COVER FEATURE   PALM AND LINUX

Connecting Palm and Linux

CLOSE
FRIENDS?

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Palm Pilots have made a lot of friends since they came onto the market, not least because of their ability to synchronise data with a home PC. This article provides an overview of what can be achieved with a Palm/ Linux PC combination.

The Discovery

When I first got my hands on my own Palm, I felt a surge of enthusiasm: It was small and handy, truly uncomplicated to use, exchanging data was simple, and above all it offered the opportunity to enormously increase functionality and benefit by installing additional programs.

Apart from the cradle, to make a connection to the PC, only Windows software came with the Palm. This software package essentially consists of the *Palm Desktop* and the *Hotsynch Manager*, which manages data exchange between Palm and the workstation computer in co-operation with so-called 'conduits'. The *Palm Desktop* is an application for this which helps manage the tasks of *Calendar*, *To-do lists*, *Memo*, *Addresses*, *Accounts* and the installation of software under a common desktop. Apart from data exchange by these applications, which on the Palm correspond, to separate programs, the Hotsync Manager also runs data synchronisation for other applications, such as e-mail with Outlook, using other conduits.

Apart from Windows and the Mac, Palm does not support any other operating systems. In the domain of development tools, in the meantime, Palm is now basking in the sun; *gcc* (GNU-C-Compiler) is supported. So, as a friend of the penguin, I went on a hunt for suitable software to ensure co-operation between the Palm and my own computers (see *Equipment* box).

Making contact

To enable Palm to make contact with Linux, the most-frequently mentioned software package was *pilot-link*. This is a bundle of command line programs for a huge variety of tasks from the domain of data exchange and/or synchronisation between PC and Palm. The individual programs are often compared to the conduits supplied by Palm. Which is roughly correct, too. But anyone expecting an application a la *Palm Desktop* will not find the program they are looking for in this package.

There is a whole range of easier-to-use applications for data synchronisation, sometimes

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Equipment

Palm PDA
Palm IIIx, PalmOS 3.3
Workstation computers
Apple Powerbook G3 with Linux-PPC (serial and IrDA) Pentium II Desktop-PC with Debian Linux (serial [Standard or Cyclades Multiport] and IrDA dongle)

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with GUIs. The main ones are *jpilot*, *gnome-pilot*, *kpilot*, *pilot-manager* or *coldsync*, but *StarOffice* is also suitable. Quite often these programs make use of the tools from the Pilot-Link package. They also offer the option, using plugins, of synchronisation with the use of additional applications, for example e-mail.

Application for infonauts

There are solutions for all network and Internet services for the Palm. As it has a TCP/IP stack, these services can be made available via the Linux computer.

Making Linux useful for the Usenet requirements (newsgroups) of the Palm user is really simple: Using the Palm programs *yanoff* or *msgagent* you fetch data from the nearest local news server.

There is a range of Palm programs to display Web content. This can be done off-line via downloaded and converted Web pages, but online surfing is also possible. While net surfing with a Palm is not usually much fun, it is even more unlikely that you would surf using the Palm if your PC is connected.

Converting Web pages for off-line use, though, is all the more interesting, as news sites such as Slashdot, LinuxUK, LWN, The Register & Co. seem the obvious choice for reading in peace on the train. In particular *sitescooper* and *plucker* are especially suitable for all Linux applications. These programs can be used to prepare Web pages for the Palm for off-line use.

Logging in from Palm via Telnet onto a Linux workstation or even remote controlling an X-interface via VNC is equally possible. IRC and FTP facilities are also an option.

Important and interesting tools

The special significance of PDAs is their ability to make data mobile. The data you want to take with you, apart from diary, addresses and memos, includes documents, graphics and databases. Text files can be converted into Palm-doc format using *makedoc*. *XnotesPlus* offers the option of managing PostIt notes on the X-desktop and synchronising them with your Palm memos. Graphics can for example be converted, using *imgvtopgm*, into Palm format. Databases in the formats of Palm-DBMS Handbase, DB, or MobileDB can be converted using *palm-db-tools*, *SQLpilot* or *MobileDB Lite* from text files or data in an SQL-compatible database.

The subject of backup and recovery is covered by *PenguinBackup*. This is a complete bootable Linux distribution on a floppy disk giving the ability to back up the data from a Palm onto disks, or to restore data or upload books or databases from disks onto the Palm. The system can be booted on

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Linux PDAs

* Samsung has already announced a Linux PDA named Yopy (http://www. sem.samsung.com/eng/product/digital/pda/index.htm), at the last CeBIT, but this device is not yet ready for market launch.

* Agenda (http://www.agendacomputing.com/) has announced a Linux PDA, the Agenda VR3, for this spring. Samples are available through the Agenda Developer Program.

* Linux is ported onto the Helio PDA (http://www.myhelio.com/cgi-bin/ vtechhelio.storefront), a 75 MHz Philips R3912-based handheld computer from the firm VTech (http://www.vtech.com/) (http://vhl-tools.sourceforge .net/).

* Handhelds.org (http://www.handhelds.org) supports Open Source Software for all PDAs but focuses on the Compaq iPaq H3600 with Linux.

* The Korean firm Palm Palm Technology (http://www.palmpalm.co.kr) has developed the first mobile telephone to use Linux as operating system. This device also has multimedia functions, has the ability to transmit video conferences, and can play music files. Tynux is used as distribution, which the firm has developed especially for this purpose.

* Acer (http://elife2.acer.com.tw/slimmate.htm) announced a new PDA at Computex in Taiwan. The equipment includes a grey scale display with a resolution of 240x160 pixels, 48 MB Ram, 2 or 4 MB flash Rom, an infrared port and a serial interface. The built-in lithium-ion battery, an expansion port and the metal housing make this an interesting competitor for the Palm Vx. Linux porting has been announced for the fourth quarter of this year.

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any i386 compatible PC without affecting its hard drive contents. See *http://PenguinBackup.sourceforge .net/*.

Development for the Palm

Palm Inc. now supports the development of Palm applications under Linux (*http://www.palmos.com/ dev/tech/tools/gcc/*), by putting the GNU Cross C-Compiler from PRC-Tools (*http://sourceforge.net/ projects/prc-tools/*) and PilRC (*http://www.ardiri .com/index.cfm?redir=palm&cat=pilrc*), a resource compiler, in a range of commercial program development environments.

The PalmOS Emulator (POSE), available from *http://www.palm.com/devzone/pose/*, is especially suited to debugging Palm programs: This is a graphical simulation of a Palm Pilot in which Palm programs can be executed.

Summary

There is now a truly vast range of Palm-oriented applications for Linux. But particular interest is currently being aroused among some Linux enthusiasts by another development altogether, and that is *Linux on the Palm or on a PDA*. The idea of this is to port Linux onto the Palm (*http://www. uclinux.org/*). Elsewhere, there are manufacturers developing PDAs with Linux installed right from the start as operating system (see box *Linux PDAs*).

Whichever way you look at it, Linux & Palm are a terrific team and you could join up with them to become the Three Musketeers. One for all, all for one. Exciting times.   ■

Figure 1: POSE – the PalmOS Emulator is suitable for debugging

The author

Michael Tepperis-von der Ohe is a data processing businessman, part-time student of IT and champion of free software, listens to jazz and classical music and goes on the burn with his mountain bike. He is always up for a good meal and is looking forward to his responsibilities as a father.