

A new computer and ubuntu

A brief history

Without giving away my age too much I can say I have been deeply involved with computers since the invention of what was called the first 'microcomputer', now called a personal computer or PC. In fact my first and earlier contact with a computer was at university where I had several abortive attempts to program in Fortran on an IBM 360.

I started by building my own computers from kits and then from own designs. My very first real bought PC was an Apple][, which I loved. I still have one stored in my loft. The manuals written by Woz (Steve Wozniak) were masterly. As you see from Pictures 1 and 2 it had a lid that could be flipped off and other maker's boards inserted into the slots. It was an open design with powerful programming languages. Its only real fault was that on early keyboards the RESET key was next to the ENTER key, then called Carriage Return. Some accidental disastrous resets sometimes happened.



Picture 1 from applerescueofdenver.com



oldcomputr.com

Picture 2 from oldcomputr.com

Sadly Apple then decided to lock that all down and take complete control of the boxes and add-ons. That was the point when the high prices were no longer justifiable and I switched to what was then called an IBM PC. Foolishly IBM's boss Watson told Microsoft's Bill Gates that he could sell, to other companies, the PC DOS operating system he had developed for IBM, calling it MSDOS. Why? Well IBM's Watson was a good friend of Bill's mother. Indeed it was him giving Bill's school remote access to a company mainframe that got Bill going in the first place. IBM thought they would always dominate the market. One of my favourite words is hubris. The market for cheaper, powerful PCs not made by IBM then exploded into life. Another good word - nemesis. The ancient Greeks were a clever lot.

Internet and corruption

I was an early user of the emerging Internet. My first use was investigating unix for which I needed access to one of the California university's download sites. At that time resources were very limited. Data speeds were measured in kilobit/s, and bulk data storage in megabytes. The two big crimes were to waste those resources with such as spam and to bring in any attempt at making money. I used Demon Internet as my internet service provider (ISP). They were very proud when they leased a 1 Mbit/s line to the US. And that was for all their users. I later trained one of the people who worked at Demon when they first set up above a shop in North London. He told me they ran out of office space and rented another a few doors down. They couldn't get permission to run a data cable between the two so they crept in one night, climbed the ladder and, in the dark, nailed it to the outside wall above some shops. No-one noticed. I suggested we should write the Demon story together but he said he was bound by an early Non-disclosure Agreement.

Damascene moment?

Whilst writing this article I realised the factor that allows some things to go wrong. Money. Just like with the English football premier league, big money distorts. As soon as the money grubbers realised that they could make money in two rhyming words – fast and vast – the data thefts started.

A while before this time we saw the emergence of a mid-size range of computers, called mini-computers, such as the DEC PDP-8. These were networked with a central processor and ‘dumb’ terminals using the US meaning of dumb as stupid. They couldn’t talk anyway. Many used an operating system called Unix, developed at Bell Labs, that I used for a while. Then a Finn called Linus Torvalds wrote a version of Unix in the 1990’s that he allowed others to use free of charge and to help develop. It became called linux after him (properly pronounced lean- erks), and is now my system of choice in the form of ubuntu. Ubuntu still has the inbuilt networking, security and user management if you want them, but can be run on a single PC and it is VERY good. The motto for unix is ‘live free or die’. More about unix later.

The two next steps were the invention of a graphic user-friendly interface (GUI) called Windows and the commercial use of the Internet. At that time I was training computer staff as analysts, developers and users and advising companies.

For some of my most enjoyable working years I was with a group of highly intelligent and knowledgeable people. We were very much a team, with a huge range of skills between us and a leader who allowed us freedom and listened. I was in that team when graphical windows took off and the first social media were set up. To find out about the hazards of social media and other dat thefts read my companion article ‘Avoiding identity theft’.

I said all that not to boast, or perhaps bore you, but to persuade you that I am worth listening to.

The practical side

What sort of a computer system would makes sense?

Hardware

If you use ubuntu you don’t need a super powerful computer. However why not? I built my old one about twelve years ago and its still OK. The new one runs ubuntu like \$£”% off a shovel and will be fine for a long time. So what did I buy and how much was it? If you buy Apple kit you will probably wonder at the low prices here. I never touch it so can’t suggest anything Apple. Nor do I suggest a toy laptop with the usual rubbish keyboard. Buy a proper PC.

Screen

- Samsung 800 mm monitor with 1920 x 1080 resolution. That is the limit for ubuntu 22.
- Cost £250

Computer

- Intel I7-12700 4.9 GHz bus made by Acer with twelve cores in a small low energy tower case
- 8 Gb ram
- 4 Tb 7200 rpm hard disk
- I didn't get a Solid State Drive as ubuntu doesn't need the extra speed.
- Cost about £700
-

Backup

- 4 Tb USB3 plug in drive
- Cost about £100
- USB3 thumb drive of 256 Gb on which to drop files being edited using 'Save a copy'

Keyboard and mouse

- Logitech MK270 cordless
- Has on/off switches to save batteries
- Superb keyboard of the type that I have used for years
- Now has light for Caps Lock (at last!)
- Cost £25

Peripherals

Printers

- Hewlett-Packard 1320 mono laser of ancient vintage. Always use a laser for low cost and high speed unless you really need a colour print.
- Hewlett-Packard OfficeJet 7720 colour inkjet with low resolution scanner. It uses expensive ink cartridges but then I don't use it that much. Epson does large ink containers that they call Ecotank.

Scanner

- Canon CanoScan LIDE 400 scanner that now works with ubuntu 22. Buy the highest resolution you can at a sensible price but check it will work with ubuntu.

Plotter

- I haven't got one. If I want drawings scaled or printed I get it done at a print shop.

3D printers

- I haven't got one. You love 'em or hate 'em. I can't see the point of spending £1500 upwards to print parts that you can make from wood or metal for next to nothing. However I am willing to be convinced.

Economy

One unexpected bonus is that the new machine uses a lot less electricity. In operating mode but inactive my watt meter tells me it takes about 50 W. Even at present insane prices that's only about 15 p per working day. I now don't bother to switch off except for lengthy breaks of work.

Network

Here there be dragons

The ideal security for a home network is for it to be fully wired with Cat6 ethernet. However you will need wifi for a range of devices such as a mobile phone, or a laptop or tablet if you use one. As soon as you enable wifi you allow attacks unless you are careful. I have two wifi access points but I have changed both the device names and the passwords. One clever suggestion is to use the name below in Picture 3. Tends to put off the hackers too.



Picture 3

As mentioned above any wifi device has the potential to allow hackers in, including 'smart devices' like central heating controllers, speakers, refrigerators and external cameras. Intruders might just use your Internet access or could hack data. NEVER install any wifi device on which you can't change name or password or both, though of course some white goods can't be so done. And then do it, or switch off the smart features. Always buy wifi kit from well known and reputable names, not from cheap overseas unknowns. Any maker can make mistakes over security but good ones are much less likely to and might even let you know when they do. We are yet to discover whether oriental kit might be spying on us.

Passwords

There is so much drivel talked about passwords. Yes, we all know that pass, password and 123456 used to be the most used. But suggesting that we use a system generated one like 1454%&Bvn@ff is asking for trouble. We can't

remember it, so either write it down or store it with another password that we have made up protecting the store.

Here is what I do

I split my online accounts into two. There are those that don't matter and those that do.

The small minority that do

- Examples are my bank accounts and paypal.
- For these I invent a passphrase containing several words. Each account has a different one and I write a clue, that only I would understand, in a document that can then be public, or possibly encrypted

The vast majority that don't

- As long as you make sure your card details are not stored by the supplier these don't matter much. People can't hack and buy on your card. Be VERY careful when buying, as many suppliers make it tricky to avoid storing card details. It's a good idea to go into your account details and check payment methods. A red flag is not to be asked for a password when you next buy. For these accounts I have a few generic words to which I attach different endings or beginnings, with the generic clues again stored in a document and listed as initials.

In case of your sudden death you might put the full passwords in a safe. Or not. You won't be around to worry about it will you?

Linux and ubuntu

Linux is Open Source. This means that you can get the code that it runs and can make improvements. **Most people won't need or want to do that.** This approach is called 'bazaar' development meaning that lots of people can chip in to help. The alternative is the 'cathedral' method where all change comes from on high in a developer company like Microsoft. It is 'ex-cathedra' like the 'wisdom' and dogma in most religions that users or believers can't change.

One key factor in linux's quality is that as linux and its apps are developed it is for one reason only – what makes it work better. It is not to make a load of money for someone.

As it is not as widely used as Windows, hackers rarely bother to try to attack ubuntu with viruses and if they do it tends to be company and government networks for which it is increasingly used. Even the desktop version is not immune though, so take the usual precautions. Changes that need to be installed are blocked using the very solid security system.

There are several versions, called 'flavours', of linux. I use ubuntu developed by Canonical, a UK company. It is free to use for ordinary users but the company has a paid service for professional users such as businesses. The name comes from the African Nguni language. It is one of those words almost impossible to translate, but three versions are 'compassion, humanity and joint

effort', 'universal bond of humanity' and 'a person is a person through other people'.

Each new version, and in early 2023 we are up to number 22, has a double name, currently Jammy Jellyfish. I have used ubuntu since version 7 (Feisty Fawn). In between versions there are regular updates for security and improvements. As you see from Picture 4 the screen is very clean and simple. All the icons for the chosen apps are along the bottom of the screen and the Files or Home icons give secure access to the files for the user currently logged in. The icons look small here only because my screen is very large. Each user has his or her own screens and set of apps, and a password which he or she can use to login or only to use for installing apps and updates.



Picture 4
Peter Scott

File sharing and samba

Though users can lock up their files and only allow them to be seen or edited by selected other users, or by no-one else if they choose, you can set up a file server using an app called samba. This can be on the same machine as normal users, or you can put it on a spare computer used only as a server. For that you need a different and simpler version of ubuntu called Server. Users can then, if they want, have a samba directory (folder) put into their home directory which will contain files visible to others using samba. If you also have Windows or, heaven forbid, Apple machines, on the same network, you can allow access to them as well.

How do you get ubuntu?

Go on to the Canonical site at <https://ubuntu.com/>, download the relevant Desktop version and follow instructions to copy it to a USB thumb drive or a

DVD. Ideally install it onto a PC that has no operating system. On an old machine you could cheaply put in a new blank hard disk unless you are unfortunate enough to be using an Apple. You can then keep the Windows disk in case you want to go back to it. Ubuntu can be installed alongside an existing Windows system allowing you to choose which to use when you start up the PC, called 'dual boot'. If you fear such work, get your usual dealer to install it. If he or she doesn't know what you are talking about, find a competent dealer.

Here is a list of the apps shown along the bottom of my screen (Picture 4) together with their equivalents in a Microsoft (MS) Windows system. I haven't listed the apps that are only of interest to nutters like me. You install new apps through a ready installed app and all are updated periodically. And remember they are **FREE**.

Firefox	(Internet browser)
Thunderbird	(Emailer)
LibreOffice Writer	(MS Word)
LibreOffice Calc	(MS Excel)
LibreOffice Impress	(MS PowerPoint)
GIMP	(Photoshop)
Darktable	(Photoshop)
Inkscape	(Drawing package)
Pinta	(MS Paint)
Kompozer	(Dreamweaver for website design)
Krita	(Drawing package)
VLC	(Media player)
Audacity	(Sound file editor and sound recorder)
Rhythmbox	(Sound file player)
Document Scanner	(Scanner)
Xsane	(Scanner and OCR reader)
Sound Converter	(Excellent and fast converter of sound files)
Samba	(Homegroup)

There is a LibreOffice database management app called Base but so far it is not as easy to use as MS Access. I must give the latest version a try. All MS Office equivalents can load and save in MS formats. Some Windows apps can be run on ubuntu using a simulator called wine but I find it clunky.

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