



Ryzen 9 5950X Linux 5.11 Regression Schedutil

AMD Ryzen 9 5950X 16-Core testing with a ASUS ROG CROSSHAIR VIII HERO (WI-FI) (3003 BIOS) and AMD Radeon RX 5600 OEM/5600 XT / 5700/5700 8GB on Ubuntu 20.04 via the Phoronix Test Suite.

Automated Executive Summary

Linux 5.11 Performance had the most wins, coming in first place for 64% of the tests.

Based on the geometric mean of all complete results, the fastest (Linux 5.11 Performance) was 1.022x the speed of the slowest (Linux 5.10). Linux 5.11 Git was 0.98x the speed of Linux 5.11 Performance and Linux 5.10 was 0.999x the speed of Linux 5.11 Git.

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

Socketperf (Test: Latency Ping Pong) at 2.005x

G'MIC (Test: 2D Function Plotting, 1000 Times) at 1.44x

RAR Compression (Linux Source Tree Archiving To RAR) at 1.384x

Tesseract (Resolution: 2560 x 1440) at 1.36x

ECP-CANDLE (Benchmark: P3B2) at 1.321x

librsvg (Operation: SVG Files To PNG) at 1.318x

Tesseract (Resolution: 1920 x 1080) at 1.31x

Apache CouchDB (Bulk Size: 100 - Inserts: 1000 - Rounds: 24) at 1.304x

Timed GDB GNU Debugger Compilation (Time To Compile) at 1.259x
Timed HMMer Search (Pfam Database Search) at 1.237x.

Test Systems:

Linux 5.10

Processor: AMD Ryzen 9 5950X 16-Core @ 3.40GHz (16 Cores / 32 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (WI-FI) (3003 BIOS), Chipset: AMD Starship/Matisse, Memory: 16GB, Disk: 2000GB Corsair Force MP600, Graphics: AMD Radeon RX 5600 OEM/5600 XT / 5700/5700 8GB (2100/875MHz), Audio: AMD Navi 10 HDMI Audio, Monitor: ASUS MG28U, Network: Realtek RTL8125 2.5GbE + Intel I211 + Intel Wi-Fi 6 AX200

OS: Ubuntu 20.04, Kernel: 5.10.2-051002-generic (x86_64), Desktop: GNOME Shell 3.36.4, Display Server: X Server 1.20.8, OpenGL: 4.6 Mesa 21.0.0-devel (git-00c3042 2020-12-23 focal-oibaf-ppa) (LLVM 11.0.0), Vulkan: 1.2.145, Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 3840x2160

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-9-HskZEa/gcc-9-9.3.0/debian/tmp-nvptx/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: acpi-cpufreq ondemand (Boost: Enabled) - CPU Microcode: 0xa201009
Java Notes: OpenJDK Runtime Environment (build 11.0.9.1+1-Ubuntu-0ubuntu1.20.04)
Python Notes: Python 2.7.18 + Python 3.8.5
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swaps barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

Linux 5.11 Git

Linux 5.11 Performance

Processor: AMD Ryzen 9 5950X 16-Core @ 3.40GHz (16 Cores / 32 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (WI-FI) (3003 BIOS), Chipset: AMD Starship/Matisse, Memory: 16GB, Disk: 2000GB Corsair Force MP600, Graphics: AMD Radeon RX 5600 OEM/5600 XT / 5700/5700 8GB (2100/875MHz), Audio: AMD Navi 10 HDMI Audio, Monitor: ASUS MG28U, Network: Realtek RTL8125 2.5GbE + Intel I211 + Intel Wi-Fi 6 AX200

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Disk Notes: NONE / errors=remount-ro,relatime,rw / Block Size: 4096
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa201009
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	Linux 5.10	Linux 5.11 Git	Linux 5.11 Performance
Sockperf - Latency Ping Pong (usec)	4.419	4.238	2.204
Normalized	49.88%	52.01%	100%
Standard Deviation	0.6%	0.7%	1.5%
G'MIC - 2.F.P.1.T (sec)	124.351	104.656	86.379
Normalized	69.46%	82.54%	100%
Standard Deviation	0.5%	0.7%	1.1%
RAR Compression - L.S.T.A.T.R (sec)	54.600	55.077	39.788
Normalized	72.87%	72.24%	100%
Standard Deviation	2.7%	0.3%	1.4%
Tesseract - 2560 x 1440 (FPS)	429.8992	415.1657	564.4407
Normalized	76.16%	73.55%	100%
Standard Deviation	0.5%	0.7%	0.2%
ECP-CANDLE - P3B2 (sec)	537.413	539.428	408.399
Normalized	75.99%	75.71%	100%
librsvg - SVG Files To PNG (sec)	21.740	21.844	16.577
Normalized	76.25%	75.89%	100%
Standard Deviation	1.3%	2%	0.6%
Tesseract - 1920 x 1080 (FPS)	436.7327	428.8668	561.6348
Normalized	77.76%	76.36%	100%
Standard Deviation	3%	3%	1.4%
Apache CouchDB - 100 - 1000 - 24 (sec)	70.248	72.837	55.878
Normalized	79.54%	76.72%	100%
Standard Deviation	1.1%	1.6%	3%
Timed GDB GNU Debugger Compilation - Time To Compile (sec)	79.366	78.119	63.038
Normalized	79.43%	80.69%	100%
Standard Deviation	0.2%	0.2%	1%
Timed HMMer Search - P.D.S (sec)	100.691	91.199	81.421
Normalized	80.86%	89.28%	100%
Standard Deviation	0.2%	0.4%	0.2%
dav1d - S.N.1 (FPS)	758.37	755.48	925.04
Normalized	81.98%	81.67%	100%
Standard Deviation	0.7%	0.6%	0.4%
dav1d - Chimera 1080p (FPS)	744.31	744.81	897.50
Normalized	82.93%	82.99%	100%
Standard Deviation	1.5%	1.2%	0.1%
Perl Benchmarks - Interpreter (sec)	0.00072036	0.00070219	0.00060098
Normalized	83.43%	85.59%	100%
Standard Deviation	1.3%	2.4%	0.2%
dav1d - C.1.1.b (FPS)	153.79	154.36	184.04
Normalized	83.56%	83.87%	100%
Standard Deviation	0.5%	0.3%	0%
simdjson - DistinctUserID (GB/s)	1.03	1.05	0.89
Normalized	98.1%	100%	84.76%
Standard Deviation	4.3%	1.6%	2.6%
AOM AV1 - Speed 6 Realtime (FPS)	28.91	28.92	33.93
Normalized	85.2%	85.23%	100%
Standard Deviation	0.6%	2.6%	0.6%
Selenium - StyleBench - Firefox (Runs /	109	109	127
Normalized	85.83%	85.83%	100%
Standard Deviation	0.5%	1.1%	1.2%
Inkscape - SVG Files To PNG (sec)	18.467	18.795	16.209
Normalized	87.77%	86.24%	100%

	Standard Deviation	0.9%	0.7%	0.6%
Selenium - StyleBench - Google Chrome	49.39		49.85	56.84
	(Runs / Minute)			
	Normalized	86.89%	87.7%	100%
	Standard Deviation	0.4%	0.9%	0.9%
GIMP - resize (sec)	6.110		6.021	5.331
	Normalized	87.25%	88.54%	100%
	Standard Deviation	1.7%	2.1%	2.1%
PyPerformance - python_startup	6.53		6.45	5.70
	Normalized	87.29%	88.37%	100%
	Standard Deviation	2.1%	0.3%	0.1%
Basemark GPU - OpenGL - 1920 x 1080 - High (FPS)	132.25		129.54	147.67
	Normalized	89.56%	87.72%	100%
	Standard Deviation	1.3%	1.2%	2.1%
PostgreSQL pgbench - 100 - 100 - Read	36880		38917	41683
	Write (TPS)			
	Normalized	88.48%	93.36%	100%
	Standard Deviation	0.1%	0.4%	0.2%
PostgreSQL pgbench - 100 - 100 - Read	2.713		2.572	2.401
	Write - Average Latency (ms)			
	Normalized	88.5%	93.35%	100%
	Standard Deviation	0.1%	0.4%	0.2%
VP9 libvpx Encoding - Speed 5 (FPS)	32.45		32.22	35.92
	Normalized	90.34%	89.7%	100%
	Standard Deviation	0.1%	1.5%	0.4%
GIMP - rotate (sec)	9.513		9.363	8.541
	Normalized	89.78%	91.22%	100%
	Standard Deviation	0.4%	0.4%	0.2%
ASKAP - tConvolve OpenMP - Gridding	3440		3681	3315
	(Million Grid Points/sec)			
	Normalized	93.46%	100%	90.05%
	Standard Deviation	5.2%	0.8%	1.4%
LAMMPS Molecular Dynamics Simulator - Rhodopsin Protein (ns/day)	12.388		12.280	13.591
	Normalized	91.15%	90.35%	100%
	Standard Deviation	3%	4.7%	1.2%
C-Blosc - blosclz (MB/s)	13666		14179	15124
	Normalized	90.36%	93.75%	100%
	Standard Deviation	0.4%	0.5%	0.3%
Kvazaar - Bosphorus 1080p - Very Fast (FPS)	99.89		100.06	110.14
	Normalized	90.69%	90.85%	100%
	Standard Deviation	0.5%	0.2%	0.5%
Kvazaar - Bosphorus 1080p - Ultra Fast	181.37		181.62	199.93
	Normalized	90.72%	90.84%	100%
	Standard Deviation	0.3%	0.3%	0.4%
Basemark GPU - OpenGL - 2560 x 1440 - High (FPS)	131.98		128.63	141.17
	Normalized	93.49%	91.12%	100%
	Standard Deviation	1.7%	1.3%	0.4%
Incompact3D - Cylinder (sec)	196.931697		197.761922	181.113347
	Normalized	91.97%	91.58%	100%
	Standard Deviation	0.8%	1.1%	1.2%

Timed Apache Compilation - Time To Compile (sec)	16.814	16.734	15.400
Normalized	91.59%	92.03%	100%
Standard Deviation	0.7%	0.5%	0.2%
WireGuard + Linux Networking Stack Stress Test (sec)	154.051	156.134	143.777
Normalized	93.33%	92.09%	100%
Standard Deviation	0.6%	0.2%	0.6%
x265 - Bosphorus 1080p (FPS)	83.59	83.36	90.45
Normalized	92.42%	92.16%	100%
Standard Deviation	0.3%	0.6%	0.9%
Selenium - Kraken - Google Chrome (ms)	575.9	570.8	533.2
Normalized	92.59%	93.41%	100%
Standard Deviation	0.4%	0.6%	1.3%
Hackbench - 8 - Thread (sec)	13.704	14.761	14.582
Normalized	100%	92.84%	93.98%
Standard Deviation	0.3%	0.2%	0.1%
Hackbench - 16 - Process (sec)	26.547	28.588	28.404
Normalized	100%	92.86%	93.46%
Standard Deviation	0.3%	0.1%	0.2%
Hackbench - 8 - Process (sec)	13.495	14.526	14.438
Normalized	100%	92.9%	93.47%
Standard Deviation	0.1%	0.3%	0.1%
rav1e - 10 (FPS)	4.556	4.551	4.895
Normalized	93.07%	92.97%	100%
Standard Deviation	0.1%	0.2%	0.3%
Hackbench - 16 - Thread (sec)	26.983	28.993	28.786
Normalized	100%	93.07%	93.74%
Standard Deviation	0.2%	0.1%	0.1%
AOM AV1 - Speed 8 Realtime (FPS)	57.07	56.82	61.00
Normalized	93.56%	93.15%	100%
Standard Deviation	0.9%	1.9%	1.2%
InfluxDB - 4 - 10000 - 2,5000,1 - 10000	2021356	2014207	2162126
Normalized	93.49%	93.16%	100%
Standard Deviation	0.3%	0.4%	1.4%
Hackbench - 32 - Process (sec)	54.724	58.579	58.172
Normalized	100%	93.42%	94.07%
Standard Deviation	0.1%	0.1%	0.3%
GIMP - auto-levels (sec)	10.266	10.264	9.606
Normalized	93.57%	93.59%	100%
Standard Deviation	0.6%	0.3%	0.2%
ECP-CANDLE - P1B2 (sec)	34.929	33.623	32.706
Normalized	93.64%	97.27%	100%
AOM AV1 - Speed 6 Two-Pass (FPS)	5.47	5.52	5.84
Normalized	93.66%	94.52%	100%
Standard Deviation	2%	0.3%	1.3%
Selenium - Jetstream 2 - Google Chrome (Score)	198.902	199.484	211.595
Normalized	94%	94.28%	100%
Standard Deviation	0.2%	0.4%	0.3%
CP2K Molecular Dynamics - Fayalite-FIST Data (sec)	901.594	848.529	869.725
Normalized	94.11%	100%	97.56%
ET: Legacy - Renderer2 - 3840 x 2160 (FPS)	268.9	266.0	282.5

	Normalized	95.19%	94.16%	100%
	Standard Deviation	1.9%	0.4%	0.2%
Selenium - Speedometer - Google Chrome		178.7	180	189.7
	(Runs/min)			
	Normalized	94.2%	94.89%	100%
	Standard Deviation	0.2%	0.3%	0.3%
NCNN - CPU - mnasnet (ms)		4.00	4.14	3.92
	Normalized	98%	94.69%	100%
	Standard Deviation	4.5%	5.2%	0.4%
GIMP - unsharp-mask (sec)		12.933	12.948	12.262
	Normalized	94.81%	94.7%	100%
	Standard Deviation	0.4%	0.2%	0.2%
Selenium - Jetstream 2 - Firefox (Score)		95.822	95.040	100.191
	Normalized	95.64%	94.86%	100%
	Standard Deviation	0.9%	1.9%	3%
Selenium - Maze Solver - Google Chrome		3.9	3.9	3.7
	Normalized	94.87%	94.87%	100%
	Standard Deviation	0%	1.5%	0%
Radiance Benchmark - SMP Parallel (sec)		137.655	145.046	138.908
	Normalized	100%	94.9%	99.1%
Darmstadt Automotive Parallel		29506	30538	31088
Heterogeneous Suite - OpenMP - Points2Image (Test Cases/min)				
	Normalized	94.91%	98.23%	100%
	Standard Deviation	1%	0.7%	0.5%
Kvazaar - Bosphorus 4K - Very Fast (FPS)		28.09	28.07	29.55
	Normalized	95.06%	94.99%	100%
	Standard Deviation	0.4%	0.3%	0.1%
Botan - Blowfish (MiB/s)		567.099	539.342	550.914
	Normalized	100%	95.11%	97.15%
	Standard Deviation	0.2%	2.5%	0.4%
Selenium - Maze Solver - Firefox (sec)		4.1	4.1	3.9
	Normalized	95.12%	95.12%	100%
	Standard Deviation	1.4%	2.4%	0%
Selenium - Kraken - Firefox (ms)		924.8	920.0	881.2
	Normalized	95.29%	95.78%	100%
	Standard Deviation	1.4%	0.6%	1.4%
NCNN - CPU - mobilenet (ms)		12.40	12.70	12.11
	Normalized	97.66%	95.35%	100%
	Standard Deviation	4.1%	2.6%	1.8%
RNNoise (sec)		15.648	15.367	14.925
	Normalized	95.38%	97.12%	100%
	Standard Deviation	1.2%	0.5%	0.3%
yquake2 - Software CPU - 2560 x 1440 (FPS)		100.0	102.9	104.8
	Normalized	95.42%	98.19%	100%
	Standard Deviation	1.5%	1.1%	0.4%
Selenium - WebXPRT - Google Chrome		336	341	352
	Normalized	95.45%	96.88%	100%
	Standard Deviation	1.4%	2.1%	2.4%
Kvazaar - Bosphorus 4K - Ultra Fast (FPS)		51.87	51.97	54.32
	Normalized	95.49%	95.67%	100%
	Standard Deviation	0.1%	0.6%	0.1%
DeepSpeech - CPU (sec)		58.84674	58.17644	56.24089
	Normalized	95.57%	96.67%	100%
	Standard Deviation	0.8%	1%	0.1%

Facebook RocksDB - Seq Fill (Op/s)	1646375	1665111	1720753
Normalized	95.68%	96.77%	100%
Standard Deviation	3%	0.3%	1.6%
Socketperf - Throughput (Messages/sec)	894840	929068	934687
Normalized	95.74%	99.4%	100%
Standard Deviation	1.9%	0.7%	2.9%
NCNN - CPU-v2-v2 - mobilenet-v2 (ms)	4.45	4.58	4.39
Normalized	98.65%	95.85%	100%
Standard Deviation	4%	4.6%	0.2%
Selenium - PSPDFKit WASM - Google Chrome (Score)	2938	2917	2820
Normalized	95.98%	96.67%	100%
Standard Deviation	1.1%	0.7%	0.5%
Unpacking Firefox - firefox-84.0.source.tar.xz (sec)	13.682	13.604	13.133
Normalized	95.99%	96.54%	100%
Standard Deviation	0.1%	0.2%	0.8%
NCNN - CPU-v3-v3 - mobilenet-v3 (ms)	4.18	4.25	4.08
Normalized	97.61%	96%	100%
Standard Deviation	3%	3.7%	0.4%
Facebook RocksDB - Rand Fill Sync (Op/s)	16642	16737	17335
Normalized	96%	96.55%	100%
Standard Deviation	0.4%	0.9%	0.6%
x264 - H.2.V.E (FPS)	201.77	200.88	209.16
Normalized	96.47%	96.04%	100%
Standard Deviation	3%	3.2%	3%
BLAKE2 (Cycles/Byte)	6.89	6.65	6.92
Normalized	96.52%	100%	96.1%
Standard Deviation	0.4%	0.9%	0.3%
ACES DGEMM - S.F.P.R (GFLOP/s)	9.359648	9.273701	9.646750
Normalized	97.02%	96.13%	100%
Standard Deviation	2.9%	2.4%	2.9%
Java SciMark - Composite (Mflops)	3629	3723	3775
Normalized	96.15%	98.64%	100%
Standard Deviation	1.1%	0.7%	1.6%
OpenVKL - vkIBenchmarkStructuredVolume (Items / Sec)	87341915	87025755	90440747
Normalized	96.57%	96.22%	100%
Standard Deviation	1.7%	1.6%	1.6%
Timed Eigen Compilation - Time To Compile (sec)	59.832	58.821	57.574
Normalized	96.23%	97.88%	100%
Standard Deviation	0.2%	0.6%	0.1%
NCNN - CPU - blazeface (ms)	1.84	1.86	1.79
Normalized	97.28%	96.24%	100%
Standard Deviation	4.3%	3.2%	0.9%
Selenium - ARES-6 - Firefox (ms)	44.08	44.19	42.54
Normalized	96.51%	96.27%	100%
Standard Deviation	0.6%	0.9%	1.1%
CLOMP - Static OMP Speedup (Speedup)	20.7	20.8	21.5
Normalized	96.28%	96.74%	100%
Standard Deviation	2.1%	1.7%	0.8%
x265 - Bosphorus 4K (FPS)	27.22	27.53	28.26
Normalized	96.32%	97.42%	100%
Standard Deviation	0.7%	0.2%	0.5%

Botan - CAST-256 (MiB/s)	180.592	174.320	175.171
Normalized	100%	96.53%	97%
Standard Deviation	1.9%	0.3%	0.6%
Swet - Average (Operations/sec)	1137189168	1099210585	1105675053
Normalized	100%	96.66%	97.23%
Standard Deviation	1.3%	0.8%	1.4%
PyPerformance - pickle_pure_python (Milliseconds)	319	330	330
Normalized	100%	96.67%	96.67%
rav1e - 6 (FPS)	2.029	2.026	2.095
Normalized	96.85%	96.71%	100%
Standard Deviation	0.3%	0.8%	0.6%
Selenium - ARES-6 - Google Chrome (ms)	13.99	13.97	13.53
Normalized	96.71%	96.85%	100%
Standard Deviation	0.7%	0.3%	0.7%
Mlpack Benchmark - scikit_ica (sec)	50.17	49.35	51.01
Normalized	98.37%	100%	96.75%
Standard Deviation	1.9%	1.3%	2.5%
Selenium - Speedometer - Firefox (Runs/min)	119	120	123
Normalized	96.75%	97.56%	100%
Standard Deviation	1.7%	1.3%	2%
Darktable - Server Rack - CPU-only (sec)	0.185	0.188	0.182
Normalized	98.38%	96.81%	100%
Standard Deviation	0.5%	1.2%	0.3%
PyBench - T.F.A.T.T (Milliseconds)	702	709	725
Normalized	100%	99.01%	96.83%
Standard Deviation	1.7%	0.7%	0.6%
SQLite Speedtest - Timed Time - Size 1,000 (sec)	42.091	43.449	43.404
Normalized	100%	96.87%	96.97%
Standard Deviation	0.6%	0.5%	1.3%
NCNN - CPU - efficientnet-b0 (ms)	5.37	5.46	5.29
Normalized	98.51%	96.89%	100%
Standard Deviation	3.3%	3%	0.4%
Build2 - Time To Compile (sec)	71.685	71.709	69.510
Normalized	96.97%	96.93%	100%
Standard Deviation	0.2%	0.6%	0.2%
PyPerformance - crypto_pyaes	76.9	78.9	79.3
Normalized	100%	97.47%	96.97%
Standard Deviation	0.3%	0.1%	0.2%
Cython benchmark (sec)	37.319	37.475	38.479
Normalized	100%	99.58%	96.99%
Standard Deviation	1.7%	1.5%	0.3%
PyPerformance - 2to3 (Milliseconds)	235	236	229
Normalized	97.45%	97.03%	100%
Standard Deviation	0.4%		0.3%
PlaidML - No - Inference - DenseNet 201 - CPU (FPS)	4.83	4.69	4.78
Normalized	100%	97.1%	98.96%
Standard Deviation	0.9%	1%	0.9%
eSpeak-NG Speech Engine - T.T.S.S (sec)	21.017	20.782	21.402
Normalized	98.88%	100%	97.1%
Standard Deviation	1%	1.3%	0.6%
GNU Octave Benchmark (sec)	5.377	5.321	5.476
Normalized	98.96%	100%	97.17%

	Standard Deviation	1.3%	1.1%	0.7%
SVT-AV1 - Enc Mode 8 - 1080p (FPS)		50.663	50.927	52.138
	Normalized	97.17%	97.68%	100%
	Standard Deviation	0.5%	0.6%	1%
Perl Benchmarks - Pod2html (sec)		0.08813081	0.08975752	0.09061546
	Normalized	100%	98.19%	97.26%
	Standard Deviation	2.5%	0.4%	1.3%
NCNN - CPU - resnet18 (ms)		14.51	14.66	14.27
	Normalized	98.35%	97.34%	100%
	Standard Deviation	2.6%	3%	0.1%
NCNN - CPU - alexnet (ms)		11.13	11.28	10.98
	Normalized	98.65%	97.34%	100%
	Standard Deviation	3.1%	4.6%	3.1%
Crafty - Elapsed Time (Nodes/s)		11848420	11574143	11889046
	Normalized	99.66%	97.35%	100%
	Standard Deviation	1.4%	0.5%	1.1%
LibreOffice - 2.D.T.P (sec)		5.161	5.163	5.030
	Normalized	97.46%	97.42%	100%
	Standard Deviation	4.9%	4.7%	3.9%
Selenium - W.i - Google Chrome (ms)		24.8332	24.548	24.2008
	Normalized	97.45%	98.59%	100%
	Standard Deviation	2.3%	2.2%	0.2%
Selenium - Jetstream - Google Chrome		342.38	342.21	351.14
	Normalized	97.51%	97.46%	100%
	Standard Deviation	0.6%	0.6%	1.2%
Unpacking The Linux Kernel - linux-4.15.tar.xz (sec)		3.827	3.837	3.740
	Normalized	97.73%	97.47%	100%
	Standard Deviation	0.7%	0.7%	0.8%
OpenVINO - F.D.0.F - CPU (ms)		2116	2098	2064
	Normalized	97.55%	98.35%	100%
	Standard Deviation	0.9%	0.6%	0.4%
WavPack Audio Encoding - WAV To WavPack (sec)		11.115	10.915	11.188
	Normalized	98.2%	100%	97.56%
	Standard Deviation	1%	1.6%	0.9%
NCNN - CPU - squeezeNet_ssd (ms)		14.64	14.79	14.43
	Normalized	98.57%	97.57%	100%
	Standard Deviation	2.1%	1.8%	2.7%
LZ4 Compression - 9 - Compression Speed (MB/s)		70.44	70.89	69.17
	Normalized	99.37%	100%	97.57%
	Standard Deviation	2.9%	0.9%	0.5%
yquake2 - OpenGL 3.x - 1920 x 1080 (FPS)		966.4	970.3	990.1
	Normalized	97.61%	98%	100%
	Standard Deviation	0.9%	0.2%	0.1%
KeyDB (Ops/sec)		820008	816903	836869
	Normalized	97.99%	97.61%	100%
	Standard Deviation	0.2%	0.3%	1.6%
InfluxDB - 64 - 10000 - 2,5000,1 - 10000 (val/sec)		2214168	2213506	2267414
	Normalized	97.65%	97.62%	100%
	Standard Deviation	0.3%	0.3%	0.3%
GEGL - Crop (sec)		6.911	6.857	6.747
	Normalized	97.63%	98.4%	100%

	Standard Deviation	1.9%	1.5%	1.6%
OpenVINO - F.D.0.F - CPU (FPS)		3.75	3.79	3.84
	Normalized	97.66%	98.7%	100%
	Standard Deviation	0.8%	0.6%	0.3%
Bork File Encrypter - F.E.T (sec)		6.408	6.351	6.258
	Normalized	97.66%	98.54%	100%
	Standard Deviation	0.6%	2%	0.7%
LZ4 Compression - 3 - Compression Speed (MB/s)		73.43	73.21	71.72
	Normalized	100%	99.7%	97.67%
	Standard Deviation	2.9%	2.9%	1.9%
NCNN - CPU - yolov4-tiny (ms)		21.80	22.10	21.60
	Normalized	99.08%	97.74%	100%
	Standard Deviation	4.5%	4.8%	4.2%
TSCP - A.C.P (Nodes/s)		1982656	1955943	2001083
	Normalized	99.08%	97.74%	100%
	Standard Deviation	0.3%	0.6%	2.9%
Selenium - W.c - Google Chrome (ms)		255.8043	250.1523	255.6180
	Normalized	97.79%	100%	97.86%
	Standard Deviation	0.6%	1.4%	0.7%
Ogg Audio Encoding - WAV To Ogg (sec)		14.566	14.561	14.887
	Normalized	99.97%	100%	97.81%
	Standard Deviation	1.4%	1.2%	0.3%
LeelaChessZero - BLAS (Nodes/s)		416	407	411
	Normalized	100%	97.84%	98.8%
	Standard Deviation	0.6%	2.7%	
Facebook RocksDB - Read While Writing		4336214	4432093	4376801
	Normalized	97.84%	100%	98.75%
	Standard Deviation	0.7%	2.7%	2.7%
FFTW - Float + SSE - 2D FFT Size 4096 (Mflops)		30848	31520	31327
	Normalized	97.87%	100%	99.39%
	Standard Deviation	2.6%	0.7%	2.9%
LeelaChessZero - Eigen (Nodes/s)		416	419	425
	Normalized	97.88%	98.59%	100%
	Standard Deviation	1.6%	3.5%	0.3%
ASKAP - tConvolve OpenMP - Degriding (Million Grid Points/sec)		4227	4272	4318
	Normalized	97.88%	98.93%	100%
	Standard Deviation	0.8%	0.9%	0.9%
Cryptsetup - PBKDF2-whirlpool			894197	913462
	Normalized		97.89%	100%
	Standard Deviation		0.5%	1.1%
LuxCoreRender - R.C.a.P (M samples/sec)		3.80	3.73	3.81
	Normalized	99.74%	97.9%	100%
	Standard Deviation	0.5%	0.9%	0.8%
NAS Parallel Benchmarks - FT.C (Mop/s)		12323	12586	12464
	Normalized	97.92%	100%	99.03%
	Standard Deviation	0.2%	0.3%	0.1%
libjpeg-turbo tjbench - D.T (Megapixels/sec)		288.406308	282.410933	286.273377
	Normalized	100%	97.92%	99.26%
	Standard Deviation	1.3%	0.4%	0.6%
yquake2 - Software CPU - 1920 x 1080 (FPS)		180.7	177.0	178.4
	Normalized	100%	97.95%	98.73%
	Standard Deviation	2.9%	0.9%	1.5%

Selenium - PSPDFKit WASM - Firefox (Score)	2830	2845	2787
Normalized	98.48%	97.96%	100%
Standard Deviation	0.3%	0.6%	0.3%
Hierarchical INTegration - FLOAT (QUIPs)	530826296	520060602	520930505
Normalized	100%	97.97%	98.14%
Standard Deviation	1.7%	0.1%	0.6%
PlaidML - No - Inference - VGG19 - CPU	17.15	17.19	17.50
Normalized	98%	98.23%	100%
Standard Deviation	0.5%	0.5%	1.2%
FFTW - Stock - 1D FFT Size 32 (Mflops)	15306	15340	15040
Normalized	99.78%	100%	98.04%
Standard Deviation	1.5%	0.5%	0.6%
Parboil - OpenMP CUTCP (sec)	1.001032	1.005328	0.985730
Normalized	98.47%	98.05%	100%
Standard Deviation	0.6%	1.2%	1.6%
Mobile Neural Network - MobileNetV2_224	3.954	3.892	3.877
Normalized	98.05%	99.61%	100%
Standard Deviation	2.7%	2.7%	0.6%
NCNN - CPU - vgg16 (ms)	58.06	57.70	58.83
Normalized	99.38%	100%	98.08%
Standard Deviation	0.4%	0.4%	0.1%
Coremark - CoreMark Size 666 - I.P.S (Iterations/Sec)	825089	832797	841223
Normalized	98.08%	99%	100%
Standard Deviation	0.5%	0.3%	0.3%
Fhourstones - C.C.4.S (Kpos / sec)	20307	20378	20703
Normalized	98.09%	98.43%	100%
Standard Deviation	0.9%	0.2%	0.7%
TNN - CPU - SqueezeNet v1.1 (ms)	209.535	212.941	213.508
Normalized	100%	98.4%	98.14%
Standard Deviation	1.2%	0.7%	0.7%
Botan - AES-256 (MiB/s)	7522	7480	7382
Normalized	100%	99.45%	98.14%
Standard Deviation	1.9%	2.6%	0.3%
oneDNN - R.N.N.I - f32 - CPU (ms)	1719	1688	1713
Normalized	98.18%	100%	98.51%
Standard Deviation	2%	0.2%	2.5%
Selenium - Jetstream - Firefox (Score)	196.98	197.18	200.62
Normalized	98.19%	98.29%	100%
Standard Deviation	0.6%	1.4%	0.8%
Facebook RocksDB - Rand Fill (Op/s)	1513472	1504767	1532539
Normalized	98.76%	98.19%	100%
Standard Deviation	2.5%	1.1%	1.1%
Montage Astronomical Image Mosaic Engine - M.o.M.K.b.1.5.d.x.1.5.d (sec)	57.312	57.155	58.197
Normalized	99.73%	100%	98.21%
Standard Deviation	1.1%	0.9%	1.7%
WebP Image Encode - Q.1.L (Encode Time - sec)	12.736	12.958	12.726
Normalized	99.92%	98.21%	100%
Standard Deviation	2.3%	0.7%	0.5%
PlaidML - No - Inference - Inception V3 - CPU (FPS)	12.86	12.87	13.09
Normalized	98.24%	98.32%	100%
Standard Deviation	0.4%	0.8%	0.4%

OpenVKL - vkIBenchmark (Items / Sec)	290.56	289.39	294.56
Normalized	98.64%	98.24%	100%
Standard Deviation	0.4%	0.2%	0.3%
Embree - Pathtracer ISPC - Asian Dragon (FPS)	25.4608	25.6222	25.9025
Normalized	98.29%	98.92%	100%
Standard Deviation	0.2%	1.1%	0.1%
simdjson - LargeRand (GB/s)	0.60	0.59	0.59
Normalized	100%	98.33%	98.33%
Standard Deviation	1%	2.6%	1%
Monte Carlo Simulations of Ionised Nebulae - Dust 2D tau100.0 (sec)	179	181	178
Normalized	99.44%	98.34%	100%
Standard Deviation		2.4%	
Radiance Benchmark - Serial (sec)	429.908	426.978	422.935
Normalized	98.38%	99.05%	100%
Darktable - Masskrug - CPU-only (sec)	6.204	6.162	6.106
Normalized	98.42%	99.09%	100%
Standard Deviation	0.2%	0.3%	0.2%
Mobile Neural Network - SqueezeNetV1.0	6.476	6.375	6.404
Normalized	98.44%	100%	99.55%
Standard Deviation	4.6%	4.8%	2.6%
NAS Parallel Benchmarks - LU.C (Mop/s)	28127	28146	28568
Normalized	98.46%	98.52%	100%
Standard Deviation	0.1%	0%	0.1%
Monkey Audio Encoding - WAV To APE (sec)	9.837	9.915	9.989
Normalized	100%	99.21%	98.48%
Standard Deviation	0.9%	1%	2.8%
RawTherapee - T.B.T (sec)	47.306	46.597	47.080
Normalized	98.5%	100%	98.97%
Standard Deviation	0.1%	0.1%	0.2%
Timed Linux Kernel Compilation - Time To Compile (sec)	45.806	45.534	45.120
Normalized	98.5%	99.09%	100%
Standard Deviation	1.5%	1.3%	1%
OpenVINO - P.D.0.F - CPU (ms)	3137	3091	3101
Normalized	98.52%	100%	99.67%
Standard Deviation	1.3%	0.4%	0.1%
Selenium - W.c - Firefox (ms)	295.7	299.5	300.1
Normalized	100%	98.73%	98.53%
Standard Deviation	1.6%	0.7%	1.1%
PlaidML - No - Inference - VGG16 - CPU	20.87	21.18	20.94
Normalized	98.54%	100%	98.87%
Standard Deviation	2%	1.6%	1%
Timed ImageMagick Compilation - Time To Compile (sec)	18.178	18.181	17.919
Normalized	98.58%	98.56%	100%
Standard Deviation	0.2%	0.5%	0.6%
yquake2 - OpenGL 3.x - 2560 x 1440 (FPS)	975.3	977.4	989.5
Normalized	98.56%	98.78%	100%
Standard Deviation	0.5%	0.8%	0.1%

Darmstadt Automotive Parallel Heterogeneous Suite - OpenMP - Euclidean Cluster (Test Cases/min)	1494	1505	1515
Normalized	98.62%	99.34%	100%
Standard Deviation	0.4%	0.3%	0.3%
SVT-AV1 - Enc Mode 4 - 1080p (FPS)	6.071	6.155	6.128
Normalized	98.64%	100%	99.56%
Standard Deviation	0.9%	1.1%	0.6%
Unigine Valley - 1920 x 1080 - Fullscreen - OpenGL (FPS)	176.385	178.774	178.166
Normalized	98.66%	100%	99.66%
Standard Deviation	0.6%	0.2%	0.3%
Mlpack Benchmark - scikit_linearridgeregression (sec)	2.24	2.25	2.22
Normalized	99.11%	98.67%	100%
Standard Deviation	0.6%	0.6%	0.5%
PlaidML - No - Inference - Mobilenet - CPU (FPS)	24.04	24.15	24.36
Normalized	98.69%	99.14%	100%
Standard Deviation	0.5%	1.6%	0.4%
PHPBench - P.B.S (Score)	834204	845304	838294
Normalized	98.69%	100%	99.17%
Standard Deviation	2.7%	1.3%	1%
Mobile Neural Network - resnet-v2-50 (ms)	28.284	28.290	27.919
Normalized	98.71%	98.69%	100%
Standard Deviation	1.8%	1.7%	0.6%
Unigine Superposition - 1920 x 1080 - Fullscreen - Low - OpenGL (FPS)	238.5	235.6	238.7
Normalized	99.92%	98.7%	100%
Standard Deviation	1.5%	0.2%	0%
SVT-VP9 - VMAF Optimized - Bosphorus 1080p (FPS)	226.18	227.57	229.11
Normalized	98.72%	99.33%	100%
Standard Deviation	2.7%	3%	2.9%
Dolfyn - C.F.D (sec)	12.913	12.970	12.808
Normalized	99.19%	98.75%	100%
Standard Deviation	1.2%	0.7%	0.6%
7-Zip Compression - C.S.T (MIPS)	95492	95520	96698
Normalized	98.75%	98.78%	100%
Standard Deviation	0.4%	0.3%	0.2%
Selenium - Octane - Firefox (Geometric)	24724	24946	25036
Normalized	98.75%	99.64%	100%
Standard Deviation	0.9%	0.4%	0.1%
Rodinia - OpenMP CFD Solver (sec)	10.321	10.263	10.193
Normalized	98.76%	99.32%	100%
Standard Deviation	0.7%	0.5%	0.8%
LibRaw - P.P.B (Mpix/sec)	54.21	53.89	53.54
Normalized	100%	99.41%	98.76%
Standard Deviation	0.6%	0.4%	0.1%
Intel Open Image Denoise - Memorial (Images / Sec)	14.49	14.39	14.57
Normalized	99.45%	98.76%	100%
Standard Deviation	0%	0.2%	0.2%

Selenium - Octane - Google Chrome	73504	72999	73911
(Geometric Mean)			
Normalized	99.45%	98.77%	100%
Standard Deviation	0.8%	0.3%	0.8%
Opus Codec Encoding - WAV To Opus	6.065	6.021	6.096
Encode (sec)			
Normalized	99.27%	100%	98.77%
Standard Deviation	2.2%	2.1%	2%
NCNN - CPU - resnet50 (ms)	25.49	25.38	25.18
Normalized	98.78%	99.21%	100%
Standard Deviation	3.3%	3.5%	4%
PlaidML - No - Inference - ResNet 50 - CPU	11.66	11.59	11.73
(FPS)			
Normalized	99.4%	98.81%	100%
Standard Deviation	1.9%	0.8%	1.3%
Git - T.T.C.C.G.C (sec)	38.302	38.071	37.847
Normalized	98.81%	99.41%	100%
Standard Deviation	0.5%	0.6%	0.7%
OpenVINO - P.D.O.F - CPU (FPS)	2.51	2.53	2.54
Normalized	98.82%	99.61%	100%
Standard Deviation	0.9%	0.5%	0.2%
Mobile Neural Network - inception-v3 (ms)	26.856	26.870	26.553
Normalized	98.87%	98.82%	100%
Standard Deviation	2.1%	1.7%	0.6%
POV-Ray - Trace Time (sec)	22.918	22.986	22.717
Normalized	99.12%	98.83%	100%
Standard Deviation	1%	0.6%	0.1%
Tachyon - Total Time (sec)	43.8547	43.5594	43.3602
Normalized	98.87%	99.54%	100%
Standard Deviation	0.4%	0.6%	0.8%
Darktable - Server Room - CPU-only (sec)	5.856	5.822	5.790
Normalized	98.87%	99.45%	100%
Standard Deviation	0.1%	0.2%	0.1%
NCNN - CPU - shufflenet-v2 (ms)	4.45	4.45	4.40
Normalized	98.88%	98.88%	100%
Standard Deviation	0.7%	0.2%	0.5%
WebP Image Encode - Q.1.H.C (Encode Time - sec)	5.402	5.347	5.342
Normalized	98.89%	99.91%	100%
Standard Deviation	0.3%	0.7%	0.2%
Mlpack Benchmark - scikit_qda (sec)	61.75	61.19	61.08
Normalized	98.91%	99.82%	100%
Standard Deviation	1.5%	0.2%	0.5%
LZ4 Compression - 9 - D.S (MB/s)	12872	13013	12925
Normalized	98.92%	100%	99.33%
Standard Deviation	0.8%	0.3%	0.6%
libavif avifenc - 10 (sec)	4.134	4.106	4.090
Normalized	98.94%	99.61%	100%
Standard Deviation	1.2%	1.6%	0.3%
Hugin - P.P.A.S.T (sec)	35.415	35.247	35.625
Normalized	99.53%	100%	98.94%
Standard Deviation	1.7%	1.5%	0.9%

Timed FFmpeg Compilation - Time To Compile (sec)	30.083	30.032	29.764
Normalized	98.94%	99.11%	100%
Standard Deviation	0.1%	0.7%	0.3%
asmFish - 1.H.M.2.D (Nodes/s)	60303543	60938021	60561225
Normalized	98.96%	100%	99.38%
Standard Deviation	1.9%	1.9%	1.2%
Numpy Benchmark (Score)	559.49	553.69	558.01
Normalized	100%	98.96%	99.74%
Standard Deviation	1.2%	0%	0.2%
TNN - CPU - MobileNet v2 (ms)	228.278	227.616	229.973
Normalized	99.71%	100%	98.98%
Standard Deviation	0.3%	1%	0.5%
PostgreSQL pgbench - 100 - 100 - Read Only (TPS)	481182	485232	480266
Normalized	99.17%	100%	98.98%
Standard Deviation	0.9%	0.4%	0.4%
NAS Parallel Benchmarks - EP.C (Mop/s)	1901	1883	1881
Normalized	100%	99.07%	98.98%
Standard Deviation	0.3%	2.1%	0.3%
GraphicsMagick - Rotate (Iterations/min)	982	972	976
Normalized	100%	98.98%	99.39%
Standard Deviation	2.1%	0.9%	0.7%
GEGL - Reflect (sec)	24.643	24.759	24.507
Normalized	99.45%	98.98%	100%
Standard Deviation	0.3%	0.1%	0.8%
Timed MrBayes Analysis - P.P.A (sec)	62.343	62.330	61.709
Normalized	98.98%	99%	100%
Standard Deviation	0.6%	0.5%	0.4%
TTSIOD 3D Renderer - P.R.W.S.S.M (FPS)	1045	1043	1053
Normalized	99.17%	99%	100%
Standard Deviation	0.4%	0.7%	0.9%
IndigoBench - CPU - Supercar (M samples/s)	8.656	8.743	8.725
Normalized	99%	100%	99.79%
Standard Deviation	0.3%	0.2%	0.5%
Node.js V8 Web Tooling Benchmark (runs/s)	16.13	16.07	15.97
Normalized	100%	99.63%	99.01%
Standard Deviation	0.2%	1.9%	2.8%
Caffe - AlexNet - CPU - 100 (ms)	40058	39662	39897
Normalized	99.01%	100%	99.41%
Standard Deviation	0.2%	0.4%	0.2%
PostgreSQL pgbench - 100 - 250 - Read Only - Average Latency (ms)	0.513	0.510	0.515
Normalized	99.42%	100%	99.03%
Standard Deviation	0.2%	0.6%	0.9%
PostgreSQL pgbench - 100 - 100 - Read Only - Average Latency (ms)	0.208	0.206	0.208
Normalized	99.04%	100%	99.04%
Standard Deviation	0.8%	0.3%	0.6%
FFTW - Float + SSE - 1D FFT Size 32 (Mflops)	21867	21744	21658
Normalized	100%	99.44%	99.04%
Standard Deviation	0.7%	0.7%	1.1%

PostgreSQL pgbench - 100 - 250 - Read Only (TPS)	487889	490262	485621
Normalized	99.52%	100%	99.05%
Standard Deviation	0.2%	0.6%	0.8%
BRL-CAD - V.P.M (VGR Performance Metric)	262736	264322	265236
Normalized	99.06%	99.66%	100%
Mobile Neural Network - mobilenet-v1-1.0	4.913	4.869	4.868
Normalized	99.08%	99.98%	100%
Standard Deviation	1.1%	1%	0.8%
Rodinia - OpenMP LavaMD (sec)	104.373	104.648	103.696
Normalized	99.35%	99.09%	100%
Standard Deviation	0.1%	0.7%	0.1%
John The Ripper - MD5 (Real C/S)	2220667	2231333	2241000
Normalized	99.09%	99.57%	100%
Standard Deviation	0.4%	0.3%	0.2%
NCNN - CPU - regnety_400m (ms)	17.92	17.76	17.78
Normalized	99.11%	100%	99.89%
Standard Deviation	1%	1%	0.3%
Embree - Pathtracer - Crown (FPS)	24.2333	24.0188	24.1488
Normalized	100%	99.11%	99.65%
Standard Deviation	1.1%	0.8%	1.3%
Aircrack-ng (k/s)	74209	74464	74867
Normalized	99.12%	99.46%	100%
Standard Deviation	0.2%	0.2%	0.1%
GEGL - Rotate 90 Degrees (sec)	30.955	30.911	30.683
Normalized	99.12%	99.26%	100%
Standard Deviation	0.2%	0.5%	0.5%
FLAC Audio Encoding - WAV To FLAC (sec)	6.375	6.398	6.342
Normalized	99.48%	99.12%	100%
Standard Deviation	1.2%	0.3%	1.8%
Timed MPlayer Compilation - Time To Compile (sec)	19.078	19.119	18.952
Normalized	99.34%	99.13%	100%
Standard Deviation	0.5%	0.3%	0.1%
NAS Parallel Benchmarks - CG.C (Mop/s)	7072	7045	7106
Normalized	99.52%	99.14%	100%
Standard Deviation	0.9%	2.1%	0.8%
Optcarrot - O.B (FPS)	167.47	166.03	166.03
Normalized	100%	99.14%	99.14%
Standard Deviation	1.2%	0.8%	1%
GROMACS - Water Benchmark (Ns/Day)	1.298	1.287	1.288
Normalized	100%	99.15%	99.23%
Standard Deviation	0.3%	0.2%	0.4%
YafaRay - T.T.F.S.S (sec)	66.772	66.402	66.213
Normalized	99.16%	99.72%	100%
Standard Deviation	0.7%	0.4%	0.3%
LuxCoreRender - DLSC (M samples/sec)	3.60	3.58	3.57
Normalized	100%	99.44%	99.17%
Standard Deviation	0.8%	0.7%	0.8%
TensorFlow Lite - NASNet Mobile (us)	104510	104167	103643
Normalized	99.17%	99.5%	100%
Standard Deviation	0.5%	0.2%	0.3%
Selenium - W.i - Firefox (ms)	24.2	24.2	24.4
Normalized	100%	100%	99.18%
Standard Deviation	0.7%	0.8%	0.4%

OpenVINO - A.G.R.R.0.F - CPU (FPS)	13509	13573	13620
Normalized	99.19%	99.65%	100%
Standard Deviation	0.1%	0.3%	0.2%
OpenVINO - P.D.0.F - CPU (FPS)	2.49	2.51	2.51
Normalized	99.2%	100%	100%
Standard Deviation	0.2%	1.1%	0.6%
PyPerformance - pathlib (Milliseconds)	12.7	12.6	12.6
Normalized	99.21%	100%	100%
Standard Deviation	0%	0%	0.5%
Caffe - GoogleNet - CPU - 100 (ms)	105402	104908	104584
Normalized	99.22%	99.69%	100%
Standard Deviation	0.3%	0.1%	0.2%
CloverLeaf - L.E.H (sec)	3.87	3.86	3.84
Normalized	99.22%	99.48%	100%
Standard Deviation	0.2%	0.3%	0.3%
dav1d - Summer Nature 4K (FPS)	235.54	233.72	233.80
Normalized	100%	99.23%	99.26%
Standard Deviation	0.4%	0.2%	2.7%
John The Ripper - Blowfish (Real C/S)	37933	37996	38228
Normalized	99.23%	99.39%	100%
Standard Deviation	0.7%	0.6%	0.6%
oneDNN - C.B.S.A - f32 - CPU (ms)	16.6197	16.6616	16.7477
Normalized	100%	99.75%	99.24%
Standard Deviation	0.5%	0.2%	0.2%
NAMD - ATPase Simulation - 327,506 Atoms (days/ns)	1.08379	1.07587	1.07561
Normalized	99.25%	99.98%	100%
Standard Deviation	1.1%	0.4%	0.5%
Darktable - Boat - CPU-only (sec)	14.366	14.395	14.287
Normalized	99.45%	99.25%	100%
Standard Deviation	0.4%	0.3%	0%
Facebook RocksDB - Rand Read (Op/s)	125000032	125941907	125807563
Normalized	99.25%	100%	99.89%
Standard Deviation	0.4%	0.2%	0.2%
SVT-VP9 - P.S.O - Bosphorus 1080p (FPS)	233.83	234.44	235.57
Normalized	99.26%	99.52%	100%
Standard Deviation	0%	0.3%	0.6%
Smallpt - G.I.R.1.S (sec)	4.929	4.918	4.893
Normalized	99.27%	99.49%	100%
Standard Deviation	0.1%	0.2%	0%
NAS Parallel Benchmarks - EP.D (Mop/s)	1876	1863	1863
Normalized	100%	99.28%	99.29%
Standard Deviation	1.4%	2.7%	1.2%
Embree - Pathtracer - Asian Dragon (FPS)	25.0346	25.1259	25.2129
Normalized	99.29%	99.65%	100%
Standard Deviation	0.8%	0.9%	1%
IndigoBench - CPU - Bedroom (M samples/s)	4.117	4.146	4.145
Normalized	99.3%	100%	99.98%
Standard Deviation	0.7%	0.5%	0.4%
OpenVINO - F.D.0.F - CPU (ms)	2073	2065	2059
Normalized	99.3%	99.72%	100%
Standard Deviation	0.6%	1%	0.1%
OpenVINO - P.D.0.F - CPU (ms)	3151	3136	3129
Normalized	99.31%	99.8%	100%
Standard Deviation	0.4%	0.7%	0.3%

Blender - Barbershop - CPU-Only (sec)	301.13	300.54	299.07
Normalized	99.32%	99.51%	100%
Standard Deviation	0.4%	0.2%	0%
LAME MP3 Encoding - WAV To MP3 (sec)	5.594	5.632	5.632
Normalized	100%	99.33%	99.33%
Standard Deviation	2%	0.9%	1.4%
OpenVINO - A.G.R.R.O.F - CPU (FPS)	13800	13836	13892
Normalized	99.33%	99.59%	100%
Standard Deviation	0.2%	0.3%	0.3%
Selenium - CanvasMark - Firefox (Score)	4990	5000	4967
Normalized	99.8%	100%	99.34%
Standard Deviation	0.4%	0.7%	0.3%
GraphicsMagick - HWB Color Space (Iterations/min)	1062	1069	1068
Normalized	99.35%	100%	99.91%
Standard Deviation	0.9%	0.2%	0.3%
ASTC Encoder - Thorough (sec)	12.85	12.85	12.77
Normalized	99.38%	99.38%	100%
Standard Deviation	0.1%	0.2%	0.4%
NAS Parallel Benchmarks - SP.B (Mop/s)	7941	7973	7990
Normalized	99.39%	99.79%	100%
Standard Deviation	0.2%	0.3%	0.2%
PyPerformance - json_loads (Milliseconds)	16.8	16.8	16.9
Normalized	100%	100%	99.41%
Standard Deviation	0%	0.3%	0.3%
OCRMyPDF - P.6.P.P.D (sec)	15.655	15.630	15.563
Normalized	99.41%	99.57%	100%
Standard Deviation	0.7%	1.7%	0.4%
libavif avifenc - 8 (sec)	4.262	4.244	4.237
Normalized	99.41%	99.84%	100%
Standard Deviation	0.2%	1.4%	1.3%
XZ Compression - C.u.1.0.3.s.i.i.C.L.9 (sec)	23.126	23.066	23.200
Normalized	99.74%	100%	99.42%
Standard Deviation	0.3%	0.5%	0.5%
Parboil - OpenMP LBM (sec)	137.736557	137.658142	136.992167
Normalized	99.46%	99.52%	100%
Standard Deviation	0.2%	0.1%	0.2%
NAS Parallel Benchmarks - BT.C (Mop/s)	24320	24400	24452
Normalized	99.46%	99.79%	100%
Standard Deviation	0%	0.1%	0.1%
Parboil - OpenMP Stencil (sec)	14.834088	14.824556	14.904474
Normalized	99.94%	100%	99.46%
Standard Deviation	0.9%	1.2%	0.6%
Selenium - CanvasMark - Google Chrome (Score)	4974	4953	4950
Normalized	100%	99.58%	99.52%
Standard Deviation	0.7%	1.1%	0.6%
Embree - Pathtracer ISPC - Crown (FPS)	23.7339	23.7196	23.8322
Normalized	99.59%	99.53%	100%
Standard Deviation	0.8%	0.6%	0.3%
Zstd Compression - 3 (MB/s)	4888	4899	4911
Normalized	99.53%	99.76%	100%
Standard Deviation	0.8%	0.4%	0.7%
oneDNN - R.N.N.T - f32 - CPU (ms)	2646	2646	2634
Normalized	99.54%	99.54%	100%

	Standard Deviation	0.6%	2.1%	2%
Zstd Compression - 19 (MB/s)		44.3	44.3	44.5
	Normalized	99.55%	99.55%	100%
	Standard Deviation	0.3%	0.2%	0%
Darmstadt Automotive Parallel		900.83	896.86	900.27
Heterogeneous Suite - OpenMP - NDT				
Mapping (Test Cases/min)				
	Normalized	100%	99.56%	99.94%
	Standard Deviation	1.2%	1.2%	1.3%
GraphicsMagick - Sharpen (Iterations/min)		227	228	228
	Normalized	99.56%	100%	100%
	Standard Deviation	0.5%	0.5%	0.4%
GraphicsMagick - Resizing (Iterations/min)		1823	1831	1827
	Normalized	99.56%	100%	99.78%
	Standard Deviation	0.1%	0.2%	0.3%
ASTC Encoder - Exhaustive (sec)		101.30	100.87	100.90
	Normalized	99.58%	100%	99.97%
	Standard Deviation	0.2%	0.2%	0.5%
ASKAP - tConvolve MT - Degriding (Million		1922	1920	1929
Grid Points/sec)				
	Normalized	99.64%	99.58%	100%
	Standard Deviation	0.2%	0.2%	0.1%
TensorFlow Lite - SqueezeNet (us)		94692	94474	94297
	Normalized	99.58%	99.81%	100%
	Standard Deviation	0.3%	0.4%	0.3%
OpenSSL - R.4.b.P (Signs/sec)		4884	4893	4904
	Normalized	99.59%	99.77%	100%
	Standard Deviation	0.3%	0.2%	0.1%
ECP-CANDLE - P3B1 (sec)		1273	1276	1270
	Normalized	99.78%	99.59%	100%
FFTW - Stock - 2D FFT Size 4096 (Mflops)		8175	8142	8145
	Normalized	100%	99.59%	99.64%
	Standard Deviation	0.3%	1.1%	1.2%
Nebular Empirical Analysis Tool (sec)		10.393	10.400	10.435
	Normalized	100%	99.93%	99.6%
	Standard Deviation	0.4%	1%	0.5%
PlaidML - No - Inference - IMDB LSTM - CPU		913.41	917.10	915.07
(FPS)				
	Normalized	99.6%	100%	99.78%
	Standard Deviation	0.2%	0.2%	0.1%
Basemark GPU - Vulkan - 1920 x 1080 - High		184.84	185.28	185.58
(FPS)				
	Normalized	99.6%	99.84%	100%
	Standard Deviation	0%	0.1%	0.1%
C-Ray - Total Time - 4.1.R.P.P (sec)		30.364	30.283	30.243
	Normalized	99.6%	99.87%	100%
	Standard Deviation	0.3%	0.3%	0.3%
m-queens - Time To Solve (sec)		29.534	29.502	29.418
	Normalized	99.61%	99.72%	100%
	Standard Deviation	0.6%	0.6%	0.5%
TensorFlow Lite - I.R.V (us)		1214700	1212953	1210443
	Normalized	99.65%	99.79%	100%
	Standard Deviation	0.1%	0.1%	0.1%
NAS Parallel Benchmarks - MG.C (Mop/s)		10104	10097	10132

	Normalized	99.73%	99.66%	100%
	Standard Deviation	0.2%	0%	0.1%
Chaos Group V-RAY - CPU (Ksamples)		32530	32422	32464
	Normalized	100%	99.67%	99.8%
	Standard Deviation	0.9%	0.5%	0.3%
Sysbench - Memory (Events/sec)		15417335	15421737	15467309
	Normalized	99.68%	99.71%	100%
	Standard Deviation	0%	0.1%	0.3%
TensorFlow Lite - Inception V4 (us)		1349143	1347910	1344923
	Normalized	99.69%	99.78%	100%
	Standard Deviation	0.1%	0.1%	0.1%
Basis Universal - UASTC Level 2 (sec)		16.115	16.165	16.138
	Normalized	100%	99.69%	99.86%
	Standard Deviation	0.5%	0.2%	0.2%
TensorFlow Lite - Mobilenet Quant (us)		67988	67870	67779
	Normalized	99.69%	99.87%	100%
	Standard Deviation	0.1%	0.2%	0.1%
Mlpack Benchmark - scikit_svm (sec)		16.25	16.30	16.29
	Normalized	100%	99.69%	99.75%
	Standard Deviation	1.9%	1.2%	0.5%
FFTE - N.2.3.C.F.R (MFLOPS)		36615	36508	36553
	Normalized	100%	99.71%	99.83%
	Standard Deviation	0.2%	0.4%	0.5%
TensorFlow Lite - Mobilenet Float (us)		62667	62577	62493
	Normalized	99.72%	99.87%	100%
	Standard Deviation	0.1%	0.1%	0.1%
Unigine Heaven - 1920 x 1080 - Fullscreen - OpenGL (FPS)		166.995	167.412	167.452
	Normalized	99.73%	99.98%	100%
	Standard Deviation	0.2%	0.4%	0.1%
Appleseed - Material Tester (sec)		111.515078	111.611024	111.318736
	Normalized	99.82%	99.74%	100%
OpenVINO - F.D.0.F - CPU (FPS)		3.83	3.84	3.84
	Normalized	99.74%	100%	100%
	Standard Deviation	0.7%	0.9%	0.3%
Parboil - O.M.G (sec)		95.078891	95.098343	95.324809
	Normalized	100%	99.98%	99.74%
	Standard Deviation	0.5%	0.2%	0.1%
Sysbench - CPU (Events/sec)		90818	90884	91043
	Normalized	99.75%	99.83%	100%
	Standard Deviation	0.2%	0.1%	0.2%
WebP Image Encode - Q.1.L.H.C (Encode Time - sec)		27.348	27.388	27.321
	Normalized	99.9%	99.76%	100%
	Standard Deviation	0.6%	0.6%	0.3%
ASKAP - tConvolve MT - Gridding (Million Grid Points/sec)		936.560	937.659	938.830
	Normalized	99.76%	99.88%	100%
	Standard Deviation	0.1%	0.1%	0.1%
High Performance Conjugate Gradient (GFLOP/s)		4.32441	4.32531	4.33375
	Normalized	99.78%	99.81%	100%
	Standard Deviation	0.3%	0.1%	0.2%
Basis Universal - UASTC Level 3 (sec)		28.370	28.377	28.328
	Normalized	99.85%	99.83%	100%

Standard Deviation	0.3%	0.1%	0.1%
Basemark GPU - Vulkan - 2560 x 1440 - High (FPS)	140.23	140.44	140.45
Normalized	99.84%	99.99%	100%
Standard Deviation	0.1%	0%	0.2%
Blender - BMW27 - CPU-Only (sec)	78.51	78.56	78.46
Normalized	99.94%	99.87%	100%
Standard Deviation	0.2%	0.1%	0.1%
LZ4 Compression - 3 - D.S (MB/s)	12885	12901	12889
Normalized	99.88%	100%	99.9%
Standard Deviation	0.1%	0.6%	0.9%
Unigine Superposition - 1920 x 1080 - Fullscreen - High - OpenGL (FPS)	82.9	82.9	82.9
Standard Deviation	0.1%	0.1%	0%
Selenium - MotionMark - Google Chrome (Score)	1	1	1
Selenium - MotionMark - Firefox (Score)	1	1	1
PyPerformance - regex_compile	123	123	123
OpenVINO - A.G.R.R.0.F - CPU (ms)	0.58	0.58	0.58
Standard Deviation	0%	0%	0%
OpenVINO - A.G.R.R.0.F - CPU (ms)	0.57	0.57	0.57
Standard Deviation	0%	0%	1%
Selenium - Basemark - Google Chrome (Overall Score)	1259	1374	1494
Normalized	84.27%	91.96%	100%
Standard Deviation	1.5%	14.2%	12.8%
NCNN - CPU - googlenet (ms)	13.13	13.92	12.87
Normalized	98.02%	92.46%	100%
Standard Deviation	5%	7.4%	0.2%
PostgreSQL pgbench - 100 - 250 - Read Write - Average Latency (ms)	6.449	6.244	14.190
Normalized	96.82%	100%	44%
Standard Deviation	0.5%	2.3%	30.2%
PostgreSQL pgbench - 100 - 250 - Read Write (TPS)	38796	40085	18829
Normalized	96.78%	100%	46.97%
Standard Deviation	0.5%	2.3%	24.4%
Cryptsetup - PBKDF2-whirlpool	901033	889667	862499
Normalized	100%	98.74%	95.72%
Standard Deviation	1.8%	0.8%	18.9%
Cryptsetup - PBKDF2-sha512 (Iterations/sec)	2462021	2412473	2357151
Normalized	99.82%	97.81%	95.57%
Standard Deviation	1.9%	0.8%	15.4%
Himeno Benchmark - P.P.S (MFLOPS)	5302	5226	5207
Normalized	100%	98.56%	98.21%
Standard Deviation	5.6%	5.6%	6.4%
simdjson - PartialTweets (GB/s)	0.98	1.00	0.88
Normalized	98%	100%	88%
Standard Deviation	6.5%	1.2%	0.7%
simdjson - Kostya (GB/s)	0.71	0.74	0.67
Normalized	95.95%	100%	90.54%
Standard Deviation	10.7%	14%	0%
Sockperf - Latency Under Load (usec)	16.896	16.236	12.183
Normalized	72.11%	75.04%	100%

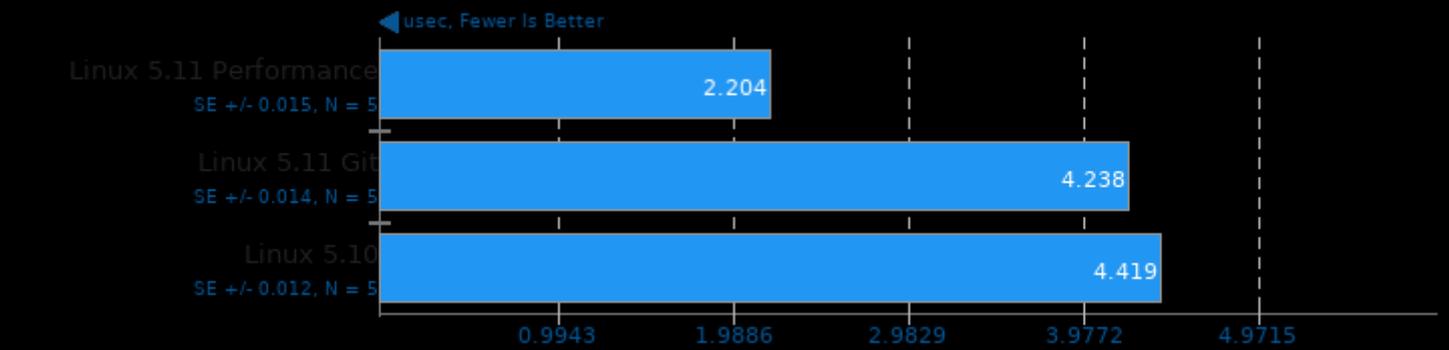
Standard Deviation 98.6%

56.1%

25.9%

Socketperf 3.4

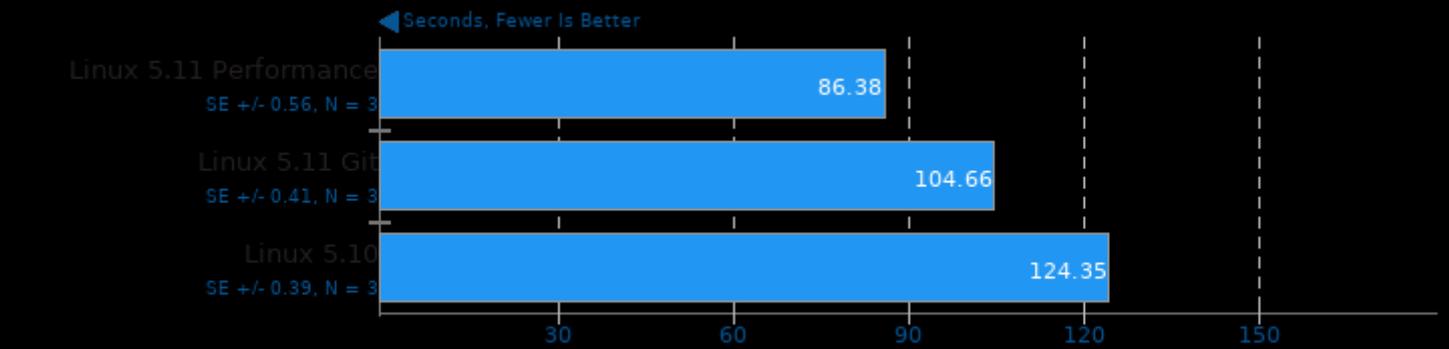
Test: Latency Ping Pong



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

G'MIC

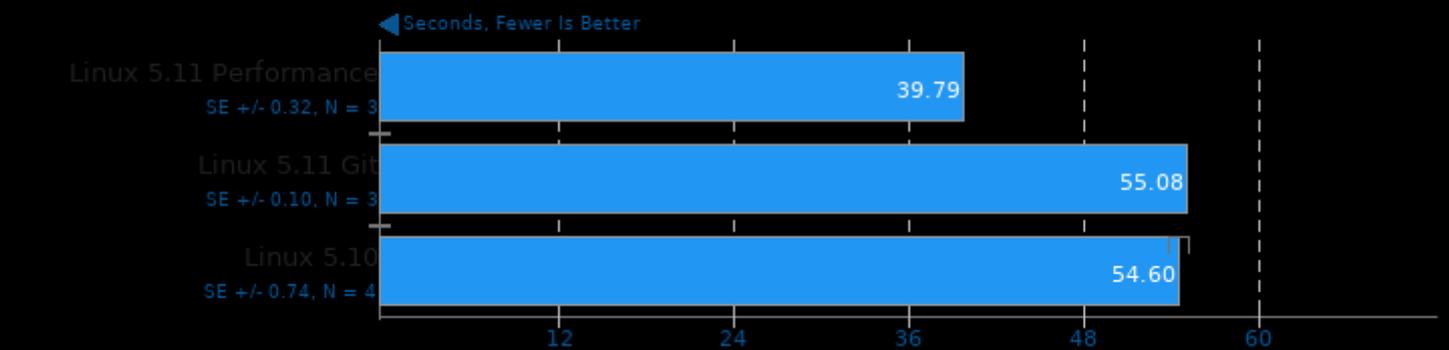
Test: 2D Function Plotting, 1000 Times



1. Version 2.4.5, Copyright (c) 2008-2019, David Tschumperle.

RAR Compression 5.6.1

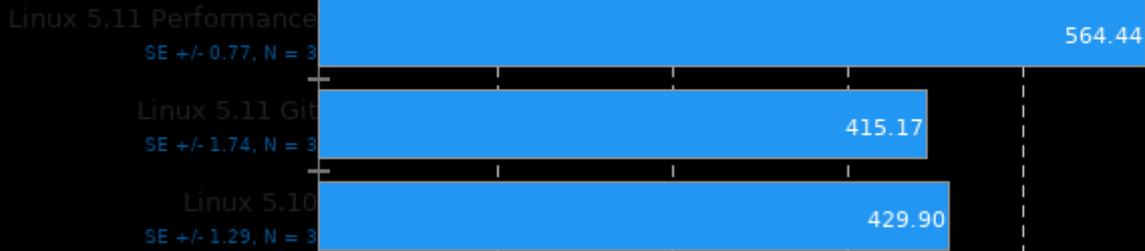
Linux Source Tree Archiving To RAR



Tesseract 2014-05-12

Resolution: 2560 x 1440

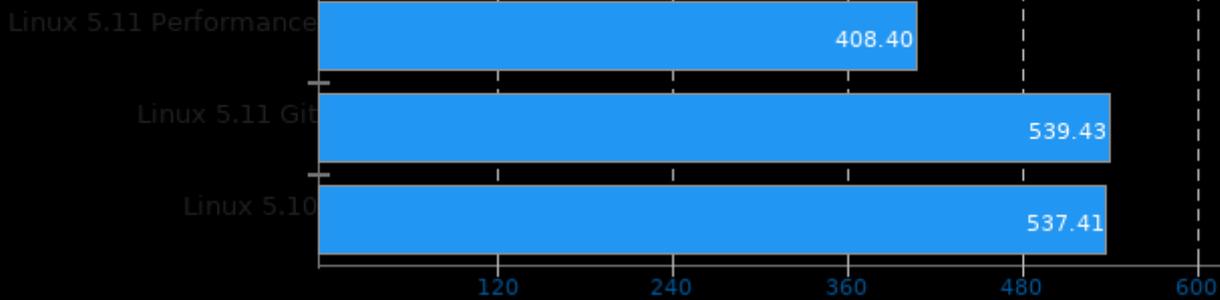
▶ Frames Per Second, More Is Better



ECP-CANDLE 0.3

Benchmark: P3B2

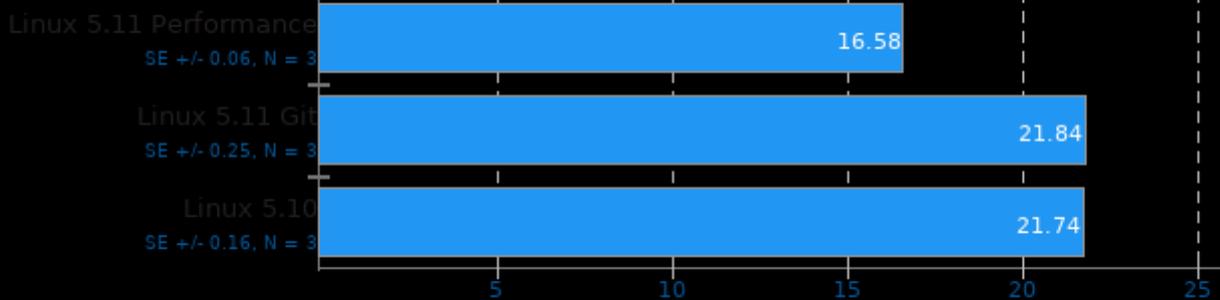
◀ Seconds, Fewer Is Better



librsvg

Operation: SVG Files To PNG

◀ Seconds, Fewer Is Better

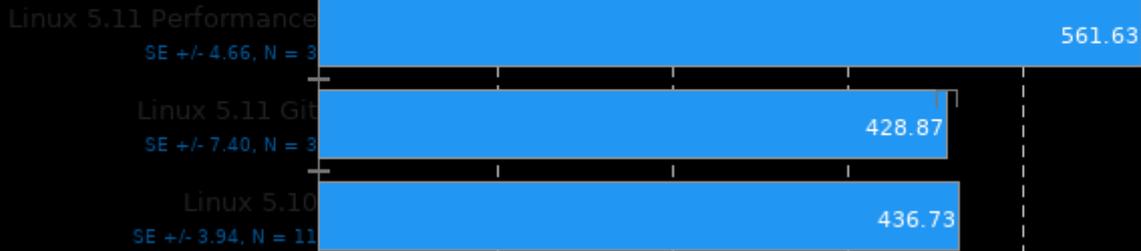


1. rsvg-convert version 2.48.9

Tesseract 2014-05-12

Resolution: 1920 x 1080

▶ Frames Per Second, More Is Better



Apache CouchDB 3.1.1

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

◀ Seconds, Fewer Is Better



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

Timed GDB GNU Debugger Compilation 9.1

Time To Compile

◀ Seconds, Fewer Is Better



Timed HMMer Search 3.3.1

Pfam Database Search

← Seconds, Fewer Is Better

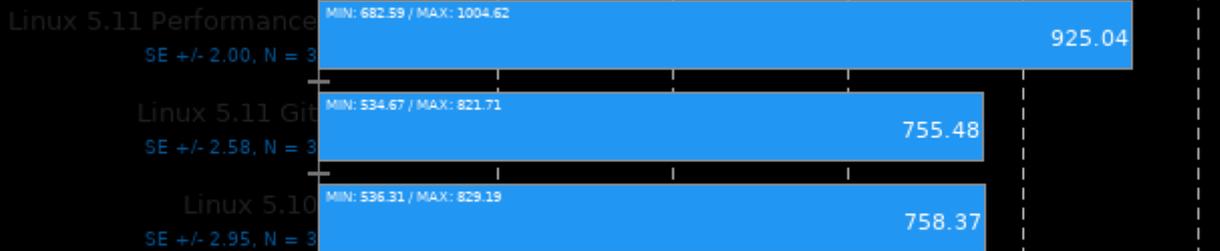


1. (CC) gcc options: -O3 -pthread -lhmmmer -leasel -lm

dav1d 0.7.0

Video Input: Summer Nature 1080p

▶ FPS, More Is Better

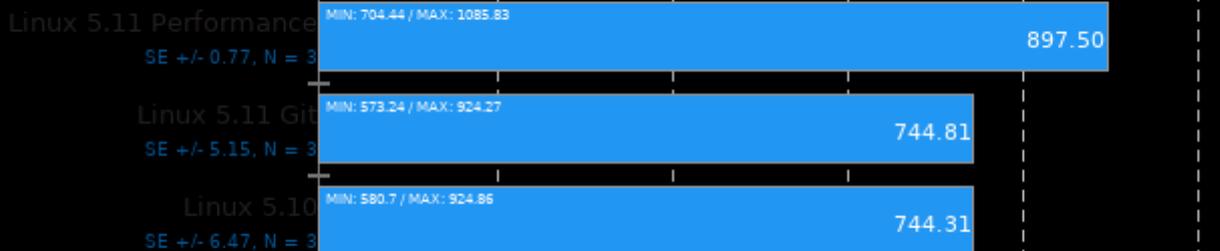


1. (CC) gcc options: -pthread

dav1d 0.7.0

Video Input: Chimera 1080p

▶ FPS, More Is Better

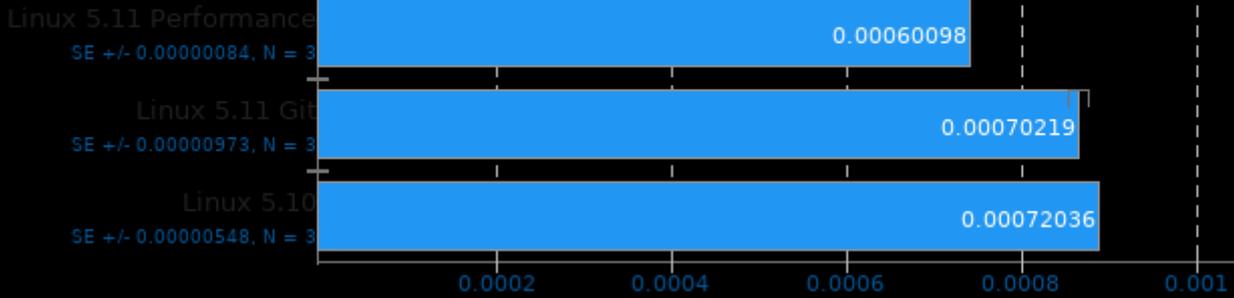


1. (CC) gcc options: -pthread

Perl Benchmarks

Test: Interpreter

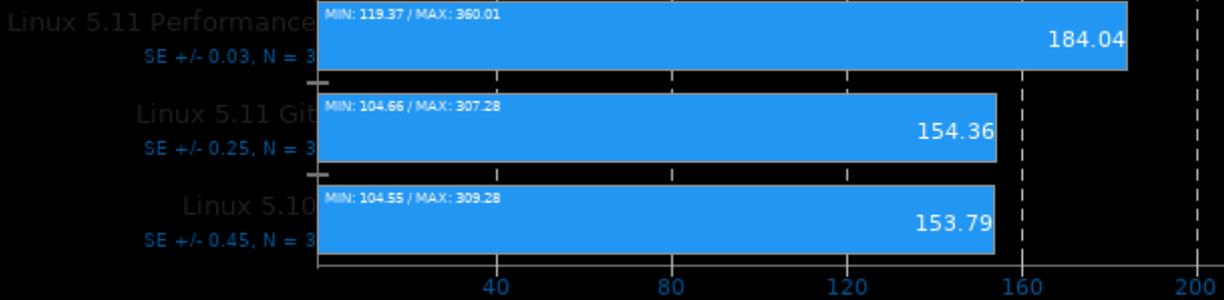
← Seconds, Fewer Is Better



dav1d 0.7.0

Video Input: Chimera 1080p 10-bit

▶ FPS, More Is Better

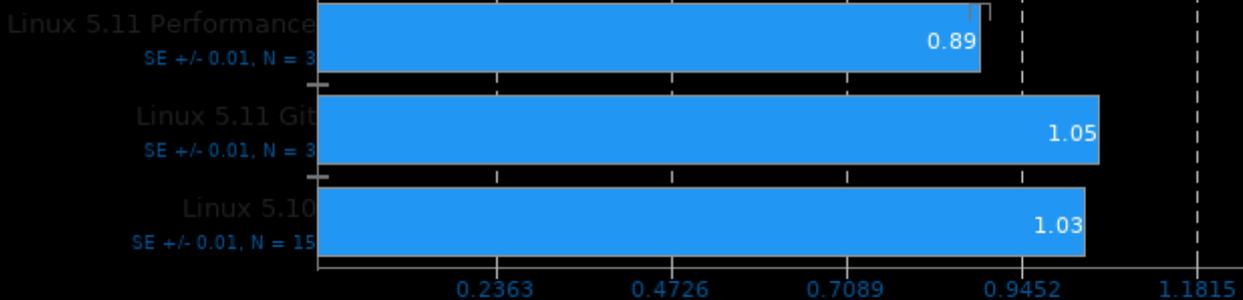


1. (CC) gcc options: -pthread

simdjson 0.7.1

Throughput Test: DistinctUserID

▶ GB/s, More Is Better

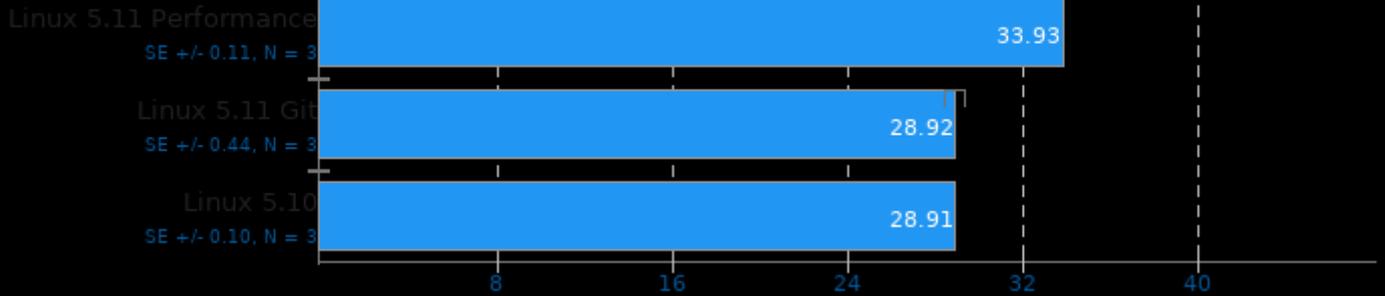


1. (CXX) g++ options: -O3 -pthread

AOM AV1 2.0

Encoder Mode: Speed 6 Realtime

▶ Frames Per Second, More Is Better

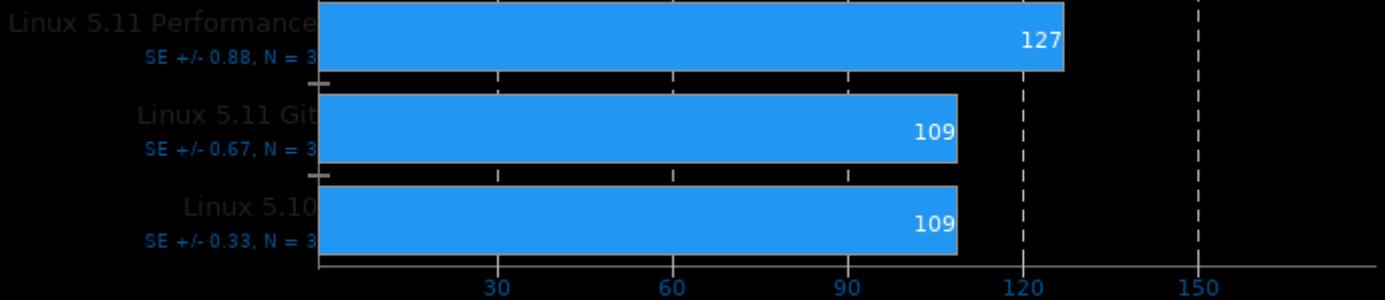


1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -pthread

Selenium

Benchmark: StyleBench - Browser: Firefox

▶ Runs / Minute, More Is Better

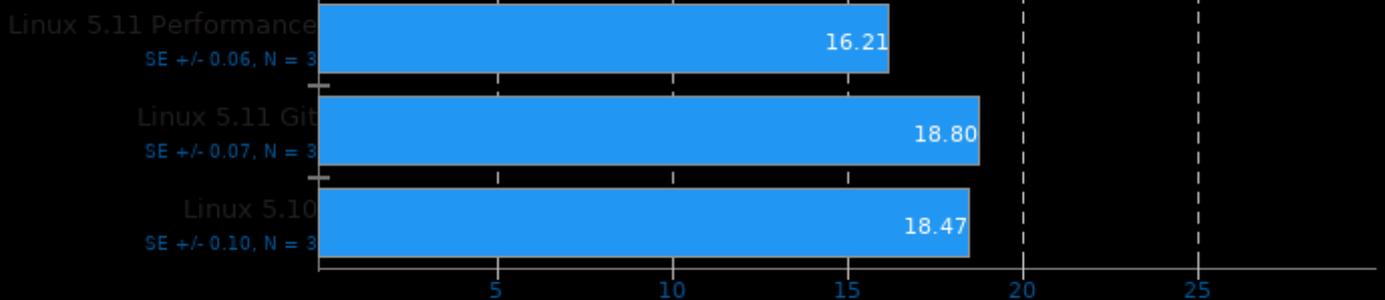


1. firefox 84.0

Inkscape

Operation: SVG Files To PNG

◀ Seconds, Fewer Is Better

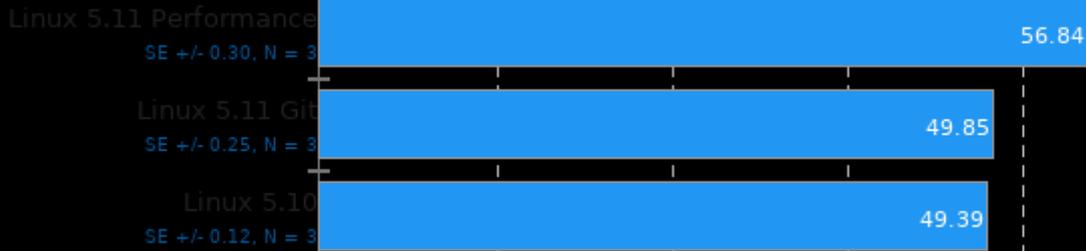


1. Inkscape 0.92.5 (2060ec1f9f, 2020-04-08)

Selenium

Benchmark: StyleBench - Browser: Google Chrome

Runs / Minute, More Is Better

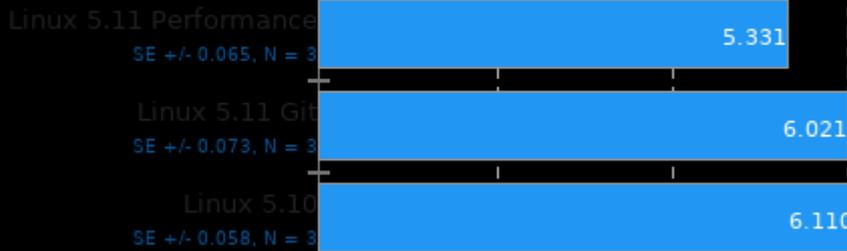


1. chrome 87.0.4280.88

GIMP 2.10.18

Test: resize

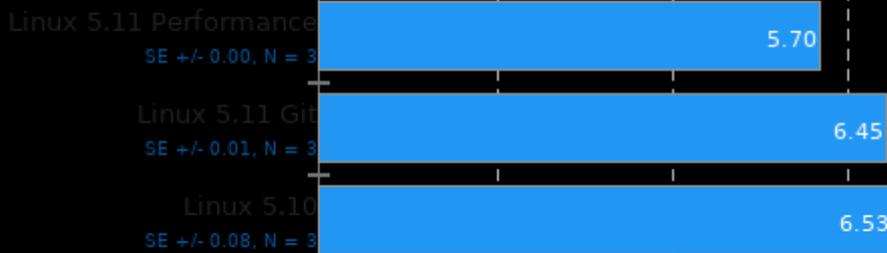
Seconds, Fewer Is Better



PyPerformance 1.0.0

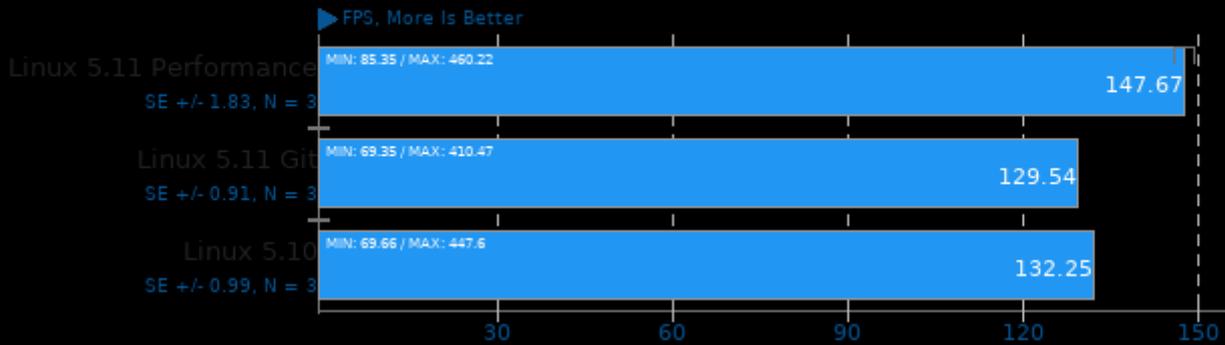
Benchmark: python_startup

Milliseconds, Fewer Is Better



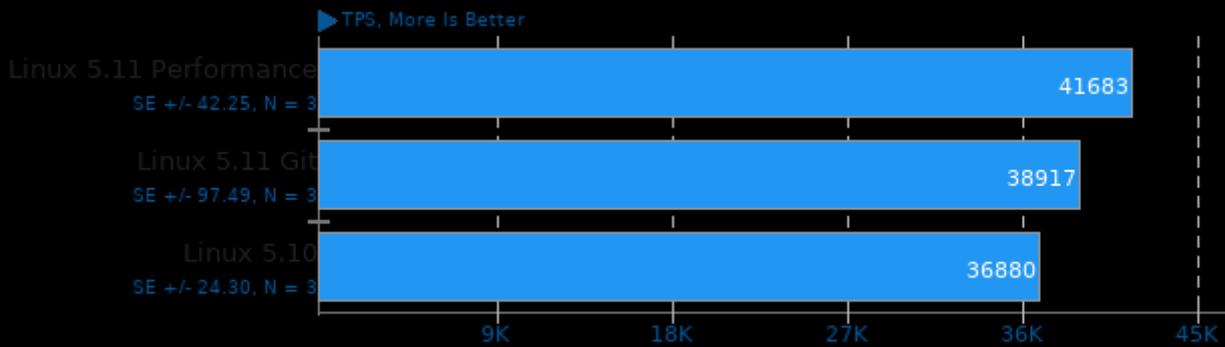
Basemark GPU 1.2

Renderer: OpenGL - Resolution: 1920 x 1080 - Graphics Preset: High



PostgreSQL pgbench 13.0

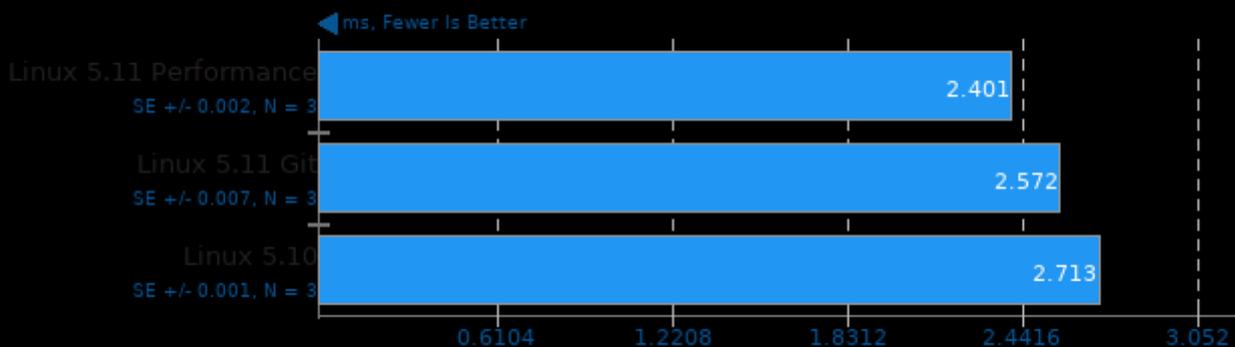
Scaling Factor: 100 - Clients: 100 - Mode: Read Write



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

PostgreSQL pgbench 13.0

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

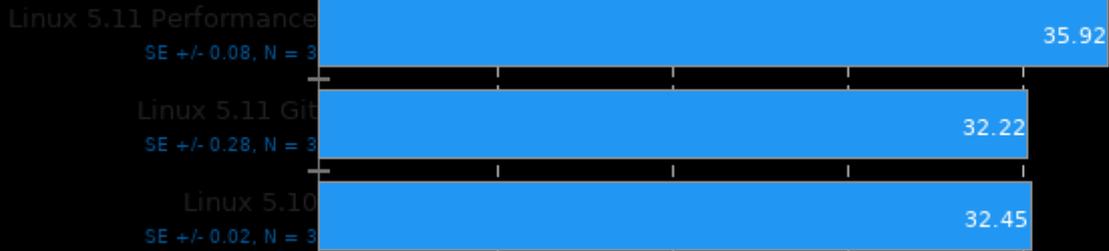


1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

VP9 libvpx Encoding 1.8.2

Speed: Speed 5

▶ Frames Per Second, More Is Better

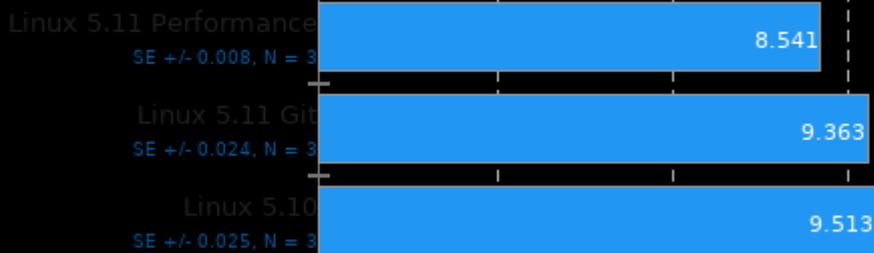


1. (CXX) g++ options: -m64 -lm -pthread -O3 -fPIC -U_FORTIFY_SOURCE -std=c++11

GIMP 2.10.18

Test: rotate

◀ Seconds, Fewer Is Better



ASKAP 2018-11-10

Test: tConvolve OpenMP - Gridding

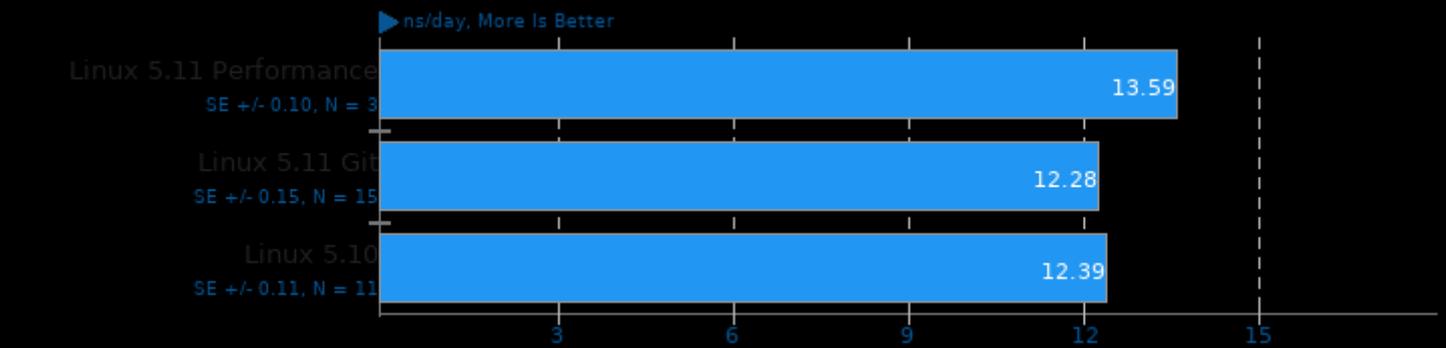
▶ Million Grid Points Per Second, More Is Better



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

LAMMPS Molecular Dynamics Simulator 29Oct2020

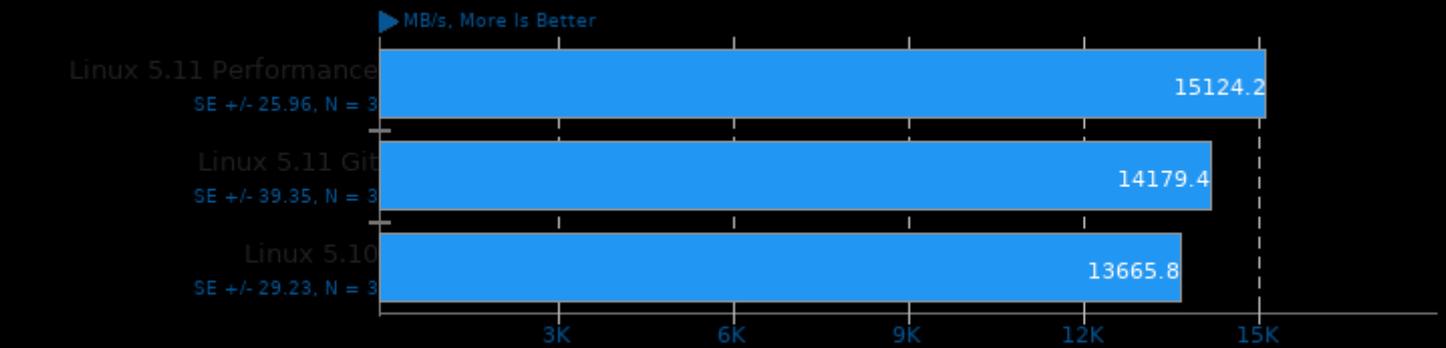
Model: Rhodopsin Protein



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

C-Blosc 2.0 Beta 5

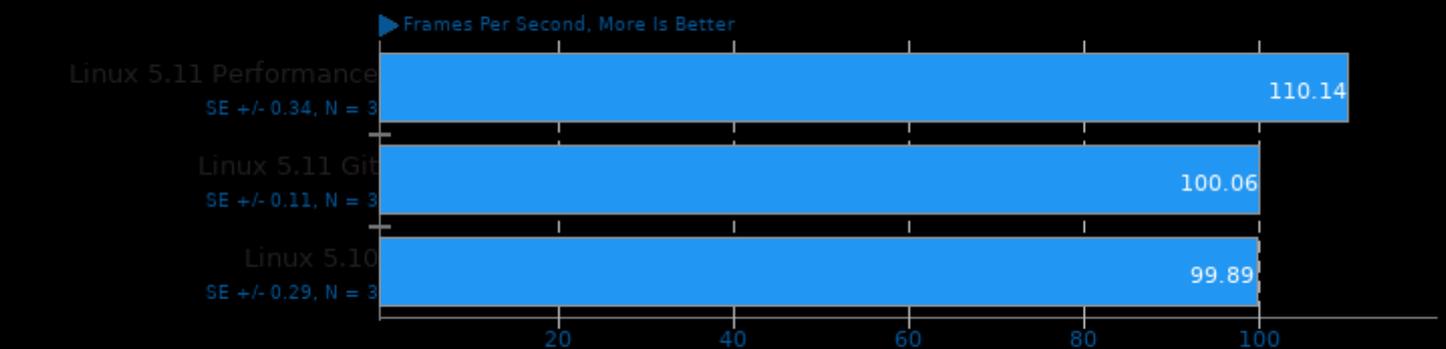
Compressor: blosclz



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

Kvazaar 2.0

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

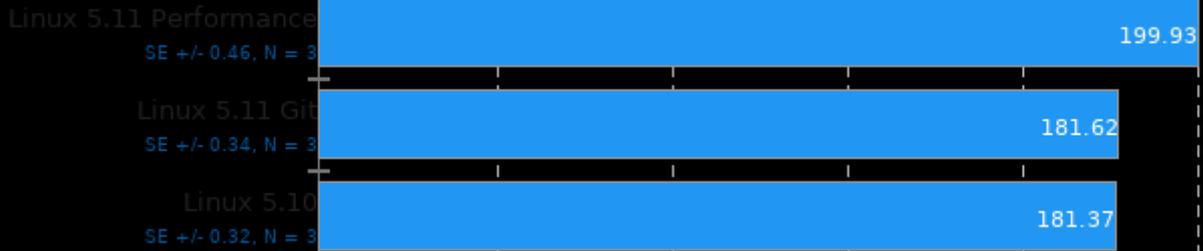


1. (C) gcc options: -pthread -fsee-vectorize -fvisibility=hidden -O2 -pthread -lm -lrt

Kvazaar 2.0

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

► Frames Per Second, More Is Better

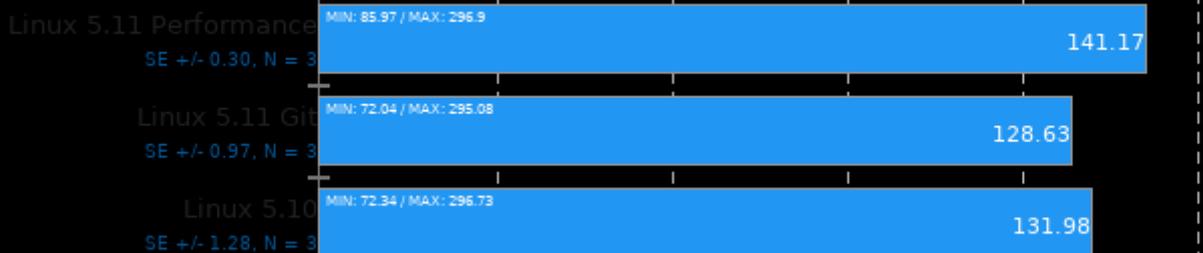


1. (C) gcc options: -pthread -free-vectorize -fvisibility=hidden -O2 -pthread -lm -lrt

Basemark GPU 1.2

Renderer: OpenGL - Resolution: 2560 x 1440 - Graphics Preset: High

► FPS, More Is Better



Incompact3D 2020-09-17

Input: Cylinder

◄ Seconds, Fewer Is Better

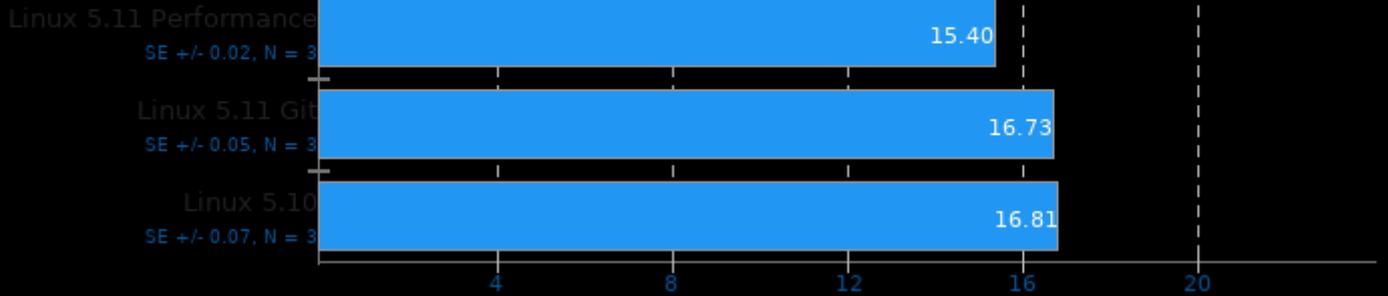


1. (F9X) gfortran options: -cpp -funroll-loops -floop-optimize -fcray-pointer -fbacktrace -pthread -mpi_usempif08 -mpi_mpi fh -mpi

Timed Apache Compilation 2.4.41

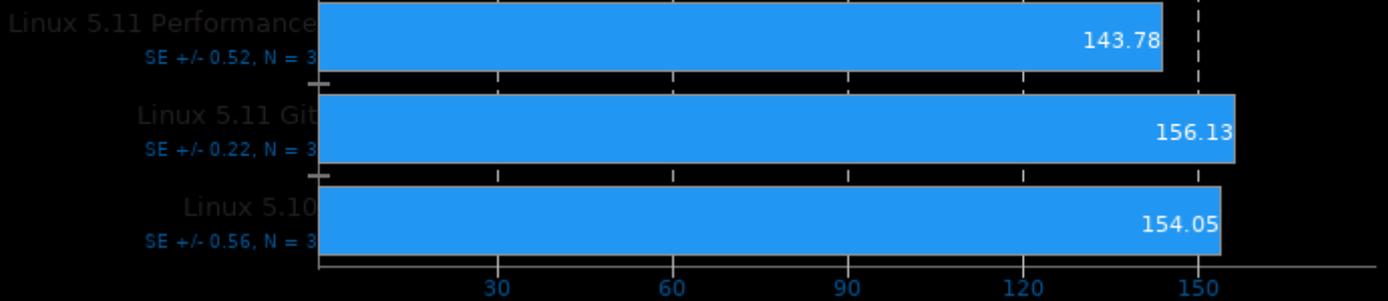
Time To Compile

← Seconds, Fewer Is Better



WireGuard + Linux Networking Stack Stress Test

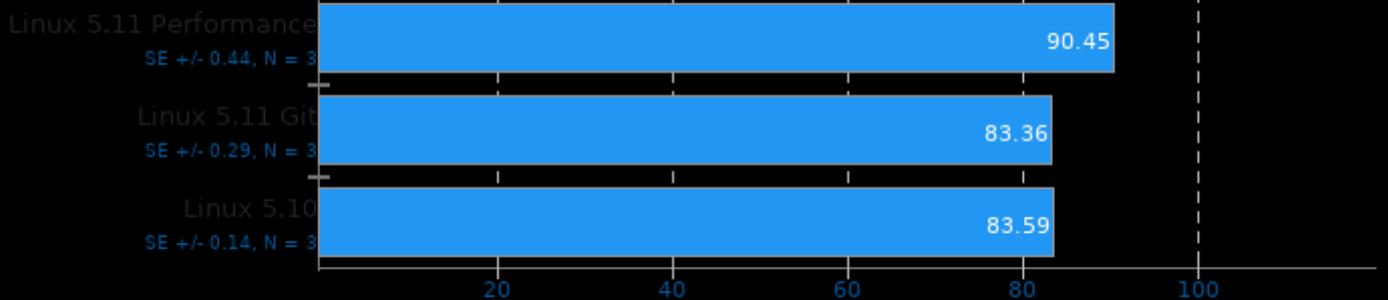
← Seconds, Fewer Is Better



x265 3.4

Video Input: Bosphorus 1080p

▶ Frames Per Second, More Is Better

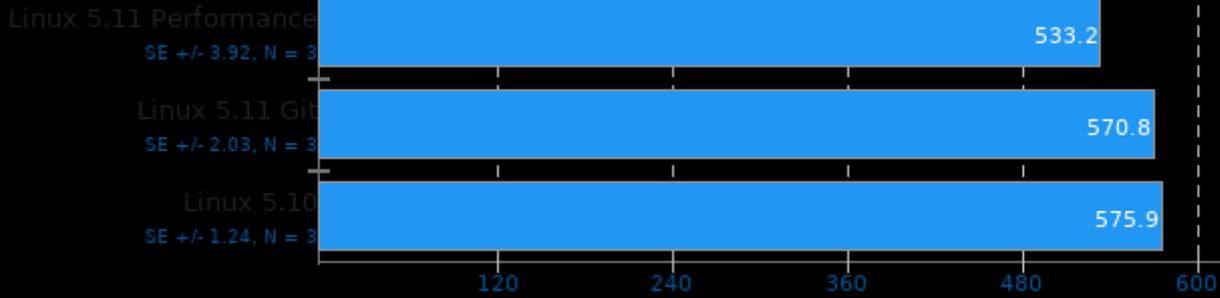


1. (CXX) g++ options: -O3 -rdynamic -lpthread -lrt -ldl -lnuma

Selenium

Benchmark: Kraken - Browser: Google Chrome

ms, Fewer Is Better

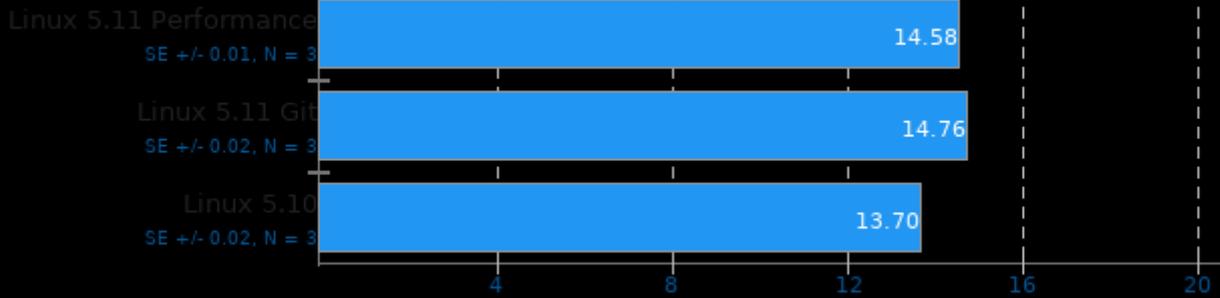


1. chrome 87.0.4280.88

Hackbench

Count: 8 - Type: Thread

Seconds, Fewer Is Better

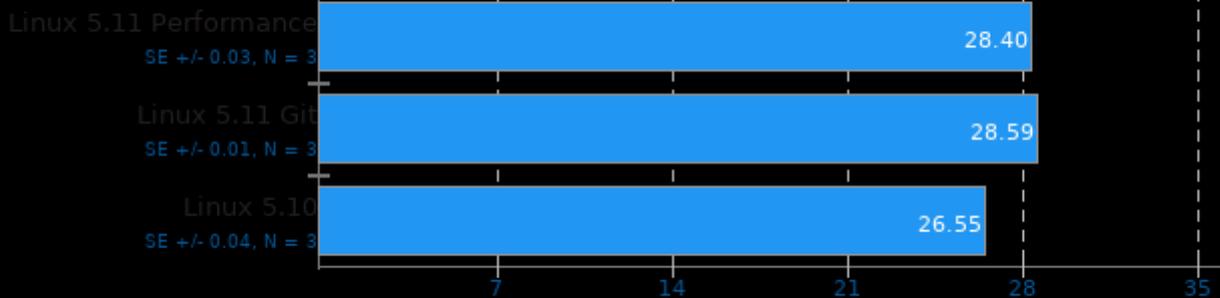


1. (CC) gcc options: -pthread

Hackbench

Count: 16 - Type: Process

Seconds, Fewer Is Better



1. (CC) gcc options: -pthread

Hackbench

Count: 8 - Type: Process

← Seconds, Fewer Is Better

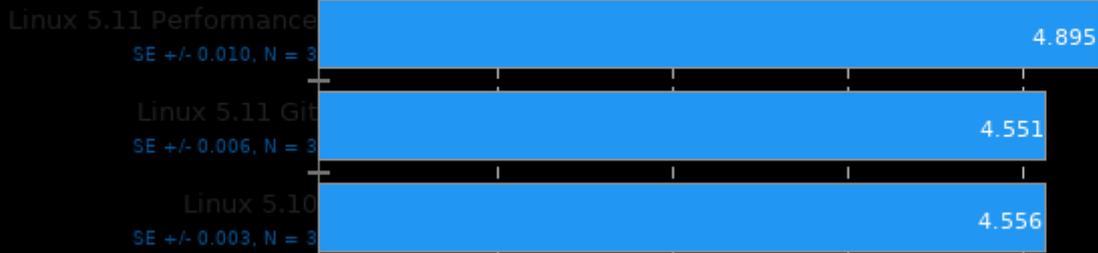


1. (CC) gcc options: -pthread

rav1e 0.4 Alpha

Speed: 10

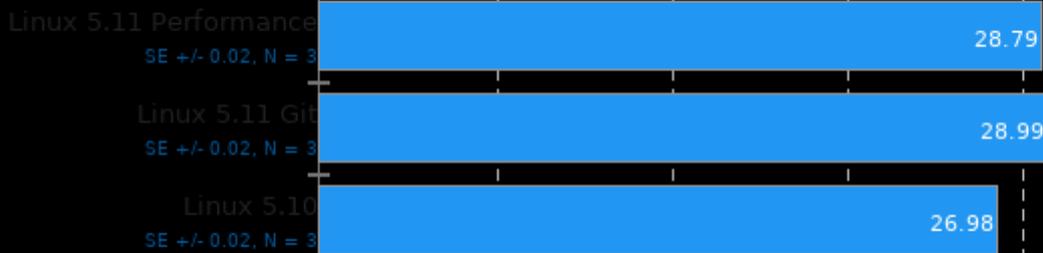
▶ Frames Per Second, More Is Better



Hackbench

Count: 16 - Type: Thread

← Seconds, Fewer Is Better

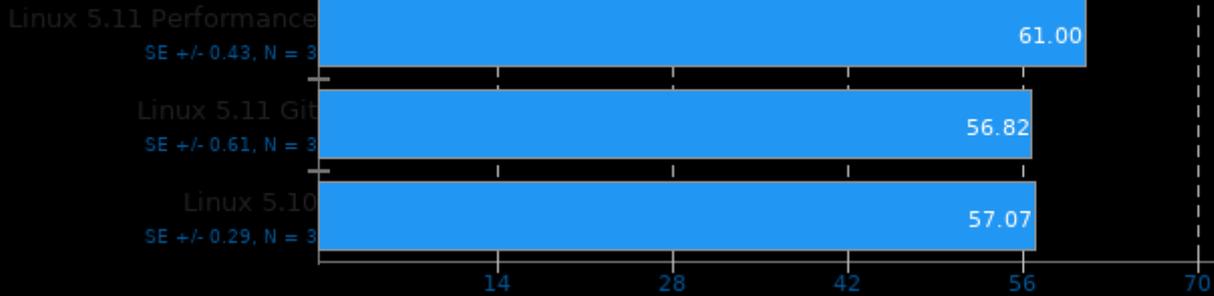


1. (CC) gcc options: -pthread

AOM AV1 2.0

Encoder Mode: Speed 8 Realtime

▶ Frames Per Second, More Is Better

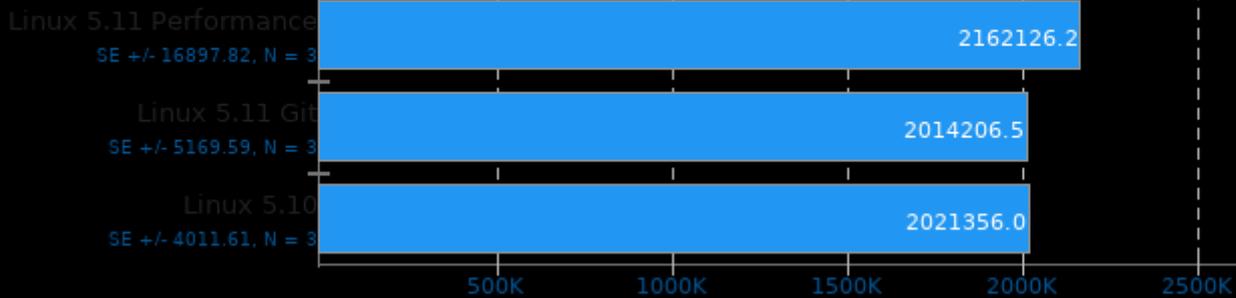


1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -pthread

InfluxDB 1.8.2

Concurrent Streams: 4 - Batch Size: 10000 - Tags: 2,5000,1 - Points Per Series: 10000

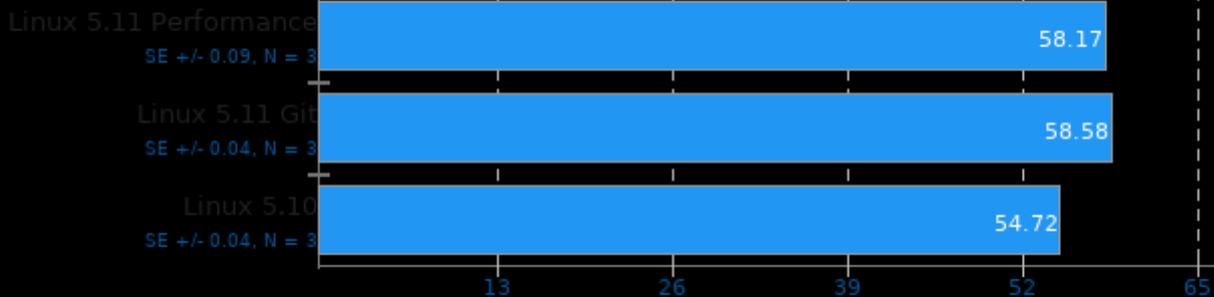
▶ val/sec, More Is Better



Hackbench

Count: 32 - Type: Process

◀ Seconds, Fewer Is Better

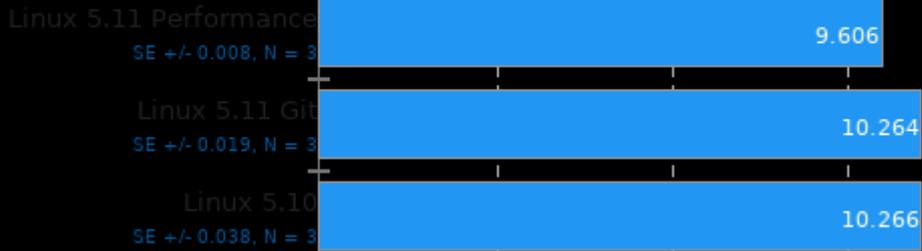


1. (C) gcc options: -pthread

GIMP 2.10.18

Test: auto-levels

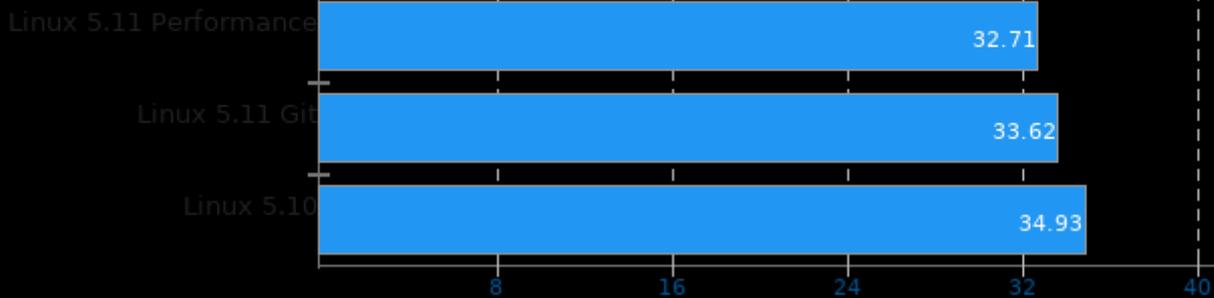
← Seconds, Fewer Is Better



ECP-CANDLE 0.3

Benchmark: P1B2

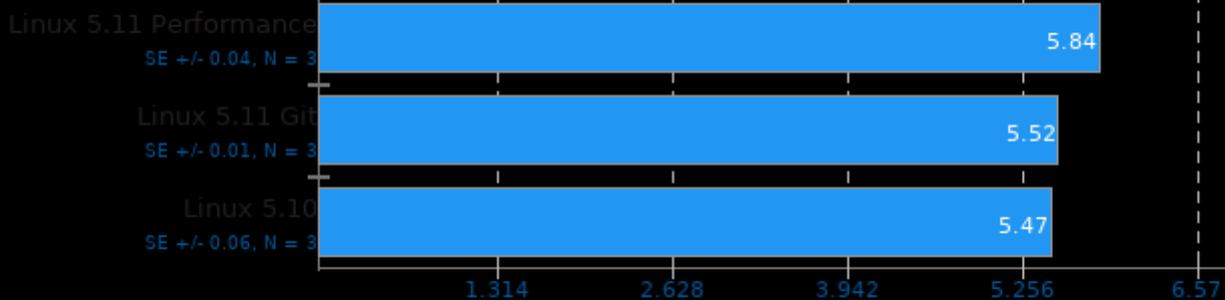
← Seconds, Fewer Is Better



AOM AV1 2.0

Encoder Mode: Speed 6 Two-Pass

▶ Frames Per Second, More Is Better

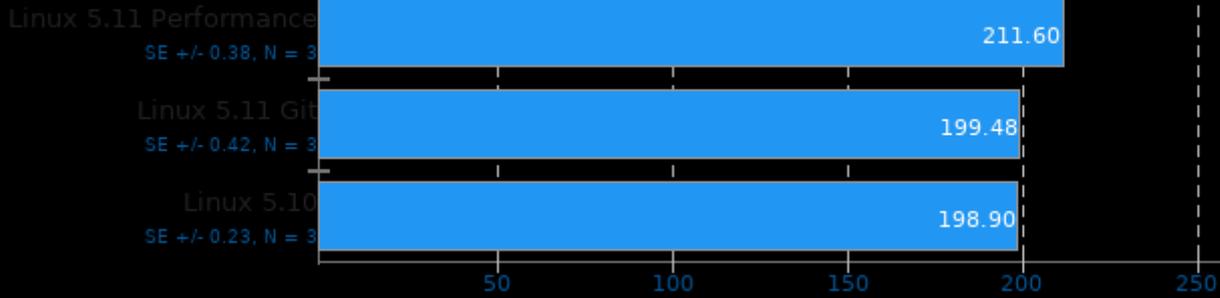


1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -pthread

Selenium

Benchmark: Jetstream 2 - Browser: Google Chrome

▶ Score, More Is Better

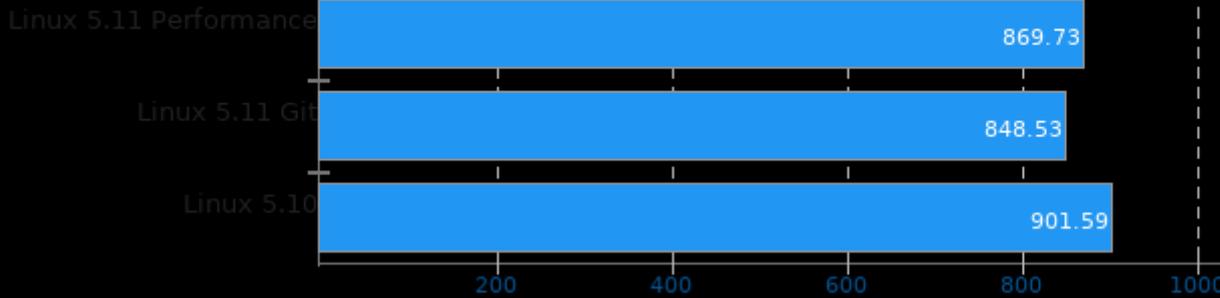


1. chrome 87.0.4280.88

CP2K Molecular Dynamics 6.1

Fayalite-FIST Data

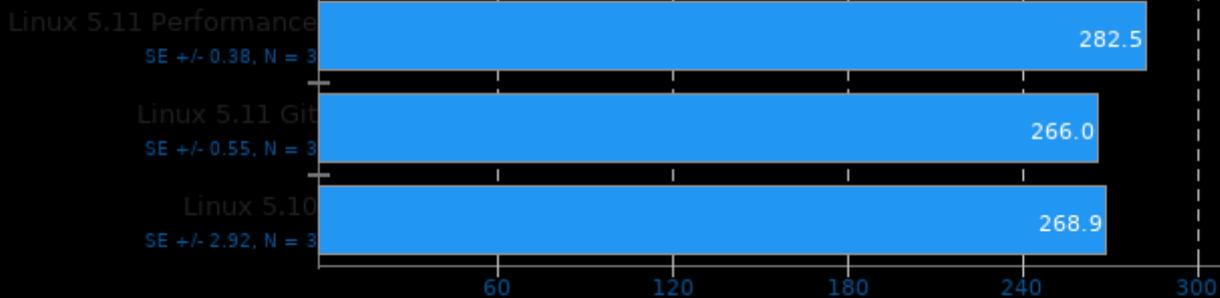
◀ Seconds, Fewer Is Better



ET: Legacy 2.75

Renderer: Renderer2 - Resolution: 3840 x 2160

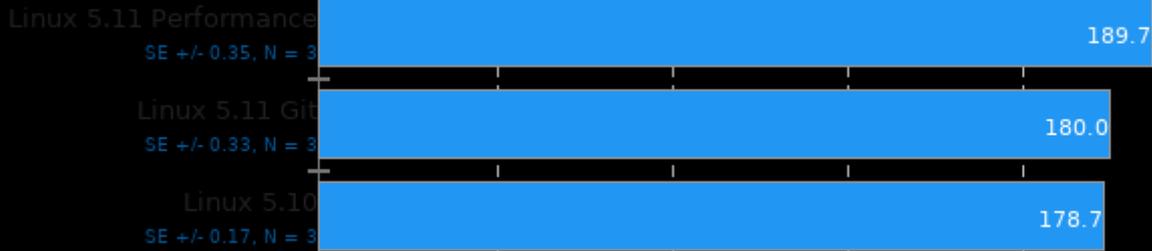
▶ Frames Per Second, More Is Better



Selenium

Benchmark: Speedometer - Browser: Google Chrome

Runs Per Minute, More Is Better

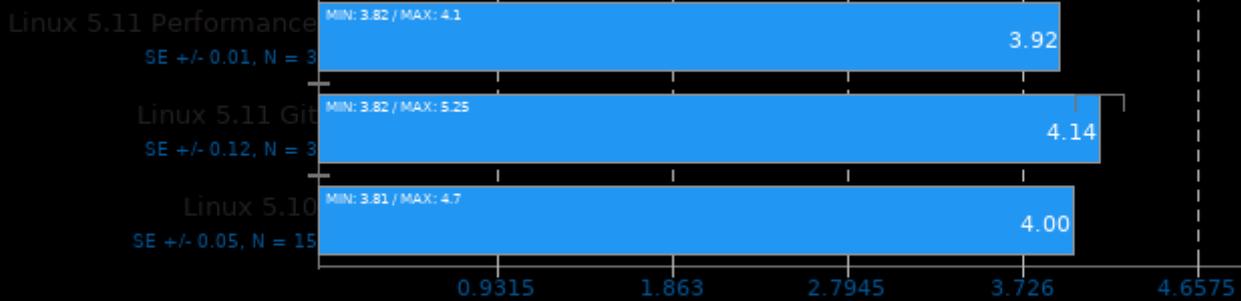


1. chrome 87.0.4280.88

NCNN 20201218

Target: CPU - Model: mnasnet

ms, Fewer Is Better

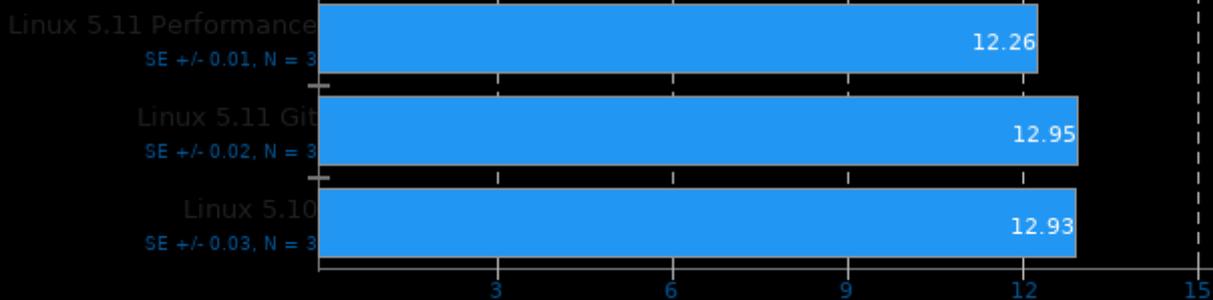


1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

GIMP 2.10.18

Test: unsharp-mask

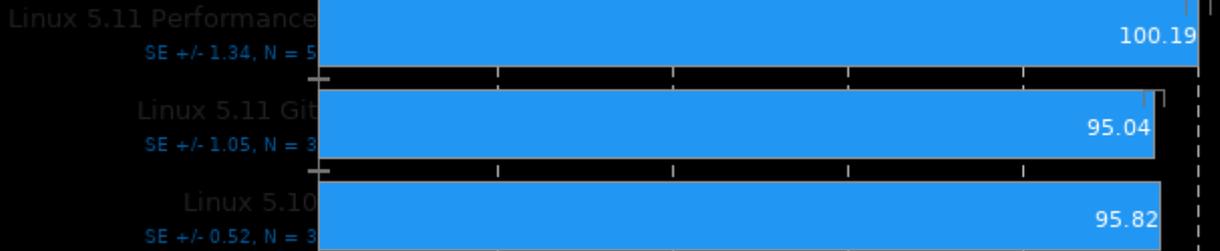
Seconds, Fewer Is Better



Selenium

Benchmark: Jetstream 2 - Browser: Firefox

▶ Score, More Is Better

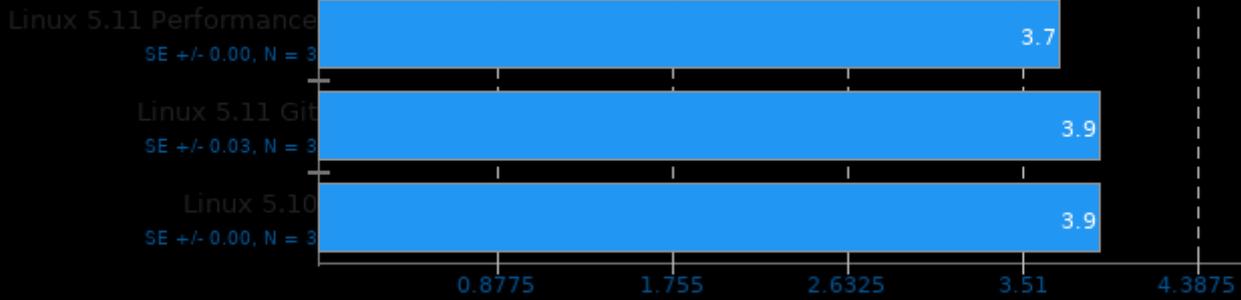


1. firefox 84.0

Selenium

Benchmark: Maze Solver - Browser: Google Chrome

◀ Seconds, Fewer Is Better

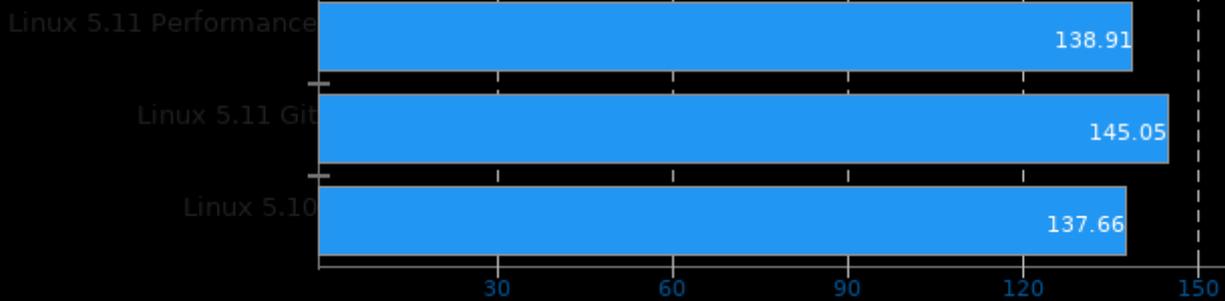


1. chrome 87.0.4280.88

Radiance Benchmark 5.0

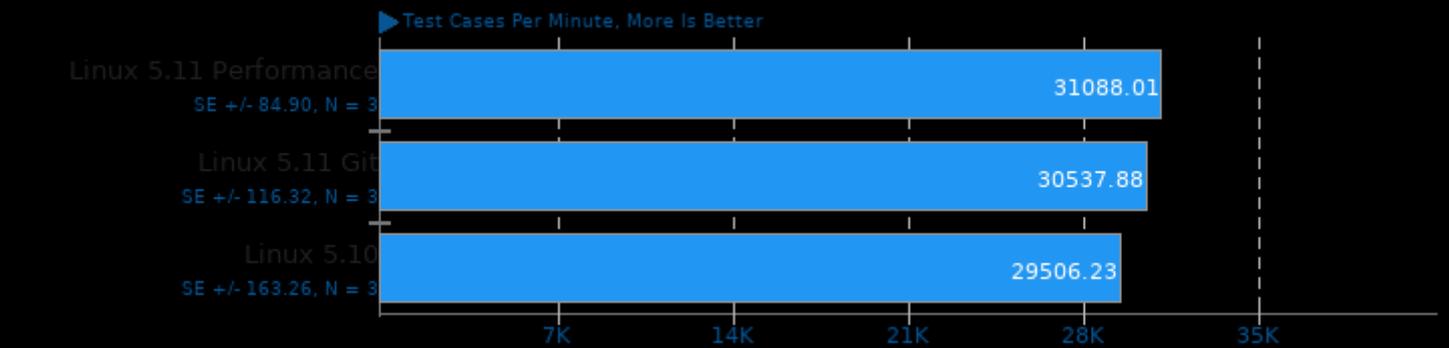
Test: SMP Parallel

◀ Seconds, Fewer Is Better



Darmstadt Automotive Parallel Heterogeneous Suite

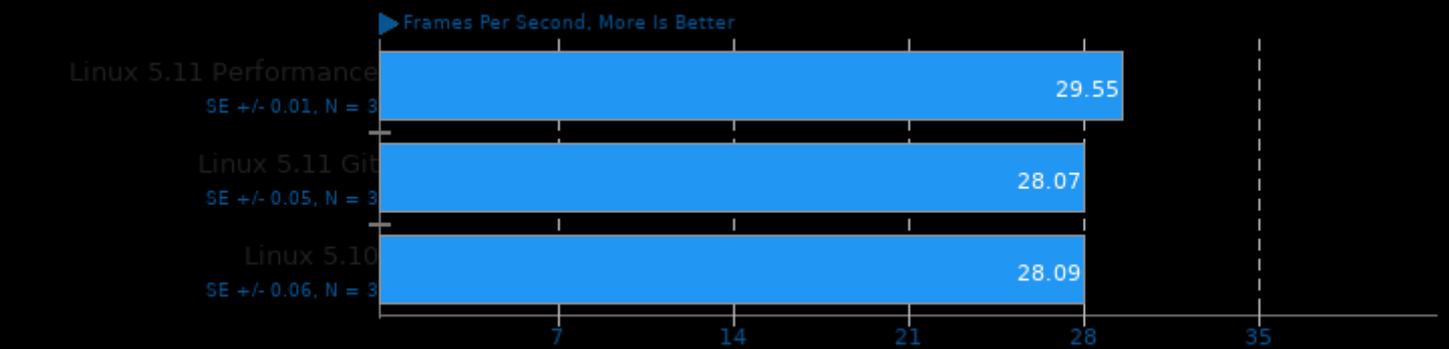
Backend: OpenMP - Kernel: Points2Image



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

Kvazaar 2.0

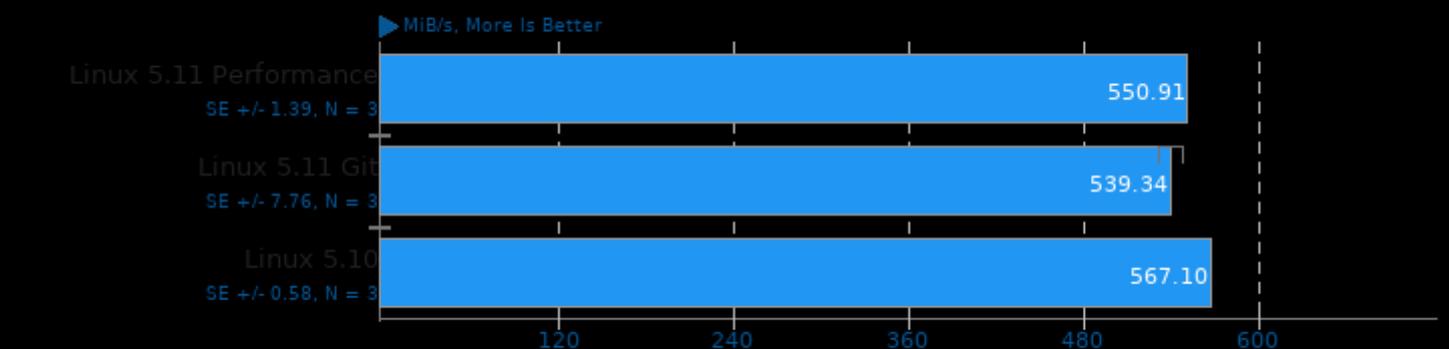
Video Input: Bosphorus 4K - Video Preset: Very Fast



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

Botan 2.13.0

Test: Blowfish

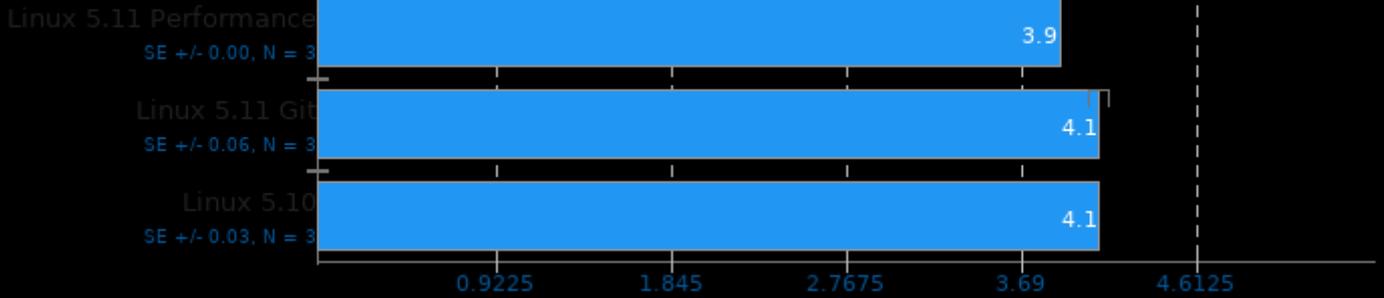


1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

Selenium

Benchmark: Maze Solver - Browser: Firefox

← Seconds, Fewer Is Better

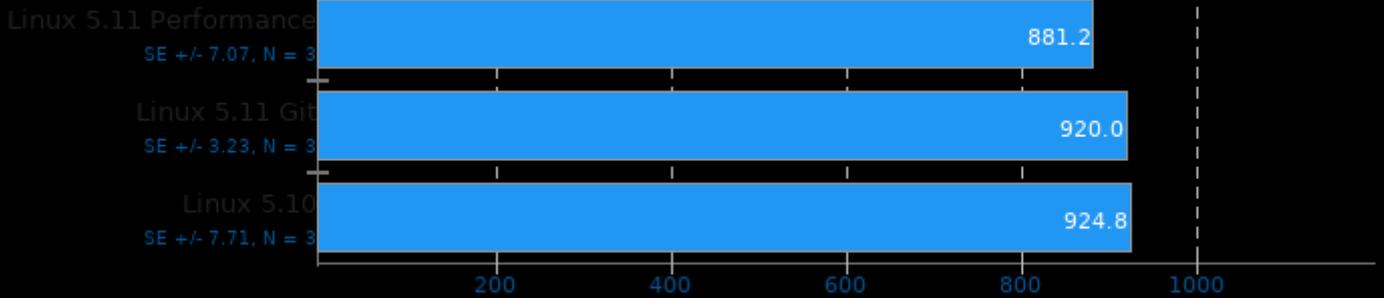


1. firefox 84.0

Selenium

Benchmark: Kraken - Browser: Firefox

← ms, Fewer Is Better

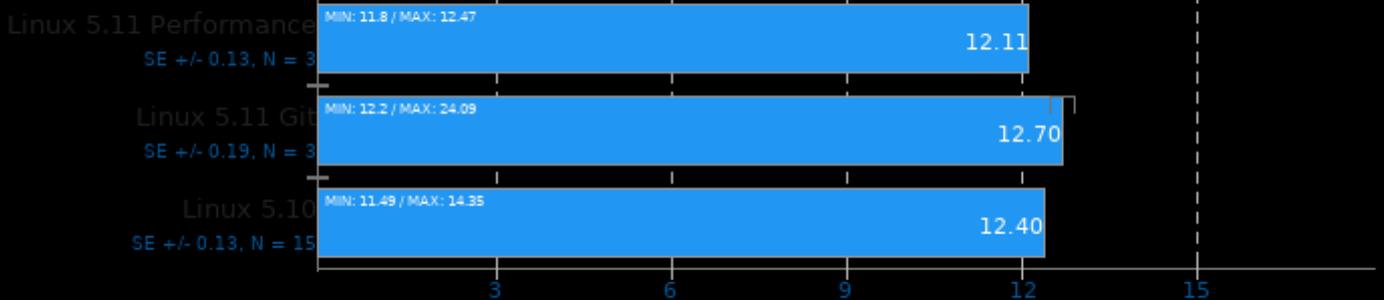


1. firefox 84.0

NCNN 20201218

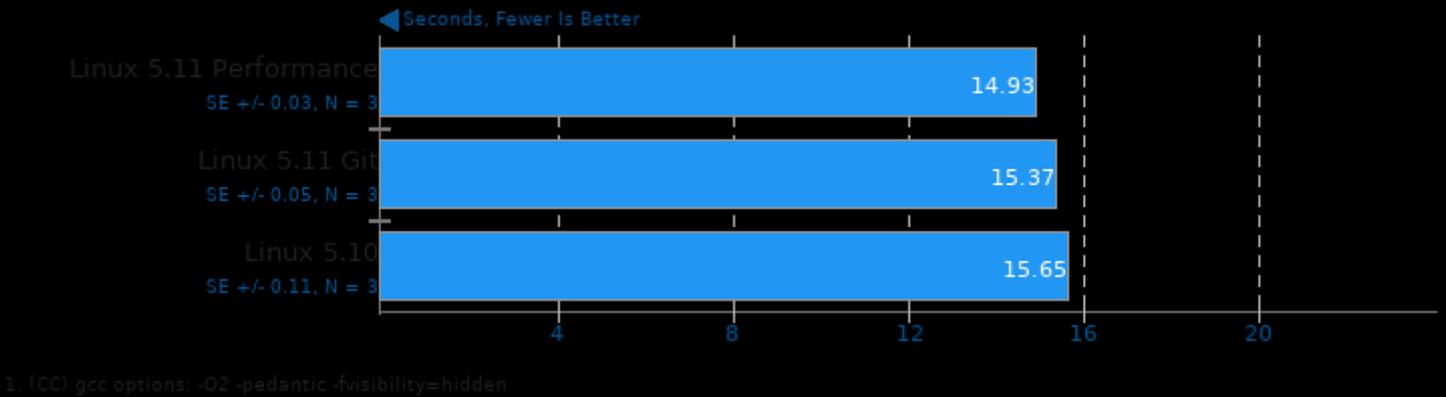
Target: CPU - Model: mobilenet

← ms, Fewer Is Better



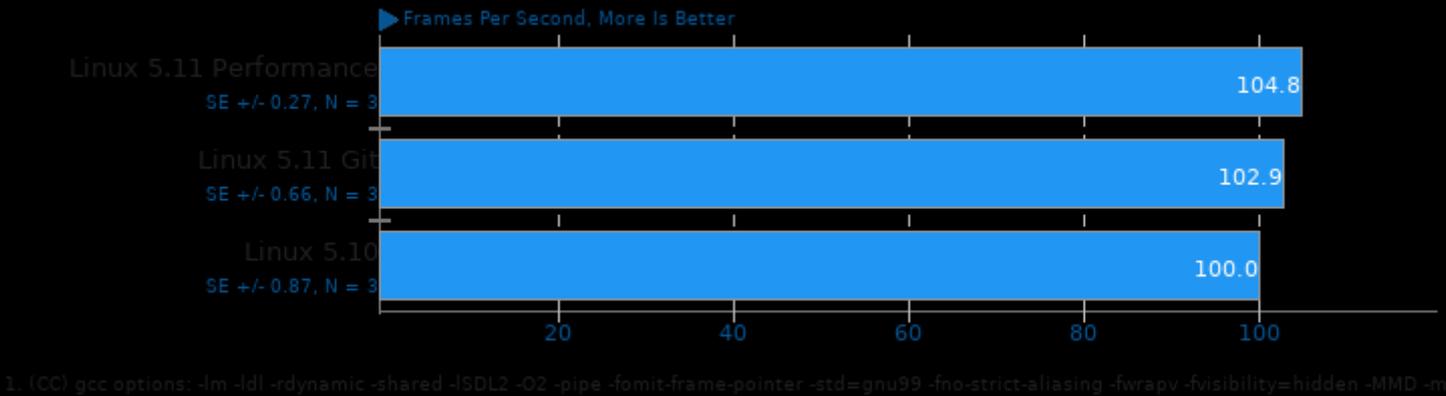
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

RNNoise 2020-06-28



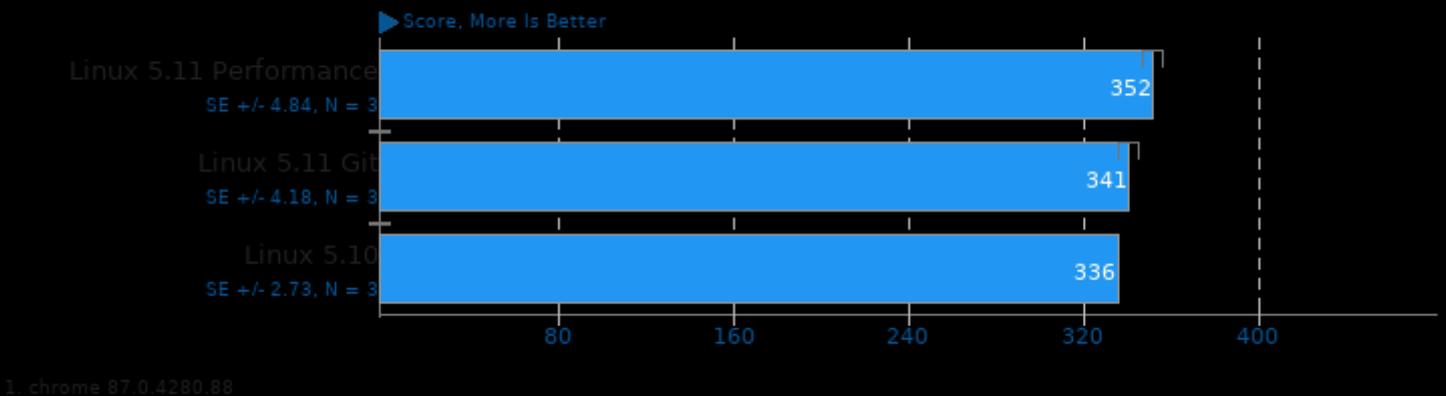
yquake2 7.45

Renderer: Software CPU - Resolution: 2560 x 1440



Selenium

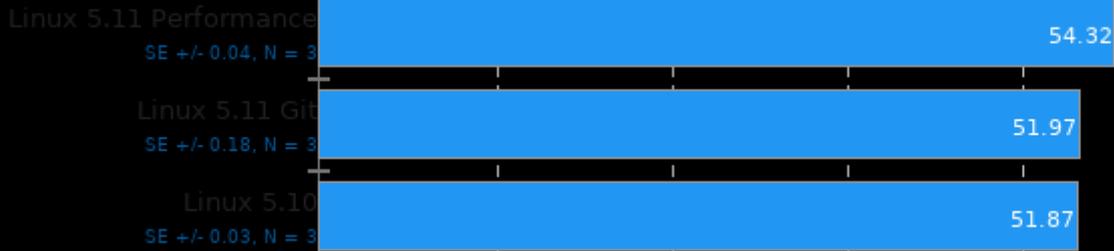
Benchmark: WebXPRT - Browser: Google Chrome



Kvazaar 2.0

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

▶ Frames Per Second, More Is Better



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

DeepSpeech 0.6

Acceleration: CPU

◀ Seconds, Fewer Is Better



Facebook RocksDB 6.3.6

Test: Sequential Fill

▶ Op/s, More Is Better

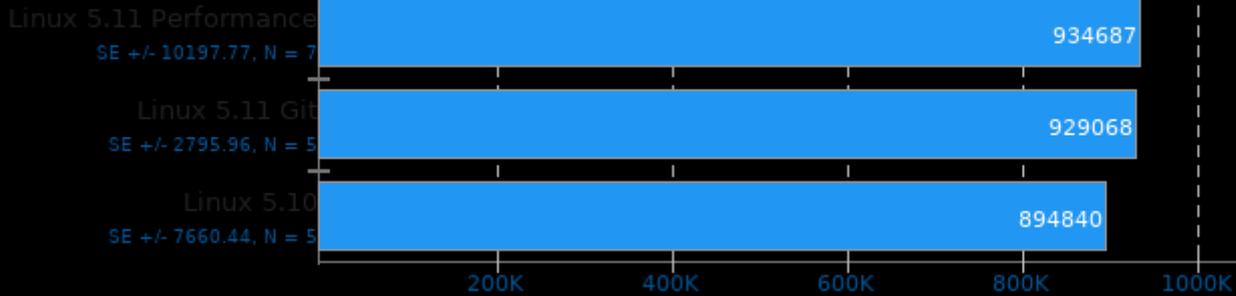


1. (CXX) g++ options: -O3 -march=native -std=c++11 -fno-builtin-memcmp -fno-rtti -rdynamic -pthread

Socketperf 3.4

Test: Throughput

Messages Per Second, More Is Better

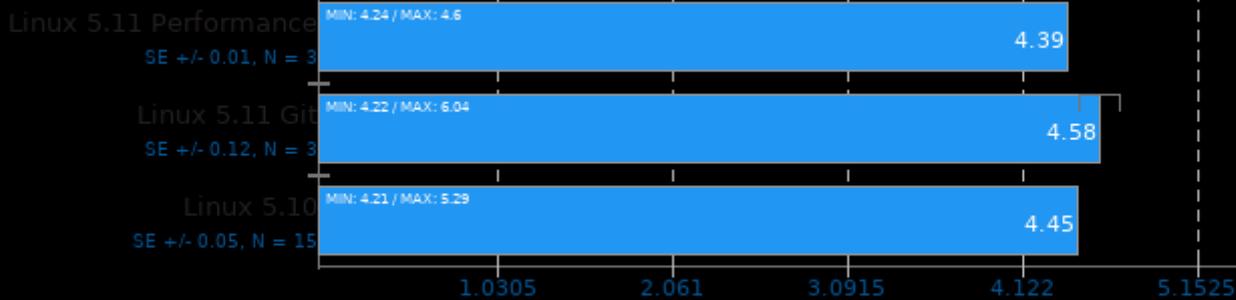


1. (CXX) g++ options: -param -O3 -rdynamic -ldl -pthread

NCNN 20201218

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

ms, Fewer Is Better

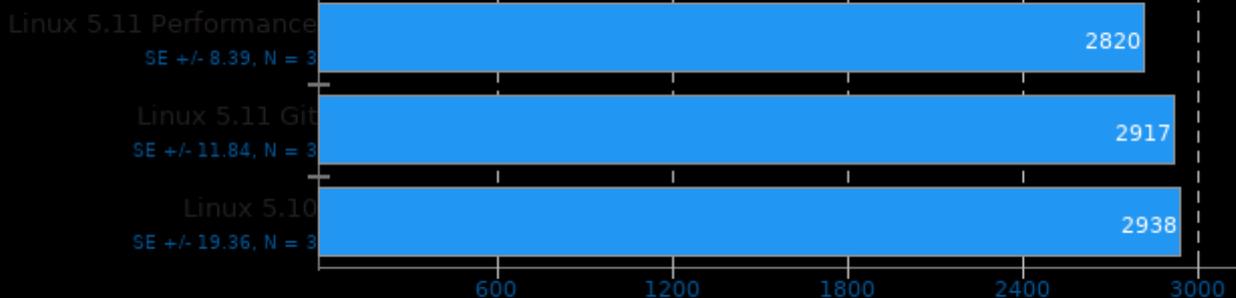


1. (CXX) g++ options: -O3 -rdynamic -lgomp -pthread

Selenium

Benchmark: PSPDFKit WASM - Browser: Google Chrome

Score, Fewer Is Better

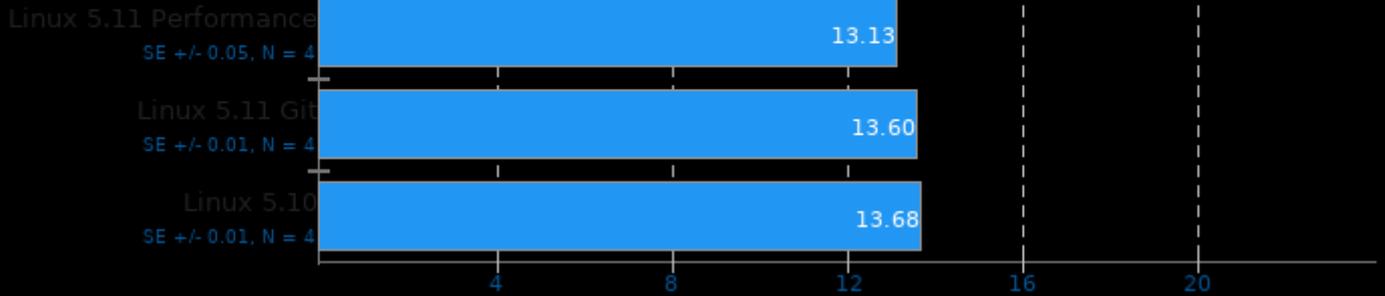


1. chrome 87.0.4280.88

Unpacking Firefox 84.0

Extracting: firefox-84.0.source.tar.xz

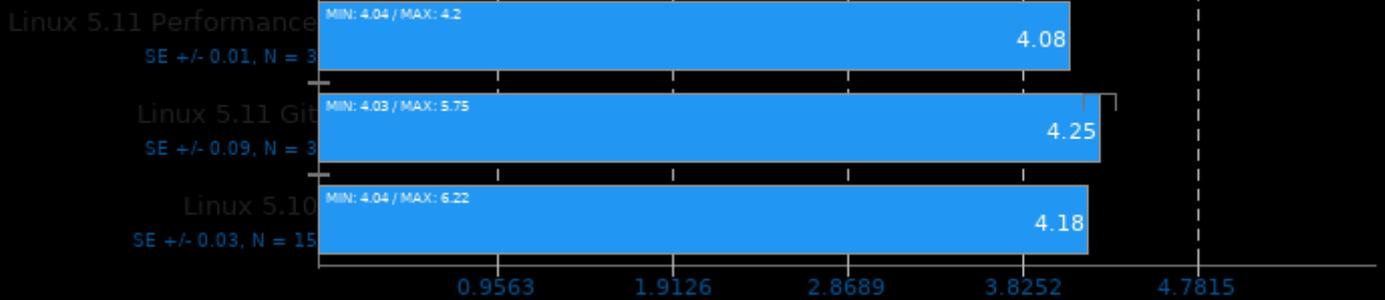
← Seconds, Fewer Is Better



NCNN 20201218

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

← ms, Fewer Is Better

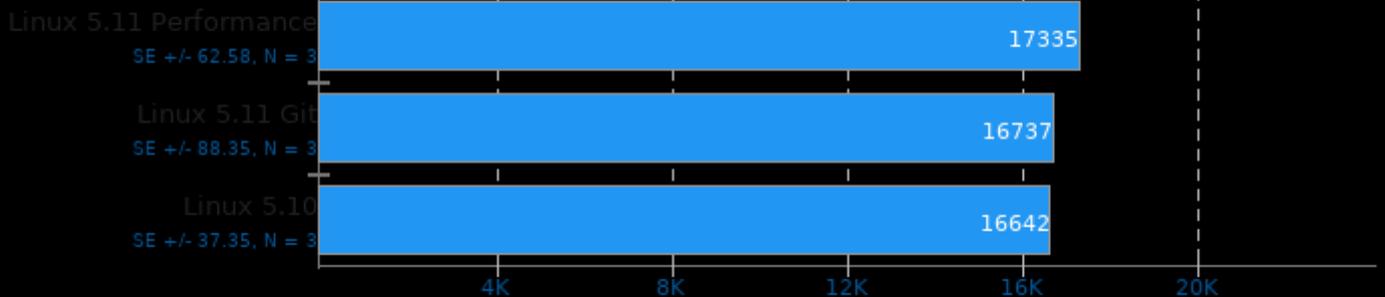


1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

Facebook RocksDB 6.3.6

Test: Random Fill Sync

► Op/s, More Is Better

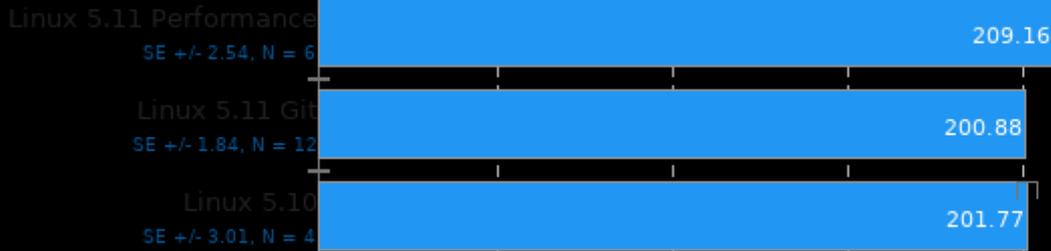


1. (CXX) g++ options: -O3 -march=native -std=c++11 -fno-builtin-memcmp -fno-rtti -rdynamic -lpthread

x264 2019-12-17

H.264 Video Encoding

► Frames Per Second, More Is Better



1. (CC) gcc options: -ldl -lavformat -lavcodec -lavutil -lswscale -m64 -lm -lthread -O3 -ffast-math -std=gnu99 -fPIC -fomit-frame-pointer -fno-tree-vectorize

BLAKE2 20170307

◀ Cycles Per Byte, Fewer Is Better

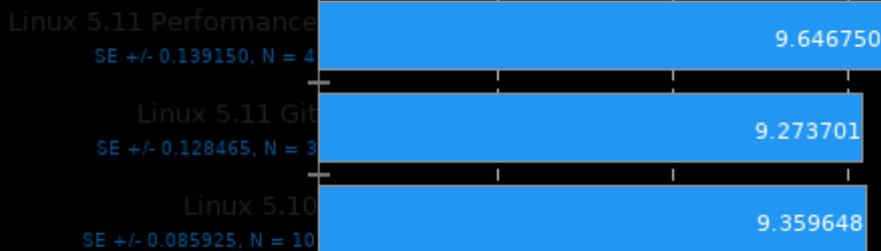


1. (CC) gcc options: -O3 -march=native -lcrypto -lz

ACES DGEMM 1.0

Sustained Floating-Point Rate

► GFLOP/s, More Is Better



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

Java SciMark 2.0

Computational Test: Composite

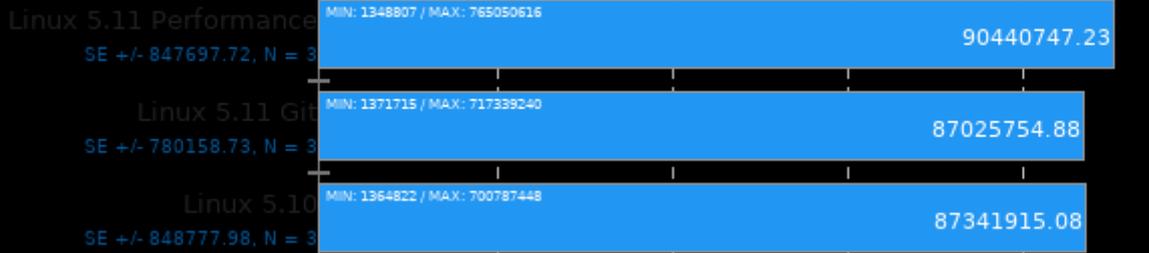
Mflops, More Is Better



OpenVKL 0.9

Benchmark: vkIBenchmarkStructuredVolume

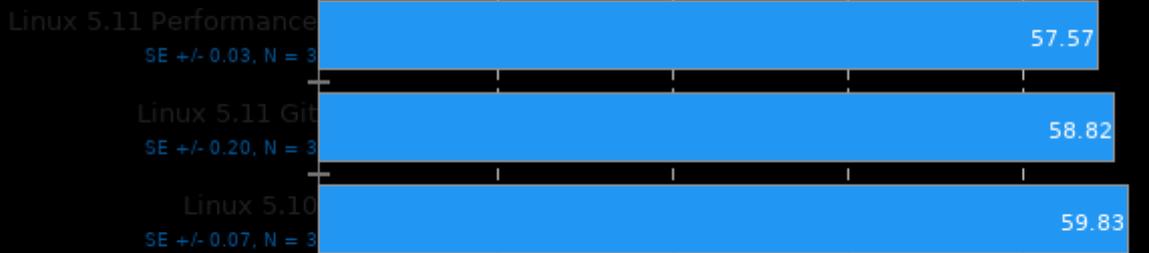
Items / Sec, More Is Better



Timed Eigen Compilation 3.3.9

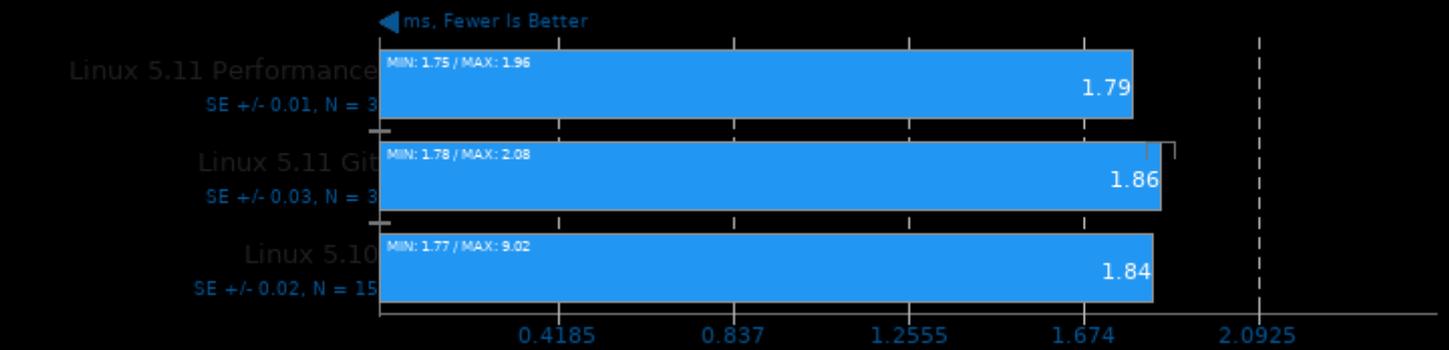
Time To Compile

Seconds, Fewer Is Better



NCNN 20201218

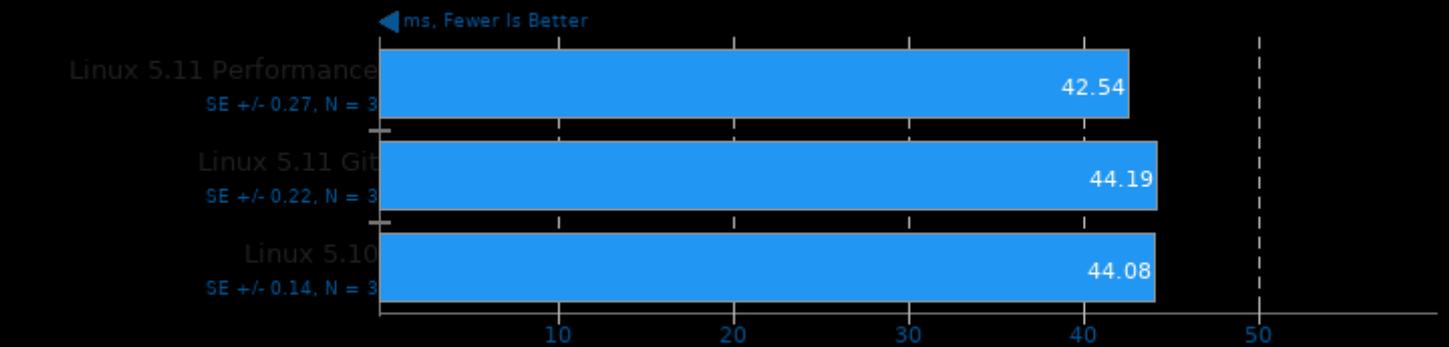
Target: CPU - Model: blazeface



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

Selenium

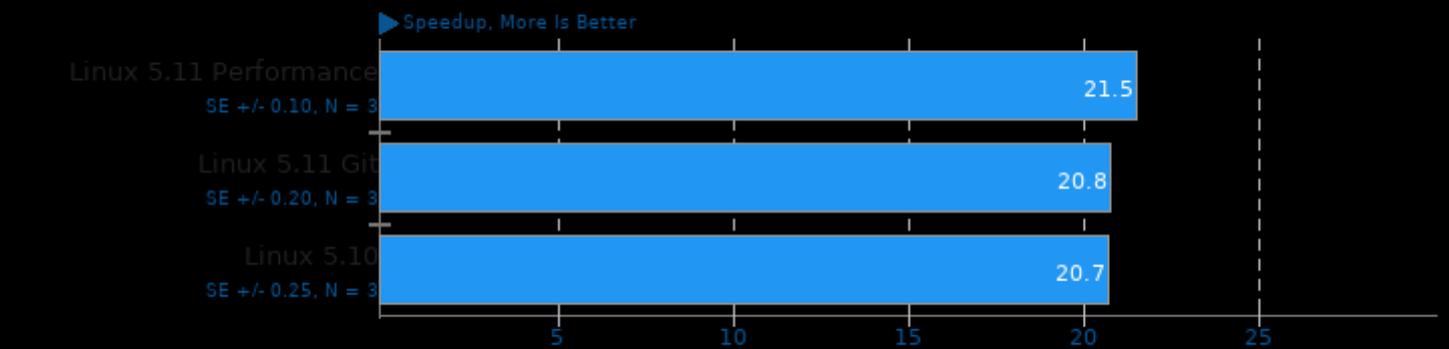
Benchmark: ARES-6 - Browser: Firefox



1. firefox 84.0

CLOMP 1.2

Static OMP Speedup

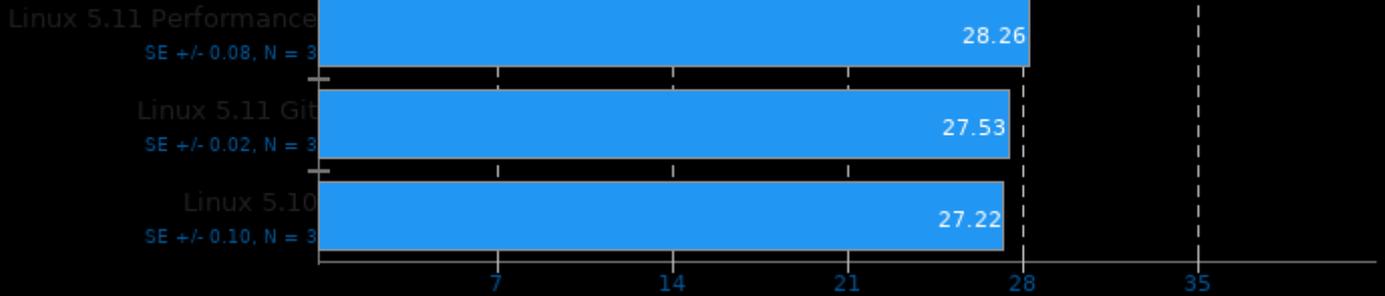


1. (CC) gcc options: -fopenmp -O3 -lm

x265 3.4

Video Input: Bosphorus 4K

► Frames Per Second, More Is Better

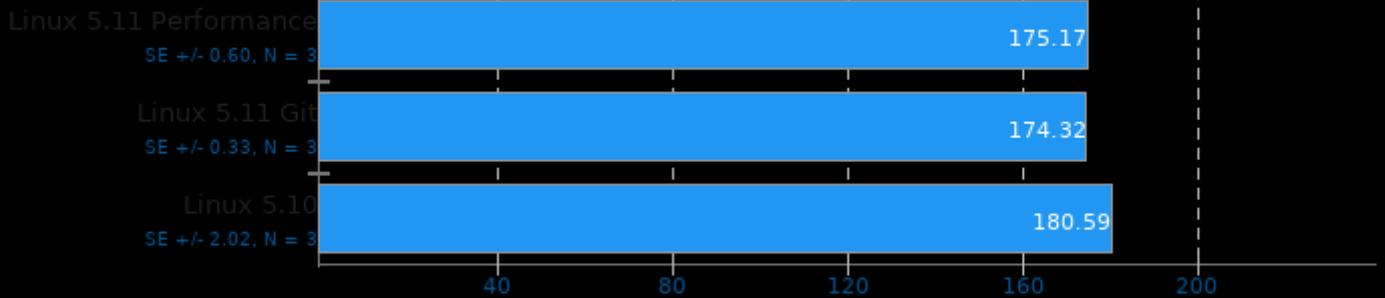


1. (CXX) g++ options: -O3 -rdynamic -lpthread -lrt -ldl -lnuma

Botan 2.13.0

Test: CAST-256

► MiB/s, More Is Better

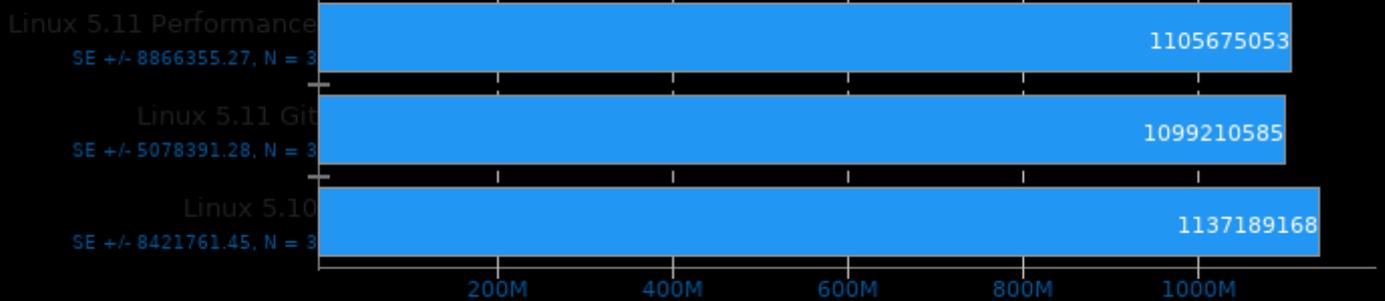


1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

Swet 1.5.16

Average

► Operations Per Second, More Is Better

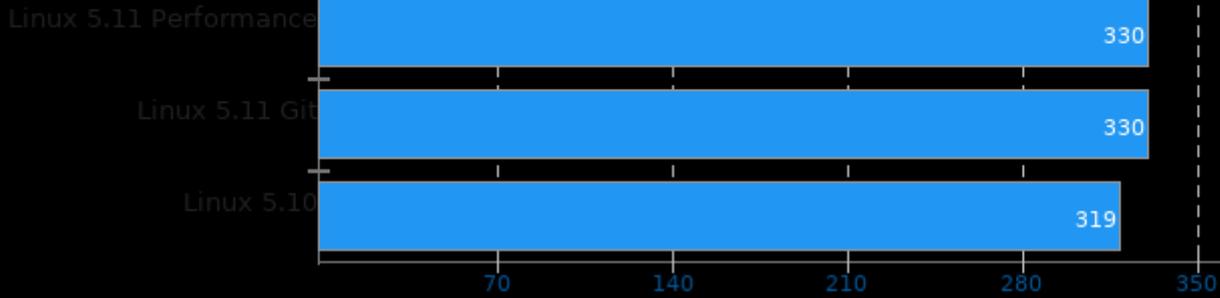


1. (C) gcc options: -lm -lpthread -lcurses -lrt

PyPerformance 1.0.0

Benchmark: pickle_pure_python

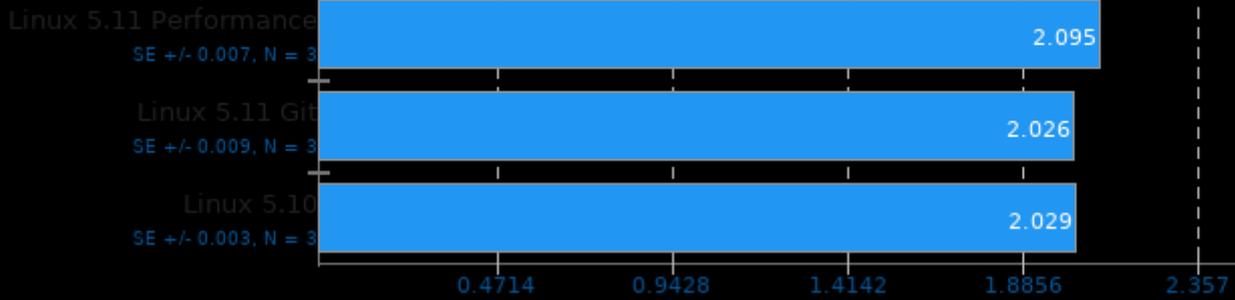
◀ Milliseconds, Fewer Is Better



rav1e 0.4 Alpha

Speed: 6

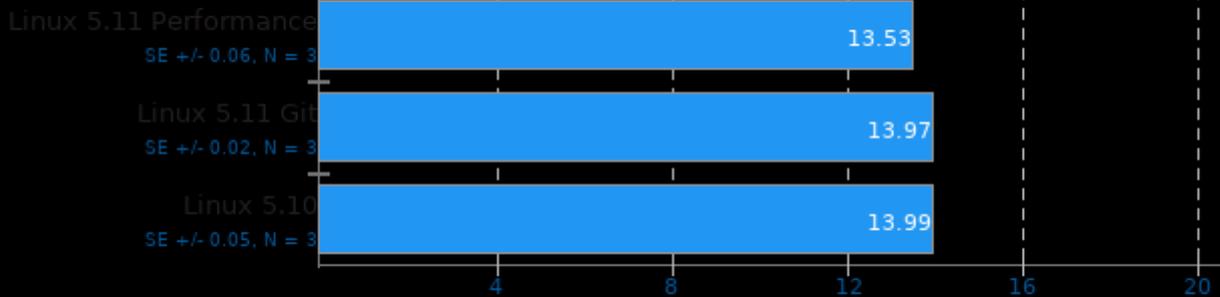
▶ Frames Per Second, More Is Better



Selenium

Benchmark: ARES-6 - Browser: Google Chrome

◀ ms, Fewer Is Better

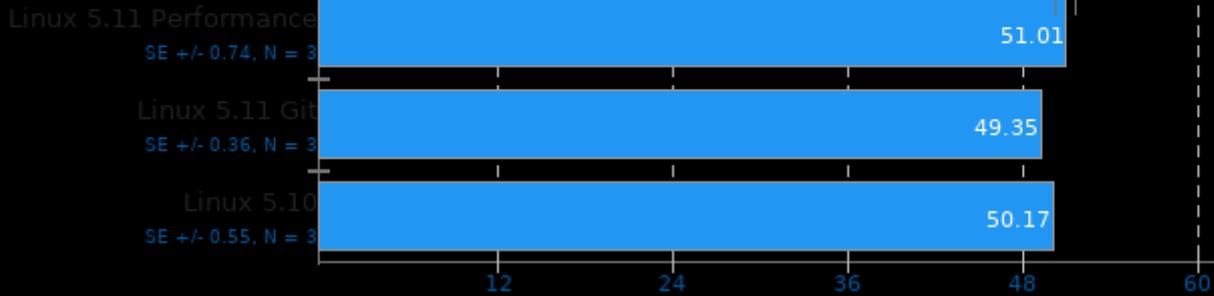


1. chrome 87.0.4280.88

Mlpack Benchmark

Benchmark: scikit_ica

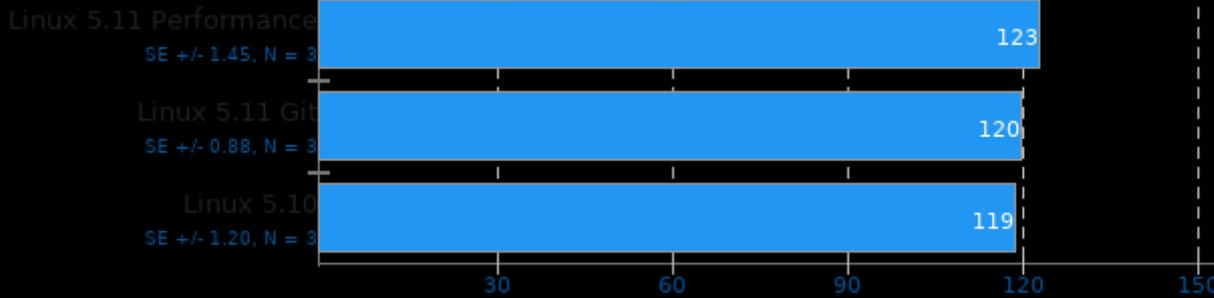
← Seconds, Fewer Is Better



Selenium

Benchmark: Speedometer - Browser: Firefox

▶ Runs Per Minute, More Is Better

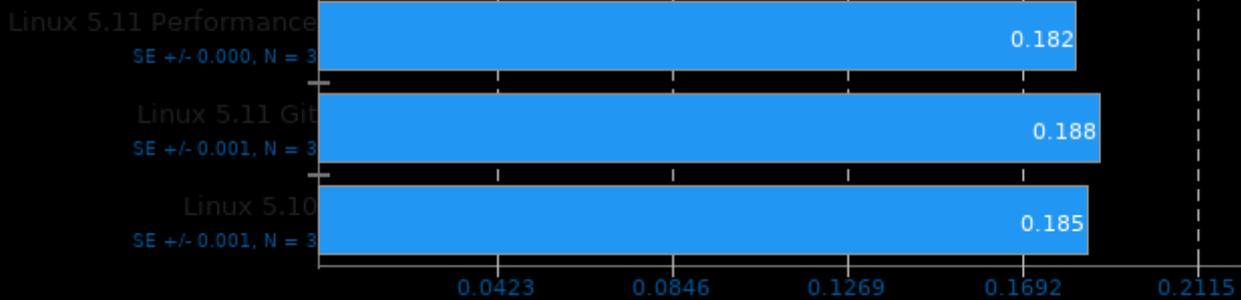


1. firefox 84.0

Darktable 3.0.1

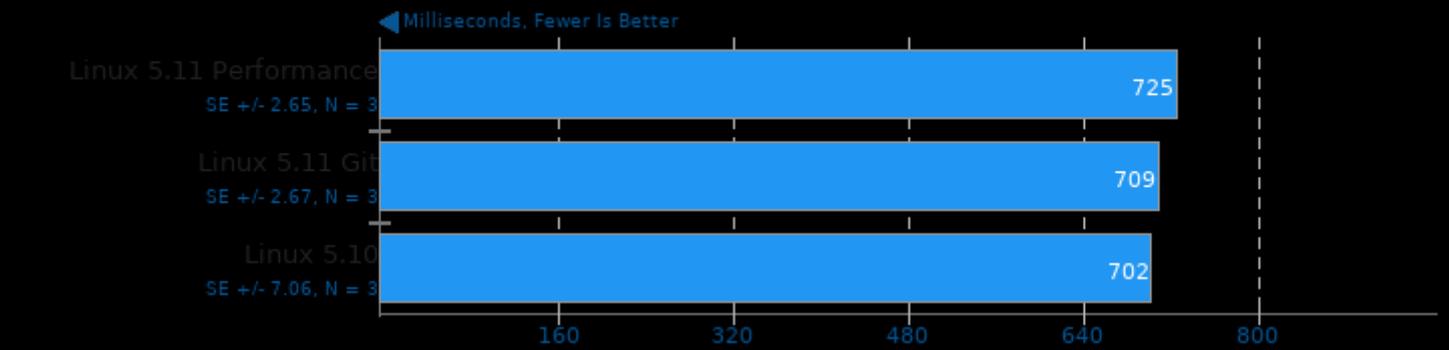
Test: Server Rack - Acceleration: CPU-only

← Seconds, Fewer Is Better



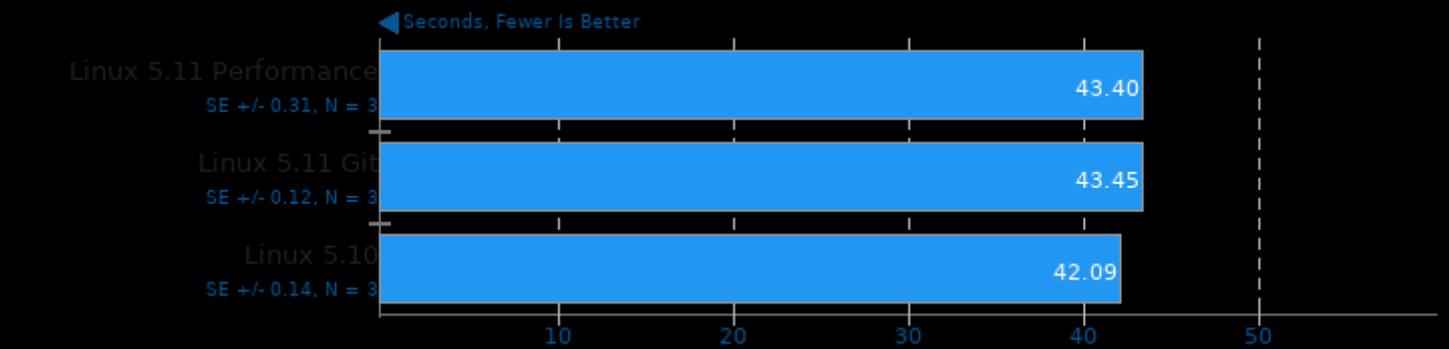
PyBench 2018-02-16

Total For Average Test Times



SQLite Speedtest 3.30

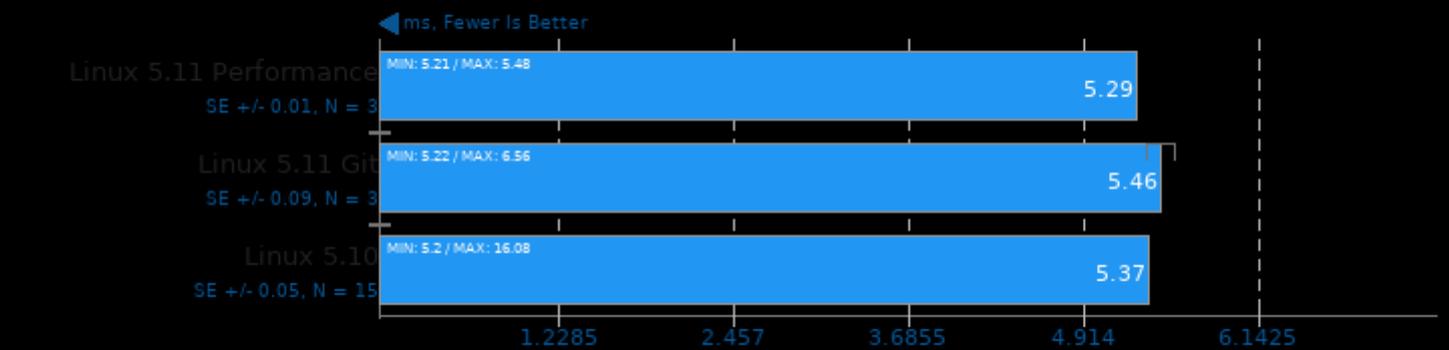
Timed Time - Size 1,000



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

NCNN 20201218

Target: CPU - Model: efficientnet-b0

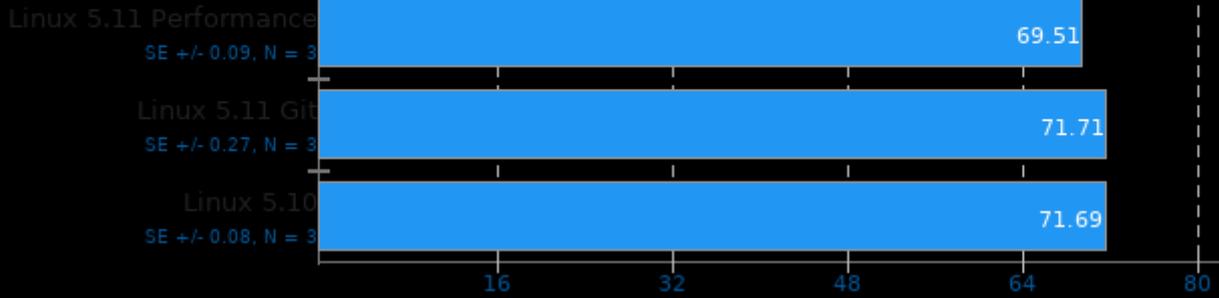


1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

Build2 0.13

Time To Compile

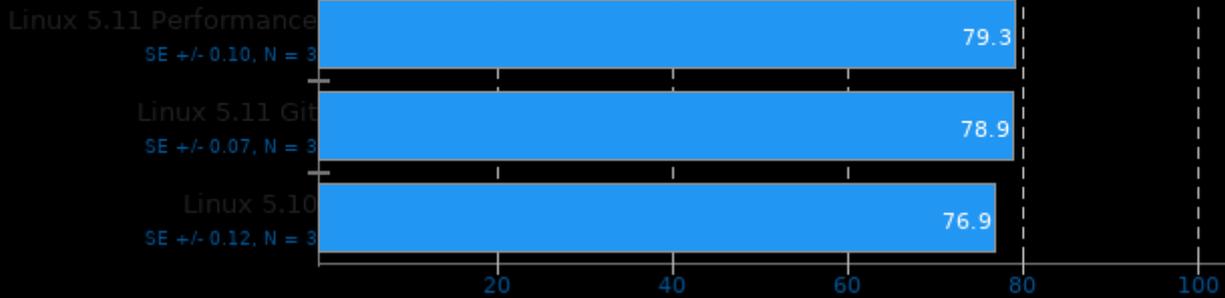
← Seconds, Fewer Is Better



PyPerformance 1.0.0

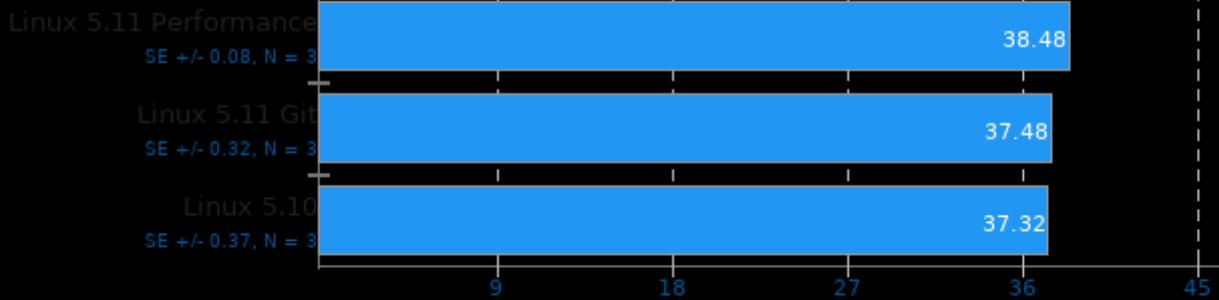
Benchmark: crypto_pyaes

← Milliseconds, Fewer Is Better



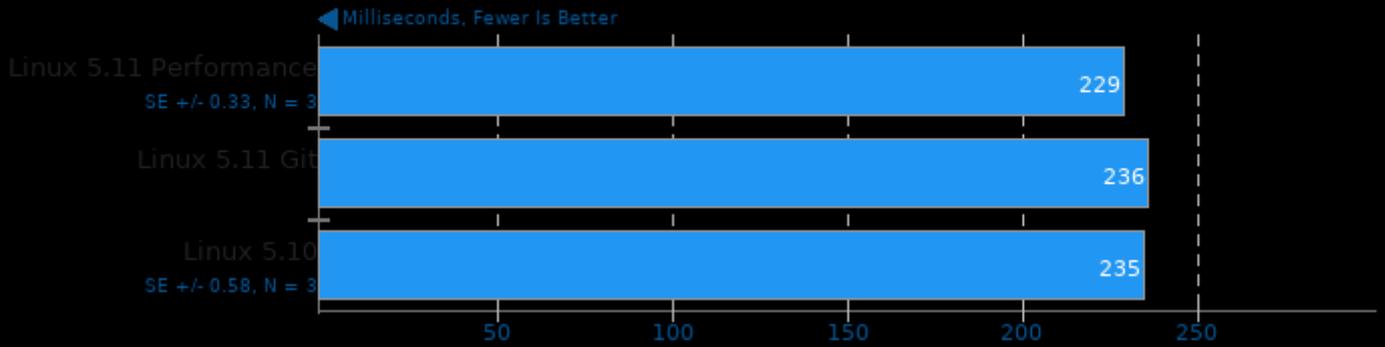
Cython benchmark 0.27

← Seconds, Fewer Is Better



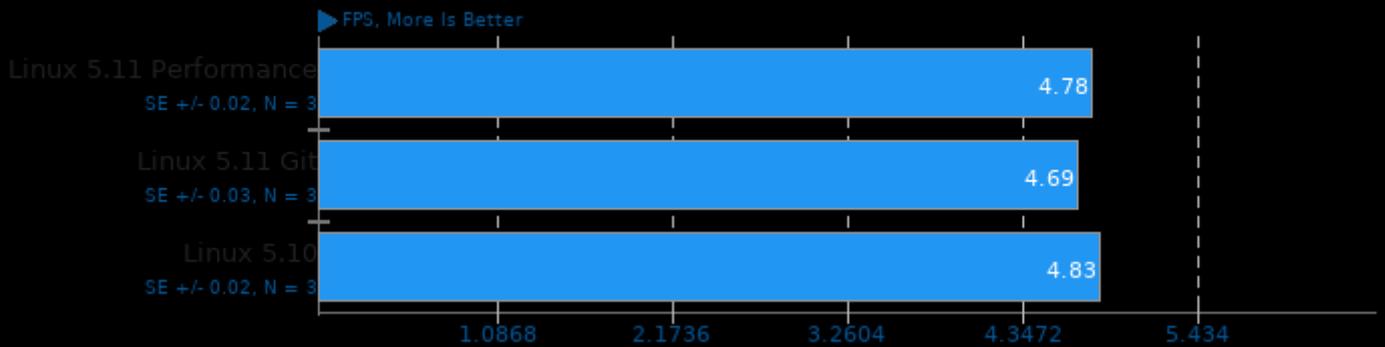
PyPerformance 1.0.0

Benchmark: 2to3



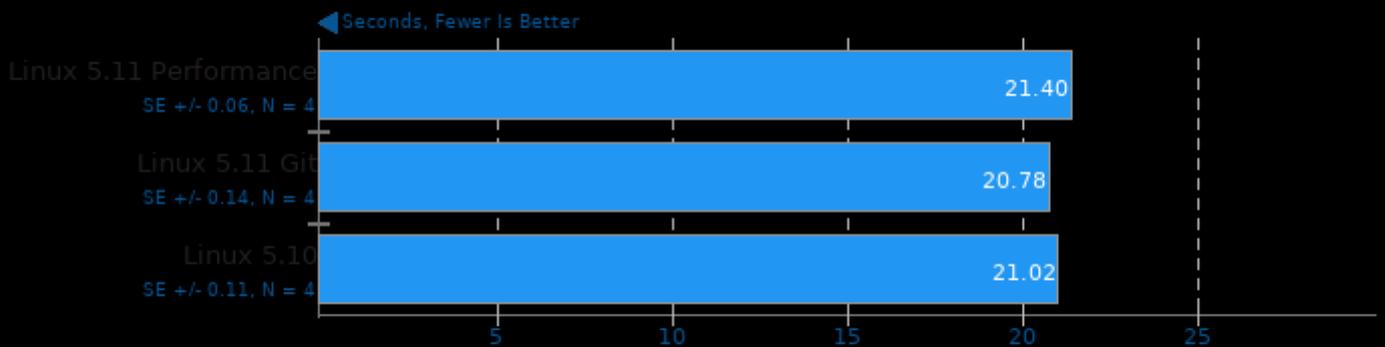
PlaidML

FP16: No - Mode: Inference - Network: DenseNet 201 - Device: CPU



eSpeak-NG Speech Engine 20200907

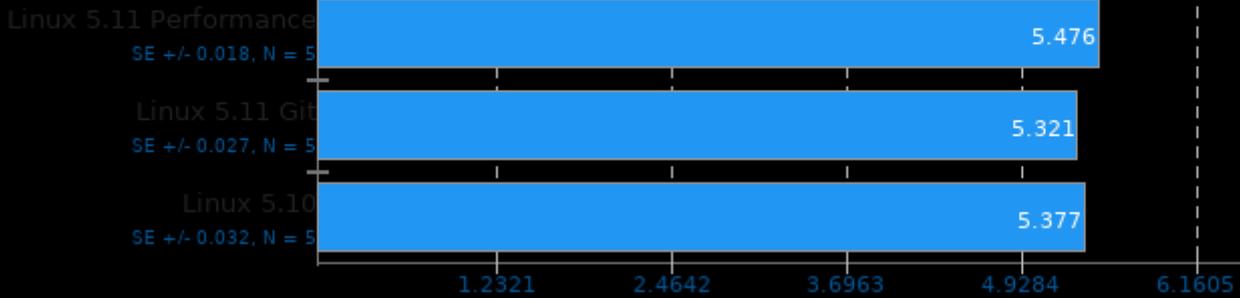
Text-To-Speech Synthesis



1. (CC) gcc options: -O2 -std=c99

GNU Octave Benchmark 5.2.0

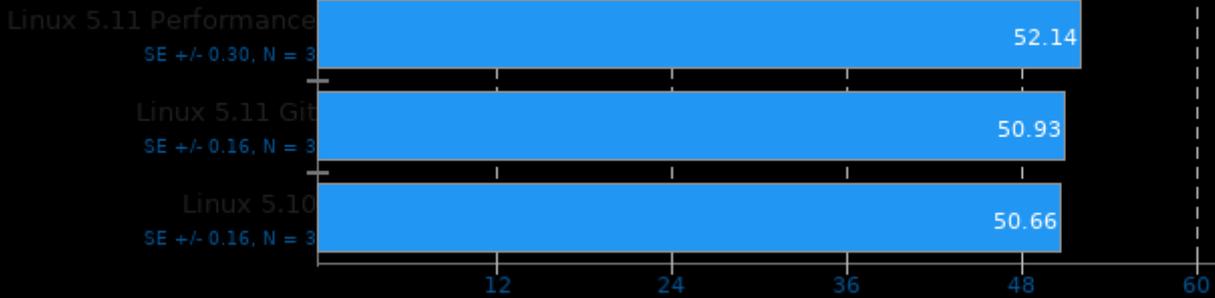
← Seconds, Fewer Is Better



SVT-AV1 0.8

Encoder Mode: Enc Mode 8 - Input: 1080p

▶ Frames Per Second, More Is Better

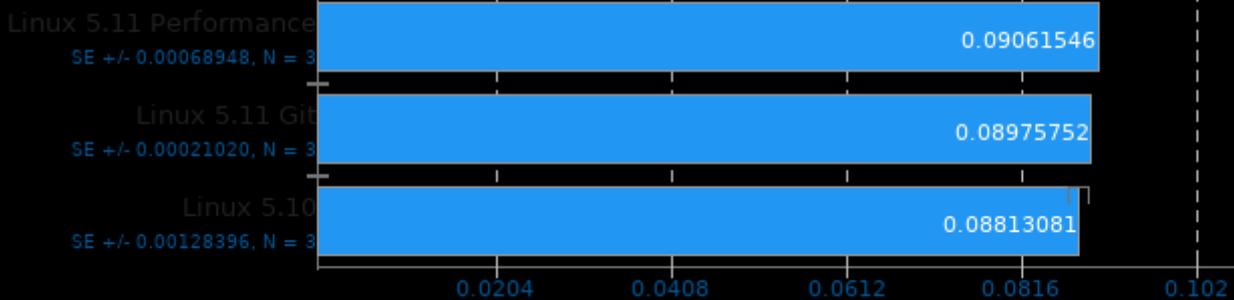


1. (CXX) g++ options: -O3 -fcommon -fPIE -fPIC -pie

Perl Benchmarks

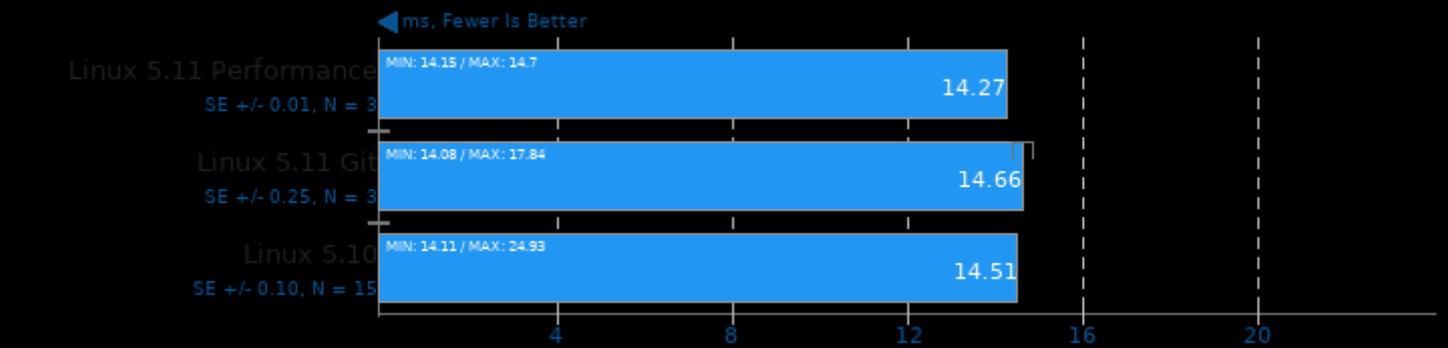
Test: Pod2html

← Seconds, Fewer Is Better



NCNN 20201218

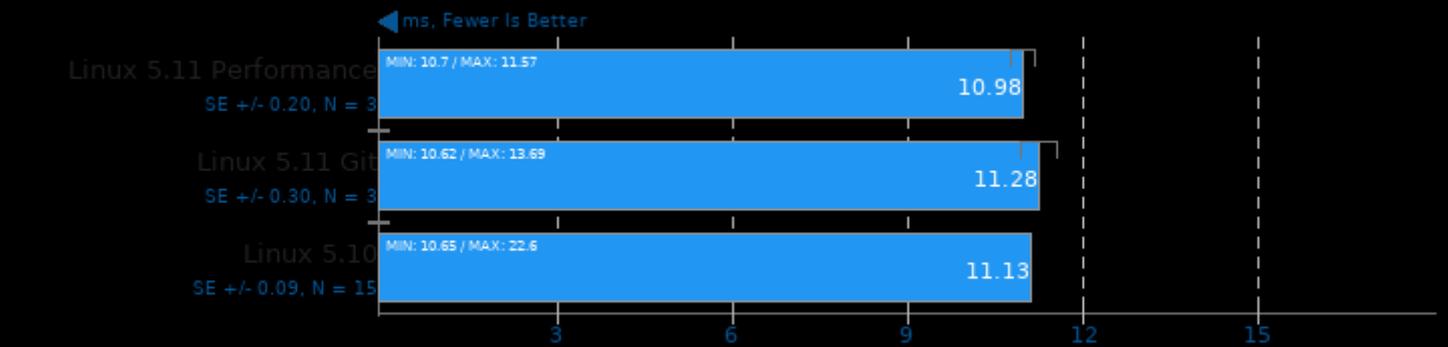
Target: CPU - Model: resnet18



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

NCNN 20201218

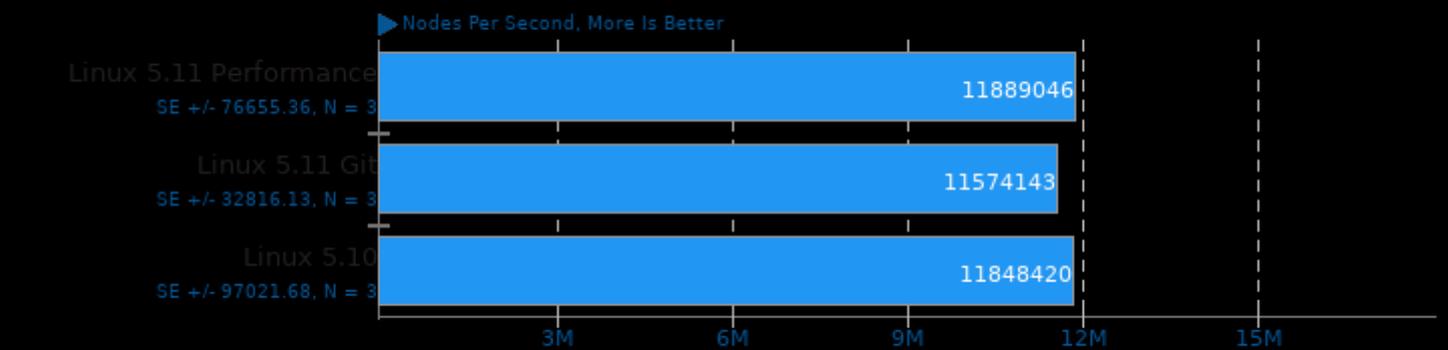
Target: CPU - Model: alexnet



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

Crafty 25.2

Elapsed Time

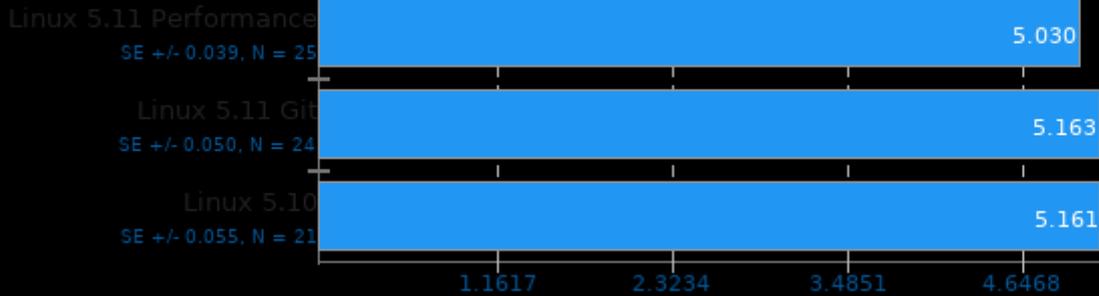


1. (C) gcc options: -pthread -lstdc++ -fprofile-use -lm

LibreOffice

Test: 20 Documents To PDF

← Seconds, Fewer Is Better

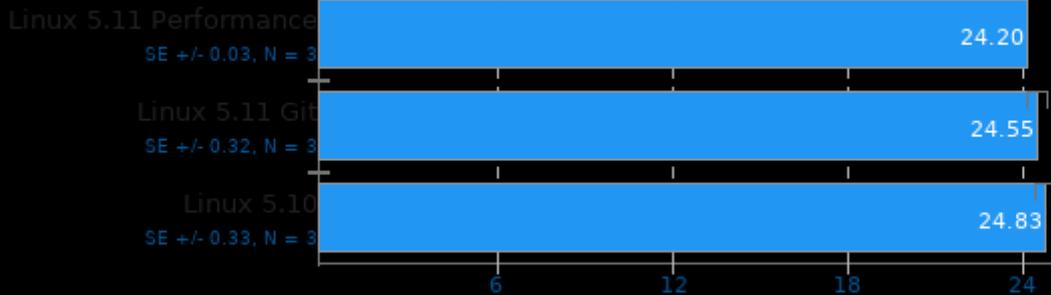


1. LibreOffice 7.0.2.2 00(Build:2)

Selenium

Benchmark: WASM imageConvolute - Browser: Google Chrome

← ms, Fewer Is Better

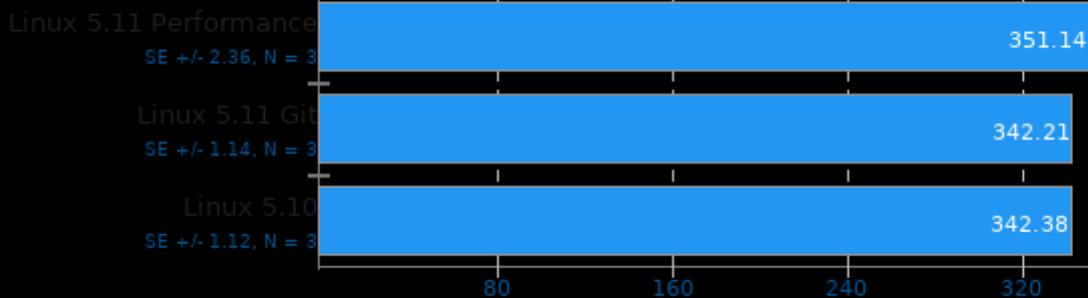


1. chrome 87.0.4280.88

Selenium

Benchmark: Jetstream - Browser: Google Chrome

▶ Score, More Is Better

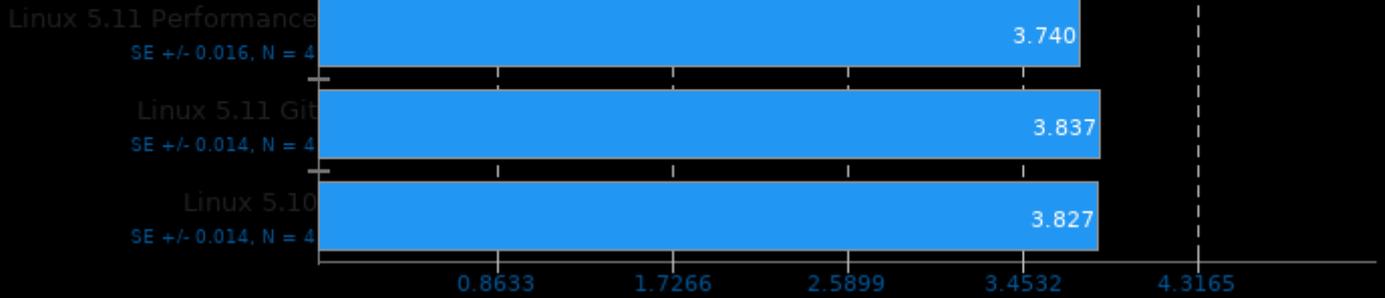


1. chrome 87.0.4280.88

Unpacking The Linux Kernel

linux-4.15.tar.xz

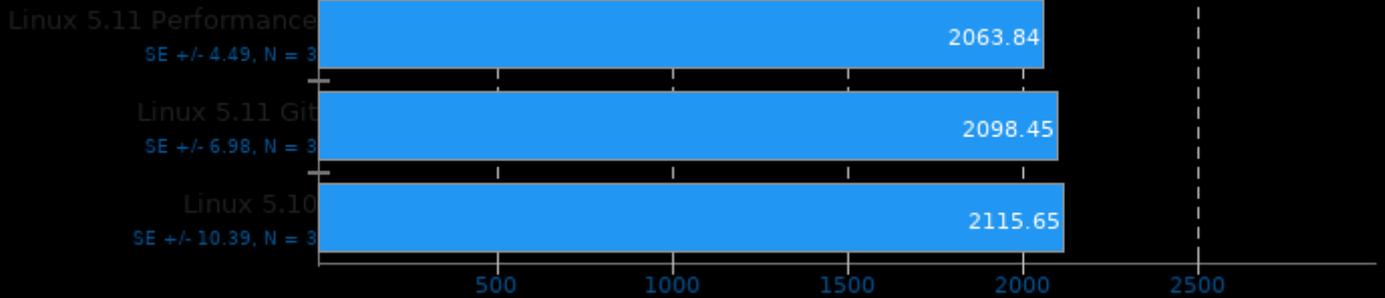
Seconds, Fewer Is Better



OpenVINO 2021.1

Model: Face Detection 0106 FP32 - Device: CPU

ms, Fewer Is Better

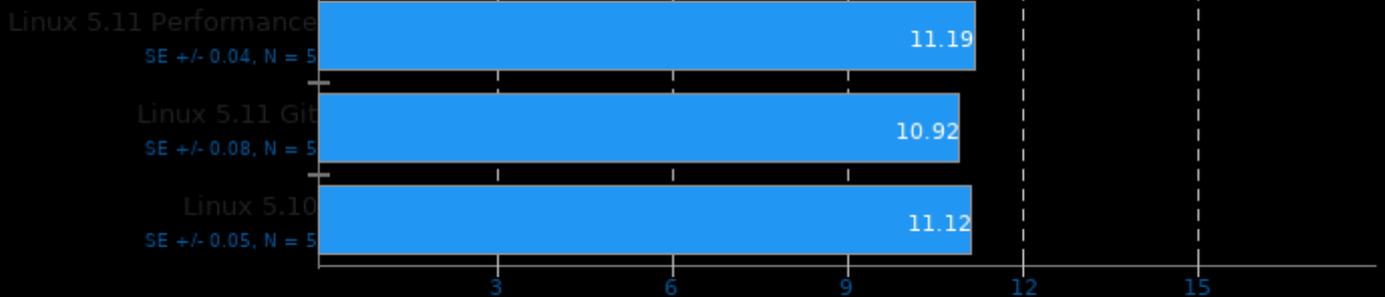


1. (CXX) g++ options: -fsigned-char -ffunction-sections -fdata-sections -O3 -pie -pthread -lpthread

WavPack Audio Encoding 5.3

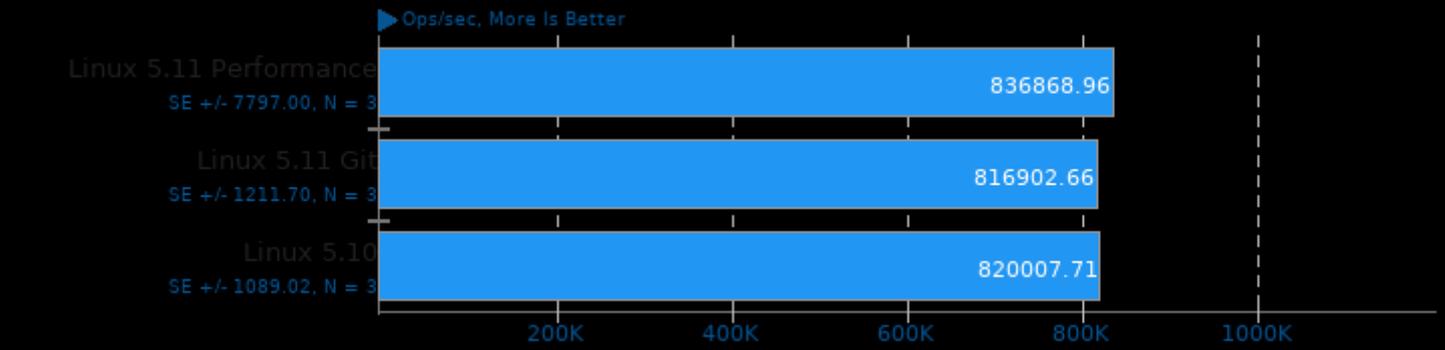
WAV To WavPack

Seconds, Fewer Is Better



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

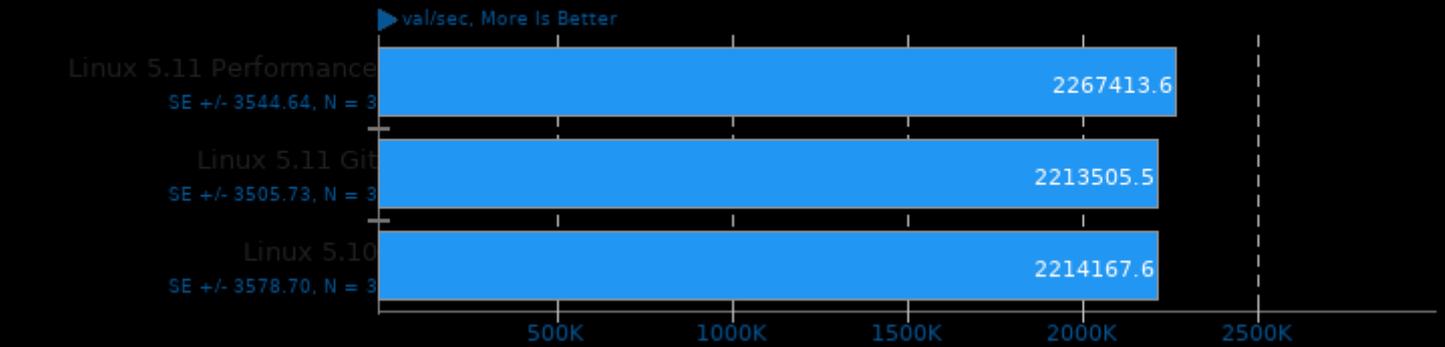
KeyDB 6.0.16



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

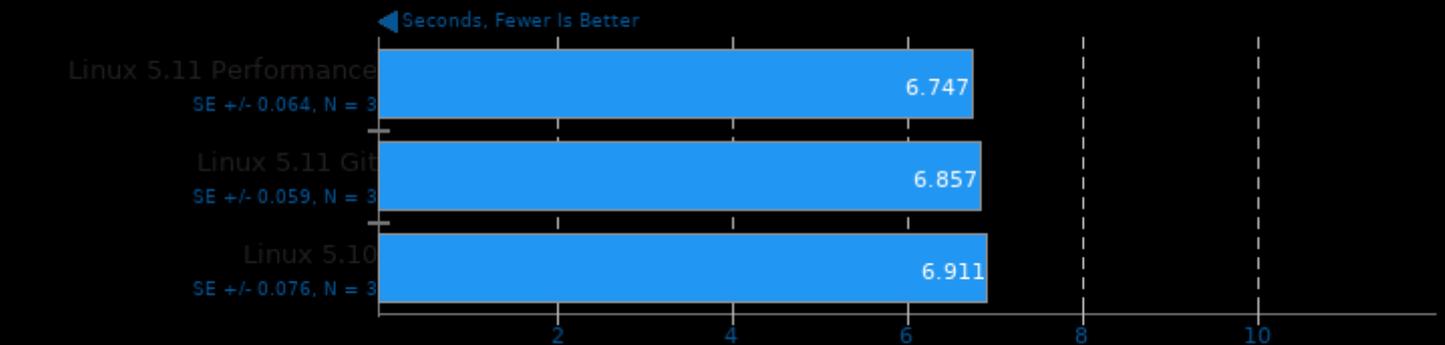
InfluxDB 1.8.2

Concurrent Streams: 64 - Batch Size: 10000 - Tags: 2,5000,1 - Points Per Series: 10000



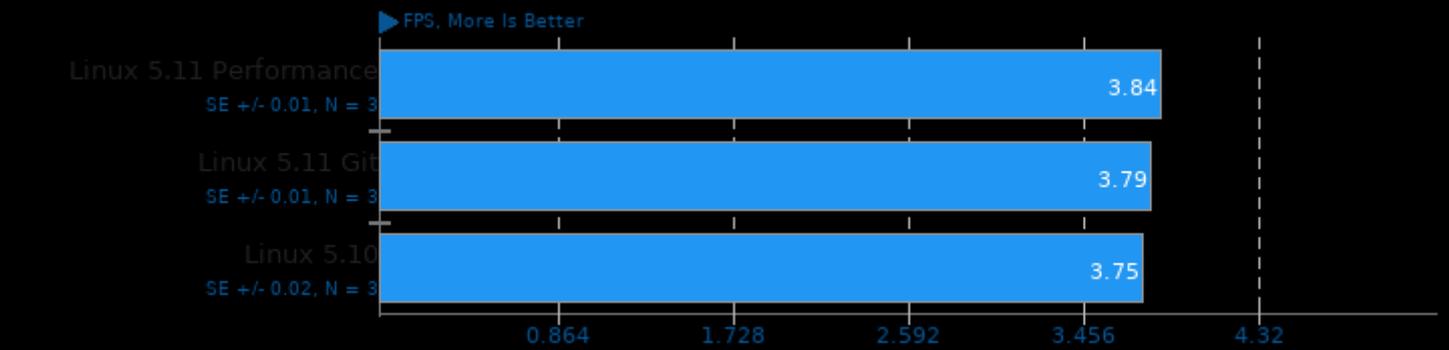
GEGL

Operation: Crop



OpenVINO 2021.1

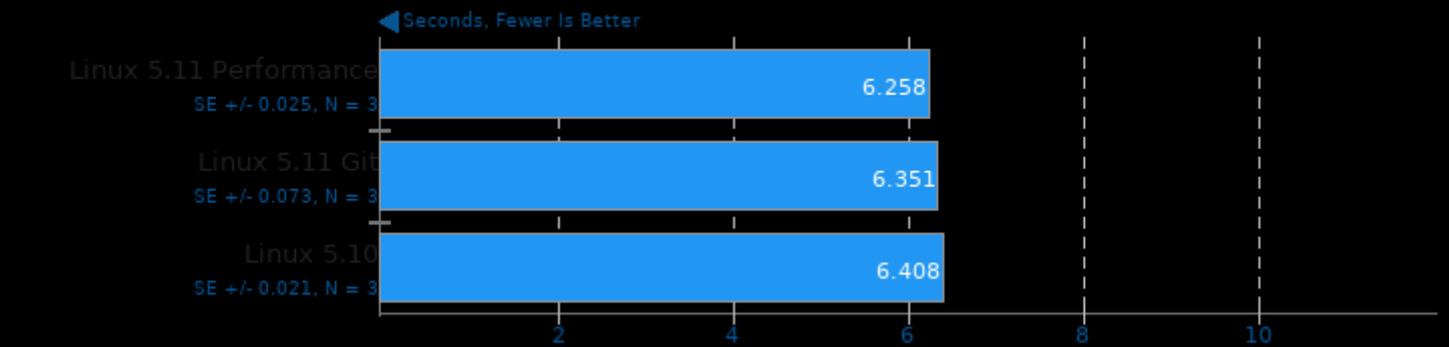
Model: Face Detection 0106 FP32 - Device: CPU



1. (CXX) g++ options: -fsigned-char -ffunction-sections -fdata-sections -O3 -pie -pthread -lpthread

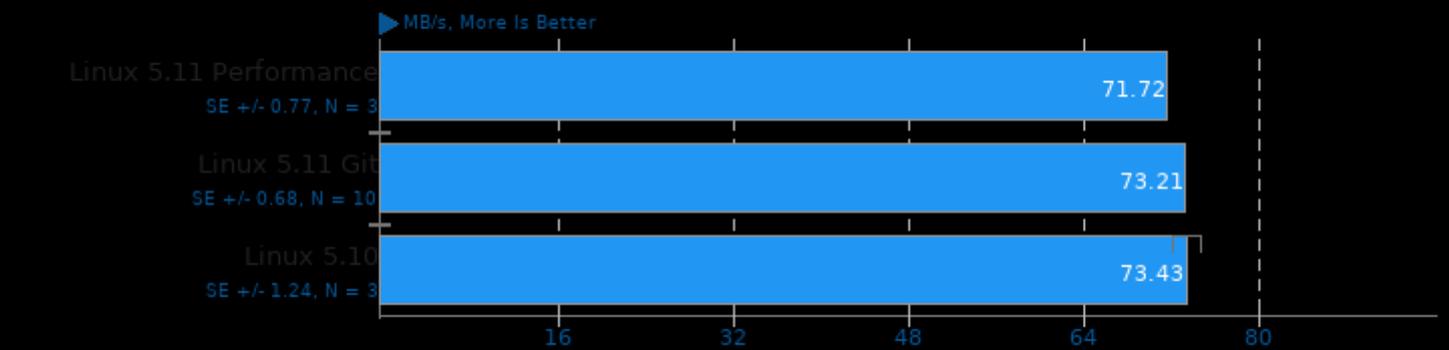
Bork File Encrypter 1.4

File Encryption Time



LZ4 Compression 1.9.3

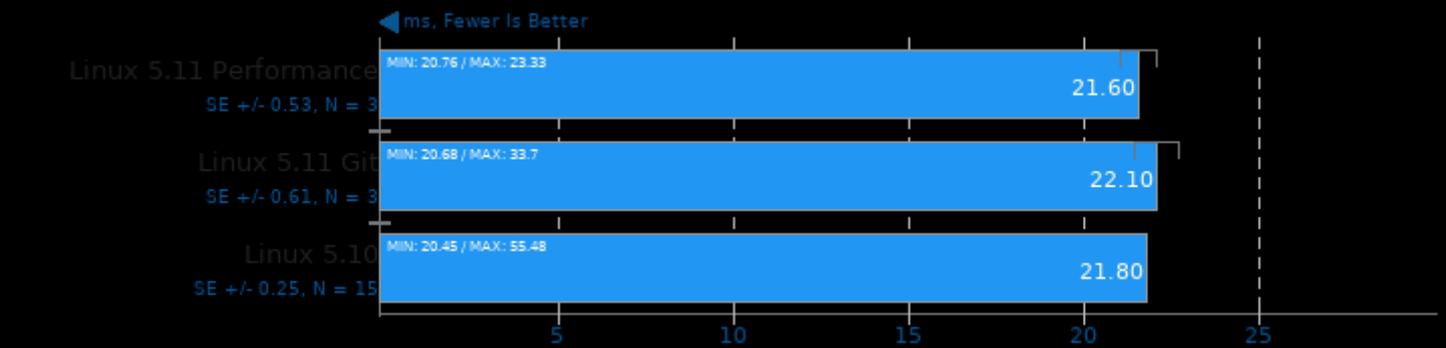
Compression Level: 3 - Compression Speed



1. (C) gcc options: -O3

NCNN 20201218

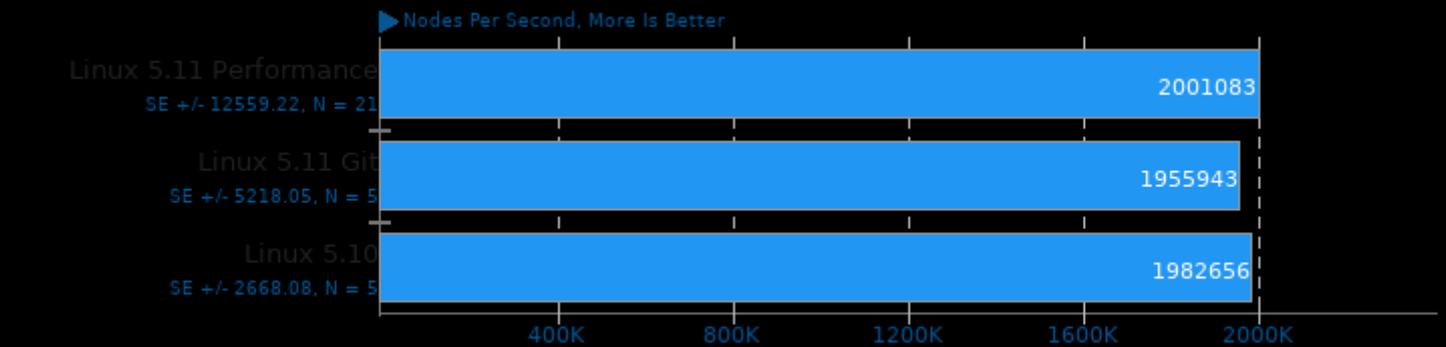
Target: CPU - Model: yolov4-tiny



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

TSCP 1.81

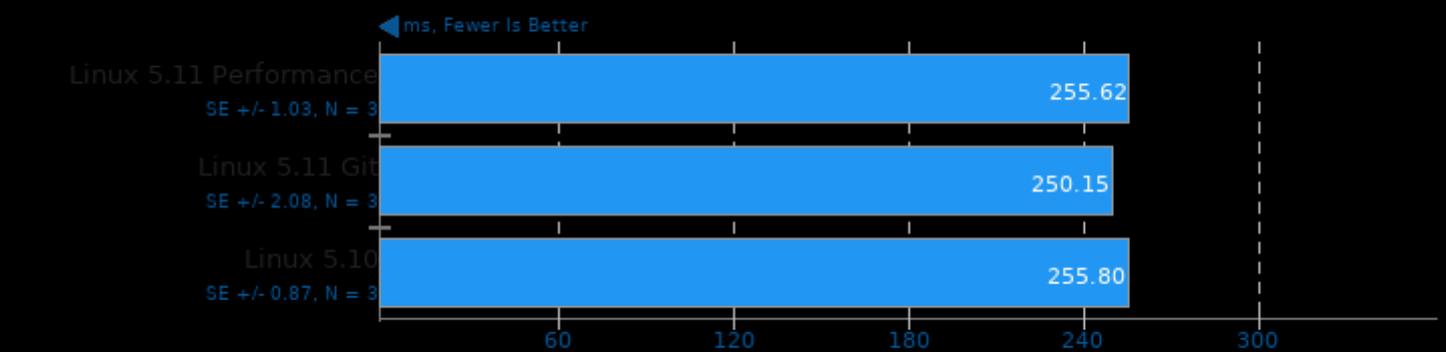
AI Chess Performance



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

Selenium

Benchmark: WASM collisionDetection - Browser: Google Chrome

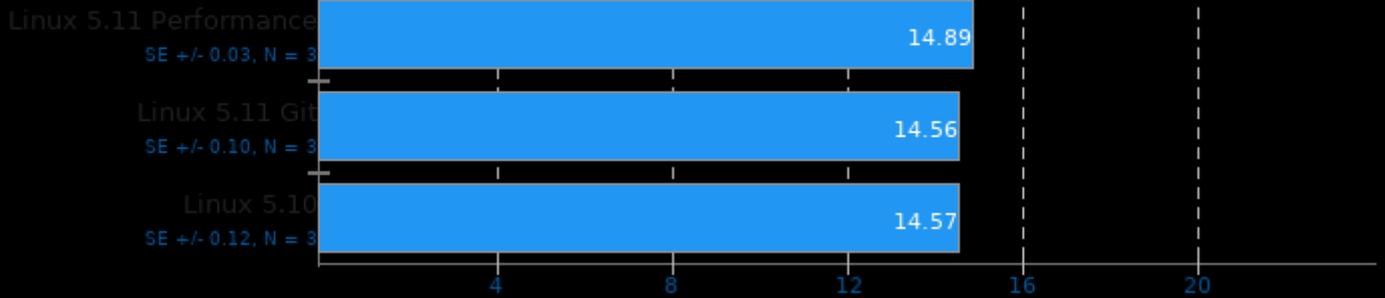


1. chrome 87.0.4280.88

Ogg Audio Encoding 1.3.4

WAV To Ogg

◀ Seconds, Fewer Is Better

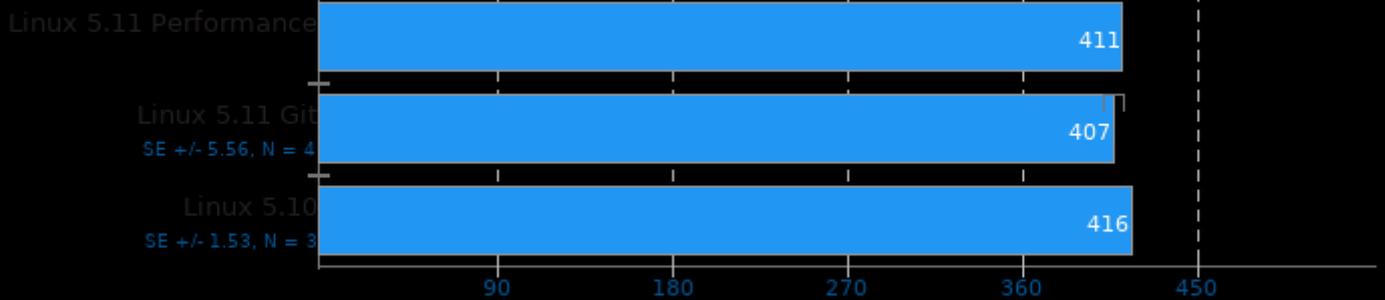


1. (CXX) gcc options: -O2 -fast-math -fsigned-char

LeelaChessZero 0.26

Backend: BLAS

▶ Nodes Per Second, More Is Better

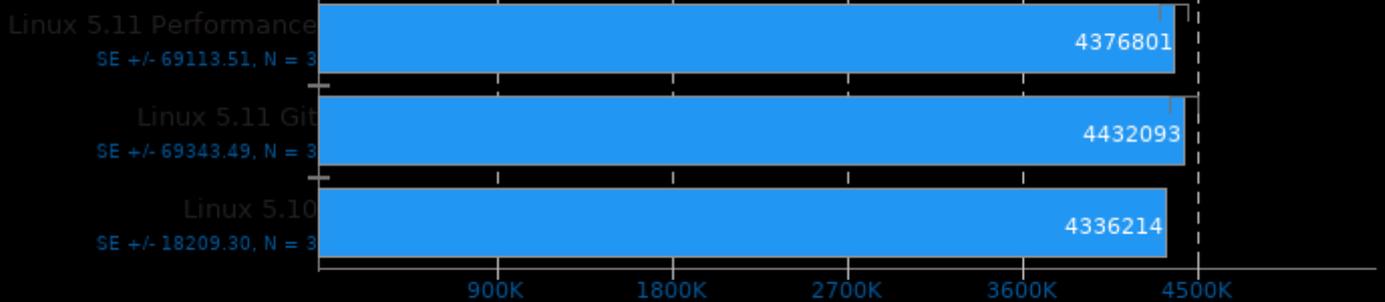


1. (CXX) g++ options: -fno-threads

Facebook RocksDB 6.3.6

Test: Read While Writing

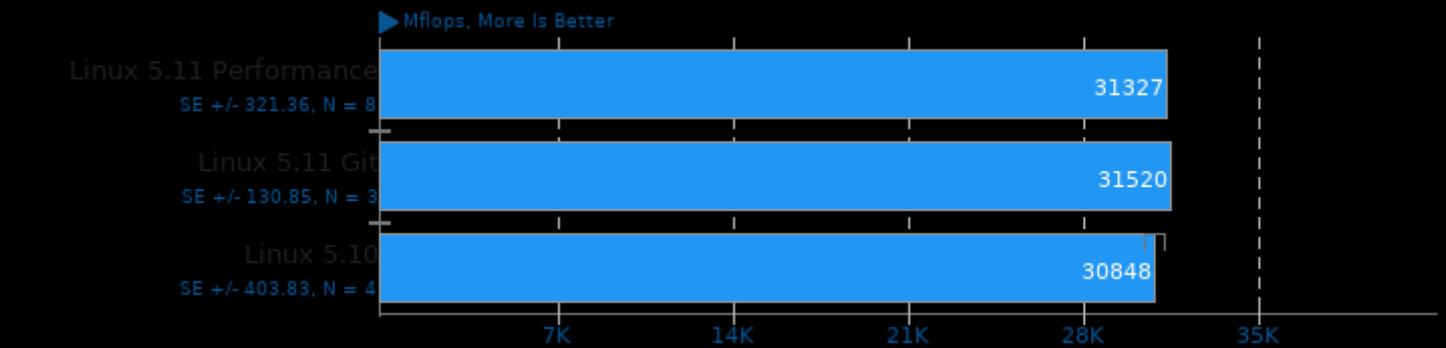
▶ Op/s, More Is Better



1. (CXX) g++ options: -O3 -march=native -std=c++11 -fno-builtin-memcmp -fno-rtti -rdynamic -pthread

FFTW 3.3.6

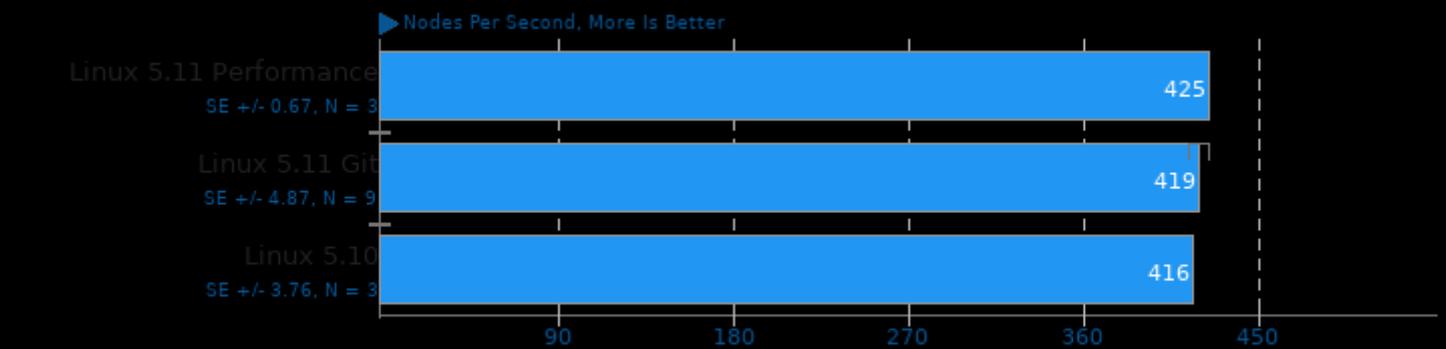
Build: Float + SSE - Size: 2D FFT Size 4096



1. (CC) gcc options: -pthread -O3 -fomit-frame-pointer -mtune=native -malign-double -fstrict-aliasing -fno-schedule-insns -ffast-math -lm

LeelaChessZero 0.26

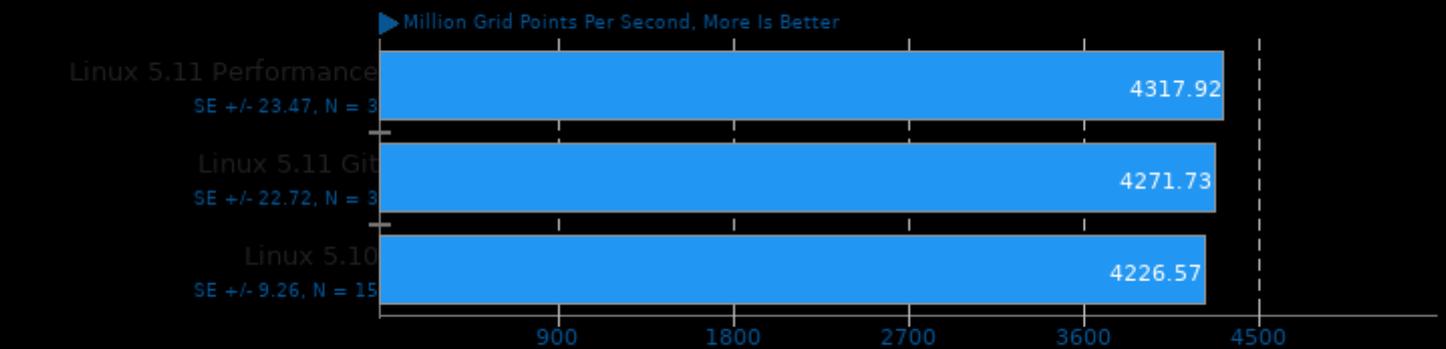
Backend: Eigen



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

ASKAP 2018-11-10

Test: tConvolve OpenMP - Degriding

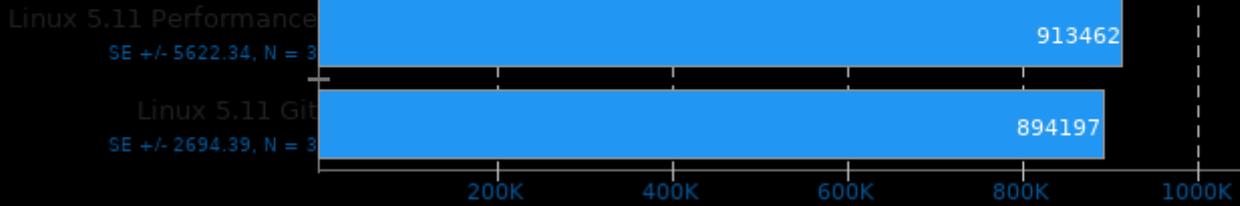


1. (CXX) g++ options: -pthread

Cryptsetup 2.2.2

PBKDF2-whirlpool

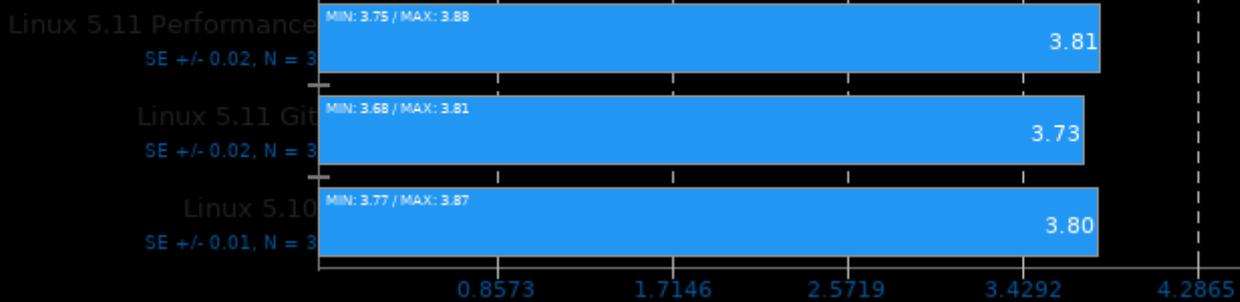
Iterations Per Second, More Is Better



LuxCoreRender 2.3

Scene: Rainbow Colors and Prism

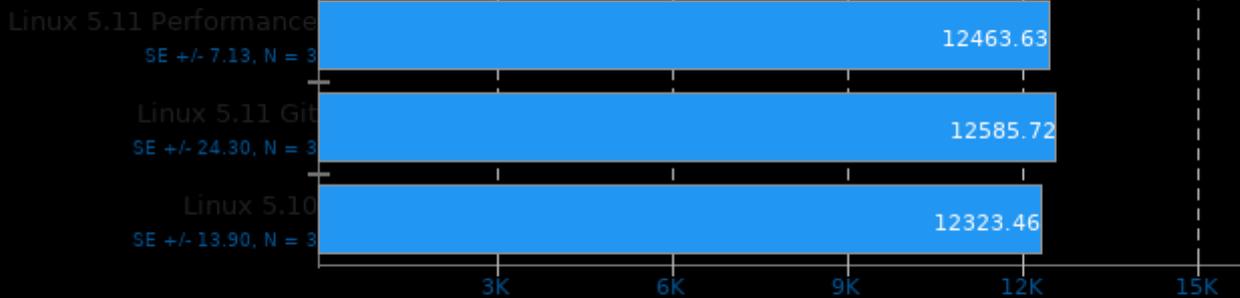
M samples/sec, More Is Better



NAS Parallel Benchmarks 3.4

Test / Class: FT.C

Total Mop/s, More Is Better

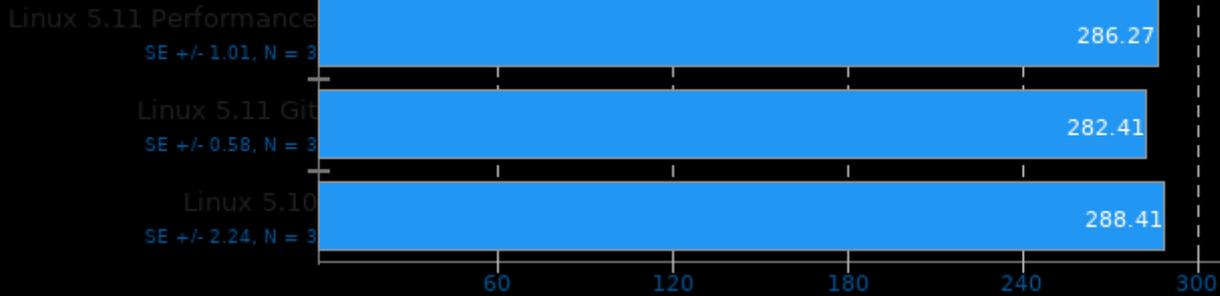


1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpi fh -lmpi
2. Open MPI 4.0.3

libjpeg-turbo tjbench 2.0.2

Test: Decompression Throughput

► Megapixels/sec, More Is Better

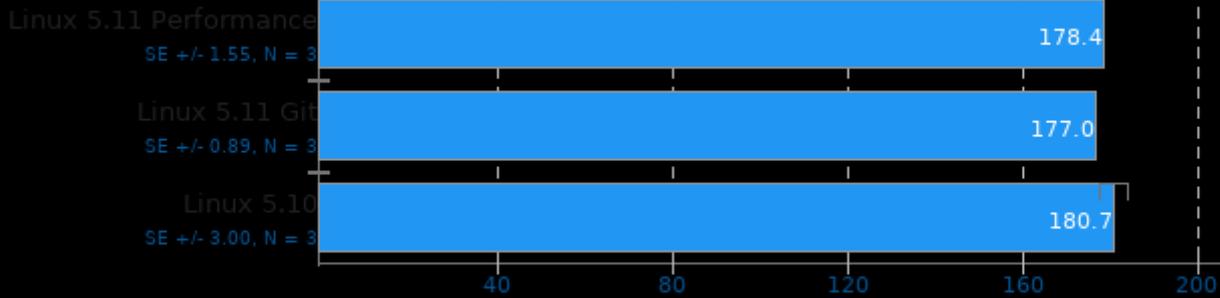


1. (CC) gcc options: -O3 -rdynamic

yquake2 7.45

Renderer: Software CPU - Resolution: 1920 x 1080

► Frames Per Second, More Is Better

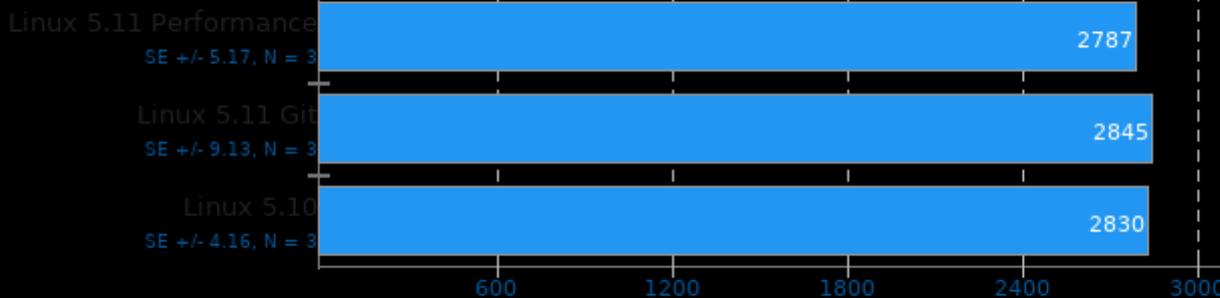


1. (CC) gcc options: -lm -ldl -rdynamic -shared -ISDL2 -O2 -pipe -fomit-frame-pointer -std=gnu99 -fno-strict-aliasing -fwrapv -fvisibility=hidden -MMD -mfr

Selenium

Benchmark: PSPDFKit WASM - Browser: Firefox

◄ Score, Fewer Is Better

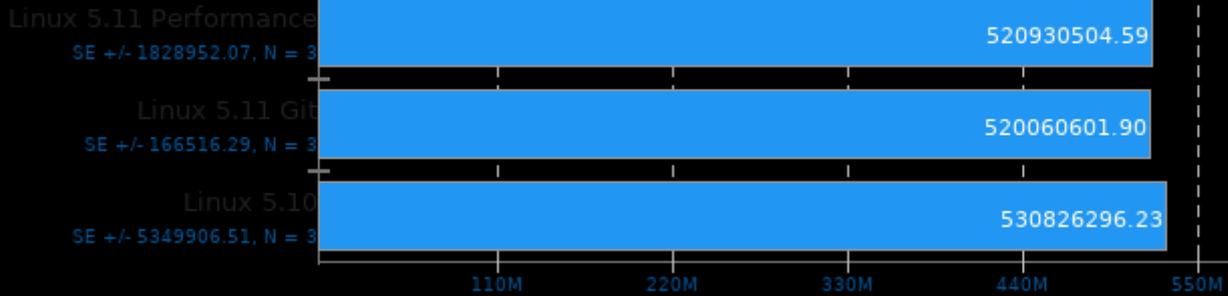


1. firefox 84.0

Hierarchical INTegration 1.0

Test: FLOAT

QUIPs, More Is Better

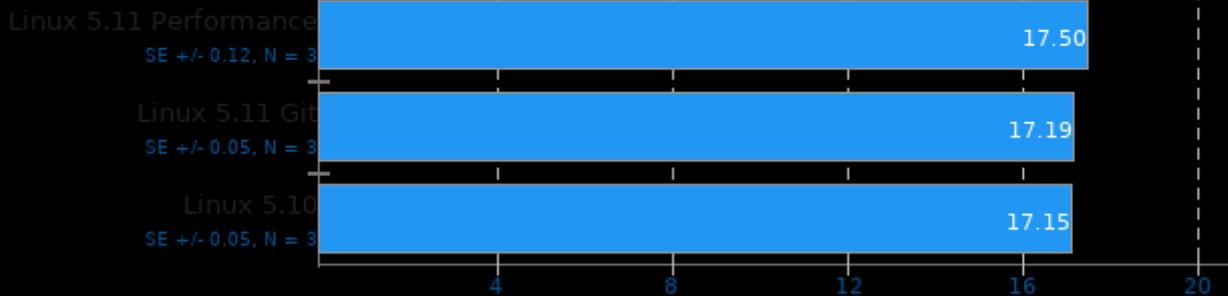


1. (CC) gcc options: -O3 -march=native -lm

PlaidML

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

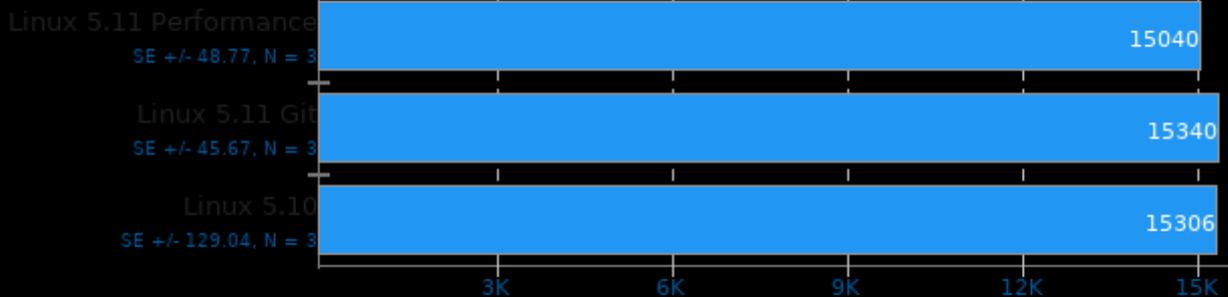
FPS, More Is Better



FFTW 3.3.6

Build: Stock - Size: 1D FFT Size 32

Mflops, More Is Better

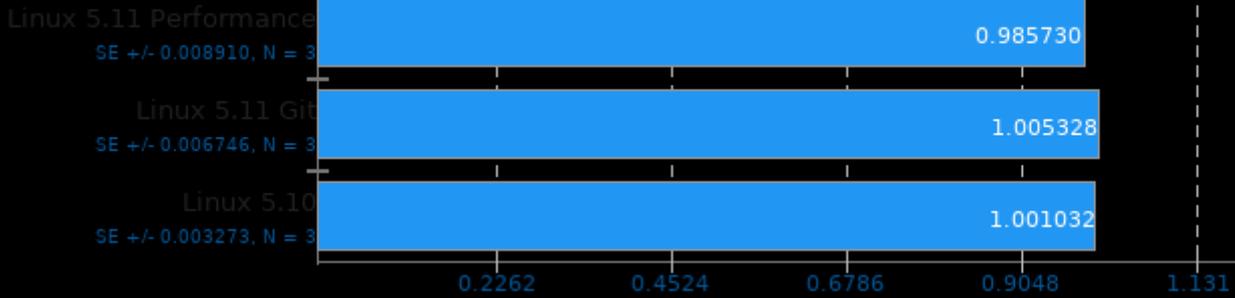


1. (CC) gcc options: -pthread -O3 -fomit-frame-pointer -mtune=native -malign-double -fstrict-aliasing -fno-schedule-insns -ffast-math -lm

Parboil 2.5

Test: OpenMP CUTCP

← Seconds, Fewer Is Better

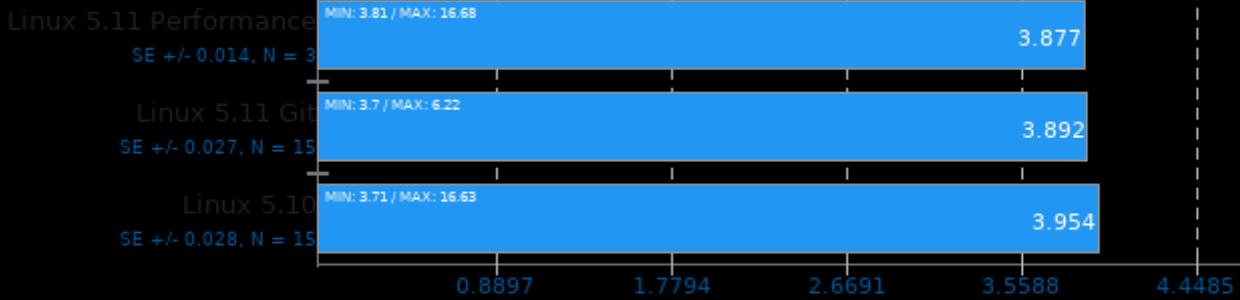


1. (CXX) g++ options: -lm -lthread -lgomp -O3 -ffast-math -fopenmp

Mobile Neural Network 2020-09-17

Model: MobileNetV2_224

← ms, Fewer Is Better

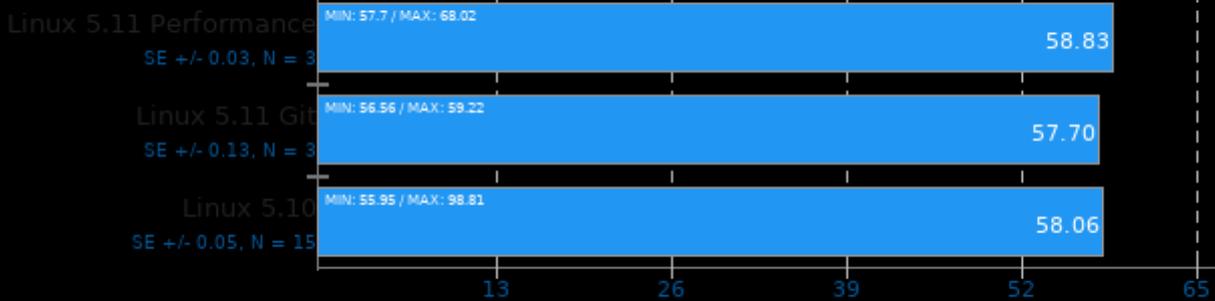


1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fno-common

NCNN 20201218

Target: CPU - Model: vgg16

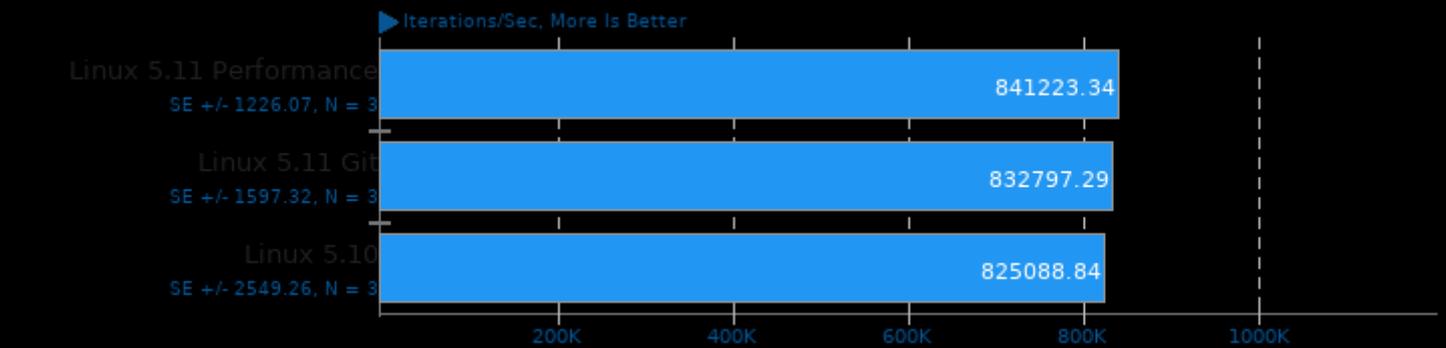
← ms, Fewer Is Better



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

Coremark 1.0

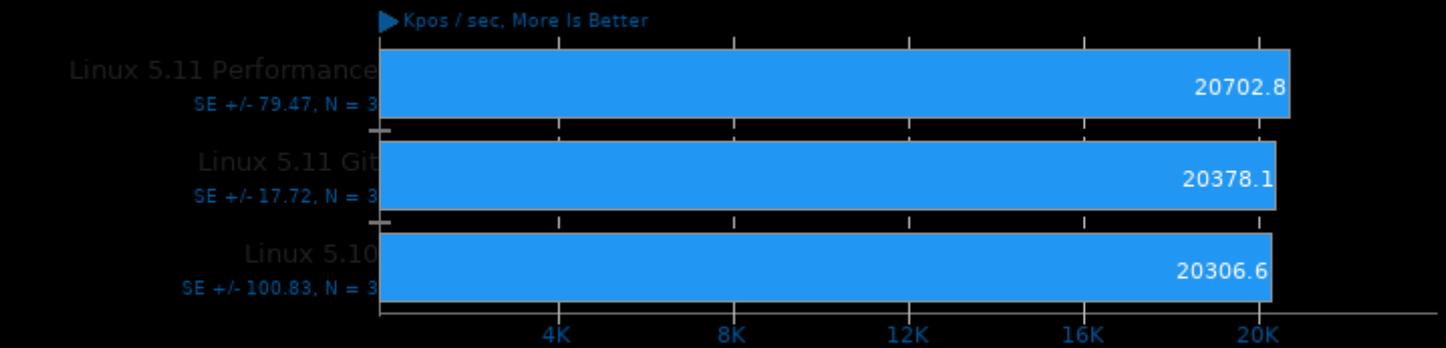
CoreMark Size 666 - Iterations Per Second



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

Fhourstones 3.1

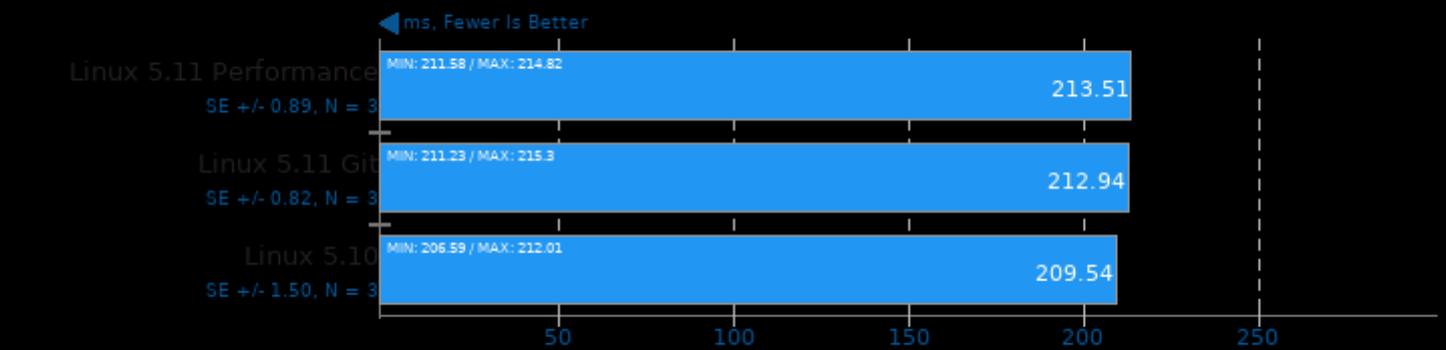
Complex Connect-4 Solving



1. (CC) gcc options: -O3

TNN 0.2.3

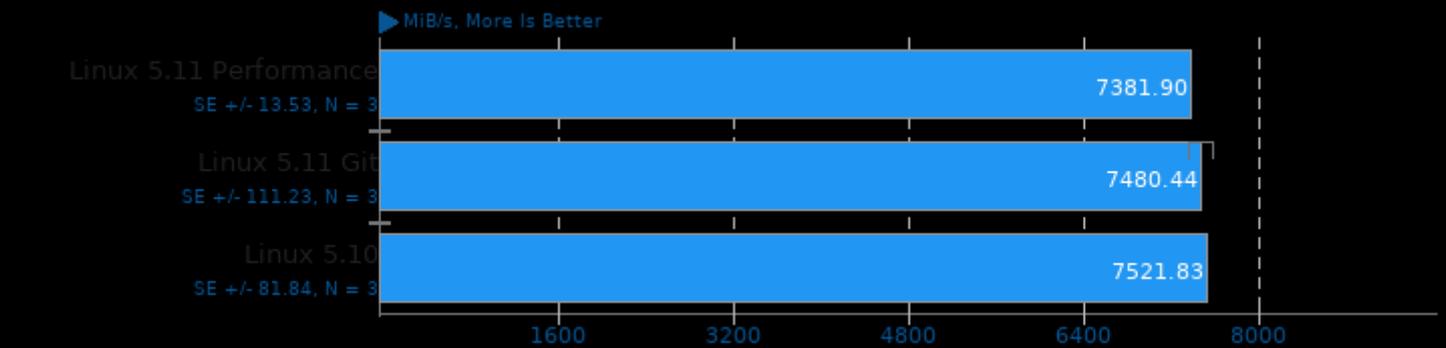
Target: CPU - Model: SqueezeNet v1.1



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

Botan 2.13.0

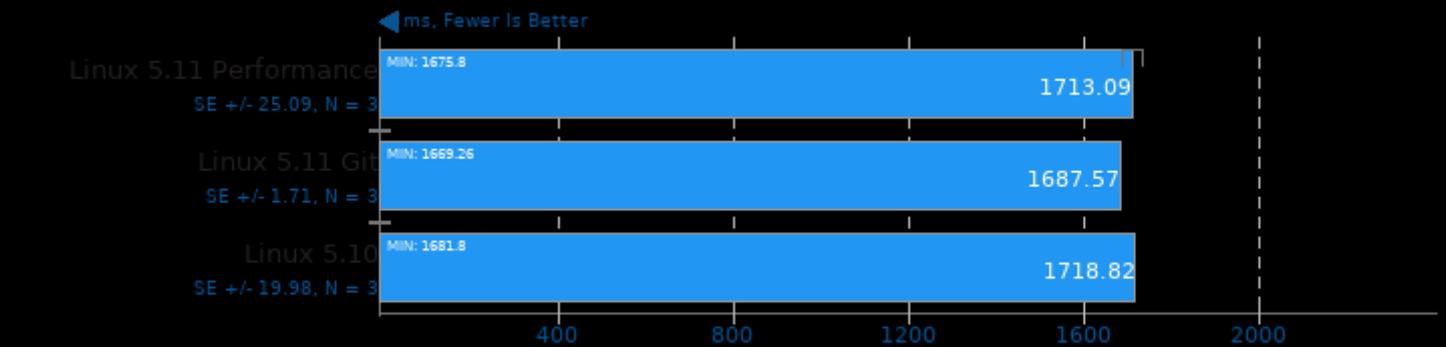
Test: AES-256



1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

oneDNN 2.0

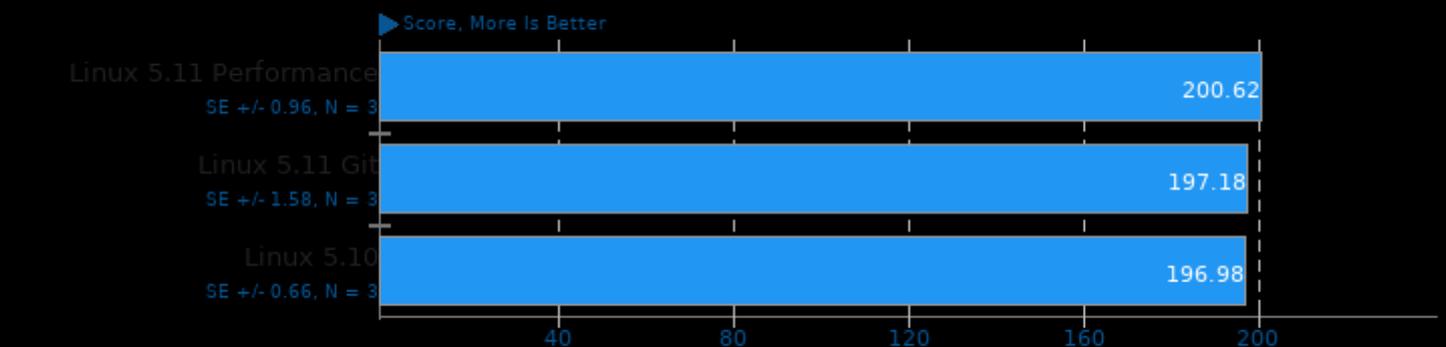
Harness: Recurrent Neural Network Inference - Data Type: f32 - Engine: CPU



1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -mssse4.1 -fpic -pie -pthread

Selenium

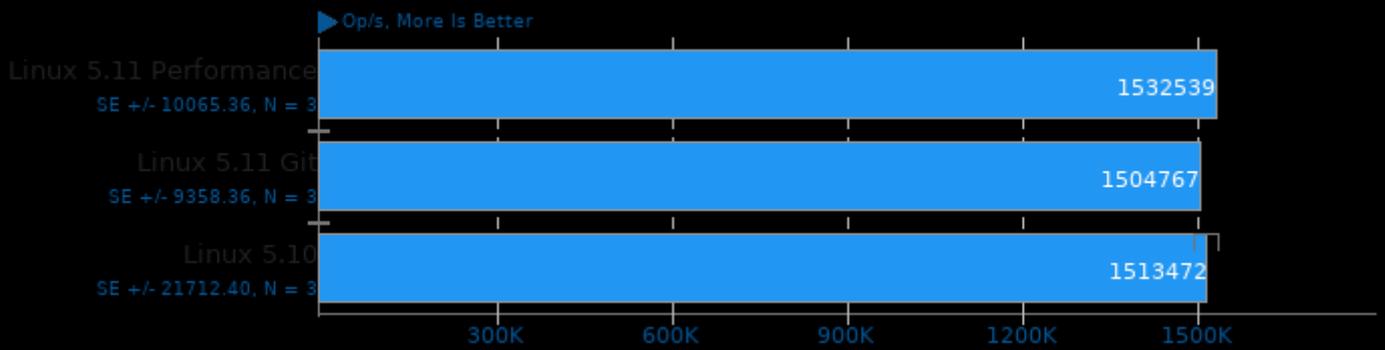
Benchmark: Jetstream - Browser: Firefox



1. firefox 84.0

Facebook RocksDB 6.3.6

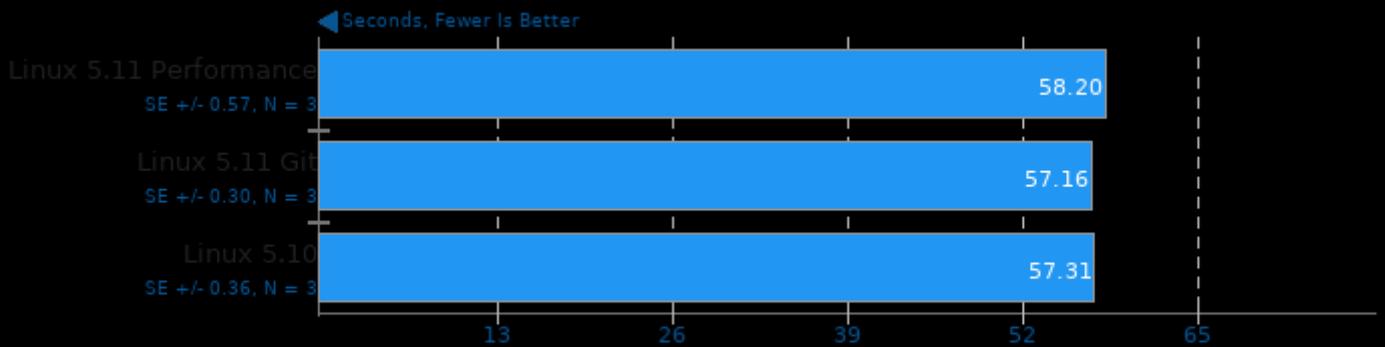
Test: Random Fill



1. (CXX) g++ options: -O3 -march=native -std=c++11 -fno-builtin-memcmp -fno-rtti -rdynamic -pthread

Montage Astronomical Image Mosaic Engine 6.0

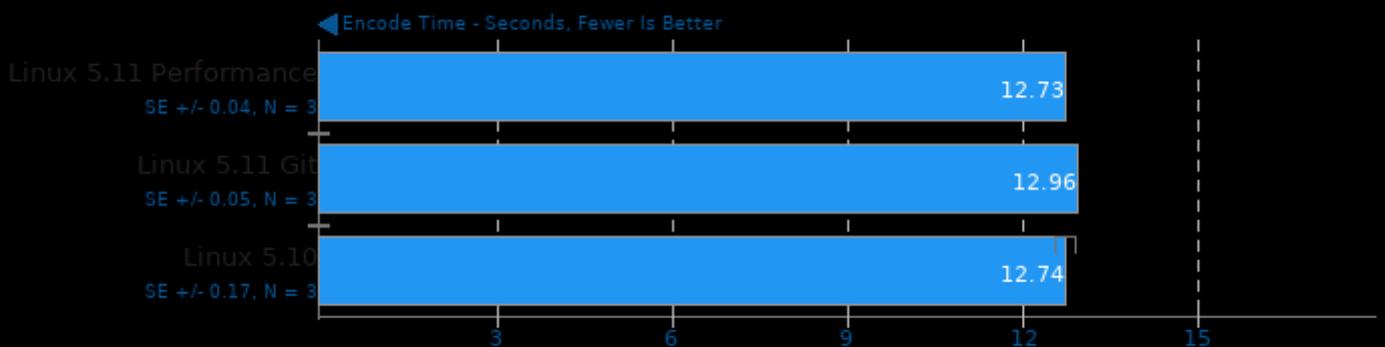
Mosaic of M17, K band, 1.5 deg x 1.5 deg



1. (CC) gcc options: -std=gnu99 -lcfitsio -lm -O2

WebP Image Encode 1.1

Encode Settings: Quality 100, Lossless

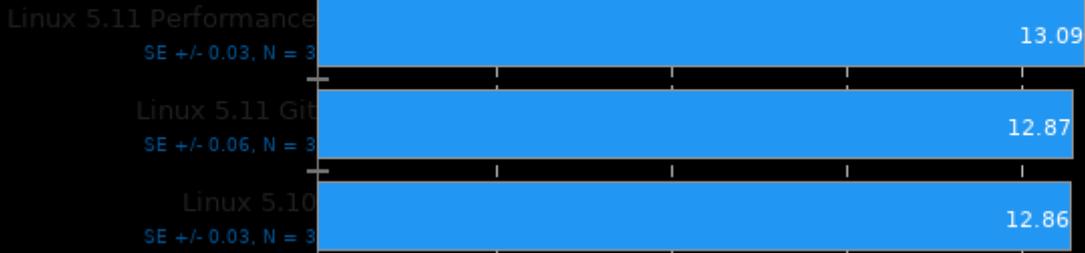


1. (CC) gcc options: -fvisibility=hidden -O2 -pthread -lm -ljpeg -lpng16 -ltiff

PlaidML

FP16: No - Mode: Inference - Network: Inception V3 - Device: CPU

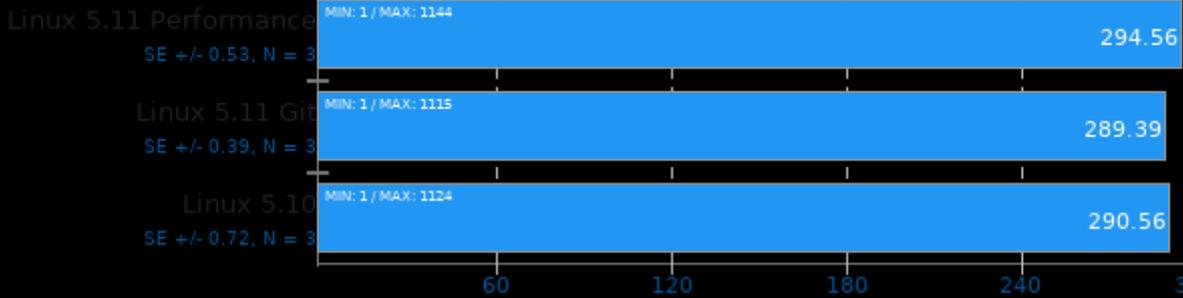
FPS, More Is Better



OpenVKL 0.9

Benchmark: vklBenchmark

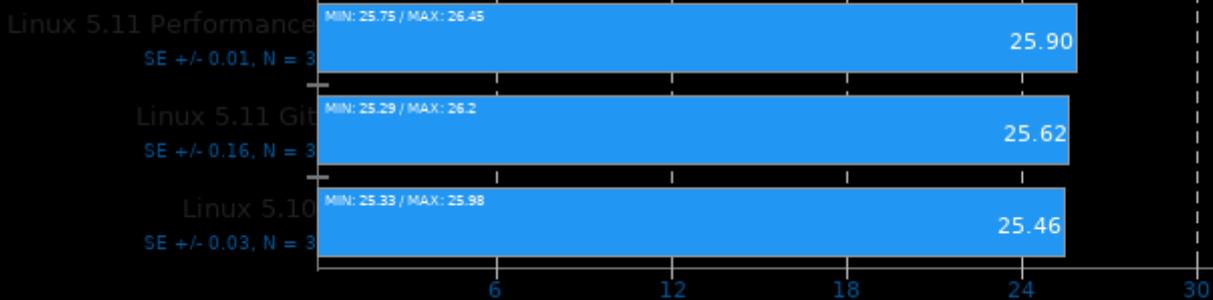
Items / Sec, More Is Better



Embree 3.9.0

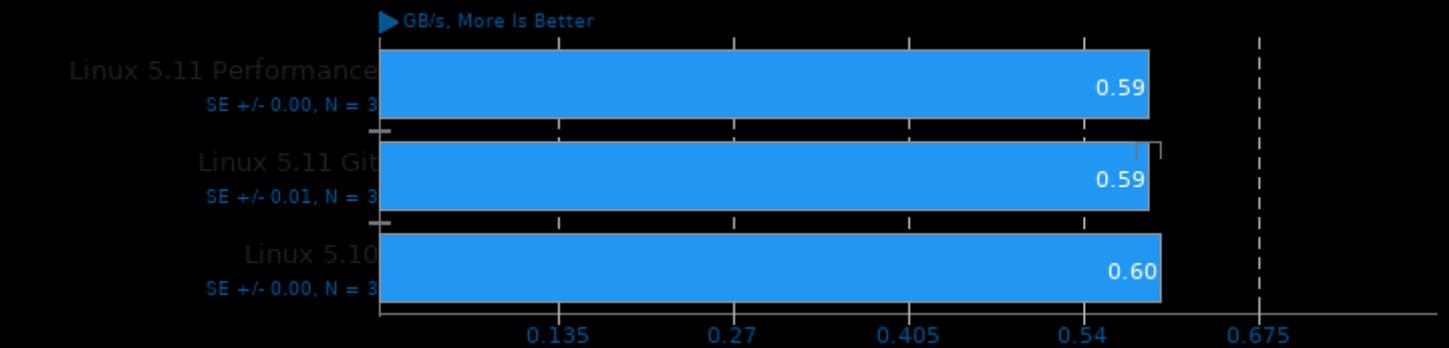
Binary: Pathtracer ISPC - Model: Asian Dragon

Frames Per Second, More Is Better



simdjson 0.7.1

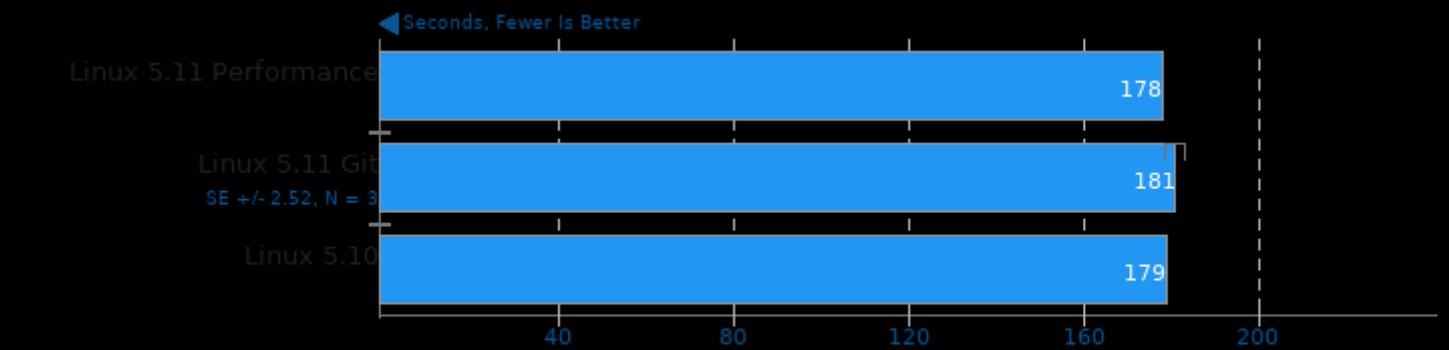
Throughput Test: LargeRandom



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

Monte Carlo Simulations of Ionised Nebulae 2019-03-24

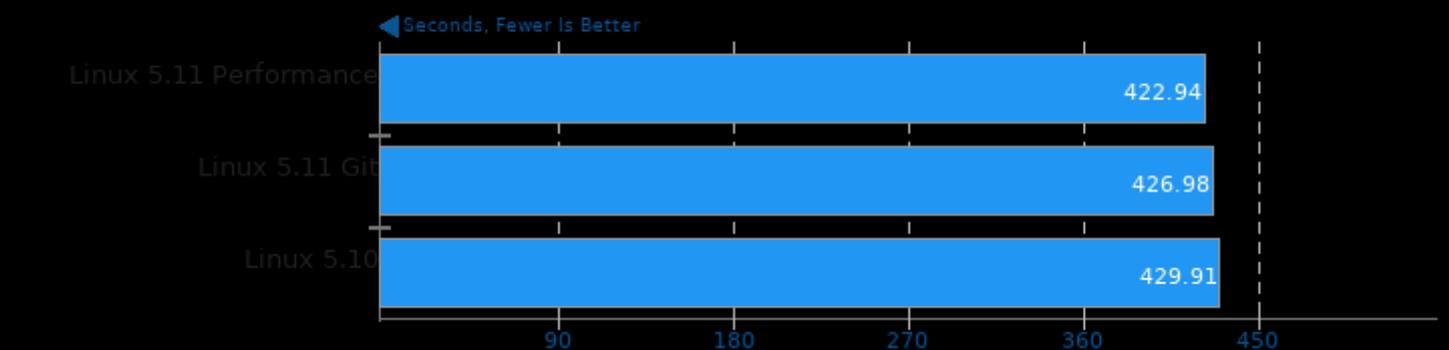
Input: Dust 2D tau100.0



1. (F9X) gfortran options: -cpp -jsource/ -f-free-line-length=0 -lm -std=legacy -O3 -O2 -pthread -fmpi_usempif08 -fmpi_mpifh -fmpi

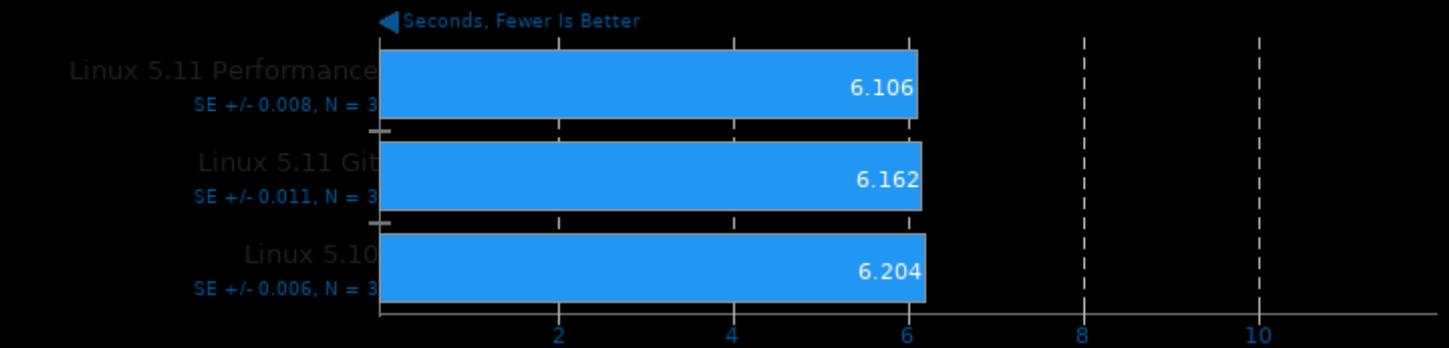
Radiance Benchmark 5.0

Test: Serial



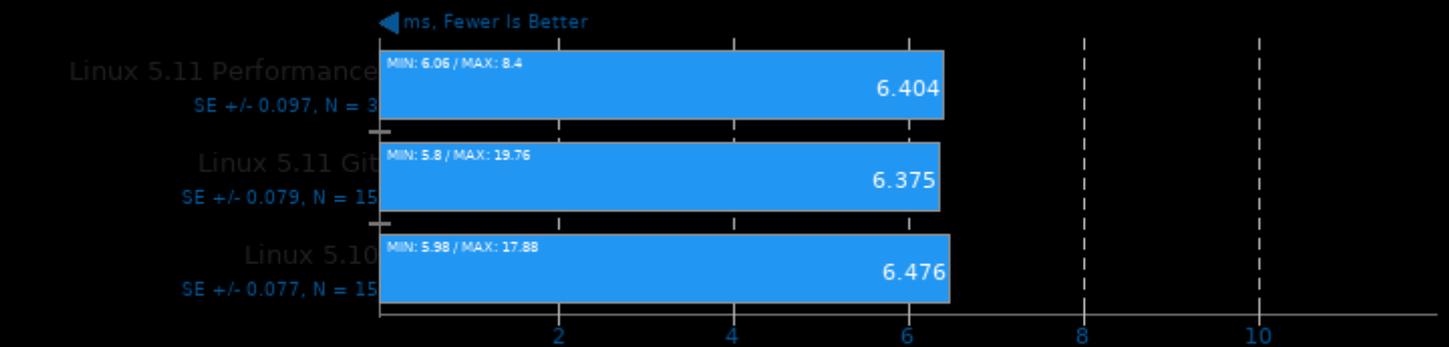
Darktable 3.0.1

Test: Masskrug - Acceleration: CPU-only



Mobile Neural Network 2020-09-17

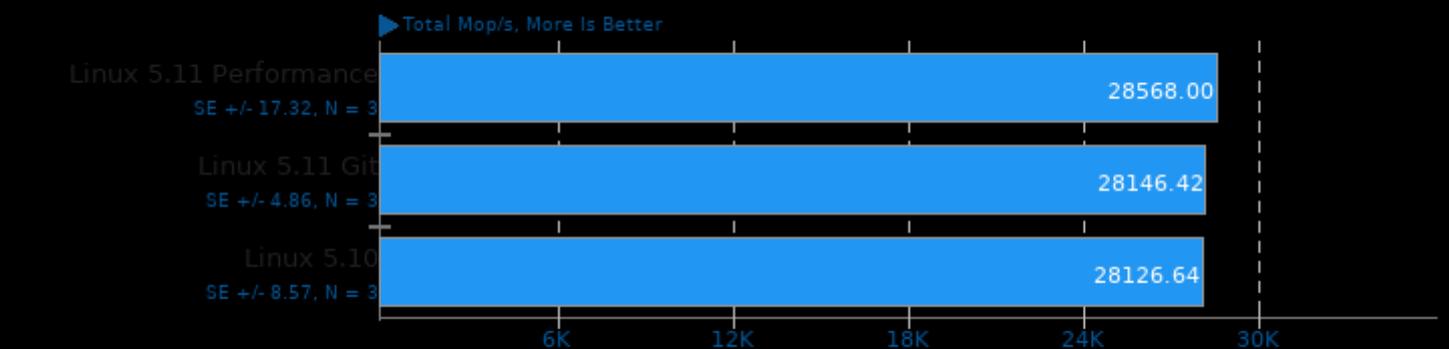
Model: SqueezeNetV1.0



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

NAS Parallel Benchmarks 3.4

Test / Class: LU.C

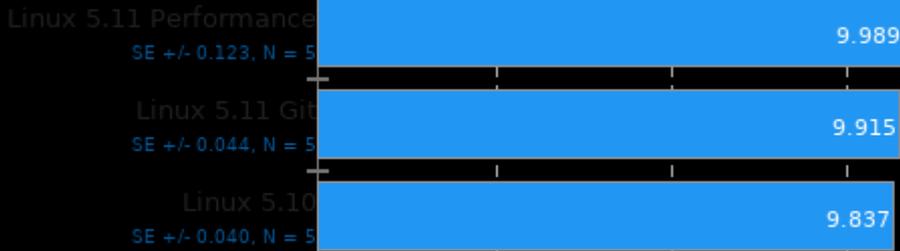


1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 4.0.3

Monkey Audio Encoding 3.99.6

WAV To APE

← Seconds, Fewer Is Better

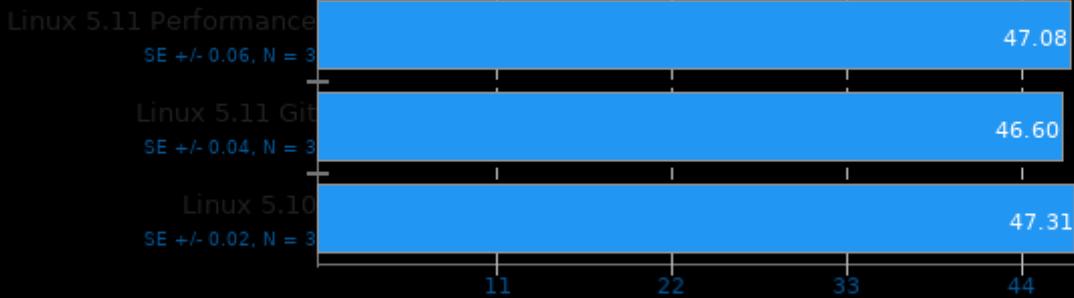


1. (CXX) g++ options: -O3 -pedantic -rdynamic -lrt

RawTherapee

Total Benchmark Time

← Seconds, Fewer Is Better

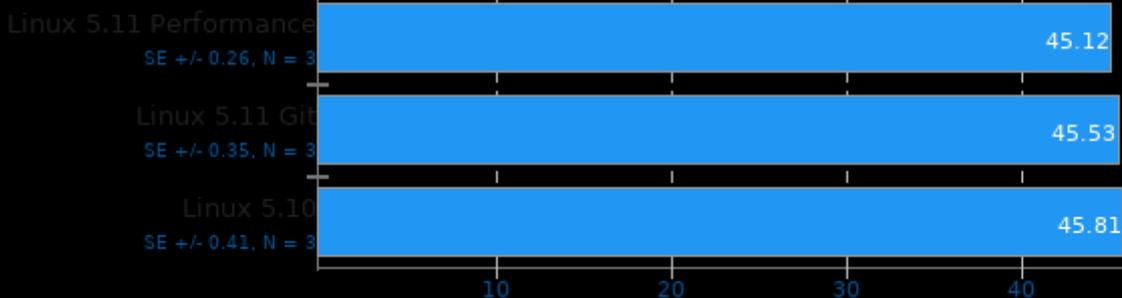


1. RawTherapee, version 5.8, command line.

Timed Linux Kernel Compilation 5.4

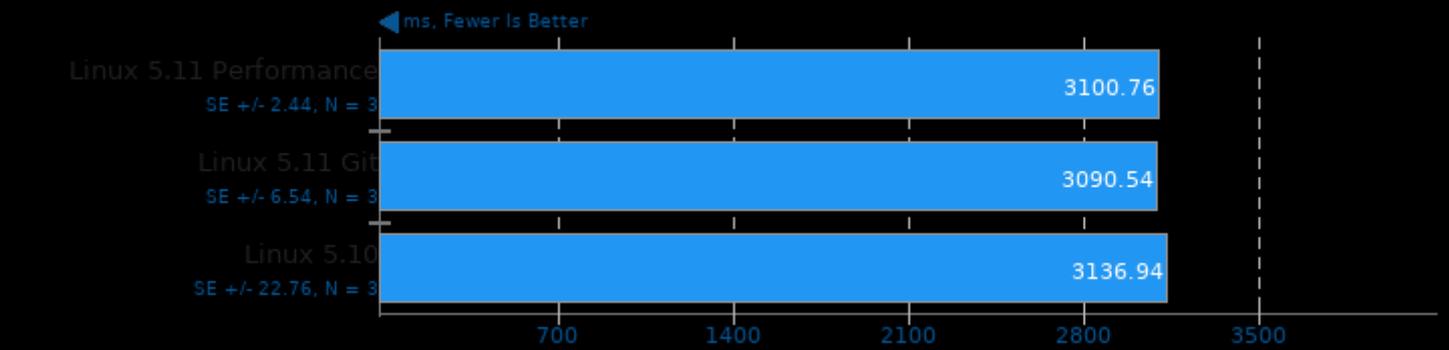
Time To Compile

← Seconds, Fewer Is Better



OpenVINO 2021.1

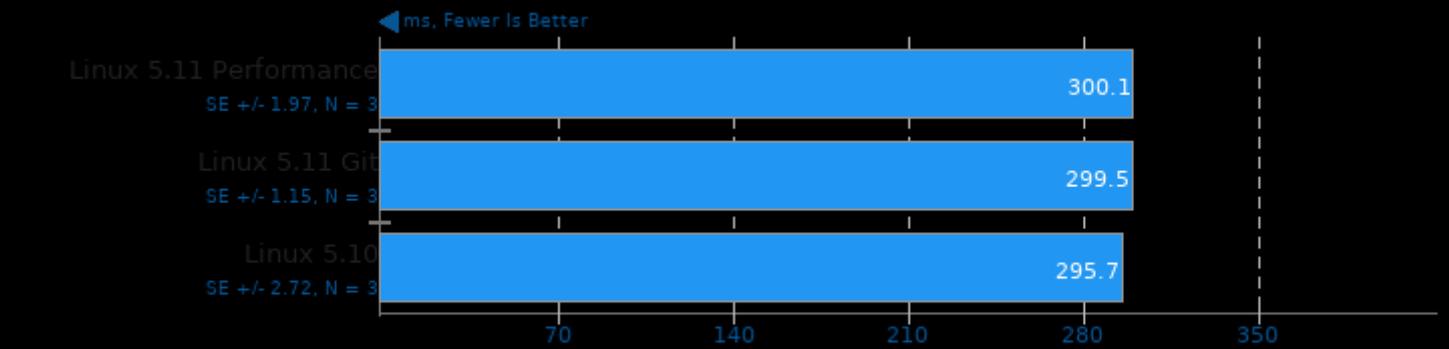
Model: Person Detection 0106 FP16 - Device: CPU



1. (CXX) g++ options: -fsigned-char -ffunction-sections -fdata-sections -O3 -pie -pthread -lpthread

Selenium

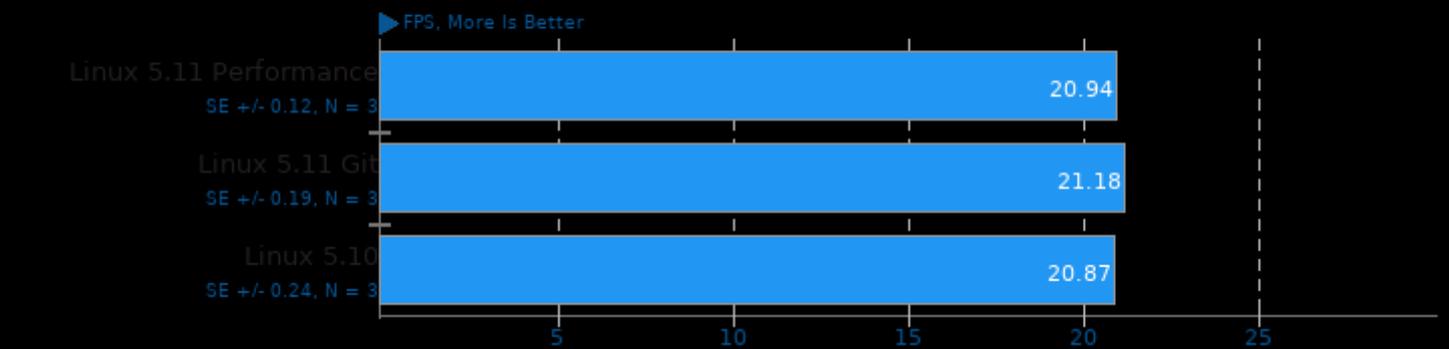
Benchmark: WASM collisionDetection - Browser: Firefox



1. firefox 84.0

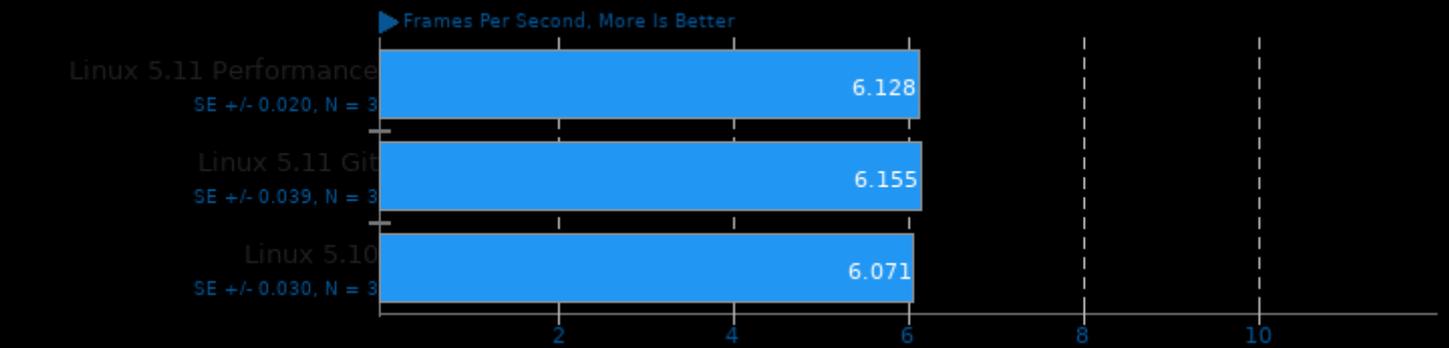
PlaidML

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



SVT-AV1 0.8

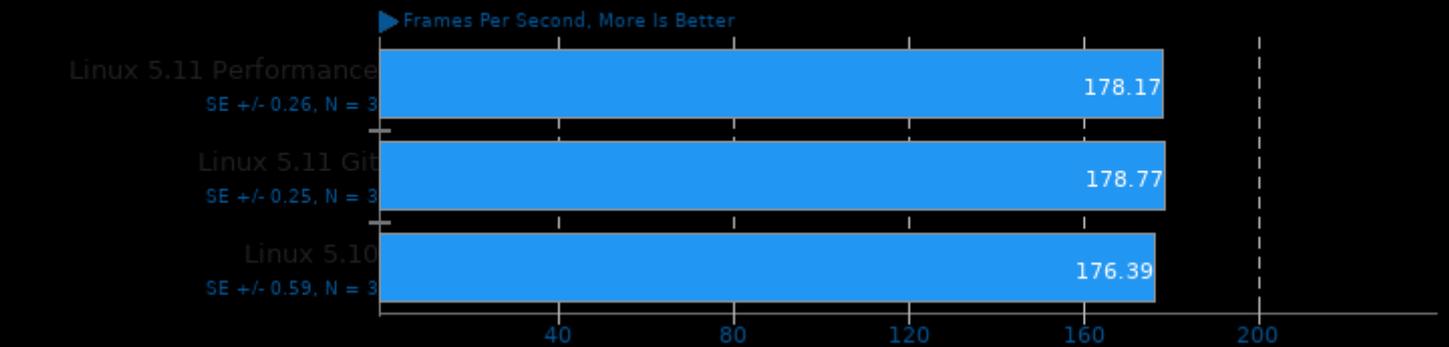
Encoder Mode: Enc Mode 4 - Input: 1080p



1. (CXX) g++ options: -O3 -fcommon -fPIE -fPIC -pie

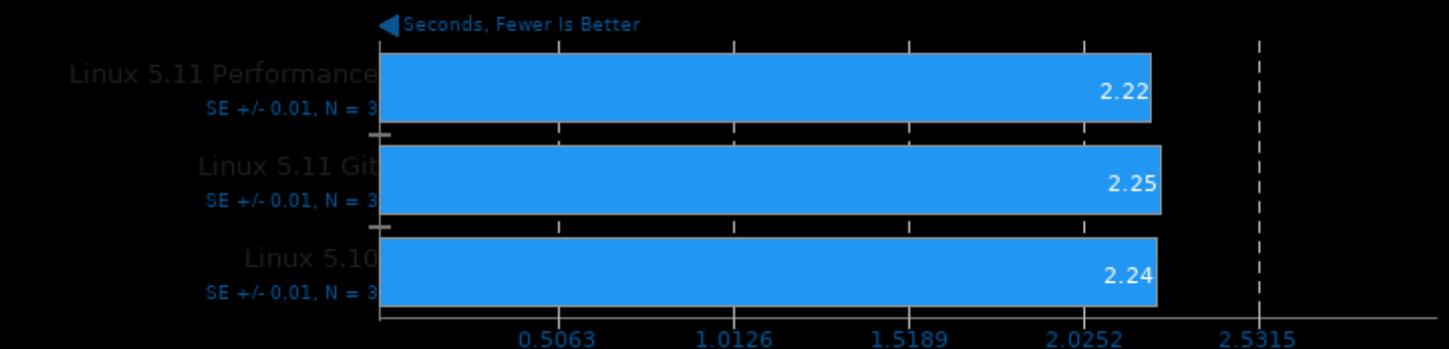
Unigine Valley 1.0

Resolution: 1920 x 1080 - Mode: Fullscreen - Renderer: OpenGL



Mlpack Benchmark

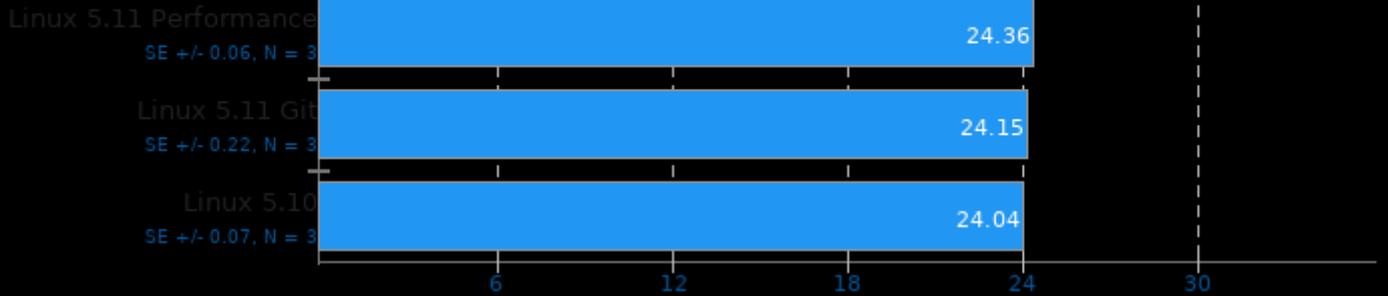
Benchmark: scikit_linearridge regression



PlaidML

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

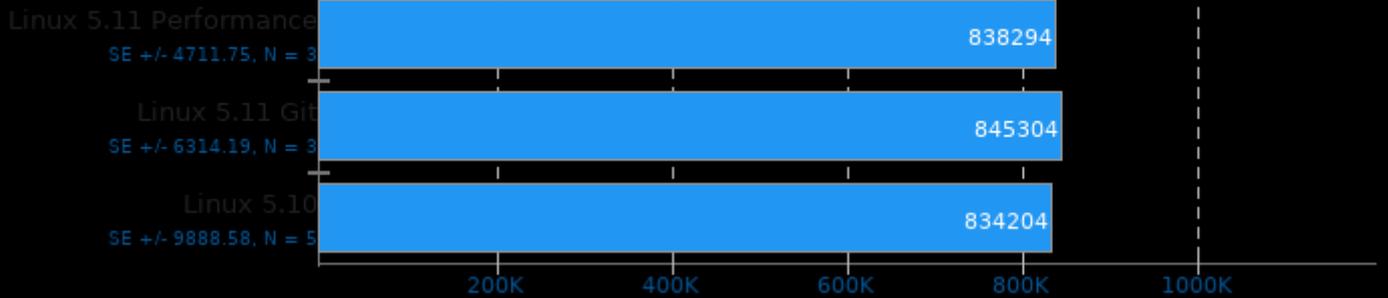
► FPS, More Is Better



PHPBench 0.8.1

PHP Benchmark Suite

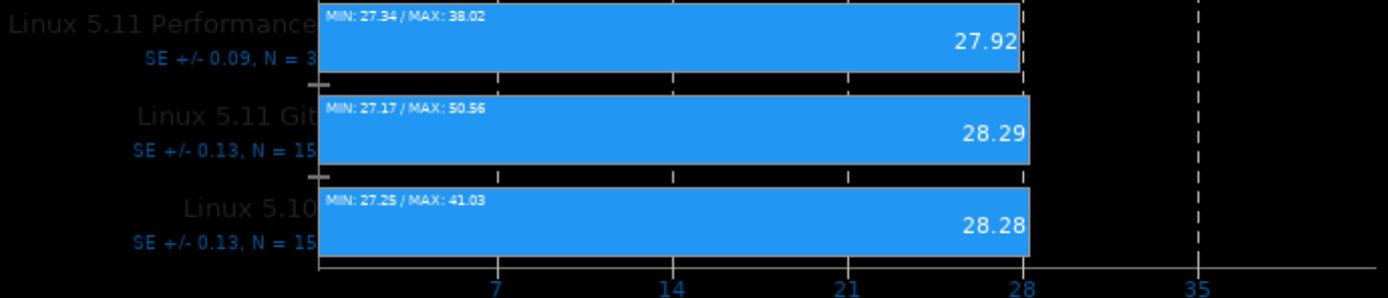
► Score, More Is Better



Mobile Neural Network 2020-09-17

Model: resnet-v2-50

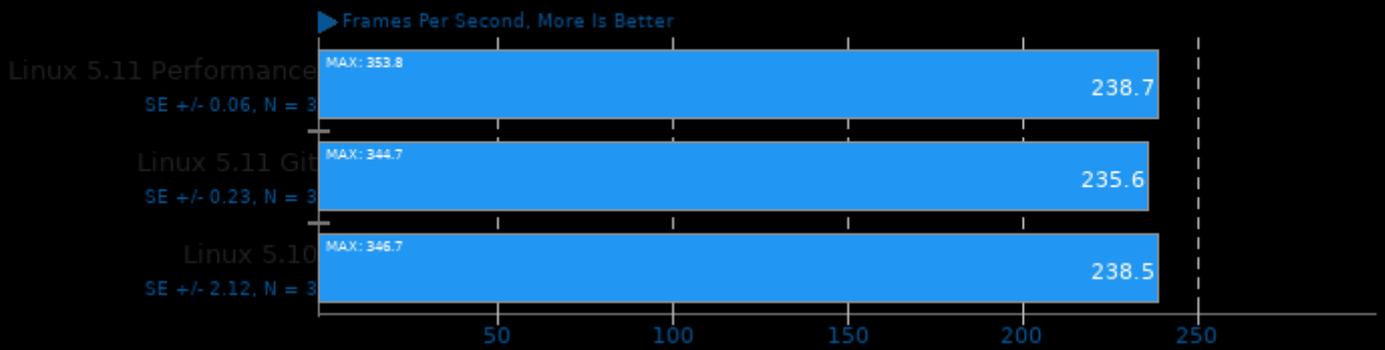
◀ ms, Fewer Is Better



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

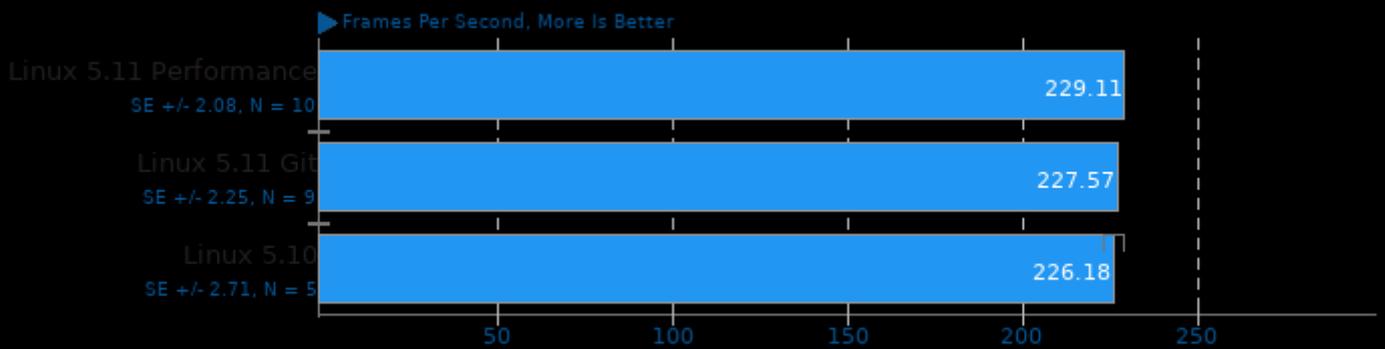
Unigine Superposition 1.0

Resolution: 1920 x 1080 - Mode: Fullscreen - Quality: Low - Renderer: OpenGL



SVT-VP9 0.1

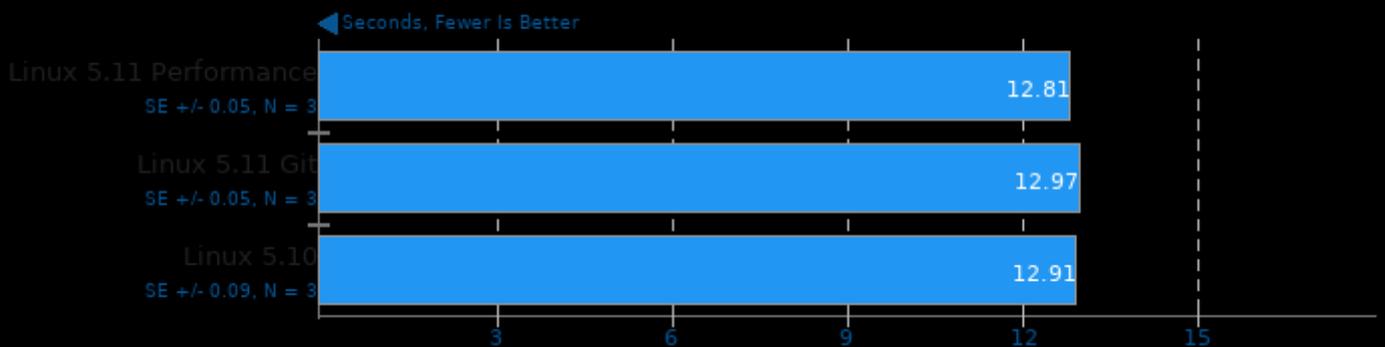
Tuning: VMAF Optimized - Input: Bosphorus 1080p



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

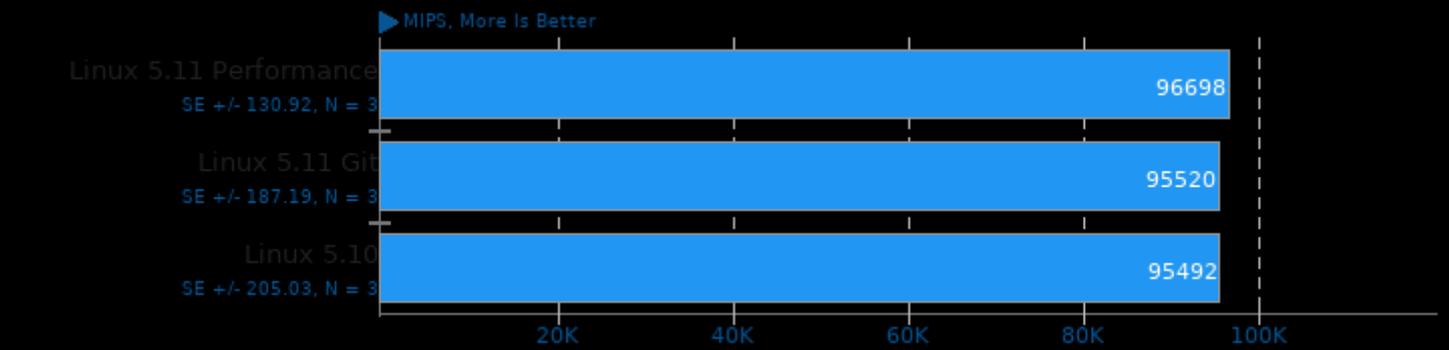
Dolfyn 0.527

Computational Fluid Dynamics



7-Zip Compression 16.02

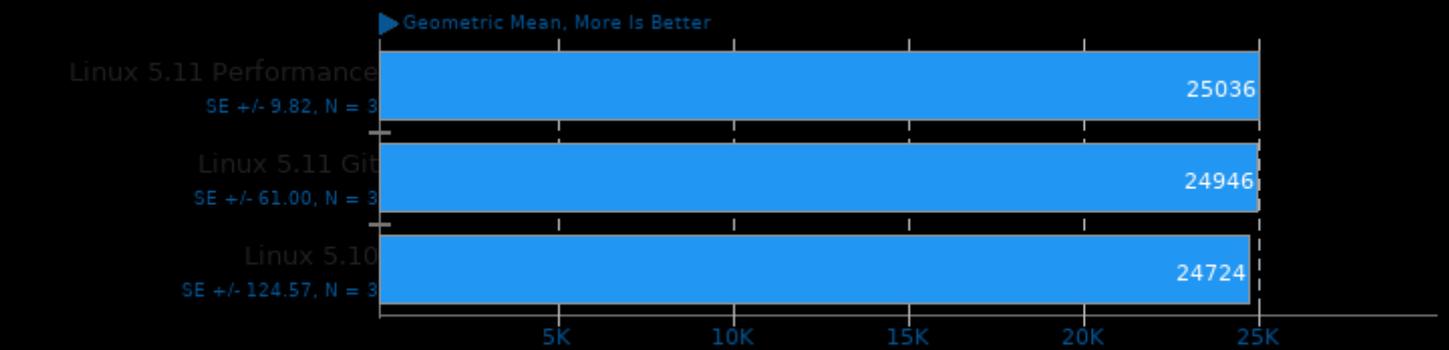
Compress Speed Test



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

Selenium

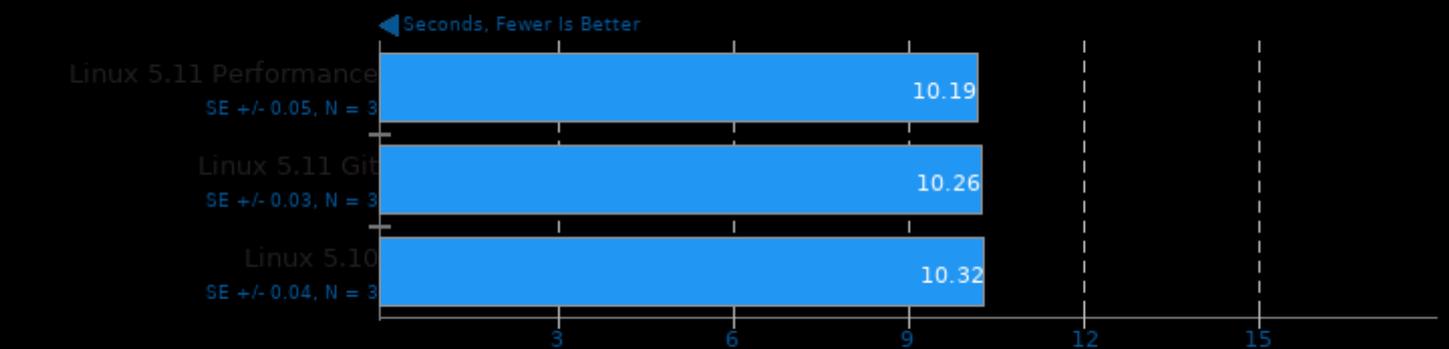
Benchmark: Octane - Browser: Firefox



1. firefox 84.0

Rodinia 3.1

Test: OpenMP CFD Solver

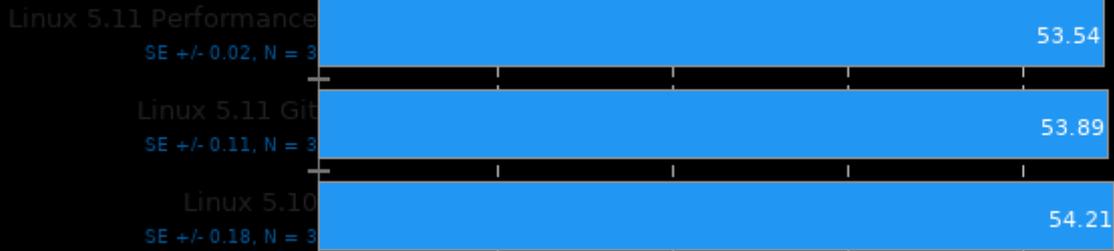


1. (CXX) g++ options: -O2 -lOpenCL

LibRaw 0.20

Post-Processing Benchmark

► Mpix/sec, More Is Better

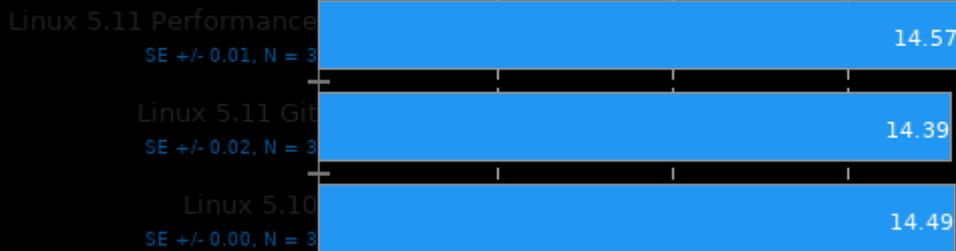


1. (CXX) g++ options: -O2 -fopenmp -ljpeg -lz -lm

Intel Open Image Denoise 1.2.0

Scene: Memorial

► Images / Sec, More Is Better



Selenium

Benchmark: Octane - Browser: Google Chrome

► Geometric Mean, More Is Better

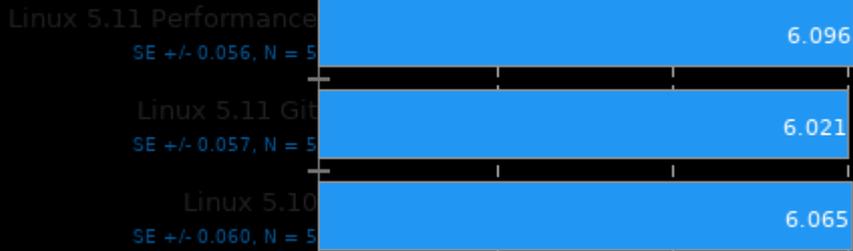


1. chrome 87.0.4280.88

Opus Codec Encoding 1.3.1

WAV To Opus Encode

← Seconds, Fewer Is Better

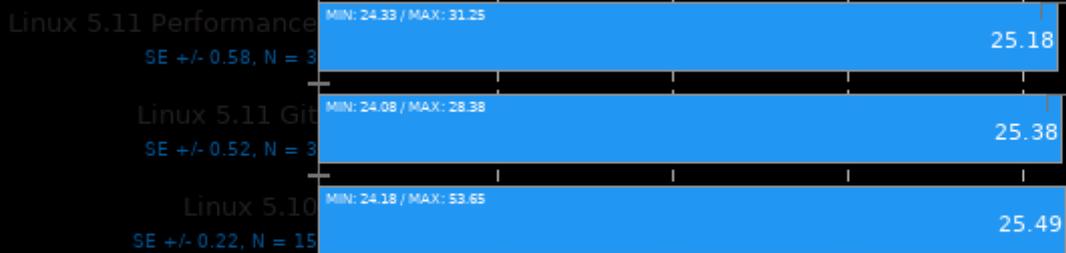


1. (CXX) g++ options: -fvisibility=hidden -logg -lm

NCNN 20201218

Target: CPU - Model: resnet50

← ms, Fewer Is Better

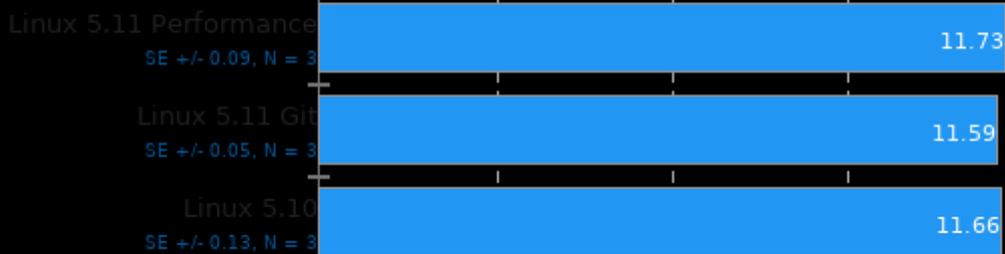


1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

PlaidML

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

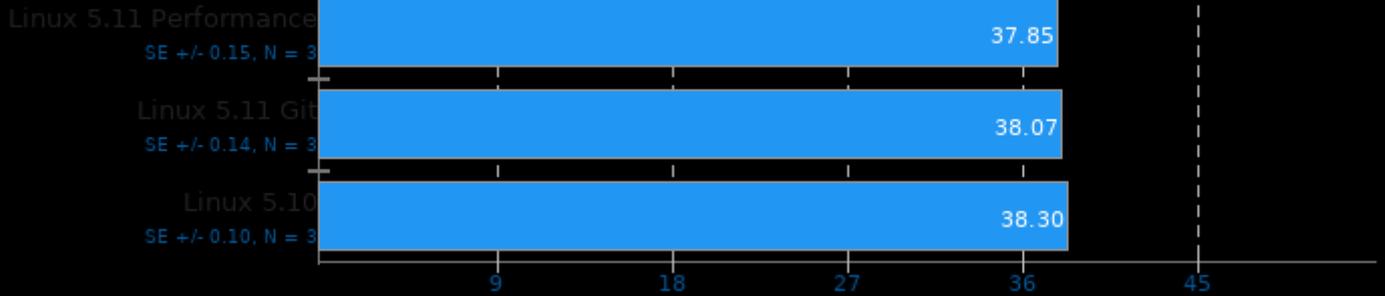
► FPS, More Is Better



Git

Time To Complete Common Git Commands

← Seconds, Fewer Is Better

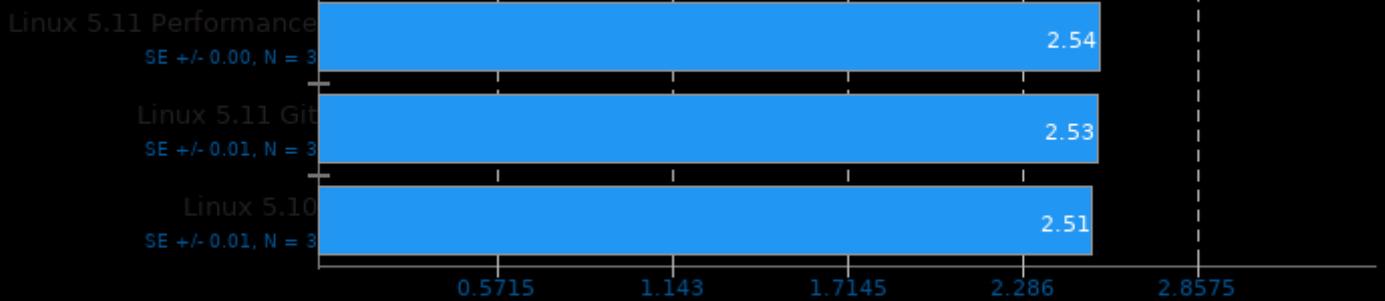


1. git version 2.25.1

OpenVINO 2021.1

Model: Person Detection 0106 FP16 - Device: CPU

▶ FPS, More Is Better

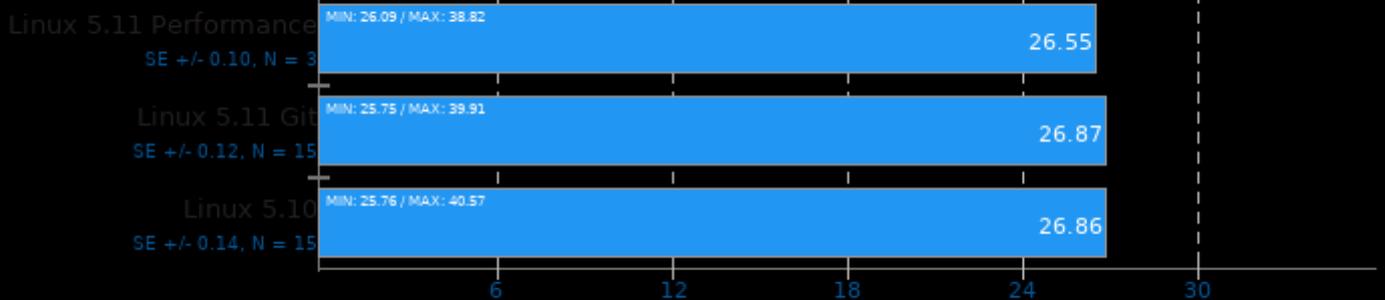


1. (CXX) g++ options: -fsigned-char -ffunction-sections -fdata-sections -O3 -pie -pthread -lpthread

Mobile Neural Network 2020-09-17

Model: inception-v3

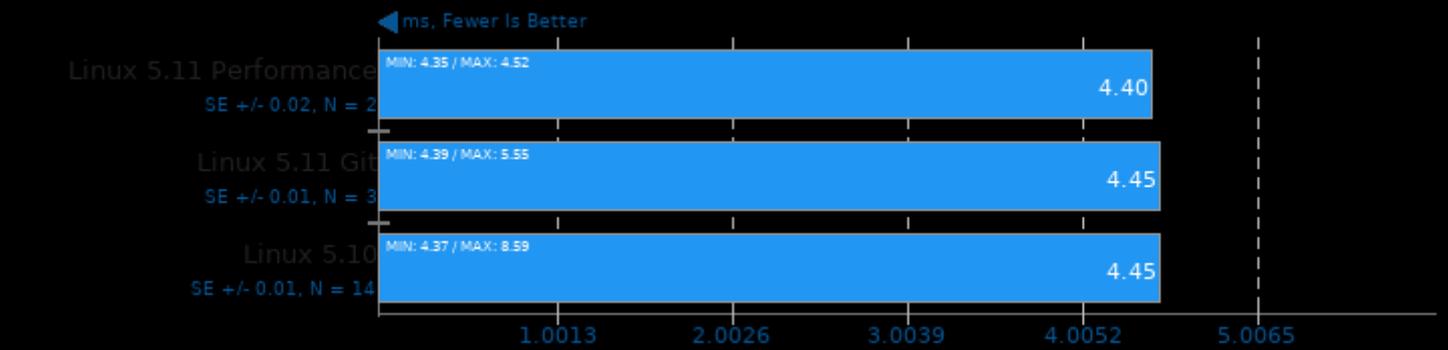
← ms, Fewer Is Better



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

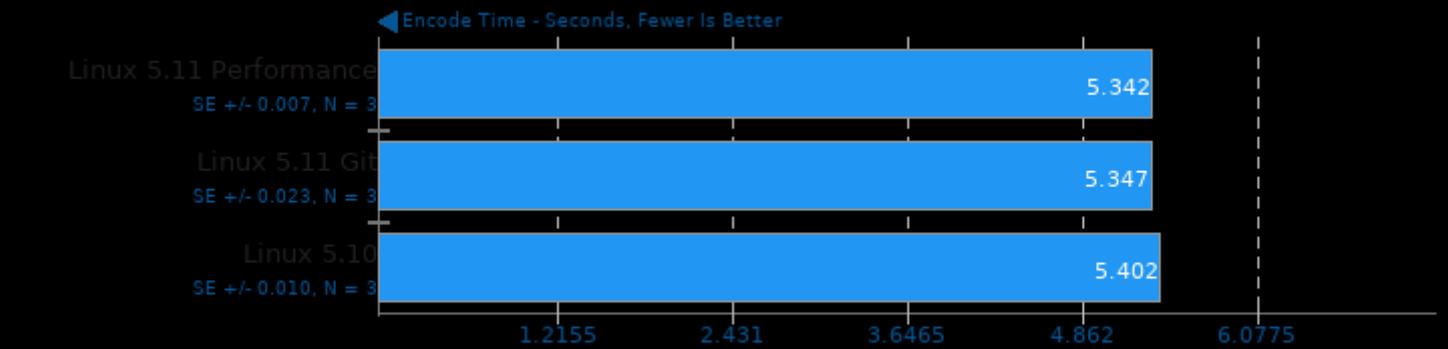
NCNN 20201218

Target: CPU - Model: shufflenet-v2



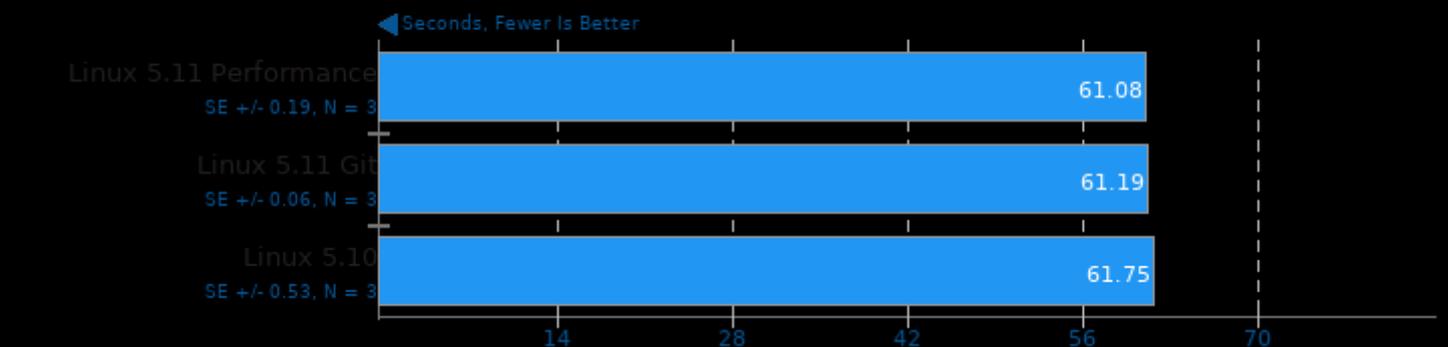
WebP Image Encode 1.1

Encode Settings: Quality 100, Highest Compression



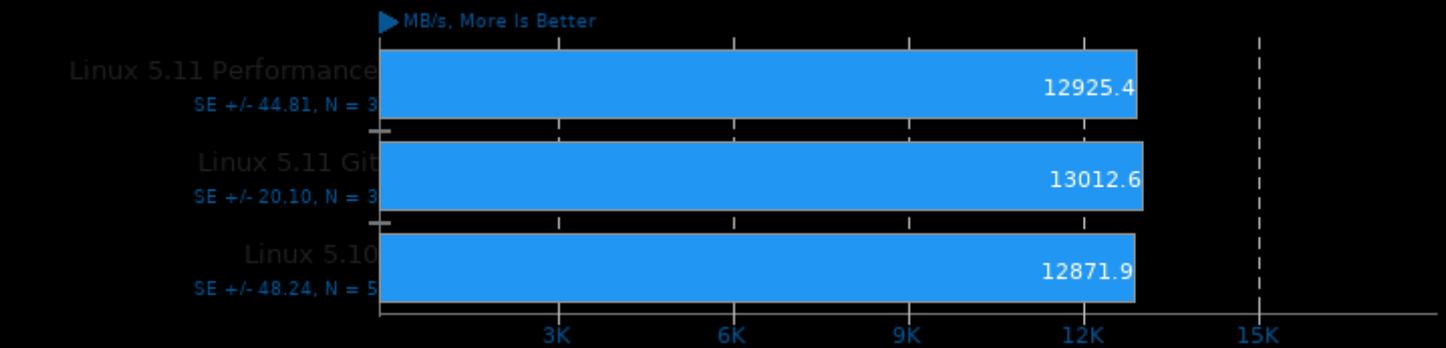
Mlpack Benchmark

Benchmark: scikit_qda



LZ4 Compression 1.9.3

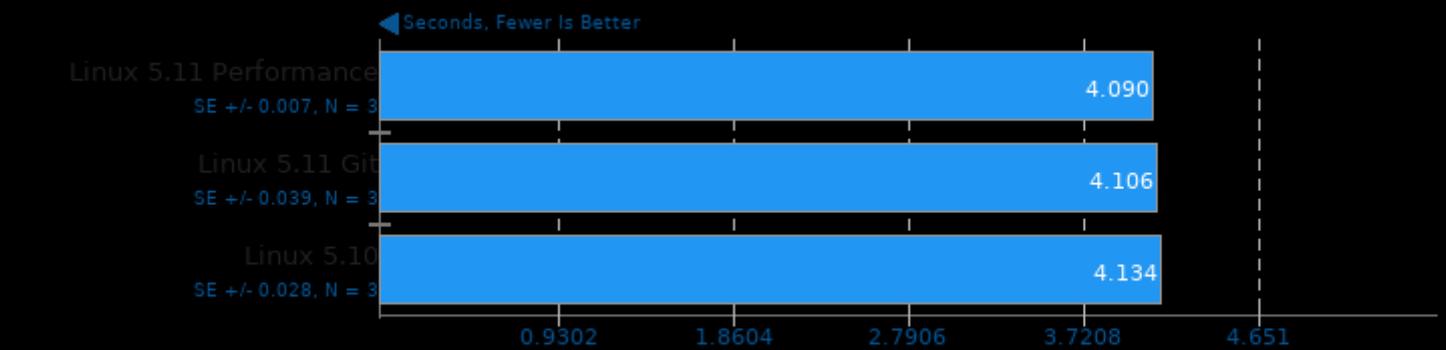
Compression Level: 9 - Decompression Speed



1. (CC) gcc options: -O3

libavif avifenc 0.7.3

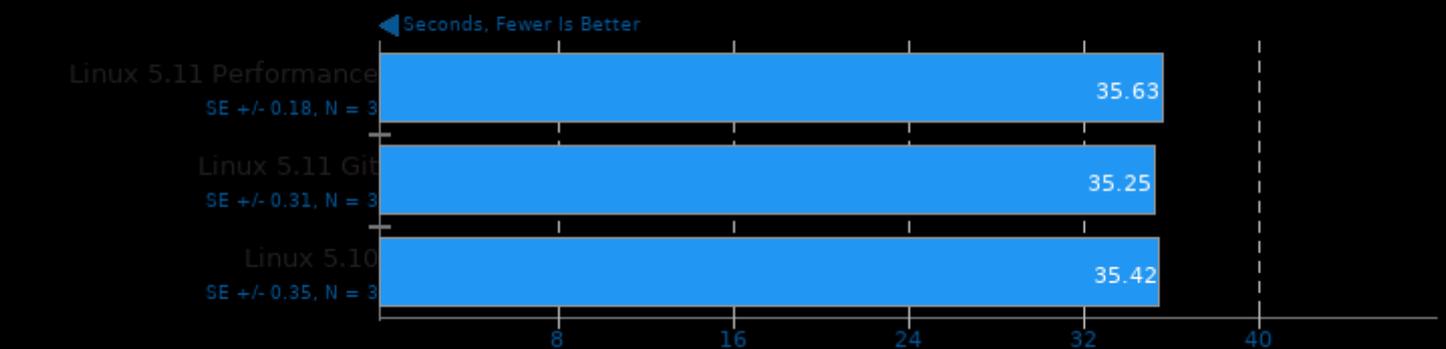
Encoder Speed: 10



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

Hugin

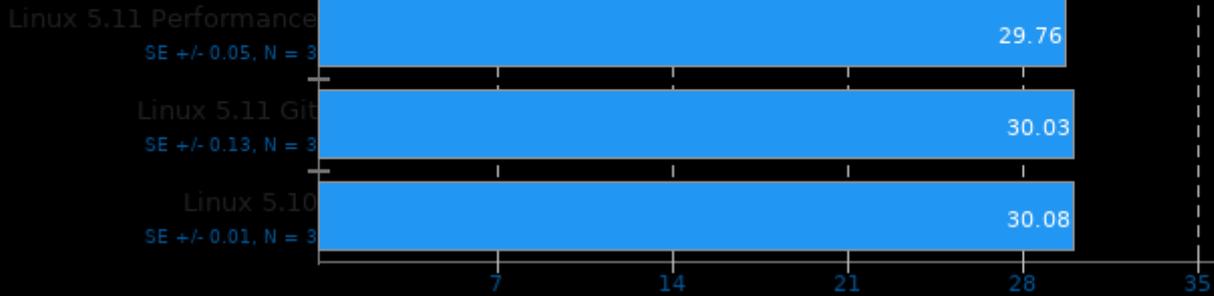
Panorama Photo Assistant + Stitching Time



Timed FFmpeg Compilation 4.2.2

Time To Compile

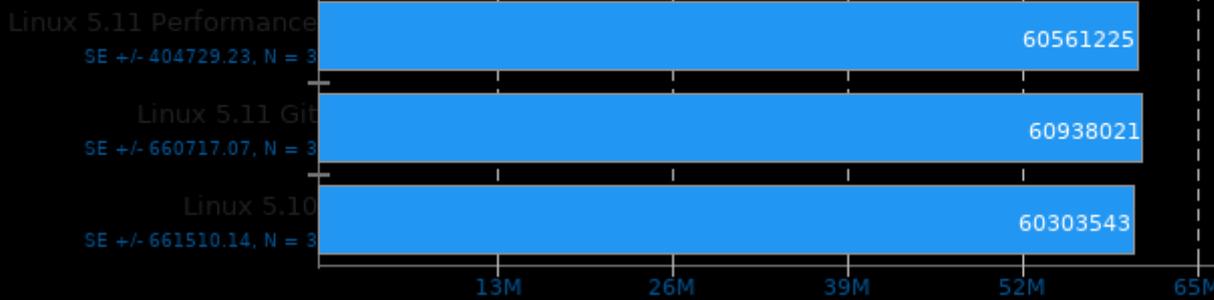
Seconds, Fewer Is Better



asmFish 2018-07-23

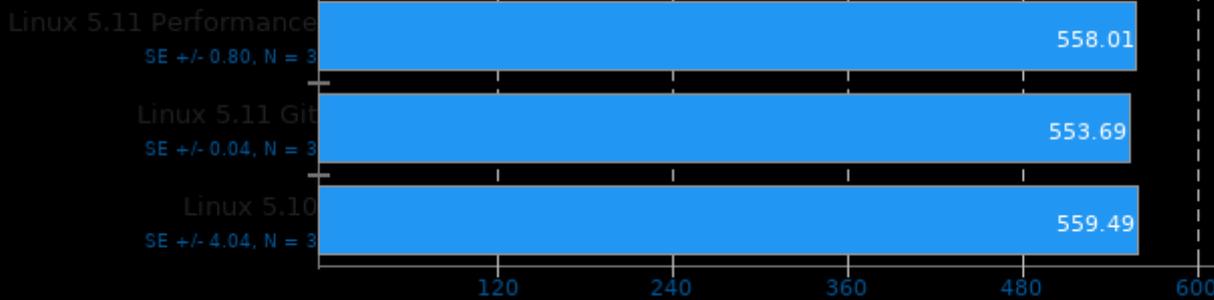
1024 Hash Memory, 26 Depth

Nodes/second, More Is Better



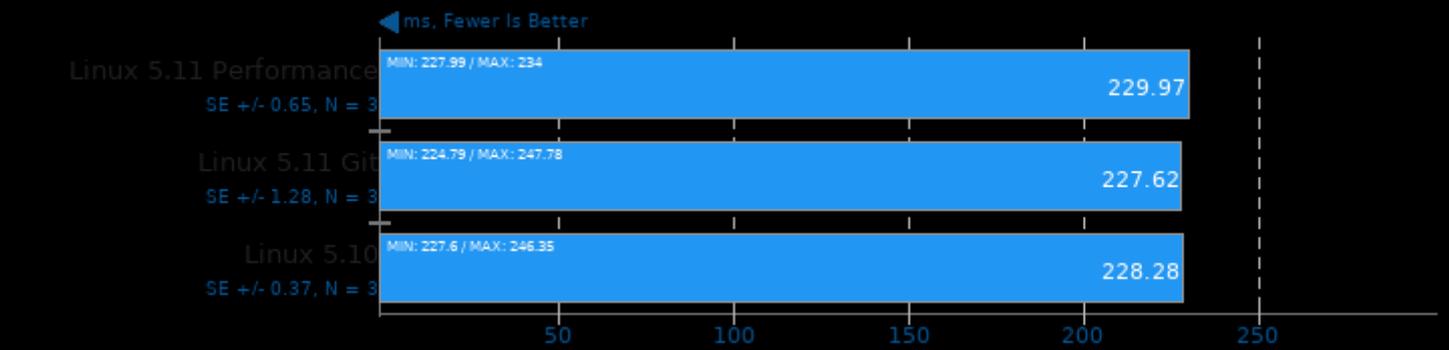
Numpy Benchmark

Score, More Is Better



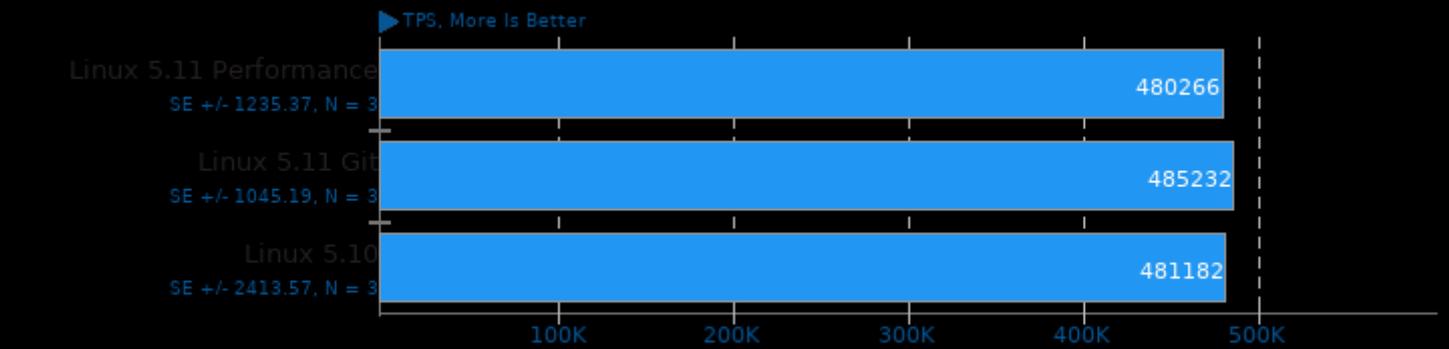
TNN 0.2.3

Target: CPU - Model: MobileNet v2



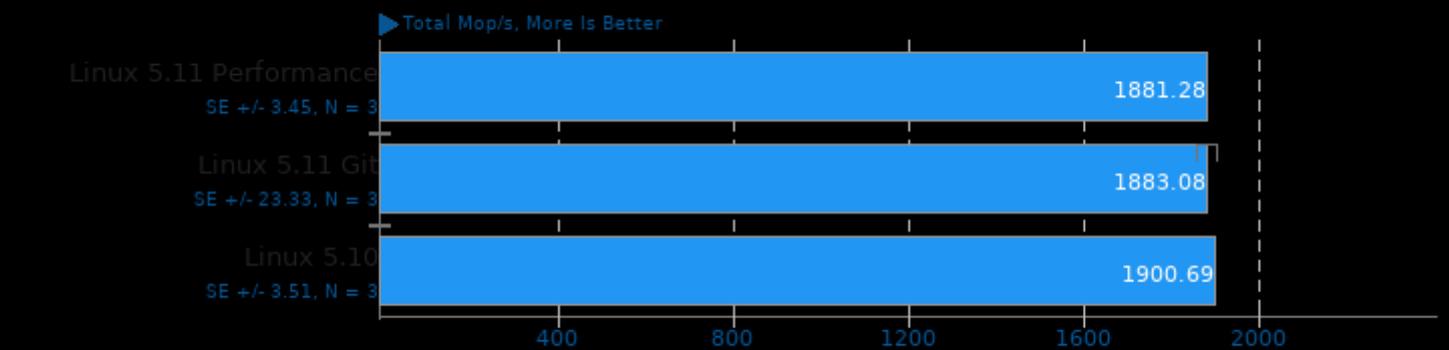
PostgreSQL pgbench 13.0

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



NAS Parallel Benchmarks 3.4

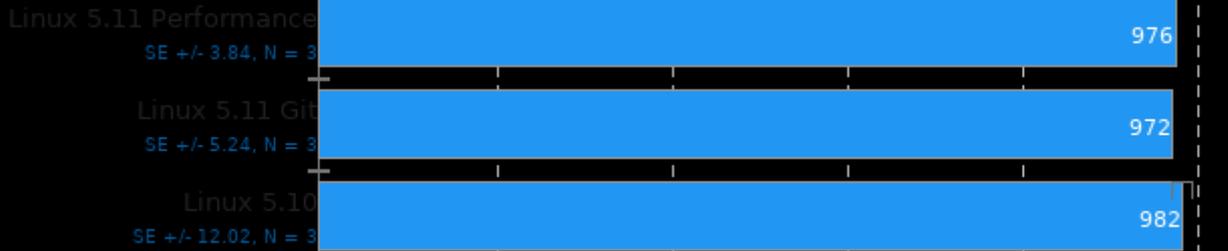
Test / Class: EP.C



GraphicsMagick 1.3.33

Operation: Rotate

Iterations Per Minute, More Is Better

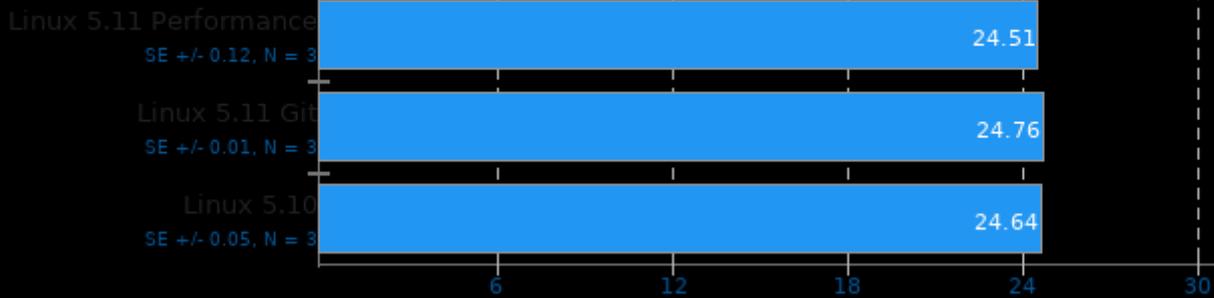


1. (CC) gcc options: -fopenmp -O2 -pthread -ljbig -lwebp -lwebpmux -ltiff -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -lXt -lXmu -lXpm -lXft -lX11 -lXt -lXmu -lXpm -lXft -lX11 -lXt -lXmu -lXpm -lXft

GEGL

Operation: Reflect

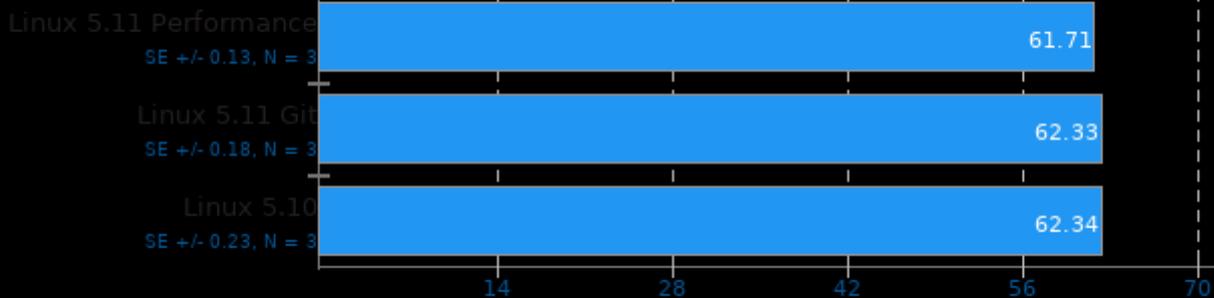
Seconds, Fewer Is Better



Timed MrBayes Analysis 3.2.7

Primate Phylogeny Analysis

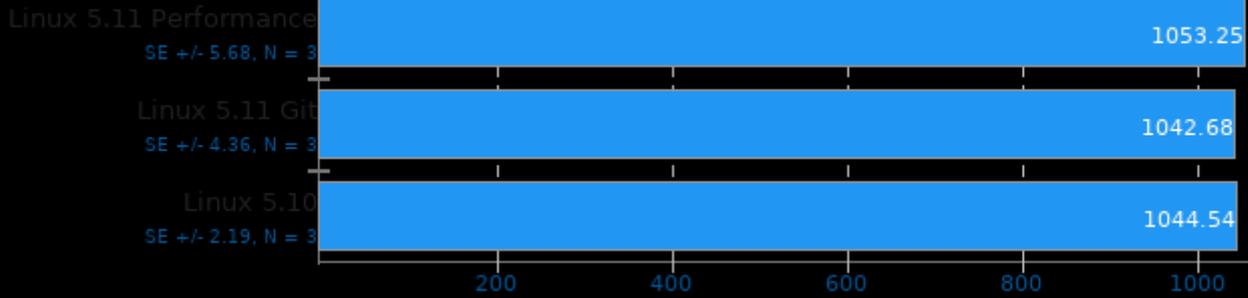
Seconds, Fewer Is Better



1. (CC) gcc options: -mmmx -msse -msse2 -msse3 -mssse3 -msse4.1 -msse4.2 -msse4a -msha -maes -mavx -mfma -mavx2 -mrdnd -mbmi -mbmi2 -madx

TTSIOD 3D Renderer 2.3b Phong Rendering With Soft-Shadow Mapping

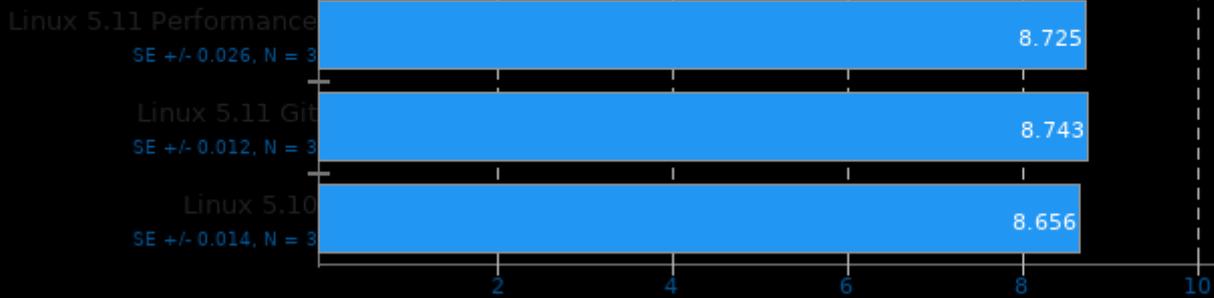
► FPS, More Is Better



1. (CXX) g++ options: -O3 -fomit-frame-pointer -ffast-math -mtune=native -flto -msse -mrecip -mfpmath=sse -msse2 -mssse3 -ISDL -fopenmp -fwhole-pr

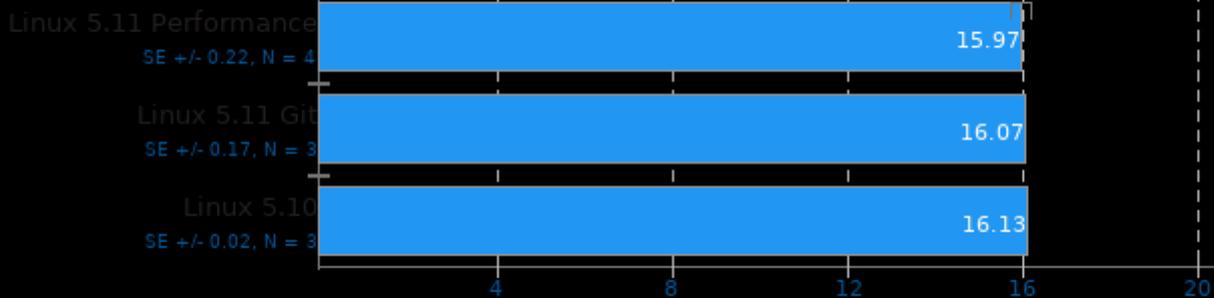
IndigoBench 4.4 Acceleration: CPU - Scene: Supercar

► M samples/s, More Is Better



Node.js V8 Web Tooling Benchmark

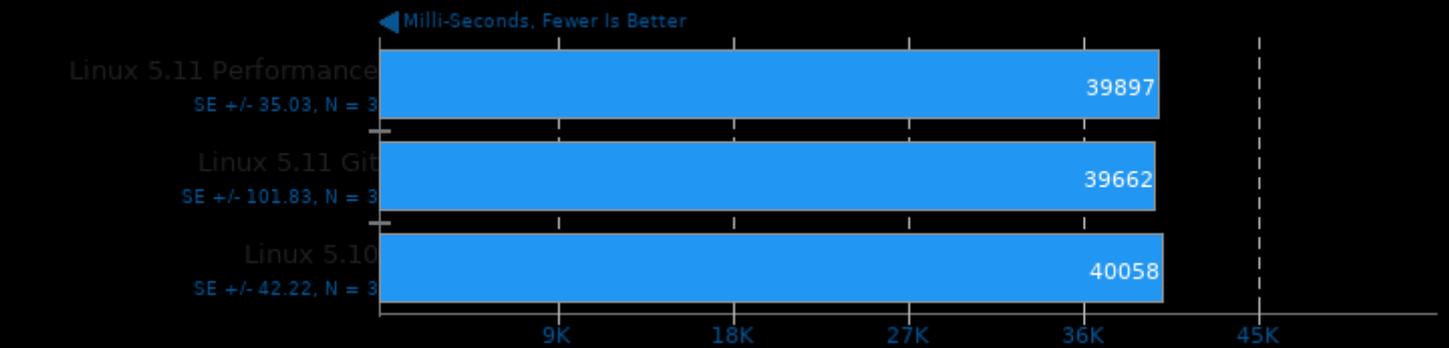
► runs/s, More Is Better



1. Nodejs
v10.19.0

Caffe 2020-02-13

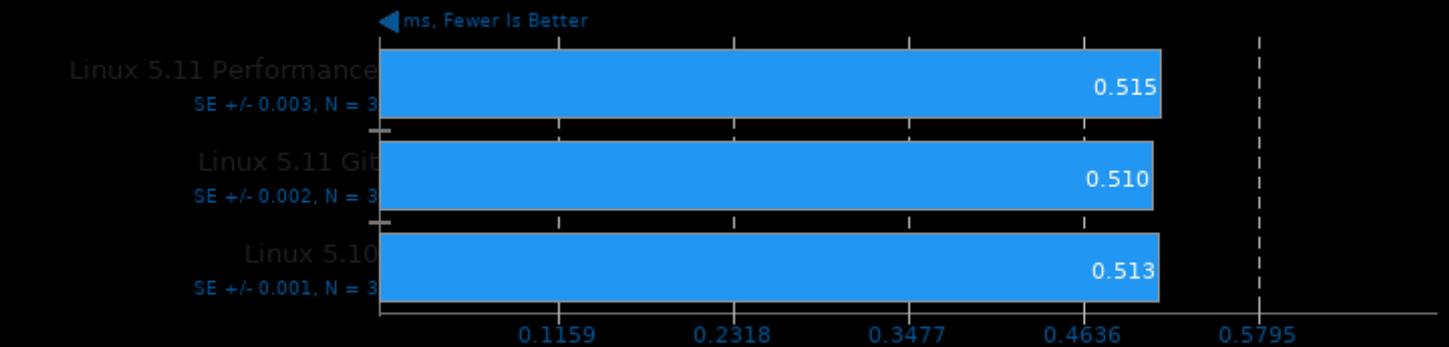
Model: AlexNet - Acceleration: CPU - Iterations: 100



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

PostgreSQL pgbench 13.0

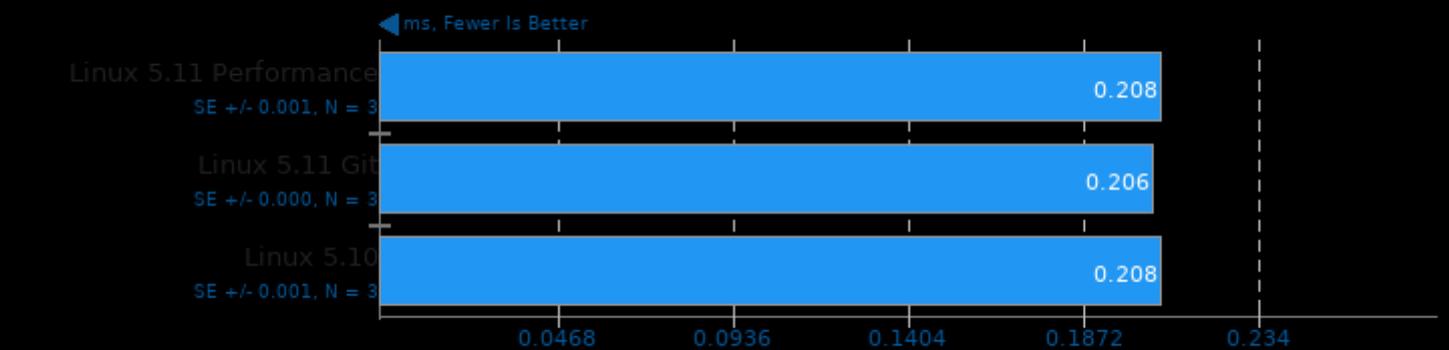
Scaling Factor: 100 - Clients: 250 - Mode: Read Only - Average Latency



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

PostgreSQL pgbench 13.0

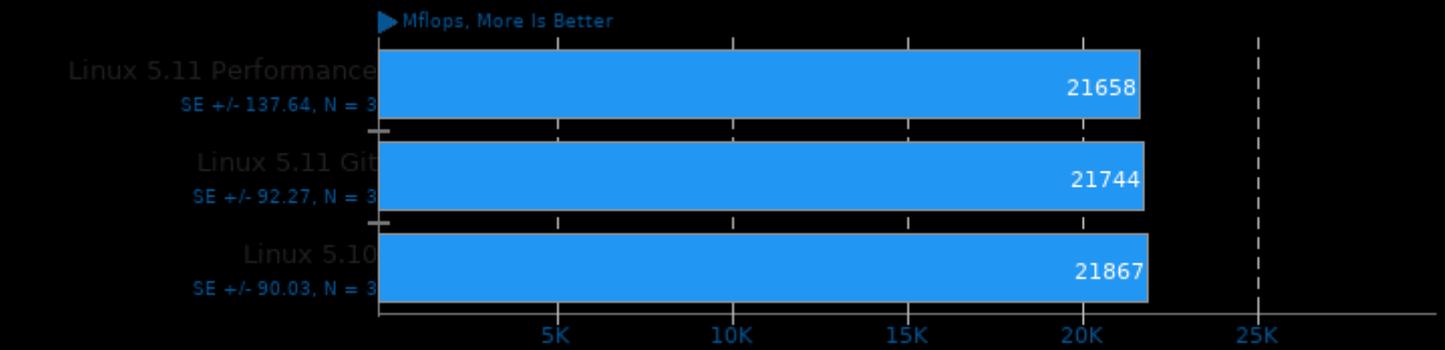
Scaling Factor: 100 - Clients: 100 - Mode: Read Only - Average Latency



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

FFTW 3.3.6

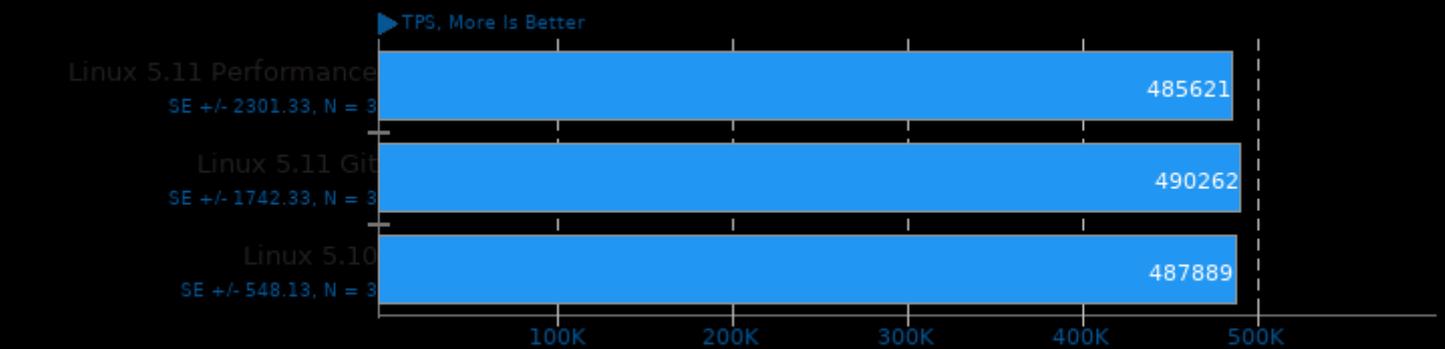
Build: Float + SSE - Size: 1D FFT Size 32



1. (CC) gcc options: -pthread -O3 -fomit-frame-pointer -mtune=native -malign-double -fstrict-aliasing -fno-schedule-insns -ffast-math -lm

PostgreSQL pgbench 13.0

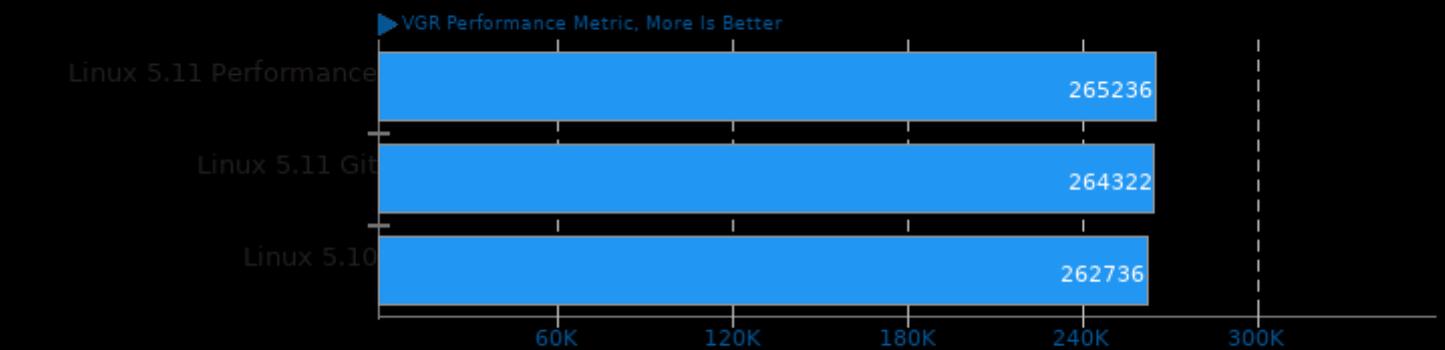
Scaling Factor: 100 - Clients: 250 - Mode: Read Only



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

BRL-CAD 7.30.8

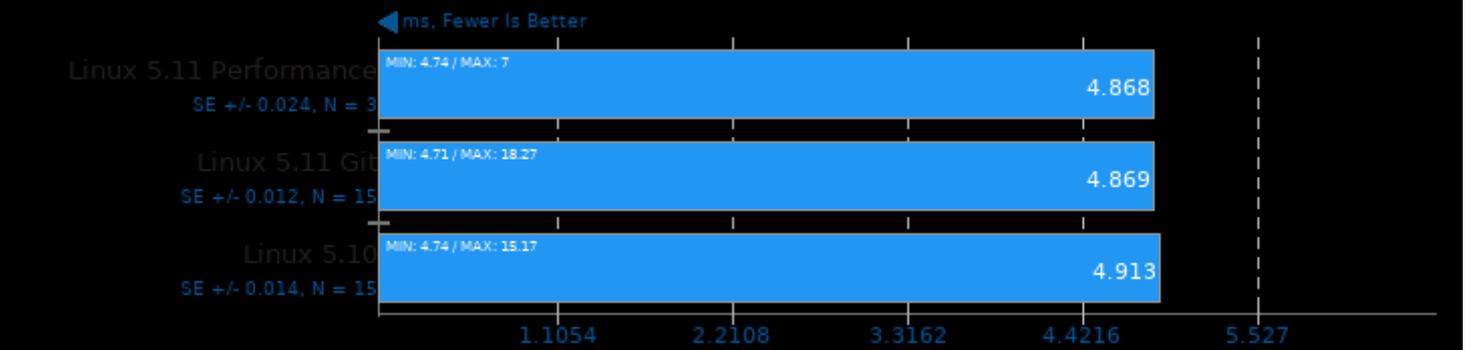
VGR Performance Metric



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

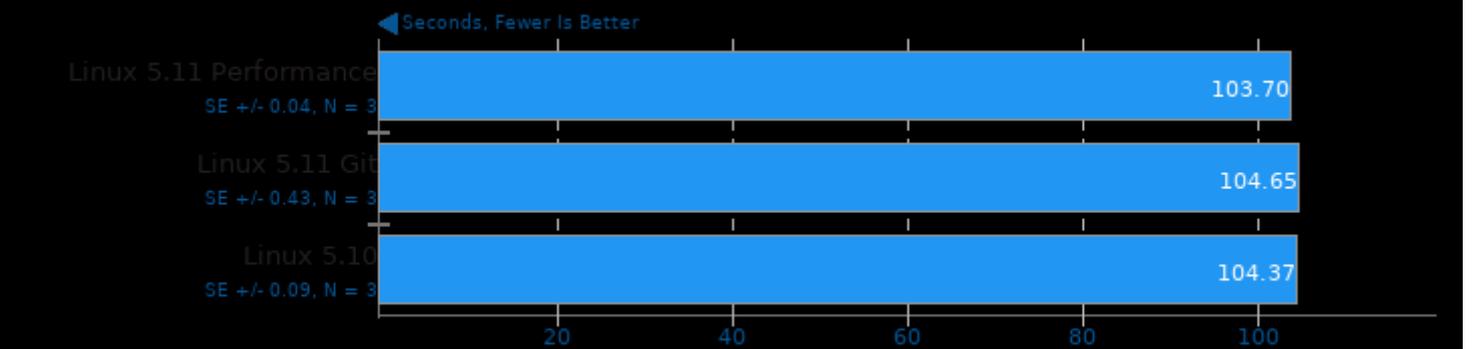
Mobile Neural Network 2020-09-17

Model: mobilenet-v1-1.0



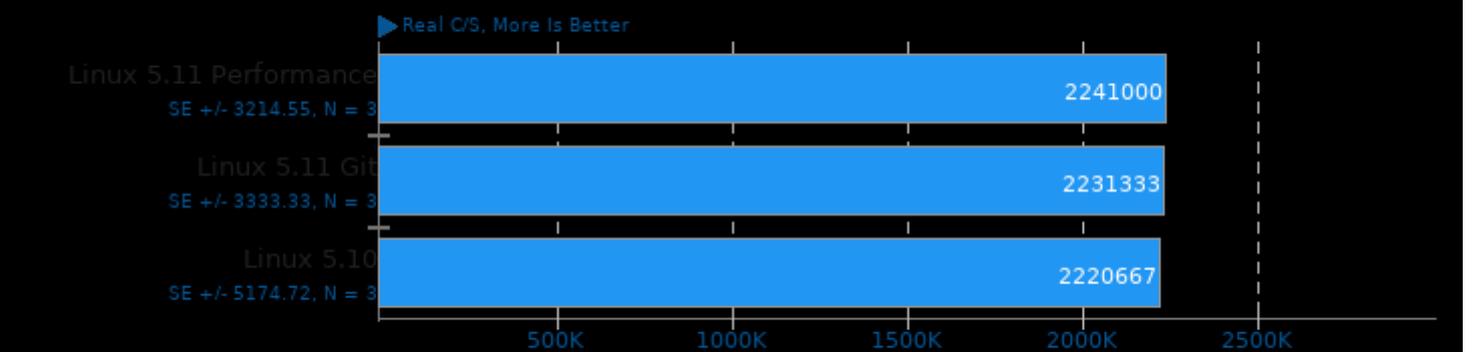
Rodinia 3.1

Test: OpenMP LavaMD



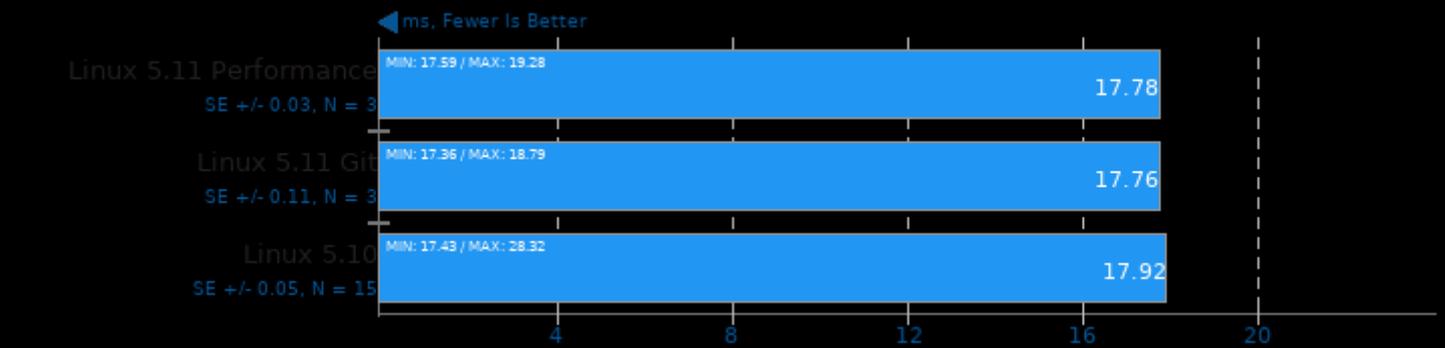
John The Ripper 1.9.0-jumbo-1

Test: MD5



NCNN 20201218

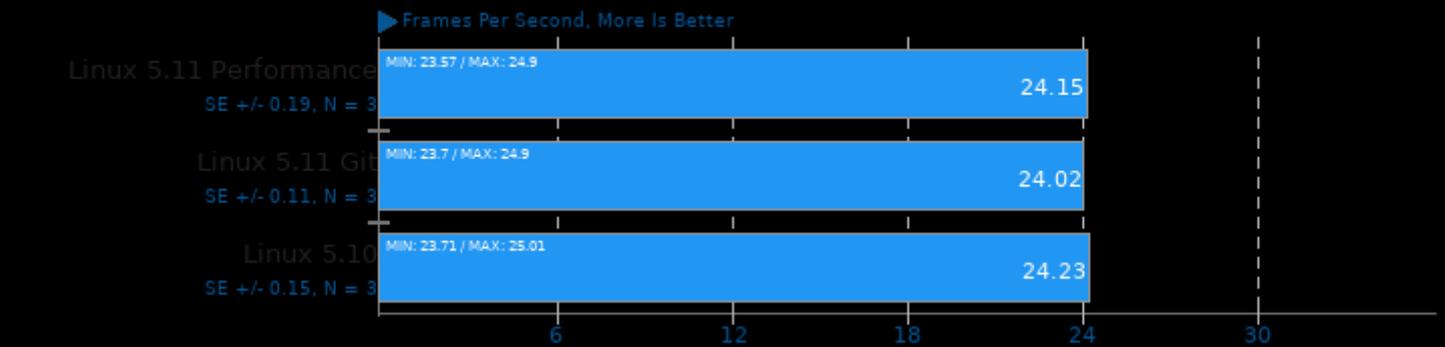
Target: CPU - Model: regnety_400m



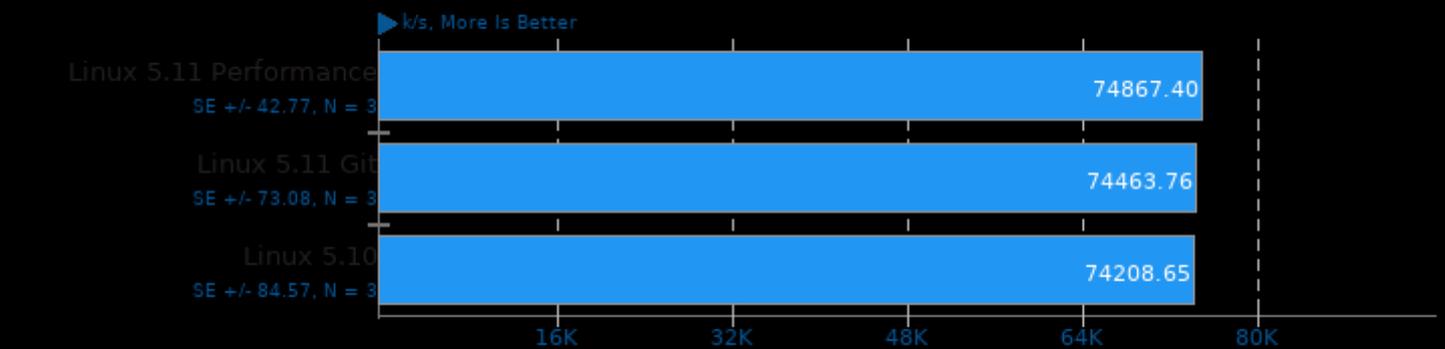
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

Embree 3.9.0

Binary: Pathtracer - Model: Crown



Aircrack-ng 1.5.2

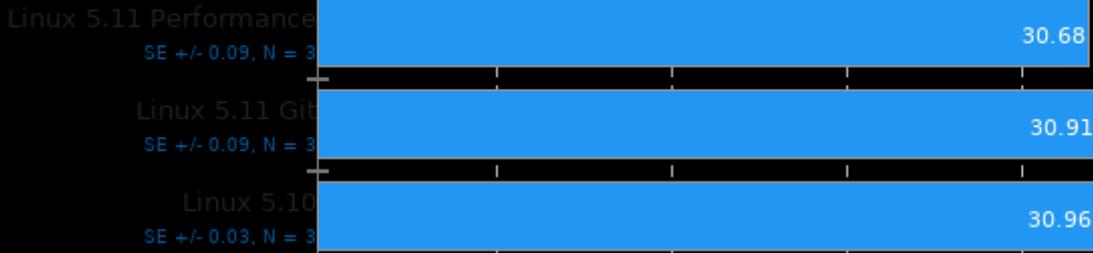


1. (CXX) g++ options: -O3 -fvisibility=hidden -masm=intel -fcommon -rdynamic -lpthread -lz -lcrypto -lhwloc -ldl -lm -pthread

GEGL

Operation: Rotate 90 Degrees

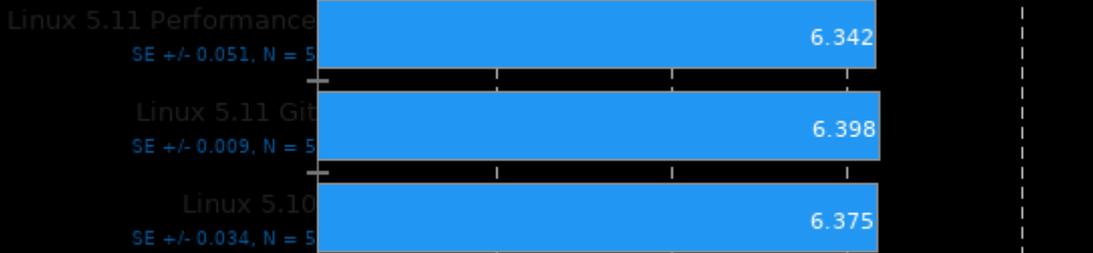
← Seconds, Fewer Is Better



FLAC Audio Encoding 1.3.2

WAV To FLAC

← Seconds, Fewer Is Better

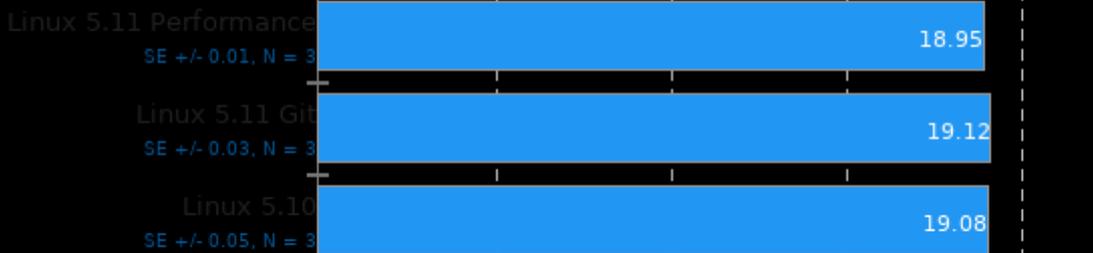


1. (CXX) g++ options: -O2 -fvisibility=hidden -logg -lm

Timed MPlayer Compilation 1.4

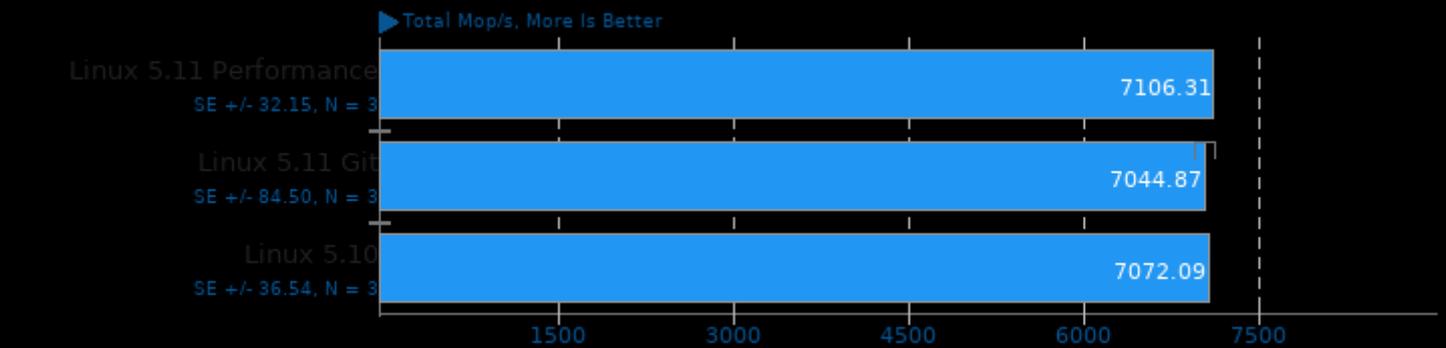
Time To Compile

← Seconds, Fewer Is Better



NAS Parallel Benchmarks 3.4

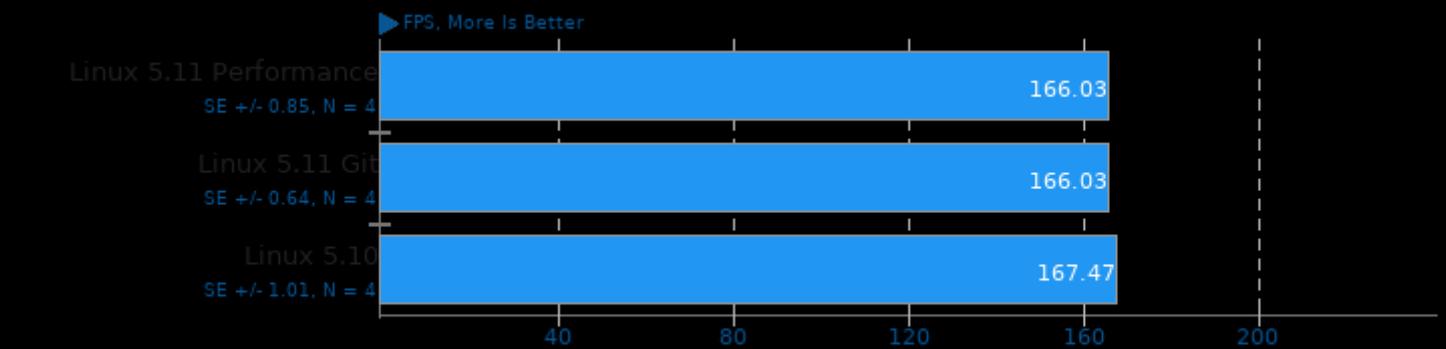
Test / Class: CG.C



1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 4.0.3

Optcarrot

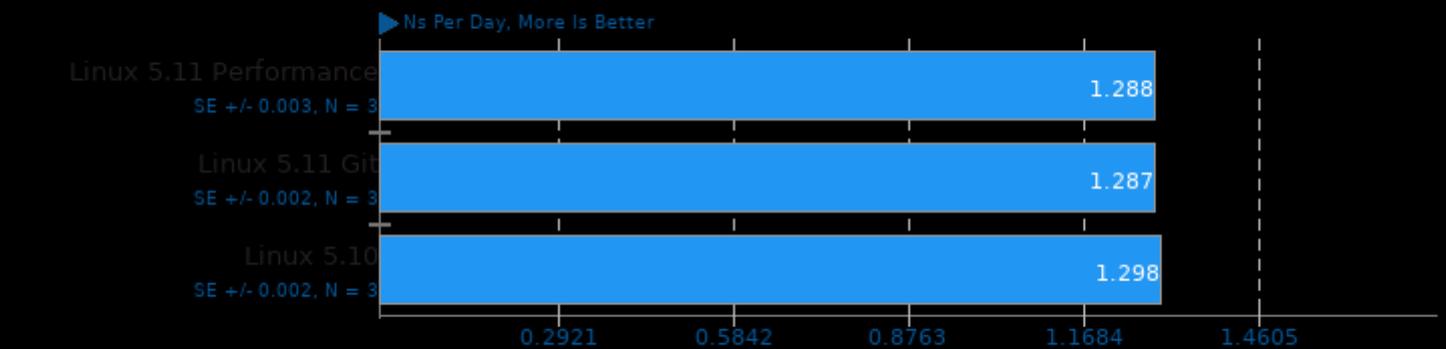
Optimized Benchmark



1. ruby 2.7.0p0 (2019-12-25 revision 647ee6f091) [x86_64-linux-gnu]

GROMACS 2020.3

Water Benchmark

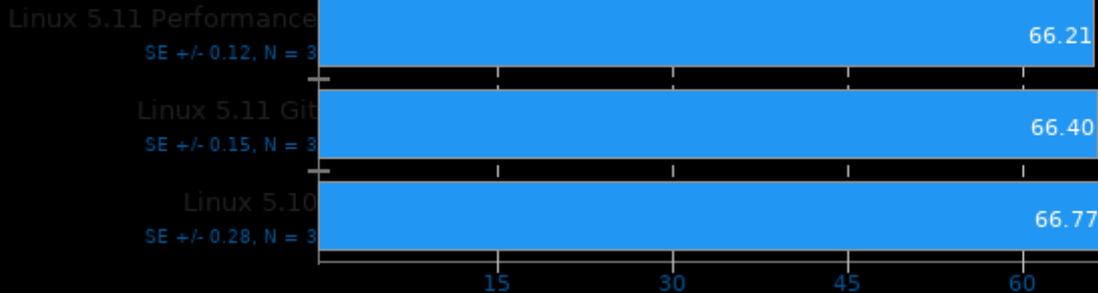


1. (CXX) g++ options: -O3 -pthread -lrt -lpthread -lm

YafaRay 3.4.1

Total Time For Sample Scene

◀ Seconds, Fewer Is Better

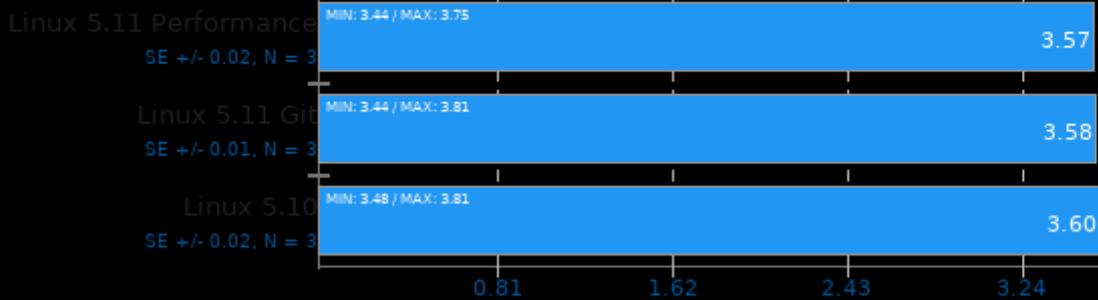


1. (CXX) g++ options: -std=c++11 -O3 -ffast-math -rdynamic -ldl -lm -lmimf -llex -lHalf -lz -llmThread -lxml2 -lfreetype -pthread

LuxCoreRender 2.3

Scene: DLSC

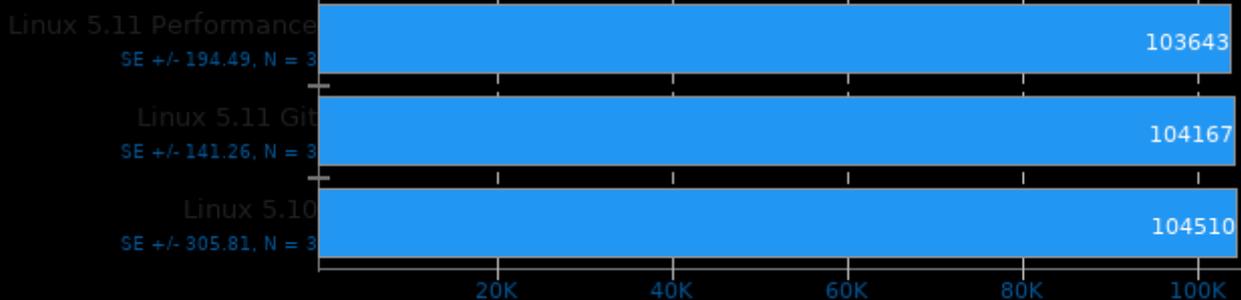
▶ M samples/sec, More Is Better



TensorFlow Lite 2020-08-23

Model: NASNet Mobile

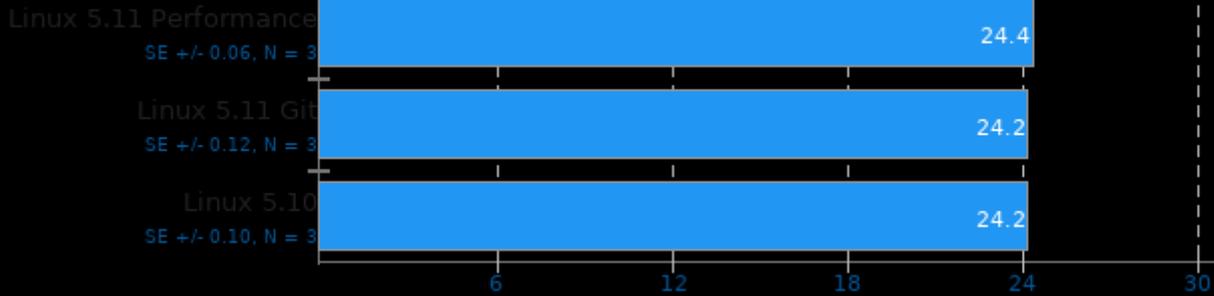
◀ Microseconds, Fewer Is Better



Selenium

Benchmark: WASM imageConvolute - Browser: Firefox

ms, Fewer Is Better

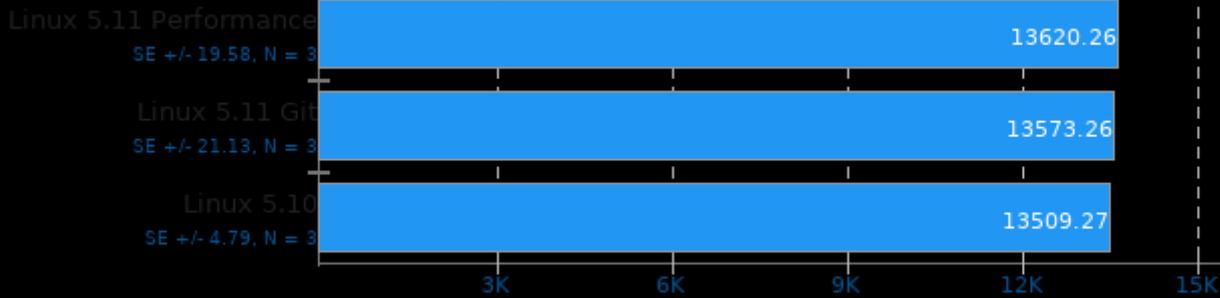


1. firefox 84.0

OpenVINO 2021.1

Model: Age Gender Recognition Retail_0013_FP32 - Device: CPU

FPS, More Is Better

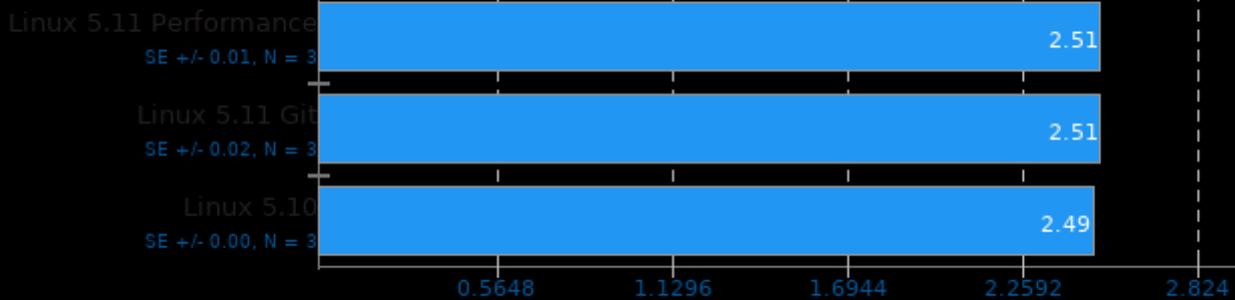


1. (CXX) g++ options: -fsigned-char -ffunction-sections -fdata-sections -O3 -pie -pthread -lpthread

OpenVINO 2021.1

Model: Person Detection_0106_FP32 - Device: CPU

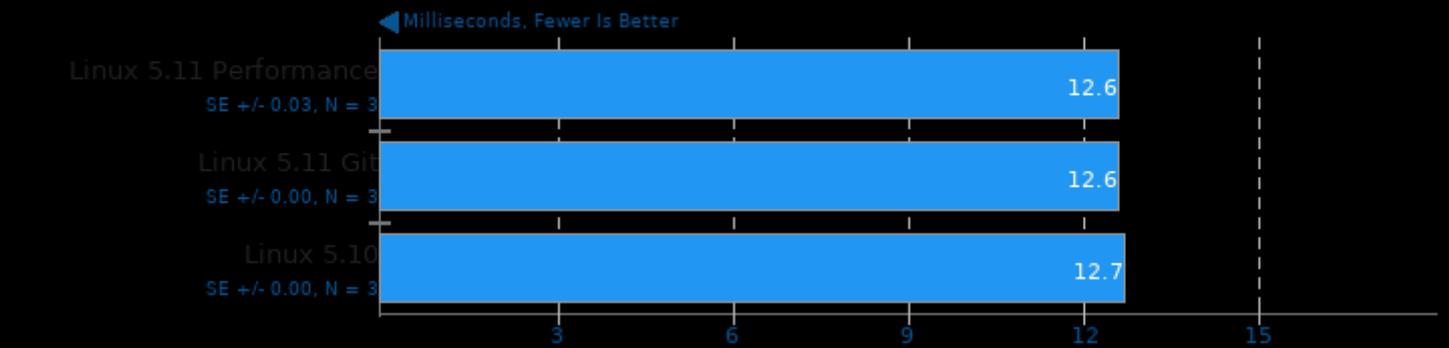
FPS, More Is Better



1. (CXX) g++ options: -fsigned-char -ffunction-sections -fdata-sections -O3 -pie -pthread -lpthread

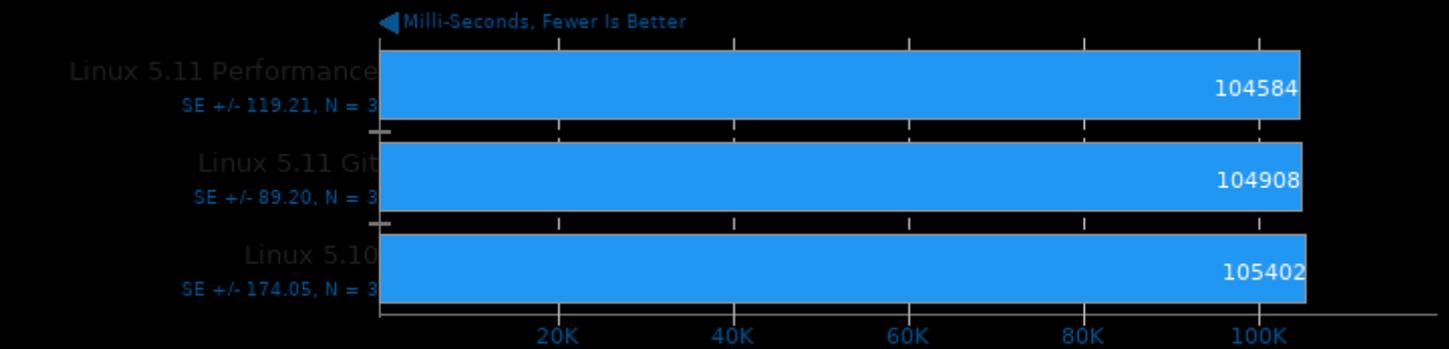
PyPerformance 1.0.0

Benchmark: pathlib



Caffe 2020-02-13

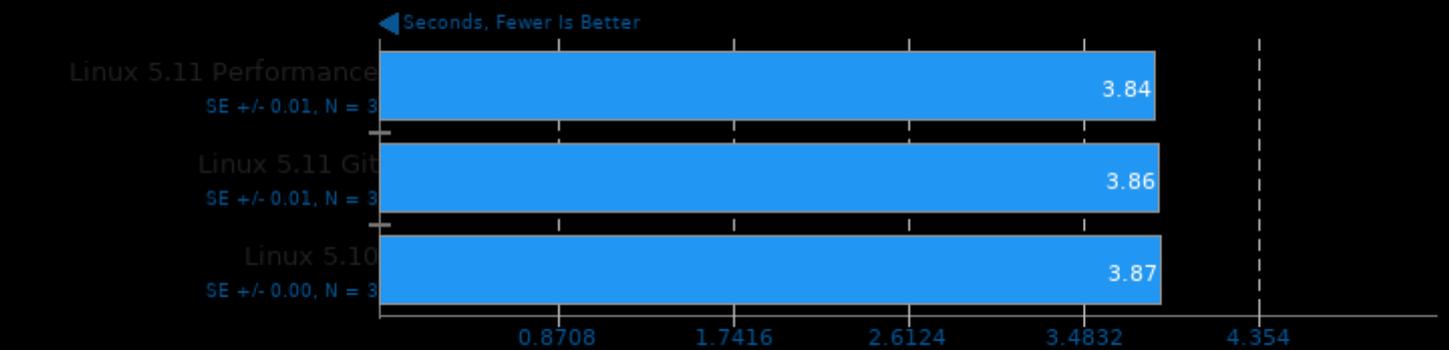
Model: GoogleNet - Acceleration: CPU - Iterations: 100



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

CloverLeaf

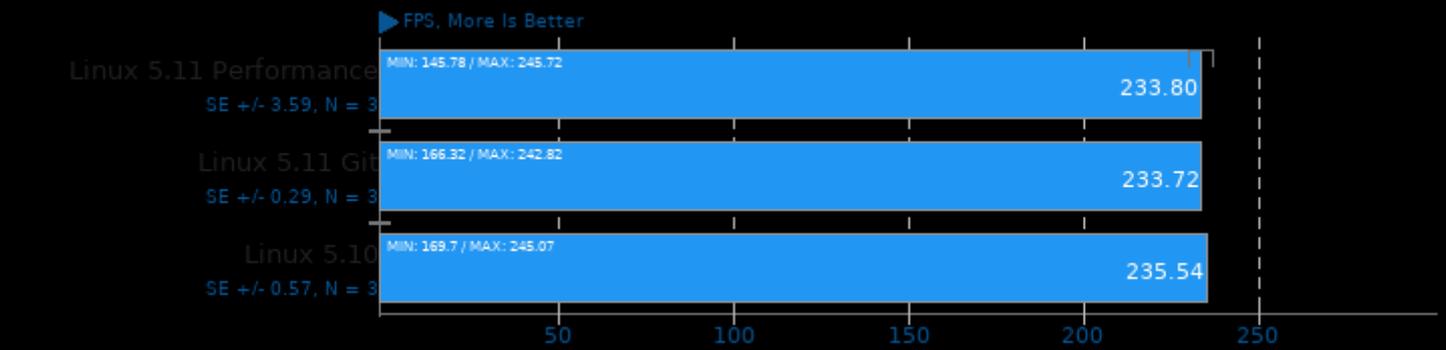
Lagrangian-Eulerian Hydrodynamics



1. (F9X) gfortran options: -O3 -march=native -funroll-loops -fopenmp

dav1d 0.7.0

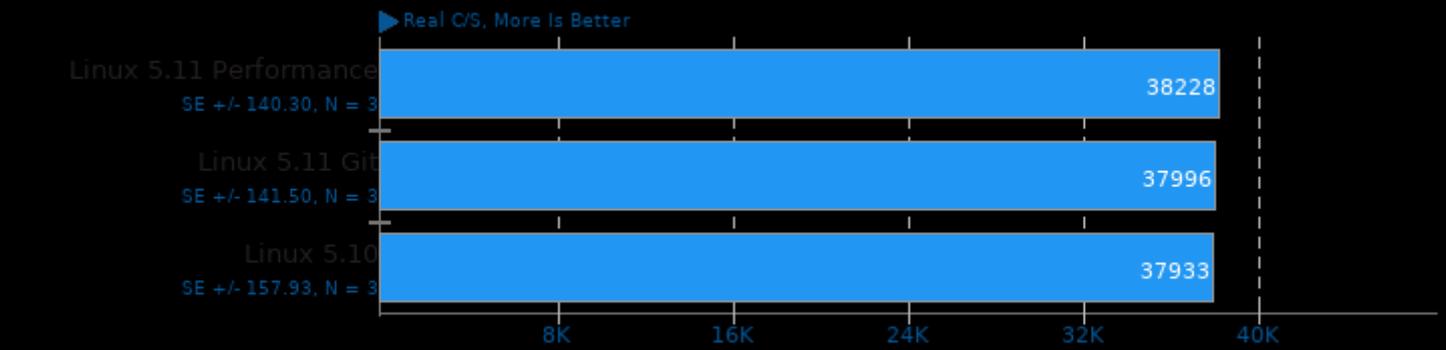
Video Input: Summer Nature 4K



1. (CC) gcc options: -pthread

John The Ripper 1.9.0-jumbo-1

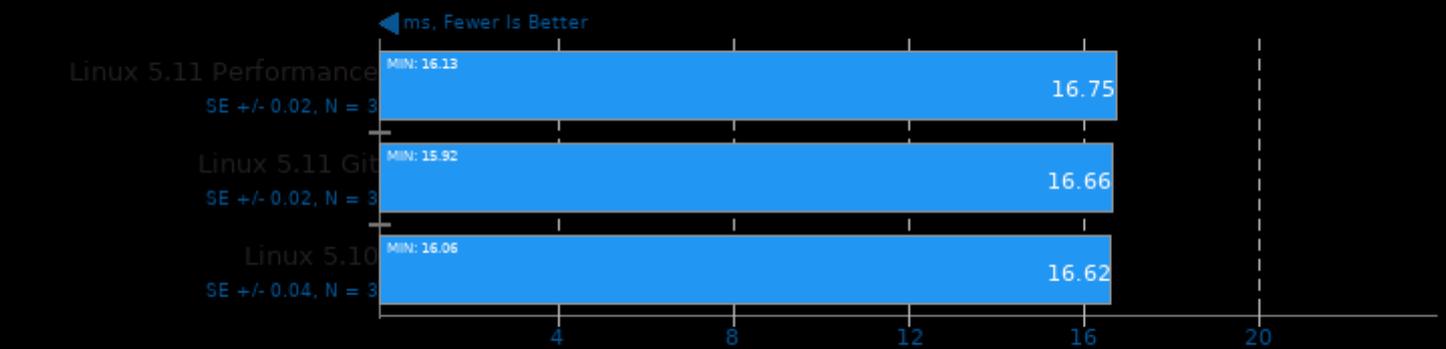
Test: Blowfish



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

oneDNN 2.0

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

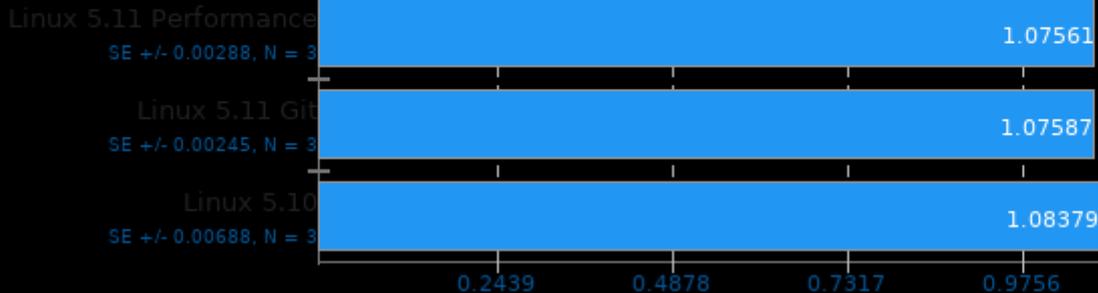


1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -pthread

NAMD 2.14

ATPase Simulation - 327,506 Atoms

days/ns, Fewer Is Better



Darktable 3.0.1

Test: Boat - Acceleration: CPU-only

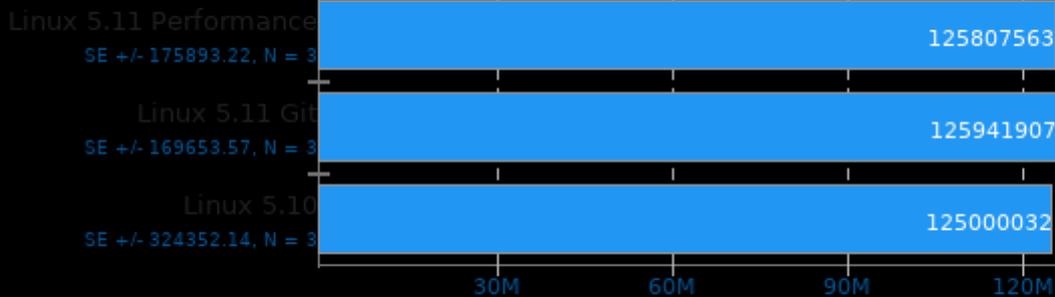
Seconds, Fewer Is Better



Facebook RocksDB 6.3.6

Test: Random Read

Op/s, More Is Better

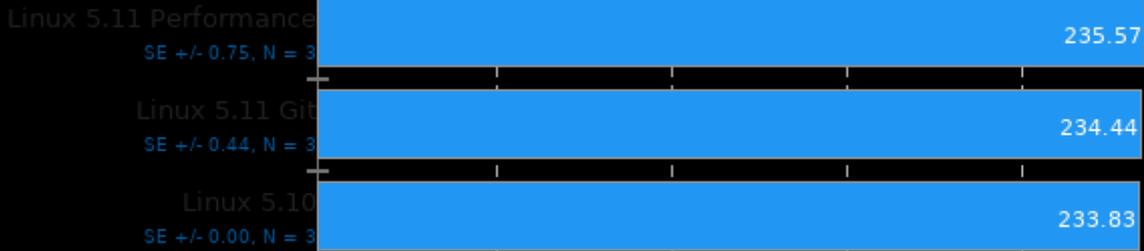


1. (CXX) g++ options: -O3 -march=native -std=c++11 -fno-builtin-memcmp -fno-rtti -rdynamic -pthread

SVT-VP9 0.1

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

► Frames Per Second, More Is Better



50 100 150 200 250

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

Smallpt 1.0

Global Illumination Renderer; 128 Samples

◀ Seconds, Fewer Is Better



1.109 2.218 3.327 4.436 5.545

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

NAS Parallel Benchmarks 3.4

Test / Class: EP.D

► Total Mop/s, More Is Better

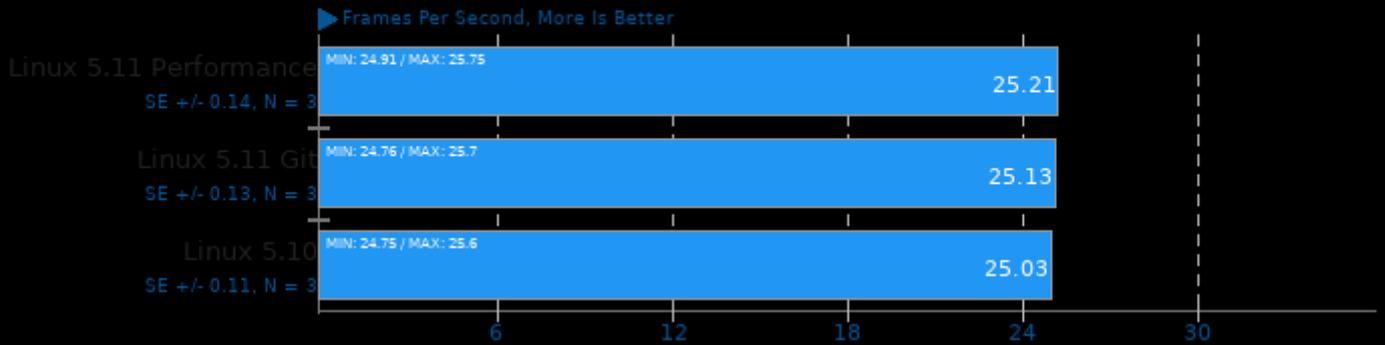


400 800 1200 1600 2000

1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 4.0.3

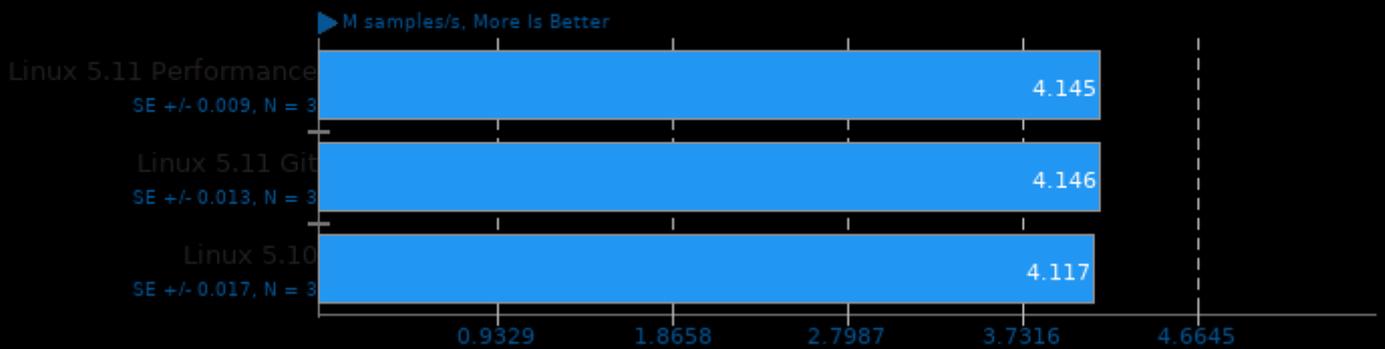
Embree 3.9.0

Binary: Pathtracer - Model: Asian Dragon



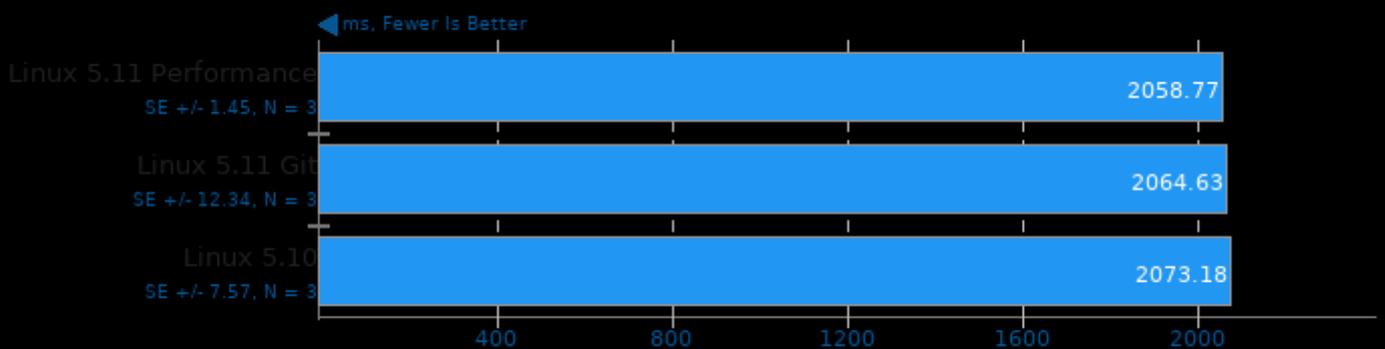
IndigoBench 4.4

Acceleration: CPU - Scene: Bedroom



OpenVINO 2021.1

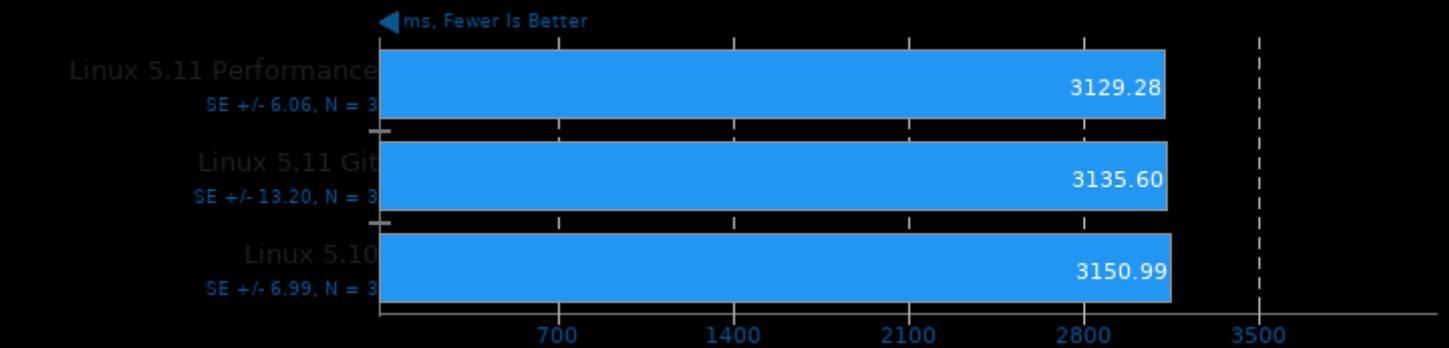
Model: Face Detection 0106 FP16 - Device: CPU



1. (CXX) g++ options: -fsigned-char -ffunction-sections -fdata-sections -O3 -pie -pthread -lpthread

OpenVINO 2021.1

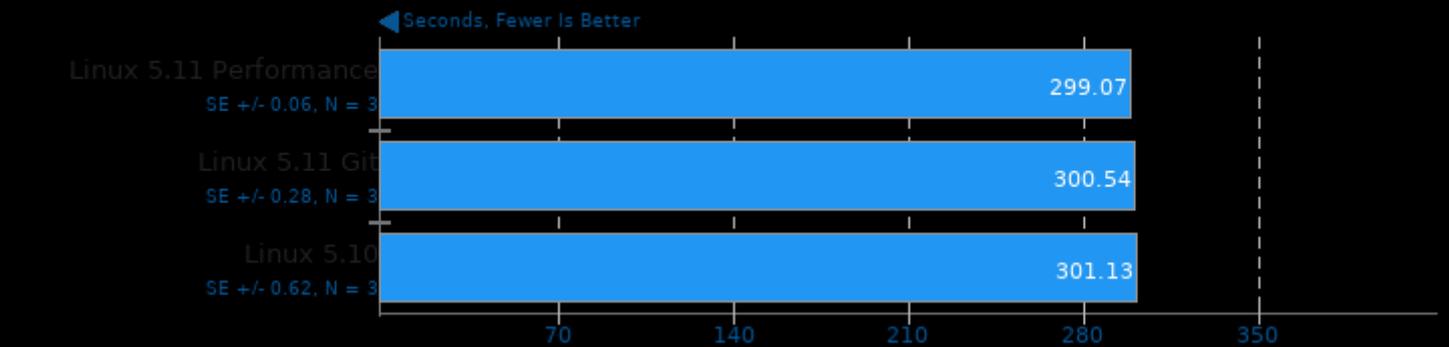
Model: Person Detection 0106 FP32 - Device: CPU



1. (CXX) g++ options: -fsigned-char -ffunction-sections -fdata-sections -O3 -pie -pthread -lpthread

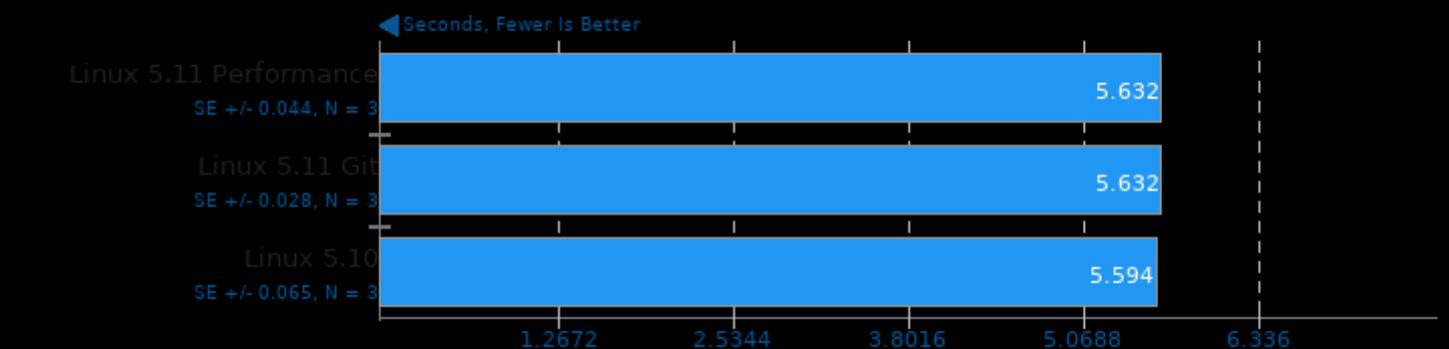
Blender 2.90

Blend File: Barbershop - Compute: CPU-Only



LAME MP3 Encoding 3.100

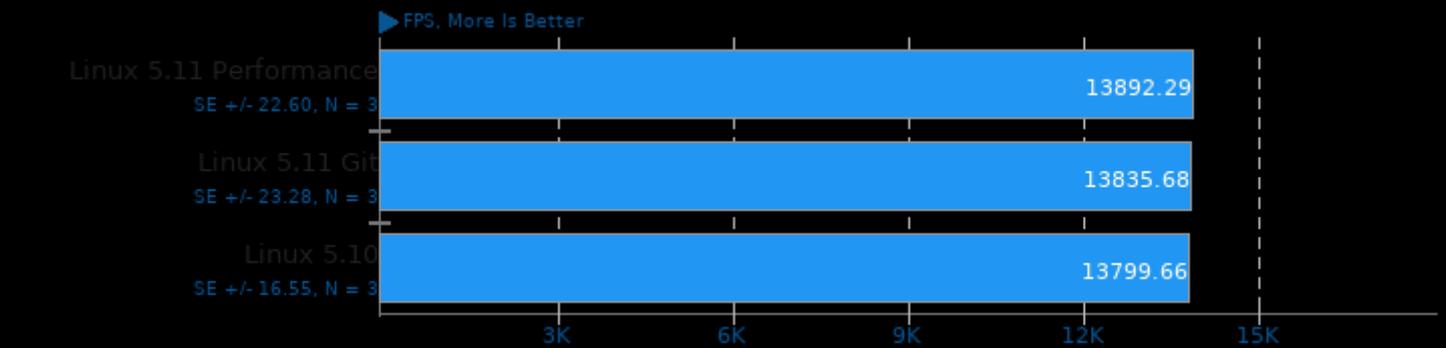
WAV To MP3



1. (CC) gcc options: -O3 -ffast-math -funroll-loops -fschedule-insns2 -fbranch-count-reg -fforce-addr -pipe -Incurses -lm

OpenVINO 2021.1

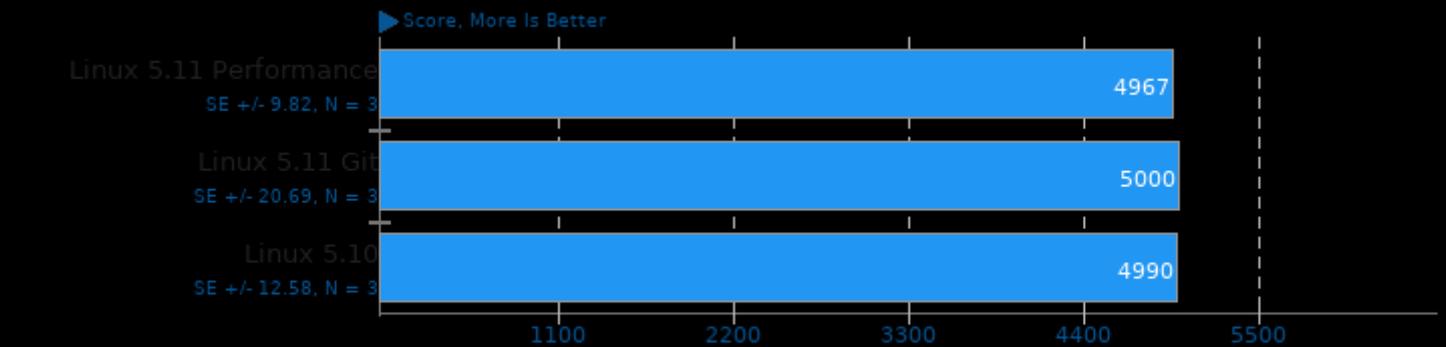
Model: Age Gender Recognition Retail 0013 FP16 - Device: CPU



1. (CXX) g++ options: -fsigned-char -ffunction-sections -fdata-sections -O3 -pie -pthread -lpthread

Selenium

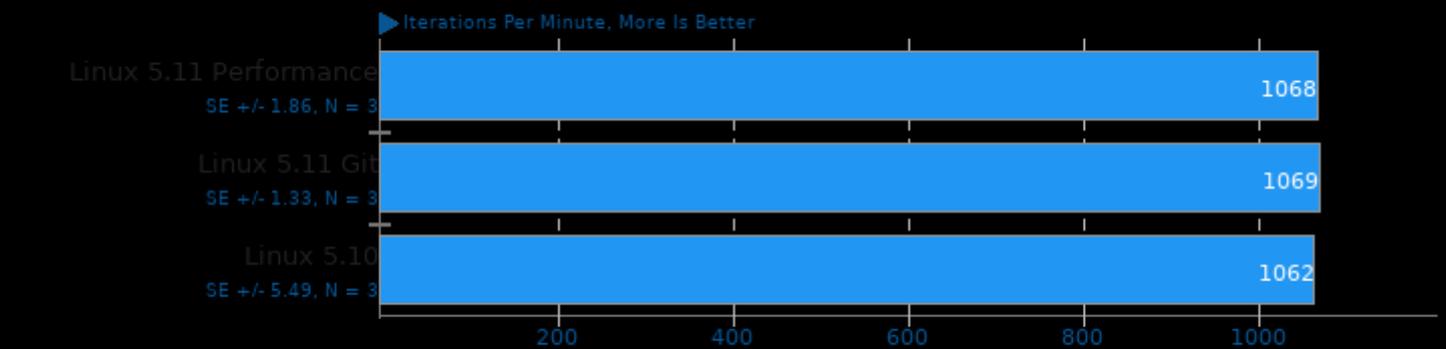
Benchmark: CanvasMark - Browser: Firefox



1. firefox 84.0

GraphicsMagick 1.3.33

Operation: HWB Color Space

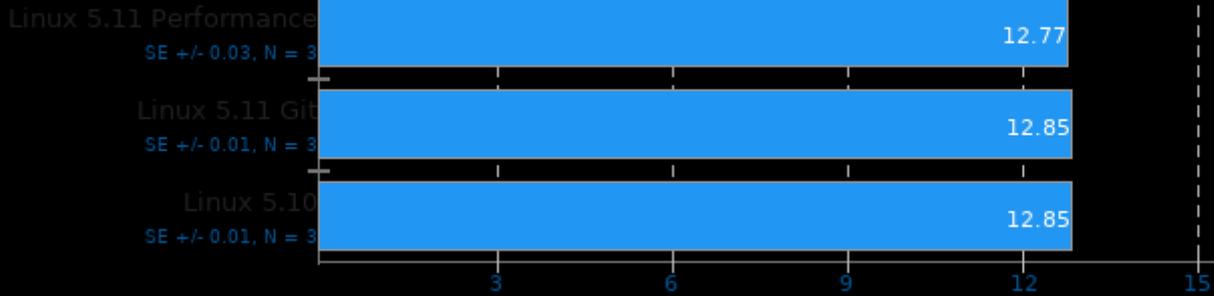


1. (CC) gcc options: -fopenmp -O2 -pthread -ljpeg -lwebp -lwebpmux -ltiff -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -lz -lzlib -lz -lz -lm -lpthread

ASTC Encoder 2.0

Preset: Thorough

← Seconds, Fewer Is Better

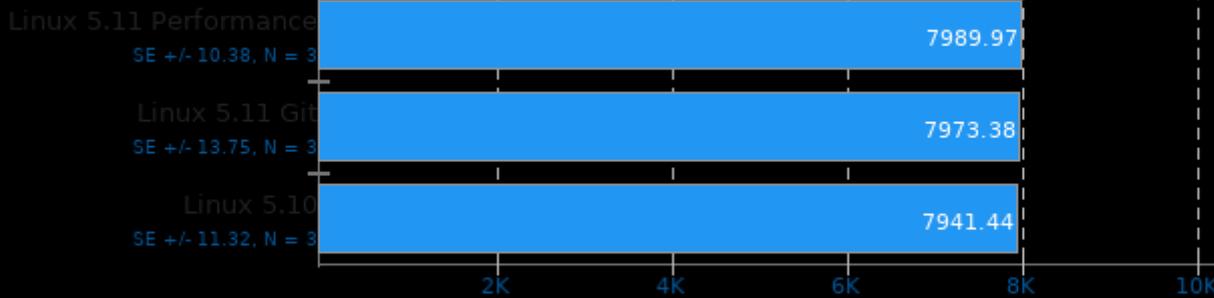


1. (CXX) g++ options: -std=c++14 -fvisibility=hidden -O3 -fno-math-errno -mavx2 -mpopcnt -lpthread

NAS Parallel Benchmarks 3.4

Test / Class: SP.B

▶ Total Mop/s, More Is Better

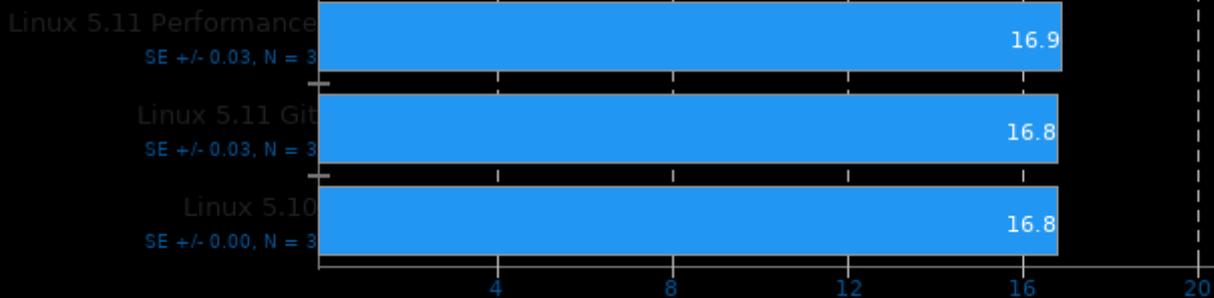


1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 4.0.3

PyPerformance 1.0.0

Benchmark: json_loads

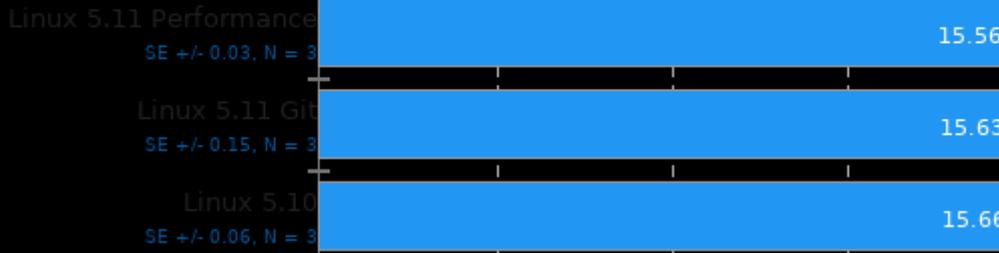
← Milliseconds, Fewer Is Better



OCRMyPDF 9.6.0+dfsg

Processing 60 Page PDF Document

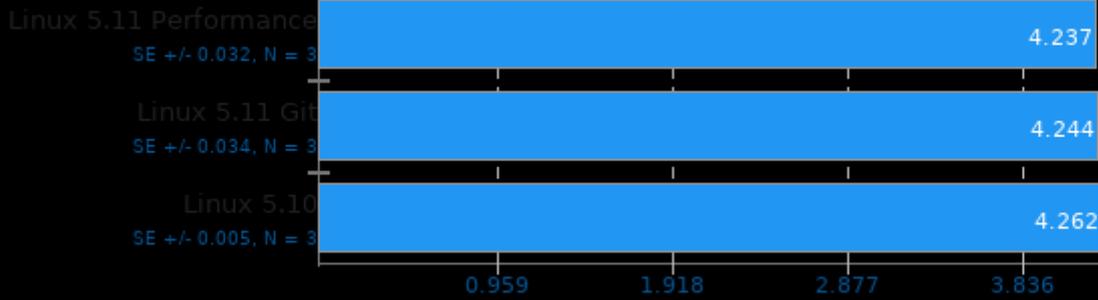
← Seconds, Fewer Is Better



libavif avifenc 0.7.3

Encoder Speed: 8

← Seconds, Fewer Is Better

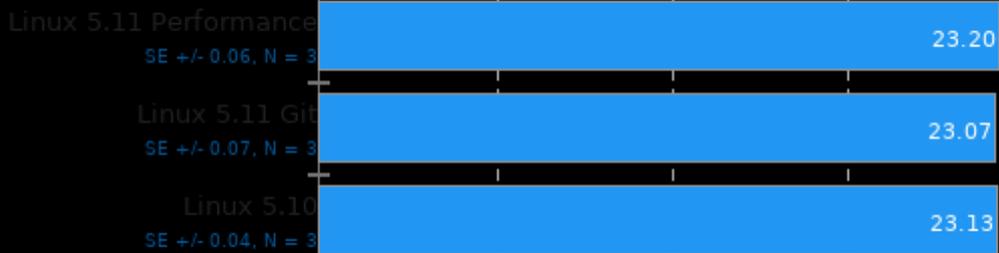


1. (CXX) g++ options: -O3 -fPIC

XZ Compression 5.2.4

Compressing ubuntu-16.04.3-server-i386.img, Compression Level 9

← Seconds, Fewer Is Better

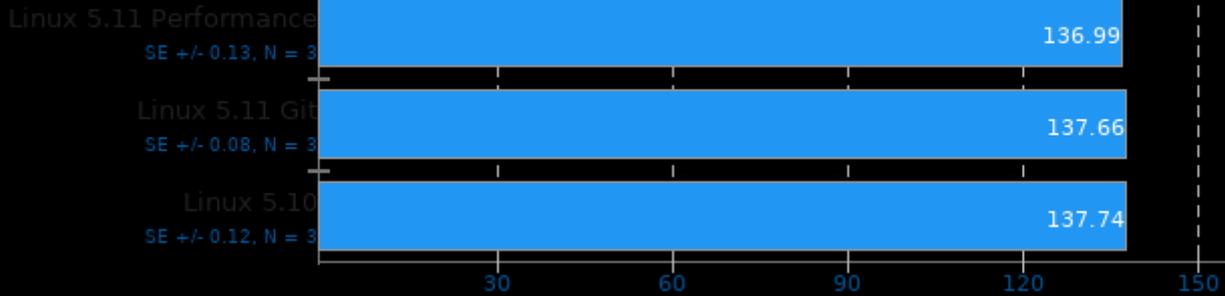


1. (CC) gcc options: -pthread -fvisibility=hidden -O2

Parboil 2.5

Test: OpenMP LBM

◀ Seconds, Fewer Is Better

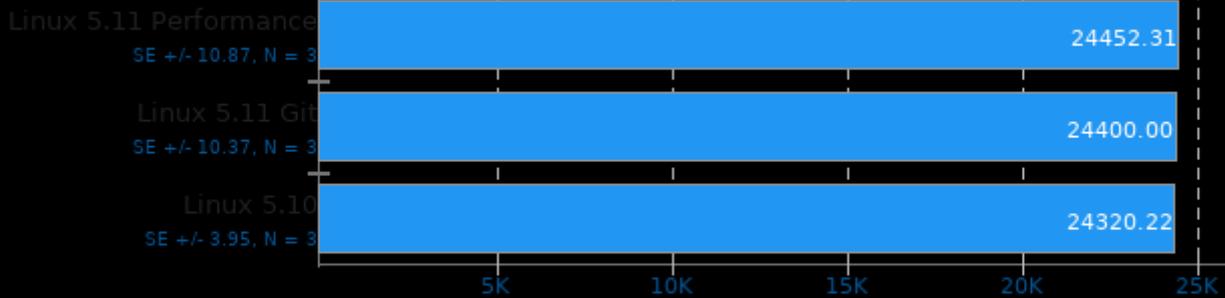


1. (CXX) g++ options: -lm -lthread -lgomp -O3 -ffast-math -fopenmp

NAS Parallel Benchmarks 3.4

Test / Class: BT.C

▶ Total Mop/s, More Is Better

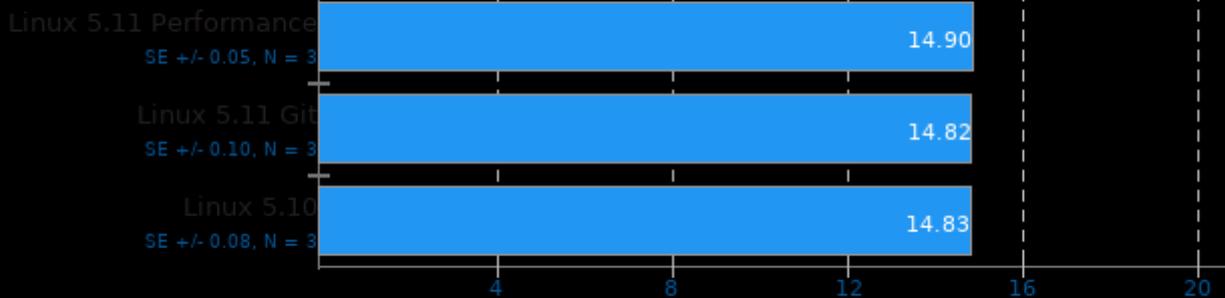


1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 4.0.3

Parboil 2.5

Test: OpenMP Stencil

◀ Seconds, Fewer Is Better

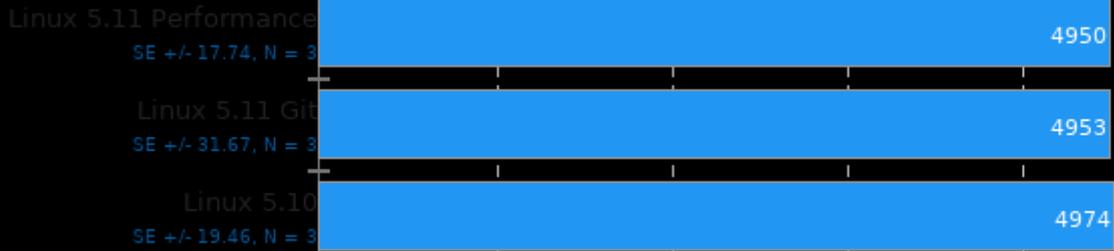


1. (CXX) g++ options: -lm -lthread -lgomp -O3 -ffast-math -fopenmp

Selenium

Benchmark: CanvasMark - Browser: Google Chrome

Score, More Is Better

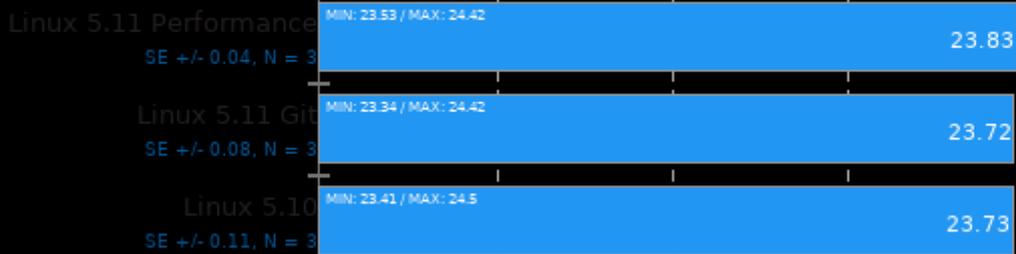


1. chrome 87.0.4280.88

Embree 3.9.0

Binary: Pathtracer ISPC - Model: Crown

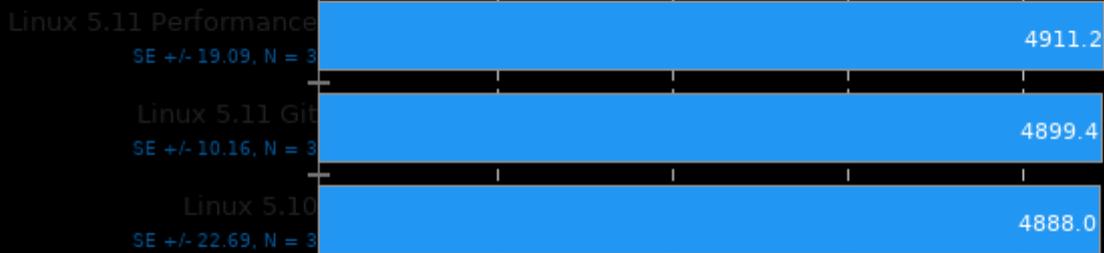
Frames Per Second, More Is Better



Zstd Compression 1.4.5

Compression Level: 3

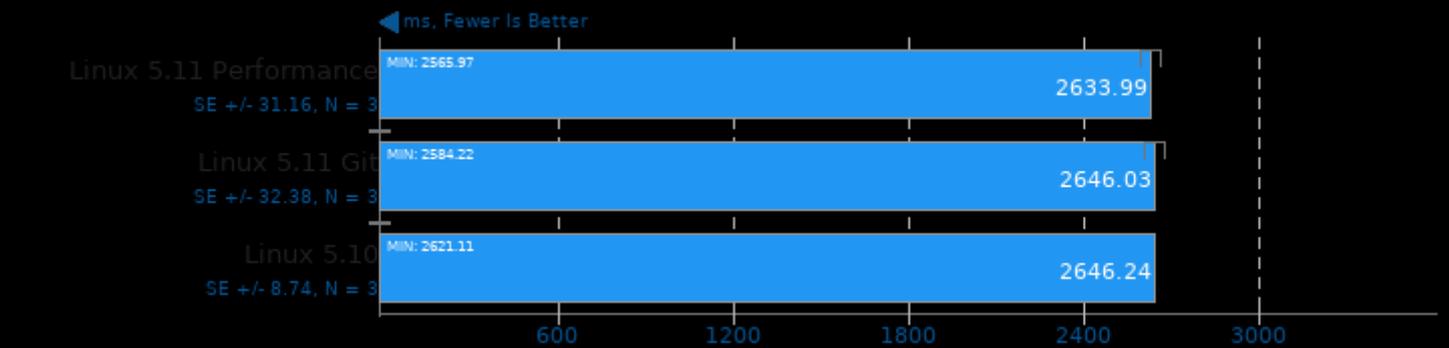
MB/s, More Is Better



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

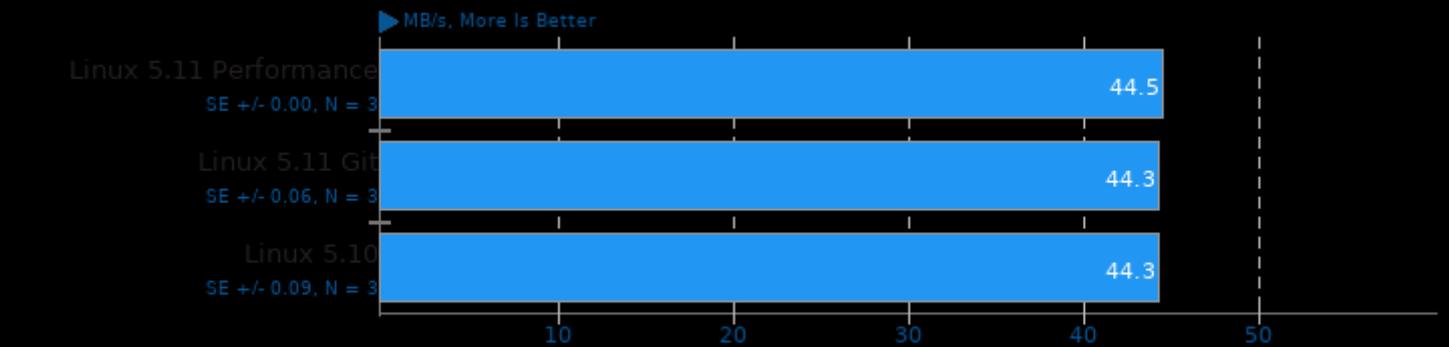
oneDNN 2.0

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



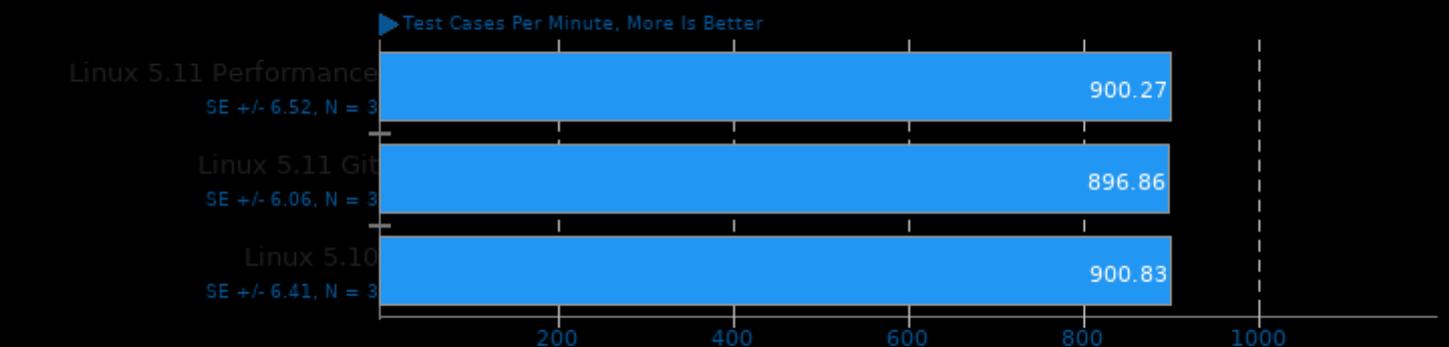
Zstd Compression 1.4.5

Compression Level: 19



Darmstadt Automotive Parallel Heterogeneous Suite

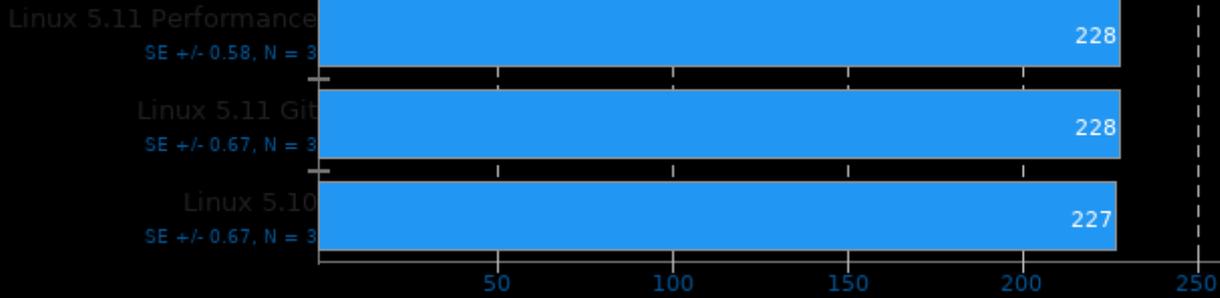
Backend: OpenMP - Kernel: NDT Mapping



GraphicsMagick 1.3.33

Operation: Sharpen

Iterations Per Minute, More Is Better

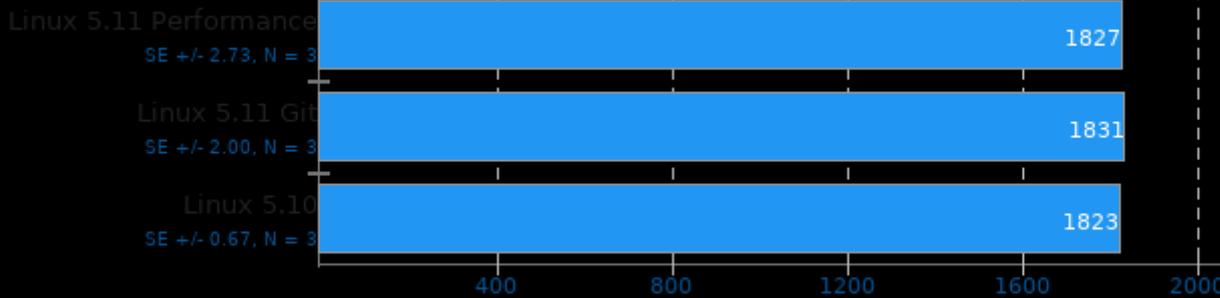


1. (CC) gcc options: -fopenmp -O2 -pthread -ljbig -lwebp -lwebpmux -ltiff -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -llzma -lbz2 -lxml2 -lz -lm -lpthread

GraphicsMagick 1.3.33

Operation: Resizing

Iterations Per Minute, More Is Better

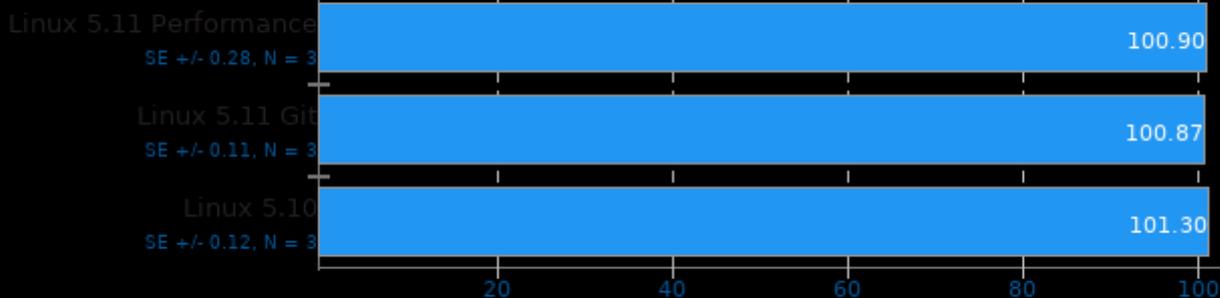


1. (CC) gcc options: -fopenmp -O2 -pthread -ljbig -lwebp -lwebpmux -ltiff -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -llzma -lbz2 -lxml2 -lz -lm -lpthread

ASTC Encoder 2.0

Preset: Exhaustive

Seconds, Fewer Is Better

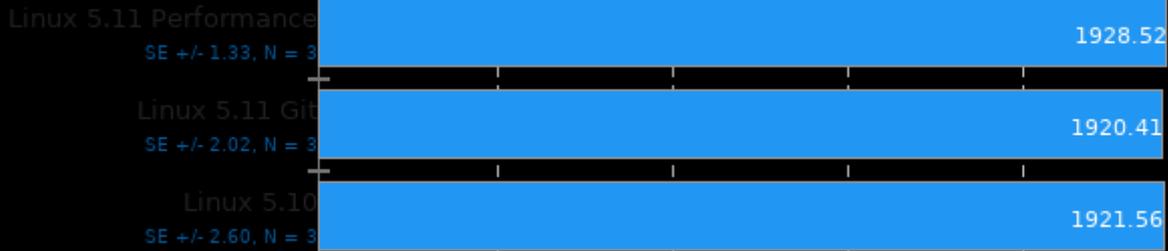


1. (CXX) g++ options: -std=c++14 -fvisibility=hidden -O3 -fno-mfpmath -sse -mavx2 -mpopcnt -lpthread

ASKAP 2018-11-10

Test: tConvolve MT - Degriding

▶ Million Grid Points Per Second, More Is Better

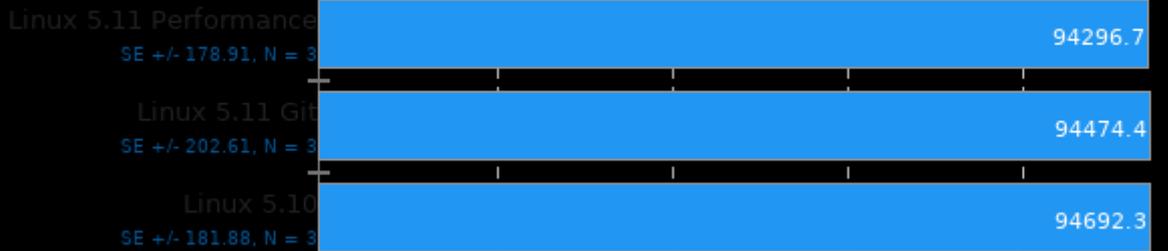


1. (CXX) g++ options: -lthread

TensorFlow Lite 2020-08-23

Model: SqueezeNet

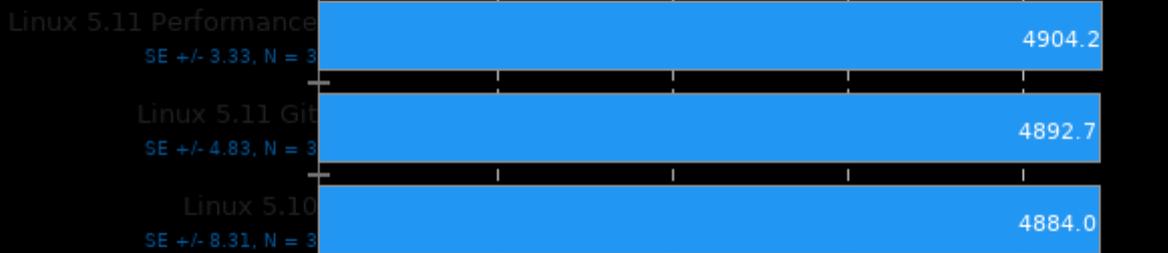
◀ Microseconds, Fewer Is Better



OpenSSL 1.1.1

RSA 4096-bit Performance

▶ Signs Per Second, More Is Better

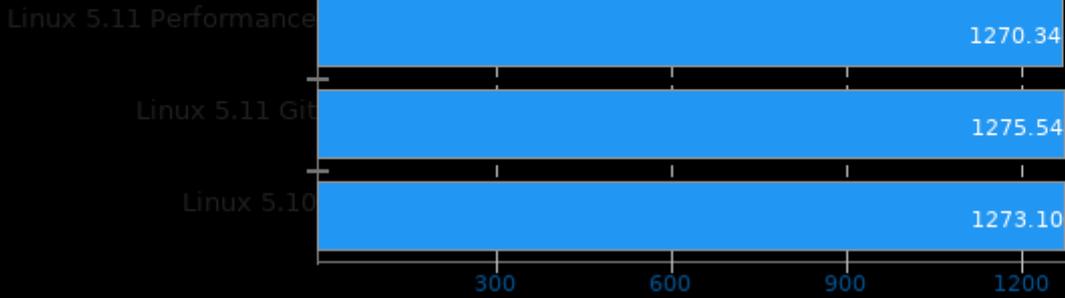


1. (CC) gcc options: -pthread -m64 -O3 -lssl -lcrypto -ld

ECP-CANDLE 0.3

Benchmark: P3B1

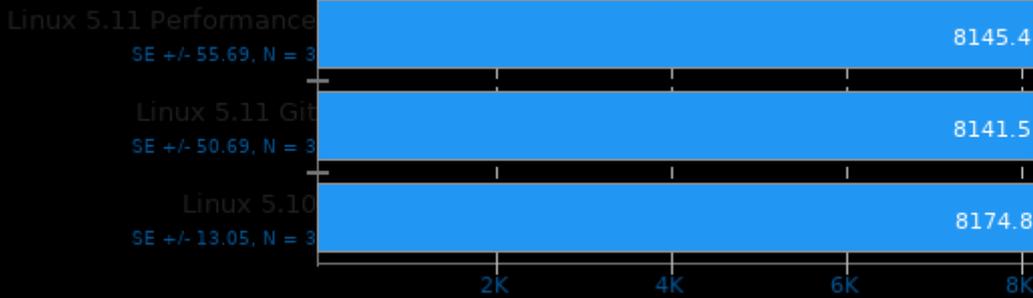
← Seconds, Fewer Is Better



FFTW 3.3.6

Build: Stock - Size: 2D FFT Size 4096

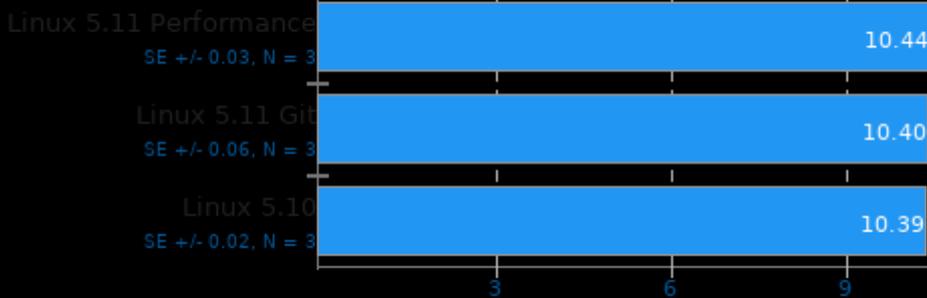
▶ Mflops, More Is Better



1. (C) gcc options: -pthread -O3 -fomit-frame-pointer -mtune=native -malign-double -fstrict-aliasing -fno-schedule-insns -ffast-math -lm

Nebular Empirical Analysis Tool 2020-02-29

← Seconds, Fewer Is Better

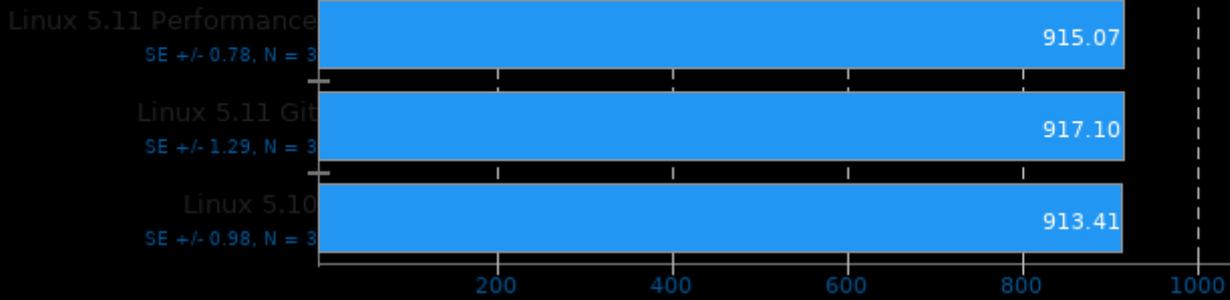


1. (F9X) gfortran options: -cpp -free-line-length-0 -jsource/ -fopenmp -O3 -fno-backtrace

PlaidML

FP16: No - Mode: Inference - Network: IMDB LSTM - Device: CPU

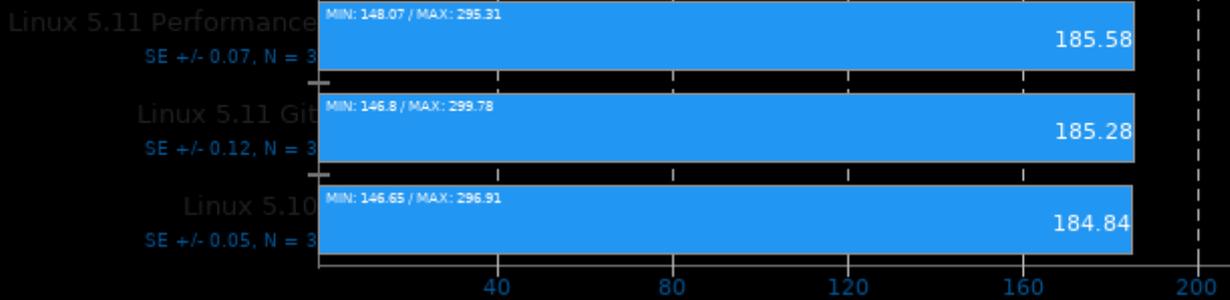
FPS, More Is Better



Basemark GPU 1.2

Renderer: Vulkan - Resolution: 1920 x 1080 - Graphics Preset: High

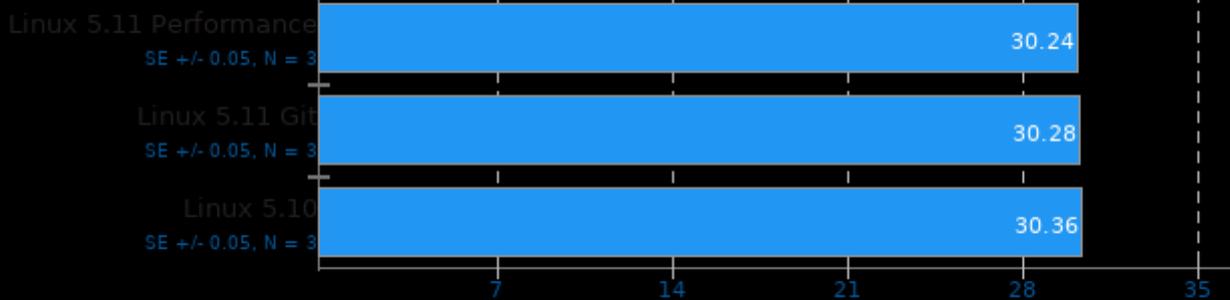
FPS, More Is Better



C-Ray 1.1

Total Time - 4K, 16 Rays Per Pixel

Seconds, Fewer Is Better

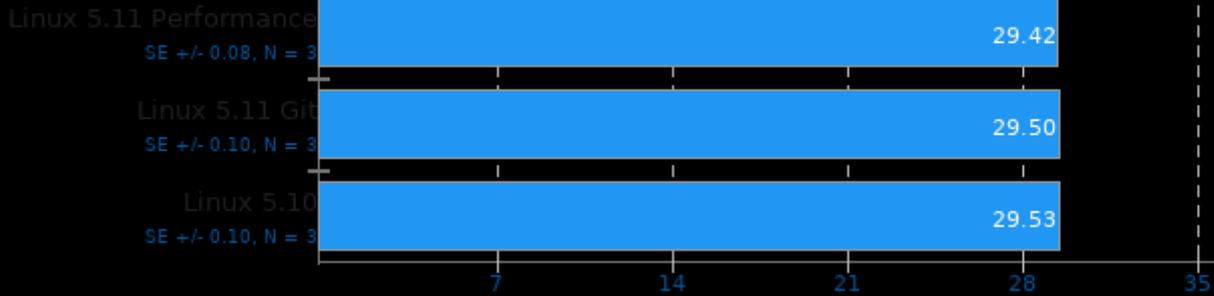


1. (CC) gcc options: -lm -lpthread -O3

m-queens 1.2

Time To Solve

← Seconds, Fewer Is Better

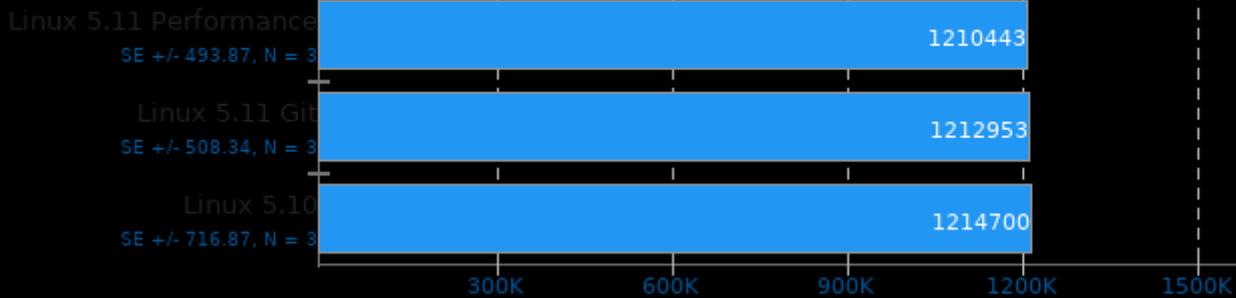


1. (CXX) g++ options: -fopenmp -O2 -march=native

TensorFlow Lite 2020-08-23

Model: Inception ResNet V2

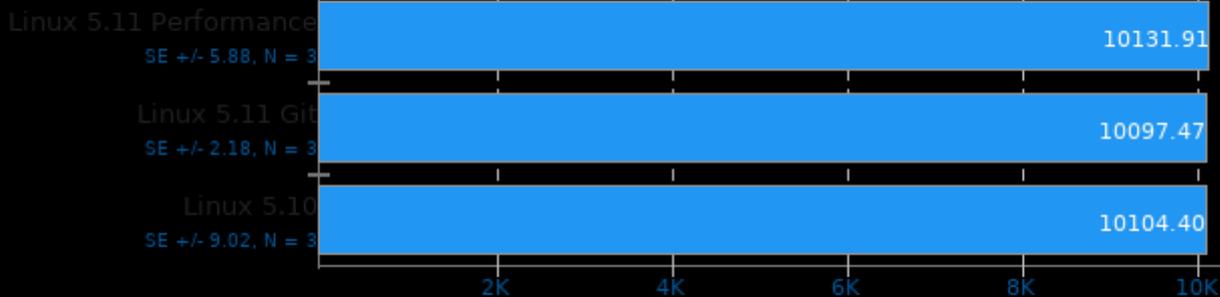
← Microseconds, Fewer Is Better



NAS Parallel Benchmarks 3.4

Test / Class: MG.C

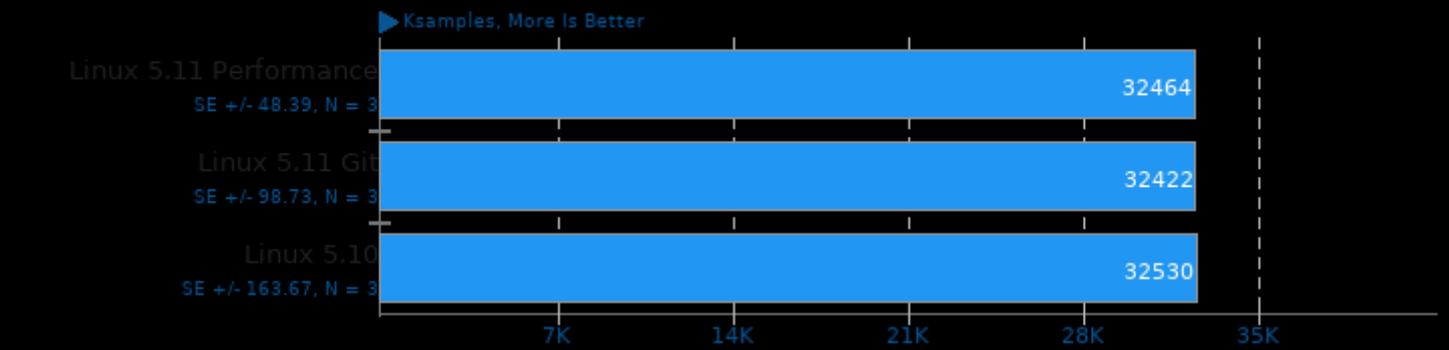
► Total Mop/s, More Is Better



1. (F9X) gfortran options: -O3 -march=native -pthread -Impi_usempif08 -Impi_mpifh -Impi
2. Open MPI 4.0.3

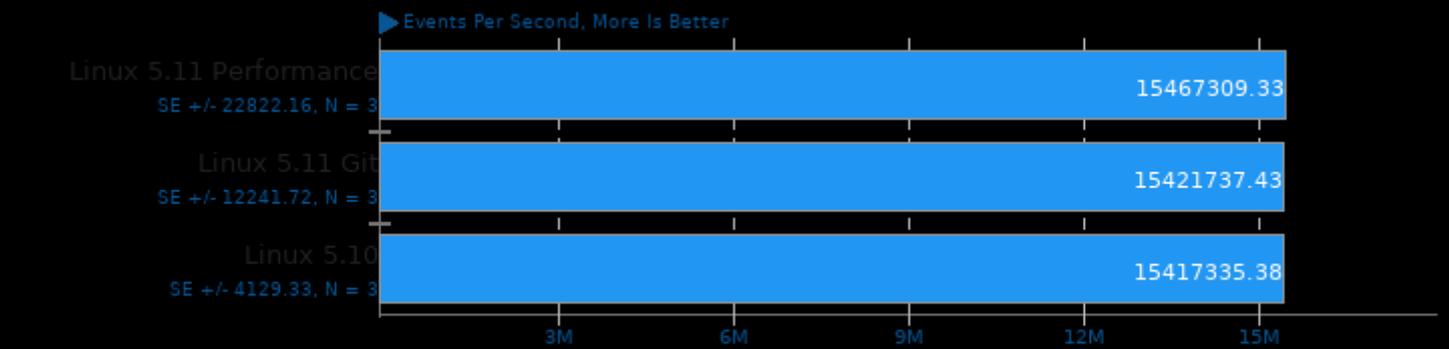
Chaos Group V-RAY 4.10.07

Mode: CPU



Sysbench 2018-07-28

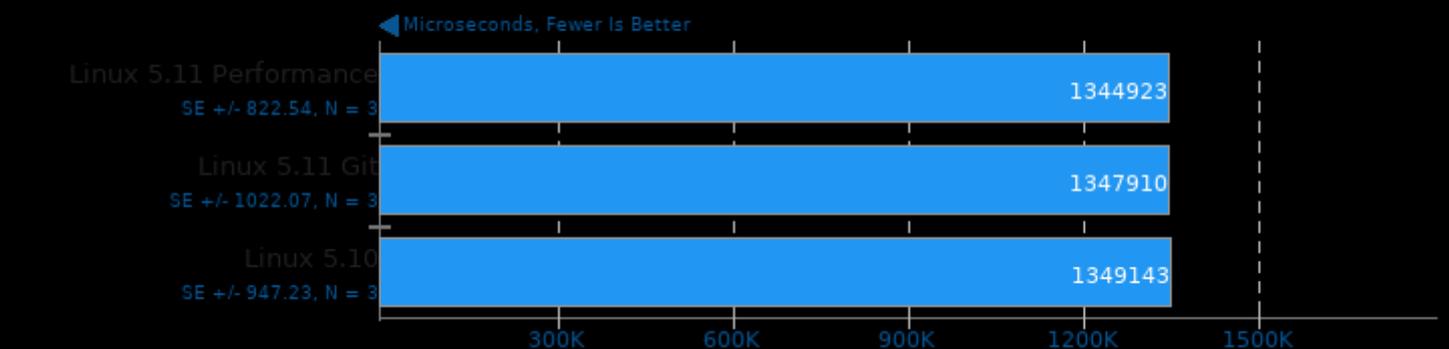
Test: Memory



1. (CC) gcc options: -pthread -O3 -funroll-loops -ggdb3 -march=amdfam10 -rdynamic -ldl -laio -lm

TensorFlow Lite 2020-08-23

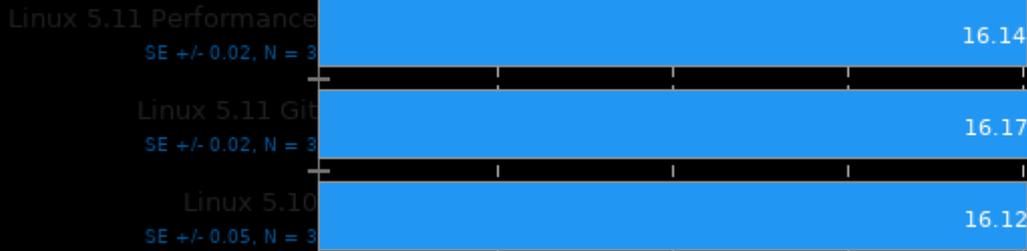
Model: Inception V4



Basis Universal 1.12

Settings: UASTC Level 2

← Seconds, Fewer Is Better

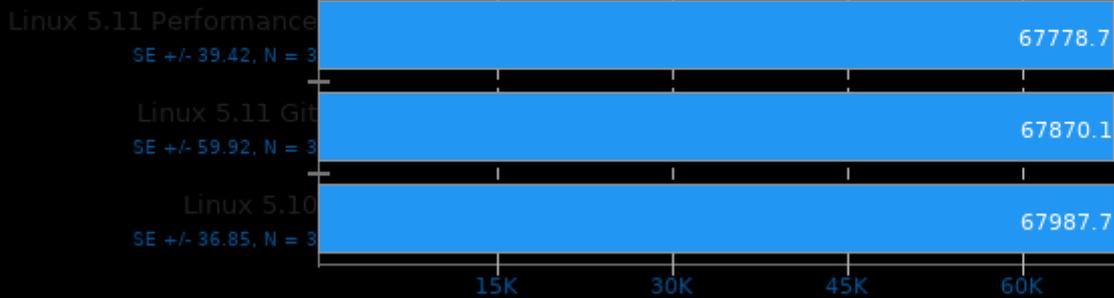


1. (CXX) g++ options: -std=c++11 -fvisibility=hidden -fPIC -fno-strict-aliasing -O3 -rdynamic -lm -lpthread

TensorFlow Lite 2020-08-23

Model: Mobilenet Quant

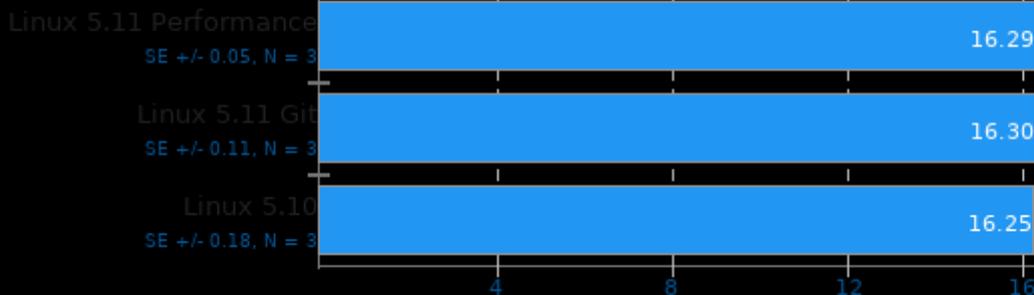
← Microseconds, Fewer Is Better



Mlpack Benchmark

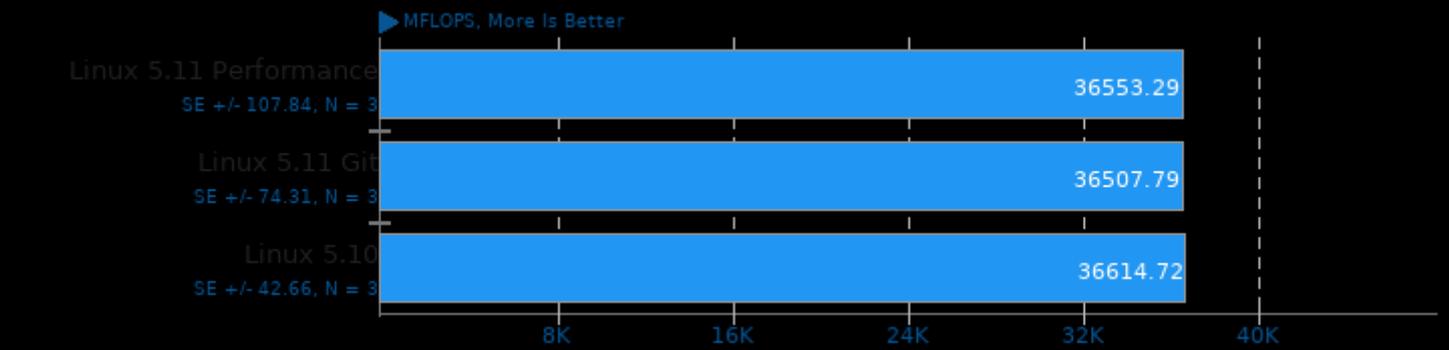
Benchmark: scikit_svm

← Seconds, Fewer Is Better



FFTE 7.0

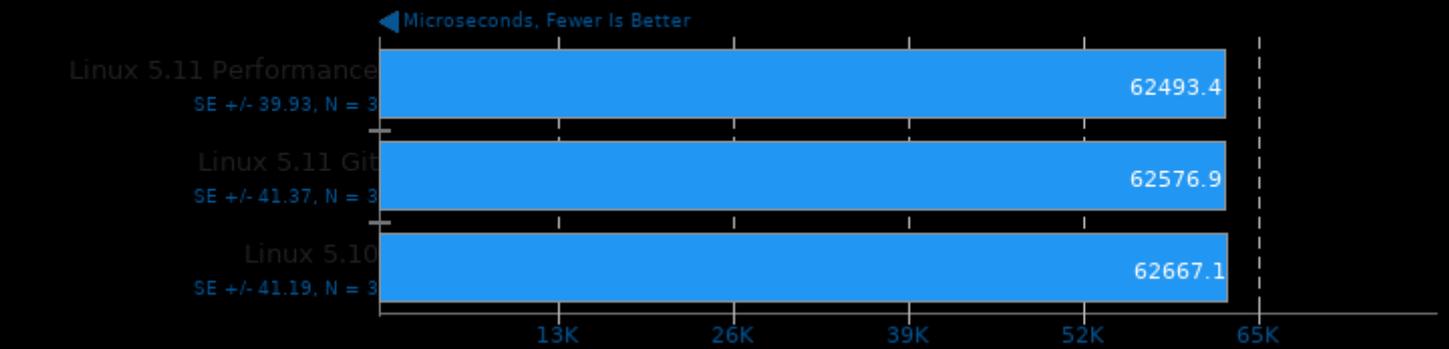
N=256, 3D Complex FFT Routine



1. (F9X) gfortran options: -O3 -fomit-frame-pointer -fopenmp

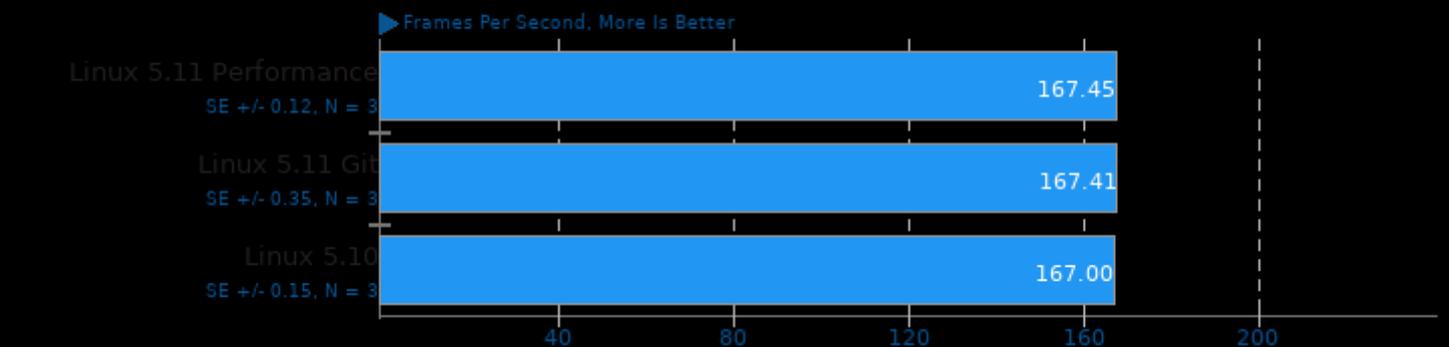
TensorFlow Lite 2020-08-23

Model: Mobilenet Float



Unigine Heaven 4.0

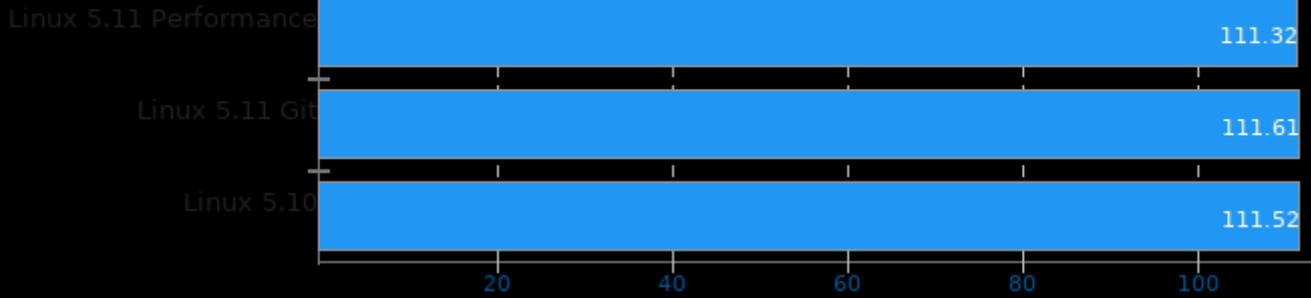
Resolution: 1920 x 1080 - Mode: Fullscreen - Renderer: OpenGL



Appleseed 2.0 Beta

Scene: Material Tester

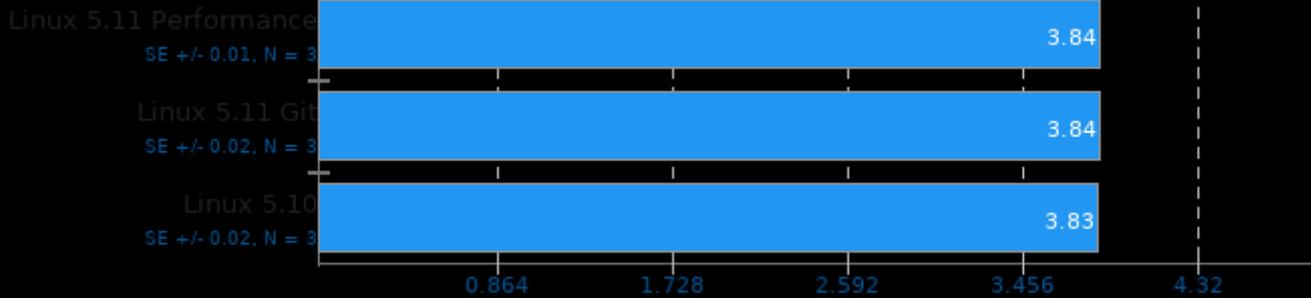
← Seconds, Fewer Is Better



OpenVINO 2021.1

Model: Face Detection 0106 FP16 - Device: CPU

▶ FPS, More Is Better



1. (CXX) g++ options: -fsigned-char -ffunction-sections -fdata-sections -O3 -pie -pthread -lpthread

Parboil 2.5

Test: OpenMP MRI Gridding

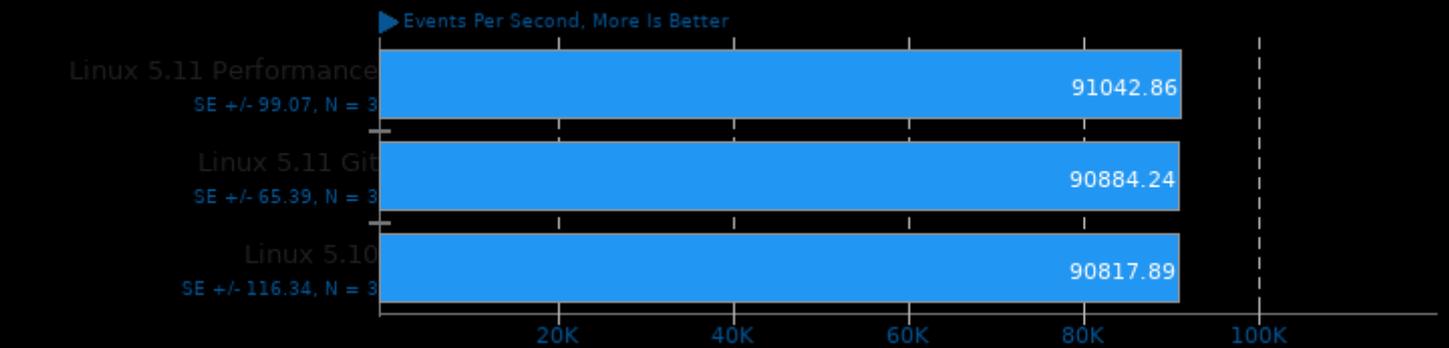
← Seconds, Fewer Is Better



1. (CXX) g++ options: -lm -lpthread -lgomp -O3 -ffast-math -fopenmp

Sysbench 2018-07-28

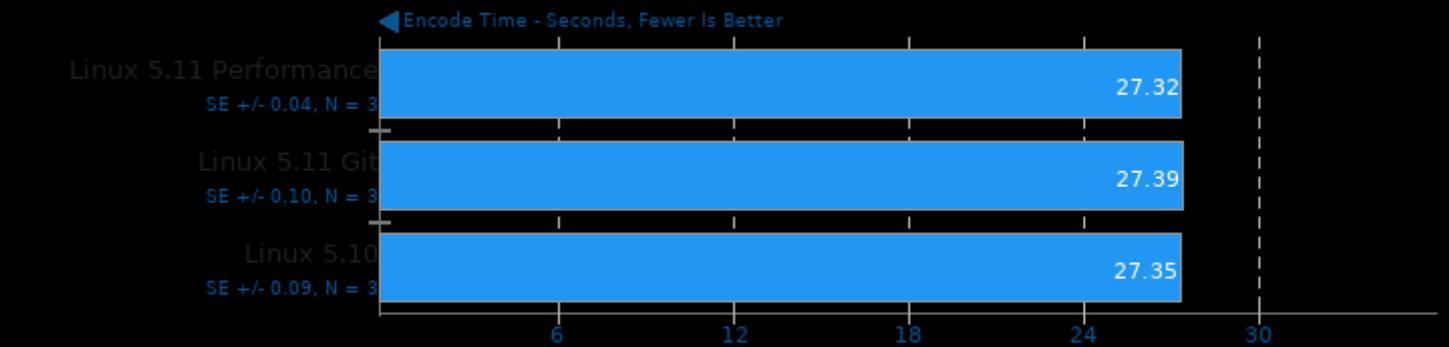
Test: CPU



1. (CC) gcc options: -pthread -O3 -funroll-loops -ggdb3 -march=amdfam10 -rdynamic -ldl -laio -lm

WebP Image Encode 1.1

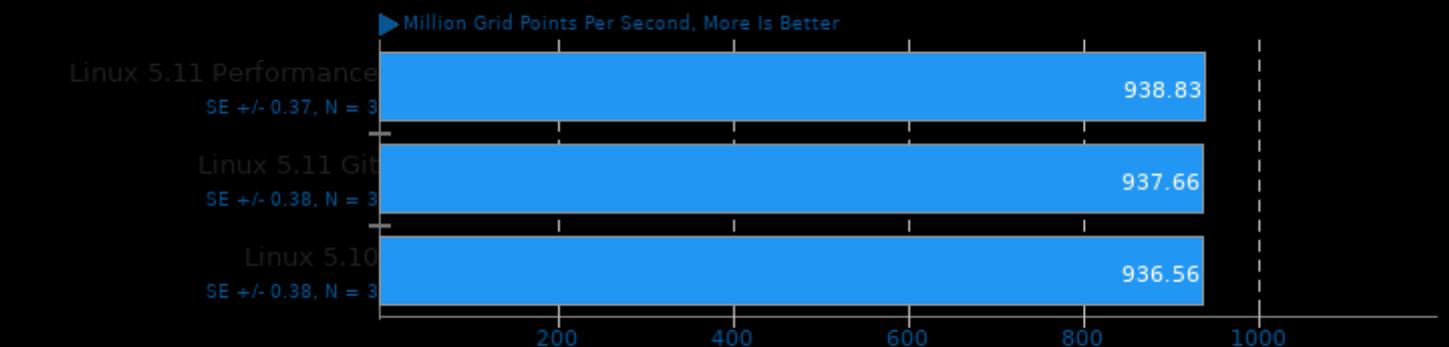
Encode Settings: Quality 100, Lossless, Highest Compression



1. (CC) gcc options: -fvisibility=hidden -O2 -pthread -lm -ljpeg -lpng16 -ltiff

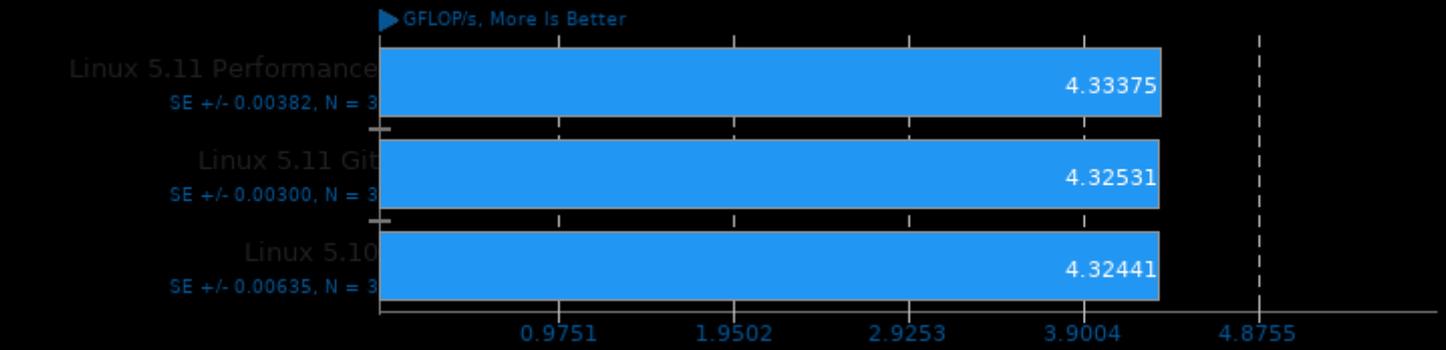
ASKAP 2018-11-10

Test: tConvolve MT - Gridding



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

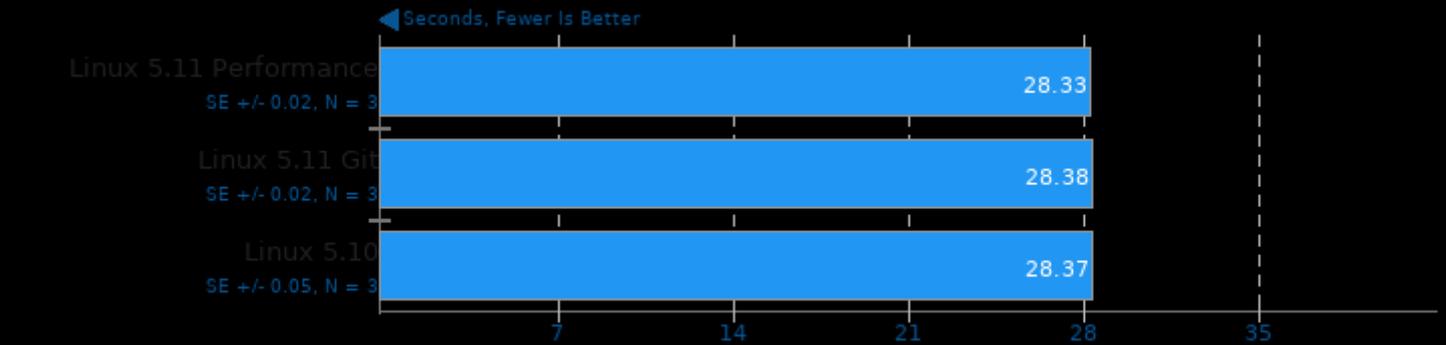
High Performance Conjugate Gradient 3.1



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

Basis Universal 1.12

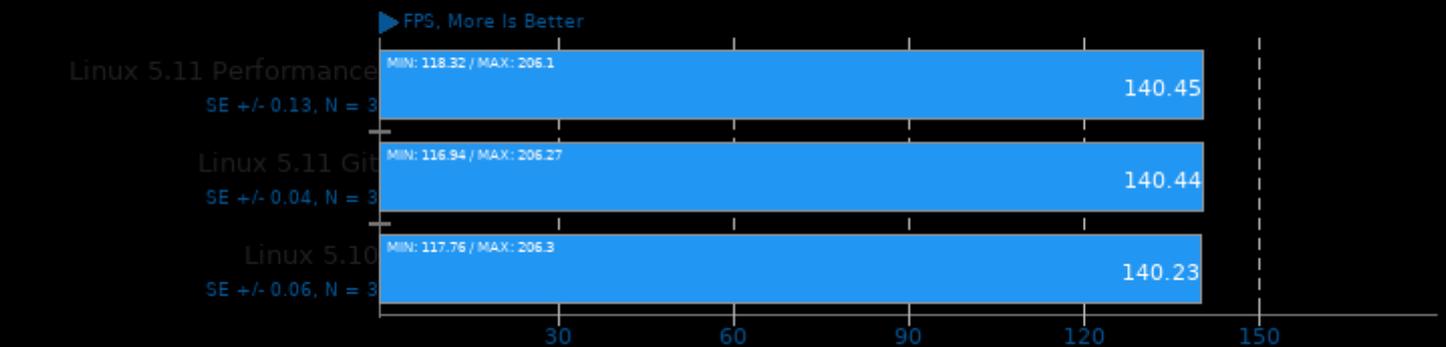
Settings: UASTC Level 3



1. (CXX) g++ options: -std=c++11 -fvisibility=hidden -fpic -fno-strict-aliasing -O3 -rdynamic -lm -lpthread

Basemark GPU 1.2

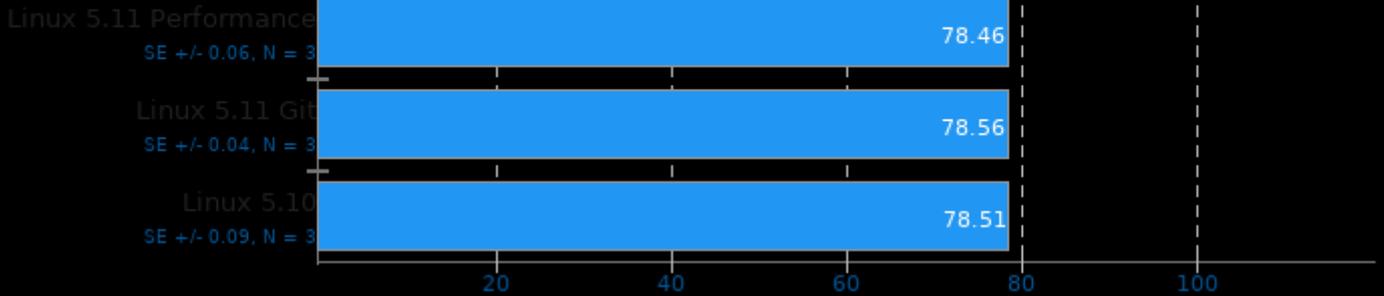
Renderer: Vulkan - Resolution: 2560 x 1440 - Graphics Preset: High



Blender 2.90

Blend File: BMW27 - Compute: CPU-Only

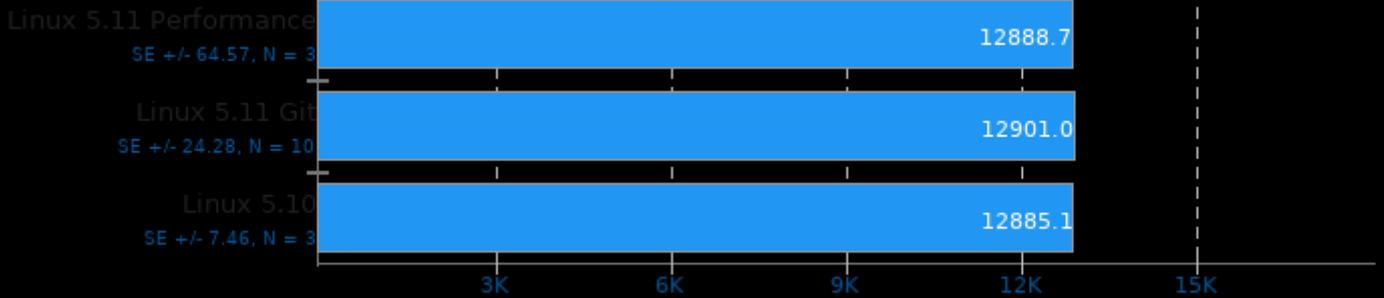
← Seconds, Fewer Is Better



LZ4 Compression 1.9.3

Compression Level: 3 - Decompression Speed

▶ MB/s, More Is Better

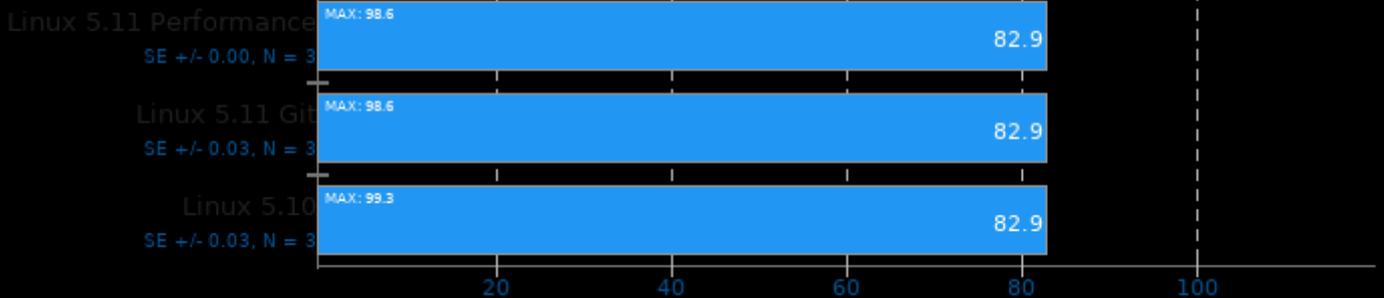


1. (CC) gcc options: -O3

Unigine Superposition 1.0

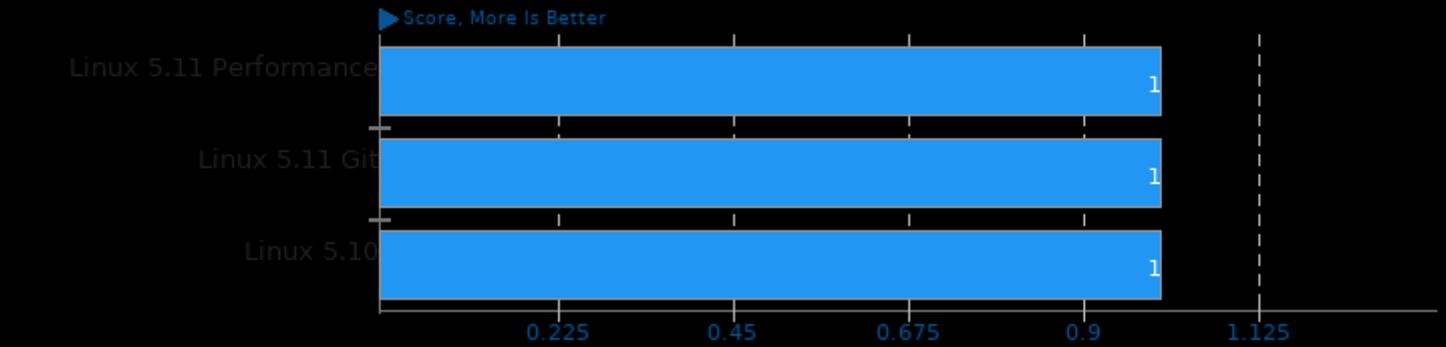
Resolution: 1920 x 1080 - Mode: Fullscreen - Quality: High - Renderer: OpenGL

▶ Frames Per Second, More Is Better



Selenium

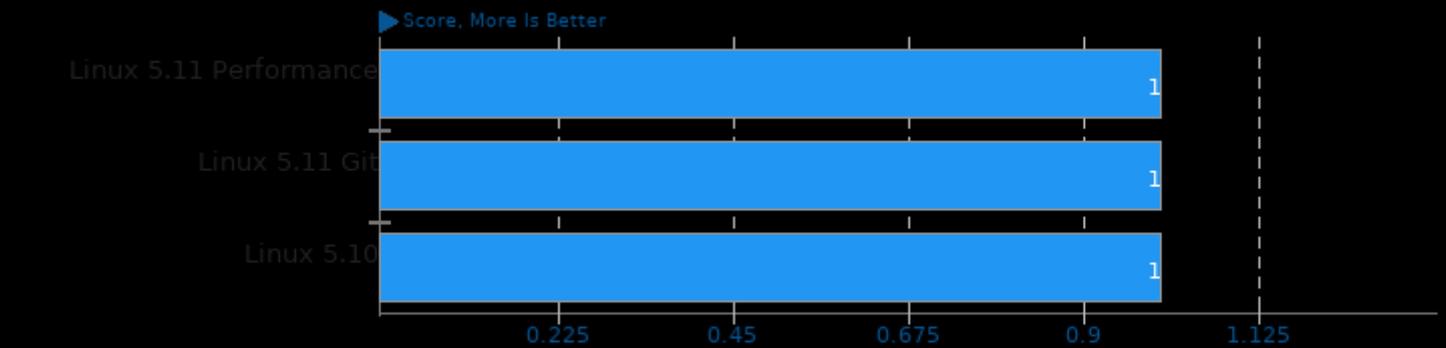
Benchmark: MotionMark - Browser: Google Chrome



1. chrome 87.0.4280.88

Selenium

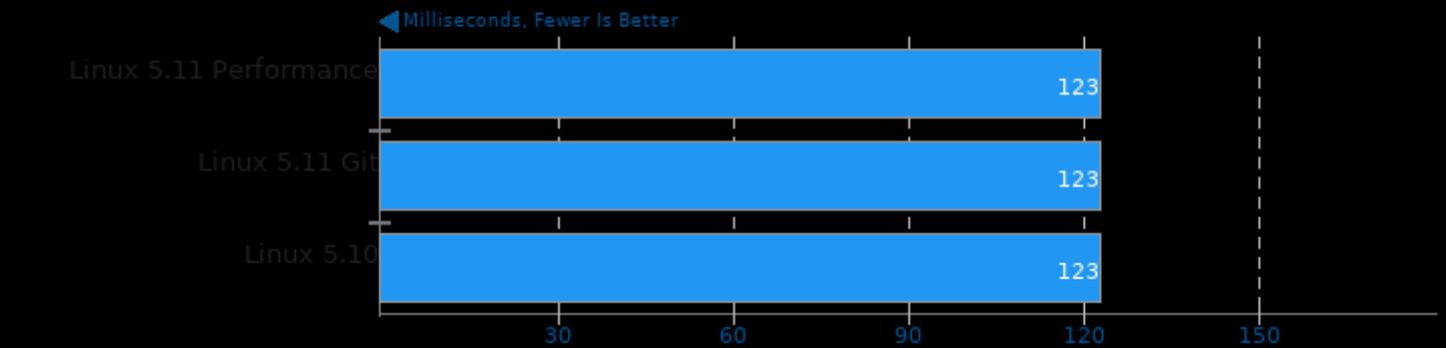
Benchmark: MotionMark - Browser: Firefox



1. firefox 84.0

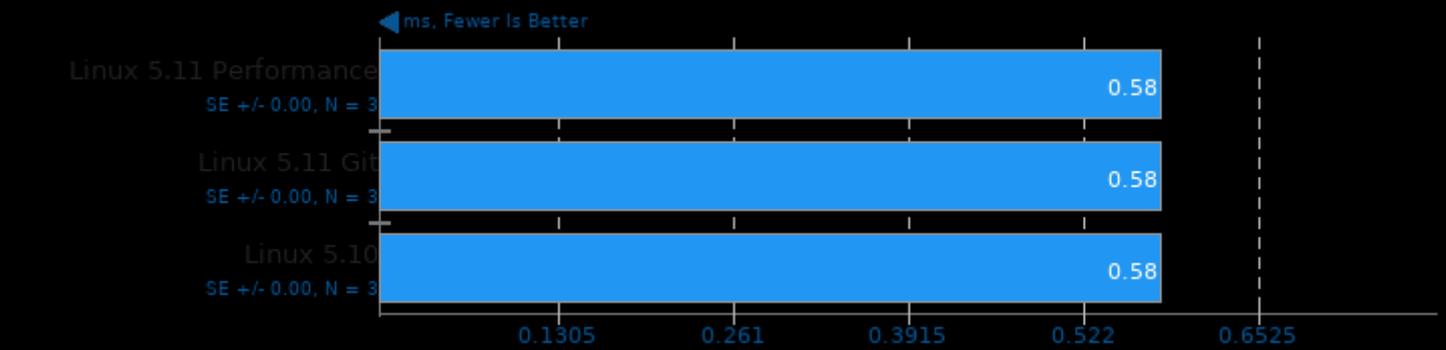
PyPerformance 1.0.0

Benchmark: regex_compile



OpenVINO 2021.1

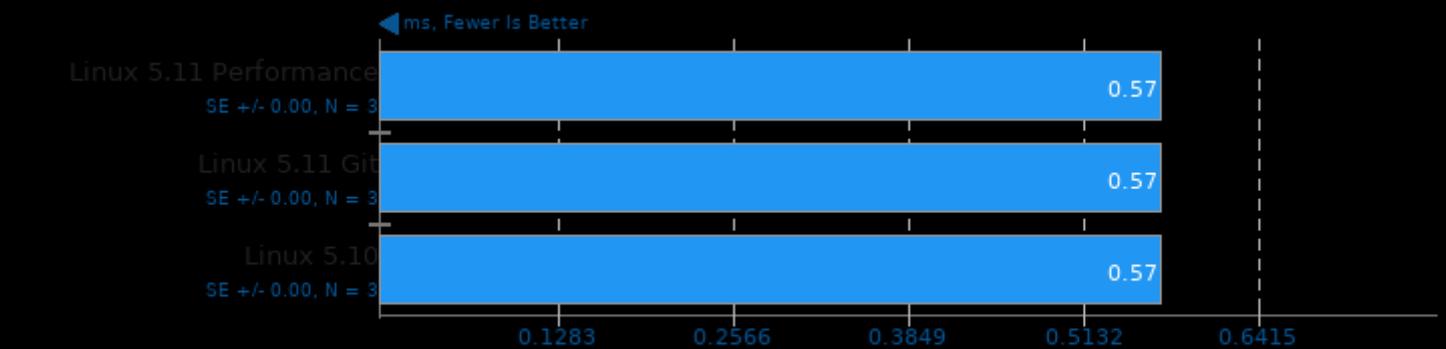
Model: Age Gender Recognition Retail 0013 FP32 - Device: CPU



1. (CXX) g++ options: -fsigned-char -ffunction-sections -fdata-sections -O3 -pie -pthread -lpthread

OpenVINO 2021.1

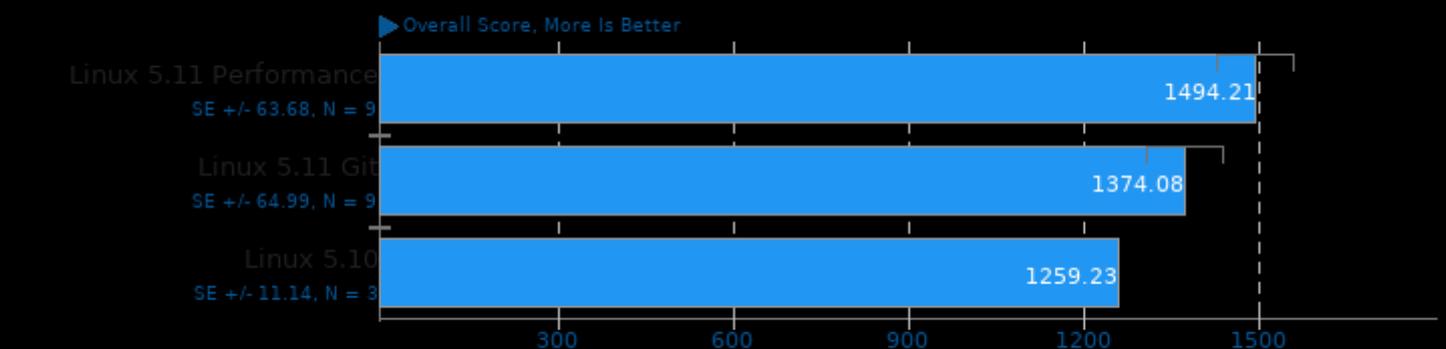
Model: Age Gender Recognition Retail 0013 FP16 - Device: CPU



1. (CXX) g++ options: -fsigned-char -ffunction-sections -fdata-sections -O3 -pie -pthread -lpthread

Selenium

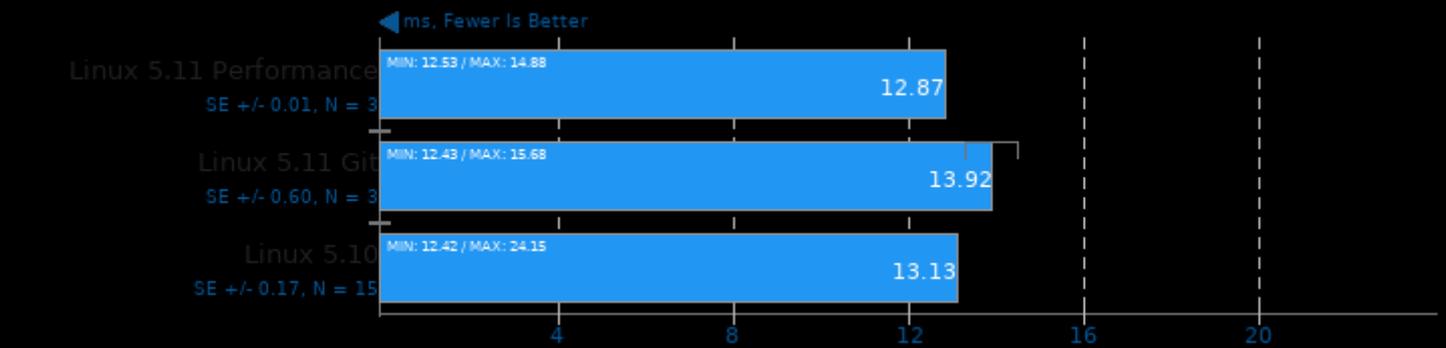
Benchmark: Basemark - Browser: Google Chrome



1. chrome 87.0.4280.88

NCNN 20201218

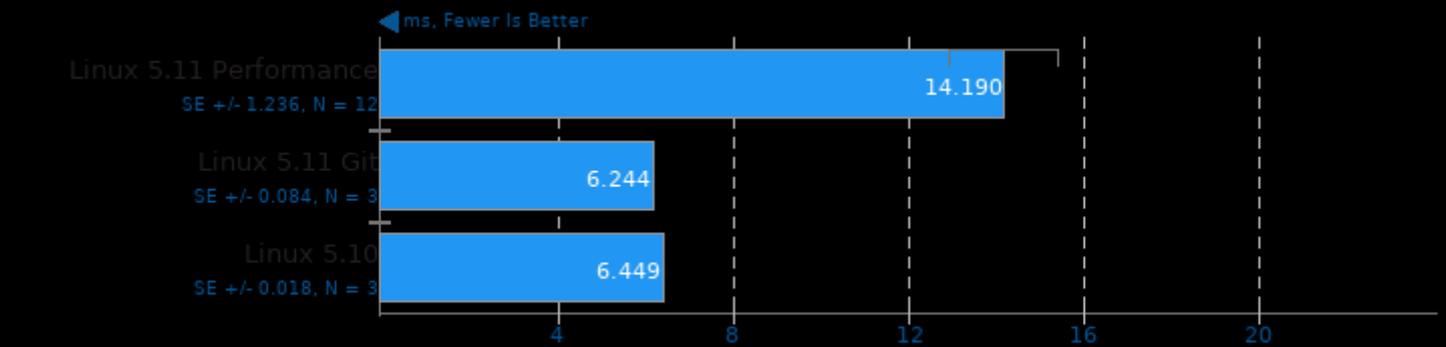
Target: CPU - Model: googlenet



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

PostgreSQL pgbench 13.0

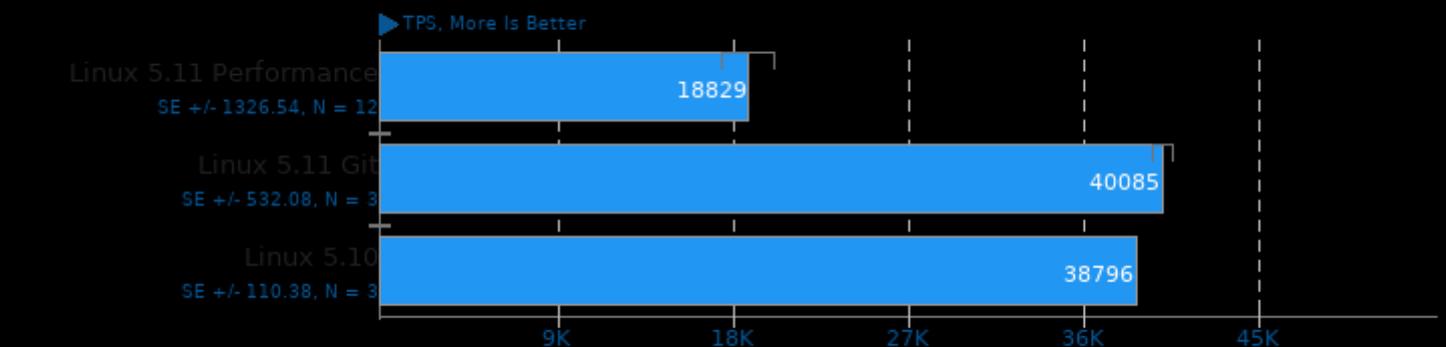
Scaling Factor: 100 - Clients: 250 - Mode: Read Write - Average Latency



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

PostgreSQL pgbench 13.0

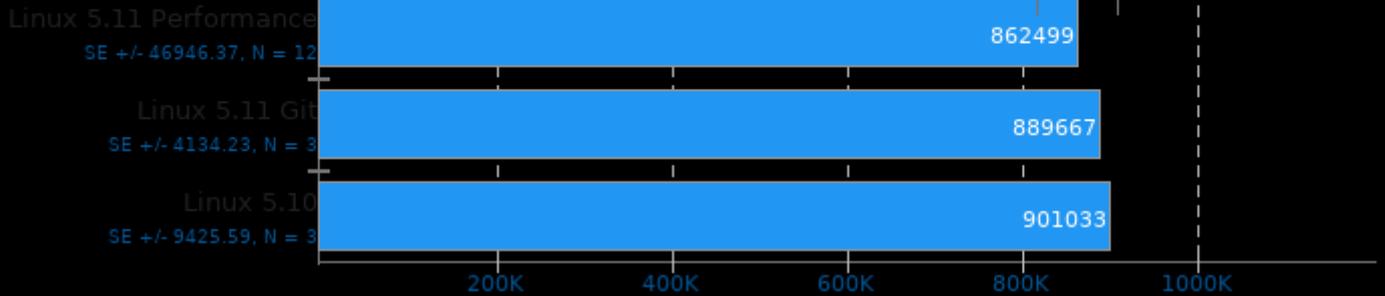
Scaling Factor: 100 - Clients: 250 - Mode: Read Write



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

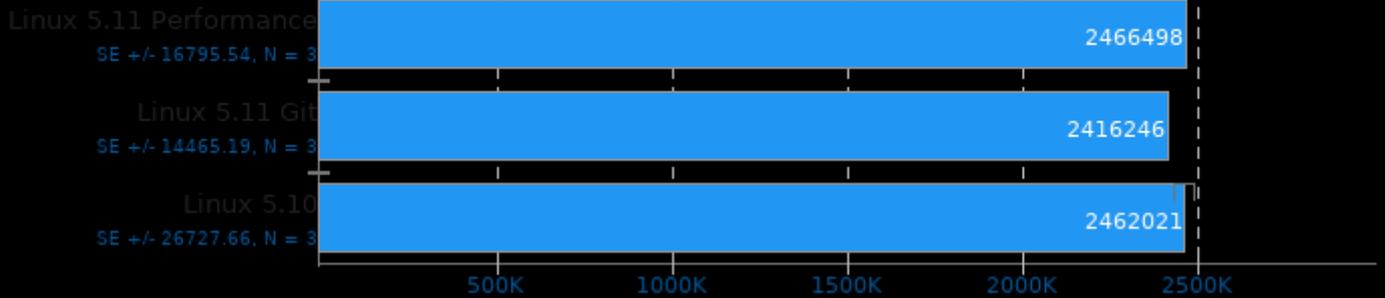
Cryptsetup PBKDF2-whirlpool

Iterations Per Second, More Is Better



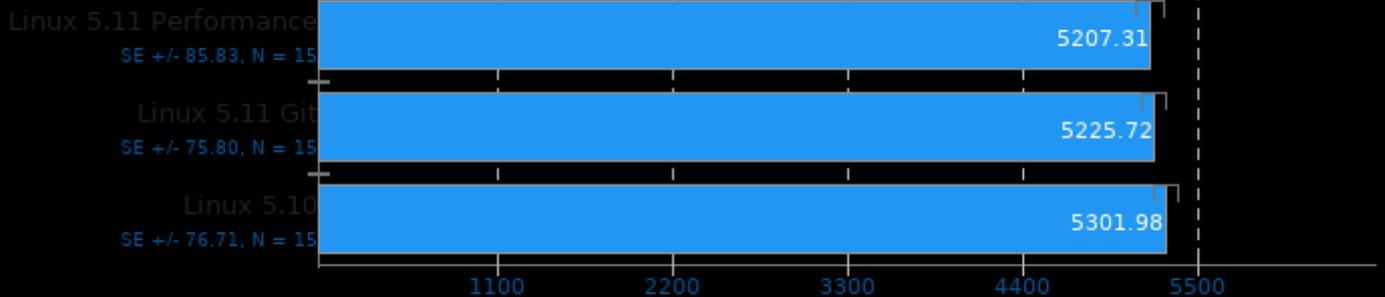
Cryptsetup 2.2.2 PBKDF2-sha512

Iterations Per Second, More Is Better



Himeno Benchmark 3.0 Poisson Pressure Solver

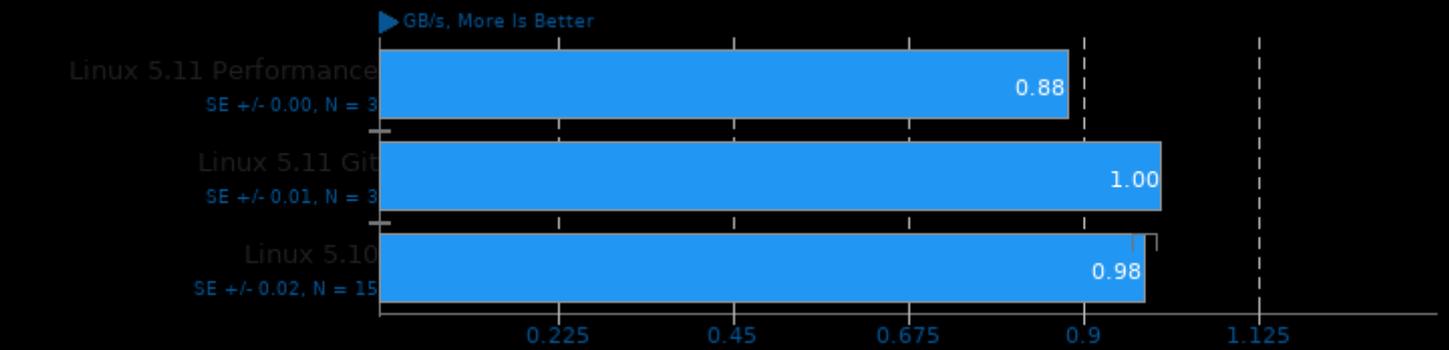
MFLOPS, More Is Better



1. (CC) gcc options: -O3 -mavx2

simdjson 0.7.1

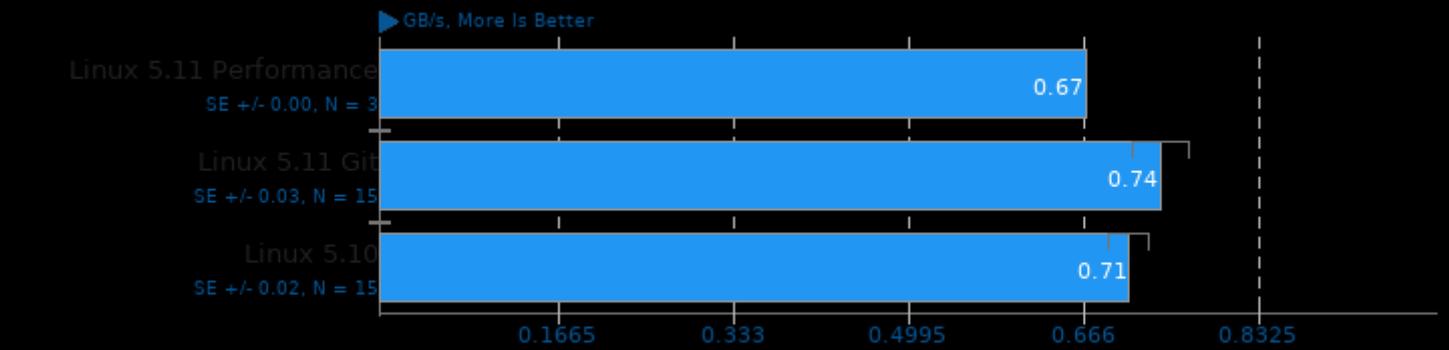
Throughput Test: PartialTweets



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

simdjson 0.7.1

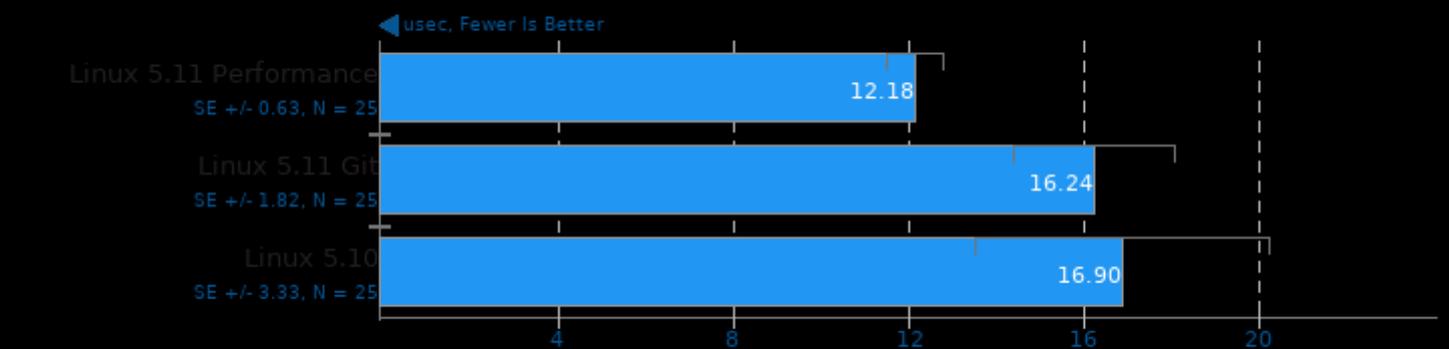
Throughput Test: Kostya



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

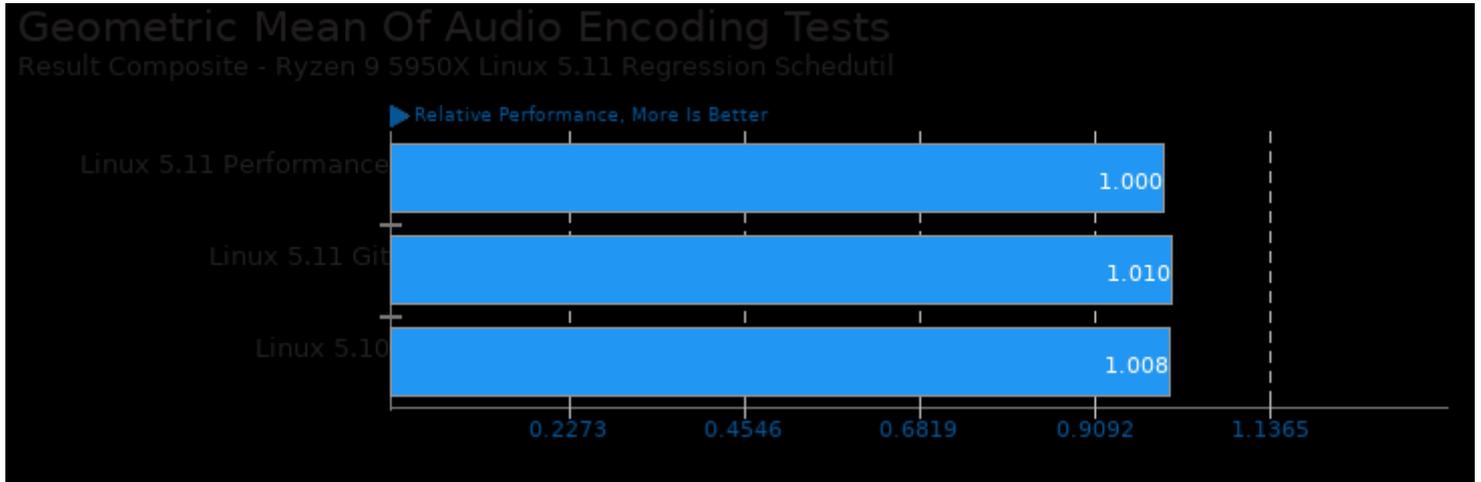
Socketperf 3.4

Test: Latency Under Load

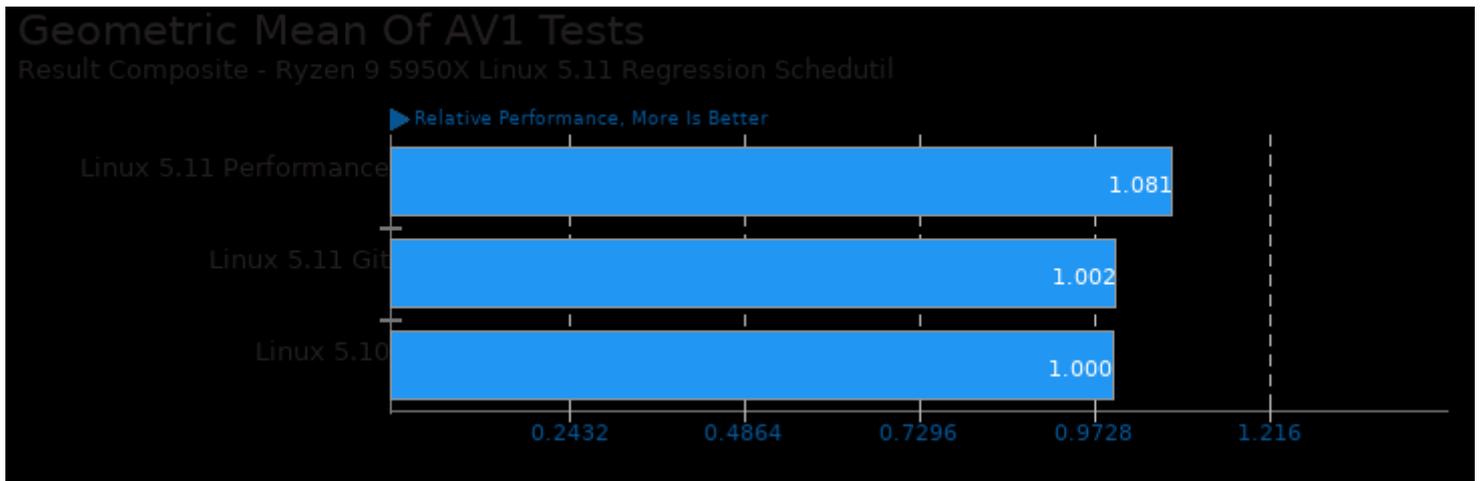


1. (CXX) g++ options: -param -O3 -rdynamic -ldl -pthread

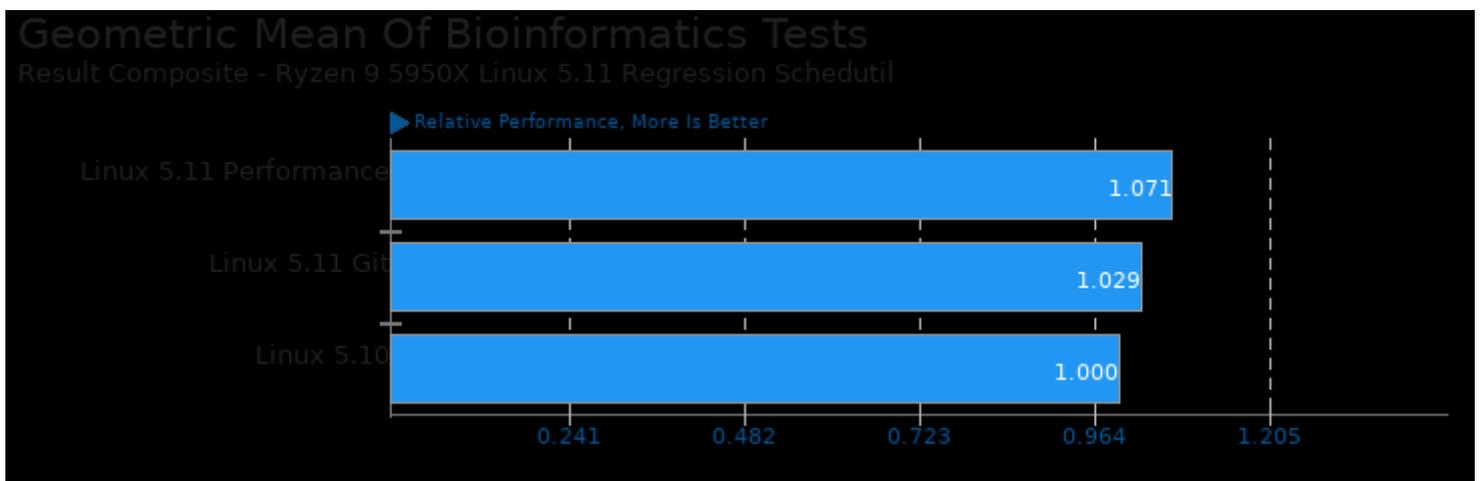
These geometric means are based upon test groupings / test suites for this result file.



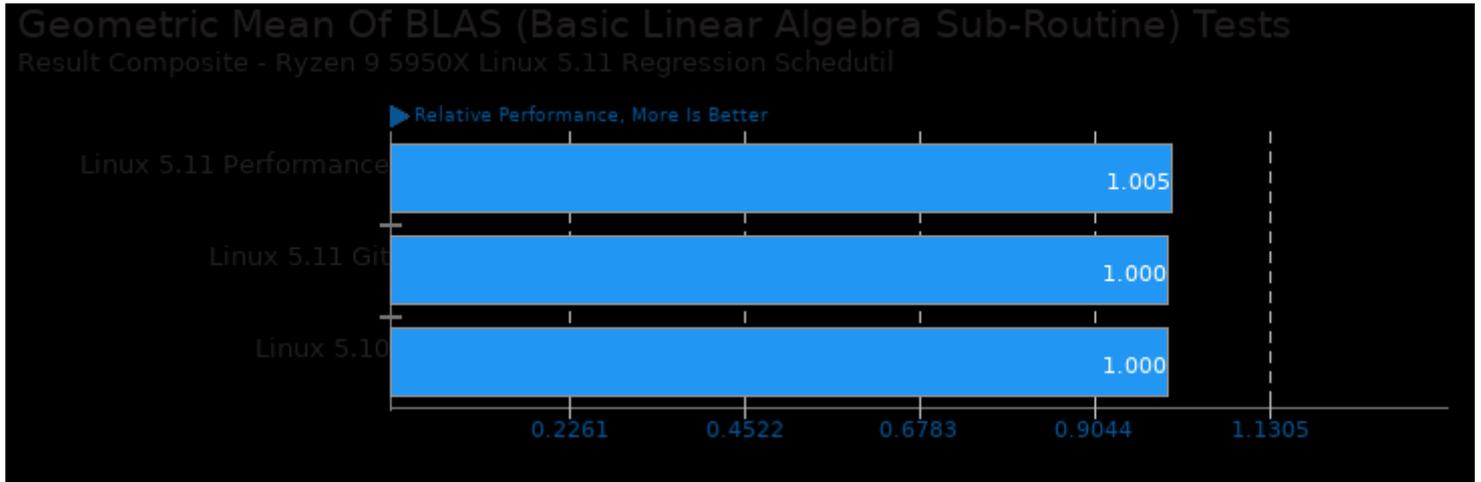
Geometric mean based upon tests: pts/encode-mp3, pts/encode-ogg, pts/encode-flac, pts/encode-ape, pts/encode-wavpack and pts/encode-opus



Geometric mean based upon tests: pts/dav1d, pts/aom-av1, pts/svt-av1, pts/rav1e and pts/avifenc



Geometric mean based upon tests: pts/himeno, pts/mrbayes and pts/hmmer



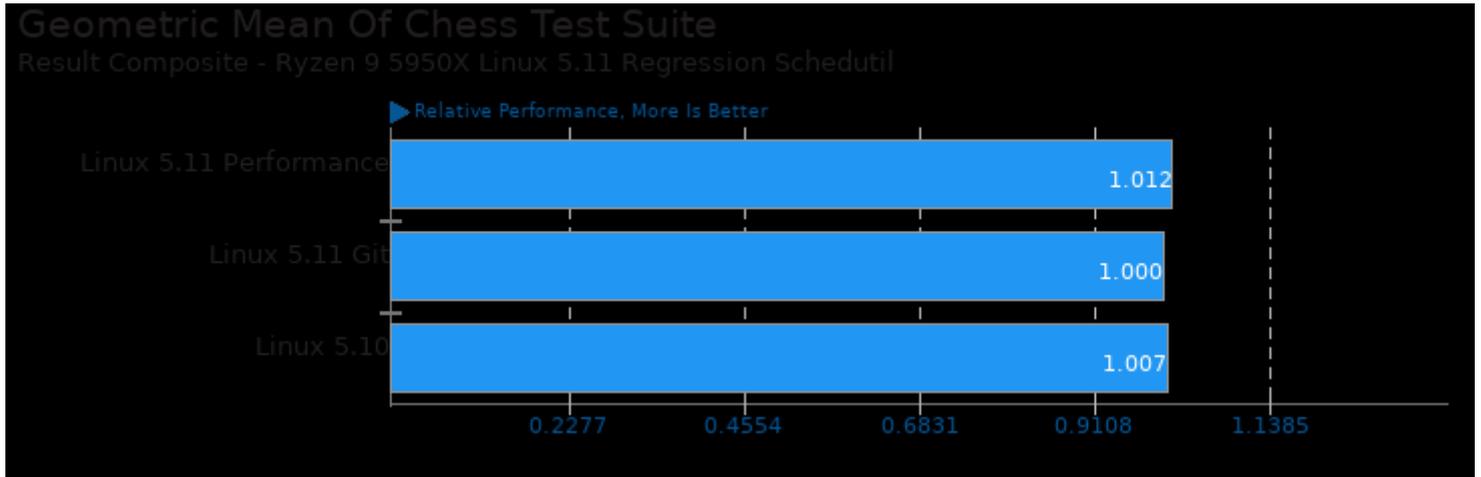
Geometric mean based upon tests: pts/lczero and pts/caffe



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



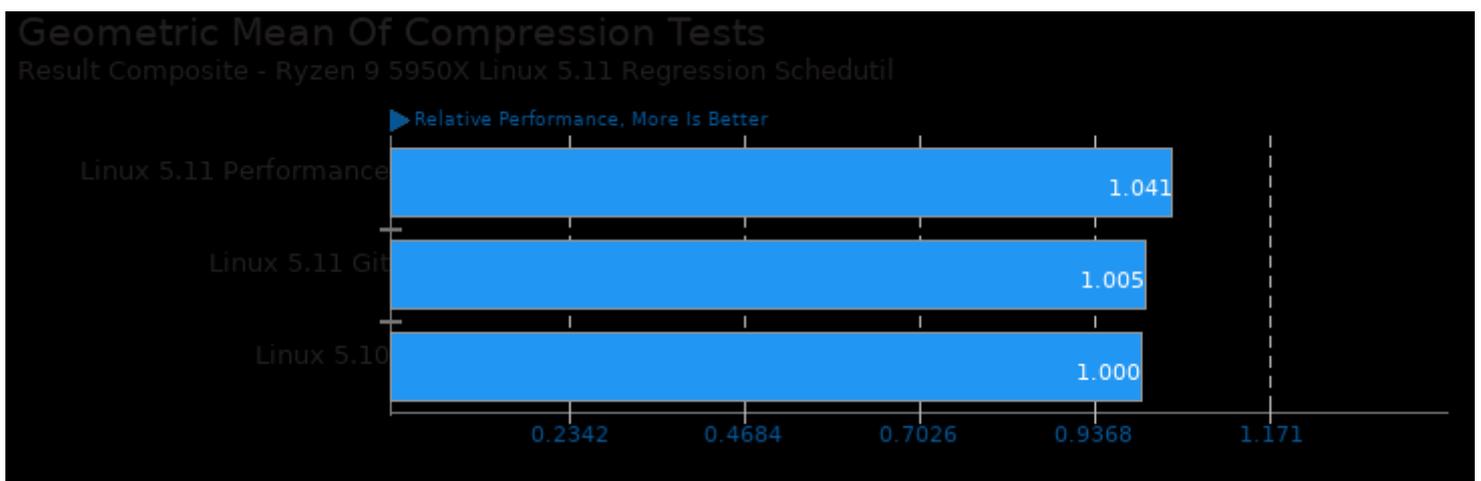
Geometric mean based upon tests: system/selenium



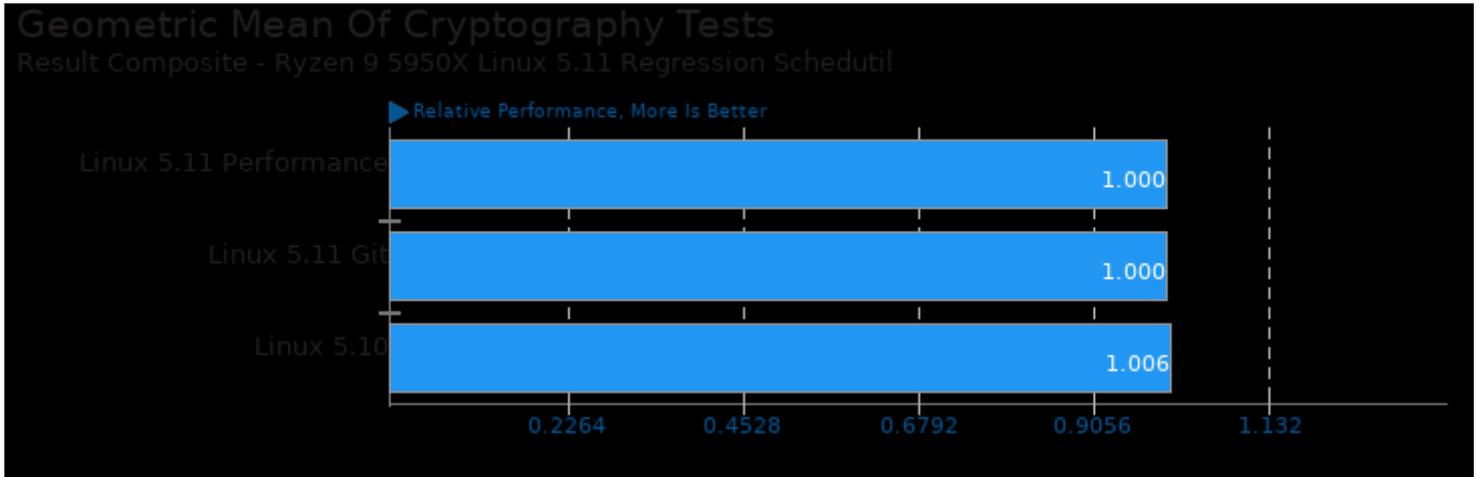
Geometric mean based upon tests: pts/crafty, pts/tscp, pts/lczero, pts/asmfish and pts/m-queens



Geometric mean based upon tests: pts/build-apache, pts/build-eigen, pts/build-linux-kernel, pts/build-imagemagick, pts/build-gdb, pts/build-ffmpeg, pts/build-mplayer and pts/build2



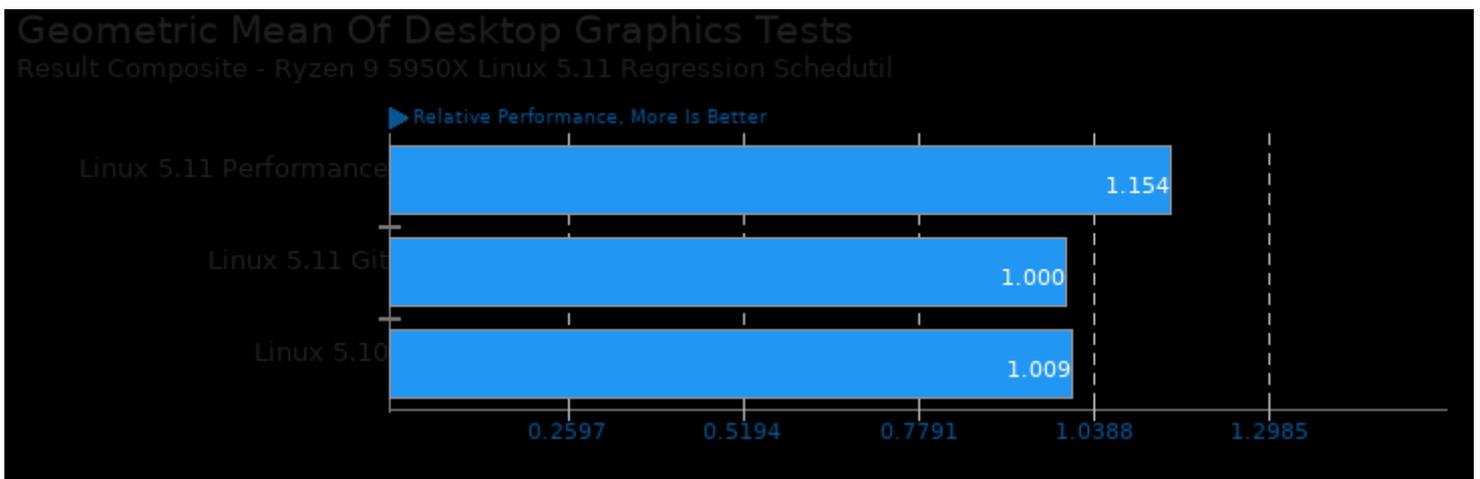
Geometric mean based upon tests: pts/compress-7zip, pts/compress-zstd, pts/compress-lz4, pts/compress-rar, pts/compress-xz and pts/blosc



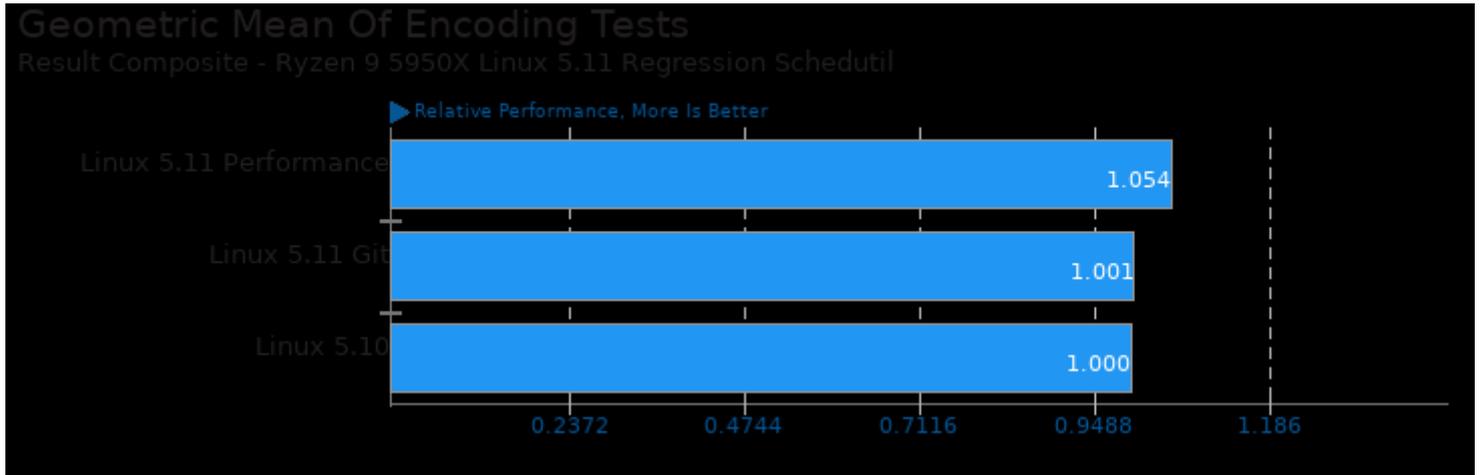
Geometric mean based upon tests: pts/openssl, pts/blake2, pts/john-the-ripper, pts/botan, system/cryptsetup, pts/bork and pts/aircrack-ng



Geometric mean based upon tests: pts/sqlite-speedtest, pts/keydb, pts/rocksdb, pts/pgbench, pts/couchdb and pts/influxdb



Geometric mean based upon tests: pts/tesseract, pts/unigine-valley and pts/unigine-heaven



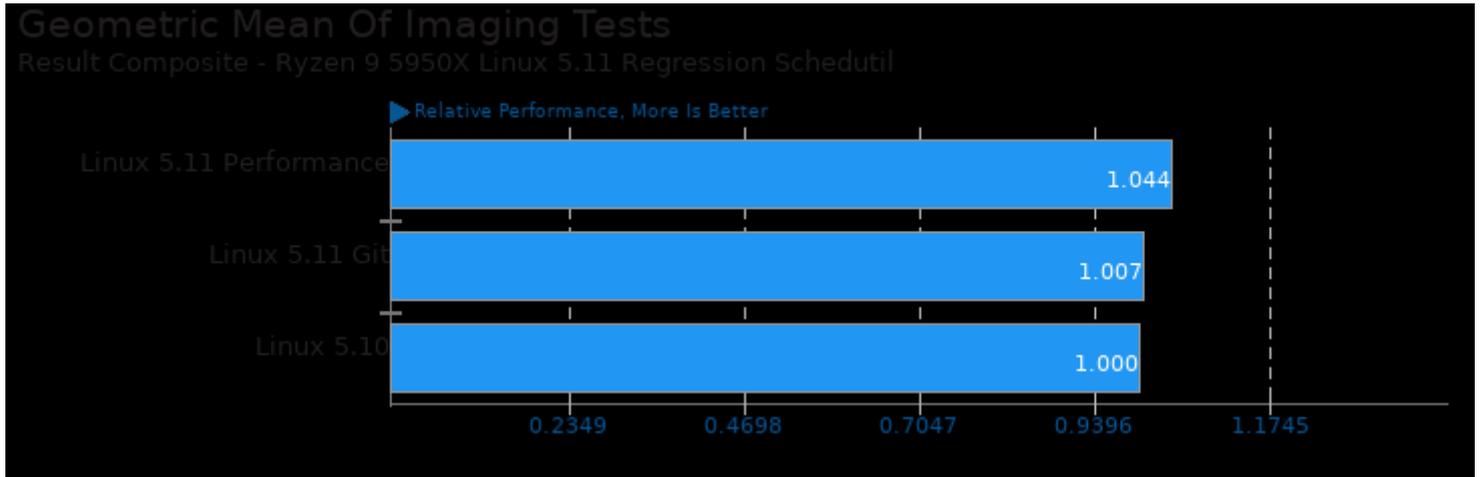
Geometric mean based upon tests: pts/encode-mp3, pts/encode-ogg, pts/encode-flac, pts/encode-ape, pts/encode-wavpack, pts/encode-opus, pts/svt-vp9, pts/x264, pts/x265, pts/kvazaar, pts/vpxenc, pts/dav1d, pts/aom-av1, pts/svt-av1, pts/rav1e and pts/avifenc



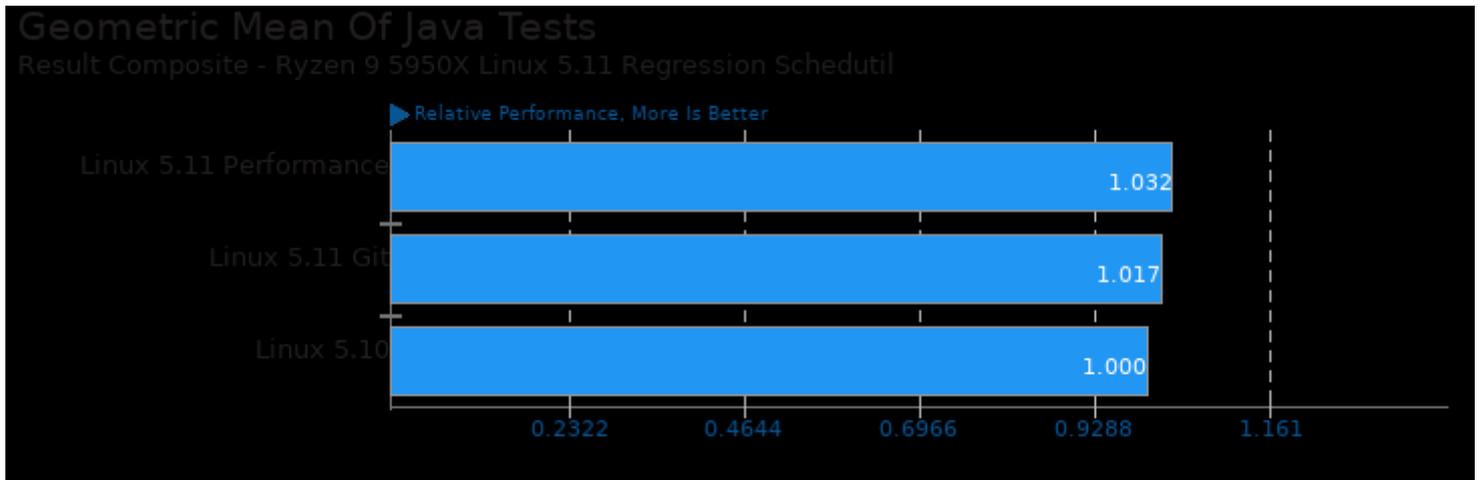
Geometric mean based upon tests: pts/lammps, pts/incompact3d, pts/npb, pts/mocassin, pts/dolfyn, pts/cloverleaf, pts/neat, pts/ffte and pts/hpcg



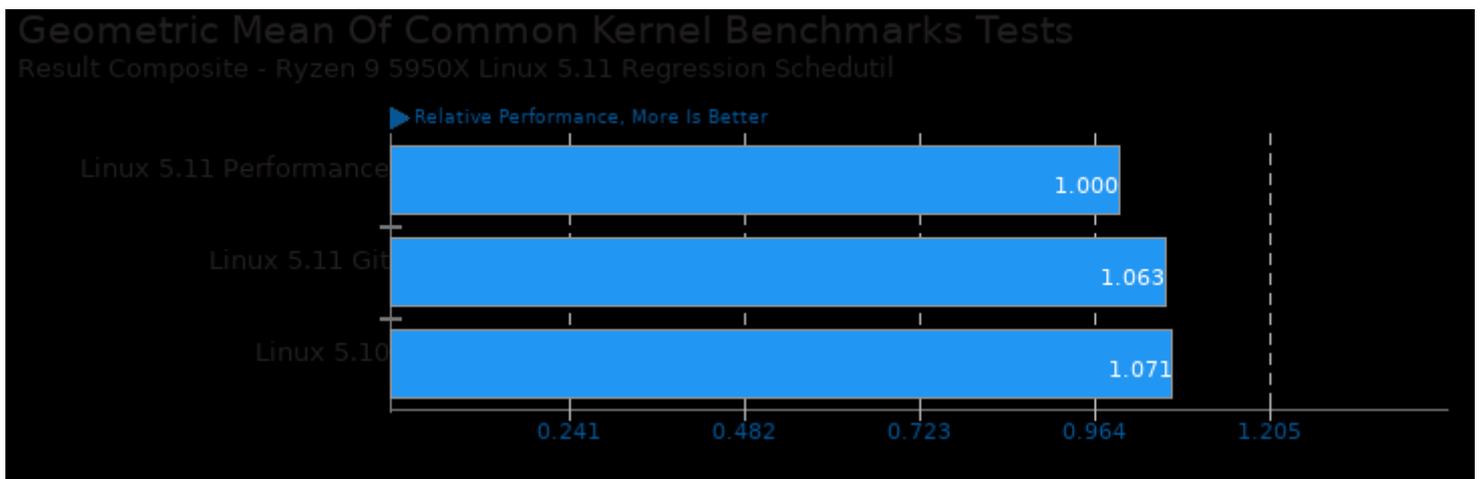
Geometric mean based upon tests: pts/basis, pts/astcenc, pts/blender, pts/oidn and pts/opencvl



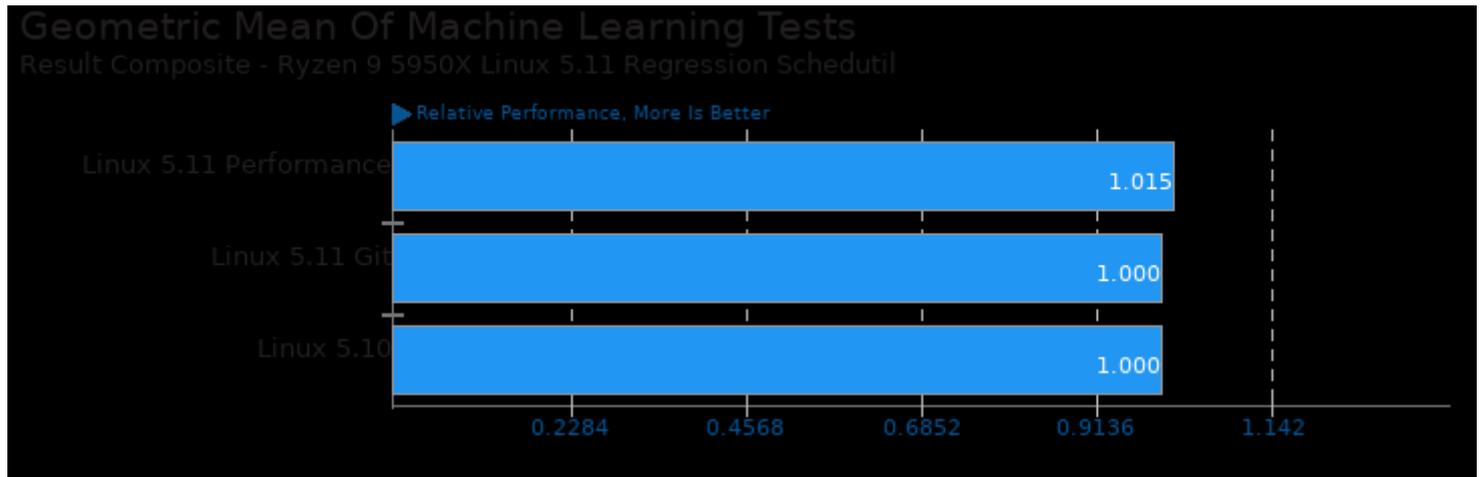
Geometric mean based upon tests: pts/graphics-magick, system/inkscape, system/gmic, pts/libraw, pts/webp, system/rawtherapee, pts/tjbench, system/gimp, pts/montage, system/hugin, system/darktable, system/rsvg, system/gegl and pts/avifenc



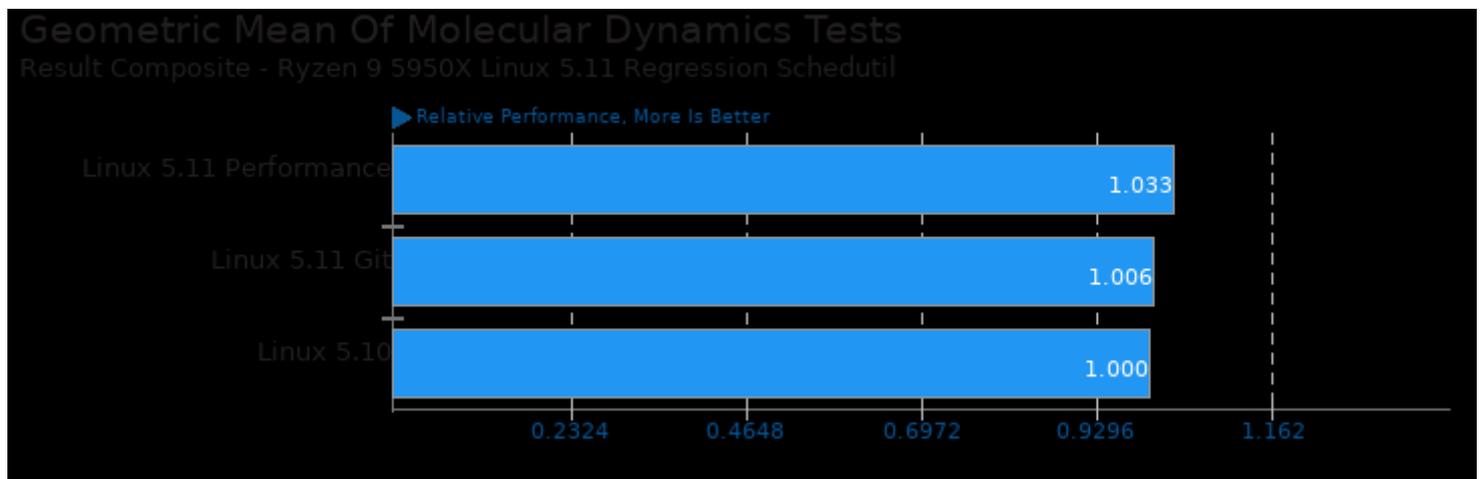
Geometric mean based upon tests: pts/bork and pts/java-scimark2



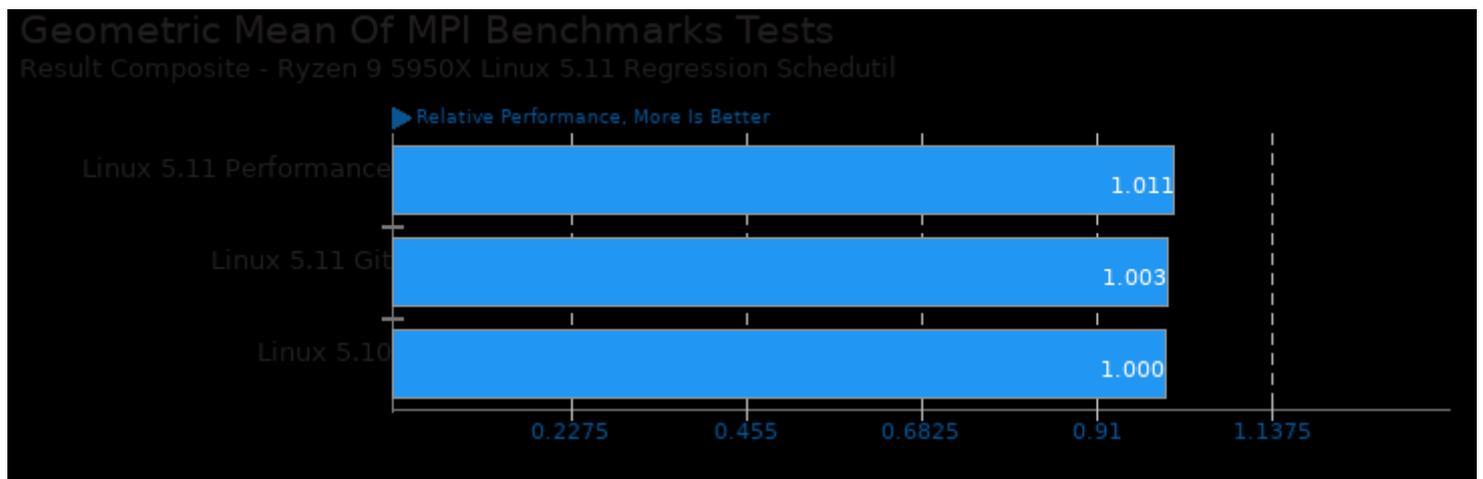
Geometric mean based upon tests: system/wireguard, pts/sqlite-speedtest, pts/pgbench, pts/openssl, pts/hackbench and pts/rocksdb



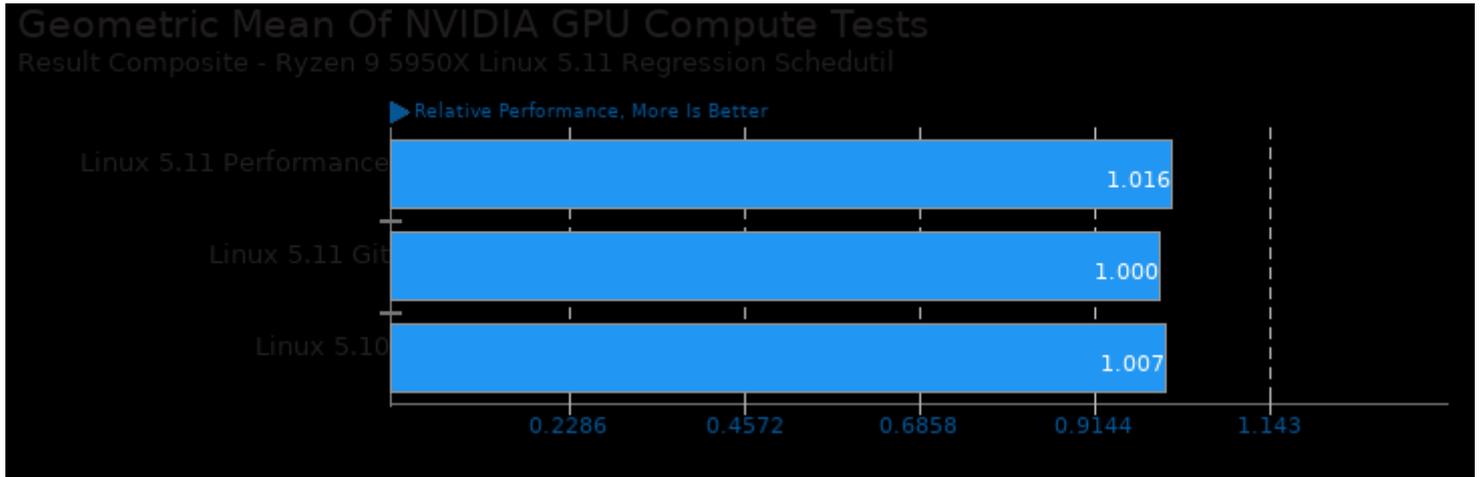
Geometric mean based upon tests: pts/mnn, pts/ncnn, pts/tnn, pts/caffe, pts/numpy, pts/deepspeech, pts/ecp-candle, pts/rnoise, pts/mlpack, pts/tensorflow-lite, pts/onednn, pts/opencvino, pts/plaidml and pts/lczero



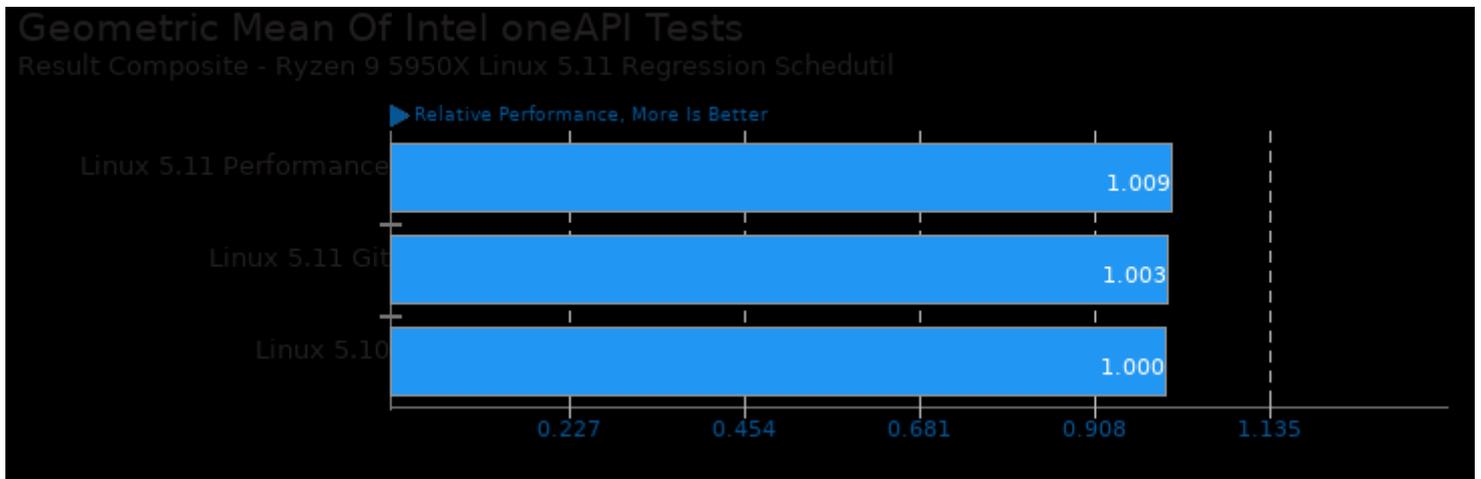
Geometric mean based upon tests: pts/namd, pts/gromacs, pts/cp2k, pts/dolfyn, pts/cloverleaf, pts/lammps and pts/incompact3d



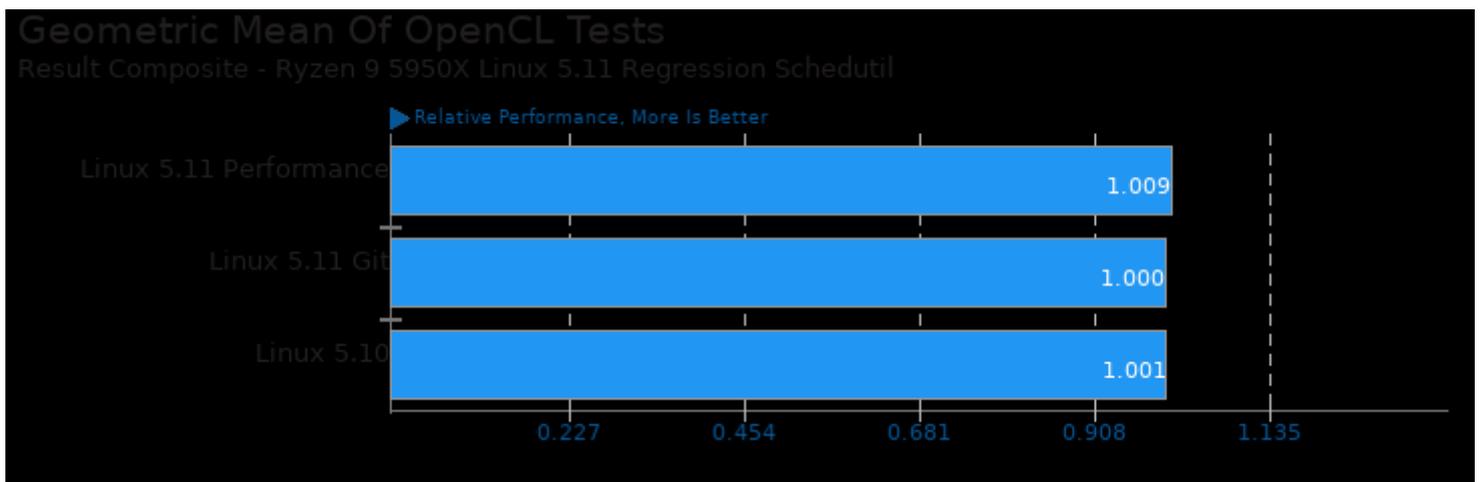
Geometric mean based upon tests: pts/askap, pts/lammps, pts/incompact3d, pts/mocassin, pts/gromacs, pts/hpcg, pts/mrbayes and pts/npb



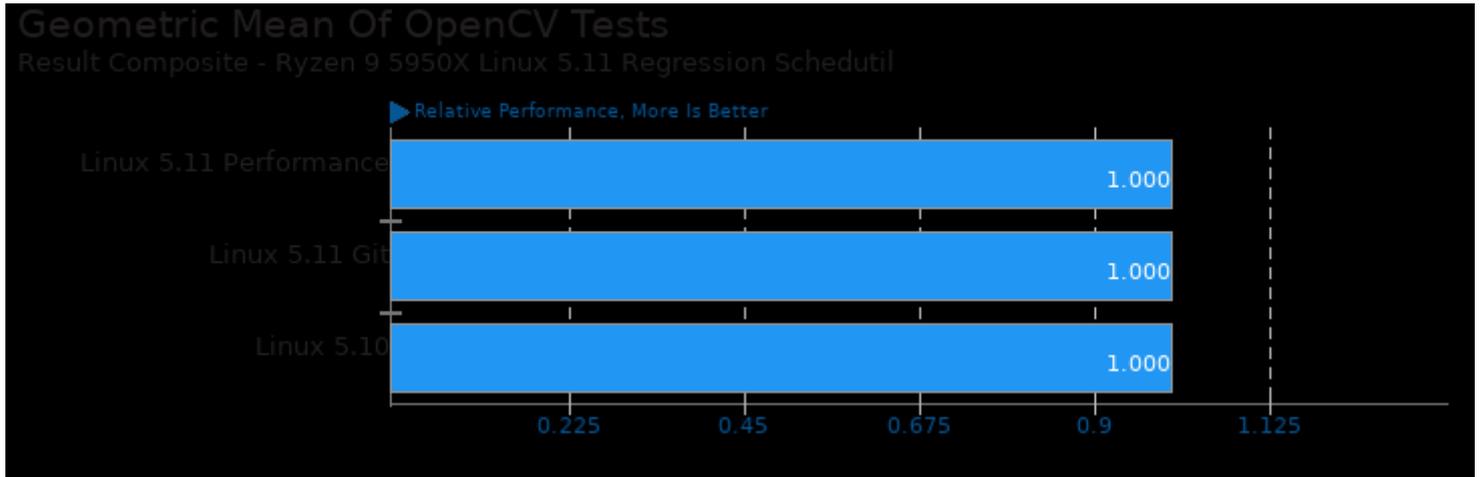
Geometric mean based upon tests: pts/gromacs, pts/luxcorerender, pts/rodinia, pts/plaidml, pts/lczero, pts/indigobench, pts/v-ray, pts/blender, pts/caffe and pts/ncnn



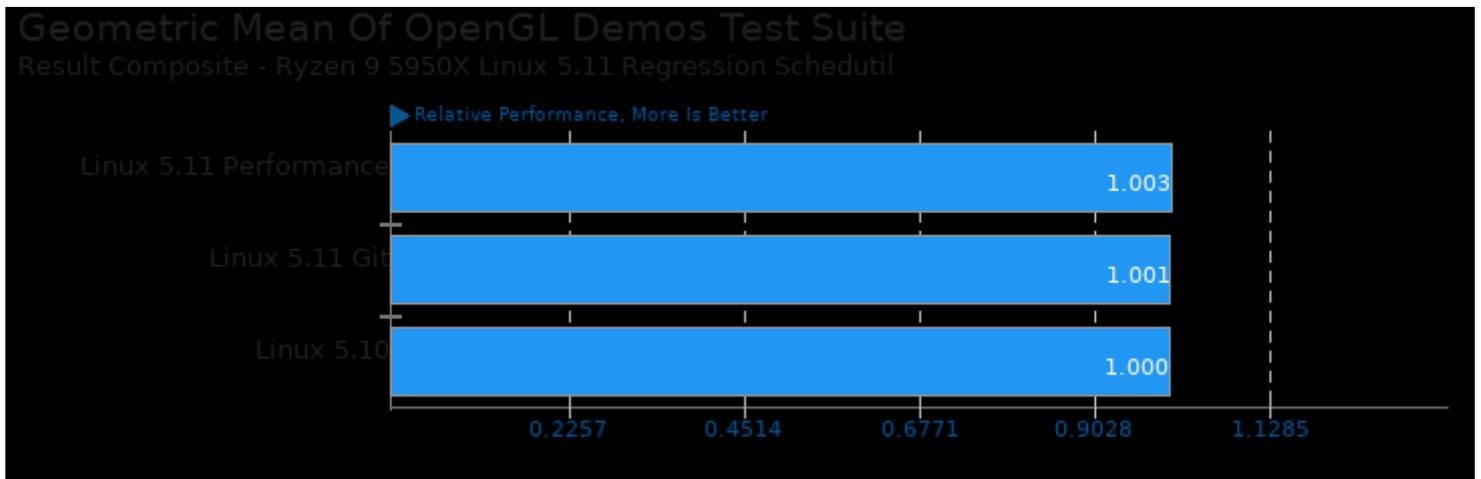
Geometric mean based upon tests: pts/embree, pts/onednn, pts/oidn, pts/openvkl and pts/openvino



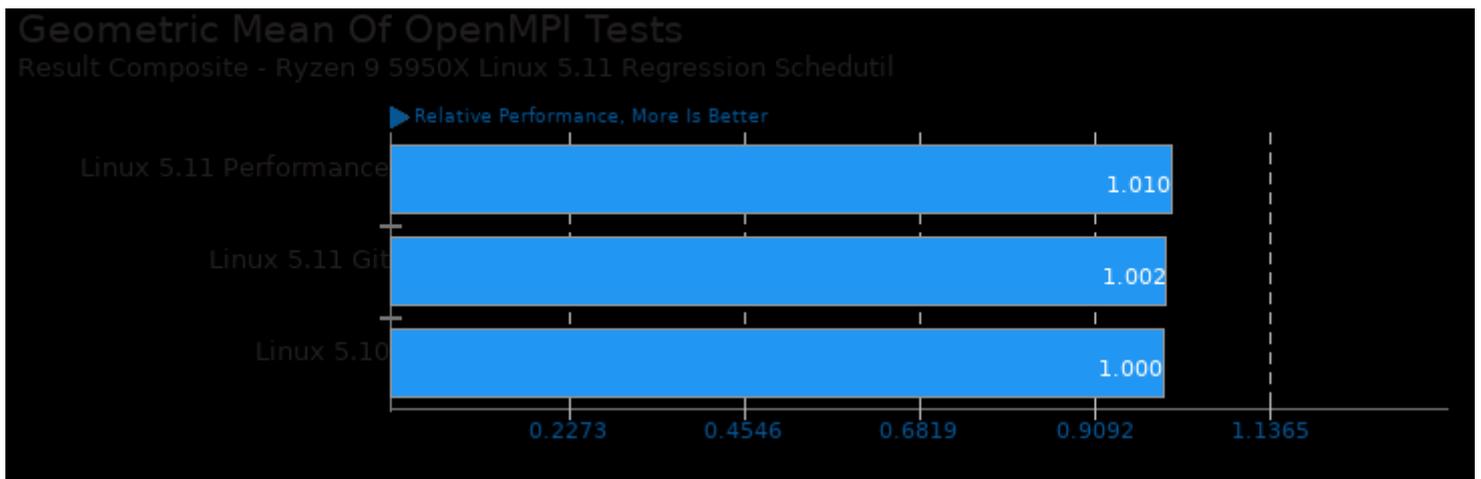
Geometric mean based upon tests: pts/rodinia, pts/parboil and system/darktable



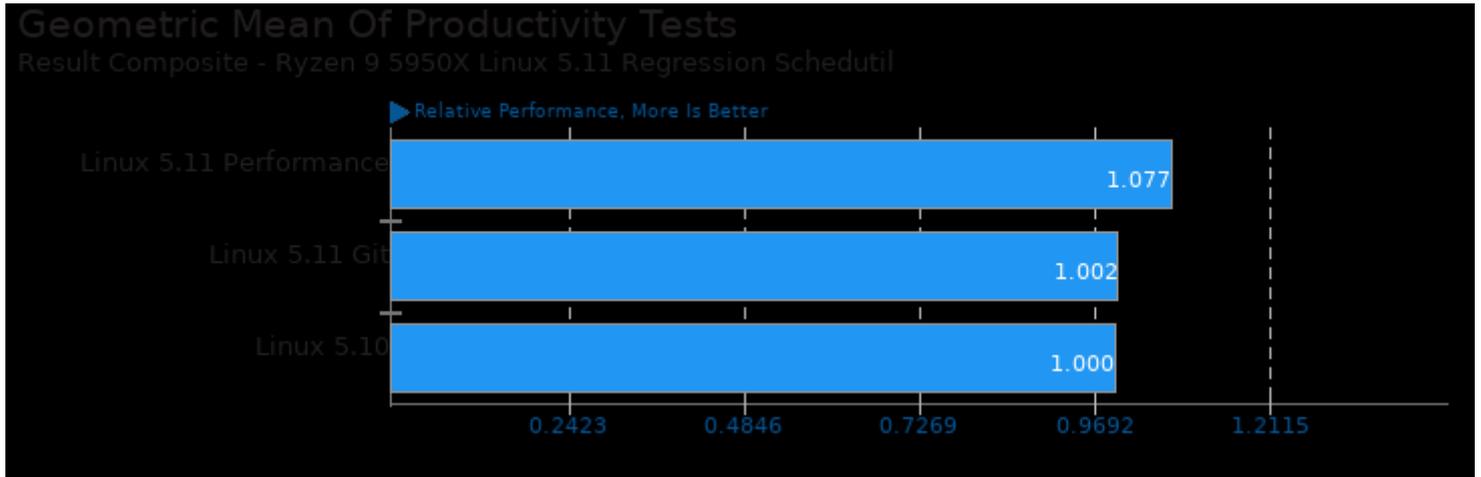
Geometric mean based upon tests: pts/caffe and pts/yafaray



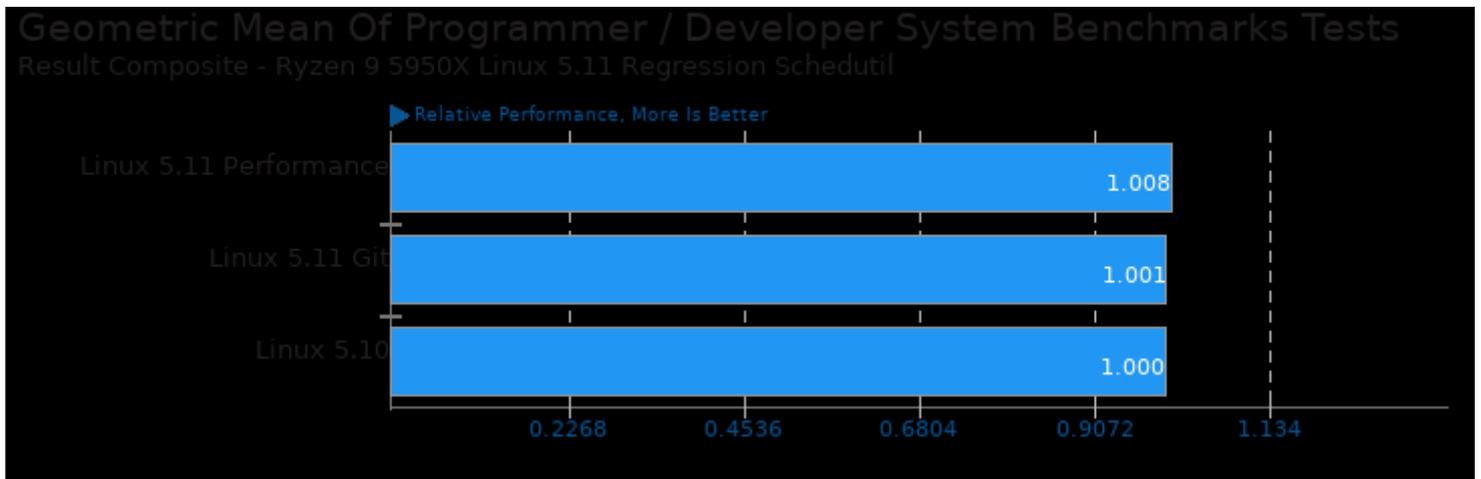
Geometric mean based upon tests: pts/unigine-valley, pts/unigine-heaven and pts/unigine-super



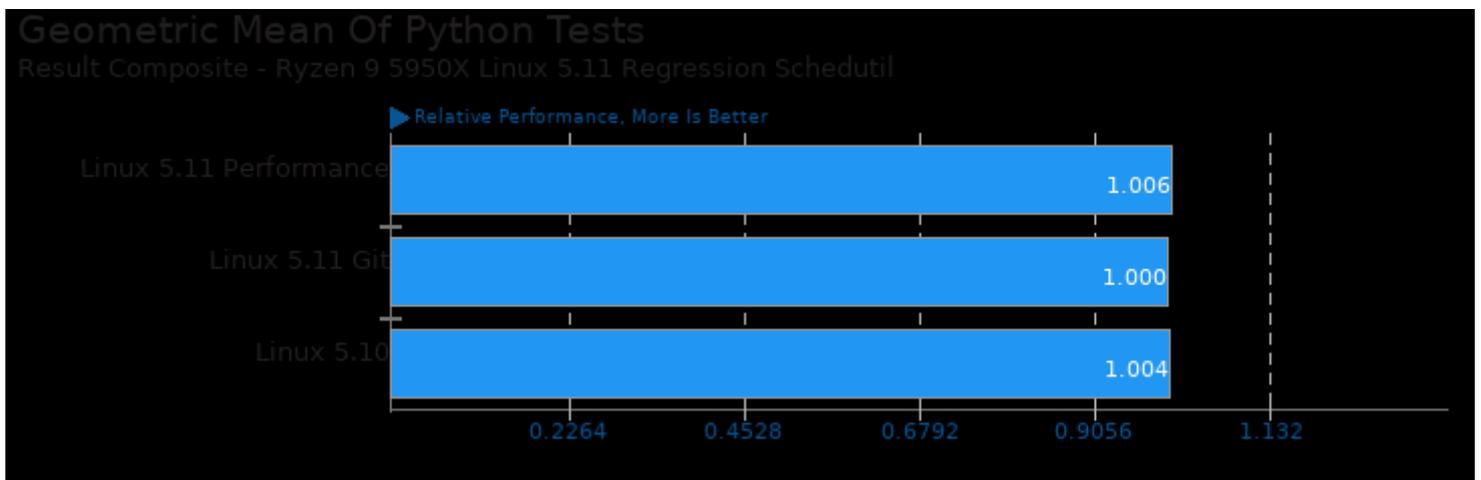
Geometric mean based upon tests: pts/askap, pts/lammps, pts/incompact3d, pts/npb, pts/parboil, pts/mocassin, pts/rodinia, pts/mrbayes, pts/gromacs, pts/coverleaf and pts/hpcg



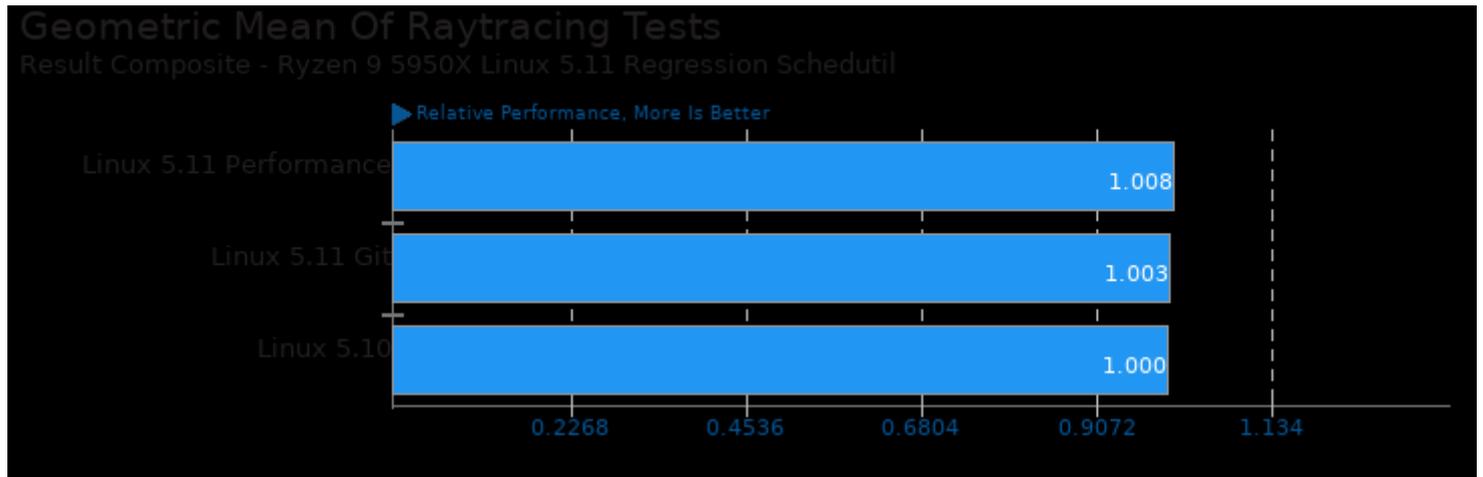
Geometric mean based upon tests: system/libreoffice, system/octave-benchmark, system/inkscape, system/gimp, system/gegl and system/rsvg



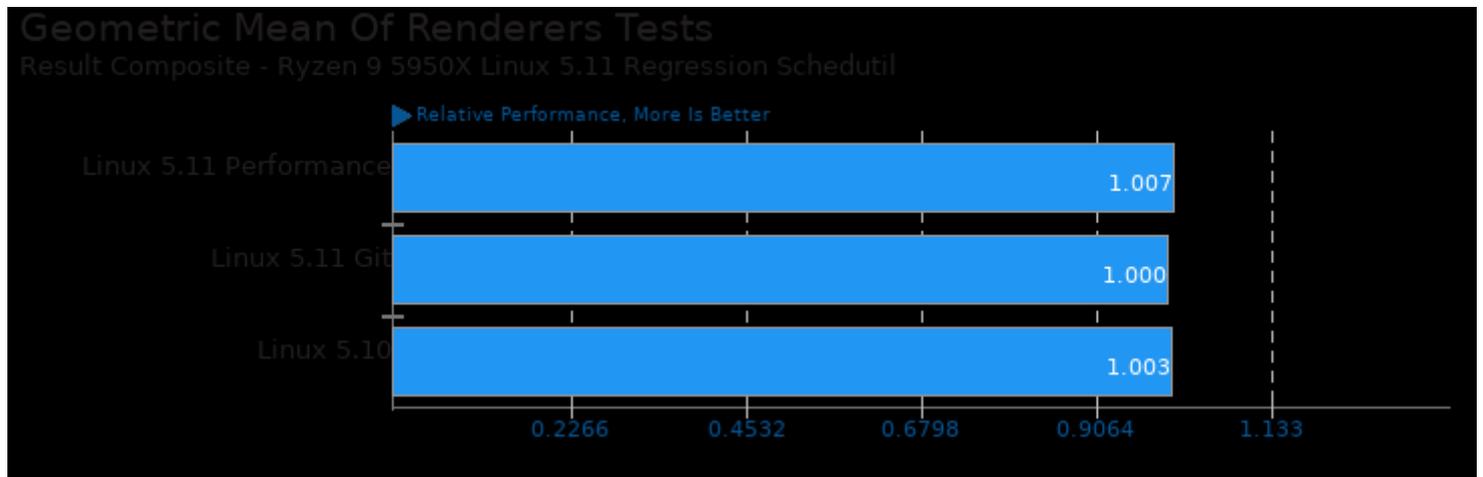
Geometric mean based upon tests: pts/simdjson, pts/sqlite-speedtest, pts/node-web-tooling, pts/git, pts/blosc, pts/compress-zstd, pts/pyperformance, pts/pybench, system/cryptsetup, pts/build-apache, pts/build-eigen, pts/build-linux-kernel, pts/build-imagemagick, pts/build-gdb, pts/build-ffmpeg, pts/build-mplayer, pts/build2 and pts/mt-dgemm



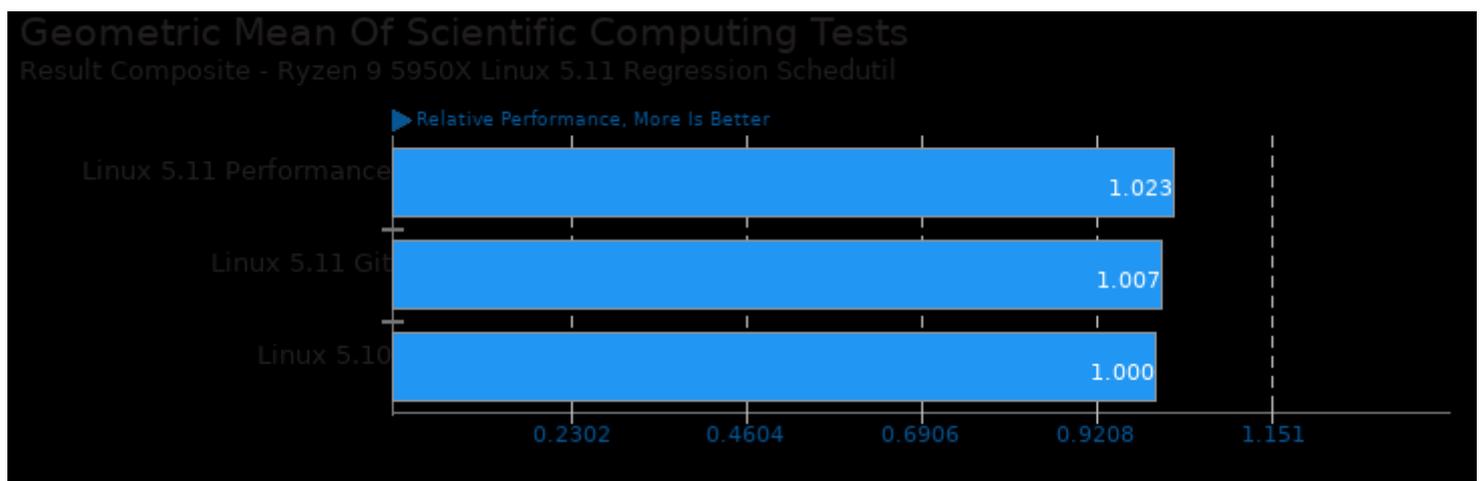
Geometric mean based upon tests: pts/pybench, pts/cython-bench, pts/numpy, pts/mlpack and pts/pyperformance



Geometric mean based upon tests: pts/c-ray, pts/tachyon, pts/povray and pts/yafaray



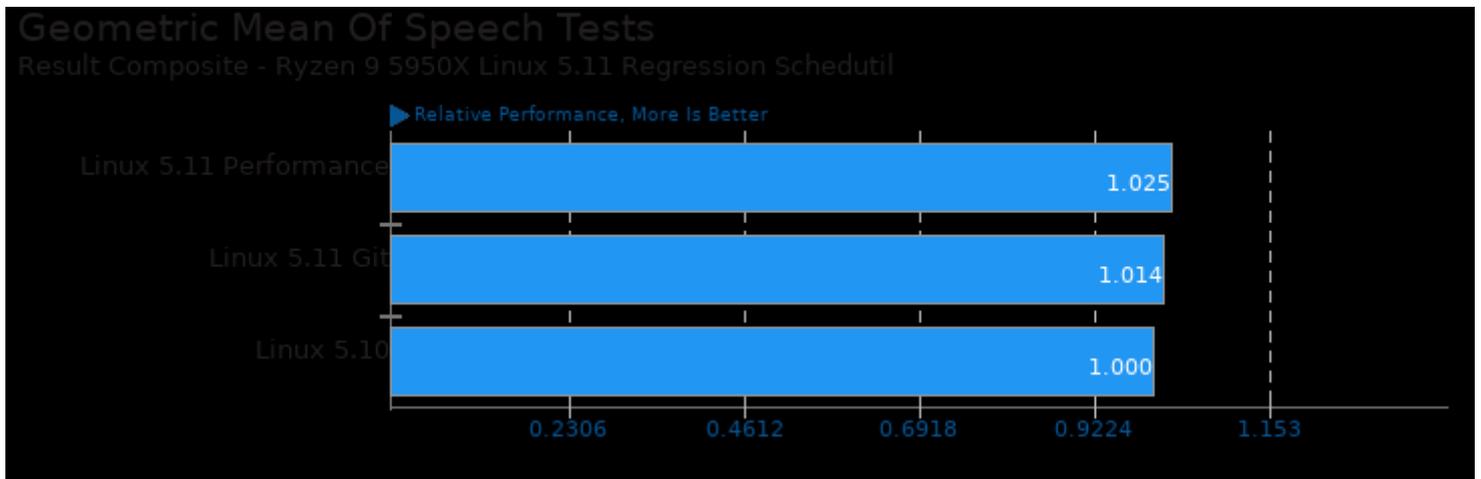
Geometric mean based upon tests: pts/c-ray, pts/tachyon, pts/povray, pts/yafaray, pts/blender, pts/appleseed, pts/radiance, pts/luxcorerender, pts/smallpt, pts/ttsiod-renderer, pts/v-ray and pts/indigobench



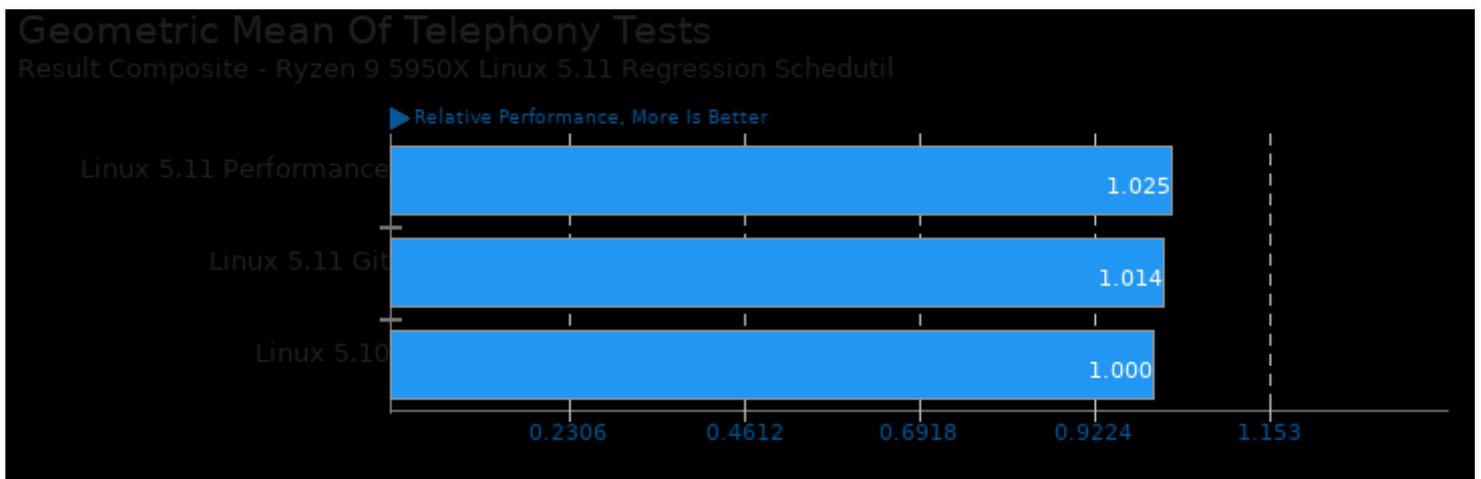
Geometric mean based upon tests: pts/ffte, pts/fftw, system/octave-benchmark, pts/neat, pts/mt-dgemm, pts/namd, pts/gromacs, pts/cp2k, pts/dolfyn, pts/cloverleaf, pts/lammps, pts/incompact3d, pts/himeno, pts/mrbayes, pts/hmmer and pts/mocassin



Geometric mean based upon tests: pts/pgbench, pts/keydb, pts/rocksdb, pts/phpbench, pts/openssl, pts/perl-benchmark, pts/simdjson, pts/node-web-tooling, pts/sqlite-speedtest, pts/couchdb and pts/influxdb



Geometric mean based upon tests: pts/espeak, pts/deepspeech and pts/rnnoise



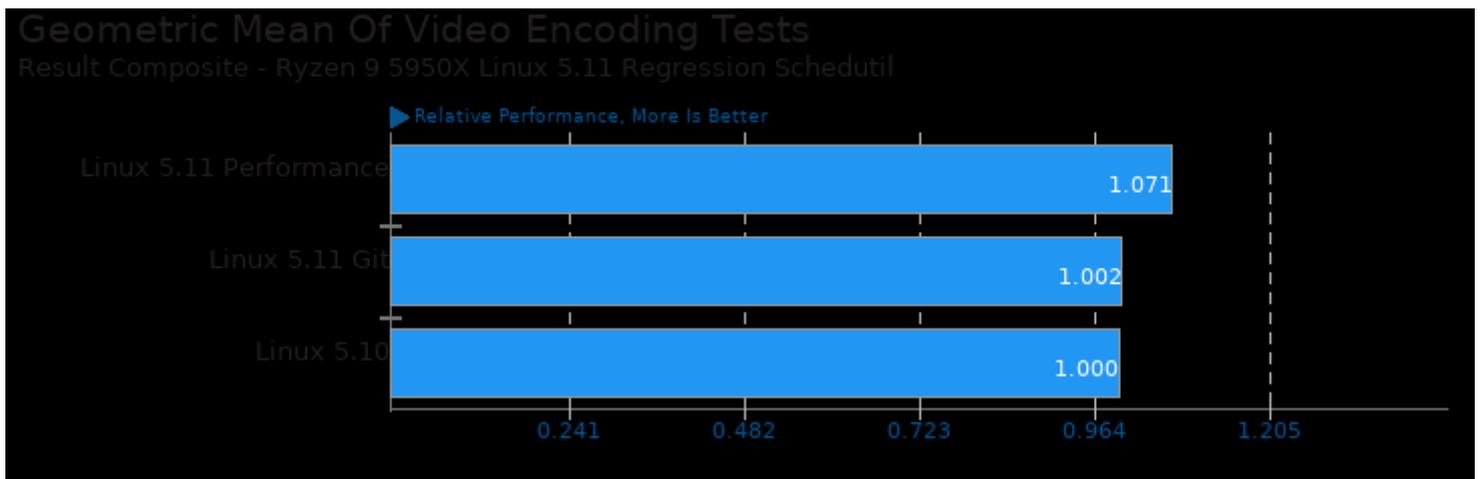
Geometric mean based upon tests: pts/espeak, pts/deepspeech and pts/rnnoise



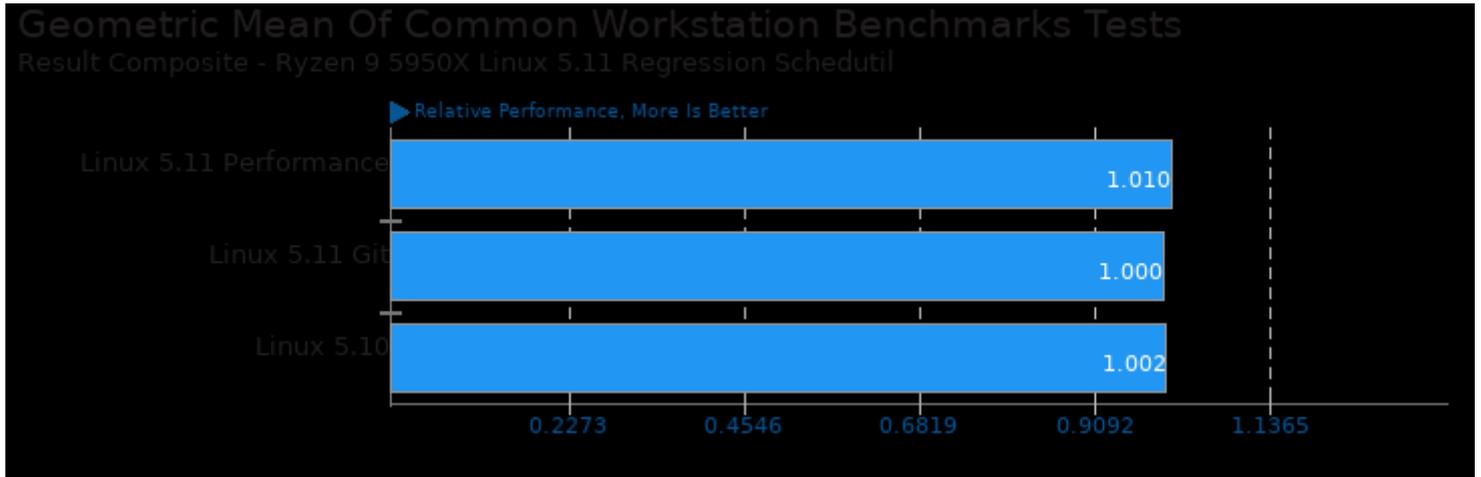
Geometric mean based upon tests: pts/basis and pts/ascenc



Geometric mean based upon tests: pts/unigine-valley, pts/unigine-heaven and pts/unigine-super



Geometric mean based upon tests: pts/svt-vp9, pts/x264, pts/x265, pts/kvazaar, pts/vpxenc, pts/dav1d, pts/aom-av1, pts/svt-av1, pts/rav1e and pts/avifenc



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

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