

DELL PERC5/i Integrated (LSI Logic MegaRAID)

– Emergency Cheat Sheet –

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Version 1.3, 2008-05-20
<http://tools.rapidsoft.de/perc>

1 Requirements and general information

DELL's PowerEdge RAID Controller (PERC) is a special LSI Logic SAS/SATA RAID Controller and thus the LSI management utility called *MegaCli* also works for this controller. For older controllers like PERC4 and PERC3 please refer to <http://linux.dell.com/storage.shtml> (keyword DellMgr).

MegaCli is available for Linux, DOS, Windows, Netware and Solaris. You can get it from LSI's website (search for MegaRAID SAS) or download it here: http://www.lsi.com/support/downloads/megaraid/miscellaneous/linux/1.01.40_Linux_Cli.zip.

Inside the ZIP file you'll find an RPM archive which contains the MegaCli and MegaCli64 binaries (will be installed to `/opt/MegaRAID/MegaCli`).

Please note:

This emergency cheat sheet is not exhaustive, but it should be sufficient in most cases. For a complete reference either call `MegaCli -h` or refer to the manual at: http://www.lsi.com/files/docs/techdocs/storage_stand_prod/sas/mr_sas_sw_ug.pdf (Chapter 3 – MegaRAID Command Tool).

2 MegaCli conventions

While there are a lot of different parameters for MegaCli, some of them are always identical. These are described here in short.

- **Adapter parameter** `-aN`

The parameter `-aN` (where *N* is a number starting with zero or the string *ALL*) specifies the PERC5/i adapter ID. If you have only one controller it's safe to use *ALL* instead of a specific ID, but you're encouraged to use the ID for everything that makes changes to your RAID configuration.

- **Physical drive parameter** `-PhysDrv [E:S]`

For commands that operate on one or more physical drives, the `-PhysDrv [E:S]` parameter is used, where *E* is the enclosure device ID in which the drive resides and *S* the

slot number (starting with zero). You can get the enclosure device ID using „MegaCli -EncInfo -aALL“. The *E:S* syntax is also used for specifying the physical drives when creating a new RAID virtual drive (see [Virtual drive management](#)).

- **Virtual drive parameter -Lx**

The parameter **-Lx** is used for specifying the virtual drive (where *x* is a number starting with zero or the string *all*).

3 Gather information

- **Controller information**

```
MegaCli -AdpAllInfo -aALL
```

```
MegaCli -CfgDsply -aALL
```

```
MegaCli -AdpEventLog -GetEvents -f events.log -aALL && cat events.log
```

- **Enclosure information**

```
MegaCli -EncInfo -aALL
```

- **Virtual drive information**

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

- **Physical drive information**

```
MegaCli -PDList -aALL
```

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

- **Battery backup information**

```
MegaCli -AdpBbuCmd -aALL
```

4 Controller management

- **Silence active alarm**

```
MegaCli -AdpSetProp AlarmSilence -aALL
```

- **Disable alarm**

```
MegaCli -AdpSetProp AlarmDsbl -aALL
```

- **Enable alarm**

```
MegaCli -AdpSetProp AlarmEnbl -aALL
```

5 Virtual drive management

- Create RAID 0, 1, 5 drive

```
MegaCli -CfgLdAdd -r(0|1|5) [E:S, E:S, ...] -aN
```

- Create RAID 10 drive

```
MegaCli -CfgSpanAdd -r10 -Array0[E:S,E:S] -Array1[E:S,E:S] -aN
```

- Remove drive

```
MegaCli -CfgLdDel -Lx -aN
```

6 Physical drive management

- Set state to offline

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

- Set state to online

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

- Mark as missing

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

- Prepare for removal

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

- Replace missing drive

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

The number *N* of the array parameter is the *Span Reference* you get using „MegaCli -CfgDsply -aALL“ and the number *N* of the row parameter is the *Physical Disk* in that span or array starting with zero (it's *not* the physical disk's slot!).

- Rebuild drive

```
MegaCli -PDRbld -Start -PhysDrv [E:S] -aN
```

```
MegaCli -PDRbld -Stop -PhysDrv [E:S] -aN
```

```
MegaCli -PDRbld -ShowProg -PhysDrv [E:S] -aN
```

- Clear drive

```
MegaCli -PDClear -Start -PhysDrv [E:S] -aN
```

```
MegaCli -PDClear -Stop -PhysDrv [E:S] -aN
```

```
MegaCli -PDClear -ShowProg -PhysDrv [E:S] -aN
```

- Bad to good

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

Changes drive in state *Unconfigured-Bad* to *Unconfigured-Good*.

7 Hot spare management

- Set global hot spare

```
MegaCli -PDHSP -Set -PhysDrv [E:S] -aN
```

- Remove hot spare

```
MegaCli -PDHSP -Rmv -PhysDrv [E:S] -aN
```

- Set dedicated hot spare

```
MegaCli -PDHSP -Set -Dedicated -ArrayN,M,... -PhysDrv [E:S] -aN
```

8 Walkthrough: Change/replace a drive

1. Set the drive offline, if it is not already offline due to an error

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

2. Mark the drive as missing

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

3. Prepare drive for removal

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

4. Change/replace the drive

5. If you're using hot spares then the replaced drive should become your new hot spare drive

```
MegaCli -PDHSP -Set -PhysDrv [E:S] -aN
```

6. In case you're *not* working with hot spares, you must re-add the new drive to your RAID virtual drive and start the rebuilding

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

```
MegaCli -PDRbld -Start -PhysDrv [E:S] -aN
```