



An Introduction to PsiLinux

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P A R T O N E

Often the term Linux conveys to people a very vague and unfamiliar system that is perceived as hard to set up and difficult to use and it has therefore has been dismissed after only brief consideration.

Its lack of immediately obvious advantages coupled with the fact that most users will be moving away from a system very familiar to themselves only increases this tendency.

However, many readers have probably heard of Linux and wanted to dabble out of interest, or may well have had a go. Lots of first-time Linux users give up because they never get around to learning how to use their new system.

This article aims to help people new to Linux as well as veterans learn about what the PsiLinux project is all about.

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Linux & PsiLinux

Linux is an Open Source, UNIX-like operating system which runs on almost any kind of computer (including a Psion).

Open Source (don't complain if I get this slightly wrong!) means that it is founded on the principles set down by Richard Stallman and other programmers in the GNU Public License (GPL); it is freely distributable and anyone can edit the source code or use it in their own project provided that they don't sell it and that they distribute the source code freely as well.

UNIX

The majority of programs written for Linux are also Open Source. 'UNIX-like' means it is based on another Operating System called UNIX, which was designed mostly with very large servers in mind. Unix and Linux have many of the same commands and programs in common. However, Linux is written

from scratch, with no code taken from any versions of UNIX. In fact, many of the key Linux programs are written by the GNU project (mentioned above) - and GNU is actually a recursive acronym for GNU's Not UNIX.

ARM Processor

Linux runs on lots of different processors and therefore many different machines - x86 based (PCs), Apple Macs and Acorns, to name but a few. Psions from the Series 5 onwards use ARM processors, which there is already a port of Linux for, so the PsiLinux project aimed to write drivers for all the different peripherals on a Psion - its keyboard, screen, touch-screen, serial port etc, so that Linux could be run on it. The project has since moved on to also entail the building of working installations and system distributions.



Linux on a 5mx with Ice Window Manager

LINUX ON A PSION: WHY?

There are lots of reasons why you might want to run Linux on a Psion. Maybe you just want to have a play, or maybe you are a Linux or Unix user who wants to use a familiar system, whichever it is, there are always pros and cons to running an alternative system:

Advantages

- § There is a huge amount of software out there which will just install on a Psion without any trouble.
- § Although Linux is generally run on much more powerful machines than something like a 5mx or Revo, it does perform quite well.
- § People who are already Linux users can use software with which they are familiar, including the command line which is where much of the power of Linux is based. A Psion makes an excellent command-line only system, and makes a useful tool for a system administrator or a network technician.
- § It's fun. If you don't want to use it all the time you only have to boot it up when you want.
- § Linux supports much more hardware than EPOC and this makes it possible (although it's true that it generally requires you to take the compact flash door off) to use compact flash modems and network cards (including standard, wireless 802.11b and Bluetooth). Some Bluetooth cards will fit inside the drive with the door closed. Compact Flash GPS cards will also probably work.

Disadvantages

- § Often Linux is unfamiliar to users.
- § While available software is numerous, some software simply needs more power than a Psion can give. The screen resolution is sometimes a difficulty too.
- § EPOC is extremely good at most of what it does, it is therefore difficult for Linux to compete in areas such as PIM (Personal Information Manager - address book, contacts etc.) - although suitable applications are available.
- § EPOC applications that users are used to are not available in Linux.
- § In some places the code is not finished - for example there are problems when using the touch screen and the backlight on the 5mx, and the sound code is experimental.



Where the power lies; the command line

Generally Linux is nice to have a go with on a Psion, however, even as a long term user I still like EPOC a lot and am a fan of many pieces of EPOC software and I therefore still use it a fair bit.

Development Situation

Since PsiLinux is developed entirely by volunteers it takes time to write the code to support certain features of Psion models.

As it happens most development is done very quickly , but the problems lie in that information about the hardware is almost non-existent, as Psion are fairly unwilling to reveal what makes their machines tick - although they did release some Psion 5 information to developers.

This means that adding features is often guess work, which is slow, and therefore

not all Psion peripherals are supported.

As a general guide, I have provided a snapshot of the development situation for PsiLinux currently. The best supported is the Series 5mx and Revo, which are essentially fully supported, although Linux is limited on a Revo due to the absence of any mass storage medium.

The Series 5 is generally working, as it was the first to get developed on, but has no graphical interface, although this is probably easy to implement. The Series 7 and netBook are far behind in the development process.

Opposite is a table of what works and what doesn't.



	Series 5 (or Geofox One)	Series 5mx/5mx Pro	Revo/ Revo Plus (or Diamond Mako)	Series 7/netBook
Linux starts, basic functionality (screen, keyboard)	Yes	Yes	Yes	Yes
Instant on/off functionality	Yes	Yes	Yes	No
Touch-screen support	Yes	Yes	Yes	No
Serial port and infrared work	Yes	Yes	Yes	Unknown
Sound works	No	Yes, experimental	Yes, experimental	No
Compact Flash/PC Card supported	Yes	Yes	N/A	No
Backlight*	Yes	Yes	Yes	N/A
Graphical Interface (i.e., not text only)	Not yet	Yes	Yes	Not yet

*Note that when using a graphical interface and the touch-screen, the backlight causes random screen presses and so cannot be used.

www.psilinux.org

What Now?

In the next issue I am going to demonstrate how to run a minimal system on a Series 5, 5mx or Revo.

This wont require any big overhauls of your system, the deeper stuff comes in the issue after. For more information on anything in this issue, and for all things PsiLinux related, check out the PsiLinux web page at www.psilinux.org.

Details can be found there on joining the mailing list where you can get help with any problems, since the website is out of date and currently undergoing an overhaul.