



## 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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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 performance (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 5.10	Linux 5.11 Git	Linux 5.11 Performance
<b>7-Zip Compression - C.S.T (MIPS)</b>	<b>95492</b>	95520	<b>96698</b>
Normalized	98.75%	98.78%	100%
Standard Deviation	0.4%	0.3%	0.2%
<b>ACES DGEMM - S.F.P.R (GFLOP/s)</b>	9.359648	<b>9.273701</b>	<b>9.646750</b>
Normalized	97.02%	96.13%	100%
Standard Deviation	2.9%	2.4%	2.9%
<b>Aircrack-ng (k/s)</b>	<b>74209</b>	74464	<b>74867</b>
Normalized	99.12%	99.46%	100%
Standard Deviation	0.2%	0.2%	0.1%
<b>AOM AV1 - Speed 6 Realtime (FPS)</b>	<b>28.91</b>	28.92	<b>33.93</b>
Normalized	85.2%	85.23%	100%
Standard Deviation	0.6%	2.6%	0.6%
<b>AOM AV1 - Speed 6 Two-Pass (FPS)</b>	<b>5.47</b>	5.52	<b>5.84</b>
Normalized	93.66%	94.52%	100%
Standard Deviation	2%	0.3%	1.3%
<b>AOM AV1 - Speed 8 Realtime (FPS)</b>	57.07	<b>56.82</b>	<b>61.00</b>
Normalized	93.56%	93.15%	100%
Standard Deviation	0.9%	1.9%	1.2%
<b>Apache CouchDB - 100 - 1000 - 24 (sec)</b>	70.248	<b>72.837</b>	<b>55.878</b>
Normalized	79.54%	76.72%	100%
Standard Deviation	1.1%	1.6%	3%
<b>Appleseed - Material Tester (sec)</b>	111.515078	<b>111.611024</b>	<b>111.318736</b>
Normalized	99.82%	99.74%	100%
<b>ASKAP - tConvolve MT - Gridding (Million Grid Points/sec)</b>	<b>936.560</b>	937.659	<b>938.830</b>
Normalized	99.76%	99.88%	100%
Standard Deviation	0.1%	0.1%	0.1%
<b>ASKAP - tConvolve MT - Degriding (Million Grid Points/sec)</b>	1922	<b>1920</b>	<b>1929</b>
Normalized	99.64%	99.58%	100%
Standard Deviation	0.2%	0.2%	0.1%
<b>ASKAP - tConvolve OpenMP - Gridding (Million Grid Points/sec)</b>	3440	<b>3681</b>	<b>3315</b>
Normalized	93.46%	100%	90.05%
Standard Deviation	5.2%	0.8%	1.4%
<b>ASKAP - tConvolve OpenMP - Degriding (Million Grid Points/sec)</b>	<b>4227</b>	4272	<b>4318</b>
Normalized	97.88%	98.93%	100%
Standard Deviation	0.8%	0.9%	0.9%
<b>asmFish - 1.H.M.2.D (Nodes/s)</b>	<b>60303543</b>	<b>60938021</b>	60561225
Normalized	98.96%	100%	99.38%
Standard Deviation	1.9%	1.9%	1.2%
<b>ASTC Encoder - Thorough (sec)</b>	<b>12.85</b>	<b>12.85</b>	<b>12.77</b>
Normalized	99.38%	99.38%	100%
Standard Deviation	0.1%	0.2%	0.4%
<b>ASTC Encoder - Exhaustive (sec)</b>	<b>101.30</b>	<b>100.87</b>	100.90
Normalized	99.58%	100%	99.97%
Standard Deviation	0.2%	0.2%	0.5%
<b>Basemark GPU - OpenGL - 1920 x 1080 - High (FPS)</b>	132.25	<b>129.54</b>	<b>147.67</b>
Normalized	89.56%	87.72%	100%
Standard Deviation	1.3%	1.2%	2.1%

<b>Basemark GPU - OpenGL - 2560 x 1440 - High (FPS)</b>	131.98	<b>128.63</b>	<b>141.17</b>
Normalized	93.49%	91.12%	100%
Standard Deviation	1.7%	1.3%	0.4%
<b>Basemark GPU - Vulkan - 1920 x 1080 - High (FPS)</b>	<b>184.84</b>	185.28	<b>185.58</b>
Normalized	99.6%	99.84%	100%
Standard Deviation	0%	0.1%	0.1%
<b>Basemark GPU - Vulkan - 2560 x 1440 - High (FPS)</b>	<b>140.23</b>	140.44	<b>140.45</b>
Normalized	99.84%	99.99%	100%
Standard Deviation	0.1%	0%	0.2%
<b>Basis Universal - UASTC Level 2 (sec)</b>	<b>16.115</b>	<b>16.165</b>	16.138
Normalized	100%	99.69%	99.86%
Standard Deviation	0.5%	0.2%	0.2%
<b>Basis Universal - UASTC Level 3 (sec)</b>	28.370	<b>28.377</b>	<b>28.328</b>
Normalized	99.85%	99.83%	100%
Standard Deviation	0.3%	0.1%	0.1%
<b>BLAKE2 (Cycles/Byte)</b>	6.89	<b>6.65</b>	<b>6.92</b>
Normalized	96.52%	100%	96.1%
Standard Deviation	0.4%	0.9%	0.3%
<b>Blender - BMW27 - CPU-Only (sec)</b>	78.51	<b>78.56</b>	<b>78.46</b>
Normalized	99.94%	99.87%	100%
Standard Deviation	0.2%	0.1%	0.1%
<b>Blender - Barbershop - CPU-Only (sec)</b>	<b>301.13</b>	300.54	<b>299.07</b>
Normalized	99.32%	99.51%	100%
Standard Deviation	0.4%	0.2%	0%
<b>Bork File Encrypter - F.E.T (sec)</b>	<b>6.408</b>	6.351	<b>6.258</b>
Normalized	97.66%	98.54%	100%
Standard Deviation	0.6%	2%	0.7%
<b>Botan - AES-256 (MiB/s)</b>	<b>7522</b>	7480	<b>7382</b>
Normalized	100%	99.45%	98.14%
Standard Deviation	1.9%	2.6%	0.3%
<b>Botan - Blowfish (MiB/s)</b>	<b>567.099</b>	<b>539.342</b>	550.914
Normalized	100%	95.11%	97.15%
Standard Deviation	0.2%	2.5%	0.4%
<b>Botan - CAST-256 (MiB/s)</b>	<b>180.592</b>	<b>174.320</b>	175.171
Normalized	100%	96.53%	97%
Standard Deviation	1.9%	0.3%	0.6%
<b>BRL-CAD - V.P.M (VGR Performance Metric)</b>	<b>262736</b>	264322	<b>265236</b>
Normalized	99.06%	99.66%	100%
<b>Build2 - Time To Compile (sec)</b>	71.685	<b>71.709</b>	<b>69.510</b>
Normalized	96.97%	96.93%	100%
Standard Deviation	0.2%	0.6%	0.2%
<b>C-Blosc - blosclz (MB/s)</b>	<b>13666</b>	14179	<b>15124</b>
Normalized	90.36%	93.75%	100%
Standard Deviation	0.4%	0.5%	0.3%
<b>C-Ray - Total Time - 4.1.R.P.P (sec)</b>	<b>30.364</b>	30.283	<b>30.243</b>
Normalized	99.6%	99.87%	100%
Standard Deviation	0.3%	0.3%	0.3%
<b>Caffe - AlexNet - CPU - 100 (ms)</b>	<b>40058</b>	<b>39662</b>	39897
Normalized	99.01%	100%	99.41%
Standard Deviation	0.2%	0.4%	0.2%
<b>Caffe - GoogleNet - CPU - 100 (ms)</b>	<b>105402</b>	104908	<b>104584</b>
Normalized	99.22%	99.69%	100%

	Standard Deviation	0.3%	0.1%	0.2%
<b>Chaos Group V-RAY - CPU (Ksamples)</b>		<b>32530</b>	<b>32422</b>	32464
	Normalized	100%	99.67%	99.8%
	Standard Deviation	0.9%	0.5%	0.3%
<b>CLOMP - Static OMP Speedup (Speedup)</b>		<b>20.7</b>	20.8	<b>21.5</b>
	Normalized	96.28%	96.74%	100%
	Standard Deviation	2.1%	1.7%	0.8%
<b>CloverLeaf - L.E.H (sec)</b>		<b>3.87</b>	3.86	<b>3.84</b>
	Normalized	99.22%	99.48%	100%
	Standard Deviation	0.2%	0.3%	0.3%
<b>Coremark - CoreMark Size 666 - I.P.S (Iterations/Sec)</b>		<b>825089</b>	832797	<b>841223</b>
	Normalized	98.08%	99%	100%
	Standard Deviation	0.5%	0.3%	0.3%
<b>CP2K Molecular Dynamics - Fayalite-FIST Data (sec)</b>		<b>901.594</b>	<b>848.529</b>	869.725
	Normalized	94.11%	100%	97.56%
<b>Crafty - Elapsed Time (Nodes/s)</b>		11848420	<b>11574143</b>	<b>11889046</b>
	Normalized	99.66%	97.35%	100%
	Standard Deviation	1.4%	0.5%	1.1%
<b>Cryptsetup - PBKDF2-whirlpool</b>		<b>901033</b>	889667	<b>862499</b>
	Normalized	100%	98.74%	95.72%
	Standard Deviation	1.8%	0.8%	18.9%
<b>Cryptsetup - PBKDF2-sha512 (Iterations/sec)</b>		2462021	2412473	<b>2357151</b>
	Normalized	99.82%	97.81%	95.57%
	Standard Deviation	1.9%	0.8%	15.4%
<b>Cryptsetup - PBKDF2-whirlpool</b>			<b>894197</b>	<b>913462</b>
	Normalized		97.89%	100%
	Standard Deviation		0.5%	1.1%
<b>Cython benchmark (sec)</b>		<b>37.319</b>	37.475	<b>38.479</b>
	Normalized	100%	99.58%	96.99%
	Standard Deviation	1.7%	1.5%	0.3%
<b>Darktable - Boat - CPU-only (sec)</b>		14.366	<b>14.395</b>	<b>14.287</b>
	Normalized	99.45%	99.25%	100%
	Standard Deviation	0.4%	0.3%	0%
<b>Darktable - Masskrug - CPU-only (sec)</b>		<b>6.204</b>	6.162	<b>6.106</b>
	Normalized	98.42%	99.09%	100%
	Standard Deviation	0.2%	0.3%	0.2%
<b>Darktable - Server Rack - CPU-only (sec)</b>		0.185	<b>0.188</b>	<b>0.182</b>
	Normalized	98.38%	96.81%	100%
	Standard Deviation	0.5%	1.2%	0.3%
<b>Darktable - Server Room - CPU-only (sec)</b>		<b>5.856</b>	5.822	<b>5.790</b>
	Normalized	98.87%	99.45%	100%
	Standard Deviation	0.1%	0.2%	0.1%
<b>Darmstadt Automotive Parallel Heterogeneous Suite - OpenMP - NDT Mapping (Test Cases/min)</b>		<b>900.83</b>	<b>896.86</b>	900.27
	Normalized	100%	99.56%	99.94%
	Standard Deviation	1.2%	1.2%	1.3%
<b>Darmstadt Automotive Parallel Heterogeneous Suite - OpenMP - Points2Image (Test Cases/min)</b>		<b>29506</b>	30538	<b>31088</b>
	Normalized	94.91%	98.23%	100%
	Standard Deviation	1%	0.7%	0.5%

<b>Darmstadt Automotive Parallel Heterogeneous Suite - OpenMP - Euclidean Cluster (Test Cases/min)</b>	<b>1494</b>	1505	<b>1515</b>
Normalized	98.62%	99.34%	100%
Standard Deviation	0.4%	0.3%	0.3%
<b>dav1d - Chimera 1080p (FPS)</b>	<b>744.31</b>	744.81	<b>897.50</b>
Normalized	82.93%	82.99%	100%
Standard Deviation	1.5%	1.2%	0.1%
<b>dav1d - Summer Nature 4K (FPS)</b>	<b>235.54</b>	<b>233.72</b>	233.80
Normalized	100%	99.23%	99.26%
Standard Deviation	0.4%	0.2%	2.7%
<b>dav1d - S.N.1 (FPS)</b>	758.37	<b>755.48</b>	<b>925.04</b>
Normalized	81.98%	81.67%	100%
Standard Deviation	0.7%	0.6%	0.4%
<b>dav1d - C.1.1.b (FPS)</b>	<b>153.79</b>	154.36	<b>184.04</b>
Normalized	83.56%	83.87%	100%
Standard Deviation	0.5%	0.3%	0%
<b>DeepSpeech - CPU (sec)</b>	<b>58.84674</b>	58.17644	<b>56.24089</b>
Normalized	95.57%	96.67%	100%
Standard Deviation	0.8%	1%	0.1%
<b>Dolfyn - C.F.D (sec)</b>	12.913	<b>12.970</b>	<b>12.808</b>
Normalized	99.19%	98.75%	100%
Standard Deviation	1.2%	0.7%	0.6%
<b>ECP-CANDLE - P1B2 (sec)</b>	<b>34.929</b>	33.623	<b>32.706</b>
Normalized	93.64%	97.27%	100%
<b>ECP-CANDLE - P3B1 (sec)</b>	1273	<b>1276</b>	<b>1270</b>
Normalized	99.78%	99.59%	100%
<b>ECP-CANDLE - P3B2 (sec)</b>	537.413	<b>539.428</b>	<b>408.399</b>
Normalized	75.99%	75.71%	100%
<b>Embree - Pathtracer - Crown (FPS)</b>	<b>24.2333</b>	<b>24.0188</b>	24.1488
Normalized	100%	99.11%	99.65%
Standard Deviation	1.1%	0.8%	1.3%
<b>Embree - Pathtracer ISPC - Crown (FPS)</b>	23.7339	<b>23.7196</b>	<b>23.8322</b>
Normalized	99.59%	99.53%	100%
Standard Deviation	0.8%	0.6%	0.3%
<b>Embree - Pathtracer - Asian Dragon (FPS)</b>	<b>25.0346</b>	25.1259	<b>25.2129</b>
Normalized	99.29%	99.65%	100%
Standard Deviation	0.8%	0.9%	1%
<b>Embree - Pathtracer ISPC - Asian Dragon (FPS)</b>	<b>25.4608</b>	25.6222	<b>25.9025</b>
Normalized	98.29%	98.92%	100%
Standard Deviation	0.2%	1.1%	0.1%
<b>eSpeak-NG Speech Engine - T.T.S.S (sec)</b>	21.017	<b>20.782</b>	<b>21.402</b>
Normalized	98.88%	100%	97.1%
Standard Deviation	1%	1.3%	0.6%
<b>ET: Legacy - Renderer2 - 3840 x 2160 (FPS)</b>	268.9	<b>266.0</b>	<b>282.5</b>
Normalized	95.19%	94.16%	100%
Standard Deviation	1.9%	0.4%	0.2%
<b>Facebook RocksDB - Rand Fill (Op/s)</b>	1513472	<b>1504767</b>	<b>1532539</b>
Normalized	98.76%	98.19%	100%
Standard Deviation	2.5%	1.1%	1.1%
<b>Facebook RocksDB - Rand Read (Op/s)</b>	<b>125000032</b>	<b>125941907</b>	125807563
Normalized	99.25%	100%	99.89%
Standard Deviation	0.4%	0.2%	0.2%

Facebook RocksDB - Seq Fill (Op/s)	<b>1646375</b>	1665111	<b>1720753</b>
Normalized	95.68%	96.77%	100%
Standard Deviation	3%	0.3%	1.6%
Facebook RocksDB - Rand Fill Sync (Op/s)	<b>16642</b>	16737	<b>17335</b>
Normalized	96%	96.55%	100%
Standard Deviation	0.4%	0.9%	0.6%
Facebook RocksDB - Read While Writing	<b>4336214</b>	<b>4432093</b>	4376801
Normalized	97.84%	100%	98.75%
Standard Deviation	0.7%	2.7%	2.7%
FFTE - N.2.3.C.F.R (MFLOPS)	<b>36615</b>	<b>36508</b>	36553
Normalized	100%	99.71%	99.83%
Standard Deviation	0.2%	0.4%	0.5%
FFTW - Stock - 1D FFT Size 32 (Mflops)	15306	<b>15340</b>	<b>15040</b>
Normalized	99.78%	100%	98.04%
Standard Deviation	1.5%	0.5%	0.6%
FFTW - Stock - 2D FFT Size 4096 (Mflops)	<b>8175</b>	<b>8142</b>	8145
Normalized	100%	99.59%	99.64%
Standard Deviation	0.3%	1.1%	1.2%
FFTW - Float + SSE - 1D FFT Size 32 (Mflops)	<b>21867</b>	21744	<b>21658</b>
Normalized	100%	99.44%	99.04%
Standard Deviation	0.7%	0.7%	1.1%
FFTW - Float + SSE - 2D FFT Size 4096 (Mflops)	<b>30848</b>	<b>31520</b>	31327
Normalized	97.87%	100%	99.39%
Standard Deviation	2.6%	0.7%	2.9%
Fhourstones - C.C.4.S (Kpos / sec)	<b>20307</b>	20378	<b>20703</b>
Normalized	98.09%	98.43%	100%
Standard Deviation	0.9%	0.2%	0.7%
FLAC Audio Encoding - WAV To FLAC (sec)	6.375	<b>6.398</b>	<b>6.342</b>
Normalized	99.48%	99.12%	100%
Standard Deviation	1.2%	0.3%	1.8%
G'MIC - 2.F.P.1.T (sec)	<b>124.351</b>	104.656	<b>86.379</b>
Normalized	69.46%	82.54%	100%
Standard Deviation	0.5%	0.7%	1.1%
GEGL - Crop (sec)	<b>6.911</b>	6.857	<b>6.747</b>
Normalized	97.63%	98.4%	100%
Standard Deviation	1.9%	1.5%	1.6%
GEGL - Reflect (sec)	24.643	<b>24.759</b>	<b>24.507</b>
Normalized	99.45%	98.98%	100%
Standard Deviation	0.3%	0.1%	0.8%
GEGL - Rotate 90 Degrees (sec)	<b>30.955</b>	30.911	<b>30.683</b>
Normalized	99.12%	99.26%	100%
Standard Deviation	0.2%	0.5%	0.5%
GIMP - resize (sec)	<b>6.110</b>	6.021	<b>5.331</b>
Normalized	87.25%	88.54%	100%
Standard Deviation	1.7%	2.1%	2.1%
GIMP - rotate (sec)	<b>9.513</b>	9.363	<b>8.541</b>
Normalized	89.78%	91.22%	100%
Standard Deviation	0.4%	0.4%	0.2%
GIMP - auto-levels (sec)	<b>10.266</b>	10.264	<b>9.606</b>
Normalized	93.57%	93.59%	100%
Standard Deviation	0.6%	0.3%	0.2%
GIMP - unsharp-mask (sec)	12.933	<b>12.948</b>	<b>12.262</b>
Normalized	94.81%	94.7%	100%
Standard Deviation	0.4%	0.2%	0.2%

<b>Git - T.T.C.C.G.C (sec)</b>	<b>38.302</b>	38.071	<b>37.847</b>
Normalized	98.81%	99.41%	100%
Standard Deviation	0.5%	0.6%	0.7%
<b>GNU Octave Benchmark (sec)</b>	5.377	<b>5.321</b>	<b>5.476</b>
Normalized	98.96%	100%	97.17%
Standard Deviation	1.3%	1.1%	0.7%
<b>GraphicsMagick - Rotate (Iterations/min)</b>	<b>982</b>	<b>972</b>	976
Normalized	100%	98.98%	99.39%
Standard Deviation	2.1%	0.9%	0.7%
<b>GraphicsMagick - Sharpen (Iterations/min)</b>	<b>227</b>	<b>228</b>	<b>228</b>
Normalized	99.56%	100%	100%
Standard Deviation	0.5%	0.5%	0.4%
<b>GraphicsMagick - Resizing (Iterations/min)</b>	<b>1823</b>	<b>1831</b>	1827
Normalized	99.56%	100%	99.78%
Standard Deviation	0.1%	0.2%	0.3%
<b>GraphicsMagick - HWB Color Space (Iterations/min)</b>	<b>1062</b>	<b>1069</b>	1068
Normalized	99.35%	100%	99.91%
Standard Deviation	0.9%	0.2%	0.3%
<b>GROMACS - Water Benchmark (Ns/Day)</b>	<b>1.298</b>	<b>1.287</b>	1.288
Normalized	100%	99.15%	99.23%
Standard Deviation	0.3%	0.2%	0.4%
<b>Hackbench - 8 - Thread (sec)</b>	<b>13.704</b>	<b>14.761</b>	14.582
Normalized	100%	92.84%	93.98%
Standard Deviation	0.3%	0.2%	0.1%
<b>Hackbench - 16 - Thread (sec)</b>	<b>26.983</b>	<b>28.993</b>	28.786
Normalized	100%	93.07%	93.74%
Standard Deviation	0.2%	0.1%	0.1%
<b>Hackbench - 8 - Process (sec)</b>	<b>13.495</b>	<b>14.526</b>	14.438
Normalized	100%	92.9%	93.47%
Standard Deviation	0.1%	0.3%	0.1%
<b>Hackbench - 16 - Process (sec)</b>	<b>26.547</b>	<b>28.588</b>	28.404
Normalized	100%	92.86%	93.46%
Standard Deviation	0.3%	0.1%	0.2%
<b>Hackbench - 32 - Process (sec)</b>	<b>54.724</b>	<b>58.579</b>	58.172
Normalized	100%	93.42%	94.07%
Standard Deviation	0.1%	0.1%	0.3%
<b>Hierarchical INTegration - FLOAT (QUIPs)</b>	<b>530826296</b>	<b>520060602</b>	520930505
Normalized	100%	97.97%	98.14%
Standard Deviation	1.7%	0.1%	0.6%
<b>High Performance Conjugate Gradient (GFLOP/s)</b>	<b>4.32441</b>	4.32531	<b>4.33375</b>
Normalized	99.78%	99.81%	100%
Standard Deviation	0.3%	0.1%	0.2%
<b>Himeno Benchmark - P.P.S (MFLOPS)</b>	<b>5302</b>	5226	<b>5207</b>
Normalized	100%	98.56%	98.21%
Standard Deviation	5.6%	5.6%	6.4%
<b>Hugin - P.P.A.S.T (sec)</b>	35.415	<b>35.247</b>	<b>35.625</b>
Normalized	99.53%	100%	98.94%
Standard Deviation	1.7%	1.5%	0.9%
<b>Incompact3D - Cylinder (sec)</b>	196.931697	<b>197.761922</b>	<b>181.113347</b>
Normalized	91.97%	91.58%	100%
Standard Deviation	0.8%	1.1%	1.2%
<b>IndigoBench - CPU - Bedroom (M samples/s)</b>	<b>4.117</b>	<b>4.146</b>	4.145
Normalized	99.3%	100%	99.98%

	Standard Deviation	0.7%	0.5%	0.4%
<b>IndigoBench - CPU - Supercar (M samples/s)</b>		<b>8.656</b>	<b>8.743</b>	8.725
	Normalized	99%	100%	99.79%
	Standard Deviation	0.3%	0.2%	0.5%
<b>InfluxDB - 4 - 10000 - 2,5000,1 - 10000</b>		2021356	<b>2014207</b>	<b>2162126</b>
	Normalized	93.49%	93.16%	100%
	Standard Deviation	0.3%	0.4%	1.4%
<b>InfluxDB - 64 - 10000 - 2,5000,1 - 10000</b>		2214168	<b>2213506</b>	<b>2267414</b>
	(val/sec)			
	Normalized	97.65%	97.62%	100%
	Standard Deviation	0.3%	0.3%	0.3%
<b>Inkscape - SVG Files To PNG (sec)</b>		18.467	<b>18.795</b>	<b>16.209</b>
	Normalized	87.77%	86.24%	100%
	Standard Deviation	0.9%	0.7%	0.6%
<b>Intel Open Image Denoise - Memorial</b>		14.49	<b>14.39</b>	<b>14.57</b>
	(Images / Sec)			
	Normalized	99.45%	98.76%	100%
	Standard Deviation	0%	0.2%	0.2%
<b>Java SciMark - Composite (Mflops)</b>		<b>3629</b>	3723	<b>3775</b>
	Normalized	96.15%	98.64%	100%
	Standard Deviation	1.1%	0.7%	1.6%
<b>John The Ripper - Blowfish (Real C/S)</b>		<b>37933</b>	37996	<b>38228</b>
	Normalized	99.23%	99.39%	100%
	Standard Deviation	0.7%	0.6%	0.6%
<b>John The Ripper - MD5 (Real C/S)</b>		<b>2220667</b>	2231333	<b>2241000</b>
	Normalized	99.09%	99.57%	100%
	Standard Deviation	0.4%	0.3%	0.2%
<b>KeyDB (Ops/sec)</b>		820008	<b>816903</b>	<b>836869</b>
	Normalized	97.99%	97.61%	100%
	Standard Deviation	0.2%	0.3%	1.6%
<b>Kvazaar - Bosphorus 4K - Very Fast (FPS)</b>		28.09	<b>28.07</b>	<b>29.55</b>
	Normalized	95.06%	94.99%	100%
	Standard Deviation	0.4%	0.3%	0.1%
<b>Kvazaar - Bosphorus 4K - Ultra Fast (FPS)</b>		<b>51.87</b>	51.97	<b>54.32</b>
	Normalized	95.49%	95.67%	100%
	Standard Deviation	0.1%	0.6%	0.1%
<b>Kvazaar - Bosphorus 1080p - Very Fast (FPS)</b>		<b>99.89</b>	100.06	<b>110.14</b>
	Normalized	90.69%	90.85%	100%
	Standard Deviation	0.5%	0.2%	0.5%
<b>Kvazaar - Bosphorus 1080p - Ultra Fast</b>		<b>181.37</b>	181.62	<b>199.93</b>
	Normalized	90.72%	90.84%	100%
	Standard Deviation	0.3%	0.3%	0.4%
<b>LAME MP3 Encoding - WAV To MP3 (sec)</b>		<b>5.594</b>	<b>5.632</b>	<b>5.632</b>
	Normalized	100%	99.33%	99.33%
	Standard Deviation	2%	0.9%	1.4%
<b>LAMMPS Molecular Dynamics Simulator - Rhodopsin Protein (ns/day)</b>		12.388	<b>12.280</b>	<b>13.591</b>
	Normalized	91.15%	90.35%	100%
	Standard Deviation	3%	4.7%	1.2%
<b>LeelaChessZero - BLAS (Nodes/s)</b>		<b>416</b>	<b>407</b>	411
	Normalized	100%	97.84%	98.8%
	Standard Deviation	0.6%	2.7%	
<b>LeelaChessZero - Eigen (Nodes/s)</b>		<b>416</b>	419	<b>425</b>
	Normalized	97.88%	98.59%	100%
	Standard Deviation	1.6%	3.5%	0.3%

libavif avifenc - 8 (sec)	<b>4.262</b>	4.244	<b>4.237</b>
Normalized	99.41%	99.84%	100%
Standard Deviation	0.2%	1.4%	1.3%
libavif avifenc - 10 (sec)	<b>4.134</b>	4.106	<b>4.090</b>
Normalized	98.94%	99.61%	100%
Standard Deviation	1.2%	1.6%	0.3%
libjpeg-turbo tjbenc - D.T (Megapixels/sec)	<b>288.406308</b>	<b>282.410933</b>	286.273377
Normalized	100%	97.92%	99.26%
Standard Deviation	1.3%	0.4%	0.6%
LibRaw - P.P.B (Mpix/sec)	<b>54.21</b>	53.89	<b>53.54</b>
Normalized	100%	99.41%	98.76%
Standard Deviation	0.6%	0.4%	0.1%
LibreOffice - 2.D.T.P (sec)	5.161	<b>5.163</b>	<b>5.030</b>
Normalized	97.46%	97.42%	100%
Standard Deviation	4.9%	4.7%	3.9%
librsvg - SVG Files To PNG (sec)	21.740	<b>21.844</b>	<b>16.577</b>
Normalized	76.25%	75.89%	100%
Standard Deviation	1.3%	2%	0.6%
LuxCoreRender - DLSC (M samples/sec)	<b>3.60</b>	3.58	<b>3.57</b>
Normalized	100%	99.44%	99.17%
Standard Deviation	0.8%	0.7%	0.8%
LuxCoreRender - R.C.a.P (M samples/sec)	3.80	<b>3.73</b>	<b>3.81</b>
Normalized	99.74%	97.9%	100%
Standard Deviation	0.5%	0.9%	0.8%
LZ4 Compression - 3 - Compression Speed (MB/s)	<b>73.43</b>	73.21	<b>71.72</b>
Normalized	100%	99.7%	97.67%
Standard Deviation	2.9%	2.9%	1.9%
LZ4 Compression - 3 - D.S (MB/s)	<b>12885</b>	<b>12901</b>	12889
Normalized	99.88%	100%	99.9%
Standard Deviation	0.1%	0.6%	0.9%
LZ4 Compression - 9 - Compression Speed (MB/s)	70.44	<b>70.89</b>	<b>69.17</b>
Normalized	99.37%	100%	97.57%
Standard Deviation	2.9%	0.9%	0.5%
LZ4 Compression - 9 - D.S (MB/s)	<b>12872</b>	<b>13013</b>	12925
Normalized	98.92%	100%	99.33%
Standard Deviation	0.8%	0.3%	0.6%
m-queens - Time To Solve (sec)	<b>29.534</b>	29.502	<b>29.418</b>
Normalized	99.61%	99.72%	100%
Standard Deviation	0.6%	0.6%	0.5%
Mlpack Benchmark - scikit_ica (sec)	50.17	<b>49.35</b>	<b>51.01</b>
Normalized	98.37%	100%	96.75%
Standard Deviation	1.9%	1.3%	2.5%
Mlpack Benchmark - scikit_qda (sec)	<b>61.75</b>	61.19	<b>61.08</b>
Normalized	98.91%	99.82%	100%
Standard Deviation	1.5%	0.2%	0.5%
Mlpack Benchmark - scikit_svm (sec)	<b>16.25</b>	<b>16.30</b>	16.29
Normalized	100%	99.69%	99.75%
Standard Deviation	1.9%	1.2%	0.5%
Mlpack Benchmark - scikit_linearridge regression (sec)	2.24	<b>2.25</b>	<b>2.22</b>
Normalized	99.11%	98.67%	100%
Standard Deviation	0.6%	0.6%	0.5%

<b>Mobile Neural Network - SqueezeNetV1.0</b>	<b>6.476</b>	<b>6.375</b>	6.404
Normalized	98.44%	100%	99.55%
Standard Deviation	4.6%	4.8%	2.6%
<b>Mobile Neural Network - resnet-v2-50 (ms)</b>	28.284	<b>28.290</b>	<b>27.919</b>
Normalized	98.71%	98.69%	100%
Standard Deviation	1.8%	1.7%	0.6%
<b>Mobile Neural Network - MobileNetV2_224</b>	<b>3.954</b>	3.892	<b>3.877</b>
Normalized	98.05%	99.61%	100%
Standard Deviation	2.7%	2.7%	0.6%
<b>Mobile Neural Network - mobilenet-v1-1.0</b>	<b>4.913</b>	4.869	<b>4.868</b>
Normalized	99.08%	99.98%	100%
Standard Deviation	1.1%	1%	0.8%
<b>Mobile Neural Network - inception-v3 (ms)</b>	26.856	<b>26.870</b>	<b>26.553</b>
Normalized	98.87%	98.82%	100%
Standard Deviation	2.1%	1.7%	0.6%
<b>Monkey Audio Encoding - WAV To APE (sec)</b>	<b>9.837</b>	9.915	<b>9.989</b>
Normalized	100%	99.21%	98.48%
Standard Deviation	0.9%	1%	2.8%
<b>Montage Astronomical Image Mosaic Engine - M.o.M.K.b.1.5.d.x.1.5.d (sec)</b>	57.312	<b>57.155</b>	<b>58.197</b>
Normalized	99.73%	100%	98.21%
Standard Deviation	1.1%	0.9%	1.7%
<b>Monte Carlo Simulations of Ionised Nebulae - Dust 2D tau100.0 (sec)</b>	179	<b>181</b>	<b>178</b>
Normalized	99.44%	98.34%	100%
Standard Deviation		2.4%	
<b>NAMD - ATPase Simulation - 327,506 Atoms (days/ns)</b>	<b>1.08379</b>	1.07587	<b>1.07561</b>
Normalized	99.25%	99.98%	100%
Standard Deviation	1.1%	0.4%	0.5%
<b>NAS Parallel Benchmarks - BT.C (Mop/s)</b>	<b>24320</b>	24400	<b>24452</b>
Normalized	99.46%	99.79%	100%
Standard Deviation	0%	0.1%	0.1%
<b>NAS Parallel Benchmarks - CG.C (Mop/s)</b>	7072	<b>7045</b>	<b>7106</b>
Normalized	99.52%	99.14%	100%
Standard Deviation	0.9%	2.1%	0.8%
<b>NAS Parallel Benchmarks - EP.C (Mop/s)</b>	<b>1901</b>	1883	<b>1881</b>
Normalized	100%	99.07%	98.98%
Standard Deviation	0.3%	2.1%	0.3%
<b>NAS Parallel Benchmarks - EP.D (Mop/s)</b>	<b>1876</b>	<b>1863</b>	1863
Normalized	100%	99.28%	99.29%
Standard Deviation	1.4%	2.7%	1.2%
<b>NAS Parallel Benchmarks - FT.C (Mop/s)</b>	<b>12323</b>	<b>12586</b>	12464
Normalized	97.92%	100%	99.03%
Standard Deviation	0.2%	0.3%	0.1%
<b>NAS Parallel Benchmarks - LU.C (Mop/s)</b>	<b>28127</b>	28146	<b>28568</b>
Normalized	98.46%	98.52%	100%
Standard Deviation	0.1%	0%	0.1%
<b>NAS Parallel Benchmarks - MG.C (Mop/s)</b>	10104	<b>10097</b>	<b>10132</b>
Normalized	99.73%	99.66%	100%
Standard Deviation	0.2%	0%	0.1%
<b>NAS Parallel Benchmarks - SP.B (Mop/s)</b>	<b>7941</b>	7973	<b>7990</b>
Normalized	99.39%	99.79%	100%
Standard Deviation	0.2%	0.3%	0.2%

NCNN - CPU - mobilenet (ms)	12.40	<b>12.70</b>	<b>12.11</b>
Normalized	97.66%	95.35%	100%
Standard Deviation	4.1%	2.6%	1.8%
NCNN - CPU-v2-v2 - mobilenet-v2 (ms)	4.45	<b>4.58</b>	<b>4.39</b>
Normalized	98.65%	95.85%	100%
Standard Deviation	4%	4.6%	0.2%
NCNN - CPU-v3-v3 - mobilenet-v3 (ms)	4.18	<b>4.25</b>	<b>4.08</b>
Normalized	97.61%	96%	100%
Standard Deviation	3%	3.7%	0.4%
NCNN - CPU - shufflenet-v2 (ms)	<b>4.45</b>	<b>4.45</b>	<b>4.40</b>
Normalized	98.88%	98.88%	100%
Standard Deviation	0.7%	0.2%	0.5%
NCNN - CPU - mnasnet (ms)	4.00	<b>4.14</b>	<b>3.92</b>
Normalized	98%	94.69%	100%
Standard Deviation	4.5%	5.2%	0.4%
NCNN - CPU - efficientnet-b0 (ms)	5.37	<b>5.46</b>	<b>5.29</b>
Normalized	98.51%	96.89%	100%
Standard Deviation	3.3%	3%	0.4%
NCNN - CPU - blazeface (ms)	1.84	<b>1.86</b>	<b>1.79</b>
Normalized	97.28%	96.24%	100%
Standard Deviation	4.3%	3.2%	0.9%
NCNN - CPU - googlenet (ms)	13.13	<b>13.92</b>	<b>12.87</b>
Normalized	98.02%	92.46%	100%
Standard Deviation	5%	7.4%	0.2%
NCNN - CPU - vgg16 (ms)	58.06	<b>57.70</b>	<b>58.83</b>
Normalized	99.38%	100%	98.08%
Standard Deviation	0.4%	0.4%	0.1%
NCNN - CPU - resnet18 (ms)	14.51	<b>14.66</b>	<b>14.27</b>
Normalized	98.35%	97.34%	100%
Standard Deviation	2.6%	3%	0.1%
NCNN - CPU - alexnet (ms)	11.13	<b>11.28</b>	<b>10.98</b>
Normalized	98.65%	97.34%	100%
Standard Deviation	3.1%	4.6%	3.1%
NCNN - CPU - resnet50 (ms)	<b>25.49</b>	25.38	<b>25.18</b>
Normalized	98.78%	99.21%	100%
Standard Deviation	3.3%	3.5%	4%
NCNN - CPU - yolov4-tiny (ms)	21.80	<b>22.10</b>	<b>21.60</b>
Normalized	99.08%	97.74%	100%
Standard Deviation	4.5%	4.8%	4.2%
NCNN - CPU - squeezenet_ssd (ms)	14.64	<b>14.79</b>	<b>14.43</b>
Normalized	98.57%	97.57%	100%
Standard Deviation	2.1%	1.8%	2.7%
NCNN - CPU - regnety_400m (ms)	<b>17.92</b>	<b>17.76</b>	17.78
Normalized	99.11%	100%	99.89%
Standard Deviation	1%	1%	0.3%
Nebular Empirical Analysis Tool (sec)	<b>10.393</b>	10.400	<b>10.435</b>
Normalized	100%	99.93%	99.6%
Standard Deviation	0.4%	1%	0.5%
Node.js V8 Web Tooling Benchmark (runs/s)	<b>16.13</b>	16.07	<b>15.97</b>
Normalized	100%	99.63%	99.01%
Standard Deviation	0.2%	1.9%	2.8%
Numpy Benchmark (Score)	<b>559.49</b>	<b>553.69</b>	558.01
Normalized	100%	98.96%	99.74%
Standard Deviation	1.2%	0%	0.2%
OCRMyPDF - P.6.P.P.D (sec)	<b>15.655</b>	15.630	<b>15.563</b>

	Normalized	99.41%	99.57%	100%
	Standard Deviation	0.7%	1.7%	0.4%
Ogg Audio Encoding - WAV To Ogg (sec)		14.566	<b>14.561</b>	<b>14.887</b>
	Normalized	99.97%	100%	97.81%
	Standard Deviation	1.4%	1.2%	0.3%
oneDNN - C.B.S.A - f32 - CPU (ms)		<b>16.6197</b>	16.6616	<b>16.7477</b>
	Normalized	100%	99.75%	99.24%
	Standard Deviation	0.5%	0.2%	0.2%
oneDNN - R.N.N.T - f32 - CPU (ms)		<b>2646</b>	2646	<b>2634</b>
	Normalized	99.54%	99.54%	100%
	Standard Deviation	0.6%	2.1%	2%
oneDNN - R.N.N.I - f32 - CPU (ms)		<b>1719</b>	<b>1688</b>	1713
	Normalized	98.18%	100%	98.51%
	Standard Deviation	2%	0.2%	2.5%
OpenSSL - R.4.b.P (Signs/sec)		<b>4884</b>	4893	<b>4904</b>
	Normalized	99.59%	99.77%	100%
	Standard Deviation	0.3%	0.2%	0.1%
OpenVINO - F.D.0.F - CPU (FPS)		<b>3.83</b>	<b>3.84</b>	<b>3.84</b>
	Normalized	99.74%	100%	100%
	Standard Deviation	0.7%	0.9%	0.3%
OpenVINO - F.D.0.F - CPU (ms)		<b>2073</b>	2065	<b>2059</b>
	Normalized	99.3%	99.72%	100%
	Standard Deviation	0.6%	1%	0.1%
OpenVINO - F.D.0.F - CPU (FPS)		<b>3.75</b>	3.79	<b>3.84</b>
	Normalized	97.66%	98.7%	100%
	Standard Deviation	0.8%	0.6%	0.3%
OpenVINO - F.D.0.F - CPU (ms)		<b>2116</b>	2098	<b>2064</b>
	Normalized	97.55%	98.35%	100%
	Standard Deviation	0.9%	0.6%	0.4%
OpenVINO - P.D.0.F - CPU (FPS)		<b>2.51</b>	2.53	<b>2.54</b>
	Normalized	98.82%	99.61%	100%
	Standard Deviation	0.9%	0.5%	0.2%
OpenVINO - P.D.0.F - CPU (ms)		<b>3137</b>	<b>3091</b>	3101
	Normalized	98.52%	100%	99.67%
	Standard Deviation	1.3%	0.4%	0.1%
OpenVINO - P.D.0.F - CPU (FPS)		<b>2.49</b>	<b>2.51</b>	<b>2.51</b>
	Normalized	99.2%	100%	100%
	Standard Deviation	0.2%	1.1%	0.6%
OpenVINO - P.D.0.F - CPU (ms)		<b>3151</b>	3136	<b>3129</b>
	Normalized	99.31%	99.8%	100%
	Standard Deviation	0.4%	0.7%	0.3%
OpenVINO - A.G.R.R.0.F - CPU (FPS)		<b>13800</b>	13836	<b>13892</b>
	Normalized	99.33%	99.59%	100%
	Standard Deviation	0.2%	0.3%	0.3%
OpenVINO - A.G.R.R.0.F - CPU (ms)		0.57	0.57	0.57
	Standard Deviation	0%	0%	1%
OpenVINO - A.G.R.R.0.F - CPU (FPS)		<b>13509</b>	13573	<b>13620</b>
	Normalized	99.19%	99.65%	100%
	Standard Deviation	0.1%	0.3%	0.2%
OpenVINO - A.G.R.R.0.F - CPU (ms)		0.58	0.58	0.58
	Standard Deviation	0%	0%	0%
OpenVKL - vkiBenchmark (Items / Sec)		290.56	<b>289.39</b>	<b>294.56</b>
	Normalized	98.64%	98.24%	100%
	Standard Deviation	0.4%	0.2%	0.3%

OpenVKL - vkIBenchmarkStructuredVolume	87341915	<b>87025755</b>	<b>90440747</b>
(Items / Sec)			
Normalized	96.57%	96.22%	100%
Standard Deviation	1.7%	1.6%	1.6%
Optcarrot - O.B (FPS)	<b>167.47</b>	<b>166.03</b>	<b>166.03</b>
Normalized	100%	99.14%	99.14%
Standard Deviation	1.2%	0.8%	1%
Opus Codec Encoding - WAV To Opus	6.065	<b>6.021</b>	<b>6.096</b>
Encode (sec)			
Normalized	99.27%	100%	98.77%
Standard Deviation	2.2%	2.1%	2%
Parboil - OpenMP LBM (sec)	<b>137.736557</b>	137.658142	<b>136.992167</b>
Normalized	99.46%	99.52%	100%
Standard Deviation	0.2%	0.1%	0.2%
Parboil - OpenMP CUTCP (sec)	1.001032	<b>1.005328</b>	<b>0.985730</b>
Normalized	98.47%	98.05%	100%
Standard Deviation	0.6%	1.2%	1.6%
Parboil - OpenMP Stencil (sec)	14.834088	<b>14.824556</b>	<b>14.904474</b>
Normalized	99.94%	100%	99.46%
Standard Deviation	0.9%	1.2%	0.6%
Parboil - O.M.G (sec)	<b>95.078891</b>	95.098343	<b>95.324809</b>
Normalized	100%	99.98%	99.74%
Standard Deviation	0.5%	0.2%	0.1%
Perl Benchmarks - Pod2html (sec)	<b>0.08813081</b>	0.08975752	<b>0.09061546</b>
Normalized	100%	98.19%	97.26%
Standard Deviation	2.5%	0.4%	1.3%
Perl Benchmarks - Interpreter (sec)	<b>0.00072036</b>	0.00070219	<b>0.00060098</b>
Normalized	83.43%	85.59%	100%
Standard Deviation	1.3%	2.4%	0.2%
PHPBench - P.B.S (Score)	<b>834204</b>	<b>845304</b>	838294
Normalized	98.69%	100%	99.17%
Standard Deviation	2.7%	1.3%	1%
PlaidML - No - Inference - VGG16 - CPU	<b>20.87</b>	<b>21.18</b>	20.94
Normalized	98.54%	100%	98.87%
Standard Deviation	2%	1.6%	1%
PlaidML - No - Inference - VGG19 - CPU	<b>17.15</b>	17.19	<b>17.50</b>
Normalized	98%	98.23%	100%
Standard Deviation	0.5%	0.5%	1.2%
PlaidML - No - Inference - IMDB LSTM - CPU	<b>913.41</b>	<b>917.10</b>	915.07
(FPS)			
Normalized	99.6%	100%	99.78%
Standard Deviation	0.2%	0.2%	0.1%
PlaidML - No - Inference - Mobilenet - CPU	<b>24.04</b>	24.15	<b>24.36</b>
(FPS)			
Normalized	98.69%	99.14%	100%
Standard Deviation	0.5%	1.6%	0.4%
PlaidML - No - Inference - ResNet 50 - CPU	11.66	<b>11.59</b>	<b>11.73</b>
(FPS)			
Normalized	99.4%	98.81%	100%
Standard Deviation	1.9%	0.8%	1.3%
PlaidML - No - Inference - DenseNet 201 -	<b>4.83</b>	<b>4.69</b>	4.78
CPU (FPS)			
Normalized	100%	97.1%	98.96%
Standard Deviation	0.9%	1%	0.9%

<b>PlaidML - No - Inference - Inception V3 - CPU (FPS)</b>	<b>12.86</b>	12.87	<b>13.09</b>
Normalized	98.24%	98.32%	100%
Standard Deviation	0.4%	0.8%	0.4%
<b>PostgreSQL pgbench - 100 - 100 - Read Only (TPS)</b>	481182	<b>485232</b>	<b>480266</b>
Normalized	99.17%	100%	98.98%
Standard Deviation	0.9%	0.4%	0.4%
<b>PostgreSQL pgbench - 100 - 100 - Read Only - Average Latency (ms)</b>	<b>0.208</b>	<b>0.206</b>	<b>0.208</b>
Normalized	99.04%	100%	99.04%
Standard Deviation	0.8%	0.3%	0.6%
<b>PostgreSQL pgbench - 100 - 250 - Read Only (TPS)</b>	487889	<b>490262</b>	<b>485621</b>
Normalized	99.52%	100%	99.05%
Standard Deviation	0.2%	0.6%	0.8%
<b>PostgreSQL pgbench - 100 - 250 - Read Only - Average Latency (ms)</b>	0.513	<b>0.510</b>	<b>0.515</b>
Normalized	99.42%	100%	99.03%
Standard Deviation	0.2%	0.6%	0.9%
<b>PostgreSQL pgbench - 100 - 100 - Read Write (TPS)</b>	<b>36880</b>	38917	<b>41683</b>
Normalized	88.48%	93.36%	100%
Standard Deviation	0.1%	0.4%	0.2%
<b>PostgreSQL pgbench - 100 - 100 - Read Write - Average Latency (ms)</b>	<b>2.713</b>	2.572	<b>2.401</b>
Normalized	88.5%	93.35%	100%
Standard Deviation	0.1%	0.4%	0.2%
<b>PostgreSQL pgbench - 100 - 250 - Read Write (TPS)</b>	38796	<b>40085</b>	<b>18829</b>
Normalized	96.78%	100%	46.97%
Standard Deviation	0.5%	2.3%	24.4%
<b>PostgreSQL pgbench - 100 - 250 - Read Write - Average Latency (ms)</b>	6.449	<b>6.244</b>	<b>14.190</b>
Normalized	96.82%	100%	44%
Standard Deviation	0.5%	2.3%	30.2%
<b>POV-Ray - Trace Time (sec)</b>	22.918	<b>22.986</b>	<b>22.717</b>
Normalized	99.12%	98.83%	100%
Standard Deviation	1%	0.6%	0.1%
<b>PyBench - T.F.A.T.T (Milliseconds)</b>	<b>702</b>	709	<b>725</b>
Normalized	100%	99.01%	96.83%
Standard Deviation	1.7%	0.7%	0.6%
<b>PyPerformance - 2to3 (Milliseconds)</b>	235	<b>236</b>	<b>229</b>
Normalized	97.45%	97.03%	100%
Standard Deviation	0.4%		0.3%
<b>PyPerformance - pathlib (Milliseconds)</b>	<b>12.7</b>	<b>12.6</b>	<b>12.6</b>
Normalized	99.21%	100%	100%
Standard Deviation	0%	0%	0.5%
<b>PyPerformance - json_loads (Milliseconds)</b>	<b>16.8</b>	<b>16.8</b>	<b>16.9</b>
Normalized	100%	100%	99.41%
Standard Deviation	0%	0.3%	0.3%
<b>PyPerformance - crypto_pyaes</b>	<b>76.9</b>	78.9	<b>79.3</b>
Normalized	100%	97.47%	96.97%
Standard Deviation	0.3%	0.1%	0.2%

PyPerformance - regex_compile	123	123	123
PyPerformance - python_startup	<b>6.53</b>	6.45	<b>5.70</b>
Normalized	87.29%	88.37%	100%
Standard Deviation	2.1%	0.3%	0.1%
PyPerformance - pickle_pure_python (Milliseconds)	<b>319</b>	<b>330</b>	<b>330</b>
Normalized	100%	96.67%	96.67%
Radiance Benchmark - Serial (sec)	<b>429.908</b>	426.978	<b>422.935</b>
Normalized	98.38%	99.05%	100%
Radiance Benchmark - SMP Parallel (sec)	<b>137.655</b>	<b>145.046</b>	138.908
Normalized	100%	94.9%	99.1%
RAR Compression - L.S.T.A.T.R (sec)	54.600	<b>55.077</b>	<b>39.788</b>
Normalized	72.87%	72.24%	100%
Standard Deviation	2.7%	0.3%	1.4%
rav1e - 6 (FPS)	2.029	<b>2.026</b>	<b>2.095</b>
Normalized	96.85%	96.71%	100%
Standard Deviation	0.3%	0.8%	0.6%
rav1e - 10 (FPS)	4.556	<b>4.551</b>	<b>4.895</b>
Normalized	93.07%	92.97%	100%
Standard Deviation	0.1%	0.2%	0.3%
RawTherapee - T.B.T (sec)	<b>47.306</b>	<b>46.597</b>	47.080
Normalized	98.5%	100%	98.97%
Standard Deviation	0.1%	0.1%	0.2%
RNNoise (sec)	<b>15.648</b>	15.367	<b>14.925</b>
Normalized	95.38%	97.12%	100%
Standard Deviation	1.2%	0.5%	0.3%
Rodinia - OpenMP LavaMD (sec)	104.373	<b>104.648</b>	<b>103.696</b>
Normalized	99.35%	99.09%	100%
Standard Deviation	0.1%	0.7%	0.1%
Rodinia - OpenMP CFD Solver (sec)	<b>10.321</b>	10.263	<b>10.193</b>
Normalized	98.76%	99.32%	100%
Standard Deviation	0.7%	0.5%	0.8%
Selenium - ARES-6 - Firefox (ms)	44.08	<b>44.19</b>	<b>42.54</b>
Normalized	96.51%	96.27%	100%
Standard Deviation	0.6%	0.9%	1.1%
Selenium - Kraken - Firefox (ms)	<b>924.8</b>	920.0	<b>881.2</b>
Normalized	95.29%	95.78%	100%
Standard Deviation	1.4%	0.6%	1.4%
Selenium - Octane - Firefox (Geometric)	<b>24724</b>	24946	<b>25036</b>
Normalized	98.75%	99.64%	100%
Standard Deviation	0.9%	0.4%	0.1%
Selenium - Jetstream - Firefox (Score)	<b>196.98</b>	197.18	<b>200.62</b>
Normalized	98.19%	98.29%	100%
Standard Deviation	0.6%	1.4%	0.8%
Selenium - CanvasMark - Firefox (Score)	4990	<b>5000</b>	<b>4967</b>
Normalized	99.8%	100%	99.34%
Standard Deviation	0.4%	0.7%	0.3%
Selenium - MotionMark - Firefox (Score)	1	1	1
Selenium - StyleBench - Firefox (Runs /	<b>109</b>	<b>109</b>	<b>127</b>
Normalized	85.83%	85.83%	100%
Standard Deviation	0.5%	1.1%	1.2%
Selenium - Jetstream 2 - Firefox (Score)	95.822	<b>95.040</b>	<b>100.191</b>
Normalized	95.64%	94.86%	100%
Standard Deviation	0.9%	1.9%	3%

<b>Selenium - Maze Solver - Firefox (sec)</b>	<b>4.1</b>	<b>4.1</b>	<b>3.9</b>
Normalized	95.12%	95.12%	100%
Standard Deviation	1.4%	2.4%	0%
<b>Selenium - Speedometer - Firefox (Runs/min)</b>	<b>119</b>	120	<b>123</b>
Normalized	96.75%	97.56%	100%
Standard Deviation	1.7%	1.3%	2%
<b>Selenium - ARES-6 - Google Chrome (ms)</b>	<b>13.99</b>	13.97	<b>13.53</b>
Normalized	96.71%	96.85%	100%
Standard Deviation	0.7%	0.3%	0.7%
<b>Selenium - Kraken - Google Chrome (ms)</b>	<b>575.9</b>	570.8	<b>533.2</b>
Normalized	92.59%	93.41%	100%
Standard Deviation	0.4%	0.6%	1.3%
<b>Selenium - Octane - Google Chrome (Geometric Mean)</b>	73504	<b>72999</b>	<b>73911</b>
Normalized	99.45%	98.77%	100%
Standard Deviation	0.8%	0.3%	0.8%
<b>Selenium - PSPDFKit WASM - Firefox (Score)</b>	2830	<b>2845</b>	<b>2787</b>
Normalized	98.48%	97.96%	100%
Standard Deviation	0.3%	0.6%	0.3%
<b>Selenium - WebXPRT - Google Chrome</b>	<b>336</b>	341	<b>352</b>
Normalized	95.45%	96.88%	100%
Standard Deviation	1.4%	2.1%	2.4%
<b>Selenium - Basemark - Google Chrome (Overall Score)</b>	<b>1259</b>	1374	<b>1494</b>
Normalized	84.27%	91.96%	100%
Standard Deviation	1.5%	14.2%	12.8%
<b>Selenium - Jetstream - Google Chrome</b>	342.38	<b>342.21</b>	<b>351.14</b>
Normalized	97.51%	97.46%	100%
Standard Deviation	0.6%	0.6%	1.2%
<b>Selenium - CanvasMark - Google Chrome (Score)</b>	<b>4974</b>	4953	<b>4950</b>
Normalized	100%	99.58%	99.52%
Standard Deviation	0.7%	1.1%	0.6%
<b>Selenium - MotionMark - Google Chrome (Score)</b>	1	1	1
<b>Selenium - StyleBench - Google Chrome (Runs / Minute)</b>	<b>49.39</b>	49.85	<b>56.84</b>
Normalized	86.89%	87.7%	100%
Standard Deviation	0.4%	0.9%	0.9%
<b>Selenium - Jetstream 2 - Google Chrome (Score)</b>	<b>198.902</b>	199.484	<b>211.595</b>
Normalized	94%	94.28%	100%
Standard Deviation	0.2%	0.4%	0.3%
<b>Selenium - Maze Solver - Google Chrome</b>	<b>3.9</b>	<b>3.9</b>	<b>3.7</b>
Normalized	94.87%	94.87%	100%
Standard Deviation	0%	1.5%	0%
<b>Selenium - Speedometer - Google Chrome (Runs/min)</b>	<b>178.7</b>	180	<b>189.7</b>
Normalized	94.2%	94.89%	100%
Standard Deviation	0.2%	0.3%	0.3%
<b>Selenium - PSPDFKit WASM - Google Chrome (Score)</b>	<b>2938</b>	2917	<b>2820</b>
Normalized	95.98%	96.67%	100%
Standard Deviation	1.1%	0.7%	0.5%

<b>Selenium - W.i - Firefox (ms)</b>	<b>24.2</b>	<b>24.2</b>	<b>24.4</b>
Normalized	100%	100%	99.18%
Standard Deviation	0.7%	0.8%	0.4%
<b>Selenium - W.c - Firefox (ms)</b>	<b>295.7</b>	299.5	<b>300.1</b>
Normalized	100%	98.73%	98.53%
Standard Deviation	1.6%	0.7%	1.1%
<b>Selenium - W.i - Google Chrome (ms)</b>	<b>24.8332</b>	24.548	<b>24.2008</b>
Normalized	97.45%	98.59%	100%
Standard Deviation	2.3%	2.2%	0.2%
<b>Selenium - W.c - Google Chrome (ms)</b>	<b>255.8043</b>	<b>250.1523</b>	255.6180
Normalized	97.79%	100%	97.86%
Standard Deviation	0.6%	1.4%	0.7%
<b>simdjson - Kostya (GB/s)</b>	0.71	<b>0.74</b>	<b>0.67</b>
Normalized	95.95%	100%	90.54%
Standard Deviation	10.7%	14%	0%
<b>simdjson - LargeRand (GB/s)</b>	<b>0.60</b>	<b>0.59</b>	<b>0.59</b>
Normalized	100%	98.33%	98.33%
Standard Deviation	1%	2.6%	1%
<b>simdjson - PartialTweets (GB/s)</b>	0.98	<b>1.00</b>	<b>0.88</b>
Normalized	98%	100%	88%
Standard Deviation	6.5%	1.2%	0.7%
<b>simdjson - DistinctUserID (GB/s)</b>	1.03	<b>1.05</b>	<b>0.89</b>
Normalized	98.1%	100%	84.76%
Standard Deviation	4.3%	1.6%	2.6%
<b>Smallpt - G.I.R.1.S (sec)</b>	<b>4.929</b>	4.918	<b>4.893</b>
Normalized	99.27%	99.49%	100%
Standard Deviation	0.1%	0.2%	0%
<b>Sockperf - Throughput (Messages/sec)</b>	<b>894840</b>	929068	<b>934687</b>
Normalized	95.74%	99.4%	100%
Standard Deviation	1.9%	0.7%	2.9%
<b>Sockperf - Latency Ping Pong (usec)</b>	<b>4.419</b>	4.238	<b>2.204</b>
Normalized	49.88%	52.01%	100%
Standard Deviation	0.6%	0.7%	1.5%
<b>Sockperf - Latency Under Load (usec)</b>	<b>16.896</b>	16.236	<b>12.183</b>
Normalized	72.11%	75.04%	100%
Standard Deviation	98.6%	56.1%	25.9%
<b>SQLite Speedtest - Timed Time - Size 1,000 (sec)</b>	<b>42.091</b>	<b>43.449</b>	43.404
Normalized	100%	96.87%	96.97%
Standard Deviation	0.6%	0.5%	1.3%
<b>SVT-AV1 - Enc Mode 4 - 1080p (FPS)</b>	<b>6.071</b>	<b>6.155</b>	6.128
Normalized	98.64%	100%	99.56%
Standard Deviation	0.9%	1.1%	0.6%
<b>SVT-AV1 - Enc Mode 8 - 1080p (FPS)</b>	<b>50.663</b>	50.927	<b>52.138</b>
Normalized	97.17%	97.68%	100%
Standard Deviation	0.5%	0.6%	1%
<b>SVT-VP9 - VMAF Optimized - Bosphorus 1080p (FPS)</b>	<b>226.18</b>	227.57	<b>229.11</b>
Normalized	98.72%	99.33%	100%
Standard Deviation	2.7%	3%	2.9%
<b>SVT-VP9 - P.S.O - Bosphorus 1080p (FPS)</b>	<b>233.83</b>	234.44	<b>235.57</b>
Normalized	99.26%	99.52%	100%
Standard Deviation	0%	0.3%	0.6%
<b>Swet - Average (Operations/sec)</b>	<b>1137189168</b>	<b>1099210585</b>	1105675053
Normalized	100%	96.66%	97.23%

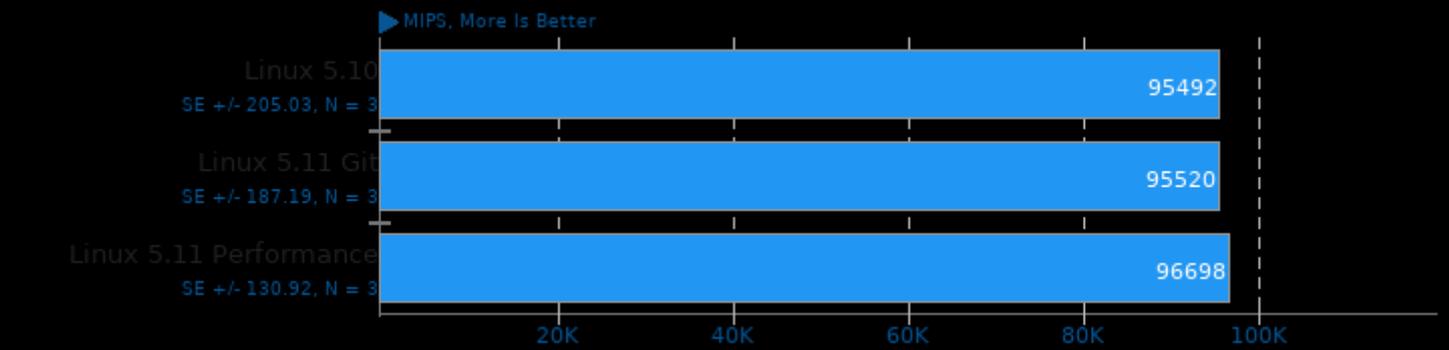
	Standard Deviation	1.3%	0.8%	1.4%
<b>Sysbench - Memory (Events/sec)</b>		<b>15417335</b>	15421737	<b>15467309</b>
	Normalized	99.68%	99.71%	100%
	Standard Deviation	0%	0.1%	0.3%
<b>Sysbench - CPU (Events/sec)</b>		<b>90818</b>	90884	<b>91043</b>
	Normalized	99.75%	99.83%	100%
	Standard Deviation	0.2%	0.1%	0.2%
<b>Tachyon - Total Time (sec)</b>		<b>43.8547</b>	43.5594	<b>43.3602</b>
	Normalized	98.87%	99.54%	100%
	Standard Deviation	0.4%	0.6%	0.8%
<b>TensorFlow Lite - SqueezeNet (us)</b>		<b>94692</b>	94474	<b>94297</b>
	Normalized	99.58%	99.81%	100%
	Standard Deviation	0.3%	0.4%	0.3%
<b>TensorFlow Lite - Inception V4 (us)</b>		<b>1349143</b>	1347910	<b>1344923</b>
	Normalized	99.69%	99.78%	100%
	Standard Deviation	0.1%	0.1%	0.1%
<b>TensorFlow Lite - NASNet Mobile (us)</b>		<b>104510</b>	104167	<b>103643</b>
	Normalized	99.17%	99.5%	100%
	Standard Deviation	0.5%	0.2%	0.3%
<b>TensorFlow Lite - Mobilenet Float (us)</b>		<b>62667</b>	62577	<b>62493</b>
	Normalized	99.72%	99.87%	100%
	Standard Deviation	0.1%	0.1%	0.1%
<b>TensorFlow Lite - Mobilenet Quant (us)</b>		<b>67988</b>	67870	<b>67779</b>
	Normalized	99.69%	99.87%	100%
	Standard Deviation	0.1%	0.2%	0.1%
<b>TensorFlow Lite - I.R.V (us)</b>		<b>1214700</b>	1212953	<b>1210443</b>
	Normalized	99.65%	99.79%	100%
	Standard Deviation	0.1%	0.1%	0.1%
<b>Tesseract - 1920 x 1080 (FPS)</b>		436.7327	<b>428.8668</b>	<b>561.6348</b>
	Normalized	77.76%	76.36%	100%
	Standard Deviation	3%	3%	1.4%
<b>Tesseract - 2560 x 1440 (FPS)</b>		429.8992	<b>415.1657</b>	<b>564.4407</b>
	Normalized	76.16%	73.55%	100%
	Standard Deviation	0.5%	0.7%	0.2%
<b>Timed Apache Compilation - Time To Compile (sec)</b>		<b>16.814</b>	16.734	<b>15.400</b>
	Normalized	91.59%	92.03%	100%
	Standard Deviation	0.7%	0.5%	0.2%
<b>Timed Eigen Compilation - Time To Compile (sec)</b>		<b>59.832</b>	58.821	<b>57.574</b>
	Normalized	96.23%	97.88%	100%
	Standard Deviation	0.2%	0.6%	0.1%
<b>Timed FFmpeg Compilation - Time To Compile (sec)</b>		<b>30.083</b>	30.032	<b>29.764</b>
	Normalized	98.94%	99.11%	100%
	Standard Deviation	0.1%	0.7%	0.3%
<b>Timed GDB GNU Debugger Compilation - Time To Compile (sec)</b>		<b>79.366</b>	78.119	<b>63.038</b>
	Normalized	79.43%	80.69%	100%
	Standard Deviation	0.2%	0.2%	1%
<b>Timed HMMer Search - P.D.S (sec)</b>		<b>100.691</b>	91.199	<b>81.421</b>
	Normalized	80.86%	89.28%	100%
	Standard Deviation	0.2%	0.4%	0.2%

Timed ImageMagick Compilation - Time To Compile (sec)	18.178	<b>18.181</b>	<b>17.919</b>
Normalized	98.58%	98.56%	100%
Standard Deviation	0.2%	0.5%	0.6%
Timed Linux Kernel Compilation - Time To Compile (sec)	<b>45.806</b>	45.534	<b>45.120</b>
Normalized	98.5%	99.09%	100%
Standard Deviation	1.5%	1.3%	1%
Timed MPlayer Compilation - Time To Compile (sec)	19.078	<b>19.119</b>	<b>18.952</b>
Normalized	99.34%	99.13%	100%
Standard Deviation	0.5%	0.3%	0.1%
Timed MrBayes Analysis - P.P.A (sec)	<b>62.343</b>	62.330	<b>61.709</b>
Normalized	98.98%	99%	100%
Standard Deviation	0.6%	0.5%	0.4%
TNN - CPU - MobileNet v2 (ms)	228.278	<b>227.616</b>	<b>229.973</b>
Normalized	99.71%	100%	98.98%
Standard Deviation	0.3%	1%	0.5%
TNN - CPU - SqueezeNet v1.1 (ms)	<b>209.535</b>	212.941	<b>213.508</b>
Normalized	100%	98.4%	98.14%
Standard Deviation	1.2%	0.7%	0.7%
TSCP - A.C.P (Nodes/s)	1982656	<b>1955943</b>	<b>2001083</b>
Normalized	99.08%	97.74%	100%
Standard Deviation	0.3%	0.6%	2.9%
TTSIOD 3D Renderer - P.R.W.S.S.M (FPS)	1045	<b>1043</b>	<b>1053</b>
Normalized	99.17%	99%	100%
Standard Deviation	0.4%	0.7%	0.9%
Unigine Heaven - 1920 x 1080 - Fullscreen - OpenGL (FPS)	<b>166.995</b>	167.412	<b>167.452</b>
Normalized	99.73%	99.98%	100%
Standard Deviation	0.2%	0.4%	0.1%
Unigine Superposition - 1920 x 1080 - Fullscreen - Low - OpenGL (FPS)	238.5	<b>235.6</b>	<b>238.7</b>
Normalized	99.92%	98.7%	100%
Standard Deviation	1.5%	0.2%	0%
Unigine Superposition - 1920 x 1080 - Fullscreen - High - OpenGL (FPS)	82.9	82.9	82.9
Standard Deviation	0.1%	0.1%	0%
Unigine Valley - 1920 x 1080 - Fullscreen - OpenGL (FPS)	<b>176.385</b>	<b>178.774</b>	178.166
Normalized	98.66%	100%	99.66%
Standard Deviation	0.6%	0.2%	0.3%
Unpacking Firefox - firefox-84.0.source.tar.xz (sec)	<b>13.682</b>	13.604	<b>13.133</b>
Normalized	95.99%	96.54%	100%
Standard Deviation	0.1%	0.2%	0.8%
Unpacking The Linux Kernel - linux-4.15.tar.xz (sec)	3.827	<b>3.837</b>	<b>3.740</b>
Normalized	97.73%	97.47%	100%
Standard Deviation	0.7%	0.7%	0.8%
VP9 libvpx Encoding - Speed 5 (FPS)	32.45	<b>32.22</b>	<b>35.92</b>
Normalized	90.34%	89.7%	100%
Standard Deviation	0.1%	1.5%	0.4%

<b>WavPack Audio Encoding - WAV To WavPack (sec)</b>	11.115	<b>10.915</b>	<b>11.188</b>
Normalized	98.2%	100%	97.56%
Standard Deviation	1%	1.6%	0.9%
<b>WebP Image Encode - Q.1.L (Encode Time - sec)</b>	12.736	<b>12.958</b>	<b>12.726</b>
Normalized	99.92%	98.21%	100%
Standard Deviation	2.3%	0.7%	0.5%
<b>WebP Image Encode - Q.1.H.C (Encode Time - sec)</b>	<b>5.402</b>	5.347	<b>5.342</b>
Normalized	98.89%	99.91%	100%
Standard Deviation	0.3%	0.7%	0.2%
<b>WebP Image Encode - Q.1.L.H.C (Encode Time - sec)</b>	27.348	<b>27.388</b>	<b>27.321</b>
Normalized	99.9%	99.76%	100%
Standard Deviation	0.6%	0.6%	0.3%
<b>WireGuard + Linux Networking Stack Stress Test (sec)</b>	154.051	<b>156.134</b>	<b>143.777</b>
Normalized	93.33%	92.09%	100%
Standard Deviation	0.6%	0.2%	0.6%
<b>x264 - H.2.V.E (FPS)</b>	201.77	<b>200.88</b>	<b>209.16</b>
Normalized	96.47%	96.04%	100%
Standard Deviation	3%	3.2%	3%
<b>x265 - Bosphorus 4K (FPS)</b>	<b>27.22</b>	27.53	<b>28.26</b>
Normalized	96.32%	97.42%	100%
Standard Deviation	0.7%	0.2%	0.5%
<b>x265 - Bosphorus 1080p (FPS)</b>	83.59	<b>83.36</b>	<b>90.45</b>
Normalized	92.42%	92.16%	100%
Standard Deviation	0.3%	0.6%	0.9%
<b>XZ Compression - C.u.1.0.3.s.i.i.C.L.9 (sec)</b>	23.126	<b>23.066</b>	<b>23.200</b>
Normalized	99.74%	100%	99.42%
Standard Deviation	0.3%	0.5%	0.5%
<b>YafaRay - T.T.F.S.S (sec)</b>	<b>66.772</b>	66.402	<b>66.213</b>
Normalized	99.16%	99.72%	100%
Standard Deviation	0.7%	0.4%	0.3%
<b>yquake2 - OpenGL 3.x - 1920 x 1080 (FPS)</b>	<b>966.4</b>	970.3	<b>990.1</b>
Normalized	97.61%	98%	100%
Standard Deviation	0.9%	0.2%	0.1%
<b>yquake2 - OpenGL 3.x - 2560 x 1440 (FPS)</b>	<b>975.3</b>	977.4	<b>989.5</b>
Normalized	98.56%	98.78%	100%
Standard Deviation	0.5%	0.8%	0.1%
<b>yquake2 - Software CPU - 1920 x 1080 (FPS)</b>	<b>180.7</b>	<b>177.0</b>	178.4
Normalized	100%	97.95%	98.73%
Standard Deviation	2.9%	0.9%	1.5%
<b>yquake2 - Software CPU - 2560 x 1440 (FPS)</b>	<b>100.0</b>	102.9	<b>104.8</b>
Normalized	95.42%	98.19%	100%
Standard Deviation	1.5%	1.1%	0.4%
<b>Zstd Compression - 3 (MB/s)</b>	<b>4888</b>	4899	<b>4911</b>
Normalized	99.53%	99.76%	100%
Standard Deviation	0.8%	0.4%	0.7%
<b>Zstd Compression - 19 (MB/s)</b>	<b>44.3</b>	<b>44.3</b>	<b>44.5</b>
Normalized	99.55%	99.55%	100%
Standard Deviation	0.3%	0.2%	0%

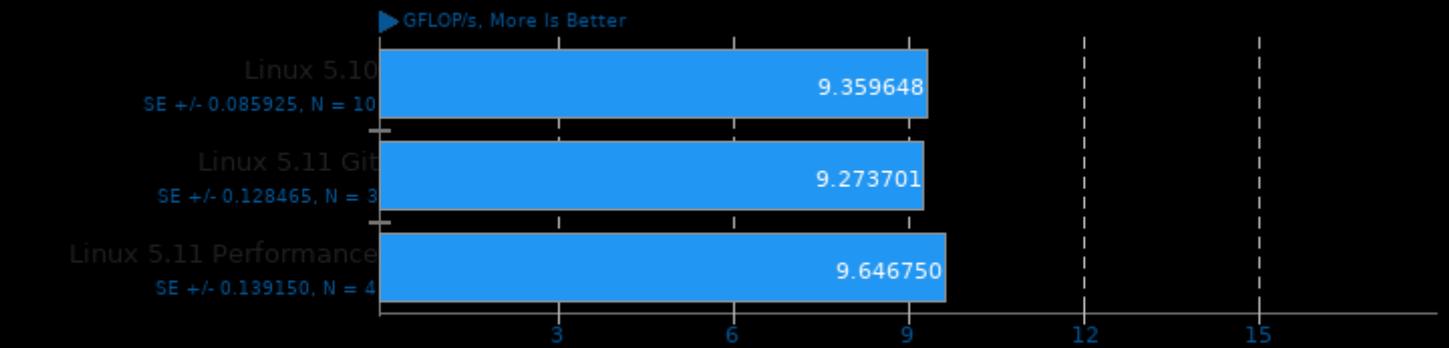
## 7-Zip Compression 16.02

Compress Speed Test

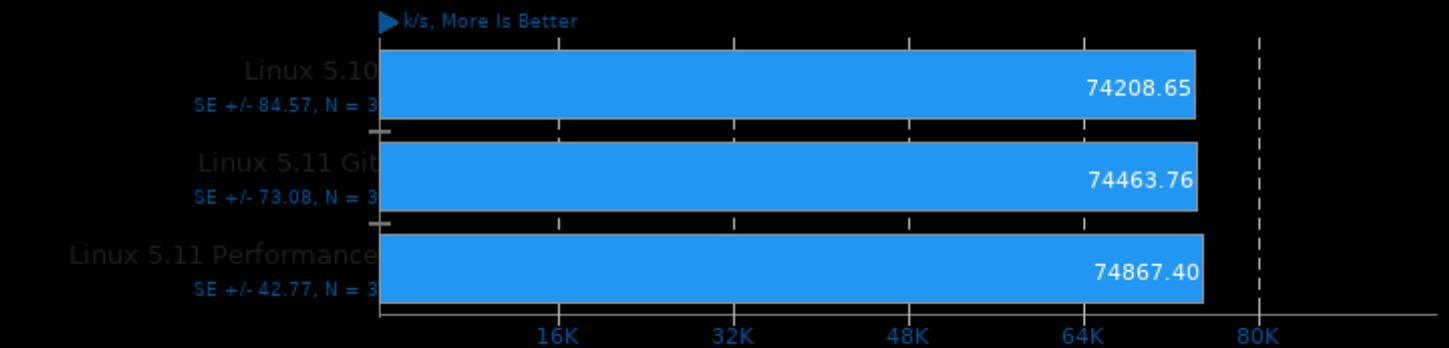


## ACES DGEMM 1.0

Sustained Floating-Point Rate



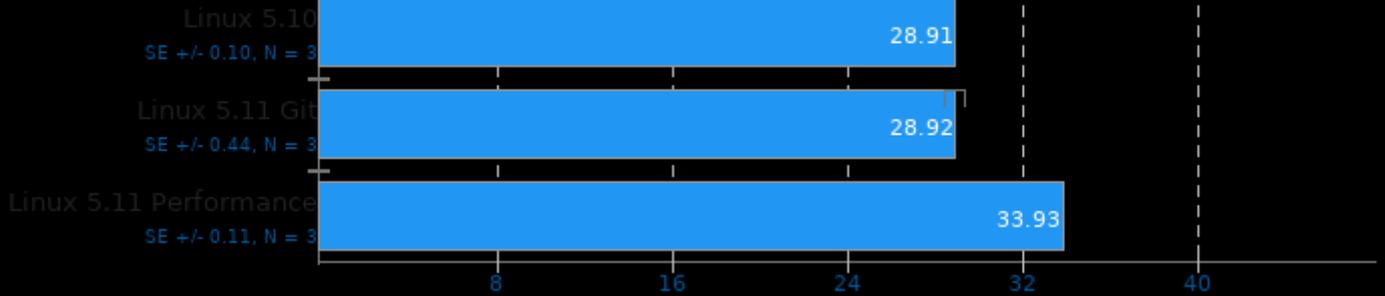
## Aircrack-ng 1.5.2



## AOM AV1 2.0

Encoder Mode: Speed 6 Realtime

▶ Frames Per Second, More Is Better

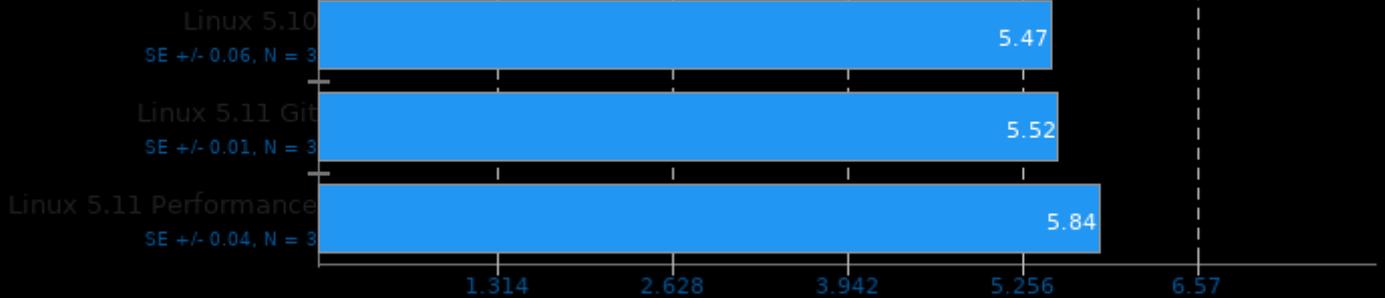


1. (CXX) g++ options: -O3 -std=c++11 -U\_FORTIFY\_SOURCE -lm -pthread

## AOM AV1 2.0

Encoder Mode: Speed 6 Two-Pass

▶ Frames Per Second, More Is Better

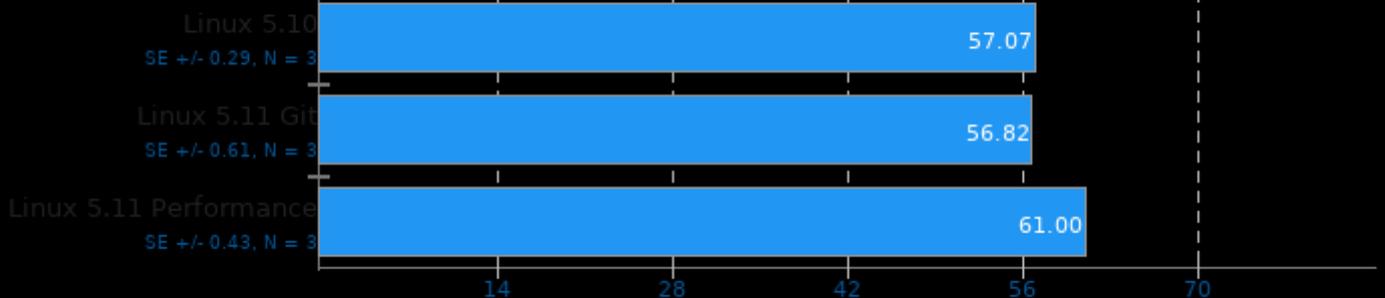


1. (CXX) g++ options: -O3 -std=c++11 -U\_FORTIFY\_SOURCE -lm -pthread

## AOM AV1 2.0

Encoder Mode: Speed 8 Realtime

▶ Frames Per Second, More Is Better

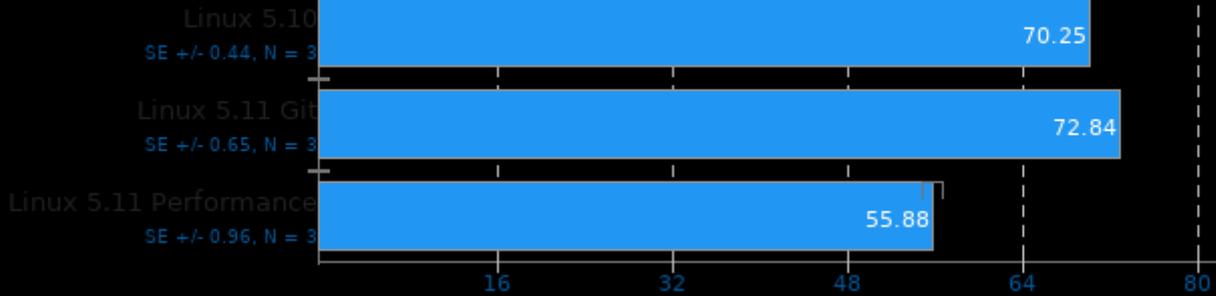


1. (CXX) g++ options: -O3 -std=c++11 -U\_FORTIFY\_SOURCE -lm -pthread

## Apache CouchDB 3.1.1

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

← Seconds, Fewer Is Better

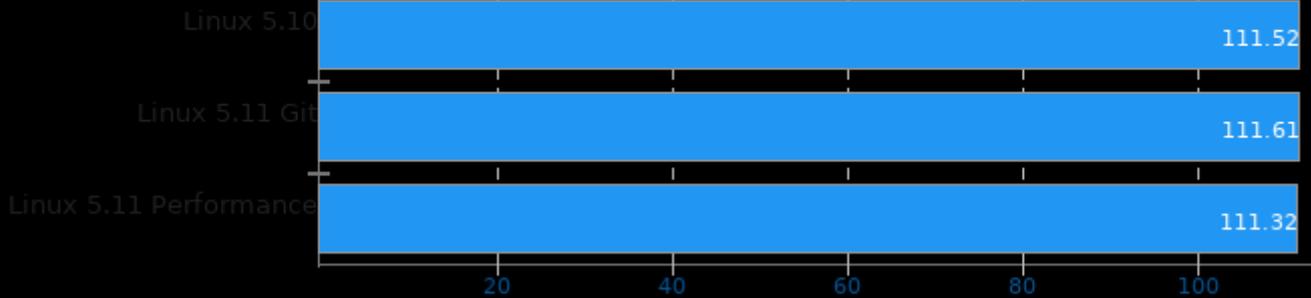


1. (CXX) g++ options: -std=c++14 -lmozjs-68 -lm -lerl\_interface -lei -fPIC -MMD

## Appleseed 2.0 Beta

Scene: Material Tester

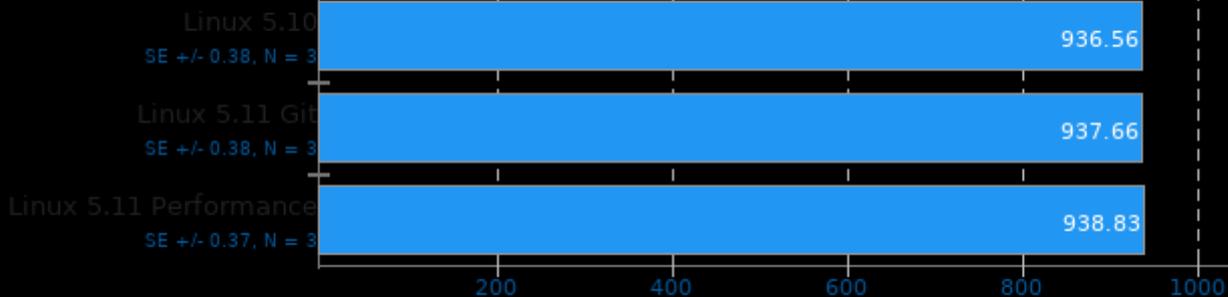
← Seconds, Fewer Is Better



## ASKAP 2018-11-10

Test: tConvolve MT - Gridding

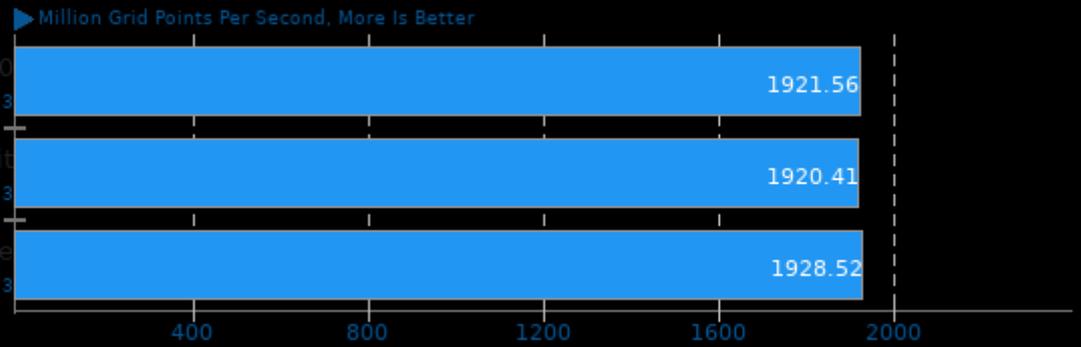
▶ Million Grid Points Per Second, More Is Better



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

ASKAP 2018-11-10

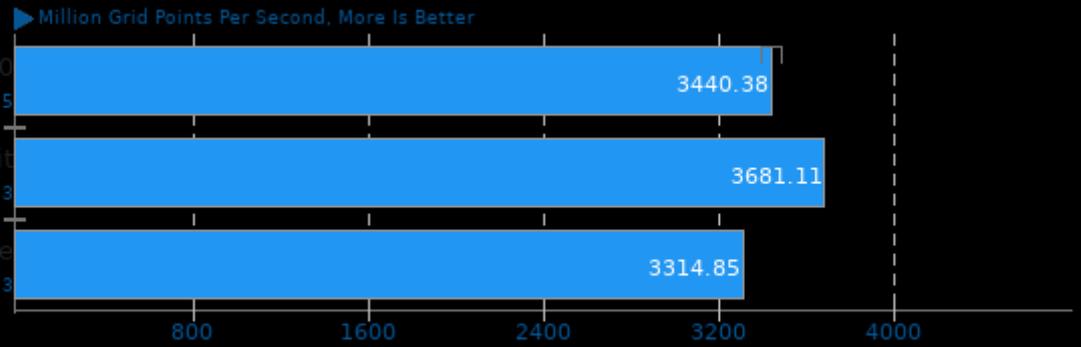
Test: tConvolve MT - Degriding



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

ASKAP 2018-11-10

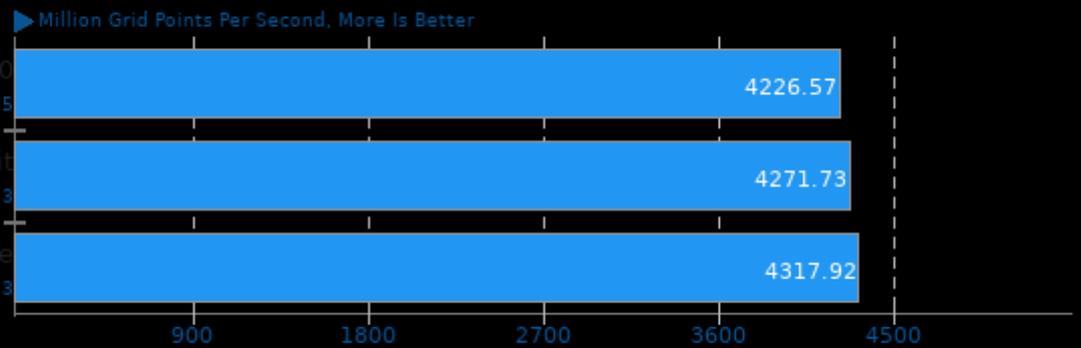
Test: tConvolve OpenMP - Gridding



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

ASKAP 2018-11-10

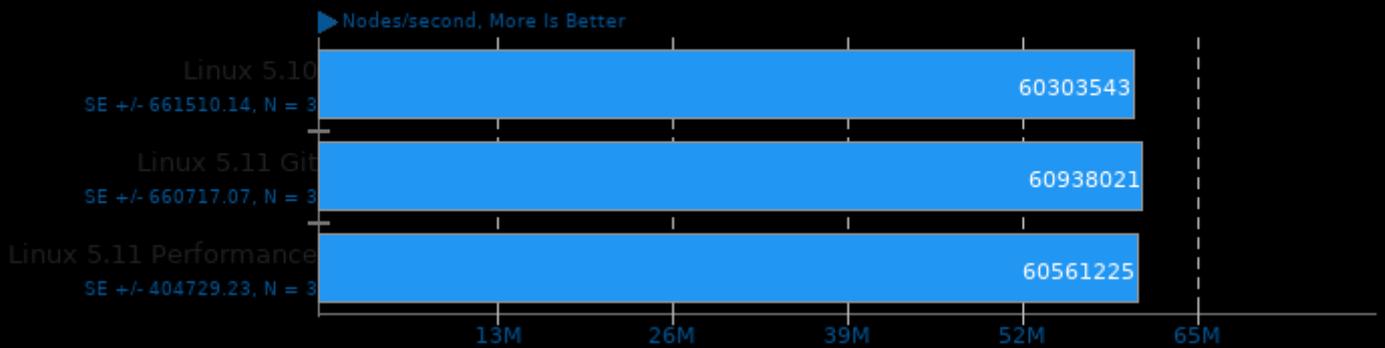
Test: tConvolve OpenMP - Degriding



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

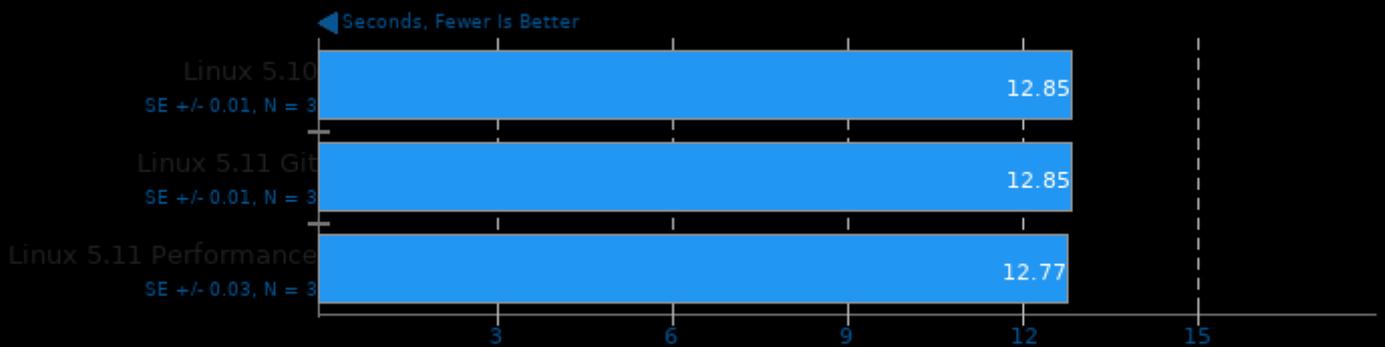
## asmFish 2018-07-23

1024 Hash Memory, 26 Depth



## ASTC Encoder 2.0

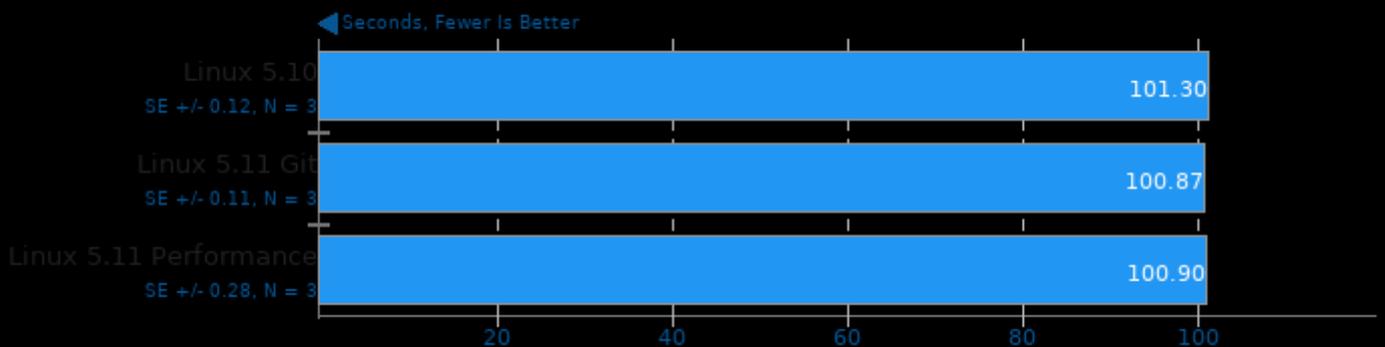
Preset: Thorough



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

## ASTC Encoder 2.0

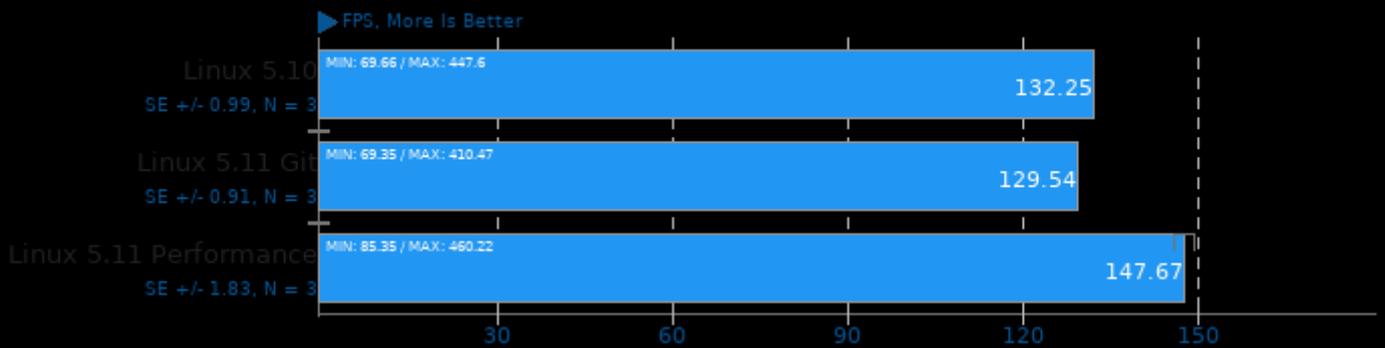
Preset: Exhaustive



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

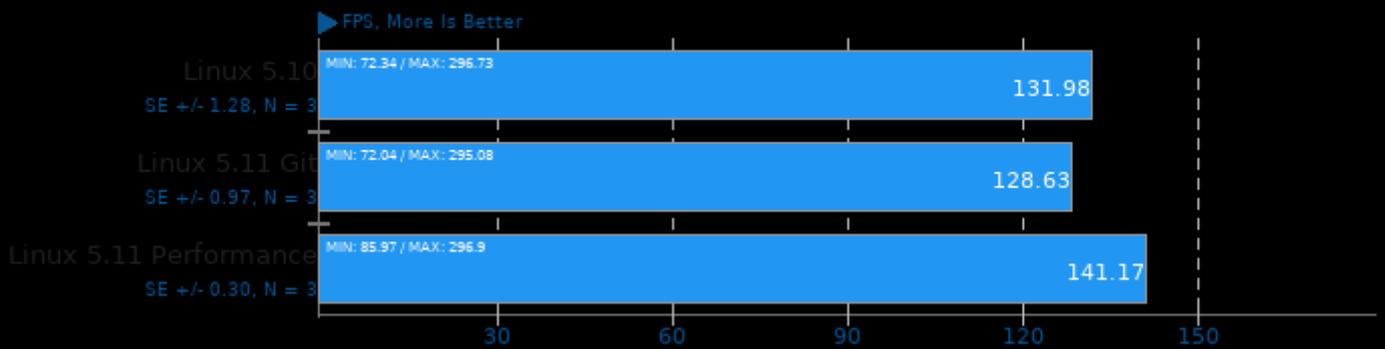
## Basemark GPU 1.2

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



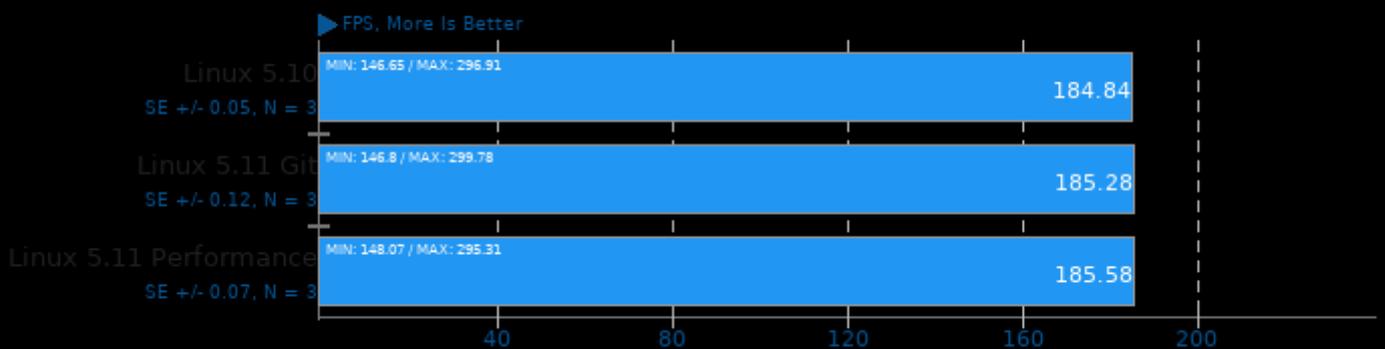
## Basemark GPU 1.2

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



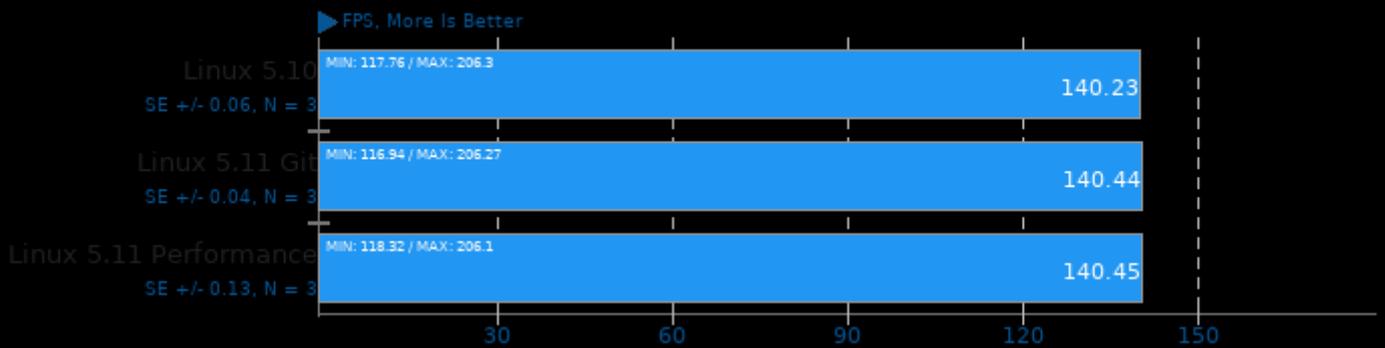
## Basemark GPU 1.2

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



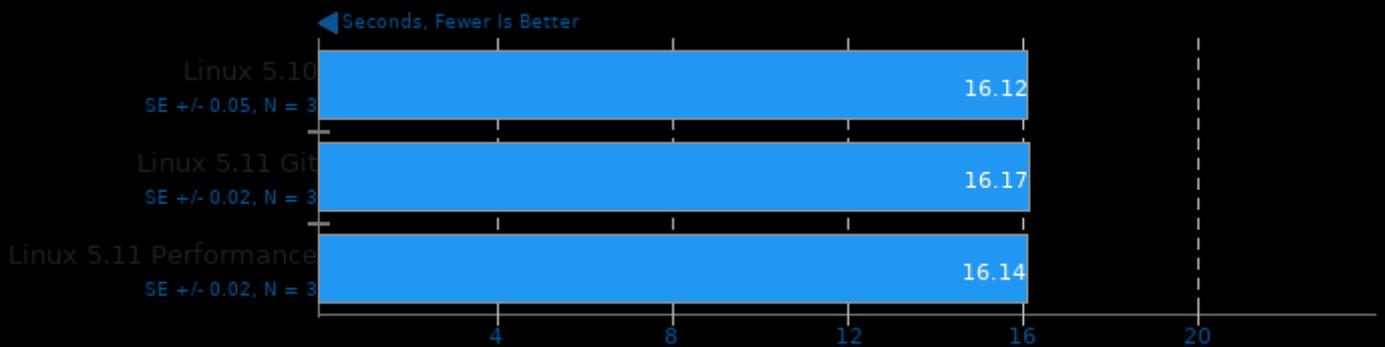
## Basemark GPU 1.2

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



## Basis Universal 1.12

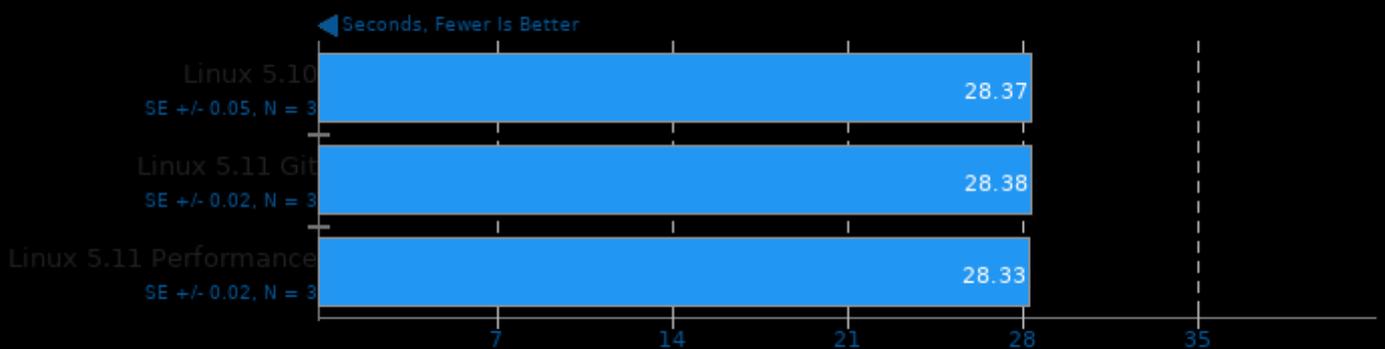
Settings: UASTC Level 2



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

## Basis Universal 1.12

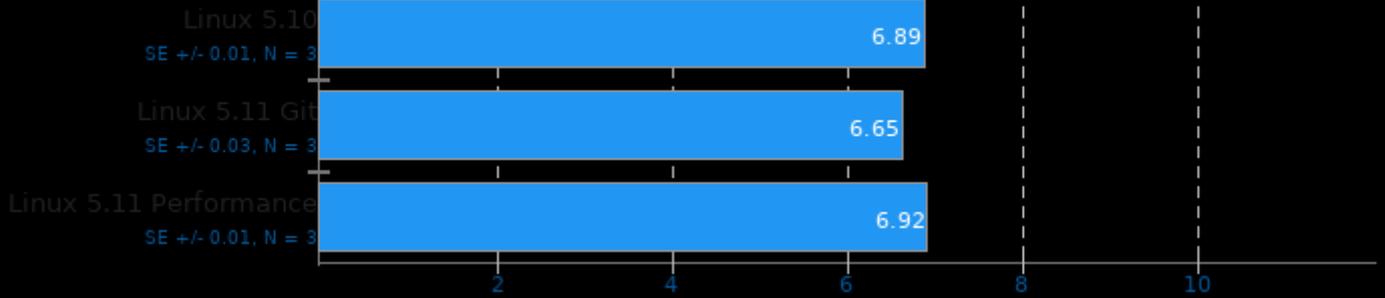
Settings: UASTC Level 3



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

## BLAKE2 20170307

◀ Cycles Per Byte, Fewer Is Better

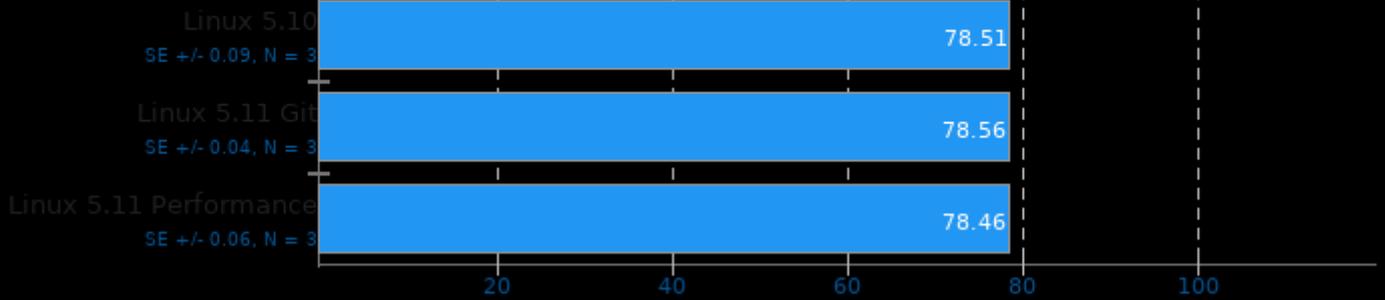


1. (CC) gcc options: -O3 -march=native -lcrypto -lz

## Blender 2.90

Blend File: BMW27 - Compute: CPU-Only

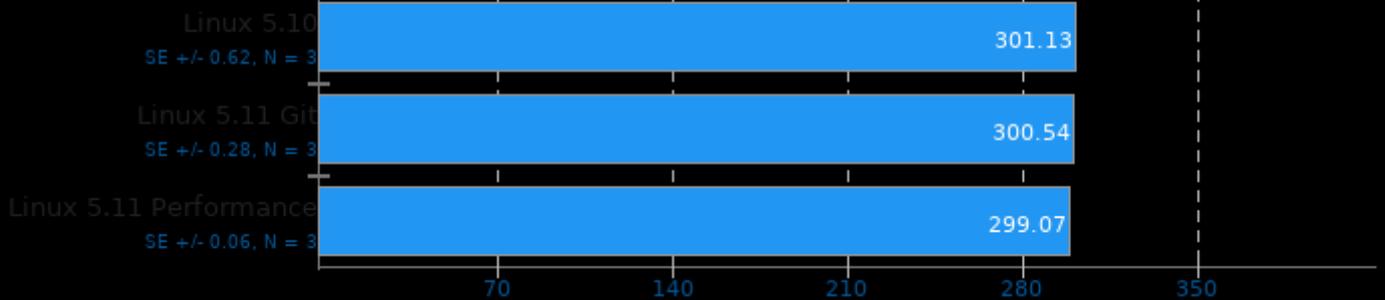
◀ Seconds, Fewer Is Better



## Blender 2.90

Blend File: Barbershop - Compute: CPU-Only

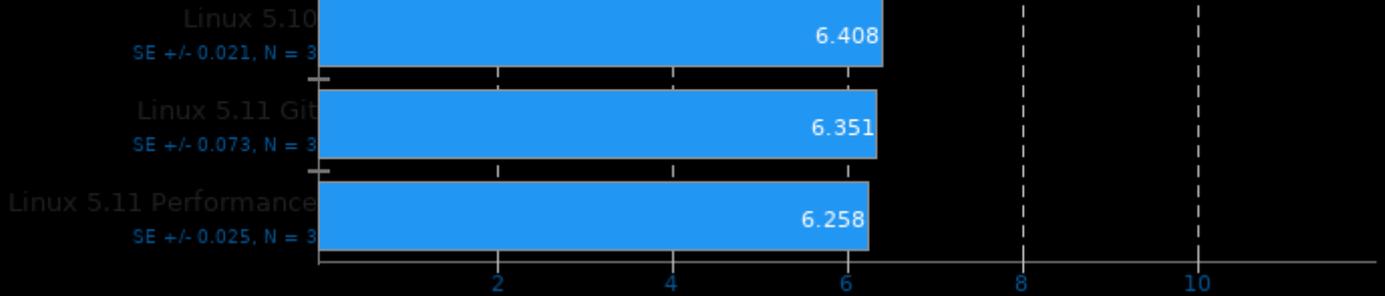
◀ Seconds, Fewer Is Better



## Bork File Encrypter 1.4

File Encryption Time

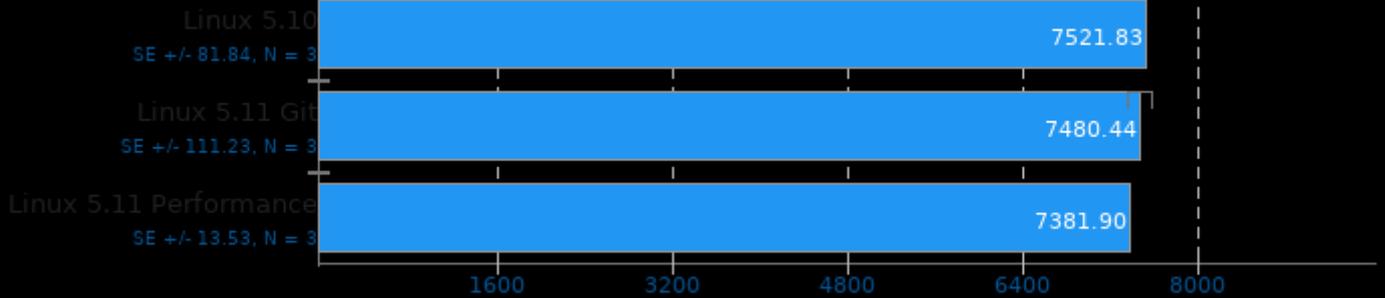
← Seconds, Fewer Is Better



## Botan 2.13.0

Test: AES-256

▶ MiB/s, More Is Better

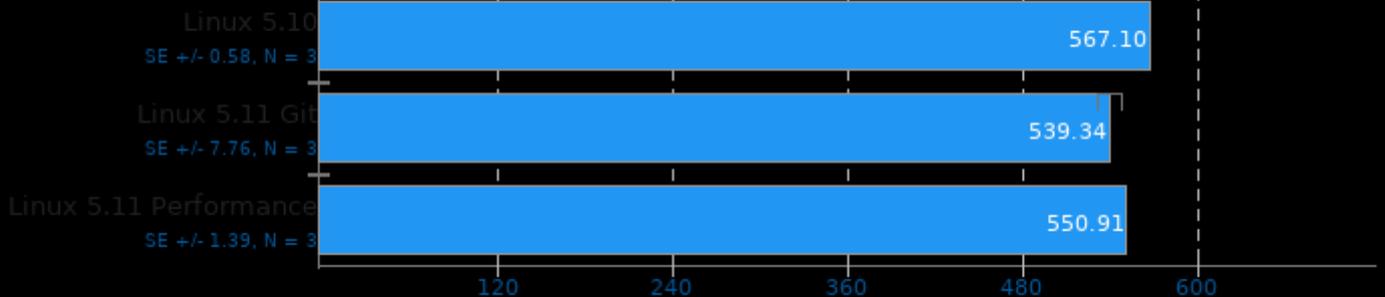


1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

## Botan 2.13.0

Test: Blowfish

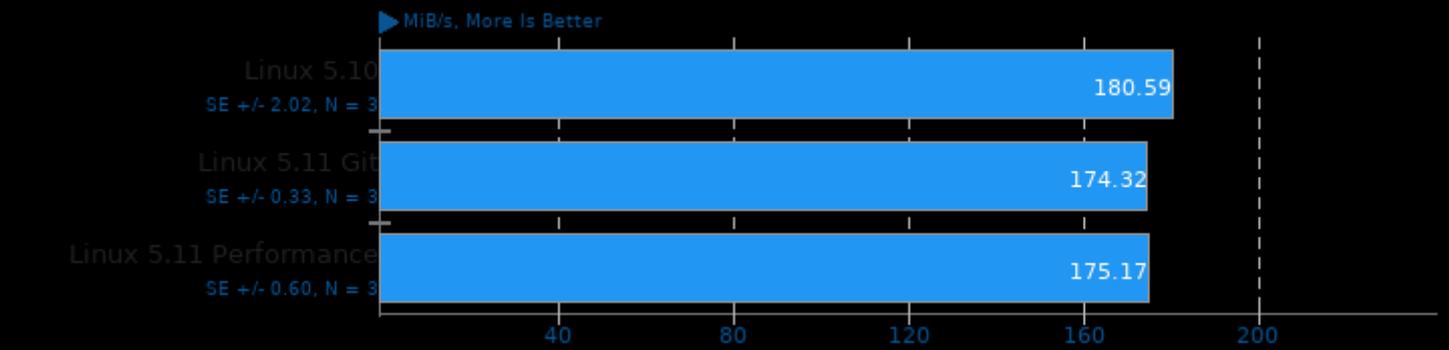
▶ MiB/s, More Is Better



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

## Botan 2.13.0

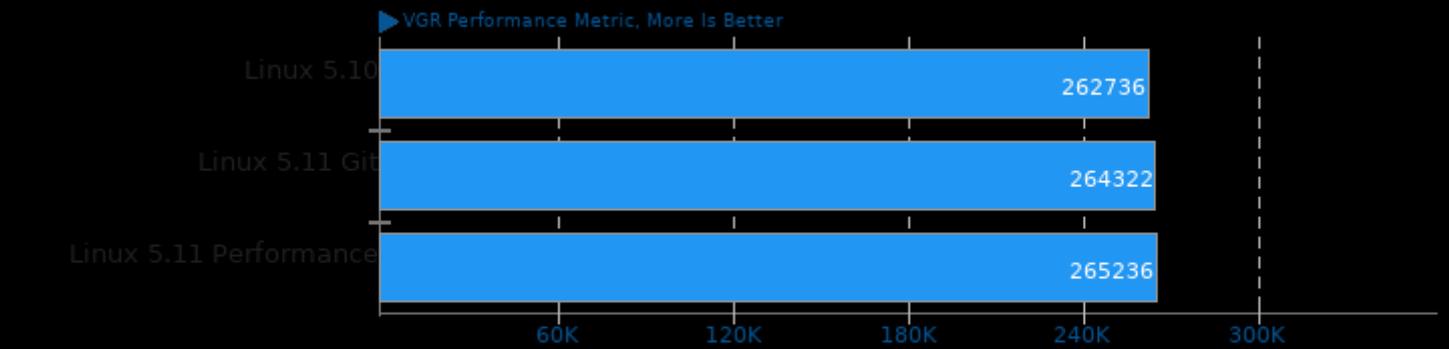
Test: CAST-256



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

## BRL-CAD 7.30.8

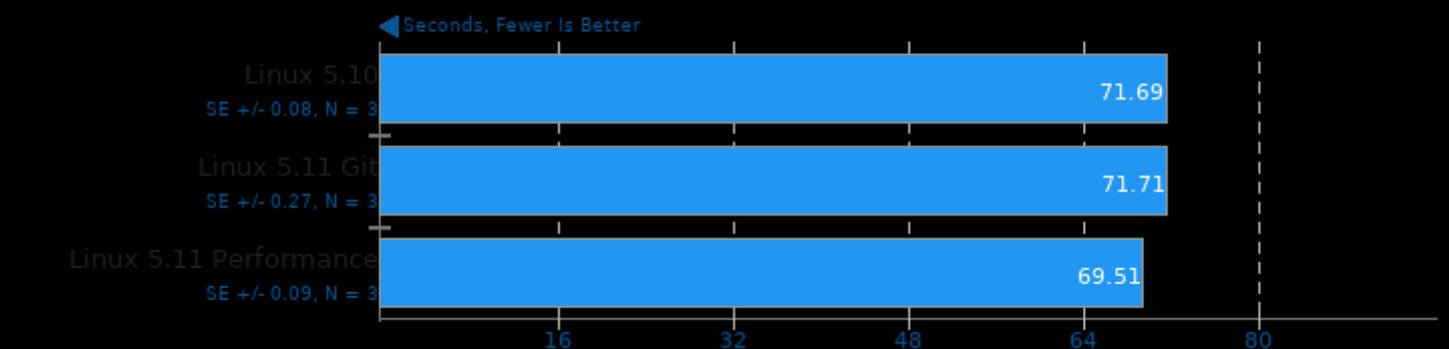
VGR Performance Metric



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

## Build2 0.13

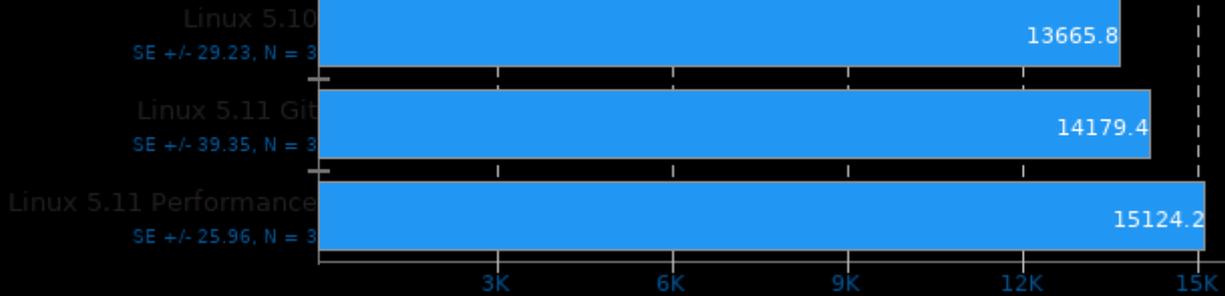
Time To Compile



## C-Blosc 2.0 Beta 5

Compressor: blosclz

▶ MB/s, More Is Better

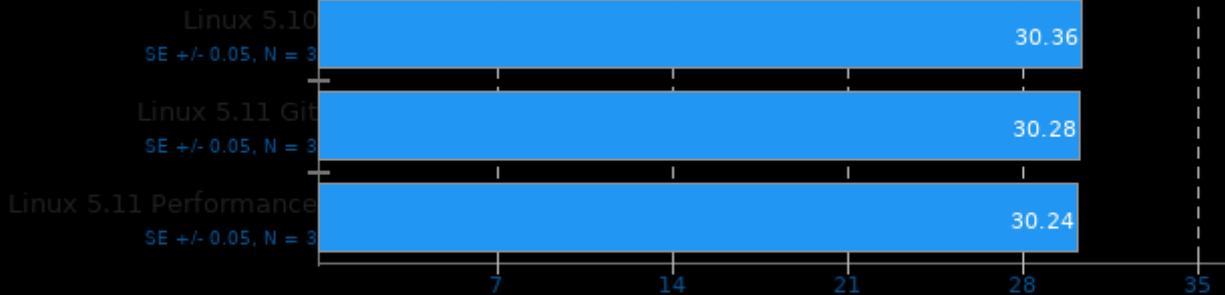


1. (CXX) g++ options: -rdynamic

## C-Ray 1.1

Total Time - 4K, 16 Rays Per Pixel

◀ Seconds, Fewer Is Better

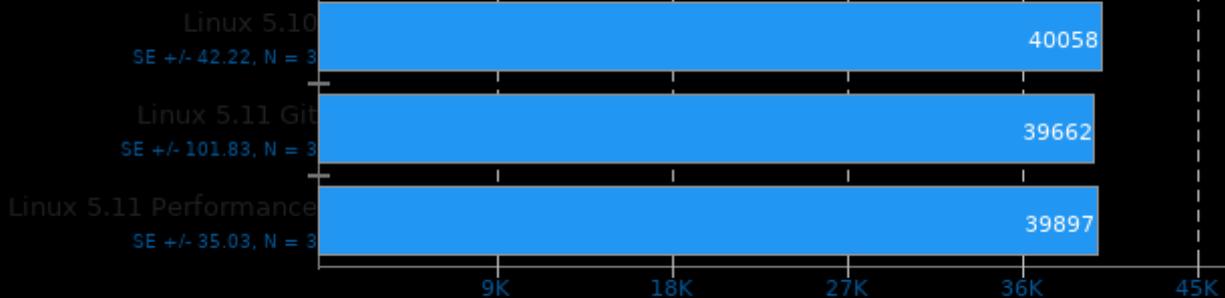


1. (CO) gcc options: -lm -pthread -O3

## Caffe 2020-02-13

Model: AlexNet - Acceleration: CPU - Iterations: 100

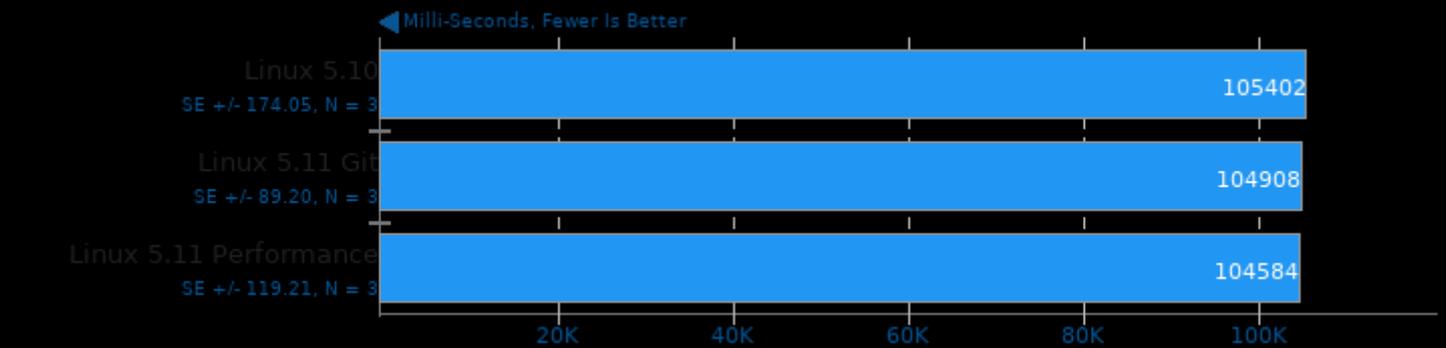
◀ Milli-Seconds, Fewer Is Better



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

## Caffe 2020-02-13

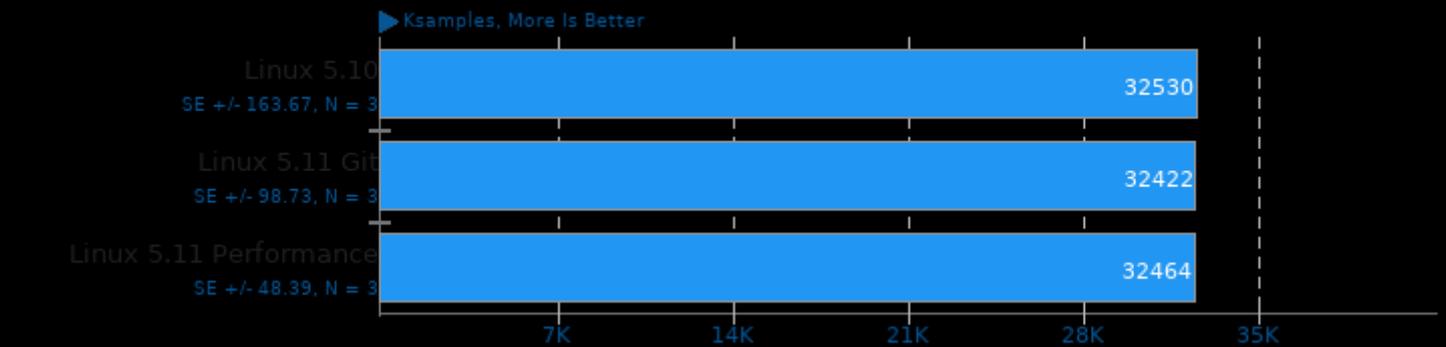
Model: GoogleNet - Acceleration: CPU - Iterations: 100



1. (CXX) g++ options: -fPIC -O3 -rdynamic -lglog -lgflags -lprotobuf -lpthread -lsz -lz -ldl -lm -lmd5 -lopenblas

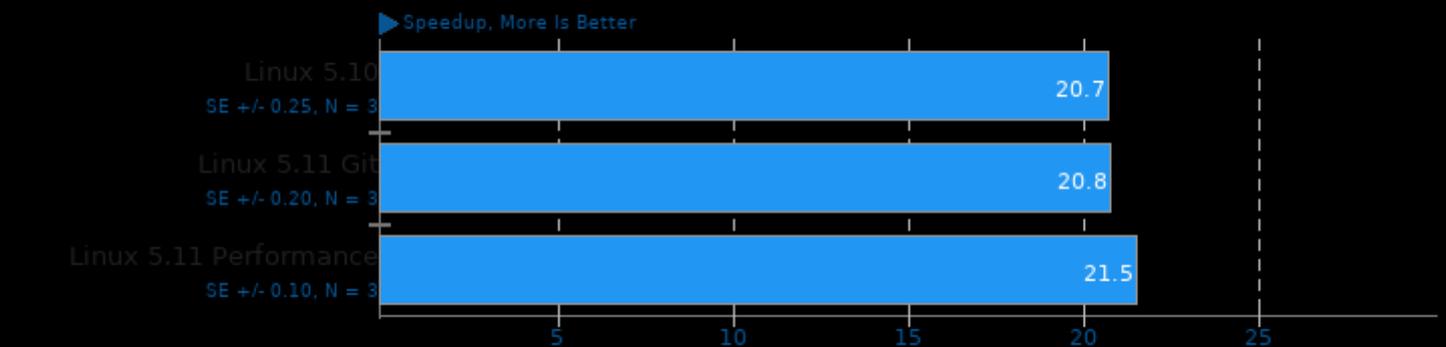
## Chaos Group V-RAY 4.10.07

Mode: CPU



## CLOMP 1.2

Static OMP Speedup

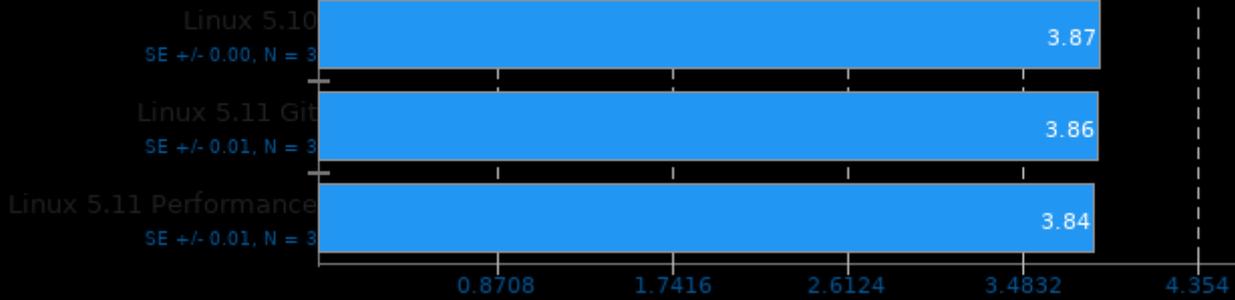


1. (CC) gcc options: -fopenmp -O3 -lm

## CloverLeaf

Lagrangian-Eulerian Hydrodynamics

← Seconds, Fewer Is Better

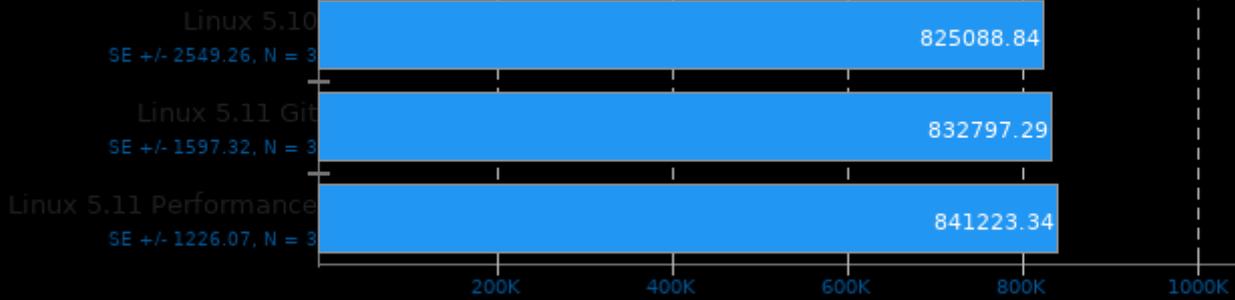


1. (F9X) gfortran options: -O3 -march=native -funroll-loops -fopenmp

## Coremark 1.0

CoreMark Size 666 - Iterations Per Second

▶ Iterations/Sec, More Is Better

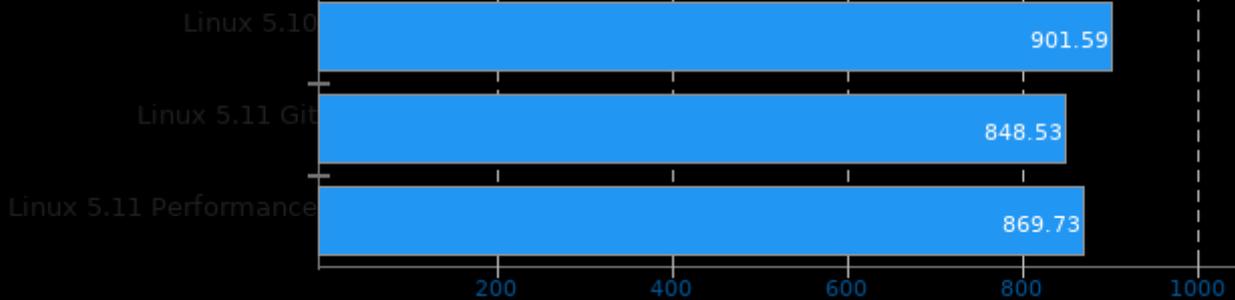


1. (CC) gcc options: -O2 -lrt -lrt

## CP2K Molecular Dynamics 6.1

Fayalite-FIST Data

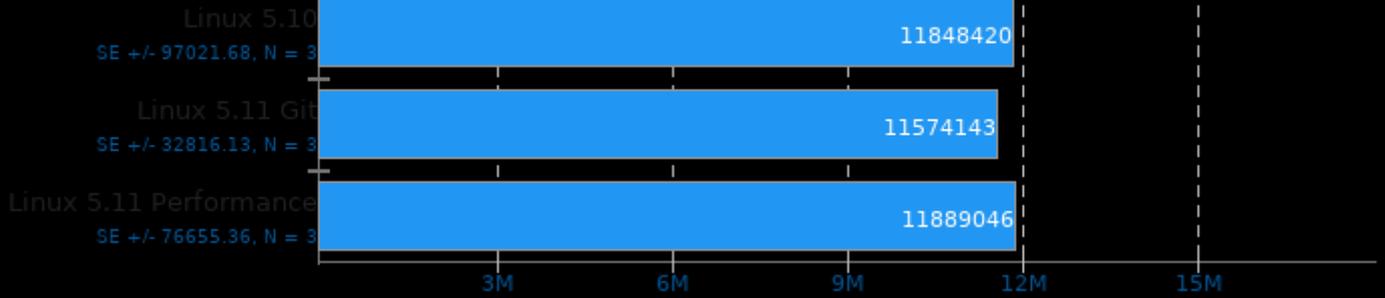
← Seconds, Fewer Is Better



## Crafty 25.2

Elapsed Time

Nodes Per Second, More Is Better

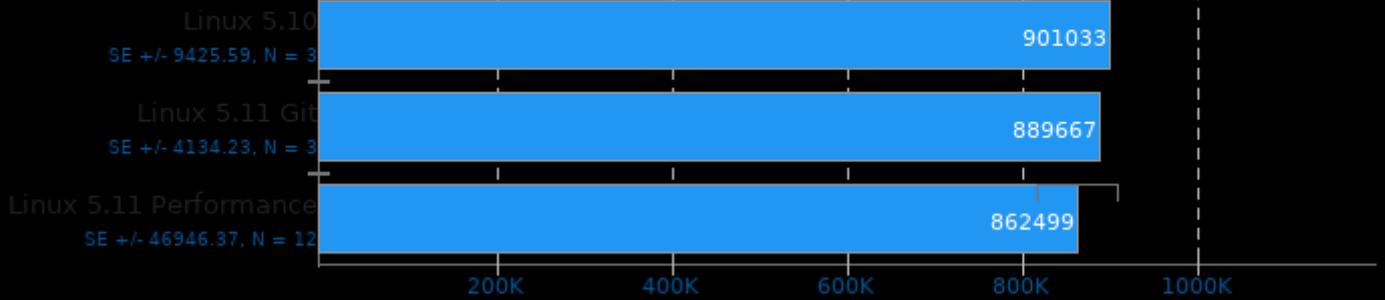


1. (CC) gcc options: -pthread -lstdc++ -fprofile-use -lm

## Cryptsetup

PBKDF2-whirlpool

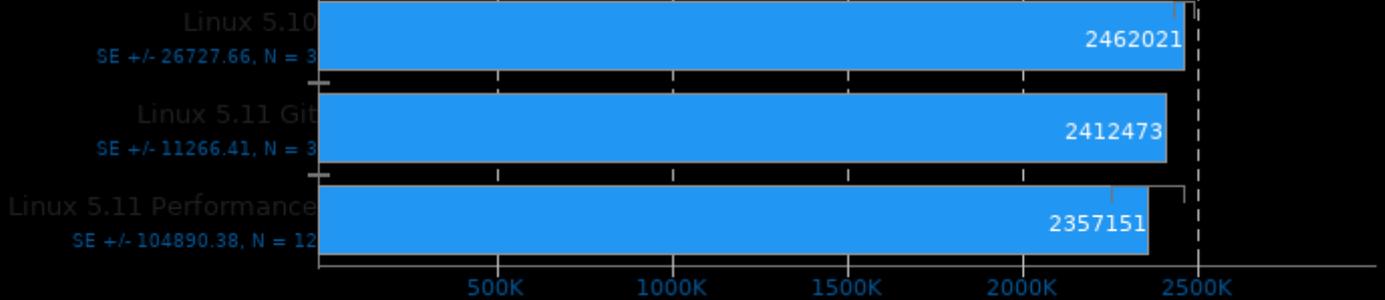
Iterations Per Second, More Is Better



## Cryptsetup 2.2.2

PBKDF2-sha512

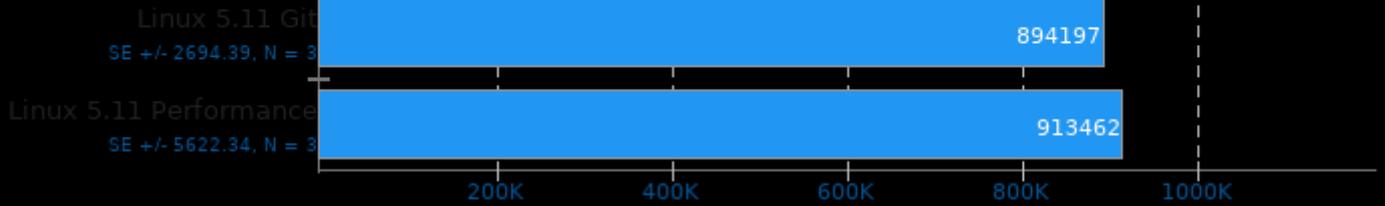
Iterations Per Second, More Is Better



## Cryptsetup 2.2.2

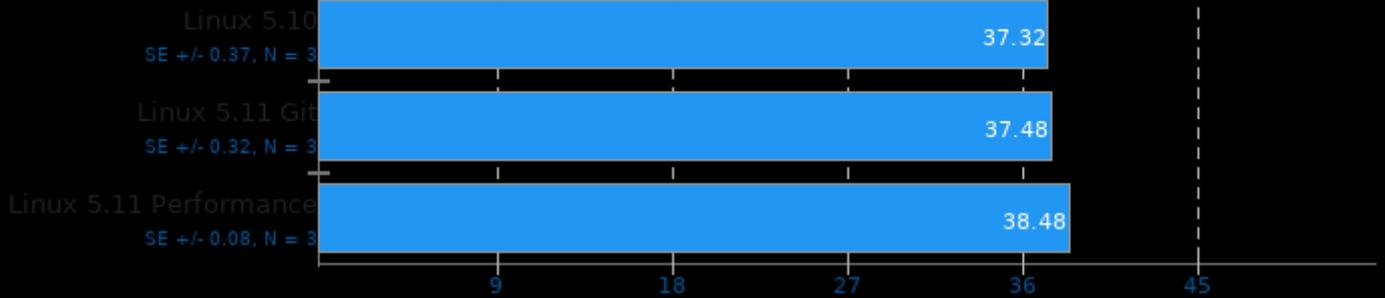
PBKDF2-whirlpool

▶ Iterations Per Second, More Is Better



## Cython benchmark 0.27

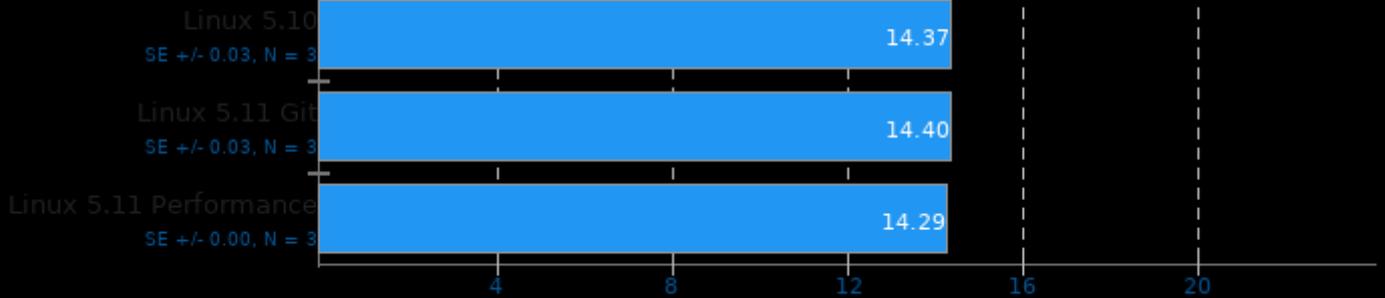
◀ Seconds, Fewer Is Better



## Darktable 3.0.1

Test: Boat - Acceleration: CPU-only

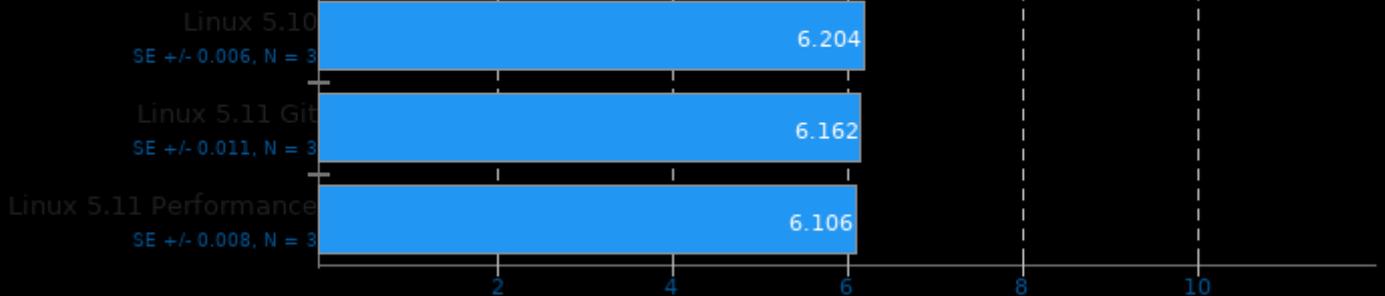
◀ Seconds, Fewer Is Better



## Darktable 3.0.1

Test: Masskrug - Acceleration: CPU-only

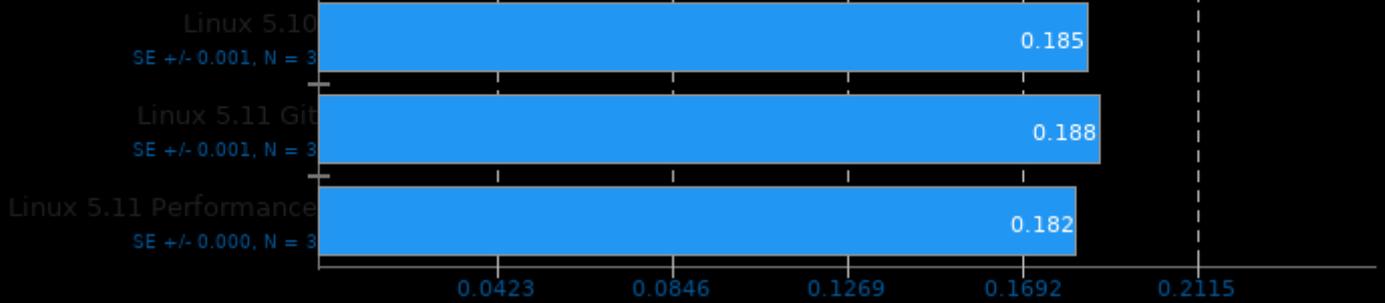
◀ Seconds, Fewer Is Better



## Darktable 3.0.1

Test: Server Rack - Acceleration: CPU-only

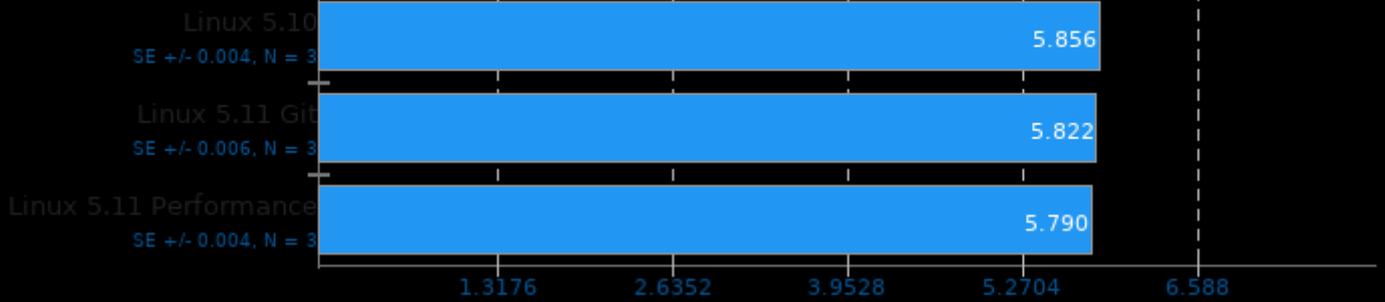
◀ Seconds, Fewer Is Better



## Darktable 3.0.1

Test: Server Room - Acceleration: CPU-only

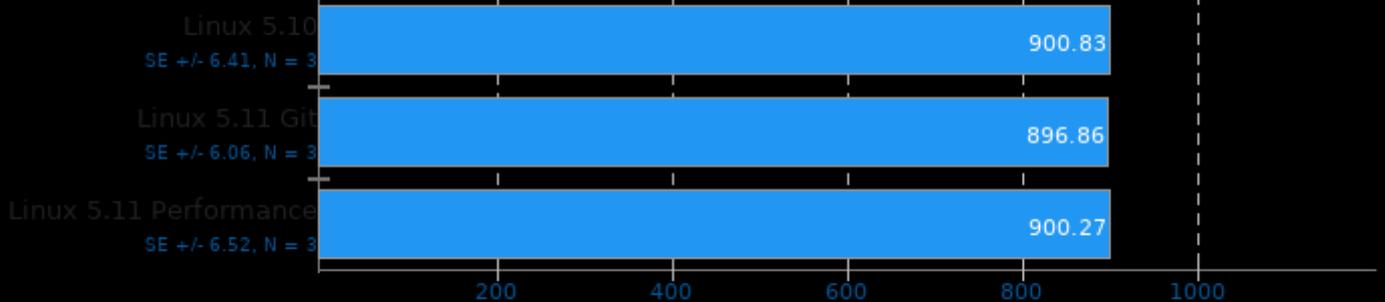
◀ Seconds, Fewer Is Better



## Darmstadt Automotive Parallel Heterogeneous Suite

Backend: OpenMP - Kernel: NDT Mapping

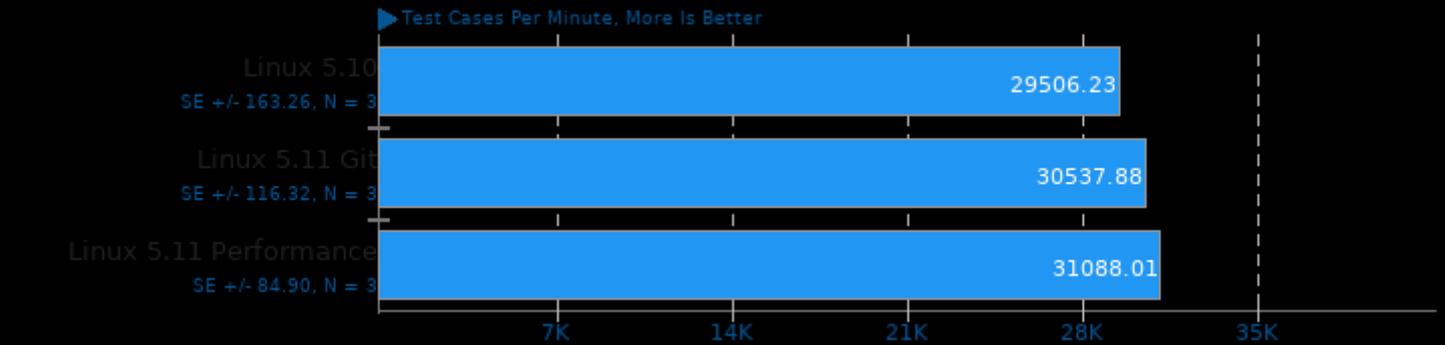
▶ Test Cases Per Minute, More Is Better



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

### Darmstadt Automotive Parallel Heterogeneous Suite

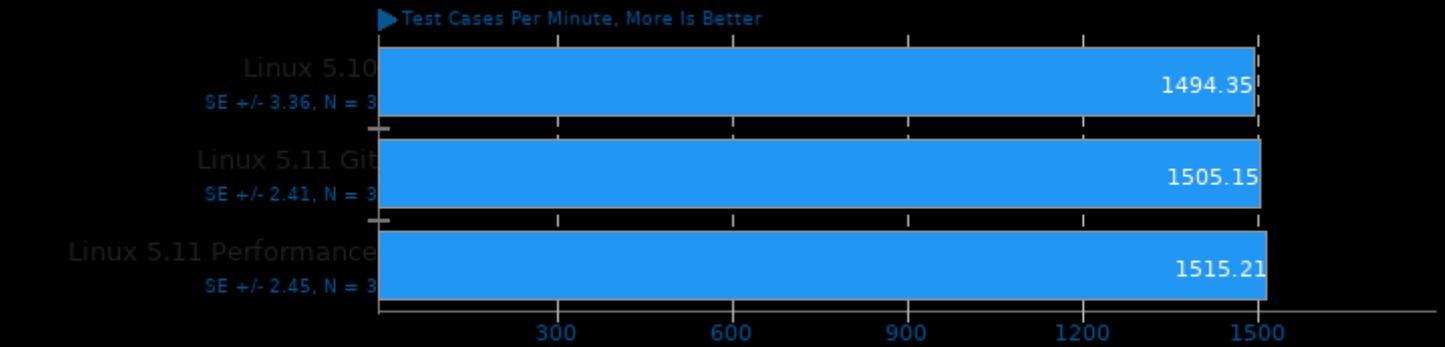
Backend: OpenMP - Kernel: Points2Image



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

### Darmstadt Automotive Parallel Heterogeneous Suite

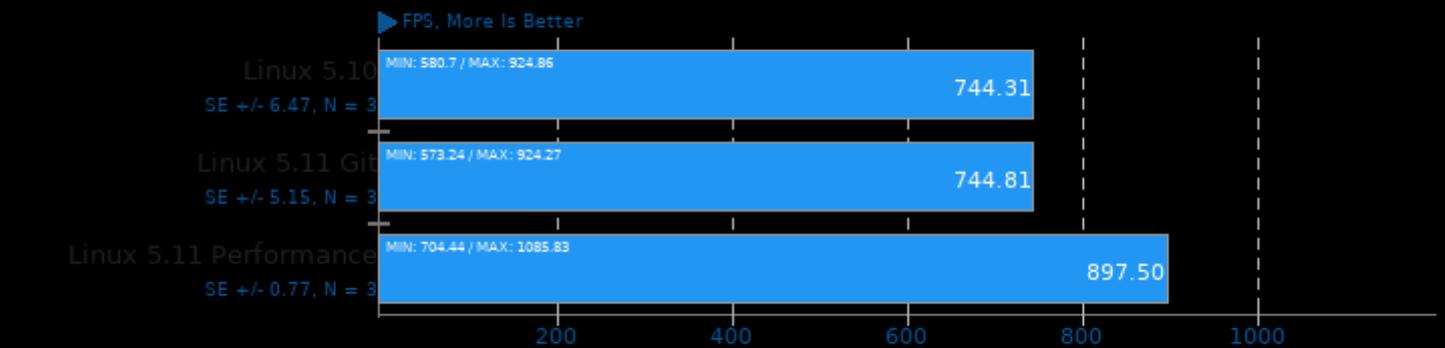
Backend: OpenMP - Kernel: Euclidean Cluster



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

### dav1d 0.7.0

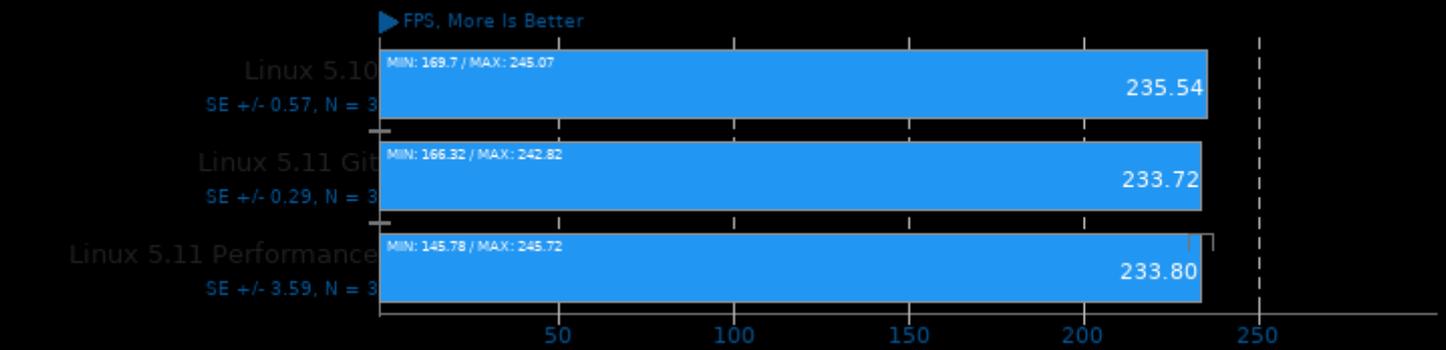
Video Input: Chimera 1080p



1. (C) gcc options: -pthread

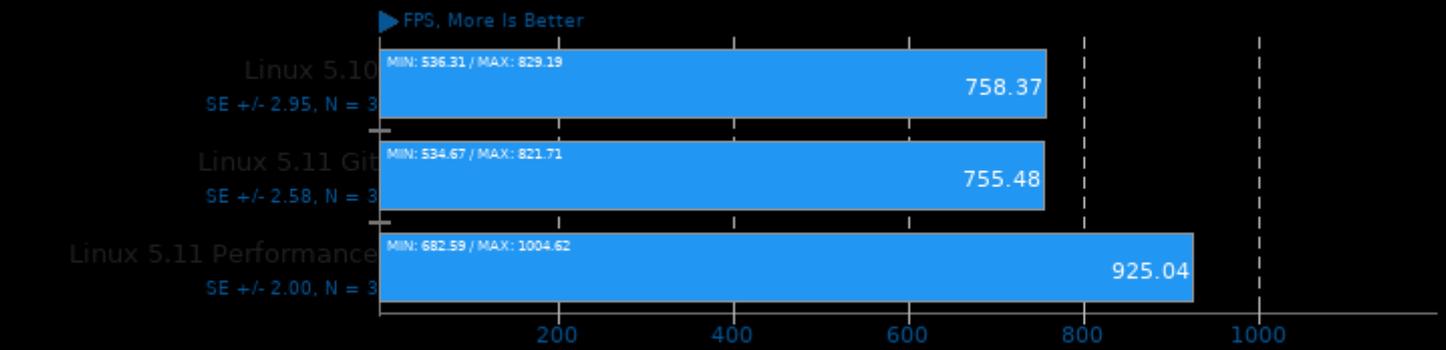
## dav1d 0.7.0

Video Input: Summer Nature 4K



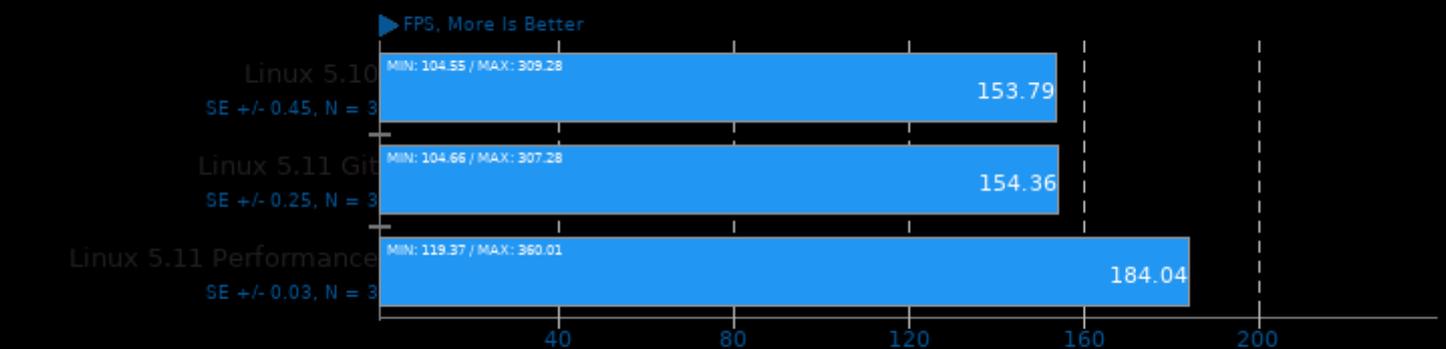
## dav1d 0.7.0

Video Input: Summer Nature 1080p



## dav1d 0.7.0

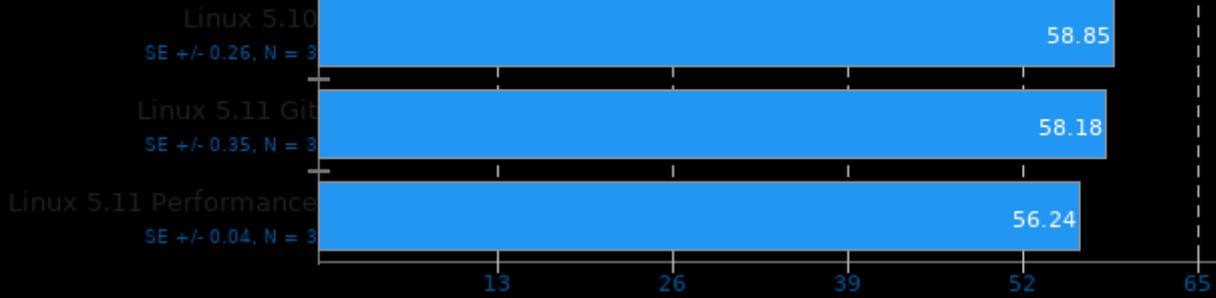
Video Input: Chimera 1080p 10-bit



## DeepSpeech 0.6

Acceleration: CPU

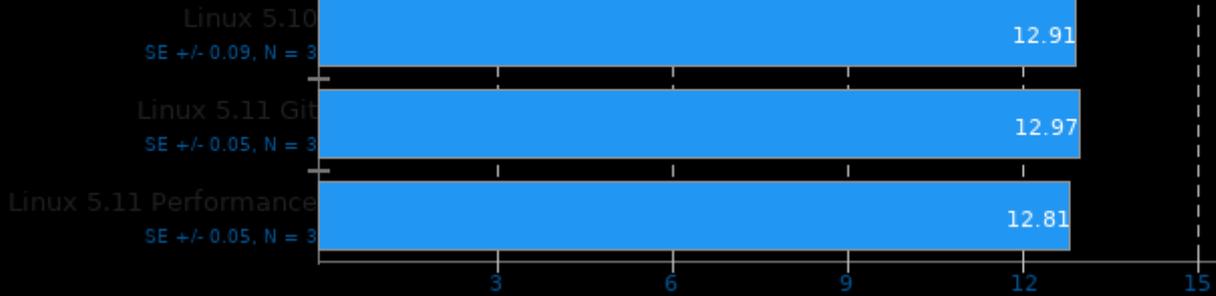
← Seconds, Fewer Is Better



## Dolfyn 0.527

Computational Fluid Dynamics

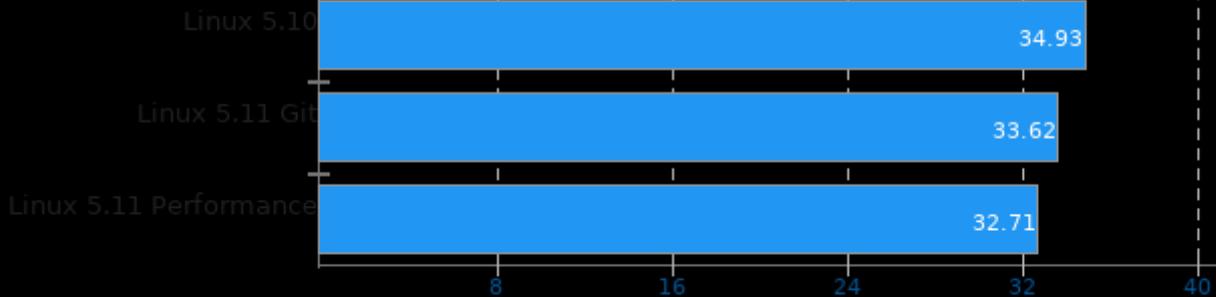
← Seconds, Fewer Is Better



## ECP-CANDLE 0.3

Benchmark: P1B2

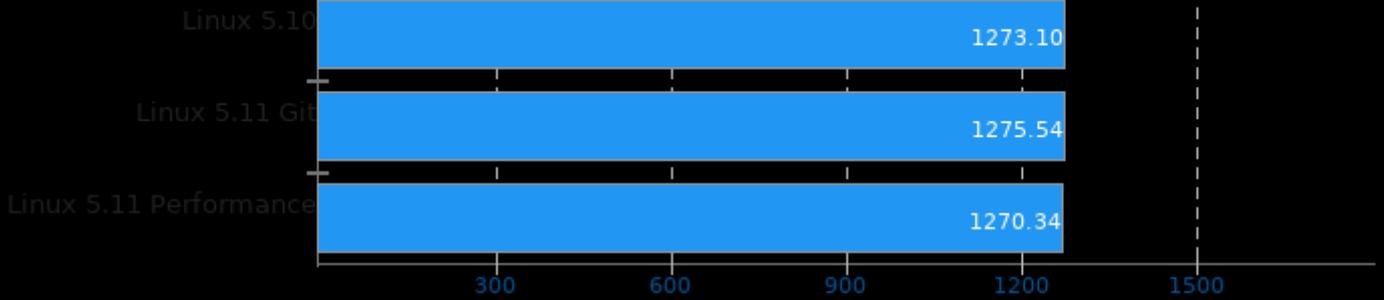
← Seconds, Fewer Is Better



## ECP-CANDLE 0.3

Benchmark: P3B1

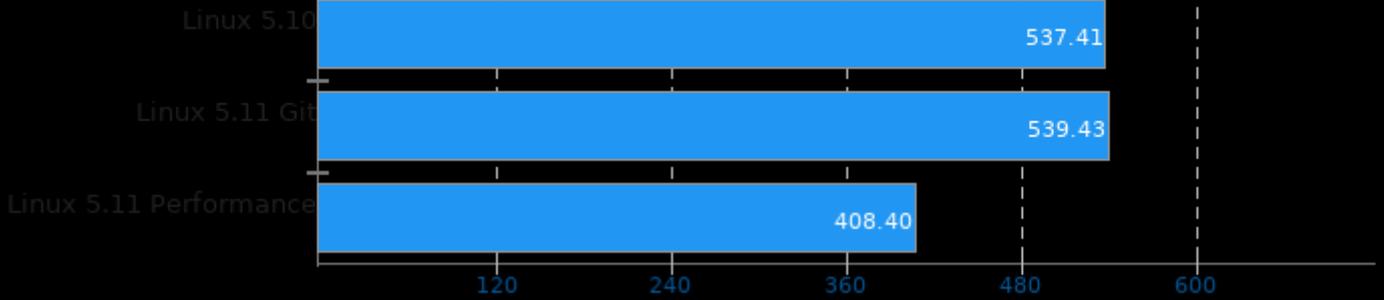
← Seconds, Fewer Is Better



## ECP-CANDLE 0.3

Benchmark: P3B2

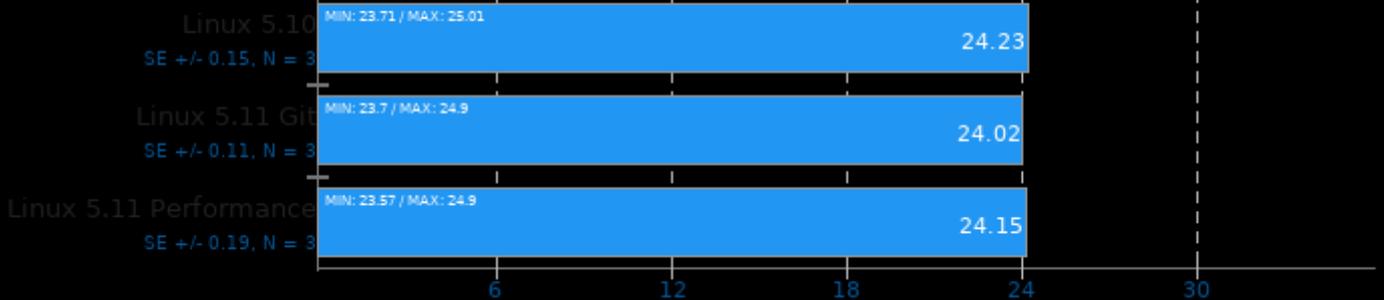
← Seconds, Fewer Is Better



## Embree 3.9.0

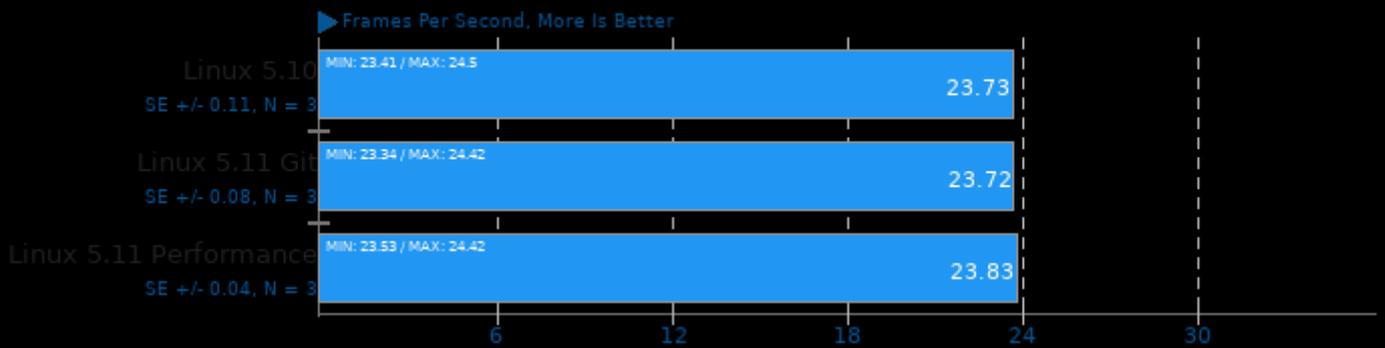
Binary: Pathtracer - Model: Crown

▶ Frames Per Second, More Is Better



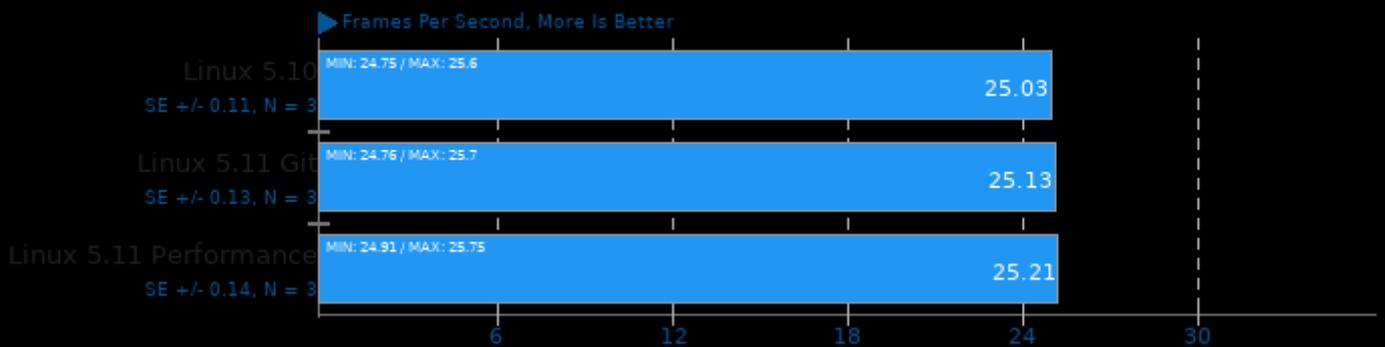
## Embree 3.9.0

Binary: Pathtracer ISPC - Model: Crown



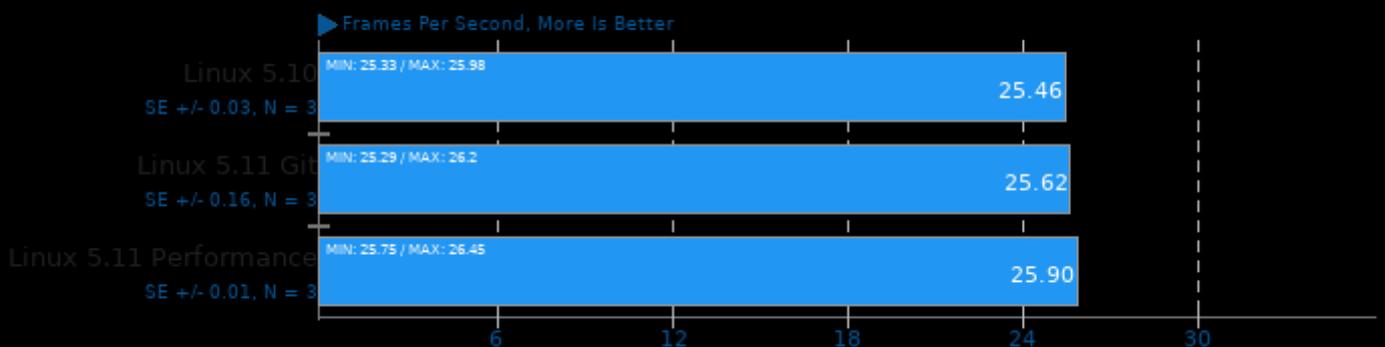
## Embree 3.9.0

Binary: Pathtracer - Model: Asian Dragon



## Embree 3.9.0

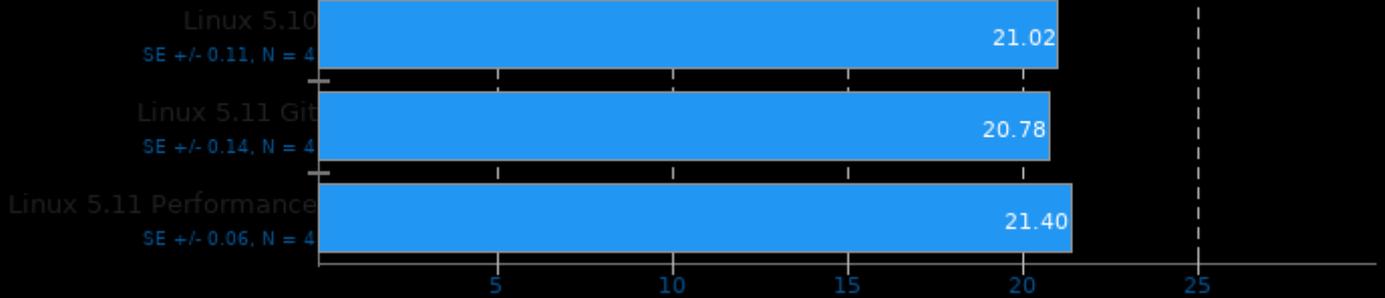
Binary: Pathtracer ISPC - Model: Asian Dragon



## eSpeak-NG Speech Engine 20200907

Text-To-Speech Synthesis

← Seconds, Fewer Is Better

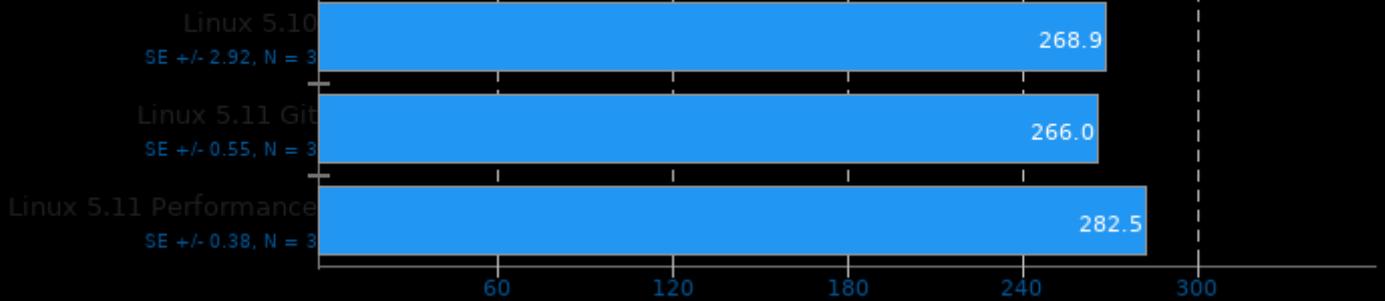


1. (CC) gcc options: -O2 -std=c99

## ET: Legacy 2.75

Renderer: Renderer2 - Resolution: 3840 x 2160

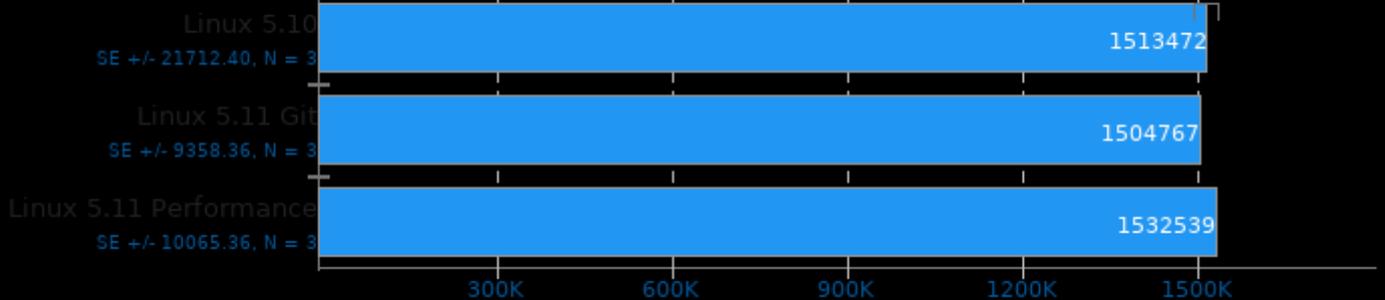
▶ Frames Per Second, More Is Better



## Facebook RocksDB 6.3.6

Test: Random Fill

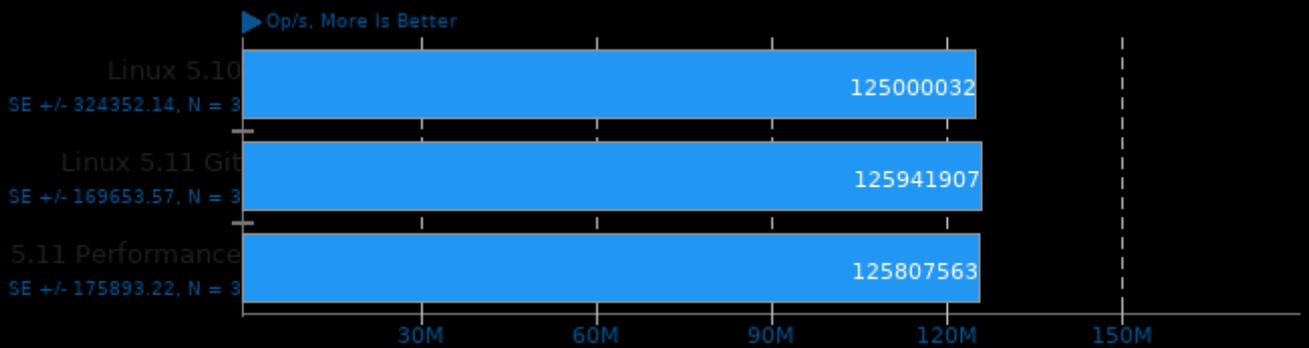
▶ Op/s, More Is Better



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

## Facebook RocksDB 6.3.6

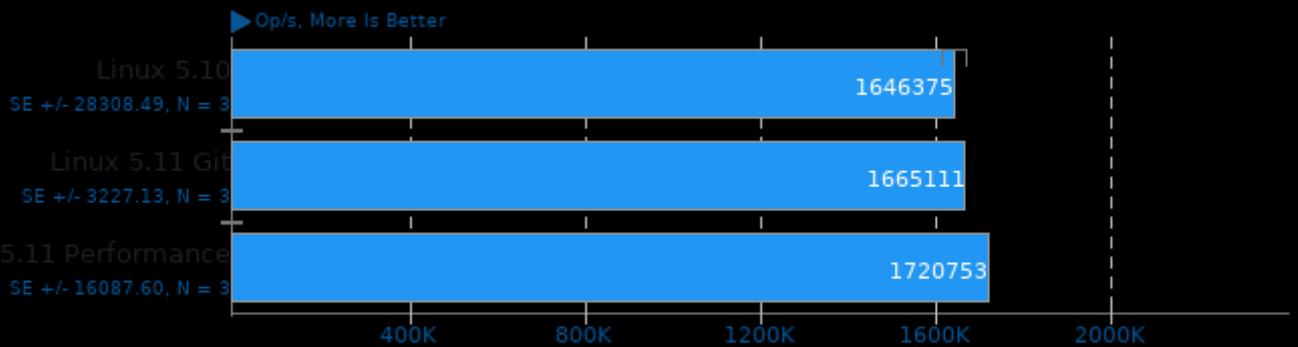
Test: Random Read



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

## Facebook RocksDB 6.3.6

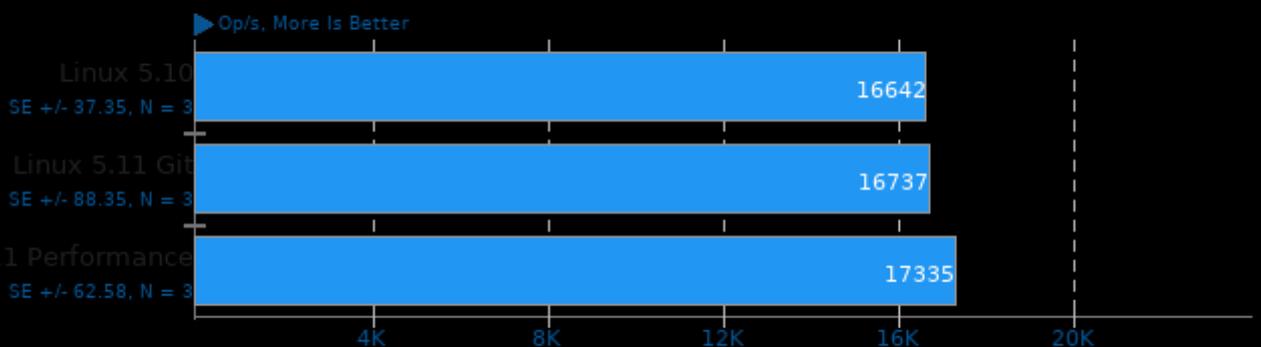
Test: Sequential Fill



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

## Facebook RocksDB 6.3.6

Test: Random Fill Sync

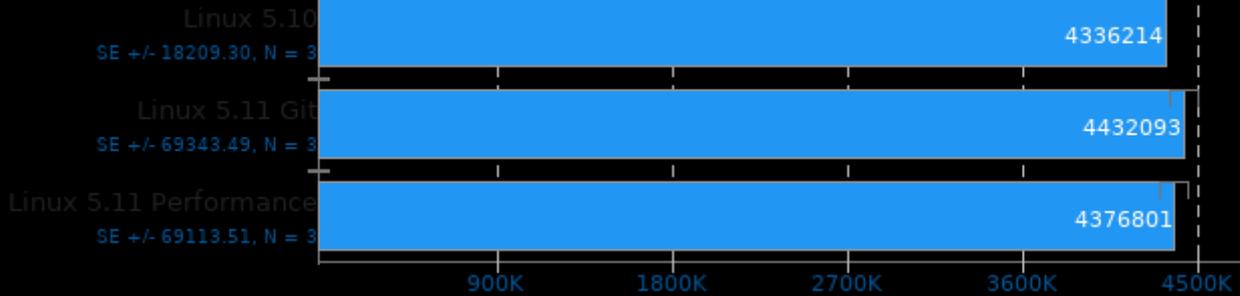


1. (CXX) g++ options: -O3 -march=native -std=c++11 -fno-builtin-memcmp -fno-rtti -rdynamic -lpthread

## Facebook RocksDB 6.3.6

Test: Read While Writing

Op/s, More Is Better

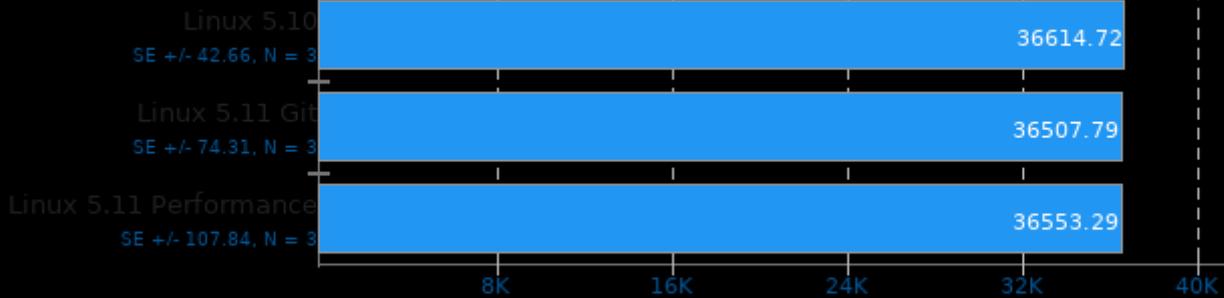


1. (CXX) g++ options: -O3 -march=native -std=c++11 -fno-builtin-memcmp -fno-rtti -rdynamic -lpthread

## FFTE 7.0

N=256, 3D Complex FFT Routine

MFLOPS, More Is Better

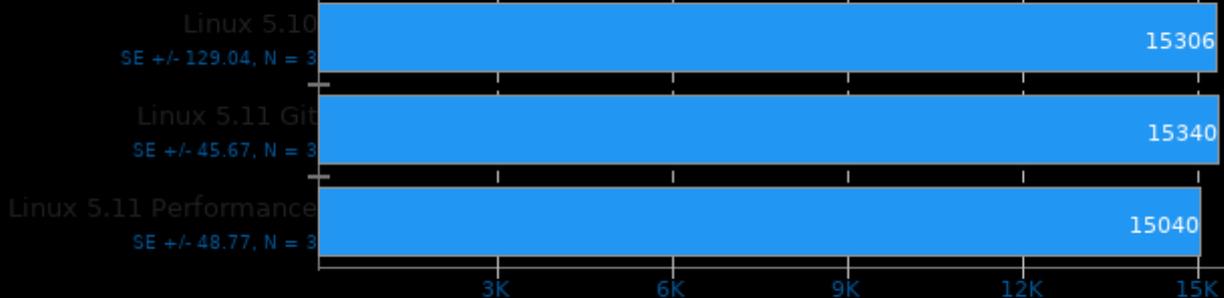


1. (F9X) gfortran options: -O3 -fomit-frame-pointer -fopenmp

## FFTW 3.3.6

Build: Stock - Size: 1D FFT Size 32

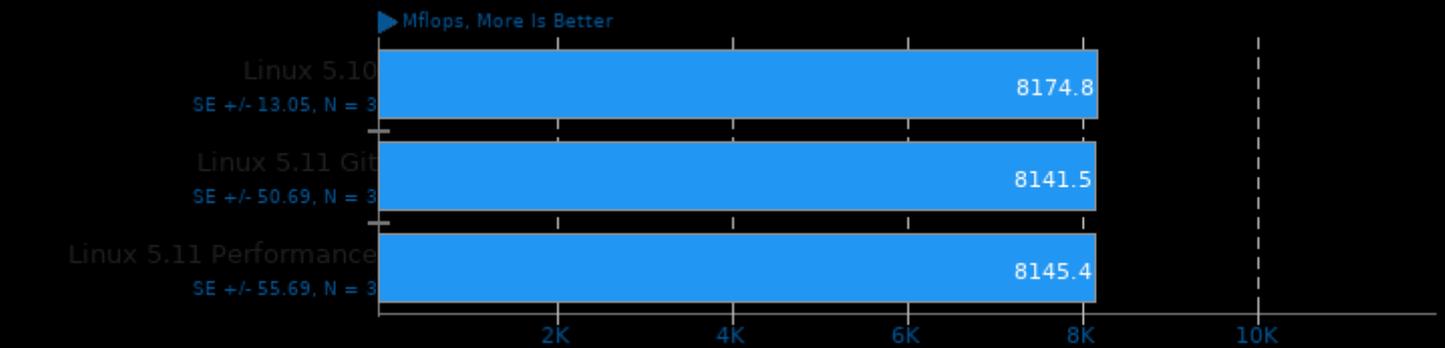
Mflops, More Is Better



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

## FFTW 3.3.6

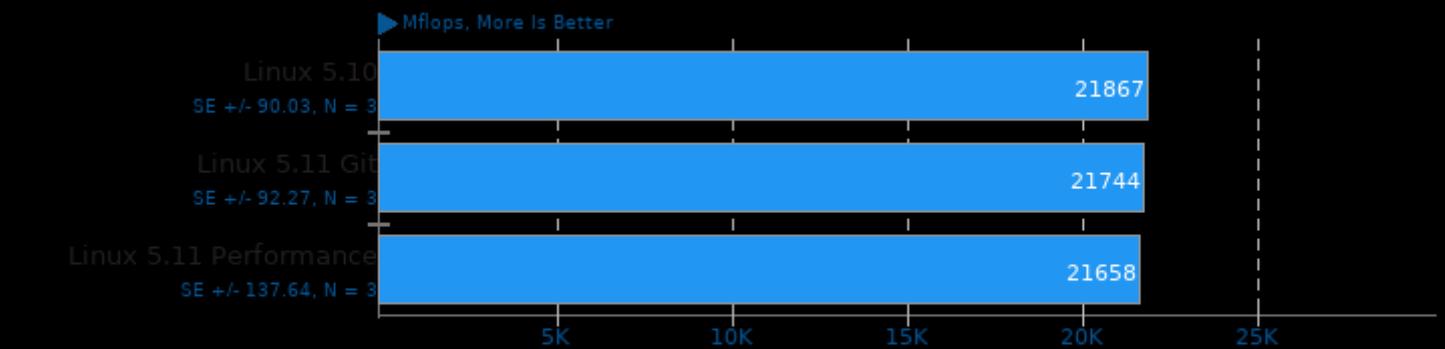
Build: Stock - Size: 2D FFT Size 4096



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

## FFTW 3.3.6

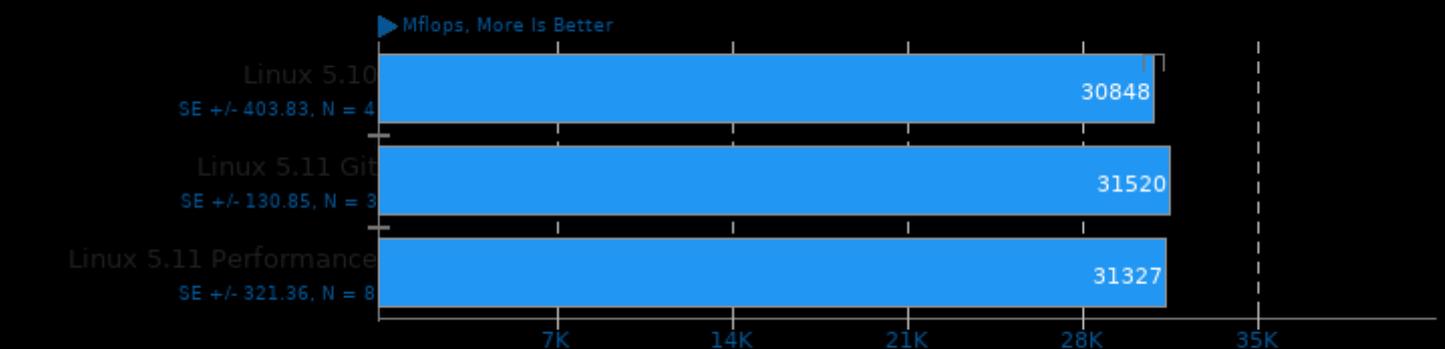
Build: Float + SSE - Size: 1D FFT Size 32



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

## FFTW 3.3.6

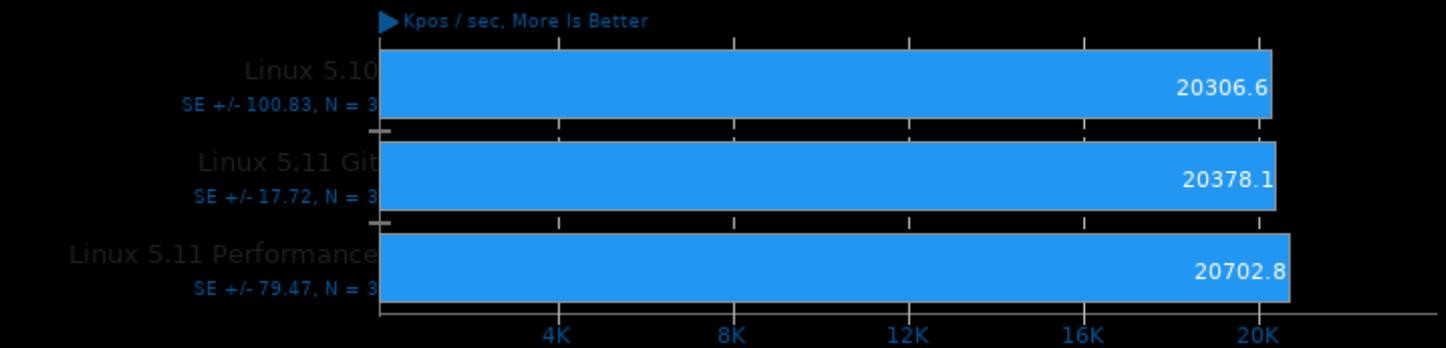
Build: Float + SSE - Size: 2D FFT Size 4096



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

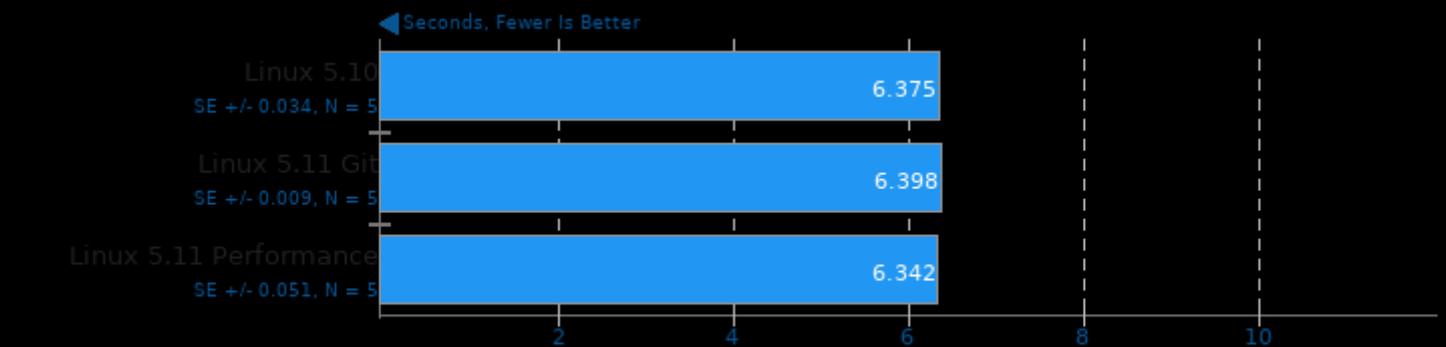
## Fhourstones 3.1

Complex Connect-4 Solving



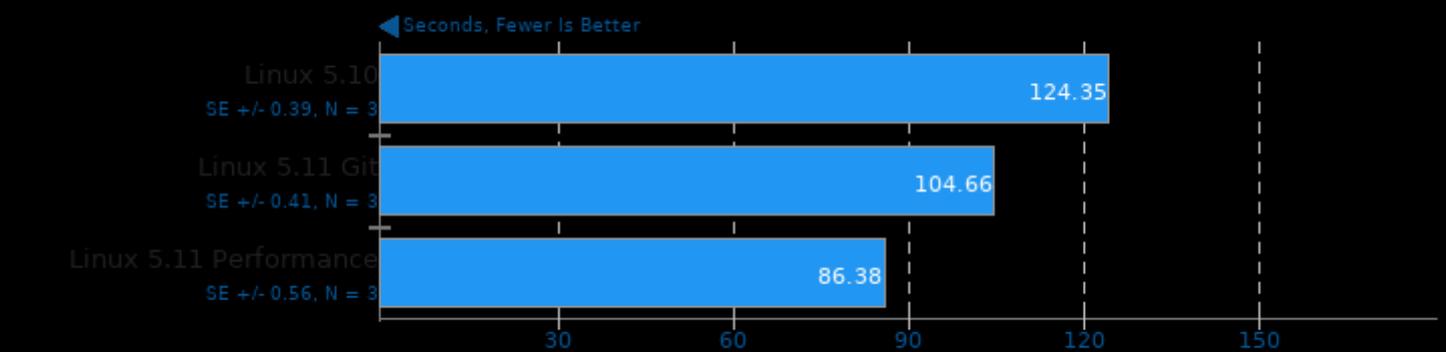
## FLAC Audio Encoding 1.3.2

WAV To FLAC



## G'MIC

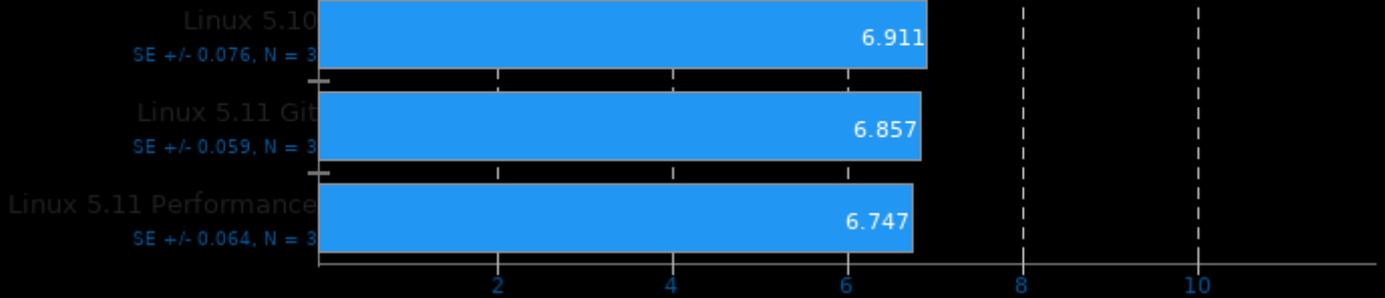
Test: 2D Function Plotting, 1000 Times



## GEGL

Operation: Crop

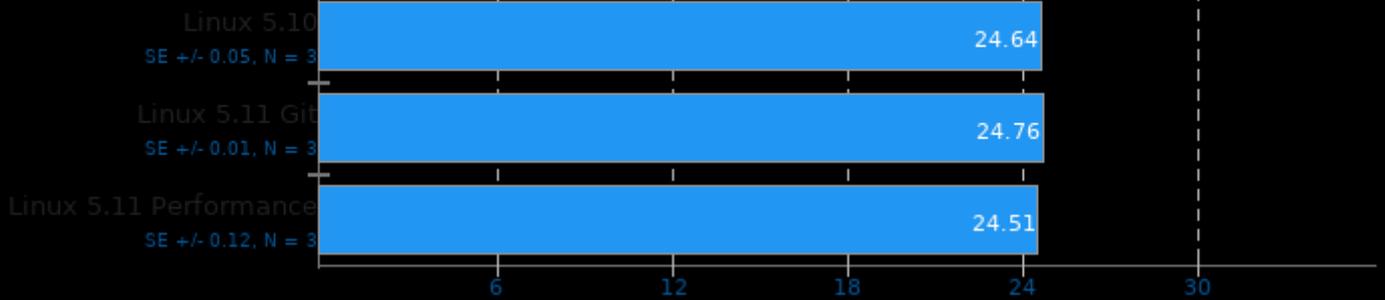
← Seconds, Fewer Is Better



## GEGL

Operation: Reflect

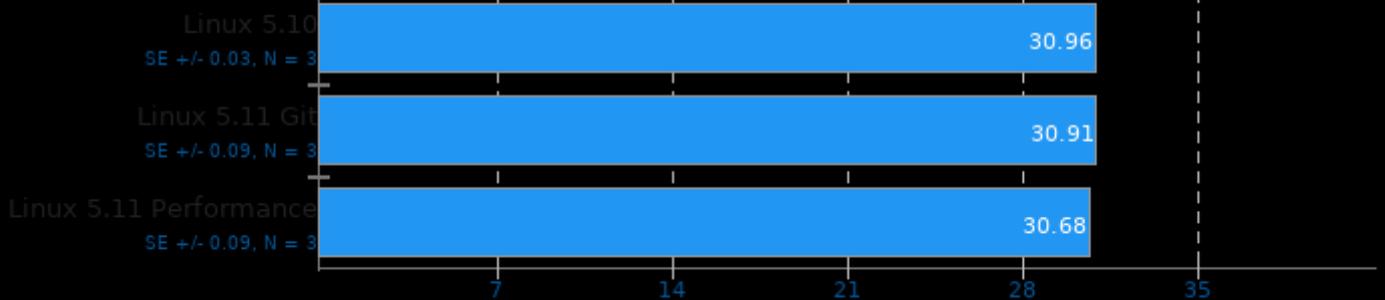
← Seconds, Fewer Is Better



## GEGL

Operation: Rotate 90 Degrees

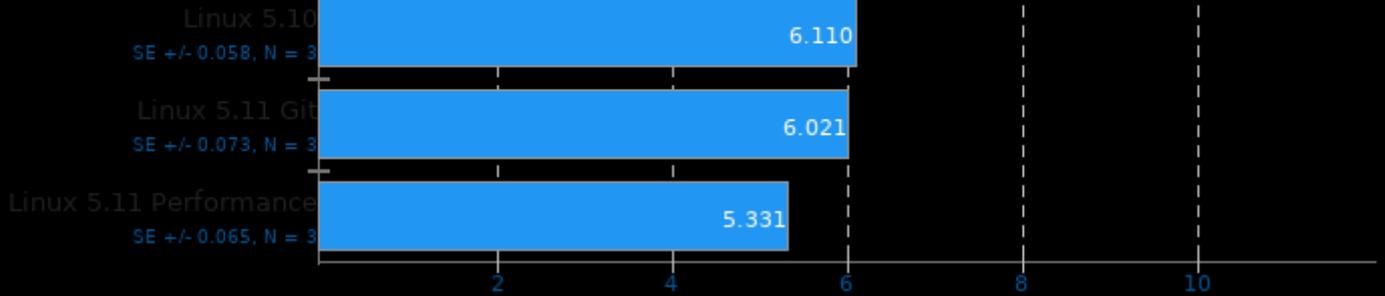
← Seconds, Fewer Is Better



## GIMP 2.10.18

Test: resize

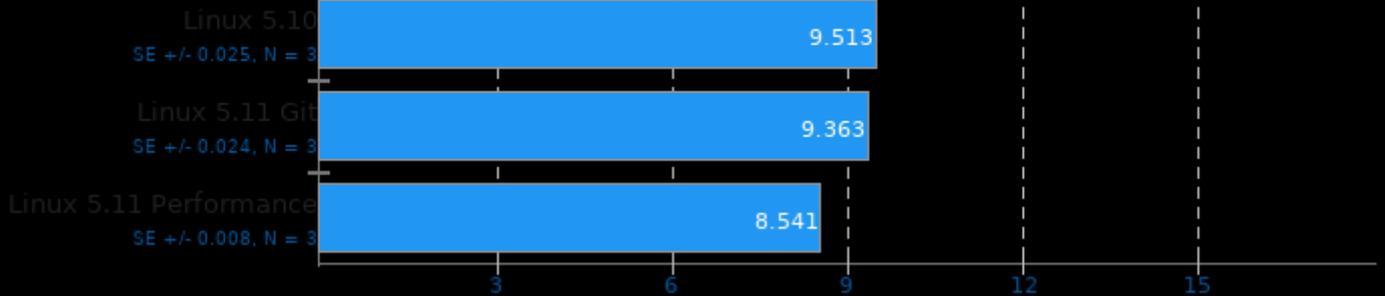
← Seconds, Fewer Is Better



## GIMP 2.10.18

Test: rotate

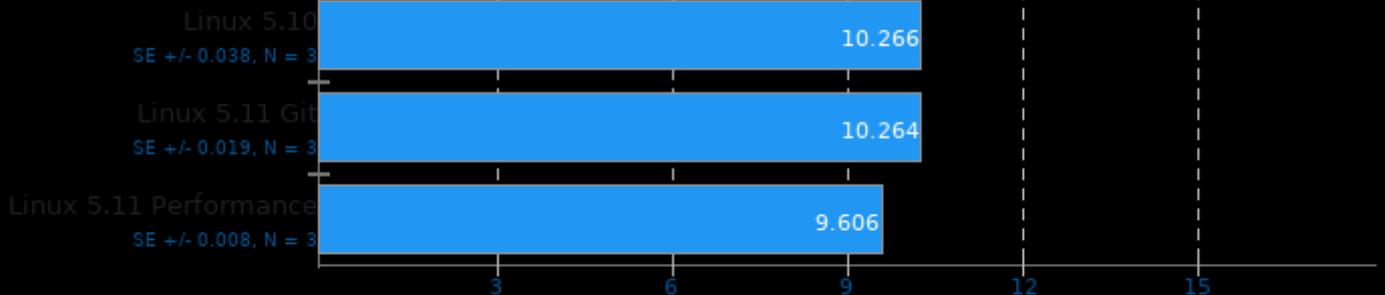
← Seconds, Fewer Is Better



## GIMP 2.10.18

Test: auto-levels

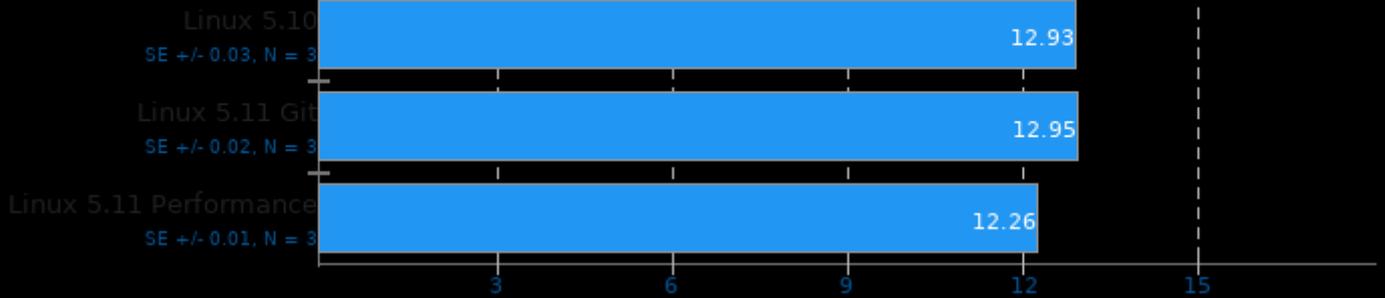
← Seconds, Fewer Is Better



## GIMP 2.10.18

Test: unsharp-mask

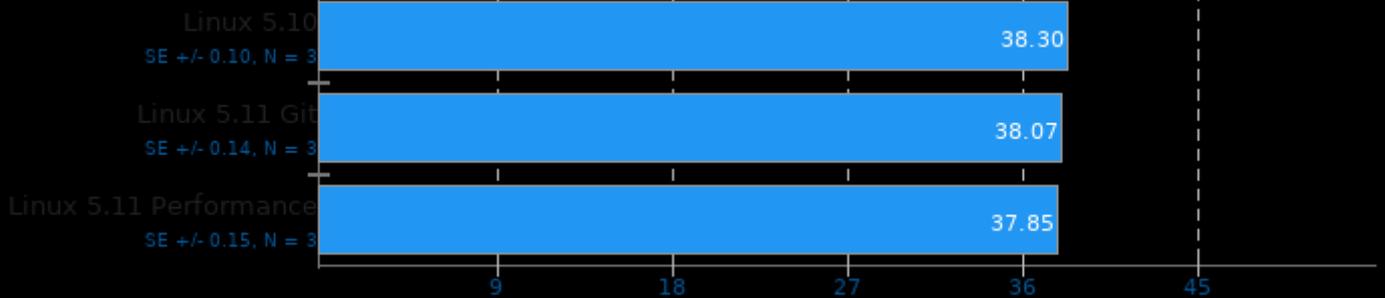
← Seconds, Fewer Is Better



## Git

Time To Complete Common Git Commands

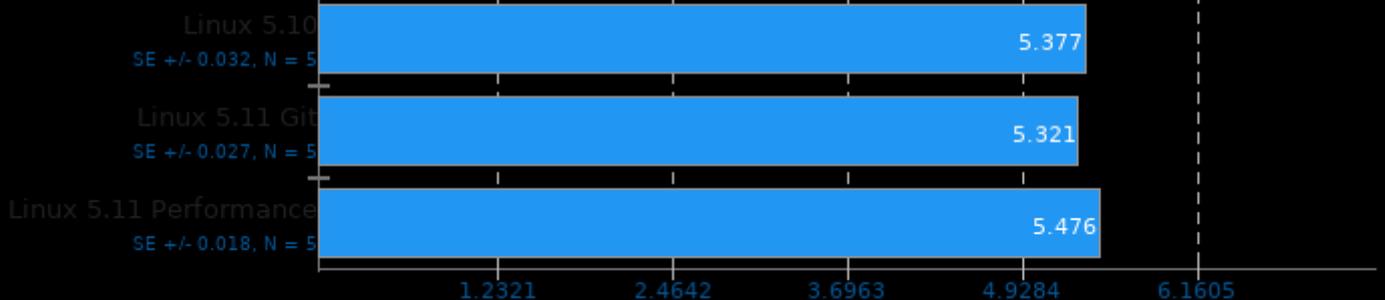
← Seconds, Fewer Is Better



1. git version 2.25.1

## GNU Octave Benchmark 5.2.0

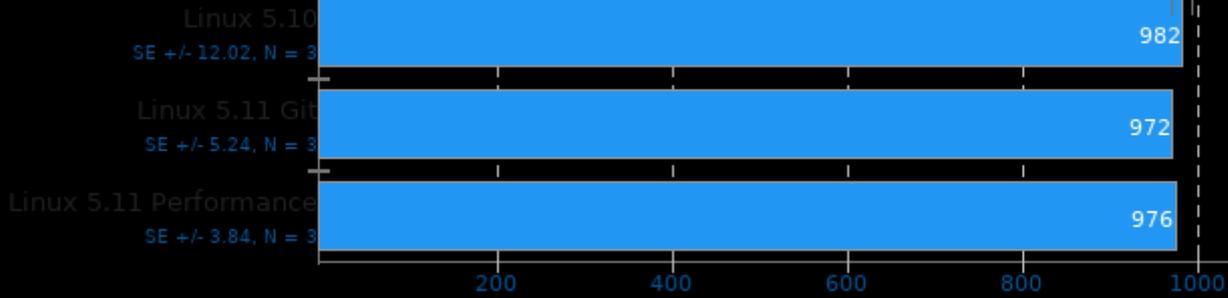
← Seconds, Fewer Is Better



## GraphicsMagick 1.3.33

Operation: Rotate

Iterations Per Minute, More Is Better

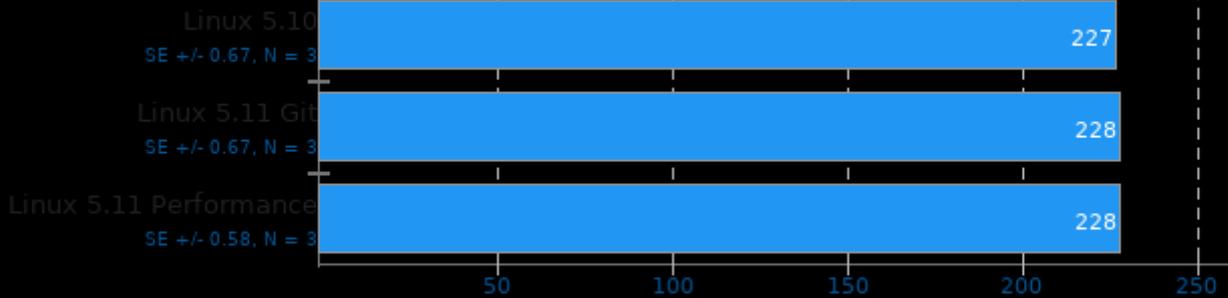


1. (CC) gcc options: -fopenmp -O2 -pthread -ljpeg -lwebp -lwebpmux -ltiff -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -llzma -lbz2 -lxml2 -lz -lm -lpthread

## GraphicsMagick 1.3.33

Operation: Sharpen

Iterations Per Minute, More Is Better

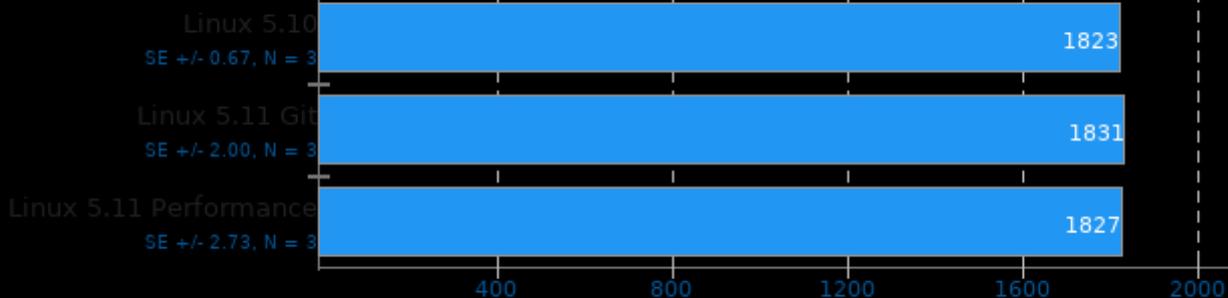


1. (CC) gcc options: -fopenmp -O2 -pthread -ljpeg -lwebp -lwebpmux -ltiff -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -llzma -lbz2 -lxml2 -lz -lm -lpthread

## GraphicsMagick 1.3.33

Operation: Resizing

Iterations Per Minute, More Is Better

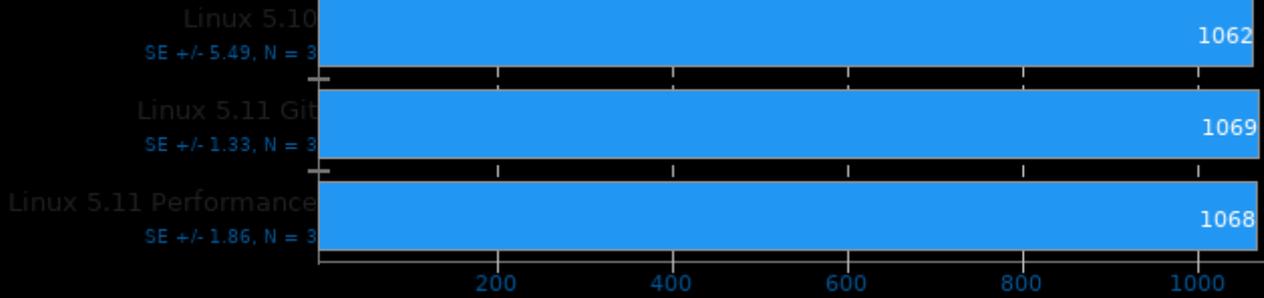


1. (CC) gcc options: -fopenmp -O2 -pthread -ljpeg -lwebp -lwebpmux -ltiff -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -llzma -lbz2 -lxml2 -lz -lm -lpthread

## GraphicsMagick 1.3.33

Operation: HWB Color Space

Iterations Per Minute, More Is Better

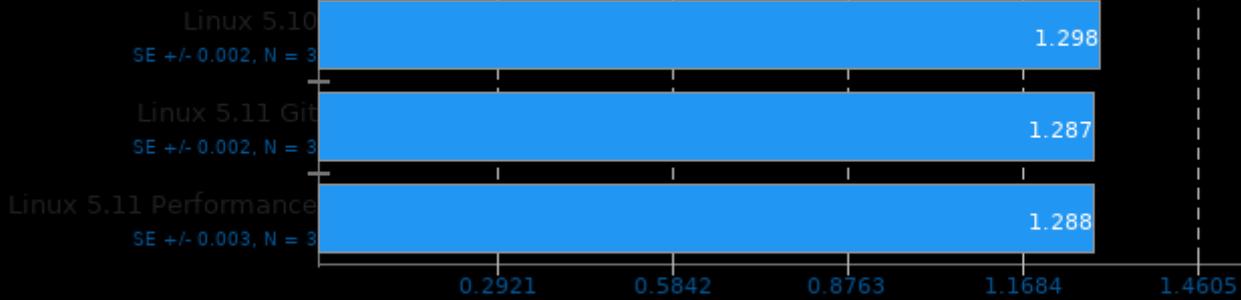


1. (CC) gcc options: -fopenmp -O2 -pthread -ljbig -lwebp -lwebpmux -ltiff -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -lZma -lbz2 -lxml2 -lz -lm -lpthread

## GROMACS 2020.3

Water Benchmark

Ns Per Day, More Is Better

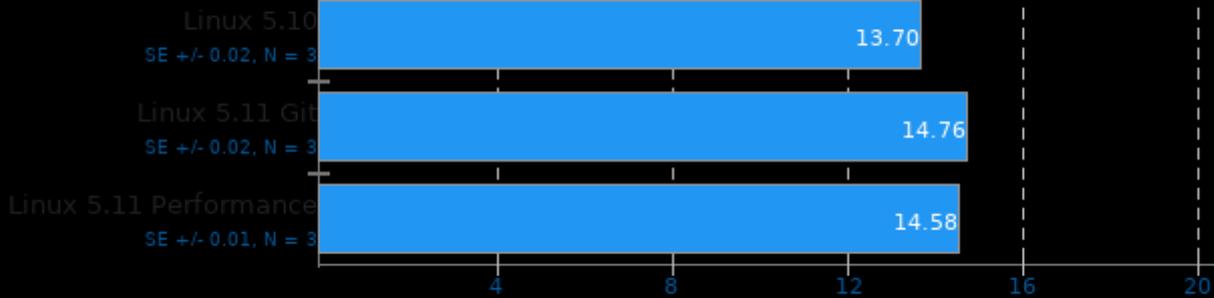


1. (CXX) g++ options: -O3 -pthread -lrt -lpthread -lm

## Hackbench

Count: 8 - Type: Thread

Seconds, Fewer Is Better

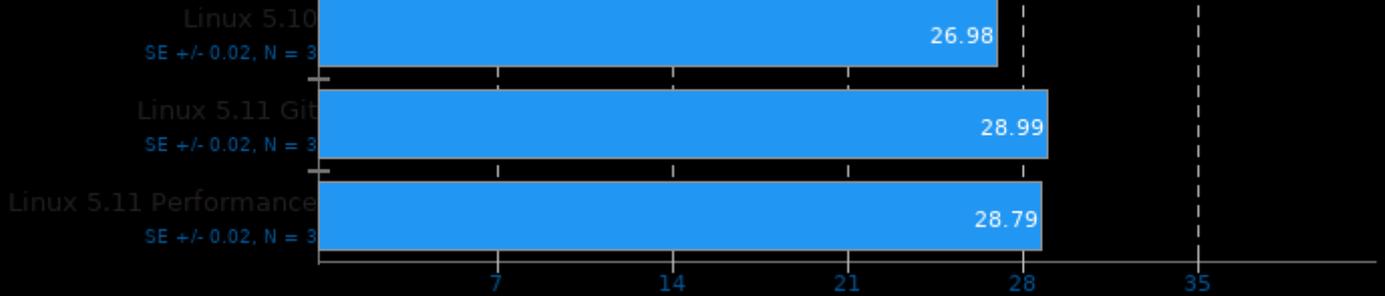


1. (CC) gcc options: -lpthread

## Hackbench

Count: 16 - Type: Thread

← Seconds, Fewer Is Better

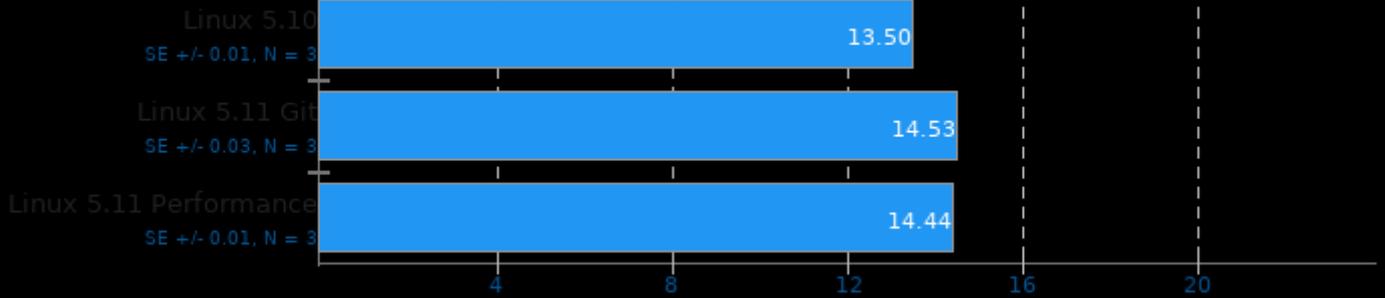


1. (CC) gcc options: -lpthread

## Hackbench

Count: 8 - Type: Process

← Seconds, Fewer Is Better

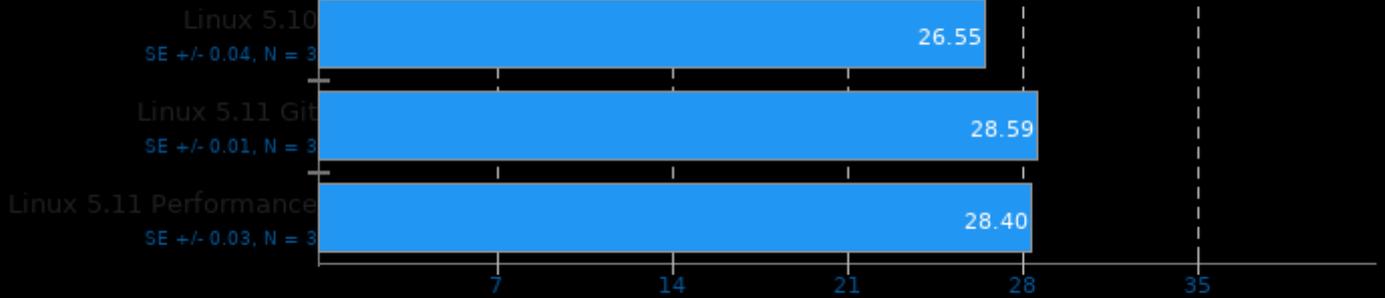


1. (CC) gcc options: -lpthread

## Hackbench

Count: 16 - Type: Process

← Seconds, Fewer Is Better

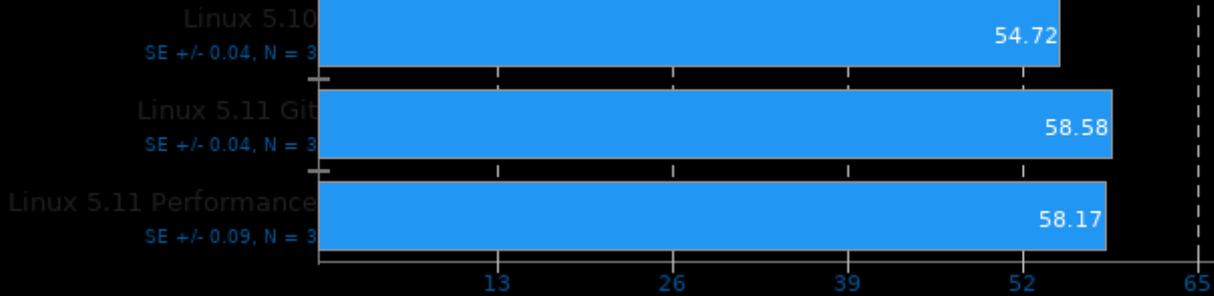


1. (CC) gcc options: -lpthread

## Hackbench

Count: 32 - Type: Process

← Seconds, Fewer Is Better

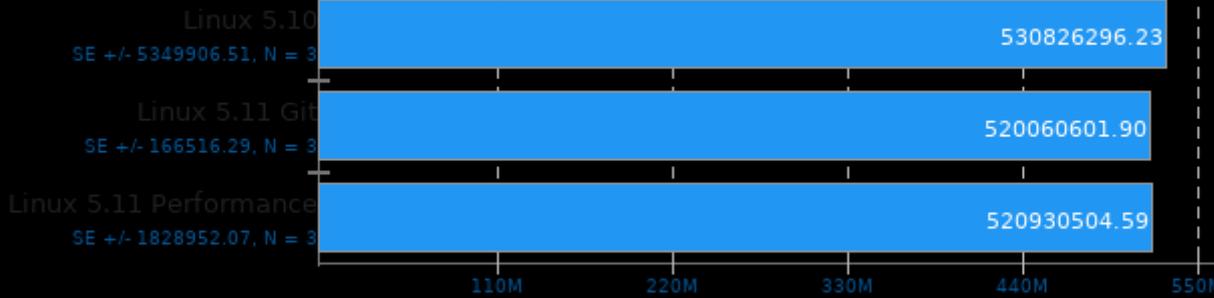


1. (CC) gcc options: -lpthread

## Hierarchical INTegration 1.0

Test: FLOAT

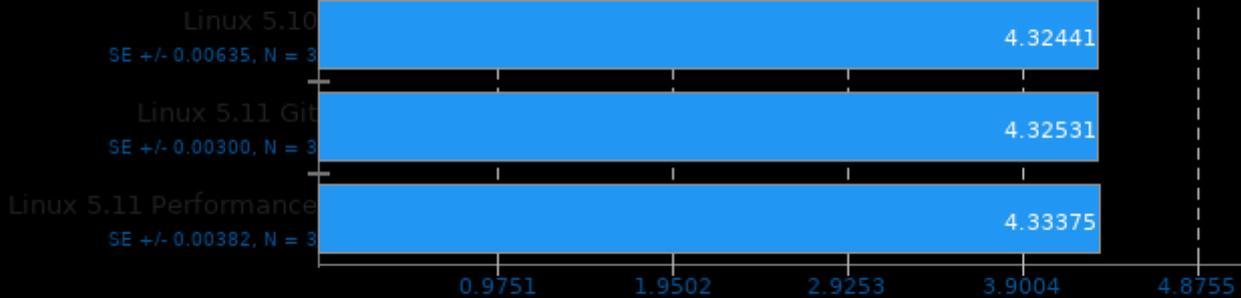
▶ QUIPs, More Is Better



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

## High Performance Conjugate Gradient 3.1

▶ GFLOP/s, More Is Better

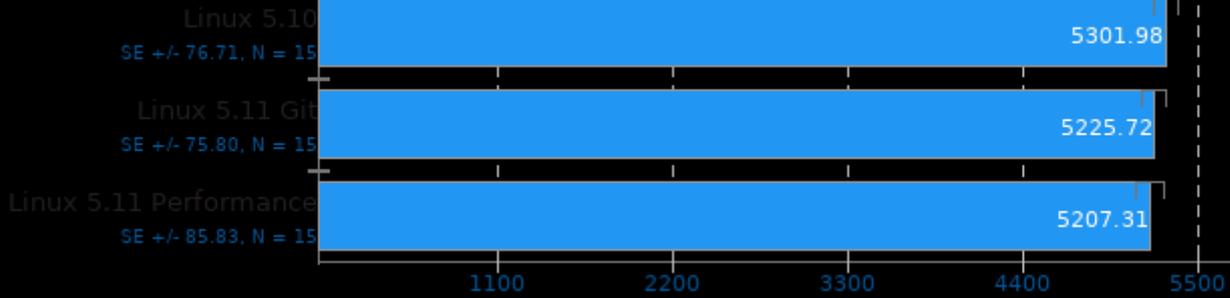


1. (CXX) g++ options: -O3 -ffast-math -ftriple-vectorize -pthread -lmpi\_cxx -lmpi

## Himeno Benchmark 3.0

Poisson Pressure Solver

► MFLOPS, More Is Better

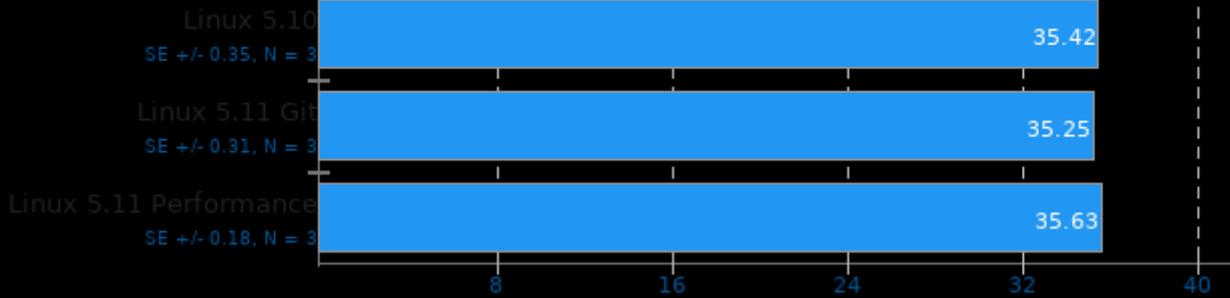


1. (CC) gcc options: -O3 -mavx2

## Hugin

Panorama Photo Assistant + Stitching Time

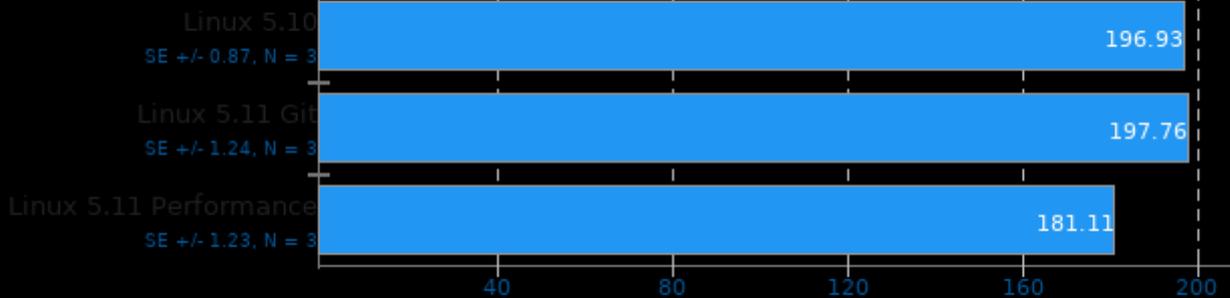
◄ Seconds, Fewer Is Better



## Incompact3D 2020-09-17

Input: Cylinder

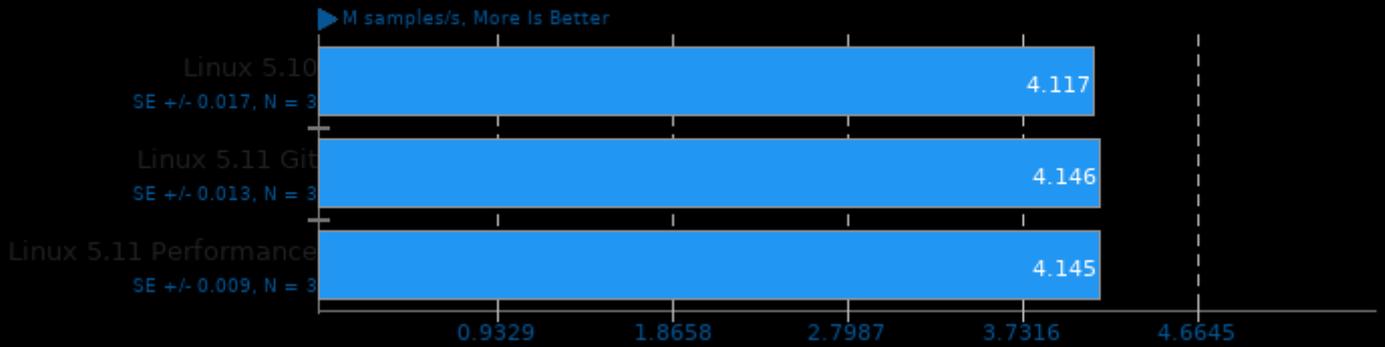
◄ Seconds, Fewer Is Better



1. (F9X) gfortran options: -cpp -funroll-loops -floop-optimize -fcray-pointer -fbacktrace -pthread -mpi\_usempif08 -mpi\_mpifh -mpi

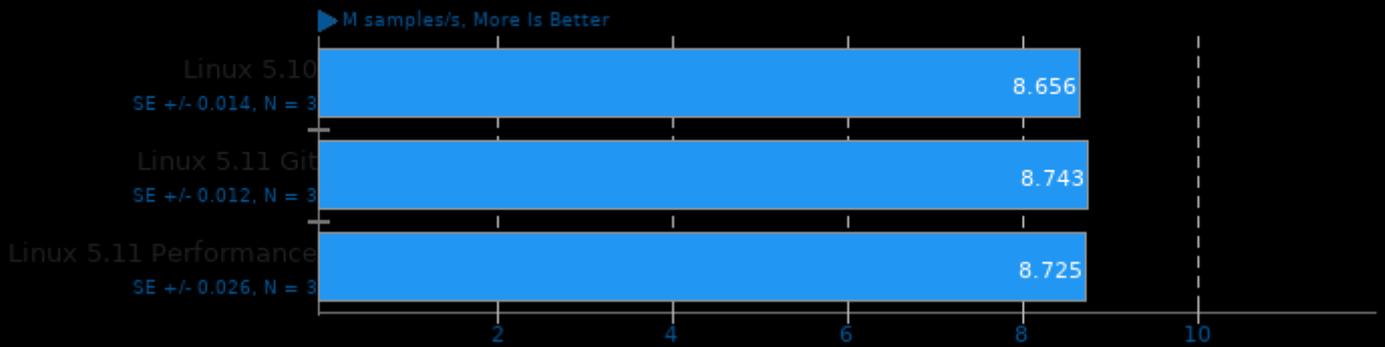
## IndigoBench 4.4

Acceleration: CPU - Scene: Bedroom



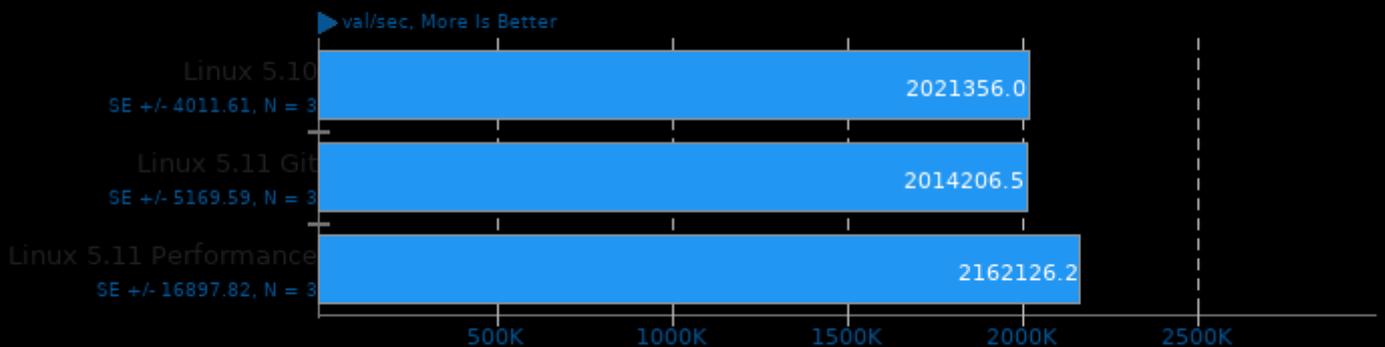
## IndigoBench 4.4

Acceleration: CPU - Scene: Supercar



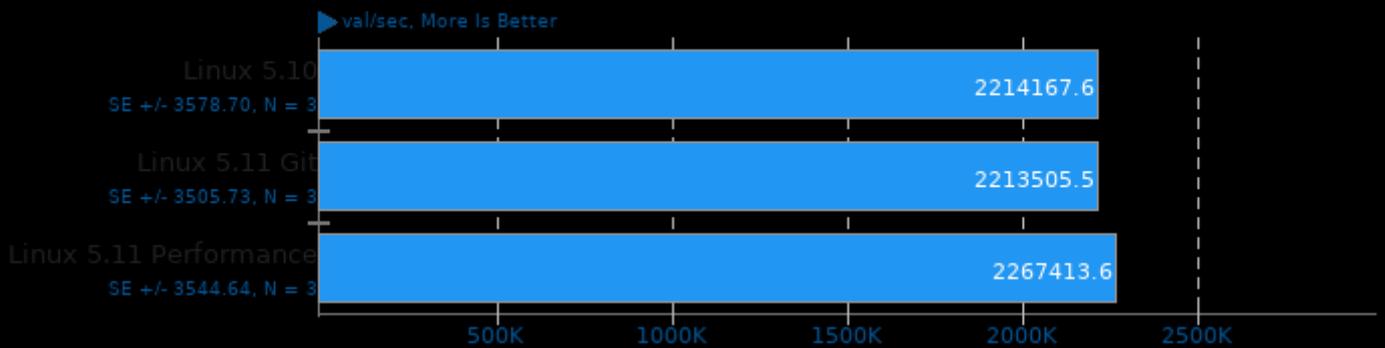
## InfluxDB 1.8.2

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



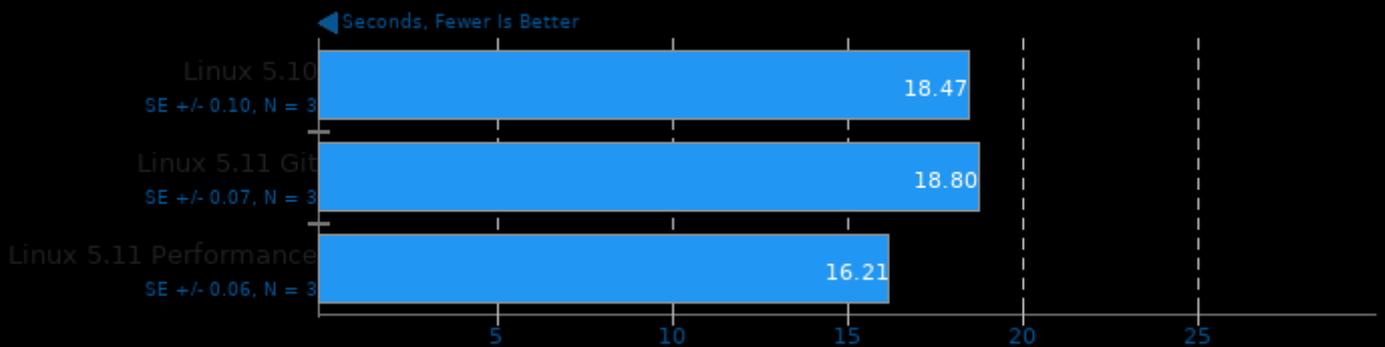
## InfluxDB 1.8.2

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



## Inkscape

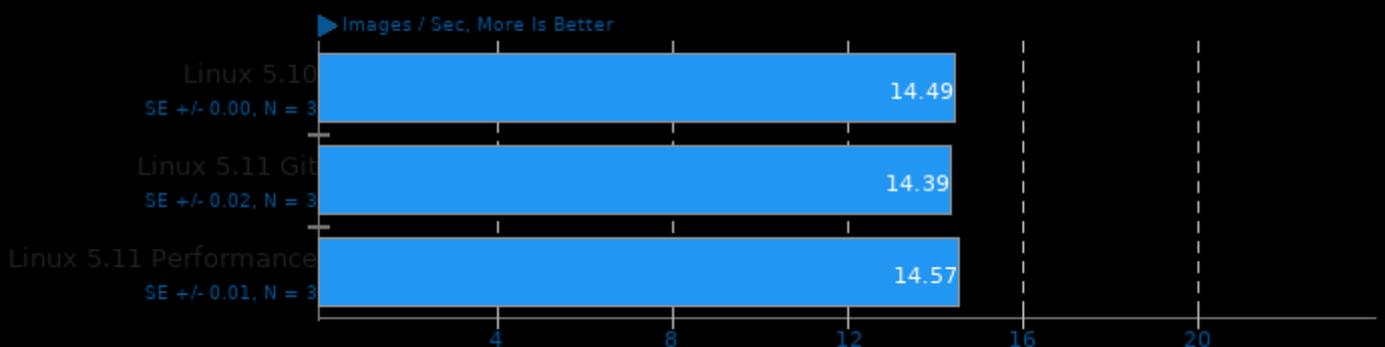
Operation: SVG Files To PNG



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

## Intel Open Image Denoise 1.2.0

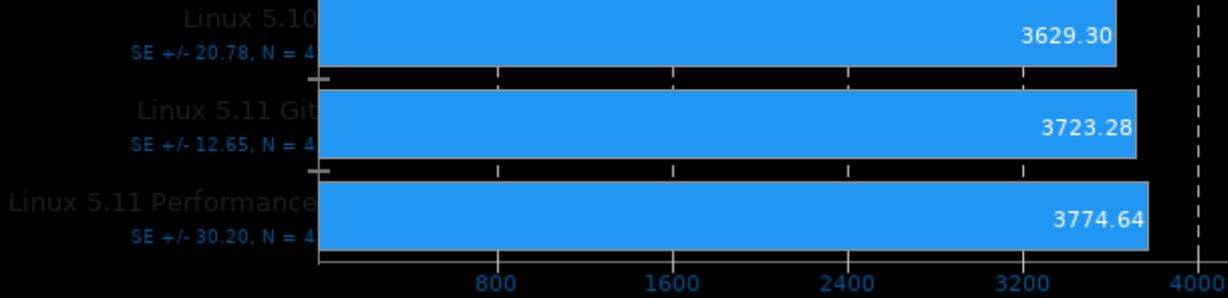
Scene: Memorial



## Java SciMark 2.0

Computational Test: Composite

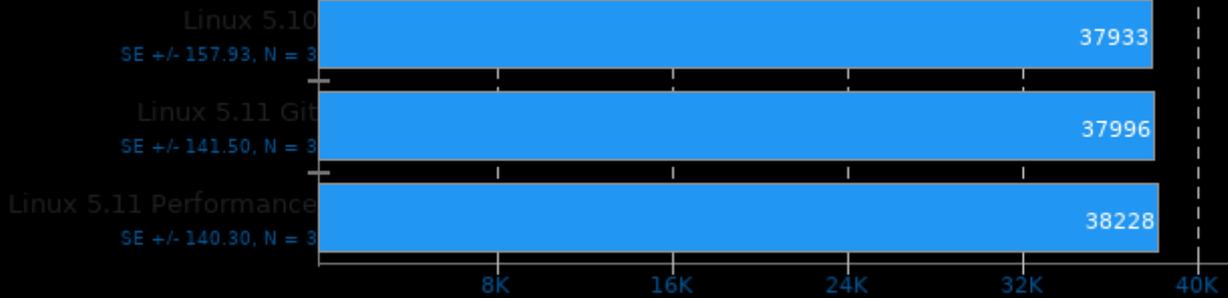
► Mflops, More Is Better



## John The Ripper 1.9.0-jumbo-1

Test: Blowfish

► Real C/S, More Is Better

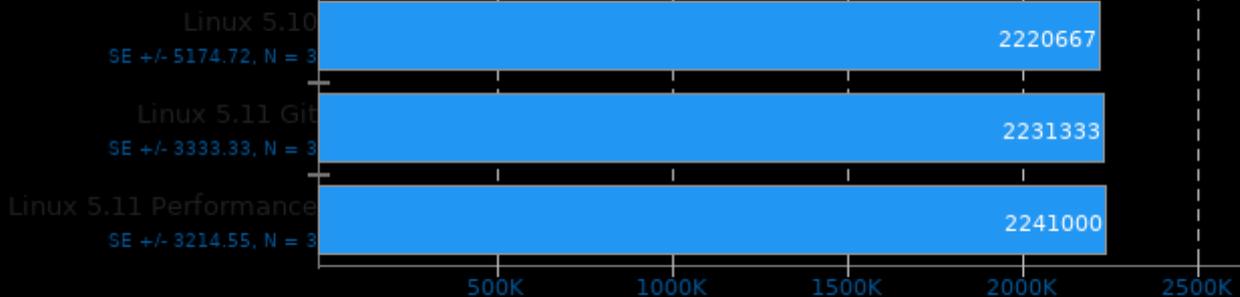


1. (CC) gcc options: -m64 -lssl -lcrypto -fopenmp -lgmp -pthread -lm -lz -ldl -lcrypt -lbz2

## John The Ripper 1.9.0-jumbo-1

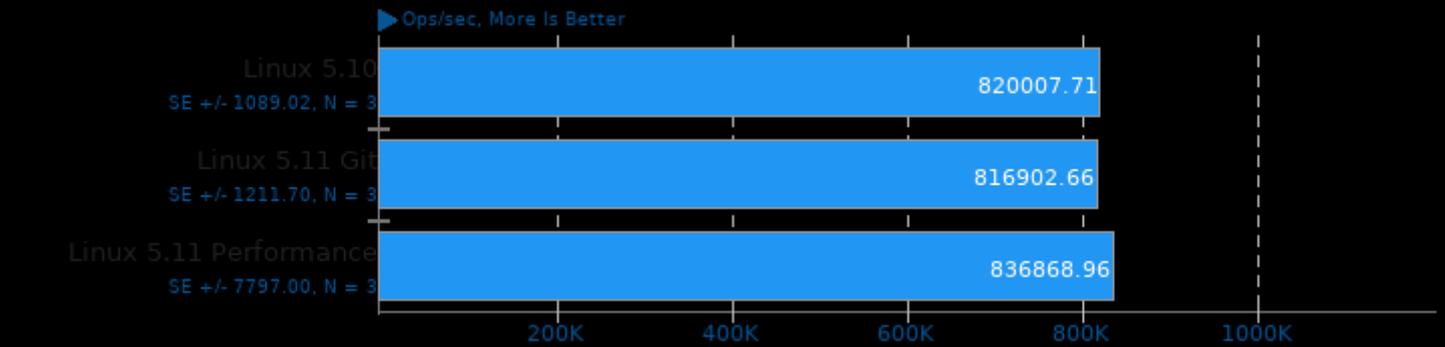
Test: MD5

► Real C/S, More Is Better



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

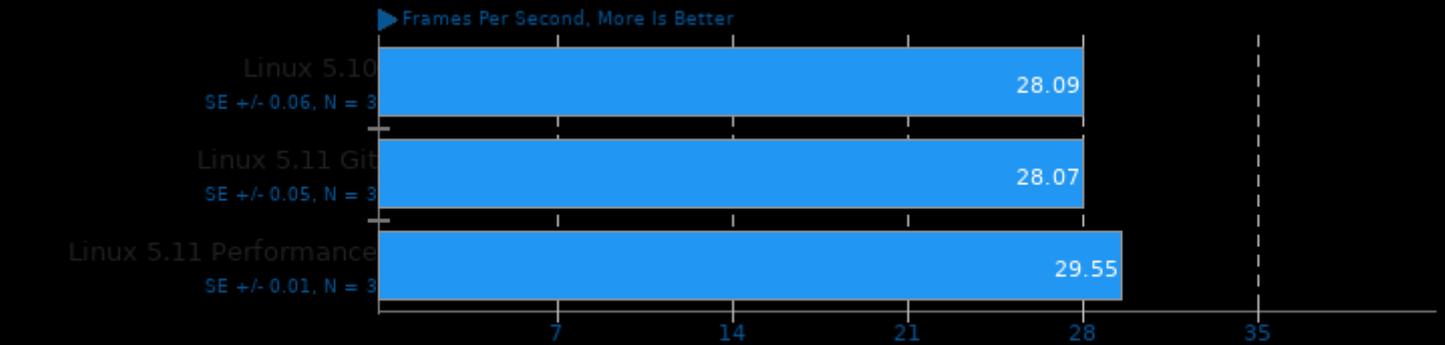
## KeyDB 6.0.16



1. (CXX) g++ options: -O2 -levent\_openssl -levent -lcrypto -lssl -lthread -lz -lpcrc

## Kvazaar 2.0

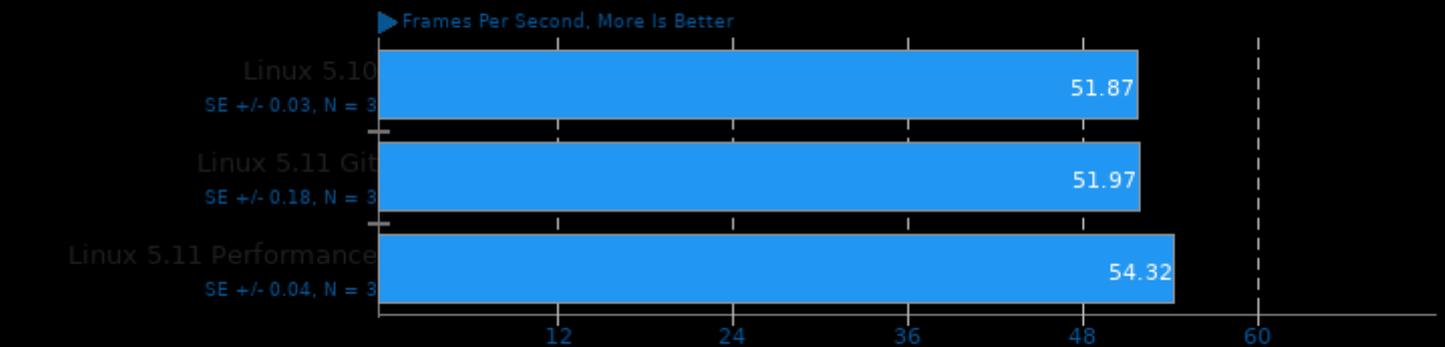
Video Input: Bosphorus 4K - Video Preset: Very Fast



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

## Kvazaar 2.0

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

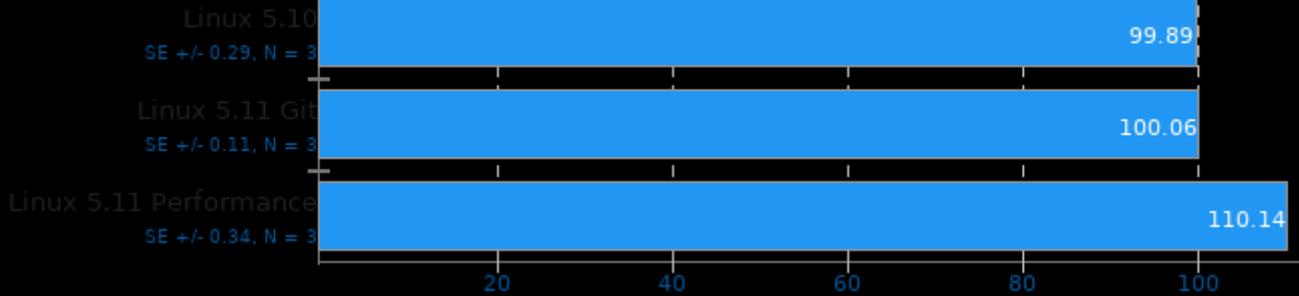


1. (CC) gcc options: -pthread -free-vectorize -fvisibility=hidden -O2 -lthread -lm -lrt

### Kvazaar 2.0

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

▶ Frames Per Second, More Is Better

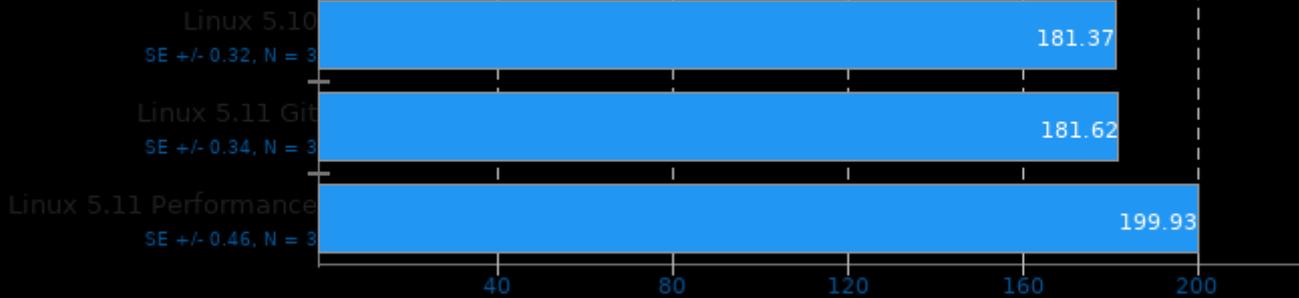


1. (CC) gcc options: -pthread -free-vectorize -fvisibility=hidden -O2 -lthread -lm -lrt

### Kvazaar 2.0

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

▶ Frames Per Second, More Is Better

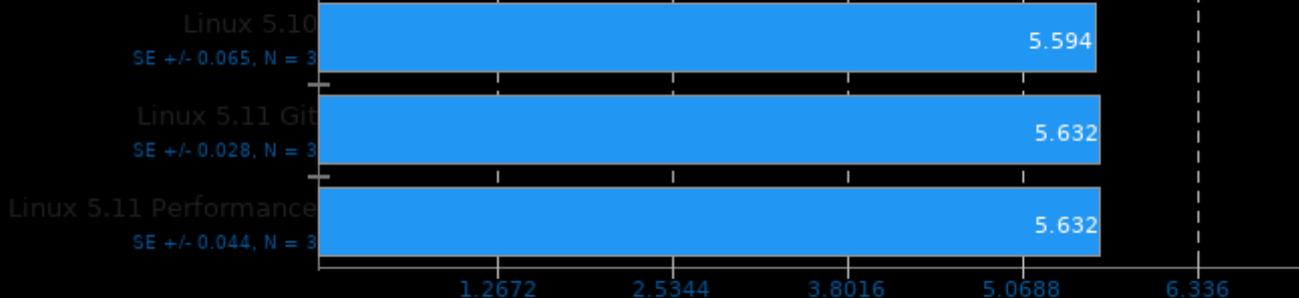


1. (CC) gcc options: -pthread -free-vectorize -fvisibility=hidden -O2 -lthread -lm -lrt

### LAME MP3 Encoding 3.100

WAV To MP3

◀ Seconds, Fewer Is Better

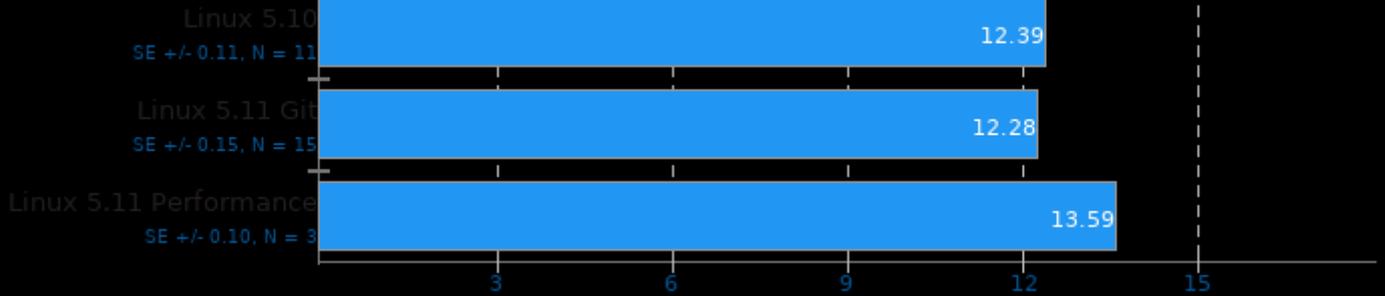


1. (CC) gcc options: -O3 -fast-math -funroll-loops -fschedule-insns2 -fbranch-count-rag -fforce-addr -pipe -lncurses -lm

## LAMMPS Molecular Dynamics Simulator 29Oct2020

Model: Rhodopsin Protein

ns/day, More Is Better

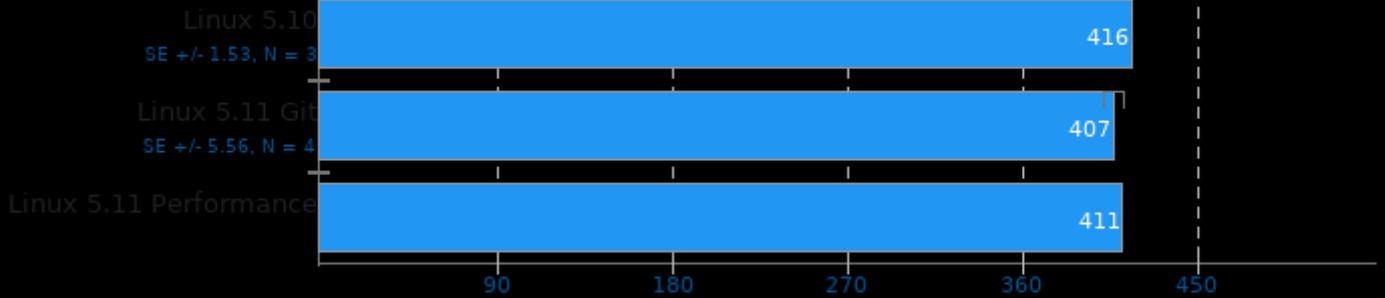


1. (CXX) g++ options: -O3 -pthread -lm

## LeelaChessZero 0.26

Backend: BLAS

Nodes Per Second, More Is Better

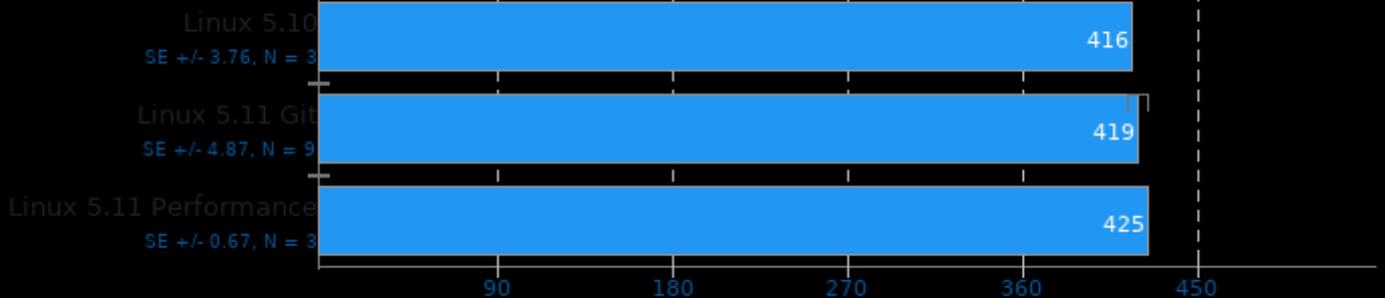


1. (CXX) g++ options: -fno -pthread

## LeelaChessZero 0.26

Backend: Eigen

Nodes Per Second, More Is Better

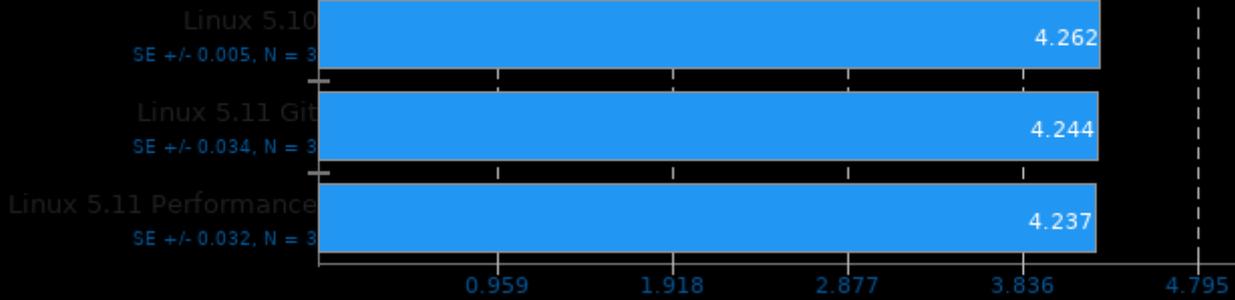


1. (CXX) g++ options: -fno -pthread

## libavif avifenc 0.7.3

Encoder Speed: 8

◀ Seconds, Fewer Is Better

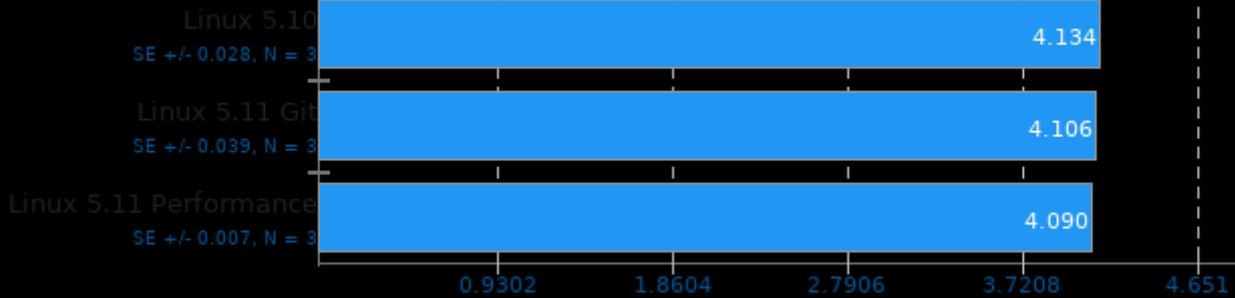


1. (CXX) g++ options: -O3 -fPIC

## libavif avifenc 0.7.3

Encoder Speed: 10

◀ Seconds, Fewer Is Better

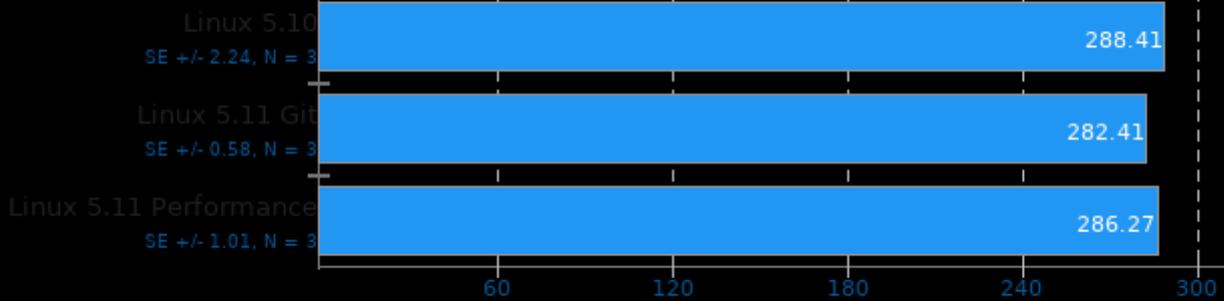


1. (CXX) g++ options: -O3 -fPIC

## libjpeg-turbo tjbenc 2.0.2

Test: Decompression Throughput

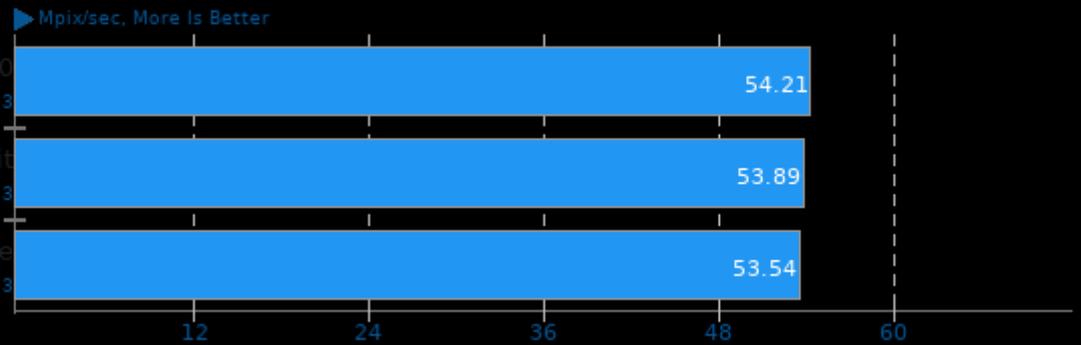
▶ Megapixels/sec, More Is Better



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

## LibRaw 0.20

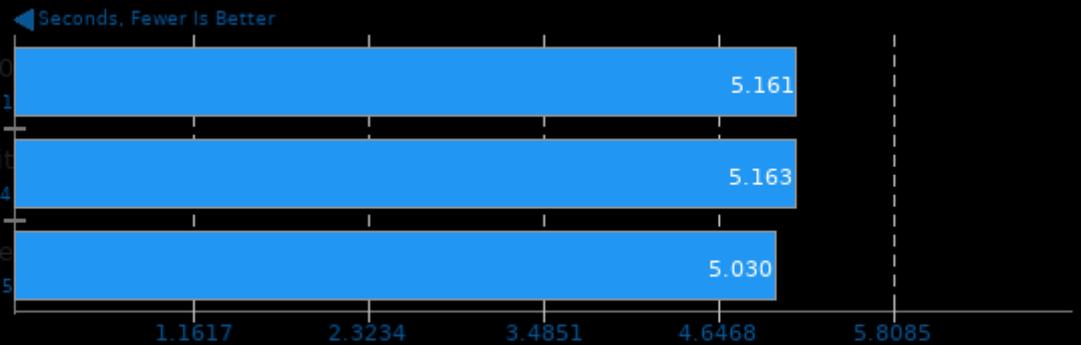
Post-Processing Benchmark



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

## LibreOffice

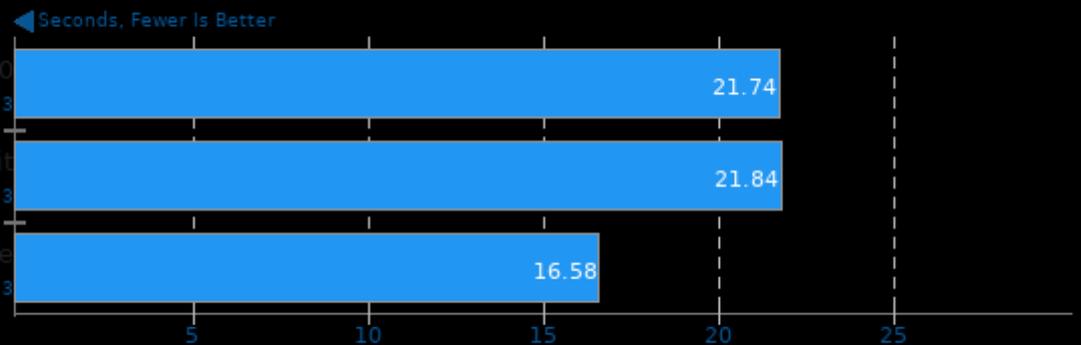
Test: 20 Documents To PDF



1. LibreOffice 7.0.2.2 00(Build:2)

## librsvg

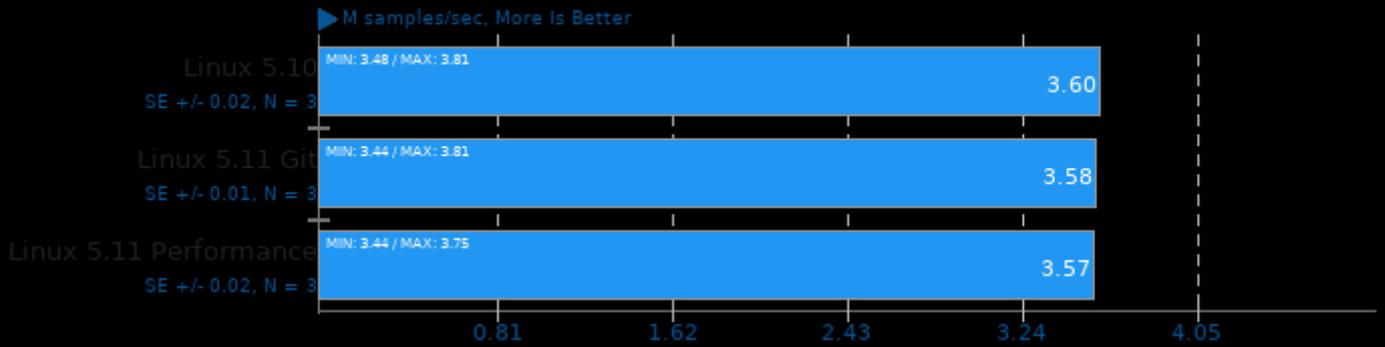
Operation: SVG Files To PNG



1. rsvg-convert version 2.48.9

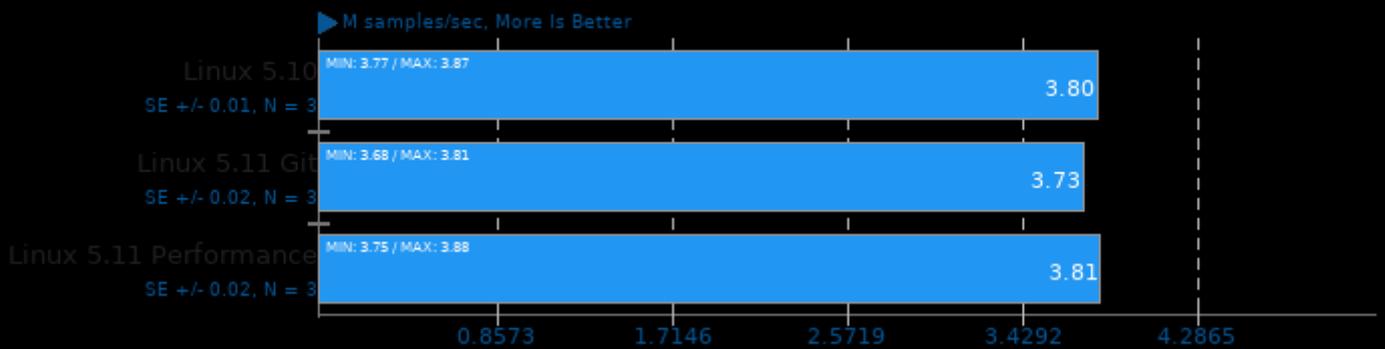
## LuxCoreRender 2.3

Scene: DLSC



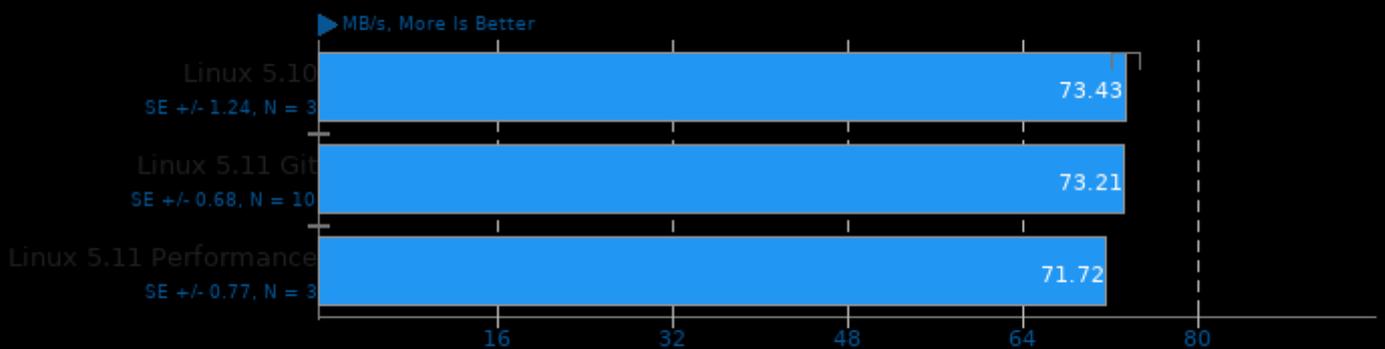
## LuxCoreRender 2.3

Scene: Rainbow Colors and Prism



## LZ4 Compression 1.9.3

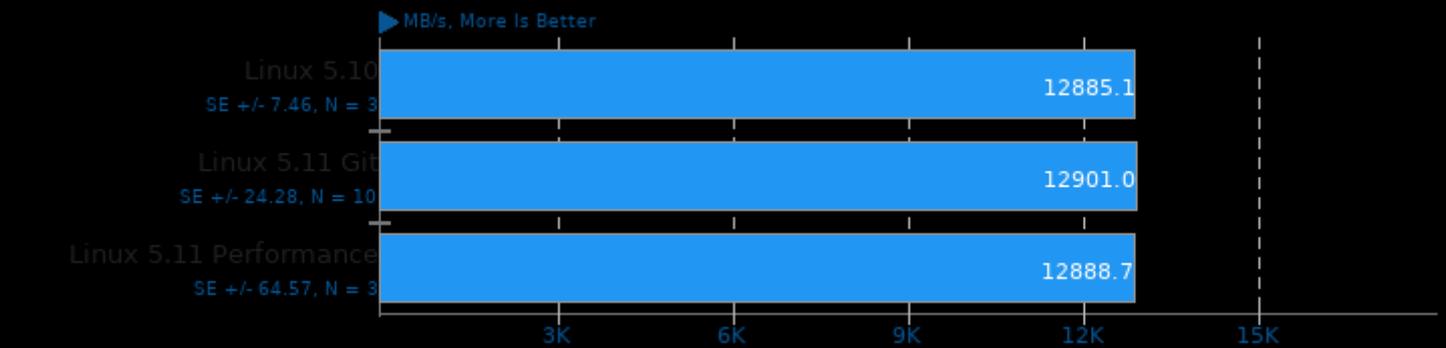
Compression Level: 3 - Compression Speed



1. (CC) gcc options: -O3

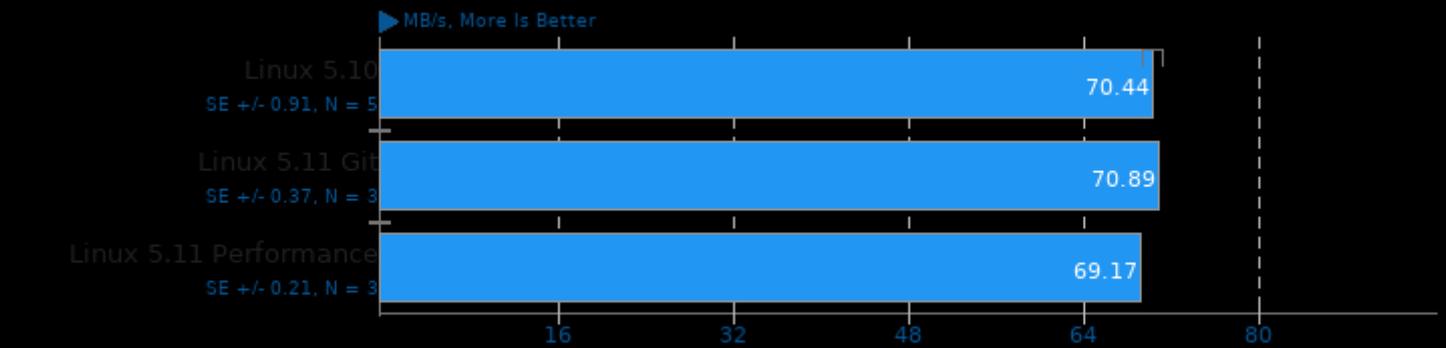
## LZ4 Compression 1.9.3

Compression Level: 3 - Decompression Speed



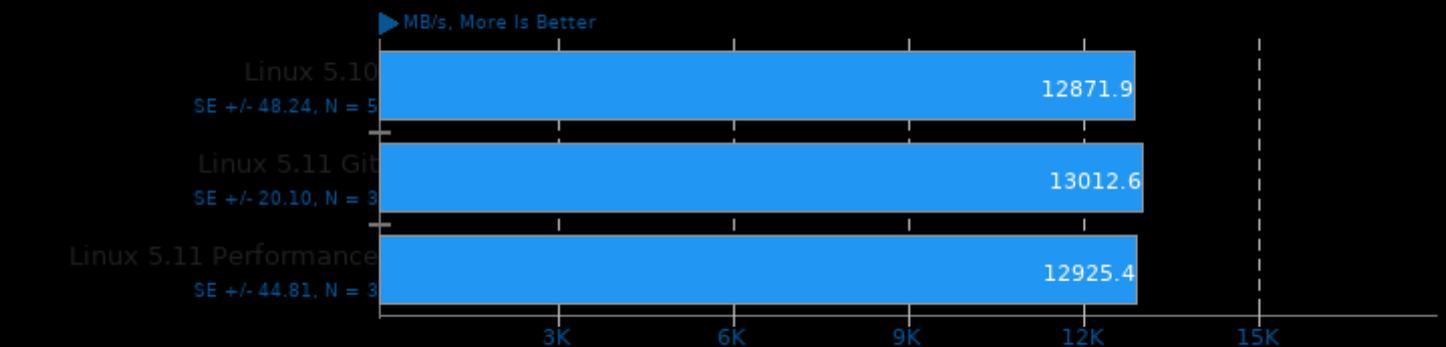
## LZ4 Compression 1.9.3

Compression Level: 9 - Compression Speed



## LZ4 Compression 1.9.3

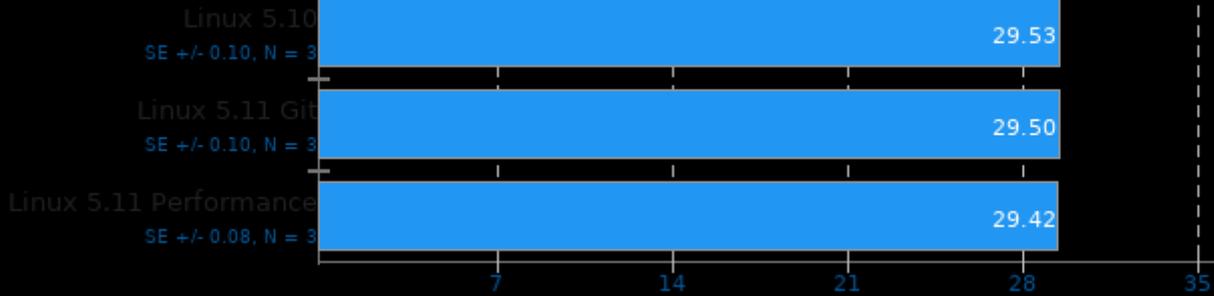
Compression Level: 9 - Decompression Speed



## m-queens 1.2

Time To Solve

← Seconds, Fewer Is Better

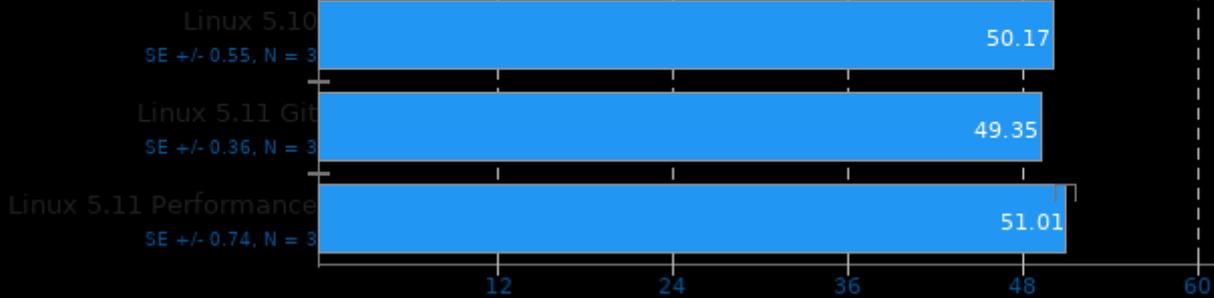


1. (CXX) g++ options: -fopenmp -O2 -march=native

## Mlpack Benchmark

Benchmark: scikit\_ica

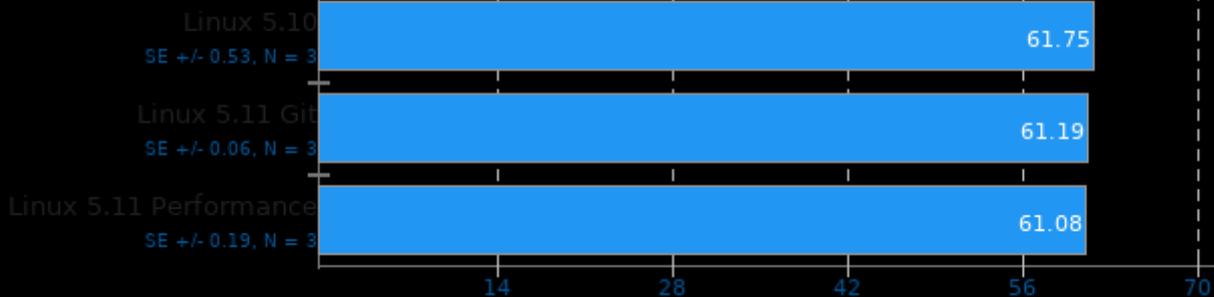
← Seconds, Fewer Is Better



## Mlpack Benchmark

Benchmark: scikit\_qda

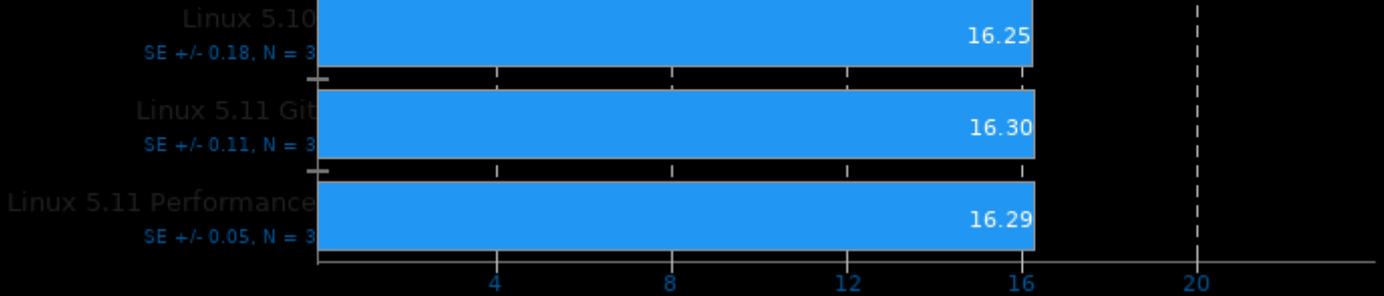
← Seconds, Fewer Is Better



## Mlpack Benchmark

Benchmark: scikit\_svm

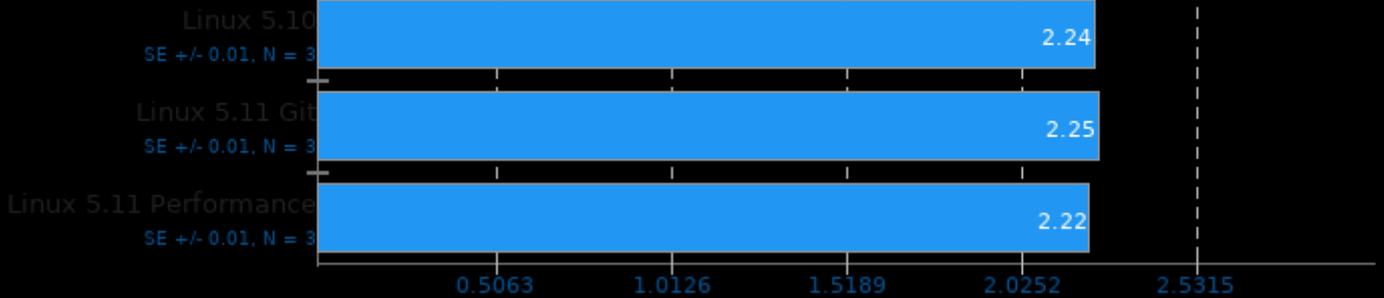
← Seconds, Fewer Is Better



## Mlpack Benchmark

Benchmark: scikit\_linearridgeregression

← Seconds, Fewer Is Better



## Mobile Neural Network 2020-09-17

Model: SqueezeNetV1.0

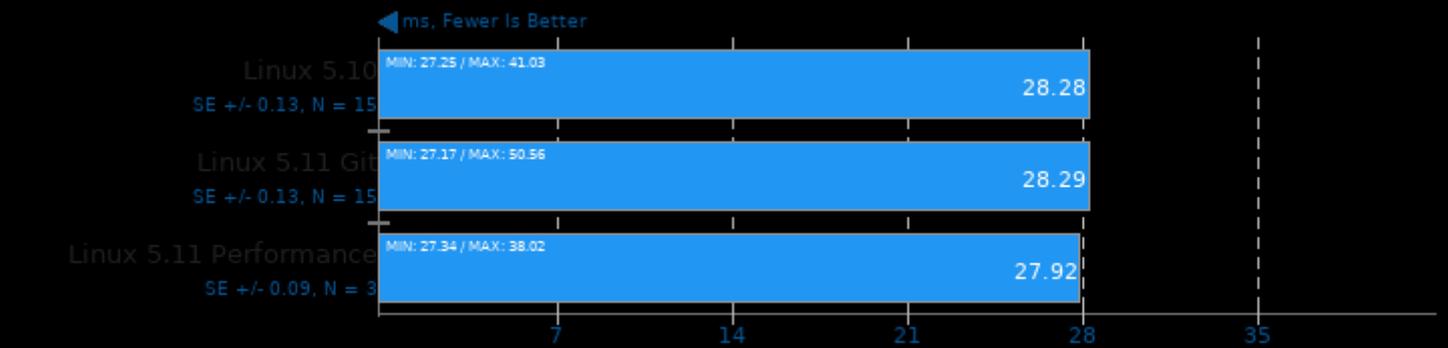
← ms, Fewer Is Better



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

Mobile Neural Network 2020-09-17

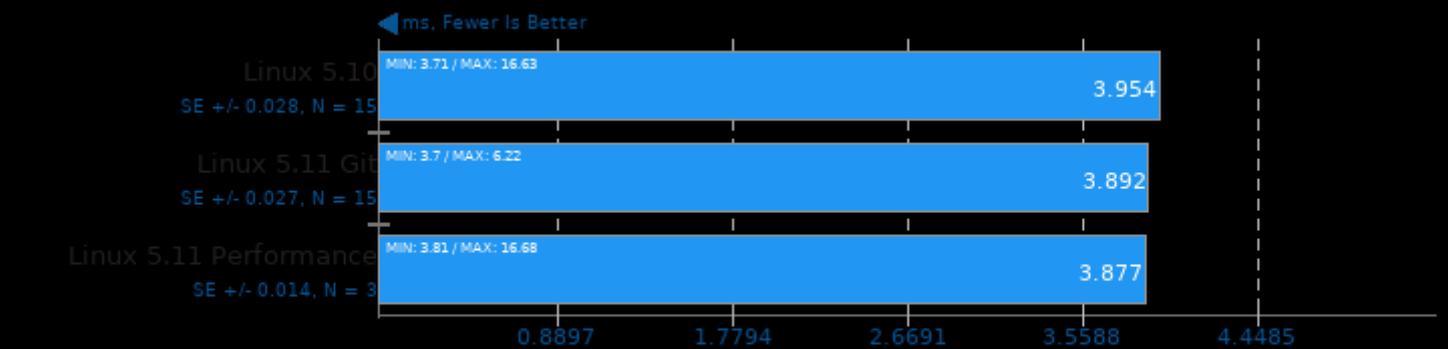
Model: resnet-v2-50



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

Mobile Neural Network 2020-09-17

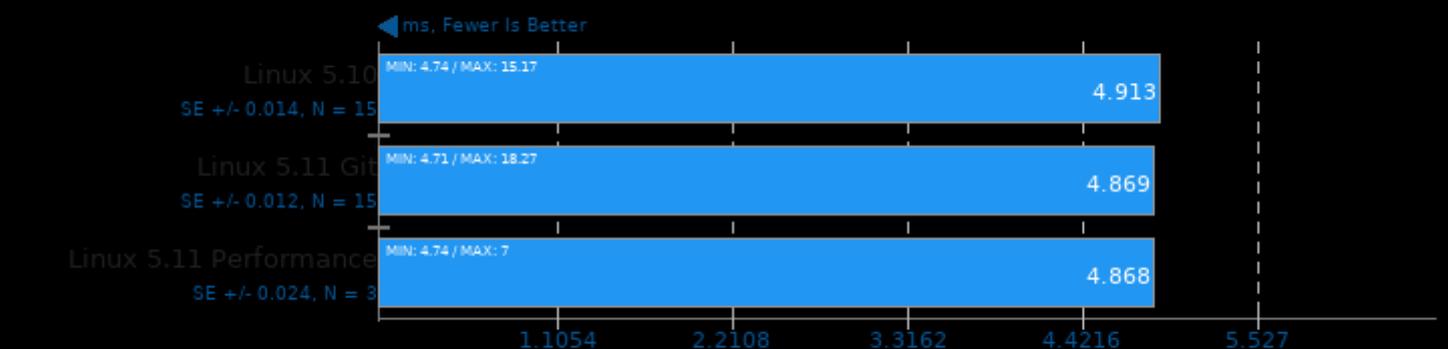
Model: MobileNetV2\_224



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

Mobile Neural Network 2020-09-17

Model: mobilenet-v1-1.0

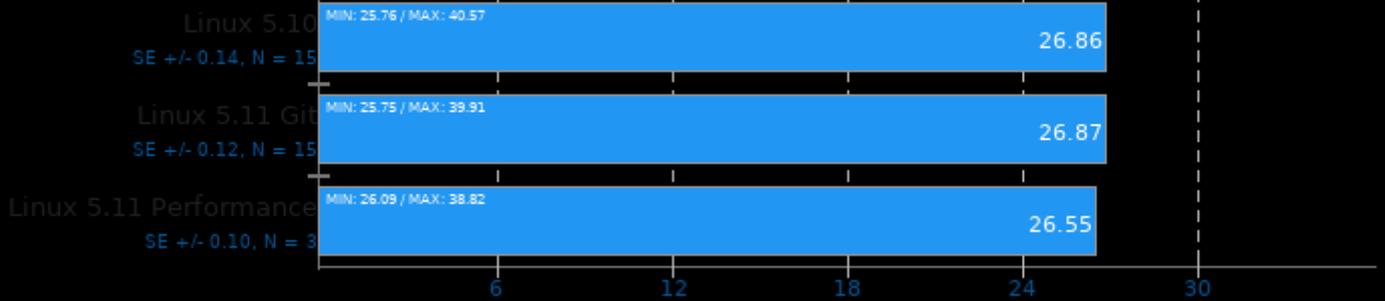


1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fno-

### Mobile Neural Network 2020-09-17

Model: inception-v3

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-

### Monkey Audio Encoding 3.99.6

WAV To APE

Seconds, Fewer Is Better

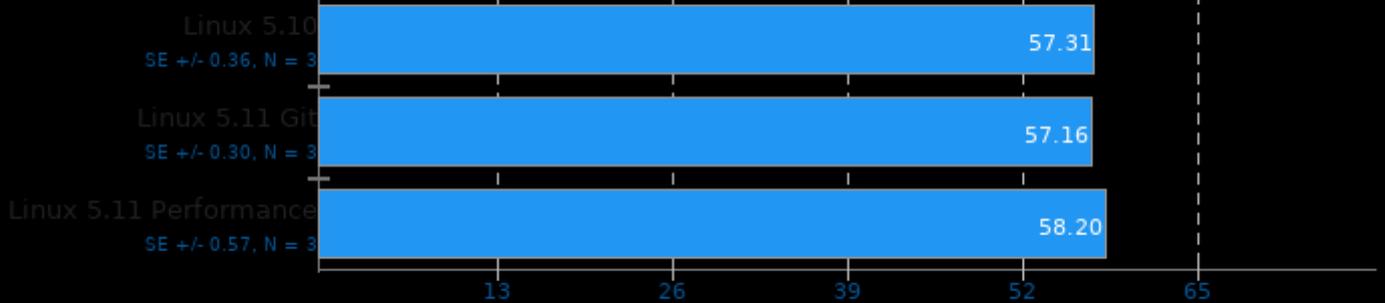


1. (CXX) g++ options: -O3 -pedantic -rdynamic -lrt

### Montage Astronomical Image Mosaic Engine 6.0

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

Seconds, Fewer Is Better

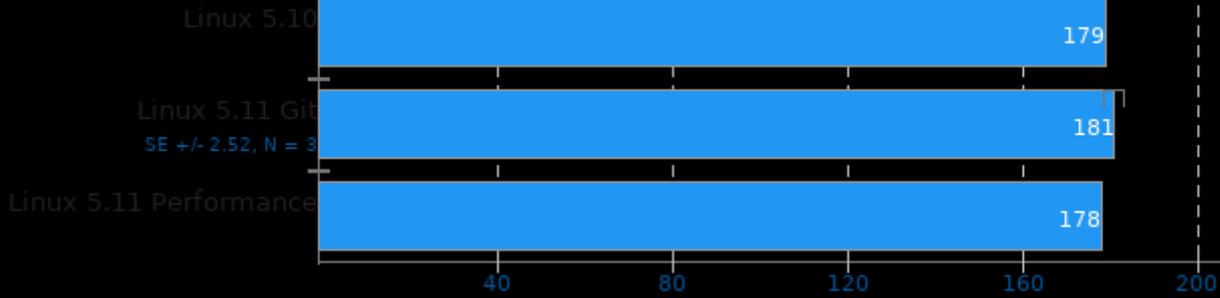


1. (C) gcc options: -std=gnu99 -lcfitsio -lm -O2

### Monte Carlo Simulations of Ionised Nebulae 2019-03-24

Input: Dust 2D tau100.0

◀ Seconds, Fewer Is Better

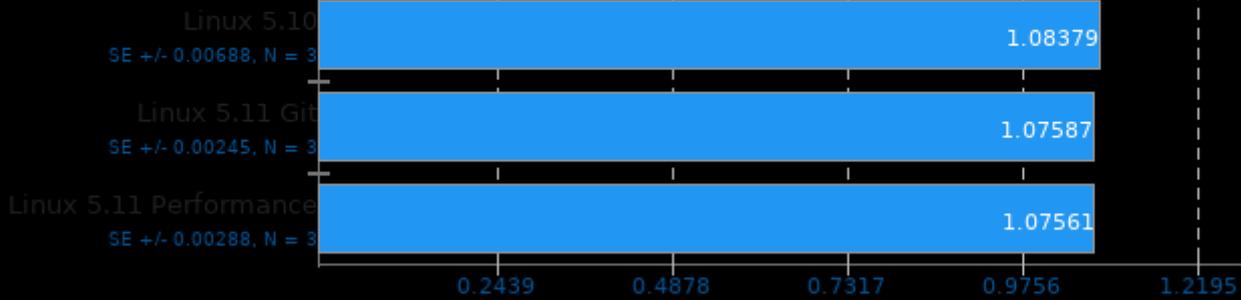


1. (F9X) gfortran options: -cpp -jsource/ -ffree-line-length-0 -lm -std=legacy -O3 -O2 -pthread -lmpi\_usempif08 -lmpi\_mpifh -lmpi

### NAMD 2.14

ATPase Simulation - 327,506 Atoms

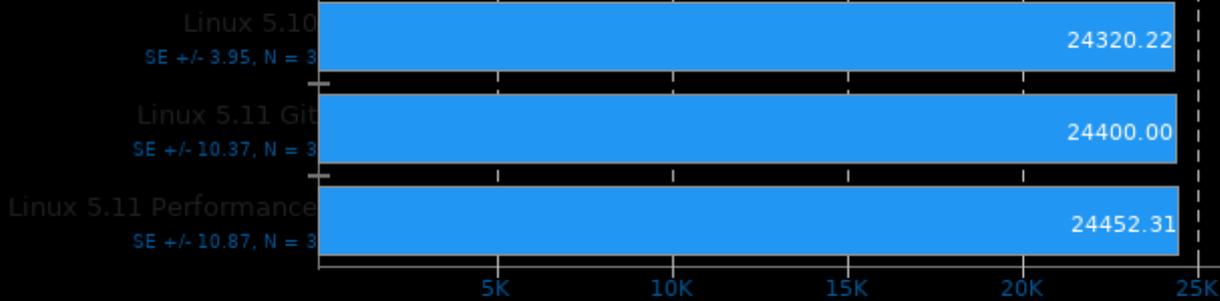
◀ days/ns, Fewer Is Better



### NAS Parallel Benchmarks 3.4

Test / Class: BT.C

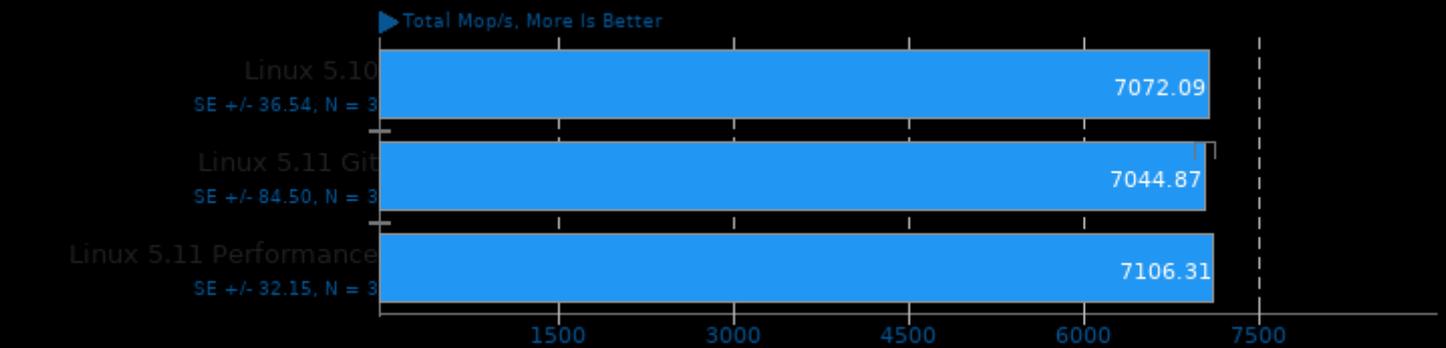
▶ Total Mop/s, More Is Better



1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi\_usempif08 -lmpi\_mpifh -lmpi  
2. Open MPI 4.0.3

## NAS Parallel Benchmarks 3.4

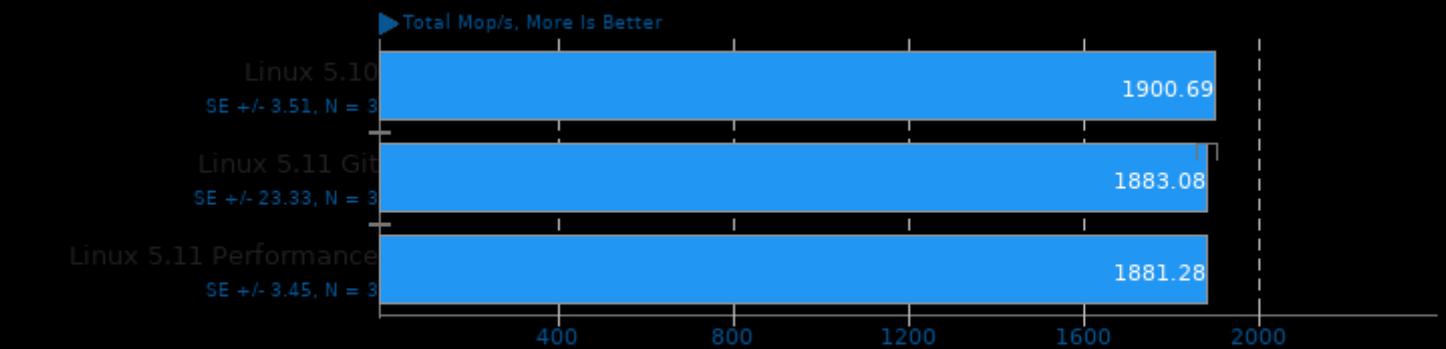
Test / Class: CG.C



1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi\_usempif08 -lmpi\_mpifh -lmpi  
2. Open MPI 4.0.3

## NAS Parallel Benchmarks 3.4

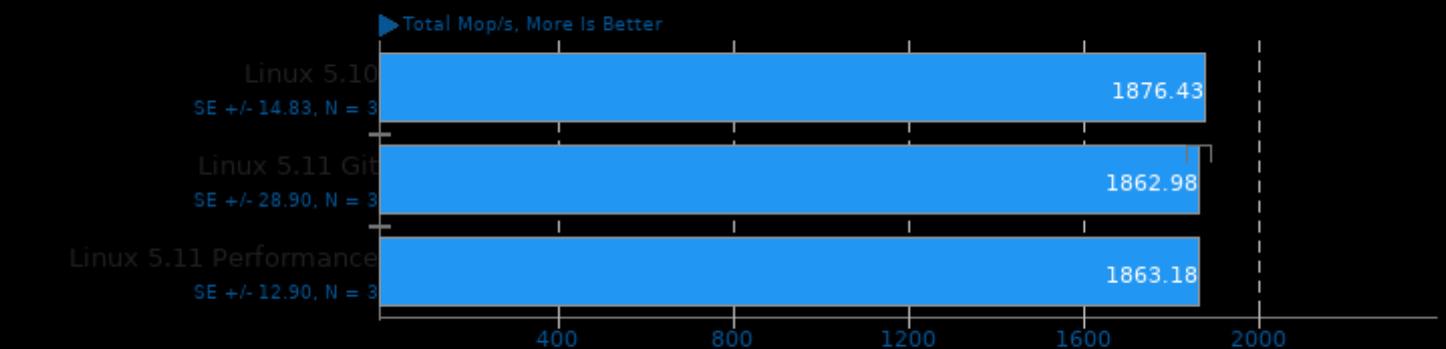
Test / Class: EP.C



1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi\_usempif08 -lmpi\_mpifh -lmpi  
2. Open MPI 4.0.3

## NAS Parallel Benchmarks 3.4

Test / Class: EP.D

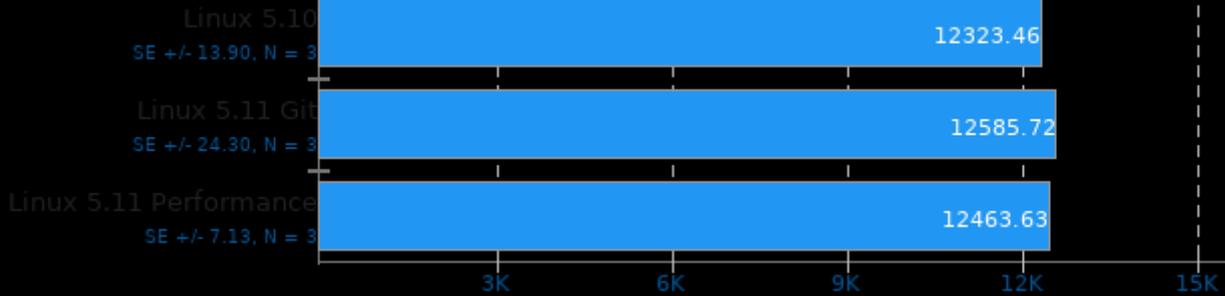


1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi\_usempif08 -lmpi\_mpifh -lmpi  
2. Open MPI 4.0.3

## NAS Parallel Benchmarks 3.4

Test / Class: FT.C

Total Mop/s, More Is Better

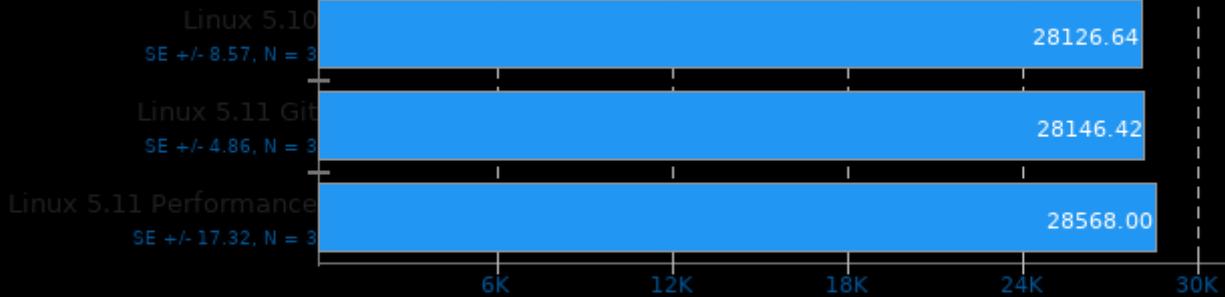


1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi\_usempif08 -lmpi\_mpifh -lmpi  
2. Open MPI 4.0.3

## NAS Parallel Benchmarks 3.4

Test / Class: LU.C

Total Mop/s, More Is Better

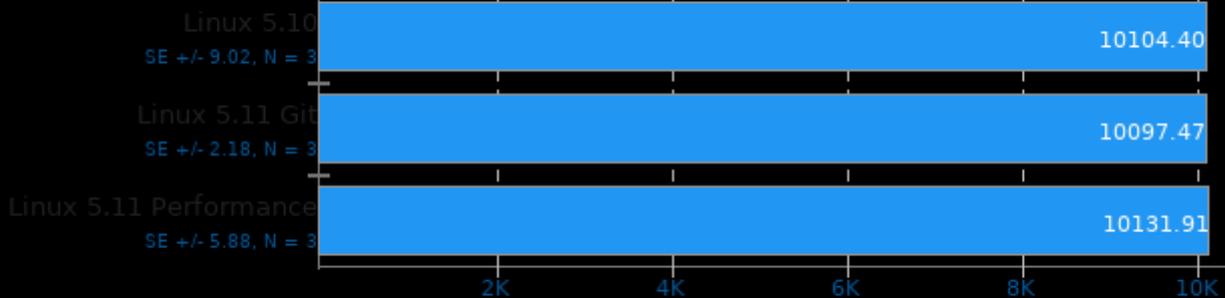


1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi\_usempif08 -lmpi\_mpifh -lmpi  
2. Open MPI 4.0.3

## NAS Parallel Benchmarks 3.4

Test / Class: MG.C

Total Mop/s, More Is Better

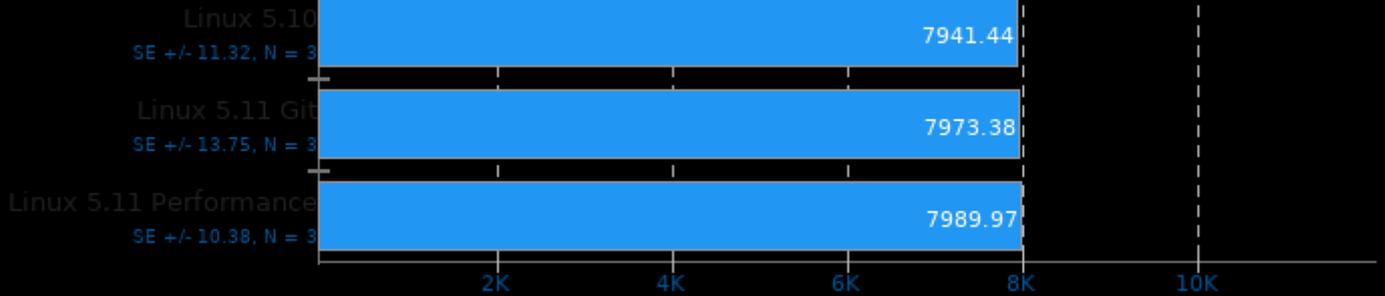


1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi\_usempif08 -lmpi\_mpifh -lmpi  
2. Open MPI 4.0.3

## NAS Parallel Benchmarks 3.4

Test / Class: SP.B

► Total Mop/s, More Is Better

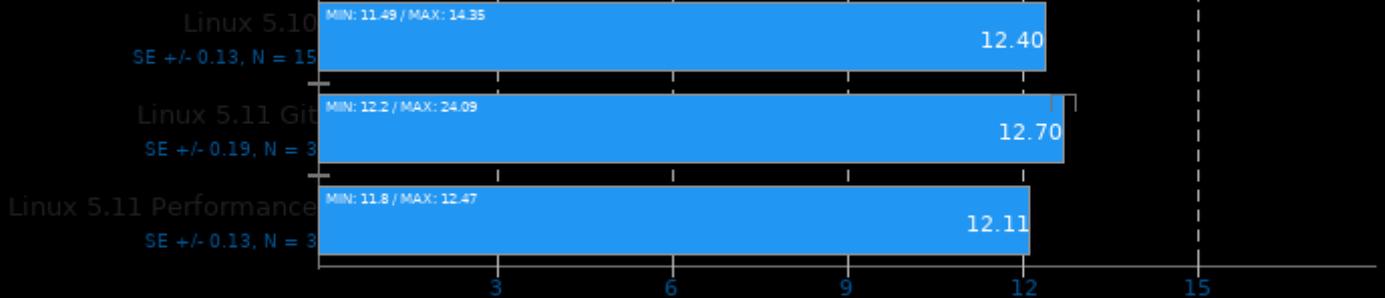


1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi\_usempif08 -lmpi\_mpifh -lmpi  
2. Open MPI 4.0.3

## NCNN 20201218

Target: CPU - Model: mobilenet

◀ ms, Fewer Is Better

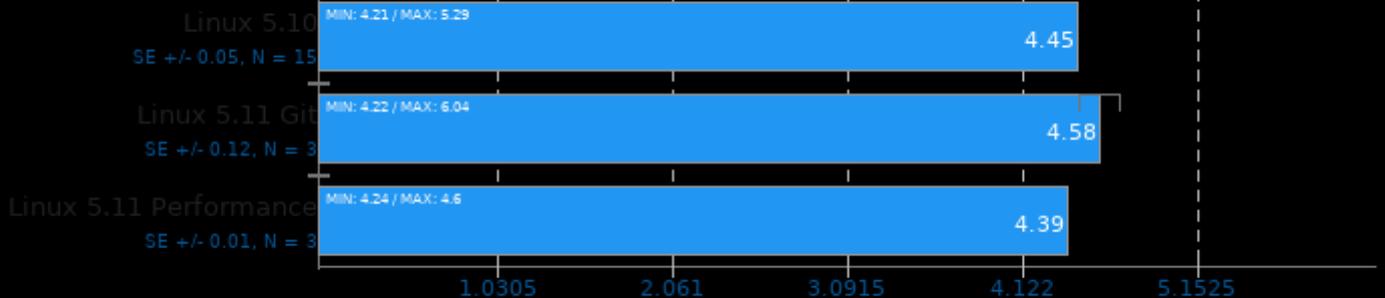


1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

## NCNN 20201218

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

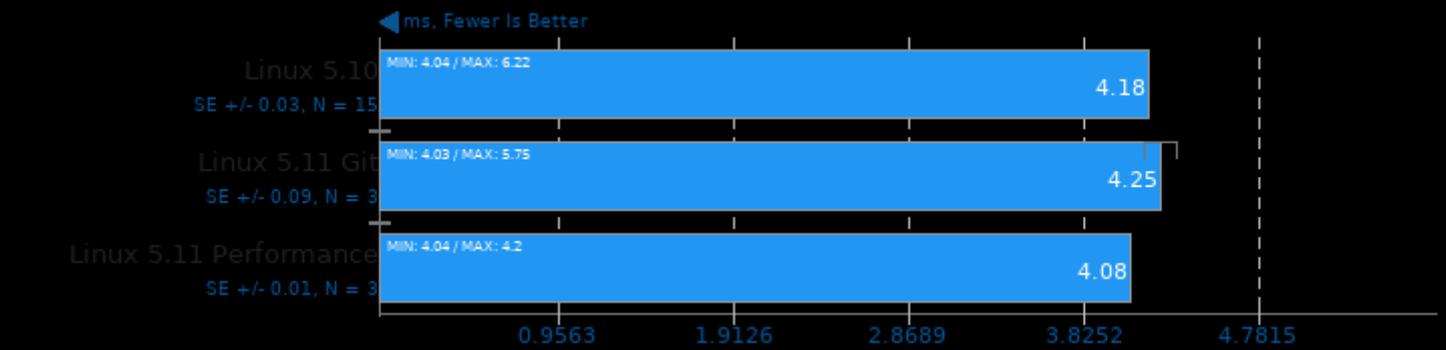
◀ ms, Fewer Is Better



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

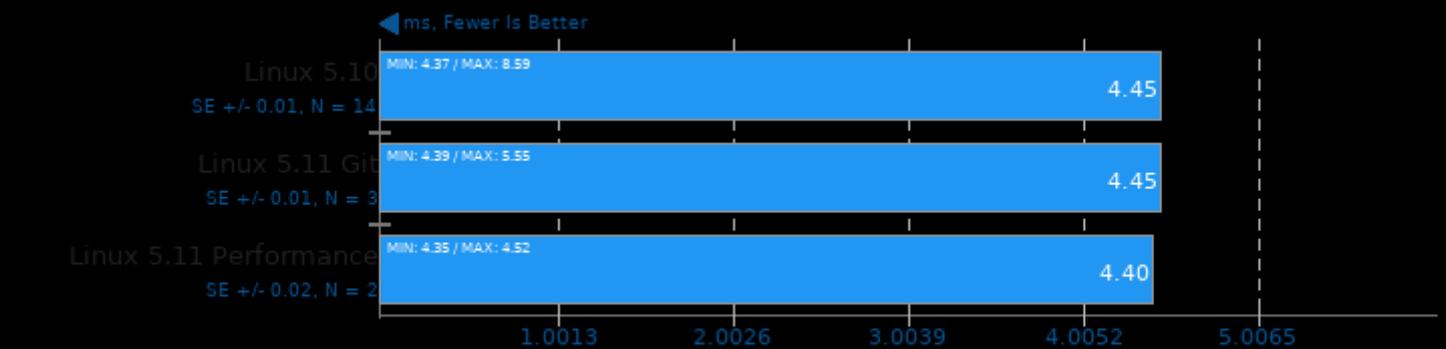
## NCNN 20201218

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



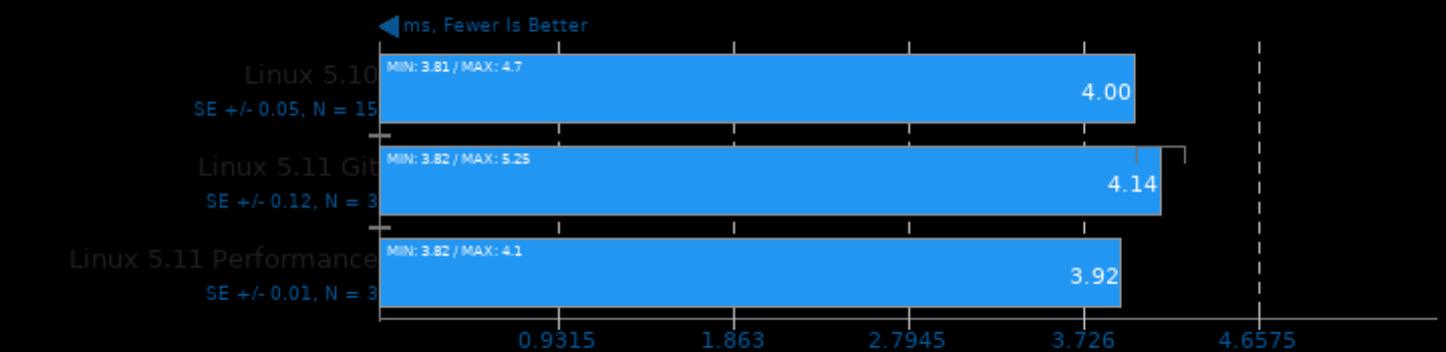
## NCNN 20201218

Target: CPU - Model: shufflenet-v2



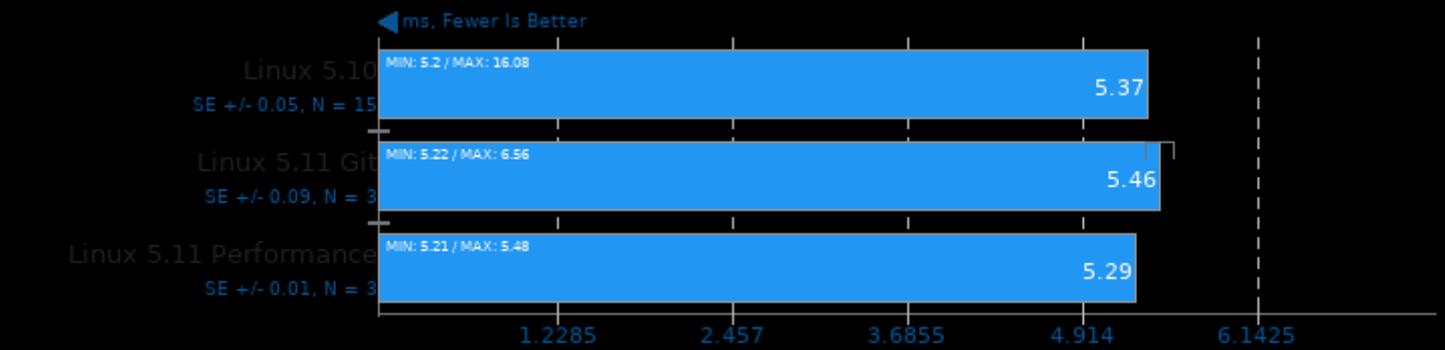
## NCNN 20201218

Target: CPU - Model: mnasnet



## NCNN 20201218

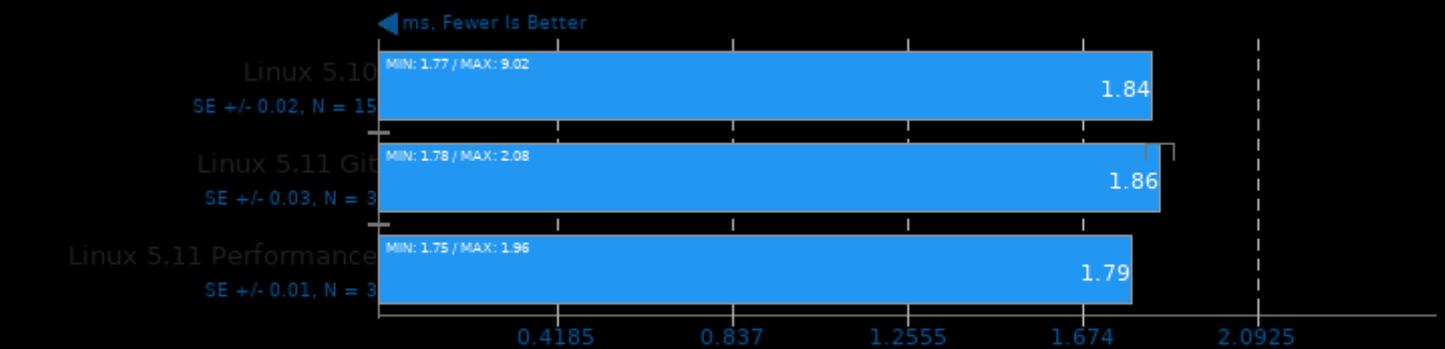
Target: CPU - Model: efficientnet-b0



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

## NCNN 20201218

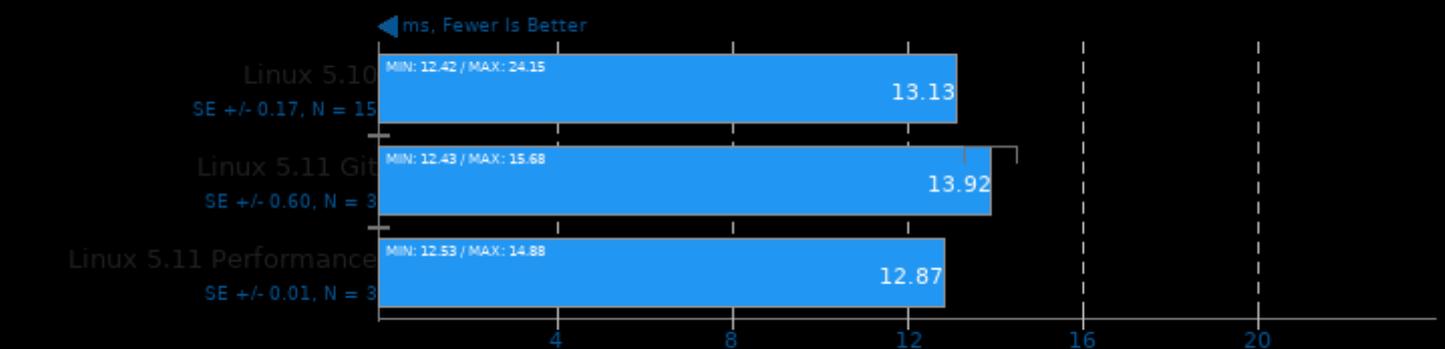
Target: CPU - Model: blazeface



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

## NCNN 20201218

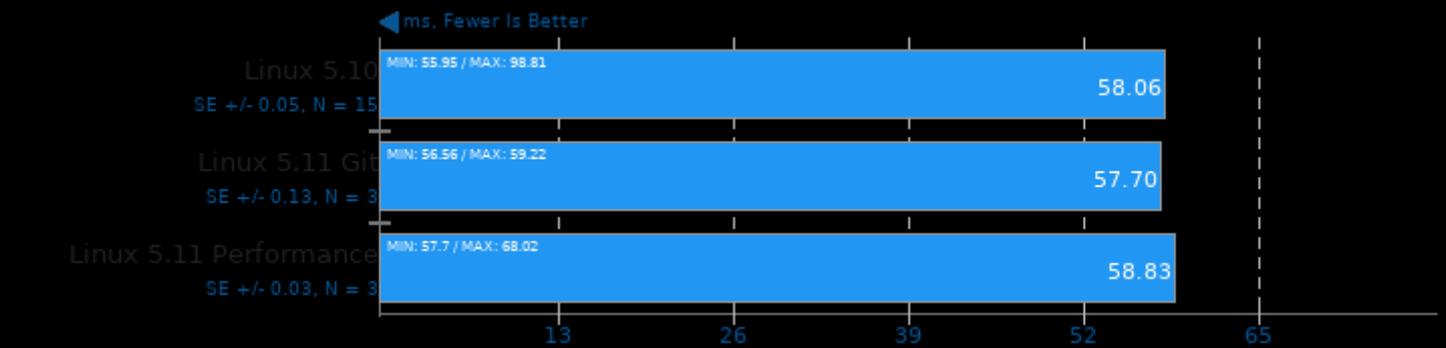
Target: CPU - Model: googlenet



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

## NCNN 20201218

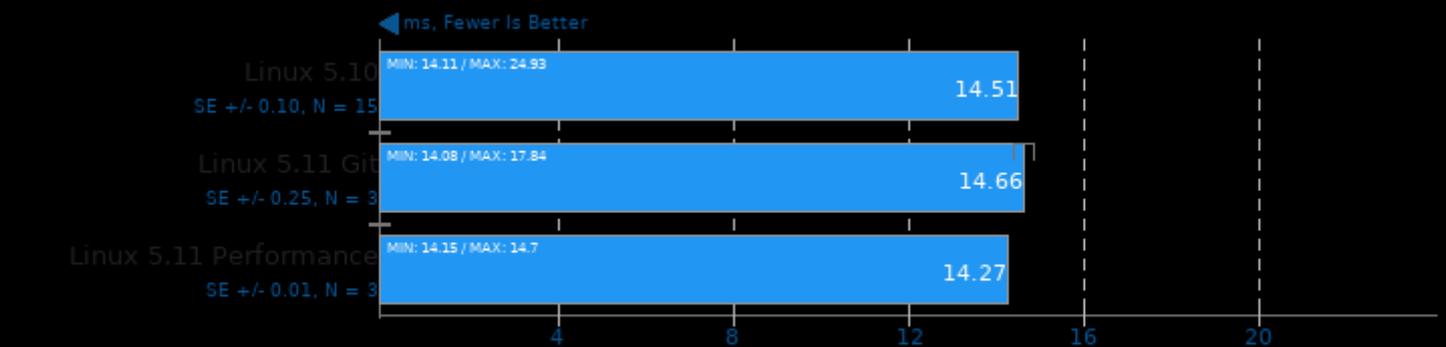
Target: CPU - Model: vgg16



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

## NCNN 20201218

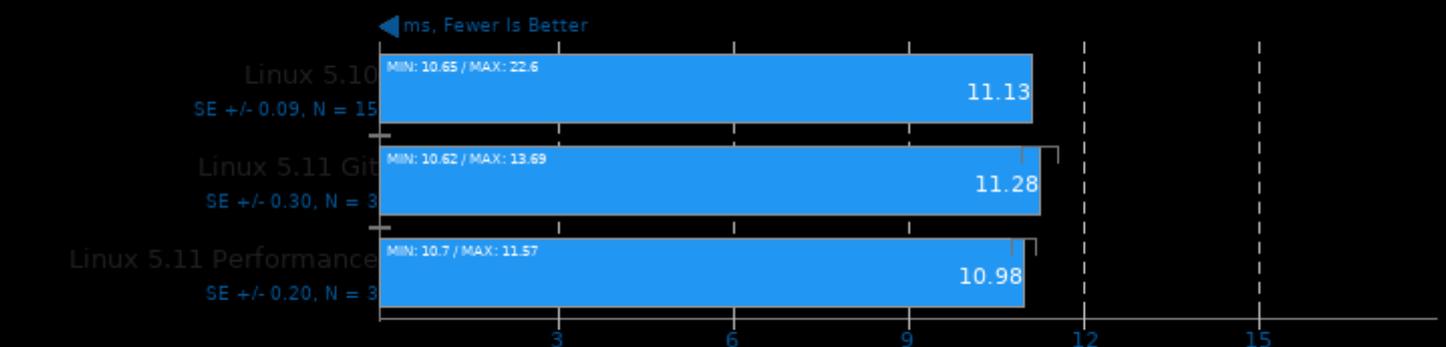
Target: CPU - Model: resnet18



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

## NCNN 20201218

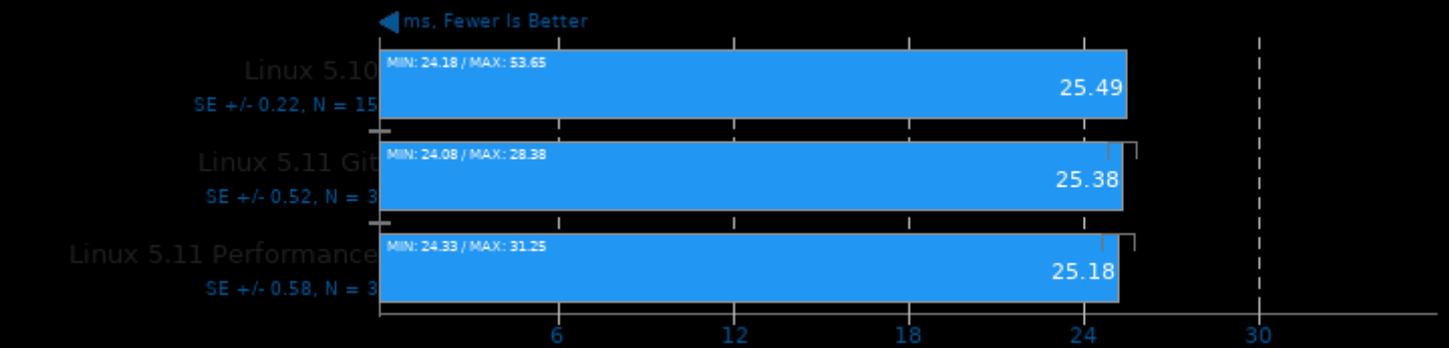
Target: CPU - Model: alexnet



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

## NCNN 20201218

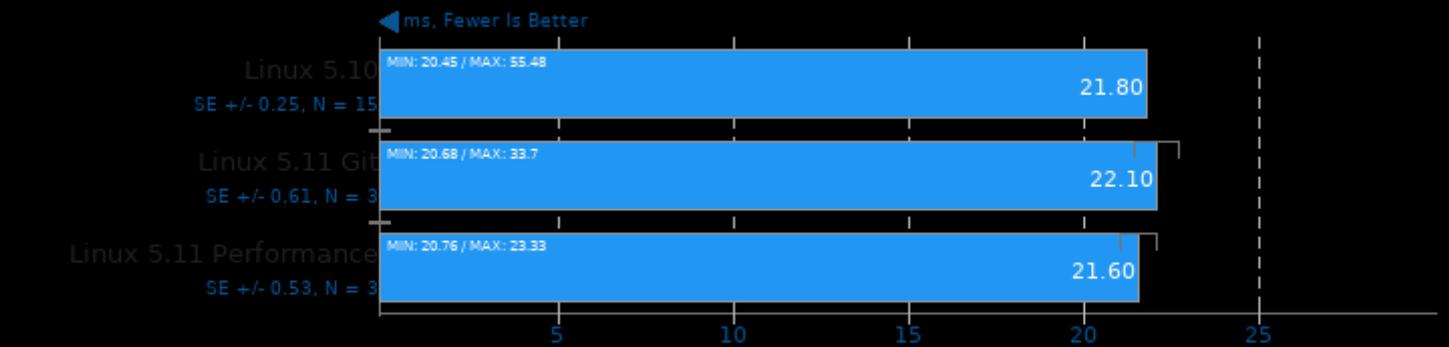
Target: CPU - Model: resnet50



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

## NCNN 20201218

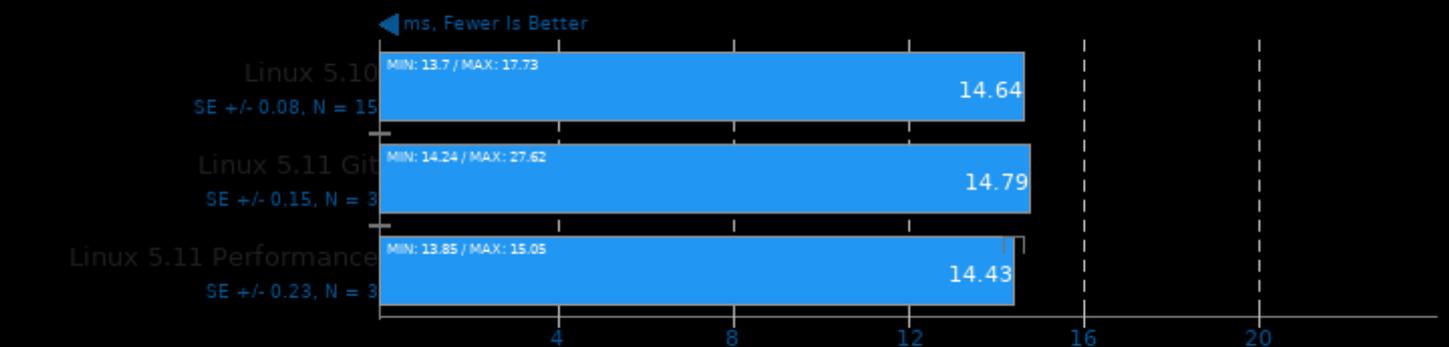
Target: CPU - Model: yolov4-tiny



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

## NCNN 20201218

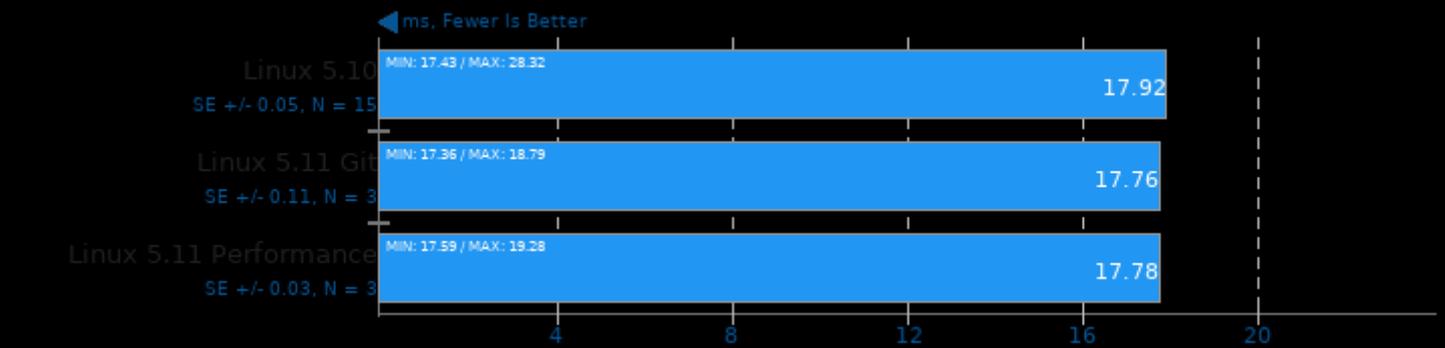
Target: CPU - Model: squeezenet\_ssd



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

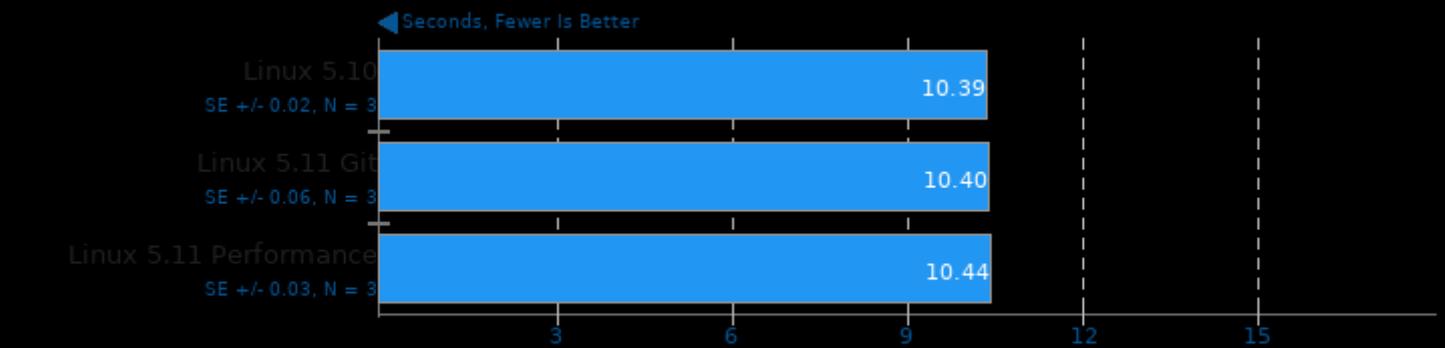
## NCNN 20201218

Target: CPU - Model: regnety\_400m



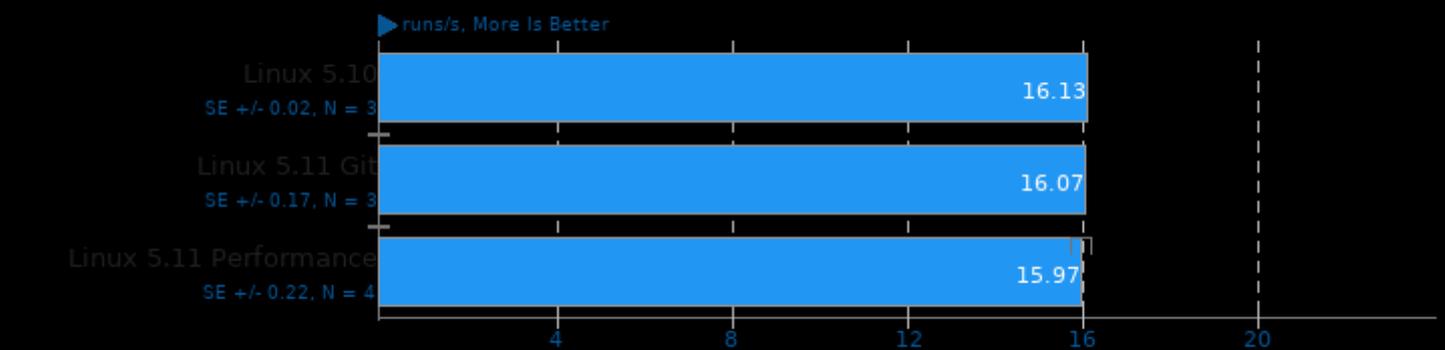
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

## Nebular Empirical Analysis Tool 2020-02-29



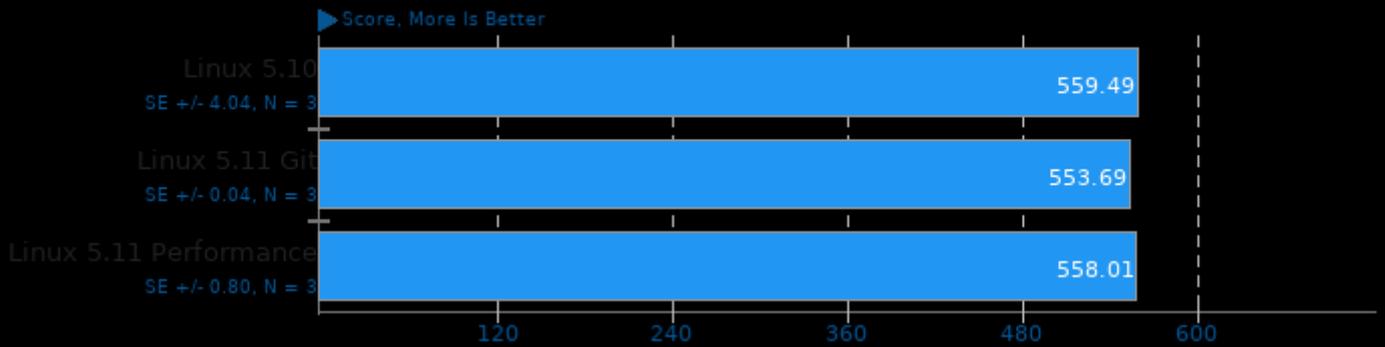
1. (F9X) gfortran options: -cpp -free-line-length-0 -jsource/ -fopenmp -O3 -fno-backtrace

## Node.js V8 Web Tooling Benchmark



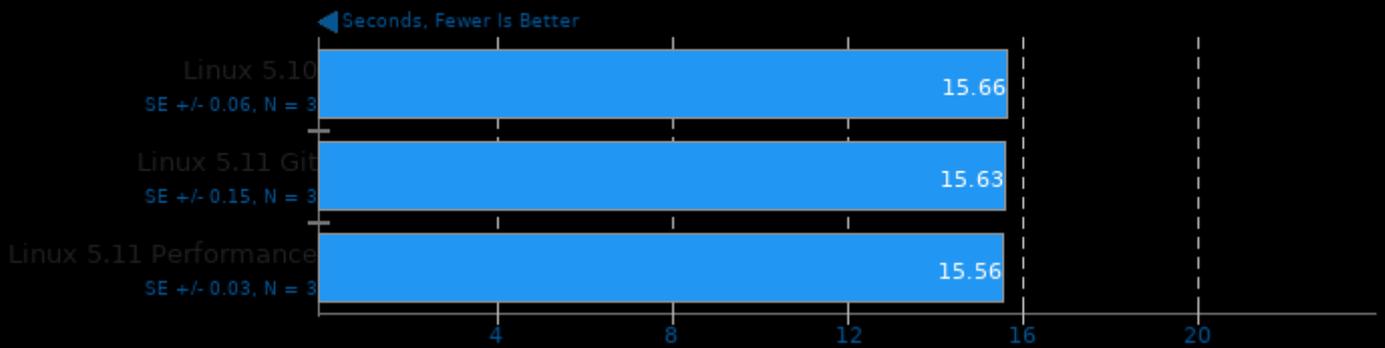
1. Nodejs v10.19.0

## Numpy Benchmark



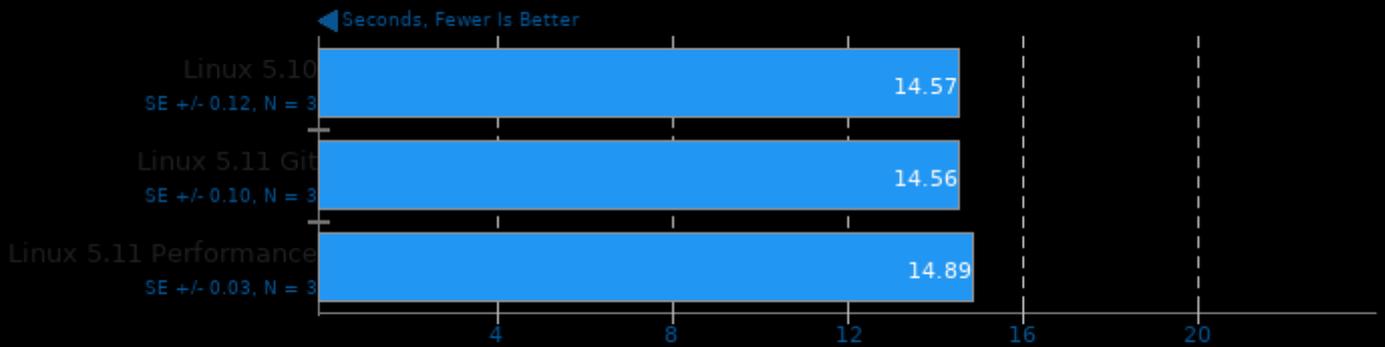
## OCRMyPDF 9.6.0+dfsg

Processing 60 Page PDF Document



## Ogg Audio Encoding 1.3.4

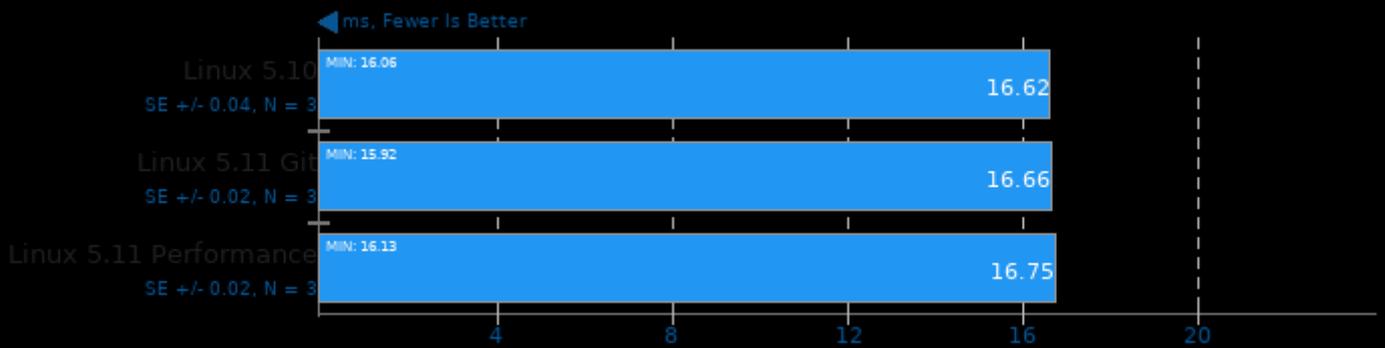
WAV To Ogg



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

## oneDNN 2.0

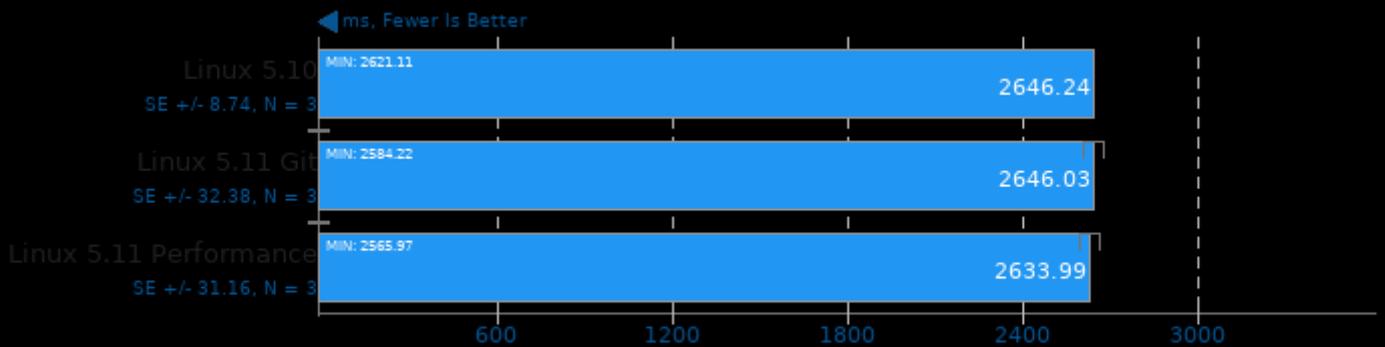
Harness: Convolution Batch Shapes Auto - Data Type: f32 - Engine: CPU



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

## oneDNN 2.0

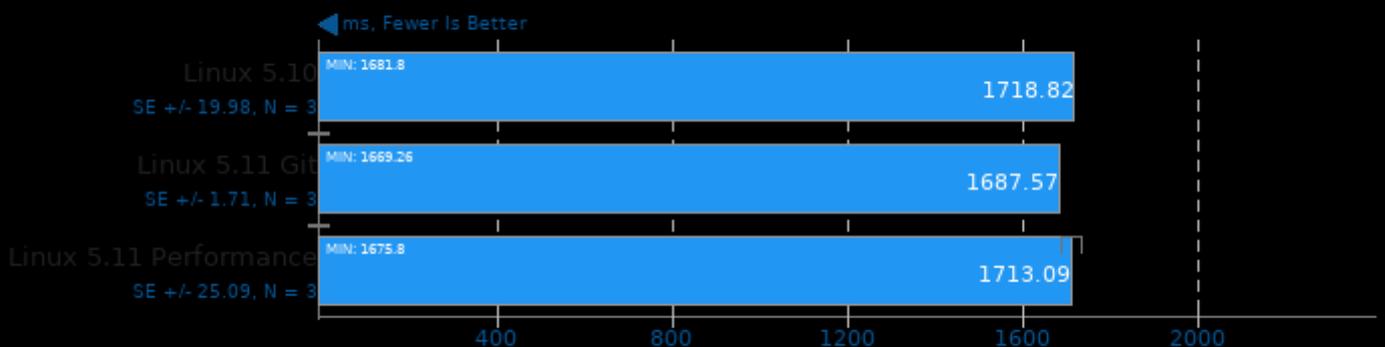
Harness: Recurrent Neural Network Training - Data Type: f32 - Engine: CPU



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

## oneDNN 2.0

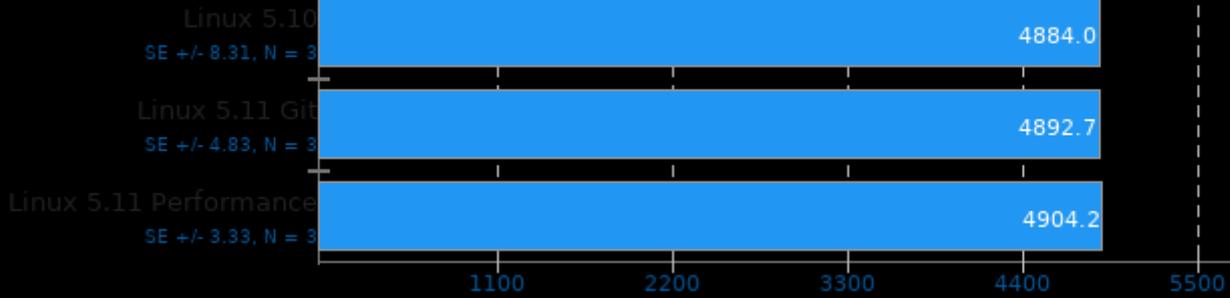
Harness: Recurrent Neural Network Inference - Data Type: f32 - Engine: CPU



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

## OpenSSL 1.1.1 RSA 4096-bit Performance

Signs Per Second, More Is Better

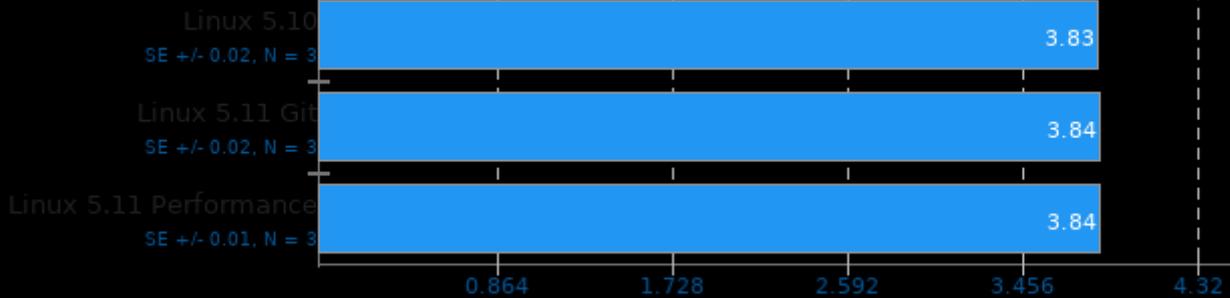


1. (GCC) gcc options: -pthread -m64 -O3 -lssl -lcrypto -ldl

## OpenVINO 2021.1

Model: Face Detection 0106 FP16 - Device: CPU

FPS, More Is Better

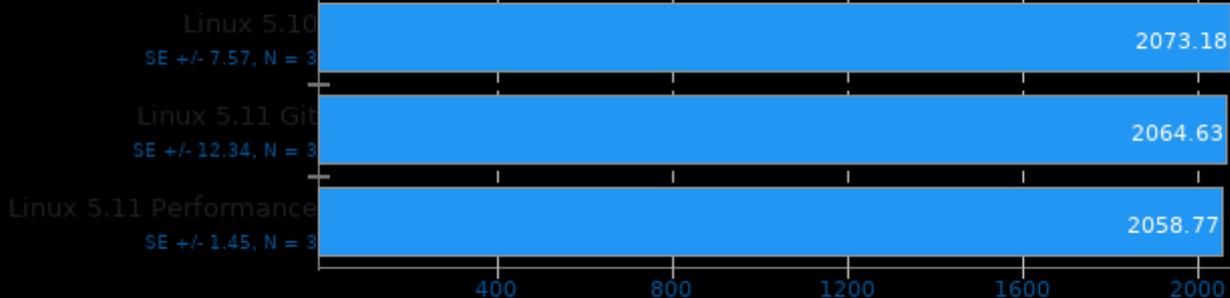


1. (ICXX) g++ options: -fsigned-char -ffunction-sections -fdata-sections -O3 -pie -pthread -lpthread

## OpenVINO 2021.1

Model: Face Detection 0106 FP16 - Device: CPU

ms, Fewer Is Better

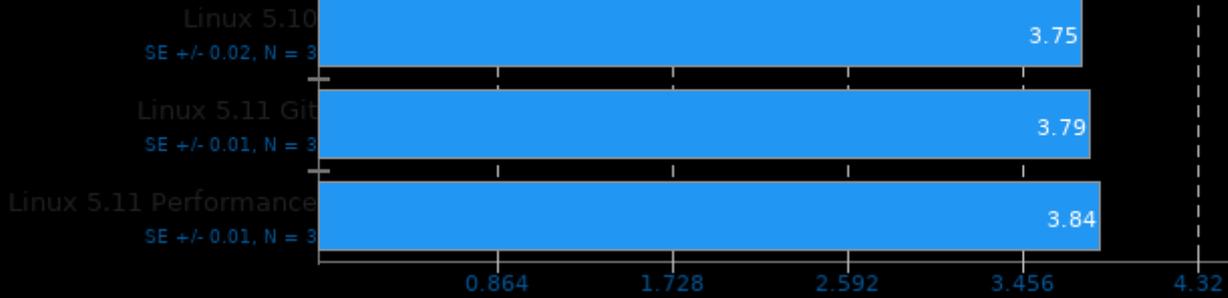


1. (ICXX) g++ options: -fsigned-char -ffunction-sections -fdata-sections -O3 -pie -pthread -lpthread

## OpenVINO 2021.1

Model: Face Detection 0106 FP32 - Device: CPU

FPS, More Is Better

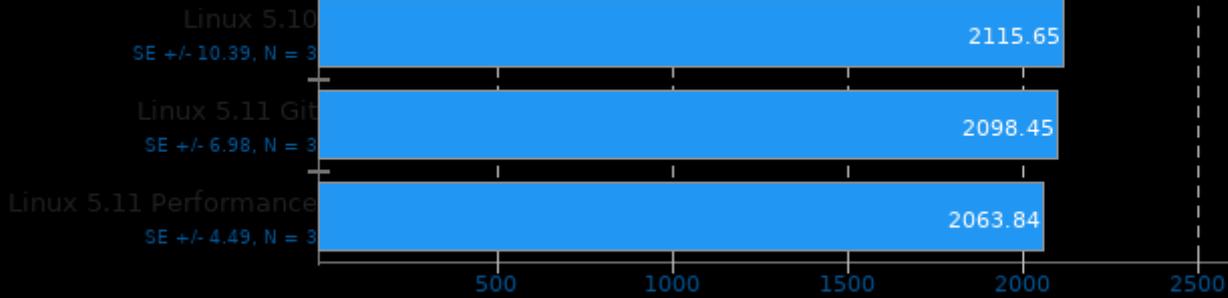


1. (CXX) g++ options: -fsigned-char -ffunction-sections -fdata-sections -O3 -pie -pthread -lpthread

## OpenVINO 2021.1

Model: Face Detection 0106 FP32 - Device: CPU

ms, Fewer Is Better

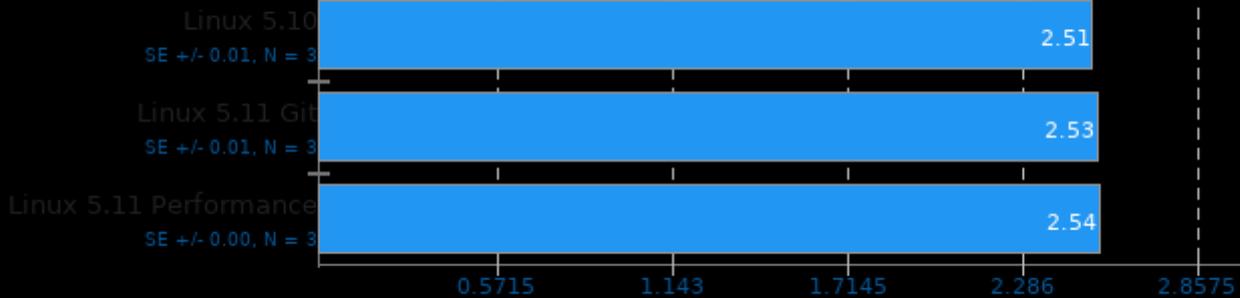


1. (CXX) g++ options: -fsigned-char -ffunction-sections -fdata-sections -O3 -pie -pthread -lpthread

## OpenVINO 2021.1

Model: Person Detection 0106 FP16 - Device: CPU

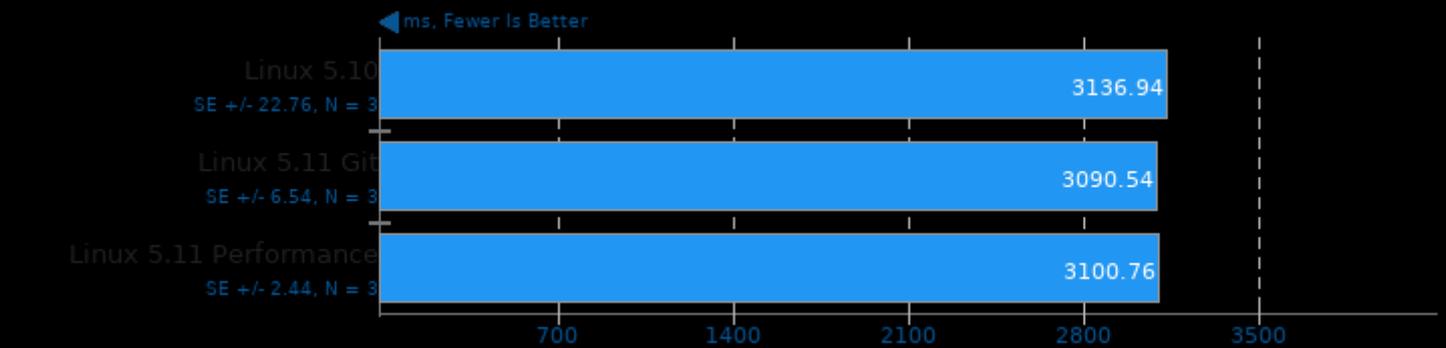
FPS, More Is Better



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

## OpenVINO 2021.1

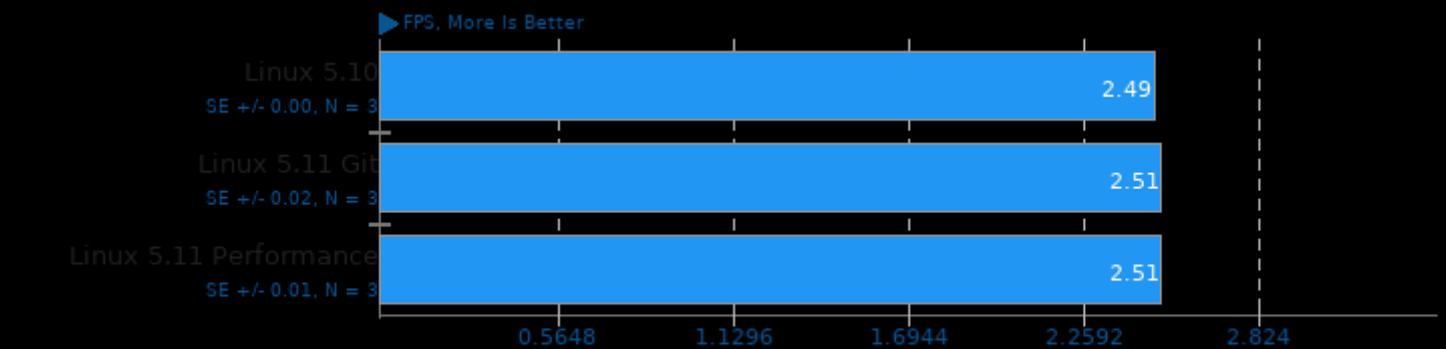
Model: Person Detection 0106 FP16 - Device: CPU



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

## OpenVINO 2021.1

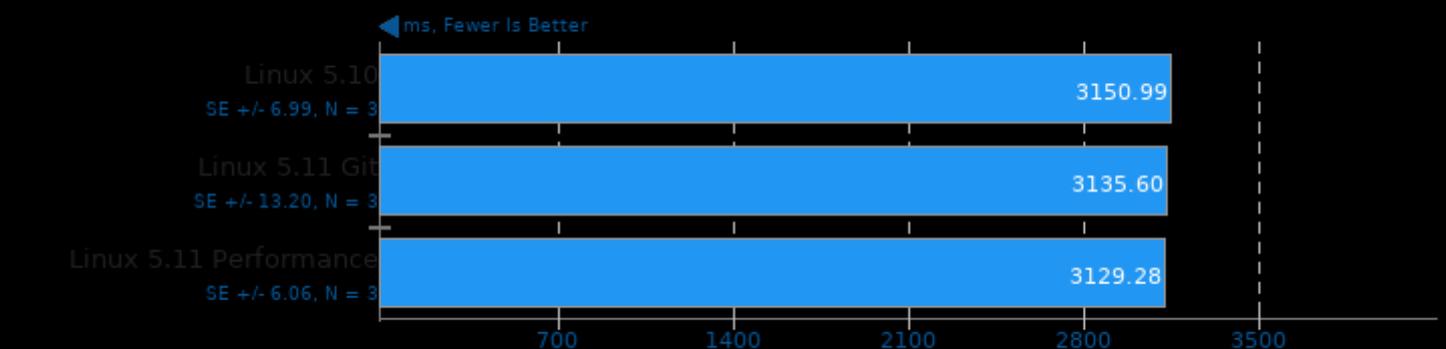
Model: Person Detection 0106 FP32 - Device: CPU



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

## OpenVINO 2021.1

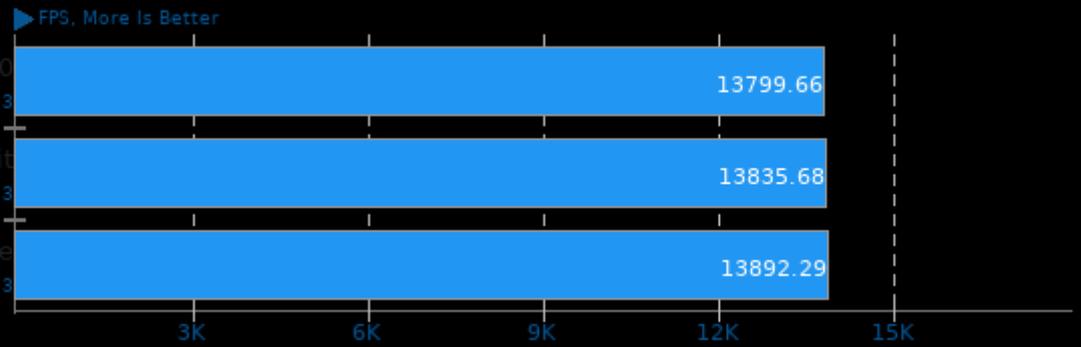
Model: Person Detection 0106 FP32 - Device: CPU



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

## OpenVINO 2021.1

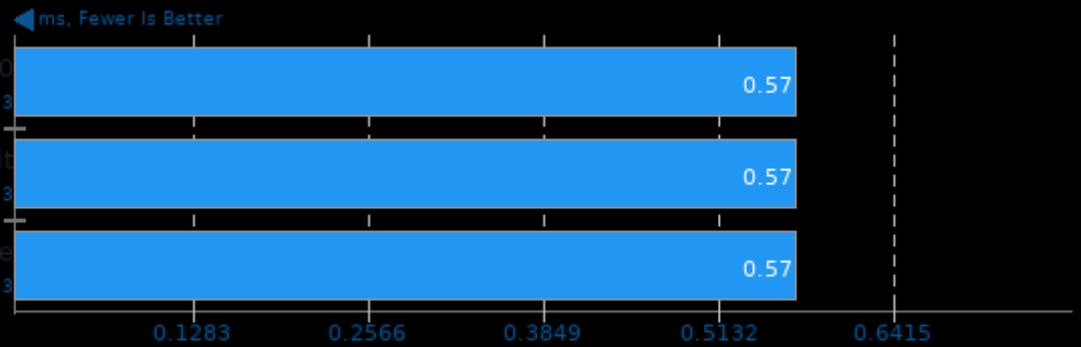
Model: Age Gender Recognition Retail 0013 FP16 - Device: CPU



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

## OpenVINO 2021.1

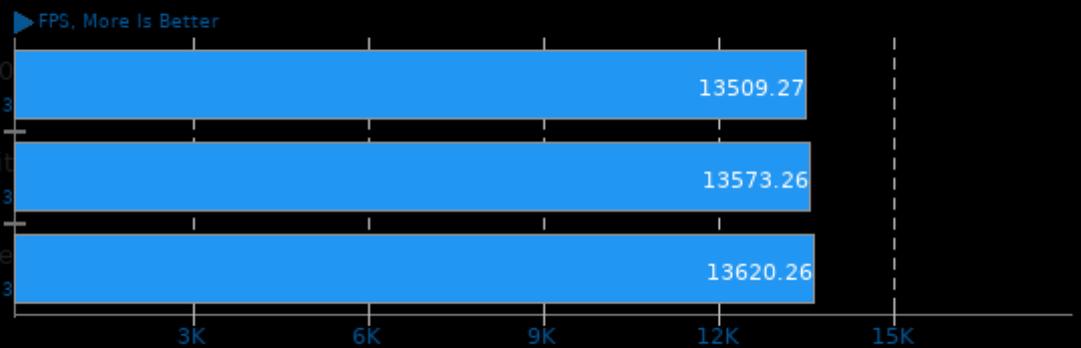
Model: Age Gender Recognition Retail 0013 FP16 - Device: CPU



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

## OpenVINO 2021.1

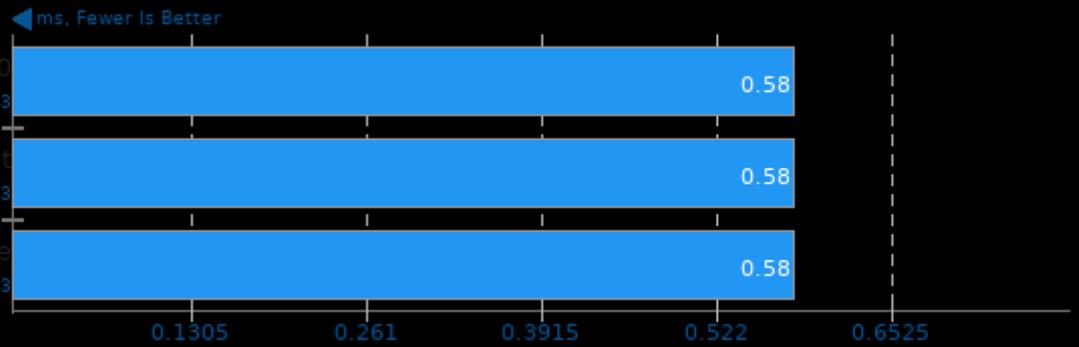
Model: Age Gender Recognition Retail 0013 FP32 - Device: CPU



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

## OpenVINO 2021.1

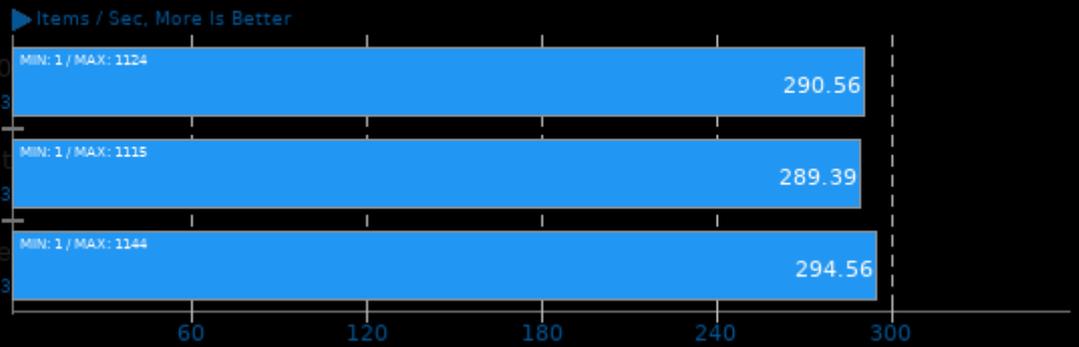
Model: Age Gender Recognition Retail 0013 FP32 - Device: CPU



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

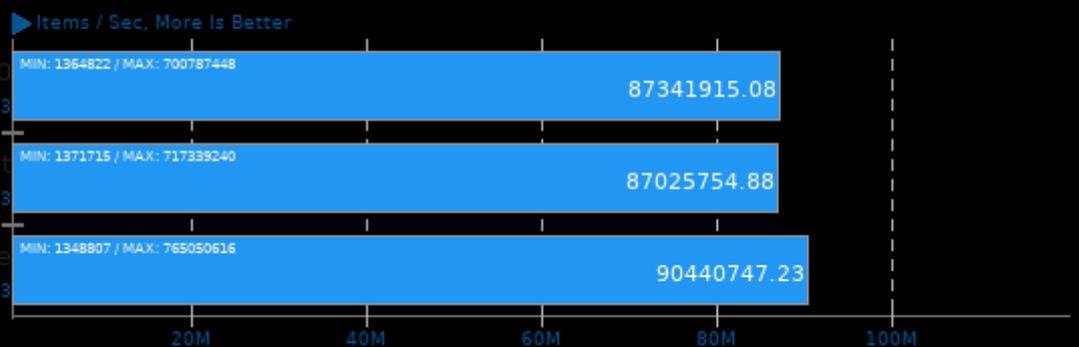
## OpenVKL 0.9

Benchmark: vklBenchmark



## OpenVKL 0.9

Benchmark: vklBenchmarkStructuredVolume



## Optcarrot

Optimized Benchmark

► FPS, More Is Better

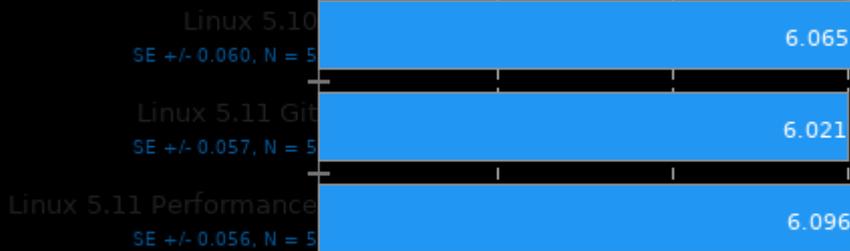


1. ruby 2.7.0p0 (2019-12-25 revision 647ee6f091) [x86\_64-linux-gnu]

## Opus Codec Encoding 1.3.1

WAV To Opus Encode

◄ Seconds, Fewer Is Better



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

## Parboil 2.5

Test: OpenMP LBM

◄ Seconds, Fewer Is Better

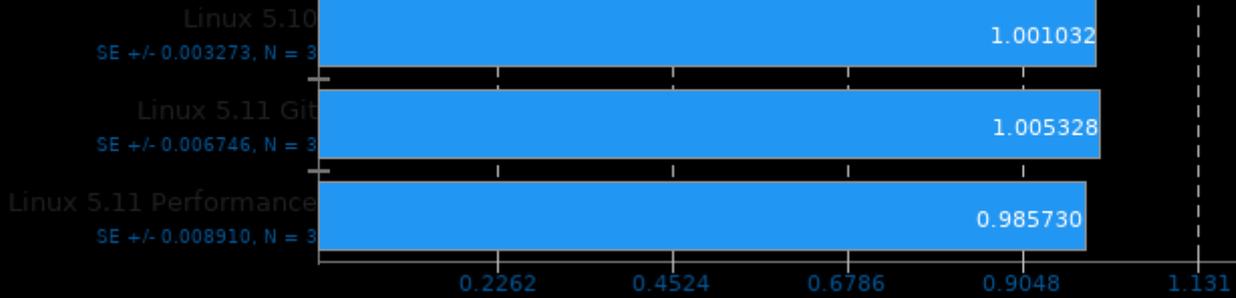


1. (CXX) g++ options: -lm -lpthread -lgomp -O3 -ffast-math -fopenmp

## Parboil 2.5

Test: OpenMP CUTCP

← Seconds, Fewer Is Better

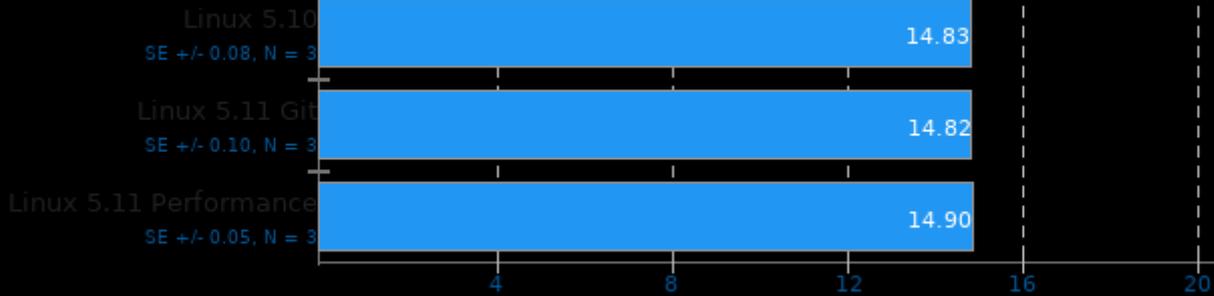


1. (CXX) g++ options: -lm -lpthread -lgomp -O3 -ffast-math -fopenmp

## Parboil 2.5

Test: OpenMP Stencil

← Seconds, Fewer Is Better

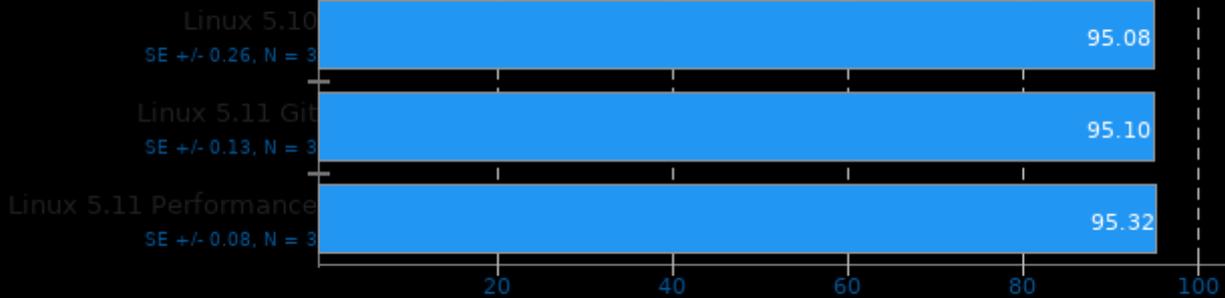


1. (CXX) g++ options: -lm -lpthread -lgomp -O3 -ffast-math -fopenmp

## Parboil 2.5

Test: OpenMP MRI Gridding

← Seconds, Fewer Is Better

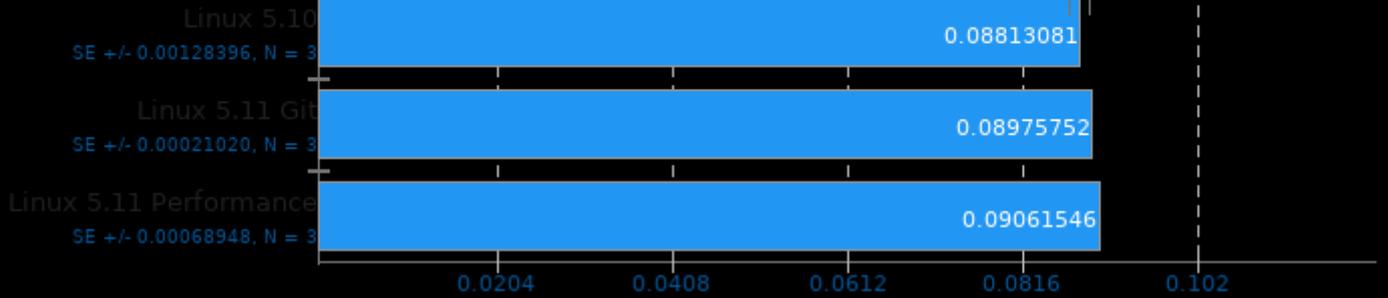


1. (CXX) g++ options: -lm -lpthread -lgomp -O3 -ffast-math -fopenmp

## Perl Benchmarks

Test: Pod2html

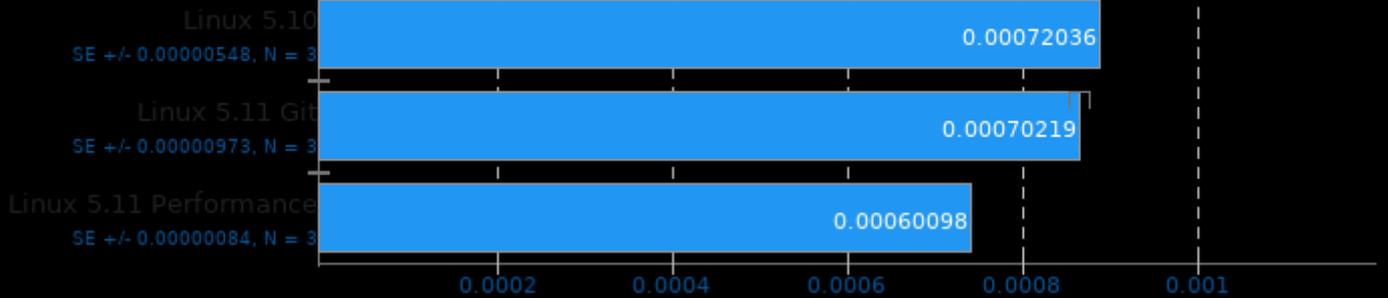
← Seconds, Fewer Is Better



## Perl Benchmarks

Test: Interpreter

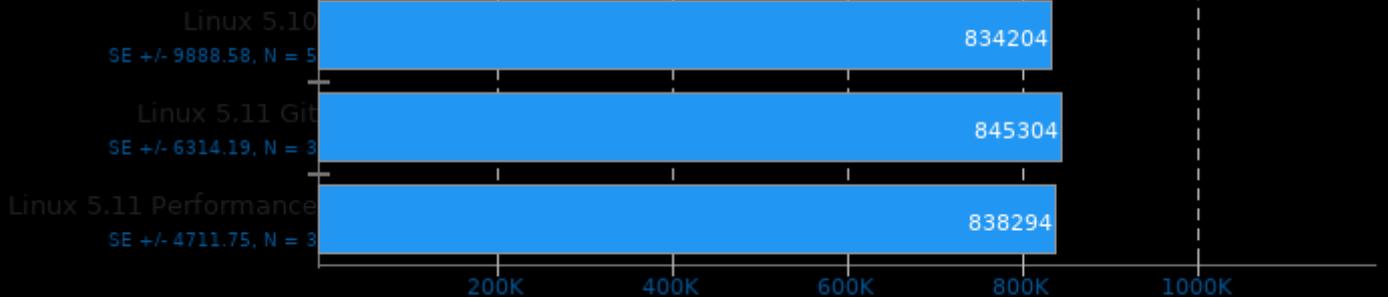
← Seconds, Fewer Is Better



## PHPBench 0.8.1

PHP Benchmark Suite

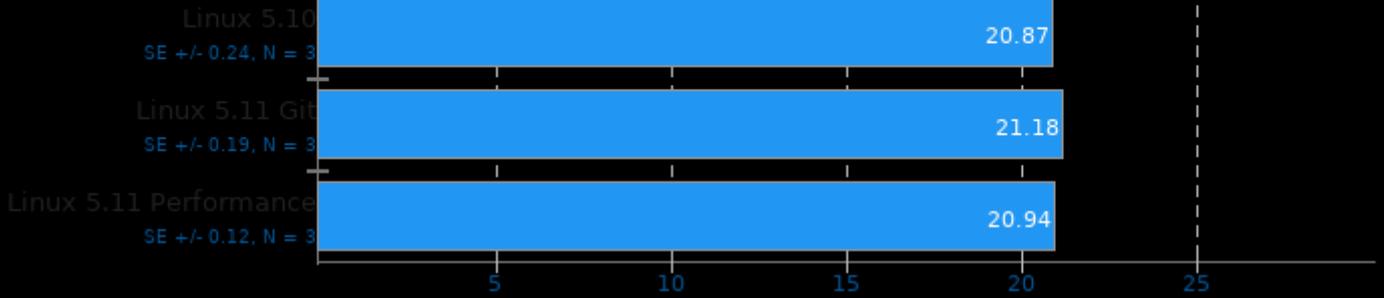
▶ Score, More Is Better



## PlaidML

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

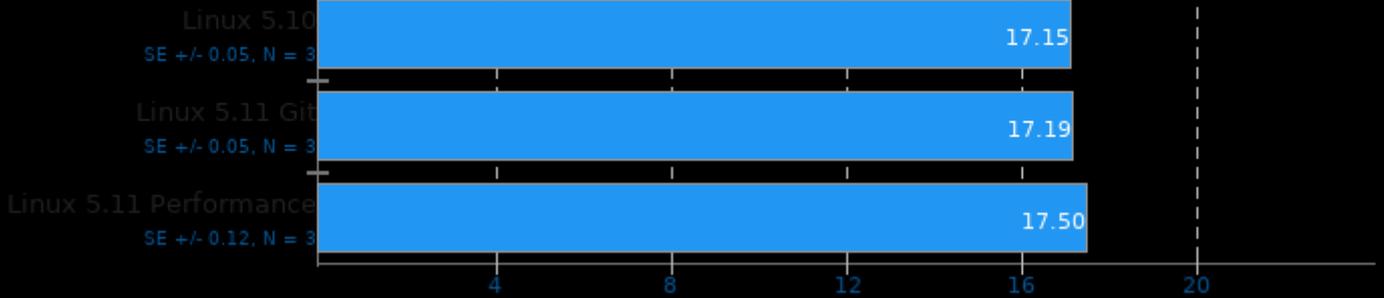
FPS, More Is Better



## PlaidML

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

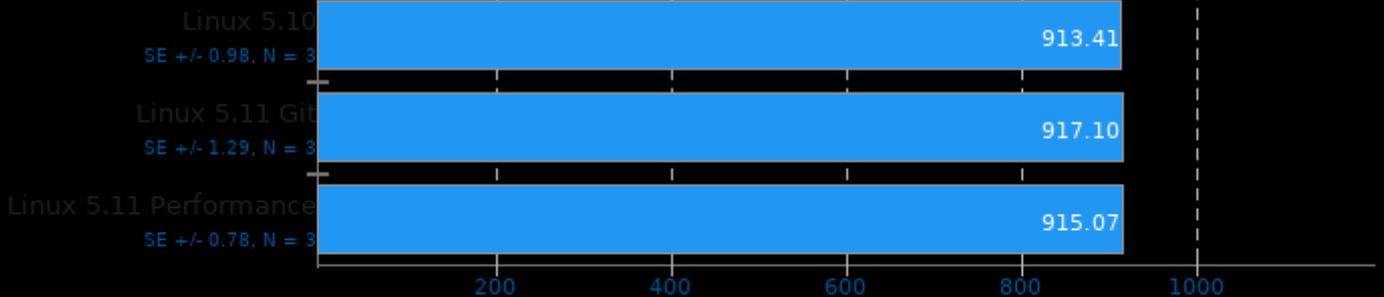
FPS, More Is Better



## PlaidML

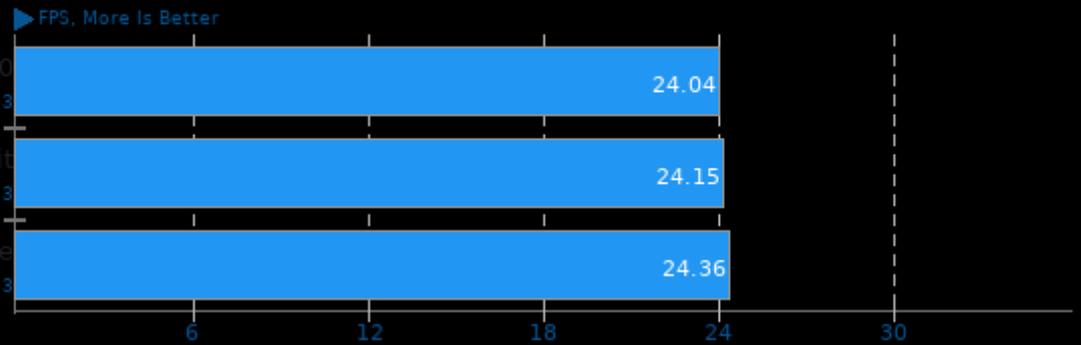
FP16: No - Mode: Inference - Network: IMDB LSTM - Device: CPU

FPS, More Is Better



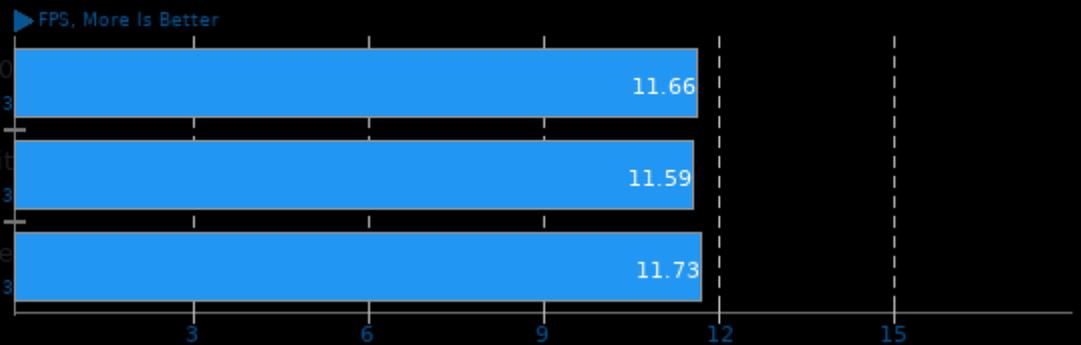
## PlaidML

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



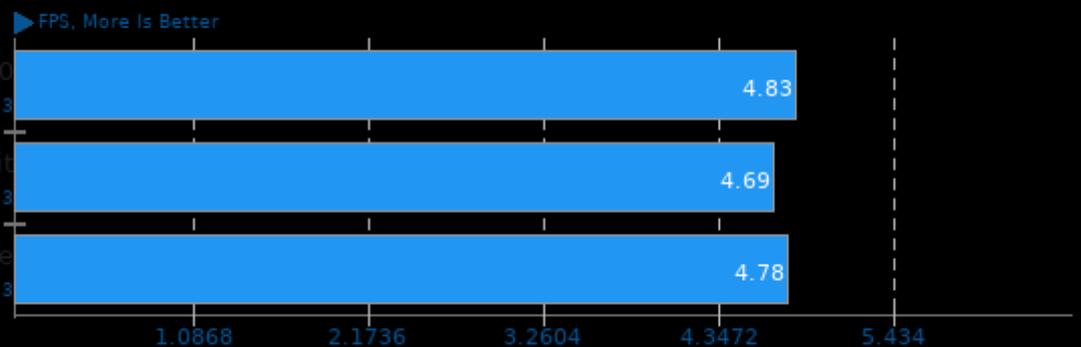
## PlaidML

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



## PlaidML

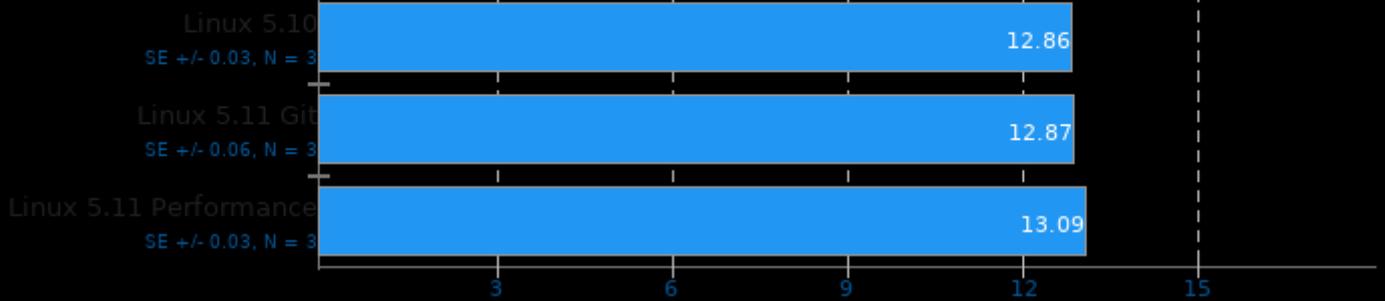
FP16: No - Mode: Inference - Network: DenseNet 201 - Device: CPU



## PlaidML

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

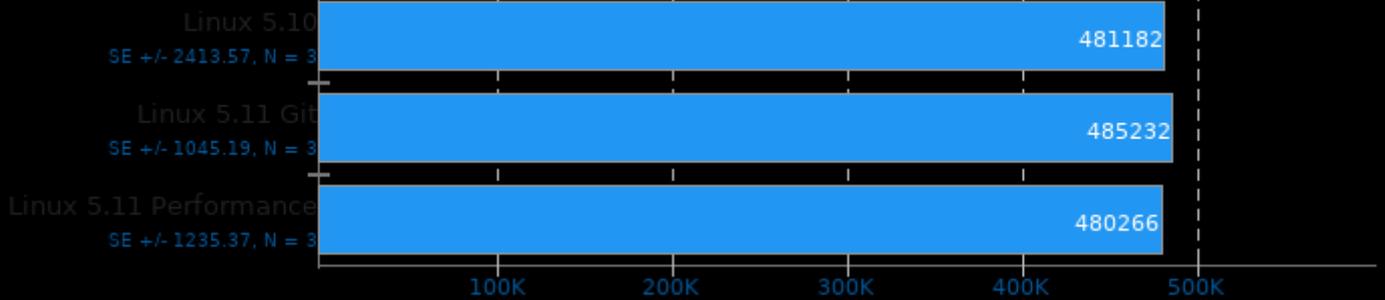
▶ FPS, More Is Better



## PostgreSQL pgbench 13.0

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

▶ TPS, More Is Better

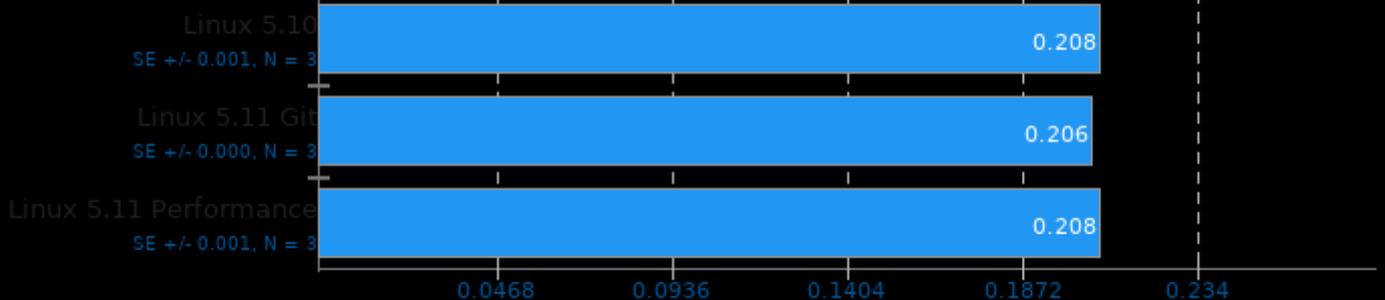


1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

## PostgreSQL pgbench 13.0

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

◀ ms, Fewer Is Better

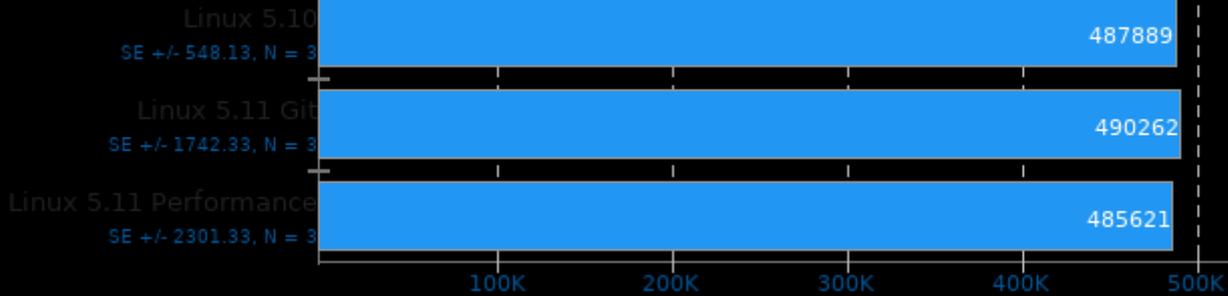


1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

## PostgreSQL pgbench 13.0

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

► TPS, More Is Better

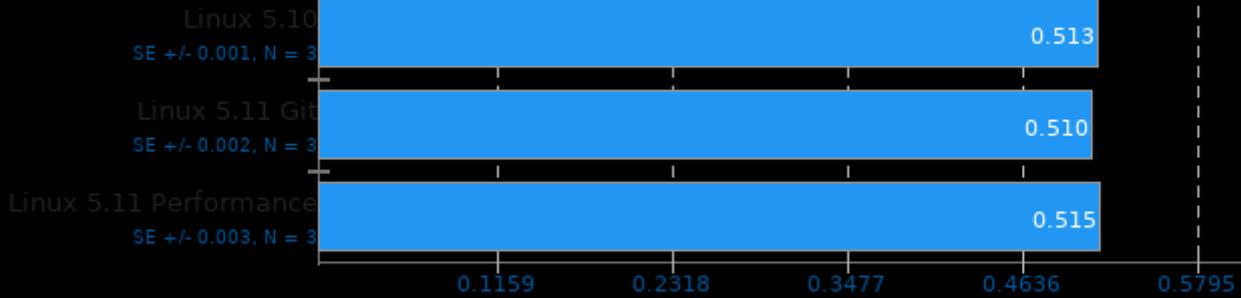


1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

## PostgreSQL pgbench 13.0

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

◄ ms, Fewer Is Better

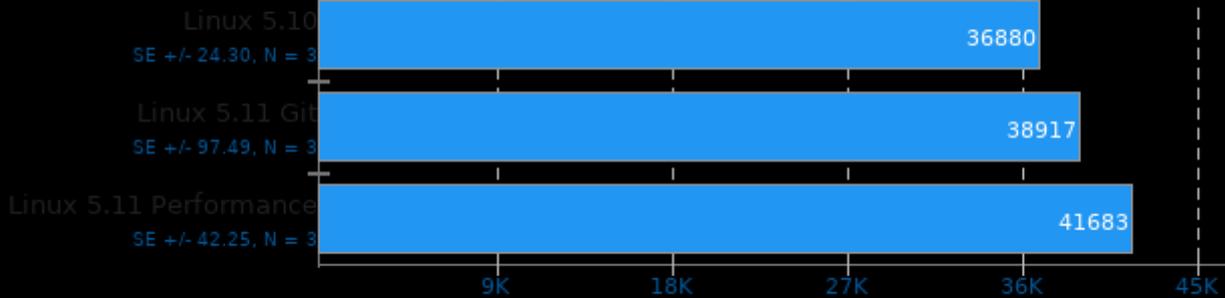


1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

## PostgreSQL pgbench 13.0

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

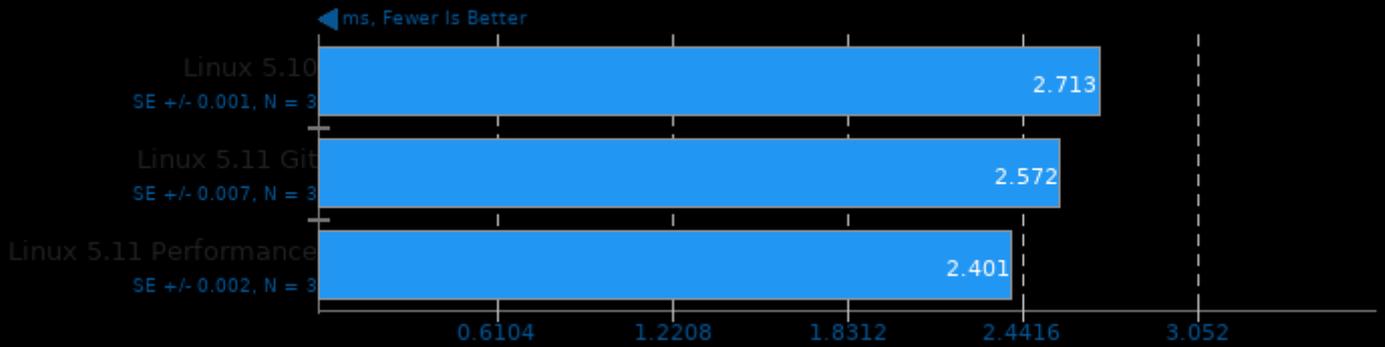
► TPS, More Is Better



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

## PostgreSQL pgbench 13.0

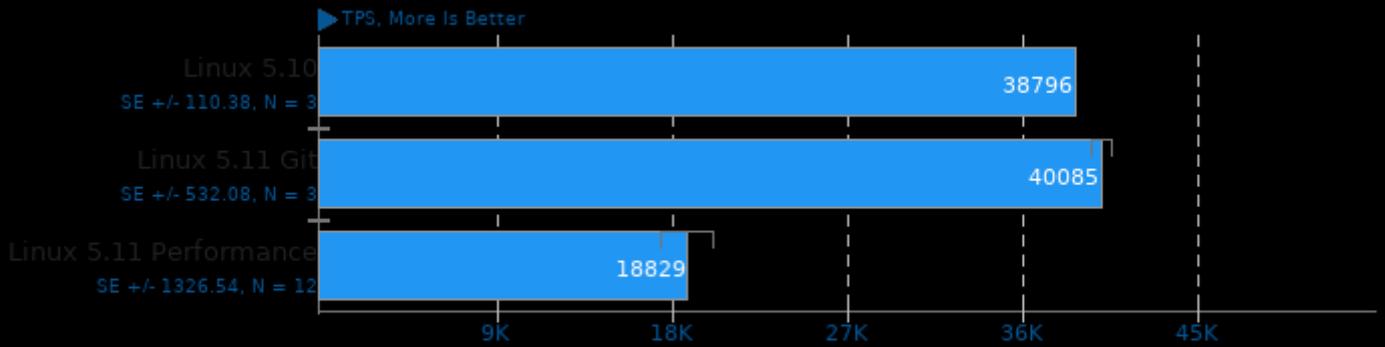
Scaling Factor: 100 - Clients: 100 - Mode: Read Write - Average Latency



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

## PostgreSQL pgbench 13.0

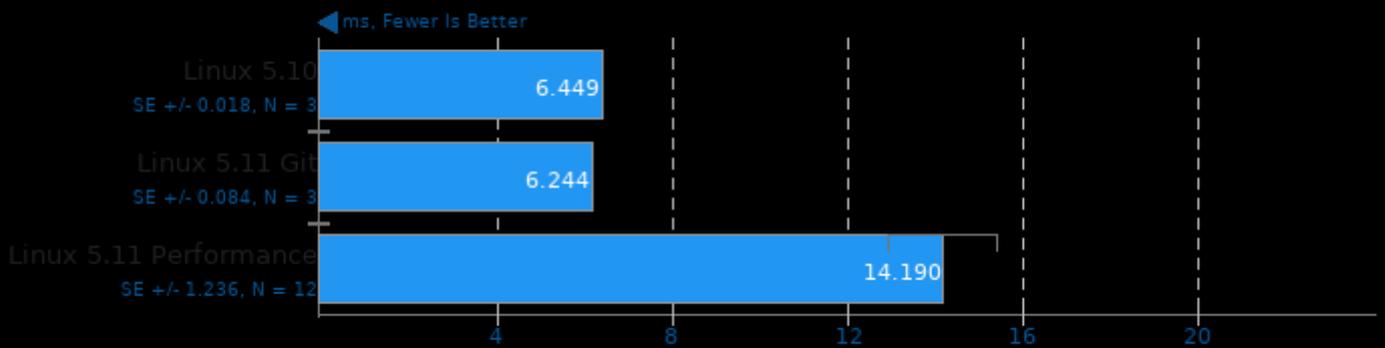
Scaling Factor: 100 - Clients: 250 - Mode: Read Write



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

## PostgreSQL pgbench 13.0

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

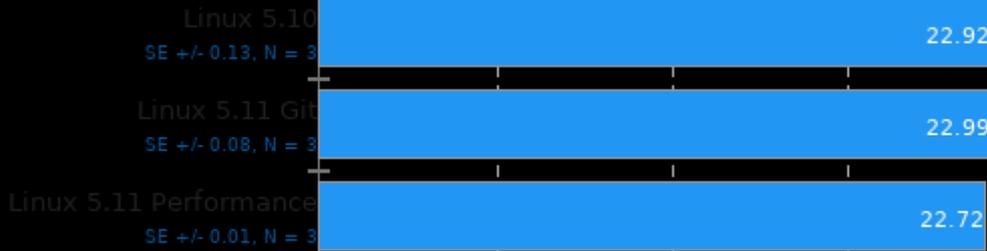


1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

## POV-Ray 3.7.0.7

Trace Time

← Seconds, Fewer Is Better



1. (CXX) g++ options: -pipe -O3 -ffast-math -march=native -pthread -ISDL -ISM -LICE -lX11 -llmimf -lmath -lHalf -llex -llexMath -llmThread -lpthread -ltif

## PyBench 2018-02-16

Total For Average Test Times

← Milliseconds, Fewer Is Better



## PyPerformance 1.0.0

Benchmark: 2to3

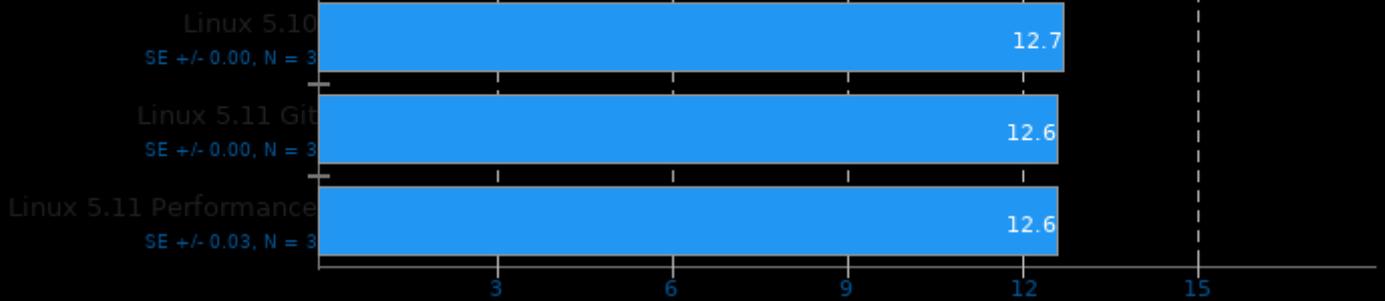
← Milliseconds, Fewer Is Better



## PyPerformance 1.0.0

Benchmark: pathlib

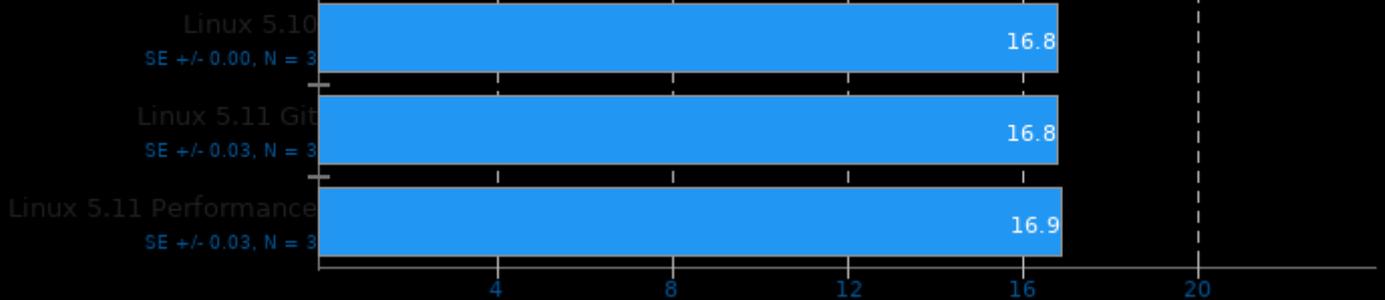
◀ Milliseconds, Fewer Is Better



## PyPerformance 1.0.0

Benchmark: json\_loads

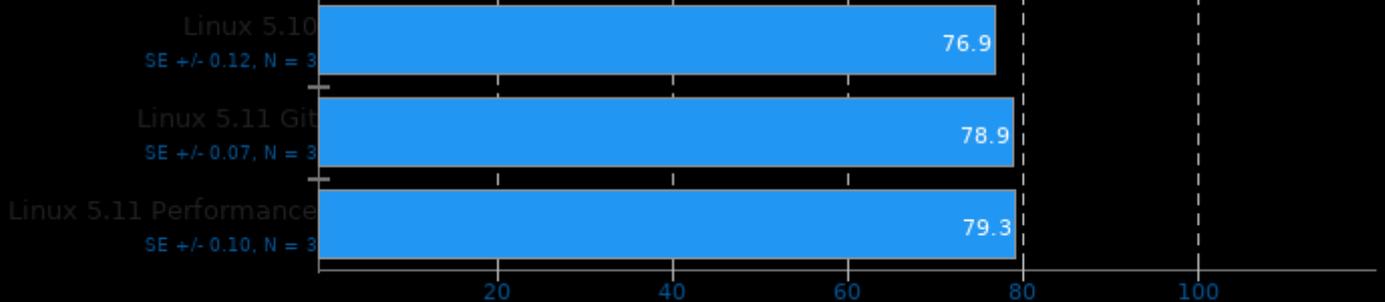
◀ Milliseconds, Fewer Is Better



## PyPerformance 1.0.0

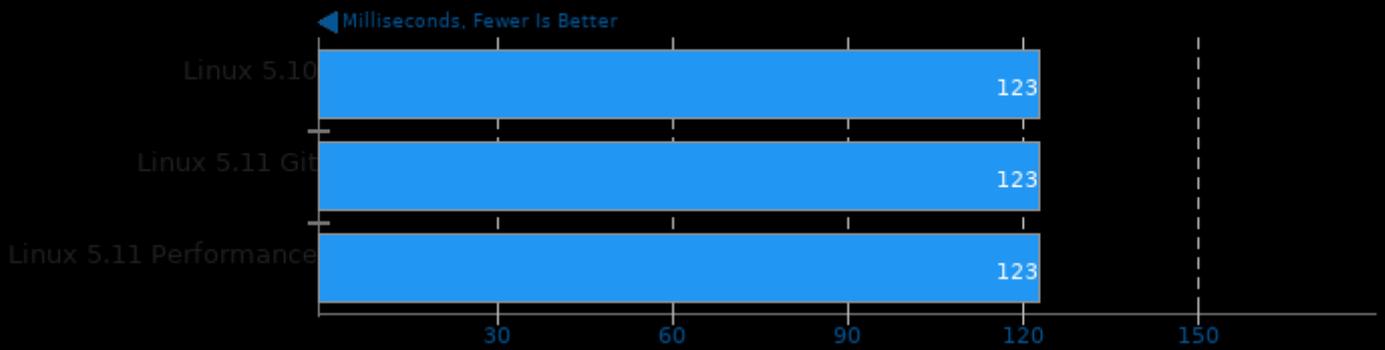
Benchmark: crypto\_pyaes

◀ Milliseconds, Fewer Is Better



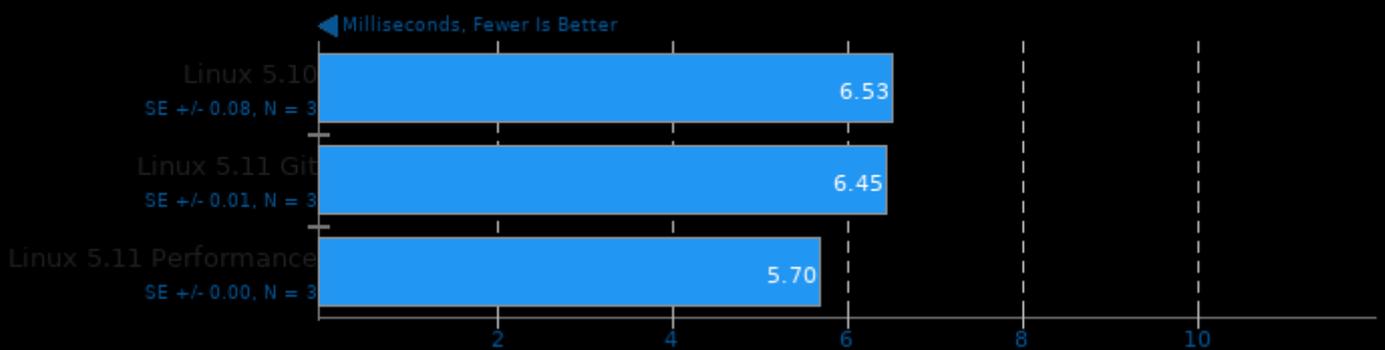
## PyPerformance 1.0.0

Benchmark: regex\_compile



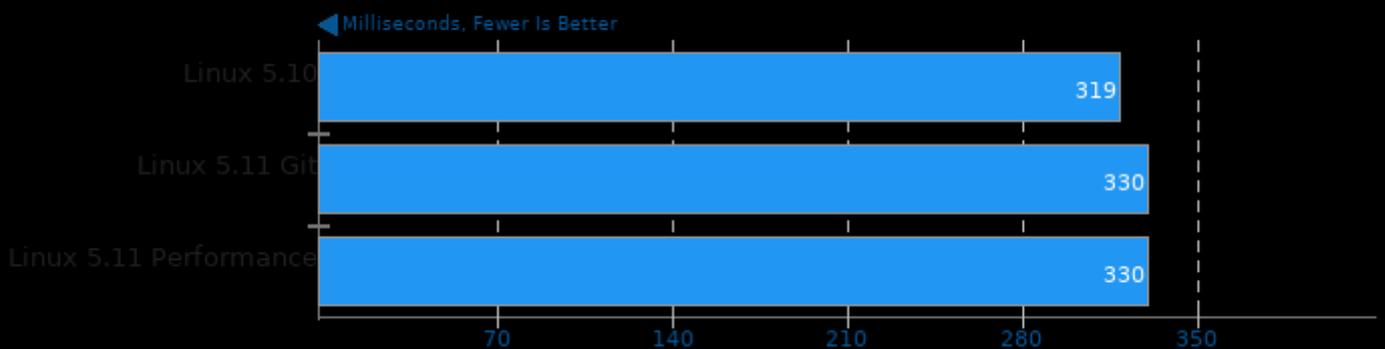
## PyPerformance 1.0.0

Benchmark: python\_startup



## PyPerformance 1.0.0

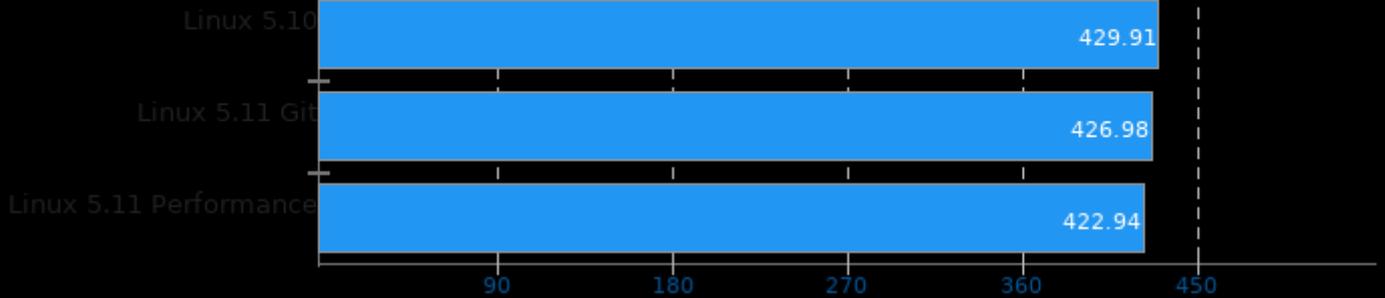
Benchmark: pickle\_pure\_python



## Radiance Benchmark 5.0

Test: Serial

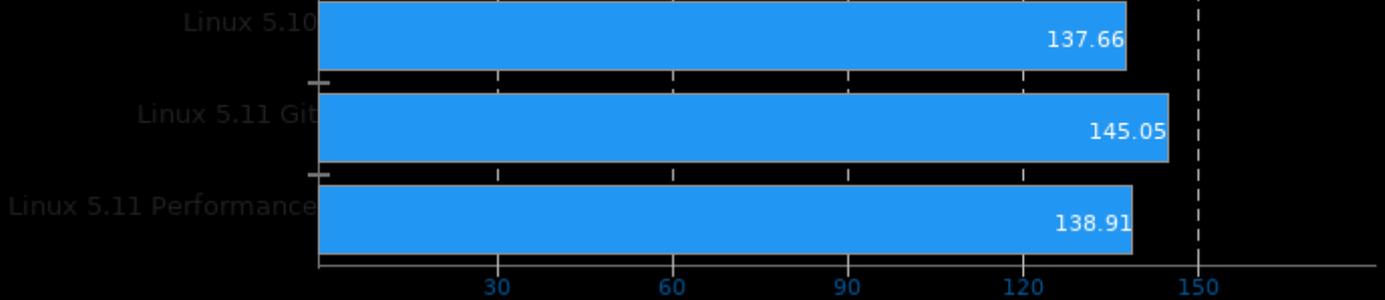
← Seconds, Fewer Is Better



## Radiance Benchmark 5.0

Test: SMP Parallel

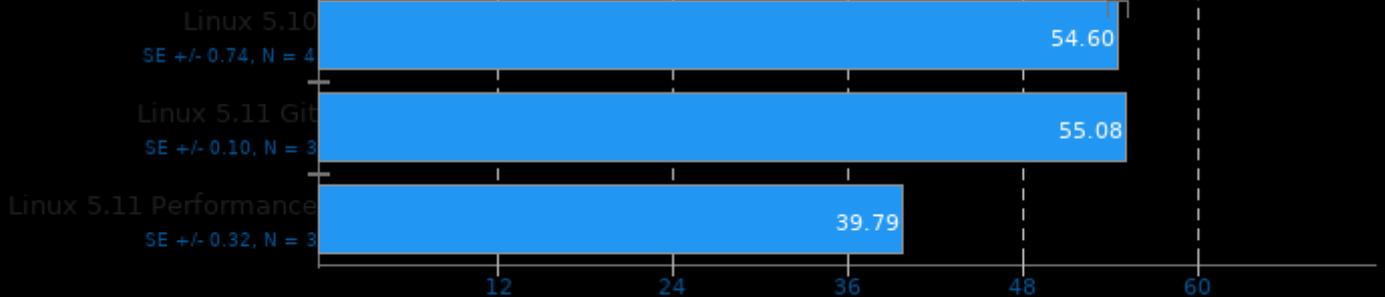
← Seconds, Fewer Is Better



## RAR Compression 5.6.1

Linux Source Tree Archiving To RAR

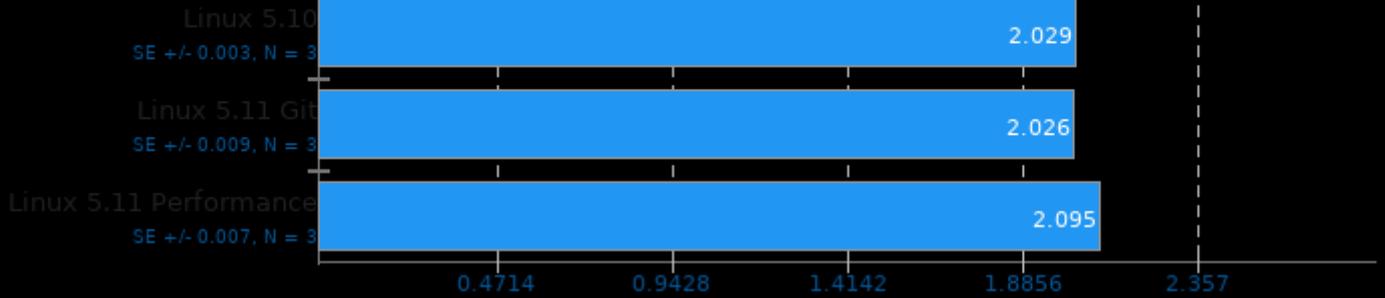
← Seconds, Fewer Is Better



## rav1e 0.4 Alpha

Speed: 6

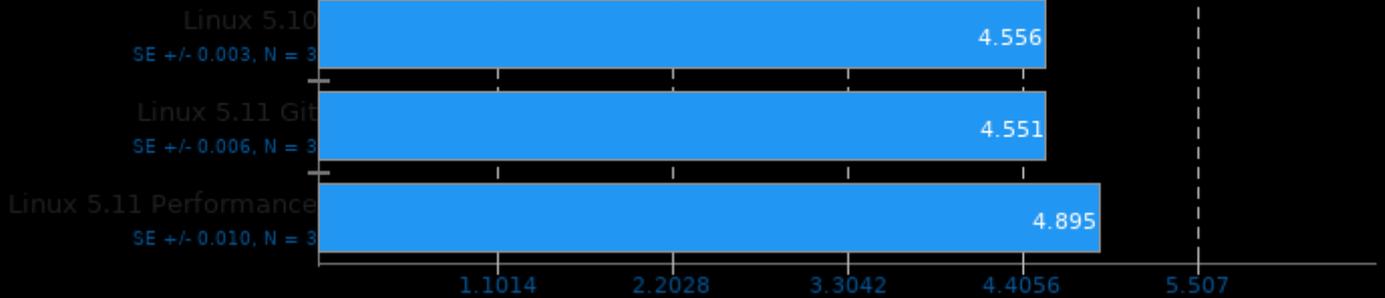
▶ Frames Per Second, More Is Better



## rav1e 0.4 Alpha

Speed: 10

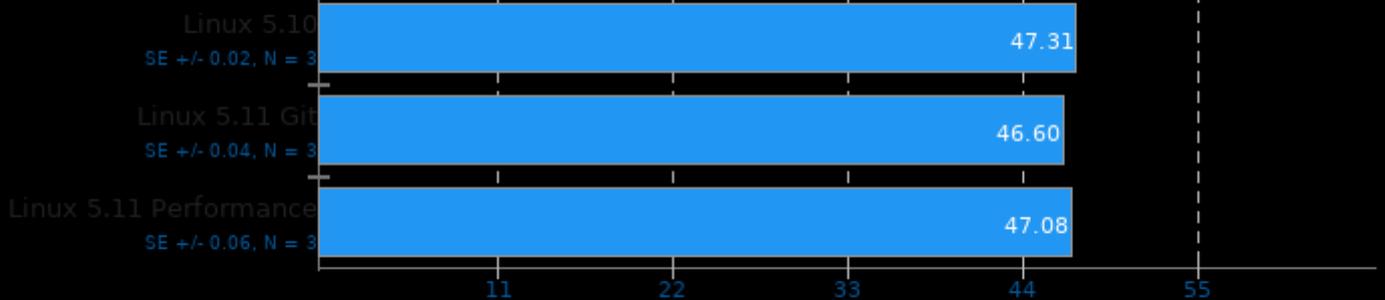
▶ Frames Per Second, More Is Better



## RawTherapee

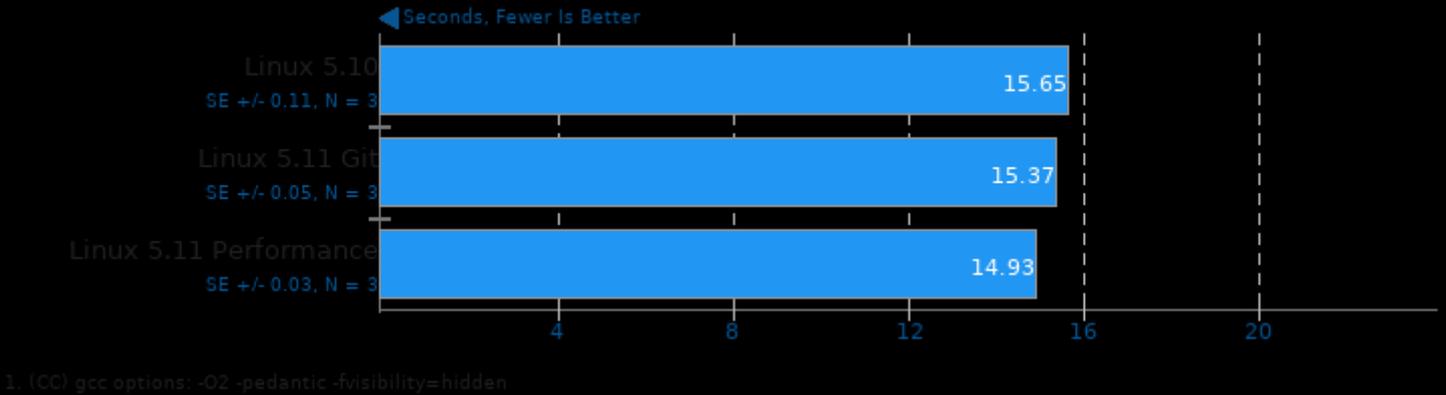
Total Benchmark Time

◀ Seconds, Fewer Is Better



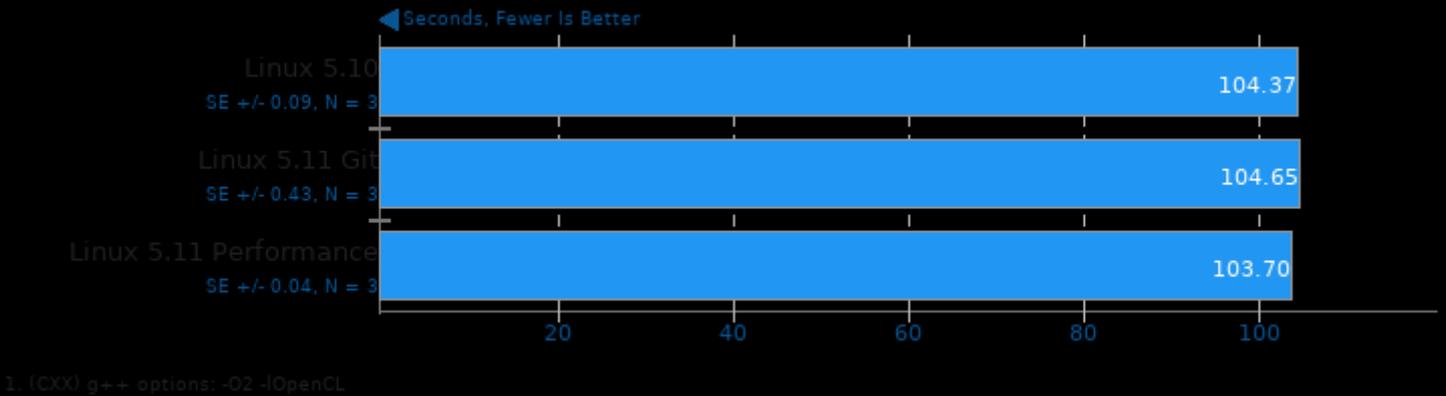
1. RawTherapee, version 5.8, command line.

## RNNoise 2020-06-28



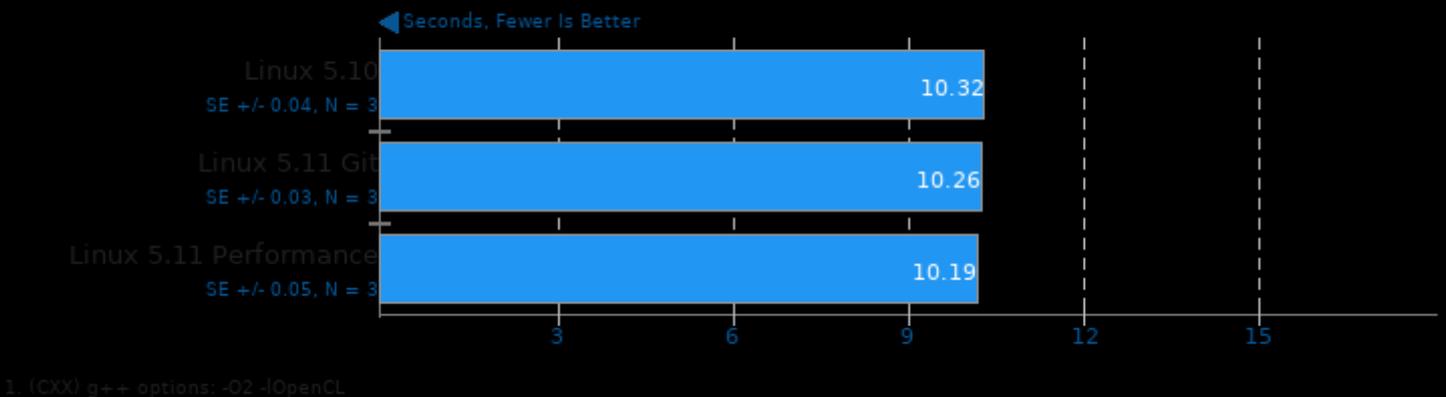
## Rodinia 3.1

Test: OpenMP LavaMD



## Rodinia 3.1

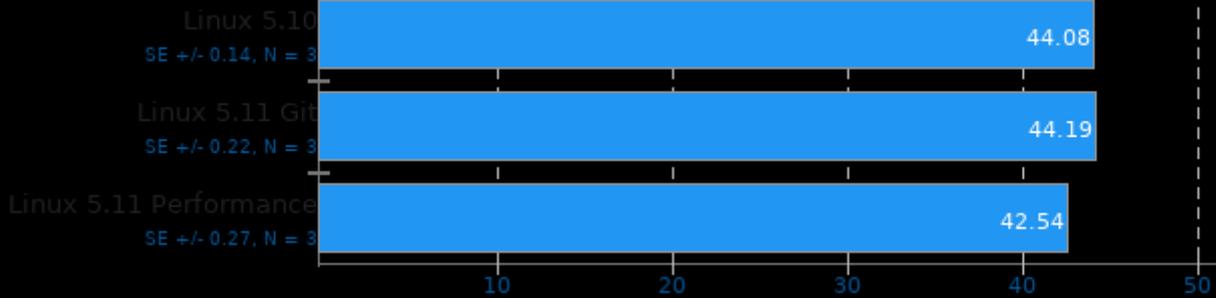
Test: OpenMP CFD Solver



## Selenium

Benchmark: ARES-6 - Browser: Firefox

ms, Fewer Is Better

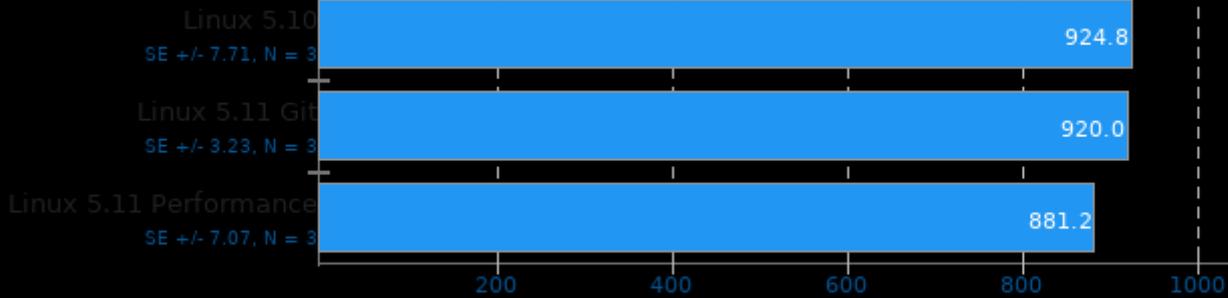


1. firefox 84.0

## Selenium

Benchmark: Kraken - Browser: Firefox

ms, Fewer Is Better

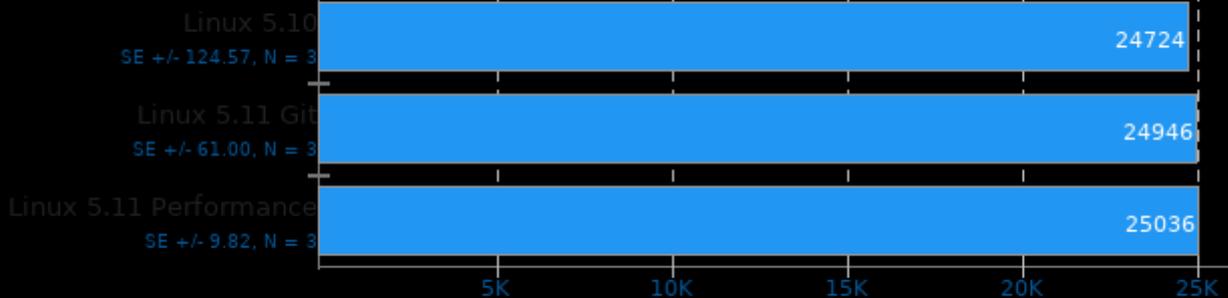


1. firefox 84.0

## Selenium

Benchmark: Octane - Browser: Firefox

Geometric Mean, More Is Better

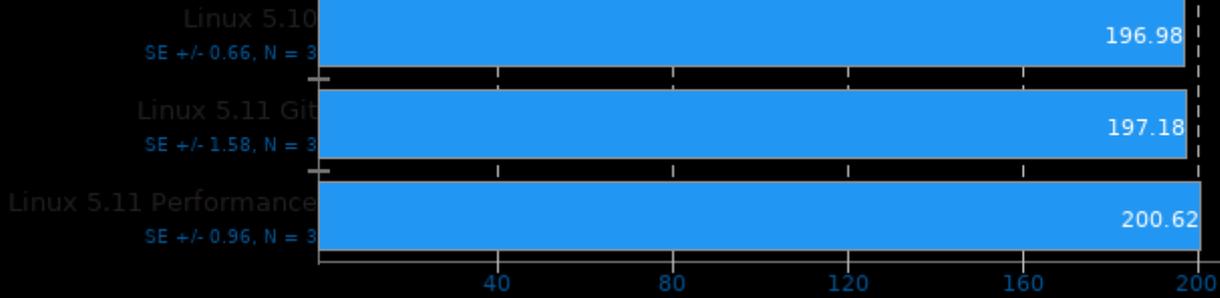


1. firefox 84.0

## Selenium

Benchmark: Jetstream - Browser: Firefox

Score, More Is Better

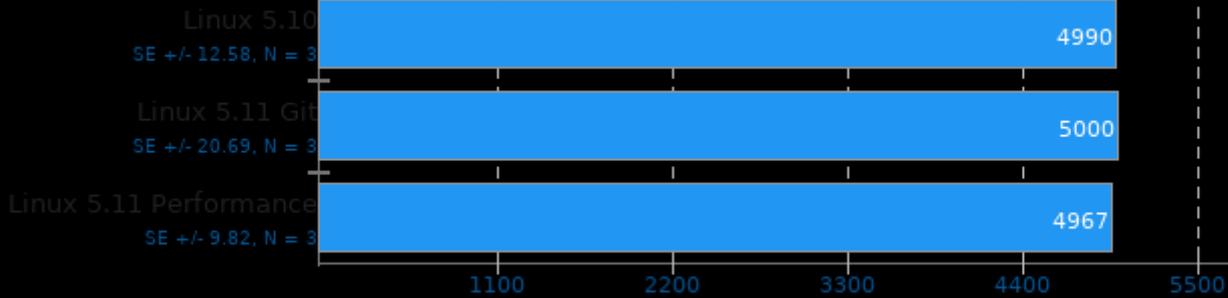


1. firefox 84.0

## Selenium

Benchmark: CanvasMark - Browser: Firefox

Score, More Is Better

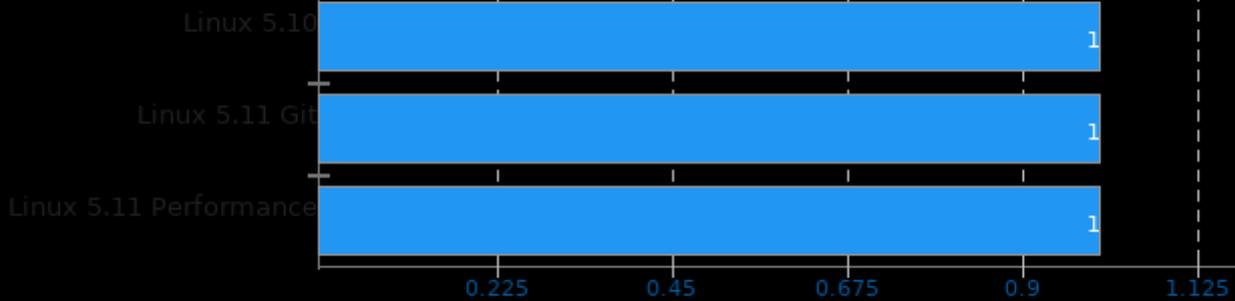


1. firefox 84.0

## Selenium

Benchmark: MotionMark - Browser: Firefox

Score, More Is Better

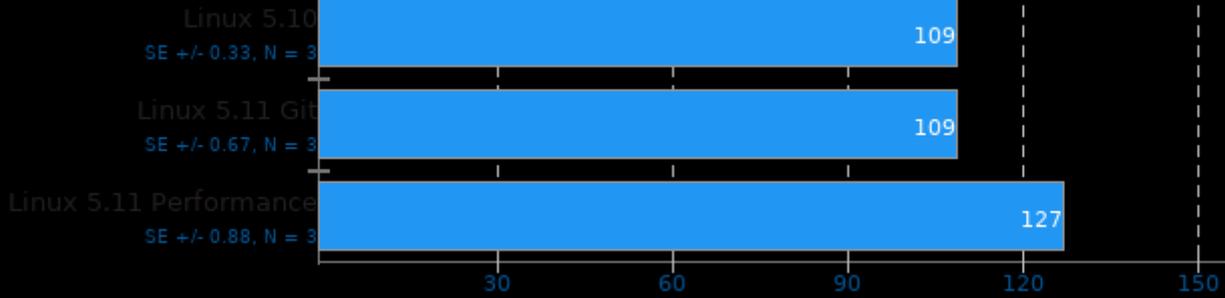


1. firefox 84.0

## Selenium

Benchmark: StyleBench - Browser: Firefox

Runs / Minute, More Is Better

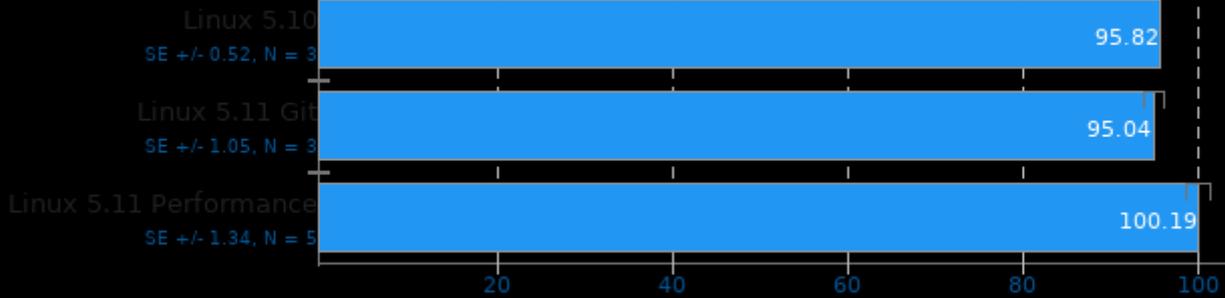


1. firefox 84.0

## Selenium

Benchmark: Jetstream 2 - Browser: Firefox

Score, More Is Better

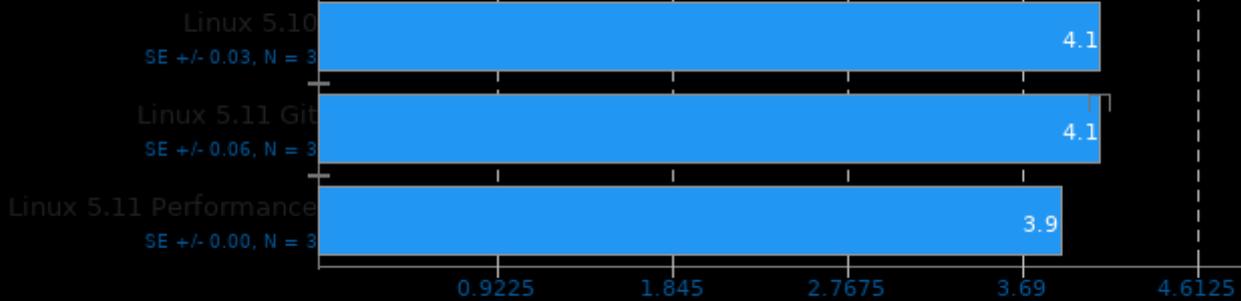


1. firefox 84.0

## Selenium

Benchmark: Maze Solver - Browser: Firefox

Seconds, Fewer Is Better

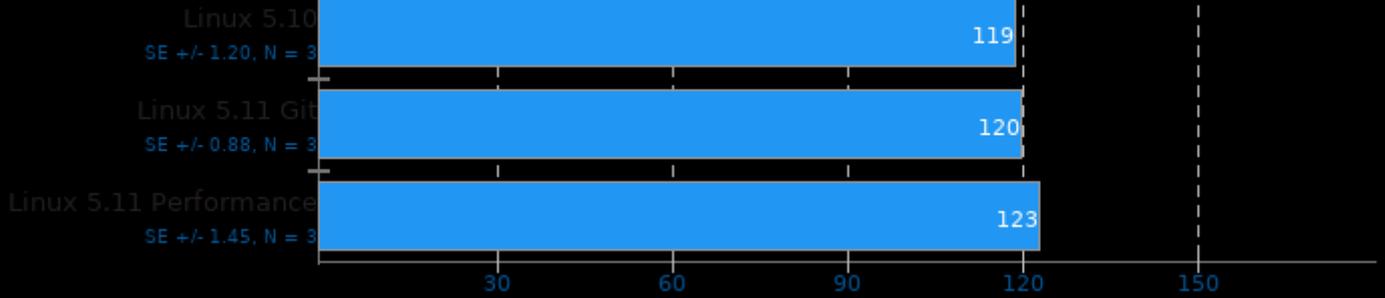


1. firefox 84.0

## Selenium

Benchmark: Speedometer - Browser: Firefox

Runs Per Minute, More Is Better

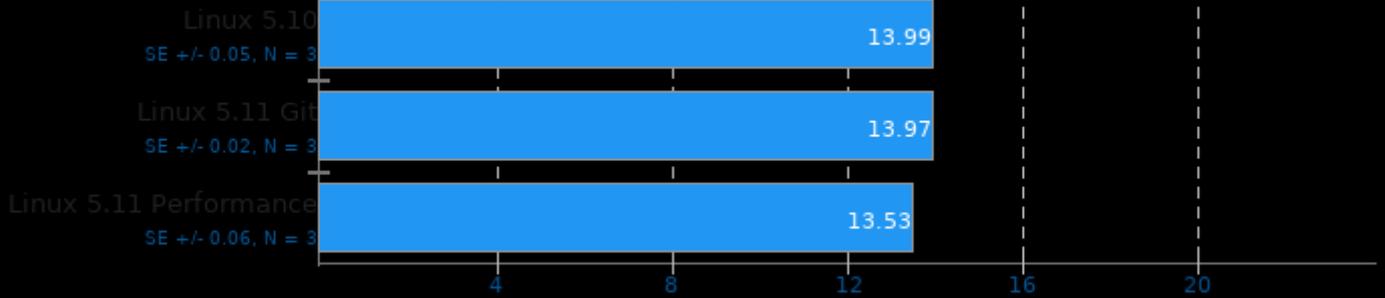


1. firefox 84.0

## Selenium

Benchmark: ARES-6 - Browser: Google Chrome

ms, Fewer Is Better

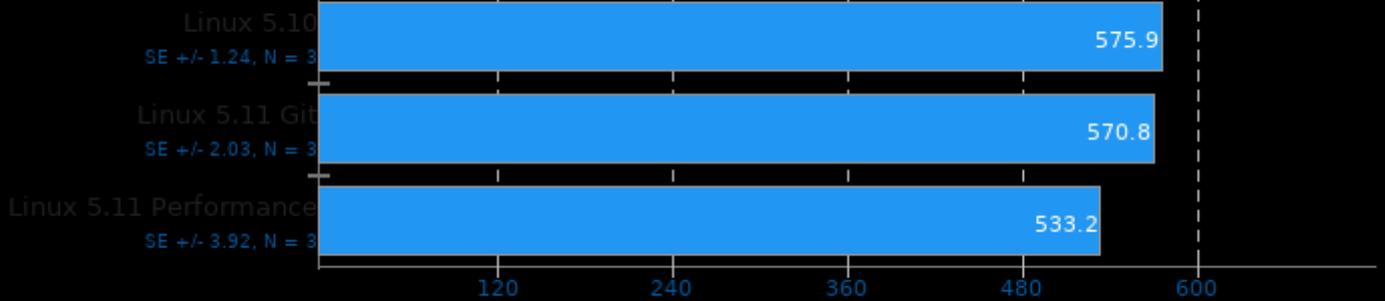


1. chrome 87.0.4280.88

## Selenium

Benchmark: Kraken - Browser: Google Chrome

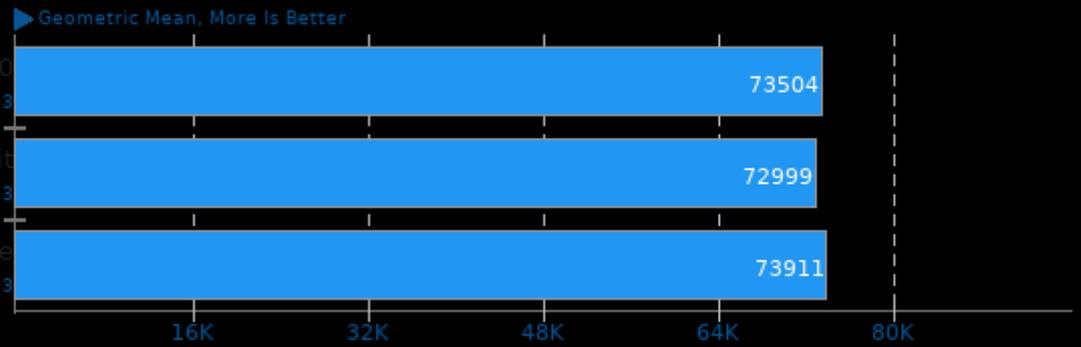
ms, Fewer Is Better



1. chrome 87.0.4280.88

## Selenium

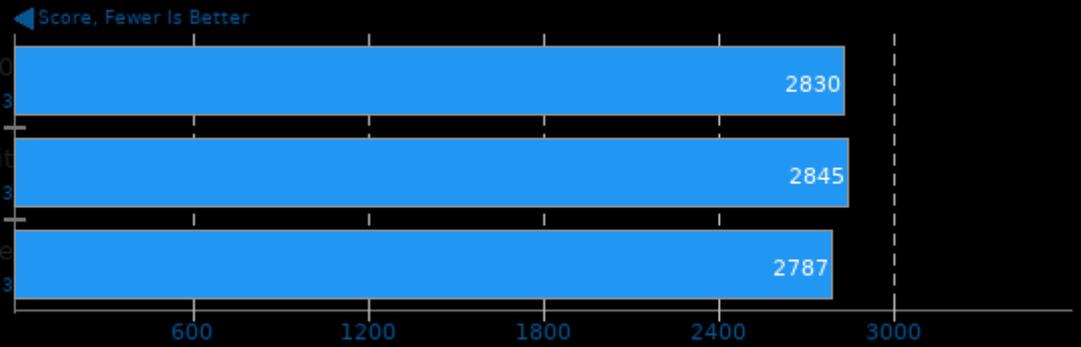
Benchmark: Octane - Browser: Google Chrome



1. chrome 87.0.4280.88

## Selenium

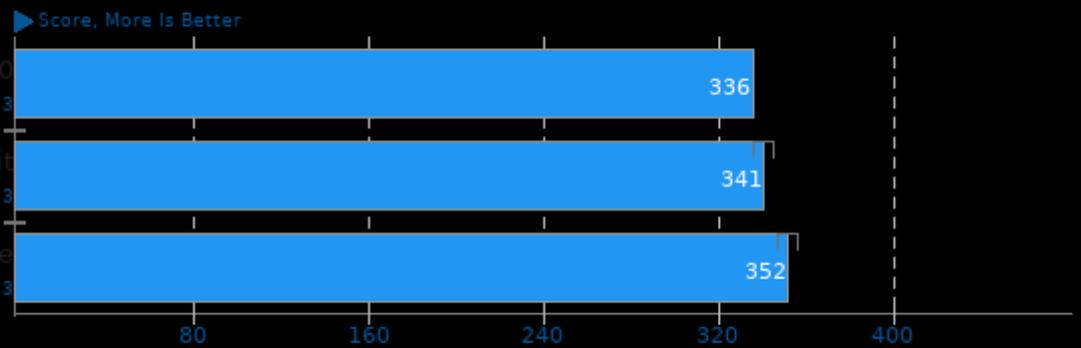
Benchmark: PSPDFKit WASM - Browser: Firefox



1. firefox 84.0

## Selenium

Benchmark: WebXPRT - Browser: Google Chrome

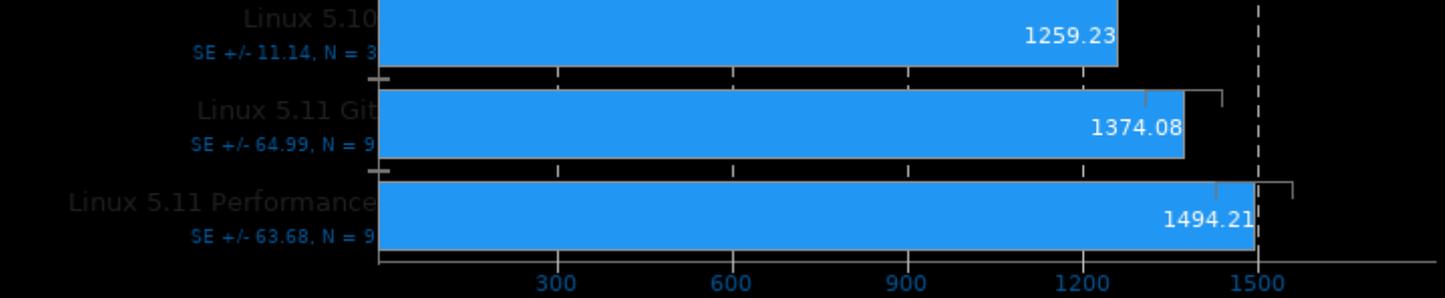


1. chrome 87.0.4280.88

## Selenium

Benchmark: Basemark - Browser: Google Chrome

Overall Score, More Is Better

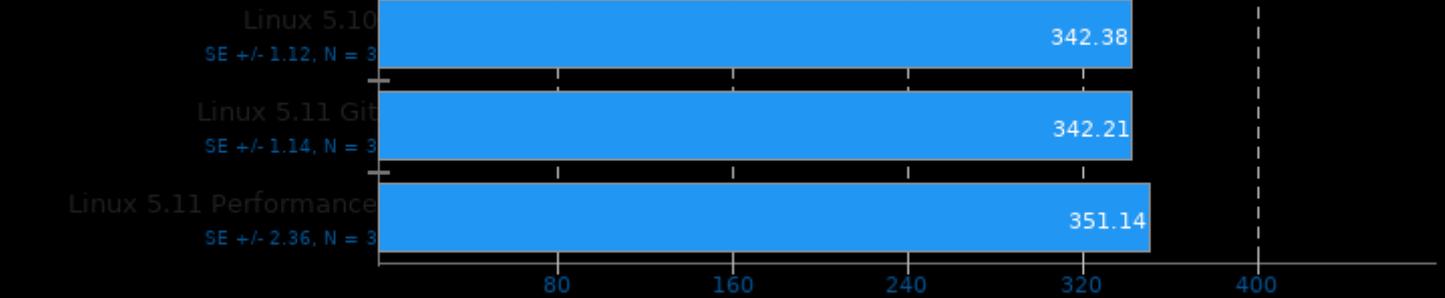


1. chrome 87.0.4280.88

## Selenium

Benchmark: Jetstream - Browser: Google Chrome

Score, More Is Better

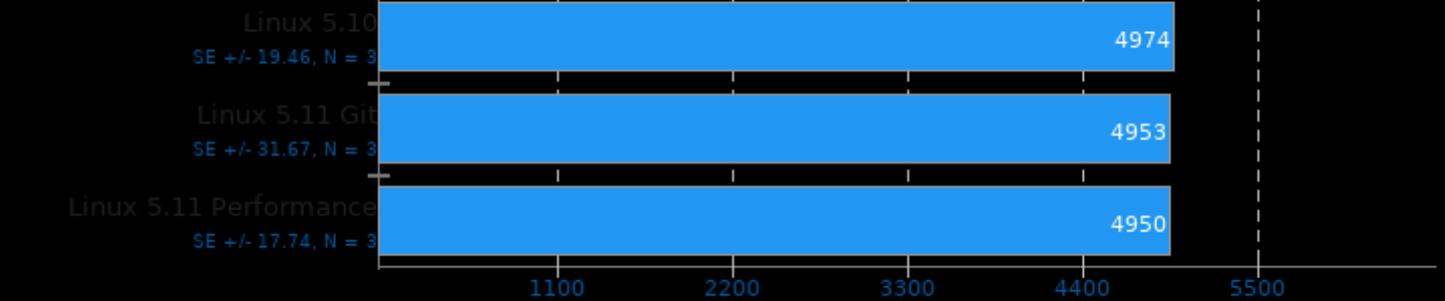


1. chrome 87.0.4280.88

## Selenium

Benchmark: CanvasMark - Browser: Google Chrome

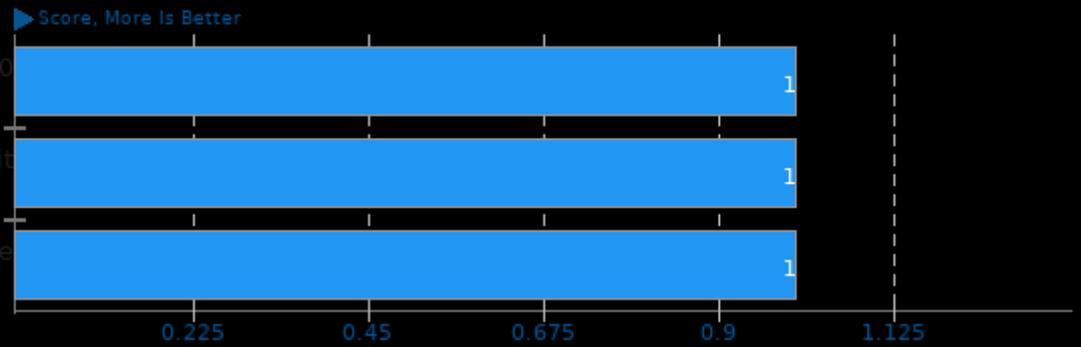
Score, More Is Better



1. chrome 87.0.4280.88

## Selenium

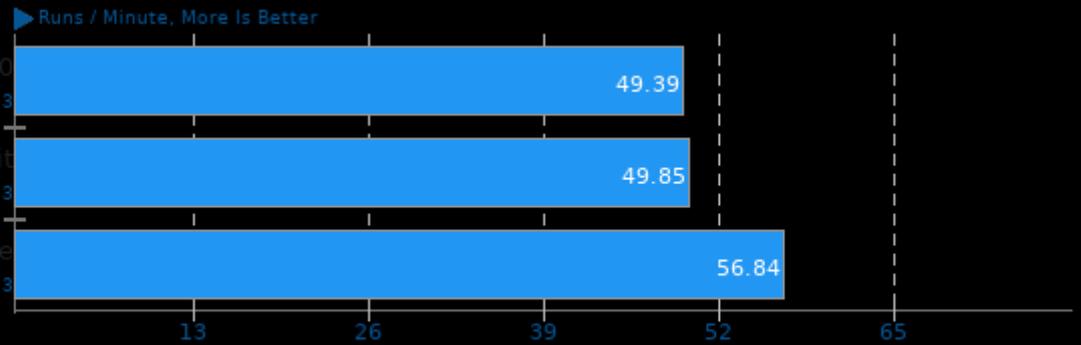
Benchmark: MotionMark - Browser: Google Chrome



1. chrome 87.0.4280.88

## Selenium

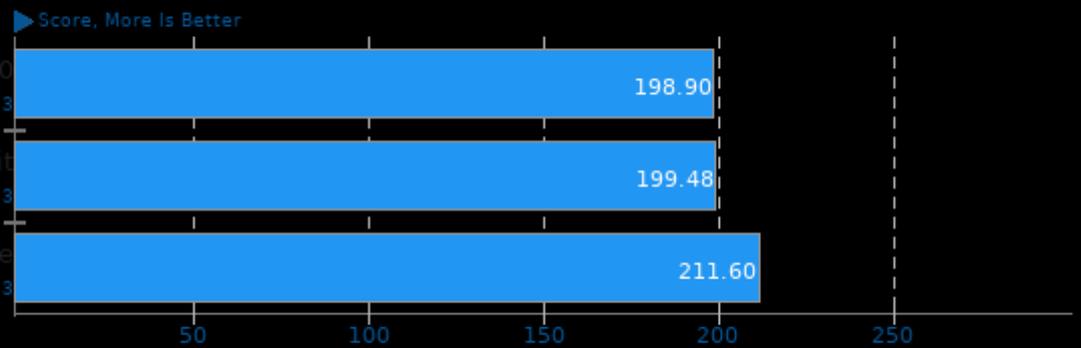
Benchmark: StyleBench - Browser: Google Chrome



1. chrome 87.0.4280.88

## Selenium

Benchmark: Jetstream 2 - Browser: Google Chrome

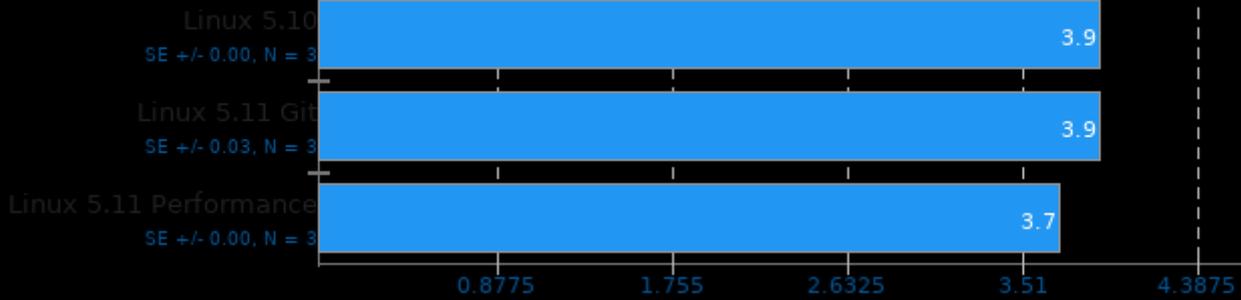


1. chrome 87.0.4280.88

## Selenium

Benchmark: Maze Solver - Browser: Google Chrome

← Seconds, Fewer Is Better

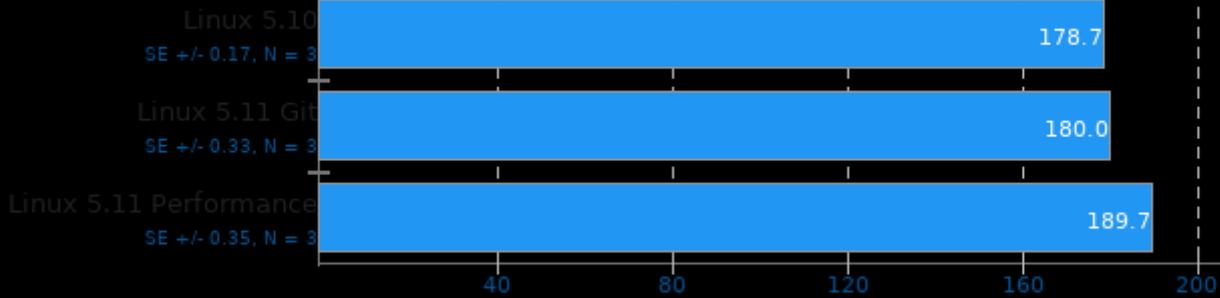


1. chrome 87.0.4280.88

## Selenium

Benchmark: Speedometer - Browser: Google Chrome

▶ Runs Per Minute, More Is Better

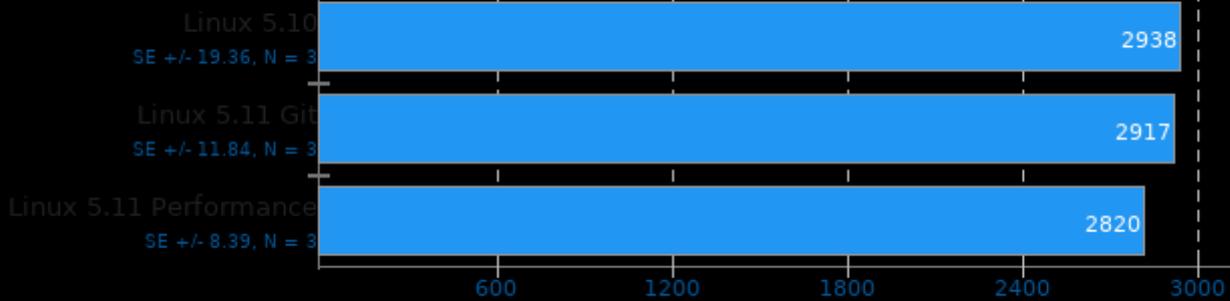


1. chrome 87.0.4280.88

## Selenium

Benchmark: PSPDFKit WASM - Browser: Google Chrome

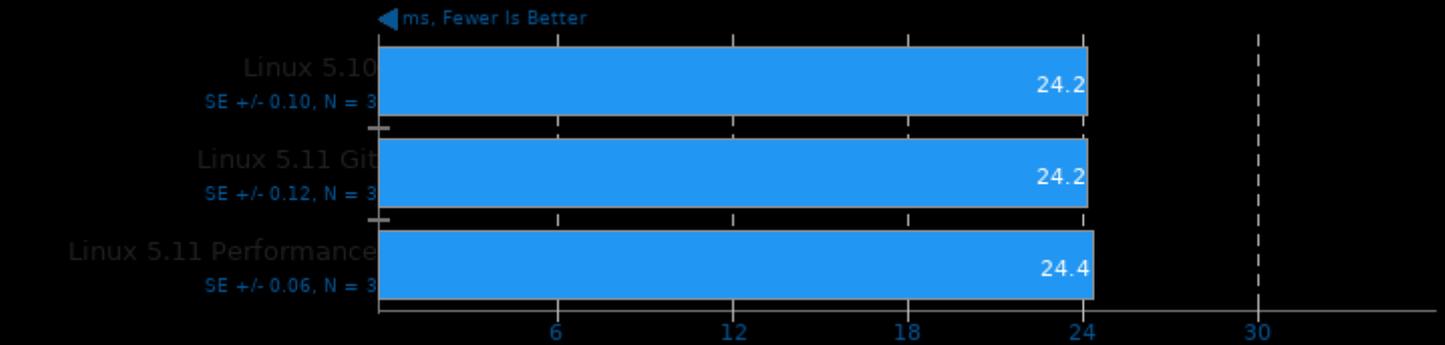
← Score, Fewer Is Better



1. chrome 87.0.4280.88

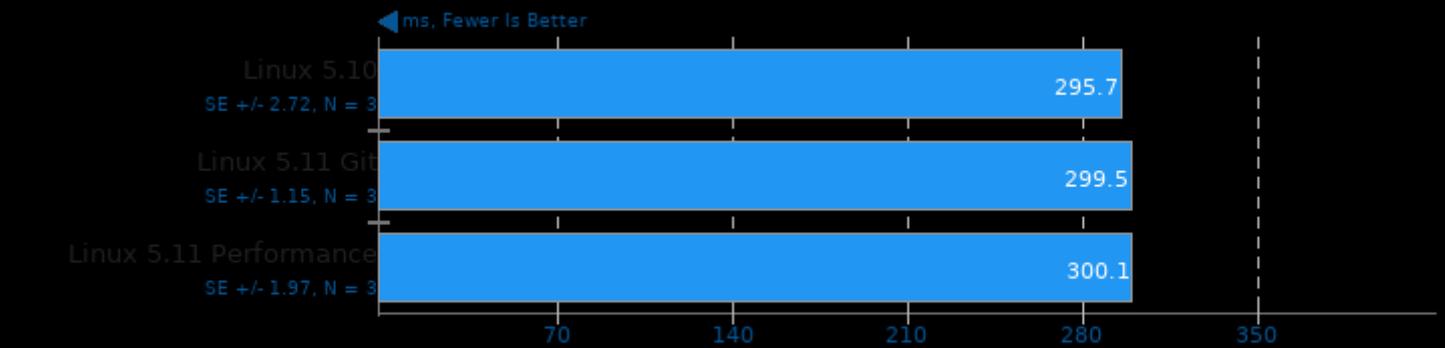
## Selenium

Benchmark: WASM imageConvolute - Browser: Firefox



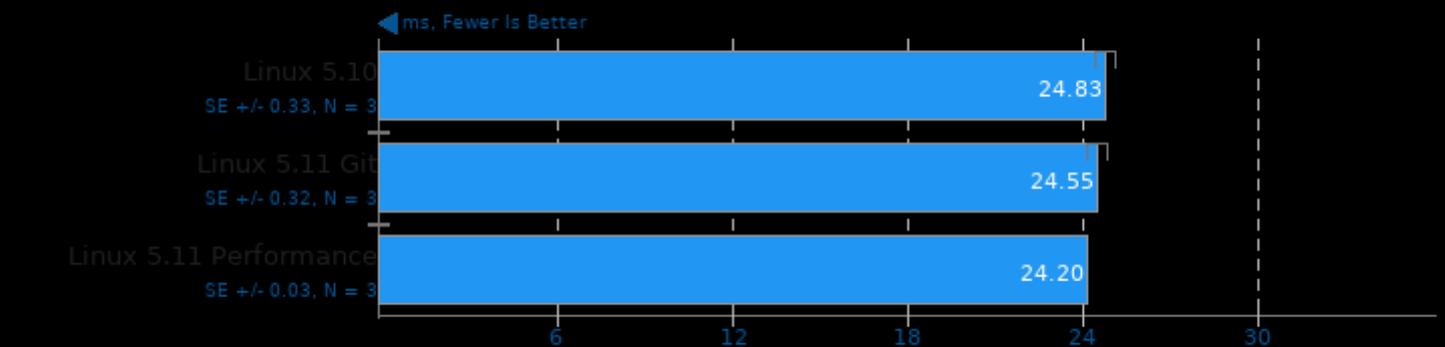
## Selenium

Benchmark: WASM collisionDetection - Browser: Firefox



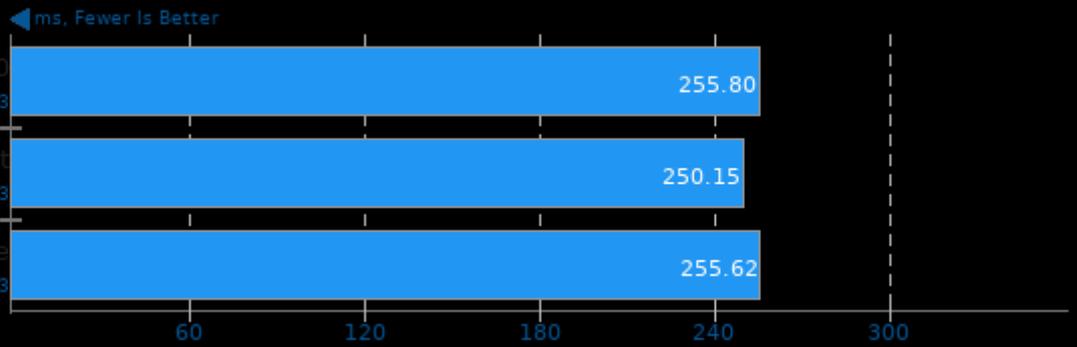
## Selenium

Benchmark: WASM imageConvolute - Browser: Google Chrome



## Selenium

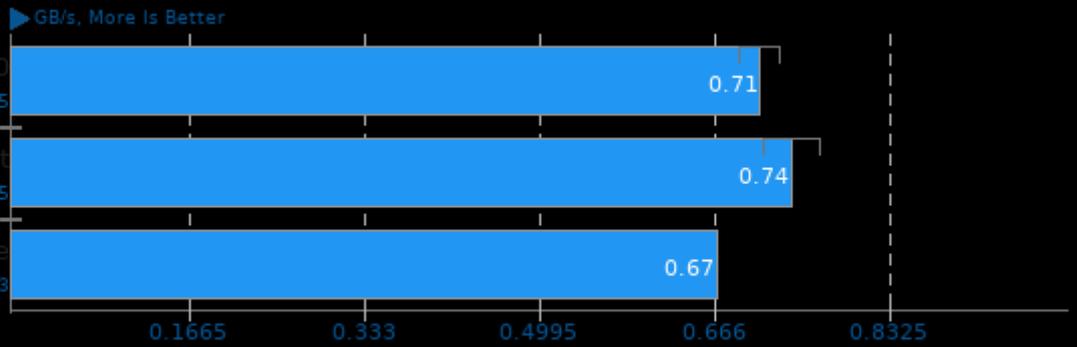
Benchmark: WASM collisionDetection - Browser: Google Chrome



1. chrome 87.0.4280.88

## simdjson 0.7.1

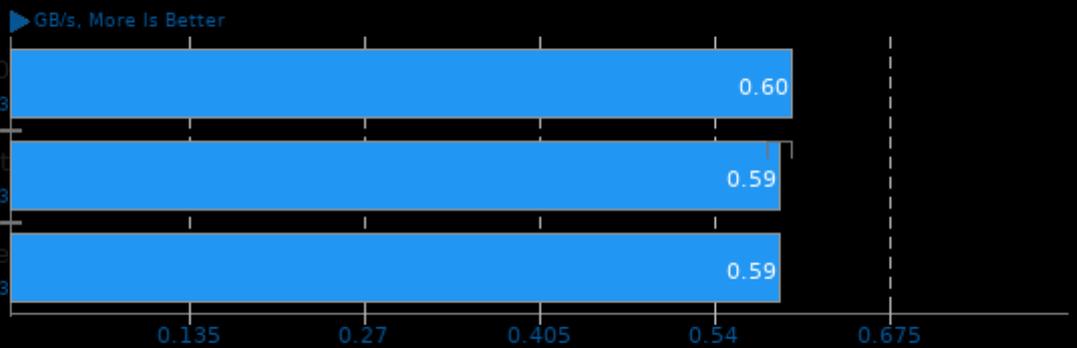
Throughput Test: Kostya



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

## simdjson 0.7.1

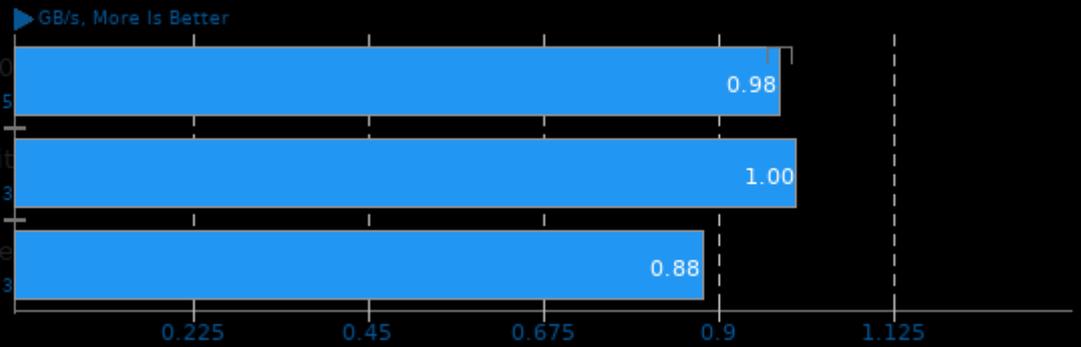
Throughput Test: LargeRandom



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

## simdjson 0.7.1

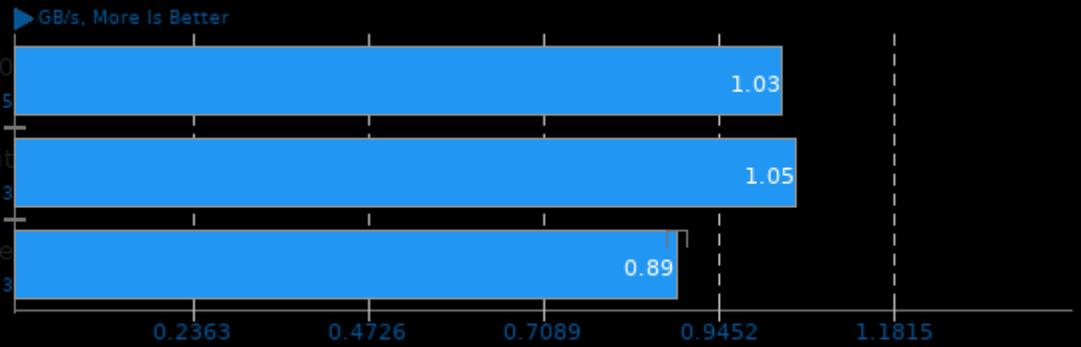
Throughput Test: PartialTweets



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

## simdjson 0.7.1

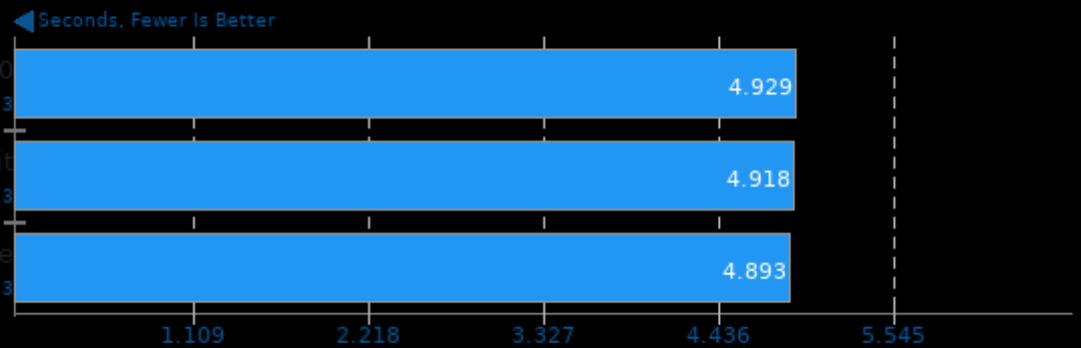
Throughput Test: DistinctUserID



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

## Smallpt 1.0

Global Illumination Renderer; 128 Samples

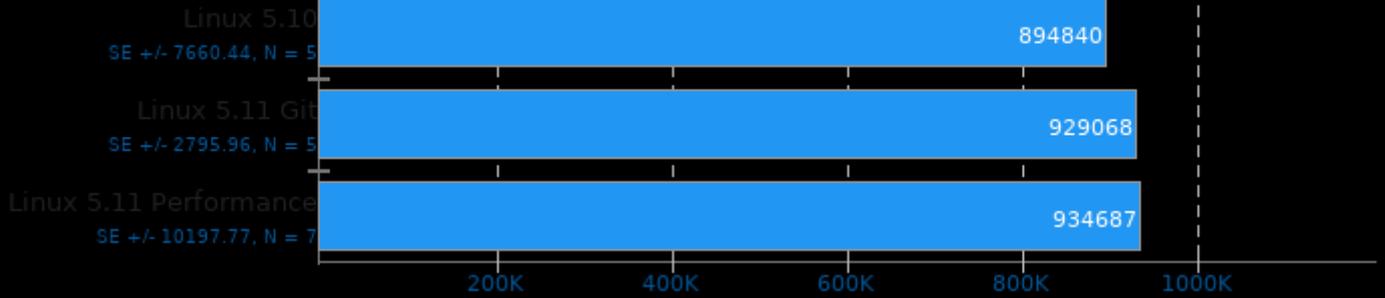


1. (CXX) g++ options: -fopenmp -O3

## Sockperf 3.4

Test: Throughput

Messages Per Second, More Is Better

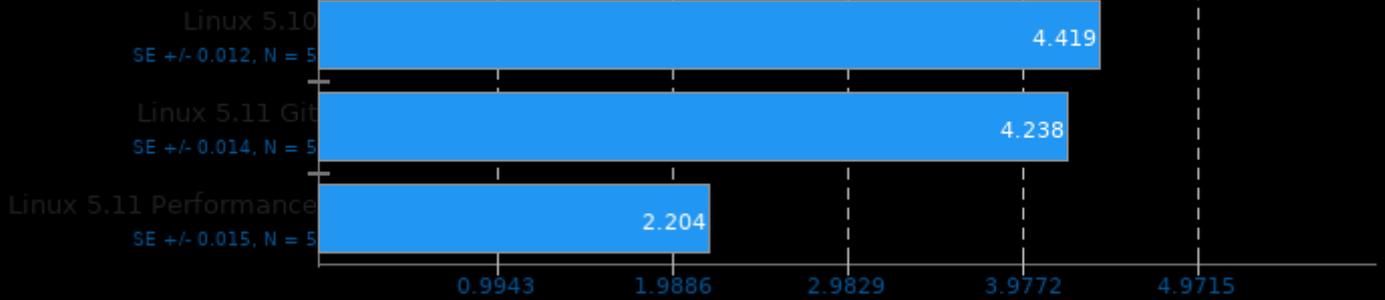


1. (CXX) g++ options: -param -O3 -rdynamic -ldl -pthread

## Sockperf 3.4

Test: Latency Ping Pong

usec, Fewer Is Better

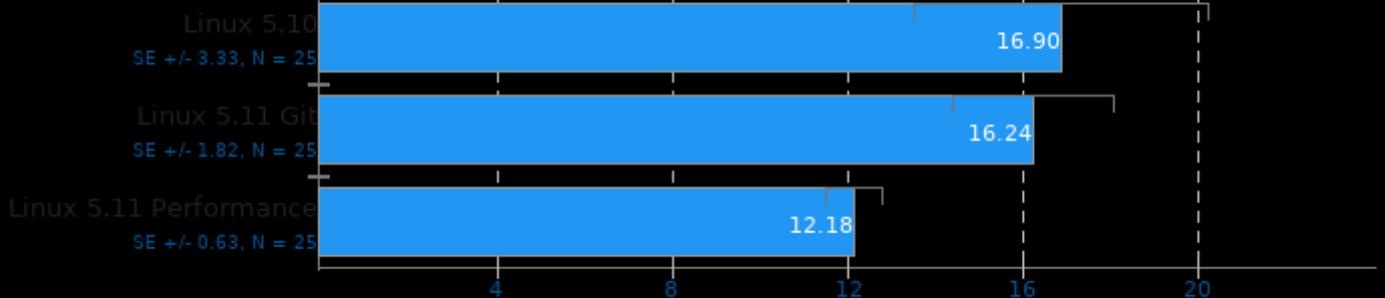


1. (CXX) g++ options: -param -O3 -rdynamic -ldl -pthread

## Sockperf 3.4

Test: Latency Under Load

usec, Fewer Is Better

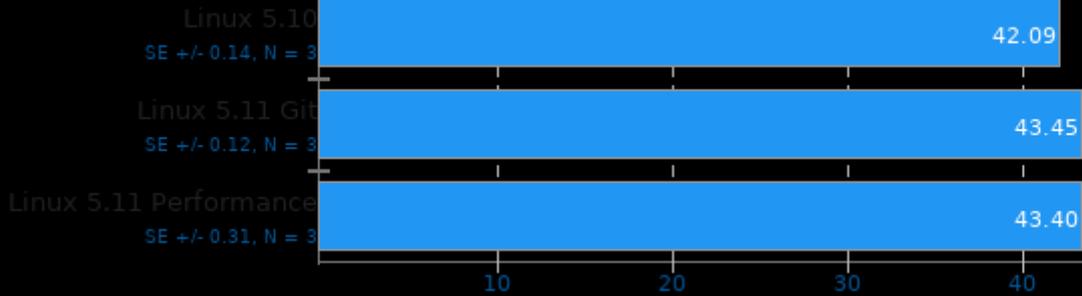


1. (CXX) g++ options: -param -O3 -rdynamic -ldl -pthread

## SQLite Speedtest 3.30

Timed Time - Size 1,000

← Seconds, Fewer Is Better

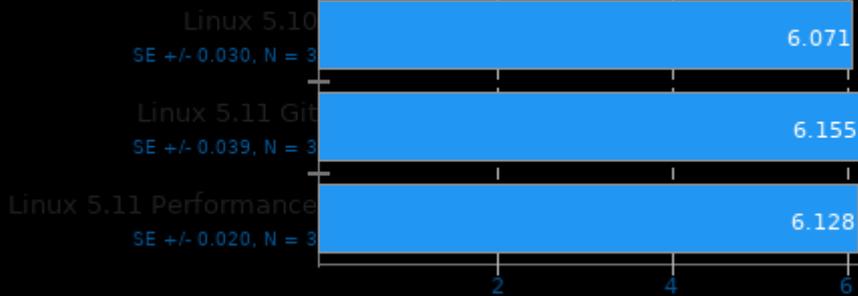


1. (CC) gcc options: -O2 -ldl -lz -lpthread

## SVT-AV1 0.8

Encoder Mode: Enc Mode 4 - Input: 1080p

▶ Frames Per Second, More Is Better

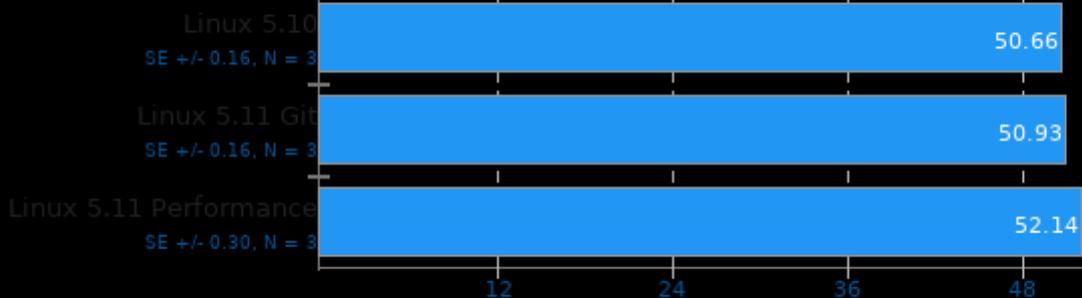


1. (CXX) g++ options: -O3 -fcommon -fPIE -fPIC -pie

## SVT-AV1 0.8

Encoder Mode: Enc Mode 8 - Input: 1080p

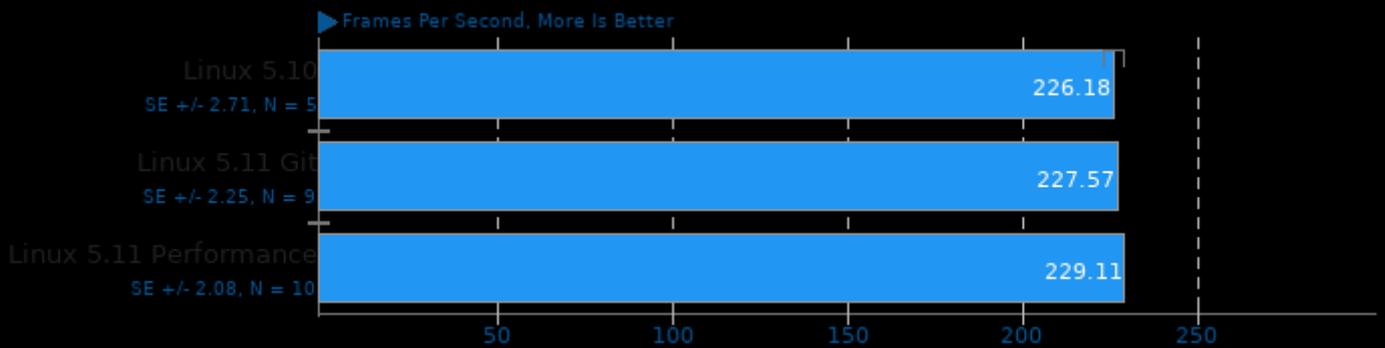
▶ Frames Per Second, More Is Better



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

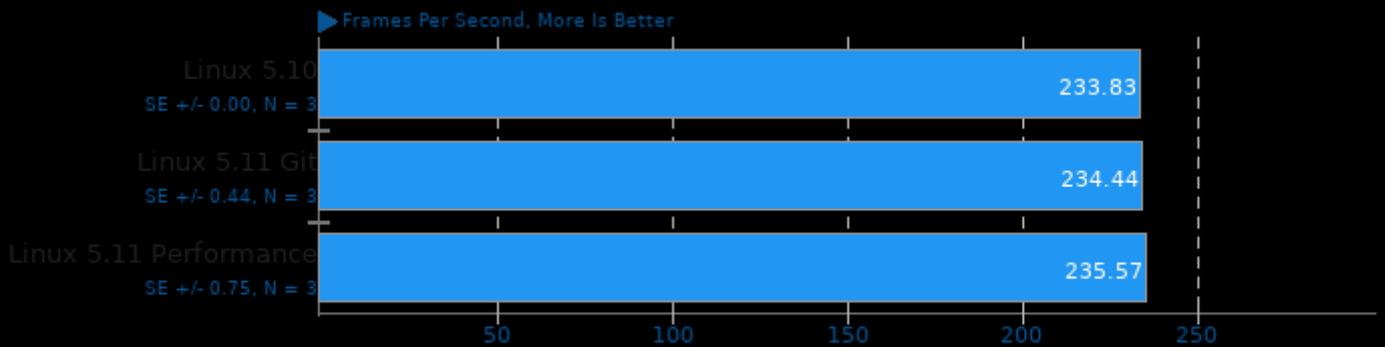
## SVT-VP9 0.1

Tuning: VMAF Optimized - Input: Bosphorus 1080p



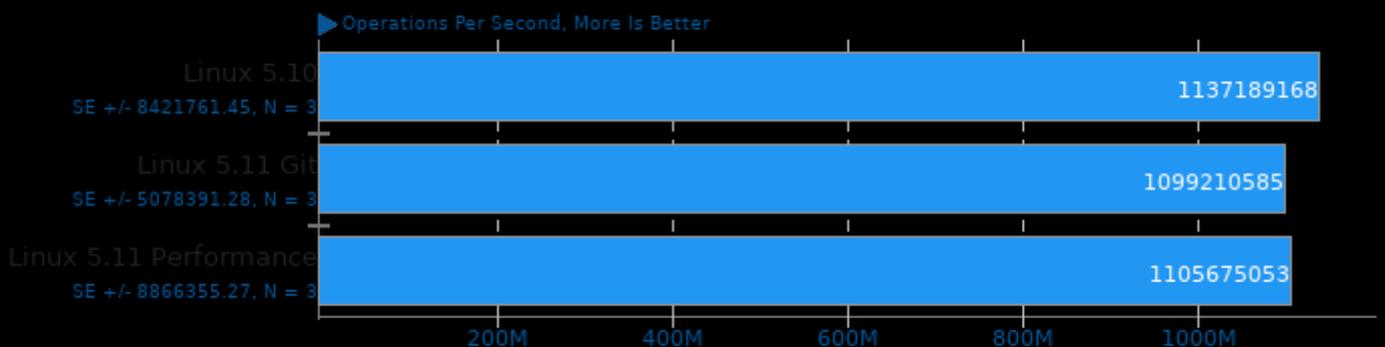
## SVT-VP9 0.1

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



## Swet 1.5.16

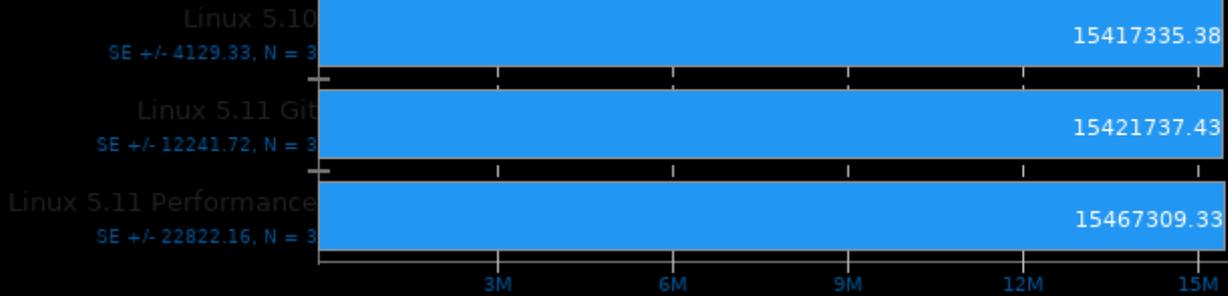
Average



## Sysbench 2018-07-28

Test: Memory

Events Per Second, More Is Better

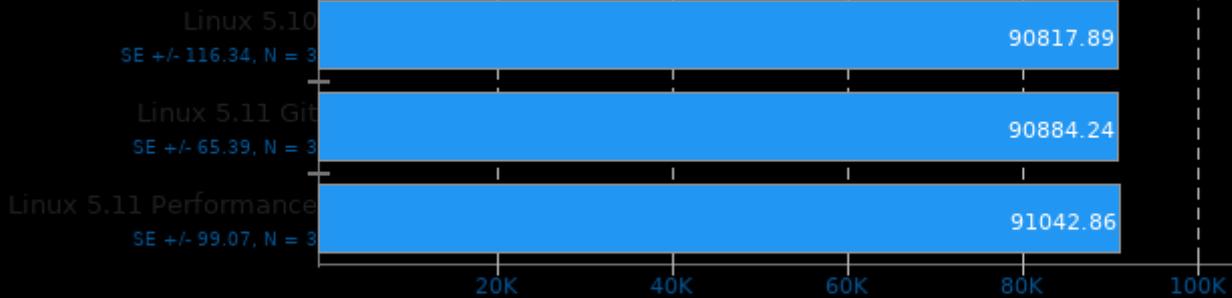


1. (CC) gcc options: -pthread -O3 -funroll-loops -ggdb3 -march=amdfam10 -rdynamic -ldl -laio -lm

## Sysbench 2018-07-28

Test: CPU

Events Per Second, More Is Better

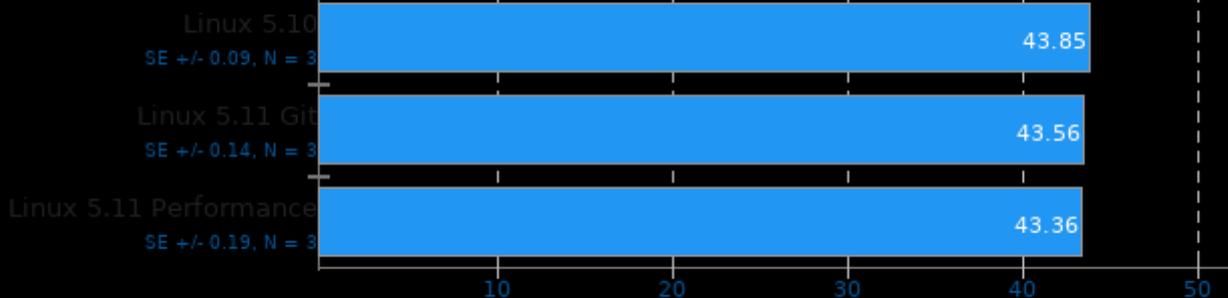


1. (CC) gcc options: -pthread -O3 -funroll-loops -ggdb3 -march=amdfam10 -rdynamic -ldl -laio -lm

## Tachyon 0.99b6

Total Time

Seconds, Fewer Is Better

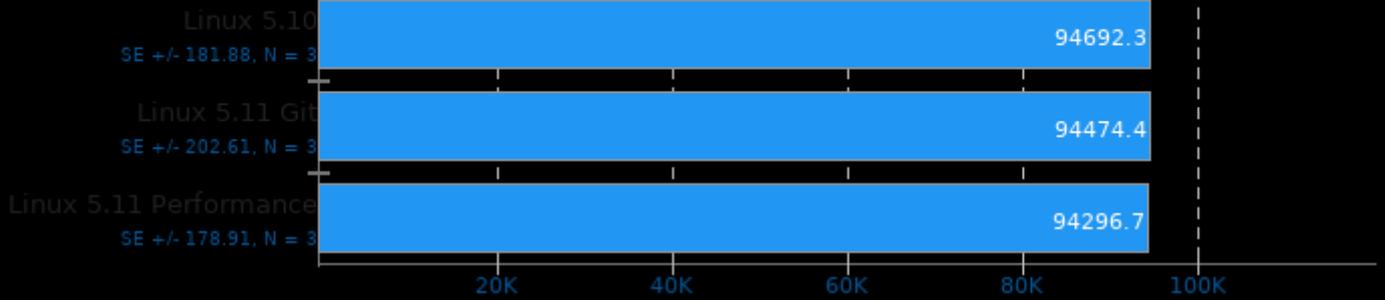


1. (CC) gcc options: -m64 -O3 -fomit-frame-pointer -ffast-math -ltachyon -lm -lpthread

## TensorFlow Lite 2020-08-23

Model: SqueezeNet

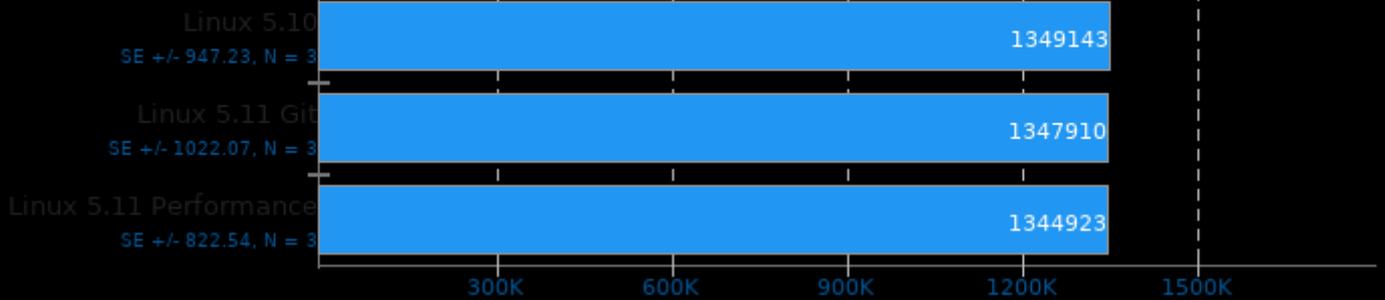
Microseconds, Fewer Is Better



## TensorFlow Lite 2020-08-23

Model: Inception V4

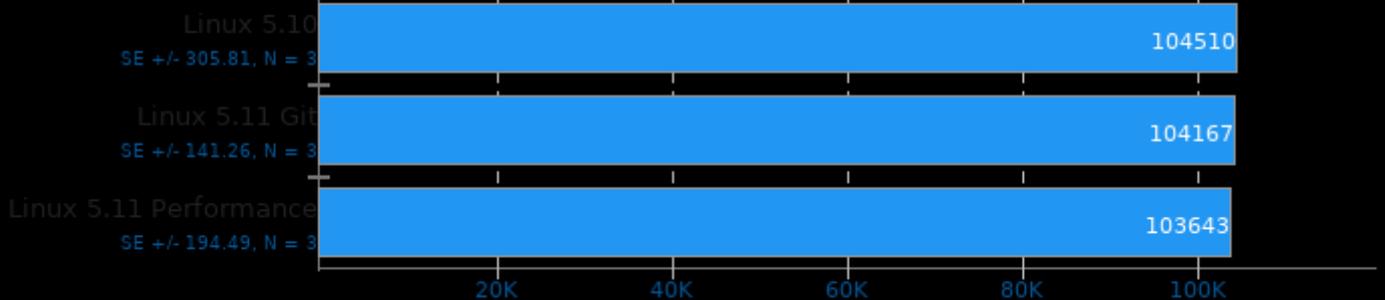
Microseconds, Fewer Is Better



## TensorFlow Lite 2020-08-23

Model: NASNet Mobile

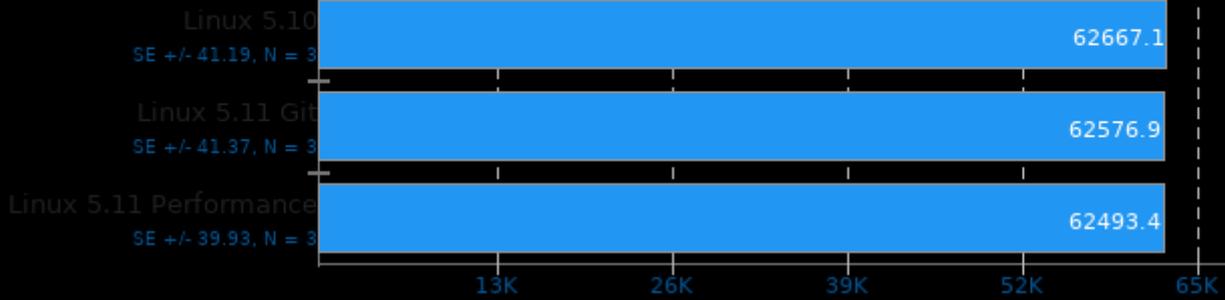
Microseconds, Fewer Is Better



TensorFlow Lite 2020-08-23

Model: Mobilenet Float

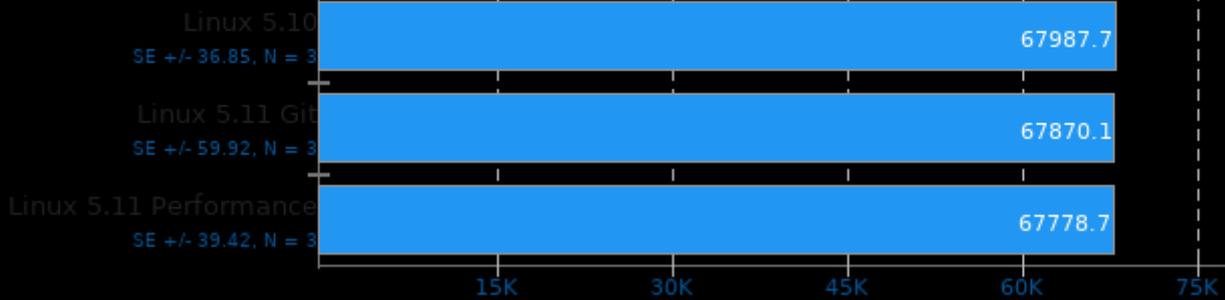
Microseconds, Fewer Is Better



TensorFlow Lite 2020-08-23

Model: Mobilenet Quant

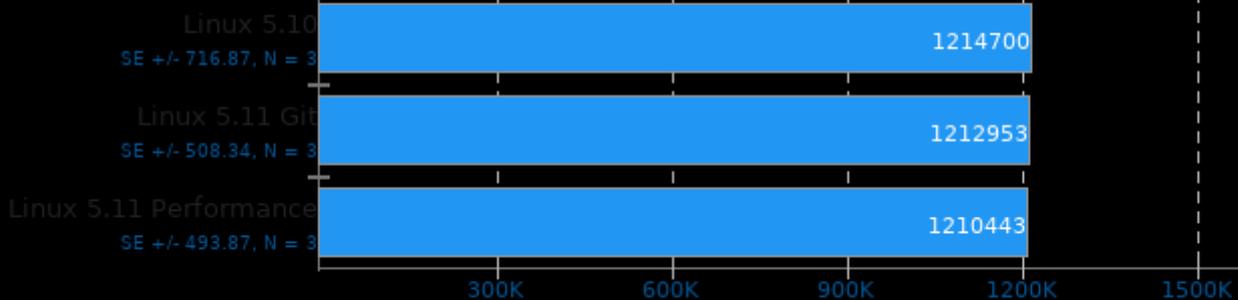
Microseconds, Fewer Is Better



TensorFlow Lite 2020-08-23

Model: Inception ResNet V2

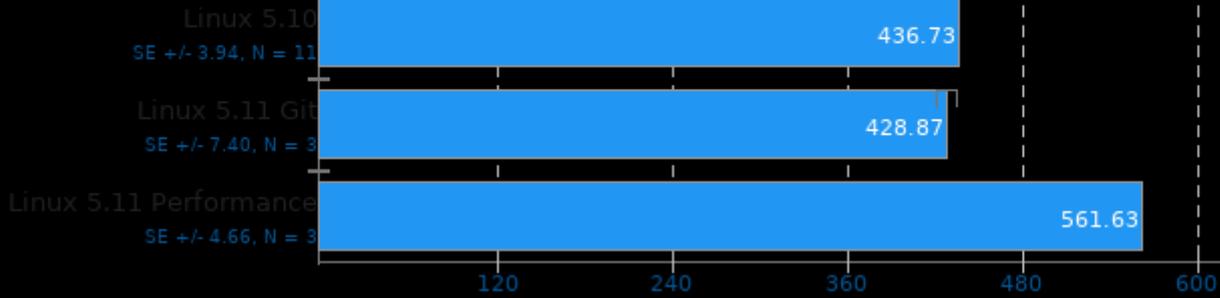
Microseconds, Fewer Is Better



## Tesseract 2014-05-12

Resolution: 1920 x 1080

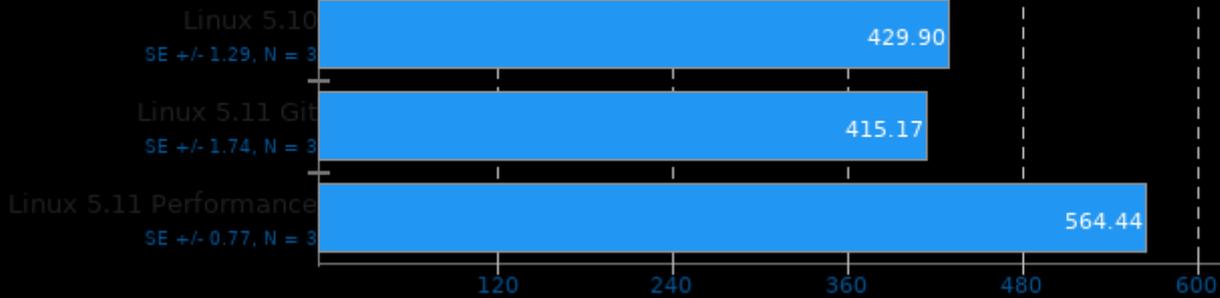
▶ Frames Per Second, More Is Better



## Tesseract 2014-05-12

Resolution: 2560 x 1440

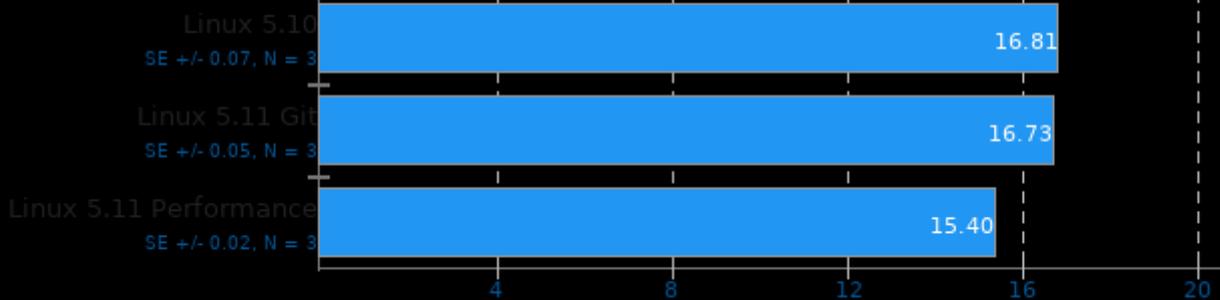
▶ Frames Per Second, More Is Better



## Timed Apache Compilation 2.4.41

Time To Compile

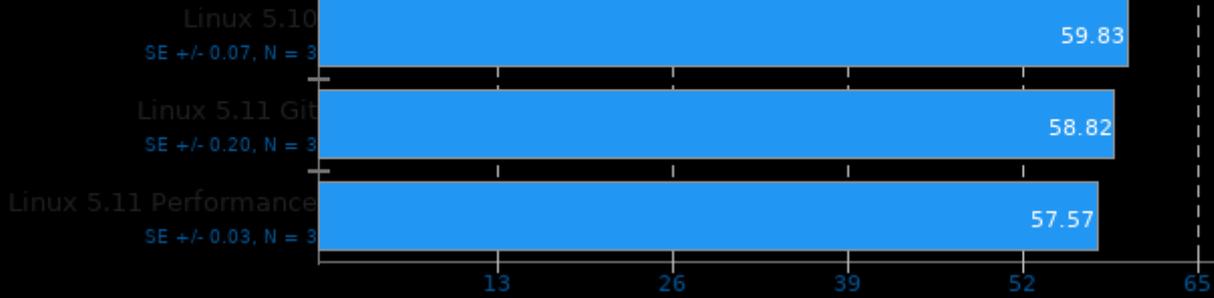
◀ Seconds, Fewer Is Better



## Timed Eigen Compilation 3.3.9

Time To Compile

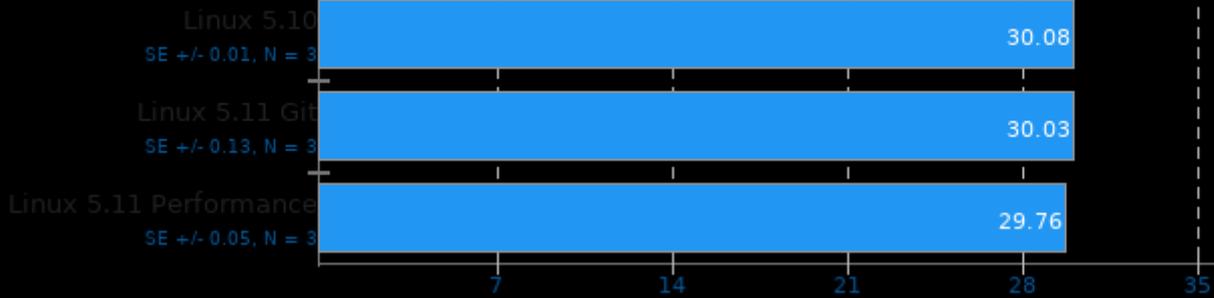
← Seconds, Fewer Is Better



## Timed FFmpeg Compilation 4.2.2

Time To Compile

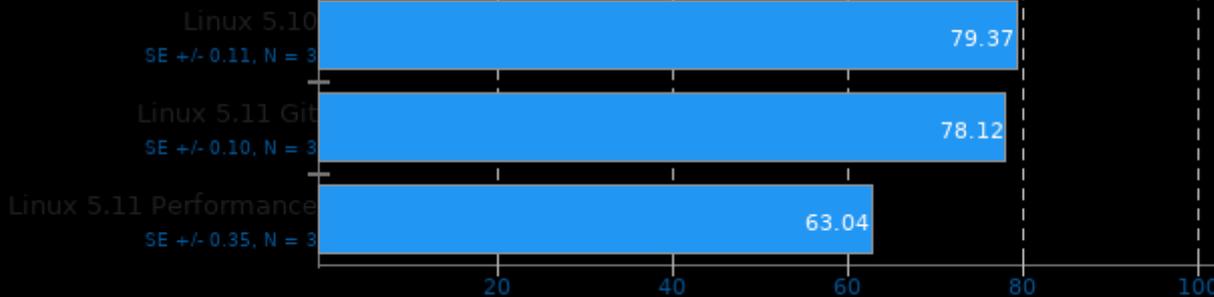
← Seconds, Fewer Is Better



## Timed GDB GNU Debugger Compilation 9.1

Time To Compile

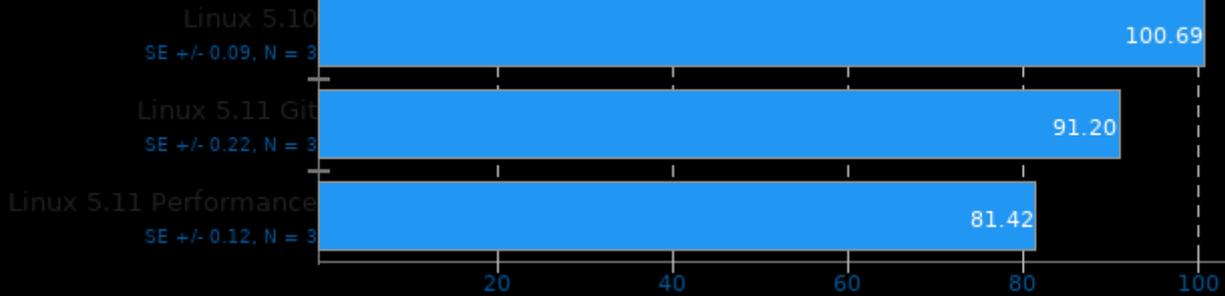
← Seconds, Fewer Is Better



## Timed HMMer Search 3.3.1

Pfam Database Search

← Seconds, Fewer Is Better

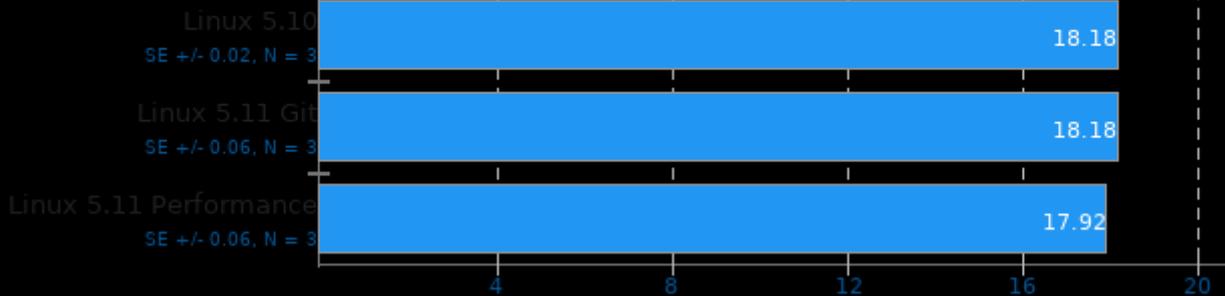


1. (CC) gcc options: -O3 -pthread -lhmmmer -leasel -lm

## Timed ImageMagick Compilation 6.9.0

Time To Compile

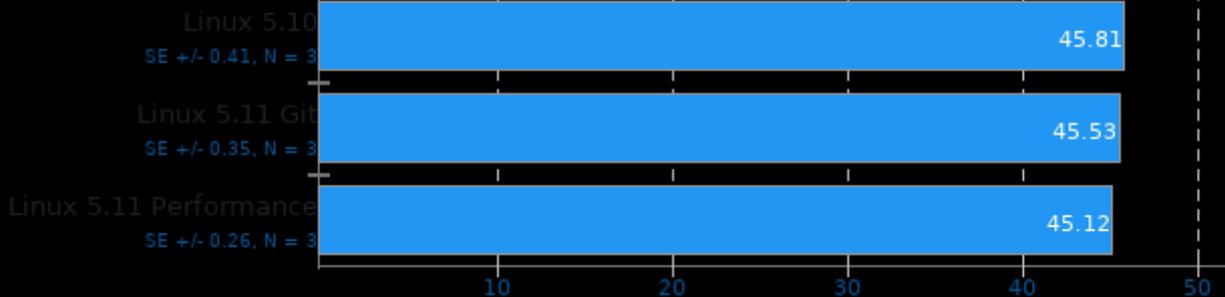
← Seconds, Fewer Is Better



## Timed Linux Kernel Compilation 5.4

Time To Compile

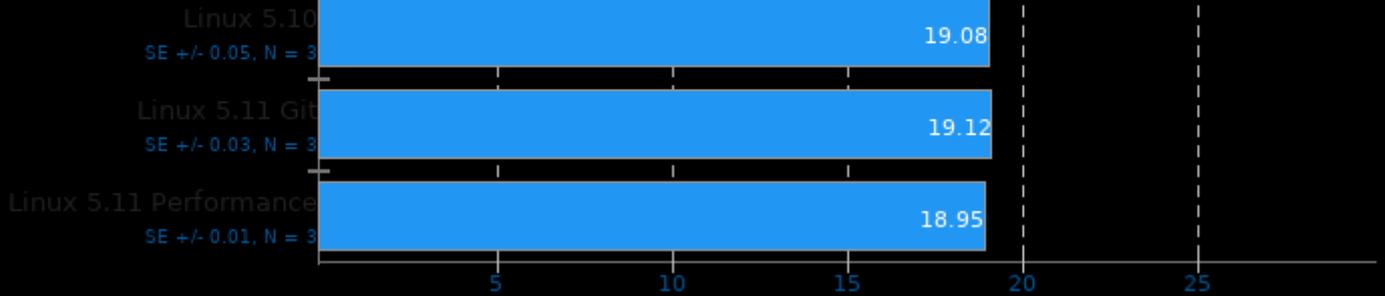
← Seconds, Fewer Is Better



### Timed MPlayer Compilation 1.4

Time To Compile

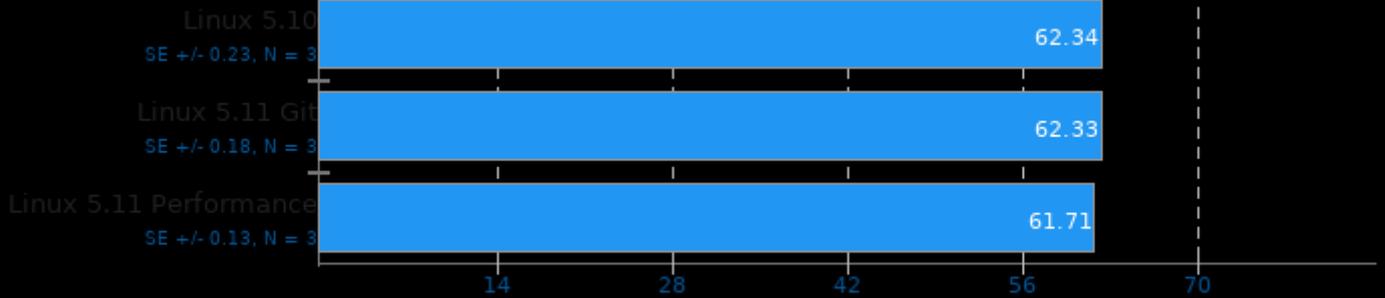
Seconds, Fewer Is Better



### Timed MrBayes Analysis 3.2.7

Primate Phylogeny Analysis

Seconds, Fewer Is Better

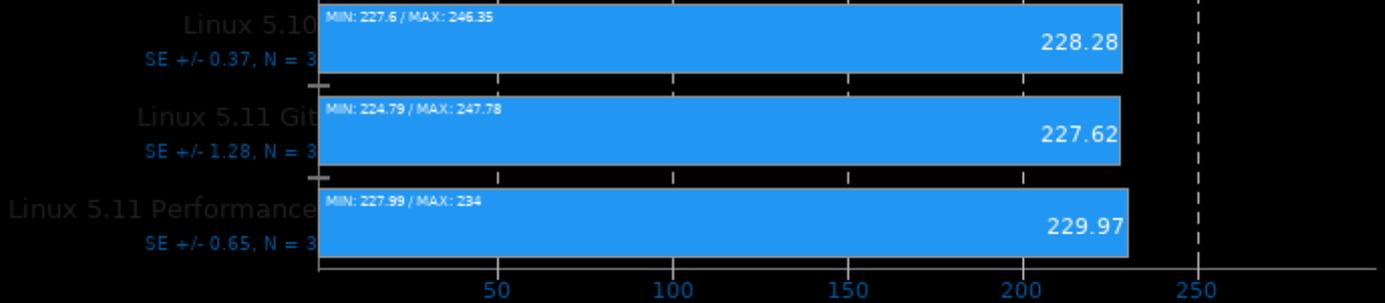


1. (GCC) gcc options: -mmmx -msse -msse2 -msse3 -ssse3 -sse4.1 -sse4.2 -sse4a -msha -maes -mavx -mfma -mavx2 -mrdnd -mbmi -mbmi2 -madx

### TNN 0.2.3

Target: CPU - Model: MobileNet v2

ms, Fewer Is Better

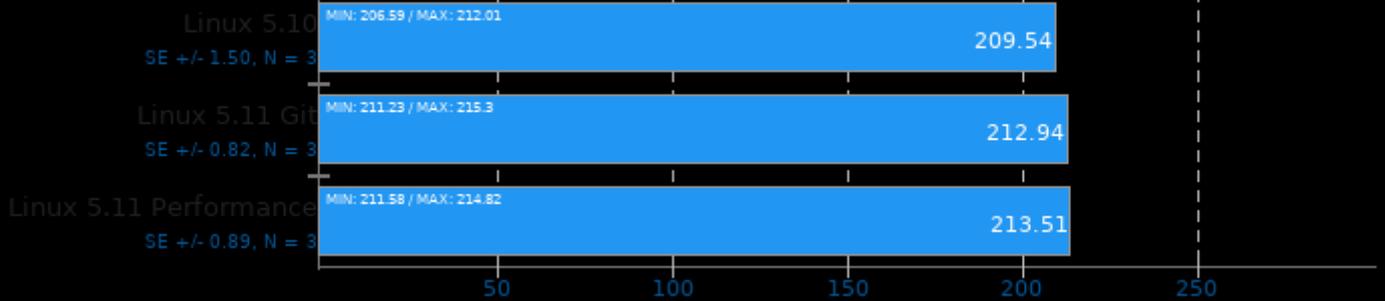


1. (CXX) g++ options: -fopenmp -pthread -fvisibility=hidden -O3 -rdynamic -ldl

## TNN 0.2.3

Target: CPU - Model: SqueezeNet v1.1

ms, Fewer Is Better

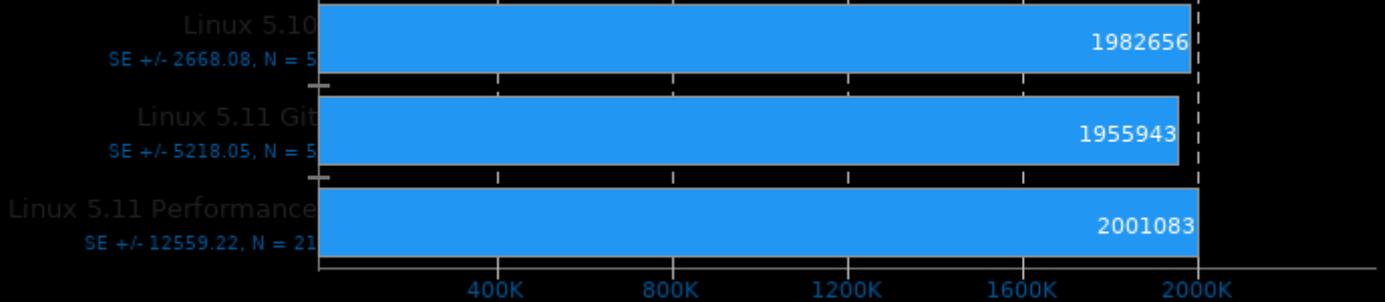


1. (CXX) g++ options: -fopenmp -pthread -fvisibility=hidden -O3 -rdynamic -ldl

## TSCP 1.81

AI Chess Performance

Nodes Per Second, More Is Better

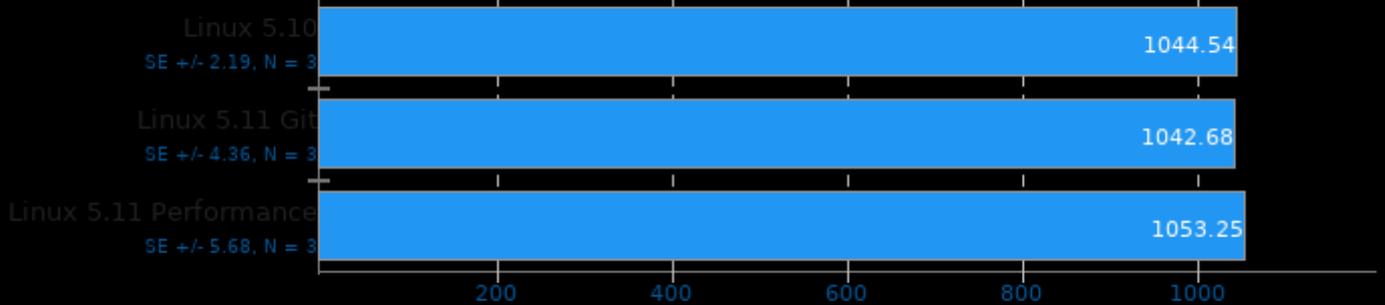


1. (CC) gcc options: -O3 -march=native

## TTSIOD 3D Renderer 2.3b

Phong Rendering With Soft-Shadow Mapping

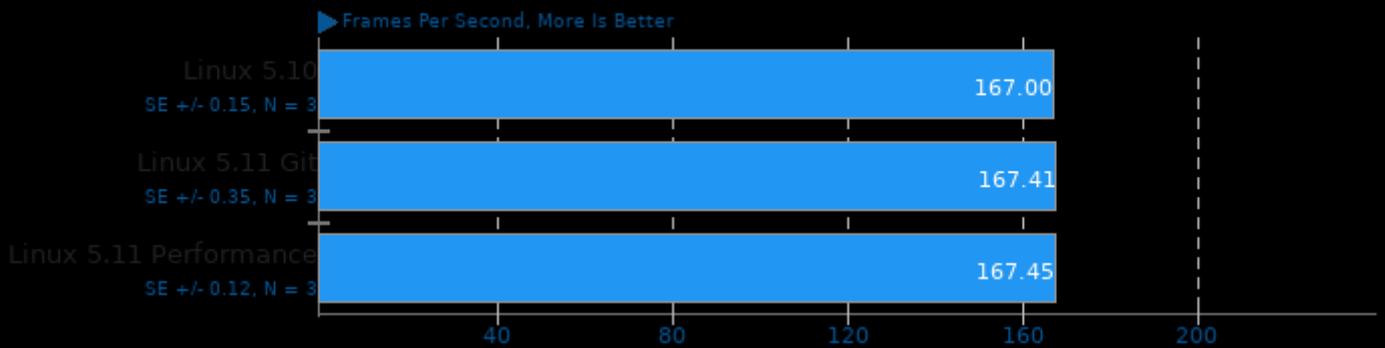
FPS, More Is Better



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

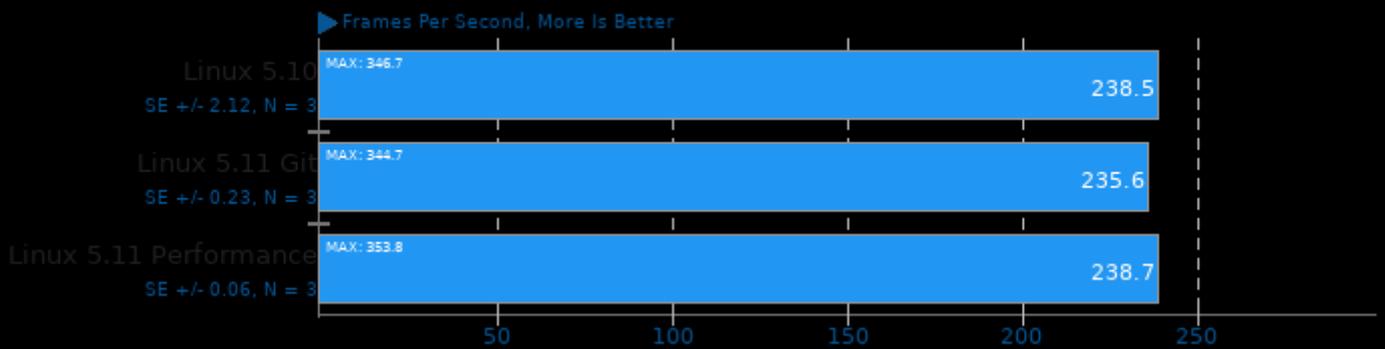
## Unigine Heaven 4.0

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



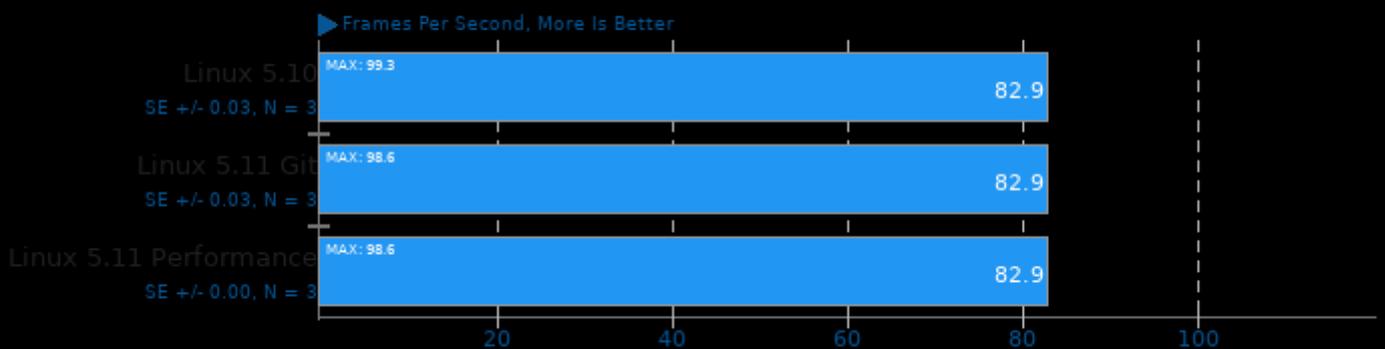
## Unigine Superposition 1.0

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



## Unigine Superposition 1.0

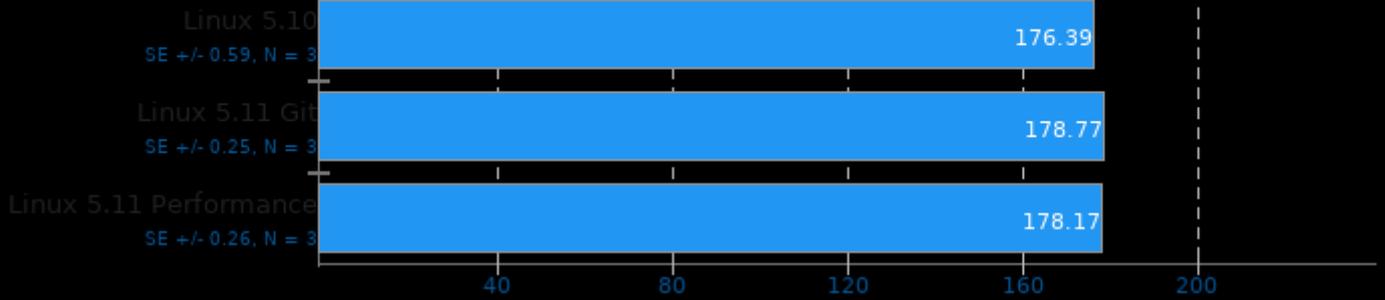
Resolution: 1920 x 1080 - Mode: Fullscreen - Quality: High - Renderer: OpenGL



## Unigine Valley 1.0

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

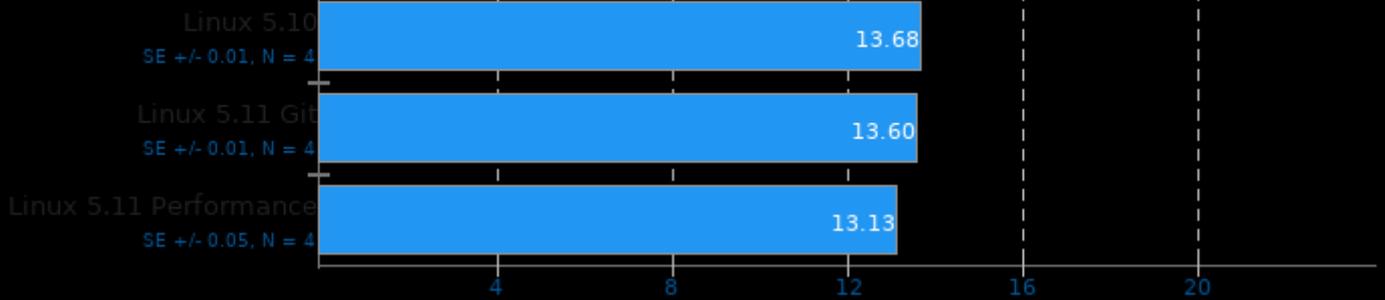
► Frames Per Second, More Is Better



## Unpacking Firefox 84.0

Extracting: firefox-84.0.source.tar.xz

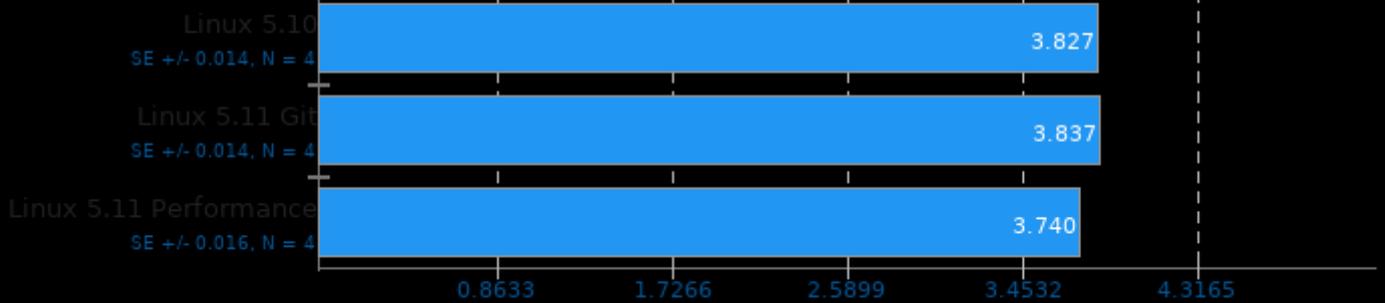
◄ Seconds, Fewer Is Better



## Unpacking The Linux Kernel

linux-4.15.tar.xz

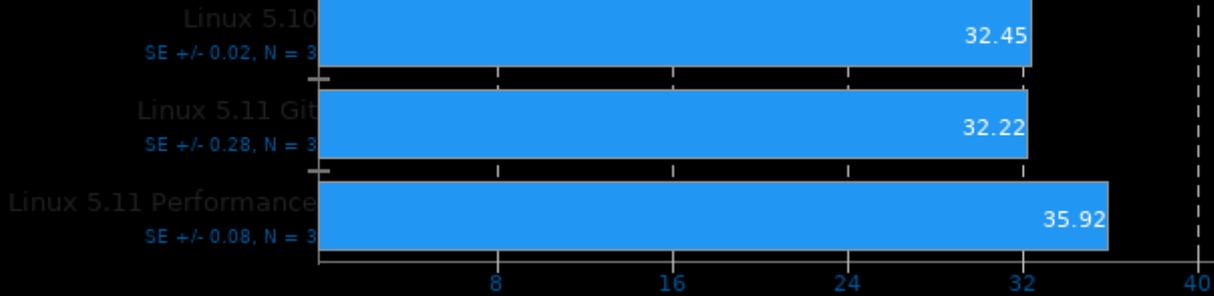
◄ Seconds, Fewer Is Better



## VP9 libvpx Encoding 1.8.2

Speed: Speed 5

▶ Frames Per Second, More Is Better

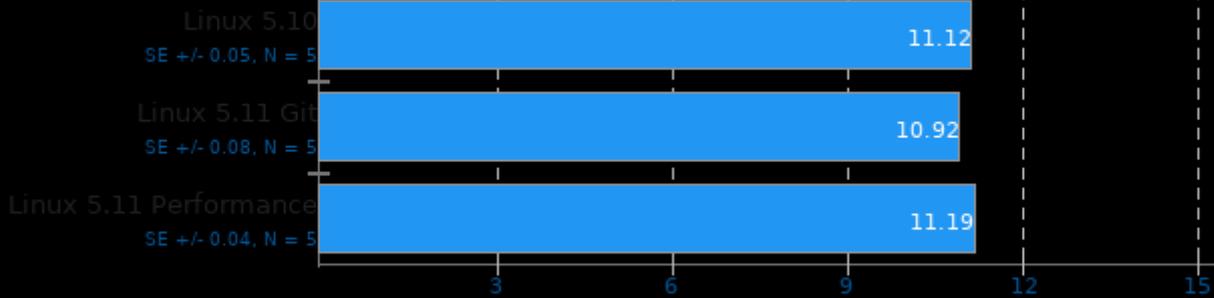


1. (CXX) g++ options: -m64 -lm -pthread -O3 -fPIC -U\_FORTIFY\_SOURCE -std=c++11

## WavPack Audio Encoding 5.3

WAV To WavPack

◀ Seconds, Fewer Is Better

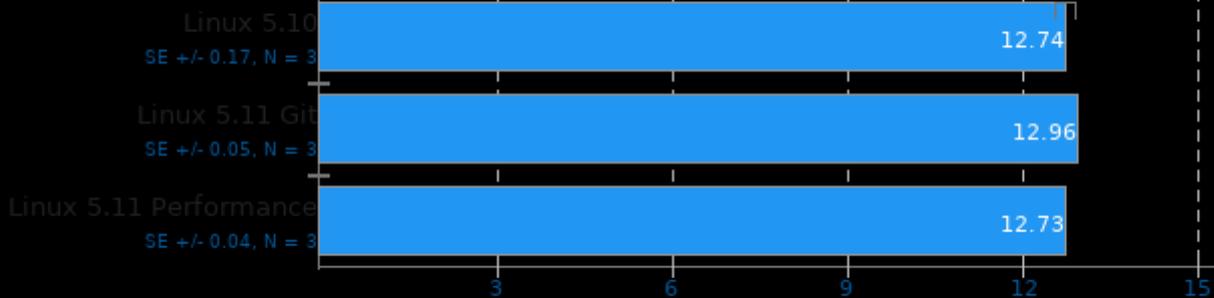


1. (CXX) g++ options: -rdynamic

## WebP Image Encode 1.1

Encode Settings: Quality 100, Lossless

◀ Encode Time - Seconds, Fewer Is Better

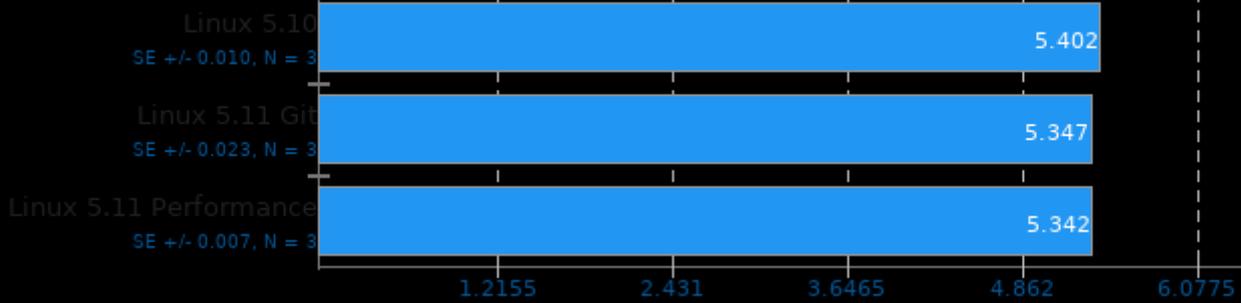


1. (CC) gcc options: -fvisibility=hidden -O2 -pthread -lm -ljpeg -lpng16 -ltiff

## WebP Image Encode 1.1

Encode Settings: Quality 100, Highest Compression

Encode Time - Seconds, Fewer Is Better

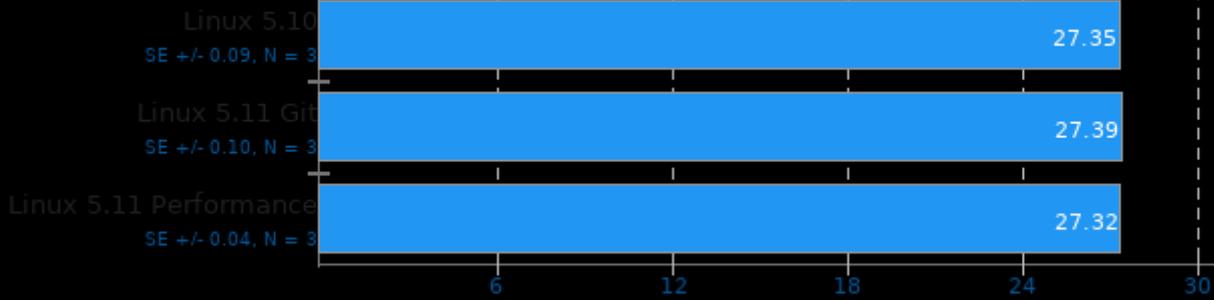


1. (CC) gcc options: -fvisibility=hidden -O2 -pthread -lm -ljpeg -lpng16 -ltiff

## WebP Image Encode 1.1

Encode Settings: Quality 100, Lossless, Highest Compression

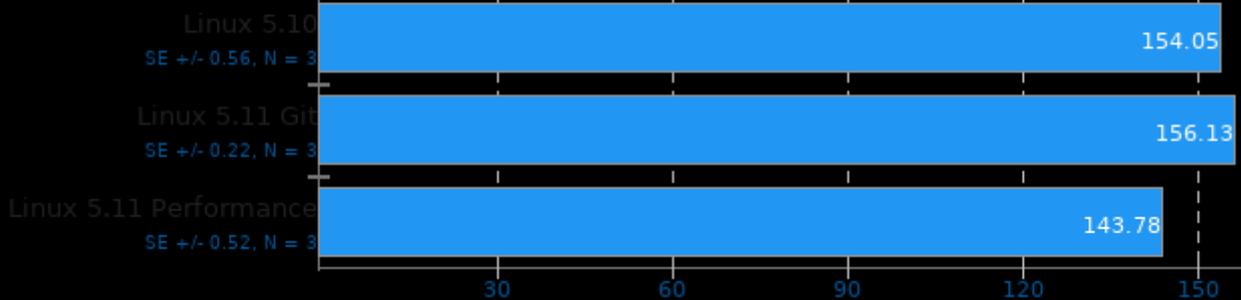
Encode Time - Seconds, Fewer Is Better



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

## WireGuard + Linux Networking Stack Stress Test

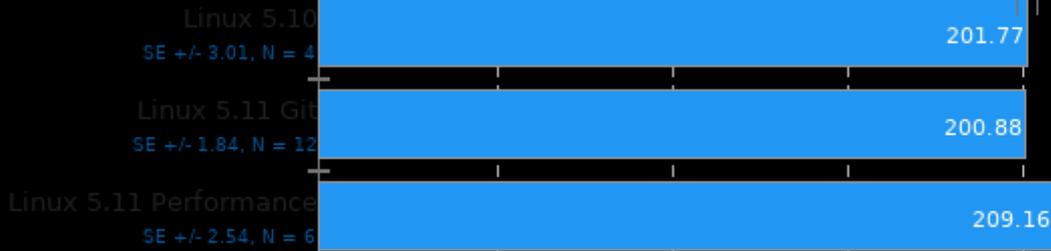
Seconds, Fewer Is Better



## x264 2019-12-17

H.264 Video Encoding

▶ Frames Per Second, More Is Better



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

## x265 3.4

Video Input: Bosphorus 4K

▶ Frames Per Second, More Is Better



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

## x265 3.4

Video Input: Bosphorus 1080p

▶ Frames Per Second, More Is Better



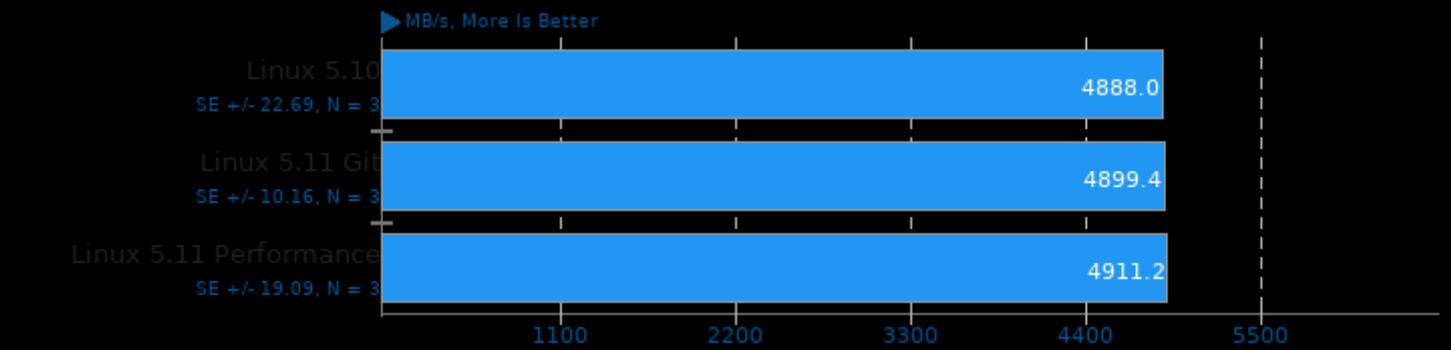
1. (CXX) g++ options: -O3 -rdynamic -lpthread -lrt -ldl -lnuma





## Zstd Compression 1.4.5

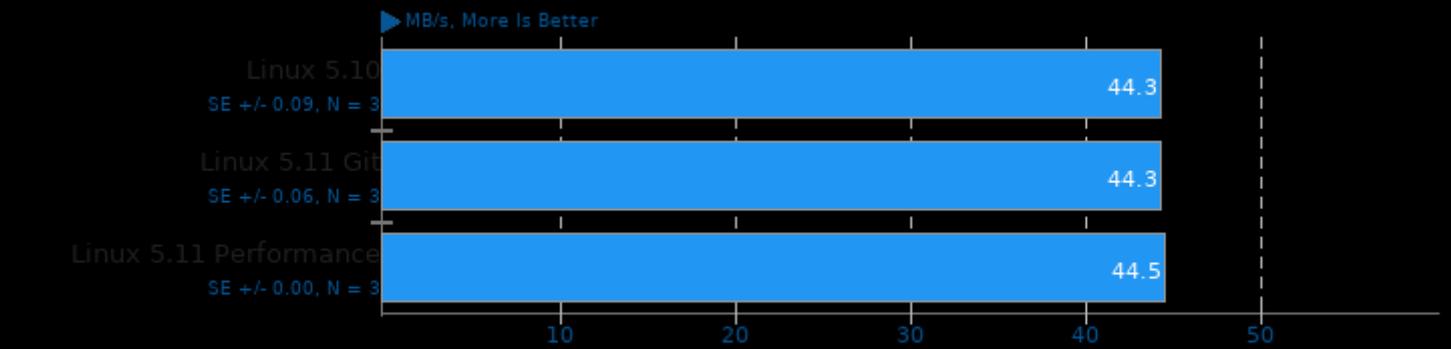
Compression Level: 3



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

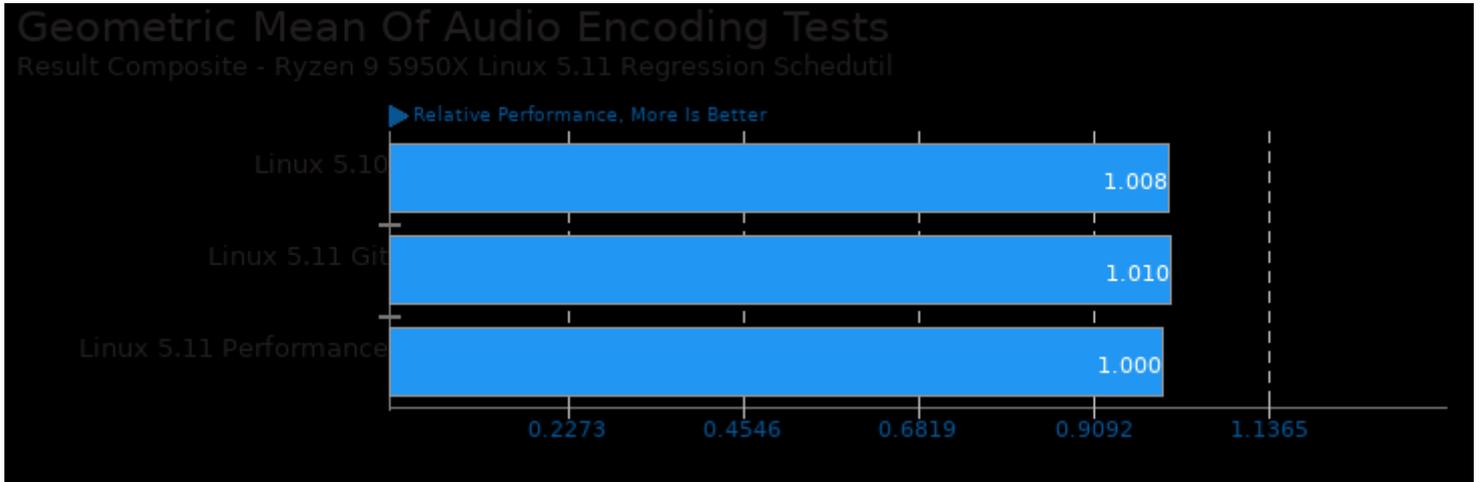
## Zstd Compression 1.4.5

Compression Level: 19

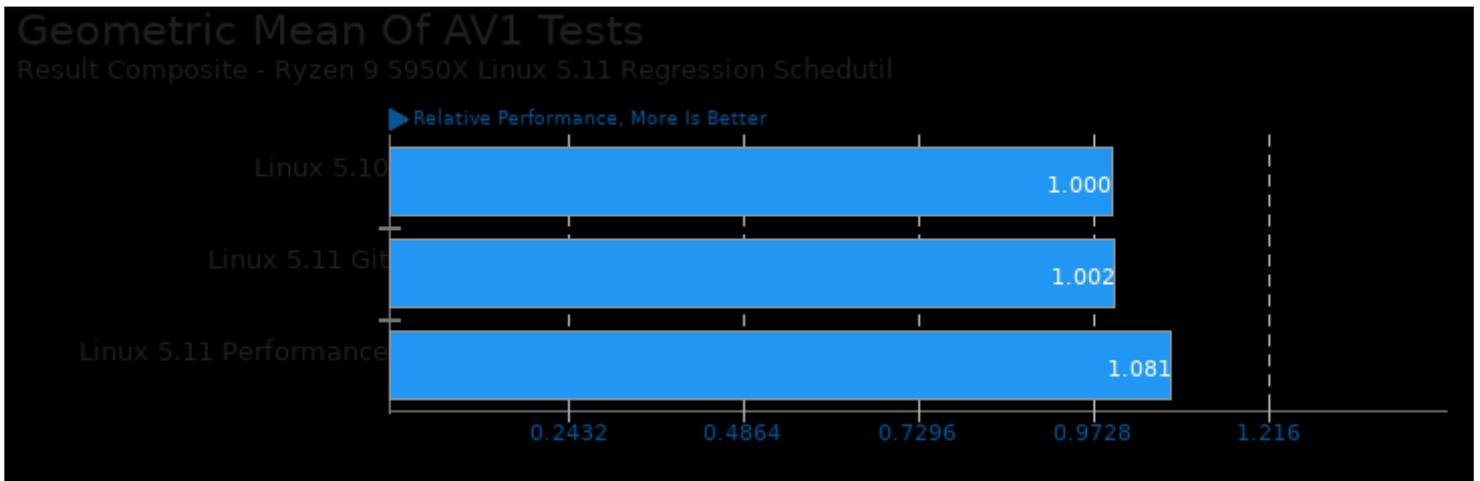


1. (CC) gcc options: -O3 -pthread -lz -lzma

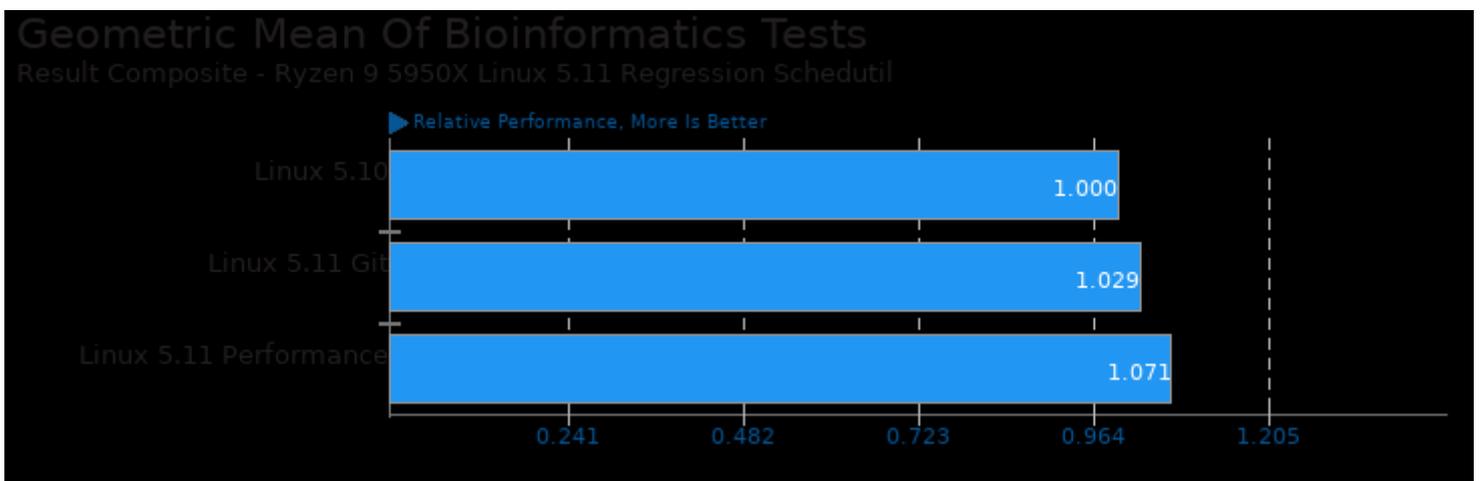
These geometric means are based upon test groupings / test suites for this result file.



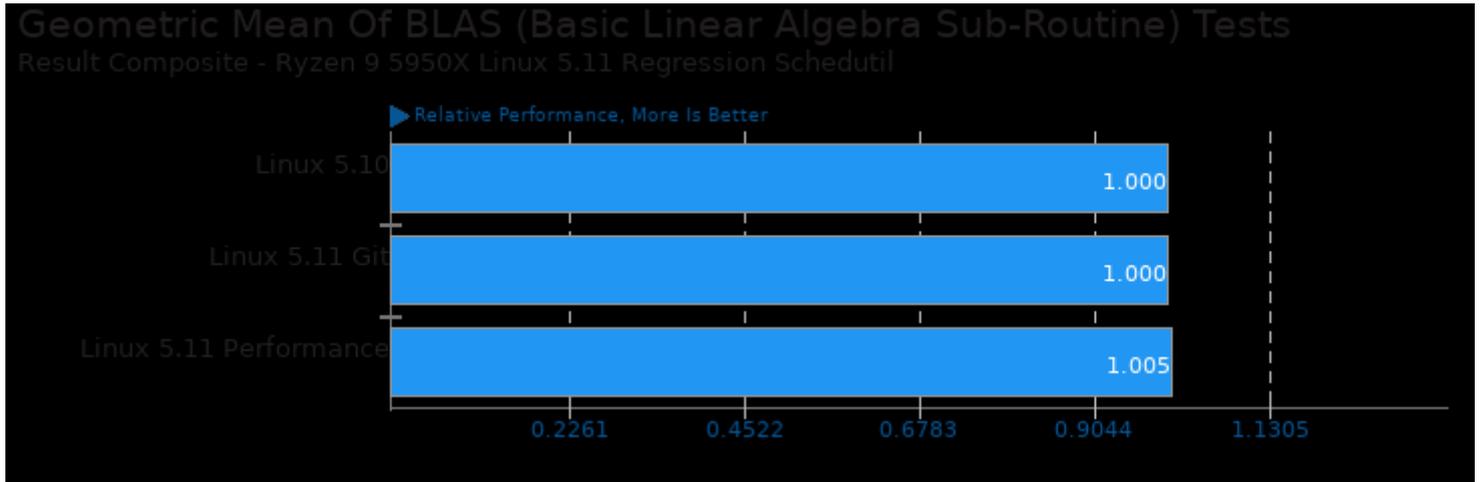
Geometric mean based upon tests: pts/encode-mp3, pts/encode-ogg, pts/encode-flac, pts/encode-ape, pts/encode-wavpack and pts/encode-opus



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



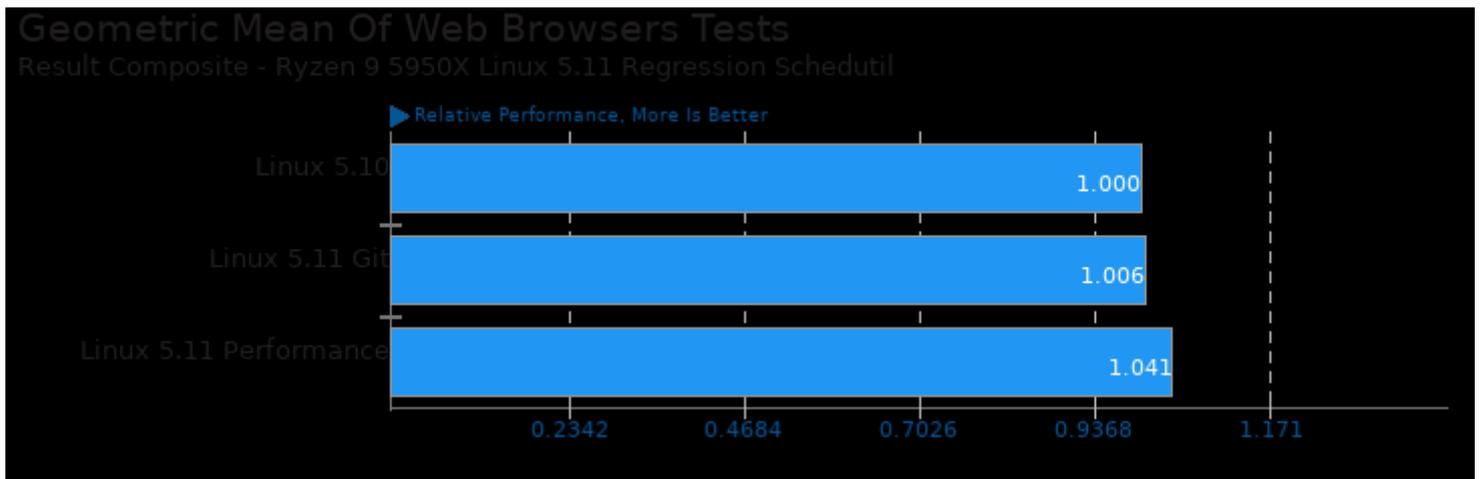
Geometric mean based upon tests: pts/himeno, pts/mrbayes and pts/hmmer



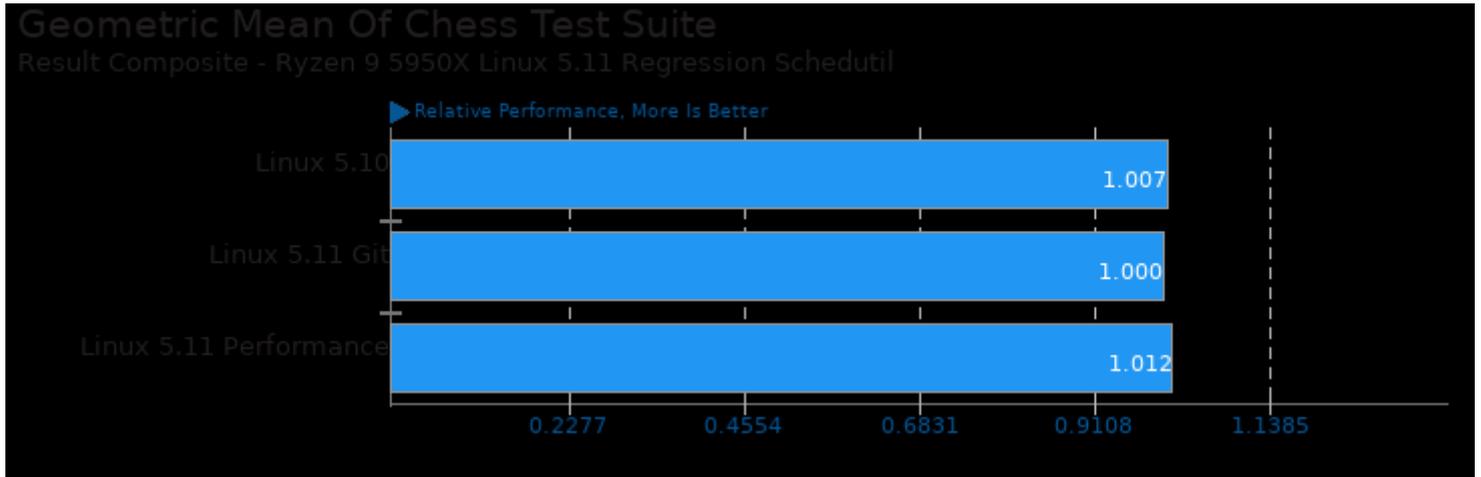
Geometric mean based upon tests: pts/caffe and pts/lczero



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



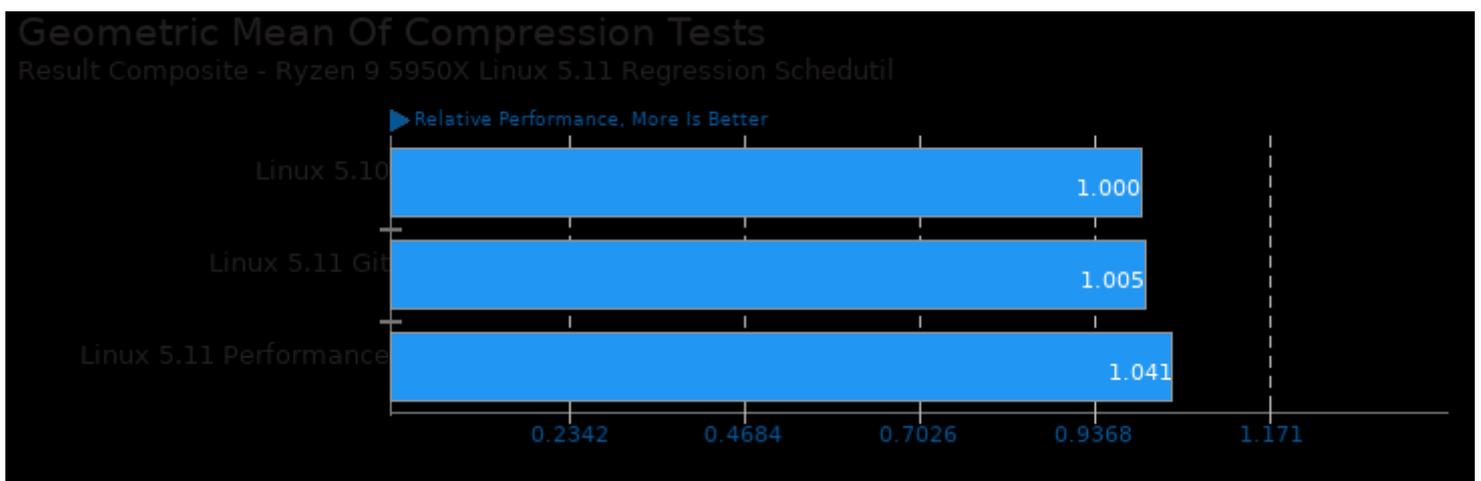
Geometric mean based upon tests: system/selenium



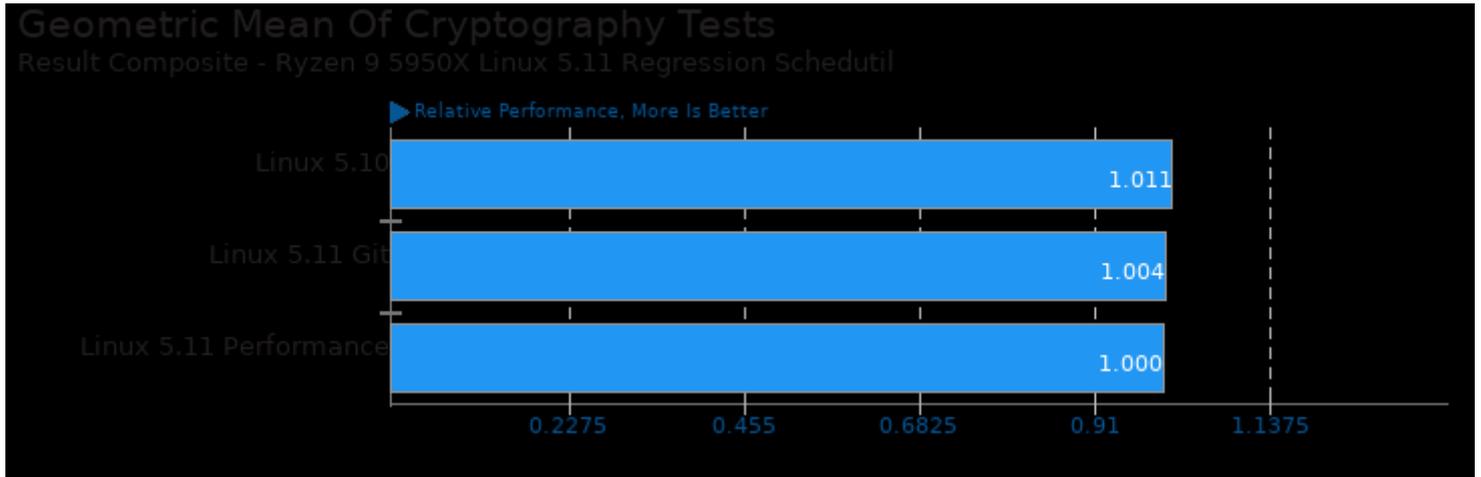
Geometric mean based upon tests: pts/crafty, pts/tscp, pts/lczero, pts/asmfish and pts/m-queens



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



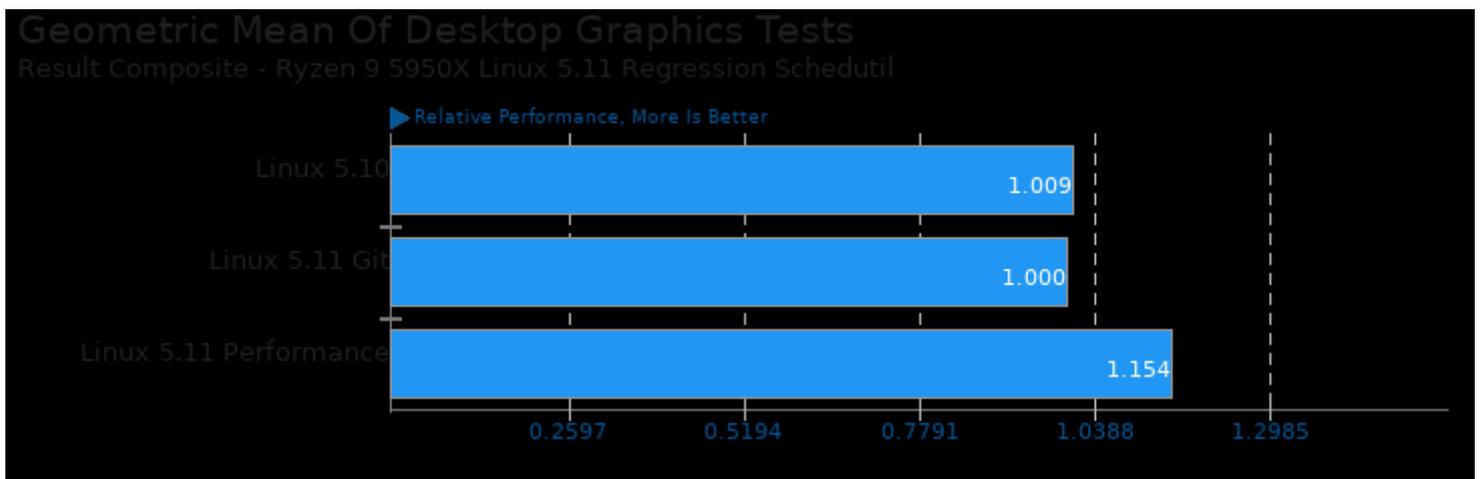
Geometric mean based upon tests: pts/compress-7zip, pts/compress-zstd, pts/compress-lz4, pts/compress-rar, pts/compress-xz and pts/blosc



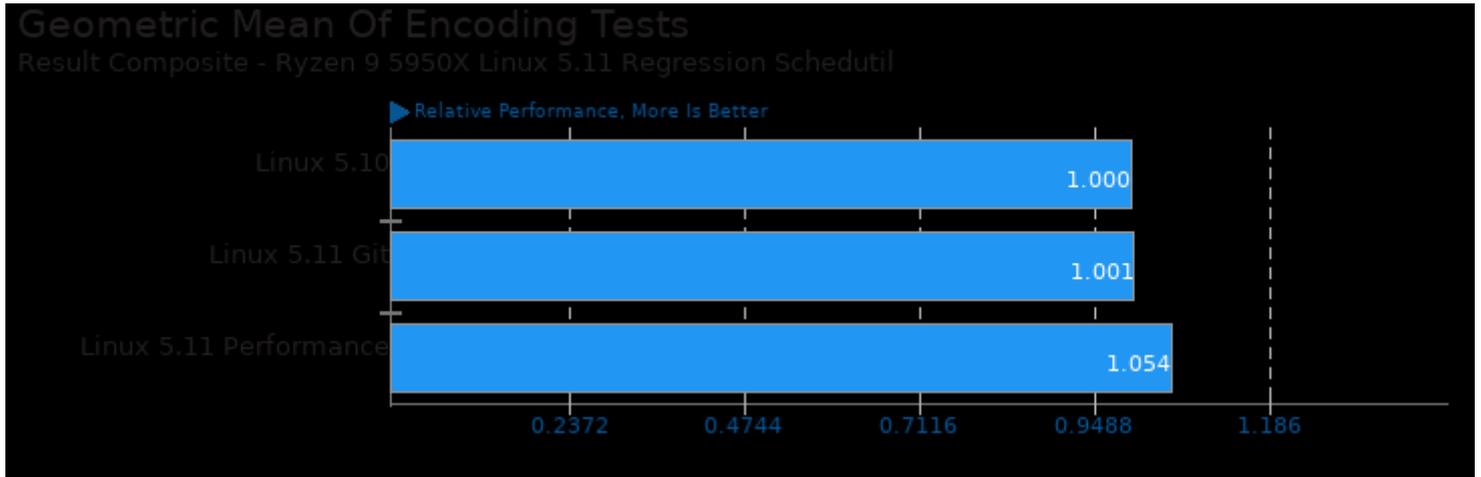
Geometric mean based upon tests: pts/openssl, pts/blake2, pts/john-the-ripper, pts/botan, system/cryptsetup, pts/bork and pts/aircrack-ng



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



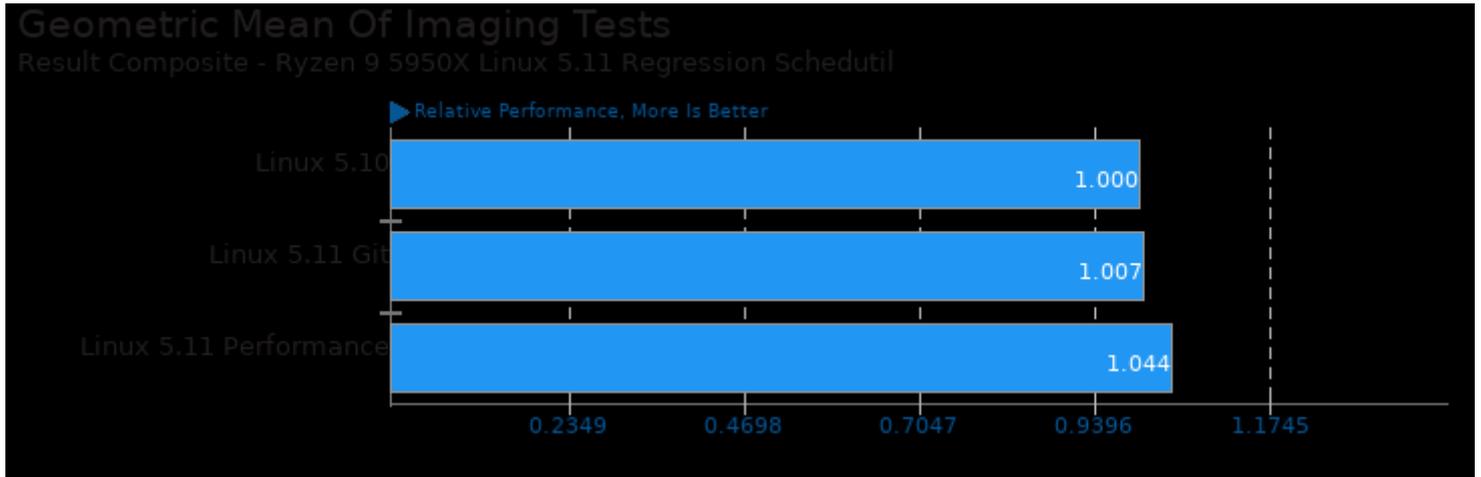
Geometric mean based upon tests: pts/encode-mp3, pts/encode-ogg, pts/encode-flac, pts/encode-ape, pts/encode-wavpack, pts/encode-opus, pts/svt-vp9, pts/x264, pts/x265, pts/kvazaar, pts/vpxenc, pts/dav1d, pts/aom-av1, pts/svt-av1, pts/rav1e and pts/avifenc



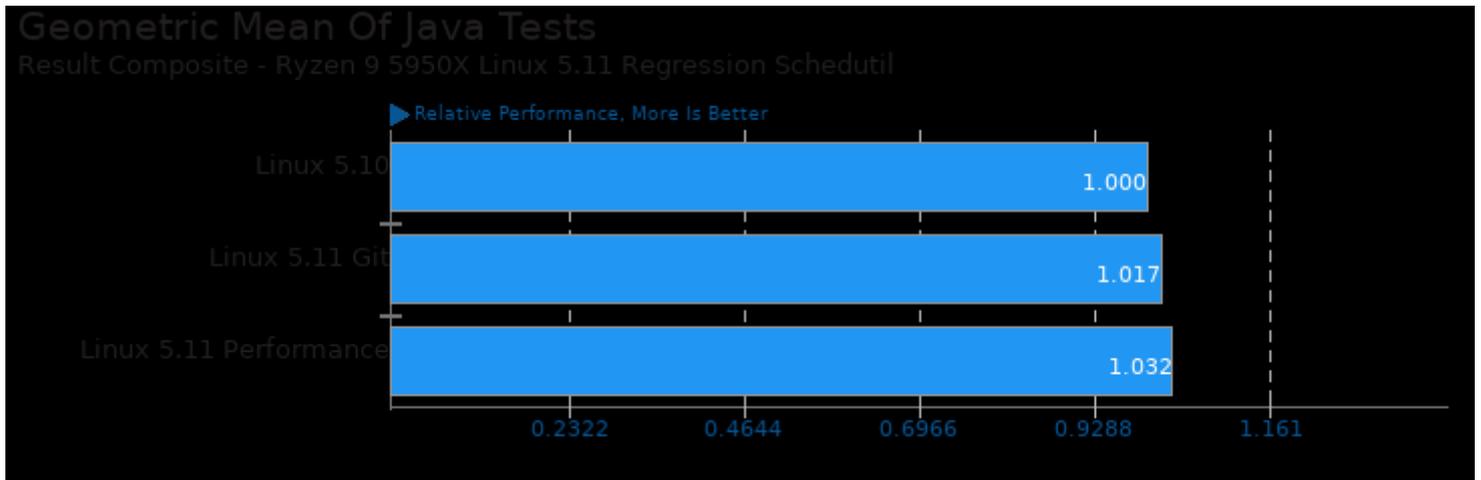
Geometric mean based upon tests: pts/cloverleaf, pts/dolfyn, pts/ffte, pts/hpcg, pts/incompact3d, pts/lammps, pts/mocassin, pts/npb and pts/neat



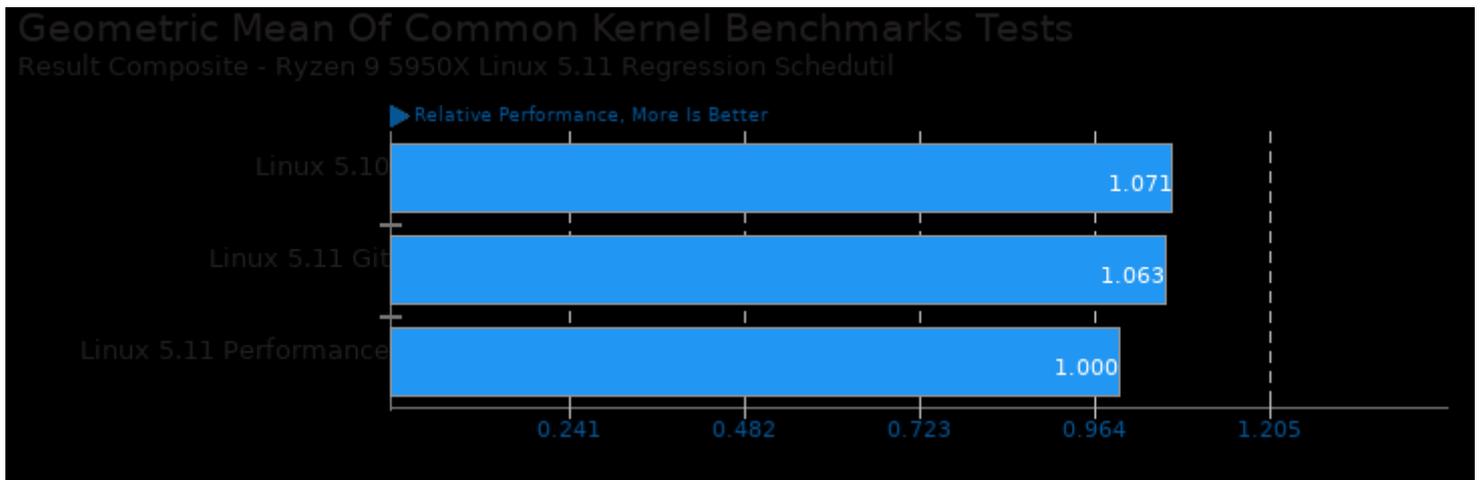
Geometric mean based upon tests: pts/basis, pts/astcenc, pts/blender, pts/oidn and pts/opencvl



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



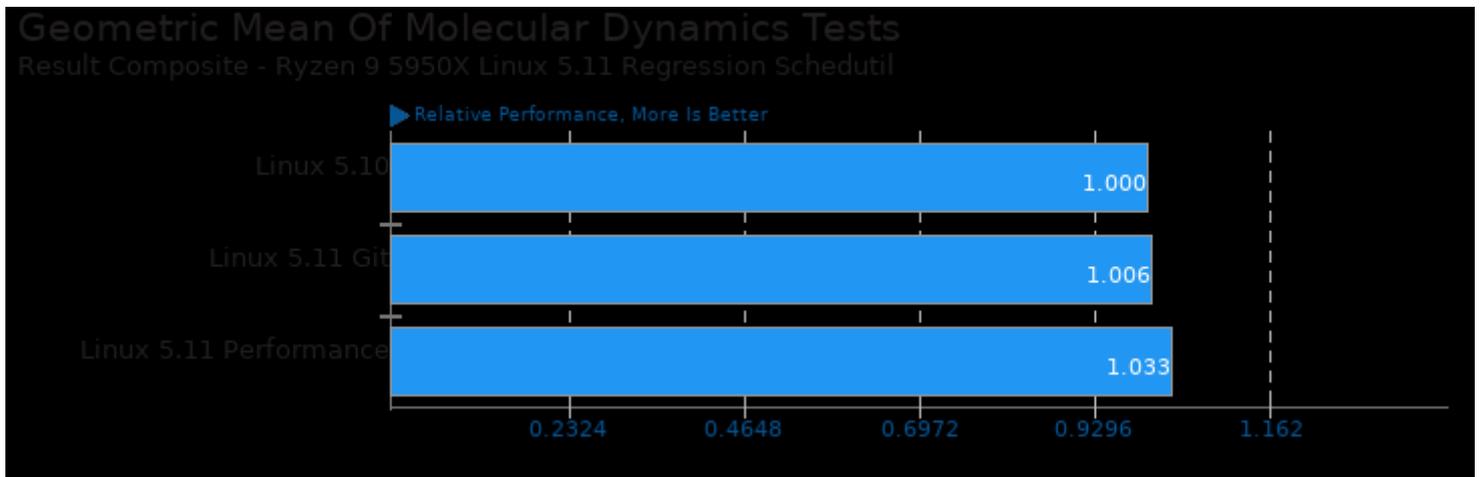
Geometric mean based upon tests: pts/bork and pts/java-scimark2



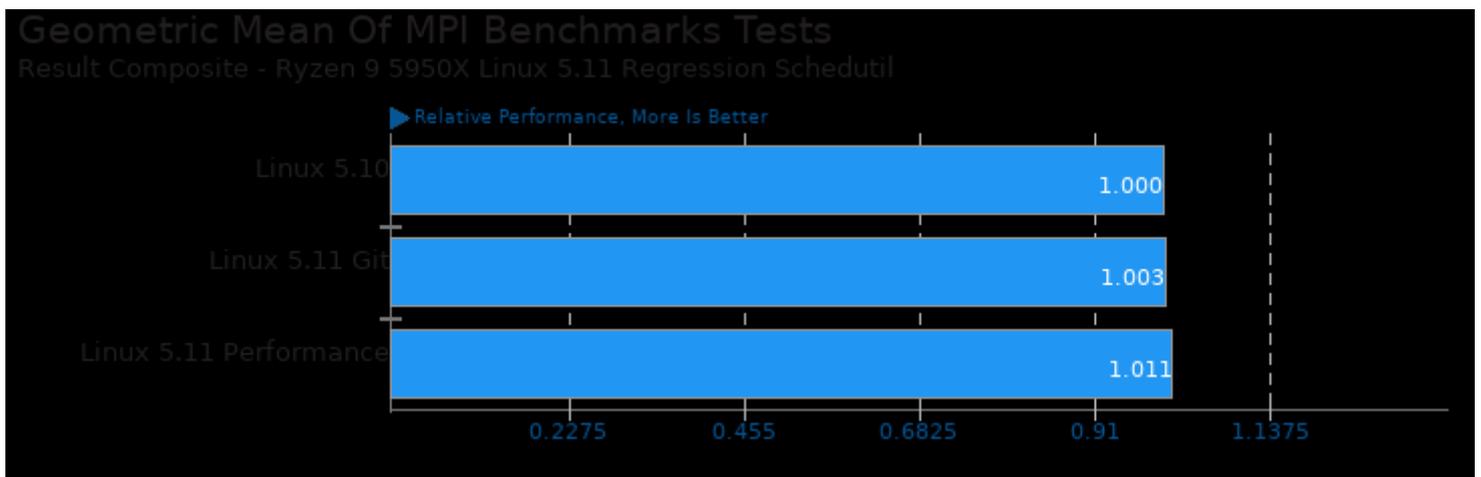
Geometric mean based upon tests: system/wireguard, pts/sqlite-speedtest, pts/pgbench, pts/openssl, pts/hackbench and pts/rocksdb



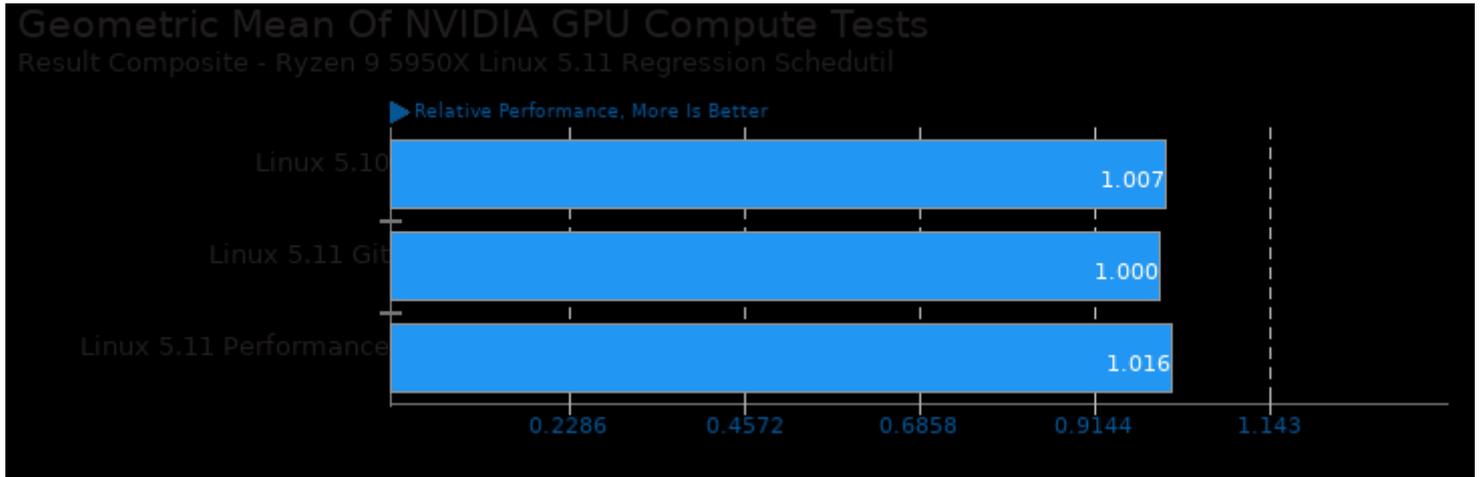
Geometric mean based upon tests: pts/mnn, pts/ncnn, pts/tnn, pts/caffe, pts/numpy, pts/deepspeech, pts/ecp-candle, pts/rnoise, pts/mlpack, pts/tensorflow-lite, pts/onednn, pts/opencvino, pts/plaidml and pts/lczero



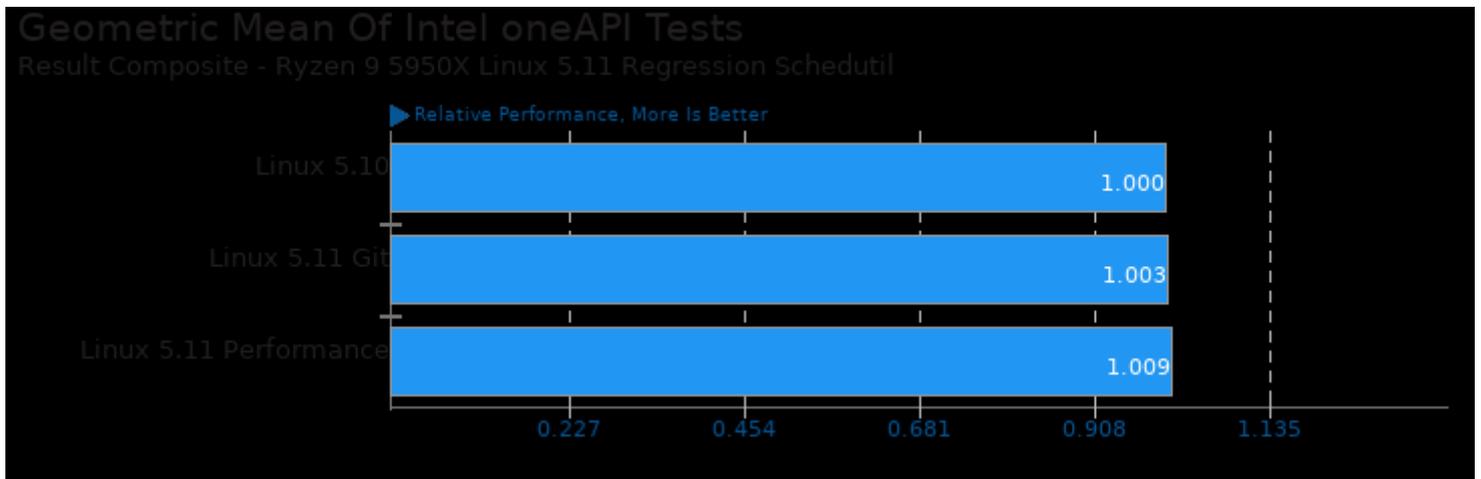
Geometric mean based upon tests: pts/namd, pts/gromacs, pts/cp2k, pts/dolfyn, pts/cloverleaf, pts/lammps and pts/incompact3d



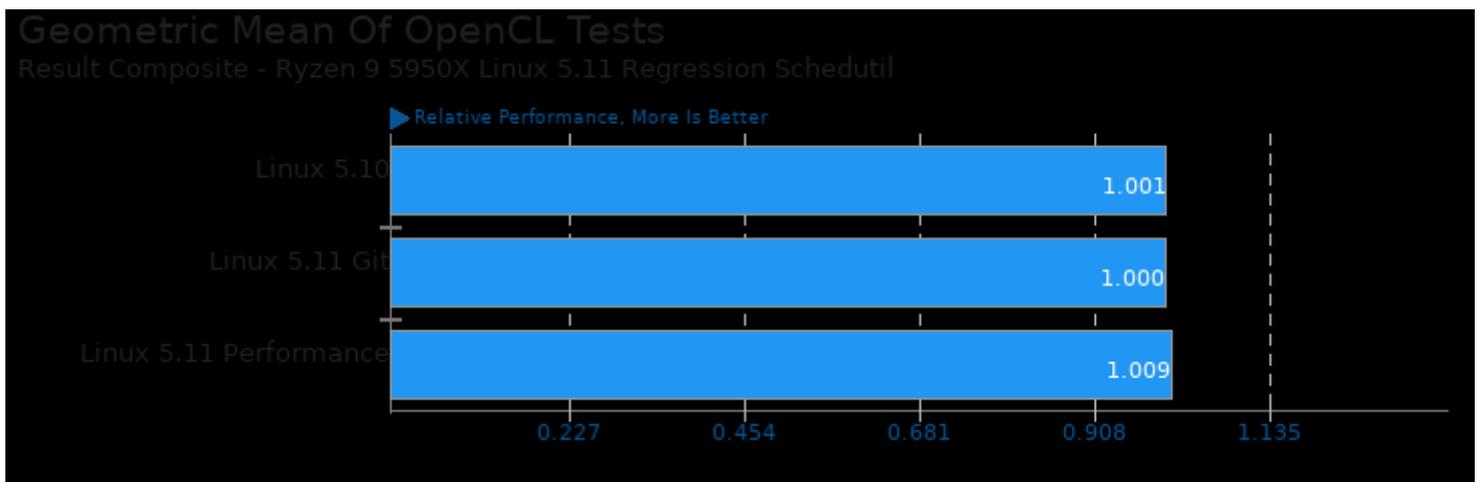
Geometric mean based upon tests: pts/askap, pts/lammps, pts/incompact3d, pts/mocassin, pts/gromacs, pts/hpcg, pts/mrbayes and pts/npb



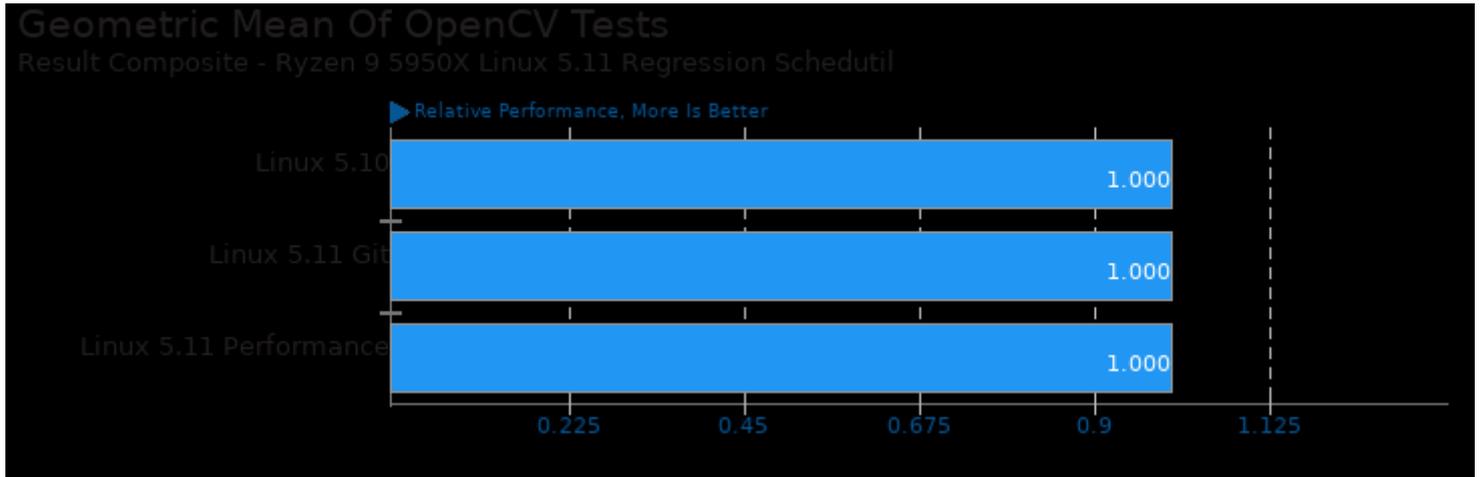
Geometric mean based upon tests: pts/gromacs, pts/luxcorerender, pts/rodinia, pts/plaidml, pts/lczero, pts/indigobench, pts/v-ray, pts/blender, pts/caffe and pts/ncnn



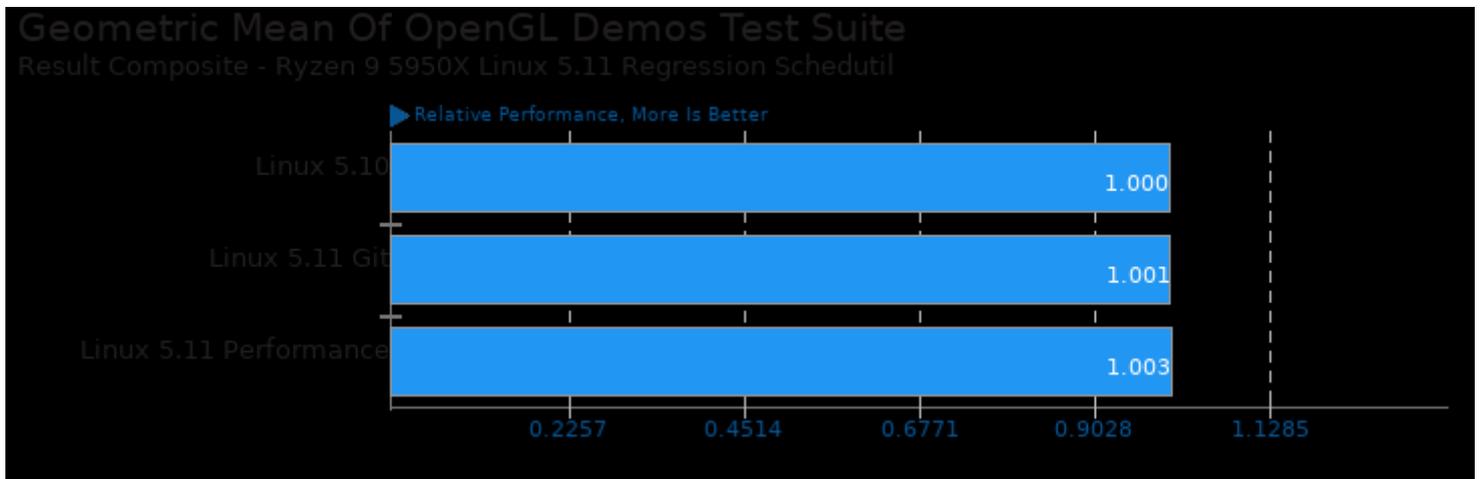
Geometric mean based upon tests: pts/embree, pts/onednn, pts/oidn, pts/openvkl and pts/openvino



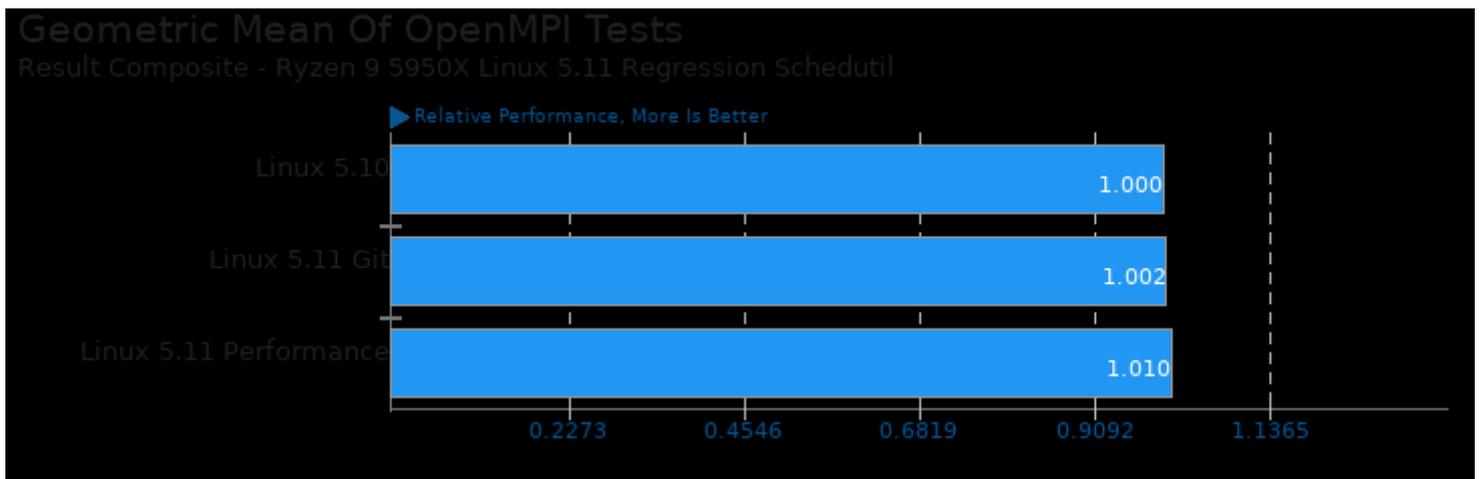
Geometric mean based upon tests: pts/rodinia, pts/parboil and system/darktable



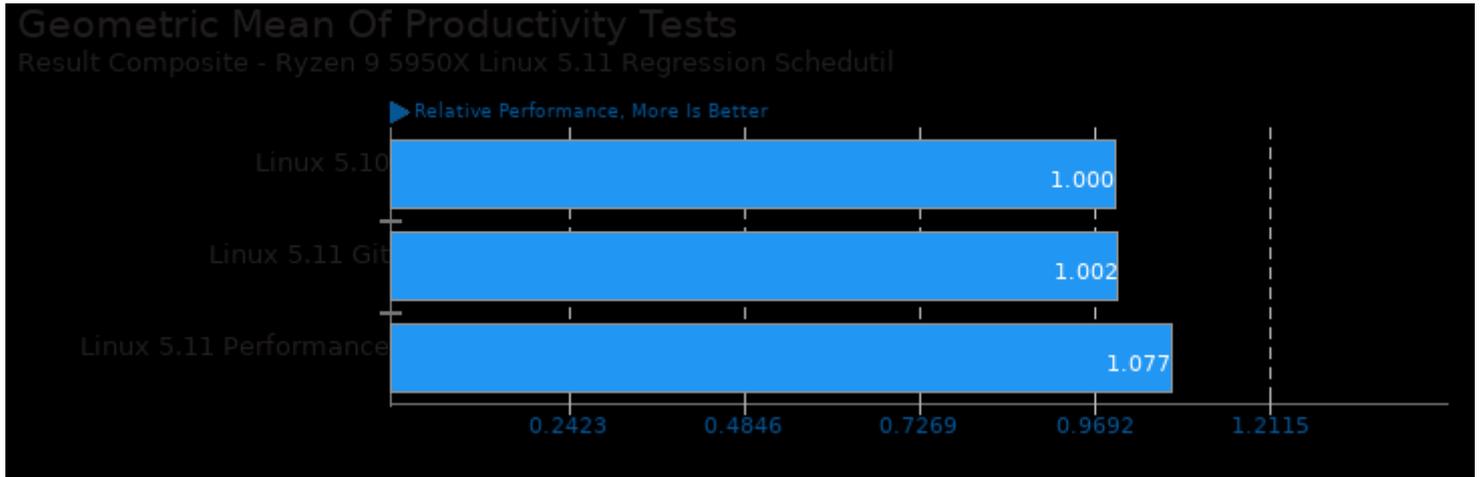
Geometric mean based upon tests: pts/caffe and pts/yafaray



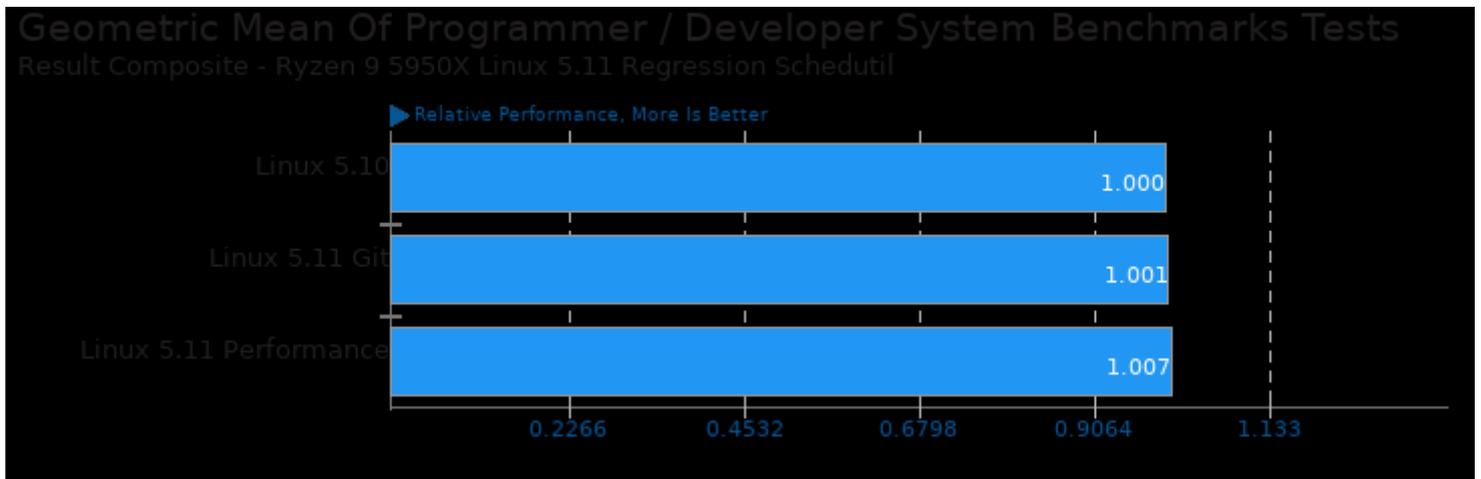
Geometric mean based upon tests: pts/unigine-valley, pts/unigine-heaven and pts/unigine-super



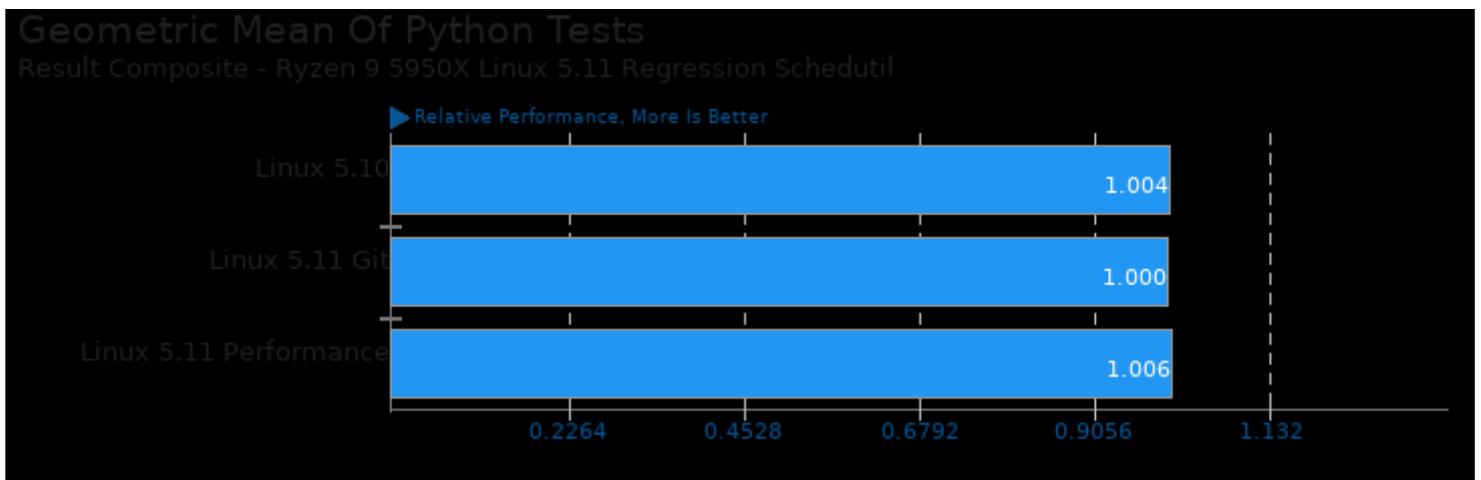
Geometric mean based upon tests: pts/askap, pts/cloverleaf, pts/gromacs, pts/hpcg, pts/incompact3d, pts/lammps, pts/mocassin, pts/npb, pts/parboil, pts/rodinia and pts/mrbyes



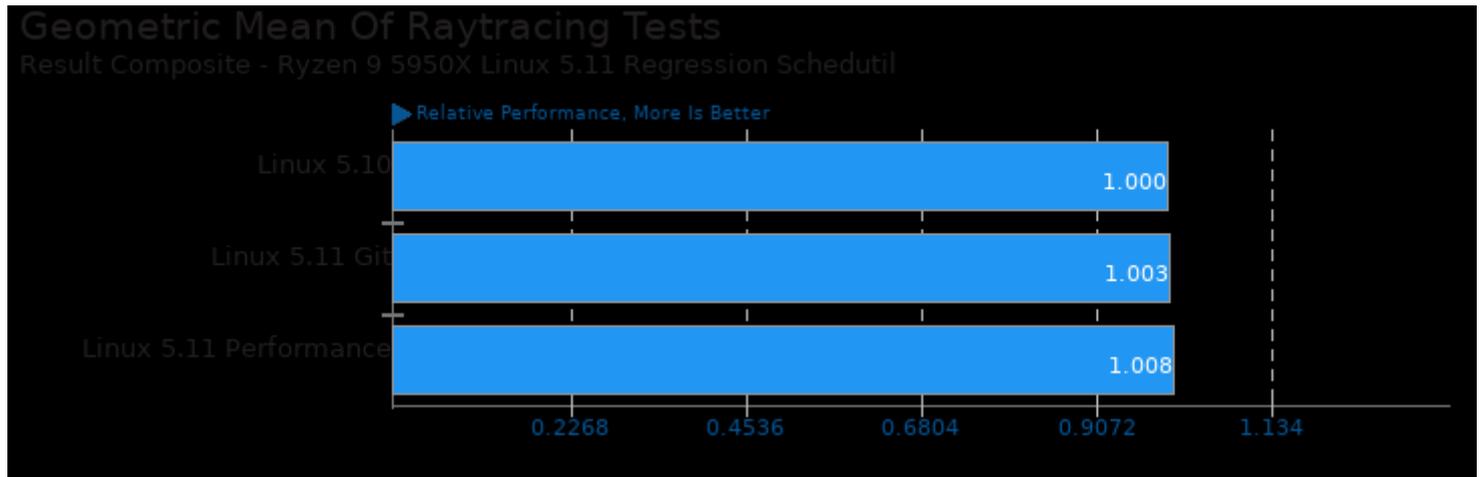
Geometric mean based upon tests: system/libreoffice, system/octave-benchmark, system/inkscape, system/gimp, system/gegl and system/rsvg



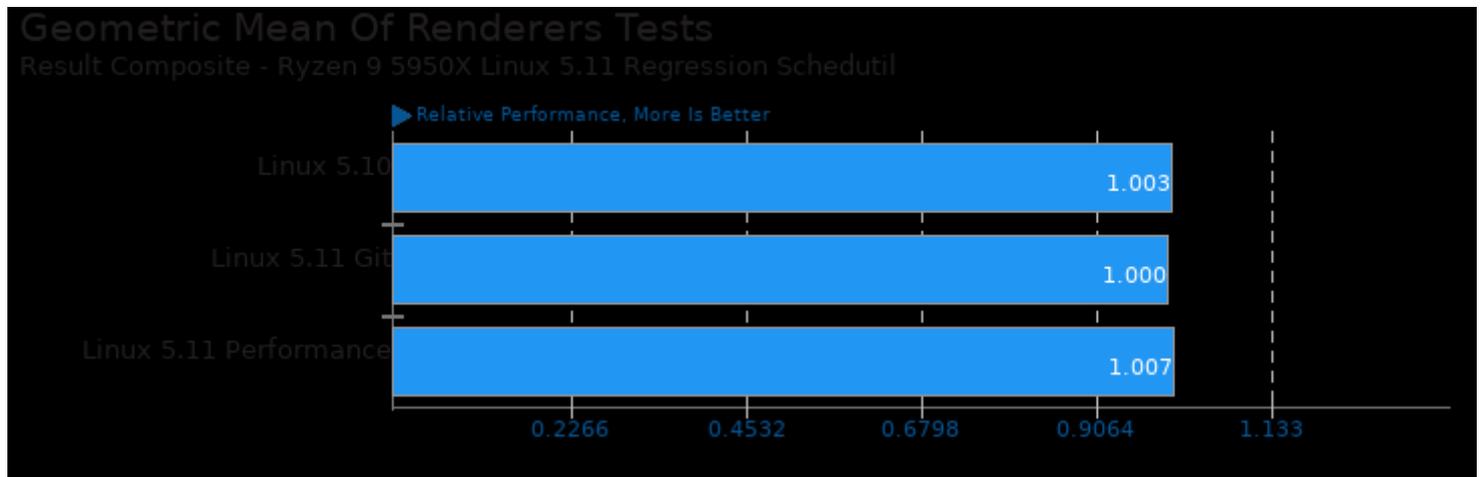
Geometric mean based upon tests: pts/simdjson, pts/sqlite-speedtest, pts/node-web-tooling, pts/git, pts/blosc, pts/compress-zstd, pts/pyperformance, pts/pybench, system/cryptsetup, pts/build-apache, pts/build-eigen, pts/build-linux-kernel, pts/build-imagemagick, pts/build-gdb, pts/build-ffmpeg, pts/build-mplayer,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



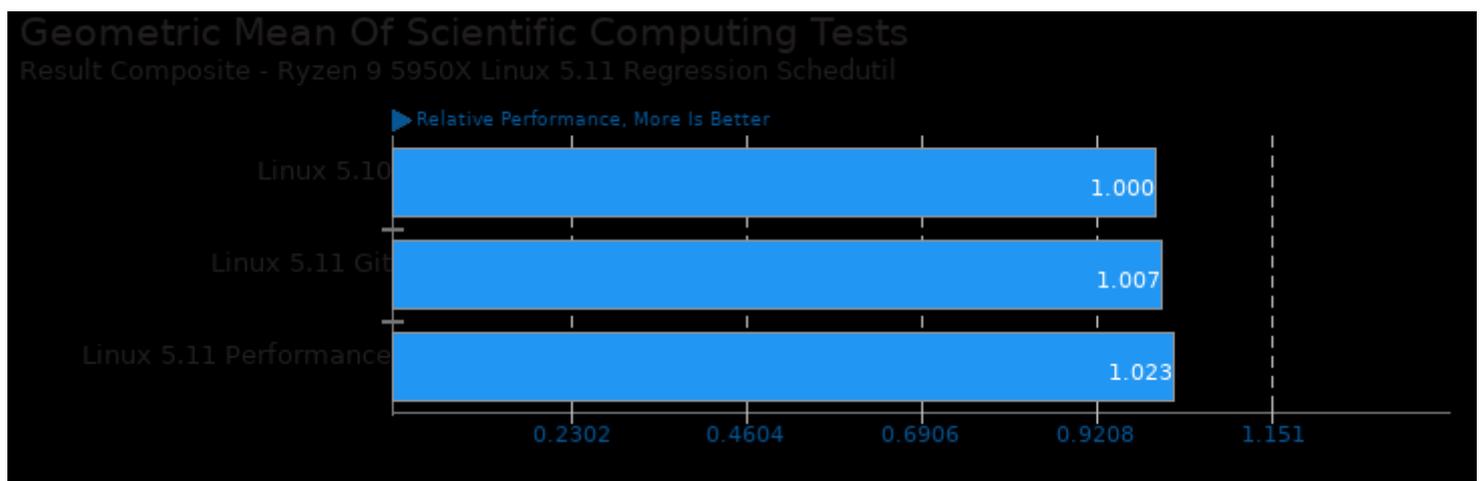
Geometric mean based upon tests: pts/pybench, pts/cython-bench, pts/numpy, pts/mlpack and pts/pyperformance



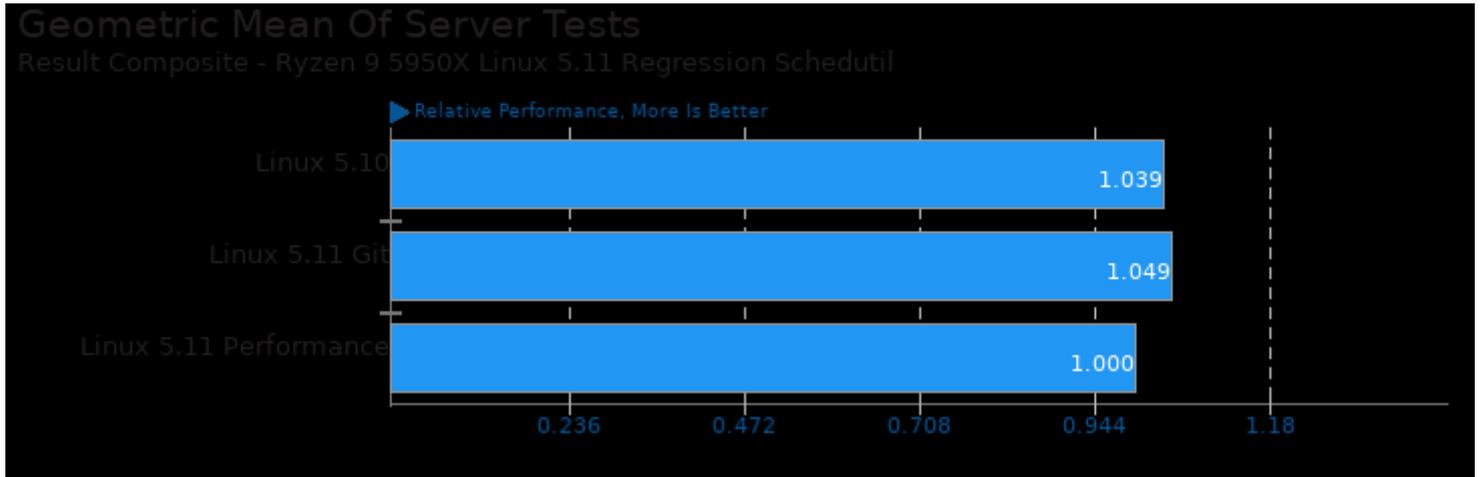
Geometric mean based upon tests: pts/c-ray, pts/tachyon, pts/povray and pts/yafaray



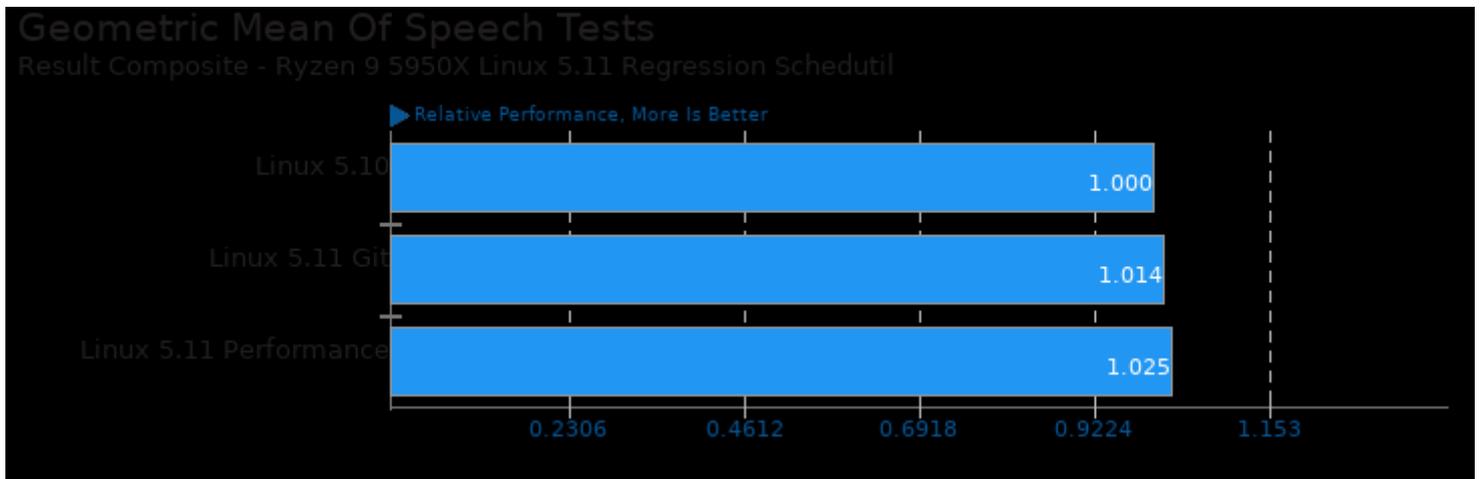
Geometric mean based upon tests: pts/c-ray, pts/tachyon, pts/povray, pts/yafaray, pts/blender, pts/appleseed, pts/radiance, pts/luxcorerender, pts/smallpt, pts/ttsiod-renderer, pts/v-ray and pts/indigobench



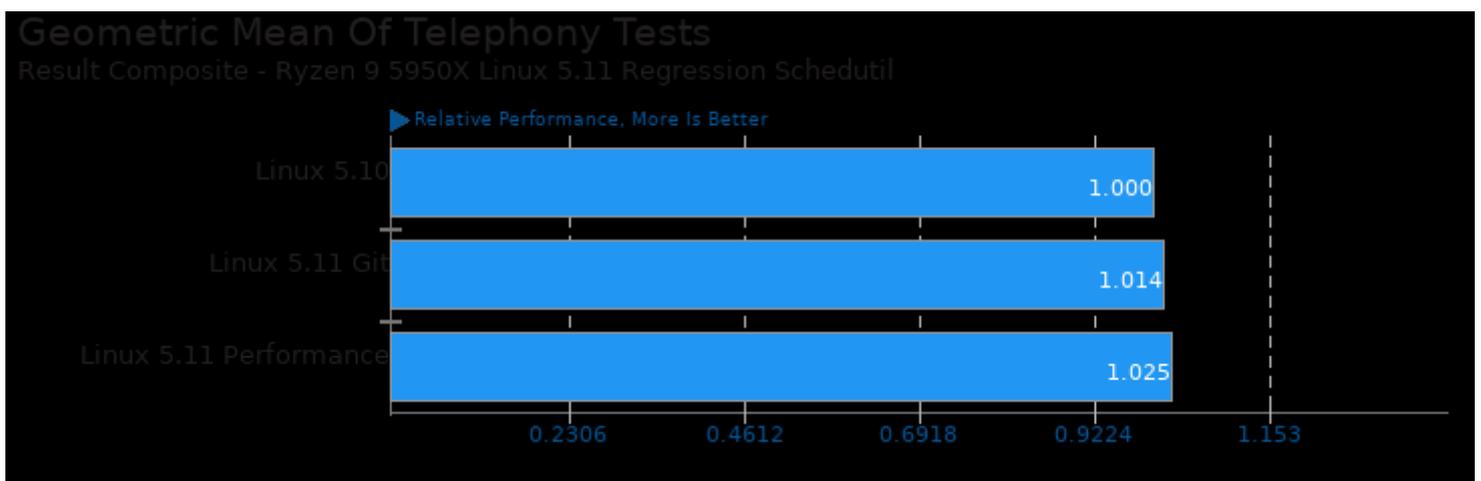
Geometric mean based upon tests: pts/ffte, pts/fftw, system/octave-benchmark, pts/neat, pts/mt-dgemm, pts/namd, pts/gromacs, pts/cp2k, pts/dolfyn, pts/cloverleaf, pts/lammps, pts/incompact3d, pts/himeno, pts/mrbayes, pts/hmmer and pts/mocassin



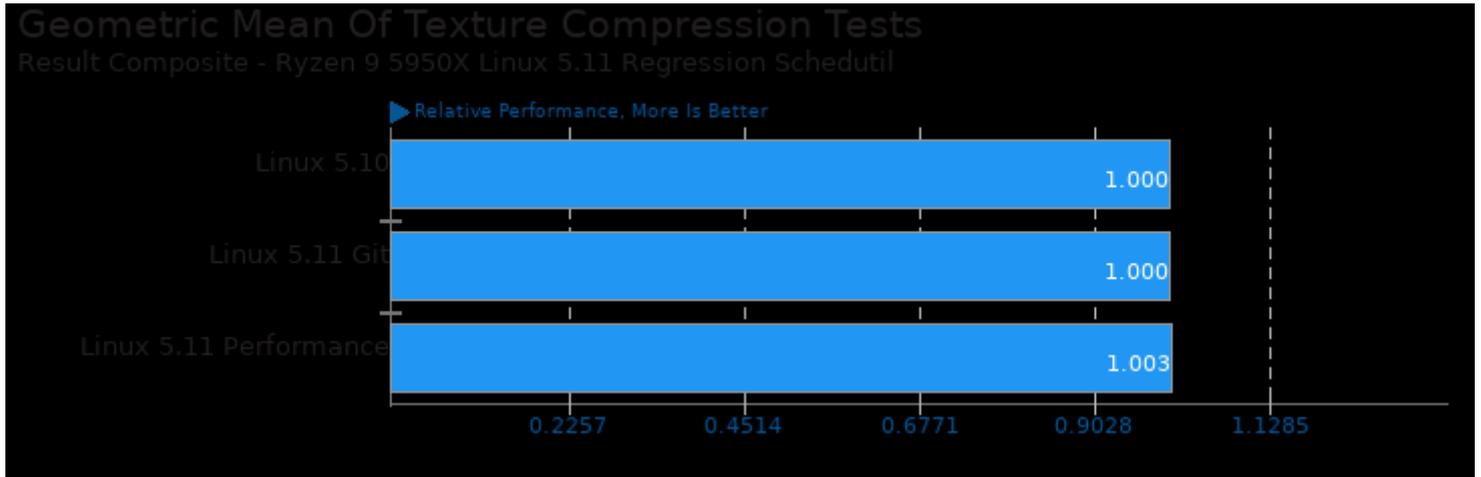
Geometric mean based upon tests: pts/pgbench, pts/keydb, pts/rocksdb, pts/phpbench, pts/openssl, pts/perl-benchmark, pts/simdjson, pts/node-web-tooling, pts/sqlite-speedtest, pts/couchdb and pts/influxdb



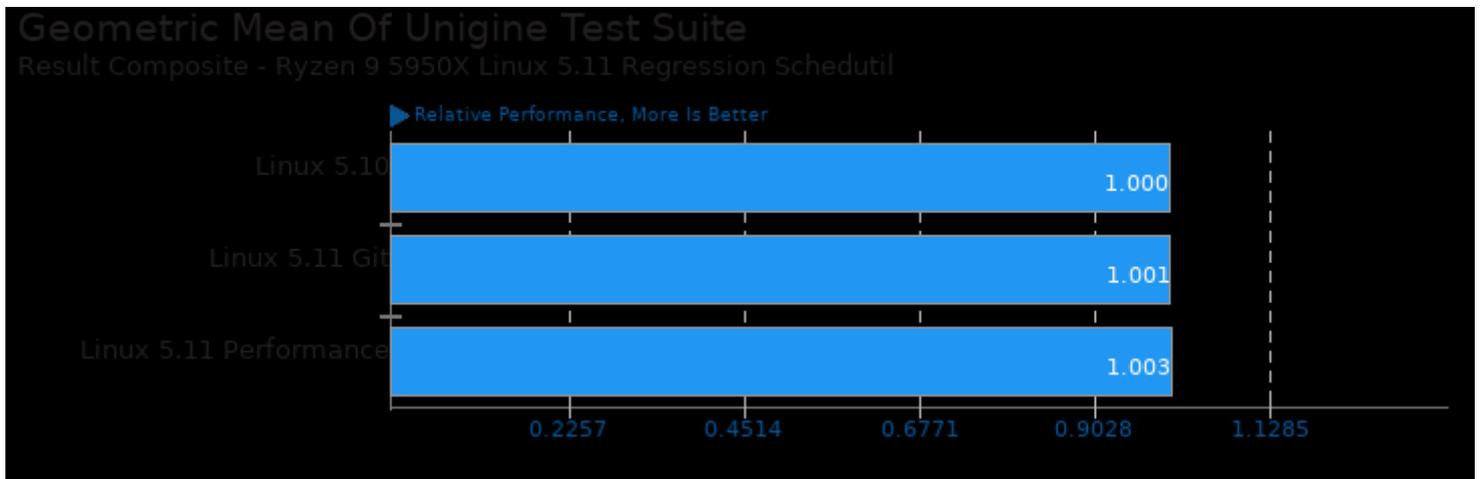
Geometric mean based upon tests: pts/espeak, pts/deepspeech and pts/rnnoise



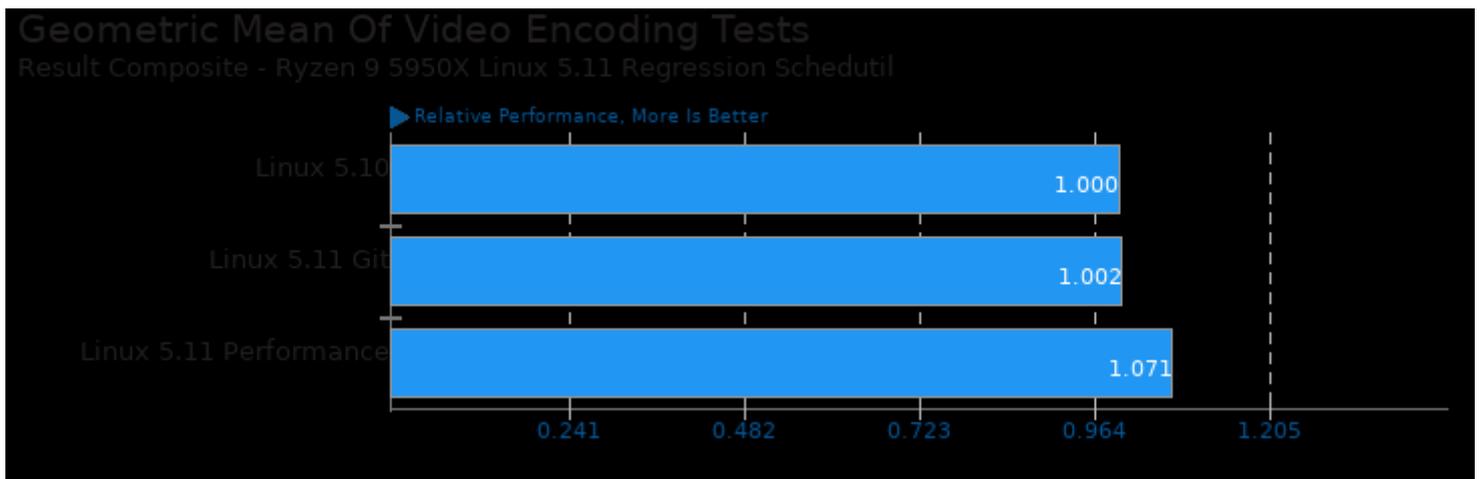
Geometric mean based upon tests: pts/espeak, pts/deepspeech and pts/rnnoise



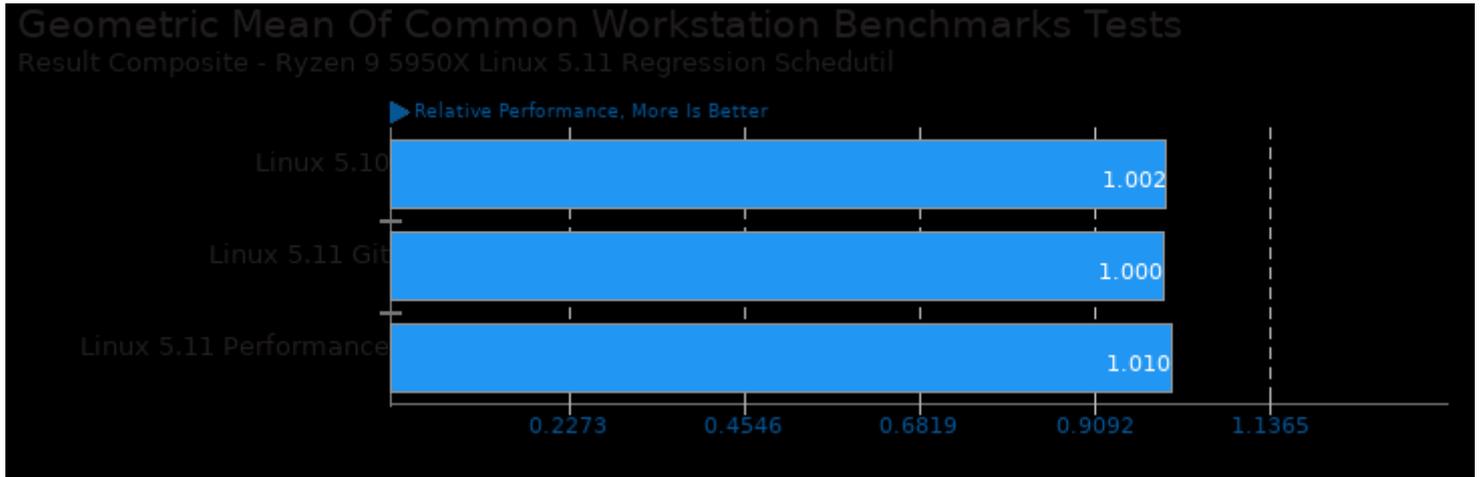
Geometric mean based upon tests: pts/basis and pts/ascenc



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

*This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 12:43.*