



www.phoronix-test-suite.com

Ubuntu 21.10 EPYC Milan

AMD EPYC 74F3 24-Core testing with a ASRockRack ROME2D16-2T (P3.10 BIOS) and ASPEED on Ubuntu 21.10 via the Phoronix Test Suite.

Automated Executive Summary

Ubuntu 21.10 + Linux 5.15 had the most wins, coming in first place for 70% of the tests.

Based on the geometric mean of all complete results, the fastest (Ubuntu 21.10 + Linux 5.15) was 1.015x the speed of the slowest (Ubuntu 21.10).

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

Stress-NG (Test: IO_uring) at 4.228x

Stress-NG (Test: System V Message Passing) at 1.48x

Stress-NG (Test: Socket Activity) at 1.289x

PostgreSQL pgbench (Scaling Factor: 100 - Clients: 250 - Mode: Read Write - Average Latency) at 1.27x

PostgreSQL pgbench (Scaling Factor: 100 - Clients: 250 - Mode: Read Write) at 1.27x

PostgreSQL pgbench (Scaling Factor: 100 - Clients: 500 - Mode: Read Write) at 1.203x

PostgreSQL pgbench (Scaling Factor: 100 - Clients: 500 - Mode: Read Write - Average Latency) at 1.203x

Stress-NG (Test: Context Switching) at 1.163x

nginx (Concurrent Requests: 20) at 1.146x

Stress-NG (Test: MMAP) at 1.143x.

Test Systems:

Ubuntu 21.10

Processor: AMD EPYC 74F3 24-Core @ 3.20GHz (24 Cores / 48 Threads), Motherboard: ASRockRack ROME2D16-2T (P3.10 BIOS), Chipset: AMD Starship/Matisse, Memory: 64GB, Disk: 1000GB Western Digital WD_BLACK SN850 1TB, Graphics: ASPEED, Audio: AMD Starship/Matisse, Monitor: VE228, Network: 2 x Intel 10G X550T

OS: Ubuntu 21.10, Kernel: 5.13.0-16-generic (x86_64), Desktop: GNOME Shell 40.5, Display Server: X Server, Vulkan: 1.1.182, Compiler: GCC 11.2.0, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --enable-cet --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-serialization=2 --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-11-ZPT0kp/gcc-11-11.2.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-11-ZPT0kp/gcc-11-11.2.0/debian/tmp-gcn/usr --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: acpi-cpufreq schedutil (Boost: Enabled) - CPU Microcode: 0xa001114
Java Notes: OpenJDK Runtime Environment (build 11.0.12+7-Ubuntu-0ubuntu3)
Python Notes: Python 3.9.7
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 Full AMD retrpoline IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbd: Not affected + tsx_async_abort: Not affected

Ubuntu 21.10 + Linux 5.15

Processor: AMD EPYC 74F3 24-Core @ 3.20GHz (24 Cores / 48 Threads), Motherboard: ASRockRack ROME2D16-2T (P3.10 BIOS), Chipset: AMD Starship/Matisse, Memory: 64GB, Disk: 1000GB Western Digital WD_BLACK SN850 1TB, Graphics: ASPEED, Audio: AMD Starship/Matisse, Monitor: VE228, Network: 2 x Intel 10G X550T

OS: Ubuntu 21.10, Kernel: 5.15.0-051500rc5daily20211011-generic (x86_64) 20211010, Desktop: GNOME Shell 40.5, Display Server: X Server, Vulkan: 1.1.182, Compiler: GCC 11.2.0, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --enable-cet --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-serialization=2 --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-11-ZPT0kp/gcc-11-11.2.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-11-ZPT0kp/gcc-11-11.2.0/debian/tmp-gcn/usr --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: acpi-cpufreq schedutil (Boost: Enabled) - CPU Microcode: 0xa001114
Java Notes: OpenJDK Runtime Environment (build 11.0.12+7-Ubuntu-0ubuntu3)
Python Notes: Python 3.9.7
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 Full AMD retrpoline IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbd: Not affected + tsx_async_abort: Not affected

	Ubuntu 21.10	Ubuntu 21.10 + Linux 5.15
NAS Parallel Benchmarks - CG.C (Mop/s)	24114	25960
Normalized	92.89%	100%
Standard Deviation	1.1%	1.6%
NAS Parallel Benchmarks - FT.C (Mop/s)	42915	43591
Normalized	98.45%	100%
Standard Deviation	0.5%	0.1%
NAS Parallel Benchmarks - IS.D (Mop/s)	1994	2013
Normalized	99.04%	100%
Standard Deviation	0.6%	0.3%
NAS Parallel Benchmarks - LU.C (Mop/s)	82765	84921
Normalized	97.46%	100%
Standard Deviation	0.6%	0.2%
NAS Parallel Benchmarks - MG.C (Mop/s)	50333	52548
Normalized	95.78%	100%
Standard Deviation	0.1%	0.2%
NAS Parallel Benchmarks - SP.B (Mop/s)	63598	65351
Normalized	97.32%	100%
Standard Deviation	0.3%	0.4%
NAS Parallel Benchmarks - SP.C (Mop/s)	35556	36600
Normalized	97.15%	100%
Standard Deviation	0.1%	0.1%
LeelaChessZero - BLAS (Nodes/s)	1457	1340
Normalized	100%	91.97%
Standard Deviation	1.4%	3.2%
LeelaChessZero - Eigen (Nodes/s)	1330	1306
Normalized	100%	98.2%
Standard Deviation	1.6%	0.8%
Rodinia - OpenMP LavaMD (sec)	85.062	84.099
Normalized	98.87%	100%
Standard Deviation	0.1%	0.1%
Rodinia - OpenMP HotSpot3D (sec)	79.403	80.312
Normalized	100%	98.87%
Standard Deviation	6.3%	6.7%
Rodinia - OpenMP Leukocyte (sec)	44.601	44.354
Normalized	99.45%	100%
Standard Deviation	0.4%	0.9%
Rodinia - OpenMP CFD Solver (sec)	9.541	9.701
Normalized	100%	98.35%
Standard Deviation	0.6%	0.6%
Rodinia - O.S (sec)	6.558	6.695
Normalized	100%	97.95%
Standard Deviation	5.1%	0.8%
NAMD - ATPase Simulation - 327,506 Atoms (days/ns)	0.77725	0.77730
Normalized	100%	99.99%
Standard Deviation	0.2%	0.5%
Xcompact3d Incompact3d - i.i.1.C.P.D (sec)	6.90810013	6.55719979
Normalized	94.92%	100%
Standard Deviation	0.6%	1.4%
Xcompact3d Incompact3d - i.i.1.C.P.D (sec)	30.3851414	29.8944200
Normalized	98.38%	100%
Standard Deviation	0.9%	1.1%
OpenFOAM - Motorbike 30M (sec)	24.22	24.21
Normalized	99.96%	100%
Standard Deviation	0.5%	0.4%

OpenFOAM - Motorbike 60M (sec)	243.11	239.68
Normalized	98.59%	100%
Standard Deviation	0.3%	0.2%
LAMMPS Molecular Dynamics Simulator - 20k Atoms (ns/day)	16.874	17.002
Normalized	99.25%	100%
Standard Deviation	0.4%	0.3%
LAMMPS Molecular Dynamics Simulator - Rhodopsin Protein (ns/day)	16.350	15.905
Normalized	100%	97.28%
Standard Deviation	3.7%	0.5%
simdjson - Kostya (GB/s)	3.21	3.21
Standard Deviation	0.2%	0%
simdjson - LargeRand (GB/s)	1.11	1.11
Standard Deviation	0%	0.5%
simdjson - PartialTweets (GB/s)	4.17	4.18
Normalized	99.76%	100%
Standard Deviation	0.3%	0%
simdjson - DistinctUserID (GB/s)	4.93	4.94
Normalized	99.8%	100%
Standard Deviation	0.1%	0.2%
Xmrig - Monero - 1M (H/s)	18218	18333
Normalized	99.37%	100%
Standard Deviation	0.2%	0.4%
Xmrig - Wownero - 1M (H/s)	19060	19139
Normalized	99.59%	100%
Standard Deviation	0.1%	0.1%
JPEG XL libjxl - PNG - 5 (MP/s)	72.00	74.92
Normalized	96.1%	100%
Standard Deviation	0.4%	0.1%
JPEG XL libjxl - PNG - 7 (MP/s)	9.36	9.74
Normalized	96.1%	100%
Standard Deviation	0.1%	0.1%
JPEG XL libjxl - PNG - 8 (MP/s)	0.96	0.98
Normalized	97.96%	100%
Standard Deviation	0%	0%
JPEG XL libjxl - JPEG - 5 (MP/s)	74.55	79.04
Normalized	94.32%	100%
Standard Deviation	0.4%	1%
JPEG XL libjxl - JPEG - 7 (MP/s)	73.99	79.20
Normalized	93.42%	100%
Standard Deviation	0.4%	0.5%
JPEG XL libjxl - JPEG - 8 (MP/s)	28.94	29.99
Normalized	96.5%	100%
Standard Deviation	1.2%	0.9%
LuxCoreRender - DLSC - CPU (M samples/sec)	4.74	4.77
Normalized	99.37%	100%
Standard Deviation	0.7%	0.5%
LuxCoreRender - Danish Mood - CPU (M samples/sec)	3.61	3.69
Normalized	97.83%	100%
Standard Deviation	0.4%	2%
LuxCoreRender - Orange Juice - CPU (M samples/sec)	7.05	7.09
Normalized	99.44%	100%
Standard Deviation	0.2%	0.4%

LuxCoreRender - LuxCore Benchmark - CPU (M samples/sec)	3.94	3.99
Normalized	98.75%	100%
Standard Deviation	0.4%	0.4%
LuxCoreRender - R.C.a.P - CPU (M samples/sec)	14.11	14.10
Normalized	100%	99.93%
Standard Deviation	3.6%	11.8%
OSPray - San Miguel - SciVis (FPS)	37.51	37.51
Standard Deviation	2.2%	2.2%
OSPray - San Miguel - Path Tracer (FPS)	3.11	3.10
Normalized	100%	99.68%
Standard Deviation	0%	0.2%
OSPray - NASA Streamlines - SciVis (FPS)	50.53	52.11
Normalized	96.97%	100%
Standard Deviation	2.3%	2.3%
OSPray - M.R - SciVis (FPS)	28.57	28.57
Standard Deviation	0%	0%
OSPray - NASA Streamlines - Path Tracer (FPS)	10.53	10.53
Standard Deviation	0%	0%
OSPray - M.R - Path Tracer (FPS)	500	500
Standard Deviation	0%	0%
TTSIOD 3D Renderer - P.R.W.S.S.M (FPS)	969.494	957.387
Normalized	100%	98.75%
Standard Deviation	0.1%	2.5%
AOM AV1 - Speed 6 Two-Pass - Bosphorus 4K (FPS)	7.30	7.35
Normalized	99.32%	100%
Standard Deviation	2.1%	0.5%
AOM AV1 - Speed 8 Realtime - Bosphorus 4K (FPS)	31.28	30.96
Normalized	100%	98.98%
Standard Deviation	0.2%	0.7%
AOM AV1 - Speed 9 Realtime - Bosphorus 4K (FPS)	46.80	46.73
Normalized	100%	99.85%
Standard Deviation	0.5%	0.7%
Embree - Pathtracer - Crown (FPS)	30.7634	30.9509
Normalized	99.39%	100%
Standard Deviation	0.3%	0.8%
Embree - Pathtracer ISPC - Crown (FPS)	28.4922	28.2755
Normalized	100%	99.24%
Standard Deviation	0.3%	0.2%
Embree - Pathtracer - Asian Dragon (FPS)	34.1566	34.3835
Normalized	99.34%	100%
Standard Deviation	0.8%	0.1%
Embree - Pathtracer ISPC - Asian Dragon (FPS)	31.4647	31.4044
Normalized	100%	99.81%
Standard Deviation	0.3%	1.1%
SVT-AV1 - Preset 8 - Bosphorus 4K (FPS)	19.707	19.488
Normalized	100%	98.89%
Standard Deviation	1.1%	0.9%
SVT-HEVC - 7 - Bosphorus 1080p (FPS)	281.48	283.51
Normalized	99.28%	100%
Standard Deviation	2.4%	2.4%
SVT-HEVC - 10 - Bosphorus 1080p (FPS)	553.02	556.42
Normalized	99.39%	100%
Standard Deviation	0.8%	0.2%

SVT-VP9 - VMAF Optimized - Bosphorus 1080p (FPS)	446.62	444.46
Normalized	100%	99.52%
Standard Deviation	2.7%	4.3%
VP9 libvpx Encoding - Speed 0 - Bosphorus 4K (FPS)	7.46	7.42
Normalized	100%	99.46%
Standard Deviation	0.4%	1.8%
VP9 libvpx Encoding - Speed 5 - Bosphorus 4K (FPS)	17.51	16.97
Normalized	100%	96.92%
Standard Deviation	1.5%	0.7%
x265 - Bosphorus 4K (FPS)	26.36	26.58
Normalized	99.17%	100%
Standard Deviation	0.7%	1.4%
x265 - Bosphorus 1080p (FPS)	54.72	55.20
Normalized	99.13%	100%
Standard Deviation	2.3%	2.1%
Intel Open Image Denoise - RT.Idr_alb_nrm.3840x2160	0.86	0.85
(Images / Sec)		
Normalized	100%	98.84%
Standard Deviation	0.1%	0.1%
7-Zip Compression - C.S.T (MIPS)	172117	175165
Normalized	98.26%	100%
Standard Deviation	0.4%	0.2%
Stockfish - Total Time (Nodes/s)	75631071	75304369
Normalized	100%	99.57%
Standard Deviation	1.6%	2.8%
libavif avifenc - 0 (sec)	45.120	45.073
Normalized	99.9%	100%
Standard Deviation	0.1%	0.5%
libavif avifenc - 2 (sec)	25.023	24.518
Normalized	97.98%	100%
Standard Deviation	1%	0.2%
libavif avifenc - 6 (sec)	9.722	9.418
Normalized	96.87%	100%
Standard Deviation	0.3%	0.4%
libavif avifenc - 10 (sec)	3.497	3.197
Normalized	91.42%	100%
Standard Deviation	0.2%	0.4%
libavif avifenc - 6, Lossless (sec)	28.860	28.358
Normalized	98.26%	100%
Standard Deviation	1.1%	0.7%
libavif avifenc - 10, Lossless (sec)	5.730	5.390
Normalized	94.07%	100%
Standard Deviation	0.5%	0.5%
Timed Godot Game Engine Compilation - Time To Compile (sec)	56.360	56.081
Normalized	99.5%	100%
Standard Deviation	0.4%	0.4%
Timed Linux Kernel Compilation - Time To Compile	36.731	36.466
Normalized	99.28%	100%
Standard Deviation	1.8%	2.1%
Timed LLVM Compilation - Ninja (sec)	235.750	234.950
Normalized	99.66%	100%
Standard Deviation	0.4%	0.2%
Timed LLVM Compilation - Unix Makefiles (sec)	274.264	275.492
Normalized	100%	99.55%

	Standard Deviation	2.4%	2.3%
Timed Node.js Compilation - Time To Compile (sec)	Normalized	153.714	153.044
	Standard Deviation	0.2%	0.2%
oneDNN - R.N.N.T - f32 - CPU (ms)	Normalized	1429	1413
	Standard Deviation	0.1%	0.1%
oneDNN - R.N.N.I - f32 - CPU (ms)	Normalized	777.262	766.690
	Standard Deviation	0.5%	0.3%
Google SynthMark - VoiceMark_100 (Voices)	Normalized	814.640	816.310
	Standard Deviation	0.4%	0.1%
Cpuminer-Opt - Magi (kH/s)	Normalized	1221	1224
	Standard Deviation	0.2%	0.3%
Cpuminer-Opt - x25x (kH/s)	Normalized	768.20	773.60
	Standard Deviation	1.1%	0.8%
Cpuminer-Opt - Deepcoin (kH/s)	Normalized	23600	23450
	Standard Deviation	1.3%	0.2%
Cpuminer-Opt - Ringcoin (kH/s)	Normalized	3390	3379
	Standard Deviation	5.3%	4.4%
Cpuminer-Opt - Blake-2 S (kH/s)	Normalized	1335178	1292525
	Standard Deviation	2.4%	3.7%
Cpuminer-Opt - Garlicoin (kH/s)	Normalized	1977	1927
	Standard Deviation	0.8%	2.3%
Cpuminer-Opt - Skeincoin (kH/s)	Normalized	208510	209400
	Standard Deviation	1.1%	0.7%
Cpuminer-Opt - Myriad-Groestl (kH/s)	Normalized	12315	12437
	Standard Deviation	3.2%	3.1%
Cpuminer-Opt - LBC, LBRY Credits (kH/s)	Normalized	69070	69163
	Standard Deviation	0.4%	0.7%
Cpuminer-Opt - Q.S.2.P (kH/s)	Normalized	214267	213690
	Standard Deviation	0%	0.2%
Cpuminer-Opt - T.S.2.O (kH/s)	Normalized	506553	508047
	Standard Deviation	0.2%	0.6%
SecureMark - SecureMark-TLS (marks)	Normalized	269688	272310
	Standard Deviation	1.1%	0.2%
OpenSSL - SHA256 (byte/s)	Normalized	36164270263	36289852270
	Standard Deviation	0.4%	0.3%
OpenSSL - RSA4096 (sign/s)	Normalized	6520	6529
	Standard Deviation	0.1%	0%

OpenSSL - RSA4096 (verify/s)	425838	426053
Normalized	99.95%	100%
Standard Deviation	0%	0%
GROMACS - MPI CPU - water_GMX50_bare (Ns/Day)	3.259	3.297
Normalized	98.85%	100%
Standard Deviation	0.6%	0%
TensorFlow Lite - SqueezeNet (us)	82511	81889
Normalized	99.25%	100%
Standard Deviation	0.1%	0.3%
TensorFlow Lite - Inception V4 (us)	1224573	1217903
Normalized	99.46%	100%
Standard Deviation	0.2%	0.3%
TensorFlow Lite - NASNet Mobile (us)	89415	86693
Normalized	96.96%	100%
Standard Deviation	0.6%	0.6%
TensorFlow Lite - Mobilenet Float (us)	55376	54956
Normalized	99.24%	100%
Standard Deviation	0.3%	0.3%
TensorFlow Lite - Mobilenet Quant (us)	59852	58918
Normalized	98.44%	100%
Standard Deviation	0%	0.6%
TensorFlow Lite - I.R.V (us)	1080320	1076140
Normalized	99.61%	100%
Standard Deviation	0.1%	0.1%
MariaDB - 512 (Queries/sec)	703	647
Normalized	100%	92.03%
Standard Deviation	0.5%	1.7%
PostgreSQL pgbench - 100 - 250 - Read Only (TPS)	739400	748263
Normalized	98.82%	100%
Standard Deviation	0.6%	0.3%
PostgreSQL pgbench - 100 - 250 - Read Only -	0.338	0.334
Average Latency (ms)		
Normalized	98.82%	100%
Standard Deviation	0.7%	0.3%
PostgreSQL pgbench - 100 - 500 - Read Only (TPS)	740296	782876
Normalized	94.56%	100%
Standard Deviation	1.8%	0.8%
PostgreSQL pgbench - 100 - 500 - Read Only -	0.675	0.639
Average Latency (ms)		
Normalized	94.67%	100%
Standard Deviation	1.8%	0.9%
PostgreSQL pgbench - 100 - 250 - Read Write (TPS)	53398	42046
Normalized	100%	78.74%
Standard Deviation	2.1%	2.4%
PostgreSQL pgbench - 100 - 250 - Read Write -	4.683	5.949
Average Latency (ms)		
Normalized	100%	78.72%
Standard Deviation	2%	2.4%
PostgreSQL pgbench - 100 - 500 - Read Write (TPS)	46430	38594
Normalized	100%	83.12%
Standard Deviation	1.9%	1.9%
PostgreSQL pgbench - 100 - 500 - Read Write -	10.772	12.958
Average Latency (ms)		
Normalized	100%	83.13%
Standard Deviation	2%	1.9%

PostgreSQL pgbench - 1000 - 250 - Read Only (TPS)	611633	620425
Normalized	98.58%	100%
Standard Deviation	0.5%	0.2%
PostgreSQL pgbench - 1000 - 250 - Read Only -	0.409	0.403
Average Latency (ms)		
Normalized	98.53%	100%
Standard Deviation	0.5%	0.2%
PostgreSQL pgbench - 1000 - 500 - Read Only (TPS)	639361	624794
Normalized	100%	97.72%
Standard Deviation	0.3%	0.4%
PostgreSQL pgbench - 1000 - 500 - Read Only -	0.782	0.800
Average Latency (ms)		
Normalized	100%	97.75%
Standard Deviation	0.3%	0.5%
PostgreSQL pgbench - 1000 - 250 - Read Write (TPS)	40117	26474
Normalized	100%	65.99%
Standard Deviation	14.5%	1.1%
PostgreSQL pgbench - 1000 - 250 - Read Write -	6.349	9.444
Average Latency (ms)		
Normalized	100%	67.23%
Standard Deviation	13.9%	1.1%
PostgreSQL pgbench - 1000 - 500 - Read Write (TPS)	31750	20688
Normalized	100%	65.16%
Standard Deviation	10%	1.7%
PostgreSQL pgbench - 1000 - 500 - Read Write -	15.886	24.174
Average Latency (ms)		
Normalized	100%	65.72%
Standard Deviation	9.6%	1.7%
ASTC Encoder - Thorough (sec)	6.5677	6.5450
Normalized	99.65%	100%
Standard Deviation	0.2%	0.1%
ASTC Encoder - Exhaustive (sec)	24.0608	24.0457
Normalized	99.94%	100%
Standard Deviation	0%	0%
Redis - GET (Req/sec)	2684890	2472941
Normalized	100%	92.11%
Standard Deviation	0.6%	1.3%
Redis - SET (Req/sec)	2148023	2195898
Normalized	97.82%	100%
Standard Deviation	8.3%	6.9%
Stress-NG - MMAP (Bogo Ops/s)	550.07	481.35
Normalized	100%	87.51%
Standard Deviation	0.2%	0.4%
Stress-NG - NUMA (Bogo Ops/s)	573.20	584.46
Normalized	98.07%	100%
Standard Deviation	0.7%	0.3%
Stress-NG - MEMFD (Bogo Ops/s)	1046	1130
Normalized	92.58%	100%
Standard Deviation	0.4%	0.1%
Stress-NG - Atomic (Bogo Ops/s)	196373	197808
Normalized	99.27%	100%
Standard Deviation	0.2%	0.1%
Stress-NG - Crypto (Bogo Ops/s)	6538	6540
Normalized	99.97%	100%
Standard Deviation	0%	0%

Stress-NG - Malloc (Bogo Ops/s)	619879642	622292053
Normalized	99.61%	100%
Standard Deviation	0.1%	0.1%
Stress-NG - Forking (Bogo Ops/s)	69855	73799
Normalized	94.66%	100%
Standard Deviation	0.3%	0.7%
Stress-NG - IO_uring (Bogo Ops/s)	116668	493316
Normalized	23.65%	100%
Standard Deviation	2.3%	2.5%
Stress-NG - SENDFILE (Bogo Ops/s)	532284	521315
Normalized	100%	97.94%
Standard Deviation	0%	0.2%
Stress-NG - CPU Cache (Bogo Ops/s)	105.97	105.96
Normalized	100%	99.99%
Standard Deviation	5.6%	5.8%
Stress-NG - CPU Stress (Bogo Ops/s)	69409	69941
Normalized	99.24%	100%
Standard Deviation	0.2%	0%
Stress-NG - Semaphores (Bogo Ops/s)	3625859	3635712
Normalized	99.73%	100%
Standard Deviation	0.7%	0.2%
Stress-NG - Matrix Math (Bogo Ops/s)	102692	105286
Normalized	97.54%	100%
Standard Deviation	0.8%	0.1%
Stress-NG - Vector Math (Bogo Ops/s)	142582	142691
Normalized	99.92%	100%
Standard Deviation	0%	0%
Stress-NG - Memory Copying (Bogo Ops/s)	8095	8142
Normalized	99.42%	100%
Standard Deviation	0.1%	0.1%
Stress-NG - Socket Activity (Bogo Ops/s)	14982	19319
Normalized	77.55%	100%
Standard Deviation	0.2%	0.6%
Stress-NG - Context Switching (Bogo Ops/s)	11961807	13907201
Normalized	86.01%	100%
Standard Deviation	1.5%	0.3%
Stress-NG - G.C.S.F (Bogo Ops/s)	3684070	3705740
Normalized	99.42%	100%
Standard Deviation	1.1%	0.1%
Stress-NG - G.Q.D.S (Bogo Ops/s)	348.09	347.75
Normalized	100%	99.9%
Standard Deviation	0%	0.1%
Stress-NG - S.V.M.P (Bogo Ops/s)	6620370	9796819
Normalized	67.58%	100%
Standard Deviation	0.1%	0.1%
Mobile Neural Network - mobilenetV3 (ms)	2.375	2.370
Normalized	99.79%	100%
Standard Deviation	6%	5.3%
Mobile Neural Network - squeezenetv1.1 (ms)	4.726	4.441
Normalized	93.97%	100%
Standard Deviation	4.4%	4.5%
Mobile Neural Network - resnet-v2-50 (ms)	20.711	21.021
Normalized	100%	98.53%
Standard Deviation	7.9%	6.9%
Mobile Neural Network - SqueezeNetV1.0 (ms)	6.249	5.962

	Normalized	95.41%	100%
	Standard Deviation	3.4%	2.8%
Mobile Neural Network - MobileNetV2_224 (ms)	3.837	3.604	
	Normalized	93.93%	100%
	Standard Deviation	3.2%	3.3%
Mobile Neural Network - mobilenet-v1-1.0 (ms)	2.718	2.694	
	Normalized	99.12%	100%
	Standard Deviation	3.5%	2.9%
Mobile Neural Network - inception-v3 (ms)	26.608	26.381	
	Normalized	99.15%	100%
	Standard Deviation	4.9%	4.3%
NCNN - CPU - mobilenet (ms)	13.59	12.84	
	Normalized	94.48%	100%
	Standard Deviation	1.5%	2.4%
NCNN - CPU-v2-v2 - mobilenet-v2 (ms)	5.73	5.61	
	Normalized	97.91%	100%
	Standard Deviation	0.6%	0.7%
NCNN - CPU-v3-v3 - mobilenet-v3 (ms)	5.66	5.31	
	Normalized	93.82%	100%
	Standard Deviation	5%	0.6%
NCNN - CPU - shufflenet-v2 (ms)	6.21	6.13	
	Normalized	98.71%	100%
	Standard Deviation	0.7%	0.4%
NCNN - CPU - mnasnet (ms)	5.13	5.01	
	Normalized	97.66%	100%
	Standard Deviation	0.9%	0.8%
NCNN - CPU - efficientnet-b0 (ms)	7.07	6.81	
	Normalized	96.32%	100%
	Standard Deviation	1.6%	0.1%
NCNN - CPU - blazeface (ms)	2.97	2.74	
	Normalized	92.26%	100%
	Standard Deviation	6.9%	1.3%
NCNN - CPU - googlenet (ms)	13.03	12.48	
	Normalized	95.78%	100%
	Standard Deviation	4.7%	4.8%
NCNN - CPU - vgg16 (ms)	25.51	24.70	
	Normalized	96.82%	100%
	Standard Deviation	1.1%	4%
NCNN - CPU - resnet18 (ms)	9.26	8.74	
	Normalized	94.38%	100%
	Standard Deviation	0.9%	4.3%
NCNN - CPU - alexnet (ms)	5.56	4.98	
	Normalized	89.57%	100%
	Standard Deviation	1.4%	8.7%
NCNN - CPU - resnet50 (ms)	16.43	15.45	
	Normalized	94.04%	100%
	Standard Deviation	3.3%	2.7%
NCNN - CPU - yolov4-tiny (ms)	21.12	20.15	
	Normalized	95.41%	100%
	Standard Deviation	2.9%	5.3%
NCNN - CPU - squeezenet_ssd (ms)	16.17	15.69	
	Normalized	97.03%	100%
	Standard Deviation	1.2%	1.3%
NCNN - CPU - regnety_400m (ms)	14.94	14.50	
	Normalized	97.05%	100%

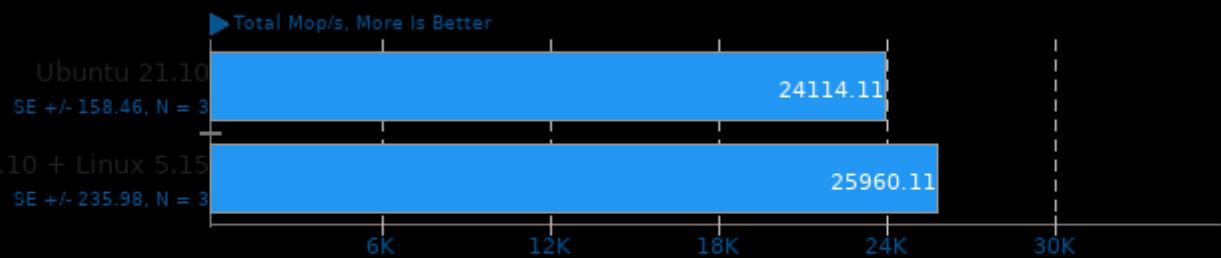
	Standard Deviation	2.1%	0.5%
TNN - CPU - DenseNet (ms)	2850	2838	
	Normalized	99.55%	100%
	Standard Deviation	0%	0%
TNN - CPU - MobileNet v2 (ms)	282.131	280.338	
	Normalized	99.36%	100%
	Standard Deviation	1.1%	0.6%
TNN - CPU - SqueezeNet v2 (ms)	62.609	61.875	
	Normalized	98.83%	100%
	Standard Deviation	1.8%	0.3%
TNN - CPU - SqueezeNet v1.1 (ms)	251.852	251.443	
	Normalized	99.84%	100%
	Standard Deviation	0.1%	0%
PlaidML - No - Inference - VGG16 - CPU (FPS)	27.13	28.99	
	Normalized	93.58%	100%
	Standard Deviation	0.6%	1.4%
PlaidML - No - Inference - VGG19 - CPU (FPS)	22.20	23.92	
	Normalized	92.81%	100%
	Standard Deviation	0.9%	2.2%
PlaidML - No - Inference - ResNet 50 - CPU (FPS)	10.10	10.29	
	Normalized	98.15%	100%
	Standard Deviation	1.5%	0.4%
Sysbench - RAM / Memory (MiB/sec)	10278	10250	
	Normalized	100%	99.72%
	Standard Deviation	0.2%	0.5%
Sysbench - CPU (Events/sec)	114580	114562	
	Normalized	100%	99.98%
	Standard Deviation	0%	0%
Apache Cassandra - Writes (Ops/s)	230318	231554	
	Normalized	99.47%	100%
	Standard Deviation	0.7%	0.8%
Facebook RocksDB - Rand Fill (Ops/s)	777421	772468	
	Normalized	100%	99.36%
	Standard Deviation	1%	1.6%
Facebook RocksDB - Update Rand (Ops/s)	727767	741343	
	Normalized	98.17%	100%
	Standard Deviation	0.7%	0.6%
Facebook RocksDB - R.R.W.R (Ops/s)	2687791	2748440	
	Normalized	97.79%	100%
	Standard Deviation	1%	1%
Blender - BMW27 - CPU-Only (sec)	59.79	59.91	
	Normalized	100%	99.8%
	Standard Deviation	0.1%	0.3%
Blender - Barbershop - CPU-Only (sec)	229.14	227.94	
	Normalized	99.48%	100%
	Standard Deviation	0.4%	0.4%
ONNX Runtime - yolov4 - OpenMP CPU	428	436	
	Normalized	98.17%	100%
	Standard Deviation	0.2%	0.8%
ONNX Runtime - bertsquad-10 - OpenMP CPU (Inferences/min)	648	751	
	Normalized	86.28%	100%
	Standard Deviation	4.7%	9.2%

ONNX Runtime - fcn-resnet101-11 - OpenMP CPU	167	171
(Inferences/min)		
Normalized	97.66%	100%
Standard Deviation	0.6%	1%
ONNX Runtime - shufflenet-v2-10 - OpenMP CPU	17156	17704
(Inferences/min)		
Normalized	96.9%	100%
Standard Deviation	0.7%	0.3%
ONNX Runtime - super-resolution-10 - OpenMP CPU	5056	5914
(Inferences/min)		
Normalized	85.49%	100%
Standard Deviation	3.3%	10%
nginx - 1 (Req/sec)	52710	52530
Normalized	100%	99.66%
Standard Deviation	2.5%	2.8%
nginx - 20 (Req/sec)	192582	220753
Normalized	87.24%	100%
Standard Deviation	0.2%	0.4%
nginx - 100 (Req/sec)	178551	202016
Normalized	88.38%	100%
Standard Deviation	0.4%	0.4%
nginx - 200 (Req/sec)	180032	202847
Normalized	88.75%	100%
Standard Deviation	0.1%	0.2%
nginx - 500 (Req/sec)	180524	203361
Normalized	88.77%	100%
Standard Deviation	0.2%	0.2%
nginx - 1000 (Req/sec)	178901	200086
Normalized	89.41%	100%
Standard Deviation	0.2%	0.2%
Natron - Spaceship (FPS)	5.1	5.1
Standard Deviation	2.3%	0%
Apache HTTP Server - 1 (Req/sec)	6320	6117
Normalized	100%	96.79%
Standard Deviation	1.5%	1.6%
Apache HTTP Server - 20 (Req/sec)	67346	76762
Normalized	87.73%	100%
Standard Deviation	0.3%	1.3%
Apache HTTP Server - 100 (Req/sec)	110031	120148
Normalized	91.58%	100%
Standard Deviation	0.4%	0.7%
Apache HTTP Server - 200 (Req/sec)	133795	141088
Normalized	94.83%	100%
Standard Deviation	0.9%	1.4%
Apache HTTP Server - 500 (Req/sec)	128307	134587
Normalized	95.33%	100%
Standard Deviation	0.4%	0.4%
Apache HTTP Server - 1000 (Req/sec)	128081	135459
Normalized	94.55%	100%
Standard Deviation	0%	0.3%
Appleseed - Emily (sec)	162.672185	163.068268
Normalized	100%	99.76%
Appleseed - Material Tester (sec)	147.897295	147.981773
Normalized	100%	99.94%

BRL-CAD - V.P.M (VGR Performance Metric)	349508	349004
Normalized	100%	99.86%
Chaos Group V-RAY - CPU (vsamples)	27825	28305
Normalized	98.3%	100%
Standard Deviation	2.2%	1.6%

NAS Parallel Benchmarks 3.4

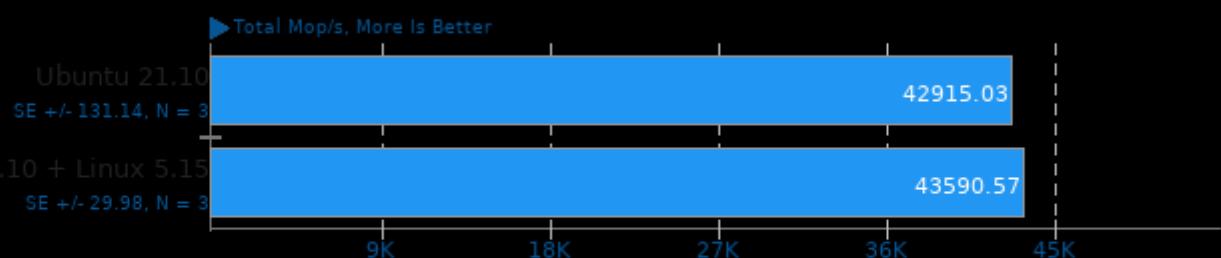
Test / Class: CG.C



1. (F9X) gfortran options: -O3 -march=native -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -levent_core -levent_pthreads -lm -lz
2. Open MPI 4.1.0

NAS Parallel Benchmarks 3.4

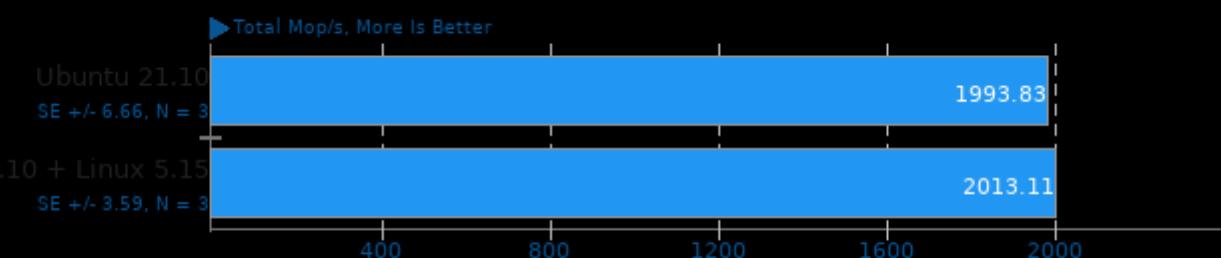
Test / Class: FT.C



1. (F9X) gfortran options: -O3 -march=native -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -levent_core -levent_pthreads -lm -lz
2. Open MPI 4.1.0

NAS Parallel Benchmarks 3.4

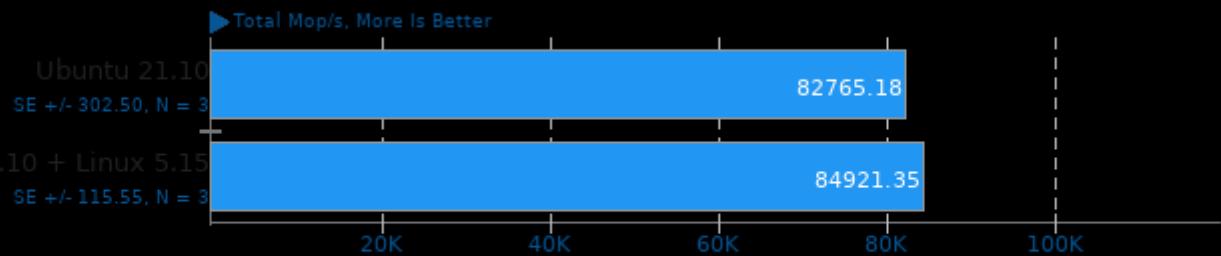
Test / Class: IS.D



1. (F9X) gfortran options: -O3 -march=native -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -levent_core -levent_pthreads -lm -lz
2. Open MPI 4.1.0

NAS Parallel Benchmarks 3.4

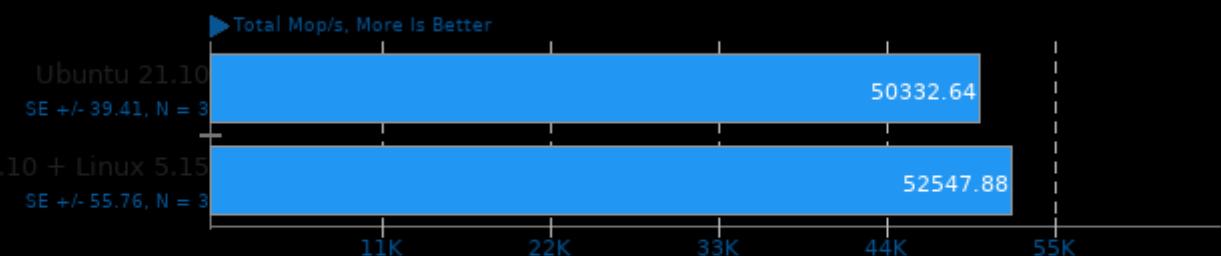
Test / Class: LU.C



1. (F9X) gfortran options: -O3 -march=native -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -levent_core -levent_pthreads -lm -lz
2. Open MPI 4.1.0

NAS Parallel Benchmarks 3.4

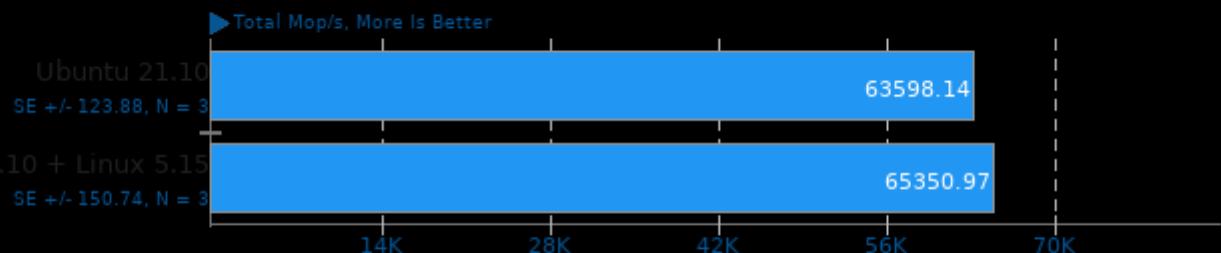
Test / Class: MG.C



1. (F9X) gfortran options: -O3 -march=native -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -levent_core -levent_pthreads -lm -lz
2. Open MPI 4.1.0

NAS Parallel Benchmarks 3.4

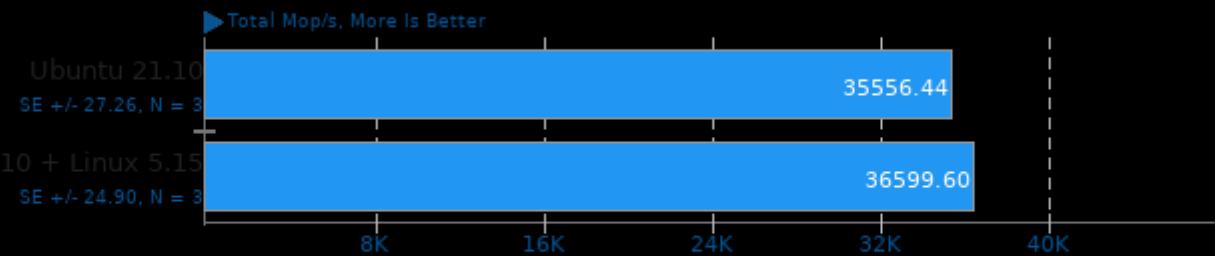
Test / Class: SP.B



1. (F9X) gfortran options: -O3 -march=native -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -levent_core -levent_pthreads -lm -lz
2. Open MPI 4.1.0

NAS Parallel Benchmarks 3.4

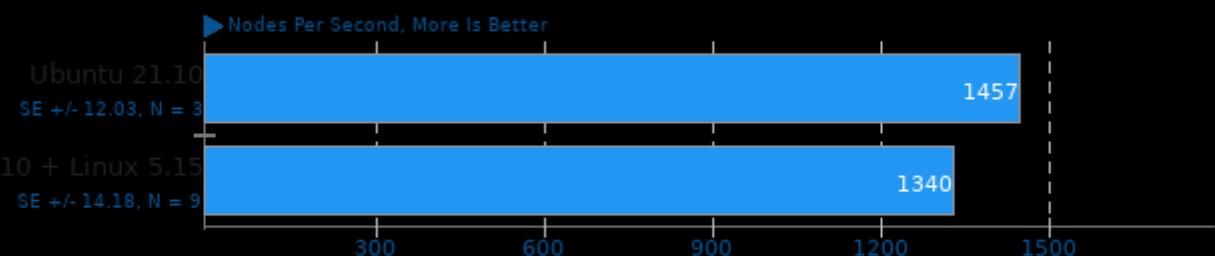
Test / Class: SPC



1. (F9X) gfortran options: -O3 -march=native -lmpi_usempif08 -lmpi_mpih -lmpi -lopen-rte -lopen-pal -lhwloc -levent_core -levent_pthreads -lm -lz
2. Open MPI 4.1.0

LeelaChessZero 0.28

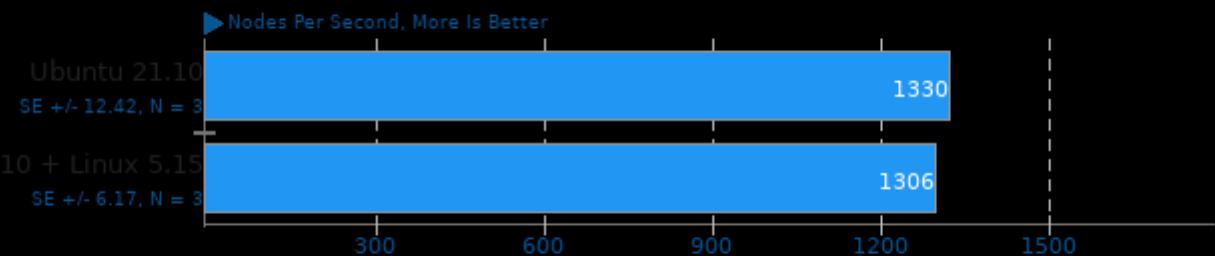
Backend: BLAS



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

LeelaChessZero 0.28

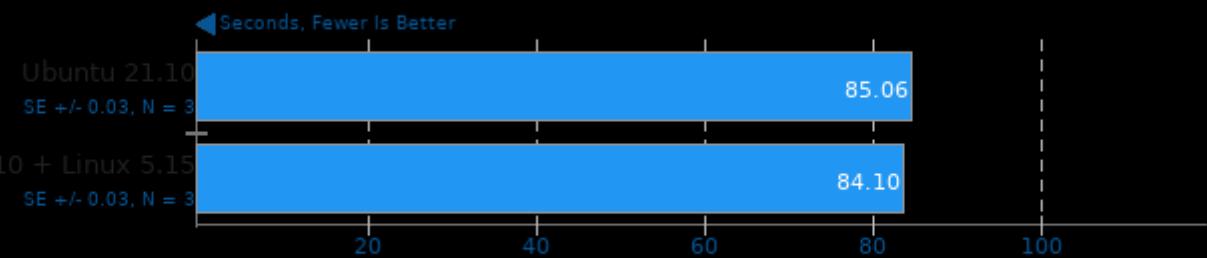
Backend: Eigen



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

Rodinia 3.1

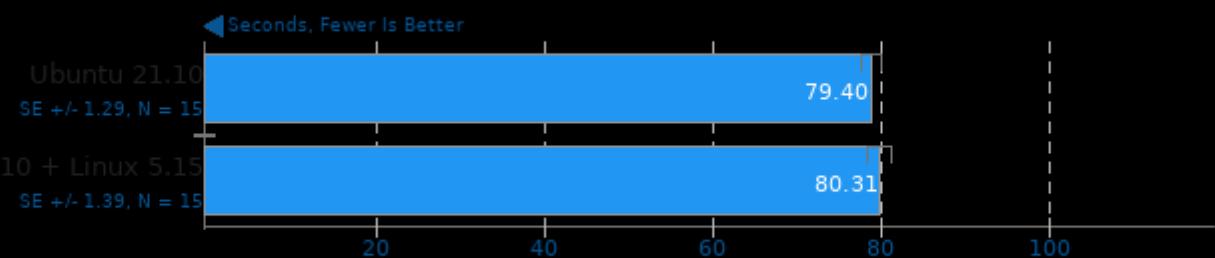
Test: OpenMP LavaMD



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

Rodinia 3.1

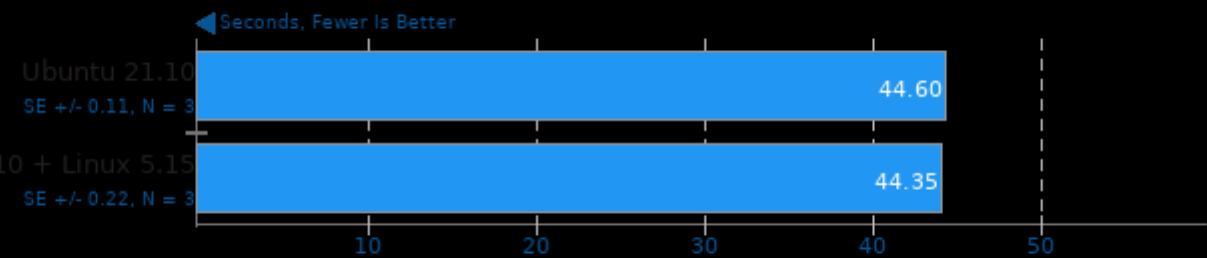
Test: OpenMP HotSpot3D



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

Rodinia 3.1

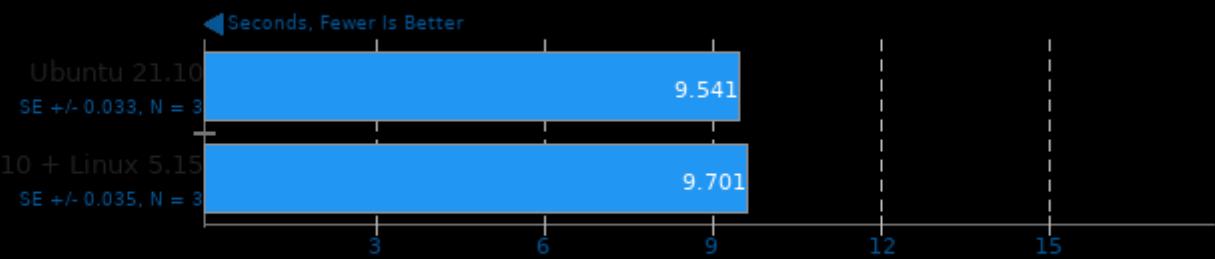
Test: OpenMP Leukocyte



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

Rodinia 3.1

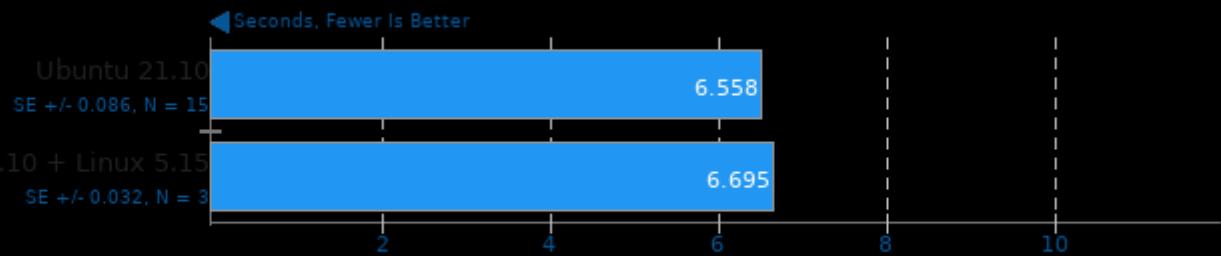
Test: OpenMP CFD Solver



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

Rodinia 3.1

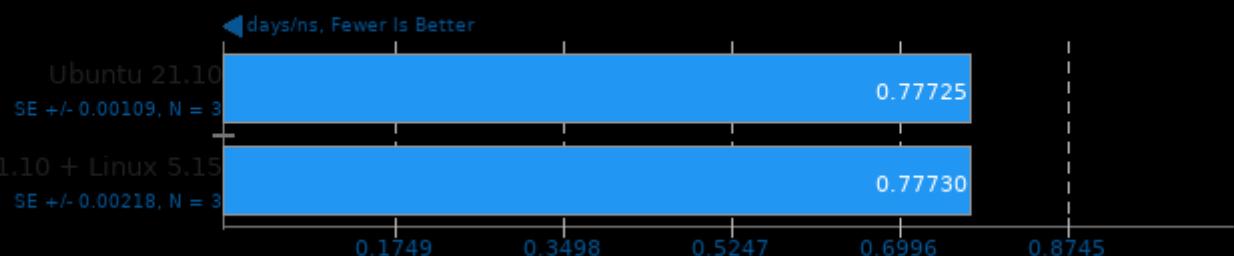
Test: OpenMP Streamcluster



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

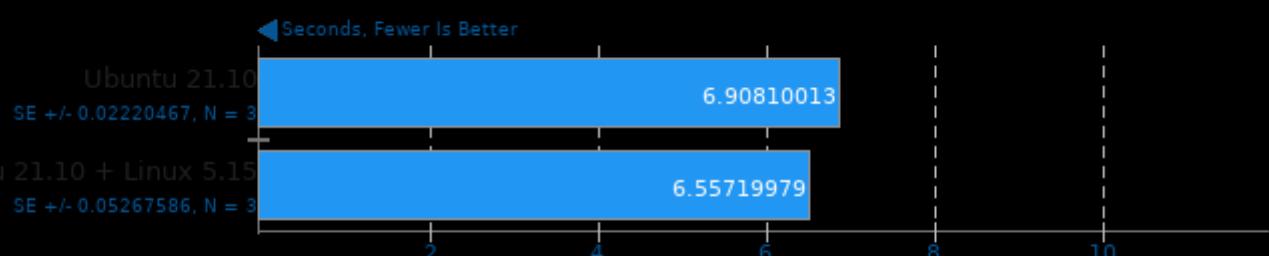
NAMD 2.14

ATPase Simulation - 327,506 Atoms



Xcompact3d Incompact3d 2021-03-11

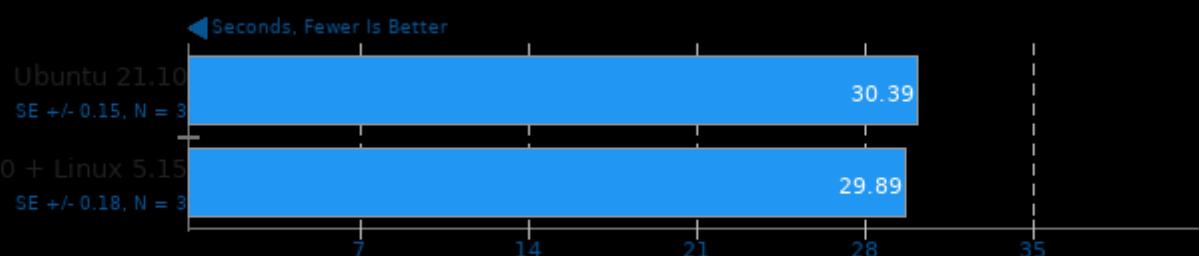
Input: input.i3d 129 Cells Per Direction



1. (F9X) gfortran options: -cpp -O2 -funroll-loops -floop-optimize -fcray-pointer -fbacktrace -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc

Xcompact3d Incompact3d 2021-03-11

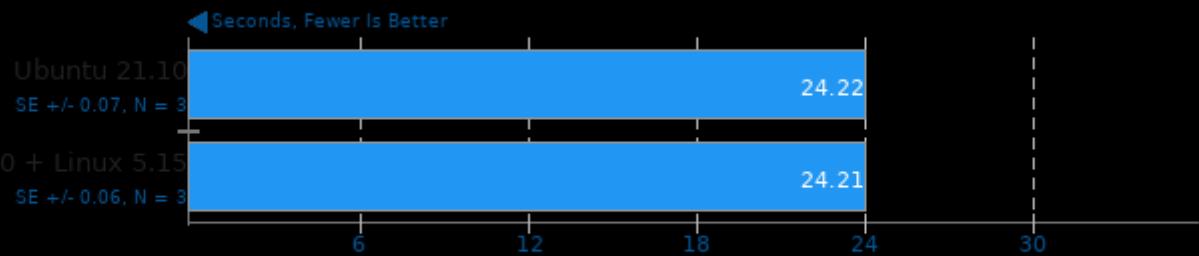
Input: input.i3d 193 Cells Per Direction



1. (F9X) gfortran options: -cpp -O2 -funroll-loops -floop-optimize -fcray-pointer -fbacktrace -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc

OpenFOAM 8

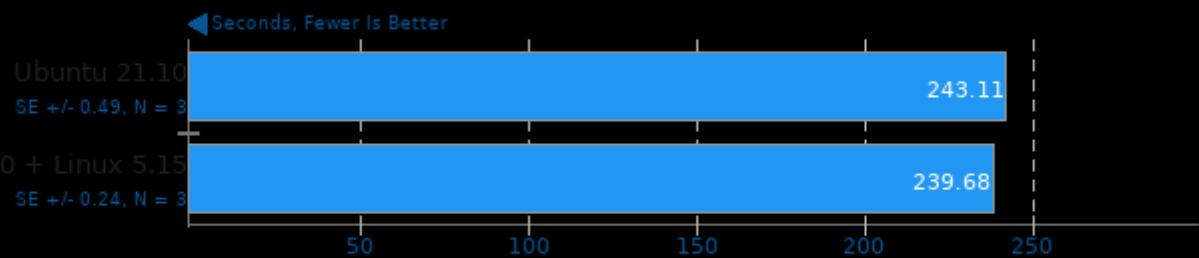
Input: Motorbike 30M



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

OpenFOAM 8

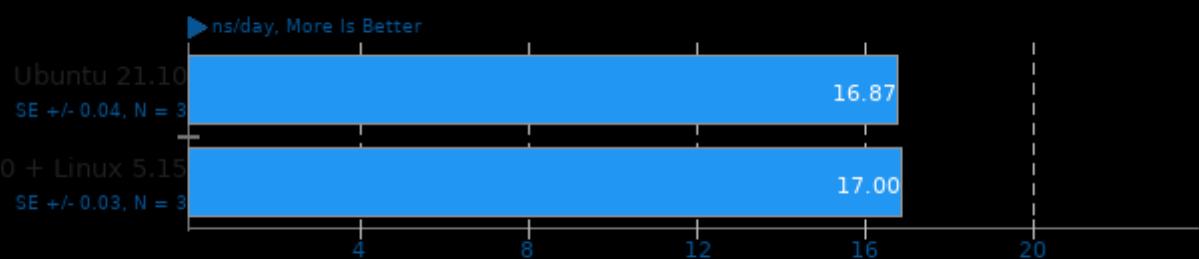
Input: Motorbike 60M



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

LAMMPS Molecular Dynamics Simulator 29Oct2020

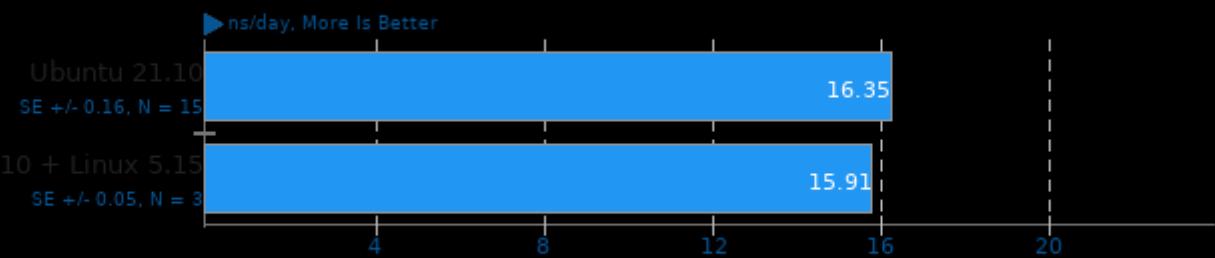
Model: 20k Atoms



l. (CXX) g++ options: -O3 -lm

LAMMPS Molecular Dynamics Simulator 29Oct2020

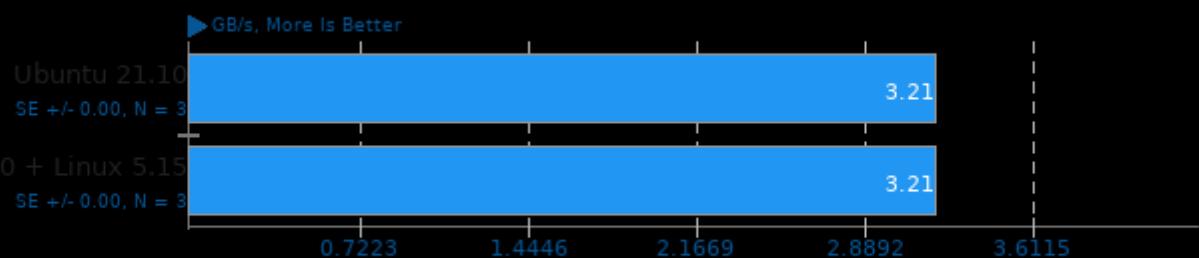
Model: Rhodopsin Protein



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

simdjson 1.0

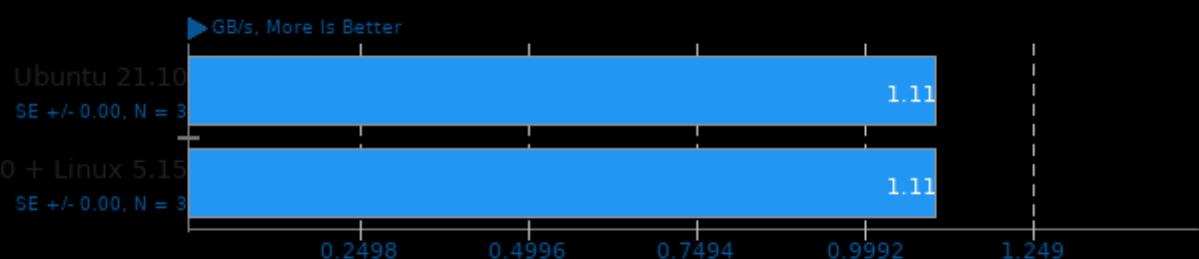
Throughput Test: Kostya



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

simdjson 1.0

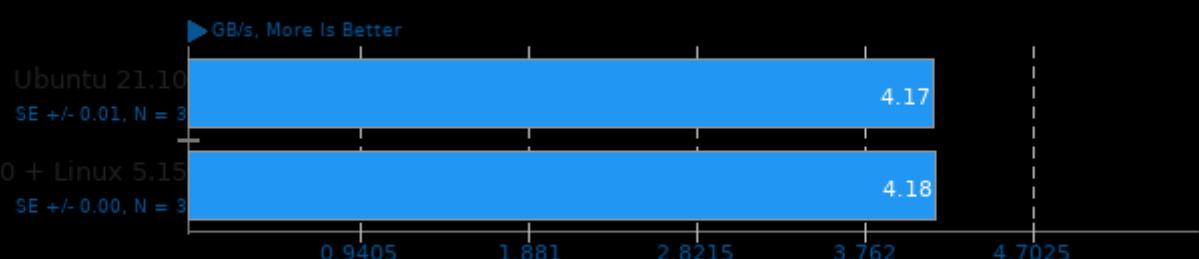
Throughput Test: LargeRandom



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

simdjson 1.0

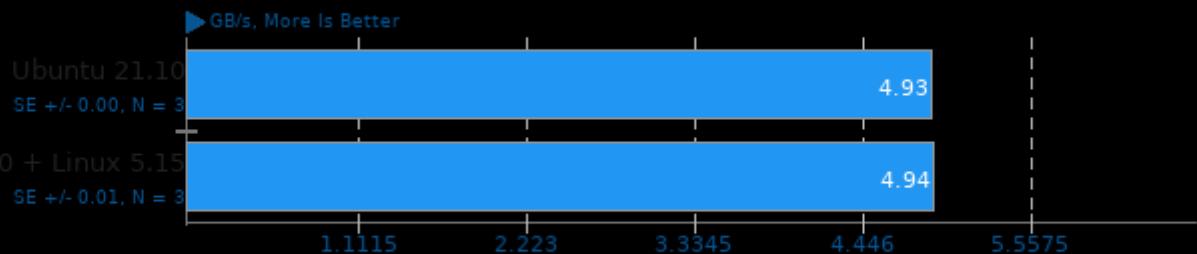
Throughput Test: PartialTweets



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

simdjson 1.0

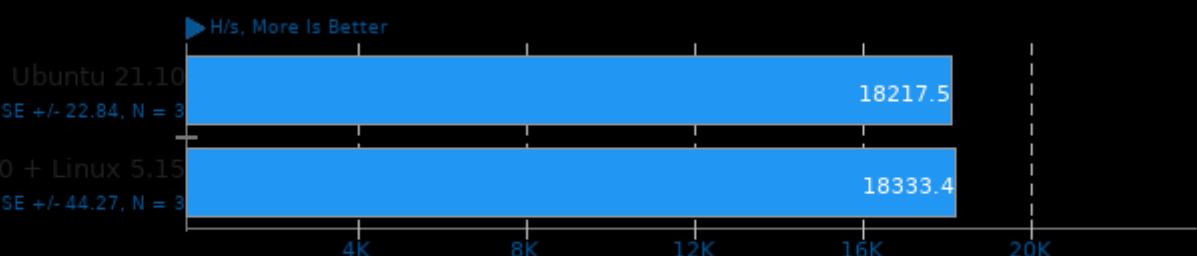
Throughput Test: DistinctUserID



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

Xmrig 6.12.1

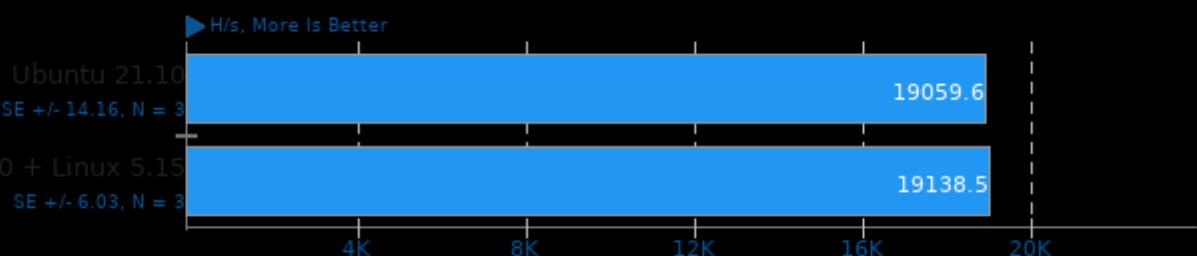
Variant: Monero - Hash Count: 1M



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

Xmrig 6.12.1

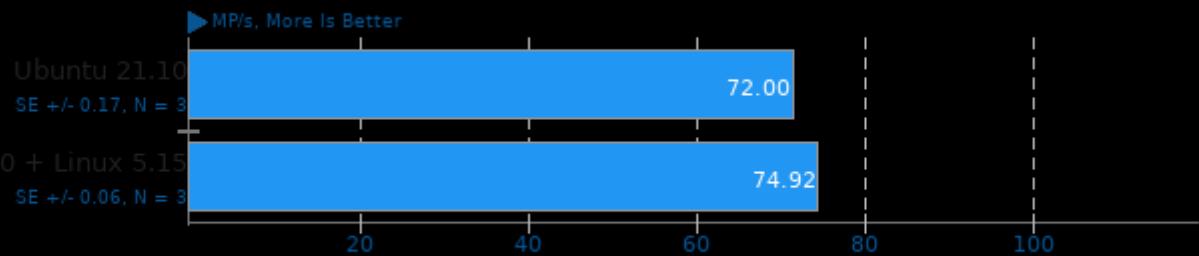
Variant: Wownero - Hash Count: 1M



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

JPEG XL libjxl 0.5

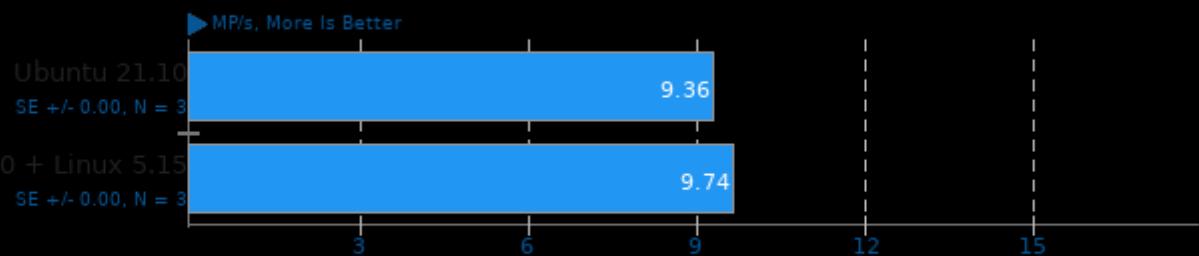
Input: PNG - Encode Speed: 5



1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie

JPEG XL libjxl 0.5

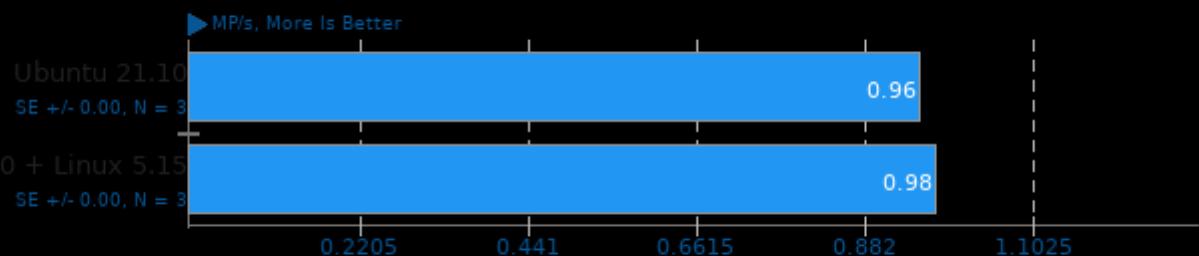
Input: PNG - Encode Speed: 7



1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie

JPEG XL libjxl 0.5

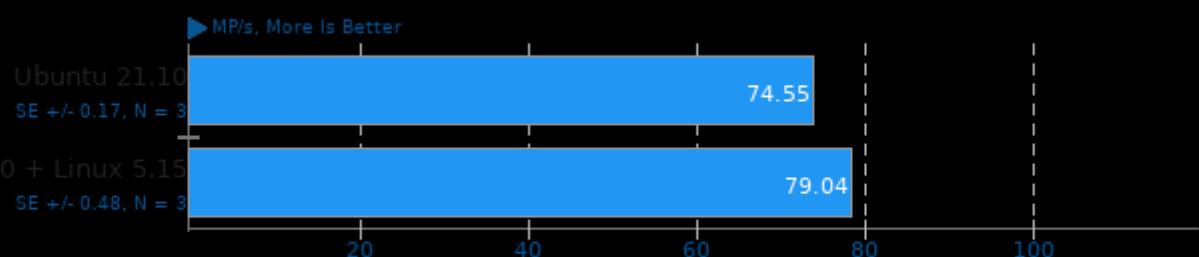
Input: PNG - Encode Speed: 8



1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie

JPEG XL libjxl 0.5

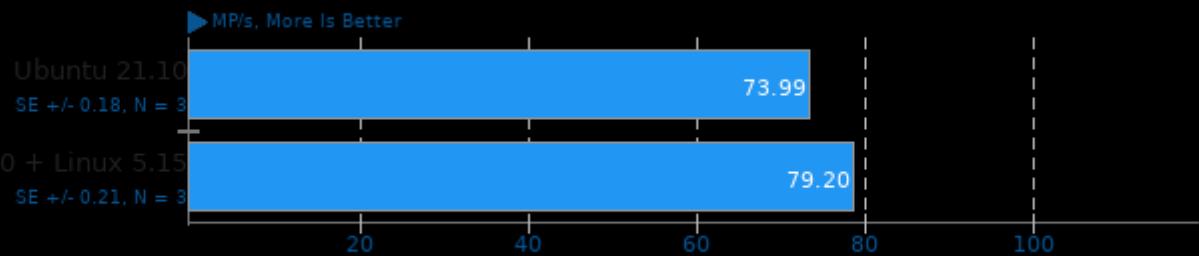
Input: JPEG - Encode Speed: 5



1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie

JPEG XL libjxl 0.5

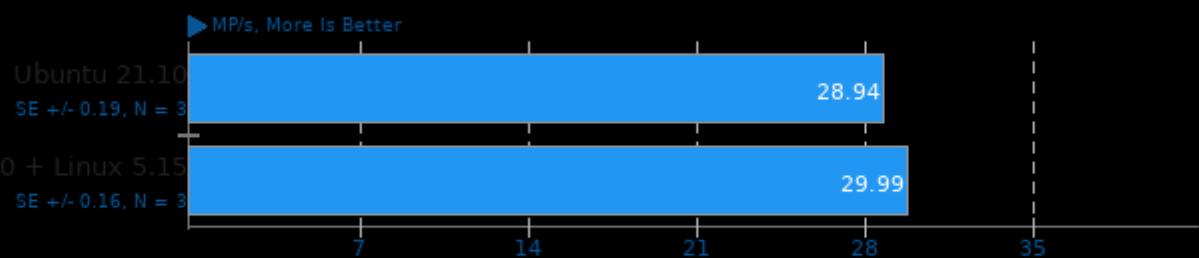
Input: JPEG - Encode Speed: 7



1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie

JPEG XL libjxl 0.5

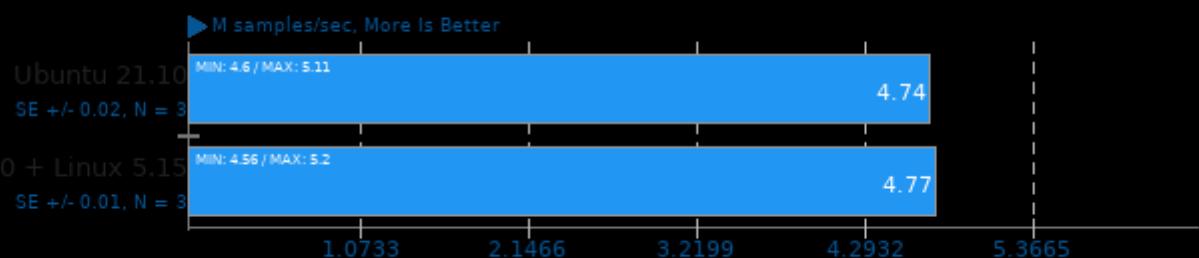
Input: JPEG - Encode Speed: 8



1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie

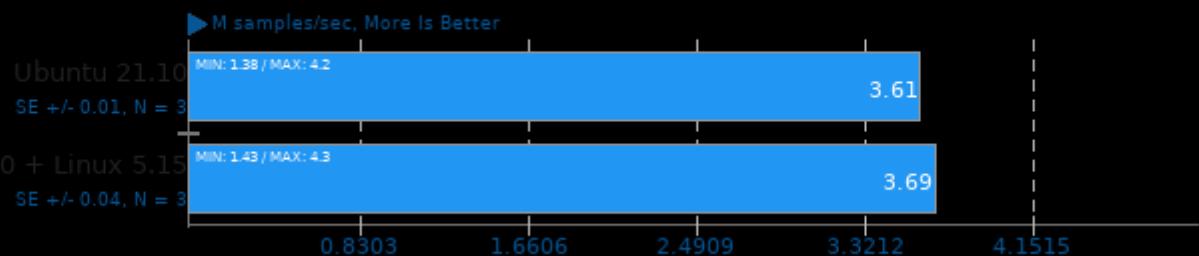
LuxCoreRender 2.5

Scene: DLSC - Acceleration: CPU



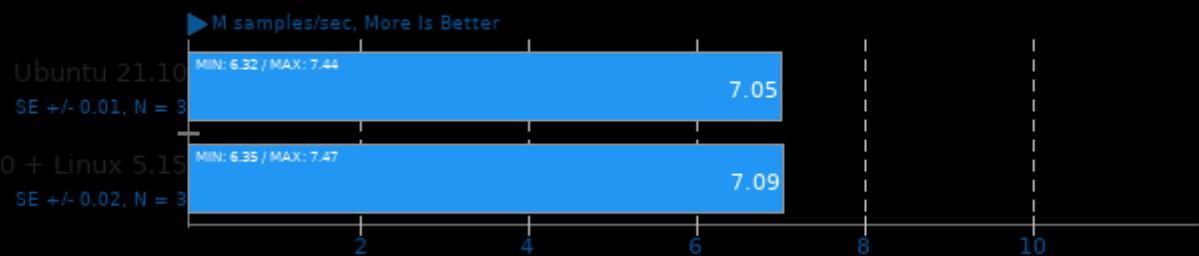
LuxCoreRender 2.5

Scene: Danish Mood - Acceleration: CPU



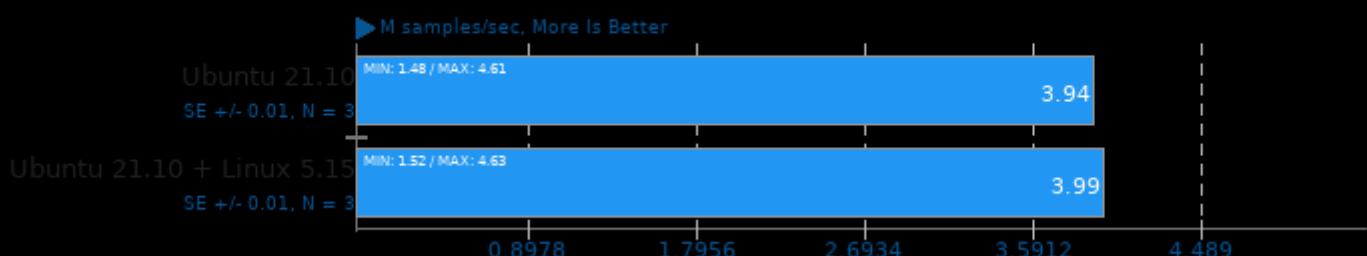
LuxCoreRender 2.5

Scene: Orange Juice - Acceleration: CPU



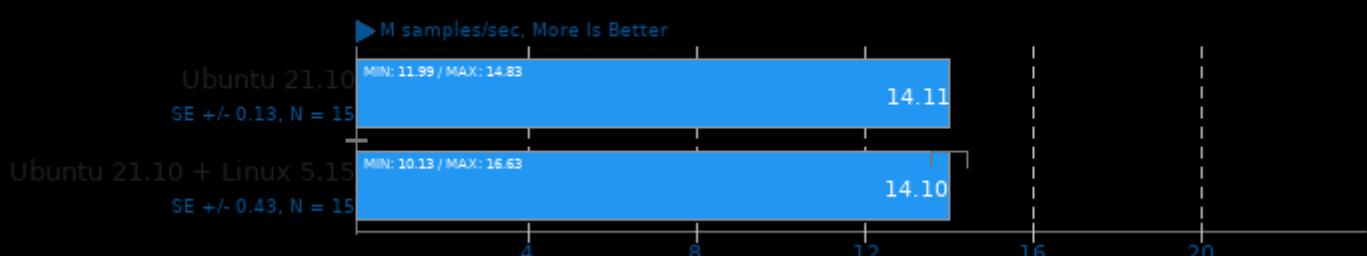
LuxCoreRender 2.5

Scene: LuxCore Benchmark - Acceleration: CPU



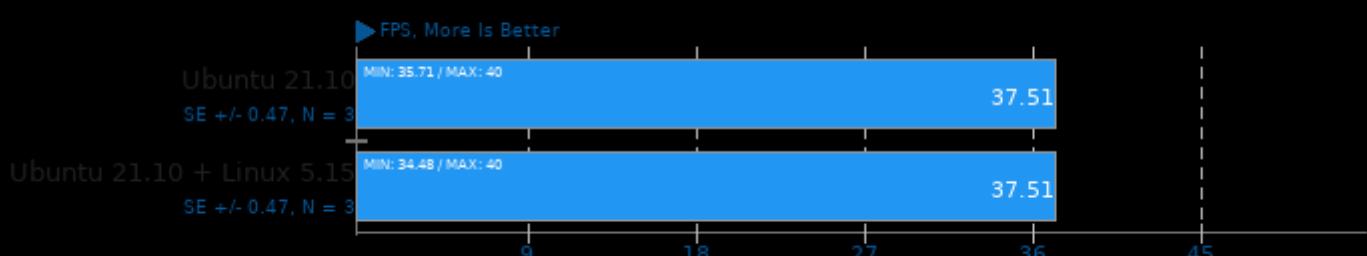
LuxCoreRender 2.5

Scene: Rainbow Colors and Prism - Acceleration: CPU



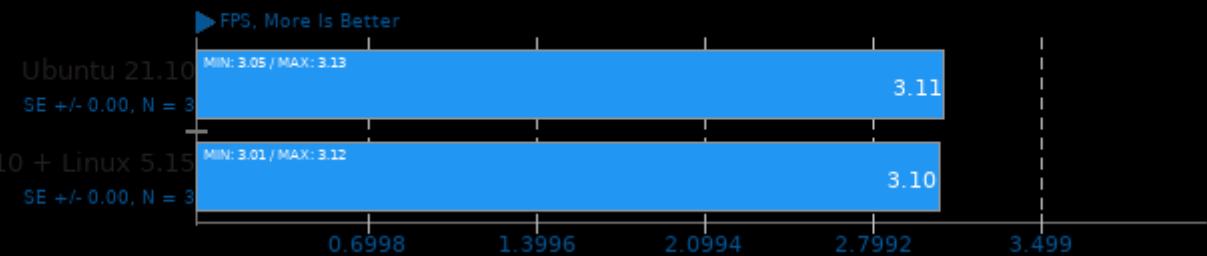
OSPray 1.8.5

Demo: San Miguel - Renderer: SciVis



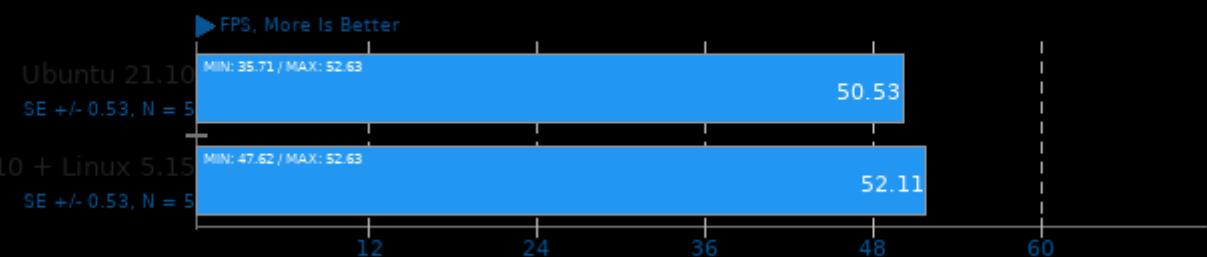
OSPray 1.8.5

Demo: San Miguel - Renderer: Path Tracer



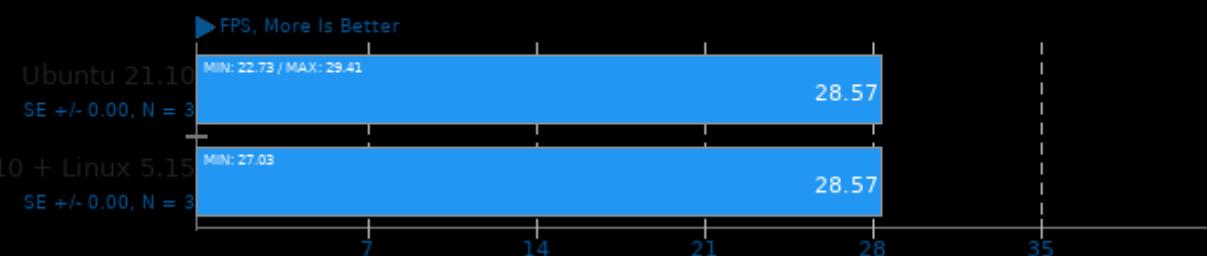
OSPray 1.8.5

Demo: NASA Streamlines - Renderer: SciVis



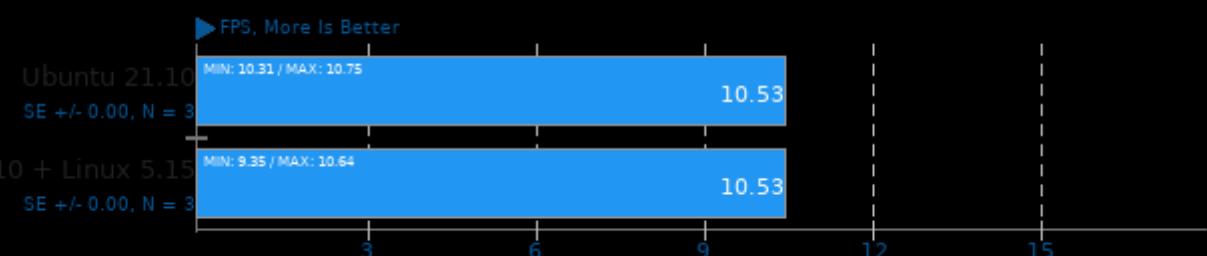
OSPray 1.8.5

Demo: Magnetic Reconnection - Renderer: SciVis



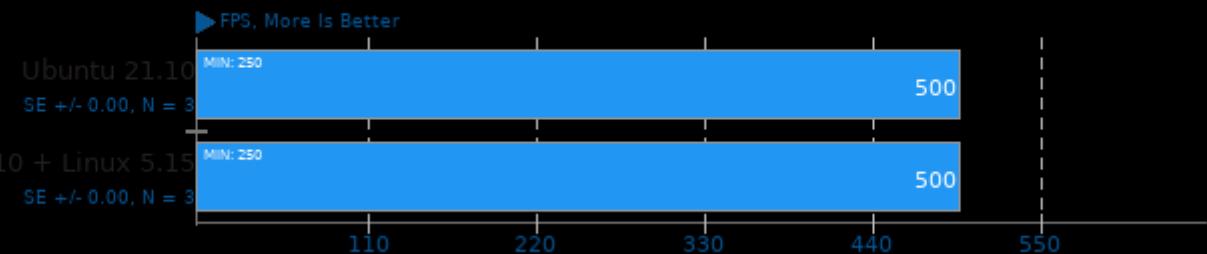
OSPray 1.8.5

Demo: NASA Streamlines - Renderer: Path Tracer



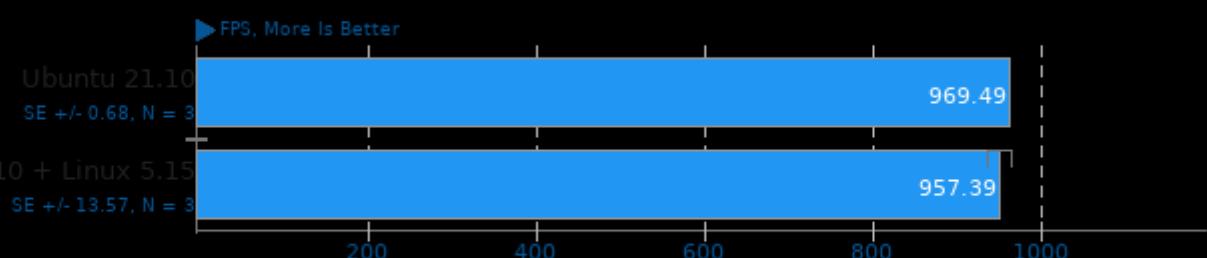
OSPray 1.8.5

Demo: Magnetic Reconnection - Renderer: Path Tracer



TTSIOD 3D Renderer 2.3b

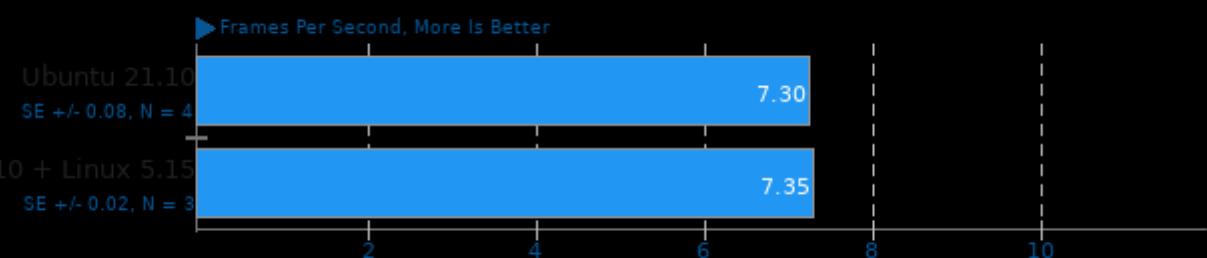
Phong Rendering With Soft-Shadow Mapping



1. (CXX) g++ options: -O3 -fomit-frame-pointer -ffast-math -mtune=native -fno -msse -mrecip -mfpmath=sse -msse2 -msse3 -fSDL -fopenmp -fwhole-pr

AOM AV1 3.1

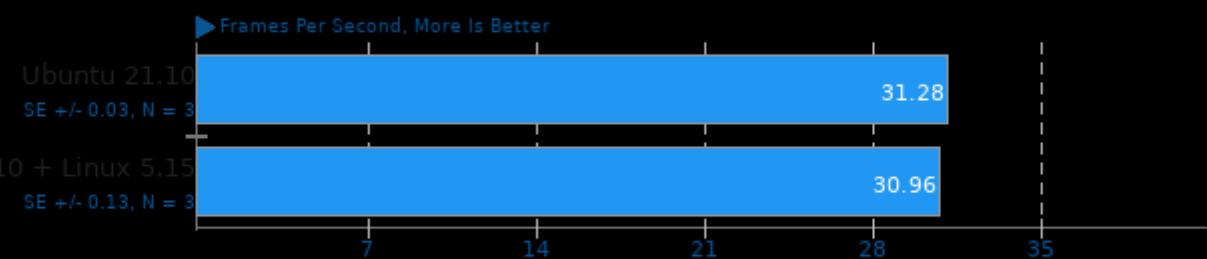
Encoder Mode: Speed 6 Two-Pass - Input: Bosphorus 4K



1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm

AOM AV1 3.1

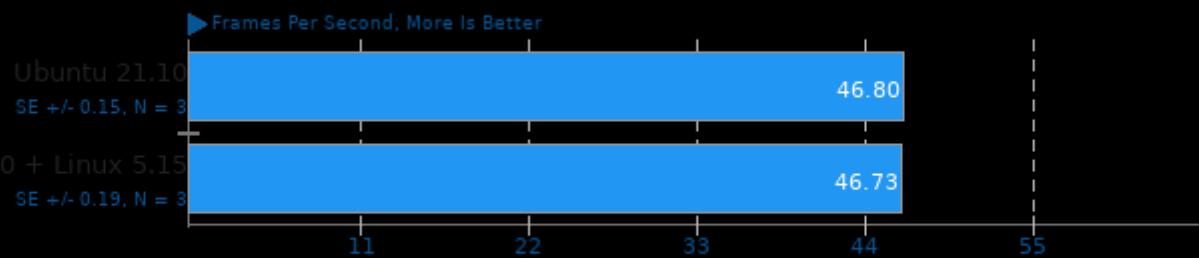
Encoder Mode: Speed 8 Realtime - Input: Bosphorus 4K



1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm

AOM AV1 3.1

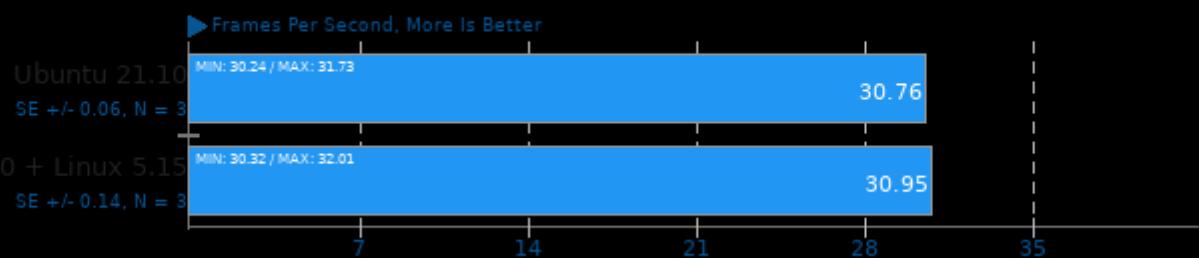
Encoder Mode: Speed 9 Realtime - Input: Bosphorus 4K



1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm

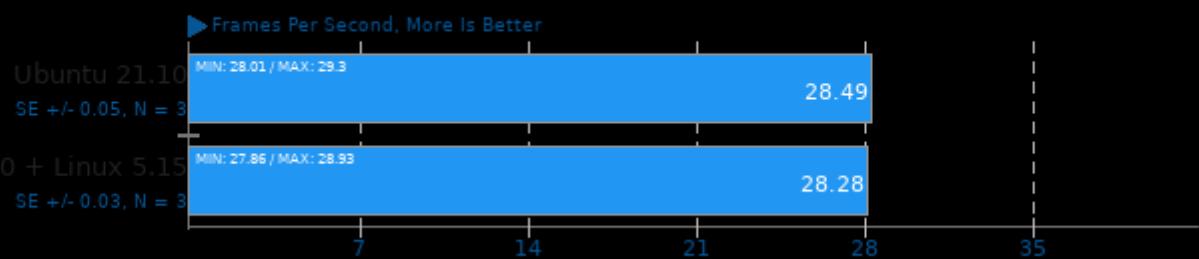
Embree 3.13

Binary: Pathtracer - Model: Crown



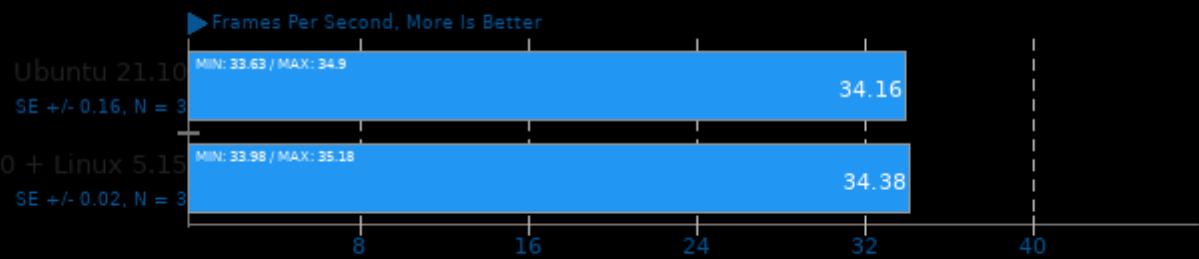
Embree 3.13

Binary: Pathtracer ISPC - Model: Crown



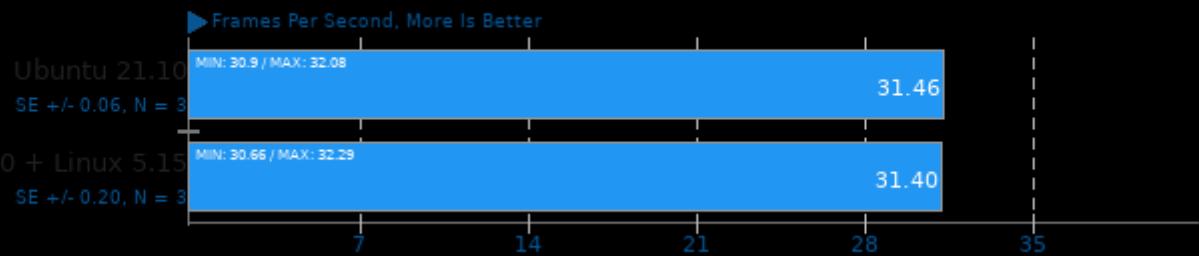
Embree 3.13

Binary: Pathtracer - Model: Asian Dragon



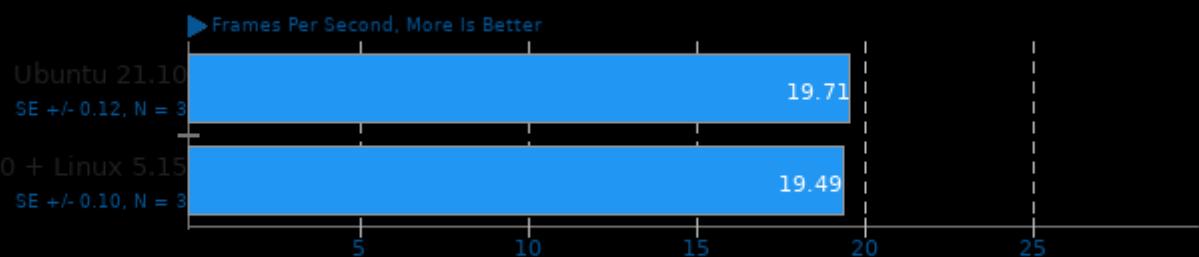
Embree 3.13

Binary: Pathtracer ISPC - Model: Asian Dragon



SVT-AV1 0.8.7

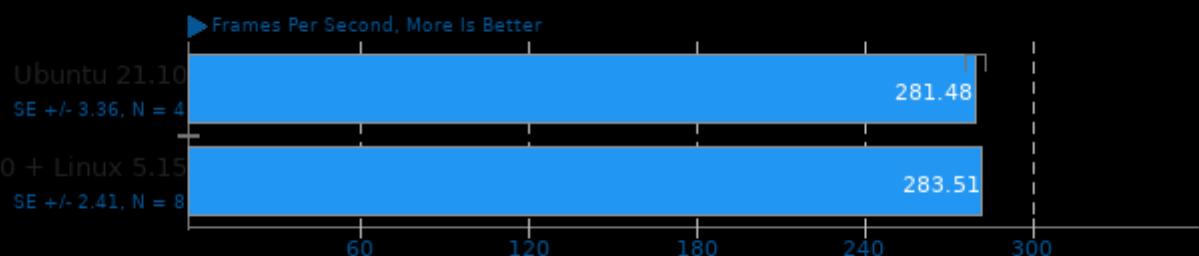
Encoder Mode: Preset 8 - Input: Bosphorus 4K



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

SVT-HEVC 1.5.0

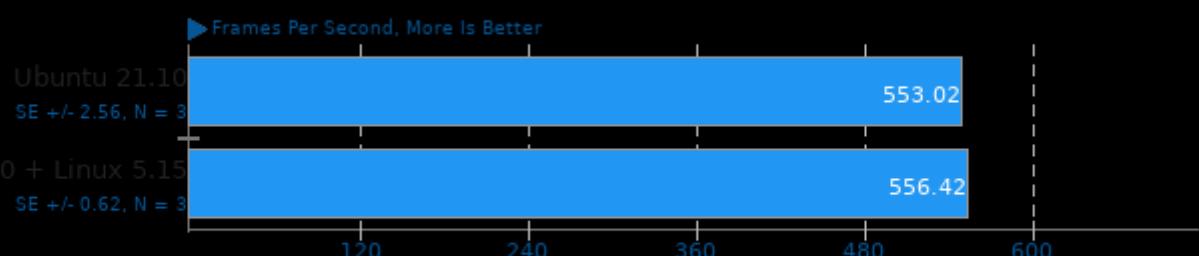
Tuning: 7 - Input: Bosphorus 1080p



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

SVT-HEVC 1.5.0

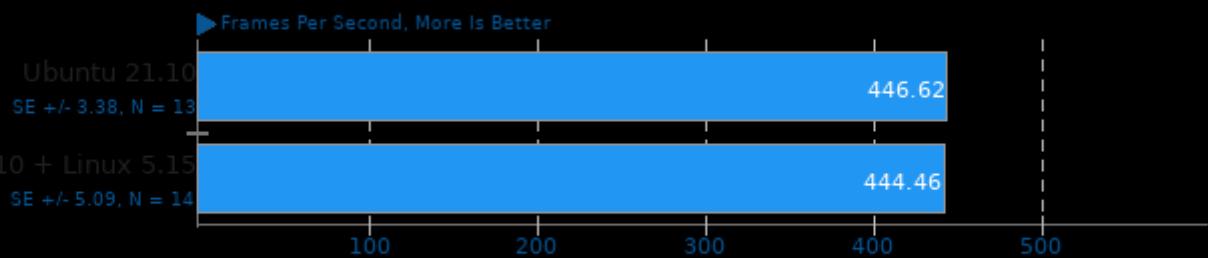
Tuning: 10 - Input: Bosphorus 1080p



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

SVT-VP9 0.3

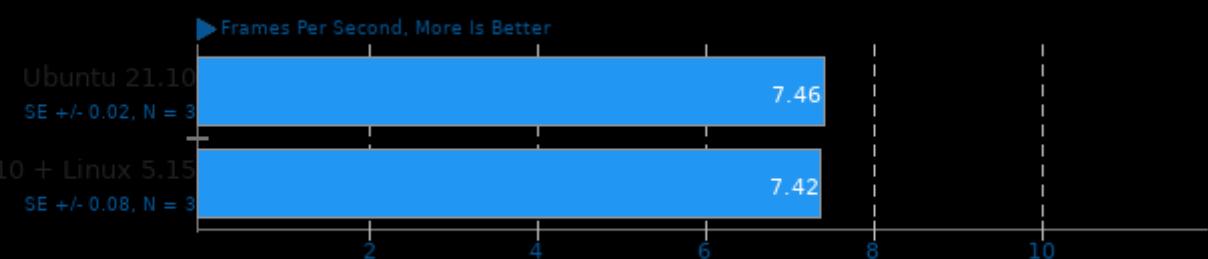
Tuning: VMAF Optimized - Input: Bosphorus 1080p



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

VP9 libvpx Encoding 1.10.0

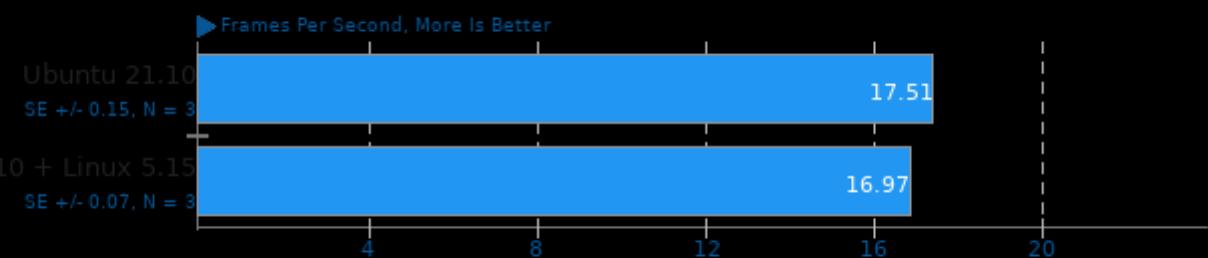
Speed: Speed 0 - Input: Bosphorus 4K



1. (CXX) g++ options: -m64 -lm -lpthread -O3 -fPIC -U_FORTIFY_SOURCE -std=gnu++11

VP9 libvpx Encoding 1.10.0

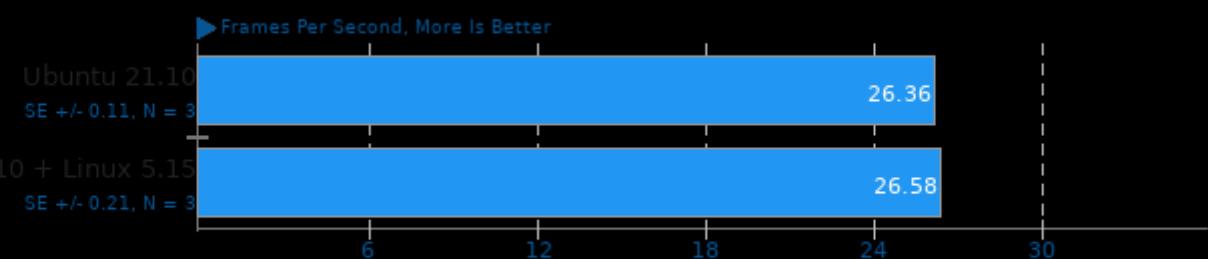
Speed: Speed 5 - Input: Bosphorus 4K



1. (CXX) g++ options: -m64 -lm -lpthread -O3 -fPIC -U_FORTIFY_SOURCE -std=gnu++11

x265 3.4

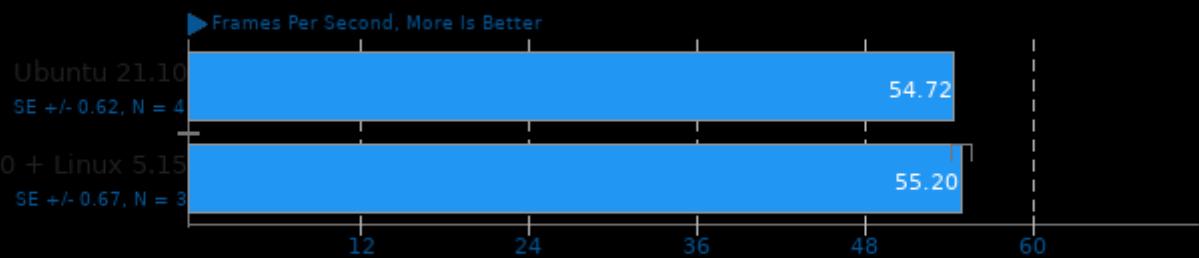
Video Input: Bosphorus 4K



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

x265 3.4

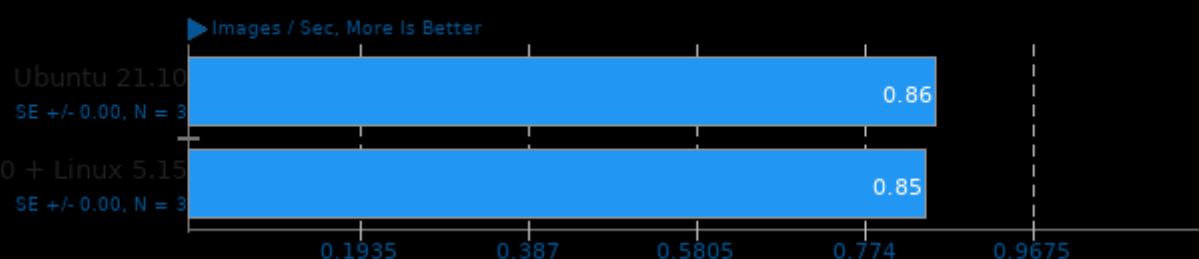
Video Input: Bosphorus 1080p



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

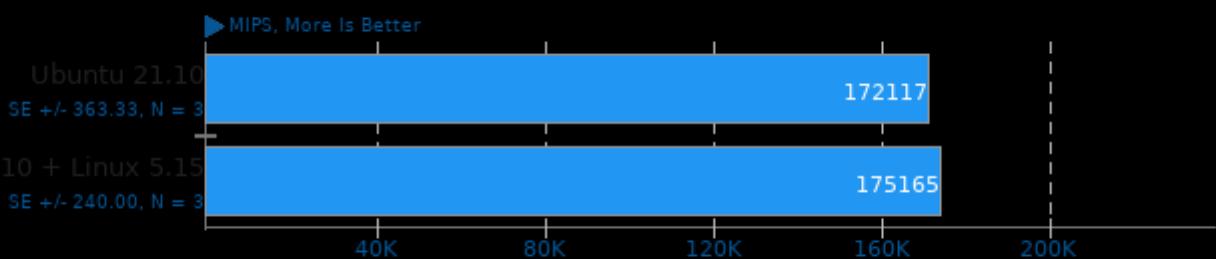
Intel Open Image Denoise 1.4.0

Run: RT.Idr_alb_nrm.3840x2160



7-Zip Compression 16.02

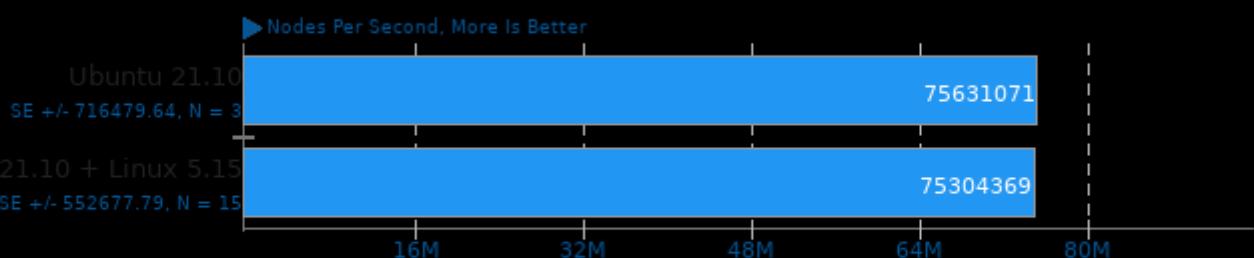
Compress Speed Test



1. (CXX) g++ options: -pipe -lpthread

Stockfish 13

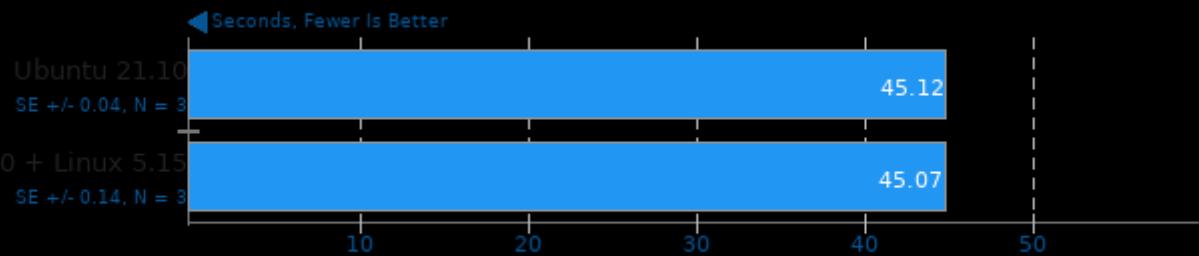
Total Time



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

libavif avifenc 0.9.0

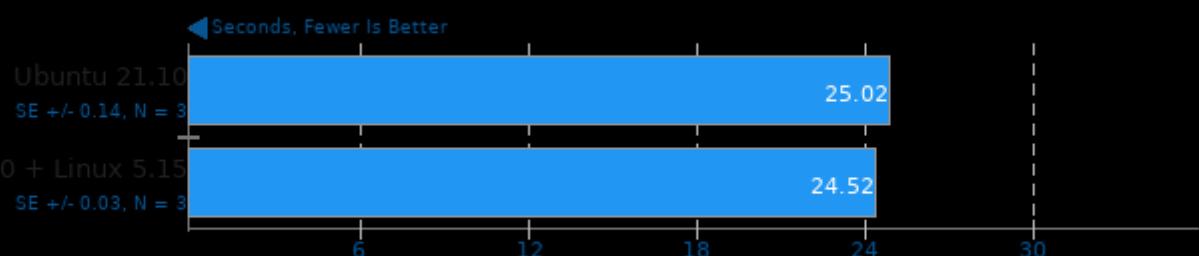
Encoder Speed: 0



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

libavif avifenc 0.9.0

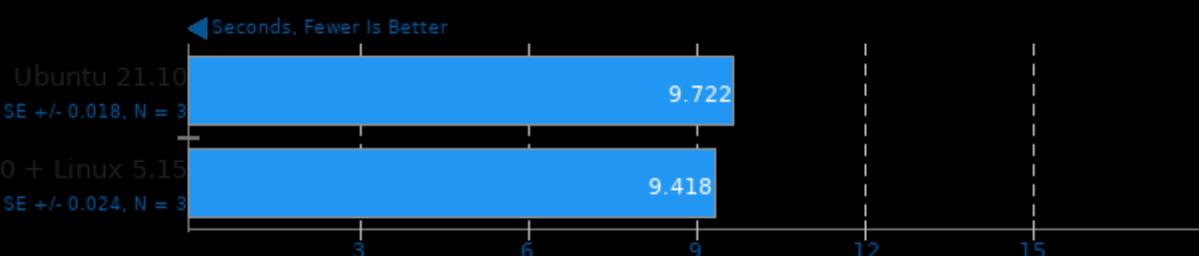
Encoder Speed: 2



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

libavif avifenc 0.9.0

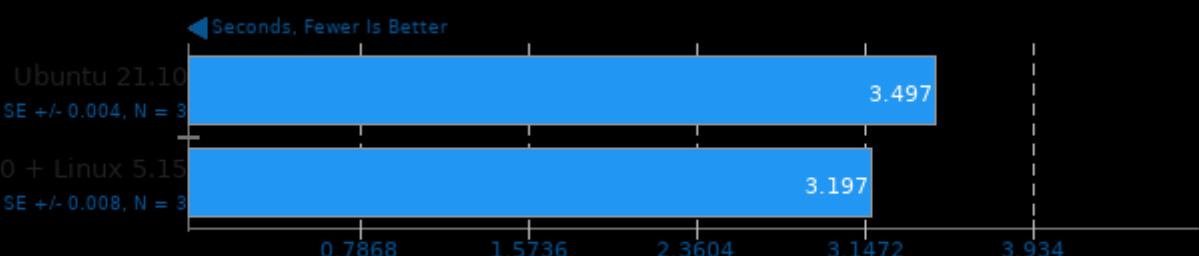
Encoder Speed: 6



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

libavif avifenc 0.9.0

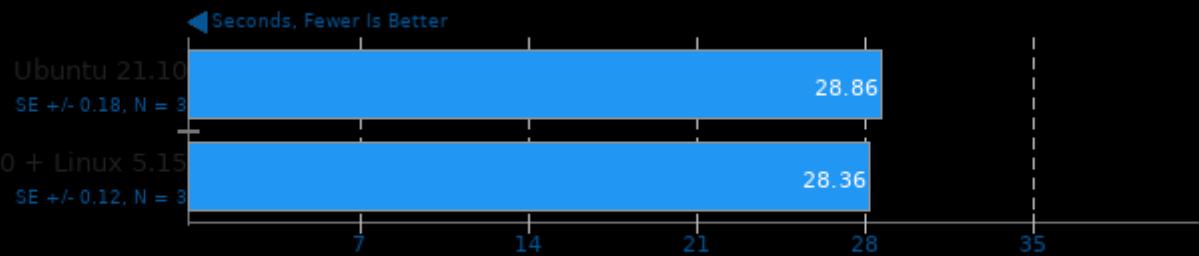
Encoder Speed: 10



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

libavif avifenc 0.9.0

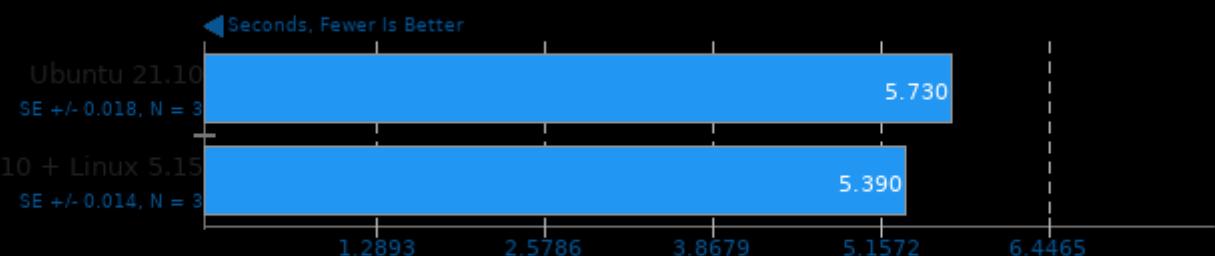
Encoder Speed: 6, Lossless



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

libavif avifenc 0.9.0

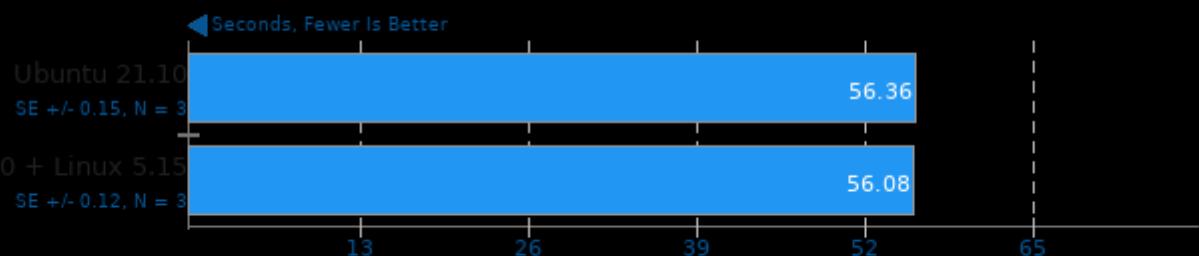
Encoder Speed: 10, Lossless



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

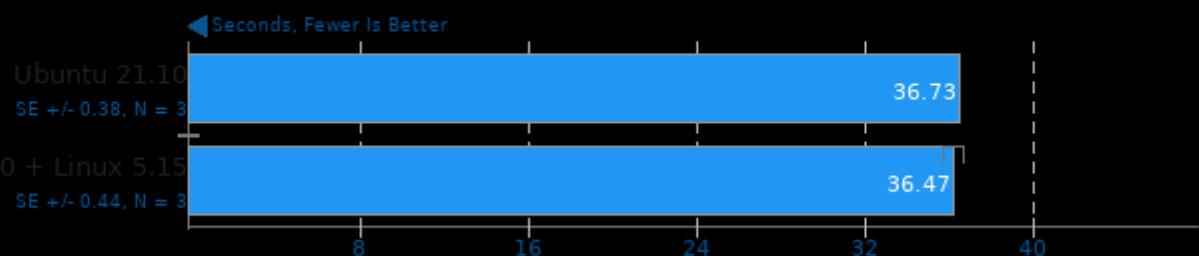
Timed Godot Game Engine Compilation 3.2.3

Time To Compile



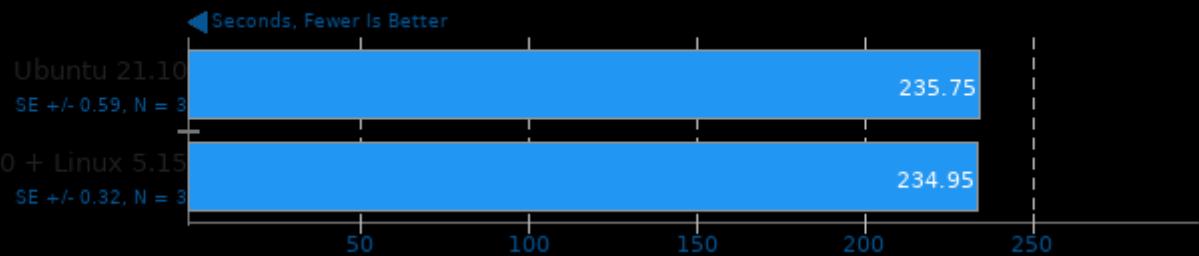
Timed Linux Kernel Compilation 5.14

Time To Compile



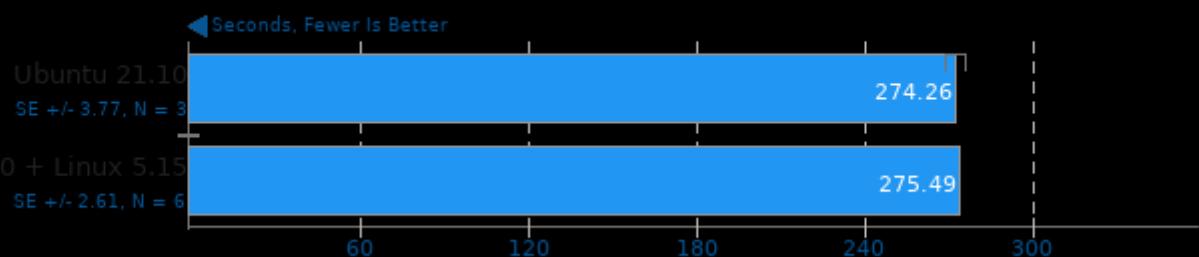
Timed LLVM Compilation 13.0

Build System: Ninja



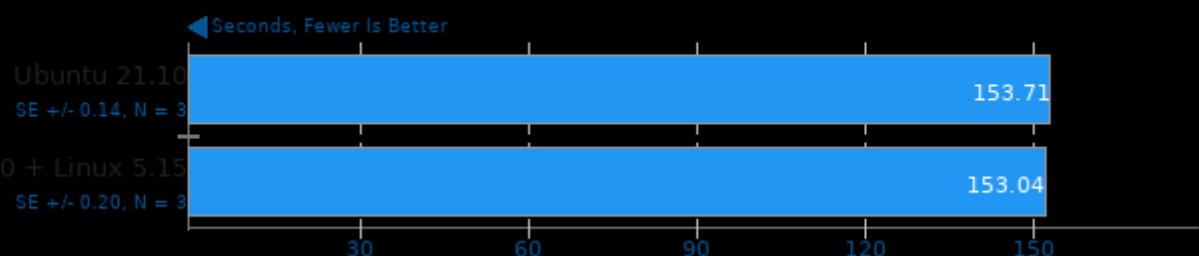
Timed LLVM Compilation 13.0

Build System: Unix Makefiles



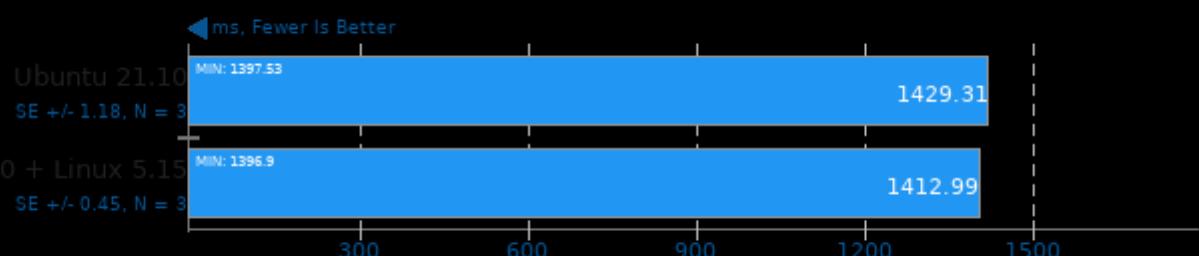
Timed Node.js Compilation 15.11

Time To Compile



oneDNN 2.1.2

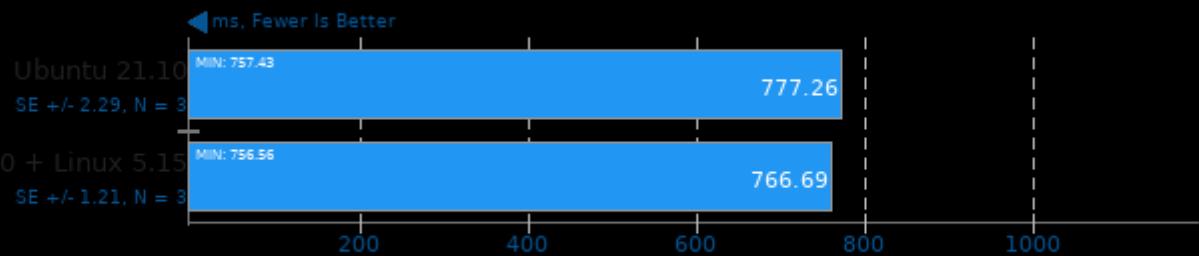
Harness: Recurrent Neural Network Training - Data Type: f32 - Engine: CPU



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

oneDNN 2.1.2

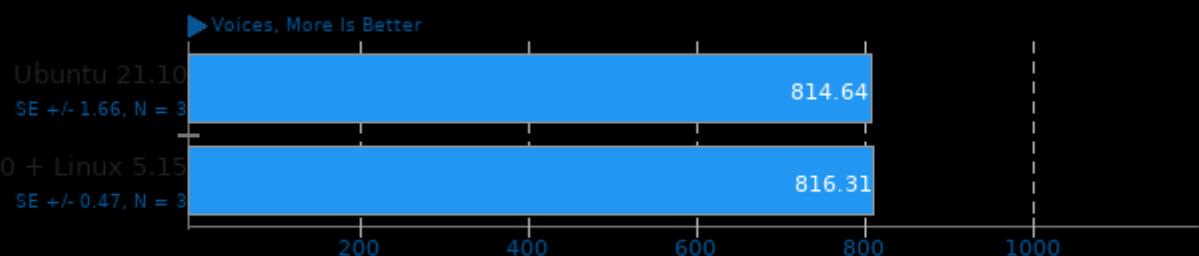
Harness: Recurrent Neural Network Inference - Data Type: f32 - Engine: CPU



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

Google SynthMark 20201109

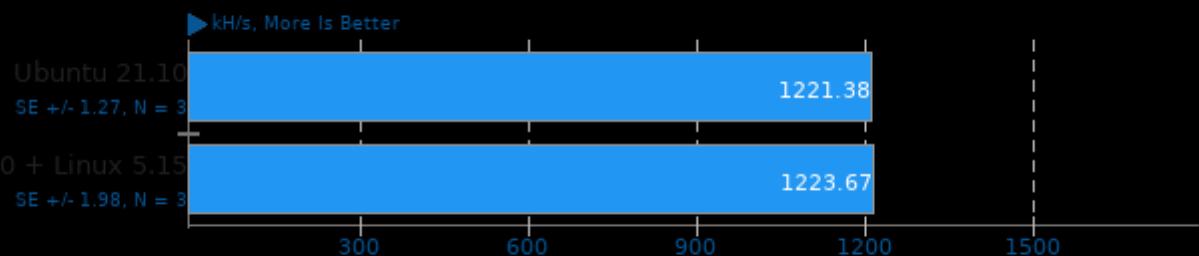
Test: VoiceMark_100



1. (CXX) g++ options: -lm -lpthread -std=c++11 -Ofast

Cpuminer-Opt 3.18

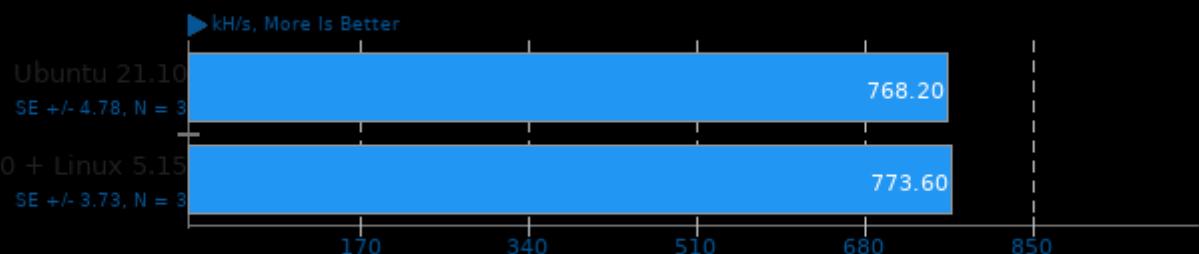
Algorithm: Magi



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

Cpuminer-Opt 3.18

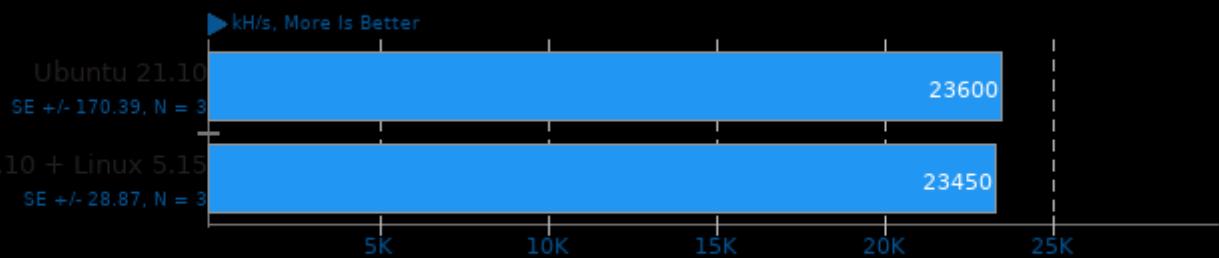
Algorithm: x25x



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

Cpuminer-Opt 3.18

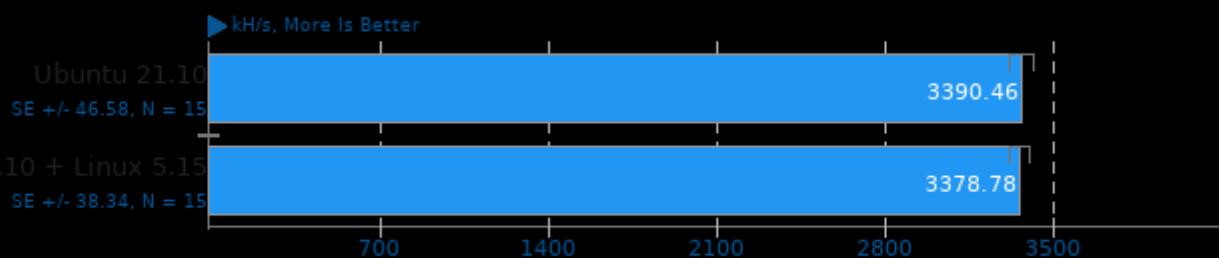
Algorithm: Deepcoin



1. (CXX) g++ options: -O2 -curl -lz -pthread -lssl -lcrypto -lgmp

Cpuminer-Opt 3.18

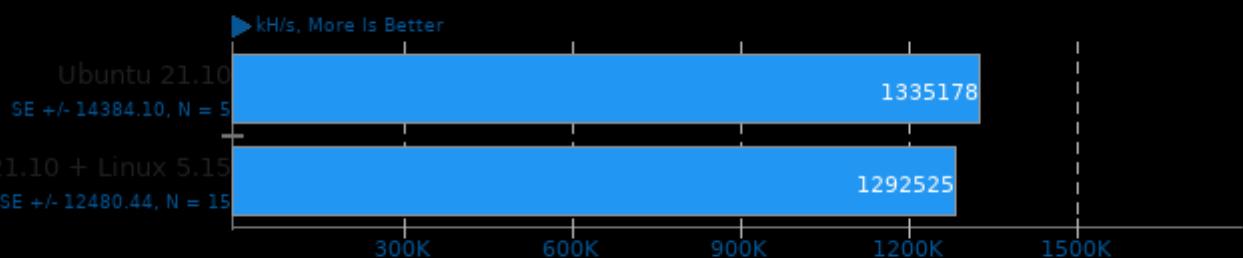
Algorithm: Ringcoin



1. (CXX) g++ options: -O2 -curl -lz -pthread -lssl -lcrypto -lgmp

Cpuminer-Opt 3.18

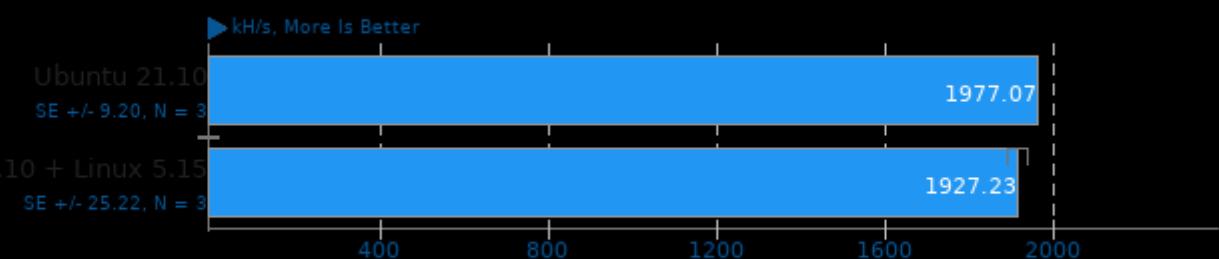
Algorithm: Blake-2 S



1. (CXX) g++ options: -O2 -curl -lz -pthread -lssl -lcrypto -lgmp

Cpuminer-Opt 3.18

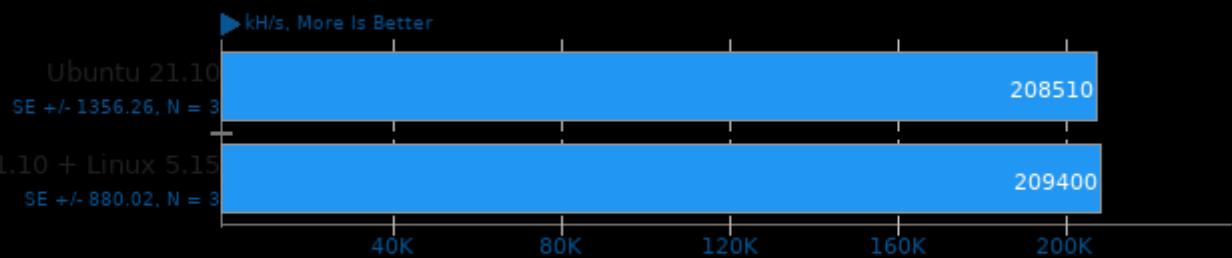
Algorithm: Garlicoin



1. (CXX) g++ options: -O2 -curl -lz -pthread -lssl -lcrypto -lgmp

Cpuminer-Opt 3.18

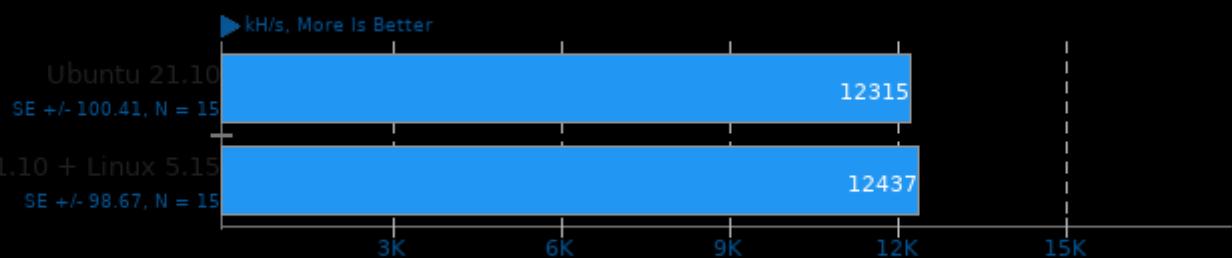
Algorithm: Skeincoin



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

Cpuminer-Opt 3.18

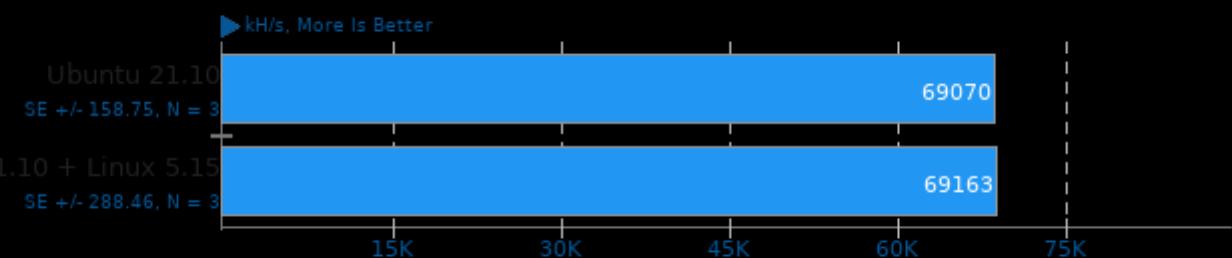
Algorithm: Myriad-Groestl



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

Cpuminer-Opt 3.18

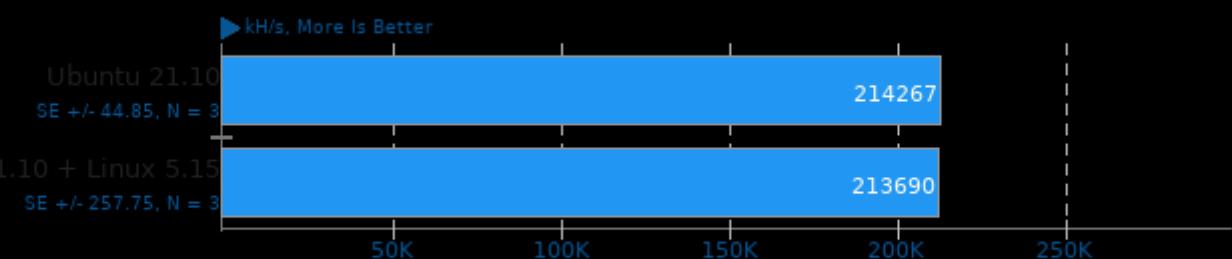
Algorithm: LBC, LBRY Credits



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

Cpuminer-Opt 3.18

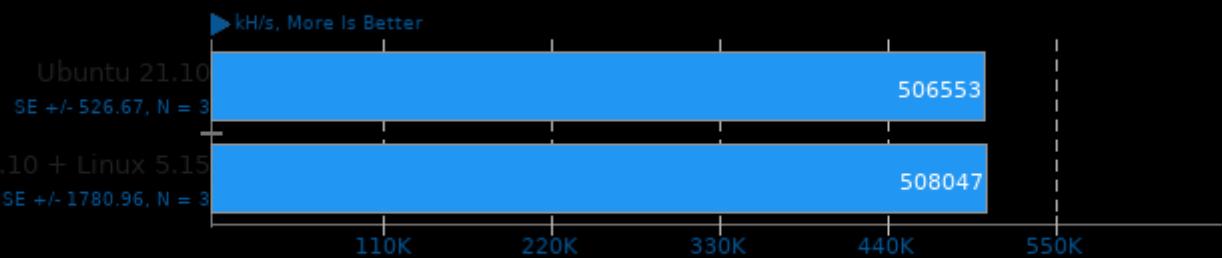
Algorithm: Quad SHA-256, Pyrite



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

Cpuminer-Opt 3.18

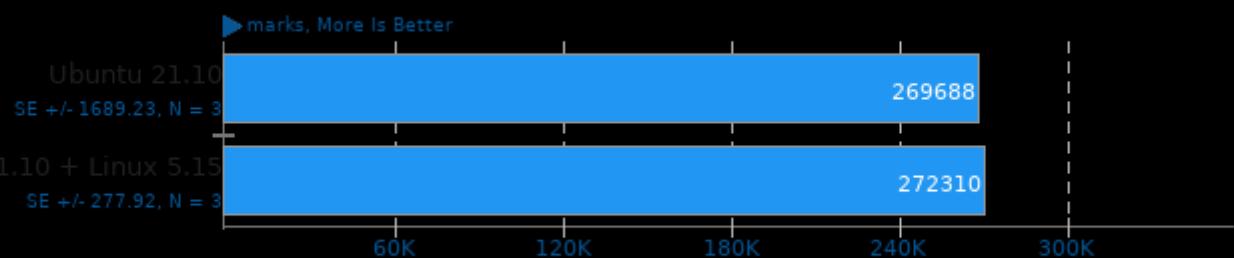
Algorithm: Triple SHA-256, Onecoin



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

SecureMark 1.0.4

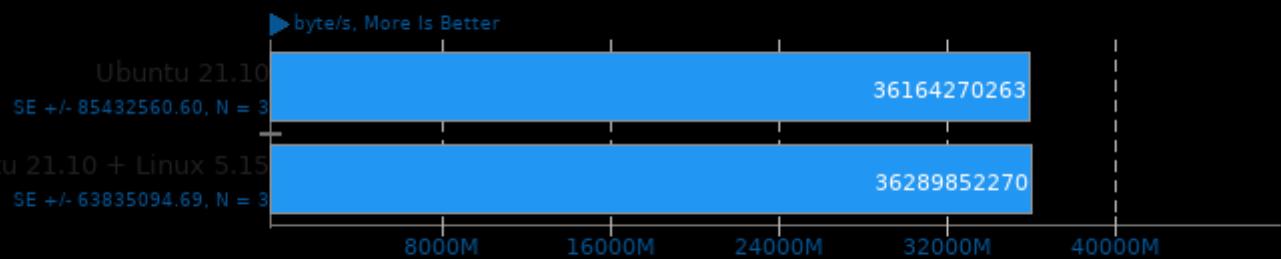
Benchmark: SecureMark-TLS



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

OpenSSL 3.0

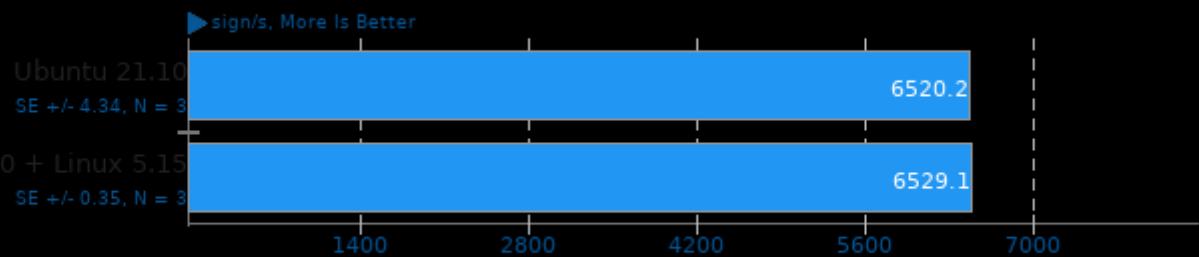
Algorithm: SHA256



1. (CC) gcc options: -pthread -m64 -O3 -lssl -lcrypto -ldl

OpenSSL 3.0

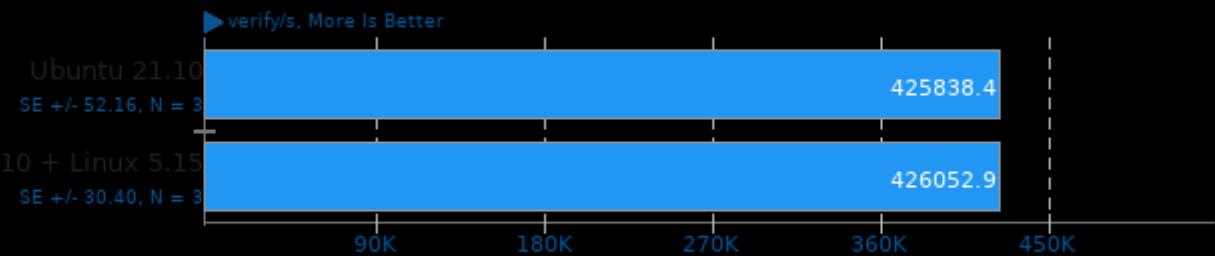
Algorithm: RSA4096



1. (CC) gcc options: -pthread -m64 -O3 -lssl -lcrypto -ldl

OpenSSL 3.0

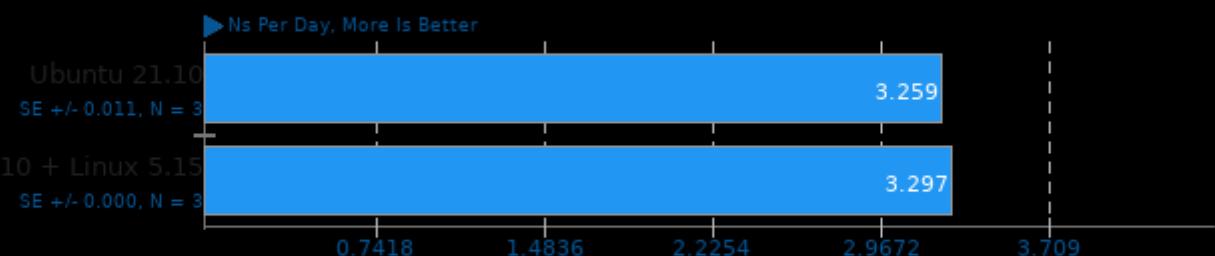
Algorithm: RSA4096



1. (CC) gcc options: -pthread -m64 -O3 -lssl -lcrypto -ldl

GROMACS 2021.2

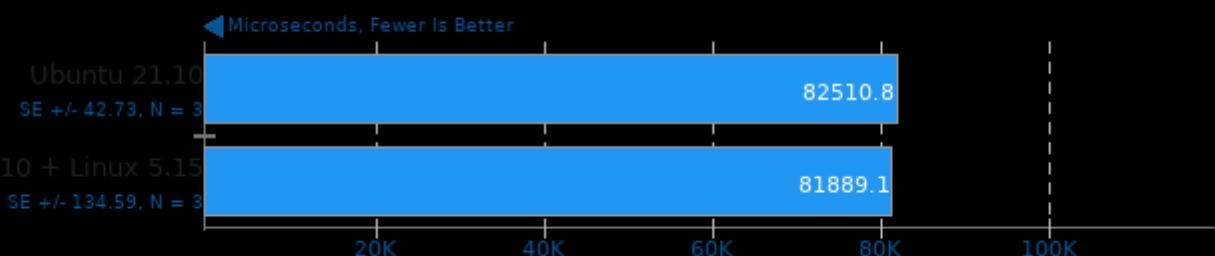
Implementation: MPI CPU - Input: water_GMX50_bare



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

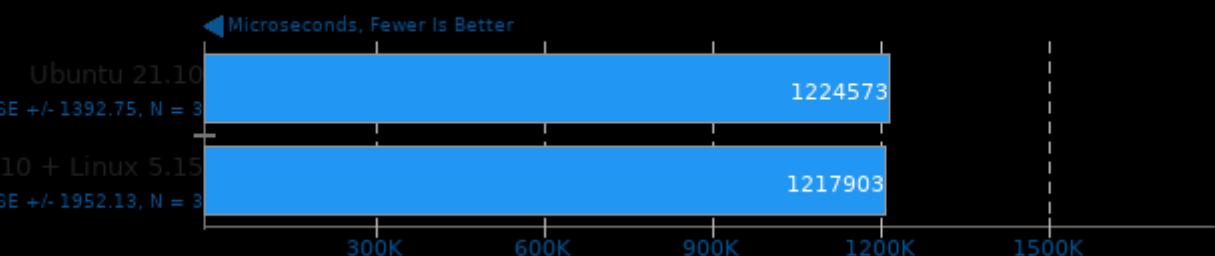
TensorFlow Lite 2020-08-23

Model: SqueezeNet



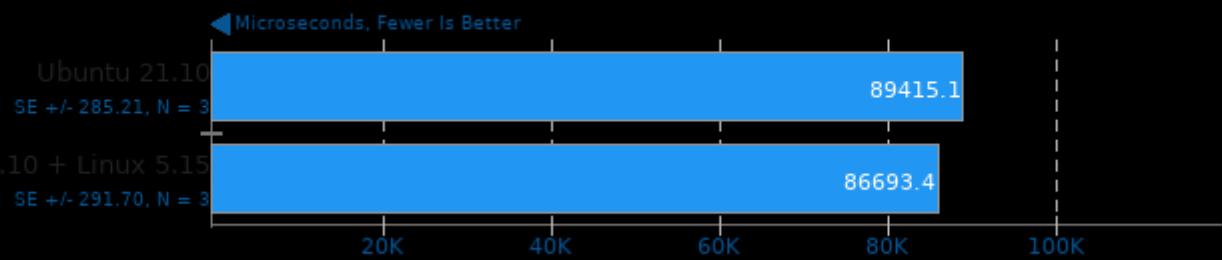
TensorFlow Lite 2020-08-23

Model: Inception V4



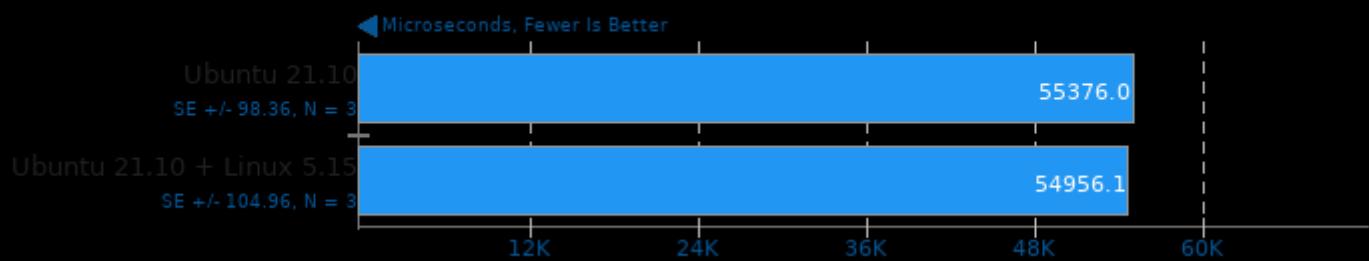
TensorFlow Lite 2020-08-23

Model: NASNet Mobile



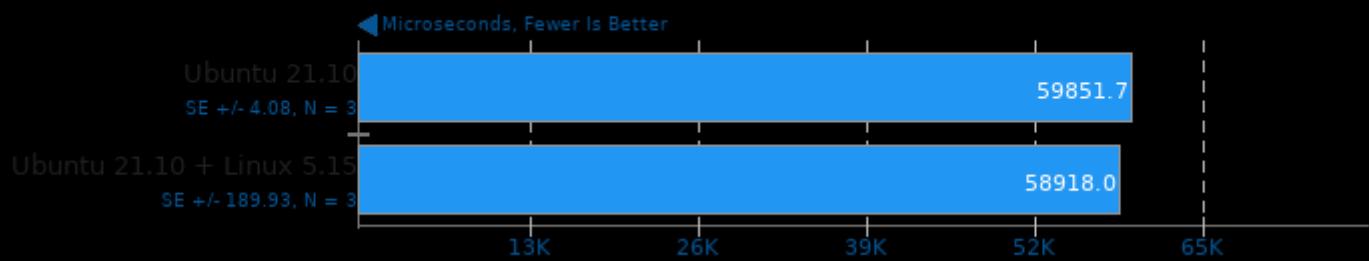
TensorFlow Lite 2020-08-23

Model: Mobilenet Float



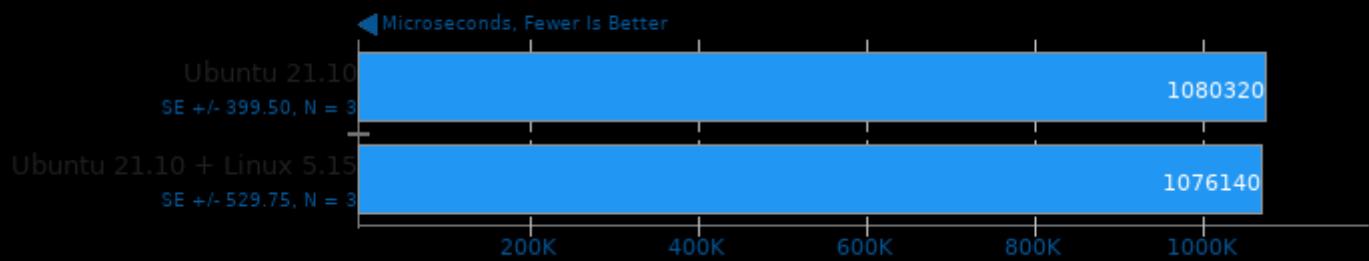
TensorFlow Lite 2020-08-23

Model: Mobilenet Quant



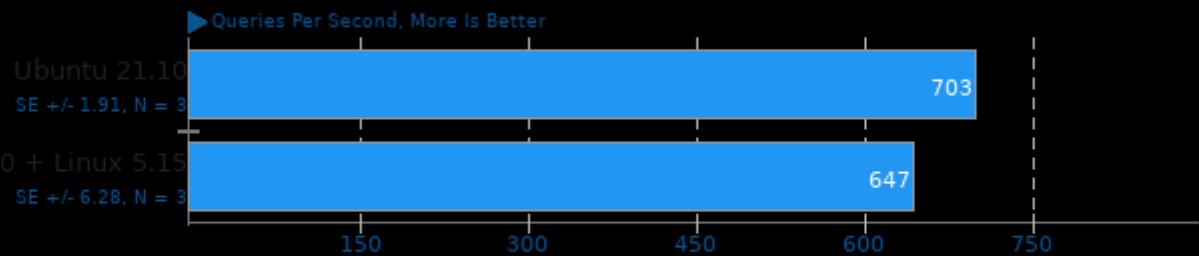
TensorFlow Lite 2020-08-23

Model: Inception ResNet V2



MariaDB 10.6.4

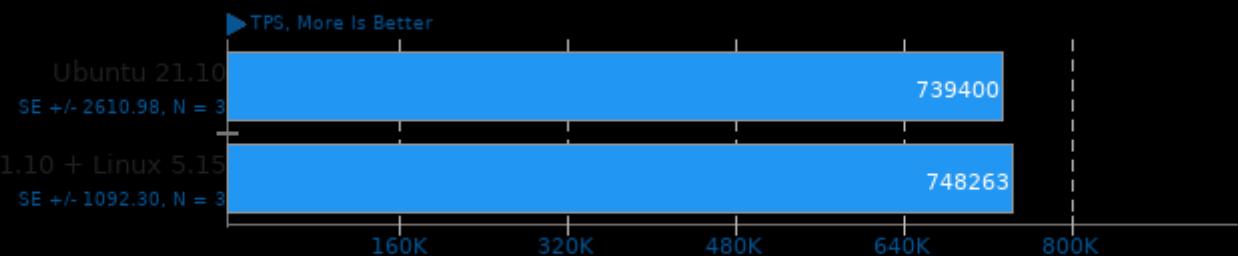
Clients: 512



1. (CXX) g++ options: -pie -fPIC -fstack-protector -O3 -llzma -lbz2 -lsnappy -lnuma -lpcre2-8 -lcrypt -laio -lz -lm -lssl -lcrypto -lpthread -ldl

PostgreSQL pgbench 14.0

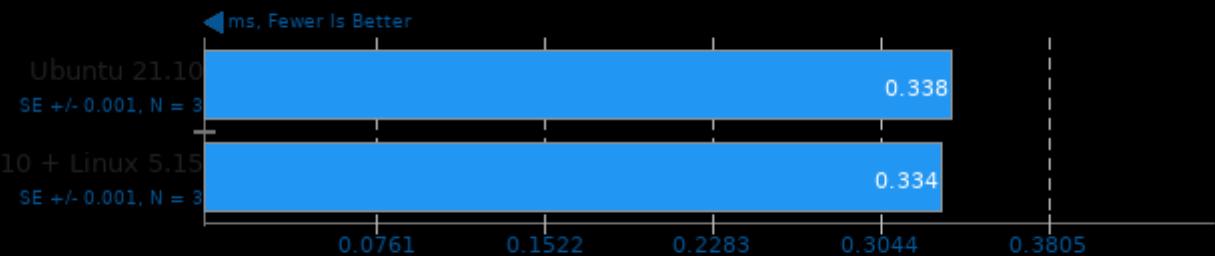
Scaling Factor: 100 - Clients: 250 - Mode: Read Only



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

PostgreSQL pgbench 14.0

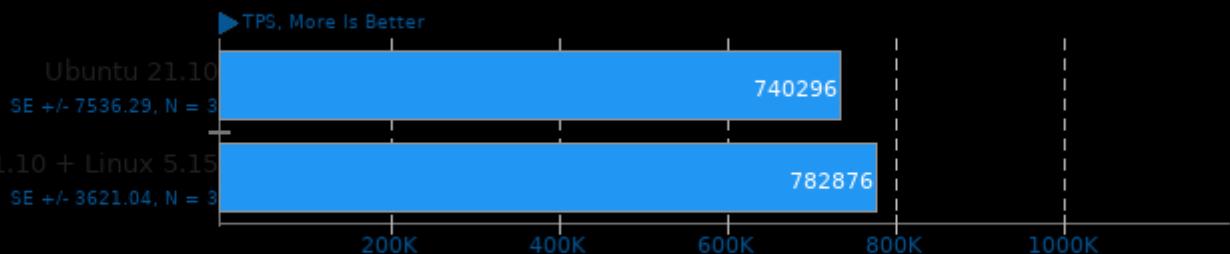
Scaling Factor: 100 - Clients: 250 - Mode: Read Only - Average Latency



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

PostgreSQL pgbench 14.0

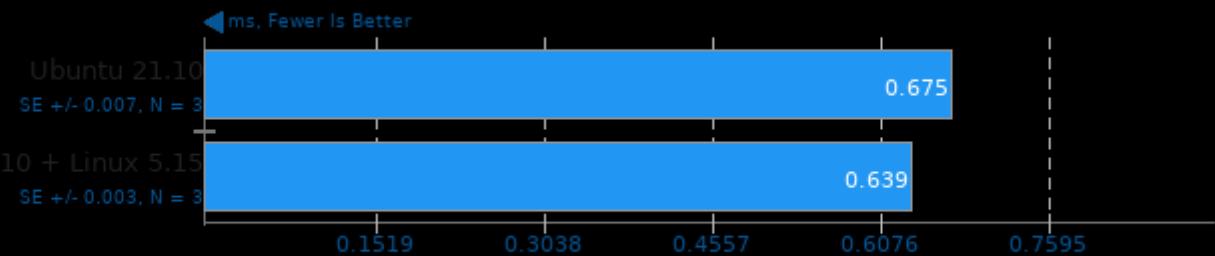
Scaling Factor: 100 - Clients: 500 - Mode: Read Only



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

PostgreSQL pgbench 14.0

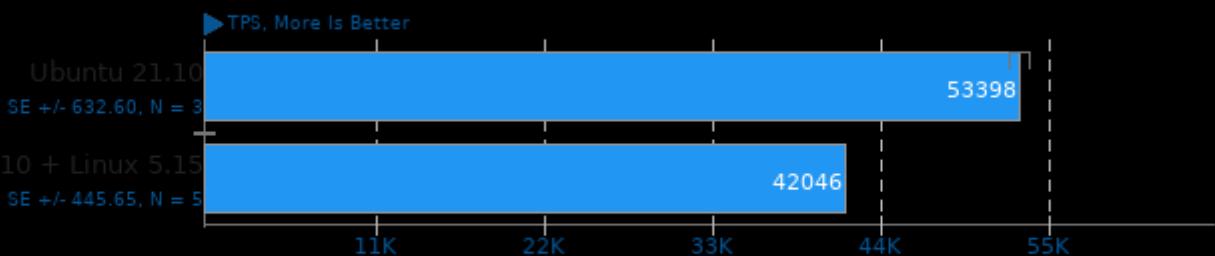
Scaling Factor: 100 - Clients: 500 - Mode: Read Only - Average Latency



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lgpgcommon -lgpgport -lpq -lm

PostgreSQL pgbench 14.0

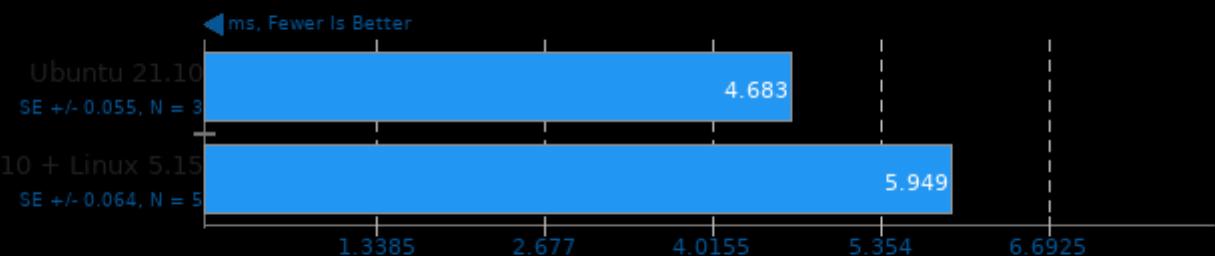
Scaling Factor: 100 - Clients: 250 - Mode: Read Write



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lgpgcommon -lgpgport -lpq -lm

PostgreSQL pgbench 14.0

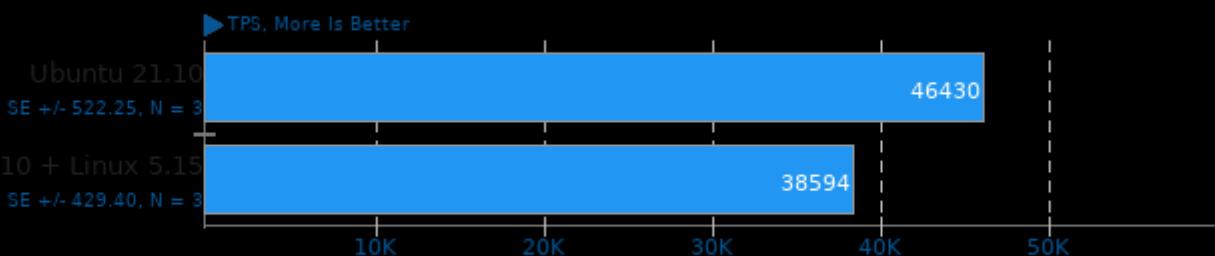
Scaling Factor: 100 - Clients: 250 - Mode: Read Write - Average Latency



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lgpgcommon -lgpgport -lpq -lm

PostgreSQL pgbench 14.0

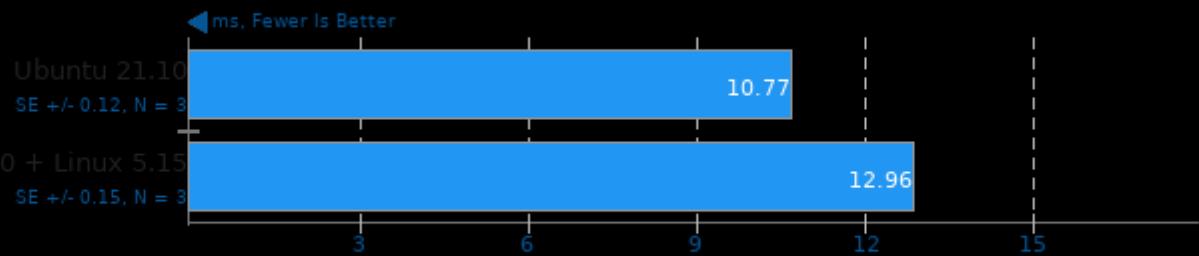
Scaling Factor: 100 - Clients: 500 - Mode: Read Write



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lgpgcommon -lgpgport -lpq -lm

PostgreSQL pgbench 14.0

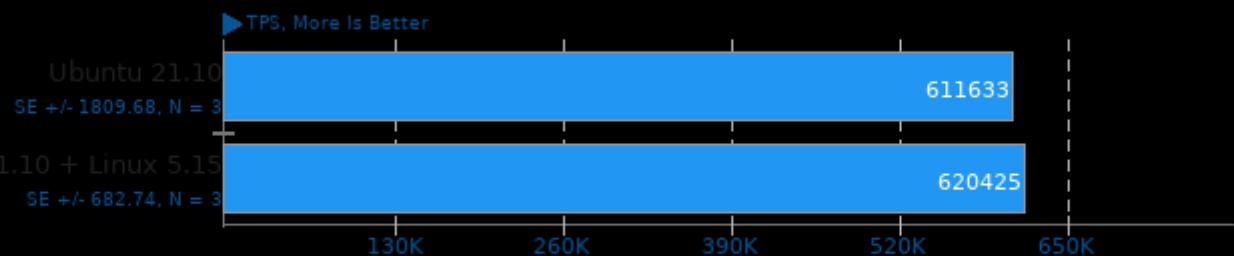
Scaling Factor: 100 - Clients: 500 - Mode: Read Write - Average Latency



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lgpgcommon -lgpgport -lpq -lm

PostgreSQL pgbench 14.0

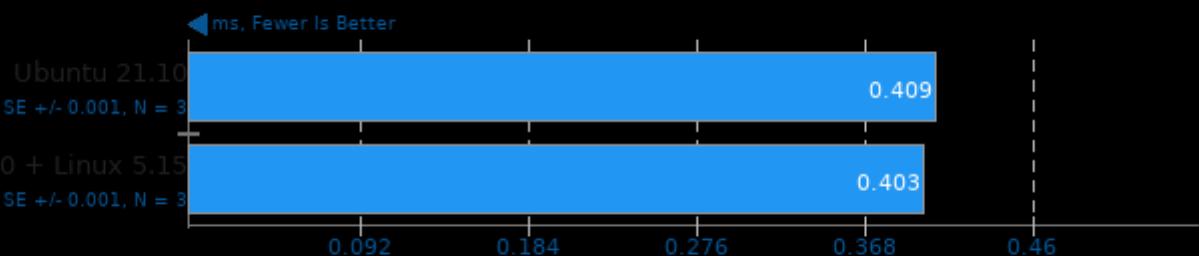
Scaling Factor: 1000 - Clients: 250 - Mode: Read Only



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lgpgcommon -lgpgport -lpq -lm

PostgreSQL pgbench 14.0

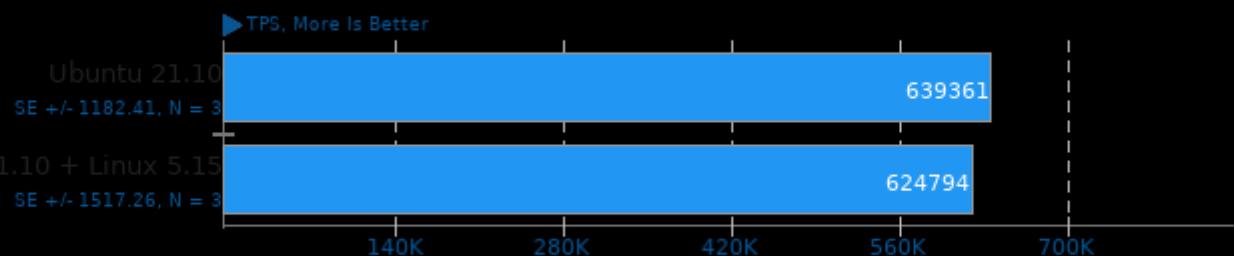
Scaling Factor: 1000 - Clients: 250 - Mode: Read Only - Average Latency



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lgpgcommon -lgpgport -lpq -lm

PostgreSQL pgbench 14.0

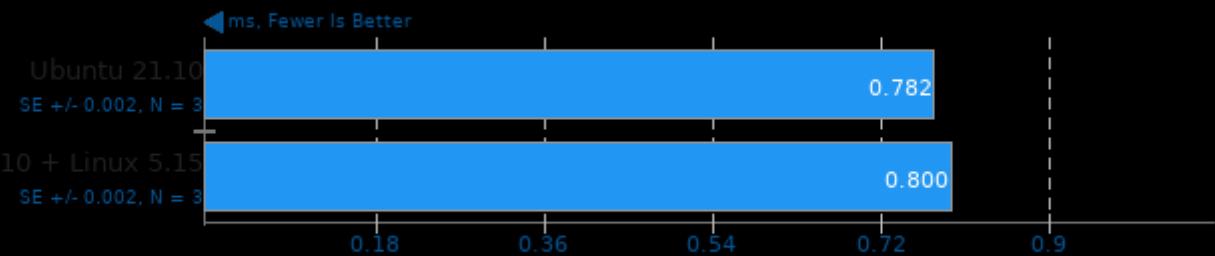
Scaling Factor: 1000 - Clients: 500 - Mode: Read Only



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lgpgcommon -lgpgport -lpq -lm

PostgreSQL pgbench 14.0

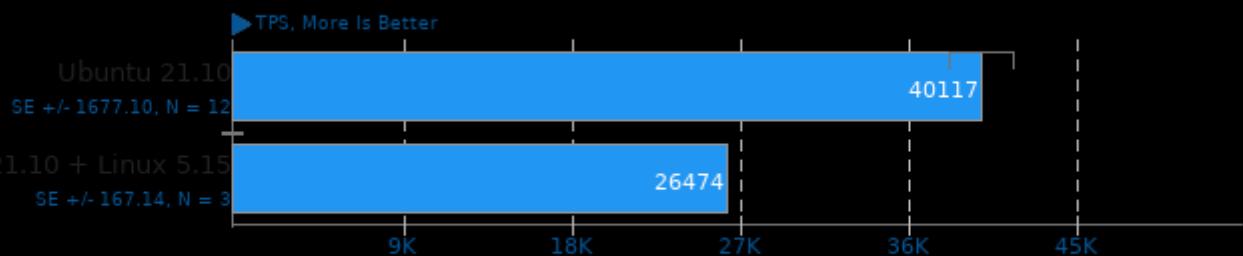
Scaling Factor: 1000 - Clients: 500 - Mode: Read Only - Average Latency



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lgpgcommon -lgpgport -lpq -lm

PostgreSQL pgbench 14.0

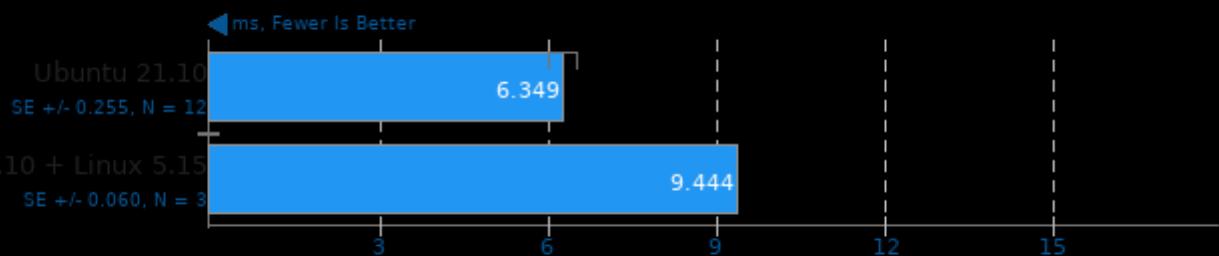
Scaling Factor: 1000 - Clients: 250 - Mode: Read Write



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lgpgcommon -lgpgport -lpq -lm

PostgreSQL pgbench 14.0

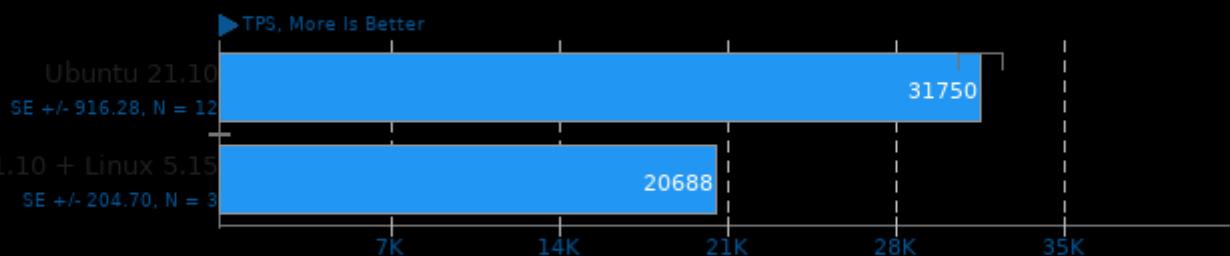
Scaling Factor: 1000 - Clients: 250 - Mode: Read Write - Average Latency



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lgpgcommon -lgpgport -lpq -lm

PostgreSQL pgbench 14.0

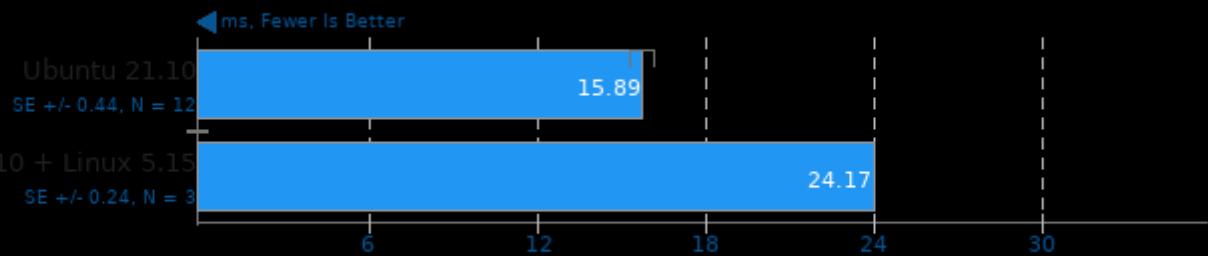
Scaling Factor: 1000 - Clients: 500 - Mode: Read Write



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lgpgcommon -lgpgport -lpq -lm

PostgreSQL pgbench 14.0

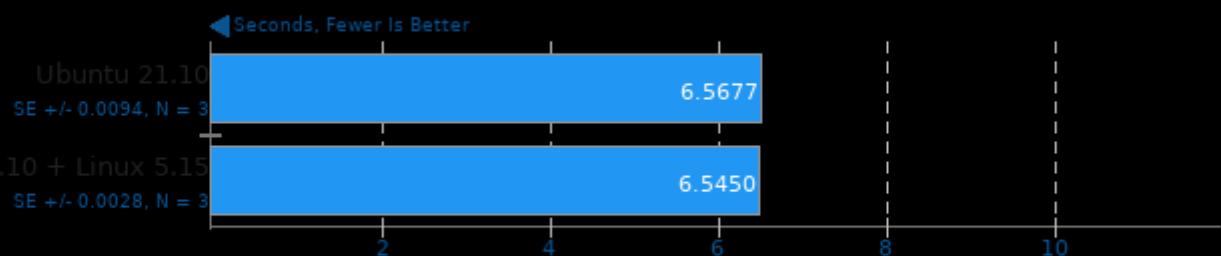
Scaling Factor: 1000 - Clients: 500 - Mode: Read Write - Average Latency



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

ASTC Encoder 3.2

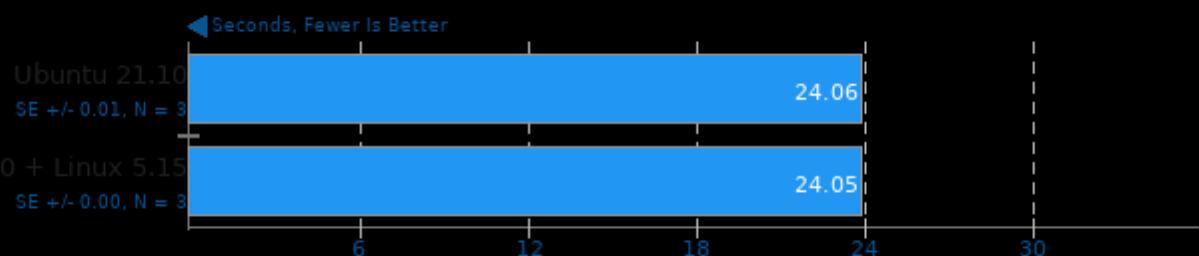
Preset: Thorough



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

ASTC Encoder 3.2

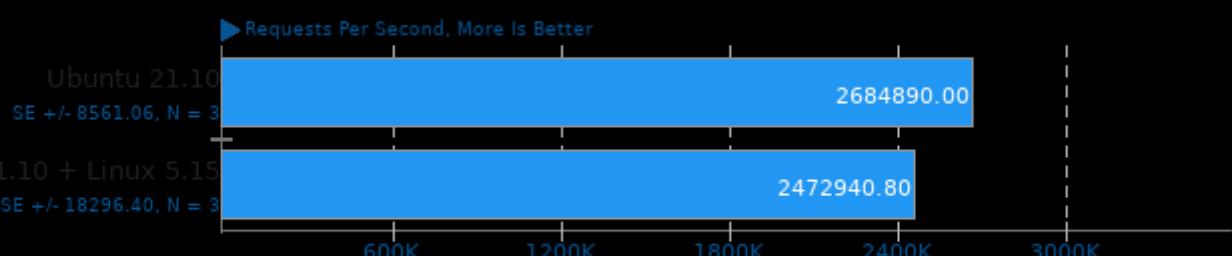
Preset: Exhaustive



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

Redis 6.0.9

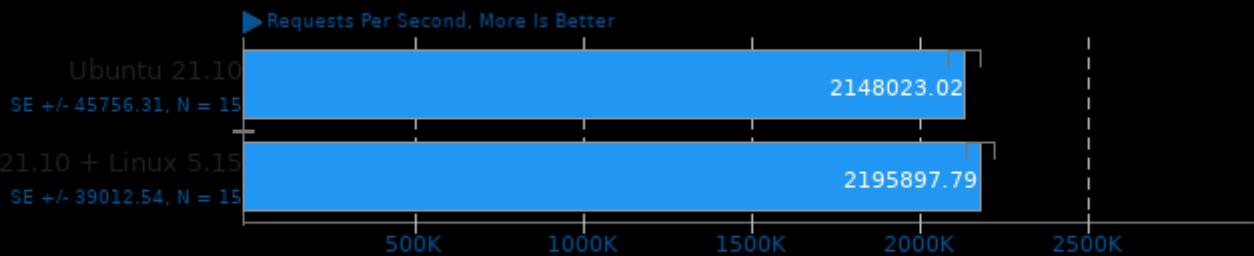
Test: GET



1. (CXX) g++ options: -MM -MT -g3 -fvisibility=hidden -O3

Redis 6.0.9

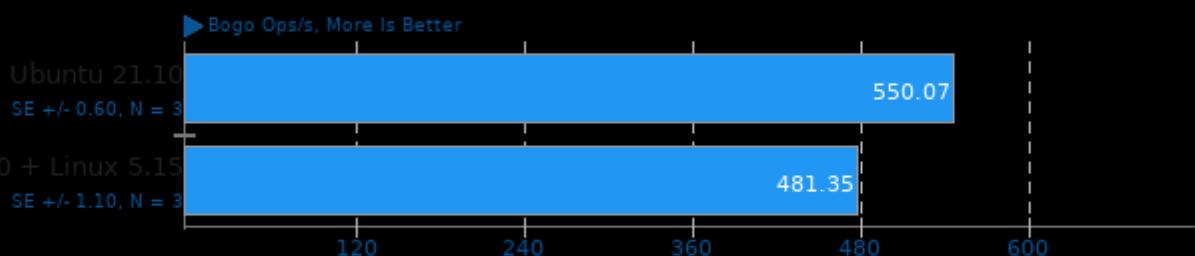
Test: SET



1. (CXX) g++ options: -MM -MT -g3 -fvisibility=hidden -O3

Stress-NG 0.13.02

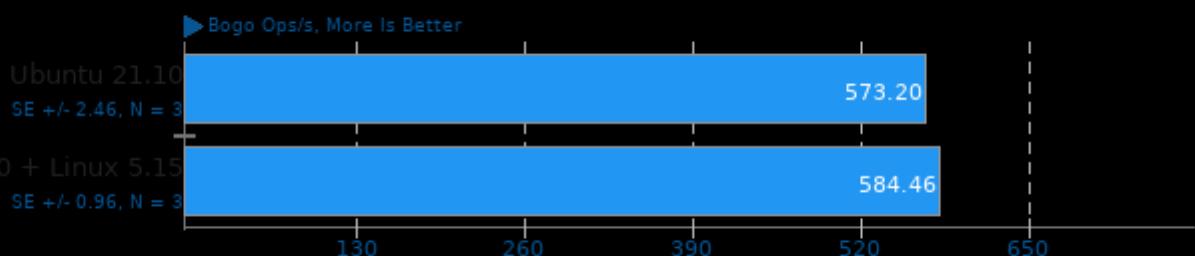
Test: MMAP



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

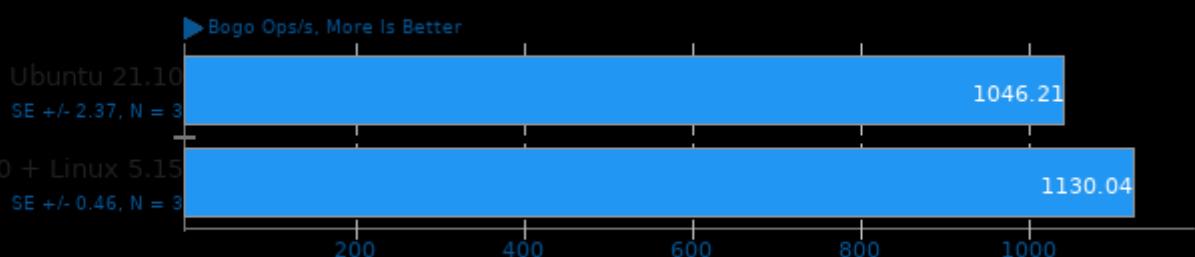
Test: NUMA



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

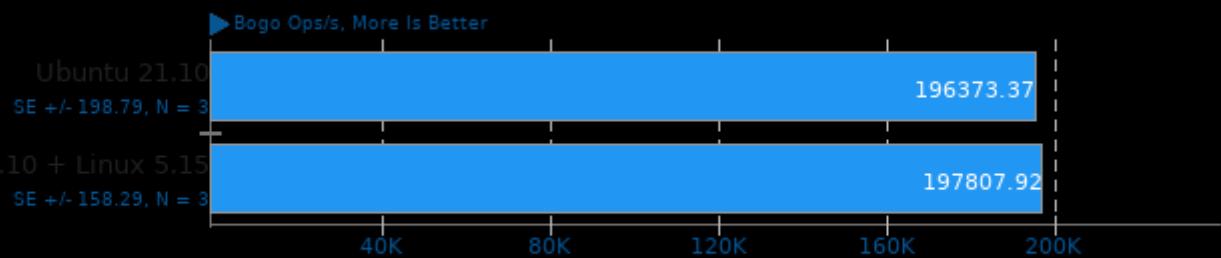
Test: MEMFD



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

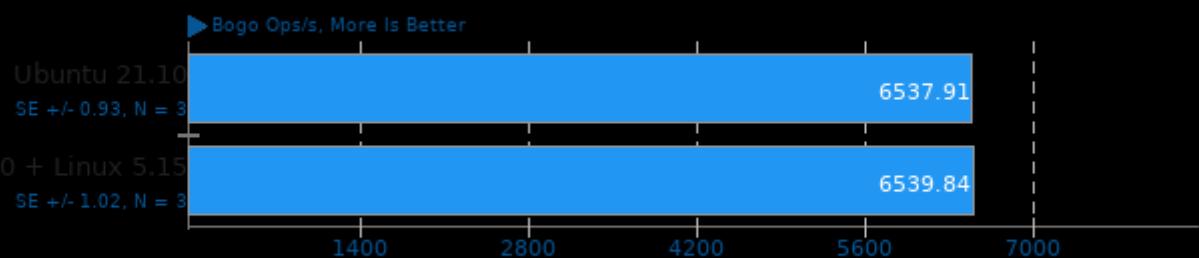
Test: Atomic



1. (CC) gcc options: -O2 -std=gnu99 -lm -lao -lcrypt -lrt -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

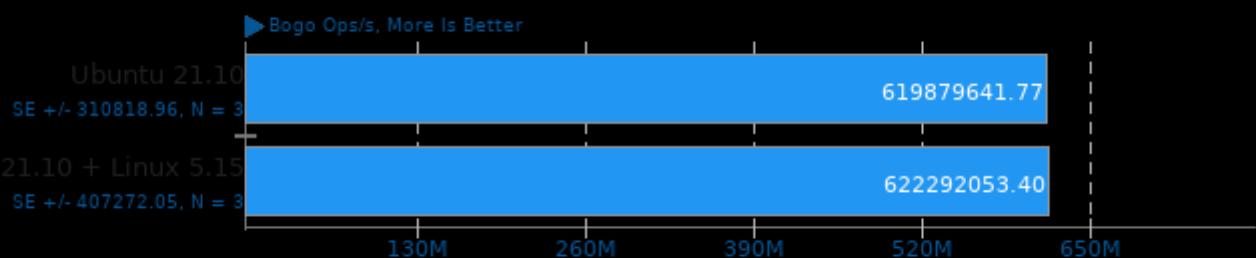
Test: Crypto



1. (CC) gcc options: -O2 -std=gnu99 -lm -lao -lcrypt -lrt -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

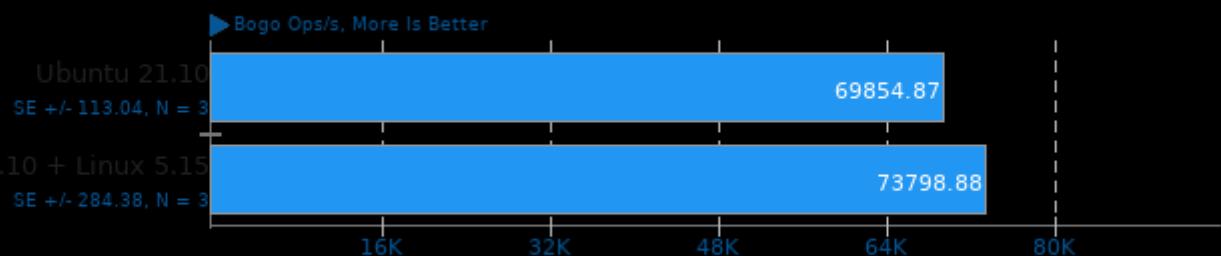
Test: Malloc



1. (CC) gcc options: -O2 -std=gnu99 -lm -lao -lcrypt -lrt -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

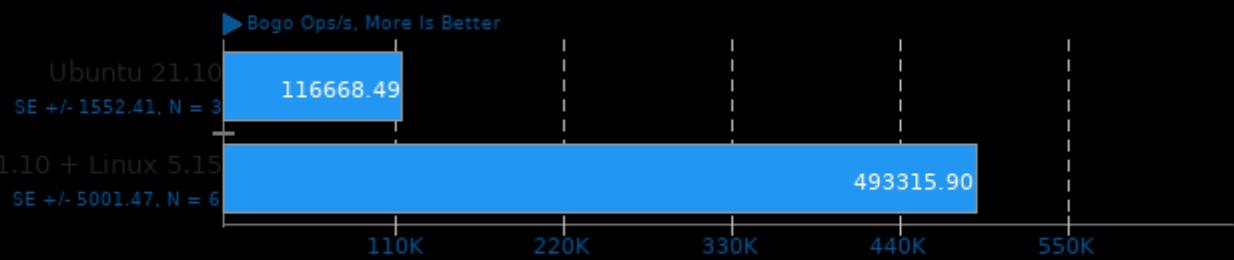
Test: Forking



1. (CC) gcc options: -O2 -std=gnu99 -lm -lao -lcrypt -lrt -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

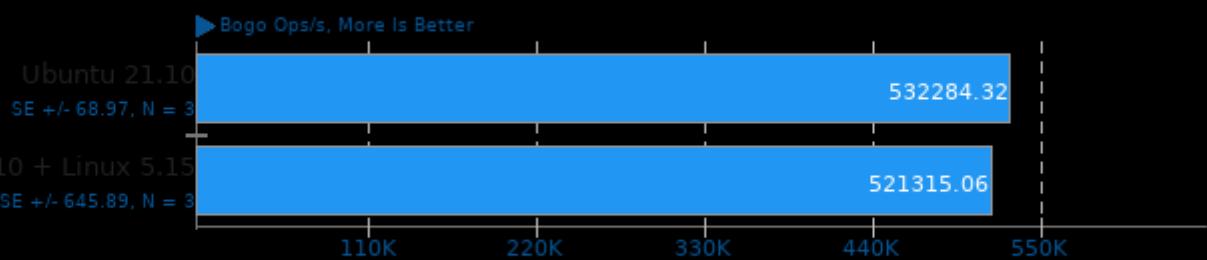
Test: IO_uring



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

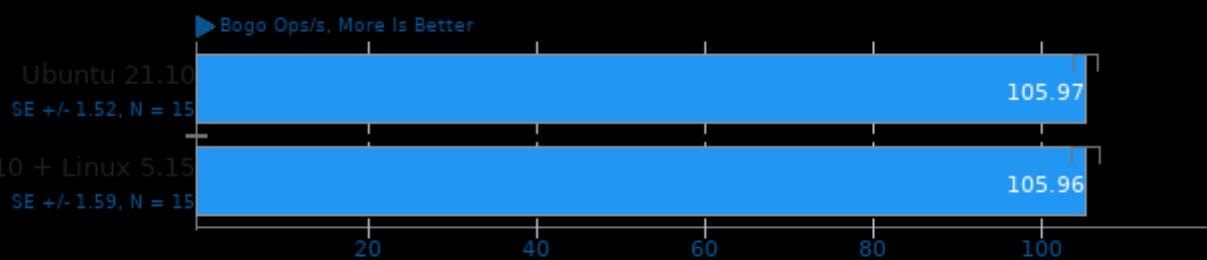
Test: SENDFILE



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

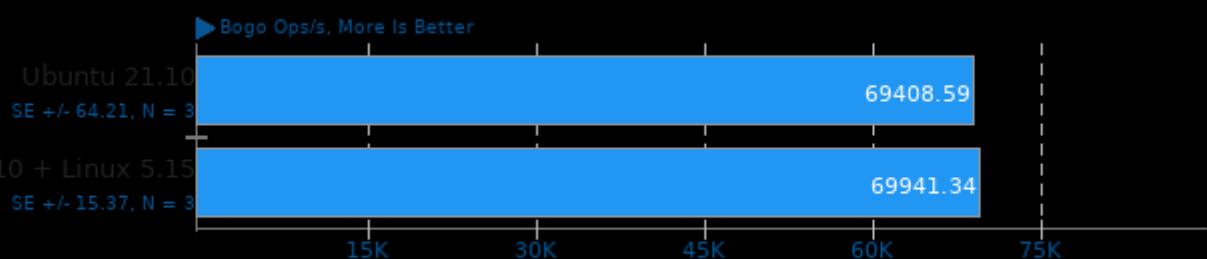
Test: CPU Cache



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

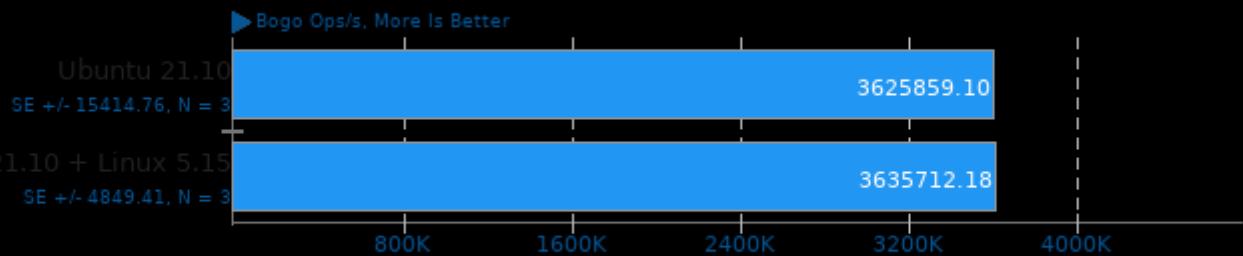
Test: CPU Stress



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

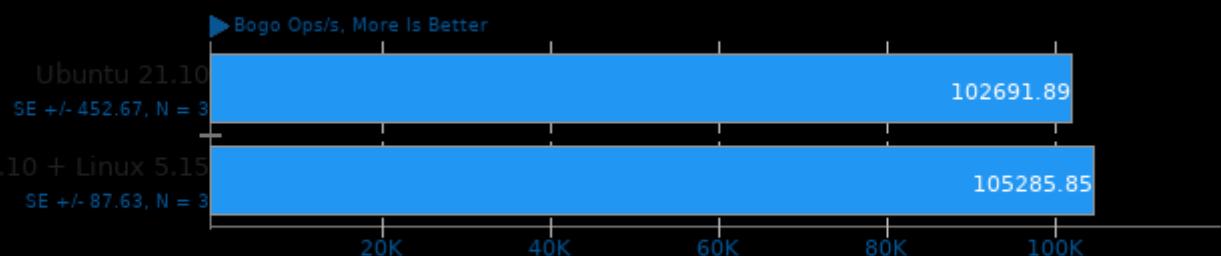
Test: Semaphores



1. (CC) gcc options: -O2 -std=gnu99 -lm -lao -lcrypt -lrt -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

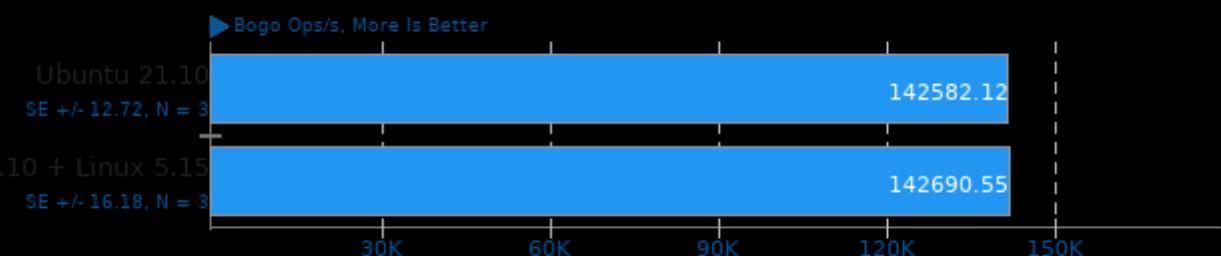
Test: Matrix Math



1. (CC) gcc options: -O2 -std=gnu99 -lm -lao -lcrypt -lrt -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

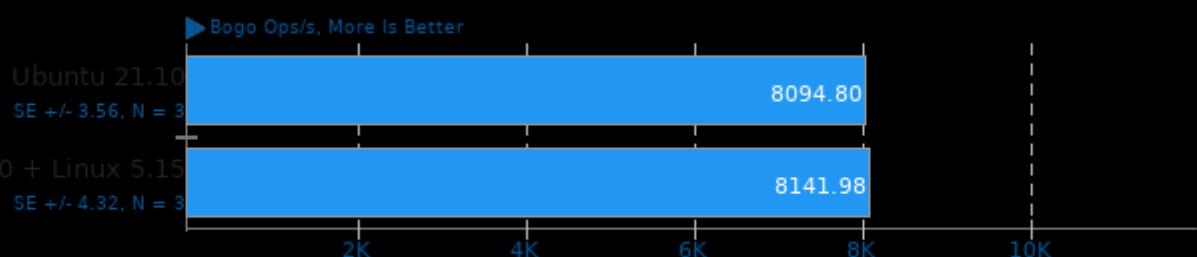
Test: Vector Math



1. (CC) gcc options: -O2 -std=gnu99 -lm -lao -lcrypt -lrt -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

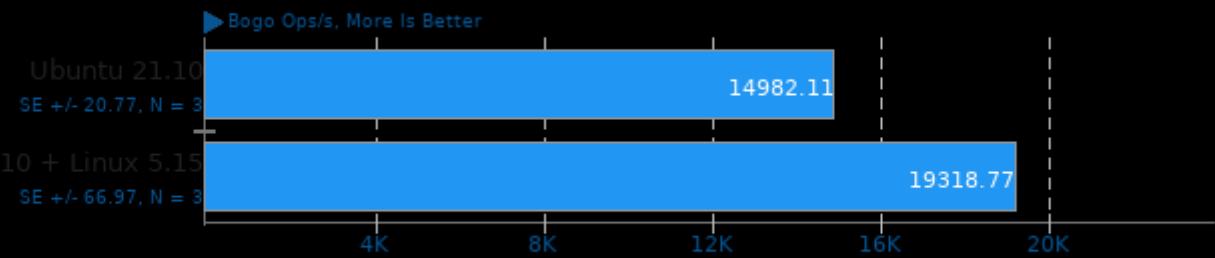
Test: Memory Copying



1. (CC) gcc options: -O2 -std=gnu99 -lm -lao -lcrypt -lrt -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

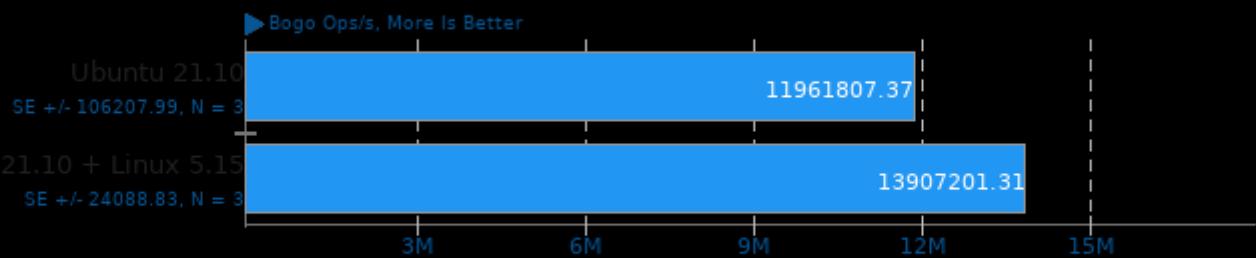
Test: Socket Activity



1. (CC) gcc options: -O2 -std=gnu99 -lm -lao -lcrypt -lrt -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

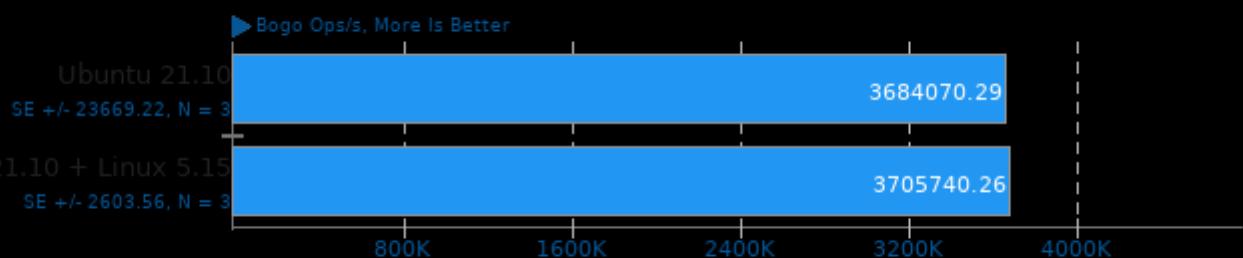
Test: Context Switching



1. (CC) gcc options: -O2 -std=gnu99 -lm -lao -lcrypt -lrt -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

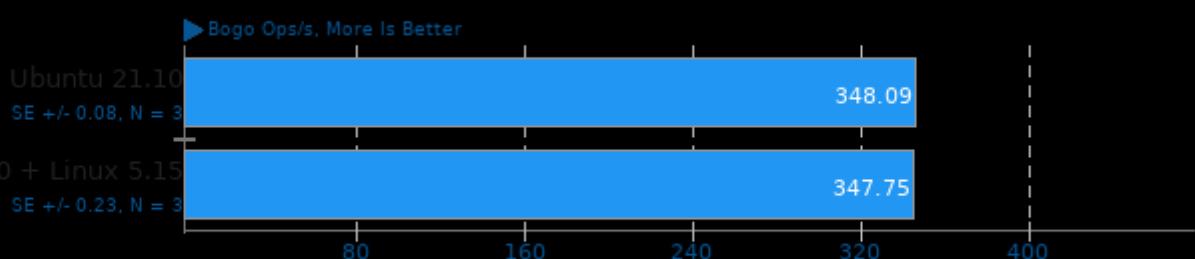
Test: Glibc C String Functions



1. (CC) gcc options: -O2 -std=gnu99 -lm -lao -lcrypt -lrt -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

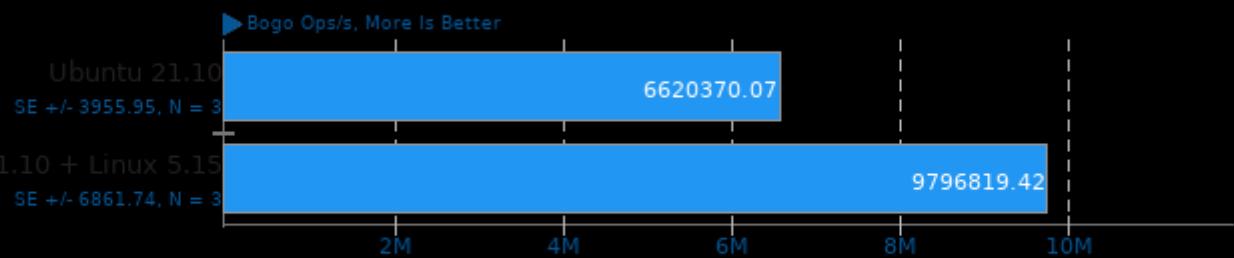
Test: Glibc Qsort Data Sorting



1. (CC) gcc options: -O2 -std=gnu99 -lm -lao -lcrypt -lrt -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

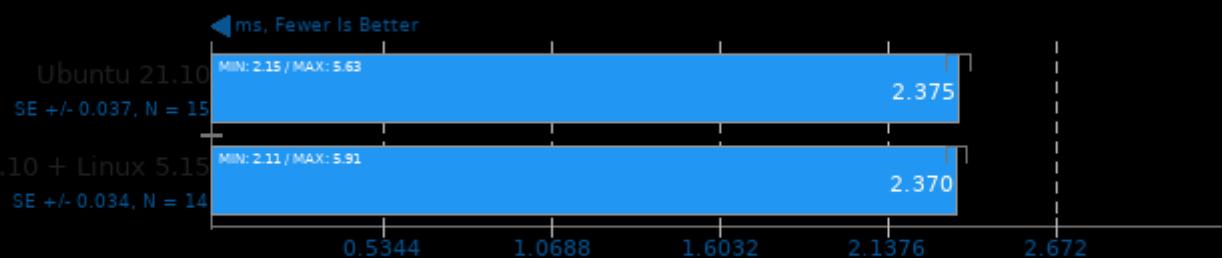
Test: System V Message Passing



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lz -ldl -pthread -lc -latomic

Mobile Neural Network 1.2

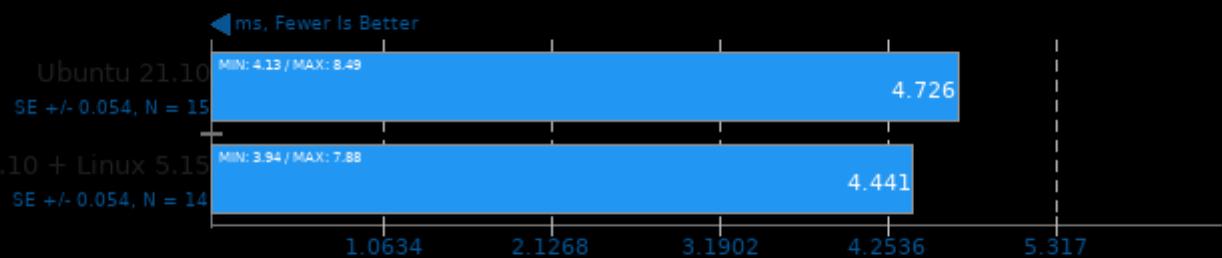
Model: mobilenetV3



1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fno-threadsafe-statics

Mobile Neural Network 1.2

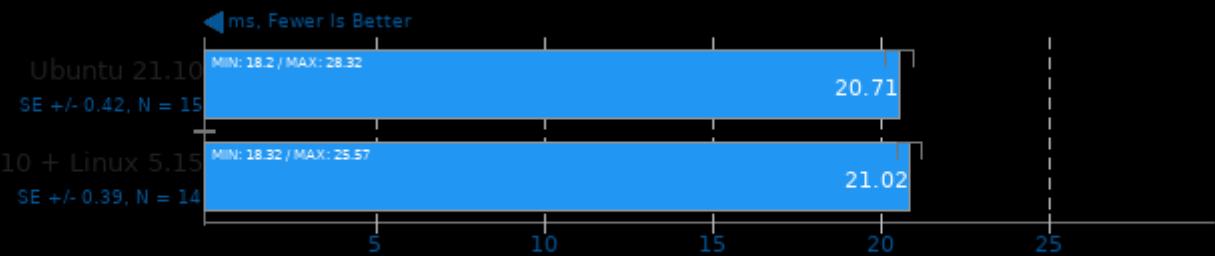
Model: squeezenetv1.1



1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fno-threadsafe-statics

Mobile Neural Network 1.2

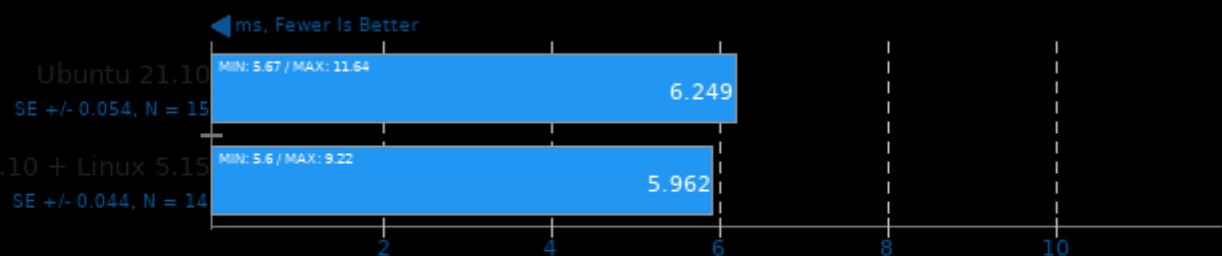
Model: resnet-v2-50



1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fno-threadsafe-statics

Mobile Neural Network 1.2

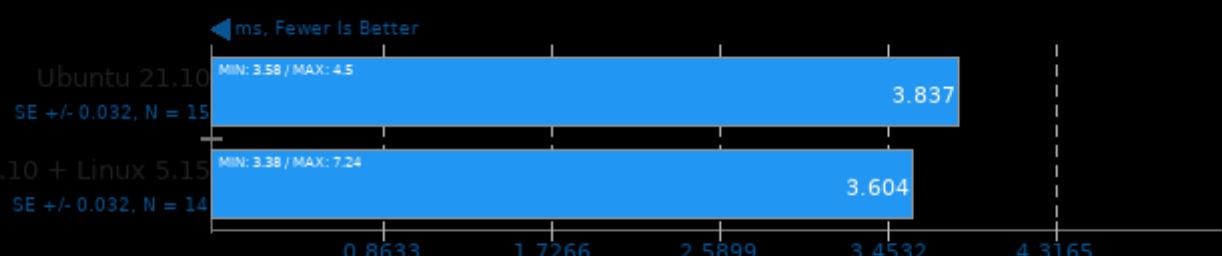
Model: SqueezeNetV1.0



1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fno-threadsafe-statics

Mobile Neural Network 1.2

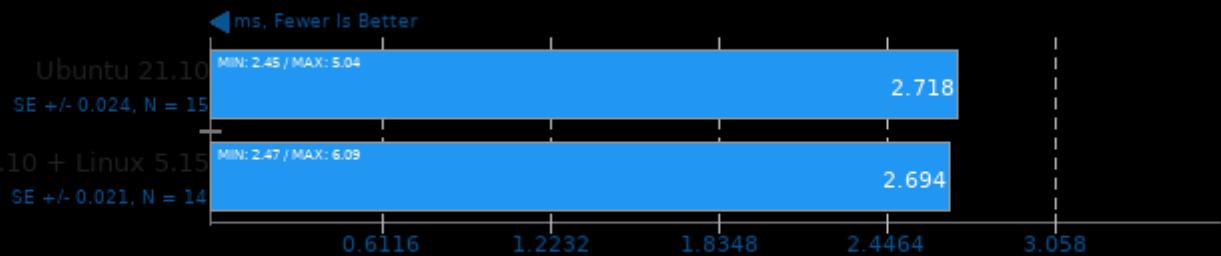
Model: MobileNetV2_224



1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fno-threadsafe-statics

Mobile Neural Network 1.2

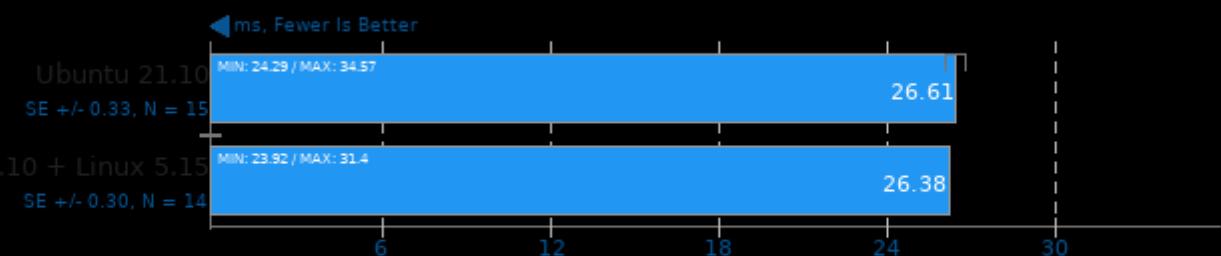
Model: mobilenet-v1-1.0



```
1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fno-threadsafe-statics
```

Mobile Neural Network 1.2

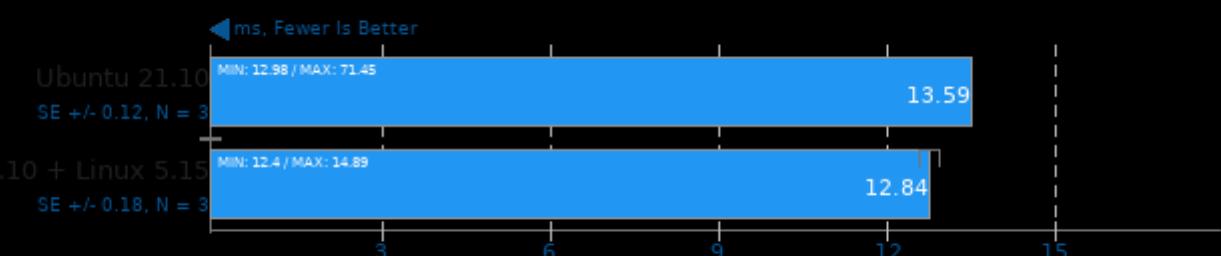
Model: inception-v3



```
1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fno-threadsafe-statics
```

NCNN 20210720

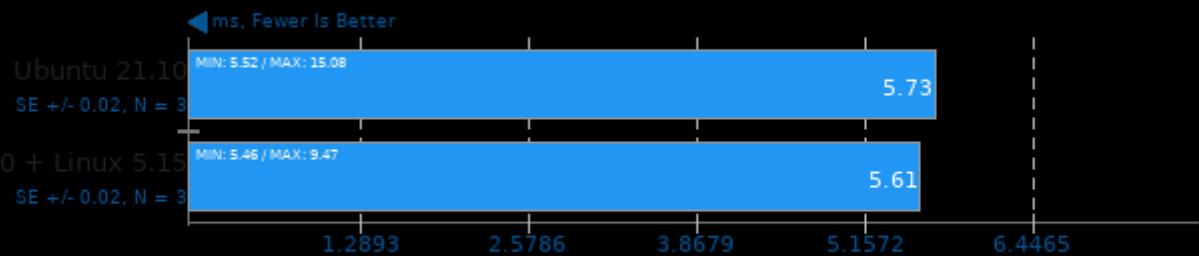
Target: CPU - Model: mobilenet



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

NCNN 20210720

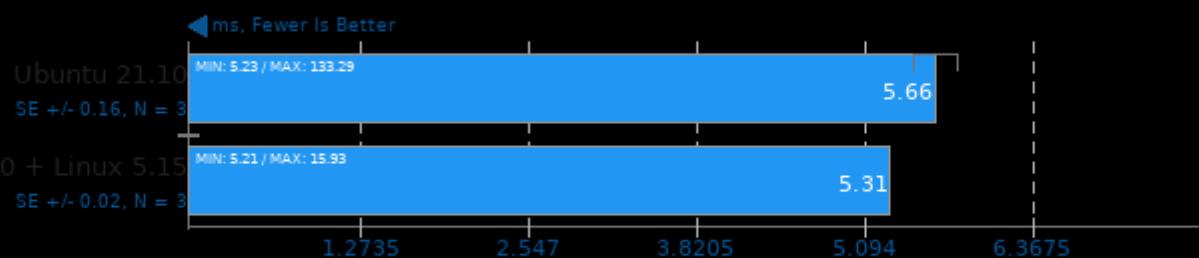
Target: CPU-v2-v2 - Model: mobilenet-v2



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

NCNN 20210720

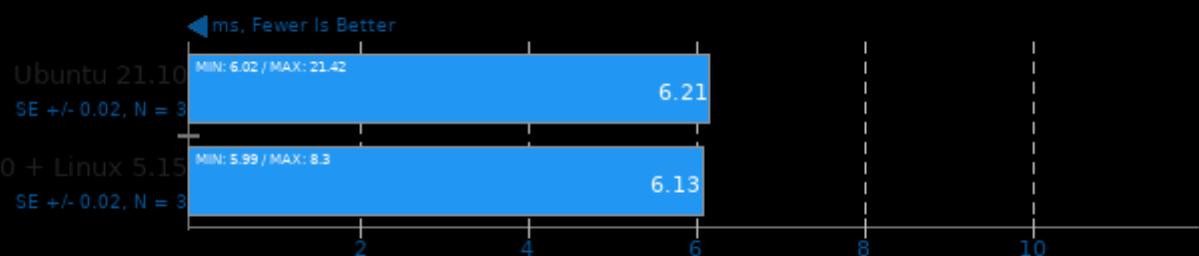
Target: CPU-v3-v3 - Model: mobilenet-v3



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

NCNN 20210720

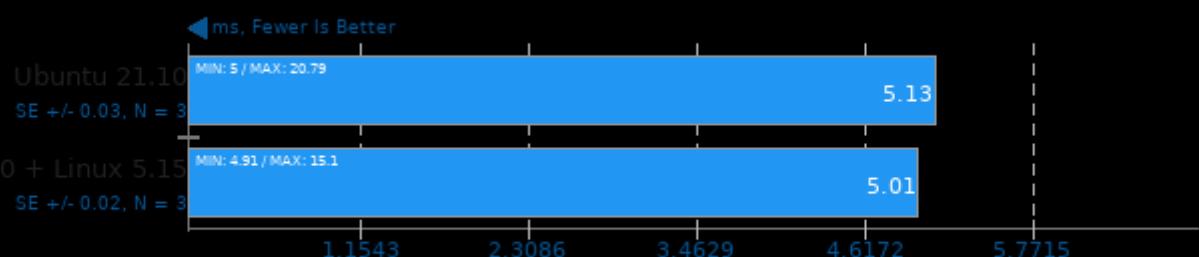
Target: CPU - Model: shufflenet-v2



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

NCNN 20210720

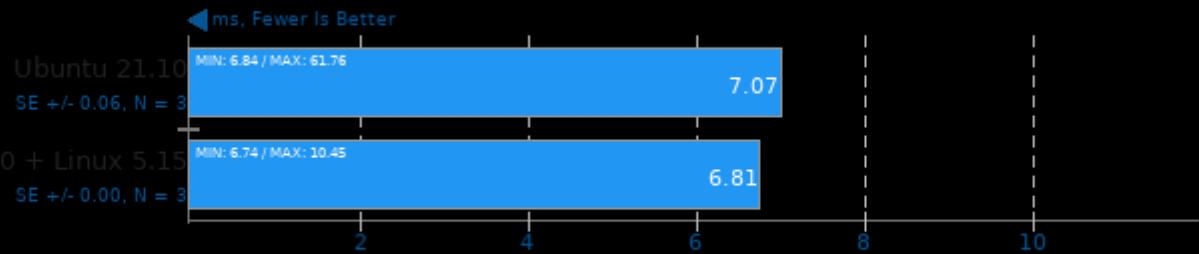
Target: CPU - Model: mnasnet



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

NCNN 20210720

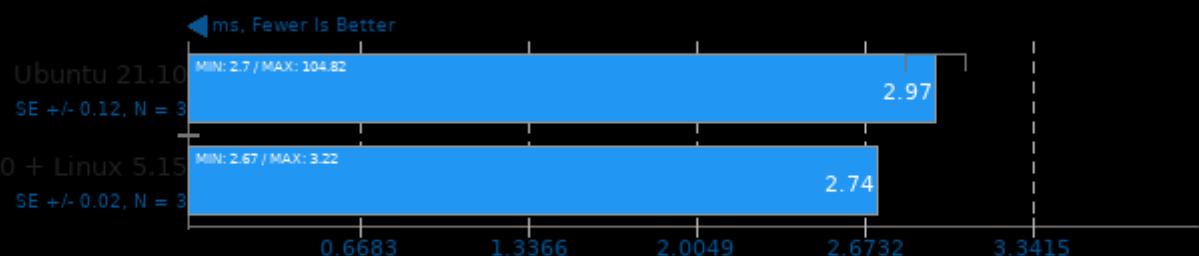
Target: CPU - Model: efficientnet-b0



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

NCNN 20210720

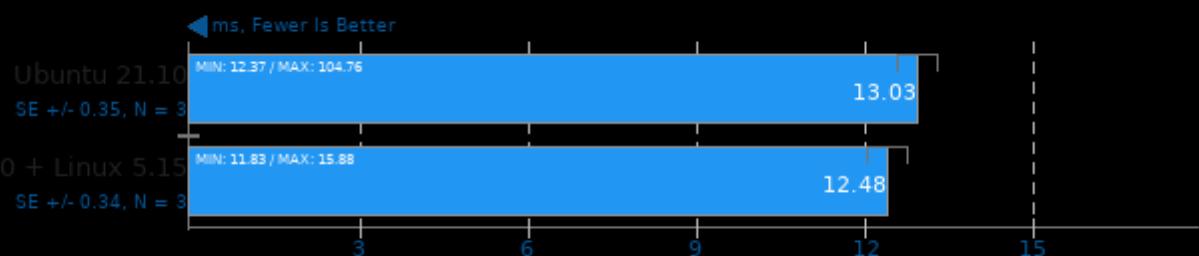
Target: CPU - Model: blazeface



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

NCNN 20210720

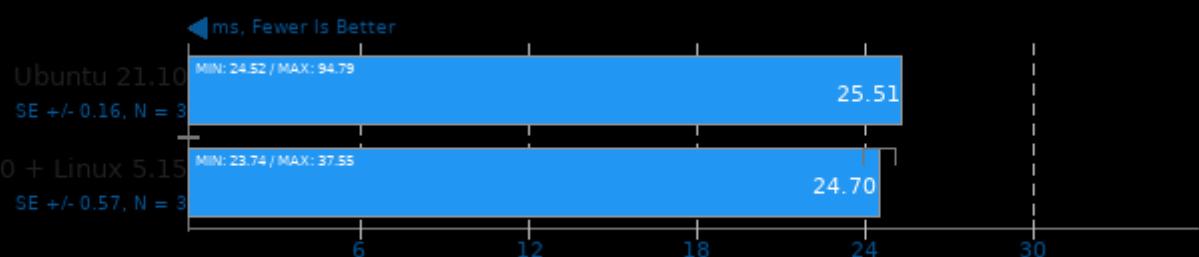
Target: CPU - Model: googlenet



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

NCNN 20210720

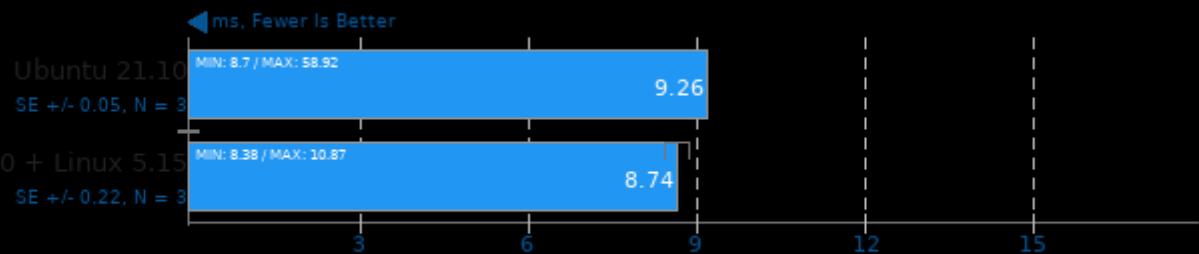
Target: CPU - Model: vgg16



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

NCNN 20210720

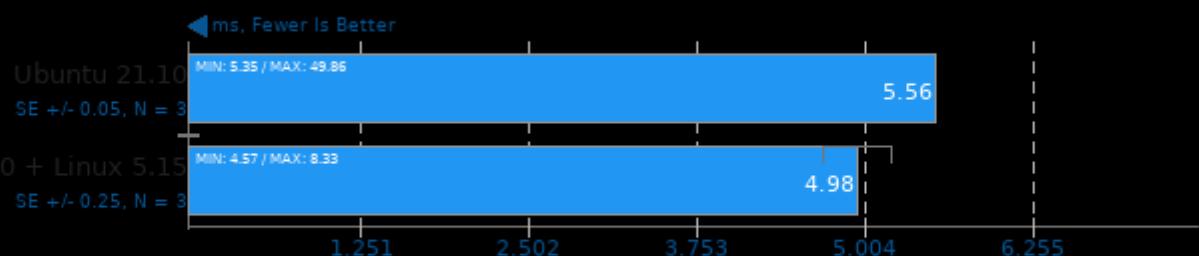
Target: CPU - Model: resnet18



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

NCNN 20210720

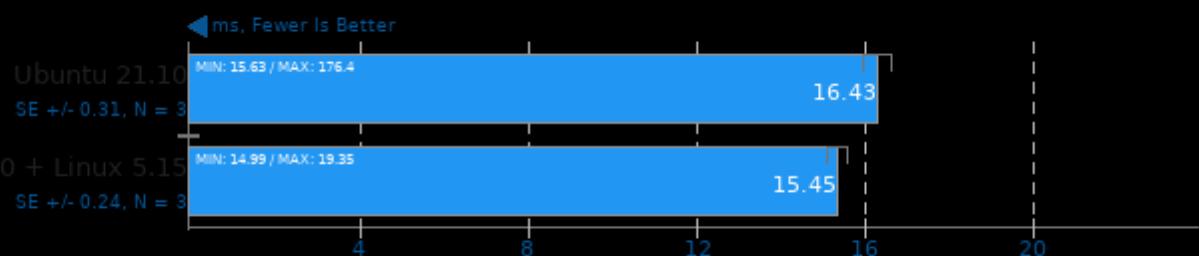
Target: CPU - Model: alexnet



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

NCNN 20210720

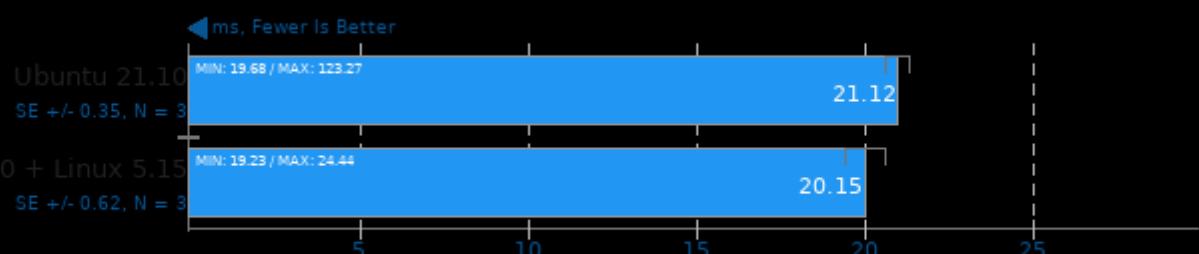
Target: CPU - Model: resnet50



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

NCNN 20210720

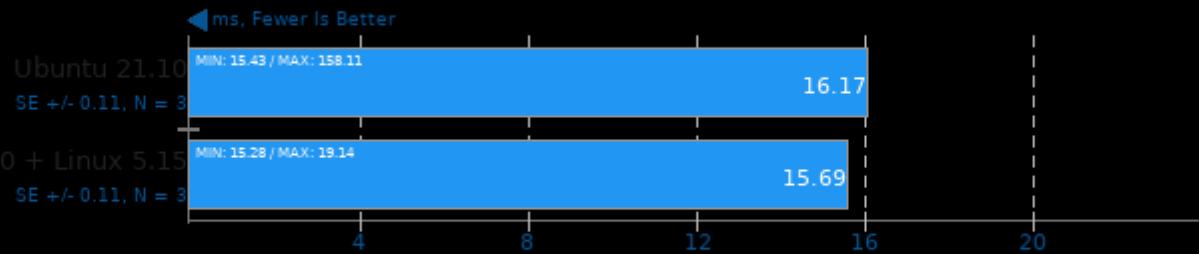
Target: CPU - Model: yolov4-tiny



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

NCNN 20210720

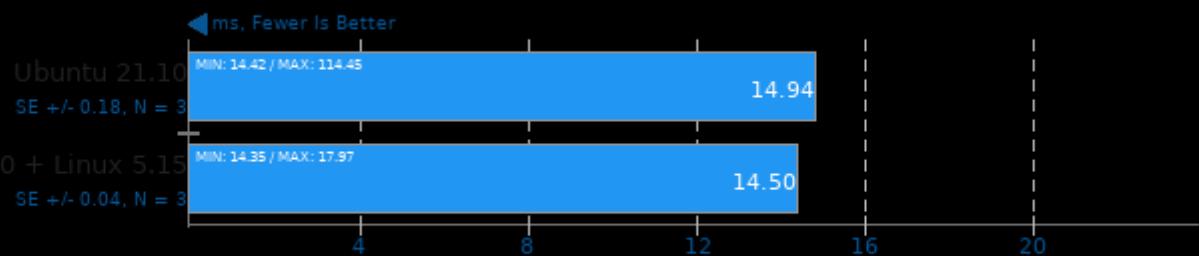
Target: CPU - Model: squeezeenet_ssd



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

NCNN 20210720

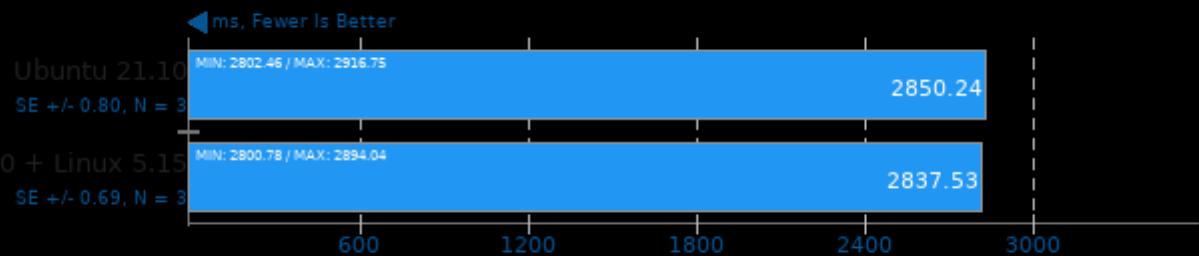
Target: CPU - Model: regnety_400m



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

TNN 0.3

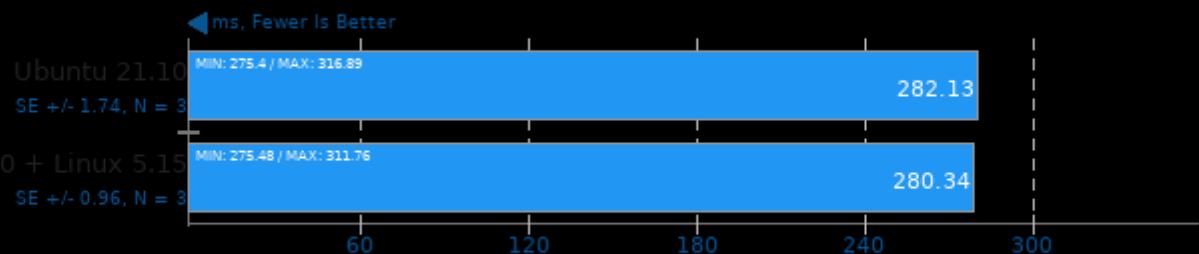
Target: CPU - Model: DenseNet



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

TNN 0.3

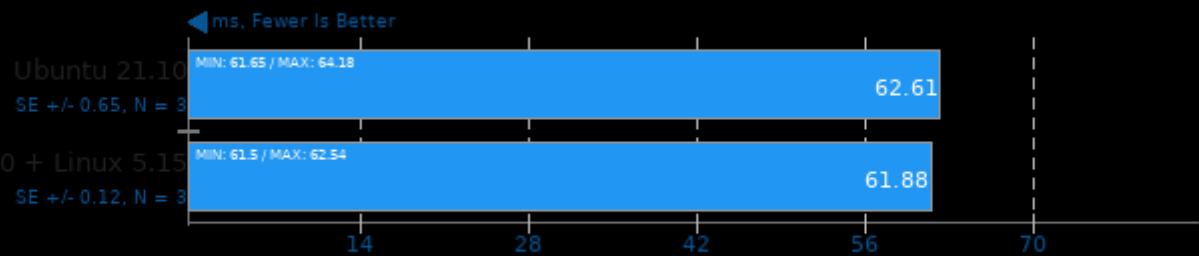
Target: CPU - Model: MobileNet v2



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

TNN 0.3

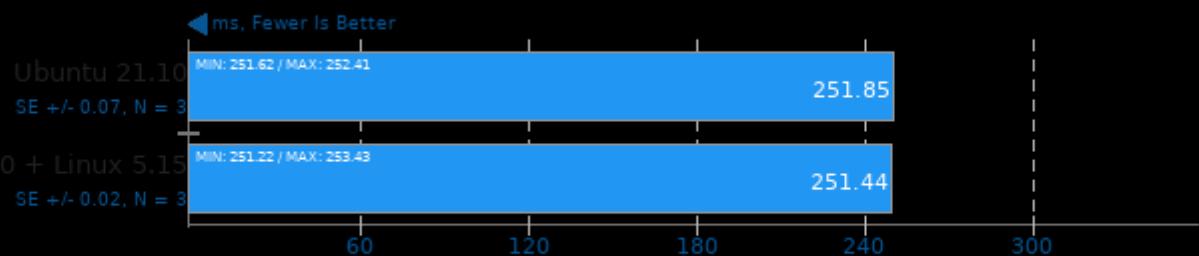
Target: CPU - Model: SqueezeNet v2



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

TNN 0.3

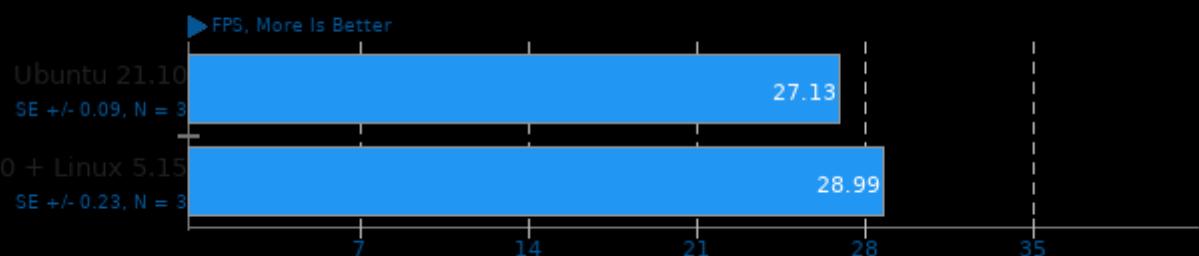
Target: CPU - Model: SqueezeNet v1.1



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

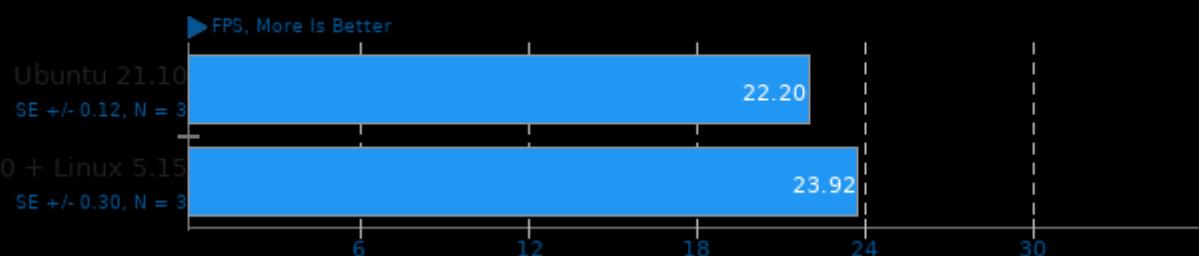
PlaidML

FP16: No - Mode: Inference - Network: VGG16 - Device: CPU



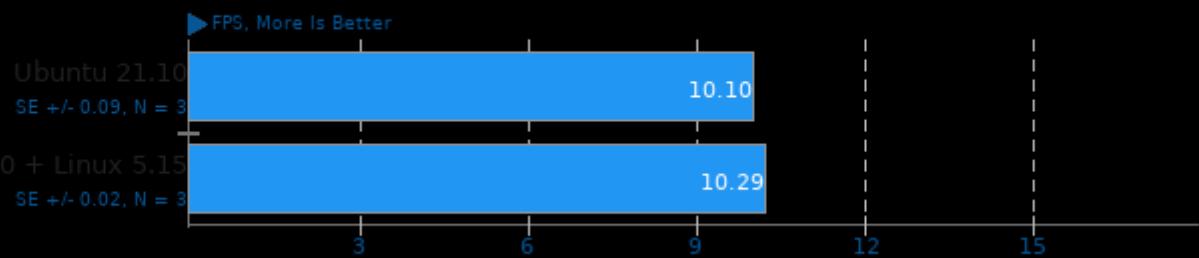
PlaidML

FP16: No - Mode: Inference - Network: VGG19 - Device: CPU



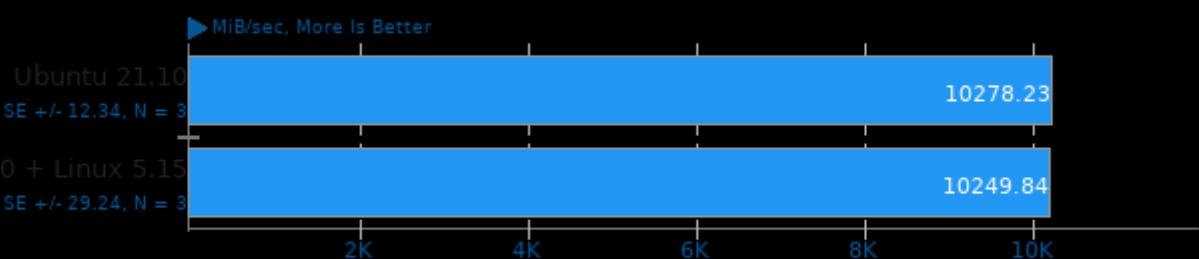
PlaidML

FP16: No - Mode: Inference - Network: ResNet 50 - Device: CPU



Sysbench 1.0.20

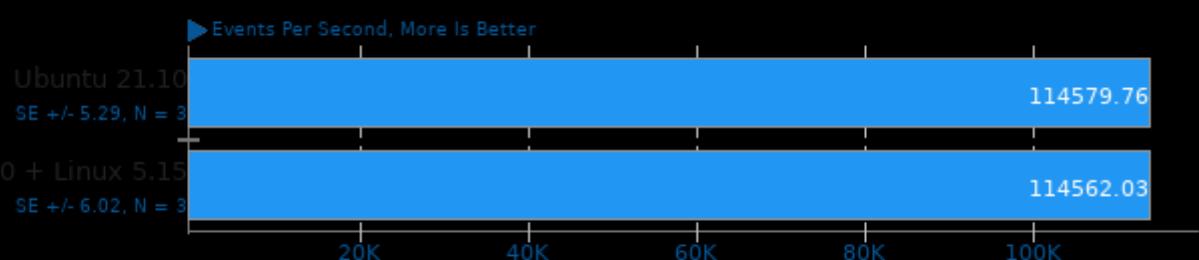
Test: RAM / Memory



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

Sysbench 1.0.20

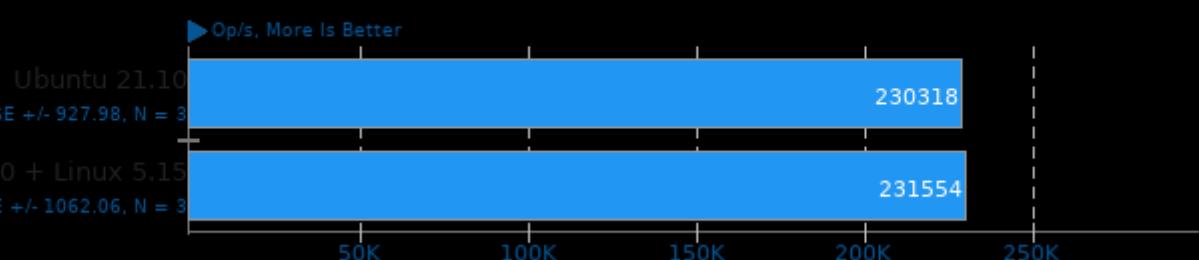
Test: CPU



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

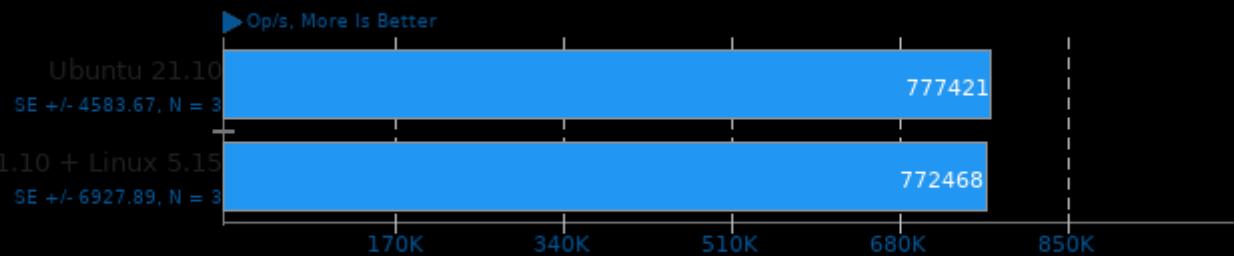
Apache Cassandra 4.0

Test: Writes



Facebook RocksDB 6.22.1

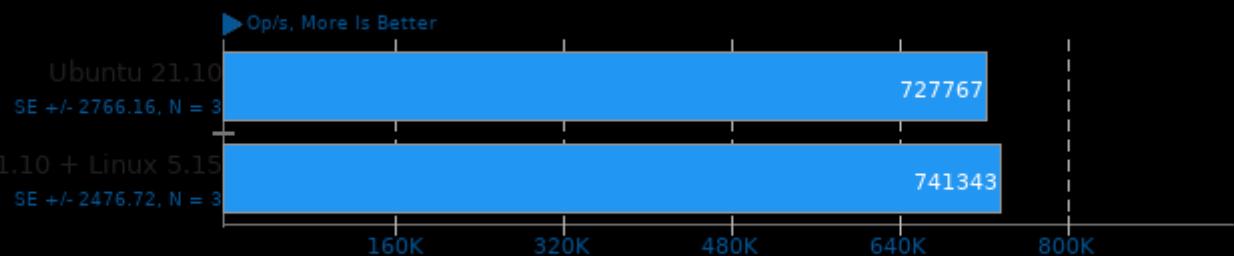
Test: Random Fill



1. (CXX) g++ options: -O3 -march=native -pthread -fno-builtin-memcmp -fno-rtti -lpthread

Facebook RocksDB 6.22.1

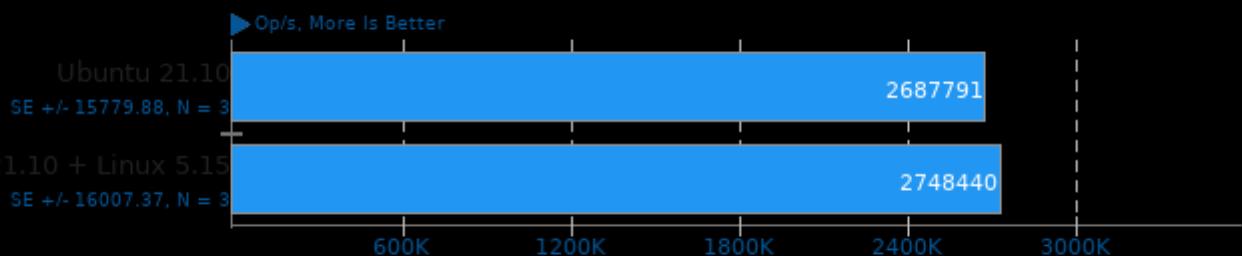
Test: Update Random



1. (CXX) g++ options: -O3 -march=native -pthread -fno-builtin-memcmp -fno-rtti -lpthread

Facebook RocksDB 6.22.1

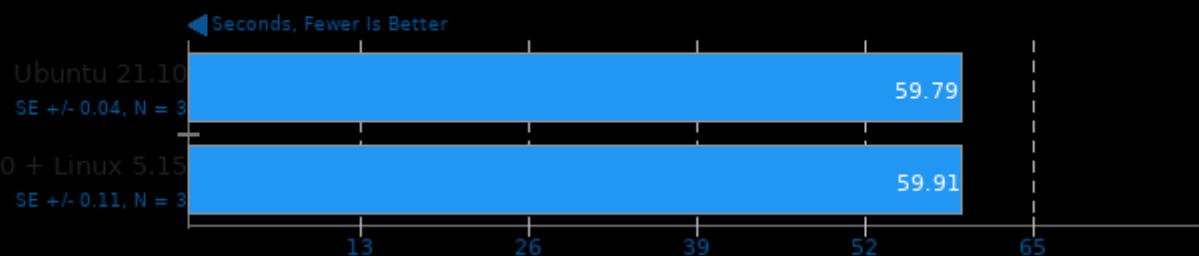
Test: Read Random Write Random



1. (CXX) g++ options: -O3 -march=native -pthread -fno-builtin-memcmp -fno-rtti -lpthread

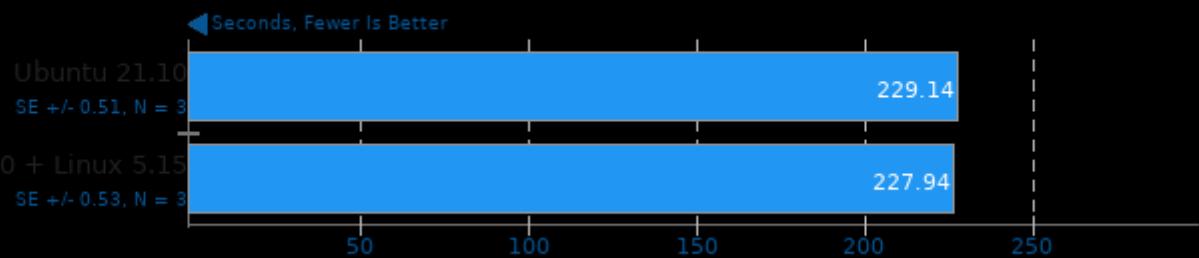
Blender 2.92

Blend File: BMW27 - Compute: CPU-Only



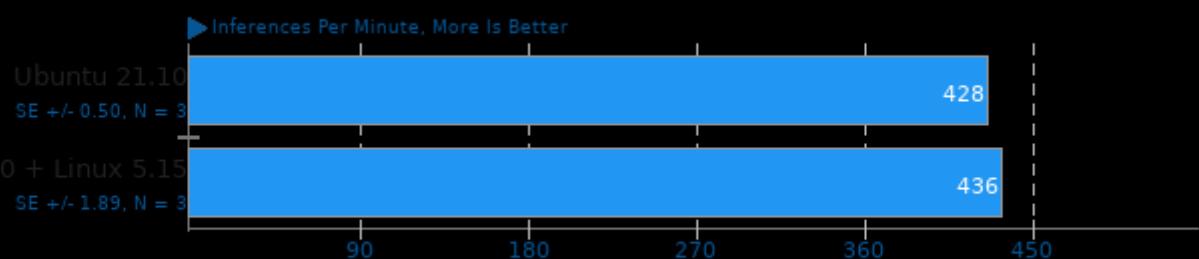
Blender 2.92

Blend File: Barbershop - Compute: CPU-Only



ONNX Runtime 1.8.2

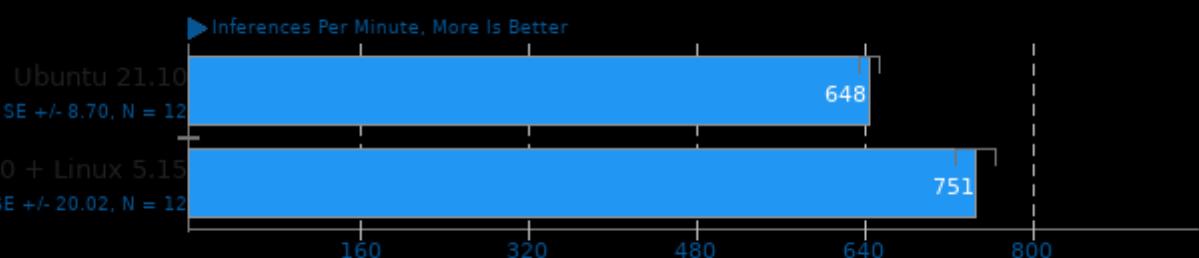
Model: yolov4 - Device: OpenMP CPU



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

ONNX Runtime 1.8.2

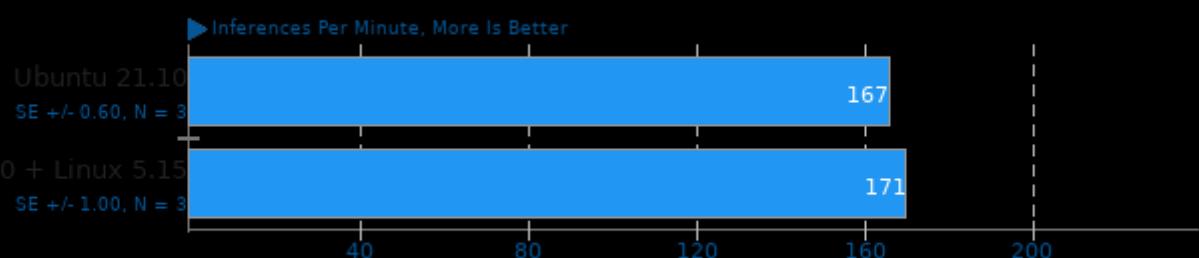
Model: bertsquad-10 - Device: OpenMP CPU



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

ONNX Runtime 1.8.2

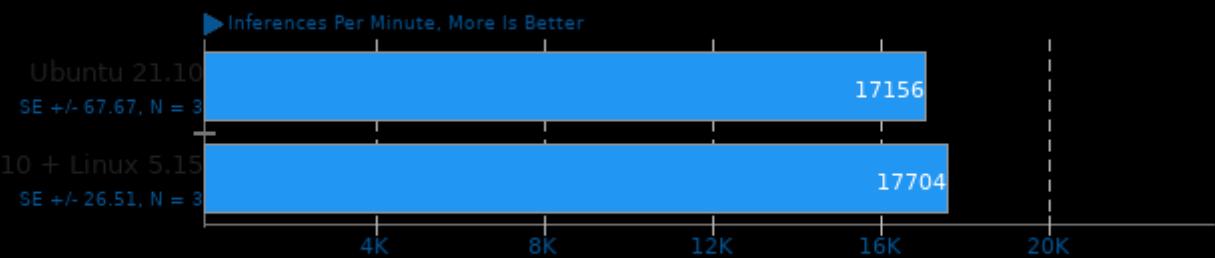
Model: fcn-resnet101-11 - Device: OpenMP CPU



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

ONNX Runtime 1.8.2

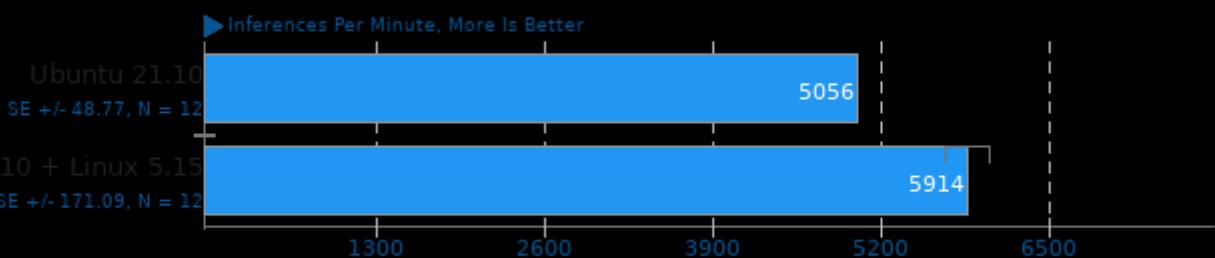
Model: shufflenet-v2-10 - Device: OpenMP CPU



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

ONNX Runtime 1.8.2

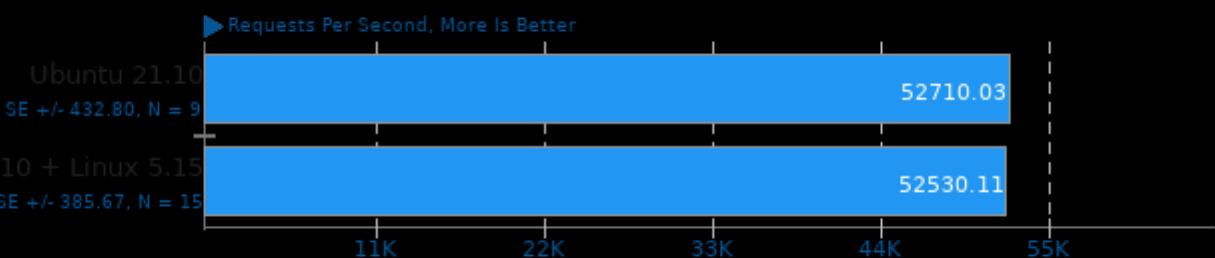
Model: super-resolution-10 - Device: OpenMP CPU



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

nginx 1.21.1

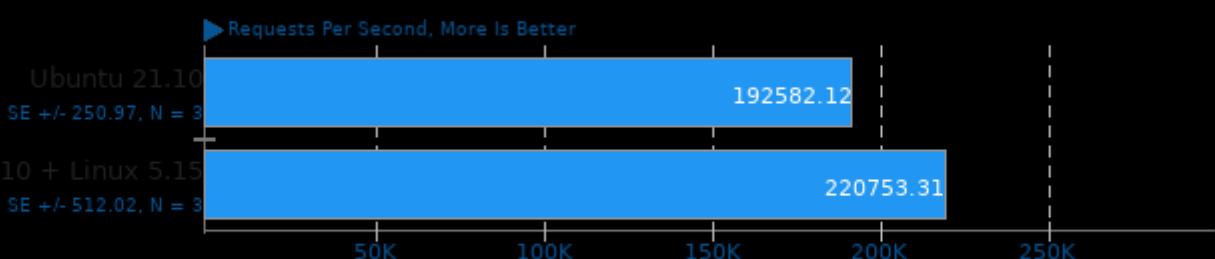
Concurrent Requests: 1



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

nginx 1.21.1

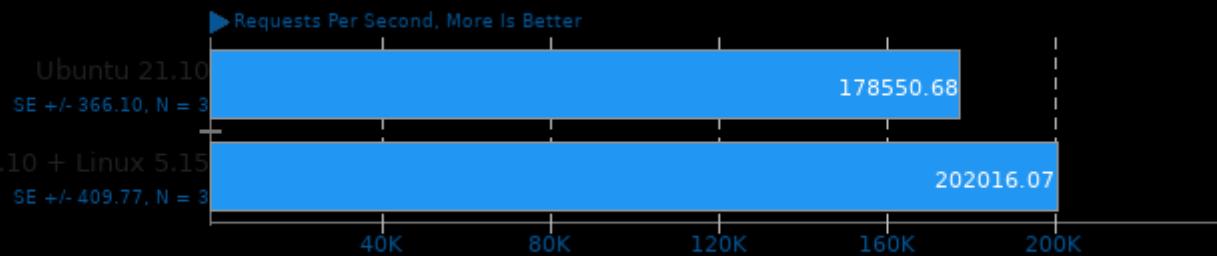
Concurrent Requests: 20



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

nginx 1.21.1

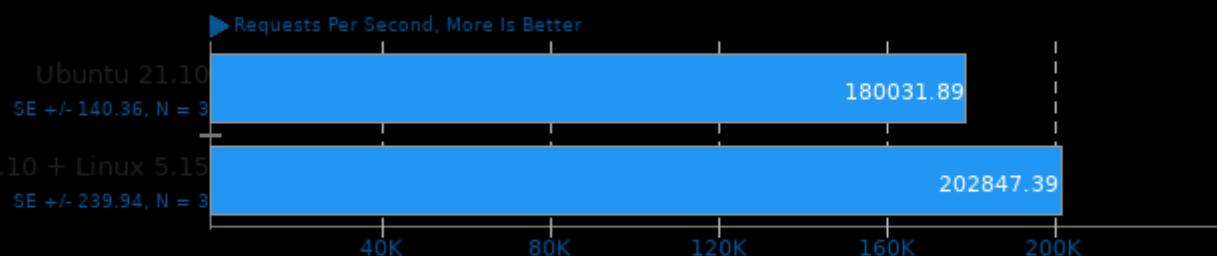
Concurrent Requests: 100



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

nginx 1.21.1

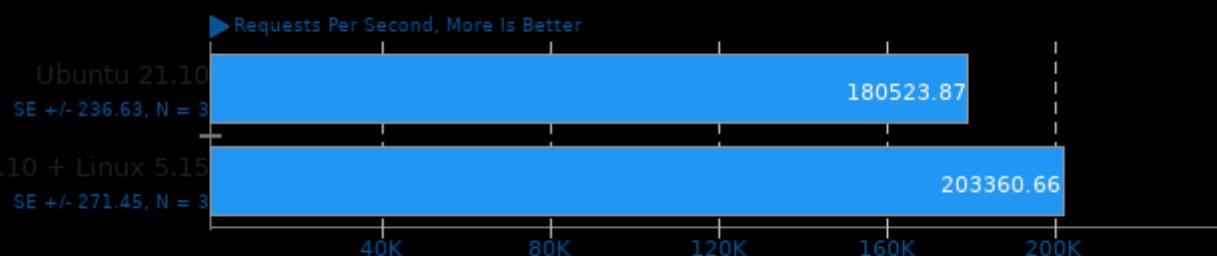
Concurrent Requests: 200



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

nginx 1.21.1

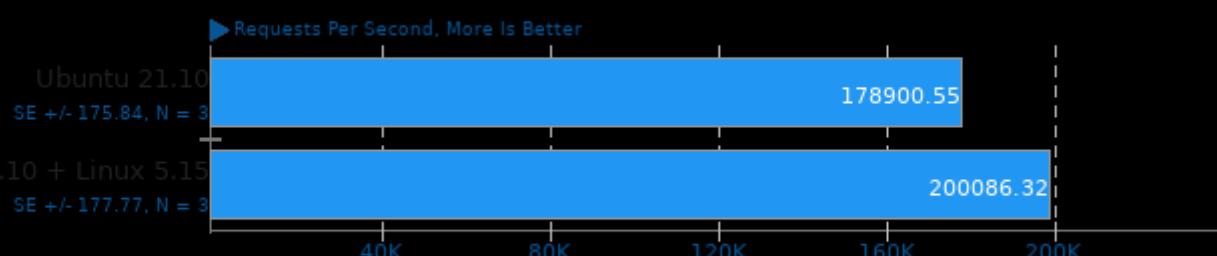
Concurrent Requests: 500



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

nginx 1.21.1

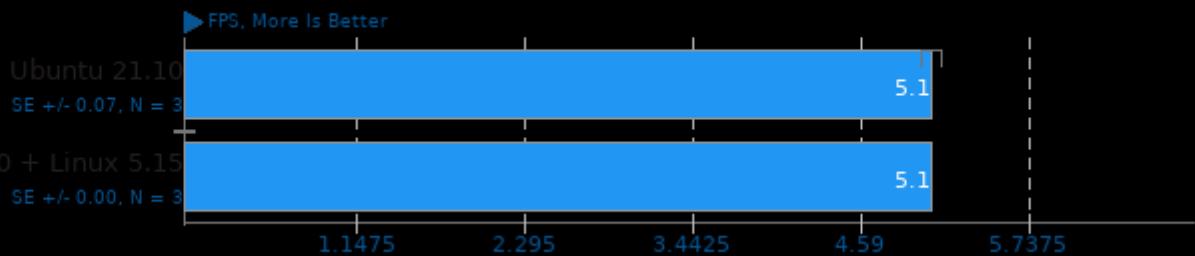
Concurrent Requests: 1000



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

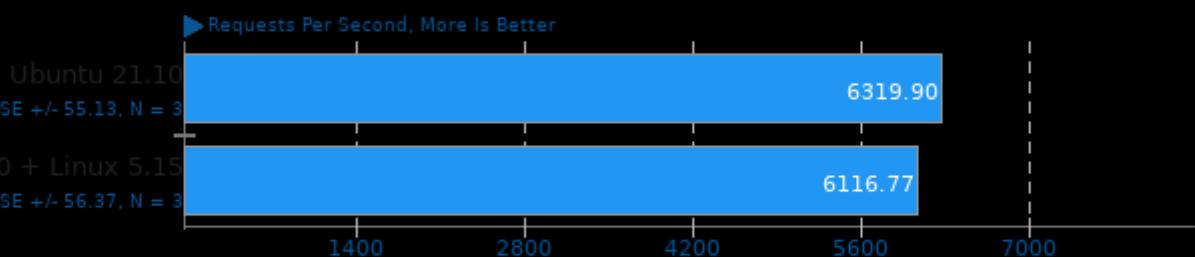
Natron 2.4

Input: Spaceship



Apache HTTP Server 2.4.48

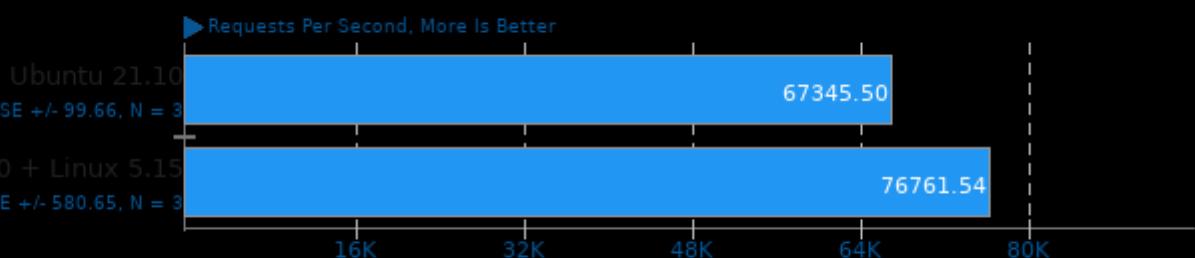
Concurrent Requests: 1



1. (CC) gcc options: -shared -fPIC -O2

Apache HTTP Server 2.4.48

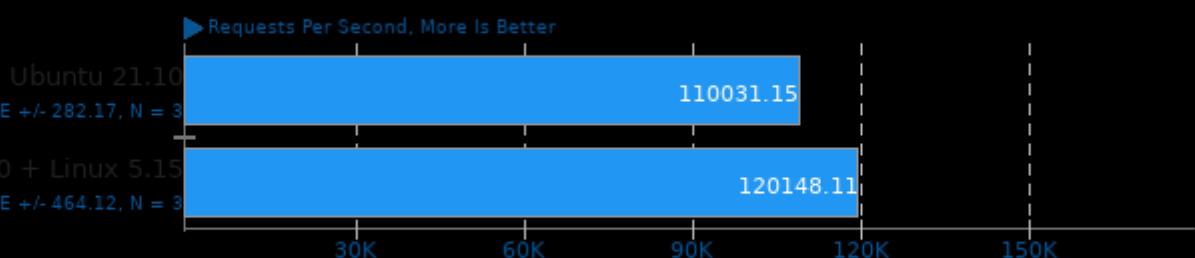
Concurrent Requests: 20



1. (CC) gcc options: -shared -fPIC -O2

Apache HTTP Server 2.4.48

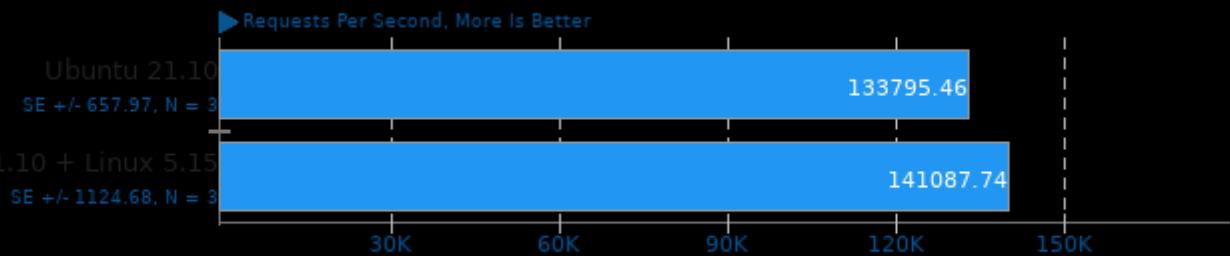
Concurrent Requests: 100



1. (CC) gcc options: -shared -fPIC -O2

Apache HTTP Server 2.4.48

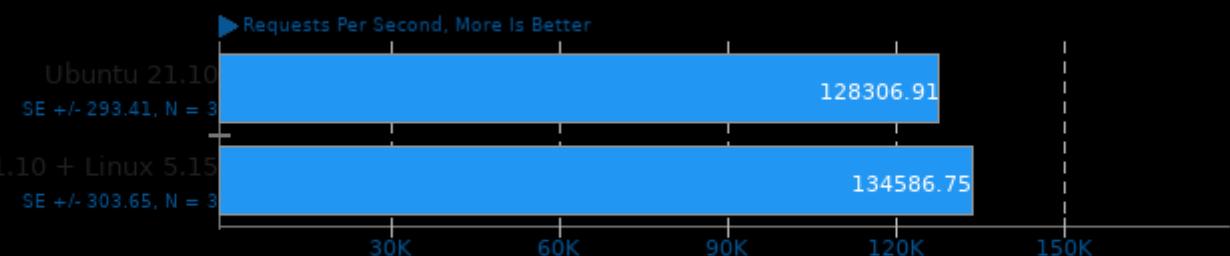
Concurrent Requests: 200



1. (CC) gcc options: -shared -fPIC -O2

Apache HTTP Server 2.4.48

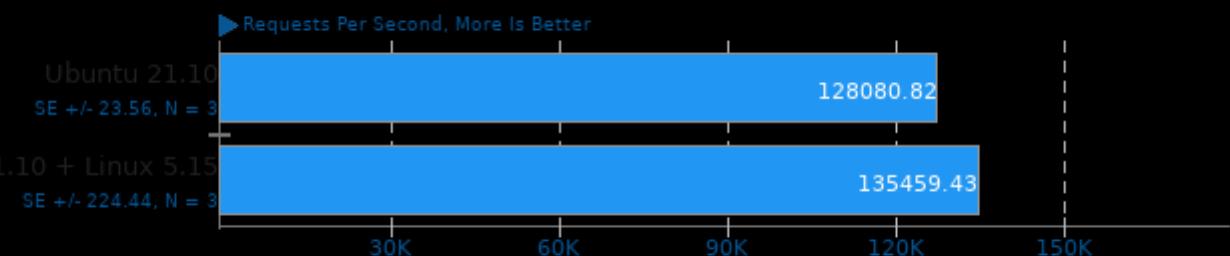
Concurrent Requests: 500



1. (CC) gcc options: -shared -fPIC -O2

Apache HTTP Server 2.4.48

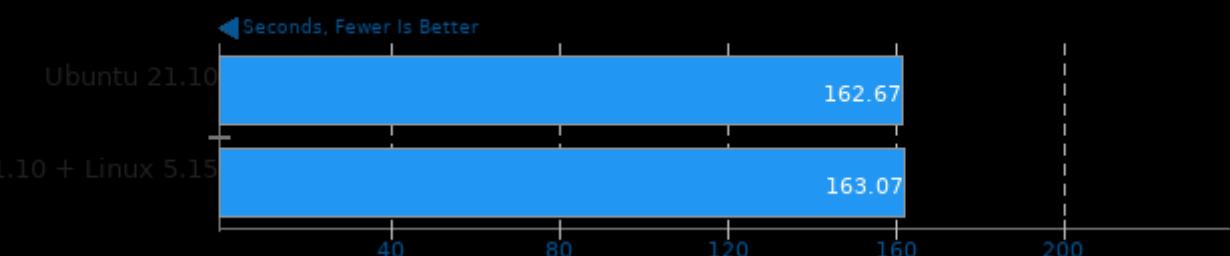
Concurrent Requests: 1000



1. (CC) gcc options: -shared -fPIC -O2

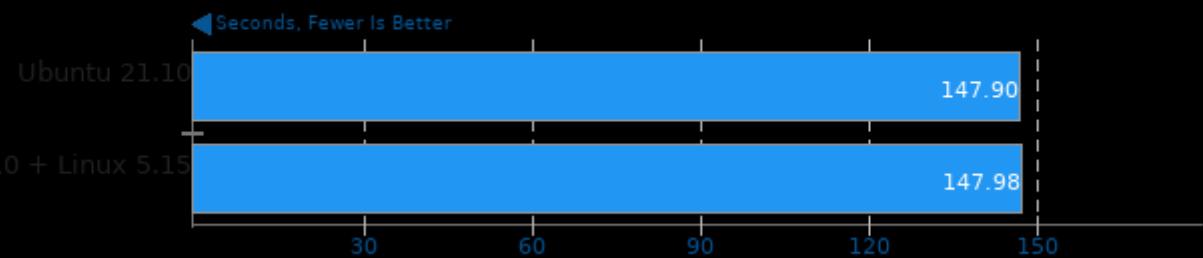
Appleseed 2.0 Beta

Scene: Emily



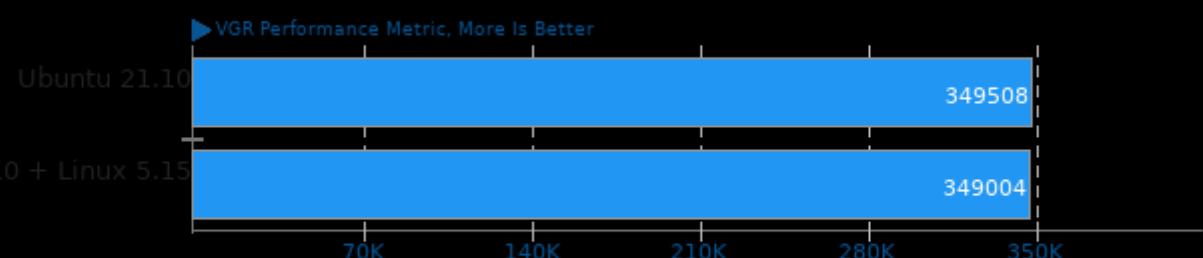
Appleseed 2.0 Beta

Scene: Material Tester



BRL-CAD 7.32.2

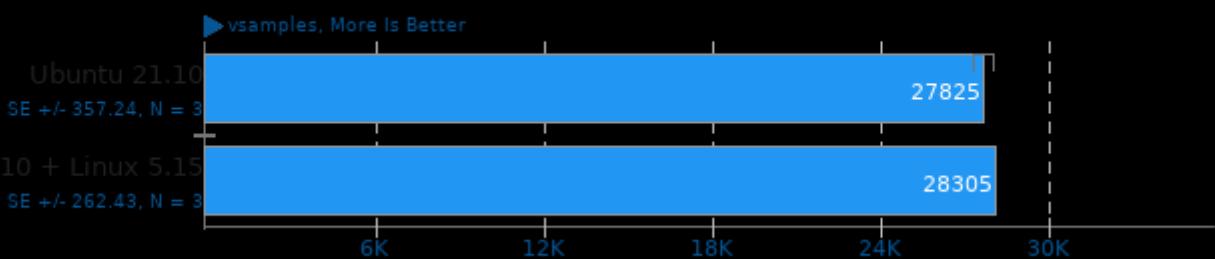
VGR Performance Metric



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

Chaos Group V-RAY 5

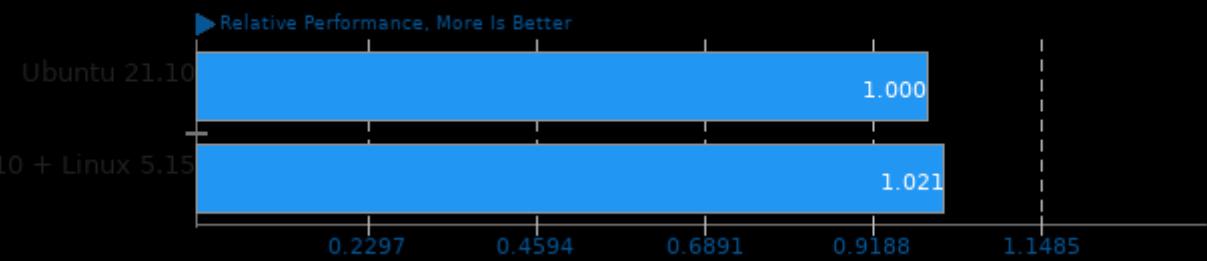
Mode: CPU



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

Geometric Mean Of AV1 Tests

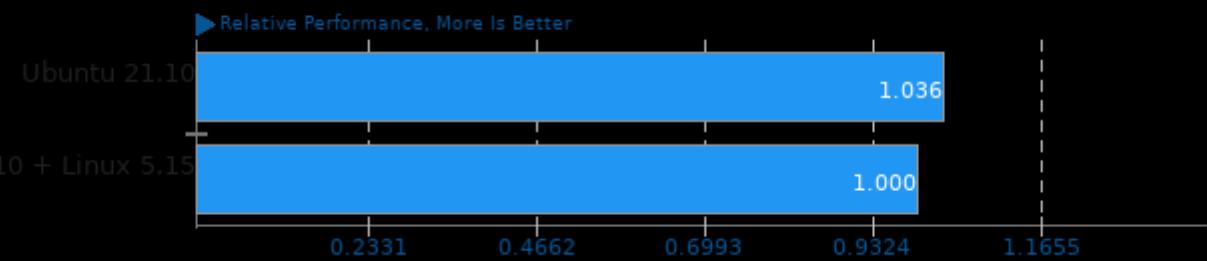
Result Composite - Ubuntu 21.10 EPYC Milan



Geometric mean based upon tests: pts/aom-av1, pts/svt-av1 and pts/avifenc

Geometric Mean Of Chess Test Suite

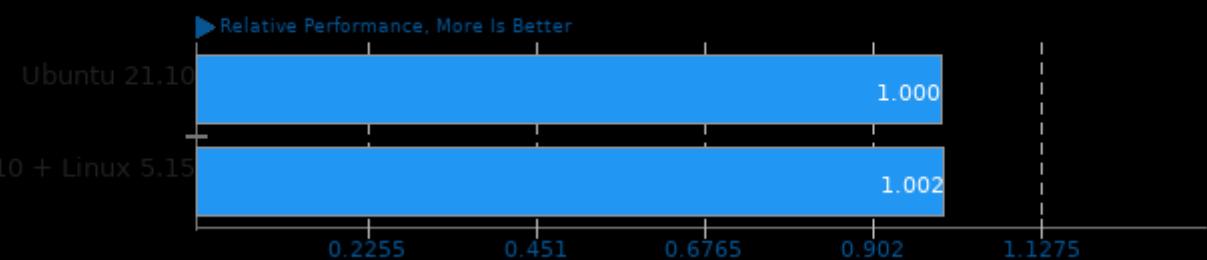
Result Composite - Ubuntu 21.10 EPYC Milan



Geometric mean based upon tests: pts/lczero and pts/stockfish

Geometric Mean Of Timed Code Compilation Tests

Result Composite - Ubuntu 21.10 EPYC Milan

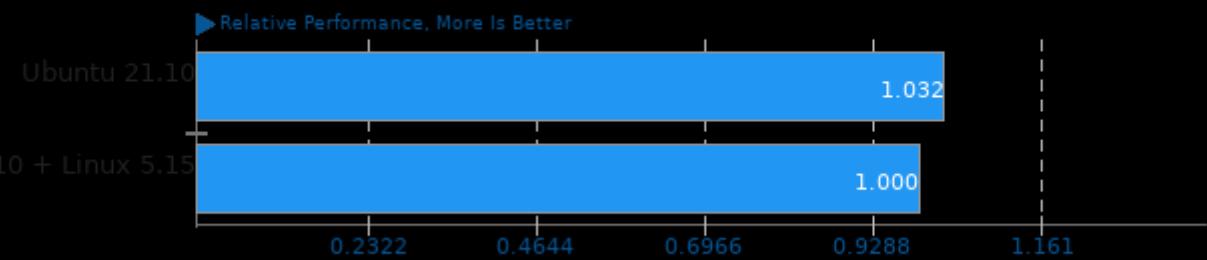


Geometric mean based upon tests: pts/build-linux-kernel, pts/build-llvm, pts/build-godot and pts/build-nodejs

Ubuntu 21.10 EPYC Milan

Geometric Mean Of C/C++ Compiler Tests

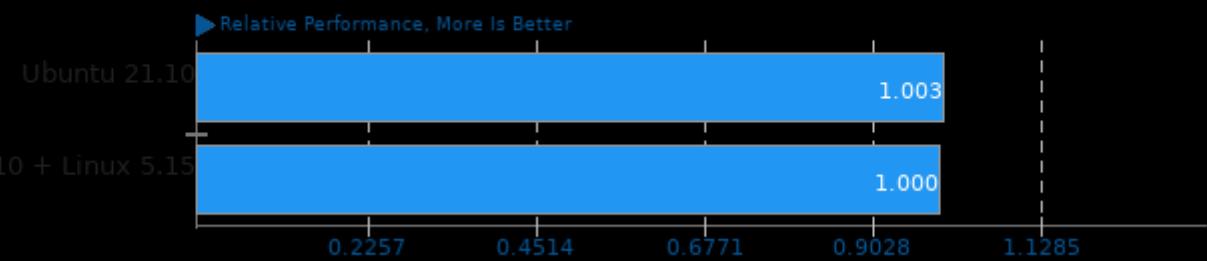
Result Composite - Ubuntu 21.10 EPYC Milan



Geometric mean based upon tests: pts/vpxenc, pts/stockfish, pts/build-llvm, pts/compress-7zip, pts/pgbench, pts/apache, pts/x265, pts/openssl, pts/nginx, pts/lammps, pts/aom-av1, pts/svt-av1, pts/svt-vp9 and pts/gromacs

Geometric Mean Of Cryptocurrency Benchmarks, CPU Mining Tests

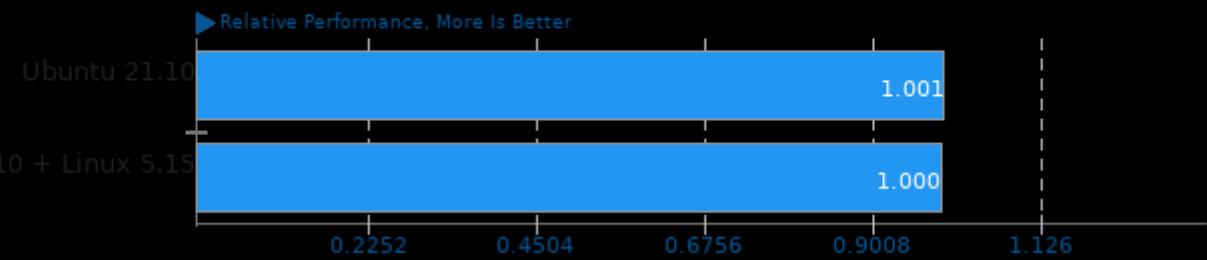
Result Composite - Ubuntu 21.10 EPYC Milan



Geometric mean based upon tests: pts/cpuminer-opt and pts/xmrig

Geometric Mean Of Cryptography Tests

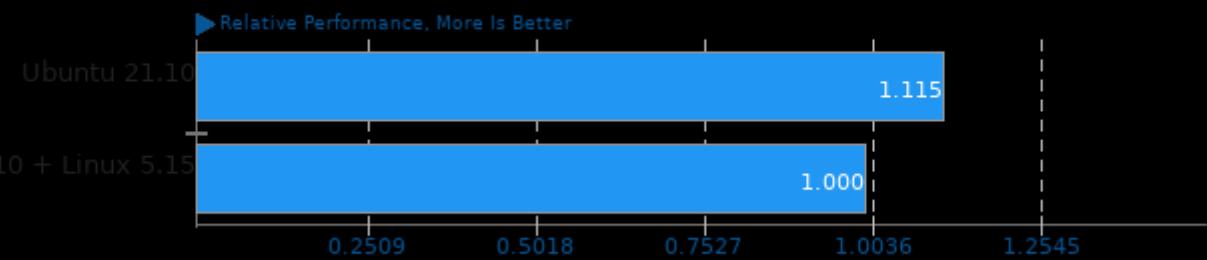
Result Composite - Ubuntu 21.10 EPYC Milan



Geometric mean based upon tests: pts/openssl, pts/securemark, pts/cpuminer-opt and pts/xmrig

Geometric Mean Of Database Test Suite

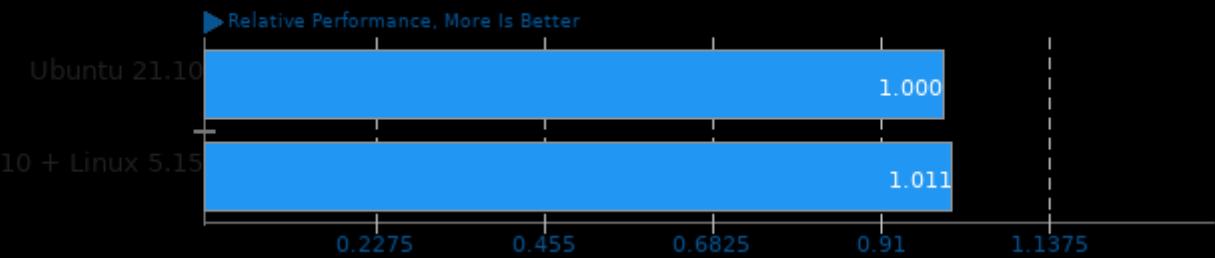
Result Composite - Ubuntu 21.10 EPYC Milan



Geometric mean based upon tests: pts/redis, pts/rocksdb, pts/cassandra, pts/pgbench and pts/mysqlslap

Geometric Mean Of Encoding Tests

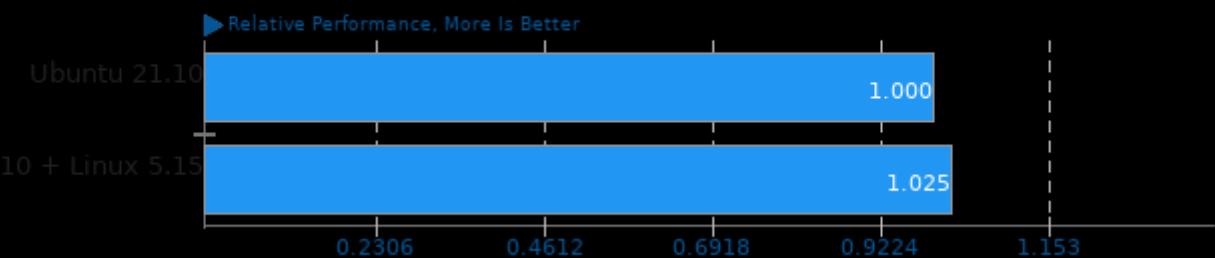
Result Composite - Ubuntu 21.10 EPYC Milan



Geometric mean based upon tests: pts/svt-vp9, pts/svt-hevc, pts/x265, pts/vpxenc, pts/aom-av1, pts/svt-av1 and pts/avifenc

Geometric Mean Of Fortran Tests

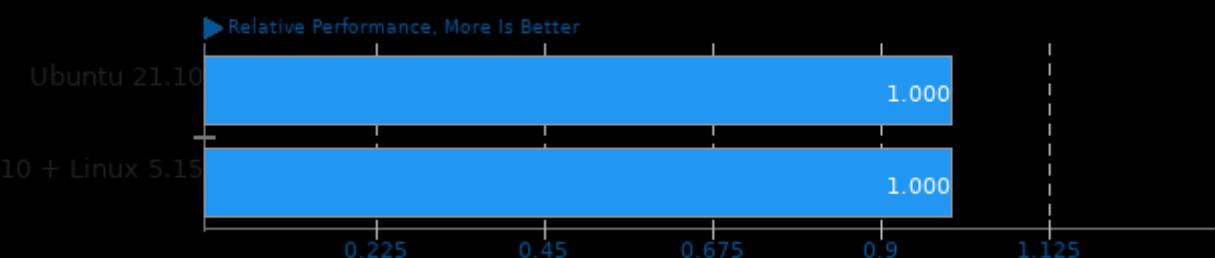
Result Composite - Ubuntu 21.10 EPYC Milan



Geometric mean based upon tests: pts/npb, pts/incompact3d and pts/lammps

Geometric Mean Of Game Development Tests

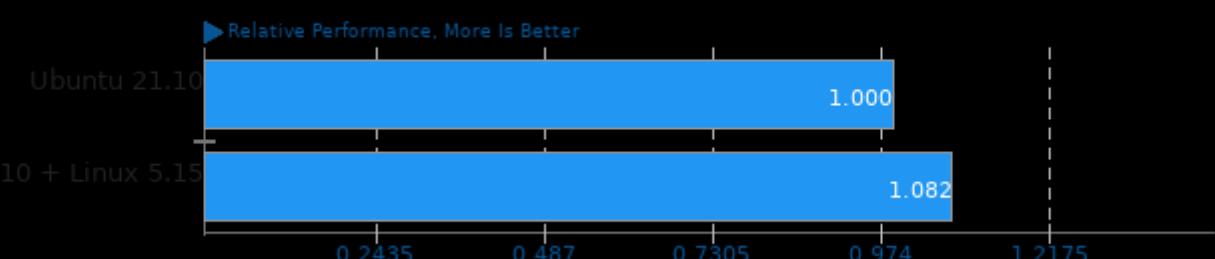
Result Composite - Ubuntu 21.10 EPYC Milan



Geometric mean based upon tests: pts/astcenc, pts/build-godot, pts/blender and pts/oidn

Geometric Mean Of Go Language Tests

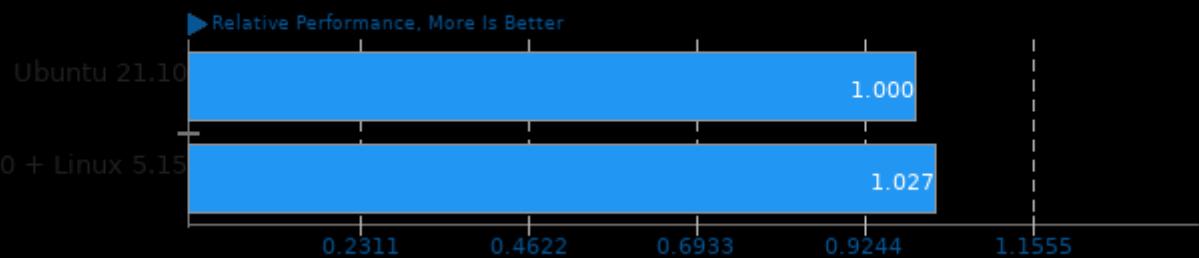
Result Composite - Ubuntu 21.10 EPYC Milan



Geometric mean based upon tests: pts/nginx and pts/apache

Geometric Mean Of HPC - High Performance Computing Tests

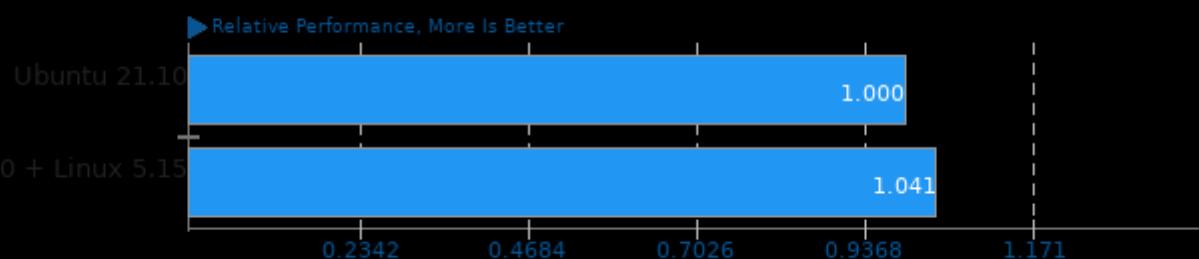
Result Composite - Ubuntu 21.10 EPYC Milan



Geometric mean based upon tests: pts/npb, pts/rodinia, pts/parboil, pts/namd, pts/gromacs, pts/lammps, pts/incompact3d, pts/openfoam, pts/mnn, pts/ncnn, pts/tnn, pts/tensorflow-lite, pts/onednn, pts/onnx, pts/plaidml and pts/lczero

Geometric Mean Of Imaging Tests

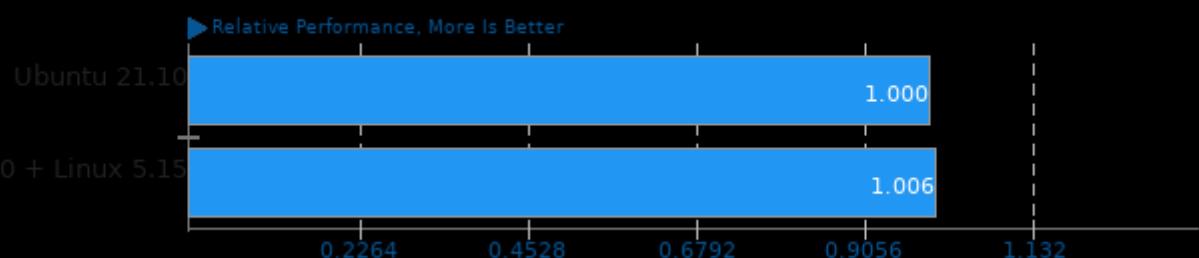
Result Composite - Ubuntu 21.10 EPYC Milan



Geometric mean based upon tests: pts/jpegxl and pts/avifenc

Geometric Mean Of Common Kernel Benchmarks Tests

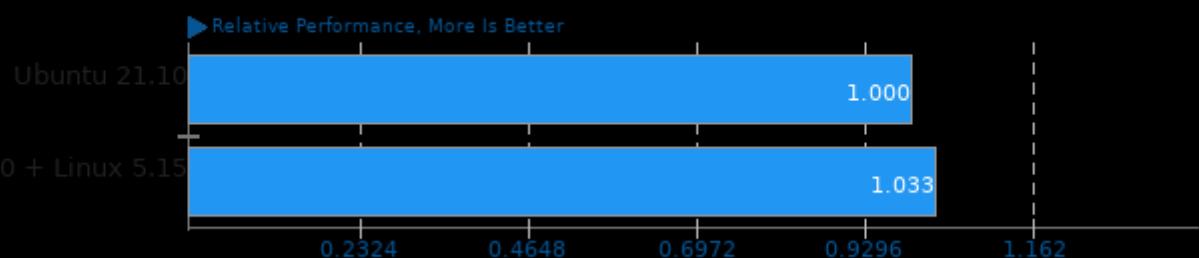
Result Composite - Ubuntu 21.10 EPYC Milan



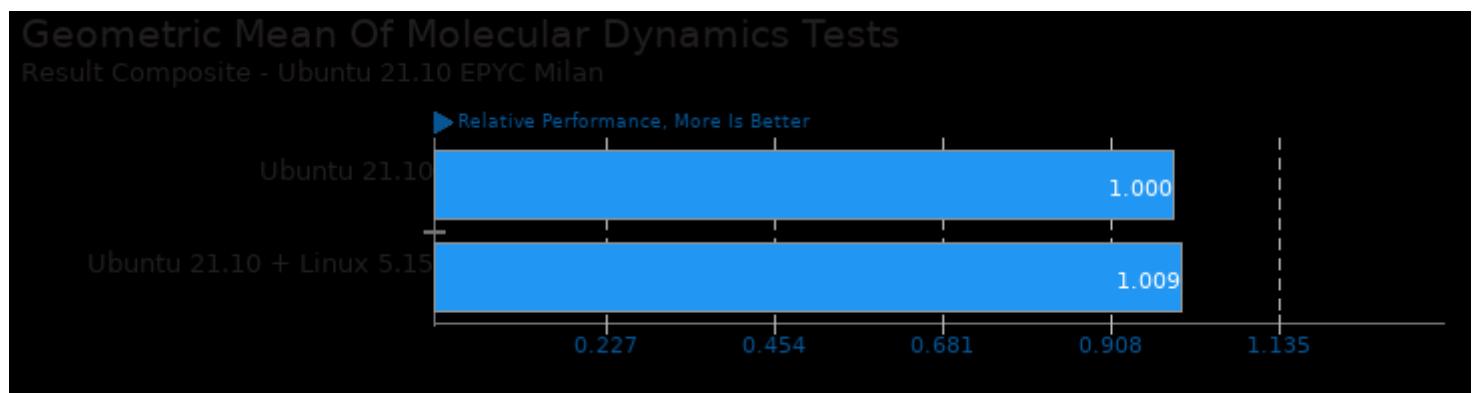
Geometric mean based upon tests: pts/apache, pts/pgbench, pts/openssl, pts/stress-ng and pts/rocksdb

Geometric Mean Of Machine Learning Tests

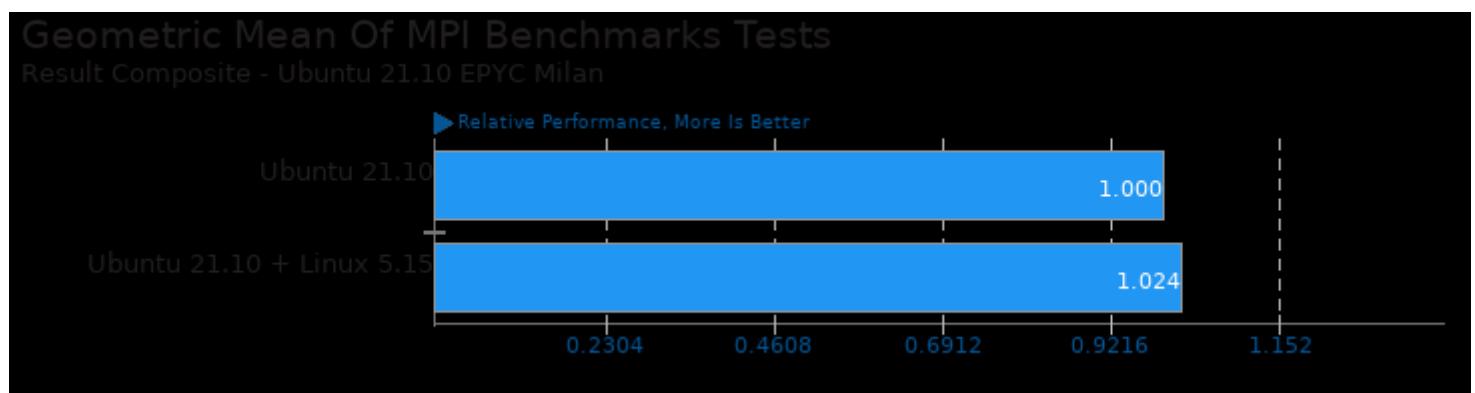
Result Composite - Ubuntu 21.10 EPYC Milan



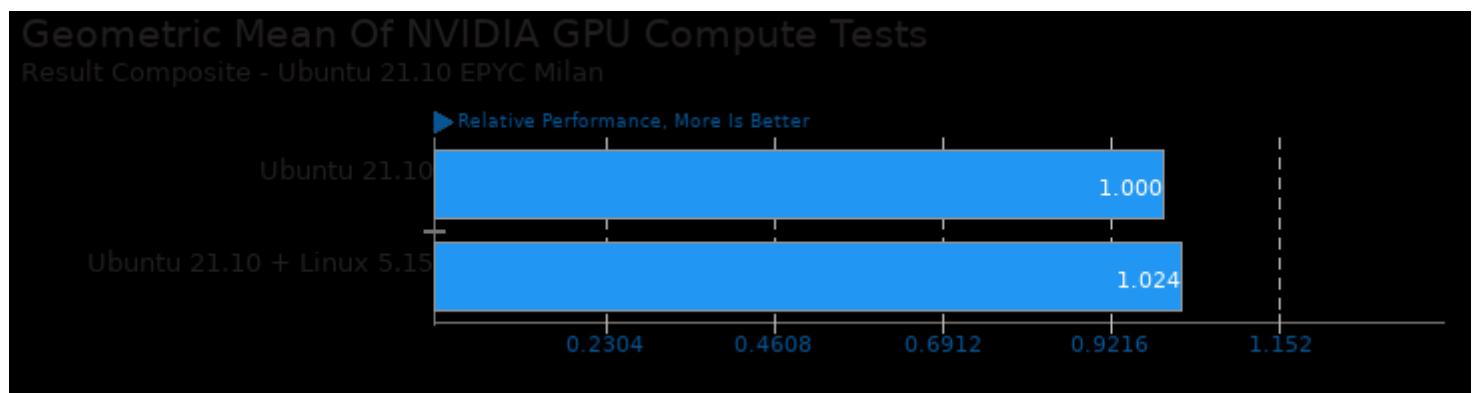
Geometric mean based upon tests: pts/mnn, pts/ncnn, pts/tnn, pts/tensorflow-lite, pts/oneden, pts/onn, pts/plaidml and pts/lcero



Geometric mean based upon tests: pts/namd, pts/gromacs, pts/lammps, pts/incompact3d and pts/openfoam



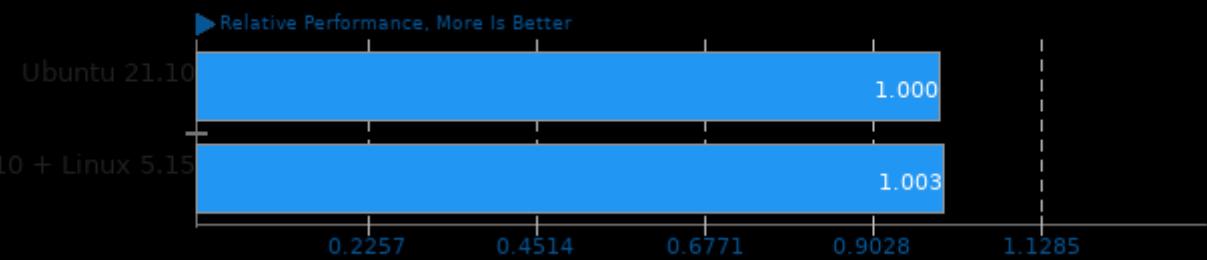
Geometric mean based upon tests: pts/lammps, pts/incompact3d, pts/gromacs and pts/npb



Geometric mean based upon tests: pts/gromacs, pts/luxcorerender, pts/rodinia, pts/plaidml, pts/lcero, pts/v-ray, pts/blender and pts/ncnn

Geometric Mean Of Intel oneAPI Tests

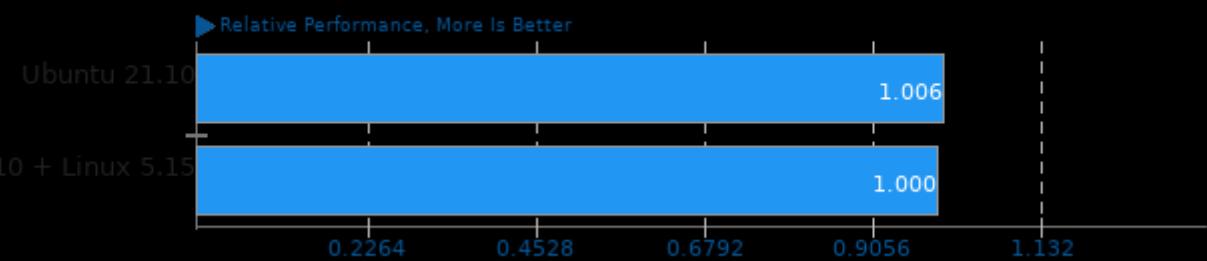
Result Composite - Ubuntu 21.10 EPYC Milan



Geometric mean based upon tests: pts/embree, pts/onednn, pts/oidn and pts/ospray

Geometric Mean Of OpenCL Tests

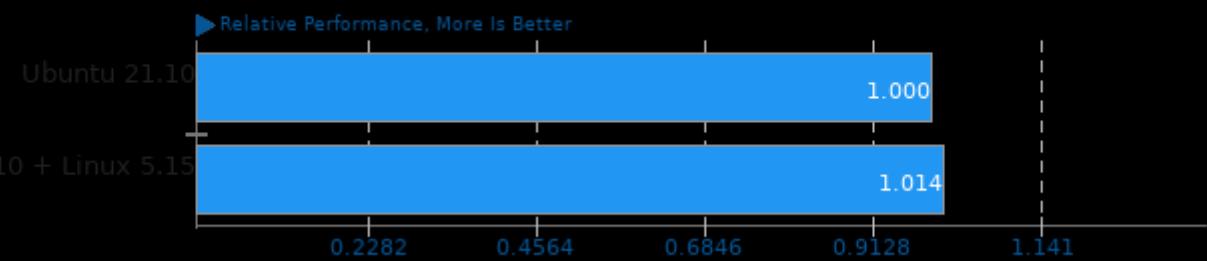
Result Composite - Ubuntu 21.10 EPYC Milan



Geometric mean based upon tests: pts/rodinia and pts/parboil

Geometric Mean Of OpenMPI Tests

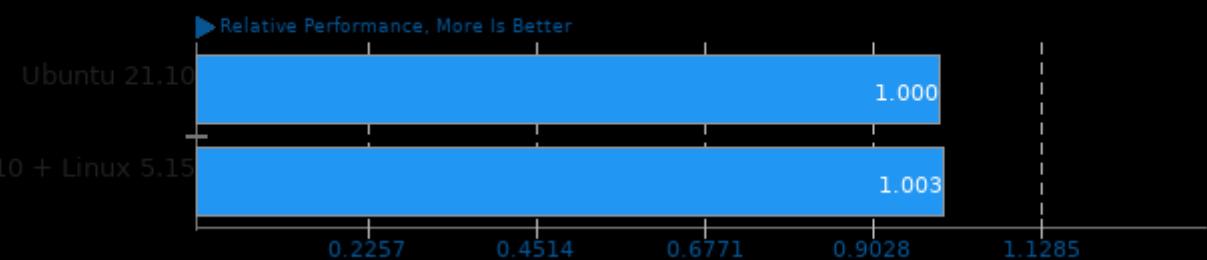
Result Composite - Ubuntu 21.10 EPYC Milan



Geometric mean based upon tests: pts/npb, pts/parboil, pts/rodinia, pts/incompact3d, pts/openfoam, pts/lammps and pts/gromacs

Geometric Mean Of Programmer / Developer System Benchmarks Tests

Result Composite - Ubuntu 21.10 EPYC Milan



Geometric mean based upon tests: pts/simdjson, pts/build-linux-kernel, pts/build-llvm, pts/build-godot and

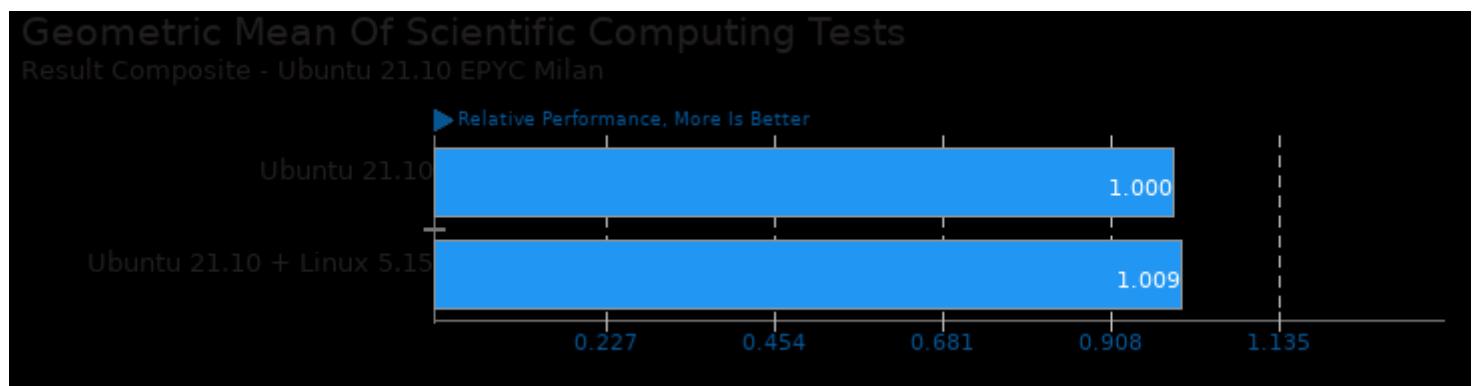
pts/build-nodejs



Geometric mean based upon tests: pts/parboil, pts/build-godot, pts/build-llvm, pts/build-nodejs, pts/plaidml and pts/onnx



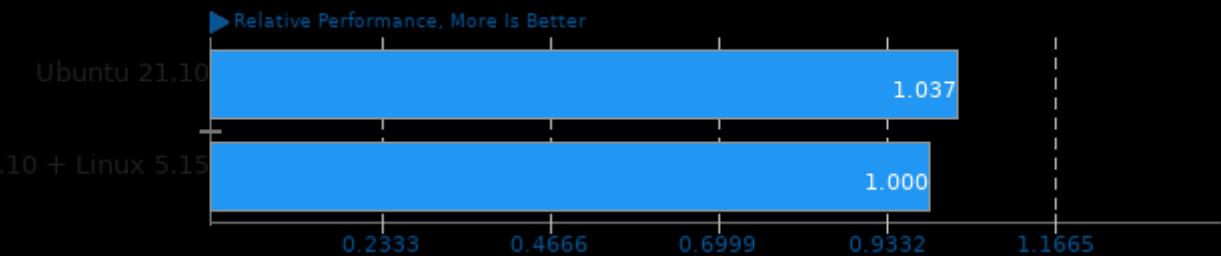
Geometric mean based upon tests: pts/ospray, pts/blender, pts/appleseed, pts/luxcorerender, pts/ttsiod-renderer, pts/v-ray and pts/natron



Geometric mean based upon tests: pts/namd, pts/gromacs, pts/lammps, pts/incompact3d and pts/openfoam

Geometric Mean Of Server Tests

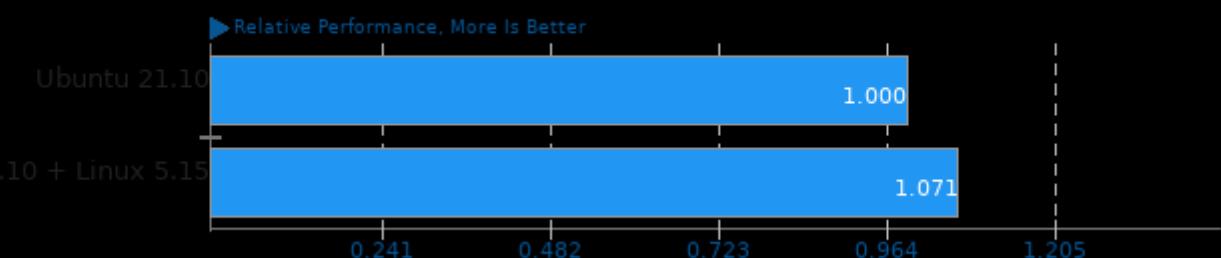
Result Composite - Ubuntu 21.10 EPYC Milan



Geometric mean based upon tests: pts/apache, pts/nginx, pts/mysqlslap, pts/pgbench, pts/redis, pts/cassandra, pts/rocksdb, pts/openssl and pts/simjson

Geometric Mean Of Single-Threaded Tests

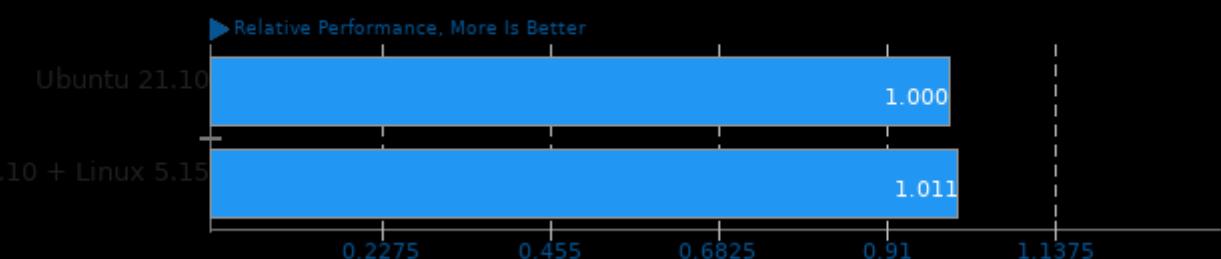
Result Composite - Ubuntu 21.10 EPYC Milan



Geometric mean based upon tests: pts/redis and pts/nginx

Geometric Mean Of Video Encoding Tests

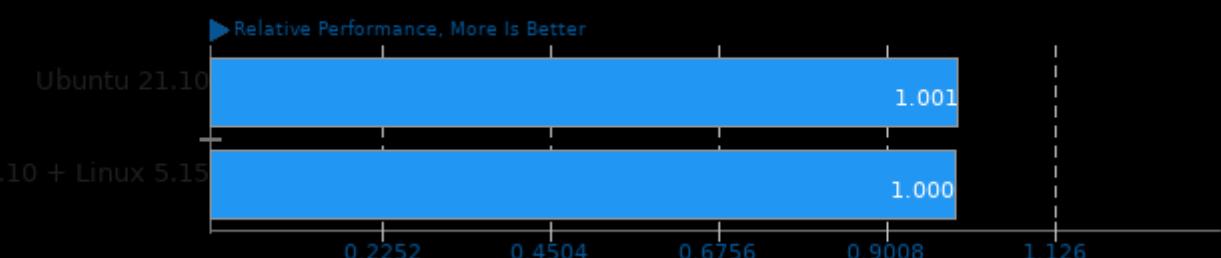
Result Composite - Ubuntu 21.10 EPYC Milan



Geometric mean based upon tests: pts/svt-vp9, pts/svt-hevc, pts/x265, pts/vpxenc, pts/aom-av1, pts/svt-av1 and pts/avifenc

Geometric Mean Of Common Workstation Benchmarks Tests

Result Composite - Ubuntu 21.10 EPYC Milan



Geometric mean based upon tests: pts/blender, pts/rodinia, pts/parboil, pts/brl-cad, pts/x265 and pts/sysbench

This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 11:27.