

# Raid

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# Software Raid

## Create raid:

Raid levels can be changed with: `--level=1 // --level=0 // --level=5`

### Raid 1

```
mdadm --create --verbose /dev/md0 --level=1 --raid-devices=2 /dev/sdX /dev/sdX
```

### Raid 5

```
mdadm --create --verbose /dev/md0 --level=5 --raid-devices=3 /dev/sdX /dev/sdX /dev/sdX
```

### Raid 6

```
mdadm --create --verbose /dev/md0 --level=6 --raid-devices=4 /dev/sda /dev/sdX /dev/sdX  
/dev/sdX
```

### Raid 10

```
mdadm --create --verbose /dev/md0 --level=10 --layout=o3 --raid-devices=4 /dev/sdX /dev/sdX  
/dev/sdX /dev/sdX
```

## Stop raid:

```
mdadm --stop /dev/md0
```

## Assemble raid:

```
mdadm -A /dev/mdX /dev/sdaX --run
```

## Adding a drive in a failed raid:

```
mdadm --manage /dev/md0 --add /dev/sdb1
```

## Resize drives after a HDD swap to something larger

```
screen  
resize2fs `mount | grep "on / " | cut -d " " -f 1` && exit
```

Then check with "watch df -h" and watch it go up

## Cloning a partition table

MBR:

X = Source (old drive), Y = Destination (new drive)

```
sfdisk -d /dev/sdX | sfdisk /dev/sdY --force
```

GPT:

Install gdisk

The first command copies the partition table of sdX to sdY

```
sgdisk -R /dev/sdY /dev/sdX  
sgdisk -G /dev/sdY
```

# MegaCli

## Check raid card:

```
lspci | grep -i raid
```

## Ubuntu/Debian:

```
apt-get install alien
# Convert to .deb
alien -k --scripts filename.rpm
# Install .deb
dpkg -i filename.deb
```

## CentOS/Other:

[https://docs.broadcom.com/docs-and-downloads/raid-controllers/raid-controllers-common-files/8-07-14\\_MegaCLI.zip](https://docs.broadcom.com/docs-and-downloads/raid-controllers/raid-controllers-common-files/8-07-14_MegaCLI.zip)

### Clear all config

```
-CfgLdDel -Lall -aAll
-CfgClr -aAll
```

### Physical drive information

```
-PDList -aALL
-PDInfo -PhysDrv [E:S] -aALL
```

### Virtual drive information

```
-LDInfo -Lall -aALL
```

### Enclosure information.

```
-EncInfo -aALL
```

### Set physical drive state to online

```
-PDOnline -PhysDrv[E:S] -aALL
```

## Stop Rebuild manually on the drive

```
-PDRbld -Stop -PhysDrv[E:S] -aALL
```

## Show rebuild progress

```
-PDRbld -ShowProg -PhysDrv[E:S] -aALL
```

## View dead disks (offline or missing)

```
-ldpdinfo -aall |grep -i "firmware state\|slot"
```

## View new disks

```
-pdlist -aall |grep -i "firmware\|unconfigured\|slot"
```

## Create raid 1:

```
-CfgLdAdd -r1 [E:S, E:S] -aN
```

## Create raid 0:

```
-CfgLdAdd -r0 [E:S, E:S] -aN
```

## Init ALL VDs

```
-LDInit -Start -LALL -a0
```

## Init 1 VD

```
-LDInit -Start -L[VD_ID] -a0
```

## clearcache

```
-DiscardPreservedCache -L3 -aN (3 being the VD number)
```

## Check FW

```
-AdpAllInfo -aALL | grep 'FW Package Build'
```

## Flash FW

```
-AdpFwFlash -f <Your rom file> -a0
```

## Flash FW to older version

```
-adpfwflash -f $ROMFILE -noverchk -a0
```

## Check BBU

```
-AdpBbuCmd -a0
```

## Flash LED on HDD

```
-PdLocate -start -physdrv[E:S] -aALL  
-PdLocate -stop -physdrv[E:S] -aALL
```

## Scan Foreign

```
-CfgForeign -Scan -a0
```

## Import Foreign

```
-cfgforeign -import -a0
```

## Bad to Good

```
MegaCli -PDMakeGood -PhysDrv[E:S] -aN
```

## Disable auto rebuild

```
-AdpAutoRbld -Dsbl -a0
```

## Enable auto rebuild

```
-AdpAutoRbld -Enbl -a0
```

## Check BBU

```
-AdpBbuCmd -a0
```

# JBOD

## Figure out the Enclosure Device ID

```
-PDList -a0 | grep -e '^Enclosure Device ID:' | head -1 | cut -f2- -d':' | xargs
```

Set all the drives to "Good"

```
-PDMakeGood -PhysDrv[$id:1,$id:2,$id:3,$id:4,$id:5,$id:6,$id:7,$id:8] -Force -a0
```

Check and see if JBOD support is enabled

```
AdpGetProp EnableJBOD -aALL
```

Turn JBOD support on

```
AdpSetProp EnableJBOD 1 -a0
```

Set each disk from above to be in JBOD mode

```
-PDMakeJBOD -PhysDrv[$id:1,$id:2,$id:3,$id:4,$id:5,$id:6,$id:7,$id:8] -a0
```

The syntax for checking a disk within a MegaRAID based controller is as follows via CLI:

This shows the "Device ID: X", Replace n with the Device ID

```
-LdPdInfo -a0 | grep Id
```

```
smartctl -a -d sat+megaraid,n /dev/sg0
```

Disk missing - No automatically rebuilding

```
-PdReplaceMissing -PhysDrv [E:S] -ArrayN -rowN -aN  
-PDRbld -Start -PhysDrv [E:S] -aN
```

For more see here: <https://www.broadcom.com/support/knowledgebase/1211161498596/megacli-cheat-sheet--live-examples>