

The Course Description

Title: Linux \Leftarrow Alternative to Windows 7

Preamble: Windows is expensive and has proven to be prone to viruses. One good alternative is Linux, which is fast, flexible and free: free of viruses, free of usage restrictions, and free of fees. Linux powers the majority of the world's fastest computers – it can power your computer too. Join us on a discovery tour of Linux; your computer will love you if you do!

Objectives:

- To show that Linux can work on your existing hardware.
- To demonstrate that Linux is a superior alternative to Windows.
- To provide each participant with hands-on experience using a Linux system.

Outline: Microsoft is gradually withdrawing all support for Windows XP. Many U3A members currently rely on XP and are, or soon will be, facing the considerable expense of replacing their XP machine with new hardware that is capable of running Windows 7.

This expenditure is probably unnecessary. A Linux Operating System can be installed on existing hardware at minimal or no cost and can provide superior performance.

This course module shall provide participants with the information required to empower them in making informed choices regarding their future personal computer system.

The module is non-technical and provides students with hands-on experience using the Linux operating system and various applications, along with a live DVD to try out at home.

We are: Greg, Hayden and Barry (from the Linux Supporters Group Adelaide).

Is Linux a Superior Alternative ?

In this talk we shall \oplus Explore what it might mean to you, and \oplus Explain some eminently practical steps you can take, if you decide that you want to install Linux on your existing computer (next to and not disturbing your copy of XP) and try it out.

You might use Internet Explorer for browsing \implies we shall show you *Firefox*. It is similar, but better because of tabbed browsing (multiple pages open) and faster security fixes.

You might use Outlook Express for email \implies we shall show you *Thunderbird*. It is similar, but better, because it won't just execute any old attachment that might contain a virus.

All this and much more is made possible because everyone in the whole world who wants to, and who is able to, can examine the Linux internal code, and check it for security holes and backdoors; they'll be quickly exposed. But *no one* can look at the Windows 7 internal code – so they cannot fix it, and goodness knows what malicious code might be in there, and how many undiscovered security flaws. Read on and see what *The Linux Adventure*TM might hold for you.

What do I need my computer to do for me ?

There is a bewildering range of application programs ^[1] in Linux that may all be installed on your computer at the touch of a button – as can all your security and program updates.

Consider this table in the light of your existing requirements.

<i>You currently use</i>	<i>... for ...</i>	<i>Linux alternative to try</i>
MS Windows XP Pro	everything	PCLinuxOS
Internet Explorer	browsing the world-wide-web	Firefox
Outlook Express	managing email	Thunderbird
Picasa	editing digital photos	Picasa
MS Word	documents and letters	OOWriter
MS Excel	spreadsheets and accounting	OOCalc
MS PowerPoint	presentations and talks	OoImpress
Adobe Reader	examining PDF files	Evince

Computer System: You can put PCLINUXOS on your computer next to MS XP PRO and try it out and get used to it without leaving XP behind at all. PCLINUXOS is probably the best Linux for users of XP to start with, because it has the same look and feel to it as XP.

Web Browsing: You might have already been using the XP version of Firefox. If not, you'll be pleasantly surprised with its greater functionality, and although you might not notice it, the greater security underneath. Internet Explorer is far too full of security holes (widely reported on the internet^[2]) to be a safe browser. When Microsoft ceases all support for XP, any security holes that are exposed in future and exploited by hackers will never be fixed.

Email: THUNDERBIRD stops *spam*, protects *privacy* and cuts *phishing* better than anything.

Photos: PICASA from GOOGLE is very convenient for resizing and generally touching up photos, and there is a version for LINUX that works the same, so there is no grief in this move.

Letters: OPENOFFICE (OO) WRITER has a similar look and feel to MS WORD, and it will even allow you to convert your Windows documents into its format.

Accounts: OPENOFFICE (OO) CALC does much the same job as EXCEL.

Slideshows: OPENOFFICE (OO) IMPRESS comes from the same stable and gives you the ability to construct slideshows of presentations with a similar range of special effects.

PDF files: EVINCE is one of the many choices for reading and printing files that come in the widespread PORTABLE DOCUMENT FORMAT.

Home Media: LINUXMCE is a complete and sophisticated Home Media Entertainment System.

¹http://wiki.linuxquestions.org/wiki/Linux_software_equivalent_to_Windows_software

²<http://www.securityfocus.com/columnists/188>

What are Your Options ?

If you are thinking of moving from XP \implies Windows 7, you should check your computer's suitability to run Windows 7 (much the same as for Vista) by downloading the Upgrade Advisor from:

<http://www.microsoft.com/downloads/>

`thankyou.aspx?familyId=1b544e90-7659-4bd9-9e51-2497c146af15&displayLang=en`

and run it on your XP computer. We did this on our XP, and the Advisor reported this (*inter alia*):

Windows 7 Upgrade Advisor Report

Operating System: Windows XP Professional

CPU: Mobile Intel(R) Pentium(R) 4 - M CPU 2.00GHz

Memory: 512 MB

You need to perform a custom installation of 32-bit Windows 7 and reinstall.

Your current graphics adapter won't support the Windows Aero user interface.

Your PC needs at least 1 GB of RAM for 32-bit Windows 7 for optimal performance.

You need at least 16 GB of free space on your hard disk to install Windows 7.

Outlook Express is no longer included in Windows 7.

CPU speed: 2.0 GHz: Your CPU meets the 1 GHz minimum requirement.

Intel(R) 82852/82855 GM/GME Graphics Controller: Unknown

We don't have compatibility information about this device.

Agere Systems AC'97 Modem: Check Windows Update after installing Windows 7.

HP LaserJet 1200 Series PCL: Check Windows Update after installing Windows 7.

Realtek AC'97 Audio: Check Windows Update after installing Windows 7.

Realtek RTL8139 Family PCI Fast Ethernet NIC: Compatible

Tweak UI: You may experience issues running this program on Windows 7.

WinZip version 11.0: We don't have compatibility information about this version.

Corel DVD MovieFactory 7: Compatible with Windows 7

Virtualization technology not supported

Your PC memory doesn't meet the 2 GB requirement for running Windows XP Mode

Make sure your PC has 15 GB of free space before installing Windows XP Mode.

Wonderful ! They do not know about a standard Intel graphics chipset; and we have to install Windows 7 before we know if some things are compatible with it! (*Catch-22*)

So we are up for a new copy of Win 7 (\$300), new 1GB memory (\$60), a new Hard Disk with enough space (\$90), a new graphics card – oh wait a bit we can't easily replace that on a laptop ... actually we need a whole new laptop (a new ACER TravelMate 5740 costs \$800) so we are looking at around \$1000, plus reinstall new versions of programs plus we hope our printer still works On the other hand, to install Linux, we can probably keep the laptop – it'll be adequate – and we might need a new USB laser printer (\$330) ... and that is about it.

Does Linux Work on your Existing Hardware ?

You use a printer: well, your printer *might not work* with Linux (postscript printers always work). Your choice is then between upgrading to a Linux-compatible postscript laser printer (much better ink than cheap bubblejets) or buying Windows 7 for about the same cost (\$300).

You are on the internet: dialup or ADSL. No Linux problems if ADSL, but what about dialup? OK, your existing internal modem is probably *not going to work* with Linux; you need to get an external modem – we can help in this regard and can configure it for dialup.

You use cameras: OK, your camera *might not work* with Linux, but quite a few do. If you take out the SD memory card and pop it into a USB adapter, then it will work fine. We can help here.

You play videos: OK, if you install PCLINUXOS, it has the program SMPPLAYER *already there* to play almost all video formats (except those protected by DRM of course).

Safely try out Linux on your current Computer

Your best bet, before you decide on a Linux distribution to install, is to get, insert and boot a **live CD** distribution called PCLINUXOS (which stands for PERSONAL COMPUTER LINUX OPERATING SYSTEM). We gave you a copy on DVD at the talk to take home with you. Just ask us to help you install it next to XP; we do this successfully all the time for people wanting to try Linux.

We shall now walk you through the process of running the live PCLINUXOS we handed out at the talk, and show how you can safely and thoroughly check out all your software and hardware.

Start your Computer so that you are in your normal XP system.

Restart your computer with the PCLINUXOS DVD in the DVD drive. Your computer is likely to be set up to boot from a DVD already. If it is not, look for the option along the bottom of the screen such as **press F12 to change boot order** or something similar; (be quick: it will be visible only for a couple of seconds. you might have to reboot twice to see it.) Press the F12 key (or whatever it happens to be) before booting and select the CD-ROM as the first boot device. If there is no key to select the boot order, press the F2 key or whatever it is that gets you into the **SETUP** program, then move across to the **Boot** menu and ensure that the **CD-ROM Drive** is the first medium available for booting.

Select PCLinux 2007 from the boot menu by pressing **↔ENTER**. You'll see a lot of messages, starting with **Loading vmlinuz1...**, and there will be a lot of activity from the DVD drive as PCLinuxOS loads itself into the computer's memory. This takes a couple of minutes.

Select US keyboard when asked, by left-clicking (to test the mouse) the **Next** button.

Select your Location by scrolling down to click on **Australia**, and then click further down on **Adelaide** and click on **Next**.

Date, Clock and Time-Zone Settings should just be accepted by clicking **Next**.

Configure your Network Connection (with ADSL): Plug in your ethernet cable and turn on the ADSL modem. With **Ethernet** highlighted, click on **Next**. Click on the network interface card if you recognise it; accept by clicking **Next**. Select Automatic IP by clicking **Next**; select IP Settings (click **Next**); start the connection at boot (click **Next**); start the connection now (click **Next**). You should now see something to the effect of *Congratulations, the network and internet configuration is finished*. Click on **Finish** to continue.

Configure your Network Connection (on Dialup): This is more complicated. Buy an external modem that plugs into the serial port. This is configured by following *exactly* the recipe titled HOW TO HOOK UP PPP IN LINUX by W.G. UNRUH. This recipe is given in complete detail at <http://axion.physics.ubc.ca/ppp-linux.html>. Seek our help with this – we have used this scores of times in the past and it always produces a working PPP dialup system.

Log in at the login screen by clicking on the **guest** figure and typing the word **guest** into the **Password:** box, then press ←ENTER. (the **root** user is only used for system administration).

Observe more activity from the DVD drive. Various icons appear on the screen, you'll see the whole PCLinuxOS desktop, some music plays (testing your sound card) and you are now logged in as user **guest**.

Let's Take a bit of Time to explore and get used to this desktop.

- Right-click the mouse in the middle of the desktop, then left-click on **Configure Desktop**.
- Left-click **Multiple Desktops** and notice that you have four of them available already.
- Left-click **Screensaver** and preview the extensive choice there is.
- Left-click **Display** and see how many screen size options you have.
- Notice the icons down the left side of the desktop. One of them is for (later) installation of PCLinuxOS onto your hard disk.
- There is a task bar along the bottom. You may left-click on the **PC** in the circle to bring up a menu similar to XP, and navigate it in the same way.
- Left-click on the icon **gear in the box** to bring up the KDE control centre, much like XP's control panel. Click on any menu item and it expands with its further options explained in the box.
- There is a package manager (for software updates etc) and a browser icon (firefox) then four boxes where you can select one of the four virtual desktops – labelled **1 2 3 4** – much like XP's powertoy MSVDM. The time of day is shown at bottom right.
- Go to the second virtual desktop by left-clicking on the box labelled **2**. You are immediately given a clean desktop where you can do other tasks uncluttered by previous windows, returning to them when ready.

Try some Internet Browsing by clicking on the red and blue firefox symbol (on the bottom).

The mozilla firefox browser should appear after a minute, showing two tabs open: the Firefox home page and the PCLinuxOS home page. You may now surf the web.

Exercise your Email System by clicking on the PC symbol (lower left). When a menu appears, click on the **Internet** text, go right and down to click on the **Mail** text and then right to click on **mozilla thunderbird**. The **Mozilla Thunderbird** email browser should appear after a minute. You will need to have handy: your ISP account login name (eg `user@isp.com.au`), your incoming mail server (eg `pop.isp.com.au`), your outgoing mail server (eg `smtp.isp.com.au`) and your secure account password (eg `oJfpv2kx5U5iGG`). Select *Don't Import Anything* by clicking on **Next**. Try the **New Account Setup**, much like in Outlook Express. When configured, send yourself an email to check the system is working.

Test if your Camera is Supported by first moving to desktop 3 by clicking on the desktop box labelled 3. Plug in your digital camera. Click on the fourth icon from lower left (a gearwheel in a box). Click **Peripherals** then **Digital Camera** and look for your make and model in **Select Camera Device**. If it is there, click on it and select the port (probably USB) and click **OK**. An icon is created for it. If not, you'll just need to buy a USB adapter for the camera card (cheap at Dick Smith) remove the SDHC card from the camera, put it into the USB adapter and insert that into a USB port. You should then see all your photos and movies.

Make sure you can Play a Movie by inserting a USB stick containing a movie (eg from your camera) and double-click on the movie icon when the files are displayed.

Check that your Printer Works by connecting the parallel or USB cable, turning it on, and clicking on the configuration icon (a gearwheel in a square). In the left menu click on **Peripherals** and then below that click on **Printers**. Just under the bold word **Printers** click on **Add** and then on **Add Printer/Class...** \implies the **Add Printer Wizard** should appear. Click on **Next** and then on the top line **Local Printer** and then on **Next**.

Click on the name of your printer, if it appears, and then on **Next**. Observe the action: *Please wait while KDE rebuilds a driver database*. Scroll down under **Manufacturer** and click on the manufacturer; scroll down under **Model** and click on the printer model, if it is there. Click on **Next** and click on the recommended driver for your printer, then on **Next**. Click on the **Test** button to print a test page. In the **Authorization Dialog** that appears, delete the word **guest** and type **root** in both the **Username** box and the **Password** box and click **OK**. A test page should print within 15 seconds. Keep clicking **Next** until you are asked to enter a printer name. Make up a name for your printer and press **Next** and then **Finish**.

If your printer does not appear in any of these lists, you'll save a lot of grief by selling it and buying a more appropriate one by the method described in detail on the following page. If you buy a printer that contains the **postscript** language, it will not matter what make or model it is, because it will work just by selecting `make=GENERIC` and `model=postscript`.

Deciding on a Printer, if necessary

1. Determine which affordable printers, that will do what you want, are for sale locally. Let's imagine we find two possibilities: the Samsung ML-2851ND, a black and white laser printer selling for \$332 in Kent Town; and the Samsung CLP-315, a colour printer selling for \$387 on Main North Road. (You can check your existing printer at this site in the same way.)
2. Go to the website <http://www.openprinting.org/printers>.

The screenshot in Figure 1 shows what you shall find on that website.

Figure 1: WHAT THE SELECTOR PANEL LOOKS LIKE AT OPENPRINTING.ORG

3. You drag the selector in the **Manufacturer** button to the maker of the printer, in this case **Samsung**; the model numbers then come up in the middle and as shown in Figure 2 we select the model ML-2851ND and then ping the **show this printer** button.

Figure 2: WHAT THE PANEL LOOKS LIKE IF WE SELECT A SAMSUNG ML2851ND

If you do not want problems that you are not ready to handle at this stage of your Linux experience, then you *must* see the words **works Perfectly** and **Recommended Driver: Postscript**, as shown in Figure 3, before you buy it.

Figure 3: WHAT THE RESULTS LOOK LIKE FOR A TYPICAL SUITABLE PRINTER

Hands-On Demonstration of Linux

When you have finished running the live DVD of PCLinuxOS on your own computer:

- Click the PC menu, click **Log Out...** and then click **End Current Session**
- At the new login screen, click **System Menu** (bottom) and then click **Shutdown...**
- Finally, click **Turn off Computer...** and the PCLinuxOS DVD shall eject.

We have laptops and towers with these systems on them for trying out and there hundreds of other versions of Linux and tens of thousands of applications available. See these sites for info.:

PCLinuxOS: ⇒ <http://www.pclinuxos.com>

PCLinuxOS Applications: ⇒ http://www.pclinuxos.com/?page_id=180

Knoppix Linux: ⇒ <http://www.knoppix.net>

Linux Application Programs: <http://www.linux.org/apps/>

Firefox Browser: ⇒ <http://www.mozilla.com/en-US/firefox/firefox.html>

Thunderbird Email: ⇒ <http://www.mozillamessaging.com/en-US/thunderbird>

Home Entertainment: ⇒ <http://www.linuxmce.com>

More Questions ?

Here is one of the great advantages of adopting Linux: If you want to phone Bill Gates, the inventor of Microsoft, to get help or to ask for a small change in a program, you can't, because: ⊗ you do not know Bill's contact details; and ⊗ Bill no longer works for Microsoft – so you are plumb out of luck. However, with Linux, there is an active community of beginners through to experienced users all over the whole world, and right here in Adelaide too.

So for *any* help, always feel free to :

- meet with us ⇒ **The Linux Learners Lounge**, every Fri 2pm-4pm, at the South West Community Centre, 171 Sturt Street, Adelaide,
 - or consult our website ⇒ linuxlsga.net.
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