

RTFM: smartctl

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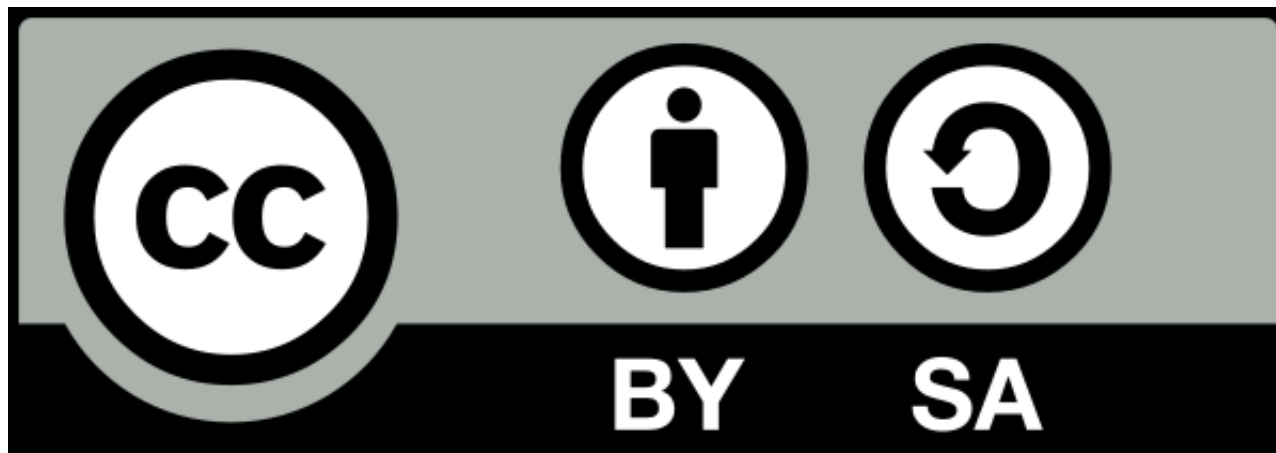
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I am so S.M.A.R.T.

Self-Monitoring, Analysis, and Reporting Technology

<http://en.wikipedia.org/wiki/S.M.A.R.T.>

S.M.A.R.T.

Not a substitute for backups

smartmontools:

smartctl

smartd

<http://smartmontools.sourceforge.net/>

apt: smartmontools

yum: smartmontools

RTFM

Everything

```
$ smartctl -a /dev/whatever
```

```
$ smartctl -d ata -a /dev/whatever
```

-i, --info

\$ smartctl -i /dev/whatever

Model Family: Fujitsu MHT series
Device Model: FUJITSU MHT2030AT
Serial Number: NN1WT4917529
Firmware Version: 009B
User Capacity: 30,005,821,440 bytes
Device is: In smartctl database [for details use: -P show]
ATA Version is: 6
ATA Standard is: ATA/ATAPI-6 T13 1410D revision 3a
Local Time is: Tue Apr 13 16:40:48 2010 CDT
SMART support is: Available - device has SMART capability.
SMART support is: Enabled

-H, --health

\$ smartctl -H /dev/whatever

If the device reports failing health status, this means either that the device has already failed, or that it is predicting its own failure within the next 24 hours. If this happens, use the `'-a'` option to get more information, and get your data off the disk and to someplace safe as soon as you can.

(from the man page)

-A, --attributes, ATA

```
$ smartctl -A /dev/whatever
```

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

```
SMART Attributes Data Structure revision number: 16
```

```
Vendor Specific SMART Attributes with Thresholds:
```

| ID# | ATTRIBUTE_NAME | FLAG | VALUE | WORST | THRESH | TYPE | UPDATED | WHEN_FAILED | RAW_VALUE |
|-----|-------------------------|--------|-------|-------|--------|----------|---------|-------------|-------------------------------|
| 1 | Raw_Read_Error_Rate | 0x000f | 100 | 100 | 046 | Pre-fail | Always | - | 257023 |
| 2 | Throughput_Performance | 0x0005 | 100 | 100 | 030 | Pre-fail | Offline | - | 12713984 |
| 3 | Spin_Up_Time | 0x0003 | 100 | 100 | 025 | Pre-fail | Always | - | 0 |
| 4 | Start_Stop_Count | 0x0032 | 095 | 095 | 000 | Old_age | Always | - | 25020 |
| 5 | Reallocated_Sector_Ct | 0x0033 | 100 | 100 | 024 | Pre-fail | Always | - | 8589934592000 |
| 7 | Seek_Error_Rate | 0x000f | 100 | 100 | 047 | Pre-fail | Always | - | 2571 |
| 8 | Seek_Time_Performance | 0x0005 | 100 | 100 | 019 | Pre-fail | Offline | - | 0 |
| 9 | Power_On_Seconds | 0x0032 | 068 | 068 | 000 | Old_age | Always | - | 16106h+49m+21s |
| 10 | Spin_Retry_Count | 0x0013 | 100 | 100 | 020 | Pre-fail | Always | - | 0 |
| 12 | Power_Cycle_Count | 0x0032 | 099 | 099 | 000 | Old_age | Always | - | 5726 |
| 192 | Power-Off_Retract_Count | 0x0032 | 099 | 099 | 000 | Old_age | Always | - | 424 |
| 193 | Load_Cycle_Count | 0x0032 | 071 | 071 | 000 | Old_age | Always | - | 298023 |
| 194 | Temperature_Celsius | 0x0022 | 100 | 100 | 000 | Old_age | Always | - | 36 (Lifetime Min/Max 8/53) |
| 195 | Hardware_ECC_Recovered | 0x001a | 100 | 100 | 000 | Old_age | Always | - | 791 |
| 196 | Reallocated_Event_Count | 0x0032 | 100 | 100 | 000 | Old_age | Always | - | 286982144 |
| 197 | Current_Pending_Sector | 0x0012 | 100 | 100 | 000 | Old_age | Always | - | 0 |
| 198 | Offline_Uncorrectable | 0x0010 | 100 | 100 | 000 | Old_age | Offline | - | 0 |
| 199 | UDMA_CRC_Error_Count | 0x003e | 200 | 200 | 000 | Old_age | Always | - | 0 |
| 200 | Multi_Zone_Error_Rate | 0x000f | 100 | 100 | 060 | Pre-fail | Always | - | 3928 |
| 203 | Run_Out_Cancel | 0x0002 | 100 | 100 | 000 | Old_age | Always | - | 433759584723 |

-A, --attributes, ATA

```
$ smartctl -A /dev/whatever
10 Spin_Retry_Count
0x0013
100 100 097
Pre-fail Always - 0
```

Count of retry of spin start attempts. This attribute stores a total count of the spin start attempts to reach the fully operational speed (under the condition that the first attempt was unsuccessful). An increase of this attribute value is a sign of problems in the hard disk mechanical subsystem.

(from wikipedia)

-A, --attributes, SCSI

```
$ smartctl -A /dev/whatever
```

```
Current Drive Temperature:      37 C
Drive Trip Temperature:         68 C
Elements in grown defect list:  0
Vendor (Seagate) cache information
  Blocks sent to initiator = 3563989753
  Blocks received from initiator = 1186914687
  Blocks read from cache and sent to initiator = 2387380644
  Number of read and write commands whose size <= segment size =
2257704667
  Number of read and write commands whose size > segment size =
0
Vendor (Seagate/Hitachi) factory information
  number of hours powered up = 23428.35
  number of minutes until next internal SMART test = 1
```

-t short, --test short

```
$ smartctl -t short /dev/whatever
```

```
=== START OF OFFLINE IMMEDIATE AND SELF-TEST SECTION  
===
```

```
Sending command: "Execute SMART Short self-test  
routine immediately in off-line mode".
```

```
Drive command "Execute SMART Short self-test routine  
immediately in off-line mode" successful.
```

```
Testing has begun.
```

```
Please wait 2 minutes for test to complete.
```

-t long, --test long

```
$ smartctl -t long /dev/whatever
```

```
=== START OF OFFLINE IMMEDIATE AND SELF-TEST SECTION  
===
```

```
Sending command: "Execute SMART Extended self-test  
routine immediately in off-line mode".
```

```
Drive command "Execute SMART Extended self-test  
routine immediately in off-line mode" successful.
```

```
Testing has begun.
```

```
Please wait 30 minutes for test to complete.
```

```
Test will complete after Tue Apr 13 16:56:22 2010
```

```
Use smartctl -X to abort test.
```

-l selftest, --log selftest

```
$ smartctl -l selftest /dev/whatever
```

```
SMART Self-test log structure revision number 1
```

| Num | Test_Description | Status |
|-----------|------------------|-------------------------|
| Remaining | LifeTime(hours) | LBA_of_first_error |
| # 1 | Extended offline | Completed without error |
| 00% | 34469 | - |
| # 2 | Short offline | Completed without error |
| 00% | 34465 | - |
| # 3 | Extended offline | Completed: read failure |
| 30% | 34445 | 130833330 |

-l error, --log error

```
$ smartctl -l error /dev/whatever
```

```
Error 41 occurred at disk power-on lifetime: 32299 hours (1345 days + 19 hours)
```

```
When the command that caused the error occurred, the device was in an unknown state.
```

```
After command completion occurred, registers were:
```

```
ER ST SC SN CL CH DH  
-- -- -- -- -- -- --  
00 00 08 b2 5b cc a0
```

```
Commands leading to the command that caused the error were:
```

```
CR FR SC SN CL CH DH DC    Powered_Up_Time  
Command/Feature_Name  
-----  
ec 00 08 b2 5b cc a0 00    16d+01:24:24.440    IDENTIFY DEVICE  
c8 00 08 b0 5b cc e7 00    16d+01:24:23.770    READ DMA  
c8 00 08 a8 5b cc e7 00    16d+01:24:23.769    READ DMA  
c8 00 08 a0 5b cc e7 00    16d+01:24:23.769    READ DMA
```


RTFM

Goodnight