While the Linux 5.17 merge window hasn't opened up yet, there have been a few early pull requests sent out this week ahead of this imminent next kernel cycle. One of those already sent out is the ARM64/AArch64 CPU architecture code updates for Linux 5.17.

Linux 5.17's 64-bit ARM code has a few feature items at play and a lot of code cleaning / preparations for future kernel cycles. This pull is just about the architecture work and not the Arm platform/DT updates for new SoC and hardware support, which will be sent separately as a PR during the merge window.

As part of the plethora of networking changes for Linux 5.17, NVIDIA is introducing support for Spectrum-4 networking ASICS.

For Linux on the NVIDIA (Mellanox) Spectrum Open Ethernet Switches there is the MLXSW driver for supporting the Ethernet Switch ASICS. That Mellanox network driver has supported Spectrum, Spectrum-2, and Spectrum3- families of Ethernet switches while queued up now in time for Linux 5.17 is Spectrum-4 support.

With the latest NVIDIA Spectrum SN4000 series Ethernet switches being based on Spectrum-3, it doesn't appear there is any Spectrum-4 hardware out yet in the marketplace.
Ahead of the Linux 5.17 merge window officially opening next week, random (RNG) subsystem maintainer Jason Donenfeld has submitted an exciting batch of updates for this next kernel cycle.

As covered at the end of December, Linux is replacing SHA1 usage with BLAKE2s as part of its entropy extractor code. The BLAKE2s code is not only more secure than SHA1 but also faster. This BLAKE2s usage was found to improve the entropy extraction by 131%.

Intel is implementing a feature support for the motherboards that, at least for now, will be Linux exclusive, a detail that is not usually the norm in the hardware world, where Windows is the highest priority in almost 100% of cases, even for Intel, which is practically the manufacturer that best supports Linux.

Being more specific, Intel has introduced a future Linux 5.17 driver called `pfr_update` that will make use of the specification Platform Firmware Runtime Update and Telemetry ACPI (PFRUT), which allows updating a BIOS or UEFI without the need to reboot. For now this feature will not reach Windows, but who doubts that this exclusivity aims to be ephemeral.

It doesn't take a lynx to realize that Intel's priority of Linux over Windows is due to the use of PFRUT I know will focus on servers, where workloads often cannot be interrupted. The ACPI specification will allow BIOS / UEFI updates to be carried out on the fly, thus eliminating, at least on paper, a potential outage scenario. In addition, it also incorporates a controller to read telemetry data from the firmware in a standardized way.

Recently I've been curious about how hibernation works on Linux, as it's an interesting interaction between hardware and software. There are some notes in the Arch wiki and the kernel documentation (as well as some kernel documentation on debugging hibernation and on sleep states more generally), and of course the ACPI Specification.

Microsoft Eyeing OpenGL Compute + GLES 3.1 For Its Mesa D3D12 Backend [7] [Ed: This is about promoting Windows [8], Not Linux, but the headline does not tell you that. One needs to read the comments [9] to know what's really going on here...]
