



ice-lake-ubuntu

2 x Intel Xeon Platinum 8380 testing with a Intel M50CYP2SB2U (SE5C6200.86B.0022.D08.2103221623 BIOS) and ASPEED on Ubuntu 20.10 via the Phoronix Test Suite.

Automated Executive Summary

Ubuntu 21.04 had the most wins, coming in first place for 75% of the tests.

Based on the geometric mean of all complete results, the fastest (Ubuntu 21.04) was 1.064x the speed of the slowest (Ubuntu 20.10).

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

Timed Wasmer Compilation (Time To Compile) at 1.542x

Liquid-DSP (Threads: 64 - Buffer Length: 256 - Filter Length: 57) at 1.412x

PostgreSQL pgbench (Scaling Factor: 100 - Clients: 250 - Mode: Read Write - Average Latency) at 1.385x

PostgreSQL pgbench (Scaling Factor: 100 - Clients: 250 - Mode: Read Write) at 1.384x

Rodinia (Test: OpenMP Leukocyte) at 1.375x

TensorFlow Lite (Model: Mobilenet Quant) at 1.369x

Zstd Compression (Compression Level: 3 - Compression Speed) at 1.361x

PJSIP (Method: INVITE) at 1.356x

ONNX Runtime (Model: yolov4 - Device: OpenMP CPU) at 1.346x

TensorFlow Lite (Model: Mobilenet Float) at 1.335x.

Test Systems:

Ubuntu 21.04

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

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

Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-link-mutex --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-10-gDeRY6/gcc-10-10.3.0/debian/tmp-nvptx/usr,amdgcnc-ahsa=/build/gcc-10-gDeRY6/gcc-10-10.3.0/debian/tmp-gcn/usr,hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-build-config=bootstrap-lto-lean --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Disk Notes: NONE / errors=remount-ro,relatime,rw / Block Size: 4096
Processor Notes: Scaling Governor: intel_pstate powersave - CPU Microcode: 0xd000270
Java Notes: OpenJDK Runtime Environment (build 11.0.11+9-Ubuntu-0ubuntu2)
Python Notes: Python 3.9.4
Security Notes: itlb_multihit: Not affected + 1tft: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swaps barriers and __user pointer sanitization + spectre_v2: Mitigation of Enhanced IBRS IBPB: conditional RSB filling + srbds: Not affected + tsx_async_abort: Not affected

Ubuntu 20.10

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

OS: Ubuntu 20.10, Kernel: 5.8.0-53-generic (x86_64), Desktop: GNOME Shell 3.38.1, Display Server: X Server 1.20.9, Compiler: GCC 10.2.0, 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-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-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-nvptx/usr,amdgcnc-ahsa=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-gcn/usr,hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Disk Notes: NONE / errors=remount-ro,relatime,rw / Block Size: 4096
Processor Notes: Scaling Governor: intel_pstate powersave - CPU Microcode: 0xd000270
Java Notes: OpenJDK Runtime Environment (build 11.0.11+9-Ubuntu-0ubuntu2.20.10)
Python Notes: Python 3.8.6
Security Notes: itlb_multihit: Not affected + 1tft: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swaps barriers and __user pointer sanitization + spectre_v2: Mitigation of Enhanced IBRS IBPB: conditional RSB filling + srbds: Not affected + tsx_async_abort: Not affected

	Ubuntu 21.04	Ubuntu 20.10
BlogBench - Read (Final Score)	2253810	2245366
Normalized	100%	99.63%
Standard Deviation	2.3%	1.5%
BlogBench - Write (Final Score)	60768	62517
Normalized	97.2%	100%
Standard Deviation	2%	1.2%
WireGuard + Linux Networking Stack Stress Test	681.119	657.468
Normalized	96.53%	100%
Standard Deviation	2.2%	1.9%
High Performance Conjugate Gradient (GFLOP/s)	39.8231	39.6266
Normalized	100%	99.51%
Standard Deviation	0.1%	0.7%
NAS Parallel Benchmarks - EP.C (Mop/s)	6260	5881
Normalized	100%	93.95%
Standard Deviation	3.2%	6.1%
NAS Parallel Benchmarks - EP.D (Mop/s)	8659	9183
Normalized	94.29%	100%
Standard Deviation	0.7%	2.3%
NAS Parallel Benchmarks - LU.C (Mop/s)	187807	188751
Normalized	99.5%	100%
Standard Deviation	0.4%	0.5%
Rodinia - OpenMP LavaMD (sec)	40.406	39.838
Normalized	98.59%	100%
Standard Deviation	0.6%	0.5%
Rodinia - OpenMP HotSpot3D (sec)	105.650	104.849
Normalized	99.24%	100%
Standard Deviation	0.9%	0%
Rodinia - OpenMP Leukocyte (sec)	62.044	85.284
Normalized	100%	72.75%
Standard Deviation	1.9%	1.2%
Rodinia - OpenMP CFD Solver (sec)	4.807	4.941
Normalized	100%	97.29%
Standard Deviation	5.1%	5.1%
Rodinia - O.S (sec)	7.696	8.563
Normalized	100%	89.88%
Standard Deviation	1.8%	1.8%
NAMD - ATPase Simulation - 327,506 Atoms (days/ns)	0.27128	0.28452
Normalized	100%	95.35%
Standard Deviation	0.3%	2.2%
Nebular Empirical Analysis Tool (sec)	45.569	55.921
Normalized	100%	81.49%
Standard Deviation	0.7%	1.4%
toyBrot Fractal Generator - TBB (ms)	6999	6946
Normalized	99.24%	100%
Standard Deviation	5%	3.8%
toyBrot Fractal Generator - OpenMP (ms)	7438	7806
Normalized	100%	95.29%
Standard Deviation	2.5%	2.4%
toyBrot Fractal Generator - C++ Tasks (ms)	8015	7963
Normalized	99.35%	100%
Standard Deviation	2.4%	2.4%
toyBrot Fractal Generator - C++ Threads (ms)	7118	7165
Normalized	100%	99.34%
Standard Deviation	2.4%	1.5%

Timed MrBayes Analysis - P.P.A (sec)	170.019	171.388
Normalized	100%	99.2%
Standard Deviation	0.8%	0.4%
NWChem - C240 Buckyball (sec)	1876	1874
Normalized	99.89%	100%
Xcompact3d Incompact3d - X.b.i.i (sec)	291.993968	299.195353
Normalized	100%	97.59%
Standard Deviation	0.7%	1%
Xcompact3d Incompact3d - i.i.1.C.P.D (sec)	11.3305505	11.8795649
Normalized	100%	95.38%
Standard Deviation	0.6%	0.5%
OpenFOAM - Motorbike 30M (sec)	15.05	15.01
Normalized	99.73%	100%
Standard Deviation	1.3%	0.7%
OpenFOAM - Motorbike 60M (sec)	105.35	104.92
Normalized	99.59%	100%
Standard Deviation	0.8%	0.1%
RELION - Basic - CPU (sec)	348.838	348.747
Normalized	99.97%	100%
Standard Deviation	0.8%	0.2%
LAMMPS Molecular Dynamics Simulator - 20k Atoms (ns/day)	35.725	35.506
Normalized	100%	99.39%
Standard Deviation	0.1%	0.9%
LAMMPS Molecular Dynamics Simulator - Rhodopsin Protein (ns/day)	23.866	21.646
Normalized	100%	90.7%
Standard Deviation	0.2%	4.7%
libgav1 - Chimera 1080p (FPS)	34.39	34.93
Normalized	98.45%	100%
Standard Deviation	0.9%	0.5%
libgav1 - Summer Nature 4K (FPS)	19.39	19.20
Normalized	100%	99.02%
Standard Deviation	1.3%	0.5%
libgav1 - S.N.1 (FPS)	41.83	42.30
Normalized	98.89%	100%
Standard Deviation	1.8%	0.1%
Chia Blockchain VDF - Square Plain C++ (IPS)	138967	139033
Normalized	99.95%	100%
Standard Deviation	0.1%	0.6%
Chia Blockchain VDF - S.A.O (IPS)	147240	147100
Normalized	100%	99.9%
Standard Deviation	2.4%	1.1%
Java Gradle Build - Reactor (sec)	366.363	401.780
Normalized	100%	91.18%
Standard Deviation	4.1%	8.2%
DaCapo Benchmark - H2 (msec)	10740	11377
Normalized	100%	94.4%
Standard Deviation	2.5%	2.3%
DaCapo Benchmark - Jython (msec)	5320	5614
Normalized	100%	94.76%
Standard Deviation	12.9%	13.9%
DaCapo Benchmark - Tradebeans (msec)	16729	17609
Normalized	100%	95%
Standard Deviation	1%	2.3%

Zstd Compression - 19 - Compression Speed (MB/s)	82.3	81.7
Normalized	100%	99.27%
Standard Deviation	1.7%	2.3%
Zstd Compression - 19 - D.S (MB/s)	2728	2714
Normalized	100%	99.49%
Standard Deviation	0.8%	1.1%
Zstd Compression - 8, Long Mode - Compression Speed (MB/s)	296.3	300.1
Normalized	98.73%	100%
Standard Deviation	2.4%	11%
Zstd Compression - 8, Long Mode - D.S (MB/s)	3194	3193
Normalized	100%	99.96%
Standard Deviation	0.4%	0.7%
Zstd Compression - 19, Long Mode - Compression Speed (MB/s)	47.2	45.1
Normalized	100%	95.55%
Standard Deviation	1.2%	3.4%
Zstd Compression - 19, Long Mode - D.S (MB/s)	2719	2736
Normalized	99.38%	100%
Standard Deviation	0.1%	0.8%
srsLTE - OFDM_Test (Samples / Second)	121500000	120333333
Normalized	100%	99.04%
Standard Deviation	0.9%	0.4%
srsLTE - PHY_DL_Test (eNb Mb/s)	210.9	207.6
Normalized	100%	98.44%
Standard Deviation	0.7%	1.1%
srsLTE - PHY_DL_Test (UE Mb/s)	86.6	84.4
Normalized	100%	97.46%
Standard Deviation	0.6%	1.8%
John The Ripper - Blowfish (Real C/S)	118366	111351
Normalized	100%	94.07%
Standard Deviation	0.2%	1.4%
John The Ripper - MD5 (Real C/S)	10077667	9267667
Normalized	100%	91.96%
Standard Deviation	2.4%	2.2%
Node.js Express HTTP Load Test (Reqs/sec)	5554	5765
Normalized	96.34%	100%
Standard Deviation	11.2%	12.2%
OSPray - San Miguel - SciVis (FPS)	90.91	90.91
Standard Deviation	0%	0%
OSPray - XFrog Forest - SciVis (FPS)	18.87	18.87
Standard Deviation	0%	0%
OSPray - San Miguel - Path Tracer (FPS)	10.42	10.42
Standard Deviation	0%	0%
OSPray - NASA Streamlines - SciVis (FPS)	125	125
OSPray - XFrog Forest - Path Tracer (FPS)	10.38	10.31
Normalized	100%	99.33%
Standard Deviation	0.6%	0%
OSPray - M.R - SciVis (FPS)	109.63	111.11
Normalized	98.67%	100%
Standard Deviation	3.6%	0%
OSPray - NASA Streamlines - Path Tracer (FPS)	27.78	27.78
Standard Deviation	0%	0%
OSPray - M.R - Path Tracer (FPS)	477.78	466.67

	Normalized	100%	97.67%
	Standard Deviation	12.3%	14.8%
AOM AV1 - Speed 6 Realtime - Bosphorus 4K (FPS)		7.36	7.34
	Normalized	100%	99.73%
	Standard Deviation	0.4%	0.8%
AOM AV1 - Speed 6 Two-Pass - Bosphorus 4K (FPS)		4.05	3.89
	Normalized	100%	96.05%
	Standard Deviation	0.6%	1.4%
AOM AV1 - Speed 8 Realtime - Bosphorus 4K (FPS)		16.97	17.02
	Normalized	99.71%	100%
	Standard Deviation	0.2%	1.7%
AOM AV1 - Speed 9 Realtime - Bosphorus 4K (FPS)		23.59	23.69
	Normalized	99.58%	100%
	Standard Deviation	2.1%	1.1%
Embree - Pathtracer - Crown (FPS)		64.3015	64.4236
	Normalized	99.81%	100%
	Standard Deviation	1.9%	2.1%
Embree - Pathtracer ISPC - Crown (FPS)		67.0395	66.1552
	Normalized	100%	98.68%
	Standard Deviation	0.8%	1.2%
Embree - Pathtracer - Asian Dragon (FPS)		81.2911	80.2191
	Normalized	100%	98.68%
	Standard Deviation	1.2%	2.5%
Embree - Pathtracer ISPC - Asian Dragon (FPS)		106.6858	101.8558
	Normalized	100%	95.47%
	Standard Deviation	2.5%	0.8%
Kvazaar - Bosphorus 4K - Medium (FPS)		6.90	6.93
	Normalized	99.57%	100%
	Standard Deviation	0.2%	0.4%
Kvazaar - Bosphorus 1080p - Medium (FPS)		25.42	25.26
	Normalized	100%	99.37%
	Standard Deviation	0.4%	0.3%
Kvazaar - Bosphorus 4K - Very Fast (FPS)		13.38	13.20
	Normalized	100%	98.65%
	Standard Deviation	0.2%	0.3%
Kvazaar - Bosphorus 4K - Ultra Fast (FPS)		22.78	22.74
	Normalized	100%	99.82%
	Standard Deviation	0.9%	0.2%
Kvazaar - Bosphorus 1080p - Very Fast (FPS)		49.20	48.57
	Normalized	100%	98.72%
	Standard Deviation	1.6%	0.7%
Kvazaar - Bosphorus 1080p - Ultra Fast (FPS)		85.41	86.46
	Normalized	98.79%	100%
	Standard Deviation	1.4%	0.4%
SVT-AV1 - Preset 4 - Bosphorus 4K (FPS)		2.845	2.796
	Normalized	100%	98.28%
	Standard Deviation	2.2%	0.1%
SVT-AV1 - Preset 8 - Bosphorus 4K (FPS)		29.809	27.160
	Normalized	100%	91.11%
	Standard Deviation	2%	5.2%
SVT-HEVC - 1 - Bosphorus 1080p (FPS)		29.57	28.63
	Normalized	100%	96.82%
	Standard Deviation	0.5%	1.1%
SVT-HEVC - 7 - Bosphorus 1080p (FPS)		172.02	161.78
	Normalized	100%	94.05%

	Standard Deviation	1.7%	1.2%
SVT-HEVC - 10 - Bosphorus 1080p (FPS)		260.88	237.32
	Normalized	100%	90.97%
	Standard Deviation	1.7%	2.4%
SVT-VP9 - VMAF Optimized - Bosphorus 1080p (FPS)		210.15	201.11
	Normalized	100%	95.7%
	Standard Deviation	3.7%	1.9%
SVT-VP9 - P.S.O - Bosphorus 1080p (FPS)		204.86	198.24
	Normalized	100%	96.77%
	Standard Deviation	3.8%	1.1%
SVT-VP9 - V.Q.O - Bosphorus 1080p (FPS)		170.47	164.77
	Normalized	100%	96.66%
	Standard Deviation	2.1%	0.5%
x265 - Bosphorus 4K (FPS)		12.92	12.66
	Normalized	100%	97.99%
	Standard Deviation	1.2%	1%
x265 - Bosphorus 1080p (FPS)		28.33	28.26
	Normalized	100%	99.75%
	Standard Deviation	2.1%	2.3%
Intel Open Image Denoise - Memorial (Images / Sec)		57.59	50.81
	Normalized	100%	88.23%
	Standard Deviation	15.5%	17.9%
OpenVKL - vkiBenchmark (Items / Sec)		669	604
	Normalized	100%	90.28%
	Standard Deviation	0.6%	2.1%
OpenVKL - vkiBenchmarkVdbVolume (Items / Sec)		21915837	22032745
	Normalized	99.47%	100%
	Standard Deviation	0.5%	1.4%
OpenVKL - vkiBenchmarkStructuredVolume (Items / Sec)		73429487	80648255
	Normalized	91.05%	100%
	Standard Deviation	0.2%	11.1%
OpenVKL - vkiBenchmarkUnstructuredVolume (Items / Sec)		1776457	1493294
	Normalized	100%	84.06%
	Standard Deviation	0.7%	0.7%
Coremark - CoreMark Size 666 - I.P.S (Iterations/Sec)		2347454	2316975
	Normalized	100%	98.7%
	Standard Deviation	0.2%	0.2%
Stockfish - Total Time (Nodes/s)		180493580	177624409
	Normalized	100%	98.41%
	Standard Deviation	4.6%	1.6%
asmFish - 1.H.M.2.D (Nodes/s)		172711481	167218420
	Normalized	100%	96.82%
	Standard Deviation	1.8%	0.8%
Swet - Average (Operations/sec)		639155887	627367473
	Normalized	100%	98.16%
	Standard Deviation	0.5%	2.1%
PJSIP - INVITE (Responses/sec)		2531	1866
	Normalized	100%	73.73%
	Standard Deviation	3.4%	2.4%
PJSIP - OPTIONS, Stateful (Responses/sec)		3815	3716
	Normalized	100%	97.4%
	Standard Deviation	0.3%	0.4%
PJSIP - OPTIONS, Stateless (Responses/sec)		40082	40166
	Normalized	99.79%	100%

	Standard Deviation	2.3%	0.9%
libavif avifenc - 6 (sec)		15.383	15.356
	Normalized	99.82%	100%
	Standard Deviation	2.4%	1.3%
libavif avifenc - 10 (sec)		5.050	5.855
	Normalized	100%	86.25%
	Standard Deviation	5.7%	5.5%
libavif avifenc - 6, Lossless (sec)		36.764	38.676
	Normalized	100%	95.06%
	Standard Deviation	2.2%	0.2%
libavif avifenc - 10, Lossless (sec)		8.522	9.451
	Normalized	100%	90.17%
	Standard Deviation	6.6%	2.5%
Timed Apache Compilation - Time To Compile (sec)		35.187	37.074
	Normalized	100%	94.91%
	Standard Deviation	0.2%	0.3%
Timed Godot Game Engine Compilation - Time To Compile (sec)		75.951	76.879
	Normalized	100%	98.79%
	Standard Deviation	0.3%	0.8%
Timed Linux Kernel Compilation - Time To Compile		24.813	26.529
	Normalized	100%	93.53%
	Standard Deviation	5.1%	5.5%
Timed LLVM Compilation - Ninja (sec)		129.152	144.787
	Normalized	100%	89.2%
	Standard Deviation	0.5%	1.9%
Timed LLVM Compilation - Unix Makefiles (sec)		198.538	226.852
	Normalized	100%	87.52%
	Standard Deviation	1.2%	0.7%
Timed MPlayer Compilation - Time To Compile (sec)		10.109	11.098
	Normalized	100%	91.09%
	Standard Deviation	1.1%	1%
Timed Node.js Compilation - Time To Compile (sec)		102.136	108.602
	Normalized	100%	94.05%
	Standard Deviation	1.6%	2.3%
Timed PHP Compilation - Time To Compile (sec)		40.207	44.011
	Normalized	100%	91.36%
	Standard Deviation	2.2%	2.5%
Build2 - Time To Compile (sec)		70.057	74.317
	Normalized	100%	94.27%
	Standard Deviation	1.2%	1.3%
POV-Ray - Trace Time (sec)		9.476	9.365
	Normalized	98.83%	100%
	Standard Deviation	2.3%	1.2%
Tungsten Renderer - Hair (sec)		6.52538	6.75881
	Normalized	100%	96.55%
	Standard Deviation	2%	4.1%
Tungsten Renderer - Water Caustic (sec)		31.2739	31.1264
	Normalized	99.53%	100%
	Standard Deviation	1.5%	0.3%
Tungsten Renderer - Non-Exponential (sec)		5.23912	5.25085
	Normalized	100%	99.78%
	Standard Deviation	2.5%	1.5%
Tungsten Renderer - Volumetric Caustic (sec)		13.4481	13.7613
	Normalized	100%	97.72%

	Standard Deviation	12.8%	12.5%
YafaRay - T.T.F.S.S (sec)		86.283	83.265
	Normalized	96.5%	100%
	Standard Deviation	10.1%	10.6%
oneDNN - IP Shapes 1D - f32 - CPU (ms)		0.945450	1.018895
	Normalized	100%	92.79%
	Standard Deviation	2.3%	2.4%
oneDNN - IP Shapes 3D - f32 - CPU (ms)		1.37903	1.54442
	Normalized	100%	89.29%
	Standard Deviation	1.4%	2.3%
oneDNN - IP Shapes 1D - u8s8f32 - CPU (ms)		1.25869	1.40323
	Normalized	100%	89.7%
	Standard Deviation	2.8%	1.5%
oneDNN - IP Shapes 3D - u8s8f32 - CPU (ms)		0.445171	0.471052
	Normalized	100%	94.51%
	Standard Deviation	2.5%	2.8%
oneDNN - IP Shapes 1D - bf16bf16bf16 - CPU (ms)		3.03516	3.30961
	Normalized	100%	91.71%
	Standard Deviation	3.1%	2%
oneDNN - IP Shapes 3D - bf16bf16bf16 - CPU (ms)		1.82051	1.96166
	Normalized	100%	92.8%
	Standard Deviation	2.4%	2.5%
oneDNN - C.B.S.A - f32 - CPU (ms)		1.41084	1.57954
	Normalized	100%	89.32%
	Standard Deviation	0.7%	1.2%
oneDNN - D.B.s - f32 - CPU (ms)		28.7517	35.4561
	Normalized	100%	81.09%
	Standard Deviation	3.9%	4%
oneDNN - D.B.s - f32 - CPU (ms)		0.846330	0.902751
	Normalized	100%	93.75%
	Standard Deviation	2.4%	2.3%
oneDNN - C.B.S.A - u8s8f32 - CPU (ms)		0.924756	1.03102
	Normalized	100%	89.69%
	Standard Deviation	0.9%	0.8%
oneDNN - D.B.s - u8s8f32 - CPU (ms)		0.362841	0.386794
	Normalized	100%	93.81%
	Standard Deviation	2.1%	1.6%
oneDNN - D.B.s - u8s8f32 - CPU (ms)		0.193198	0.206919
	Normalized	100%	93.37%
	Standard Deviation	3.4%	2.7%
oneDNN - R.N.N.T - f32 - CPU (ms)		672.646	732.235
	Normalized	100%	91.86%
	Standard Deviation	0.4%	2.8%
oneDNN - R.N.N.I - f32 - CPU (ms)		437.866	468.050
	Normalized	100%	93.55%
	Standard Deviation	0.2%	0.9%
oneDNN - R.N.N.T - u8s8f32 - CPU (ms)		684.271	730.825
	Normalized	100%	93.63%
	Standard Deviation	3.2%	3.3%
oneDNN - C.B.S.A - bf16bf16bf16 - CPU (ms)		2.10597	2.27008
	Normalized	100%	92.77%
	Standard Deviation	1.5%	5%
oneDNN - D.B.s - bf16bf16bf16 - CPU (ms)		3.27051	3.50505
	Normalized	100%	93.31%
	Standard Deviation	0.5%	1.3%

oneDNN - D.B.s - bf16bf16bf16 - CPU (ms)	3.60538	11.68014
Normalized	100%	30.87%
Standard Deviation	3.4%	101.3%
oneDNN - R.N.N.I - u8s8f32 - CPU (ms)	439.677	506.972
Normalized	100%	86.73%
Standard Deviation	0.2%	25.8%
oneDNN - M.M.B.S.T - f32 - CPU (ms)	0.256555	0.270802
Normalized	100%	94.74%
Standard Deviation	2%	2.3%
oneDNN - R.N.N.T - bf16bf16bf16 - CPU (ms)	671.541	754.982
Normalized	100%	88.95%
Standard Deviation	0%	9.2%
oneDNN - R.N.N.I - bf16bf16bf16 - CPU (ms)	437.972	472.245
Normalized	100%	92.74%
Standard Deviation	0.4%	0.5%
oneDNN - M.M.B.S.T - u8s8f32 - CPU (ms)	0.231483	0.247260
Normalized	100%	93.62%
Standard Deviation	2.5%	2.5%
oneDNN - M.M.B.S.T - bf16bf16bf16 - CPU (ms)	0.615331	0.659638
Normalized	100%	93.28%
Standard Deviation	1.3%	1.2%
Numpy Benchmark (Score)	332.22	387.62
Normalized	85.71%	100%
Standard Deviation	2.6%	2.6%
Timed Eigen Compilation - Time To Compile (sec)	87.461	81.774
Normalized	93.5%	100%
Standard Deviation	1.7%	0.7%
Timed Erlang/OTP Compilation - Time To Compile	180.485	183.275
Normalized	100%	98.48%
Standard Deviation	0.8%	1.1%
Timed Wasmer Compilation - Time To Compile (sec)	44.607	68.800
Normalized	100%	64.84%
Standard Deviation	1.4%	0.5%
Helsing - 14 digit (sec)	82.465	83.525
Normalized	100%	98.73%
Standard Deviation	3.4%	0.4%
Aircrack-ng (k/s)	211170	211559
Normalized	99.82%	100%
Standard Deviation	0.1%	0.1%
Cpuminer-Opt - Magi (kH/s)	2736	2731
Normalized	100%	99.83%
Standard Deviation	6.4%	0.4%
Cpuminer-Opt - x25x (kH/s)	2222	2254
Normalized	98.59%	100%
Standard Deviation	1.9%	2.2%
Cpuminer-Opt - Deepcoin (kH/s)	29191	28568
Normalized	100%	97.87%
Standard Deviation	4.3%	7.5%
Cpuminer-Opt - Ringcoin (kH/s)	3488	3954
Normalized	88.2%	100%
Standard Deviation	11.1%	16.5%
Cpuminer-Opt - Blake-2 S (kH/s)	1395127	1360453
Normalized	100%	97.51%
Standard Deviation	6%	4.1%
Cpuminer-Opt - Garlicoin (kH/s)	29473	26183

	Normalized	100%	88.84%
	Standard Deviation	13.9%	14.4%
Cpuminer-Opt - Skeincoin (kH/s)		277683	268467
	Normalized	100%	96.68%
	Standard Deviation	3.4%	5%
Cpuminer-Opt - Myriad-Groestl (kH/s)		40753	46086
	Normalized	88.43%	100%
	Standard Deviation	14.4%	10.6%
Cpuminer-Opt - LBC, LBRY Credits (kH/s)		163627	151978
	Normalized	100%	92.88%
	Standard Deviation	6.4%	7.1%
Cpuminer-Opt - Q.S.2.P (kH/s)		317291	322628
	Normalized	98.35%	100%
	Standard Deviation	4.8%	11.1%
Cpuminer-Opt - T.S.2.O (kH/s)		422680	402686
	Normalized	100%	95.27%
	Standard Deviation	0.5%	9.6%
SecureMark - SecureMark-TLS (marks)		230272	226588
	Normalized	100%	98.4%
	Standard Deviation	0.1%	0.4%
Node.js V8 Web Tooling Benchmark (runs/s)		10.79	10.37
	Normalized	100%	96.11%
	Standard Deviation	1.1%	4.7%
Liquid-DSP - 16 - 256 - 57 (samples/s)		826756667	812776667
	Normalized	100%	98.31%
	Standard Deviation	0.1%	0.6%
Liquid-DSP - 32 - 256 - 57 (samples/s)		1631166667	1569933333
	Normalized	100%	96.25%
	Standard Deviation	0.1%	1.3%
Liquid-DSP - 64 - 256 - 57 (samples/s)		3044966667	2157125000
	Normalized	100%	70.84%
	Standard Deviation	1.1%	2.3%
Liquid-DSP - 128 - 256 - 57 (samples/s)		3290766667	3292133333
	Normalized	99.96%	100%
	Standard Deviation	0.5%	0.7%
Liquid-DSP - 160 - 256 - 57 (samples/s)		3080633333	3086966667
	Normalized	99.79%	100%
	Standard Deviation	0.8%	0.6%
KeyDB (Ops/sec)		524178	355593
	Normalized	100%	67.84%
	Standard Deviation	1.4%	13.2%
TensorFlow Lite - SqueezeNet (us)		47808	66836
	Normalized	100%	71.53%
	Standard Deviation	0.1%	8.9%
TensorFlow Lite - Inception V4 (us)		687019	892083
	Normalized	100%	77.01%
	Standard Deviation	2.4%	1.4%
TensorFlow Lite - NASNet Mobile (us)		81319	157434
	Normalized	100%	51.65%
	Standard Deviation	3.7%	14%
TensorFlow Lite - Mobilenet Float (us)		41555	55490
	Normalized	100%	74.89%
	Standard Deviation	5.7%	5.1%
TensorFlow Lite - Mobilenet Quant (us)		43075	58978
	Normalized	100%	73.04%

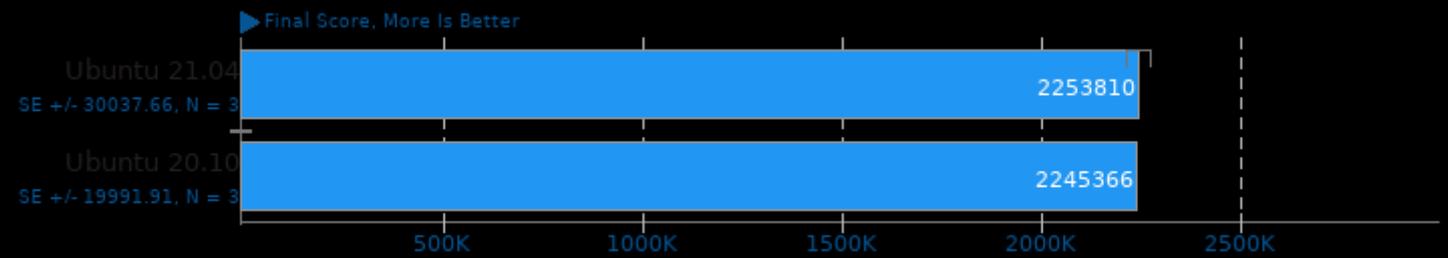
	Standard Deviation	5.4%	3.8%
TensorFlow Lite - I.R.V (us)		569303	725870
	Normalized	100%	78.43%
	Standard Deviation	0.2%	6.6%
PostgreSQL pgbench - 100 - 250 - Read Only (TPS)		946634	927066
	Normalized	100%	97.93%
	Standard Deviation	4.4%	2.4%
PostgreSQL pgbench - 100 - 250 - Read Only - Average Latency (ms)		0.266	0.271
	Normalized	100%	98.15%
	Standard Deviation	4.6%	2.4%
PostgreSQL pgbench - 100 - 250 - Read Write (TPS)		28712	20742
	Normalized	100%	72.24%
	Standard Deviation	0.3%	0.4%
PostgreSQL pgbench - 100 - 250 - Read Write - Average Latency (ms)		8.739	12.100
	Normalized	100%	72.22%
	Standard Deviation	0.2%	0.4%
WRF - conus 2.5km (sec)		9903	9897
	Normalized	99.94%	100%
TNN - CPU - MobileNet v2 (ms)		443.547	606.052
	Normalized	100%	73.19%
	Standard Deviation	8.2%	7.8%
TNN - CPU - SqueezeNet v1.1 (ms)		366.729	366.201
	Normalized	99.86%	100%
	Standard Deviation	0%	0%
Sysbench - RAM / Memory (MiB/sec)		12177	12185
	Normalized	99.93%	100%
	Standard Deviation	4.6%	4.3%
Sysbench - CPU (Events/sec)		213871	213970
	Normalized	99.95%	100%
	Standard Deviation	0.2%	0.2%
Apache Cassandra - Writes (Op/s)		106863	104506
	Normalized	100%	97.79%
	Standard Deviation	8.2%	2.4%
Blender - BMW27 - CPU-Only (sec)		29.61	29.56
	Normalized	99.83%	100%
	Standard Deviation	0.3%	0.8%
Blender - Classroom - CPU-Only (sec)		72.28	72.53
	Normalized	100%	99.66%
	Standard Deviation	0.1%	0.1%
Blender - Fishy Cat - CPU-Only (sec)		45.72	46.91
	Normalized	100%	97.46%
	Standard Deviation	0.6%	1.6%
Blender - Barbershop - CPU-Only (sec)		108.31	109.65
	Normalized	100%	98.78%
	Standard Deviation	0.4%	0.7%
Blender - Pabellon Barcelona - CPU-Only (sec)		88.36	89.25
	Normalized	100%	99%
	Standard Deviation	0.5%	0.5%
ONNX Runtime - yolov4 - OpenMP CPU		479	356
	Normalized	100%	74.32%
	Standard Deviation	0.4%	0.8%

ONNX Runtime - bert squad-10 - OpenMP CPU	500	435
(Inferences/min)		
Normalized	100%	87%
Standard Deviation	4.4%	1.7%
ONNX Runtime - fcn-resnet101-11 - OpenMP CPU	193	161
(Inferences/min)		
Normalized	100%	83.42%
Standard Deviation	1.1%	1.1%
ONNX Runtime - shufflenet-v2-10 - OpenMP CPU	8217	7470
(Inferences/min)		
Normalized	100%	90.91%
Standard Deviation	2.2%	0.8%
ONNX Runtime - super-resolution-10 - OpenMP CPU	6967	5673
(Inferences/min)		
Normalized	100%	81.43%
Standard Deviation	10.2%	9.7%
PyBench - T.F.A.T.T (Milliseconds)	995	984
Normalized	98.89%	100%
Standard Deviation	0.3%	0.5%
PHPBench - P.B.S (Score)	715587	717063
Normalized	99.79%	100%
Standard Deviation	0.8%	1%
Zstd Compression - 3 - Compression Speed (MB/s)	6148	4517
Normalized	100%	73.46%
Standard Deviation	1.5%	3.5%
Zstd Compression - 3 - D.S (MB/s)	2986	2969
Normalized	100%	99.45%
Standard Deviation	0.4%	0.6%
Zstd Compression - 8 - Compression Speed (MB/s)	2097	2004
Normalized	100%	95.59%
Standard Deviation	2%	8.1%
Zstd Compression - 8 - D.S (MB/s)	3073	3022
Normalized	100%	98.33%
Standard Deviation	0.2%	0.8%
Zstd Compression - 19 - Compression Speed (MB/s)	82.2	81.8
Normalized	100%	99.51%
Standard Deviation	4.8%	1%
Zstd Compression - 19 - D.S (MB/s)	2616	2607
Normalized	100%	99.67%
Standard Deviation	0.4%	0.7%
Zstd Compression - 3, Long Mode - Compression Speed (MB/s)	266.9	265.2
Normalized	100%	99.36%
Standard Deviation	1.3%	11%
Zstd Compression - 8, Long Mode - Compression Speed (MB/s)	300.2	297.4
Normalized	100%	99.07%
Standard Deviation	1.9%	0.6%
Zstd Compression - 8, Long Mode - D.S (MB/s)	3284	3236
Normalized	100%	98.53%
Standard Deviation	0.4%	0.8%
Zstd Compression - 19, Long Mode - Compression Speed (MB/s)	46.0	41.0
Normalized	100%	89.13%

	Standard Deviation	4.5%	1.1%
Zstd Compression - 19, Long Mode - D.S (MB/s)		2709	2686
	Normalized	100%	99.15%
	Standard Deviation	0.7%	0.3%
GROMACS - MPI CPU - water_GMX50_bare (Ns/Day)		9.004	8.851
	Normalized	100%	98.3%
	Standard Deviation	1.1%	0.3%
srsRAN - OFDM_Test (Samples / Second)		120766667	121300000
	Normalized	99.56%	100%
	Standard Deviation	0.4%	0.4%
srsRAN - PHY_DL_Test (eNb Mb/s)		206.8	205.4
	Normalized	100%	99.32%
	Standard Deviation	0.7%	0.5%
srsRAN - PHY_DL_Test (UE Mb/s)		85.1	85.3
	Normalized	99.77%	100%
	Standard Deviation	1.6%	0.5%
Zstd Compression - 3, Long Mode - D.S (MB/s)			3132
	Standard Deviation		3.4%

BlogBench 1.1

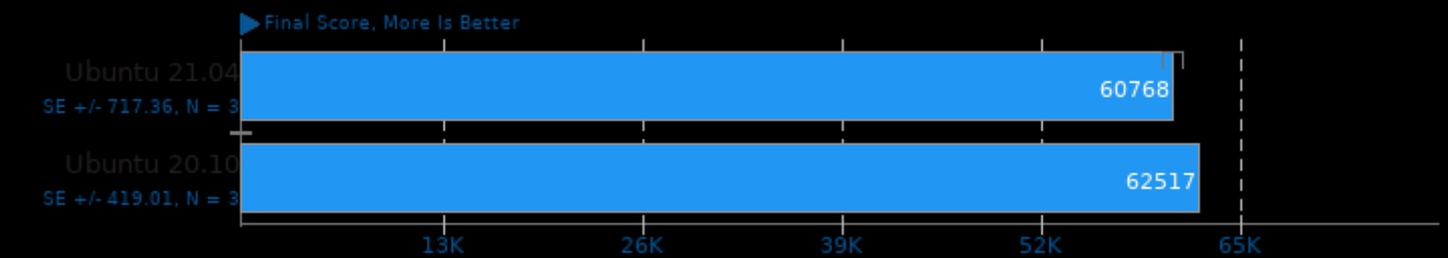
Test: Read



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

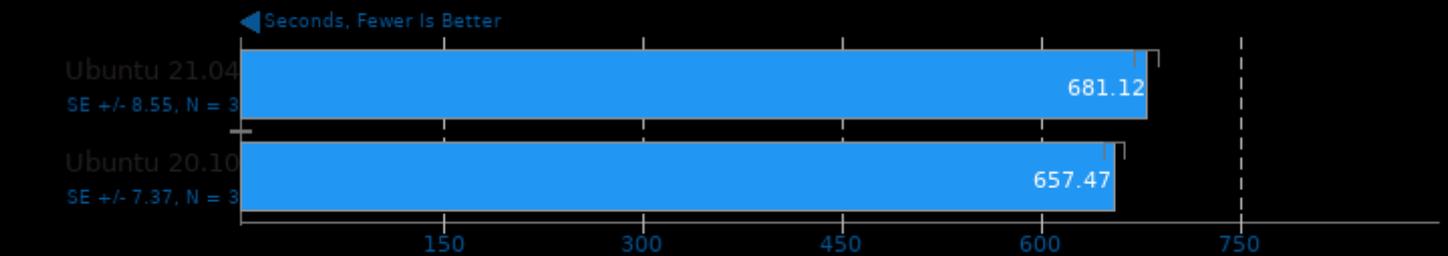
BlogBench 1.1

Test: Write

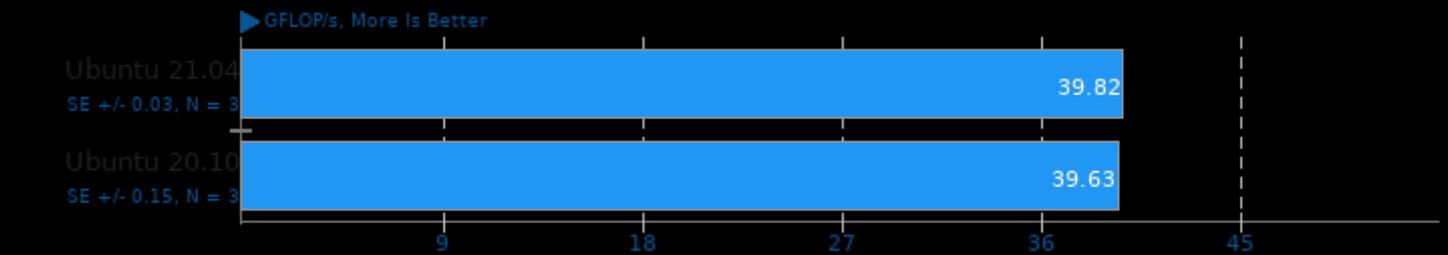


1. (CC) gcc options: -O2 -pthread

WireGuard + Linux Networking Stack Stress Test



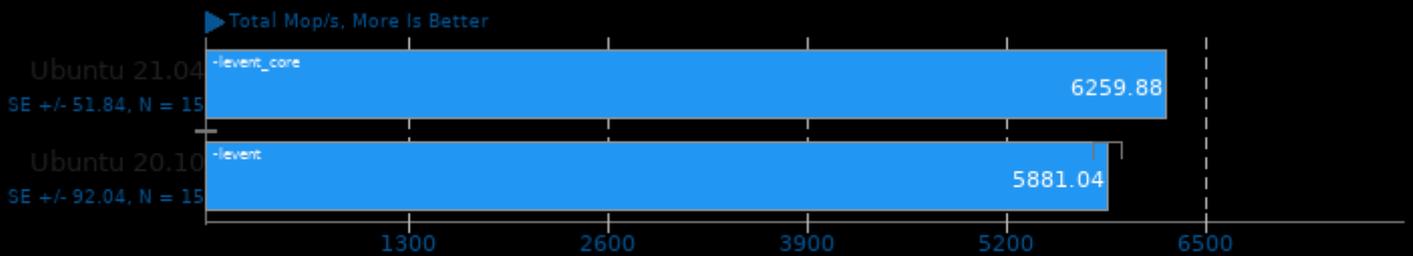
High Performance Conjugate Gradient 3.1



1. (CXX) g++ options: -O3 -ffast-math -ftrivial-auto-var-init -pthread -lmpi_cxx -lmpi

NAS Parallel Benchmarks 3.4

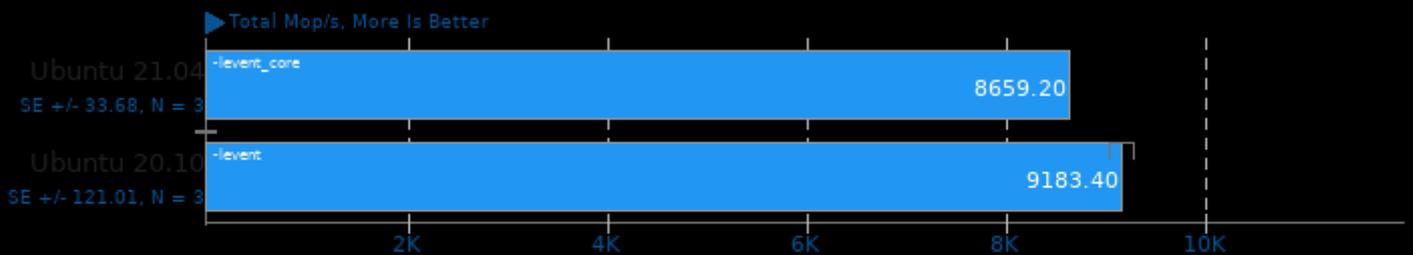
Test / Class: EP.C



1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -ldl -levent_threads -lutil -lm -lnsl
2. Ubuntu 21.04: Open MPI 4.1.0
3. Ubuntu 20.10: Open MPI 4.0.3

NAS Parallel Benchmarks 3.4

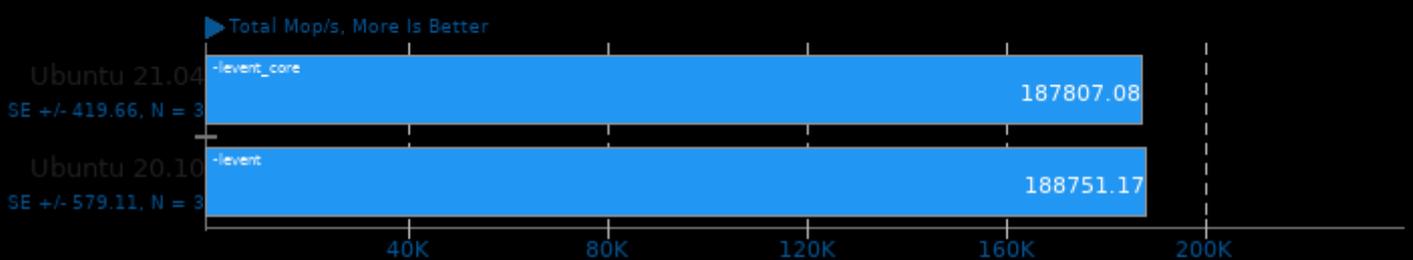
Test / Class: EP.D



1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -ldl -levent_threads -lutil -lm -lnsl
2. Ubuntu 21.04: Open MPI 4.1.0
3. Ubuntu 20.10: Open MPI 4.0.3

NAS Parallel Benchmarks 3.4

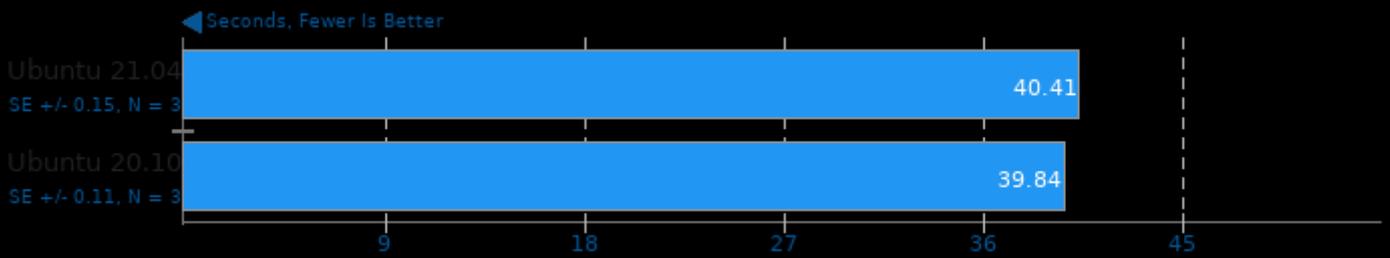
Test / Class: LU.C



1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -ldl -levent_threads -lutil -lm -lnsl
2. Ubuntu 21.04: Open MPI 4.1.0
3. Ubuntu 20.10: Open MPI 4.0.3

Rodinia 3.1

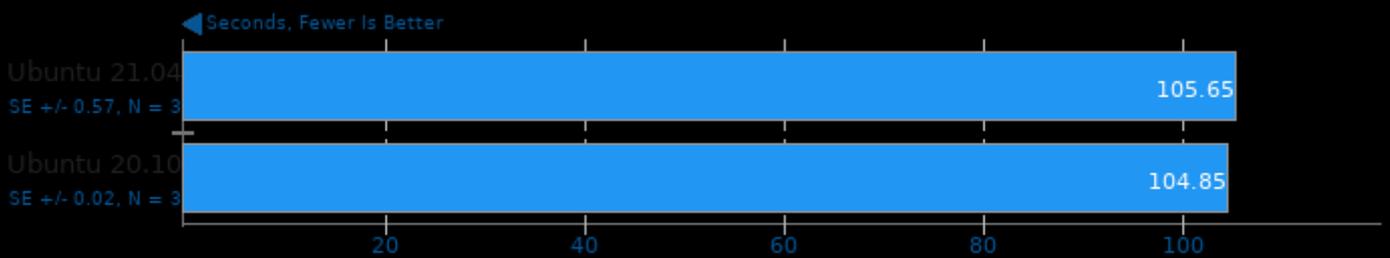
Test: OpenMP LavaMD



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

Rodinia 3.1

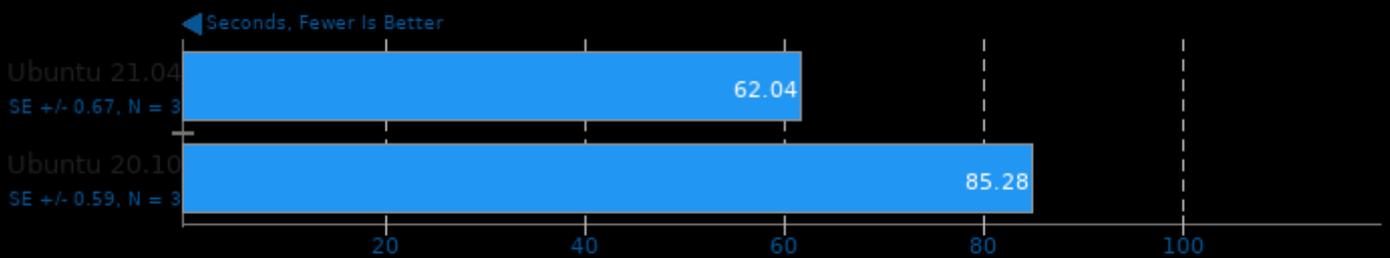
Test: OpenMP HotSpot3D



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

Rodinia 3.1

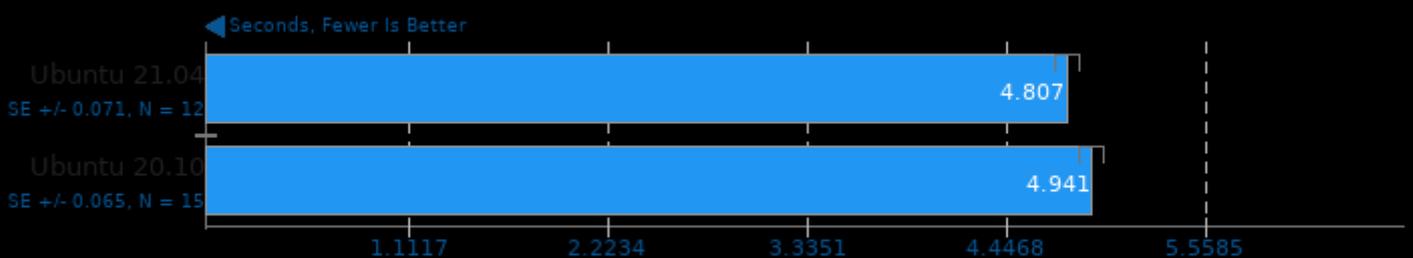
Test: OpenMP Leukocyte



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

Rodinia 3.1

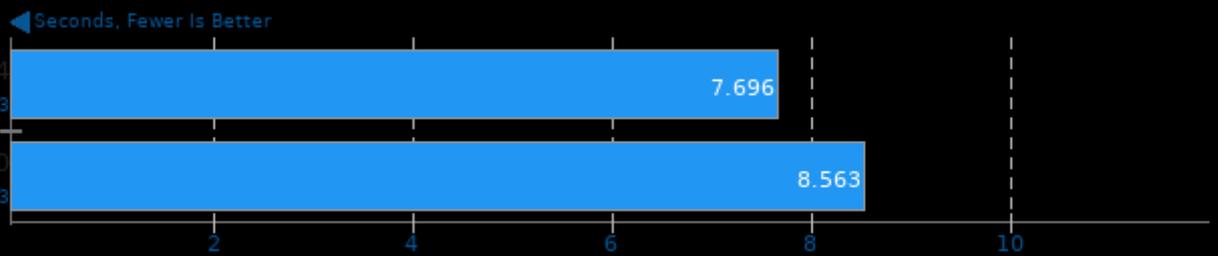
Test: OpenMP CFD Solver



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

Rodinia 3.1

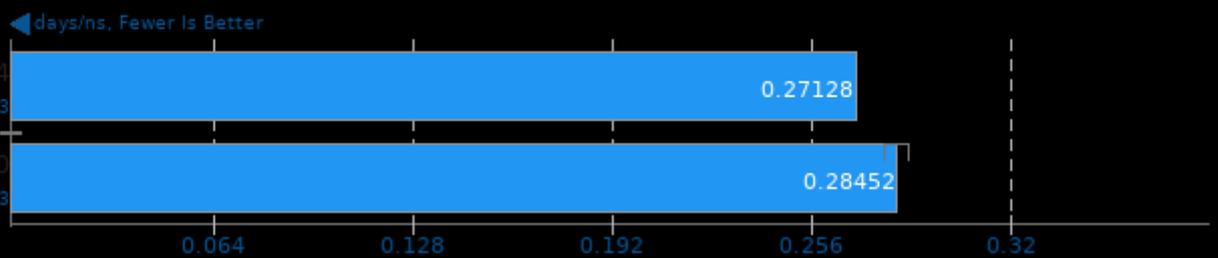
Test: OpenMP Streamcluster



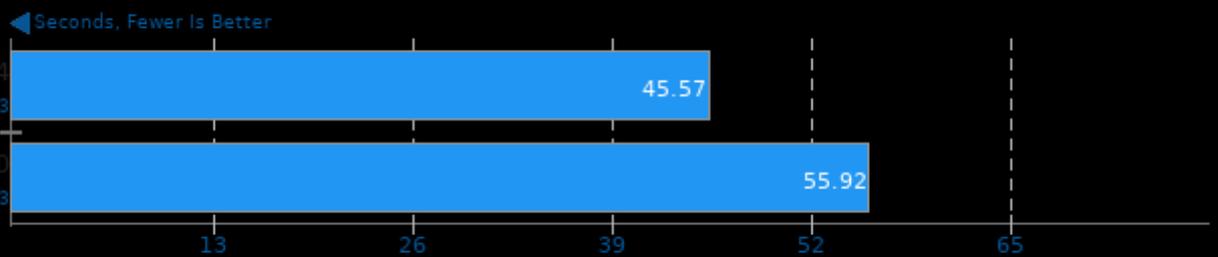
1. (CXX) g++ options: -O2 -fOpenCL

NAMD 2.14

ATPase Simulation - 327,506 Atoms



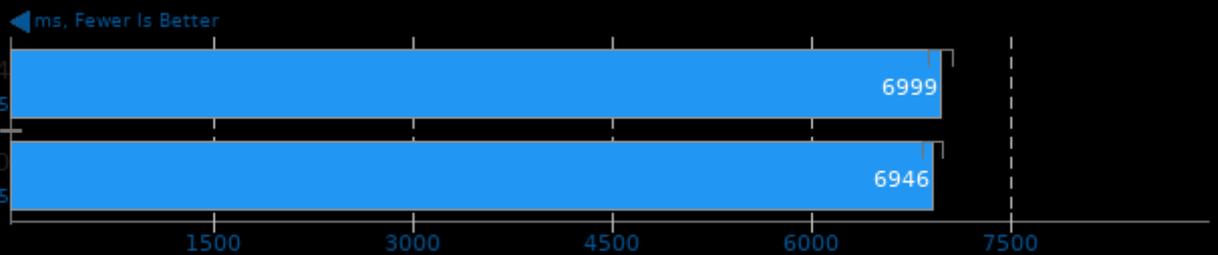
Nebular Empirical Analysis Tool 2.3



1. (F9X) gfortran options: -O3 -cpp -fno-backtrace -fopenmp -fno-backtrace -fno-backtrace -fno-backtrace

toyBrot Fractal Generator 2020-11-18

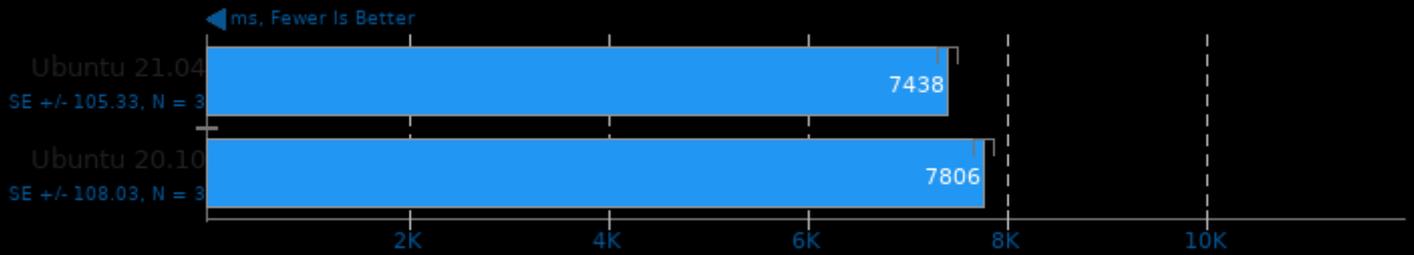
Implementation: TBB



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

toyBrot Fractal Generator 2020-11-18

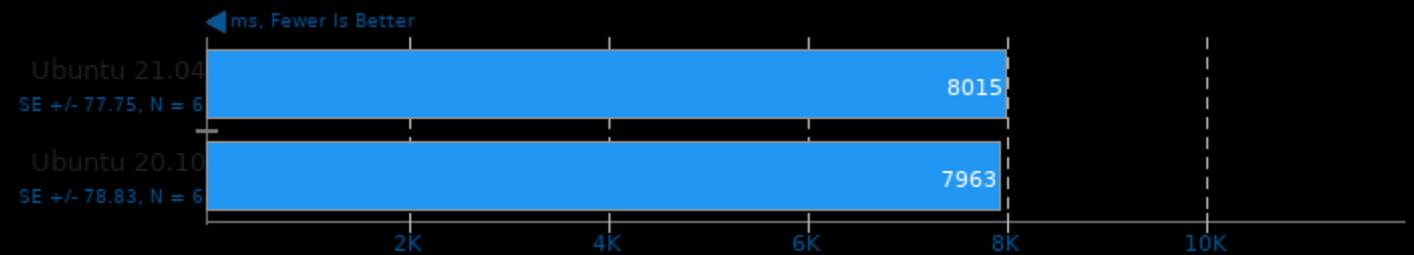
Implementation: OpenMP



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

toyBrot Fractal Generator 2020-11-18

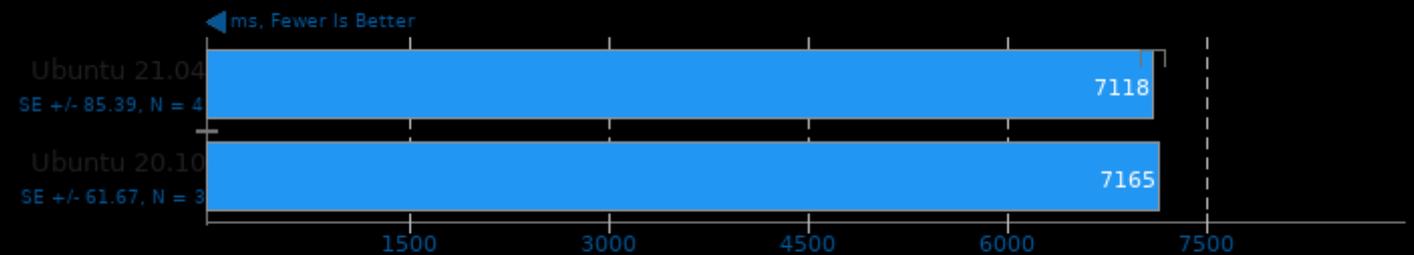
Implementation: C++ Tasks



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

toyBrot Fractal Generator 2020-11-18

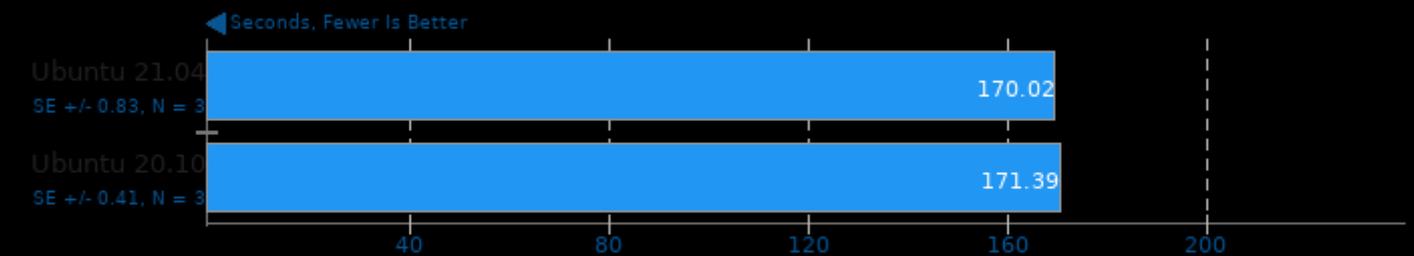
Implementation: C++ Threads



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

Timed MrBayes Analysis 3.2.7

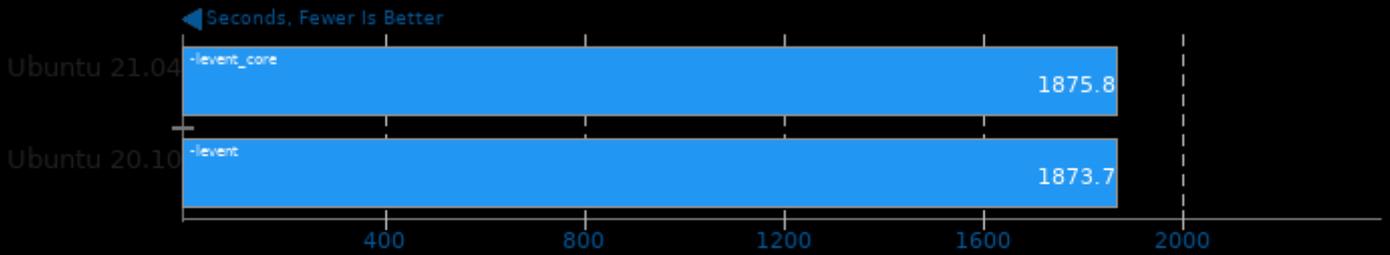
Primate Phylogeny Analysis



1. (CC) gcc options: -march=icelake -mssse3 -msse4.1 -msse4.2 -msha -maes -mavx -mfma -mavx2 -mavx512f -mavx512cd -mavx512vl -m

NWChem 7.0.2

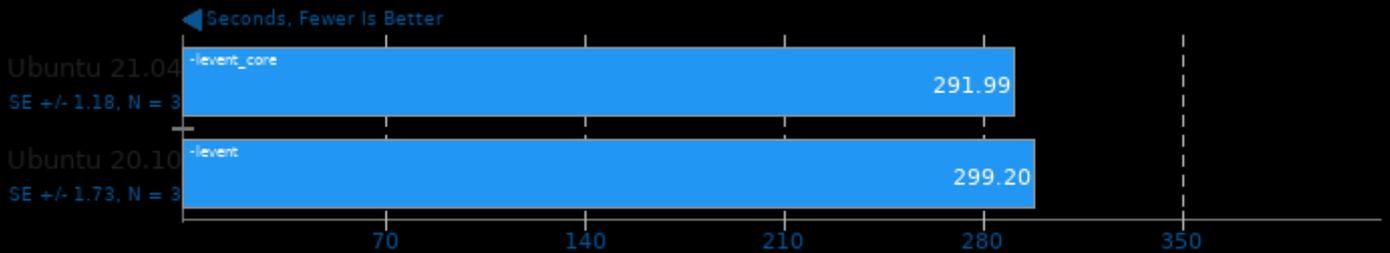
Input: C240 Buckyball



1. (F9X) gfortran options: -lnwctask -lccsd -lmcsf -lscf -lmp2 -lmoints -lstepper -ldriver -loptim -lnwdfc -lgradients -lcpfh -lesp -laddscf -ldangchang -lgue

Xcompact3d Incompact3d 2021-03-11

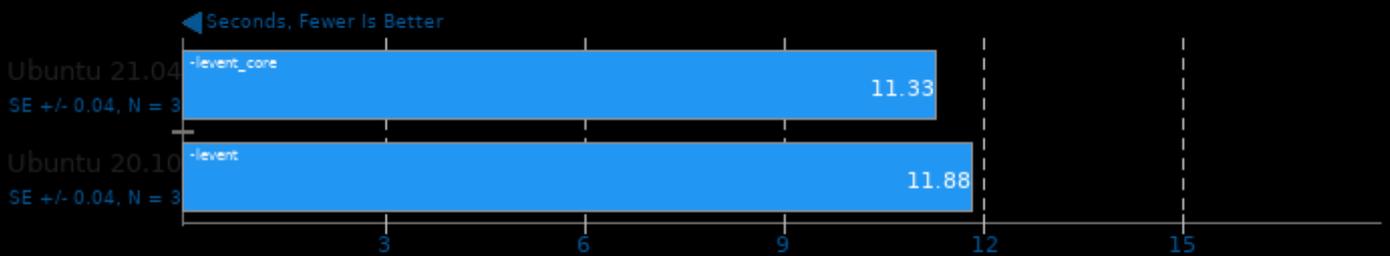
Input: X3D-benchmarking input.i3d



1. (F9X) gfortran options: -cpp -O2 -funroll-loops -loop-optimise -fcray-pointer -fbacktrace -pthread -lmpi_usempif08 -lmpi_mpih -lmpi -lopen-rte -lopen

Xcompact3d Incompact3d 2021-03-11

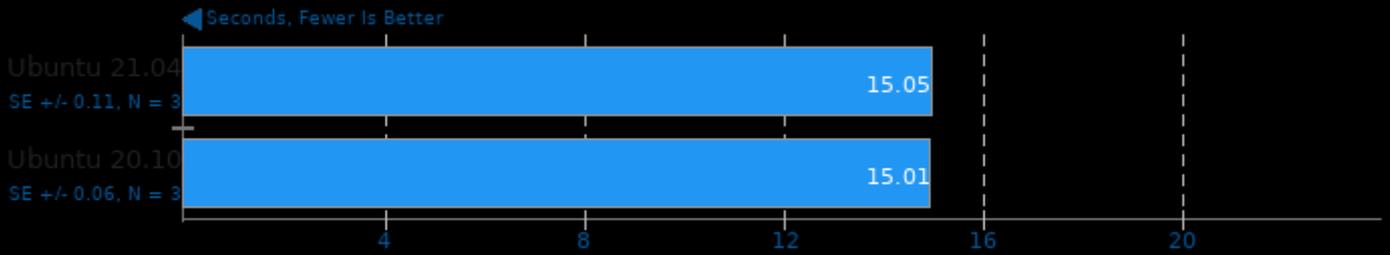
Input: input.i3d 193 Cells Per Direction



1. (F9X) gfortran options: -cpp -O2 -funroll-loops -loop-optimise -fcray-pointer -fbacktrace -pthread -lmpi_usempif08 -lmpi_mpih -lmpi -lopen-rte -lopen

OpenFOAM 8

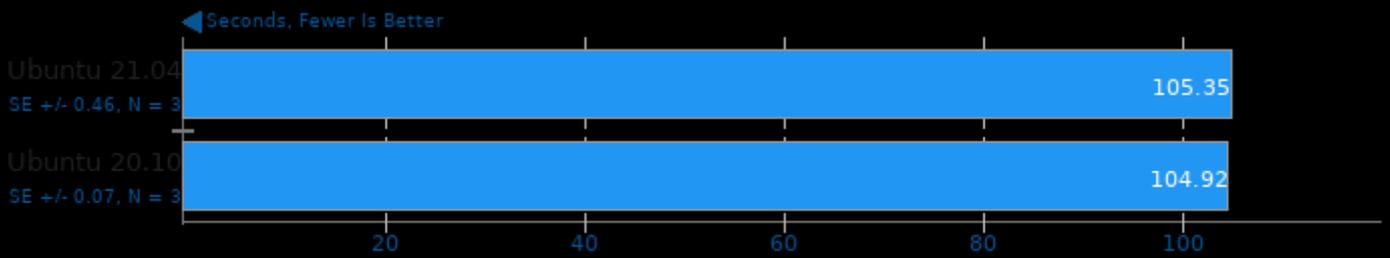
Input: Motorbike 30M



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

OpenFOAM 8

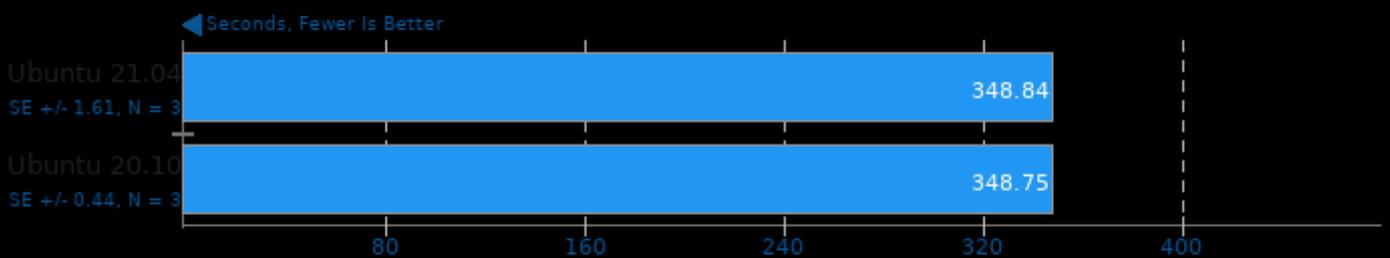
Input: Motorbike 60M



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

RELION 3.1.1

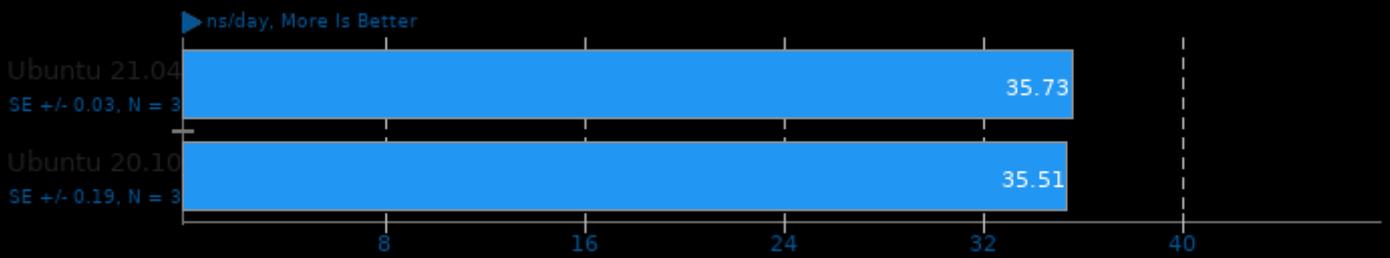
Test: Basic - Device: CPU



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

LAMMPS Molecular Dynamics Simulator 29Oct2020

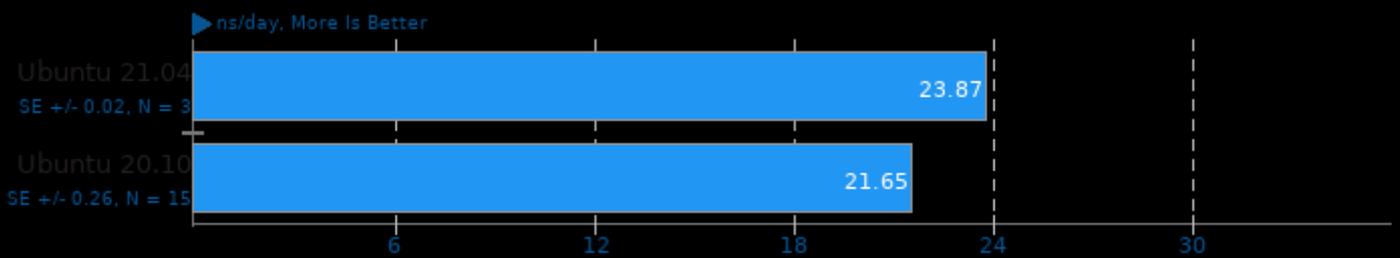
Model: 20k Atoms



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

LAMMPS Molecular Dynamics Simulator 29Oct2020

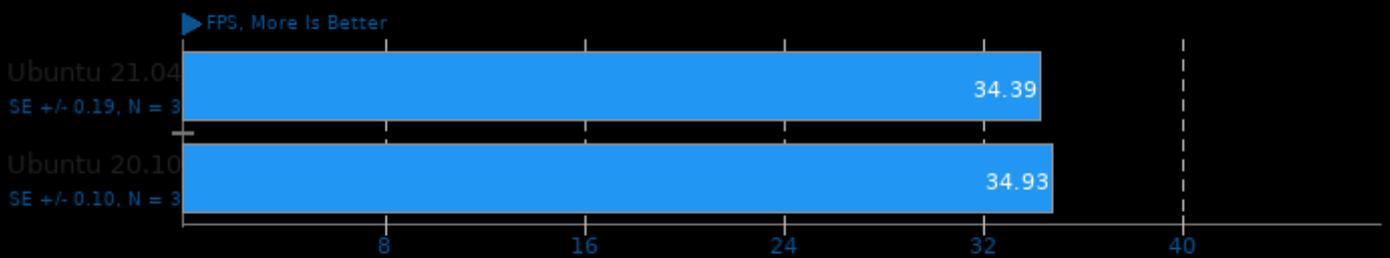
Model: Rhodopsin Protein



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

libgav1 0.16.3

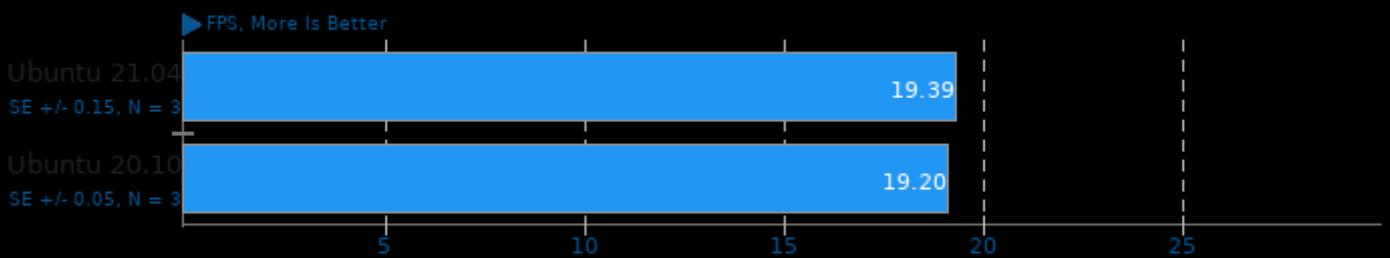
Video Input: Chimera 1080p



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

libgav1 0.16.3

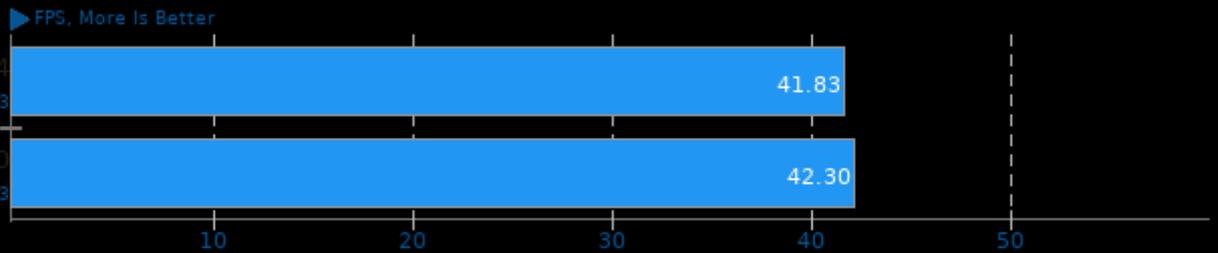
Video Input: Summer Nature 4K



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

libgav1 0.16.3

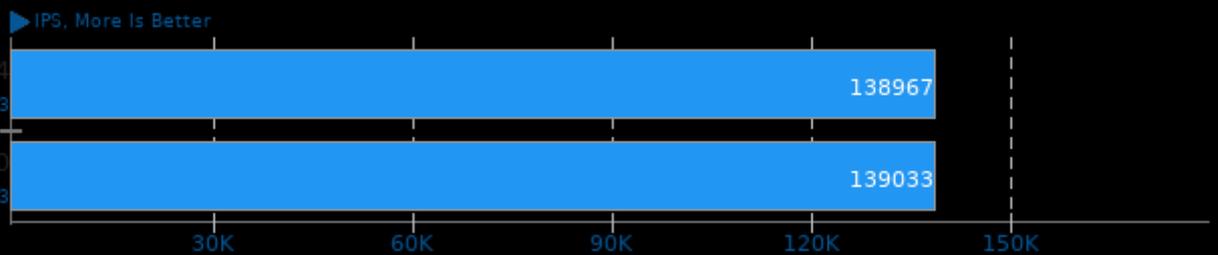
Video Input: Summer Nature 1080p



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

Chia Blockchain VDF 1.0.1

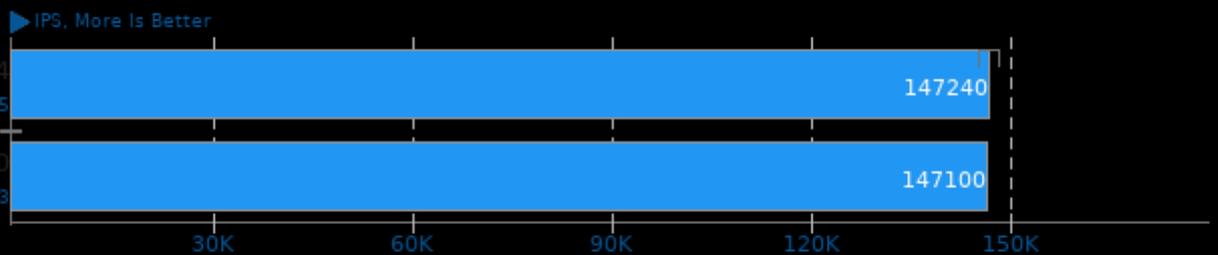
Test: Square Plain C++



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

Chia Blockchain VDF 1.0.1

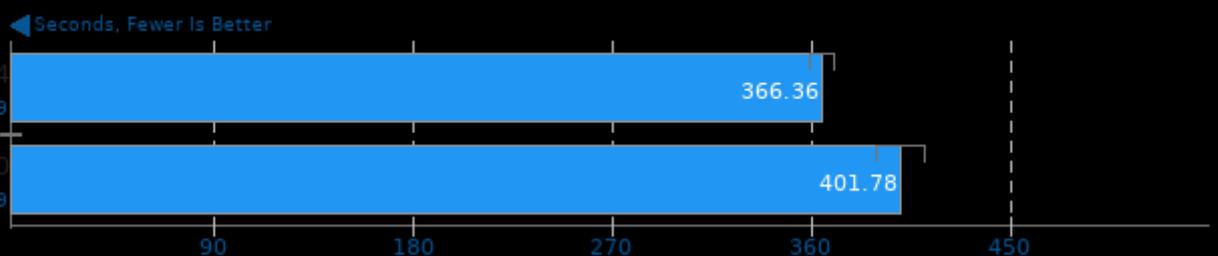
Test: Square Assembly Optimized



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

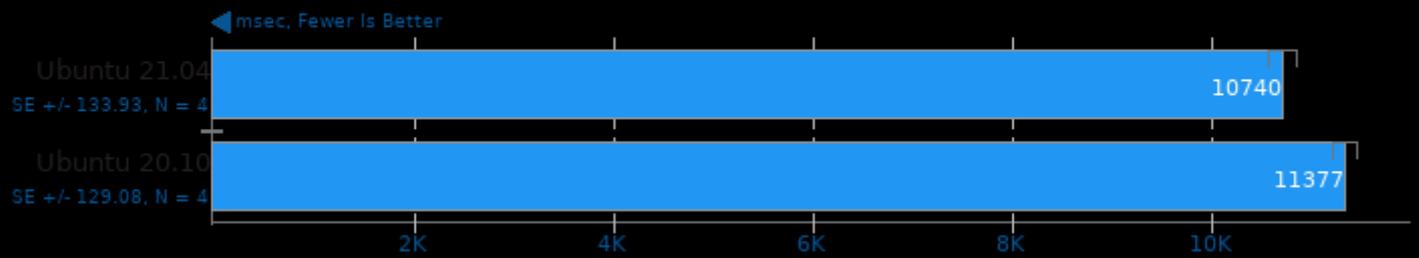
Java Gradle Build

Gradle Build: Reactor



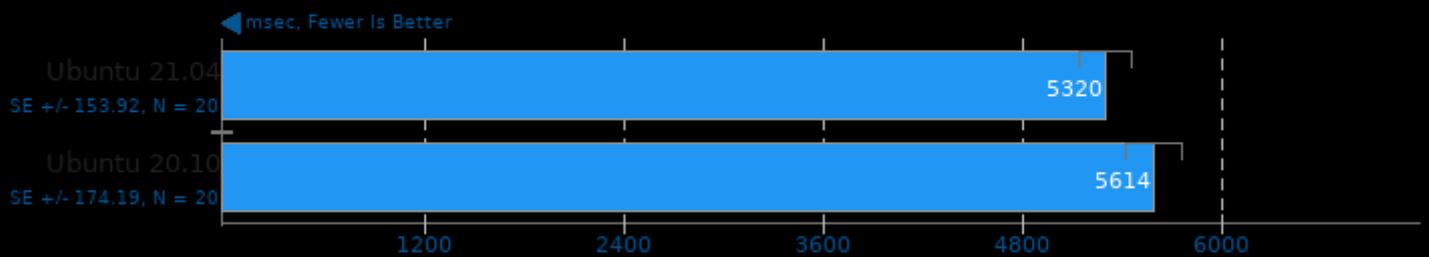
DaCapo Benchmark 9.12-MR1

Java Test: H2



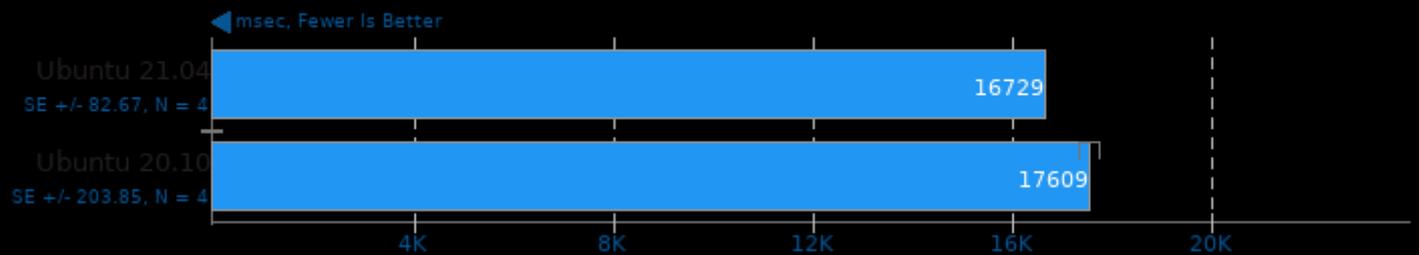
DaCapo Benchmark 9.12-MR1

Java Test: Jython



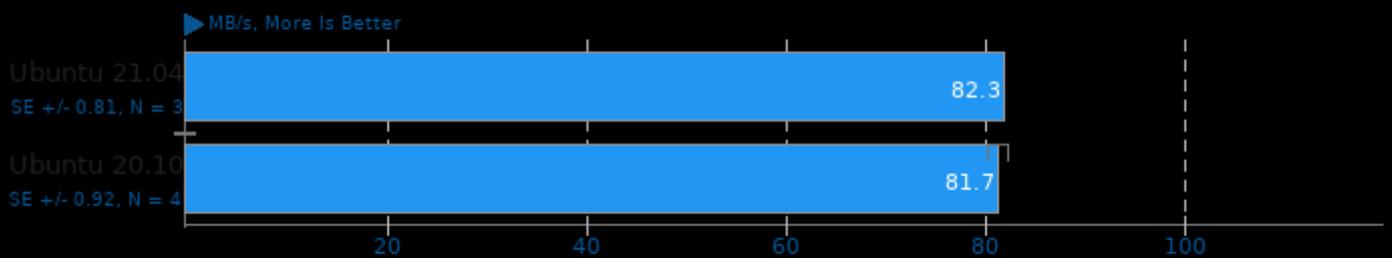
DaCapo Benchmark 9.12-MR1

Java Test: Tradebeans



Zstd Compression 1.4.9

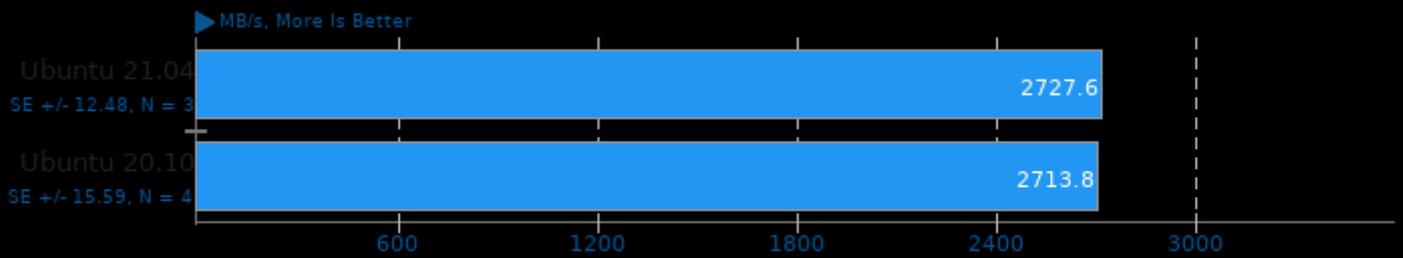
Compression Level: 19 - Compression Speed



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

Zstd Compression 1.4.9

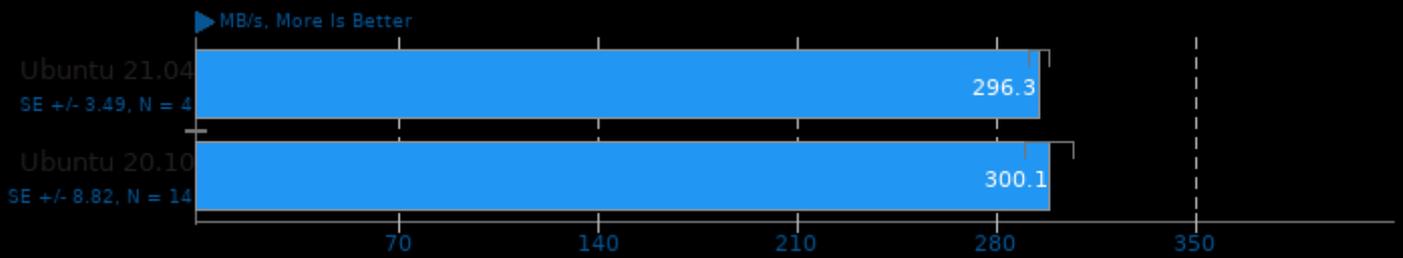
Compression Level: 19 - Decompression Speed



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

Zstd Compression 1.4.9

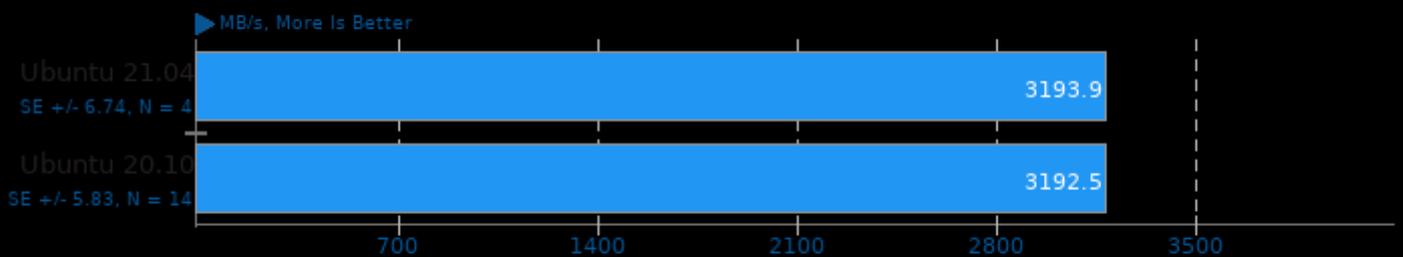
Compression Level: 8, Long Mode - Compression Speed



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

Zstd Compression 1.4.9

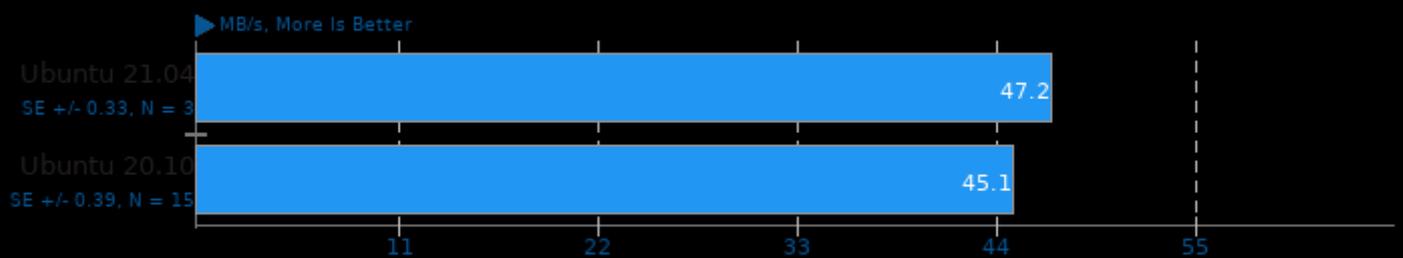
Compression Level: 8, Long Mode - Decompression Speed



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

Zstd Compression 1.4.9

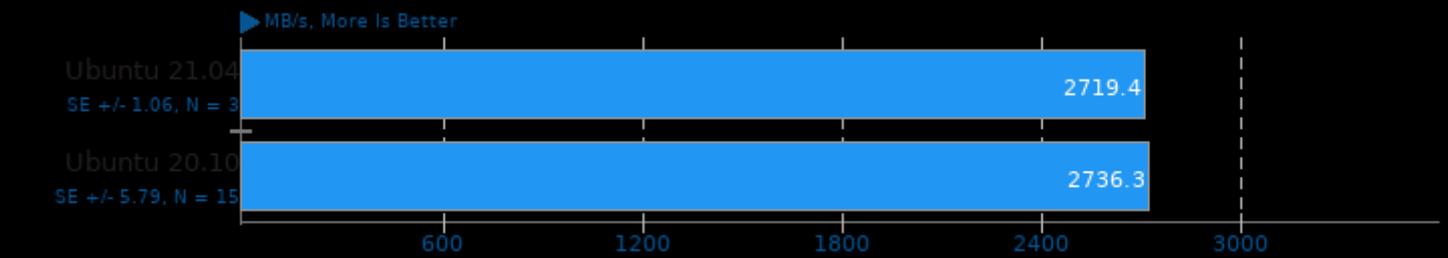
Compression Level: 19, Long Mode - Compression Speed



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

Zstd Compression 1.4.9

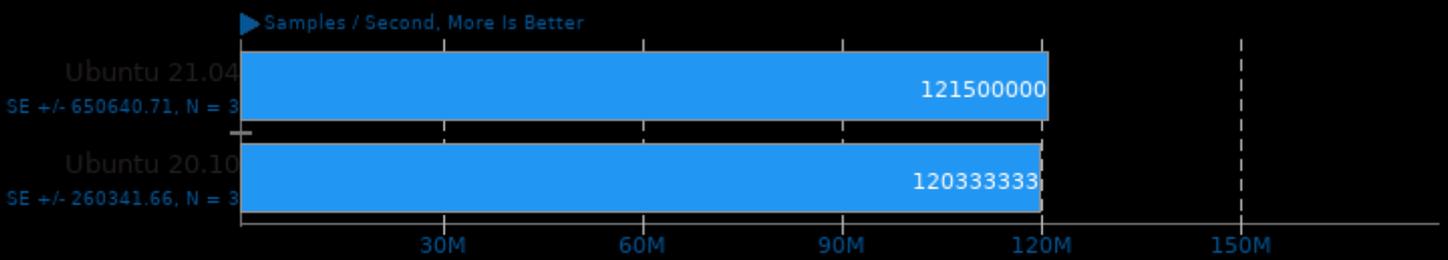
Compression Level: 19, Long Mode - Decompression Speed



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

srsLTE 20.10.1

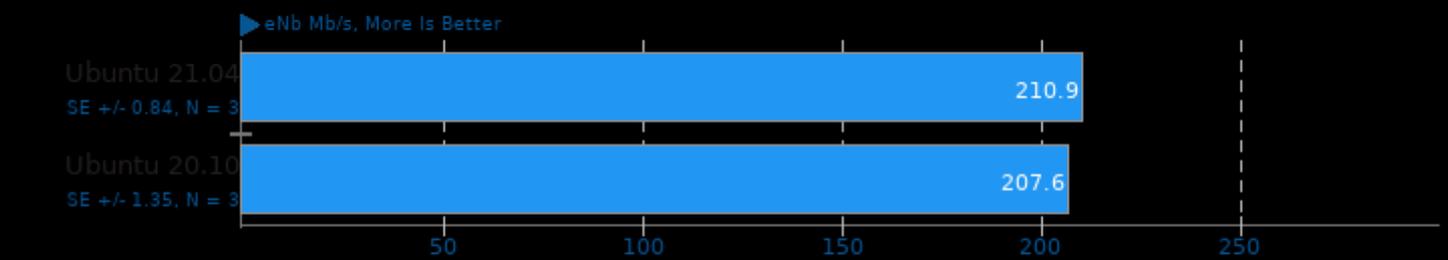
Test: OFDM_Test



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

srsLTE 20.10.1

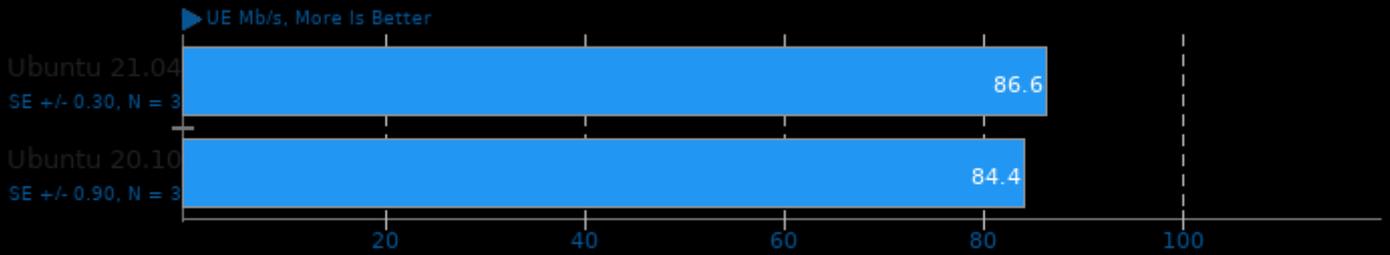
Test: PHY_DL_Test



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

srsLTE 20.10.1

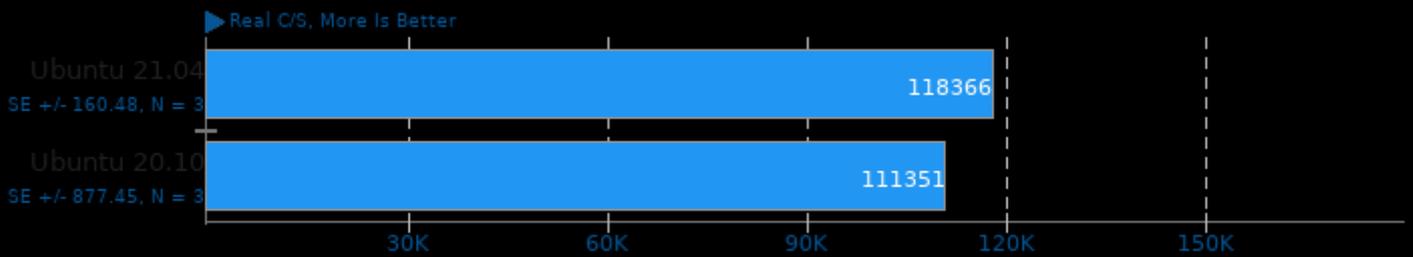
Test: PHY_DL_Test



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

John The Ripper 1.9.0-jumbo-1

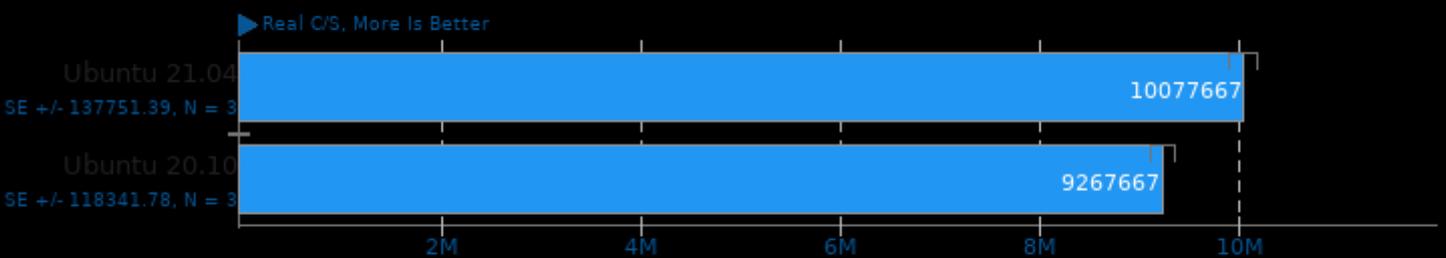
Test: Blowfish



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

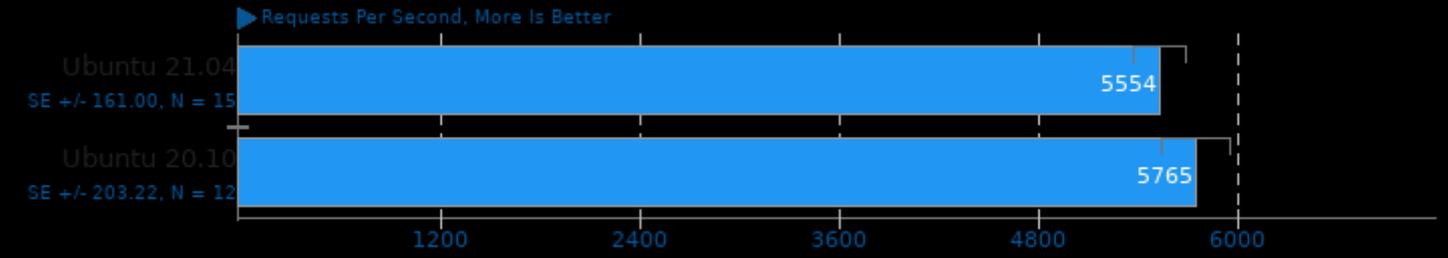
John The Ripper 1.9.0-jumbo-1

Test: MD5



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

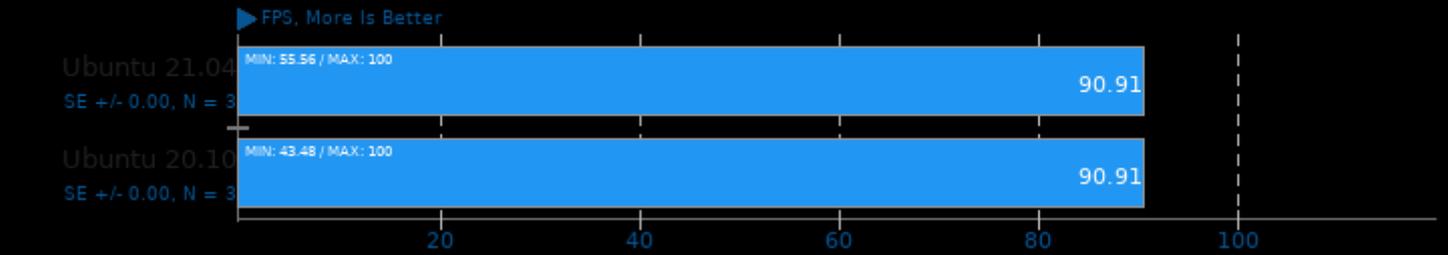
Node.js Express HTTP Load Test



1. Ubuntu 21.04: Nodejs v12.18.2
2. Ubuntu 20.10: Nodejs v12.18.2

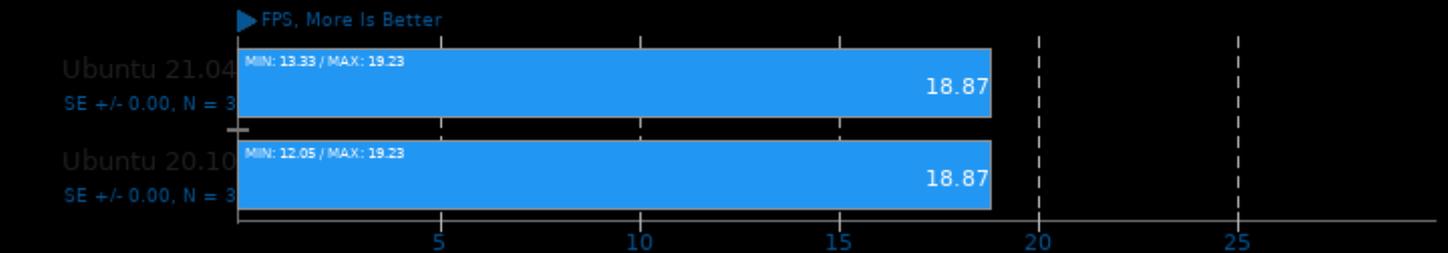
OSPray 1.8.5

Demo: San Miguel - Renderer: SciVis



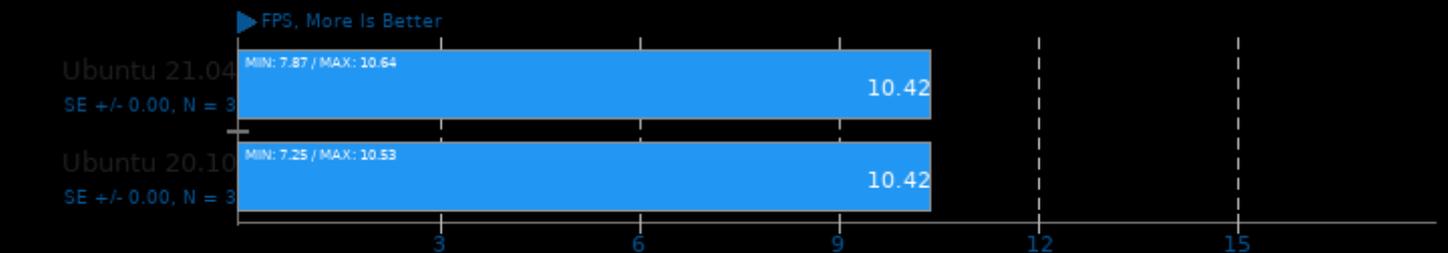
OSPray 1.8.5

Demo: XFrog Forest - Renderer: SciVis



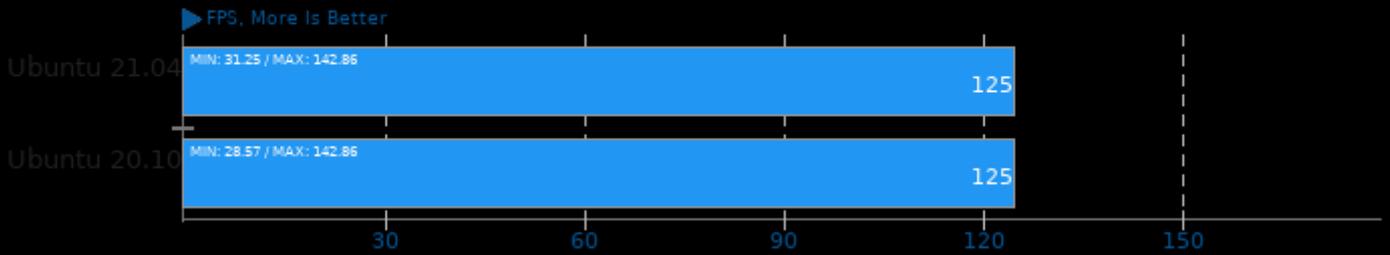
OSPray 1.8.5

Demo: San Miguel - Renderer: Path Tracer



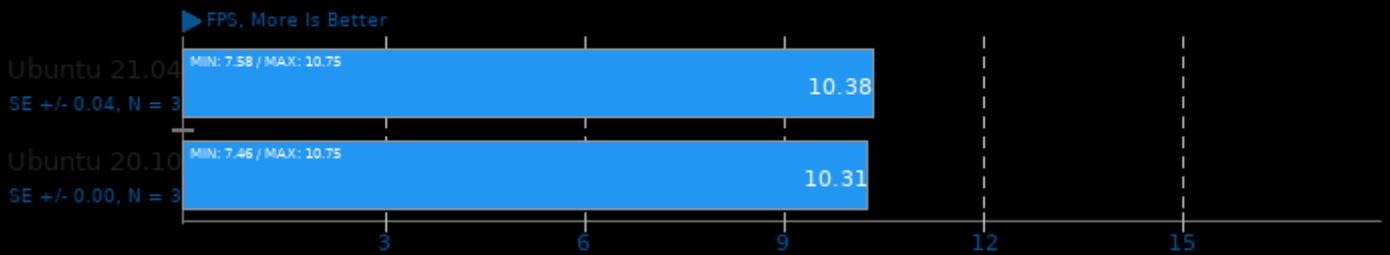
OSPray 1.8.5

Demo: NASA Streamlines - Renderer: SciVis



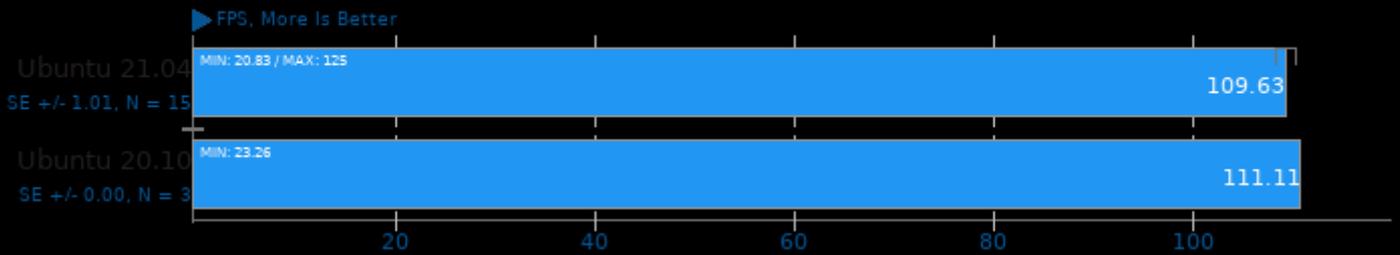
OSPray 1.8.5

Demo: XFrog Forest - Renderer: Path Tracer



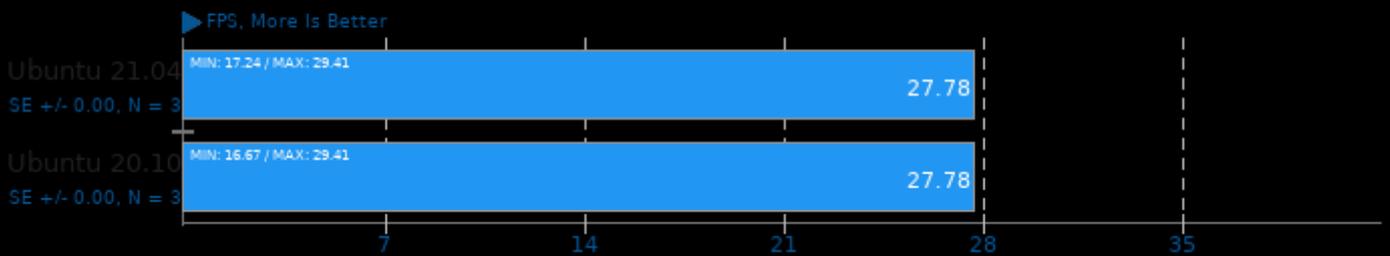
OSPray 1.8.5

Demo: Magnetic Reconnection - Renderer: SciVis



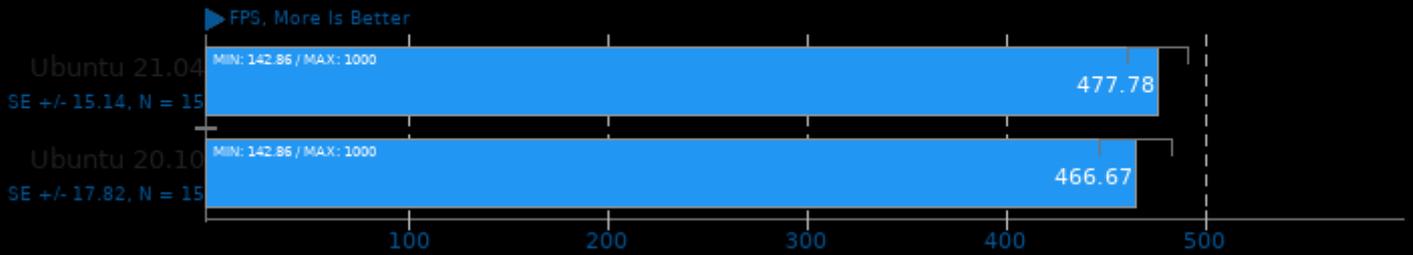
OSPray 1.8.5

Demo: NASA Streamlines - Renderer: Path Tracer



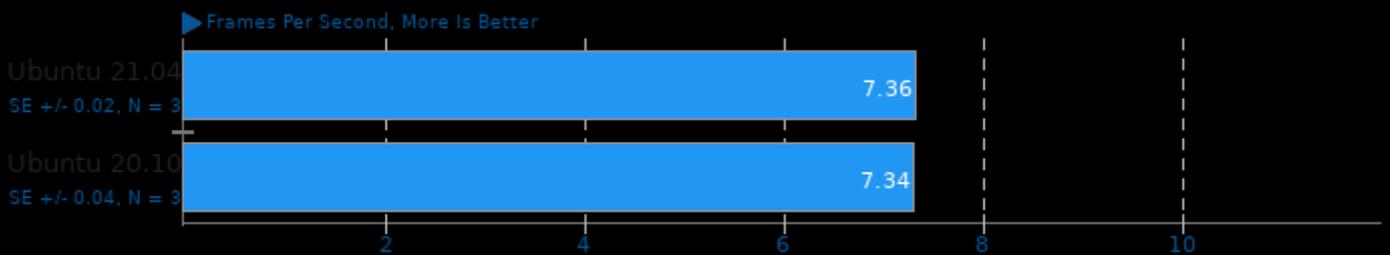
OSPray 1.8.5

Demo: Magnetic Reconnection - Renderer: Path Tracer



AOM AV1 3.1

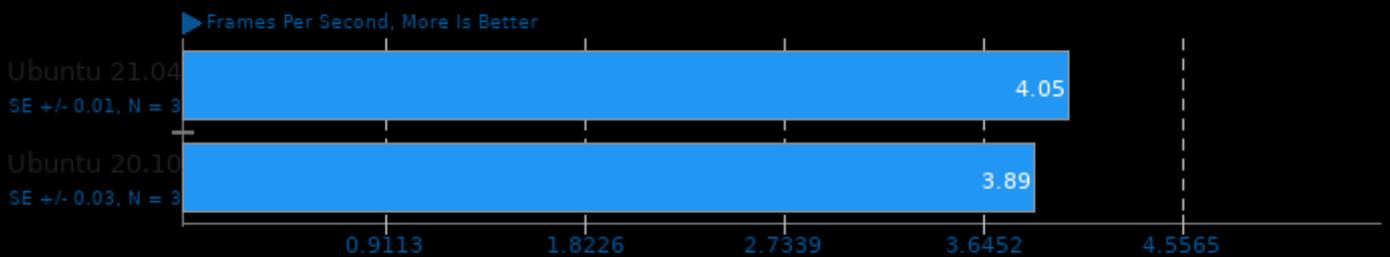
Encoder Mode: Speed 6 Realtime - Input: Bosphorus 4K



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

AOM AV1 3.1

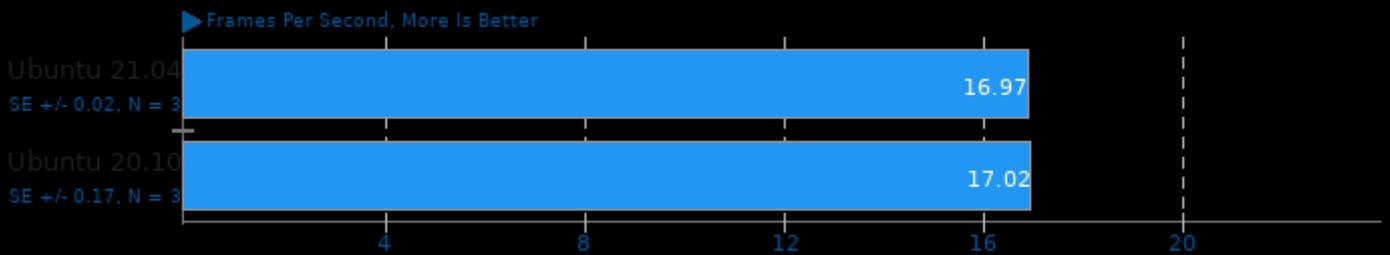
Encoder Mode: Speed 6 Two-Pass - Input: Bosphorus 4K



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

AOM AV1 3.1

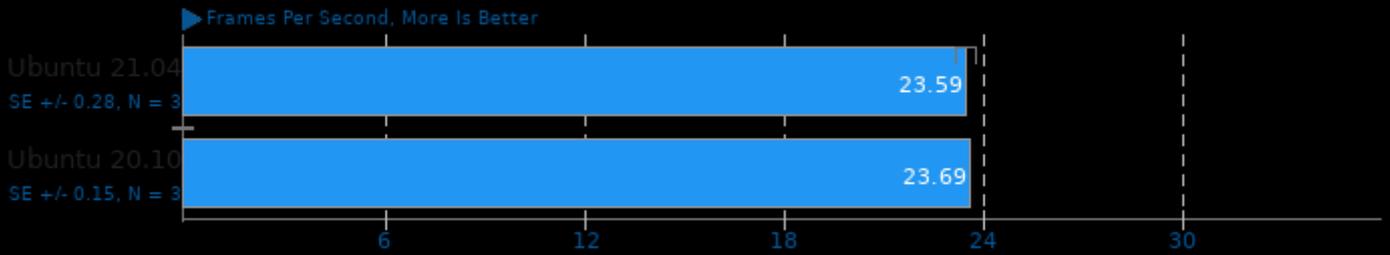
Encoder Mode: Speed 8 Realtime - Input: Bosphorus 4K



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

AOM AV1 3.1

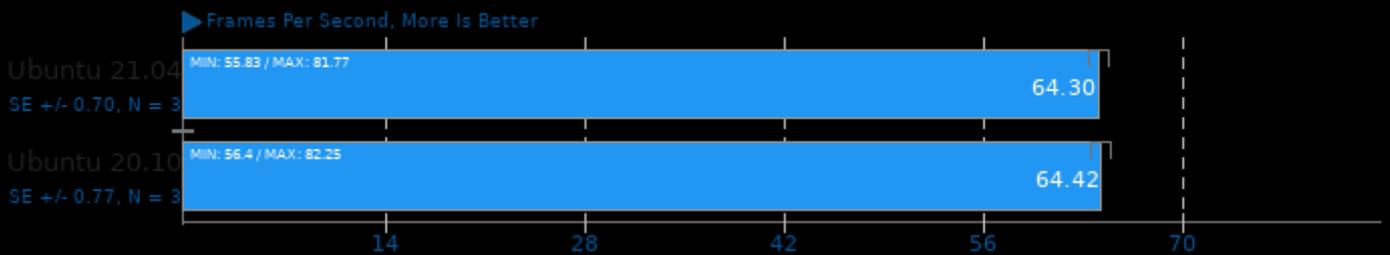
Encoder Mode: Speed 9 Realtime - Input: Bosphorus 4K



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

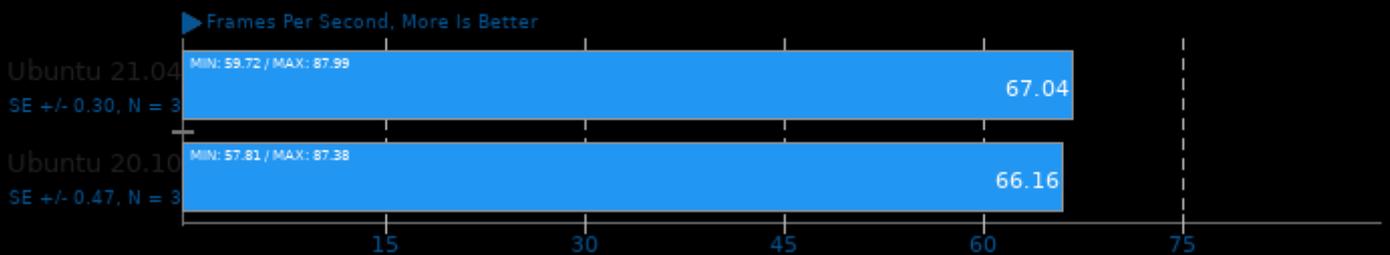
Embree 3.13

Binary: Pathtracer - Model: Crown



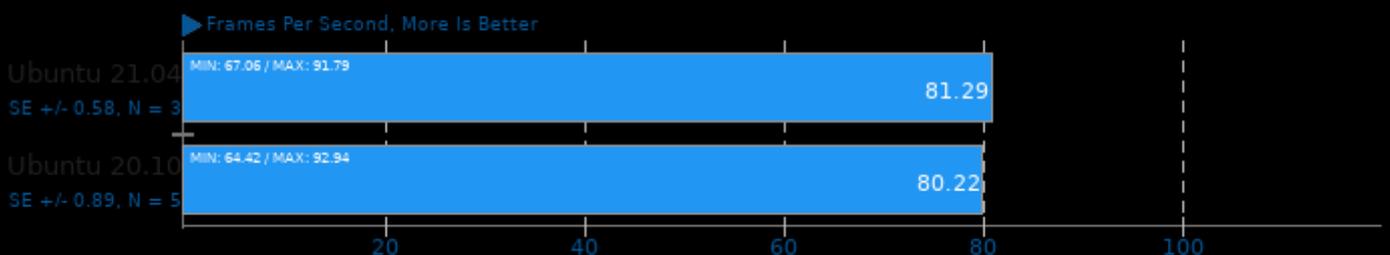
Embree 3.13

Binary: Pathtracer ISPC - Model: Crown



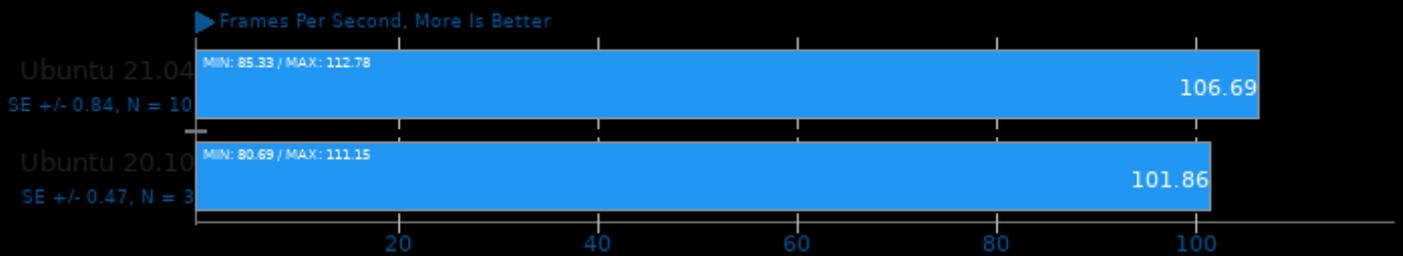
Embree 3.13

Binary: Pathtracer - Model: Asian Dragon



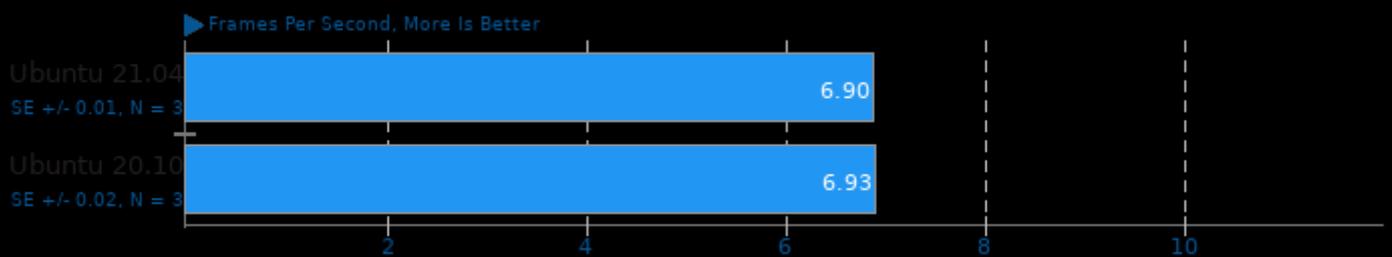
Embree 3.13

Binary: Pathtracer ISPC - Model: Asian Dragon



Kvazaar 2.0

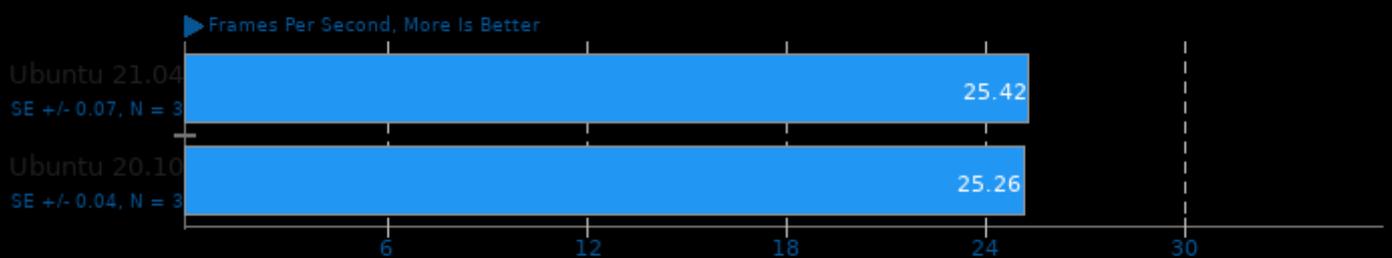
Video Input: Bosphorus 4K - Video Preset: Medium



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

Kvazaar 2.0

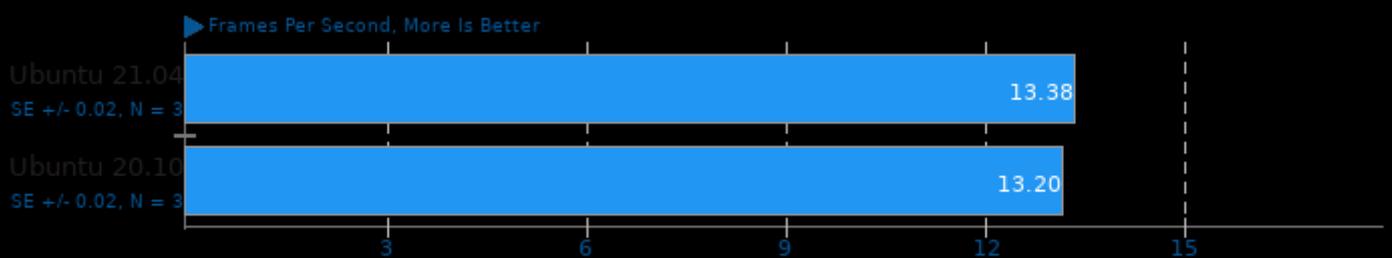
Video Input: Bosphorus 1080p - Video Preset: Medium



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

Kvazaar 2.0

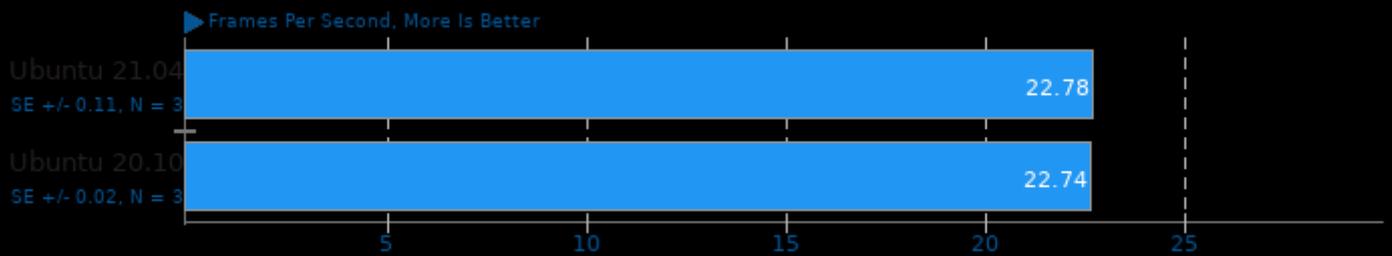
Video Input: Bosphorus 4K - Video Preset: Very Fast



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

Kvazaar 2.0

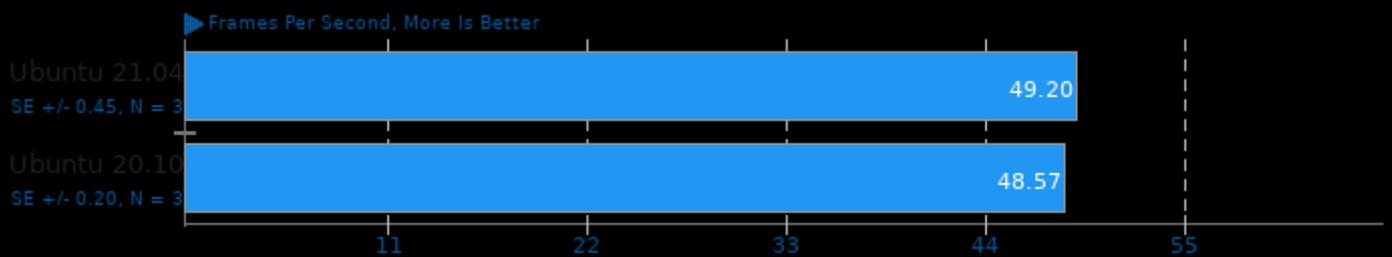
Video Input: Bosphorus 4K - Video Preset: Ultra Fast



1. (ICC) gcc options: -pthread -free-vectorize -fvisibility=hidden -O2 -lthread -lm -lrt

Kvazaar 2.0

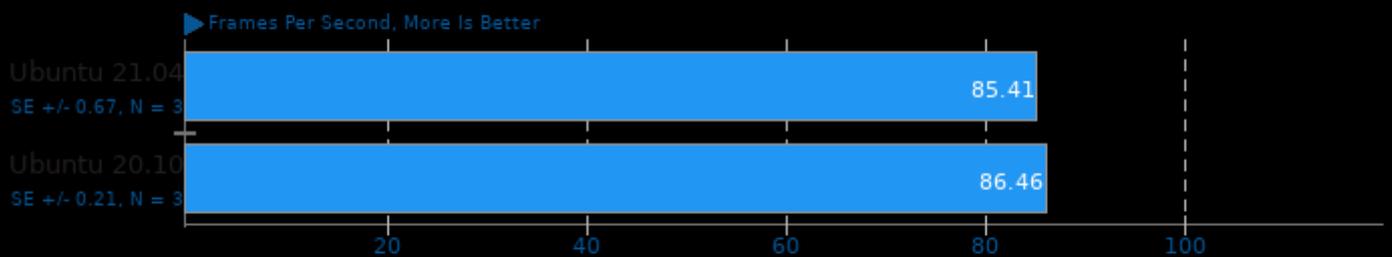
Video Input: Bosphorus 1080p - Video Preset: Very Fast



1. (ICC) gcc options: -pthread -free-vectorize -fvisibility=hidden -O2 -lthread -lm -lrt

Kvazaar 2.0

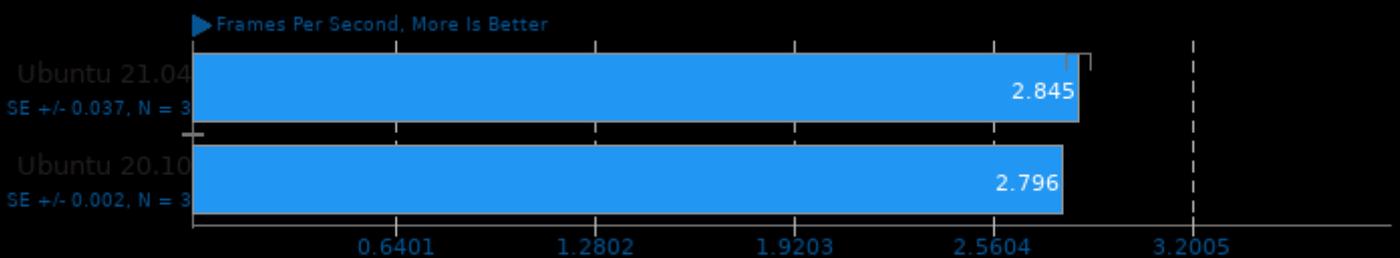
Video Input: Bosphorus 1080p - Video Preset: Ultra Fast



1. (ICC) gcc options: -pthread -free-vectorize -fvisibility=hidden -O2 -lthread -lm -lrt

SVT-AV1 0.8.7

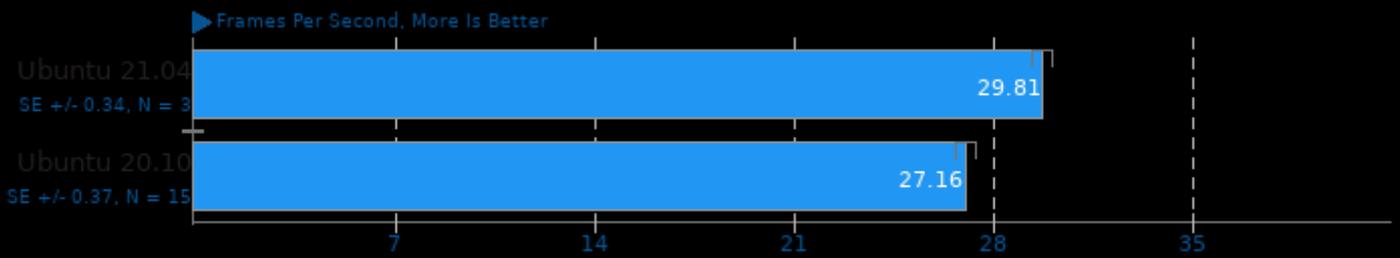
Encoder Mode: Preset 4 - Input: Bosphorus 4K



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

SVT-AV1 0.8.7

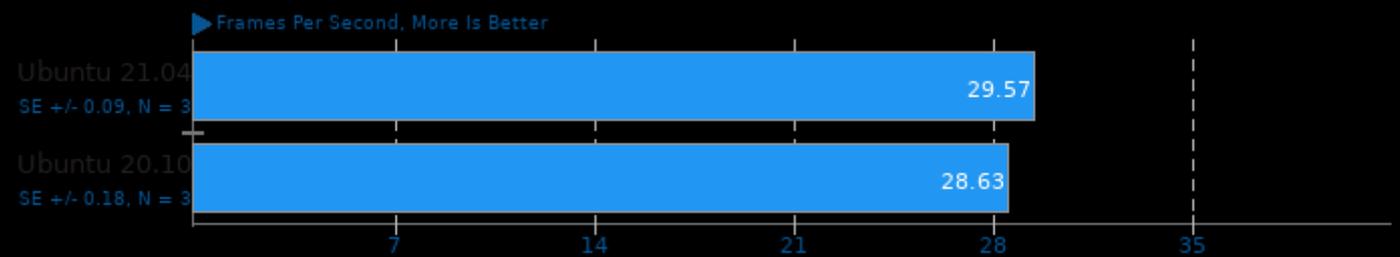
Encoder Mode: Preset 8 - Input: Bosphorus 4K



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

SVT-HEVC 1.5.0

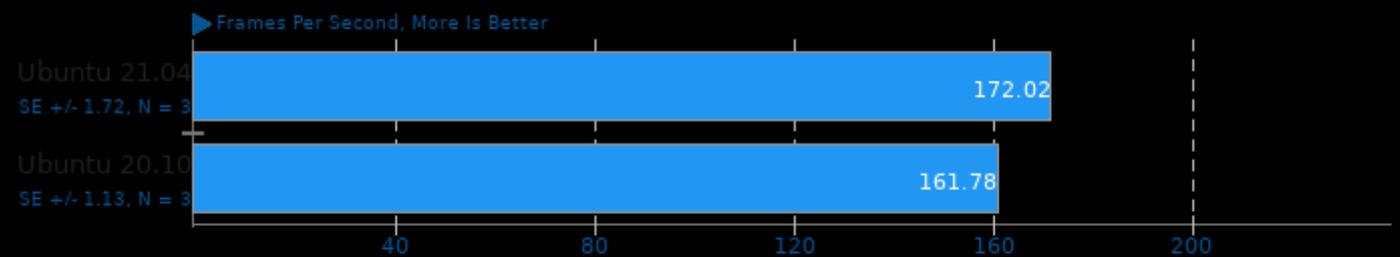
Tuning: 1 - Input: Bosphorus 1080p



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

SVT-HEVC 1.5.0

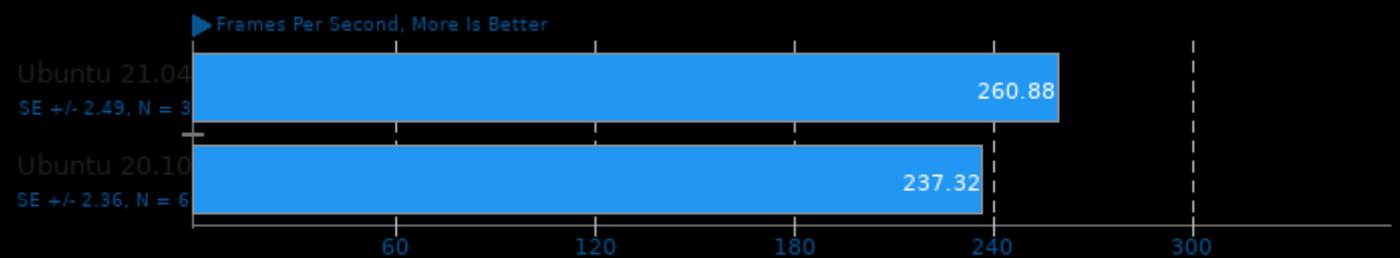
Tuning: 7 - Input: Bosphorus 1080p



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

SVT-HEVC 1.5.0

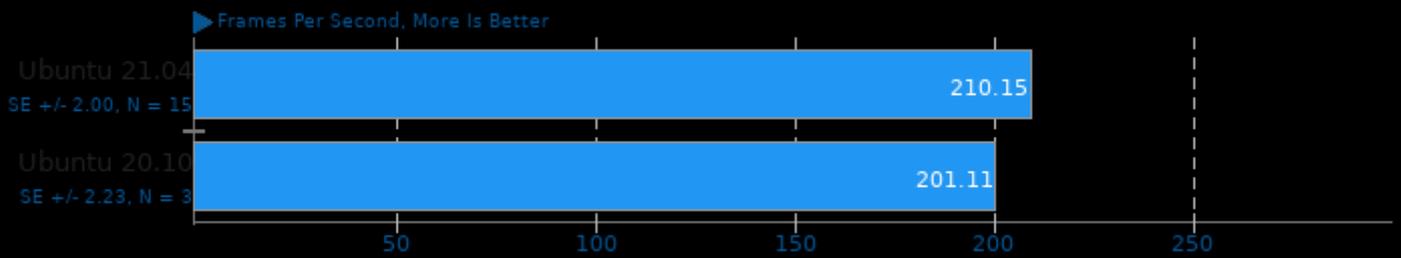
Tuning: 10 - Input: Bosphorus 1080p



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

SVT-VP9 0.3

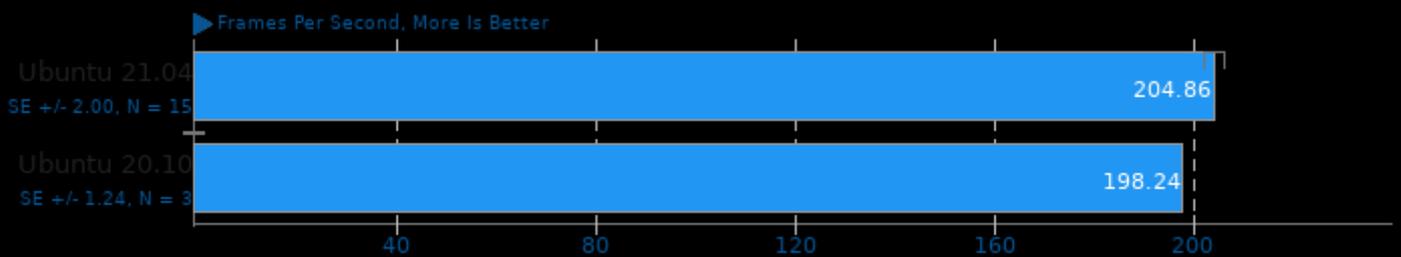
Tuning: VMAF Optimized - Input: Bosphorus 1080p



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

SVT-VP9 0.3

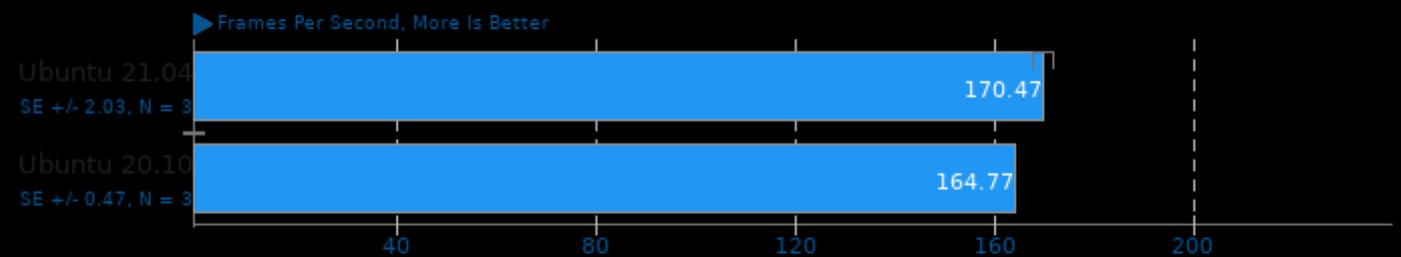
Tuning: PSNR/SSIM Optimized - Input: Bosphorus 1080p



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

SVT-VP9 0.3

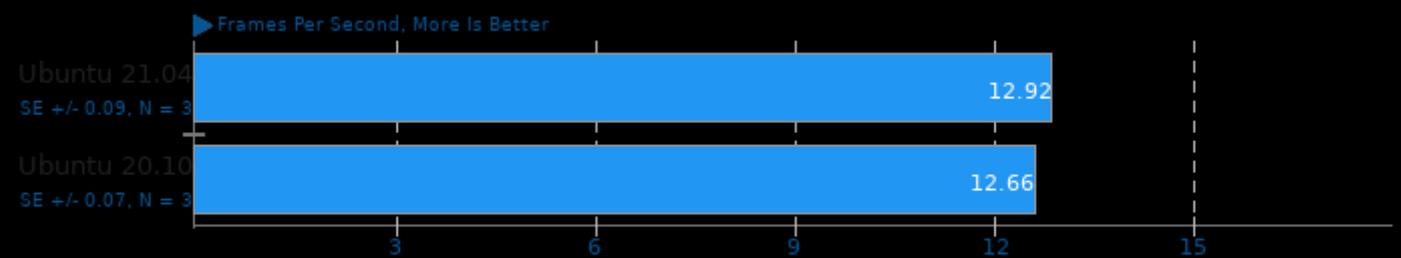
Tuning: Visual Quality Optimized - Input: Bosphorus 1080p



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

x265 3.4

Video Input: Bosphorus 4K

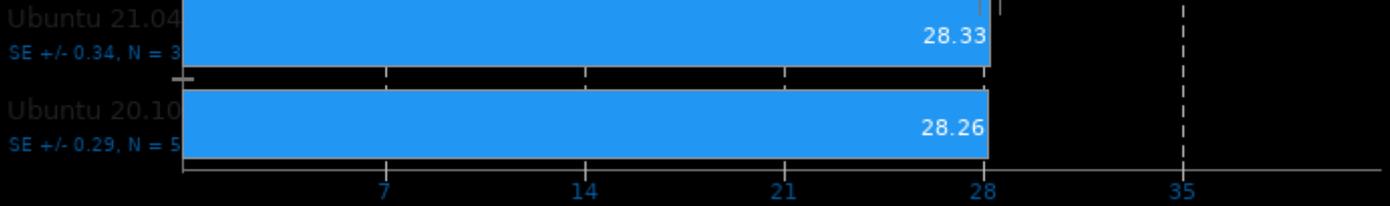


1. (CXX) g++ options: -O3 -rdynamic -lpthread -lrt -ldl -lnuma

x265 3.4

Video Input: Bosphorus 1080p

► Frames Per Second, More Is Better

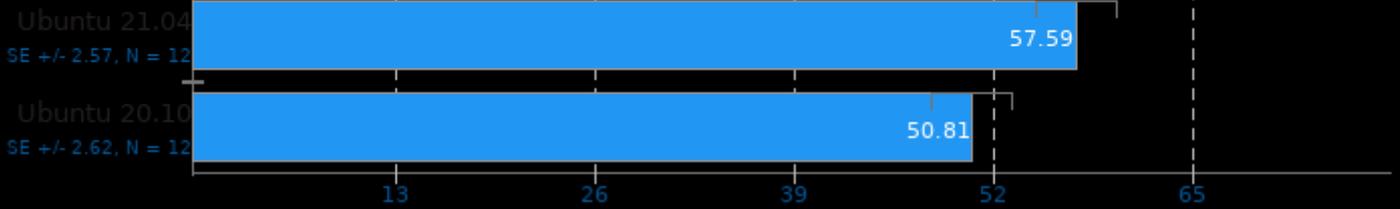


1. (CXX) g++ options: -O3 -rdynamic -pthread -lrt -ldl -lnuma

Intel Open Image Denoise 1.2.0

Scene: Memorial

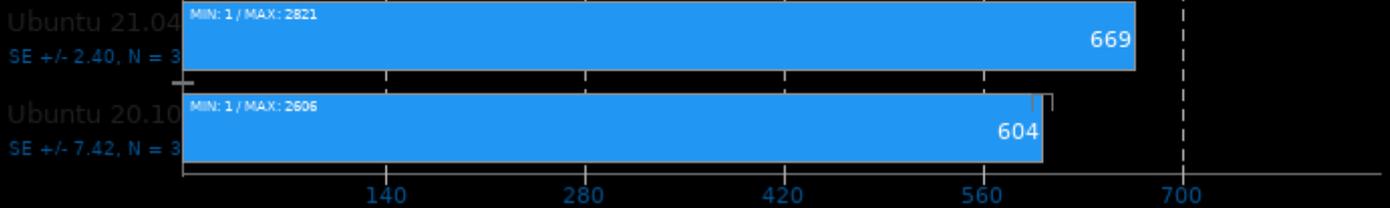
► Images / Sec, More Is Better



OpenVKL 0.9

Benchmark: vklBenchmark

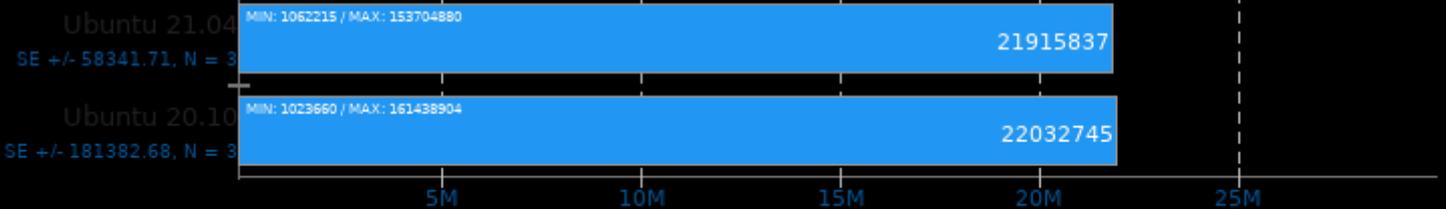
► Items / Sec, More Is Better



OpenVKL 0.9

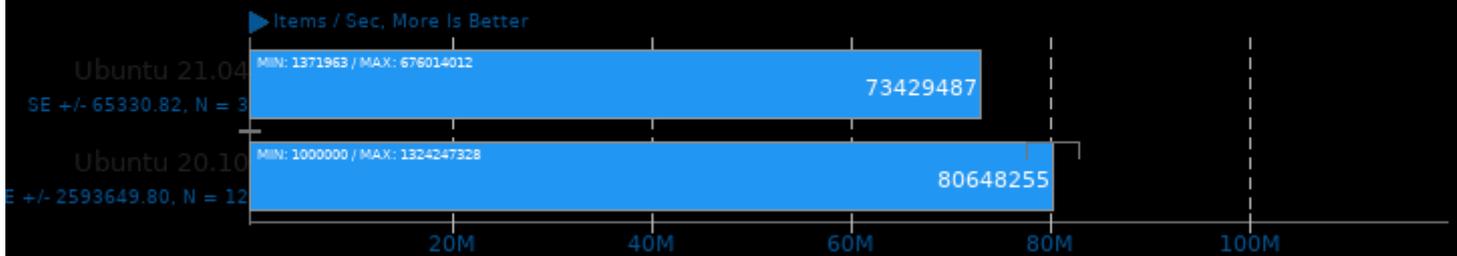
Benchmark: vklBenchmarkVdbVolume

► Items / Sec, More Is Better



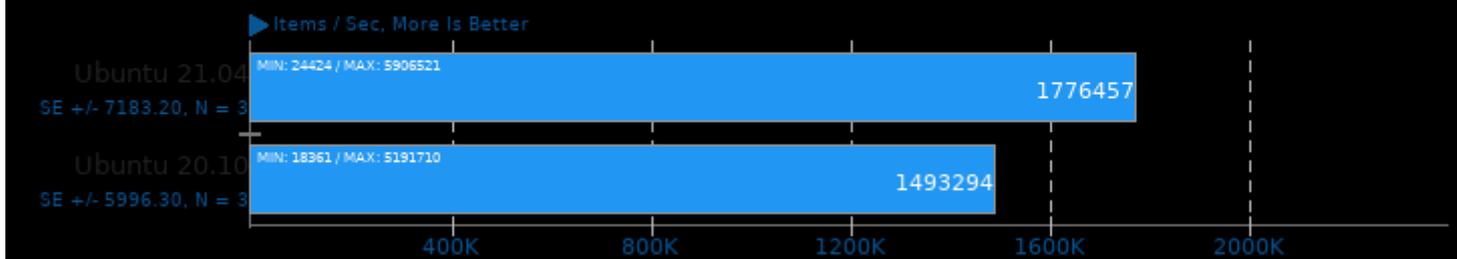
OpenVKL 0.9

Benchmark: vklBenchmarkStructuredVolume



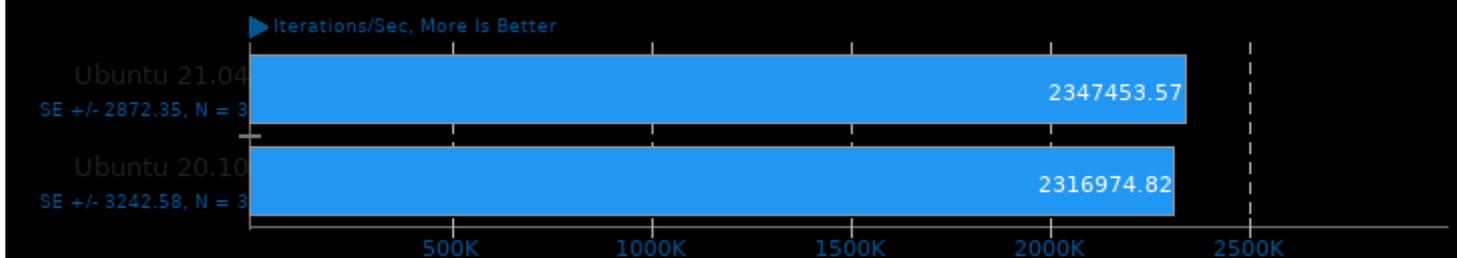
OpenVKL 0.9

Benchmark: vklBenchmarkUnstructuredVolume



Coremark 1.0

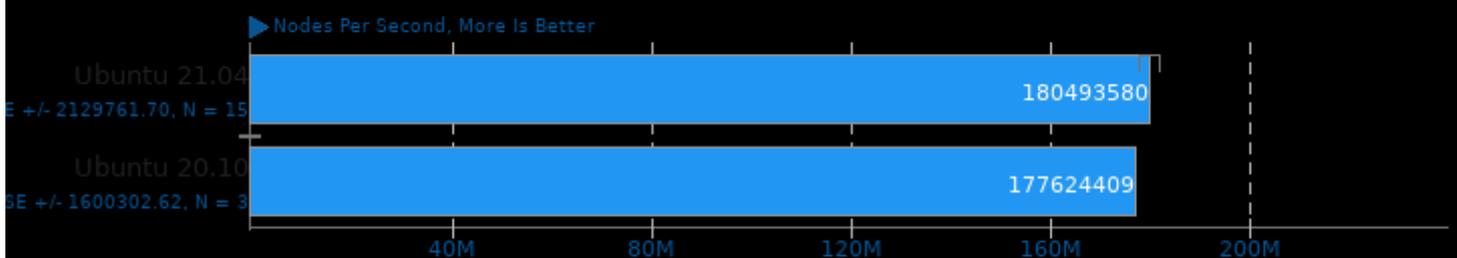
CoreMark Size 666 - Iterations Per Second



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

Stockfish 13

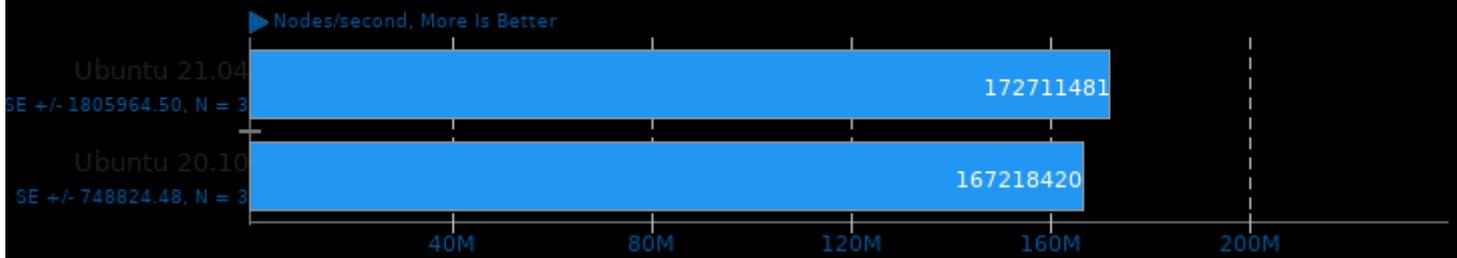
Total Time



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

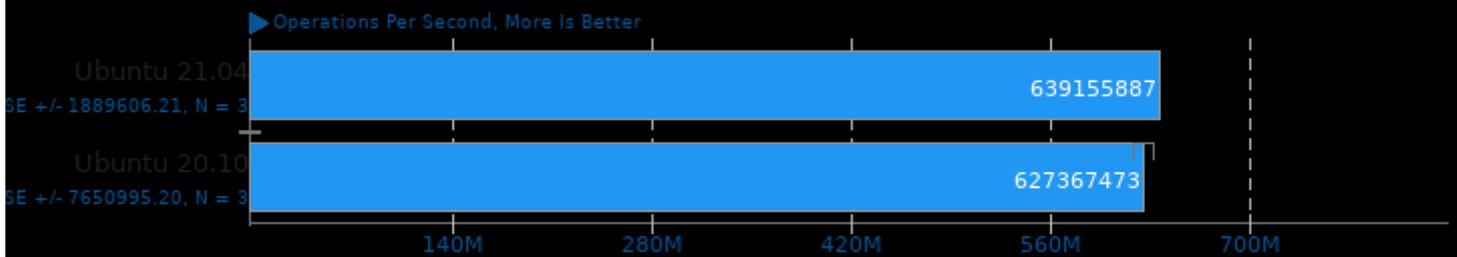
asmFish 2018-07-23

1024 Hash Memory, 26 Depth



Swet 1.5.16

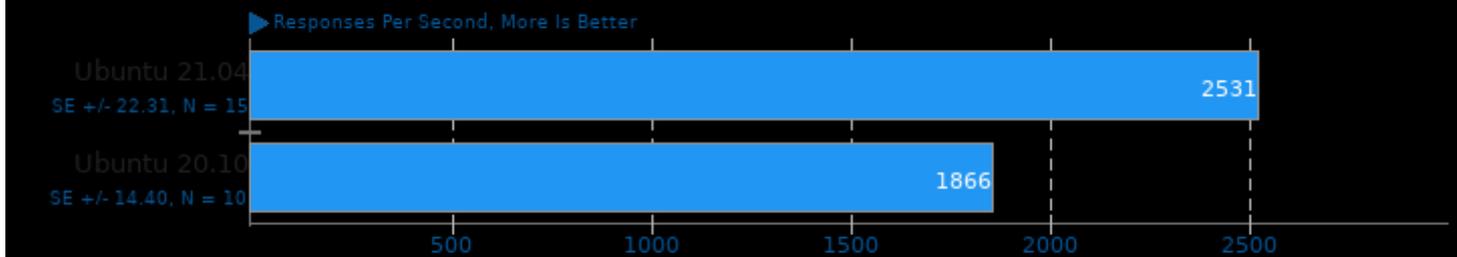
Average



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

PJSIP 2.11

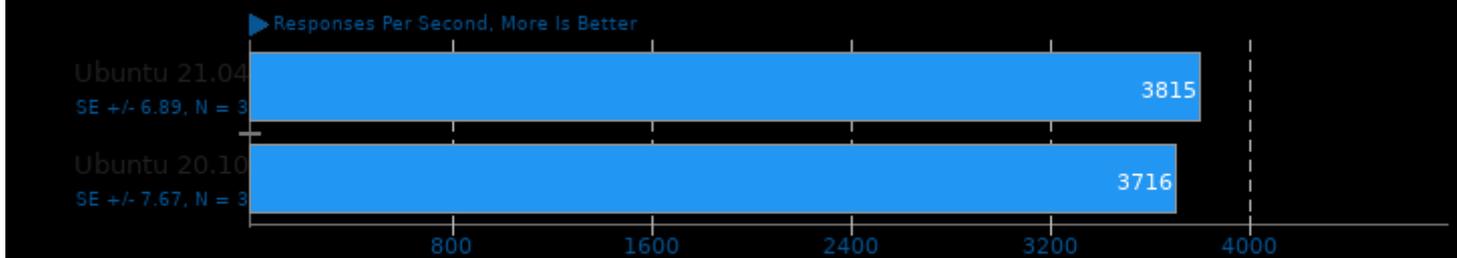
Method: INVITE



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

PJSIP 2.11

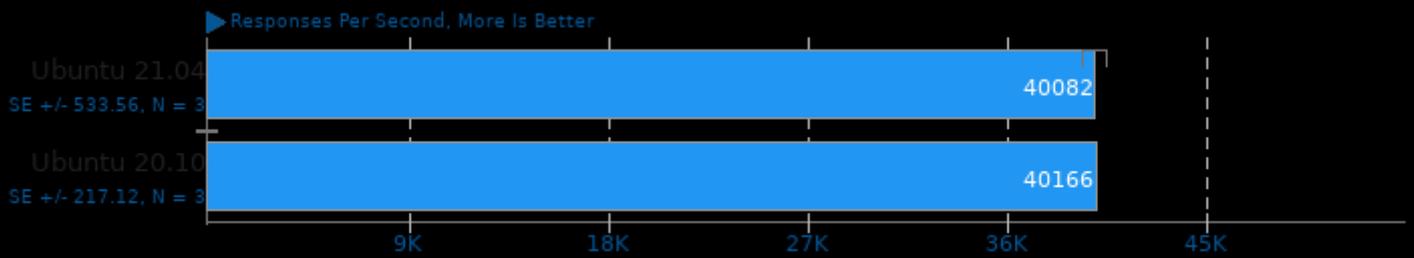
Method: OPTIONS, Stateful



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

PJSIP 2.11

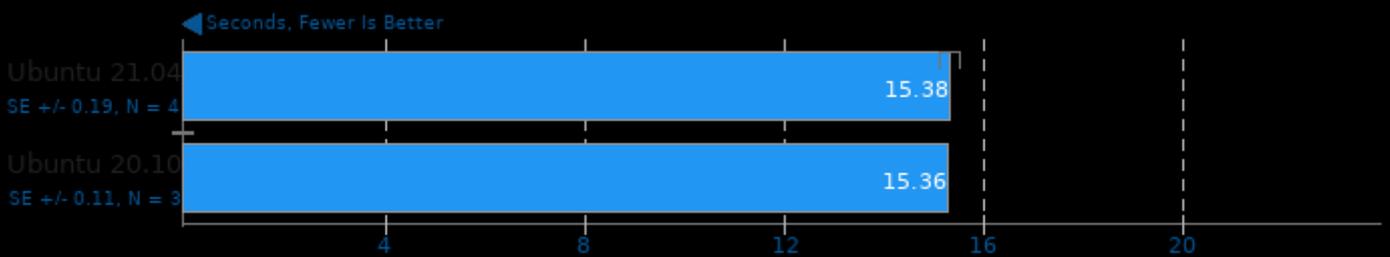
Method: OPTIONS, Stateless



1. (CC) gcc options: -fSDL2 -lavformat -lavcodec -lswscale -lavutil -lstdc++ -lssl -lcrypto -luuid -lm -lrt -lpthread -lasound -O2

libavif avifenc 0.9.0

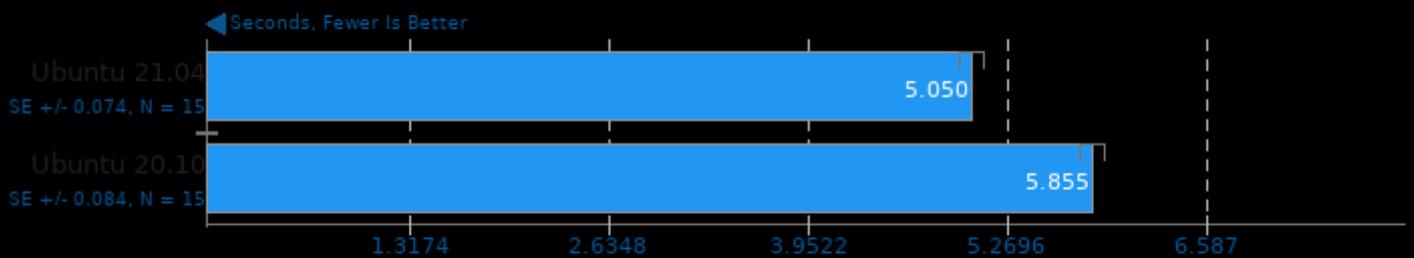
Encoder Speed: 6



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

libavif avifenc 0.9.0

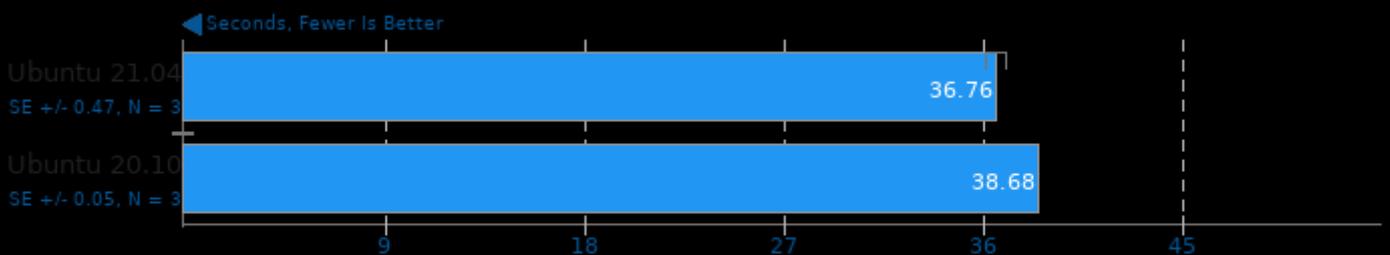
Encoder Speed: 10



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

libavif avifenc 0.9.0

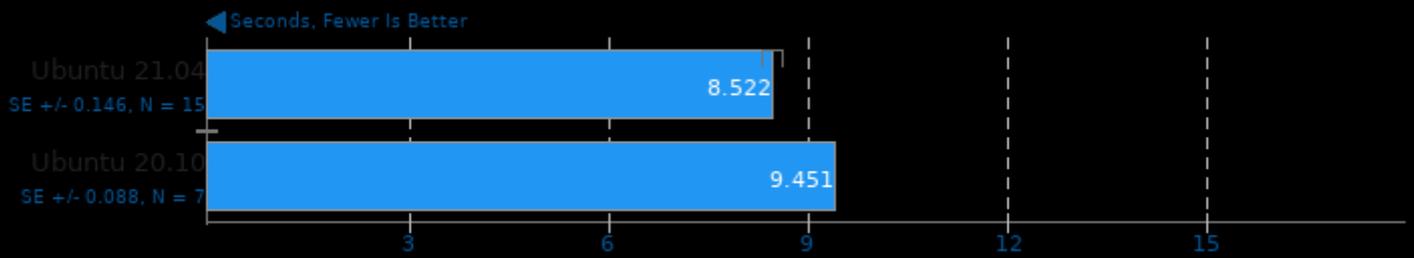
Encoder Speed: 6, Lossless



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

libavif avifenc 0.9.0

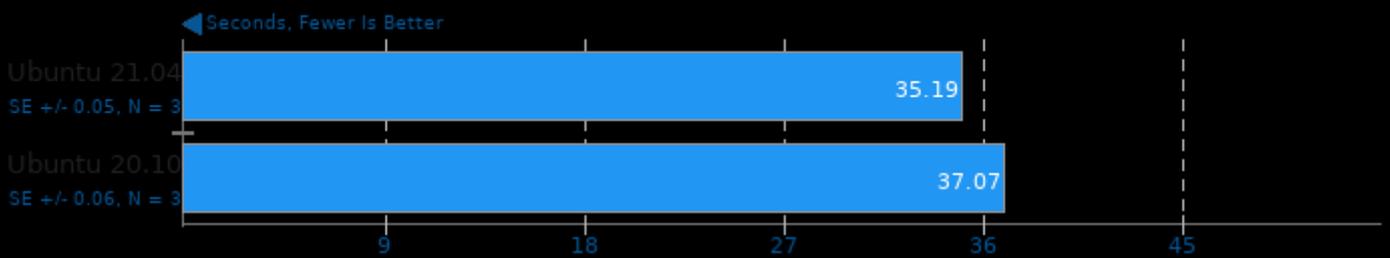
Encoder Speed: 10, Lossless



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

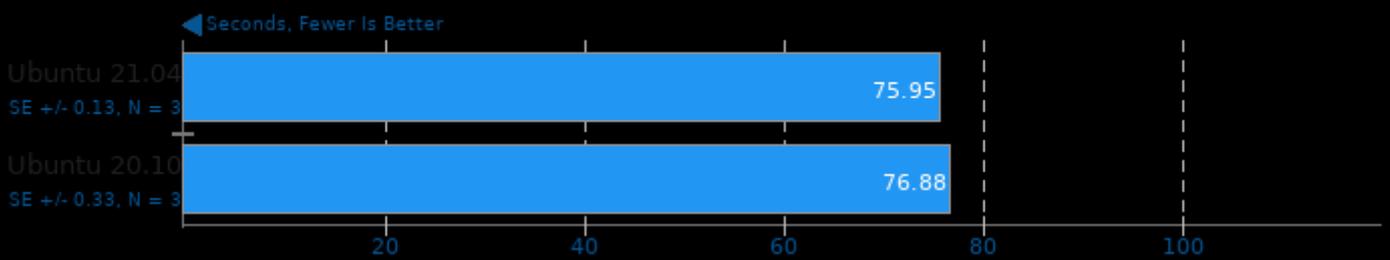
Timed Apache Compilation 2.4.41

Time To Compile



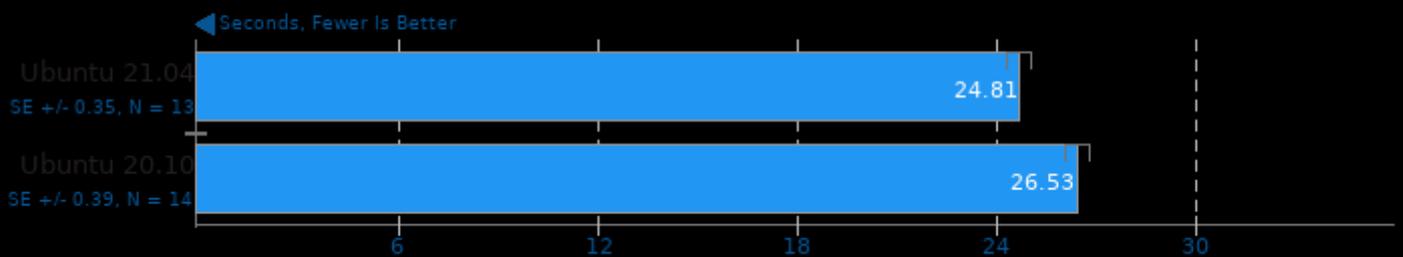
Timed Godot Game Engine Compilation 3.2.3

Time To Compile



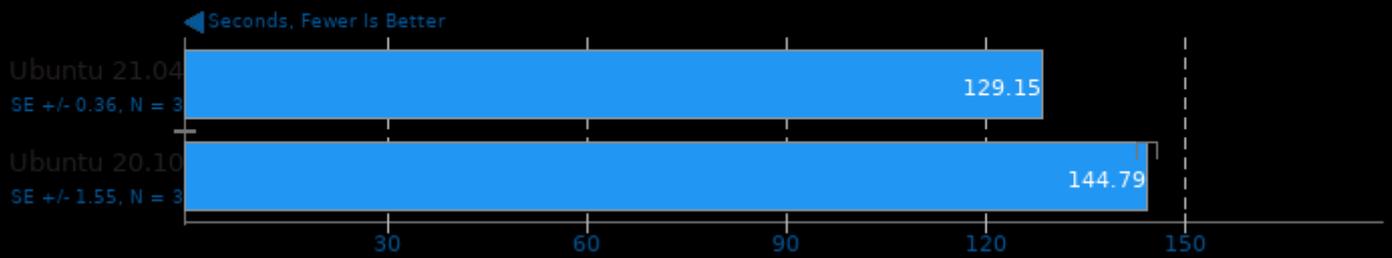
Timed Linux Kernel Compilation 5.10.20

Time To Compile



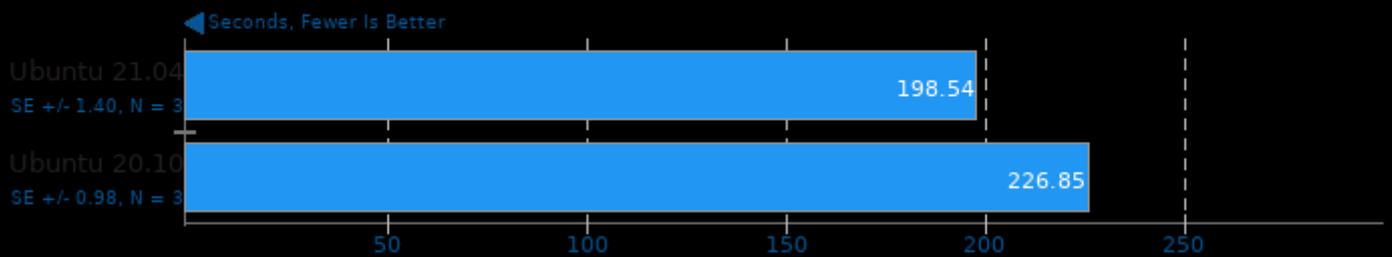
Timed LLVM Compilation 12.0

Build System: Ninja



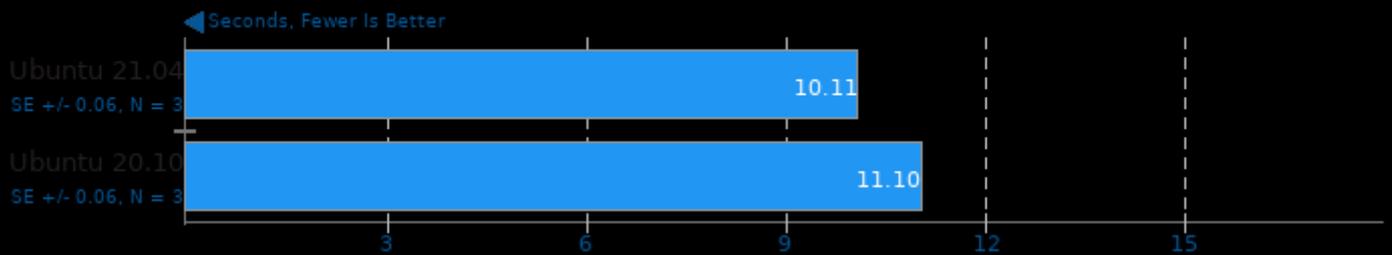
Timed LLVM Compilation 12.0

Build System: Unix Makefiles



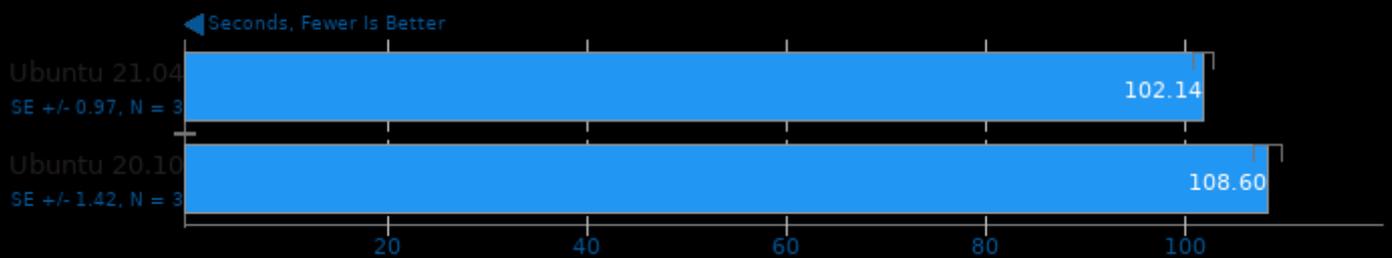
Timed MPlayer Compilation 1.4

Time To Compile



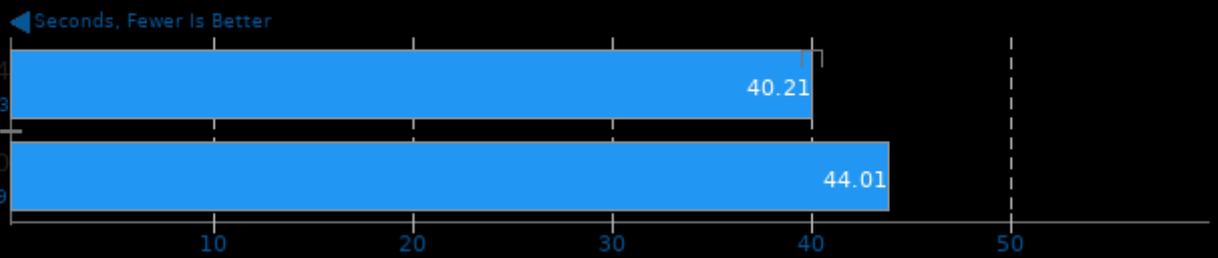
Timed Node.js Compilation 15.11

Time To Compile



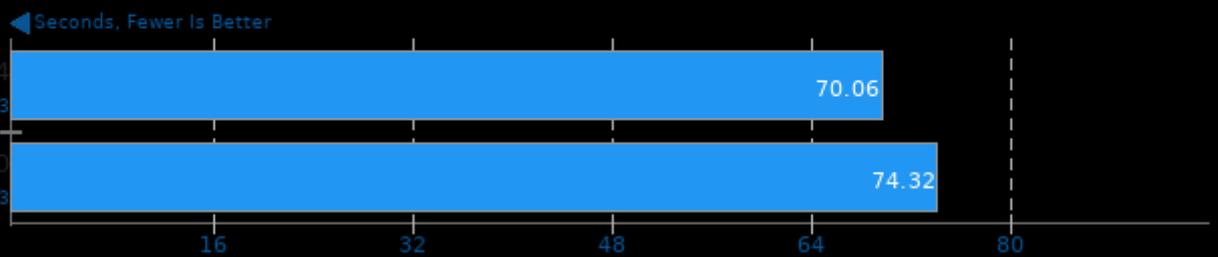
Timed PHP Compilation 7.4.2

Time To Compile



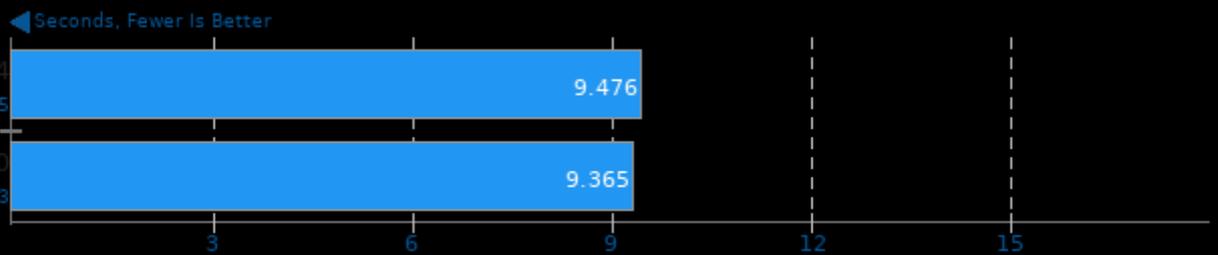
Build2 0.13

Time To Compile



POV-Ray 3.7.0.7

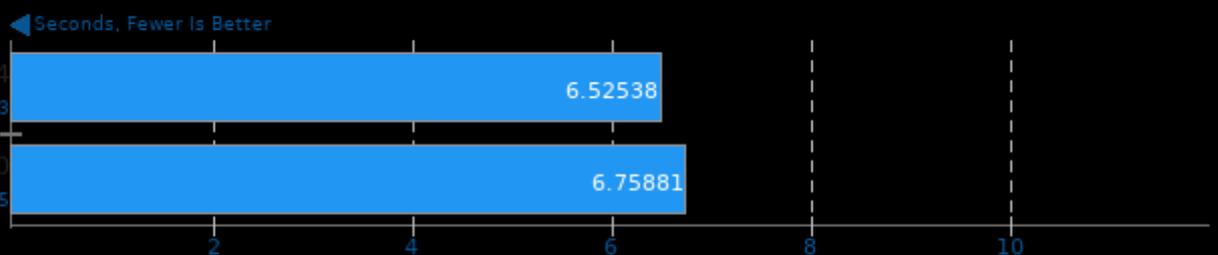
Trace Time



1. (CXX) g++ options: -pipe -O3 -ffast-math -march=native -pthread -fasm -fice -fj11 -fllmimf -fllmimf-2_5 -fllmath-2_5 -fhalf-2_5 -fhex-2_5 -fhexMath-2_5 -fll

Tungsten Renderer 0.2.2

Scene: Hair

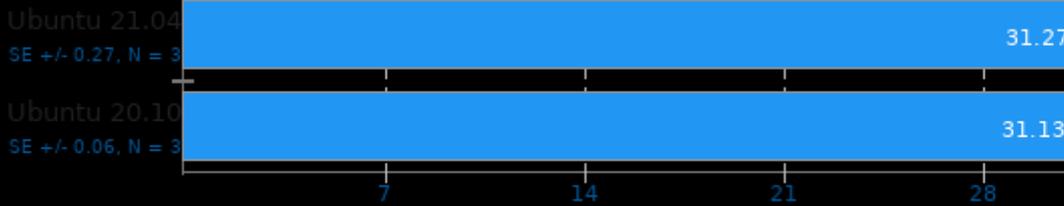


1. (CXX) g++ options: -std=c++0x -march=core2 -msse2 -msse3 -mssse3 -mno-sse4.1 -mno-sse4.2 -mno-sse4a -mno-avx -mno-fma -mno-bmi2 -mno-av

Tungsten Renderer 0.2.2

Scene: Water Caustic

← Seconds, Fewer Is Better

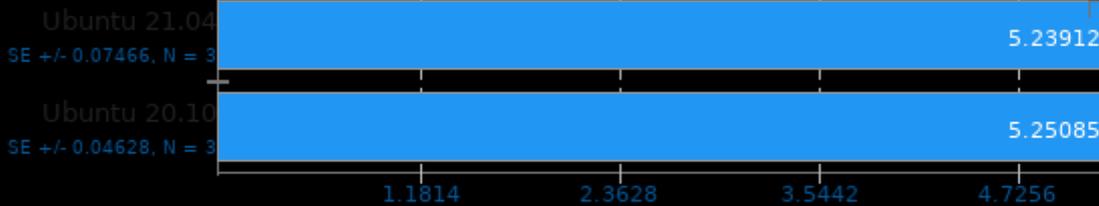


1. (CXX) g++ options: -std=c++0x -march=core2 -msse2 -msse3 -mssse3 -mno-sse4.1 -mno-sse4.2 -mno-sse4a -mno-avx -mno-fma -mno-bmi2 -mno-avx512

Tungsten Renderer 0.2.2

Scene: Non-Exponential

← Seconds, Fewer Is Better

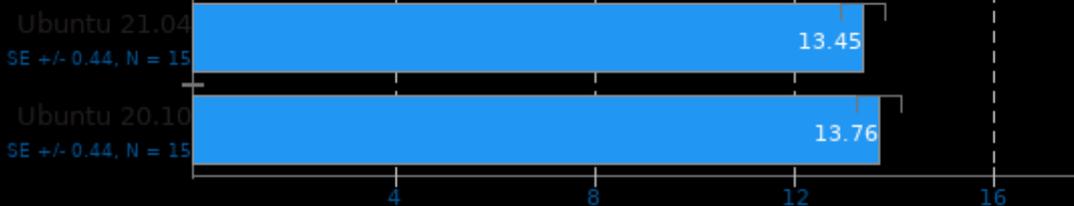


1. (CXX) g++ options: -std=c++0x -march=core2 -msse2 -msse3 -mssse3 -mno-sse4.1 -mno-sse4.2 -mno-sse4a -mno-avx -mno-fma -mno-bmi2 -mno-avx512

Tungsten Renderer 0.2.2

Scene: Volumetric Caustic

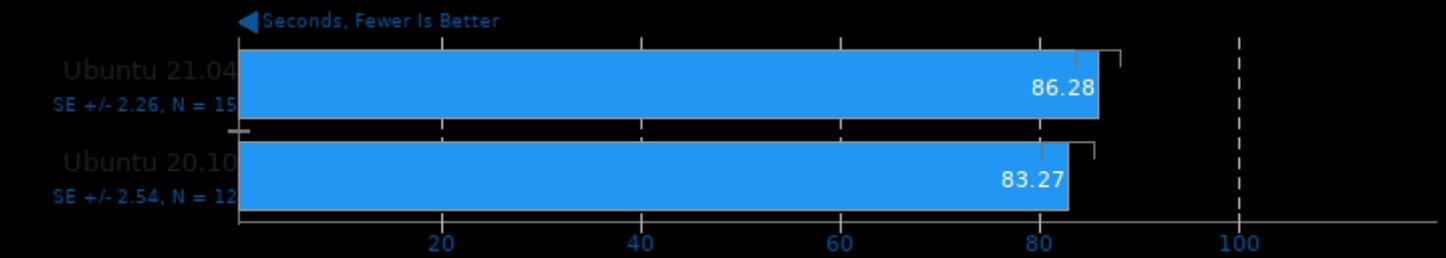
← Seconds, Fewer Is Better



1. (CXX) g++ options: -std=c++0x -march=core2 -msse2 -msse3 -mssse3 -mno-sse4.1 -mno-sse4.2 -mno-sse4a -mno-avx -mno-fma -mno-bmi2 -mno-avx512

YafaRay 3.4.1

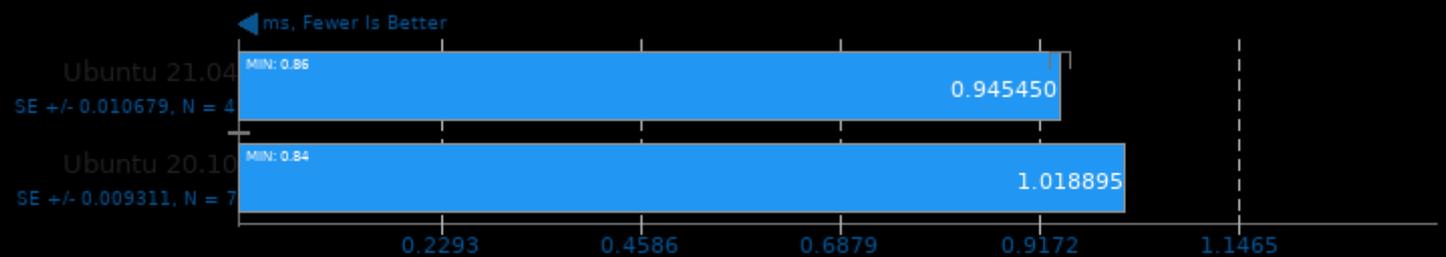
Total Time For Sample Scene



1. (CXX) g++ options: -std=c++11 -O3 -ffast-math -rdynamic -ldl -lm -lmf -llex -lHalf -lz -llmThread -lxml2 -lfreetype -lpthread

oneDNN 2.1.2

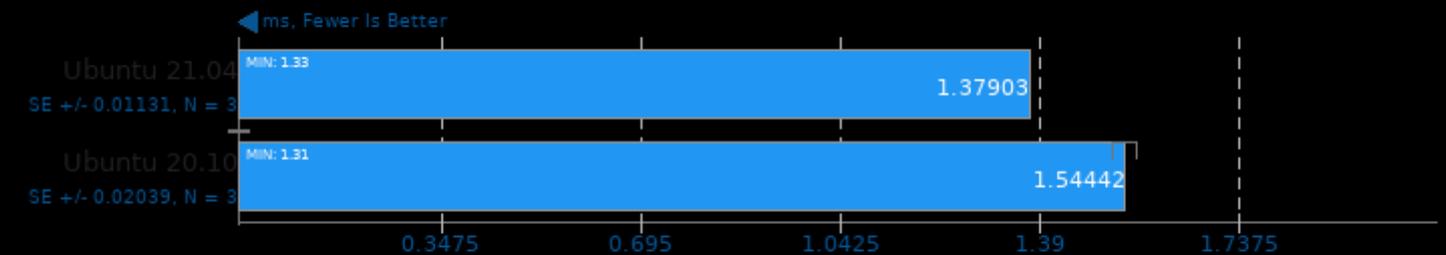
Harness: IP Shapes 1D - Data Type: f32 - Engine: CPU



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

oneDNN 2.1.2

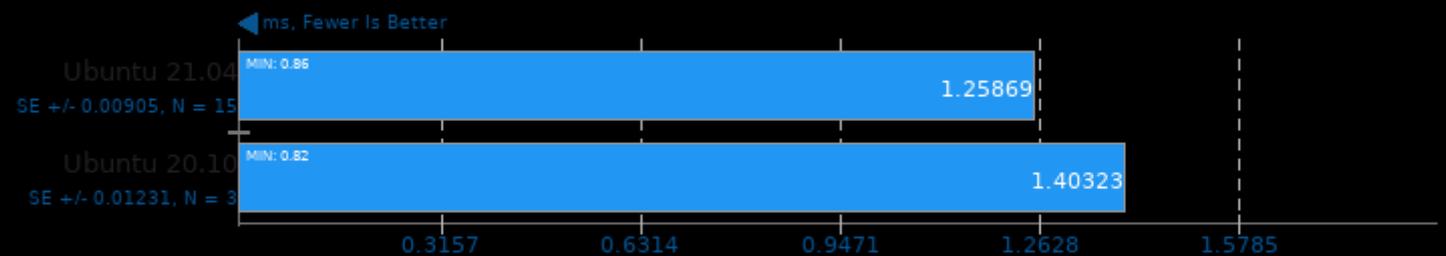
Harness: IP Shapes 3D - Data Type: f32 - Engine: CPU



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

oneDNN 2.1.2

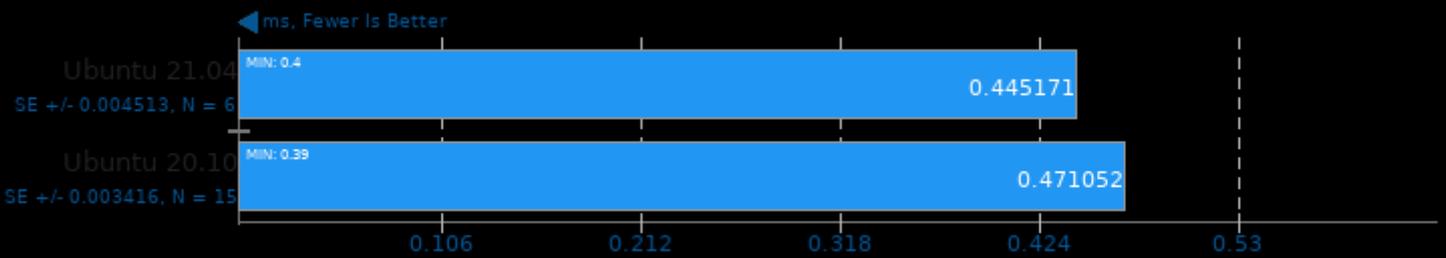
Harness: IP Shapes 1D - Data Type: u8s8f32 - Engine: CPU



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

oneDNN 2.1.2

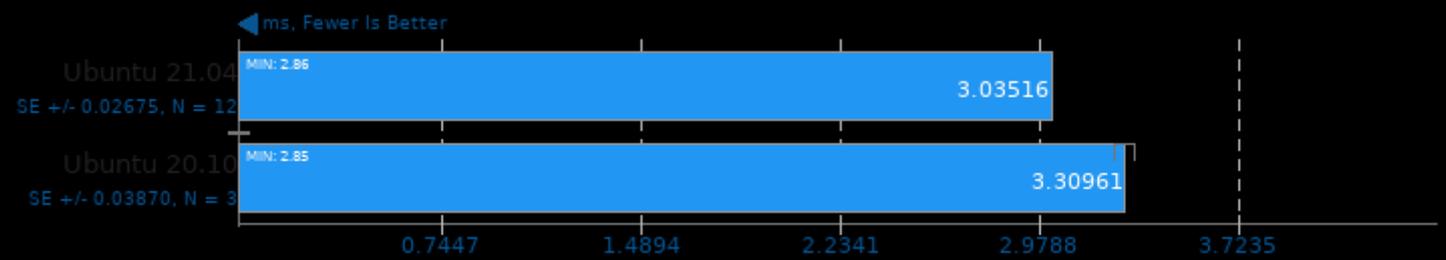
Harness: IP Shapes 3D - Data Type: u8s8f32 - Engine: CPU



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

oneDNN 2.1.2

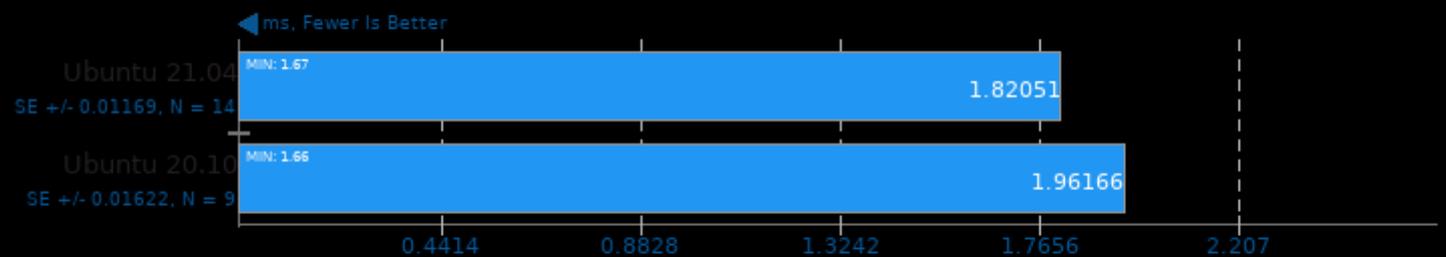
Harness: IP Shapes 1D - Data Type: bf16bf16bf16 - Engine: CPU



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

oneDNN 2.1.2

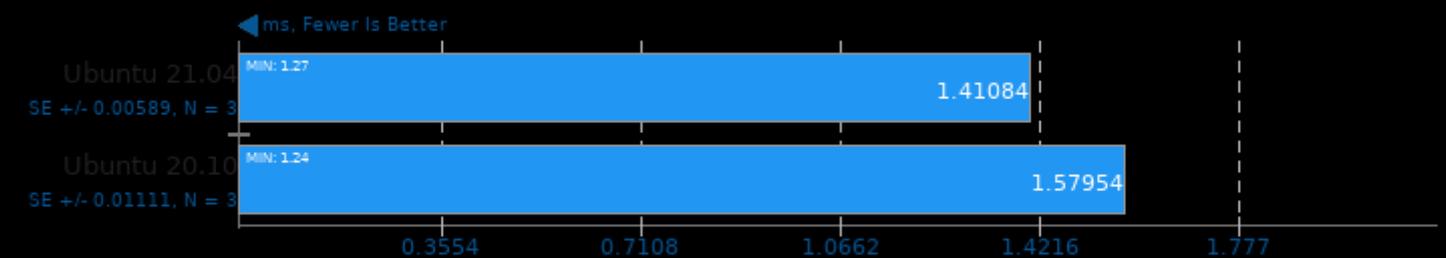
Harness: IP Shapes 3D - Data Type: bf16bf16bf16 - Engine: CPU



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

oneDNN 2.1.2

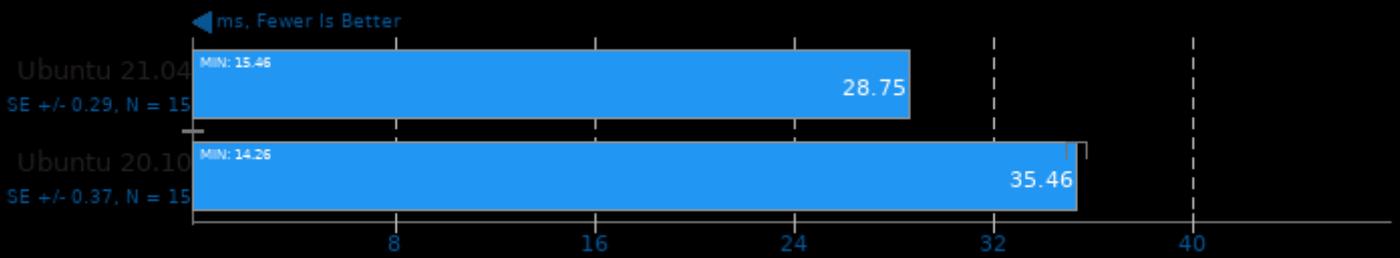
Harness: Convolution Batch Shapes Auto - Data Type: f32 - Engine: CPU



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

oneDNN 2.1.2

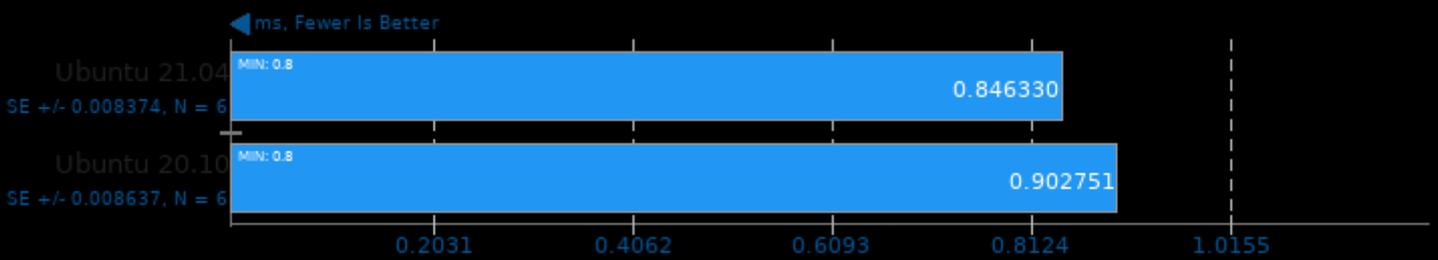
Harness: Deconvolution Batch shapes_1d - Data Type: f32 - Engine: CPU



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

oneDNN 2.1.2

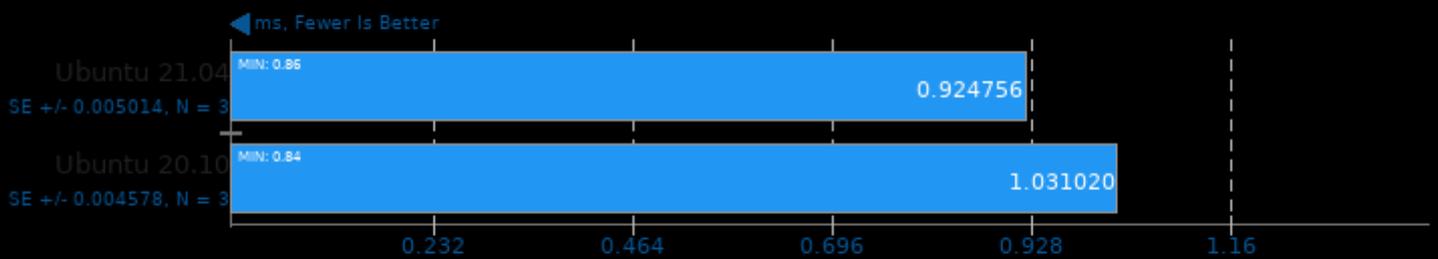
Harness: Deconvolution Batch shapes_3d - Data Type: f32 - Engine: CPU



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

oneDNN 2.1.2

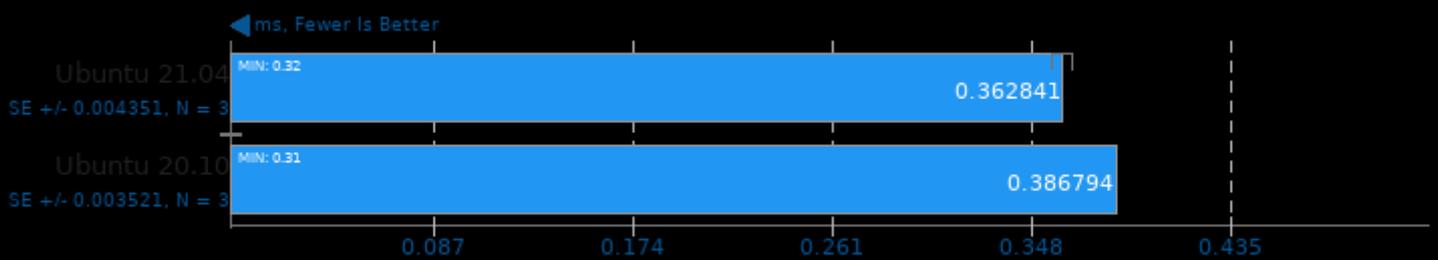
Harness: Convolution Batch Shapes Auto - Data Type: u8s8f32 - Engine: CPU



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

oneDNN 2.1.2

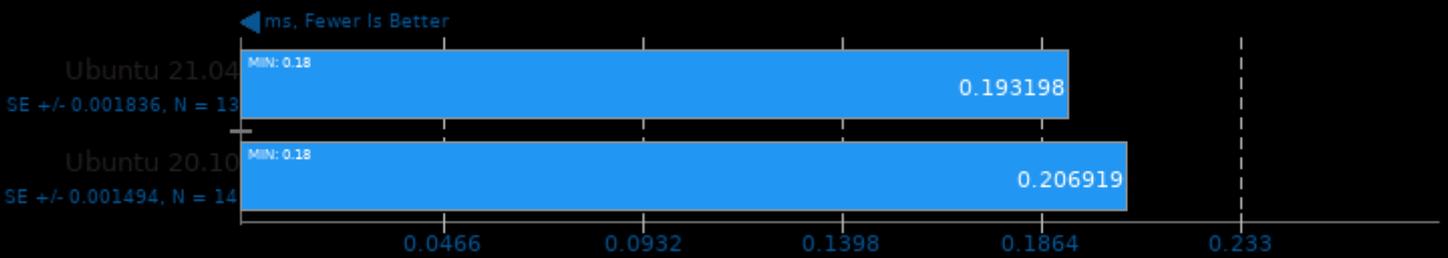
Harness: Deconvolution Batch shapes_1d - Data Type: u8s8f32 - Engine: CPU



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

oneDNN 2.1.2

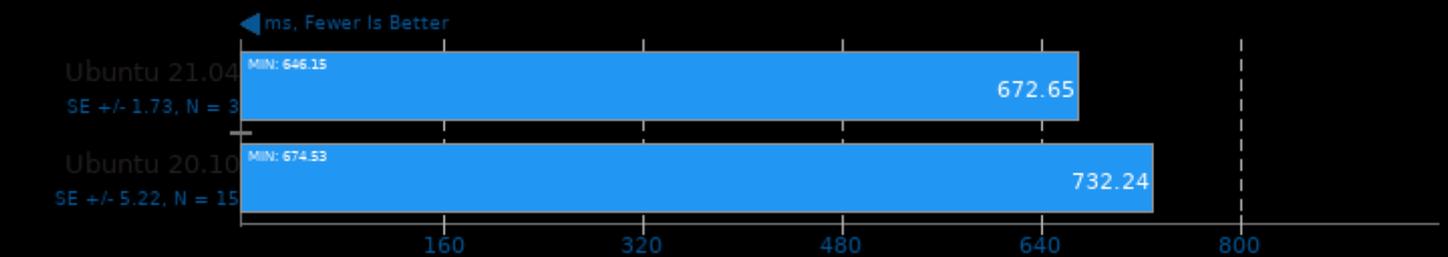
Harness: Deconvolution Batch shapes_3d - Data Type: u8s8f32 - Engine: CPU



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

oneDNN 2.1.2

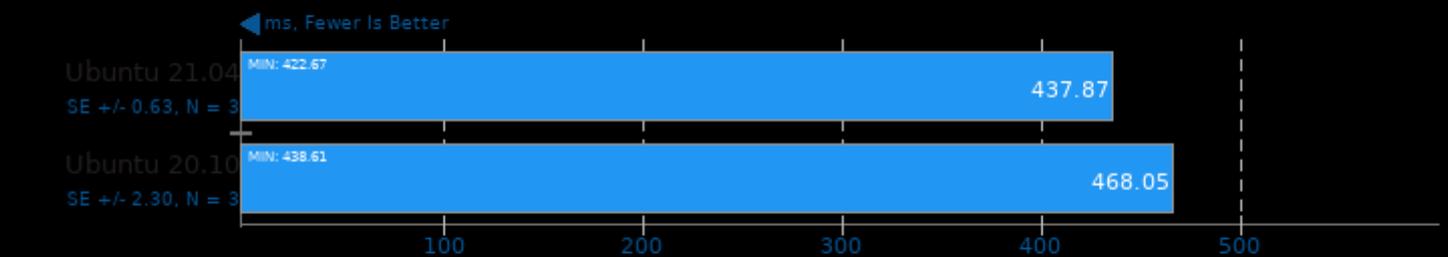
Harness: Recurrent Neural Network Training - Data Type: f32 - Engine: CPU



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

oneDNN 2.1.2

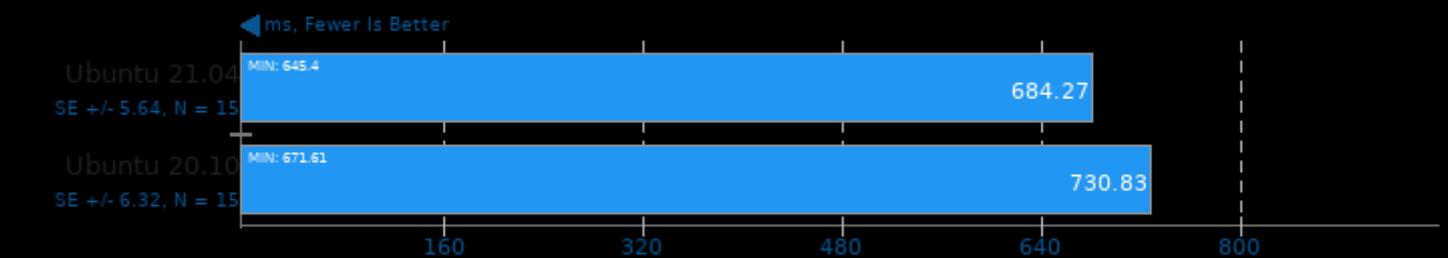
Harness: Recurrent Neural Network Inference - Data Type: f32 - Engine: CPU



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

oneDNN 2.1.2

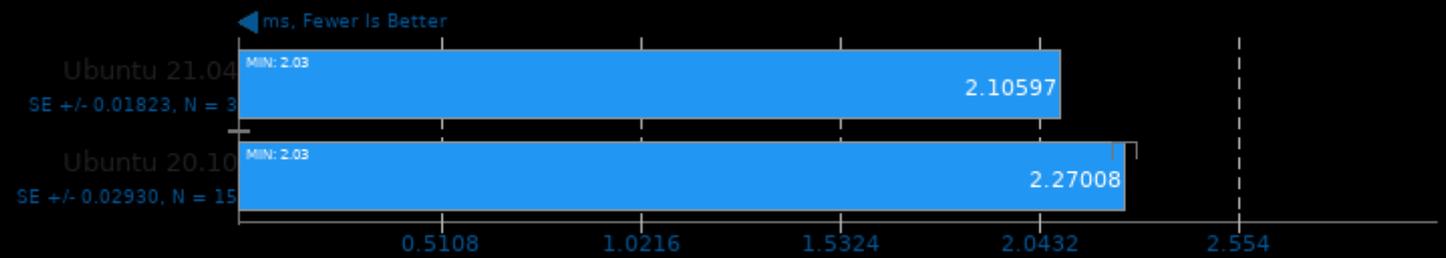
Harness: Recurrent Neural Network Training - Data Type: u8s8f32 - Engine: CPU



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

oneDNN 2.1.2

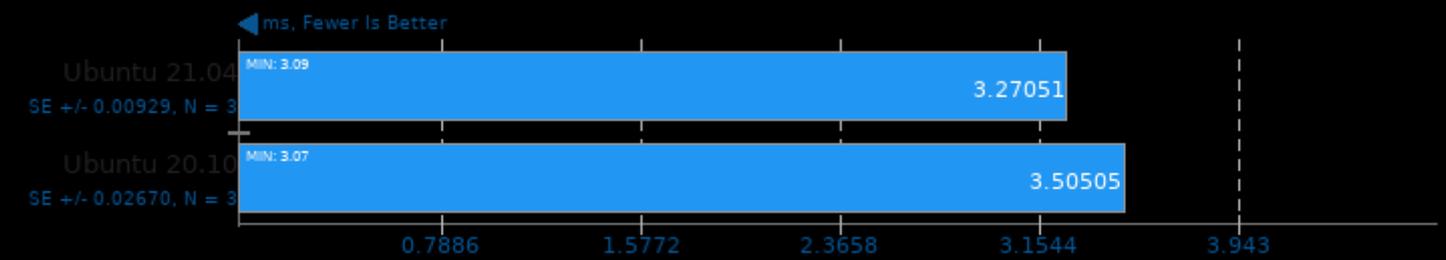
Harness: Convolution Batch Shapes Auto - Data Type: bf16bf16bf16 - Engine: CPU



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

oneDNN 2.1.2

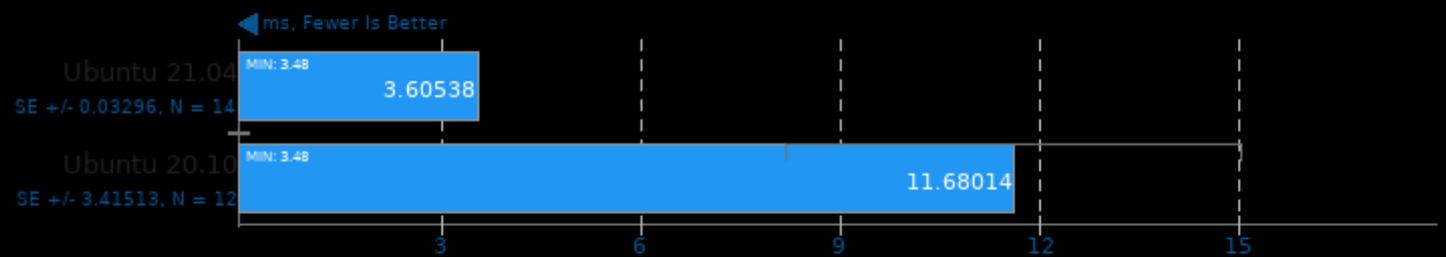
Harness: Deconvolution Batch shapes_1d - Data Type: bf16bf16bf16 - Engine: CPU



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

oneDNN 2.1.2

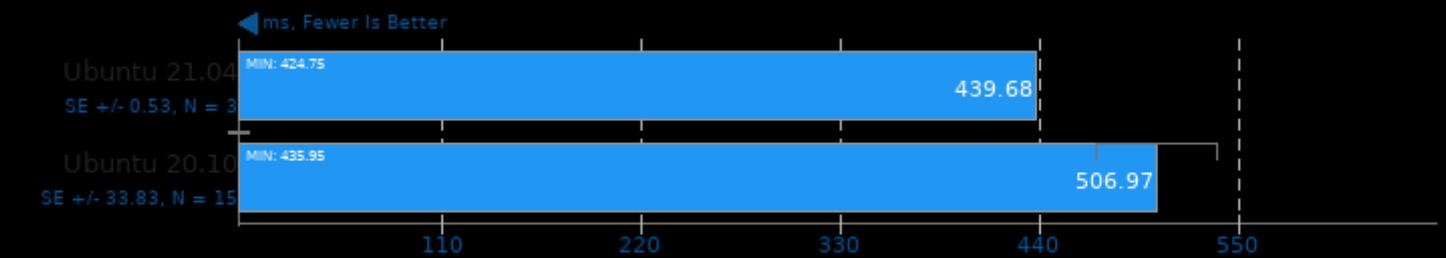
Harness: Deconvolution Batch shapes_3d - Data Type: bf16bf16bf16 - Engine: CPU



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

oneDNN 2.1.2

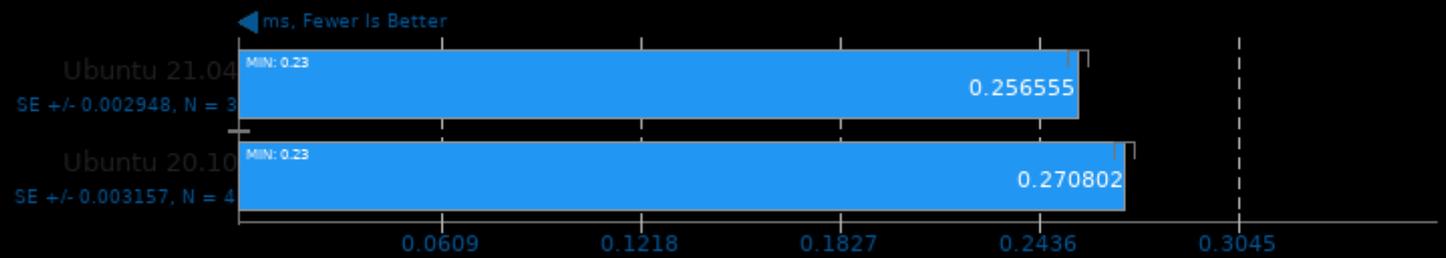
Harness: Recurrent Neural Network Inference - Data Type: u8s8f32 - Engine: CPU



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

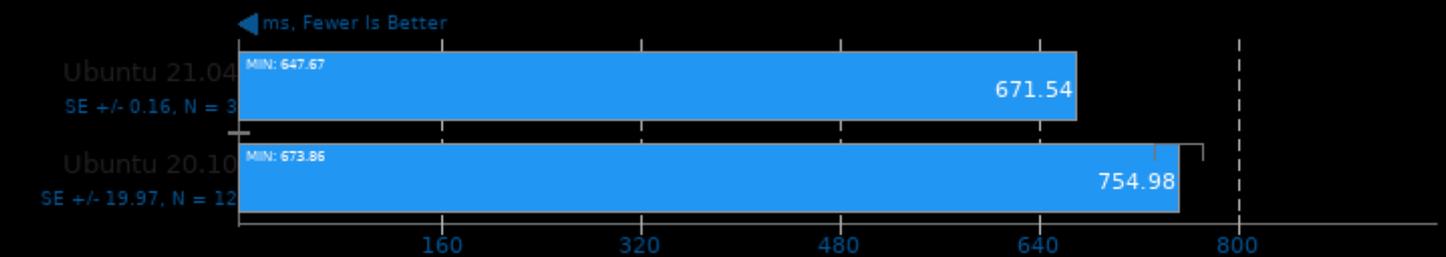
oneDNN 2.1.2

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



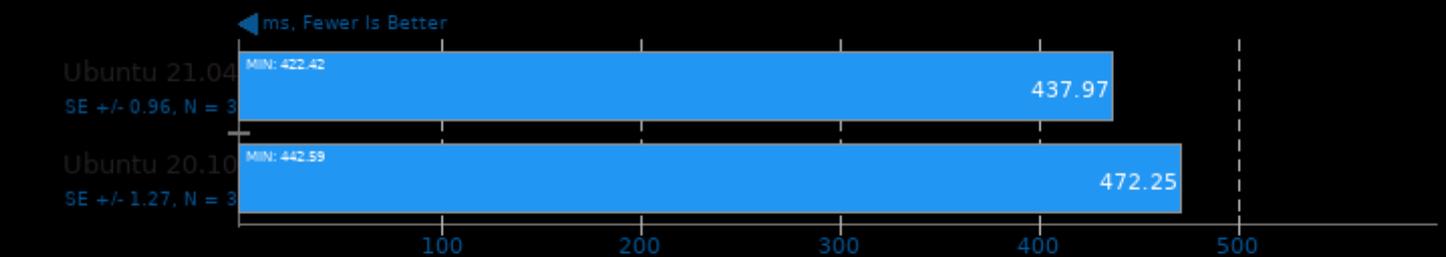
oneDNN 2.1.2

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



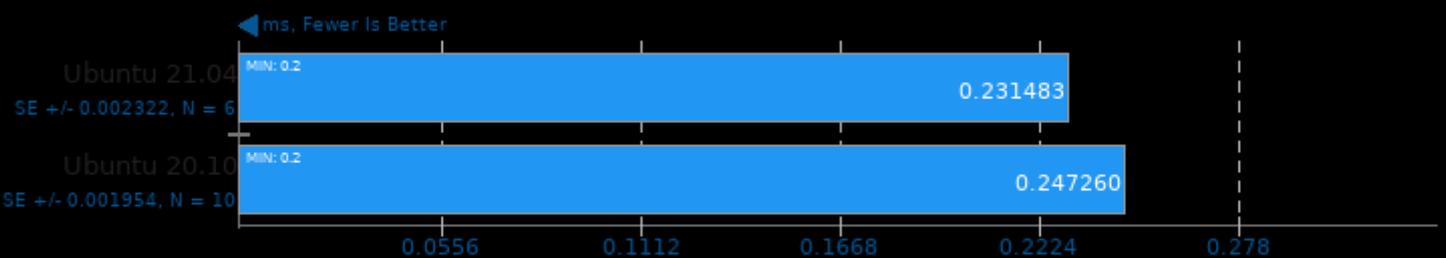
oneDNN 2.1.2

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



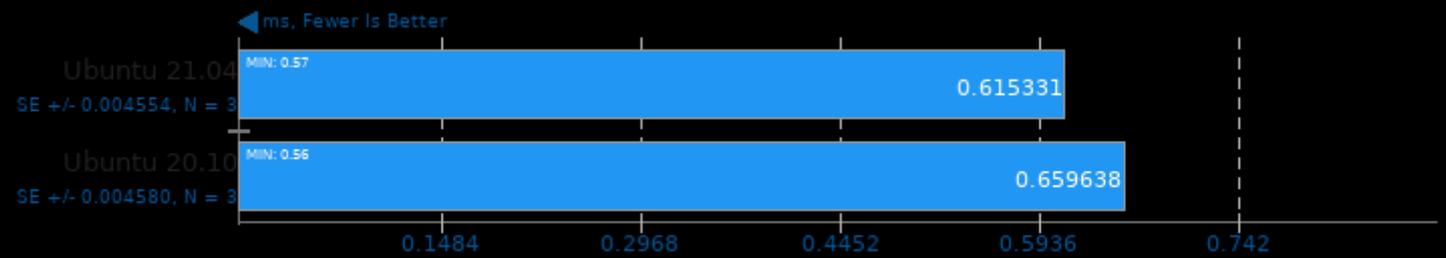
oneDNN 2.1.2

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



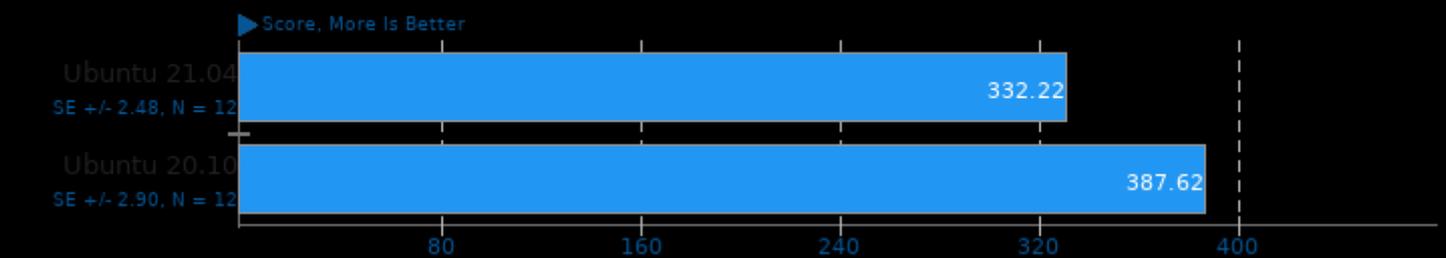
oneDNN 2.1.2

Harness: Matrix Multiply Batch Shapes Transformer - Data Type: bf16bf16bf16 - Engine: CPU



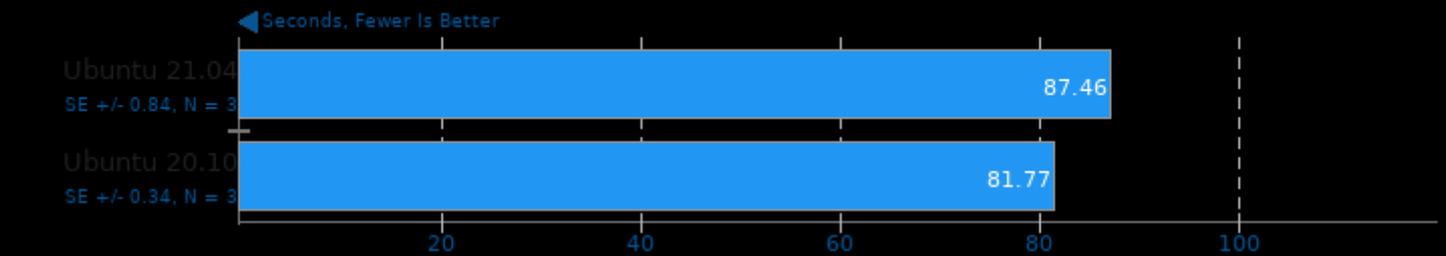
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -pthread -ldl

Numpy Benchmark



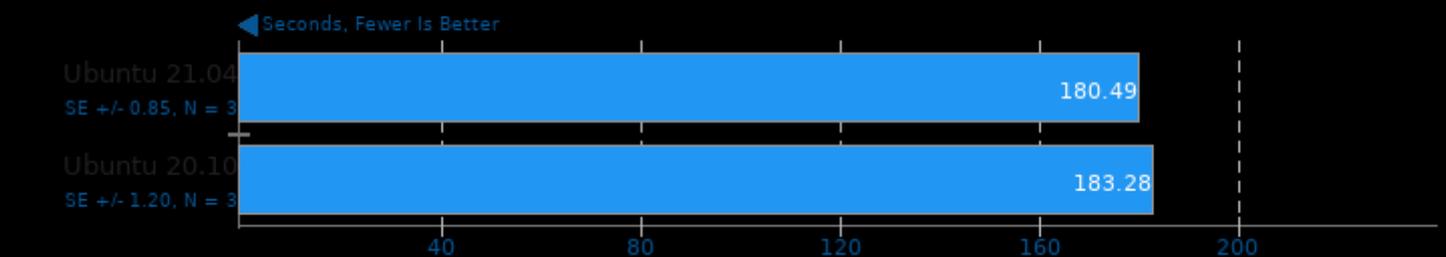
Timed Eigen Compilation 3.3.9

Time To Compile



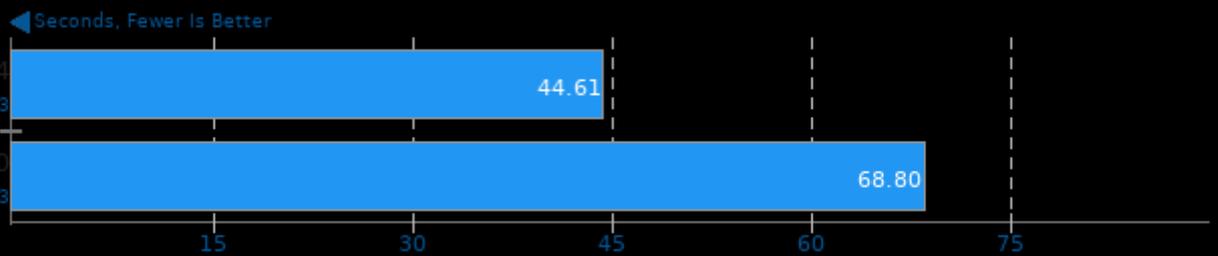
Timed Erlang/OTP Compilation 23.2

Time To Compile



Timed Wasmer Compilation 1.0.2

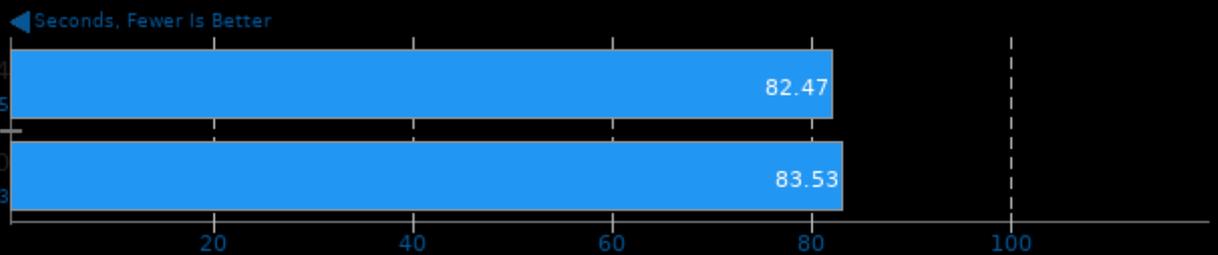
Time To Compile



1. (CC) gcc options: -m64 -pie -nodefaultlibs -ldl -lgcc_s -lutil -lrt -lpthread -lm -lc

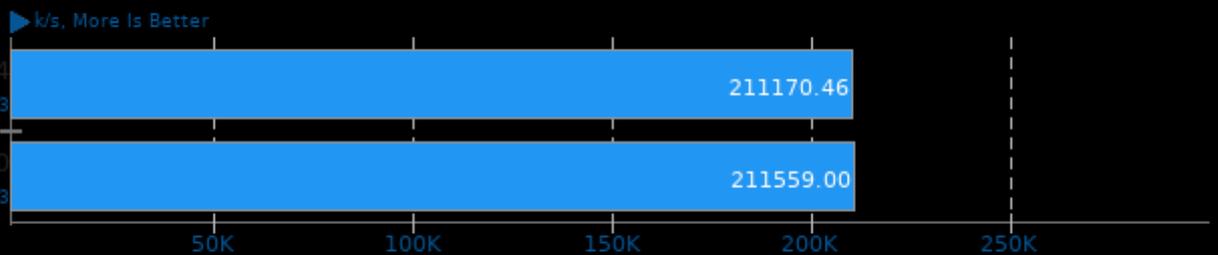
Helsing 1.0-beta

Digit Range: 14 digit



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

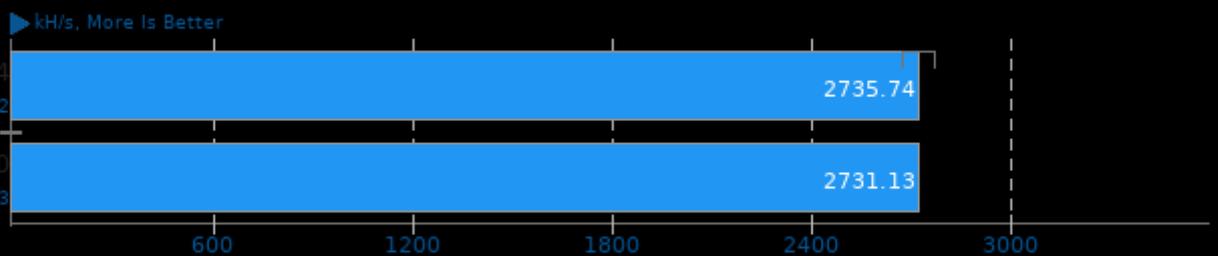
Aircrack-ng 1.5.2



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

Cpuminer-Opt 3.15.5

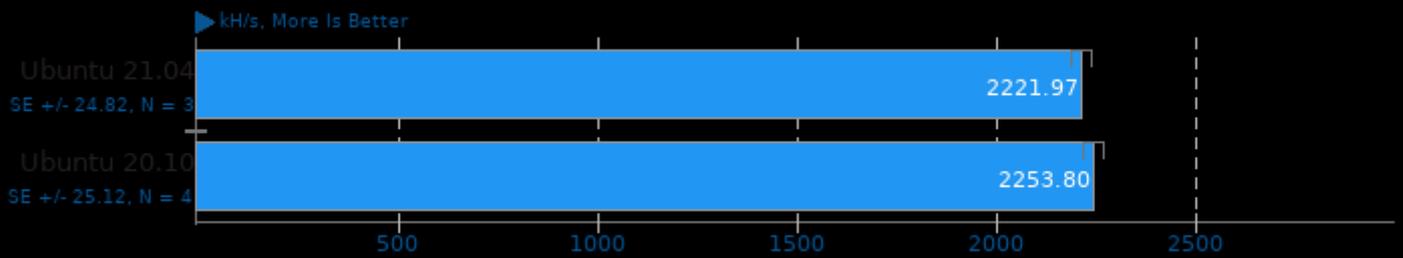
Algorithm: Magi



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

Cpuminer-Opt 3.15.5

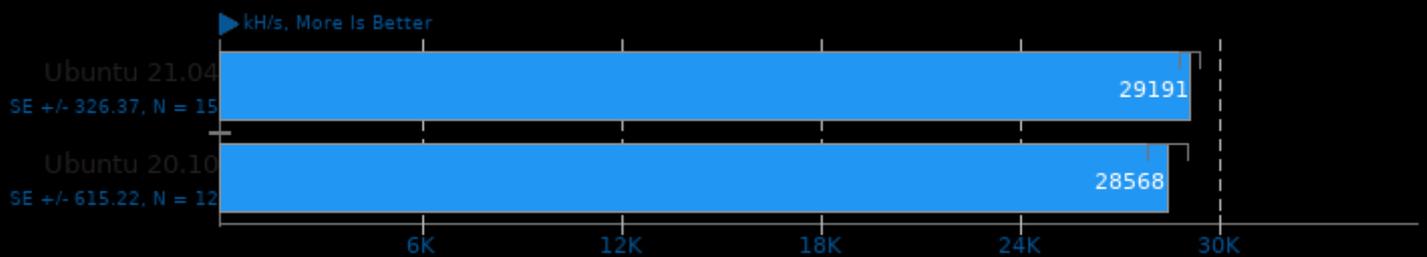
Algorithm: x25x



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

Cpuminer-Opt 3.15.5

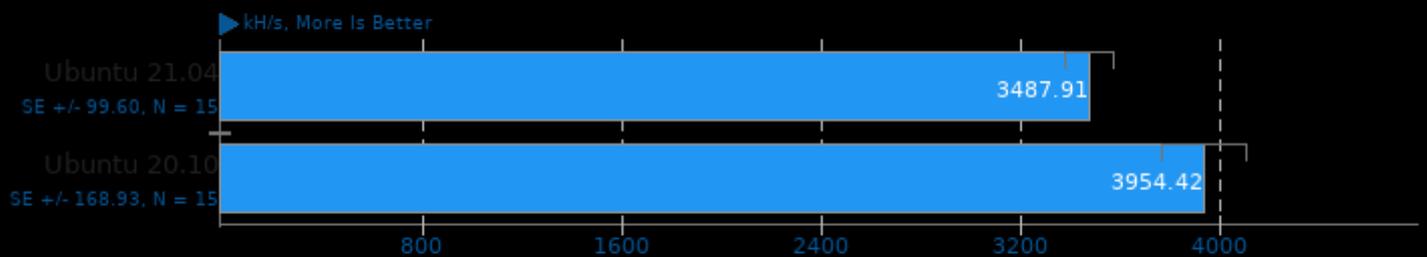
Algorithm: Deepcoin



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

Cpuminer-Opt 3.15.5

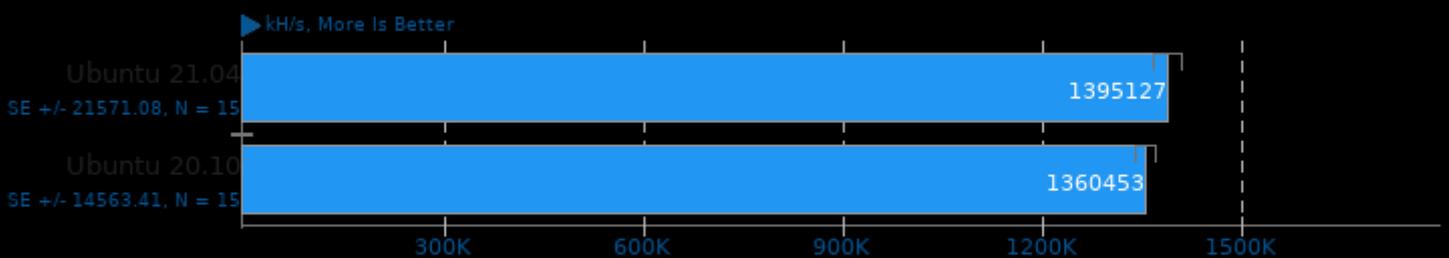
Algorithm: Ringcoin



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

Cpuminer-Opt 3.15.5

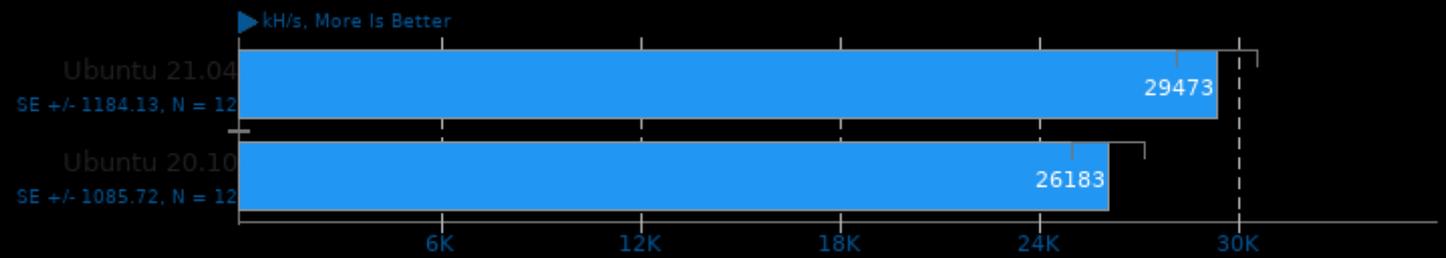
Algorithm: Blake-2 S



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

Cpuminer-Opt 3.15.5

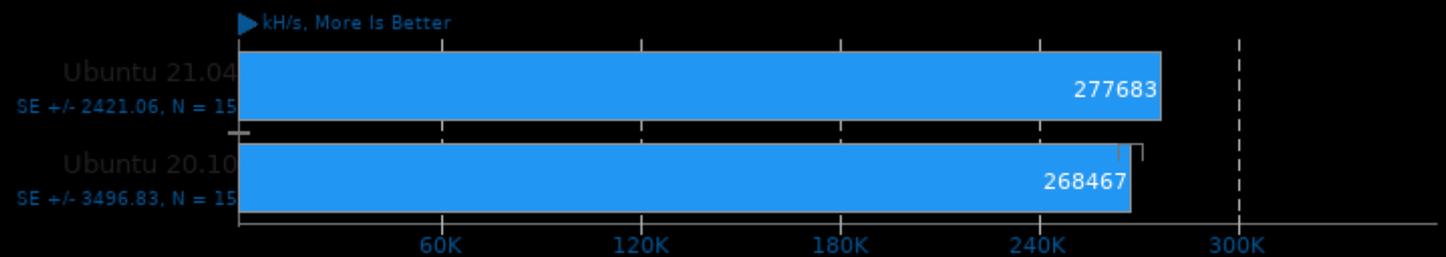
Algorithm: Garlicoin



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

Cpuminer-Opt 3.15.5

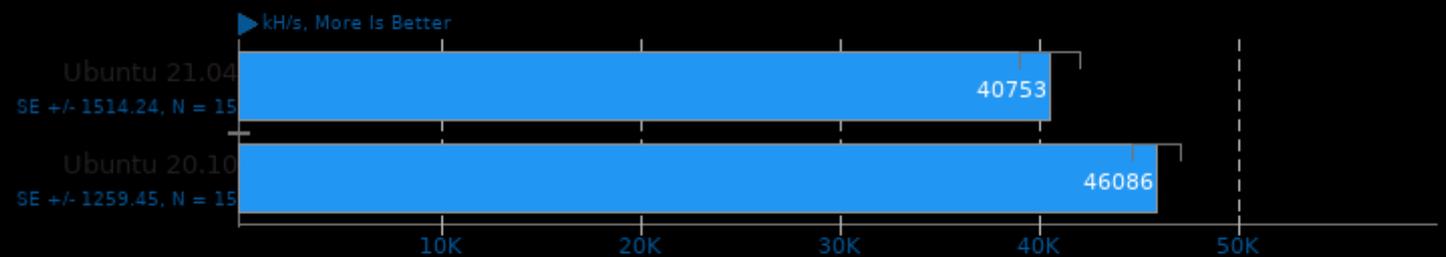
Algorithm: Skeincoin



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

Cpuminer-Opt 3.15.5

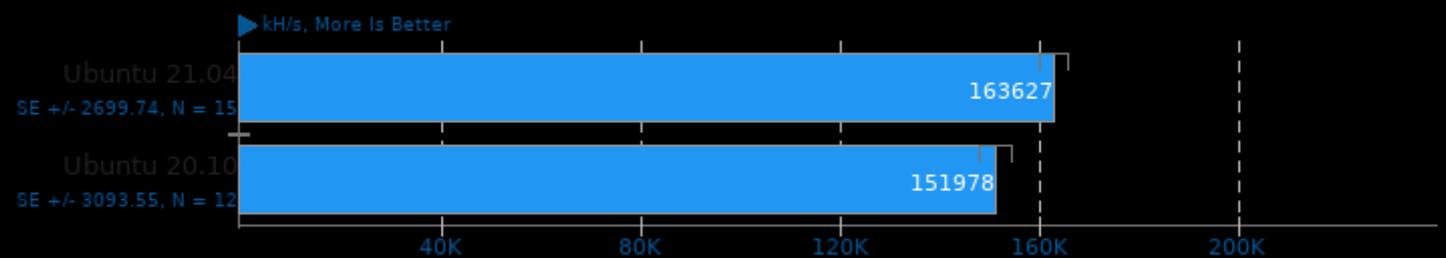
Algorithm: Myriad-Groestl



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

Cpuminer-Opt 3.15.5

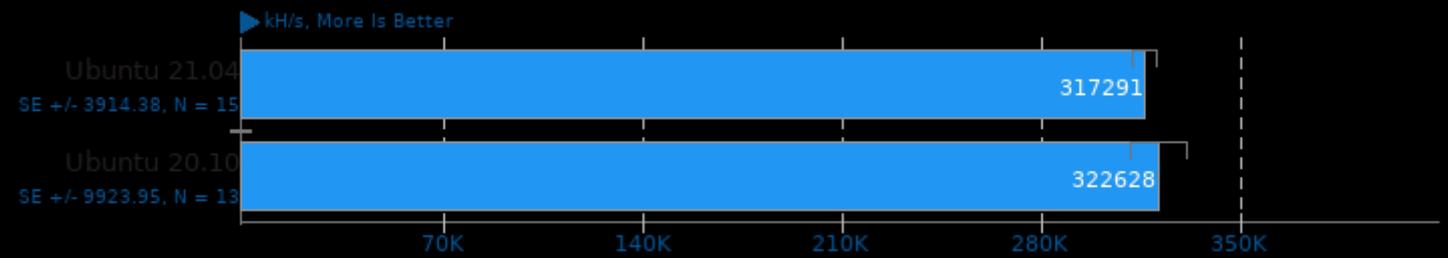
Algorithm: LBC, LBRY Credits



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

Cpuminer-Opt 3.15.5

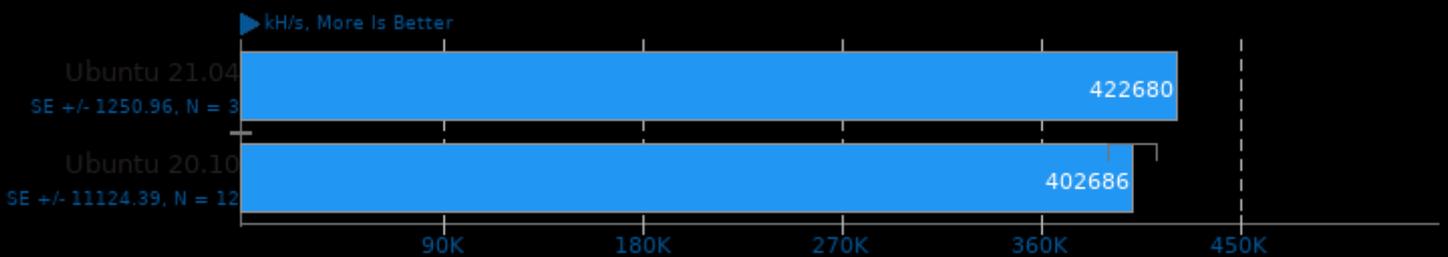
Algorithm: Quad SHA-256, Pyrite



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

Cpuminer-Opt 3.15.5

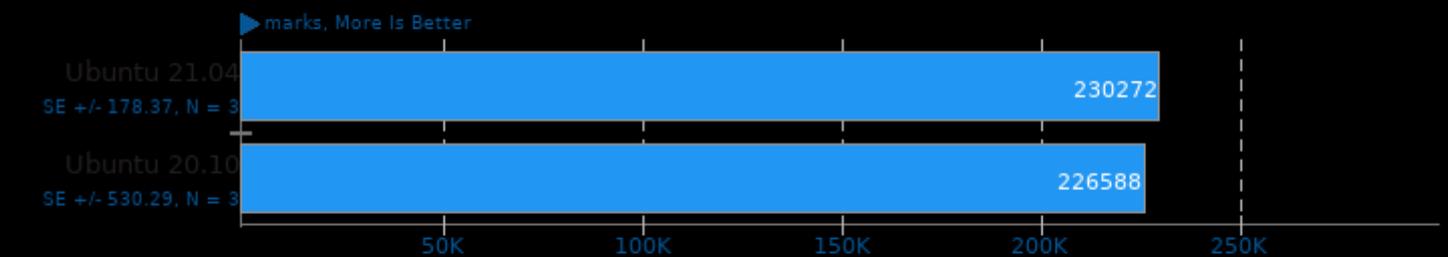
Algorithm: Triple SHA-256, Onecoin



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

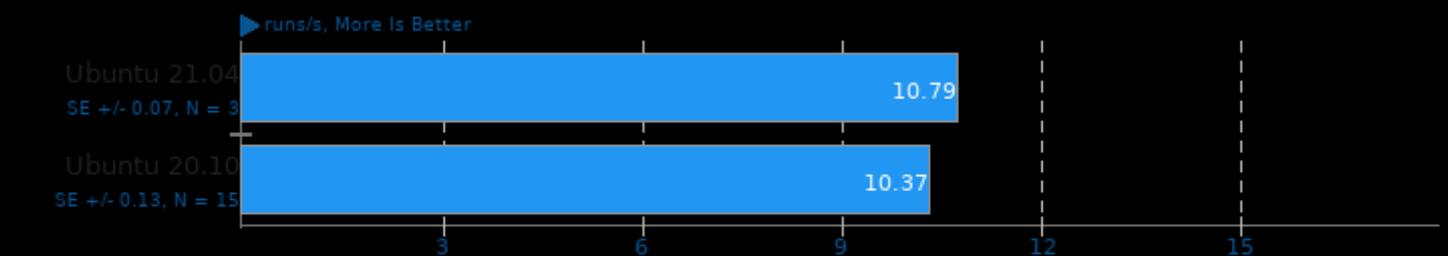
SecureMark 1.0.4

Benchmark: SecureMark-TLS



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

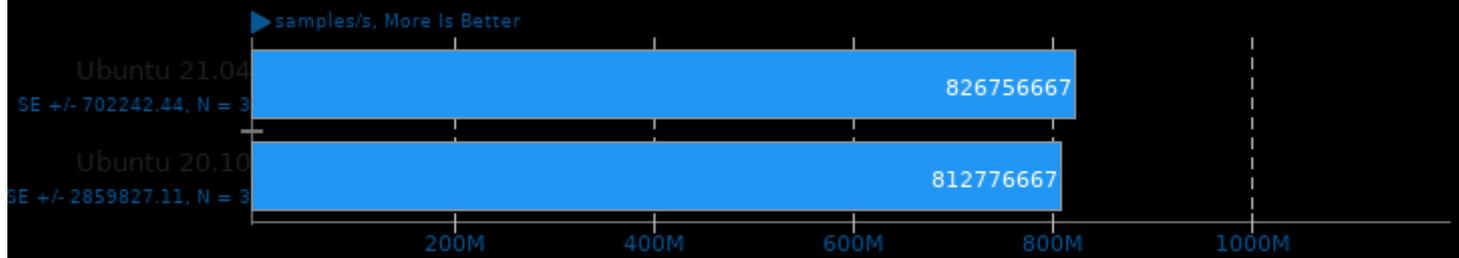
Node.js V8 Web Tooling Benchmark



1. Ubuntu 21.04: Nodejs v12.18.2
Ubuntu 20.10: Nodejs v12.18.2

Liquid-DSP 2021.01.31

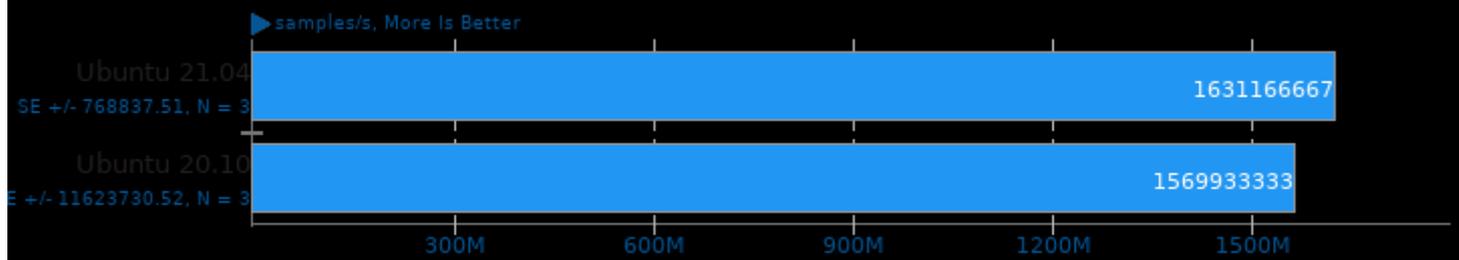
Threads: 16 - Buffer Length: 256 - Filter Length: 57



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

Liquid-DSP 2021.01.31

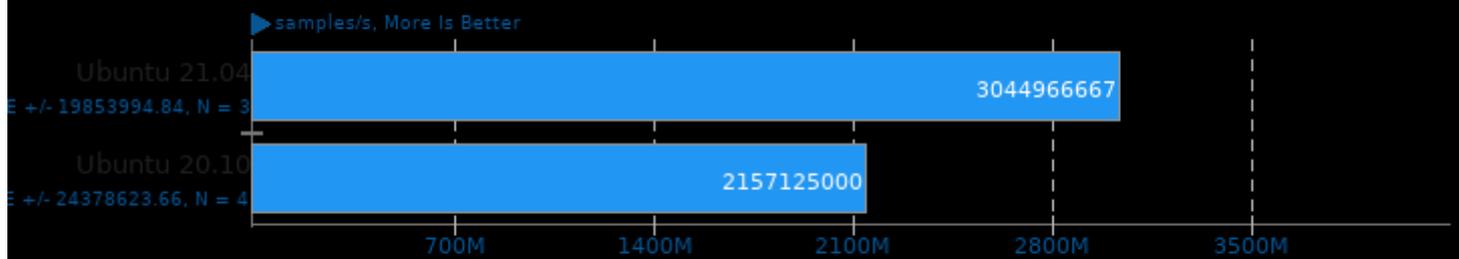
Threads: 32 - Buffer Length: 256 - Filter Length: 57



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

Liquid-DSP 2021.01.31

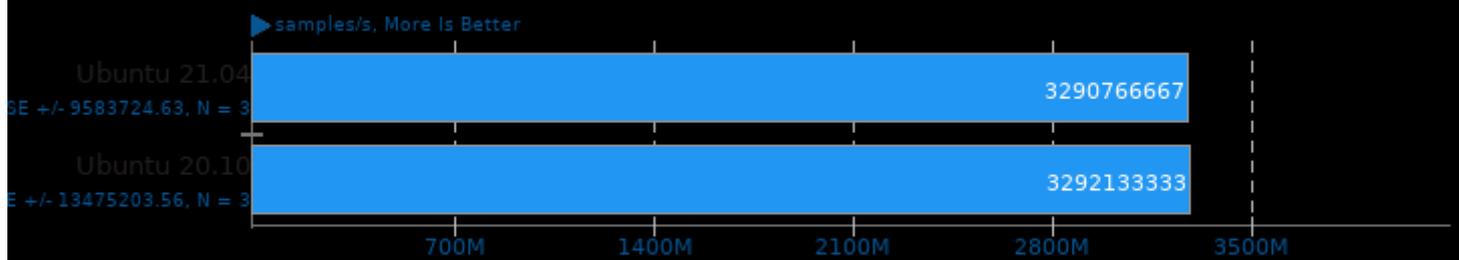
Threads: 64 - Buffer Length: 256 - Filter Length: 57



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

Liquid-DSP 2021.01.31

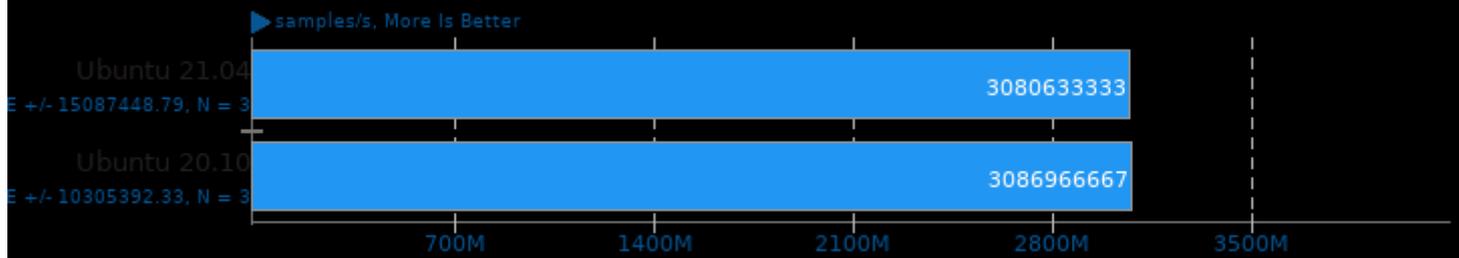
Threads: 128 - Buffer Length: 256 - Filter Length: 57



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

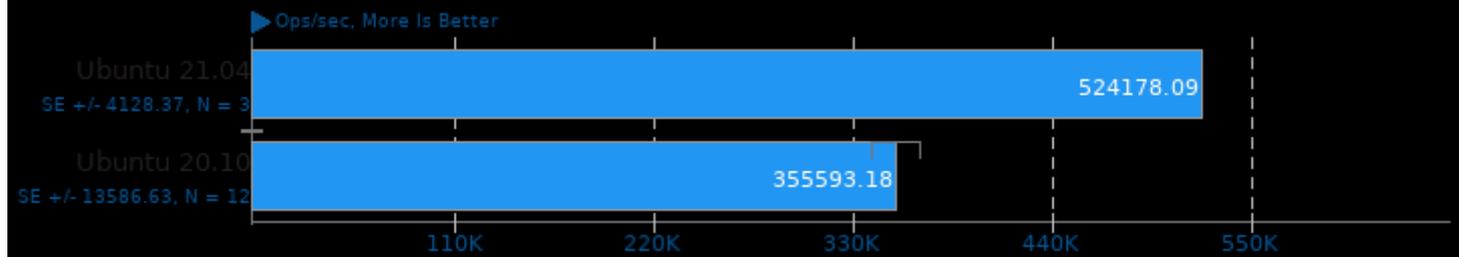
Liquid-DSP 2021.01.31

Threads: 160 - Buffer Length: 256 - Filter Length: 57



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

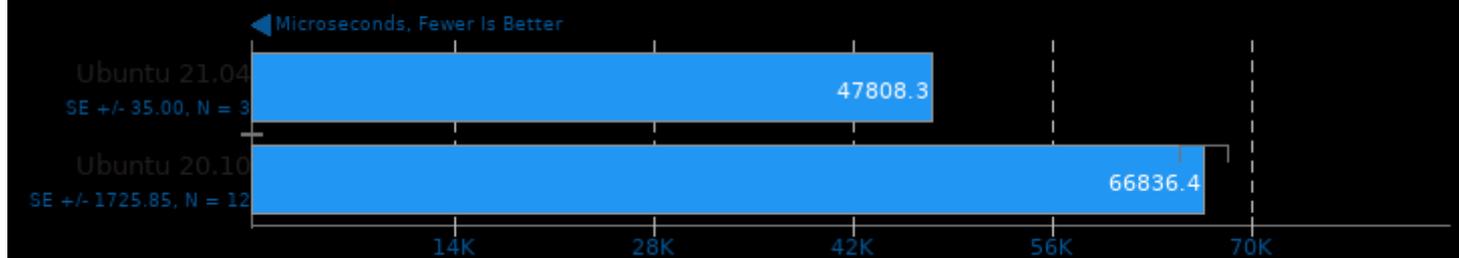
KeyDB 6.0.16



1. (CXX) g++ options: -O2 -levent_openssl -levent -lcrypto -lssl -pthread -lz -lpcrc

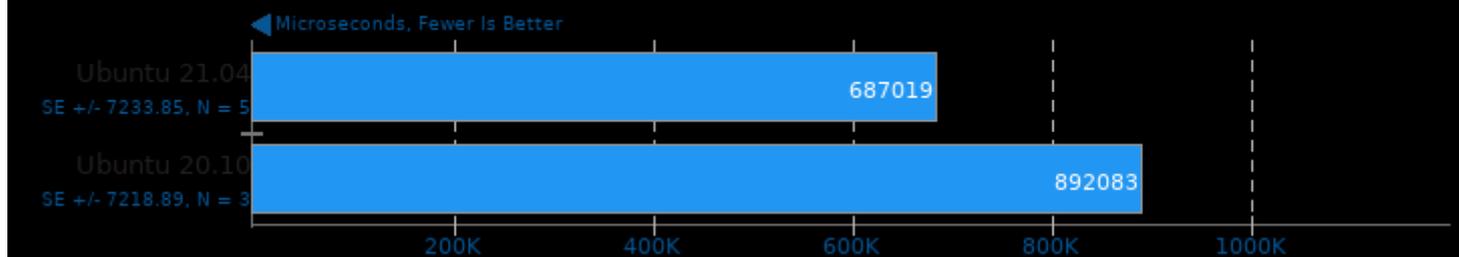
TensorFlow Lite 2020-08-23

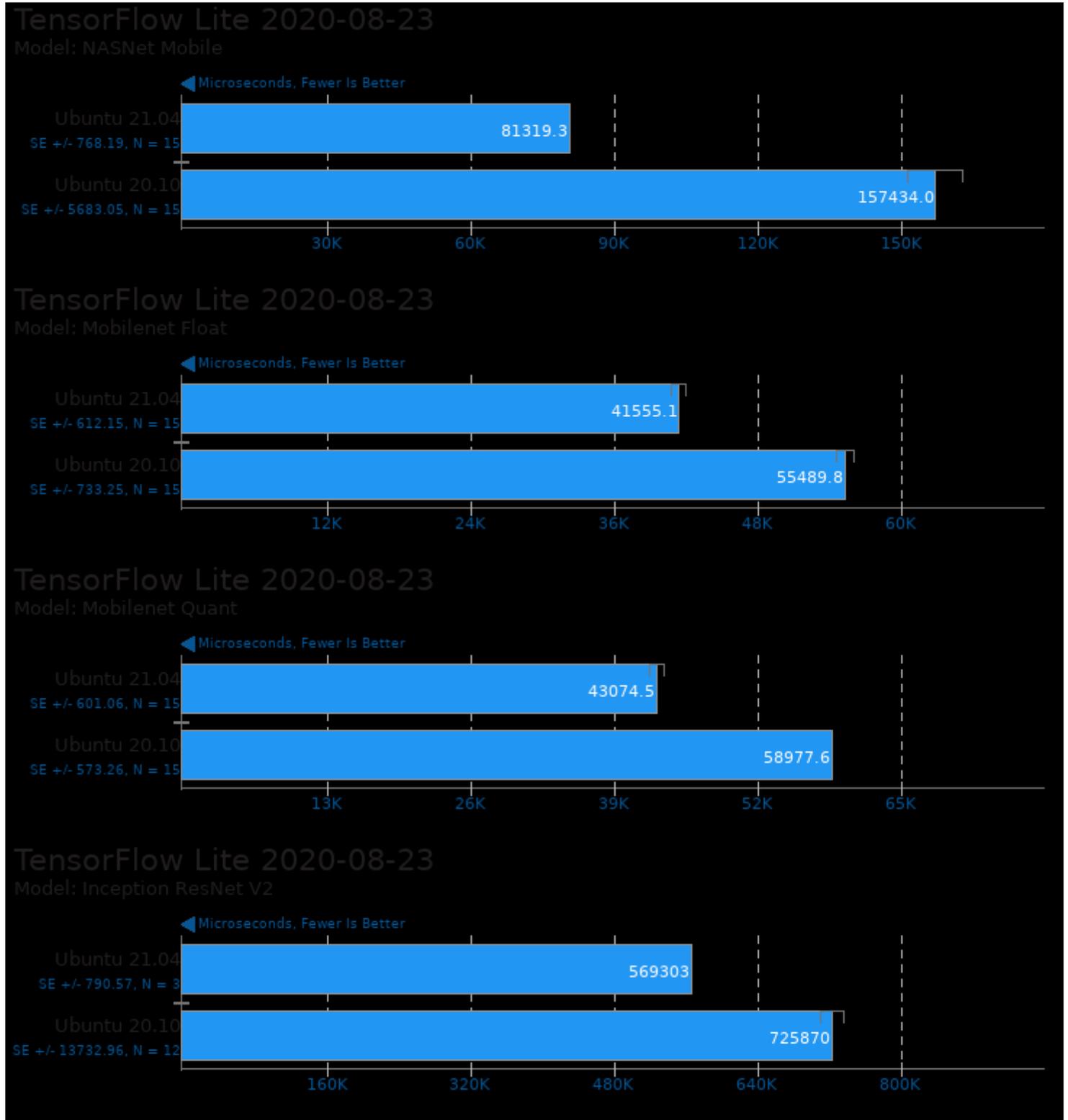
Model: SqueezeNet



TensorFlow Lite 2020-08-23

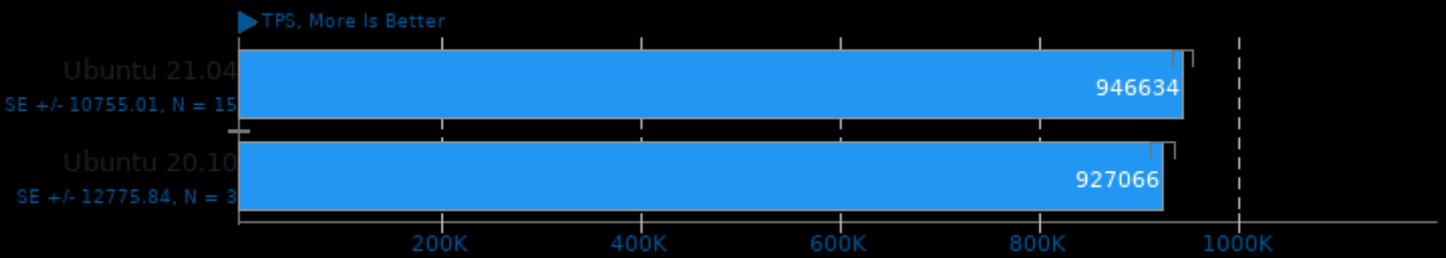
Model: Inception V4





PostgreSQL pgbench 13.0

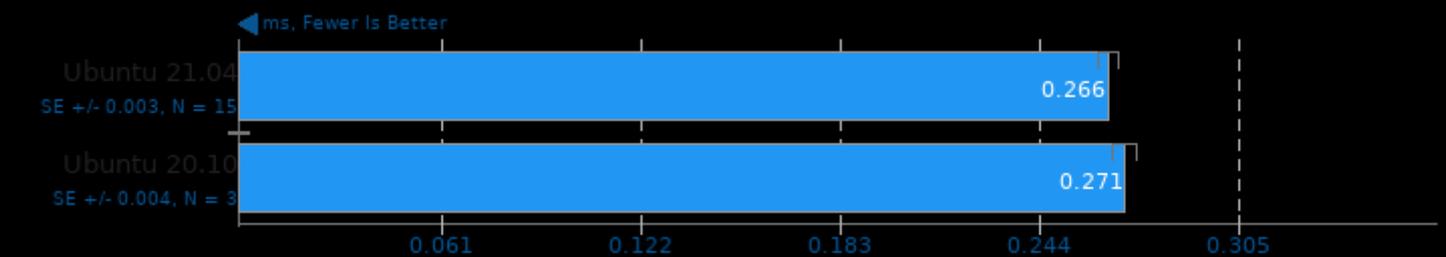
Scaling Factor: 100 - Clients: 250 - Mode: Read Only



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

PostgreSQL pgbench 13.0

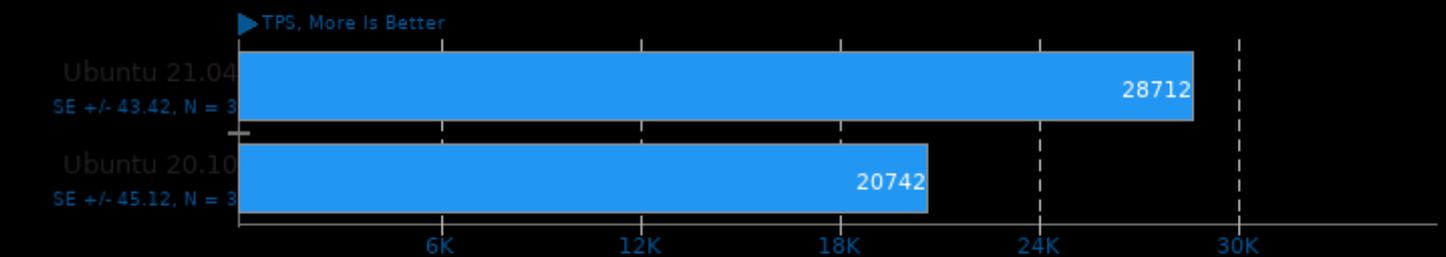
Scaling Factor: 100 - Clients: 250 - Mode: Read Only - Average Latency



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

PostgreSQL pgbench 13.0

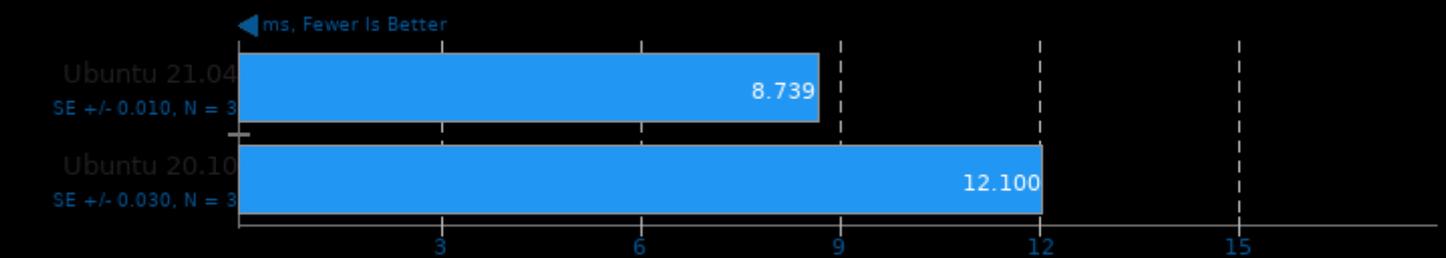
Scaling Factor: 100 - Clients: 250 - Mode: Read Write



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

PostgreSQL pgbench 13.0

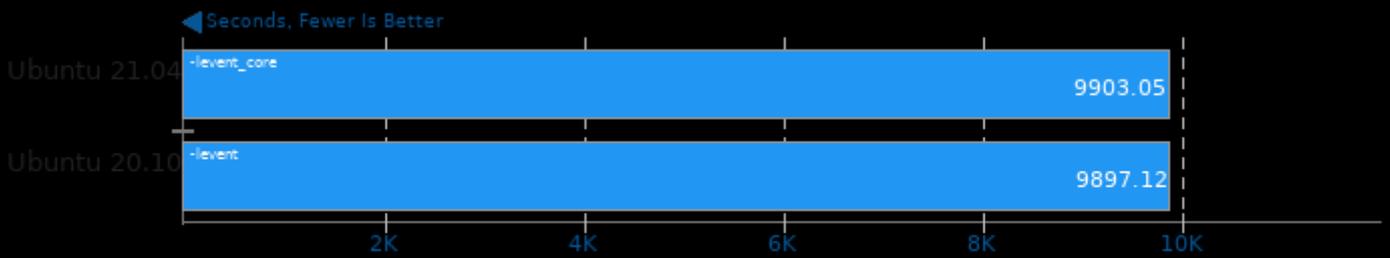
Scaling Factor: 100 - Clients: 250 - Mode: Read Write - Average Latency



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

WRF 4.2.2

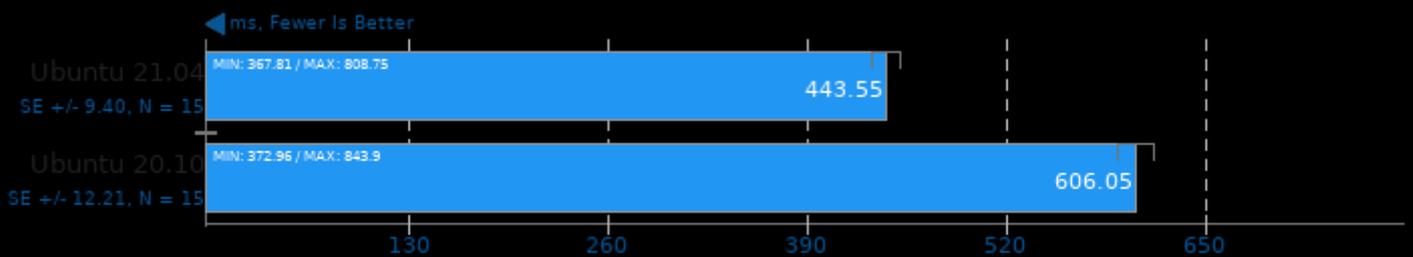
Input: conus 2.5km



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

TNN 0.2.3

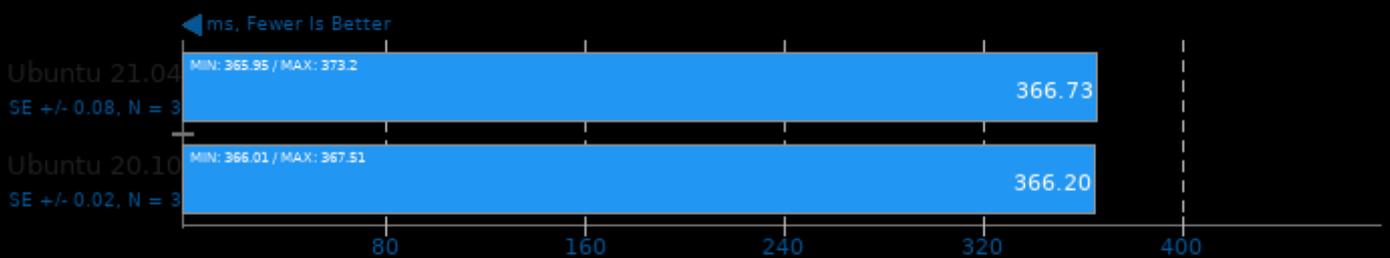
Target: CPU - Model: MobileNet v2



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

TNN 0.2.3

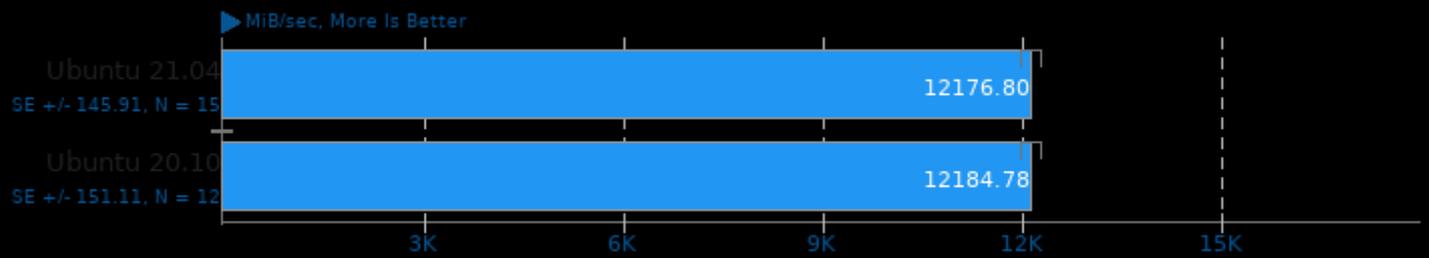
Target: CPU - Model: SqueezeNet v1.1



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

Sysbench 1.0.20

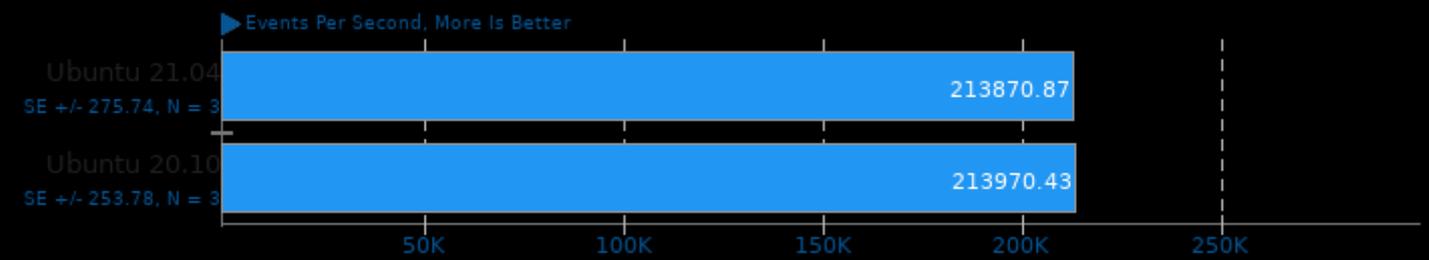
Test: RAM / Memory



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

Sysbench 1.0.20

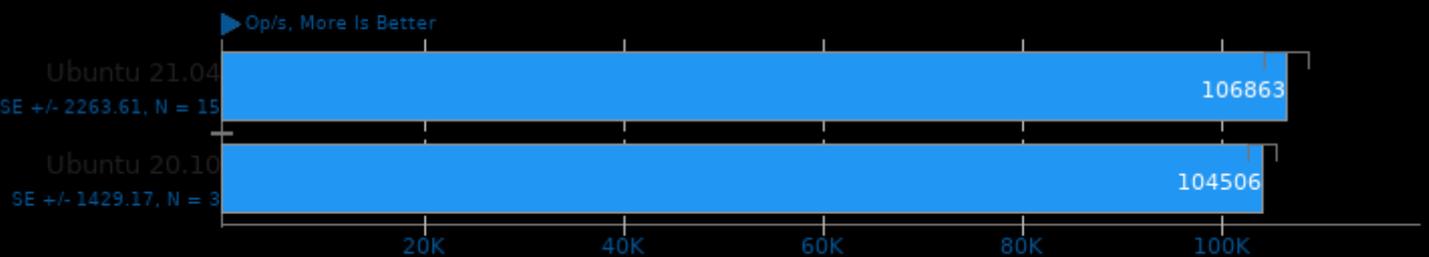
Test: CPU



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

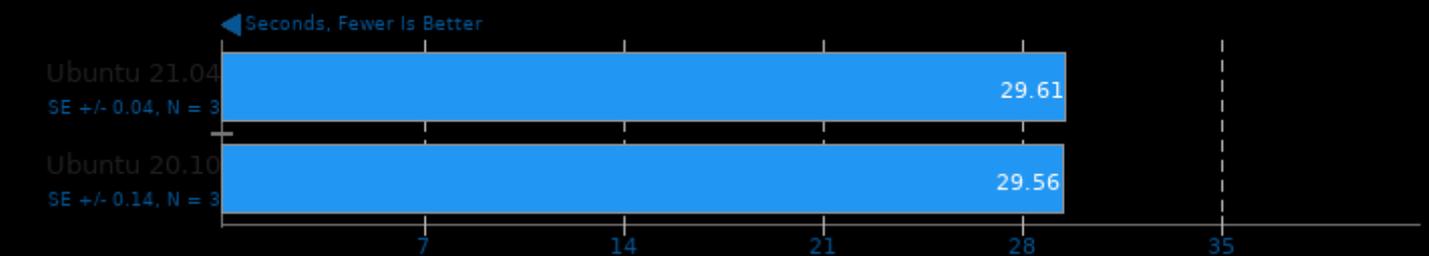
Apache Cassandra 3.11.4

Test: Writes



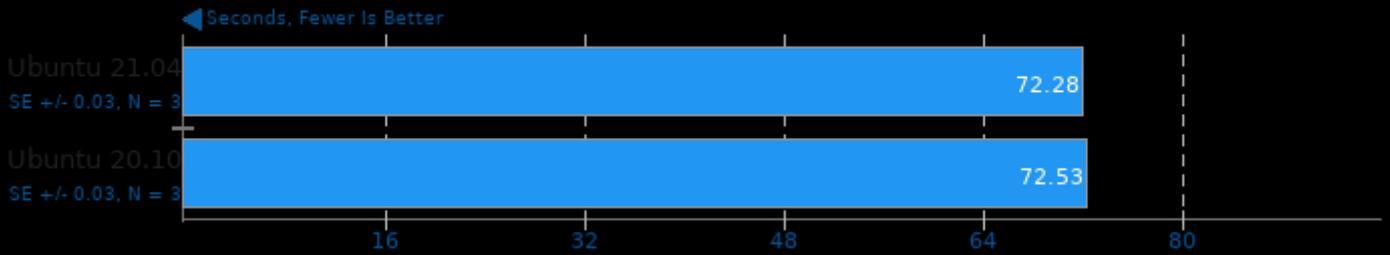
Blender 2.92

Blend File: BMW27 - Compute: CPU-Only



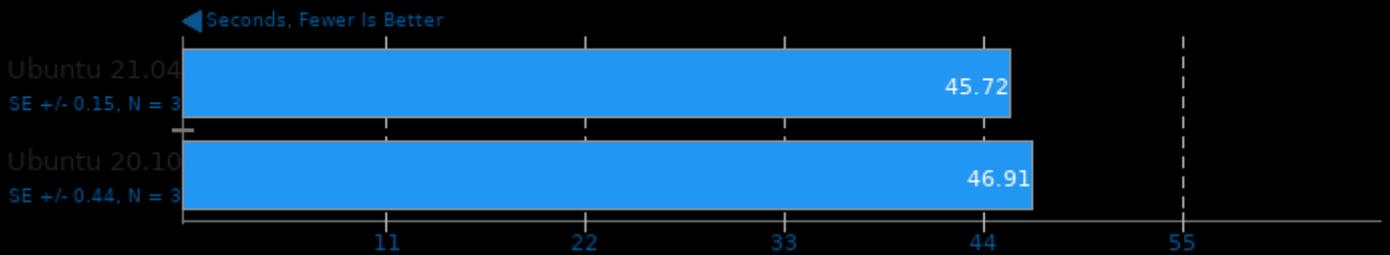
Blender 2.92

Blend File: Classroom - Compute: CPU-Only



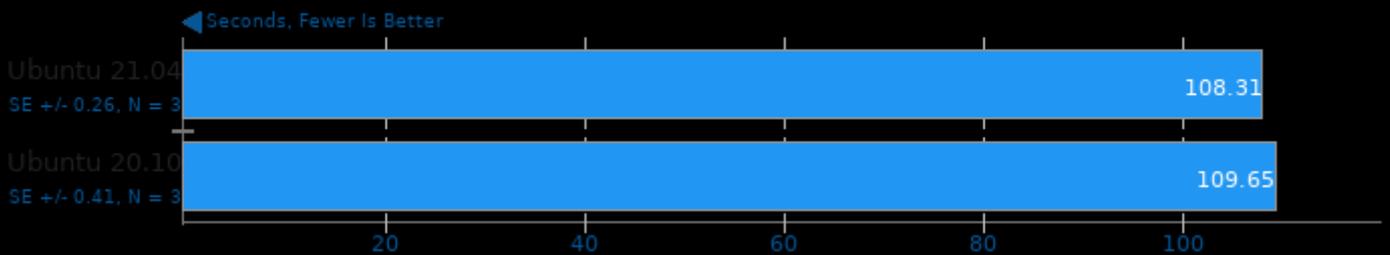
Blender 2.92

Blend File: Fishy Cat - Compute: CPU-Only



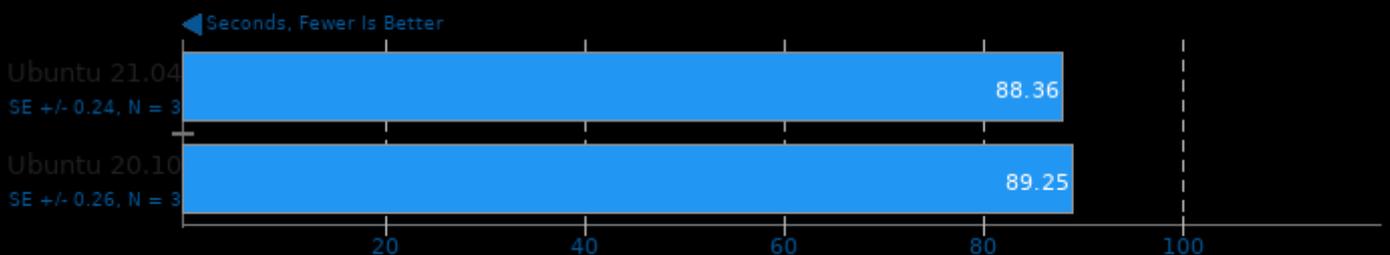
Blender 2.92

Blend File: Barbershop - Compute: CPU-Only



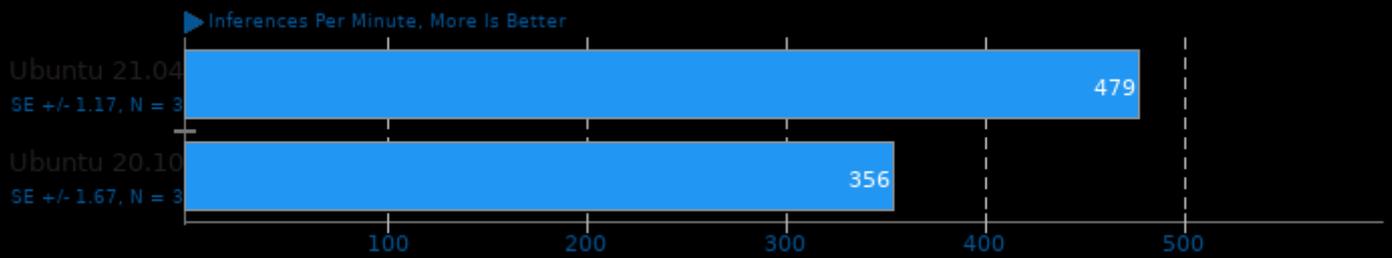
Blender 2.92

Blend File: Pabellon Barcelona - Compute: CPU-Only



ONNX Runtime 1.6

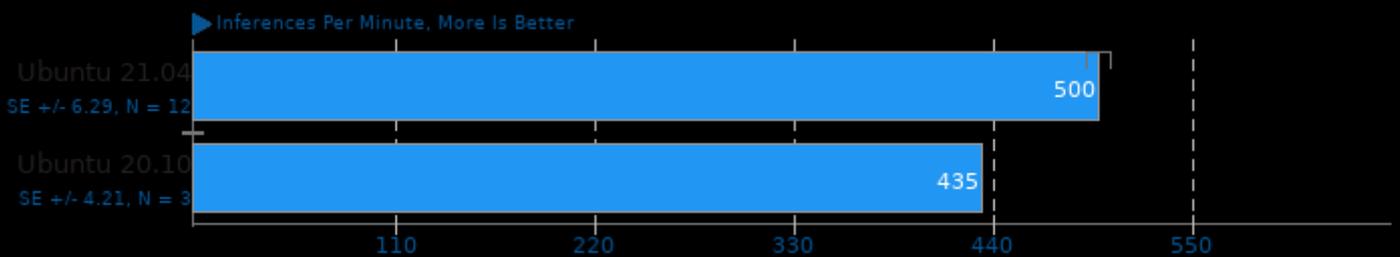
Model: yolov4 - Device: OpenMP CPU



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

ONNX Runtime 1.6

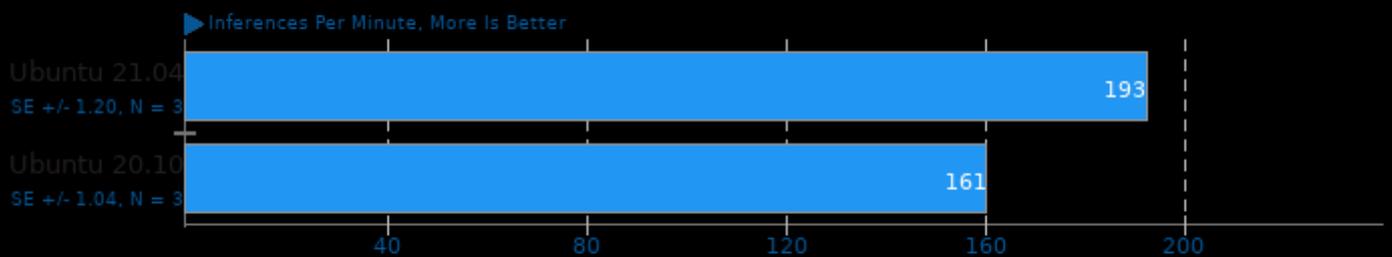
Model: bertseqad-10 - Device: OpenMP CPU



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

ONNX Runtime 1.6

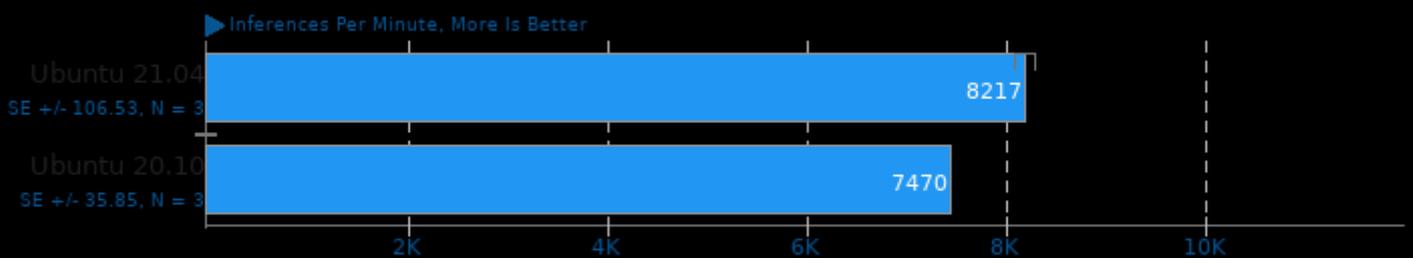
Model: fcn-resnet101-11 - Device: OpenMP CPU



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

ONNX Runtime 1.6

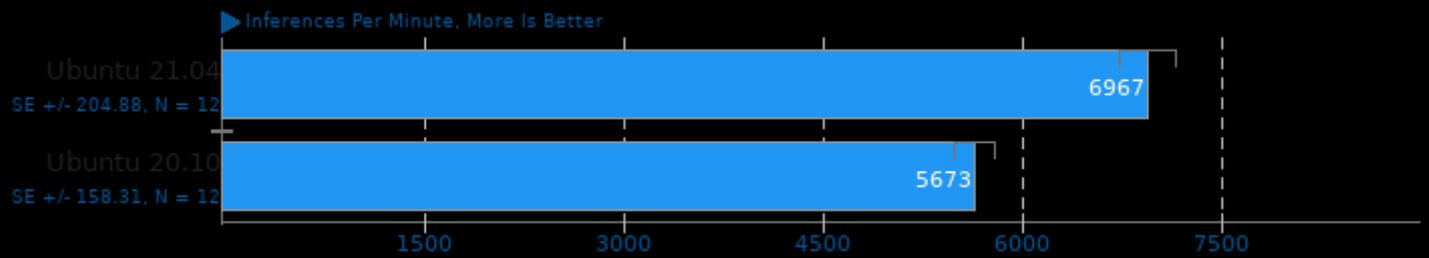
Model: shufflenet-v2-10 - Device: OpenMP CPU



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

ONNX Runtime 1.6

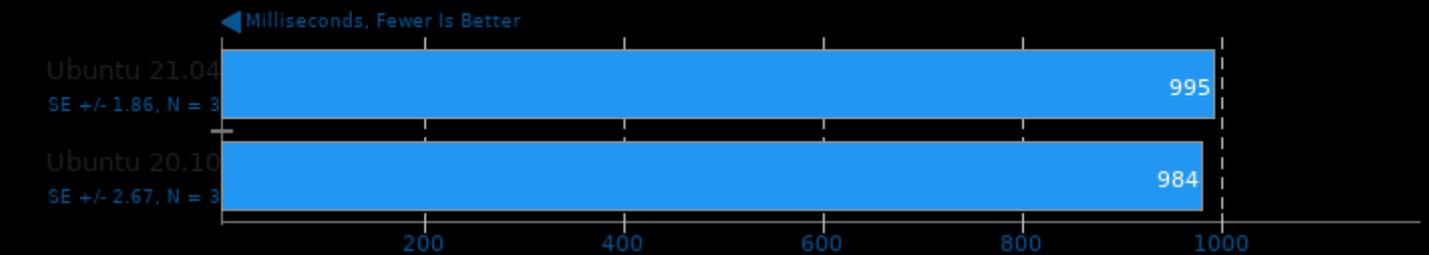
Model: super-resolution-10 - Device: OpenMP CPU



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

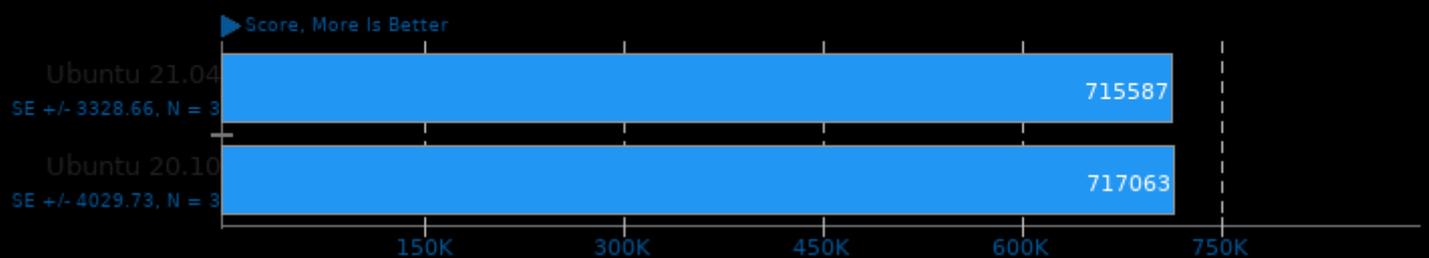
PyBench 2018-02-16

Total For Average Test Times



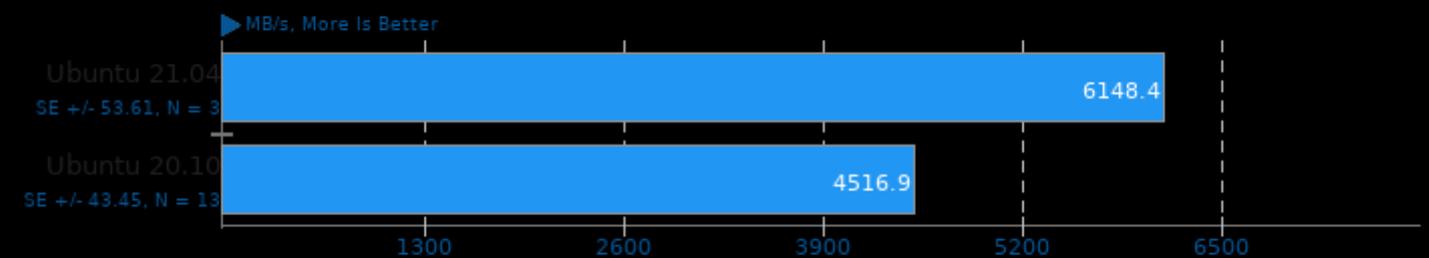
PHPBench 0.8.1

PHP Benchmark Suite



Zstd Compression 1.5.0

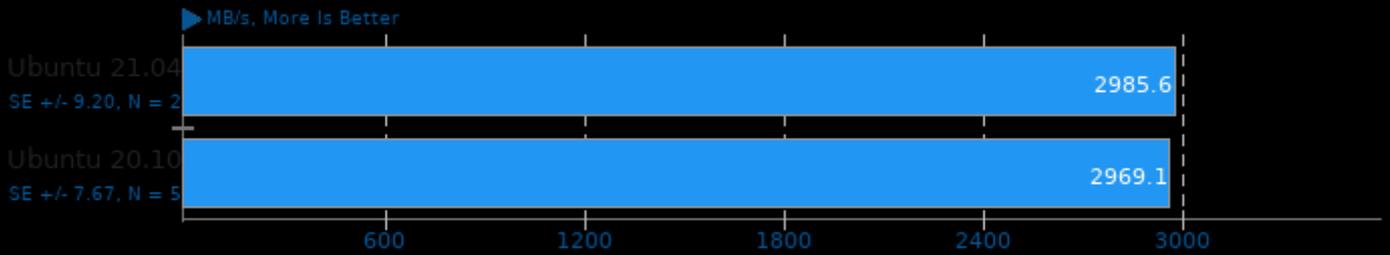
Compression Level: 3 - Compression Speed



1. (C) gcc options: -O3 -pthread -lz -lzma

Zstd Compression 1.5.0

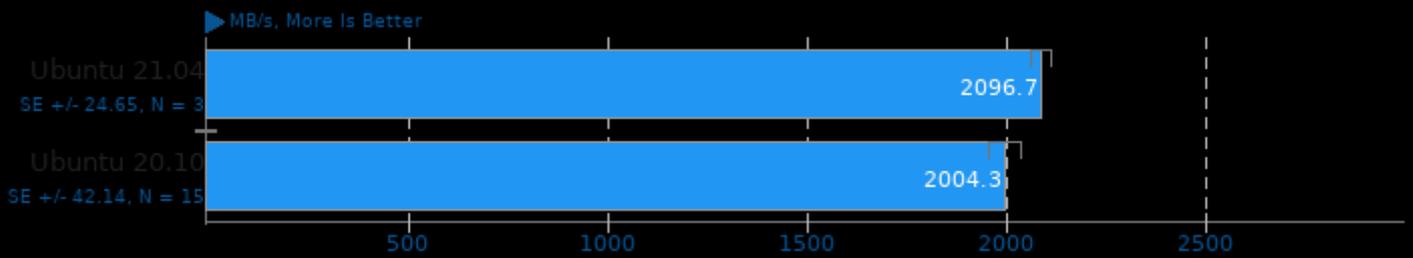
Compression Level: 3 - Decompression Speed



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

Zstd Compression 1.5.0

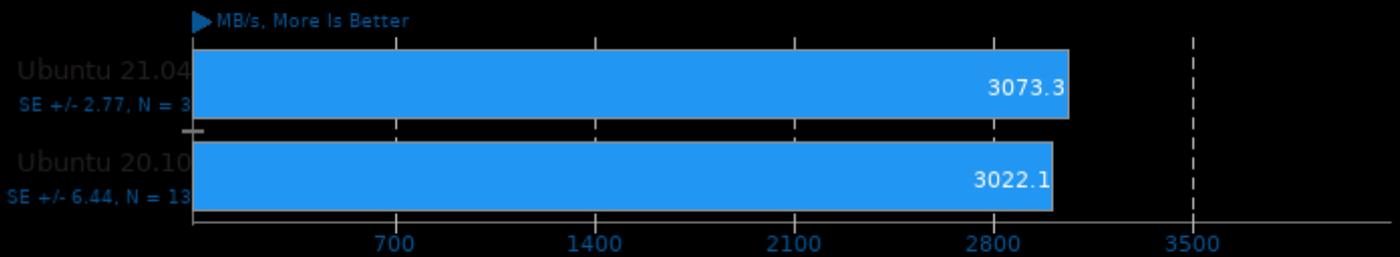
Compression Level: 8 - Compression Speed



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

Zstd Compression 1.5.0

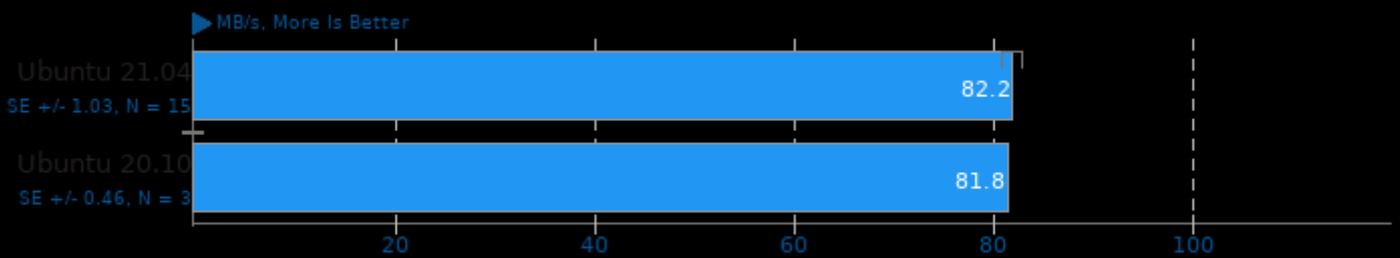
Compression Level: 8 - Decompression Speed



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

Zstd Compression 1.5.0

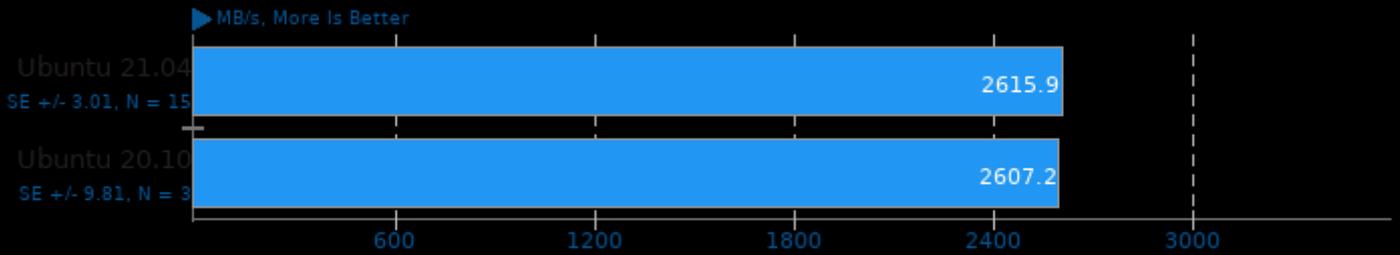
Compression Level: 19 - Compression Speed



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

Zstd Compression 1.5.0

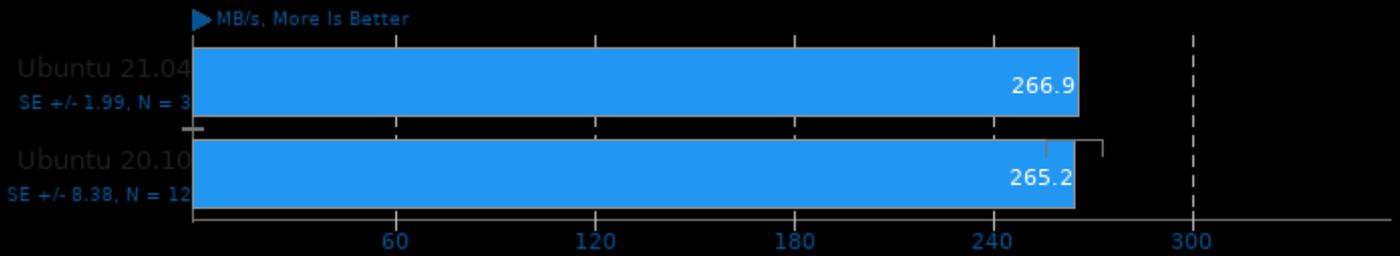
Compression Level: 19 - Decompression Speed



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

Zstd Compression 1.5.0

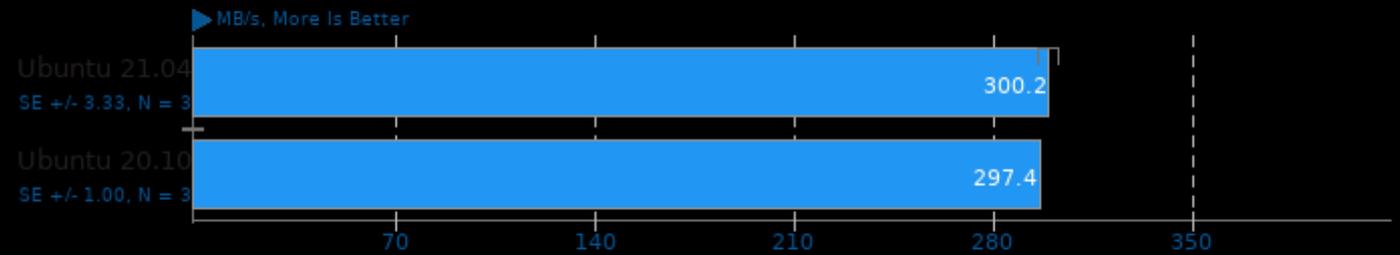
Compression Level: 3, Long Mode - Compression Speed



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

Zstd Compression 1.5.0

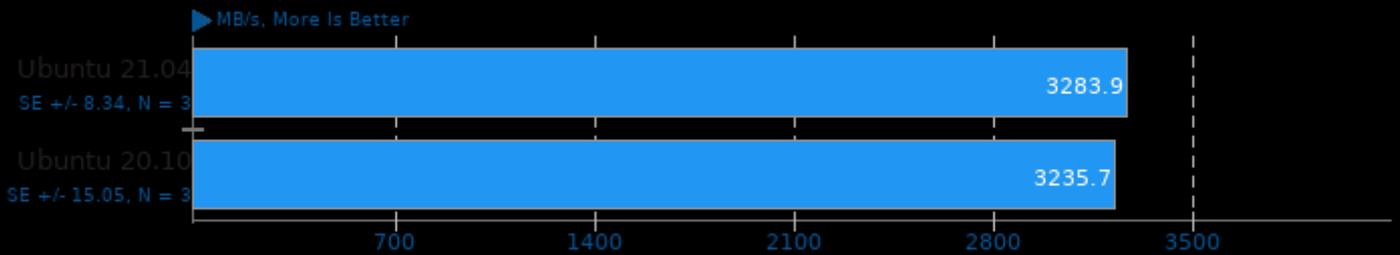
Compression Level: 8, Long Mode - Compression Speed



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

Zstd Compression 1.5.0

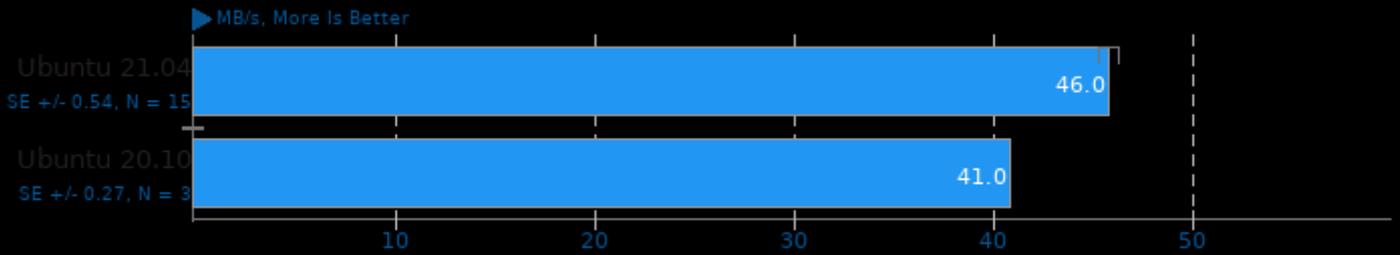
Compression Level: 8, Long Mode - Decompression Speed



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

Zstd Compression 1.5.0

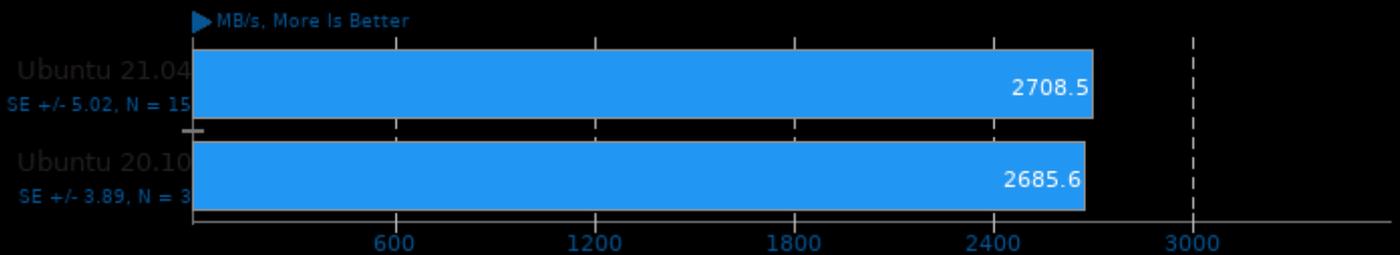
Compression Level: 19, Long Mode - Compression Speed



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

Zstd Compression 1.5.0

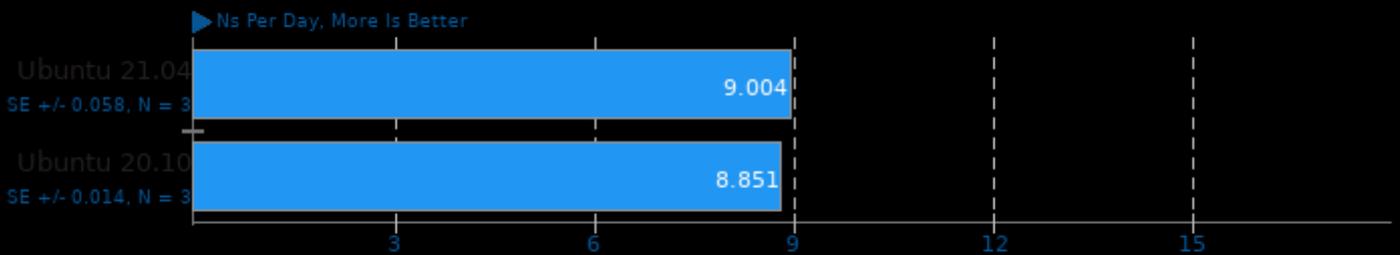
Compression Level: 19, Long Mode - Decompression Speed



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

GROMACS 2021.2

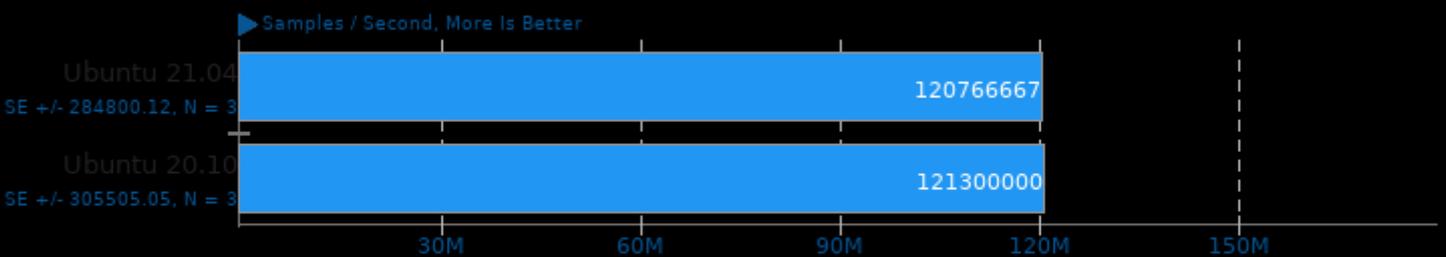
Implementation: MPI CPU - Input: water_GMX50_bare



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

srsRAN 21.04

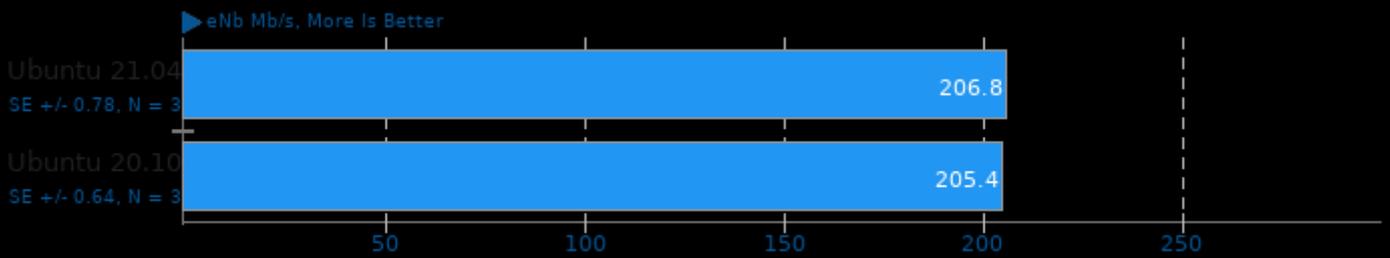
Test: OFDM_Test



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

srsRAN 21.04

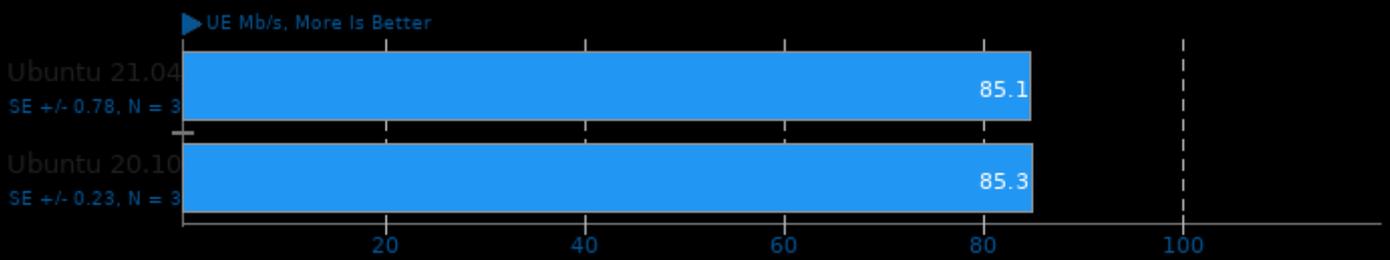
Test: PHY_DL_Test



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

srsRAN 21.04

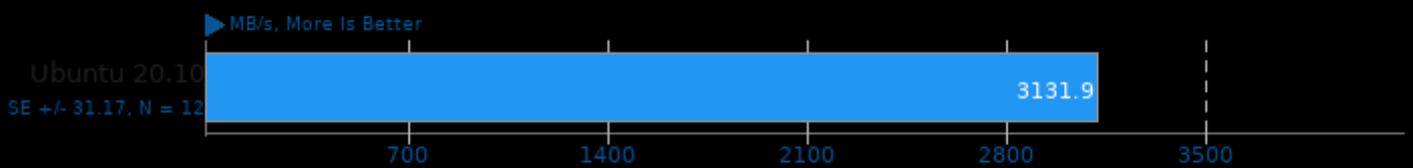
Test: PHY_DL_Test



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

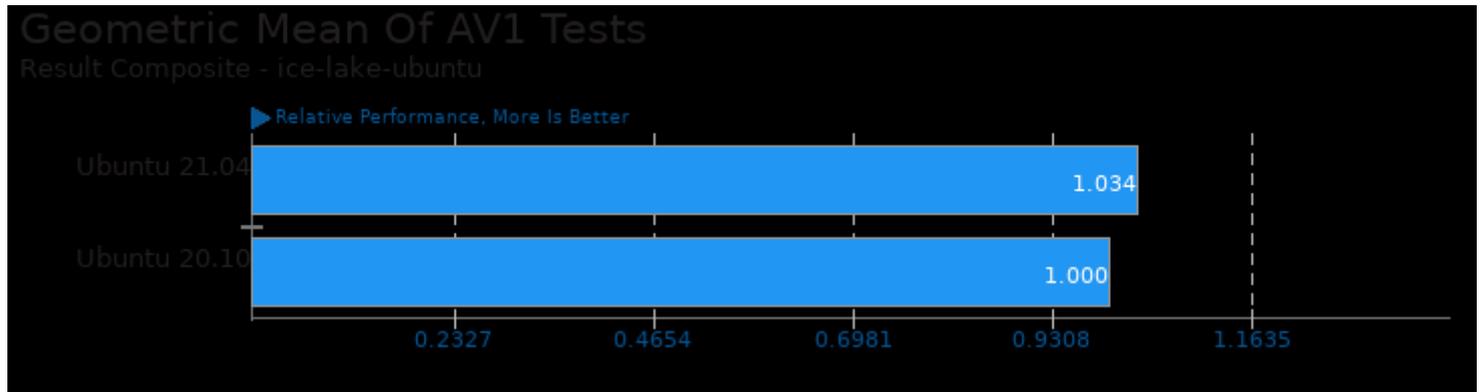
Zstd Compression 1.5.0

Compression Level: 3, Long Mode - Decompression Speed

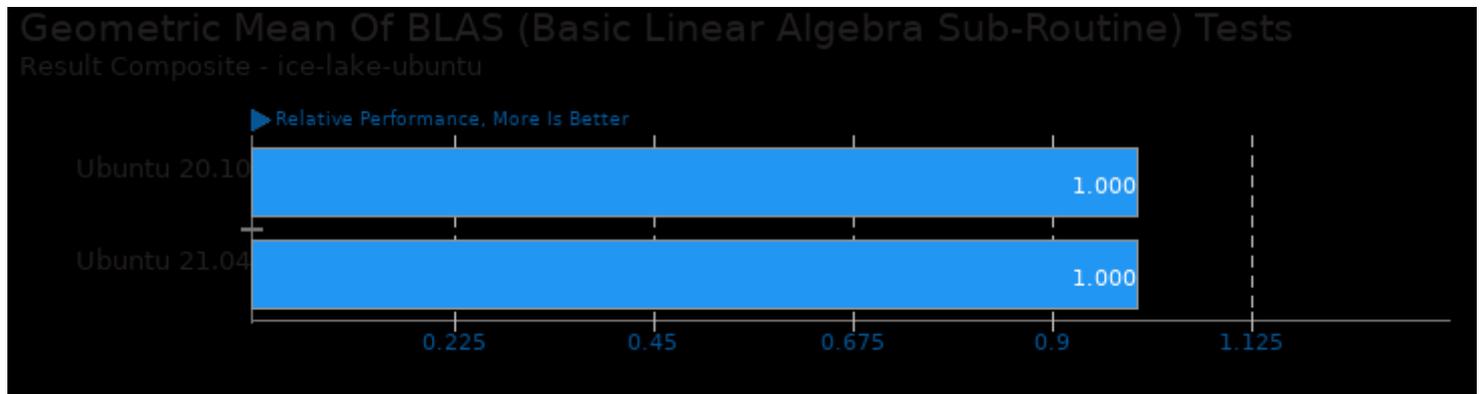


1. (CC) gcc options: -O3 -pthread -lz -llzma

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



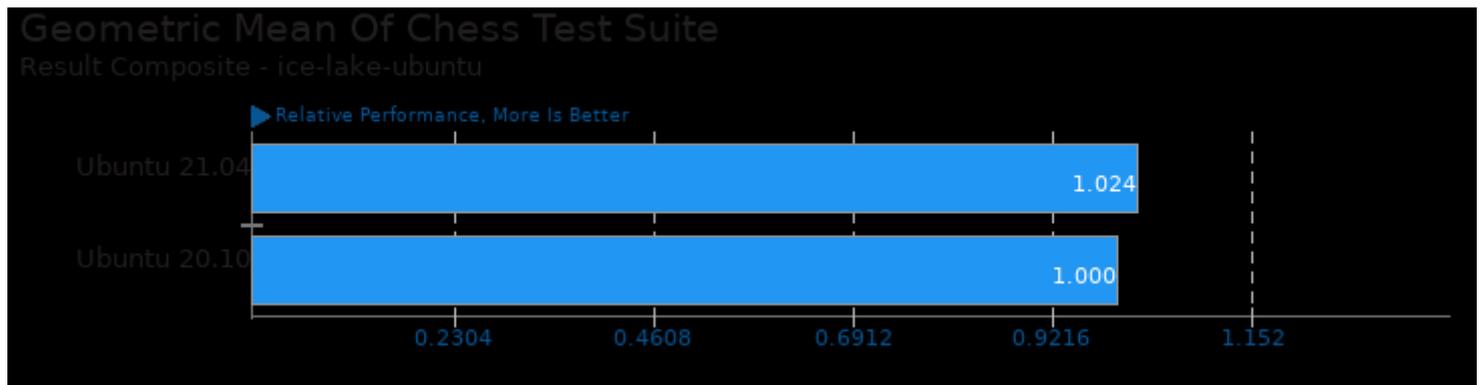
Geometric mean based upon tests: pts/aom-av1, pts/svt-av1, pts/libgav1 and pts/avifenc



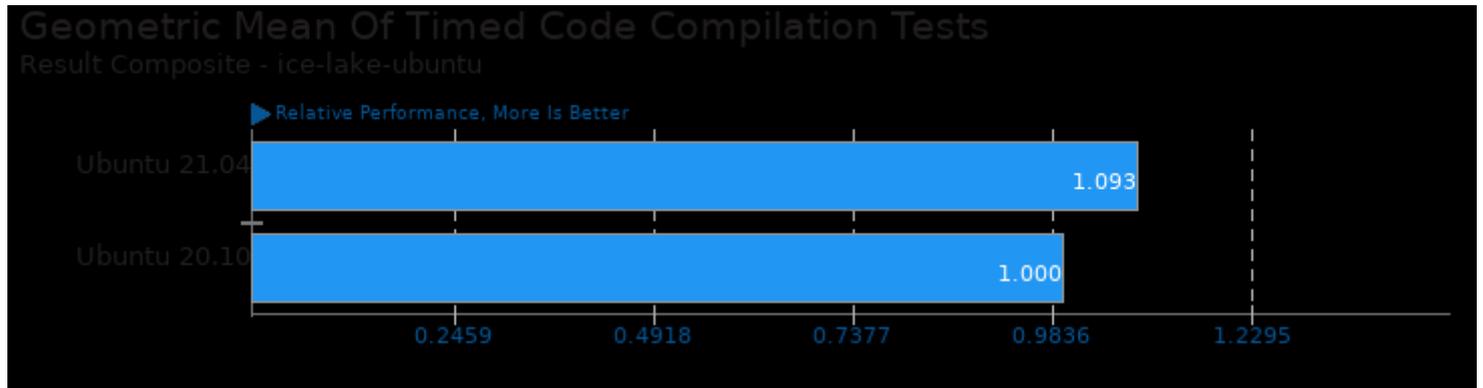
Geometric mean based upon tests: pts/nwchem and pts/wrf



Geometric mean based upon tests: pts/openfoam, pts/chia-vidf, pts/srslte, pts/povray, pts/yafaray and pts/srsran



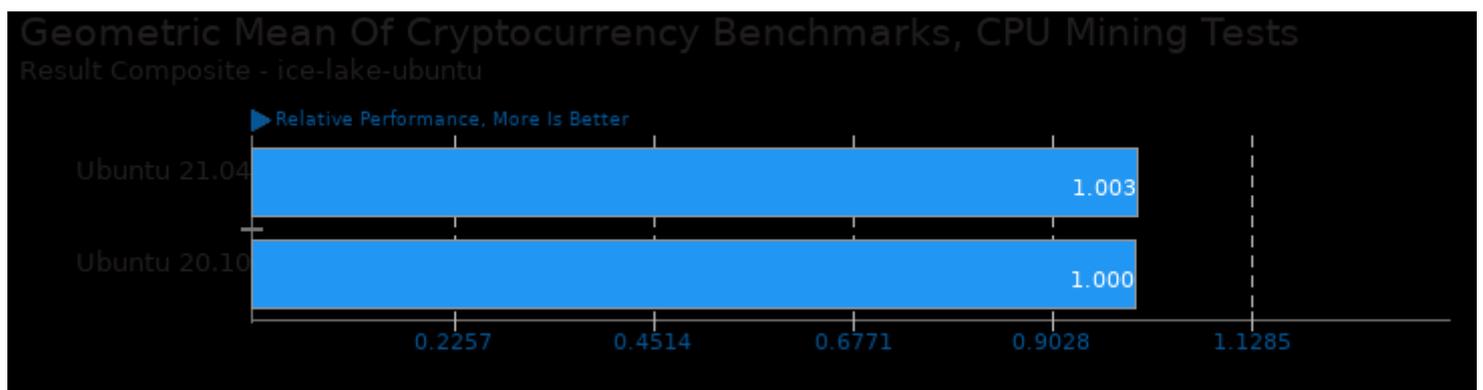
Geometric mean based upon tests: pts/stockfish and pts/asmfish



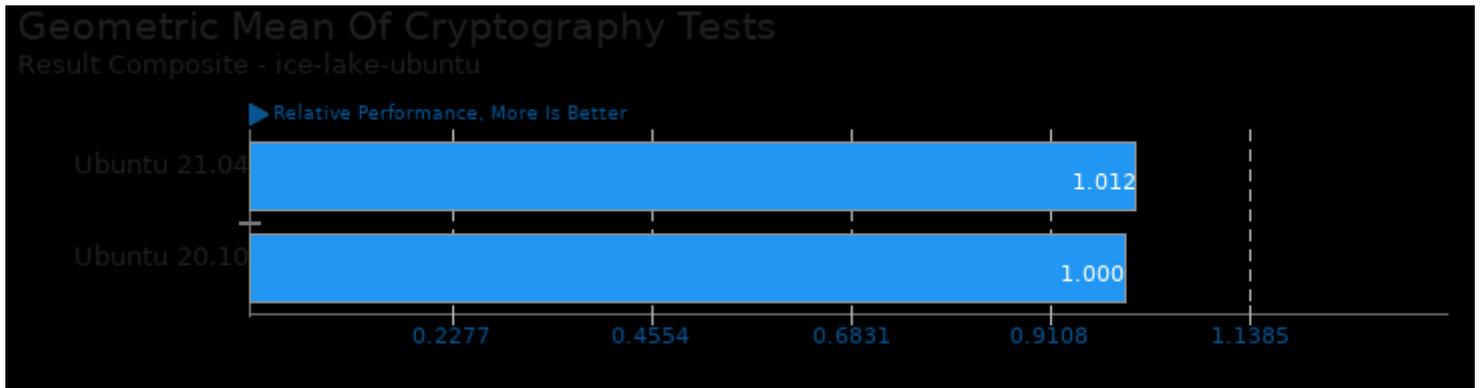
Geometric mean based upon tests: pts/build-apache, pts/build-php, pts/build-eigen, pts/build-linux-kernel, pts/build-llvm, pts/build-mpplayer, pts/build2, pts/build-godot, pts/build-erlang, pts/build-wasmer and pts/build-nodejs



Geometric mean based upon tests: pts/ospray, pts/povray, pts/yafaray, pts/blender, pts/tungsten, pts/svt-vp9, pts/svt-hevc, pts/x265, pts/kvazaar, pts/aom-av1, pts/svt-av1, pts/libgav1, pts/avifenc, pts/embree, pts/onednn, pts/oidn, pts/openvkl and pts/build-godot



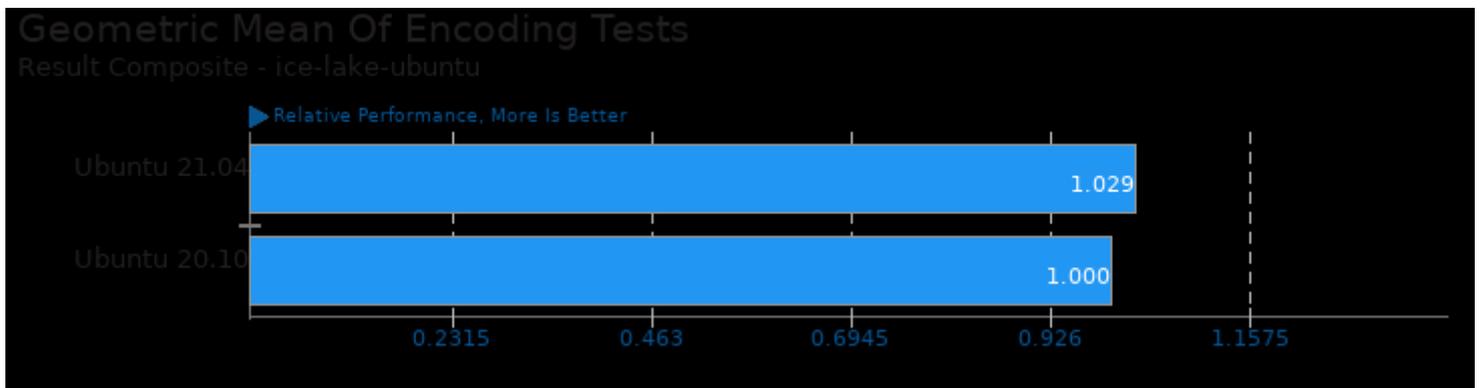
Geometric mean based upon tests: pts/cpuminer-opt and pts/chia-vdf



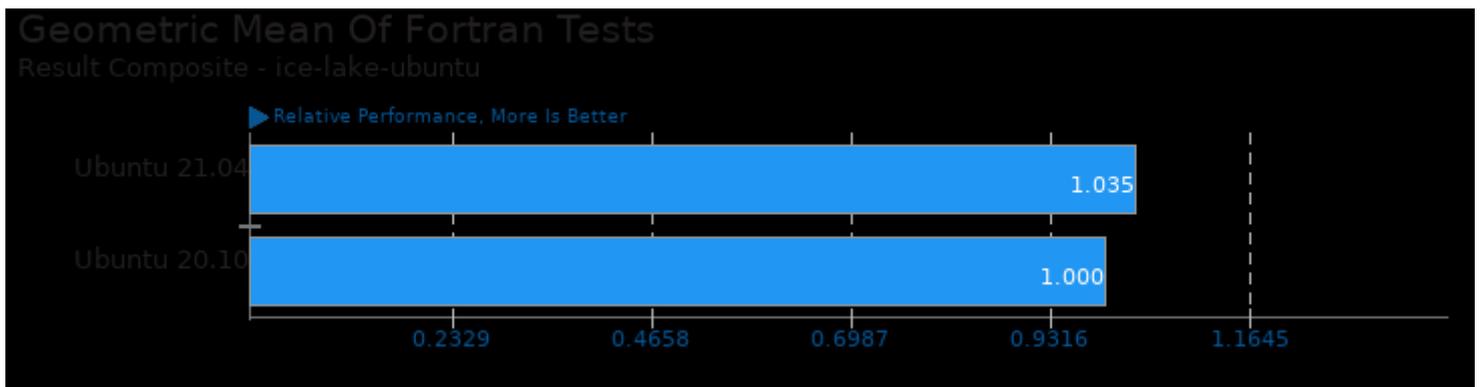
Geometric mean based upon tests: pts/john-the-ripper, pts/aircrack-ng, pts/securemark, pts/cpuminer-opt and pts/chia-vdf



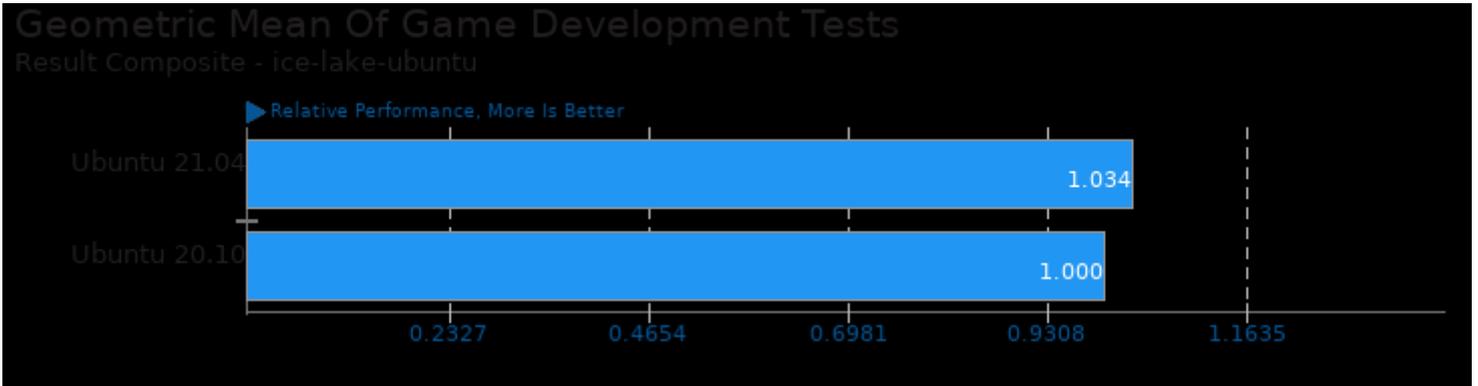
Geometric mean based upon tests: pts/keydb, pts/cassandra and pts/pgbench



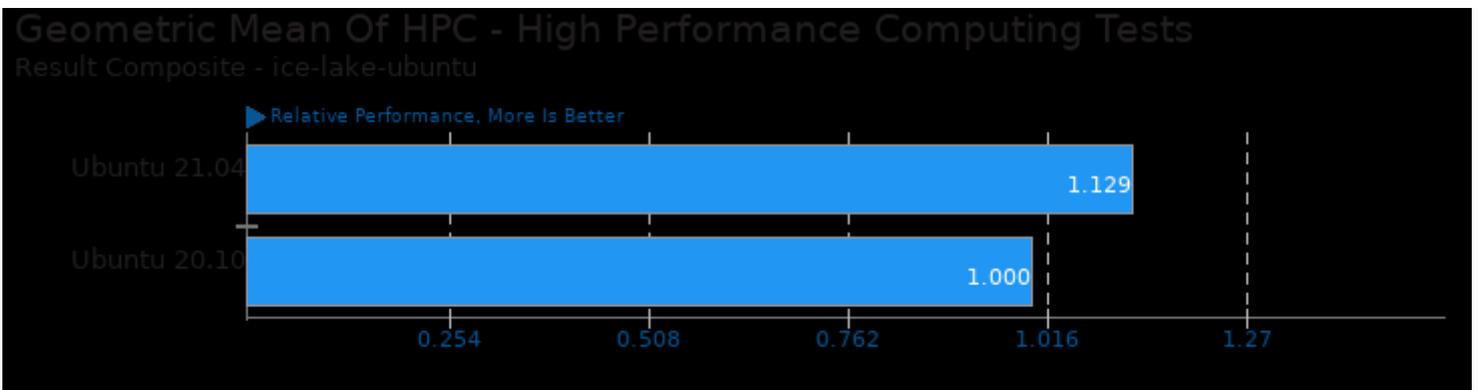
Geometric mean based upon tests: pts/svt-vp9, pts/svt-hevc, pts/x265, pts/kvazaar, pts/aom-av1, pts/svt-av1, pts/libgav1 and pts/avifenc



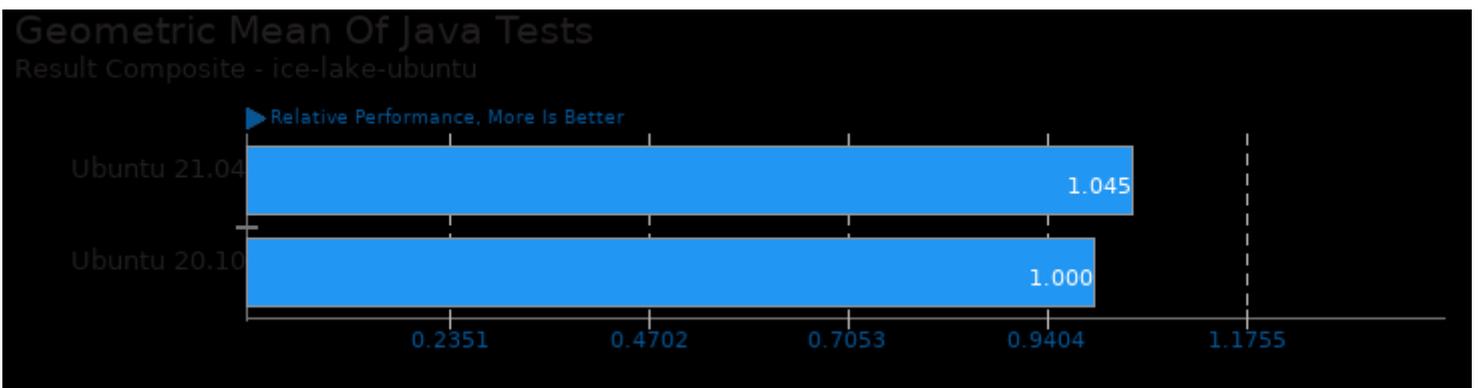
Geometric mean based upon tests: pts/hpcg, pts/npb, pts/neat, pts/nwchem, pts/incompact3d, pts/lammps and pts/wrf



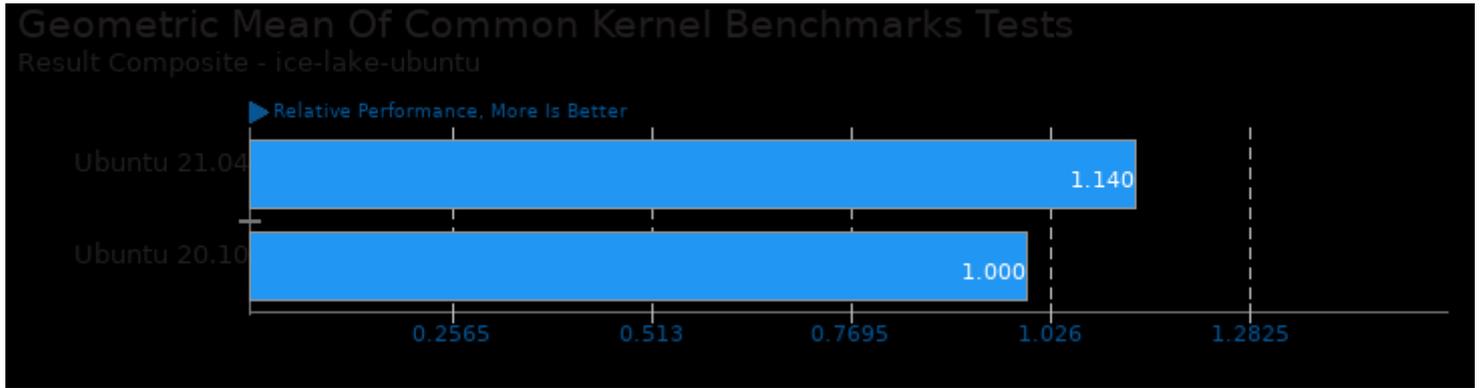
Geometric mean based upon tests: pts/build-godot, pts/blender, pts/oidn and pts/opencv1



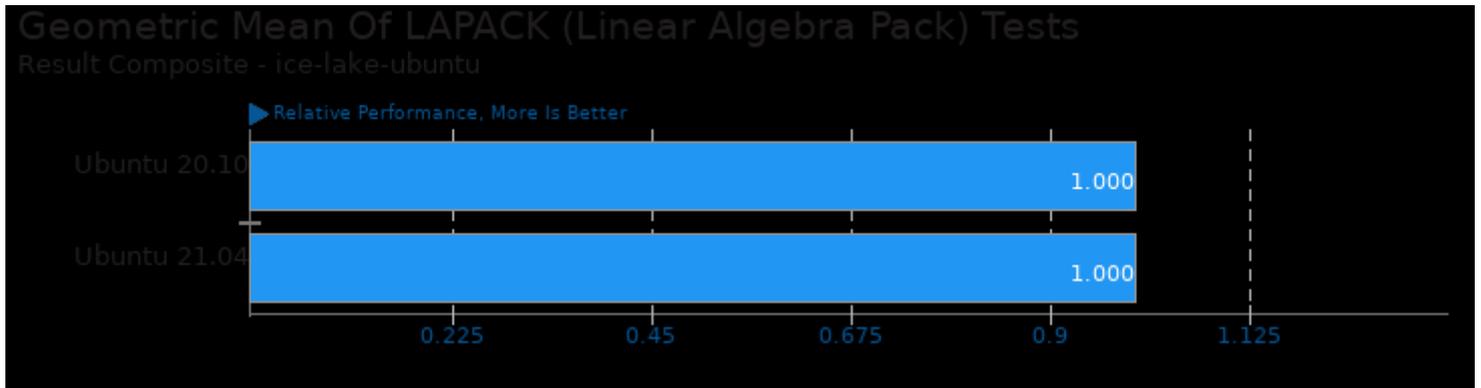
Geometric mean based upon tests: pts/npb, pts/rodinia, pts/hpcg, pts/neat, pts/namd, pts/gromacs, pts/nwchem, pts/lammps, pts/incompact3d, pts/openfoam, pts/mrbayes, pts/relion, pts/tnn, pts/numpy, pts/tensorflow-lite, pts/onednn, pts/onnx and pts/wrf



Geometric mean based upon tests: pts/dacapobench and pts/java-gradle-perf



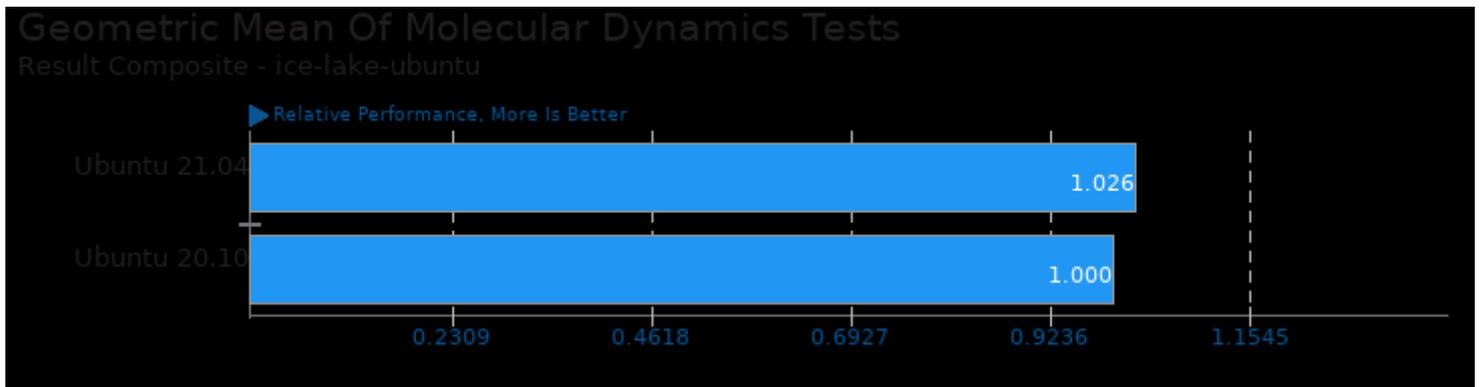
Geometric mean based upon tests: system/wireguard and pts/pgbench



Geometric mean based upon tests: pts/nwchem and pts/wrf



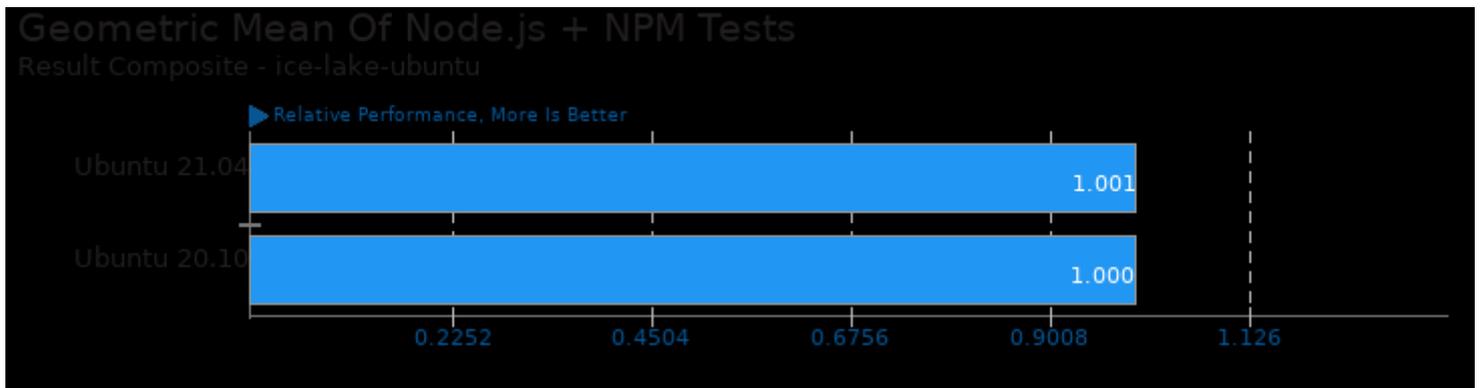
Geometric mean based upon tests: pts/tnn, pts/numpy, pts/tensorflow-lite, pts/onednn and pts/onnx



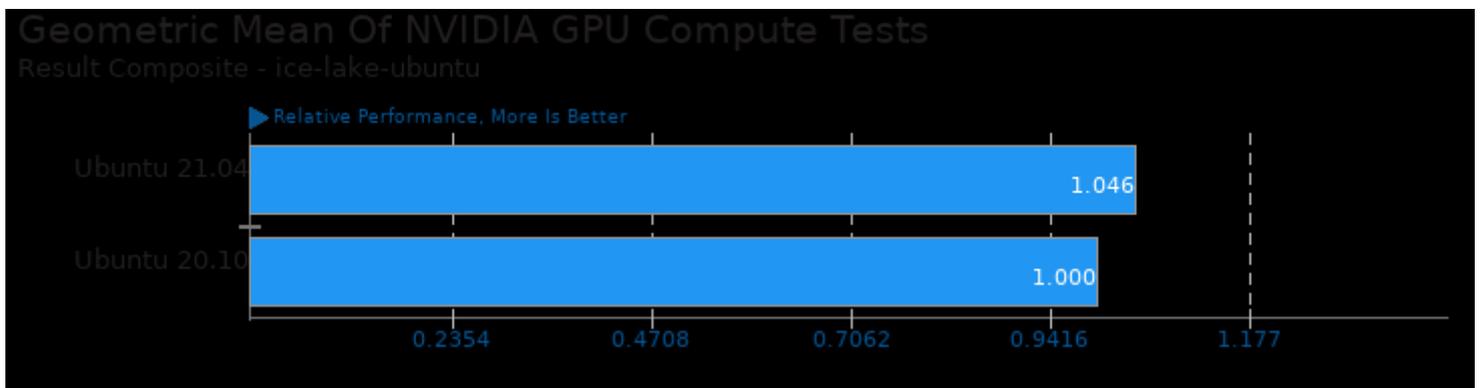
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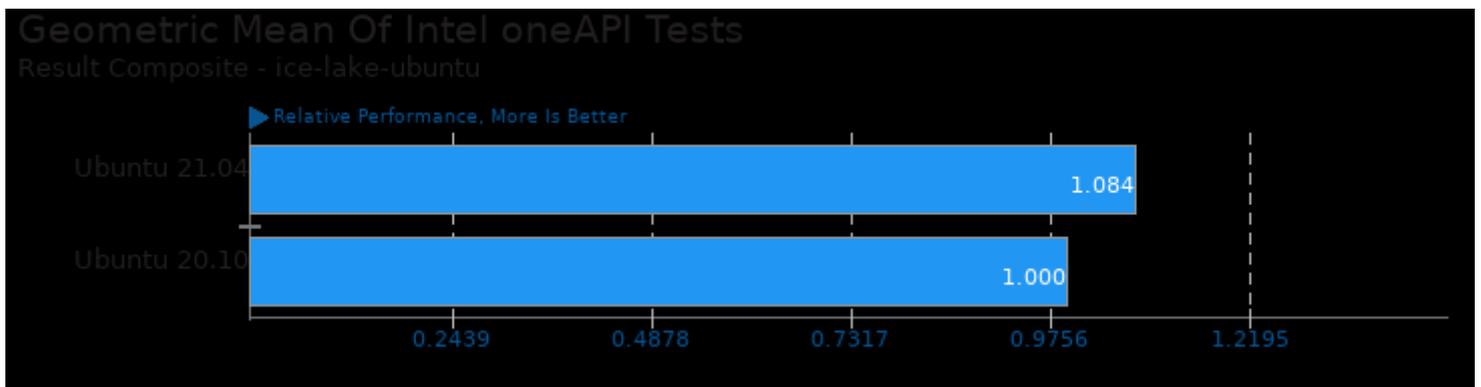
Geometric mean based upon tests: pts/lammps, pts/incompact3d, pts/gromacs, pts/hpcg, pts/mrbayes and pts/npb



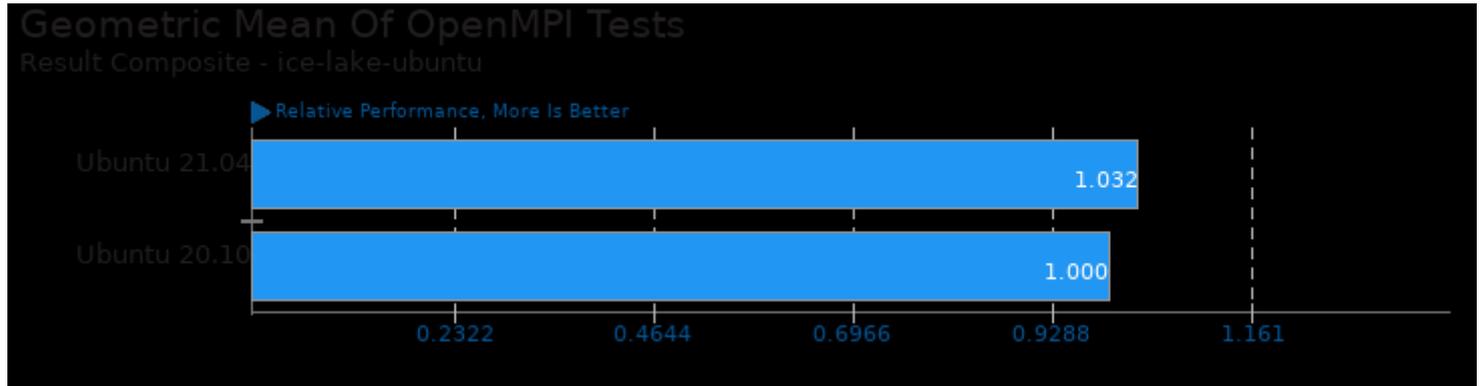
Geometric mean based upon tests: pts/node-express-loadtest and pts/node-web-tooling



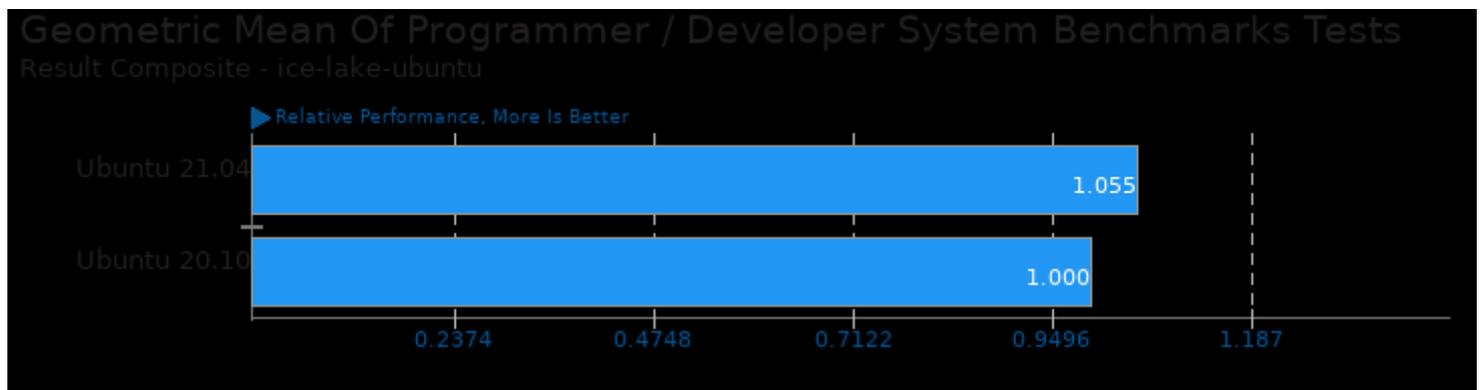
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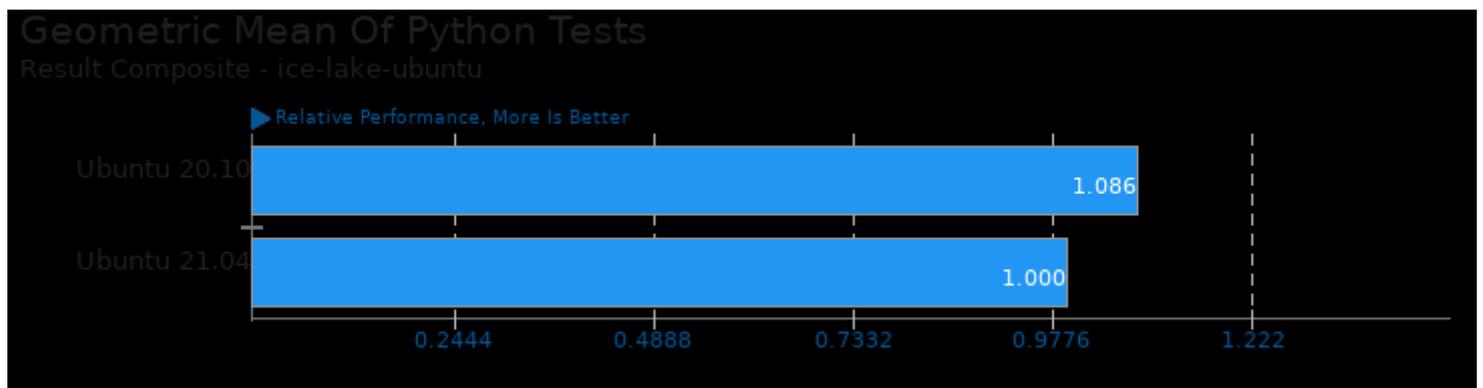
Geometric mean based upon tests: pts/embree, pts/onednn, pts/oidn, pts/ospray, pts/tungsten and pts/opencv



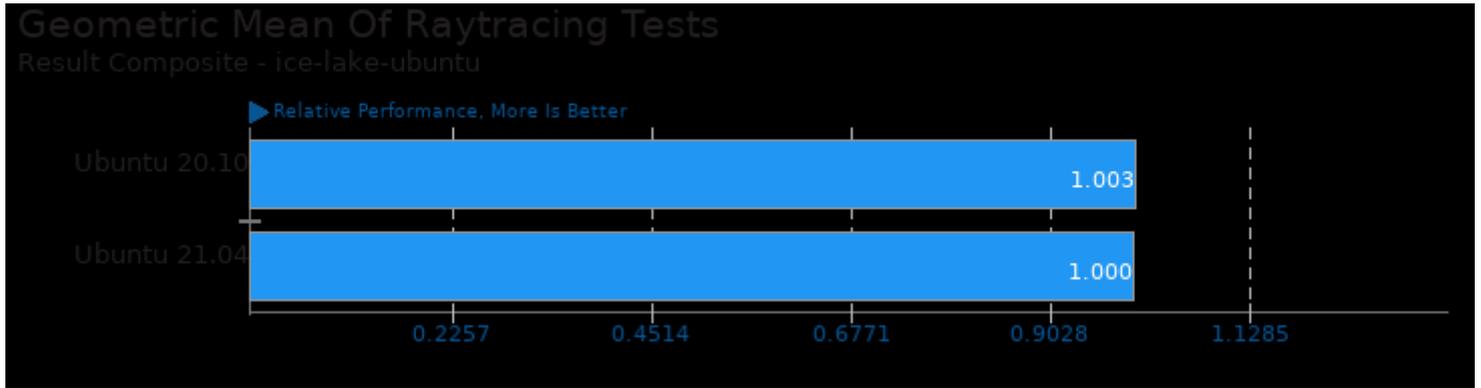
Geometric mean based upon tests: pts/hpcg, pts/npb, pts/rodinia, pts/mrbbas, pts/nwchem, pts/incompact3d, pts/openfoam, pts/relion, pts/lammps, pts/wrf and pts/gromacs



Geometric mean based upon tests: pts/node-web-tooling, pts/compress-zstd, pts/pybench, pts/build-apache, pts/build-php, pts/build-eigen, pts/build-linux-kernel, pts/build-llvm, pts/build-mplayer, pts/build2, pts/build-godot, pts/build-erlang, pts/build-wasmer and pts/build-nodejs



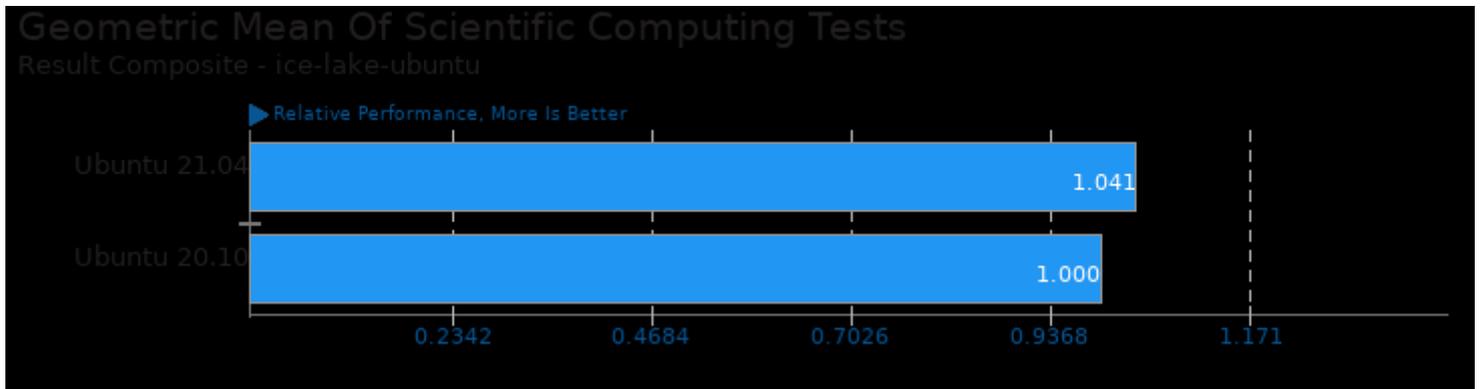
Geometric mean based upon tests: pts/pybench and pts/numpy



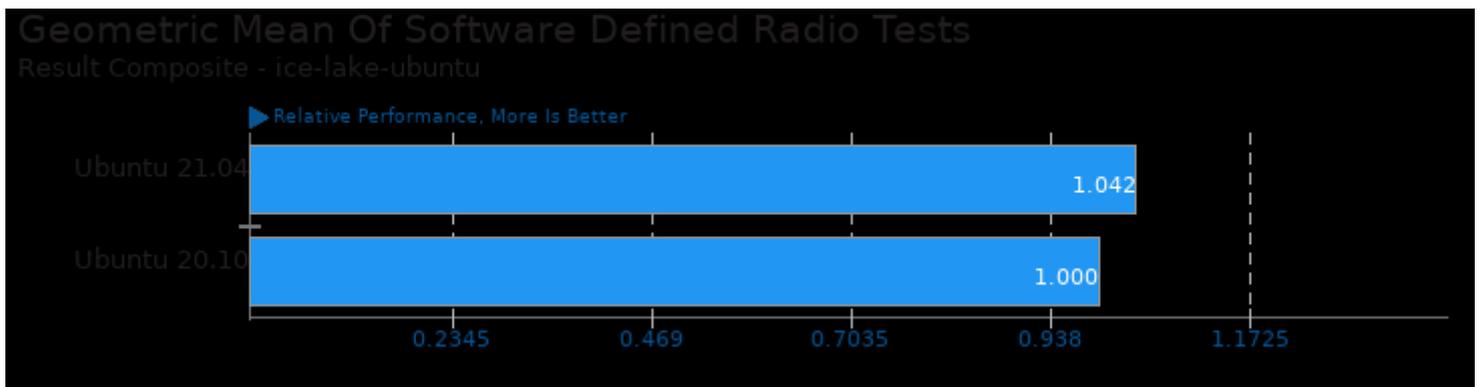
Geometric mean based upon tests: pts/ospray, pts/povray and pts/yafaray



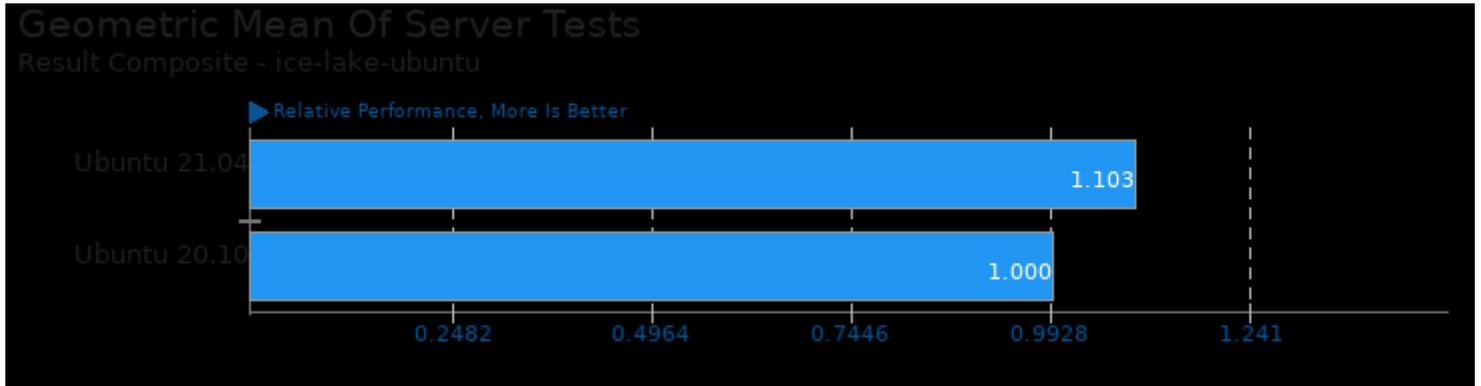
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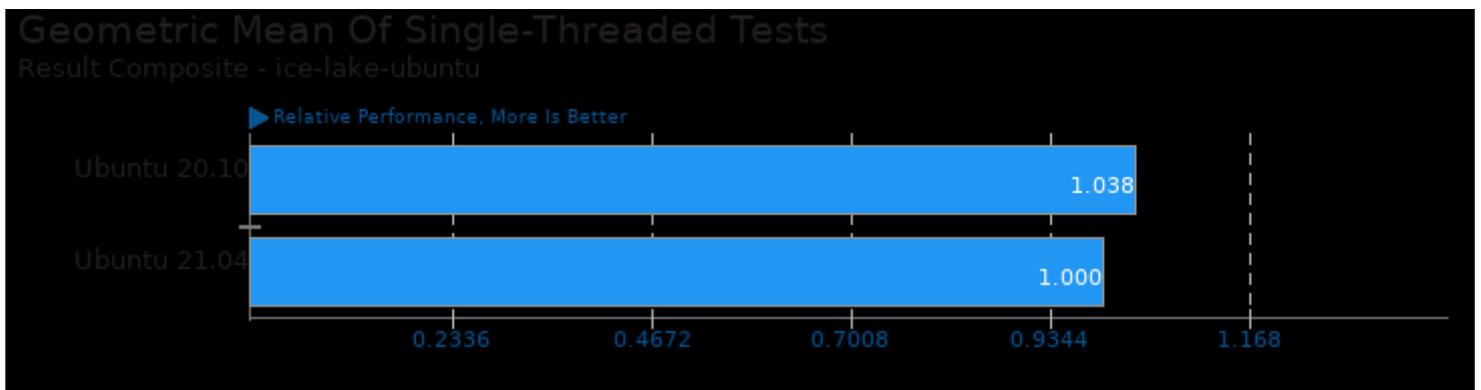
Geometric mean based upon tests: pts/neat, pts/namd, pts/gromacs, pts/nwchem, pts/lammps, pts/incompact3d, pts/openfoam and pts/mrbyes



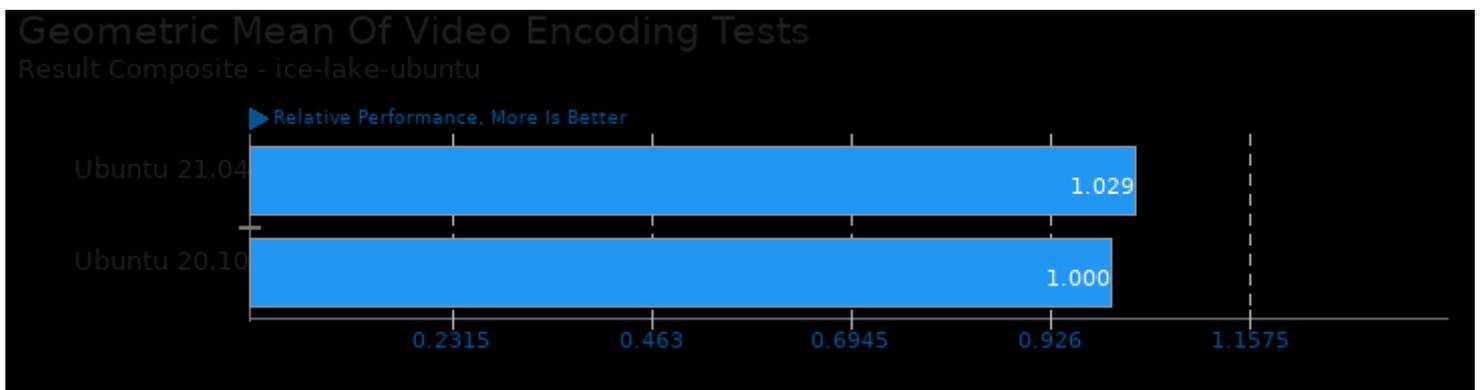
Geometric mean based upon tests: pts/liquid-dsp, pts/srsran and pts/srsite



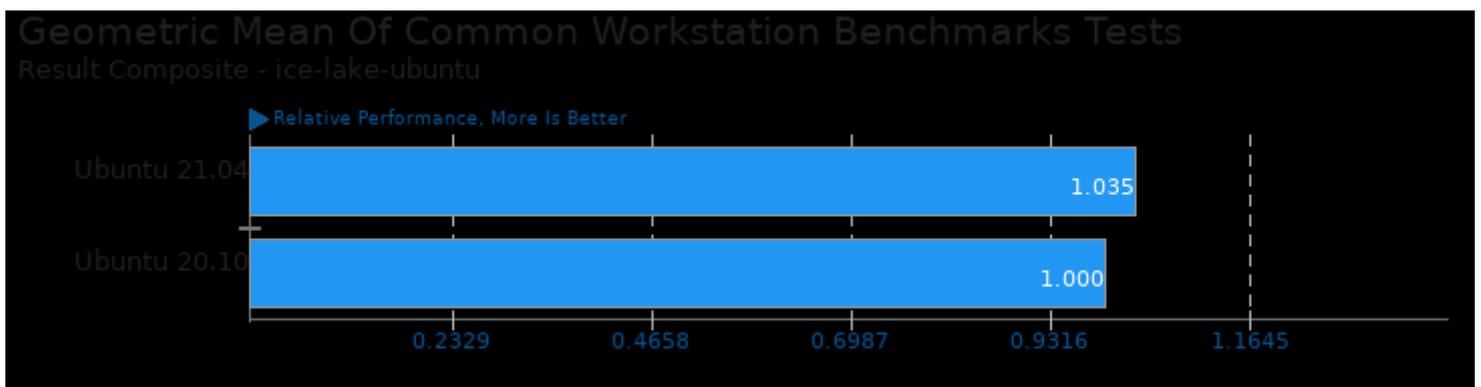
Geometric mean based upon tests: pts/blogbench, pts/pgbench, pts/keydb, pts/cassandra, pts/phpbench, pts/node-express-loadtest and pts/node-web-tooling



Geometric mean based upon tests: pts/node-express-loadtest, pts/swet, pts/numpy, pts/pybench and pts/phpbench



Geometric mean based upon tests: pts/svt-vp9, pts/svt-hevc, pts/x265, pts/kvazaar, pts/aom-av1, pts/svt-av1, pts/libgav1 and pts/avifenc



Geometric mean based upon tests: pts/blender, pts/rodinia, pts/x265, pts/swet and pts/sysbench

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 18:21.