www.phoronix-test-suite.com

ice-lake-ubuntu

2 x Intel Xeon Platinum 8380 testing with a Intel M50CYP2SB2U (SE5C6200.86B.0022.D08.2103221623 BIOS) and ASPEED on Ubuntu 21.04 via the Phoronix Test Suite.

Test Systems:

Ubuntu 21.04

Ubuntu 21.04 Extra

Processor: 2 x Intel Xeon Platinum 8380 @ 3.40GHz (80 Cores / 160 Threads), Motherboard: Intel M50CYP2SB2U (SE5C6200.86B.0022.D08.2103221623 BIOS), Chipset: Intel Device 0998, Memory: 504GB, Disk: 800GB INTEL SSDPF21Q800GB, Graphics: ASPEED, Monitor: VE228, Network: 2 x Intel X710 for 10GBASE-T + 2 x Intel E810-C for QSFP

OS: Ubuntu 21.04, Kernel: 5.11.0-17-generic (x86_64), Desktop: GNOME Shell 3.38.4, Display Server: X Server, Compiler: GCC 10.3.0, File-System: ext4, Screen Resolution: 1920x1080

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Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-link-mutex --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-10-gDeRY6/gcc-10-10.3.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-10-gDeRY6/gcc-10-10.3.0/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-build-config=bootstrap-lto-lean --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_pstate powersave - CPU Microcode: 0xd000270
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Enhanced IBRS IBPB: conditional RSB filling + srbds: Not affected + tsx_async_abort: Not affected

	Ubuntu 21.04	Ubuntu 21.04 Extra
BlogBench - Read (Final Score)	2253810	
Standard Deviation	2.3%	
BlogBench - Write (Final Score)	60768	
Standard Deviation	2%	
WireGuard + Linux Networking Stack Stress Test	681.119	
Standard Deviation	2.2%	
High Performance Conjugate Gradient (GFLOP/s)	39.8231	
Standard Deviation	0.1%	
NAS Parallel Benchmarks - EP.C (Mop/s)	6260	
Standard Deviation	3.2%	
NAS Parallel Benchmarks - EP.D (Mop/s)	8659	
Standard Deviation	0.7%	
NAS Parallel Benchmarks - LU.C (Mop/s)	187807	
Standard Deviation	0.4%	
Rodinia - OpenMP LavaMD (sec)	40.406	
Standard Deviation	0.6%	
Rodinia - OpenMP HotSpot3D (sec)	105.650	
Standard Deviation	0.9%	
Rodinia - OpenMP Leukocyte (sec)	62.044	
Standard Deviation	1.9%	
Rodinia - OpenMP CFD Solver (sec)	4.807	
Standard Deviation	5.1%	
Rodinia - O.S (sec)	7.696	
Standard Deviation	1.8%	
NAMD - ATPase Simulation - 327,506 Atoms (days/ns)	0.27128	
Standard Deviation	0.3%	
Nebular Empirical Analysis Tool (sec)	45.569	
Standard Deviation	0.7%	
toyBrot Fractal Generator - TBB (ms)	6999	
Standard Deviation	5%	
toyBrot Fractal Generator - OpenMP (ms)	7438	
Standard Deviation	2.5%	
toyBrot Fractal Generator - C++ Tasks (ms)	8015	
Standard Deviation	2.4%	
toyBrot Fractal Generator - C++ Threads (ms)	7118	
Standard Deviation	2.4%	
Timed MrBayes Analysis - P.P.A (sec)	170.019	
Standard Deviation	0.8%	
NWChem - C240 Buckyball (sec)	1876	

Xcompact3d Incompact3d - X.b.i.i (sec)	291.993968
Standard Deviation	0.7%
Xcompact3d Incompact3d - i.i.1.C.P.D (sec)	2.88066936
Standard Deviation	1.9%
Xcompact3d Incompact3d - i.i.1.C.P.D (sec)	11.3305505
Standard Deviation	0.6%
OpenFOAM - Motorbike 30M (sec)	15.05
Standard Deviation	1.3%
OpenFOAM - Motorbike 60M (sec)	105.35
Standard Deviation	0.8%
RELION - Basic - CPU (sec)	348.838
Standard Deviation	0.8%
LAMMPS Molecular Dynamics Simulator - 20k Atoms (ns/day)	35.725
Standard Deviation	0.1%
LAMMPS Molecular Dynamics Simulator - Rhodopsin Protein (ns/day)	23.866
Standard Deviation	0.2%
libgav1 - Chimera 1080p (FPS)	34.39
Standard Deviation	0.9%
libgav1 - Summer Nature 4K (FPS)	19.39
Standard Deviation	1.3%
libgav1 - S.N.1 (FPS)	41.83
Standard Deviation	1.8%
libgav1 - C.1.1.b (FPS)	15.47
Standard Deviation	0.7%
Chia Blockchain VDF - Square Plain C++ (IPS)	138967
Standard Deviation	0.1%
Chia Blockchain VDF - S.A.O (IPS)	147240
Standard Deviation	2.4%
Java Gradle Build - Reactor (sec)	366.363
Standard Deviation	4.1%
DaCapo Benchmark - H2 (msec)	10740
Standard Deviation	2.5%
DaCapo Benchmark - Jython (msec)	5320
Standard Deviation	12.9%
DaCapo Benchmark - Tradebeans (msec)	16729
Standard Deviation	1%
Zstd Compression - 19 - Compression Speed (MB/s)	82.3
Standard Deviation	1.7%
Zstd Compression - 19 - D.S (MB/s)	2728
Standard Deviation	0.8%
Zstd Compression - 8, Long Mode - Compression Speed (MB/s)	296.3
Standard Deviation	2.4%
Zstd Compression - 8, Long Mode - D.S (MB/s)	3194
Standard Deviation	0.4%
Zstd Compression - 19, Long Mode - Compression Speed (MB/s)	47.2
Standard Deviation	1.2%
Zstd Compression - 19, Long Mode - D.S (MB/s)	2719
Standard Deviation	0.1%

srsLTE - OFDM_Test (Samples / Second)	121500000
Standard Deviation	0.9%
srsLTE - PHY_DL_Test (eNb Mb/s)	210.9
Standard Deviation	0.7%
srsLTE - PHY_DL_Test (UE Mb/s)	86.6
Standard Deviation	0.6%
John The Ripper - Blowfish (Real C/S)	118366
Standard Deviation	0.2%
John The Ripper - MD5 (Real C/S)	10077667
Standard Deviation	2.4%
Node.js Express HTTP Load Test (Reqs/sec)	5554
Standard Deviation	11.2%
OSPray - San Miguel - SciVis (FPS)	90.91
Standard Deviation	0%
OSPray - XFrog Forest - SciVis (FPS)	18.87
Standard Deviation	0%
OSPray - San Miguel - Path Tracer (FPS)	10.42
Standard Deviation	0%
OSPray - NASA Streamlines - SciVis (FPS)	125
OSPray - XFrog Forest - Path Tracer (FPS)	10.38
Standard Deviation	0.6%
OSPray - M.R - SciVis (FPS)	109.63
Standard Deviation	3.6%
OSPray - NASA Streamlines - Path Tracer (FPS)	27.78
Standard Deviation	0%
OSPray - M.R - Path Tracer (FPS)	477.78
Standard Deviation	12.3%
AOM AV1 - Speed 6 Realtime - Bosphorus 4K (FPS)	7.36
Standard Deviation	0.4%
AOM AV1 - Speed 6 Two-Pass - Bosphorus 4K (FPS)	4.05
Standard Deviation	0.6%
AOM AV1 - Speed 8 Realtime - Bosphorus 4K (FPS)	16.97
Standard Deviation	0.2%
AOM AV1 - Speed 9 Realtime - Bosphorus 4K (FPS)	23.59
Standard Deviation	2.1%
Embree - Pathtracer - Crown (FPS)	64.3015
Standard Deviation	1.9%
Embree - Pathtracer ISPC - Crown (FPS)	67.0395
Standard Deviation	0.8%
Embree - Pathtracer - Asian Dragon (FPS)	81.2911
Standard Deviation	1.2%
Embree - Pathtracer ISPC - Asian Dragon (FPS)	106.6858
Standard Deviation	2.5%
Kvazaar - Bosphorus 4K - Medium (FPS)	6.90
Standard Deviation	0.2%
Kvazaar - Bosphorus 1080p - Medium (FPS)	25.42
Standard Deviation	0.4%
Kvazaar - Bosphorus 4K - Very Fast (FPS)	13.38
Standard Deviation	0.2%
Kvazaar - Bosphorus 4K - Ultra Fast (FPS)	22.78
Standard Deviation	0.9%
Kvazaar - Bosphorus 1080p - Very Fast (FPS)	49.20
Standard Deviation	1.6%

Kvazaar - Bosphorus 1080p - Ultra Fast (FPS)	85.41
Standard Deviation	1.4%
SVT-AV1 - Preset 4 - Bosphorus 4K (FPS)	2.845
Standard Deviation	2.2%
SVT-AV1 - Preset 8 - Bosphorus 4K (FPS)	29.809
Standard Deviation	2%
SVT-HEVC - 1 - Bosphorus 1080p (FPS)	29.57
Standard Deviation	0.5%
SVT-HEVC - 7 - Bosphorus 1080p (FPS)	172.02
Standard Deviation	1.7%
SVT-HEVC - 10 - Bosphorus 1080p (FPS)	260.88
Standard Deviation	1.7%
SVT-VP9 - VMAF Optimized - Bosphorus 1080p (FPS)	210.15
Standard Deviation	3.7%
SVT-VP9 - P.S.O - Bosphorus 1080p (FPS)	204.86
Standard Deviation	3.8%
SVT-VP9 - V.Q.O - Bosphorus 1080p (FPS)	170.47
Standard Deviation	2.1%
x265 - Bosphorus 4K (FPS)	12.92
Standard Deviation	1.2%
x265 - Bosphorus 1080p (FPS)	28.33
Standard Deviation	2.1%
Intel Open Image Denoise - Memorial (Images / Sec)	57.59
Standard Deviation	15.5%
OpenVKL - vklBenchmark (Items / Sec)	669
Standard Deviation	0.6%
OpenVKL - vklBenchmarkVdbVolume (Items / Sec)	21915837
Standard Deviation	0.5%
OpenVKL - vklBenchmarkStructuredVolume (Items /	73429487
Standard Deviation	0.2%
OpenVKL - vklBenchmarkUnstructuredVolume (Items / Sec)	1776457
Standard Deviation	0.7%
Coremark - CoreMark Size 666 - I.P.S (Iterations/Sec)	2347454
Standard Deviation	0.2%
Stockfish - Total Time (Nodes/s)	180493580
Standard Deviation	4.6%
asmFish - 1.H.M.2.D (Nodes/s)	172711481
Standard Deviation	1.8%
Swet - Average (Operations/sec)	639155887
Standard Deviation	0.5%
PJSIP - INVITE (Responses/sec)	2531
Standard Deviation	3.4%
PJSIP - OPTIONS, Stateful (Responses/sec)	3815
Standard Deviation	0.3%
PJSIP - OPTIONS, Stateless (Responses/sec)	40082
Standard Deviation	2.3%
libavif avifenc - 6 (sec)	15.383
Standard Deviation	2.4%
libavif avifenc - 10 (sec)	5.050
Standard Deviation	5.7%
libavif avifenc - 6, Lossless (sec)	36.764
Standard Deviation	2.2%

libavif avifenc - 10, Lossless (sec)	8.522
Standard Deviation	6.6%
Timed Apache Compilation - Time To Compile (sec)	35.187
Standard Deviation	0.2%
Timed GCC Compilation - Time To Compile (sec)	1107
Standard Deviation	0.1%
Timed Godot Game Engine Compilation - Time To Compile (sec)	75.951
Standard Deviation	0.3%
Timed Linux Kernel Compilation - Time To Compile	24.813
Standard Deviation	5.1%
Timed LLVM Compilation - Ninja (sec)	129.152
Standard Deviation	0.5%
Timed LLVM Compilation - Unix Makefiles (sec)	198.538
Standard Deviation	1.2%
Timed MPlayer Compilation - Time To Compile (sec)	10.109
Standard Deviation	1.1%
Timed Node.js Compilation - Time To Compile (sec)	102.136
Standard Deviation	1.6%
Timed PHP Compilation - Time To Compile (sec)	40.207
Standard Deviation	2.2%
Build2 - Time To Compile (sec)	70.057
Standard Deviation	1.2%
POV-Ray - Trace Time (sec)	9.476
Standard Deviation	2.3%
Tungsten Renderer - Hair (sec)	6.52538
Standard Deviation	2%
Tungsten Renderer - Water Caustic (sec)	31.2739
Standard Deviation	1.5%
Tungsten Renderer - Non-Exponential (sec)	5.23912
Standard Deviation	2.5%
Tungsten Renderer - Volumetric Caustic (sec)	13.4481
Standard Deviation	12.8%
YafaRay - T.T.F.S.S (sec)	86.283
Standard Deviation	10.1%
oneDNN - IP Shapes 1D - f32 - CPU (ms)	0.945450
Standard Deviation	2.3%
oneDNN - IP Shapes 3D - f32 - CPU (ms)	1.37903
Standard Deviation	1.4%
oneDNN - IP Shapes 1D - u8s8f32 - CPU (ms)	1.25869
Standard Deviation	2.8%
oneDNN - IP Shapes 3D - u8s8f32 - CPU (ms)	0.445171
Standard Deviation	2.5%
oneDNN - IP Shapes 1D - bf16bf16bf16 - CPU (ms)	3.03516
Standard Deviation	3.1%
oneDNN - IP Shapes 3D - bf16bf16bf16 - CPU (ms)	1.82051
Standard Deviation	2.4%
oneDNN - C.B.S.A - f32 - CPU (ms)	1.41084
Standard Deviation	0.7%
oneDNN - D.B.s - f32 - CPU (ms)	28.7517
Standard Deviation	3.9%
oneDNN - D.B.s - f32 - CPU (ms)	0.846330
Standard Deviation	2.4%

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oneDNN - C.B.S.A - u8s8f32 - CPU (ms)	0.924756
Standard Deviation	0.9%
oneDNN - D.B.s - u8s8f32 - CPU (ms)	0.362841
Standard Deviation	2.1%
oneDNN - D.B.s - u8s8f32 - CPU (ms)	0.193198
Standard Deviation	3.4%
oneDNN - R.N.N.T - f32 - CPU (ms)	672.646
Standard Deviation	0.4%
oneDNN - R.N.N.I - f32 - CPU (ms)	437.866
Standard Deviation	0.2%
oneDNN - R.N.N.T - u8s8f32 - CPU (ms)	684.271
Standard Deviation	3.2%
oneDNN - C.B.S.A - bf16bf16bf16 - CPU (ms)	2.10597
Standard Deviation	1.5%
oneDNN - D.B.s - bf16bf16bf16 - CPU (ms)	3.27051
Standard Deviation	0.5%
oneDNN - D.B.s - bf16bf16bf16 - CPU (ms)	3.60538
Standard Deviation	3.4%
oneDNN - R.N.N.I - u8s8f32 - CPU (ms)	439.677
Standard Deviation	0.2%
oneDNN - M.M.B.S.T - f32 - CPU (ms)	0.256555
Standard Deviation	2%
oneDNN - R.N.N.T - bf16bf16bf16 - CPU (ms)	671.541
Standard Deviation	0%
oneDNN - R.N.N.I - bf16bf16bf16 - CPU (ms)	437.972
Standard Deviation	0.4%
oneDNN - M.M.B.S.T - u8s8f32 - CPU (ms)	0.231483
Standard Deviation	2.5%
oneDNN - M.M.B.S.T - bf16bf16bf16 - CPU (ms)	0.615331
Standard Deviation	1.3%
Numpy Benchmark (Score)	332.22
Standard Deviation	2.6%
Timed Eigen Compilation - Time To Compile (sec)	87.461
Standard Deviation	1.7%
Timed Erlang/OTP Compilation - Time To Compile	180.485
Standard Deviation	0.8%
Timed Wasmer Compilation - Time To Compile (sec)	44.607
Standard Deviation	1.4%
Helsing - 14 digit (sec)	82.465
Standard Deviation	3.4%
Aircrack-ng (k/s)	211170
Standard Deviation	0.1%
Cpuminer-Opt - Magi (kH/s)	2736
Standard Deviation	6.4%
Cpuminer-Opt - x25x (kH/s)	2222
Standard Deviation	1.9%
Cpuminer-Opt - Deepcoin (kH/s)	29191
Standard Deviation	4.3%
Cpuminer-Opt - Ringcoin (kH/s)	3488
Standard Deviation	11.1%
Cpuminer-Opt - Blake-2 S (kH/s)	1395127
Standard Deviation	6%
Cpuminer-Opt - Garlicoin (kH/s)	29473

Standard Deviation	13.9%
Cpuminer-Opt - Skeincoin (kH/s)	277683
Standard Deviation	3.4%
Cpuminer-Opt - Myriad-Groestl (kH/s)	40753
Standard Deviation	14.4%
Cpuminer-Opt - LBC, LBRY Credits (kH/s)	163627
Standard Deviation	6.4%
Cpuminer-Opt - Q.S.2.P (kH/s)	317291
Standard Deviation	4.8%
Cpuminer-Opt - T.S.2.O (kH/s)	422680
Standard Deviation	0.5%
SecureMark - SecureMark-TLS (marks)	230272
Standard Deviation	0.1%
Node.js V8 Web Tooling Benchmark (runs/s)	10.79
Standard Deviation	1.1%
Liquid-DSP - 16 - 256 - 57 (samples/s)	826756667
Standard Deviation	0.1%
Liquid-DSP - 32 - 256 - 57 (samples/s)	1631166667
Standard Deviation	0.1%
Liquid-DSP - 64 - 256 - 57 (samples/s)	3044966667
Standard Deviation	1.1%
Liquid-DSP - 128 - 256 - 57 (samples/s)	3290766667
Standard Deviation	0.5%
Liquid-DSP - 160 - 256 - 57 (samples/s)	3080633333
Standard Deviation	0.8%
KeyDB (Ops/sec)	524178
Standard Deviation	1.4%
TensorFlow Lite - SqueezeNet (us)	47808
Standard Deviation	0.1%
TensorFlow Lite - Inception V4 (us)	687019
Standard Deviation	2.4%
TensorFlow Lite - NASNet Mobile (us)	81319
Standard Deviation	3.7%
TensorFlow Lite - Mobilenet Float (us)	41555
Standard Deviation	5.7%
TensorFlow Lite - Mobilenet Quant (us)	43075
Standard Deviation	5.4%
TensorFlow Lite - I.R.V (us)	569303
Standard Deviation	0.2%
HammerDB - MariaDB - 128 - 250 (New Orders/min)	23934
Standard Deviation	8.8%
HammerDB - MariaDB - 128 - 250 (Transactions/min)	72390
Standard Deviation	9%
MariaDB - 256 (Queries/sec)	160
Standard Deviation	0.3%
MariaDB - 512 (Queries/sec)	168
Standard Deviation	0.9%
PostgreSQL pgbench - 100 - 250 - Read Only (TPS)	946634
Standard Deviation	4.4%
PostgreSQL pgbench - 100 - 250 - Read Only - Average Latency (ms)	0.266
Standard Deviation	4.6%
PostgreSQL pgbench - 100 - 250 - Read Write (TPS)	28712

Standard Deviation	0.3%	
PostgreSQL pgbench - 100 - 250 - Read Write - Average Latency (ms)	8.739	
Standard Deviation	0.2%	
WRF - conus 2.5km (sec)	9903	
TNN - CPU - MobileNet v2 (ms)	443.547	
Standard Deviation	8.2%	
TNN - CPU - SqueezeNet v1.1 (ms)	366.729	
Standard Deviation	0%	
Sysbench - RAM / Memory (MiB/sec)	12177	
Standard Deviation	4.6%	
Sysbench - CPU (Events/sec)	213871	
Standard Deviation	0.2%	
Apache Cassandra - Reads (Op/s)	28878	
Standard Deviation	79.1%	
Apache Cassandra - Writes (Op/s)	106863	
Standard Deviation	8.2%	
Blender - BMW27 - CPU-Only (sec)	29.61	
Standard Deviation	0.3%	
Blender - Classroom - CPU-Only (sec)	72.28	
Standard Deviation	0.1%	
Blender - Fishy Cat - CPU-Only (sec)	45.72	
Standard Deviation	0.6%	
Blender - Barbershop - CPU-Only (sec)	108.31	
Standard Deviation	0.4%	
Blender - Pabellon Barcelona - CPU-Only (sec)	88.36	
Standard Deviation	0.5%	
ONNX Runtime - yolov4 - OpenMP CPU	479	
Standard Deviation	0.4%	
ONNX Runtime - bertsquad-10 - OpenMP CPU (Inferences/min)	500	
Standard Deviation	4.4%	
ONNX Runtime - fcn-resnet101-11 - OpenMP CPU (Inferences/min)	193	
Standard Deviation	1.1%	
ONNX Runtime - shufflenet-v2-10 - OpenMP CPU (Inferences/min)	8217	
Standard Deviation	2.2%	
ONNX Runtime - super-resolution-10 - OpenMP CPU (Inferences/min)	6967	
Standard Deviation	10.2%	
PyBench - T.F.A.T.T (Milliseconds)	995	
Standard Deviation	0.3%	
Appleseed - Emily (sec)	**186.123763**	**177.929817**
Normalized	95.6%	100%
Appleseed - Disney Material (sec)	**82.969613**	**82.156434**
Normalized	99.02%	100%
Appleseed - Material Tester (sec)	**187.641751**	**179.921628**
Normalized	95.89%	100%
PHPBench - P.B.S (Score)	715587	
Standard Deviation	0.8%	
Zstd Compression - 3 - Compression Speed (MB/s)		6148
Standard Deviation		1.5%

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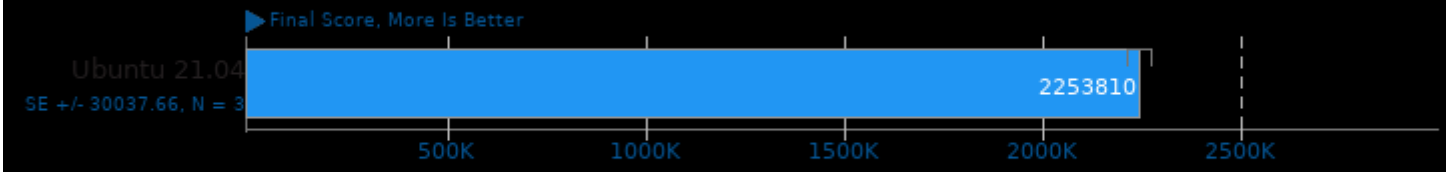
Zstd Compression - 3 - D.S (MB/s)	2986
Standard Deviation	0.4%
Zstd Compression - 8 - Compression Speed (MB/s)	2097
Standard Deviation	2%
Zstd Compression - 8 - D.S (MB/s)	3073
Standard Deviation	0.2%
Zstd Compression - 19 - Compression Speed (MB/s)	82.2
Standard Deviation	4.8%
Zstd Compression - 19 - D.S (MB/s)	2616
Standard Deviation	0.4%
Zstd Compression - 3, Long Mode - Compression Speed (MB/s)	266.9
Standard Deviation	1.3%
Zstd Compression - 3, Long Mode - D.S (MB/s)	3053
Standard Deviation	8.5%
Zstd Compression - 8, Long Mode - Compression Speed (MB/s)	300.2
Standard Deviation	1.9%
Zstd Compression - 8, Long Mode - D.S (MB/s)	3284
Standard Deviation	0.4%
Zstd Compression - 19, Long Mode - Compression Speed (MB/s)	46.0
Standard Deviation	4.5%
Zstd Compression - 19, Long Mode - D.S (MB/s)	2709
Standard Deviation	0.7%
GROMACS - MPI CPU - water_GMX50_bare (Ns/Day)	9.004
Standard Deviation	1.1%

BlogBench 1.1

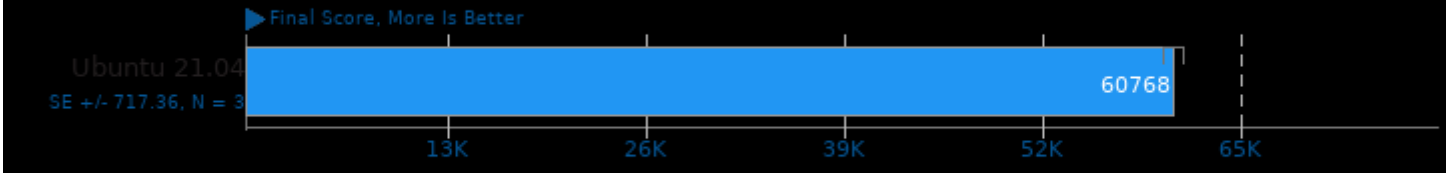
Test: Read



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

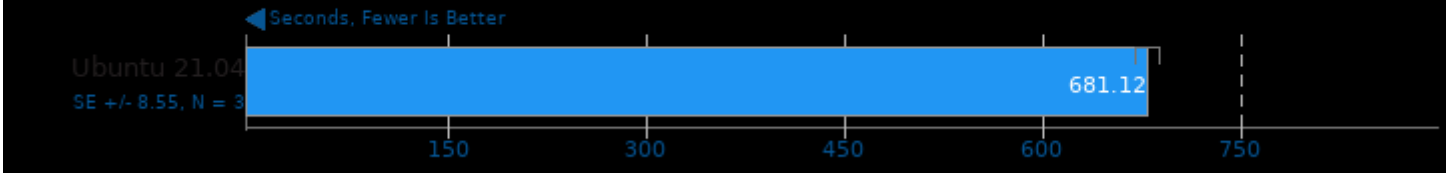
BlogBench 1.1

Test: Write

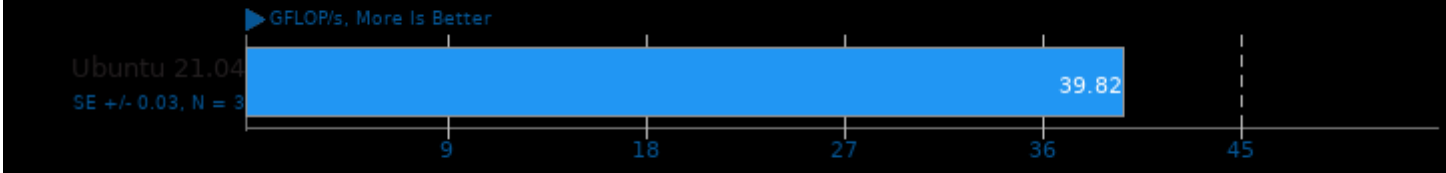


1. (CC) gcc options: -O2 -pthread

WireGuard + Linux Networking Stack Stress Test



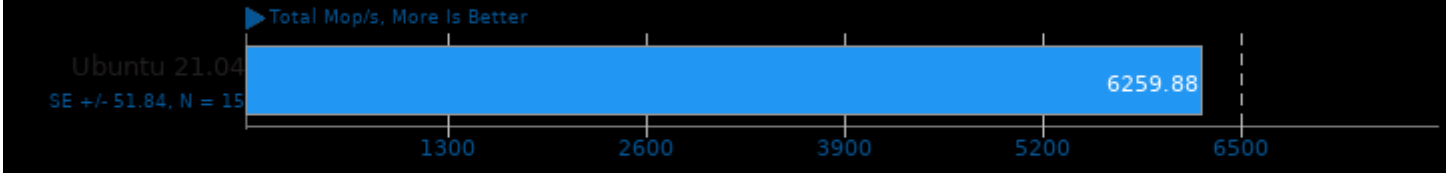
High Performance Conjugate Gradient 3.1



1. (CXX) g++ options: -O3 -ffast-math -ftree-vectorize -pthread -lmpi_cxx -lmpi

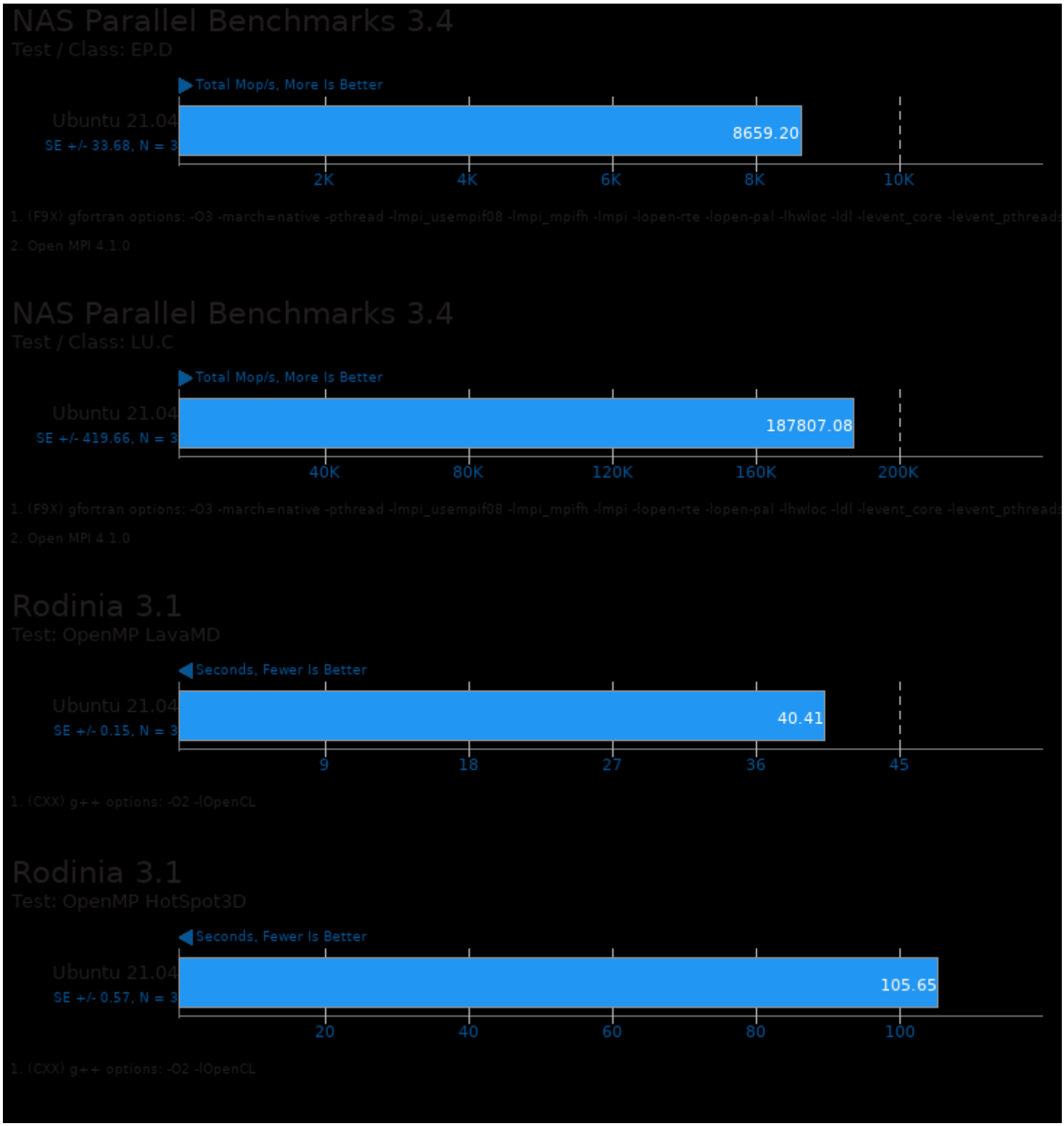
NAS Parallel Benchmarks 3.4

Test / Class: EP.C



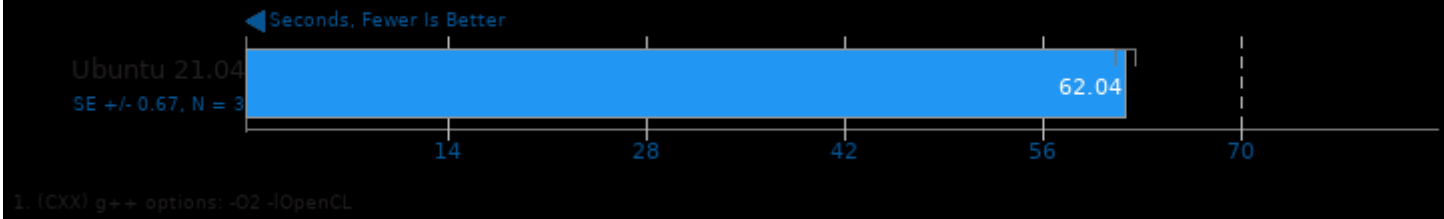
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -ldl -levent_core -levent_pthread

2. Open MPI 4.1.0


NAS Parallel Benchmarks 3.4
Test / Class: EP.D
Total Mop/s, More Is Better
Ubuntu 21.04
SE +/- 33.68, N = 3
8659.20
2K
4K
6K
8K
10K
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -ldl -levent_core -levent_pthreads
2. Open MPI 4.1.0
NAS Parallel Benchmarks 3.4
Test / Class: LU.C
Total Mop/s, More Is Better
Ubuntu 21.04
SE +/- 419.66, N = 3
187807.08
40K
80K
120K
160K
200K
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -ldl -levent_core -levent_pthreads
2. Open MPI 4.1.0
Rodinia 3.1
Test: OpenMP LavaMD
Seconds, Fewer Is Better
Ubuntu 21.04
SE +/- 0.15, N = 3
40.41
9
18
27
36
45
1. (CXX) g++ options: -O2 -lOpenCL
Rodinia 3.1
Test: OpenMP HotSpot3D
Seconds, Fewer Is Better
Ubuntu 21.04
SE +/- 0.57, N = 3
105.65
20
40
60
80
100
1. (CXX) g++ options: -O2 -lOpenCL

Rodinia 3.1

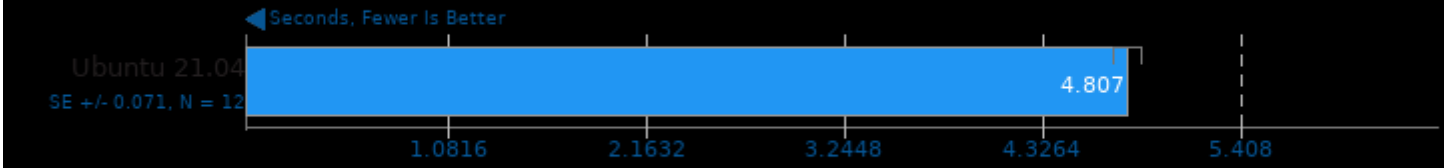
Test: OpenMP Leukocyte



1. (CXX) g++ options: -O2 -lOpenCL

Rodinia 3.1

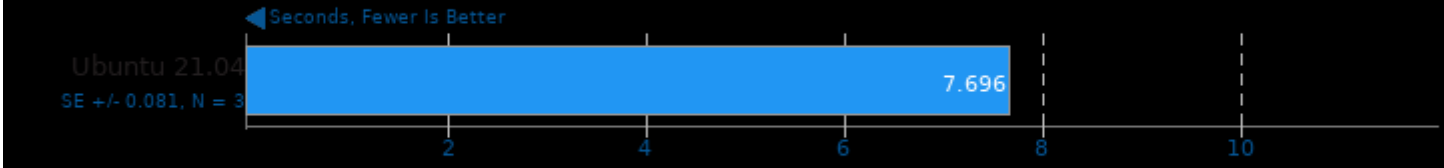
Test: OpenMP CFD Solver



1. (CXX) g++ options: -O2 -lOpenCL

Rodinia 3.1

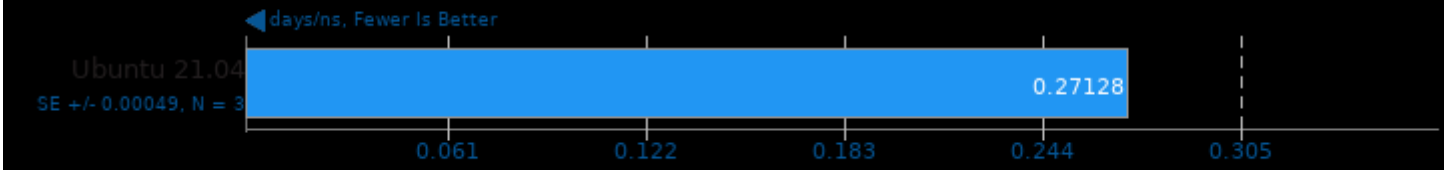
Test: OpenMP Streamcluster



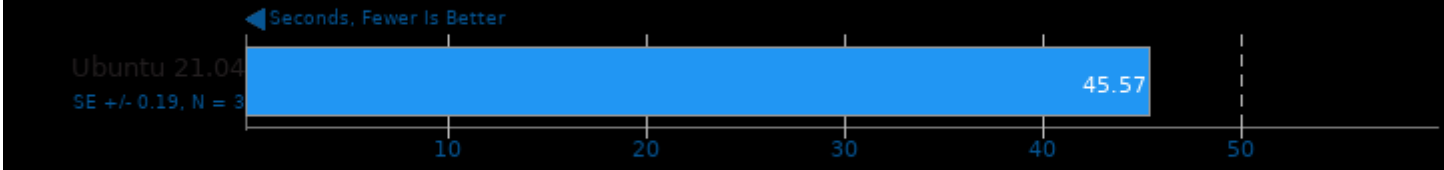
1. (CXX) g++ options: -O2 -lOpenCL

NAMD 2.14

ATPase Simulation - 327,506 Atoms



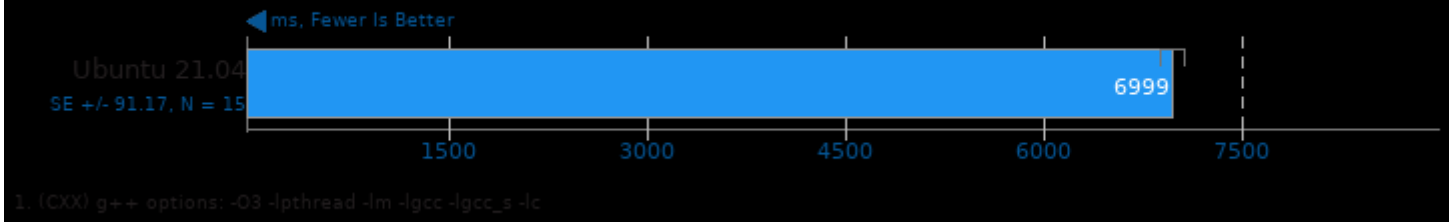
Nebular Empirical Analysis Tool 2.3



1. (F9X) gfortran options: -O3 -cpp -ffree-line-length-0 -Jsource/ -fopenmp -fno-backtrace -lcfitsio

toyBrot Fractal Generator 2020-11-18

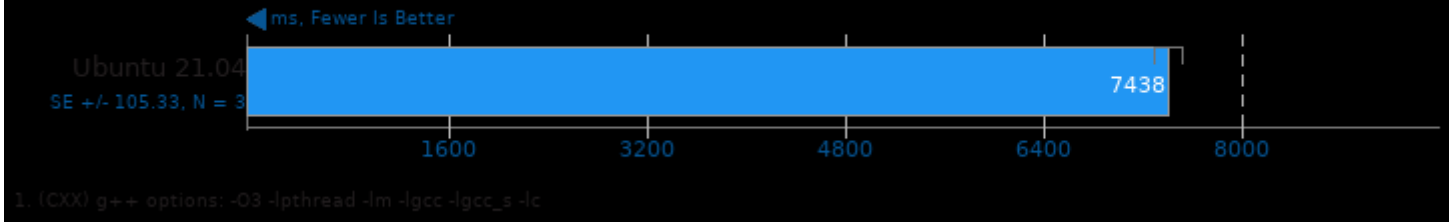
Implementation: TBB



1. (CXX) g++ options: -O3 -lpthread -lm -lgcc -lgcc_s -lc

toyBrot Fractal Generator 2020-11-18

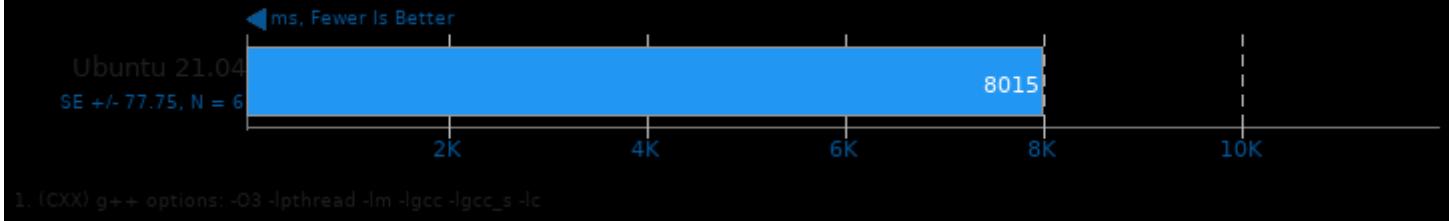
Implementation: OpenMP



1. (CXX) g++ options: -O3 -lpthread -lm -lgcc -lgcc_s -lc

toyBrot Fractal Generator 2020-11-18

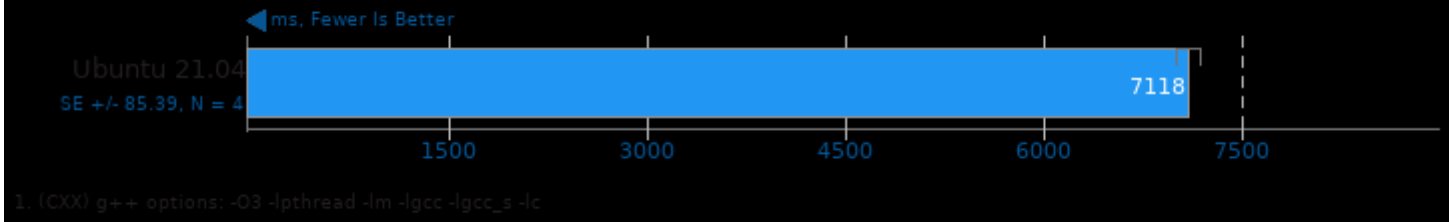
Implementation: C++ Tasks



1. (CXX) g++ options: -O3 -lpthread -lm -lgcc -lgcc_s -lc

toyBrot Fractal Generator 2020-11-18

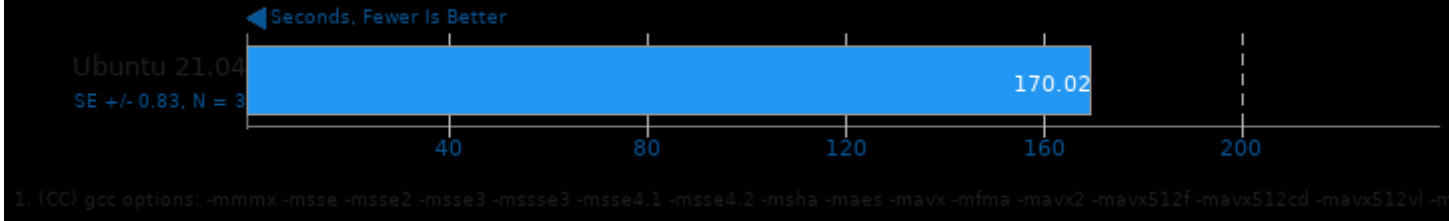
Implementation: C++ Threads



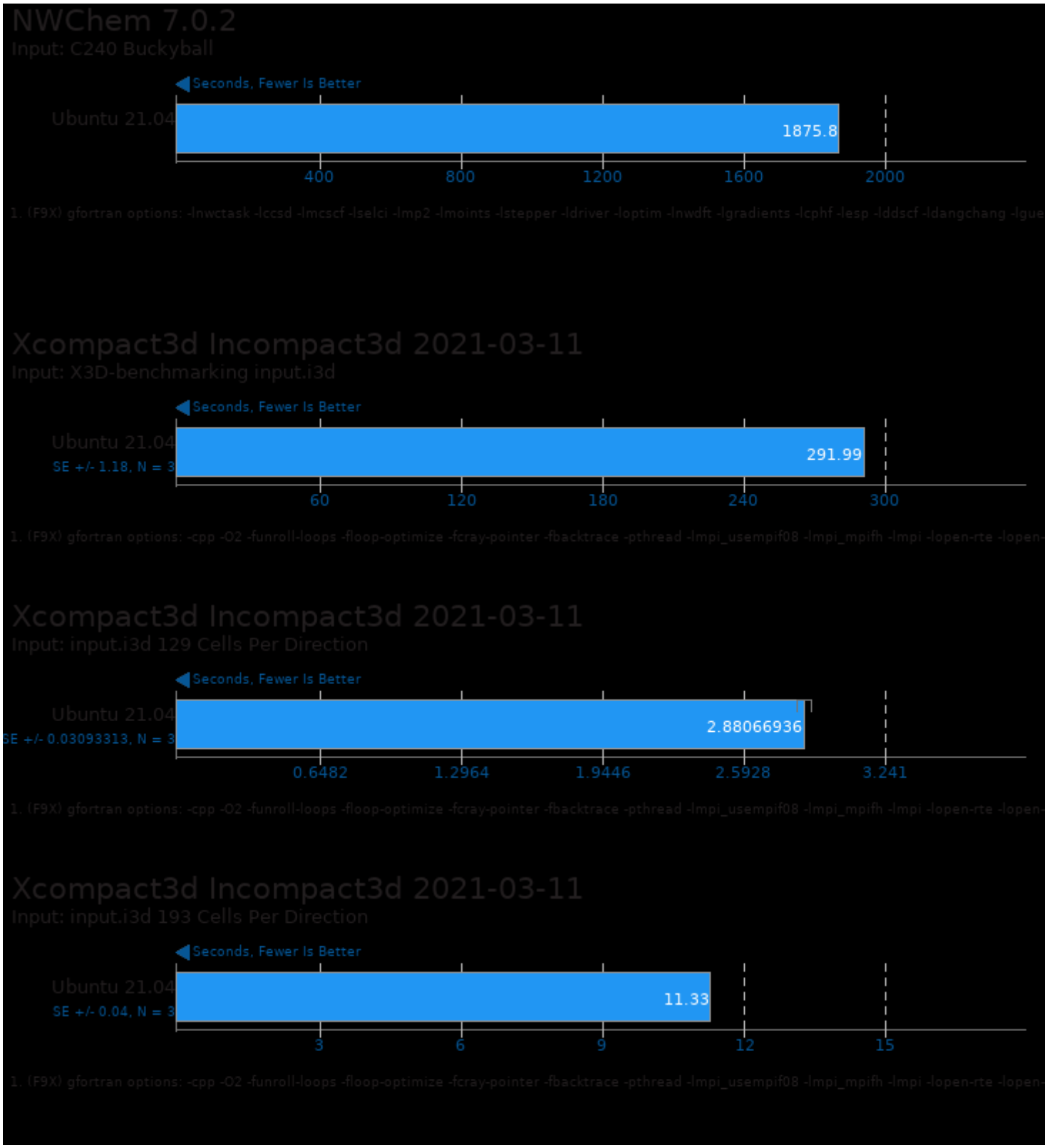
1. (CXX) g++ options: -O3 -lpthread -lm -lgcc -lgcc_s -lc

Timed MrBayes Analysis 3.2.7

Primate Phylogeny Analysis



1. (CC) gcc options: -mmmx -msse -msse2 -msse3 -mssse3 -msse4.1 -msse4.2 -msha -maes -mavx -mfma -mavx2 -mavx512f -mavx512cd -mavx512vl -ma


NWChem 7.0.2
Input: C240 Buckyball
Seconds, Fewer Is Better
Ubuntu 21.04
1875.8
400
800
1200
1600
2000
1. (F9X) gfortran options: -lnwctask -lccsd -lmcscf -lselci -lmp2 -lmoints -lstepper -ldriver -loptim -lnwdft -lgradients -lcphf -lesp -lddscf -ldangchang -lgue
Xcompact3d Incompact3d 2021-03-11
Input: X3D-benchmarking input.i3d
Seconds, Fewer Is Better
Ubuntu 21.04
SE +/- 1.18, N = 3
291.99
60
120
180
240
300
1. (F9X) gfortran options: -cpp -O2 -funroll-loops -floop-optimize -fcray-pointer -fbacktrace -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-
Xcompact3d Incompact3d 2021-03-11
Input: input.i3d 129 Cells Per Direction
Seconds, Fewer Is Better
Ubuntu 21.04
SE +/- 0.03093313, N = 3
2.88066936
0.6482
1.2964
1.9446
2.5928
3.241
1. (F9X) gfortran options: -cpp -O2 -funroll-loops -floop-optimize -fcray-pointer -fbacktrace -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-
Xcompact3d Incompact3d 2021-03-11
Input: input.i3d 193 Cells Per Direction
Seconds, Fewer Is Better
Ubuntu 21.04
SE +/- 0.04, N = 3
11.33
3
6
9
12
15
1. (F9X) gfortran options: -cpp -O2 -funroll-loops -floop-optimize -fcray-pointer -fbacktrace -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-

OpenFOAM 8

Input: Motorbike 30M

1. (CXX) g++ options: -std=c++11 -m64 -O3 -ftemplate-depth-100 -fPIC -fuse-ld=bfd -Xlinker --add-needed --no-as-needed -ldynamicMesh -ldecompose

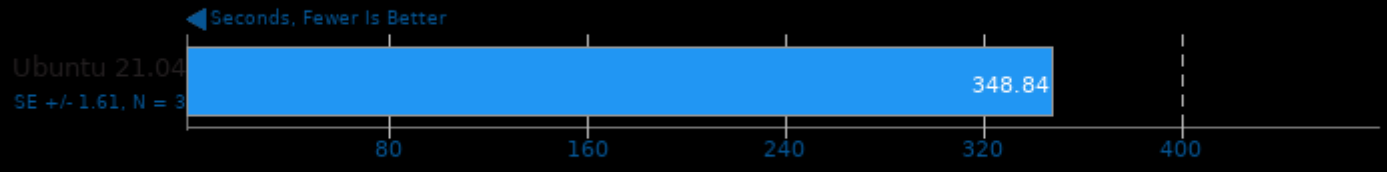
OpenFOAM 8

Input: Motorbike 60M

1. (CXX) g++ options: -std=c++11 -m64 -O3 -ftemplate-depth-100 -fPIC -fuse-ld=bfd -Xlinker --add-needed --no-as-needed -ldynamicMesh -ldecompose

RELION 3.1.1

Test: Basic - Device: CPU



1. (CXX) g++ options: -fopenmp -std=c++0x -O3 -rdynamic -ldl -ltiff -lfftw3f -lfftw3 -lpng -pthread -lmpi_cxx -lmpi

LAMMPS Molecular Dynamics Simulator 29Oct2020

Model: 20k Atoms

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

LAMMPS Molecular Dynamics Simulator 29Oct2020

Model: Rhodopsin Protein

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

libgav1 0.16.3

Video Input: Chimera 1080p

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

libgav1 0.16.3

Video Input: Summer Nature 4K

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

libgav1 0.16.3

Video Input: Summer Nature 1080p

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

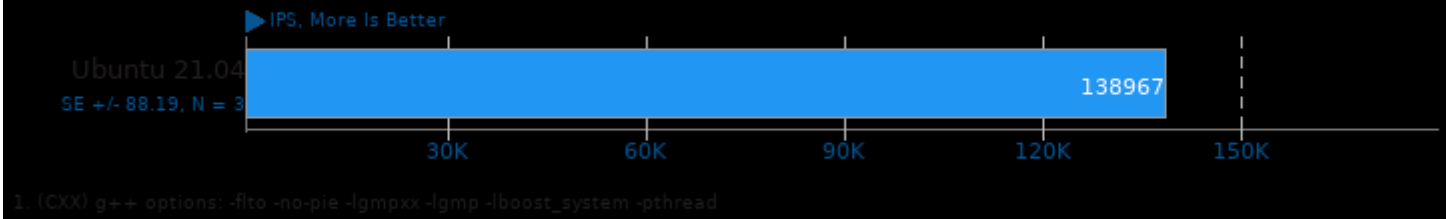
libgav1 0.16.3

Video Input: Chimera 1080p 10-bit

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

Chia Blockchain VDF 1.0.1

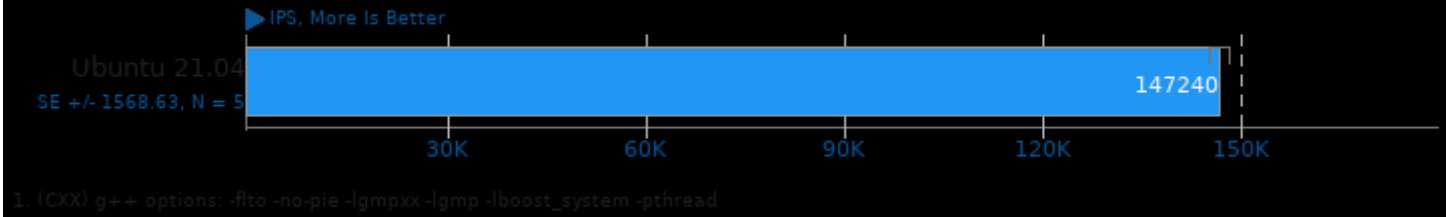
Test: Square Plain C++



1. (CXX) g++ options: -flto -no-pie -lgmpxx -lgmp -lboost_system -pthread

Chia Blockchain VDF 1.0.1

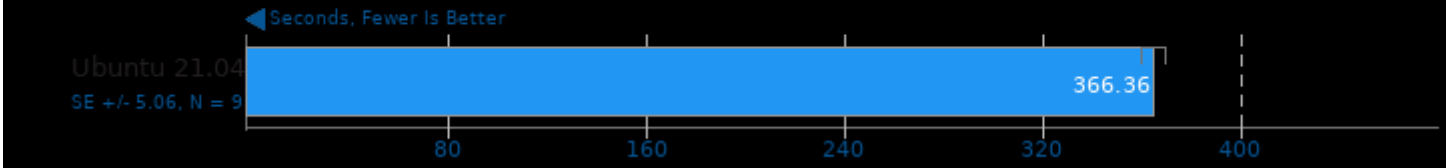
Test: Square Assembly Optimized



1. (CXX) g++ options: -flto -no-pie -lgmpxx -lgmp -lboost_system -pthread

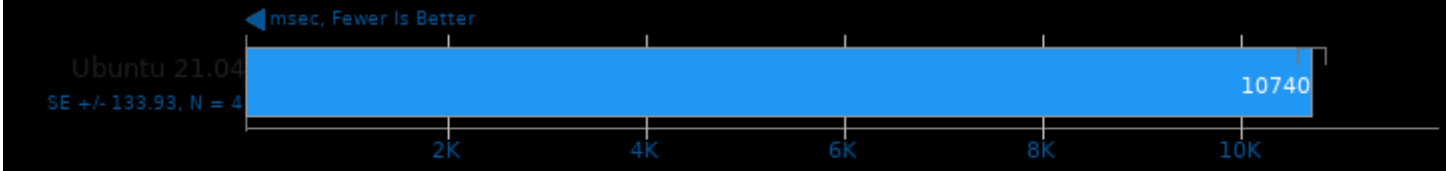
Java Gradle Build

Gradle Build: Reactor



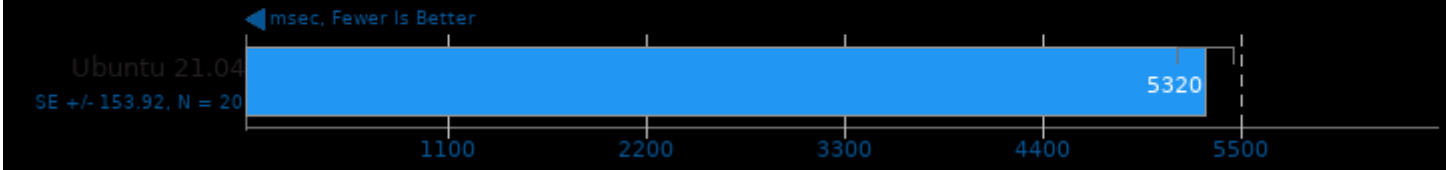
DaCapo Benchmark 9.12-MR1

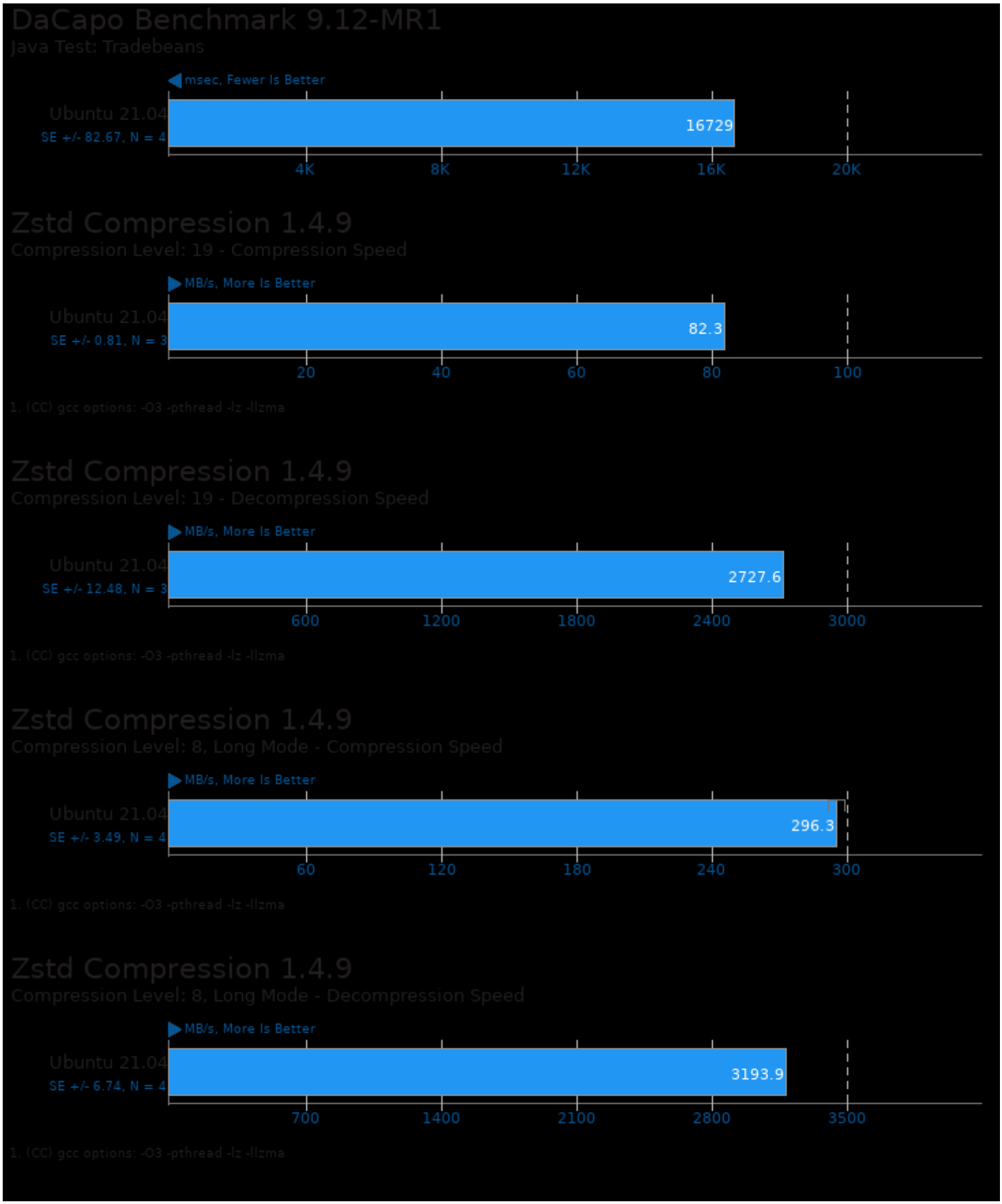
Java Test: H2



DaCapo Benchmark 9.12-MR1

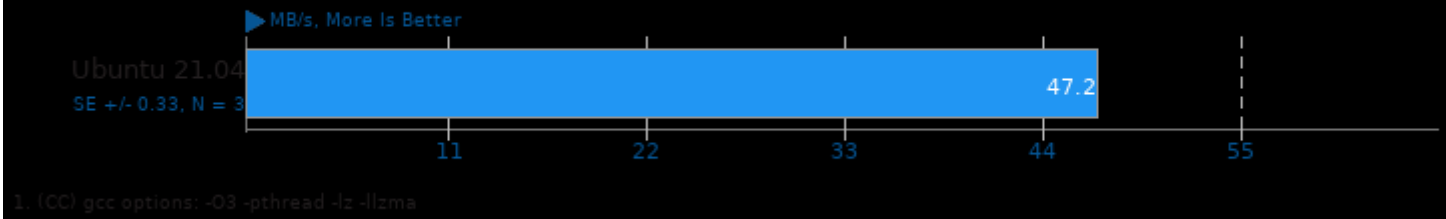
Java Test: Jython




DaCapo Benchmark 9.12-MR1
Java Test: Tradebeans
msec, Fewer Is Better
Ubuntu 21.04
SE +/- 82.67, N = 4
16729
4K
8K
12K
16K
20K
Zstd Compression 1.4.9
Compression Level: 19 - Compression Speed
MB/s, More Is Better
Ubuntu 21.04
SE +/- 0.81, N = 3
82.3
20
40
60
80
100
1. (CC) gcc options: -O3 -pthread -lz -llzma
Zstd Compression 1.4.9
Compression Level: 19 - Decompression Speed
MB/s, More Is Better
Ubuntu 21.04
SE +/- 12.48, N = 3
2727.6
600
1200
1800
2400
3000
1. (CC) gcc options: -O3 -pthread -lz -llzma
Zstd Compression 1.4.9
Compression Level: 8, Long Mode - Compression Speed
MB/s, More Is Better
Ubuntu 21.04
SE +/- 3.49, N = 4
296.3
60
120
180
240
300
1. (CC) gcc options: -O3 -pthread -lz -llzma
Zstd Compression 1.4.9
Compression Level: 8, Long Mode - Decompression Speed
MB/s, More Is Better
Ubuntu 21.04
SE +/- 6.74, N = 4
3193.9
700
1400
2100
2800
3500
1. (CC) gcc options: -O3 -pthread -lz -llzma

Zstd Compression 1.4.9

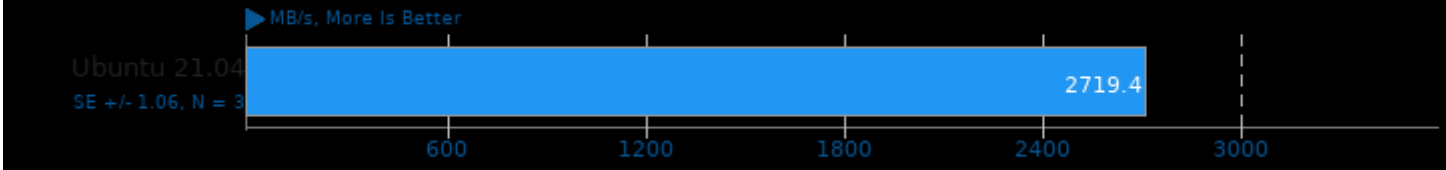
Compression Level: 19, Long Mode - Compression Speed



1. (CC) gcc options: -O3 -pthread -lz -llzma

Zstd Compression 1.4.9

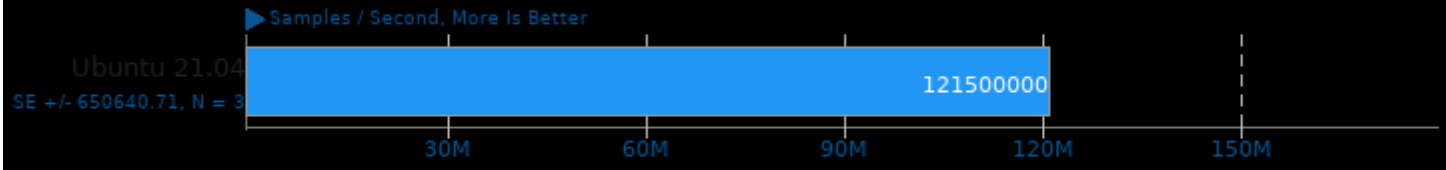
Compression Level: 19, Long Mode - Decompression Speed



1. (CC) gcc options: -O3 -pthread -lz -llzma

srsLTE 20.10.1

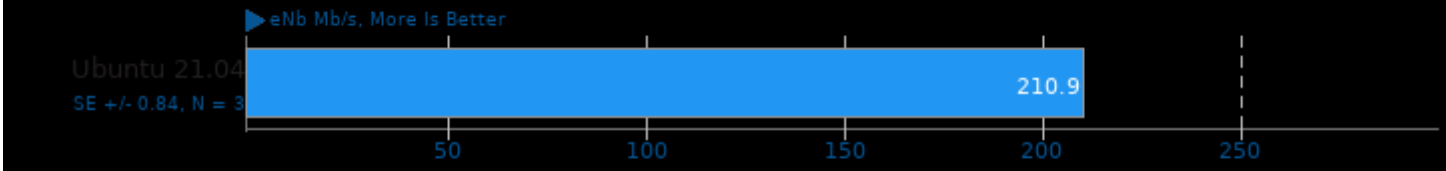
Test: OFDM_Test



1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

srsLTE 20.10.1

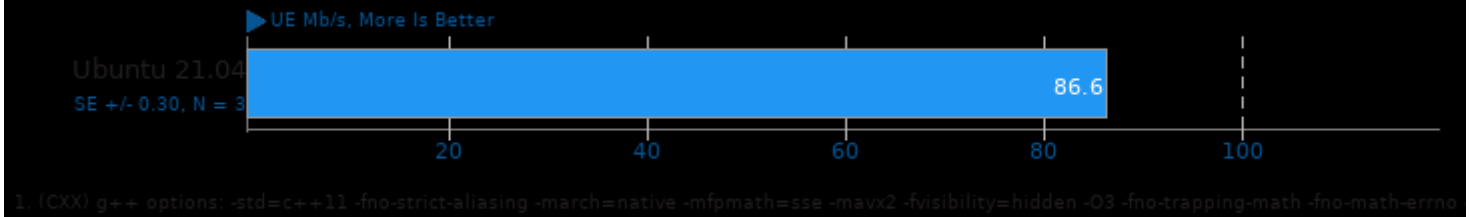
Test: PHY_DL_Test



1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

srsLTE 20.10.1

Test: PHY_DL_Test



1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

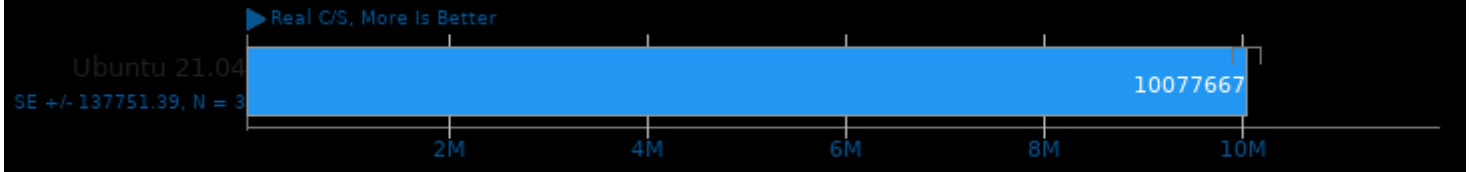
John The Ripper 1.9.0-jumbo-1

Test: Blowfish

1. (CC) gcc options: -m64 -lssl -lcrypto -fopenmp -lgmp -pthread -lm -lz -ldl -lcrypt -lbz2

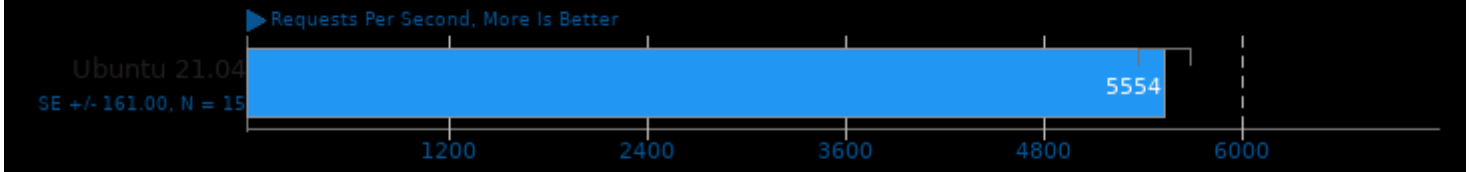
John The Ripper 1.9.0-jumbo-1

Test: MD5



1. (CC) gcc options: -m64 -lssl -lcrypto -fopenmp -lgmp -pthread -lm -lz -ldl -lcrypt -lbz2

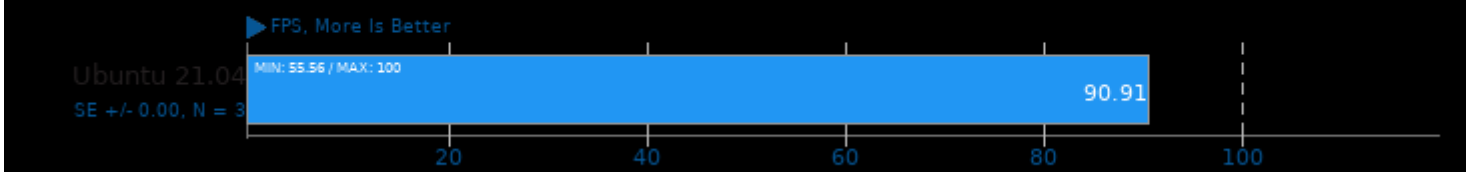
Node.js Express HTTP Load Test

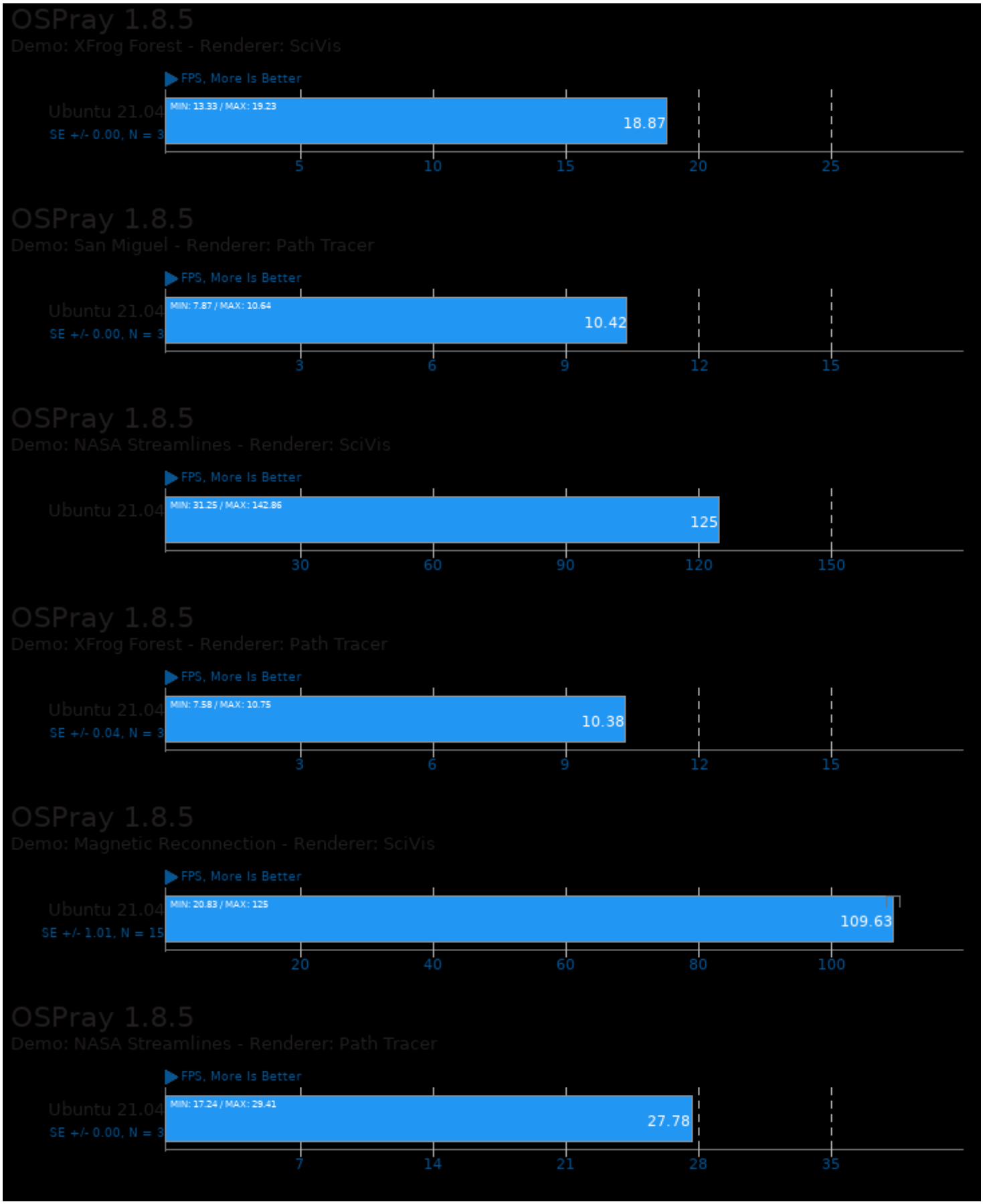


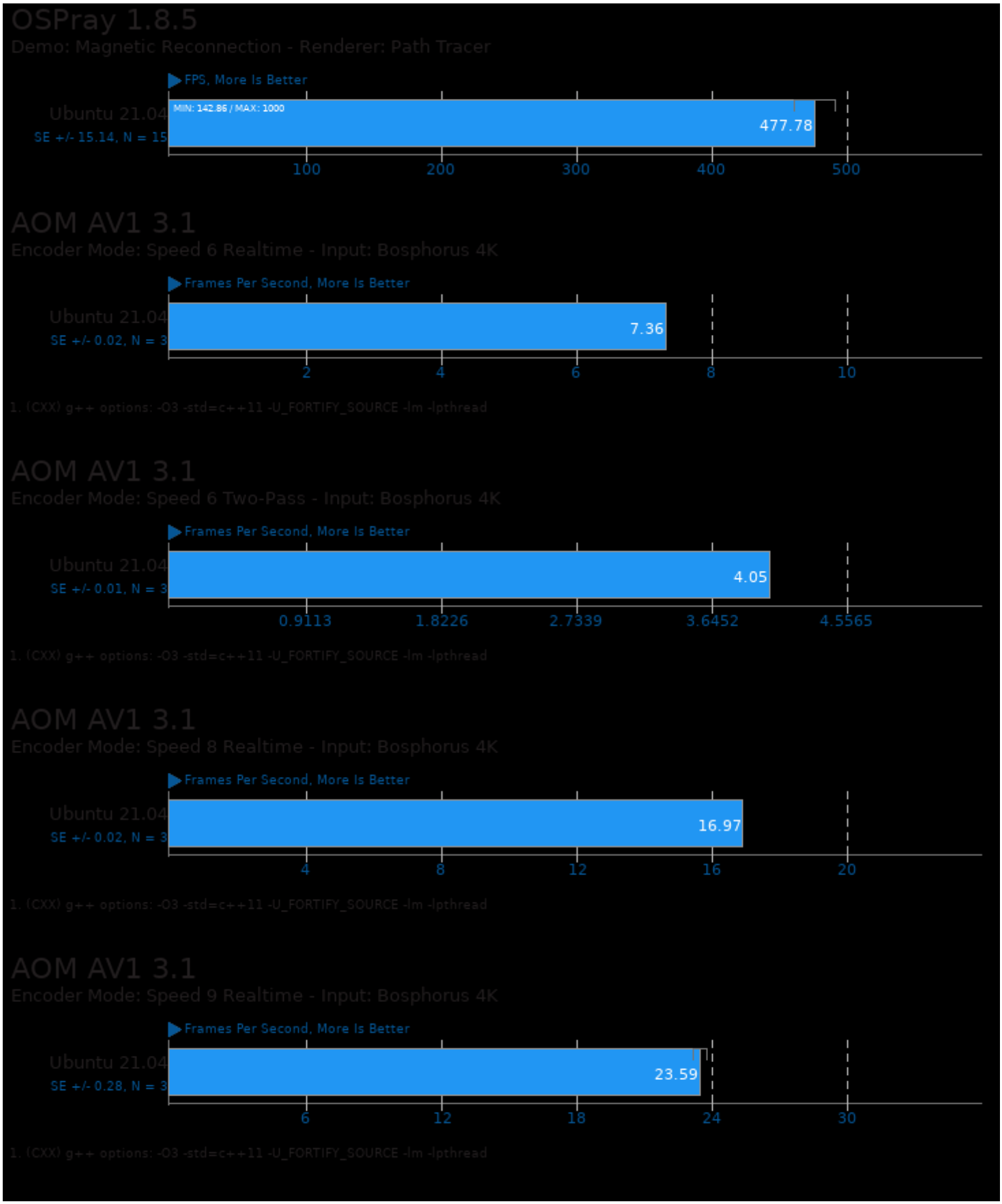
1. Nodejs
v12.21.0

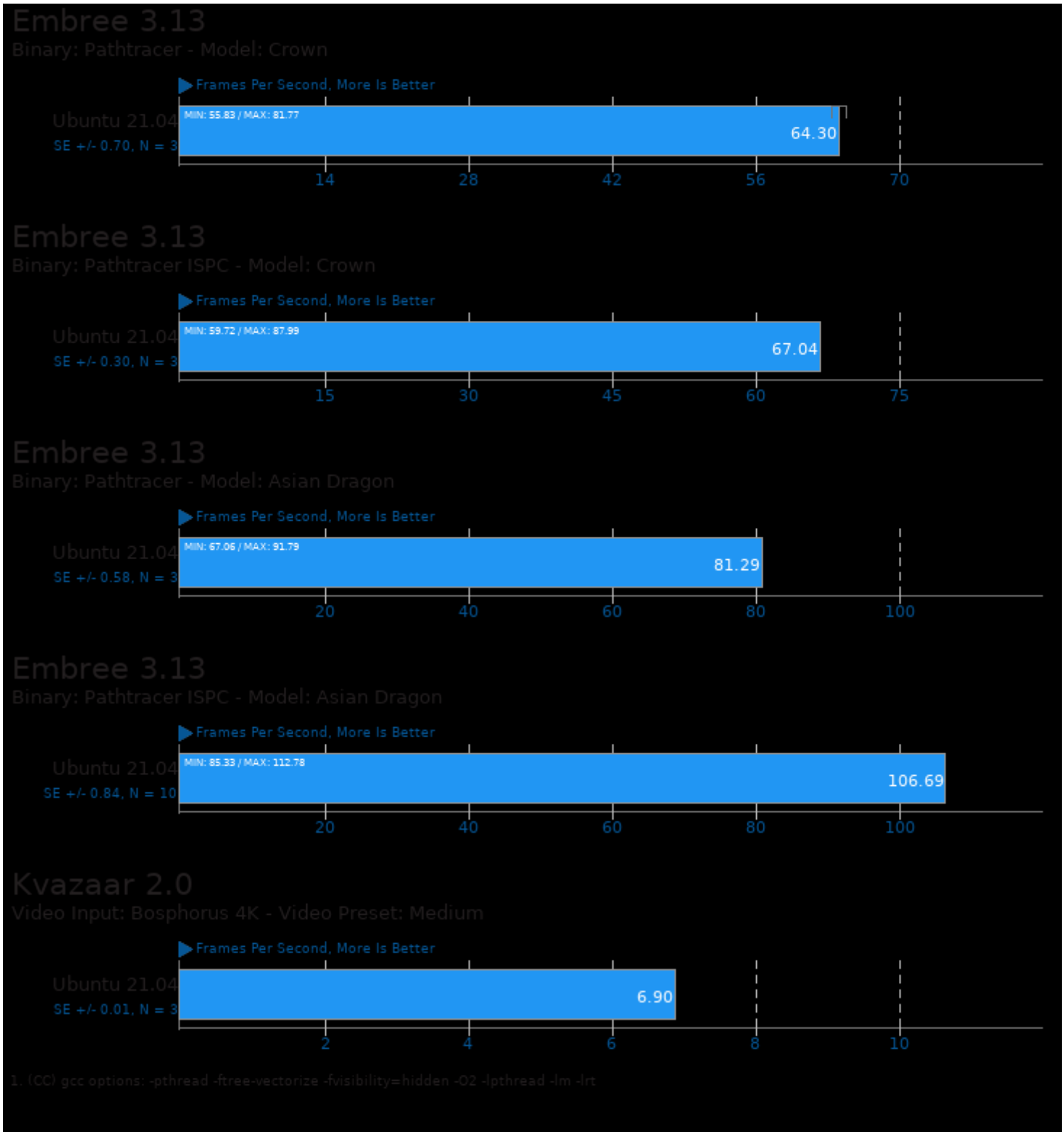
OSPray 1.8.5

Demo: San Miguel - Renderer: SciVis




OSPray 1.8.5
Demo: XFrog Forest - Renderer: SciVis
FPS, More Is Better
Ubuntu 21.04
SE +/- 0.00, N = 3
MIN: 13.33 / MAX: 19.23
18.87
5
10
15
20
25
OSPray 1.8.5
Demo: San Miguel - Renderer: Path Tracer
FPS, More Is Better
Ubuntu 21.04
SE +/- 0.00, N = 3
MIN: 7.87 / MAX: 10.64
10.42
3
6
9
12
15
OSPray 1.8.5
Demo: NASA Streamlines - Renderer: SciVis
FPS, More Is Better
Ubuntu 21.04
MIN: 31.25 / MAX: 142.86
125
30
60
90
120
150
OSPray 1.8.5
Demo: XFrog Forest - Renderer: Path Tracer
FPS, More Is Better
Ubuntu 21.04
SE +/- 0.04, N = 3
MIN: 7.58 / MAX: 10.75
10.38
3
6
9
12
15
OSPray 1.8.5
Demo: Magnetic Reconnection - Renderer: SciVis
FPS, More Is Better
Ubuntu 21.04
SE +/- 1.01, N = 15
MIN: 20.83 / MAX: 125
109.63
20
40
60
80
100
OSPray 1.8.5
Demo: NASA Streamlines - Renderer: Path Tracer
FPS, More Is Better
Ubuntu 21.04
SE +/- 0.00, N = 3
MIN: 17.24 / MAX: 29.41
27.78
7
14
21
28
35


OSPray 1.8.5
Demo: Magnetic Reconnection - Renderer: Path Tracer
FPS, More Is Better
Ubuntu 21.04
SE +/- 15.14, N = 15
MIN: 142.86 / MAX: 1000
477.78
100
200
300
400
500
AOM AV1 3.1
Encoder Mode: Speed 6 Realtime - Input: Bosphorus 4K
Frames Per Second, More Is Better
Ubuntu 21.04
SE +/- 0.02, N = 3
7.36
2
4
6
8
10
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 3.1
Encoder Mode: Speed 6 Two-Pass - Input: Bosphorus 4K
Frames Per Second, More Is Better
Ubuntu 21.04
SE +/- 0.01, N = 3
4.05
0.9113
1.8226
2.7339
3.6452
4.5565
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 3.1
Encoder Mode: Speed 8 Realtime - Input: Bosphorus 4K
Frames Per Second, More Is Better
Ubuntu 21.04
SE +/- 0.02, N = 3
16.97
4
8
12
16
20
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 3.1
Encoder Mode: Speed 9 Realtime - Input: Bosphorus 4K
Frames Per Second, More Is Better
Ubuntu 21.04
SE +/- 0.28, N = 3
23.59
6
12
18
24
30
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread


Embree 3.13
Binary: Pathtracer - Model: Crown
Frames Per Second, More Is Better
Ubuntu 21.04
SE +/- 0.70, N = 3
MIN: 55.83 / MAX: 81.77
64.30
14
28
42
56
70
Embree 3.13
Binary: Pathtracer ISPC - Model: Crown
Frames Per Second, More Is Better
Ubuntu 21.04
SE +/- 0.30, N = 3
MIN: 59.72 / MAX: 87.99
67.04
15
30
45
60
75
Embree 3.13
Binary: Pathtracer - Model: Asian Dragon
Frames Per Second, More Is Better
Ubuntu 21.04
SE +/- 0.58, N = 3
MIN: 67.06 / MAX: 91.79
81.29
20
40
60
80
100
Embree 3.13
Binary: Pathtracer ISPC - Model: Asian Dragon
Frames Per Second, More Is Better
Ubuntu 21.04
SE +/- 0.84, N = 10
MIN: 85.33 / MAX: 112.78
106.69
20
40
60
80
100
Kvazaar 2.0
Video Input: Bosphorus 4K - Video Preset: Medium
Frames Per Second, More Is Better
Ubuntu 21.04
SE +/- 0.01, N = 3
6.90
2
4
6
8
10
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt

Kvazaar 2.0

Video Input: Bosphorus 1080p - Video Preset: Medium

1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt

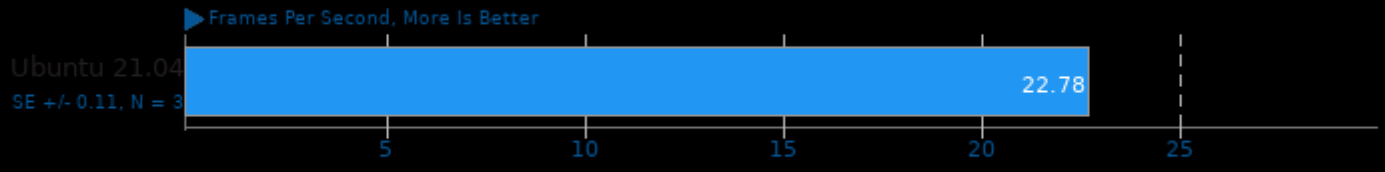
Kvazaar 2.0

Video Input: Bosphorus 4K - Video Preset: Very Fast

1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt

Kvazaar 2.0

Video Input: Bosphorus 4K - Video Preset: Ultra Fast



1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt

Kvazaar 2.0

Video Input: Bosphorus 1080p - Video Preset: Very Fast

1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt

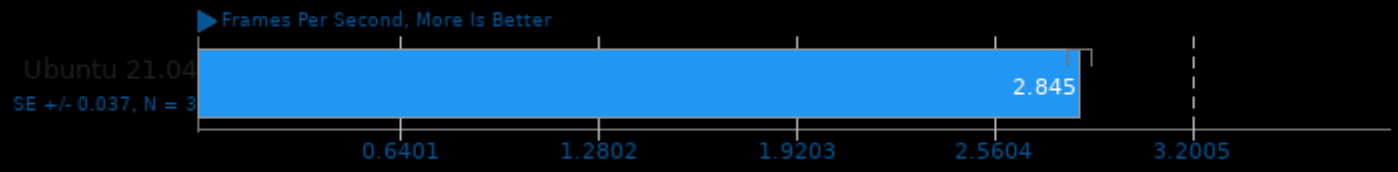
Kvazaar 2.0

Video Input: Bosphorus 1080p - Video Preset: Ultra Fast

1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt

SVT-AV1 0.8.7

Encoder Mode: Preset 4 - Input: Bosphorus 4K



1. (CXX) g++ options: -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie

SVT-AV1 0.8.7

Encoder Mode: Preset 8 - Input: Bosphorus 4K

1. (CXX) g++ options: -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie

SVT-HEVC 1.5.0

Tuning: 1 - Input: Bosphorus 1080p

1. (CC) gcc options: -fPIE -fPIC -O3 -O2 -pie -rdynamic -lpthread -lrt

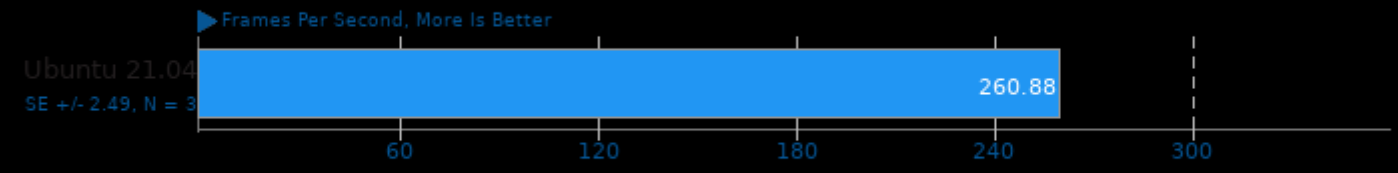
SVT-HEVC 1.5.0

Tuning: 7 - Input: Bosphorus 1080p

1. (CC) gcc options: -fPIE -fPIC -O3 -O2 -pie -rdynamic -lpthread -lrt

SVT-HEVC 1.5.0

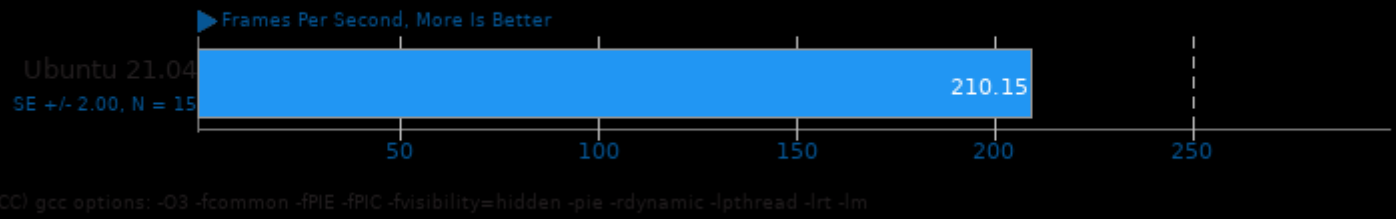
Tuning: 10 - Input: Bosphorus 1080p



1. (CC) gcc options: -fPIE -fPIC -O3 -O2 -pie -rdynamic -lpthread -lrt

SVT-VP9 0.3

Tuning: VMAF Optimized - Input: Bosphorus 1080p



1. (CC) gcc options: -O3 -fcommon -fPIE -fPIC -fvisibility=hidden -pie -rdynamic -lpthread -lrt -lm

SVT-VP9 0.3

Tuning: PSNR/SSIM Optimized - Input: Bosphorus 1080p

1. (CC) gcc options: -O3 -fcommon -fPIE -fPIC -fvisibility=hidden -pie -rdynamic -lpthread -lrt -lm

SVT-VP9 0.3

Tuning: Visual Quality Optimized - Input: Bosphorus 1080p

1. (CC) gcc options: -O3 -fcommon -fPIE -fPIC -fvisibility=hidden -pie -rdynamic -lpthread -lrt -lm

x265 3.4

Video Input: Bosphorus 4K

1. (CXX) g++ options: -O3 -rdynamic -lpthread -lrt -ldl -lnuma

x265 3.4

Video Input: Bosphorus 1080p

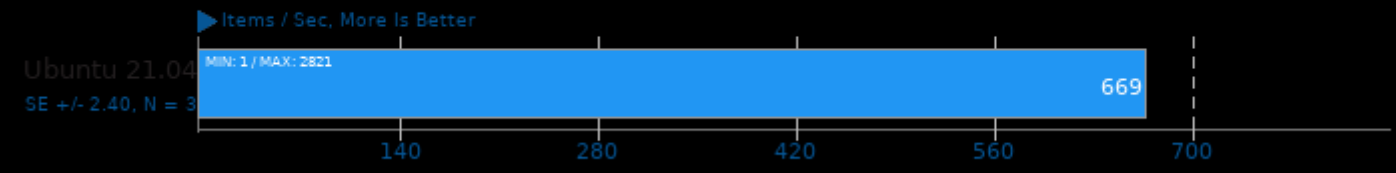
1. (CXX) g++ options: -O3 -rdynamic -lpthread -lrt -ldl -lnuma

Intel Open Image Denoise 1.2.0

Scene: Memorial

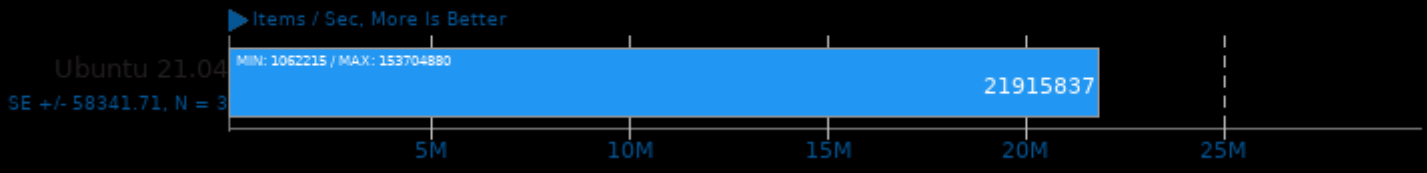
OpenVKL 0.9

Benchmark: vklBenchmark



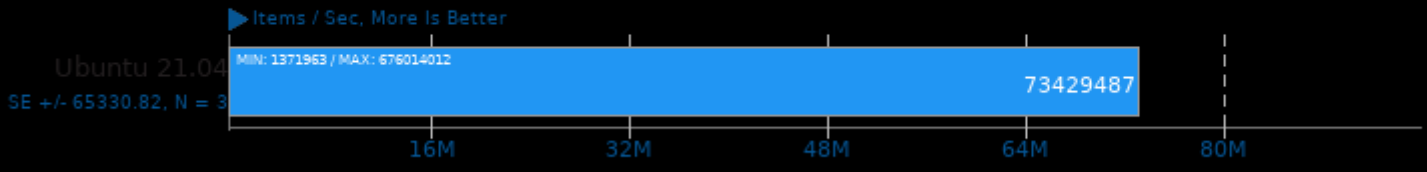
OpenVKL 0.9

Benchmark: vklBenchmarkVdbVolume



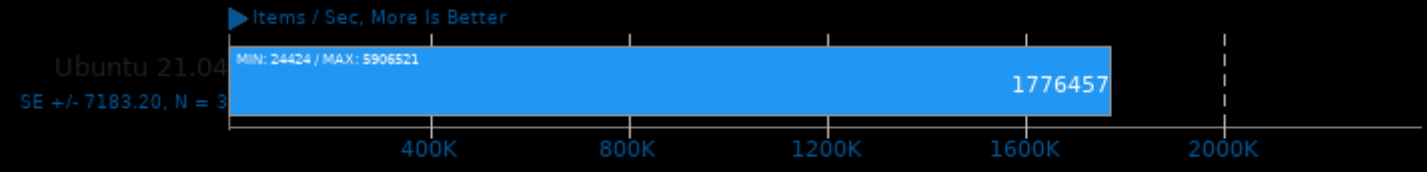
OpenVKL 0.9

Benchmark: vklBenchmarkStructuredVolume



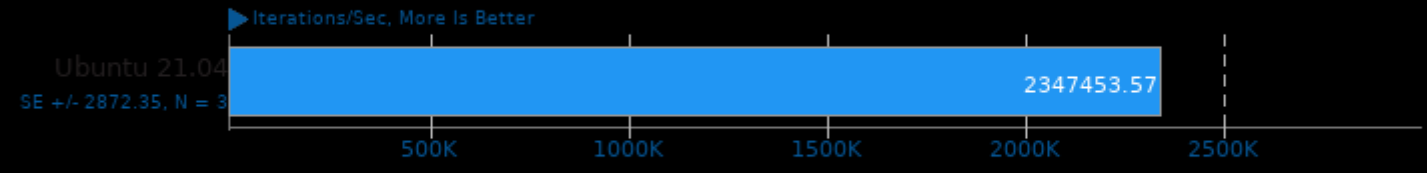
OpenVKL 0.9

Benchmark: vklBenchmarkUnstructuredVolume



Coremark 1.0

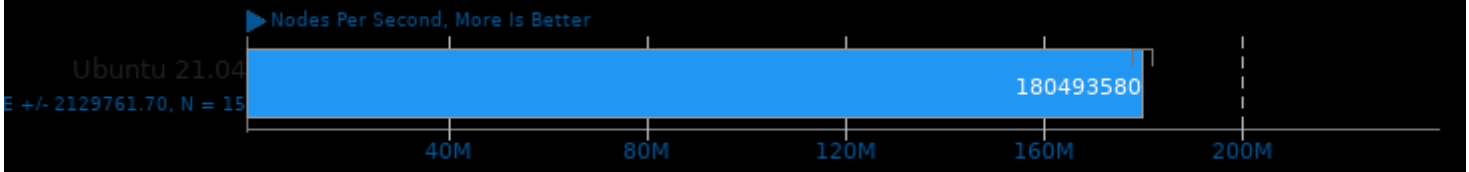
CoreMark Size 666 - Iterations Per Second



1. (CC) gcc options: -O2 -lrt" -lrt

Stockfish 13

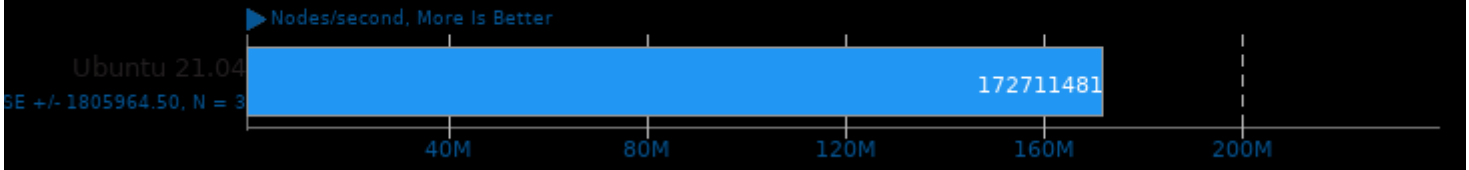
Total Time



1. (CXX) g++ options: -lgcov -m64 -lpthread -fno-exceptions -std=c++17 -fprofile-use -fno-peel-loops -fno-tracer -pedantic -O3 -msse -msse3 -mpopcnt

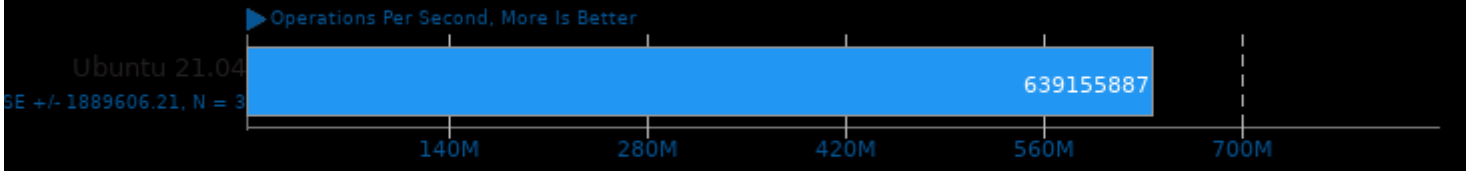
asmFish 2018-07-23

1024 Hash Memory, 26 Depth



Swet 1.5.16

Average



1. (CC) gcc options: -lm -lpthread -lcurses -lrt

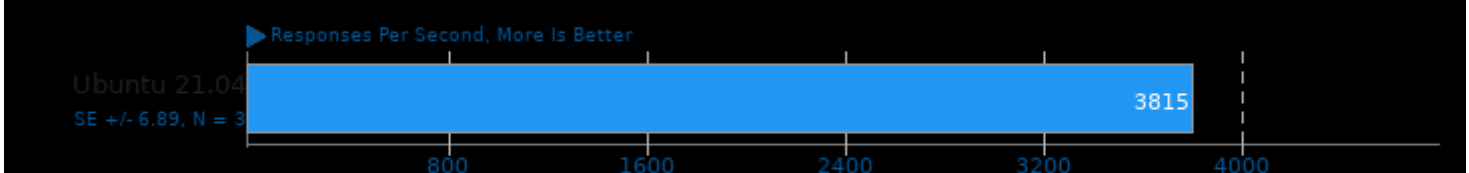
PJSIP 2.11

Method: INVITE

1. (CC) gcc options: -lSDL2 -lavformat -lavcodec -lswscale -lavutil -lstdc++ -lssl -lcrypto -luuid -lm -lrt -lpthread -lasound -O2

PJSIP 2.11

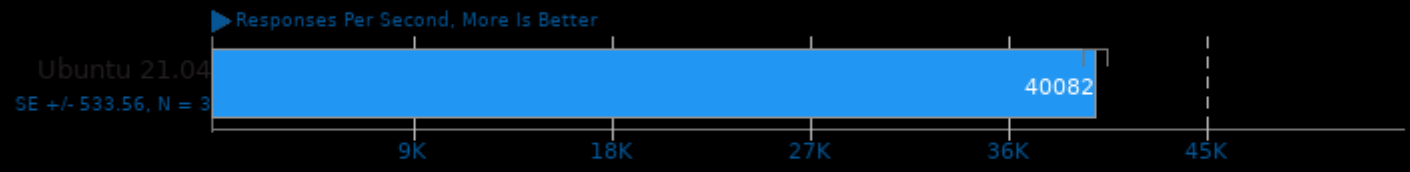
Method: OPTIONS, Stateful



1. (CC) gcc options: -lSDL2 -lavformat -lavcodec -lswscale -lavutil -lstdc++ -lssl -lcrypto -luuid -lm -lrt -lpthread -lasound -O2

PJSIP 2.11

Method: OPTIONS, Stateless



1. (CC) gcc options: -lSDL2 -lavformat -lavcodec -lswscale -lavutil -lstdc++ -lssl -lcrypto -luuid -lm -lrt -lpthread -lasound -O2

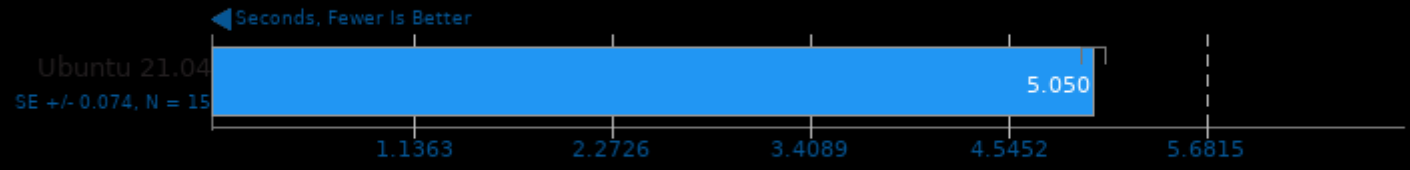
libavif avifenc 0.9.0

Encoder Speed: 6

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

libavif avifenc 0.9.0

Encoder Speed: 10



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

libavif avifenc 0.9.0

Encoder Speed: 6, Lossless

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

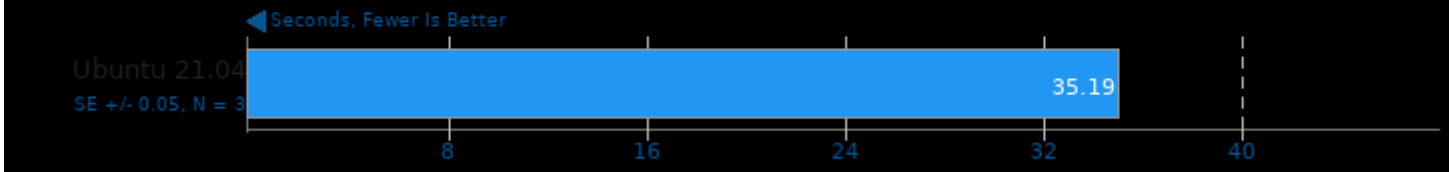
libavif avifenc 0.9.0

Encoder Speed: 10, Lossless

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

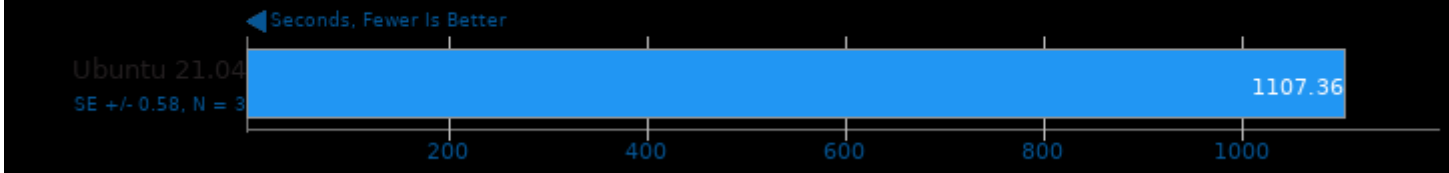
Timed Apache Compilation 2.4.41

Time To Compile



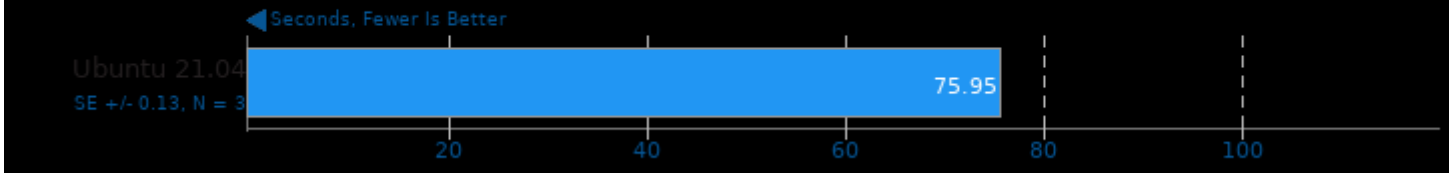
Timed GCC Compilation 9.3.0

Time To Compile



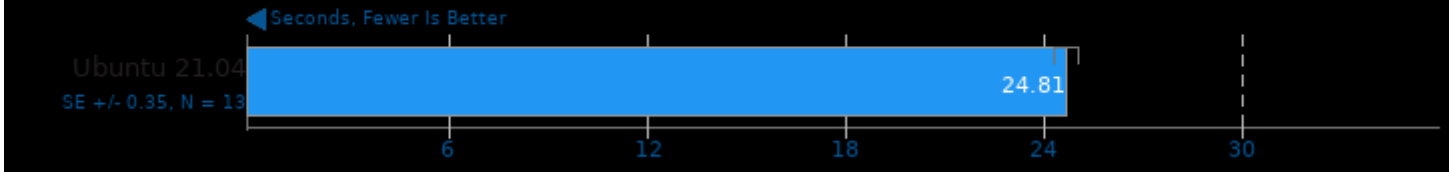
Timed Godot Game Engine Compilation 3.2.3

Time To Compile



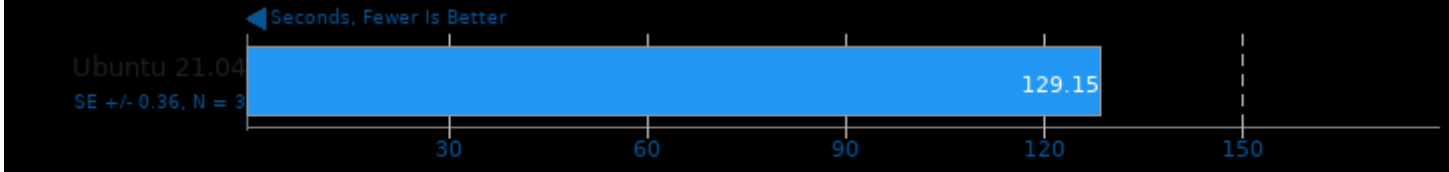
Timed Linux Kernel Compilation 5.10.20

Time To Compile



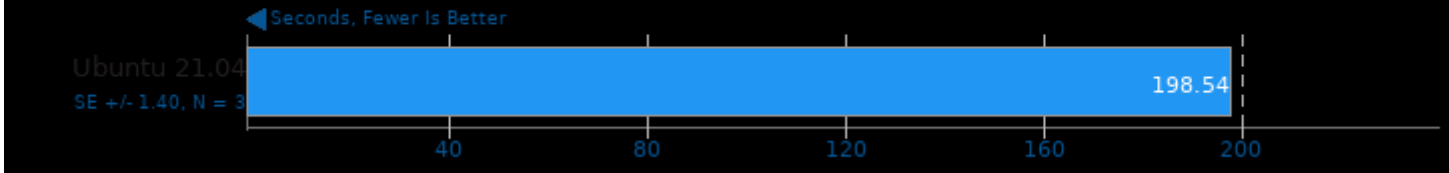
Timed LLVM Compilation 12.0

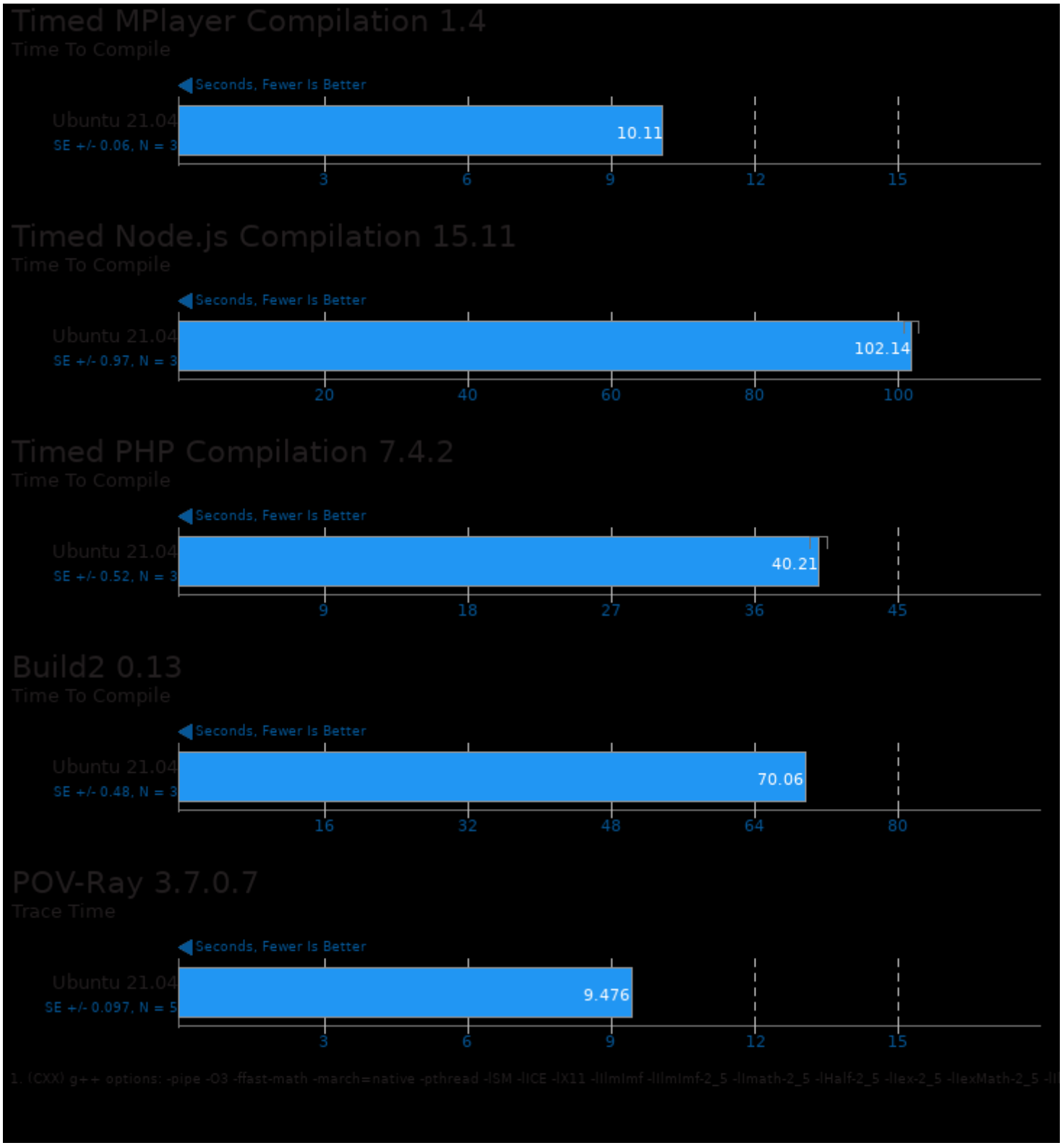
Build System: Ninja

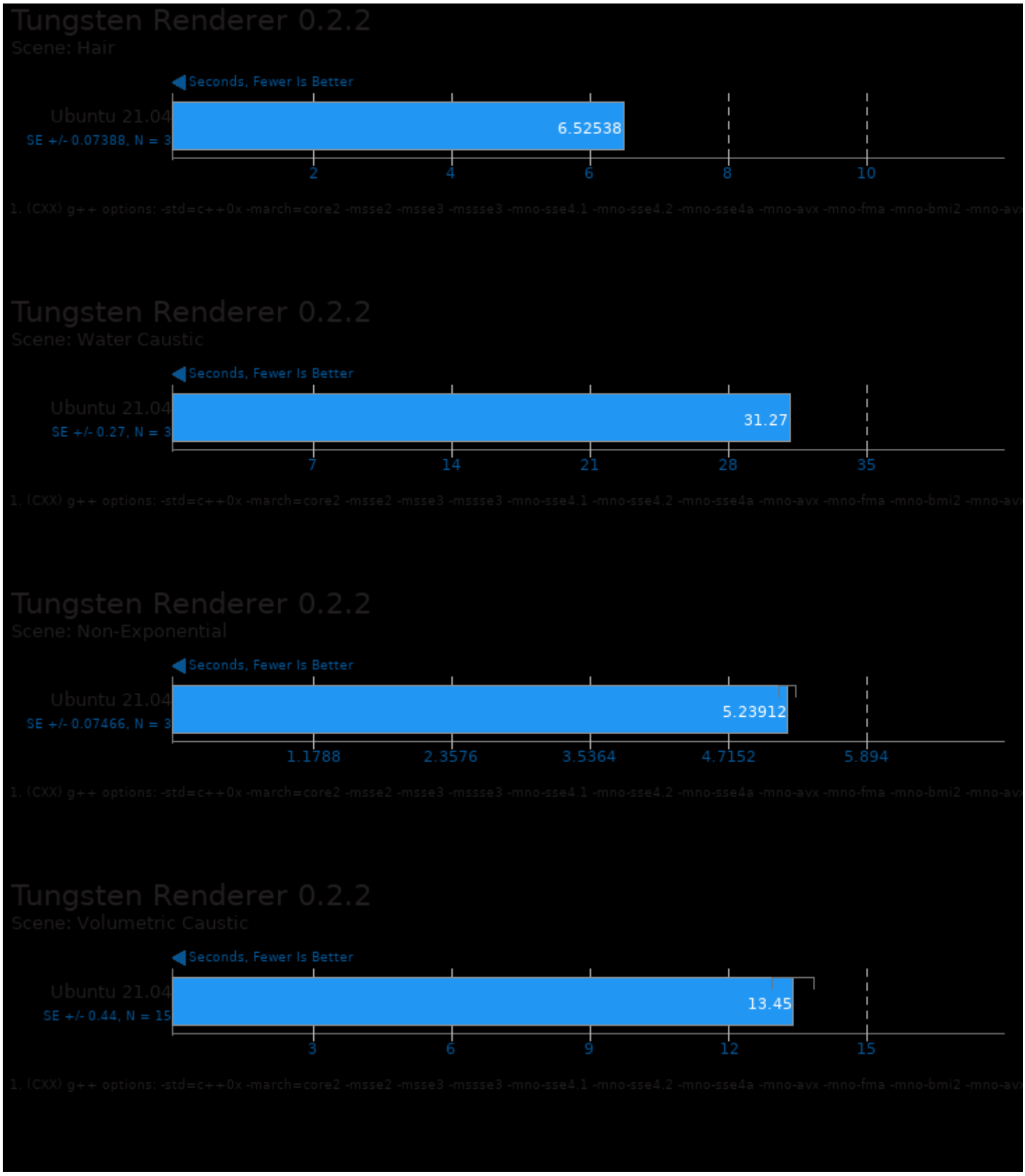


Timed LLVM Compilation 12.0

Build System: Unix Makefiles

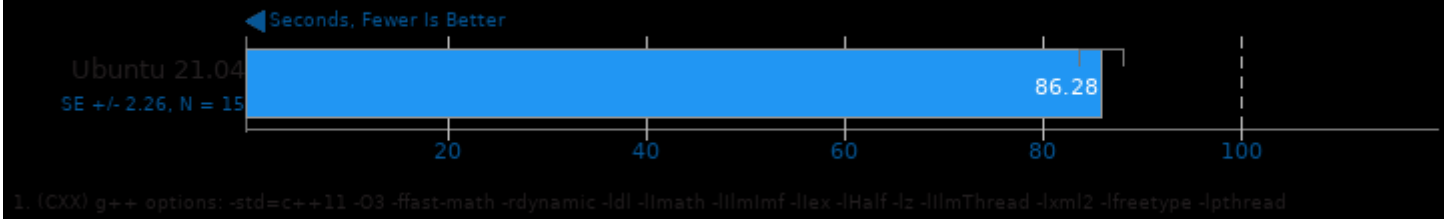



Timed MPlayer Compilation 1.4
Time To Compile
Seconds, Fewer Is Better
Ubuntu 21.04
SE +/- 0.06, N = 3
10.11
3
6
9
12
15
Timed Node.js Compilation 15.11
Time To Compile
Seconds, Fewer Is Better
Ubuntu 21.04
SE +/- 0.97, N = 3
102.14
20
40
60
80
100
Timed PHP Compilation 7.4.2
Time To Compile
Seconds, Fewer Is Better
Ubuntu 21.04
SE +/- 0.52, N = 3
40.21
9
18
27
36
45
Build2 0.13
Time To Compile
Seconds, Fewer Is Better
Ubuntu 21.04
SE +/- 0.48, N = 3
70.06
16
32
48
64
80
POV-Ray 3.7.0.7
Trace Time
Seconds, Fewer Is Better
Ubuntu 21.04
SE +/- 0.097, N = 5
9.476
3
6
9
12
15
1. (CXX) g++ options: -pipe -O3 -ffast-math -march=native -pthread -lSM -lICE -lX11 -lIlmImf -lIlmImf-2_5 -lImath-2_5 -lHalf-2_5 -lIex-2_5 -lIexMath-2_5


Tungsten Renderer 0.2.2
Scene: Hair
Seconds, Fewer Is Better
Ubuntu 21.04
SE +/- 0.07388, N = 3
6.52538
2
4
6
8
10
1. (CXX) g++ options: -std=c++0x -march=core2 -msse2 -msse3 -mssse3 -mno-sse4.1 -mno-sse4.2 -mno-sse4a -mno-avx -mno-fma -mno-bmi2 -mno-av
Tungsten Renderer 0.2.2
Scene: Water Caustic
Seconds, Fewer Is Better
Ubuntu 21.04
SE +/- 0.27, N = 3
31.27
7
14
21
28
35
1. (CXX) g++ options: -std=c++0x -march=core2 -msse2 -msse3 -mssse3 -mno-sse4.1 -mno-sse4.2 -mno-sse4a -mno-avx -mno-fma -mno-bmi2 -mno-av
Tungsten Renderer 0.2.2
Scene: Non-Exponential
Seconds, Fewer Is Better
Ubuntu 21.04
SE +/- 0.07466, N = 3
5.23912
1.1788
2.3576
3.5364
4.7152
5.894
1. (CXX) g++ options: -std=c++0x -march=core2 -msse2 -msse3 -mssse3 -mno-sse4.1 -mno-sse4.2 -mno-sse4a -mno-avx -mno-fma -mno-bmi2 -mno-av
Tungsten Renderer 0.2.2
Scene: Volumetric Caustic
Seconds, Fewer Is Better
Ubuntu 21.04
SE +/- 0.44, N = 15
13.45
3
6
9
12
15
1. (CXX) g++ options: -std=c++0x -march=core2 -msse2 -msse3 -mssse3 -mno-sse4.1 -mno-sse4.2 -mno-sse4a -mno-avx -mno-fma -mno-bmi2 -mno-av

YafaRay 3.4.1

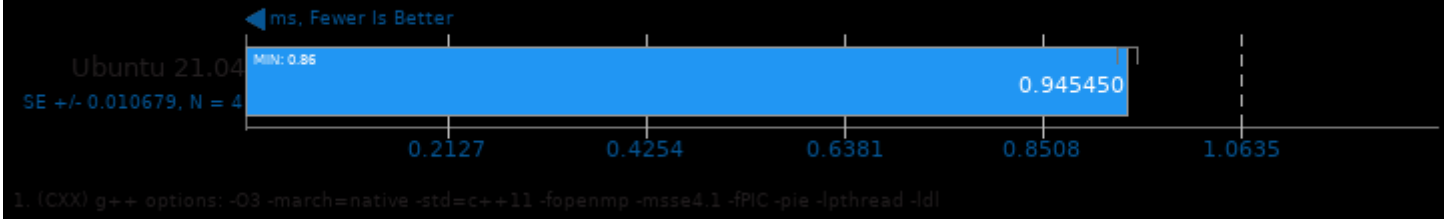
Total Time For Sample Scene



1. (CXX) g++ options: -std=c++11 -O3 -ffast-math -rdynamic -ldl -lImath -lIlmImf -lIex -lHalf -lz -lIlmThread -lxml2 -lfreetype -lpthread

oneDNN 2.1.2

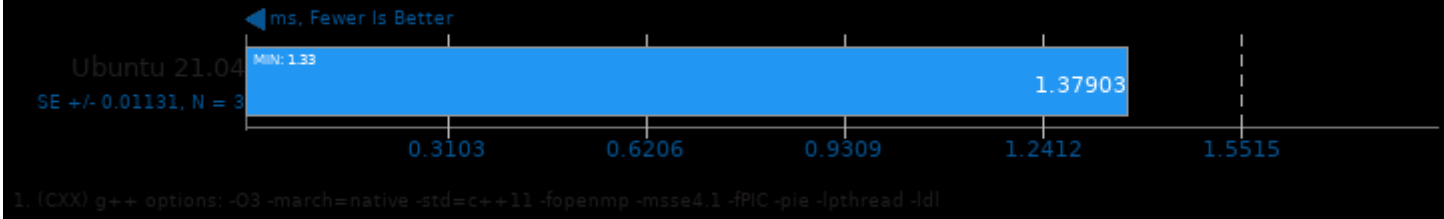
Harness: IP Shapes 1D - Data Type: f32 - Engine: CPU



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

oneDNN 2.1.2

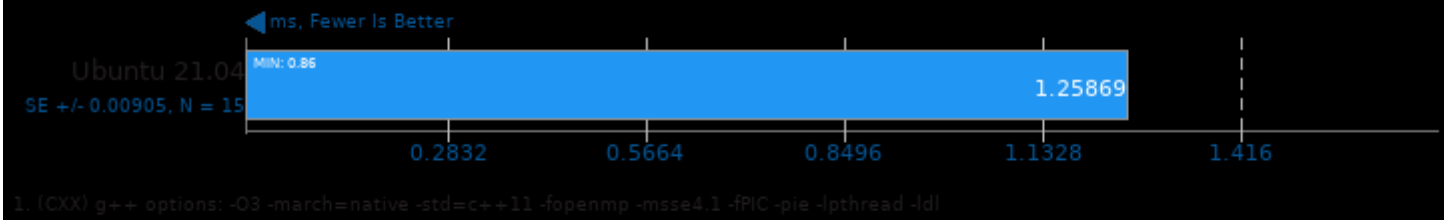
Harness: IP Shapes 3D - Data Type: f32 - Engine: CPU



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

oneDNN 2.1.2

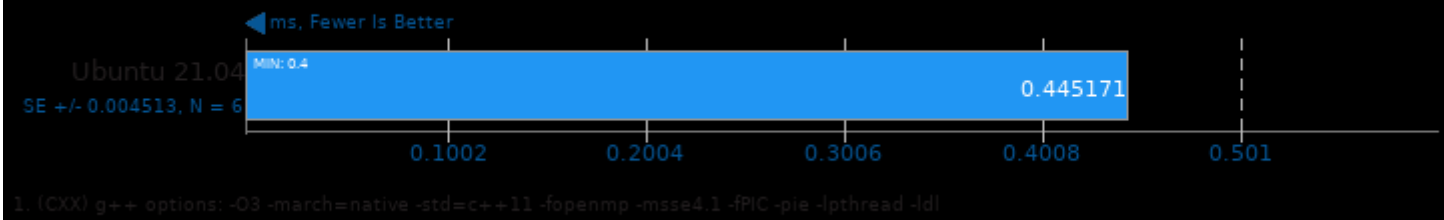
Harness: IP Shapes 1D - Data Type: u8s8f32 - Engine: CPU



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

oneDNN 2.1.2

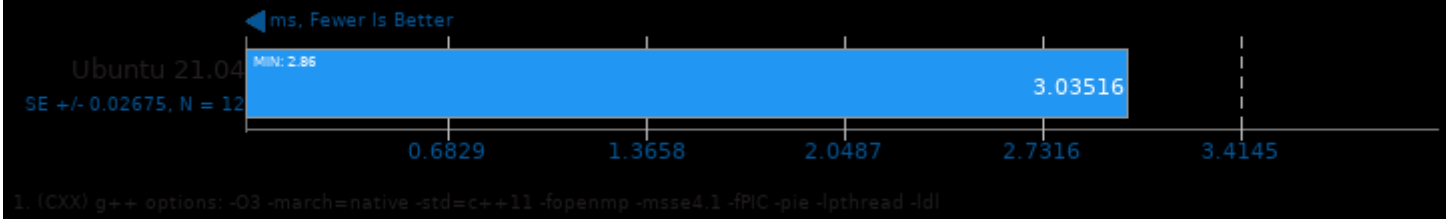
Harness: IP Shapes 3D - Data Type: u8s8f32 - Engine: CPU



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

oneDNN 2.1.2

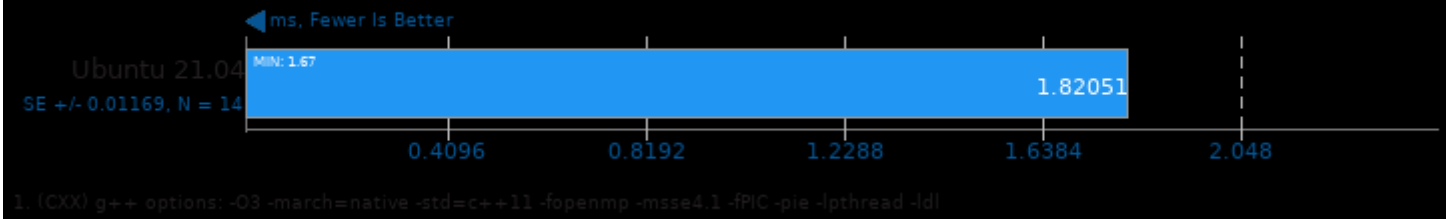
Harness: IP Shapes 1D - Data Type: bf16bf16bf16 - Engine: CPU



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

oneDNN 2.1.2

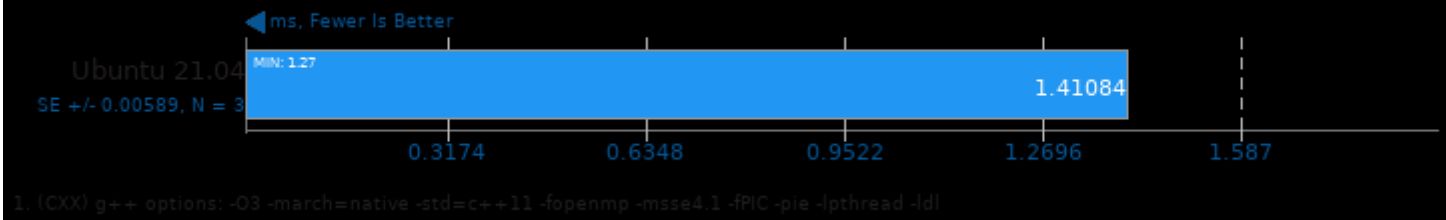
Harness: IP Shapes 3D - Data Type: bf16bf16bf16 - Engine: CPU



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

oneDNN 2.1.2

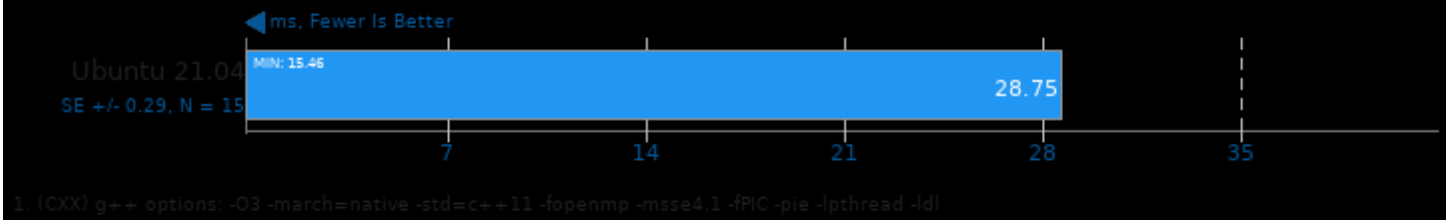
Harness: Convolution Batch Shapes Auto - Data Type: f32 - Engine: CPU



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

oneDNN 2.1.2

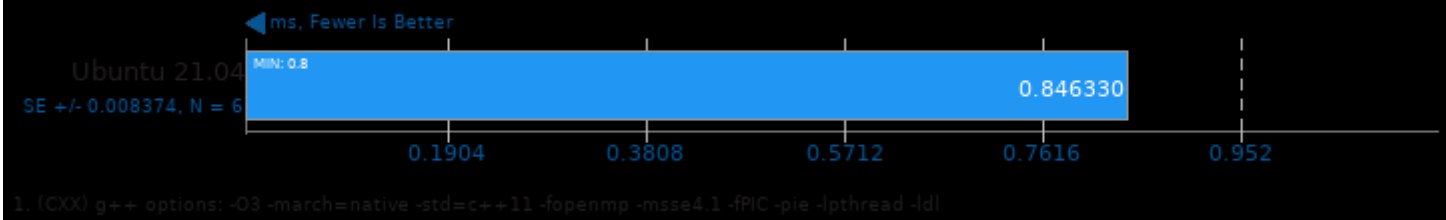
Harness: Deconvolution Batch shapes_1d - Data Type: f32 - Engine: CPU



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

oneDNN 2.1.2

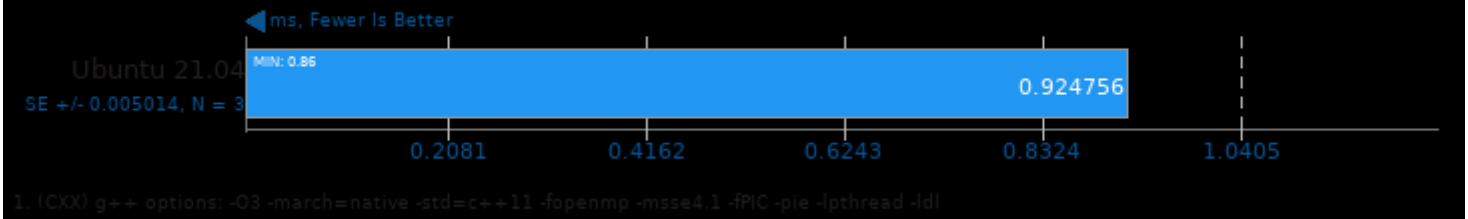
Harness: Deconvolution Batch shapes_3d - Data Type: f32 - Engine: CPU



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

oneDNN 2.1.2

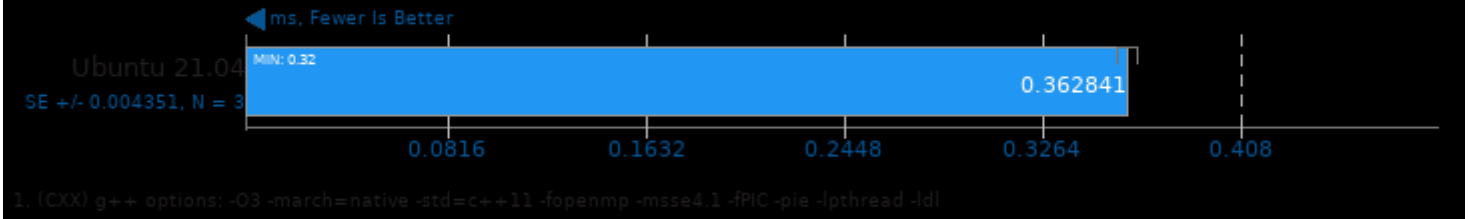
Harness: Convolution Batch Shapes Auto - Data Type: u8s8f32 - Engine: CPU



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

oneDNN 2.1.2

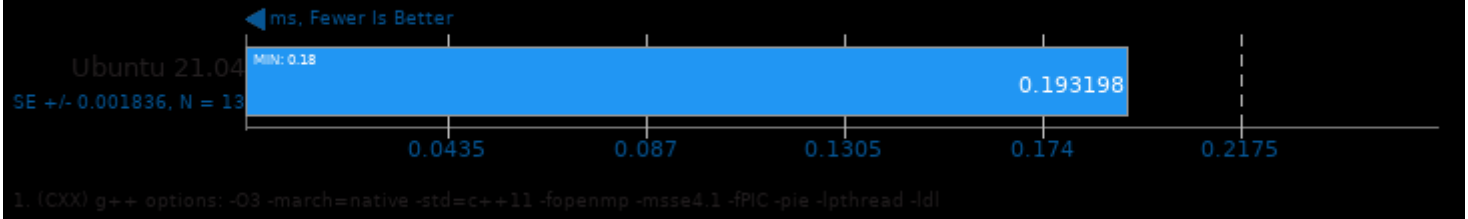
Harness: Deconvolution Batch shapes_1d - Data Type: u8s8f32 - Engine: CPU



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

oneDNN 2.1.2

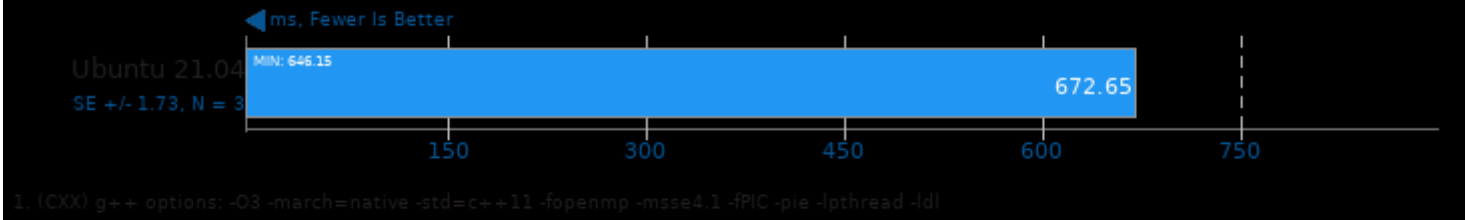
Harness: Deconvolution Batch shapes_3d - Data Type: u8s8f32 - Engine: CPU



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

oneDNN 2.1.2

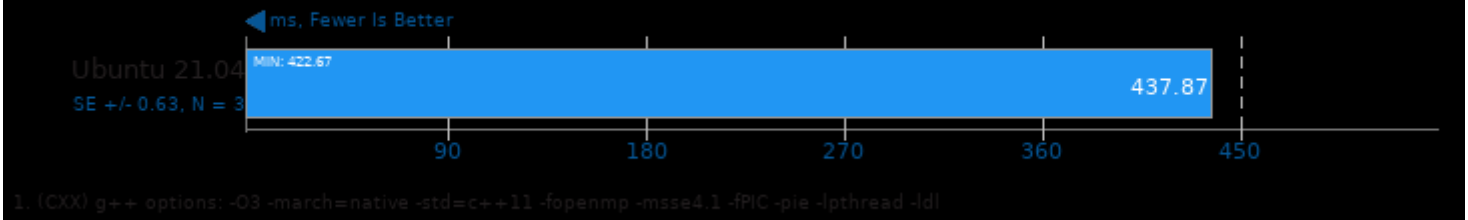
Harness: Recurrent Neural Network Training - Data Type: f32 - Engine: CPU



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

oneDNN 2.1.2

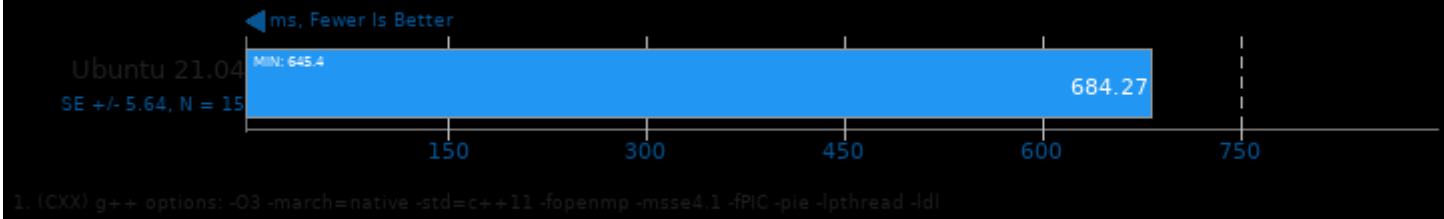
Harness: Recurrent Neural Network Inference - Data Type: f32 - Engine: CPU



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

oneDNN 2.1.2

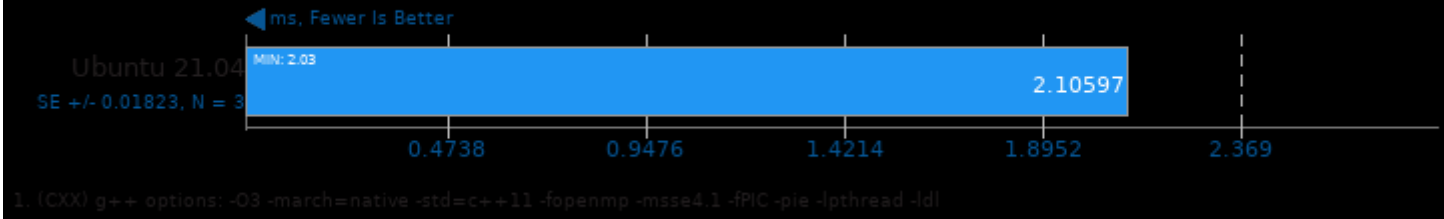
Harness: Recurrent Neural Network Training - Data Type: u8s8f32 - Engine: CPU



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

oneDNN 2.1.2

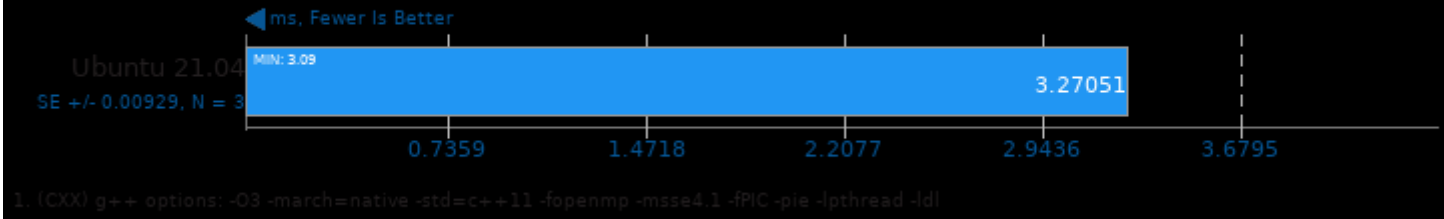
Harness: Convolution Batch Shapes Auto - Data Type: bf16bf16bf16 - Engine: CPU



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

oneDNN 2.1.2

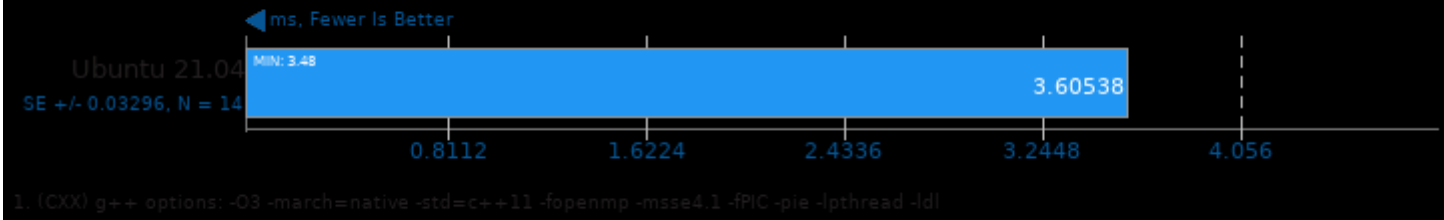
Harness: Deconvolution Batch shapes_1d - Data Type: bf16bf16bf16 - Engine: CPU



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

oneDNN 2.1.2

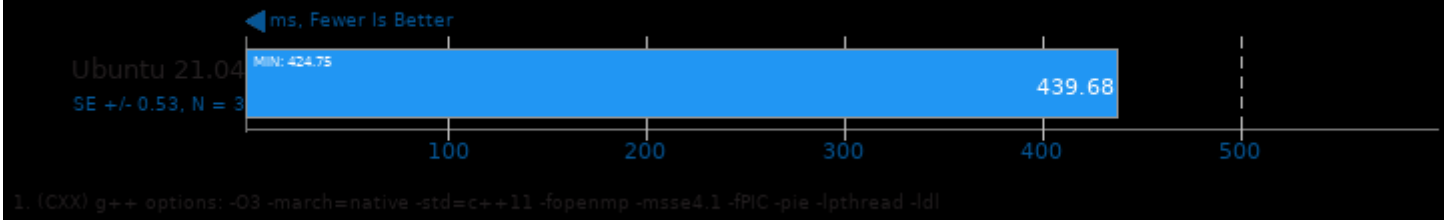
Harness: Deconvolution Batch shapes_3d - Data Type: bf16bf16bf16 - Engine: CPU



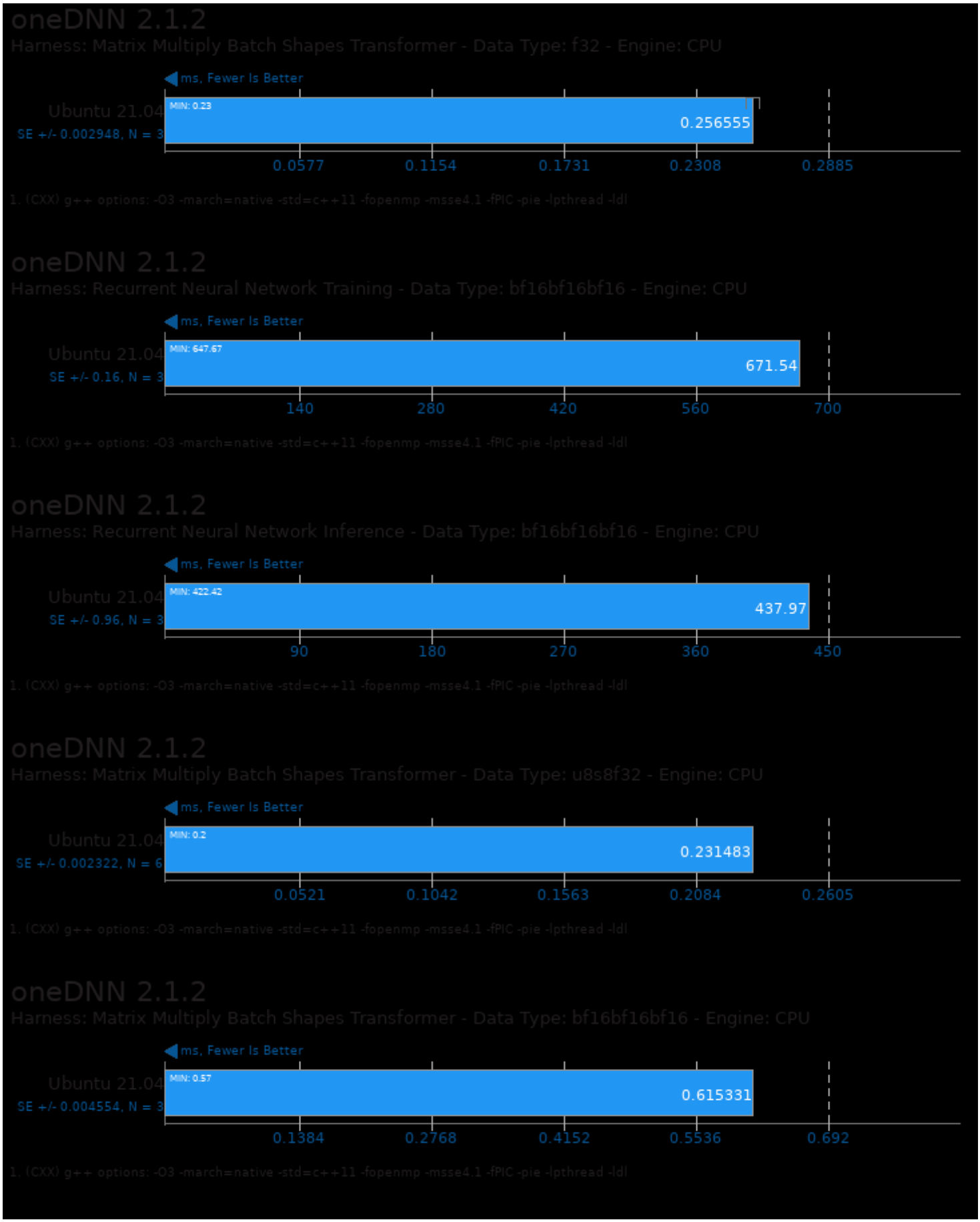
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl

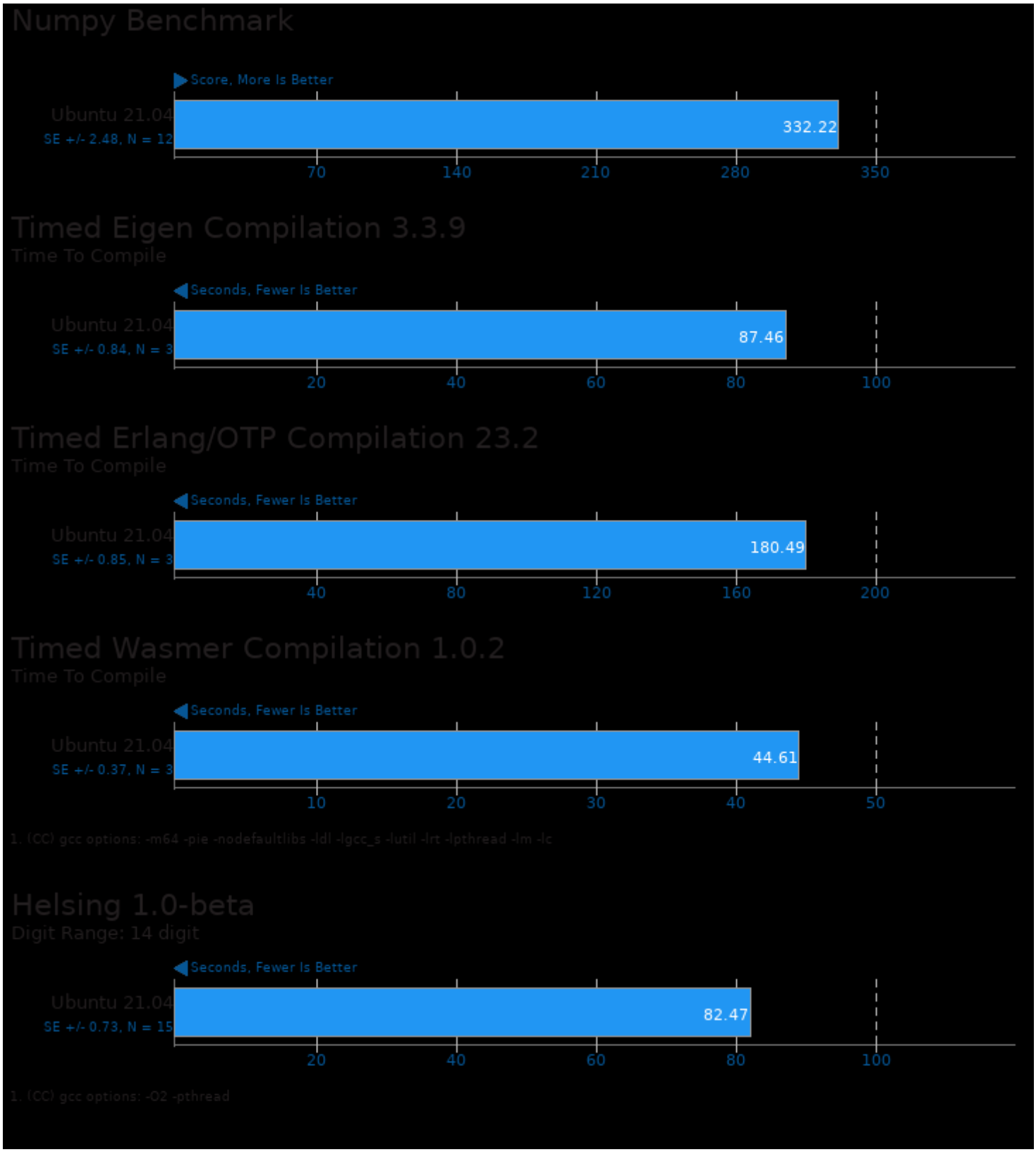
oneDNN 2.1.2

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

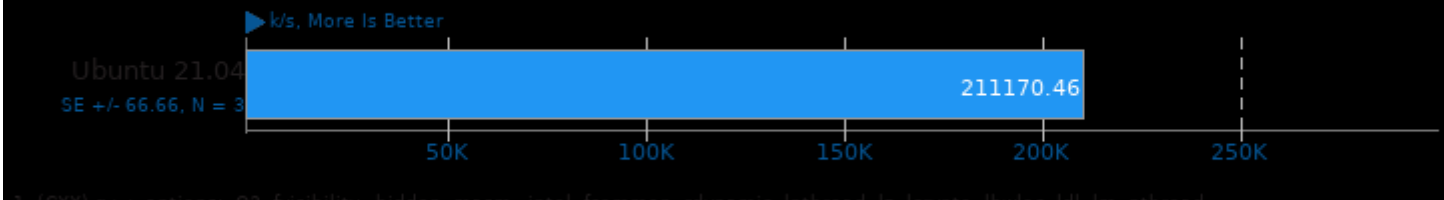


1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl


oneDNN 2.1.2
Harness: Matrix Multiply Batch Shapes Transformer - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
Ubuntu 21.04
SE +/- 0.002948, N = 3
MIN: 0.23
0.256555
0.0577
0.1154
0.1731
0.2308
0.2885
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 2.1.2
Harness: Recurrent Neural Network Training - Data Type: bf16bf16bf16 - Engine: CPU
ms, Fewer Is Better
Ubuntu 21.04
SE +/- 0.16, N = 3
MIN: 647.67
671.54
140
280
420
560
700
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 2.1.2
Harness: Recurrent Neural Network Inference - Data Type: bf16bf16bf16 - Engine: CPU
ms, Fewer Is Better
Ubuntu 21.04
SE +/- 0.96, N = 3
MIN: 422.42
437.97
90
180
270
360
450
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 2.1.2
Harness: Matrix Multiply Batch Shapes Transformer - Data Type: u8s8f32 - Engine: CPU
ms, Fewer Is Better
Ubuntu 21.04
SE +/- 0.002322, N = 6
MIN: 0.2
0.231483
0.0521
0.1042
0.1563
0.2084
0.2605
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 2.1.2
Harness: Matrix Multiply Batch Shapes Transformer - Data Type: bf16bf16bf16 - Engine: CPU
ms, Fewer Is Better
Ubuntu 21.04
SE +/- 0.004554, N = 3
MIN: 0.57
0.615331
0.1384
0.2768
0.4152
0.5536
0.692
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl


Numpy Benchmark
Score, More Is Better
Ubuntu 21.04
SE +/- 2.48, N = 12
332.22
70
140
210
280
350
Timed Eigen Compilation 3.3.9
Time To Compile
Seconds, Fewer Is Better
Ubuntu 21.04
SE +/- 0.84, N = 3
87.46
20
40
60
80
100
Timed Erlang/OTP Compilation 23.2
Time To Compile
Seconds, Fewer Is Better
Ubuntu 21.04
SE +/- 0.85, N = 3
180.49
40
80
120
160
200
Timed Wasmer Compilation 1.0.2
Time To Compile
Seconds, Fewer Is Better
Ubuntu 21.04
SE +/- 0.37, N = 3
44.61
10
20
30
40
50
1. (CC) gcc options: -m64 -pie -nodefaultlibs -ldl -lgcc_s -lutil -lrt -lpthread -lm -lc
Helsing 1.0-beta
Digit Range: 14 digit
Seconds, Fewer Is Better
Ubuntu 21.04
SE +/- 0.73, N = 15
82.47
20
40
60
80
100
1. (CC) gcc options: -O2 -pthread

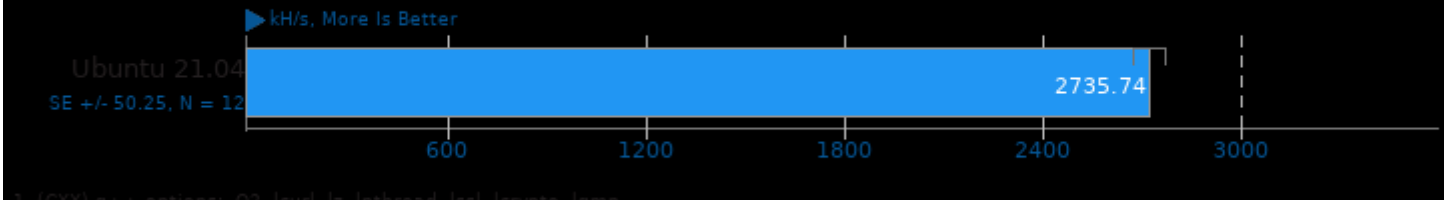
Aircrack-ng 1.5.2



1. (CXX) g++ options: -O3 -fvisibility=hidden -masm=intel -fcommon -rdynamic -lpthread -lz -lcrypto -lhwloc -ldl -lm -pthread

Cpuminer-Opt 3.15.5

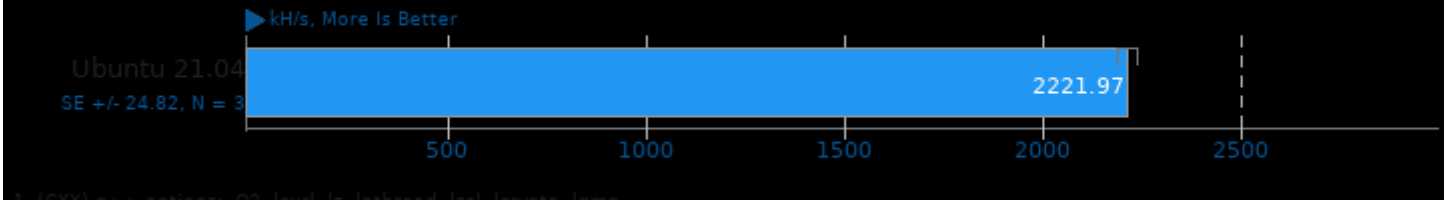
Algorithm: Magi



1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp

Cpuminer-Opt 3.15.5

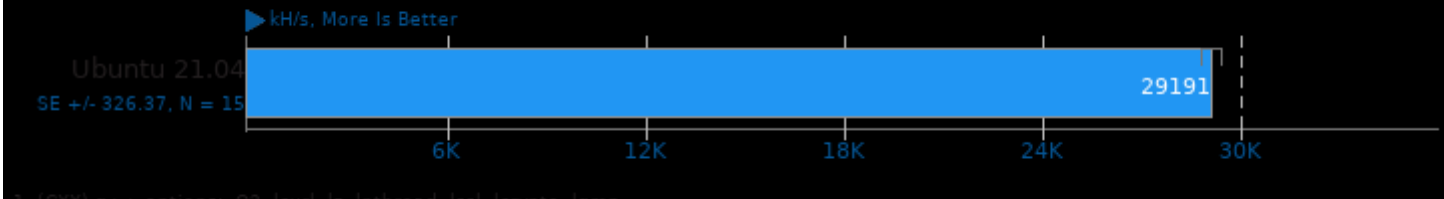
Algorithm: x25x



1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp

Cpuminer-Opt 3.15.5

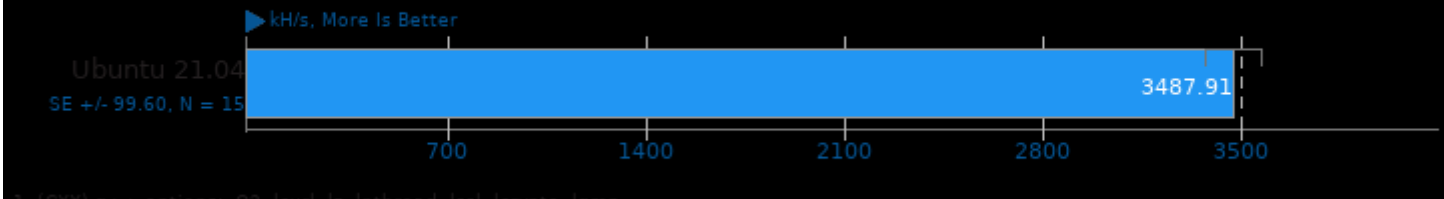
Algorithm: Deepcoin



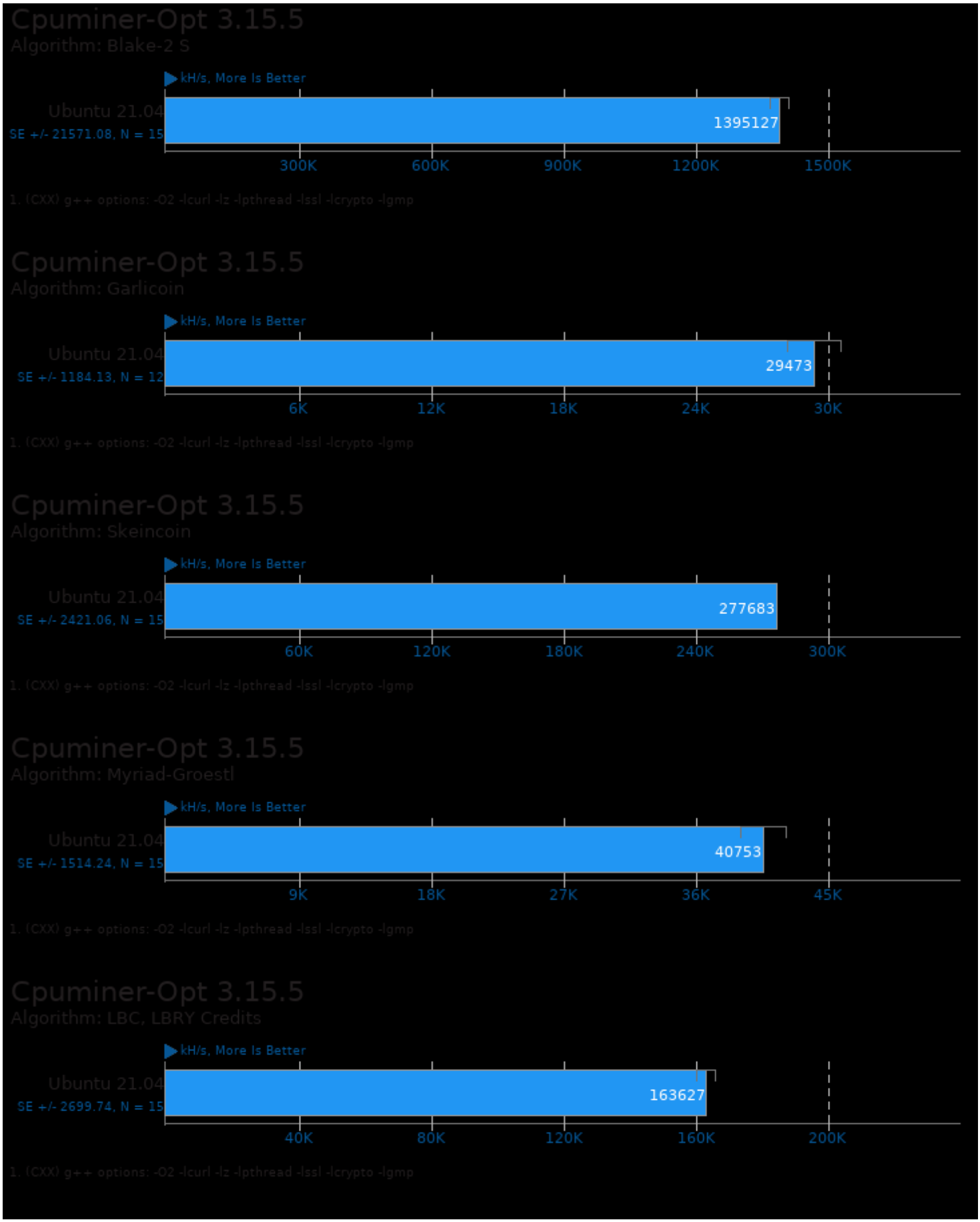
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp

Cpuminer-Opt 3.15.5

Algorithm: Ringcoin

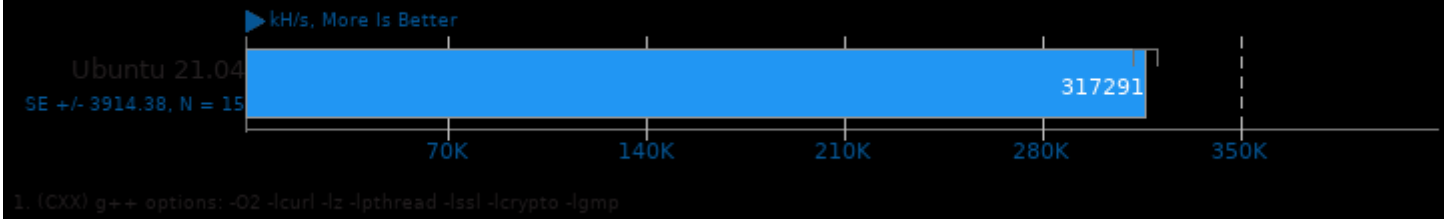


1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp


Cpuminer-Opt 3.15.5
Algorithm: Blake-2 S
kH/s, More Is Better
Ubuntu 21.04
SE +/- 21571.08, N = 15
1395127
300K
600K
900K
1200K
1500K
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp
Cpuminer-Opt 3.15.5
Algorithm: Garlicoin
kH/s, More Is Better
Ubuntu 21.04
SE +/- 1184.13, N = 12
29473
6K
12K
18K
24K
30K
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp
Cpuminer-Opt 3.15.5
Algorithm: Skeincoin
kH/s, More Is Better
Ubuntu 21.04
SE +/- 2421.06, N = 15
277683
60K
120K
180K
240K
300K
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp
Cpuminer-Opt 3.15.5
Algorithm: Myriad-Groestl
kH/s, More Is Better
Ubuntu 21.04
SE +/- 1514.24, N = 15
40753
9K
18K
27K
36K
45K
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp
Cpuminer-Opt 3.15.5
Algorithm: LBC, LBRY Credits
kH/s, More Is Better
Ubuntu 21.04
SE +/- 2699.74, N = 15
163627
40K
80K
120K
160K
200K
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp

Cpuminer-Opt 3.15.5

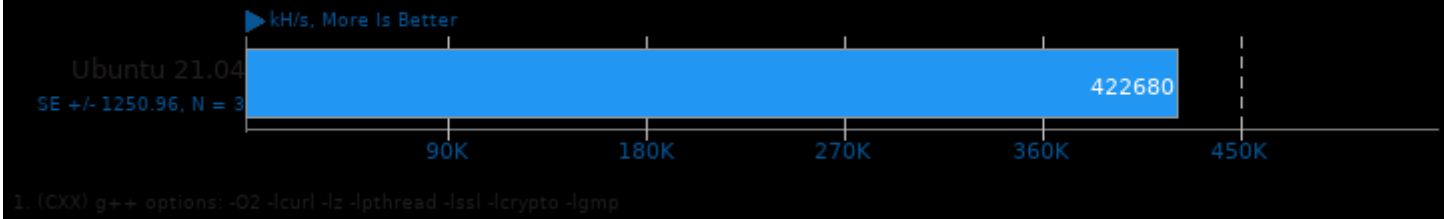
Algorithm: Quad SHA-256, Pyrite



1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp

Cpuminer-Opt 3.15.5

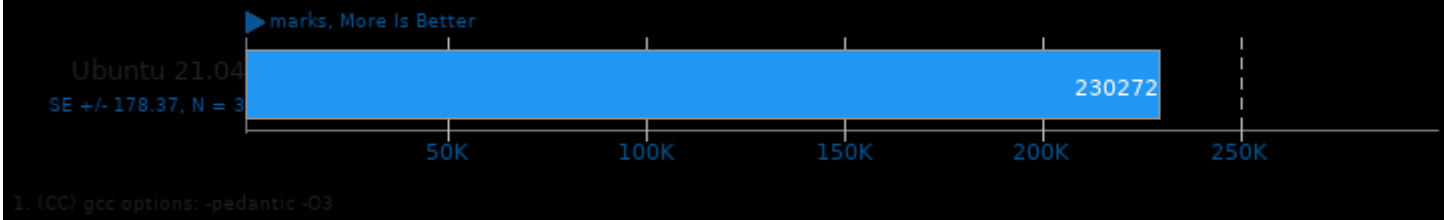
Algorithm: Triple SHA-256, Onecoin



1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp

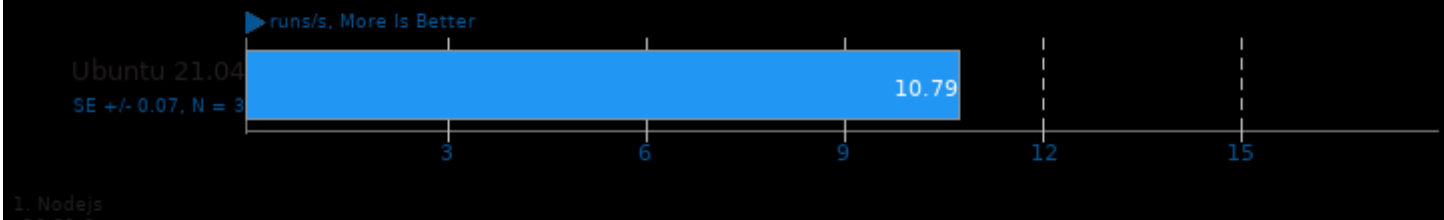
SecureMark 1.0.4

Benchmark: SecureMark-TLS



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

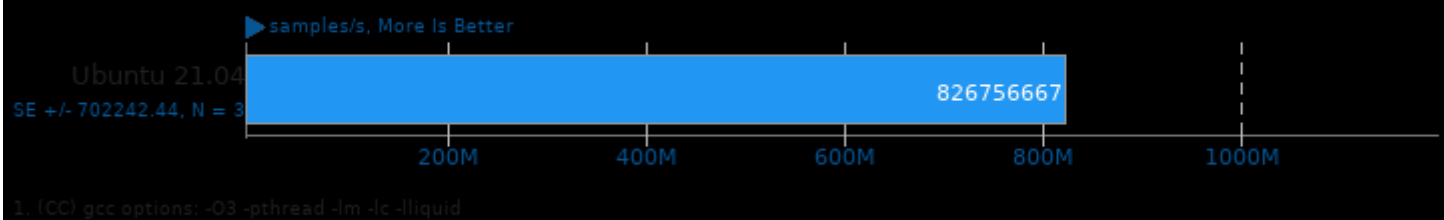
Node.js V8 Web Tooling Benchmark



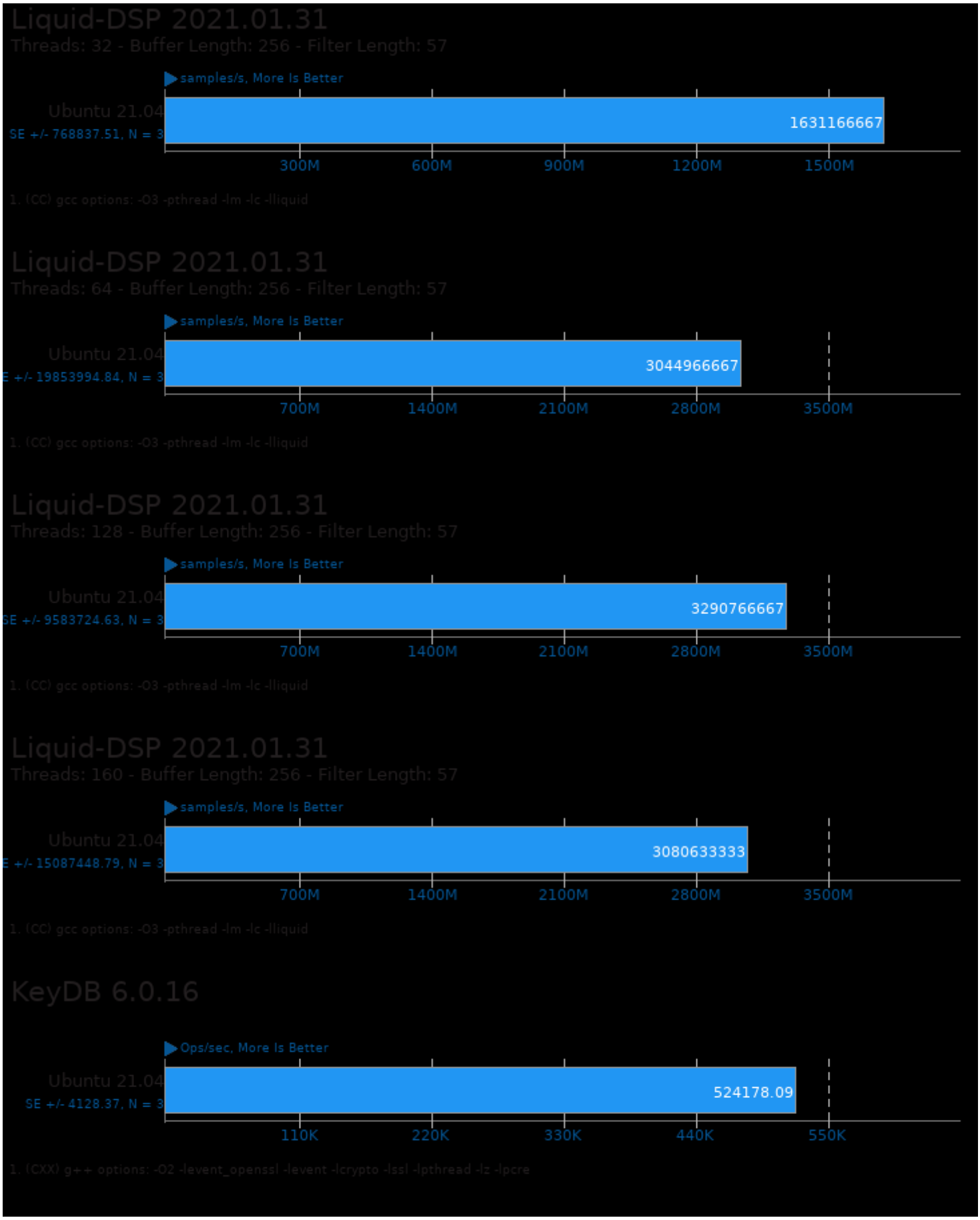
1. Nodejs
v12.21.0

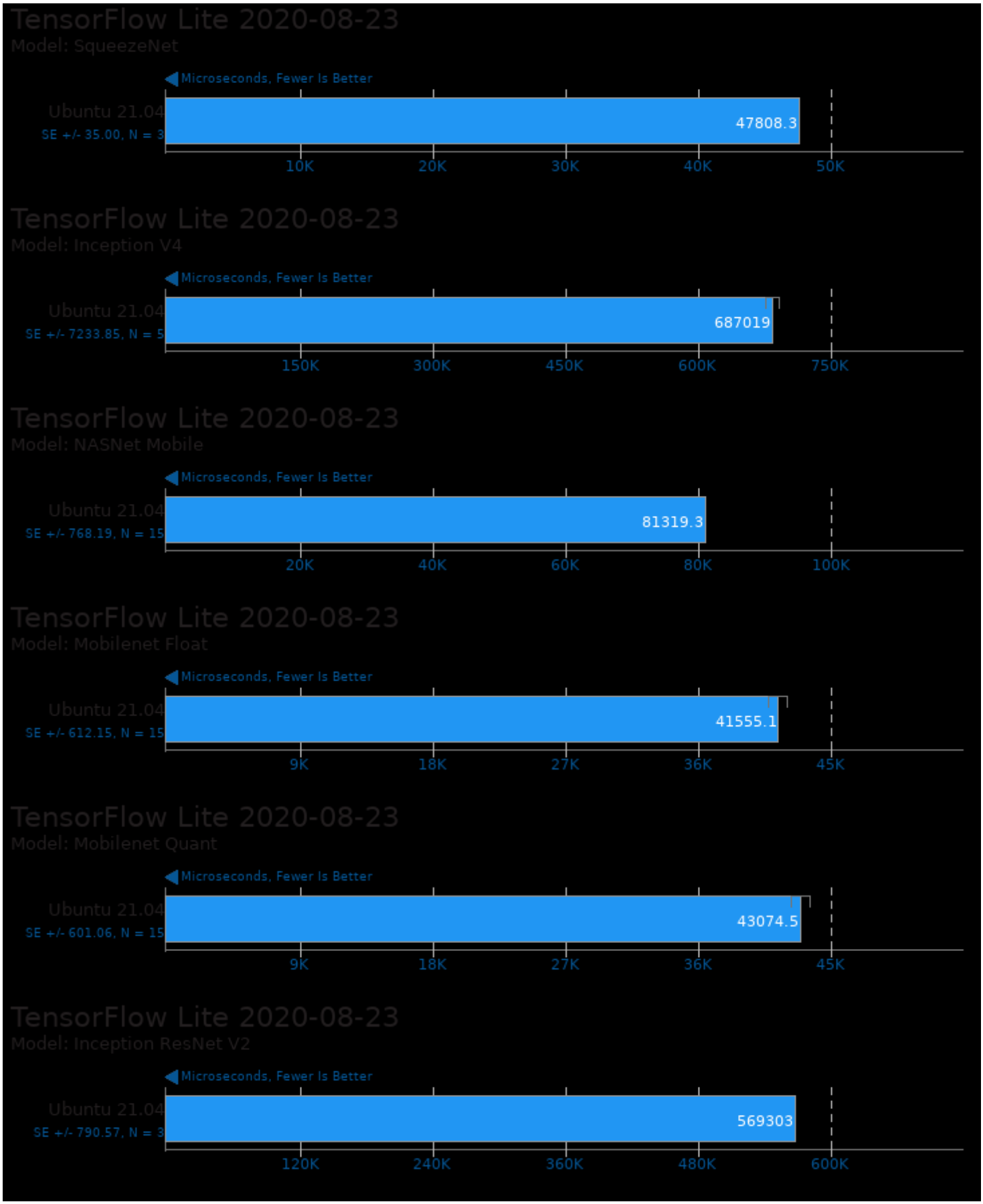
Liquid-DSP 2021.01.31

Threads: 16 - Buffer Length: 256 - Filter Length: 57



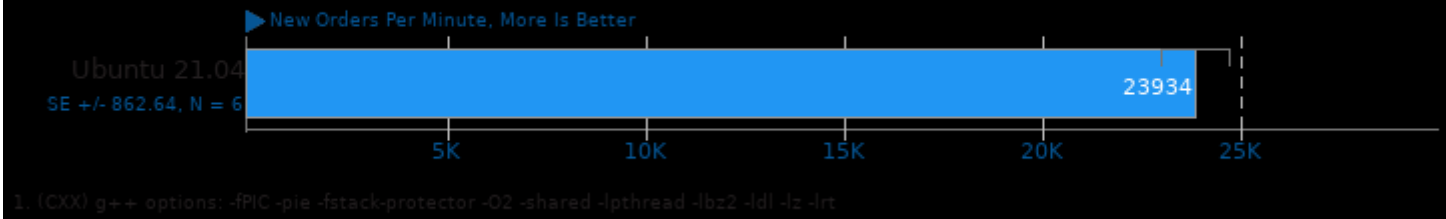
1. (CC) gcc options: -O3 -pthread -lm -lc -lliquid


Liquid-DSP 2021.01.31
Threads: 32 - Buffer Length: 256 - Filter Length: 57
samples/s, More Is Better
Ubuntu 21.04
SE +/- 768837.51, N = 3
1631166667
300M
600M
900M
1200M
1500M
1. (CC) gcc options: -O3 -pthread -lm -lc -lliquid
Liquid-DSP 2021.01.31
Threads: 64 - Buffer Length: 256 - Filter Length: 57
samples/s, More Is Better
Ubuntu 21.04
E +/- 19853994.84, N = 3
3044966667
700M
1400M
2100M
2800M
3500M
1. (CC) gcc options: -O3 -pthread -lm -lc -lliquid
Liquid-DSP 2021.01.31
Threads: 128 - Buffer Length: 256 - Filter Length: 57
samples/s, More Is Better
Ubuntu 21.04
SE +/- 9583724.63, N = 3
3290766667
700M
1400M
2100M
2800M
3500M
1. (CC) gcc options: -O3 -pthread -lm -lc -lliquid
Liquid-DSP 2021.01.31
Threads: 160 - Buffer Length: 256 - Filter Length: 57
samples/s, More Is Better
Ubuntu 21.04
E +/- 15087448.79, N = 3
3080633333
700M
1400M
2100M
2800M
3500M
1. (CC) gcc options: -O3 -pthread -lm -lc -lliquid
KeyDB 6.0.16
Ops/sec, More Is Better
Ubuntu 21.04
SE +/- 4128.37, N = 3
524178.09
110K
220K
330K
440K
550K
1. (CXX) g++ options: -O2 -levent_openssl -levent -lcrypto -lssl -lpthread -lz -lpcre


TensorFlow Lite 2020-08-23
Model: SqueezeNet
Microseconds, Fewer Is Better
Ubuntu 21.04
SE +/- 35.00, N = 3
47808.3
10K
20K
30K
40K
50K
TensorFlow Lite 2020-08-23
Model: Inception V4
Microseconds, Fewer Is Better
Ubuntu 21.04
SE +/- 7233.85, N = 5
687019
150K
300K
450K
600K
750K
TensorFlow Lite 2020-08-23
Model: NASNet Mobile
Microseconds, Fewer Is Better
Ubuntu 21.04
SE +/- 768.19, N = 15
81319.3
20K
40K
60K
80K
100K
TensorFlow Lite 2020-08-23
Model: Mobilenet Float
Microseconds, Fewer Is Better
Ubuntu 21.04
SE +/- 612.15, N = 15
41555.1
9K
18K
27K
36K
45K
TensorFlow Lite 2020-08-23
Model: Mobilenet Quant
Microseconds, Fewer Is Better
Ubuntu 21.04
SE +/- 601.06, N = 15
43074.5
9K
18K
27K
36K
45K
TensorFlow Lite 2020-08-23
Model: Inception ResNet V2
Microseconds, Fewer Is Better
Ubuntu 21.04
SE +/- 790.57, N = 3
569303
120K
240K
360K
480K
600K

HammerDB - MariaDB 10.5.9

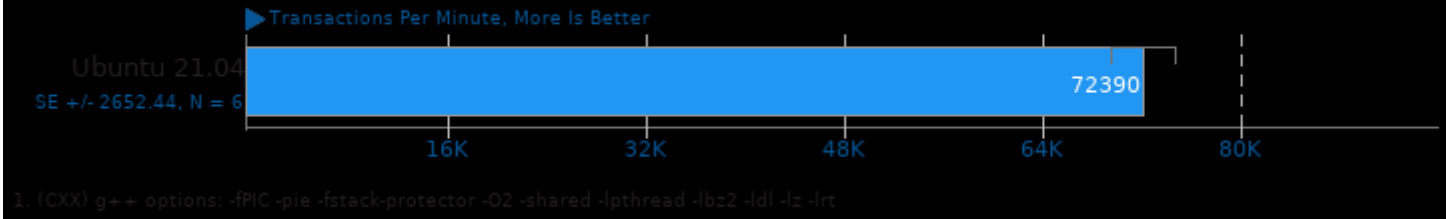
Virtual Users: 128 - Warehouses: 250



1. (CXX) g++ options: -fPIC -pie -fstack-protector -O2 -shared -lpthread -lbz2 -ldl -lz -lrt

HammerDB - MariaDB 10.5.9

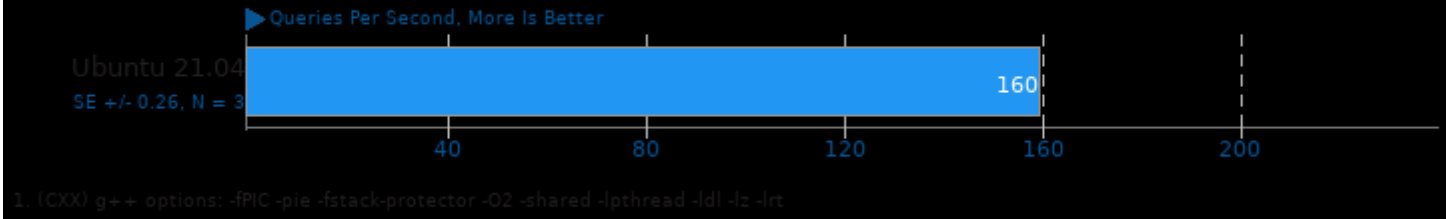
Virtual Users: 128 - Warehouses: 250



1. (CXX) g++ options: -fPIC -pie -fstack-protector -O2 -shared -lpthread -lbz2 -ldl -lz -lrt

MariaDB 10.5.2

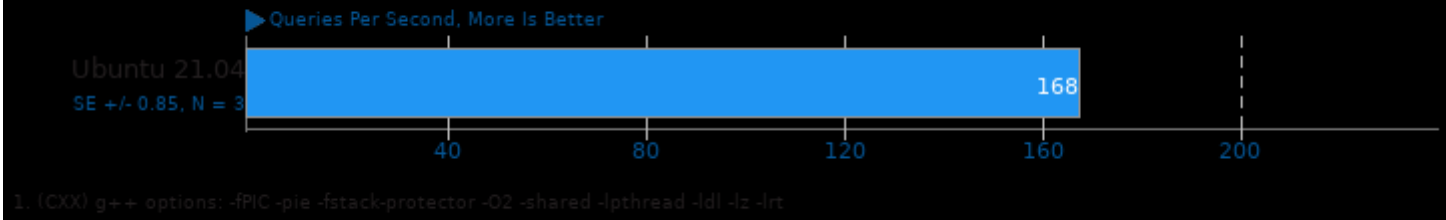
Clients: 256



1. (CXX) g++ options: -fPIC -pie -fstack-protector -O2 -shared -lpthread -ldl -lz -lrt

MariaDB 10.5.2

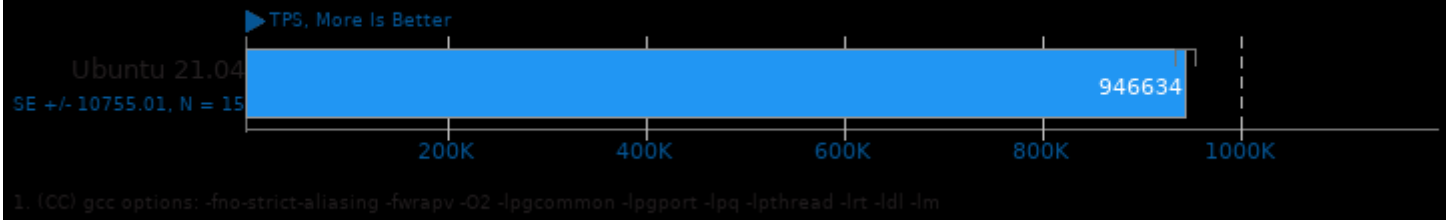
Clients: 512



1. (CXX) g++ options: -fPIC -pie -fstack-protector -O2 -shared -lpthread -ldl -lz -lrt

PostgreSQL pgbench 13.0

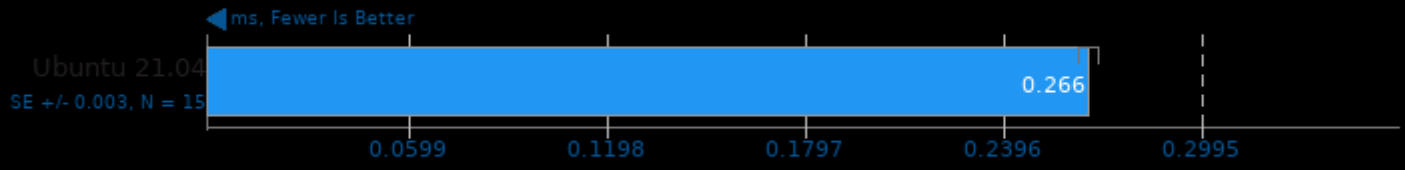
Scaling Factor: 100 - Clients: 250 - Mode: Read Only



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

PostgreSQL pgbench 13.0

Scaling Factor: 100 - Clients: 250 - Mode: Read Only - Average Latency



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

PostgreSQL pgbench 13.0

Scaling Factor: 100 - Clients: 250 - Mode: Read Write

1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

PostgreSQL pgbench 13.0

Scaling Factor: 100 - Clients: 250 - Mode: Read Write - Average Latency

1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

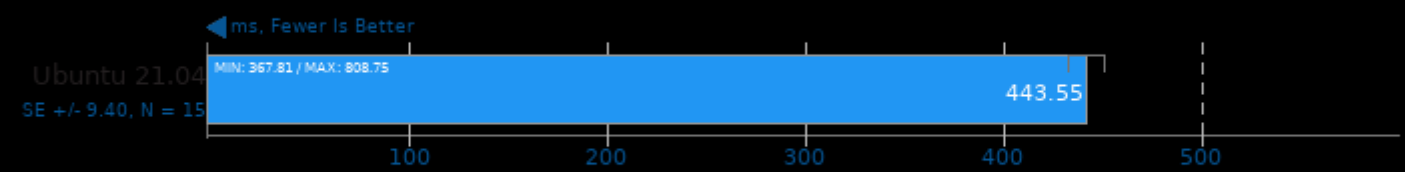
WRF 4.2.2

Input: conus 2.5km

1. (F9X) gfortran options: -O2 -ftree-vectorize -funroll-loops -ffree-form -fconvert=big-endian -frecord-marker=4 -fallow-invalid-boz -fsmf_time -lwrfio_nf

TNN 0.2.3

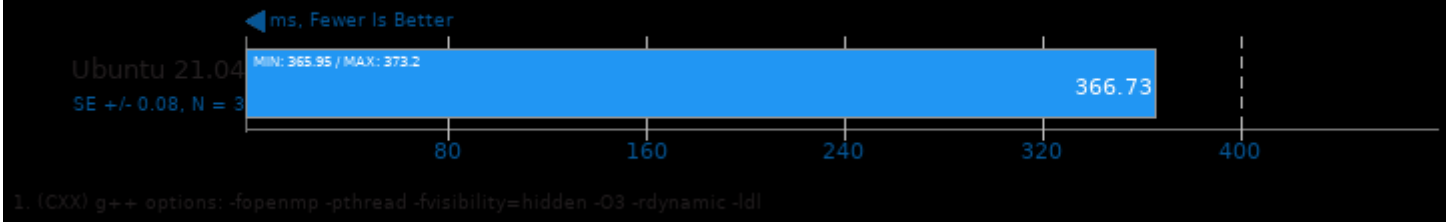
Target: CPU - Model: MobileNet v2



1. (CXX) g++ options: -fopenmp -pthread -fvisibility=hidden -O3 -rdynamic -ldl

TNN 0.2.3

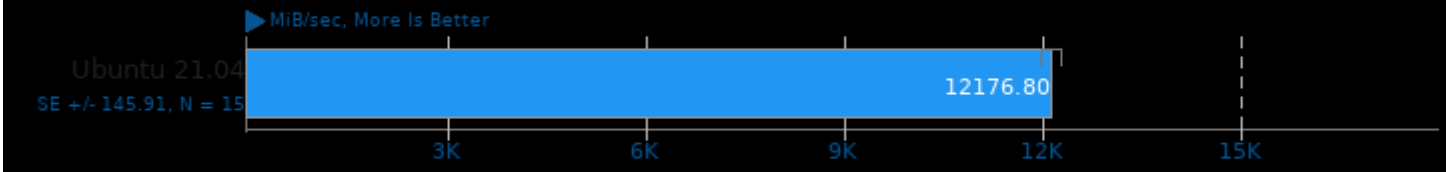
Target: CPU - Model: SqueezeNet v1.1



1. (CXX) g++ options: -fopenmp -pthread -fvisibility=hidden -O3 -rdynamic -ldl

Sysbench 1.0.20

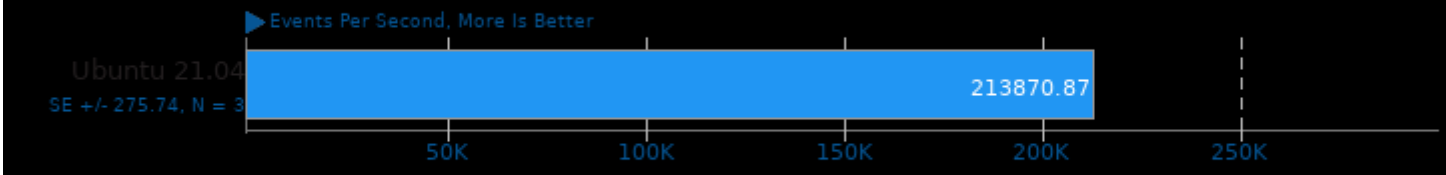
Test: RAM / Memory



1. (CC) gcc options: -pthread -O2 -funroll-loops -rdynamic -ldl -laio -lm

Sysbench 1.0.20

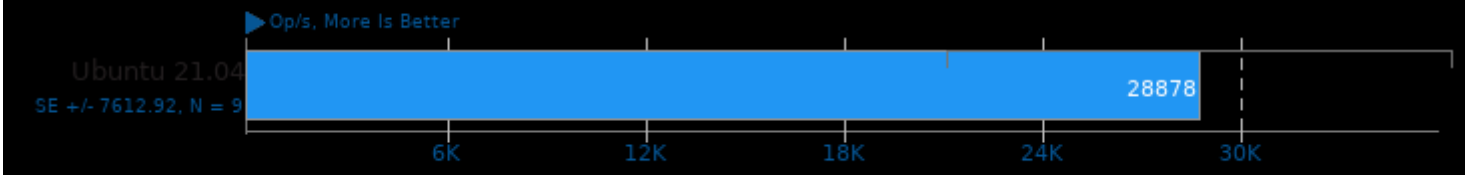
Test: CPU



1. (CC) gcc options: -pthread -O2 -funroll-loops -rdynamic -ldl -laio -lm

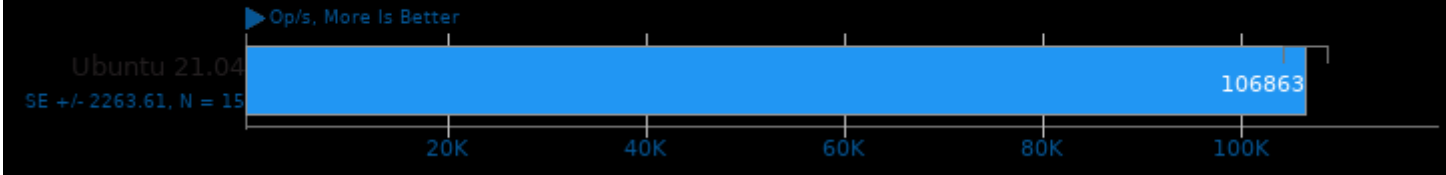
Apache Cassandra 3.11.4

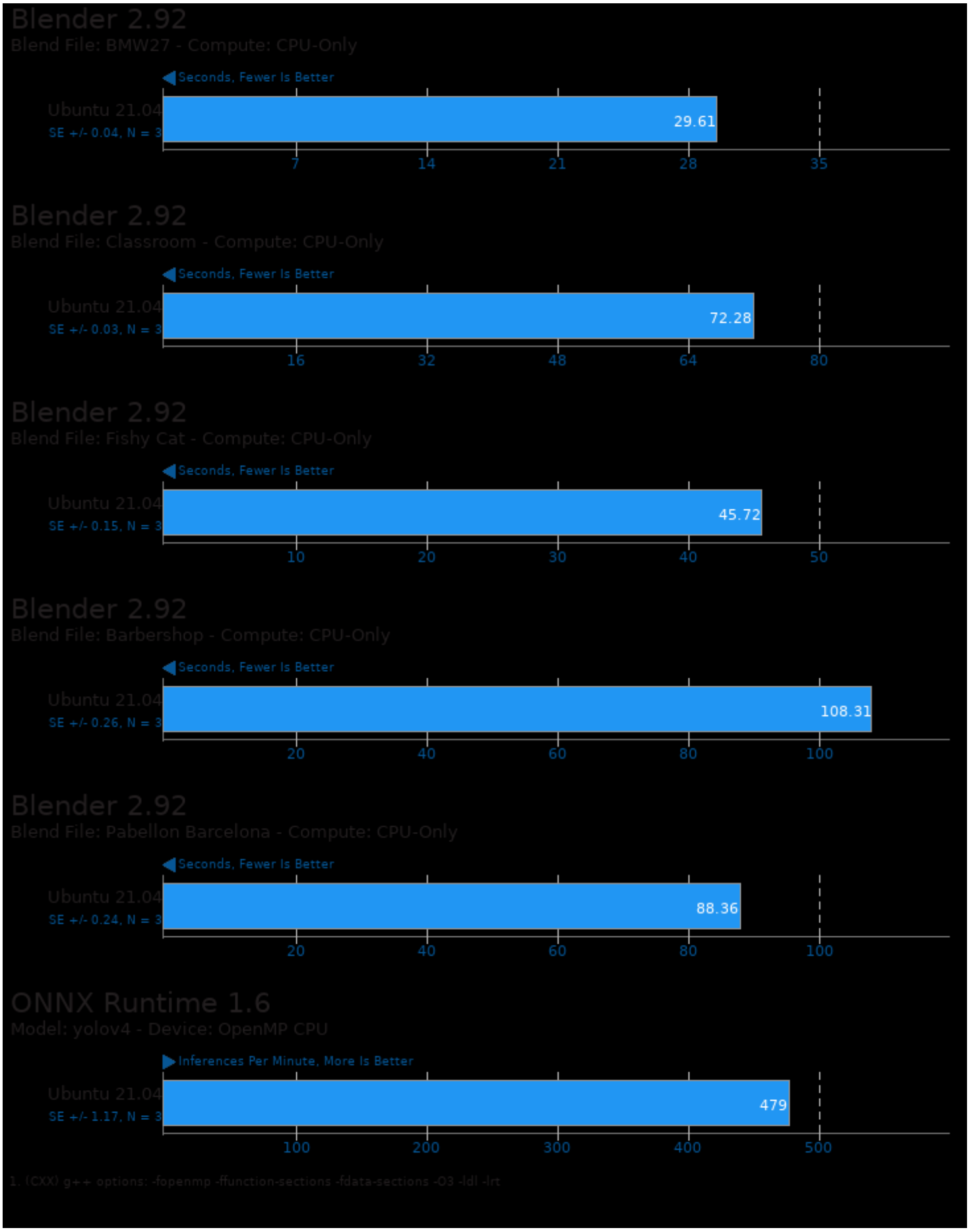
Test: Reads



Apache Cassandra 3.11.4

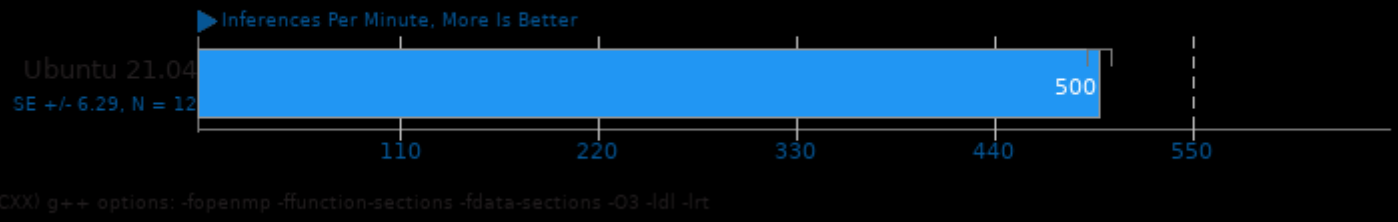
Test: Writes




Blender 2.92
Blend File: BMW27 - Compute: CPU-Only
Seconds, Fewer Is Better
Ubuntu 21.04
SE +/- 0.04, N = 3
29.61
7
14
21
28
35
Blender 2.92
Blend File: Classroom - Compute: CPU-Only
Seconds, Fewer Is Better
Ubuntu 21.04
SE +/- 0.03, N = 3
72.28
16
32
48
64
80
Blender 2.92
Blend File: Fishy Cat - Compute: CPU-Only
Seconds, Fewer Is Better
Ubuntu 21.04
SE +/- 0.15, N = 3
45.72
10
20
30
40
50
Blender 2.92
Blend File: Barbershop - Compute: CPU-Only
Seconds, Fewer Is Better
Ubuntu 21.04
SE +/- 0.26, N = 3
108.31
20
40
60
80
100
Blender 2.92
Blend File: Pabellon Barcelona - Compute: CPU-Only
Seconds, Fewer Is Better
Ubuntu 21.04
SE +/- 0.24, N = 3
88.36
20
40
60
80
100
ONNX Runtime 1.6
Model: yolov4 - Device: OpenMP CPU
Inferences Per Minute, More Is Better
Ubuntu 21.04
SE +/- 1.17, N = 3
479
100
200
300
400
500
1. (CXX) g++ options: -fopenmp -ffunction-sections -fdata-sections -O3 -ldl -lrt

ONNX Runtime 1.6

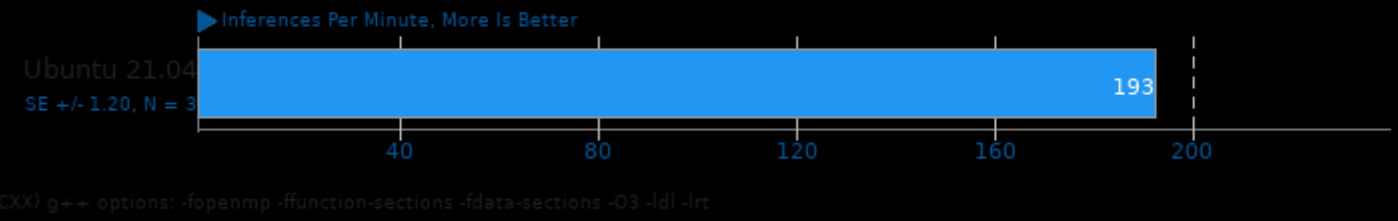
Model: bertsquad-10 - Device: OpenMP CPU



1. (CXX) g++ options: -fopenmp -ffunction-sections -fdata-sections -O3 -ldl -lrt

ONNX Runtime 1.6

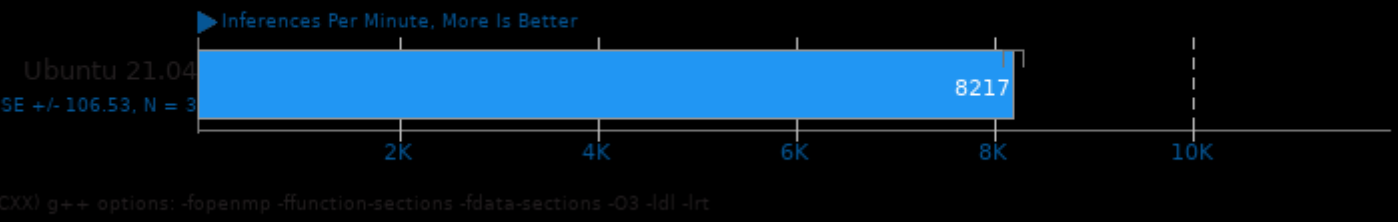
Model: fcn-resnet101-11 - Device: OpenMP CPU



1. (CXX) g++ options: -fopenmp -ffunction-sections -fdata-sections -O3 -ldl -lrt

ONNX Runtime 1.6

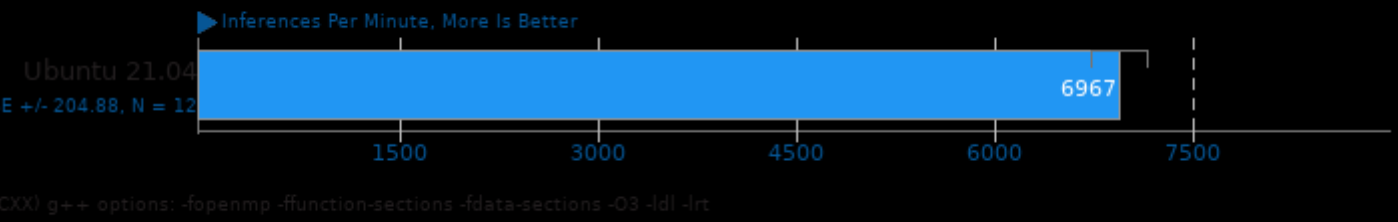
Model: shufflenet-v2-10 - Device: OpenMP CPU



1. (CXX) g++ options: -fopenmp -ffunction-sections -fdata-sections -O3 -ldl -lrt

ONNX Runtime 1.6

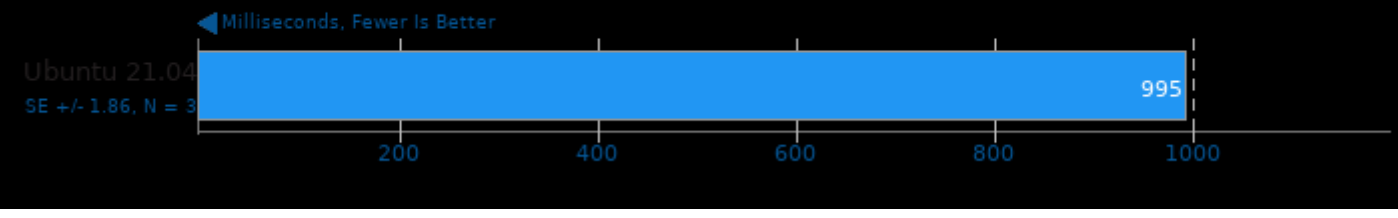
Model: super-resolution-10 - Device: OpenMP CPU



1. (CXX) g++ options: -fopenmp -ffunction-sections -fdata-sections -O3 -ldl -lrt

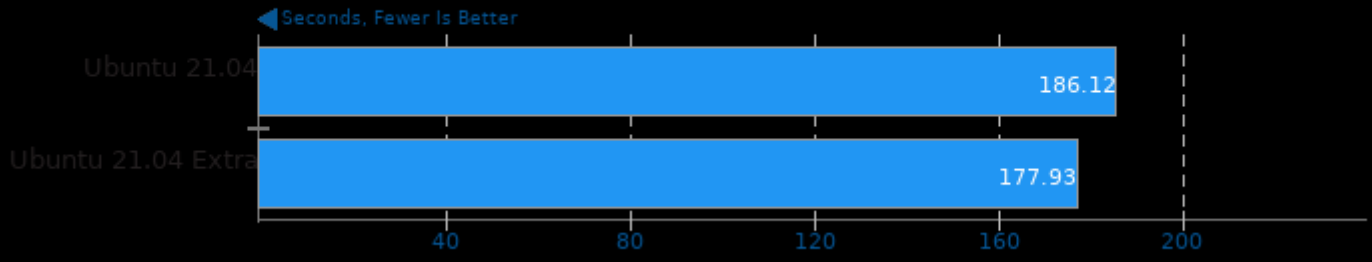
PyBench 2018-02-16

Total For Average Test Times



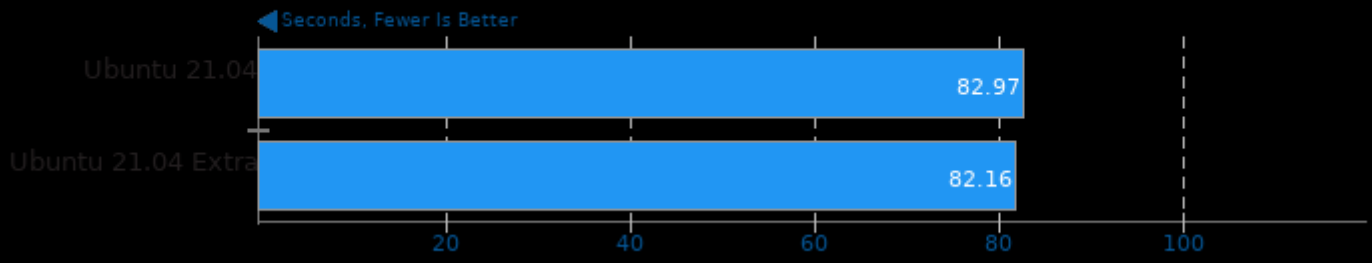
Appleseed 2.0 Beta

Scene: Emily



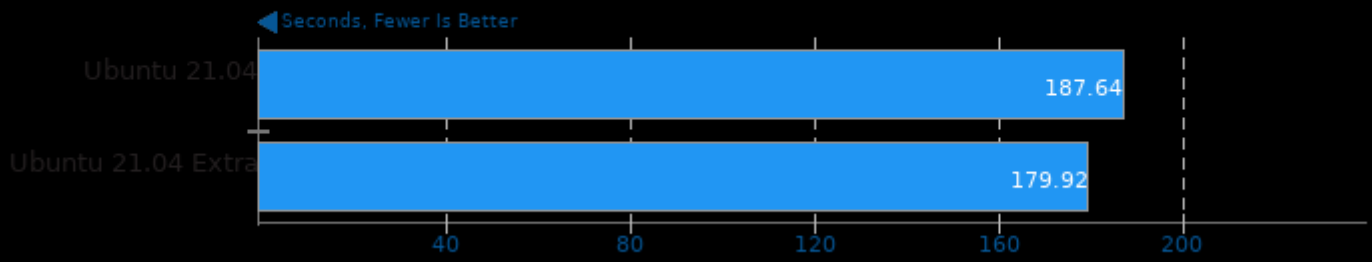
Appleseed 2.0 Beta

Scene: Disney Material



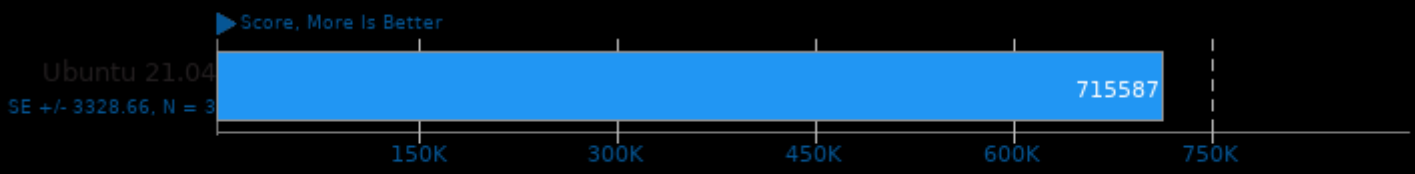
Appleseed 2.0 Beta

Scene: Material Tester



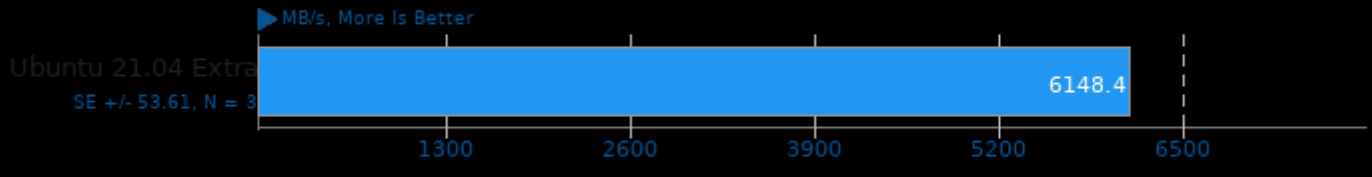
PHPBench 0.8.1

PHP Benchmark Suite

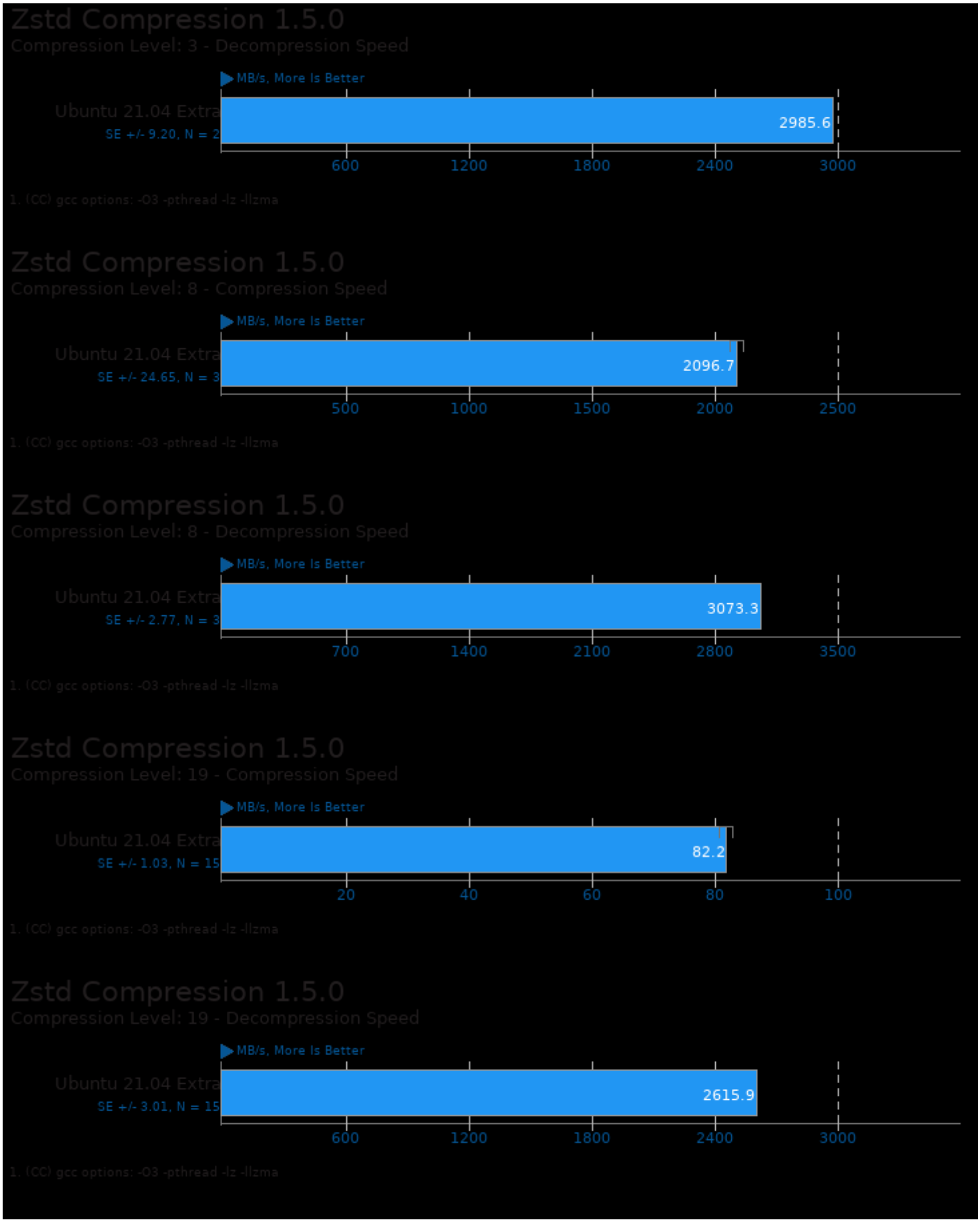


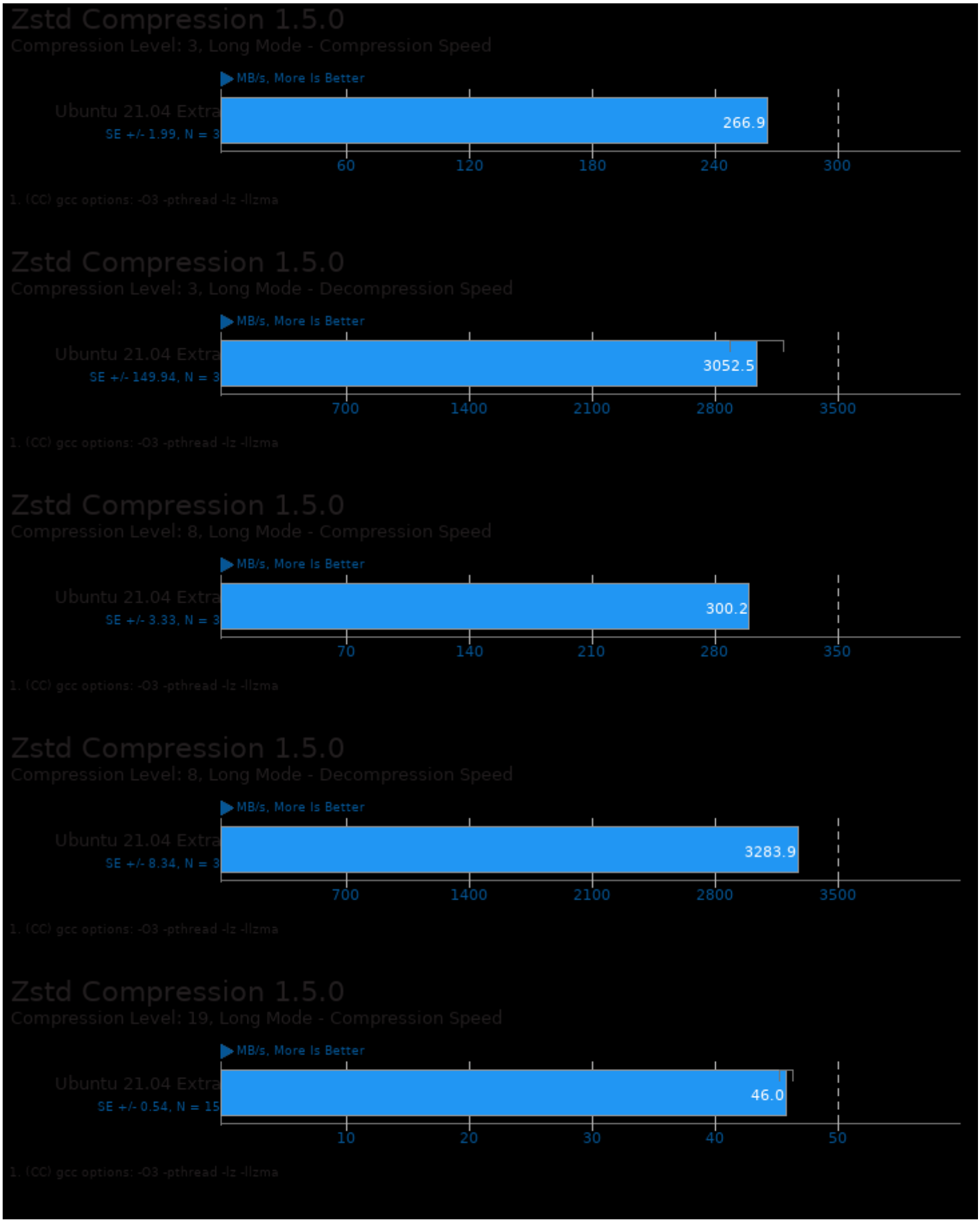
Zstd Compression 1.5.0

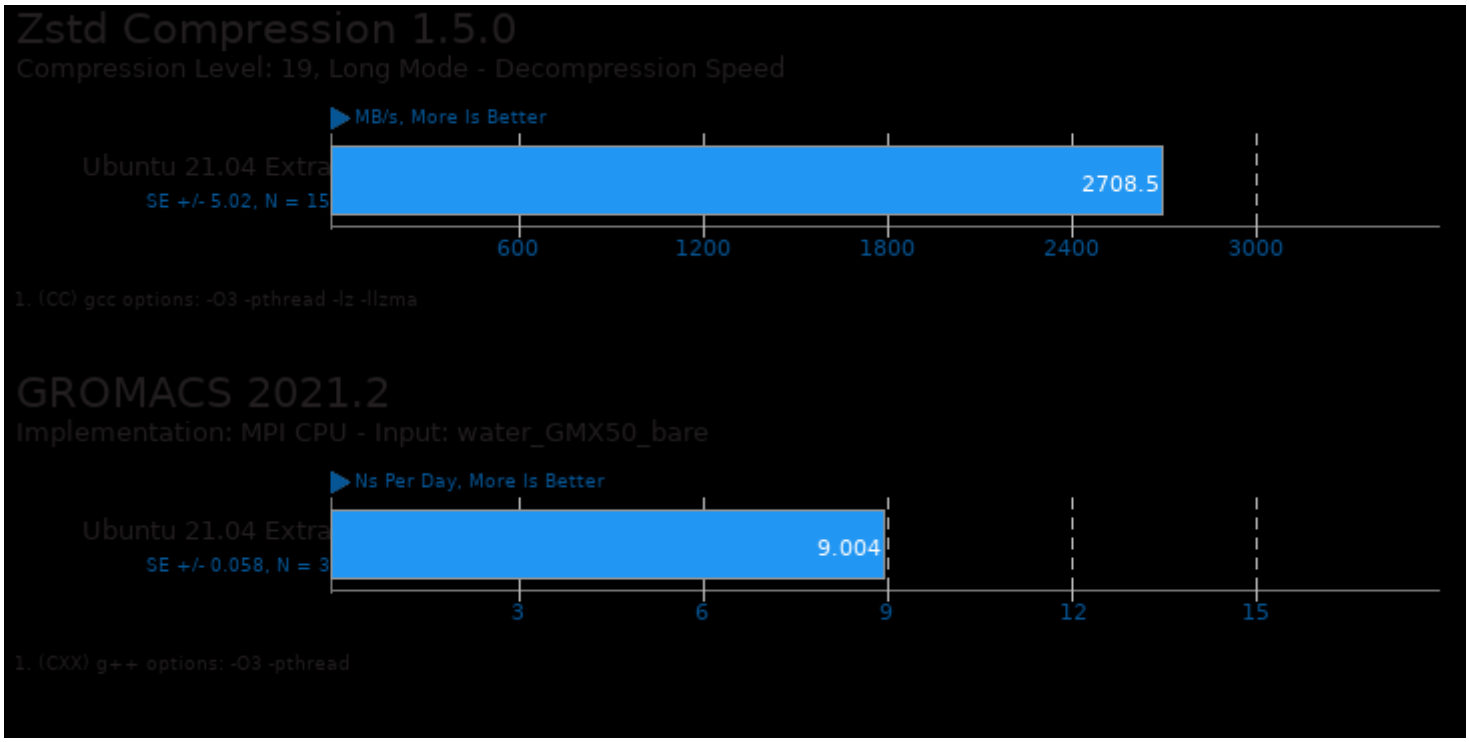
Compression Level: 3 - Compression Speed



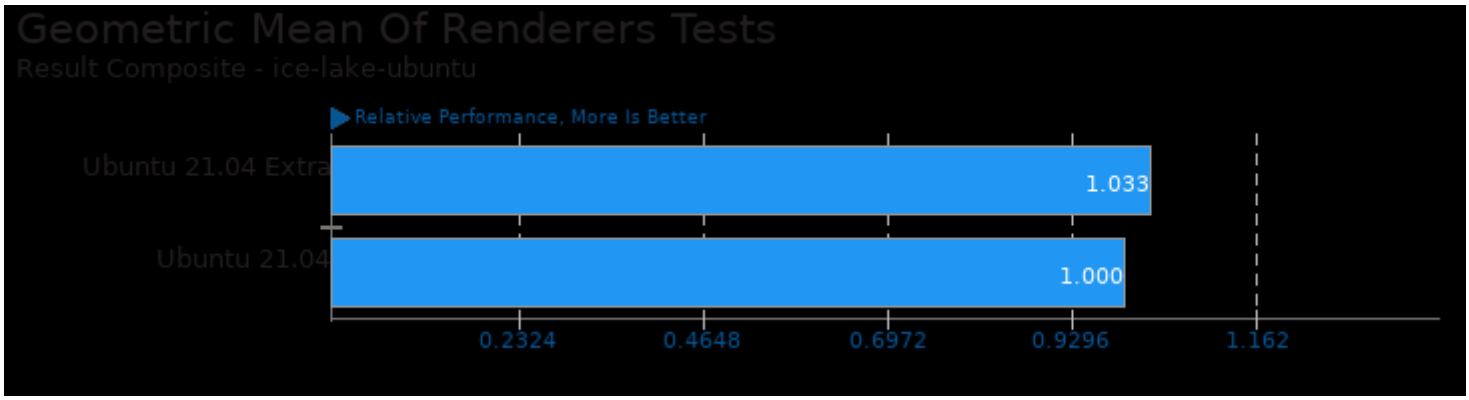
1. (CC) gcc options: -O3 -pthread -lz -llzma


Zstd Compression 1.5.0
Compression Level: 3 - Decompression Speed
MB/s, More Is Better
Ubuntu 21.04 Extra
SE +/- 9.20, N = 2
2985.6
600
1200
1800
2400
3000
1. (CC) gcc options: -O3 -pthread -lz -llzma
Zstd Compression 1.5.0
Compression Level: 8 - Compression Speed
MB/s, More Is Better
Ubuntu 21.04 Extra
SE +/- 24.65, N = 3
2096.7
500
1000
1500
2000
2500
1. (CC) gcc options: -O3 -pthread -lz -llzma
Zstd Compression 1.5.0
Compression Level: 8 - Decompression Speed
MB/s, More Is Better
Ubuntu 21.04 Extra
SE +/- 2.77, N = 3
3073.3
700
1400
2100
2800
3500
1. (CC) gcc options: -O3 -pthread -lz -llzma
Zstd Compression 1.5.0
Compression Level: 19 - Compression Speed
MB/s, More Is Better
Ubuntu 21.04 Extra
SE +/- 1.03, N = 15
82.2
20
40
60
80
100
1. (CC) gcc options: -O3 -pthread -lz -llzma
Zstd Compression 1.5.0
Compression Level: 19 - Decompression Speed
MB/s, More Is Better
Ubuntu 21.04 Extra
SE +/- 3.01, N = 15
2615.9
600
1200
1800
2400
3000
1. (CC) gcc options: -O3 -pthread -lz -llzma


Zstd Compression 1.5.0
Compression Level: 3, Long Mode - Compression Speed
MB/s, More Is Better
Ubuntu 21.04 Extra
SE +/- 1.99, N = 3
266.9
60
120
180
240
300
1. (CC) gcc options: -O3 -pthread -lz -llzma
Zstd Compression 1.5.0
Compression Level: 3, Long Mode - Decompression Speed
MB/s, More Is Better
Ubuntu 21.04 Extra
SE +/- 149.94, N = 3
3052.5
700
1400
2100
2800
3500
1. (CC) gcc options: -O3 -pthread -lz -llzma
Zstd Compression 1.5.0
Compression Level: 8, Long Mode - Compression Speed
MB/s, More Is Better
Ubuntu 21.04 Extra
SE +/- 3.33, N = 3
300.2
70
140
210
280
350
1. (CC) gcc options: -O3 -pthread -lz -llzma
Zstd Compression 1.5.0
Compression Level: 8, Long Mode - Decompression Speed
MB/s, More Is Better
Ubuntu 21.04 Extra
SE +/- 8.34, N = 3
3283.9
700
1400
2100
2800
3500
1. (CC) gcc options: -O3 -pthread -lz -llzma
Zstd Compression 1.5.0
Compression Level: 19, Long Mode - Compression Speed
MB/s, More Is Better
Ubuntu 21.04 Extra
SE +/- 0.54, N = 15
46.0
10
20
30
40
50
1. (CC) gcc options: -O3 -pthread -lz -llzma


Zstd Compression 1.5.0
Compression Level: 19, Long Mode - Decompression Speed
MB/s, More Is Better
Ubuntu 21.04 Extra
SE +/- 5.02, N = 15
2708.5
600
1200
1800
2400
3000
1. (CC) gcc options: -O3 -pthread -lz -llzma
GROMACS 2021.2
Implementation: MPI CPU - Input: water_GMX50_bare
Ns Per Day, More Is Better
Ubuntu 21.04 Extra
SE +/- 0.058, N = 3
9.004
3
6
9
12
15
1. (CXX) g++ options: -O3 -pthread

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



Geometric mean based upon tests: pts/ospray, pts/povray, pts/yafaray, pts/blender, pts/tungsten and pts/appleseed

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 09:24.