By Ben Tasker

Hard Drive Full on Linux

If your Harddrive seems to be full, yet you don't have that many documents it is more than possible it is various temporary files. Firstly to confirm that the drive is actually full run

df

from the command line. You should get an out put like the one below;

Filesystem	1K-blocks	Used	Available	Use%	Mounted on
/dev/hdb3	37927244	37547804	379440	100%	/
udev	382704	216	382488	1%	/dev
/dev/hda1	16735516	8270096	7615300	53%	/mnt/storage
none	382704	0	382704	0%	/dev/shm
/dev/sda1	480719056	268390196	187909660	59%	/mnt/exthd

This output shows how many 1K blocks each of your mounted partitions has, how many are used and how many are available. Note the 100% use on /dev/hdb3
As this partition is our root partition (mounted on /) this is probably the partition that you are concerned about. If you do have a seperate home partition take note of the line with /home listed as the mount point (I haven't got one on this system).

OK, so we have confirmed that the disk is full, but why? You haven't got that many files.

A big one for Gentoo users can often be /usr/portage/distfiles, to find out, run the following command

cd /usr/portage/distfiles
du -sh

This will return the total size of all files in the directory, if it is large then they may need clearing out. Ensure you have no emerge's running (and be aware if you have run emerge –fetchonly it will delete those files as well) then

su
[roots password]
rm /usr/portage/distfiles/*
exit

This step may or may not have freed up all your space, but lets continue anyway.

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KDE Image Thumbnails

If you use KDE then you will probably recall seeing thumbnails of your pictures when browsing the filesystem with Konqueror. These are not generated on-the-fly every time, but rather accessed from a cache. Unfortunately, if you move, rename or delete the Image file the thumbnail is not removed or updated, so you find yourself with a massive cache of thumbnails for images you no longer have.

so

cd ~/.thumbnails
ls

should show you a couple of directories. check the size of them with the following command;

du -sh

Now if this folder is particularly large, there are three ways to clear it down. You can just rm the contents, or you can sit in Konqueror and remove old thumbnails one by one. It is also possible to remove them based on their last access time without having to look it up yourself.

so first method;

cd normal && rm ./* -f && cd ../large && rm ./* -f

Second method is simply to browse to the appropriate folder and start wading your way through.

Third Method

find ~/.thumbnails -type f -atime +30 -exec rm {} \;

This command will search for thumbnails not accessed in the last 30 days and remove them, you can substitute 30 for however many days you feel is appropriate.

Hopefully this has cleared a lot of space, but there are a few other things to double check;

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System Messages

I was recently working on trying to get a USB device to work, so I switched on USB Debugging support in the kernel. This meant that I would get a lot of output from running

dmesg

Whilst it is unlikely it is switched on in yours, other things may be. The output generated by dmesg comes from the file /var/log/messages and I have recently seen it swell to about 4G in size.

ls -sh /var/log/messages

If it is particularly large then overwrite it with a blank file (unless you are having other problems in which case you may want to keep the output);

su
[roots password]
echo "" > /var/log/messages
exit

Temp Files

Some programs will get upset if you wipe the /tmp directory, and as a rule most programs are pretty good at cleaning up after themselves. However system crashes, and application crashes can sometimes leave unneeded, unwanted, unloved files behind. Check for these using the find command

find /tmp -type f -atime +30

Make sure you browse the list for anything that seems like it should stay, then you could try running

find /tmp -type f -atime +30 -exec rm {} \;

to remove the files. Personally, unless I am really hard up for space I don't like to play around too much with those files, one of them could be needed by an application that I haven't loaded in 30 Days. Odds are they aren't, but if they are not occupying too much space, leave them alone.

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Still out of space?

If you still don't seem to have any space, then you will have to conduct a wider search. The next command can take a while to execute, so before you run it consider whether it could simply be the size of your documents. Check your cron jobs, are you creating backups on the wrong partition? If all else fails then run this to see where the space is taken up;

su
[roots password]
cd /
du -sh /*
exit

This will show you what each of the directories holds, then you will have to navigate into that tree and run the command again, chasing it down. If there is a vast amount of space taken by /home then your assumptions about the size of your documents may have been wrong. Try moving them onto another partition, burning to CD or just having a clear out. It's amazing how quickly the junk can mount up!