Palm OS Linux Desktop HOWTO

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Palm OS Desktop HOWTO

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v1.1.1, 28 February 1999

This HOWTO document explains how to use your Palm OS device with a Linux system. Although HOWTO documents are targeted towards use with the Linux operating system, this one is not dependent on the version of unix used.

1.Introduction

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1.Introduction

PalmOS is the operating system used by the Pilot, PalmPilot, WorkPad, Palm III, Palm IIIx, Palm V, and pdQ smartphone devices. Each of these gadgets is a Personal Digital Assistant (PDA) and comes with programs to help the user keep track of personal information, such as addresses & telephone numbers, meetings, todo lists and general notes. In this way, they replace the traditional paper address book, calendar and notepad. PalmOS devices improve on earlier PDAs in that they can synchronize their data with another computer. Of course the other computer must have compatible software in order to communicate with the PalmOS device. This software is often referred to as a *conduit*. Although 3Com does not support Linux conduits, Linux developers have provided a wide variety of applications which share data with PalmOS devices.

1.1 This Document

The latest version of this document can be read at `http://www.orbits.com/Palm/PalmOS-HOWTO.html`, and is part of the Linux Documentation Project (LDP). This document superceedes the previous version, which was called the `Pilot HOWTO`. See `http://sunsite.unc.edu/LDP/` for further information about the LDP and other HOWTO documents.

If you find anything in this document which needs to be corrected or better explained, please send me e−mail at the address above and specify which version of this document you are referring to.

1.2 See Also

The http://www.orbits.com/Palm/PalmDevelompent-HOWTO.html document describes how to use the gcc−based development system to write Palm OS applications.

The http://www.orbits.com/Palm/PalmConduit-HOWTO.html document describes how to use the pilot−link libraries to write Linux−resident conduits for use with Palm OS devices.

You may also wish to look at http://www.orbits.com/Palm/ for updates on the status of these and related documents.

2.General Information

2.1 Hardware Installation

Palm OS devices come with a ``cradle'' for exchanging data with the desktop computer. This device is actually a serial cable with a custom holder for the Palm OS devices and an integrated `HotSync' button. Plug your cradle into a spare serial port on your computer. When you run each of the stand−alone programs, you will need to place your Palm OS device in the cradle and push the `HotSync' button so the Palm OS device knows that it has to communicate. If the Palm OS device happens to be off when the button is pushed, it will turn itself on.

For convenience, create a device, `/dev/pilot` which will be an alternate name for the serial port to which your Palm OS device cradle is connected. As the root user, enter the following at the shell prompt:

```
ln /dev/ttyS0 /dev/pilot
```

Replace `ttyS0` with the name of the port to which you connected your Palm OS device's cradle.

3.Sharing Data Between Palm OS and Linux Systems

3.1 The pilot−link software

The pilot−link suite of software tools allows you to download programs onto your Palm OS device, and transfer data for the Palm OS device's various built−in programs between the Linux system and the Palm OS device. While these programs are not quite as seamless as the desktop software that comes with the Palm OS device, they do allow you to copy your data in both directions. In general, each separate program in the `pilot−link` suite manages one type of data.

Installing the pilot−link software

The prepackaged versions will inevitably lag slightly behind the master distribution, but will be easier to install and not require configuration. The master distribution might be a better choice in those rare occasions when you have been waiting for a particular feature or bug fix.

You can get the *Debian Linux* (i386) port of *pilot−link* version 0.8.7 from `ftp://ftp.debian.org/pub/debian/dists/stable/main/binary−i386/otherosfs/pilot−link_0.8.7−2.deb`. If this file does not exist, you will likely find a newer version located in the same directory. If all else fails, or if you want a more recent version than has been packaged for Debian, you can install the generic distribution, as detailed below. Install this file in the normal manner and skip to *Using the pilot−link software*.

You can get the *RedHat Linux* (i386) port of *pilot−link* version 0.8.9 from `ftp://ftp.redhat.com/pub/contrib/i386/pilot−link−0.8.9−1.i386.rpm`. If this file does not exist, you will likely find a newer version located in the same directory. If all else fails, or if you want a more recent version than has been packaged for RedHat, you can install the generic distribution, as detailed below. Install this file in the normal manner and skip to *Using the pilot−link software*.

For other versions of Linux or unix, or if you need the absolute latest version, download the version 0.9.0 of pilot–link from `ftp://ryeham.ee.ryerson.ca/pub/PalmOS/pilot−link.0.9.0.tar.gz`. The version number is likely to change, but new versions should end up in the same location with a similar name.

Once you have the software distribution, unpack it with:

```
tar −xvzf pilot−link.0.9.0.tar.gz
```

If your version of tar does not support the `−z` option, decompress the archive with gunzip, as follows:

```
gunzip pilot−link.0.9.0.tar.gz | tar −xvf −
```

This will create a directory (`pilot−link.0.9.0`) containing the source.

Change your working directory to the source (`pilot−link.0.9.0`) directory.

Run `./configure`. This will search through your system for information needed to compile the software. `configure` will set things up to be installed in `/usr/local` by default. If you want to change it, run

`./configure --prefix=DIR`, where `DIR` is replaced with the name of the directory to which the software will be installed.

Run `make`. This will compile the software. The software will not be installed until later, so that you have a chance to try it out first. (If you are replacing an older version with a newer release, you may wish to check and make sure that no functionality that you need has been broken. Generally, this is not a problem.)

As the root user, run `make install`. This will copy the software into directories under `/usr/local` (or wherever you specified with the `--prefix` option). If you can not log in as root, you can install the software to some directory where you have write access.

Don't forget to add any new directories of executables to your search path.

Using the pilot−link software

Most of the programs in the `pilot−link` suite are *conduits*, that is they transfer data into or out of your Palm OS device.

Each time you use of one of these programs, press the HotSync button on your Palm OS device's cradle. This will initiate the Palm OS device side of the data transfer. Note that not all of these programs prompt you to press the `HotSync' button, so you may have to remember to do it yourself.

For more details, and other options to these programs, view the corresponding manual page. There is an overview manual page under the name `pilot−link`. For the `pilot−xfer` program, for example, type `man pilot−xfer` at your unix shell prompt.

pilot−xfer

Possibly the most useful program in the pilot−link suite, `pilot−xfer` allows you to install programs on your Palm OS device, make a backup, and restore that backup.

To install a program:

```
pilot−xfer /dev/pilot −i program.prc
```

To backup your Palm OS device:

```
pilot−xfer /dev/pilot −b backup−directory
```

This will copy all of the databases on your Palm OS device, (including programs?) to a directory called ``backup−directory'', creating it if it does not already exist.

To restore data to Palm OS device:

```
pilot-xfer /dev/pilot -r backup-directory
```

Generally, you will only need to do this if your Palm OS device loses power or if you have to do a hard reset.

To list the programs on your Palm OS device:

```
pilot-xfer /dev/pilot -l
```

install-memo

Install a Linux file onto the Palm OS device as a memo.

To install a memo into your (already existing) *project* category:

```
install-memo /dev/pilot -c project project.memo
```

The name of the file will be inserted into the memo as its first line and will appear in the directory of memos on your Palm OS device.

memos

This program grabs each memo from the Palm OS device and prints it out in standard mailbox format.

To view your memos:

```
memos /dev/pilot
```

pilot−addresses

`pilot−addresses` Transfer the address database to or from the Palm OS device.

To write your address data to a Linux file from your Palm OS device:

```
pilot−addresses /dev/pilot −w storage.file
```

To read your address data from a Linux file onto your Palm OS device:

```
pilot−addresses /dev/pilot −r storage.file
```

Mailing List

The pilot−unix mailing list is maintained by Matthew Cravit pilot−unix−owner@lists.best.com. Its mandate is:

```
The pilot−unix mailing list is for discussion and idea−sharing for those
interested in using the US Robotics Pilot PDAs with UNIX systems. This
includes people who are interested in helping to develop tools to allow the
Pilot to operate with UNIX, and possibly to develop an SDK for the Pilot
for Unix.
```

For more information, including how to subscribe to the list, send mail containing the word ``INFO'' to `pilot−unix−request@lists.best.com`. The subject line does not matter.

Mailing List Archives

An archive of the pilot−unix mailing list can be found at `http:///www.acm.rpi.edu/~albert/pilot/`. It is maintained by Chris Stevens albert@acm.rpi.edu.

FTP Site

An FTP site containing an archive of Palm OS tools for use on unix systems is located at `ftp://ryeham.ee.ryerson.ca/pub/PalmOS/`. It is maintained by Jeff Dionne jeff@ryeham.ee.ryerson.ca.

4.Linux Applications Which Synchronise with PalmOS Devices.

4.1 XNotesPlus

`XNotesPlus` provides a means to post small notes on your X−Windows desktop. These notes can be shared as memos with your PalmOS device.

Installing XNotesPlus

The XNotesPlus web page at http://www.graphics−muse.org/xnotes/xnotes.html contains full installation and use instructions. I suggest using the prebuilt binaries if you can.

One caveat is that you need to create an ``Xnotes'' category on your PalmOS device, if you intend to export notes.

5.Data Conversion

5.1 MakeDoc

One short−coming of the Palm OS device's built−in memo program is that it does not deal well with large documents. To compensate for this, Rick Bram wrote *Doc*, a document reader for the Palm OS device. (See `http://www.concentric.net/~rbram/doc.shtml`). Documents can be converted to the Doc format with `MakeDoc`, by Pat Beirne.

Installing MakeDoc

`MakeDoc` can be downloaded from `http://www.concentric.net/~rbram/makedoc7.cpp`. Compile it with your C++ compiler and install the resulting executable as ``makedoc'' in a directory in your search path. There seems to be a small bug in `makedoc` (version 0.7a) in that it does not output a newline as the last character displayed to the user. This does not seem to affect the resulting document file, but it is annoying.

Using MakeDoc

Use `MakeDoc` as follows:

```
makedoc data.txt data.prc "Data to display with Doc"
```

This will create a file `data.prc`, which can be installed on your Palm OS device with pilot−xfer. The text *"Data to display with Doc"* will be displayed in the directory of documents that *Doc* manages.

The syntax for `MakeDoc` is as follows:

```
makedoc [-n] [-b] <text-file> <prc-file> <story-name>
or
makedoc -d [-b] <prc-file> <text-file>
```

<text−file>

The file that you wish to convert.

<prc−file>

The name of the resulting file. (End the name with ``.prc''.)

<story−name>

The name you want displayed in the `Doc` or `Jdoc` directory of documents.

There are also options to decode the resulting `.prc` file and manage various compression options.

6.People

Kenneth Albanowski Maintains the pilot−link suite of tools.

Donnie Barnes Packaged pilot−link suite as Red Hat RPM files.

Rick Bram Author of Doc.

Matthew Cravit List owner for the *pilot−unix* mailing list.

Jeff Dionne Original author of the pilot−link suite of tools. Manages the FTP area for the UNIX Palm OS/Pilot development project.

Mark W. Eichin Ported pilot−link suite to Debian Linux.

David H. Silber Author of this document.

Chris Stevens Maintains the pilot−unix mailing list archives.

7.A History of Palm OS devices.

There are two versions of the Pilot. They are the *1000* and the *5000* and have 128k and 512k of RAM, respectively. They come with Palm OS 1.0 in ROM.

Then came two devices with the name *PalmPilot*. They are the *PalmPilot Personal* and the *PalmPilot Professional* and have 512k and 1 Meg of RAM, respectively. They also have a backlighting feature for the LCD panel and version 2.0 of the operating system. The *Professional* also comes with a TCP/IP stack and a few extra programs built−in.

IBM has released a rebadged version of the PalmPilot Professional, which they call a *WorkPad*.

Now we have the Palm III, which has a redesigned case and an infrared port, not to mention the 2 Meg of RAM and Palm OS 3.0.

There is an announced product from Qualcomm, called the *pdQ smartphone*, which is a cell phone that incorporates a Palm OS PDA. Don't get all excited about it yet, it will not be released until sometime in 1999.

It is possible to upgrade any Pilot by swapping out the memory card, which includes both RAM & ROM. Of course, this doesn't get you backlighting for the original Pilot series.
