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Linux 5.13 AMD Ryzen 9 5950X

AMD Ryzen 9 5950X 16-Core testing with a ASUS ROG CROSSHAIR VIII HERO (WI-FI) (3302 BIOS) and AMD Radeon RX 5600 OEM/5600 XT / 5700/5700 8GB on Ubuntu 20.10 via the Phoronix Test Suite.

Automated Executive Summary

Linux 5.11 had the most wins, coming in first place for 41% of the tests.

Based on the geometric mean of all complete results, the fastest (Linux 5.12) was 1.007x the speed of the slowest (Linux 5.13 3May). Linux 5.11 was 0.996x the speed of Linux 5.12 and Linux 5.13 3May was 0.997x the speed of Linux 5.11.

The results with the greatest spread from best to worst included:

Stress-NG (Test: Context Switching) at 1.347x
Stress-NG (Test: System V Message Passing) at 1.338x
Stress-NG (Test: Socket Activity) at 1.1x
Xmrig (Variant: Monero - Hash Count: 1M) at 1.097x
Tesseract (Resolution: 3840 x 2160) at 1.066x
Stress-NG (Test: CPU Stress) at 1.049x
ParaView (Test: Wavelet Volume - Resolution: 1920 x 1080) at 1.045x
ParaView (Test: Wavelet Volume - Resolution: 1920 x 1080) at 1.045x

Ethr (Server Address: localhost - Protocol: UDP - Test: Bandwidth - Threads: 8) at 1.044x
GIMP (Test: rotate) at 1.043x.

Test Systems:

Linux 5.11

Processor: AMD Ryzen 9 5950X 16-Core @ 3.40GHz (16 Cores / 32 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (WI-FI) (3302 BIOS), Chipset: AMD Starship/Matisse, Memory: 32GB, Disk: 2000GB Corsair Force MP600, Graphics: AMD Radeon RX 5600 OEM/5600 XT / 5700/5700 8GB (2100/875MHz), Audio: AMD Navi 10 HDMI Audio, Monitor: ASUS MG28U, Network: Realtek RTL8125 2.5GbE + Intel I211 + Intel Wi-Fi 6 AX200

OS: Ubuntu 20.10, Kernel: 5.11.18-051118-generic (x86_64), Desktop: GNOME Shell 3.38.2, Display Server: X Server 1.20.9, OpenGL: 4.6 Mesa 21.2.0-devel (git-55fb941 2021-04-16 groovy-oibaf-ppa) (LLVM 12.0.0), Vulkan: 1.2.168, Compiler: GCC 10.2.0, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-gcn/usr,hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Disk Notes: NONE / errors=remount-ro,relatime,rw / Block Size: 4096
Processor Notes: Scaling Governor: acpi-cpufreq schedutil (Boost: Enabled) - CPU Microcode: 0xa201009
Python Notes: Python 3.8.6
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

Linux 5.12

Processor: AMD Ryzen 9 5950X 16-Core @ 3.40GHz (16 Cores / 32 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (WI-FI) (3302 BIOS), Chipset: AMD Starship/Matisse, Memory: 32GB, Disk: 2000GB Corsair Force MP600, Graphics: AMD Radeon RX 5600 OEM/5600 XT / 5700/5700 8GB (2100/875MHz), Audio: AMD Navi 10 HDMI Audio, Monitor: ASUS MG28U, Network: Realtek RTL8125 2.5GbE + Intel I211 + Intel Wi-Fi 6 AX200

OS: Ubuntu 20.10, Kernel: 5.12.1-051201-generic (x86_64), Desktop: GNOME Shell 3.38.2, Display Server: X Server 1.20.9, OpenGL: 4.6 Mesa 21.2.0-devel (git-55fb941 2021-04-16 groovy-oibaf-ppa) (LLVM 12.0.0), Vulkan: 1.2.168, Compiler: GCC 10.2.0, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-gcn/usr,hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Disk Notes: NONE / errors=remount-ro,relatime,rw / Block Size: 4096
Processor Notes: Scaling Governor: acpi-cpufreq schedutil (Boost: Enabled) - CPU Microcode: 0xa201009
Python Notes: Python 3.8.6
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

Linux 5.13 3May

Processor: AMD Ryzen 9 5950X 16-Core @ 3.40GHz (16 Cores / 32 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (WI-FI) (3302 BIOS), Chipset: AMD Starship/Matisse, Memory: 32GB, Disk: 2000GB Corsair Force MP600, Graphics: AMD Radeon RX 5600 OEM/5600 XT / 5700/5700 8GB (2100/875MHz), Audio: AMD Navi 10 HDMI Audio, Monitor: ASUS MG28U, Network: Realtek RTL8125 2.5GbE + Intel I211 + Intel Wi-Fi 6 AX200

OS: Ubuntu 20.10, Kernel: 5.12.0-051200daily20210503-generic (x86_64), Desktop: GNOME Shell 3.38.2, Display Server: X Server 1.20.9, OpenGL: 4.6 Mesa 21.2.0-devel (git-55fb941 2021-04-16 groovy-oibaf-ppa) (LLVM 12.0.0), Vulkan: 1.2.168, Compiler: GCC 10.2.0, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-gcn/usr,hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Disk Notes: NONE / errors=remount-ro,relatime,rw / Block Size: 4096
Processor Notes: Scaling Governor: acpi-cpufreq schedutil (Boost: Enabled) - CPU Microcode: 0xa201009
Python Notes: Python 3.8.6
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

	Linux 5.11	Linux 5.12	Linux 5.13 3May
FS-Mark - 1.F.1.S (Files/s)	**701.0**	**686.2**	697.7
Normalized	100%	97.89%	99.53%
Standard Deviation	5.6%	1.9%	2.2%
FS-Mark - 4.F.3.S.D.1.S (Files/s)	**705.2**	**717.6**	715.7
Normalized	98.27%	100%	99.74%
Standard Deviation	0.6%	1.4%	1.2%
Compile Bench - Initial Create (MB/s)	**790.15**	777.33	**768.43**
Normalized	100%	98.38%	97.25%
Standard Deviation	2.4%	1.7%	2.1%
vkpeak - fp32-scalar (GFLOPS)	**9813**	**9438**	9525
Normalized	100%	96.17%	97.07%
Standard Deviation	1.1%	0.8%	1.1%
vkpeak - fp32-vec4 (GFLOPS)	**9608**	9486	**9386**
Normalized	100%	98.73%	97.68%
Standard Deviation	0.6%	0.7%	0.7%
vkpeak - fp16-scalar (GFLOPS)	9755	**9869**	**9632**
Normalized	98.84%	100%	97.6%
Standard Deviation	0.7%	1.3%	0.6%
vkpeak - fp16-vec4 (GFLOPS)	**9604**	**9451**	9520
Normalized	100%	98.4%	99.12%
Standard Deviation	0.4%	0.4%	0.5%
vkpeak - fp64-scalar (GFLOPS)	321.83	**321.90**	**321.72**
Normalized	99.98%	100%	99.94%
Standard Deviation	0%	0%	0%
vkpeak - fp64-vec4 (GFLOPS)	**321.73**	**321.60**	321.64
Normalized	100%	99.96%	99.97%
Standard Deviation	0%	0%	0%

vkpeak - int32-scalar (GIOPS)	**1581**	1581	**1581**
Normalized	100%	99.98%	99.96%
Standard Deviation	0%	0%	0%
vkpeak - int32-vec4 (GIOPS)	**2053**	2052	**2051**
Normalized	100%	99.95%	99.94%
Standard Deviation	0%	0%	0%
vkpeak - int16-scalar (GIOPS)	4889	**4915**	**4849**
Normalized	99.48%	100%	98.66%
Standard Deviation	0.4%	0.3%	0.3%
vkpeak - int16-vec4 (GIOPS)	**4938**	**4871**	4891
Normalized	100%	98.64%	99.05%
Standard Deviation	0.1%	0.1%	0.2%
RealSR-NCNN - 4x - Yes (sec)	57.613	**57.575**	**57.622**
Normalized	99.93%	100%	99.92%
Standard Deviation	0.2%	0%	0.1%
Waifu2x-NCNN Vulkan - 2x - 3 - Yes (sec)	**5.073**	**5.065**	5.072
Normalized	99.84%	100%	99.86%
Standard Deviation	0.9%	0.2%	0.6%
VkFFT (Benchmark Score)	20500	**20501**	**20480**
Normalized	100%	100%	99.9%
Standard Deviation	0.3%	0.2%	0.1%
Tesseract - 3840 x 2160 (FPS)	407.5456	**423.6318**	**397.4433**
Normalized	96.2%	100%	93.82%
Standard Deviation	0.9%	4.4%	0.8%
Xonotic - 3840 x 2160 - High (FPS)	**542.4447503**	547.9433934	**551.3453352**
Normalized	98.39%	99.38%	100%
Standard Deviation	1%	2.1%	2%
Xonotic - 3840 x 2160 - Ultra (FPS)	**476.0800924**	**486.8252941**	482.7683938
Normalized	97.79%	100%	99.17%
Standard Deviation	1.3%	0.6%	0.5%
Xonotic - 3840 x 2160 - Ultimate (FPS)	**378.9641737**	**383.9420227**	381.3802971
Normalized	98.7%	100%	99.33%
Standard Deviation	0.4%	0.4%	0.7%
ParaView - Many Spheres - 1920 x 1080 (Frames / Sec)	66.30	**66.11**	**66.35**
Normalized	99.92%	99.64%	100%
Standard Deviation	0.1%	0.6%	0.2%
ParaView - Many Spheres - 1920 x 1080 (MiPolys / Sec)	6647	**6628**	**6652**
Normalized	99.93%	99.64%	100%
Standard Deviation	0.1%	0.6%	0.2%
ParaView - Many Spheres - 3840 x 2160 (Frames / Sec)	62.60	**62.57**	**62.61**
Normalized	99.98%	99.94%	100%
Standard Deviation	0.1%	0%	0.1%
ParaView - Many Spheres - 3840 x 2160 (MiPolys / Sec)	6276	**6273**	**6277**
Normalized	99.97%	99.92%	100%
Standard Deviation	0.1%	0%	0.1%
ParaView - Wavelet Volume - 1920 x 1080 (Frames / Sec)	**505.86**	**484.26**	497.50
Normalized	100%	95.73%	98.35%
Standard Deviation	1.1%	1%	1.5%

ParaView - Wavelet Volume - 1920 x 1080 (MiVoxels / Sec)	**8094**	**7748**	7960
Normalized	100%	95.73%	98.35%
Standard Deviation	1.1%	1%	1.5%
ParaView - Wavelet Volume - 3840 x 2160 (Frames / Sec)	**259.66**	**262.05**	261.96
Normalized	99.09%	100%	99.97%
Standard Deviation	2.8%	0.2%	0.1%
ParaView - Wavelet Volume - 3840 x 2160 (MiVoxels / Sec)	**4155**	**4193**	4191
Normalized	99.09%	100%	99.97%
Standard Deviation	2.8%	0.2%	0.1%
ParaView - Wavelet Contour - 1920 x 1080 (Frames / Sec)	**370.30**	369.84	**369.10**
Normalized	100%	99.88%	99.68%
Standard Deviation	0%	0%	0%
ParaView - Wavelet Contour - 1920 x 1080 (MiPolys / Sec)	**3859**	3854	**3846**
Normalized	100%	99.88%	99.68%
Standard Deviation	0%	0%	0%
ParaView - Wavelet Contour - 3840 x 2160 (Frames / Sec)	**249.59**	249.20	**249.15**
Normalized	100%	99.84%	99.82%
Standard Deviation	0%	0.1%	0.1%
ParaView - Wavelet Contour - 3840 x 2160 (MiPolys / Sec)	**2601**	2597	**2597**
Normalized	100%	99.85%	99.83%
Standard Deviation	0%	0.1%	0.1%
Ethr - TCP - Latency - 1 (us)	**11.82**	**11.52**	11.61
Normalized	97.46%	100%	99.22%
Standard Deviation	5.9%	7.5%	2%
Ethr - TCP - Latency - 8 (us)	**12.05**	11.71	**11.52**
Normalized	95.6%	98.38%	100%
Standard Deviation	8.9%	8.7%	5.7%
Ethr - TCP - Bandwidth - 8 (Mbits/s)	**146912**	147374	**147975**
Normalized	99.28%	99.59%	100%
Standard Deviation	2.3%	1.2%	1%
Ethr - UDP - Bandwidth - 8 (Mbits/s)	**206643**	215223	**215768**
Normalized	95.77%	99.75%	100%
Standard Deviation	0.9%	0.1%	0.4%
Ethr - HTTP - Bandwidth - 1 (Mbits/s)	**1078**	**1066**	1068
Normalized	100%	98.89%	99.07%
Standard Deviation	0.5%	0.6%	
Ethr - HTTP - Bandwidth - 8 (Mbits/s)	**5112**	**5069**	5078
Normalized	100%	99.16%	99.33%
Standard Deviation	1.3%	0.6%	0.9%
Ethr - TCP - Connections/s - 1 (Connections/sec)	**10019**	**9631**	9655
Normalized	100%	96.13%	96.37%
Standard Deviation	9.1%	7.3%	11.1%
Ethr - TCP - Connections/s - 8 (Connections/sec)	**93430**	91373	**89758**
Normalized	100%	97.8%	96.07%
Standard Deviation	0.4%	5.4%	4.5%

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NAMD - ATPase Simulation - 327,506 Atoms (days/ns)	**1.07862**	1.07989	**1.08446**
Normalized	100%	99.88%	99.46%
Standard Deviation	0.7%	0.9%	0.8%
Timed HMMer Search - P.D.S (sec)	**81.091**	81.014	**80.988**
Normalized	99.87%	99.97%	100%
Standard Deviation	0.1%	0.1%	0.2%
Xmrig - Monero - 1M (H/s)	7001	**7586**	**6917**
Normalized	92.29%	100%	91.19%
Standard Deviation	1.1%	2.4%	1.8%
Xmrig - Wownero - 1M (H/s)	13530	**13851**	**13472**
Normalized	97.68%	100%	97.26%
Standard Deviation	1.3%	0.3%	1.3%
Chia Blockchain VDF - Square (IPS)	181433	**182300**	**179133**
Normalized	99.52%	100%	98.26%
Standard Deviation	0.8%	0.5%	2.2%
Zstd Compression - 19 - Compression Speed (MB/s)	**51.5**	51.4	**51.3**
Normalized	100%	99.81%	99.61%
Standard Deviation	0.3%	0.3%	0.2%
Zstd Compression - 19 - D.S (MB/s)	**4312**	**4293**	4304
Normalized	100%	99.57%	99.84%
Standard Deviation	1.6%	1.1%	1.1%
Zstd Compression - 19, Long Mode - Compression Speed (MB/s)	**36.5**	**36.5**	**36.4**
Normalized	100%	100%	99.73%
Standard Deviation	0.3%	0.2%	0%
Zstd Compression - 19, Long Mode - D.S (MB/s)	**4256**	4295	**4301**
Normalized	98.95%	99.86%	100%
Standard Deviation	1.7%	1.6%	1.3%
srsLTE - OFDM_Test (Samples / Second)	**167600000**	**162130000**	162227273
Normalized	100%	96.74%	96.79%
Standard Deviation	1.9%	2.5%	2.4%
srsLTE - PHY_DL_Test (eNb Mb/s)	364.5	**370.0**	**358.4**
Normalized	98.51%	100%	96.86%
Standard Deviation	0.8%	1.4%	0%
srsLTE - PHY_DL_Test (UE Mb/s)	130.1	**131.4**	**127.1**
Normalized	99.01%	100%	96.73%
Standard Deviation	0.4%	1.1%	0.3%
LuaRadio - F.B.t.B.F.F (MiB/s)	**1739**	**1754**	1747
Normalized	99.16%	100%	99.62%
Standard Deviation	2.1%	1%	0.5%
LuaRadio - F.D.F (MiB/s)	**468.2**	465.7	**463.1**
Normalized	100%	99.47%	98.91%
Standard Deviation	0.9%	1%	0.6%
LuaRadio - Hilbert Transform (MiB/s)	**129.5**	128.5	**128.3**
Normalized	100%	99.23%	99.07%
Standard Deviation	0.7%	0.7%	0.7%
LuaRadio - Complex Phase (MiB/s)	877.3	**878.5**	**876.5**
Normalized	99.86%	100%	99.77%
Standard Deviation	1.4%	0.5%	0.3%
LuxCoreRender - DLSC - CPU (M	**3.70**	3.71	**3.73**
Normalized	99.2%	99.46%	100%
Standard Deviation	1.2%	1%	1%

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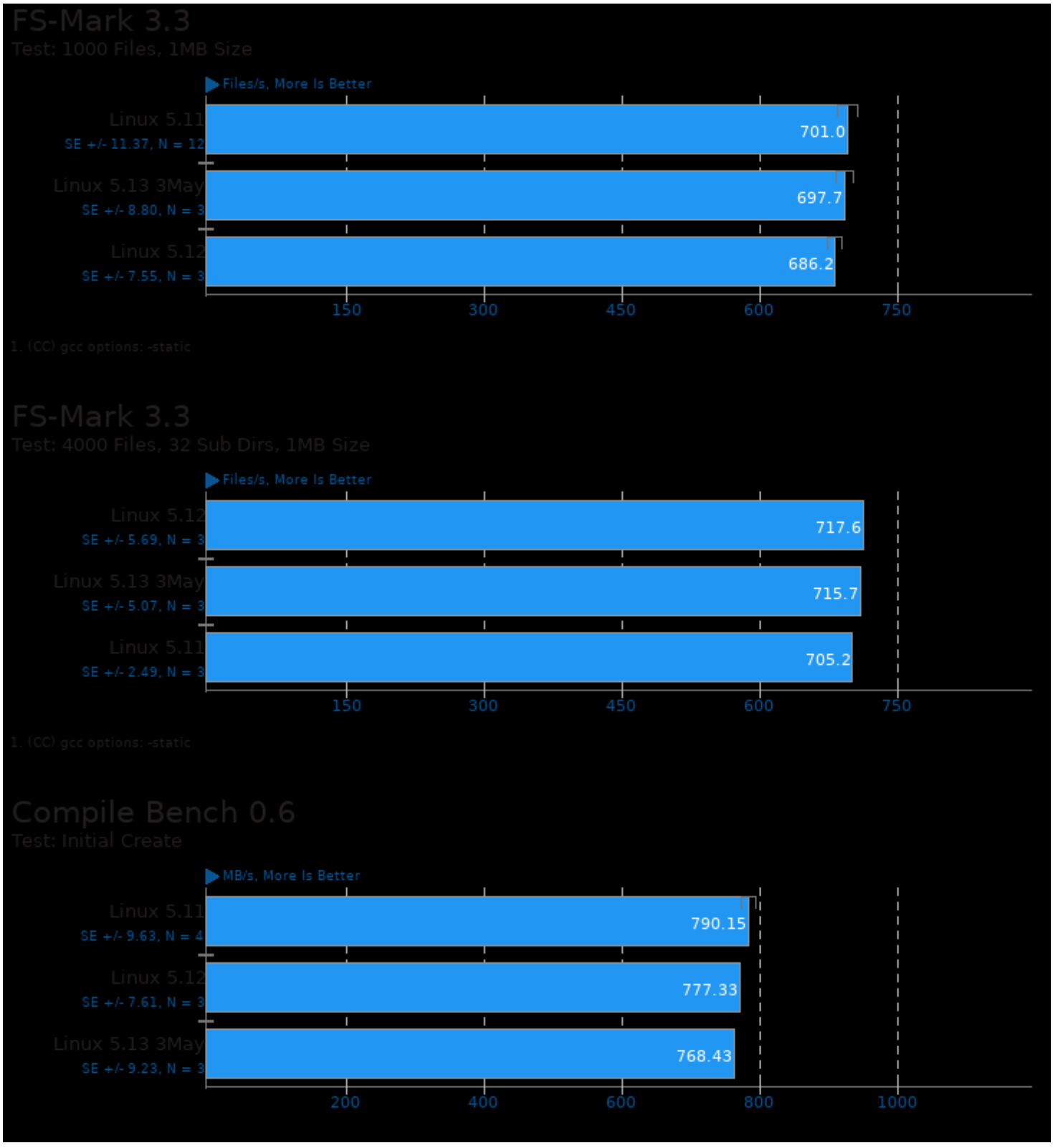
LuxCoreRender - Danish Mood - CPU (M samples/sec)	**3.10**	**3.10**	**3.12**
Normalized	99.36%	99.36%	100%
Standard Deviation	2.3%	0.9%	2%
LuxCoreRender - Orange Juice - CPU (M samples/sec)	**5.76**	5.77	**5.79**
Normalized	99.48%	99.65%	100%
Standard Deviation	0.5%	0.2%	0.4%
AOM AV1 - Speed 8 Realtime - Bosphorus 4K (FPS)	**40.53**	40.25	**40.09**
Normalized	100%	99.31%	98.91%
Standard Deviation	1.2%	4.2%	1.7%
AOM AV1 - Speed 9 Realtime - Bosphorus 4K (FPS)	**48.69**	48.50	**47.21**
Normalized	100%	99.61%	96.96%
Standard Deviation	0.8%	2%	0.8%
SVT-AV1 - Enc Mode 4 - 1080p (FPS)	**6.117**	6.130	**6.138**
Normalized	99.66%	99.87%	100%
Standard Deviation	1%	0.5%	0.7%
SVT-AV1 - Enc Mode 8 - 1080p (FPS)	52.291	**51.836**	**52.554**
Normalized	99.5%	98.63%	100%
Standard Deviation	0.2%	1.3%	0.1%
SVT-HEVC - 7 - Bosphorus 1080p (FPS)	**217.81**	218.62	**218.99**
Normalized	99.46%	99.83%	100%
Standard Deviation	1.9%	1.1%	1.6%
SVT-HEVC - 10 - Bosphorus 1080p (FPS)	**363.87**	365.05	**366.02**
Normalized	99.41%	99.73%	100%
Standard Deviation	0.6%	0.6%	0.8%
SVT-VP9 - VMAF Optimized - Bosphorus 1080p (FPS)	**227.49**	229.00	**229.34**
Normalized	99.19%	99.85%	100%
Standard Deviation	3%	2.9%	2.6%
SVT-VP9 - P.S.O - Bosphorus 1080p (FPS)	**233.46**	235.27	**235.45**
Normalized	99.15%	99.92%	100%
Standard Deviation	0.4%	0.4%	0.3%
Stockfish - Total Time (Nodes/s)	**54460035**	**56726532**	56470673
Normalized	96%	100%	99.55%
Standard Deviation	1.3%	2.2%	0.5%
Timed Godot Game Engine Compilation - Time To Compile (sec)	**80.167**	**79.960**	79.965
Normalized	99.74%	100%	99.99%
Standard Deviation	0.3%	0.4%	0.4%
Timed Linux Kernel Compilation - Time To Compile (sec)	50.056	**51.284**	**49.741**
Normalized	99.37%	96.99%	100%
Standard Deviation	1.2%	1.1%	1.2%
Timed Mesa Compilation - Time To Compile (sec)	32.143	**32.414**	**32.048**
Normalized	99.7%	98.87%	100%
Standard Deviation	0.3%	0.7%	0.2%
Timed Wasmer Compilation - Time To Compile (sec)	56.073	**55.803**	**56.659**
Normalized	99.52%	100%	98.49%
Standard Deviation	0.4%	1%	0.9%

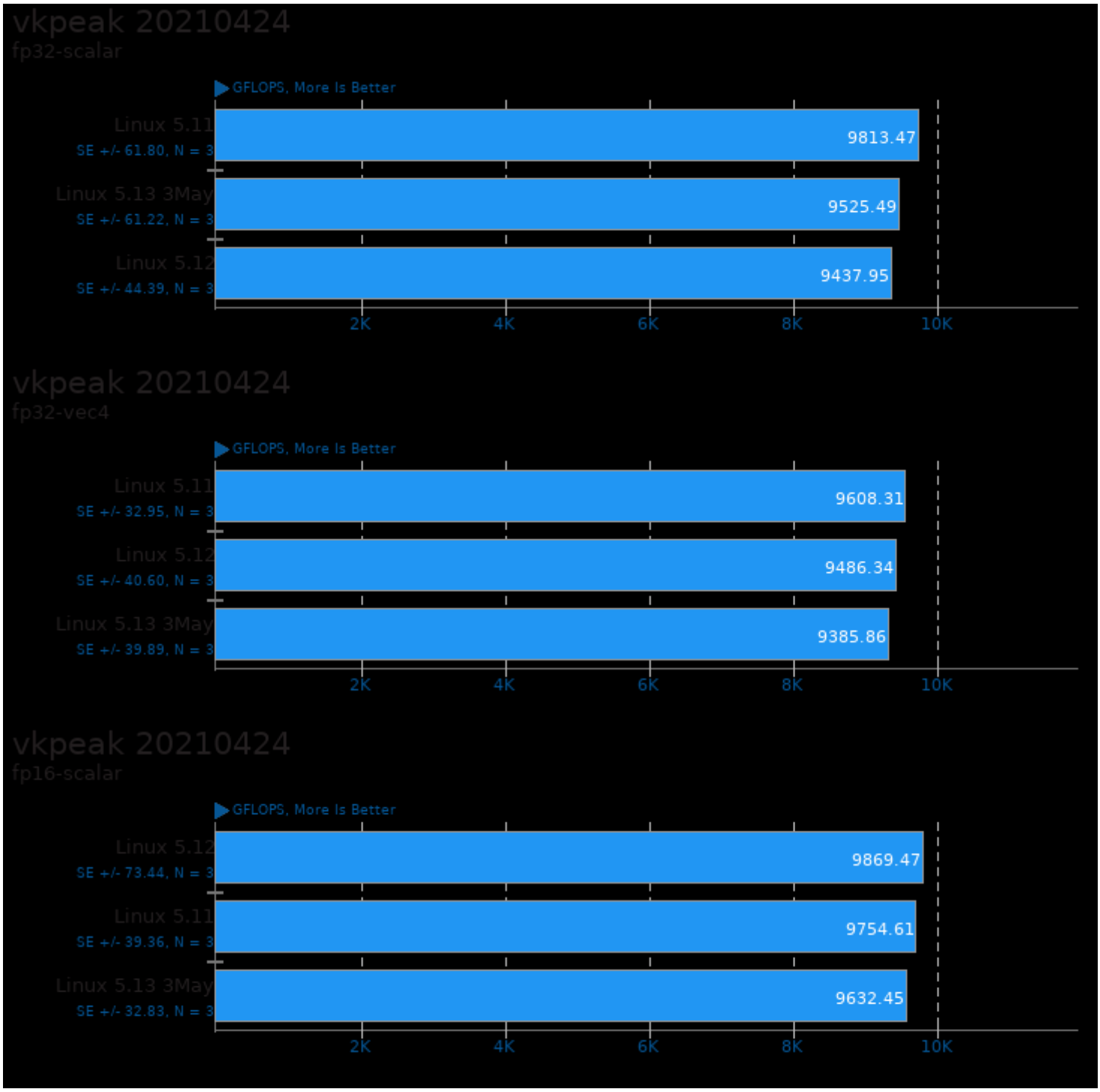
Linux 5.13 AMD Ryzen 9 5950X

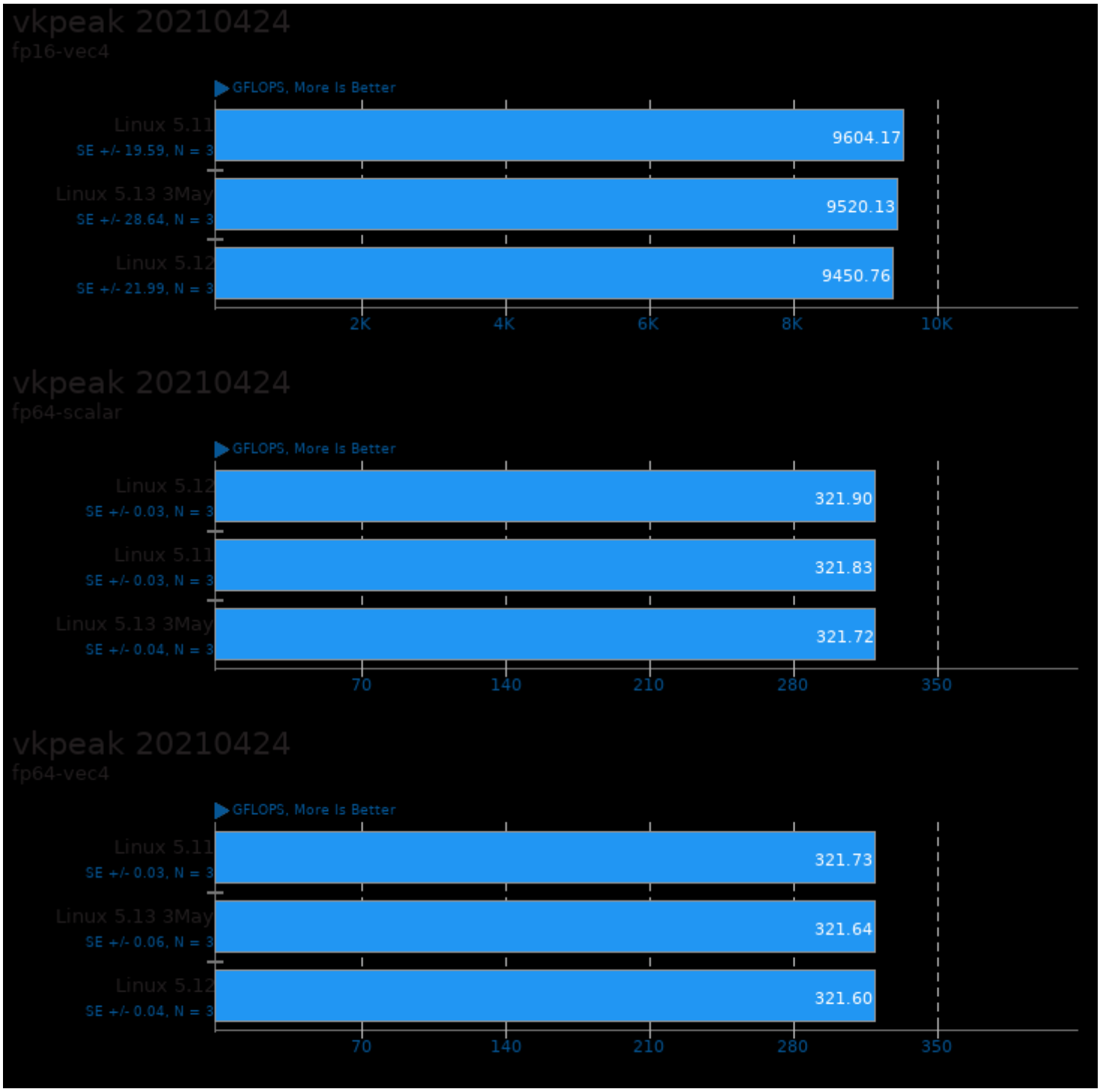
SecureMark - SecureMark-TLS (marks)	319344	**317217**	**322534**
Normalized	99.01%	98.35%	100%
Standard Deviation	0.6%	1.6%	0.9%
Liquid-DSP - 16 - 256 - 57 (samples/s)	1041100000	**1044266667**	**1040966667**
Normalized	99.7%	100%	99.68%
Standard Deviation	0.2%	0.2%	0.8%
Liquid-DSP - 32 - 256 - 57 (samples/s)	1098566667	**1100200000**	**1097766667**
Normalized	99.85%	100%	99.78%
Standard Deviation	0.1%	0.2%	0.3%
libjpeg-turbo tjbench - D.T (Megapixels/sec)	268.107535	**263.689680**	**270.782137**
Normalized	99.01%	97.38%	100%
Standard Deviation	0.4%	0.2%	1.4%
KeyDB (Ops/sec)	**819653**	832076	**835297**
Normalized	98.13%	99.61%	100%
Standard Deviation	0.5%	0.6%	0.2%
GROMACS - water_GMX50_bare (Ns/Day)	**1.269**	**1.267**	**1.267**
Normalized	100%	99.84%	99.84%
Standard Deviation	0.3%	0.2%	0.3%
SQLite Speedtest - Timed Time - Size 1,000 (sec)	**42.274**	42.601	**43.155**
Normalized	100%	99.23%	97.96%
Standard Deviation	1.2%	2.1%	1.3%
Darktable - Boat - CPU-only (sec)	**14.515**	14.536	**14.554**
Normalized	100%	99.86%	99.73%
Standard Deviation	0.1%	0.2%	0%
Darktable - Masskrug - CPU-only (sec)	**5.924**	5.944	**5.947**
Normalized	100%	99.66%	99.61%
Standard Deviation	0.5%	0.2%	0.2%
Darktable - Server Rack - CPU-only (sec)	**0.196**	**0.198**	**0.198**
Normalized	100%	98.99%	98.99%
Standard Deviation	0.3%	0.3%	0.5%
Darktable - Server Room - CPU-only (sec)	**5.853**	**5.872**	5.871
Normalized	100%	99.68%	99.69%
Standard Deviation	0.2%	0.2%	0.3%
GIMP - resize (sec)	**5.671**	5.646	**5.643**
Normalized	99.51%	99.95%	100%
Standard Deviation	2.4%	2.5%	2.2%
GIMP - rotate (sec)	**8.535**	8.768	**8.899**
Normalized	100%	97.34%	95.91%
Standard Deviation	0.6%	0.5%	2%
GIMP - auto-levels (sec)	**9.681**	**9.581**	9.671
Normalized	98.97%	100%	99.07%
Standard Deviation	1.1%	0.9%	0.4%
GIMP - unsharp-mask (sec)	**12.292**	12.244	**12.231**
Normalized	99.5%	99.89%	100%
Standard Deviation	0.6%	0.2%	0.9%
Hugin - P.P.A.S.T (sec)	**34.302**	34.561	**34.854**
Normalized	100%	99.25%	98.42%
Standard Deviation	1.7%	2.1%	0.7%
OCRMyPDF - P.6.P.P.D (sec)	**12.543**	**12.424**	12.508
Normalized	99.05%	100%	99.33%
Standard Deviation	0.6%	1.4%	1.2%
RawTherapee - T.B.T (sec)	**46.360**	46.368	**46.413**
Normalized	100%	99.98%	99.89%
Standard Deviation	0.3%	0.2%	0.1%

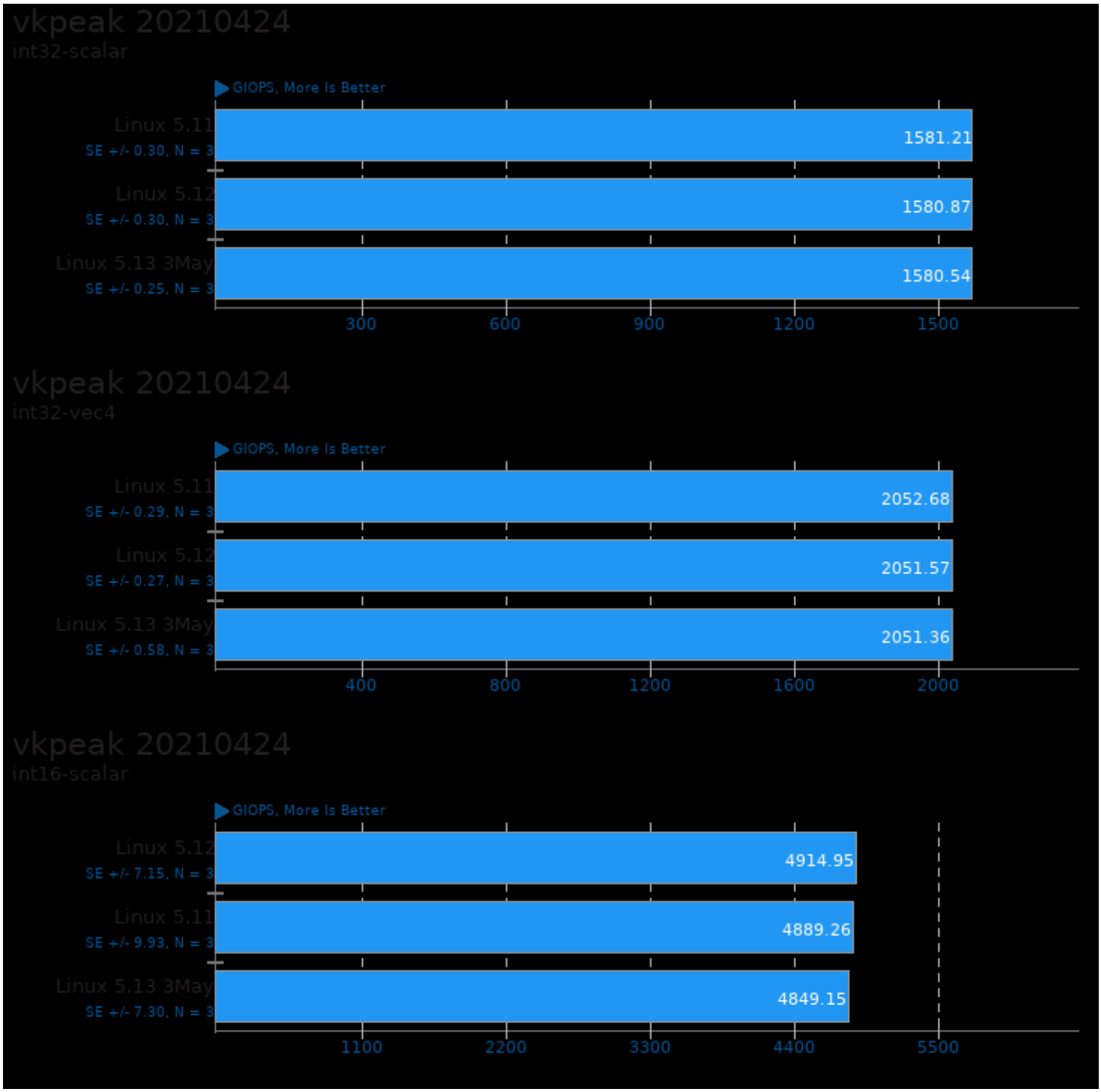
Linux 5.13 AMD Ryzen 9 5950X

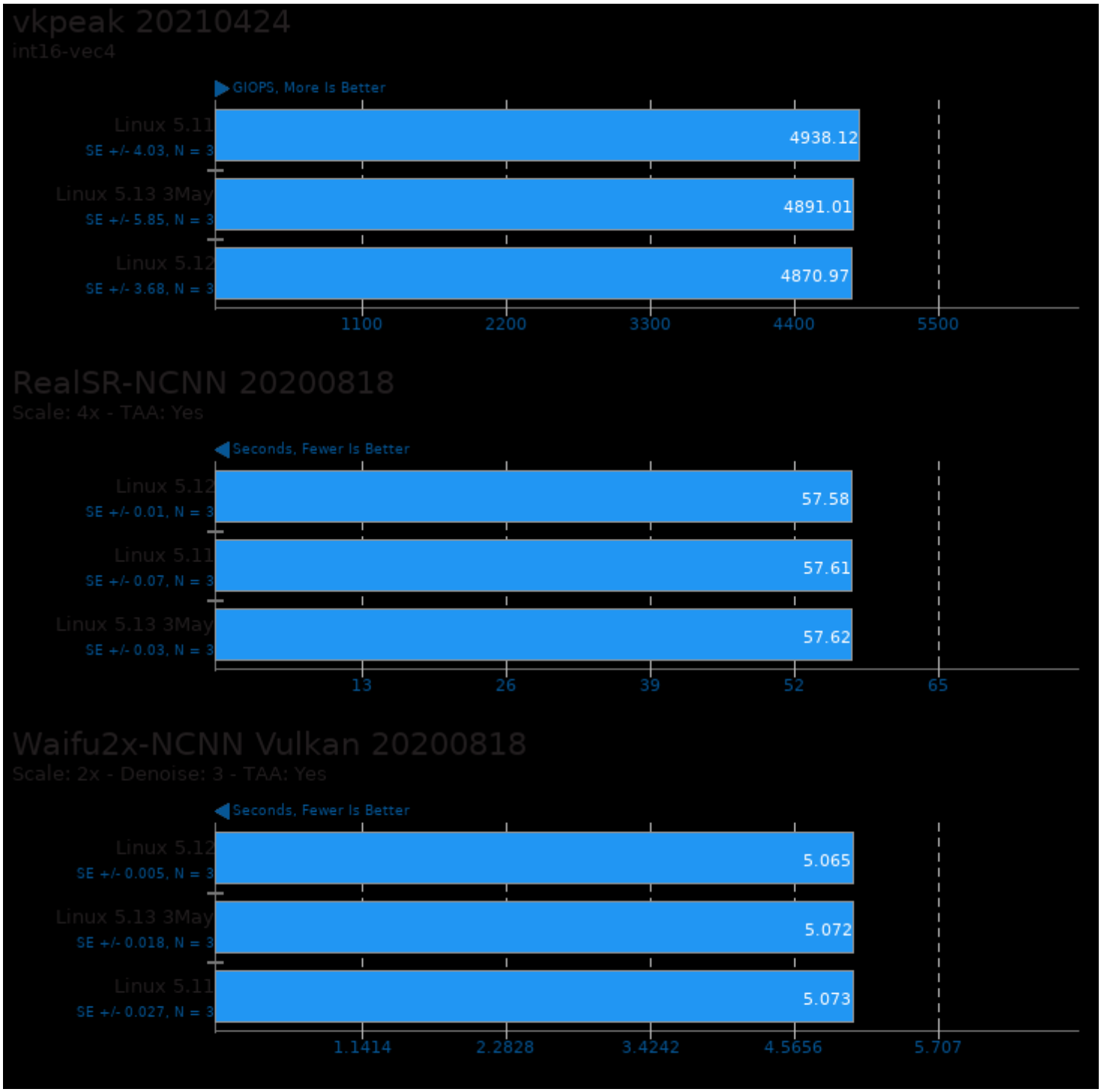
Google Draco - Lion (ms)	**4241**	4199	**4063**
Normalized	95.8%	96.76%	100%
Standard Deviation	10.8%	0.9%	2.1%
Google Draco - Church Facade (ms)	5322	**5410**	**5274**
Normalized	99.1%	97.49%	100%
Standard Deviation	2.4%	0.7%	0.5%
Stress-NG - MEMFD (Bogo Ops/s)	**1392**	**1442**	1400
Normalized	96.54%	100%	97.12%
Standard Deviation	0.4%	0.1%	0.2%
Stress-NG - Malloc (Bogo Ops/s)	257938939	**253127888**	**259049400**
Normalized	99.57%	97.71%	100%
Standard Deviation	0.2%	0.2%	0.2%
Stress-NG - SENDFILE (Bogo Ops/s)	**408425**	**395855**	396816
Normalized	100%	96.92%	97.16%
Standard Deviation	0.2%	0.3%	0.3%
Stress-NG - CPU Stress (Bogo Ops/s)	**11041**	**11586**	11426
Normalized	95.3%	100%	98.62%
Standard Deviation	1.2%	2.8%	2.9%
Stress-NG - Semaphores (Bogo Ops/s)	**2426814**	**2403606**	2419419
Normalized	100%	99.04%	99.7%
Standard Deviation	0.6%	0.6%	1.5%
Stress-NG - Memory Copying (Bogo Ops/s)	**1479**	1477	**1477**
Normalized	100%	99.82%	99.81%
Standard Deviation	0.1%	0.3%	0.1%
Stress-NG - Socket Activity (Bogo Ops/s)	**11841**	12044	**13024**
Normalized	90.92%	92.47%	100%
Standard Deviation	0.5%	3.4%	1.6%
Stress-NG - Context Switching (Bogo Ops/s)	8345623	**8902940**	**6610342**
Normalized	93.74%	100%	74.25%
Standard Deviation	1%	0.1%	1.8%
Stress-NG - S.V.M.P (Bogo Ops/s)	**14629189**	**19577137**	14843965
Normalized	74.73%	100%	75.82%
Standard Deviation	0.5%	1.7%	3%
ctx_clock - C.S.T (Clocks)	136	136	136
Blender - Barbershop - CPU-Only (sec)	**295.76**	296.25	**296.32**
Normalized	100%	99.83%	99.81%
Standard Deviation	0.4%	0.2%	0.3%
InfluxDB - 4 - 10000 - 2,5000,1 - 10000	**1748594**	1728872	**1723348**
Normalized	100%	98.87%	98.56%
Standard Deviation	0.5%	0.4%	2%
InfluxDB - 64 - 10000 - 2,5000,1 - 10000 (val/sec)	**2136508**	**2122373**	2128686
Normalized	100%	99.34%	99.63%
Standard Deviation	0.1%	0.4%	0.2%

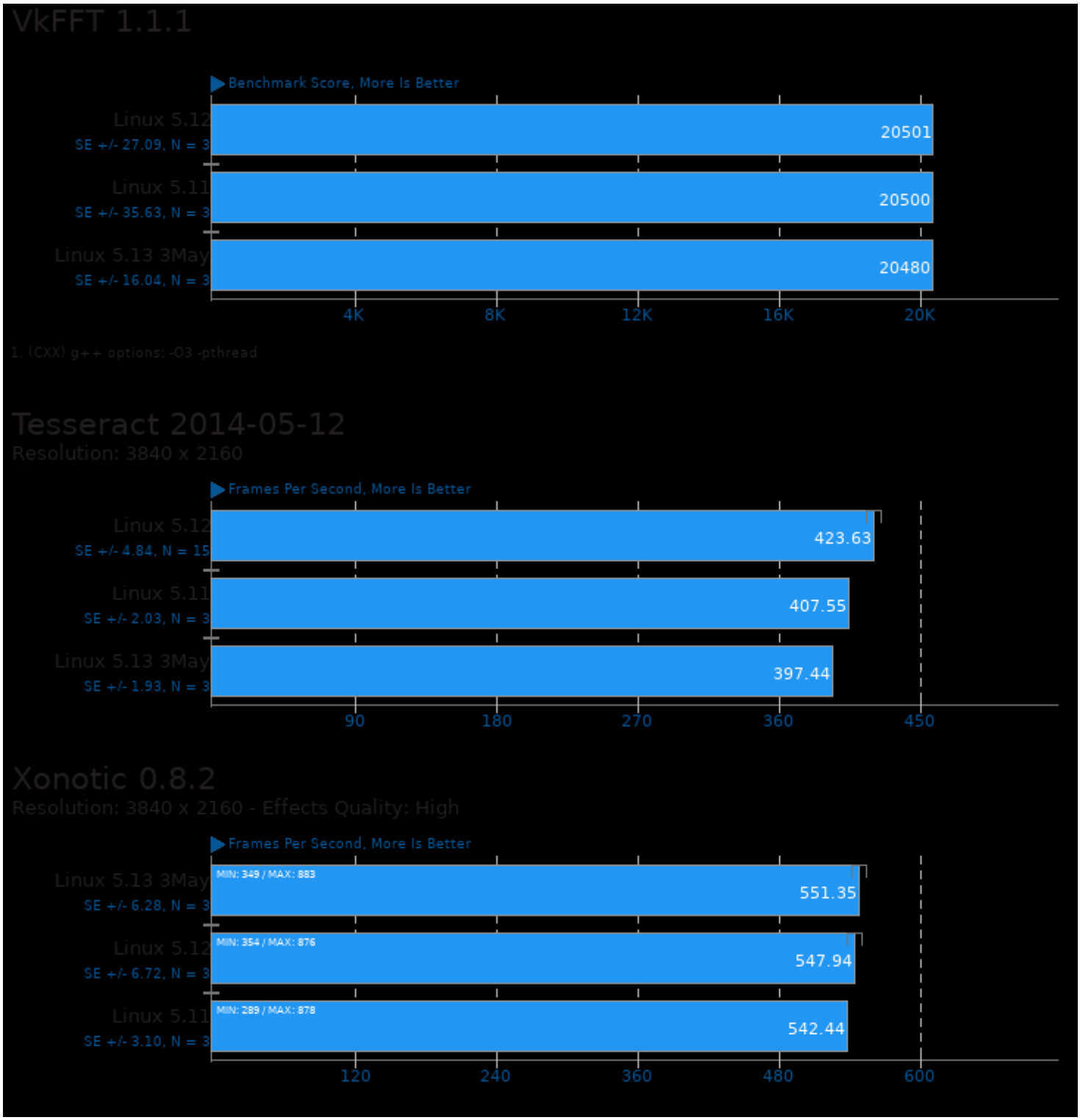

FS-Mark 3.3
Test: 1000 Files, 1MB Size
Files/s, More Is Better
Linux 5.11
SE +/- 11.37, N = 12
701.0
Linux 5.13 3May
SE +/- 8.80, N = 3
697.7
Linux 5.12
SE +/- 7.55, N = 3
686.2
150
300
450
600
750
1. (CC) gcc options: -static
FS-Mark 3.3
Test: 4000 Files, 32 Sub Dirs, 1MB Size
Files/s, More Is Better
Linux 5.12
SE +/- 5.69, N = 3
717.6
Linux 5.13 3May
SE +/- 5.07, N = 3
715.7
Linux 5.11
SE +/- 2.49, N = 3
705.2
150
300
450
600
750
1. (CC) gcc options: -static
Compile Bench 0.6
Test: Initial Create
MB/s, More Is Better
Linux 5.11
SE +/- 9.63, N = 4
790.15
Linux 5.12
SE +/- 7.61, N = 3
777.33
Linux 5.13 3May
SE +/- 9.23, N = 3
768.43
200
400
600
800
1000

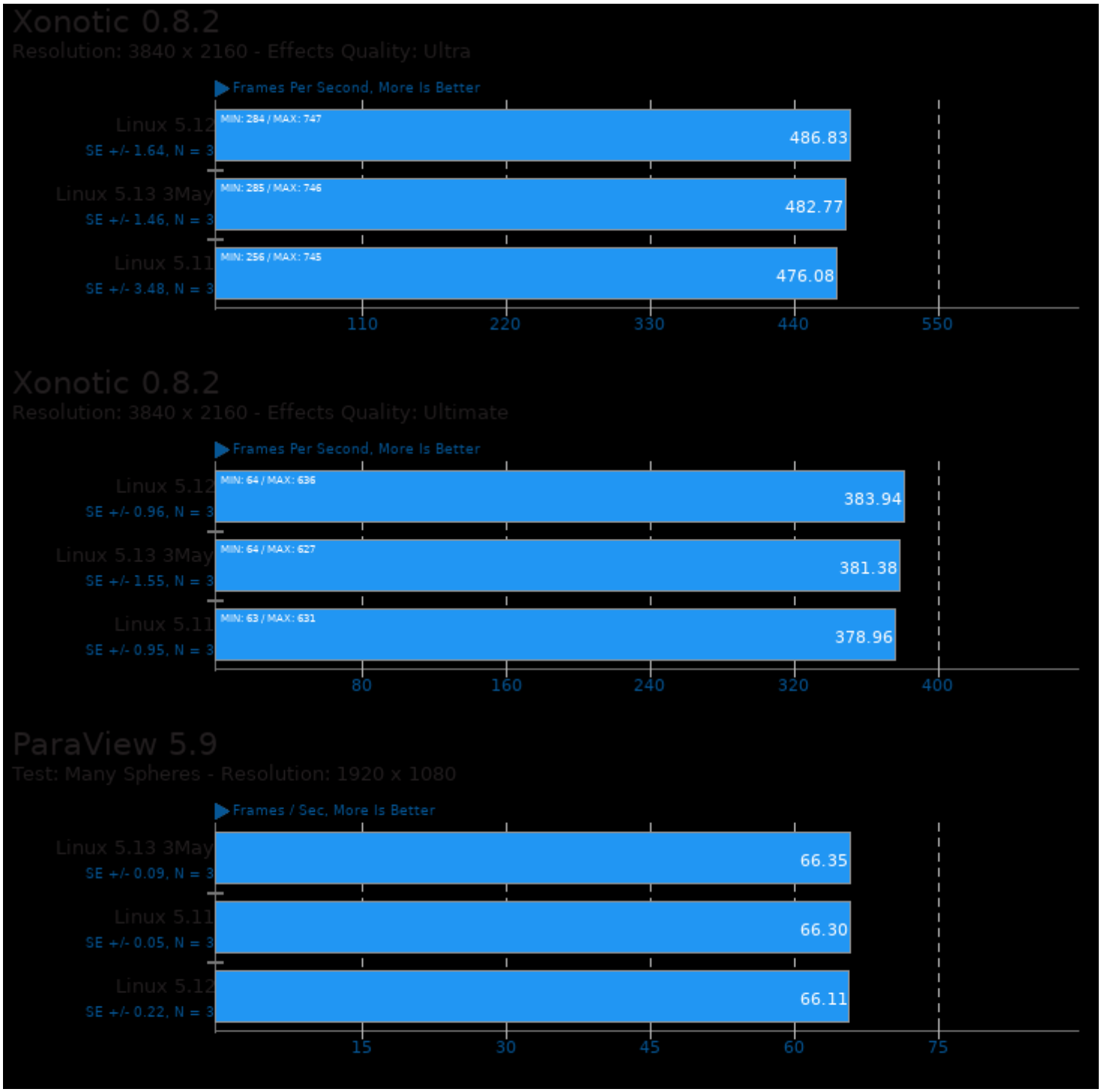

vkpeak 20210424
fp32-scalar
GFLOPS, More Is Better
Linux 5.11
SE +/- 61.80, N = 3
9813.47
Linux 5.13 3May
SE +/- 61.22, N = 3
9525.49
Linux 5.12
SE +/- 44.39, N = 3
9437.95
2K
4K
6K
8K
10K
vkpeak 20210424
fp32-vec4
GFLOPS, More Is Better
Linux 5.11
SE +/- 32.95, N = 3
9608.31
Linux 5.12
SE +/- 40.60, N = 3
9486.34
Linux 5.13 3May
SE +/- 39.89, N = 3
9385.86
2K
4K
6K
8K
10K
vkpeak 20210424
fp16-scalar
GFLOPS, More Is Better
Linux 5.12
SE +/- 73.44, N = 3
9869.47
Linux 5.11
SE +/- 39.36, N = 3
9754.61
Linux 5.13 3May
SE +/- 32.83, N = 3
9632.45
2K
4K
6K
8K
10K

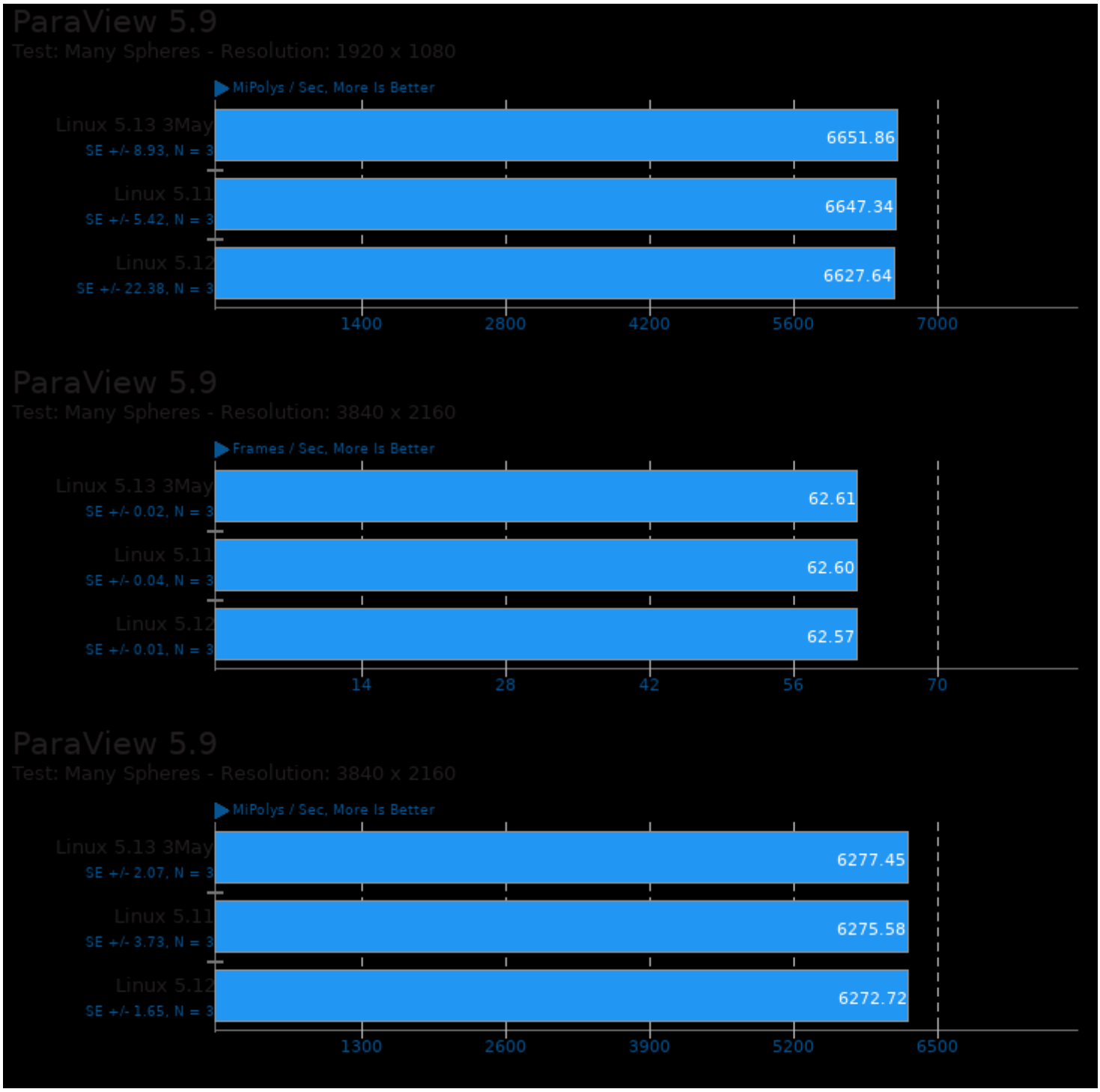

vkpeak 20210424
fp16-vec4
GFLOPS, More Is Better
Linux 5.11
SE +/- 19.59, N = 3
9604.17
Linux 5.13 3May
SE +/- 28.64, N = 3
9520.13
Linux 5.12
SE +/- 21.99, N = 3
9450.76
2K
4K
6K
8K
10K
vkpeak 20210424
fp64-scalar
GFLOPS, More Is Better
Linux 5.12
SE +/- 0.03, N = 3
321.90
Linux 5.11
SE +/- 0.03, N = 3
321.83
Linux 5.13 3May
SE +/- 0.04, N = 3
321.72
70
140
210
280
350
vkpeak 20210424
fp64-vec4
GFLOPS, More Is Better
Linux 5.11
SE +/- 0.03, N = 3
321.73
Linux 5.13 3May
SE +/- 0.06, N = 3
321.64
Linux 5.12
SE +/- 0.04, N = 3
321.60
70
140
210
280
350

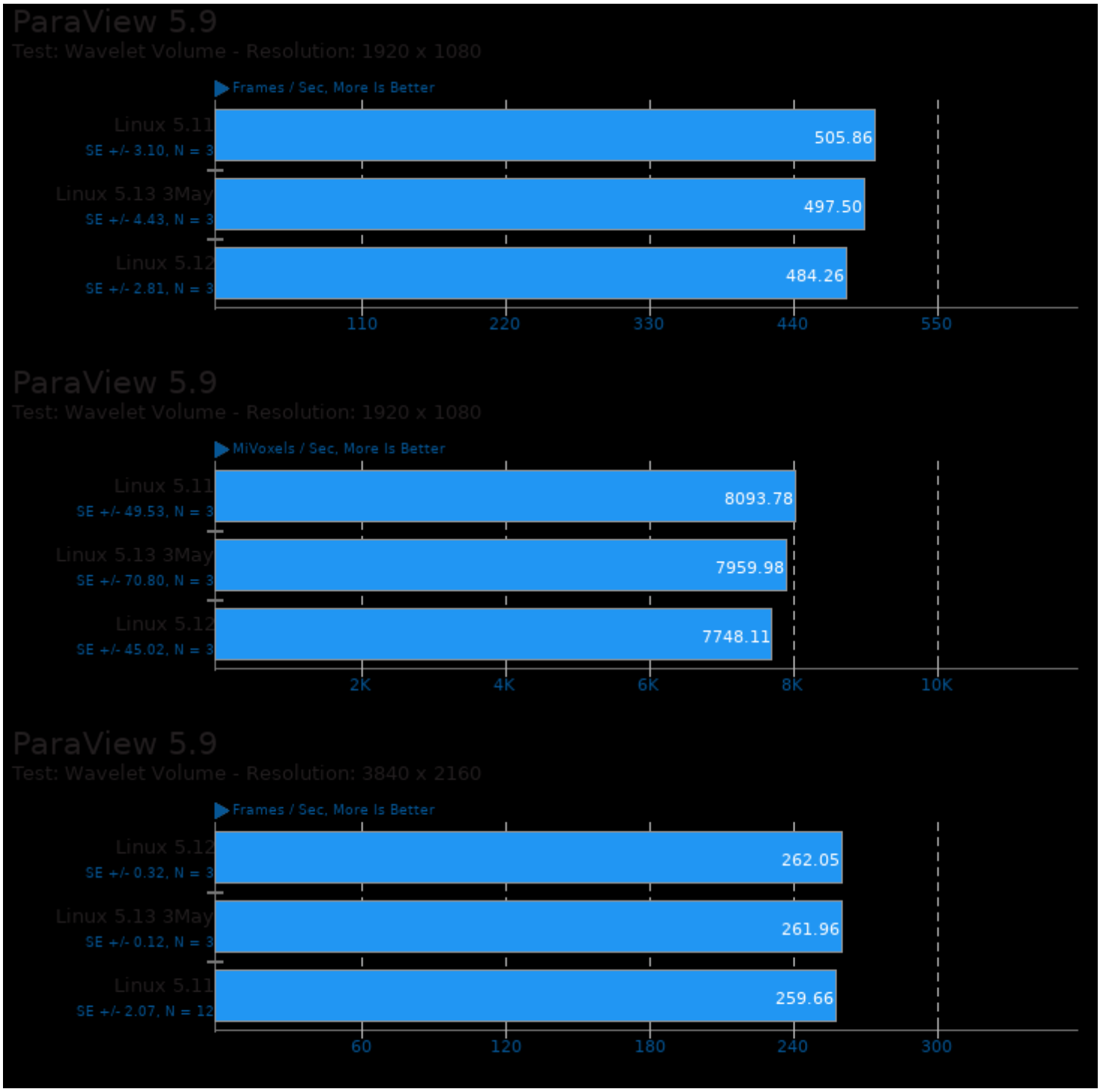

vkpeak 20210424
int32-scalar
GIOPS, More Is Better
Linux 5.11
SE +/- 0.30, N = 3
1581.21
Linux 5.12
SE +/- 0.30, N = 3
1580.87
Linux 5.13 3May
SE +/- 0.25, N = 3
1580.54
300
600
900
1200
1500
vkpeak 20210424
int32-vec4
GIOPS, More Is Better
Linux 5.11
SE +/- 0.29, N = 3
2052.68
Linux 5.12
SE +/- 0.27, N = 3
2051.57
Linux 5.13 3May
SE +/- 0.58, N = 3
2051.36
400
800
1200
1600
2000
vkpeak 20210424
int16-scalar
GIOPS, More Is Better
Linux 5.12
SE +/- 7.15, N = 3
4914.95
Linux 5.11
SE +/- 9.93, N = 3
4889.26
Linux 5.13 3May
SE +/- 7.30, N = 3
4849.15
1100
2200
3300
4400
5500

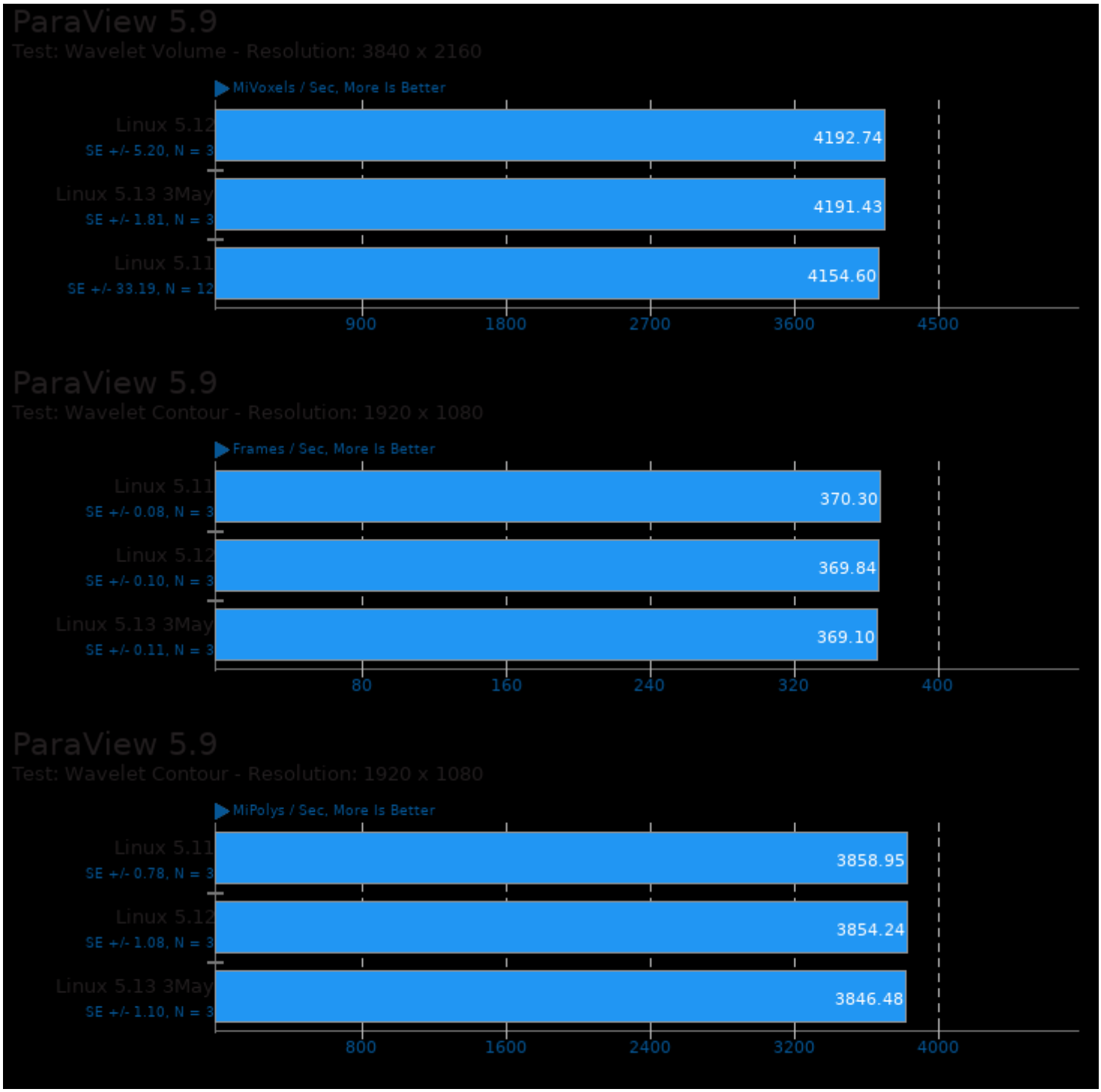

vkpeak 20210424
int16-vec4
GIOPS, More Is Better
Linux 5.11
SE +/- 4.03, N = 3
4938.12
Linux 5.13 3May
SE +/- 5.85, N = 3
4891.01
Linux 5.12
SE +/- 3.68, N = 3
4870.97
1100
2200
3300
4400
5500
RealSR-NCNN 20200818
Scale: 4x - TAA: Yes
Seconds, Fewer Is Better
Linux 5.12
SE +/- 0.01, N = 3
57.58
Linux 5.11
SE +/- 0.07, N = 3
57.61
Linux 5.13 3May
SE +/- 0.03, N = 3
57.62
13
26
39
52
65
Waifu2x-NCNN Vulkan 20200818
Scale: 2x - Denoise: 3 - TAA: Yes
Seconds, Fewer Is Better
Linux 5.12
SE +/- 0.005, N = 3
5.065
Linux 5.13 3May
SE +/- 0.018, N = 3
5.072
Linux 5.11
SE +/- 0.027, N = 3
5.073
1.1414
2.2828
3.4242
4.5656
5.707

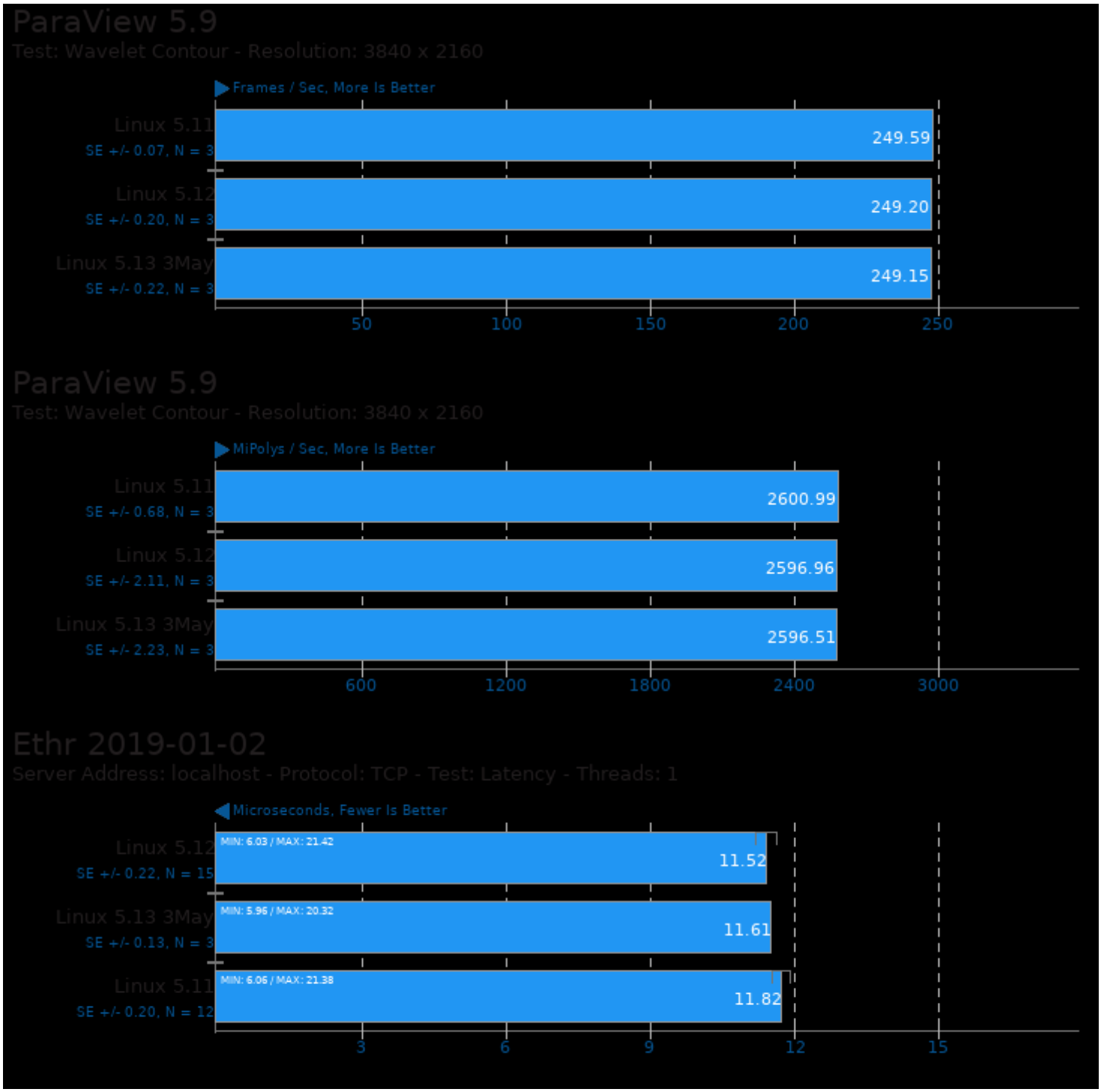

VkFFT 1.1.1
Benchmark Score, More Is Better
Linux 5.12
SE +/- 27.09, N = 3
20501
Linux 5.11
SE +/- 35.63, N = 3
20500
Linux 5.13 3May
SE +/- 16.04, N = 3
20480
4K
8K
12K
16K
20K
1. (CXX) g++ options: -O3 -pthread
Tesseract 2014-05-12
Resolution: 3840 x 2160
Frames Per Second, More Is Better
Linux 5.12
SE +/- 4.84, N = 15
423.63
Linux 5.11
SE +/- 2.03, N = 3
407.55
Linux 5.13 3May
SE +/- 1.93, N = 3
397.44
90
180
270
360
450
Xonotic 0.8.2
Resolution: 3840 x 2160 - Effects Quality: High
Frames Per Second, More Is Better
Linux 5.13 3May
SE +/- 6.28, N = 3
MIN: 349 / MAX: 883
551.35
Linux 5.12
SE +/- 6.72, N = 3
MIN: 354 / MAX: 876
547.94
Linux 5.11
SE +/- 3.10, N = 3
MIN: 289 / MAX: 878
542.44
120
240
360
480
600

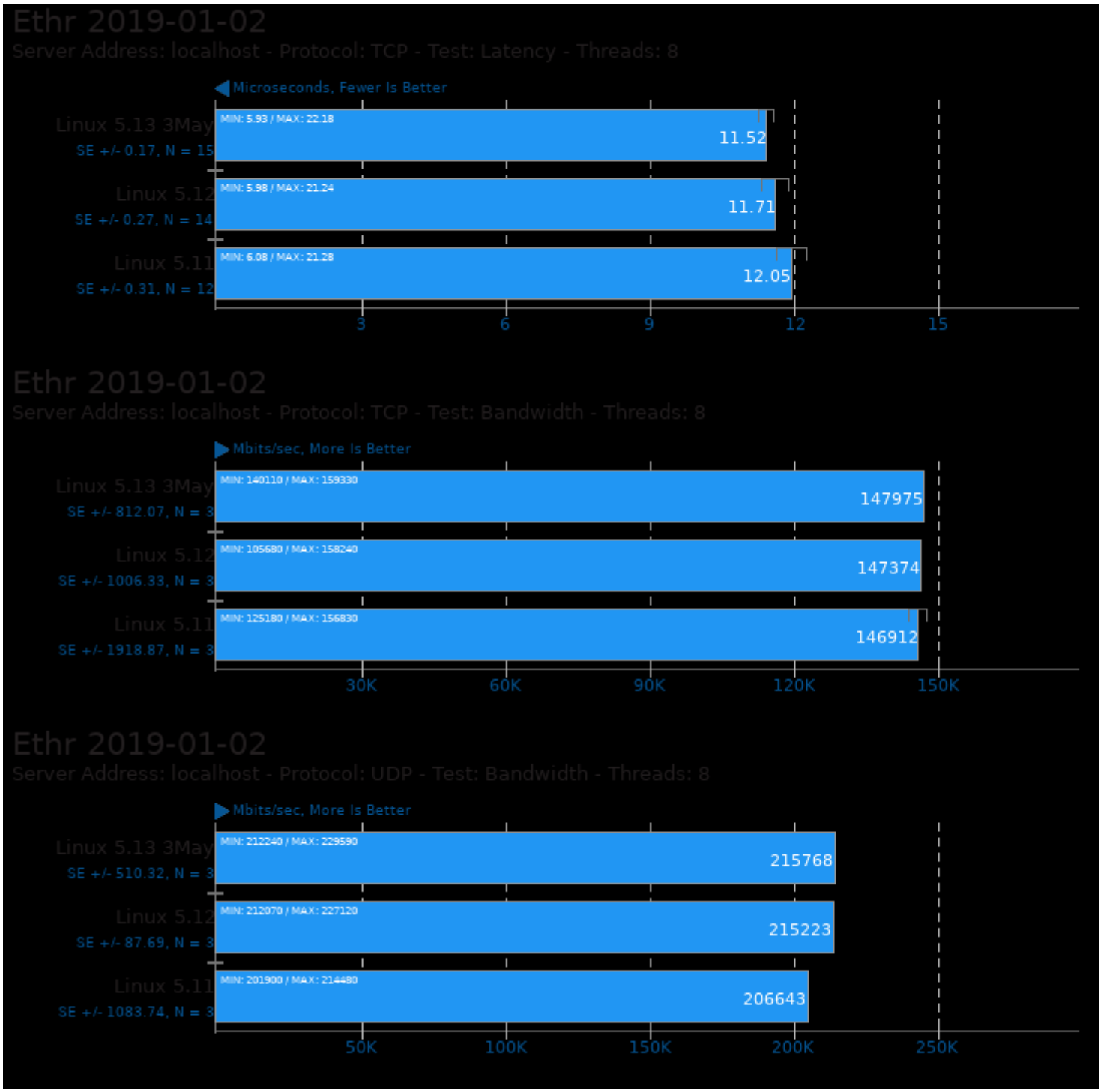

Xonotic 0.8.2
Resolution: 3840 x 2160 - Effects Quality: Ultra
Frames Per Second, More Is Better
Linux 5.12
SE +/- 1.64, N = 3
MIN: 284 / MAX: 747
486.83
Linux 5.13 3May
SE +/- 1.46, N = 3
MIN: 285 / MAX: 746
482.77
Linux 5.11
SE +/- 3.48, N = 3
MIN: 256 / MAX: 745
476.08
110
220
330
440
550
Xonotic 0.8.2
Resolution: 3840 x 2160 - Effects Quality: Ultimate
Frames Per Second, More Is Better
Linux 5.12
SE +/- 0.96, N = 3
MIN: 64 / MAX: 636
383.94
Linux 5.13 3May
SE +/- 1.55, N = 3
MIN: 64 / MAX: 627
381.38
Linux 5.11
SE +/- 0.95, N = 3
MIN: 63 / MAX: 631
378.96
80
160
240
320
400
ParaView 5.9
Test: Many Spheres - Resolution: 1920 x 1080
Frames / Sec, More Is Better
Linux 5.13 3May
SE +/- 0.09, N = 3
66.35
Linux 5.11
SE +/- 0.05, N = 3
66.30
Linux 5.12
SE +/- 0.22, N = 3
66.11
15
30
45
60
75

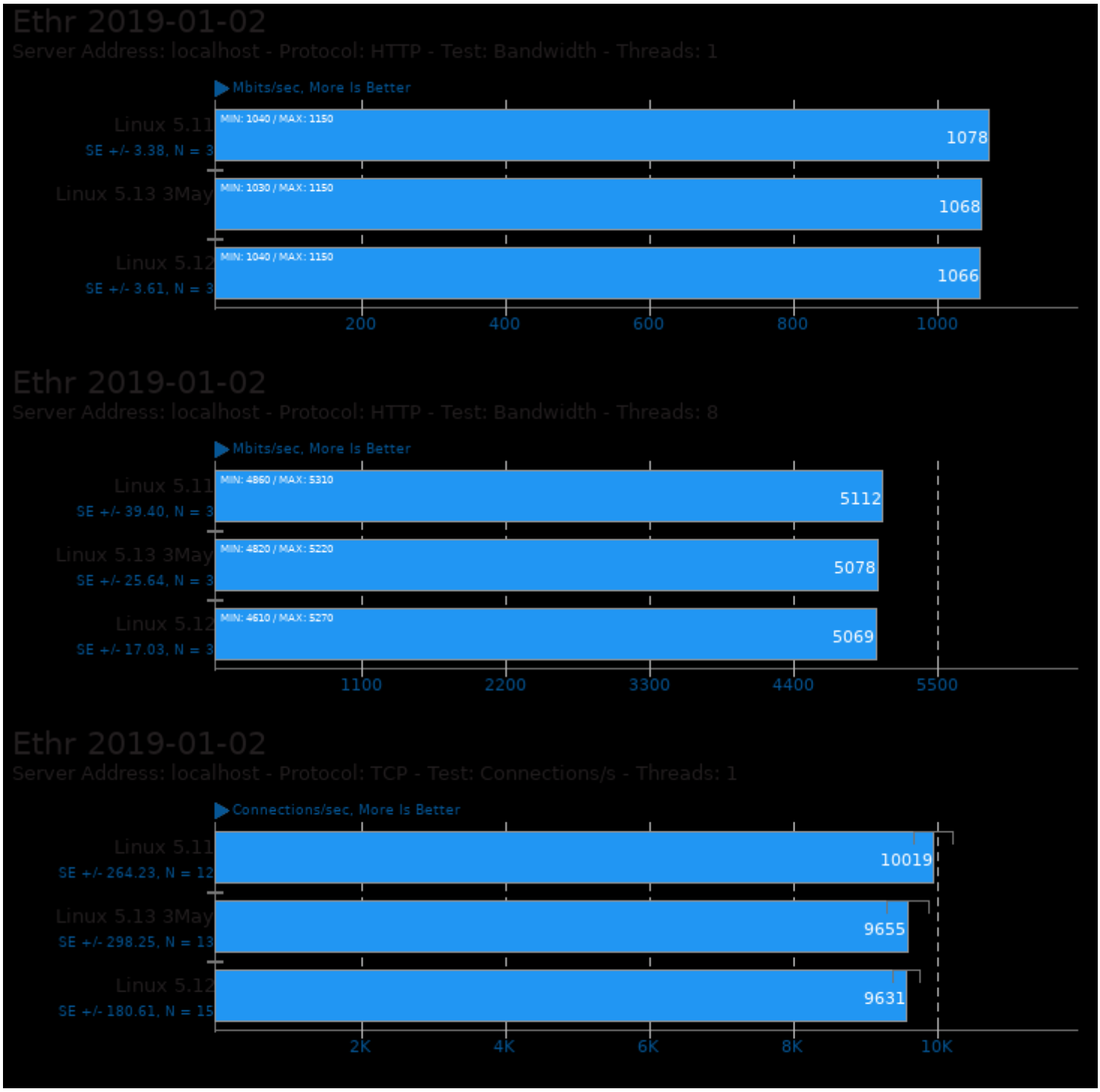

ParaView 5.9
Test: Many Spheres - Resolution: 1920 x 1080
MiPolys / Sec, More Is Better
Linux 5.13 3May
SE +/- 8.93, N = 3
6651.86
Linux 5.11
SE +/- 5.42, N = 3
6647.34
Linux 5.12
SE +/- 22.38, N = 3
6627.64
1400
2800
4200
5600
7000
ParaView 5.9
Test: Many Spheres - Resolution: 3840 x 2160
Frames / Sec, More Is Better
Linux 5.13 3May
SE +/- 0.02, N = 3
62.61
Linux 5.11
SE +/- 0.04, N = 3
62.60
Linux 5.12
SE +/- 0.01, N = 3
62.57
14
28
42
56
70
ParaView 5.9
Test: Many Spheres - Resolution: 3840 x 2160
MiPolys / Sec, More Is Better
Linux 5.13 3May
SE +/- 2.07, N = 3
6277.45
Linux 5.11
SE +/- 3.73, N = 3
6275.58
Linux 5.12
SE +/- 1.65, N = 3
6272.72
1300
2600
3900
5200
6500

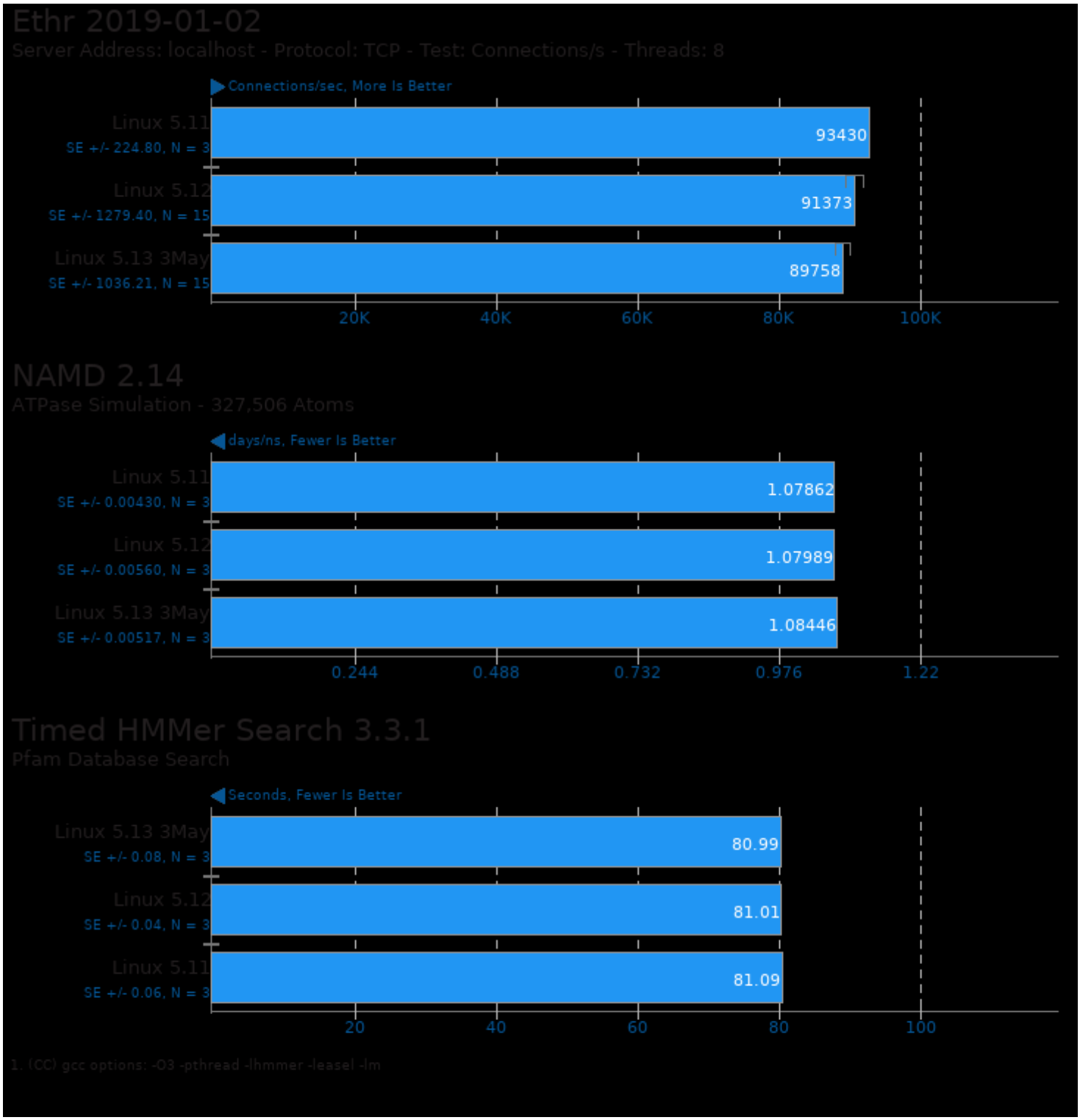

ParaView 5.9
Test: Wavelet Volume - Resolution: 1920 x 1080
Frames / Sec, More Is Better
Linux 5.11
SE +/- 3.10, N = 3
505.86
Linux 5.13 3May
SE +/- 4.43, N = 3
497.50
Linux 5.12
SE +/- 2.81, N = 3
484.26
110
220
330
440
550
ParaView 5.9
Test: Wavelet Volume - Resolution: 1920 x 1080
MiVoxels / Sec, More Is Better
Linux 5.11
SE +/- 49.53, N = 3
8093.78
Linux 5.13 3May
SE +/- 70.80, N = 3
7959.98
Linux 5.12
SE +/- 45.02, N = 3
7748.11
2K
4K
6K
8K
10K
ParaView 5.9
Test: Wavelet Volume - Resolution: 3840 x 2160
Frames / Sec, More Is Better
Linux 5.12
SE +/- 0.32, N = 3
262.05
Linux 5.13 3May
SE +/- 0.12, N = 3
261.96
Linux 5.11
SE +/- 2.07, N = 12
259.66
60
120
180
240
300


ParaView 5.9
Test: Wavelet Volume - Resolution: 3840 x 2160
MiVoxels / Sec, More Is Better
Linux 5.12
SE +/- 5.20, N = 3
4192.74
Linux 5.13 3May
SE +/- 1.81, N = 3
4191.43
Linux 5.11
SE +/- 33.19, N = 12
4154.60
900
1800
2700
3600
4500
ParaView 5.9
Test: Wavelet Contour - Resolution: 1920 x 1080
Frames / Sec, More Is Better
Linux 5.11
SE +/- 0.08, N = 3
370.30
Linux 5.12
SE +/- 0.10, N = 3
369.84
Linux 5.13 3May
SE +/- 0.11, N = 3
369.10
80
160
240
320
400
ParaView 5.9
Test: Wavelet Contour - Resolution: 1920 x 1080
MiPolys / Sec, More Is Better
Linux 5.11
SE +/- 0.78, N = 3
3858.95
Linux 5.12
SE +/- 1.08, N = 3
3854.24
Linux 5.13 3May
SE +/- 1.10, N = 3
3846.48
800
1600
2400
3200
4000


ParaView 5.9
Test: Wavelet Contour - Resolution: 3840 x 2160
Frames / Sec, More Is Better
Linux 5.11
SE +/- 0.07, N = 3
249.59
Linux 5.12
SE +/- 0.20, N = 3
249.20
Linux 5.13 3May
SE +/- 0.22, N = 3
249.15
50
100
150
200
250
ParaView 5.9
Test: Wavelet Contour - Resolution: 3840 x 2160
MiPolys / Sec, More Is Better
Linux 5.11
SE +/- 0.68, N = 3
2600.99
Linux 5.12
SE +/- 2.11, N = 3
2596.96
Linux 5.13 3May
SE +/- 2.23, N = 3
2596.51
600
1200
1800
2400
3000
Ethr 2019-01-02
Server Address: localhost - Protocol: TCP - Test: Latency - Threads: 1
Microseconds, Fewer Is Better
Linux 5.12
SE +/- 0.22, N = 15
MIN: 6.03 / MAX: 21.42
11.52
Linux 5.13 3May
SE +/- 0.13, N = 3
MIN: 5.96 / MAX: 20.32
11.61
Linux 5.11
SE +/- 0.20, N = 12
MIN: 6.06 / MAX: 21.38
11.82
3
6
9
12
15

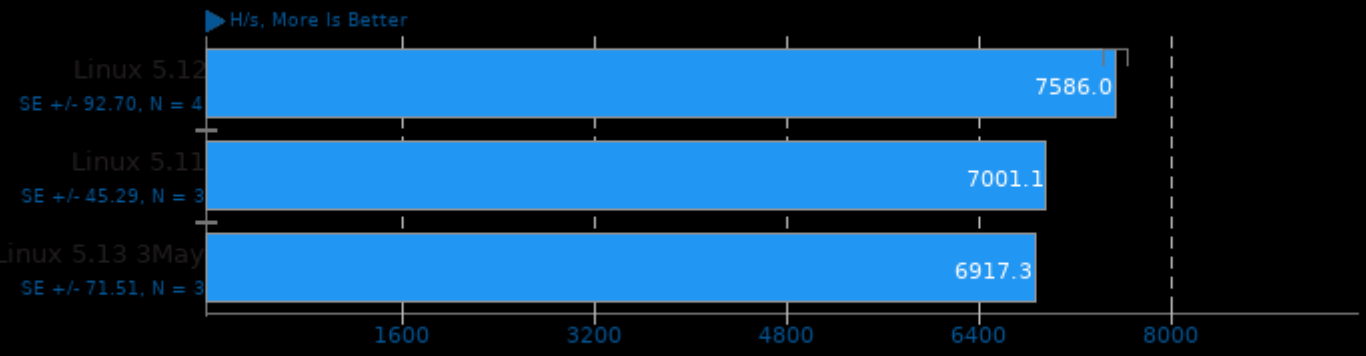

Ethr 2019-01-02
Server Address: localhost - Protocol: TCP - Test: Latency - Threads: 8
Microseconds, Fewer Is Better
Linux 5.13 3May
SE +/- 0.17, N = 15
MIN: 5.93 / MAX: 22.18
11.52
Linux 5.12
SE +/- 0.27, N = 14
MIN: 5.98 / MAX: 21.24
11.71
Linux 5.11
SE +/- 0.31, N = 12
MIN: 6.08 / MAX: 21.28
12.05
3
6
9
12
15
Ethr 2019-01-02
Server Address: localhost - Protocol: TCP - Test: Bandwidth - Threads: 8
Mbits/sec, More Is Better
Linux 5.13 3May
SE +/- 812.07, N = 3
MIN: 140110 / MAX: 159330
147975
Linux 5.12
SE +/- 1006.33, N = 3
MIN: 105680 / MAX: 158240
147374
Linux 5.11
SE +/- 1918.87, N = 3
MIN: 125180 / MAX: 156830
146912
30K
60K
90K
120K
150K
Ethr 2019-01-02
Server Address: localhost - Protocol: UDP - Test: Bandwidth - Threads: 8
Mbits/sec, More Is Better
Linux 5.13 3May
SE +/- 510.32, N = 3
MIN: 212240 / MAX: 229590
215768
Linux 5.12
SE +/- 87.69, N = 3
MIN: 212070 / MAX: 227120
215223
Linux 5.11
SE +/- 1083.74, N = 3
MIN: 201900 / MAX: 214480
206643
50K
100K
150K
200K
250K


Ethr 2019-01-02
Server Address: localhost - Protocol: HTTP - Test: Bandwidth - Threads: 1
Mbits/sec, More Is Better
Linux 5.11
SE +/- 3.38, N = 3
MIN: 1040 / MAX: 1150
1078
Linux 5.13 3May
MIN: 1030 / MAX: 1150
1068
Linux 5.12
SE +/- 3.61, N = 3
MIN: 1040 / MAX: 1150
1066
200
400
600
800
1000
Ethr 2019-01-02
Server Address: localhost - Protocol: HTTP - Test: Bandwidth - Threads: 8
Mbits/sec, More Is Better
Linux 5.11
SE +/- 39.40, N = 3
MIN: 4860 / MAX: 5310
5112
Linux 5.13 3May
SE +/- 25.64, N = 3
MIN: 4820 / MAX: 5220
5078
Linux 5.12
SE +/- 17.03, N = 3
MIN: 4610 / MAX: 5270
5069
1100
2200
3300
4400
5500
Ethr 2019-01-02
Server Address: localhost - Protocol: TCP - Test: Connections/s - Threads: 1
Connections/sec, More Is Better
Linux 5.11
SE +/- 264.23, N = 12
10019
Linux 5.13 3May
SE +/- 298.25, N = 13
9655
Linux 5.12
SE +/- 180.61, N = 15
9631
2K
4K
6K
8K
10K


Ethr 2019-01-02
Server Address: localhost - Protocol: TCP - Test: Connections/s - Threads: 8
Connections/sec, More Is Better
Linux 5.11
SE +/- 224.80, N = 3
93430
Linux 5.12
SE +/- 1279.40, N = 15
91373
Linux 5.13 3May
SE +/- 1036.21, N = 15
89758
20K
40K
60K
80K
100K
NAMD 2.14
ATPase Simulation - 327,506 Atoms
days/ns, Fewer Is Better
Linux 5.11
SE +/- 0.00430, N = 3
1.07862
Linux 5.12
SE +/- 0.00560, N = 3
1.07989
Linux 5.13 3May
SE +/- 0.00517, N = 3
1.08446
0.244
0.488
0.732
0.976
1.22
Timed HMMer Search 3.3.1
Pfam Database Search
Seconds, Fewer Is Better
Linux 5.13 3May
SE +/- 0.08, N = 3
80.99
Linux 5.12
SE +/- 0.04, N = 3
81.01
Linux 5.11
SE +/- 0.06, N = 3
81.09
20
40
60
80
100
1. (CC) gcc options: -O3 -pthread -lhmmer -leasel -lm

Xmrig 6.12.1

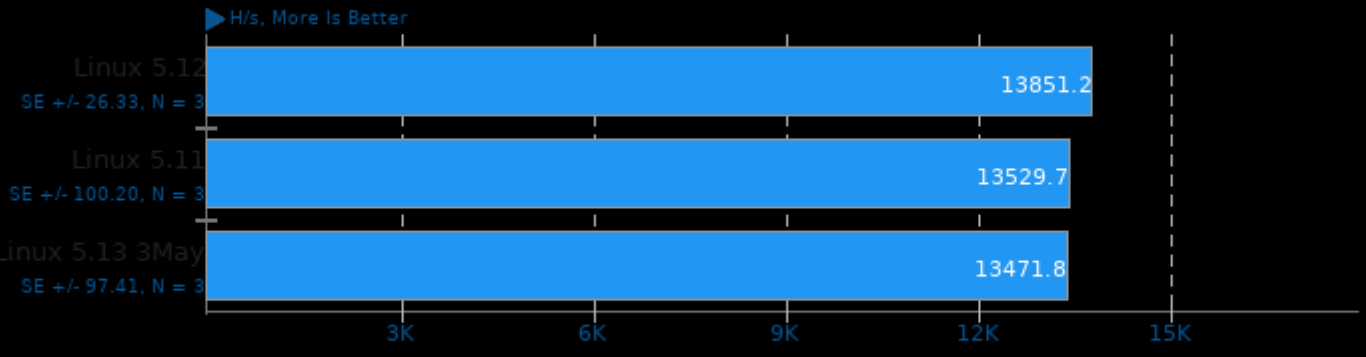
Variant: Monero - Hash Count: 1M



1. (CXX) g++ options: -fexceptions -fno-rtti -maes -O3 -Ofast -static-libgcc -static-libstdc++ -rdynamic -lssl -lcrypto -luv -lpthread -lrt -ldl -lhwloc

Xmrig 6.12.1

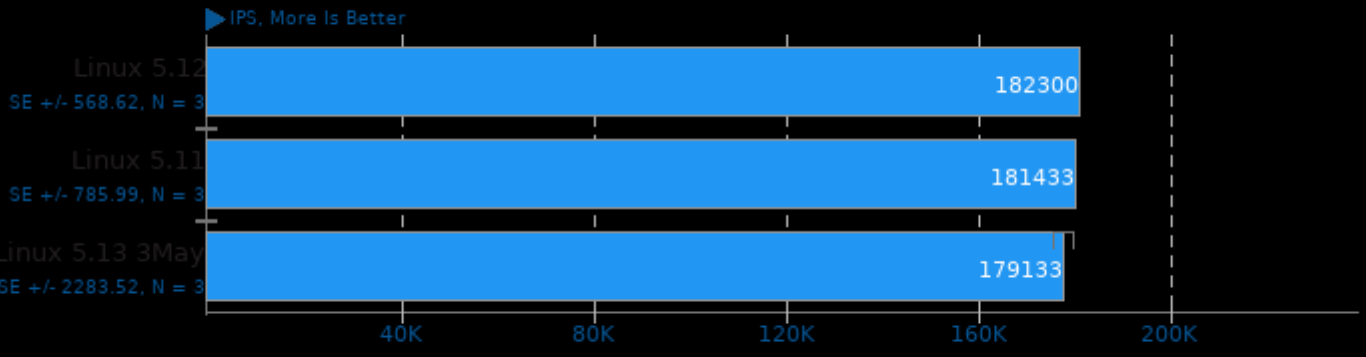
Variant: Wownero - Hash Count: 1M



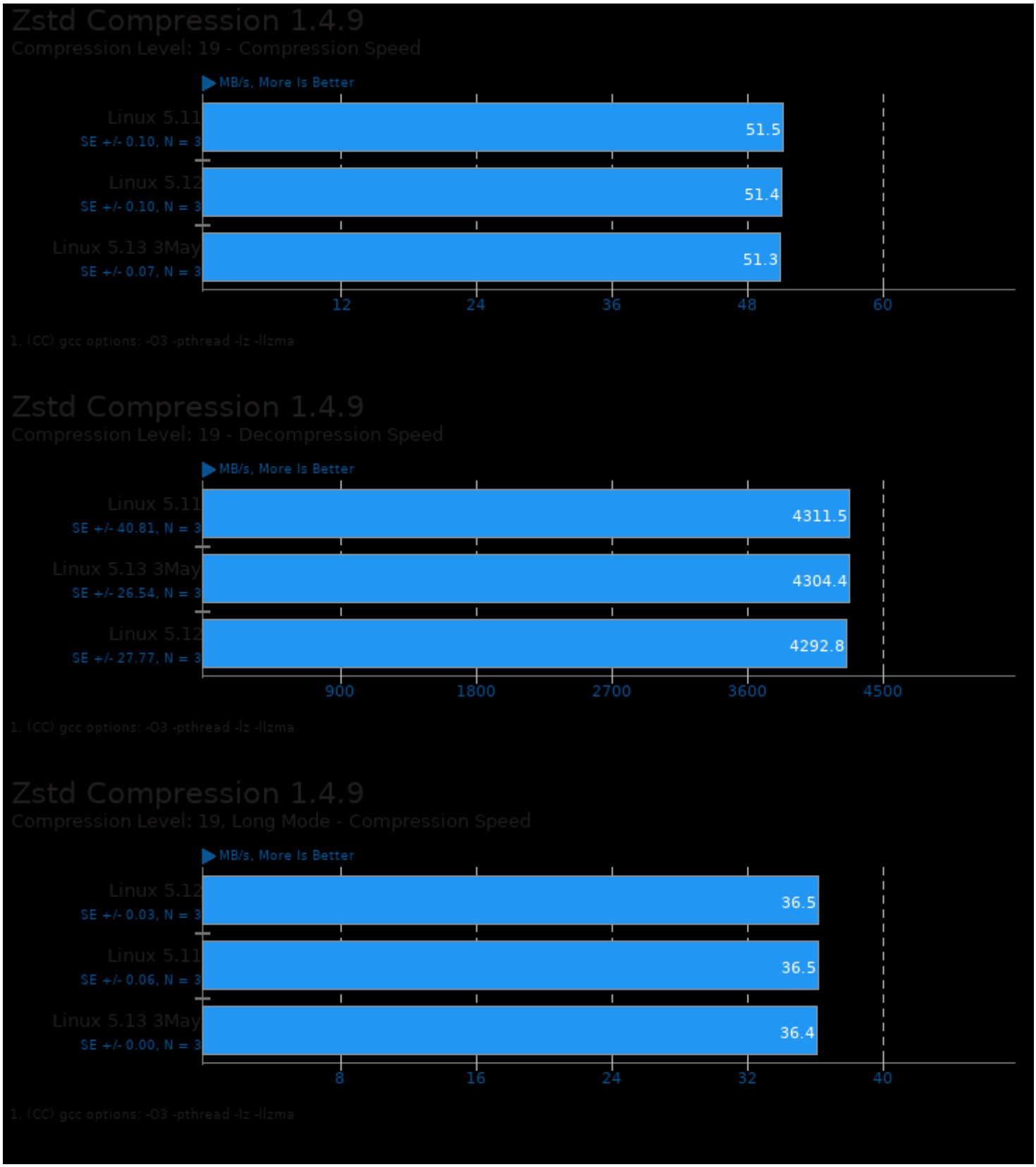
1. (CXX) g++ options: -fexceptions -fno-rtti -maes -O3 -Ofast -static-libgcc -static-libstdc++ -rdynamic -lssl -lcrypto -luv -lpthread -lrt -ldl -lhwloc

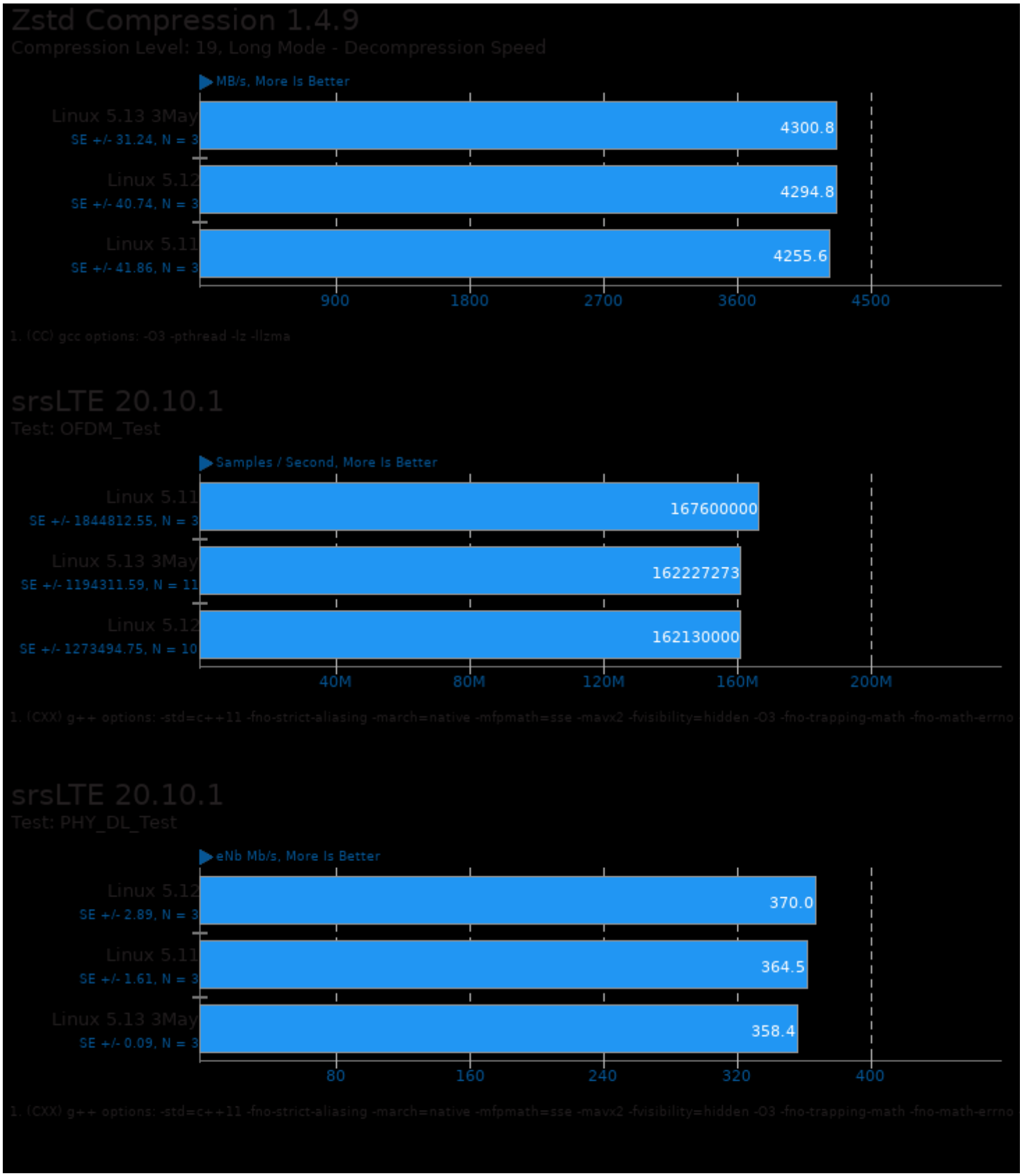
Chia Blockchain VDF 1.0.1

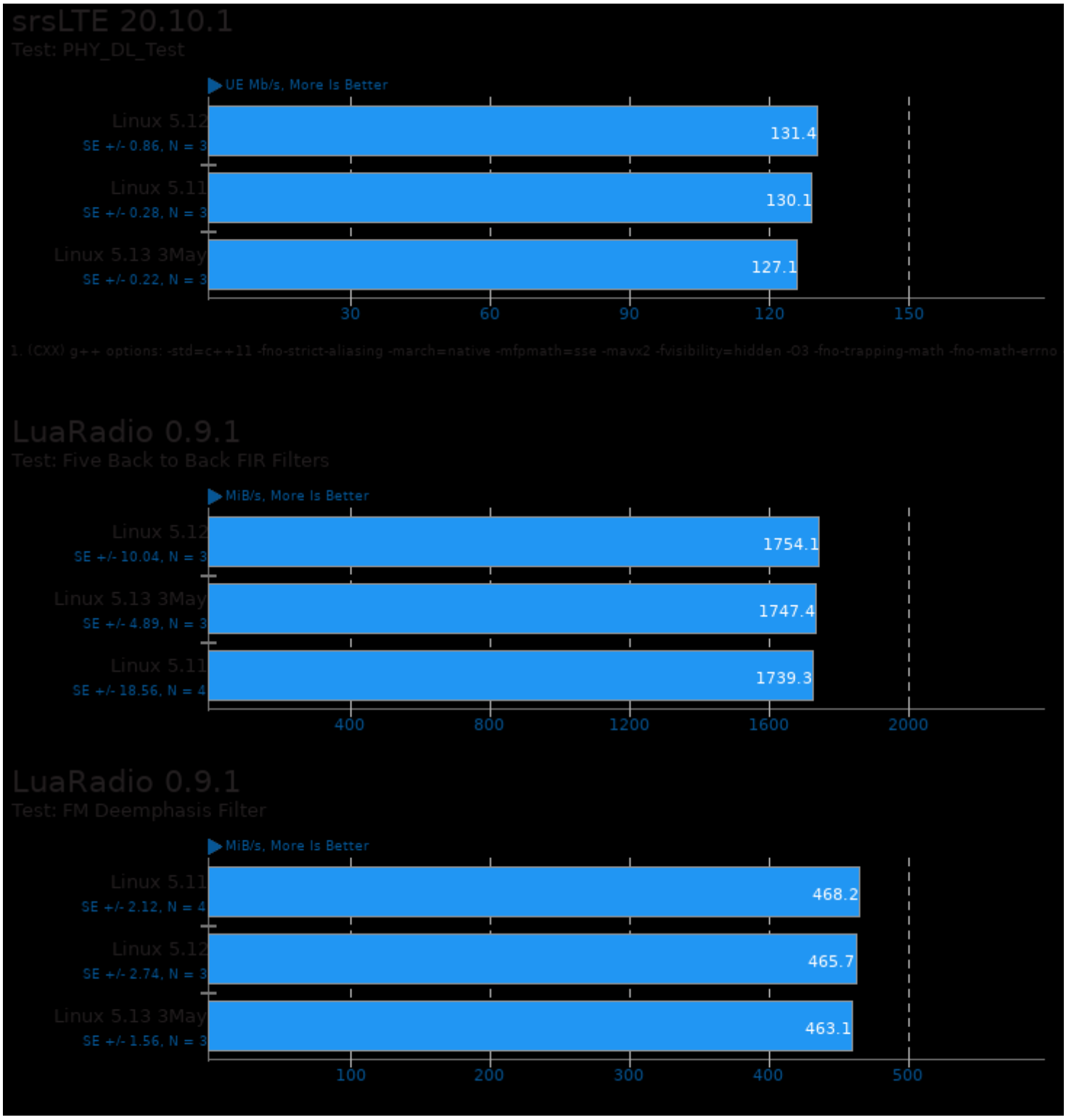
Test: Square

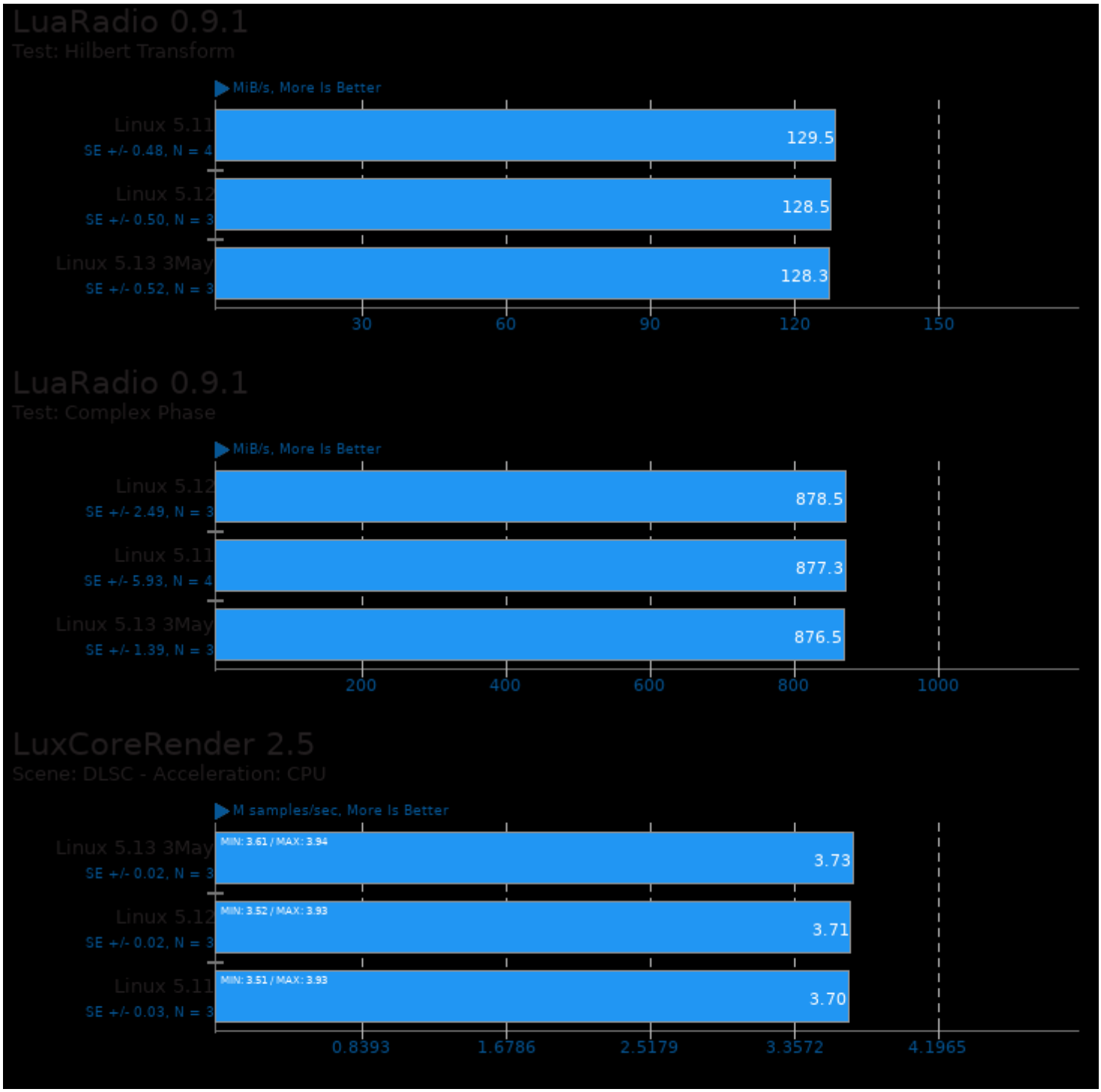


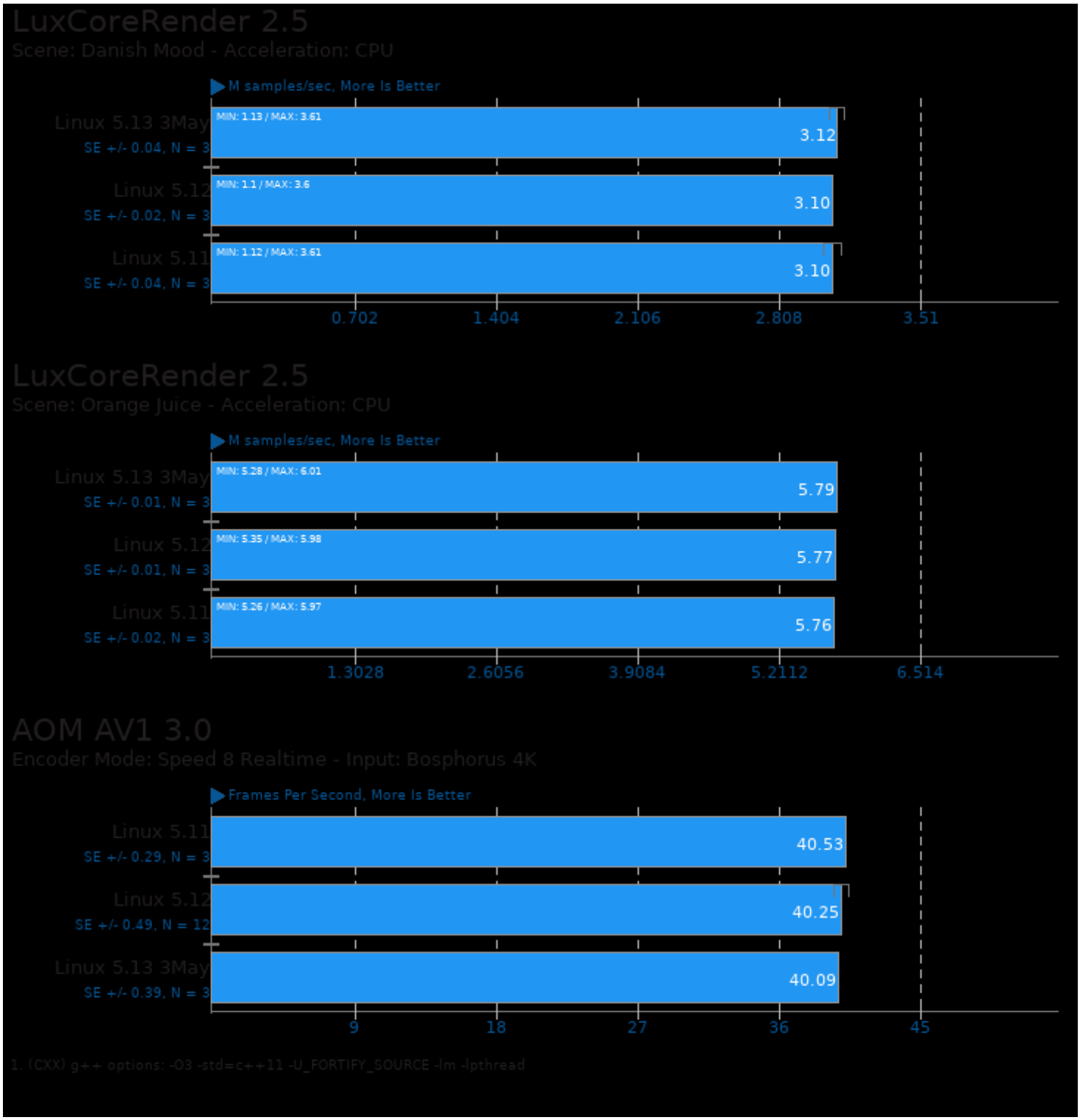
1. (CXX) g++ options: -flto -no-pie -lgmpxx -lgmp -lboost_system -pthread

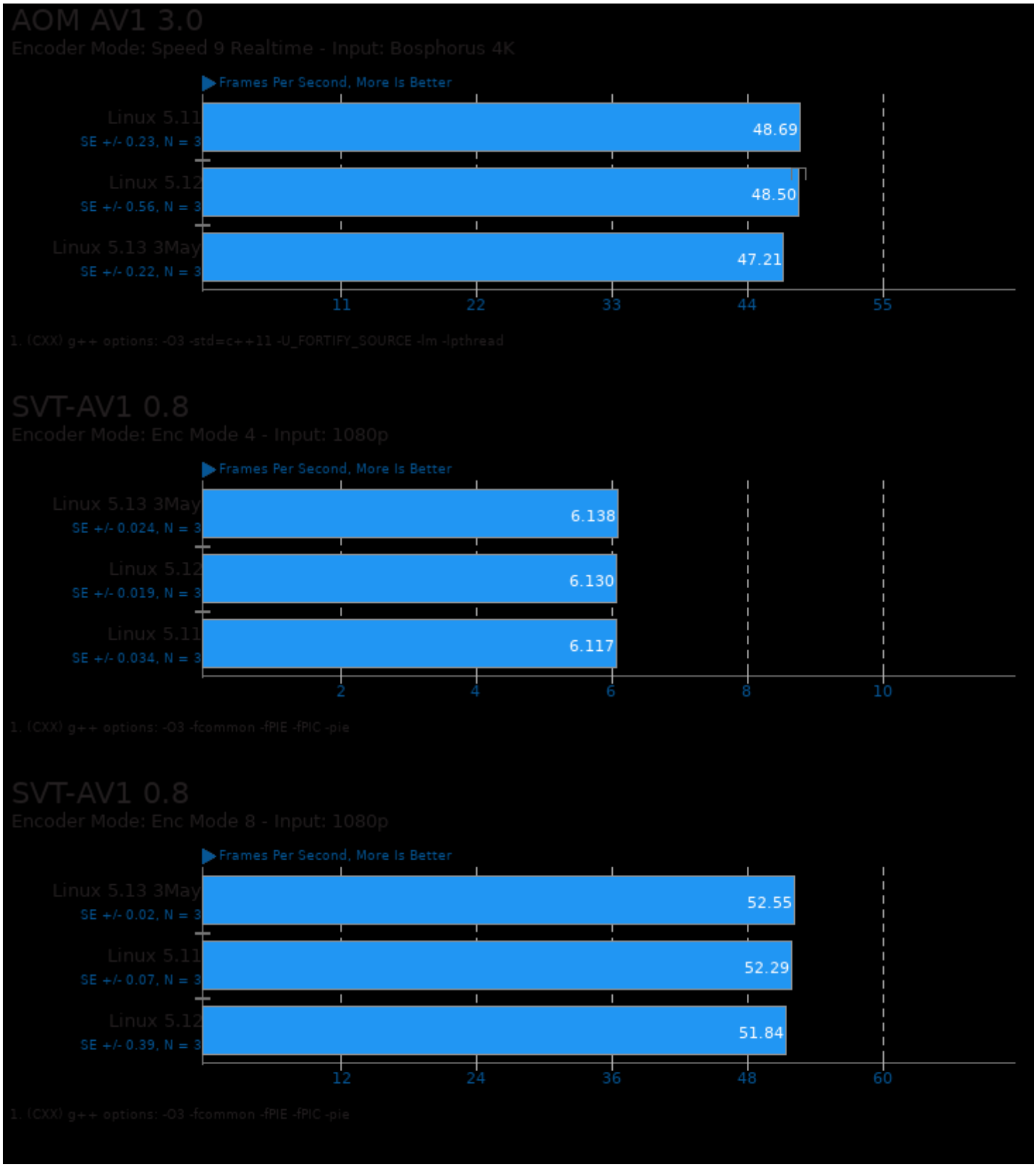

Zstd Compression 1.4.9
Compression Level: 19 - Compression Speed
MB/s, More Is Better
Linux 5.11
SE +/- 0.10, N = 3
51.5
Linux 5.12
SE +/- 0.10, N = 3
51.4
Linux 5.13 3May
SE +/- 0.07, N = 3
51.3
12
24
36
48
60
1. (CC) gcc options: -O3 -pthread -lz -llzma
Zstd Compression 1.4.9
Compression Level: 19 - Decompression Speed
MB/s, More Is Better
Linux 5.11
SE +/- 40.81, N = 3
4311.5
Linux 5.13 3May
SE +/- 26.54, N = 3
4304.4
Linux 5.12
SE +/- 27.77, N = 3
4292.8
900
1800
2700
3600
4500
1. (CC) gcc options: -O3 -pthread -lz -llzma
Zstd Compression 1.4.9
Compression Level: 19, Long Mode - Compression Speed
MB/s, More Is Better
Linux 5.12
SE +/- 0.03, N = 3
36.5
Linux 5.11
SE +/- 0.06, N = 3
36.5
Linux 5.13 3May
SE +/- 0.00, N = 3
36.4
8
16
24
32
40
1. (CC) gcc options: -O3 -pthread -lz -llzma

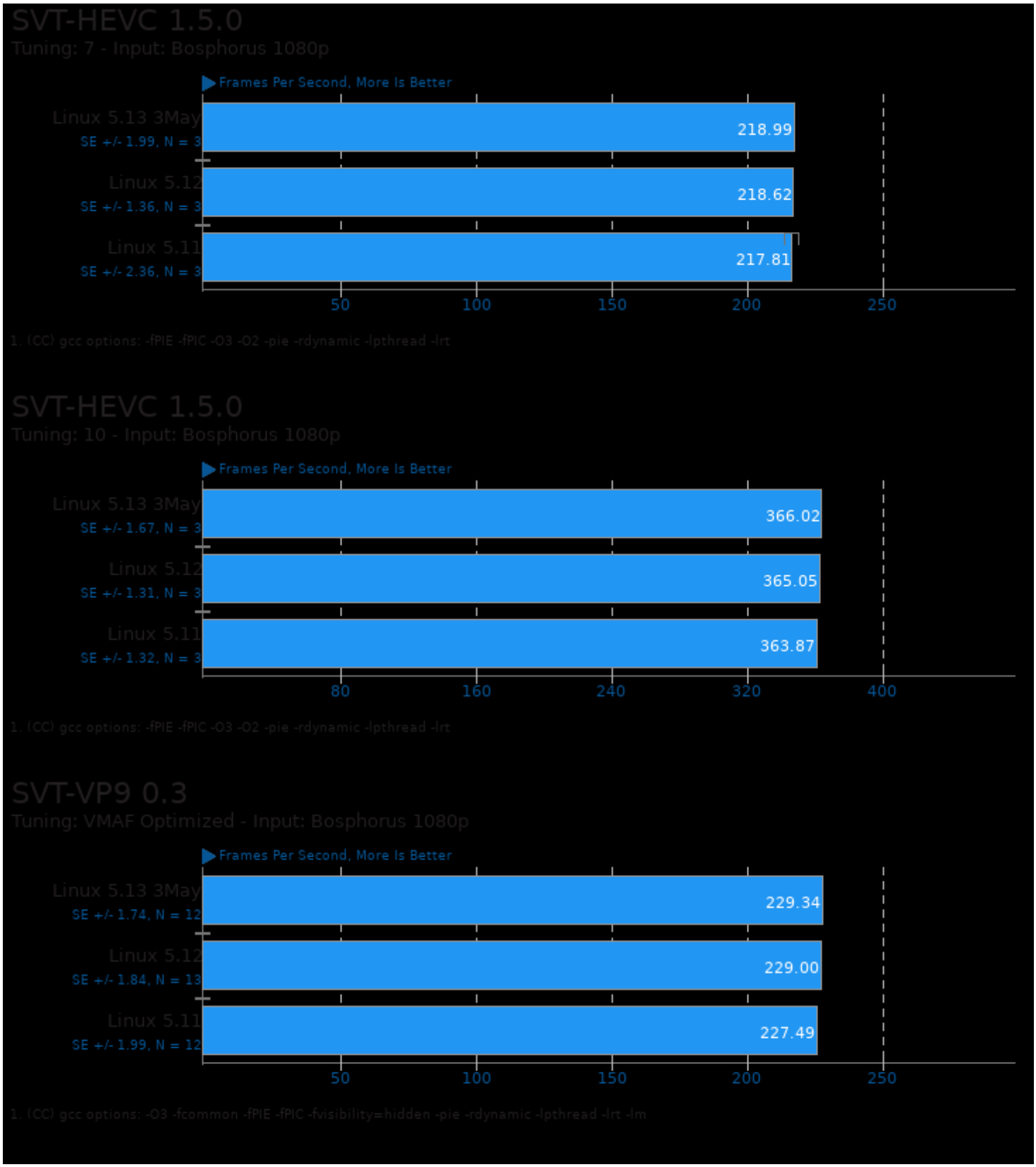

Zstd Compression 1.4.9
Compression Level: 19, Long Mode - Decompression Speed
MB/s, More Is Better
Linux 5.13 3May
SE +/- 31.24, N = 3
4300.8
Linux 5.12
SE +/- 40.74, N = 3
4294.8
Linux 5.11
SE +/- 41.86, N = 3
4255.6
900
1800
2700
3600
4500
1. (CC) gcc options: -O3 -pthread -lz -llzma
srsLTE 20.10.1
Test: OFDM_Test
Samples / Second, More Is Better
Linux 5.11
SE +/- 1844812.55, N = 3
167600000
Linux 5.13 3May
SE +/- 1194311.59, N = 11
162227273
Linux 5.12
SE +/- 1273494.75, N = 10
162130000
40M
80M
120M
160M
200M
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno
srsLTE 20.10.1
Test: PHY_DL_Test
eNb Mb/s, More Is Better
Linux 5.12
SE +/- 2.89, N = 3
370.0
Linux 5.11
SE +/- 1.61, N = 3
364.5
Linux 5.13 3May
SE +/- 0.09, N = 3
358.4
80
160
240
320
400
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno


srsLTE 20.10.1
Test: PHY_DL_Test
UE Mb/s, More Is Better
Linux 5.12
SE +/- 0.86, N = 3
131.4
Linux 5.11
SE +/- 0.28, N = 3
130.1
Linux 5.13 3May
SE +/- 0.22, N = 3
127.1
30
60
90
120
150
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno
LuaRadio 0.9.1
Test: Five Back to Back FIR Filters
MiB/s, More Is Better
Linux 5.12
SE +/- 10.04, N = 3
1754.1
Linux 5.13 3May
SE +/- 4.89, N = 3
1747.4
Linux 5.11
SE +/- 18.56, N = 4
1739.3
400
800
1200
1600
2000
LuaRadio 0.9.1
Test: FM Deemphasis Filter
MiB/s, More Is Better
Linux 5.11
SE +/- 2.12, N = 4
468.2
Linux 5.12
SE +/- 2.74, N = 3
465.7
Linux 5.13 3May
SE +/- 1.56, N = 3
463.1
100
200
300
400
500


LuaRadio 0.9.1
Test: Hilbert Transform
MiB/s, More Is Better
Linux 5.11
SE +/- 0.48, N = 4
129.5
Linux 5.12
SE +/- 0.50, N = 3
128.5
Linux 5.13 3May
SE +/- 0.52, N = 3
128.3
30
60
90
120
150
LuaRadio 0.9.1
Test: Complex Phase
MiB/s, More Is Better
Linux 5.12
SE +/- 2.49, N = 3
878.5
Linux 5.11
SE +/- 5.93, N = 4
877.3
Linux 5.13 3May
SE +/- 1.39, N = 3
876.5
200
400
600
800
1000
LuxCoreRender 2.5
Scene: DLSC - Acceleration: CPU
M samples/sec, More Is Better
Linux 5.13 3May
SE +/- 0.02, N = 3
MIN: 3.61 / MAX: 3.94
3.73
Linux 5.12
SE +/- 0.02, N = 3
MIN: 3.52 / MAX: 3.93
3.71
Linux 5.11
SE +/- 0.03, N = 3
MIN: 3.51 / MAX: 3.93
3.70
0.8393
1.6786
2.5179
3.3572
4.1965

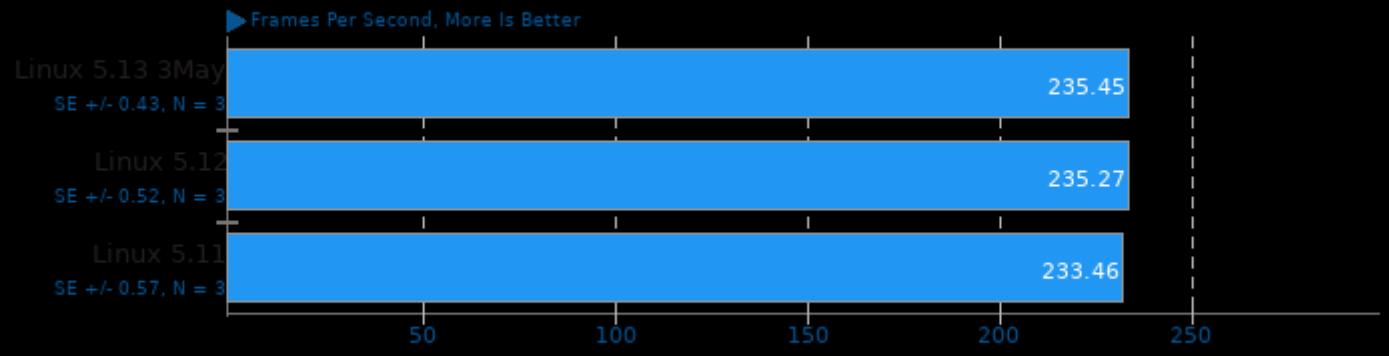

LuxCoreRender 2.5
Scene: Danish Mood - Acceleration: CPU
M samples/sec, More Is Better
Linux 5.13 3May
SE +/- 0.04, N = 3
MIN: 1.13 / MAX: 3.61
3.12
Linux 5.12
SE +/- 0.02, N = 3
MIN: 1.1 / MAX: 3.6
3.10
Linux 5.11
SE +/- 0.04, N = 3
MIN: 1.12 / MAX: 3.61
3.10
0.702
1.404
2.106
2.808
3.51
LuxCoreRender 2.5
Scene: Orange Juice - Acceleration: CPU
M samples/sec, More Is Better
Linux 5.13 3May
SE +/- 0.01, N = 3
MIN: 5.28 / MAX: 6.01
5.79
Linux 5.12
SE +/- 0.01, N = 3
MIN: 5.35 / MAX: 5.98
5.77
Linux 5.11
SE +/- 0.02, N = 3
MIN: 5.26 / MAX: 5.97
5.76
1.3028
2.6056
3.9084
5.2112
6.514
AOM AV1 3.0
Encoder Mode: Speed 8 Realtime - Input: Bosphorus 4K
Frames Per Second, More Is Better
Linux 5.11
SE +/- 0.29, N = 3
40.53
Linux 5.12
SE +/- 0.49, N = 12
40.25
Linux 5.13 3May
SE +/- 0.39, N = 3
40.09
9
18
27
36
45
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread


AOM AV1 3.0
Encoder Mode: Speed 9 Realtime - Input: Bosphorus 4K
Frames Per Second, More Is Better
Linux 5.11
SE +/- 0.23, N = 3
48.69
Linux 5.12
SE +/- 0.56, N = 3
48.50
Linux 5.13 3May
SE +/- 0.22, N = 3
47.21
11
22
33
44
55
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
SVT-AV1 0.8
Encoder Mode: Enc Mode 4 - Input: 1080p
Frames Per Second, More Is Better
Linux 5.13 3May
SE +/- 0.024, N = 3
6.138
Linux 5.12
SE +/- 0.019, N = 3
6.130
Linux 5.11
SE +/- 0.034, N = 3
6.117
2
4
6
8
10
1. (CXX) g++ options: -O3 -fcommon -fPIE -fPIC -pie
SVT-AV1 0.8
Encoder Mode: Enc Mode 8 - Input: 1080p
Frames Per Second, More Is Better
Linux 5.13 3May
SE +/- 0.02, N = 3
52.55
Linux 5.11
SE +/- 0.07, N = 3
52.29
Linux 5.12
SE +/- 0.39, N = 3
51.84
12
24
36
48
60
1. (CXX) g++ options: -O3 -fcommon -fPIE -fPIC -pie


SVT-HEVC 1.5.0
Tuning: 7 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
Linux 5.13 3May
SE +/- 1.99, N = 3
218.99
Linux 5.12
SE +/- 1.36, N = 3
218.62
Linux 5.11
SE +/- 2.36, N = 3
217.81
50
100
150
200
250
1. (CC) gcc options: -fPIE -fPIC -O3 -O2 -pie -rdynamic -lpthread -lrt
SVT-HEVC 1.5.0
Tuning: 10 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
Linux 5.13 3May
SE +/- 1.67, N = 3
366.02
Linux 5.12
SE +/- 1.31, N = 3
365.05
Linux 5.11
SE +/- 1.32, N = 3
363.87
80
160
240
320
400
1. (CC) gcc options: -fPIE -fPIC -O3 -O2 -pie -rdynamic -lpthread -lrt
SVT-VP9 0.3
Tuning: VMAF Optimized - Input: Bosphorus 1080p
Frames Per Second, More Is Better
Linux 5.13 3May
SE +/- 1.74, N = 12
229.34
Linux 5.12
SE +/- 1.84, N = 13
229.00
Linux 5.11
SE +/- 1.99, N = 12
227.49
50
100
150
200
250
1. (CC) gcc options: -O3 -fcommon -fPIE -fPIC -fvisibility=hidden -pie -rdynamic -lpthread -lrt -lm

SVT-VP9 0.3

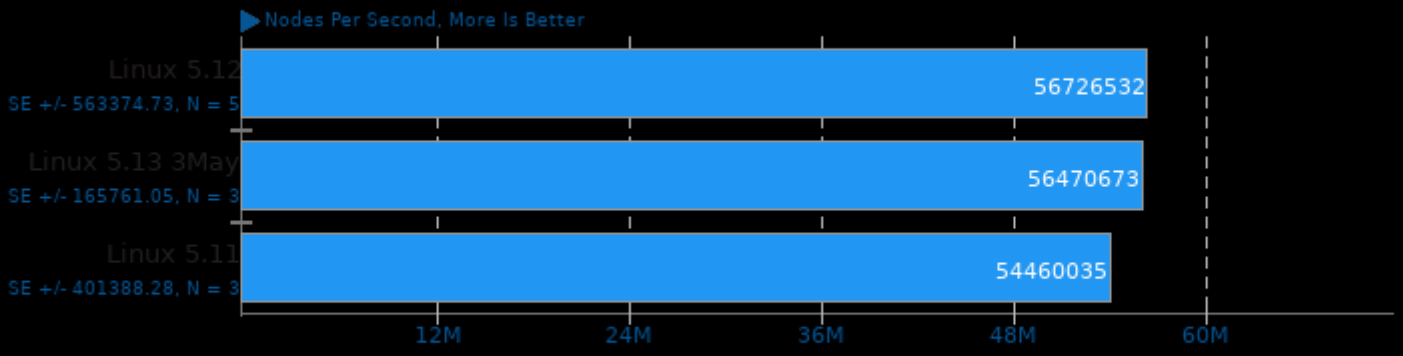
Tuning: PSNR/SSIM Optimized - Input: Bosphorus 1080p



1. (CC) gcc options: -O3 -fcommon -fPIE -fPIC -fvisibility=hidden -pie -rdynamic -lpthread -lrt -lm

Stockfish 13

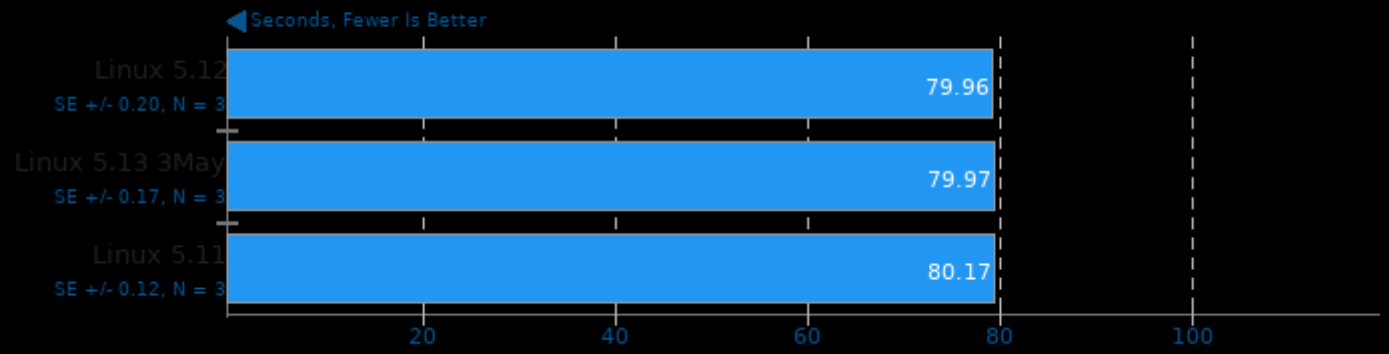
Total Time

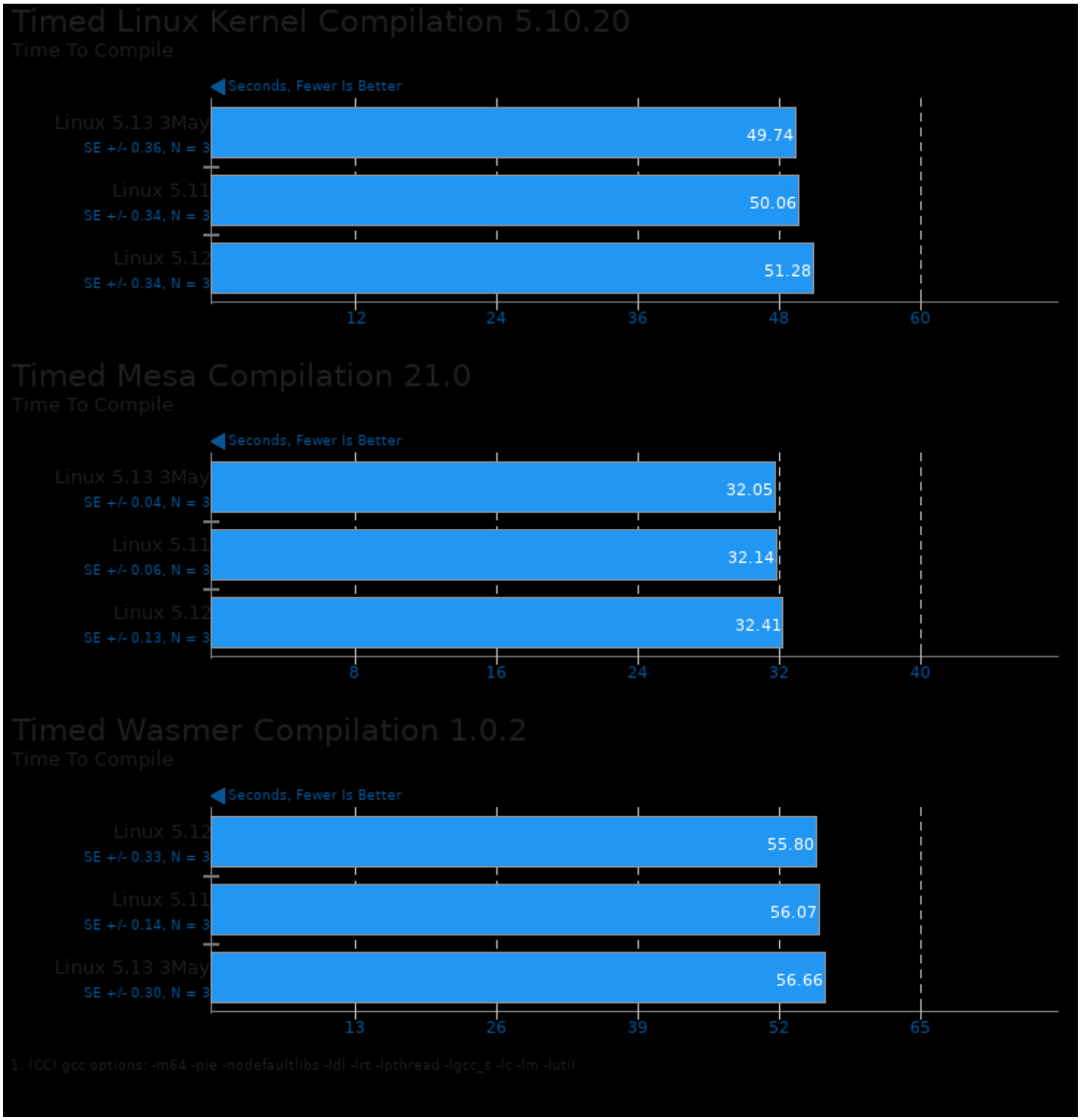


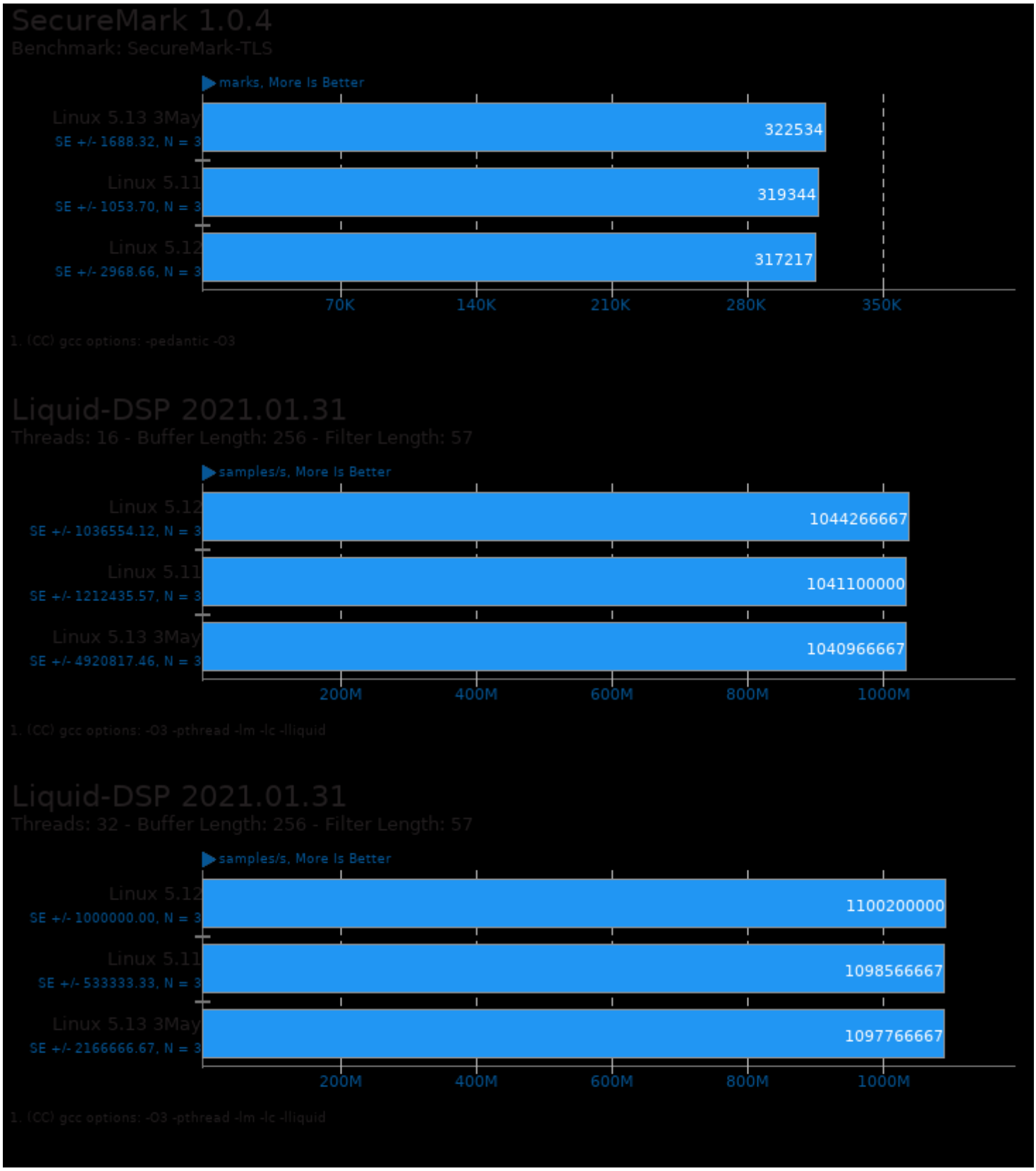
1. (CXX) g++ options: -lgcov -m64 -lpthread -fno-exceptions -std=c++17 -fprofile-use -fno-peel-loops -fno-tracer -pedantic -O3 -msse -msse3 -mpopcnt

Timed Godot Game Engine Compilation 3.2.3

Time To Compile

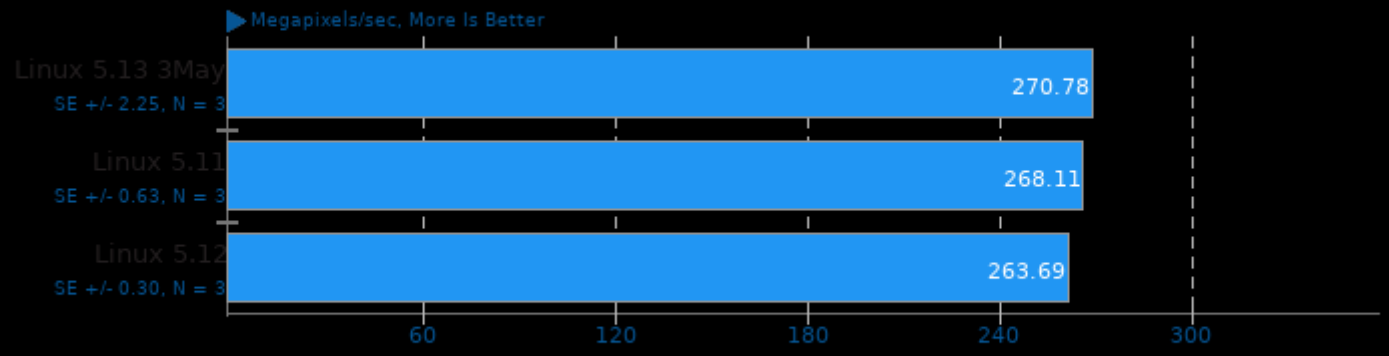



Timed Linux Kernel Compilation 5.10.20
Time To Compile
Seconds, Fewer Is Better
Linux 5.13 3May
SE +/- 0.36, N = 3
49.74
Linux 5.11
SE +/- 0.34, N = 3
50.06
Linux 5.12
SE +/- 0.34, N = 3
51.28
12
24
36
48
60
Timed Mesa Compilation 21.0
Time To Compile
Seconds, Fewer Is Better
Linux 5.13 3May
SE +/- 0.04, N = 3
32.05
Linux 5.11
SE +/- 0.06, N = 3
32.14
Linux 5.12
SE +/- 0.13, N = 3
32.41
8
16
24
32
40
Timed Wasmer Compilation 1.0.2
Time To Compile
Seconds, Fewer Is Better
Linux 5.12
SE +/- 0.33, N = 3
55.80
Linux 5.11
SE +/- 0.14, N = 3
56.07
Linux 5.13 3May
SE +/- 0.30, N = 3
56.66
13
26
39
52
65
1. (CC) gcc options: -m64 -pie -nodefaultlibs -ldl -lrt -lpthread -lgcc_s -lc -lm -lutil


SecureMark 1.0.4
Benchmark: SecureMark-TLS
marks, More Is Better
Linux 5.13 3May
SE +/- 1688.32, N = 3
322534
Linux 5.11
SE +/- 1053.70, N = 3
319344
Linux 5.12
SE +/- 2968.66, N = 3
317217
70K
140K
210K
280K
350K
1. (CC) gcc options: -pedantic -O3
Liquid-DSP 2021.01.31
Threads: 16 - Buffer Length: 256 - Filter Length: 57
samples/s, More Is Better
Linux 5.12
SE +/- 1036554.12, N = 3
1044266667
Linux 5.11
SE +/- 1212435.57, N = 3
1041100000
Linux 5.13 3May
SE +/- 4920817.46, N = 3
1040966667
200M
400M
600M
800M
1000M
1. (CC) gcc options: -O3 -pthread -lm -lc -lliquid
Liquid-DSP 2021.01.31
Threads: 32 - Buffer Length: 256 - Filter Length: 57
samples/s, More Is Better
Linux 5.12
SE +/- 1000000.00, N = 3
1100200000
Linux 5.11
SE +/- 533333.33, N = 3
1098566667
Linux 5.13 3May
SE +/- 2166666.67, N = 3
1097766667
200M
400M
600M
800M
1000M
1. (CC) gcc options: -O3 -pthread -lm -lc -lliquid

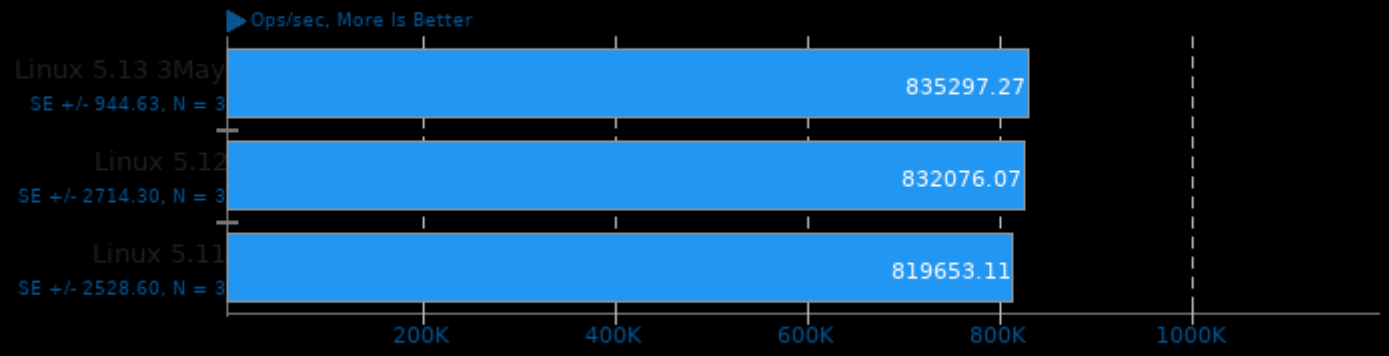
libjpeg-turbo tjbench 2.1.0

Test: Decompression Throughput



1. (CC) gcc options: -O3 -rdynamic

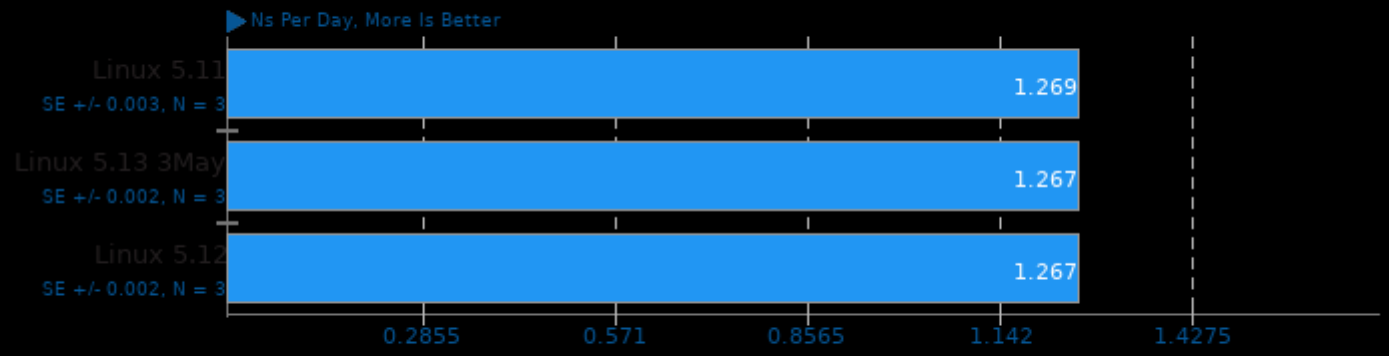
KeyDB 6.0.16



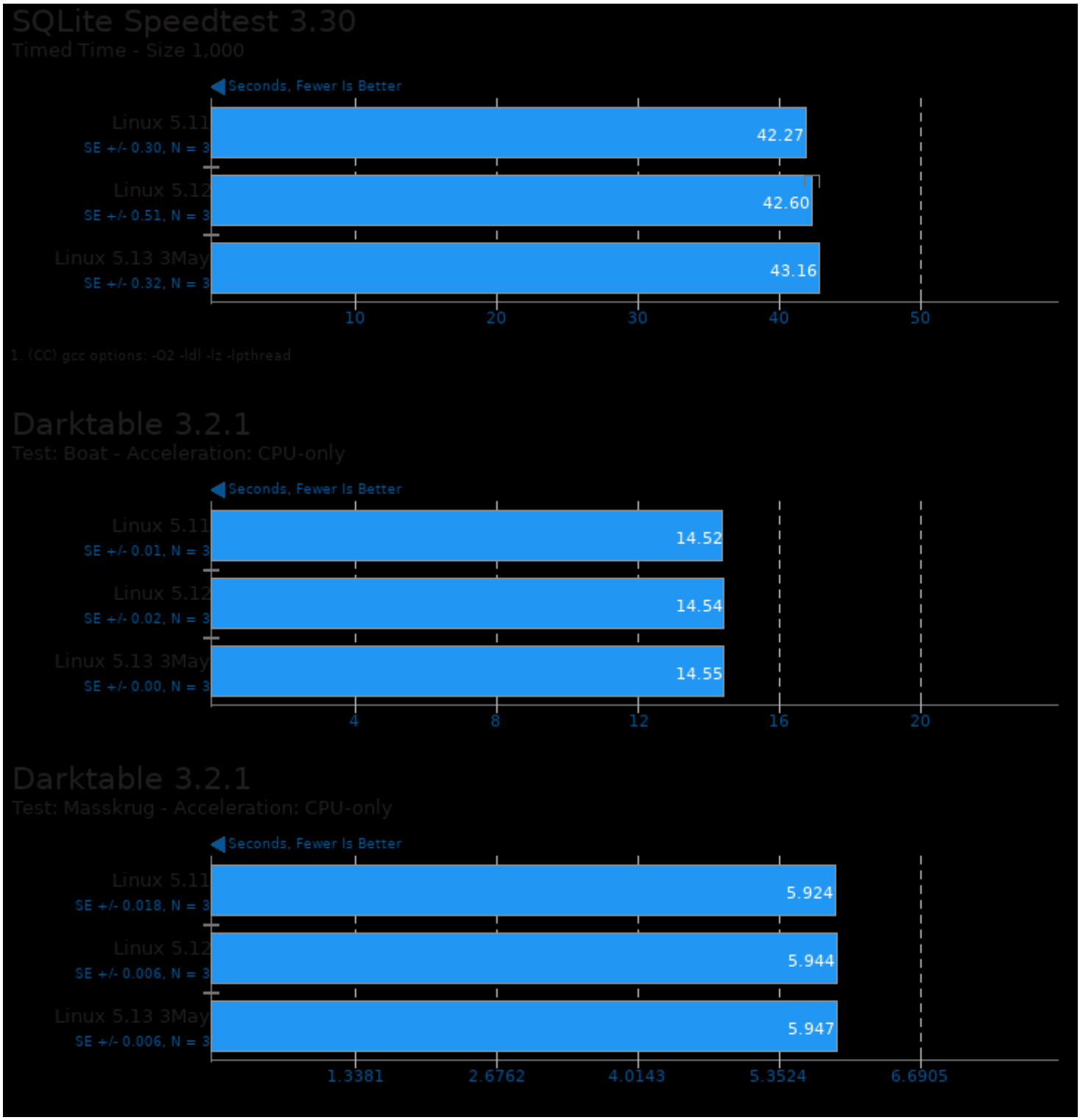
1. (CXX) g++ options: -O2 -levent_openssl -levent -lcrypto -lssl -lpthread -lz -lpcre

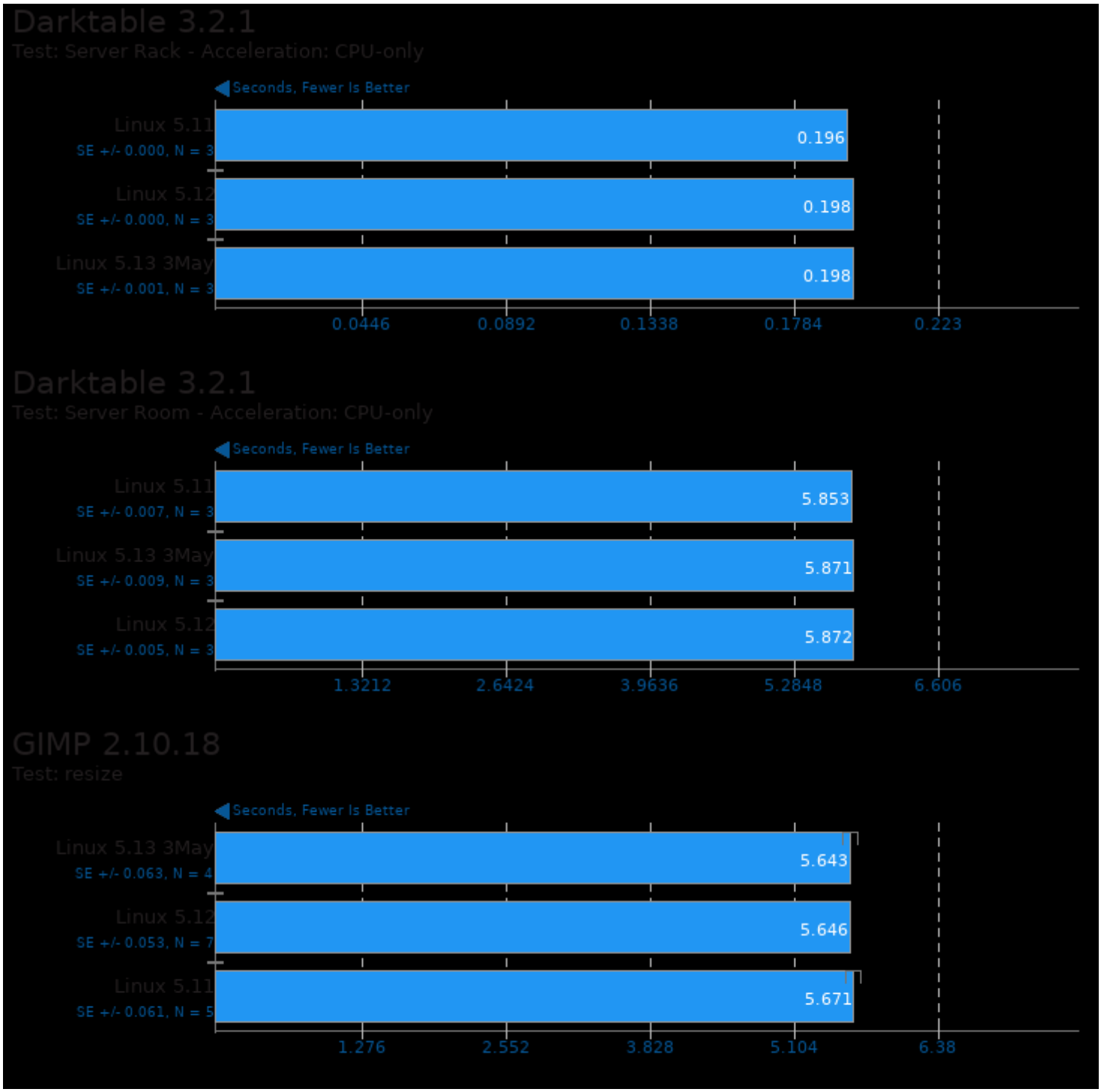
GROMACS 2021

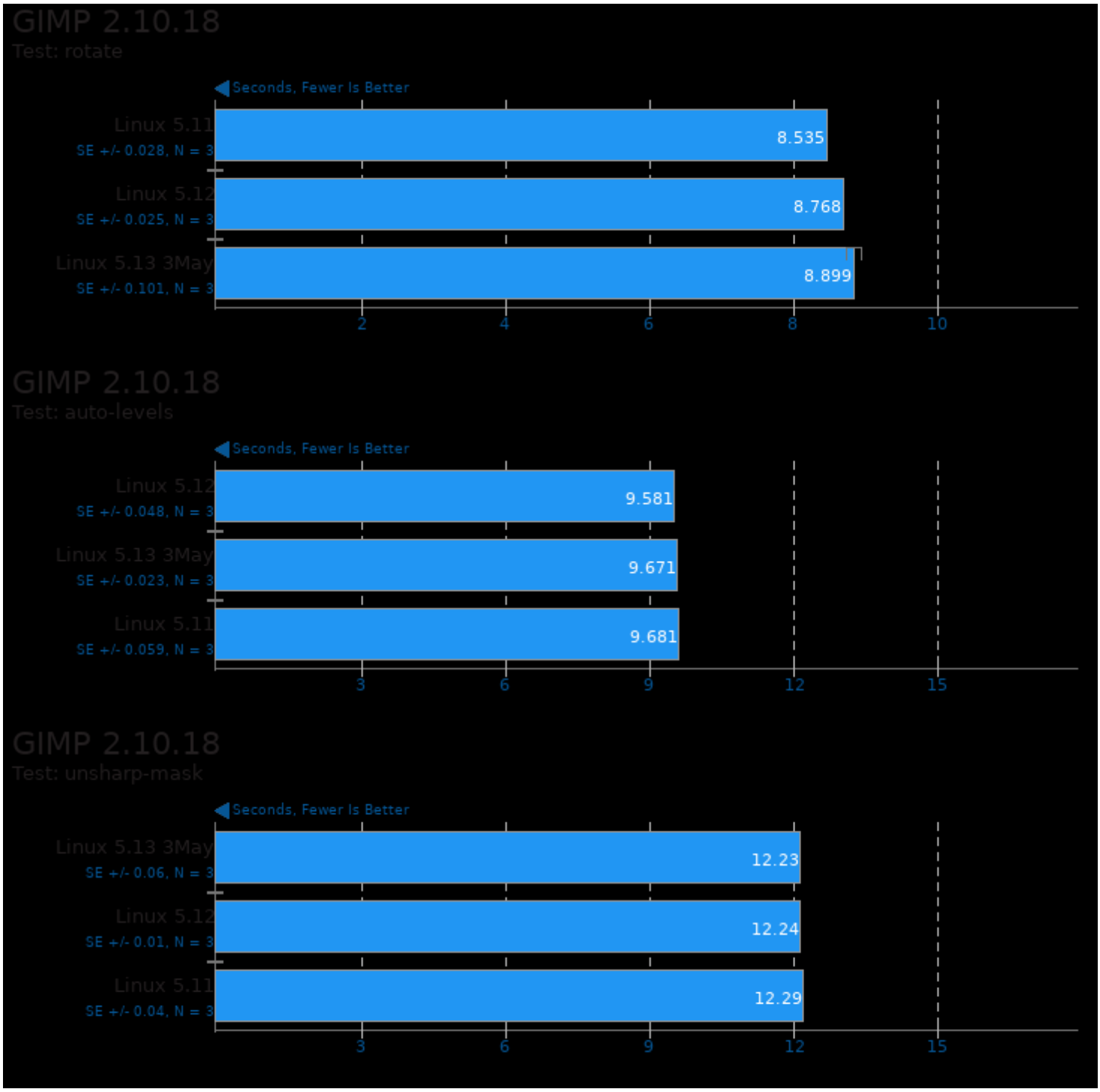
Input: water_GMX50_bare

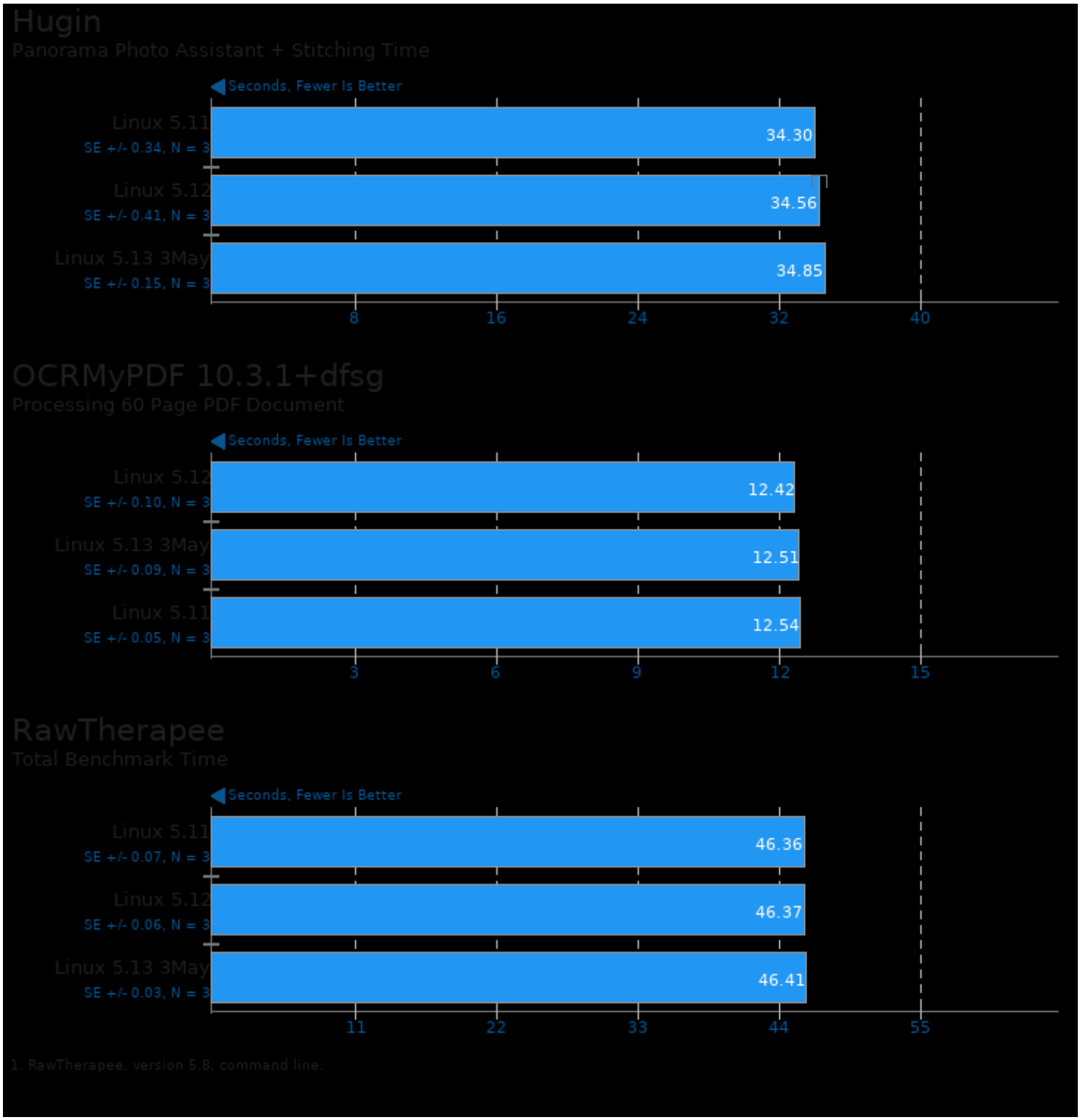


1. (CXX) g++ options: -O3 -pthread


SQLite Speedtest 3.30
Timed Time - Size 1,000
Seconds, Fewer Is Better
Linux 5.11
SE +/- 0.30, N = 3
42.27
Linux 5.12
SE +/- 0.51, N = 3
42.60
Linux 5.13 3May
SE +/- 0.32, N = 3
43.16
10
20
30
40
50
1. (CC) gcc options: -O2 -ldl -lz -lpthread
Darktable 3.2.1
Test: Boat - Acceleration: CPU-only
Seconds, Fewer Is Better
Linux 5.11
SE +/- 0.01, N = 3
14.52
Linux 5.12
SE +/- 0.02, N = 3
14.54
Linux 5.13 3May
SE +/- 0.00, N = 3
14.55
4
8
12
16
20
Darktable 3.2.1
Test: Masskrug - Acceleration: CPU-only
Seconds, Fewer Is Better
Linux 5.11
SE +/- 0.018, N = 3
5.924
Linux 5.12
SE +/- 0.006, N = 3
5.944
Linux 5.13 3May
SE +/- 0.006, N = 3
5.947
1.3381
2.6762
4.0143
5.3524
6.6905

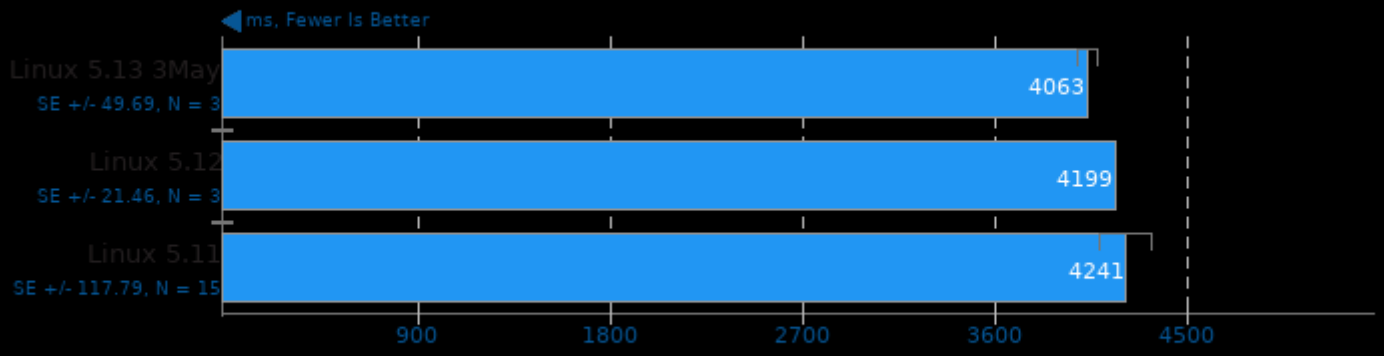

Darktable 3.2.1
Test: Server Rack - Acceleration: CPU-only
Seconds, Fewer Is Better
Linux 5.11
SE +/- 0.000, N = 3
0.196
Linux 5.12
SE +/- 0.000, N = 3
0.198
Linux 5.13 3May
SE +/- 0.001, N = 3
0.198
0.0446
0.0892
0.1338
0.1784
0.223
Darktable 3.2.1
Test: Server Room - Acceleration: CPU-only
Seconds, Fewer Is Better
Linux 5.11
SE +/- 0.007, N = 3
5.853
Linux 5.13 3May
SE +/- 0.009, N = 3
5.871
Linux 5.12
SE +/- 0.005, N = 3
5.872
1.3212
2.6424
3.9636
5.2848
6.606
GIMP 2.10.18
Test: resize
Seconds, Fewer Is Better
Linux 5.13 3May
SE +/- 0.063, N = 4
5.643
Linux 5.12
SE +/- 0.053, N = 7
5.646
Linux 5.11
SE +/- 0.061, N = 5
5.671
1.276
2.552
3.828
5.104
6.38


GIMP 2.10.18
Test: rotate
Seconds, Fewer Is Better
Linux 5.11
SE +/- 0.028, N = 3
8.535
Linux 5.12
SE +/- 0.025, N = 3
8.768
Linux 5.13 3May
SE +/- 0.101, N = 3
8.899
2
4
6
8
10
GIMP 2.10.18
Test: auto-levels
Seconds, Fewer Is Better
Linux 5.12
SE +/- 0.048, N = 3
9.581
Linux 5.13 3May
SE +/- 0.023, N = 3
9.671
Linux 5.11
SE +/- 0.059, N = 3
9.681
3
6
9
12
15
GIMP 2.10.18
Test: unsharp-mask
Seconds, Fewer Is Better
Linux 5.13 3May
SE +/- 0.06, N = 3
12.23
Linux 5.12
SE +/- 0.01, N = 3
12.24
Linux 5.11
SE +/- 0.04, N = 3
12.29
3
6
9
12
15


Hugin
Panorama Photo Assistant + Stitching Time
Seconds, Fewer Is Better
Linux 5.11
SE +/- 0.34, N = 3
34.30
Linux 5.12
SE +/- 0.41, N = 3
34.56
Linux 5.13 3May
SE +/- 0.15, N = 3
34.85
8
16
24
32
40
OCRMyPDF 10.3.1+dfsg
Processing 60 Page PDF Document
Seconds, Fewer Is Better
Linux 5.12
SE +/- 0.10, N = 3
12.42
Linux 5.13 3May
SE +/- 0.09, N = 3
12.51
Linux 5.11
SE +/- 0.05, N = 3
12.54
3
6
9
12
15
RawTherapee
Total Benchmark Time
Seconds, Fewer Is Better
Linux 5.11
SE +/- 0.07, N = 3
46.36
Linux 5.12
SE +/- 0.06, N = 3
46.37
Linux 5.13 3May
SE +/- 0.03, N = 3
46.41
11
22
33
44
55
1. RawTherapee, version 5.8, command line.

Google Draco 1.4.1

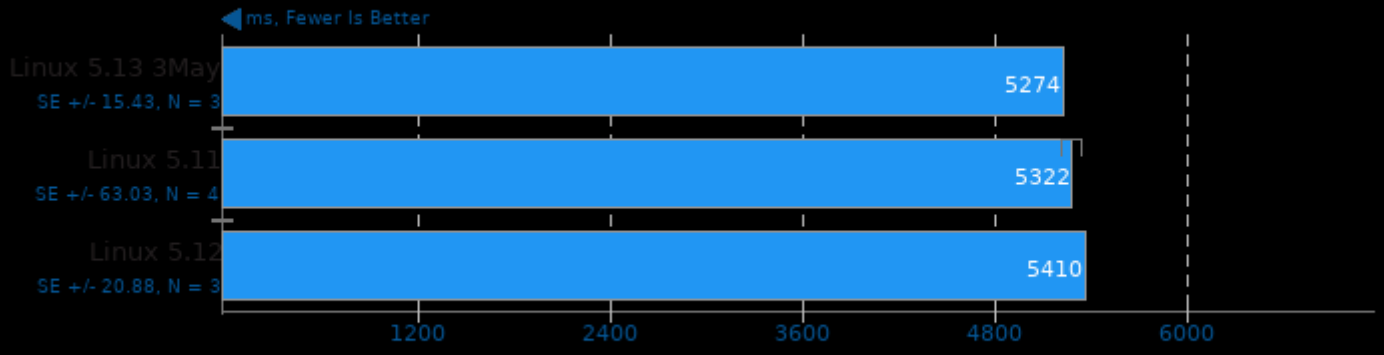
Model: Lion



1. (CXX) g++ options: -O3

Google Draco 1.4.1

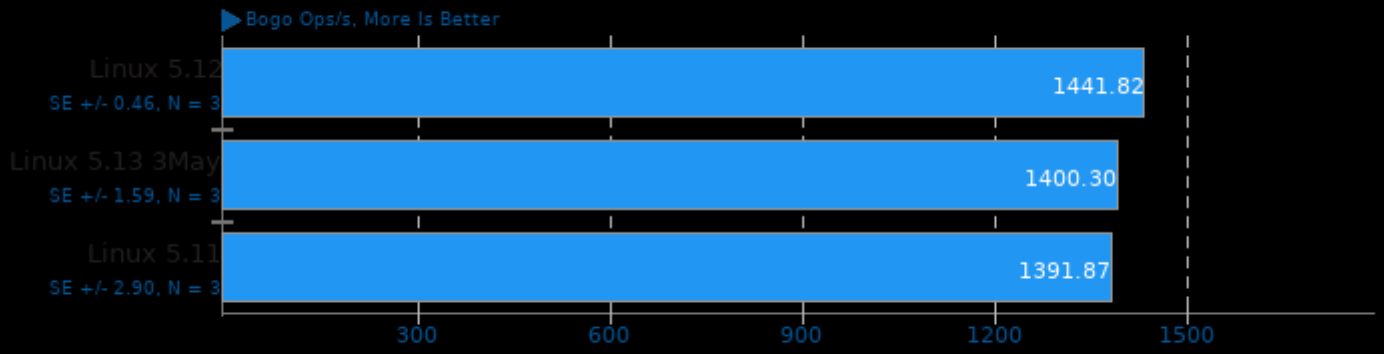
Model: Church Facade



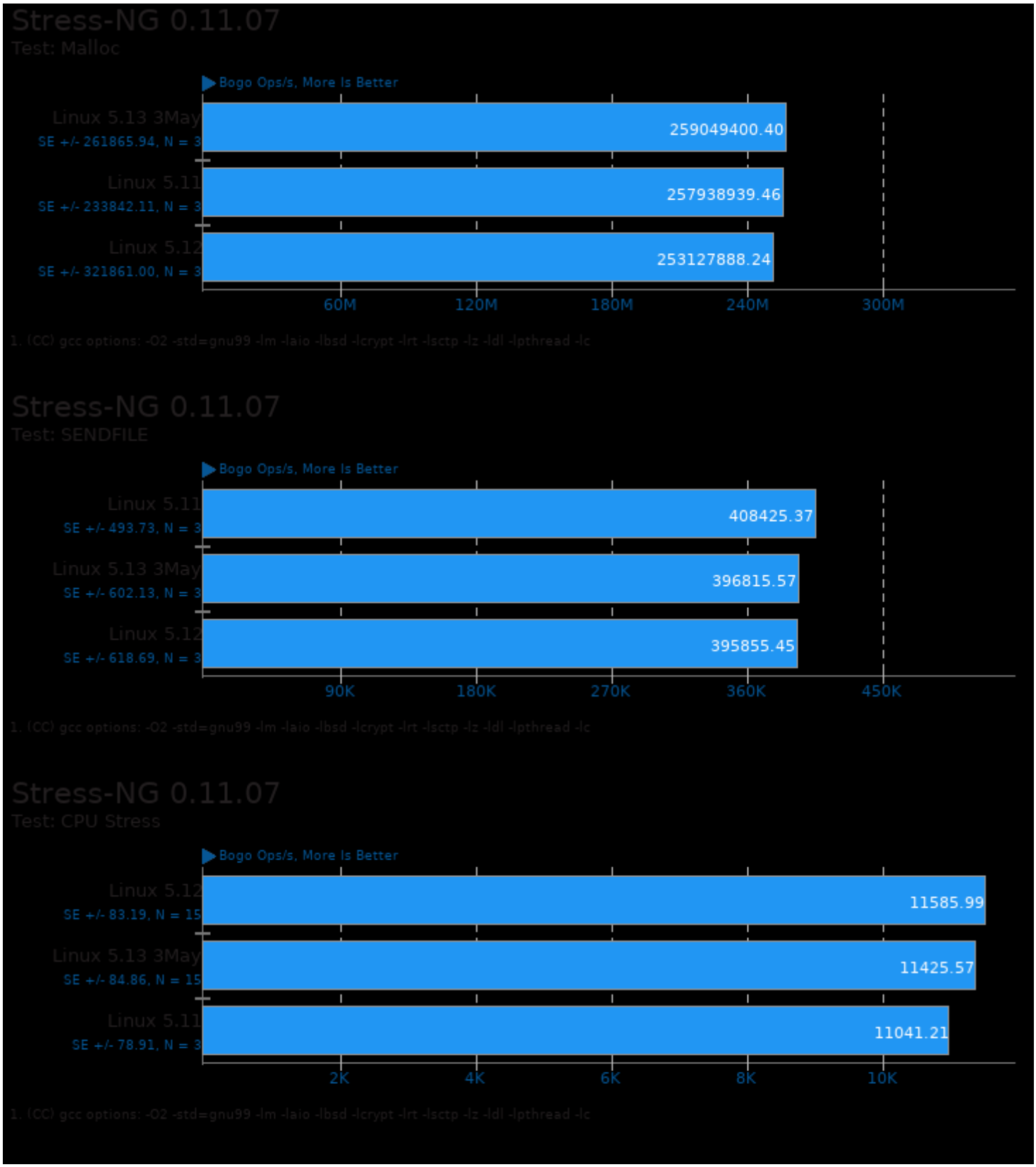
1. (CXX) g++ options: -O3

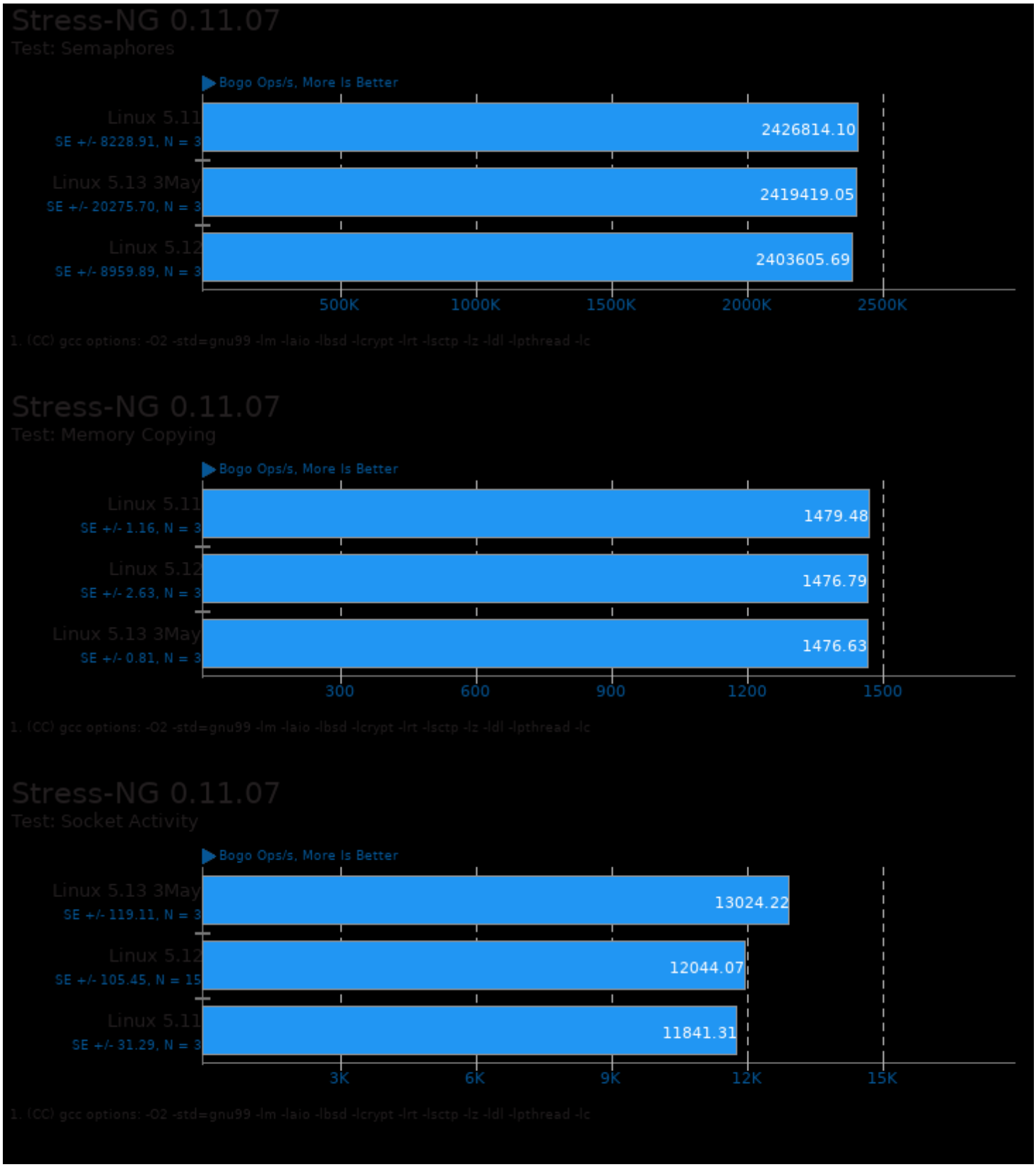
Stress-NG 0.11.07

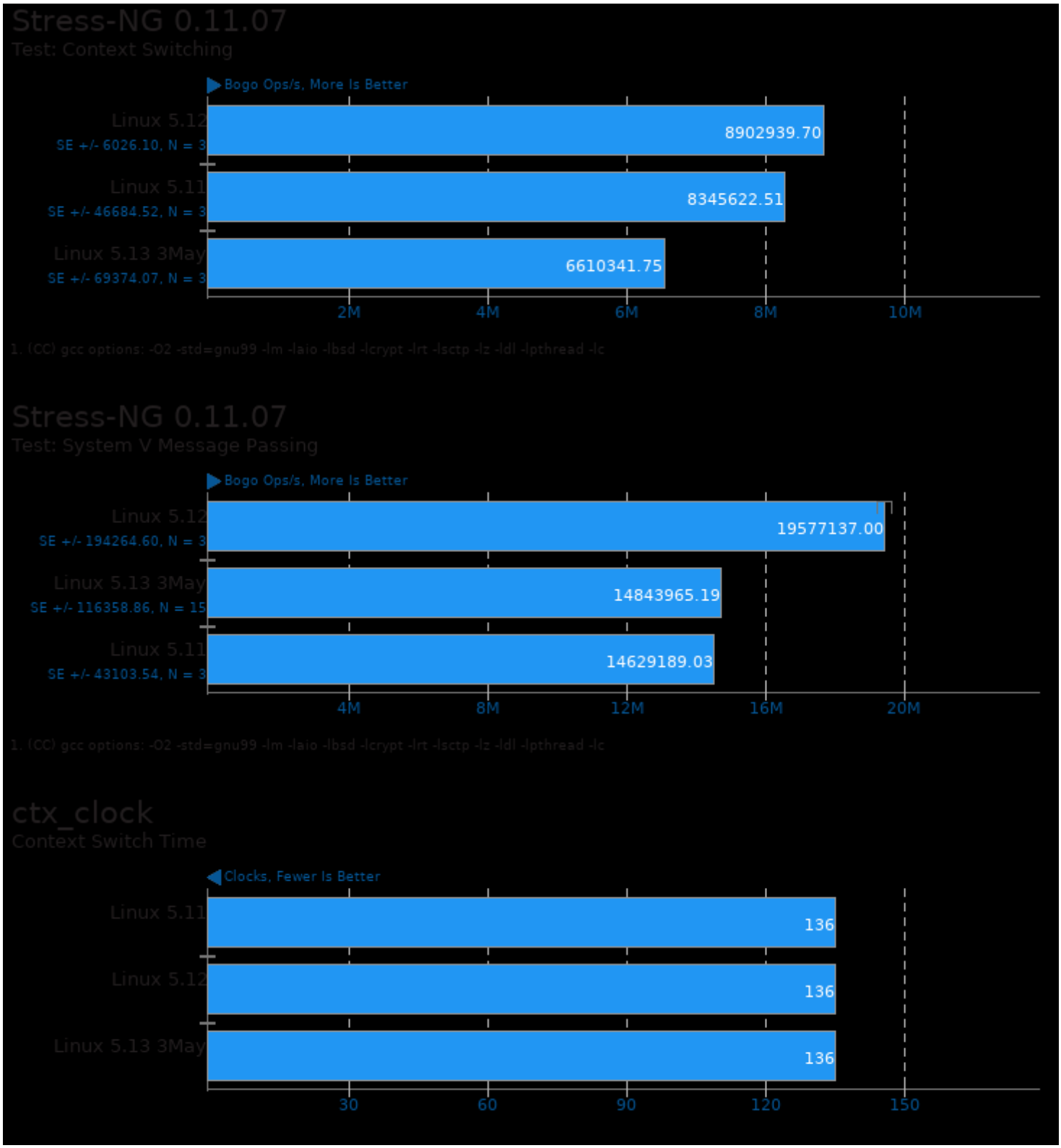
Test: MEMFD

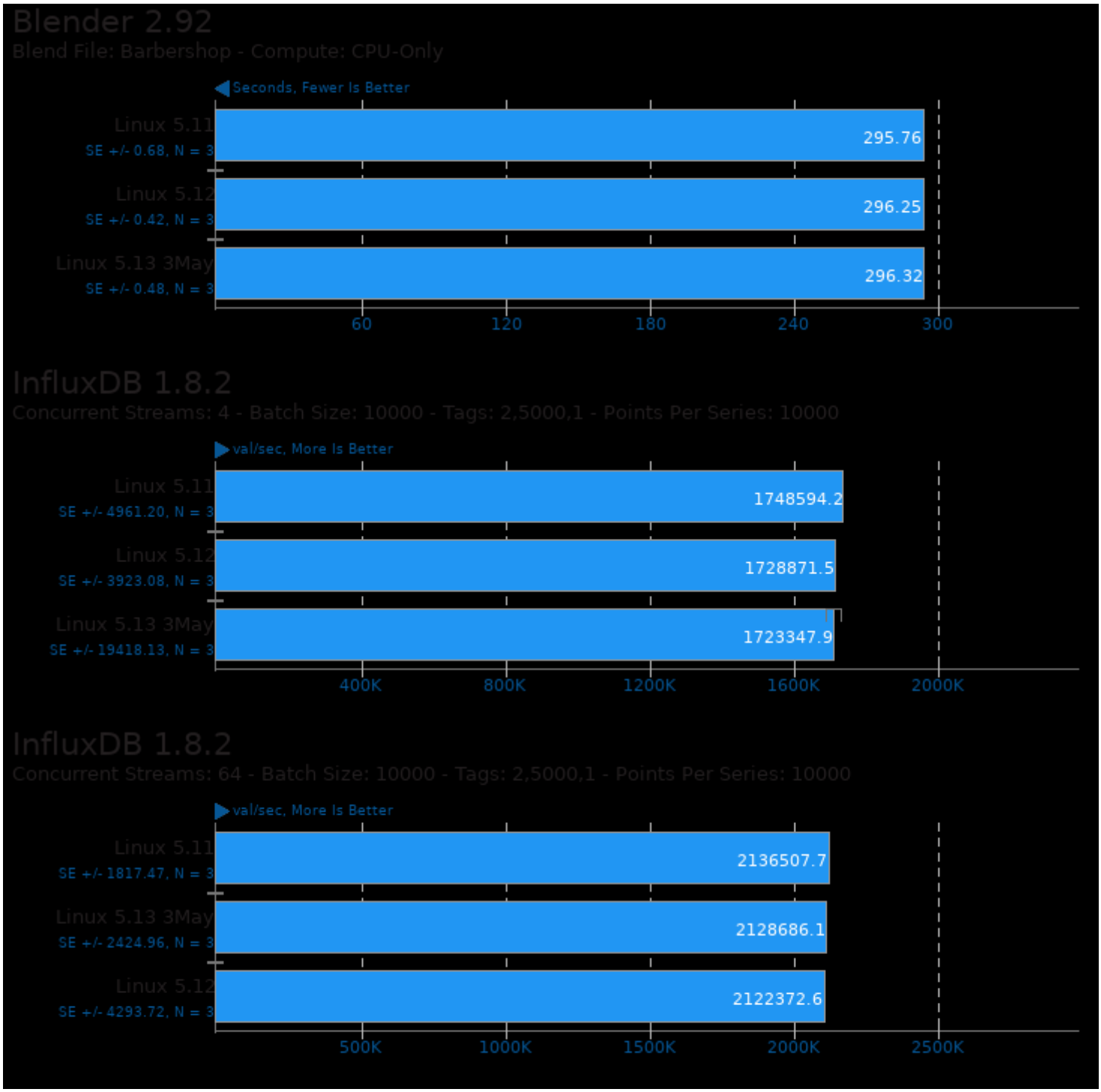


1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lbsd -lcrypt -lrt -lsctp -lz -ldl -lpthread -lc

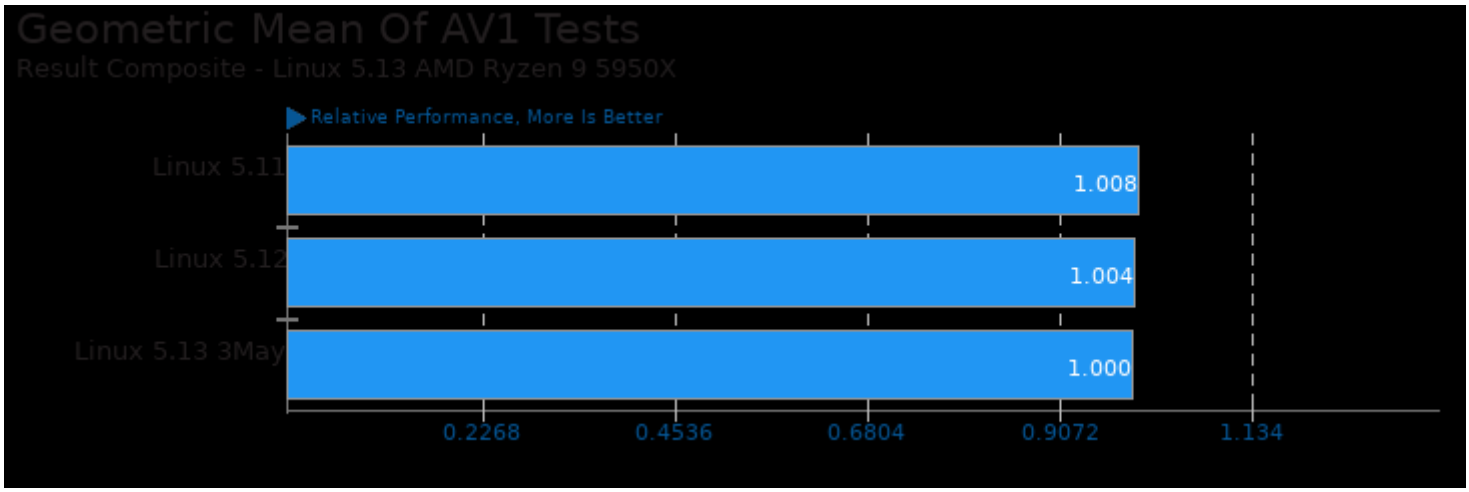

Stress-NG 0.11.07
Test: Malloc
Bogo Ops/s, More Is Better
Linux 5.13 3May
SE +/- 261865.94, N = 3
259049400.40
Linux 5.11
SE +/- 233842.11, N = 3
257938939.46
Linux 5.12
SE +/- 321861.00, N = 3
253127888.24
60M
120M
180M
240M
300M
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lbsd -lcrypt -lrt -lsctp -lz -ldl -lpthread -lc
Stress-NG 0.11.07
Test: SENDFILE
Bogo Ops/s, More Is Better
Linux 5.11
SE +/- 493.73, N = 3
408425.37
Linux 5.13 3May
SE +/- 602.13, N = 3
396815.57
Linux 5.12
SE +/- 618.69, N = 3
395855.45
90K
180K
270K
360K
450K
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lbsd -lcrypt -lrt -lsctp -lz -ldl -lpthread -lc
Stress-NG 0.11.07
Test: CPU Stress
Bogo Ops/s, More Is Better
Linux 5.12
SE +/- 83.19, N = 15
11585.99
Linux 5.13 3May
SE +/- 84.86, N = 15
11425.57
Linux 5.11
SE +/- 78.91, N = 3
11041.21
2K
4K
6K
8K
10K
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lbsd -lcrypt -lrt -lsctp -lz -ldl -lpthread -lc


Stress-NG 0.11.07
Test: Semaphores
Bogo Ops/s, More Is Better
Linux 5.11
SE +/- 8228.91, N = 3
2426814.10
Linux 5.13 3May
SE +/- 20275.70, N = 3
2419419.05
Linux 5.12
SE +/- 8959.89, N = 3
2403605.69
500K
1000K
1500K
2000K
2500K
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lbsd -lcrypt -lrt -lsctp -lz -ldl -lpthread -lc
Stress-NG 0.11.07
Test: Memory Copying
Bogo Ops/s, More Is Better
Linux 5.11
SE +/- 1.16, N = 3
1479.48
Linux 5.12
SE +/- 2.63, N = 3
1476.79
Linux 5.13 3May
SE +/- 0.81, N = 3
1476.63
300
600
900
1200
1500
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lbsd -lcrypt -lrt -lsctp -lz -ldl -lpthread -lc
Stress-NG 0.11.07
Test: Socket Activity
Bogo Ops/s, More Is Better
Linux 5.13 3May
SE +/- 119.11, N = 3
13024.22
Linux 5.12
SE +/- 105.45, N = 15
12044.07
Linux 5.11
SE +/- 31.29, N = 3
11841.31
3K
6K
9K
12K
15K
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lbsd -lcrypt -lrt -lsctp -lz -ldl -lpthread -lc

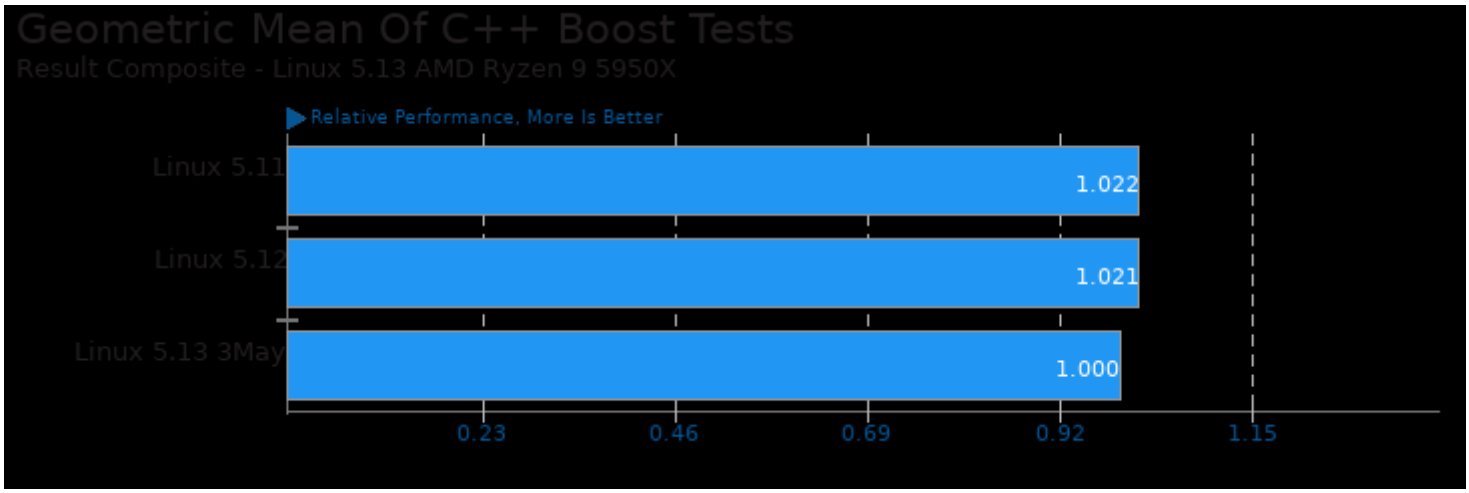

Stress-NG 0.11.07
Test: Context Switching
Bogo Ops/s, More Is Better
Linux 5.12
SE +/- 6026.10, N = 3
8902939.70
Linux 5.11
SE +/- 46684.52, N = 3
8345622.51
Linux 5.13 3May
SE +/- 69374.07, N = 3
6610341.75
2M
4M
6M
8M
10M
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lbsd -lcrypt -lrt -lsctp -lz -ldl -lpthread -lc
Stress-NG 0.11.07
Test: System V Message Passing
Bogo Ops/s, More Is Better
Linux 5.12
SE +/- 194264.60, N = 3
19577137.00
Linux 5.13 3May
SE +/- 116358.86, N = 15
14843965.19
Linux 5.11
SE +/- 43103.54, N = 3
14629189.03
4M
8M
12M
16M
20M
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lbsd -lcrypt -lrt -lsctp -lz -ldl -lpthread -lc
ctx_clock
Context Switch Time
Clocks, Fewer Is Better
Linux 5.11
136
Linux 5.12
136
Linux 5.13 3May
136
30
60
90
120
150


Blender 2.92
Blend File: Barbershop - Compute: CPU-Only
Seconds, Fewer Is Better
Linux 5.11
SE +/- 0.68, N = 3
295.76
Linux 5.12
SE +/- 0.42, N = 3
296.25
Linux 5.13 3May
SE +/- 0.48, N = 3
296.32
60
120
180
240
300
InfluxDB 1.8.2
Concurrent Streams: 4 - Batch Size: 10000 - Tags: 2,5000,1 - Points Per Series: 10000
val/sec, More Is Better
Linux 5.11
SE +/- 4961.20, N = 3
1748594.2
Linux 5.12
SE +/- 3923.08, N = 3
1728871.5
Linux 5.13 3May
SE +/- 19418.13, N = 3
1723347.9
400K
800K
1200K
1600K
2000K
InfluxDB 1.8.2
Concurrent Streams: 64 - Batch Size: 10000 - Tags: 2,5000,1 - Points Per Series: 10000
val/sec, More Is Better
Linux 5.11
SE +/- 1817.47, N = 3
2136507.7
Linux 5.13 3May
SE +/- 2424.96, N = 3
2128686.1
Linux 5.12
SE +/- 4293.72, N = 3
2122372.6
500K
1000K
1500K
2000K
2500K

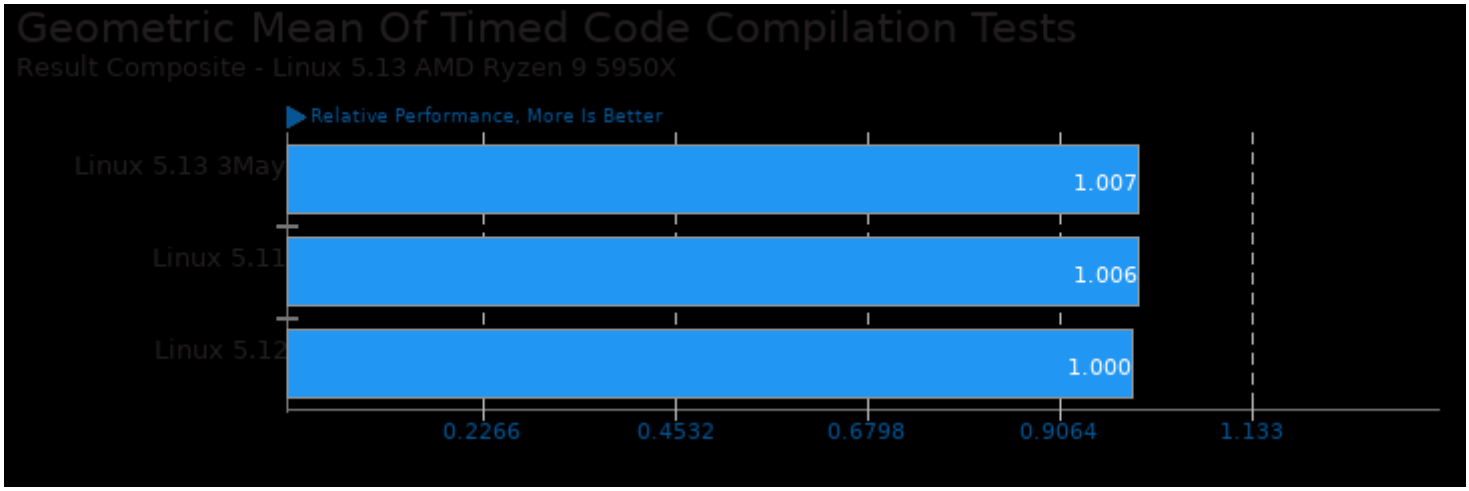
These geometric means are based upon test groupings / test suites for this result file.



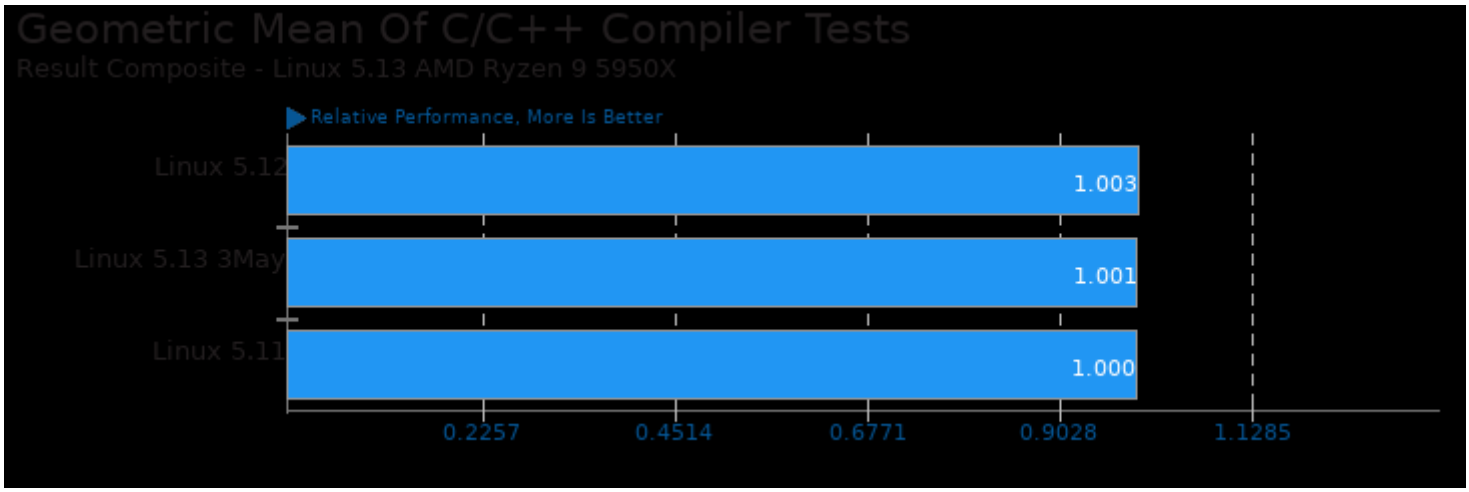
Geometric mean based upon tests: pts/aom-av1 and pts/svt-av1



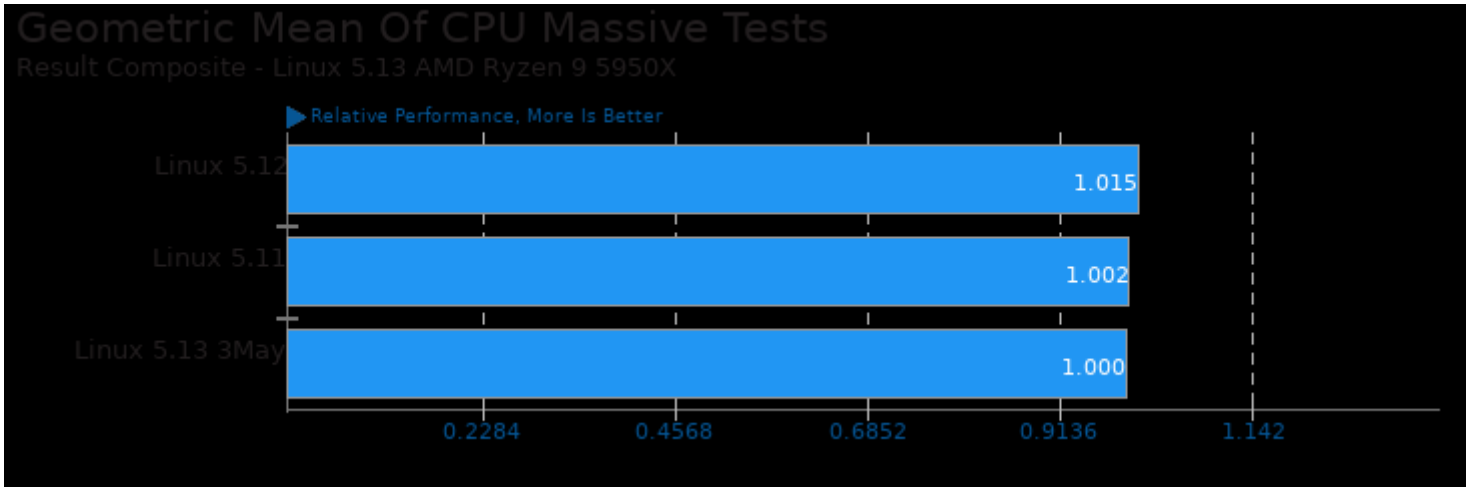
Geometric mean based upon tests: pts/chia-vdf and pts/srslte



Geometric mean based upon tests: pts/build-linux-kernel, pts/build-godot, pts/build-wasmer and pts/build-mesa



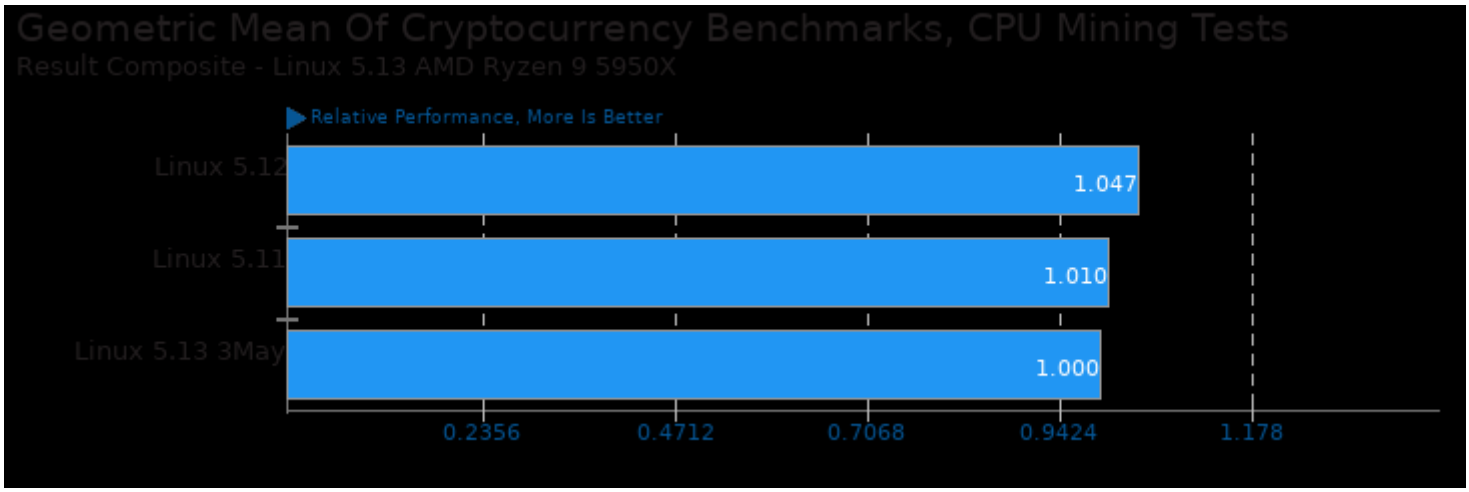
Geometric mean based upon tests: pts/stockfish, pts/hmmer, pts/sqlite-speedtest, pts/compress-zstd, pts/aom-av1, pts/svt-av1, pts/svt-vp9, pts/gromacs and pts/keydb



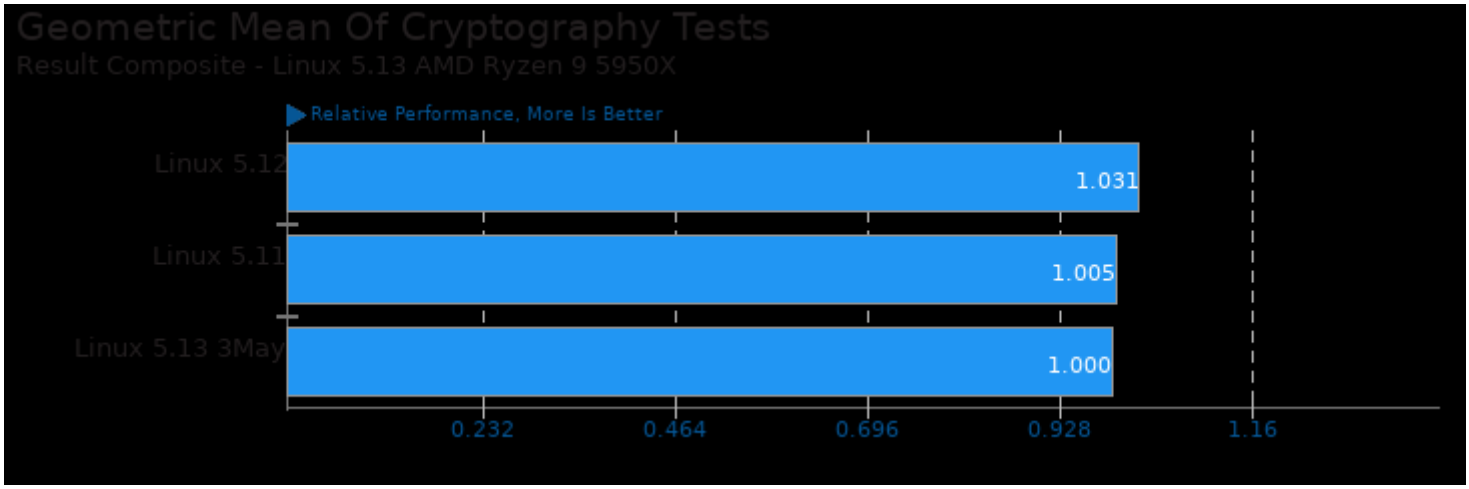
Geometric mean based upon tests: pts/build-linux-kernel, pts/compilebench, pts/compress-zstd, pts/ctx-clock, pts/svt-av1, pts/svt-hevc, pts/svt-vp9, pts/hmmer, pts/namd, pts/stockfish, pts/stress-ng, pts/blender, system/darktable and pts/tjbench



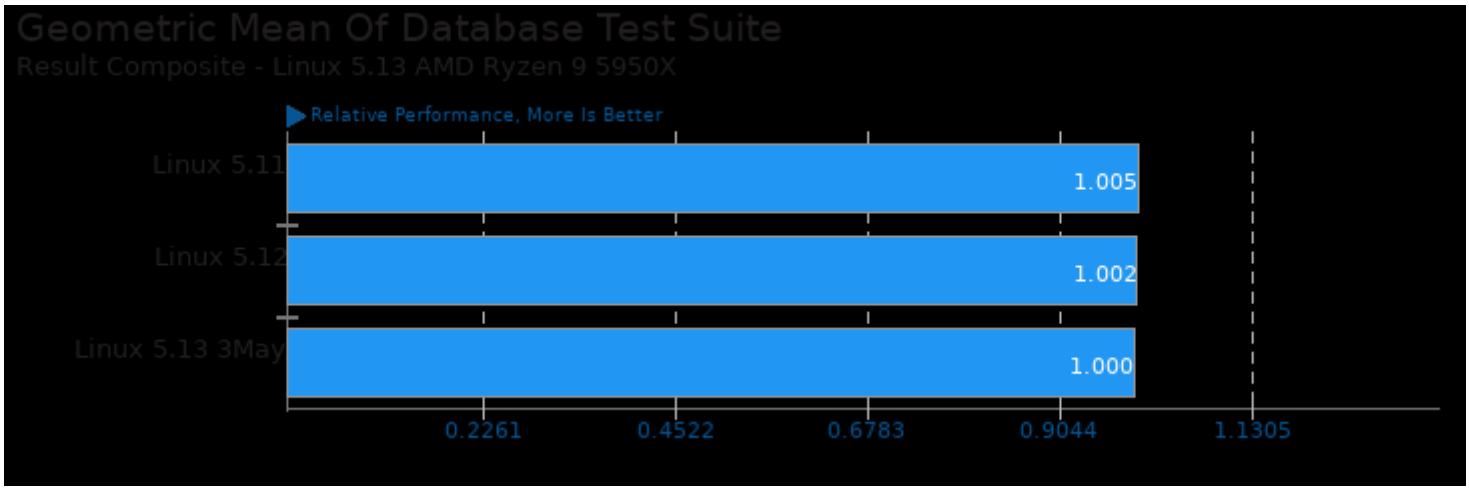
Geometric mean based upon tests: pts/blender, pts/luxcorerender, system/ocrmypdf, pts/svt-vp9, pts/svt-hevc, pts/aom-av1, pts/svt-av1, system/rawtherapee, pts/tjbench, system/gimp, system/hugin, system/darktable, pts/draco and pts/build-godot



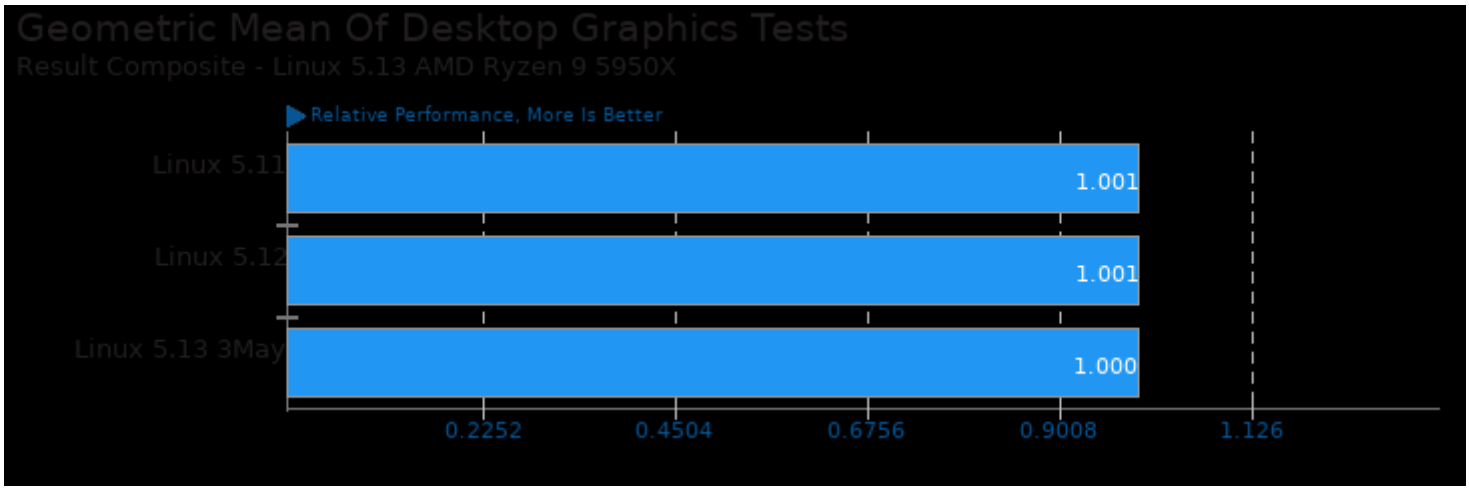
Geometric mean based upon tests: pts/xmrig and pts/chia-vdf



Geometric mean based upon tests: pts/securemark, pts/xmrig and pts/chia-vdf



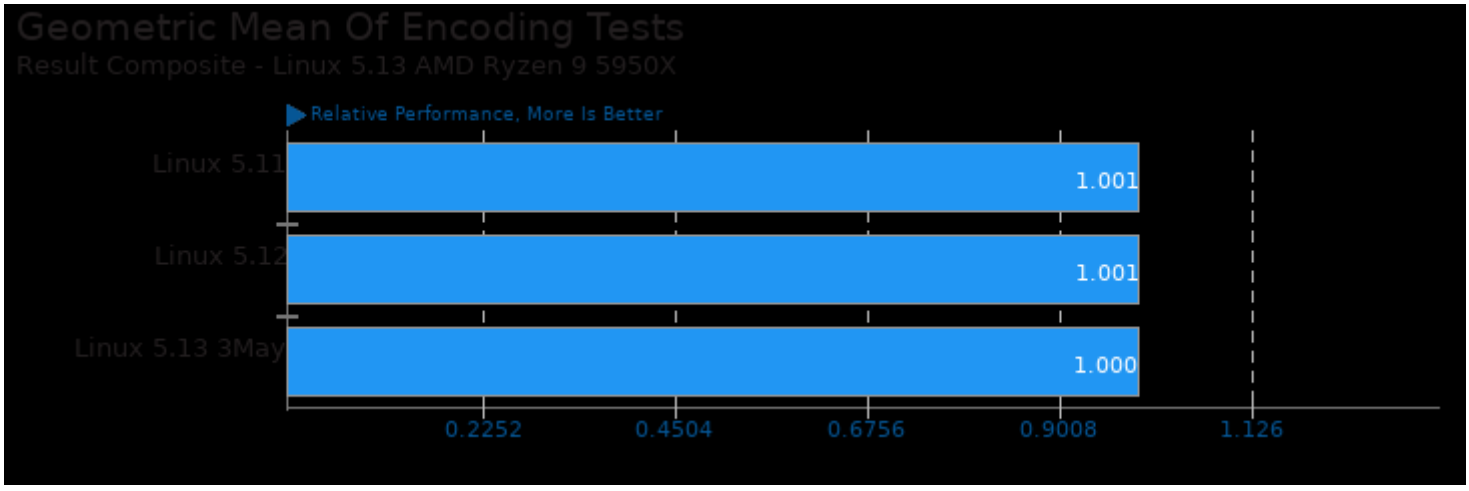
Geometric mean based upon tests: pts/sqlite-speedtest, pts/keydb and pts/influxdb



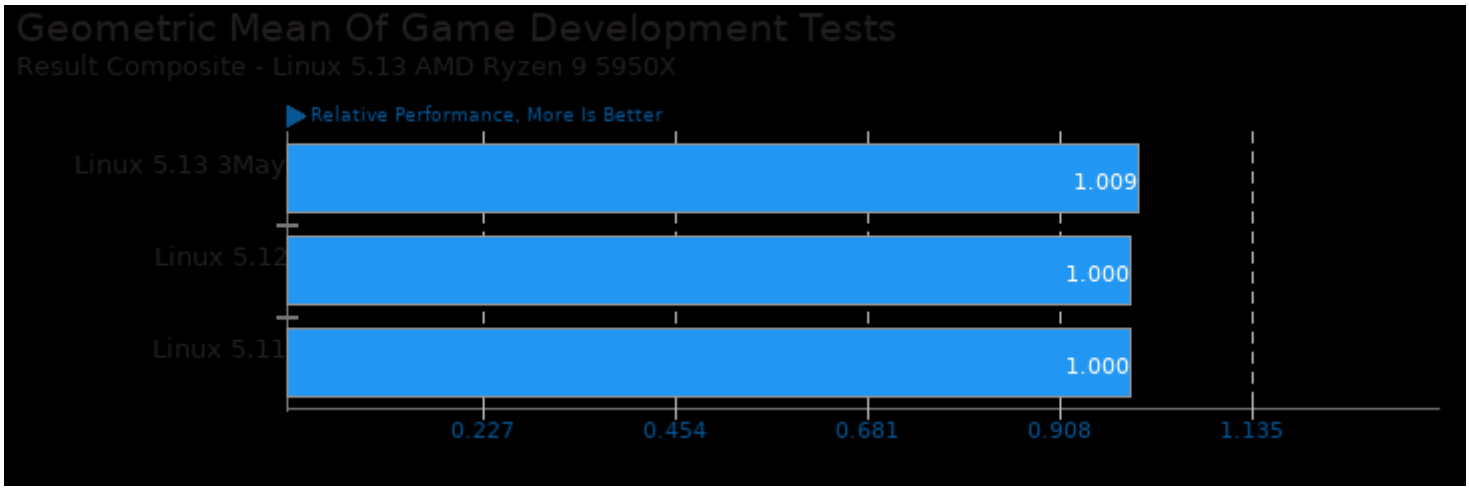
Geometric mean based upon tests: pts/xonotic, pts/tesseract and pts/paraview



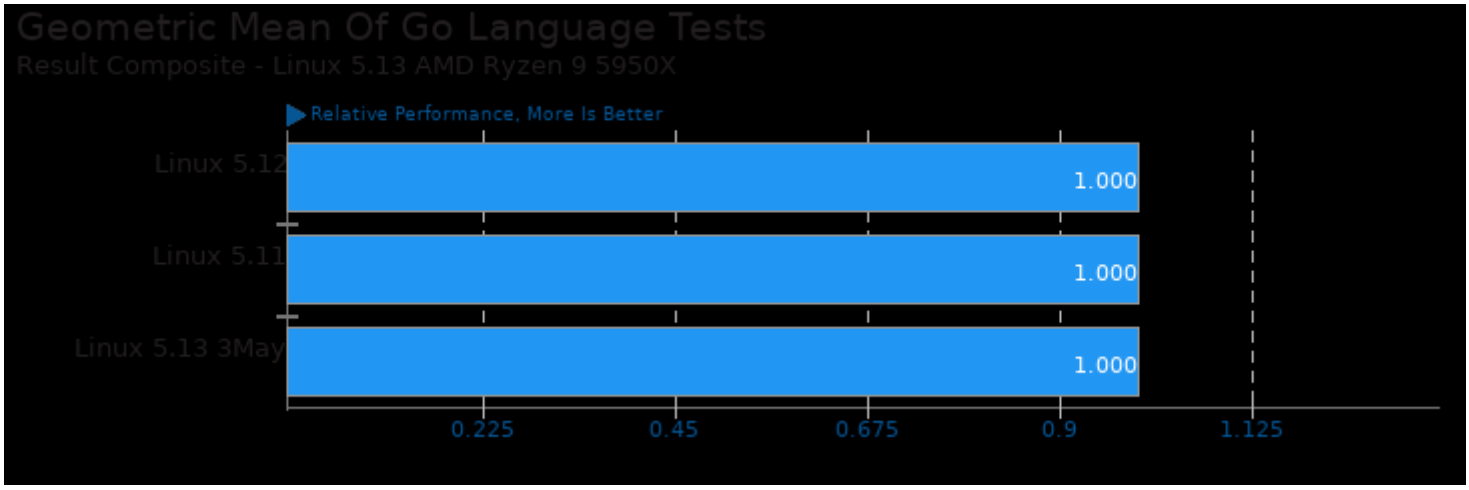
Geometric mean based upon tests: pts/fs-mark and pts/compilebench



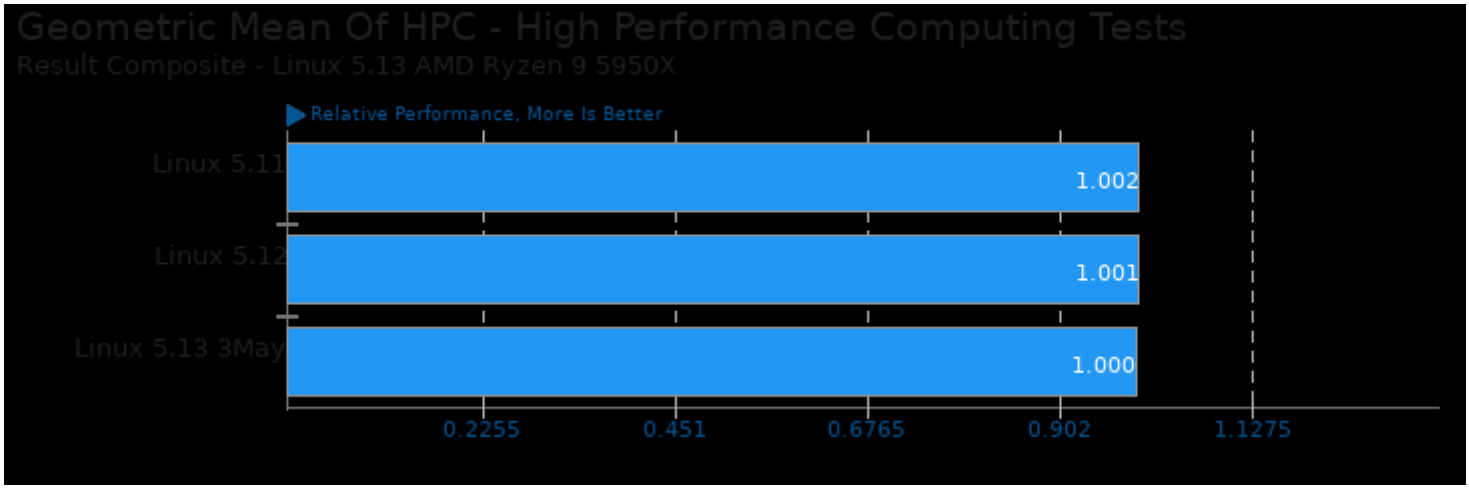
Geometric mean based upon tests: pts/svt-vp9, pts/svt-hevc, pts/aom-av1 and pts/svt-av1



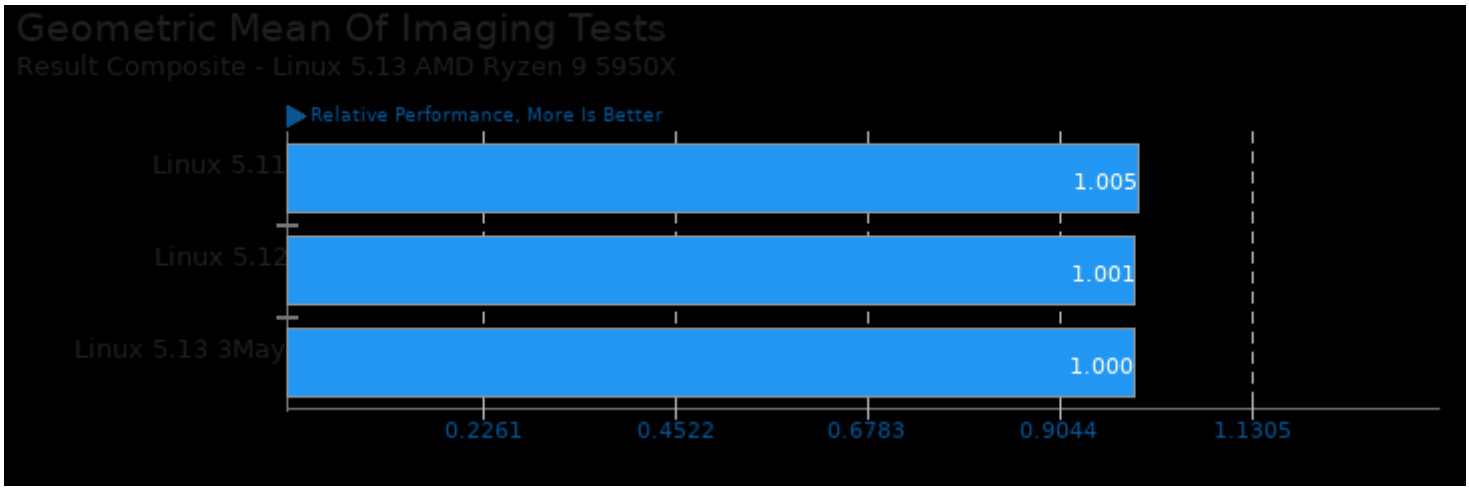
Geometric mean based upon tests: pts/draco, pts/build-godot and pts/blender



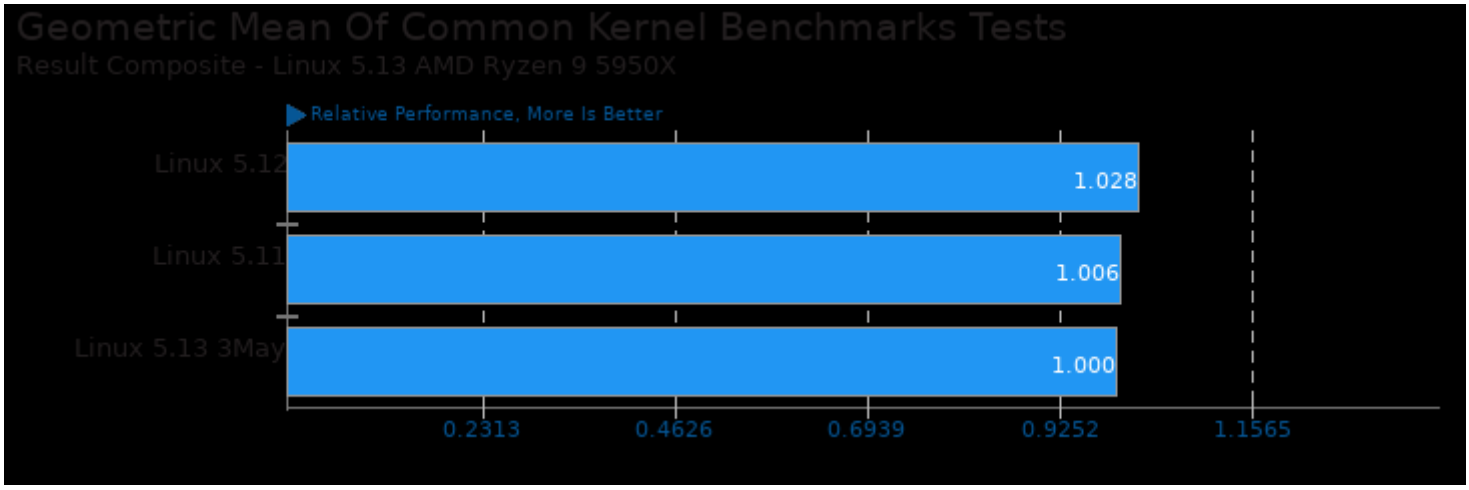
Geometric mean based upon tests: pts/ethr and pts/influxdb



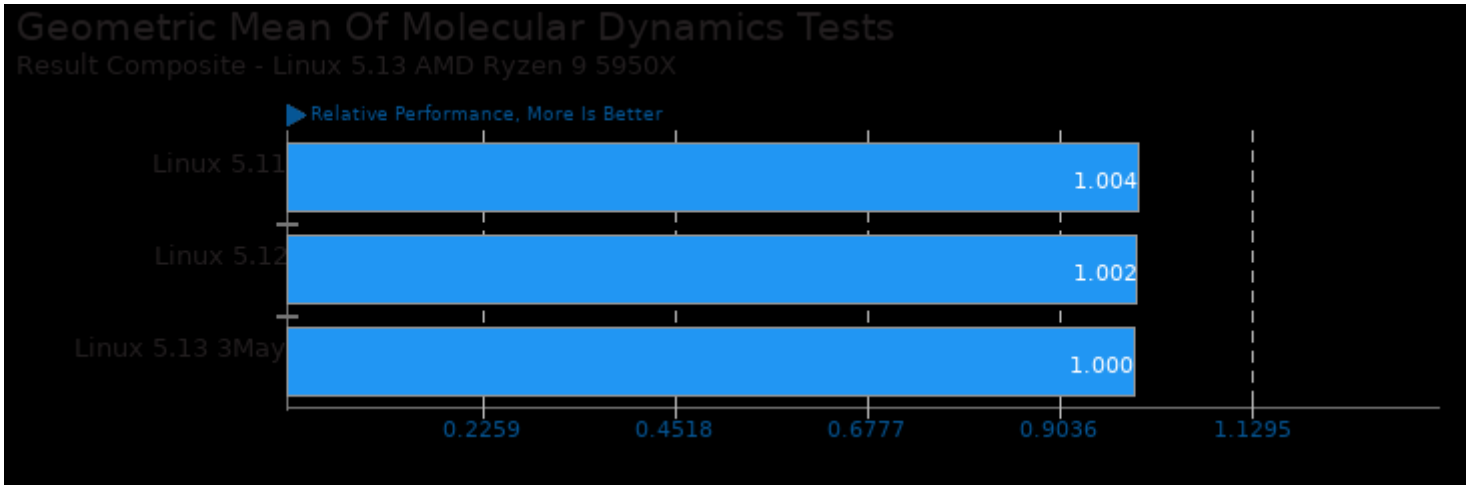
Geometric mean based upon tests: pts/namd, pts/gromacs and pts/hmmer



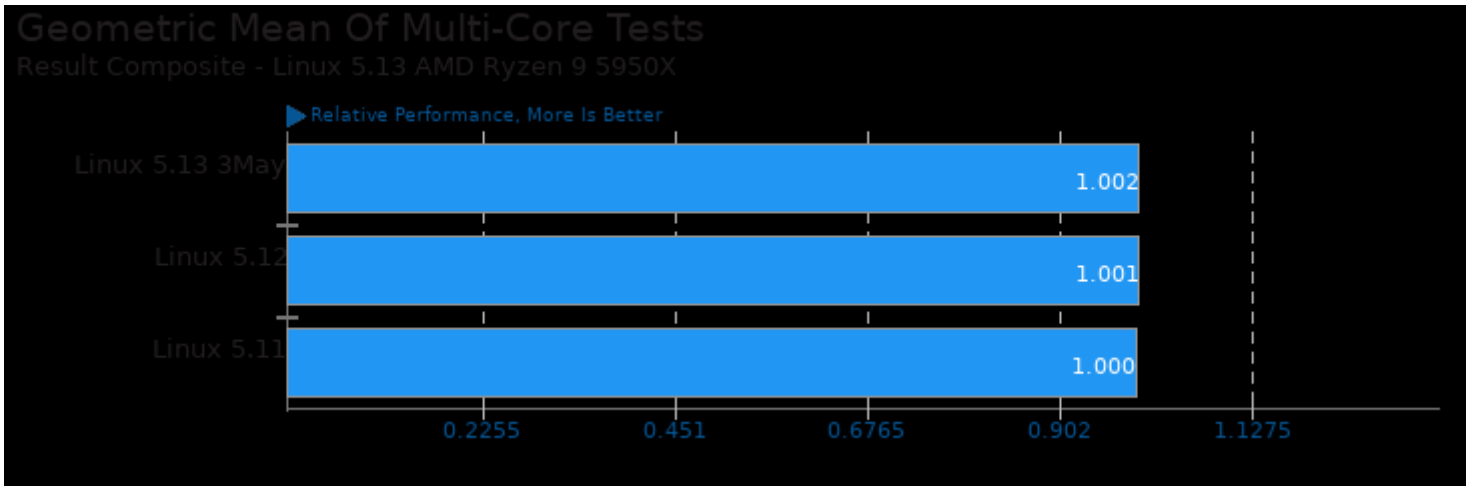
Geometric mean based upon tests: system/rawtherapee, pts/tjbench, system/gimp, system/hugin and system/darktable



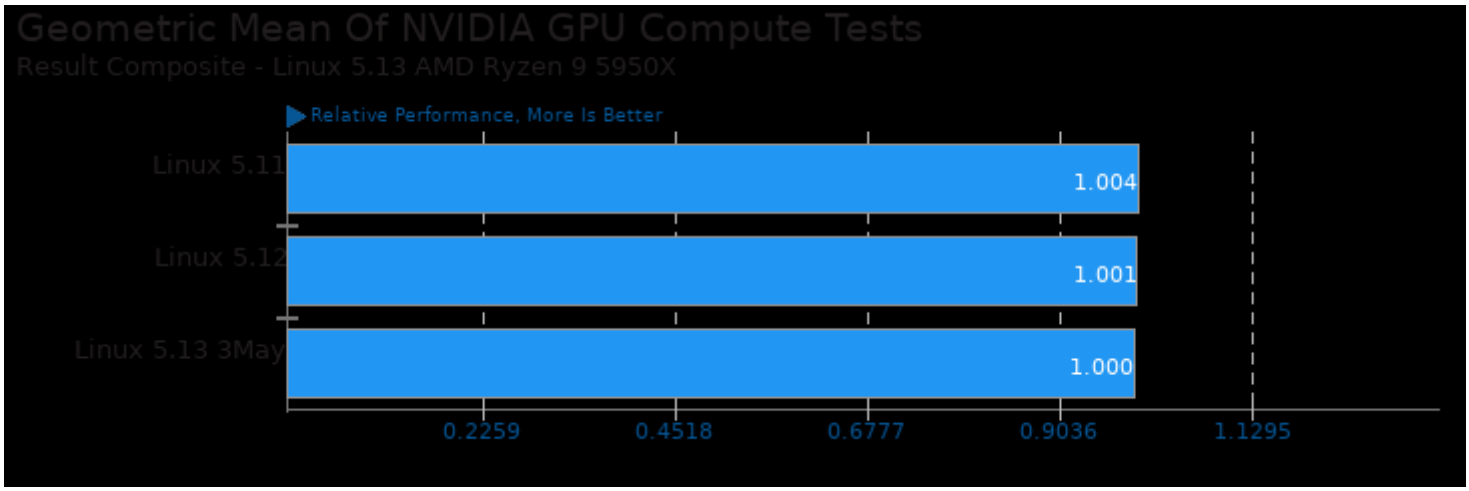
Geometric mean based upon tests: pts/sqlite-speedtest, pts/ctx-clock, pts/stress-ng and pts/ethr



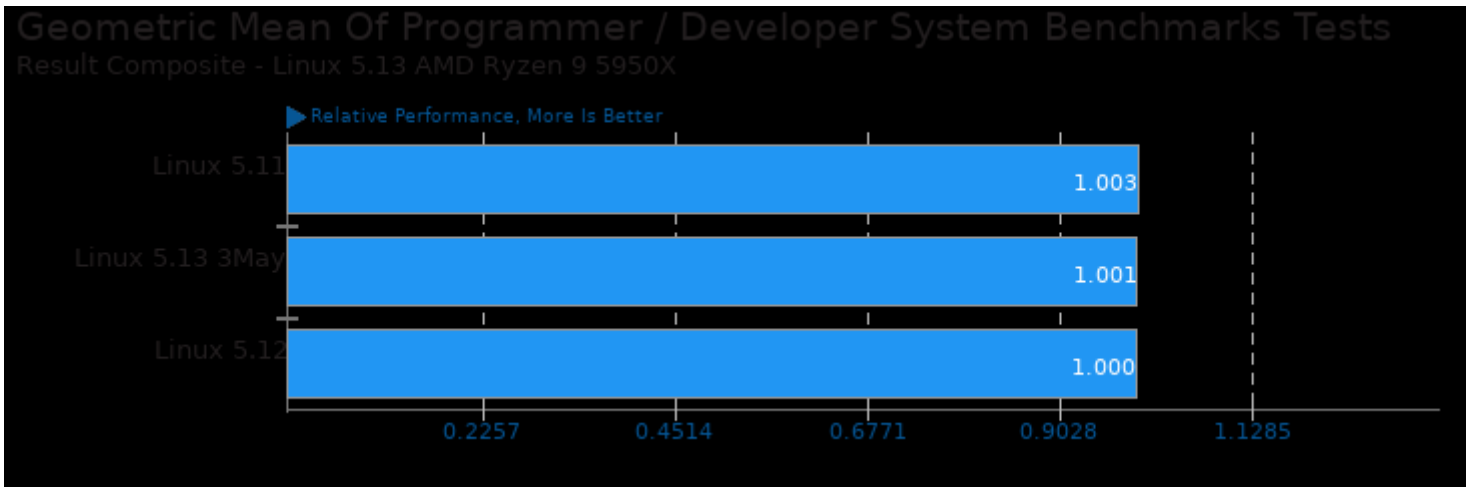
Geometric mean based upon tests: pts/namd and pts/gromacs



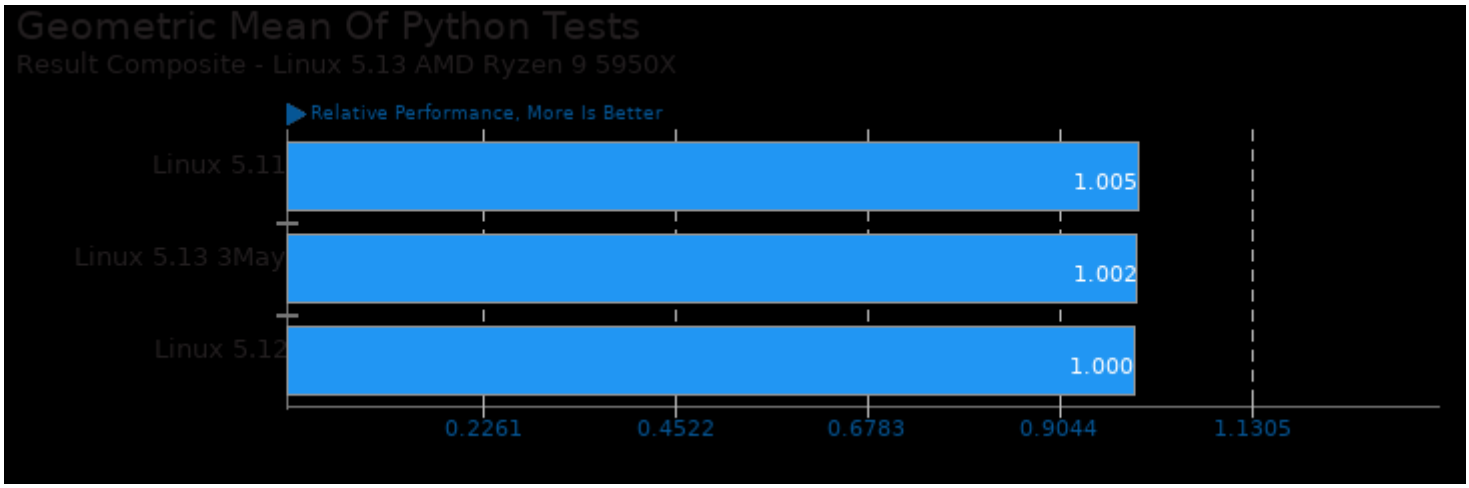
Geometric mean based upon tests: pts/blender, pts/stockfish, pts/svt-vp9, pts/svt-hevc, pts/aom-av1, pts/svt-av1, pts/namd, pts/gromacs, pts/compress-zstd, pts/build-linux-kernel, pts/build-godot, pts/build-wasmer, pts/build-mesa and pts/luxcorerender



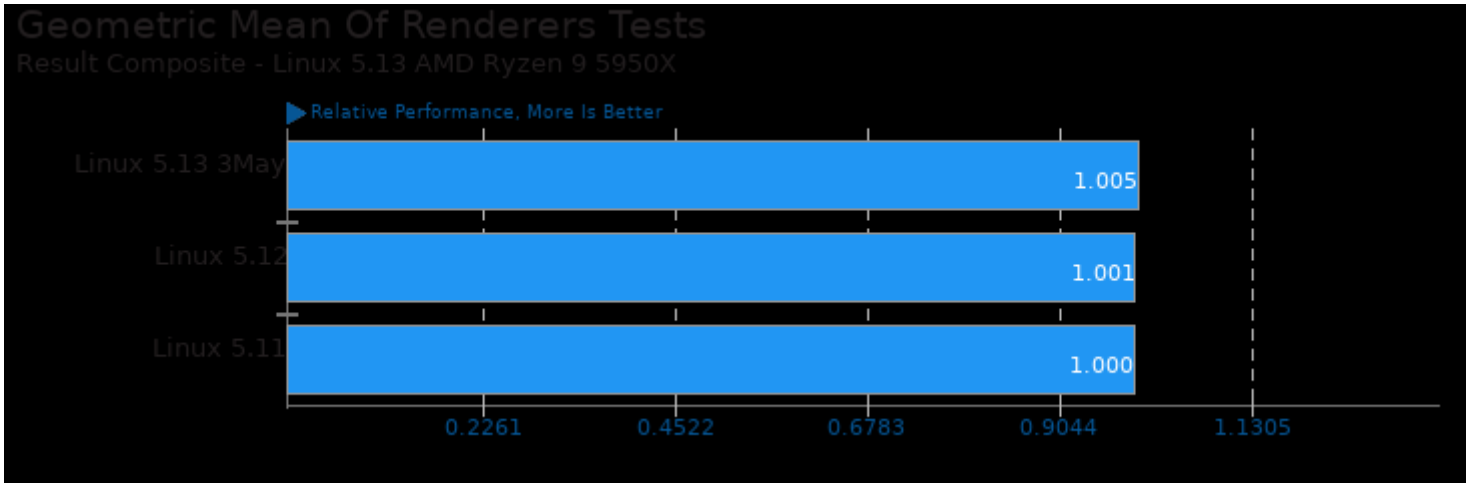
Geometric mean based upon tests: pts/gromacs, pts/luxcorerender, pts/blender, pts/vkfft, pts/vkpeak, pts/realsr-ncnn and pts/waifu2x-ncnn



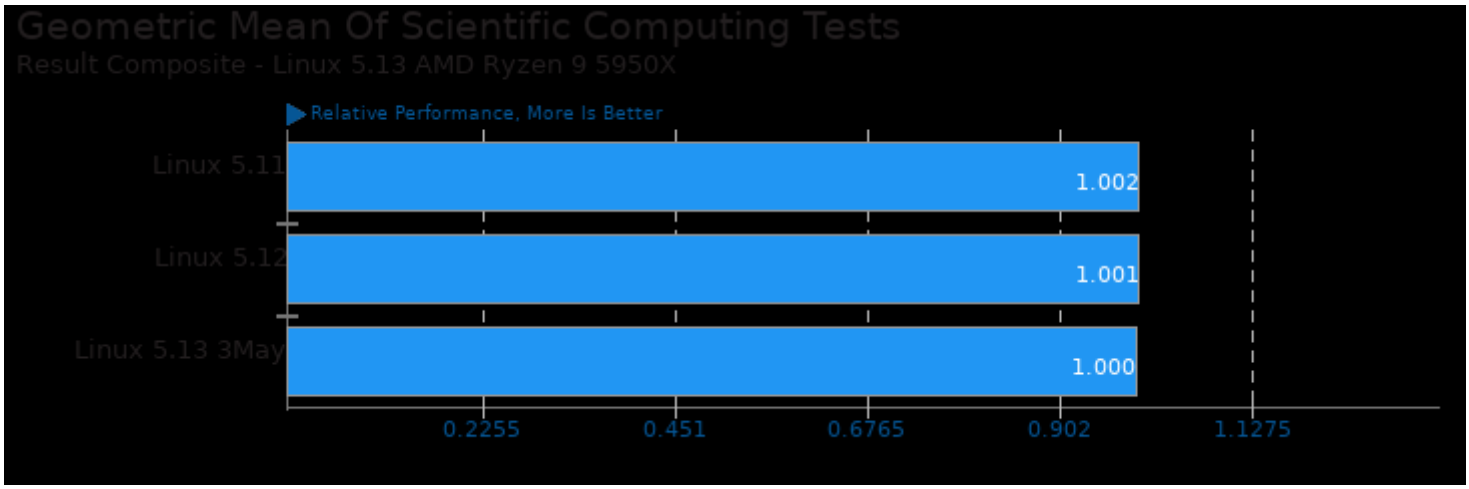
Geometric mean based upon tests: pts/sqlite-speedtest, pts/compress-zstd, pts/build-linux-kernel, pts/build-godot, pts/build-wasmer and pts/build-mesa



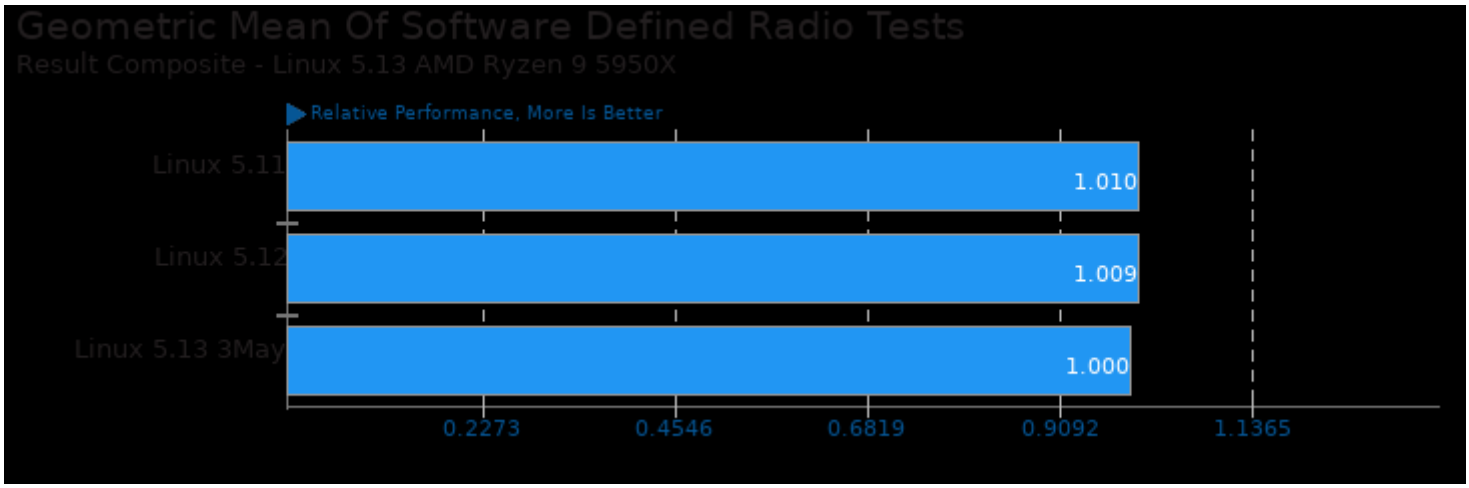
Geometric mean based upon tests: pts/compilebench, pts/paraview, pts/chia-vdf, pts/build-godot, pts/build-mesa and system/ocrmypdf



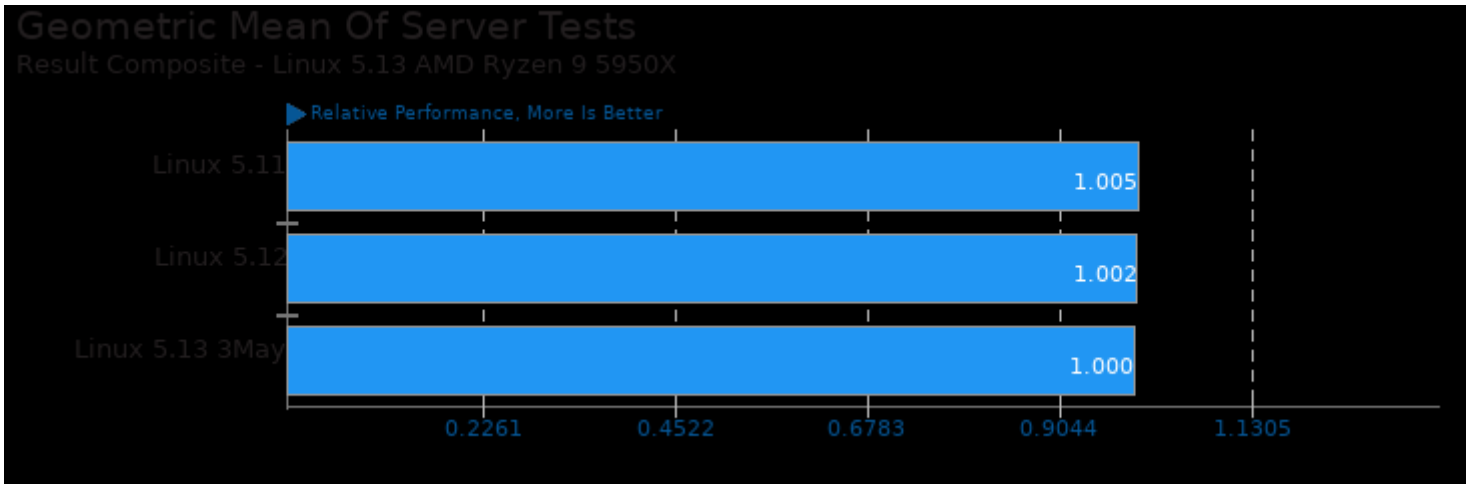
Geometric mean based upon tests: pts/blender and pts/luxcorerender



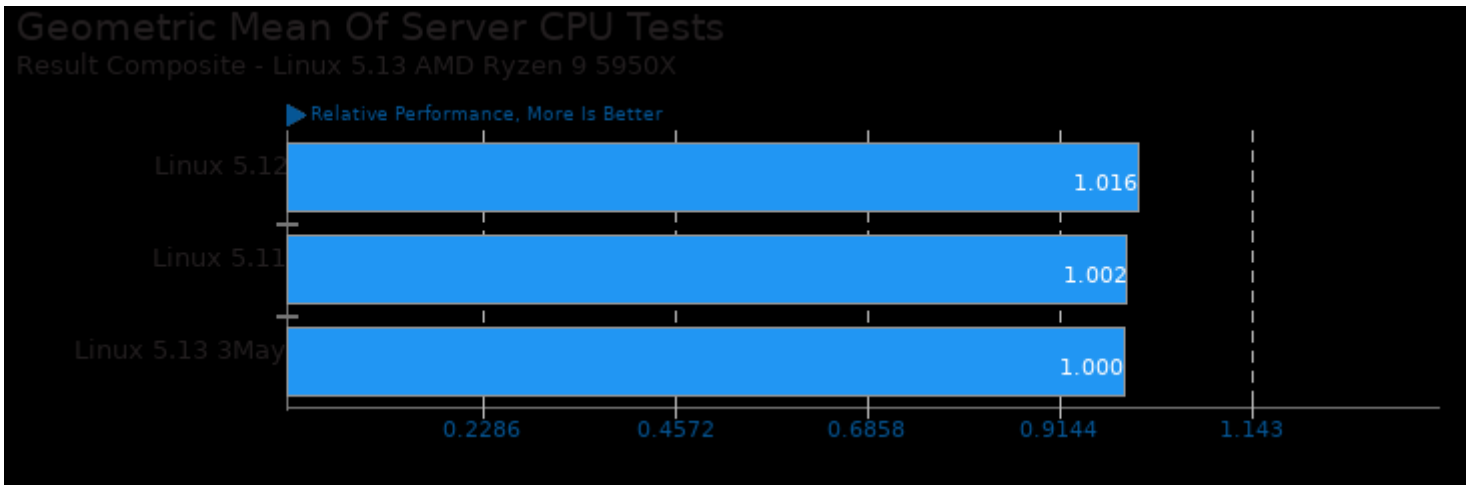
Geometric mean based upon tests: pts/namd, pts/gromacs and pts/hmmer



Geometric mean based upon tests: pts/liquid-dsp, pts/srslte and pts/luaradio

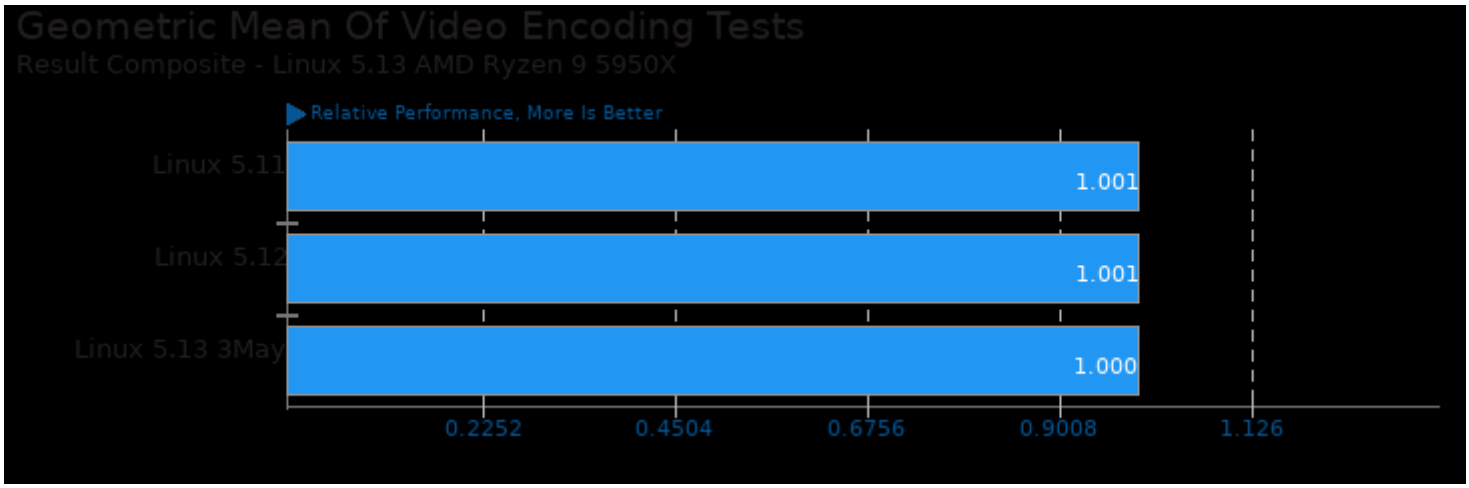


Geometric mean based upon tests: pts/keydb, pts/sqlite-speedtest and pts/influxdb

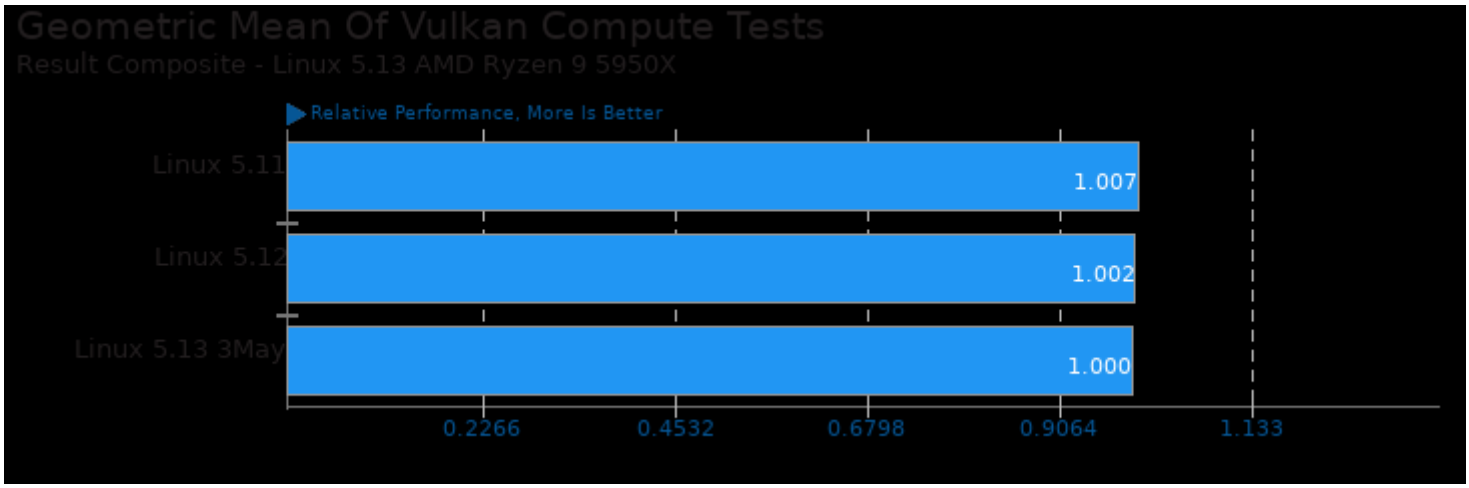


Geometric mean based upon tests: pts/namd, pts/svt-av1, pts/svt-hevc, pts/svt-vp9, pts/stockfish, pts/build-linux-kernel, pts/compress-zstd, pts/tjbench, system/gimp, pts/stress-ng, pts/ctx-clock and pts/blender

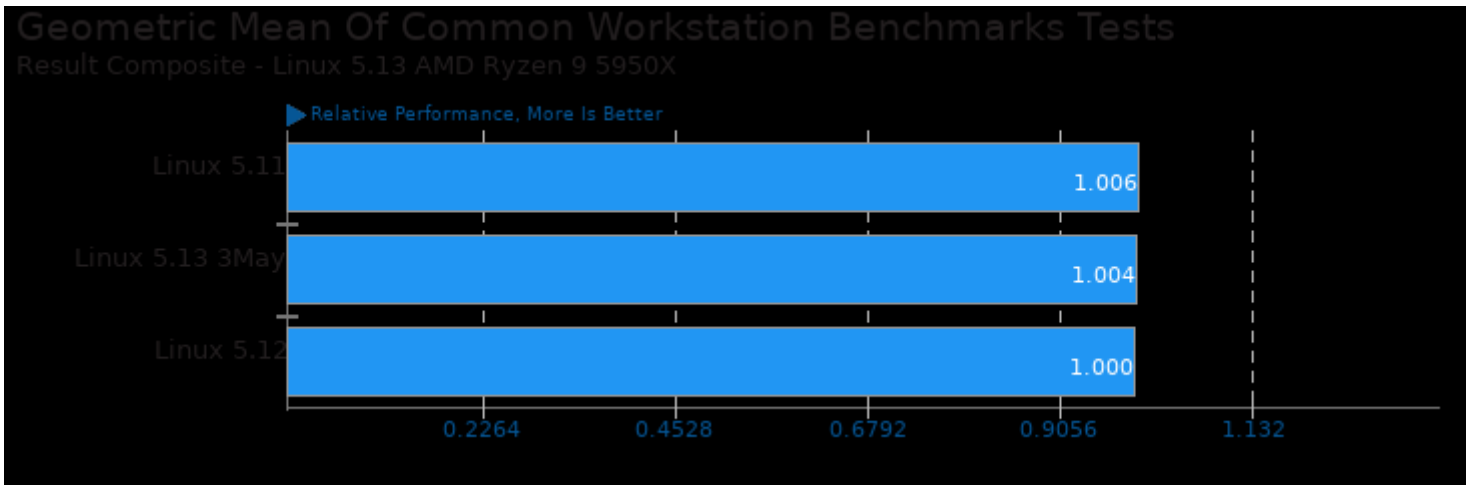
Linux 5.13 AMD Ryzen 9 5950X



Geometric mean based upon tests: pts/svt-vp9, pts/svt-hevc, pts/aom-av1 and pts/svt-av1



Geometric mean based upon tests: pts/vkfft, pts/vkpeak, pts/realsr-ncnn and pts/waifu2x-ncnn



Geometric mean based upon tests: pts/blender and pts/paraview

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