B SATA	HDD	N	N	512B	ST1000NM0033-92M173	
8:9	13	Onln	3	931.	0 G	SATA	HDD	28	N	512B	ST1000NM0033-92M173	U
8:10	.9	GHS		931.	0 G	SATA	HDD	N	N	512B	ST1000NM0033-92M173	U
	12	GHS		931.	0 G	SATA	HDD	N	N	512B	ST1000NM0033-92M173	U

To add dedicate hot spare: This will work for 2(raid1), 3(raid5) virtual disks

## # storcli /c0/e8/s10,11 add hotsparedrive dgs=2,3

Controll	er	aid-1s	hin :	storcl	1]‡	./st	orcl	164 /	/c0,	/e8/s	10,11 add hotsparedr:	ive d
Status -	- Su	ccess										
Descript	ion	= Add	Hot	Spare	54	cceed	ed.					
[root@ac	:s-r:	aid-1s)	hin :	storel	£]#	./st/	orcl	164 /	(c0	/eal	l /sall show	
Controll	ler '	- 0										
Status =	= Su	cceaa										
Descript	tion	= Sho	# Dr:	ive In	fon	nation	n Su	ccee	sed			
Drive To	for	ation										
EID:Slt	DID	State	DG	S	ize	Intf	Med	SED	PI	SeSz	Model	Sp
8:0	19	Ónln	0	931.0	GB	SATA	HDD	N	N	512B	ST1000NM0033-92M173	υ
8:1	17	Onin	0	931.0	GB	SATA	HDD	N	27	5128	ST1000NM0033-92M173	U
8:2	18	Onln	1	931.0	GB	SATA	HDD	N	N	5128	ST1000NM0033-92M173	U
8:3	15	Onln	2	931.0	GB	SATA	HDD	N	N	512B	ST1000NM0033-92M173	σ
8:4	20	Onln	2	931.0	GB	SATA	HDD	N	N	5128	ST1000NM0033-92M173	U
8:5	16	Onln		931.0	GB	SATA	HDD	N	N	5128	ST1000NM0033-9ZM173	
8:6	14	Onln		931.0	GB	SATA	HDD	N	N	512B	ST1000NM0033-92M173	
8:7	10	Onin		931.0	GB	SATA	HDD	N	N	5128	ST1000NM0033-9ZM173	
8:8	11	Onln		931.0	GB	SATA	HDD	N	N	5128	ST1000NM0033-92M173	
8:9	13	Onin	3	931.0	GB	SATA	HDD	N	N	5128	ST1000NM0033-92M173	U.
3:10	9	DHS	2,3	931.0	GB	SATA	HDD	N	N	512B	ST1000NM0033-92M173	U
		DHS	5 9	0.21 0	CR	SATA	HTVD:	3.7	1.7	5100	ST1000MM0033-07M173	U

1. Delete virtual disk

To delete hot spare disks:

# storcli /c0/e8/s10 delete hotsparedrive

# storcli /c0/e8/s11 delete hotsparedrive

To delete virtual disks: repeat for 3 virtual disk

# storcli /c0/v3 delete forse

[root@acs-raid-lshin	storeli]#	,/storcli64	/c0/v3	delete	force
Controller = 0					
Status = Success					
Description = Delete	VD succeed	ied			
[root@acs-raid-lshin	storcli]#	./storcli64	/c0/v2	delete	force
Controller = 0					
Status = Success					
Description = Delete	VD succeed	ied			
[root@acs-raid-lshin	storcli]#	./storcli64	/c0/v1	delete	force
Controller = 0					
Status = Success					
Description = Delete	VD succeed	ied			

## Now we have only OS virtual disk

Virtu	al Driv	ves :									200000000
DG/VD	TYPE	State	Access	Consist	Cache	Cac	acc		Si	ze	Name
0/0	RAID1	Optl	RW	No	RWBD		ON	931	.0	GB	RAID1-
Cac=Cr Opt1=C R=Rear AWB=A Check	acheCas Optima 1 Aheas Lways ' Consi	de Rec 1 RO=R d Alwa WriteB stency	=Recove: ead Onl; ys!NR=N ack WT=1	ry OfLn= y RW=Read o Read A WriteThr	OffLing d Write head W ough C	elPdo elB=S B=Wr =Cacl	gd=Pa Block iteBa hed :	krtik ked]( ack] IO[D	all Con =Di	y I si: rea	Degrade st=Cons st IO(s

Drive In	nforr	nation										
EID:Slt	DID	State	DG	s	ize	Intf	Med	SED	PI	SeSz	Model	Sp
8:0	19	Onln	0	931.0	GB	SATA	HDD	N	Ň	512B	ST1000NM0033-9ZM173	U
8:1	17	Onln	0	931.0	GB	SATA	HDD	24	N	512B	ST1000NM0033-9ZM173	U
8:2	18	UGood		931.0	GB	SATA	HDD	35	N	512B	ST1000NM0033-9ZM173	
8:3	15	UGood		931.0	GB	SATA	HDD	N	N	512B	5T1000NM0033-9ZM173	υ
8:4	20	UGood		931.0	GB	SATA	HDD	N	N	5128	ST1000NM0033-9ZM173	
8:5	16	UGood		931.0	GB	SATA	HDD	N	N	512B	ST1000NM0033-92M173	
8:6	14	UGood		931.0	GB	SATA	HDD	N	N	512B	ST1000NM0033-9ZM173	
8:7	10	UGood		931.0	GB	SATA	HDD	N	N	512B	ST1000NM0033-9ZM173	
8:8	11	UGood		931.0	GB	SATA	HDD	N	N	512B	ST1000NM0033-9ZM173	
8:9	13	UGood		931.0	GB	SATA	HDD	N	N	512B	ST1000NM0033-92M173	
8:10		UGood		931.0	GB	SATA	HDD	N	N	512B	ST1000NM0033-92M173	
8:11	12	UGood		931.0	GB	SATA	HDD	N	N	512B	ST1000NM0033-9ZM173	U

## Modifying cache options and strip size

This options is for specific virtual disk and should be changed depends on specific requirement.

1. Strip Size : 64KB, 128KB, 256KB, 512KB, 1MB

#### # storcli /c0 add vd type=raid5 name=RAID5-A drives=8:2-6 strip=1024



{root8acs-raid-lshin storcli}≇ ./storcli64 /c0 /v1 show all Controller = 0 Status = Success Description = None											
/c0/v1 :											
OG/VD TYPE State Access Consist Cache Cac sCC Size Name											
1/1 RAID5 Opt1 RW No RWBD - ON	3.637 TB RAID5-A										
Cac=CacheCade Rec=Recovery OfLn=OffLine Pdgd=Partially Degraded dgrd=Degraded Optl=Optimal RO=Read Only RW=Read Write B=Blocked Consist=Consistent  R=Read Ahead Always NR=No Read Ahead WB=WriteBack  AWB=Always WriteBack WT=WriteThrough C=Cached IO D=Direct IO sCC=Scheduled Check Consistency											
PDa for VD 1 :											
EID:Slt DID State DG Size Intf Med SED PI S	eSz Model Sp										
8:2 18 Onln 1 931.0 GB SATA HDD N N 5	12B ST1000NM0033-9ZM173 U										
8:3 15 Onln 1 931.0 GB SATA HDD N N 5	12B ST1000NM0033-9ZM173 U										
8:4 20 Onln 1 931.0 GB SATA HDD N N 5	12B 5T1000NM0033-9ZM173 U										
8:5 16 Onln 1 931.0 GB SATA HDD N N 5	12B ST1000NM0033-92M173 U										
8:6 14 Onln 1 931.0 GB SATA HDD N N 5	12B ST1000NM0033-9ZM173 U										
EID-Enclosure Device ID Slt-Slot No. DID-Device ID DG-DriveGroup DHS-Dedicated Hot Spare UGood-Unconfigured Good GHS-Global Hotspare UBad-Unconfigured Bad Onln-Online Offln-Offline Intf-Interface Med-Media Type SED-Self Encryptive Drive PI-Protection Info SeSz-Sector Size Sp-Spun U-Up D-Down T-Transition F-Foreign UGUnsp-Unsupported UGShld-UnConfigured shielded HSPShld-Hotspare shielded CFShld-Configured shielded											
VD1 Properties :											
Strip Size = 1.0 MB											
Number of Blocks = 7809794048											
VD has Emulated PD = No											
Span Depth = 1											
Number of Drives Per Span = 5											
Write Cache(initial setting) = WriteBack											
Disk Cache Policy = Disk's Default											
Data Protection = Disabled											
Active Operations = Background Initialization (	53%)										
Exposed to OS = Yes											
Creation Date = 25-06-2018											
Creation Time = 01:24:57 AM											
Emulation type = None											

- 1. I/O policy : determine whether use cache or not
- Cached I/O: All reads are buffered in cache memory, Cached I/O provide faster processing
- Direct I/O: Reads are not buffered in cache memory. Data is transferred to the cache and the host concurrently.

# storcli /c0 add vd type=raid5 name=RAID5-A drives=8:2-6 CACHED



[root@a	[root@acs-raid-lshin storcli]# ./storcli64 /c0 /v1 show all											
Controller = 0												
Status = Success												
Description = None												
100/01												
700771												
DG/VD 1	TYPE State	Acc	ess Co	nsist	Cach	e Cac	30	¢	Size Name			
1/1 1	RAIDS OPE1	RW	No		RWBC		ON	3.6	37 TB RAIDS-A			
Cac=Cac	heCadelRec	Rec	overvi	OfLn=	Offli	nelPd	ad≈	Parti	ally DegradedIdgrd=D	egrade	đ	
Opt1=Or	otimal   RO=Re	ad	OnlyiR	W=Rea	d Wri	telB=	Blo	cked	Consist=Consistent	- 9 - 16 18 11		
R=Read	Ahead Alway	BIN	R=No R	ead A	head	WB=Wr	ite	Back				
AWB-Alv	ways WriteBa	cki	WT-Wri	teThr	ough	C=Cac	hed	IOID	"Direct IO[sCC"Sched	uled		
Check (	Consistency											
PDs for	r VD 1 :											
FTD. C1+	DTD State	D.C			- # Ma	d cen			Model			
EID:SIC	DID Scace	00	31	ze in	CE ME	a 260	P1	aeaz	NOGET	ap 		
8:2	18 Onln	1	931.0	GB SA	TA HD	D N	N	512B	ST1000NM0033-92M173	π		
8:3	15 Onln	ĩ	931.0	GB SA	TA HD	DN	N	512B	5T1000NM0033-9ZM173	Ū.		
8:4	20 Onln	1	931.0	GB SA	TA HD	DN	N	512B	ST1000NM0033-92M173			
8:5	16 Onln	1	931.0	GB SA	TA HD	D N	27	512B	ST1000NM0033-92M173			
8:6	14 Onln		931.0	GB SA	TA HD	D N	N	512B	ST1000NM0033-9ZM173			
EID-End	closure Devi	ce	ID S1t	-Slot	No.1	DID-D	evi	ce ID	DG-DriveGroup			
DHS-Dec	ilcated Hot	Spa	relUGo	od-Un	confi	gured	Go	odIGH	5-Global Hotspare			
UBad-Ur	iconfigured	Bad	IJOnin-	Unlin	elorr	in-or	111	nelin	ti-Interface			
Red-Red	ata typelatt	-30	Down III-1	CADCT.	Ve pr	ive r	1-1-	rotec	Fion into			
11011000	Theurporters	ing ing	Shid_D	opio-	Same.	d abi	ald.	ercul.	DShid-Worspars shial	Hard .		
CESSId	-Configured	abi	elded	100111	rgure	4 9114	era	calue	ronita-nocopare onier	aea		
or on a u		ona										
VD1 Pro	operties :											
Strip 5	5ize = 256 P	CB:										
Number	of Blocks -	78	097940	48								
VD has	Emulated Pf	) =	No									
Span De	Span Depth = 1											
Number	of Drives I	er	span =	5	14.00	1.1.1.1						
Disk C.	ache Calicu		Hetting.	Deter	tites	ack						
Encrupt	tion = None		LON D	Scrau								
Data P	rotection =	Die	abled									
Active	Operations	= N	lone									
Exposed	to OS = Ye											
Creatio	on Date = 25	-06	-2018									
Creatic	on Time = 04	1:04	:05 AM									
Emulati	ion type = N	lone										

- 1. Read Policy
- Normal: The controller read sequentially ahead of requested data
- Ahead: Disable read ahead capability

# storcli /c0 add vd type=raid5 name=RAID5-A drives=8:2-6 nora



[root0	acs-raid-ls	hin	storcli]	./sto	rcli64	/ci	0 /v1	show all		
Controller = 0										
Status = Success										
Description = None										
/c0/v1										
DG/VD	TYPE State	Acc	ess Consi	at Cac	he Cac	aC		Size Name		
1/1 1	KAIDS OPEI	RM	NO	NKW.	50 -	ON .	3.0;	37 ID RAIDS-A		
Cac=CacheCade Rec=Recovery OfLn=OffLine Pdgd=Partially Degraded dgrd=Degraded Optl=Optimal RO=Read Only RN=Read Write B=Blocked Consist=Consistent  R=Read Ahead Always NR=No Read Ahead WB=WriteBack  AWB=Always WriteBack WT=WriteThrough C=Cached IO D=Direct IO sCC=Scheduled Check Consistency										
	- 170 1 -									
PDs Io:	r VD 1 :									
EID:S1	t DID State	DG	Size	Intf M	ed SED	PI	SeSz	Model	Sp	
8:2	18 Onln	1	931.0 GB	SATA H	DD N	N	512B	5T1000NM0033-9ZM173	Π.	
8:3	15 Onln		931.0 GB	SATA H	DD N	M	5128	ST1000NM0033-92M173	л П	
8:4	20 Onln	-	931.0 GB	SATA H	DD N	32	512B	ST1000NM0033-92M173	т.	
8.5	16 Onin		931.0 GB	SATA H	DD N	32	512B	ST1000NM0033-92M173	л. П	
8:6	14 Onln	1	931.0 GB	SATA H	DD N	M	512B	ST1000NM0033-92M173	u .	
EID-End DHS-Ded UBad-U: Med-Med SeSz-Se UGUnsp CFShld	closure Dev dicated Hot nconfigured dia Type SE ector Size  -Unsupporte -Configured	ice Spa Bad D-Se Sp-S d UG shi	ID Slt-SJ re UGood-  Onln-Onl lf Encrys pun U-Up  Shid-UnCo elded	Lot No. -Unconf line Of otive D  D-Down onfigur	DID-D igured fln-Of rive P  T-Tra ed shi	evi Go fli: I-P: nsi: eld	ce ID od GH3 ne Int cotect sion 1 ed HS1	DG-DriveGroup 5-Global Hotspare tf-Interface tion Info F-Foreign PShid-Hotspare shiel	ded	
VD1 Pro	operties :									
String	Size = 256	XB.								
Number	of Blocks	= 78	09794048							
VD has	Emulated P	D =	No							
Span D	epth = 1									
Number	of Drives	Per	Span = 5							
Write (	Cache (initi	al a	etting) -	Write	Back					
Disk Ca	ache Policy	= p	isk's Det	fault						
Encrypt	tion = None									
Data P	rotection =	Dis	abled							
Active	Operations	= N	lone							
Exposed	d to OS = Y	es								
Creatio	on Date = 2	5-06	-2018							
Creation Time = 04:09:14 AM										
Emulat	ion type =	None								

- 1. Write Policy
- Write thru: The controller sends a data transfer completion signal to the host when the drive subsystem has received all the data in a transaction.
- Write Back: The controller sends a data transfer completion signal to the host when the controller cache has received all the data in a transaction.

# storcli /c0 add vd type=raid5 name=RAID5-A drives=8:2-6 wt



<pre>[root@acs-raid-lshin storcli]# ./storcli64 /c0 /v1 show all</pre>													
Contro	oller :	= 0											
Status = Success													
Description = None													
/c0/v	/c0/v1 :												
DG/VD	TYPE	State	Acce	ess C	onsi	at C	ache	Cac	aCO		Size Name		
1/3	PATDS	Opt1	 DW	 N					ON	3.6	37 TR DATD5-A		
Cac=C: Opt1=( R=Read AWB=A: Check	Cac=CacheCade]Rec=Recovery{OfLn=OffLine}Pdgd=Partially Degraded dgrd=Degraded Optl=Optimal RO=Read Only RW=Read Write B=Blocked Consist=Consistent  R=Read Ahead Always NR=No Read Ahead WB=WriteBack  AWB=Always WriteBack WT=WriteThrough C=Cached IO D=Direct IO sCC=Scheduled Check Consistency												
PDs fo	PDs for VD 1 :												
EID:S.	1t DID	State	DG	S	ize	Intf	Med	SED	PI	SeSz	Model	Sp	
8:2	18	Onin	1 1	931.0	GB	SATA	HDD	N	N.	512B	5T1000NM0033-9ZM173		
8:3	15	Onln	1 1	931.0	GB	SATA	HDD	N	N	512B	ST1000NM0033-92M173		
8:4	20	Onln	1 1	931.0	GB	SATA	HDD	N	24	512B	ST1000NM0033-92M173		
8:5	16	Onln	1	931.0	GB	SATA	HDD	N	N	512B	ST1000NM0033-9ZM173	U	
8:6	14	Onin	1 :	931.0	GB	SATA	HDD	N	N	512B	ST1000NM0033-9ZM173	U	
EID-Et DHS-D UBad-1 Med-M SeSz-3 UGUnsj CFShlo	EID-Enclosure Device ID Slt-Slot No. DID-Device ID DG-DriveGroup DHS-Dedicated Hot Spare UGood-Unconfigured Good GHS-Global Hotspare UBad-Unconfigured Bad Onln-Online Offln-Offline Intf-Interface Med-Media Type SED-Self Encryptive Drive PI-Protection Info SeSz-Sector Size Sp-Spun U-Up D-Down T-Transition F-Foreign UGUnsp-Unsupported UGShld-UnConfigured shielded HSPShld-Hotspare shielded CFShld-Configured shielded												
VD1 P	roperti	ies :											
Strip	Strip Size = 256 KB												
VD has	s Emula	ated P	D = 1	No	0 + 0								
Span	Span Depth = 1												
Number	Number of Drives Per Span = 5												
Write	Cache	(initi	al s	ettin	g) =	Writ	teTh	cougi	h)				
Disk (	Cache H	Policy	= D:	isk's	Def	ault							
Encry	ption *	- None											
Data	Data Protection = Disabled												
Active operations = None Exposed to OS = Ves													
Creation Date = 25-06-2018													
Creation Time = 04:11:42 AM													
Emula	tion ty	ype = )	None										
-								_	_				

Modify existing Virtual disk's options

If you want to change options on existing virtual disk, follow the instructions.

# storcli64 /c0/v1 set iopolicy=cached

# storcli64 /c0/v1 set rdcache=ra

# storcli64 /c0/v1 set wrcache=wt

## **Consistency check and Patrol Read**

This **<u>consistency checks</u>** are automatically scheduled every seven days. The first check will run one week after provision.

To find out current scheduled date and time:

# storcli /c0 show all | grep -E "Next Consistency check launch"

```
[root@acs-raid-lshin storcli]# ./storcli64 /c0 show all | grep -E "Next Consistency check launch"
Next Consistency check launch = 06/29/2018, 19:00:00
[root@acs-raid-lshin storcli]#
```

To change schedule:

# storcli /c0 set cc=conc delay=168 starttime=2018/06/30 03



**<u>Patrol read</u>** is a feature which tries to discover disk error, by default this is done automatically with delay of 168 hours between different patrol reads and will take some of IO resources.

To find out current scheduled patrol read:

# storcli /c0 show all | grep -E "Next Patrol Read launch"

```
[root@acs-raid-lshin storcli]# ./storcli64 /c0 show all | grep -E "Next Patrol Read launch"
Next Patrol Read launch = 06/29/2018, 19:00:00
[root@acs-raid-lshin storcli]#
```

#### To change schedule:

# storcli /c0 set patrolread starttime=2018/07/01 01



Note. These two check should be scheduled in different time as it will generate alert when run at the same time.

## Manual

The manual for the raid controller can be found here: <u>http://www.avagotech.com/docs-and-downloads/raid-controllers/raid-controllers-common-files/54385-00\_RevF\_12Gbs\_MegaRAID\_SAS\_SW\_UserGd.pdf</u> (<u>http://www.avagotech.com/docs-and-downloads/raid-controllers/raid-controllers-common-files/54385-00\_RevF\_12Gbs\_MegaRAID\_SAS\_SW\_UserGd.pdf</u>)

The manual for StorCLI can be found here: <u>http://docs.avagotech.com/docs-and-downloads/raid-controllers/raid-controllers/StorCLI\_RefMan\_revf.pdf (http://docs.avagotech.com/docs-and-downloads/raid-controllers/raid-controllers/common-files/StorCLI\_RefMan\_revf.pdf)</u>



Authored by Louis Shin Last modified 1 months ago