Kernel: File-Systems, CPU Architecture Landscape For 2030, Raspberry Pi 4

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Created *31/08/2020 - 11:41pm*
Submitted by Roy Schestowitz on Monday 31st of August 2020 11:41:00 PM Filed under Linux [1] Hardware [2]

- **Linux Receiving Generic Casefolding Implementation For File-Systems [3]**

  In making for easier code re-use among file-systems and allowing a unified implementation to focus on a single code-base for optimizations moving forward, a generic case-folding implementation for Linux file-systems is being prepared for mainline.

  EXT4 and F2FS have both supported optional UTF-8 based case-folding support for file/folder names on a per-folder basis going back a year. To date the file-systems have relied upon similar albeit copied implementations of the code while now it's being spun into a generic implementation that can be easily shared between file-systems. Besides avoiding code duplication for UTF8 case-folding, this standardization makes it more easy to optimize it moving forward without having to port any optimizations to the different file-system implementations. The code in its current form should be functionally equivalent to the existing per-filesystem code.

- **A Kernel Maintainer's Prediction On The CPU Architecture Landscape For 2030 [4]**

  In addition to talking about code/hardware obsolescence from the Linux kernel, prominent upstream Linux kernel developer Arnd Bermann also presented at last week's Linux Plumbers Conference on the current SoC landscape and sharing his predictions for ten years down the road.

Bergmann gave a talk in addition to the obsolescence one on the "SoC support lifecycle in the kernel" when talking about changes in SoC/CPU architectures and how that has evolved over time and the Linux kernel embracing the changes while also identifying code that has reached the end of its useful life.

- **Linux Patch Proposed To Double Raspberry Pi 4 Transfer Speed To eMMC/SD Storage [5]**

  Manjaro Linux developer Tobias Schramm brought to light that only single data rate mode is currently being used for micro SD cards and eMMC storage with Raspberry Pi 4 Model B SBCs. But with a two line kernel patch, the double data rate mode can be enabled.

  Tobias sent out on the kernel mailing list that both micro SD and eMMC with the Raspberry Pi 4 is running in single data rate mode only. However, the controller and the board circuitry appear to support the double data rate (DDR) mode just fine. He added that he even checked on the signal integrity on the data lines for the micro SD card slot and didn't find any issues.

Linux Hardware

Links:
[1] http://www.tuxmachines.org/taxonomy/term/63
[2] http://www.tuxmachines.org/taxonomy/term/39
[3] https://www.phoronix.com/scan.php?page=news_item&px=Generic-Casefolding-FS
[4] https://www.phoronix.com/scan.php?page=news_item&px=Linux-Arnd-CPU-Archs-2030
[5] https://www.phoronix.com/scan.php?page=news_item&px=RPi4-DDR-eMMC-SD-Linux-Patch