

# An early review of the /usr-move

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# Why do we have /usr?

- ▶ Because the first disk was too small.
- ▶ Before we had initrd, / served both as /boot and initrd.
- ▶ In early times, /usr was mounted after initrd.
- ▶ Distinction into / vs. /usr is no longer useful.



# Why merge /usr?

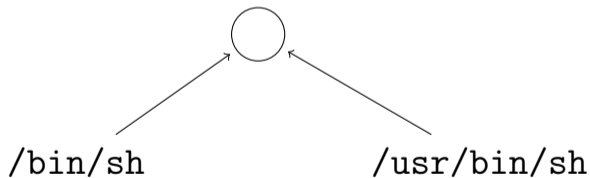
- ▶ Strong disagreement on importance of arguments
- ▶ Consistency
- ▶ Compatibility
- ▶ Read-only OS

# How to merge /usr?

- ▶ Most distributions merged via aliasing symlinks.
  - ▶ `ln -s usr/bin /bin`
- ▶ Symlink farms

# What is aliasing?

- ▶ Files now have two names.
- ▶ Like pointers: Rust forbids two mutable pointers.



# Aliasing problems

- ▶ dpkg loses files in rare circumstances.
- ▶ File move moratorium by CTTE

# Freexian

- ▶ Developer survey
- ▶ Pay Helmut to fix dpkg



# DEP17

- ▶ Proposal vs. `debian-devel@lists.debian.org`
- ▶ Why not just move all the files to `/usr` instead?



## Why not just move files to /usr?

- ▶ dpkg can loose files when using Replaces.
- ▶ dpkg triggers may fail to activate.
- ▶ Diversions may stop working.
- ▶ dpkg alternatives may cease to work.
- ▶ dpkg statoverrides may not apply.
- ▶ Empty directories may disappear.
- ▶ Multi-Arch: same packages may loose files.
- ▶ debootstrap may break.
- ▶ Debian Installer may break.

DEPT17

## /usr-move

- ▶ Move anyway and mitigate problems
- ▶ Work around problems using maintainer scripts
- ▶ Scan for (potential) problems
- ▶ Long-tail first

## /usr-move preparation

- ✓ Adapt debootstrap
- ✓ Implement the Debian /usr-merge analysis tool (dumat)
- ✓ Provide tooling
  - ✓ `dh_installsystemd` and `dh_installudev` install to `/usr`
  - ✓ `dh_movetouser`

## /usr-move transition

- ✓ Send patches for latent problems
- ✓ /usr-merge the Debian Installer
- ✓ binNMU automatically convertible packages
- ✓ Send patches for packages relevant to debootstrap
- ✓ Send patches for packages that cannot be auto-converted
- × Upload debootstrap set
- × NMU remaining packages
- × Write release-notes

# Unforeseen problems

- ▶ Diversion mitigation didn't work as sketched.
  - ▶ molly-guard was broken for months.
- ▶ Conflicts do not prevent concurrent unpack.
- ▶ Multiple diversions outside maintainer scripts escaped analysis.
  - ▶ piuparts broke repeatedly.
  - ▶ Multiple image builders affected.
- ▶ Debian Installer was unmerged and broke.
- ▶ Lots of interaction with the 2038 transition
- ▶ Frequency of undeclared file conflicts

# Reception

- ▶ Initially heated discussions are much calmer now.
- ▶ Positive feedback about data-driven analysis
- ▶ Many cooperating maintainers
- ▶ Volunteers joined the work
- ▶ Communication is hard
  - ▶ Too much content and detail
  - ▶ Request for more updates
  - ▶ Too complex
- ▶ Tolerance when things didn't work out
- ▶ Why are we not done yet?

# Where are we now?

May 2024:

- ▶ 220 uploads Build-Depends: `dh-sequence-movetousr`
- ▶ 130 patches in the BTS
- ▶ 110 no-change uploads
- ▶ 22 FTBFS
- ▶ 5 coordinated uploads for `debootstrap`

<https://subdivi.de/~helmut/usrmove.ddlist>

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