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## Xeon E3-1245 v5 Ubuntu Linux 5.4

Intel Xeon E3-1245 v5 testing with a MSI C236A WORKSTATION (MS-7998) v1.0 (2.90 BIOS) and MSI Intel HD P530 3GB on Ubuntu 20.04 via the Phoronix Test Suite.

### Automated Executive Summary

*Linux 5.4 had the most wins, coming in first place for 48% of the tests.*

*Based on the geometric mean of all complete results, the fastest (Linux 5.4) was 1.011x the speed of the slowest (Linux 5.8). Linux 5.9 Git was 0.991x the speed of Linux 5.4 and Linux 5.8 was 0.998x the speed of Linux 5.9 Git.*

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

RealSR-NCNN (Scale: 4x - TAA: No) at 16.443x  
NCNN (Target: Vulkan GPU - Model: mobilenet) at 1.216x  
NCNN (Target: Vulkan GPU - Model: squeezenet) at 1.19x  
NCNN (Target: Vulkan GPU - Model: googlenet) at 1.189x  
NCNN (Target: Vulkan GPU - Model: efficientnet-b0) at 1.186x  
LeelaChessZero (Backend: BLAS) at 1.176x  
NCNN (Target: Vulkan GPU - Model: resnet18) at 1.174x  
NCNN (Target: Vulkan GPU-v3-v3 - Model: mobilenet-v3) at 1.167x  
NCNN (Target: Vulkan GPU - Model: alexnet) at 1.164x

NCNN (*Target: Vulkan GPU - Model: mnasnet*) at 1.162x.

## Test Systems:

### Linux 5.4

Processor: Intel Xeon E3-1245 v5 @ 3.90GHz (4 Cores / 8 Threads), Motherboard: MSI C236A WORKSTATION (MS-7998) v1.0 (2.90 BIOS), Chipset: Intel Xeon E3-1200 v5/E3-1500, Memory: 32GB, Disk: 120GB Samsung SSD 850, Graphics: MSI Intel HD P530 3GB (1150MHz), Audio: Realtek ALC1150, Monitor: LG Ultra HD, Network: Intel I219-V

OS: Ubuntu 20.04, Kernel: 5.4.0-37-generic (x86\_64), Desktop: GNOME Shell 3.36.2, Display Server: X Server 1.20.8, Display Driver: modesetting 1.20.8, OpenGL: 4.6 Mesa 20.0.4, 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,objc++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none,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  
Processor Notes: Scaling Governor: intel\_pstate powersave - CPU Microcode: 0xdcc

Python Notes: Python 3.8.2

Security Notes: itlb\_multihit: KVM: Mitigation of Split huge pages + l1tf: Mitigation of PTE Inversion; VMX: conditional cache flushes SMT vulnerable + mds: Mitigation of Clear buffers; SMT vulnerable + meltdown: Mitigation of PTI + 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 generic retpoline IBPB: conditional IBRS\_FW STIBP: conditional RSB filling + srbs: Mitigation of Microcode + tsx\_async\_abort: Mitigation of Clear buffers; SMT vulnerable

### Linux 5.8

Processor: Intel Xeon E3-1245 v5 @ 3.90GHz (4 Cores / 8 Threads), Motherboard: MSI C236A WORKSTATION (MS-7998) v1.0 (2.90 BIOS), Chipset: Intel Xeon E3-1200 v5/E3-1500, Memory: 32GB, Disk: 120GB Samsung SSD 850, Graphics: MSI Intel HD P530 3GB (1150MHz), Audio: Realtek ALC1150, Monitor: LG Ultra HD, Network: Intel I219-V

OS: Ubuntu 20.04, Kernel: 5.8.13-050813-generic (x86\_64), Desktop: GNOME Shell 3.36.2, Display Server: X Server 1.20.8, Display Driver: modesetting 1.20.8, OpenGL: 4.6 Mesa 20.0.4, Vulkan: 1.2.131, 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,objc++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none,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  
Processor Notes: Scaling Governor: intel\_pstate powersave - CPU Microcode: 0xdcc

Python Notes: Python 3.8.2

Security Notes: itlb\_multihit: KVM: Mitigation of VMX disabled + l1tf: Mitigation of PTE Inversion; VMX: conditional cache flushes SMT vulnerable + mds: Mitigation of Clear buffers; SMT vulnerable + meltdown: Mitigation of PTI + 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 generic retpoline IBPB: conditional IBRS\_FW STIBP: conditional RSB filling + srbs: Mitigation of Microcode + tsx\_async\_abort: Mitigation of Clear buffers; SMT vulnerable

### Linux 5.9 Git

Processor: Intel Xeon E3-1245 v5 @ 3.90GHz (4 Cores / 8 Threads), Motherboard: MSI C236A WORKSTATION (MS-7998) v1.0 (2.90 BIOS), Chipset: Intel Xeon E3-1200 v5/E3-1500, Memory: 32GB, Disk: 120GB Samsung SSD

850, Graphics: MSI Intel HD P530 3GB (1150MHz), Audio: Realtek ALC1150, Monitor: LG Ultra HD, Network: Intel I219-V

OS: Ubuntu 20.04, Kernel: 5.9.0-050900rc7daily20201003-generic (x86\_64) 20201002, Desktop: GNOME Shell 3.36.4, Display Server: X Server 1.20.8, Display Driver: modesetting 1.20.8, OpenGL: 4.6 Mesa 20.0.4, Vulkan: 1.2.131, 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,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

Processor Notes: Scaling Governor: intel\_pstate powersave - CPU Microcode: 0xdc

Python Notes: Python 3.8.2

Security Notes: itbl\_multithit: KVM: Mitigation of VMX disabled + l1tf: Mitigation of PTE Inversion; VMX: conditional cache flushes SMT vulnerable + mds: Mitigation of Clear buffers; SMT vulnerable + meltdown: Mitigation of PTI + spec\_store\_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre\_v1: Mitigation of usercopy/swapgs barriers and \_\_user pointer sanitization + spectre\_v2: Mitigation of Full generic retpoline IBPB: conditional IBRS\_FW STIBP: conditional RSB filling + srbs: Mitigation of Microcode + tsx\_async\_abort: Mitigation of Clear buffers; SMT vulnerable

	Linux 5.4	Linux 5.8	Linux 5.9 Git
<b>RealSR-NCNN - 4x - No (sec)</b>	<b>17.241</b>	<b>283.500</b>	283.462
Normalized	100%	6.08%	6.08%
Standard Deviation	2.8%	0%	0%
<b>VkFFT (Benchmark Score)</b>	<b>1141</b>	<b>1161</b>	<b>1161</b>
Normalized	98.28%	100%	100%
Standard Deviation	0.1%		
<b>GLmark2 - 1920 x 1080 (Score)</b>	543	<b>502</b>	<b>552</b>
Normalized	98.37%	90.94%	100%
<b>GLmark2 - 3840 x 2160 (Score)</b>	135	<b>119</b>	<b>137</b>
Normalized	98.54%	86.86%	100%
<b>LeelaChessZero - BLAS (Nodes/s)</b>	<b>797</b>	<b>678</b>	779
Normalized	100%	85.07%	97.74%
Standard Deviation	0.1%	2.4%	0.5%
<b>LeelaChessZero - Eigen (Nodes/s)</b>	717	<b>701</b>	<b>719</b>
Normalized	99.72%	97.5%	100%
Standard Deviation	1.3%	4.5%	0.8%
<b>Rodinia - OpenMP LavaMD (sec)</b>	<b>570.414</b>	568.094	<b>566.532</b>
Normalized	99.32%	99.73%	100%
Standard Deviation	0.9%	0.3%	0%
<b>Rodinia - OpenMP HotSpot3D (sec)</b>	<b>118.303</b>	118.459	<b>118.977</b>
Normalized	100%	99.87%	99.43%
Standard Deviation	0.1%	0.4%	0.4%
<b>Rodinia - OpenMP Leukocyte (sec)</b>	<b>254.675</b>	256.916	<b>258.772</b>
Normalized	100%	99.13%	98.42%
Standard Deviation	0.2%	0.2%	0.8%
<b>Rodinia - OpenMP CFD Solver (sec)</b>	<b>47.393</b>	<b>47.671</b>	47.631
Normalized	100%	99.42%	99.5%
Standard Deviation	0.2%	0.2%	0%
<b>Rodinia - O.S (sec)</b>	<b>28.734</b>	28.730	<b>28.703</b>
Normalized	99.89%	99.91%	100%
Standard Deviation	0.1%	0.2%	0.2%

NAMD - ATPase Simulation - 327,506 Atoms	<b>3.87433</b>	3.88624	<b>3.88703</b>
(days/ns)			
Normalized	100%	99.69%	99.67%
Standard Deviation	0.1%	0.2%	0.2%
Dolfyn - C.F.D (sec)	<b>21.425</b>	21.476	<b>21.537</b>
Normalized	100%	99.76%	99.48%
Standard Deviation	0.2%	0.3%	0.2%
FFTE - N.2.3.C.F.R (MFLOPS)	20328	<b>20259</b>	<b>20335</b>
Normalized	99.97%	99.62%	100%
Standard Deviation	0.8%	0.5%	0.6%
Timed HMMer Search - P.D.S (sec)	<b>125.430</b>	125.495	<b>125.660</b>
Normalized	100%	99.95%	99.82%
Standard Deviation	0%	0.1%	0.1%
Incompact3D - Cylinder (sec)	<b>750.917623</b>	<b>754.293904</b>	754.269389
Normalized	100%	99.55%	99.56%
Standard Deviation	0.4%	0%	0.1%
Timed MAFFT Alignment - M.S.A - LSU RNA	<b>12.268</b>	<b>12.291</b>	<b>12.291</b>
(sec)			
Normalized	100%	99.81%	99.81%
Standard Deviation	0.8%	1.2%	2%
Monte Carlo Simulations of Ionised Nebulae	<b>305</b>	<b>304</b>	<b>304</b>
- Dust 2D tau100.0 (sec)			
Normalized	99.67%	100%	100%
Standard Deviation	0.4%		0.3%
LAMMPS Molecular Dynamics Simulator - Rhodopsin Protein (ns/day)	<b>2.746</b>	<b>2.758</b>	<b>2.758</b>
Normalized	99.56%	100%	100%
Standard Deviation	0.3%	0.3%	0.4%
WebP Image Encode - Default (Encode Time	<b>1.741</b>	<b>1.750</b>	1.749
- sec)			
Normalized	100%	99.49%	99.54%
Standard Deviation	0.1%	0%	0.1%
WebP Image Encode - Quality 100 (Encode	<b>2.728</b>	2.742	<b>2.756</b>
Time - sec)			
Normalized	100%	99.49%	98.98%
Standard Deviation	0.1%	0.2%	0.3%
WebP Image Encode - Q.1.L (Encode Time -	<b>19.361</b>	19.333	<b>19.214</b>
sec)			
Normalized	99.24%	99.38%	100%
Standard Deviation	0.3%	0.1%	0.2%
WebP Image Encode - Q.1.H.C (Encode Time	<b>8.148</b>	<b>8.184</b>	8.161
- sec)			
Normalized	100%	99.56%	99.84%
Standard Deviation	0.2%	0.2%	0.3%
WebP Image Encode - Q.1.L.H.C (Encode	<b>47.466</b>	47.260	<b>47.190</b>
Time - sec)			
Normalized	99.42%	99.85%	100%
Standard Deviation	0.5%	0.2%	0.3%
BYTE Unix Benchmark - Dhrystone 2 (LPS)	<b>38538549</b>	38513841	<b>38169339</b>
Normalized	100%	99.94%	99.04%
Standard Deviation	0.2%	0%	0.7%
Zstd Compression - 3 (MB/s)	<b>2386</b>	<b>2389</b>	2389
Normalized	99.86%	100%	99.99%
Standard Deviation	0.4%	0.1%	0.1%

Zstd Compression - 19 (MB/s)	<b>20.5</b>	<b>20.4</b>	<b>20.4</b>
Normalized	100%	99.51%	99.51%
Standard Deviation	0.3%	0%	0.6%
LibRaw - P.P.B (Mpix/sec)	<b>27.66</b>	27.65	<b>27.55</b>
Normalized	100%	99.96%	99.6%
Standard Deviation	0.1%	0.3%	0.2%
Crafty - Elapsed Time (Nodes/s)	<b>7547320</b>	7469298	<b>7302256</b>
Normalized	100%	98.97%	96.75%
Standard Deviation	0.8%	0.6%	0.5%
TSCP - A.C.P (Nodes/s)	<b>1141277</b>	1134693	<b>1131430</b>
Normalized	100%	99.42%	99.14%
Standard Deviation	0.2%	0.2%	0.2%
oneDNN - IP Batch 1D - f32 - CPU (ms)	<b>8.17233</b>	8.37706	<b>8.40703</b>
Normalized	100%	97.56%	97.21%
Standard Deviation	0.1%	0.6%	0.8%
oneDNN - IP Batch All - f32 - CPU (ms)	111.115	<b>114.236</b>	<b>110.716</b>
Normalized	99.64%	96.92%	100%
Standard Deviation	0.5%	2.3%	0.2%
oneDNN - IP Batch 1D - u8s8f32 - CPU (ms)	<b>3.77996</b>	<b>3.90177</b>	3.84716
Normalized	100%	96.88%	98.25%
Standard Deviation	0.3%	0.1%	0.3%
oneDNN - IP Batch All - u8s8f32 - CPU (ms)	<b>49.8609</b>	<b>50.9712</b>	50.2447
Normalized	100%	97.82%	99.24%
Standard Deviation	0%	0.6%	0.5%
oneDNN - C.B.S.A - f32 - CPU (ms)	<b>19.9426</b>	19.8862	<b>19.8822</b>
Normalized	99.7%	99.98%	100%
Standard Deviation	0.6%	0.6%	0.5%
oneDNN - D.B.d - f32 - CPU (ms)	<b>9.25837</b>	9.73579	<b>9.82786</b>
Normalized	100%	95.1%	94.21%
Standard Deviation	0.1%	1.6%	1.9%
oneDNN - D.B.d - f32 - CPU (ms)	<b>14.3651</b>	<b>15.1450</b>	14.7150
Normalized	100%	94.85%	97.62%
Standard Deviation	0.4%	0.3%	0.8%
oneDNN - C.B.S.A - u8s8f32 - CPU (ms)	<b>18.7529</b>	<b>18.8285</b>	18.7935
Normalized	100%	99.6%	99.78%
Standard Deviation	0.6%	0.6%	0.5%
oneDNN - D.B.d - u8s8f32 - CPU (ms)	<b>10.3947</b>	10.3074	<b>10.1850</b>
Normalized	97.98%	98.81%	100%
Standard Deviation	1.3%	1.9%	0.2%
oneDNN - D.B.d - u8s8f32 - CPU (ms)	7.41923	<b>7.42274</b>	<b>7.40944</b>
Normalized	99.87%	99.82%	100%
Standard Deviation	0.5%	0.4%	0.1%
oneDNN - R.N.N.T - f32 - CPU (ms)	<b>569.397</b>	<b>548.044</b>	558.863
Normalized	96.25%	100%	98.06%
Standard Deviation	0%	0.2%	1%
oneDNN - R.N.N.I - f32 - CPU (ms)	<b>285.961</b>	270.665	<b>260.964</b>
Normalized	91.26%	96.42%	100%
Standard Deviation	0.4%	2.2%	3.5%
oneDNN - M.M.B.S.T - f32 - CPU (ms)	<b>5.15748</b>	5.04980	<b>5.04492</b>
Normalized	97.82%	99.9%	100%
Standard Deviation	0.3%	0.5%	0.3%
oneDNN - M.M.B.S.T - u8s8f32 - CPU (ms)	<b>7.16575</b>	7.19867	<b>7.20203</b>
Normalized	100%	99.54%	99.5%
Standard Deviation	0.1%	0.4%	0.5%
AOM AV1 - Speed 0 Two-Pass (FPS)	0.22	0.22	0.22

	Standard Deviation	0%	0%	0%
<b>AOM AV1 - Speed 4 Two-Pass (FPS)</b>	<b>1.88</b>	<b>1.87</b>	<b>1.88</b>	
Normalized	100%	99.47%	100%	
Standard Deviation	0.3%	0.3%	0.3%	
<b>AOM AV1 - Speed 6 Realtime (FPS)</b>	<b>14.99</b>	<b>14.99</b>	<b>14.99</b>	
Normalized	100%	99.3%	99.53%	
Standard Deviation	0.3%	0.2%	0.2%	
<b>AOM AV1 - Speed 6 Two-Pass (FPS)</b>	<b>3.00</b>	<b>2.99</b>	<b>2.99</b>	
Normalized	100%	99.67%	99.67%	
Standard Deviation	0.2%	0.2%	0.4%	
<b>AOM AV1 - Speed 8 Realtime (FPS)</b>	<b>35.82</b>	<b>35.57</b>	<b>35.65</b>	
Normalized	100%	99.3%	99.17%	
Standard Deviation	0.4%	0.2%	0.3%	
<b>libavif avifenc - 0 (sec)</b>	<b>182.456</b>	182.788	<b>183.225</b>	
Normalized	100%	99.82%	99.58%	
Standard Deviation	0.7%	0.7%	0%	
<b>libavif avifenc - 2 (sec)</b>	<b>108.057</b>	108.403	<b>108.956</b>	
Normalized	100%	99.68%	99.17%	
Standard Deviation	0.3%	0.2%	0.3%	
<b>libavif avifenc - 8 (sec)</b>	<b>8.199</b>	8.257	<b>8.316</b>	
Normalized	100%	99.3%	98.59%	
Standard Deviation	0.3%	0.5%	0.1%	
<b>libavif avifenc - 10 (sec)</b>	<b>7.600</b>	7.639	<b>7.678</b>	
Normalized	100%	99.49%	98.98%	
Standard Deviation	0.4%	0.7%	0.7%	
<b>Timed Apache Compilation - Time To Compile (sec)</b>	32.732	<b>32.712</b>	<b>33.008</b>	
Normalized	99.94%	100%	99.1%	
Standard Deviation	0.3%	0.2%	0.4%	
<b>Timed GDB GNU Debugger Compilation - Time To Compile (sec)</b>	159.604	<b>157.323</b>	<b>160.636</b>	
Normalized	98.57%	100%	97.94%	
Standard Deviation	0.2%	0.3%	0.3%	
<b>Timed Linux Kernel Compilation - Time To Compile (sec)</b>	<b>199.635</b>	199.789	<b>200.948</b>	
Normalized	100%	99.92%	99.35%	
Standard Deviation	0.7%	0.5%	0.7%	
<b>Timed LLVM Compilation - Time To Compile (sec)</b>	1493	<b>1490</b>	<b>1494</b>	
Normalized	99.81%	100%	99.76%	
Standard Deviation	0.9%	0.1%	0%	
<b>XZ Compression - C.u.1.0.3.s.i.i.C.L.9 (sec)</b>	50.735	<b>50.618</b>	<b>51.026</b>	
Normalized	99.77%	100%	99.2%	
Standard Deviation	0.2%	0.4%	1.2%	
<b>DeepSpeech - CPU (sec)</b>	<b>78.51331</b>	<b>80.60955</b>	80.04749	
Normalized	100%	97.4%	98.08%	
Standard Deviation	0.1%	1.1%	1.1%	
<b>eSpeak-NG Speech Engine - T.T.S (sec)</b>	<b>33.933</b>	34.257	<b>34.588</b>	
Normalized	100%	99.05%	98.11%	
Standard Deviation	2.6%	1.1%	0.7%	
<b>Montage Astronomical Image Mosaic Engine - M.o.M.K.b.1.5.d.x.1.5.d (sec)</b>	<b>89.559</b>	90.697	<b>91.033</b>	
Normalized	100%	98.75%	98.38%	
Standard Deviation	0.1%	0.2%	0.3%	
<b>RNNoise (sec)</b>	<b>27.870</b>	<b>28.130</b>	28.088	

Normalized	100%	99.08%	99.22%
Standard Deviation	0.4%	1.1%	0.4%
<b>System GZIP Decompression (sec)</b>	<b>3.282</b>	3.339	<b>3.355</b>
Normalized	100%	98.29%	97.82%
Standard Deviation	0%	3.9%	4.9%
<b>MPV - B.B.B.S.4 - Software Only (FPS)</b>	<b>32.10</b>	32.22	<b>32.28</b>
Normalized	99.44%	99.81%	100%
Standard Deviation	0.1%	0.1%	0.2%
<b>MPV - B.B.B.S.1 - Software Only (FPS)</b>	<b>139.45</b>	<b>139.88</b>	139.75
Normalized	99.69%	100%	99.91%
Standard Deviation	0%	0.1%	0.1%
<b>Apache CouchDB - 100 - 1000 - 24 (sec)</b>	<b>175.791</b>	<b>157.303</b>	161.474
Normalized	89.48%	100%	97.42%
Standard Deviation	1.3%	3%	3%
<b>KeyDB (Ops/sec)</b>	<b>393603</b>	381235	<b>377603</b>
Normalized	100%	96.86%	95.94%
Standard Deviation	0.3%	0.2%	0.2%
<b>GROMACS - Water Benchmark (Ns/Day)</b>	<b>0.504</b>	<b>0.504</b>	<b>0.502</b>
Normalized	100%	100%	99.6%
Standard Deviation	0.4%	0.3%	1.3%
<b>TensorFlow Lite - SqueezeNet (us)</b>	<b>499694</b>	<b>499845</b>	499825
Normalized	100%	99.97%	99.97%
Standard Deviation	0%	0%	0%
<b>TensorFlow Lite - Inception V4 (us)</b>	7204167	<b>7204273</b>	<b>7202907</b>
Normalized	99.98%	99.98%	100%
Standard Deviation	0%	0%	0%
<b>TensorFlow Lite - NASNet Mobile (us)</b>	366947	<b>366914</b>	<b>367078</b>
Normalized	99.99%	100%	99.96%
Standard Deviation	0%	0.1%	0%
<b>TensorFlow Lite - Mobilenet Float (us)</b>	339412	<b>339372</b>	<b>339434</b>
Normalized	99.99%	100%	99.98%
Standard Deviation	0%	0%	0%
<b>TensorFlow Lite - Mobilenet Quant (us)</b>	348999	<b>348976</b>	<b>349438</b>
Normalized	99.99%	100%	99.87%
Standard Deviation	0%	0%	0.1%
<b>TensorFlow Lite - I.R.V (us)</b>	<b>6517420</b>	6518137	<b>6518793</b>
Normalized	100%	99.99%	99.98%
Standard Deviation	0%	0%	0%
<b>ASTC Encoder - Fast (sec)</b>	<b>9.02</b>	<b>9.12</b>	9.07
Normalized	100%	98.9%	99.45%
Standard Deviation	0.1%	1.1%	0.1%
<b>ASTC Encoder - Medium (sec)</b>	<b>11.14</b>	<b>11.14</b>	<b>11.15</b>
Normalized	100%	100%	99.91%
Standard Deviation	0%	0%	0.1%
<b>ASTC Encoder - Thorough (sec)</b>	<b>72.26</b>	72.32	<b>72.37</b>
Normalized	100%	99.92%	99.85%
Standard Deviation	0%	0%	0%
<b>ASTC Encoder - Exhaustive (sec)</b>	<b>578.17</b>	<b>578.30</b>	578.22
Normalized	100%	99.98%	99.99%
Standard Deviation	0%	0.1%	0%
<b>Hugin - P.P.A.S.T (sec)</b>	<b>73.463</b>	74.056	<b>74.650</b>
Normalized	100%	99.2%	98.41%
Standard Deviation	1.1%	0.6%	1%
<b>OCRMypDF - P.6.P.P.D (sec)</b>	<b>55.538</b>	<b>55.393</b>	55.509
Normalized	99.74%	100%	99.79%

	Standard Deviation	0.4%	0.4%	0.6%
<b>Caffe - AlexNet - CPU - 100 (ms)</b>	66942	<b>67067</b>	<b>66888</b>	
	Normalized	99.92%	99.73%	100%
	Standard Deviation	0.1%	0%	0.1%
<b>Caffe - AlexNet - CPU - 200 (ms)</b>	133823	<b>133870</b>	<b>133774</b>	
	Normalized	99.96%	99.93%	100%
	Standard Deviation	0%	0.1%	0.1%
<b>Caffe - GoogleNet - CPU - 100 (ms)</b>	<b>164645</b>	165139	<b>165181</b>	
	Normalized	100%	99.7%	99.68%
	Standard Deviation	0.2%	0%	0.2%
<b>Caffe - GoogleNet - CPU - 200 (ms)</b>	<b>328888</b>	330435	<b>330664</b>	
	Normalized	100%	99.53%	99.46%
	Standard Deviation	0.1%	0.1%	0.2%
<b>GPAW - Carbon Nanotube (sec)</b>	598.320	<b>597.093</b>	<b>602.790</b>	
	Normalized	99.79%	100%	99.05%
	Standard Deviation	0.2%	0.1%	1.2%
<b>Mobile Neural Network - SqueezeNetV1.0</b>	<b>10.255</b>	10.373	<b>10.396</b>	
	Normalized	100%	98.86%	98.64%
	Standard Deviation	0.9%	0.5%	1.1%
<b>Mobile Neural Network - resnet-v2-50 (ms)</b>	<b>56.164</b>	56.934	<b>57.044</b>	
	Normalized	100%	98.65%	98.46%
	Standard Deviation	0.5%	0.4%	0.2%
<b>Mobile Neural Network - MobileNetV2_224</b>	<b>5.601</b>	<b>5.638</b>	5.605	
	Normalized	100%	99.34%	99.93%
	Standard Deviation	0.6%	0.5%	1.2%
<b>Mobile Neural Network - mobilenet-v1-1.0</b>	<b>7.748</b>	7.788	<b>7.800</b>	
	Normalized	100%	99.49%	99.33%
	Standard Deviation	0.2%	0.3%	0.1%
<b>Mobile Neural Network - inception-v3 (ms)</b>	<b>62.308</b>	<b>62.931</b>	62.561	
	Normalized	100%	99.01%	99.6%
	Standard Deviation	0.4%	0.5%	1.8%
<b>NCNN - CPU - squeezenet (ms)</b>	<b>24.88</b>	<b>24.76</b>	24.84	
	Normalized	99.52%	100%	99.68%
	Standard Deviation	0.5%	0.2%	0.5%
<b>NCNN - CPU - mobilenet (ms)</b>	<b>28.94</b>	28.85	<b>28.84</b>	
	Normalized	99.65%	99.97%	100%
	Standard Deviation	0.5%	0.2%	0.5%
<b>NCNN - CPU-v2-v2 - mobilenet-v2 (ms)</b>	7.79	<b>7.82</b>	<b>7.78</b>	
	Normalized	99.87%	99.49%	100%
	Standard Deviation	1.1%	0.6%	0.3%
<b>NCNN - CPU-v3-v3 - mobilenet-v3 (ms)</b>	<b>6.53</b>	<b>6.53</b>	<b>6.52</b>	
	Normalized	99.85%	99.85%	100%
	Standard Deviation	1.1%	0.1%	0.3%
<b>NCNN - CPU - shufflenet-v2 (ms)</b>	<b>4.67</b>	<b>4.66</b>	<b>4.66</b>	
	Normalized	99.79%	100%	100%
	Standard Deviation	1%	0.6%	0.7%
<b>NCNN - CPU - mnasnet (ms)</b>	<b>6.66</b>	<b>6.61</b>	6.62	
	Normalized	99.25%	100%	99.85%
	Standard Deviation	1.2%	0.2%	0.2%
<b>NCNN - CPU - efficientnet-b0 (ms)</b>	<b>10.51</b>	<b>10.44</b>	10.45	
	Normalized	99.33%	100%	99.9%
	Standard Deviation	1%	0.1%	0.1%
<b>NCNN - CPU - blazeface (ms)</b>	<b>2.17</b>	<b>2.14</b>	2.15	
	Normalized	98.62%	100%	99.53%
	Standard Deviation	1.7%	0.3%	0.3%

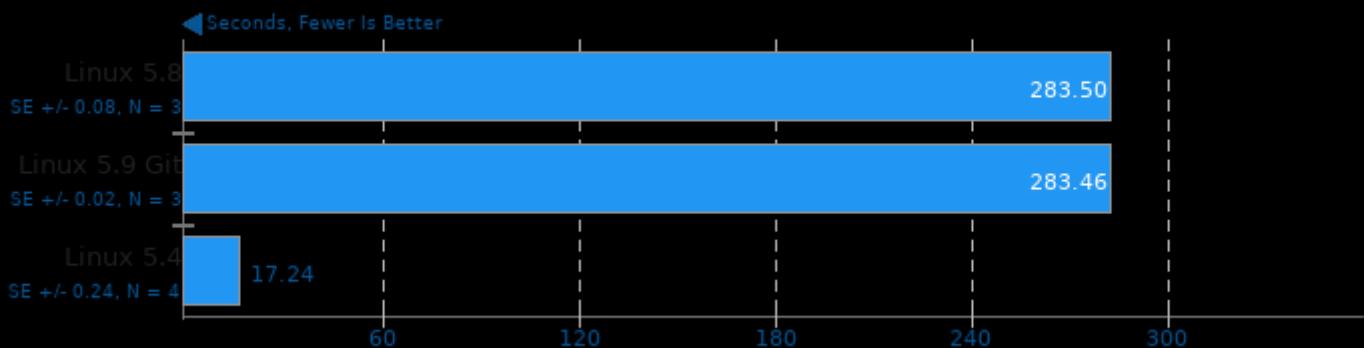
NCNN - CPU - googlenet (ms)	<b>23.08</b>	<b>23.03</b>	23.07
Normalized	99.78%	100%	99.83%
Standard Deviation	0.3%	0%	0.2%
NCNN - CPU - vgg16 (ms)	<b>89.35</b>	<b>88.95</b>	<b>88.82</b>
Normalized	99.41%	99.85%	100%
Standard Deviation	0.1%	0.2%	0.1%
NCNN - CPU - resnet18 (ms)	23.09	<b>23.11</b>	<b>23.05</b>
Normalized	99.83%	99.74%	100%
Standard Deviation	0.1%	0.2%	0%
NCNN - CPU - alexnet (ms)	<b>22.56</b>	<b>22.12</b>	22.41
Normalized	98.05%	100%	98.71%
Standard Deviation	1.7%	0.1%	2.2%
NCNN - CPU - resnet50 (ms)	<b>46.50</b>	<b>46.45</b>	46.46
Normalized	99.89%	100%	99.98%
Standard Deviation	0.1%	0.1%	0%
NCNN - CPU - yolov4-tiny (ms)	<b>39.48</b>	<b>39.36</b>	39.45
Normalized	99.7%	100%	99.77%
Standard Deviation	0.3%	0.1%	0.4%
NCNN - Vulkan GPU - squeezenet (ms)	<b>52.13</b>	<b>43.80</b>	<b>43.80</b>
Normalized	84.02%	100%	100%
Standard Deviation	0%	0%	0.1%
NCNN - Vulkan GPU - mobilenet (ms)	<b>46.43</b>	38.59	<b>38.17</b>
Normalized	82.21%	98.91%	100%
Standard Deviation	1.6%	1.1%	1.1%
NCNN - Vulkan GPU-v2-v2 - mobilenet-v2	<b>14.72</b>	12.69	<b>12.68</b>
Normalized	86.14%	99.92%	100%
Standard Deviation	0.2%	0.1%	0.1%
NCNN - Vulkan GPU-v3-v3 - mobilenet-v3	<b>16.32</b>	14	<b>13.99</b>
Normalized	85.72%	99.93%	100%
Standard Deviation	0.1%	0%	0%
NCNN - Vulkan GPU - shufflenet-v2 (ms)	10.11	<b>10.06</b>	<b>11.09</b>
Normalized	99.51%	100%	90.71%
Standard Deviation	0.2%	5.2%	8.1%
NCNN - Vulkan GPU - mnasnet (ms)	<b>15.11</b>	<b>13</b>	<b>13</b>
Normalized	86.04%	100%	100%
Standard Deviation	0.1%	0%	0%
NCNN - Vulkan GPU - efficientnet-b0 (ms)	<b>30.86</b>	<b>26.02</b>	<b>26.02</b>
Normalized	84.32%	100%	100%
Standard Deviation	0.1%	0.1%	0%
NCNN - Vulkan GPU - blazeface (ms)	<b>2.63</b>	2.35	<b>2.29</b>
Normalized	87.07%	97.45%	100%
Standard Deviation	0.4%	11%	2.3%
NCNN - Vulkan GPU - googlenet (ms)	<b>42.16</b>	35.48	<b>35.47</b>
Normalized	84.13%	99.97%	100%
Standard Deviation	0%	0%	0.1%
NCNN - Vulkan GPU - vgg16 (ms)	<b>214.21</b>	206.48	<b>205.15</b>
Normalized	95.77%	99.36%	100%
Standard Deviation	0.1%	0.1%	0.2%
NCNN - Vulkan GPU - resnet18 (ms)	<b>36.80</b>	<b>31.34</b>	31.36
Normalized	85.16%	100%	99.94%
Standard Deviation	0%	0%	0.1%
NCNN - Vulkan GPU - alexnet (ms)	<b>57.94</b>	51.30	<b>49.78</b>
Normalized	85.92%	97.04%	100%
Standard Deviation	0.2%	0.3%	3.1%
NCNN - Vulkan GPU - resnet50 (ms)	<b>87.11</b>	<b>75.25</b>	75.27

Normalized	86.39%	100%	99.97%
Standard Deviation	0%	0%	0%
<b>NCNN - Vulkan GPU - yolov4-tiny (ms)</b>	<b>89.34</b>	79.45	<b>79.33</b>
Normalized	88.8%	99.85%	100%
Standard Deviation	0.1%	0%	0.1%
<b>TNN - CPU - MobileNet v2 (ms)</b>	<b>366.297</b>	366.393	<b>366.631</b>
Normalized	100%	99.97%	99.91%
Standard Deviation	0.2%	0%	0%
<b>TNN - CPU - SqueezeNet v1.1 (ms)</b>	<b>344.444</b>	<b>346.500</b>	346.140
Normalized	100%	99.41%	99.51%
Standard Deviation	0%	0%	0.2%
<b>Blender - BMW27 - CPU-Only (sec)</b>	<b>382.67</b>	382.25	<b>381.93</b>
Normalized	99.81%	99.92%	100%
Standard Deviation	0.3%	0.5%	0.2%
<b>Blender - Fishy Cat - CPU-Only (sec)</b>	<b>532.49</b>	<b>531.91</b>	532.18
Normalized	99.89%	100%	99.95%
Standard Deviation	0.3%	0.2%	0.3%
<b>ECP-CANDLE - P1B2 (sec)</b>	<b>46.128</b>	<b>45.575</b>	45.976
Normalized	98.8%	100%	99.13%
<b>ECP-CANDLE - P3B1 (sec)</b>	<b>1213</b>	1226	<b>1229</b>
Normalized	100%	98.92%	98.65%
<b>ECP-CANDLE - P3B2 (sec)</b>	<b>590.047</b>	<b>598.284</b>	592.267
Normalized	100%	98.62%	99.63%
<b>Hierarchical INTegration - FLOAT (QUIPs)</b>	<b>381569301</b>	381270686	<b>381134358</b>
Normalized	100%	99.92%	99.89%
Standard Deviation	0.6%	0.1%	0.3%
<b>AI Benchmark Alpha - D.I.S (Score)</b>	<b>664</b>	<b>663</b>	<b>665</b>
Normalized	99.85%	99.7%	100%
<b>AI Benchmark Alpha - D.T.S (Score)</b>	<b>733</b>	733	733
<b>AI Benchmark Alpha - Device AI Score</b>	<b>1397</b>	<b>1396</b>	<b>1398</b>
Normalized	99.93%	99.86%	100%
<b>Milpack Benchmark - scikit_ica (sec)</b>	<b>71.10</b>	<b>68.13</b>	70.06
Normalized	95.82%	100%	97.25%
Standard Deviation	1.5%	2.3%	1.1%
<b>Milpack Benchmark - scikit_qda (sec)</b>	<b>88.35</b>	<b>84.76</b>	86.12
Normalized	95.94%	100%	98.42%
Standard Deviation	7.8%	2.6%	5.1%
<b>Milpack Benchmark - scikit_svm (sec)</b>	<b>27.86</b>	<b>28.12</b>	27.87
Normalized	100%	99.08%	99.96%
Standard Deviation	0.6%	0.8%	0%
<b>Milpack Benchmark -</b>	<b>4.29</b>	<b>4.24</b>	<b>4.33</b>
<b>scikit_linearridgegression (sec)</b>			
Normalized	98.83%	100%	97.92%
Standard Deviation	1.8%	1%	2.8%
<b>Tesseract OCR - T.T.O.7.I (sec)</b>	<b>27.447</b>	<b>27.639</b>	27.567
Normalized	100%	99.31%	99.56%
Standard Deviation	0.2%	0.2%	0.1%
<b>Kripke (Throughput FoM)</b>	<b>17835730</b>	<b>17866357</b>	17848217
Normalized	99.83%	100%	99.9%
Standard Deviation	0.2%	0.6%	0.8%
<b>InfluxDB - 4 - 10000 - 2,5000,1 - 10000</b>	<b>870965</b>	814462	<b>805705</b>
Normalized	100%	93.51%	92.51%
Standard Deviation	4.5%	8.2%	9.1%

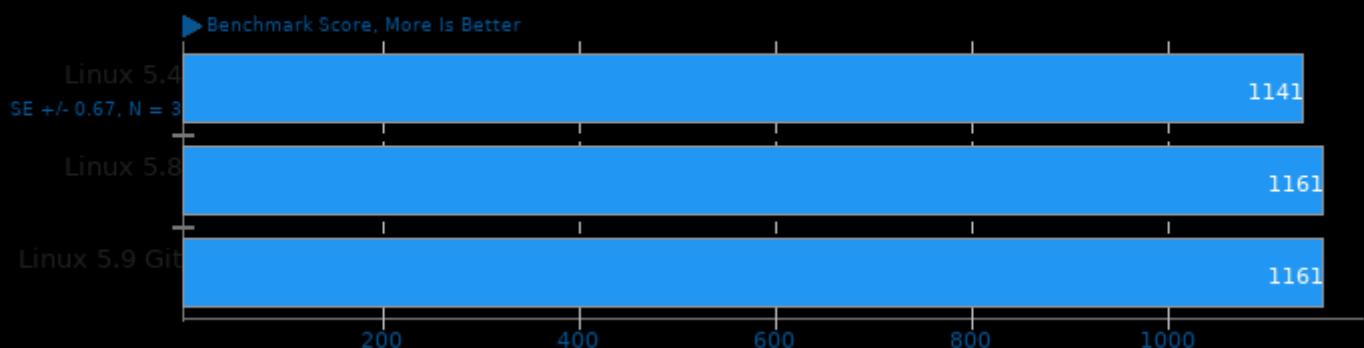
InfluxDB - 64 - 10000 - 2,5000,1 - 10000 (val/sec)	<b>990095</b>	984645	<b>982092</b>
Normalized	100%	99.45%	99.19%
Standard Deviation	0.2%	0.5%	0.9%
InfluxDB - 1024 - 10000 - 2,5000,1 - 10000 (val/sec)	<b>996460</b>	<b>993437</b>	994953
Normalized	100%	99.7%	99.85%
Standard Deviation	0.2%	0.1%	0.4%

## RealSR-NCNN 20200818

Scale: 4x - TAA: No

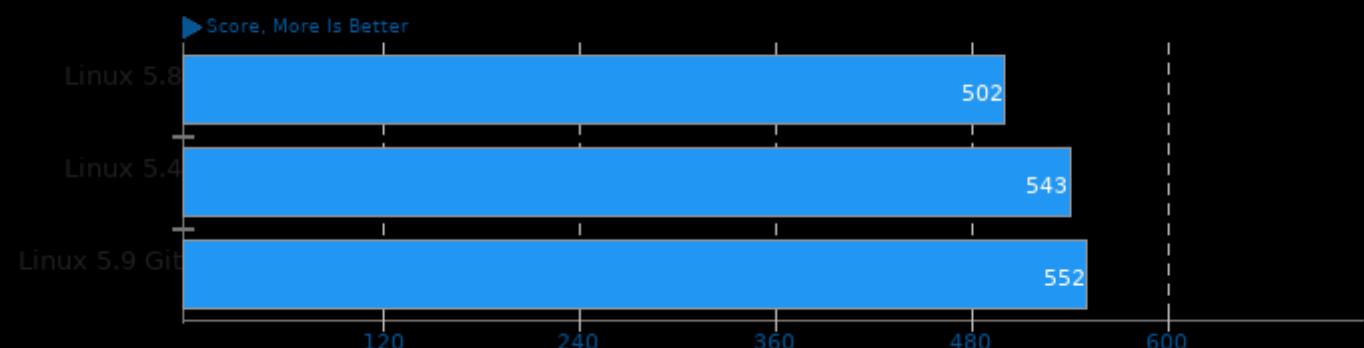


## VkFFT 2020-09-29



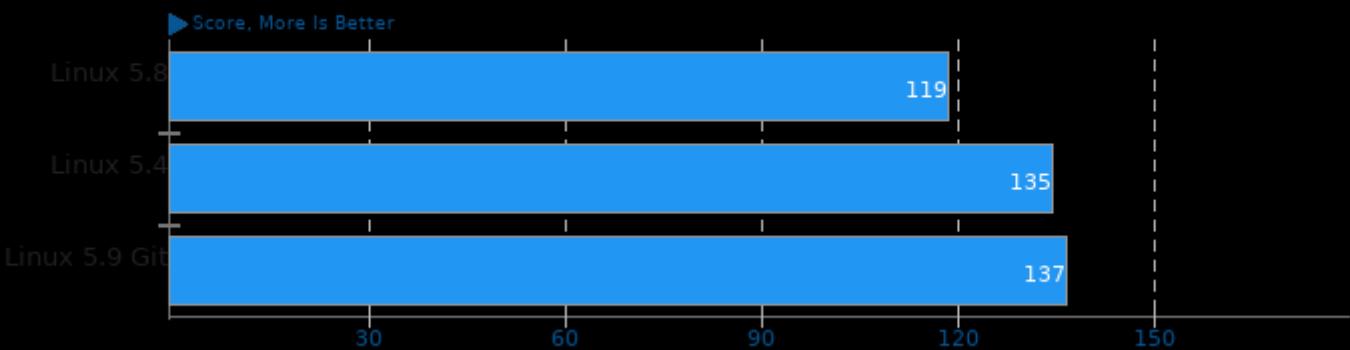
## GLmark2 2020.04

Resolution: 1920 x 1080



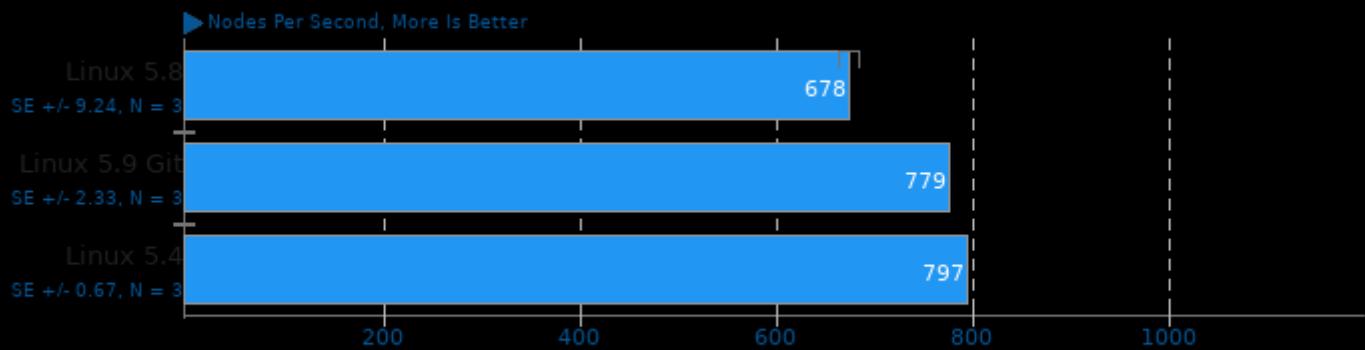
## GLmark2 2020.04

Resolution: 3840 x 2160



## LeelaChessZero 0.26

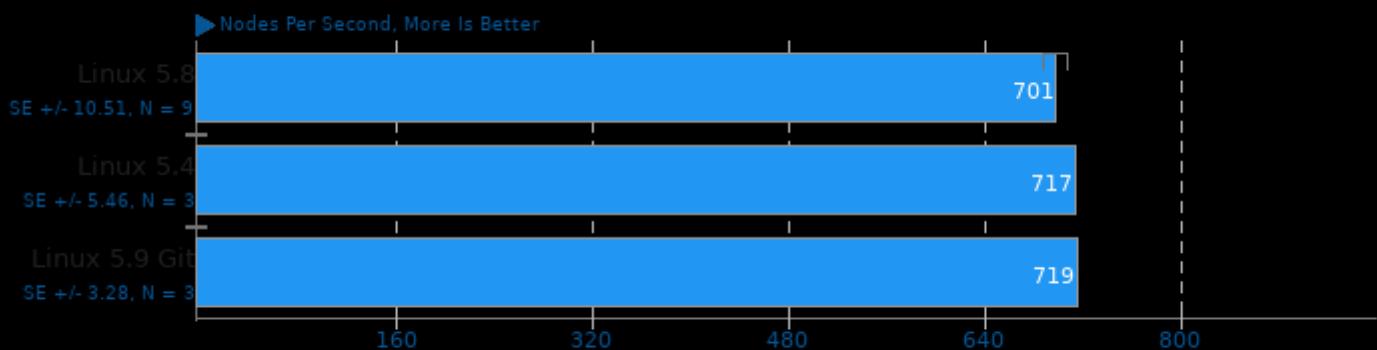
Backend: BLAS



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

## LeelaChessZero 0.26

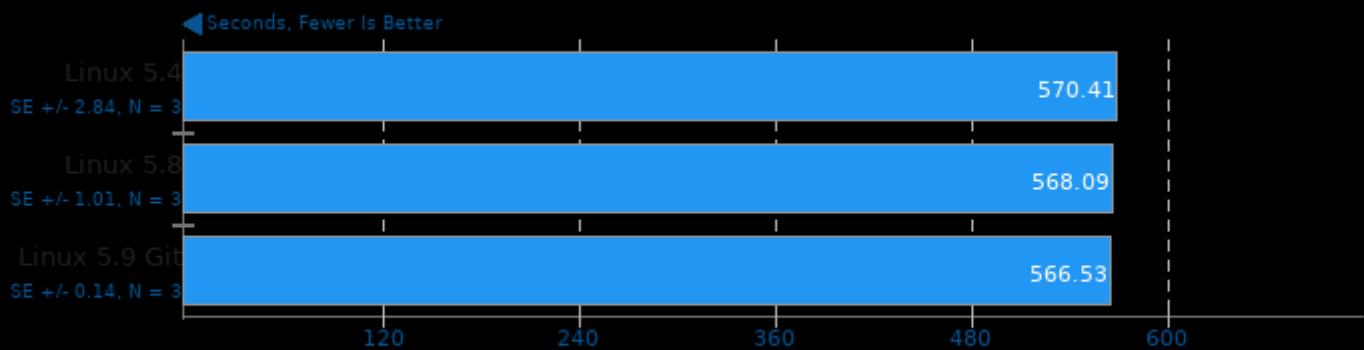
Backend: Eigen



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

## Rodinia 3.1

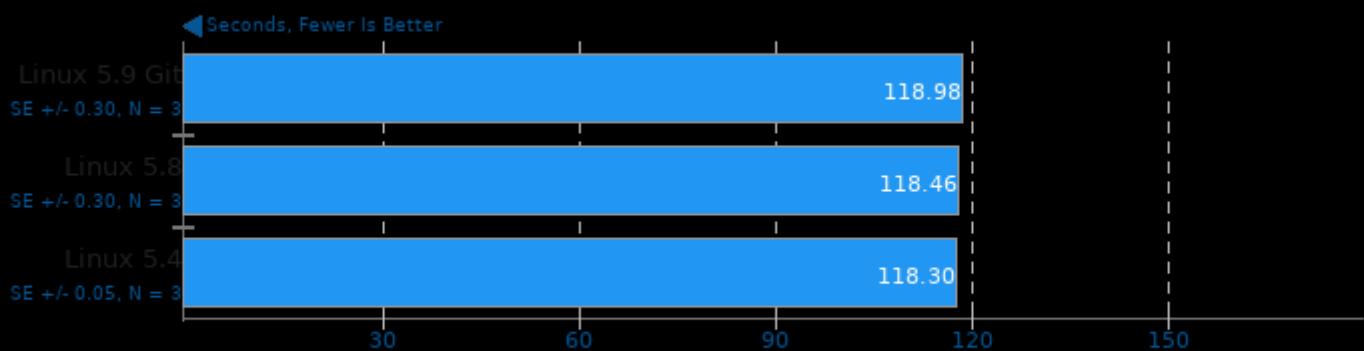
Test: OpenMP LavaMD



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

## Rodinia 3.1

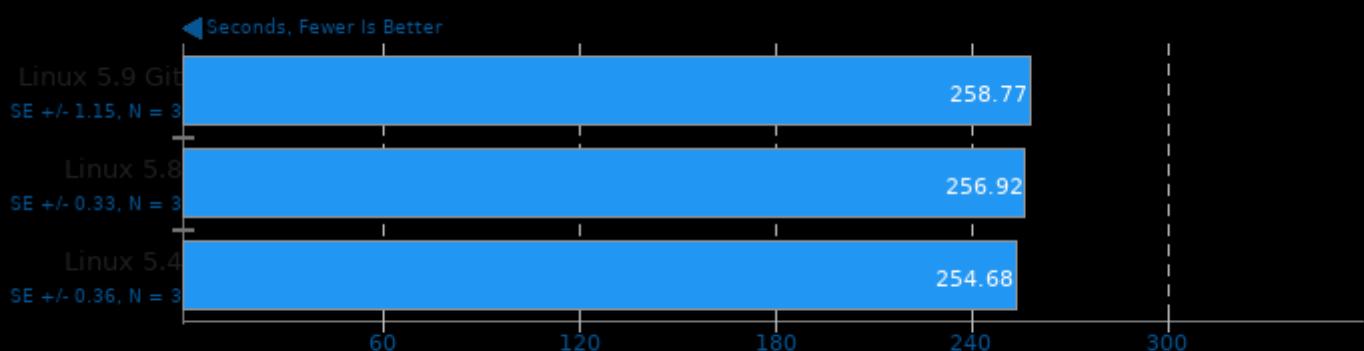
Test: OpenMP HotSpot3D



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

## Rodinia 3.1

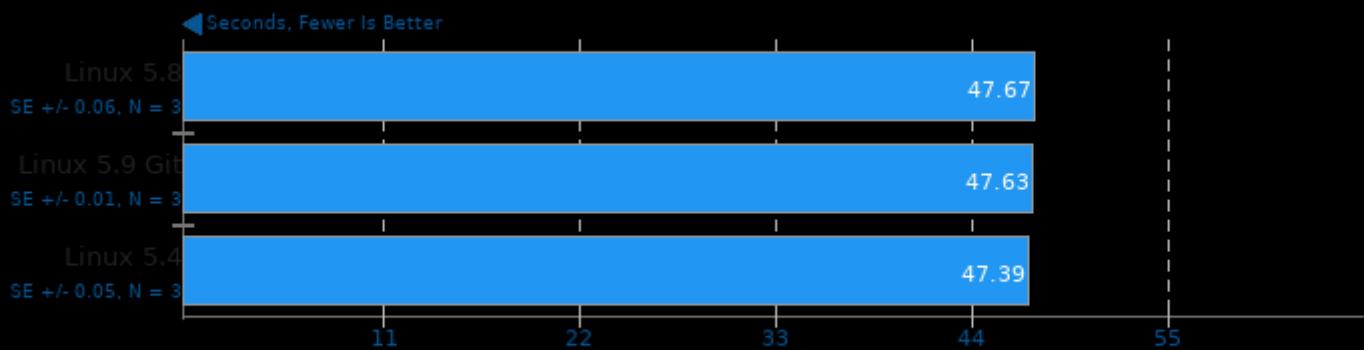
Test: OpenMP Leukocyte



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

## Rodinia 3.1

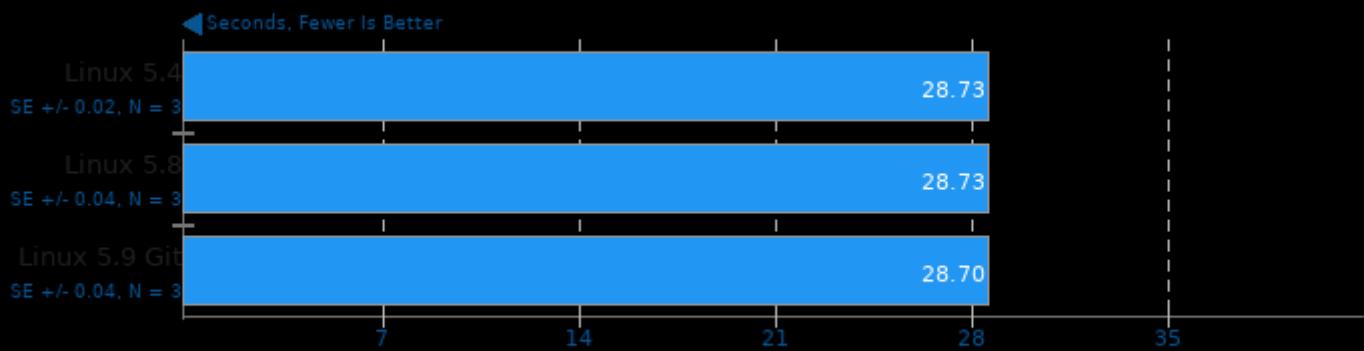
Test: OpenMP CFD Solver



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

## Rodinia 3.1

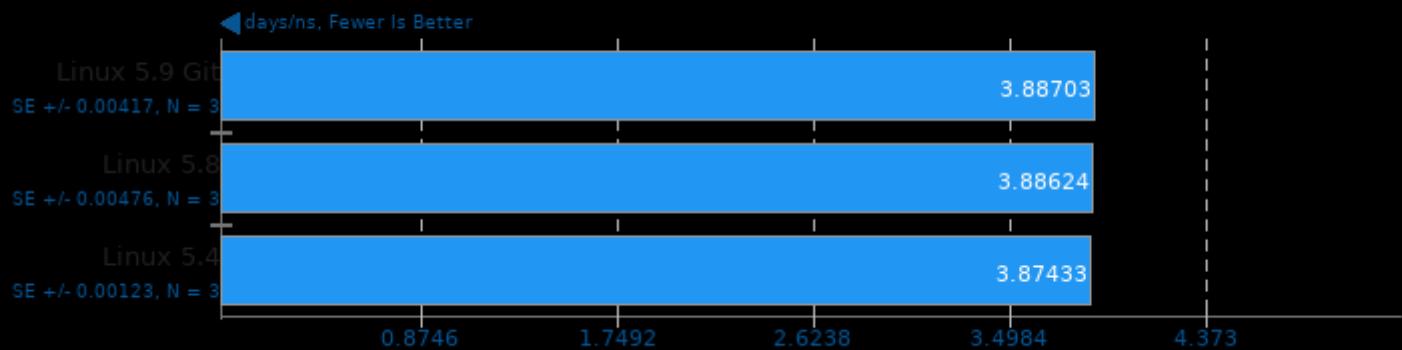
Test: OpenMP Streamcluster



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

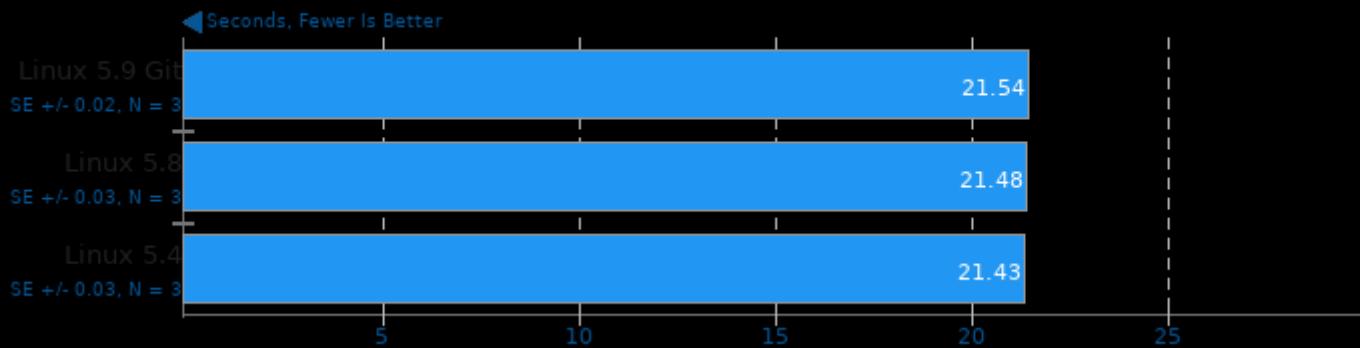
## NAMD 2.14

ATPase Simulation - 327,506 Atoms



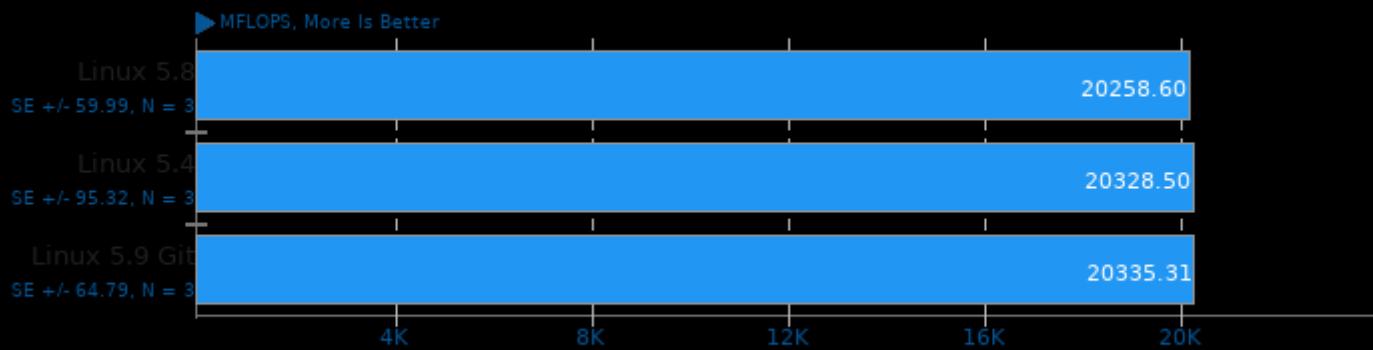
## Dolfyn 0.527

Computational Fluid Dynamics



## FFTE 7.0

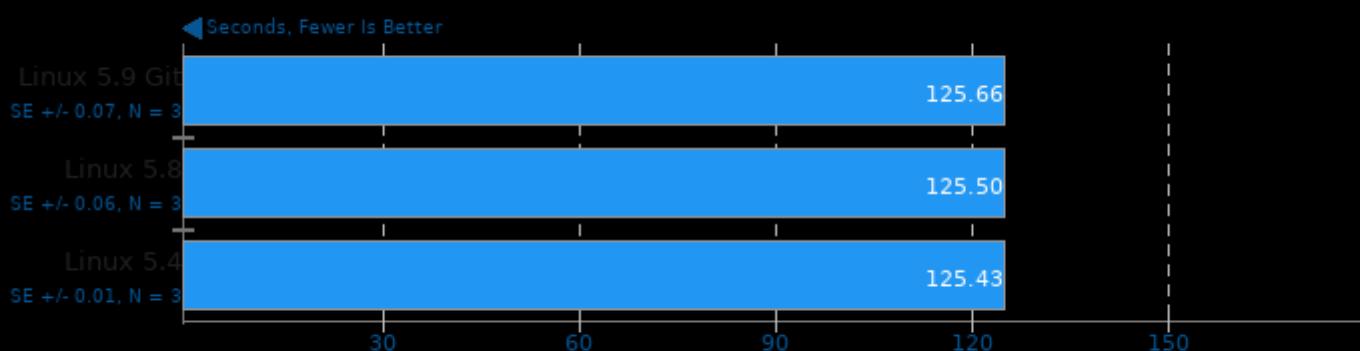
N=256, 3D Complex FFT Routine



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

## Timed HMMer Search 3.3.1

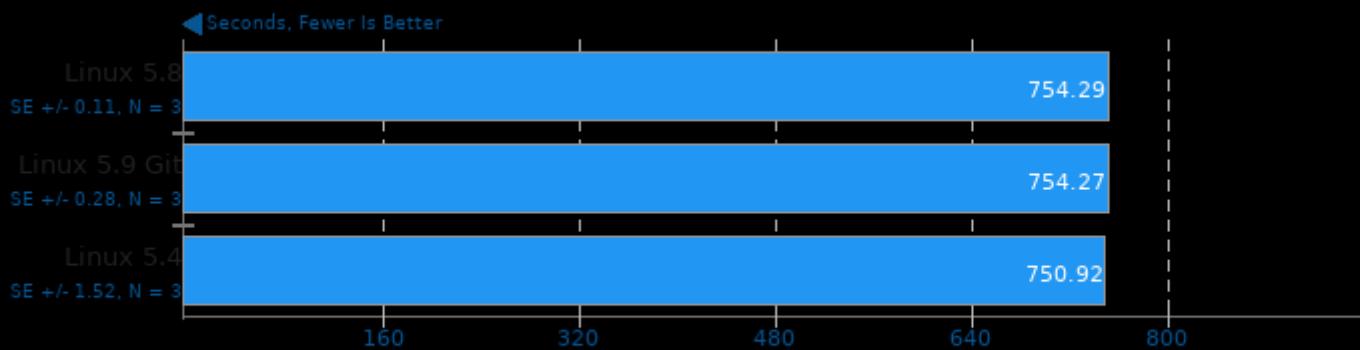
Pfam Database Search



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

## Incompact3D 2020-09-17

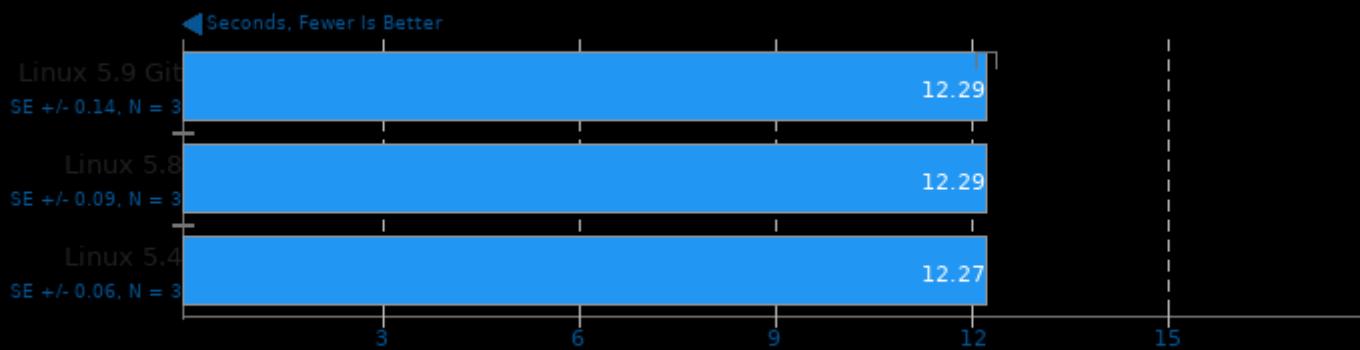
Input: Cylinder



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

## Timed MAFFT Alignment 7.471

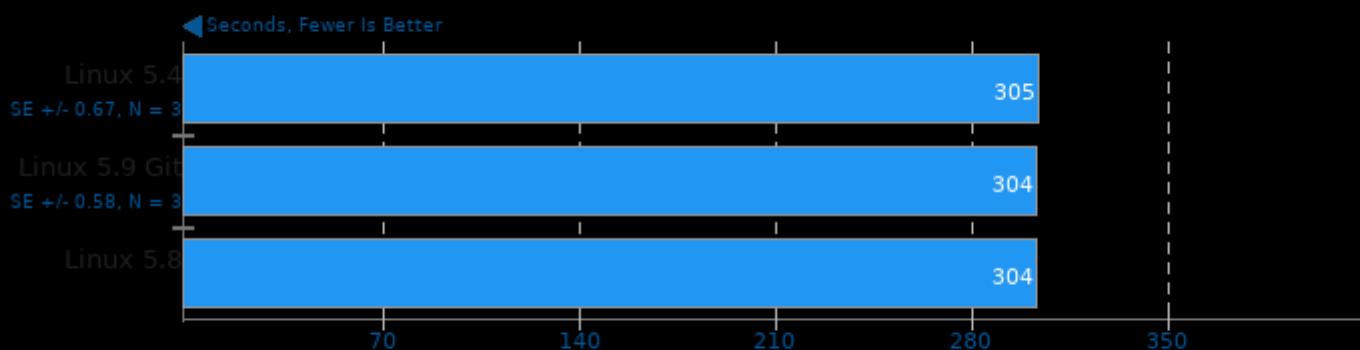
Multiple Sequence Alignment - LSU RNA



1. (CC) gcc options: -std=c99 -O3 -lm -pthread

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

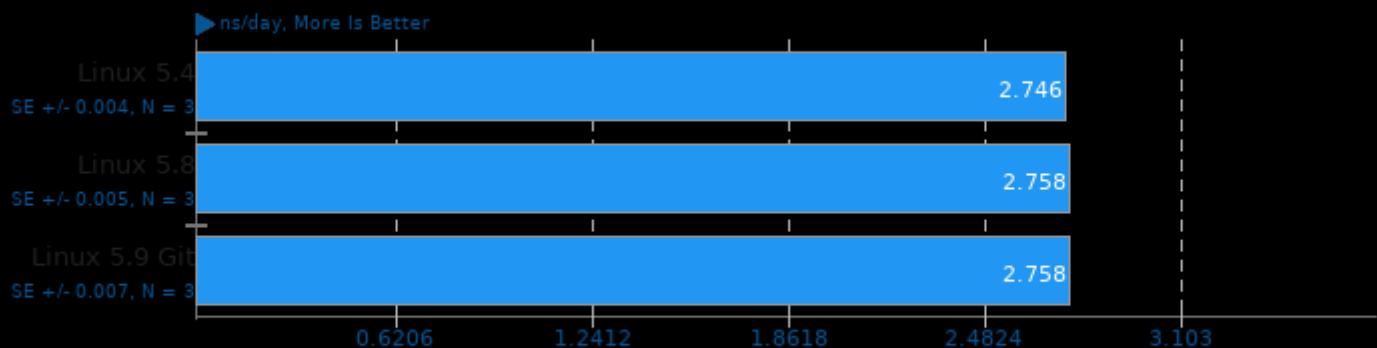
Input: Dust 2D tau100.0



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

## LAMMPS Molecular Dynamics Simulator 24Aug2020

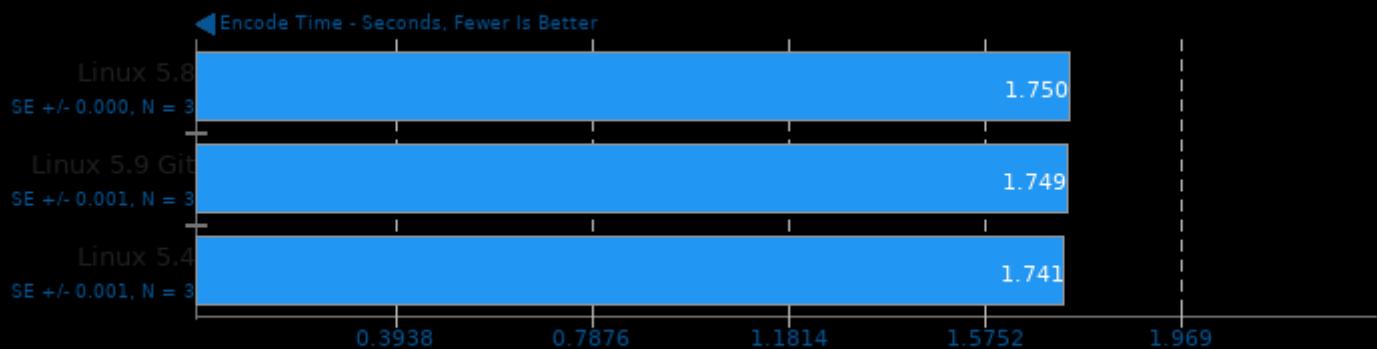
Model: Rhodopsin Protein



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

## WebP Image Encode 1.1

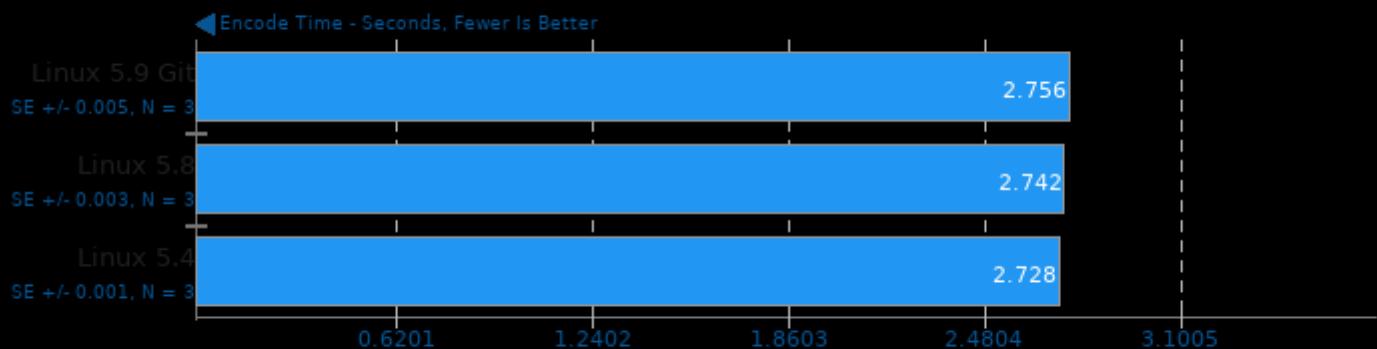
Encode Settings: Default



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

## WebP Image Encode 1.1

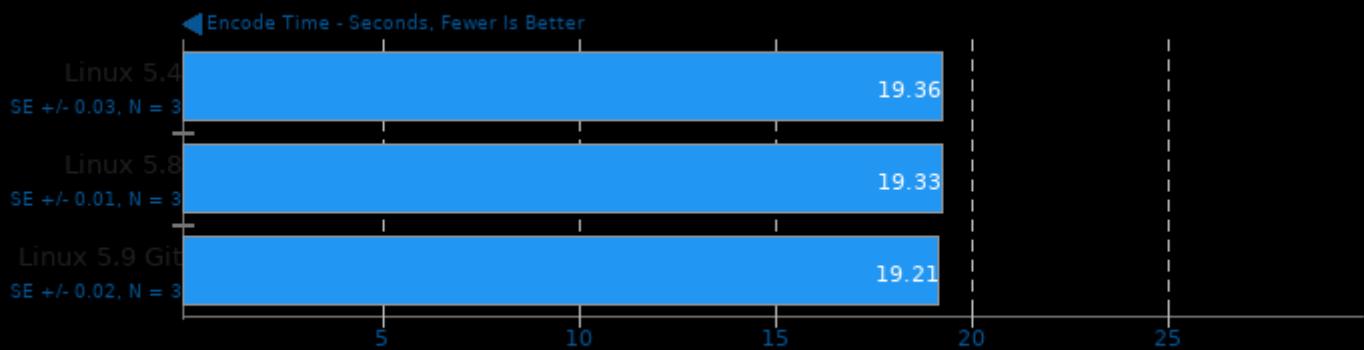
Encode Settings: Quality 100



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

## WebP Image Encode 1.1

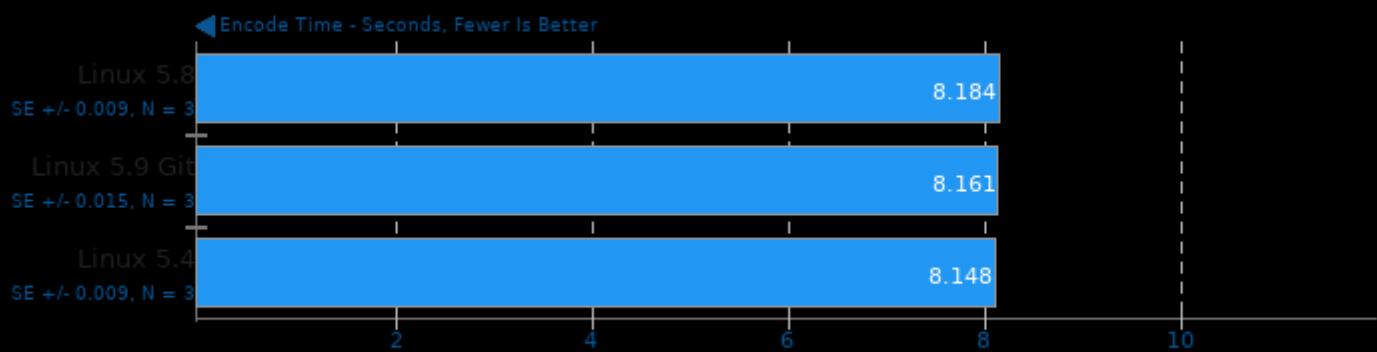
Encode Settings: Quality 100, Lossless



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

## WebP Image Encode 1.1

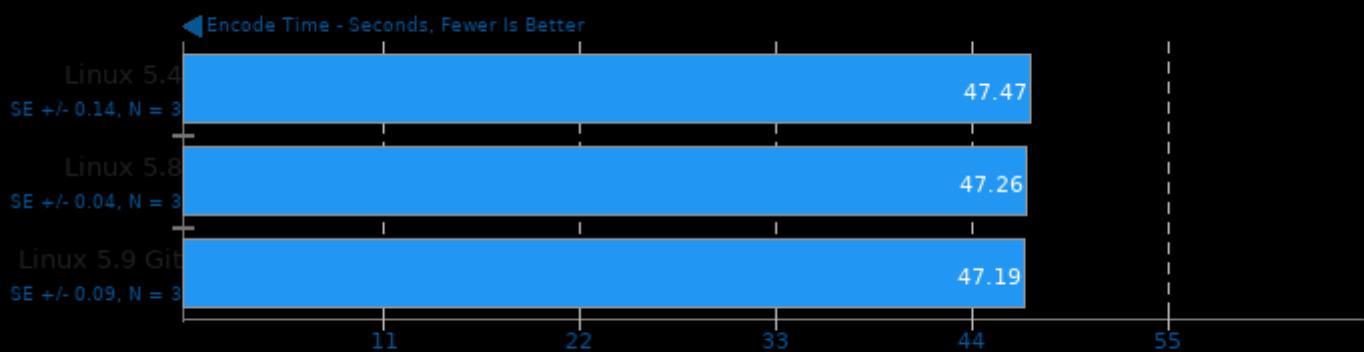
Encode Settings: Quality 100, Highest Compression



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

## WebP Image Encode 1.1

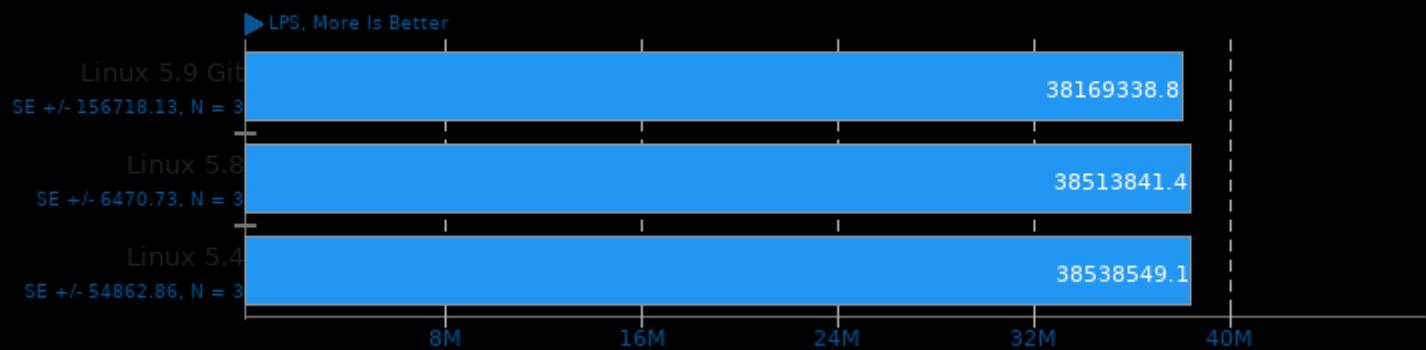
Encode Settings: Quality 100, Lossless, Highest Compression



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

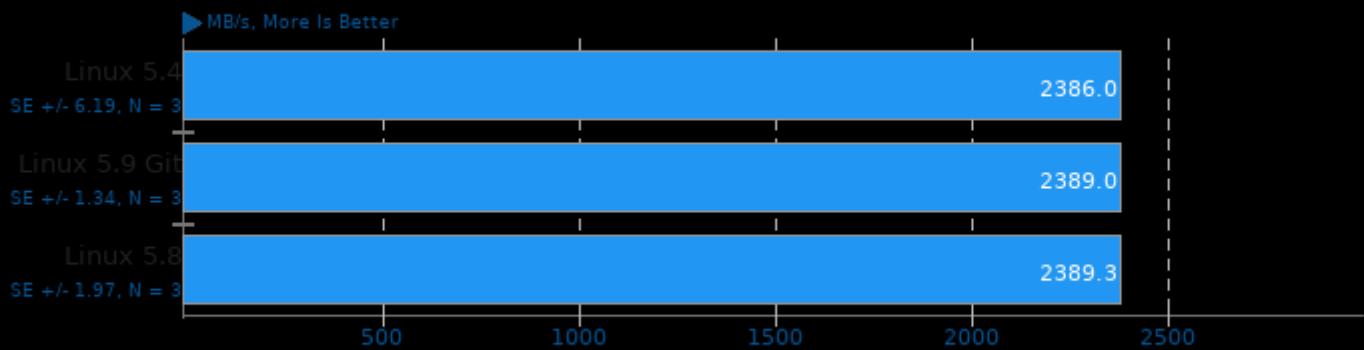
## BYTE Unix Benchmark 3.6

Computational Test: Dhrystone 2



## Zstd Compression 1.4.5

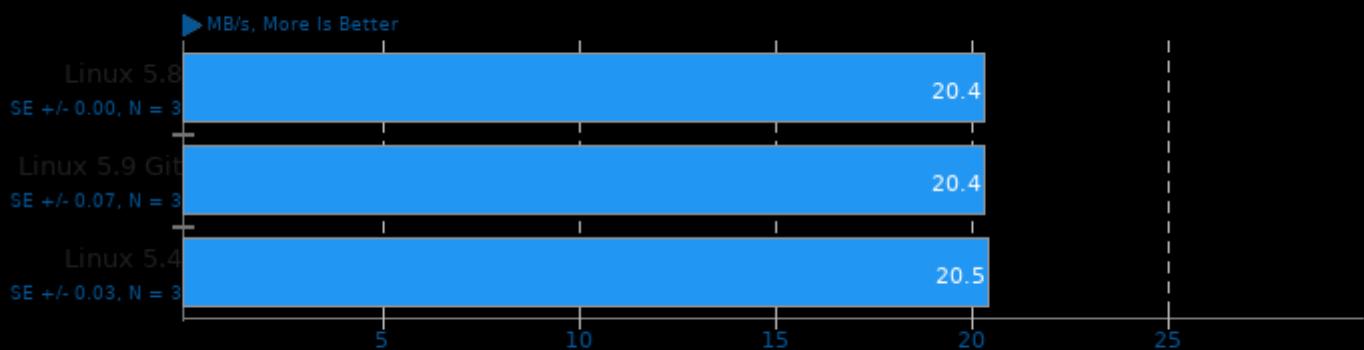
Compression Level: 3



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

## Zstd Compression 1.4.5

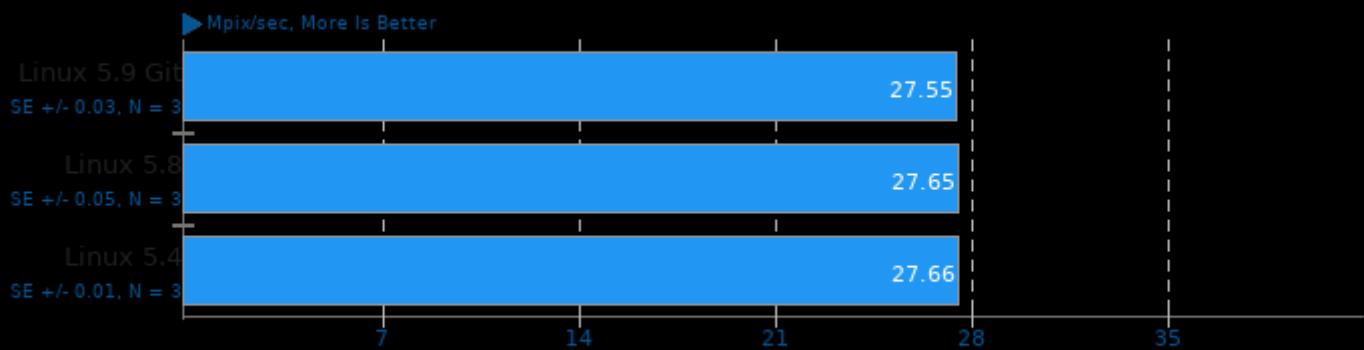
Compression Level: 19



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

## LibRaw 0.20

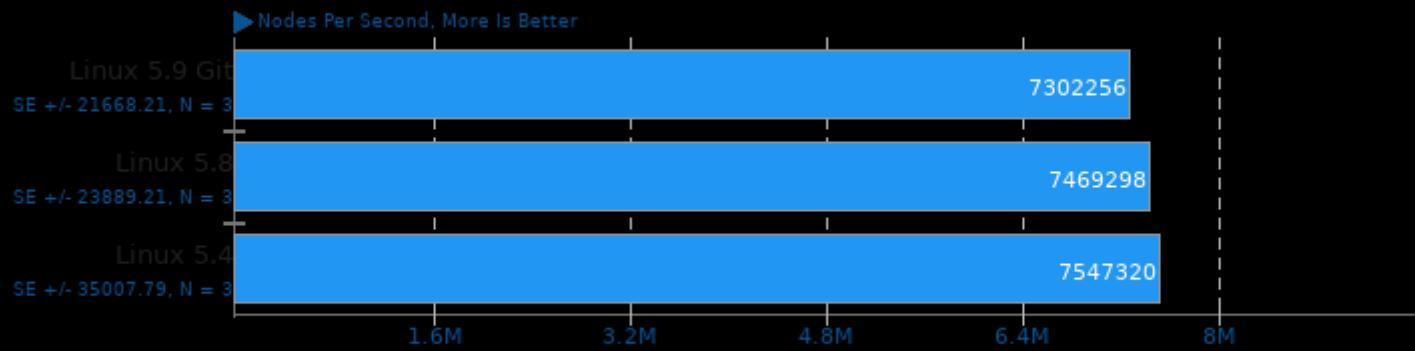
Post-Processing Benchmark



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

## Crafty 25.2

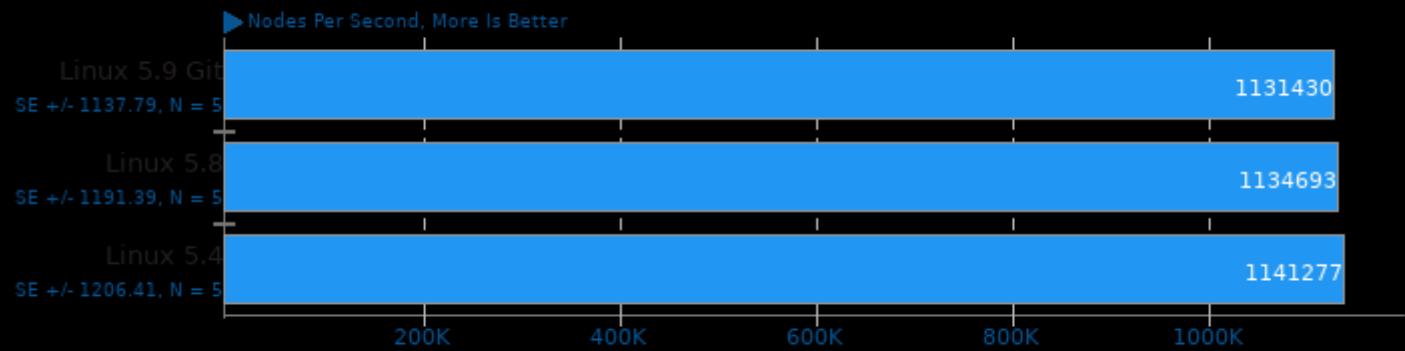
Elapsed Time



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

## TSCP 1.81

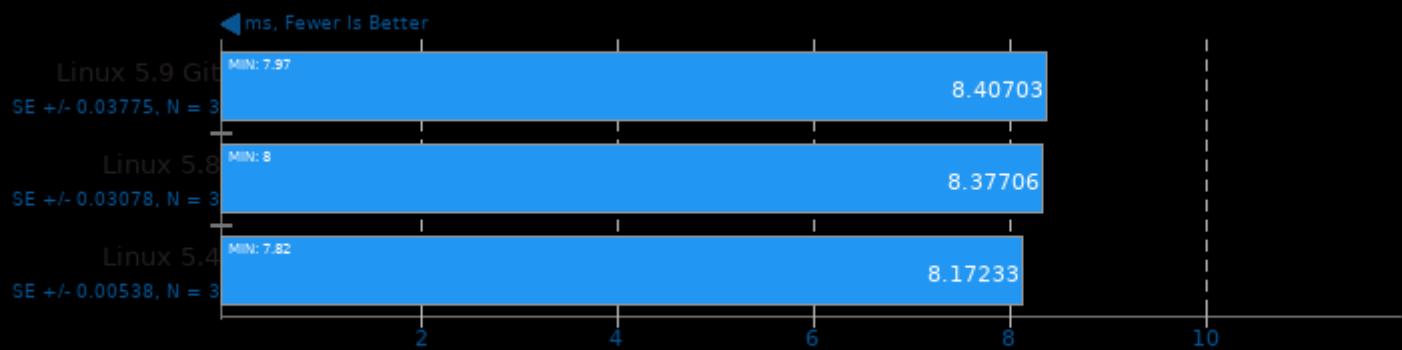
AI Chess Performance



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

## oneDNN 1.5

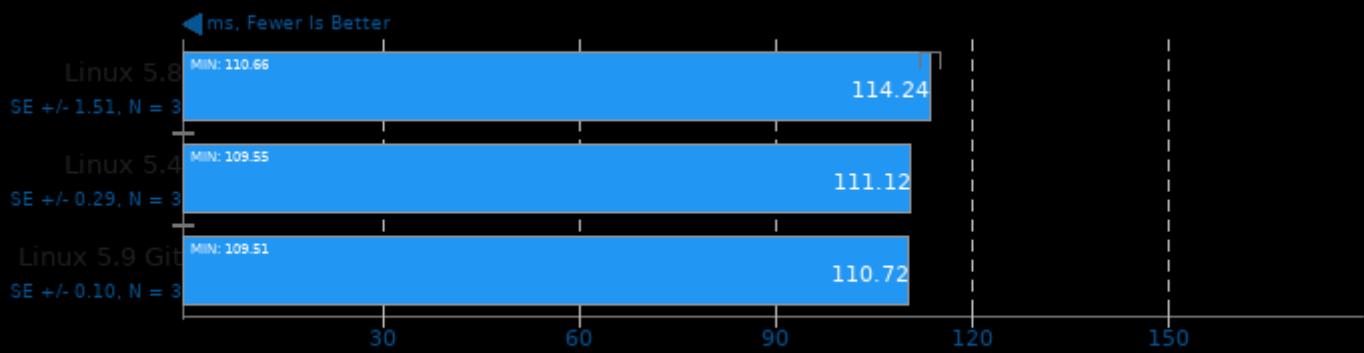
Harness: IP Batch 1D - Data Type: f32 - Engine: CPU



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

## oneDNN 1.5

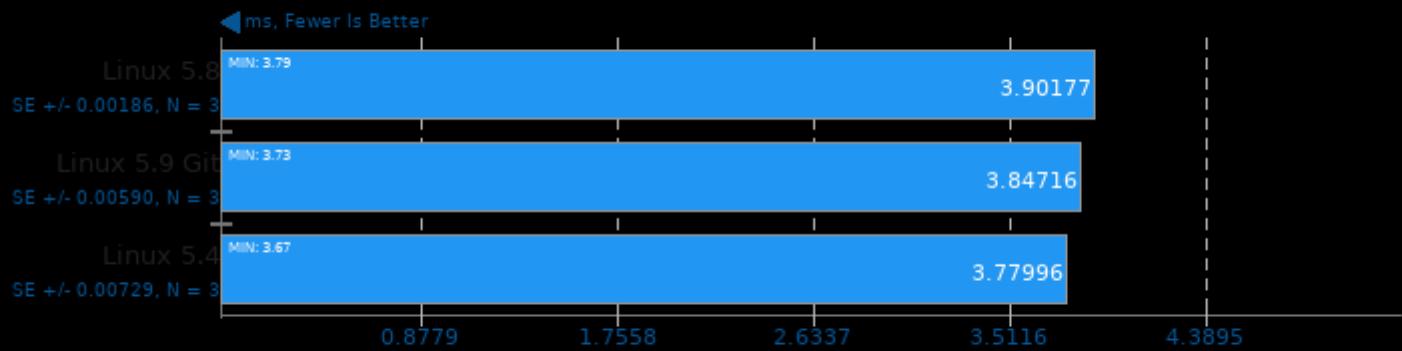
Harness: IP Batch All - Data Type: f32 - Engine: CPU



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

## oneDNN 1.5

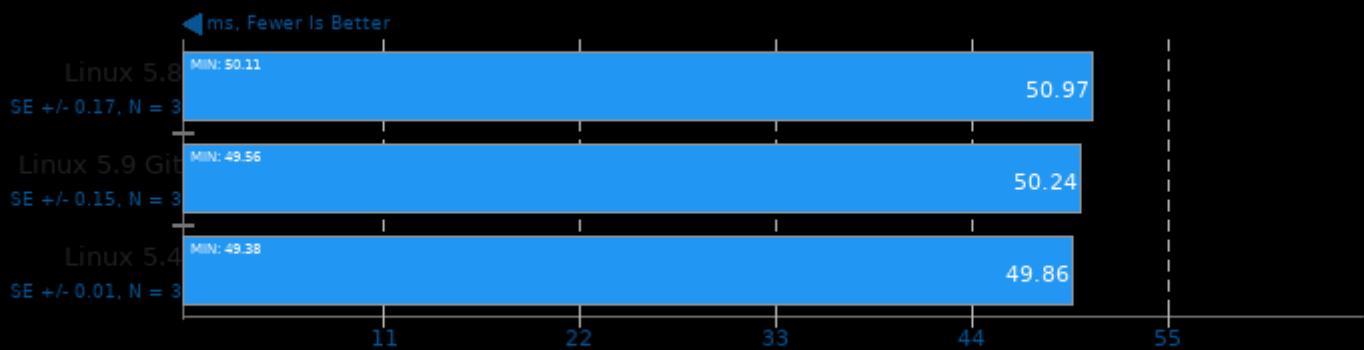
Harness: IP Batch 1D - Data Type: u8s8f32 - Engine: CPU



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

## oneDNN 1.5

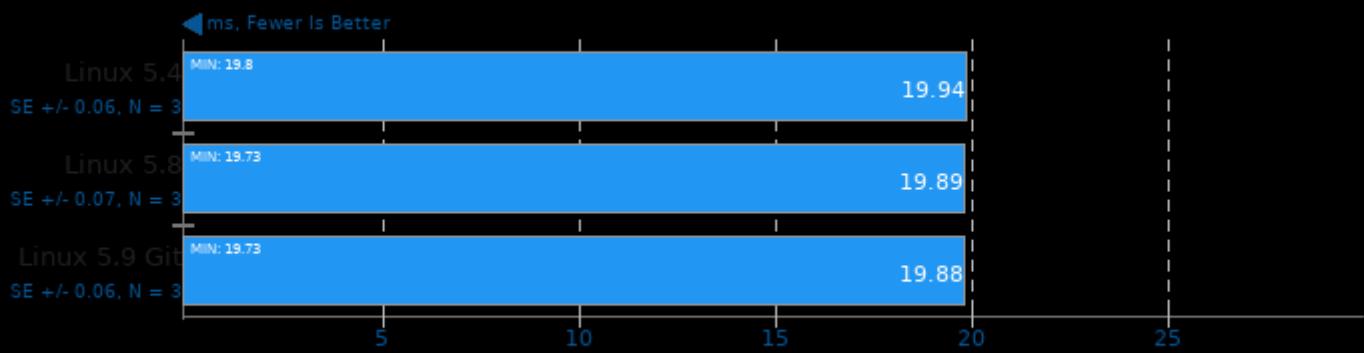
Harness: IP Batch All - Data Type: u8s8f32 - Engine: CPU



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

## oneDNN 1.5

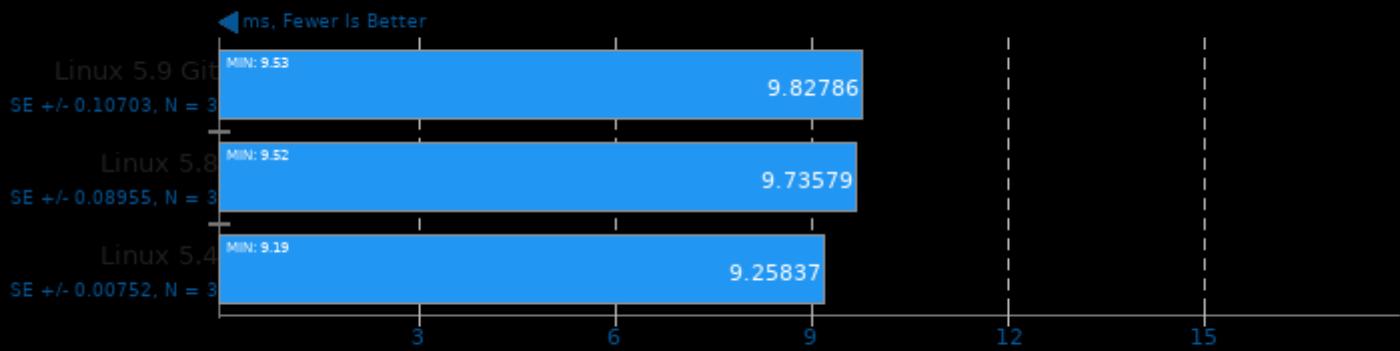
Harness: Convolution Batch Shapes Auto - Data Type: f32 - Engine: CPU



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

## oneDNN 1.5

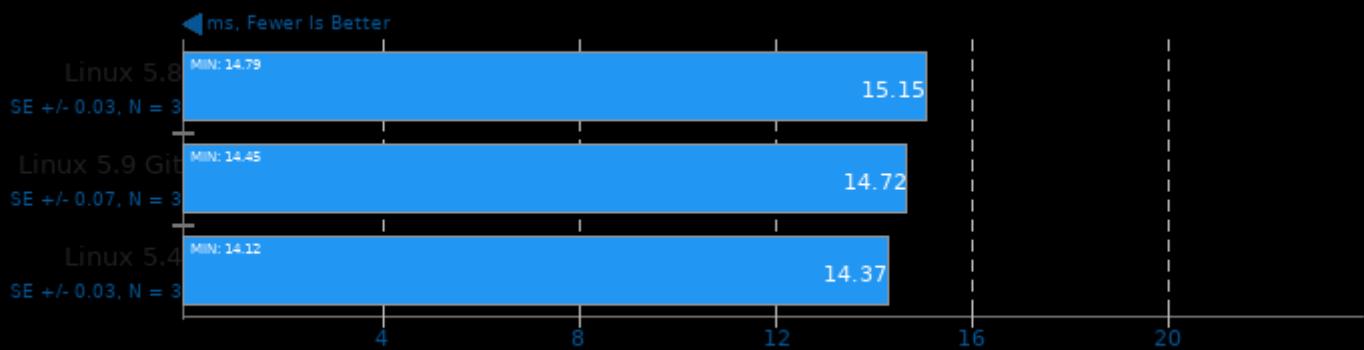
Harness: Deconvolution Batch deconv\_1d - Data Type: f32 - Engine: CPU



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

## oneDNN 1.5

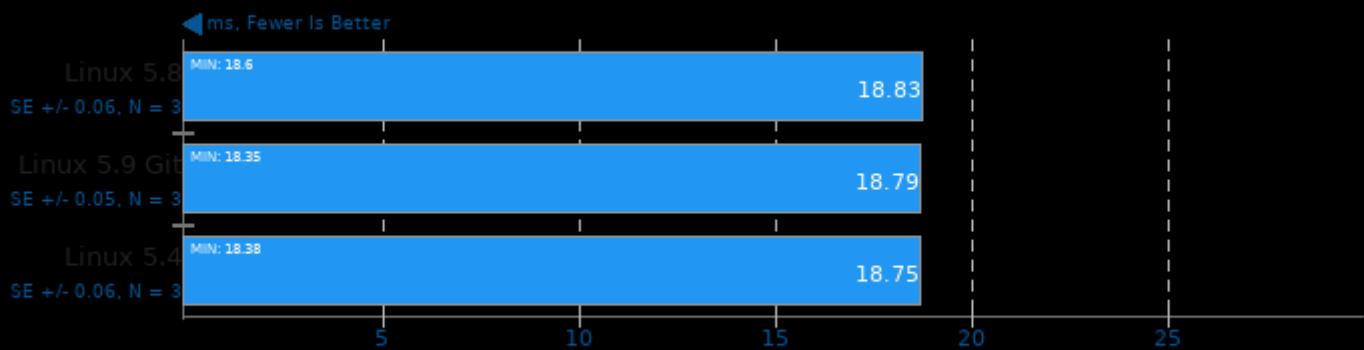
Harness: Deconvolution Batch deconv\_3d - Data Type: f32 - Engine: CPU



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

## oneDNN 1.5

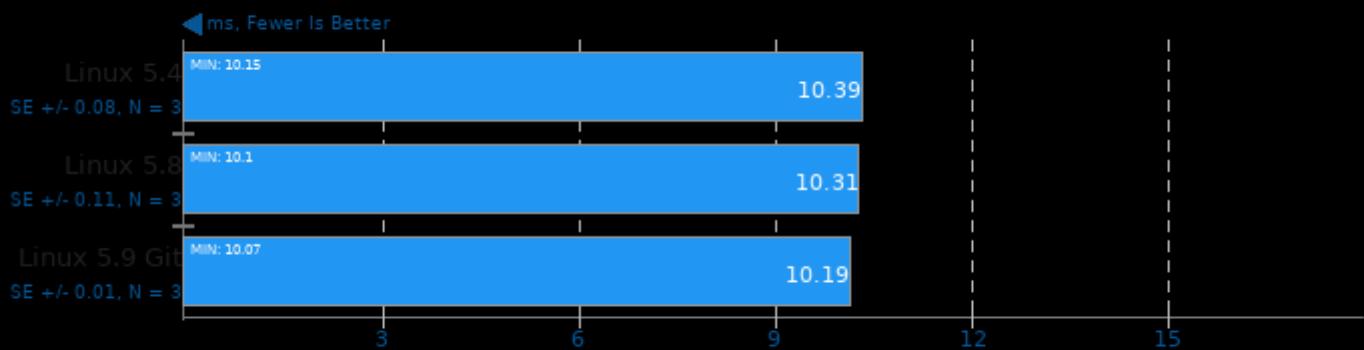
Harness: Convolution Batch Shapes Auto - Data Type: u8s8f32 - Engine: CPU



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

## oneDNN 1.5

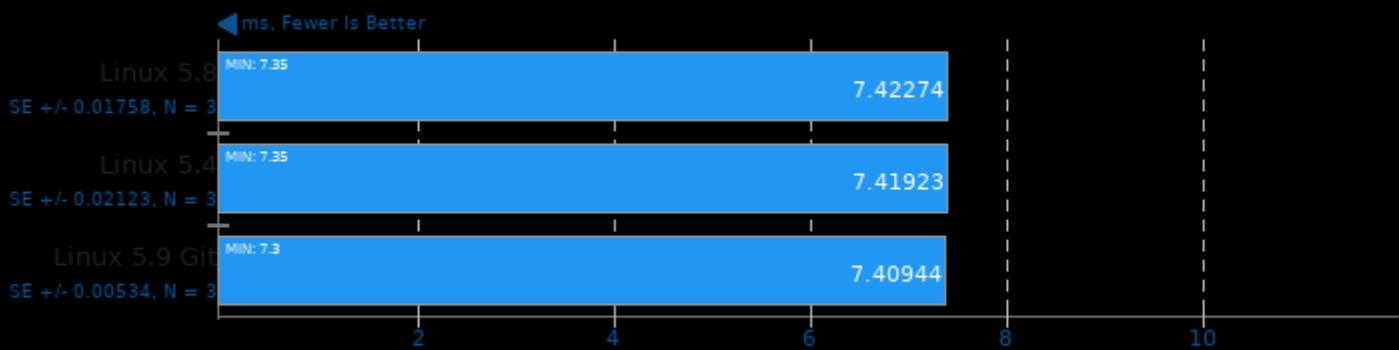
Harness: Deconvolution Batch deconv\_1d - Data Type: u8s8f32 - Engine: CPU



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

## oneDNN 1.5

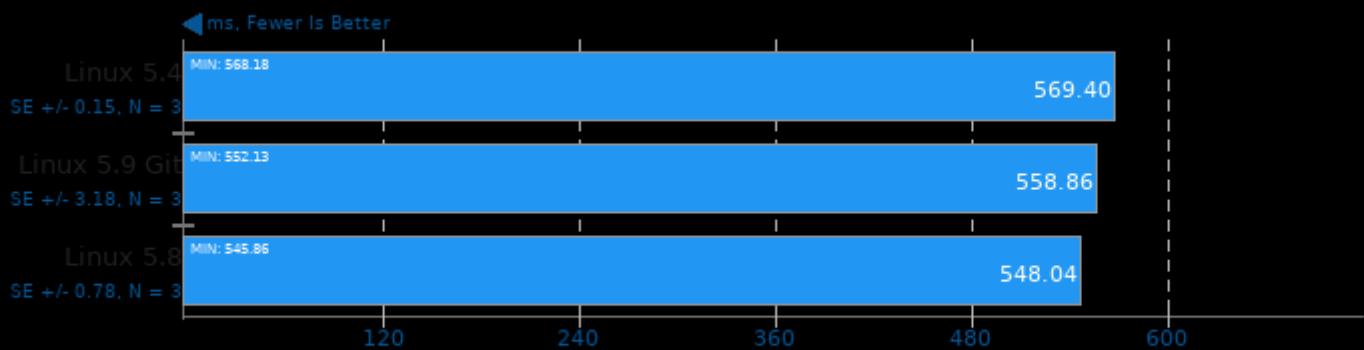
Harness: Deconvolution Batch deconv\_3d - Data Type: u8s8f32 - Engine: CPU



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

## oneDNN 1.5

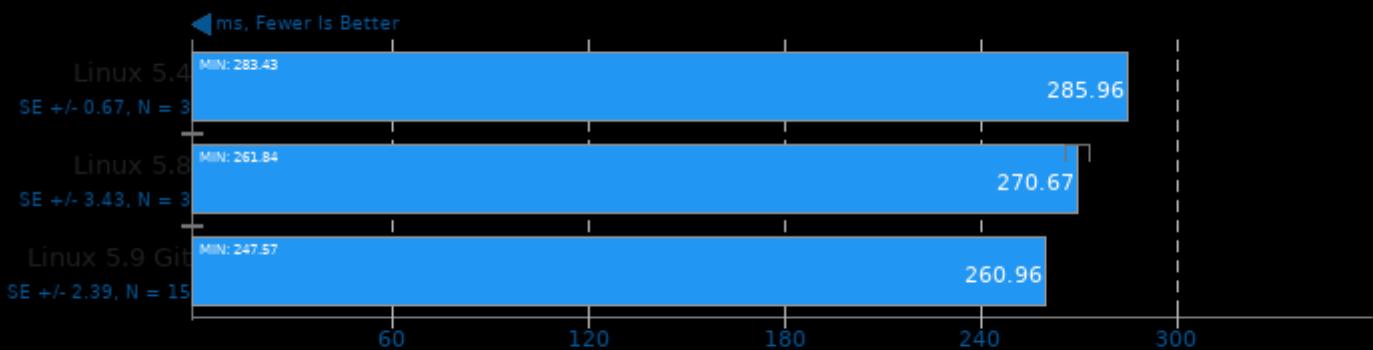
Harness: Recurrent Neural Network Training - Data Type: f32 - Engine: CPU



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

## oneDNN 1.5

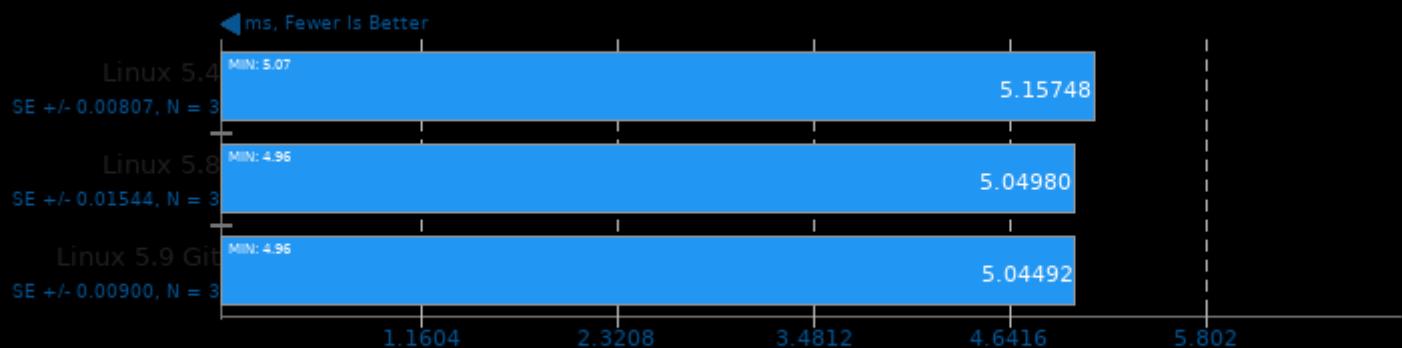
Harness: Recurrent Neural Network Inference - Data Type: f32 - Engine: CPU



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

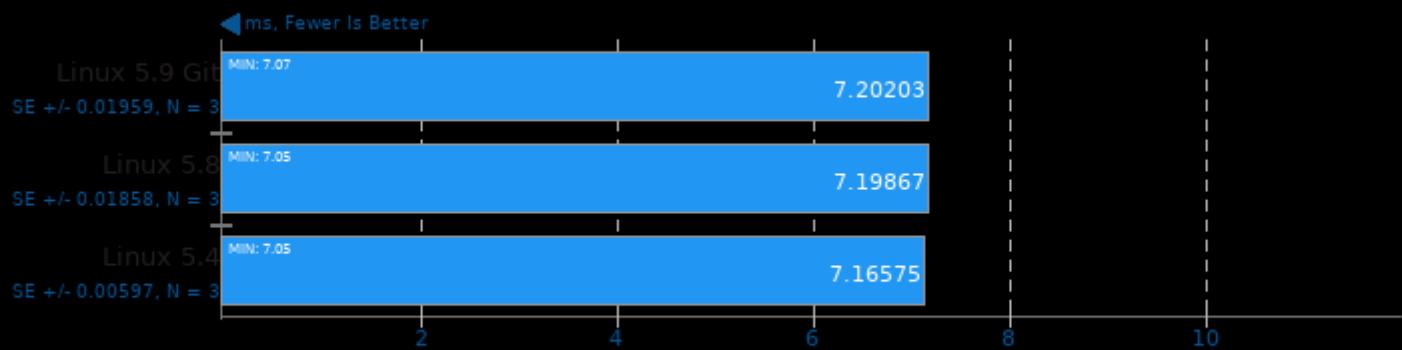
## oneDNN 1.5

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



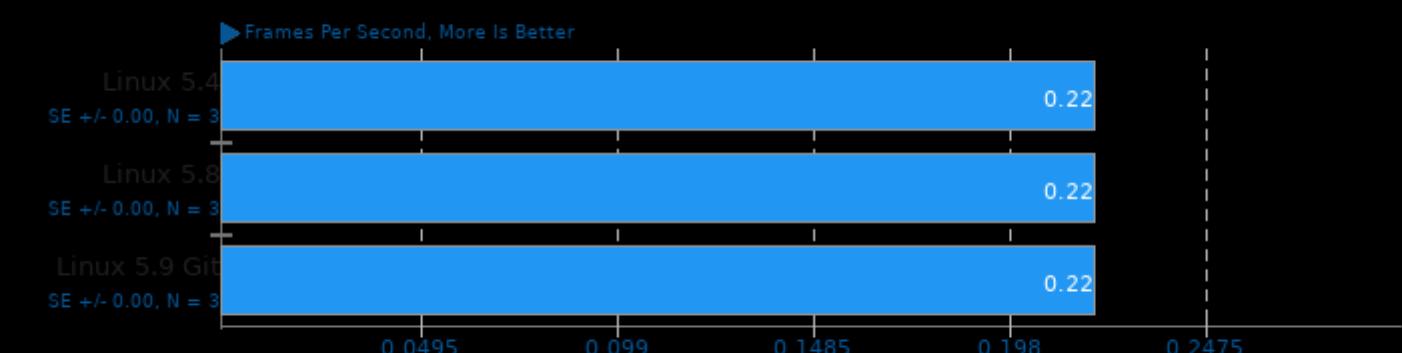
## oneDNN 1.5

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



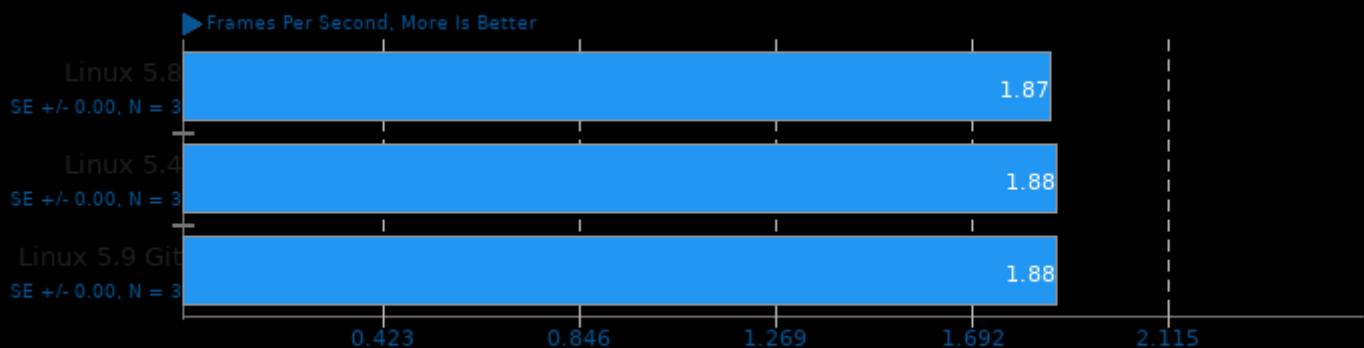
## AOM AV1 2.0

Encoder Mode: Speed 0 Two-Pass



## AOM AV1 2.0

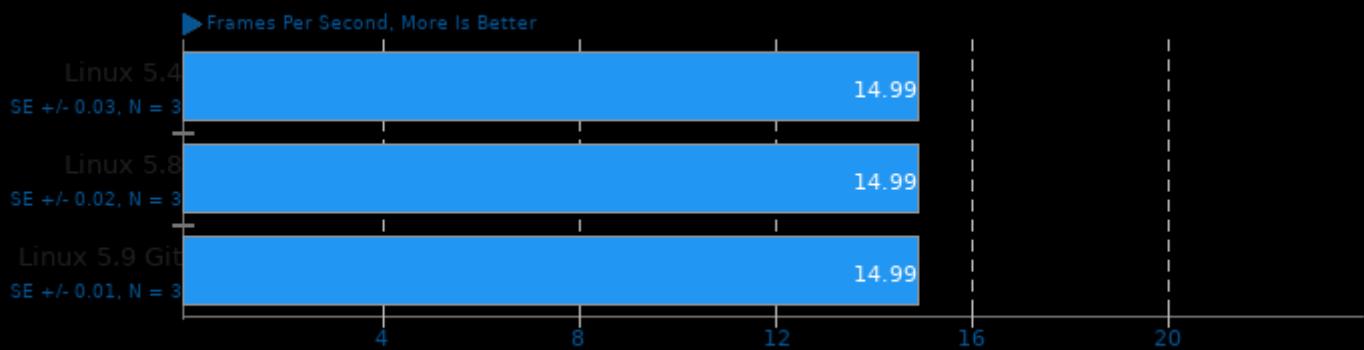
Encoder Mode: Speed 4 Two-Pass



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

## AOM AV1 2.0

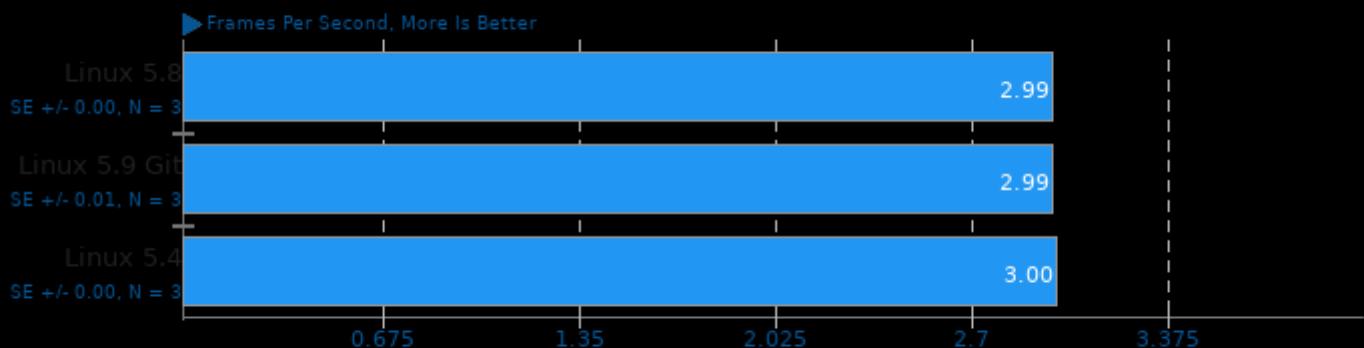
Encoder Mode: Speed 6 Realtime



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

## AOM AV1 2.0

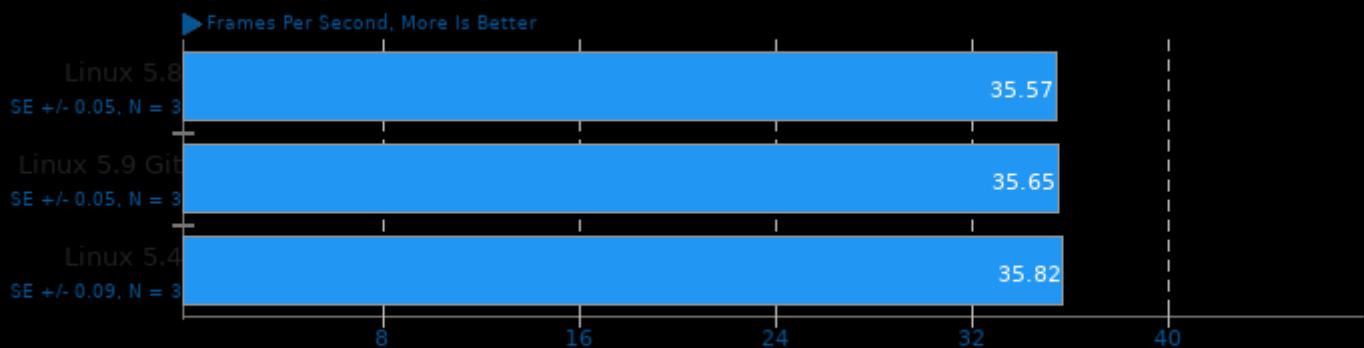
Encoder Mode: Speed 6 Two-Pass



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

## AOM AV1 2.0

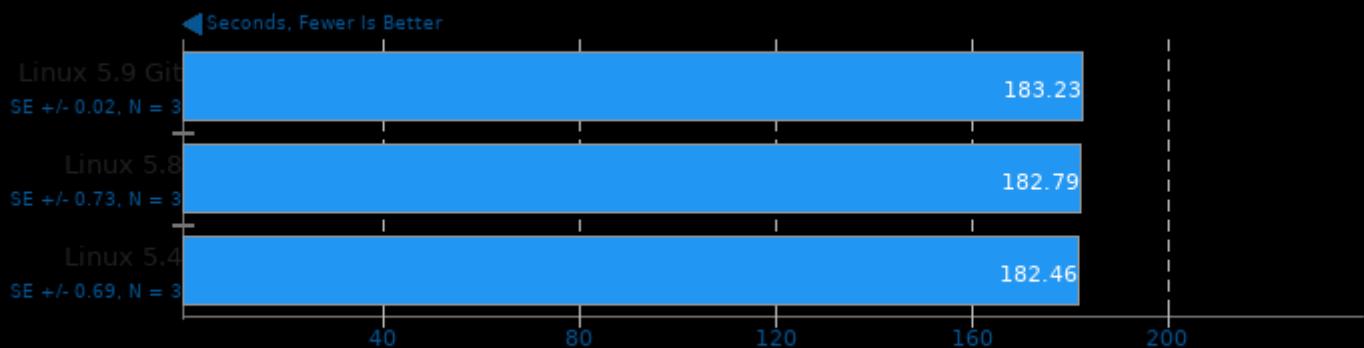
Encoder Mode: Speed 8 Realtime



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

## libavif avifenc 0.7.3

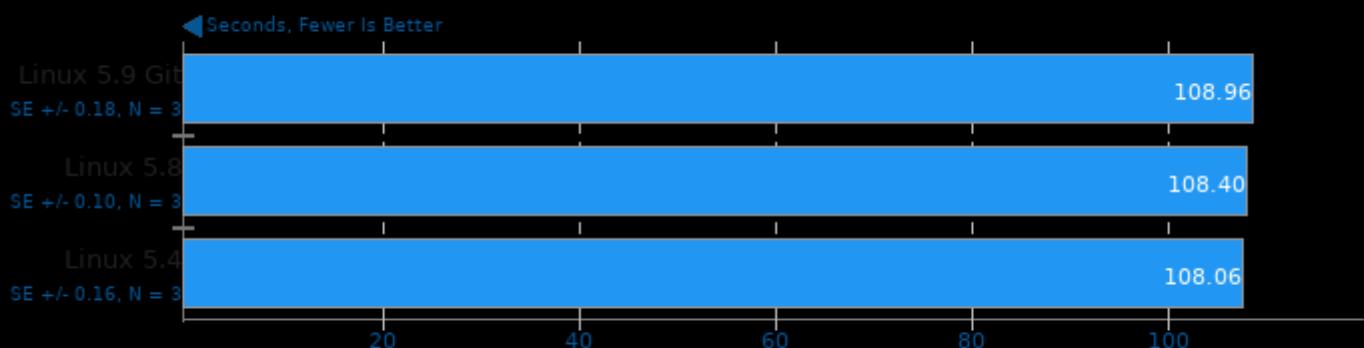
Encoder Speed: 0



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

## libavif avifenc 0.7.3

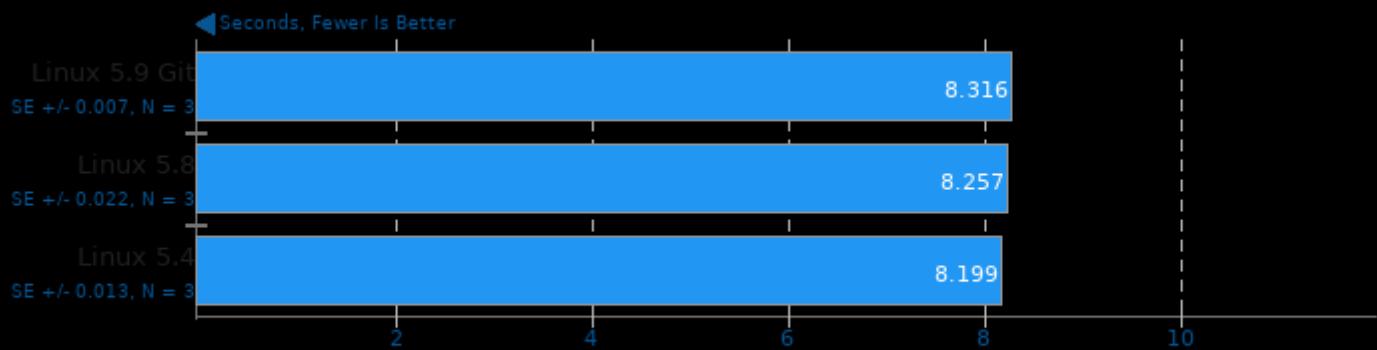
Encoder Speed: 2



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

**libavif avifenc 0.7.3**

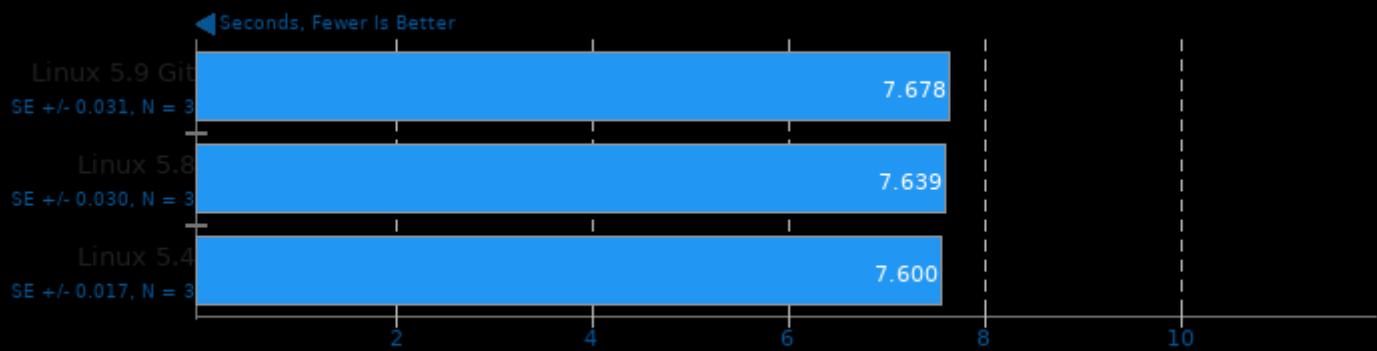
Encoder Speed: 8



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

**libavif avifenc 0.7.3**

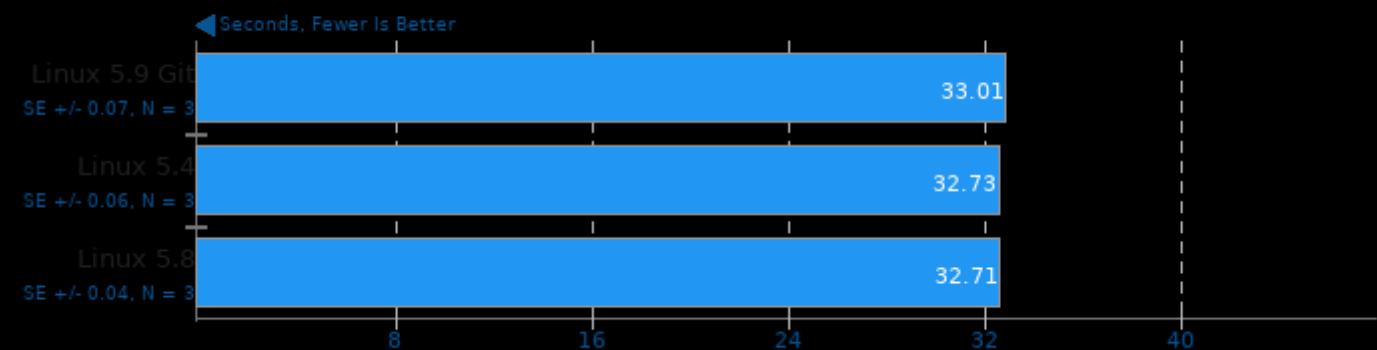
Encoder Speed: 10



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

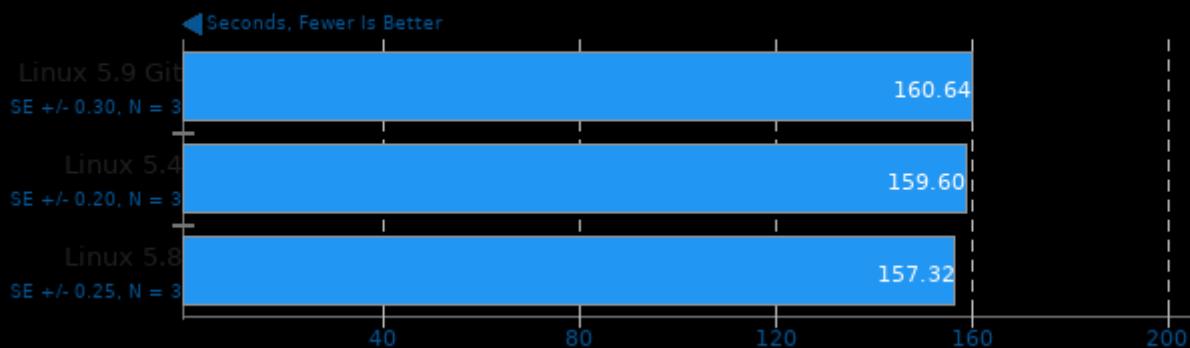
**Timed Apache Compilation 2.4.41**

Time To Compile



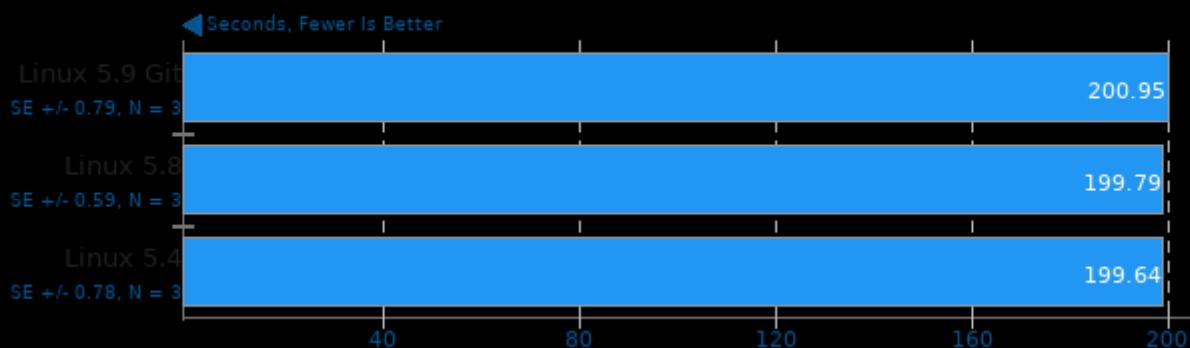
## Timed GDB GNU Debugger Compilation 9.1

Time To Compile



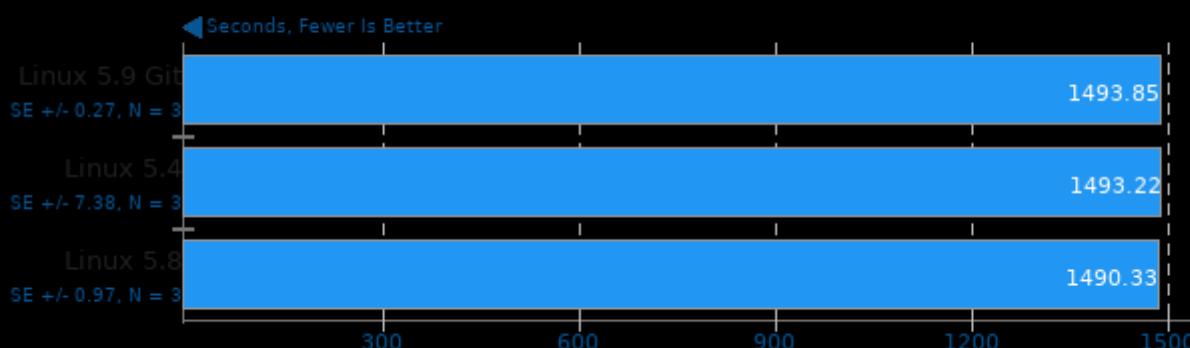
## Timed Linux Kernel Compilation 5.4

Time To Compile



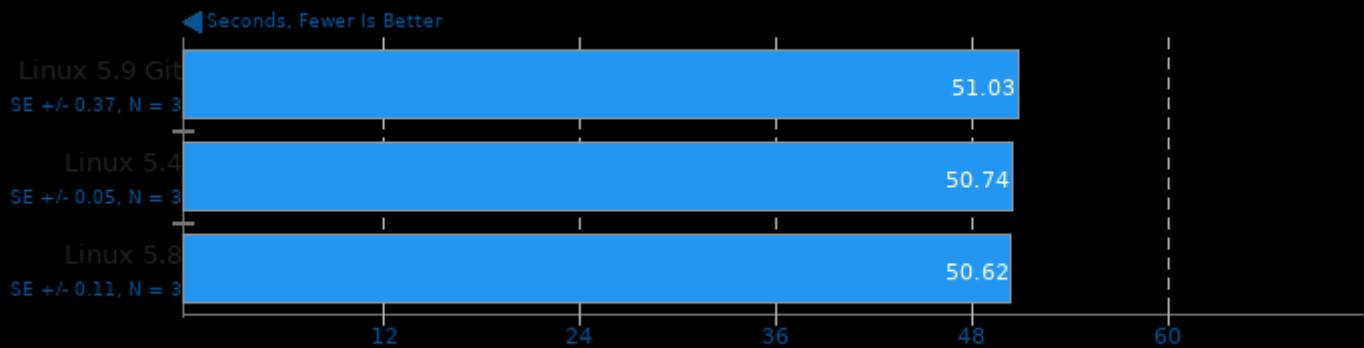
## Timed LLVM Compilation 10.0

Time To Compile



## XZ Compression 5.2.4

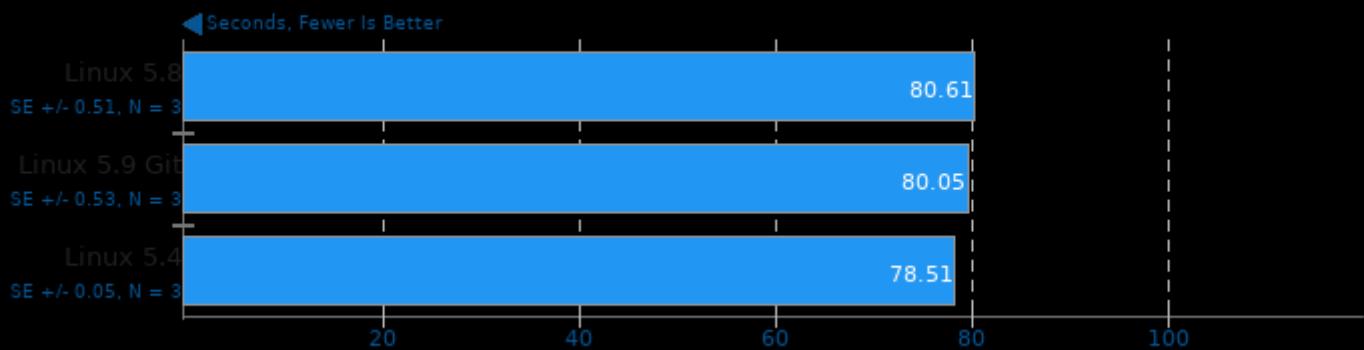
Compressing ubuntu-16.04.3-server-i386.img, Compression Level 9



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

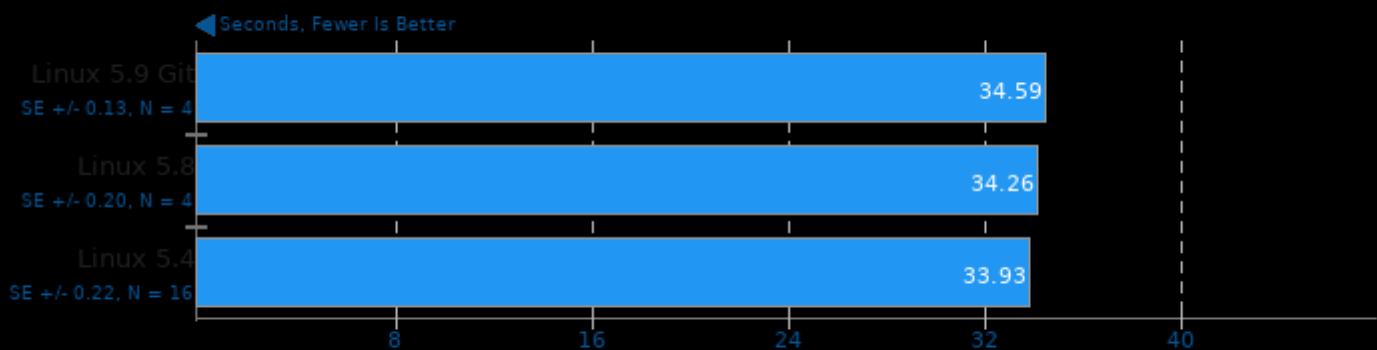
## DeepSpeech 0.6

Acceleration: CPU



## eSpeak-NG Speech Engine 20200907

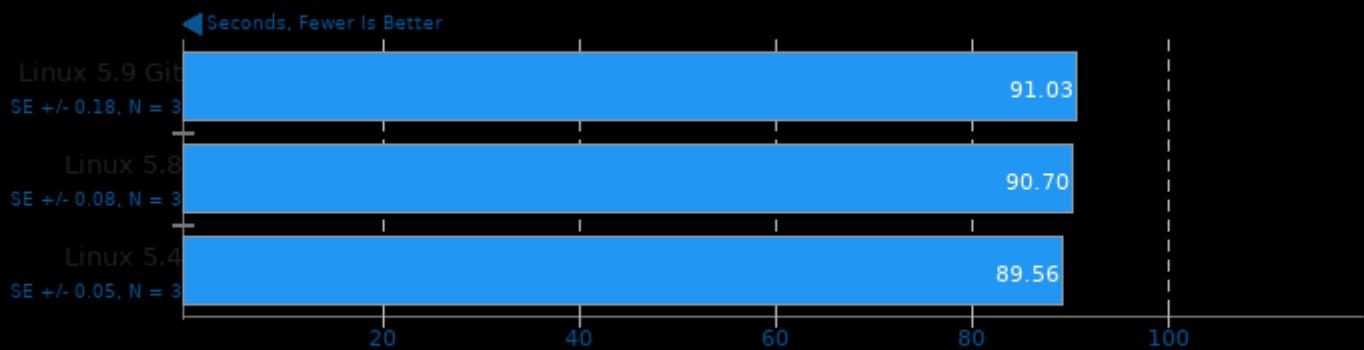
Text-To-Speech Synthesis



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

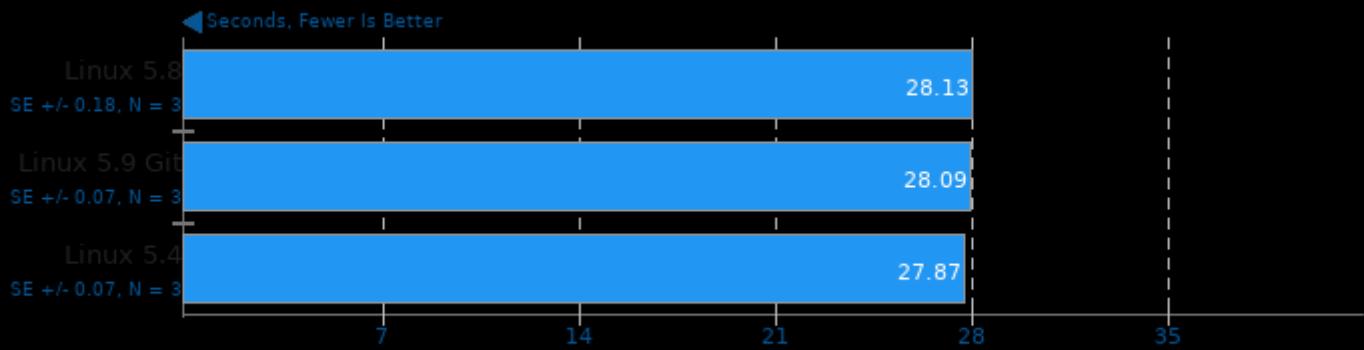
## Montage Astronomical Image Mosaic Engine 6.0

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



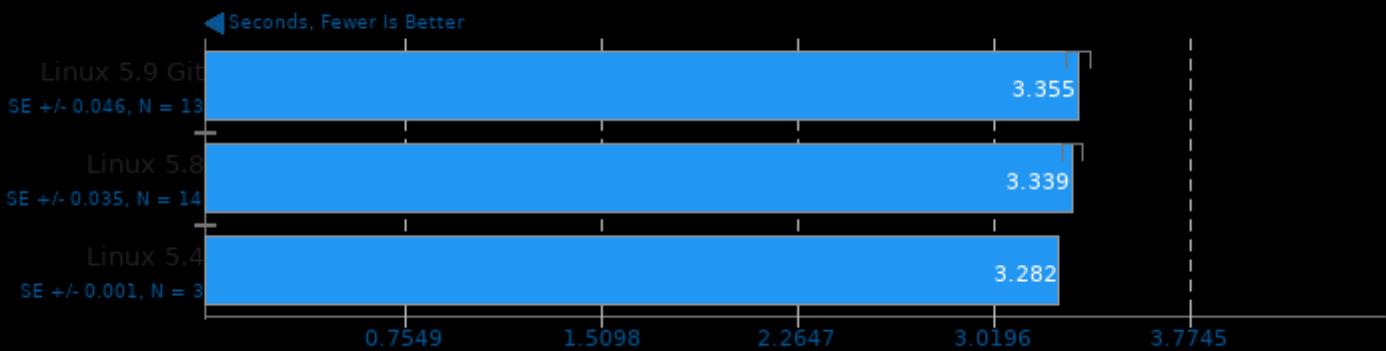
1. (CC) gcc options: -std=gnu99 -lcfitsio -lm -O2

## RNNoise 2020-06-28



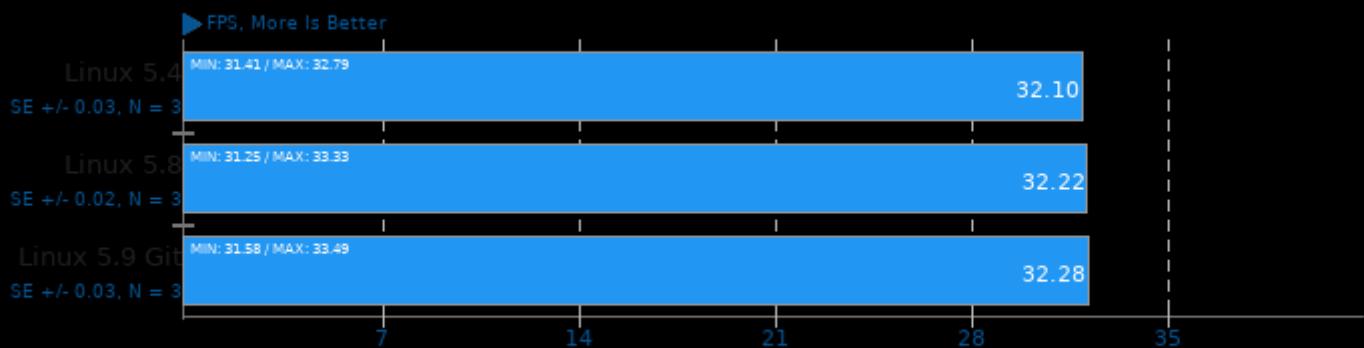
1. (CC) gcc options: -O2 -pedantic -fvisibility=hidden

## System GZIP Decompression



## MPV

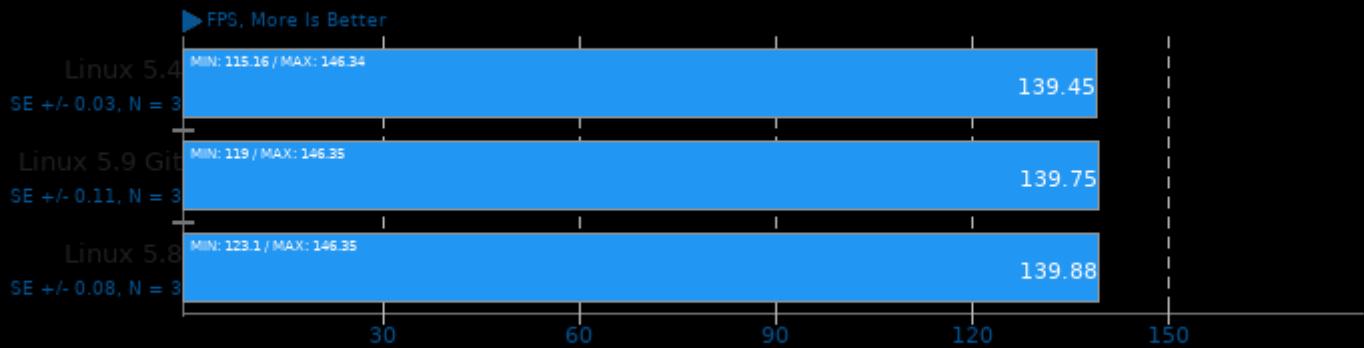
Video Input: Big Buck Bunny Sunflower 4K - Decode: Software Only



1. mpv 0.32.0

## MPV

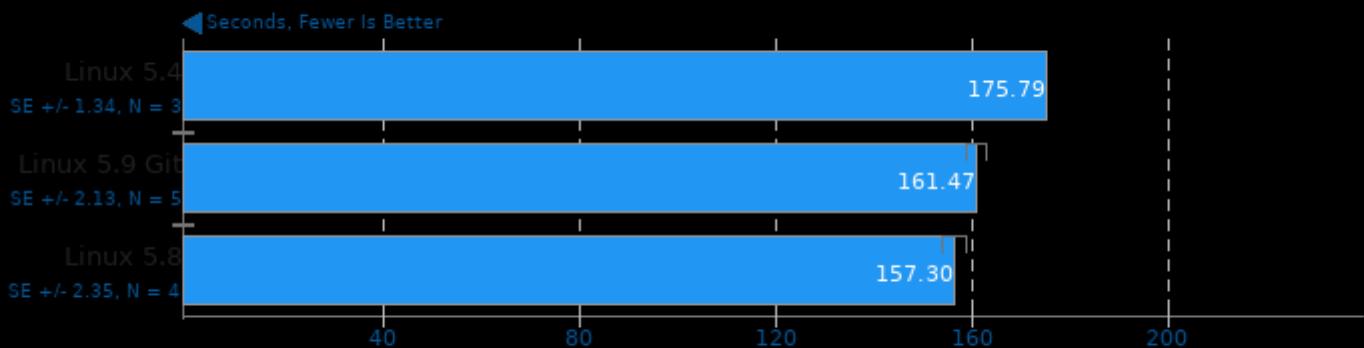
Video Input: Big Buck Bunny Sunflower 1080p - Decode: Software Only



1. mpv 0.32.0

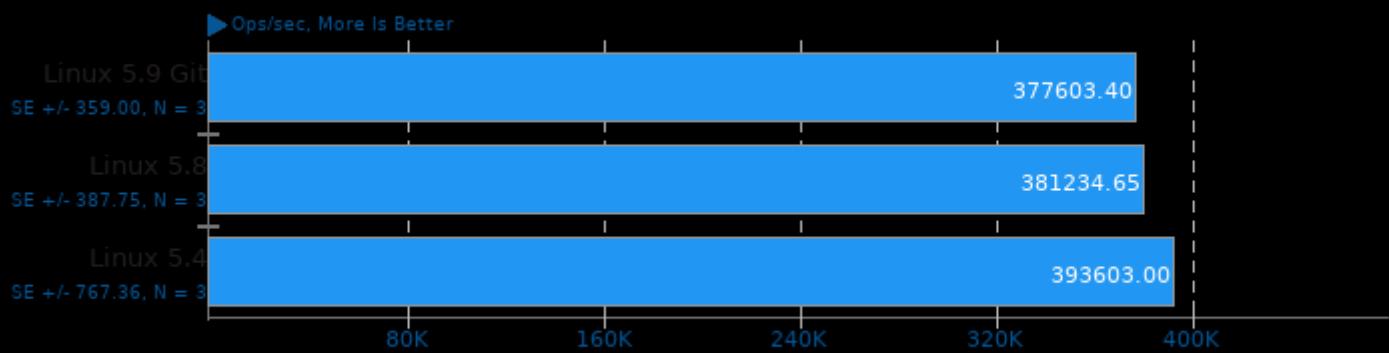
## Apache CouchDB 3.1.1

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



1. (CXX) g++ options: -std=c++14 -fmozjs-68 -fPIC -MMD

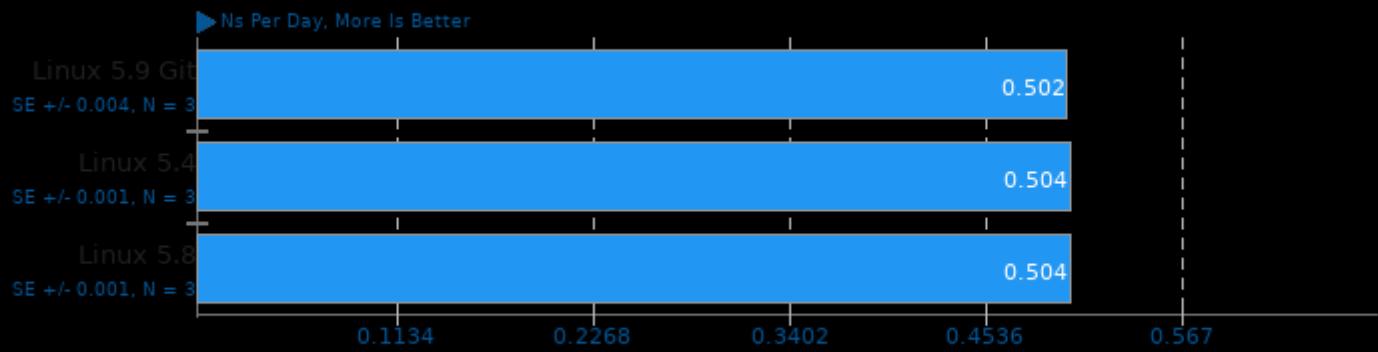
## KeyDB 6.0.16



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

## GROMACS 2020.3

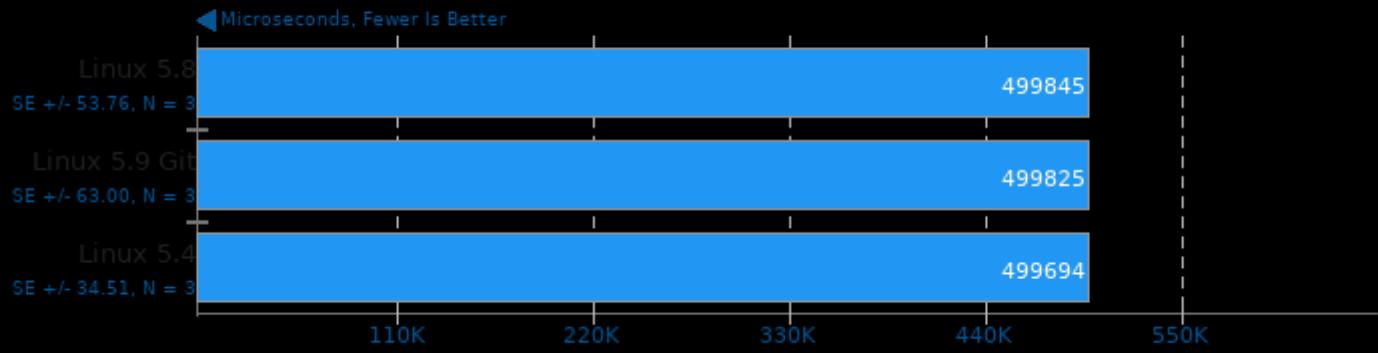
Water Benchmark



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

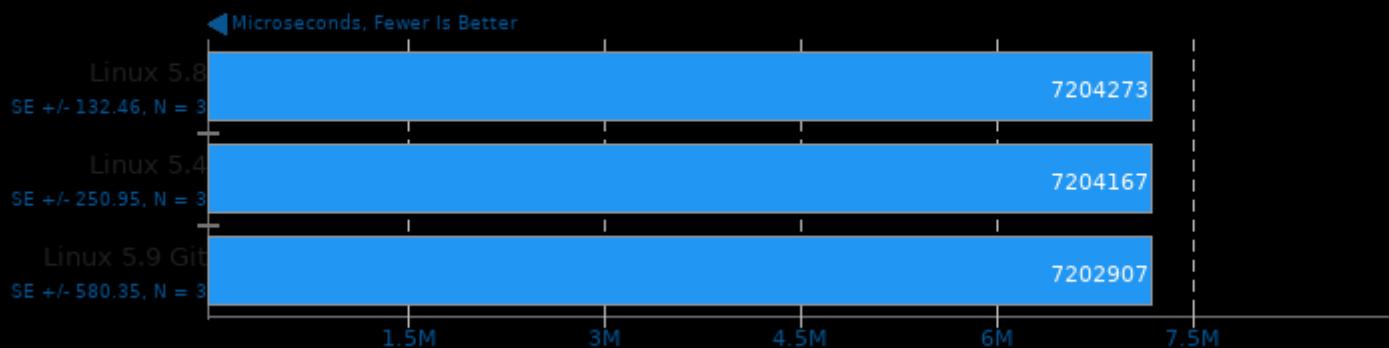
## TensorFlow Lite 2020-08-23

Model: SqueezeNet



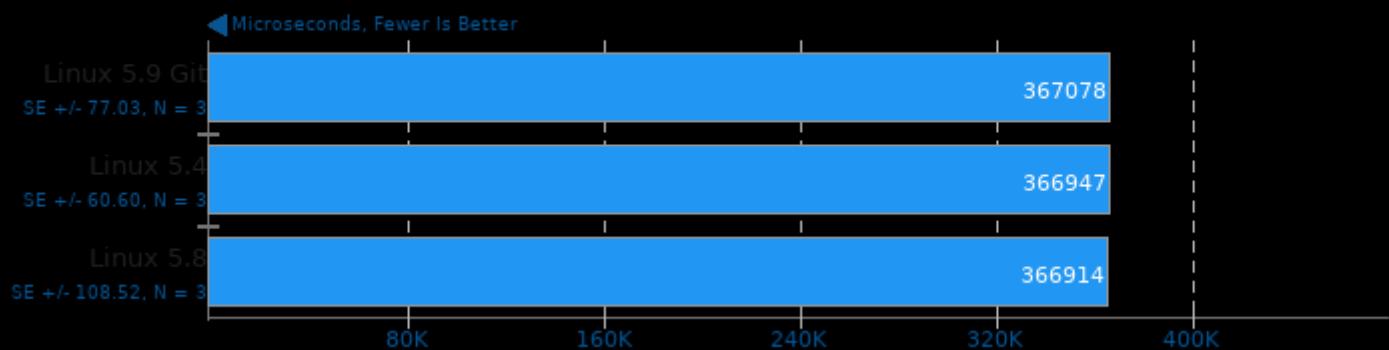
## TensorFlow Lite 2020-08-23

Model: Inception V4



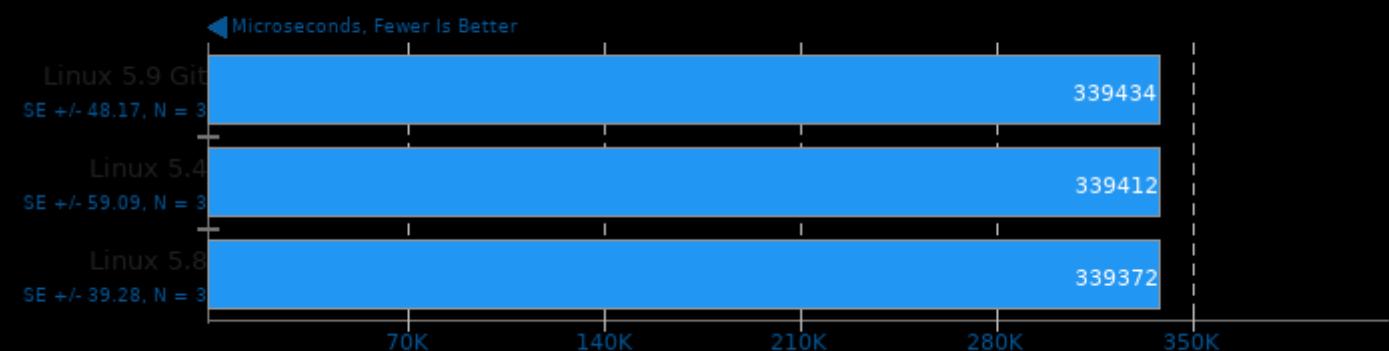
## TensorFlow Lite 2020-08-23

Model: NASNet Mobile



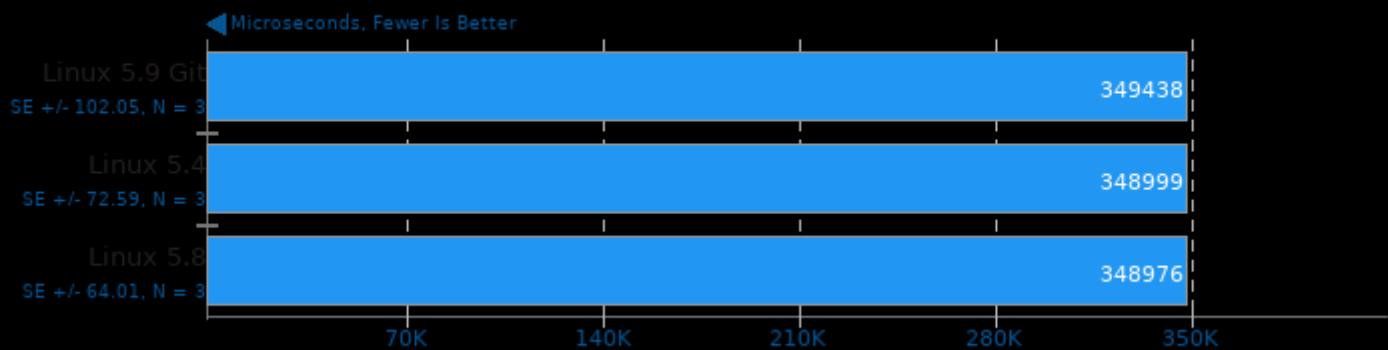
## TensorFlow Lite 2020-08-23

Model: Mobilenet Float



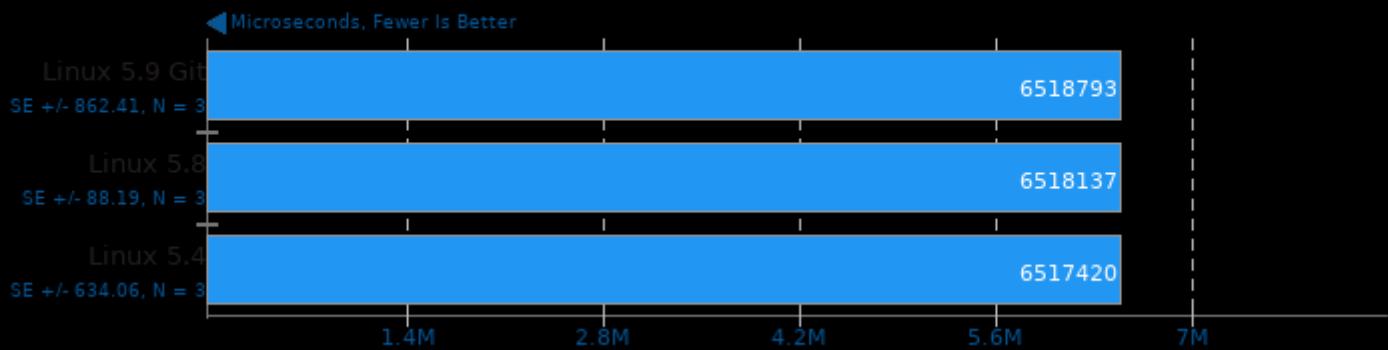
## TensorFlow Lite 2020-08-23

Model: Mobilenet Quant



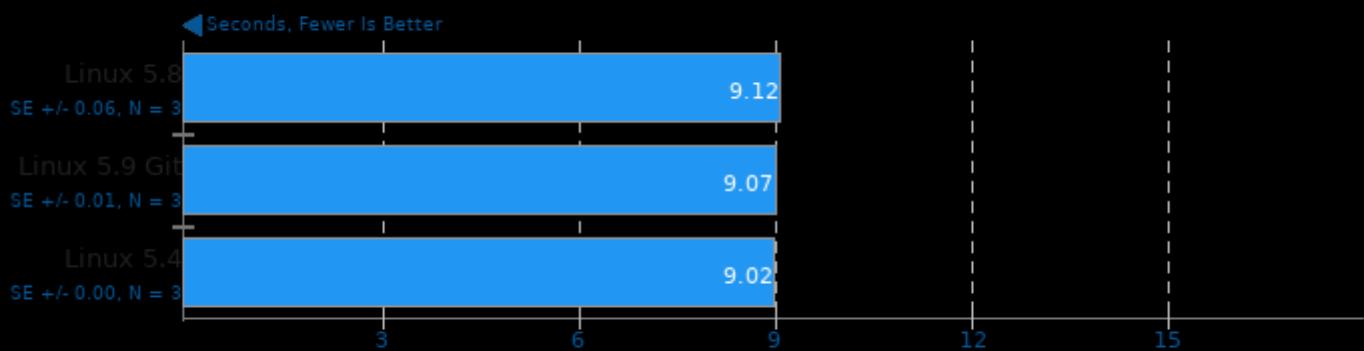
## TensorFlow Lite 2020-08-23

Model: Inception ResNet V2



## ASTC Encoder 2.0

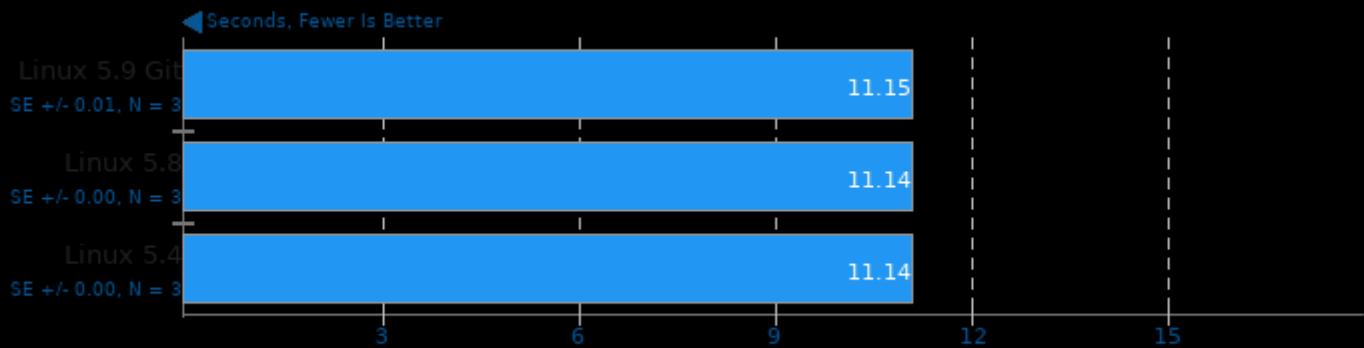
Preset: Fast



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

## ASTC Encoder 2.0

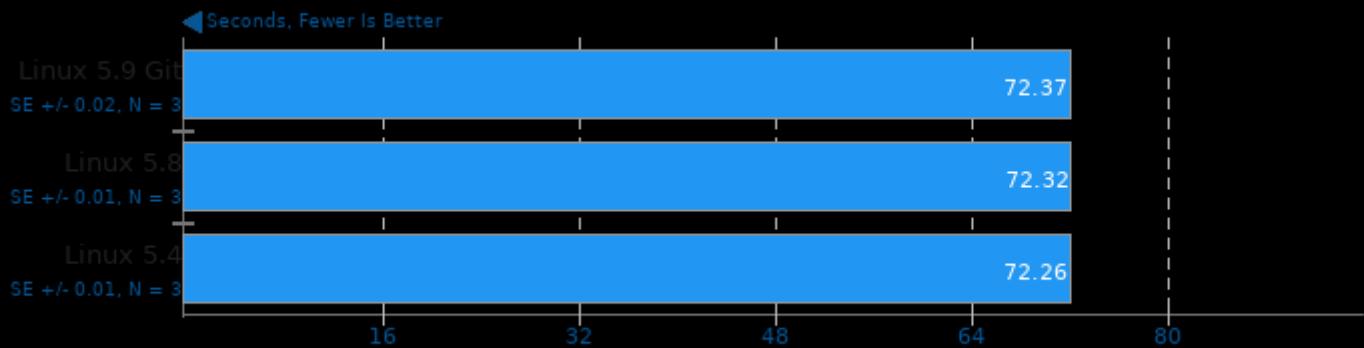
Preset: Medium



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

## ASTC Encoder 2.0

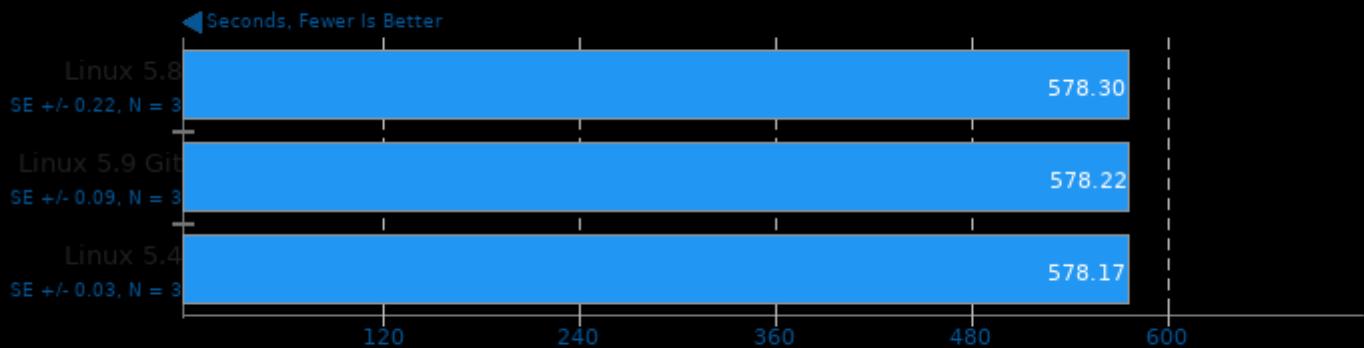
Preset: Thorough



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

## ASTC Encoder 2.0

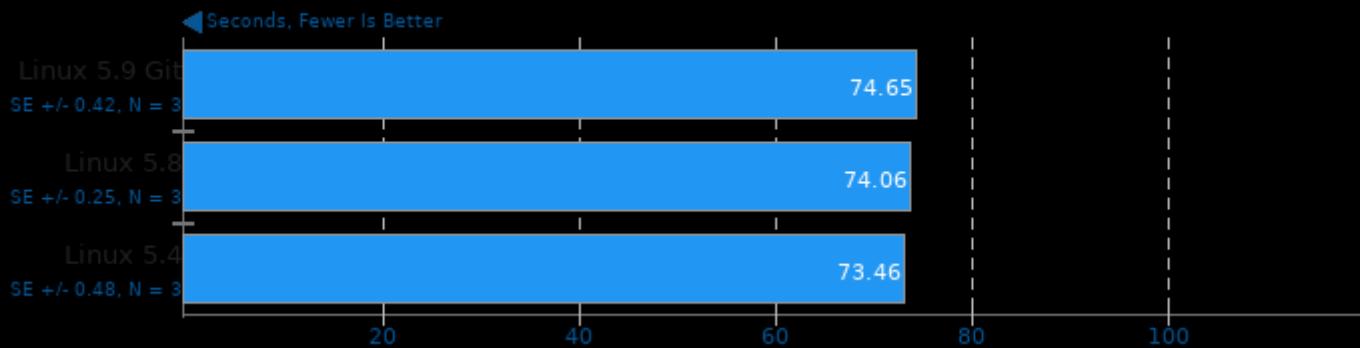
Preset: Exhaustive



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

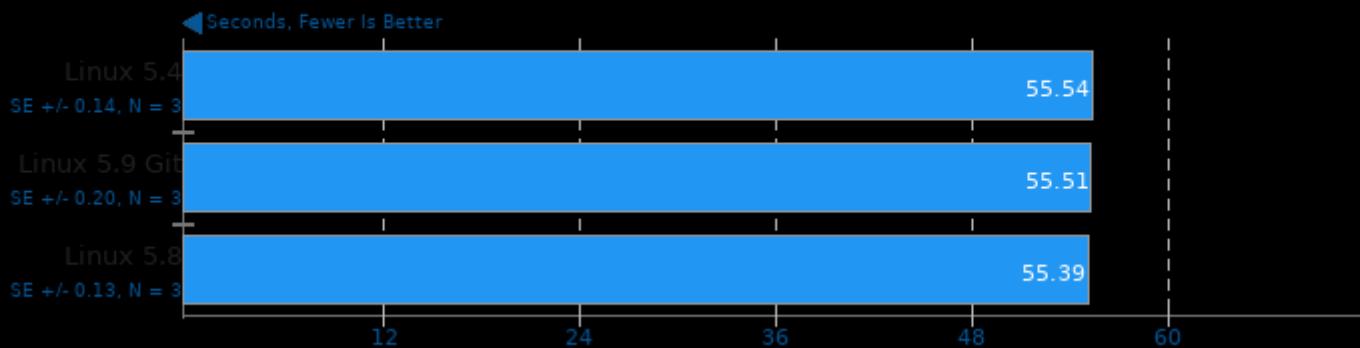
## Hugin

Panorama Photo Assistant + Stitching Time



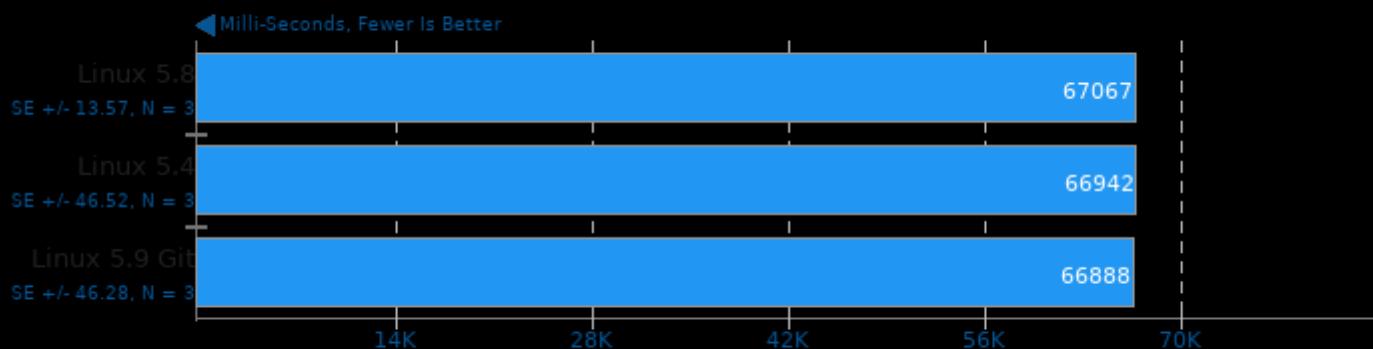
## OCRMyPDF 9.6.0+dfsg

Processing 60 Page PDF Document



## Caffe 2020-02-13

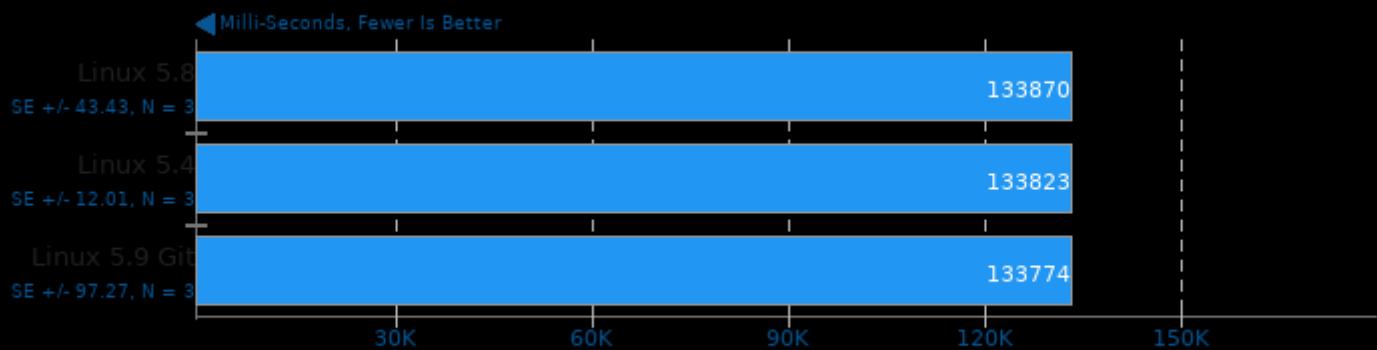
Model: AlexNet - Acceleration: CPU - Iterations: 100



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

## Caffe 2020-02-13

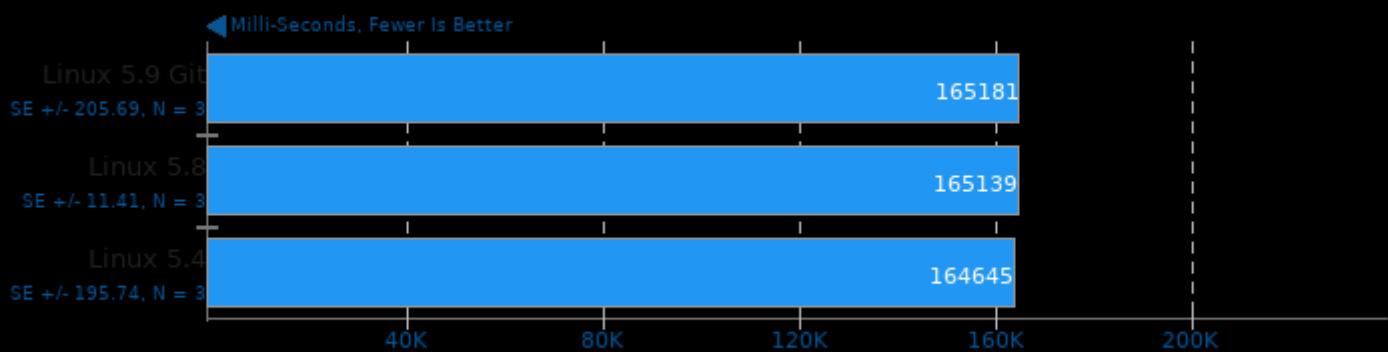
Model: AlexNet - Acceleration: CPU - Iterations: 200



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

## Caffe 2020-02-13

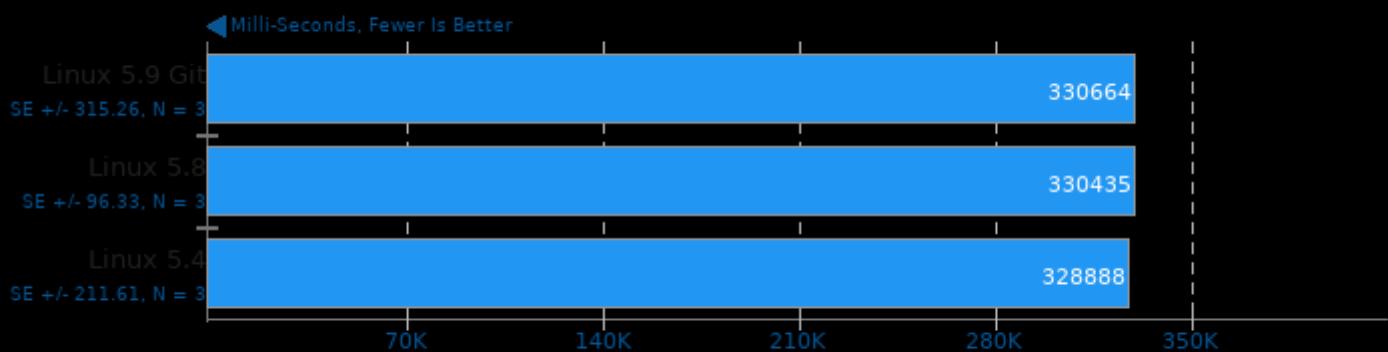
Model: GoogleNet - Acceleration: CPU - Iterations: 100



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

## Caffe 2020-02-13

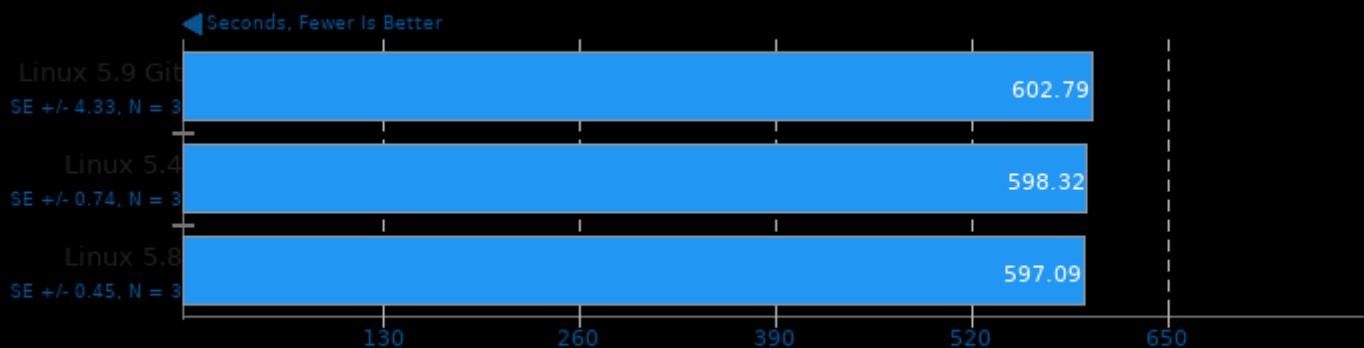
Model: GoogleNet - Acceleration: CPU - Iterations: 200



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

## GPAW 20.1

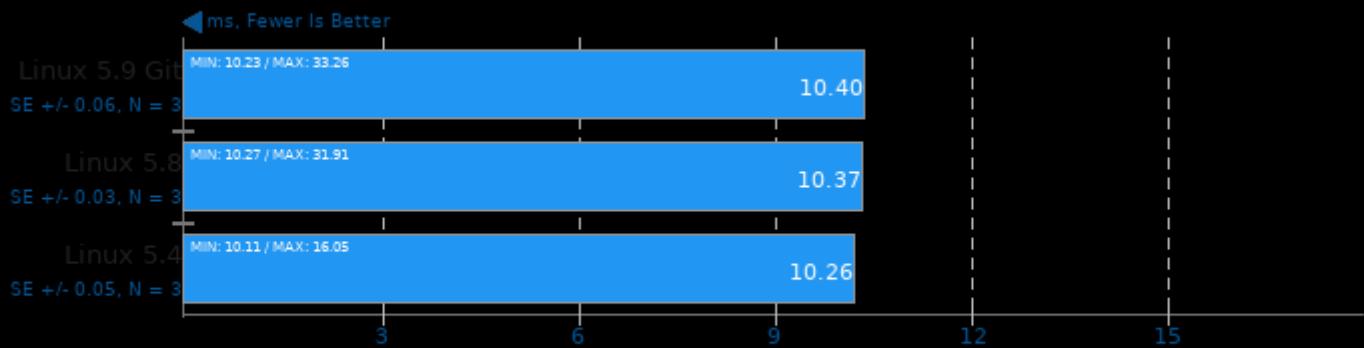
Input: Carbon Nanotube



1. (CC) gcc options: -pthread -shared -fwrapv -O2 -lxc -lblas -lmpi

## Mobile Neural Network 2020-09-17

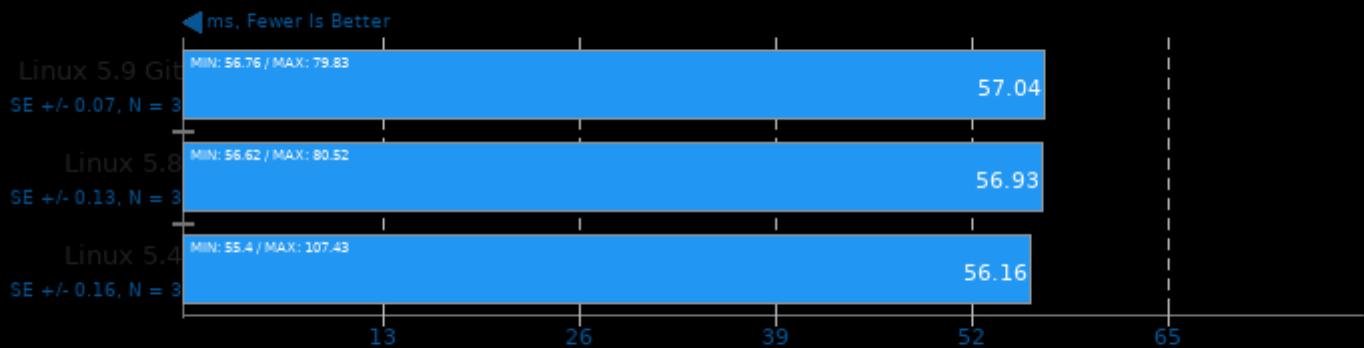
Model: SqueezeNetV1.0



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

## Mobile Neural Network 2020-09-17

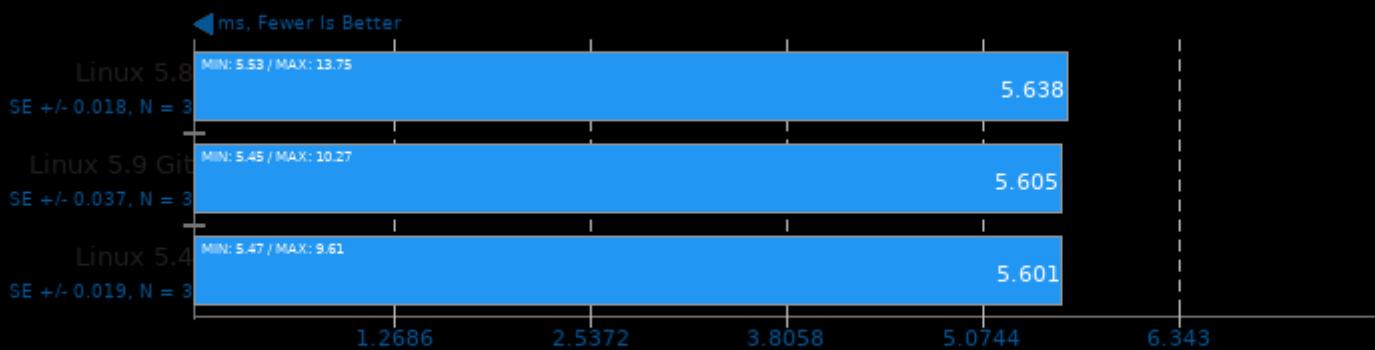
Model: resnet-v2-50



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

## Mobile Neural Network 2020-09-17

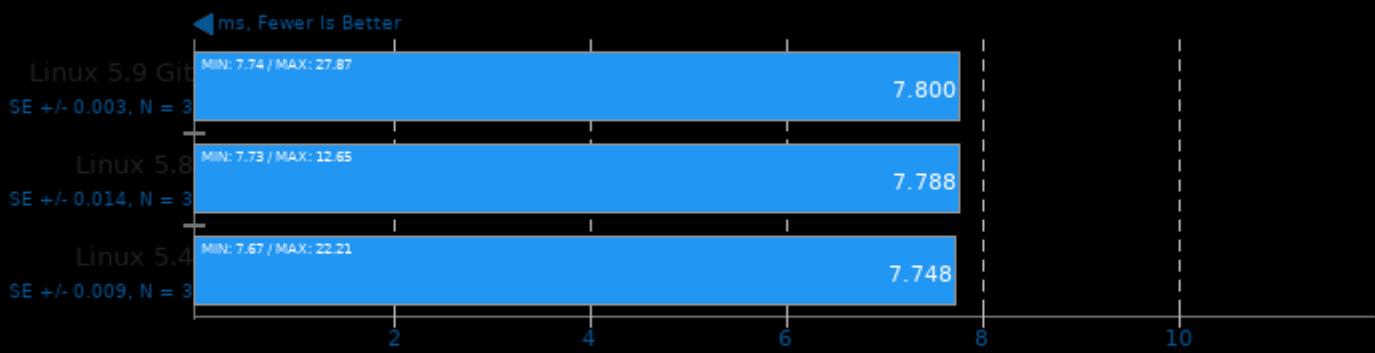
Model: MobileNetV2\_224



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

## Mobile Neural Network 2020-09-17

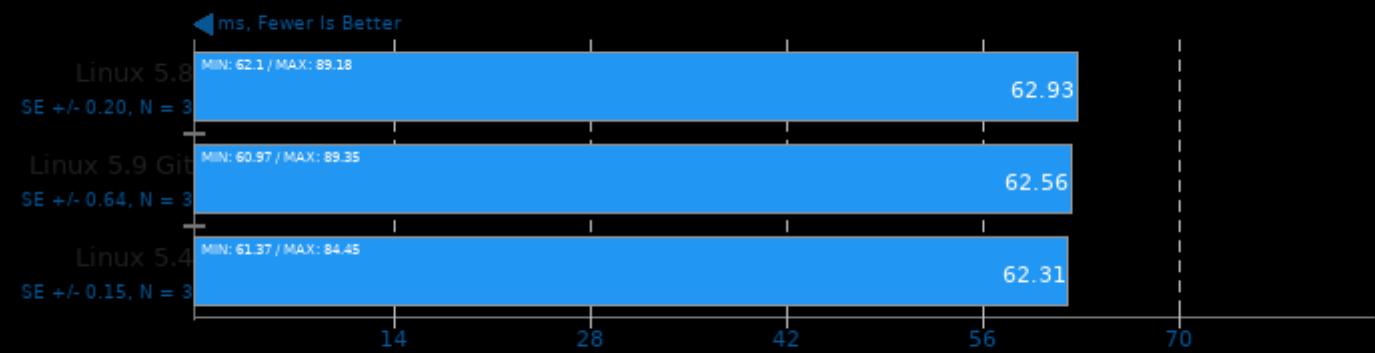
Model: mobilenet-v1-1.0



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

## Mobile Neural Network 2020-09-17

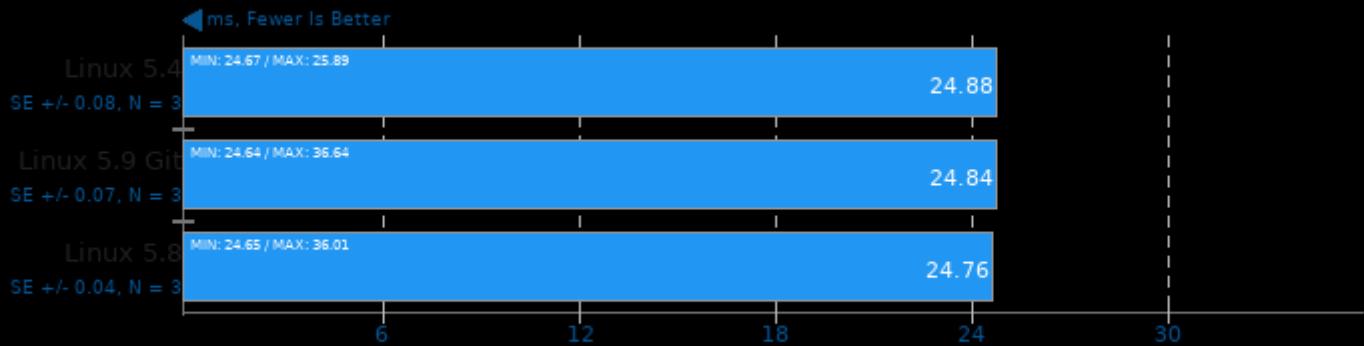
Model: inception-v3



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

## NCNN 20200916

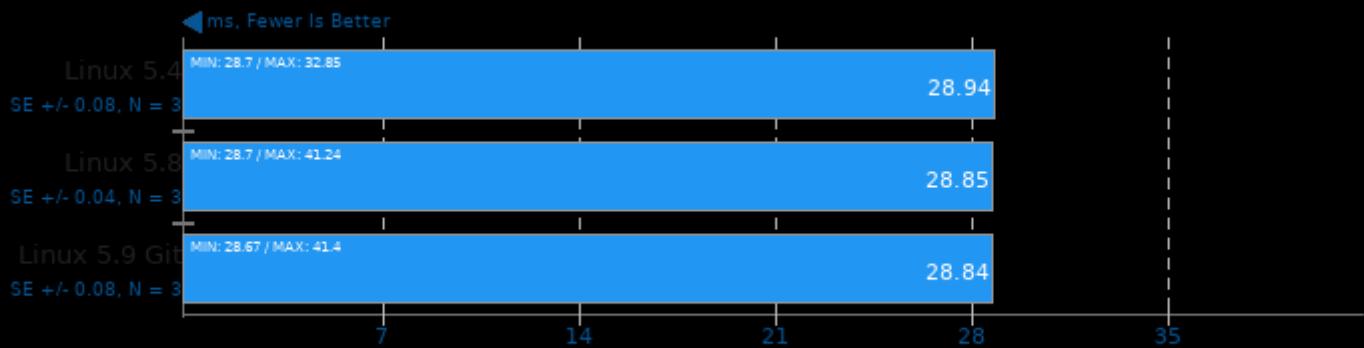
Target: CPU - Model: squeezeonet



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

## NCNN 20200916

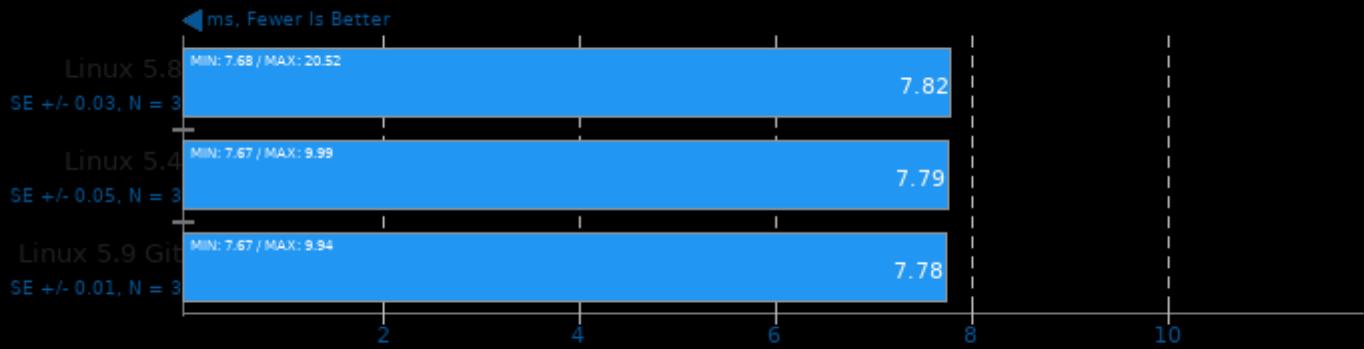
Target: CPU - Model: mobilenet



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

## NCNN 20200916

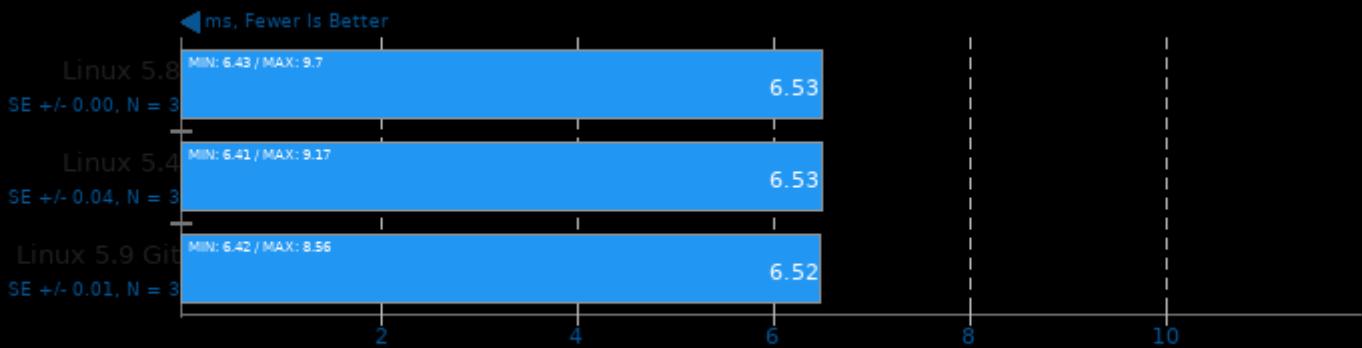
Target: CPU-v2-v2 - Model: mobilenet-v2



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

## NCNN 20200916

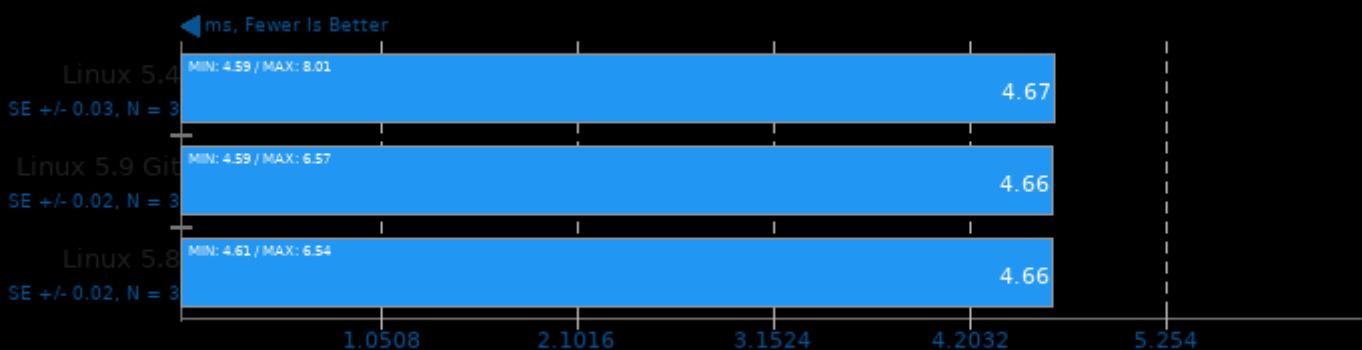
Target: CPU-v3-v3 - Model: mobilenet-v3



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

## NCNN 20200916

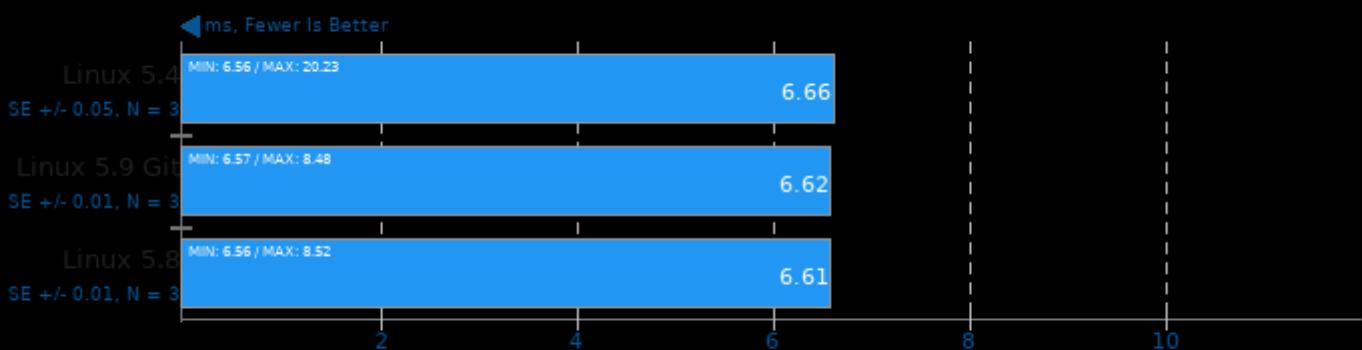
Target: CPU - Model: shufflenet-v2



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

## NCNN 20200916

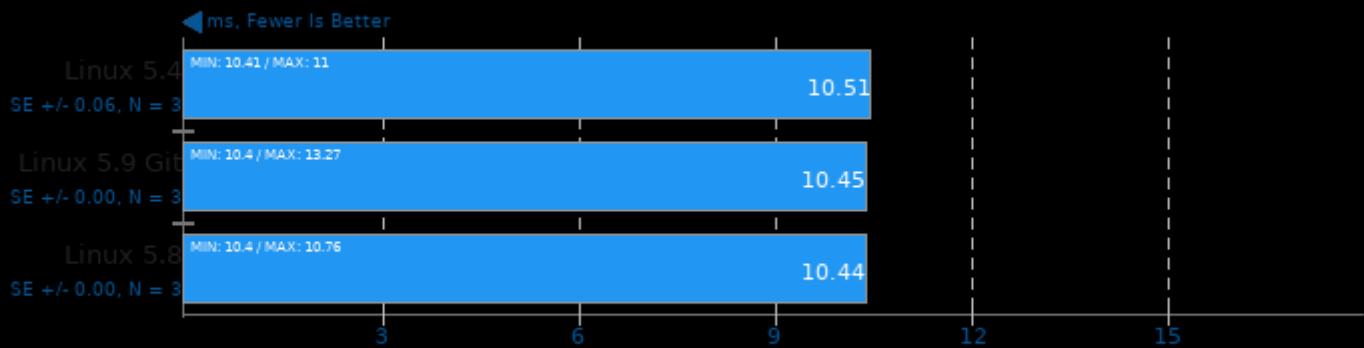
Target: CPU - Model: mnasnet



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

**NCNN 20200916**

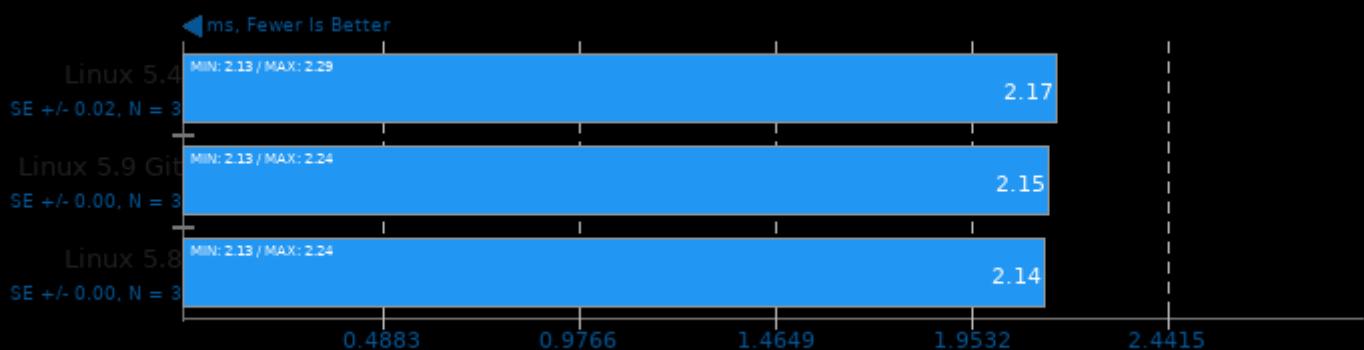
Target: CPU - Model: efficientnet-b0



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

**NCNN 20200916**

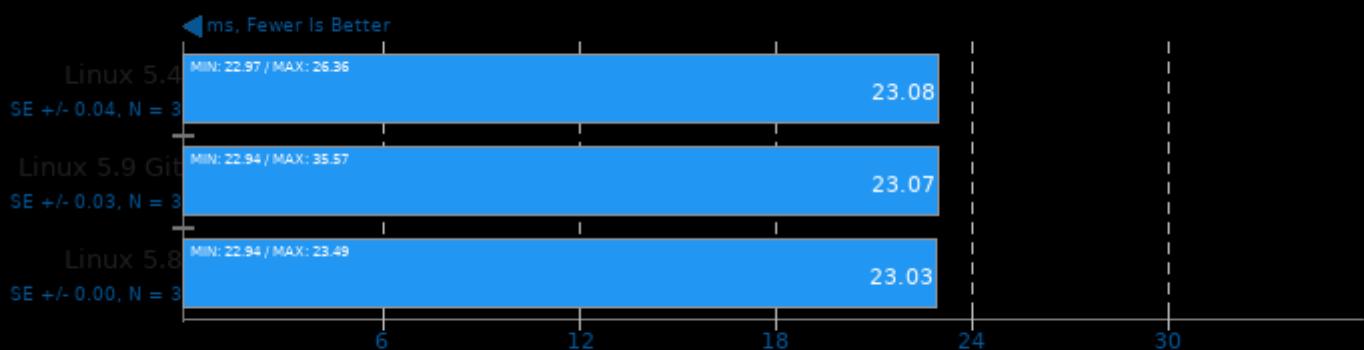
Target: CPU - Model: blazeface



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

**NCNN 20200916**

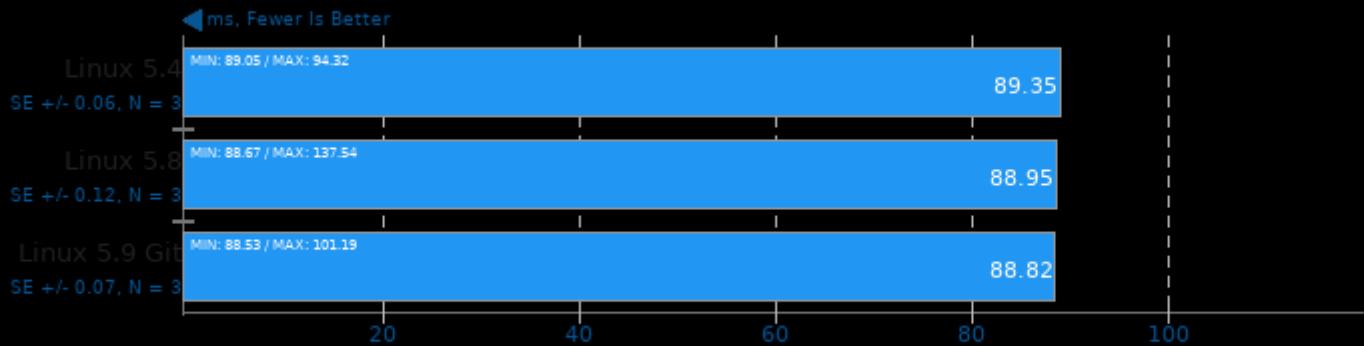
Target: CPU - Model: googlenet



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

**NCNN 20200916**

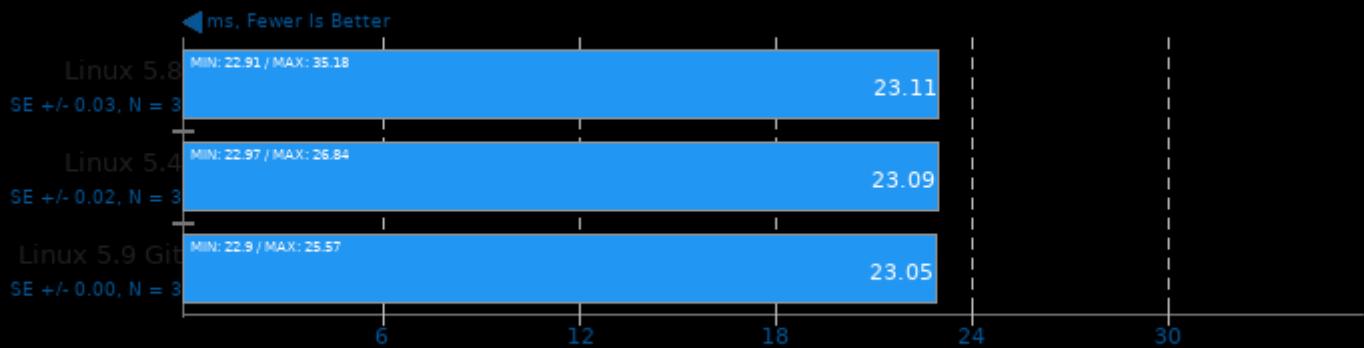
Target: CPU - Model: vgg16



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

**NCNN 20200916**

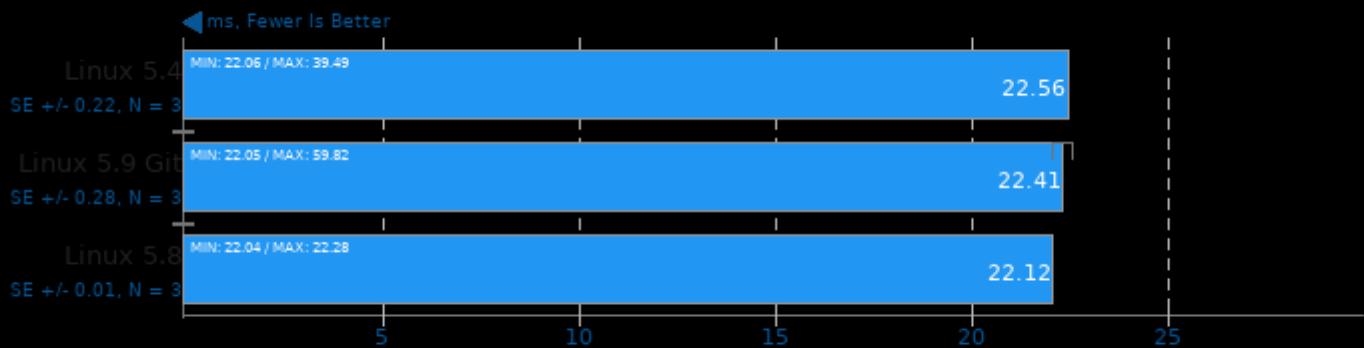
Target: CPU - Model: resnet18



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

**NCNN 20200916**

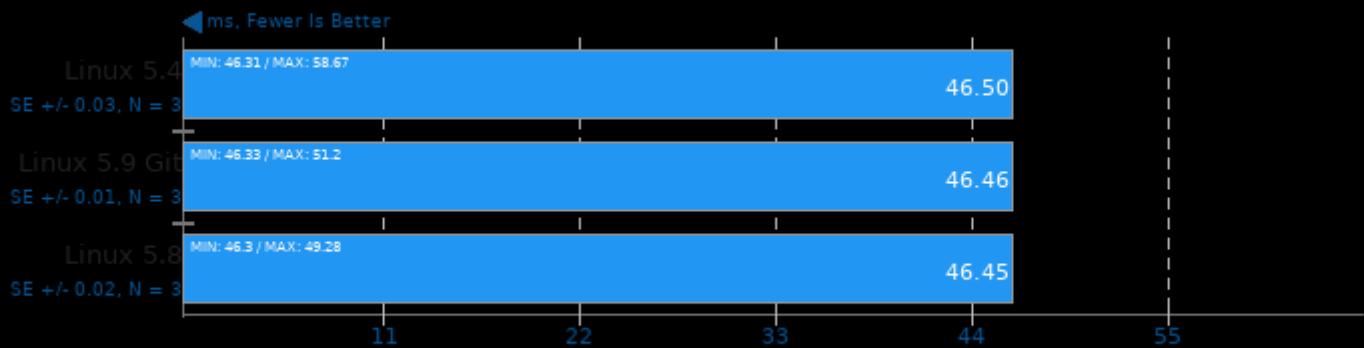
Target: CPU - Model: alexnet



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

## NCNN 20200916

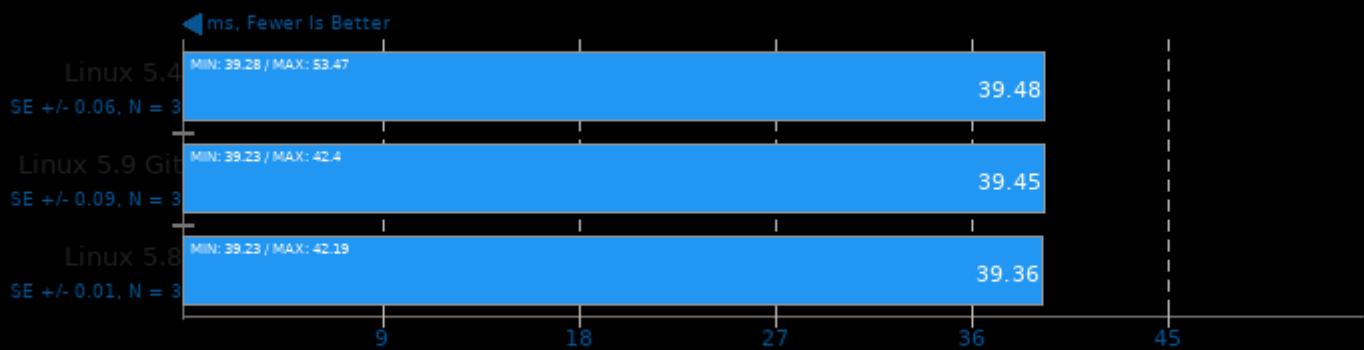
Target: CPU - Model: resnet50



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

## NCNN 20200916

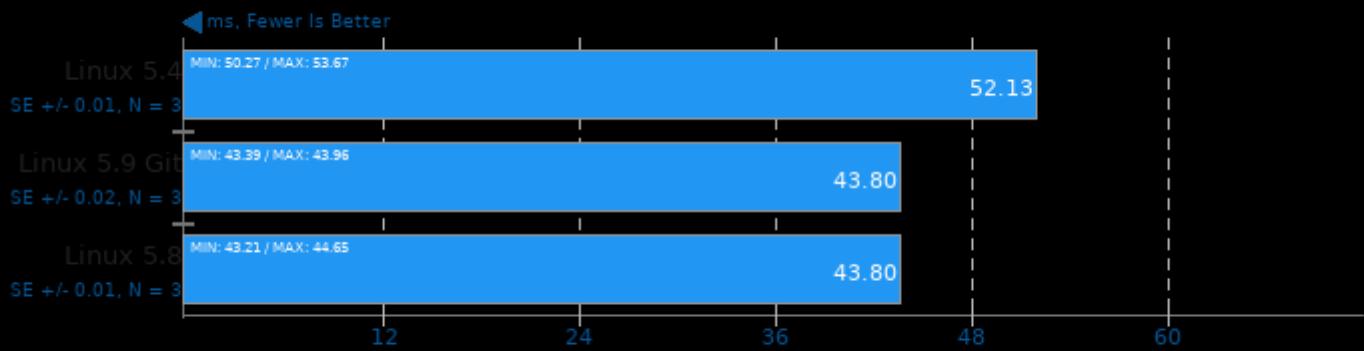
Target: CPU - Model: yolov4-tiny



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

## NCNN 20200916

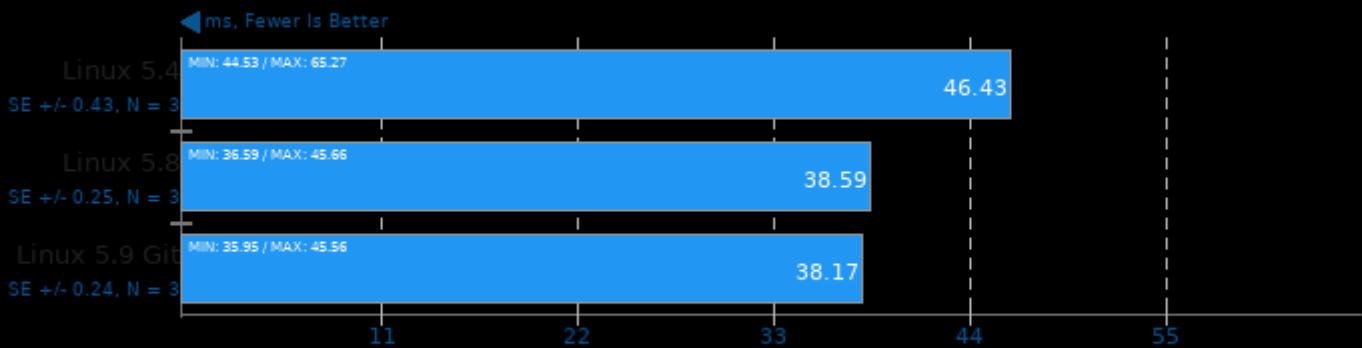
Target: Vulkan GPU - Model: squeezenet



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

## NCNN 20200916

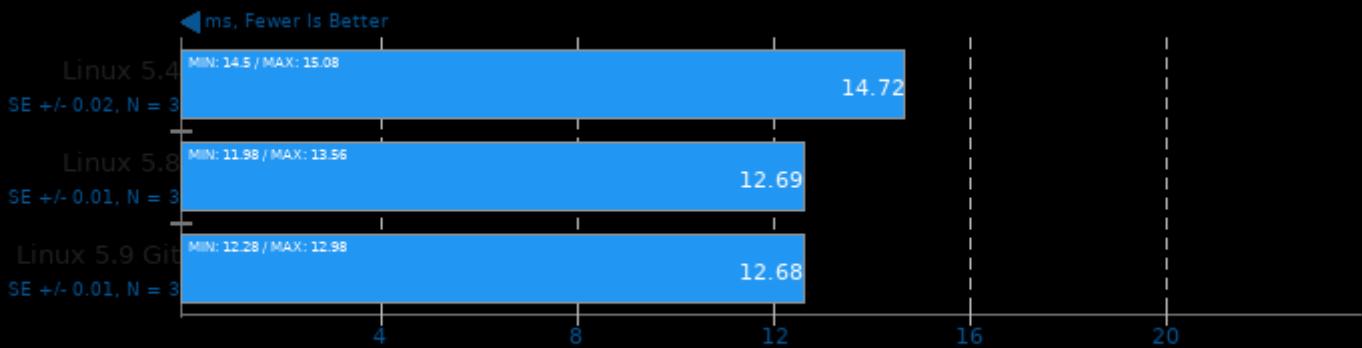
Target: Vulkan GPU - Model: mobilenet



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

## NCNN 20200916

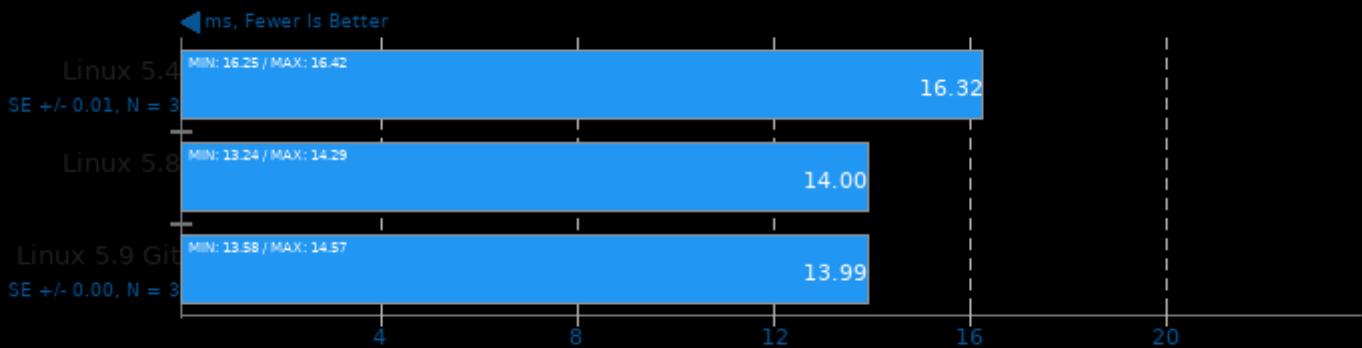
Target: Vulkan GPU-v2-v2 - Model: mobilenet-v2



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

## NCNN 20200916

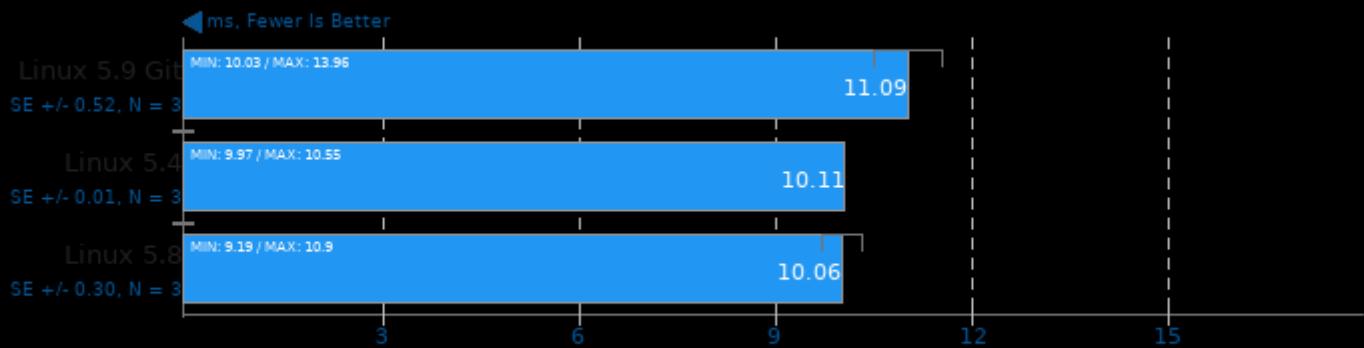
Target: Vulkan GPU-v3-v3 - Model: mobilenet-v3



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

## NCNN 20200916

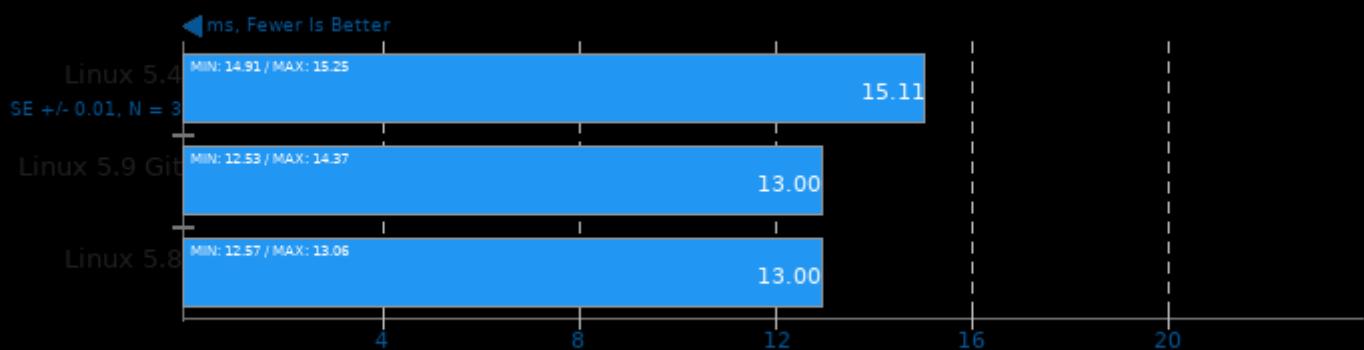
Target: Vulkan GPU - Model: shufflenet-v2



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

## NCNN 20200916

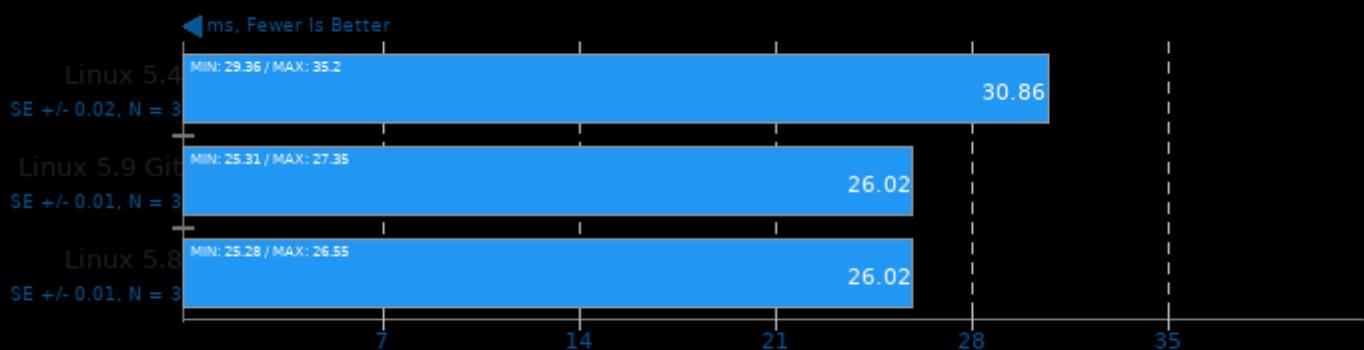
Target: Vulkan GPU - Model: mnasnet



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

## NCNN 20200916

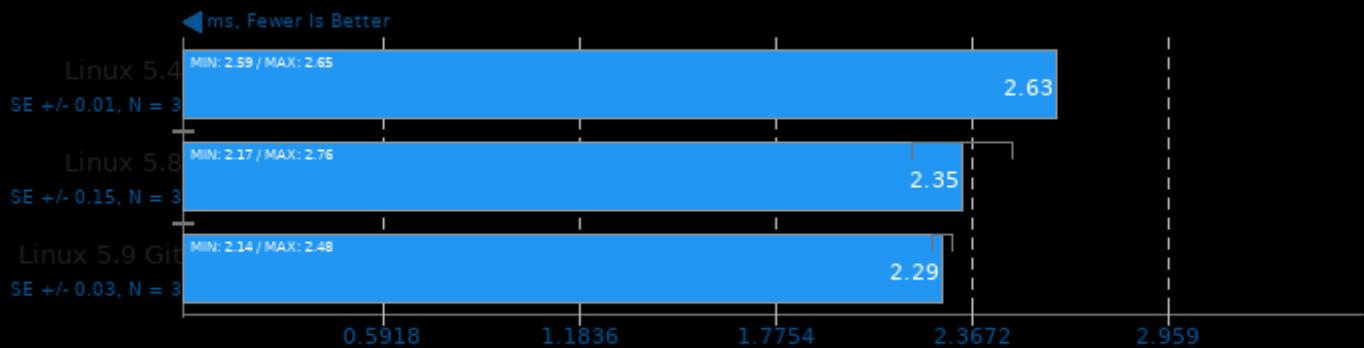
Target: Vulkan GPU - Model: efficientnet-b0



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

## NCNN 20200916

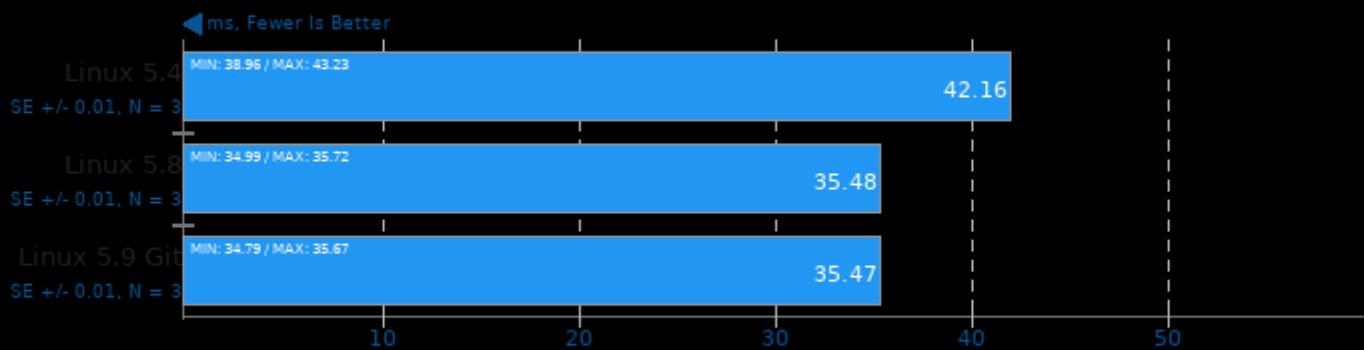
Target: Vulkan GPU - Model: blazeface



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

## NCNN 20200916

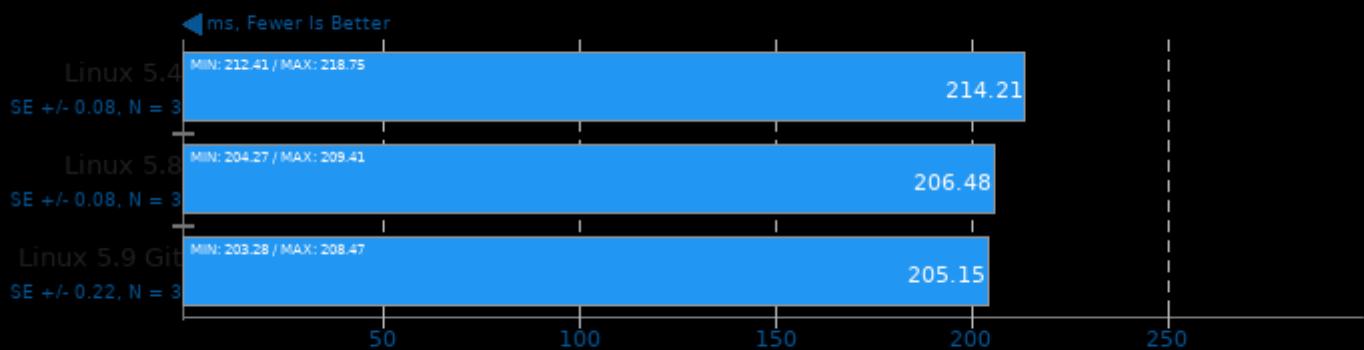
Target: Vulkan GPU - Model: googlenet



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

## NCNN 20200916

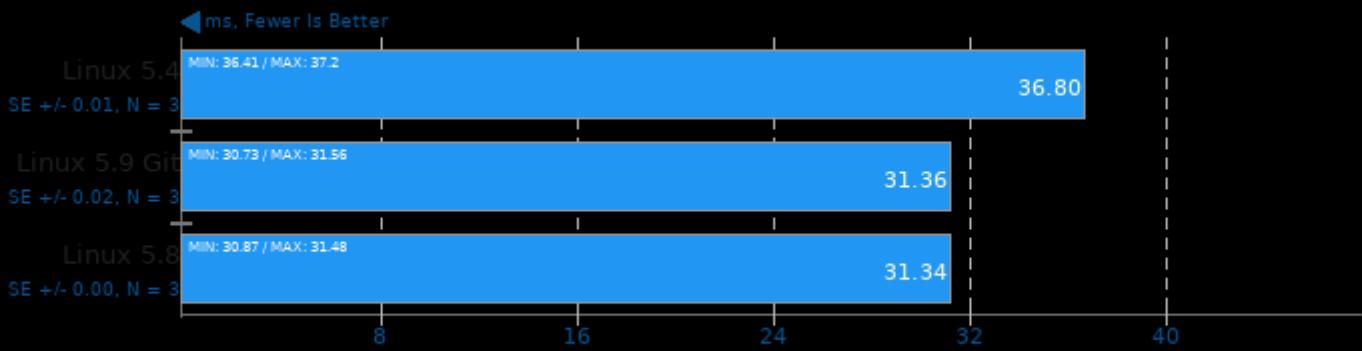
Target: Vulkan GPU - Model: vgg16



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

## NCNN 20200916

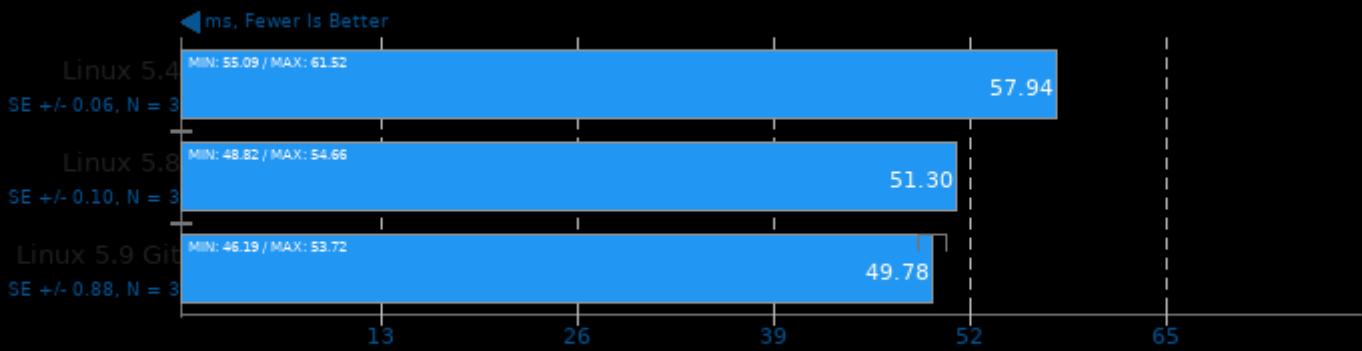
Target: Vulkan GPU - Model: resnet18



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

## NCNN 20200916

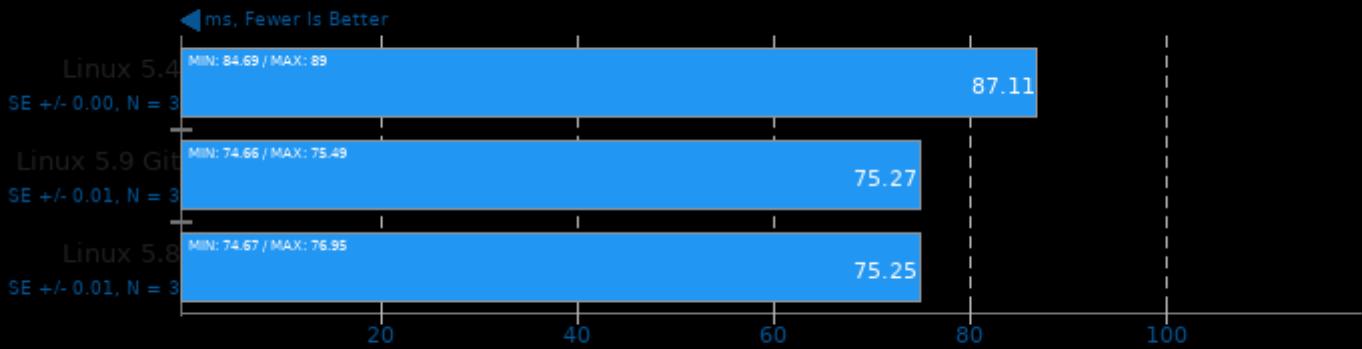
Target: Vulkan GPU - Model: alexnet



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

## NCNN 20200916

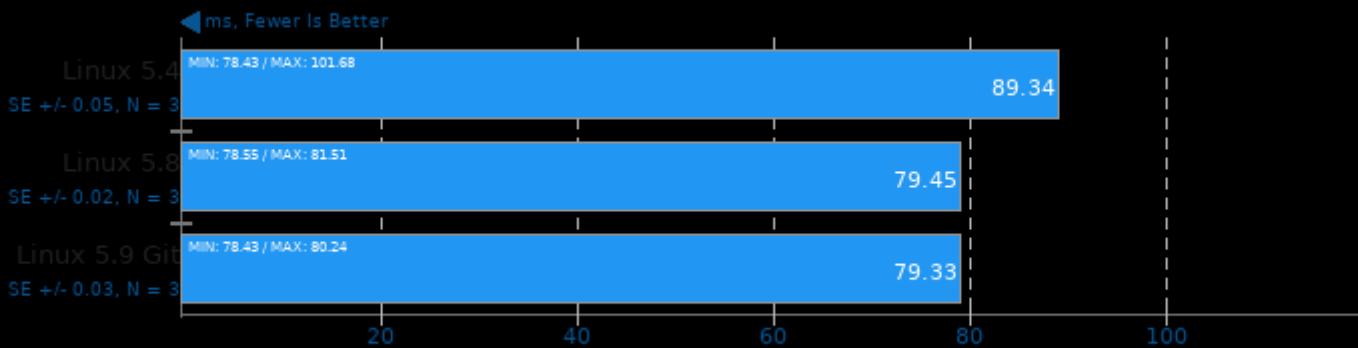
Target: Vulkan GPU - Model: resnet50



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

## NCNN 20200916

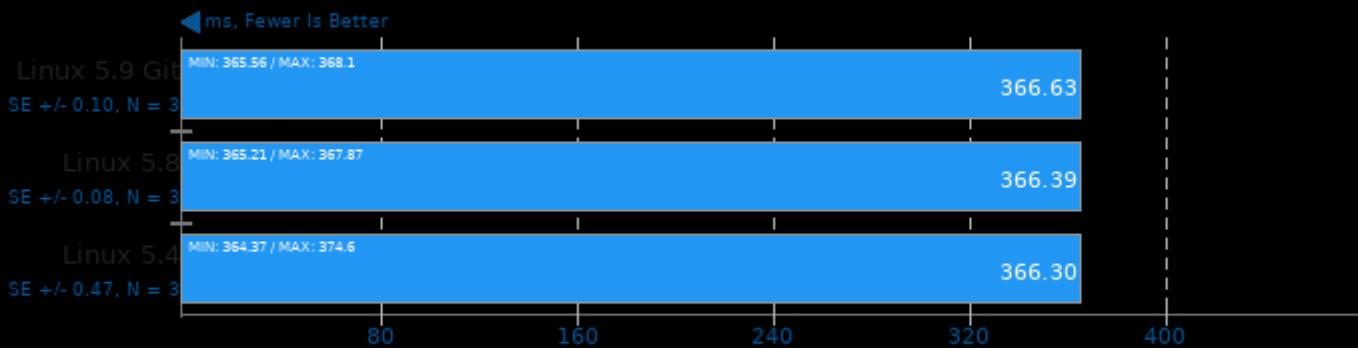
Target: Vulkan GPU - Model: yolov4-tiny



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

## TNN 0.2.3

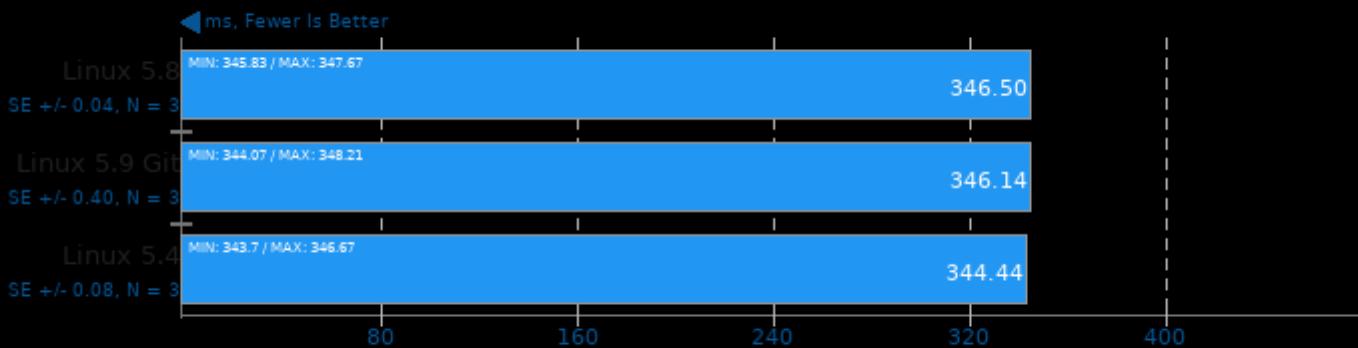
Target: CPU - Model: MobileNet v2



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

## TNN 0.2.3

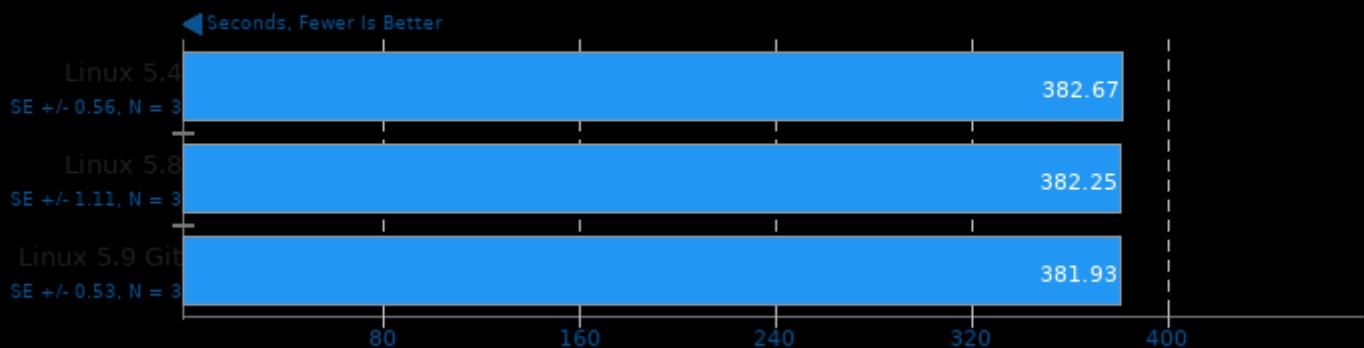
Target: CPU - Model: SqueezeNet v1.1



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

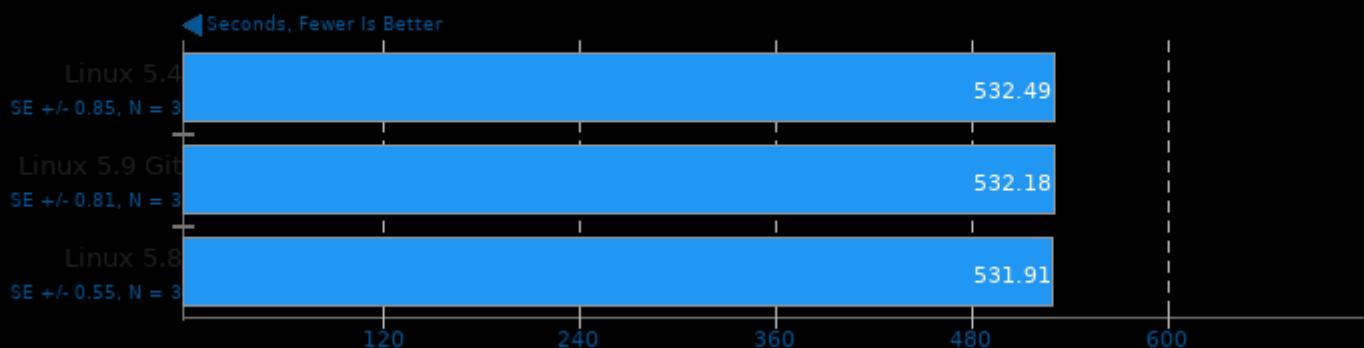
## Blender 2.90

Blend File: BMW27 - Compute: CPU-Only



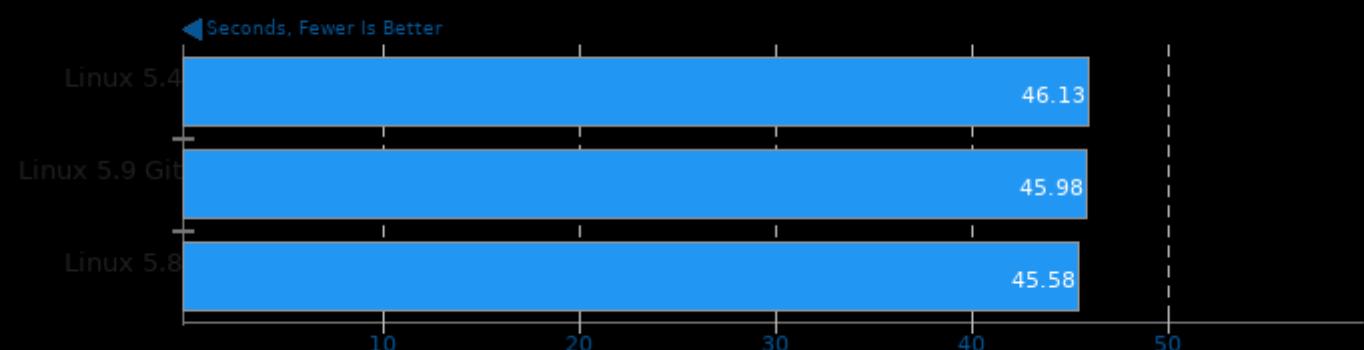
## Blender 2.90

Blend File: Fishy Cat - Compute: CPU-Only



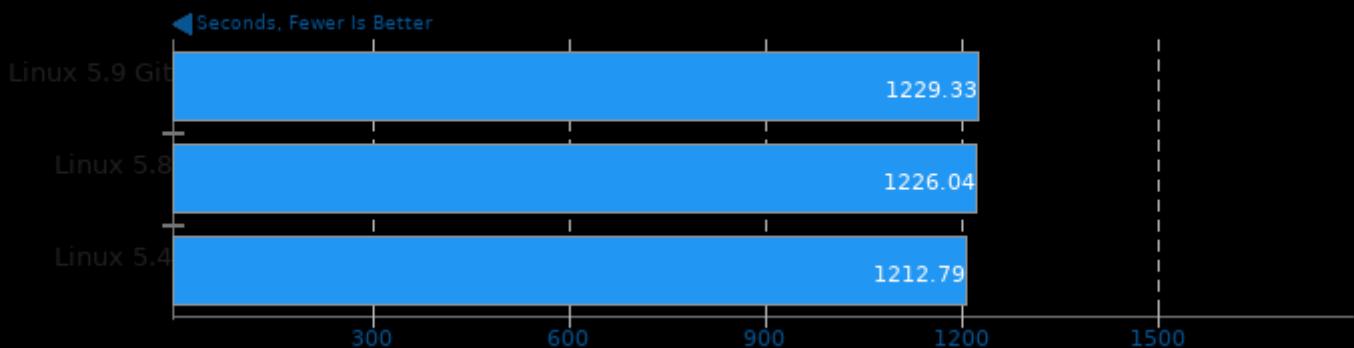
## ECP-CANDLE 0.3

Benchmark: P1B2



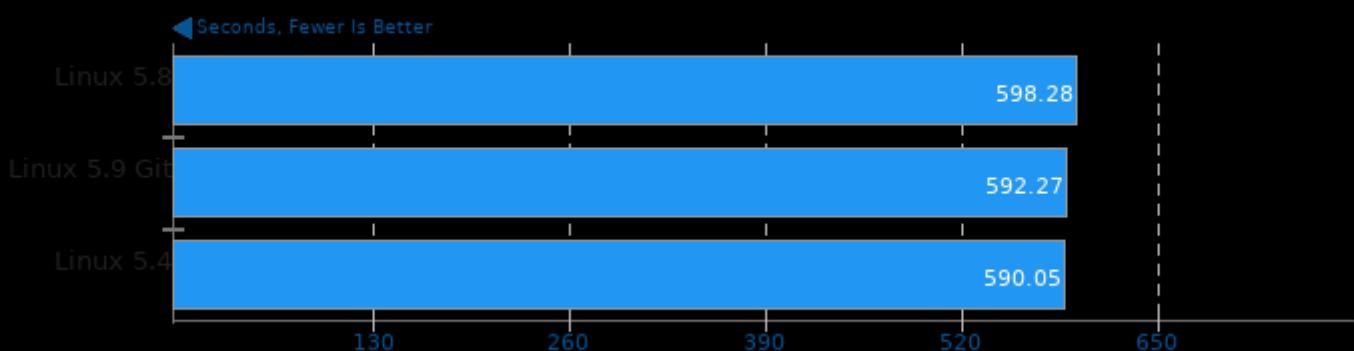
## ECP-CANDLE 0.3

Benchmark: P3B1



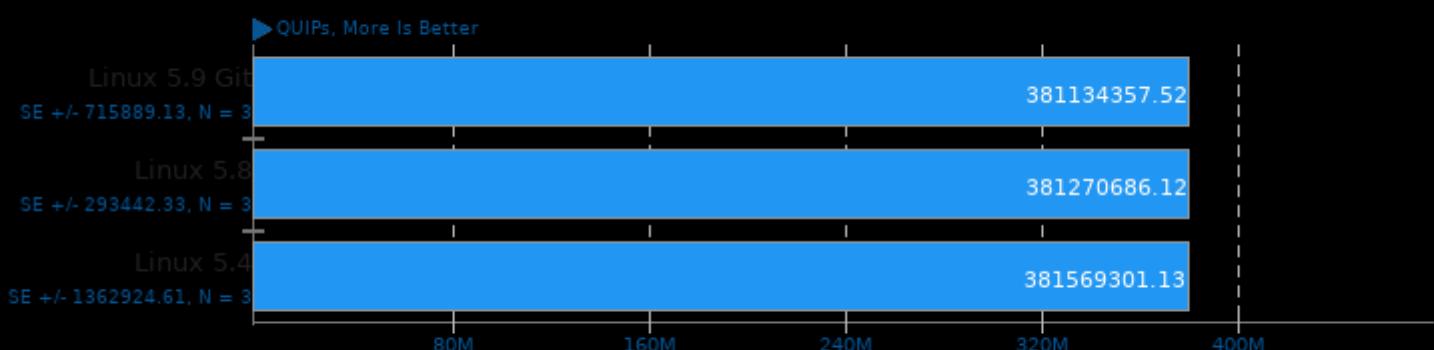
## ECP-CANDLE 0.3

Benchmark: P3B2



## Hierarchical INTegration 1.0

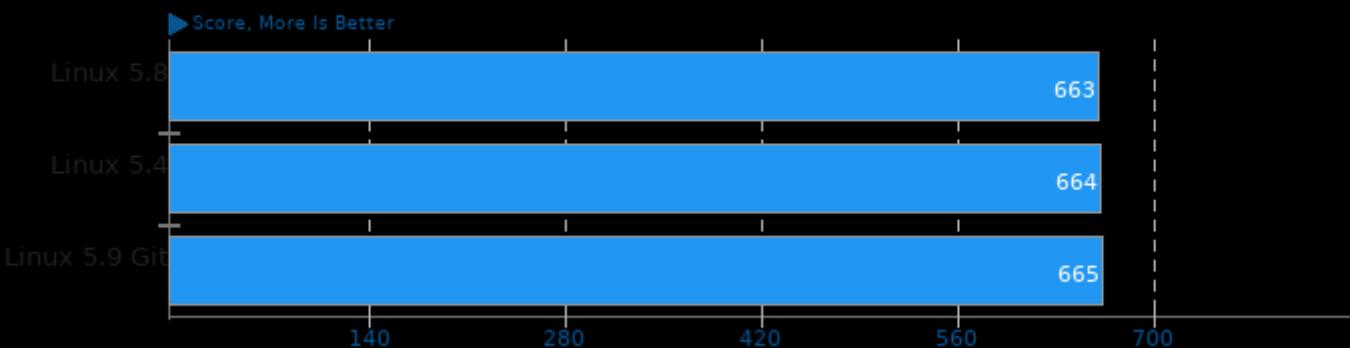
Test: FLOAT



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

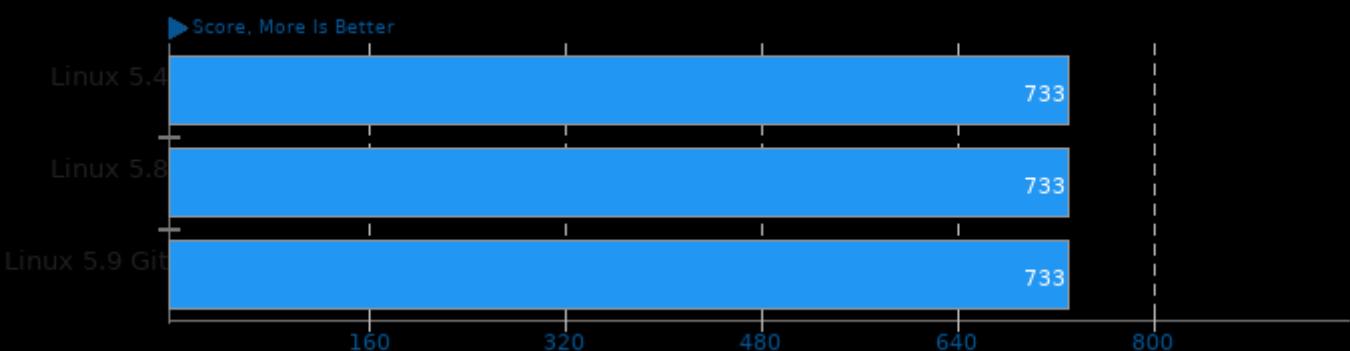
## AI Benchmark Alpha 0.1.2

Device Inference Score



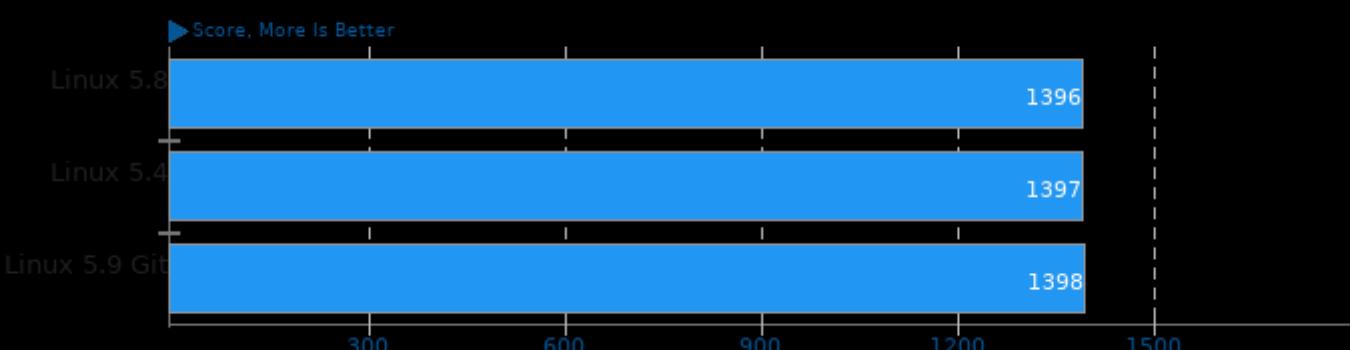
## AI Benchmark Alpha 0.1.2

Device Training Score



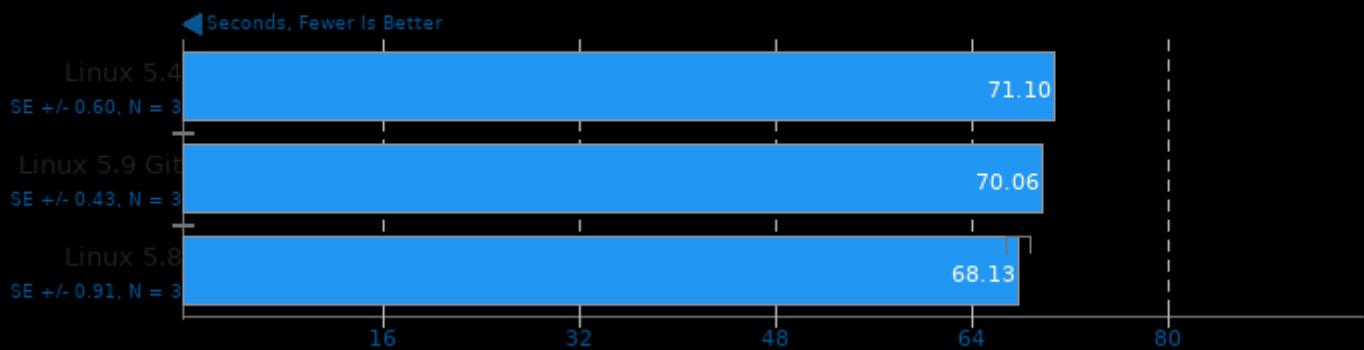
## AI Benchmark Alpha 0.1.2

Device AI Score



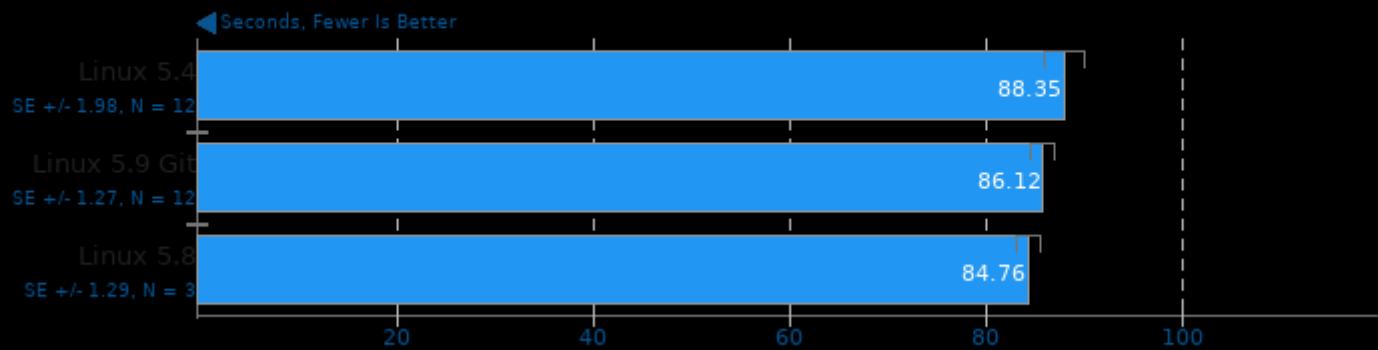
## Milpack Benchmark

Benchmark: scikit\_ica



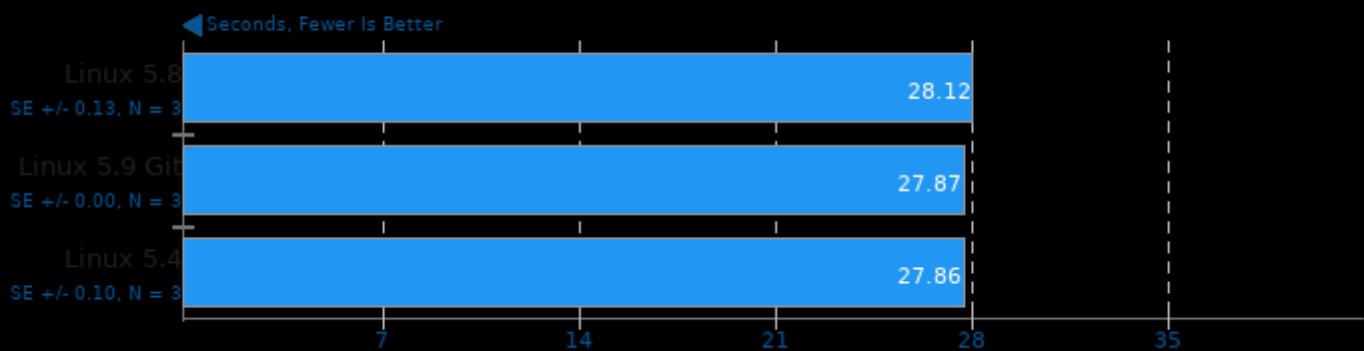
## Milpack Benchmark

Benchmark: scikit\_qda



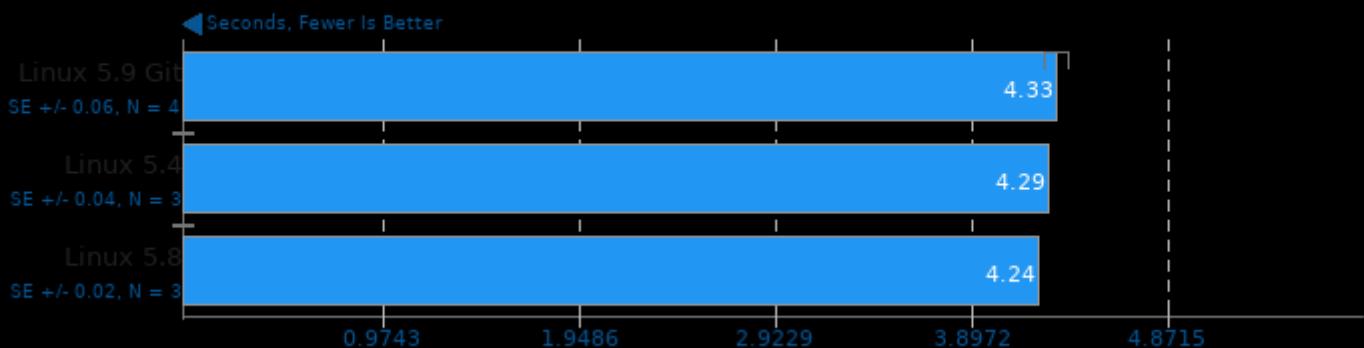
## Milpack Benchmark

Benchmark: scikit\_svm



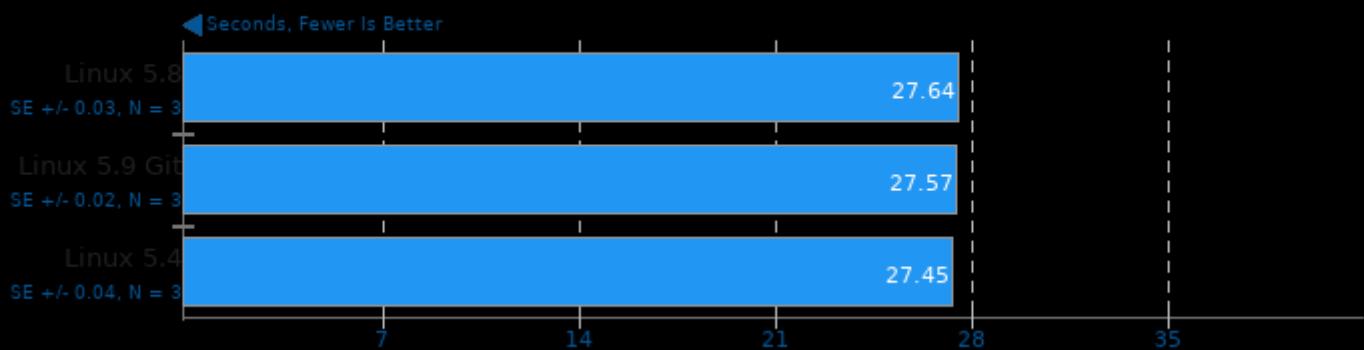
## Mlpack Benchmark

Benchmark: scikit\_linearridge\_regression

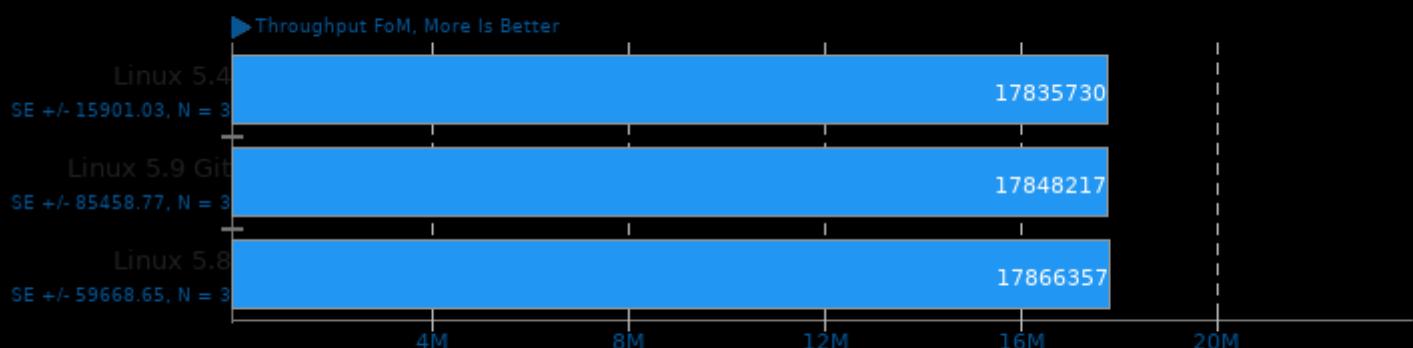


## Tesseract OCR 4.1.1

Time To OCR 7 Images



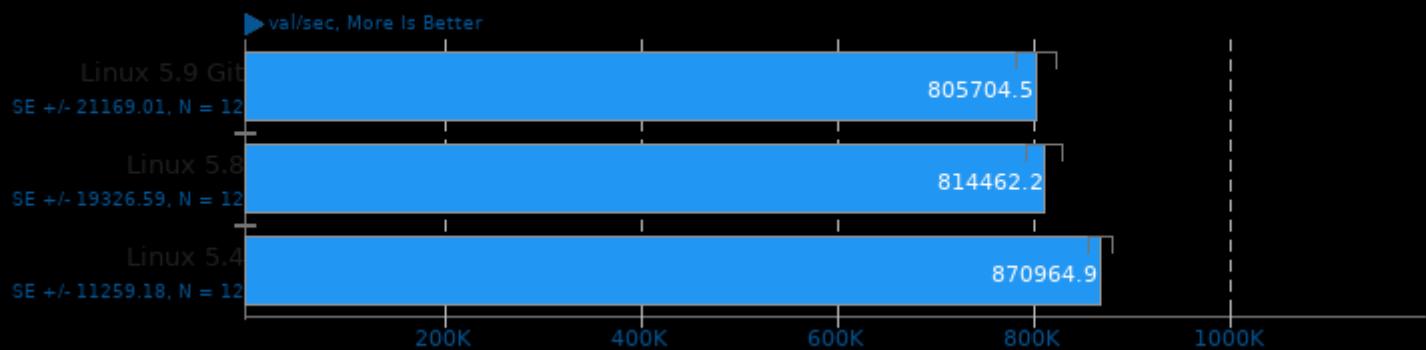
## Kripke 1.2.4



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

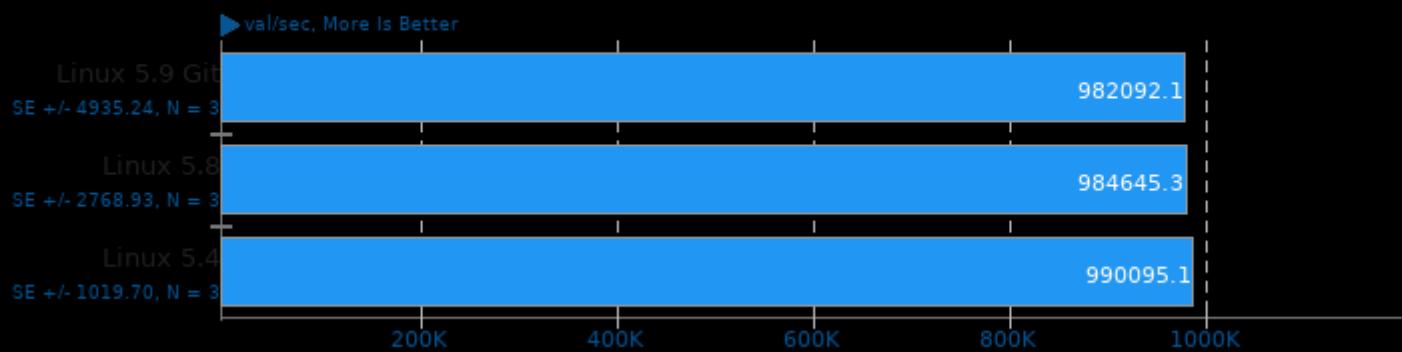
## InfluxDB 1.8.2

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



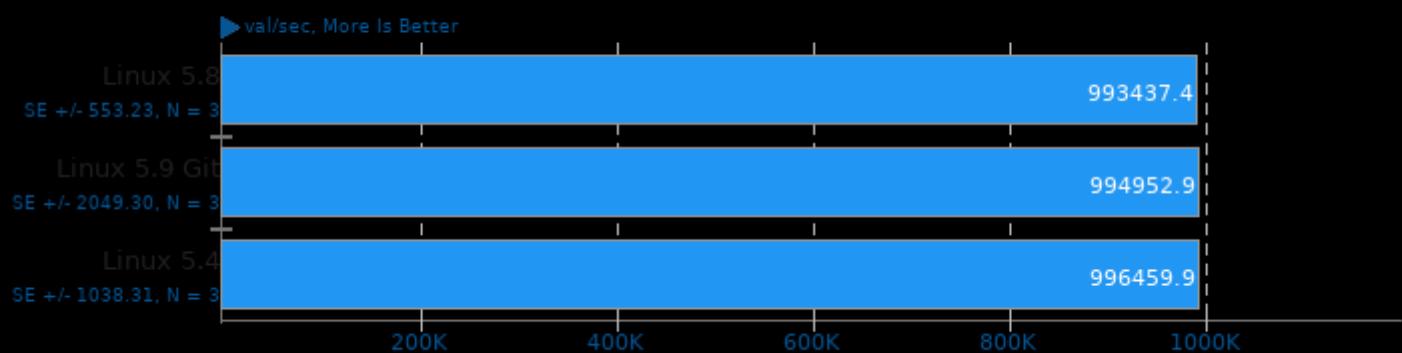
## InfluxDB 1.8.2

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



## InfluxDB 1.8.2

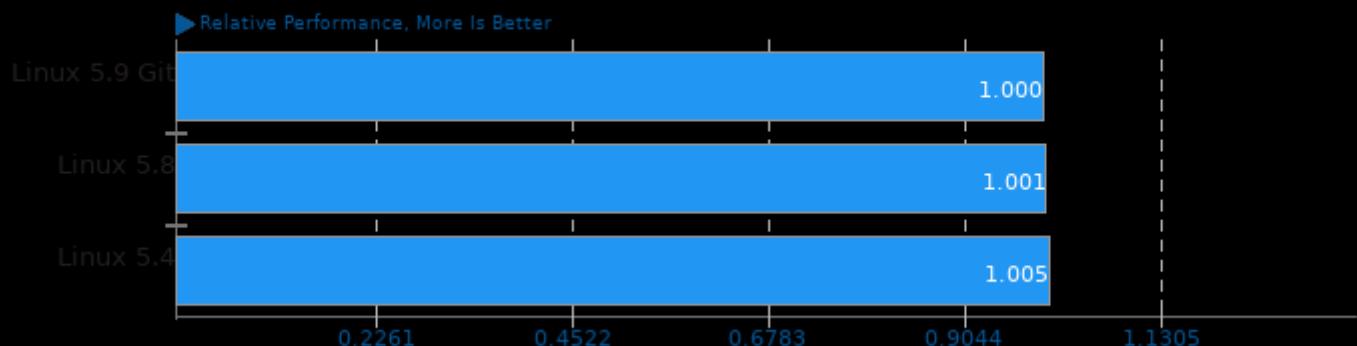
Concurrent Streams: 1024 - Batch Size: 10000 - Tags: 2,5000,1 - Points Per Series: 10000



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

### Geometric Mean Of AV1 Tests

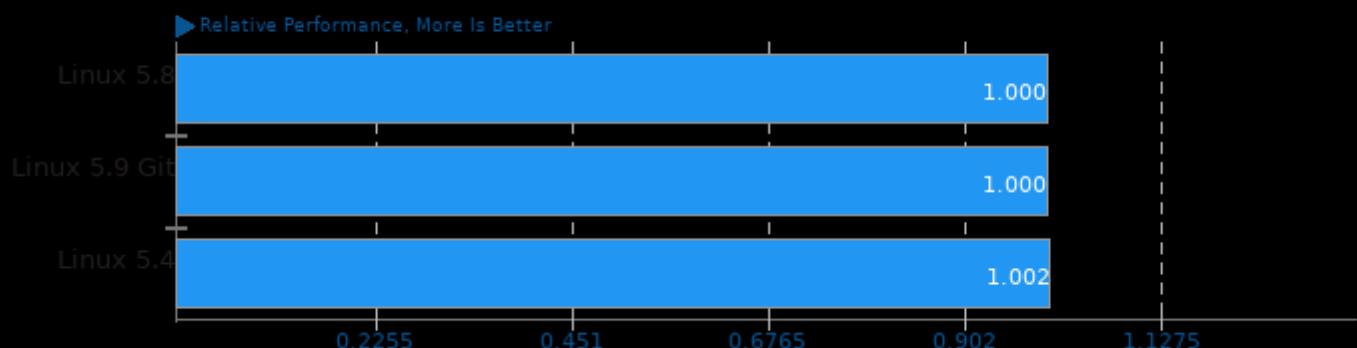
Result Composite - Xeon E3-1245 v5 Ubuntu Linux 5.4



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

### Geometric Mean Of Bioinformatics Tests

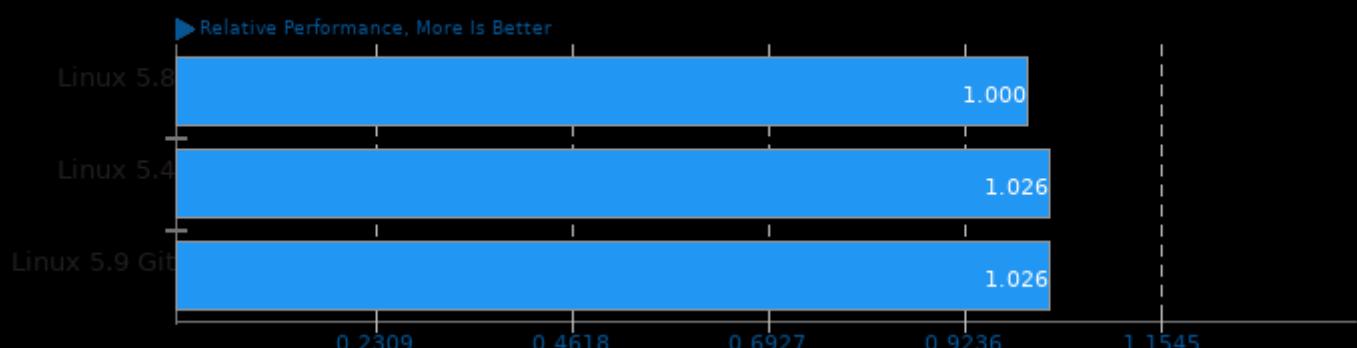
Result Composite - Xeon E3-1245 v5 Ubuntu Linux 5.4



Geometric mean based upon tests: pts/hmmer and pts/mafft

### Geometric Mean Of BLAS (Basic Linear Algebra Sub-Routine) Tests

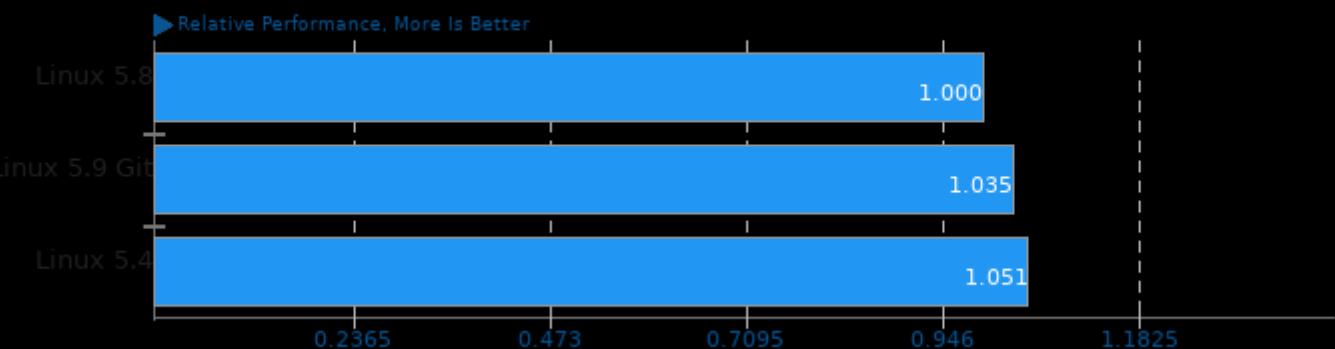
Result Composite - Xeon E3-1245 v5 Ubuntu Linux 5.4



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

**Geometric Mean Of Chess Test Suite**

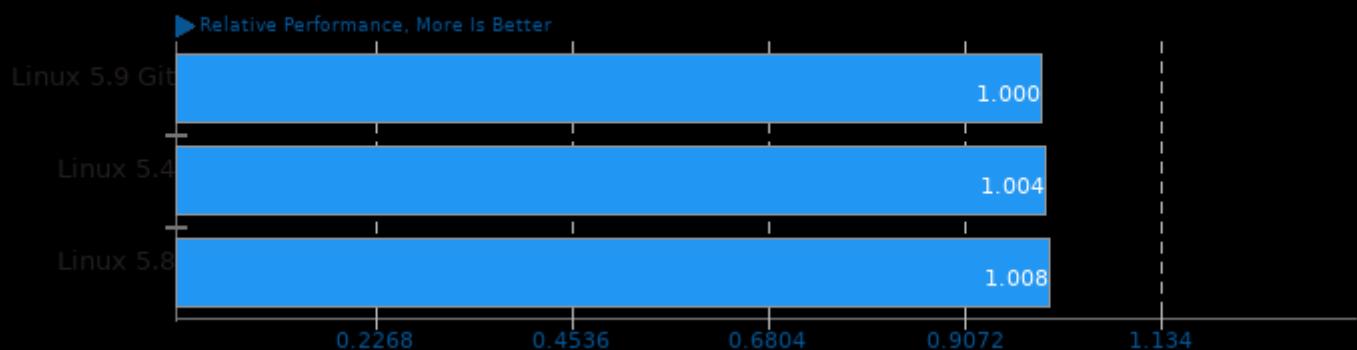
Result Composite - Xeon E3-1245 v5 Ubuntu Linux 5.4



Geometric mean based upon tests: pts/crafty, pts/tscp and pts/lczero

**Geometric Mean Of Timed Code Compilation Tests**

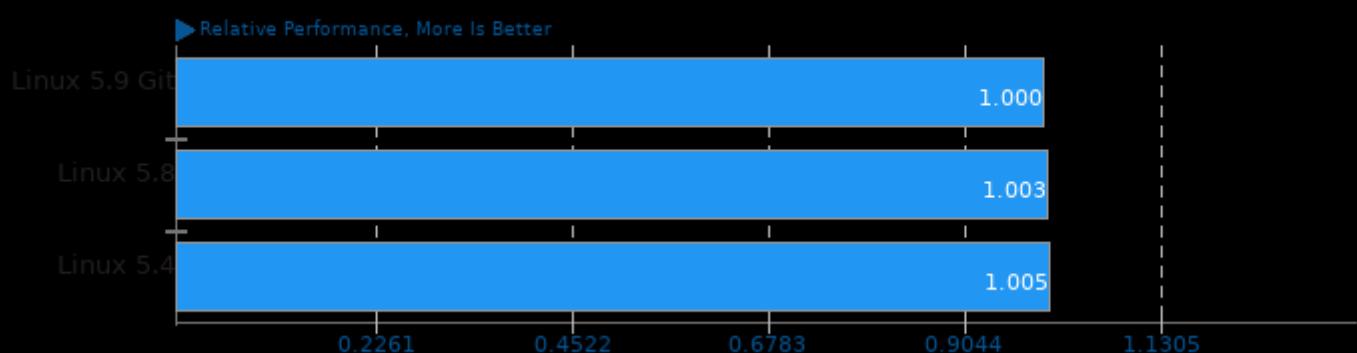
Result Composite - Xeon E3-1245 v5 Ubuntu Linux 5.4



Geometric mean based upon tests: pts/build-apache, pts/build-linux-kernel, pts/build-gdb and pts/build-llvm

**Geometric Mean Of C/C++ Compiler Tests**

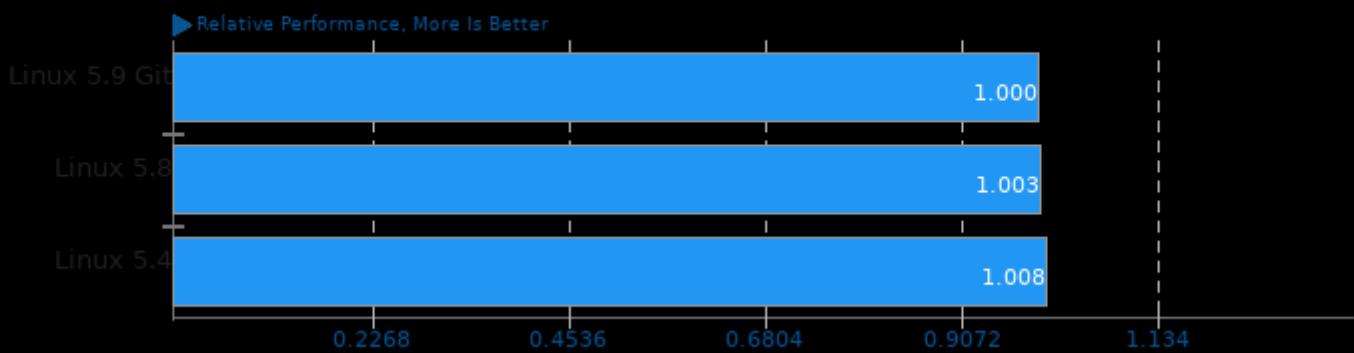
Result Composite - Xeon E3-1245 v5 Ubuntu Linux 5.4



Geometric mean based upon tests: pts/mafft, pts/tscp, pts/hmmer, pts/build-llvm, pts/compress-xz, pts/compress-zstd, pts/lammps, pts/aom-av1, pts/gromacs, pts/build-gdb, pts/build-apache and pts/keydb

### Geometric Mean Of Compression Tests

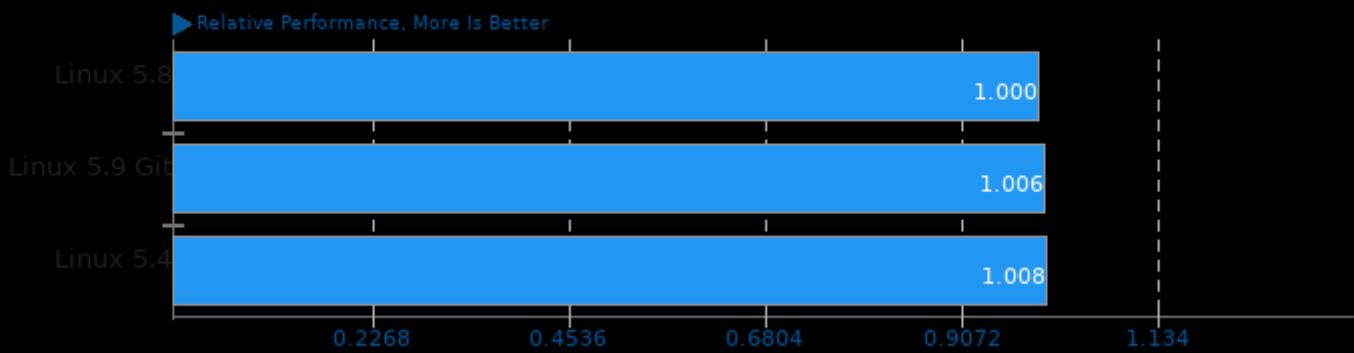
Result Composite - Xeon E3-1245 v5 Ubuntu Linux 5.4



Geometric mean based upon tests: pts/compress-zstd, pts/compress-xz and pts/system-decompress-gzip

### Geometric Mean Of CPU Massive Tests

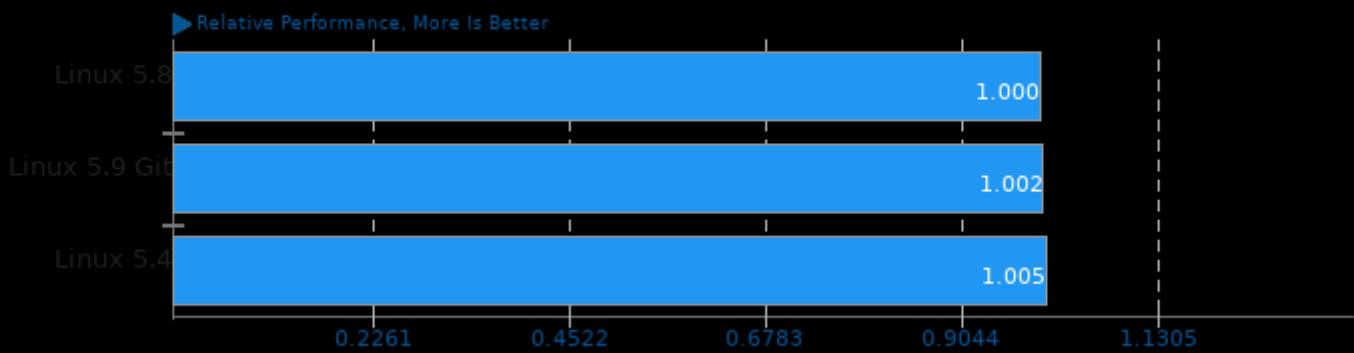
Result Composite - Xeon E3-1245 v5 Ubuntu Linux 5.4



Geometric mean based upon tests: pts/build-apache, pts/build-llvm, pts/build-linux-kernel, pts/compress-xz, pts/compress-zstd, pts/crafty, pts/dolby, pts/hint, pts/hmmer, pts/lammps, pts/lczero, pts/mafft, pts/onnednn, pts/namd, pts/rodinia, pts/blender and system/tesseract-ocr

### Geometric Mean Of Creator Workloads Tests

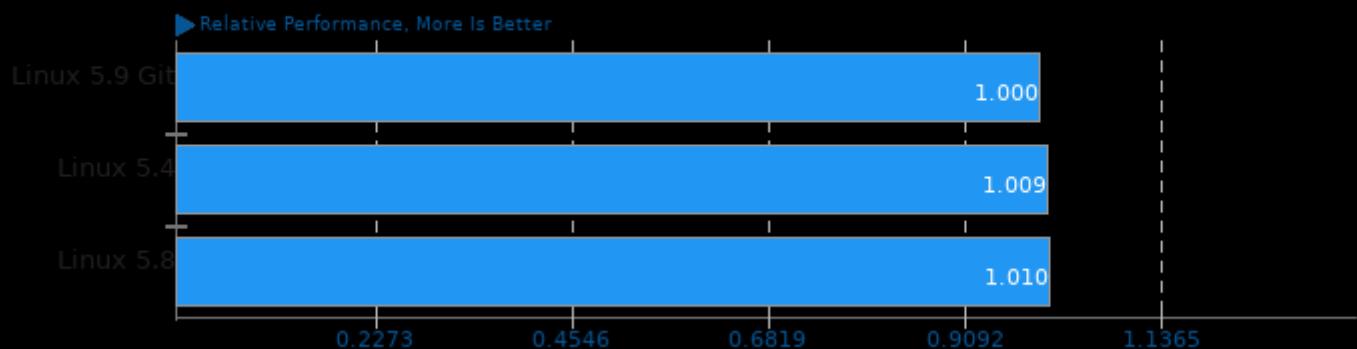
Result Composite - Xeon E3-1245 v5 Ubuntu Linux 5.4



Geometric mean based upon tests: pts/blender, system/tesseract-ocr, system/ocrmypdf, pts/aom-av1, pts/avifenc, pts/libraw, pts/webp, pts/montage, system/hugin, pts/onnednn, pts/astcenc, pts/espeak, pts/deepspeech and pts/rnnoise

**Geometric Mean Of Database Test Suite**

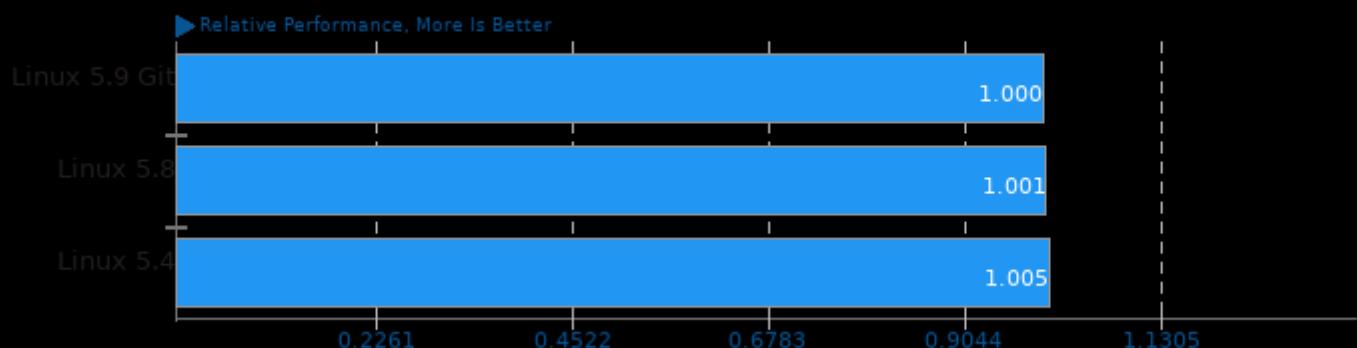
Result Composite - Xeon E3-1245 v5 Ubuntu Linux 5.4



Geometric mean based upon tests: pts/keydb, pts/couchdb and pts/influxdb

**Geometric Mean Of Encoding Tests**

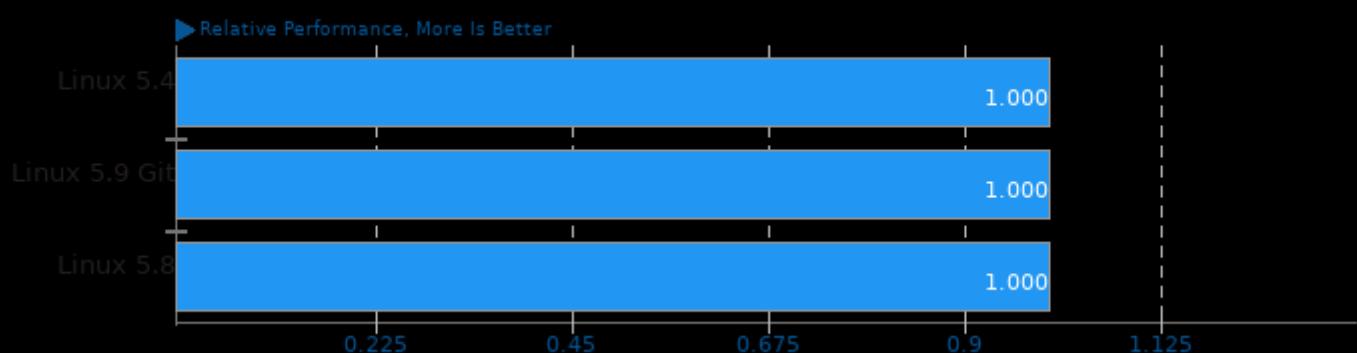
Result Composite - Xeon E3-1245 v5 Ubuntu Linux 5.4



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

**Geometric Mean Of Fortran Tests**

Result Composite - Xeon E3-1245 v5 Ubuntu Linux 5.4

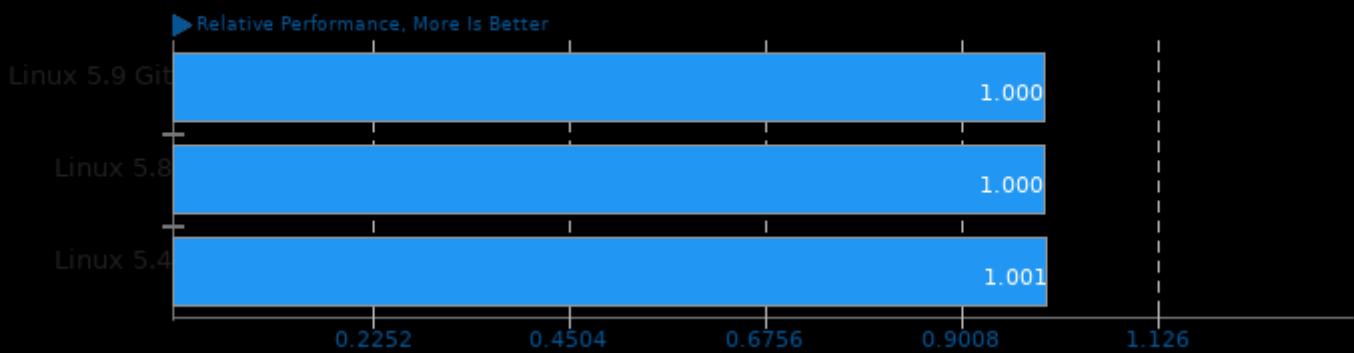


Geometric mean based upon tests: pts/dolfin, pts/ffte, pts/incompact3d, pts/mocassin and pts/lammps

## Xeon E3-1245 v5 Ubuntu Linux 5.4

### Geometric Mean Of Game Development Tests

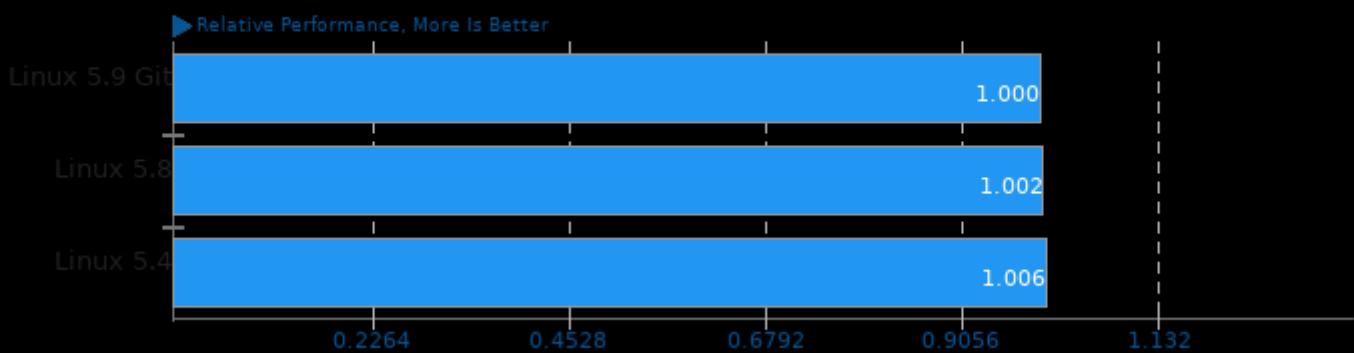
Result Composite - Xeon E3-1245 v5 Ubuntu Linux 5.4



Geometric mean based upon tests: pts/astcenc and pts/blender

### Geometric Mean Of Imaging Tests

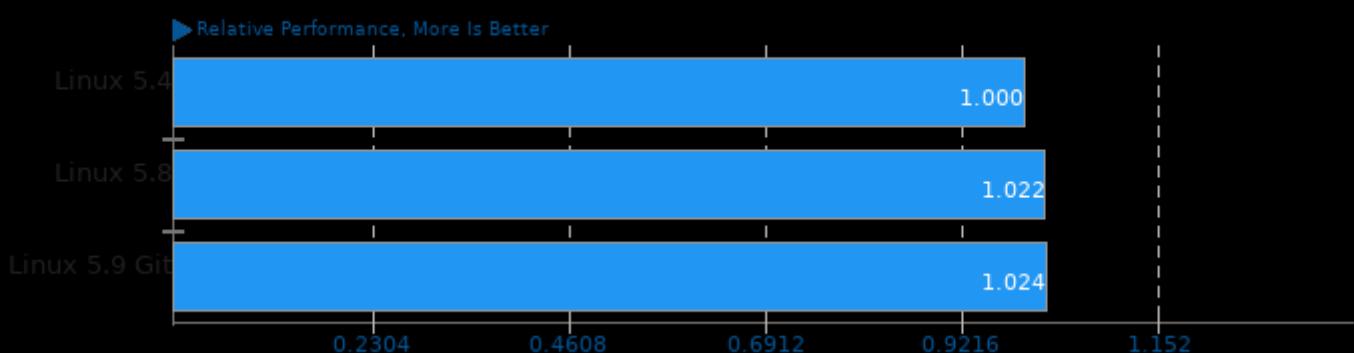
Result Composite - Xeon E3-1245 v5 Ubuntu Linux 5.4



Geometric mean based upon tests: pts/libraw, pts/webp, pts/montage, system/hugin and pts/avifenc

### Geometric Mean Of Machine Learning Tests

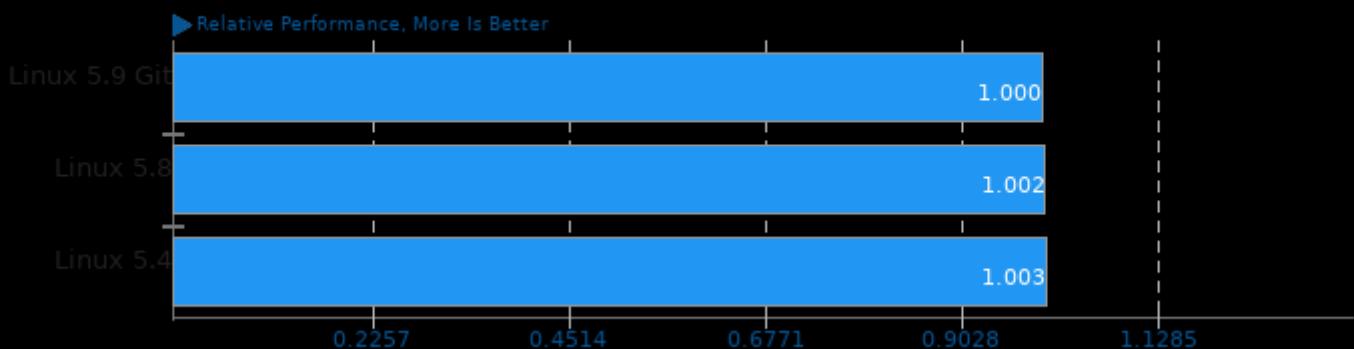
Result Composite - Xeon E3-1245 v5 Ubuntu Linux 5.4



Geometric mean based upon tests: pts/mnn, pts/ncnn, pts/tnn, pts/caffe, pts/ai-benchmark, pts/deepspeech, pts/ecp-candle, pts/rnnoise, pts/mlpack, pts/tensorflow-lite, pts/onednn and pts/lczero

**Geometric Mean Of Molecular Dynamics Tests**

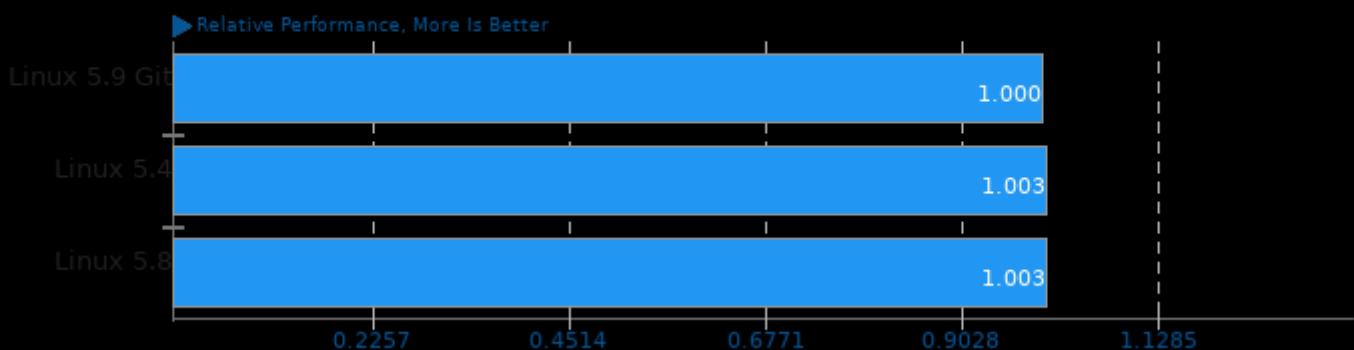
Result Composite - Xeon E3-1245 v5 Ubuntu Linux 5.4



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

**Geometric Mean Of MPI Benchmarks Tests**

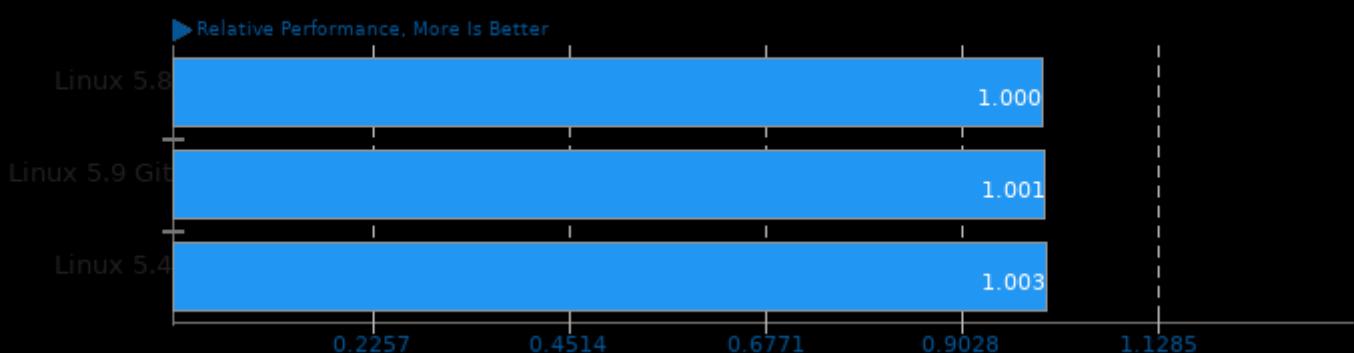
Result Composite - Xeon E3-1245 v5 Ubuntu Linux 5.4



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

**Geometric Mean Of Multi-Core Tests**

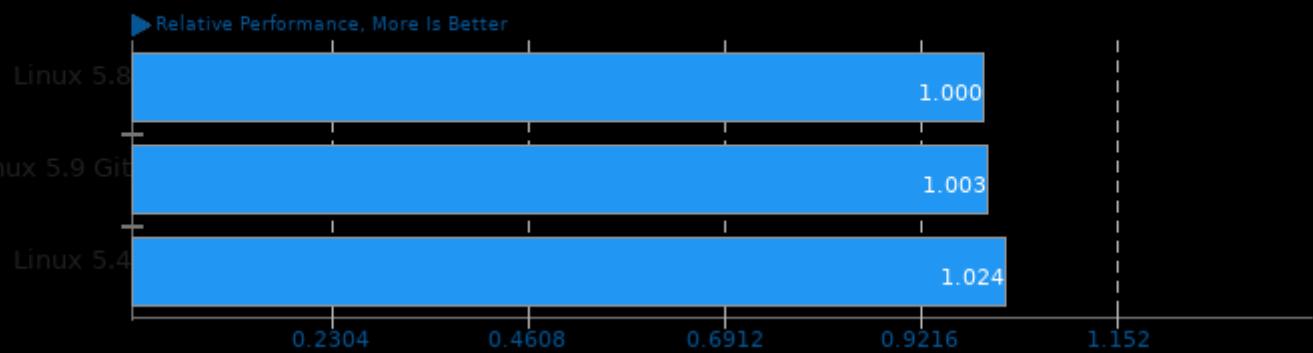
Result Composite - Xeon E3-1245 v5 Ubuntu Linux 5.4



Geometric mean based upon tests: pts/blender, pts/aom-av1, pts/avifenc, pts/rodinia, pts/namd, pts/onnednn, pts/lammps, pts/gromacs, pts/compress-zstd, pts/build-apache, pts/build-linux-kernel, pts/build-gdb and pts/build-llvm

**Geometric Mean Of NVIDIA GPU Compute Tests**

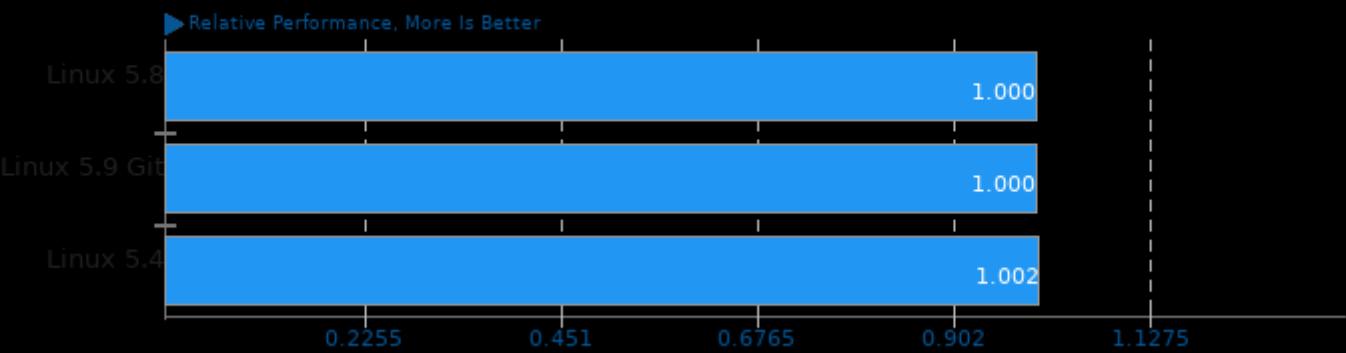
Result Composite - Xeon E3-1245 v5 Ubuntu Linux 5.4



Geometric mean based upon tests: pts/gromacs, pts/rodinia, pts/lczero, pts/blender, pts/caffe, pts/vkfft, pts/ncnn and pts/realsr-ncnn

**Geometric Mean Of OCR Tests**

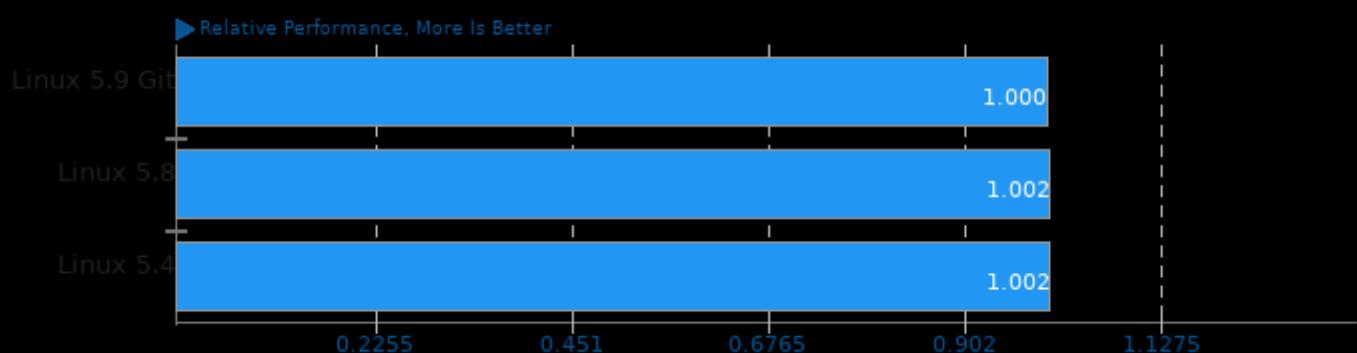
Result Composite - Xeon E3-1245 v5 Ubuntu Linux 5.4



Geometric mean based upon tests: system/tesseract-ocr and system/ocrmypdf

**Geometric Mean Of OpenMPI Tests**

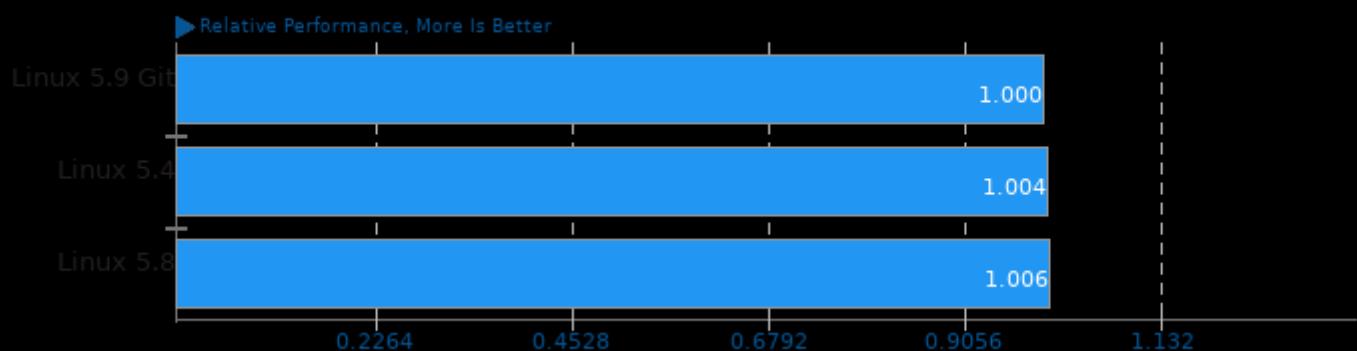
Result Composite - Xeon E3-1245 v5 Ubuntu Linux 5.4



Geometric mean based upon tests: pts/rodinia, pts/incompact3d, pts/mocassin, pts/lammps, pts/gromacs and pts/gpaw

## Geometric Mean Of Programmer / Developer System Benchmarks Tests

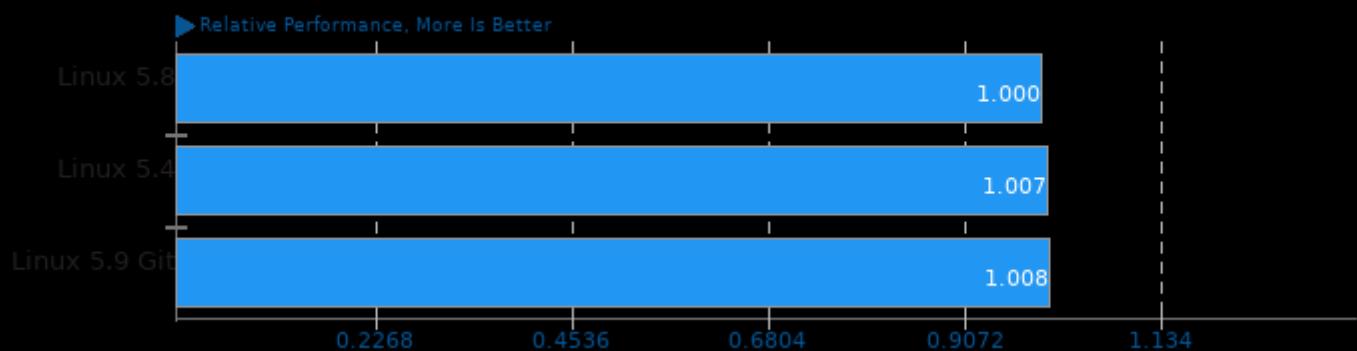
Result Composite - Xeon E3-1245 v5 Ubuntu Linux 5.4



Geometric mean based upon tests: pts/compress-zstd, pts/build-apache, pts/build-linux-kernel, pts/build-gdb and pts/build-llvm

## Geometric Mean Of Python Tests

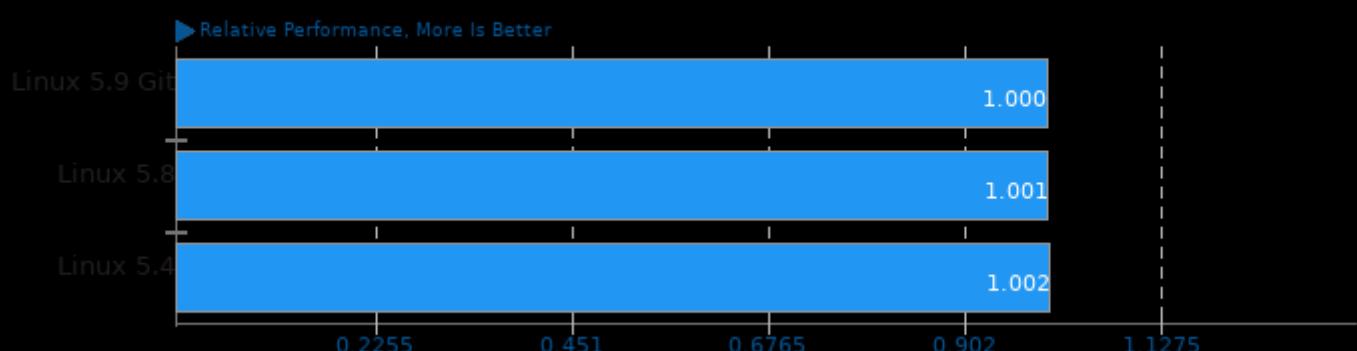
Result Composite - Xeon E3-1245 v5 Ubuntu Linux 5.4



Geometric mean based upon tests: pts/glmark2, pts/build-llvm, system/ocrmypdf, pts/caffe, pts/gpaw, pts/ecp-candle, pts/ai-benchmark and pts/mlpack

## Geometric Mean Of Scientific Computing Tests

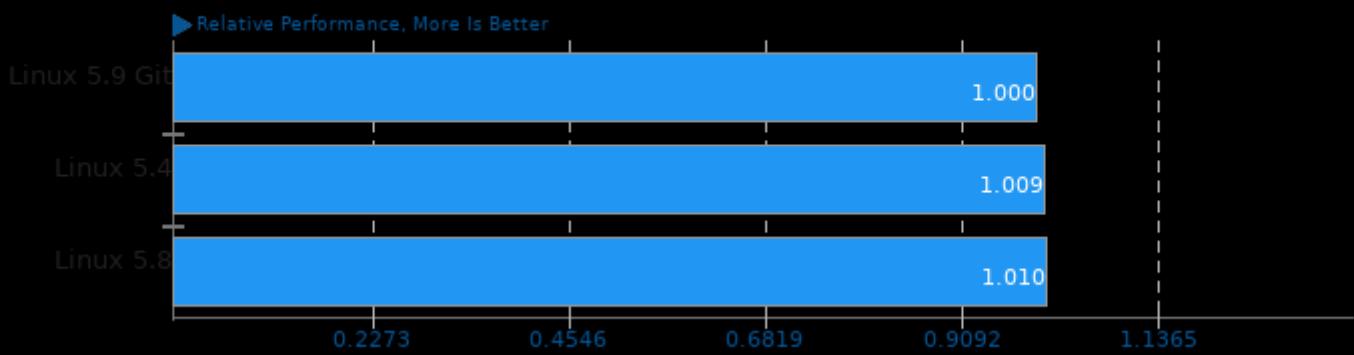
Result Composite - Xeon E3-1245 v5 Ubuntu Linux 5.4



Geometric mean based upon tests: pts/ffte, pts/hamd, pts/gromacs, pts/dolfin, pts/lammps, pts/incompact3d, pts/hmmer, pts/mafft, pts/gpaw, pts/mocassin and pts/kripke

### Geometric Mean Of Server Tests

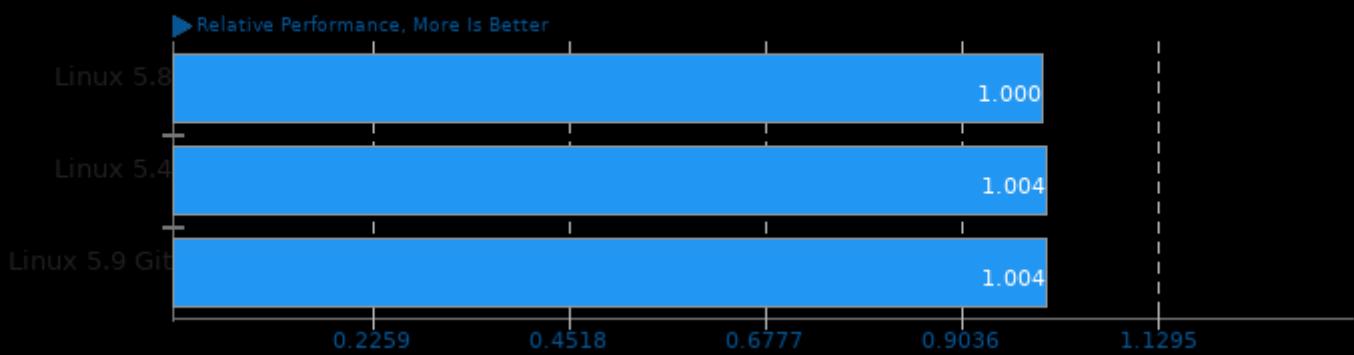
Result Composite - Xeon E3-1245 v5 Ubuntu Linux 5.4



Geometric mean based upon tests: pts/keydb, pts/couchdb and pts/influxdb

### Geometric Mean Of Server CPU Tests

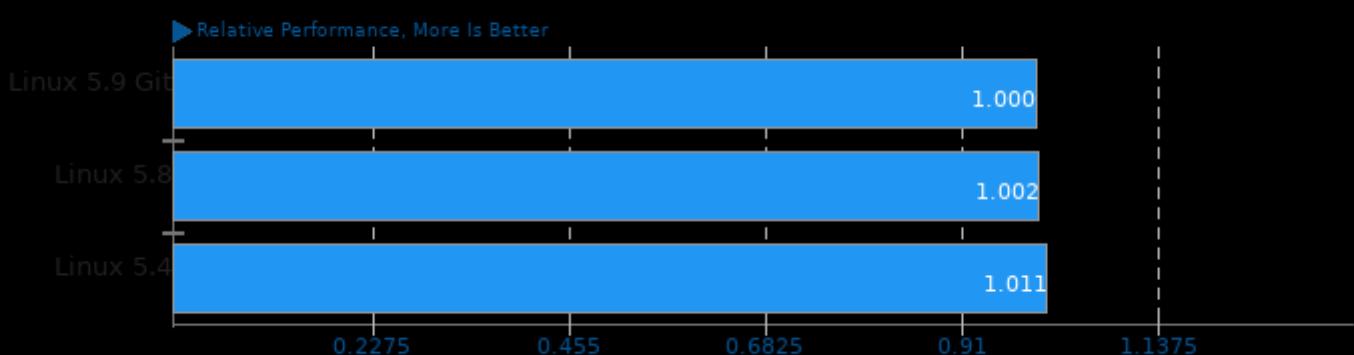
Result Composite - Xeon E3-1245 v5 Ubuntu Linux 5.4



Geometric mean based upon tests: pts/rodinia, pts/namd, pts/onnednn, pts/build-linux-kernel, pts/build-llvm, pts/compress-zstd, pts/blender and system/tesseract-ocr

### Geometric Mean Of Single-Threaded Tests

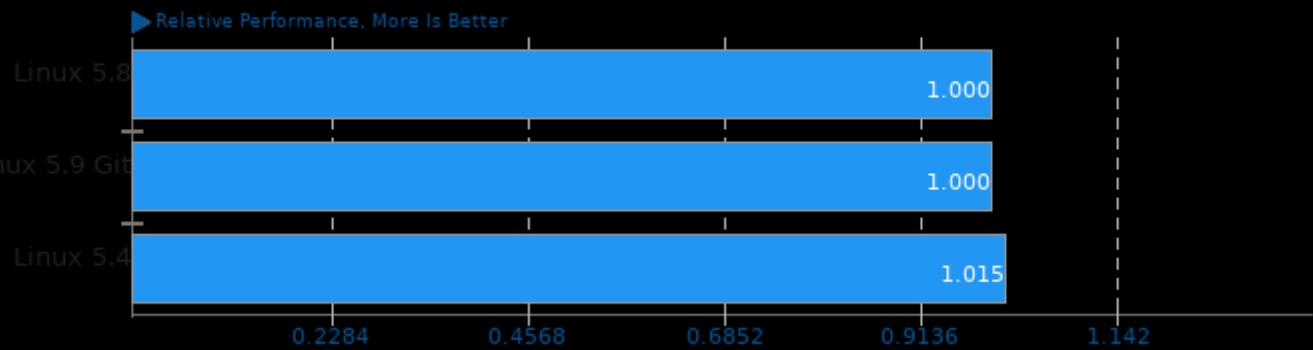
Result Composite - Xeon E3-1245 v5 Ubuntu Linux 5.4



Geometric mean based upon tests: pts/byte, pts/deepspeech, pts/espeak, pts/hint and system/tesseract-ocr

**Geometric Mean Of Speech Tests**

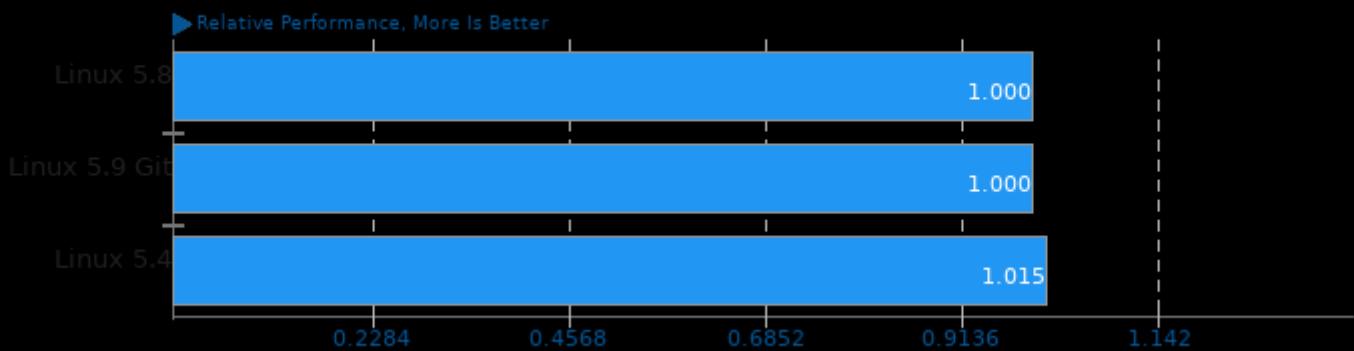
Result Composite - Xeon E3-1245 v5 Ubuntu Linux 5.4



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

**Geometric Mean Of Telephony Tests**

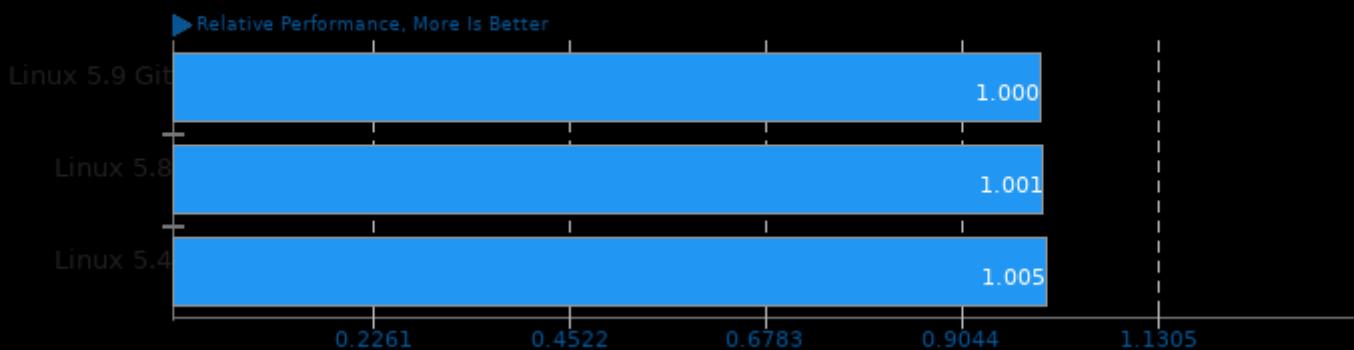
Result Composite - Xeon E3-1245 v5 Ubuntu Linux 5.4



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

**Geometric Mean Of Video Encoding Tests**

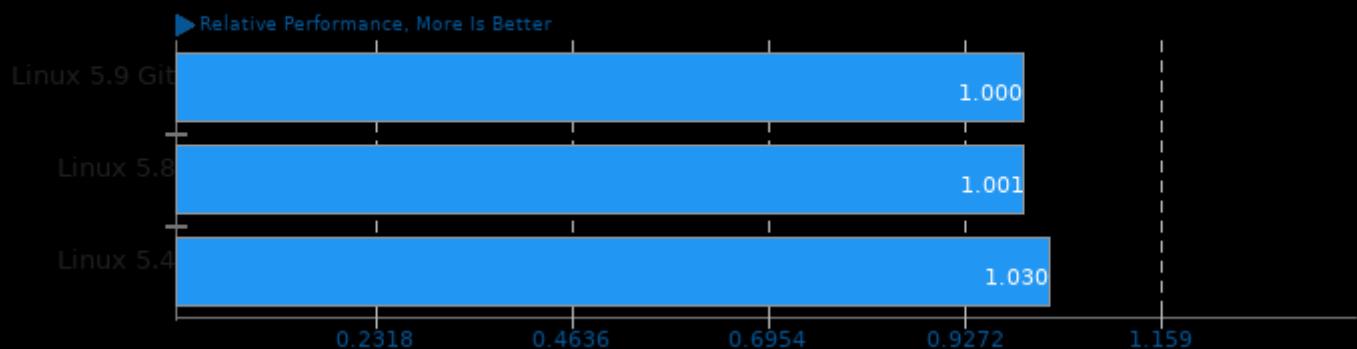
Result Composite - Xeon E3-1245 v5 Ubuntu Linux 5.4



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

**Geometric Mean Of Vulkan Compute Tests**

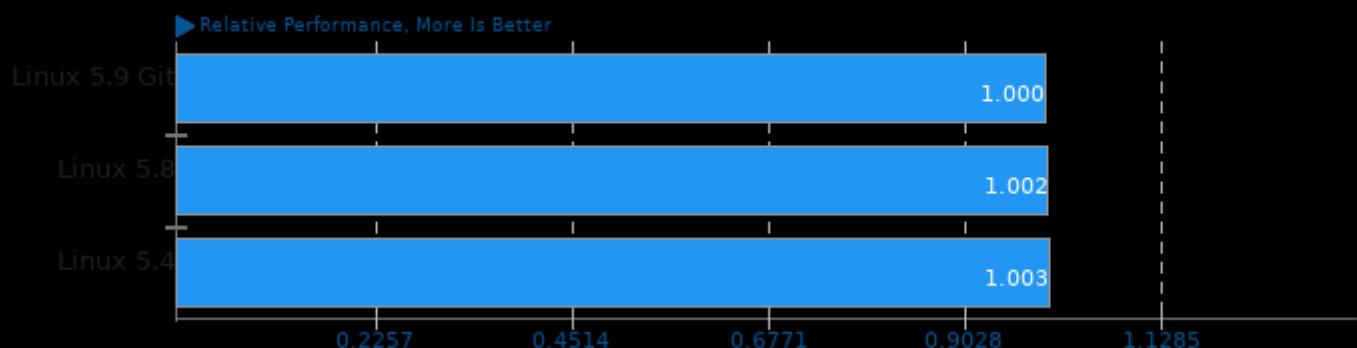
Result Composite - Xeon E3-1245 v5 Ubuntu Linux 5.4



Geometric mean based upon tests: pts/vkfft, pts/ncnn and pts/realsr-ncnn

**Geometric Mean Of Common Workstation Benchmarks Tests**

Result Composite - Xeon E3-1245 v5 Ubuntu Linux 5.4



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

*This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 17:47.*