Maintainer’s Diary: We have a scaling problem

Wolfram Sang
Consultant
We have a scaling problem.
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Stats only based on accepted patches

There are also superseded, rejected patches, teaching new authors...

Situation at v3.0 was already far from ideal
What is a maintainer? Trond Myklebust said it nicely:\footnote{link here}

"Currently, the Linux maintainer appears to be responsible for filling all of the traditional roles of

- software architect
- software developer
- patch reviewer
- patch committer
- and software maintainer."

\footnotetext[1]{link here}
First thing to notice

Yes, this is a rare bunch!^2

^2but they usually have fun doing that :)

Wolfram Sang (Consultant)
Statistics: # of people (with supporters)

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A typical (simple) SoC

System Controller
- Advanced Int. Ctrl.
- Power Mgt. Ctrl.
- PLL
- Osc
- RC Osc
- Reset Ctrl.
- Brownout Detect
- Power On Reset
- Prog. Int. Timer
- Watchdog Timer
- Real Time Timer
- Debug Unit
- PID Ctrl.

ARM Processor

Voltage Regulator

JTAG
Scan

Peripheral Bridge

Memory Controller
- EBI
- SRAM
- Flash
- Flash Programmer

Peripheral Data Controller

Application-Specific Logic

Ethernet
- UART
- SPI
- I2C / TWI
- ADC

CAN
- USB
- PWM
- SD/MMC
- Framebuffer/Display

PIO

We have a scaling problem
24.10.2013, ELC-E 2013 10 / 24
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Statistics: Subsystem Latency

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Again: Stats only based on accepted patches

There are also totally valid patches which got lost
  Couldn’t find a way to measure that, though

Weather forecast: Situation will get worse
  Expect either increased latency or questionable patches coming in
What you can do: Users

Give feedback
- give comments about patches
- give tags (Tested-by:)

resend overlooked patches
- only if you still use and need them
- check if there are open issues
- resend

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3 as in "users of patches"
What you can do: Developers

### Always give your best shot
- missing experience is no problem
- sloppiness *is* a problem
- be honest, give reasons for suboptimal solutions

### take part in Q&A
- review
- review your own patches
- discuss
- clean up, consolidate
- if you are interested, become a maintainer
What you can do: Maintainers

Work harder...not!

- we don’t need burnout
- be aware of the fast-forward button

have your tools ready

- yeah, workflow is highly subjective...
- ...still check with other maintainers what is out there
- My top three recommendations
  - keyboard shortcuts
  - git hooks
  - patchwork
    - did you know it collects tags for you?
What you can do: Maintainers

automize tasks

- really pay attention to boring, repetitive tasks
- have I mentioned proper tools?
allow developers to take part in Q&A

- some really want to if allowed
- those will improve their skills a lot

educate internally

- OK to ask maintainer for subsystem specific help
- not OK to let maintainers teach basic stuff
  if I know you have people inhouse which can do the same
What you can do: Organizations

**be aware that things might take time**
- we are trying to be fast, yet there is overload

**see maintaining as a job on its own**
- worth being paid for, directly or indirectly
- independent maintainers are best, see Linus or Greg
  although with enough credit, it will work, too
- probably *the* item to improve the situation
Paid/supported maintainers

We have a scaling problem

24.10.2013, ELC-E 2013
Let’s go for it!

Questions?
- Right here, right now...
- Later at the conference
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