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10980XE April

Intel Core i9-10980XE testing with a ASRock X299 Steel Legend (P1.30 BIOS) and NVIDIA NV132 11GB on Clear Linux OS 34440 via the Phoronix Test Suite.

Automated Executive Summary

2 had the most wins, coming in first place for 42% of the tests.

Based on the geometric mean of all complete results, the fastest (2) was 1.002x the speed of the slowest (3). 1 was 1x the speed of 2 and 3 was 0.998x the speed of 1.

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

ViennaCL (Test: CPU BLAS - dGEMM-TN) at 1.031x

LuxCoreRender (Scene: Danish Mood - Acceleration: CPU) at 1.027x

ViennaCL (Test: CPU BLAS - dGEMM-TT) at 1.025x

ViennaCL (Test: CPU BLAS - dGEMM-NT) at 1.013x

Botan (Test: ChaCha20Poly1305 - Decrypt) at 1.012x

ViennaCL (Test: CPU BLAS - dGEMV-T) at 1.009x

ViennaCL (Test: CPU BLAS - dGEMV-N) at 1.008x

LuxCoreRender (Scene: LuxCore Benchmark - Acceleration: CPU) at 1.008x

ViennaCL (Test: CPU BLAS - sDOT) at 1.008x

GNU GMP GMPbench (Total Time) at 1.007x.

Test Systems:

1

Processor: Intel Core i9-10980XE @ 4.80GHz (18 Cores / 36 Threads), Motherboard: ASRock X299 Steel Legend (P1.30 BIOS), Chipset: Intel Sky Lake-E DMI3 Registers, Memory: 32GB, Disk: Samsung SSD 970 PRO 512GB, Graphics: NVIDIA NV132 11GB, Audio: Realtek ALC1220, Monitor: ASUS VP28U, Network: Intel I219-V + Intel I211

OS: Clear Linux OS 34440, Kernel: 5.10.19-1032.native (x86_64), Desktop: GNOME Shell 3.38.4, Display Server: X Server 1.20.10, Display Driver: nouveau, OpenGL: 4.3 Mesa 20.3.4, Compiler: GCC 10.3.1 20210414 releases/gcc-10.3.0-41-ge9cc5cc589 + Clang 10.0.1 + LLVM 10.0.1, File-System: ext4, Screen Resolution: 2560x1600

Kernel Notes: Transparent Huge Pages: always
Environment Notes: FFLAGS="-g -O3 -feliminate-unused-debug-types -pipe -Wall -Wp,-D_FORTIFY_SOURCE=2 -fexceptions -fstack-protector --param=ssp-buffer-size=32 -m64 -fasynchronous-unwind-tables -Wp,-D_REENTRANT -ffree-loop-distribute-patterns -WI,-z -WI,now -WI,-z -WI,relro -malign-data=abi -fno-semantic-interposition -ffree-vectorize -ffree-loop-vectorize -WI,--enable-new-dtags -Wa,-mbranches-within-32B-boundaries" CXXFLAGS="-g -O3 -feliminate-unused-debug-types -pipe -Wall -Wp,-D_FORTIFY_SOURCE=2 -fexceptions -fstack-protector --param=ssp-buffer-size=32 -Wformat -Wformat-security -m64 -fasynchronous-unwind-tables -Wp,-D_REENTRANT -ffree-loop-distribute-patterns -WI,-z -WI,now -WI,-z -WI,relro -fno-semantic-interposition -ffat-lto-objects -fno-trapping-math -WI,-sort-common -WI,--enable-new-dtags -mtune=skylake -Wa,-mbranches-within-32B-boundaries -fvisibility-inlines-hidden -WI,--enable-new-dtags" MESA_GLSL_CACHE_DISABLE=0 FCFLAGS="-g -O3 -feliminate-unused-debug-types -pipe -Wall -Wp,-D_FORTIFY_SOURCE=2 -fexceptions -fstack-protector --param=ssp-buffer-size=32 -m64 -fasynchronous-unwind-tables -Wp,-D_REENTRANT -ffree-loop-distribute-patterns -WI,-z -WI,now -WI,-z -WI,relro -malign-data=abi -fno-semantic-interposition -ffree-vectorize -ffree-loop-vectorize -WI,-sort-common -WI,--enable-new-dtags" CFLAGS="-g -O3 -feliminate-unused-debug-types -pipe -Wall -Wp,-D_FORTIFY_SOURCE=2 -fexceptions -fstack-protector --param=ssp-buffer-size=32 -Wformat -Wformat-security -m64 -fasynchronous-unwind-tables -Wp,-D_REENTRANT -ffree-loop-distribute-patterns -WI,-z -WI,now -WI,-z -WI,relro -fno-semantic-interposition -ffat-lto-objects -fno-trapping-math -WI,-sort-common -WI,--enable-new-dtags -mtune=skylake -Wa,-mbranches-within-32B-boundaries" THEANO_FLAGS="floatX=float32,openmp=true,gcc.cxxflags=-ffree-vectorize -mavx" Compiler Notes: --build=x86_64-generic-linux --disable-libmpx --disable-libunwind-exceptions --disable-multiarch --disable-vtable-verify --disable-werror --enable__cxa_atexit --enable-bootstrap --enable-cet --enable-clocale-gnu --enable-default-pie --enable-gnu-indirect-function --enable-languages=c,c++,fortran,go --enable-ld=default --enable-libstdcxx-pch --enable-lto --enable-multilib --enable-plugin --enable-shared --enable-threads=posix --exec-prefix=/usr --includedir=/usr/include --target=x86_64-generic-linux --with-arch=westmere --with-gcc-major-version-only --with-glibc-version=2.19 --with-gnu-ld --with-isl --with-ppl=yes --with-tune=haswell Processor Notes: Scaling Governor: intel_cpf freq performance - CPU Microcode: 0x5003006 Python Notes: Python 3.9.2 Security Notes: itlb_multihit: KVM: Mitigation of VMX disabled + I1tf: 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 Enhanced IBRS IPBP: conditional RSB filling + srbs: Not affected + tsx_async_abort: Mitigation of TSX disabled

2

3

Processor: Intel Core i9-10980XE @ 4.80GHz (18 Cores / 36 Threads), Motherboard: ASRock X299 Steel Legend (P1.30 BIOS), Chipset: Intel Sky Lake-E DMI3 Registers, Memory: 32GB, Disk: Samsung SSD 970 PRO 512GB, Graphics: NVIDIA NV132 11GB, Audio: Realtek ALC1220, Monitor: ASUS VP28U, Network: Intel I219-V + Intel I211

OS: Clear Linux OS 34440, Kernel: 5.10.19-1032.native (x86_64), Desktop: GNOME Shell 3.38.4, Display Server: X Server 1.20.10, Display Driver: nouveau, OpenGL: 4.3 Mesa 21.0.2, Compiler: GCC 10.3.1 20210414 releases/gcc-10.3.0-41-ge9cc5cc589 + Clang 10.0.1 + LLVM 10.0.1, File-System: ext4, Screen Resolution: 2560x1600

Kernel Notes: Transparent Huge Pages: always
Environment Notes: FFLAGS="-g -O3 -feliminate-unused-debug-types -pipe -Wall -Wp,-D_FORTIFY_SOURCE=2 -fexceptions -fstack-protector --param=ssp-buffer-size=32 -m64 -fasynchronous-unwind-tables -Wp,-D_REENTRANT -ffree-loop-distribute-patterns -WI,-z -WI,now -WI,-z -WI,relro -malign-data=abi -fno-semantic-interposition -ffree-vectorize -ffree-loop-vectorize -WI,--enable-new-dtags -Wa,-mbranches-within-32B-boundaries" CXXFLAGS="-g -O3 -feliminate-unused-debug-types -pipe -Wall -Wp,-D_FORTIFY_SOURCE=2 -fexceptions -fstack-protector --param=ssp-buffer-size=32 -Wformat -Wformat-security -m64 -fasynchronous-unwind-tables -Wp,-D_REENTRANT -ffree-loop-distribute-patterns -WI,-z -WI,now -WI,-z -WI,relro -fno-semantic-interposition -ffat-lto-objects -fno-trapping-math -WI,-sort-common -WI,--enable-new-dtags -mtune=skylake -Wa,-mbranches-within-32B-boundaries -fvisibility-inlines-hidden -WI,--enable-new-dtags" MESA_GLSL_CACHE_DISABLE=0 FCFLAGS="-g -O3 -feliminate-unused-debug-types -pipe -Wall -Wp,-D_FORTIFY_SOURCE=2 -fexceptions -fstack-protector --param=ssp-buffer-size=32 -Wformat -Wformat-security -m64 -fasynchronous-unwind-tables -Wp,-D_REENTRANT -ffree-loop-distribute-patterns -WI,-z -WI,now -WI,-z -WI,relro -fno-semantic-interposition -ffat-lto-objects -fno-trapping-math -WI,-sort-common -WI,--enable-new-dtags -mtune=skylake -Wa,-mbranches-within-32B-boundaries" THEANO_FLAGS="floatX=float32,openmp=true,gcc.cxxflags=-ffree-vectorize -mavx"

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--param=ssp-buffer-size=32 -m64 -fasynchronous-unwind-tables -Wp,-D_REENTRANT -ftree-loop-distribute-patterns -WI,-z -WI,now -WI,-z -WI,relo -malign-data=abi
-fno-semantic-interposition -ffree-vectorize -ffree-loop-vectorize -WI,-sort-common -WI,--enable-new-dtags" CFLAGS="-g -O3 -feliminate-unused-debug-types -pipe -Wall
-Wp,-D_FORTIFY_SOURCE=2 -fexceptions -fstack-protector --param=ssp-buffer-size=32 -Wformat -Wformat-security -m64 -fasynchronous-unwind-tables
-Wp,-D_REENTRANT -ftree-loop-distribute-patterns -WI,-z -WI,now -WI,-z -WI,relo -fno-semantic-interposition -ffat-lto-objects -fno-trapping-math -WI,-sort-common
-WI,--enable-new-dtags -mtune=skylake -Wa,-mbranches-within-32B-boundaries" THEANO_FLAGS="floatX=float32,openmp=true,gcc.cxxflags=-ffree-vectorize -mavx"
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--enable-_cxa_atexit --enable-bootstrap --enable-cet --enable-clocale-gnu --enable-default-pie --enable-gnu-indirect-function --enable-languages=c,c++,fortran,go
--enable-ld=default --enable-libstdcxx-pch --enable-lto --enable-multilib --enable-plugin --enable-shared --enable-threads=posix --exec-prefix=/usr --includedir=/usr/include
--target=x86_64-generic-linux --with-arch=westmere --with-gcc-major-version-only --with-glibc-version=2.19 --with-gnu-ld --with-isl --with-ppl=yes --with-tune=haswell
Processor Notes: Scaling Governor: intel_cpfq performance - CPU Microcode: 0x5003006
Security Notes: itlb_multihit: KVM: Mitigation of VMX disabled + i1tf: 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 Enhanced IBRS IBPB:
conditional RSB filling + srbs: Not affected + tsx_async_abort: Mitigation of TSX disabled
```

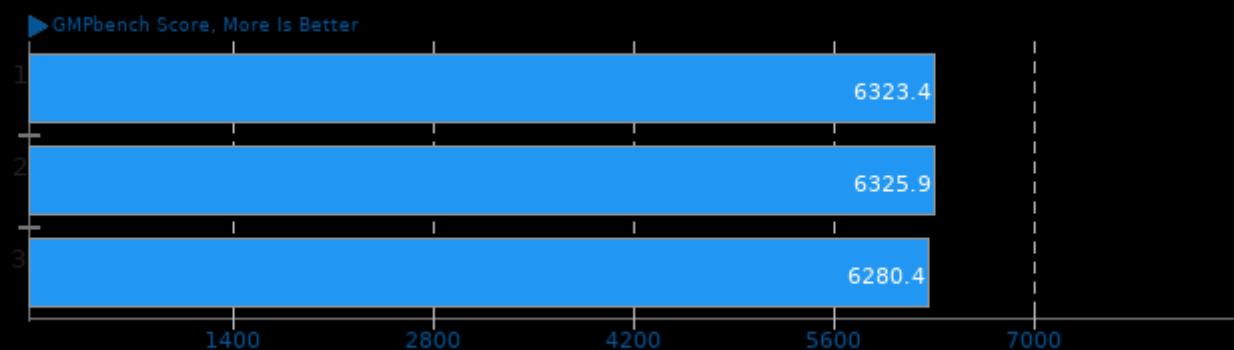
	1	2	3
GNU GMP GMPbench - Total Time	6323	6326	6280
(GMPbench Score)			
Normalized	99.96%	100%	99.28%
Botan - KASUMI (MiB/s)	105.496	105.499	105.498
Normalized	100%	100%	100%
Standard Deviation	0%	0%	0%
Botan - KASUMI - Decrypt (MiB/s)	102.201	102.177	102.199
Normalized	100%	99.98%	100%
Standard Deviation	0%	0%	0%
Botan - AES-256 (MiB/s)	4592	4592	4590
Normalized	99.99%	100%	99.97%
Standard Deviation	0%	0%	0%
Botan - AES-256 - Decrypt (MiB/s)	4591	4591	4591
Normalized	99.99%	100%	100%
Standard Deviation	0%	0%	0%
Botan - Twofish (MiB/s)	418.817	418.828	418.853
Normalized	99.99%	99.99%	100%
Standard Deviation	0%	0%	0%
Botan - Twofish - Decrypt (MiB/s)	415.434	415.399	415.235
Normalized	100%	99.99%	99.95%
Standard Deviation	0%	0%	0.1%
Botan - Blowfish (MiB/s)	512.530	512.208	512.330
Normalized	100%	99.94%	99.96%
Standard Deviation	0%	0.1%	0%
Botan - Blowfish - Decrypt (MiB/s)	507.383	506.808	507.138
Normalized	100%	99.89%	99.95%
Standard Deviation	0%	0.1%	0.1%
Botan - CAST-256 (MiB/s)	159.118	159.139	159.189
Normalized	99.96%	99.97%	100%
Standard Deviation	0%	0%	0%
Botan - CAST-256 - Decrypt (MiB/s)	159.088	159.177	159.174
Normalized	99.94%	100%	100%
Standard Deviation	0%	0%	0%
Botan - ChaCha20Poly1305 (MiB/s)	843.631	845.825	846.467
Normalized	99.66%	99.92%	100%
Standard Deviation	0.7%	0.5%	0.5%
Botan - ChaCha20Poly1305 - Decrypt (MiB/s)	832.767	842.550	837.287
Normalized	98.84%	100%	99.38%
Standard Deviation	0.7%	0.1%	0.6%

LuxCoreRender - DLSC - CPU (M samples/sec)	2.93	2.93
Standard Deviation	0.4%	0.2%
LuxCoreRender - Danish Mood - CPU (M samples/sec)	2.28	2.23
Normalized	100%	97.81%
Standard Deviation	1.3%	0.9%
LuxCoreRender - Orange Juice - CPU (M samples/sec)	4.68	4.67
Normalized	100%	99.79%
Standard Deviation	0.1%	0.1%
LuxCoreRender - LuxCore Benchmark - CPU (M samples/sec)	2.49	2.47
Normalized	100%	99.2%
Standard Deviation	1.3%	0.9%
LuxCoreRender - R.C.a.P - CPU (M samples/sec)	11.16	10.97
Normalized	100%	98.3%
Standard Deviation	2.1%	11%
Helsing - 12 digit (sec)	2.983	2.983
Normalized	99.9%	99.9%
Helsing - 14 digit (sec)	288.942	290.428
Normalized	100%	99.49%
SecureMark - SecureMark-TLS (marks)	276930	277125
Normalized	99.93%	100%
Standard Deviation	0.1%	0.1%
ViennaCL - CPU BLAS - sCOPY (GB/s)	46.2	46.2
Normalized	100%	100%
Standard Deviation	0.1%	0.2%
ViennaCL - CPU BLAS - sAXPY (GB/s)	70.1	70.1
Normalized	100%	100%
Standard Deviation	0.3%	0.5%
ViennaCL - CPU BLAS - sDOT (GB/s)	75.7	76.0
Normalized	99.61%	100%
Standard Deviation	0.5%	0.6%
ViennaCL - CPU BLAS - dCOPY (GB/s)	38.9	39.1
Normalized	99.49%	100%
Standard Deviation	0.8%	0.6%
ViennaCL - CPU BLAS - dAXPY (GB/s)	58.3	58.5
Normalized	99.66%	100%
Standard Deviation	0.8%	0.7%
ViennaCL - CPU BLAS - dDOT (GB/s)	63.4	63.8
Normalized	99.37%	100%
Standard Deviation	0.7%	0.3%
ViennaCL - CPU BLAS - dGEMV-N (GB/s)	71.7	72.0
Normalized	99.58%	100%
Standard Deviation	0.7%	0.5%
ViennaCL - CPU BLAS - dGEMV-T (GB/s)	80.0	80.5
Normalized	99.38%	100%
Standard Deviation	0.6%	0.2%
ViennaCL - CPU BLAS - dGEMM-NN (GFLOPs/s)	65.1	65.2
Normalized	99.85%	100%
Standard Deviation	0%	0.4%
		99.39%
		1.1%

ViennaCL - CPU BLAS - dGEMM-NT (GFLOPs/s)	63.8	63.0
Normalized	99.53%	100%
Standard Deviation	1.9%	0.5%
ViennaCL - CPU BLAS - dGEMM-TN (GFLOPs/s)	66.7	64.7
Normalized	100%	98.75%
Standard Deviation	1.1%	1.3%
ViennaCL - CPU BLAS - dGEMM-TT (GFLOPs/s)	63.6	65.2
Normalized	97.55%	97%
Standard Deviation	4.5%	1.6%
	99.39%	100%
	0.3%	0.7%

GNU GMP GMPbench 6.2.1

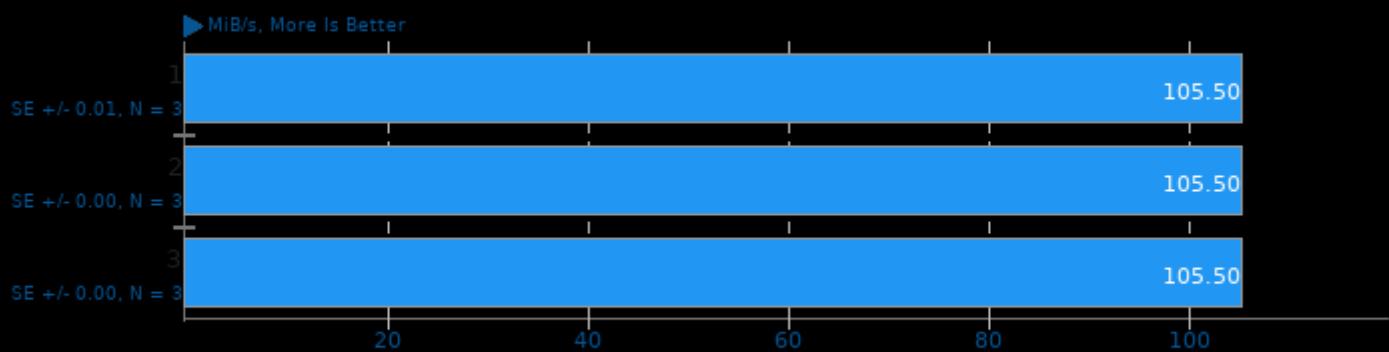
Total Time



1. (CC) gcc options: -O3 -pipe -fexceptions -fstack-protector -m64 -ffat-lto-objects -fno-trapping-math -mtune=skylake -lm

Botan 2.17.3

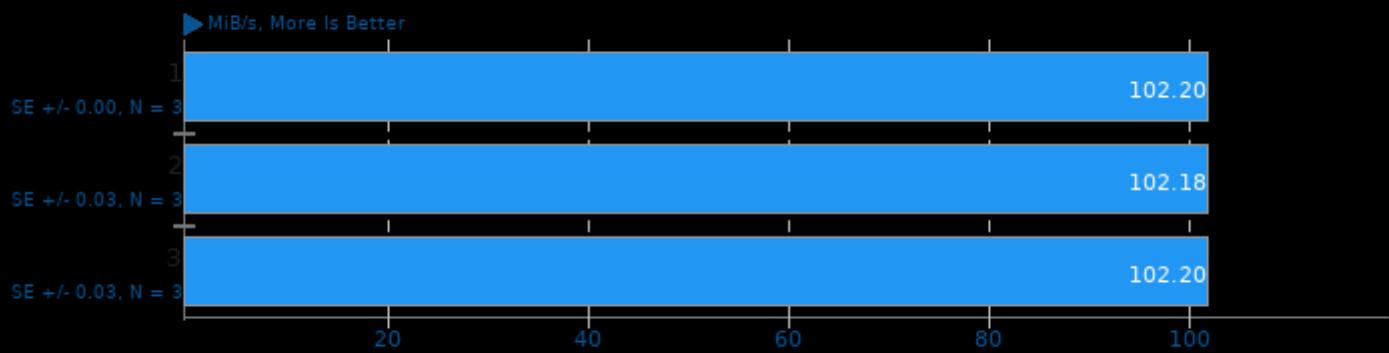
Test: KASUMI



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

Botan 2.17.3

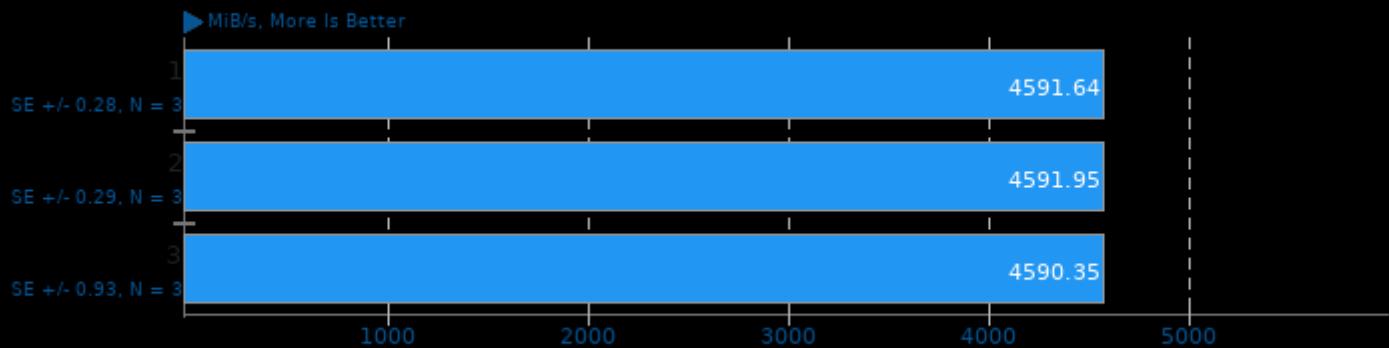
Test: KASUMI - Decrypt



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

Botan 2.17.3

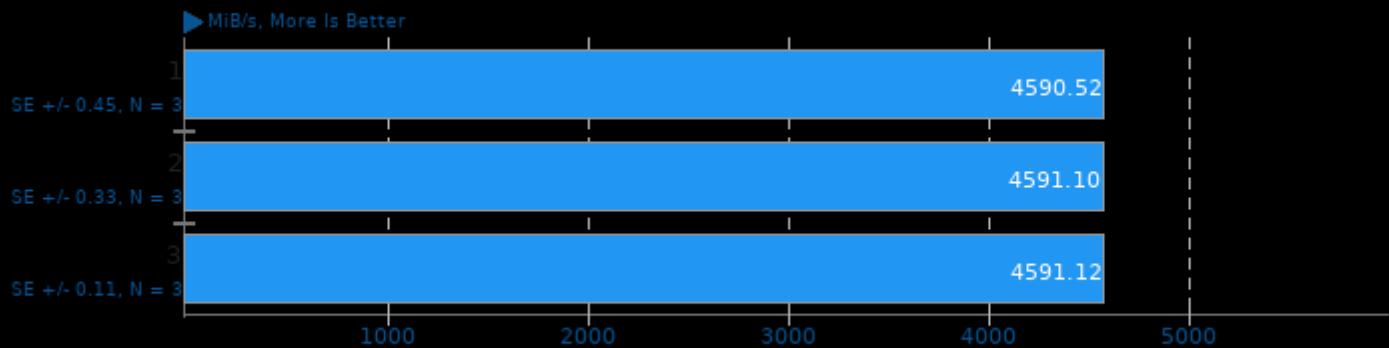
Test: AES-256



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

Botan 2.17.3

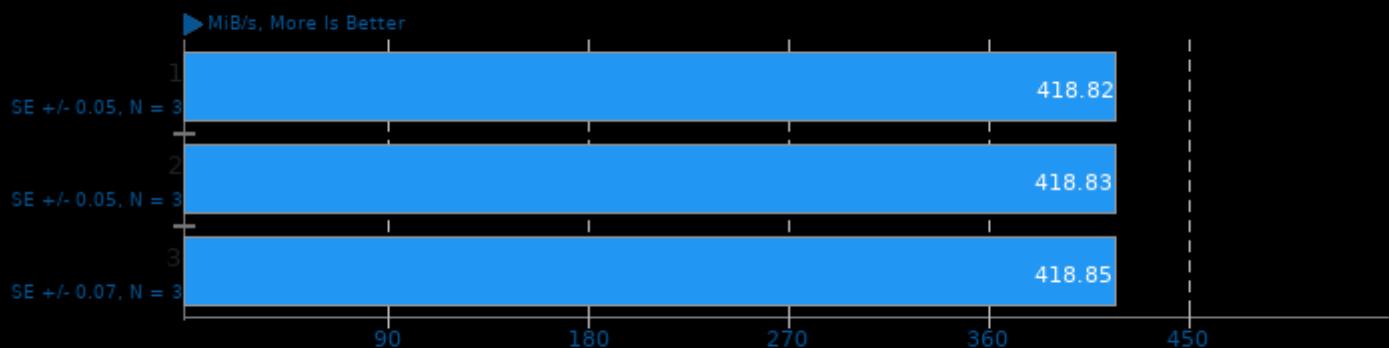
Test: AES-256 - Decrypt



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

Botan 2.17.3

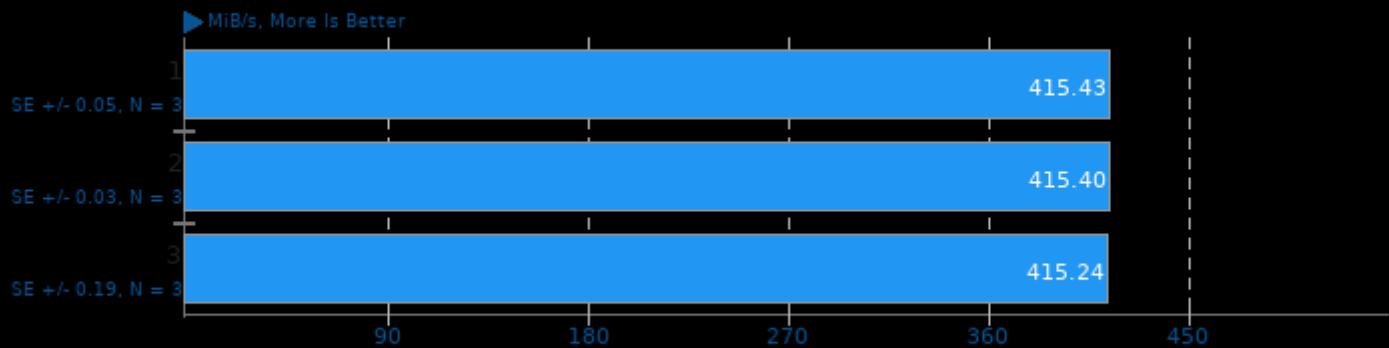
Test: Twofish



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

Botan 2.17.3

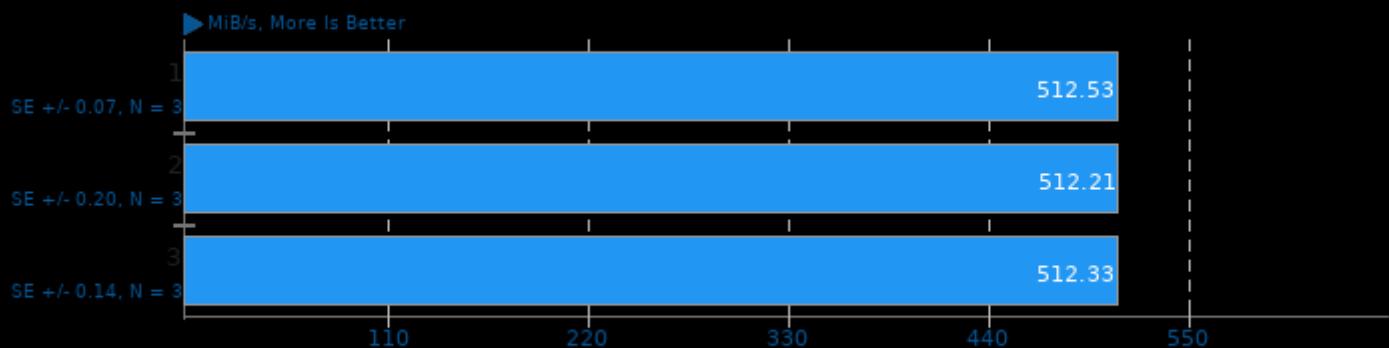
Test: Twofish - Decrypt



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

Botan 2.17.3

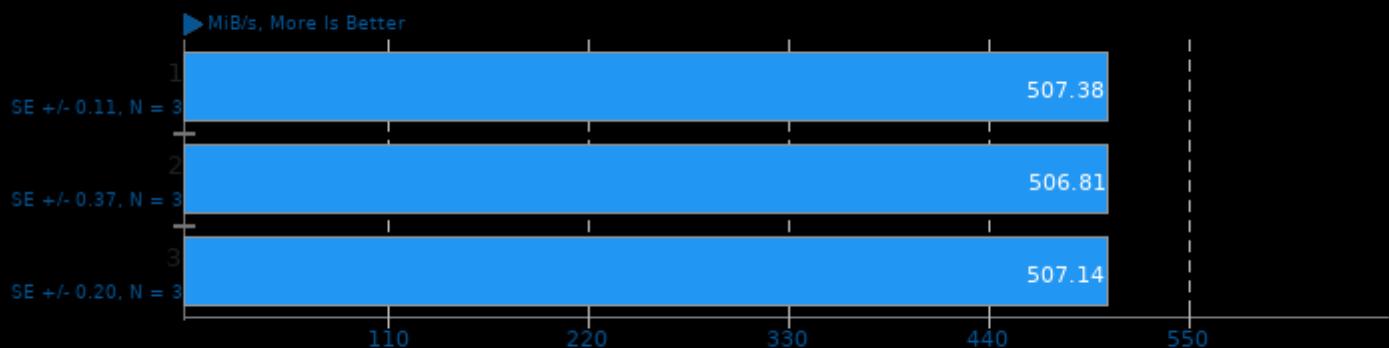
Test: Blowfish



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

Botan 2.17.3

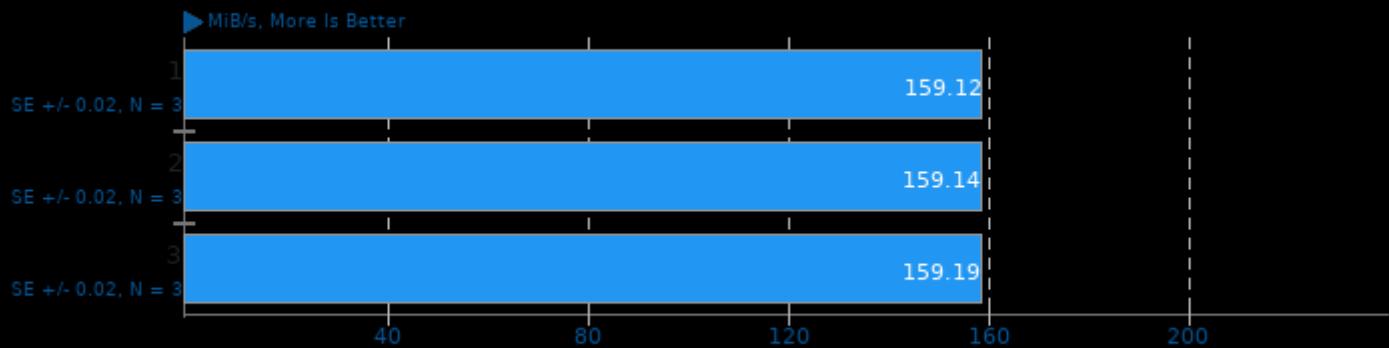
Test: Blowfish - Decrypt



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

Botan 2.17.3

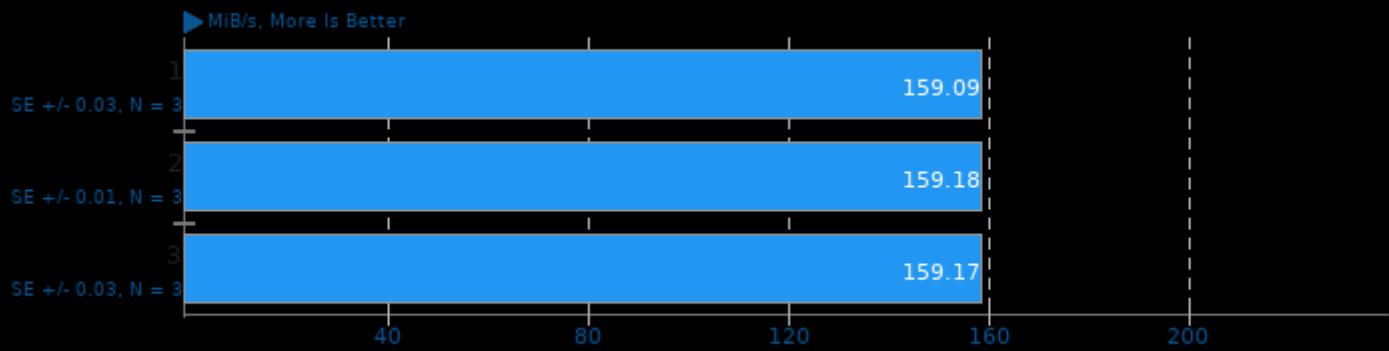
Test: CAST-256



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

Botan 2.17.3

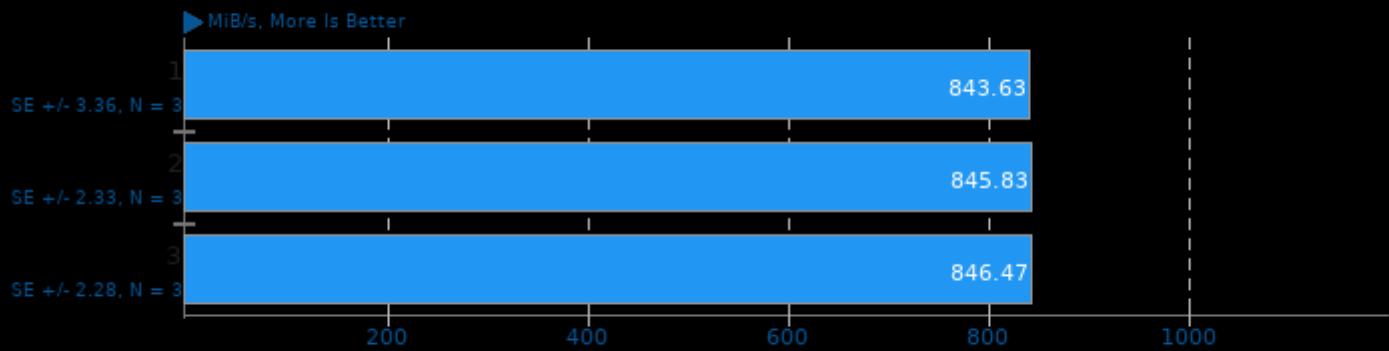
Test: CAST-256 - Decrypt



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

Botan 2.17.3

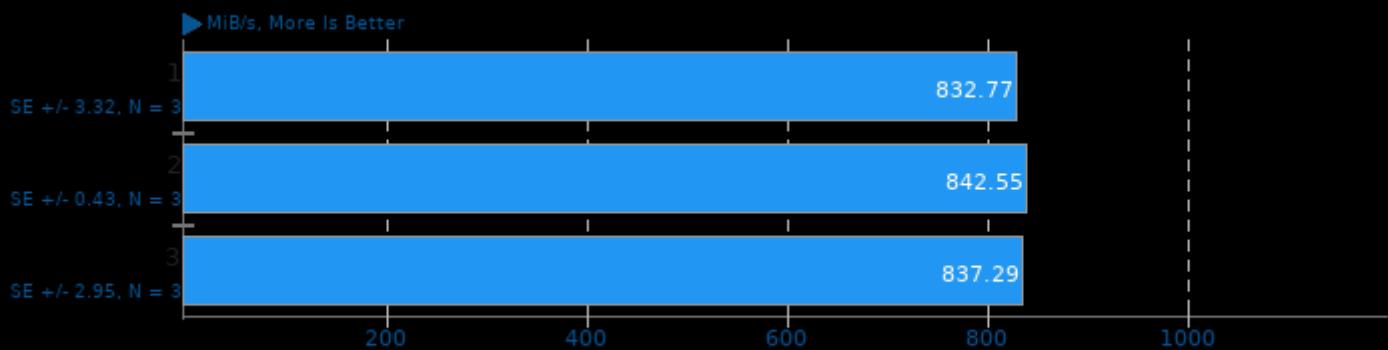
Test: ChaCha20Poly1305



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

Botan 2.17.3

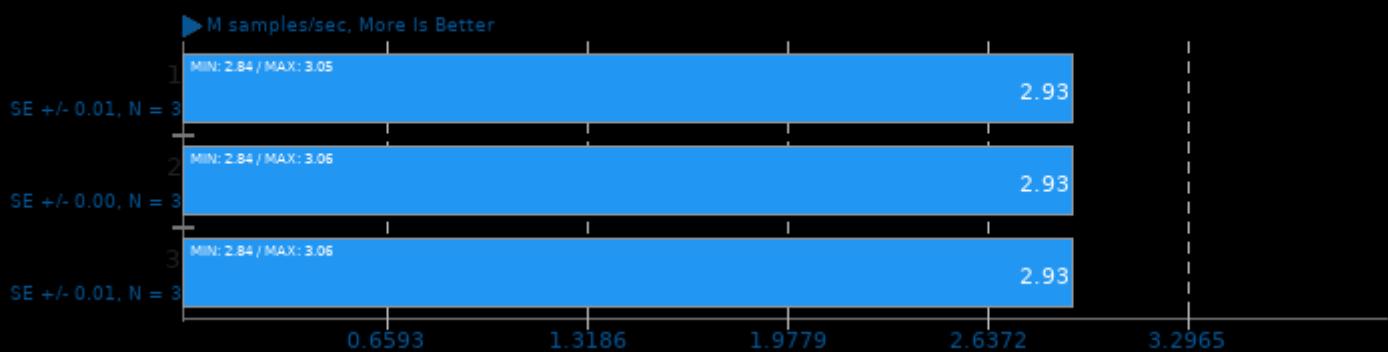
Test: ChaCha20Poly1305 - Decrypt



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

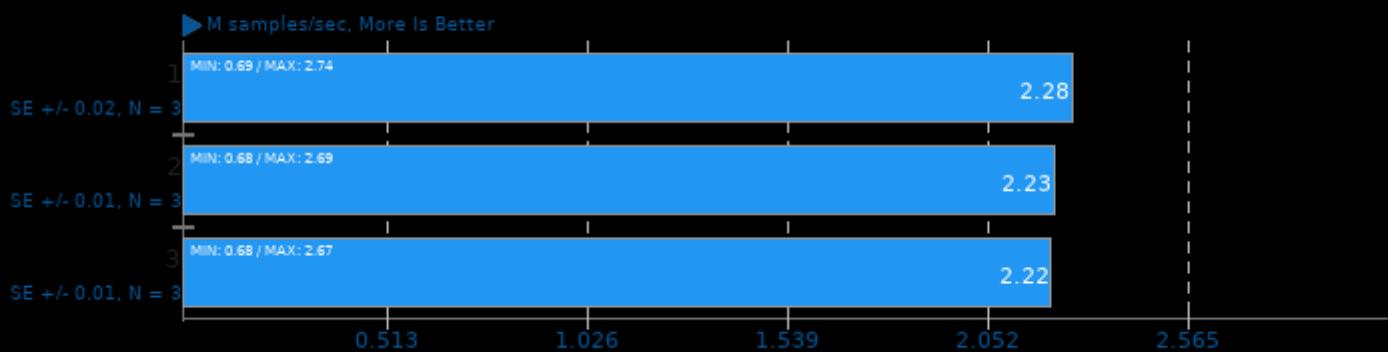
LuxCoreRender 2.5

Scene: DLSC - Acceleration: CPU



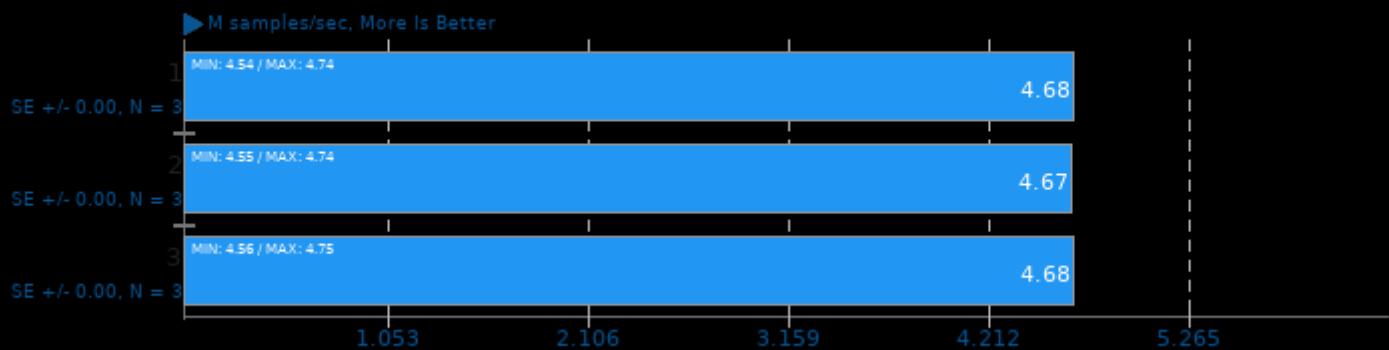
LuxCoreRender 2.5

Scene: Danish Mood - Acceleration: CPU



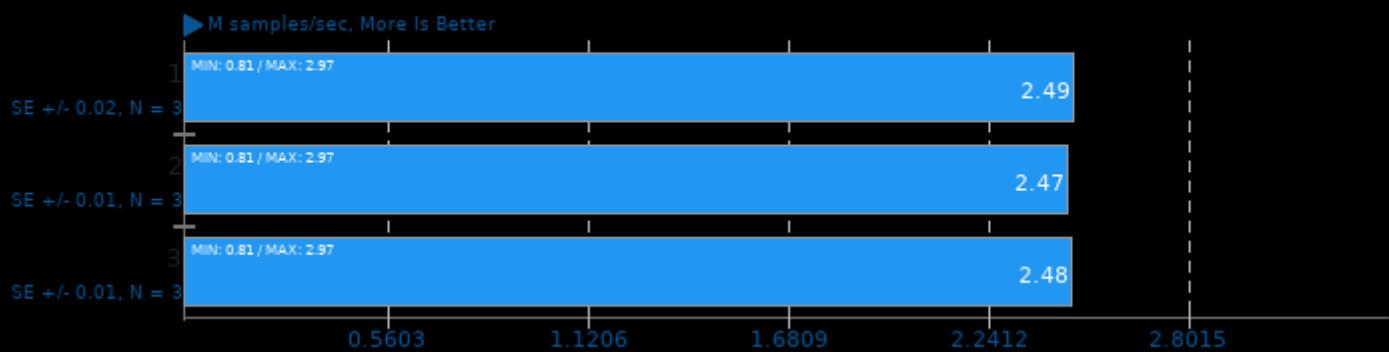
LuxCoreRender 2.5

Scene: Orange Juice - Acceleration: CPU



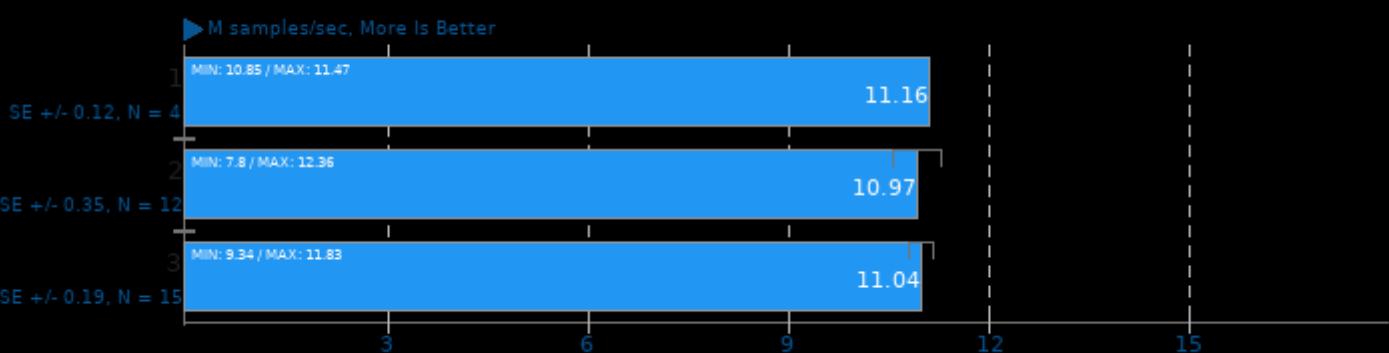
LuxCoreRender 2.5

Scene: LuxCore Benchmark - Acceleration: CPU



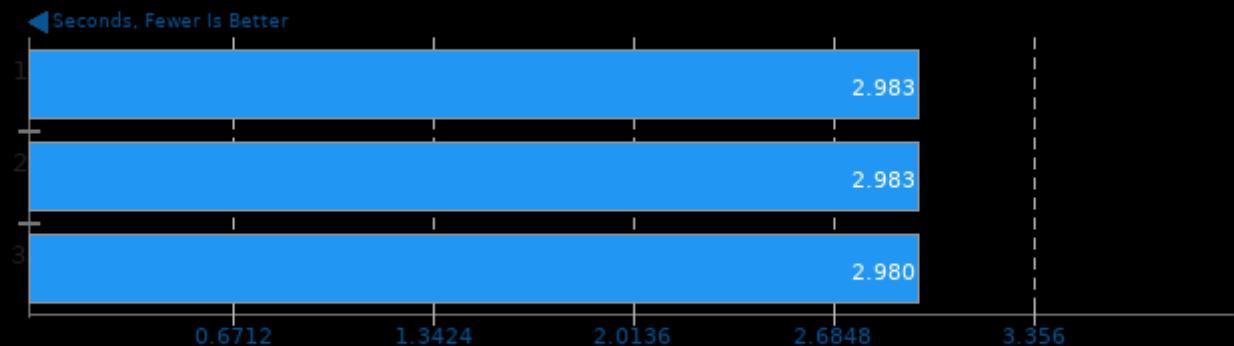
LuxCoreRender 2.5

Scene: Rainbow Colors and Prism - Acceleration: CPU



Helsing 1.0-beta

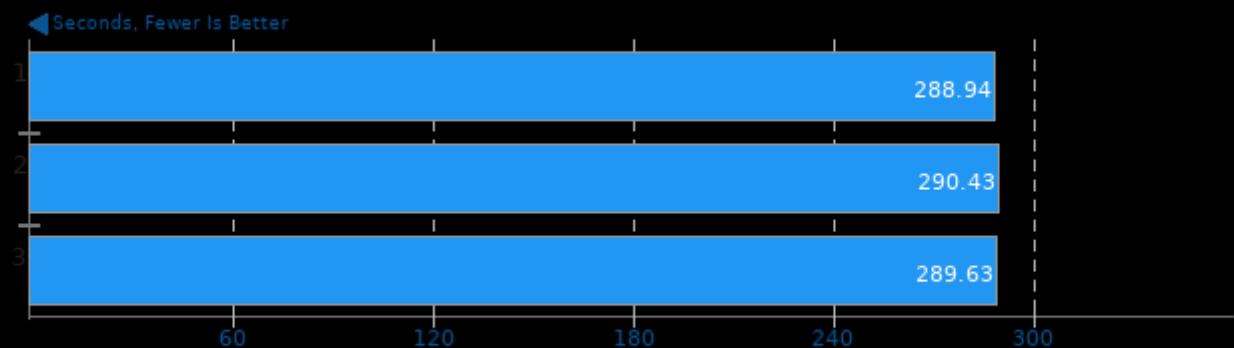
Digit Range: 12 digit



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

Helsing 1.0-beta

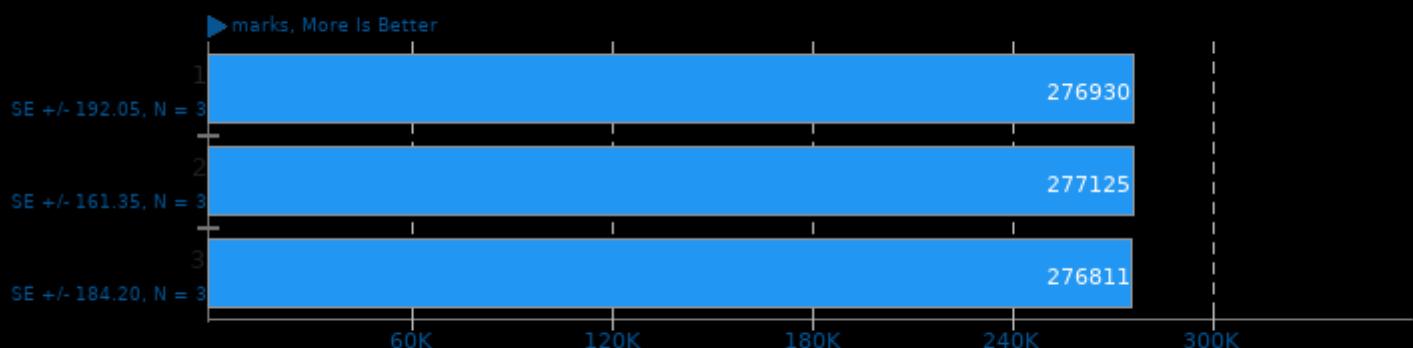
Digit Range: 14 digit



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

SecureMark 1.0.4

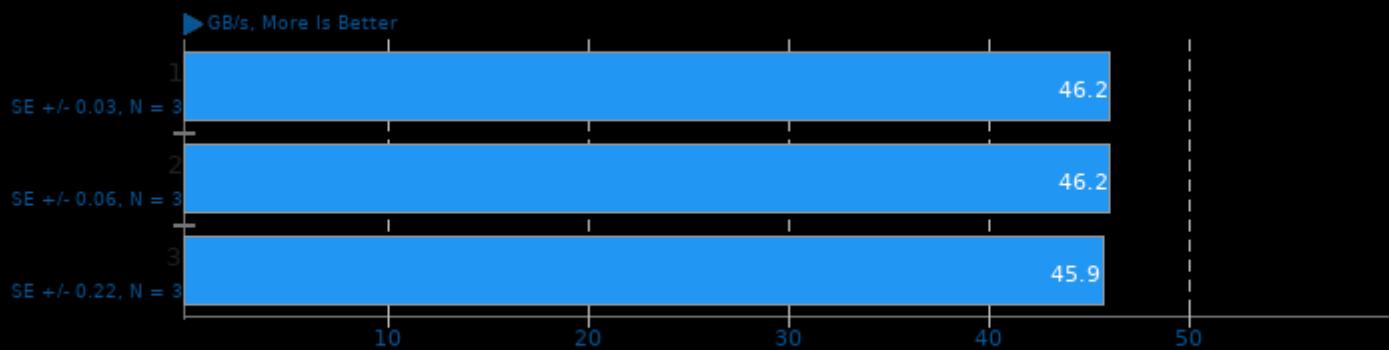
Benchmark: SecureMark-TLS



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

ViennaCL 1.7.1

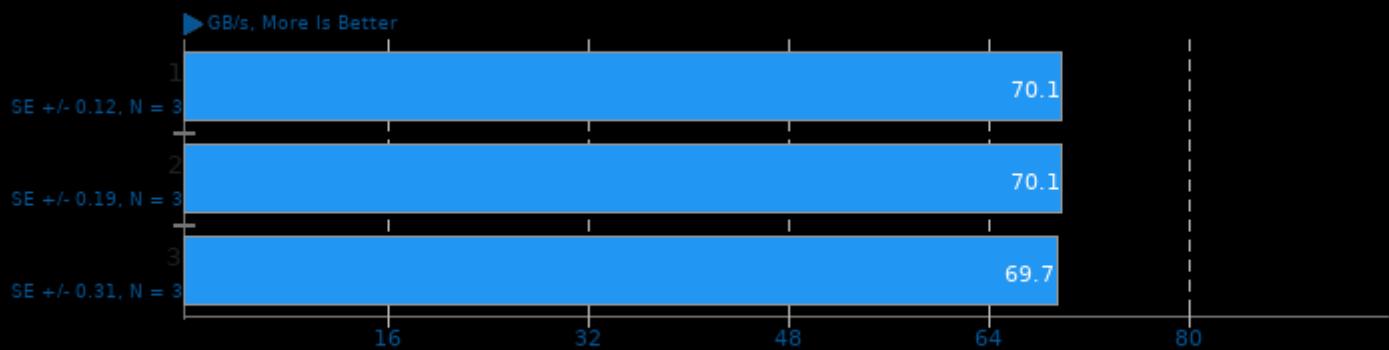
Test: CPU BLAS - sCOPY



1. (CXX) g++ options: -O3 -pipe -fexceptions -fstack-protector -m64 -ffat-lto-objects -fno-trapping-math -mtune=skylake -fopenmp -rdynamic -IOpenCL

ViennaCL 1.7.1

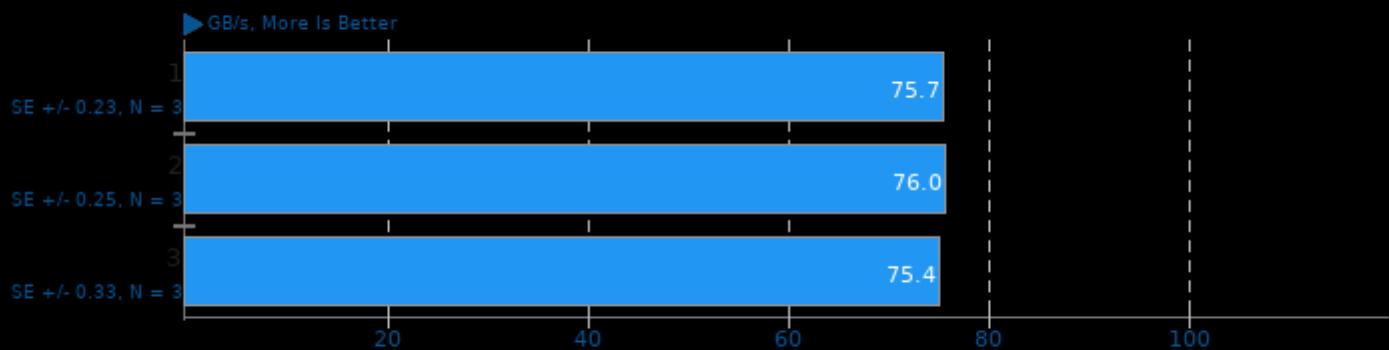
Test: CPU BLAS - sAXPY



1. (CXX) g++ options: -O3 -pipe -fexceptions -fstack-protector -m64 -ffat-lto-objects -fno-trapping-math -mtune=skylake -fopenmp -rdynamic -IOpenCL

ViennaCL 1.7.1

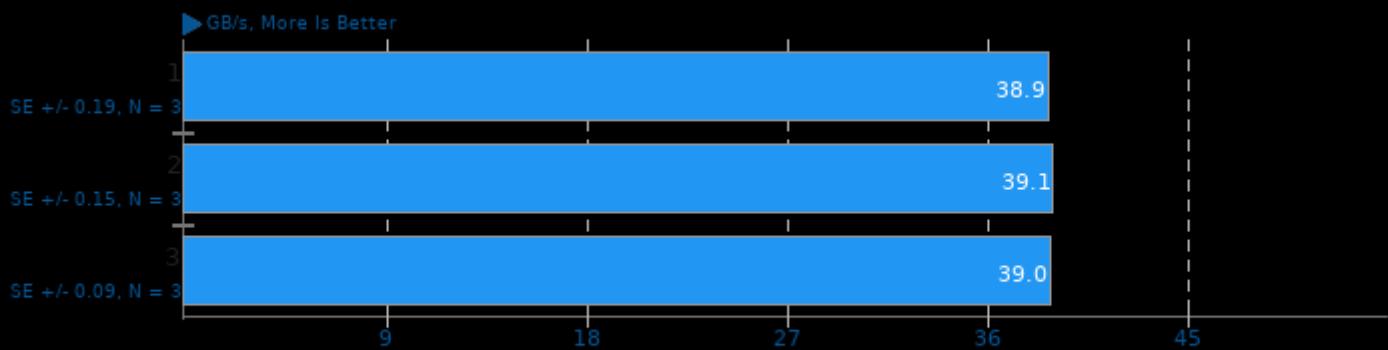
Test: CPU BLAS - sDOT



1. (CXX) g++ options: -O3 -pipe -fexceptions -fstack-protector -m64 -ffat-lto-objects -fno-trapping-math -mtune=skylake -fopenmp -rdynamic -IOpenCL

ViennaCL 1.7.1

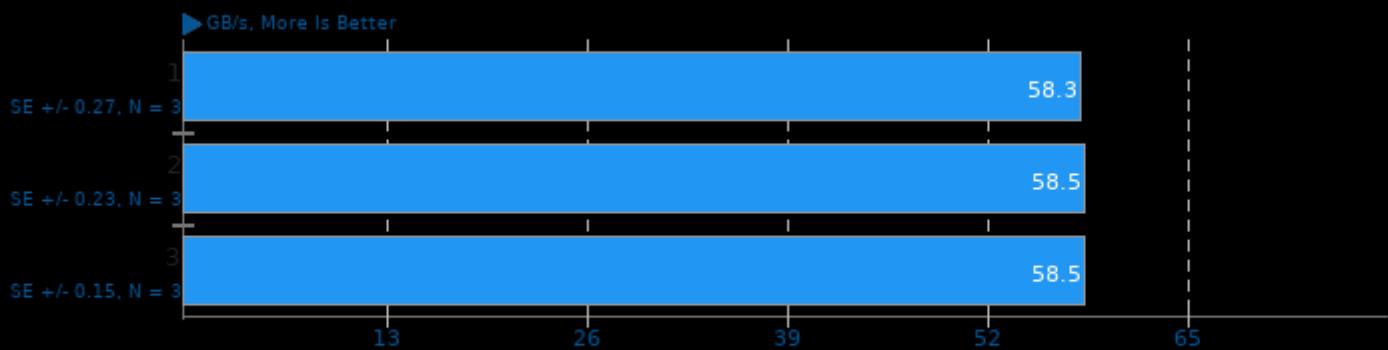
Test: CPU BLAS - dCOPY



1. (CXX) g++ options: -O3 -pipe -fexceptions -fstack-protector -m64 -ffat-lto-objects -fno-trapping-math -mtune=skylake -fopenmp -rdynamic -IOpenCL

ViennaCL 1.7.1

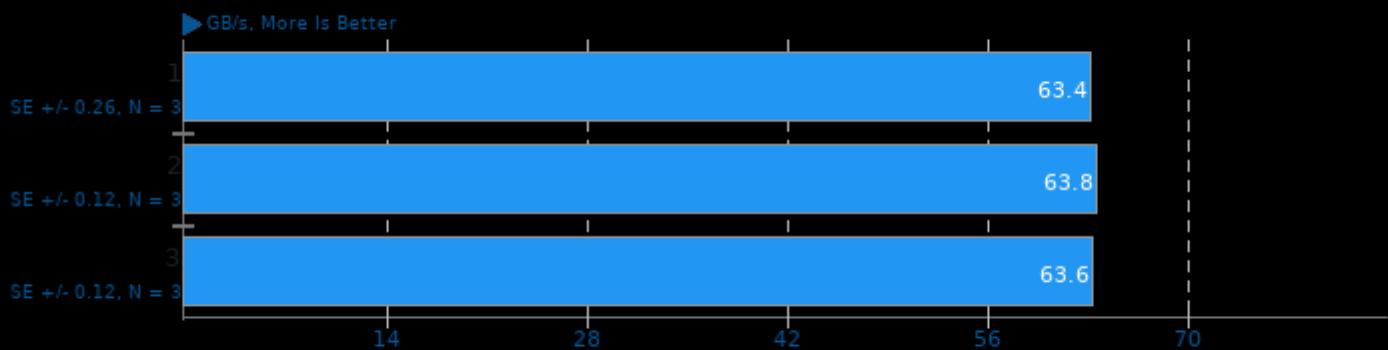
Test: CPU BLAS - dAXPY



1. (CXX) g++ options: -O3 -pipe -fexceptions -fstack-protector -m64 -ffat-lto-objects -fno-trapping-math -mtune=skylake -fopenmp -rdynamic -IOpenCL

ViennaCL 1.7.1

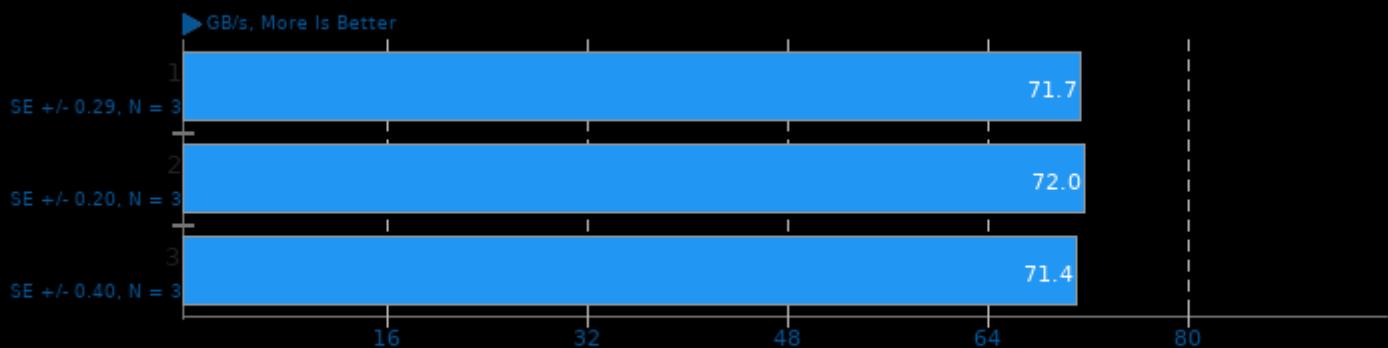
Test: CPU BLAS - dDOT



1. (CXX) g++ options: -O3 -pipe -fexceptions -fstack-protector -m64 -ffat-lto-objects -fno-trapping-math -mtune=skylake -fopenmp -rdynamic -IOpenCL

ViennaCL 1.7.1

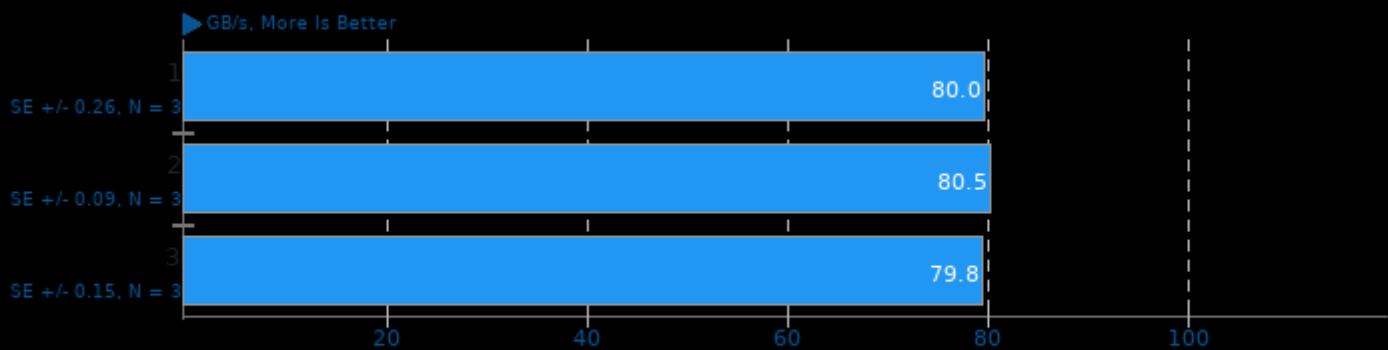
Test: CPU BLAS - dGEMV-N



1. (CXX) g++ options: -O3 -pipe -fexceptions -fstack-protector -m64 -ffat-lto-objects -fno-trapping-math -mtune=skylake -fopenmp -rdynamic -IOpenCL

ViennaCL 1.7.1

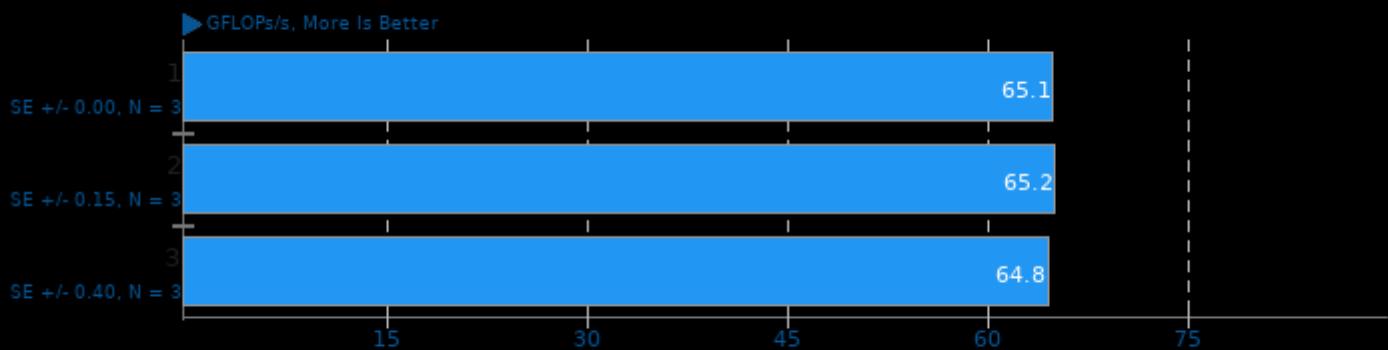
Test: CPU BLAS - dGEMV-T



1. (CXX) g++ options: -O3 -pipe -fexceptions -fstack-protector -m64 -ffat-lto-objects -fno-trapping-math -mtune=skylake -fopenmp -rdynamic -IOpenCL

ViennaCL 1.7.1

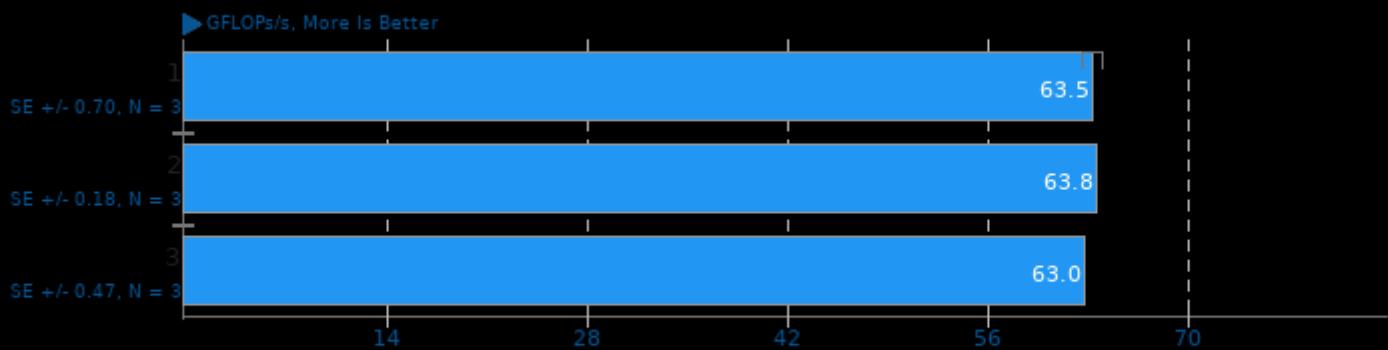
Test: CPU BLAS - dGEMM-NN



1. (CXX) g++ options: -O3 -pipe -fexceptions -fstack-protector -m64 -ffat-lto-objects -fno-trapping-math -mtune=skylake -fopenmp -rdynamic -IOpenCL

ViennaCL 1.7.1

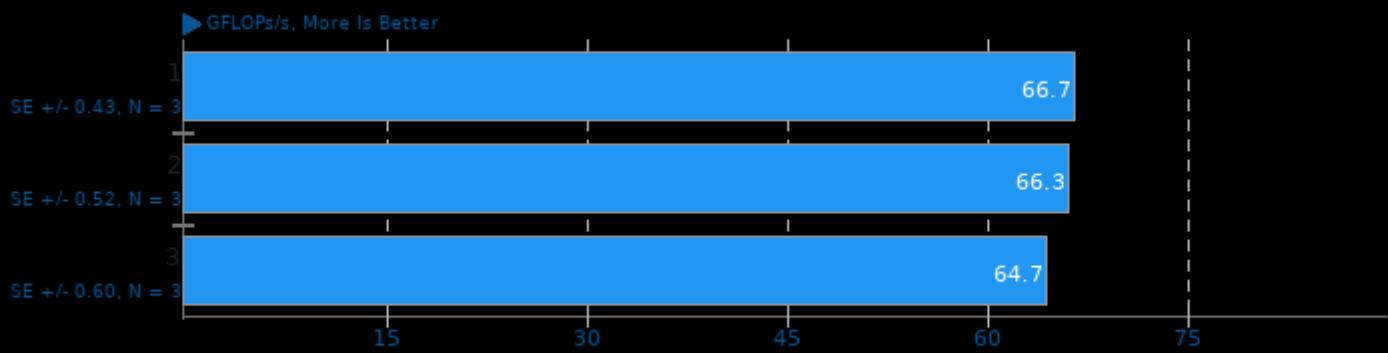
Test: CPU BLAS - dGEMM-NT



1. (CXX) g++ options: -O3 -pipe -fexceptions -fstack-protector -m64 -ffat-lto-objects -fno-trapping-math -mtune=skylake -fopenmp -rdynamic -IOpenCL

ViennaCL 1.7.1

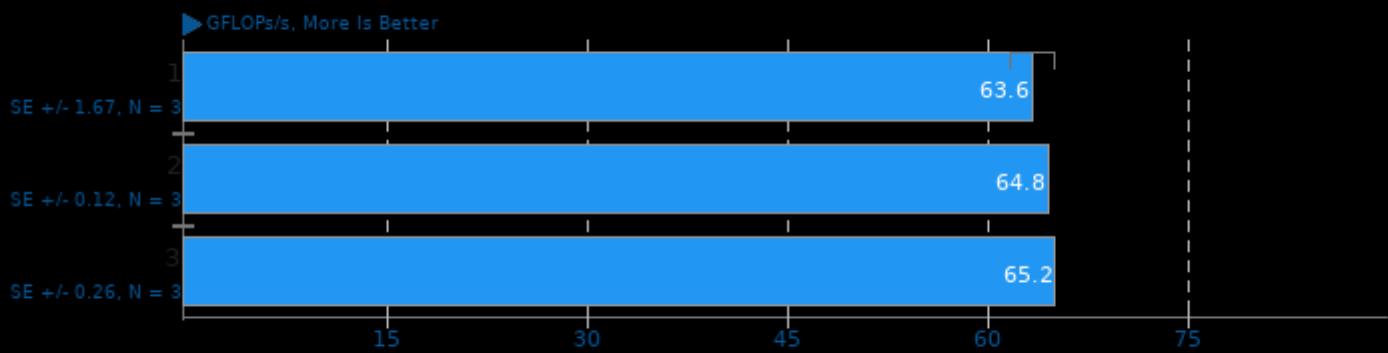
Test: CPU BLAS - dGEMM-TN



1. (CXX) g++ options: -O3 -pipe -fexceptions -fstack-protector -m64 -ffat-lto-objects -fno-trapping-math -mtune=skylake -fopenmp -rdynamic -IOpenCL

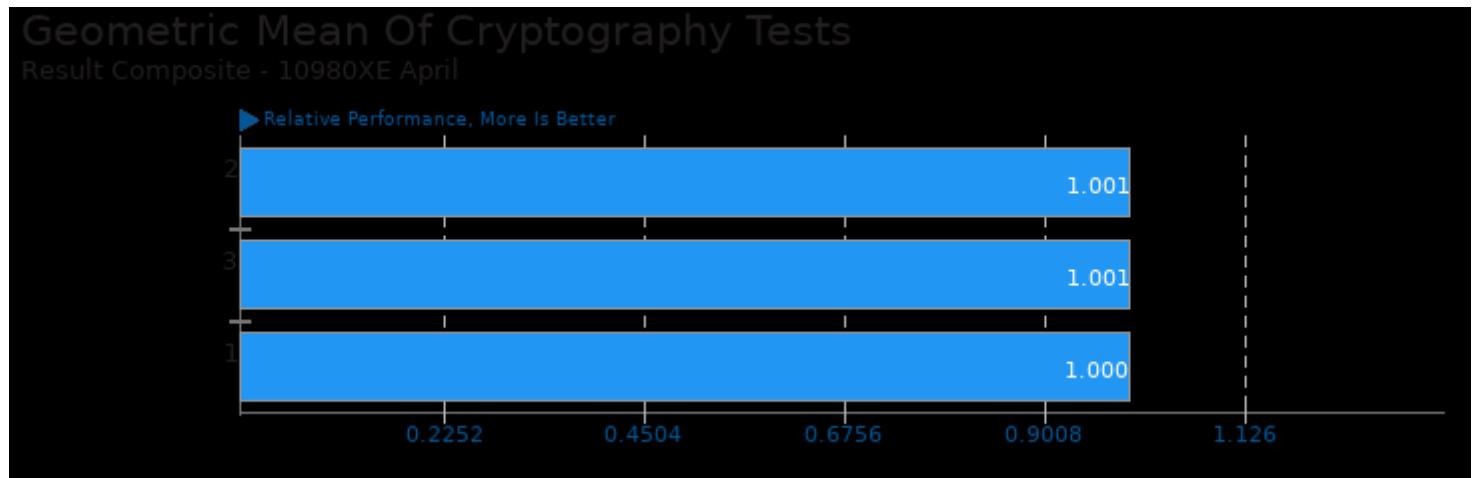
ViennaCL 1.7.1

Test: CPU BLAS - dGEMM-TT

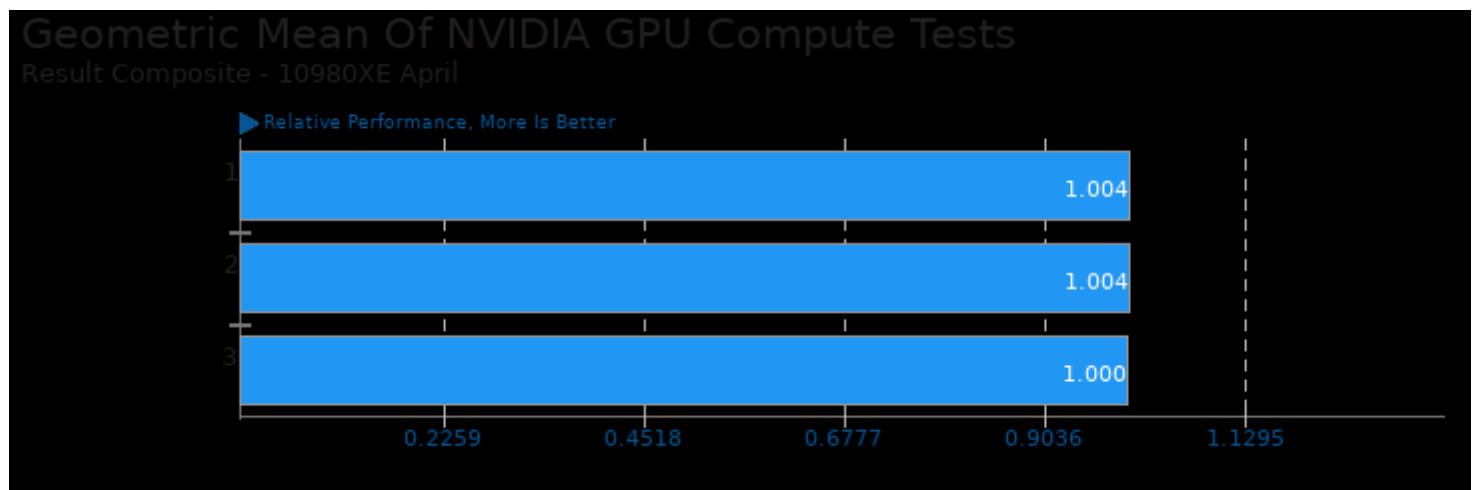


1. (CXX) g++ options: -O3 -pipe -fexceptions -fstack-protector -m64 -ffat-lto-objects -fno-trapping-math -mtune=skylake -fopenmp -rdynamic -IOpenCL

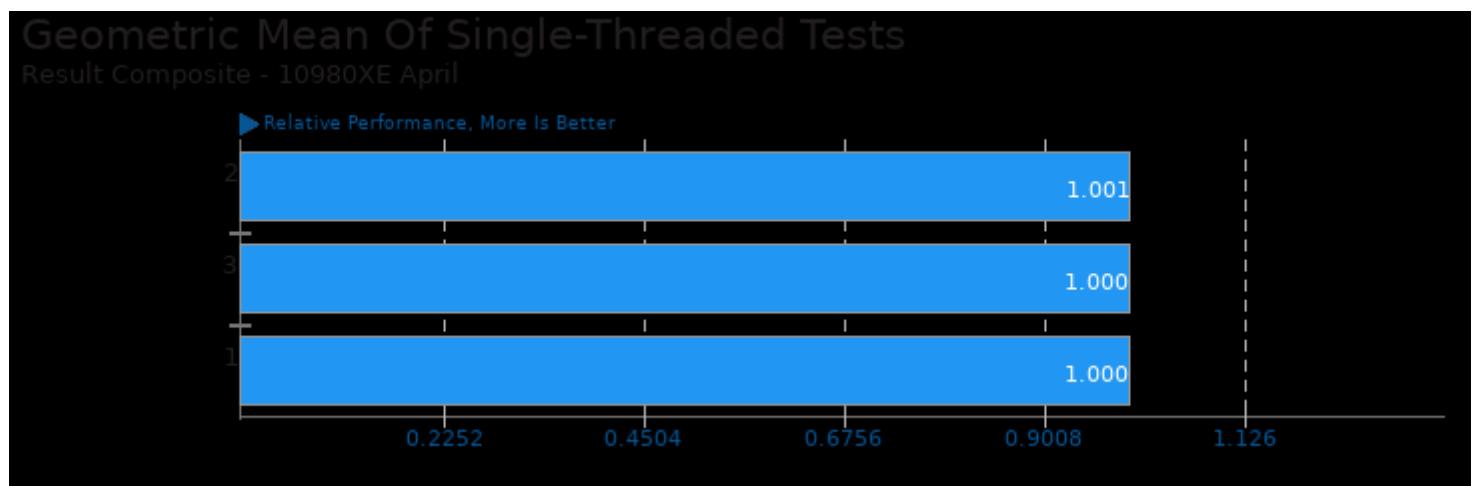
These geometric means are based upon test groupings / test suites for this result file.



Geometric mean based upon tests: pts/botan and pts/securemark



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



Geometric mean based upon tests: pts/gmpbench and pts/botan

This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 10:59.