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TR 2970WX sun

AMD Ryzen Threadripper 2970WX 24-Core testing with a Gigabyte X399 AORUS Gaming 7 (F12h BIOS) and Sapphire AMD Radeon RX 550 640SP / 560/560X 4GB on Ubuntu 20.04 via the Phoronix Test Suite.

Automated Executive Summary

2 had the most wins, coming in first place for 46% of the tests.

Based on the geometric mean of all complete results, the fastest (2) was 1.006x the speed of the slowest (4). 3 was 0.995x the speed of 2, 1 was 1x the speed of 3, 4 was 0.999x the speed of 1.

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

ViennaCL (Test: CPU BLAS - dAXPY) at 1.083x

ViennaCL (Test: CPU BLAS - dCOPY) at 1.074x

LuxCoreRender (Scene: DLSC - Acceleration: CPU) at 1.048x

Xmrig (Variant: Monero - Hash Count: 1M) at 1.034x

ViennaCL (Test: CPU BLAS - dGEMV-N) at 1.029x

SecureMark (Benchmark: SecureMark-TLS) at 1.024x

ViennaCL (Test: CPU BLAS - dGEMM-NT) at 1.022x

CP2K Molecular Dynamics (Input: Fayalite-FIST) at 1.018x

LuxCoreRender (Scene: Danish Mood - Acceleration: CPU) at 1.016x

ViennaCL (Test: CPU BLAS - dGEMM-NN) at 1.016x.

Test Systems:

1

2

3

4

Processor: AMD Ryzen Threadripper 2970WX 24-Core @ 3.00GHz (24 Cores / 48 Threads), Motherboard: Gigabyte X399 AORUS Gaming 7 (F12h BIOS), Chipset: AMD 17h, Memory: 16GB, Disk: 120GB Corsair Force MP500, Graphics: Sapphire AMD Radeon RX 550 640SP / 560/560X 4GB (1300/1750MHz), Audio: Realtek ALC1220, Monitor: VA2431, Network: Qualcomm Atheros Killer E2500 + 2 x QLogic cLOM8214 1/10GbE + Intel 8265 / 8275

OS: Ubuntu 20.04, Kernel: 5.9.0-050900rc6daily20200926-generic (x86_64) 20200925, Desktop: GNOME Shell 3.36.4, Display Server: X Server 1.20.9, OpenGL: 4.6 Mesa 20.2.6 (LLVM 11.0.0), Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 1920x1080

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++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-9-HskZEa/gcc-9.3.0/debian/tmp-nvptx/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 ondemand (Boost: Enabled) - CPU Microcode: 0x800820d
 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/swaps barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional STIBP: disabled RSB filling + srbs: Not affected + tsx_async_abort: Not affected

	1	2	3	4
ViennaCL - CPU BLAS - sCOPY (GB/s)	85.2	85.4	84.5	
Normalized	99.77%	100%	98.95%	
Standard Deviation	1.9%	0.5%	2.8%	
ViennaCL - CPU BLAS - sAXPY (GB/s)	129	123	127	
Normalized	100%	95.35%	98.45%	
Standard Deviation	1.9%	7.4%	3%	
ViennaCL - CPU BLAS - sDOT (GB/s)	135	135	126	
Normalized	100%	100%	93.33%	
Standard Deviation	2.6%	1.5%	8.9%	
ViennaCL - CPU BLAS - dCOPY (GB/s)	31.3	32.0	29.8	
Normalized	97.81%	100%	93.13%	
Standard Deviation	4.2%	1.7%	3.8%	

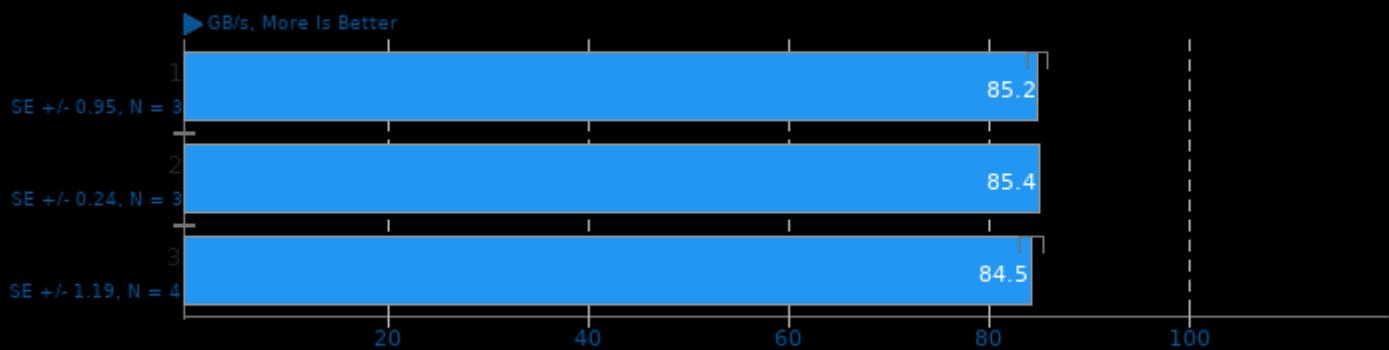
ViennaCL - CPU BLAS - dAXPY (GB/s)	46.0	48.2	44.5	
Normalized	95.44%	100%	92.32%	
Standard Deviation	3.2%	1.9%	4.5%	
ViennaCL - CPU BLAS - dDOT (GB/s)	43.8	49.5	48.1	
Normalized	88.48%	100%	97.17%	
Standard Deviation	2%	4.7%	8.4%	
ViennaCL - CPU BLAS - dGEMV-N (GB/s)	55.6	54.6	56.2	
Normalized	98.93%	97.15%	100%	
Standard Deviation	1%	2.6%	4.1%	
ViennaCL - CPU BLAS - dGEMV-T (GB/s)	65.4	63.4	61.9	
Normalized	100%	96.94%	94.65%	
Standard Deviation	16.4%	15.3%	8%	
vkpeak - fp32-scalar (GFLOPS)	2607	2609	2603	2603
Normalized	99.92%	100%	99.76%	99.75%
Standard Deviation	0.1%	0%	0.1%	0.2%
vkpeak - fp32-vec4 (GFLOPS)	2477	2471	2472	2470
Normalized	100%	99.74%	99.77%	99.72%
Standard Deviation	0.3%	0.1%	0.1%	0.1%
vkpeak - fp64-scalar (GFLOPS)	109.11	109.13	109.11	109.10
Normalized	99.98%	100%	99.98%	99.97%
Standard Deviation	0%	0.1%	0.1%	0.1%
ViennaCL - CPU BLAS - dGEMM-NN (GFLOPs/s)	70.5	70.8	69.7	
Normalized	99.58%	100%	98.45%	
Standard Deviation	0.3%	0.8%	2.4%	
ViennaCL - CPU BLAS - dGEMM-NT (GFLOPs/s)	67.8	68.2	66.7	
Normalized	99.41%	100%	97.8%	
Standard Deviation	0.4%	2.3%	3.8%	
ViennaCL - CPU BLAS - dGEMM-TN (GFLOPs/s)	71.8	71.2	72.2	
Normalized	99.45%	98.61%	100%	
Standard Deviation	2.1%	2.4%	1.3%	
ViennaCL - CPU BLAS - dGEMM-TT (GFLOPs/s)	69.9	70.8	70.6	
Normalized	98.73%	100%	99.72%	
Standard Deviation	1.9%	4.3%	0.9%	
vkpeak - int32-scalar (GIOPS)	523.27	523.35	523.41	523.43
Normalized	99.97%	99.98%	100%	100%
Standard Deviation	0%	0%	0%	0%
vkpeak - int32-vec4 (GIOPS)	521.65	521.65	521.73	521.65
Normalized	99.98%	99.98%	100%	99.98%
Standard Deviation	0%	0%	0%	0%
GNU GMP GMPbench - Total Time (GMPbench Score)	5149	5156	5120	5158
Normalized	99.84%	99.96%	99.28%	100%
Xmrig - Monero - 1M (H/s)	2972	3049	2967	2949
Normalized	97.47%	100%	97.31%	96.71%
Standard Deviation	3%	5.5%	1.9%	2.4%
Xmrig - Wownero - 1M (H/s)	7069	6918	6782	
Normalized	100%	97.86%	95.94%	
Standard Deviation	6.2%	3.2%	2.9%	

LuxCoreRender - DLSC - CPU (M samples/sec)	3.53	3.70	3.70
Normalized	95.41%	100%	100%
Standard Deviation	3.2%	2.9%	2.9%
LuxCoreRender - Danish Mood - CPU (M samples/sec)	2.45	2.47	2.43
Normalized	99.19%	100%	98.38%
Standard Deviation	2.1%	1.8%	2.5%
LuxCoreRender - Orange Juice - CPU (M samples/sec)	5.39	5.38	5.36
Normalized	100%	99.81%	99.44%
Standard Deviation	0.9%	0.9%	0.6%
LuxCoreRender - LuxCore Benchmark - CPU (M samples/sec)	2.58	2.60	2.60
Normalized	99.23%	100%	100%
Standard Deviation	1.6%	1.3%	1.3%
LuxCoreRender - R.C.a.P - CPU (M samples/sec)	11.27	11.51	11.15
Normalized	97.91%	100%	96.87%
Standard Deviation	6%	6.2%	4.9%
SecureMark - SecureMark-TLS	207268	203614	202482
Normalized	100%	98.24%	97.69%
Standard Deviation	1.1%	1.4%	0.5%
libjpeg-turbo tjbench - D.T (Megapixels/sec)	171.452130	173.268416	172.715108
Normalized	98.95%	100%	99.68%
Standard Deviation	0.1%	0.5%	0%
Botan - KASUMI (MiB/s)	93.831	93.881	93.897
Normalized	99.93%	99.98%	100%
Standard Deviation	0.4%	0.5%	0.6%
Botan - KASUMI - Decrypt (MiB/s)	90.124	90.191	90.128
Normalized	99.93%	100%	99.93%
Standard Deviation	0.4%	0.5%	0.5%
Botan - AES-256 (MiB/s)	5556	5567	5639
Normalized	98.53%	98.71%	100%
Standard Deviation	0.1%	0.2%	1.1%
Botan - AES-256 - Decrypt (MiB/s)	5572	5589	5646
Normalized	98.69%	98.99%	100%
Standard Deviation	0.1%	0.5%	1%
Botan - Twofish (MiB/s)	364.677	369.541	365.861
Normalized	98.68%	100%	99%
Standard Deviation	0.3%	0.3%	0.1%
Botan - Twofish - Decrypt (MiB/s)	363.921	368.521	364.159
Normalized	98.75%	100%	98.82%
Standard Deviation	0%	0.4%	0.1%
Botan - Blowfish (MiB/s)	447.321	447.551	447.787
Normalized	99.9%	99.95%	100%
Standard Deviation	0.1%	0.1%	0.1%
Botan - Blowfish - Decrypt (MiB/s)	446.135	445.997	446.473
Normalized	99.92%	99.89%	100%
Standard Deviation	0.1%	0.1%	0.1%
Botan - CAST-256 (MiB/s)	147.007	147.127	147.243
Normalized	99.84%	99.92%	100%
Standard Deviation	0%	0.1%	0.1%

Botan - CAST-256 - Decrypt (MiB/s)	146.793	146.885	147.129	
Normalized	99.77%	99.83%	100%	
Standard Deviation	0%	0.1%	0.2%	
Botan - ChaCha20Poly1305 (MiB/s)	499.408	499.450	506.266	
Normalized	98.65%	98.65%	100%	
Standard Deviation	0%	0.1%	1%	
Botan - ChaCha20Poly1305 - Decrypt (MiB/s)	497.766	497.425	504.105	
Normalized	98.74%	98.67%	100%	
Standard Deviation	0.1%	0.2%	0.9%	
Google Draco - Lion (ms)	5705	5711	5708	
Normalized	100%	99.89%	99.95%	
Standard Deviation	0.1%	0.4%	0.4%	
Google Draco - Church Facade (ms)	7922	7919	7997	
Normalized	99.96%	100%	99.02%	
Standard Deviation	0.8%	0.9%	1%	
CP2K Molecular Dynamics - Fayalite-FIST (sec)	1646	1617	1625	1642
Normalized	98.27%	100%	99.56%	98.5%
Helsing - 12 digit (sec)	2.369	2.354	2.334	
Normalized	98.52%	99.15%	100%	
Helsing - 14 digit (sec)	247.415	247.442	246.177	
Normalized	99.5%	99.49%	100%	
KTX-Software toktx - UASTC 3 (sec)	7.386	7.355	7.351	
Normalized	99.53%	99.95%	100%	
Standard Deviation	0.1%	0%	0.5%	
KTX-Software toktx - Zstd	3.041	3.029	3.041	
Normalized	99.61%	100%	99.61%	
Standard Deviation	0.8%	0.3%	0.9%	
KTX-Software toktx - Z.C.1 (sec)	22.263	22.258	22.302	
Normalized	99.98%	100%	99.8%	
Standard Deviation	0.2%	0.2%	0.6%	
KTX-Software toktx - U.3.Z.C.1 (sec)	13.500	13.525	13.518	
Normalized	100%	99.82%	99.87%	
Standard Deviation	0.1%	0.2%	0.1%	
KTX-Software toktx - U.4.Z.C.1 (sec)	174.015	174.008	175.511	
Normalized	100%	100%	99.14%	
Standard Deviation	2.8%	2.6%	2.7%	

ViennaCL 1.7.1

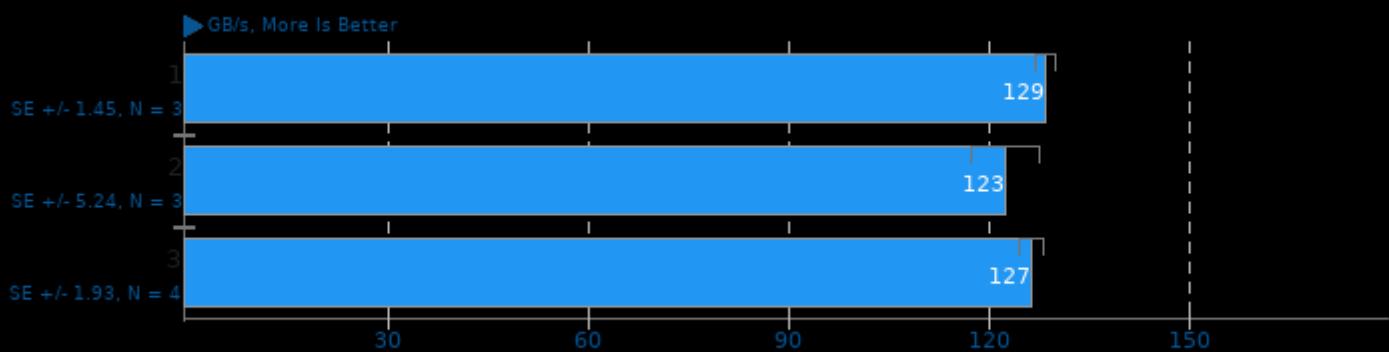
Test: CPU BLAS - sCOPY



1. (CXX) g++ options: -fopenmp -O3 -rdynamic -lOpenCL

ViennaCL 1.7.1

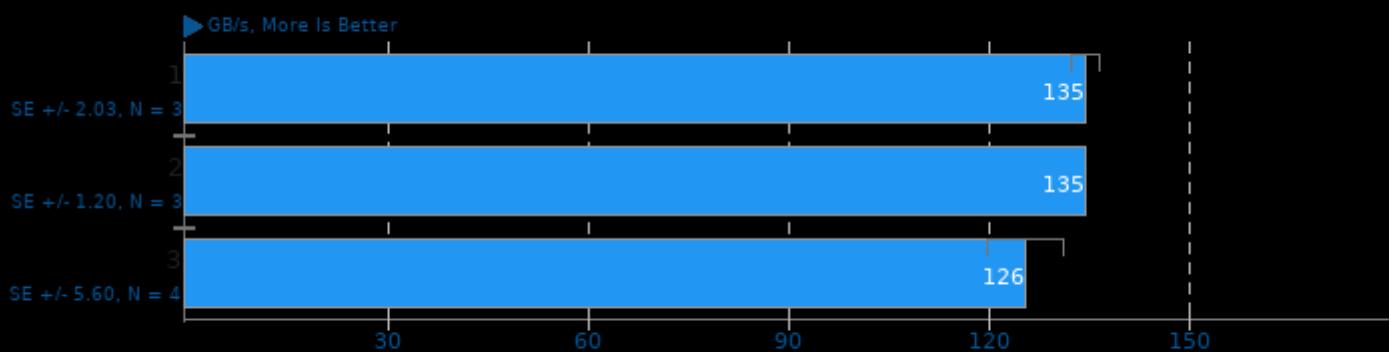
Test: CPU BLAS - sAXPY



1. (CXX) g++ options: -fopenmp -O3 -rdynamic -lOpenCL

ViennaCL 1.7.1

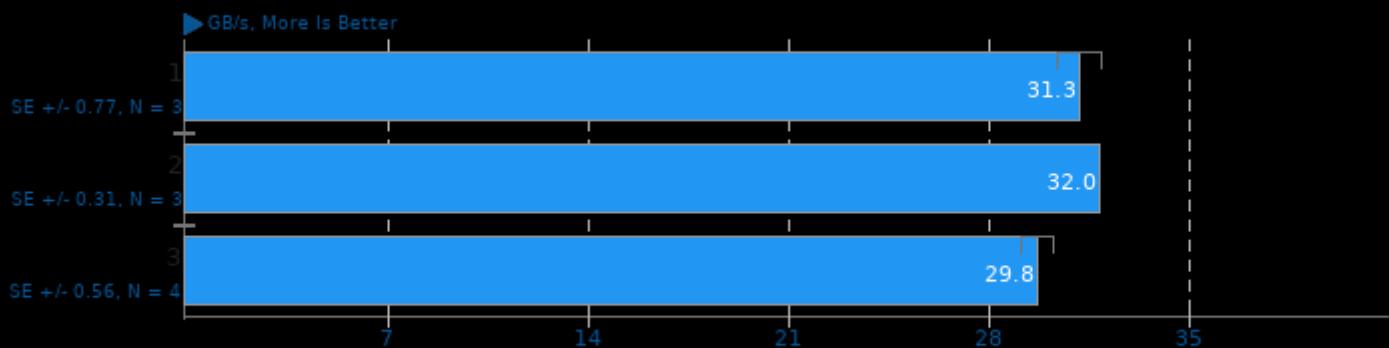
Test: CPU BLAS - sDOT



1. (CXX) g++ options: -fopenmp -O3 -rdynamic -lOpenCL

ViennaCL 1.7.1

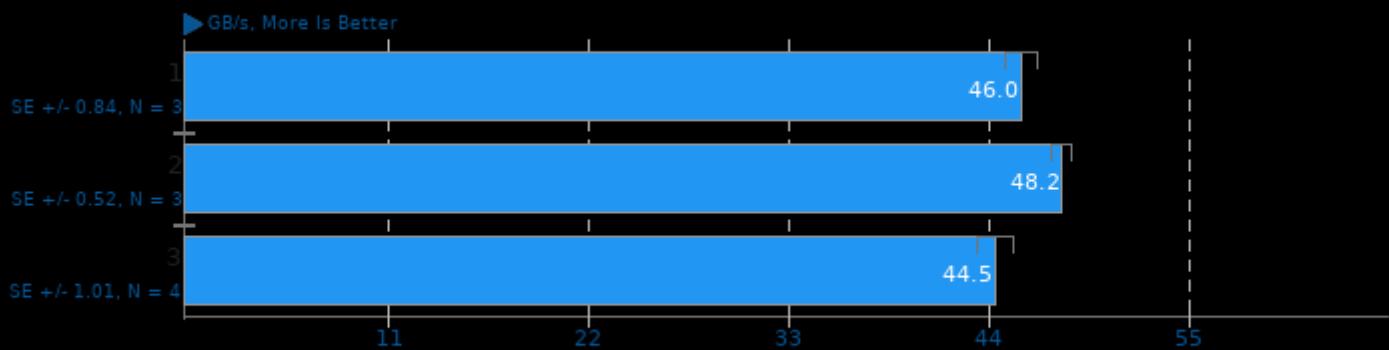
Test: CPU BLAS - dCOPY



1. (CXX) g++ options: -fopenmp -O3 -rdynamic -lOpenCL

ViennaCL 1.7.1

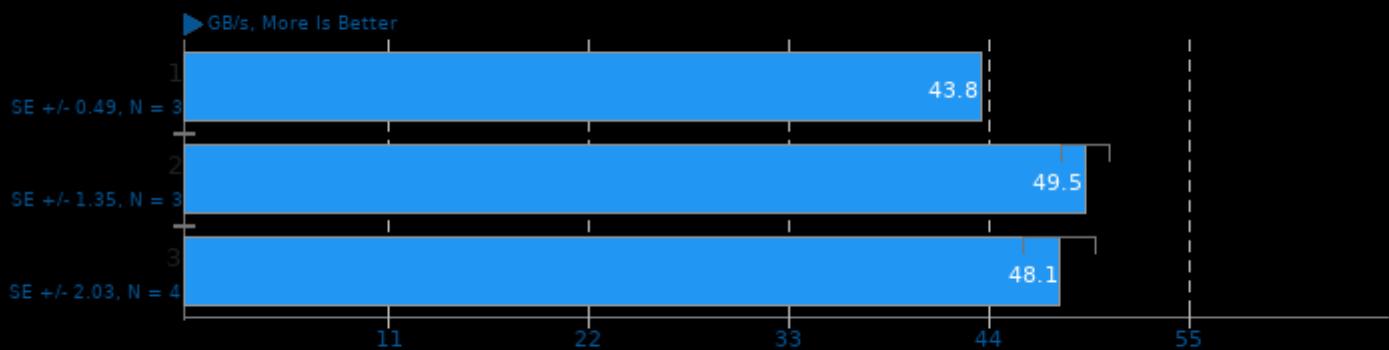
Test: CPU BLAS - dAXPY



1. (CXX) g++ options: -fopenmp -O3 -rdynamic -lOpenCL

ViennaCL 1.7.1

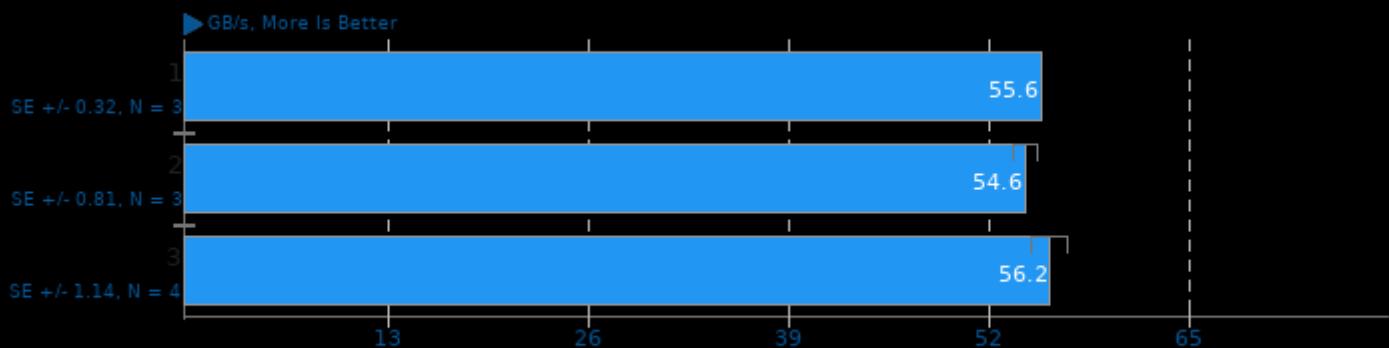
Test: CPU BLAS - dDOT



1. (CXX) g++ options: -fopenmp -O3 -rdynamic -lOpenCL

ViennaCL 1.7.1

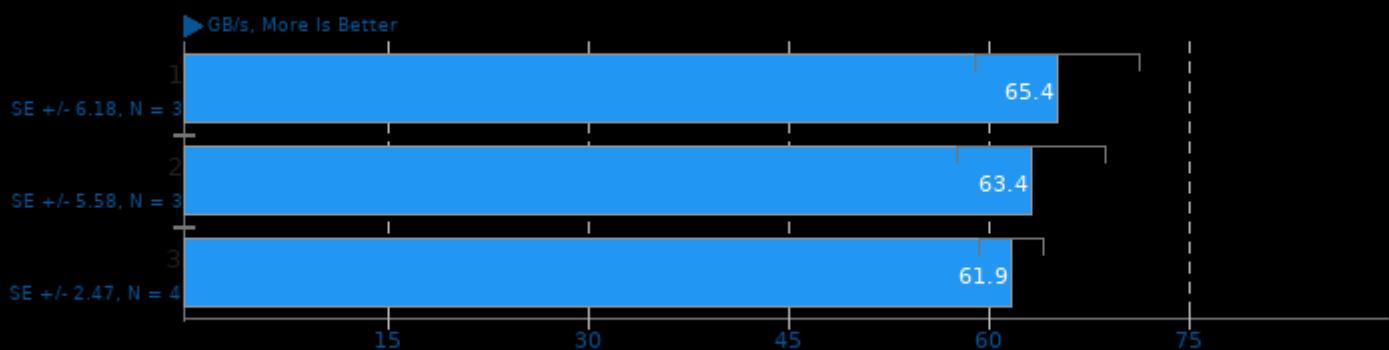
Test: CPU BLAS - dGEMV-N



1. (CXX) g++ options: -fopenmp -O3 -rdynamic -lOpenCL

ViennaCL 1.7.1

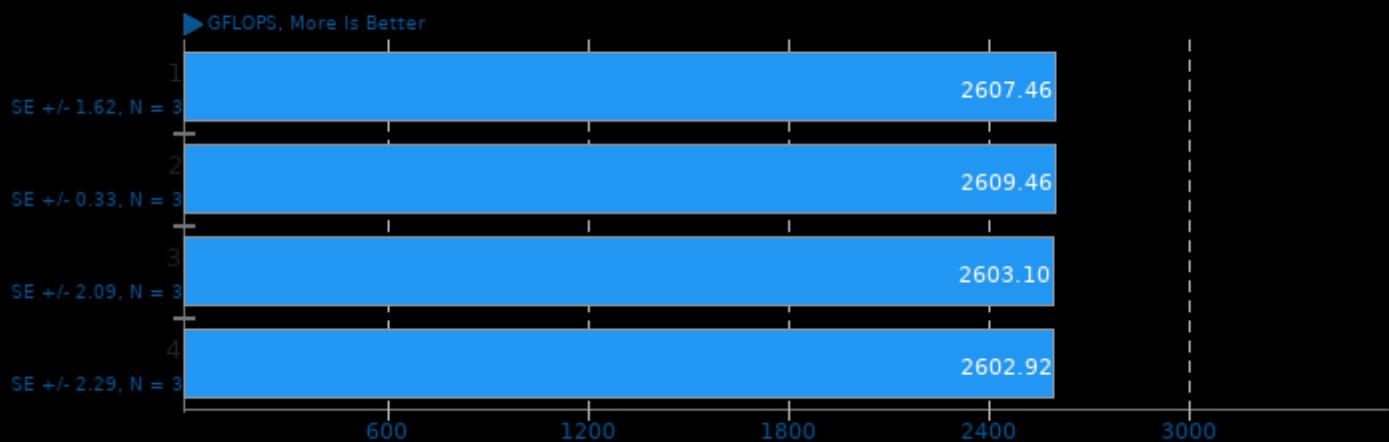
Test: CPU BLAS - dGEMV-T



1. (CXX) g++ options: -fopenmp -O3 -rdynamic -lOpenCL

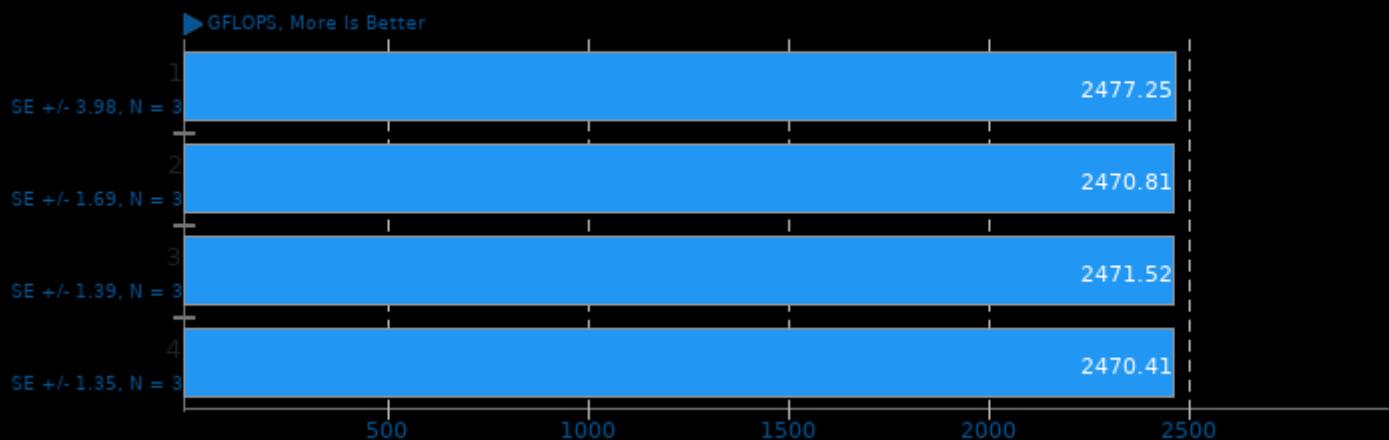
vkpeak 20210424

fp32-scalar



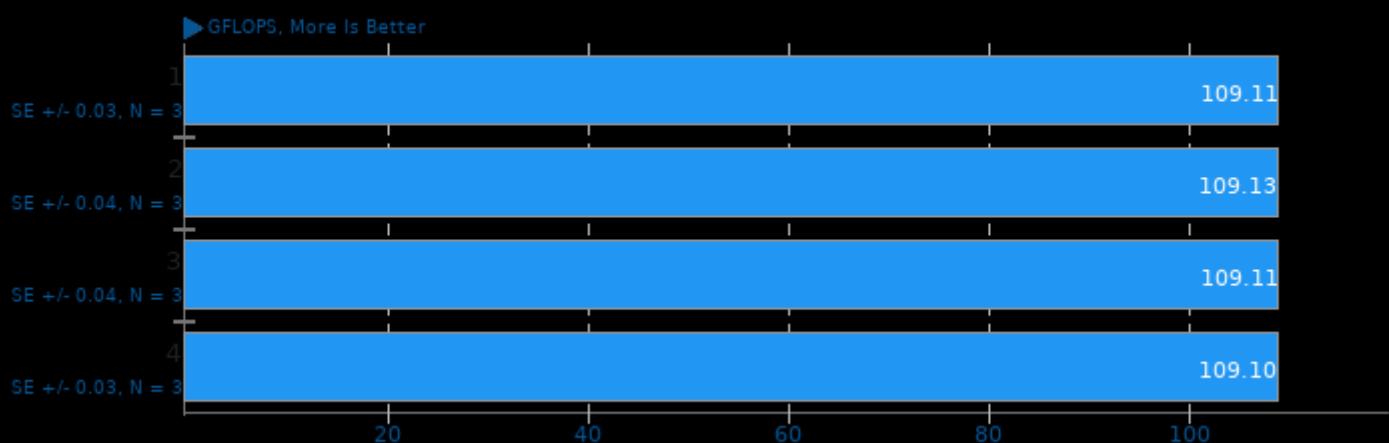
vkpeak 20210424

fp32-vec4



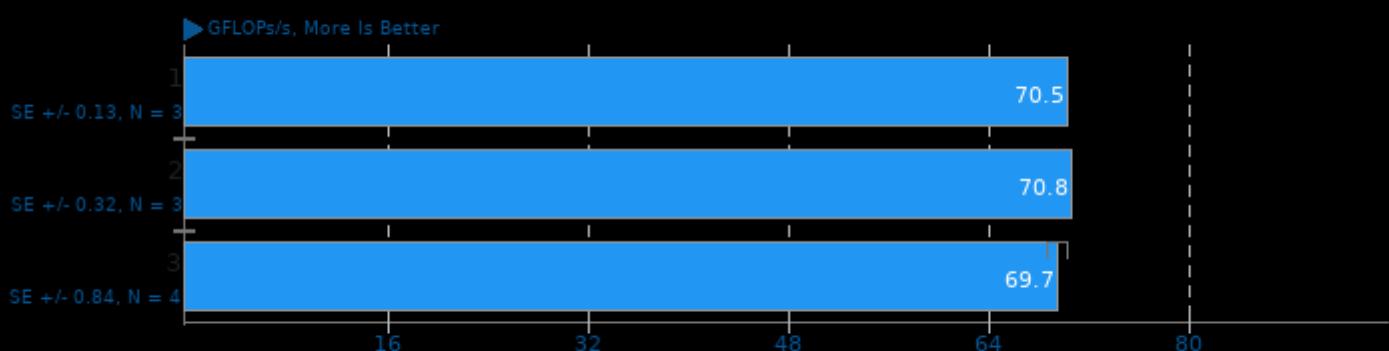
vkpeak 20210424

fp64-scalar



ViennaCL 1.7.1

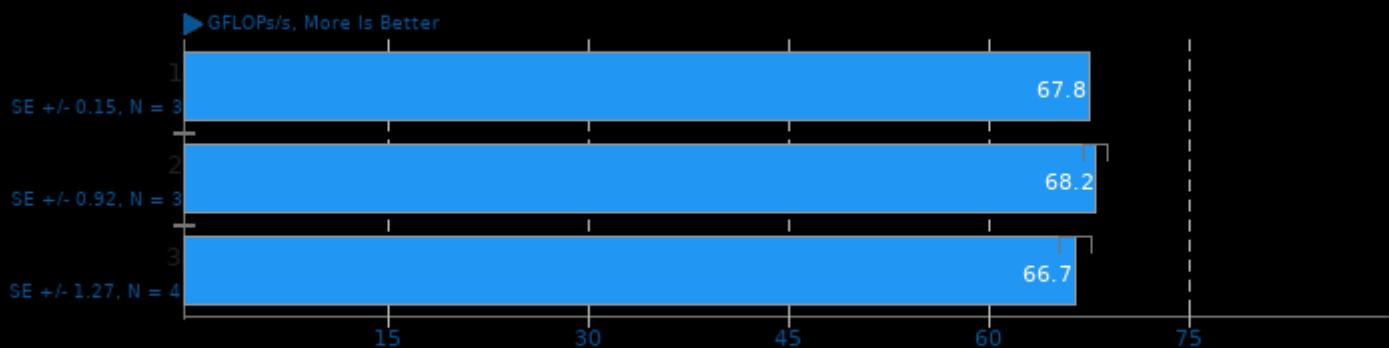
Test: CPU BLAS - dGEMM-NN



1. (CXX) g++ options: -fopenmp -O3 -rdynamic -lOpenCL

ViennaCL 1.7.1

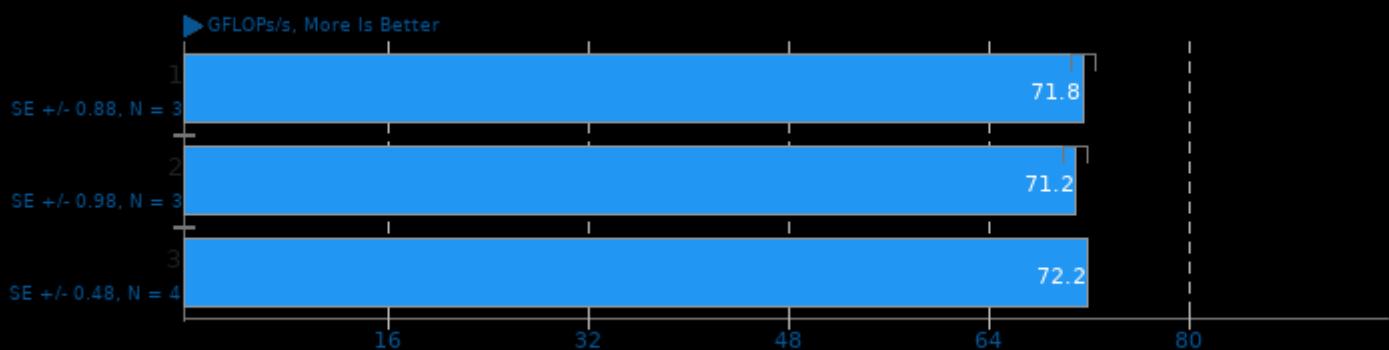
Test: CPU BLAS - dGEMM-NT



1. (CXX) g++ options: -fopenmp -O3 -rdynamic -lOpenCL

ViennaCL 1.7.1

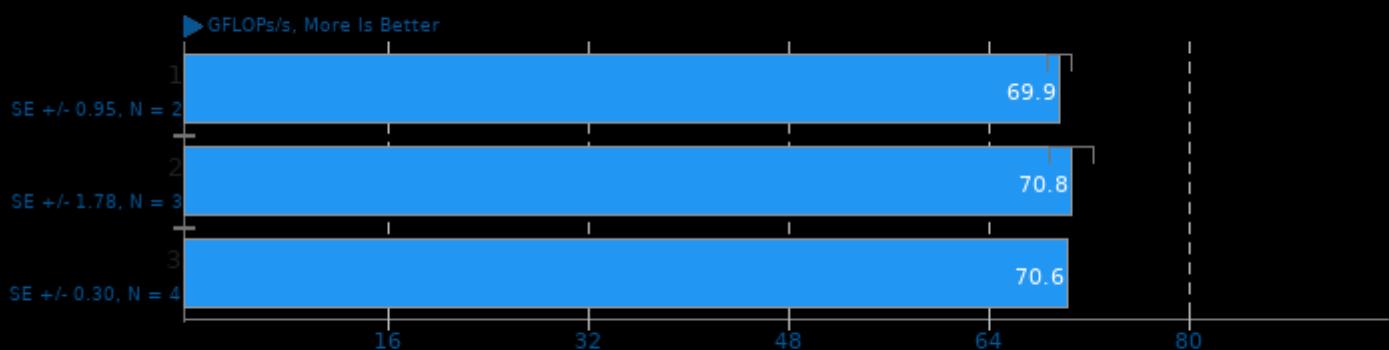
Test: CPU BLAS - dGEMM-TN



1. (CXX) g++ options: -fopenmp -O3 -rdynamic -lOpenCL

ViennaCL 1.7.1

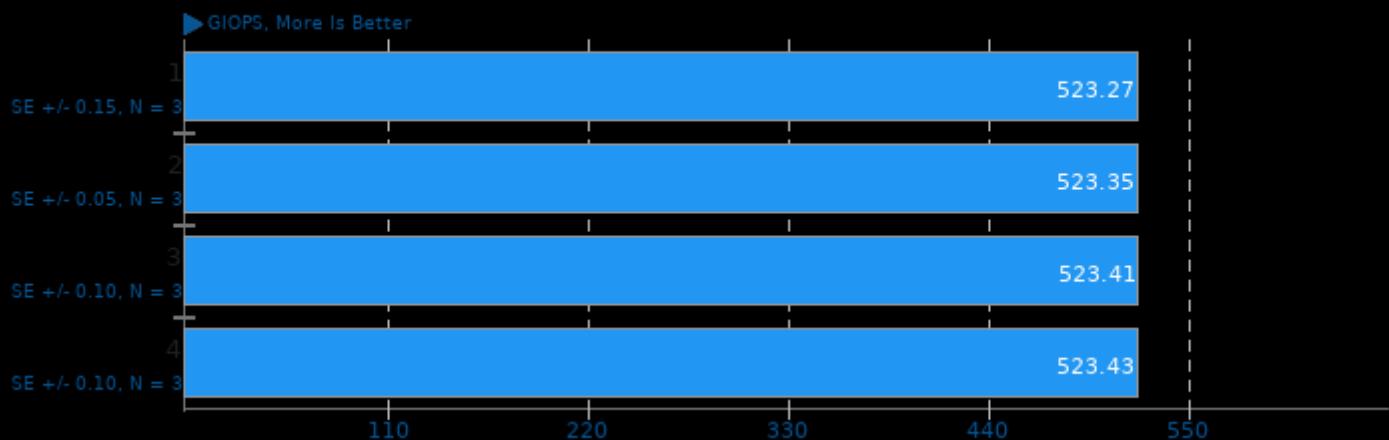
Test: CPU BLAS - dGEMM-TT



1. (CXX) g++ options: -fopenmp -O3 -rdynamic -lOpenCL

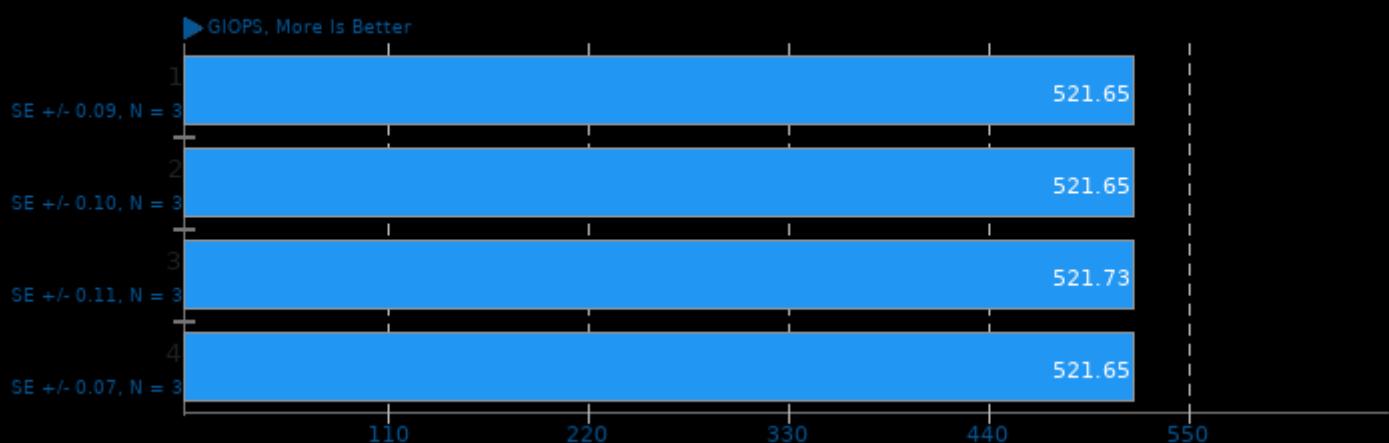
vkpeak 20210424

int32-scalar



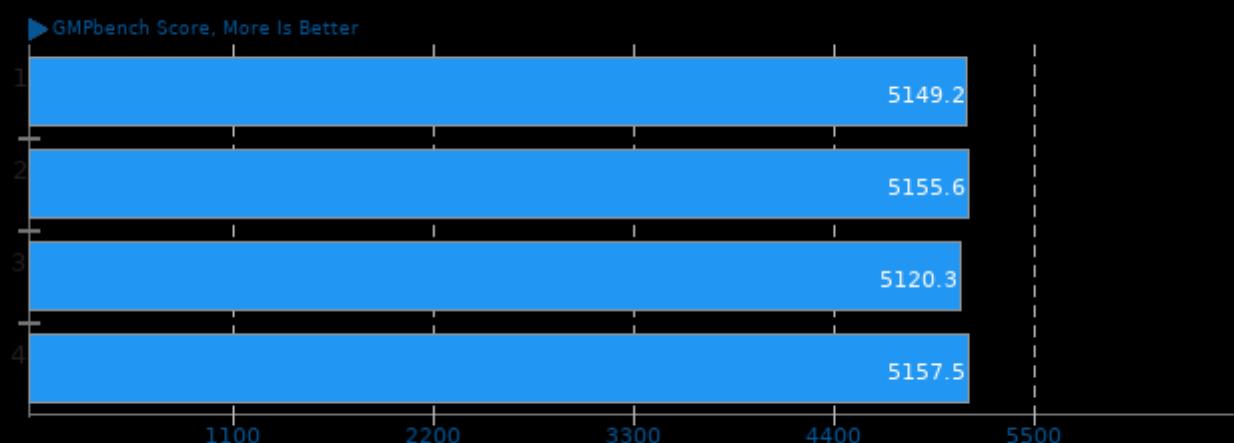
vkpeak 20210424

int32-vec4



GNU GMP GMPbench 6.2.1

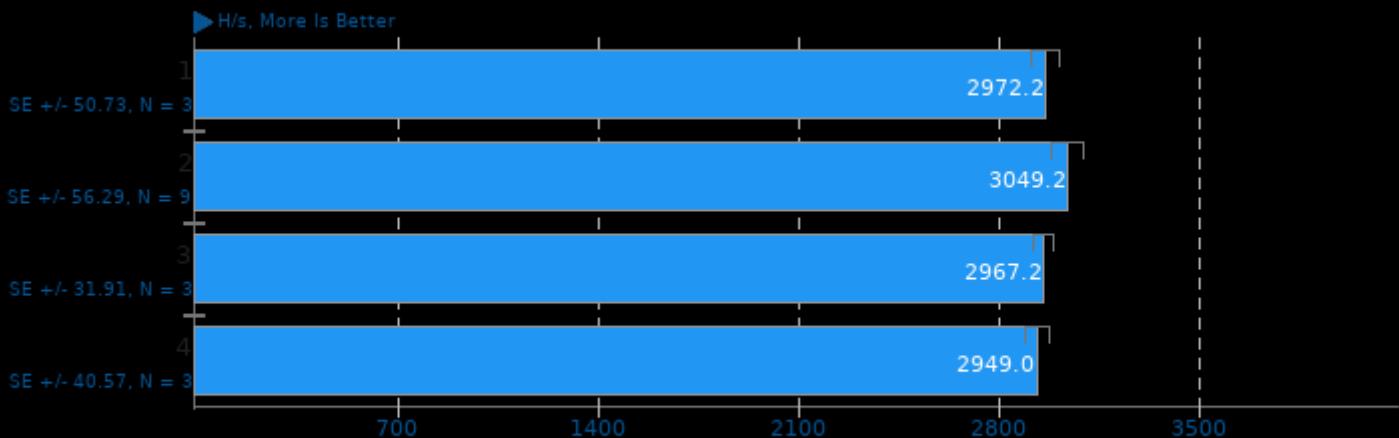
Total Time



1. (CC) gcc options: -O3 -fomit-frame-pointer -lm

Xmrig 6.12.1

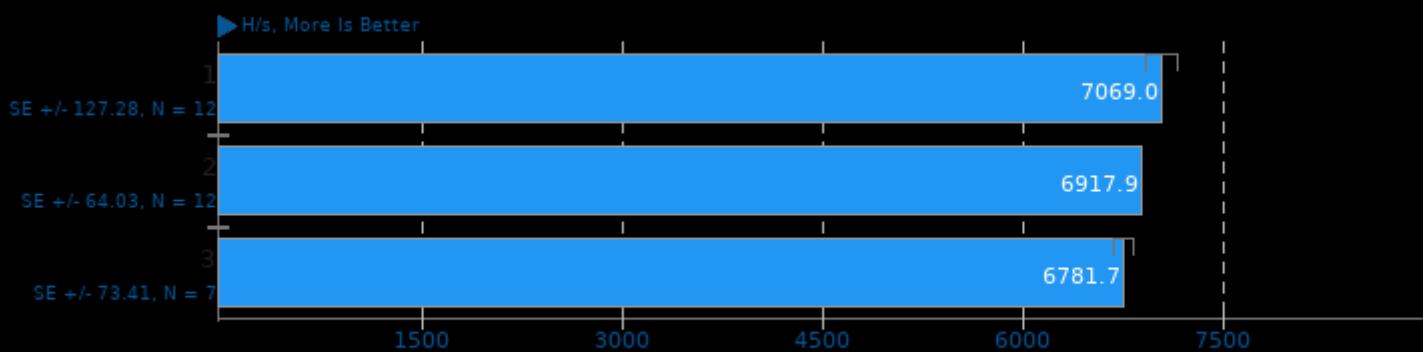
Variant: Monero - Hash Count: 1M



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

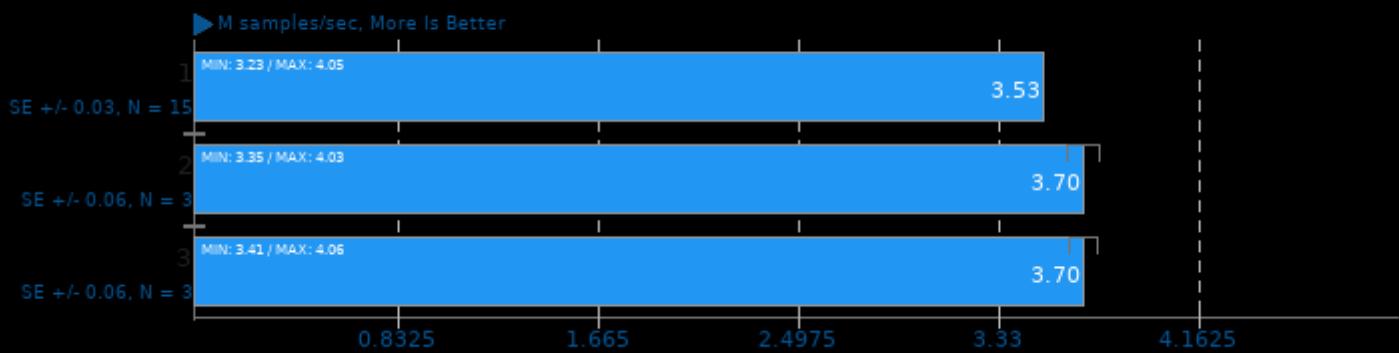
Variant: Wownero - Hash Count: 1M



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

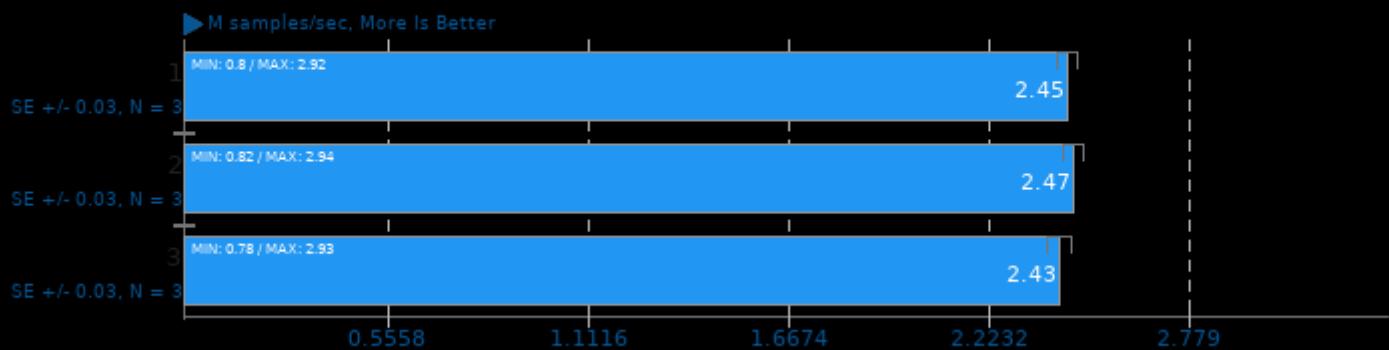
LuxCoreRender 2.5

Scene: DLSC - Acceleration: CPU



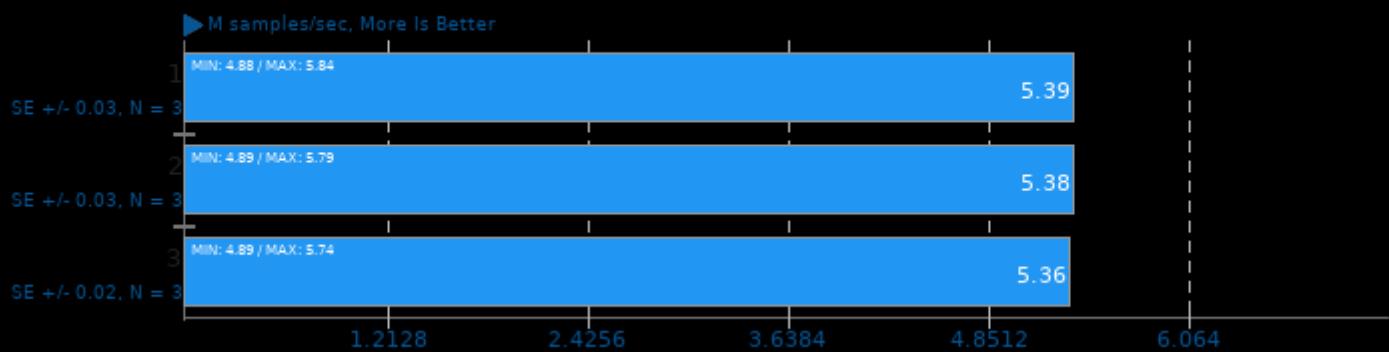
LuxCoreRender 2.5

Scene: Danish Mood - Acceleration: CPU



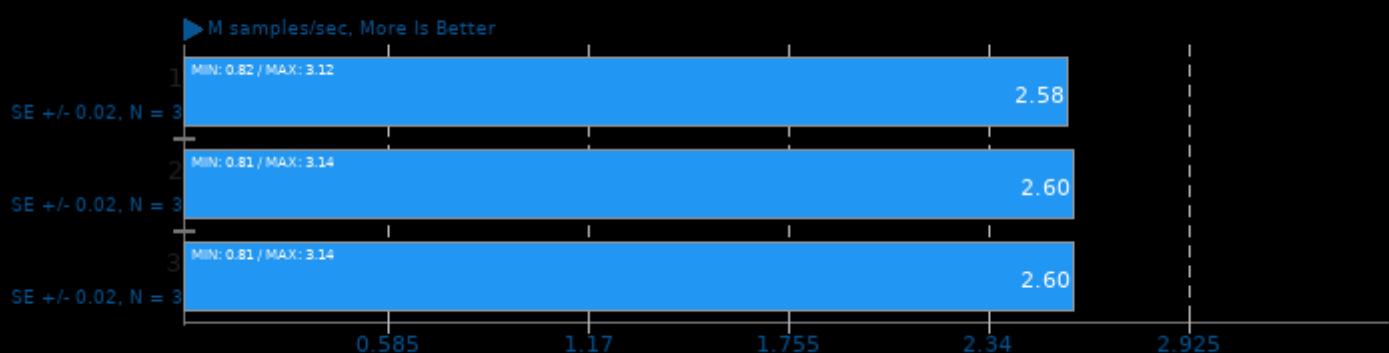
LuxCoreRender 2.5

Scene: Orange Juice - Acceleration: CPU



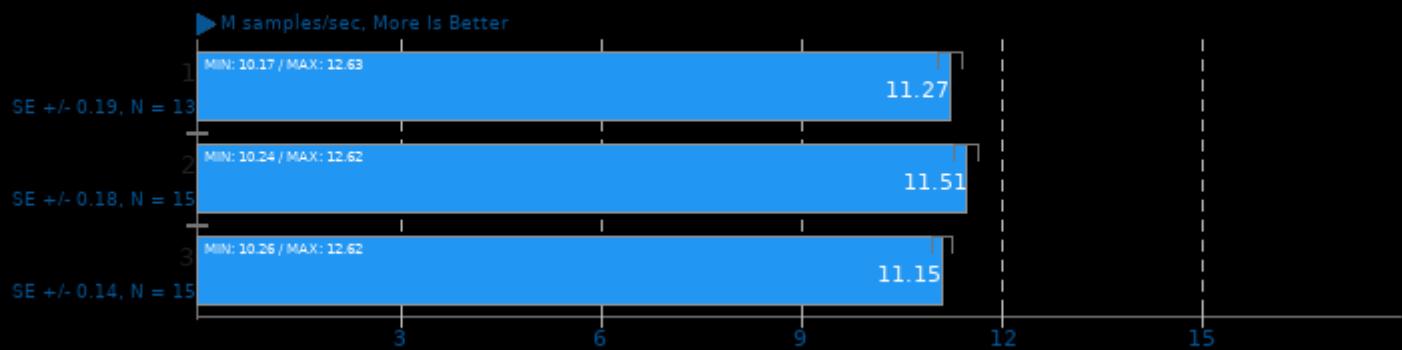
LuxCoreRender 2.5

Scene: LuxCore Benchmark - Acceleration: CPU



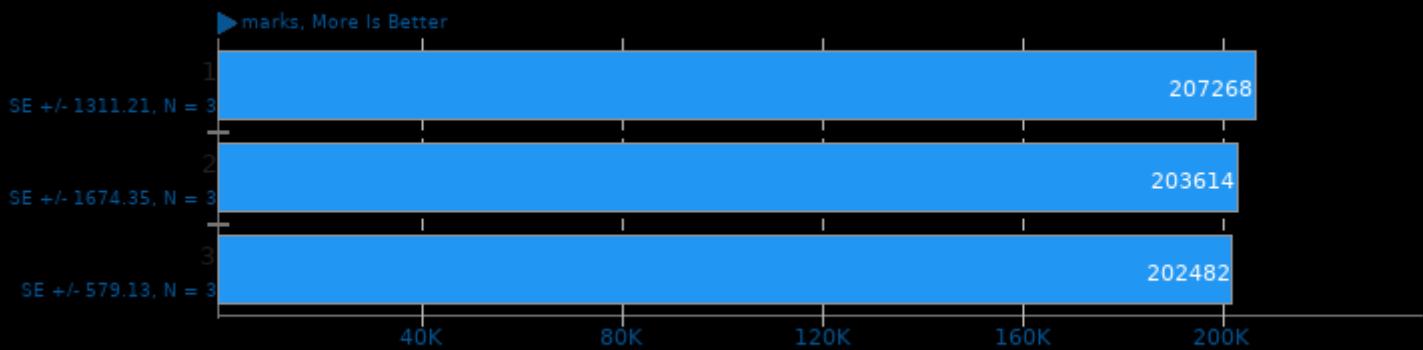
LuxCoreRender 2.5

Scene: Rainbow Colors and Prism - Acceleration: CPU



SecureMark 1.0.4

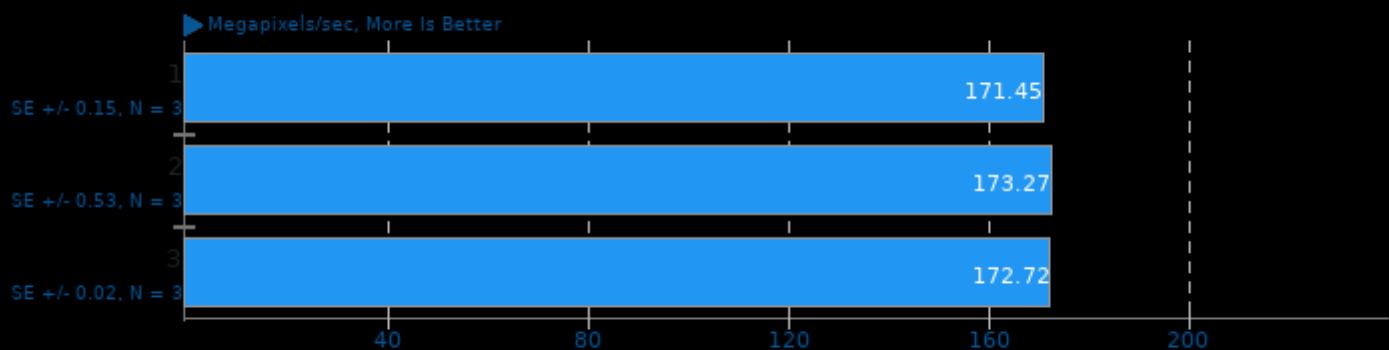
Benchmark: SecureMark-TLS



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

libjpeg-turbo tjbench 2.1.0

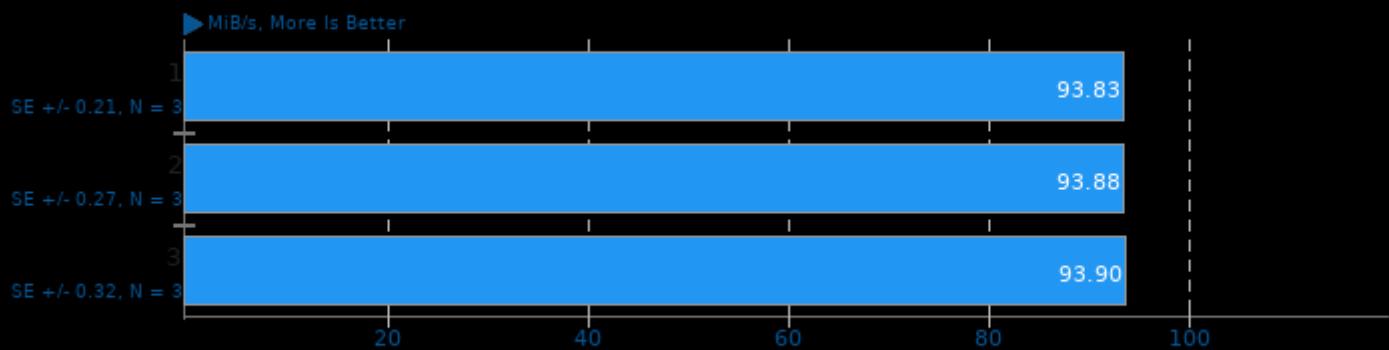
Test: Decompression Throughput



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

Botan 2.17.3

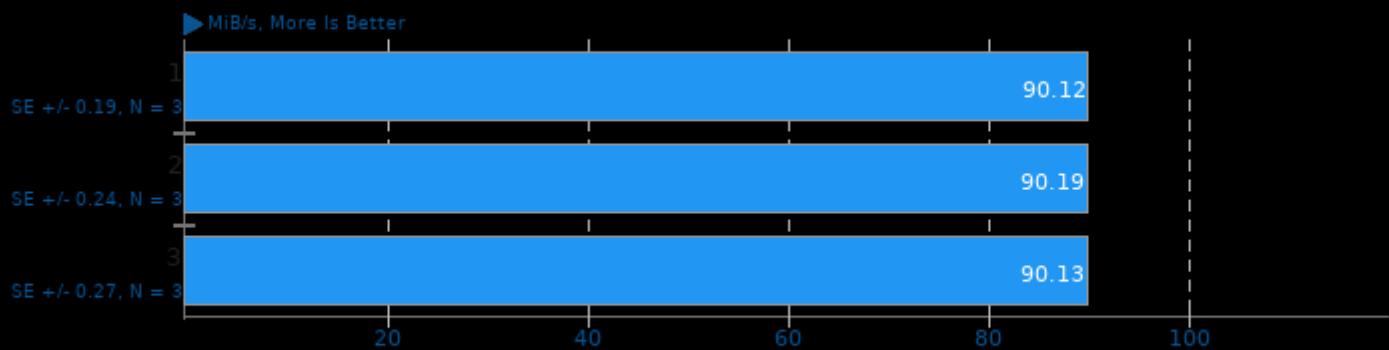
Test: KASUMI



1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

Botan 2.17.3

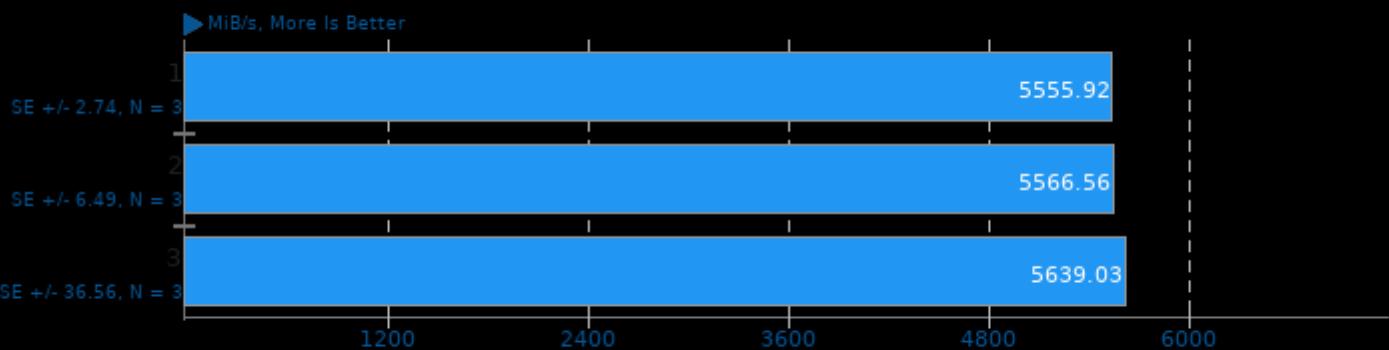
Test: KASUMI - Decrypt



1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

Botan 2.17.3

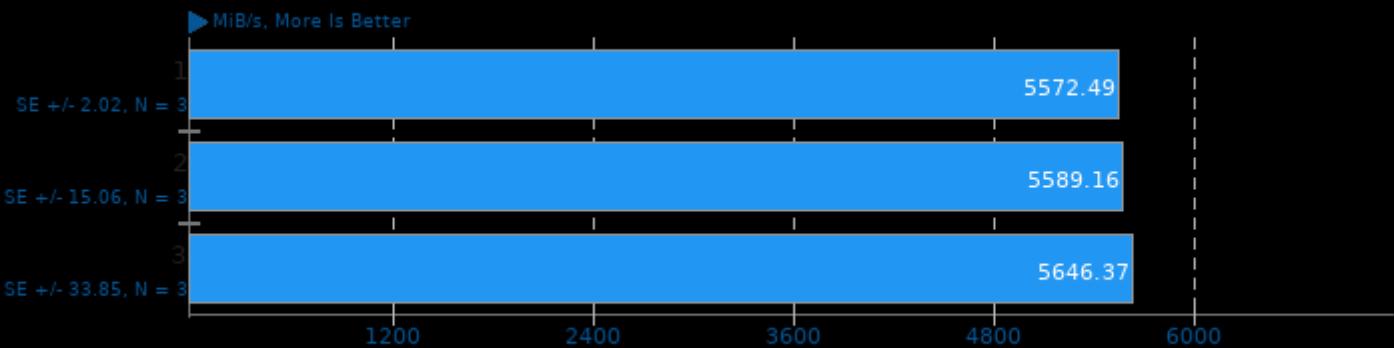
Test: AES-256



1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

Botan 2.17.3

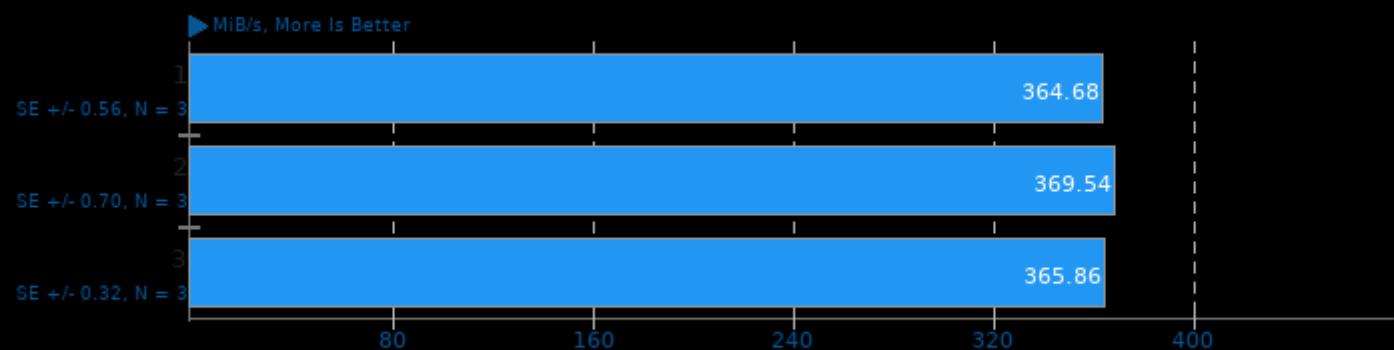
Test: AES-256 - Decrypt



1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

Botan 2.17.3

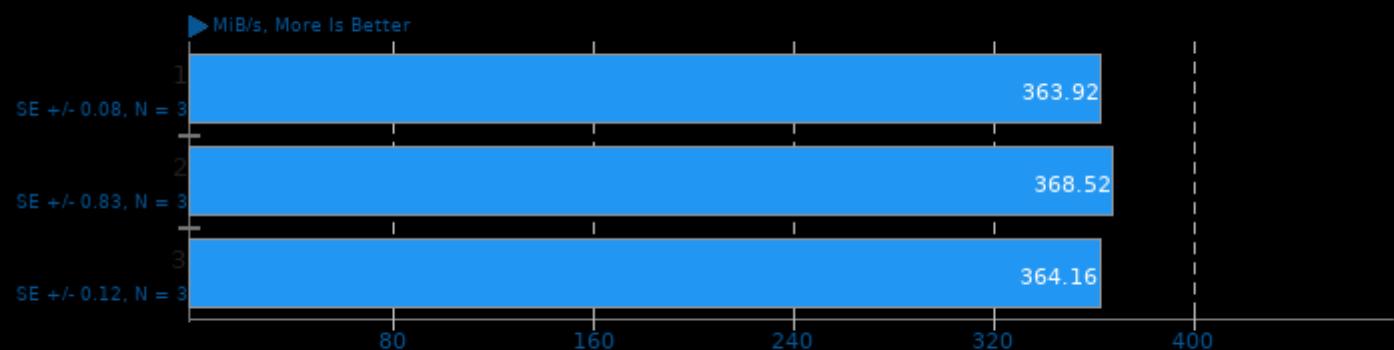
Test: Twofish



1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

Botan 2.17.3

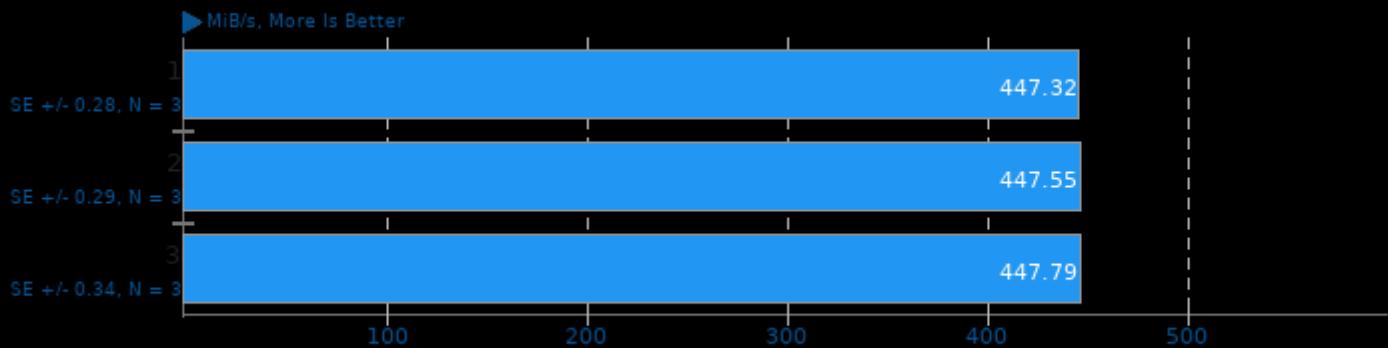
Test: Twofish - Decrypt



1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

Botan 2.17.3

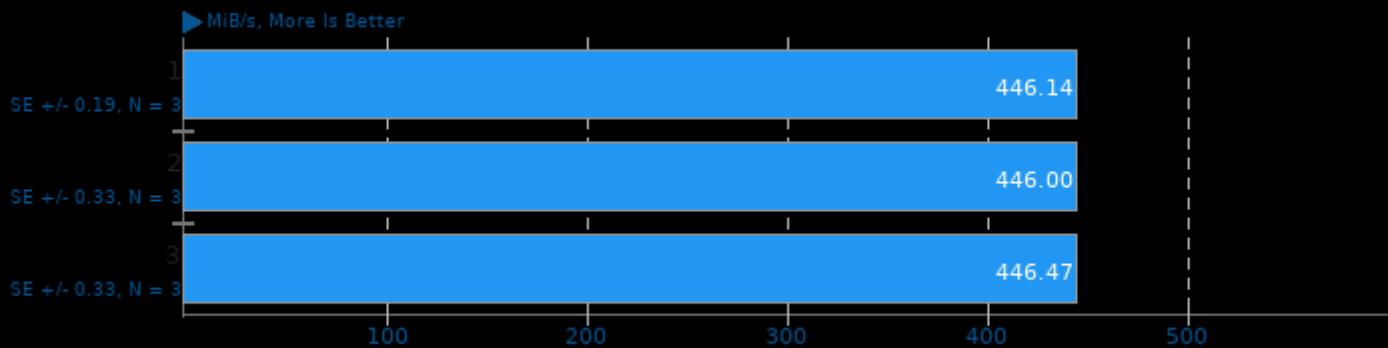
Test: Blowfish



1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

Botan 2.17.3

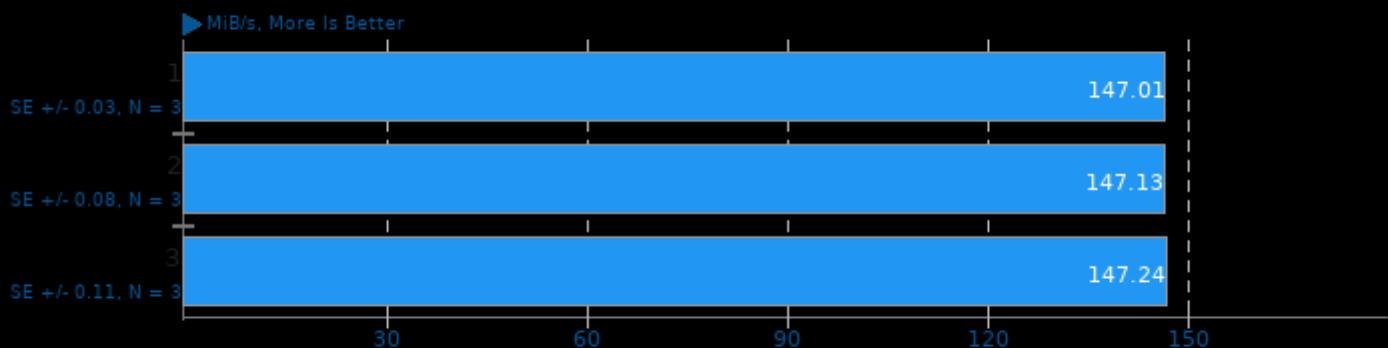
Test: Blowfish - Decrypt



1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

Botan 2.17.3

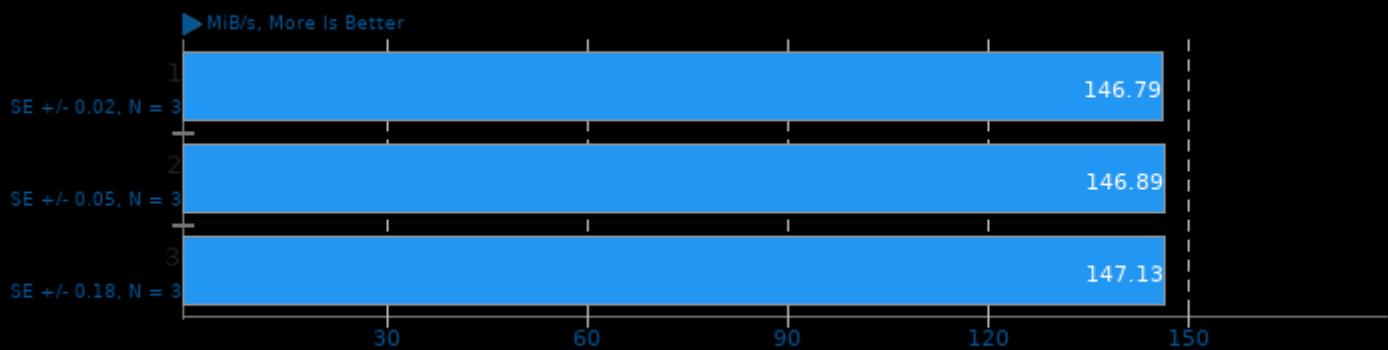
Test: CAST-256



1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

Botan 2.17.3

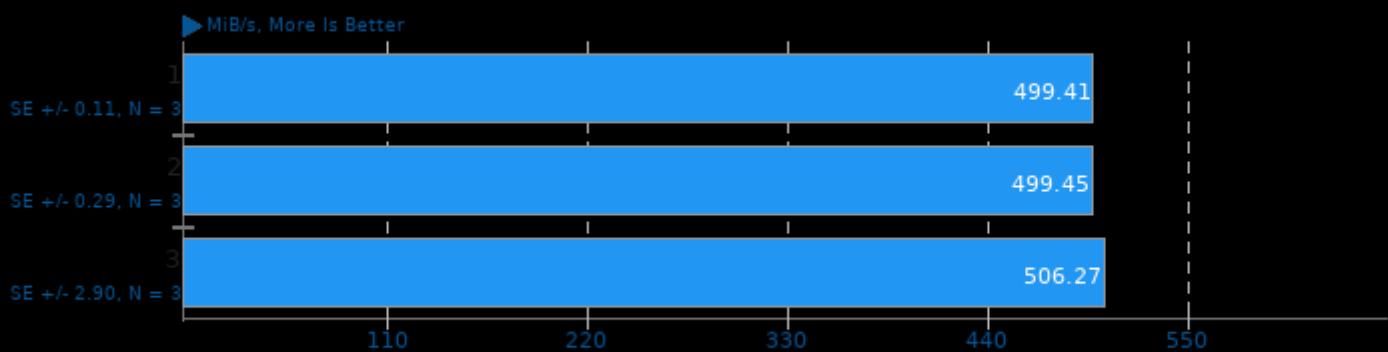
Test: CAST-256 - Decrypt



1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

Botan 2.17.3

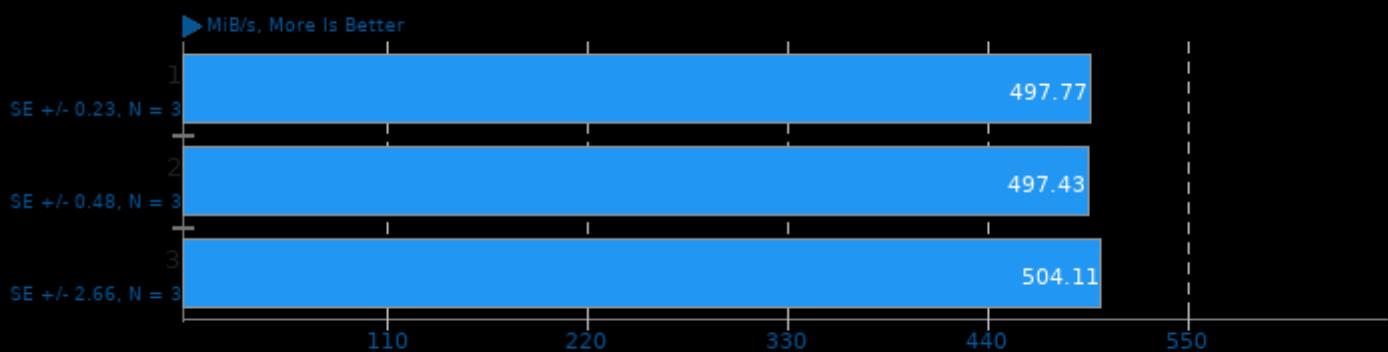
Test: ChaCha20Poly1305



1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

Botan 2.17.3

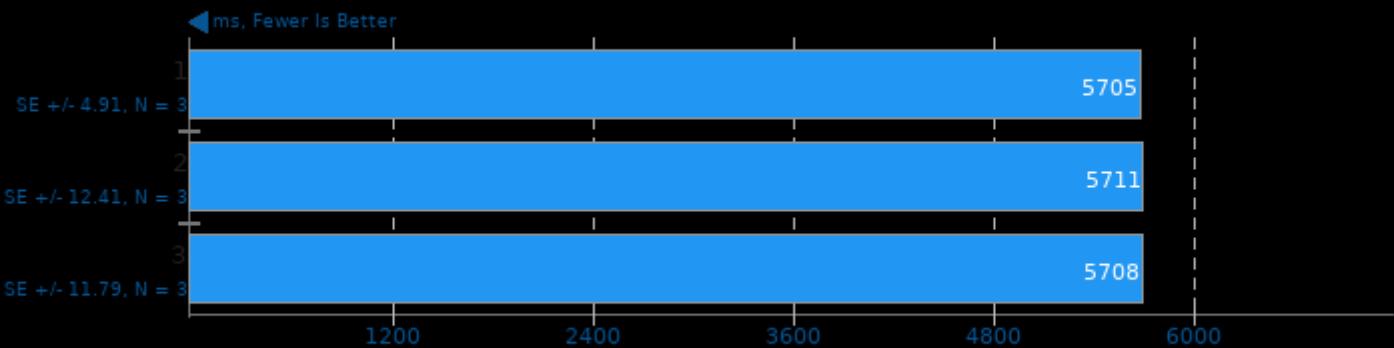
Test: ChaCha20Poly1305 - Decrypt



1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

Google Draco 1.4.1

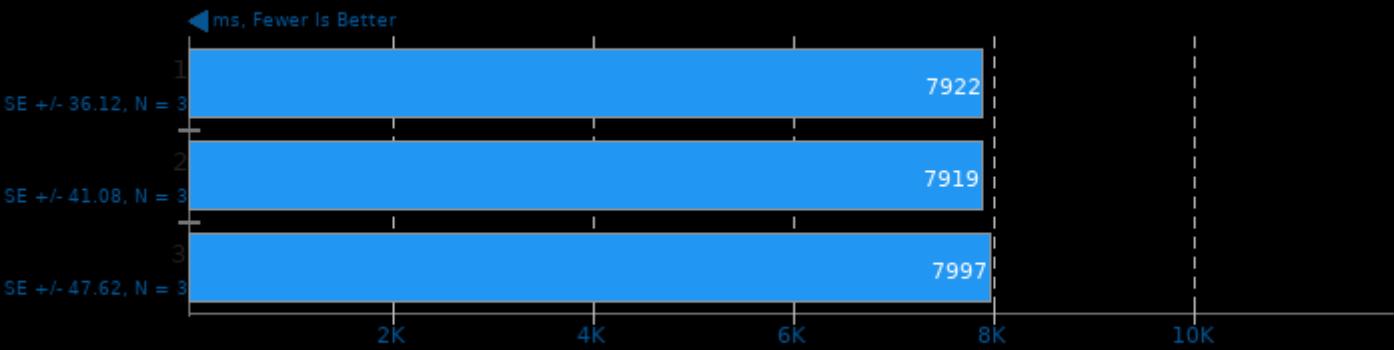
Model: Lion



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

Google Draco 1.4.1

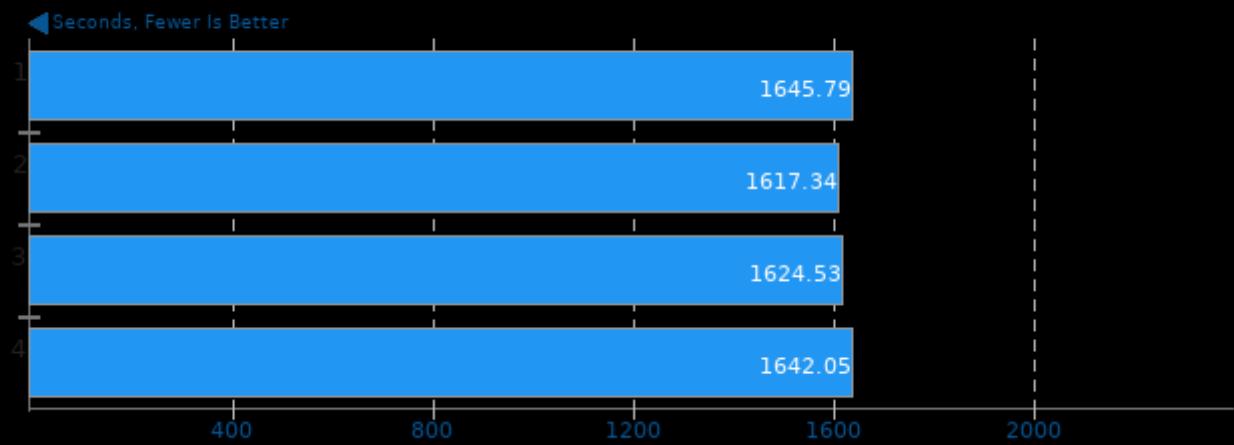
Model: Church Facade



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

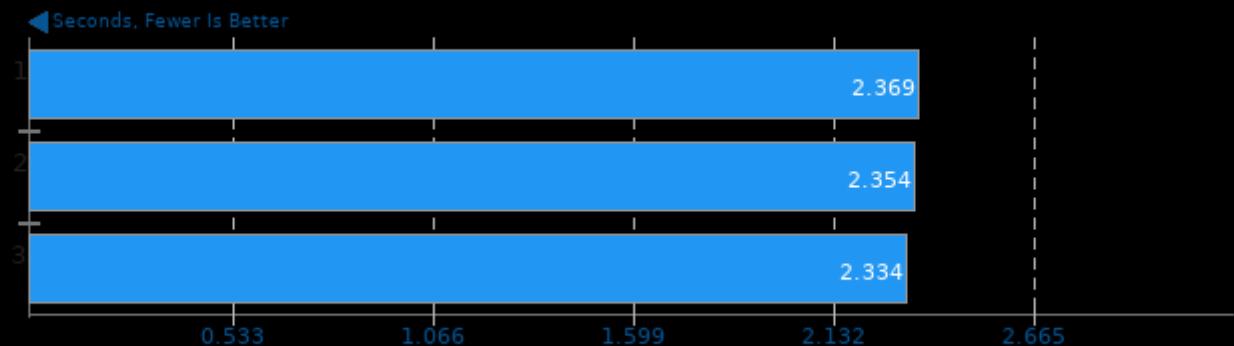
CP2K Molecular Dynamics 8.1

Input: Fayalite-FIST



Helsing 1.0-beta

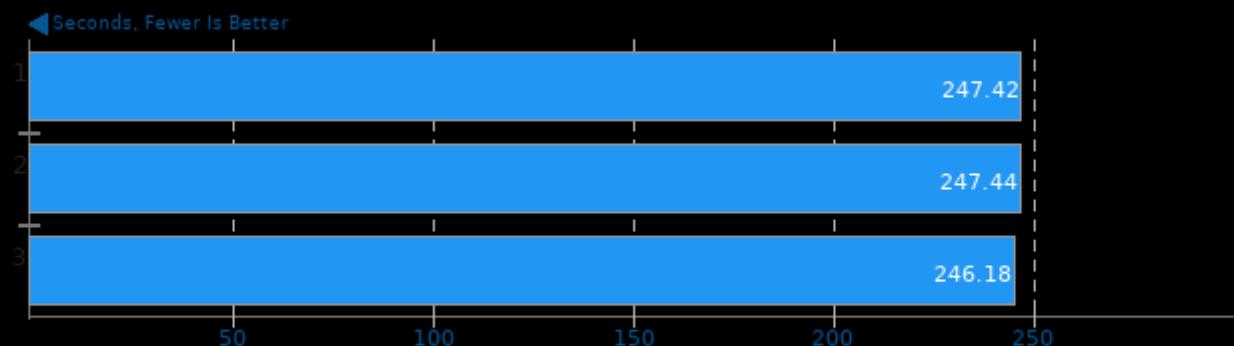
Digit Range: 12 digit



1. (CC) gcc options: -O2 -pthread -lcrypto

Helsing 1.0-beta

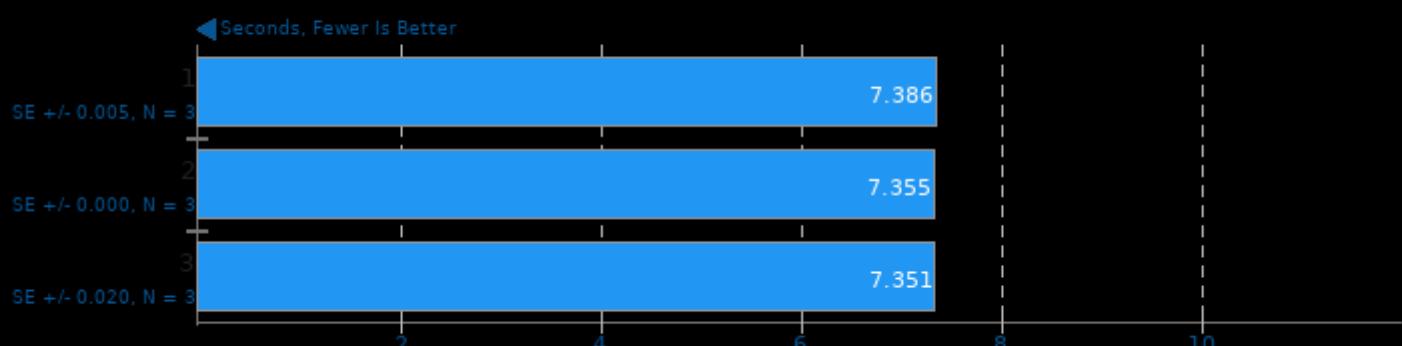
Digit Range: 14 digit



1. (CC) gcc options: -O2 -pthread -lcrypto

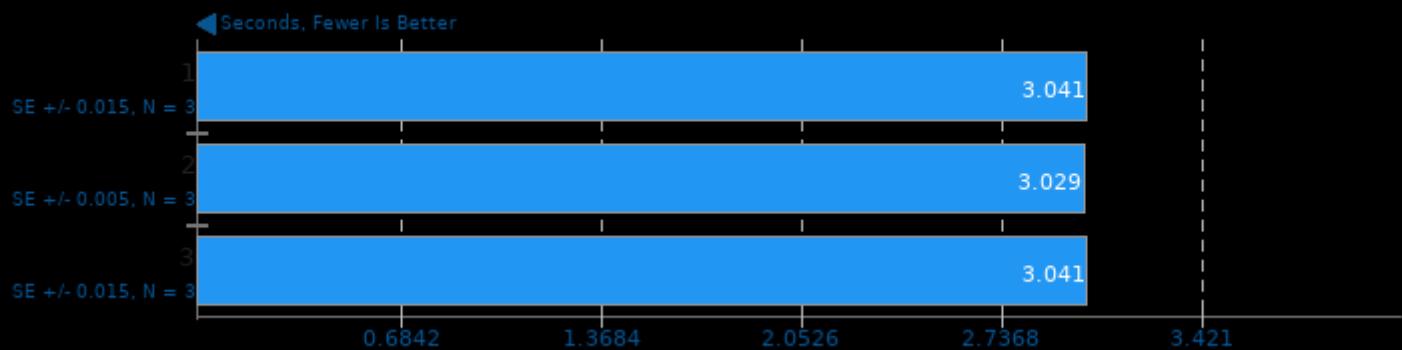
KTX-Software toktx 4.0

Settings: UASTC 3

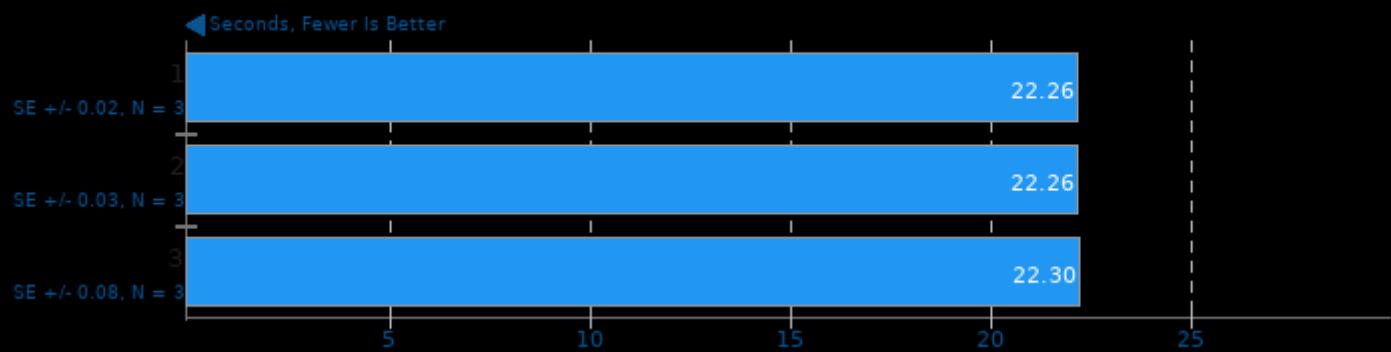


KTX-Software toktx 4.0

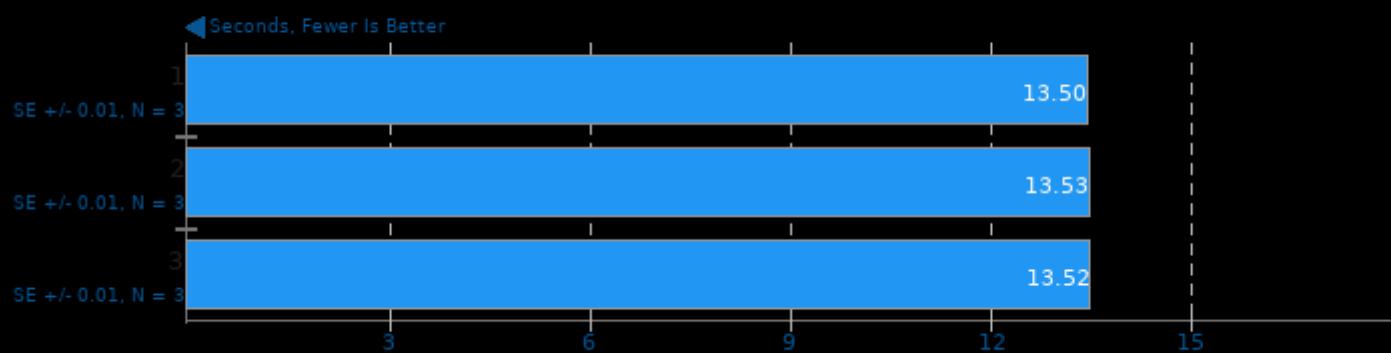
Settings: Zstd Compression 9

**KTX-Software toktx 4.0**

Settings: Zstd Compression 19

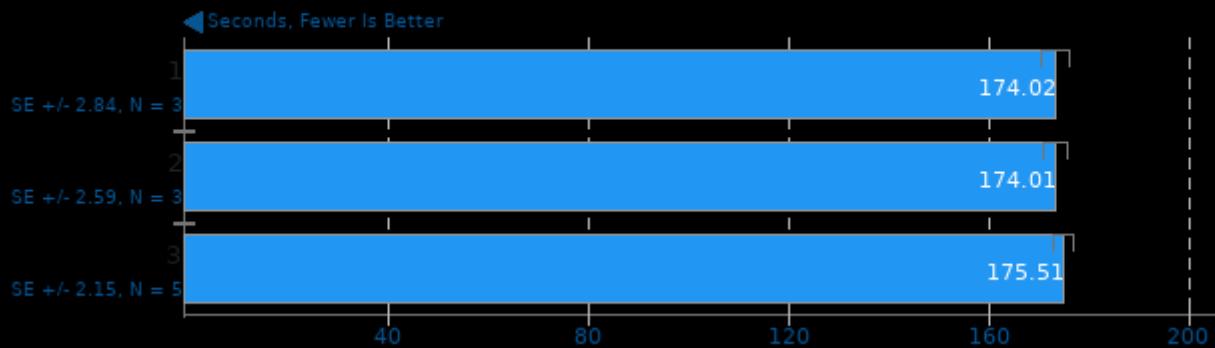
**KTX-Software toktx 4.0**

Settings: UASTC 3 + Zstd Compression 19

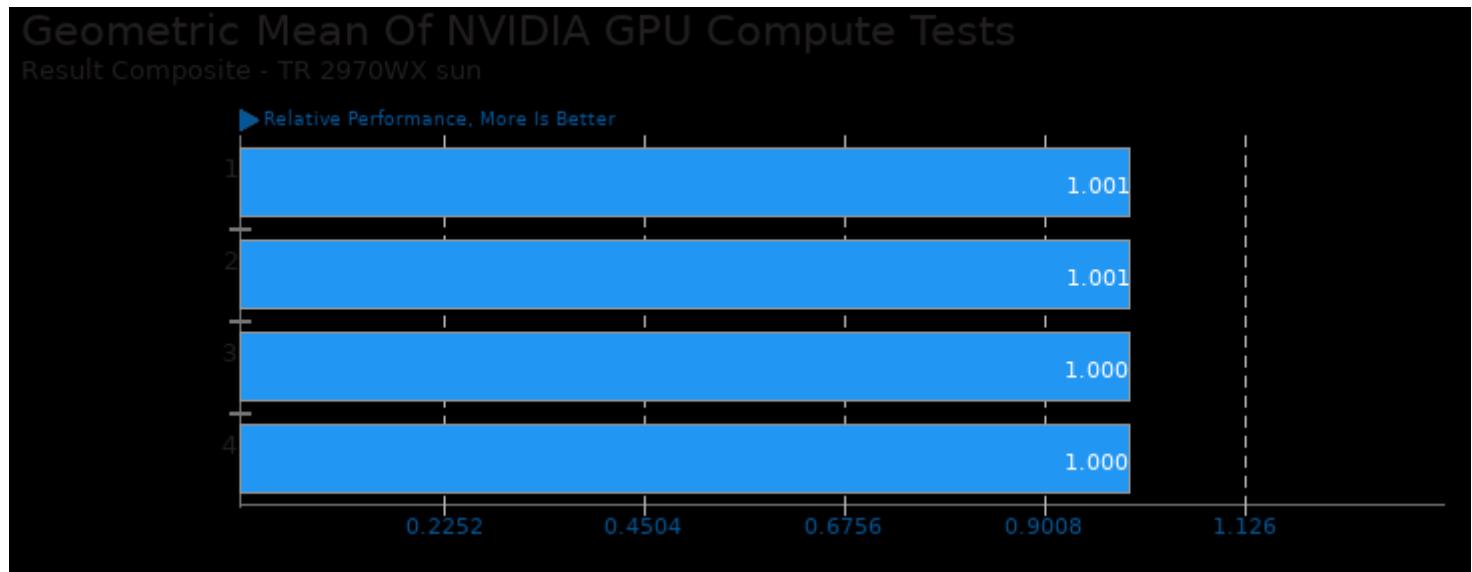


KTX-Software toktx 4.0

Settings: UASTC 4 + Zstd Compression 19



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



Geometric mean based upon tests: pts/luxcorerender, pts/viennacl and pts/vkpeak

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 11:34.