

LOGIN:

Show-and-tell:
Linux on your
AP

Mark Wallis

The hardware

The software

The build
environment

The
possibilities

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The product

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- Quite a large number of AP's on the market run Linux underneath
- Generally they run a cut-down, vendor specific "firmware"
- Which the vendors don't like you touching

Your options

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- Add custom binaries
- Use OpenWRT
- Roll your own firmware

Getting access

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First, you must find some way of getting access to the Linux system

- Hardware hacks - serial port
- Software hacks

Firmware hacking 1.2.3

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- Discover processor
- Cross-compile software to "add" to existing firmware
- Upload your additional software
- Compiling your own kernel
- Building your own firmware image
- Uploading the image
- Recovering from a failed flash

Build tools

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Similar to that of any other embedded Linux setup

- Cross-compiler
- "Buildroot"

OpenWRT

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”OpenWrt is described as a Linux distribution for embedded devices.”

Attempts to make your access point more like a standard Linux device, complete with writable filesystem and package management.

Supports limited hardware (Linksys WRT54G)

The possibilities

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- Custom web interface
- Enhanced networking features - mesh networks, adhoc routing, etc
- Bug and security fixes !

Demonstration

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- Minitar MWGAP
- 802.11g with 16meg RAM and 8meg FLASH
- Custom-rolled firmware
- 'Haserl' for dynamic web interface
- A few binary kernel modules on a 2.4.18 kernel