

HOW TO WIN 1ST PLACE IN THE KERNEL PATCH STATISTICS

TOOLS AND WORKFLOWS

ABOUT ME & PENGUTRONIX

Uwe:

- kernel engineer @ Pengutronix since 2008
- PWM maintainer
- contributor to various kernel subsystems
- ukleinek on libera and OFTC
- PGP: E2DCDD9132669BD6

Pengutronix:

- Embedded Linux consulting & support since 2001

```
linux$ grep -c @pengutronix.de MAINTAINERS
42
```

```
linux$ git log --oneline --author=@pengutronix.de v6.8-rc1 | wc -l
9910
```

LINUX KERNEL DEVELOPMENT PROCESS

- Patches sent to subsystem specific mailing lists
- Review by maintainers and other interested persons
- Patches picked up by maintainers and sent to Linus Torvalds

ALL THINGS TO CARE FOR FOR SINGLE PATCHES ALSO APPLY TO BIG SERIES

- use next as base
- checkpatch
- describe your changes well
- send it to the right people / lists
- build test, preferably on several archs

Still more important for big series.

THE RIGHT TOPIC

- Make `struct spi_device::remove()` return void (done)
- Make `struct platform_device::remove()` return void (ongoing)
- Get rid of `struct device_driver::probe, ::remove` and `::shutdown` (on my list)
- ???

There must be a benefit. You have to convince maintainers.

GENERATING THE PATCHES

Coccinelle:

```
$ make coccicheck MODE=patch M=drivers/firmware COCCI=platform_remove.cocci | git am

// Options: --include-headers

virtual patch

@c1@
identifier driver;
identifier removefunc;
@@
  struct platform_driver driver = {
    ...,
    .remove = removefunc,
    ...
  };

@@
expression E != 0;
identifier pdev;
identifier c1.removefunc;
@@
```

GENERATING THE PATCHES

Committing:

```
git ls-files -m | while read f; do
  git commit -s -m "$f :: Convert to platform remove callback returning void

  The .remove() callback for a platform driver returns an int which makes
  ..." "$f"
done

FILTER_BRANCH_SQUELCH_WARNING=1 git filter-branch -f --msg-filter "perl -p -e '
if (\$. == 1) {
    s,^drivers/mtd/(hyperbus|maps)/(.*?).c ::,mtd: \1: \2:,;
    s,^drivers/(firmware|fpga|macintosh|memory|mfd)/([a-z0-9_-]*).c ::,\1: \2:,;
    ...;
}'" next/master..
```

GENERATING THE PATCHES

Sending out (I):

```
rm -rf w l
git format-patch -o w --thread --cover-letter --base next/master next/master..
batch-add-recipients w/* > l &
vim w/0000-cover-letter.patch
vim l
./l
git send-email w/*
git rev-list next/master.. | while read r; do
    git notes add -m "Forwarded: id:$r.1704900449.git.u.kleine-koenig@pengutronix.de";
done
git rebase --onto platform-remove-void~3 next/master
git rebase HEAD platform-remove-void
```


GENERATING THE PATCHES

Sending out (II):

```
#!/bin/sh
# post-process with :%s/ (\(blamed_fixes\|removed\|added\) _lines\|obsolete minder\|od

addrecipient \
-t "\"Uwe Kleine-König\" <u.kleine-koenig@pengutronix.de> (maintainer:PWM SUBSYSTEM)
-t "Nicolas Ferre <nicolas.ferre@microchip.com> (supporter:ARM/Microchip (AT91) SoC sup
-t "Alexandre Belloni <alexandre.belloni@bootlin.com> (supporter:ARM/Microchip (AT91) S
-t "Claudiu Beznea <claudiu.beznea@tuxon.dev> (supporter:ARM/Microchip (AT91) SoC suppo
-t "Boris Brezillon <bbrezillon@kernel.org> (blamed_fixes:1/1=100%)
-t "Thierry Reding <thierry.reding@gmail.com> (blamed_fixes:1/1=100%)
-c "linux-pwm@vger.kernel.org (open list:PWM SUBSYSTEM)
-c "linux-arm-kernel@lists.infradead.org (moderated list:ARM/Microchip (AT91) SoC suppo
-c "linux-kernel@vger.kernel.org (open list)
w/0000-cover-letter.patch \
w/0001-pwm-atmel-hlcdc-Fix-clock-imbalance-related-to-suspe.patch

addrecipient \
-c "Douglas Anderson <dianders@chromium.org> (reviewer:DRM DRIVER FOR TI SN65DSI86 BRID
-t "Andrzej Hajda <andrzej.hajda@intel.com> (maintainer:DRM DRIVERS FOR BRIDGE CHIPS)
-t "Neil Armstrong <neil.armstrong@linaro.org> (maintainer:DRM DRIVERS FOR BRIDGE CHIPS
-t "Robert Foss <rfoss@kernel.org> (maintainer:DRM DRIVERS FOR BRIDGE CHIPS)
```

GENERATING THE PATCHES

Sending out (III):

```
cat ~/.gitconfig
...
[sendemail]
  bcc = uwe+patches@kleine-koenig.org
  confirm = always

[notes]
  rewriteRef = refs/notes/commits
```

GENERATING THE PATCHES

- One series per subsystem
- Be explicit about how you expect a series to be merged
- slow start

TRACKING PATCHES LOCALLY

- A branch per "quest"
- Bases on latest -rc1
- Contains all sent patches
- and then yet unsplit work
- and the completion

TRACKING PATCH APPLICATION

```
git log --oneline --cherry next/master...platform-remove-void
+ 6b9e9ac76bc9 (platform-remove-void) WIP: Make platform_driver::remove() return void
+ b27cd56017ac wip: platform-remove-void (__exit)
+ d0c71168ec43 wip: platform-remove-void
+ 5b63362d2f27 macintosh: windfarm_rm31: Convert to platform remove callback returning
+ 92195254a729 macintosh: windfarm_pm91: Convert to platform remove callback returning
+ ce74de938837 macintosh: windfarm_pm81: Convert to platform remove callback returning
+ b08c2c8e712c macintosh: windfarm_pm72: Convert to platform remove callback returning
...
= 9fa76f08d61a mailbox: zynqmp-ipi: Convert to platform remove callback returning void
= 8aa405eb3368 mailbox: tegra-hsp: Convert to platform remove callback returning void
= a05ab8382eb4 mailbox: sun6i-msgbox: Convert to platform remove callback returning voi
= 6981e0ebfeb9 mailbox: stm32-ipcc: Convert to platform remove callback returning void
= 891cd035461f mailbox: qcom-ipcc: Convert to platform remove callback returning void
= 8c49588d58e6 mailbox: qcom-apcs-ipc: Convert to platform remove callback returning vo
= 18813fb31cb4 mailbox: omap: Convert to platform remove callback returning void

git log --cherry-pick --right-only next/master...platform-remove-void
```

TRACKING PATCH APPLICATION

notmuch: thread:

{id:42358a12b38c9498b8ab2896d4f3d4eb9484b45e.1704900449.git.u.kleine-koenig@pengutronix.de}

```
q:Quit  d:Del  u:Undel  s:Save  m:Mail  r:Reply  g:Group  ?:Help
 1 N F      Jan 10 To Michael Elle ( 38) [PATCH 0/7] macintosh: Convert to platform r
 2 N F      Jan 10 To Michael Elle ( 45) |->[PATCH 7/7] macintosh: windfarm_rm31: Con
 3 N F      Jan 10 To Michael Elle ( 43) |->[PATCH 3/7] macintosh: windfarm_pm121: Co
 4 N F      Jan 10 To Michael Elle ( 50) |->[PATCH 6/7] macintosh: windfarm_pm91: Con
 5 N F      Jan 10 To Michael Elle ( 50) |->[PATCH 5/7] macintosh: windfarm_pm81: Con
 6 N F      Jan 10 To Michael Elle ( 44) |->[PATCH 2/7] macintosh: windfarm_pm112: Co
 7 N F      Jan 10 To Michael Elle ( 45) |->[PATCH 4/7] macintosh: windfarm_pm72: Con
 8 N F      Jan 10 To Michael Elle ( 47) |->[PATCH 1/7] macintosh: therm_windtunnel:
```

---NeoMutt: thread:{id:42358a12b38c9498b8ab2896d4f3d4eb9484b45e.1704900449.git.u.kleine

RESENDING A SERIES

- Collect feedback, fix commits accordingly
- To add the Reviewed-by: and Acked-by: tags, apply the series using `b4 am -t -s $msgidofcoverletter` on the same base as your branch
- Go through `git range-diff` branch...