

Disk drive troubleshooting

CVM internal storage, SATADOM, and M.2 drives

Lenovo

Disk drive troubleshooting overview

Disk drive issues include host boot disk and CVM storage disk problems. The following tools can be used to diagnose disk issues:

- Prism
- SMART utilities
- NCC CLI commands
- SATADOM diagnostics via hypervisor commands

This section also include sample scenarios that help to identify of disk issues.

Checking disk status in Prism

In Prism, users can check for disk status in the following two places:

- Go to **Hardware** → **Diagram** to check the status of the disks in each node.
(click [HERE](#) to see the image)
- Go to **Hardware** → **Table** to check the summary and status of each disk in each node.
(click [HERE](#) to see the image)



Checking disk status in Prism

In Prism, users can check for disk status in the following two places:

The screenshot displays the Dell Prism web interface. The top navigation bar includes the 'DCG_Education' logo, a 'Hardware' dropdown menu, and several status icons (heart, bell, red circle with '1', and a gear). On the right side of the navigation bar are search, help, and settings icons, along with a user profile dropdown labeled 'admin'. Below the navigation bar, there are tabs for 'Overview', 'Diagram', and 'Table', with 'Diagram' being the active tab. To the right of the tabs are two links: '+ Expand Cluster' and 'Repair Host Boot Device'. The main content area shows two drive enclosures. The left enclosure is labeled 'HX3500 (J10GC3H)' and contains eight vertical drive slots numbered 0 to 7. Below the slots is a label 'HX3500' and two status indicators: a red circle with '1' and a yellow circle with '1'. The right enclosure is labeled 'HX5500 (J10GC3G)' and contains eight horizontal drive slots arranged in two rows of four, numbered 0 to 7. Below the slots is a label 'HX5500' and one status indicator: a yellow circle with '2'.

Checking disk status in Prism



DCG_Education Hardware

? admin

Overview • Diagram • Table [+ Expand Cluster](#) [Repair Host Boot Device](#)

Host **Disk** Switch

1-10 of 36 search in table

▲ Disk ID	Serial Number	Hypervisor IP	Tier	Status	Disk Usage	Disk IOPS	Disk IO B/W	Disk Avg IO Latency
26	9XG9XEAX	10.10.3.14	HDD	Online	181.3 MiB of 801.23 GiB	0	0 KBps	0 ms
28	9XG9XELC	10.10.3.14	HDD	Online	99.19 MiB of 841.23 GiB	0	0 KBps	0 ms
29	9XG9YAZG	10.10.3.14	HDD	Online	163.69 MiB of 841.23 GiB	0	0 KBps	0 ms
30	9XG9XF7X	10.10.3.14	HDD	Online	181.54 MiB of 841.23 GiB	0	7 KBps	14.54 ms
31	9XG9XFH3	10.10.3.14	HDD	Online	162.04 MiB of 841.23 GiB	0	0 KBps	3.55 ms
32	BTHV608203CY40 ONGN	10.10.3.14	SSD	Online	9.31 GiB of 215.74 GiB	12	175 KBps	0.13 ms
33	BTHV6082032H40 ONGN	10.10.3.14	SSD	Online	9.42 GiB of 215.74 GiB	18	198 KBps	0.3 ms
35	Z4H06FRM0000R 623NVHW	10.10.3.13	HDD	Online	1.16 GiB of 1.65 TiB	0	4 KBps	12.19 ms

SMART utilities

For further, in-depth disk analysis, users can use SMART utilities.

Self-Monitoring, Analysis, and Reporting Technology (SMART) is a monitoring system included in computer HDDs, SSDs, and eMMC drives. Its primary function is to detect and report indicators of drive reliability in order to anticipate imminent hardware failures. When SMART data indicates a possible imminent drive failure, software running on the host system can notify the user so preventative action can be taken to prevent data loss. The failing drive can also be replaced and data integrity maintained.

To access SMART utilities, log in to CVM and manually run `smartctl`.

1. `#ls -la /dev/sd*` to list all disks in the system
2. `#sudo smartctl -x /dev/sd<x> -T permissive`

`smartctl` can also be invoked to run a short or a long test in the background

```
#sudo smartctl /dev/sd<x> -t short
```

```
#sudo smartctl /dev/sd<x> -t long
```

The status of the test can be checked with the `#sudo smartctl /dev/sd<x> -a` command

Go to the next page for an example.

Example of smartctl test output

=== START OF INFORMATION SECTION ===

Device Model: SSDSC2BA400G4N 00YC341 00YC344LEN
Serial Number: BTHV608204B2400NGN
LU WWN Device Id: 5 5cd2e4 04c1c9c82
Firmware Version: G201LS36
User Capacity: 400,088,457,216 bytes [400 GB]
Sector Sizes: 512 bytes logical, 4096 bytes physical
Rotation Rate: Solid State Device
Form Factor: 2.5 inches
Device is: Not in smartctl database [for details use: -P showall]
ATA Version is: ACS-2 T13/2015-D revision 3
SATA Version is: SATA 2.6, 6.0 Gb/s (current: 6.0 Gb/s)
Local Time is: Mon Sep 16 22:32:52 2019 EDT
SMART support is: Available - device has SMART capability.
SMART support is: Enabled

Disk information

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

SMART overall-health self-assessment test result: PASSED

SMART Error Log Version: 1

No Errors Logged

SMART Self-test log structure revision number 1

Num	Test_Description	Status	Remaining	LifeTime(hours)	LBA_of_first_error
# 1	Short offline	Completed without error	00%	27562	-
# 2	Short offline	Completed without error	00%	20111	-
# 3	Extended offline	Completed without error	00%	20109	-

SMART test results

Host boot disk diagnostics – SATADOM

To troubleshoot SATADOM issue individually, the following methods can be utilized. Before proceeding, users should first ensure the server firmware is up to date by checking the Lenovo HX best recipe Web site at <https://support.lenovo.com/tw/en/solutions/HT508092>.

- Run CLI command:
 - Disk firmware information can be found using the `#ncc hardware_info show_hardware_info` or `smartctl /dev/sd<x> -a` commands.
 - Check the health of the SATADOM with the `#ncc health_checks hardware_checks disk_checks run_all` command.
- The host boot disk health status can also be checked in different hypervisors (ESXi, Hyper-V, and AHV).
- If the SATADOM is not detected, turn off the node and wait 30 to 40 seconds. After turning the node back on, users should be able to see the SATADOM. If so, upgrade the firmware. If the SATADOM is still not detected, replace it with a new one.
- If users see I/O errors on the CVM console, the host hangs (most often on AHV), or errors on ESXi, turn off the node. Wait 30 to 40 seconds, and then check the SATADOM status. If the SATADOM status is still abnormal, replace the node and perform a firmware upgrade.

ESXi SATADOM CLI check – example

Scroll down for more information.

1. Use PuTTY to ssh log in to the ESXi console IP.
2. Check the SATADOM disk list.

```
#ls /dev/disks | grep -v ":" | grep -i satadom
```

```
t10.ATA_____SATADOM2DSL_3ME_____20151021AA8511027060
```

This is the name of the disk.

3. Check the status of the SATADOM. The health status can be checked with following commands:

```
#localcli storage core device smart get -d <satadom name>
```

```
#./iSMART -d <satadom_name>
```

Example:

```
#localcli storage core device smart get -d t10.
```

```
ATA_____InnoLite_SATADOM_D150QV2DL_____20131009AA5500000077
```

```
Parameter Value Threshold Worst
```

```
-----  
Health Status OK N/A N/A
```

```
Media Wearout Indicator N/A N/A N/A
```

```
Write Error Count N/A N/A N/A
```

```
Read Error Count 100 50 100
```

```
Power-on Hours 100 0 100
```

```
Power Cycle Count 100 0 100
```

```
Reallocated Sector Count 100 50 100
```

```
-----
```

ESXi SATADOM CLI check – example

Scroll down for more information.

```
Media Wearout Indicator N/A N/A N/A
Write Error Count N/A N/A N/A
Read Error Count 100 50 100
Power-on Hours 100 0 100
Power Cycle Count 100 0 100
Reallocated Sector Count 100 50 100
Raw Read Error Rate 100 50 100
Drive Temperature 45 0 100
Driver Rated Max Temperature N/A N/A N/A
Write Sectors TOT Count N/A N/A N/A
Read Sectors TOT Count N/A N/A N/A
Initial Bad Block Count N/A N/A N/A
```

To list only the health status of the SATADOM without first checking its name, you can run the following command:

```
#ls /dev/disks | grep -v ":" | grep -i satadom | while read name; do localcli storage
core device smart get -d $name | grep -B2 "Health Status"; done
Parameter Value Threshold Worst
-----
Health Status OK N/A N/A
```

Hyper-V SATADOM CLI check

Log in to Hyper-V via a remote desktop or with the `winsh` command, and then issue these two commands:

- `#Get-WMIObject -Class Win32_DiskDrive | Format-List *`
- `#Get-WMIObject -Class Win32_DiskDrive | Select Caption, Status`

Example:

```
#winsh "Get-WMIObject -Class Win32_DiskDrive | Select Caption, Status"
Caption Status
-----
ATA INTEL SSDSC2BX48 SCSI Disk Device OK
ATA ST2000NM0033-9ZM SCSI Disk Device OK
ATA ST2000NM0033-9ZM SCSI Disk Device OK
SATADOM-SL 3ME OK
```

CVM SATADOM CLI check

- Use PuTTY to ssh into Nutanix CVM.
- Use the following command to check the SATADOM device name:

```
# ls /dev/sd*  
/dev/sda /dev/sda1
```
- Use the following smartctl command to check the status:

```
# sudo smartctl -a /dev/sda | grep result  
SMART overall-health self-assessment test result: PASSED
```

This is the same as the command used to check physical SSD and HDD status from the CVM.

Host boot disk diagnostics – M.2 drive

Troubleshooting issues with M.2 boot drives is similar to troubleshooting SATADOM issues.

- For CVM, troubleshooting M.2 drives is identical to troubleshooting an SSD on a CVM.
- ESXi utilizes a different set of commands.

- To view connected devices:

```
#esxcfg-scsidevs -l | grep '^t10'
```

- To view diagnostic information:

```
#esxcli storage core device smart get -d <disk_name>
```

- To check which M.2 drive is used as the boot drive, run the following command:

```
#esxcfg-info -s | grep -A10 "Diagnostic Partition"
```

```
[root@NTNX-J10088D7-A:/usr/lib/vmware/vm-support/bin] esxcfg-info -s | grep -A10 "Diagnostic Partition"
\==+Diagnostic Partition :
|----Is Active.....true
\==+Disk Lun Partition :
|----Name.....t10.ATA_____ThinkSystem_M.2_VD_____25728174facc0010000000000:9
|----Partition Number.....9
|----Start Sector.....1843200
|----End Sector.....7086080
|----Partition Type.....252
|----Console Device...../vmfs/devices/disks/t10.ATA_____ThinkSystem_M.2_VD_____25728174facc0010
00000000:9
|----DevFS Path...../vmfs/devices/disks/t10.ATA_____ThinkSystem_M.2_VD_____25728174facc0010
00000000:9
|----Size.....2684354560
```

Checking RAID volumes in CVM

Use the following command to check boot RAID in CVM:

```
#ncc health_checks hardware_checks disk_checks boot_raid_check
```

```
Running : health_checks hardware_checks disk_checks boot_raid_check
```

```
[=====] 100%
```

```
/health_checks/hardware_checks/disk_checks/boot_raid_check [ PASS ]
```

```
-----+
```

```
+-----+
```

```
| State          | Count |
```

```
+-----+
```

```
| Pass           | 1     |
```

```
| Total Plugins  | 1     |
```

```
+-----+
```

```
Plugin output written to /home/nutanix/data/logs/ncc-output-latest.log
```

CVM storage disk identification – list_disks

The `list_disks` command lists the disks attached to the system.

```
#list_disks
```

```
Slot Disk Model Serial Size
```

```
0 -----  
1 /dev/sda INTEL SSDSC2BA40 BTTV324500SX400HGN 400 GB  
2 /dev/sdb INTEL SSDSC2BA40 BTTV324301ZB400HGN 400 GB  
3 /dev/sdc ST91000640NS 9XG5GHQR 1.0 TB  
4 /dev/sdd ST91000640NS 9XG4NW6Q 1.0 TB  
5 /dev/sde ST91000640NS 9XG4PH3P 1.0 TB  
6 /dev/sdf ST91000640NS 9XG4PE7H 1.0 TB
```

Note: Slot 0 is for media devices, such as a CDROM. It can be ignored.

CVM storage disk identification – lsscsi

The `lsscsi` command queries the LSI controller directly for information on connected disks.

```
#lsscsi
[0:0:0:0] cd/dvd NECVMWare VMware IDE CDR00 1.00 /dev/sr0
[2:0:0:0] disk ATA INTEL SSDSC2BA40 0265 /dev/sda
[2:0:1:0] disk ATA INTEL SSDSC2BA40 0265 /dev/sdb
[2:0:2:0] disk ATA ST91000640NS SN03 /dev/sdc
[2:0:3:0] disk ATA ST91000640NS SN03 /dev/sdd
[2:0:4:0] disk ATA ST91000640NS SN03 /dev/sde
[2:0:5:0] disk ATA ST91000640NS SN03 /dev/sdf
```

CVM storage disk identification – lsblk

The `lsblk` command shows how each block device is mapped to the Linux mount points on the CVM. The partitions making up the CVM RAID partitions can be seen here.

```
admin@NTNX-J10GC3G-A-CVM:10.10.3.16:~$ lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
sda          8:0    0 372.6G  0 disk
├─sda1       8:1    0   10G  0 part
│   └─md0     9:0    0   10G  0 raid1
├─sda2       8:2    0   10G  0 part
│   └─md1     9:1    0   10G  0 raid1 /
├─sda3       8:3    0   40G  0 part
│   └─md2     9:2    0   40G  0 raid1 /home
└─sda4       8:4    0 312.6G  0 part /home/nutanix/data/stargate-storage/disks/BTHV608204B2400NGN
sdb          8:16   0 372.6G  0 disk
├─sdb1       8:17   0   10G  0 part
│   └─md0     9:0    0   10G  0 raid1
├─sdb2       8:18   0   10G  0 part
│   └─md1     9:1    0   10G  0 raid1 /
├─sdb3       8:19   0   40G  0 part
│   └─md2     9:2    0   40G  0 raid1 /home
└─sdb4       8:20   0 312.6G  0 part /home/nutanix/data/stargate-storage/disks/BTHV60820322400NGN
sdc          8:32   0   1.8T  0 disk
└─sdc1       8:33   0   1.8T  0 part /home/nutanix/data/stargate-storage/disks/Z4H07ENW0000R623R3XP
sdd          8:48   0   1.8T  0 disk
└─sdd1       8:49   0   1.8T  0 part /home/nutanix/data/stargate-storage/disks/Z4H06FRM0000R623NVHW
sde          8:64   0   1.8T  0 disk
└─sde1       8:65   0   1.8T  0 part /home/nutanix/data/stargate-storage/disks/Z4H06FQ20000R616N0J9
sdf          8:80   0   1.8T  0 disk
└─sdf1       8:81   0   1.8T  0 part /home/nutanix/data/stargate-storage/disks/Z4H07R4Q0000R627HDM0
sdg          8:96   0   1.8T  0 disk
└─sdg1       8:97   0   1.8T  0 part /home/nutanix/data/stargate-storage/disks/Z4H06FMF0000R623R0CX
sdh          8:112  0   1.8T  0 disk
└─sdh1       8:113  0   1.8T  0 part /home/nutanix/data/stargate-storage/disks/Z4H07EMV0000R623R36K
sr0         11:0    1    8.3M  0 rom
loop0        7:0    0   256M  0 loop /var/tmp
admin@NTNX-J10GC3G-A-CVM:10.10.3.16:~$
```

CVM storage disk identification – lsiutil

`lsiutil`: LSI provides a utility which returns SCSI information for the attached devices and allows access to protocol level count.

```
#sudo /home/nutanix/cluster/lib/lsi-sas/lsiutil -a 12,0,0 16
```

(Click [HERE](#) to see the output.)

```
#sudo /home/nutanix/cluster/lib/lsi-sas/lsiutil -a 12,0,0 20
```

(Click [HERE](#) to see the optput.)

Note: To get disks and their location relationship, use the `list_disks` and `lsiutil` commands.

list_disks

Slot	Disk	Model	Serial	Size
0	-----	-----	-----	-----
1	/dev/sda	INTEL	SSDSC2BA40 BTTV324500SX400HGN	400 GB
2	/dev/sdb	INTEL	SSDSC2BA40 BTTV324301ZB400HGN	400 GB
3	/dev/sdc	ST91000640NS	9XG5GHQR	1.0 TB
4	/dev/sdd	ST91000640NS	9XG4NW6Q	1.0 TB
5	/dev/sde	ST91000640NS	9XG4PH3P	1.0 TB
6	/dev/sdf	ST91000640NS	9XG4PE7H	1.0 TB

/home/nutanix/cluster/lib/lsi-sas/lsiutil -a 12,0,0 20

Adapter Phy 0:	Link Up, No Errors	→ /dev/sda
Adapter Phy 1:	Link Up, No Errors	→ /dev/sdb
Adapter Phy 2:	Link Up, No Errors	→ /dev/sdc
Adapter Phy 3:	Link Up, No Errors	→ /dev/sdd
Adapter Phy 4:	Link Up, No Errors	→ /dev/sde
Adapter Phy 5:	Link Up, No Errors	→ /dev/sdf
Adapter Phy 6:	Link Up, No Errors	→ /dev/sdg
Adapter Phy 7:	Link Down, No Errors	→ no device

Disk drive troubleshoot

CVM stor

lsiutil: LSI
allows access

#sudo /home
(Click [HERE](#) t
#sudo /home
(Click [HERE](#) t

Note: To get

list_disks

Slot Disk Mod

0	-----	--
1	/dev/sda	IM
2	/dev/sdb	IM
3	/dev/sdc	ST
4	/dev/sdd	ST
5	/dev/sde	ST
6	/dev/sdf	ST

Lenovo

LSI Logic MPT Configuration Utility, Version 1.70, July 30, 2013

I
1 MPT Port found

	Port Name	Chip Vendor/Type/Rev	MPT Rev	Firmware Rev	IOC
1.	ioc0	LSI Logic SAS3008 C0	205	0f000200	0

SAS3008's links are 12.0 G, 12.0 G, 6.0 G, 6.0 G, 12.0 G, 12.0 G, 12.0 G, 12.0 G

B__T	SASAddress	PhyNum	Handle	Parent	Type
	500605b00ac41c10		0001		SAS Initiator
	500605b00ac41c11		0002		SAS Initiator
	500605b00ac41c12		0003		SAS Initiator
	500605b00ac41c13		0004		SAS Initiator
	500605b00ac41c14		0005		SAS Initiator
	500605b00ac41c15		0006		SAS Initiator
	500605b00ac41c16		0007		SAS Initiator
	500605b00ac41c17		0008		SAS Initiator
0 3	5000c50084ddfe79	0	0009	0001	SAS Target
0 1	4433221103000000	3	000a	0002	SATA Target
0 0	4433221102000000	2	000b	0003	SATA Target
0 2	5000c50084ddfa99	1	000c	0004	SAS Target
0 7	5000c50084ddf9cd	4	000d	0005	SAS Target
0 6	5000c50084de07c5	5	000e	0006	SAS Target
0 4	5000c50084de01f9	6	000f	0007	SAS Target
0 5	5000c50084f2b1c5	7	0010	0008	SAS Target

Type	NumPhys	PhyNum	Handle	PhyNum	Handle	Port	Speed
Adapter	8	0	0001 -->	0	0009	0	12.0
		1	0004 -->	0	000c	3	12.0
		2	0003 -->	0	000b	2	6.0
		3	0002 -->	0	000a	1	6.0
		4	0005 -->	0	000d	4	12.0
		5	0006 -->	0	000e	5	12.0
		6	0007 -->	0	000f	6	12.0
		7	0008 -->	0	0010	7	12.0

Enclosure Handle	Slots	SASAddress	B__T (SEP)
0001	8	500605b00ac41c10	



vices and

1 commands.

2,0,0 20

/dev/sda
/dev/sdb
/dev/sdc
/dev/sdd
/dev/sde
/dev/sdf
/dev/sdg
→ no device



```
admin@NTNX-J10GC3G-A-CVM:10.10.3.16:~$ sudo /home/nutanix/cluster/lib/lsi-sas/lsiutil -a 12,0,0 20
[sudo] password for admin:
```

```
LSI Logic MPT Configuration Utility, Version 1.70, July 30, 2013
```

```
1 MPT Port found
```

	Port Name	Chip Vendor/Type/Rev	MPT Rev	Firmware Rev	IOC
1.	ioc0	LSI Logic SAS3008 C0	205	0f000200	0

```
Diagnostics menu, select an option: [1-99 or e/p/w or 0 to quit] 12
```

```
Adapter Phy 0: Link Up, No Errors
```

```
Adapter Phy 1: Link Up, No Errors
```

```
Adapter Phy 2: Link Up, No Errors
```

```
Adapter Phy 3: Link Up, No Errors
```

```
Adapter Phy 4: Link Up, No Errors
```

```
Adapter Phy 5: Link Up, No Errors
```

```
Adapter Phy 6: Link Up, No Errors
```

```
Adapter Phy 7: Link Up, No Errors
```

```
Diagnostics menu, select an option: [1-99 or e/p/w or 0 to quit] 0
```

```
admin@NTNX-J10GC3G-A-CVM:10.10.3.16:~$
```

Offline disk example

A disk might be completely dead and offline. In this example, the disk in Slot 2 is not detected (the disk in Slot 0 can be ignored) even though **/dev/sdb** is expected to be online. With the `lsitutil` command, you can see that the link is down (Adapter Phy 1: Link Down, No Errors). Replace the disk.

Scroll down for more information.

```
#list_disks
```

```
Slot Disk Model Serial Size
```

```
0 -----
```

```
1 /dev/sda INTEL SSDSC2BA40 BTTV324500SX400HGN 400 GB
```

```
2 -----
```

```
3 /dev/sdc ST91000640NS 9XG4NW6Q 1.0 TB
```

```
4 /dev/sdd ST91000640NS 9XG4NW6Q 1.0 TB
```

```
5 /dev/sde ST91000640NS 9XG4PH3P 1.0 TB
```

```
6 /dev/sdf ST91000640NS 9XG4PE7H 1.0 TB
```

```
7 /dev/sdg ST91000640NS 9XG4PA9H 1.0 TB
```

```
#sudo /home/nutanix/cluster/lib/lsi-sas/lsiutil -a 12,0,0 20
```

```
LSI Logic MPT Configuration Utility, Version 1.70, July 30, 2013
```

```
1 MPT Port found
```

```
Port Name Chip Vendor/Type/Rev MPT Rev Firmware Rev IOC
```

← /dev/sdb is missing

Offline disk example

A disk might be completely dead and offline. In this example, the disk in Slot 2 is not detected (the disk in Slot 0 can be ignored) even though **/dev/sdb** is expected to be online. With the `lsitutil` command, you can see that the link is down (Adapter Phy 1: Link Down, No Errors). Replace the disk.

Scroll down for more information.

```
#sudo /home/nutanix/cluster/11b/lsi-sas/lsitutil -a 12,0,0 20
LSI Logic MPT Configuration Utility, Version 1.70, July 30, 2013
1 MPT Port found
Port Name Chip Vendor/Type/Rev MPT Rev Firmware Rev IOC
1. ioc0 LSI Logic SAS2008 B2 200 0e000000 0
Diagnostics menu, select an option: [1-99 or e/p/w or 0 to quit] 12
Adapter Phy 0: Link Up, No Errors
Adapter Phy 1: Link Down, No Errors
Adapter Phy 2: Link Up, No Errors
Adapter Phy 3: Link Up, No Errors
Adapter Phy 4: Link Up, No Errors
Adapter Phy 5: Link Up, No Errors
Adapter Phy 6: Link Up, No Errors
Adapter Phy 7: Link Down, No Errors
```

← **/dev/sdb link is down**

Disk online, but marked as bad

A disk could be reported as online (for example, the disk in Slot 2) but marked as bad by stargate/hades. In `lsiutil`, it can be seen that the error counter is increasing (`Adapter Phy 1`). This might be correlated with issues with the chassis or the LSI controller on the node. If multiple ports report incrementing error counts, the issue might be with the LSI controller itself or with the wiring between the node and the disks. It might be necessary to replace either the node or the chassis.

```
#sudo /home/nutanix/cluster/lib/lsi-sas/lsiutil -a 12,0,0 20
LSI Logic MPT Configuration Utility, Version 1.70, July 30, 2013
1 MPT Port found
Port Name Chip Vendor/Type/Rev MPT Rev Firmware Rev IOC
1. ioc0 LSI Logic SAS2008 B2 200 0e000000 0
Diagnostics menu, select an option: [1-99 or e/p/w or 0 to quit] 12
Adapter Phy 0: Link Up, No Errors
Adapter Phy 1: Link Up, 9827532
Adapter Phy 2: Link Up, No Errors
Adapter Phy 3: Link Up, No Errors
Adapter Phy 4: Link Up, No Errors
Adapter Phy 5: Link Up, No Errors
Adapter Phy 6: Link Up, No Errors
Adapter Phy 7: Link Down, No Errors
```

Disk link is up, but errors occur.