Linux on the Ipaq

by

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Linux on the Ipaq

- Distros
  - Familiar
  - Intimate
- GUI's/GUE's
  - Opie
  - GPE
- Window Managers
  - icewm
  - blackbox
Distributions

- **Familiar**
  - Entirely based on XFree86's/keithp's Tiny-X server, which includes the latest RENDER extension.
  - Anti-Aliased True-Type Font support in rxvt-aa, matchbox, and fltk (this is extended to any X application using the Xft APIs).
  - Dropbear sshd included by default.
  - The latest releases include JFFS2 support, which enables you to have read/write access to the iPAQ's Flash.
Distributions

- Familiar cont'd
  - Integrated Python v2.3 w/ PyGtk and PyGDKImlib.
  - Binary and Library compatible w/ Debian's ARM distribution. In most cases, programs (as long as their dependencies are met) can be taken from Debian and executed on the iPAQ w/out issue.
  - Full package support based on ipkg.
  - Many system programs are implemented using busybox, saving much space.
Distributions

- Intimate
  - Based on Familiar
  - Full blown Debian package management
  - Needs 140MB for base image
  - KDE
Graphical User Environments

Opie

GPE
Window Managers
Familiar Installation

- **Familiar 0.7.2**
- **Models Supported**
  - H3100, H3600, H3700, H3800, H3900, H5100, H5400, and H5500
- **Prerequisites**
  - Need CF card and sleeve or serial connection
  - Internet connection is nice but not needed
  - Need a Windows box
- **Download files**
Familiar/Opie Installation

- Install bootloader
  - Copy BootBlaster and bootldr files to Ipaq
    - Extract from downloaded .tar
    - ActiveSync, Synce, CF/MMC/SD, FTP, Pocket IE
    - Follow directions
  - Keep Ipaq plugged in
  - Make backup of WinCE
  - Flash ROM
  - Follow instructions
Familiar/Opie Installation

• Installing Linux image
  – Need serial connection
    • USB/serial cradle best option
    • hyperterminal or minicom
      – 115200 8N1 serial configuration
      – no flow control
      – no hardware handshaking
  – At the "boot>" prompt
    • 'load root'
    • ymodem upload jffs2
boot> load root
loading flash region root
ready for YMODEM download..
Erasing sector 00140000
Erasing sector 00180000
Erasing sector 001C0000
Erasing sector 00200000
...
addr: 00360000 data: 781590DB
addr: 00370000 data: 642637AE
addr: 00380000 data: E0021985
addr: 00390000 data: 15DA97EC
Erasing sector 00FC0000
writing flash..
Familiar/Opie Installation

addr: 00100000 data: E0021985
addr: 00110000 data: E3BAD617
addr: 00120000 data: 0FA1F57B
addr: 00130000 data: 9343AE6B

(addr: 00600000 data: E0021985
addr: 00610000 data: FFFFFFFF
addr: 00620000 data: FFFFFFFF
addr: 00630000 data: FFFFFFFF
verifying ... formatting ... done.

boot>

• 'boot'
Post Install

- Default IP
  - root:rootme
- Get Ipaq on the Internet
  - WiFi
  - USB Networking
- ntpdate -b time.handhelds.org
- ipkg update
- ipkg upgrade
Cool Addons

- **Kitchensync**
  - Sync anything with anything
  - Supposed to be in KDE 3.2
  - Currently slightly broken
  - [http://www.handhelds.org/~zecke/kitchensync.html](http://www.handhelds.org/~zecke/kitchensync.html)

- **QtopiaDesktop**
  - Can't print in v1.6

- **Wellenreiter**
  - wireless network discovery and auditing tool
  - [http://www.wellenreiter.net](http://www.wellenreiter.net)
Cool Addons

- **Opie-sh**
  - “Opie-sh is an app designed to let you use QT dialogs from the shell. It is especially useful for writing interactive shell scripts.”

- **OpieQuest**
  - OpieQuest is a Perl/Tk script that extracts the driving directions from mapquest.com ( .de, .fr, or .co.uk) and then sends them to your PDA running Opie.
  - [http://www.linuxnotes.net/wiki.pl?OpieQuest](http://www.linuxnotes.net/wiki.pl?OpieQuest)
URL's of Interest

- http://familiar.handhelds.org
- http://opie.handhelds.org
- http://intimate.handhelds.org
- http://handhelds.org