Lessons Learned Maintaining a Stable Tree

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RC, Mainline, Stable and LTS

→ RC (Release Candidate) – Development cycle

→ Mainline – Standard release, every 2-3 months

→ Stable – Previous mainline + fixes

→ LTS (Long Term Stable) – Older stable + more fixes

What's active?

- RC: 4.2-rc1

- Mainline: 4.1

- Stable: 4.1.1

- LTS: 2.6.32, 3.2, 3.14, 3.18, 4.1

What do I do?

- 3.18 LTS

- Who uses it?
  - OpenWrt 15.05 "Chaos Calmer"
  - SteamOS 2 "Brewmaster"
  - Linaro 3.18 LSK
  - Probably you, at some point

What goes in?

- Short, obviously correct, "real" fixes

- New device IDs or quirks

- Must be in Linus' tree

So many patches

- $ git log --oneline --grep 'stable@vger.kernel.org' v4.0..v4.1 | wc -l
    - 476

- About 6 patches/day

- What about the ones not tagged? Quirks? New IDs?

- No way around having to go through most patches by hand

A helping hand

- Cc: stable@vger.kernel.org # <ver>

- Fixes: commit ("subject")

- Good commit messages(!)

- Even mediocre commit messages are fine

- Backports

Common sense

- Did any of the helping hands provide help?

- Single purpose files

- Keywords in description

- What does the patch do?

Automation

- We can **try** and automate things

- "Fixes:", "Cc: [...]"

- Paths

- Because commits are mostly hand written, we can't rely on that too much

Examples

- ## Yes:
  - Cc: <stable@vger.kernel.org> # v3.15+

- ## No:
  - Cc: <stable@vger.kernel.org>   [3.18+]
  - Cc: <stable@vger.kernel.org> # 4.1, 4.0, 3.19, 3.18
  - Cc: stable@vger.kernel.org #3.10 and later
  - Cc: stable@vger.kernel.org # for version 3.17+
  - Cc: Stable <stable@vger.kernel.org> (v3.17 .. v3.19)

Prerequisites

- Cc: <stable@vger.kernel.org> # 3.3.x: a1f84a3: sched: Check for idle

- Is so rarely used that it was probably not worth automating

- Why? Is there a better way?

More automation

- Auto cherry pick and build

- On failure, try and find dependencies
  - Blame/Pickaxe
  - Bisection

- Commit message heuristics

- Authors

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Shoulders of giants

- When not sure, go see what Greg did

- Compare end result with Greg's tree

- Audit discrepancies

- "Rebase-back"

Helpful community

fuse: initialize fc->release before calling it

fc->release is called from fuse_conn_put() which was used in the error

cleanup before fc->release was initialized.

[Jeremiah Mahler <jmmahler@gmail.com>: assign fc->release after calling fuse_conn_init(fc) instead of before.]

Signed-off-by: Miklos Szeredi <mszeredi@suse.cz>

Fixes: a325f9b92273 ("fuse: update fuse_conn_init() and separate out fuse_conn_kill()")

Cc: <stable@vger.kernel.org> #v2.6.31+

And not too helpful

drm/radeon: clean up radeon_audio_enable

- make it static

- fix mask/bool handling for last param

Signed-off-by: xxx <xxx@xxx.com>

Cc: stable@vger.kernel.org

Commit message? What's that?

[PARISC] wire up sendmmsg syscall

   Cc: stable@kernel.org

   Signed-off-by: xxx <xxx@xxx.com

Things that are broken (IMO)

- -rc patches
  - linux-next
  - "urgent"

- The -stable review process

- Stable testing

Complaints^WSuggestions

- If you care about a specific patch/version, please pay attention to the review cycle.

- Please use tags to help automation.

- Please use correct tags to help automation.

- If you're working on a complex change, consider backporting.

Ideas

- Patch checker?

- Mainline monitoring

- Cross-tree audits

- Summary

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Thank you

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