Kernel: AMX, OpenZFS, and AMDGPU

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- Intel AMX Support Appears Ready For Linux 5.16 - Phoronix [3]

  It's been over one year since Intel disclosed Advanced Matrix Extensions and began posting patches for bringing up AMX support under Linux in anticipation of Xeon Scalable "Sapphire Rapids" processors. While the compiler-side work to GCC and LLVM/Clang has been landing, finally with the forthcoming Linux 5.16 cycle that AMX support appears ready for landing.

  Merged today to tip/tip.git's "x86/fpu" branch where kernel FPU changes are queued ahead of the next merge window, the last of the AMX enablement patches were queued up. Most notably, the work for actually enabling the AMX feature and being able to expose it to user-space via the new interface.

- BLK-MQ Support For OpenZFS Pending As Latest Performance Optimization [4]

  A new pull request is pending for implementing multi-queue block (blk-mq) support within OpenZFS' Zvol code, which can lead to sizable performance benefits.

  Tony Hutter opened up the pull request at the end of last week for blk-mq support. Utilizing blk-mq allows for queuing and submitting I/O requests to block devices simultaneously. With modern multi-core CPUs and speedy storage devices, BLK-MQ can lead to very real benefits.

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  AMDGPU DP 2.0 MST Support Sent In For DRM-Next - Phoronix [5]

  AMDGPU changes already queued up in DRM-Next for Linux 5.16 brought initial code for DisplayPort 2.0 ahead of next-gen GPUs with this connectivity support. Sent out today as a separate pull request is wiring up the DisplayPort 2.0 Multi-Stream Transport (MST) capability for the AMDGPU kernel driver.

  Sent in as a late topic branch is the AMDGPU DP 2.0 MST support along with a necessary change to the DRM common DisplayPort MST helper code. Multi-Stream Transport allows for multiple independent displays to be driven from a single DisplayPort output, AMDGPU has supported DP MST for DisplayPort 1.x, but additional changes are needed for DP 2.0 compatibility.

Graphics/Benchmarks Linux

Links:

[1] http://www.tuxmachines.org/taxonomy/term/148

[2] http://www.tuxmachines.org/taxonomy/term/63

[3] https://www.phoronix.com/scan.php?page=news_item&px=Intel-AMX-For-Linux-5.16

[4] https://www.phoronix.com/scan.php?page=news_item&px=OpenZFS-Zvol-BLK-MQ-PR

[5] https://www.phoronix.com/scan.php?page=news_item&px=AMDGPU-DP-2.0-MST-PR