

Ext 2 Superblock Finder

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1 License, copyright and...

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2 About this script...

e2sbf is a small script to help rescuing damaged ext2 partitions. It has been written in an afternoon to help me recover a friend's partition.

It works by asking mke2fs where it would put backup copies of the superblock on the given partition, and then trying if those sectors contain a valid superblock using e2fsck (an effort was made to use mount -o sb=... but I couldn't make it work as wanted). If no superblock is found, it then tries all the sectors starting from the closest to those indicated by mke2fs. The script terminates when:

- A valid superblock is found or
- All sectors have been checked

WARNING!! This script relies on the -n parameter of mke2fs and on the same parameter of e2fsck. It is not possible for the script to test whenever such parameter is accepted or if it has the intended meaning! Please go on reading this document before using this e2sbf!

You can find the latest version of this document and the mentioned software at <http://www.commedia.it/ccontavalli/>. If you have troubles/suggestions/corrections feel free to mail me at <ccontavalli at commedia.it>.

3 Installation

1. unpack the tarball with:

```
$ tar -xvzf ~/e2sbf.tar.gz
```

2. Check that the following tools are installed on your system:

- A recent bash version (any 2.x.x should be good – must support arrays and arithmetic operations)
- e2fsck (tested with 1.19)
- mke2fs (tested with 1.19)
- cut, tail, grep, head, sed, true and other standard unix utilities.

3. Check on the manual and with -help that both e2fsck and mke2fs accept the -n parameter and that it means “don't do what you are told to, just display what you would do”. **WARNING!! If you are not sure that -n is accepted by your e2fs tools and that it has the intended meaning don't use the provided script! Do not even try to run “mke2fs -n” on any partition just to see if “-n” is accepted. YOU MAY DAMAGE ALL YOUR DATA!!** Read the manual, and if still unsure, do not use this script!

4. A good idea would be to make a backup copy of the partition you have damaged on the hard drive and then run e2sbf on that file with something like:

```
# cat /dev/hda1 > /tmp/hda1.backup
# e2sbf /tmp/hda1.backup
```

4 Usage

After you are sure your system is ready to use this script (**read the installation section, otherwise you may DAMAGE your data!**), run something like:

```
# e2sbf /dev/hda1
```

as superuser, where /dev/hda1 is your partition or a backup copy of it. The script should print a list of preliminary checks (to make sure that all needed tools are installed and that the bash is of the right version) and then a list of sectors the script is testing. In case a superblock is found, a line of “*” followed by “Found: number” is written on the screen, where number is the sector where the superblock was found, suitable for usage with the “-b” parameter of e2fsck. It is possible to specify a “logfile” as a second parameters in order to log the output of all the commands run. Here is an example output:

```
Looking for mke2fs: /sbin/mke2fs
Looking for e2fsck: /sbin/e2fsck
Looking for grep: /bin/grep
Looking for head: /usr/bin/head
Looking for tail: /usr/bin/tail
Looking for cut: /bin/cut
Looking for sed: /bin/sed
Looking for true: /bin/true

Testing bash abilities (any error here means that no support is present)...
  Testing for arithmetic support...OK.
  Testing for arrays support...OK.

Estimated positions:
      32768
     98304
    163840
Testing: 1
Testing: 2
Testing: 32768
*****
Found: 32768
```

Some parameters are tunable on the first couple lines of the source of e2sbf. For example, with “silent=on” you can make e2sbf to be more silent while with “stop_on_first_match=false” you can tell e2sbf to scan the whole partition for all valid superblocks (in which case, you would probably use `| grep 'Found:'` |less). When this latest parameter is “true”, e2sbf returns a status of 0 if a valid superblock is found, while a different number is returned for each different error (look at the script if you need the complete list of error codes).

Watch out that the script will really slow down when a superblock is found, since it will wait for e2fsck to terminate (it is really slow, especially if the file system is damaged).

If “-n” is correctly accepted by your e2fs tools, e2sbf will not modify your file system nor write on it in any case (finding a good superblock is a read-only test).