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Broadwell 2021

Intel Core i7-5600U testing with a LENOVO 20BSCTO1WW (N14ET49W 1.27 BIOS) and Intel HD 5500 3GB on Ubuntu 20.10 via the Phoronix Test Suite.

Automated Executive Summary

2 had the most wins, coming in first place for 39% of the tests.

Based on the geometric mean of all complete results, the fastest (2) was 1.003x the speed of the slowest (R1). 3 was 0.999x the speed of 2 and R1 was 0.998x the speed of 3.

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

oneDNN (Harness: Matrix Multiply Batch Shapes Transformer - Data Type: f32 - Engine: CPU) at 1.108x
CLOMP (Static OMP Speedup) at 1.083x
NCNN (Target: Vulkan GPU - Model: mnasnet) at 1.034x
NCNN (Target: Vulkan GPU - Model: blazeface) at 1.033x
oneDNN (Harness: IP Shapes 3D - Data Type: u8s8f32 - Engine: CPU) at 1.031x
NCNN (Target: Vulkan GPU - Model: regnety_400m) at 1.025x
NCNN (Target: Vulkan GPU - Model: googlenet) at 1.023x
NCNN (Target: Vulkan GPU - Model: efficientnet-b0) at 1.022x
VkResample (Upscale: 2x - Precision: Double) at 1.022x

Timed MAFFT Alignment (Multiple Sequence Alignment - LSU RNA) at 1.021x.

Test Systems:

R1

2

3

Processor: Intel Core i7-5600U @ 3.20GHz (2 Cores / 4 Threads), Motherboard: LENOVO 20BSCTO1WW (N14ET49W 1.27 BIOS), Chipset: Intel Broadwell-U-OPI, Memory: 8GB, Disk: 128GB SAMSUNG MZNTE128, Graphics: Intel HD 5500 3GB (950MHz), Audio: Intel Broadwell-U Audio, Network: Intel I218-LM + Intel 7265

OS: Ubuntu 20.10, Kernel: 5.9.1-050901-generic (x86_64), Desktop: GNOME Shell 3.38.1, Display Server: X Server 1.20.9, Display Driver: modesetting 1.20.9, OpenGL: 4.6 Mesa 21.0.0-devel (git-bd69765 2021-01-01 groovy-oibaf-ppa), OpenCL: OpenCL 3.0, Vulkan: 1.2.145, Compiler: GCC 10.2.0, File-System: ext4, Screen Resolution: 1920x1080

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,objc++,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: intel_cpufreq ondemand - CPU Microcode: 0x2f - Thermal 2.3

Security Notes: itlb_multihit: KVM: Mitigation of VMX disabled + l1tf: Mitigation of PTE Inversion; VMX: conditional cache flushes SMT vulnerable + mds: Mitigation of Clear buffers; SMT vulnerable + meltdown: Mitigation of PTI + 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 generic retpoline IBPB: conditional IBRS_FW STIBP: conditional RSB filling + srbs: Mitigation of Microcode + tsx_async_abort: Mitigation of Clear buffers; SMT vulnerable

	R1	2	3
VkFFT (Benchmark Score)	1126	1122	1124
Normalized	100%	99.64%	99.82%
Standard Deviation	0.4%	0.3%	0.2%
Build2 - Time To Compile (sec)	919.504	918.462	906.249
Normalized	98.56%	98.67%	100%
Standard Deviation	0.1%	0.1%	0.2%
Timed FFmpeg Compilation - Time To Compile (sec)	341.928	340.639	340.201
Normalized	99.49%	99.87%	100%
Standard Deviation	0.1%	0.1%	0.2%
CLOMP - Static OMP Speedup (Speedup)	1.3	1.2	1.3
Normalized	100%	92.31%	100%
Standard Deviation	4.1%	0%	0%
BRL-CAD - V.P.M (VGR Performance Metric)	14580	14562	14504
Normalized	100%	99.88%	99.48%

NCNN - CPU - regnety_400m (ms)	27.82	27.72	27.64
Normalized	99.35%	99.71%	100%
Standard Deviation	0.2%	0.4%	0%
NCNN - CPU - squeezenet_ss (ms)	71.33	71.03	71.26
Normalized	99.58%	100%	99.68%
Standard Deviation	0.3%	0.1%	0.1%
NCNN - CPU - yolov4-tiny (ms)	79.44	79.04	78.88
Normalized	99.3%	99.8%	100%
Standard Deviation	0.6%	0.3%	0.3%
NCNN - CPU - resnet50 (ms)	101.11	101.17	101.01
Normalized	99.9%	99.84%	100%
Standard Deviation	0.2%	0.2%	0.1%
NCNN - CPU - alexnet (ms)	36.84	37.02	36.81
Normalized	99.92%	99.43%	100%
Standard Deviation	0.9%	0.7%	0.4%
NCNN - CPU - resnet18 (ms)	45.51	45.65	45.51
Normalized	100%	99.69%	100%
Standard Deviation	0.3%	0.5%	0.1%
NCNN - CPU - vgg16 (ms)	153.18	152.88	152.91
Normalized	99.8%	100%	99.98%
Standard Deviation	0.2%	0.3%	0.2%
NCNN - CPU - googlenet (ms)	47.18	47.01	47.16
Normalized	99.64%	100%	99.68%
Standard Deviation	0.3%	0.1%	0.4%
NCNN - CPU - blazeface (ms)	5.64	5.62	5.63
Normalized	99.65%	100%	99.82%
Standard Deviation	0.2%	0.2%	0.2%
NCNN - CPU - efficientnet-b0 (ms)	22.50	22.11	22.30
Normalized	98.27%	100%	99.15%
Standard Deviation	3.1%	2.8%	3%
NCNN - CPU - mnasnet (ms)	14.26	14.05	14.16
Normalized	98.53%	100%	99.22%
Standard Deviation	4.5%	5.1%	4.9%
NCNN - CPU - shufflenet-v2 (ms)	21.40	21.34	21.30
Normalized	99.53%	99.81%	100%
Standard Deviation	4.6%	5.1%	4.7%
NCNN - CPU-v3-v3 - mobilenet-v3 (ms)	12.63	12.56	12.65
Normalized	99.45%	100%	99.29%
Standard Deviation	2.6%	1.8%	2.6%
NCNN - CPU-v2-v2 - mobilenet-v2 (ms)	14.55	14.44	14.53
Normalized	99.24%	100%	99.38%
Standard Deviation	2.3%	1.6%	2.1%
NCNN - CPU - mobilenet (ms)	61.49	61.38	61.61
Normalized	99.82%	100%	99.63%
Standard Deviation	0.2%	0.2%	0.4%
NCNN - Vulkan GPU - regnety_400m (ms)	27.81	27.13	27.25
Normalized	97.55%	100%	99.56%
Standard Deviation	0.4%	3.8%	3.4%
NCNN - Vulkan GPU - squeezenet_ss (ms)	71.23	70.97	71.18
Normalized	99.63%	100%	99.7%
Standard Deviation	0.2%	0.3%	0.2%
NCNN - Vulkan GPU - yolov4-tiny (ms)	79.35	78.90	79.12
Normalized	99.43%	100%	99.72%
Standard Deviation	0.1%	0.1%	0.2%
NCNN - Vulkan GPU - resnet50 (ms)	101.55	101.22	101.23

Normalized	99.68%	100%	99.99%
Standard Deviation	0.3%	0.4%	0.5%
NCNN - Vulkan GPU - alexnet (ms)	37.08	36.70	36.76
Normalized	98.98%	100%	99.84%
Standard Deviation	1.3%	1.1%	0.5%
NCNN - Vulkan GPU - resnet18 (ms)	45.64	45.41	45.73
Normalized	99.5%	100%	99.3%
Standard Deviation	0.4%	0.2%	1.1%
NCNN - Vulkan GPU - vgg16 (ms)	153.00	152.98	152.93
Normalized	99.95%	99.97%	100%
Standard Deviation	0.1%	0.2%	0.3%
NCNN - Vulkan GPU - googlenet (ms)	47.33	46.26	46.70
Normalized	97.74%	100%	99.06%
Standard Deviation	0.6%	3%	2.8%
NCNN - Vulkan GPU - blazeface (ms)	5.65	5.48	5.47
Normalized	96.81%	99.82%	100%
Standard Deviation	0.3%	4.9%	5.1%
NCNN - Vulkan GPU - efficientnet-b0 (ms)	22.46	21.97	22.01
Normalized	97.82%	100%	99.82%
Standard Deviation	2.3%	5.2%	4.7%
NCNN - Vulkan GPU - mnasnet (ms)	14.45	14.13	13.98
Normalized	96.75%	98.94%	100%
Standard Deviation	3.1%	5.8%	5.6%
NCNN - Vulkan GPU - shufflenet-v2 (ms)	21.53	21.36	21.21
Normalized	98.51%	99.3%	100%
Standard Deviation	3%	4.7%	4.7%
NCNN - Vulkan GPU-v3-v3 - mobilenet-v3	12.69	12.57	12.61
Normalized	99.05%	100%	99.68%
Standard Deviation	0.9%	1.9%	2%
NCNN - Vulkan GPU-v2-v2 - mobilenet-v2	14.56	14.47	14.54
Normalized	99.38%	100%	99.52%
Standard Deviation	1.6%	1.8%	2.3%
NCNN - Vulkan GPU - mobilenet (ms)	61.55	61.41	61.47
Normalized	99.77%	100%	99.9%
Standard Deviation	0.2%	0.1%	0%
oneDNN - R.N.N.T - u8s8f32 - CPU (ms)	20853	20913	20848
Normalized	99.97%	99.69%	100%
Standard Deviation	0.1%	0.3%	0%
oneDNN - R.N.N.T - bf16bf16bf16 - CPU (ms)	20903	20853	20858
Normalized	99.76%	100%	99.98%
Standard Deviation	0.2%	0.1%	0%
oneDNN - R.N.N.T - f32 - CPU (ms)	20831	20852	20812
Normalized	99.91%	99.81%	100%
Standard Deviation	0.2%	0.4%	0.3%
Warsow - 1280 x 1024 (FPS)	70.7	70.5	69.5
Normalized	100%	99.72%	98.3%
Standard Deviation	0.2%	1.1%	3.3%
VKMark - 1920 x 1080 (VKMark Score)	465	461	463
Normalized	100%	99.14%	99.57%
Standard Deviation	0.7%	0.3%	0.9%
VKMark - 1280 x 1024 (VKMark Score)	693	685	689
Normalized	100%	98.85%	99.42%
Standard Deviation	0.2%	0.6%	0.4%
VKMark - 800 x 600 (VKMark Score)	1676	1691	1670
Normalized	99.11%	100%	98.76%

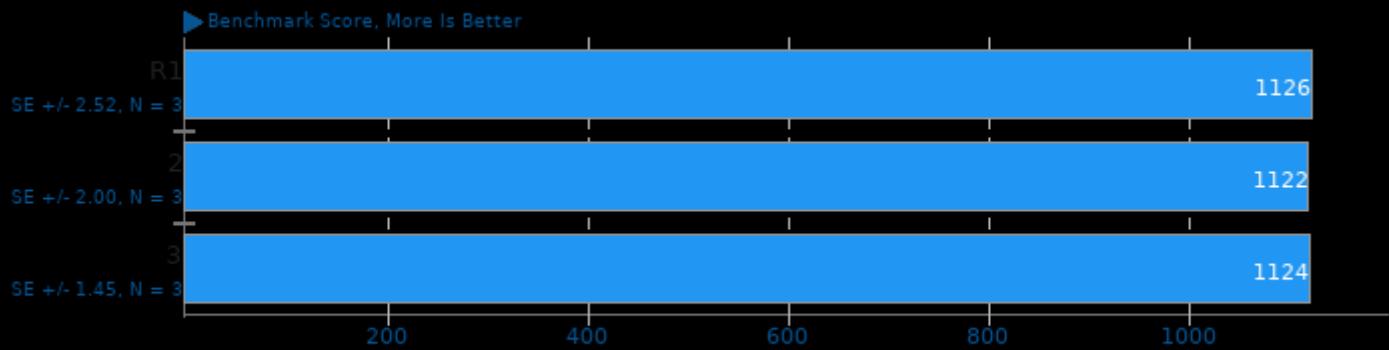
VKMark - 1024 x 768 (VKMark Score)	Standard Deviation Normalized	0.8% 99.91%	0.1% 100%	1.1% 1092 99.54%
Timed HMMer Search - P.D.S (sec)	Standard Deviation	1.1%	1%	0.7%
oneDNN - R.N.N.I - f32 - CPU (ms)	129.006	129.092	129.220	
oneDNN - R.N.N.I - bf16bf16bf16 - CPU (ms)	Normalized Standard Deviation	100% 0.2%	99.93% 0.2%	99.83% 0.2%
oneDNN - R.N.N.I - u8s8f32 - CPU (ms)	11261	11332	11244	
Timed Eigen Compilation - Time To Compile (sec)	Normalized Standard Deviation	99.84% 0.7%	99.22% 0.2%	100% 0.7%
Node.js V8 Web Tooling Benchmark (runs/s)	11309	11320	11215	
SQLite Speedtest - Timed Time - Size 1,000 (sec)	Normalized Standard Deviation	99.17% 1%	99.07% 0.7%	100% 0.2%
Unpacking Firefox - firefox-84.0.source.tar.xz (sec)	11297	11317	11200	
Warssow - 1920 x 1080 (FPS)	Normalized Standard Deviation	99.14% 0.4%	98.97% 0.2%	100% 0.3%
Libplacebo - av1_grain_lap (FPS)	116.413	116.860	116.035	
simdjson - Kostya (GB/s)	Normalized Standard Deviation	99.68% 0.1%	99.29% 0.1%	100% 0.2%
simdjson - LargeRand (GB/s)	95.581	94.577	95.187	
Libplacebo - hdr_peakdetect (FPS)	Normalized Standard Deviation	99.04% 0.5%	99.86% 1.7%	100% 0.4%
Libplacebo - polar_nocompute (FPS)	27.462	27.404	27.364	
simdjson - PartialTweets (GB/s)	Normalized Standard Deviation	98.95% 1%	100% 0.1%	99.36% 0.1%
Libplacebo - deband_heavy (FPS)	45.6	45.8	45.8	
Libplacebo - av1_grain_lap (FPS)	Normalized Standard Deviation	99.64% 2.9%	99.85% 2.9%	100% 2.5%
Libplacebo - polar_nocompute (FPS)	537.11	534.51	534.15	
simdjson - DistinctUserID (GB/s)	Normalized Standard Deviation	100% 0.1%	99.52% 0.6%	99.45% 0.4%
Libplacebo - deband_heavy (FPS)	32876	32911	32916	
Libplacebo - polar_nocompute (FPS)	Normalized Standard Deviation	99.88% 1.5%	99.99% 1.9%	100% 2.1%
Libplacebo - deband_heavy (FPS)	23.73	23.72	23.73	
simdjson - PartialTweets (GB/s)	Normalized Standard Deviation	100% 0.1%	99.96% 0.1%	100% 0.1%
Libplacebo - deband_heavy (FPS)	38.65	38.61	38.63	
Libplacebo - polar_nocompute (FPS)	Normalized Standard Deviation	100% 0.1%	99.9% 0%	99.95% 0.1%
simdjson - DistinctUserID (GB/s)	0.58	0.58	0.58	
Libplacebo - deband_heavy (FPS)	Standard Deviation	0%	0%	0%
simdjson - PartialTweets (GB/s)	0.59	0.59	0.59	
Libplacebo - polar_nocompute (FPS)	Standard Deviation	0%	0%	0%

PHPBench - P.B.S (Score)	529100	528447	530230
Normalized	99.79%	99.66%	100%
Standard Deviation	0.2%	0.1%	0.1%
oneDNN - IP Shapes 3D - u8s8f32 - CPU (ms)	7.01952	6.80809	6.81423
Normalized	96.99%	100%	99.91%
Standard Deviation	3.8%	2.5%	5.9%
Betsy GPU Compressor - ETC1 - Highest	16.148	16.177	16.208
Normalized	100%	99.82%	99.63%
Standard Deviation	3.1%	2.9%	2.9%
Betsy GPU Compressor - ETC2 RGB -	16.185	16.221	16.244
Highest (sec)			
Normalized	100%	99.78%	99.64%
Standard Deviation	4.4%	2.8%	3%
WavPack Audio Encoding - WAV To WavPack (sec)	18.946	18.948	18.946
Normalized	100%	99.99%	100%
Standard Deviation	0%	0.1%	0.1%
Cryptsetup - T.X.5.D (MiB/s)	315.0	315.5	315.4
Normalized	99.84%	100%	99.97%
Standard Deviation	0.3%	0.6%	0.3%
Cryptsetup - T.X.5.E (MiB/s)	314.9	315.7	314.4
Normalized	99.75%	100%	99.59%
Standard Deviation	0.4%	0.3%	0.1%
Cryptsetup - S.X.5.D (MiB/s)	488.7	490.5	487.8
Normalized	99.63%	100%	99.45%
Standard Deviation	0.4%	0.4%	0.2%
Cryptsetup - S.X.5.E (MiB/s)	505.2	506.8	506.4
Normalized	99.68%	100%	99.92%
Standard Deviation	0.3%	0.2%	0.3%
Cryptsetup - A.X.5.D (MiB/s)	1285	1289	1273
Normalized	99.67%	100%	98.77%
Standard Deviation	0.9%	1.8%	0.8%
Cryptsetup - A.X.5.E (MiB/s)	1305	1288	1286
Normalized	100%	98.67%	98.54%
Standard Deviation	0.9%	0.9%	0.3%
Cryptsetup - T.X.2.D (MiB/s)	314.8	316.0	315.9
Normalized	99.62%	100%	99.97%
Standard Deviation	0.3%	0.1%	0.5%
Cryptsetup - T.X.2.E (MiB/s)	313.2	314.3	315.2
Normalized	99.37%	99.71%	100%
Standard Deviation	0.5%	0.2%	0.2%
Cryptsetup - S.X.2.D (MiB/s)	489.0	488.6	488.7
Normalized	100%	99.92%	99.94%
Standard Deviation	0.1%	0.6%	0.5%
Cryptsetup - S.X.2.E (MiB/s)	505.1	505.4	503.4
Normalized	99.94%	100%	99.6%
Standard Deviation	0.3%	0.3%	0.4%
Cryptsetup - A.X.2.D (MiB/s)	1577	1587	1560
Normalized	99.41%	100%	98.29%
Standard Deviation	1.2%	1.7%	1.3%
Cryptsetup - A.X.2.E (MiB/s)	1578	1581	1590
Normalized	99.19%	99.43%	100%
Standard Deviation	2.1%	1.7%	0.1%
Cryptsetup - PBKDF2-whirlpool	513672	513001	513336
Normalized	100%	99.87%	99.93%

	Standard Deviation	0.1%		0.1%
Cryptsetup - PBKDF2-sha512 (Iterations/sec)	1263348	1262843	1263345	
	Normalized	100%	99.96%	100%
	Standard Deviation	0.2%	0.3%	0.1%
Monkey Audio Encoding - WAV To APE (sec)	16.849	16.843	16.868	
	Normalized	99.96%	100%	99.85%
	Standard Deviation	0.8%	0.8%	0.5%
Ogg Audio Encoding - WAV To Ogg (sec)	27.955	27.942	27.924	
	Normalized	99.89%	99.94%	100%
	Standard Deviation	0.1%	0.1%	0.1%
Coremark - CoreMark Size 666 - I.P.S (Iterations/Sec)	60704	60083	60346	
	Normalized	100%	98.98%	99.41%
	Standard Deviation	0.6%	1.3%	0.8%
oneDNN - D.B.s - u8s8f32 - CPU (ms)	32.1137	31.6956	31.9691	
	Normalized	98.7%	100%	99.14%
	Standard Deviation	1.5%	1.8%	1.4%
oneDNN - D.B.s - f32 - CPU (ms)	29.1499	29.4045	29.4752	
	Normalized	100%	99.13%	98.9%
	Standard Deviation	1.9%	1.7%	1.4%
VkResample - 2x - Double (ms)	152.680	155.244	156.008	
	Normalized	100%	98.35%	97.87%
	Standard Deviation	1.9%	1.6%	0.7%
VkResample - 2x - Single (ms)	152.240	152.377	153.245	
	Normalized	100%	99.91%	99.34%
	Standard Deviation	0.6%	2.1%	1.6%
Opus Codec Encoding - WAV To Opus Encode (sec)	10.894	10.903	10.922	
	Normalized	100%	99.92%	99.74%
	Standard Deviation	0.7%	0.5%	0.7%
Timed MAFFT Alignment - M.S.A - LSU RNA (sec)	17.008	17.196	17.369	
	Normalized	100%	98.91%	97.92%
	Standard Deviation	1.1%	1.4%	0.1%
oneDNN - IP Shapes 1D - f32 - CPU (ms)	21.0040	21.0875	21.0772	
	Normalized	100%	99.6%	99.65%
	Standard Deviation	2.6%	2.2%	1.9%
oneDNN - IP Shapes 1D - u8s8f32 - CPU (ms)	13.2947	13.3325	13.4601	
	Normalized	100%	99.72%	98.77%
	Standard Deviation	1.1%	1.1%	1.1%
oneDNN - M.M.B.S.T - f32 - CPU (ms)	10.1094	9.12287	10.07928	
	Normalized	90.24%	100%	90.51%
	Standard Deviation	0.7%	0.4%	2.7%
oneDNN - M.M.B.S.T - u8s8f32 - CPU (ms)	15.4532	15.5448	15.5638	
	Normalized	100%	99.41%	99.29%
	Standard Deviation	0.4%	0.7%	0.2%
oneDNN - IP Shapes 3D - f32 - CPU (ms)	20.9080	20.5172	20.6251	
	Normalized	98.13%	100%	99.48%
	Standard Deviation	1.5%	1.1%	0.4%
oneDNN - C.B.S.A - u8s8f32 - CPU (ms)	33.8840	33.5003	33.4736	
	Normalized	98.79%	99.92%	100%
	Standard Deviation	0.7%	0.3%	0.2%
oneDNN - C.B.S.A - f32 - CPU (ms)	27.7966	27.7463	27.3010	
	Normalized	98.22%	98.4%	100%
	Standard Deviation	0.8%	0.6%	0.1%

oneDNN - D.B.s - u8s8f32 - CPU (ms)	26.2014	26.2225	26.2486
Normalized	100%	99.92%	99.82%
Standard Deviation	0.2%	0.1%	0.1%
oneDNN - D.B.s - f32 - CPU (ms)	35.3540	35.6373	35.8033
Normalized	100%	99.21%	98.75%
Standard Deviation	0.2%	0.2%	0.1%

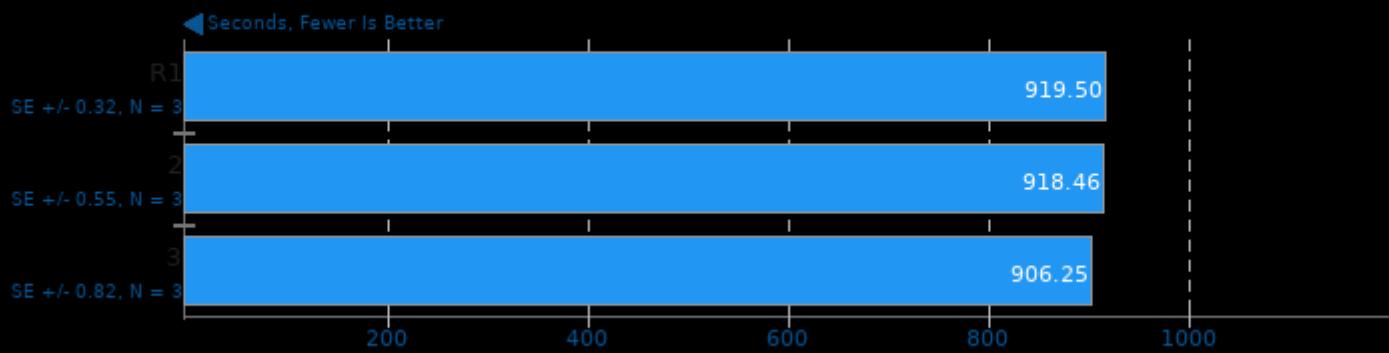
VkFFT 1.1.1



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

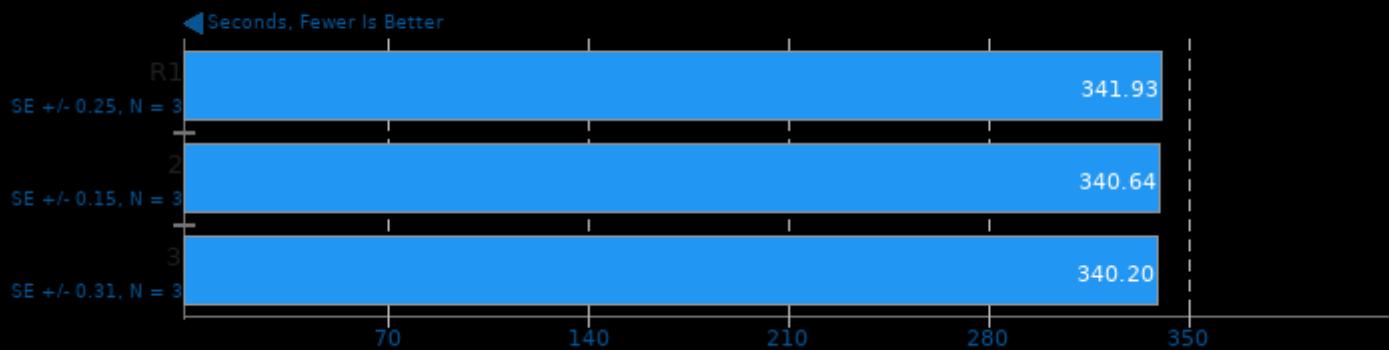
Build2 0.13

Time To Compile



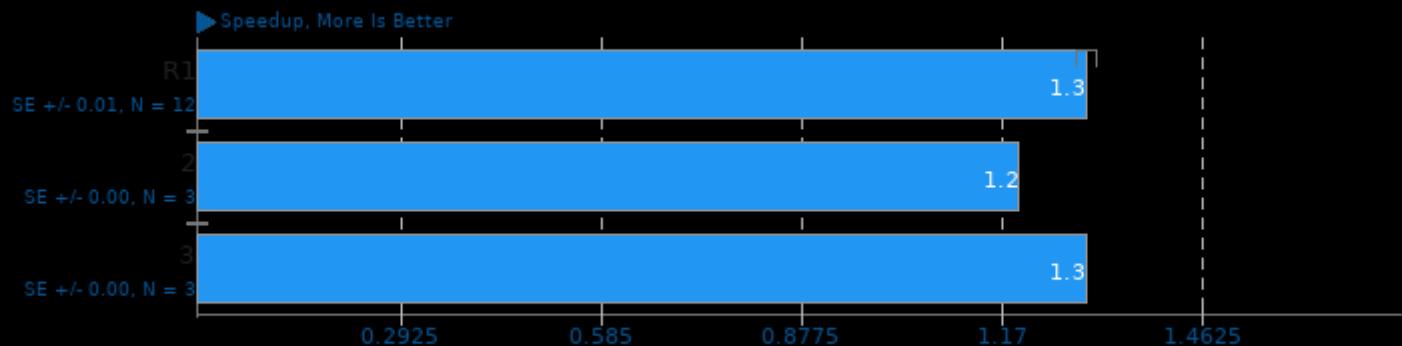
Timed FFmpeg Compilation 4.2.2

Time To Compile



CLOMP 1.2

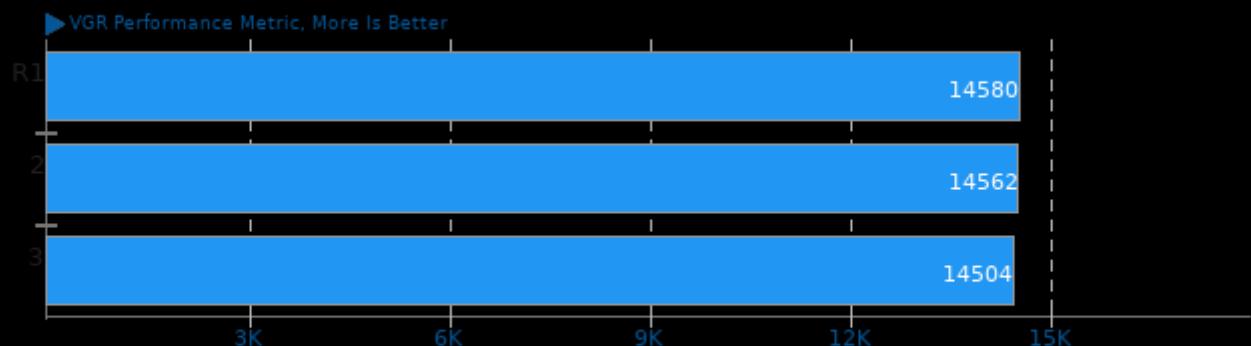
Static OMP Speedup



1. (CC) gcc options: -fopenmp -O3 -lm

BRL-CAD 7.30.8

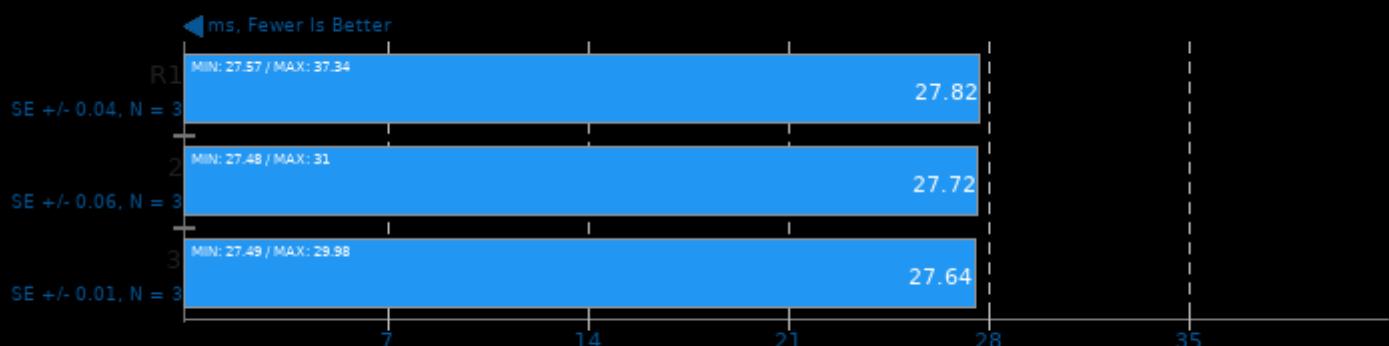
VGR Performance Metric



1. (CXX) g++ options: -std=c++11 -pipe -fno-strict-aliasing -fno-common -fexceptions -ftemplate-depth=128 -m64 -ggdb3 -O3 -fipa-ptx -fstrength-reduce

NCNN 20201218

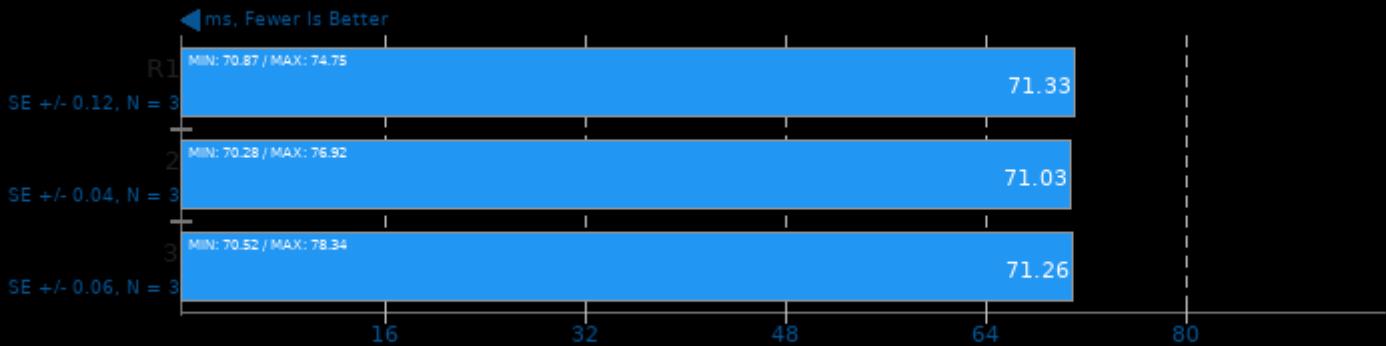
Target: CPU - Model: regnety_400m



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

NCNN 20201218

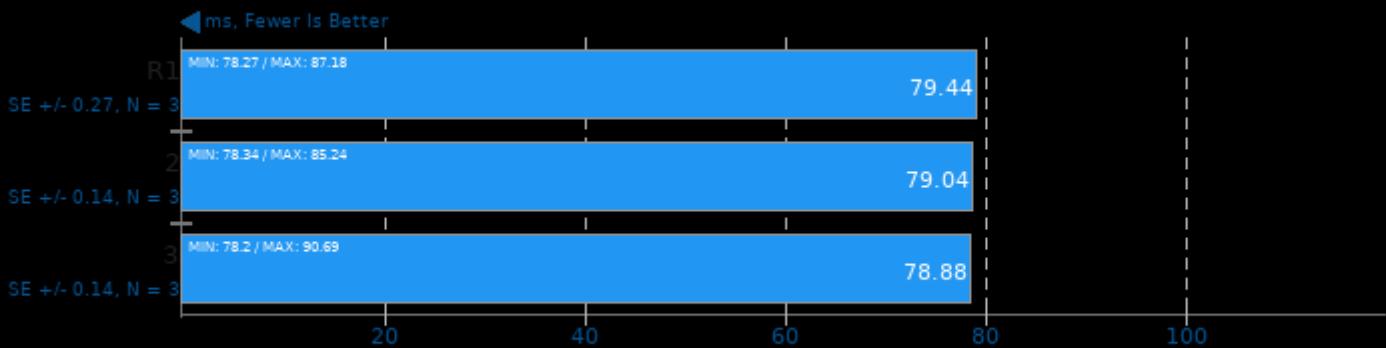
Target: CPU - Model: squeezeenet_ssd



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

NCNN 20201218

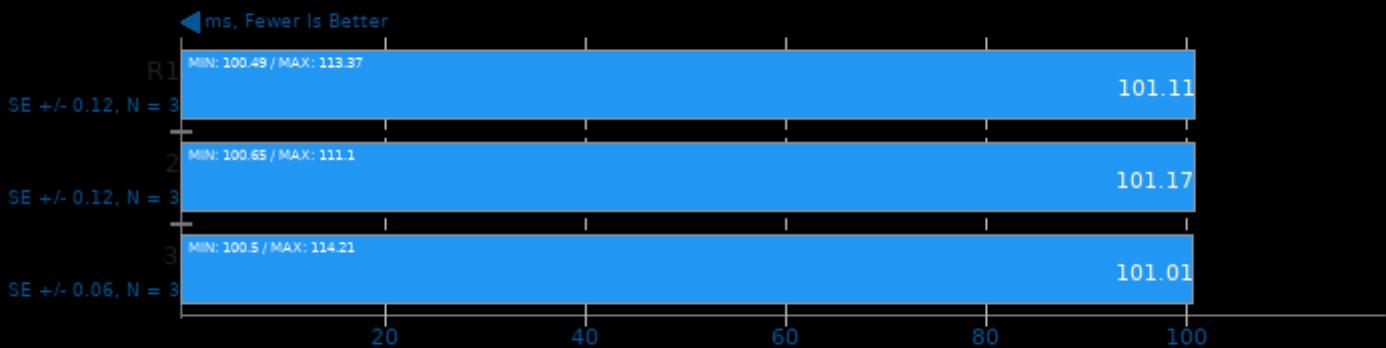
Target: CPU - Model: yolov4-tiny



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

NCNN 20201218

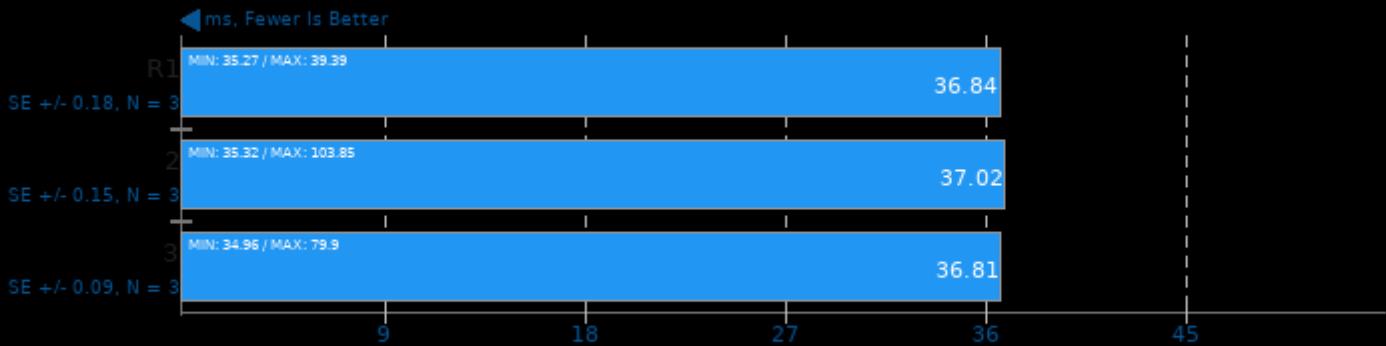
Target: CPU - Model: resnet50



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

NCNN 20201218

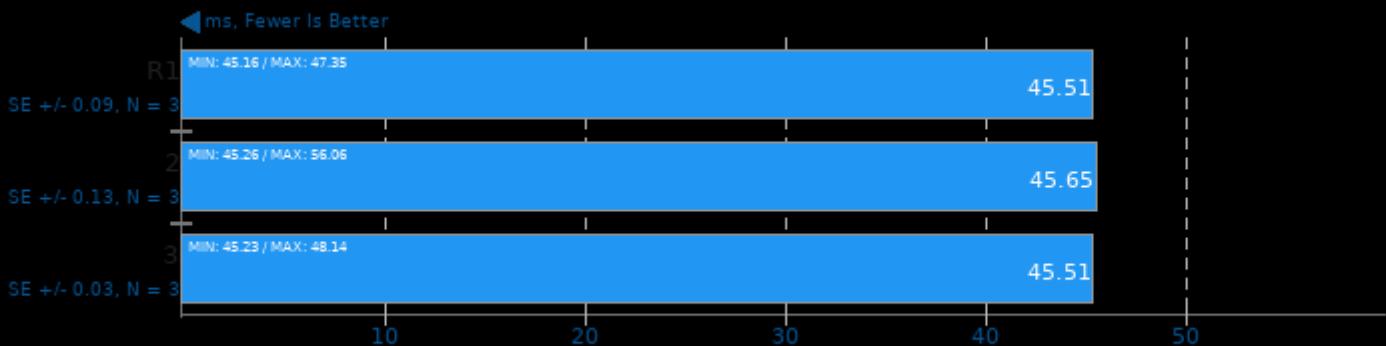
Target: CPU - Model: alexnet



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

NCNN 20201218

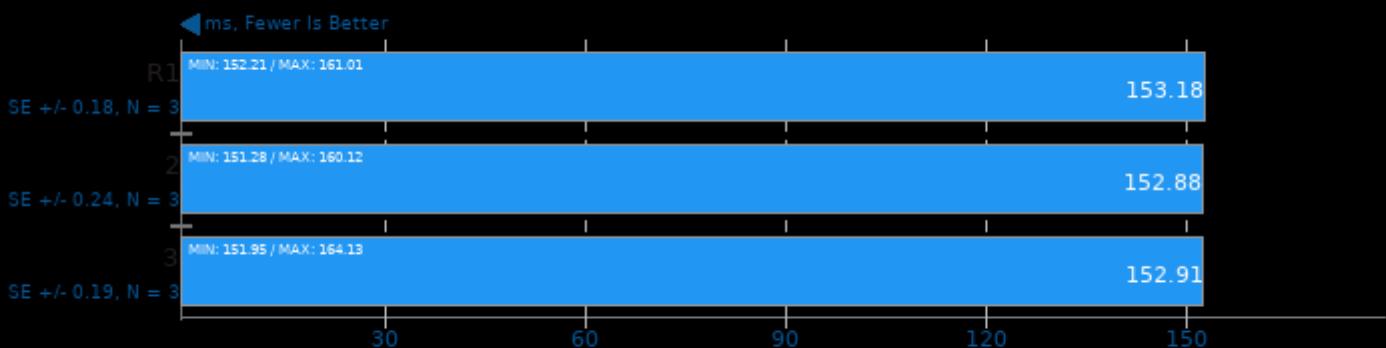
Target: CPU - Model: resnet18



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

NCNN 20201218

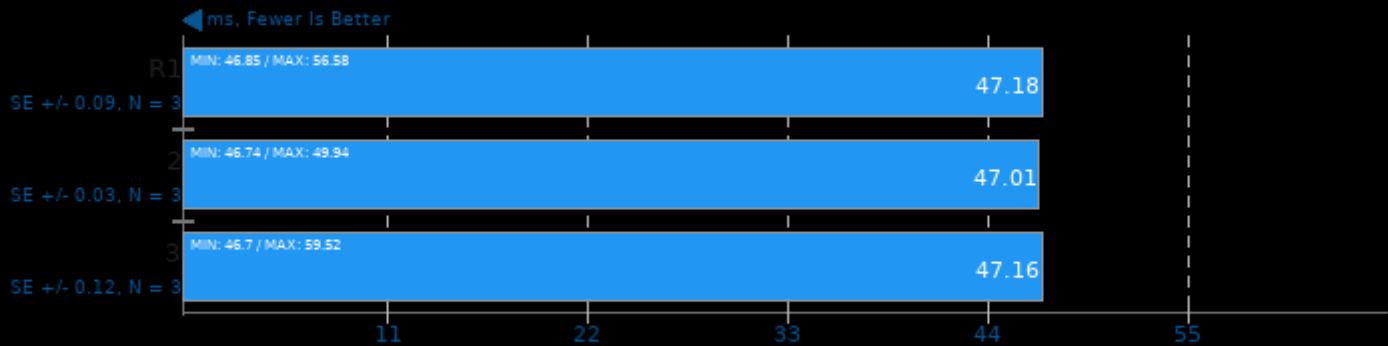
Target: CPU - Model: vgg16



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

NCNN 20201218

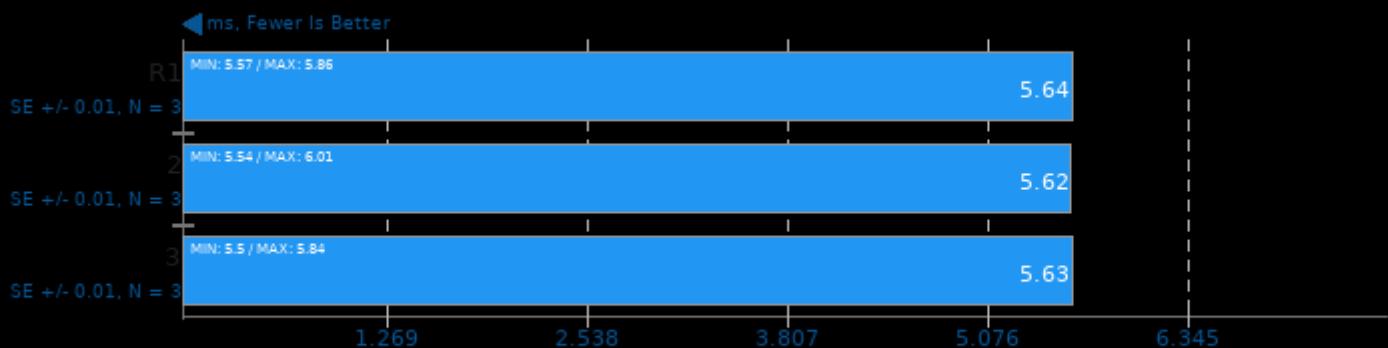
Target: CPU - Model: googlenet



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

NCNN 20201218

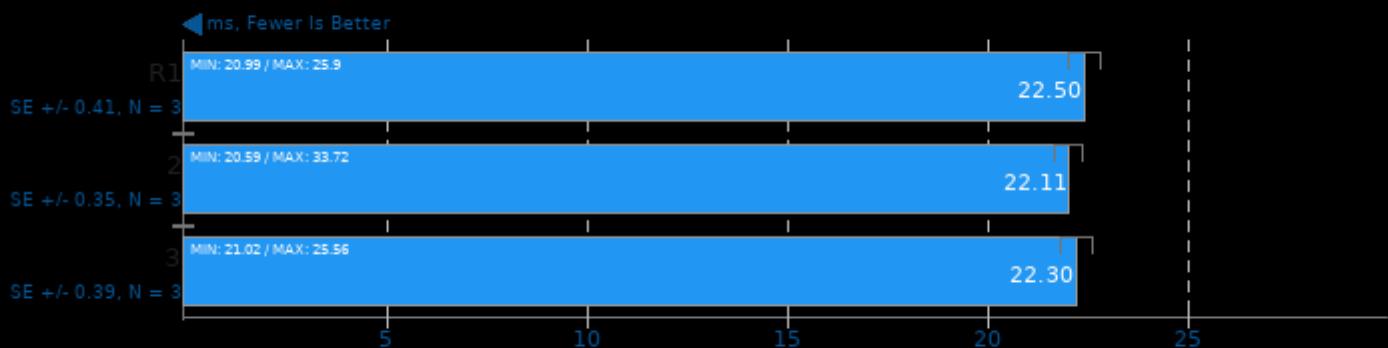
Target: CPU - Model: blazeface



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

NCNN 20201218

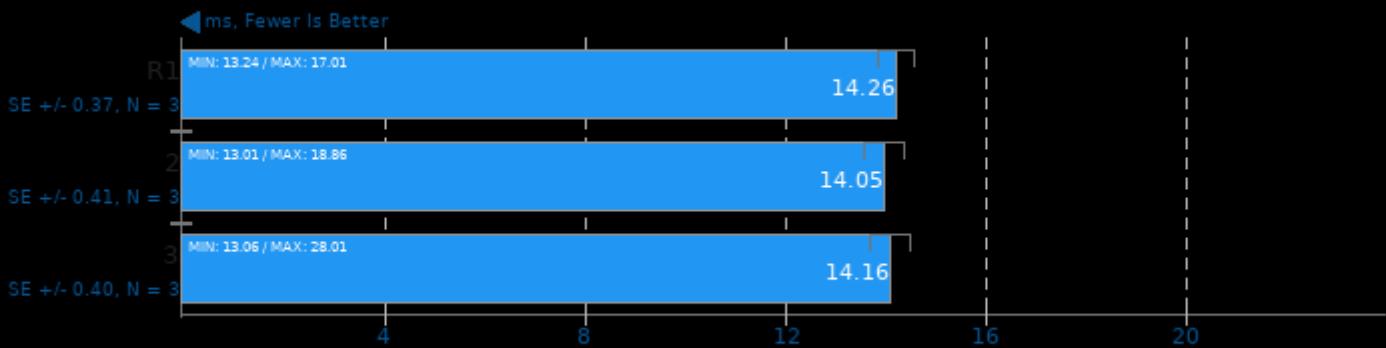
Target: CPU - Model: efficientnet-b0



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

NCNN 20201218

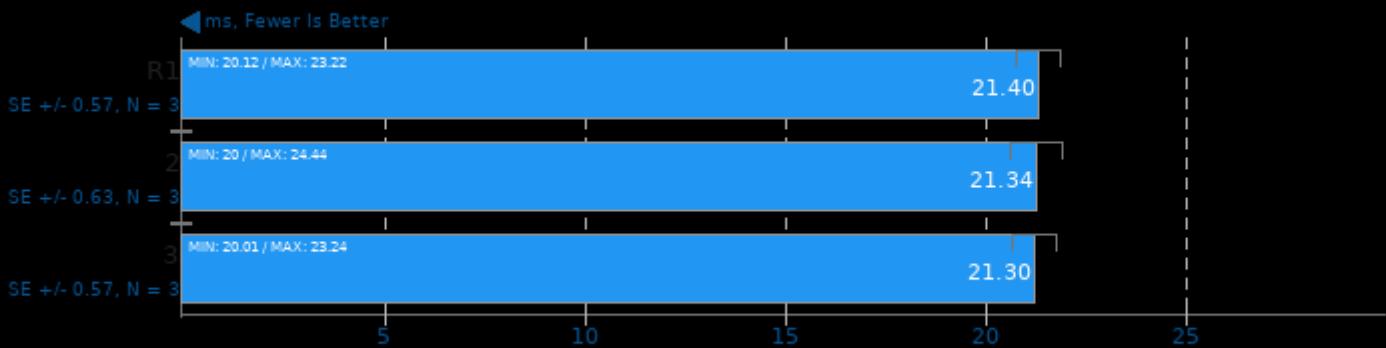
Target: CPU - Model: mnasnet



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

NCNN 20201218

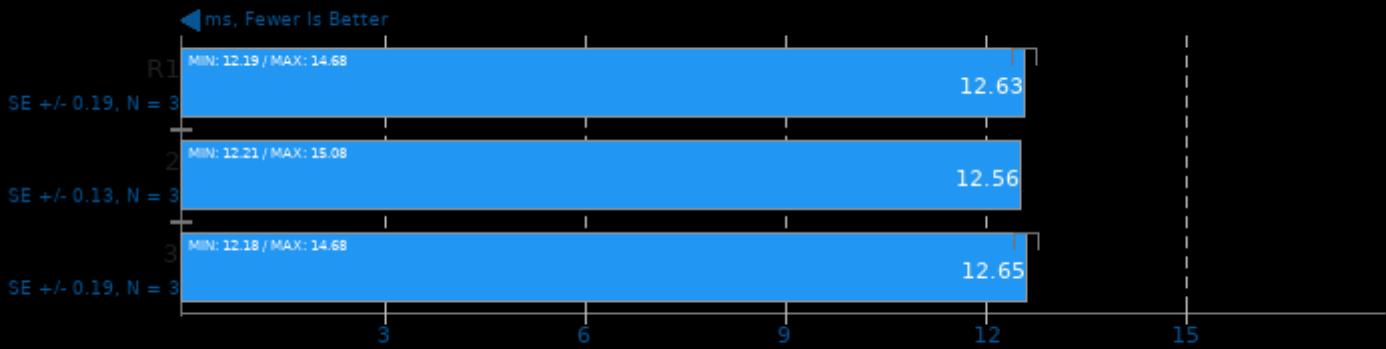
Target: CPU - Model: shufflenet-v2



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

NCNN 20201218

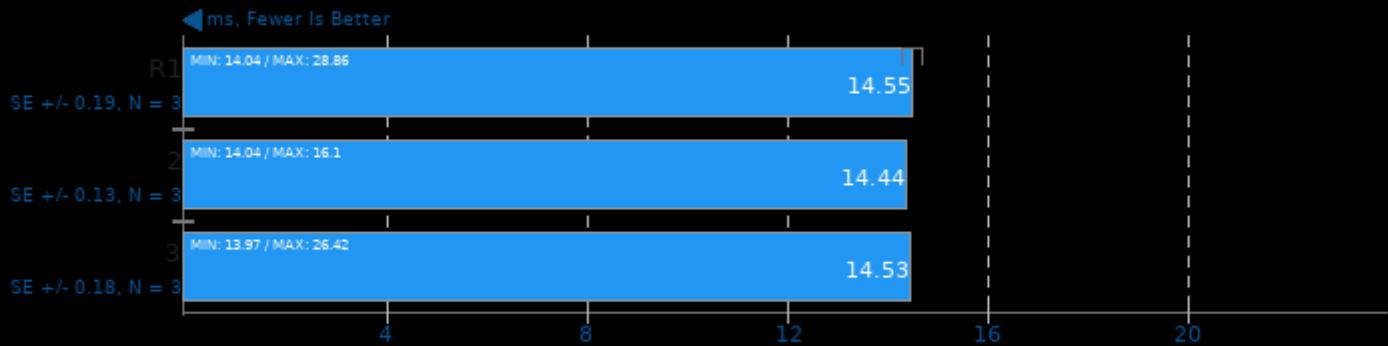
Target: CPU-v3-v3 - Model: mobilenet-v3



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

NCNN 20201218

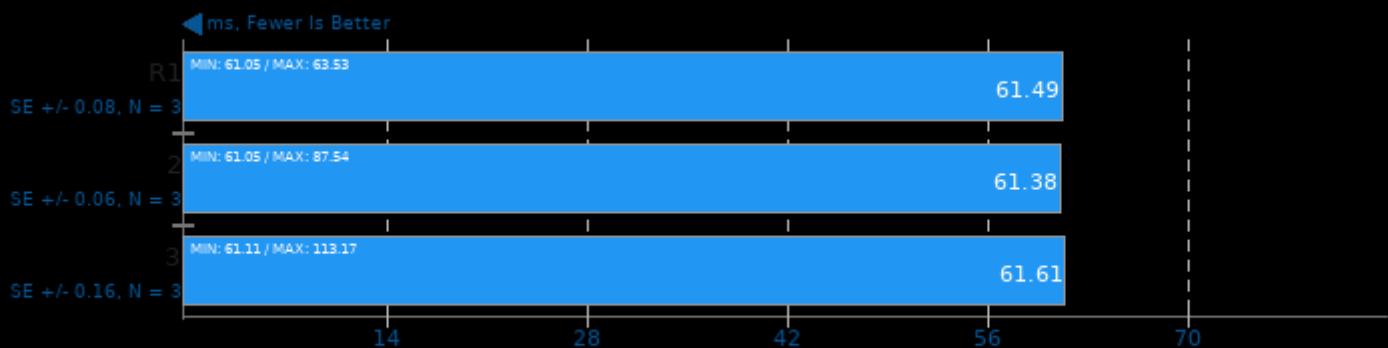
Target: CPU-v2-v2 - Model: mobilenet-v2



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

NCNN 20201218

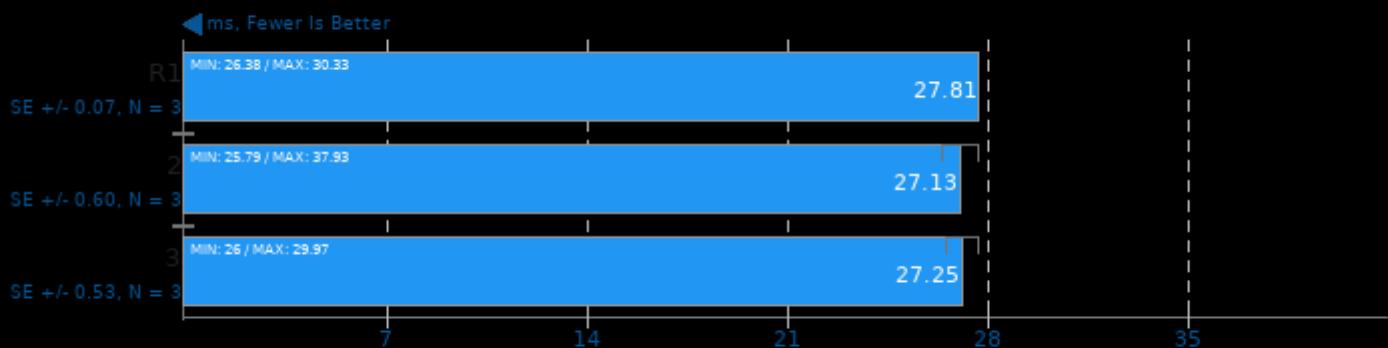
Target: CPU - Model: mobilenet



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

NCNN 20201218

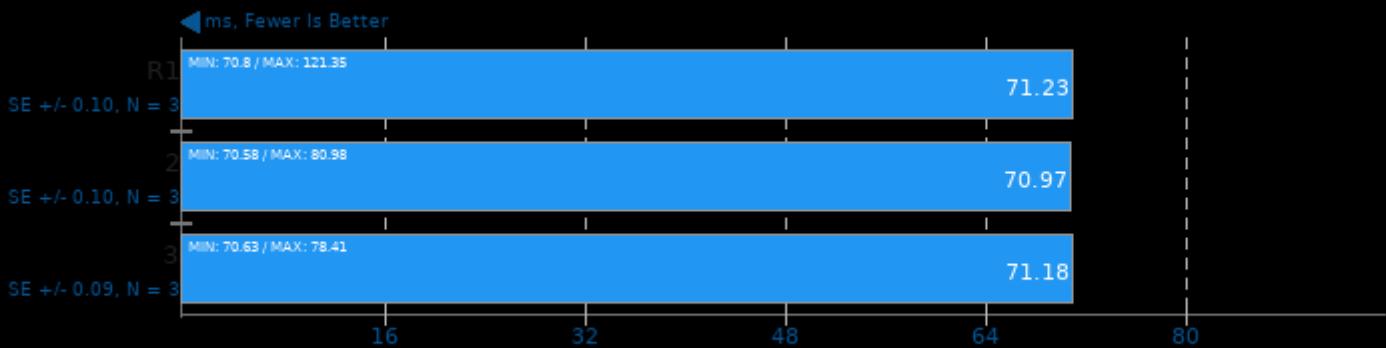
Target: Vulkan GPU - Model: regnety_400m



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

NCNN 20201218

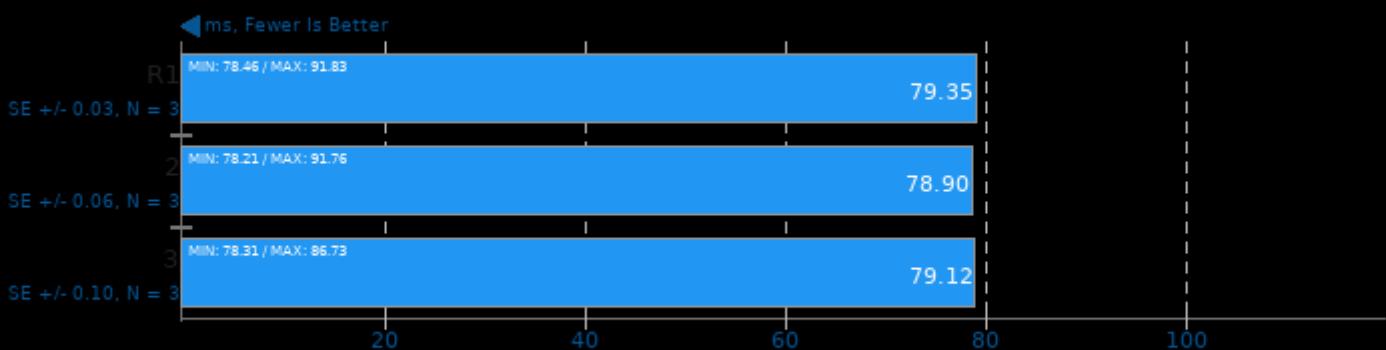
Target: Vulkan GPU - Model: squeezenet_ssd



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

NCNN 20201218

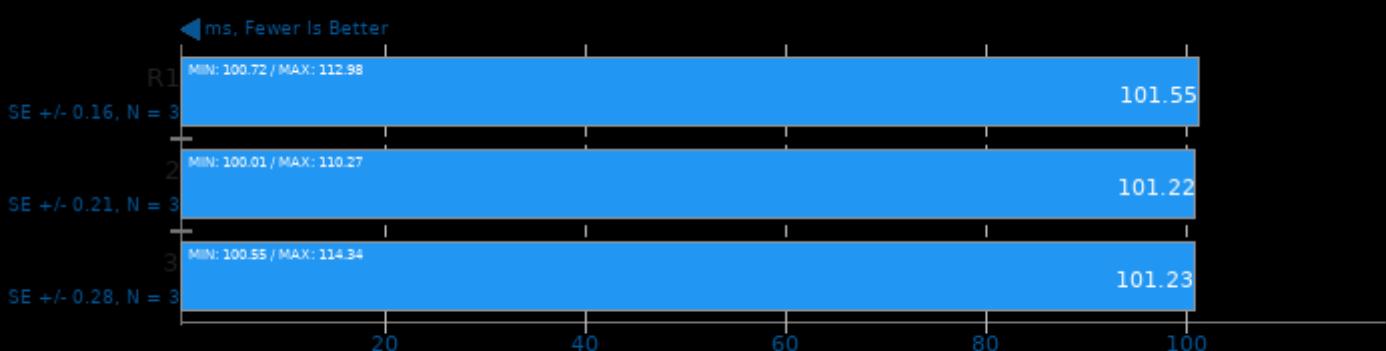
Target: Vulkan GPU - Model: yolov4-tiny



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

NCNN 20201218

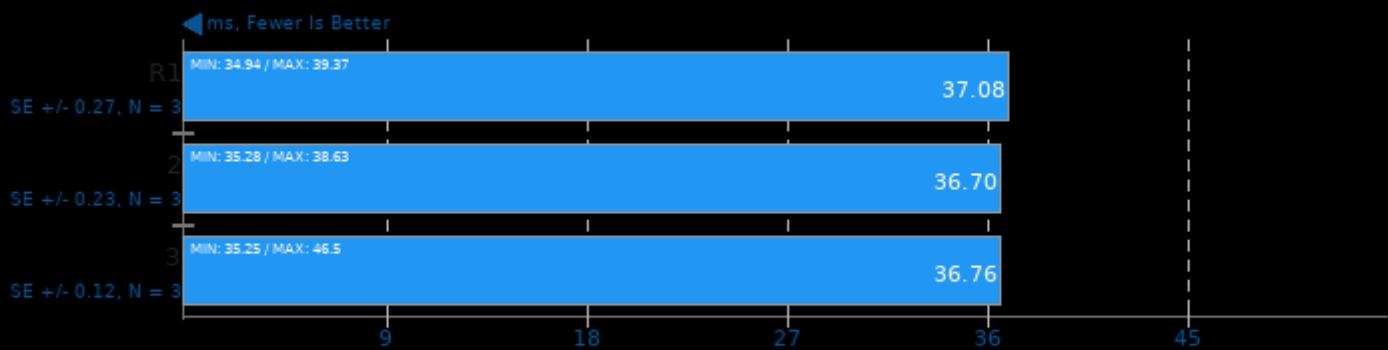
Target: Vulkan GPU - Model: resnet50



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

NCNN 20201218

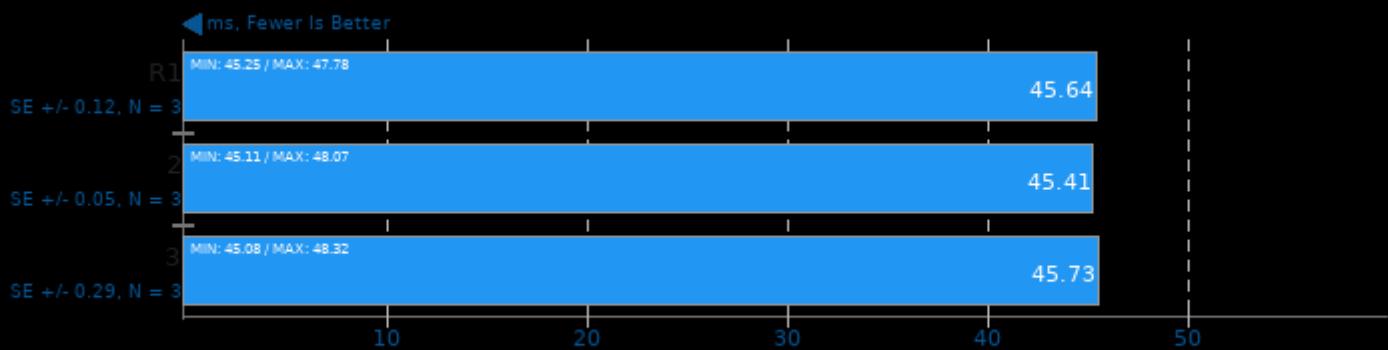
Target: Vulkan GPU - Model: alexnet



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

NCNN 20201218

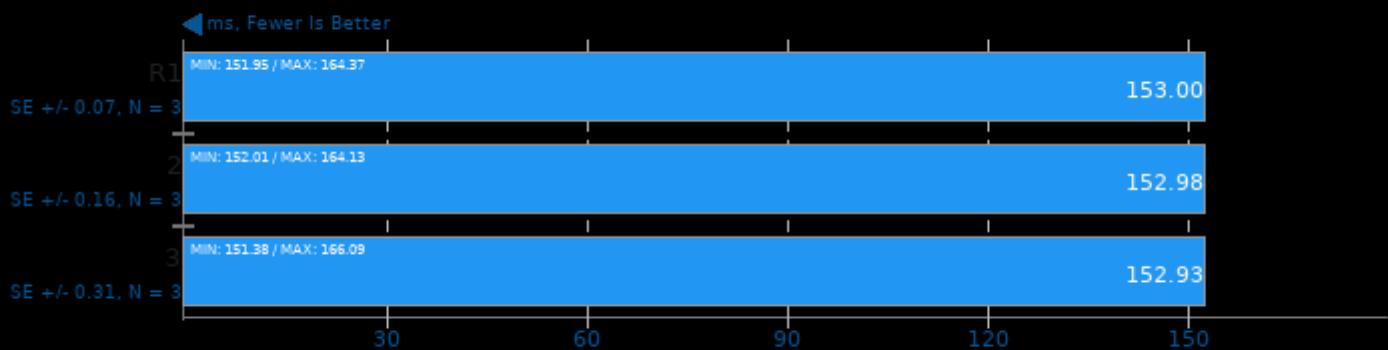
Target: Vulkan GPU - Model: resnet18



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

NCNN 20201218

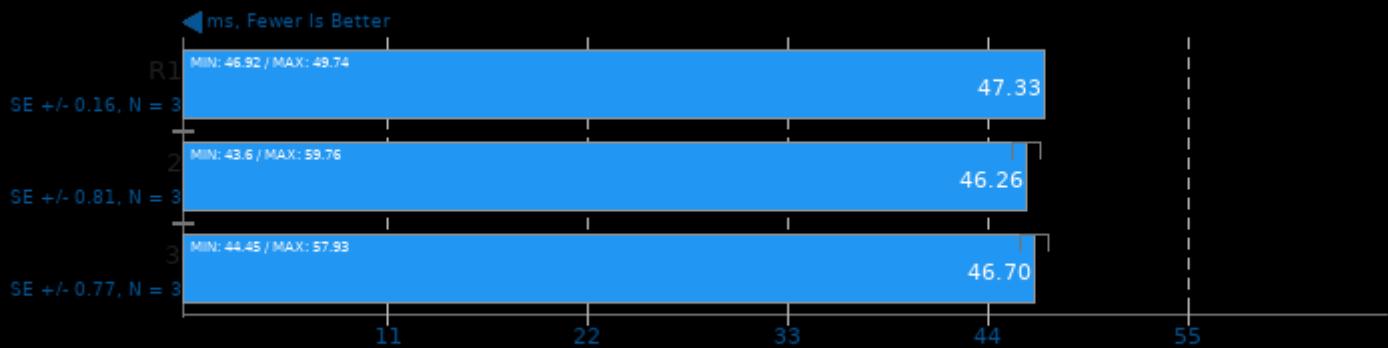
Target: Vulkan GPU - Model: vgg16



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

NCNN 20201218

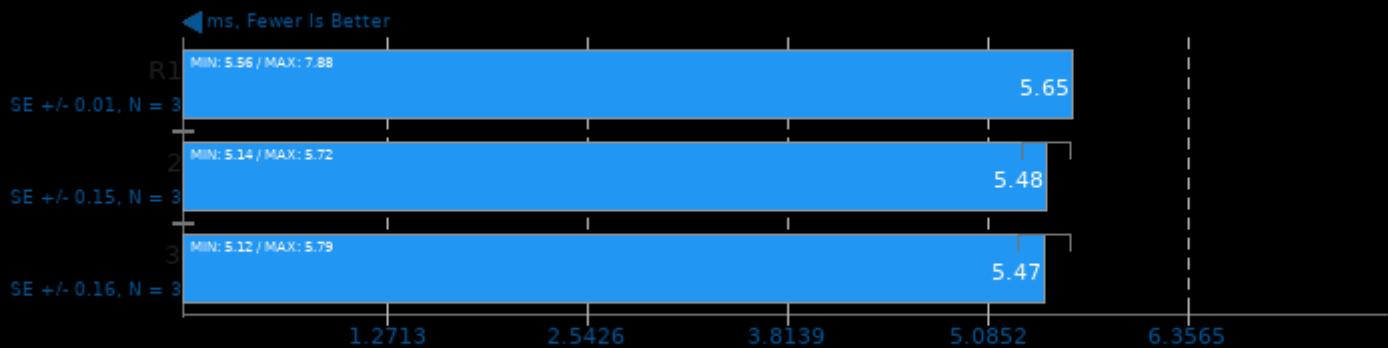
Target: Vulkan GPU - Model: googlenet



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

NCNN 20201218

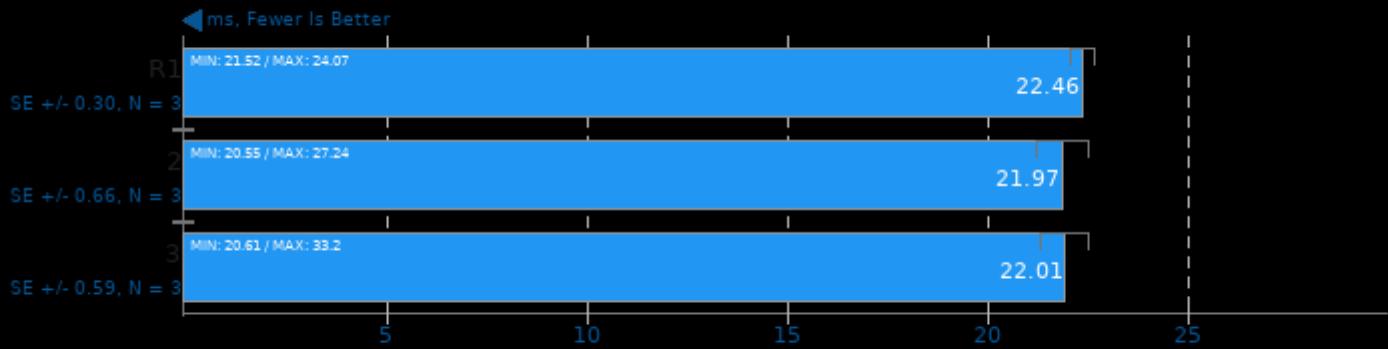
Target: Vulkan GPU - Model: blazeface



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

NCNN 20201218

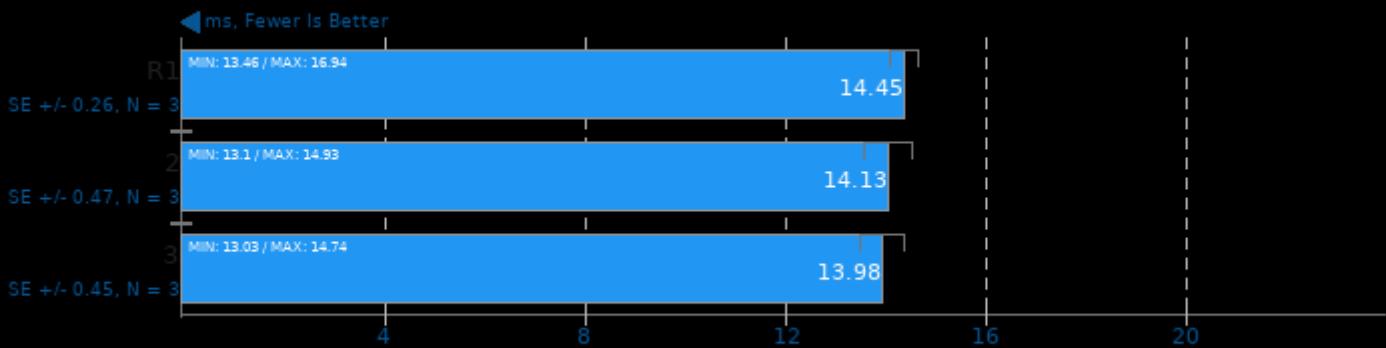
Target: Vulkan GPU - Model: efficientnet-b0



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

NCNN 20201218

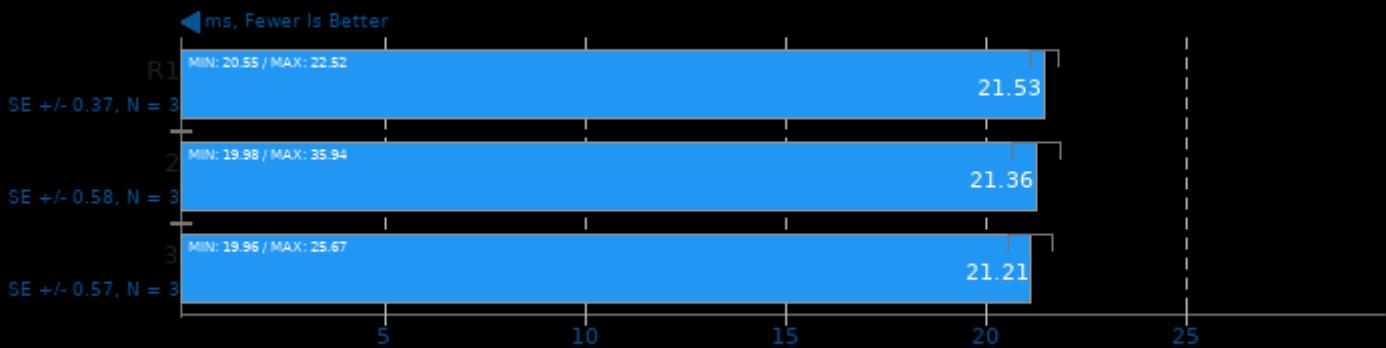
Target: Vulkan GPU - Model: mnasnet



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

NCNN 20201218

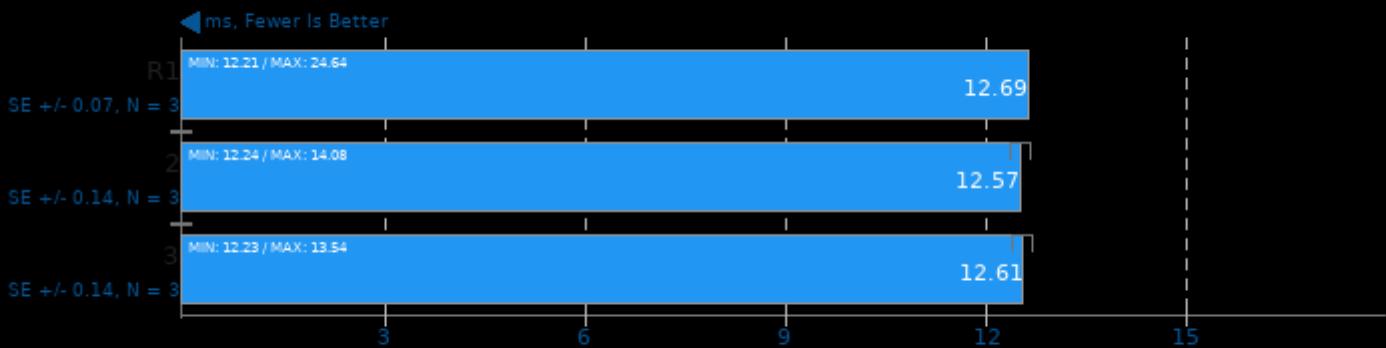
Target: Vulkan GPU - Model: shufflenet-v2



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

NCNN 20201218

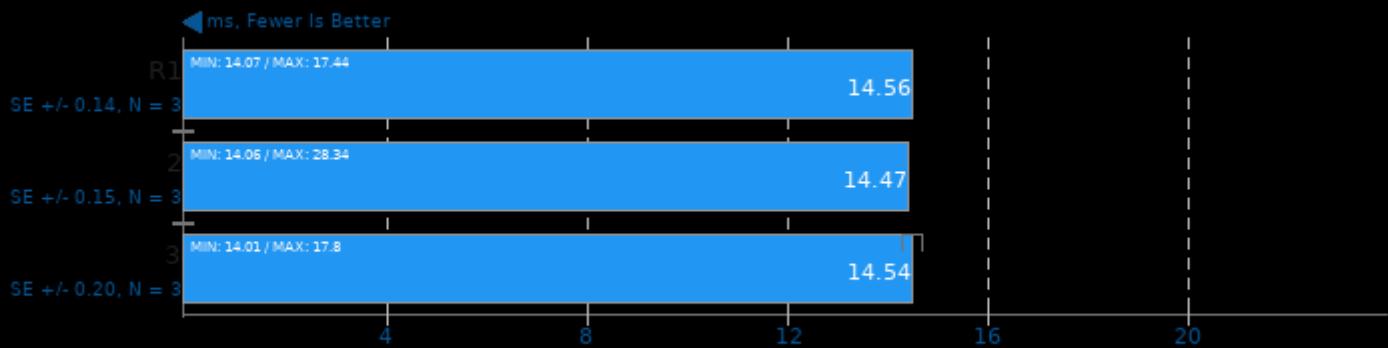
Target: Vulkan GPU-v3-v3 - Model: mobilenet-v3



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

NCNN 20201218

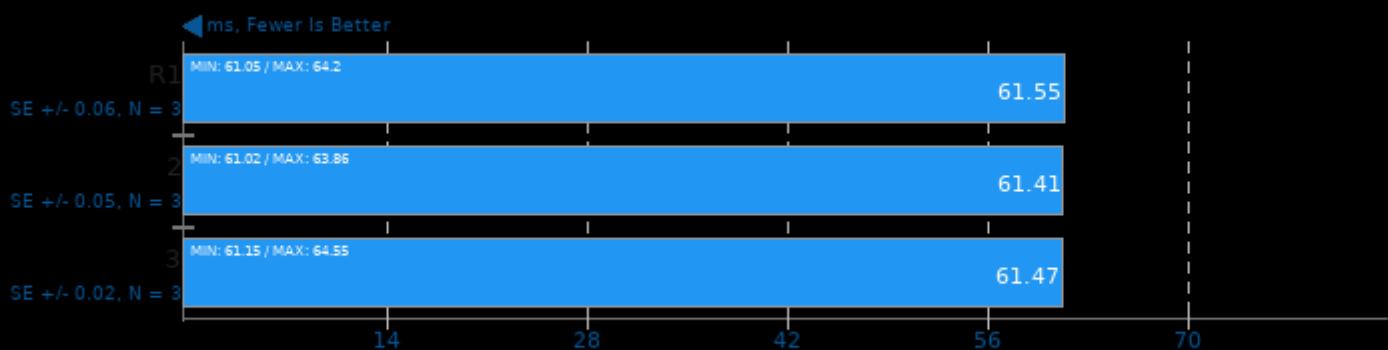
Target: Vulkan GPU-v2-v2 - Model: mobilenet-v2



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

NCNN 20201218

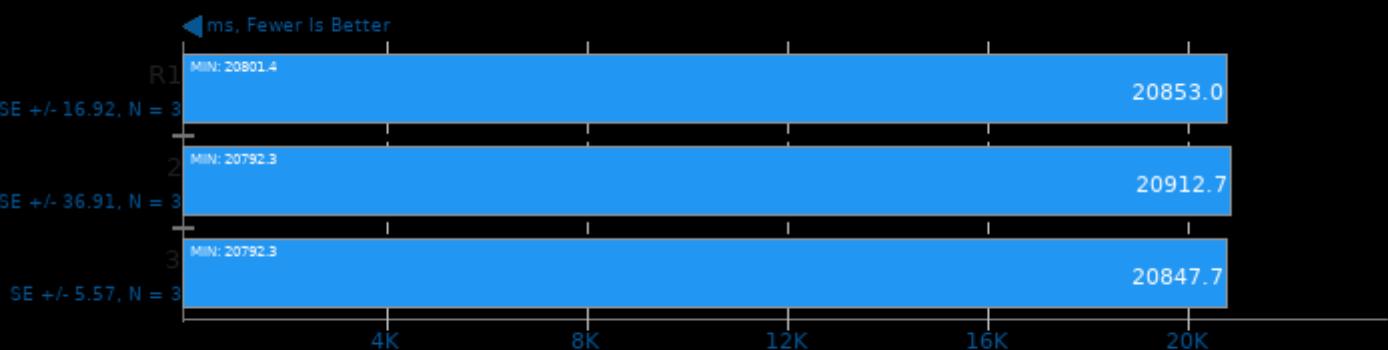
Target: Vulkan GPU - Model: mobilenet



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

oneDNN 2.0

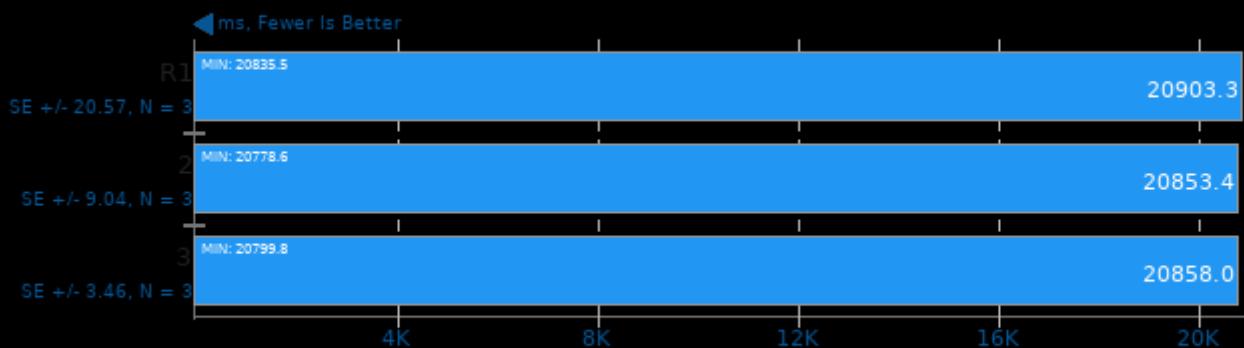
Harness: Recurrent Neural Network Training - Data Type: u8s8f32 - Engine: CPU



1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread

oneDNN 2.0

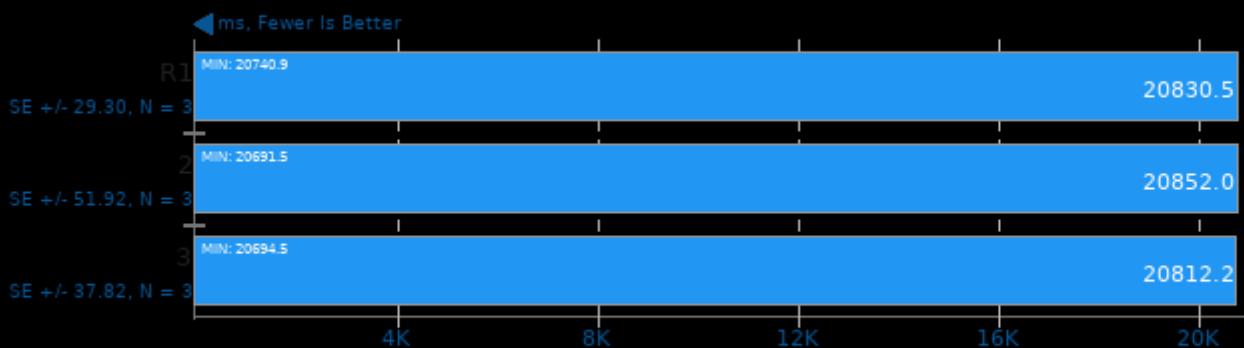
Harness: Recurrent Neural Network Training - Data Type: bf16bf16bf16 - Engine: CPU



1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread

oneDNN 2.0

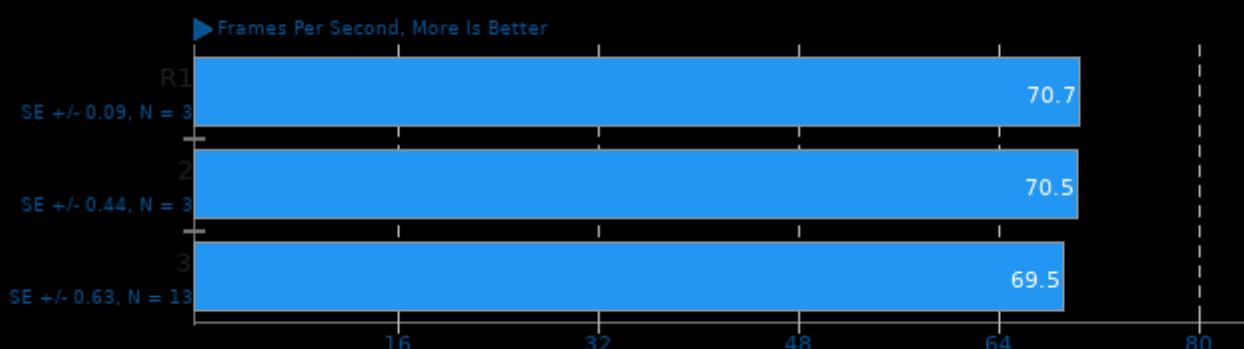
Harness: Recurrent Neural Network Training - Data Type: f32 - Engine: CPU



1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread

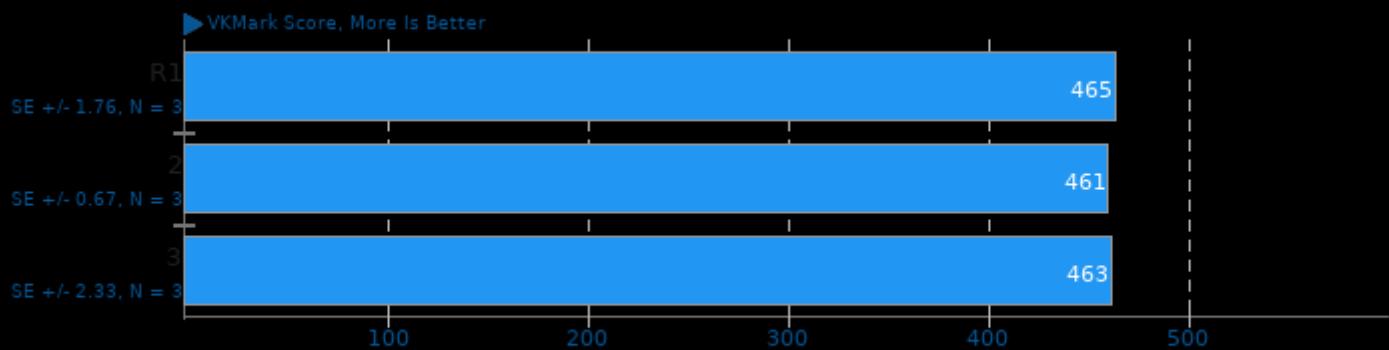
Warsow 2.5 Beta

Resolution: 1280 x 1024



VKMark 2020-05-21

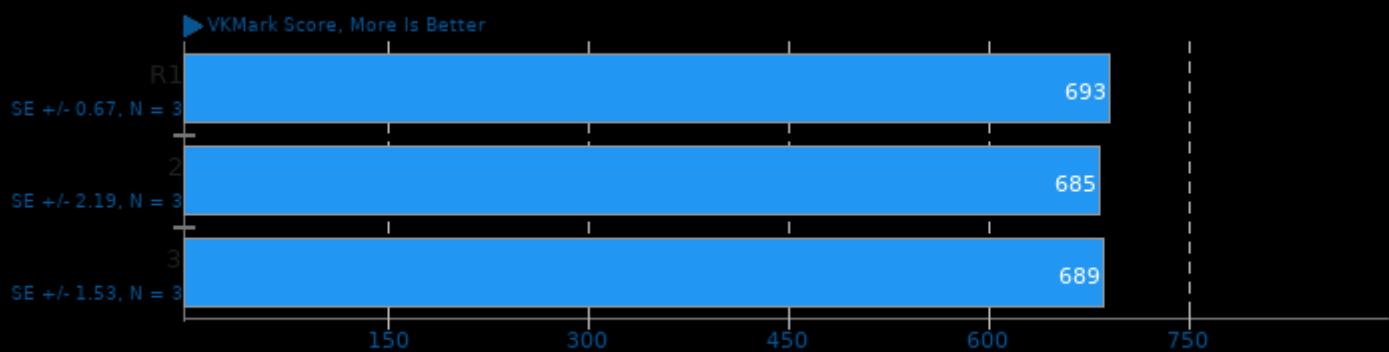
Resolution: 1920 x 1080



1. (CXX) g++ options: -pthread -ldl -pipe -std=c++14 -MD -MQ -MF

VKMark 2020-05-21

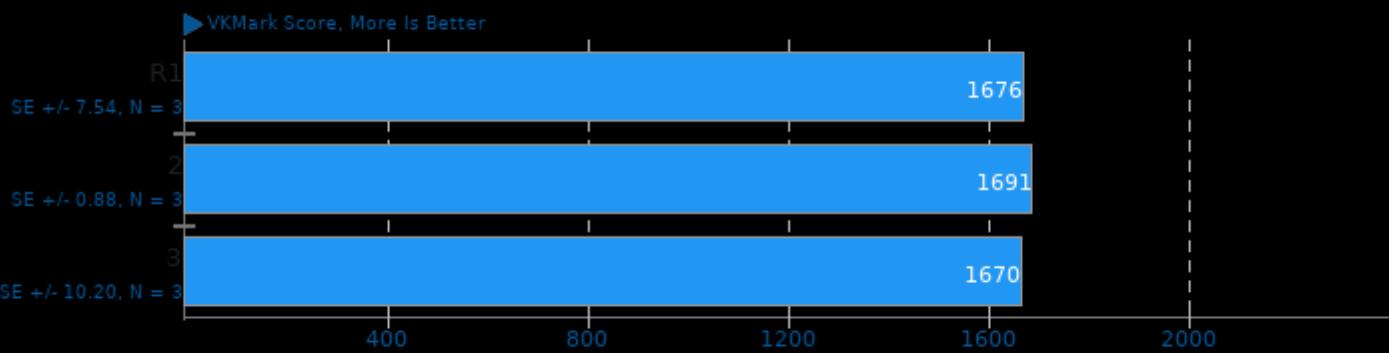
Resolution: 1280 x 1024



1. (CXX) g++ options: -pthread -ldl -pipe -std=c++14 -MD -MQ -MF

VKMark 2020-05-21

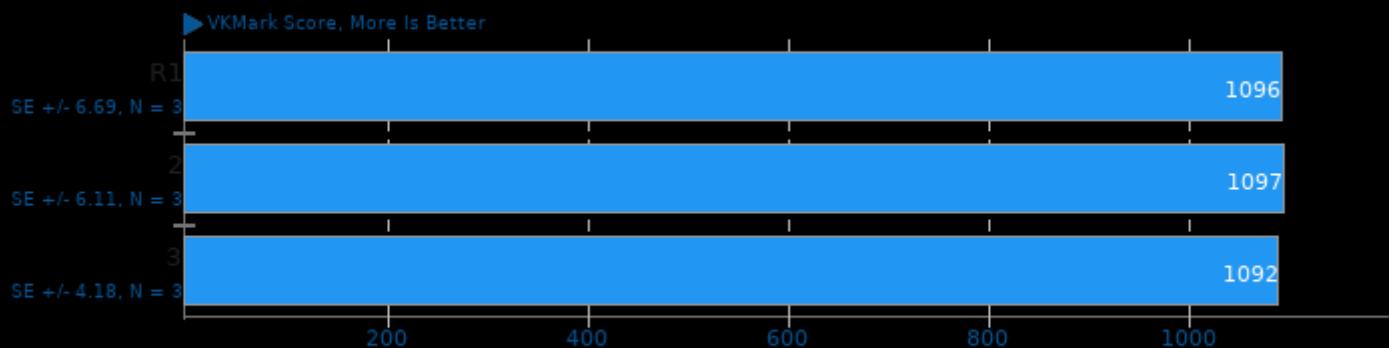
Resolution: 800 x 600



1. (CXX) g++ options: -pthread -ldl -pipe -std=c++14 -MD -MQ -MF

VKMark 2020-05-21

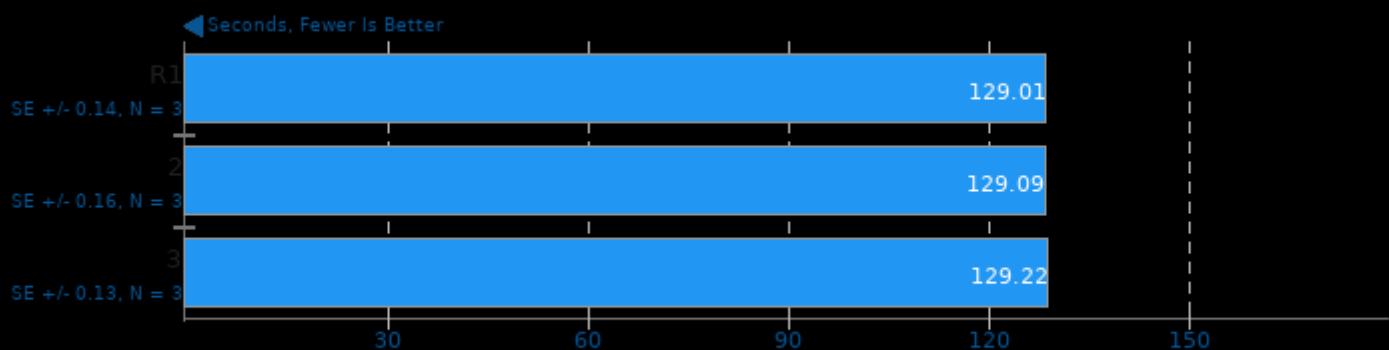
Resolution: 1024 x 768



1. (CXX) g++ options: -pthread -ldl -pipe -std=c++14 -MD -MQ -MF

Timed HMMer Search 3.3.1

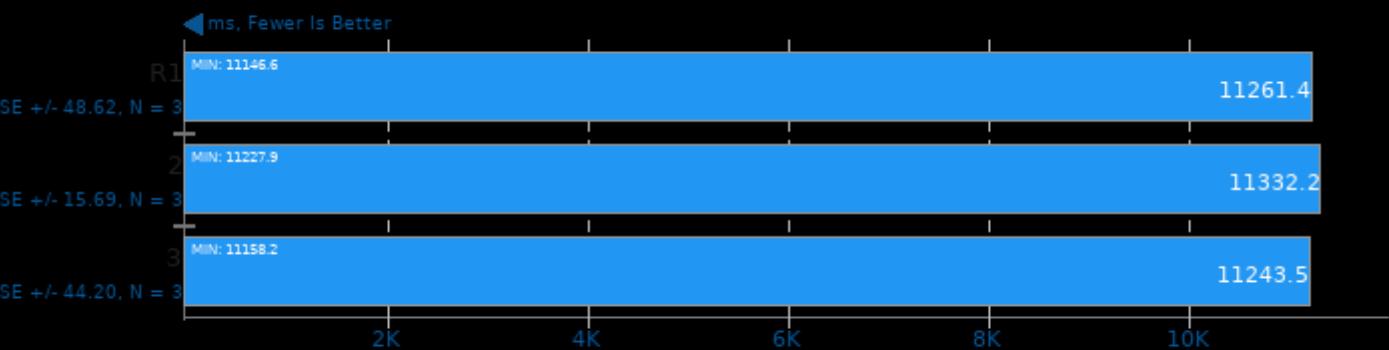
Pfam Database Search



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

oneDNN 2.0

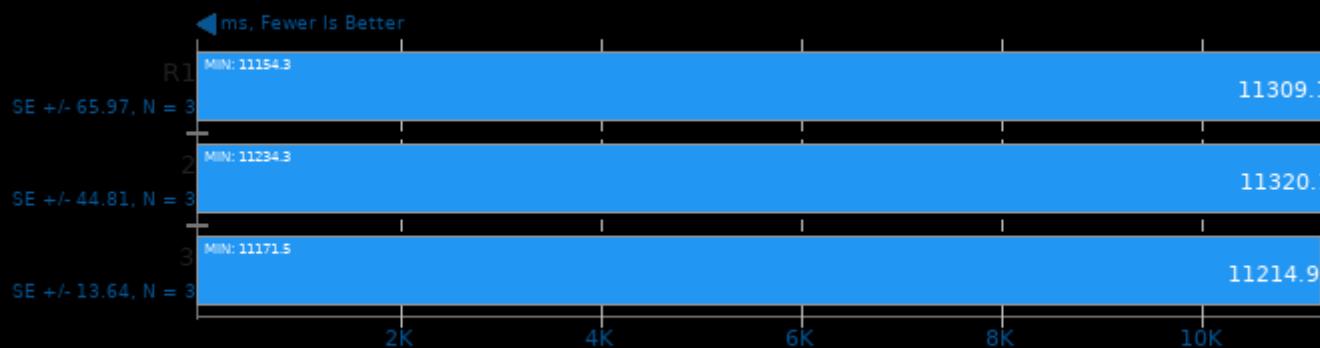
Harness: Recurrent Neural Network Inference - Data Type: f32 - Engine: CPU



1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -pthread

oneDNN 2.0

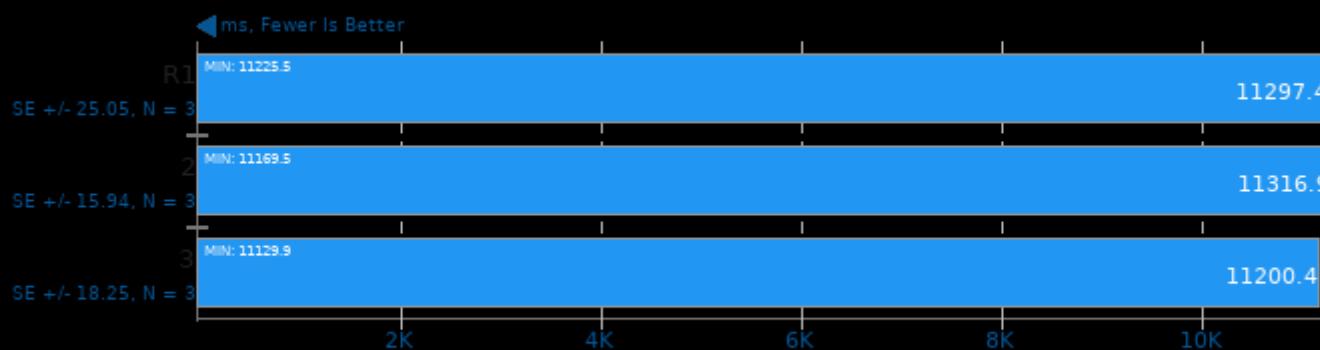
Harness: Recurrent Neural Network Inference - Data Type: bf16bf16bf16 - Engine: CPU



1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread

oneDNN 2.0

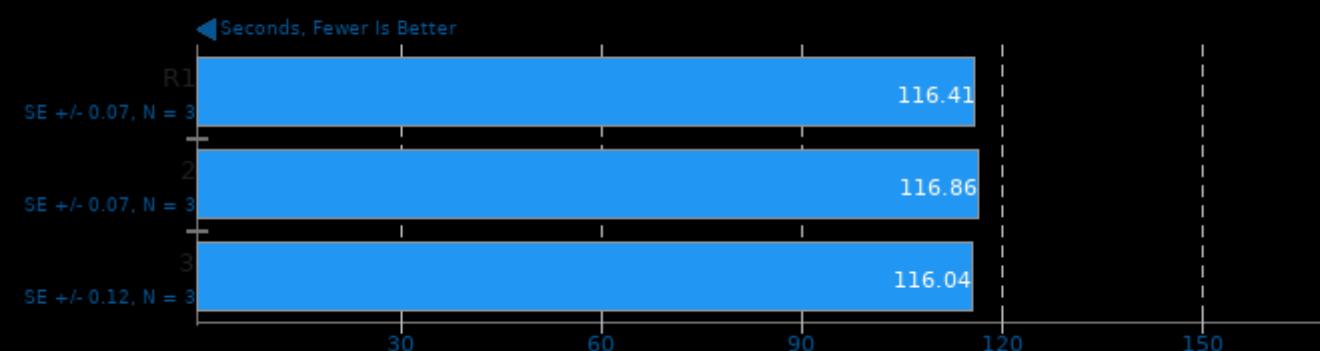
Harness: Recurrent Neural Network Inference - Data Type: u8s8f32 - Engine: CPU



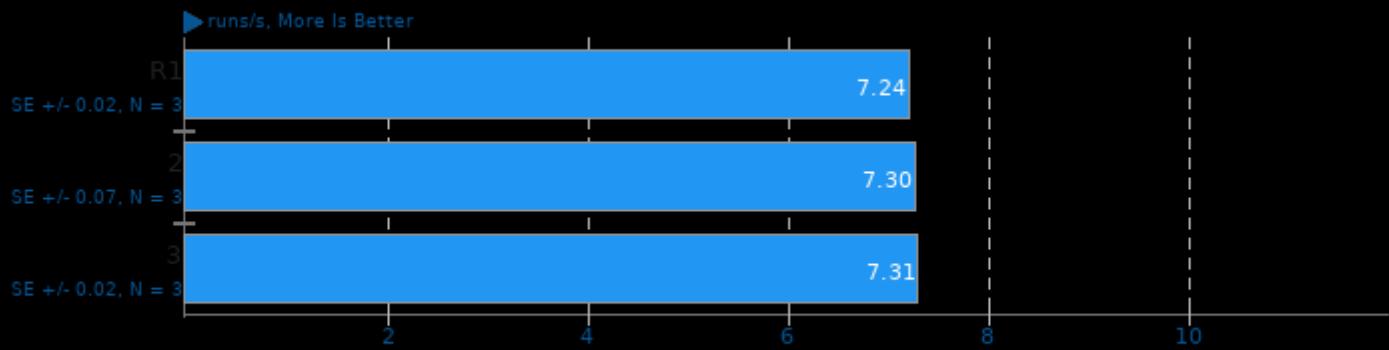
1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread

Timed Eigen Compilation 3.3.9

Time To Compile



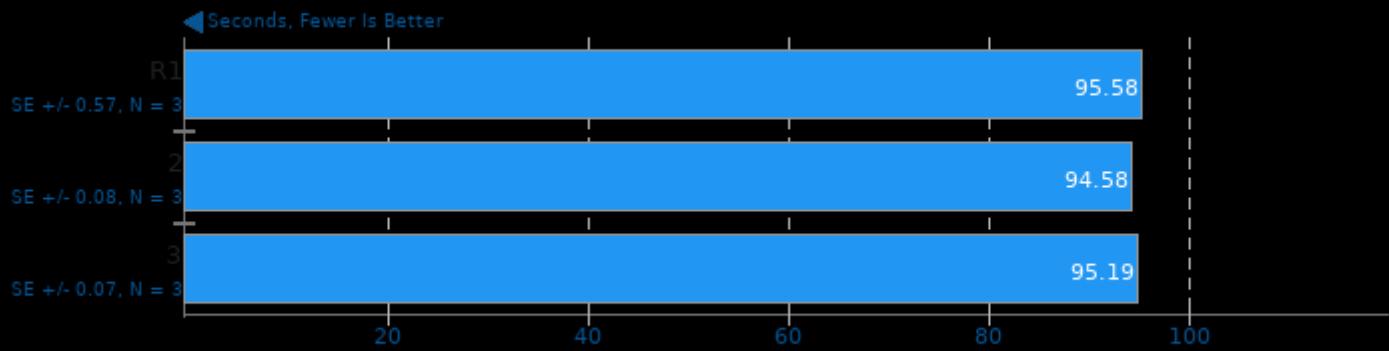
Node.js V8 Web Tooling Benchmark



1. Nodejs
v12.18.2

SQLite Speedtest 3.30

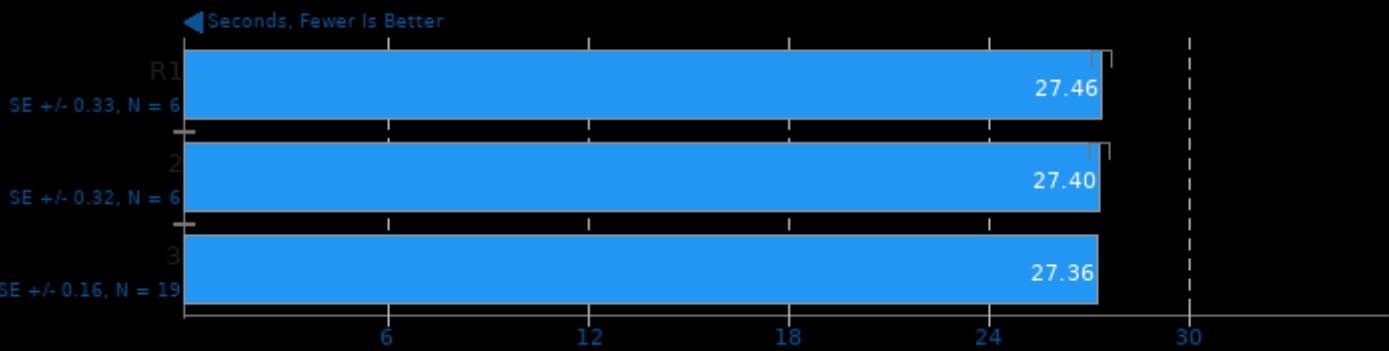
Timed Time - Size 1,000



1. (CC) gcc options: -O2 -ldl -lz -lpthread

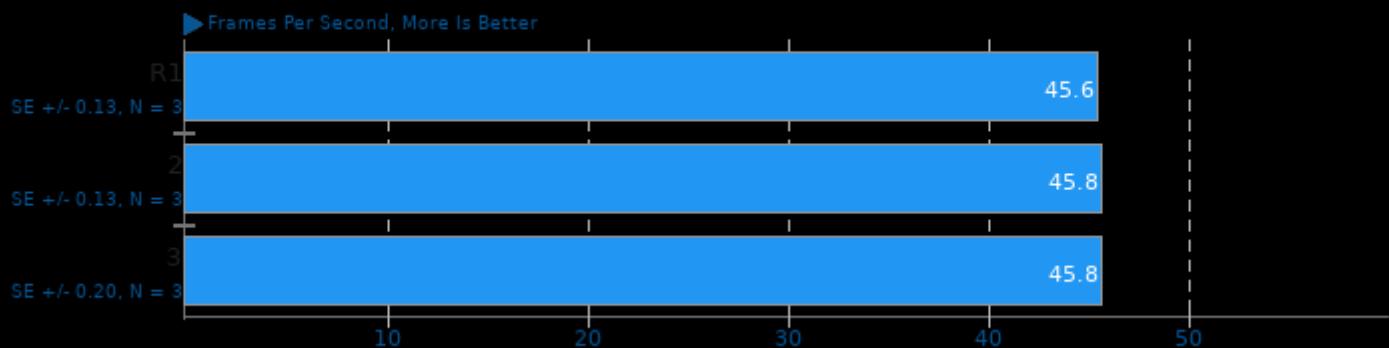
Unpacking Firefox 84.0

Extracting: firefox-84.0.source.tar.xz



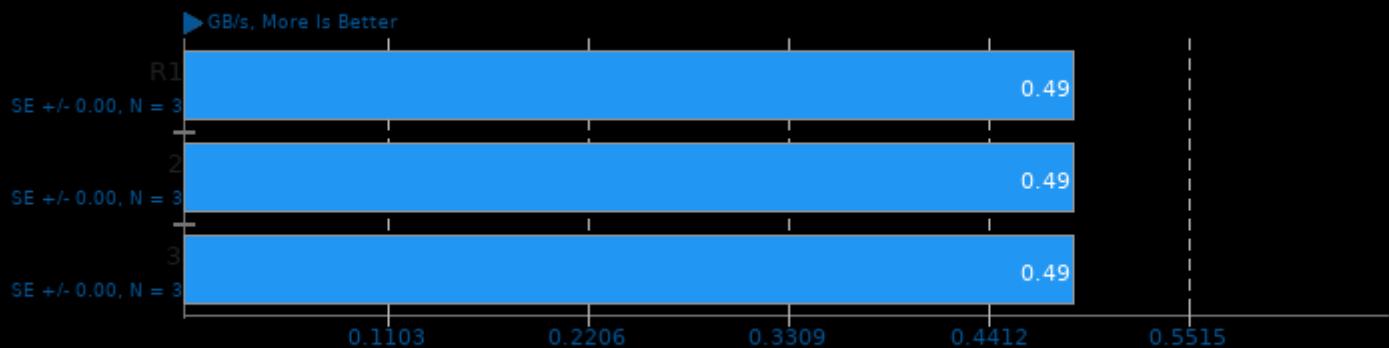
Warsow 2.5 Beta

Resolution: 1920 x 1080



simdjson 0.7.1

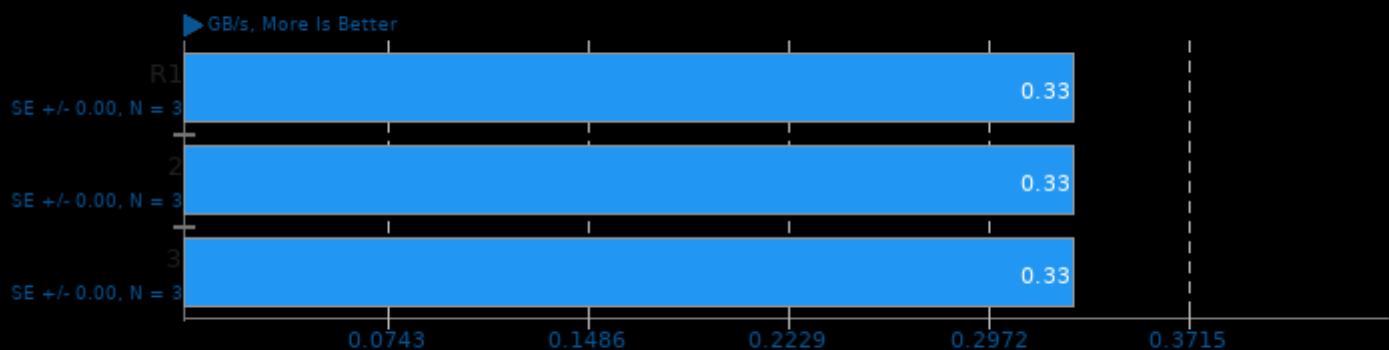
Throughput Test: Kostya



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

simdjson 0.7.1

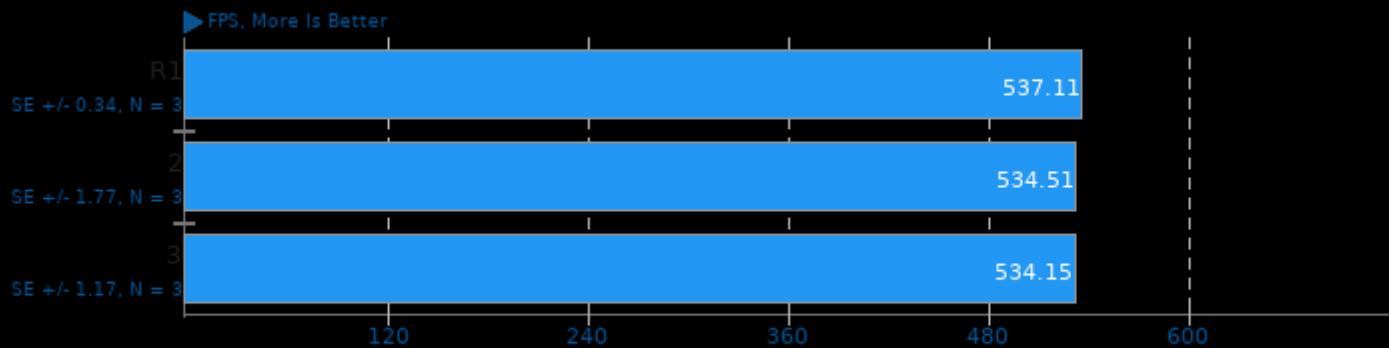
Throughput Test: LargeRandom



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

Libplacebo 2.72.2

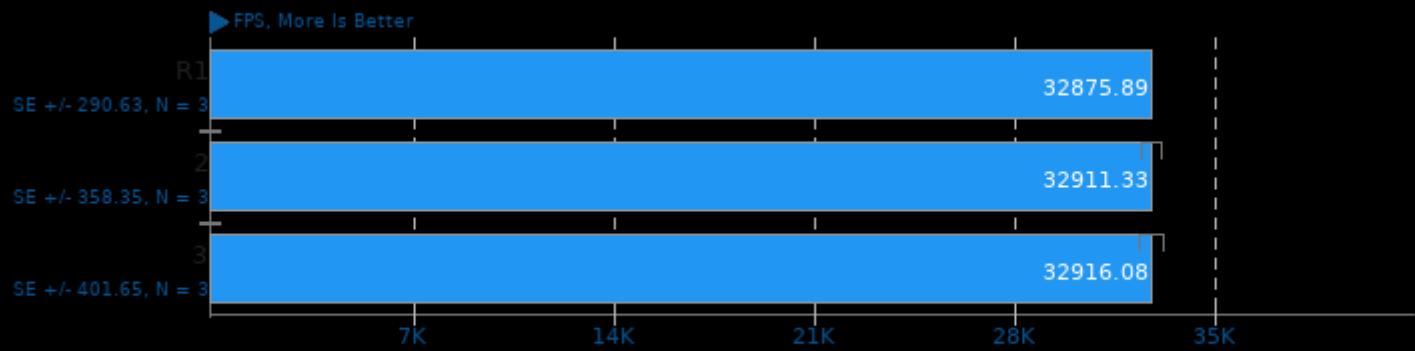
Test: av1_grain_lap



1. (CXX) g++ options: -lm -lglslang -lHLSL -lOGLCompiler -lOSDependent -lSPIRV -lSPVRemapper -lSPIRV-Tools -lSPIRV-Tools-opt -lpthread -pthread -pipe -

Libplacebo 2.72.2

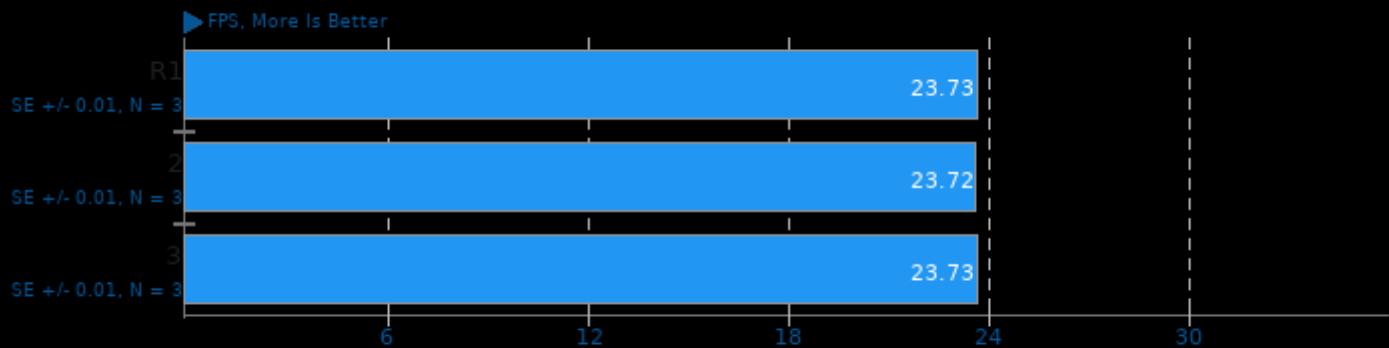
Test: hdr_peakdetect



1. (CXX) g++ options: -lm -lglslang -lHLSL -lOGLCompiler -lOSDependent -lSPIRV -lSPVRemapper -lSPIRV-Tools -lSPIRV-Tools-opt -lpthread -pthread -pipe -

Libplacebo 2.72.2

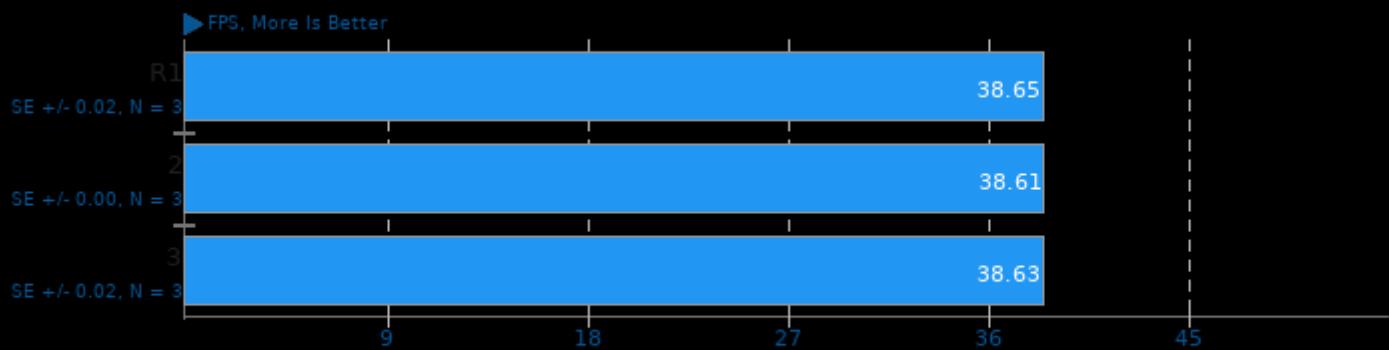
Test: polar_nocompute



1. (CXX) g++ options: -lm -lglslang -lHLSL -lOGLCompiler -lOSDependent -lSPIRV -lSPVRemapper -lSPIRV-Tools -lSPIRV-Tools-opt -lpthread -pthread -pipe -

Libplacebo 2.72.2

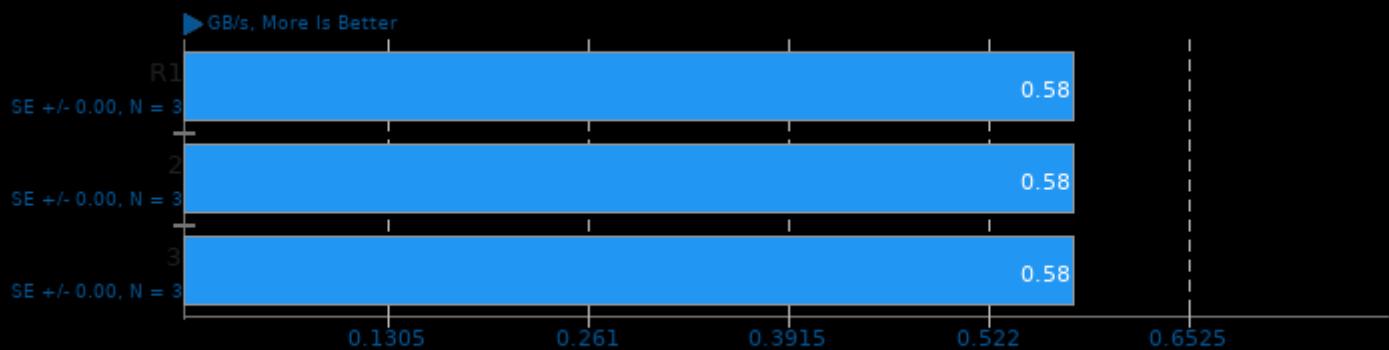
Test: deband_heavy



1. (CXX) g++ options: -lm -lglslang -IHLSL -IOGLCompiler -IOSDependent -ISPIRV -ISPVRemapper -ISPIRV-Tools -ISPIRV-Tools-opt -lpthread -pthread -pipe -

simdjson 0.7.1

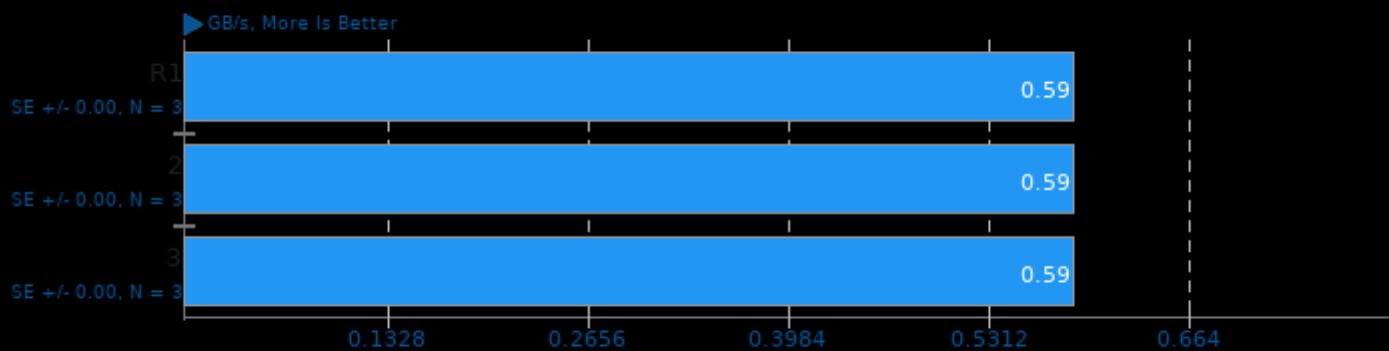
Throughput Test: PartialTweets



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

simdjson 0.7.1

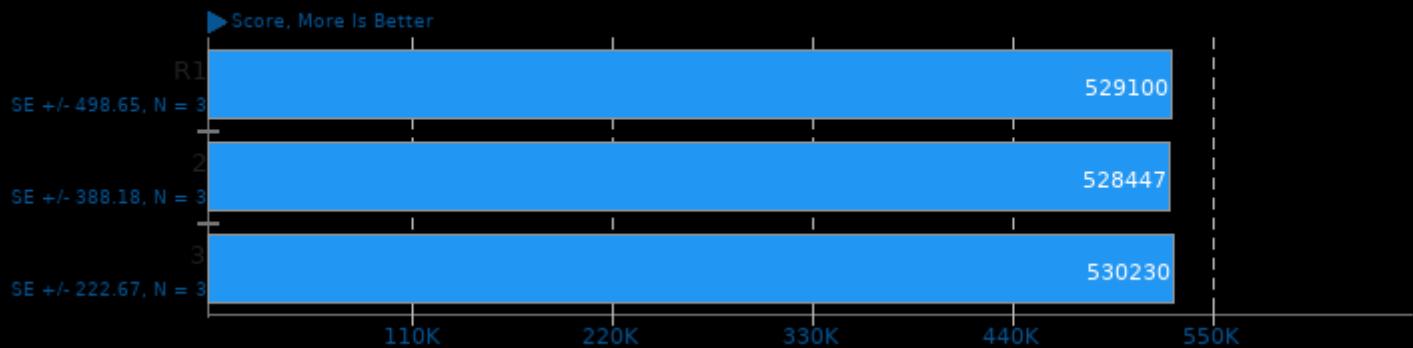
Throughput Test: DistinctUserID



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

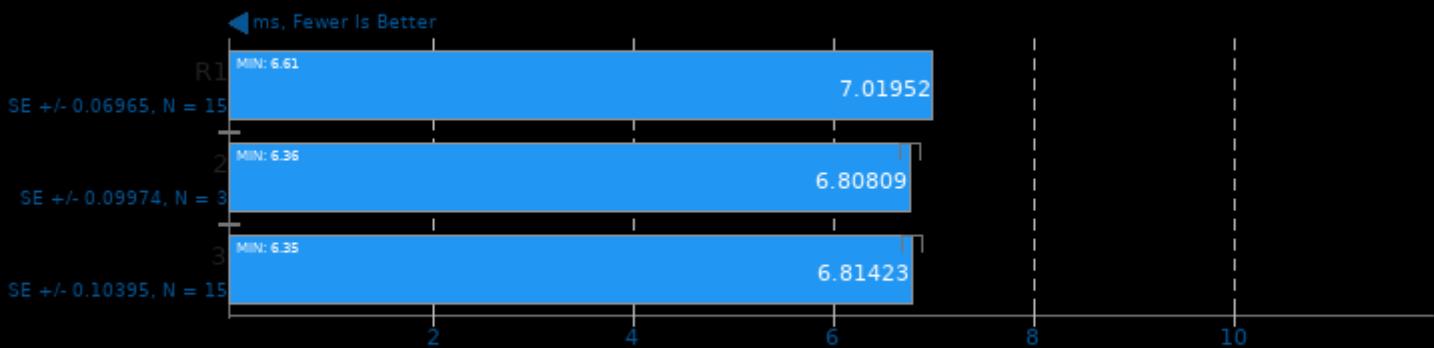
PHPBench 0.8.1

PHP Benchmark Suite



oneDNN 2.0

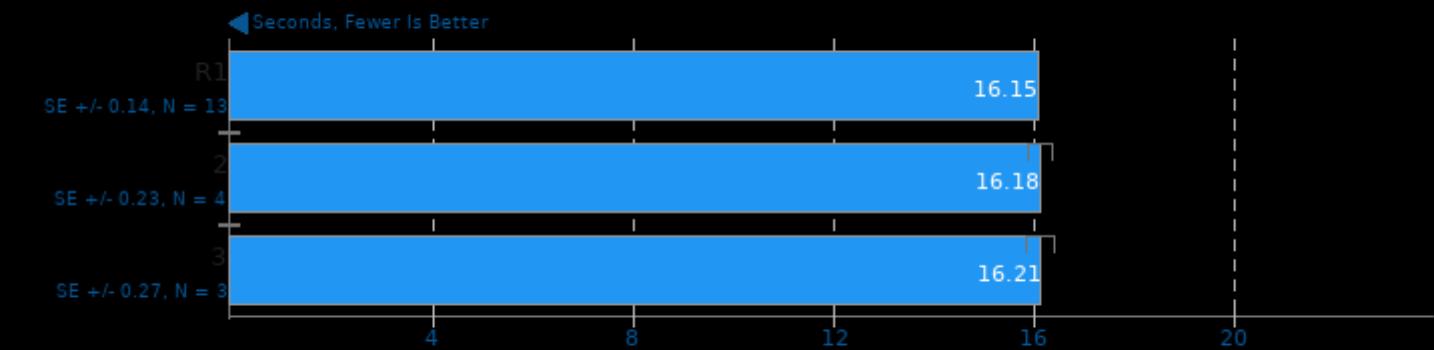
Harness: IP Shapes 3D - Data Type: u8s8f32 - Engine: CPU



1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread

Betsy GPU Compressor 1.1 Beta

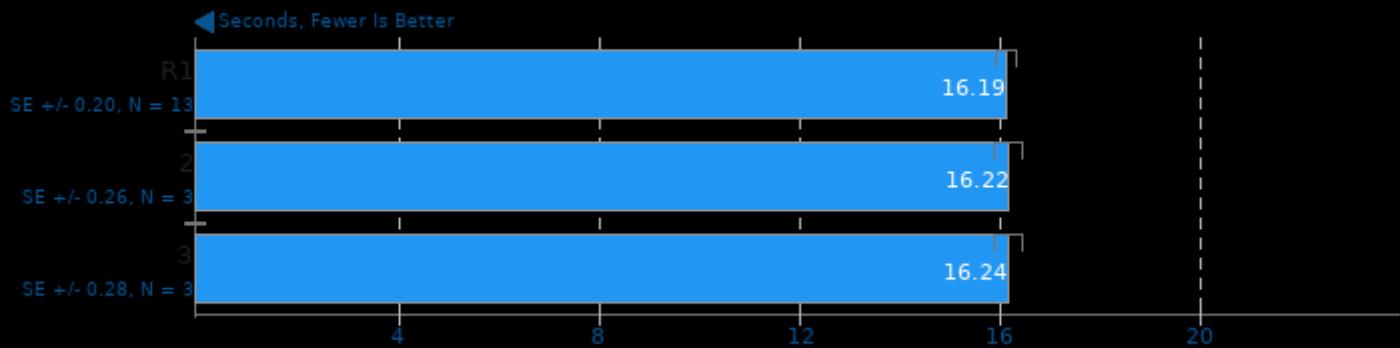
Codec: ETC1 - Quality: Highest



1. (CXX) g++ options: -O3 -O2 -lpthread -ldl

Betsy GPU Compressor 1.1 Beta

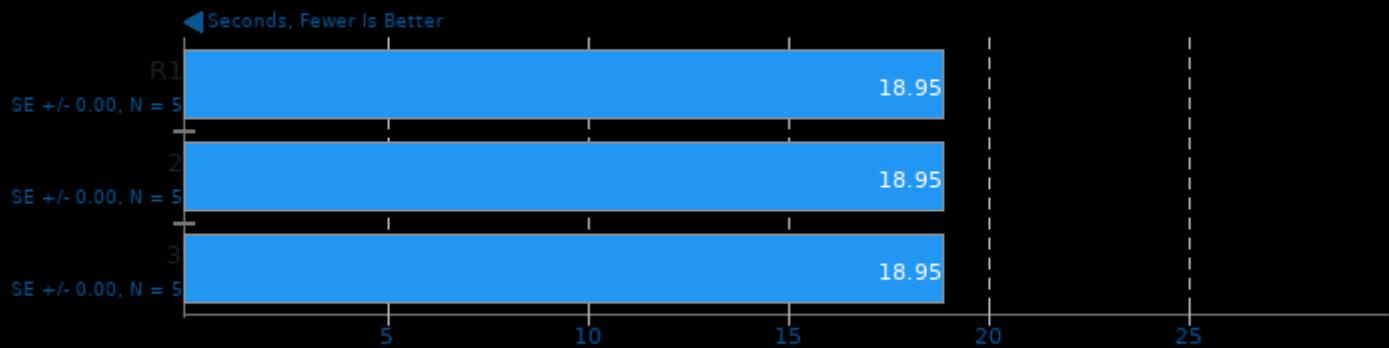
Codec: ETC2 RGB - Quality: Highest



1. (CXX) g++ options: -O3 -O2 -lpthread -ldl

WavPack Audio Encoding 5.3

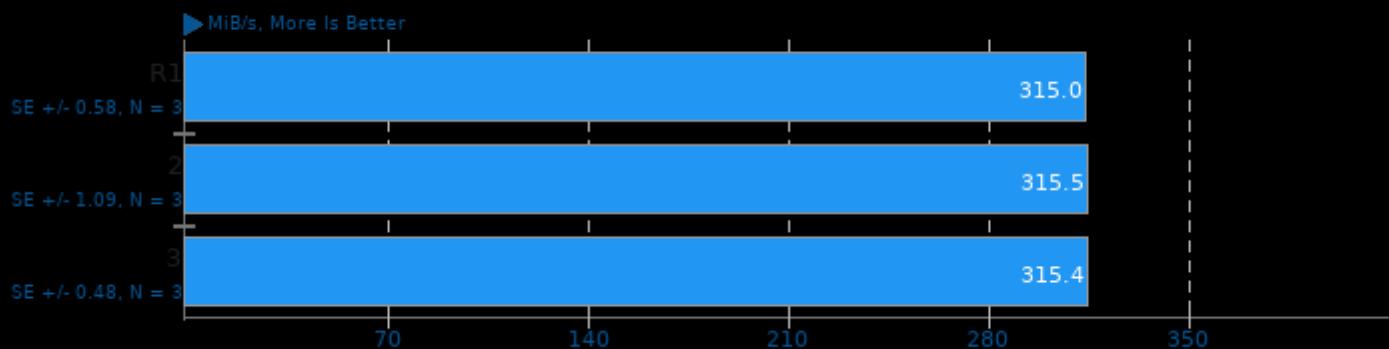
WAV To WavPack



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

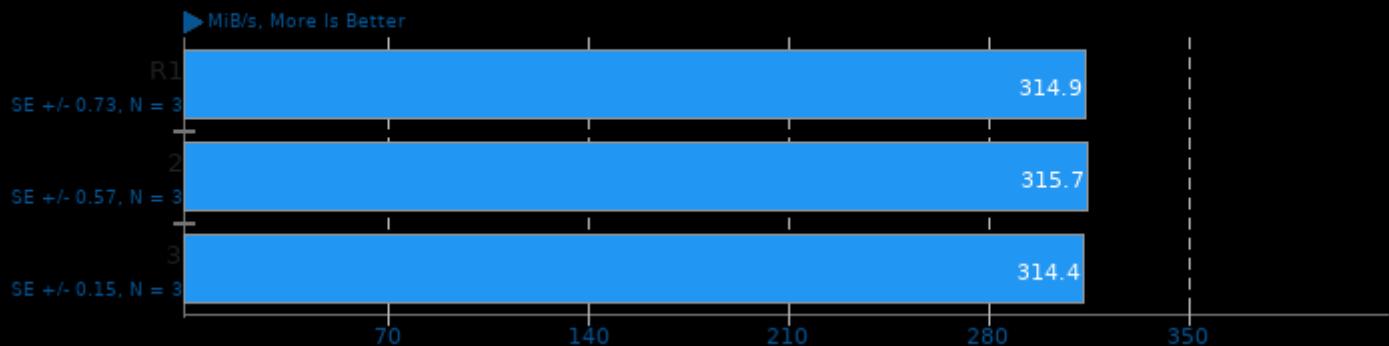
Cryptsetup

Twofish-XTS 512b Decryption



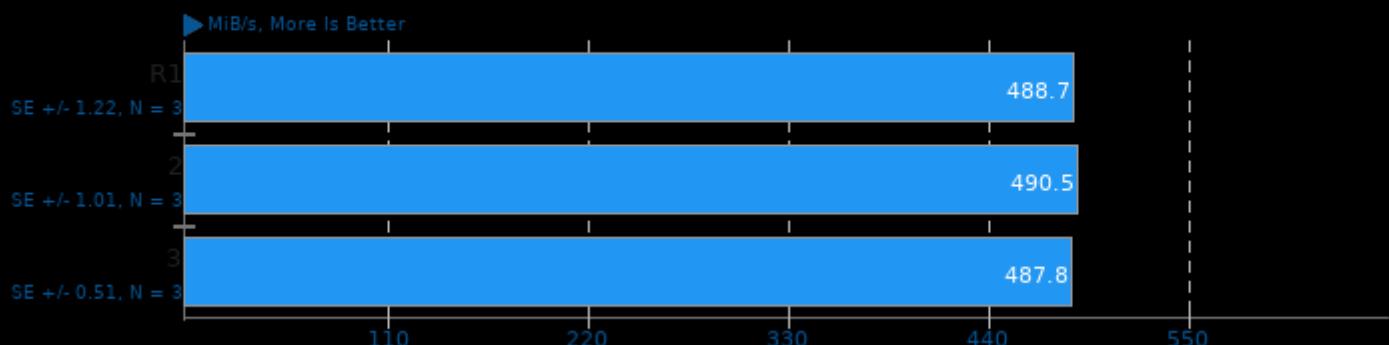
Cryptsetup

Twofish-XTS 512b Encryption



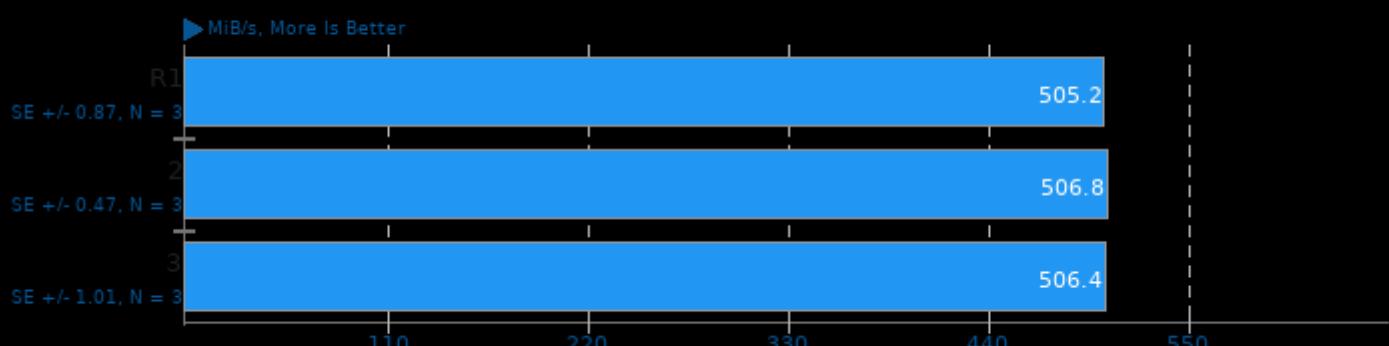
Cryptsetup

Serpent-XTS 512b Decryption



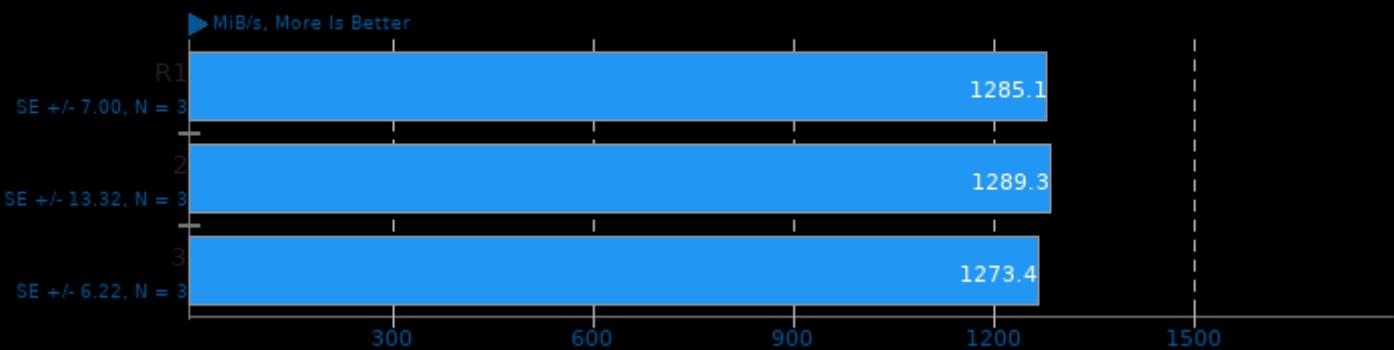
Cryptsetup

Serpent-XTS 512b Encryption



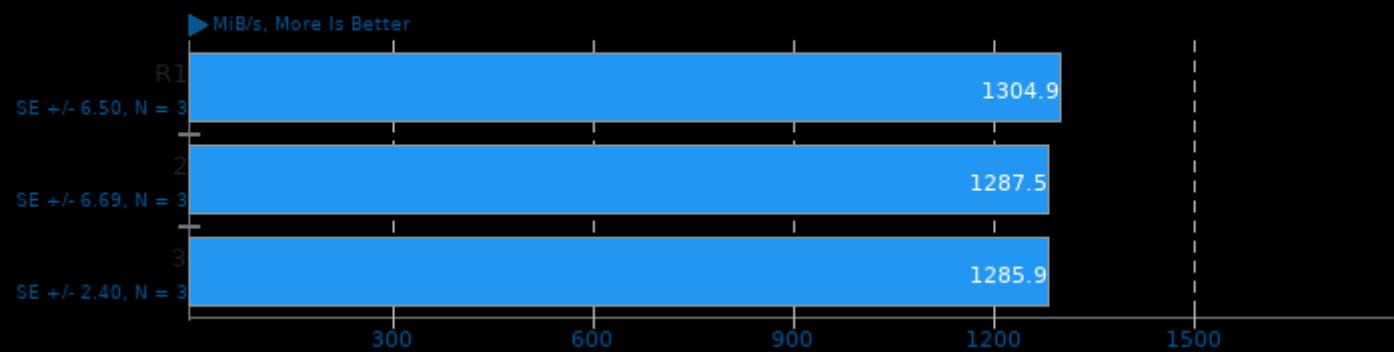
Cryptsetup

AES-XTS 512b Decryption



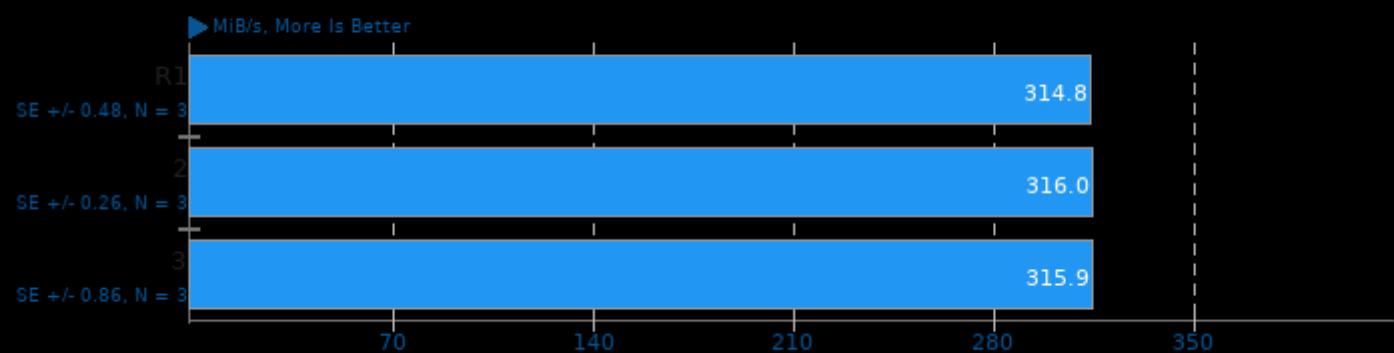
Cryptsetup

AES-XTS 512b Encryption



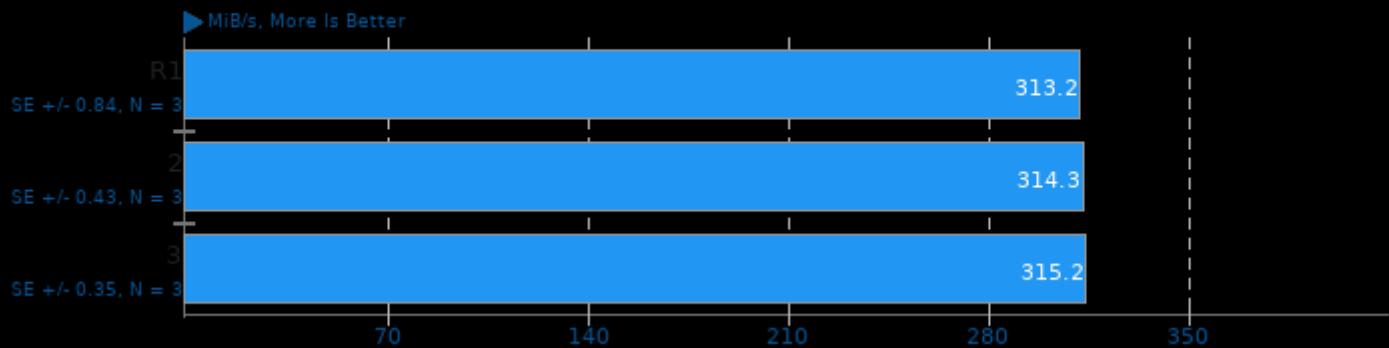
Cryptsetup

Twofish-XTS 256b Decryption



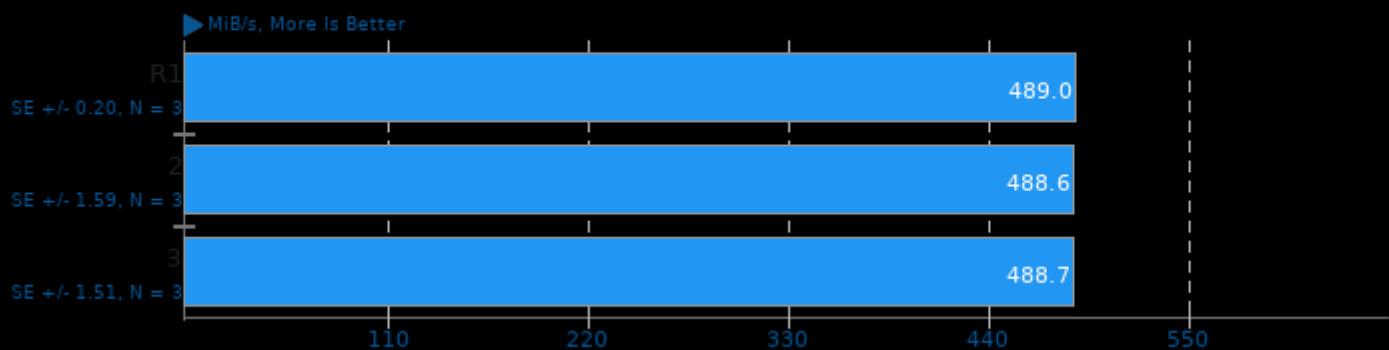
Cryptsetup

Twofish-XTS 256b Encryption



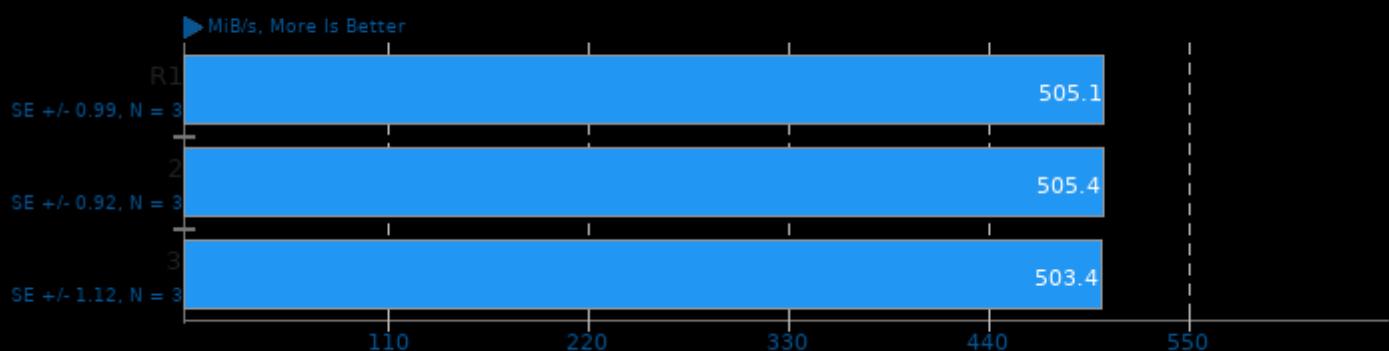
Cryptsetup

Serpent-XTS 256b Decryption



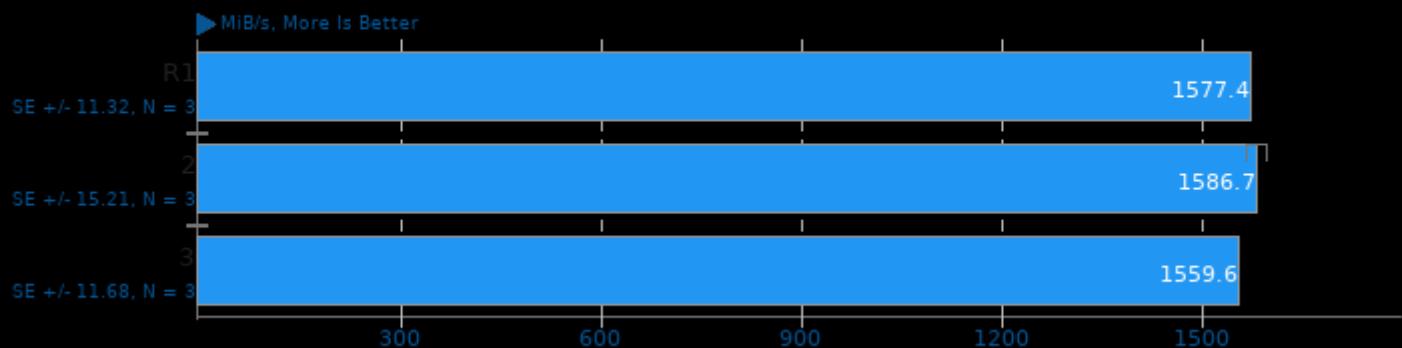
Cryptsetup

Serpent-XTS 256b Encryption



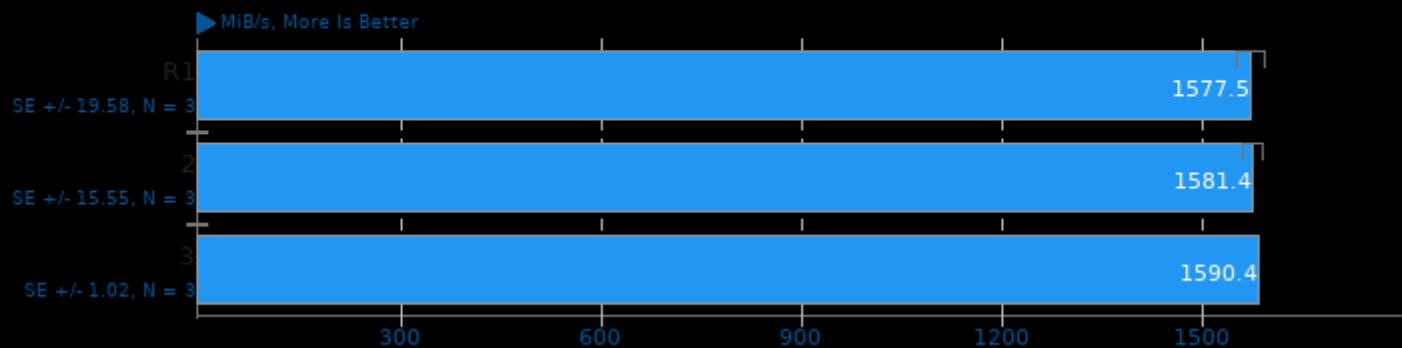
Cryptsetup

AES-XTS 256b Decryption



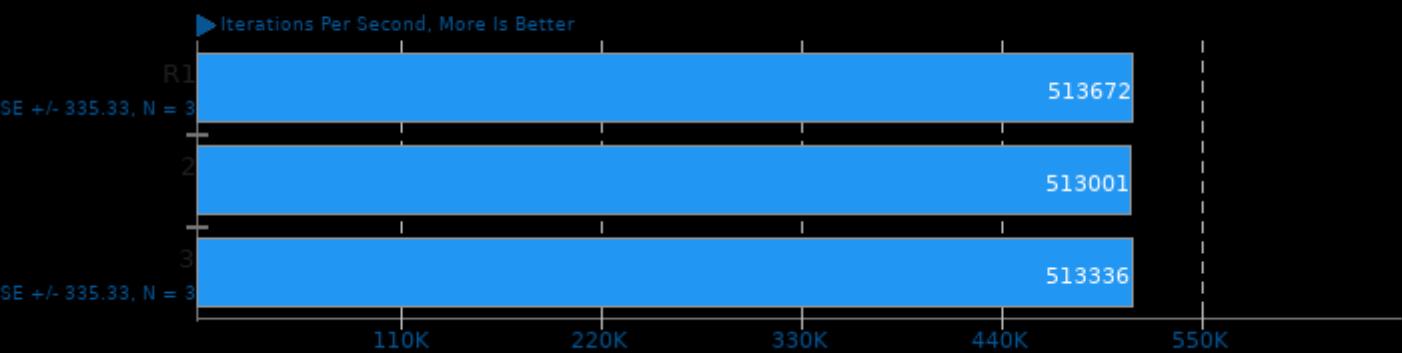
Cryptsetup

AES-XTS 256b Encryption



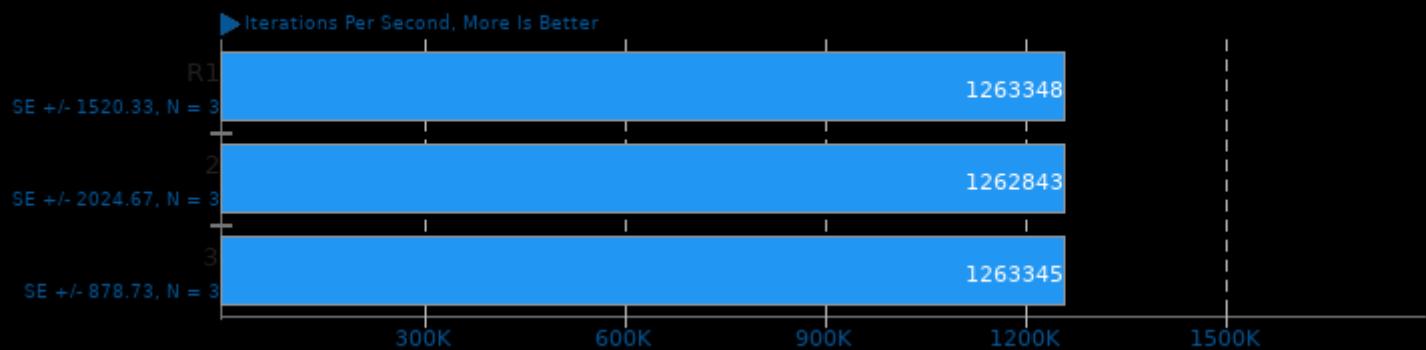
Cryptsetup

PBKDF2-whirlpool



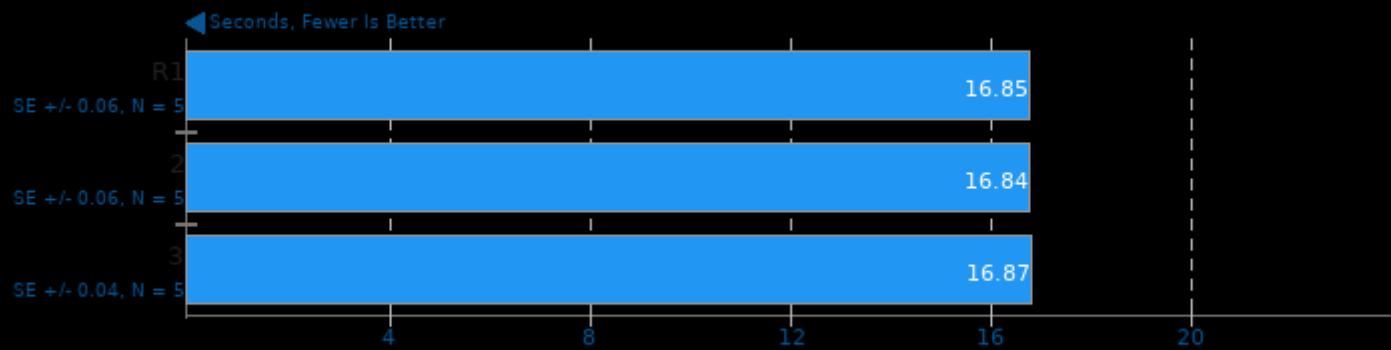
Cryptsetup

PBKDF2-sha512



Monkey Audio Encoding 3.99.6

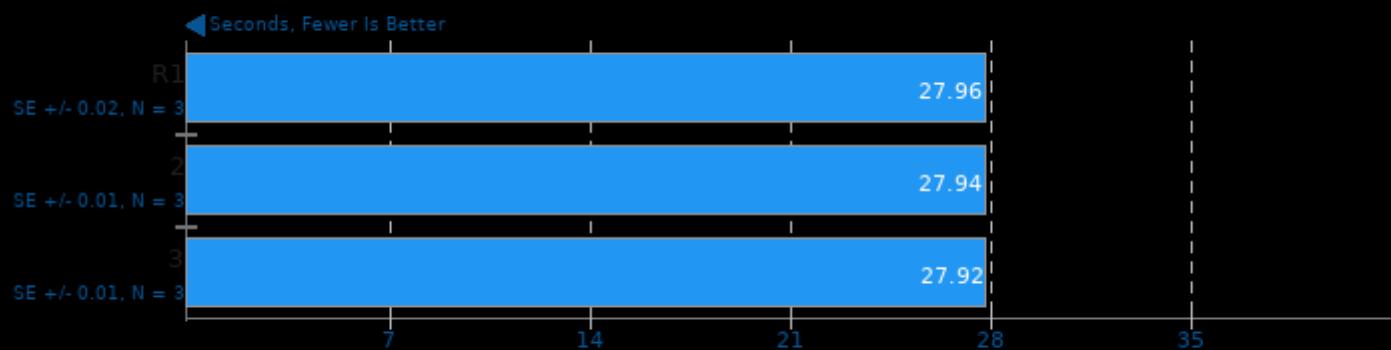
WAV To APE



1. (CXX) g++ options: -O3 -pedantic -rdynamic -lrt

Ogg Audio Encoding 1.3.4

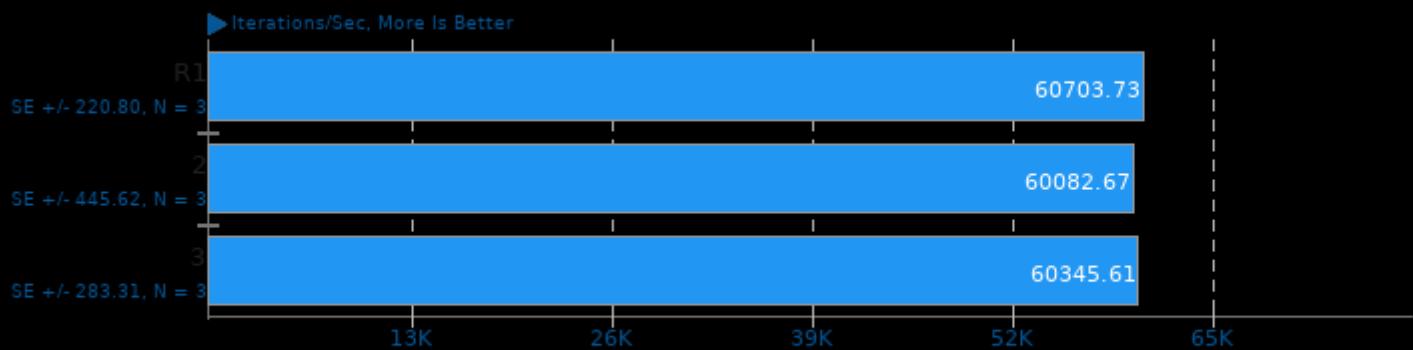
WAV To Ogg



1. (CC) gcc options: -O2 -ffast-math -fsigned-char

Coremark 1.0

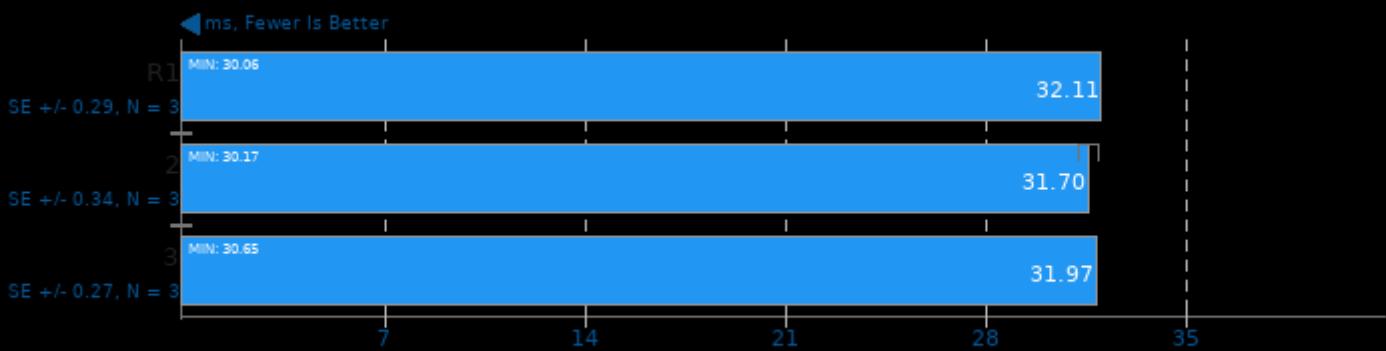
CoreMark Size 666 - Iterations Per Second



1. (CC) gcc options: -O2 -fintc -fint

oneDNN 2.0

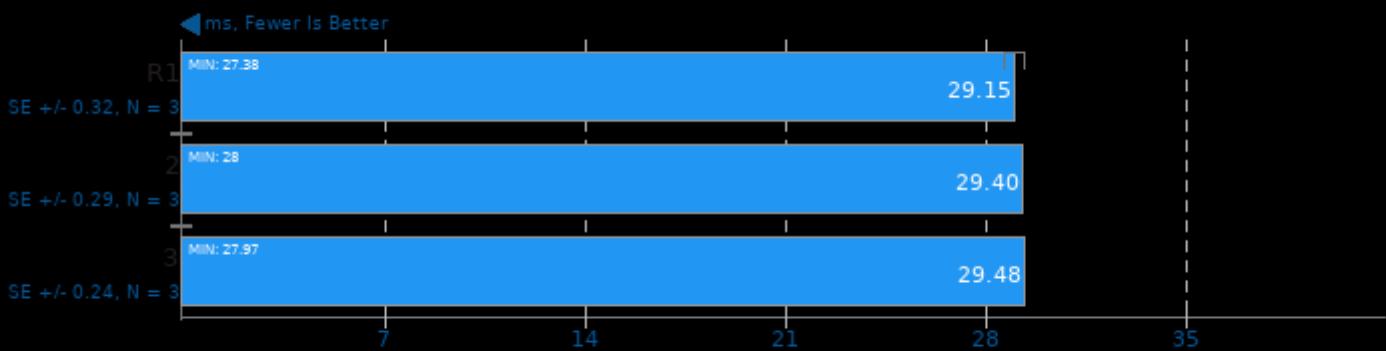
Harness: Deconvolution Batch shapes_1d - Data Type: u8s8f32 - Engine: CPU



1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread

oneDNN 2.0

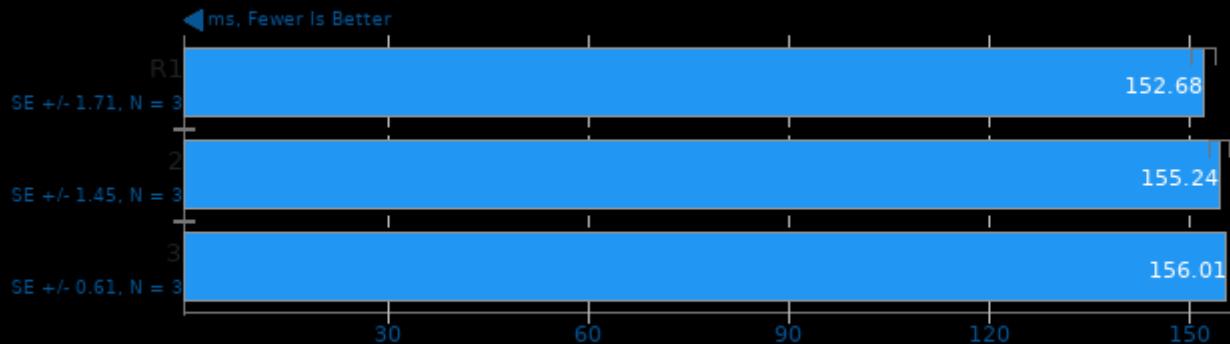
Harness: Deconvolution Batch shapes_1d - Data Type: f32 - Engine: CPU



1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread

VkResample 1.0

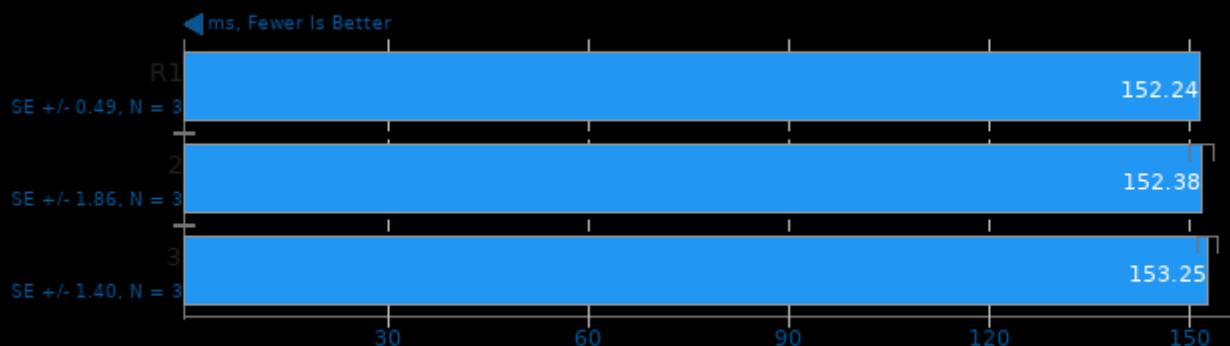
Upscale: 2x - Precision: Double



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

VkResample 1.0

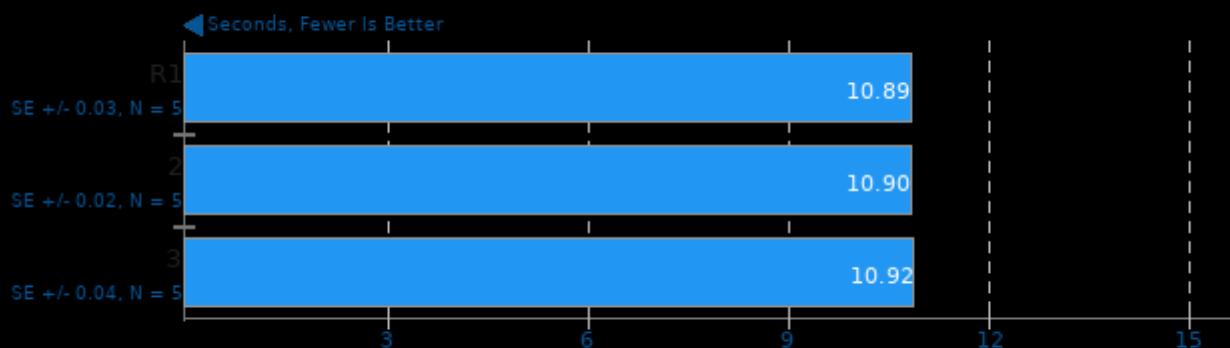
Upscale: 2x - Precision: Single



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

Opus Codec Encoding 1.3.1

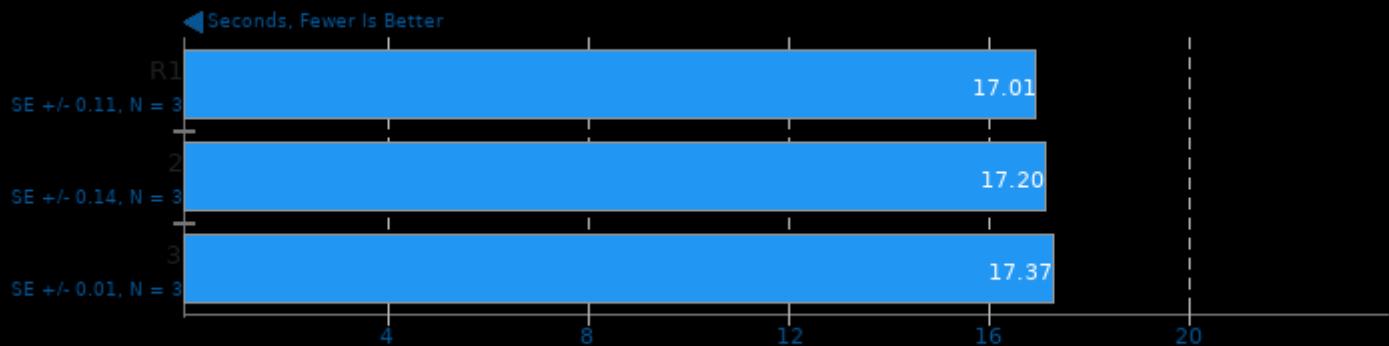
WAV To Opus Encode



1. (CXX) g++ options: -fvisibility=hidden -logg -lm

Timed MAFFT Alignment 7.471

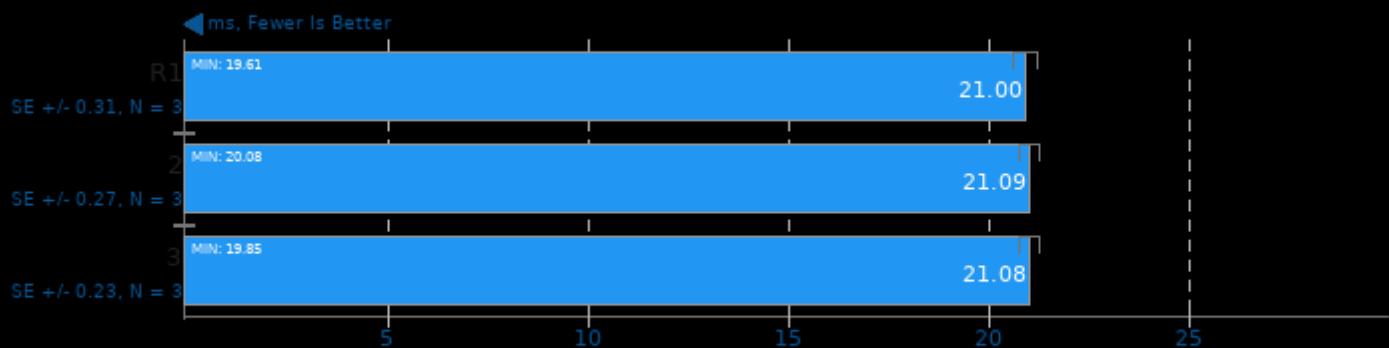
Multiple Sequence Alignment - LSU RNA



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

oneDNN 2.0

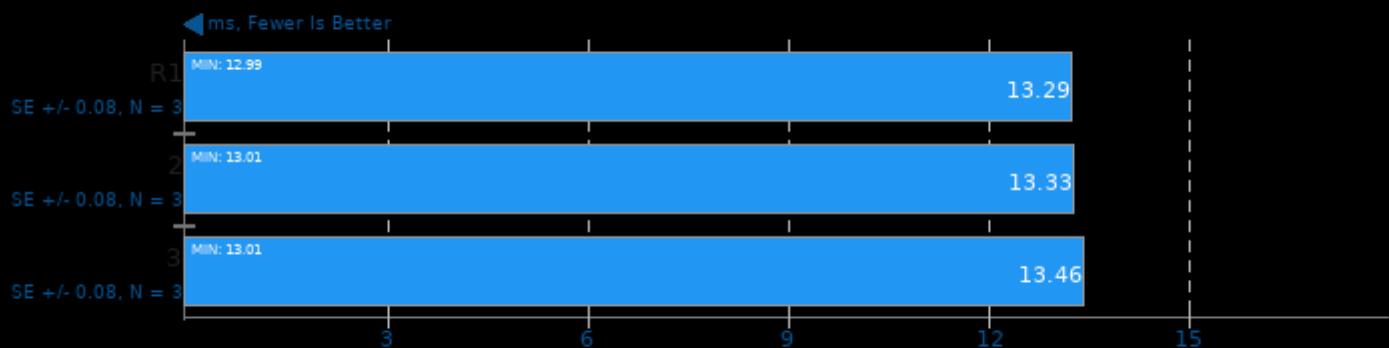
Harness: IP Shapes 1D - Data Type: f32 - Engine: CPU



1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread

oneDNN 2.0

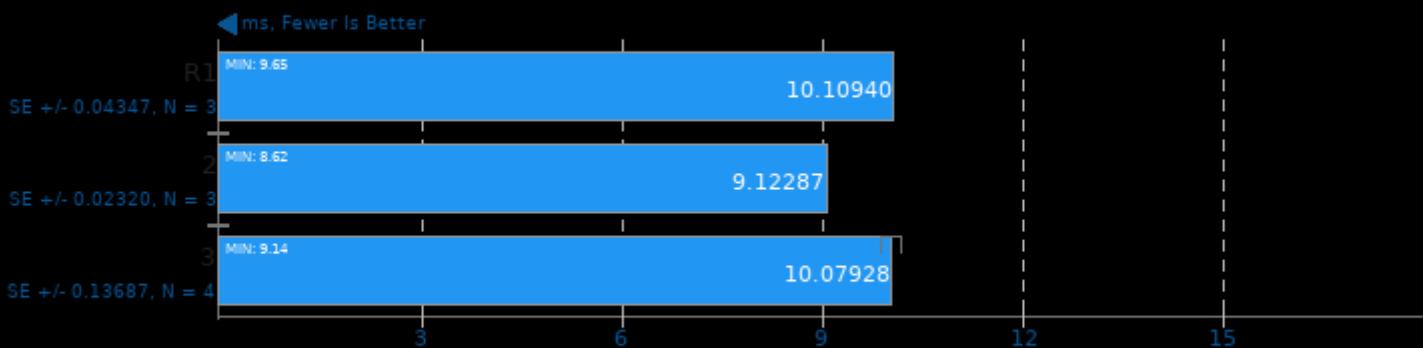
Harness: IP Shapes 1D - Data Type: u8s8f32 - Engine: CPU



1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread

oneDNN 2.0

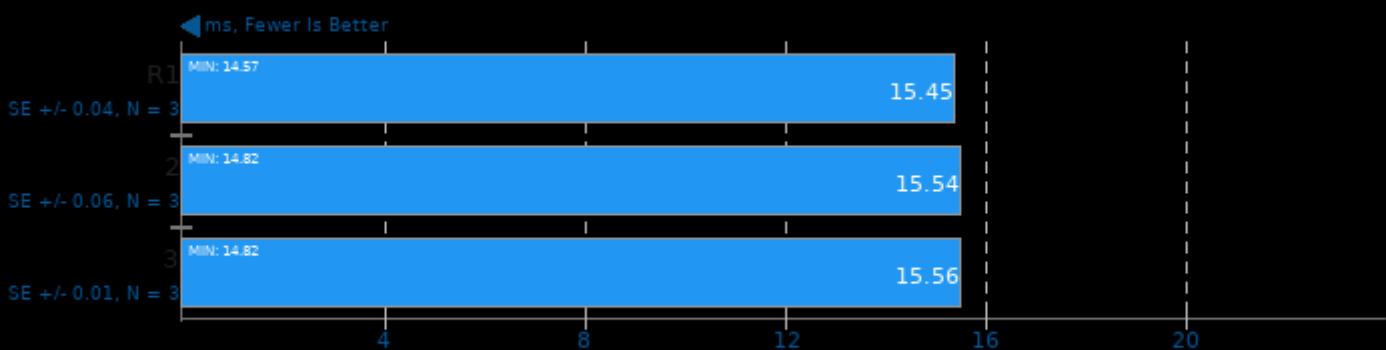
Harness: Matrix Multiply Batch Shapes Transformer - Data Type: f32 - Engine: CPU



1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread

oneDNN 2.0

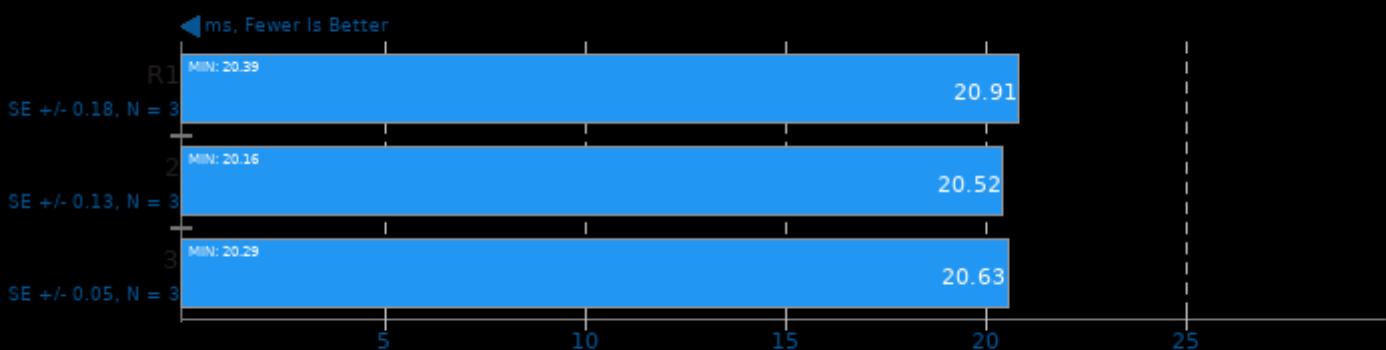
Harness: Matrix Multiply Batch Shapes Transformer - Data Type: u8s8f32 - Engine: CPU



1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread

oneDNN 2.0

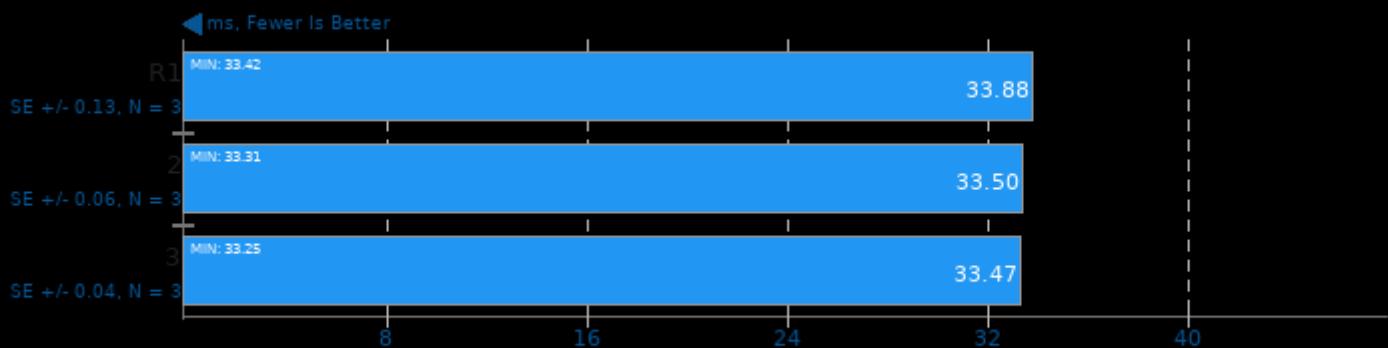
Harness: IP Shapes 3D - Data Type: f32 - Engine: CPU



1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread

oneDNN 2.0

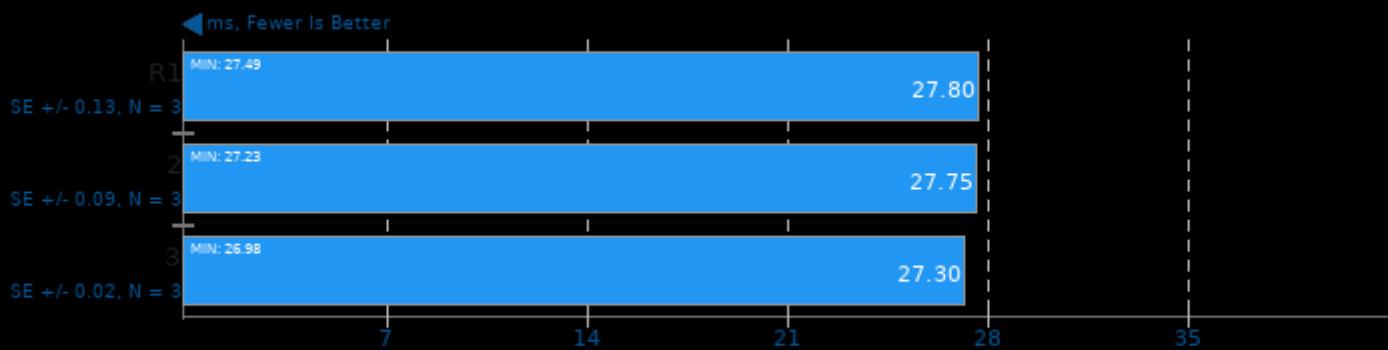
Harness: Convolution Batch Shapes Auto - Data Type: u8s8f32 - Engine: CPU



1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread

oneDNN 2.0

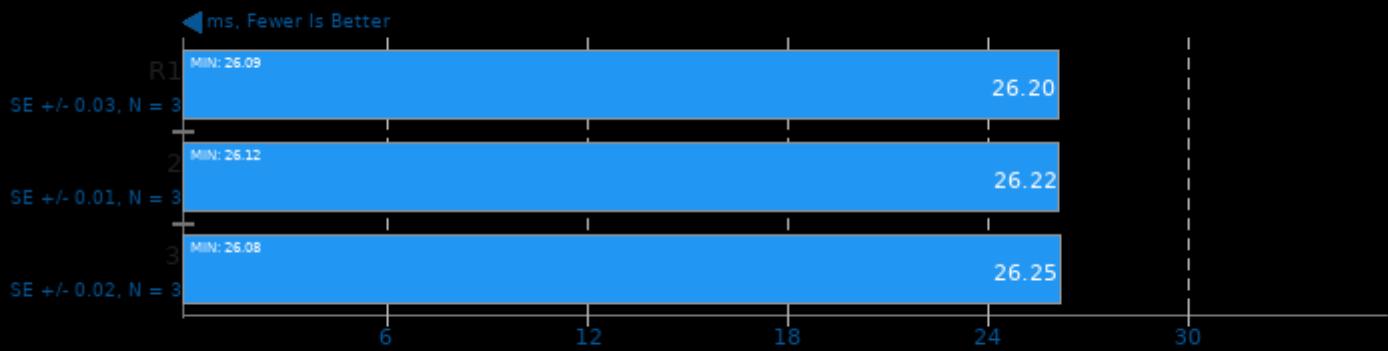
Harness: Convolution Batch Shapes Auto - Data Type: f32 - Engine: CPU



1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread

oneDNN 2.0

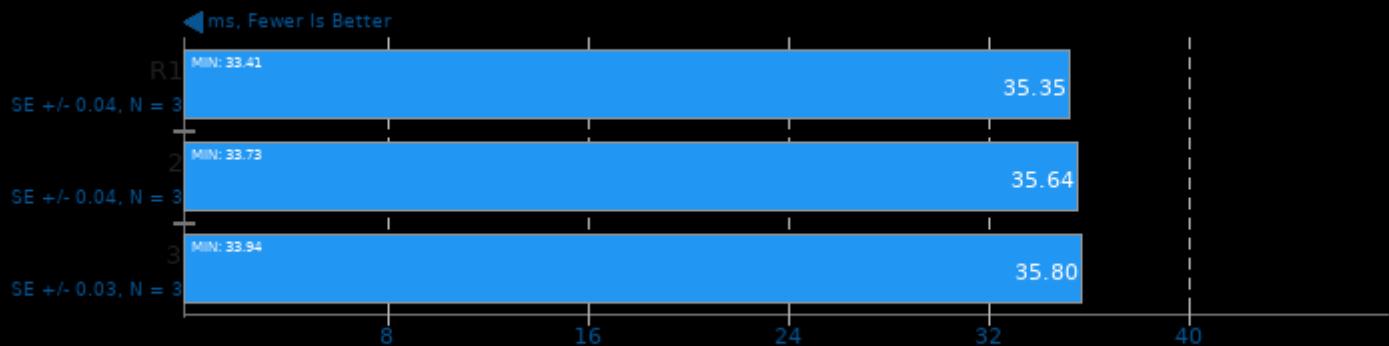
Harness: Deconvolution Batch shapes_3d - Data Type: u8s8f32 - Engine: CPU



1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread

oneDNN 2.0

Harness: Deconvolution Batch shapes_3d - Data Type: f32 - Engine: CPU

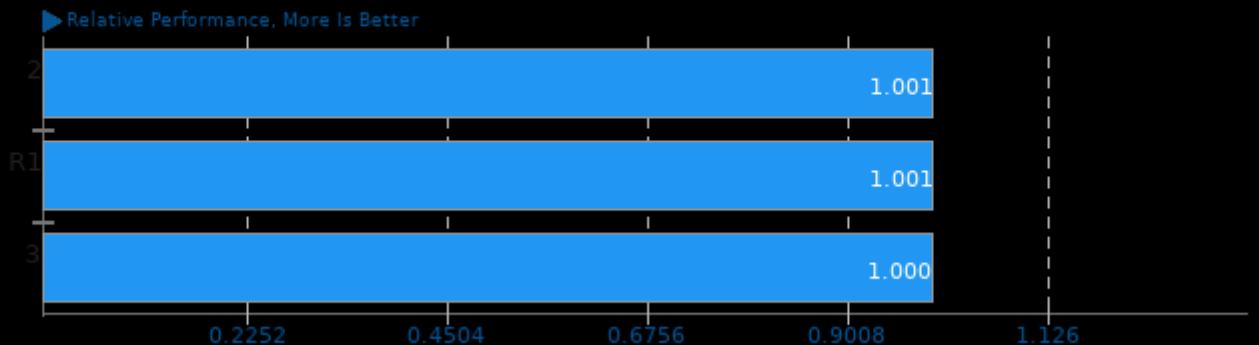


1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fpIC -pie -lpthread

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

Geometric Mean Of Audio Encoding Tests

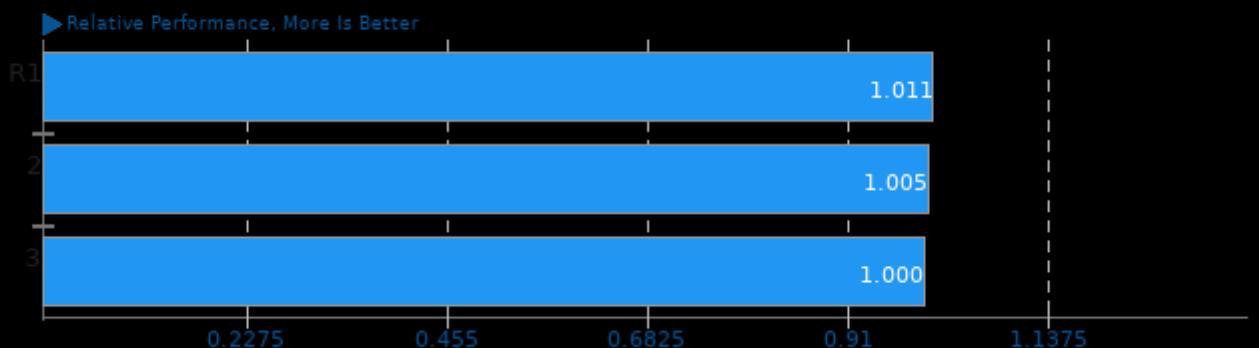
Result Composite - Broadwell 2021



Geometric mean based upon tests: pts/encode-ogg, pts/encode-ape, pts/encode-wavpack and pts/encode-opus

Geometric Mean Of Bioinformatics Tests

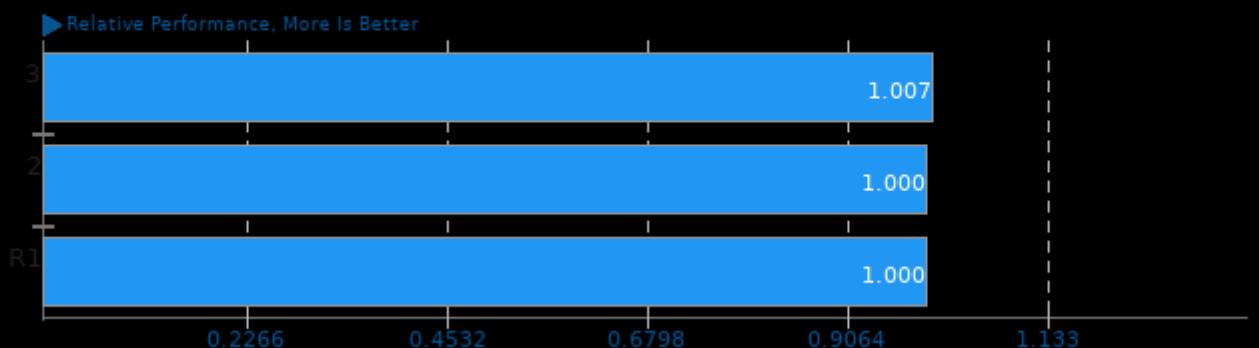
Result Composite - Broadwell 2021



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

Geometric Mean Of Timed Code Compilation Tests

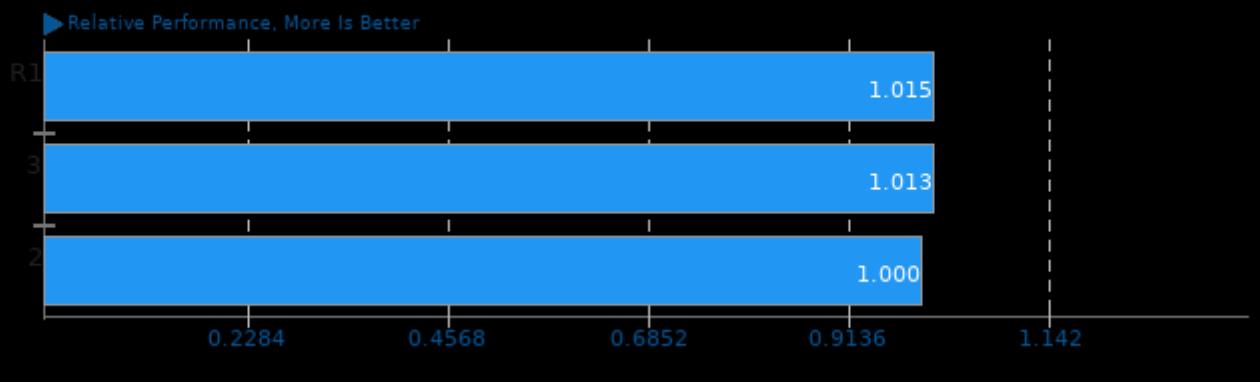
Result Composite - Broadwell 2021



Geometric mean based upon tests: pts/build-eigen, pts/build-ffmpeg and pts/build2

Geometric Mean Of C/C++ Compiler Tests

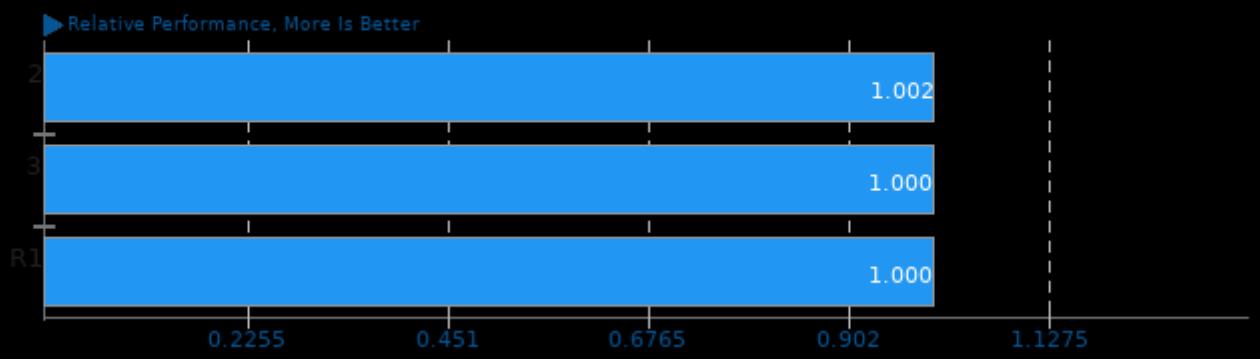
Result Composite - Broadwell 2021



Geometric mean based upon tests: pts/mafft, pts/hammer, pts/sqlite-speedtest, pts/clomp and pts/build-ffmpeg

Geometric Mean Of CPU Massive Tests

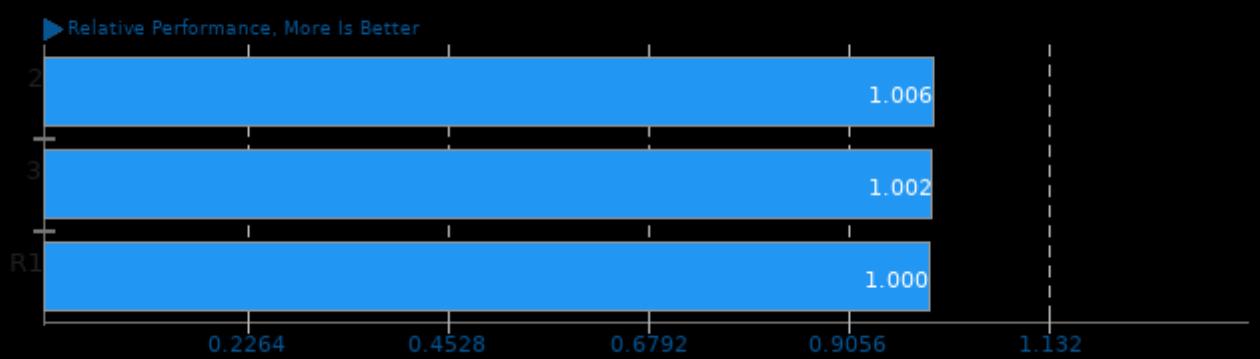
Result Composite - Broadwell 2021



Geometric mean based upon tests: pts/brl-cad, pts/hammer, pts/mafft, pts/onnednn, pts/phpbench, system/cryptsetup and pts/clomp

Geometric Mean Of Creator Workloads Tests

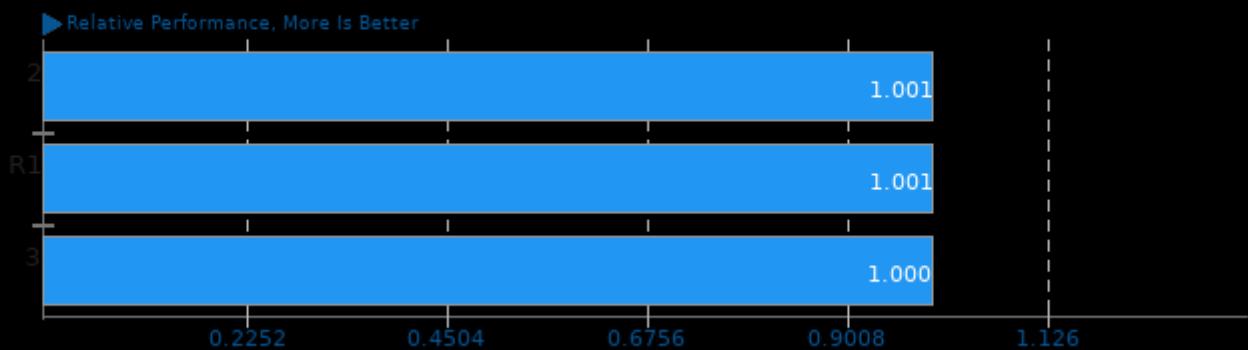
Result Composite - Broadwell 2021



Geometric mean based upon tests: pts/encode-ogg, pts/encode-ape, pts/encode-wavpack, pts/encode-opus, pts/onnednn, pts/betsy and pts/brl-cad

Geometric Mean Of Encoding Tests

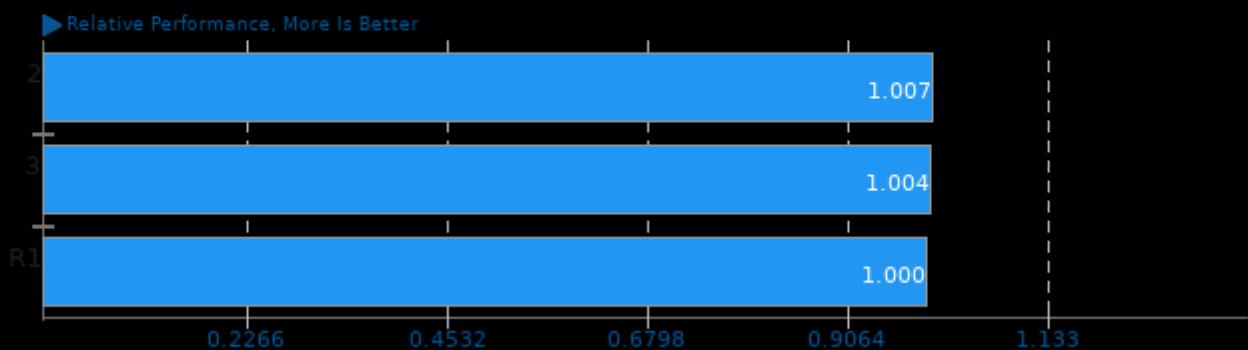
Result Composite - Broadwell 2021



Geometric mean based upon tests: pts/encode-ogg, pts/encode-ape, pts/encode-wavpack and pts/encode-opus

Geometric Mean Of HPC - High Performance Computing Tests

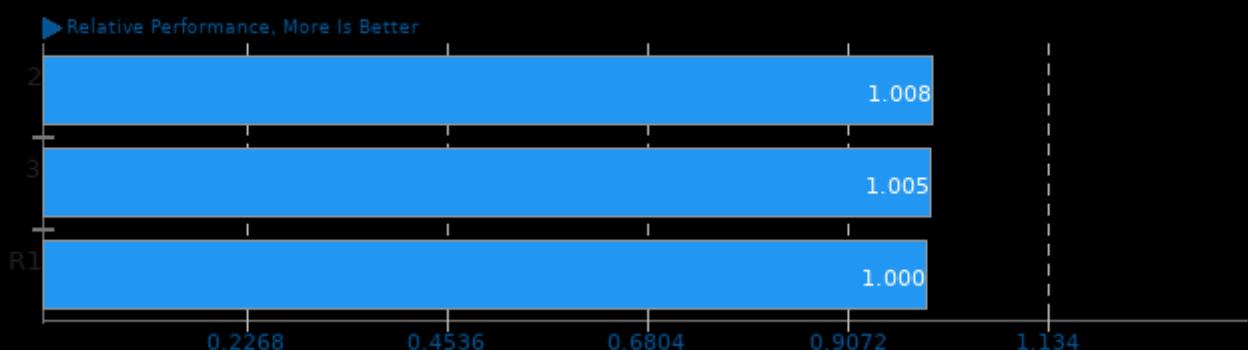
Result Composite - Broadwell 2021



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

Geometric Mean Of Machine Learning Tests

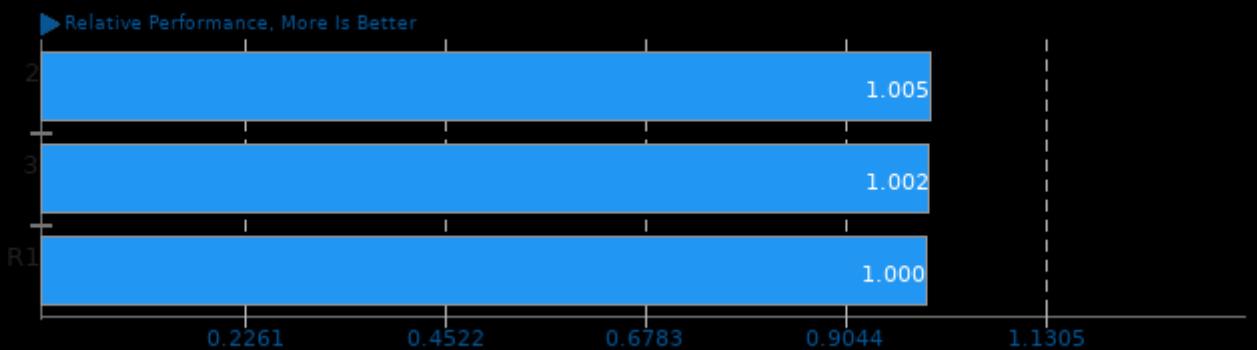
Result Composite - Broadwell 2021



Geometric mean based upon tests: pts/ncnn and pts/onnednn

Geometric Mean Of Multi-Core Tests

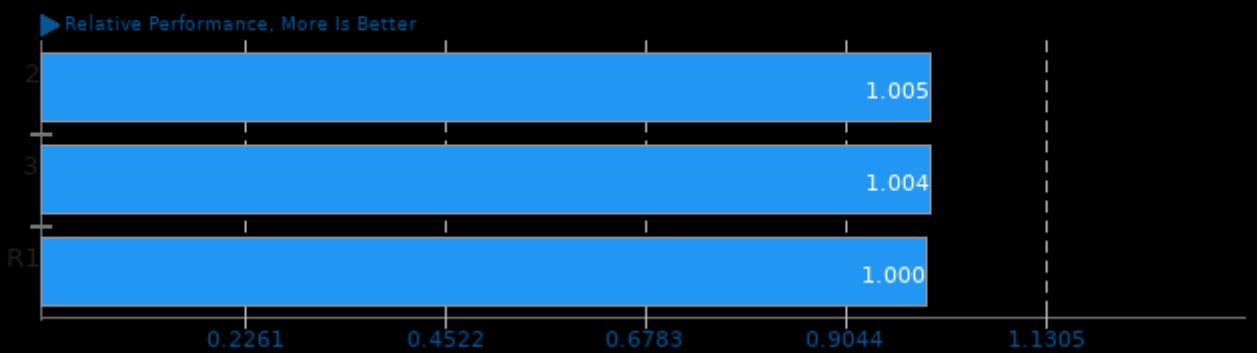
Result Composite - Broadwell 2021



Geometric mean based upon tests: pts/coremark, pts/onednn, pts/build-eigen, pts/build-ffmpeg and pts/build2

Geometric Mean Of NVIDIA GPU Compute Tests

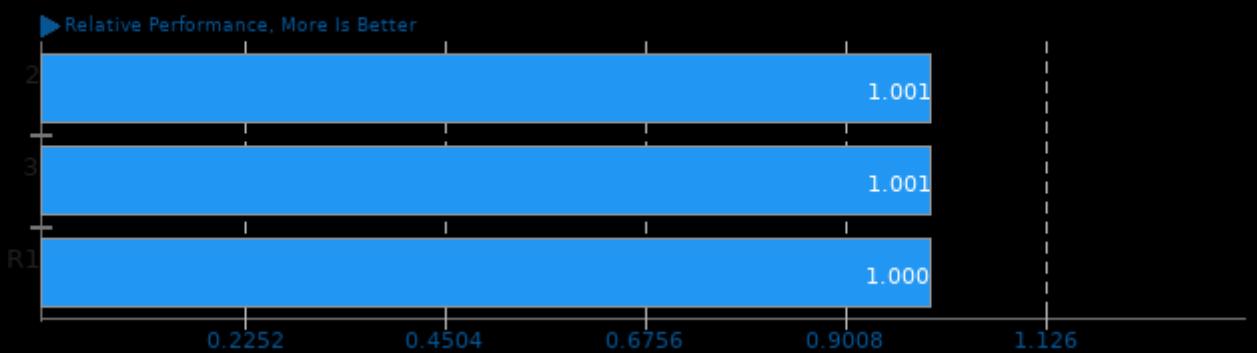
Result Composite - Broadwell 2021



Geometric mean based upon tests: pts/vkfft, pts/vkresample, pts/ncnn, pts/betsy and pts/libplacebo

Geometric Mean Of Programmer / Developer System Benchmarks Tests

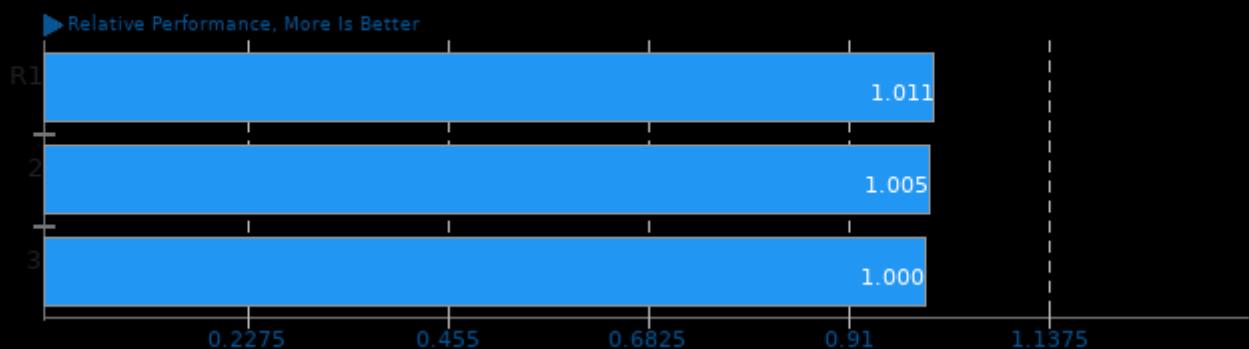
Result Composite - Broadwell 2021



Geometric mean based upon tests: pts/simdjson, pts/sqlite-speedtest, pts/node-web-tooling, system/cryptsetup, pts/build-eigen, pts/build-ffmpeg and pts/build2

Geometric Mean Of Scientific Computing Tests

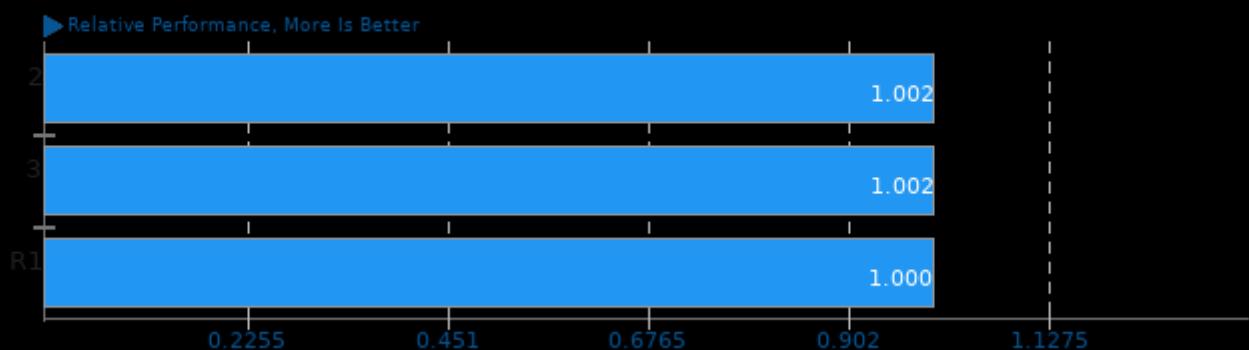
Result Composite - Broadwell 2021



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

Geometric Mean Of Server Tests

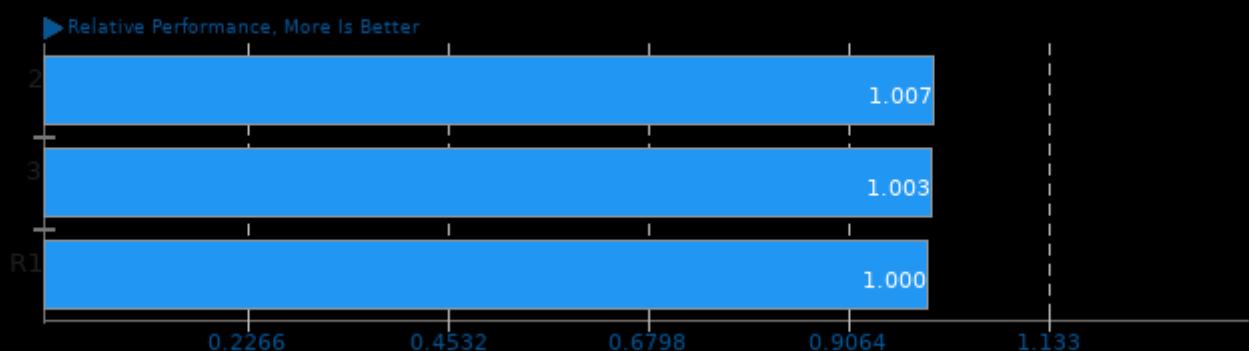
Result Composite - Broadwell 2021



Geometric mean based upon tests: pts/phpbench, pts/simjson, pts/node-web-tooling and pts/sqlite-speedtest

Geometric Mean Of Server CPU Tests

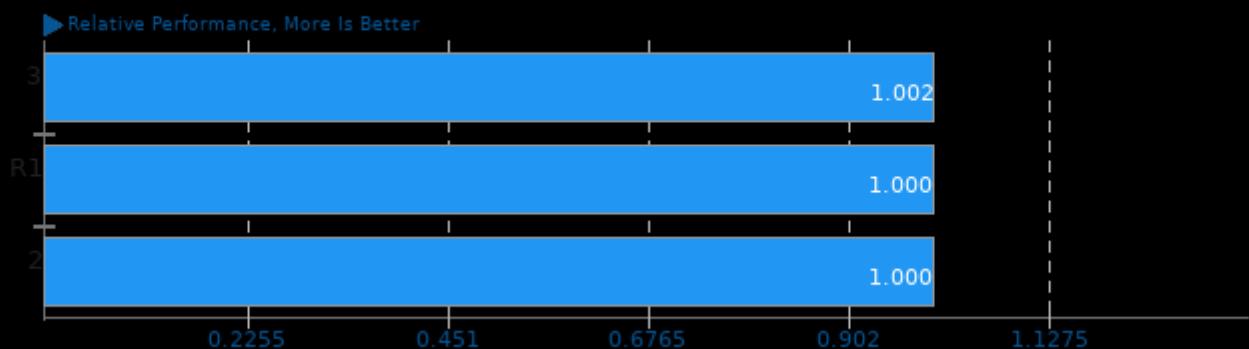
Result Composite - Broadwell 2021



Geometric mean based upon tests: pts/onnednn and pts/phpbench

Geometric Mean Of Single-Threaded Tests

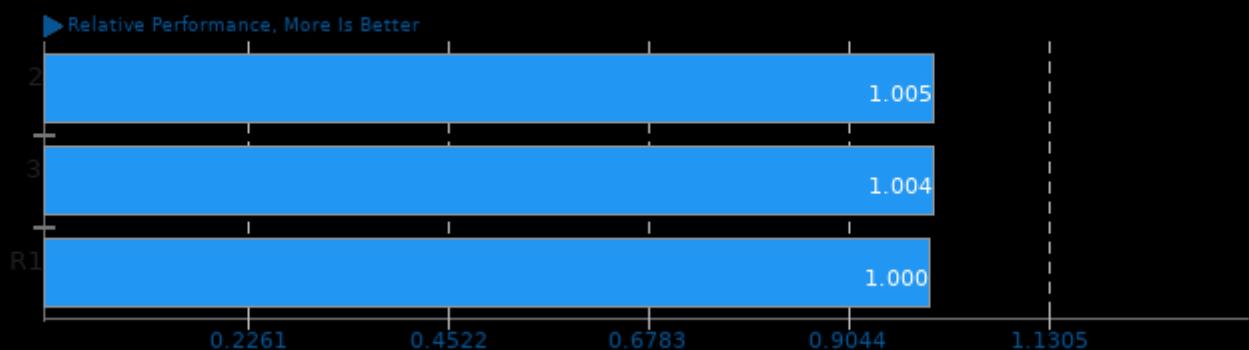
Result Composite - Broadwell 2021



Geometric mean based upon tests: pts/encode-ogg and pts/phpbench

Geometric Mean Of Vulkan Compute Tests

Result Composite - Broadwell 2021



Geometric mean based upon tests: pts/vkfft, pts/vkresample, pts/ncnn, pts/betsy and pts/libplacebo

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 12:30.