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3900xt sunday

AMD Ryzen 9 3900XT 12-Core testing with a MSI MEG X570 GODLIKE (MS-7C34) v1.0 (1.B3 BIOS) and AMD Radeon RX 56/64 8GB on Ubuntu 20.10 via the Phoronix Test Suite.

Automated Executive Summary

1 had the most wins, coming in first place for 78% of the tests.

Based on the geometric mean of all complete results, the fastest (1) was 1.005x the speed of the slowest (3). 2 was 0.996x the speed of 1 and 3 was 0.999x the speed of 2.

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

Google Draco (Model: Church Facade) at 1.027x
Xmrig (Variant: Monero - Hash Count: 1M) at 1.026x
KTX-Software toktx (Settings: Zstd Compression 19) at 1.019x
libjpeg-turbo tjbench (Test: Decompression Throughput) at 1.011x
KTX-Software toktx (Settings: UASTC 3) at 1.006x
KTX-Software toktx (Settings: Zstd Compression 9) at 1.006x
Xmrig (Variant: Wownero - Hash Count: 1M) at 1.006x
KTX-Software toktx (Settings: UASTC 4 + Zstd Compression 19) at 1.004x
vkpeak (fp16-scalar) at 1.004x

vkpeak (fp32-vec4) at 1.004x.

Test Systems:

1

2

3

Processor: AMD Ryzen 9 3900XT 12-Core @ 3.80GHz (12 Cores / 24 Threads), Motherboard: MSI MEG X570 GODLIKE (MS-7C34) v1.0 (1.B3 BIOS), Chipset: AMD Starship/Matisse, Memory: 16GB, Disk: 500GB Seagate FireCuda 520 SSD ZP500GM30002, Graphics: AMD Radeon RX 56/64 8GB (1630/945MHz), Audio: AMD Vega 10 HDMI Audio, Monitor: ASUS MG28U, Network: Realtek Device 2600 + Realtek Device 3000 + Intel Wi-Fi 6 AX200

OS: Ubuntu 20.10, Kernel: 5.11.0-rc1-phx (x86_64) 20201228, Desktop: GNOME Shell 3.38.1, Display Server: X Server 1.20.9, OpenGL: 4.6 Mesa 20.2.1 (LLVM 11.0.0), Vulkan: 1.2.131, Compiler: GCC 10.2.0, File-System: ext4, Screen Resolution: 3840x2160

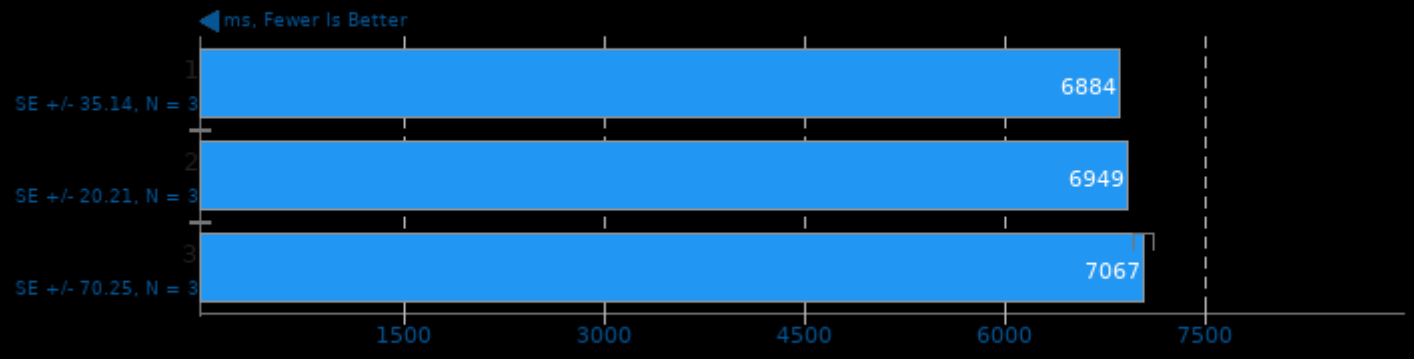
Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,m2 --enable-libphobos-checking=release --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
Processor Notes: Scaling Governor: acpi-cpufreq schedutil (Boost: Enabled) - CPU Microcode: 0x8701021
Graphics Notes: GLAMOR
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 STIBP: conditional RSB filling + srbds: Not affected + tsx_async_abort: Not affected

	1	2	3
Google Draco - Church Facade (ms)	**6884**	6949	**7067**
Normalized	100%	99.06%	97.41%
Standard Deviation	0.9%	0.5%	1.7%
Xmrig - Monero - 1M (H/s)	**8243**	**8032**	8232
Normalized	100%	97.44%	99.86%
Standard Deviation	2%	3.6%	2.3%
KTX-Software toktx - Z.C.1 (sec)	**18.193**	18.283	**18.535**
Normalized	100%	99.51%	98.15%
Standard Deviation	0.1%	0.1%	2%
libjpeg-turbo tjbench - D.T (Megapixels/sec)	**228.267937**	**225.883834**	227.247830
Normalized	100%	98.96%	99.55%
Standard Deviation	0.7%	2.3%	0.6%
KTX-Software toktx - UASTC 3 (sec)	8.892	**8.880**	**8.931**

Normalized	99.87%	100%	99.43%
Standard Deviation	0.2%	0.4%	0.2%
KTX-Software toktx - Zstd Compression 9	**2.288**	2.292	**2.301**
Normalized	100%	99.83%	99.44%
Standard Deviation	0.2%	0.1%	0.3%
Xmrig - Wownero - 1M (H/s)	**10594**	10557	**10535**
Normalized	100%	99.65%	99.44%
Standard Deviation	0.1%	0.1%	0.8%
KTX-Software toktx - U.4.Z.C.1 (sec)	227.800	**227.775**	**228.776**
Normalized	99.99%	100%	99.56%
Standard Deviation	0.1%	0.1%	0.1%
vkpeak - fp16-scalar (GFLOPS)	**11816**	11776	**11766**
Normalized	100%	99.66%	99.58%
Standard Deviation	0.9%	0.7%	0.7%
vkpeak - fp32-vec4 (GFLOPS)	**10071**	10047	**10028**
Normalized	100%	99.76%	99.58%
Standard Deviation	1.4%	1.4%	1.5%
vkpeak - int32-vec4 (GIOPS)	2319	**2322**	**2313**
Normalized	99.88%	100%	99.58%
Standard Deviation	0.5%	0.4%	0.6%
vkpeak - int32-scalar (GIOPS)	**2382**	2373	**2372**
Normalized	100%	99.64%	99.58%
Standard Deviation	0.4%	0.3%	0.4%
vkpeak - fp64-scalar (GFLOPS)	**526.93**	526.07	**525.34**
Normalized	100%	99.84%	99.7%
Standard Deviation	0.7%	0.4%	0.6%
KTX-Software toktx - U.3.Z.C.1 (sec)	14.457	**14.427**	**14.466**
Normalized	99.79%	100%	99.73%
Standard Deviation	0.6%	0.2%	0.1%
vkpeak - int16-scalar (GIOPS)	**1695**	**1691**	1692
Normalized	100%	99.81%	99.88%
Standard Deviation	0.3%	0.3%	0.3%
vkpeak - fp16-vec4 (GFLOPS)	**11125**	11119	**11105**
Normalized	100%	99.95%	99.82%
Standard Deviation	0.8%	0.7%	0.6%
vkpeak - int16-vec4 (GIOPS)	**1658**	**1656**	1656
Normalized	100%	99.87%	99.9%
Standard Deviation	0.2%	0.2%	0.2%
vkpeak - fp32-scalar (GFLOPS)	**11842**	**11829**	11830
Normalized	100%	99.89%	99.89%
Standard Deviation	2%	1.9%	1.8%
Google Draco - Lion (ms)	**4607**	4608	**4610**
Normalized	100%	99.98%	99.93%
Standard Deviation	1.8%	0.1%	2.3%

Google Draco 1.4.1

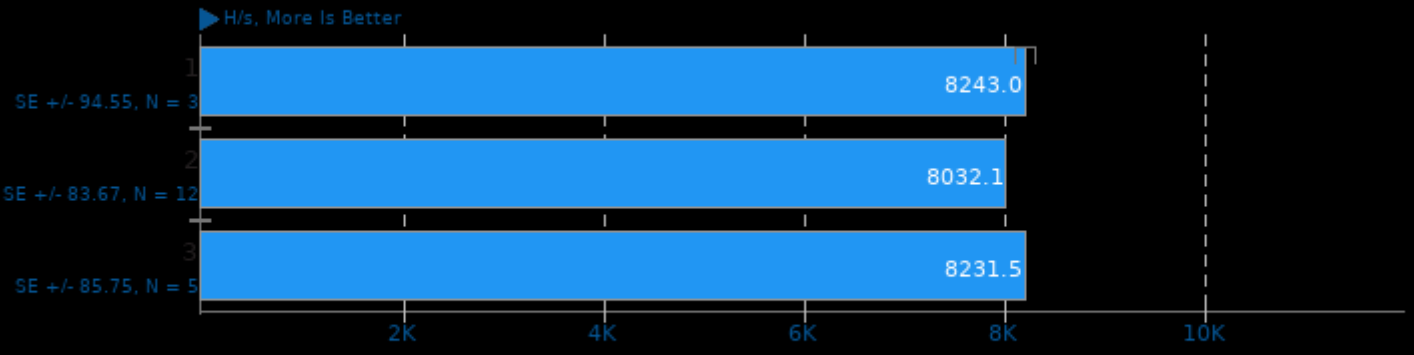
Model: Church Facade



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

Xmrig 6.12.1

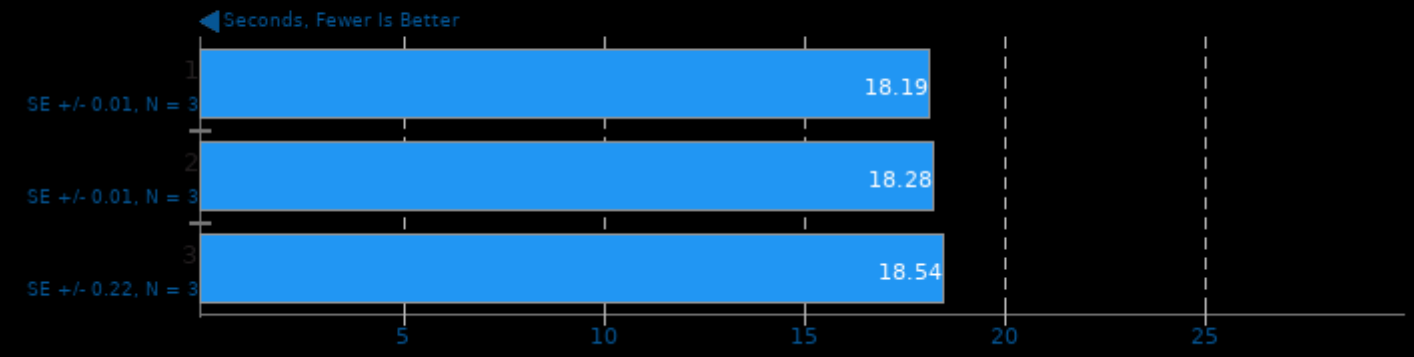
Variant: Monero - Hash Count: 1M

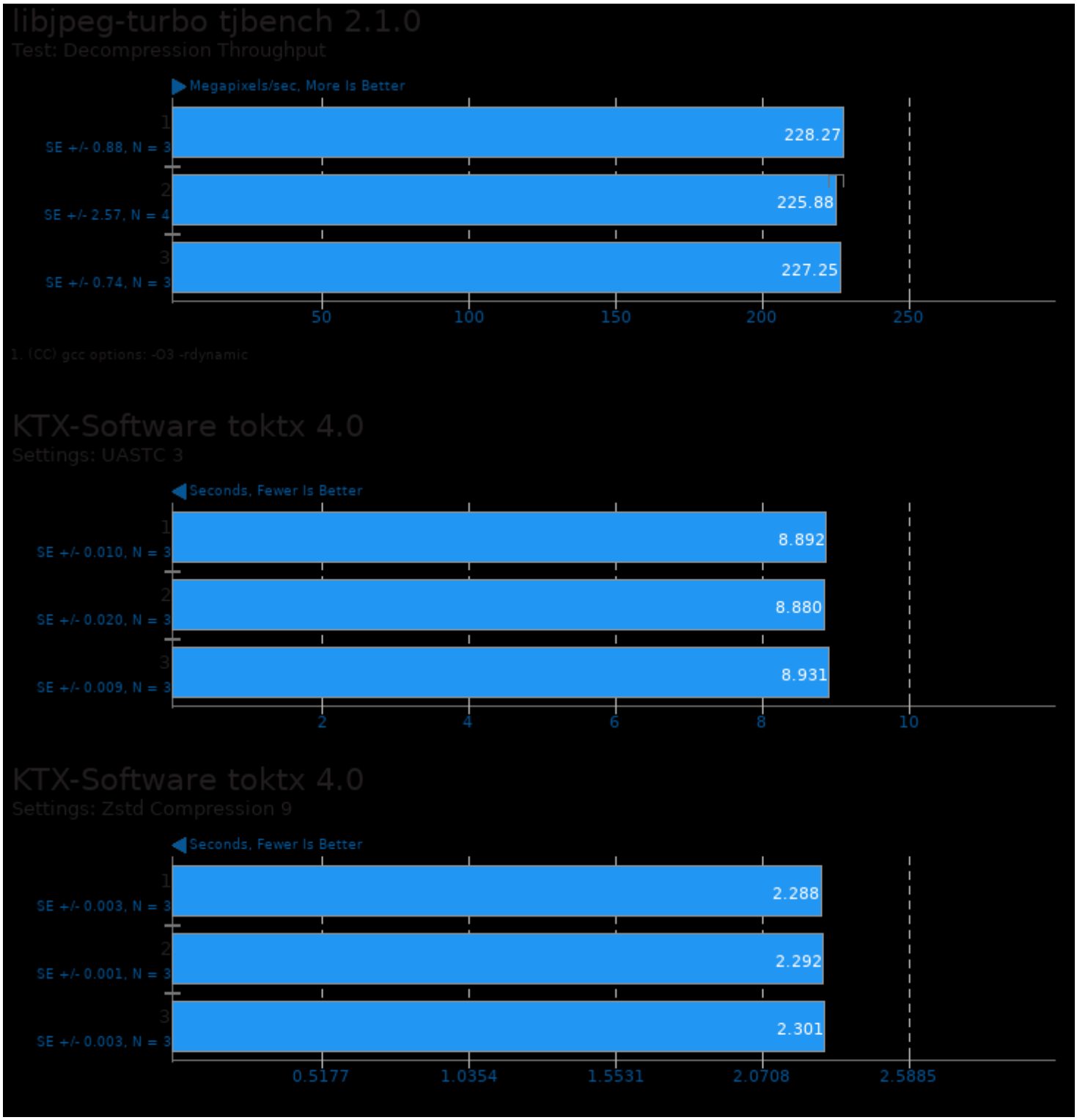


1. (CXX) g++ options: -fexceptions -fno-rtti -maes -O3 -Ofast -static-libgcc -static-libstdc++ -rdynamic -lssl -lcrypto -luv -lpthread -lrt -ldl -lhwloc

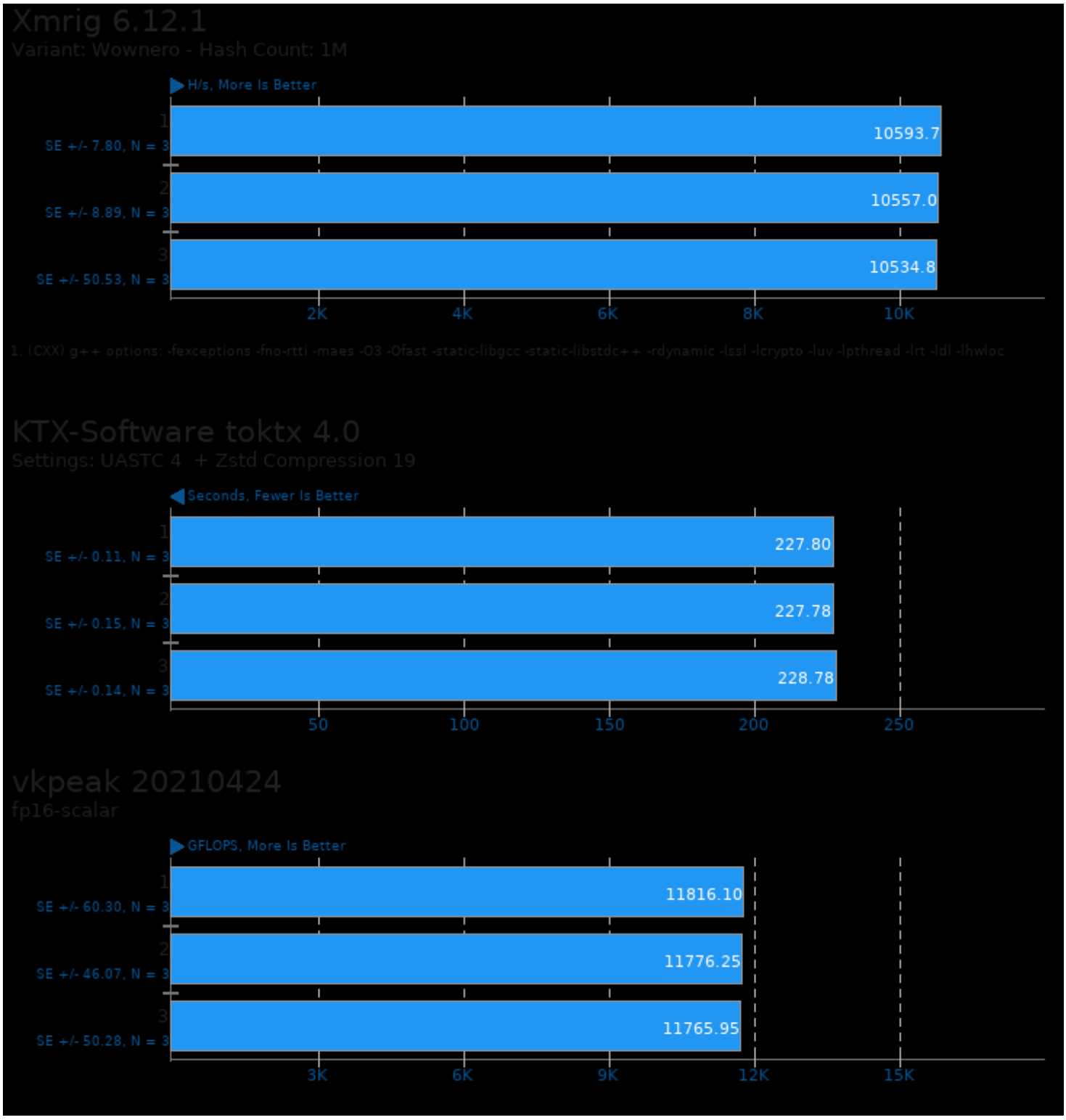
KTX-Software toktx 4.0

Settings: Zstd Compression 19

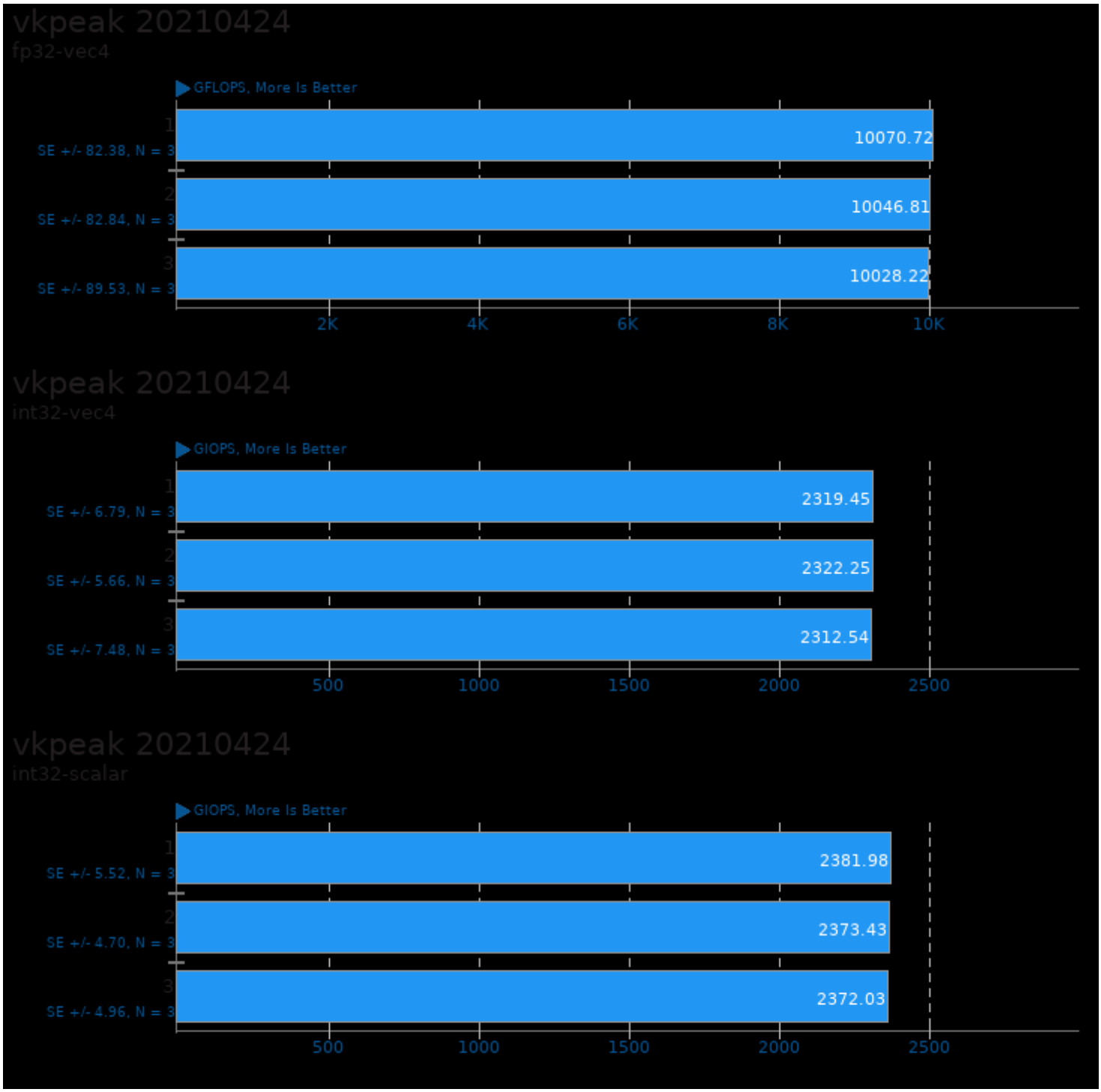



libjpeg-turbo tjbench 2.1.0
Test: Decompression Throughput
Megapixels/sec, More Is Better
1
SE +/- 0.88, N = 3
228.27
2
SE +/- 2.57, N = 4
225.88
3
SE +/- 0.74, N = 3
227.25
50
100
150
200
250
1. (CC) gcc options: -O3 -rdynamic
KTX-Software toktx 4.0
Settings: UASTC 3
Seconds, Fewer Is Better
1
SE +/- 0.010, N = 3
8.892
2
SE +/- 0.020, N = 3
8.880
3
SE +/- 0.009, N = 3
8.931
2
4
6
8
10
KTX-Software toktx 4.0
Settings: Zstd Compression 9
Seconds, Fewer Is Better
1
SE +/- 0.003, N = 3
2.288
2
SE +/- 0.001, N = 3
2.292
3
SE +/- 0.003, N = 3
2.301
0.5177
1.0354
1.5531
2.0708
2.5885

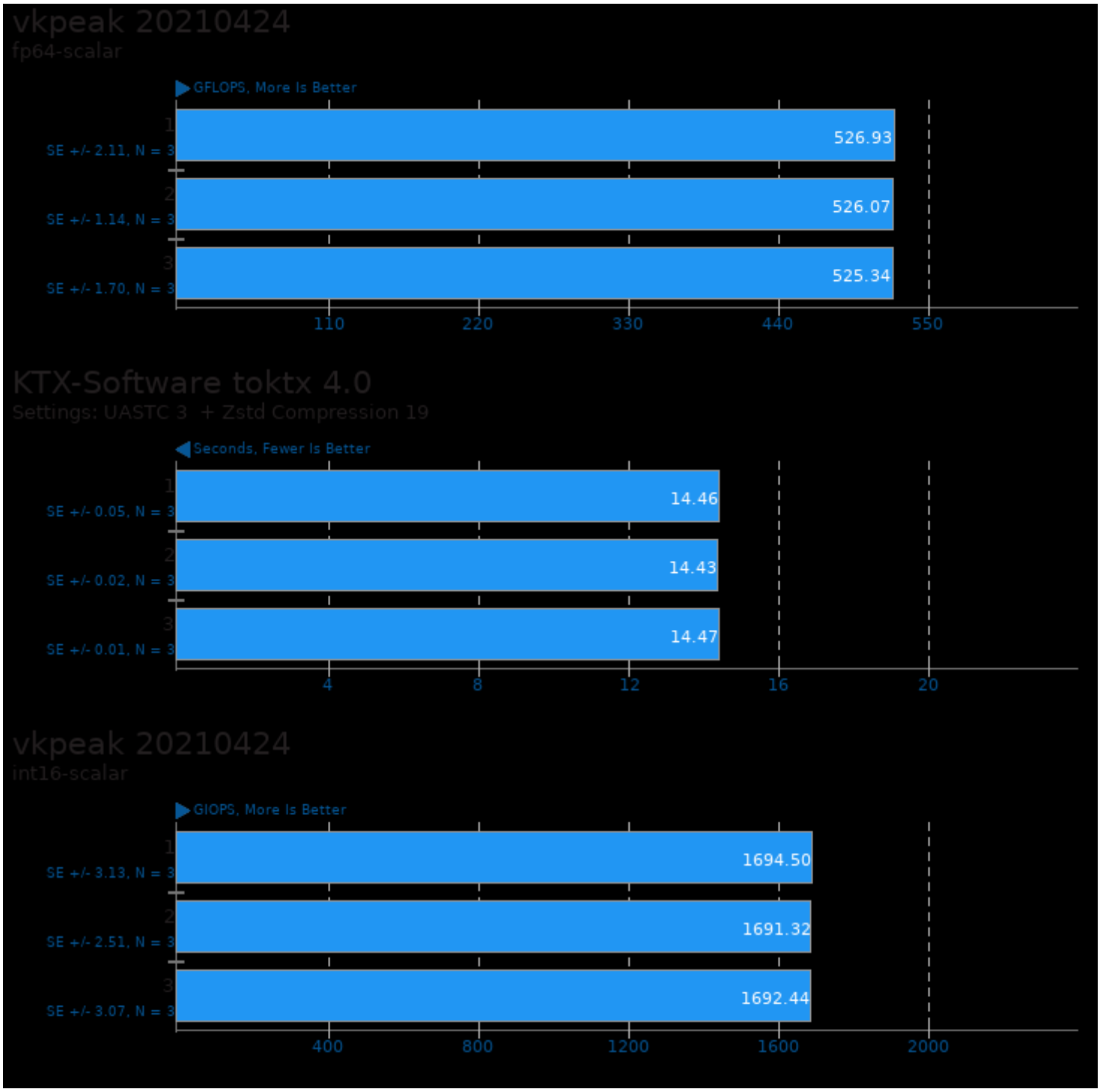
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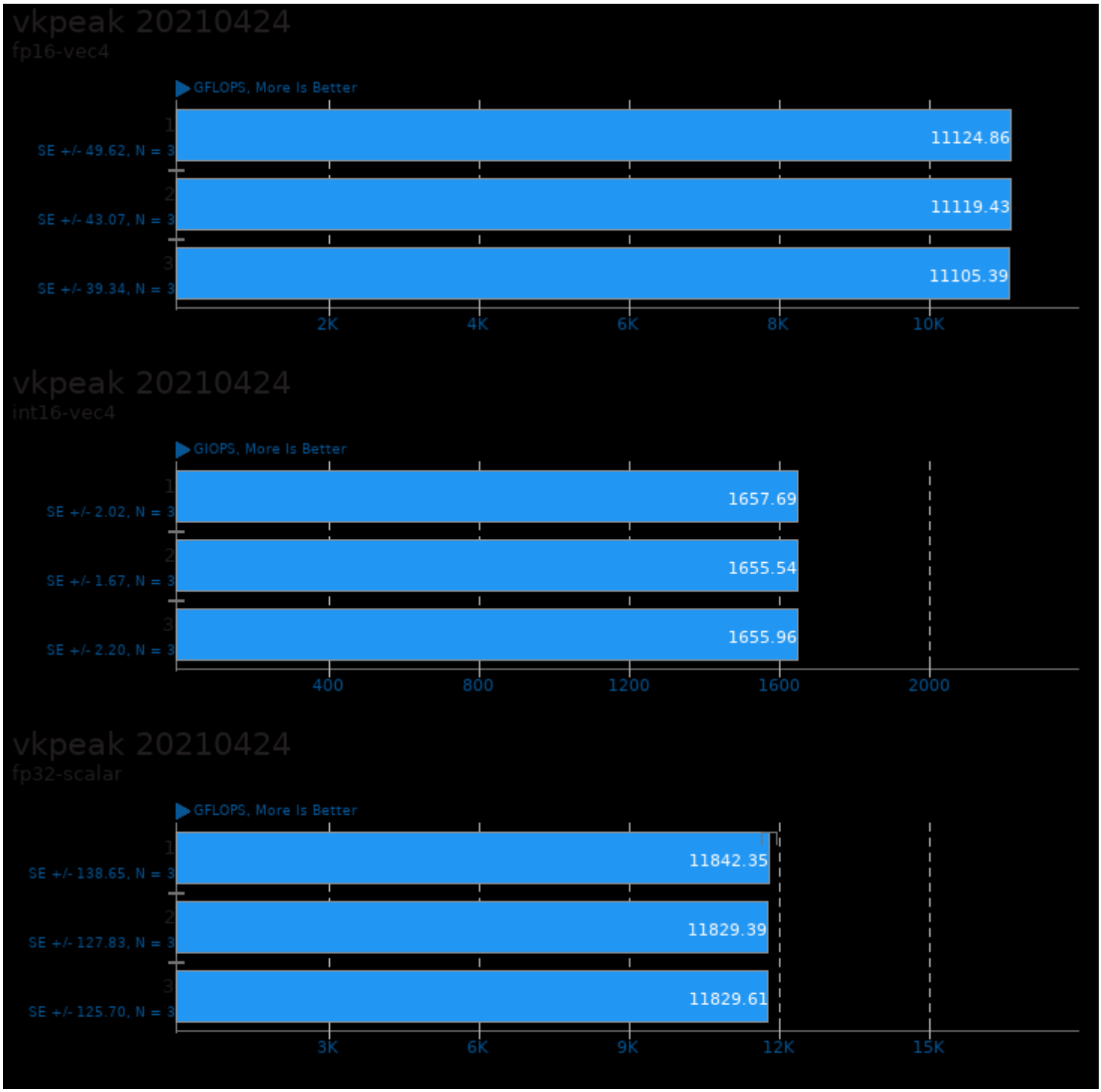
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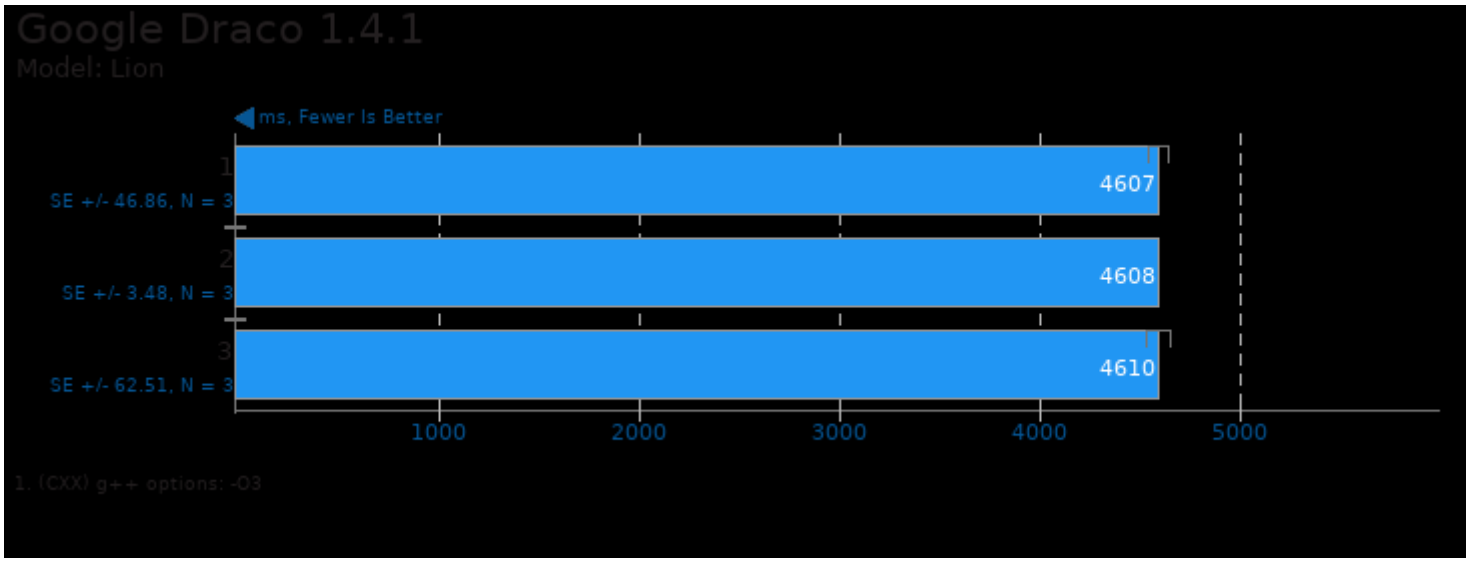
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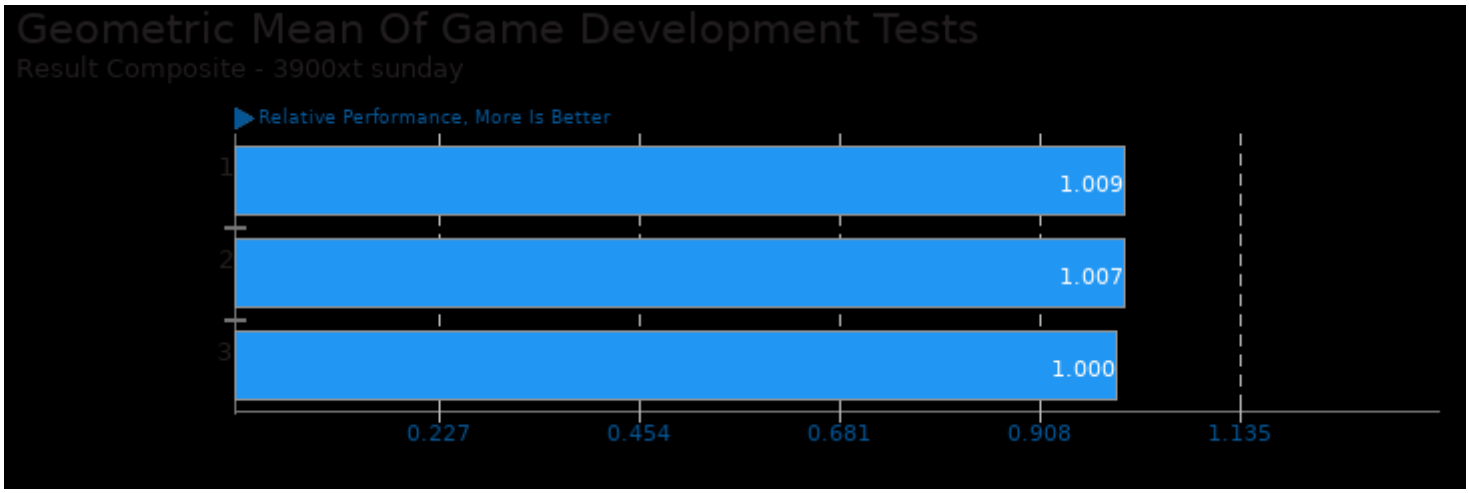


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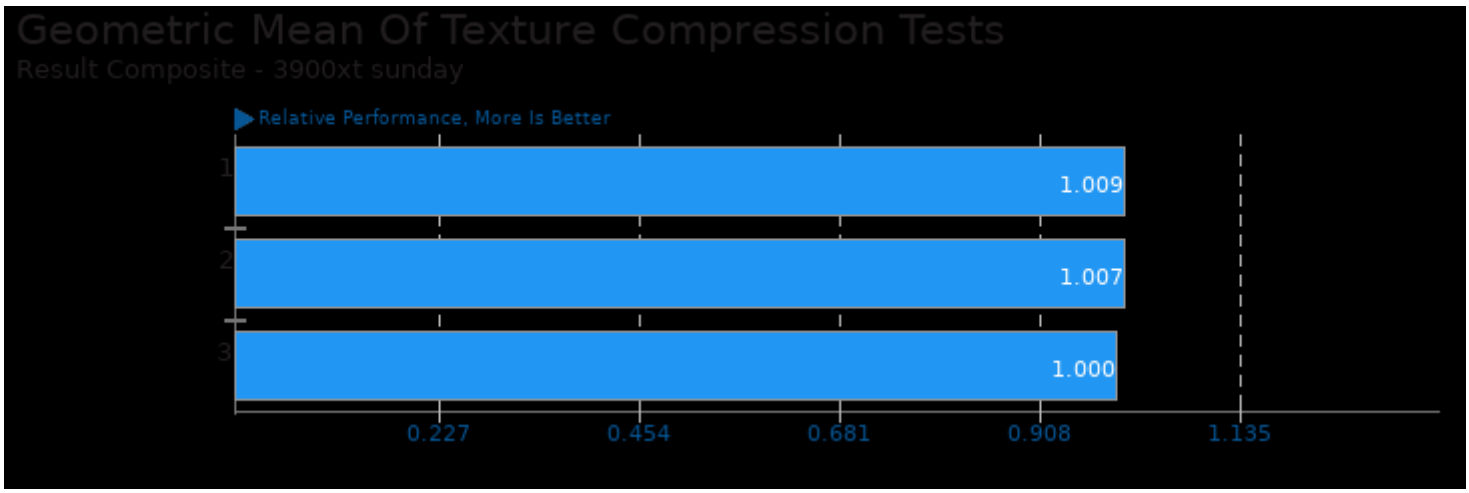
These geometric means are based upon test groupings / test suites for this result file.



Geometric mean based upon tests: pts/tjbench, pts/toktx and pts/draco



Geometric mean based upon tests: pts/toktx and pts/draco



Geometric mean based upon tests: pts/toktx and pts/draco

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