October Technical Presentation

Cheap & Silent firewalls

Registered ☺

Linux User Group of Mauritius -- http://www.lugm.org/

Why silent ?

- Old machines pentium 1 make a lot of noise (old hard disks)

- Some people in this room sleep near a pentium 1 acting as firewall at night ☹

How cheap can be cheap ?

Pentium 1 approx Rs 1500 (Orange.mu/annonces.php)

2x crappy Realtek 10/100 Rs 200

Hard disk (40 Gb -- expensive) or Hard disk 6 Gb (hard to find and noisy) Rs 2500

VS

GNU/Linux commercial routers : Linksys/Netgear –Rs 3000-4000

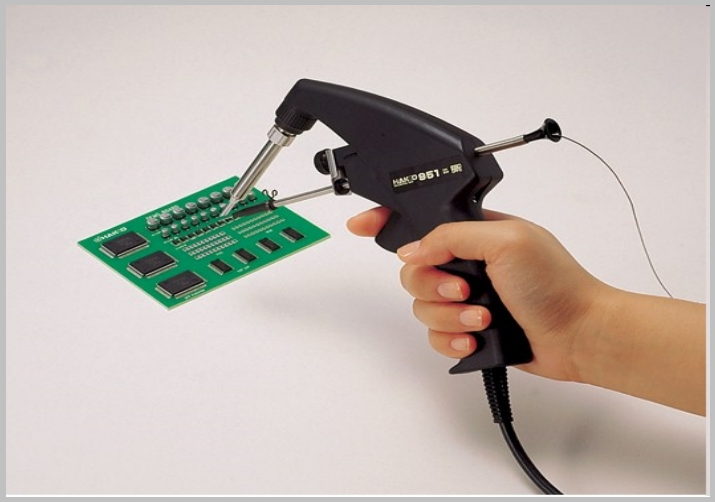
Cool devices™

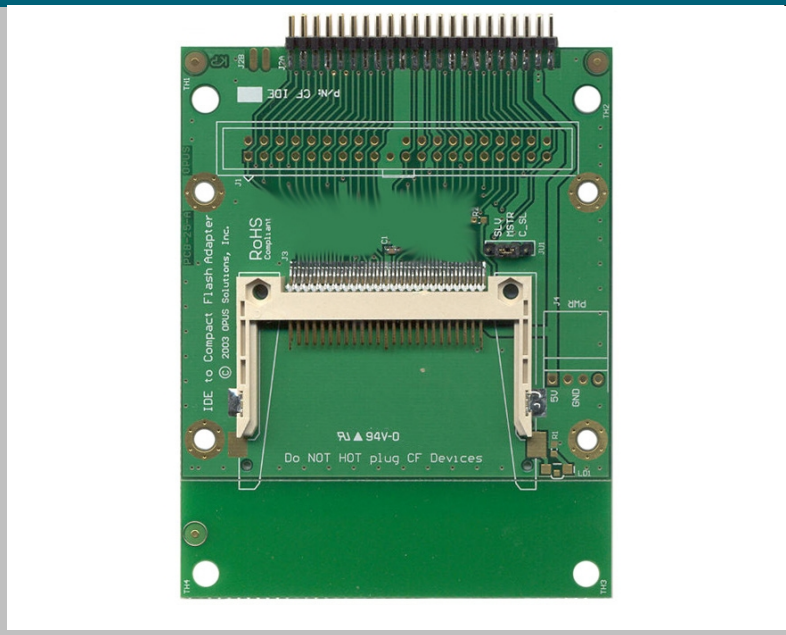
- IDE-CF adapter are cheap – Rs 500

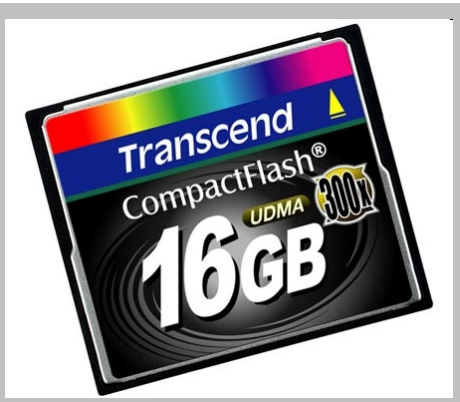
- CF Card are sold as low as Rs 450

- USB boot does not work on old machines (must be a post 2001 BIOS)

- Soldering gun (hardhack)



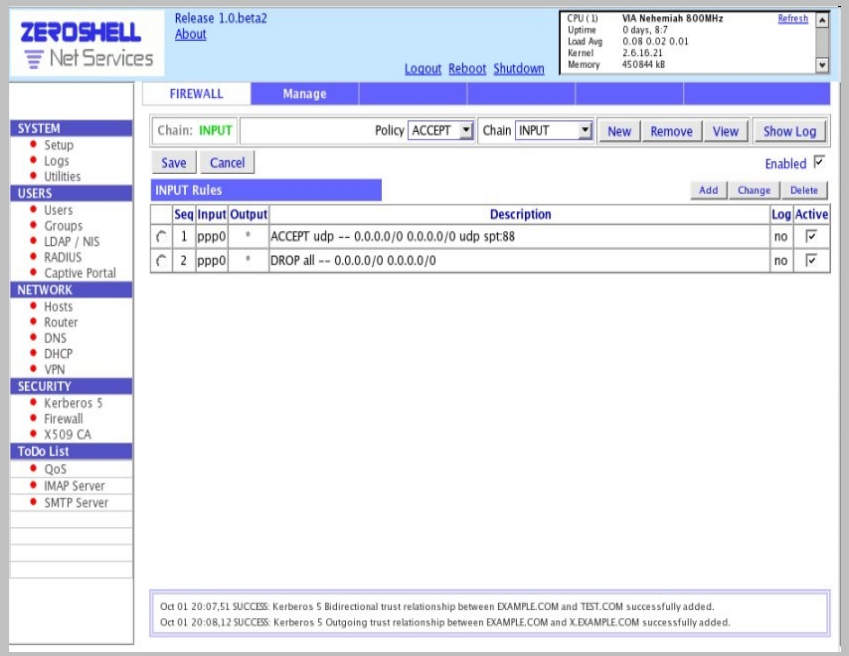


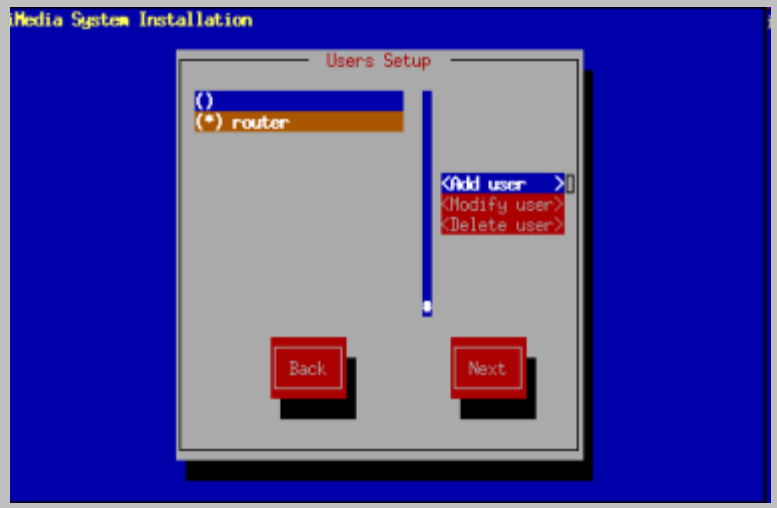


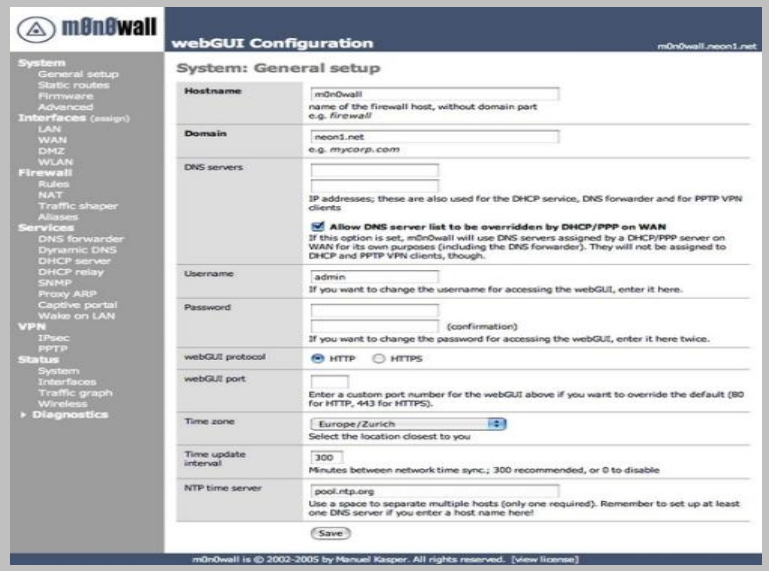
I’m no PF/netfilter guy – what can I do ?

- **Vertical GNU/Linux distributions : Zeroshell and iMedia**

- **Vertical *BSD systems : m0n0wall**



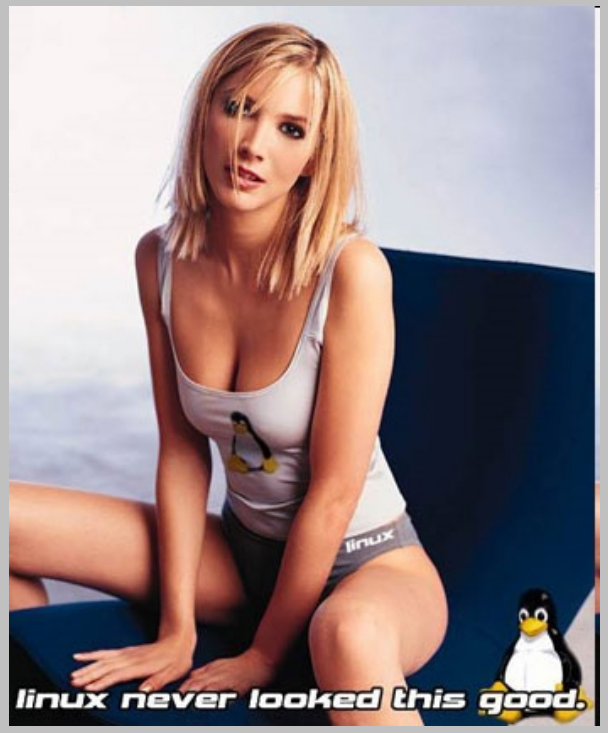




Step: download your image and phywrite to write to your CF card

I’m a GNU/*BSD guru: vtty is my breakfast!

- **Filesystems : Write as little as possible !**
- **Logging : serial console or send to (unused consoles)**



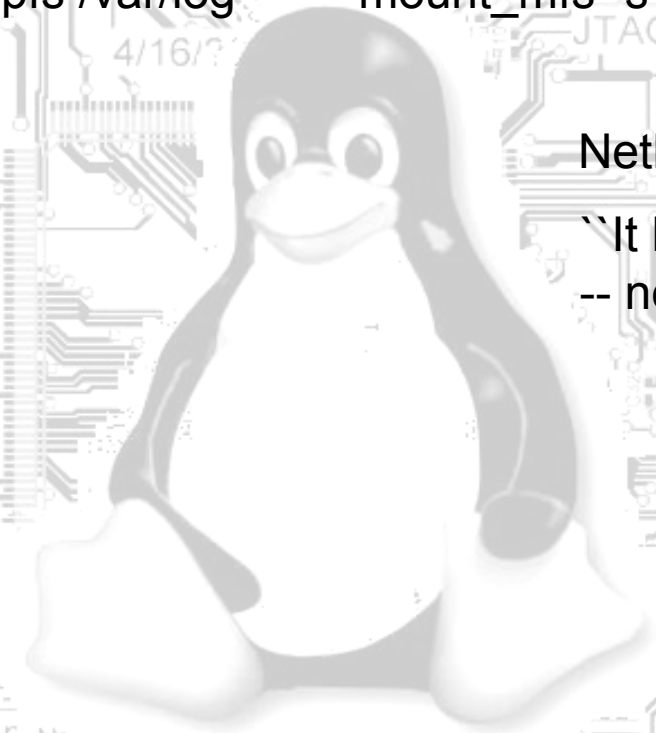
noatime,nodirtime,sync,syncdir,rw

. /dev/ttyS0

rw,sync,noatime

. /dev/ttyS0

Unix koans of Master-foo



mount -t tmpfs -o size=2m tmpfs /var/log

YaFFS

JFFS v2

LogFS

mount_mfs -s 2048 /dev/ad0s1b /var/log

NetBSD: LFS

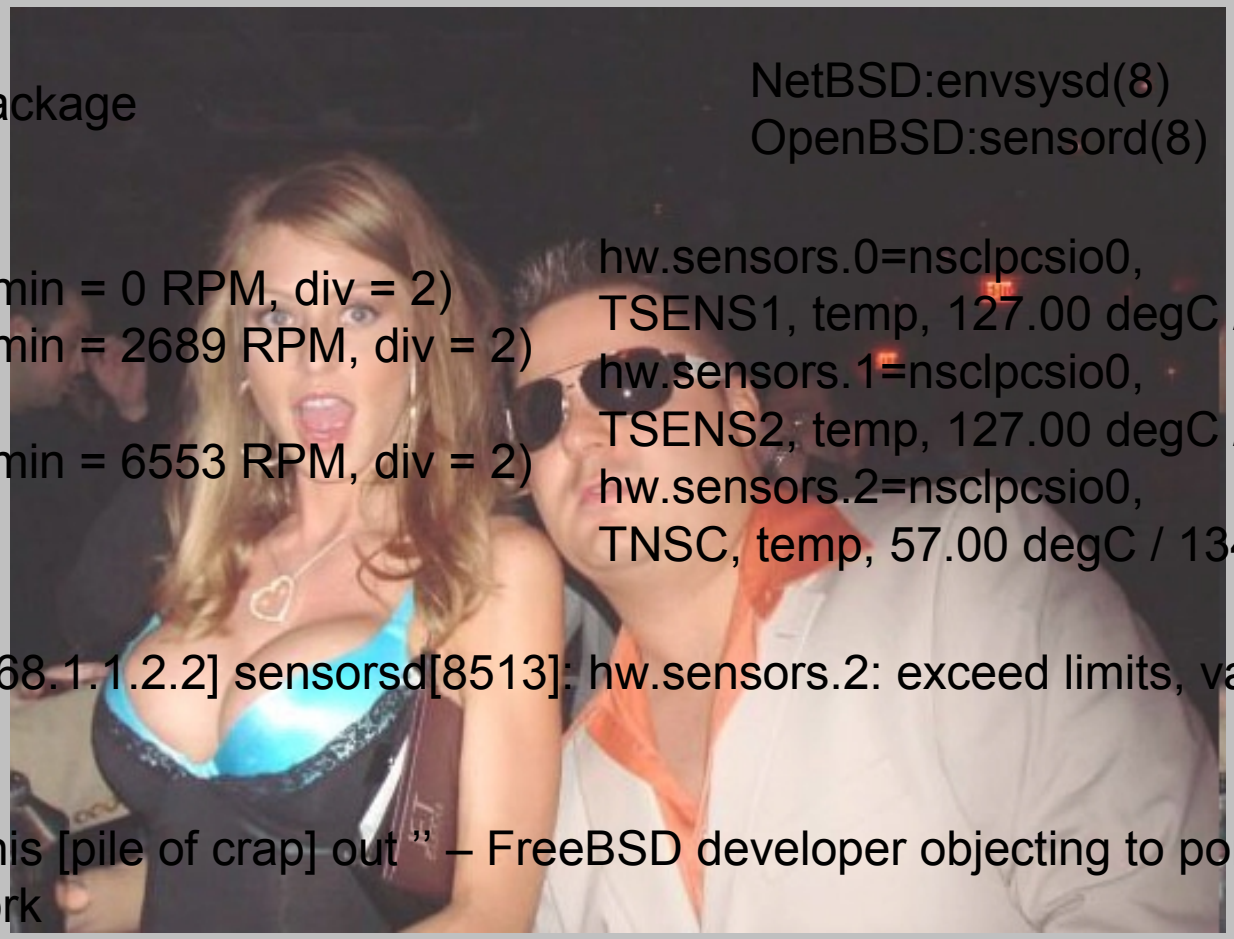
``It has never worked reliably''
-- netbsd wiki

Tip:Use syslogd/newsyslogd to rotate and rm old log files

How hot is it in there ?

Sensors -- package

NetBSD:envsysd(8)
OpenBSD:sensord(8)



fan1: 0 RPM (min = 0 RPM, div = 2)
fan2: 0 RPM (min = 2689 RPM, div = 2)
ALARM
fan3: 0 RPM (min = 6553 RPM, div = 2)
ALARM

hw.sensors.0=nsclpcsio0,
TSENS1, temp, 127.00 degC / 260.60 degF
hw.sensors.1=nsclpcsio0,
TSENS2, temp, 127.00 degC / 260.60 degF
hw.sensors.2=nsclpcsio0,
TNSC, temp, 57.00 degC / 134.60 degF

18:27:42 [192.168.1.1.2.2] sensorsd[8513]: hw.sensors.2: exceed limits, value: 56.00C/132.80

``Please back this [pile of crap] out '' – FreeBSD developer objecting to porting openbsd sensor framework

Questions ?

``The Atheros HAL on MIPS uses %s7 as a general purpose register, but the rest of the kernel uses it to store the value of curlwp. **Sam won't recompile the HAL for us (fair enough),** and we can't modify the HAL to use another register **because doing so could put us in breach of the license** (v. crappy). So, do a save/set/restore on %s7 in KernIntr() and in the stubs that the HAL uses to call back into the kernel''.

--NetBSD developers discussing how to work with high-quality FreeBSD blob (.o files)

``Full source for the operating system is freely available''
-- FreeBSD Goals (introduction page)

Zen sysadmin