Sundry things about Linux and Ubuntu

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A number of questions were addressed on the subject of Linux in general and Ubuntu in particular. The answers are written according to what was stated at the meeting.

In addition, there were some questions asked and answered by e-mail before the meeting; two of the more interesting ones hve been slected and the essential e-mail exchange has been copied here too.

1. What does "mount" mean in Linux?

Answer: Mounting is the name given in all Unix systems to the insertion of an external file system into the user's view of their file system.

Imagine a hardware device, like a disk, containing data. This can be conventionally diagrammed like this:
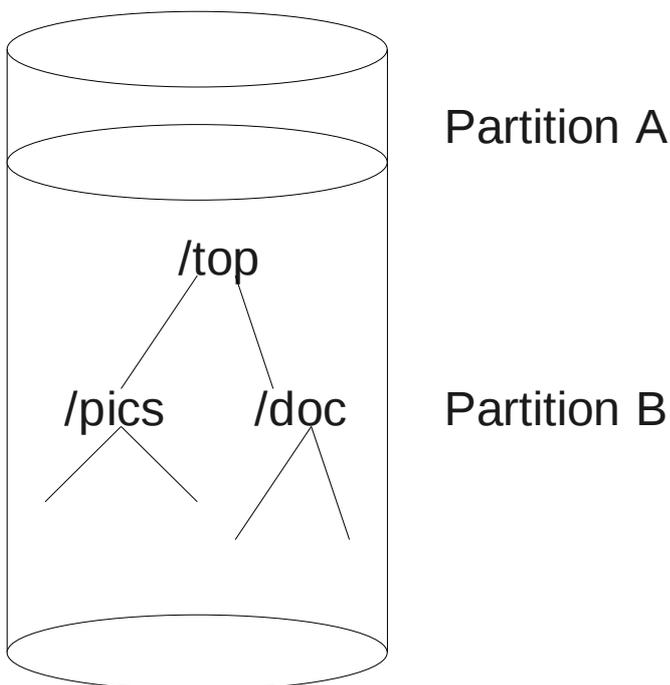
where Partition B contains a file system that can be mounted. The data in this partition is interpreted as a file system structure. The usual ones found are **ext2** and **ext3** under Linux, **ntfs** under Windows, and on portable media like memory sticks **vfat**.

The operating system has to be told what this structure is.

A user of Linux sees all data as files in a single tree-like structure starting at the root directory

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known as /. All devices and files are found in this tree.

When you want to access the file system on the external device, it must be assigned a location in this user view tree. This is done by creating an **empty** directory where you want to see it, and then **mount** it at that place. The system needs to know the device where the files are, the type of structure they are in, and the location it is to placed in your view of the files. The simple format of a mount command is thus

```
mount -t fstype /dev/device /where/to/put/it
```

This is rarely needed as Ubuntu will normally do all the necessary work automatically without any prompting when a USB stick is inserted, or a CD pushed in, etc.

To see what is mounted, use the mount command without parameters, or look in the file /etc/mtab which is always kept up to date with the current state of mounted systems. The most interesting ones in this list are those mounted from /dev/sd* or as /dev/hd* as they are the most likely to contain real external data. A lot of the others are purely convenient ways of keeping information about certain aspects of the system.

2. Why do I see so much in the initial menu after several updates

Answer: (by Mike Godfrey)

Q: *I dual booted 8.04 and it started up as xxx generic 16 (I cannot recall the exact wording). I updated about a week later and found it was xxx generic 17 and a few weeks later generic 18. All three version appear on the dual boot menu. What is the significance of the three? There are also three xxx safe versions.*

A: OK. What you are seeing is the identity of the Linux kernel. It appears in /boot/grub/menu.lst as, for example

```
Ubuntu 8.04, kernel 2.6.20-16-386
```

At first install, Ubuntu also creates an alternative 'safe' boot line (Windows has a similar 'safe boot' option). When one downloads the Ubuntu updates these can include incremental updates to the Linux kernel etc., designated by a change in the final number from 16 to 17 to 18 ... When these updates are installed, they are added to menu.lst (and a 'safe mode' line is also generated). The superseded versions are not removed from menu.lst, nor are they uninstalled – you just might need to revert!

You can do two things to clean up the accumulated crud. Firstly, install 'startupmanager' using Synaptic. Go to System > Administration > Startup Manager. Click the 'Advanced' tab; tick the 'Limit number of kernels' box and choose a number, say 2. Exit. This will rewrite `/boot/grub/menu.lst` to limit the number of entries in the menu. However, the kernels are still installed. When you are confident that the latest kernel is working for you, open a terminal window and type:

```
sudo apt-get autoremove
```

and all the older kernel elements will be uninstalled. If you want to be more cautious and retain the older kernel versions listed in menu.lst you will have to find any versions older than these individually in Synaptic, mark them for removal and then remove them. If you have upgraded, then older versions of the kernel left over from the previous version of Ubuntu will appear if, in Synaptic, you click on the 'Status' button (bottom left) and then on 'Installed (local or obsolete)'.

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This and other clean-up advice, is in:

> http://ubuntuforums.org/showthread.php?&t=140920

3. How do I format a memory stick?

Answer: Some memory sticks come with extra software that should be removed to make best use of space. Sticks can be formatted with several different file systems, but the recommended one is as **vfat** to allow it to be used on many different machines without problem.

Two useful websites to explain the details how to do this are at:

> http://www.cyberciti.biz/faq/howto-format-create-linux-filesystem/
>
> http://ehow.com/how_1000631_hard-drive-linux.html

4. How do I get Mplayer working on Linux?

This was asked via e-mail before the meeting, and was answered there.

Question:

I have been attempting to set up Mplayer with limited success. I used this http://www.howtoforge.com/the-perfect-desktop-ubuntu-8.04-lts-hardy-heron to guide me Everything seemed to go well until I loaded a DVD.

(Small aside I had used Totem to open the DVD but it did not display the introductory screen etc so I decided to give Mplayer a go).

I double clicked to DVD icon. Mplayer opened but nothing happened. I clicked Places then Home then Edit then preferences then Media tab to see what had been set up to open DVD video - it was blank and greyed out so something was wrong. Then opened a terminal and typed gmplayer (it was advised in one blog) and got a message WScreenSaver problem. I googled for that and got no clues.

I assumed I had messed up and tried again - remove and install - same result. I looked a bit further at the url above and saw a complaint about aspects of the advice - why did I note read that first? The complained gave another url http://ubuntutip.googlepages.com/home (Tips for beginners with Ubuntu).Section 5 looked like a good start point. I followed the advice and it all worked except I did not get Mplayer but Open gxine. I have still to do section 6, the missing 1%, but I need to work out what is meant.

As I followed the guidance completely I now have Rythmbox and Audacious, both addressing the same requirement. I need to work out which I want to keep.

I had a brief look at "Tips for beginners with Ubuntu" and wished I had seen it sooner.

Answer: (from Mike Godfrey)

This is the post that I used to get multimedia working with Hardy (and then with Intrepid):

> http://ubuntuforums.org/showthread.php?t=766683

Very long, as it covers Ubuntu, Xubuntu, Kubuntu, in 8.10, 8.04 and pre-8.04 guises, with detours into the differences between 32-bit and 64-bit installations. If you need to, persevere to the end, where there are some useful trouble-shooting tips. This post removes 'competing' applications, codecs, plug-ins and libraries.

By the way, you will need to install RealPlayer as well if you want to use the 'catch-up' facility in

the BBC's iPlayer - live broadcast is fine, but the recordings have extra 'stuff' included to limit their life which, AFAIK, confuse the 'free' RealPlayer equivalents.

There's a lot of argy-bargy in the forums about which is the 'best' application for ... Sometimes the choice is based more on which GUI you feel comfortable with. Having more than one media player installed isn't a problem, provided that you have set up one as the preferred application for each type of file e.g. in Firefox Edit > Preferences > Applications.

DVD playback is a problem with Debian-derived distros, such as Ubuntu, because they won't include the licensed decryption software as it's not open source (and it's not free as in beer either). libdvdcss2 was written to 'crack' the encryption and there was a huge furore about whether it was 'legal'. In the end, the content providers had to concede that it was - and went away to lick their self-inflicted wounds and devise ever more restrictive DRM schemes. If you buy a computer from Dell with Ubuntu pre-installed, it includes a commercial package that plays DVDs. Unfortunately, this package is only available to OEMs (for a price), not individuals. Last time I tried, I could play some DVDs, but not others; since our TV has a DVD player built-in, I put this annoyance at a low priority.

5. Why are some applications older versions in Ubuntu?

(via e-mail)

Question:

I am playing with Ubuntu and trying (very trying!) to create a webpage using KompZer. I have downloaded the version from the repository and after falling over five times when I strayed outside the text box I had a look in the Ubuntu forums and found that I was in good company. The version in the repository seems to have a bug which I think has been reported. The recommendation was to download the version from Sourceforge.

So I have removed the repository version and so far the Sourceforge version seems OK.

Answer: (from Mike Godfrey)

As we've written before, Ubuntu, or any other distro, has to choose which version of each application it is going to include in its next release some time in advance in order to carry out compatibility testing and ensure that all the dependencies are satisfied. This process is complicated by the fact that the programs that a particular application depends on may well be dependencies for other applications. What happens if some of these other applications require different versions of the dependency program? I think that this is how some of the 'Ubuntu-specific' versions come into existence. If you want to get a flavour of what is involved, open Synaptic and find the entry for 'wine'. Right click on this and select Properties. Click the second tab in the new window to reveal dependencies, suggestions, recommendations - and a long list of conflicts. A look here:

http://distrowatch.com/

shows which version of which application is included in different versions of each distro. For example, type 'Ubuntu' into the 'Type Distribution Name' box. Scroll down past 'Table Notes and Explanations'.

You can select either the 52 major packages view or the All tracked packages view (203). If the version number in the column for the distribution version you are interested in is green - then it's the latest version. Notice - not much green. BUT - if you were to try any other distro, you would find that there isn't much green there either. Different, but not much more or less. It depends on the

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distro's attitude to risk and its release cycle. NB - because Ubuntu sticks rigidly to a 6-month release cycle which is not, and cannot be, synchronised to the release cycles of the various application, it may have more problems with keeping 'up to date' than, say, Fedora.

Wine is developing relatively rapidly as its programmers continue to find out, by experiment, how Microsoft's code works (as they don't have access to Microsoft's source code or documentation, they can only use a 'black-box' experimental approach i.e. hit it with different combinations of inputs and see what output you get). Hence, for the reasons explained in the previous paragraph, distros can't keep pace.

The problem with KompoZer is described in various forums. Basically, there isn't a bug in KompoZer - but it doesn't work with the versions of some of its dependencies shipped with Ubuntu Intrepid. Two solutions are suggested. One - when using the menu system, take hand off mouse and use the keyboard short-cuts (the underlined letters in the menu items) instead. Two - use Ubuntu Hardy (8.04); you could dual-boot or install 8.04 as a virtual system if you have a large-enough hard drive. The version of KompoZer in the Hardy repositories is the same as that in the Intrepid one - it's also the most up-to-date STABLE version on the KompoZer website (0.7.10). I haven't checked, but the very recent version on SourceForge, 0.8a1 is, by its designation, a development version, not a stable release. Use with the usual caveats in mind. The sole developer of KompoZer is aware of the problem and its solution is his top priority - but he can't give a date for when a fix will be available.

Downloading the latest version of particular applications from the relevant project website isn't recommended unless you know enough about what you are doing to be able to recover a broken system. If you use a .deb, then installation is painless as Ubuntu includes a program, gdebi, that handles the process for you. BUT - you won't get the application updates and, if a Ubuntu update replaces one or more of the files on which your program depends, then at best you are in uncharted territory, and at worst, your system may crash. There are applications out there which do a complete job - wine is one - by allowing you to add their own repository, plus the encryption key, to the information stored by Synaptic. Then you will get updates to that application automatically - but there still might be conflicts with the dependencies (I think).