



[nixCraft](#) → [Tutorials](#) → [Howto](#) → Monitoring hard disk health with smartd under Linux or UNIX operating systems

Monitoring hard disk health with smartd under Linux or UNIX operating systems

Author: Vivek Gite • Last updated: March 7, 2022 • [13 comments](#)

smartd is SMART Disk Monitoring Daemon for Linux. SMART is acronym for Self-Monitoring, Analysis and Reporting Technology (SMART) system built into many ATA-3 and later ATA, IDE and SCSI-3 hard drives. The purpose of SMART is to monitor the reliability of the hard drive and predict drive failures, and to carry out different types of drive self-tests.

ADVERTISEMENT

smartd works with following operating systems:

1. Linux
2. *BSD
3. Windows
4. Solaris etc

How do I Install smartd?

However, smartd is not installed by default. Following are distribution specific

steps to install smartd:

Debian Linux:

```
# apt-get install smartmontools
```

Red hat/Fedora Linux:

```
# rpm -ivh kernel-utils
```

OR

```
# up2date kernel-utils
```

OR if you are using Fedora Linux

```
# yum kernel-utils
```

FreeBSD:

```
# pkg_add -r -v smartmontools
```

Before configuring hard disk for SMART monitoring make sure your hard disk is SMART capable:

```
# smartctl -i /dev/hda
```

Output:

```
smartctl version 5.34 [i686-pc-linux-gnu] Copyright (C) 2002-5 Bruce Allen  
Home page is http://smartmontools.sourceforge.net/
```

```
=== START OF INFORMATION SECTION ===
```

```
Device Model:      SAMSUNG SV2002H
Serial Number:     0395J1FR904324
Firmware Version:  RA100-04
User Capacity:     20,060,651,520 bytes
Device is:         In smartctl database [for details use: -P show]
ATA Version is:    6
ATA Standard is:   ATA/ATAPI-6 T13 1410D revision 1
Local Time is:     Tue May  2 15:44:09 2006 IST
```

```
SMART support is: Available - device has SMART capability.
SMART support is: Enabled
```

You can configure the smartd daemon by editing the file `/etc/smartd.conf`

In above output the lines:

SMART support is: Available – device has SMART capability.

SMART support is: Enabled

Indicates that it is SMART capable and it is enabled.

Configure SMARTD

Debian Linux

- Enable smart by editing `/etc/default/smartmontools` file.
- Smart Configuration file: `/etc/smartd.conf`
- Start/Stop smart: `/etc/init.d/smartmontools start | stop`

Red Hat Linux

- Enable smart by editing `/etc/smartd.conf` file.

- Smart Configuration file: `/etc/smartd.conf`
- Start/Stop smart: `/etc/init.d/smartd start | stop`

FreeBSD

- Enable smart by editing `/etc/rc.conf` file (add line `smartd_enable="YES"`).
- Smart Configuration file: `/etc/smartd.conf`
- Start/Stop smart: `/usr/local/etc/rc.d/smartd.sh start | stop`

Example

You can put following directives in Smart Configuration file:

(a) Send an email to `alert@nixcraft.in` for `/dev/sdb`:

```
/dev/sdb -m alert@nixcraft.in
```

(b) Read error log:

```
# smartctl -l error /dev/hdb
```

(c) Testing hard disk (short or long test):

```
# smartctl -t short /dev/hdb
```

```
# smartctl -t long /dev/hdb
```

Caution smartd is a monitoring tool not a backup solution. Always perform data backup.

See also:

- More information on the smarttool see [official home page](#).
- Read man page of smartd and smartd.conf for configuration help.

This entry is **4** of **9** in the **smartctl (smartd) Tutorial** series. Keep reading the rest of the series:

1. [Test If Linux Server SCSI / SATA / SSD Hard Disk Going Bad](#)
2. [Linux / UNIX: Smartctl Check Hard Disk Behind 3Ware RAID Card](#)
3. [Linux Use smartctl To Check Disk Behind Adaptec RAID Controllers](#)
4. Monitoring hard disk health with smartd under Linux or UNIX operating systems
5. [FreeBSD: Get / Read Hard Disk Temperature Using smartd Tools](#)
6. [Linux Monitor Hard Disks Temperature With hddtemp](#)
7. [Linux Command To Find SATA Link Speed Such as 1.5 / 3.0 / 6.0 Gbps \[Hard Disk \]](#)
8. [How To Find Out Hard Disk Specs / Details on Linux](#)
9. [FreeBSD insatll smartctl top check hard drive health](#)

About the author: Vivek Gite is the founder of nixCraft, the oldest running blog about Linux and open source. He wrote more than 7k+ posts and helped numerous readers to master IT topics. Join the nixCraft community via [RSS Feed](#), [Email Newsletter](#) or follow on [Twitter](#).

😞 Was this helpful? Please add [a comment to show your appreciation or feedback](#) ↓ Support the nixCraft with a [PayPal donation](#) if you use Adblock 🙏



To search, type & hit enter...

Category

List of Unix and Linux commands

Category	List of Unix and Linux commands
Ansible	Check version • Fedora • FreeBSD • Linux • Ubuntu 18.04 • Ubuntu • macOS
Backup Management	Debian/Ubuntu • FreeBSD • RHEL
Database Server	Backup MySQL server • MariaDB Galera cluster • MariaDB TLS/SSL • MariaDB replication • MySQL Server • MySQL remote access
Download managers	wget
Driver Management	Linux Nvidia driver • lsmod
Documentation	help • mandb • man • pinfo
Disk Management	df • duf • ncdu • pydf
File Management	cat • cp • less • mkdir • more • tree
Firewall	Alpine Awall • CentOS 8 • OpenSUSE • RHEL 8 • Ubuntu 16.04 • Ubuntu 18.04 • Ubuntu 20.04 • Ubuntu 24.04
KVM Virtualization	CentOS/RHEL 7 • CentOS/RHEL 8 • Debian 9/10/11 • Ubuntu 20.04
Linux Desktop apps	Chrome • Chromium • GIMP • Skype • Spotify • VLC 3
LXD	Backups • CentOS/RHEL • Fedora • Mount dir • Ubuntu 20.04
Modern utilities	bat • exa
Network Management	Monitoring tools • Network services • RHEL static IP • Restart network interface • nmcli
Network Utilities	NetHogs • dig • host • ip • nmap • ping
OpenVPN	CentOS 7 • CentOS 8 • Debian 10 • Debian 11 • Debian 8/9 • Ubuntu 18.04 • Ubuntu 20.04
Power Management	upower
Package Manager	apk • apt-get • apt • yum

Category	List of Unix and Linux commands
Processes Management	bg • chroot • cron • disown • fg • glances • gtop • iotop • jobs • killall • kill • pidof • pstree • pwdx • time • vtop
Searching	ag • egrep • grep • whereis • which
Shell builtins	compgen • echo • printf
System Management	reboot • shutdown
Terminal/ssh	sshpass • tty
Text processing	cut • rev
Text Editor	6 Text editors • Save and exit vim
User Environment	exit • who
User Information	groups • id • lastcomm • last • lid/libuser-lid • logname • members • users • whoami • w
User Management	/etc/group • /etc/passwd • /etc/shadow • chsh
Web Server	Apache • Let's Encrypt certificate • Lighttpd • Nginx Security • Nginx
WireGuard VPN	Alpine • Amazon Linux • CentOS 8 • Debian 10 • Firewall • Ubuntu 20.04 • qrencode

13 comments... [add one](#) ↓

soraver • Feb 26, 2008 @ 11:21

Just to add that if you get the “Device does not support SMART” error with the “smartctl -i /dev/hda” command, but hddtemp or another smart based app is working, you might need to add the “-d ata” option 😊

```
# smartctl -i /dev/sdb
```

smartctl version 5.36 [i686-pc-linux-gnu] Copyright (C) 2002-6 Bruce Allen

Home page is <http://smartmontools.sourceforge.net/>

Device: ATA SAMSUNG HD501LJ Version: CR10

Serial number: S0MUJ1QP503708

Device type: disk

Local Time is: Tue Feb 26 13:18:16 2008 EET

Device does not support SMART

```
# smartctl -i /dev/sdb -d ata
```

smartctl version 5.36 [i686-pc-linux-gnu] Copyright (C) 2002-6 Bruce Allen

Home page is <http://smartmontools.sourceforge.net/>

=== START OF INFORMATION SECTION ===

Device Model: SAMSUNG HD501LJ

Serial Number: S0MUJ1QP503708

Firmware Version: CR100-10

User Capacity: 500,107,862,016 bytes

Device is: In smartctl database [for details use: -P show]

ATA Version is: 8

ATA Standard is: Not recognized. Minor revision code: 0x52

Local Time is: Tue Feb 26 13:20:56 2008 EET

==> WARNING: May need -F samsung or -F samsung2 enabled; see manual for details.

SMART support is: Available – device has SMART capability.

SMART support is: Enabled



[reply](#) [link](#)

richard • Apr 19, 2011 @ 0:28

thank yes i know now

i have expansion but no indexing on it and thats true for the main

bios@133mhz

amd dimm :/ irq"s determined and requesting 16mb diskette

what can i do?????

[reply](#) [link](#)

Tweeks • Dec 10, 2008 @ 16:23

So what about motherboard based SATA controllers (such as sata_via)? How am I supposed to poll such sata drives? Neither -d ata nor -d sat works...? The actual drive kernel module is sata_via.. which in turn uses libata (it appears):

```
# lsmod |grep ata
```

```
sata_via 4208 2
```

```
libata 44124 0 [sata_via]
```

```
scsi_mod 105512 2 [sata_via libata sd_mod]
```

So why can't I poll the drive w/smartctl? It is because this functionality is broken in sata_via?

Tweeks

[reply](#) [link](#)

Mohanad S.Azzam • May 16, 2009 @ 12:00

hi

I wanna know the model of My HDD that already insatlleh in HP server model DL380.

I am very far from the site ,and i cant travel there to know the toal model number and details of old HDD .

it is possible to do command by linux to show me all the details and model numbers of my HDD ?

OS in redhat linux 4.

thanks ..

[reply](#) [link](#)

Ashish Dhabarde • Jan 11, 2012 @ 9:44

try hdpram command.....hope it will help u

[reply](#) [link](#)

Charon • Jul 31, 2009 @ 7:09

for Fedora:

yum install smartmontools

[reply](#) [link](#)

Dipak Zope • Sep 8, 2009 @ 7:18

Can we configure smartd.conf to run some commands as soon as smartd catches disk failure?

I would like to stop a service which is nothing but my application, to prevent from corruption of its database, as soon as smart demon found any disk failure.

Can anyone please help me and guide about how to do it?

[reply](#) [link](#)

tmohanta • Oct 22, 2010 @ 4:21

Hi,

I have a linux server and different JBODs are connected to it i.e SAS encloser, SATA encloser ,FC encloser , SCSI encloser and SAS encloser SAS and SATA drives are mixed. All the disks are in hardware raid (raid-1 or raid-6 or raid-5).

(1) I want to know the hard disk type- SATA ,SAS, FC etc.

In linux the device I am seeing as /dev/sda where 6 disks are there. The output I need as follows

```
/dev/sda disk serial no disk type size raid_type
```

```
/dev/sda ABCD121 SATA 1TB raid-5
```

```
/dev/sda ABCD122 SAS 1TB raid-5
```

```
/dev/sda ABCD123 FC 1TB raid-5
```

```
/dev/sda ABCD124 SCSI 1TB raid-5
```

```
/dev/sda ABCD125 IDE 1TB raid-5
```

```
/dev/sda ABCD126 SATA 1TB raid-5
```

I am planning to write the passthrough and vendor independent solution is required.

Any help on it.

Thanks in advance..

Thanks & Regds,

tmohanta

[reply](#) [link](#)

Reynold P J • Jan 10, 2011 @ 17:30

Really helpful...

Thank you so much:)

[reply](#) [link](#)

thiyagi • Jul 26, 2011 @ 11:22

Nice info..

[reply](#) [link](#)

Stefan Lasiewski • Jan 13, 2012 @ 20:50

I see that smartctl is often from from a cronjob (On FreeBSD, it can be run from periodic). What is the advantage of running a smartd daemon vs. running smartctl via cron?

[reply](#) [link](#)

kiranjith • Apr 4, 2012 @ 9:57

```
smartctl -d ata --attributes --log=selftest /dev/sda
```

Gives u the output of short and long test.

/kiran

[reply](#) [link](#)

aprogrammer • Apr 1, 2014 @ 8:05

Thanks for the post. I was using this instruction – <http://sysadmin.te.ua/linux/smartd.html> . It has more explanation about separate smartd log files, almost all smartd.conf options and debug all smartd process (email sending, logs output,daemon startup options)

[reply](#) [link](#)

Leave a Reply

Your email address will not be published. Required fields are marked *

Comment *

Name

Email

Website

Post Comment

Use HTML `<pre>...</pre>` for code samples. Your comment will appear only after approval by the site admin.

Next post: [How do I find out that who are connected to my Windows based web server?](#)

Previous post: [Linux: Save and Recover Data From Crashed Disks With ddrescue Command Like a Pro](#)

FEATURED ARTICLES

1

[30 Cool Open Source Software I Discovered in 2013](#)

2

[30 Handy Bash Shell Aliases For Linux / Unix / Mac OS X](#)

- 3 [Top 32 Nmap Command Examples For Linux Sys/Network Admins](#)
- 4 [25 PHP Security Best Practices For Linux Sys Admins](#)
- 5 [30 Linux System Monitoring Tools Every SysAdmin Should Know](#)
- 6 [40 Linux Server Hardening Security Tips](#)
- 7 [Linux: 25 Iptables Netfilter Firewall Examples For New SysAdmins](#)
- 8 [Top 20 OpenSSH Server Best Security Practices](#)
- 9 [Top 25 Nginx Web Server Best Security Practices](#)
- 10 [My 10 UNIX Command Line Mistakes](#)

Site links

- ➔ [Howtos & Tutorials](#)
- ➔ [Linux shell scripting tutorial](#)
- ➔ [RSS/Feed](#)
- ➔ [About nixCraft](#)

©2002-2023 nixCraft • [Privacy](#) • [ToS](#) • [Contact/Email](#) • Corporate patron [Linode](#)
& Cloudflare

