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TR 3960X WK

AMD Ryzen Threadripper 3960X 24-Core testing with a MSI Creator TRX40 (MS-7C59) v1.0 (1.12N1 BIOS) and Sapphire AMD Radeon RX 5500/5500M / Pro 5500M 4GB on Ubuntu 20.04 via the Phoronix Test Suite.

Automated Executive Summary

1 had the most wins, coming in first place for 43% 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 0.999x the speed of 1.

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

Milpack Benchmark (Benchmark: scikit_ica) at 1.033x
NCNN (Target: Vulkan GPU - Model: yolov4-tiny) at 1.031x
NCNN (Target: CPU - Model: vgg16) at 1.029x
NCNN (Target: Vulkan GPU-v3-v3 - Model: mobilenet-v3) at 1.028x
NCNN (Target: Vulkan GPU - Model: efficientnet-b0) at 1.027x
NCNN (Target: Vulkan GPU - Model: squeezenet) at 1.023x
Milpack Benchmark (Benchmark: scikit_qda) at 1.021x
NCNN (Target: Vulkan GPU - Model: alexnet) at 1.019x
NCNN (Target: CPU - Model: efficientnet-b0) at 1.017x

Timed MAFFT Alignment (Multiple Sequence Alignment - LSU RNA) at 1.015x.

Test Systems:

1

2

3

Processor: AMD Ryzen Threadripper 3960X 24-Core @ 3.80GHz (24 Cores / 48 Threads), Motherboard: MSI Creator TRX40 (MS-7C59) v1.0 (1.12N1 BIOS), Chipset: AMD Starship/Matisse, Memory: 32GB, Disk: 1000GB Sabrent Rocket 4.0 1TB, Graphics: Sapphire AMD Radeon RX 5500/5500M / Pro 5500M 4GB (1900/875MHz), Audio: AMD Navi 10 HDMI Audio, Monitor: ASUS MG28U, Network: Aquantia AQC107 NBase-T/IEEE + Intel I211 + Intel Wi-Fi 6 AX200

OS: Ubuntu 20.04, Kernel: 5.9.0-rc5-14sep-patch (x86_64) 20200914, Desktop: GNOME Shell 3.36.4, Display Server: X Server 1.20.8, Display Driver: modesetting 1.20.8, OpenGL: 4.6 Mesa 20.0.8 (LLVM 10.0.0), Vulkan: 1.2.128, Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 3840x2160

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-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none,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 - CPU Microcode: 0x8301025
 Python Notes: Python 3.8.2
 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: conditional RSB filling + srbs: Not affected + tsx_async_abort: Not affected

	1	2	3
Caffe - GoogleNet - CPU - 1000 (ms)	1585367	1589890	1586757
Normalized	100%	99.72%	99.91%
Standard Deviation	0%	0.2%	0.2%
Caffe - AlexNet - CPU - 1000 (ms)	634925	636843	638848
Normalized	100%	99.7%	99.39%
Standard Deviation	0.1%	0.4%	0.2%
Caffe - GoogleNet - CPU - 200 (ms)	318121	319129	317413
Normalized	99.78%	99.46%	100%
Standard Deviation	0.1%	0.3%	0.4%
Hierarchical INTegration - FLOAT (QUIPs)	387229071	387185459	388597973
Normalized	99.65%	99.64%	100%
Standard Deviation	0.1%	0.1%	0.1%
Caffe - GoogleNet - CPU - 100 (ms)	158702	158891	159254
Normalized	100%	99.88%	99.65%
Standard Deviation	0.3%	0%	0.1%

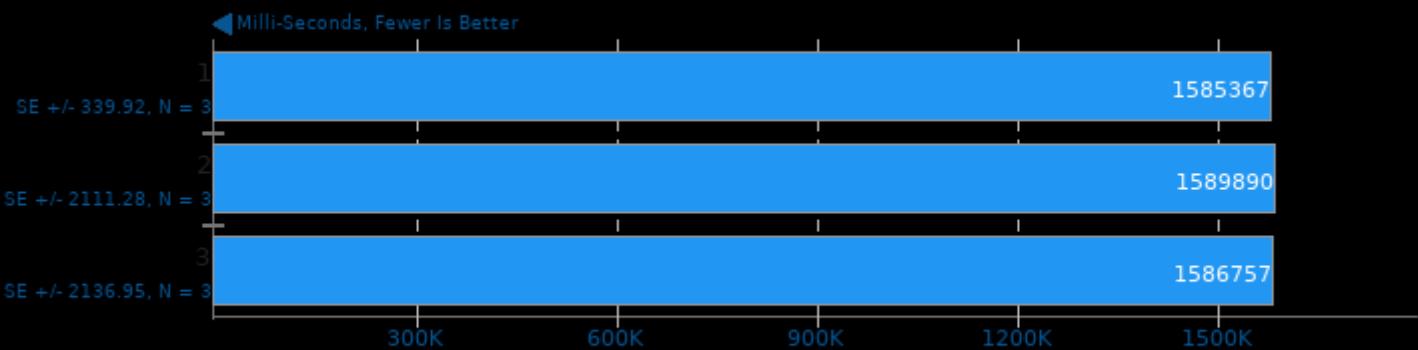
BYTE Unix Benchmark - Dhrystone 2 (LPS)	46013391	45773093	46091340
Normalized	99.83%	99.31%	100%
Standard Deviation	2.9%	0.8%	2.7%
Timed HMMer Search - P.D.S (sec)	131.076	131.428	131.508
Normalized	100%	99.73%	99.67%
Standard Deviation	0.2%	0.1%	0.3%
Caffe - AlexNet - CPU - 200 (ms)	127209	127488	127527
Normalized	100%	99.78%	99.75%
Standard Deviation	0.2%	0.3%	0.3%
Apache CouchDB - 100 - 1000 - 24 (sec)	108.154	107.556	108.106
Normalized	99.45%	100%	99.49%
Standard Deviation	0.9%	0.7%	0.2%
Milpack Benchmark - scikit_qda (sec)	44.98	45.91	45.89
Normalized	100%	97.97%	98.02%
Standard Deviation	1.2%	0.4%	0.1%
GROMACS - Water Benchmark (Ns/Day)	2.529	2.528	2.527
Normalized	100%	99.96%	99.92%
Standard Deviation	0.2%	0.1%	0.1%
NCNN - CPU - yolov4-tiny (ms)	27.88	28.20	28.07
Normalized	100%	98.87%	99.32%
Standard Deviation	0.2%	0.9%	0.6%
NCNN - CPU - resnet50 (ms)	23.37	23.55	23.53
Normalized	100%	99.24%	99.32%
Standard Deviation	0.8%	0.1%	0.9%
NCNN - CPU - alexnet (ms)	11.49	11.56	11.53
Normalized	100%	99.39%	99.65%
Standard Deviation	1%	1.8%	2%
NCNN - CPU - resnet18 (ms)	13.89	13.94	13.96
Normalized	100%	99.64%	99.5%
Standard Deviation	0.6%	1.8%	1.9%
NCNN - CPU - vgg16 (ms)	41.10	42.30	41.33
Normalized	100%	97.16%	99.44%
Standard Deviation	0.8%	2.1%	1.4%
NCNN - CPU - googlenet (ms)	17.76	17.75	17.78
Normalized	99.94%	100%	99.83%
Standard Deviation	2.1%	3.3%	3.3%
NCNN - CPU - blazeface (ms)	2.97	2.93	2.94
Normalized	98.65%	100%	99.66%
Standard Deviation	1.4%	0.8%	0.5%
NCNN - CPU - efficientnet-b0 (ms)	8.79	8.64	8.69
Normalized	98.29%	100%	99.42%
Standard Deviation	1%	0.7%	1%
NCNN - CPU - mnasnet (ms)	6.58	6.53	6.57
Normalized	99.24%	100%	99.39%
Standard Deviation	0.8%	0.6%	0.4%
NCNN - CPU - shufflenet-v2 (ms)	7.31	7.28	7.34
Normalized	99.59%	100%	99.18%
Standard Deviation	0.8%	0.2%	0.4%
NCNN - CPU-v3-v3 - mobilenet-v3 (ms)	6.82	6.78	6.86
Normalized	99.41%	100%	98.83%
Standard Deviation	0.6%	0.9%	1.1%
NCNN - CPU-v2-v2 - mobilenet-v2 (ms)	7.28	7.24	7.33
Normalized	99.45%	100%	98.77%
Standard Deviation	0.3%	1%	0.8%
NCNN - CPU - mobilenet (ms)	17.46	17.24	17.22

	Normalized	98.63%	99.88%	100%
	Standard Deviation	1.5%	1.9%	0.8%
NCNN - CPU - squeezenet (ms)	16.40	16.39	16.43	
	Normalized	99.94%	100%	99.76%
	Standard Deviation	0.8%	1.4%	1.4%
Caffe - AlexNet - CPU - 100 (ms)	63797	63525	63700	
	Normalized	99.57%	100%	99.73%
	Standard Deviation	0.4%	0.3%	0.4%
Milpck Benchmark - scikit_ica (sec)	53.53	52.58	54.33	
	Normalized	98.23%	100%	96.78%
	Standard Deviation	1.2%	2.1%	1%
NCNN - Vulkan GPU - yolov4-tiny (ms)	21.70	21.32	21.05	
	Normalized	97%	98.73%	100%
	Standard Deviation	0.1%	0.8%	2.4%
NCNN - Vulkan GPU - resnet50 (ms)	11.79	11.85	11.92	
	Normalized	100%	99.49%	98.91%
	Standard Deviation	3.5%	5.7%	4.7%
NCNN - Vulkan GPU - alexnet (ms)	28.12	28.66	28.36	
	Normalized	100%	98.12%	99.15%
	Standard Deviation	1.7%	1.7%	0.8%
NCNN - Vulkan GPU - resnet18 (ms)	3.83	3.82	3.81	
	Normalized	99.48%	99.74%	100%
	Standard Deviation	0.4%	0%	0.2%
NCNN - Vulkan GPU - vgg16 (ms)	80.33	80.68	80.10	
	Normalized	99.71%	99.28%	100%
	Standard Deviation	0.6%	0.5%	0.7%
NCNN - Vulkan GPU - googlenet (ms)	8.63	8.25	8.41	
	Normalized	95.6%	100%	98.1%
	Standard Deviation	2%	8.1%	8.4%
NCNN - Vulkan GPU - blazeface (ms)	0.90	0.89	0.89	
	Normalized	98.89%	100%	100%
	Standard Deviation	0.6%	0.6%	1.1%
NCNN - Vulkan GPU - efficientnet-b0 (ms)	11.93	12.20	12.25	
	Normalized	100%	97.79%	97.39%
	Standard Deviation	3.7%	3.9%	0.9%
NCNN - Vulkan GPU - mnasnet (ms)	4.44	4.44	4.44	
	Normalized	0.1%	0.2%	0.3%
NCNN - Vulkan GPU - shufflenet-v2 (ms)	3.20	3.20	3.20	
	Normalized	0.2%	0.2%	0.2%
NCNN - Vulkan GPU-v3-v3 - mobilenet-v3	8.35	8.23	8.46	
	Normalized	98.56%	100%	97.28%
	Standard Deviation	1.3%	5.1%	3.7%
NCNN - Vulkan GPU-v2-v2 - mobilenet-v2	4.35	4.35	4.35	
	Normalized	0.2%	0.1%	0.4%
NCNN - Vulkan GPU - mobilenet (ms)	9.60	9.79	10.22	
	Normalized	100%	98.06%	93.93%
	Standard Deviation	11.9%	7.6%	7.3%
NCNN - Vulkan GPU - squeezenet (ms)	6.22	6.27	6.13	
	Normalized	98.55%	97.77%	100%
	Standard Deviation	2.3%	2.5%	0.7%
Milpck Benchmark - scikit_linearregression (sec)	1.44	1.43	1.43	
	Normalized	99.31%	100%	100%
	Standard Deviation	1%	1.2%	0.6%
Milpck Benchmark - scikit_svm (sec)	19.75	19.69	19.67	

	Normalized	99.59%	99.9%	100%
	Standard Deviation	0.5%	0.6%	0.4%
Dolfyn - C.F.D (sec)	15.815	15.860	15.705	
	Normalized	99.3%	99.02%	100%
	Standard Deviation	0.1%	0.1%	0.7%
Timed MAFFT Alignment - M.S.A - LSU RNA (sec)	8.119	8.243	8.187	
	Normalized	100%	98.5%	99.17%
	Standard Deviation	1.2%	0.7%	0.6%
FFTE - N.2.3.C.F.R (MFLOPS)	83304	83980	83466	
	Normalized	99.19%	100%	99.39%
	Standard Deviation	0.9%	0.2%	0.6%

Caffe 2020-02-13

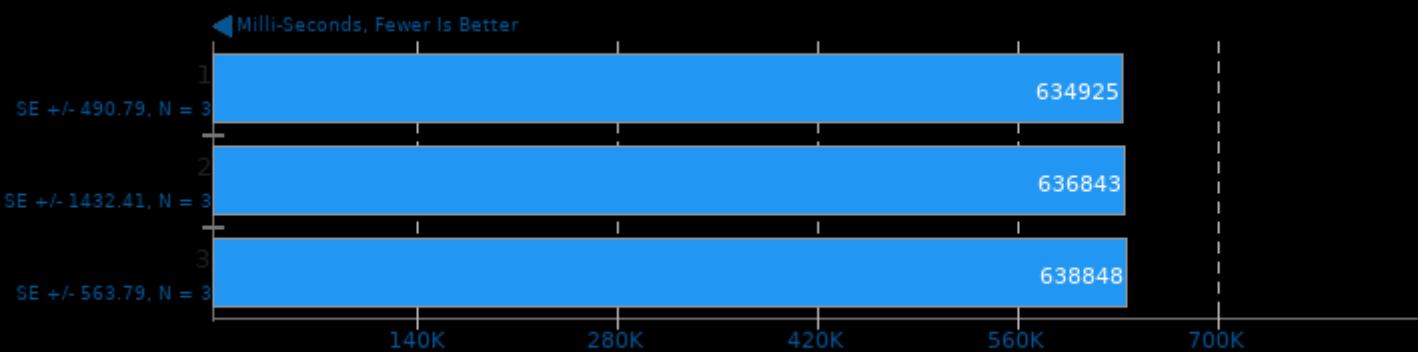
Model: GoogleNet - Acceleration: CPU - Iterations: 1000



1. (CXX) g++ options: -fPIC -O3 -rdynamic -lglog -lgflags -lprotobuf -lpthread -lsz -lz -ldl -lm -llmdb -lopenblas

Caffe 2020-02-13

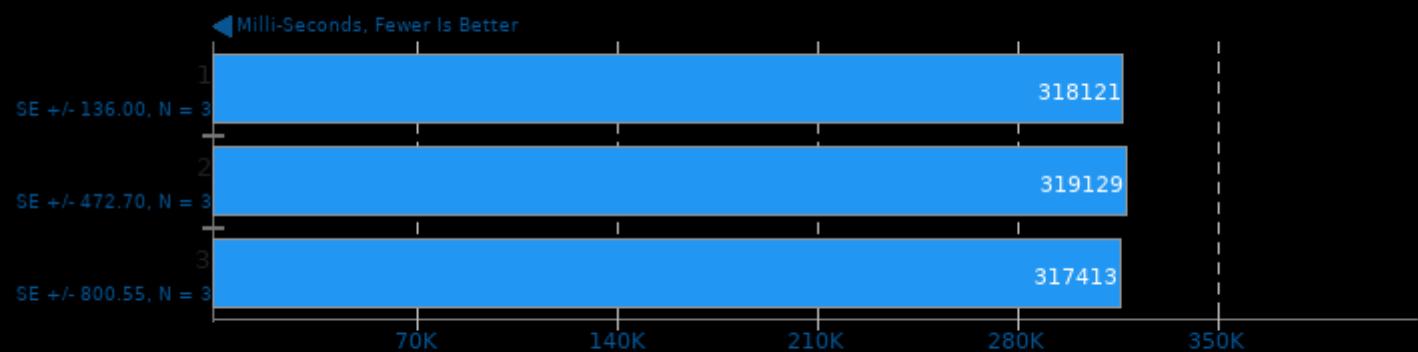
Model: AlexNet - Acceleration: CPU - Iterations: 1000



1. (CXX) g++ options: -fPIC -O3 -rdynamic -lglog -lgflags -lprotobuf -lpthread -lsz -lz -ldl -lm -llmdb -lopenblas

Caffe 2020-02-13

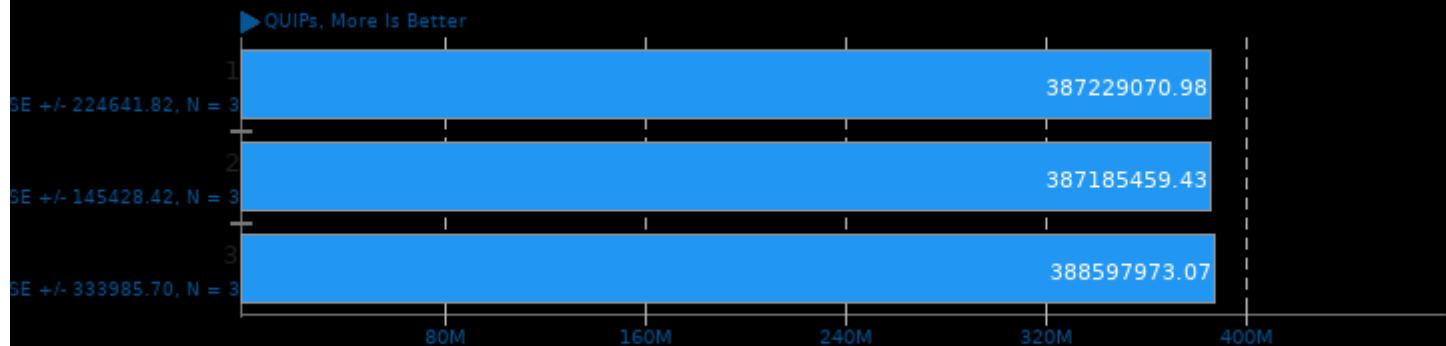
Model: GoogleNet - Acceleration: CPU - Iterations: 200



1. (CXX) g++ options: -fPIC -O3 -rdynamic -lglog -lgflags -lprotobuf -lpthread -lsz -lz -ldl -lm -llmdb -lopenblas

Hierarchical INTegration 1.0

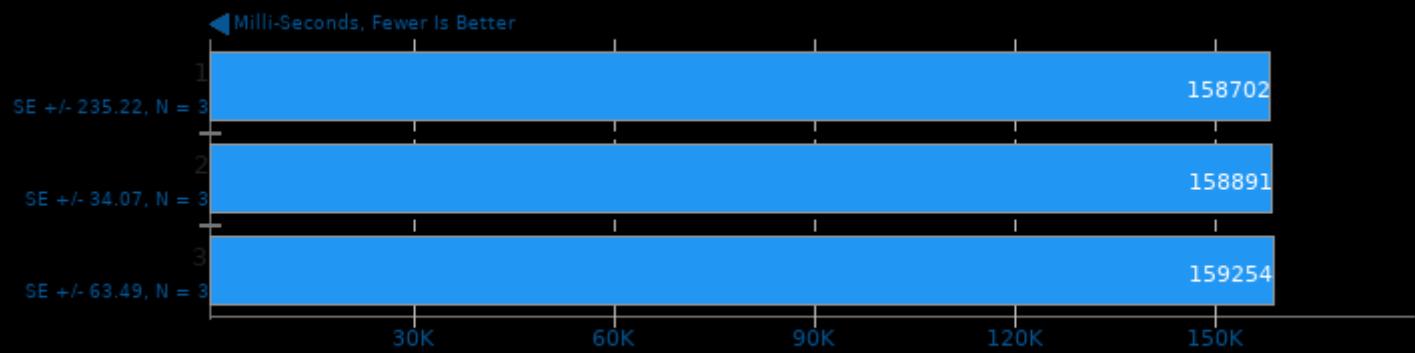
Test: FLOAT



1. (CC) gcc options: -O3 -march=native -lm

Caffe 2020-02-13

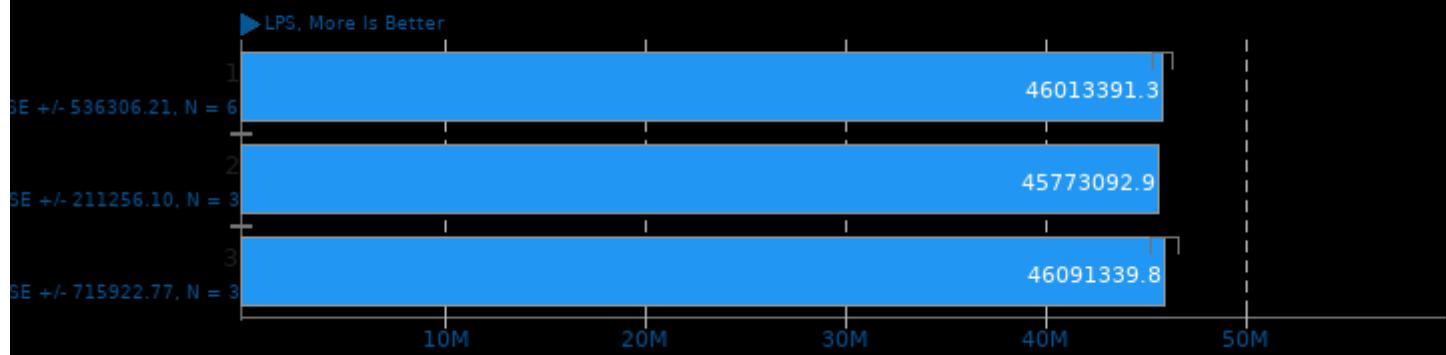
Model: GoogleNet - Acceleration: CPU - Iterations: 100



1. (CXX) g++ options: -fPIC -O3 -rdynamic -lglog -lflags -lprotobuf -lpthread -lsz -lz -ldl -lm -llmdb -lopenblas

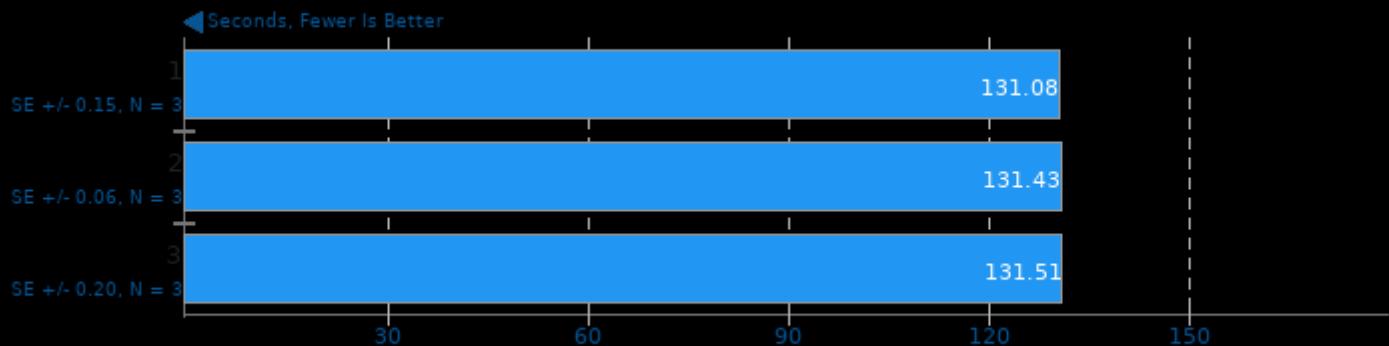
BYTE Unix Benchmark 3.6

Computational Test: Dhrystone 2



Timed HMMer Search 3.3.1

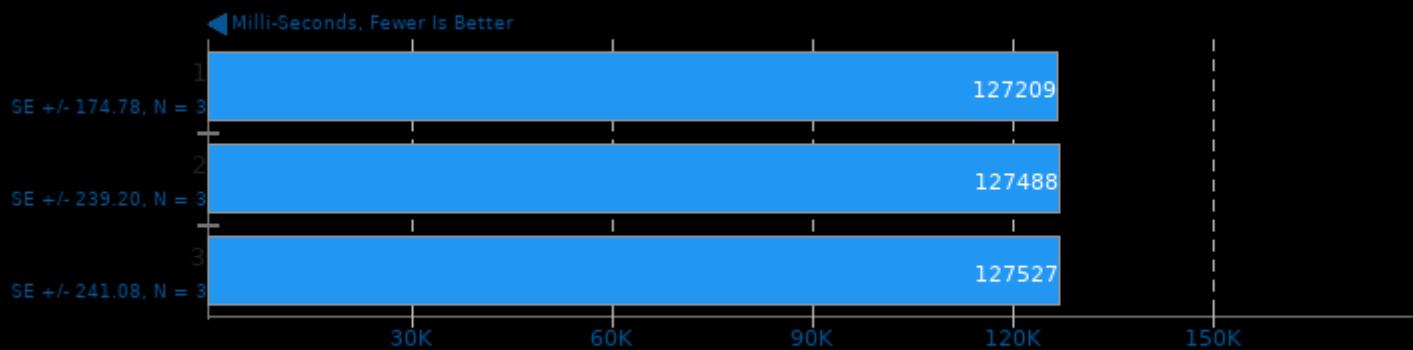
Pfam Database Search



1. (CC) gcc options: -O3 -pthread -lhmmer -leasel -lm

Caffe 2020-02-13

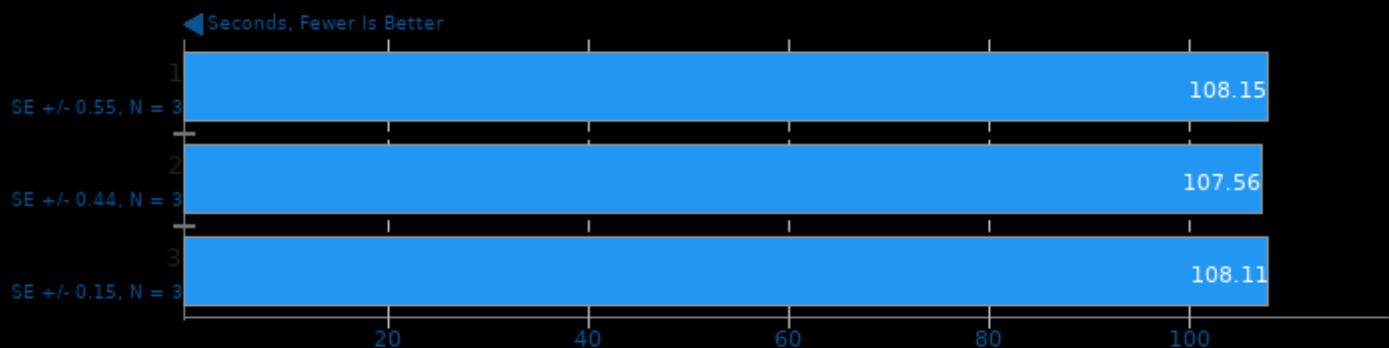
Model: AlexNet - Acceleration: CPU - Iterations: 200



1. (CXX) g++ options: -fPIC -O3 -rdynamic -lglog -lprotobuf -lpthread -lsz -lz -ldl -lm -llmdb -lopenblas

Apache CouchDB 3.1.1

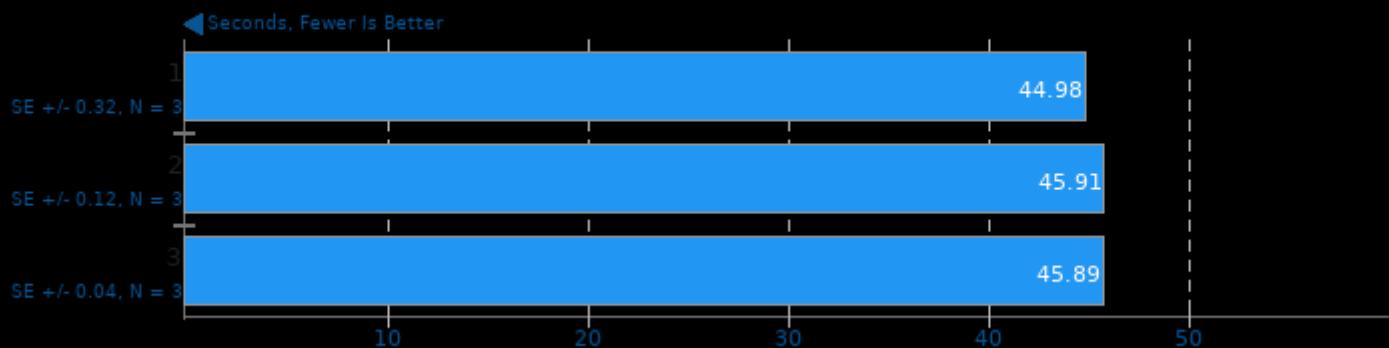
Bulk Size: 100 - Inserts: 1000 - Rounds: 24



1. (CXX) g++ options: -std=c++14 -lmozjs-68 -lm -erl_interface -lei -fPIC -MMD

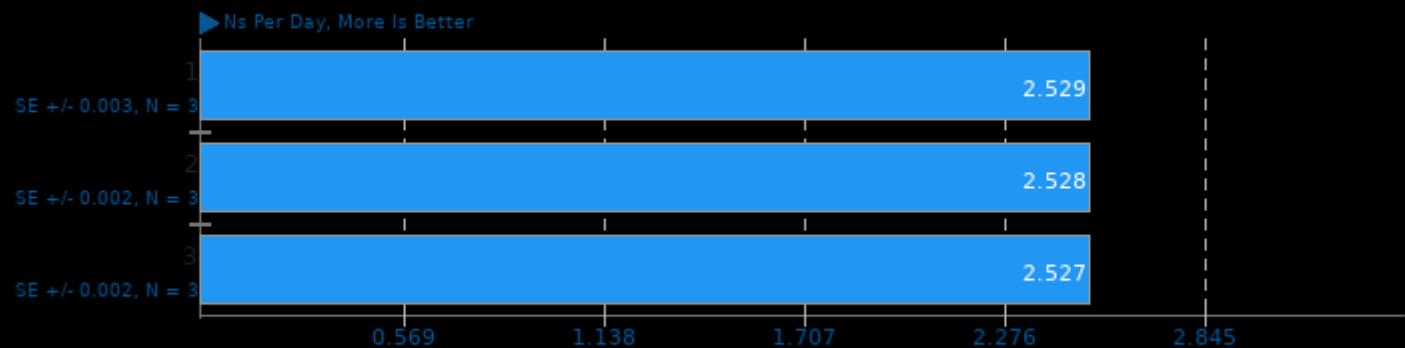
Mlpack Benchmark

Benchmark: scikit_qda



GROMACS 2020.3

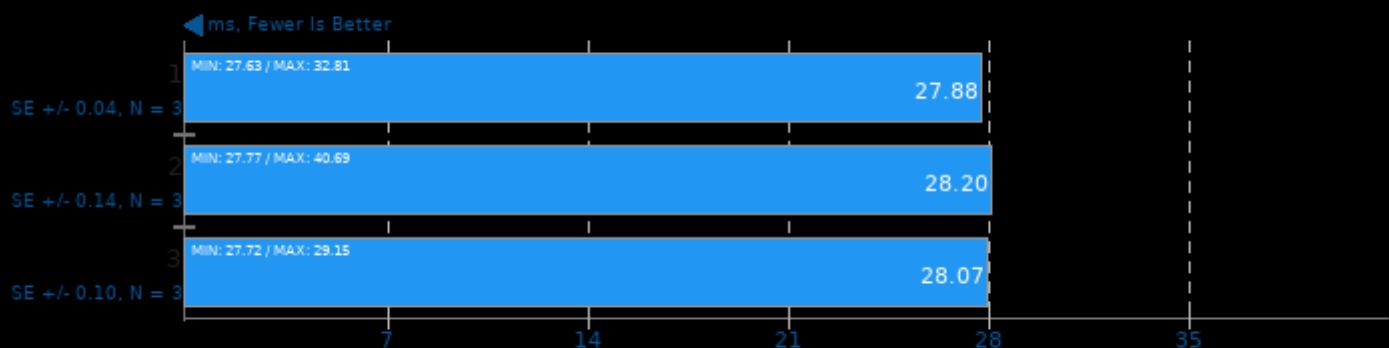
Water Benchmark



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

NCNN 20200916

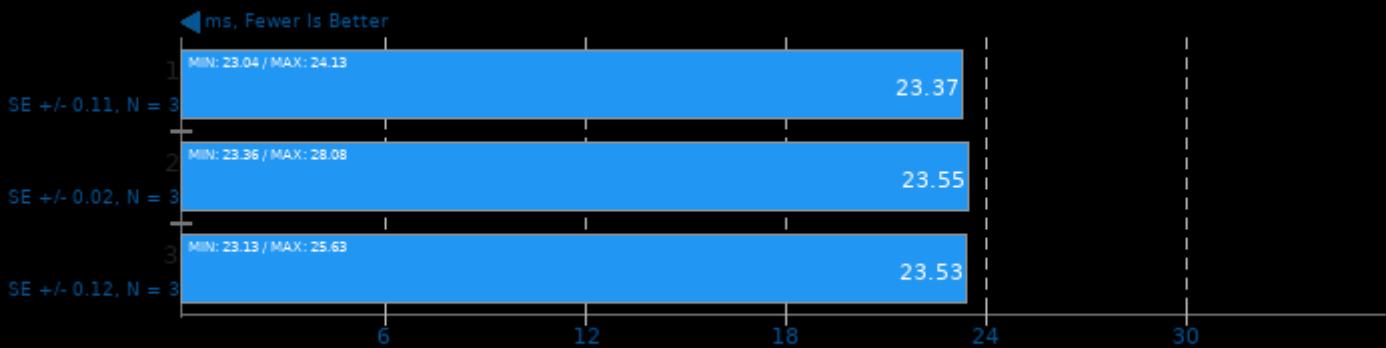
Target: CPU - Model: yolov4-tiny



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

NCNN 20200916

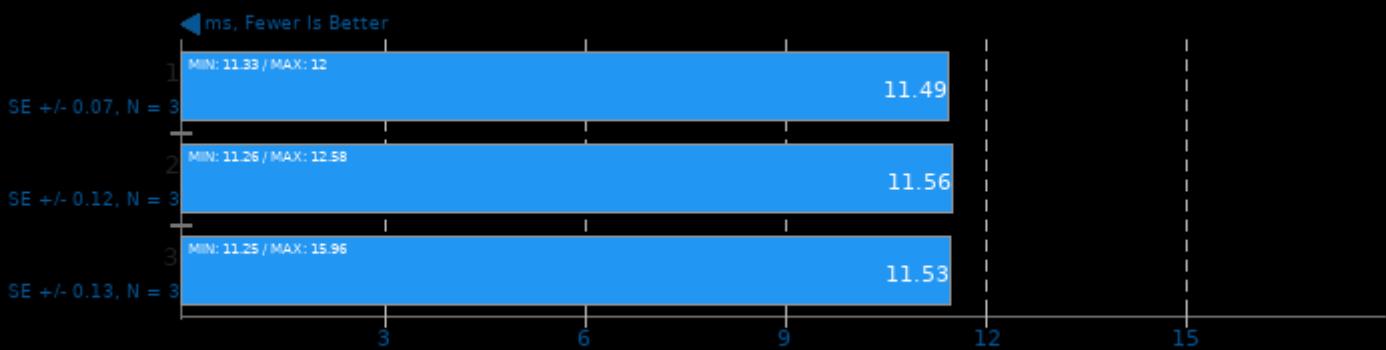
Target: CPU - Model: resnet50



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

NCNN 20200916

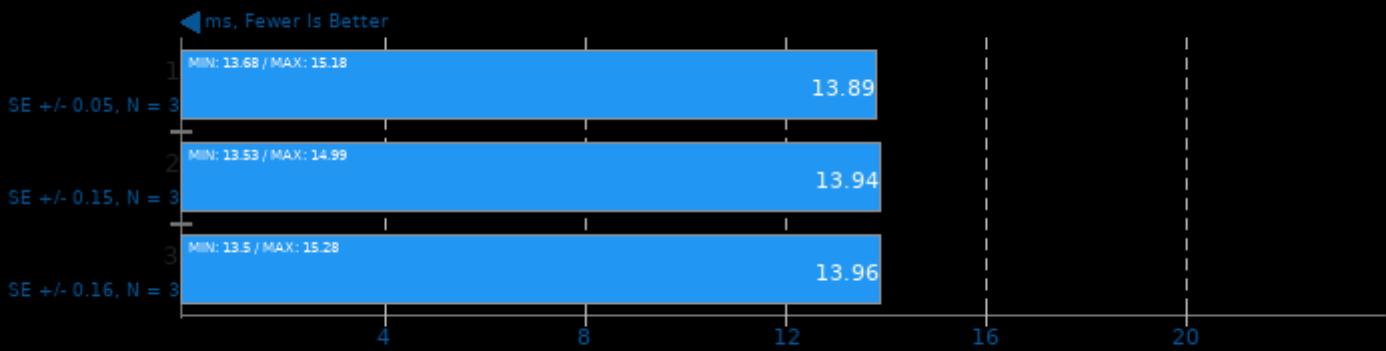
Target: CPU - Model: alexnet



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

NCNN 20200916

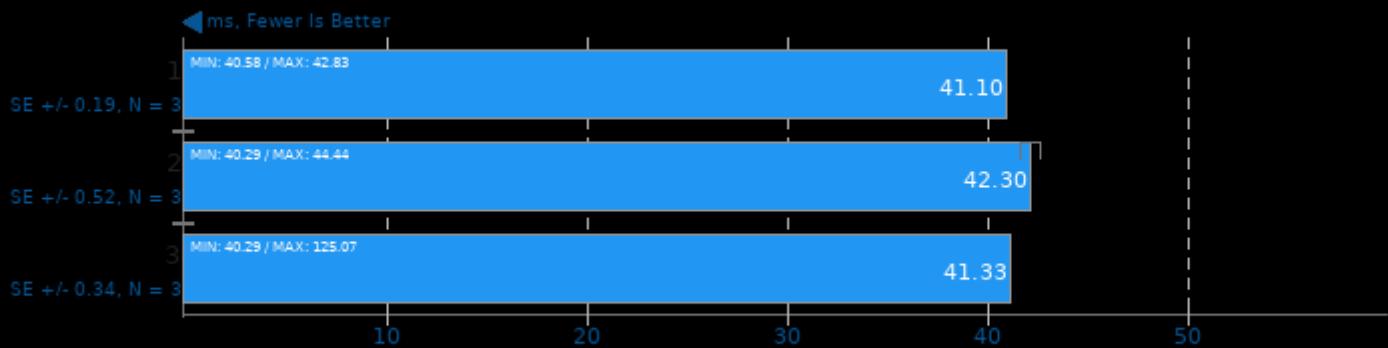
Target: CPU - Model: resnet18



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

NCNN 20200916

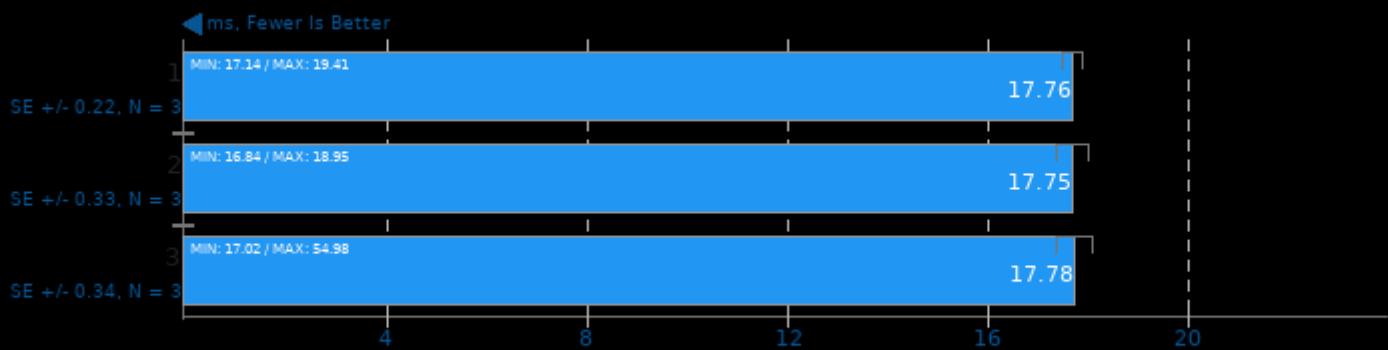
Target: CPU - Model: vgg16



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

NCNN 20200916

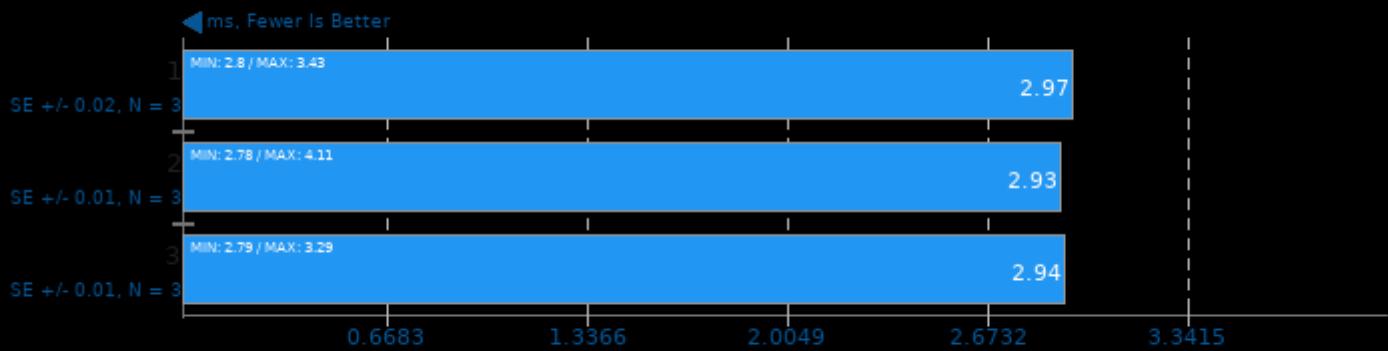
Target: CPU - Model: googlenet



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

NCNN 20200916

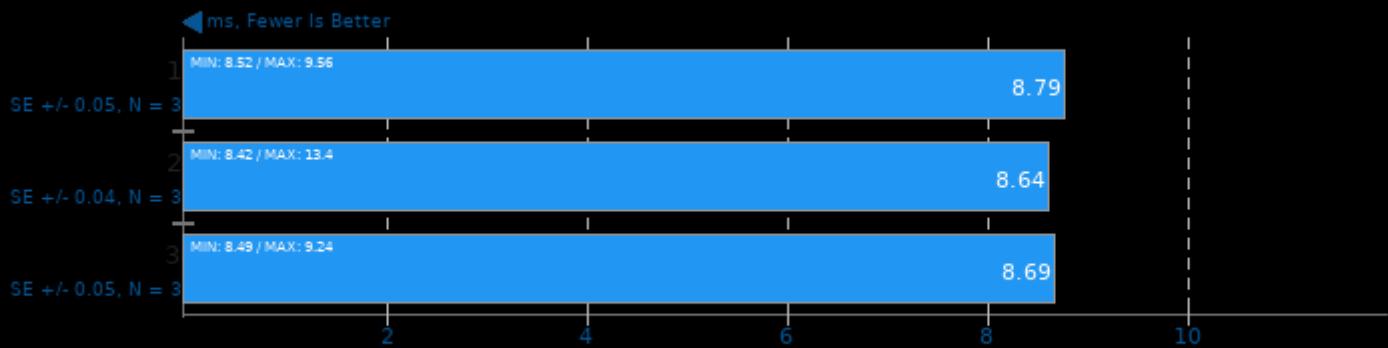
Target: CPU - Model: blazeface



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

NCNN 20200916

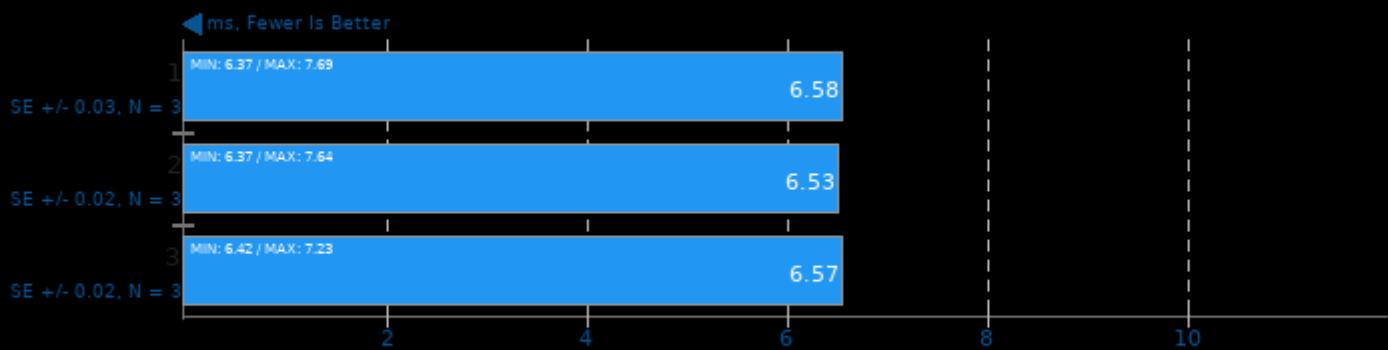
Target: CPU - Model: efficientnet-b0



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

NCNN 20200916

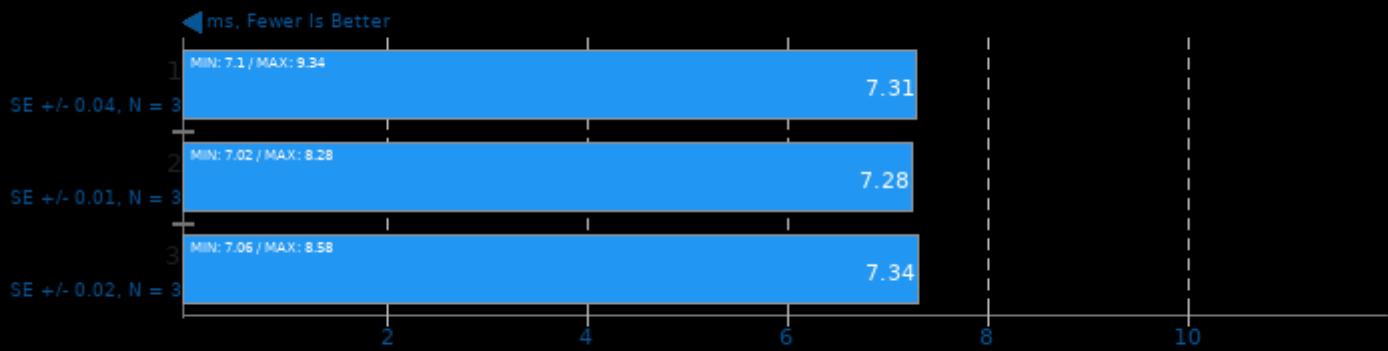
Target: CPU - Model: mnasnet



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

NCNN 20200916

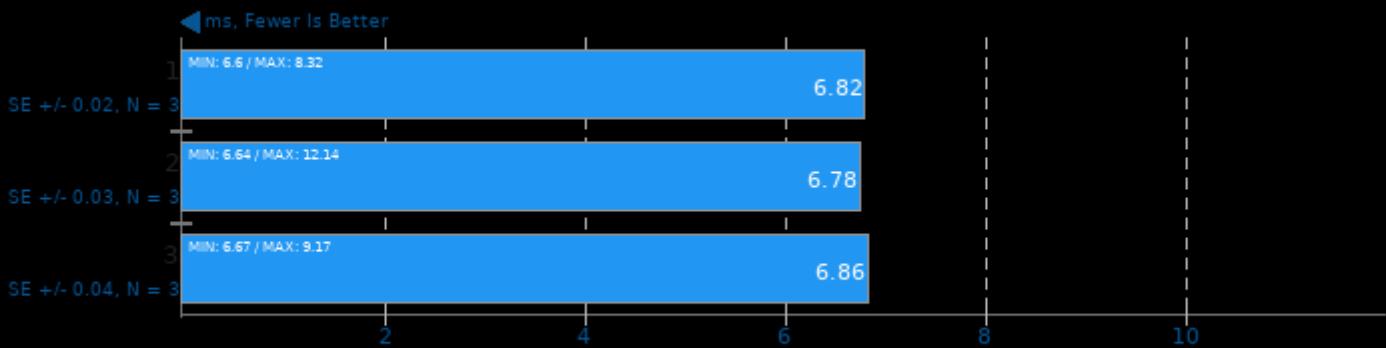
Target: CPU - Model: shufflenet-v2



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

NCNN 20200916

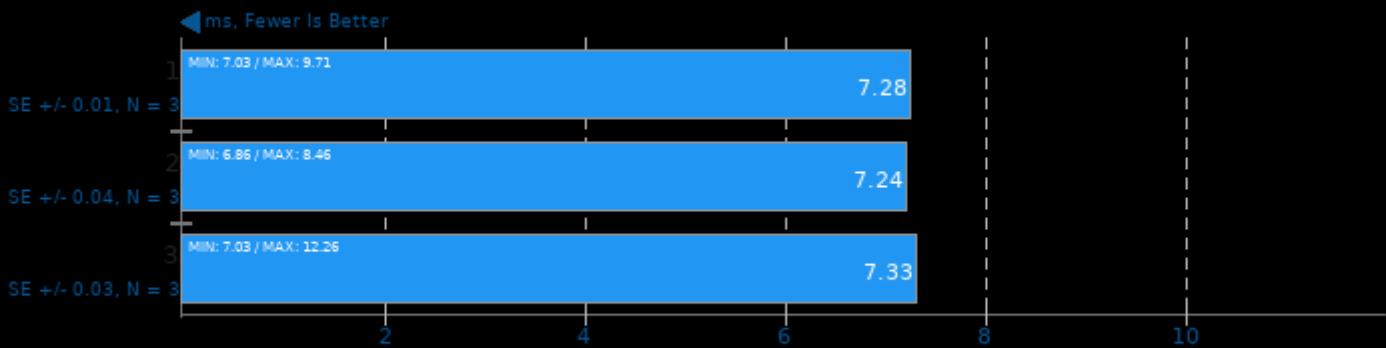
Target: CPU-v3-v3 - Model: mobilenet-v3



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

NCNN 20200916

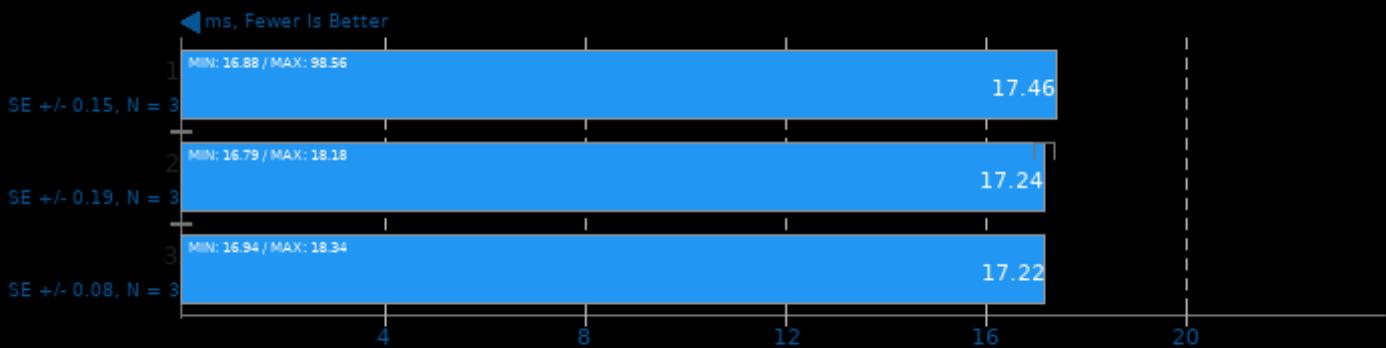
Target: CPU-v2-v2 - Model: mobilenet-v2



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

NCNN 20200916

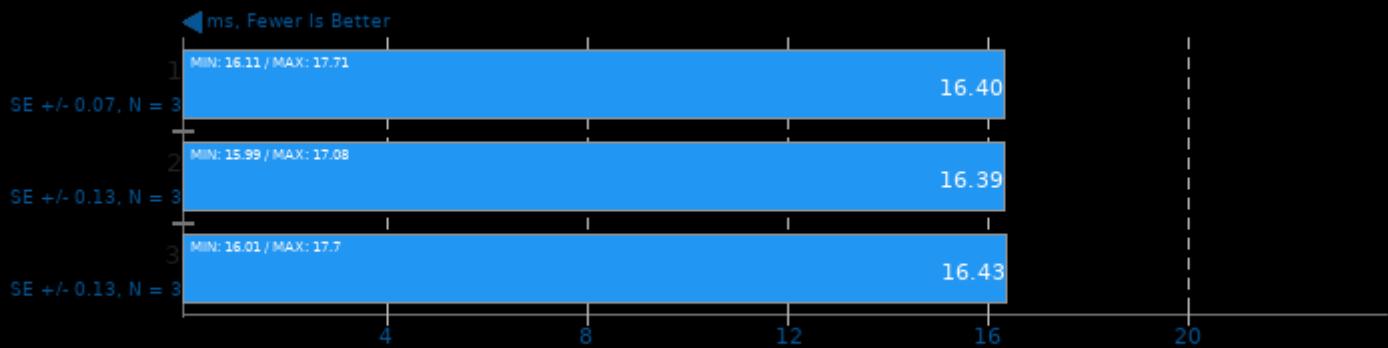
Target: CPU - Model: mobilenet



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

NCNN 20200916

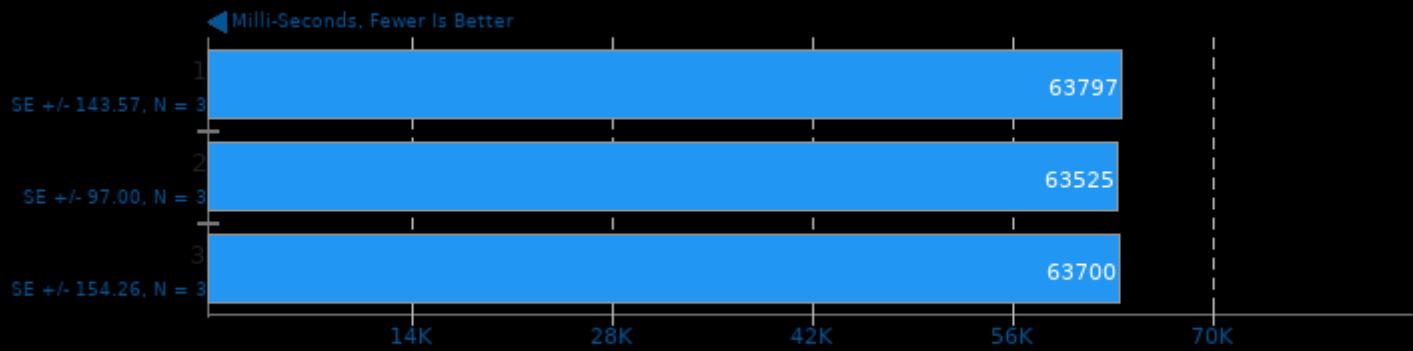
Target: CPU - Model: squeezeNet



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

Caffe 2020-02-13

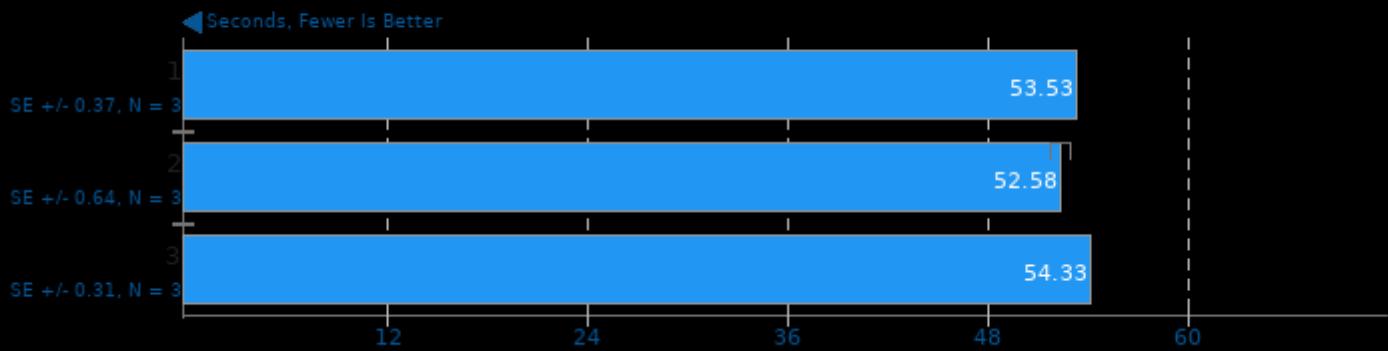
Model: AlexNet - Acceleration: CPU - Iterations: 100



1. (CXX) g++ options: -fPIC -O3 -rdynamic -lglog -lgflags -lprotobuf -lpthread -lsz -lz -ldl -lm -llmdb -lopenblas

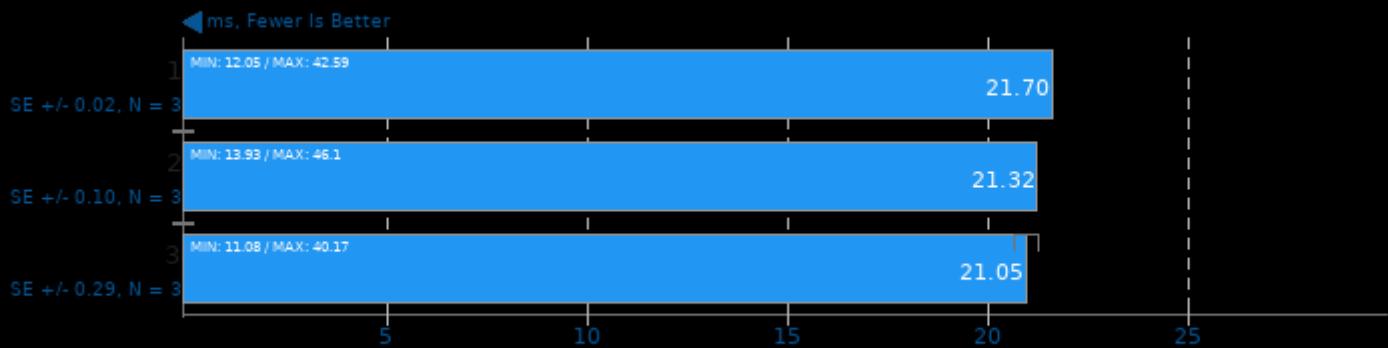
Milpack Benchmark

Benchmark: scikit_ica



NCNN 20200916

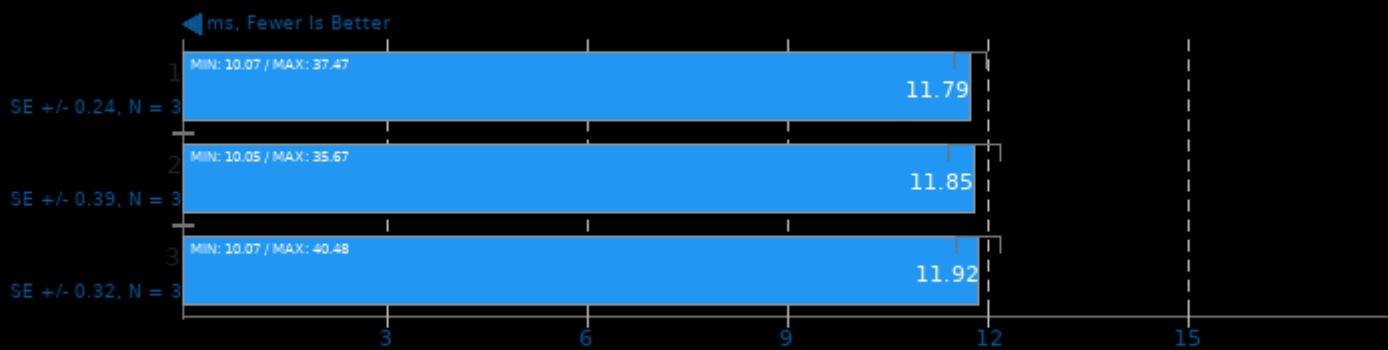
Target: Vulkan GPU - Model: yolov4-tiny



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

NCNN 20200916

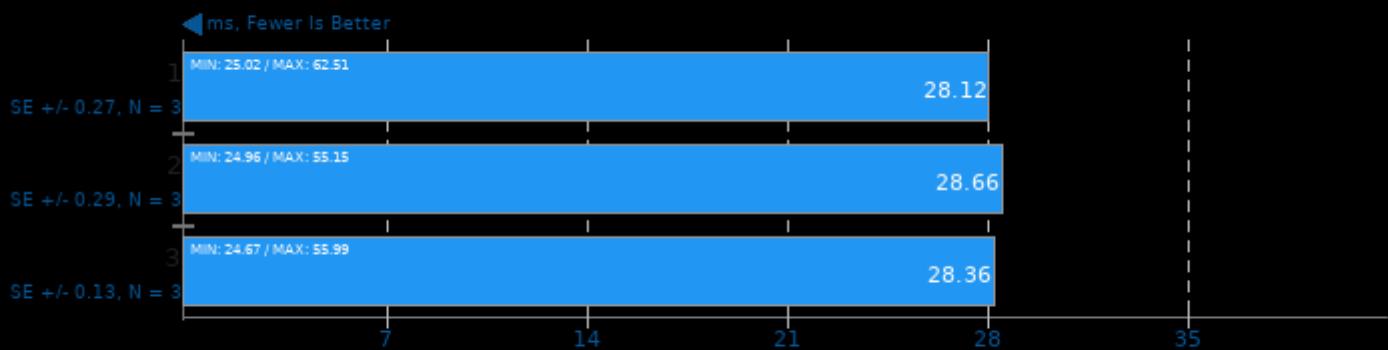
Target: Vulkan GPU - Model: resnet50



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

NCNN 20200916

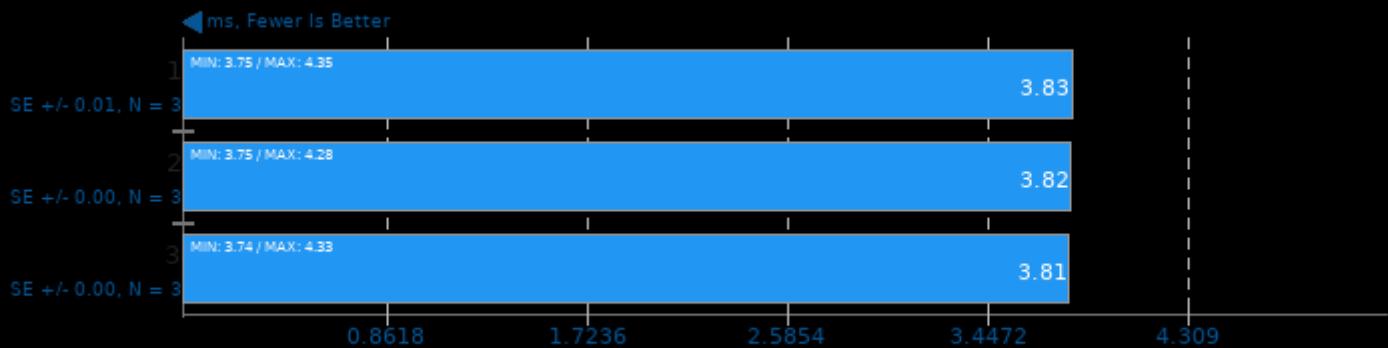
Target: Vulkan GPU - Model: alexnet



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

NCNN 20200916

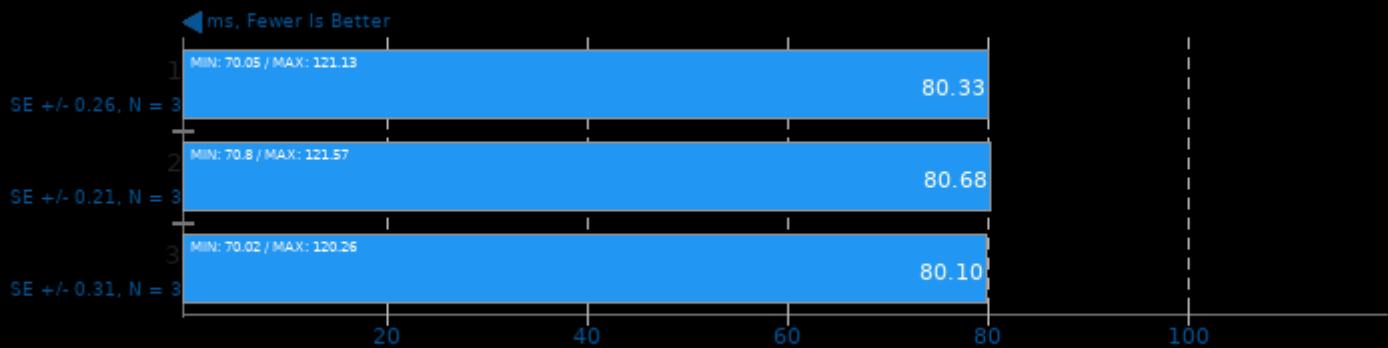
Target: Vulkan GPU - Model: resnet18



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

NCNN 20200916

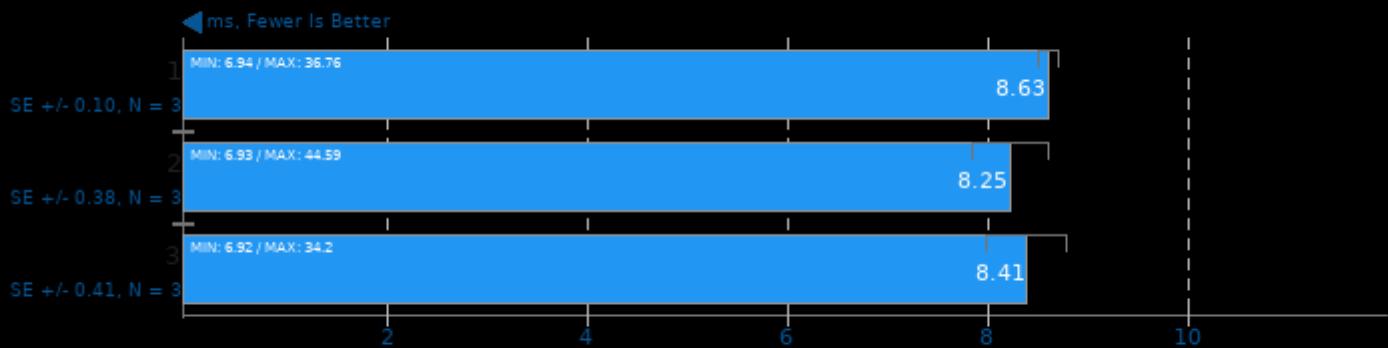
Target: Vulkan GPU - Model: vgg16



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

NCNN 20200916

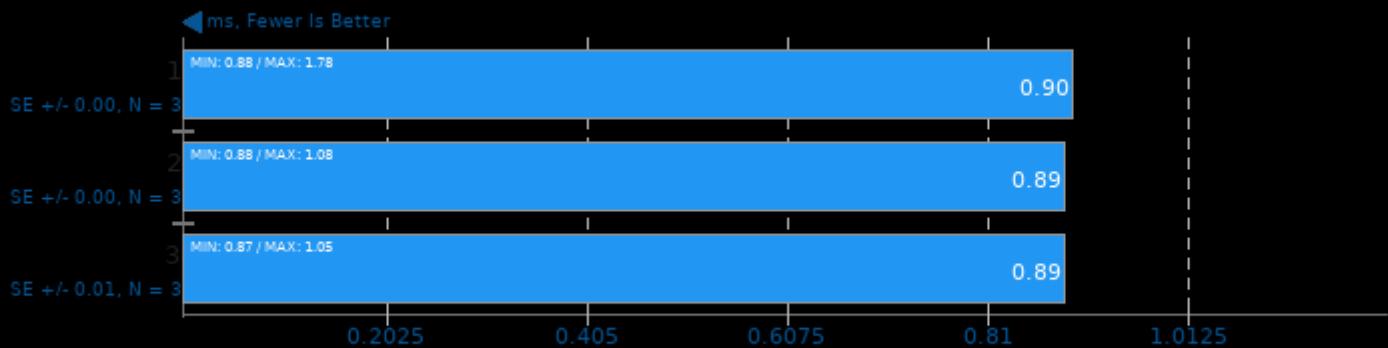
Target: Vulkan GPU - Model: googlenet



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

NCNN 20200916

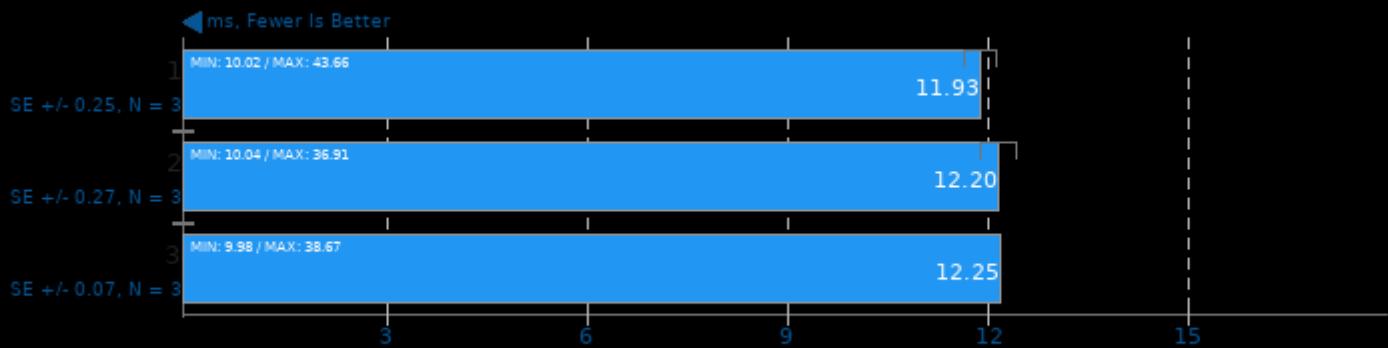
Target: Vulkan GPU - Model: blazeface



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

NCNN 20200916

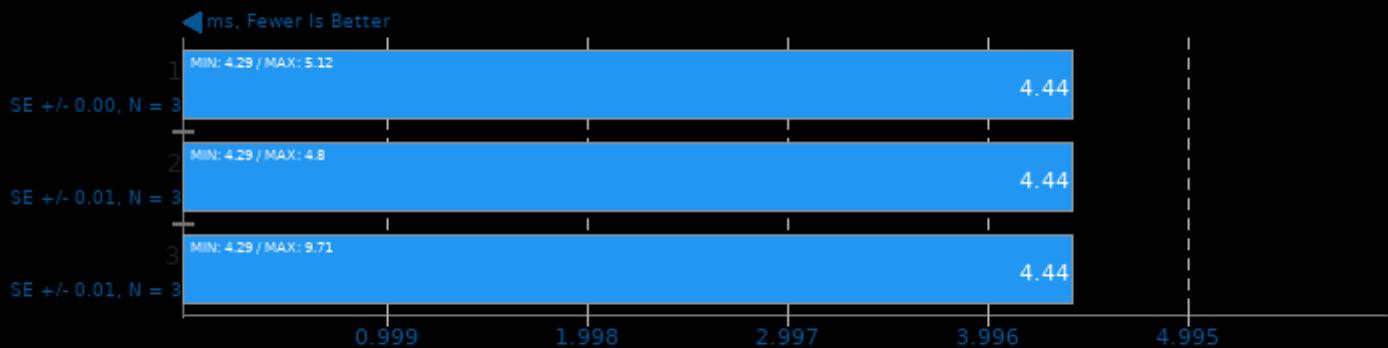
Target: Vulkan GPU - Model: efficientnet-b0



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

NCNN 20200916

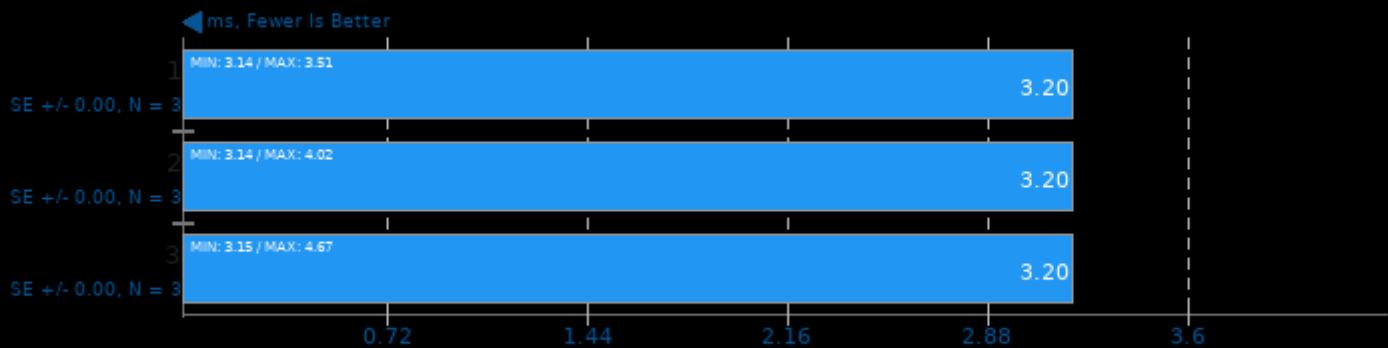
Target: Vulkan GPU - Model: mnasnet



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

NCNN 20200916

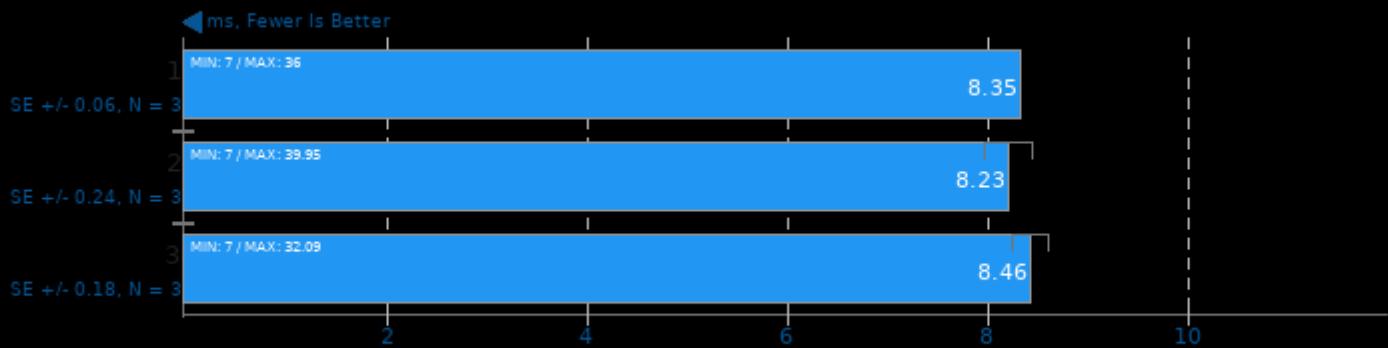
Target: Vulkan GPU - Model: shufflenet-v2



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

NCNN 20200916

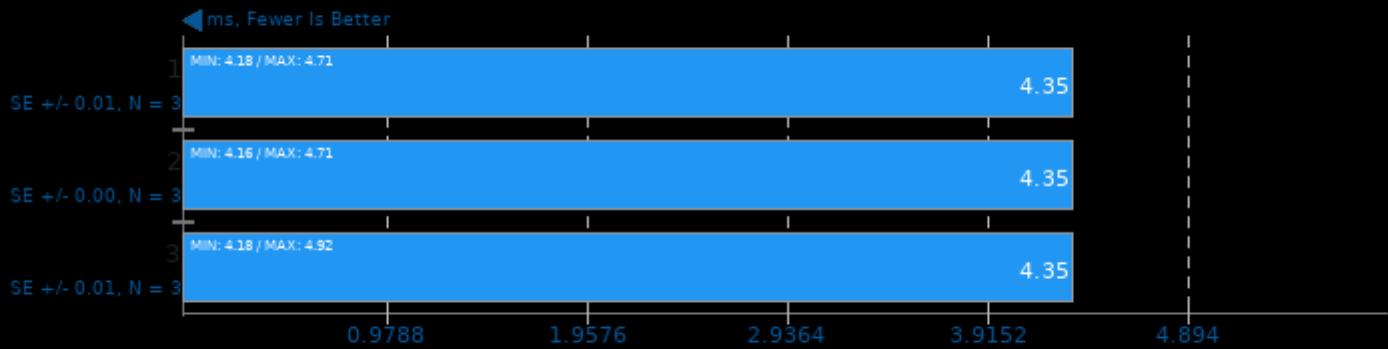
Target: Vulkan GPU-v3-v3 - Model: mobilenet-v3



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

NCNN 20200916

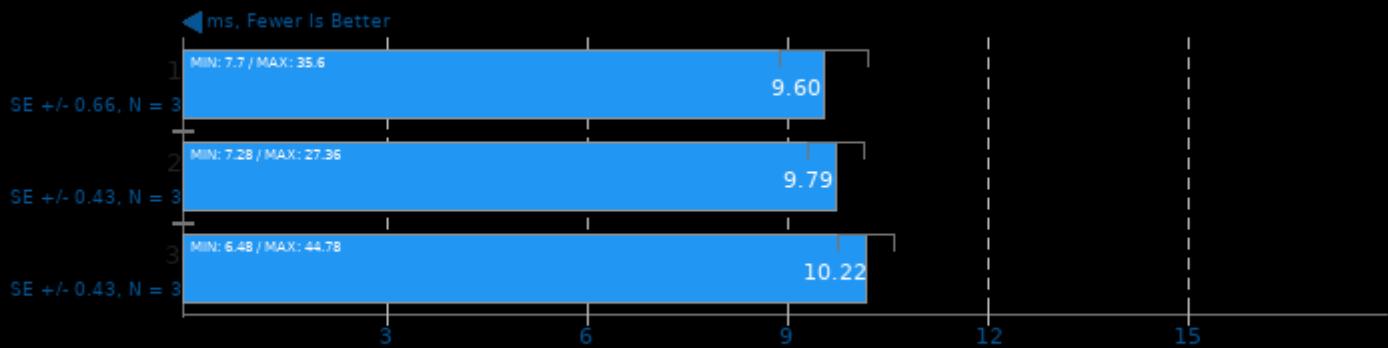
Target: Vulkan GPU-v2-v2 - Model: mobilenet-v2



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

NCNN 20200916

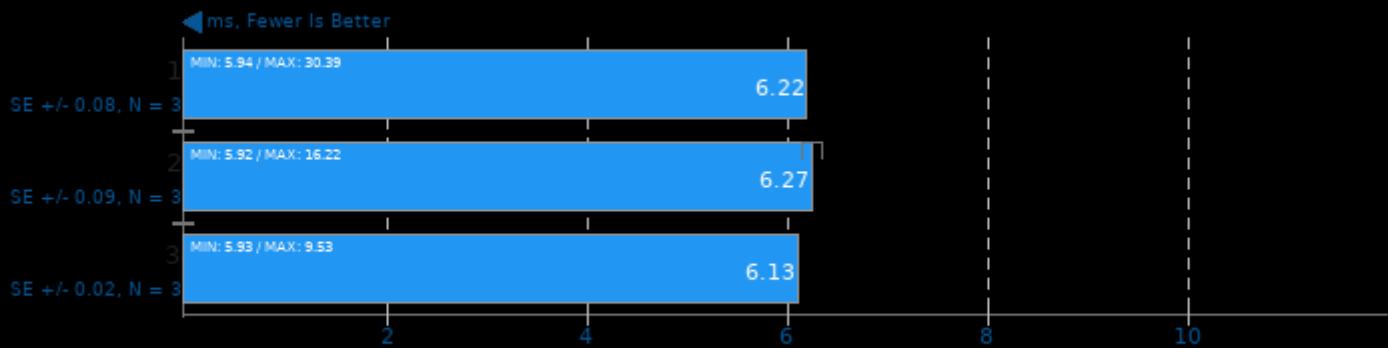
Target: Vulkan GPU - Model: mobilenet



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

NCNN 20200916

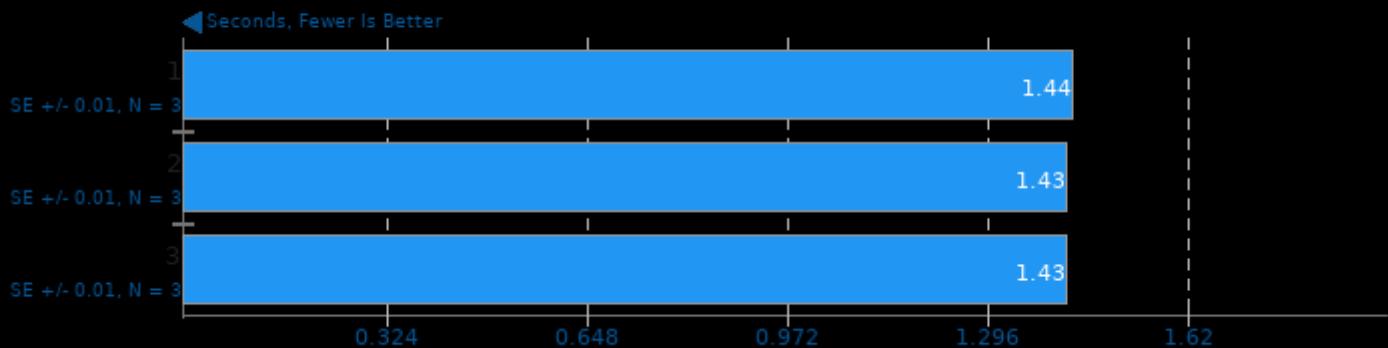
Target: Vulkan GPU - Model: squeezenet



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

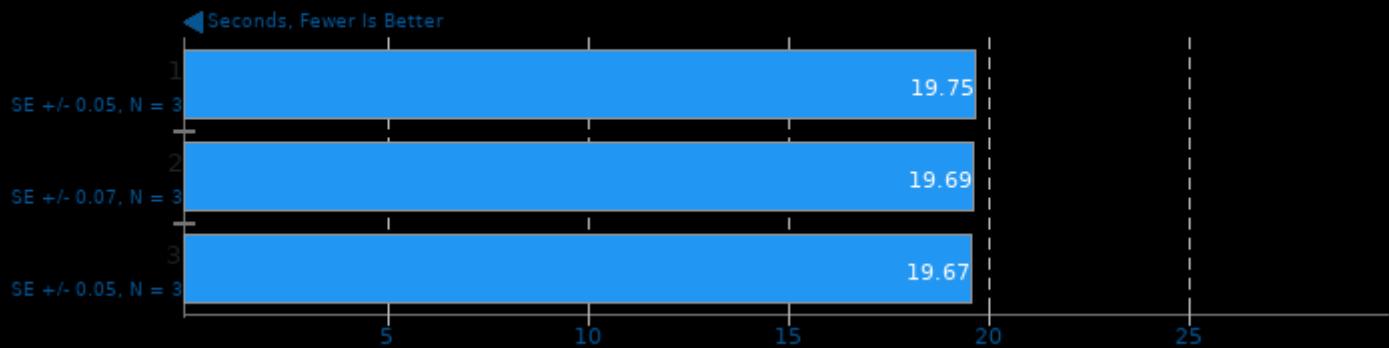
Milpack Benchmark

Benchmark: scikit_linearridge_regression



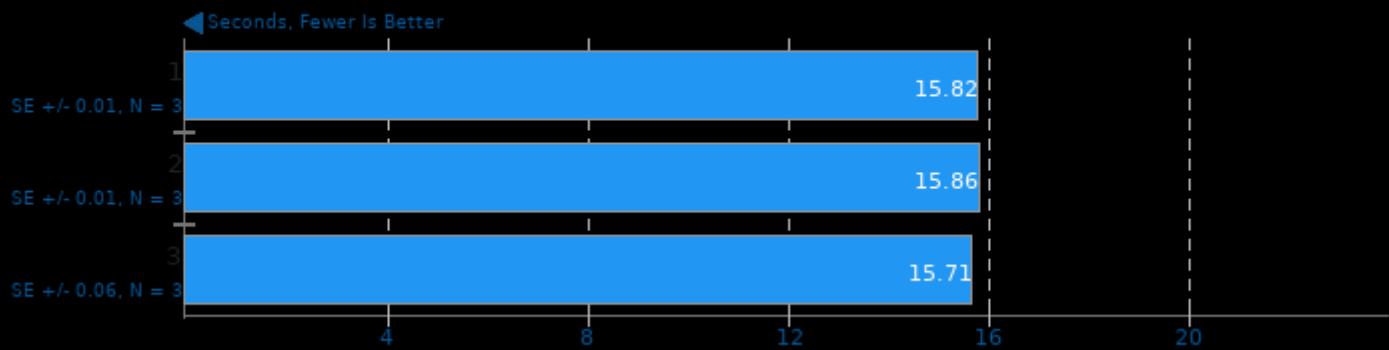
Milpack Benchmark

Benchmark: scikit_svm



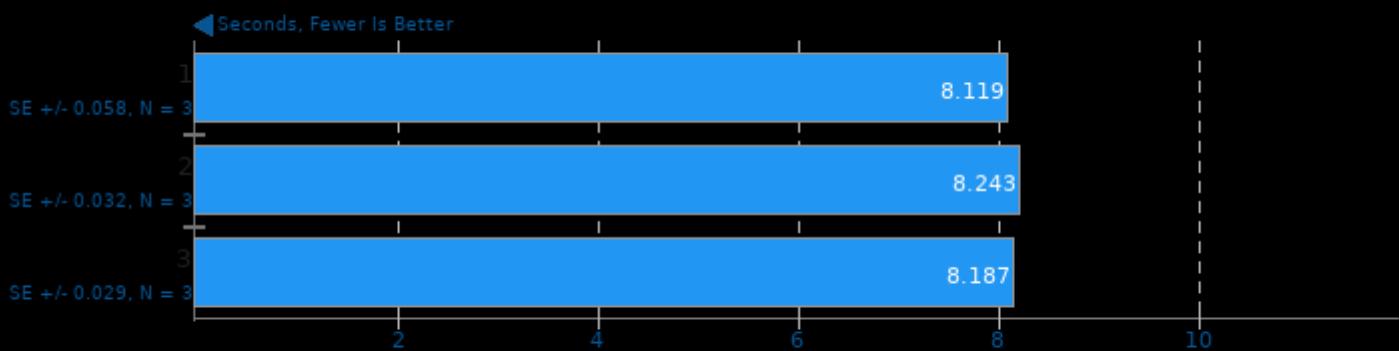
Dolfyn 0.527

Computational Fluid Dynamics



Timed MAFFT Alignment 7.471

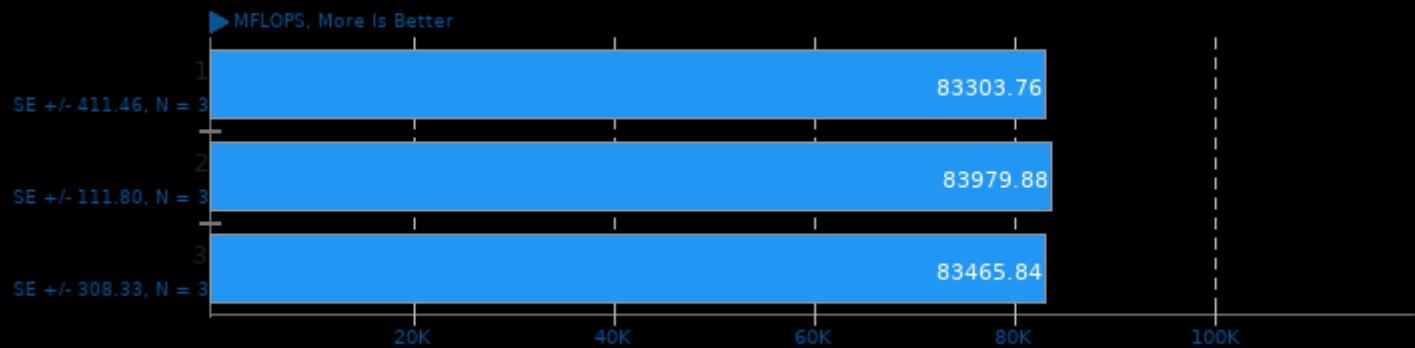
Multiple Sequence Alignment - LSU RNA



1. (CC) gcc options: -std=c99 -O3 -lm -lpthread

FFTE 7.0

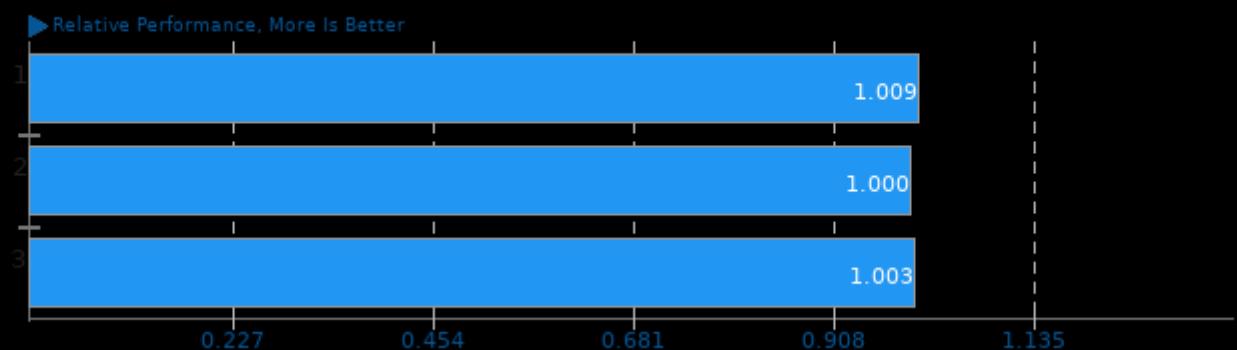
N=256, 3D Complex FFT Routine



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

Geometric Mean Of Bioinformatics Tests

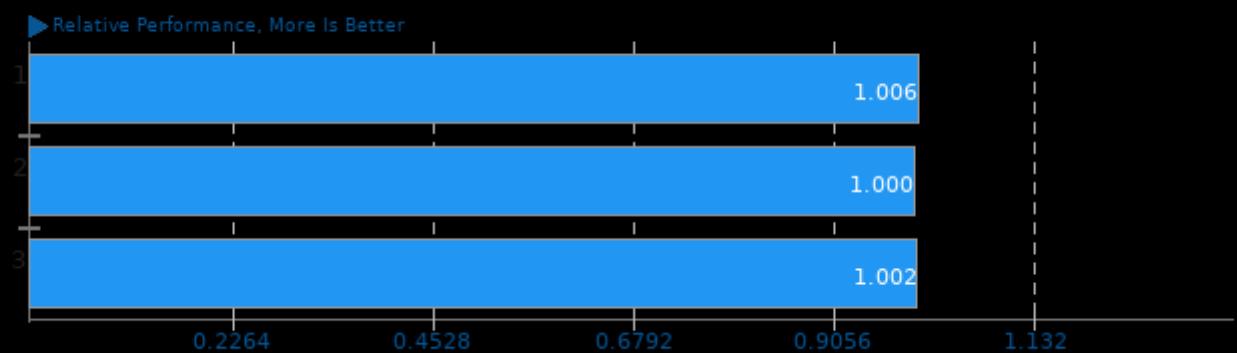
Result Composite - TR 3960X WK



Geometric mean based upon tests: pts/hmmer and pts/mafft

Geometric Mean Of C/C++ Compiler Tests

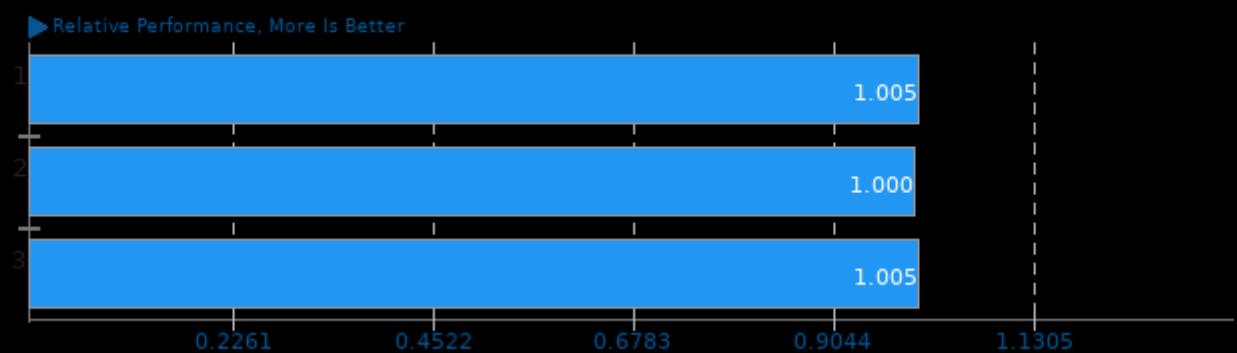
Result Composite - TR 3960X WK



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

Geometric Mean Of CPU Massive Tests

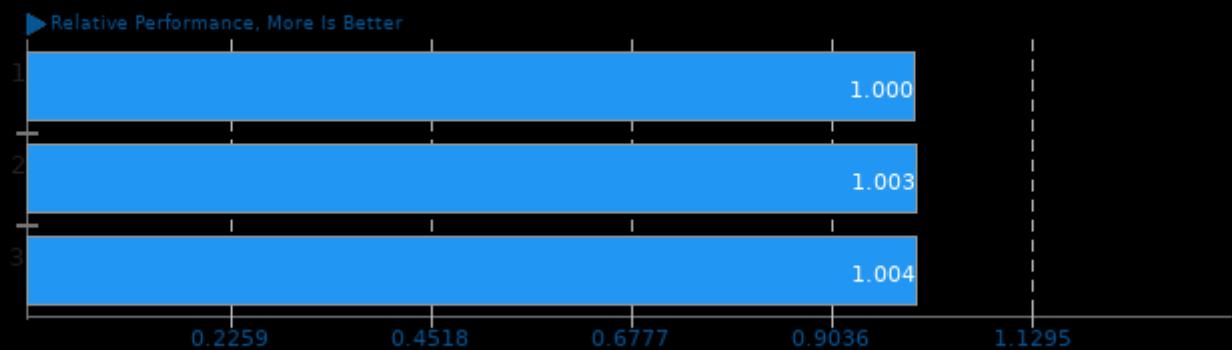
Result Composite - TR 3960X WK



Geometric mean based upon tests: pts/dolfyn, pts/hint, pts/hmmer and pts/mafft

Geometric Mean Of Fortran Tests

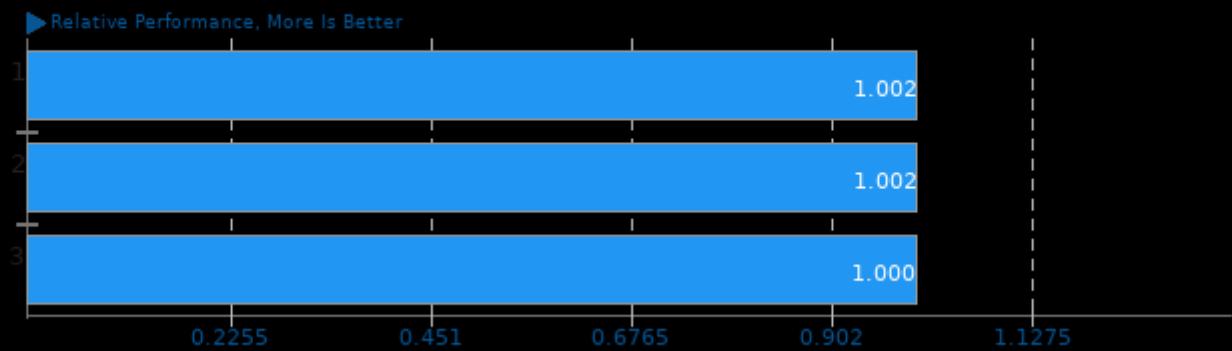
Result Composite - TR 3960X WK



Geometric mean based upon tests: pts/dolfyn and pts/ffte

Geometric Mean Of HPC - High Performance Computing Tests

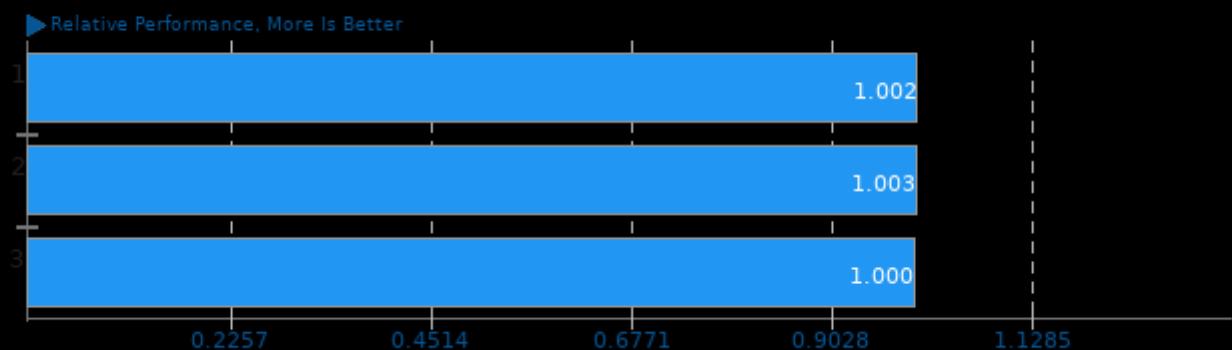
Result Composite - TR 3960X WK



Geometric mean based upon tests: pts/ffte, pts/gromacs, pts/dolfyn, pts/hmmer, pts/mafft, pts/ncnn, pts/caffe and pts/mlpack

Geometric Mean Of Machine Learning Tests

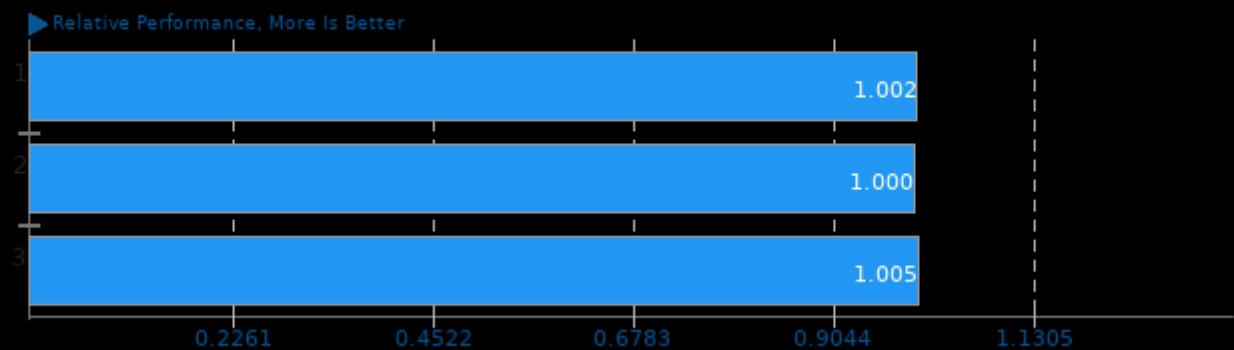
Result Composite - TR 3960X WK



Geometric mean based upon tests: pts/ncnn, pts/caffe and pts/mlpack

Geometric Mean Of Molecular Dynamics Tests

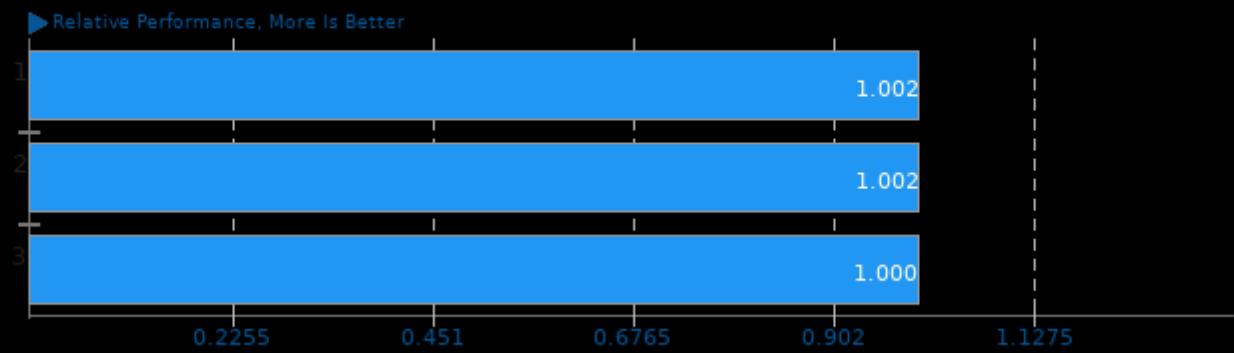
Result Composite - TR 3960X WK



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

Geometric Mean Of NVIDIA GPU Compute Tests

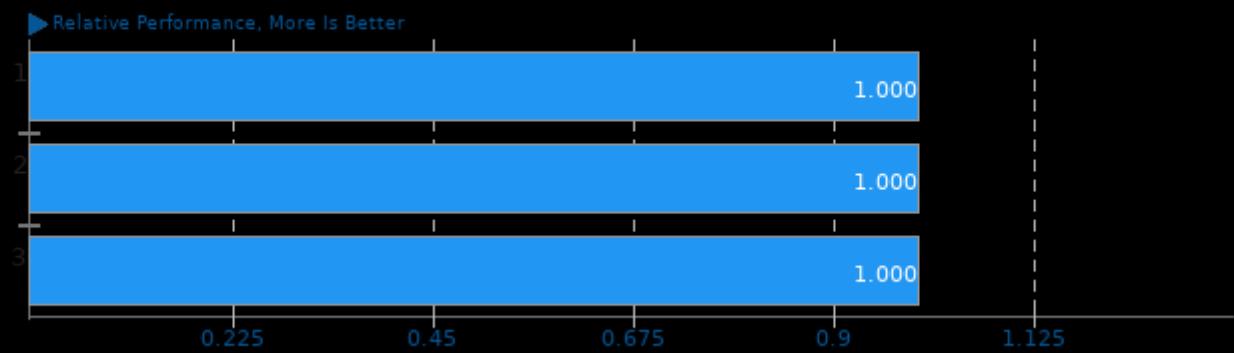
Result Composite - TR 3960X WK



Geometric mean based upon tests: pts/gromacs, pts/caffe and pts/ncnn

Geometric Mean Of Python Tests

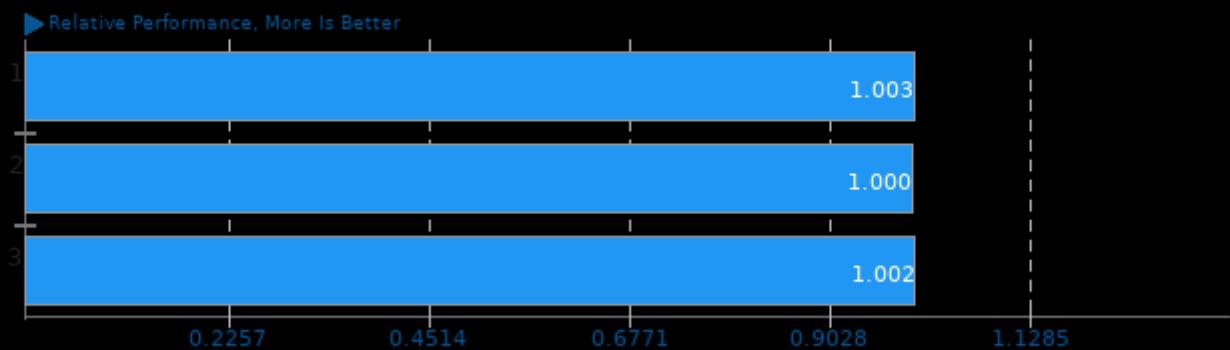
Result Composite - TR 3960X WK



Geometric mean based upon tests: pts/caffe and pts/mlpack

Geometric Mean Of Scientific Computing Tests

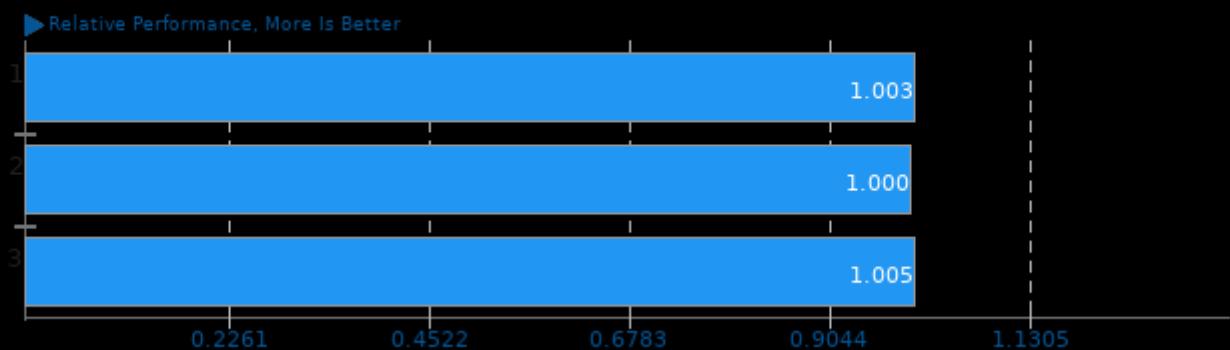
Result Composite - TR 3960X WK



Geometric mean based upon tests: pts/ffte, pts/gromacs, pts/dolfin, pts/hmmer and pts/mafft

Geometric Mean Of Single-Threaded Tests

Result Composite - TR 3960X WK



Geometric mean based upon tests: pts/byte and pts/hint

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 15:39.