

Graphics: Mesa, Nouveau, RADV and Intel Blackhole Render

By *Roy Schestowitz*

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[Mesa Developers Discuss LTO'ing + PGO'ing Builds For Greater Performance](#) [1]

Making use of Link-Time Optimizations (LTO) and Profile Guided Optimizations (PGO) is currently being talked about by Mesa developers for their release builds in potentially squeezing out better performance.

Dieter Nützel shared that when using LTO and PGO compiler optimizations on Mesa, he's able to get RadeonSI's binary size 40% smaller and 16~20% faster for this OpenGL driver. Link-time optimizations are about as the name implies running optimization passes during the linker phase when able to analyze the to-be-produced binary in full rather than the individual object files in order to allow for more inter-procedural optimizations on the whole program.



[Open-Source Nouveau Extended To Support The GeForce 16 Series With Hardware Acceleration](#) [2]

With the big Linux 5.6 kernel on the open-source NVIDIA "Nouveau" driver side there is finally accelerated support for the GeForce RTX 2000 "Turing" graphics cards (when paired with binary-only microcode). With that initial cut support is no GeForce 16 series Turing support, but that is now on-deck for Linux 5.7.

While the GeForce 16 series is Turing based and just without the RTX cores, firmware/microcode differences and other subtle changes were needed to the Nouveau kernel driver for enabling its open-source hardware accelerated support.



[Radeon "sisched" Scheduler Is Made Obsolete By RADV's ACO Back-End](#) [3]

It's been years since last hearing anything about sisched as the SI machine instruction scheduler that started out for the RadeonSI OpenGL driver and was ultimately supported by

the RADV Vulkan driver too.

Years ago, SISCHED helped offer better open-source AMD Radeon Linux gaming performance but those days are over. The scheduler was made part of the AMDGPU LLVM back-end and that sisched code hasn't seen any new work in ages. Now with Valve's ACO taking off so well since its mainlining in Mesa 19.3 as an alternative to the AMDGPU LLVM back-end, it pretty much nails the coffin on SISCHED.

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[Intel Blackhole Render Support Lands In Mesa 20.1](#) [4]

Intel Blackhole Render support was finally merged today for the new Intel "Iris" Gallium3D OpenGL driver default, the older i965 driver for pre-Broadwell hardware, and also the Mesa state tracker for Gallium3D drivers.

Proposed back in 2018 was the Intel blackhole render extension for OpenGL / GLES as an extension to disable all rendering operations emitted to the GPU through OpenGL rendering commands but without affecting OpenGL pipeline operations.

Source URL: <http://www.tuxmachines.org/node/134060>

Links:

[1] https://www.phoronix.com/scan.php?page=news_item&px=Mesa-2020-PGO-LTO-Builds

[2] https://www.phoronix.com/scan.php?page=news_item&px=Nouveau-GTX-16-Support

[3] https://www.phoronix.com/scan.php?page=news_item&px=RADV-SISCHED-Dead

[4] https://www.phoronix.com/scan.php?page=news_item&px=Mesa-20.1-Intel-Blackhole