How to check any filesystem for bad blocks using GNU / Linux or FreeBSD with dd

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Have you looked for a universal physical check up tool to check up any filesystem type existing on your hard drive partitions?
I did! and was more than happy to just recently find out that the small UNIX program **dd** is capable to check any file system which is red by the Linux or *BSD kernel.

I'll give an example, I have few partitions on my laptop computer with linux **ext3** filesystem and **NTFS** partition.
My partitions looks like so:

noah:/home/hipo# fdisk -l
Disk /dev/sda: 160.0 GB, 160041885696 bytes
255 heads, 63 sectors/track, 19457 cylinders
Units = cylinders of 16065 * 512 = 8225280 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk identifier: 0x2d92834c
Device Boot Start End Blocks Id System
/dev/sda1 1 721 5786624 27 Unknown
Partition 1 does not end on cylinder boundary.
/dev/sda2 * 721 9839 73237024 7 HPFS/NTFS
/dev/sda3 9839 19457 77263200 5 Extended
/dev/sda5 9839 12474 21167968+ 83 Linux
/dev/sda6 12474 16407 31593208+ 83 Linux
/dev/sda7 16407 16650 1950448+ 82 Linux swap / Solaris
/dev/sda8 16650 19457 22551448+ 83 Linux

For all those unfamiliar with **dd** - *dd - convert and copy a file* this tiny program is capable of **copying data from (if) input file to an output file** as in **UNIX** , the basic philosophy is that everything is a file partitions themselves are also files.
The **most common use of dd is to make image copies of a partition with any type of filesystem on it and move it to another system**
Looking from a Windows user perspective *dd* is the command line **Norton Ghost** equivalent for Linux and BSD systems.
The classic way **dd** is used to copy let's say my **/dev/sda1** partition to another hard drive **/dev/hdc1** is by cmds:

noah:/home/hipo# dd if=/dev/sda1 of=/dev/hdc1 bs=16065b

Even though the basic use of *dd* is to copy files, its flexibility allows a *"trick"* through which **dd can be used to check any partition readable by the operating system kernel for bad blocks**

In order to check any of the partitions listed, let's say the one listed with filesystem **HPFS/NTFS** on **/dev/sda2** using *dd*

noah:/home/hipo# dd if=/dev/sda2 of=/dev/null bs=1M

As you can see the **of** (output file) for dd is set to */dev/null* in order to prevent dd to write out any output red by */dev/sda2* partition. **bs=1M** instructs *dd* to read from */dev/sda2* by chunks of 1 Megabyte in order to accelerate the speed of checking the whole drive.
Decreasing the *bs=1M* to less will take more time but will make the bad block checking be more precise.
Anyhow in most cases *bs of 1 Megabyte* will be a good value.

After some minutes (depending on the partition size), *dd if, of* operations outputs a statistics informing on how *dd* operations went.
Hence ff some of the blocks on the partition failed to be red by *dd* this will be shown in the final stats on its operation completion.
The drive, I'm checking does not have any bad blocks and dd statistics for my checked partition does not show any **hard drive bad block** problems:

71520+1 records in
71520+1 records out
74994712576 bytes (75 GB) copied, 1964.75 s, 38.2 MB/s

The statistics is quite self explanatory my partition of s size **75 GB** was scanned for **1964 seconds** roughly 32 minutes 46 seconds. The number of records red and written are **71520+1** e.g. (records in / records out). This means that all the records were properly red and wrote to /dev/null and therefore no BAD blocks on my NTFS partition ;)