

Kernel: Linux Changes, Certifications, Graphics, PCI Express 6.0 and Bug

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- [PowerCap/RAPL Code To Support Icelake Desktop / X / Xeon D With Linux 5.3](#)[2]

While as of Linux 5.2 the support for Intel's Icelake CPUs appear production ready with all of the bits in place from new IDs to the much enhanced "Gen 11" graphics, there are a few stragglers of items to land with the upcoming Linux 5.3 merge window though could be back-ported to current series. Fortunately, we haven't found anything major to be missing.

One of the latest bits of Icelake Linux support is handling of these next-generation processors within the PowerCap / RAPL (Running Average Power Limit) driver code. In particular, the desktop/workstation Icelake parts. This is the code for reading the estimated CPU package power consumption based on hardware performance counters and the ability to artificially limit the power draw of the processor via software.

- [Six Niche Linux Certifications](#) [3]

- [AMD Navi GPU stack bares all in Linux graphics driver update](#)[4]

Eight Navi GPU variants have been spotted in Linux driver code. AMD's next-gen RDNA graphics chips are set for launch on July 7, 2019 within the RX 5700 XT and RX 5700, but the red team has plenty of silicon in store for a range of applications. Including console, laptops, desktop, and mobile phones.

The GPU codenames were spotted within Linux display drivers after the additional code was submitted and signed off by two AMD employees. The code adds support for Display Core Next, or DCN2, which is the display block for Navi10. Each entry following adds the necessary ASIC IDs for each Navi chip in the stack, starting with Navi 10 and down to Navi 21 LITE.

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[Nouveau Driver Picking Up NVIDIA TU116 GPU Support For Linux 5.3](#) [5]

Building off the initial Turing mode-setting bits that were in place since Linux 5.0 and have continued stepping along to support newer variants on successive kernel releases, the Linux 5.3 kernel is slated to add support for the TU116 graphics processor.

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[PCI-SIG® Announces Upcoming PCI Express® 6.0 Specification to Reach 64 GT/s](#) [6]

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[PCI Express 6.0 Announced With 4-Times The Bandwidth Of PCIe 4.0](#) [7]

With the increasing demand for bandwidth across a wide range of devices used in consumer and enterprise domains, PCI Express, the high-speed serial computer expansion bus standard has also evolved over the years.

PCI Special Interest Group, a body that sets standards for PCIe, has announced PCI Express 6 that promises four times the bandwidth offered by PCIe 4.0 and twice of PCIe 5.0.

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[PCI Express 6.0 Announced For Release In 2021 With 64 GT/s Transfer Rates](#) [8]

While PCI Express 4.0 up to this point has only been found in a few systems like Talos' POWER9 platforms and coming soon with the new AMD graphics cards and chipsets, the PCI SIG today announced PCI Express 6.0.

PCI Express 5.0 was only announced last month with 32GT/s transfer rates while already the PCI SIG announced PCI Express 6.0.

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[Netflix researcher spots TCP SACK flaws in Linux and FreeBSD](#) [9]

● [TCP SACK Panic Flaw Could Compromise Production Linux Machines](#) [10]

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