

EEEEPC 300EUR GNU/Linux laptop

Jaromil's Journal of Musings

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Since 2008 the EEEPC is my travelling deck, starting with my first journey in Indonesia¹. It is also the very first brand new laptop I ever bought: this new 7" Asus model is amazingly cheap, sold in Singapore in for 600 SGD (~300EUR in Dec2007), while the entry cost in Indonesia was 4 millions IDR in Feb2008.



The best feature consists in being completely **solid state**: no mechanical parts moving, which means more robust and less energy consuming. It is equipped with a Pentium M with 512 of RAM and 4GB NAND (internal storage), has wifi modem and ether-net, an SD card slot, usb2.0, sound-card and even a web-cam.

I place my bet this machine is going to break through the market in the coming year.

¹diaries/indonesia.html

As soon as it was out, geeks worldwide have been sporting several hardware hacks on the EEEPC²

It comes off the shelf equipped with free software: a user friendly installation of Xandros³ (Debian⁴ based) configured for a newbie or anyone used to work on M\$ wind-blows.

I didn't really kept the original system intact, instead worked on tweaks since the very first day: I'll share my hacks here and in the file repository on <ftp://ftp.dyne.org/eeepc> (now mostly obsolete).

BLAG⁵ developer Jeff Moe got interested in these devices and started brewing the **FREEEEE**⁶ *GNU/Linux distribution* for this machine, and that's what I recommend everyone to install, using it myself as well.

0.1 Issues with hacking the EEEPC

There is one major nasty issue that everyone will face when starting hacking on the EEEPC: the unionFS factory setup. For the Xandros recovery system they thought it was necessary to partitin the 4GB in 2 parts and let the first hold the system, while the second the modifications done to it: this way by deleting the second partition one can go back to the initial installation.

There is **one big problem** in all this: **unionfs is bugged**, at least it was the one shipped with my EEEPC. It is bugged so badly that, if you delete any file in your home NAND **it will not free the space**.

Fresh EEEPC users will experience quite some frustrations as they'll see their home space filled up, installing a proper system on these machines is necessary for reliable use.

We don't need unionFS and will do recovery by hand from a bootable USB stick eventually. I hope Asus will change idea in future and follow this way, meanwhile to get rid of all this madness you need to deactivate UnionFS.

You need to change this situation also if you want to install a new kernel or you want to change any boot configuration file in /etc, as the boot will read the rc. files without unionfs, all your "userspace" modifications won't be active.

The solution i suggest once again is to install and use FREEEEE GNU/Linux⁷ which is 100% free (kernel-libre) distribution for the EEEPC.

0.2 Kernel power-up

Disclaimer: hacking on the GNU/Linux kernel is not so simple, in case you are new to it keep close to your guru for any help needed

As soon as i booted it I felt the need to compile my own kernel for this machine - that's what makes you feel Own1ng a deck, right? so, here we go: <ftp://ftp.dyne.org/eeepc/kernel>. That Linux kernel was the same version as the factory default (2.6.21.4), but re-compiled with more features than the default in EEEPC, while keeping complete compatibility (fully tested).

Main features included:

- Wifi monitor mode (for wireless wardriving, kismet etc.)
- Highmem RAM (to make full use of 2GB RAM extension)
- SquashFS (allows use of read-only compressed filesystems)
- CFQ scheduling and 300Hz operation (improves usage speed)
- DM-Crypt (supporting encrypted filesystems with cryptsetup)

Anyway, that is **now obsoleted** by the kernel packages you find on <http://freeeee.org/source/SRPMS.FREEEEE/> which are provided in RPM source packages, compiled by Jeff Moe and based on the Linux-libre⁸ branch plus realtime patches and Fedora's stable patches.

²<http://clumpc.com/?p=30>

³<http://en.wikipedia.org/wiki/Special:Search?search=Xandros>

⁴<http://en.wikipedia.org/wiki/Special:Search?search=Debian>

⁵<http://www.blagblagblag.org>

⁶<http://freeeee.org>

⁷<http://freeeee.org>

⁸<http://www.fsfla.org/svnwiki/selibre/linux-libre/>

The freeeee.org kernels are 100% free, meaning they don't contain any binary blobs, firmware and proprietary drivers not even for the Wifi support, so it is perfectly legal to distribute and even re-sell them.

Besides that, they are being well tested and carefully tailored to perform well on the EEEPC hardware, especially for low-latency use in multimedia tasks.

Go FREEEEE⁹! :)

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⁹<http://freeeee.org>