

BSD Driver Harmony

EuroBSDcon 2022 - NetBSD DevSummit

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Example Situations

From NetBSD to OpenBSD and back again but not quite

emuxki(4), sound card

- Originally from NetBSD
- Imported to OpenBSD
- Some fixes made it back, other improvements did not

umb(4), 4G USB modems

- Originally from OpenBSD

- Imported to NetBSD (easy)
- Imported to FreeBSD (tough!)
...95% of the code is the same

Many more possible examples:

- ACPI/ISA devices like aps(4) (accelerometer on ThinkPad laptops)
- DVB cards (CX23885, i²c...)

Not a New Topic

Reviving the discussion

- Mentioned at NetBSD's Board last week
- Discussion between Bill Cromwell (NetBSD), George Neville-Neil (FreeBSD), Theo de Raadt (OpenBSD) in 2018
- Mentioned at the FreeBSD DevSummit 2022
- Perfect opportunity at BSD conferences

Bringing BSD Drivers Closer Together

Can we get there?

Improving collaboration between the major BSDs on driver development:

- FreeBSD, NetBSD, OpenBSD, more?

Introducing common idioms:

- e.g. listing supported devices, flags & quirks in *drivername_boards.c*

Renaming values:

- Register names, flags...

Modifying APIs, names, etc:

- Compatibility issues:
 - e.g. `void attach()` vs `int attach()`
 - Third-party drivers (e.g. FreeBSD Ports)

Time-consuming task:

- Cross-foundation committee?
- Common website, compatibility matrix?
- Funding from each foundation?