

Linux and Psion HOWTO

Table of Contents

<u>Linux and Psion HOWTO</u>	1
<u>Hans Kugler, der.hans@LuftHans.com</u>	1
<u>1. About this HOWTO</u>	1
<u>1.1 Introduction</u>	1
<u>1.2 This Document</u>	1
<u>1.3 Mailing List</u>	1
<u>1.4 Copyright notice and disclaimer</u>	1
<u>2. General Information</u>	2
<u>2.1 What is a Psion</u>	2
<u>2.2 Psion models</u>	2
<u>2.3 Psion Availability</u>	2
<u>3. Sharing data between the Psion and Linux</u>	2
<u>3.1 Hardware connectivity options</u>	3
<u>Serial cable</u>	3
<u>IrDA</u>	3
<u>Builtin programs</u>	3
<u>3.2 Programs for connectivity</u>	3
<u>plptools</u>	3
<u>p3nfs/p5nfs</u>	4
<u>ncp</u>	4
<u>3.3 Linux utilities</u>	4
<u>Psiconv</u>	4
<u>psiontobddb</u>	4
<u>psiontognomecard</u>	4
<u>kab2psion</u>	4
<u>PsiLin</u>	4
<u>Psion SDK</u>	5
<u>Xmakesys</u>	5
<u>3.4 Psion utilities</u>	5
<u>hermes</u>	5
<u>perl</u>	5
<u>python</u>	5
<u>python</u>	5
<u>BProlog</u>	5
<u>Shell5</u>	5
<u>E_Shell</u>	6
<u>c2f</u>	6
<u>4. Hardware Info</u>	6
<u>4.1 Hardware Troubleshooting</u>	6
<u>4.2 Pictures of internals</u>	6
<u>4.3 Disassembly</u>	6
<u>5. Further Information</u>	6
<u>5.1 Psion Specs</u>	6
<u>Psion File Formats</u>	6
<u>PLP and NCP</u>	7
<u>SIS and PLP</u>	7
<u>6. Series 3</u>	7
<u>6.1 Further Information</u>	7

Table of Contents

Linux and Psion HOWTO

<u>6.2 Programs for connectivity</u>	7
<u>p3nfs/p5nfs</u>	7
<u>6.3 Psion utilities</u>	7
<u>nfsc</u>	7
<u>Shell3a</u>	7
<u>PsiLin</u>	7
<u>arb's Psion Software</u>	7
<u>6.4 Informational Web Pages</u>	8
<u>Hardware Info</u>	8
<u>Psion Link Protocol (for Psion 3)</u>	8
<u>Generic FAQs</u>	8
<u>7. Revo</u>	8
<u>7.1 Informational Web Pages</u>	8
<u>Hardware Info</u>	8

Linux and Psion HOWTO

Hans Kugler, der.hans@LuftHans.com

v0.0.9, 2000-11-17

This document describes how to use Psion palmtops with Linux, but does not cover running Linux on a Psion palmtop. See the [Linux on Psion Project](#) for that.

1. About this HOWTO

1.1 Introduction

Psion has been making PDA's for years. This document will concentrate on the Series 5* models, e.g. Series 5, [Series 5mx](#) and Series 5mx PRO and the 32 bit EPOC operating system they come with, but there will be some crossover to older models such as the Series 3* and newer models such as the Series 7. There is also a little information about other [series](#) at the end of this document.

1.2 This Document

The latest version of this document can be found at <http://home.pages.de/~luft hans/unix/docs/HOWTO/psion-HOWTO.html>, but the main repository is the Linux Documentation Project ([LDP](#)).

Please send updates, corrections or suggestions to psion@LuftHans.com.

1.3 Mailing List

There is a mailing list dedicated to using Psions with Linux and developing tools to enhance communication between them.

To subscribe, send a message to plptools-developers-request@lists.SourceForge.net. John Schrader has put up a [searchable list](#) of messages from Oct 1998 through Feb 1999.

There is also a mailing list dedicated to porting Linux to the Psion 5* models at linux-7110-request@lists.SourceForge.net. An archive beginning 04Dec1999 is available at <http://web.gnu.walfield.org/mail-archive/linux-7110/>.

Both mailing lists can be searched through the SourceForge interface.

1.4 Copyright notice and disclaimer

(c) 1999-2000 Hans Kugler

This document may be distributed under the terms set forth in the LDP license at <http://www.linuxdoc.org/COPYRIGHT.html>. The author reserves the right to release the document and all

submissions under a different license in addition to the LDP license.

This document is provided ``AS IS'', with no express or implied warranties. Use the information in this document at your own risk.

2. General Information

2.1 What is a Psion

Psion is a powerful Personal Digital Assistant (PDA) with pen-based touch screen as well as keyboard. There are several models. This HOWTO currently only covers the Series 5* models, e.g. Series 5, Series 5mx and Series 5mxPro.

2.2 Psion models

There are several models of Psion PDAs. All have a foldout case where the screen is in the cover and opening the Psion causes the keyboard to jut out to a more usable position. They also feature the instant on and instant off capabilities of the EPOC operating system.

Psion 3* are older PDAs that still have a lot of functionality and still get sold new due to their meeting needs and being lower cost. This HOWTO doesn't currently cover the Psion 3* series.

Psion 5* has two main product lines with each having two models. The Psion series 5 has a green limited edition counterpart with no functional difference between itself and the standard Series 5. The series 5mxPro, however, has some fundamental differences from the Series 5mx.

All four of the Series 5* products have: compact flash, serial port, keyboard and stylus (for the touchscreen). They all operate on 2 AA batteries and have a backup battery to maintain state when changing out the main batteries. Check out [Akaev's site](#) to take a tour of a dissected Series 5 classic.

Both of the Series 5 models as well as the Series 5mx have system ROMs where the EPOC operating system is stored. After boot they operate out of the RAM (8MB for the Series 5 models and 16MB for the Series 5mx). The Series 5mxPro, however, has no ROM and operates entirely out of its 24MB of RAM. This enables software upgrades to the Series 5mxPro, whereas the other 3 models must exchange hardware to update EPOC.

Psion has also released the Series 7, which is set to compete against the subnotebook class of PC, but running EPOC. They also have a Revo, which is smaller than the Series 5*.

2.3 Psion Availability

Psion products are no longer available at retail stores in the US. They are available from retail shops in Europe as well as through mail order. Psion maintains a list of [mail order](#) firms by country on their web site.

3. Sharing data between the Psion and Linux

3.1 Hardware connectivity options

The Psions have both serial and infra red ports. Either can be used for connectivity, but most connectivity programs currently only have features for the serial port connection.

Serial cable

Armin Podtschaske x-rayed the "honda" connector.

Pin 1 is on the top and pin 15 is on the bottom. Only pins 2 through 8 and 15 are connected.

- Pin 2: RTS
- Pin 3: DTR
- Pin 4: TXD
- Pin 5: DSR
- Pin 6: DCD
- Pin 7: CTS
- Pin 8: RXD
- Pin 15: GND - Signal and Power ground
- Frame: GND - Shield frame ground

IrDA

See Werner Heuser's [Infrared HOWTO](#) for information about using the Linux IrDA driver with a Psion. It is possible to beam files from Psion 5 (mx) via Linux-IrDA to a Linux System. The `irda-utils` include a special client `psion5.c` which can beam files between them.

Builtin programs

There are two builtin software methods to use the communications ports. The first is the *remote link*, `<ctrl>-l` from the main file menu, which can be set to serial, infrared or off.

EPOC also provides the program `comms`. The remote link must be set to off for the `comms` program to have access to the serial port.

3.2 Programs for connectivity

plptools

Description

[plptools](#) was originally developed by Fritz Elfert, who had merged `plp` and [p3nfs/p5nfs](#). `plptools` is currently being worked on by members of the PLP Tools project.

`plptools` comprises of 3 different programs. `ncpd` provides a socket connection to the Psion. `plpnfsd` provides mounted filesystem access to the Psion and `plpftp` provides ftp access to the Psion.

Usage

```
ncpd [-V] [-v logclass] [-d] [-p <port>] [-s <device>] [-b <baudrate>]
```

```
plpnfsd [-v] [-V] [-p port] [-d mountdir] [-u user]
```

Linux and Psion HOWTO

First start ncpd get it to listen on a port (7501 by default) for connection requests. Then, start either plpnfsd or plpftp. plpnfsd defaults to mount the Psion under /mnt/psion.

p3nfs/p5nfs

Description

p3nfs mounts the psion drives over the serial cable at /psion.stand/mnt, by default.

ncp

Description

Matt Gumbley originally started ncp for use with his Psion Series 3. Now that he's working on plptools, you should use that :). However, ncp might still be of interest to users of a Psion Series 3, which this HOWTO doesn't cover :). Matt's ncp page also has information about the plp protocol.

3.3 Linux utilities

Psiconv

Description

Psiconv translates Psion Word documents or TextEd files (as used by the OPL editor, for example) to HTML (3.2 or 4.0) or plain text. It can also translate Sketch files and MBM files to almost any graphics format. A description of the Psion files formats is also included.

psiontobbdb

Description

psiontobbdb converts Psion vcard format from the EPOC Contacts application to emacs BBDB format.

psiontognomecard

Description

psiontognomecard converts Psion vcard format from the EPOC Contacts application GnomeCard vcard format.

kab2psion

Description

kab2psion is a small utility written in perl to create a CSV file from the KDE addressbook.

PsiLin

Description

PsiLin (in French, short english version) is a GTK-based graphical frontend for many programs which connect Linux to Psion. It also works for Series 3*.

Psion SDK

Description

The EPOC SDK works on Linux via WINE, see Olaf Flebbe's [web page](#) for instructions on how to get it working.

Xmakesys

Description

[xmakesys](#) is a perl utility that parses Psion's .pkg files and outputs .sis files.

3.4 Psion utilities

hermes

Description

[hermes](#) is a fully featured vt100 emulator.

perl

Description

Olaf Flebbe has [perl](#) running under EPOC.

python

Description

Duncan Booth has [python](#) running under EPOC. (link currently down)

python

Description

Otfried Cheong also has a port of [python](#) for EPOC.

BProlog

Description

Tim Wentford has gotten [Bprolog](#) working on the Psion 5*.

Shell5

Description

Nick Murray has created [Shell5](#), which is a command line interpreter which allows basic file operations as well as some sophisticated functions such as command history, filename expansion, batch file support, input and output redirection, pipe like feature :), aliases and shell variables, keyboard remapping and macros and UNIX or DOS syntax for pathnames.

E_Shell

Description

E-shell comes with the SDK and is a DOS-like shell environment from the EPOC SDK. It provides ways to launch programs from a command line; to check for file system corruption; to create, edit and display plain text files; to check on currently active processes and threads. The former link to download the shell itself has been removed.

c2f

Description

c2f converts the Psion contact file to a comma delimited format.

4. Hardware Info

4.1 Hardware Troubleshooting

Hardware troubleshooting

4.2 Pictures of internals

Akaev has disassembled several handhelds and made lots of pictures available as tours.

Series 5 inside

Series 5mx x-ray 1

Series 5mx x-ray 2

4.3 Disassembly

Series 5 disassembly

Series 5 monitor disassembly

5. Further Information

5.1 Psion Specs

Psion File Formats

Frodo Looijaard has released information about the information he's garnered from reverse engineering various Psion file formats.

PLP and NCP

Matt Gumbley has released some [information](#) about the [PLP](#), Psion Link Protocol, and [NCP](#).

SIS and PLP

Alexander Thoukydides has released some information about [sis](#) files as well as the [PLP](#), Psion Link Protocol.

6. Series 3

6.1 Further Information

As I said earlier, this HOWTO doesn't cover the Series 3 (e.g. 3/3a/3c/3mx/Sienna), however, as I run into information, I will try to place it here anyway. This section will probably never be organized (unless someone else keeps it uptodate), but it still might contain useful information.

6.2 Programs for connectivity

p3nfs/p5nfs

Description

[p3nfs](#), referenced [above](#) mounts the psion drives over the serial cable at /psion.stand/mnt, by default.

6.3 Psion utilities

nfsc

Description

[nfsc](#) is a VT100 emulator from Rudolf König.

Shell3a

Description

Nick Murray has created [Shell3a](#), which is a command line interpreter which allows basic file operations as well as some sophisticated functions such as command history, filename expansion, batch file support, input and output redirection, pipe like feature :), aliases and shell variables, keyboard remapping and macros and UNIX or DOS syntax for pathnames.

PsiLin

Description

[PsiLin](#), mentioned in the Series 5* sections, also supports Series 3*

arb's Psion Software

Description

Various [utilities](#) for Series 3* from arb.

6.4 Informational Web Pages

Hardware Info

[Zerlegeanleitung Psion Serie 3a](#), e.g. Disassembling a Series 3a (in German only)

[A naked Series 3](#)

[Series 3 x-ray](#)

Psion Link Protocol (for Psion 3)

[PLP documentation](#)

Generic FAQs

Series 3 FAQ: [part 1](#), [part 2](#), [part 3](#), [part 4](#)

7. Revo

7.1 Informational Web Pages

Hardware Info

[Revo Inside](#)