

## Re: missing free space

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*Source:* <http://linux.derkeiler.com/Mailing-Lists/Debian/2006-12/msg03065.html>

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- *From:* ccostin <[ccostin.dmu@xxxxxxxxxx](mailto:ccostin.dmu@xxxxxxxxxx)>
  - *Date:* Sun, 31 Dec 2006 03:09:34 +0200
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On 12/31/06, Roberto C. Sanchez <[roberto@xxxxxxxxxxxxxx](mailto:roberto@xxxxxxxxxxxxxx)> wrote:

On Sun, Dec 31, 2006 at 01:13:30AM +0200, ccostin wrote:

- > On a partition mounted as /tmp on /dev/hda2 df report
- >
- > df -h | grep -E "Size|hda2"
- > Filesystem Size Used Avail Use% Mounted on
- > /dev/hda2 479M 454M 0 100% /tmp
- >
- > and total space used by /tmp directory is
- >
- > du -sh /tmp/
- > 1.4M /tmp/
- >
- > Why this differences between used space reported df and du appear ?
- >

The way that du measure disk utilization is to check for all existing files and directories and see how many disk blocks they use and add them all up. OTOH, df checks with the filesystem to see how many blocks are not used. You are asking why the sum of blocks used by existing files and directories and the unused blocks is not the whole of the blocks in the filesystem. The reason is that there are nonexistent files.

What that means is that a program needs a temporary file and so it calls a function like tmpfile, which creates a temporary file. In order to minimize the vulnerability of information leaking from a temporary file, some programs call unlink() right after the file is created. As long as the program retains the open file descriptor, the file can be read from and written to, but no one else can access it, since it is not addressable via the filesystem. Once the program closes, the file descriptor is reclaimed by the OS and all the blocks are again marked as free.

I believe that qemu does this as I often see the exact same thing you are talking about after laeving qemu running for long periods of time.

For this moment I don't run any qemu instace. But is something similar.

Re: missing free space

When I test an example from php5-imagick package  
(/usr/share/doc/php5-imagick/examples/resize.php)  
apache2 "eat" a lot of disk space (a bug ?) from tmp  
Output from lsof

```
COMMAND PID USER FD TYPE DEVICE SIZE NODE NAME
apache2 10673 apache 11u REG 3,2 280080000
0 6161 /tmp/magick-XXuayBEU (deleted)
```

```
ls /tmp/magick-XXuayBEU
ls: /tmp/magick-XXuayBEU: No such file or directory
```

After restarting apache2 all things get back to normal, occupied space is released.

```
df -h | grep -E "Size|tmp"
Filesystem Size Used Avail Use% Mounted on
/dev/hda2 479M 9.9M 444M 3% /tmp
```

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