



## EPYC 7601 1P

AMD EPYC 7601 32-Core testing with a TYAN B8026T70AE24HR (V1.02.B10 BIOS) and llvmpipe on Ubuntu 20.04 via the Phoronix Test Suite.

### Automated Executive Summary

*2 had the most wins, coming in first place for 42% of the tests.*

*Based on the geometric mean of all complete results, the fastest (1) was 1.01x the speed of the slowest (3). 2 was 0.998x the speed of 1 and 3 was 0.992x the speed of 2.*

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

*Redis (Test: LPOP) at 1.6x*

*LULESH at 1.068x*

*Redis (Test: GET) at 1.057x*

*Izbench (Test: Crush 0 - Process: Compression) at 1.056x*

*ONNX Runtime (Model: bert squad-10 - Device: OpenMP CPU) at 1.047x*

*Cpuminer-Opt (Algorithm: Quad SHA-256, Pyrite) at 1.04x*

*Redis (Test: SET) at 1.038x*

*Cpuminer-Opt (Algorithm: Triple SHA-256, Onecoin) at 1.037x*

*CloverLeaf (Lagrangian-Eulerian Hydrodynamics) at 1.034x*

ONNX Runtime (Model: super-resolution-10 - Device: OpenMP CPU) at 1.028x.

## Test Systems:

1

2

3

Processor: AMD EPYC 7601 32-Core @ 2.20GHz (32 Cores / 64 Threads), Motherboard: TYAN B8026T70AE24HR (V1.02.B10 BIOS), Chipset: AMD 17h, Memory: 126GB, Disk: 280GB INTEL SSDPE21D280GA, Graphics: llvmpipe, Monitor: VE228, Network: 2 x Broadcom NetXtreme BCM5720 2-port PCIe

OS: Ubuntu 20.04, Kernel: 5.4.0-58-generic (x86\_64), Desktop: GNOME Shell 3.36.4, Display Server: X Server 1.20.8, Display Driver: modesetting 1.20.8, OpenGL: 3.3 Mesa 20.0.8 (LLVM 10.0.0 128 bits), Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: Transparent Huge Pages: madvise

Compiler Notes: --build=x86\_64-linux-gnu --disable-vtable-verify --disable-werror --enable-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  
Processor Notes: Scaling Governor: acpi-cpufreq ondemand (Boost: Enabled) - CPU Microcode: 0x8001250

Python Notes: Python 3.8.5

Security Notes: itlb\_multihit: Not affected + 11tf: 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 STIBP: disabled RSB filling + srbds: Not affected + tsx\_async\_abort: Not affected

	1	2	3
<b>QuantLib (MFLOPS)</b>	<b>1782</b>	<b>1785</b>	1785
Normalized	99.83%	100%	99.99%
Standard Deviation	0.2%	0.1%	0.1%
<b>Etcpak - DXT1 (Mpx/s)</b>	<b>1325</b>	<b>1323</b>	1324
Normalized	100%	99.83%	99.91%
Standard Deviation	0.2%	0.2%	0.2%
<b>Etcpak - ETC1 (Mpx/s)</b>	184.756	<b>184.780</b>	<b>184.741</b>
Normalized	99.99%	100%	99.98%
Standard Deviation	0%	0%	0%
<b>Etcpak - ETC2 (Mpx/s)</b>	<b>118.009</b>	<b>118.053</b>	118.012
Normalized	99.96%	100%	99.97%
Standard Deviation	0%	0.1%	0%
<b>Etcpak - ETC1 + Dithering (Mpx/s)</b>	<b>174.312</b>	174.285	<b>174.270</b>
Normalized	100%	99.98%	99.98%
Standard Deviation	0%	0%	0%

<b>NAS Parallel Benchmarks - CG.C (Mop/s)</b>	<b>16966</b>	<b>16878</b>	16879
Normalized	100%	99.48%	99.49%
Standard Deviation	1%	0.5%	0.4%
<b>NAS Parallel Benchmarks - EP.C (Mop/s)</b>	1372	<b>1374</b>	<b>1371</b>
Normalized	99.91%	100%	99.82%
Standard Deviation	0.1%	0.1%	0.1%
<b>NAS Parallel Benchmarks - EP.D (Mop/s)</b>	1372	<b>1372</b>	<b>1370</b>
Normalized	99.98%	100%	99.84%
Standard Deviation	0%	0.1%	0.4%
<b>NAS Parallel Benchmarks - FT.C (Mop/s)</b>	<b>41171</b>	<b>41776</b>	41561
Normalized	98.55%	100%	99.48%
Standard Deviation	1.6%	0.4%	0.3%
<b>NAS Parallel Benchmarks - IS.D (Mop/s)</b>	<b>1288</b>	1284	<b>1283</b>
Normalized	100%	99.65%	99.56%
Standard Deviation	0.1%	0.1%	0.2%
<b>NAS Parallel Benchmarks - LU.C (Mop/s)</b>	<b>73405</b>	<b>73256</b>	73360
Normalized	100%	99.8%	99.94%
Standard Deviation	0.2%	0.1%	0.1%
<b>NAS Parallel Benchmarks - MG.C (Mop/s)</b>	<b>41104</b>	41407	<b>41726</b>
Normalized	98.51%	99.24%	100%
Standard Deviation	1.2%	1.4%	0.2%
<b>CloverLeaf - L.E.H (sec)</b>	32.92	<b>32.00</b>	<b>33.08</b>
Normalized	97.21%	100%	96.74%
Standard Deviation	4.4%	2.1%	2.6%
<b>Izbench - XZ 0 - Compression (MB/s)</b>	27	27	27
<b>Izbench - XZ 0 - Decompression (MB/s)</b>	<b>83</b>	<b>84</b>	<b>84</b>
Normalized	98.81%	100%	100%
Standard Deviation			0.7%
<b>Izbench - Zstd 1 - Compression (MB/s)</b>	405	<b>403</b>	<b>406</b>
Normalized	99.75%	99.26%	100%
Standard Deviation	0.7%	0.7%	
<b>Izbench - Zstd 1 - Decompression (MB/s)</b>	<b>1203</b>	<b>1203</b>	<b>1205</b>
Normalized	99.83%	99.83%	100%
Standard Deviation			0.3%
<b>Izbench - Zstd 8 - Compression (MB/s)</b>	<b>74</b>	<b>74</b>	<b>73</b>
Normalized	100%	100%	98.65%
Standard Deviation	1.6%	1.6%	0.8%
<b>Izbench - Zstd 8 - Decompression (MB/s)</b>	<b>1344</b>	<b>1354</b>	1346
Normalized	99.26%	100%	99.41%
Standard Deviation	0.3%	0.9%	0.2%
<b>Izbench - Crush 0 - Compression (MB/s)</b>	<b>71</b>	<b>75</b>	73
Normalized	94.67%	100%	97.33%
Standard Deviation	1.6%		
<b>Izbench - Crush 0 - Decompression (MB/s)</b>	<b>347</b>	348	<b>349</b>
Normalized	99.43%	99.71%	100%
Standard Deviation	0.2%		
<b>Izbench - Brotli 0 - Compression (MB/s)</b>	<b>368</b>	<b>368</b>	<b>371</b>
Normalized	99.19%	99.19%	100%
Standard Deviation	0.5%	0.3%	0.3%
<b>Izbench - Brotli 0 - Decompression (MB/s)</b>	432	432	432
Standard Deviation			0.1%
<b>Izbench - Brotli 2 - Compression (MB/s)</b>	<b>150</b>	<b>151</b>	<b>151</b>
Normalized	99.34%	100%	100%
Standard Deviation	0.8%	0.4%	0.8%
<b>Izbench - Brotli 2 - Decompression (MB/s)</b>	504	<b>505</b>	<b>503</b>

	Normalized	99.8%	100%	99.6%
	Standard Deviation	0.2%		0.3%
<b>Izbench - Libdeflate 1 - Compression (MB/s)</b>		183	<b>184</b>	<b>181</b>
	Normalized	99.46%	100%	98.37%
	Standard Deviation	0.6%	1.4%	0.6%
<b>Izbench - Libdeflate 1 - Decompression</b>		<b>894</b>	<b>902</b>	<b>894</b>
	Normalized	99.11%	100%	99.11%
	Standard Deviation		0.1%	0.4%
<b>Algebraic Multi-Grid Benchmark (Figure Of Merit)</b>		<b>849591100</b>	847575733	<b>828037633</b>
	Normalized	100%	99.76%	97.46%
	Standard Deviation	0.3%	0%	0.7%
<b>QMCPACK - simple-H2O (Execution Time - sec)</b>		43.733	<b>43.689</b>	<b>49.375</b>
	Normalized	99.9%	100%	88.48%
	Standard Deviation	0.3%	0.7%	17.2%
<b>OpenFOAM - Motorbike 30M (sec)</b>		<b>42.20</b>	<b>42.59</b>	42.52
	Normalized	100%	99.08%	99.25%
	Standard Deviation	0.7%	1.3%	1%
<b>OpenFOAM - Motorbike 60M (sec)</b>		<b>330.57</b>	330.78	<b>331.04</b>
	Normalized	100%	99.94%	99.86%
	Standard Deviation	0.1%	0%	0%
<b>Quantum ESPRESSO - AUSURF112 (sec)</b>		1983	<b>1979</b>	<b>2003</b>
	Normalized	99.77%	100%	98.81%
	Standard Deviation	0.6%	0.1%	1.9%
<b>LULESH (z/s)</b>		<b>13537</b>	14446	<b>14461</b>
	Normalized	93.61%	99.9%	100%
	Standard Deviation	1.4%	0.3%	0.1%
<b>dav1d - Chimera 1080p (FPS)</b>		<b>382.43</b>	385.23	<b>385.43</b>
	Normalized	99.22%	99.95%	100%
	Standard Deviation	0.8%	0.5%	0.3%
<b>dav1d - Summer Nature 4K (FPS)</b>		177.53	<b>178.42</b>	<b>177.44</b>
	Normalized	99.5%	100%	99.45%
	Standard Deviation	0.8%	0.9%	2.1%
<b>dav1d - S.N.1 (FPS)</b>		<b>402.86</b>	<b>407.74</b>	404.38
	Normalized	98.8%	100%	99.18%
	Standard Deviation	0.3%	0.3%	1.2%
<b>dav1d - C.1.1.b (FPS)</b>		<b>90.90</b>	<b>91.06</b>	90.99
	Normalized	99.82%	100%	99.92%
	Standard Deviation	0.2%	0.4%	0.4%
<b>rav1e - 1 (FPS)</b>		<b>0.264</b>	0.262	<b>0.261</b>
	Normalized	100%	99.24%	98.86%
	Standard Deviation	0.6%	0.4%	0.6%
<b>rav1e - 5 (FPS)</b>		<b>0.784</b>	0.782	<b>0.780</b>
	Normalized	100%	99.74%	99.49%
	Standard Deviation	0.7%	0.4%	0.4%
<b>rav1e - 6 (FPS)</b>		<b>1.031</b>	<b>1.023</b>	1.026
	Normalized	100%	99.22%	99.52%
	Standard Deviation	0.4%	0.3%	0.4%
<b>rav1e - 10 (FPS)</b>		<b>2.306</b>	2.305	<b>2.291</b>
	Normalized	100%	99.96%	99.35%
	Standard Deviation	1.9%	0.4%	0.3%

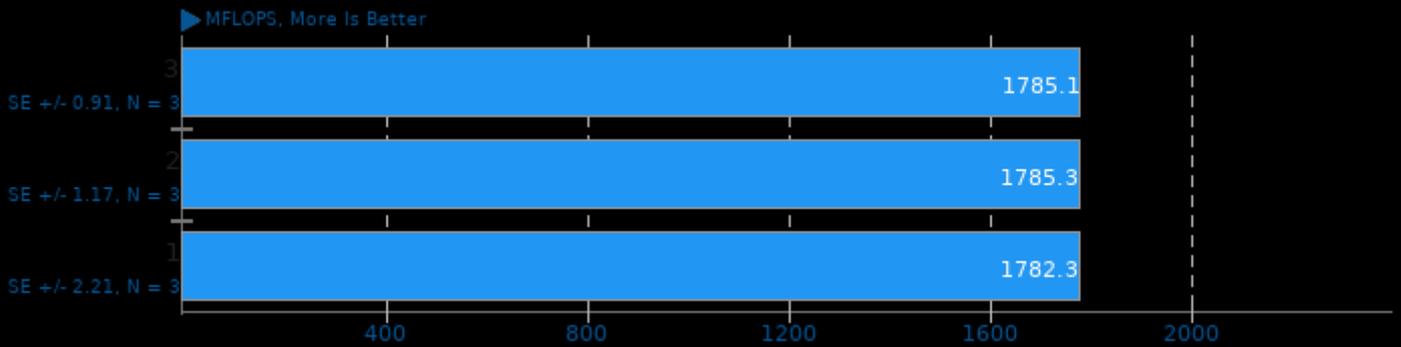
Timed Godot Game Engine Compilation - Time To Compile (sec)	94.315	94.889	94.457
Normalized	100%	99.4%	99.85%
Standard Deviation	0.5%	0.5%	0.4%
Gcrypt Library (sec)	287.991	287.019	290.017
Normalized	99.66%	100%	98.97%
Standard Deviation	0.5%	0.2%	0.5%
Google SynthMark - VoiceMark_100 (Voices)	512.067	512.075	512.071
Normalized	100%	100%	100%
Standard Deviation	0%	0%	0%
Cpuminer-Opt - Magi (kH/s)	885.86	884.41	885.83
Normalized	100%	99.84%	100%
Standard Deviation	0.7%	0.1%	5.5%
Cpuminer-Opt - x25x (kH/s)	611.10	622.78	614.97
Normalized	98.12%	100%	98.75%
Standard Deviation	0.4%	2.8%	1.1%
Cpuminer-Opt - Deepcoin (kH/s)	13656	13676	13675
Normalized	99.85%	100%	99.99%
Standard Deviation	4.8%	5.3%	6.1%
Cpuminer-Opt - Ringcoin (kH/s)	2943	2940	2896
Normalized	100%	99.92%	98.4%
Standard Deviation	2.2%	3%	0.6%
Cpuminer-Opt - Blake-2 S (kH/s)	300977	297184	301550
Normalized	99.81%	98.55%	100%
Standard Deviation	0.4%	2.8%	1.1%
Cpuminer-Opt - Garlicoin (kH/s)	3569	3571	3566
Normalized	99.94%	100%	99.87%
Standard Deviation	0.1%	0.1%	0.1%
Cpuminer-Opt - Skeincoin (kH/s)	87560	86710	87403
Normalized	100%	99.03%	99.82%
Standard Deviation	2.7%	1.5%	3%
Cpuminer-Opt - Myriad-Groestl (kH/s)	8255	8260	8233
Normalized	99.94%	100%	99.68%
Standard Deviation	0.1%	0.8%	0.4%
Cpuminer-Opt - LBC, LBRY Credits (kH/s)	34050	33653	34318
Normalized	99.22%	98.06%	100%
Standard Deviation	1.5%	1.6%	2.9%
Cpuminer-Opt - Q.S.2.P (kH/s)	102275	99320	103261
Normalized	99.05%	96.18%	100%
Standard Deviation	3.3%	2.9%	4.3%
Cpuminer-Opt - T.S.2.O (kH/s)	128363	131067	126447
Normalized	97.94%	100%	96.48%
Standard Deviation	1.3%	2%	2.1%
FinanceBench - Repo OpenMP (ms)	67977	68278	68716
Normalized	100%	99.56%	98.92%
Standard Deviation	1%	1.5%	1.4%
FinanceBench - Bonds OpenMP (ms)	121717	123559	122119
Normalized	100%	98.51%	99.67%
Standard Deviation	0.3%	1.6%	0.1%
Cryptsetup - PBKDF2-sha512 (Iterations/sec)	1178623	1182662	1183981
Normalized	99.55%	99.89%	100%
Standard Deviation	0.3%	0.9%	0.7%
Cryptsetup - PBKDF2-whirlpool	514008	512334	512336
Normalized	100%	99.67%	99.67%
Standard Deviation	0.2%	0.1%	0.3%

<b>Cryptsetup - A.X.2.E (MiB/s)</b>	<b>1450</b>	1454	<b>1457</b>
Normalized	99.53%	99.78%	100%
Standard Deviation	0.1%	0.3%	0.3%
<b>Cryptsetup - A.X.2.D (MiB/s)</b>	1458	<b>1457</b>	<b>1460</b>
Normalized	99.9%	99.81%	100%
Standard Deviation	0.5%	0.3%	0.4%
<b>Cryptsetup - S.X.2.E (MiB/s)</b>	<b>308.5</b>	309.6	<b>309.7</b>
Normalized	99.61%	99.97%	100%
Standard Deviation	0.6%	0%	0%
<b>Cryptsetup - S.X.2.D (MiB/s)</b>	307.1	<b>306.0</b>	<b>307.2</b>
Normalized	99.97%	99.61%	100%
Standard Deviation	0%	0.6%	0%
<b>Cryptsetup - T.X.2.E (MiB/s)</b>	<b>317.4</b>	<b>318.8</b>	<b>318.6</b>
Normalized	99.56%	100%	99.94%
Standard Deviation	0.5%	0%	0.2%
<b>Cryptsetup - T.X.2.D (MiB/s)</b>	317.8	<b>318.1</b>	<b>317.7</b>
Normalized	99.91%	100%	99.87%
Standard Deviation	0.2%	0%	0.2%
<b>Cryptsetup - A.X.5.E (MiB/s)</b>	1290	<b>1287</b>	<b>1292</b>
Normalized	99.89%	99.67%	100%
Standard Deviation	0.4%	0.2%	0.3%
<b>Cryptsetup - A.X.5.D (MiB/s)</b>	1289	<b>1286</b>	<b>1290</b>
Normalized	99.93%	99.71%	100%
Standard Deviation	0.4%	0.2%	0.3%
<b>Cryptsetup - S.X.5.E (MiB/s)</b>	<b>309.6</b>	<b>309.7</b>	
Normalized	99.97%	100%	
Standard Deviation	0%		
<b>Cryptsetup - T.X.5.E (MiB/s)</b>	318.6	<b>318.8</b>	<b>318.4</b>
Normalized	99.94%	100%	99.87%
Standard Deviation	0.1%	0%	0.2%
<b>Cryptsetup - T.X.5.D (MiB/s)</b>	317.6	<b>317.9</b>	<b>317.5</b>
Normalized	99.91%	100%	99.87%
Standard Deviation	0.2%	0%	0.2%
<b>Cryptsetup - S.X.5.D (MiB/s)</b>	307.2	<b>307.3</b>	<b>307.1</b>
Normalized	99.97%	100%	99.93%
Standard Deviation	0%		0%
<b>Redis - LPOP (Reqs/sec)</b>	<b>1388191</b>	873606	<b>867491</b>
Normalized	100%	62.93%	62.49%
Standard Deviation	3.1%	0.9%	1.8%
<b>Redis - SADD (Reqs/sec)</b>	1135678	<b>1139687</b>	<b>1131243</b>
Normalized	99.65%	100%	99.26%
Standard Deviation	3%	2.9%	2.5%
<b>Redis - LPUSH (Reqs/sec)</b>	<b>832369</b>	824142	<b>824028</b>
Normalized	100%	99.01%	99%
Standard Deviation	0.8%	1.3%	2.5%
<b>Redis - GET (Reqs/sec)</b>	<b>1335123</b>	<b>1263657</b>	1267016
Normalized	100%	94.65%	94.9%
Standard Deviation	2.6%	2.4%	1.6%
<b>Redis - SET (Reqs/sec)</b>	<b>980471</b>	<b>1017686</b>	988832
Normalized	96.34%	100%	97.16%
Standard Deviation	1.8%	2.7%	0.7%
<b>Mobile Neural Network - SqueezeNetV1.0</b>	<b>10.238</b>	10.157	<b>10.103</b>
Normalized	98.68%	99.47%	100%
Standard Deviation	1.7%	2.2%	2.4%
<b>Mobile Neural Network - resnet-v2-50 (ms)</b>	41.206	<b>41.666</b>	<b>41.129</b>

	Normalized	99.81%	98.71%	100%
	Standard Deviation	1.1%	1.4%	2.1%
<b>Mobile Neural Network - MobileNetV2_224</b>		<b>6.705</b>	<b>6.832</b>	6.716
	Normalized	100%	98.14%	99.84%
	Standard Deviation	1.2%	3.7%	2.1%
<b>Mobile Neural Network - mobilenet-v1-1.0</b>		<b>4.512</b>	<b>4.696</b>	4.636
	Normalized	100%	96.08%	97.33%
	Standard Deviation	2.6%	8.1%	5%
<b>Mobile Neural Network - inception-v3 (ms)</b>		<b>52.622</b>	<b>53.273</b>	52.656
	Normalized	100%	98.78%	99.94%
	Standard Deviation	1.9%	2.9%	0.7%
<b>TNN - CPU - MobileNet v2 (ms)</b>		368.144	<b>367.921</b>	<b>369.936</b>
	Normalized	99.94%	100%	99.46%
	Standard Deviation	0.2%	0.2%	0.5%
<b>TNN - CPU - SqueezeNet v1.1 (ms)</b>		<b>339.009</b>	<b>340.009</b>	339.898
	Normalized	100%	99.71%	99.74%
	Standard Deviation	0.1%	0.6%	0.3%
<b>ONNX Runtime - yolov4 - OpenMP CPU (Inferences/min)</b>		<b>164</b>	<b>166</b>	<b>164</b>
	Normalized	98.8%	100%	98.8%
	Standard Deviation	1.4%	2.7%	1.9%
<b>ONNX Runtime - bert squad-10 - OpenMP CPU (Inferences/min)</b>		<b>192</b>	199	<b>201</b>
	Normalized	95.52%	99%	100%
	Standard Deviation	4.4%	1.8%	2.1%
<b>ONNX Runtime - fcn-resnet101-11 - OpenMP CPU (Inferences/min)</b>		<b>50</b>	<b>50</b>	<b>49</b>
	Normalized	100%	100%	98%
	Standard Deviation	1%		1.5%
<b>ONNX Runtime - shufflenet-v2-10 - OpenMP CPU (Inferences/min)</b>		<b>4972</b>	<b>5075</b>	4991
	Normalized	97.97%	100%	98.34%
	Standard Deviation	3%	1.3%	1.9%
<b>ONNX Runtime - super-resolution-10 - OpenMP CPU (Inferences/min)</b>		<b>1735</b>	<b>1687</b>	1689
	Normalized	100%	97.23%	97.35%
	Standard Deviation	0.4%	2.1%	1.2%
<b>GnuPG - 2.7.S.F.E (sec)</b>		94.069	<b>93.765</b>	<b>94.920</b>
	Normalized	99.68%	100%	98.78%
	Standard Deviation	0.5%	0.3%	2.5%
<b>Unpacking Firefox - firefox-84.0.source.tar.xz (sec)</b>		26.885	<b>26.843</b>	<b>26.986</b>
	Normalized	99.84%	100%	99.47%
	Standard Deviation	0.2%	0.2%	0.3%
<b>Kripke (Throughput FoM)</b>		<b>40533015</b>	39914088	<b>37632138</b>
	Normalized	100%	98.47%	92.84%
	Standard Deviation	14.3%	11.8%	18.3%
<b>ASKAP - tConvolve MT - Gridding (Million Grid Points/sec)</b>		<b>2001</b>	1926	<b>1806</b>
	Normalized	100%	96.26%	90.25%
	Standard Deviation	24.8%	14.5%	2.7%
<b>ASKAP - tConvolve MT - Degriding (Million Grid Points/sec)</b>		<b>4536</b>	4606	<b>4700</b>
	Normalized	96.51%	97.99%	100%

	Standard Deviation	8.7%	6.6%	1.7%
<b>ASKAP - tConvolve MPI - Degriding</b>		<b>7306</b>	7340	<b>7340</b>
	Normalized	99.54%	100%	100%
	Standard Deviation	1.1%	0%	0.7%
<b>ASKAP - tConvolve MPI - Gridding</b>		<b>6400</b>	6400	<b>6387</b>
	Normalized	100%	100%	99.8%
	Standard Deviation	0.6%	0%	0.4%
<b>ASKAP - tConvolve OpenMP - Gridding</b>		<b>869.198</b>	<b>931.910</b>	886.616
	(Million Grid Points/sec)			
	Normalized	93.27%	100%	95.14%
	Standard Deviation	0.7%	7.8%	1.2%
<b>ASKAP - tConvolve OpenMP - Degriding</b>		1917	<b>2158</b>	<b>1575</b>
	(Million Grid Points/sec)			
	Normalized	88.8%	100%	72.97%
	Standard Deviation	8.9%	42.3%	4.9%
<b>Cryptsetup - PBKDF2-sha512 (MiB/s)</b>				1184446
	Standard Deviation			0.9%
<b>Cryptsetup - PBKDF2-whirlpool (MiB/s)</b>				512001
	Standard Deviation			0.2%

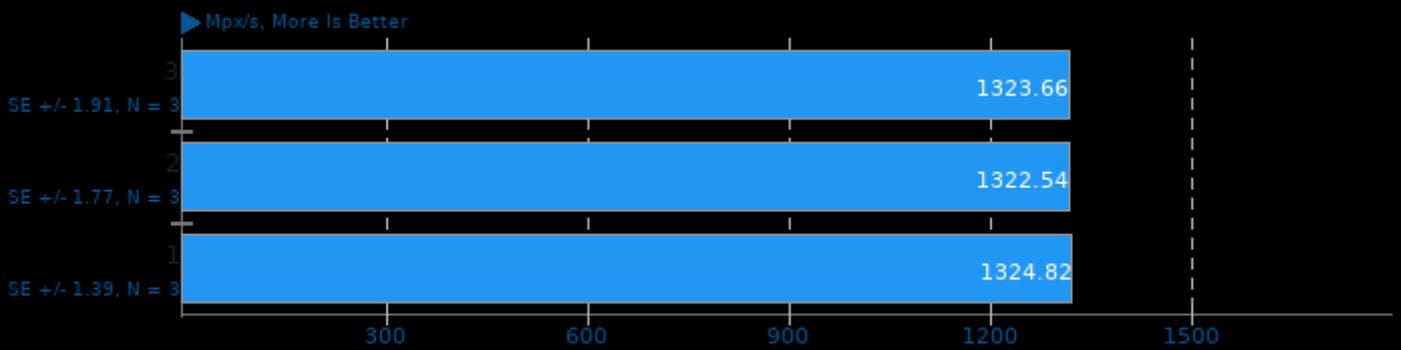
### QuantLib 1.21



1. (CXX) g++ options: -O3 -march=native -rdynamic

### Etcpak 0.7

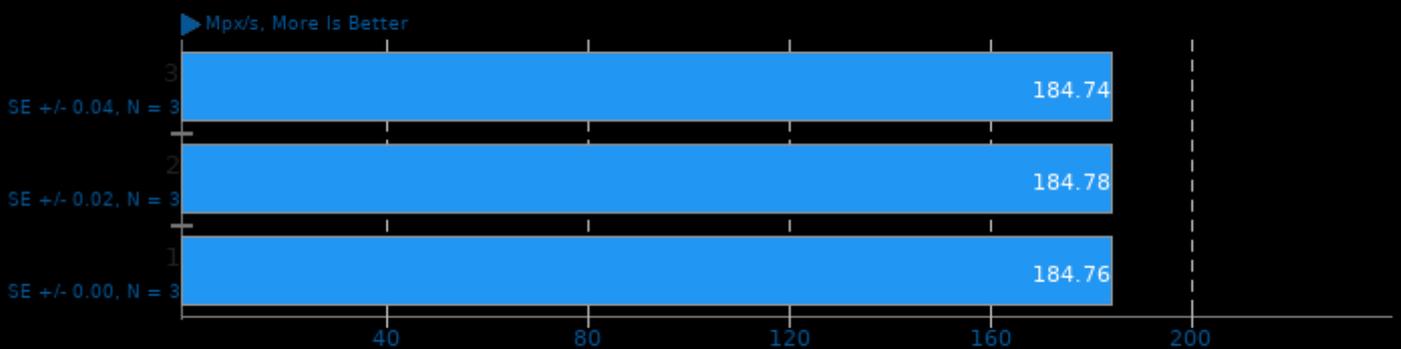
Configuration: DXT1



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

### Etcpak 0.7

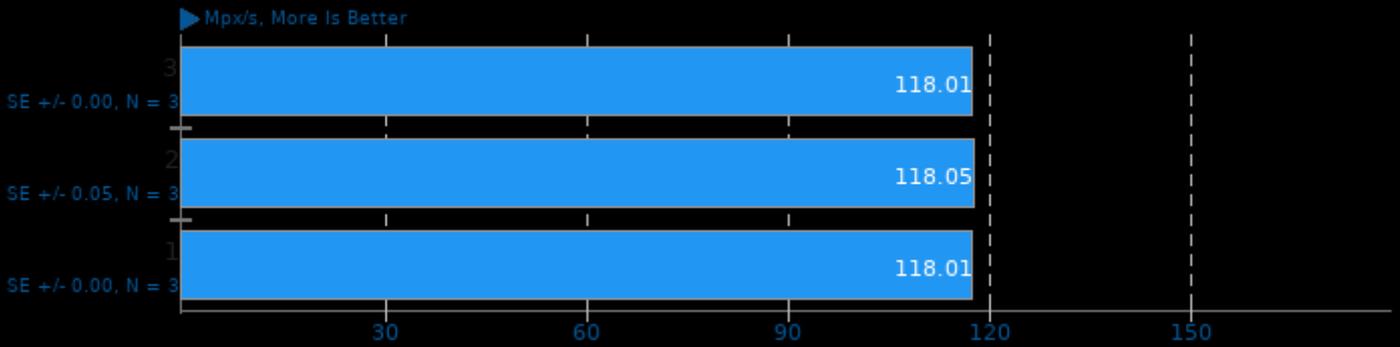
Configuration: ETC1



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

### Etcpak 0.7

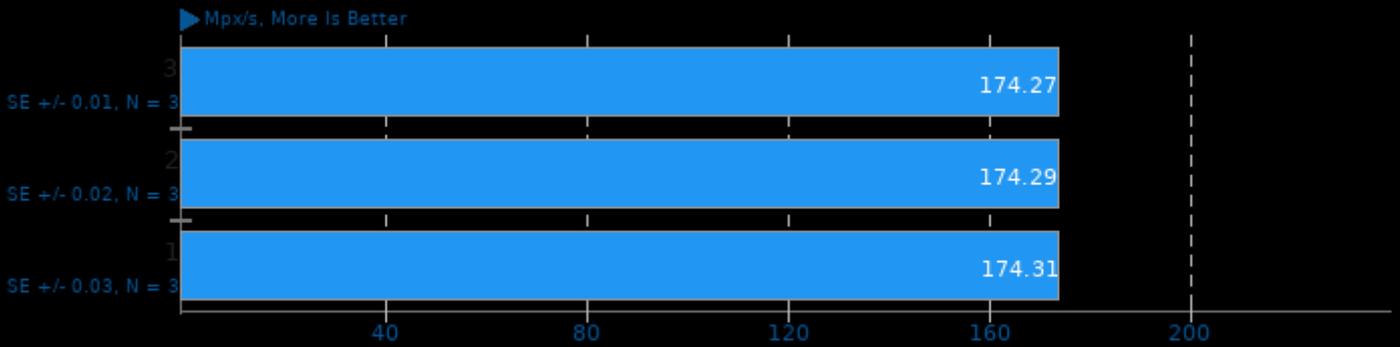
Configuration: ETC2



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

### Etcpak 0.7

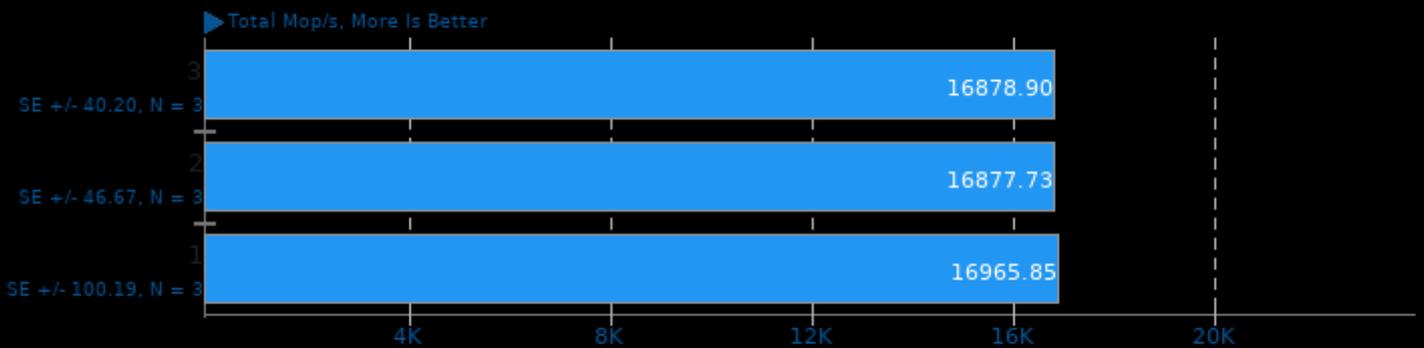
Configuration: ETC1 + Dithering



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

### NAS Parallel Benchmarks 3.4

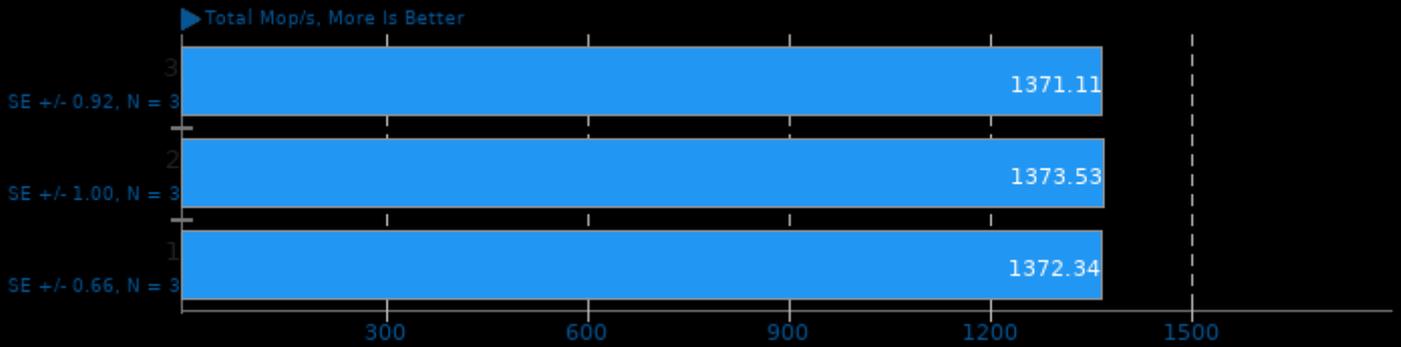
Test / Class: CG.C



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

### NAS Parallel Benchmarks 3.4

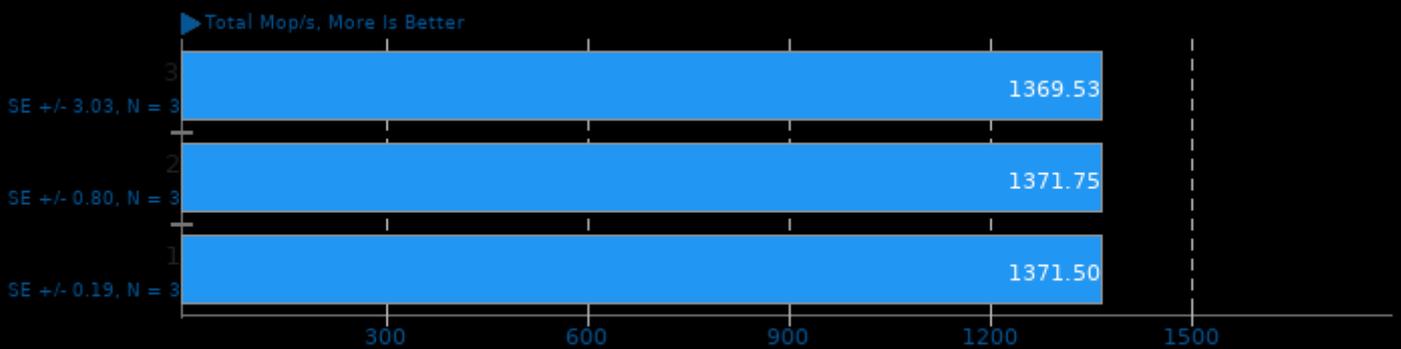
Test / Class: EP.C



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

### NAS Parallel Benchmarks 3.4

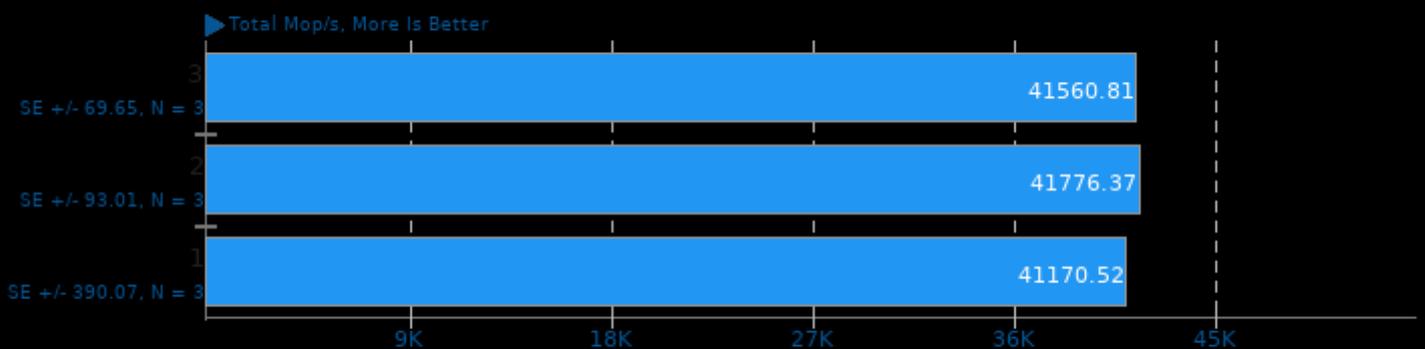
Test / Class: EP.D



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

### NAS Parallel Benchmarks 3.4

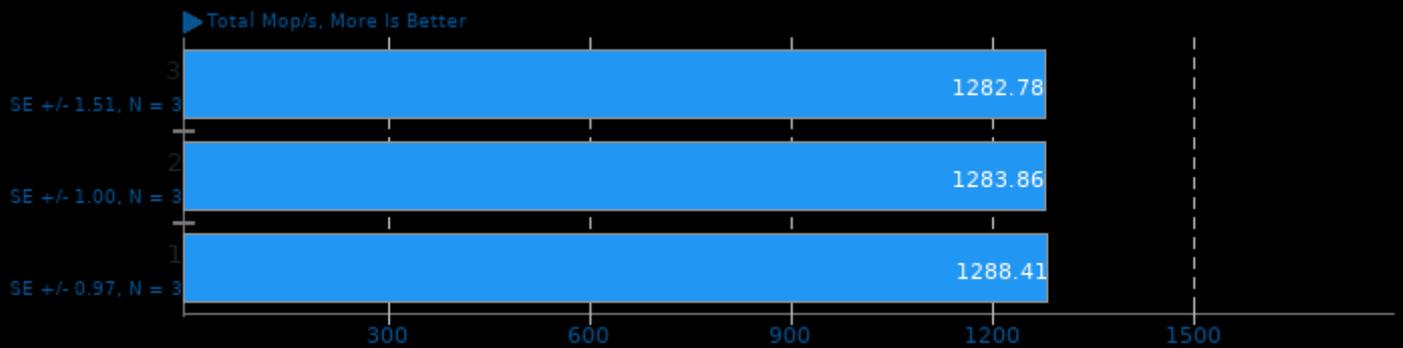
Test / Class: FT.C



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

## NAS Parallel Benchmarks 3.4

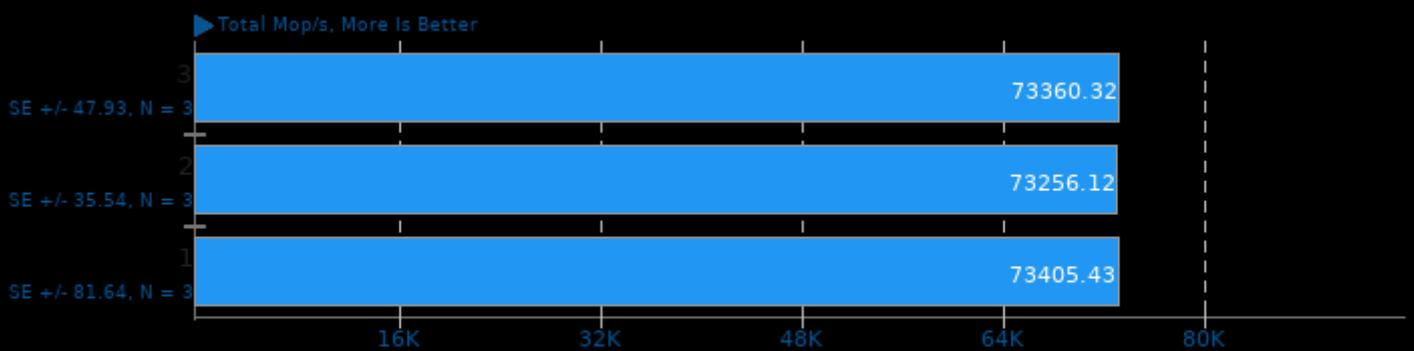
Test / Class: IS.D



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

## NAS Parallel Benchmarks 3.4

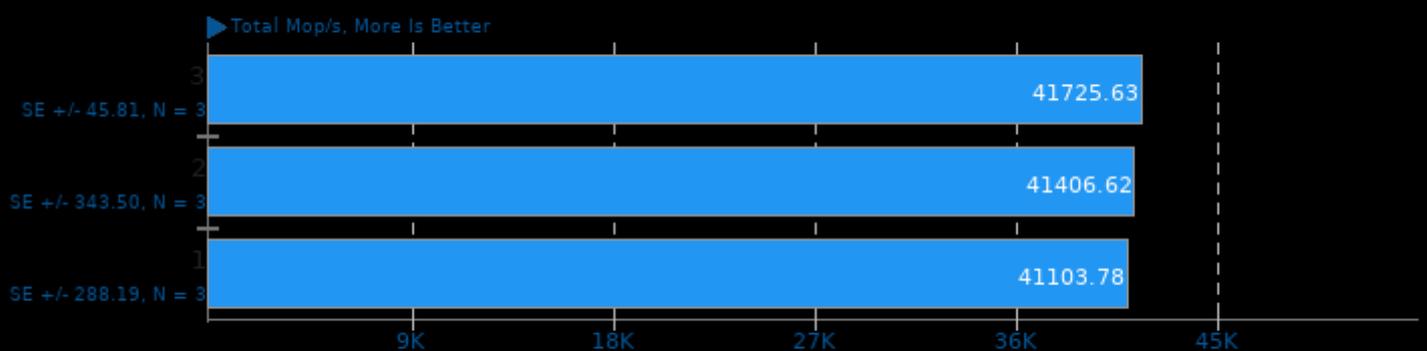
Test / Class: LU.C



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

## NAS Parallel Benchmarks 3.4

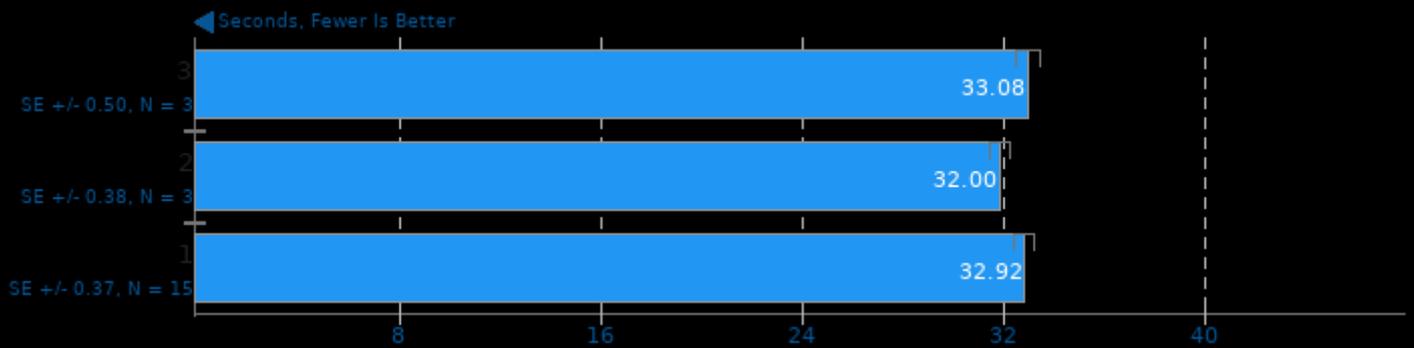
Test / Class: MG.C



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

## CloverLeaf

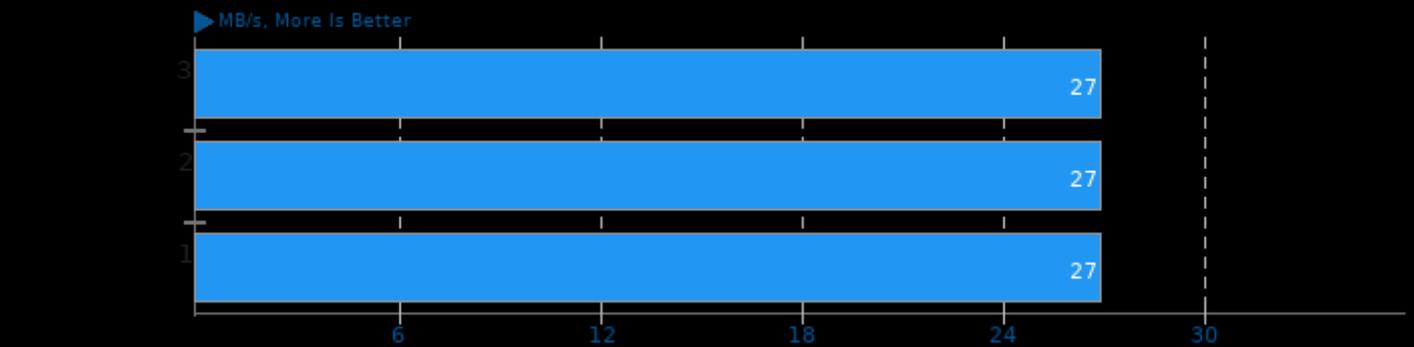
Lagrangian-Eulerian Hydrodynamics



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

## Izbench 1.8

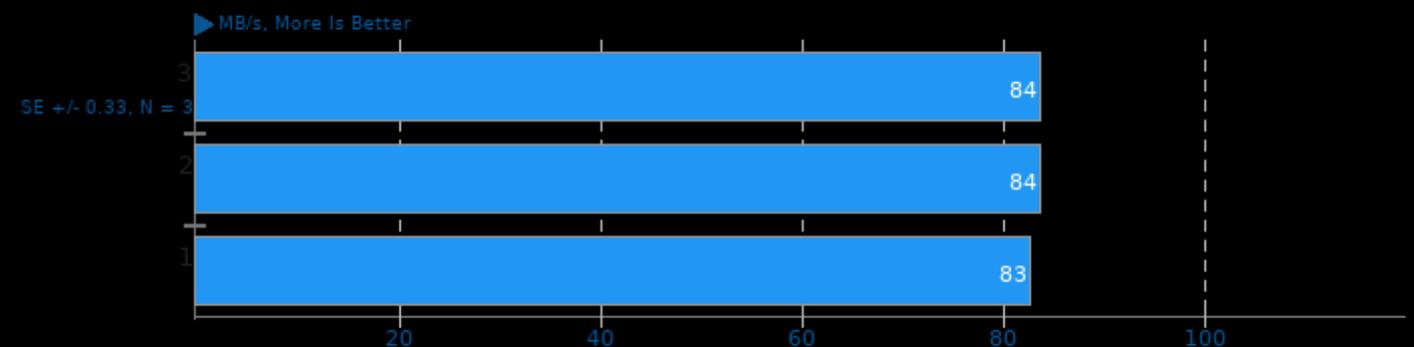
Test: XZ 0 - Process: Compression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

## Izbench 1.8

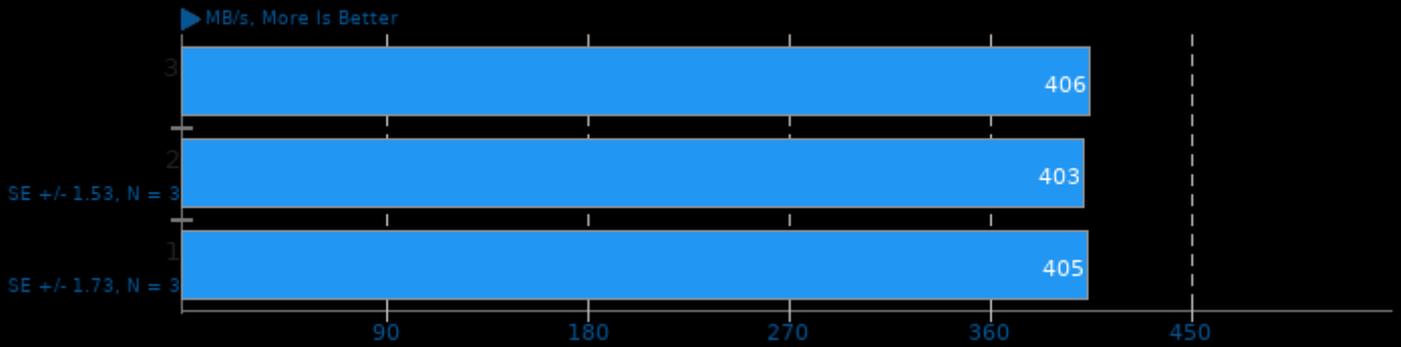
Test: XZ 0 - Process: Decompression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

### Izbench 1.8

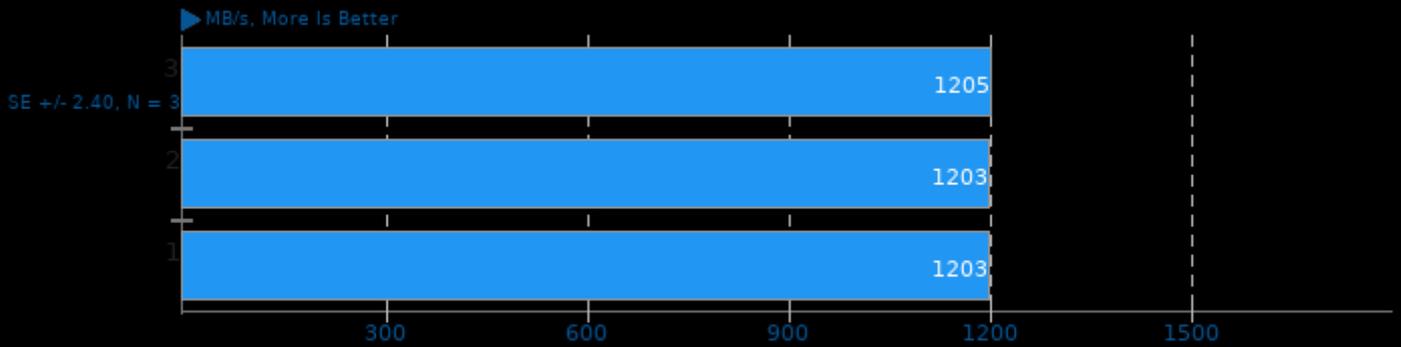
Test: Zstd 1 - Process: Compression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

### Izbench 1.8

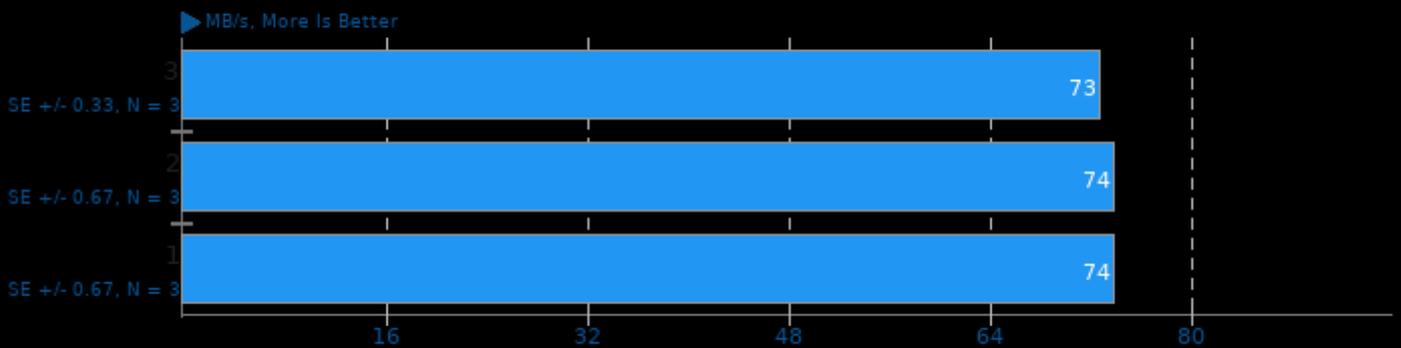
Test: Zstd 1 - Process: Decompression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

### Izbench 1.8

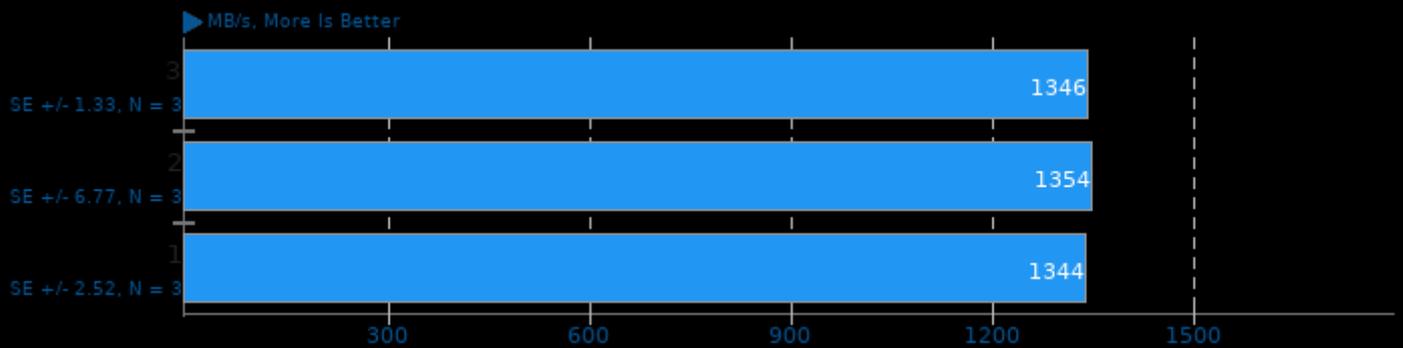
Test: Zstd 8 - Process: Compression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

### Izbench 1.8

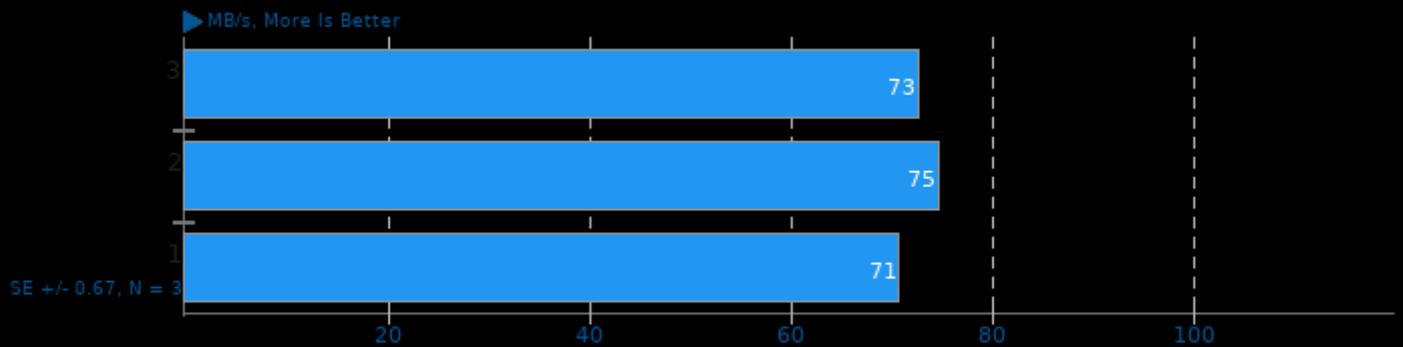
Test: Zstd 8 - Process: Decompression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

### Izbench 1.8

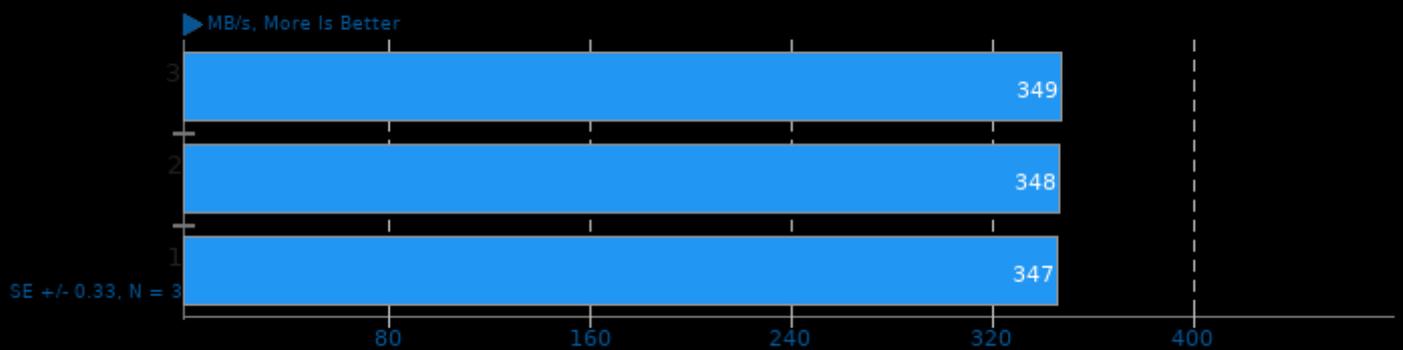
Test: Crush 0 - Process: Compression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

### Izbench 1.8

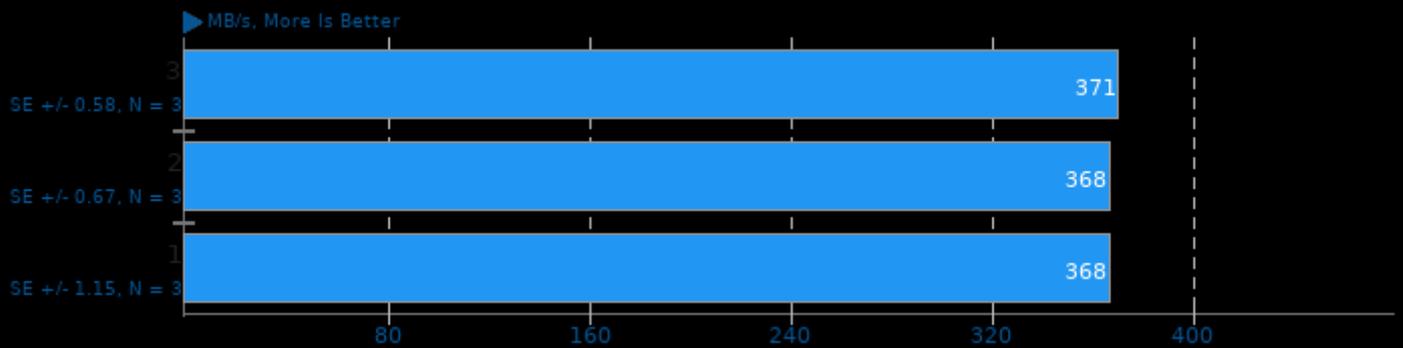
Test: Crush 0 - Process: Decompression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

### Izbench 1.8

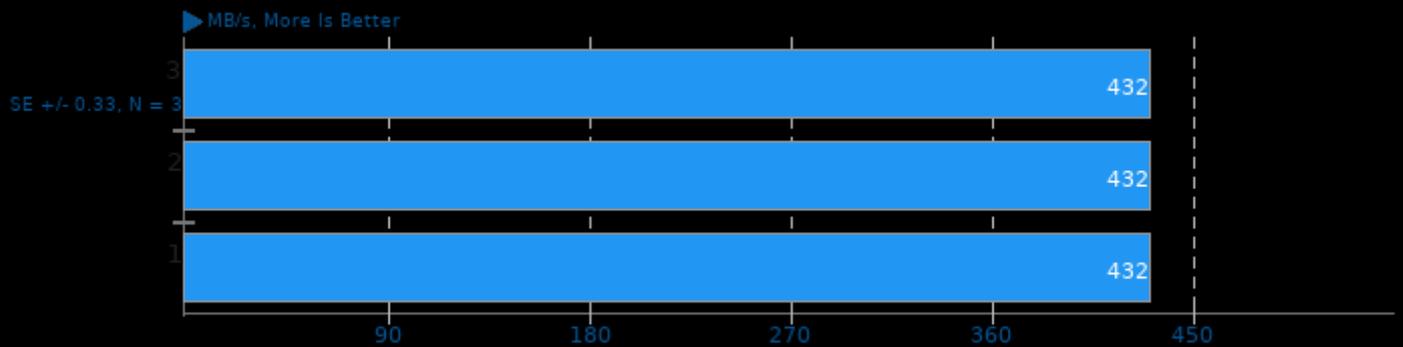
Test: Brotli 0 - Process: Compression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

### Izbench 1.8

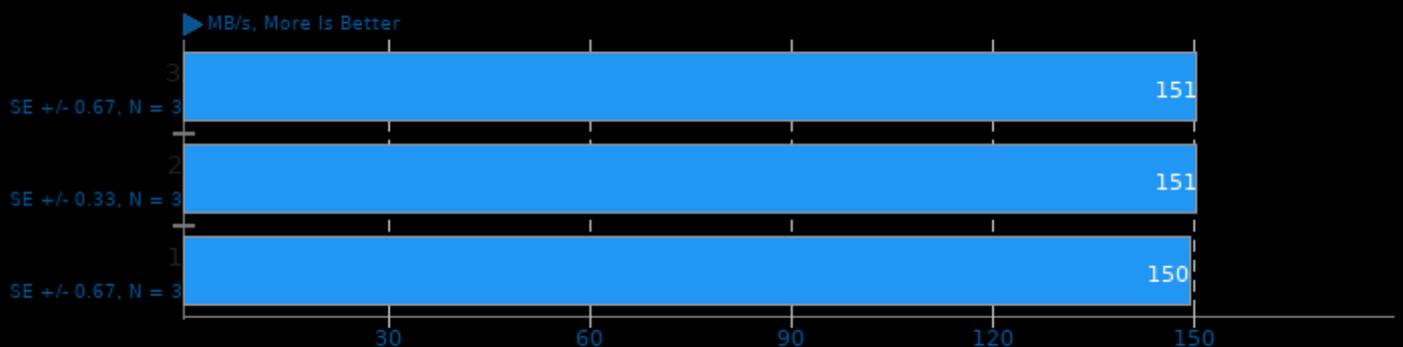
Test: Brotli 0 - Process: Decompression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

### Izbench 1.8

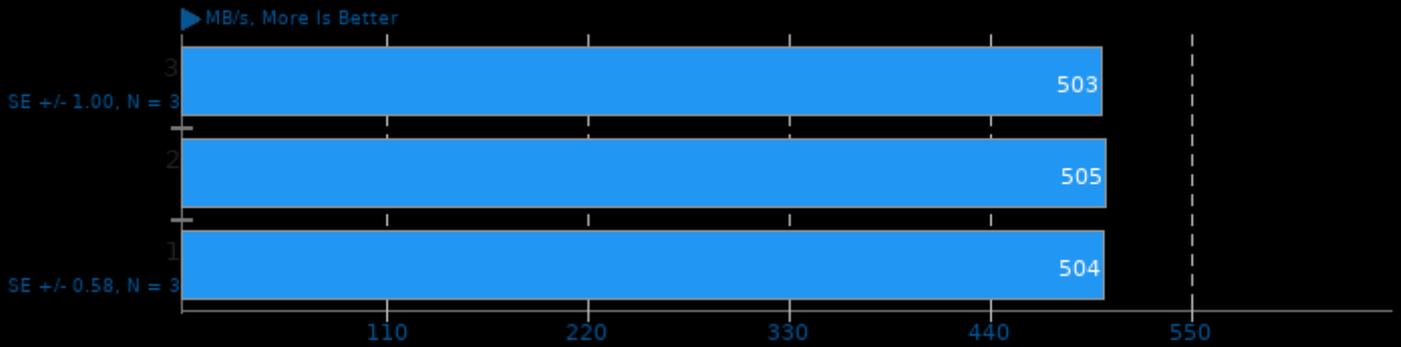
Test: Brotli 2 - Process: Compression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

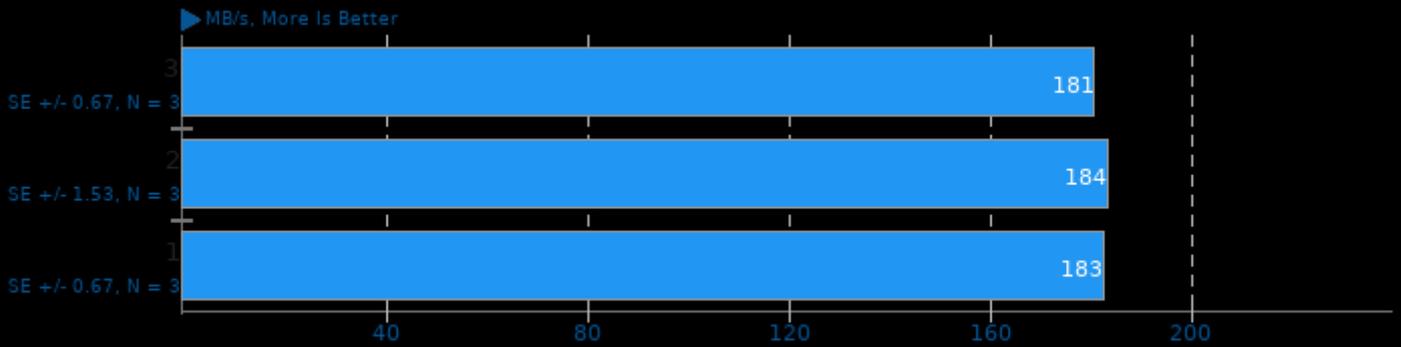
### Izbench 1.8

Test: Brotli 2 - Process: Decompression



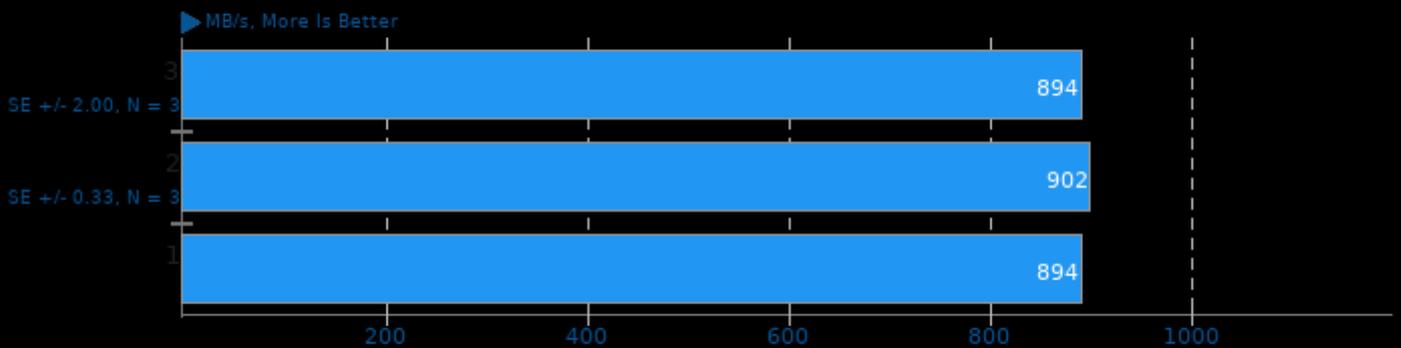
### Izbench 1.8

Test: Libdeflate 1 - Process: Compression

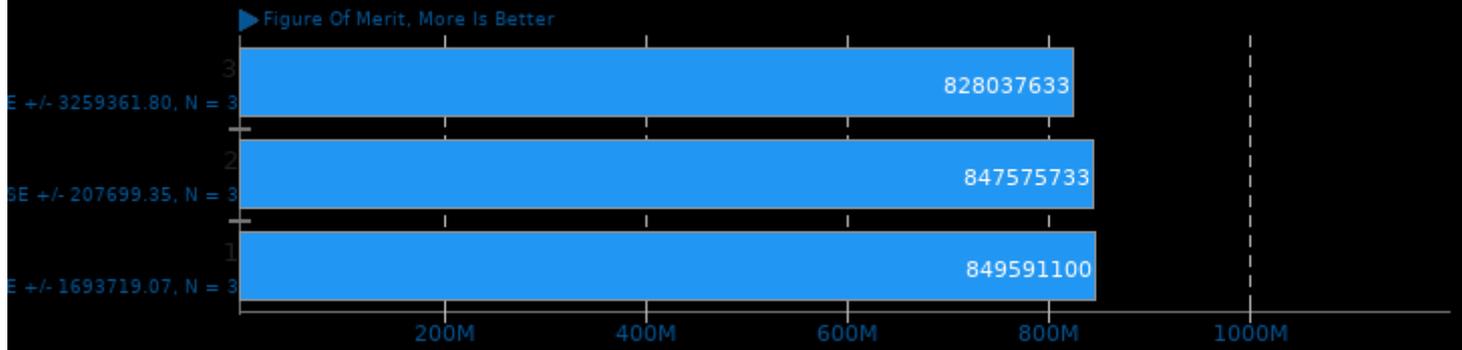


### Izbench 1.8

Test: Libdeflate 1 - Process: Decompression



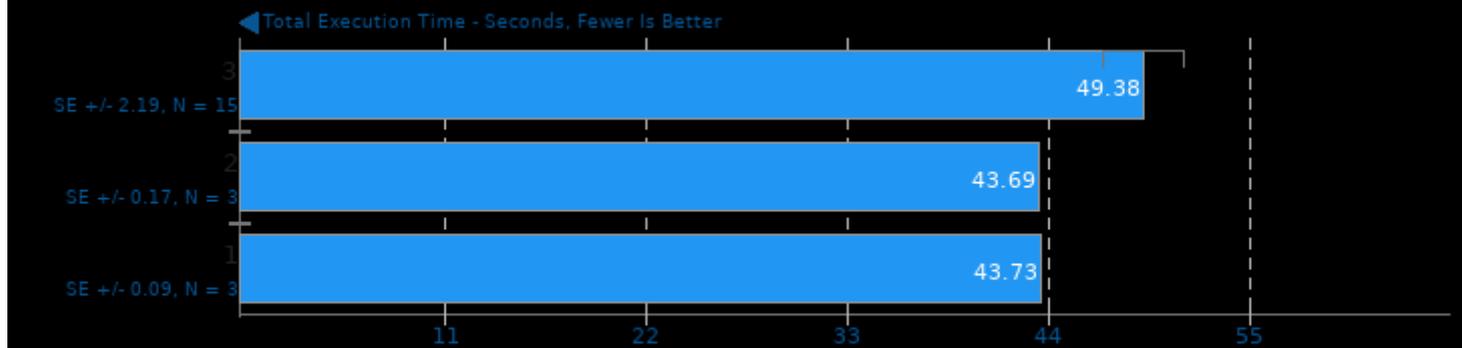
## Algebraic Multi-Grid Benchmark 1.2



1. (CC) gcc options: -lparcsr\_ls -lparcsr\_mv -lseq\_mv -ll\_mv -lkrylov -lHYPRE\_utilities -lm -fopenmp -pthread -lmpi

## QMCPACK 3.10

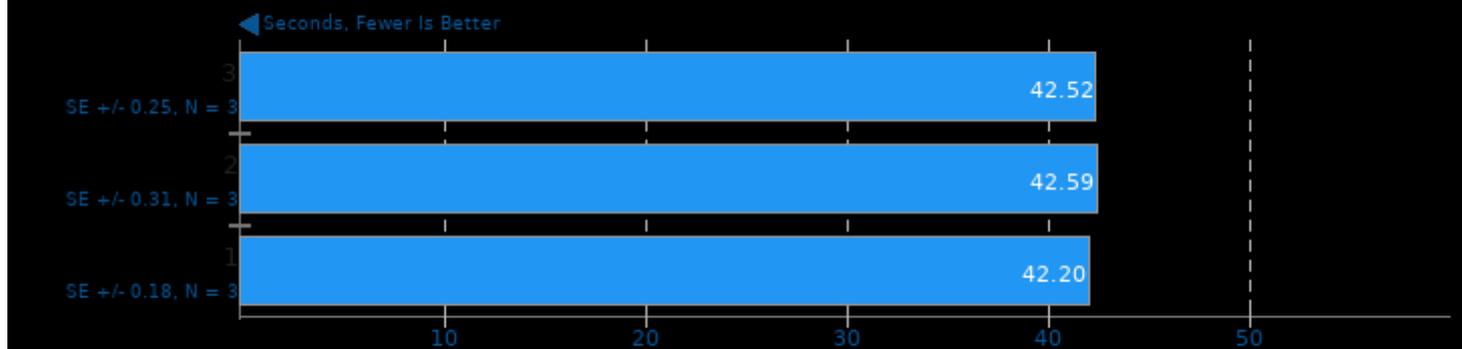
Input: simple-H2O



1. (CXX) g++ options: -fopenmp -finline-limit=1000 -fstrict-aliasing -funroll-all-loops -march=native -O3 -fomit-frame-pointer -ffast-math -pthread -lm

## OpenFOAM 8

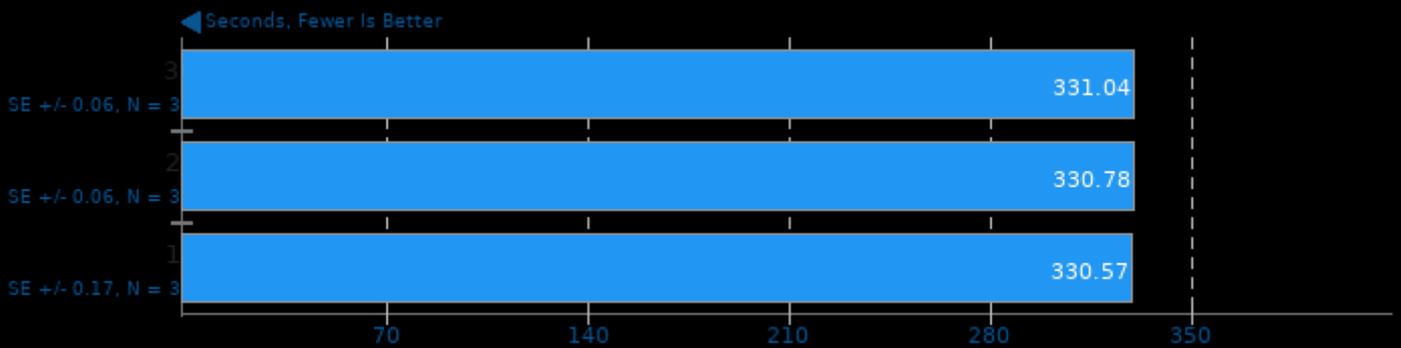
Input: Motorbike 30M



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

## OpenFOAM 8

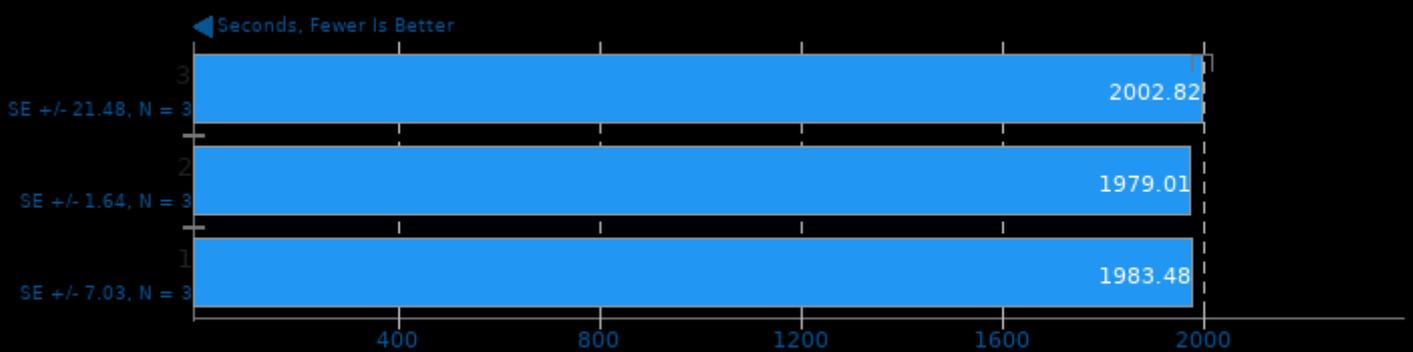
Input: Motorbike 60M



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

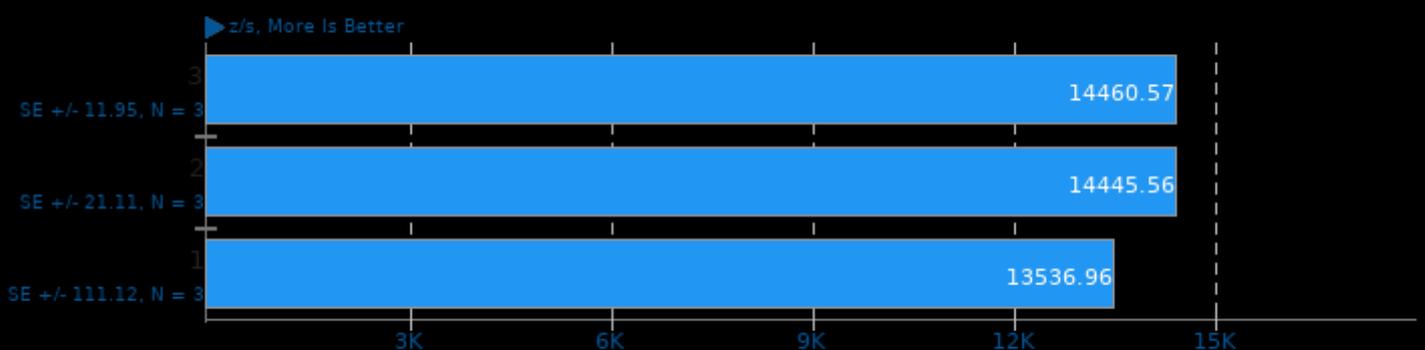
## Quantum ESPRESSO 6.7

Input: AUSURF112



1. (F9X) gfortran options: -lopenblas -lFoX\_dom -lFoX\_sax -lFoX\_wxml -lFoX\_common -lFoX\_utils -lFoX\_fsys -lfftw3 -pthread -lmpi\_usempif08 -lmpi\_mpifh

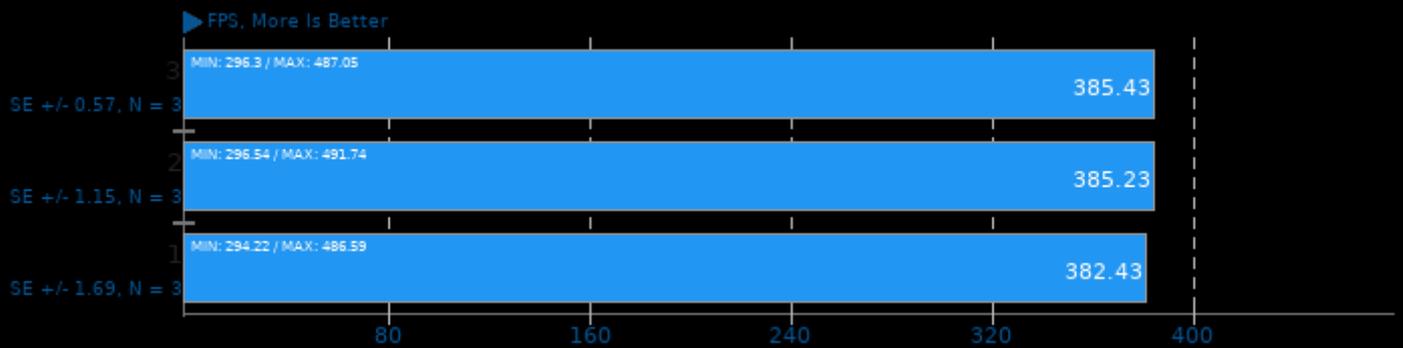
## LULESH 2.0.3



1. (CXX) g++ options: -O3 -fopenmp -lm -pthread -lmpi\_cxx -lmpi

### dav1d 0.8.1

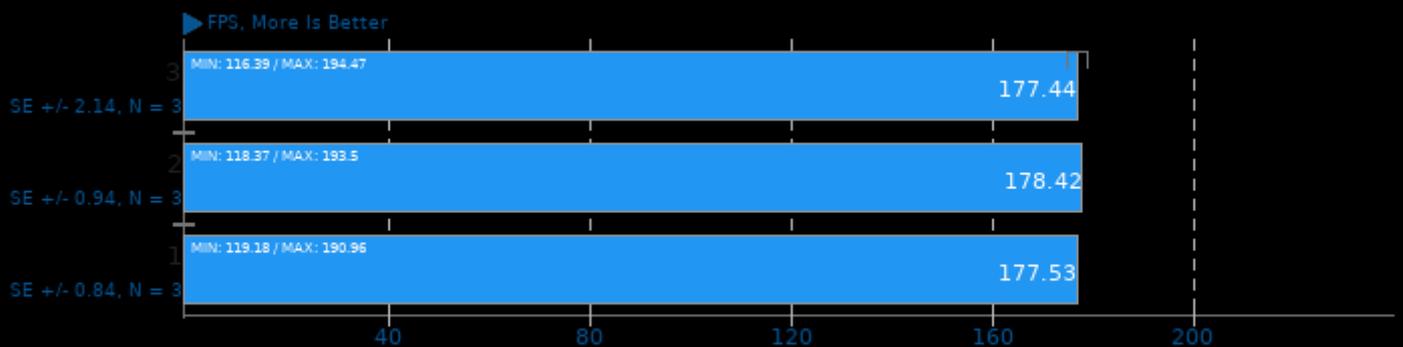
Video Input: Chimera 1080p



1. (CC) gcc options: -pthread

### dav1d 0.8.1

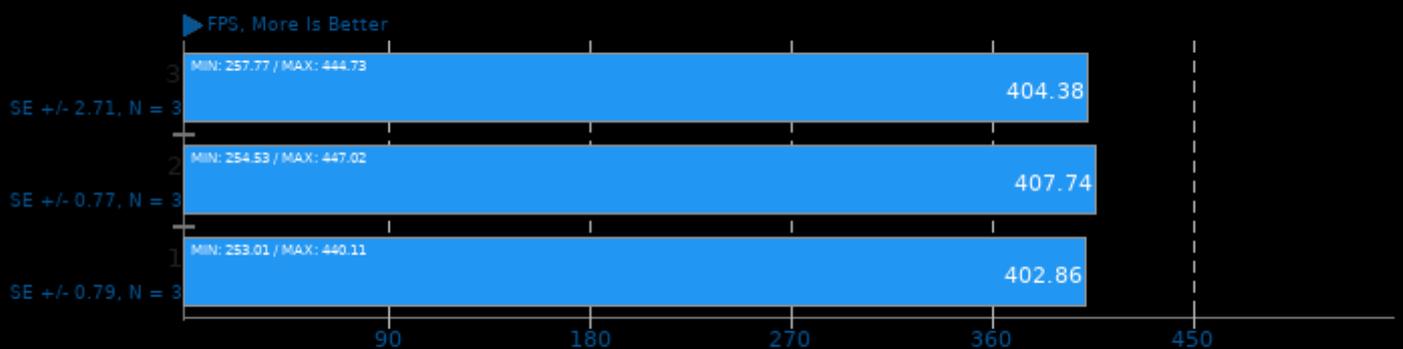
Video Input: Summer Nature 4K



1. (CC) gcc options: -pthread

### dav1d 0.8.1

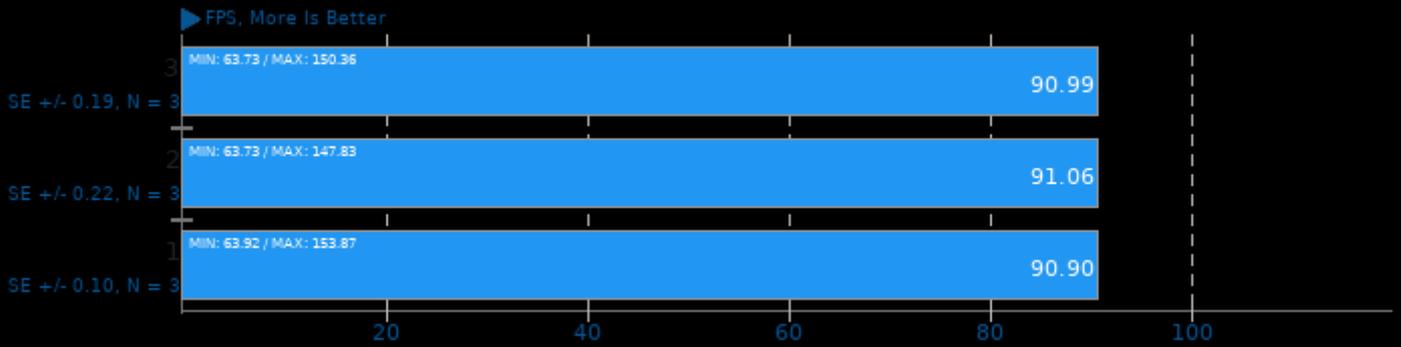
Video Input: Summer Nature 1080p



1. (CC) gcc options: -pthread

### dav1d 0.8.1

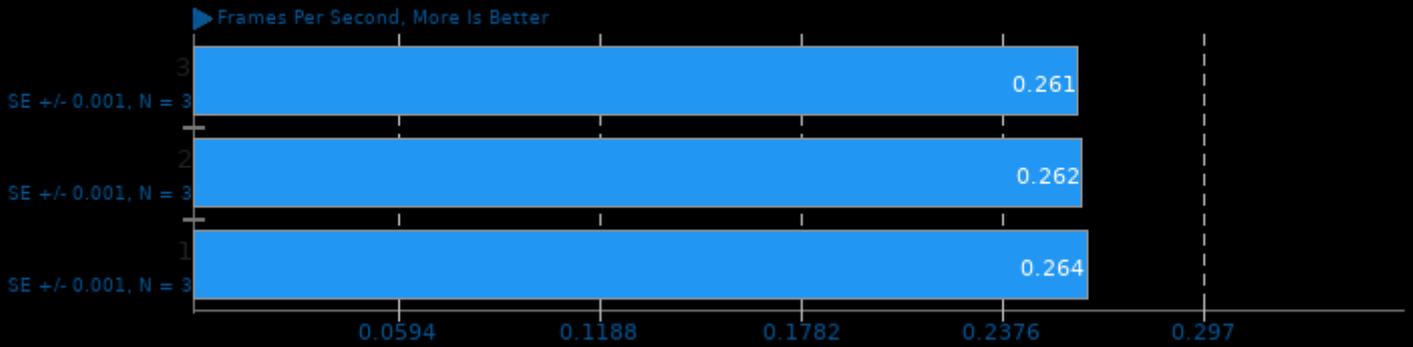
Video Input: Chimera 1080p 10-bit



1. (CC) gcc options: -pthread

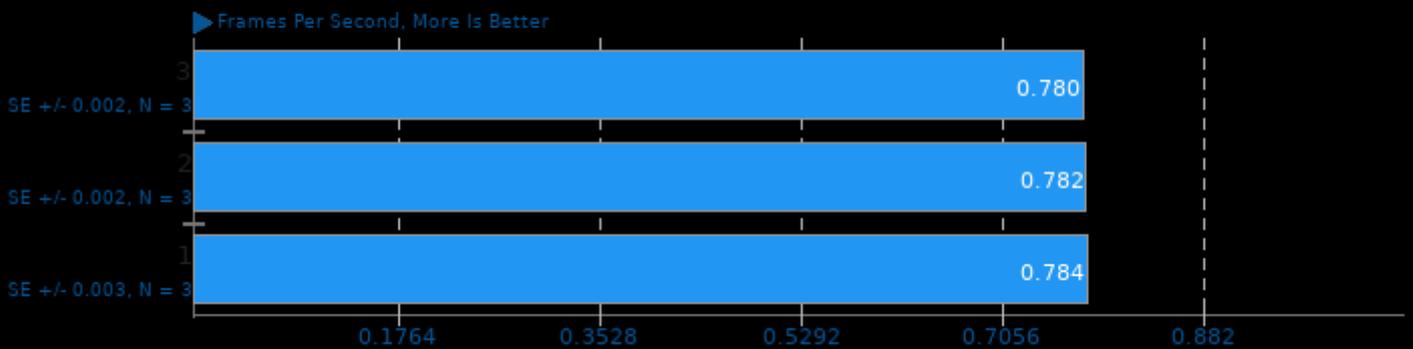
### rav1e 0.4

Speed: 1



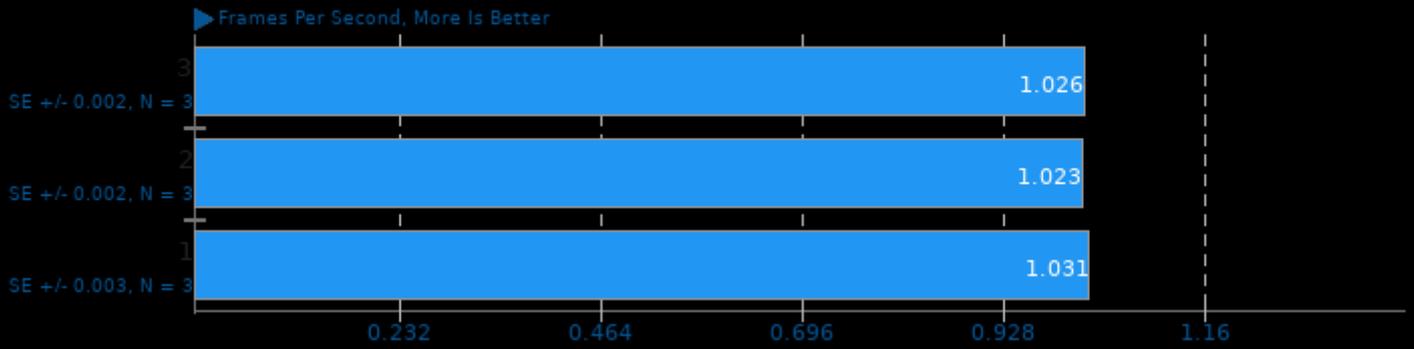
### rav1e 0.4

Speed: 5



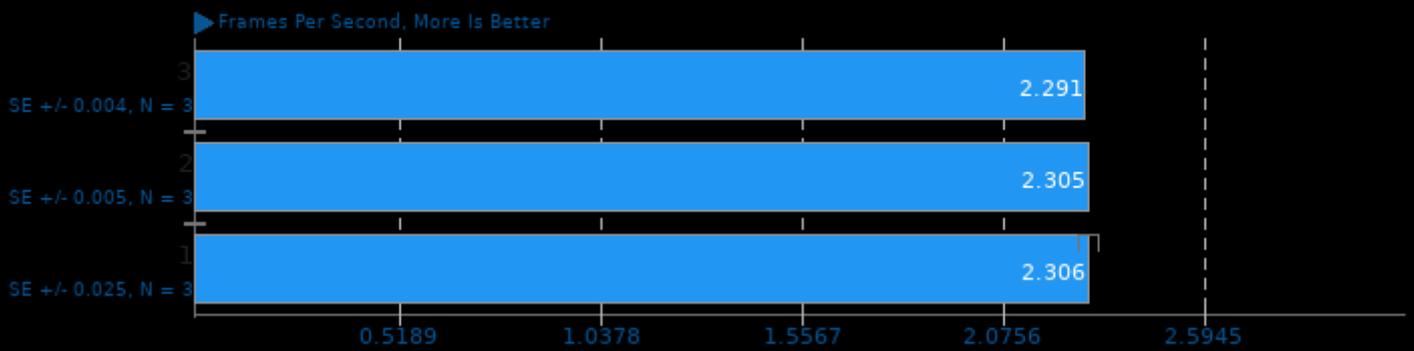
rav1e 0.4

Speed: 6



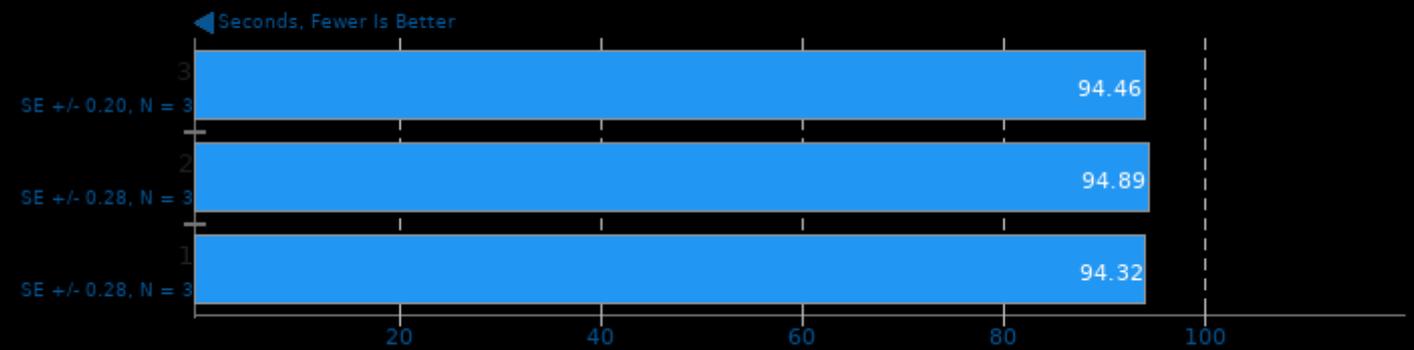
rav1e 0.4

Speed: 10

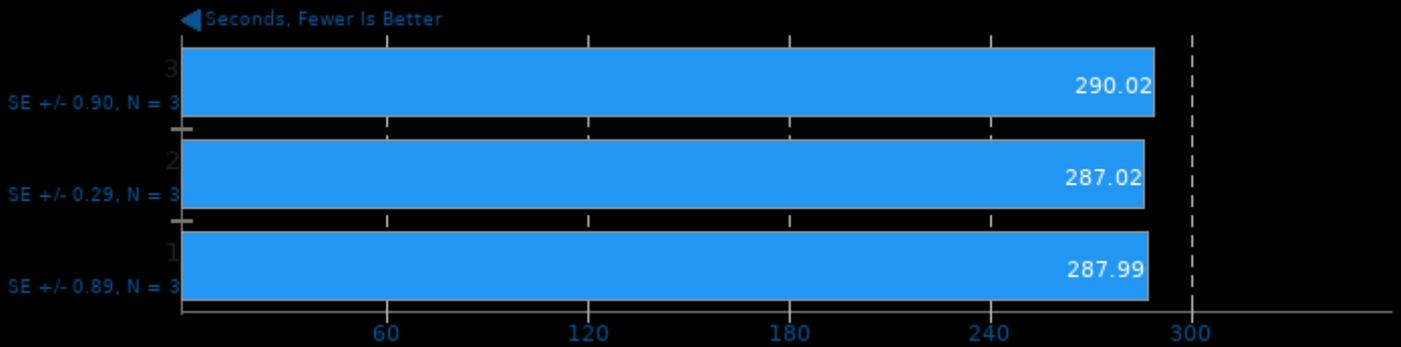


Timed Godot Game Engine Compilation 3.2.3

Time To Compile



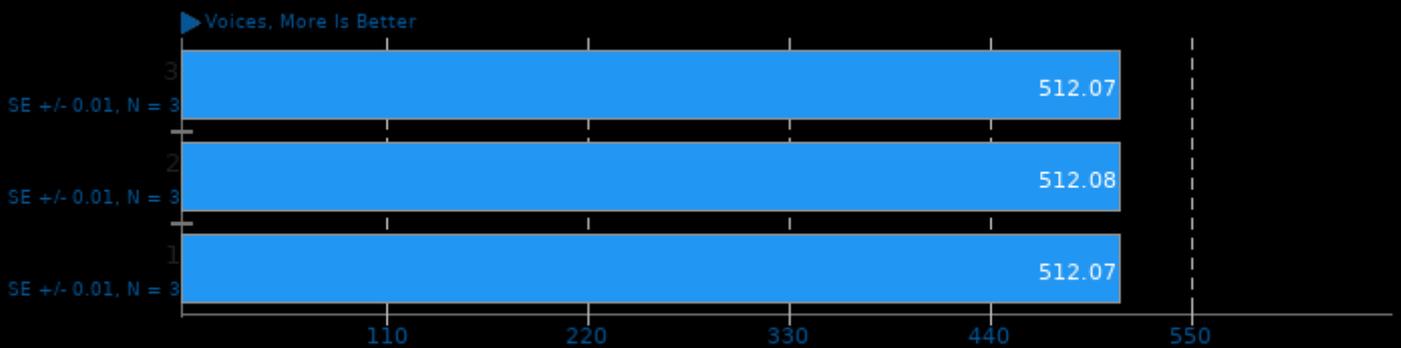
## Gcrypt Library 1.9



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

## Google SynthMark 20201109

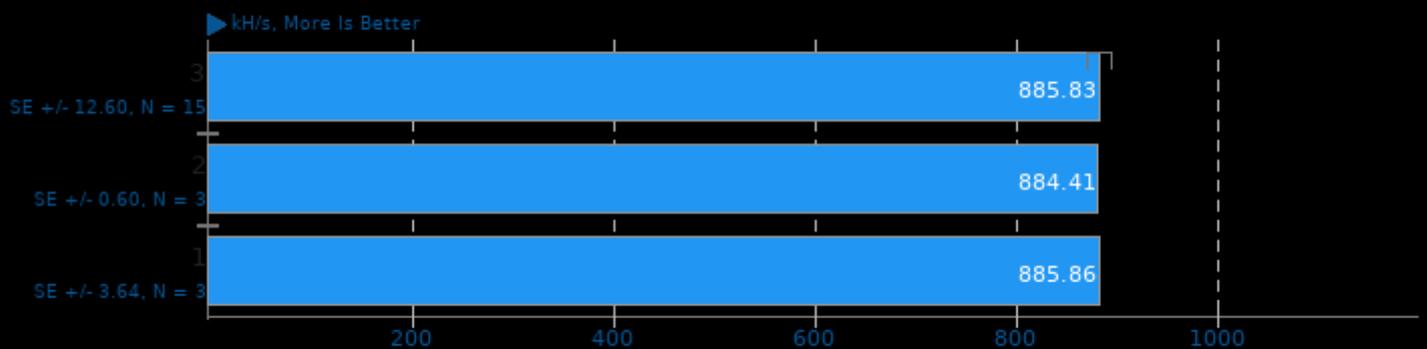
Test: VoiceMark\_100



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

## Cpuminer-Opt 3.15.5

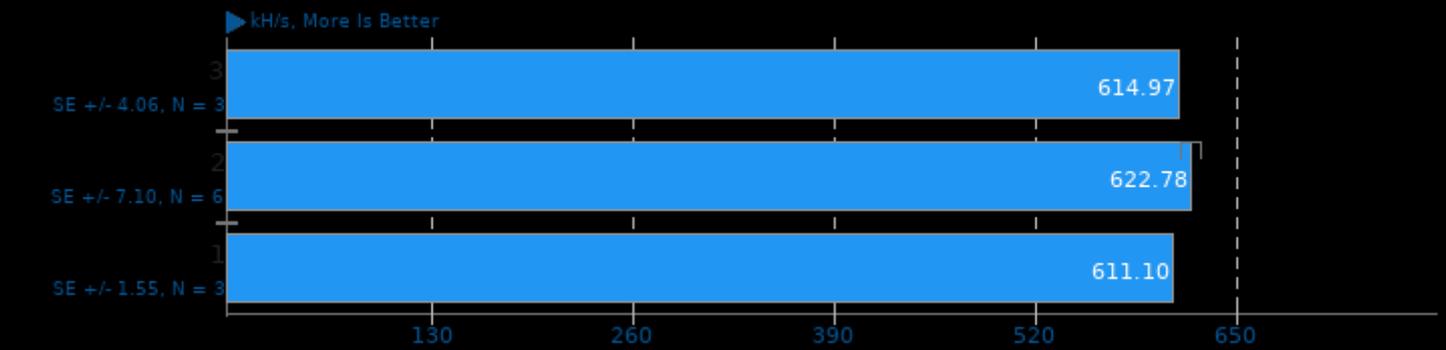
Algorithm: Magi



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

### Cpuminer-Opt 3.15.5

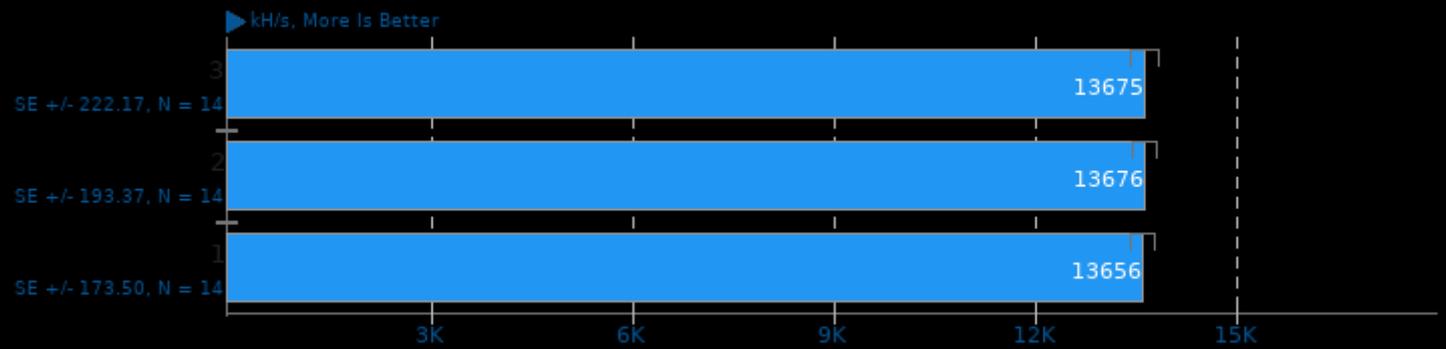
Algorithm: x25x



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

### Cpuminer-Opt 3.15.5

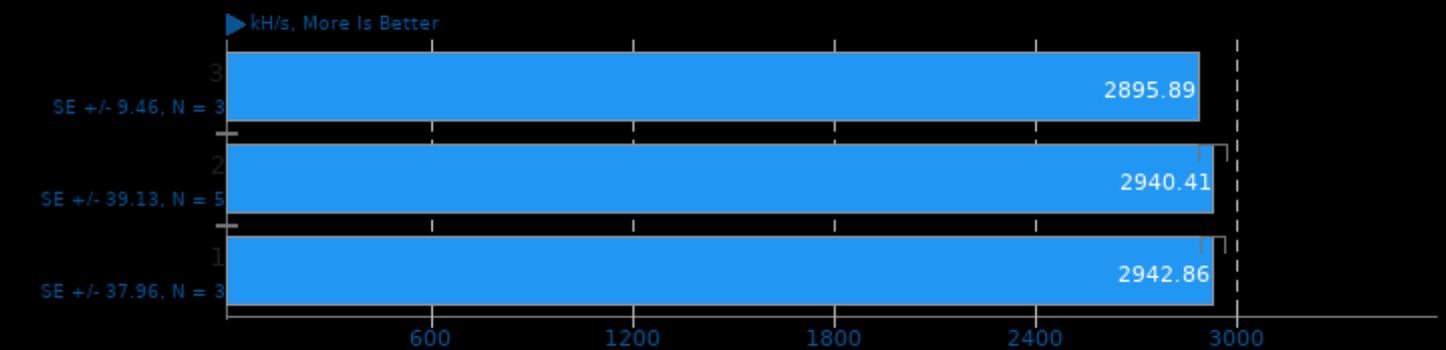
Algorithm: Deepcoin



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

### Cpuminer-Opt 3.15.5

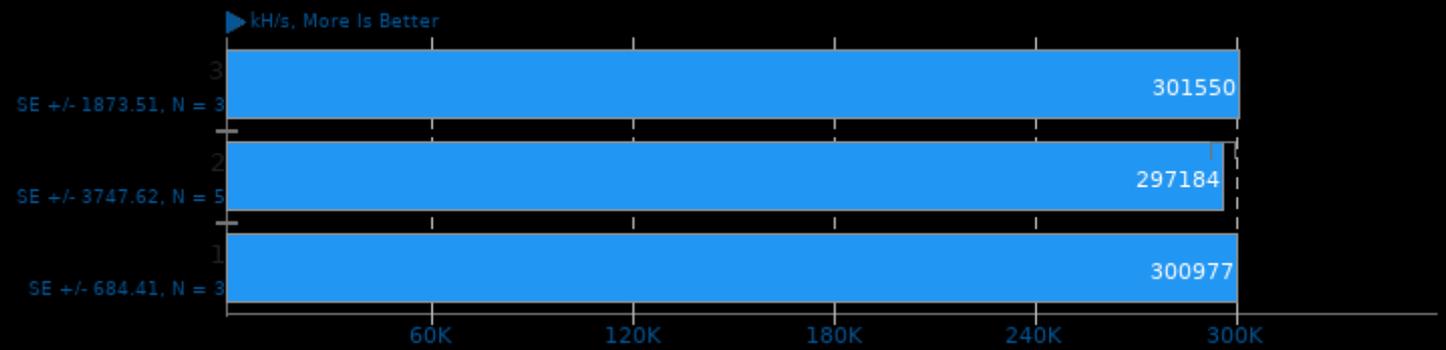
Algorithm: Ringcoin



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

### Cpuminer-Opt 3.15.5

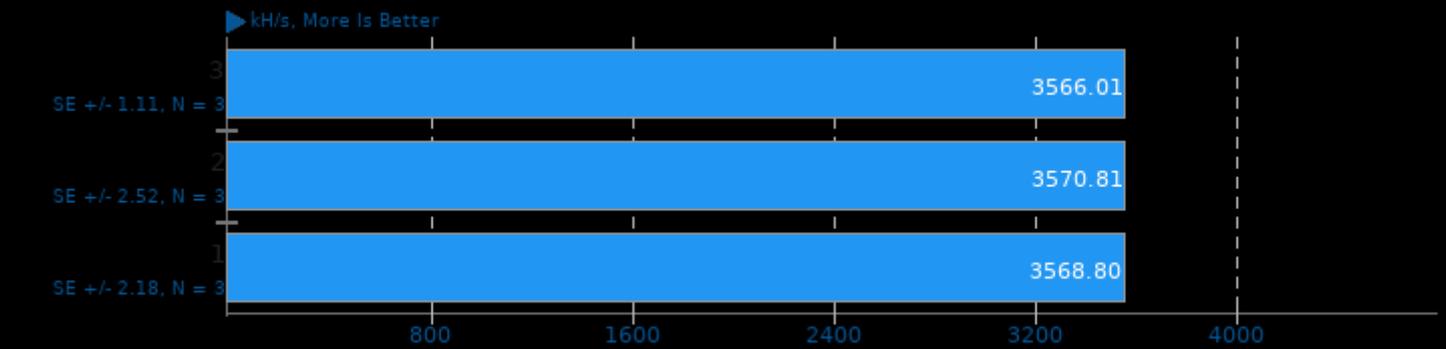
Algorithm: Blake-2 S



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

### Cpuminer-Opt 3.15.5

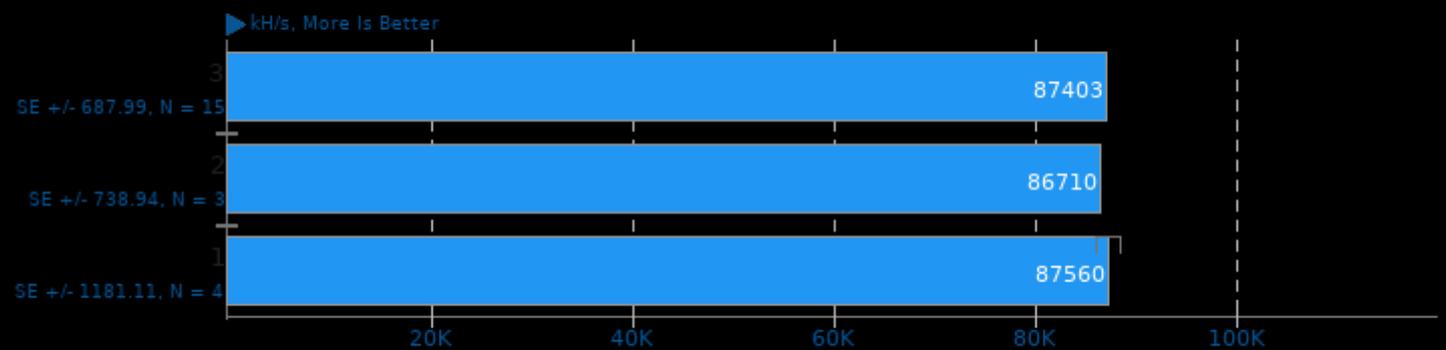
Algorithm: Garlicoin



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

### Cpuminer-Opt 3.15.5

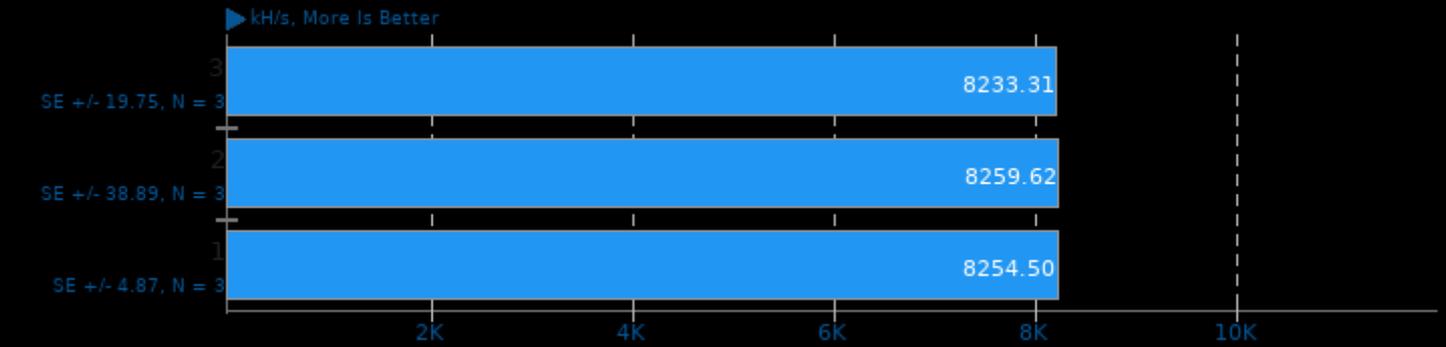
Algorithm: Skeincoin



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

### Cpuminer-Opt 3.15.5

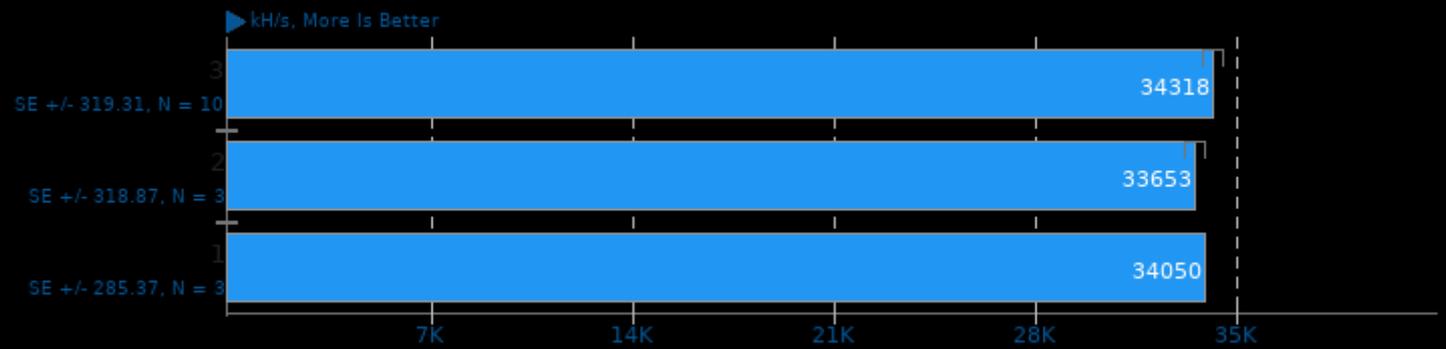
Algorithm: Myriad-Groestl



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

### Cpuminer-Opt 3.15.5

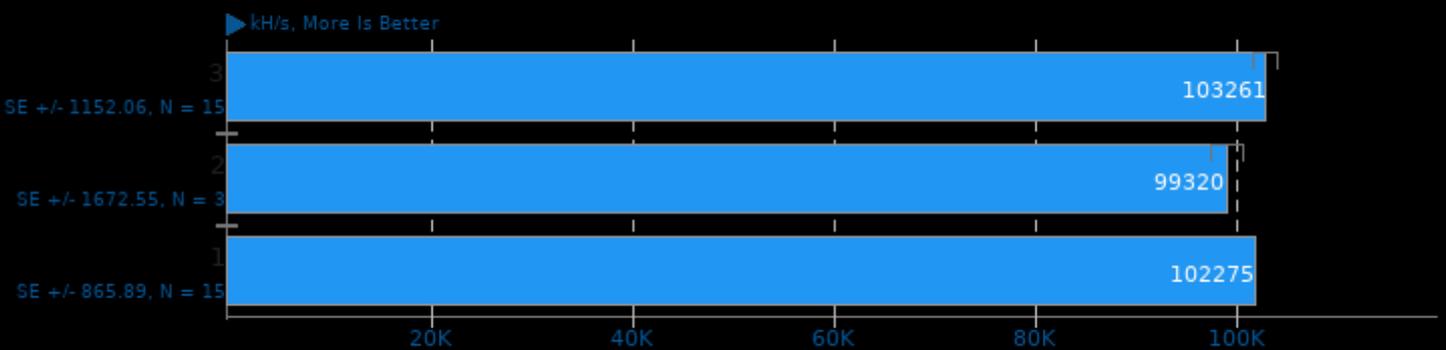
Algorithm: LBC, LBRY Credits



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

### Cpuminer-Opt 3.15.5

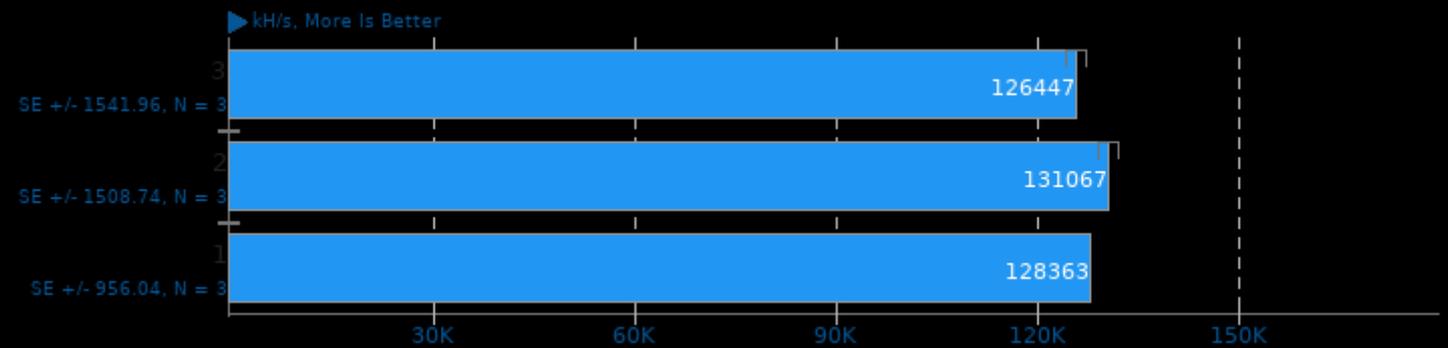
Algorithm: Quad SHA-256, Pyrite



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

### Cpuminer-Opt 3.15.5

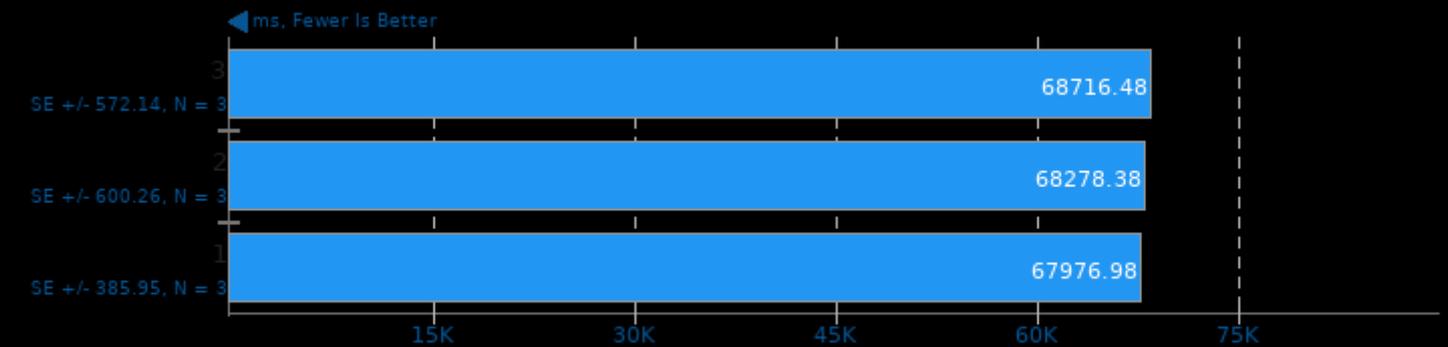
Algorithm: Triple SHA-256, Onecoin



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

### FinanceBench 2016-07-25

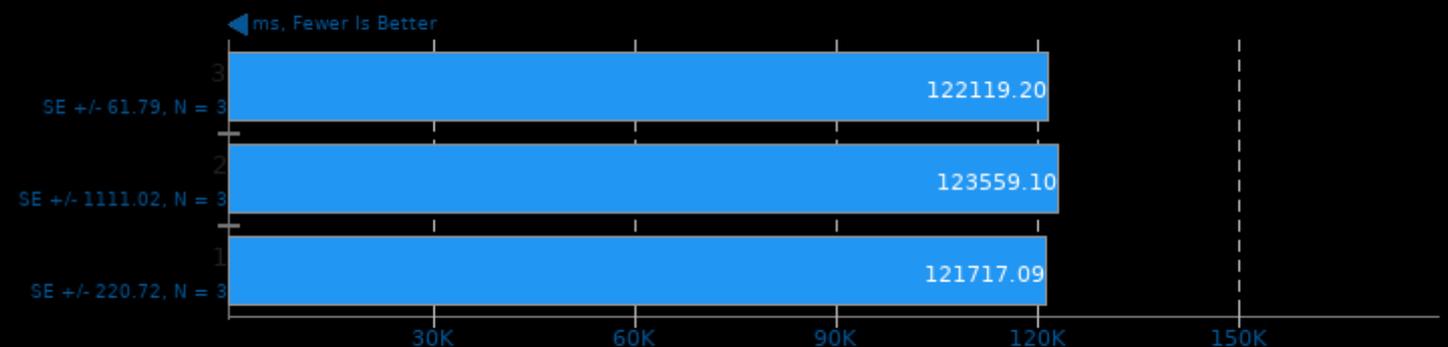
Benchmark: Repo OpenMP



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

### FinanceBench 2016-07-25

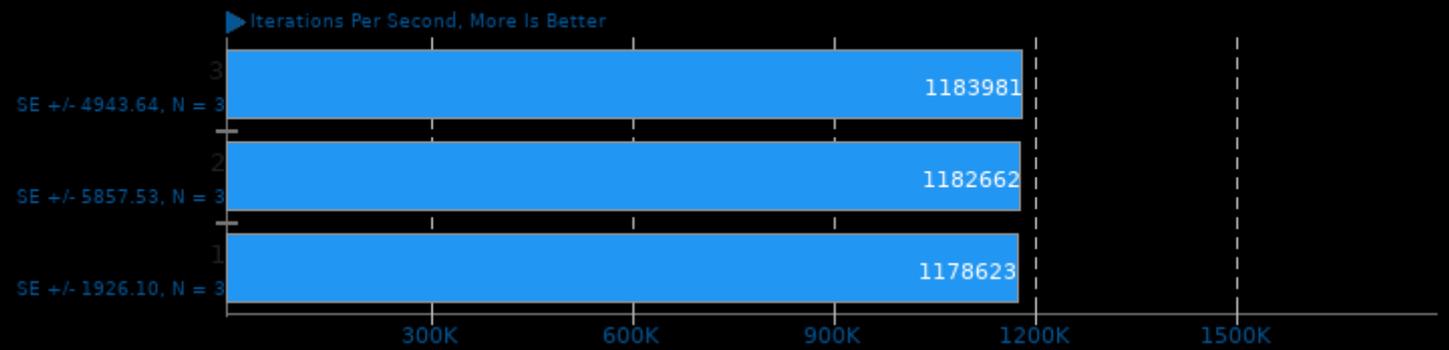
Benchmark: Bonds OpenMP



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

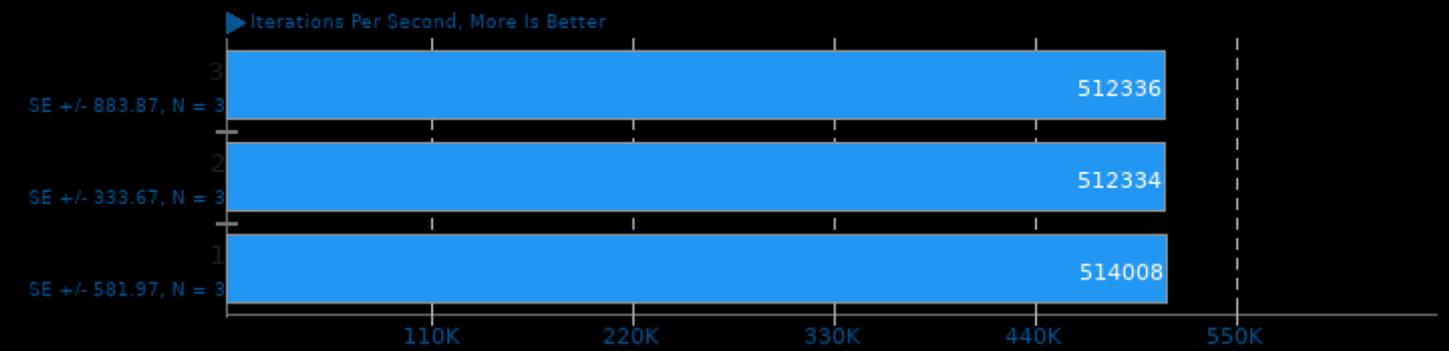
### Cryptsetup

PBKDF2-sha512



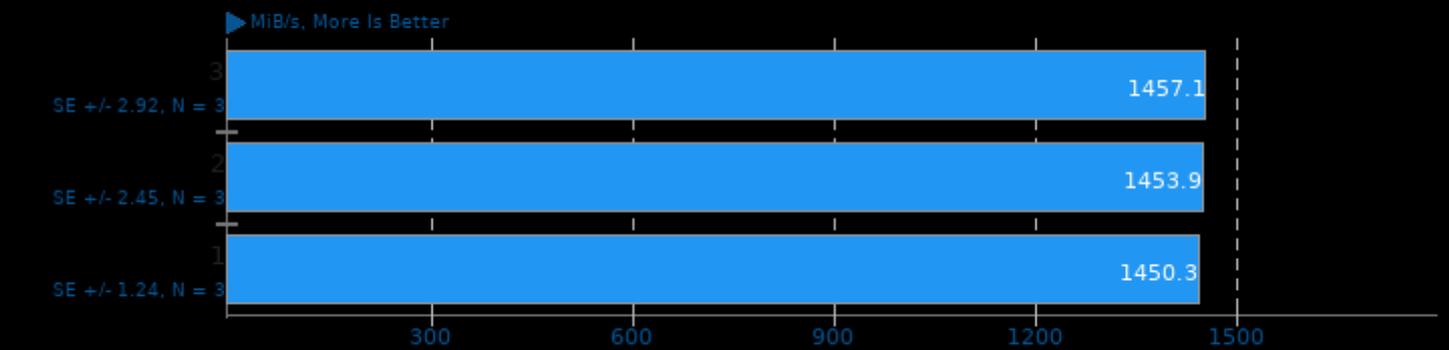
### Cryptsetup

PBKDF2-whirlpool



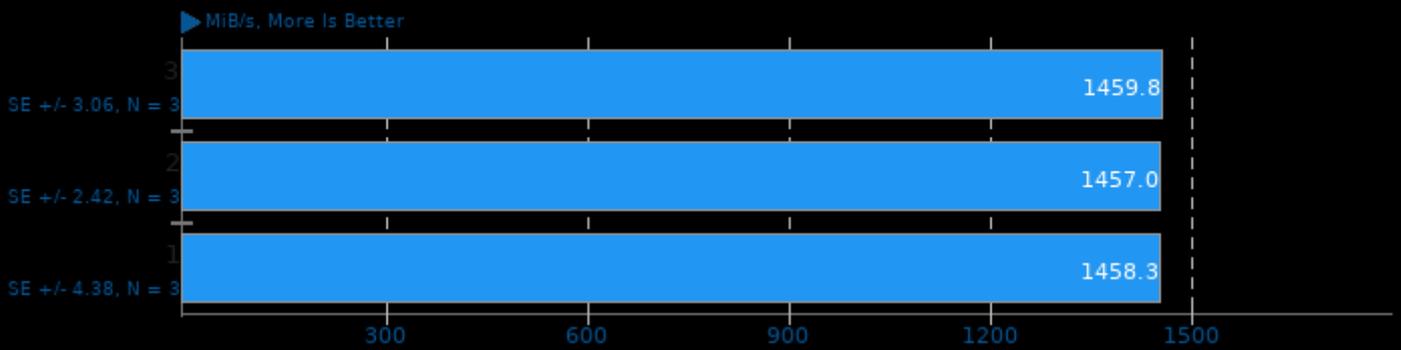
### Cryptsetup

AES-XTS 256b Encryption



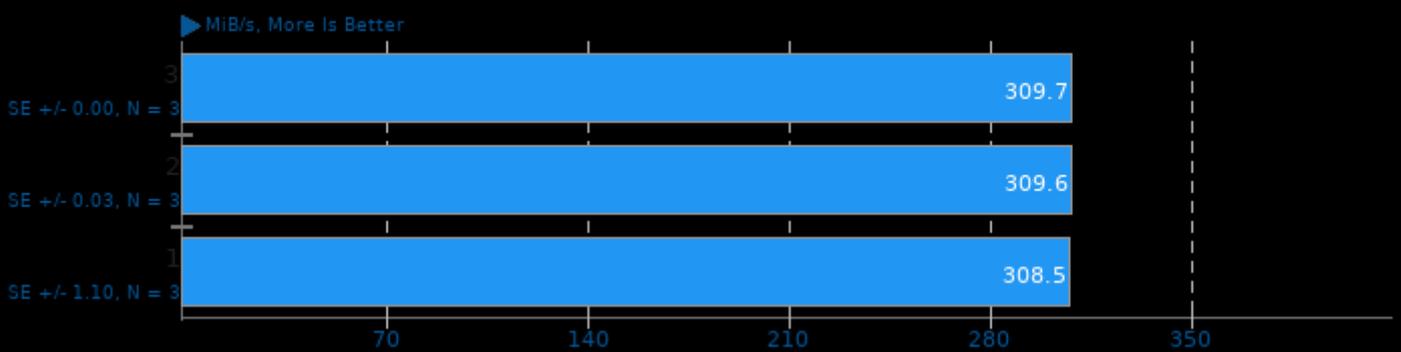
### Cryptsetup

AES-XTS 256b Decryption



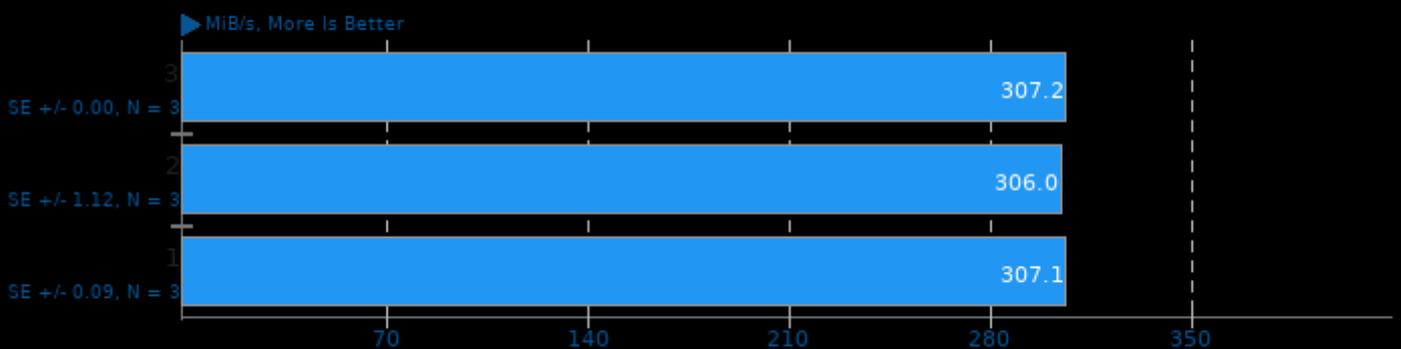
### Cryptsetup

Serpent-XTS 256b Encryption



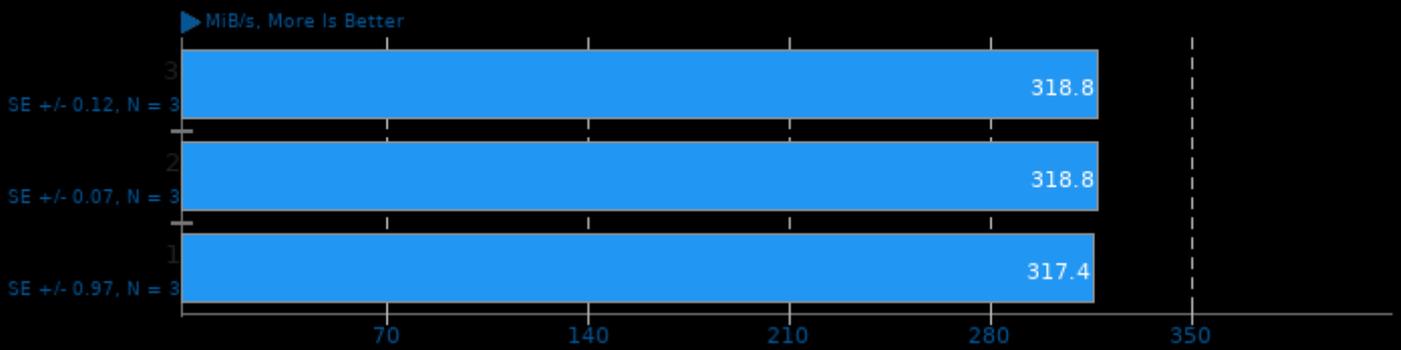
### Cryptsetup

Serpent-XTS 256b Decryption



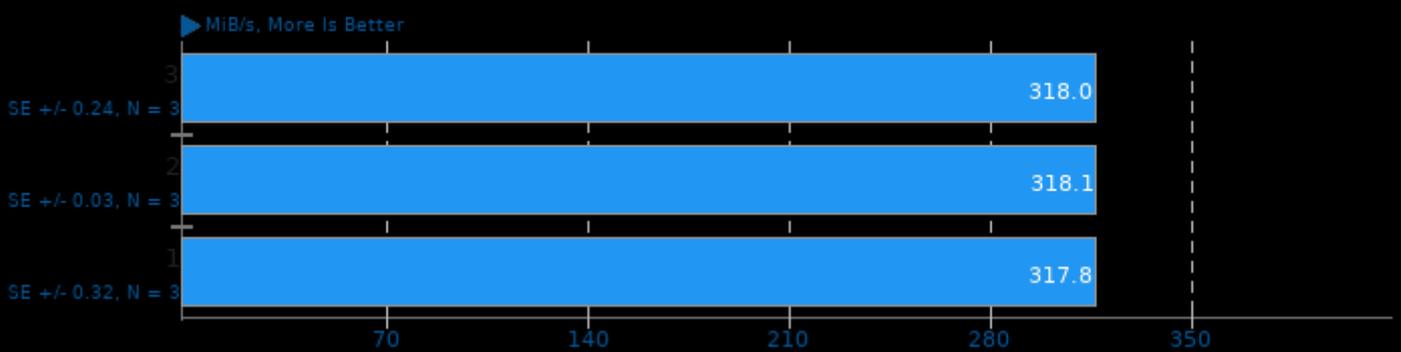
### Cryptsetup

Twofish-XTS 256b Encryption



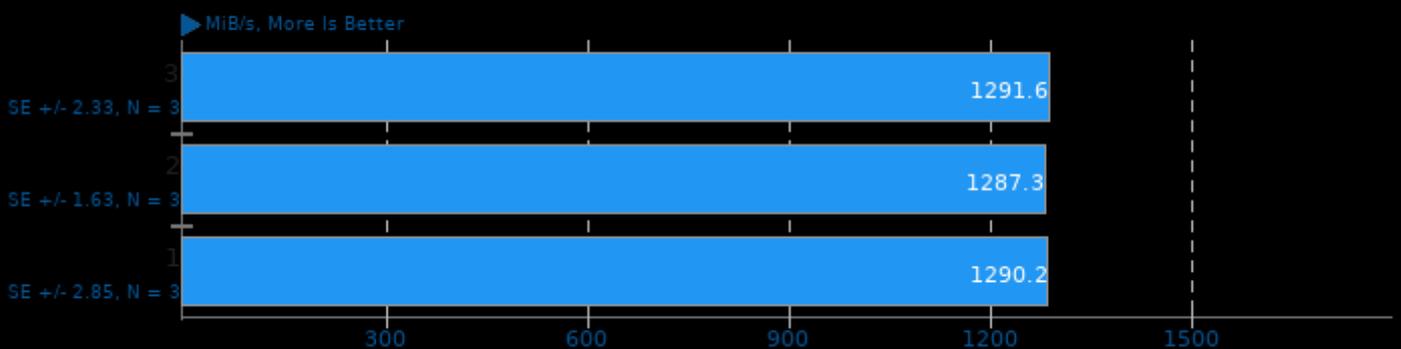
### Cryptsetup

Twofish-XTS 256b Decryption



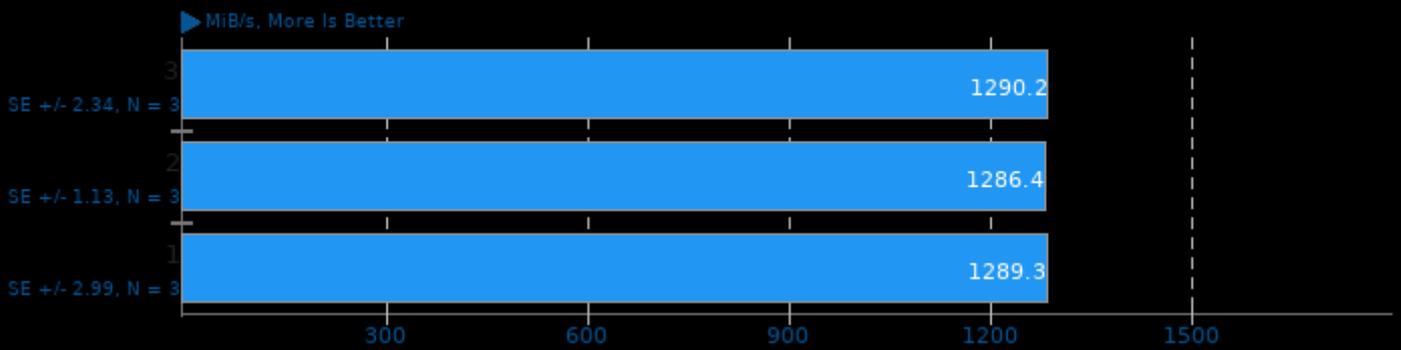
### Cryptsetup

AES-XTS 512b Encryption



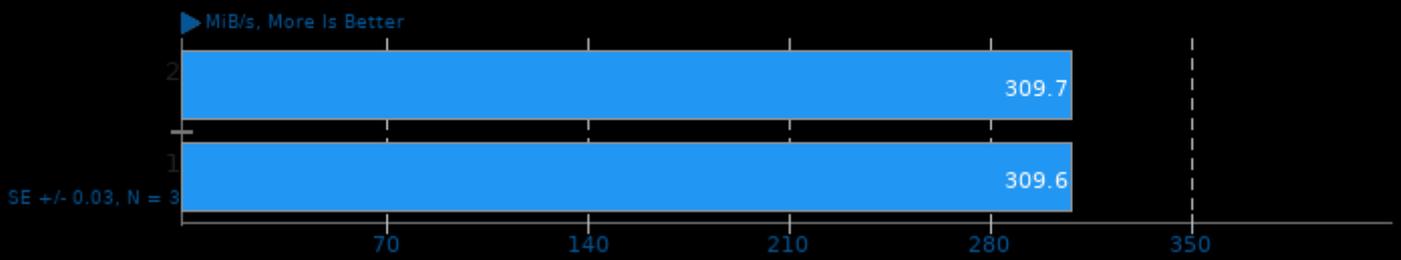
### Cryptsetup

AES-XTS 512b Decryption



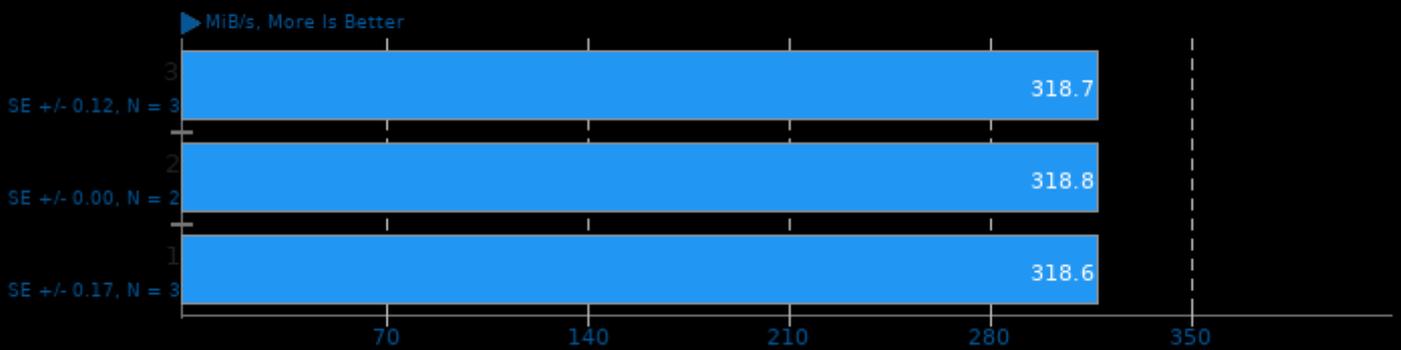
### Cryptsetup

Serpent-XTS 512b Encryption



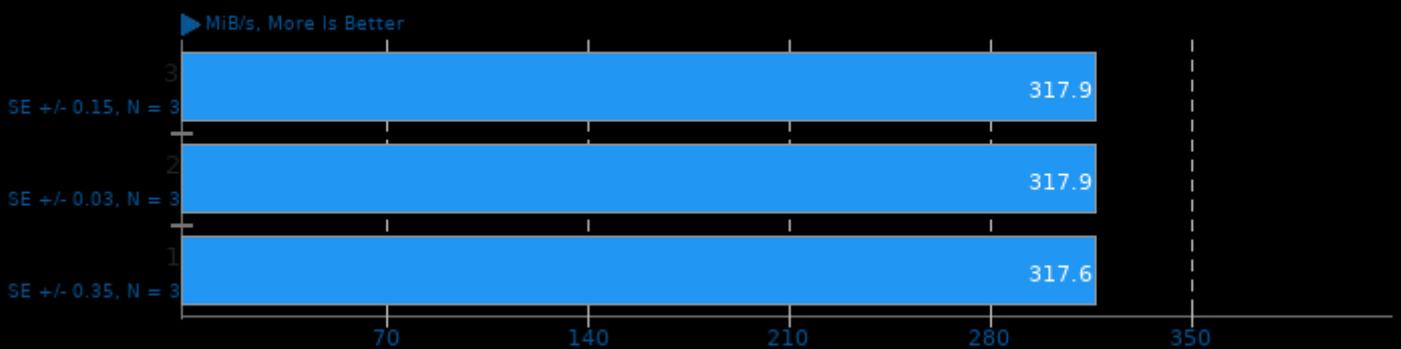
### Cryptsetup

Twofish-XTS 512b Encryption



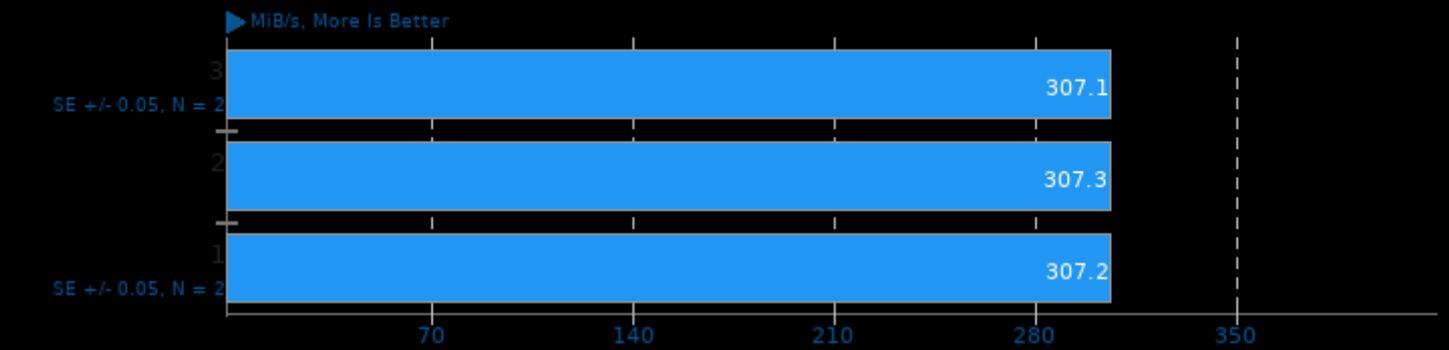
### Cryptsetup

Twofish-XTS 512b Decryption



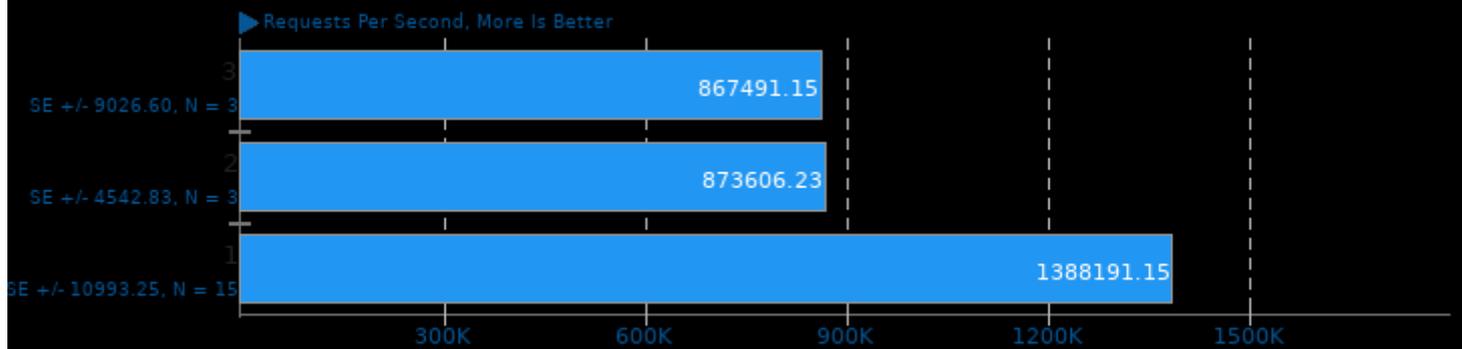
### Cryptsetup

Serpent-XTS 512b Decryption



### Redis 6.0.9

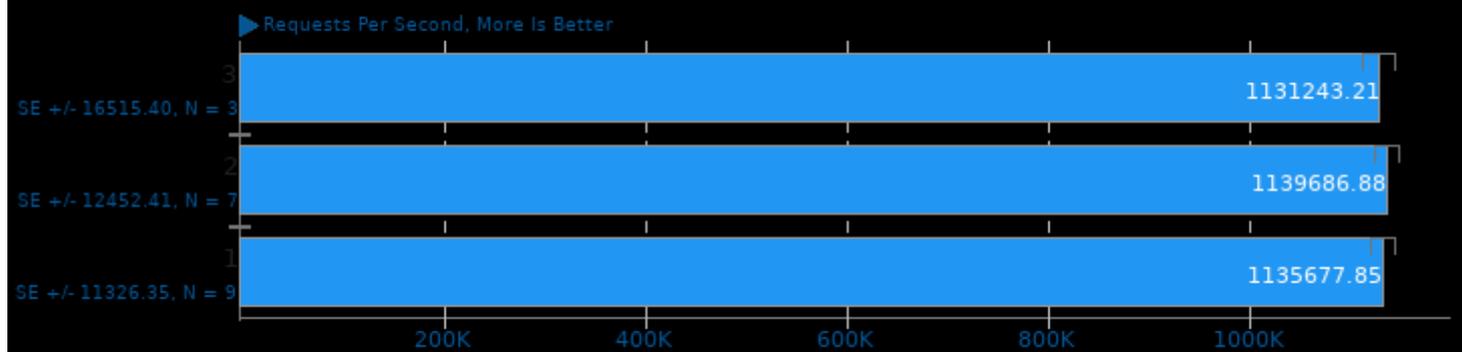
Test: LPOP



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

### Redis 6.0.9

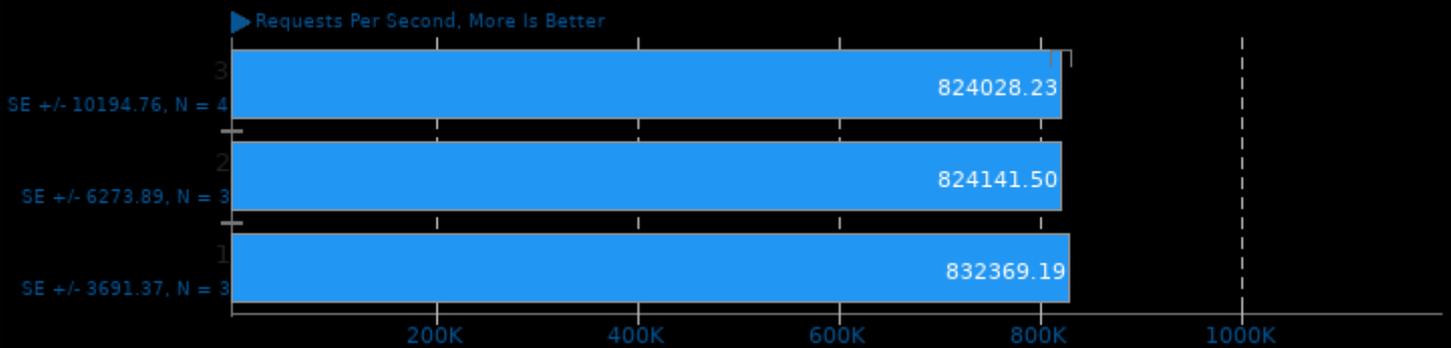
Test: SADD



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

### Redis 6.0.9

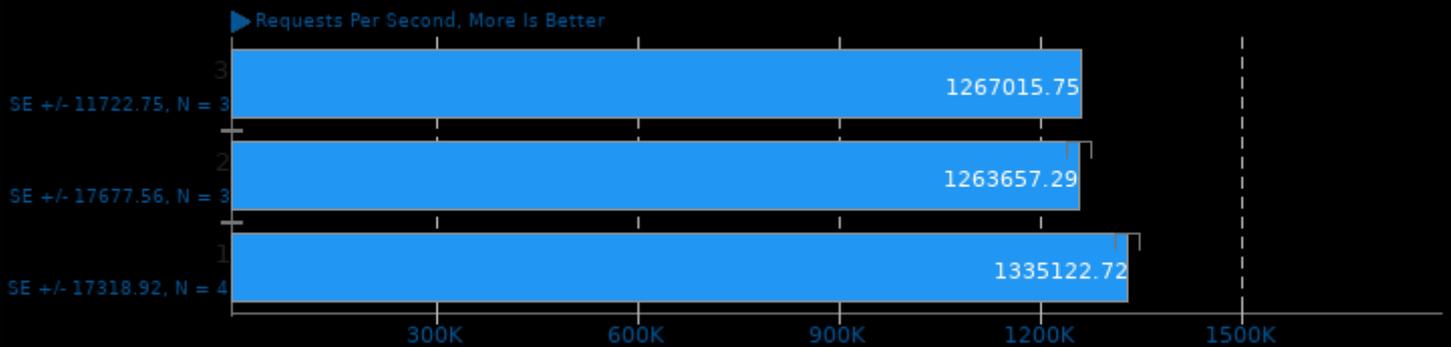
Test: LPUSH



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

### Redis 6.0.9

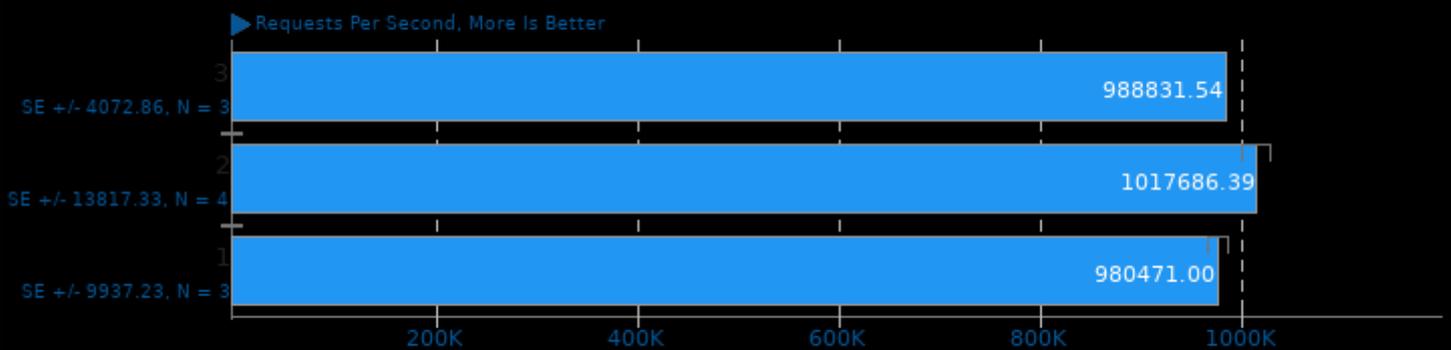
Test: GET



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

### Redis 6.0.9

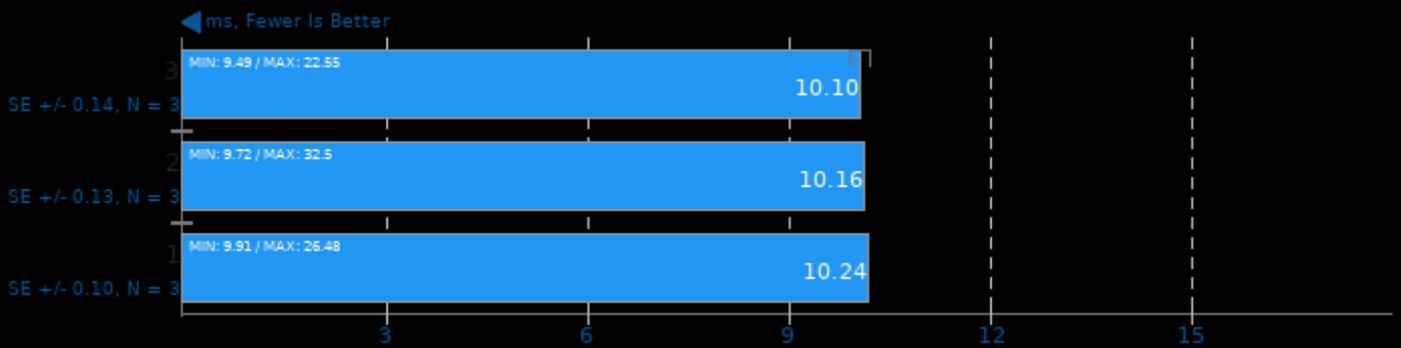
Test: SET



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

### Mobile Neural Network 1.1.1

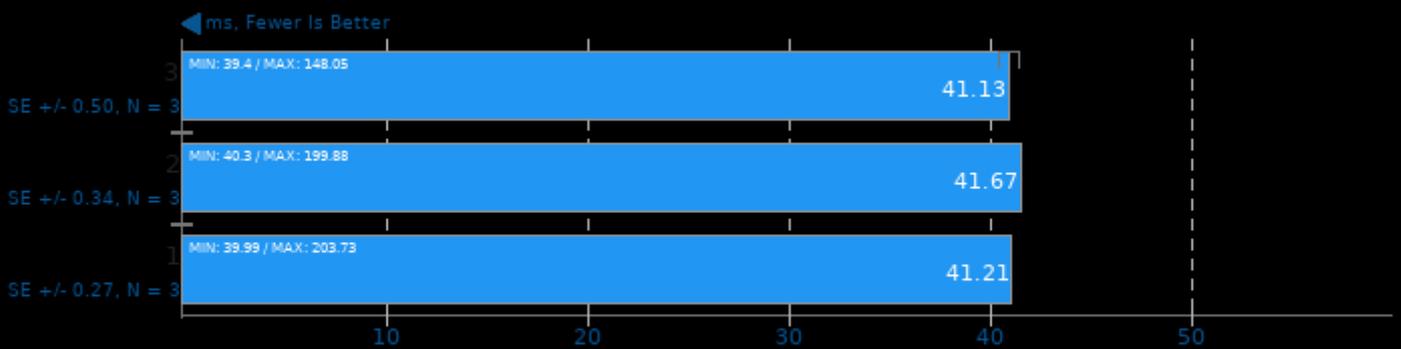
Model: SqueezeNetV1.0



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

### Mobile Neural Network 1.1.1

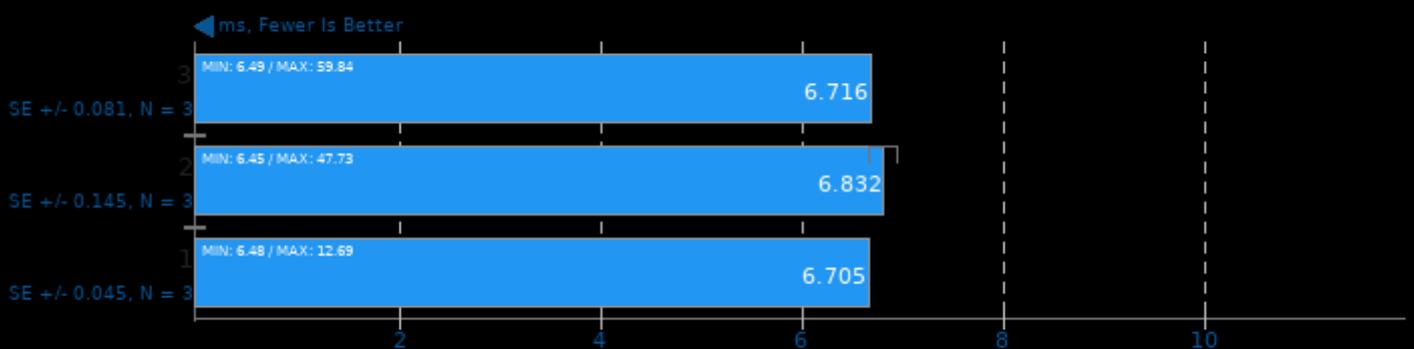
Model: resnet-v2-50



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 1.1.1

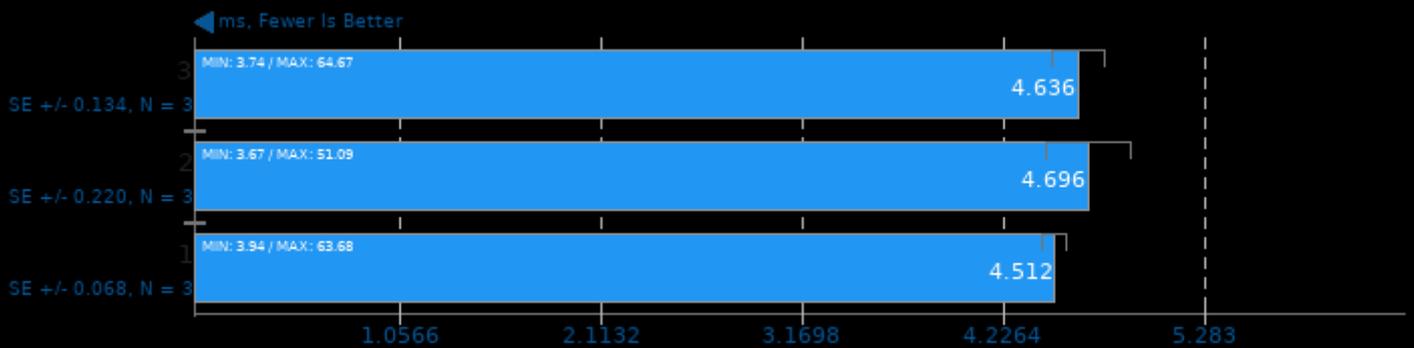
Model: MobileNetV2\_224



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 1.1.1

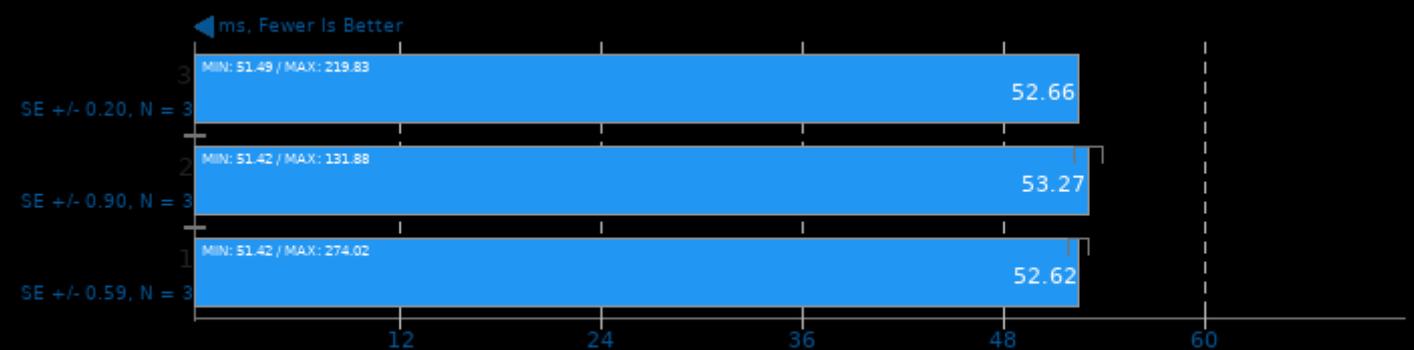
Model: mobilenet-v1-1.0



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 1.1.1

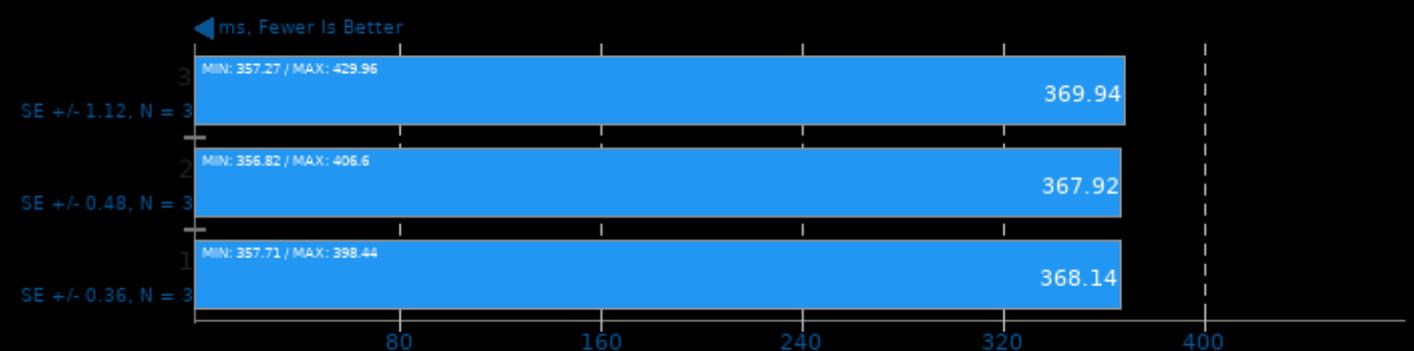
Model: inception-v3



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

## TNN 0.2.3

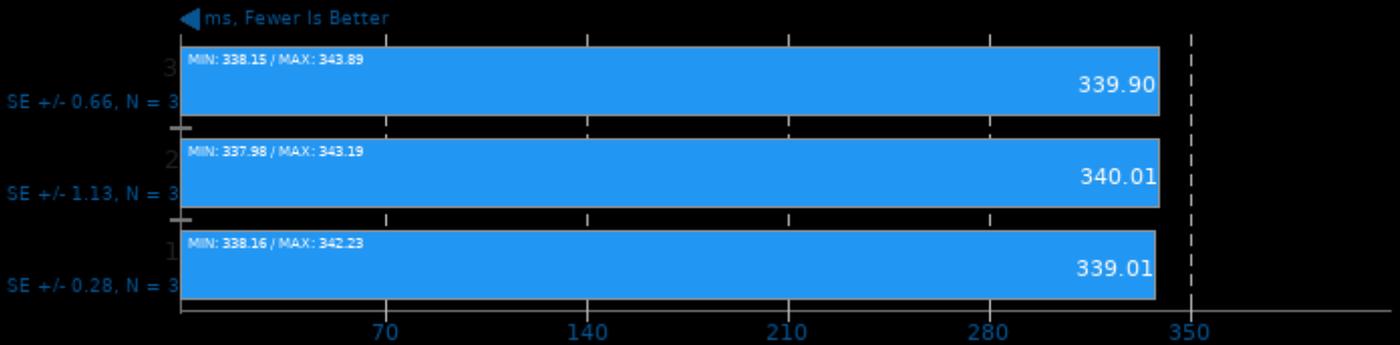
Target: CPU - Model: MobileNet v2



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

### TNN 0.2.3

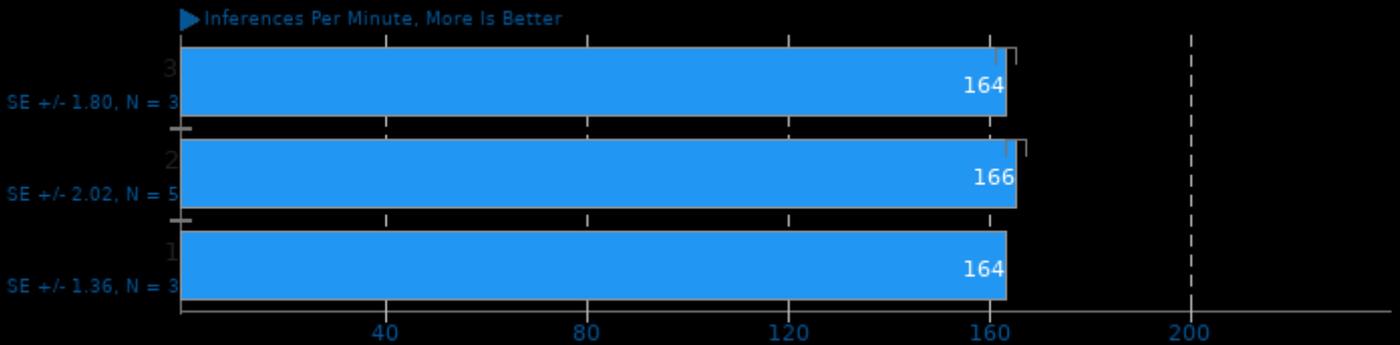
Target: CPU - Model: SqueezeNet v1.1



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

### ONNX Runtime 1.6

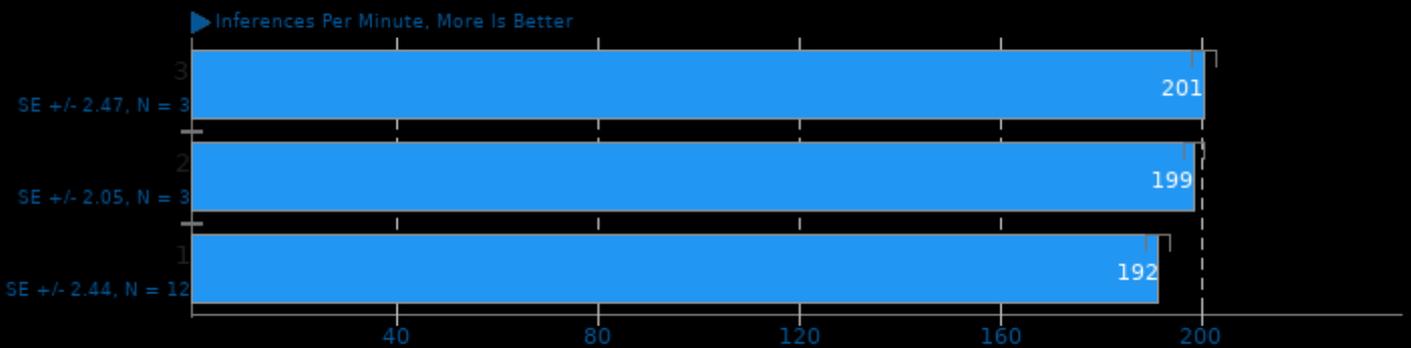
Model: yolov4 - Device: OpenMP CPU



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

### ONNX Runtime 1.6

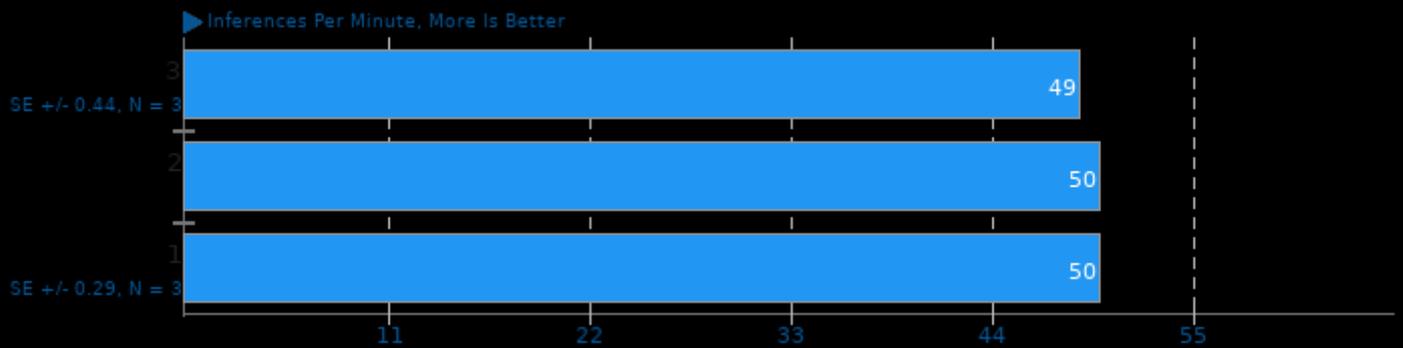
Model: bertsqad-10 - Device: OpenMP CPU



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

### ONNX Runtime 1.6

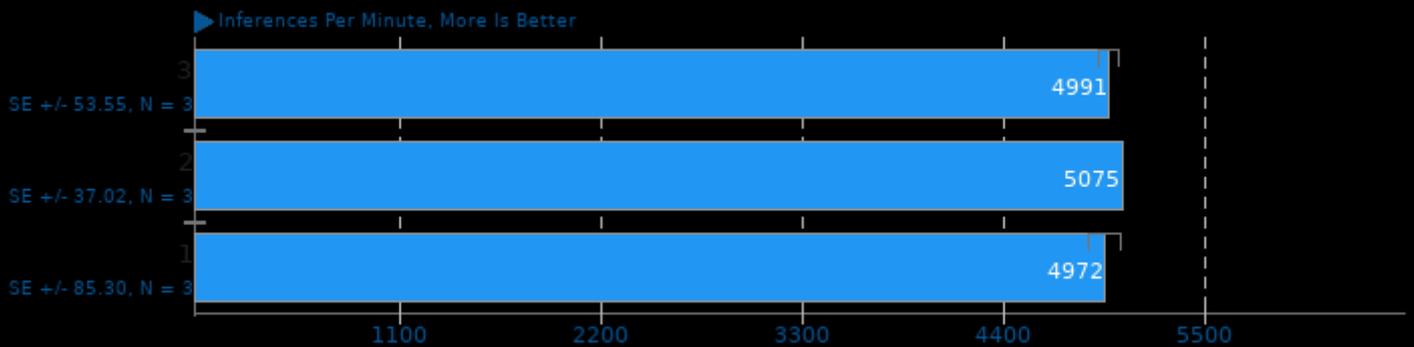
Model: fcn-resnet101-11 - Device: OpenMP CPU



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

### ONNX Runtime 1.6

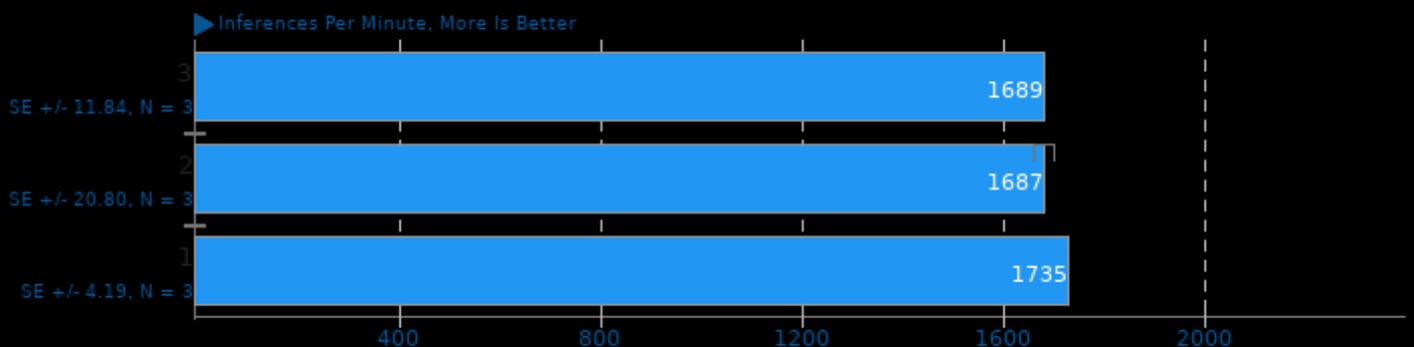
Model: shufflenet-v2-10 - Device: OpenMP CPU



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

### ONNX Runtime 1.6

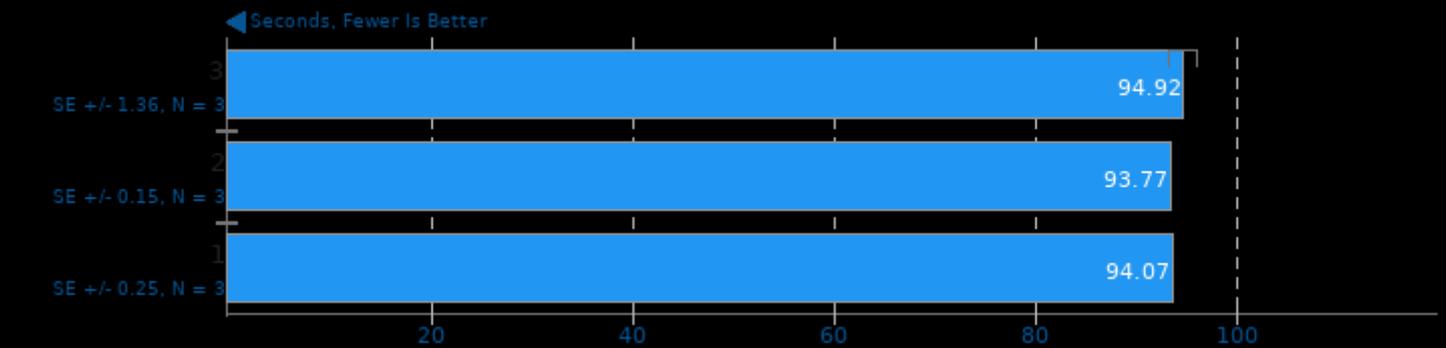
Model: super-resolution-10 - Device: OpenMP CPU



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

### GnuPG 2.2.27

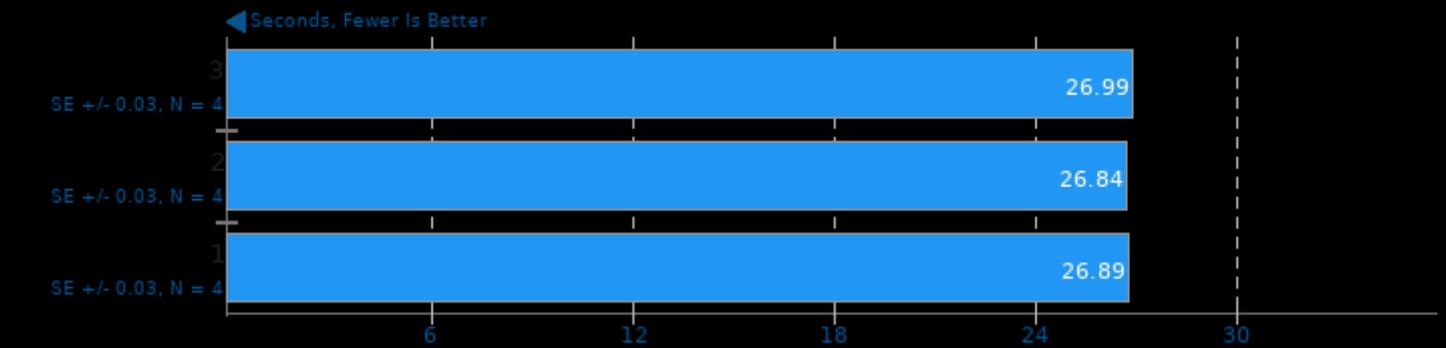
2.7GB Sample File Encryption



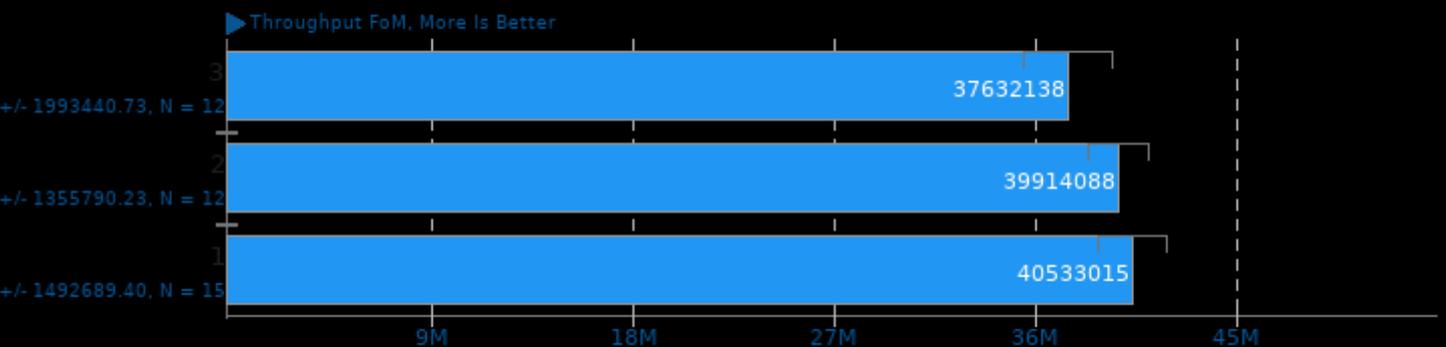
1. (CC) gcc options: -O2

### Unpacking Firefox 84.0

Extracting: firefox-84.0.source.tar.xz



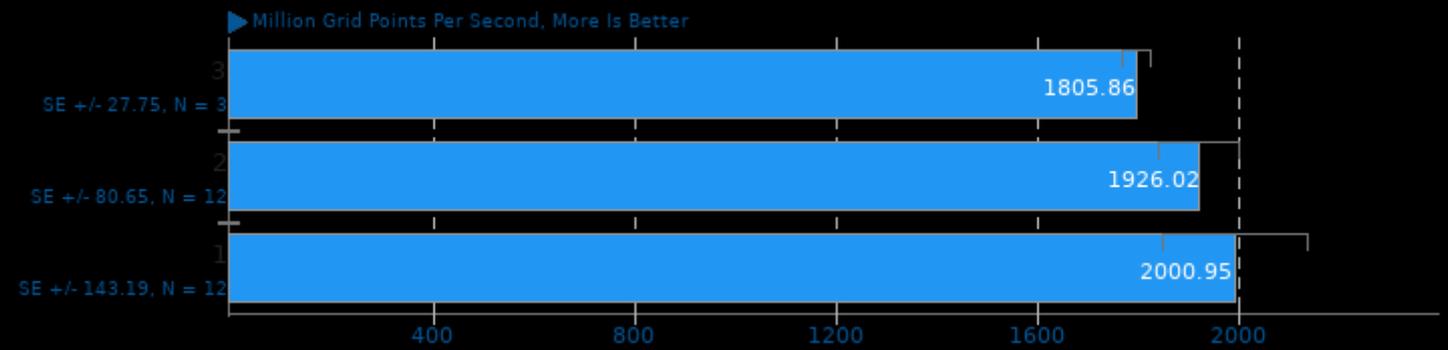
### Kripke 1.2.4



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

### ASKAP 1.0

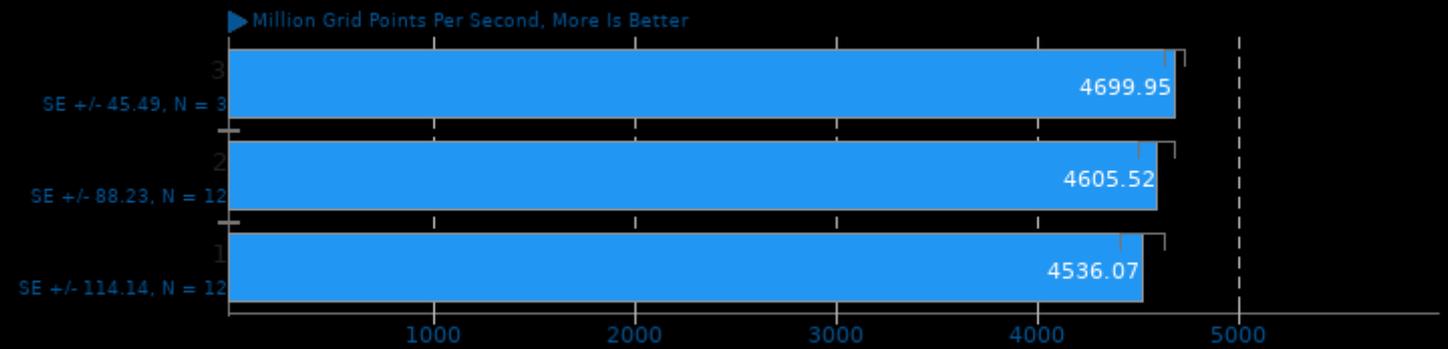
Test: tConvolve MT - Gridding



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

### ASKAP 1.0

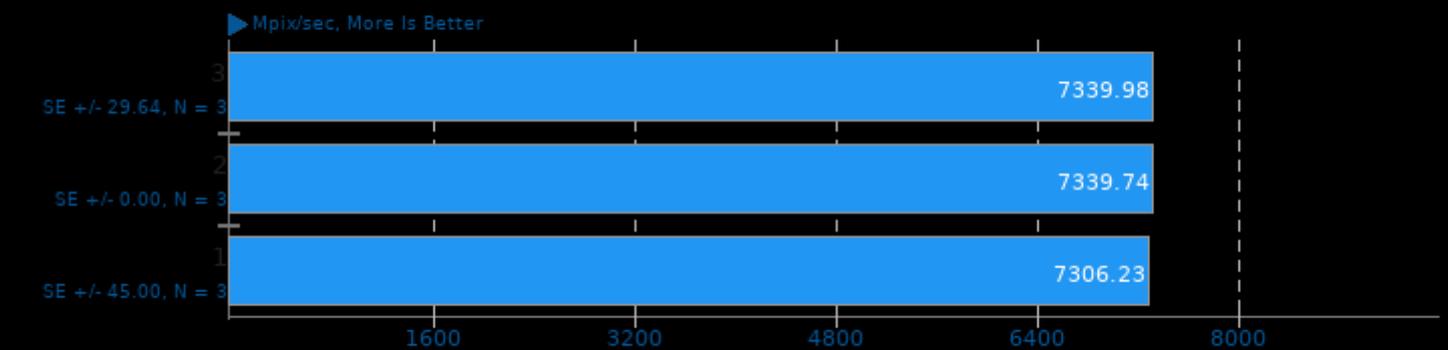
Test: tConvolve MT - Degriding



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

### ASKAP 1.0

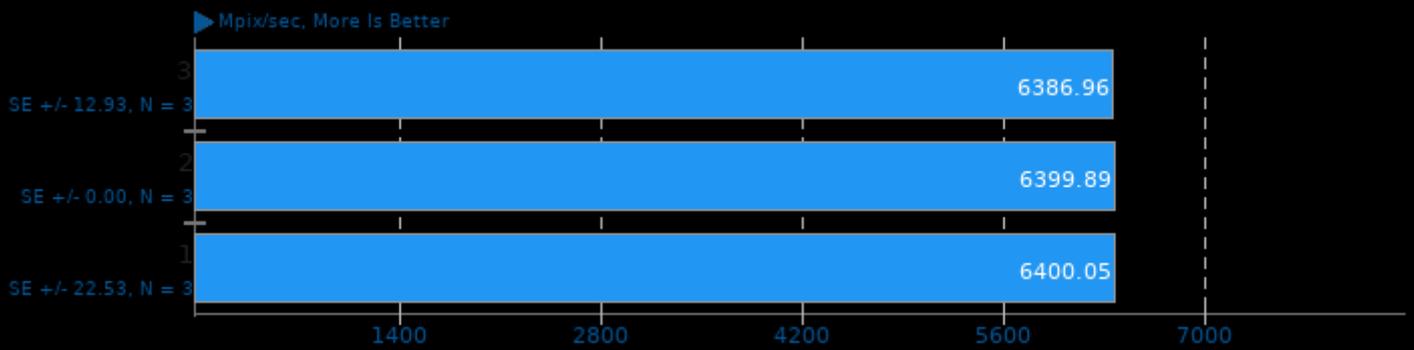
Test: tConvolve MPI - Degriding



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

### ASKAP 1.0

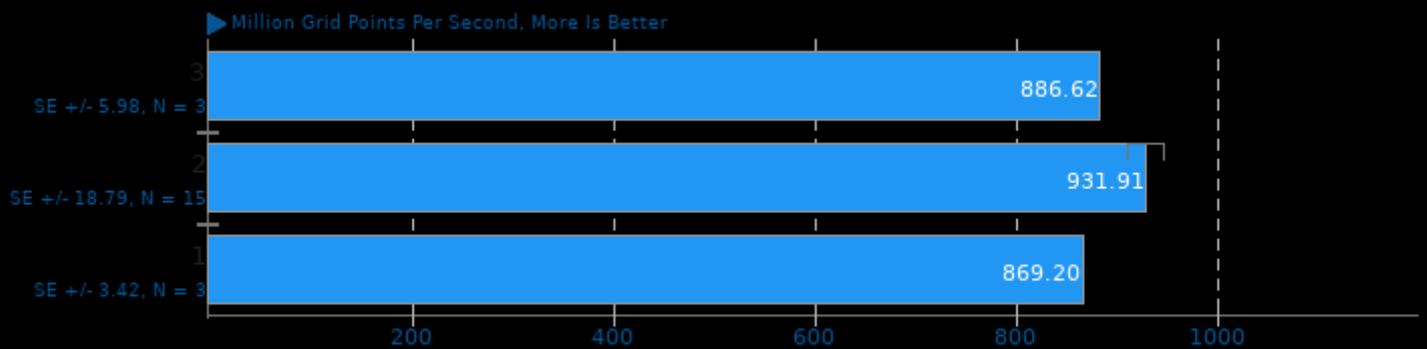
Test: tConvolve MPI - Gridding



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

### ASKAP 1.0

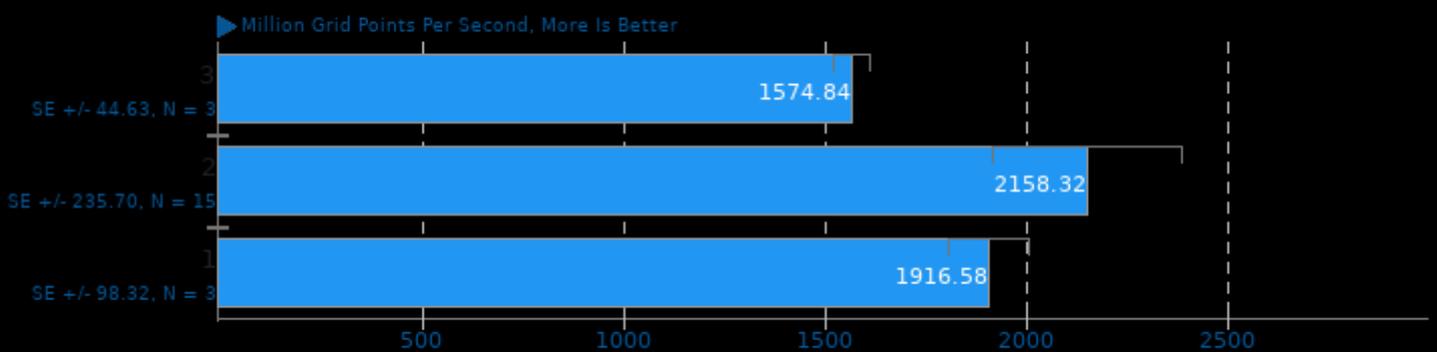
Test: tConvolve OpenMP - Gridding



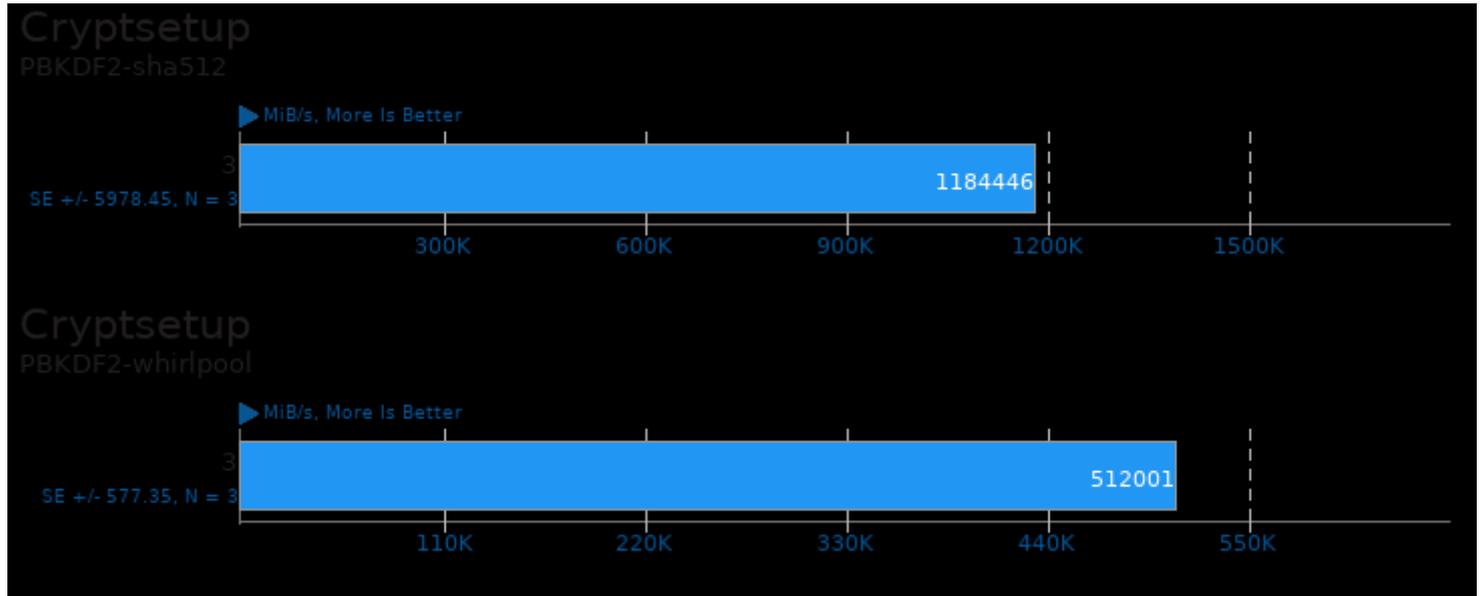
1. (CXX) g++ options: -O3 -fstrict-aliasing -fopenmp

### ASKAP 1.0

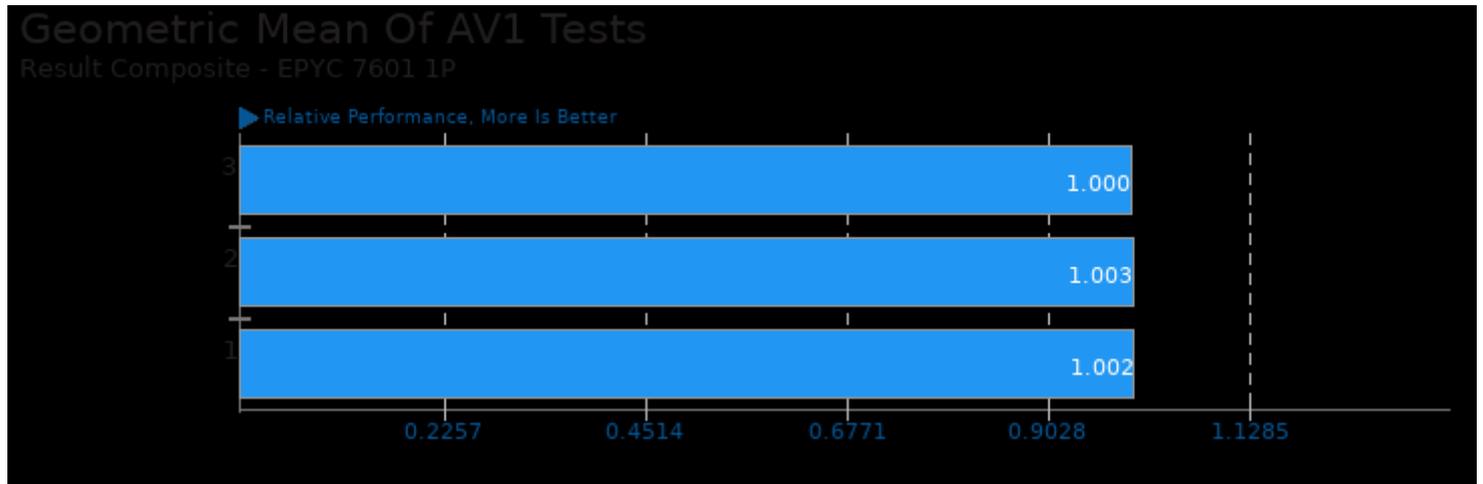
Test: tConvolve OpenMP - Degriding



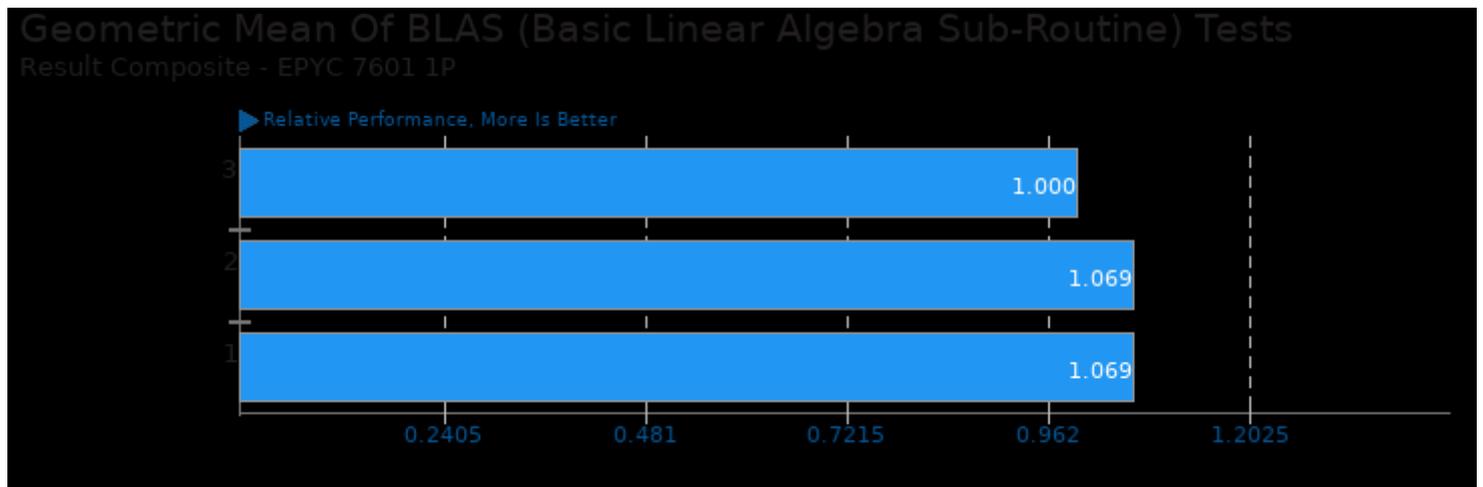
1. (CXX) g++ options: -O3 -fstrict-aliasing -fopenmp



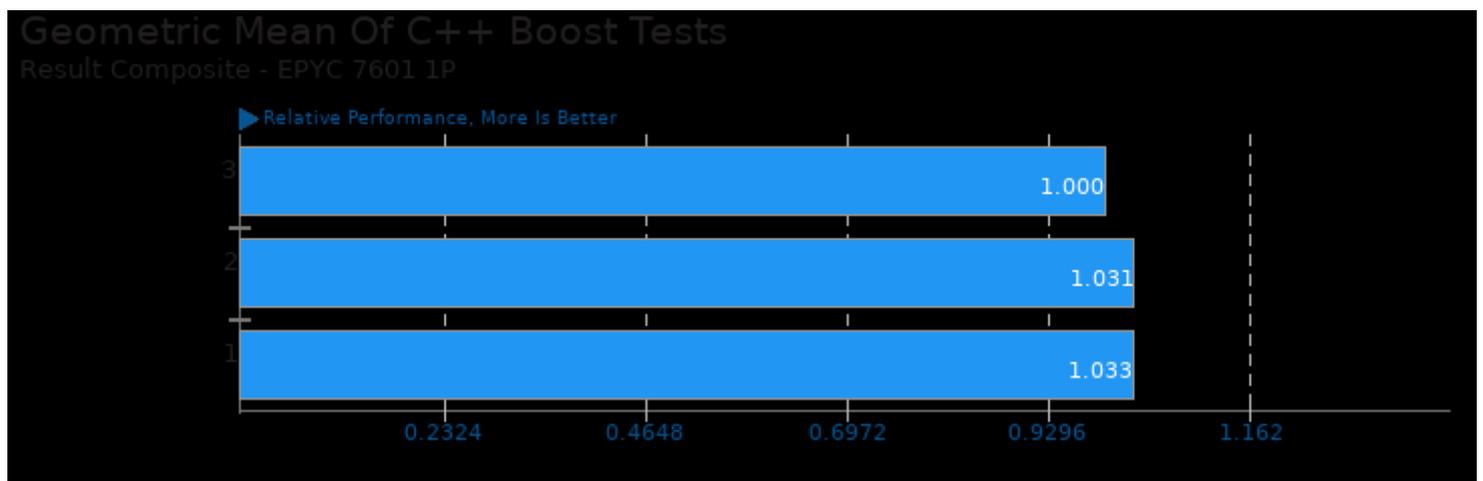
These geometric means are based upon test groupings / test suites for this result file.



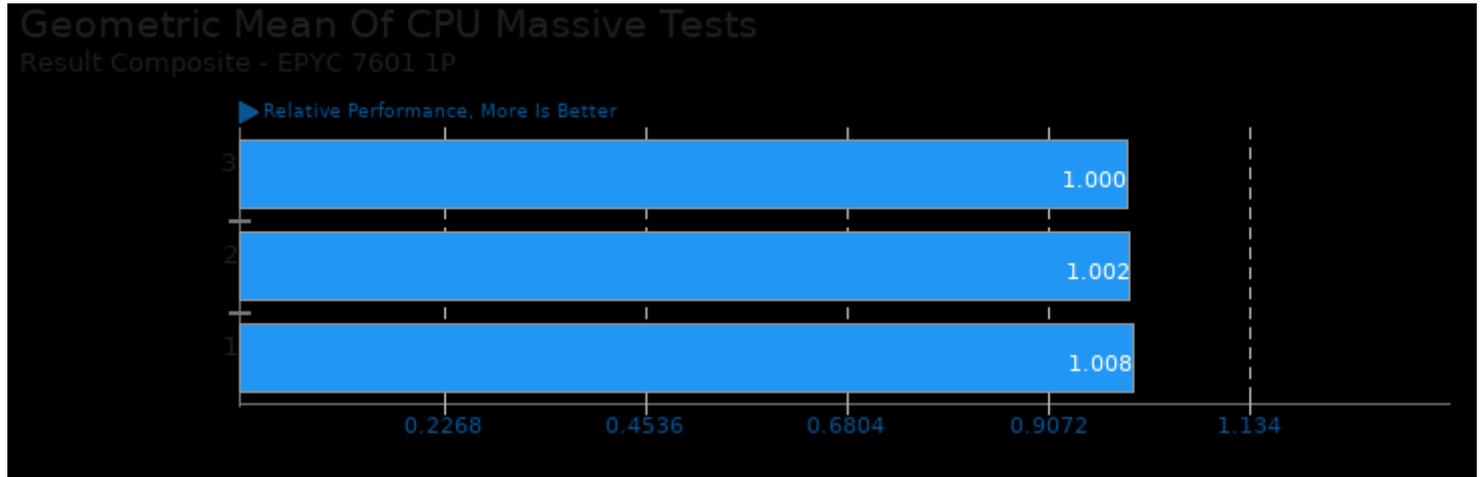
Geometric mean based upon tests: pts/dav1d and pts/rav1e



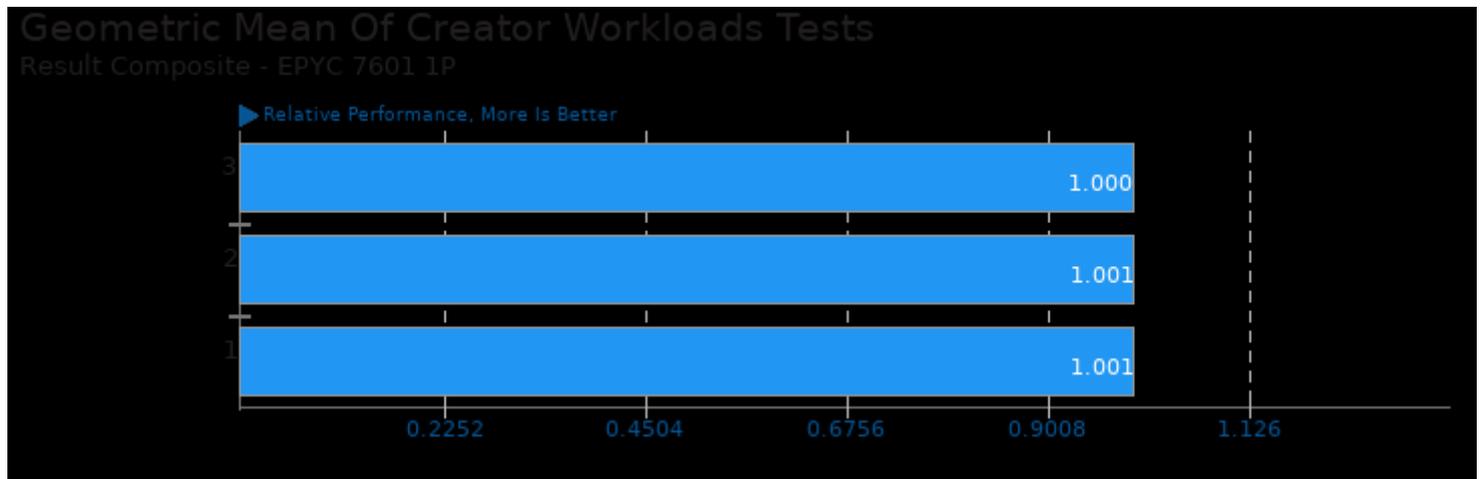
Geometric mean based upon tests: pts/qmcpack and pts/qe



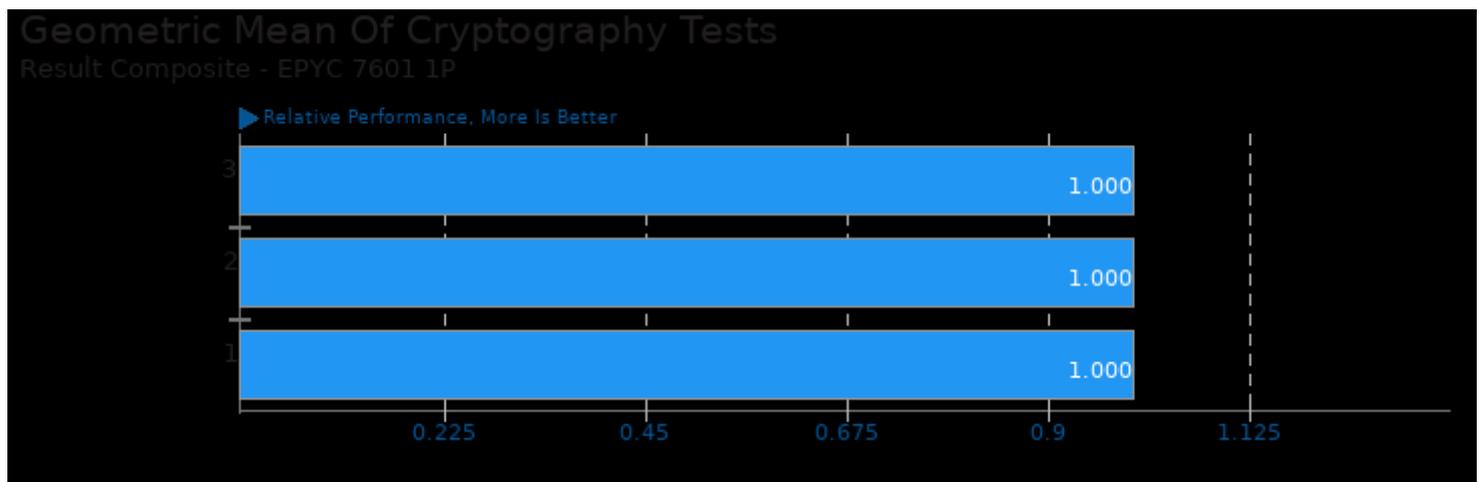
Geometric mean based upon tests: pts/quantlib, pts/qmcpack and pts/openfoam



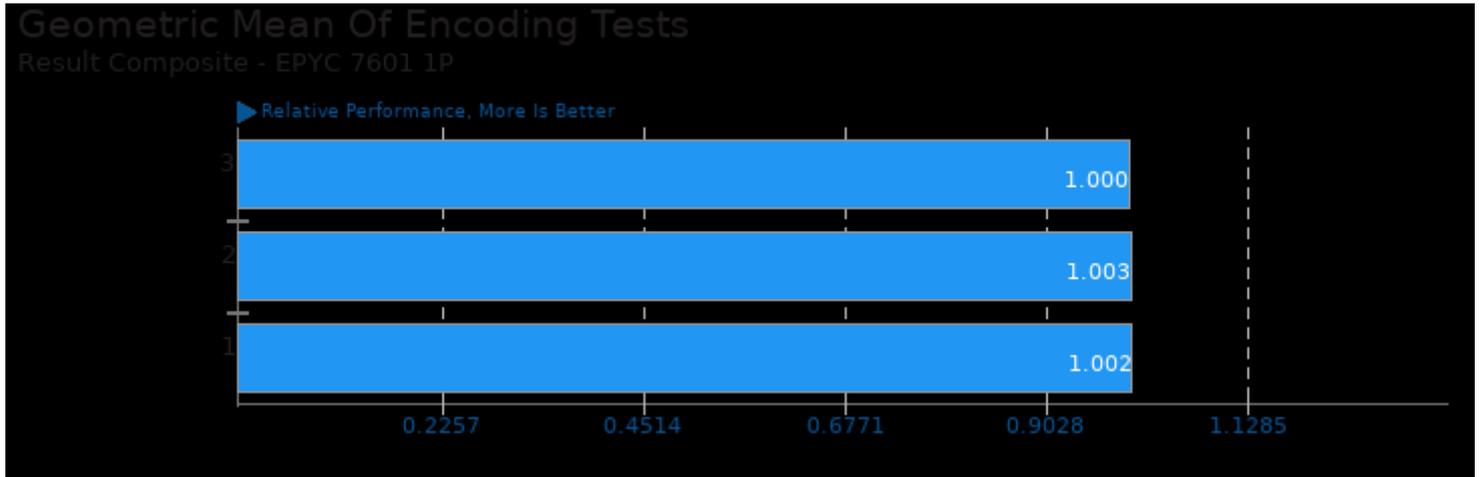
Geometric mean based upon tests: pts/cloverleaf, pts/dav1d, pts/lzbench, pts/npb, pts/redis, system/cryptsetup and pts/cpuminer-opt



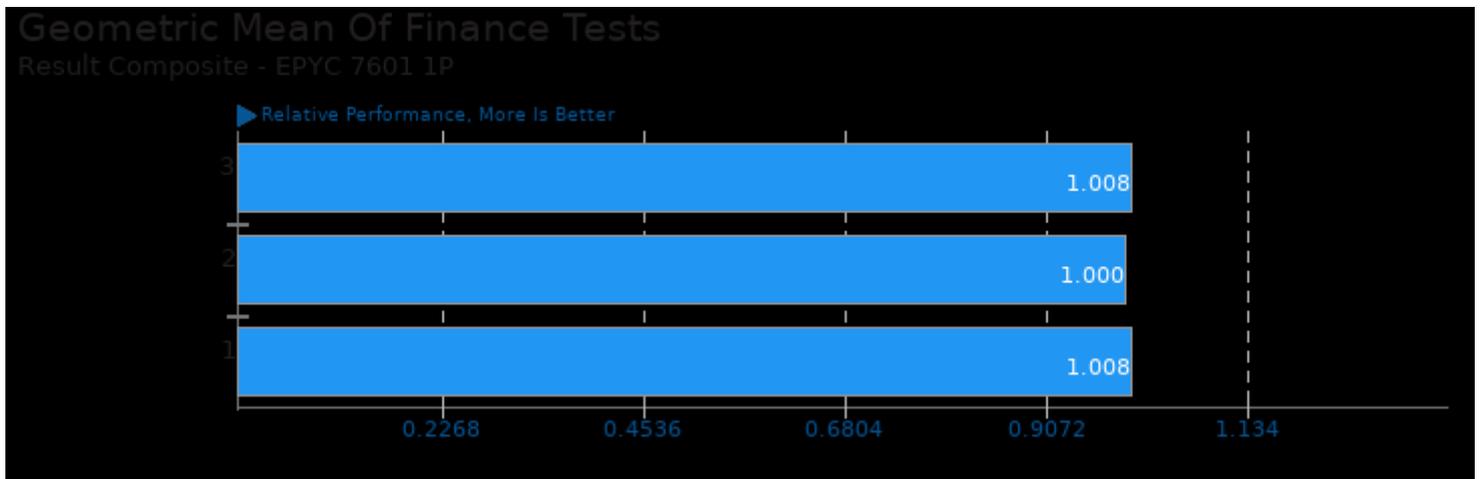
Geometric mean based upon tests: pts/dav1d, pts/rav1e, pts/etcpak, pts/build-godot and pts/synthmark



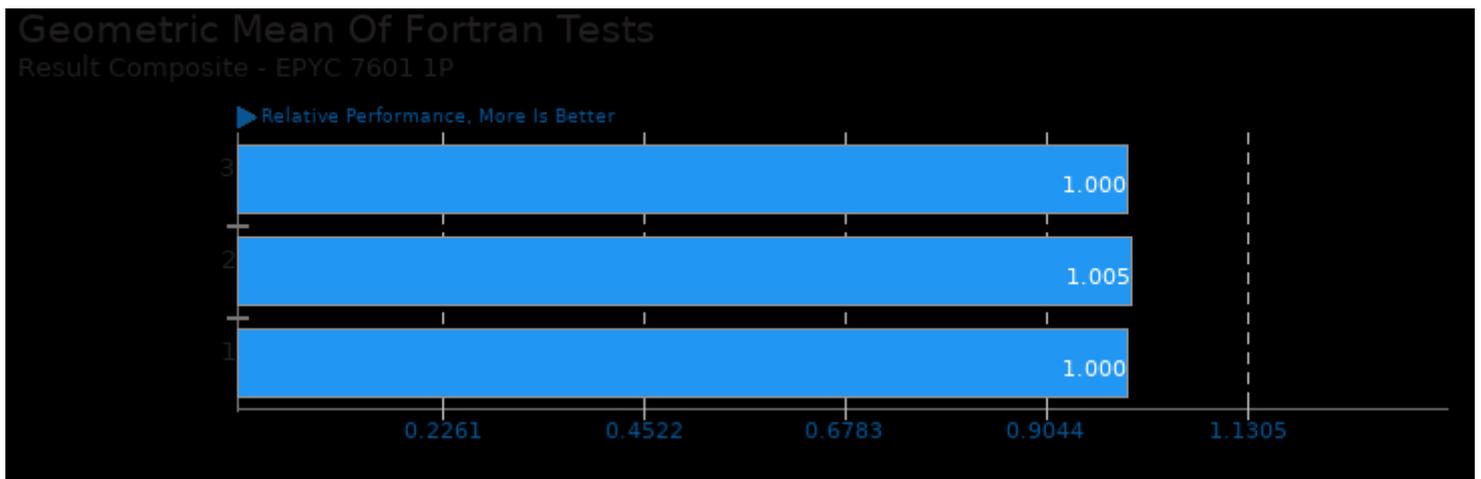
Geometric mean based upon tests: pts/gnupg, pts/gcrypt, system/cryptsetup and pts/cpuminer-opt



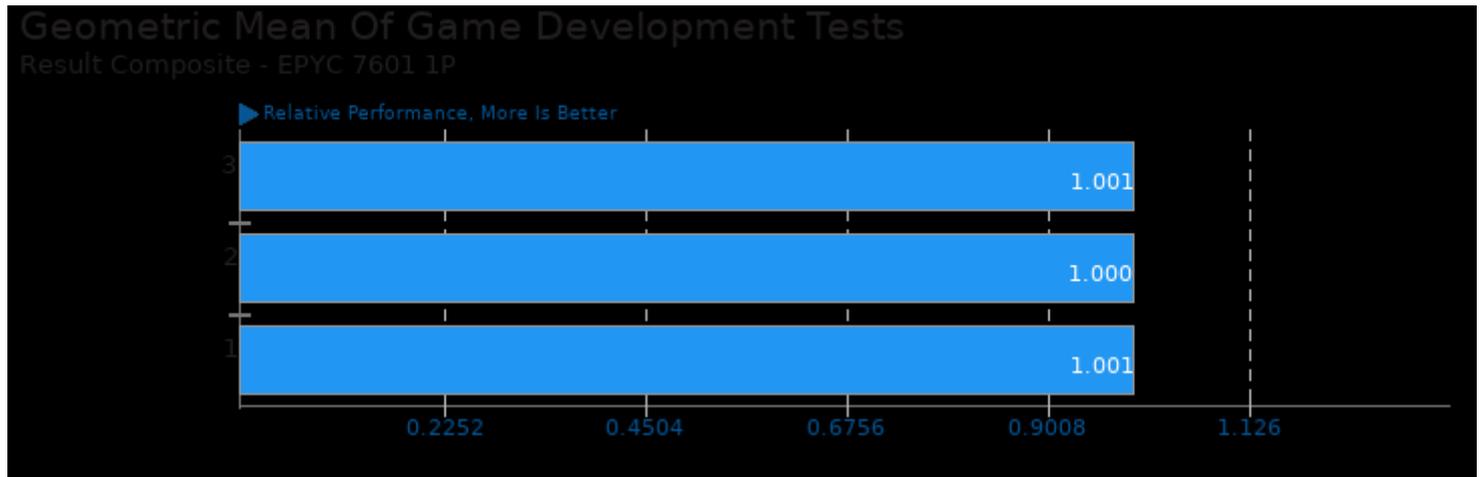
Geometric mean based upon tests: pts/dav1d and pts/rav1e



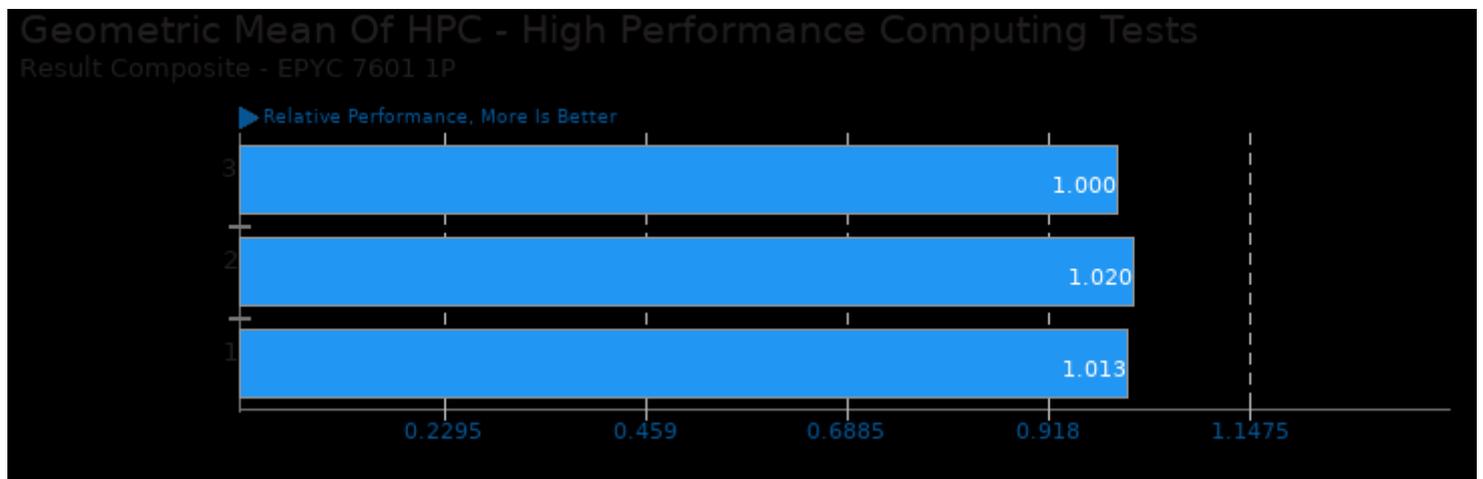
Geometric mean based upon tests: pts/financebench and pts/quantlib



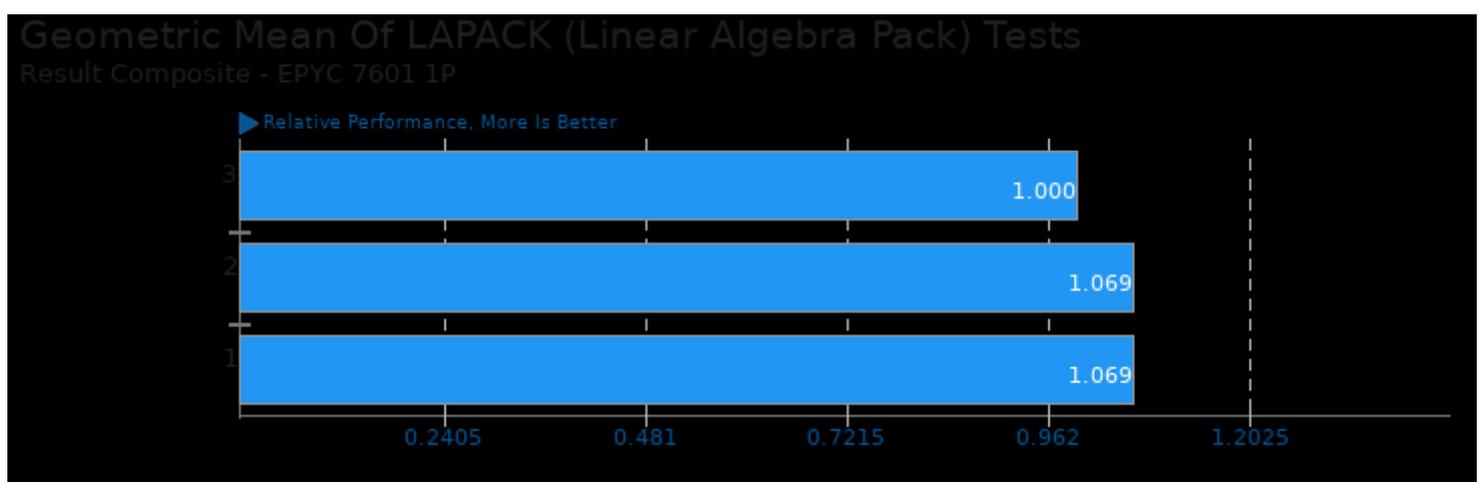
Geometric mean based upon tests: pts/npb, pts/cloverleaf and pts/qe



Geometric mean based upon tests: pts/etcpak and pts/build-godot



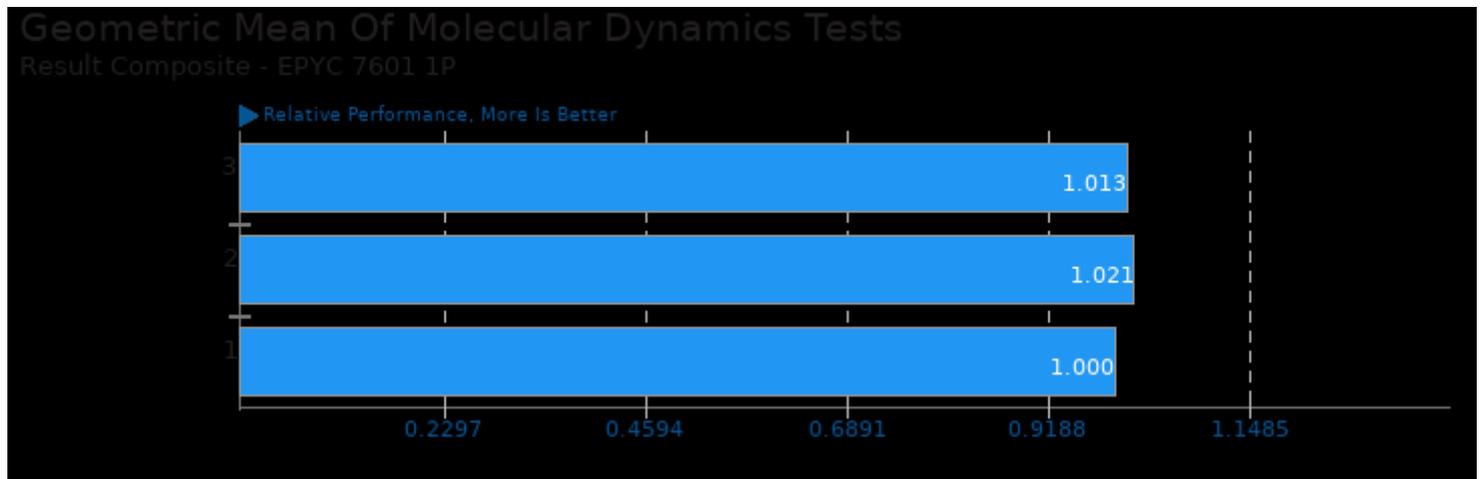
Geometric mean based upon tests: pts/npb, pts/askap, pts/qe, pts/amg, pts/cloverleaf, pts/lulesh, pts/openfoam, pts/qmcpack, pts/kripke, pts/mnn, pts/tnn and pts/onnx



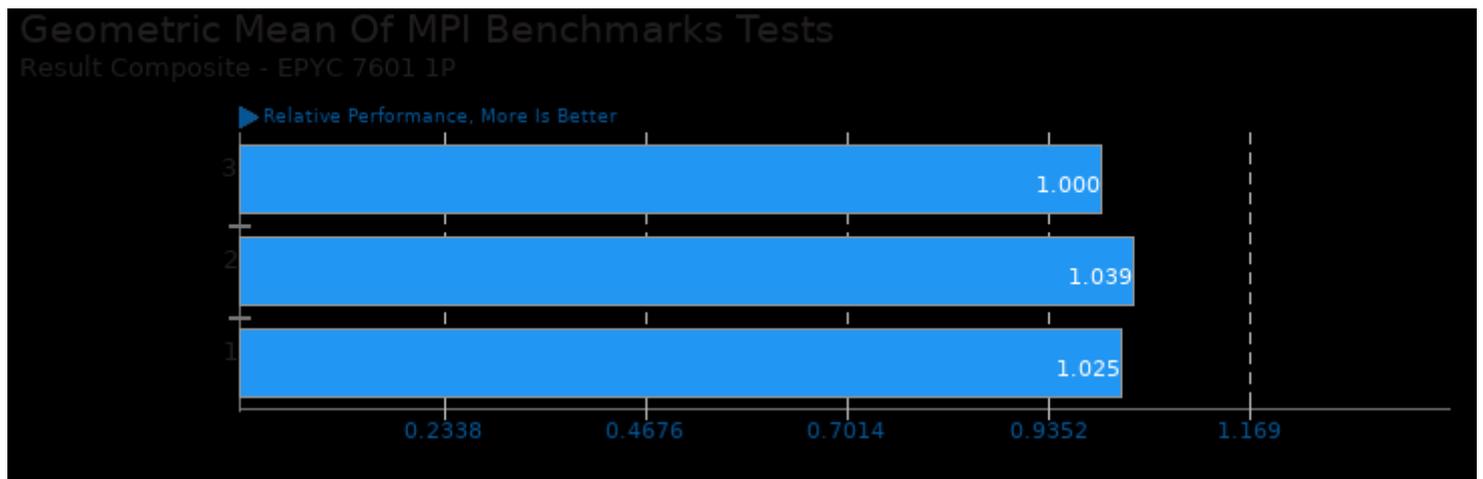
Geometric mean based upon tests: pts/qmcpack and pts/qe



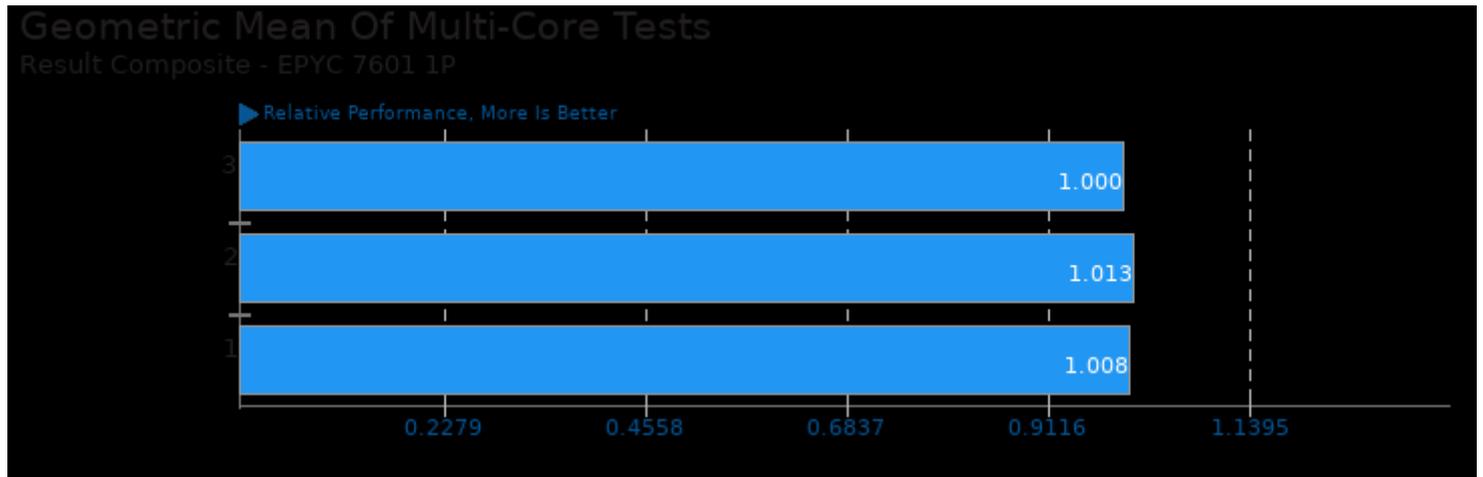
Geometric mean based upon tests: pts/mnn, pts/tnn and pts/onnx



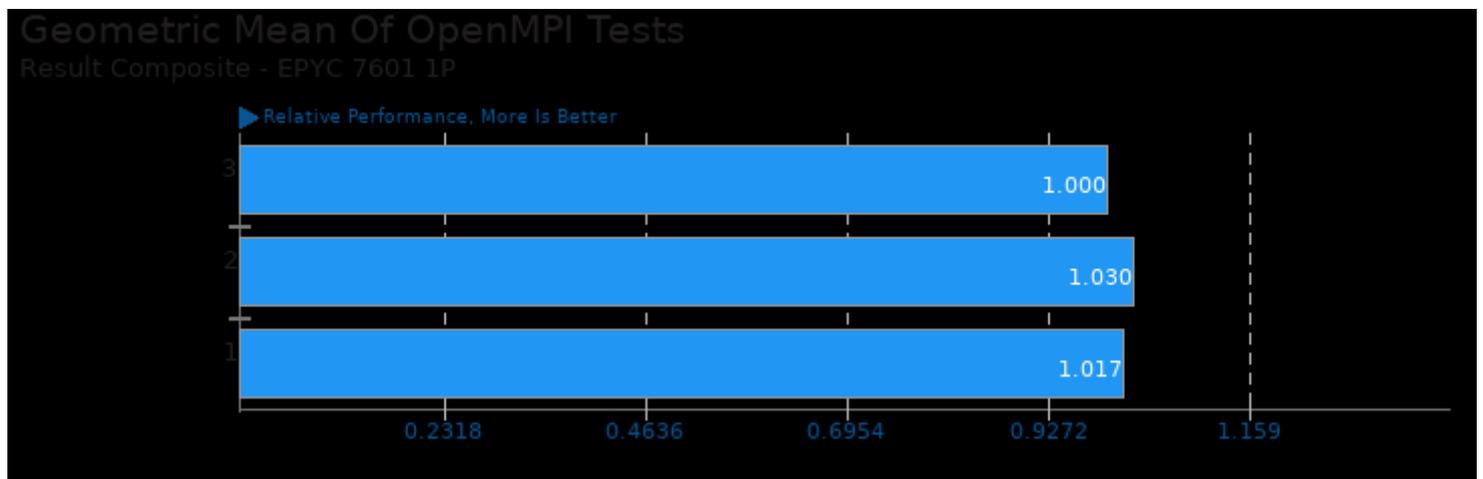
Geometric mean based upon tests: pts/cloverleaf, pts/lulesh and pts/openfoam



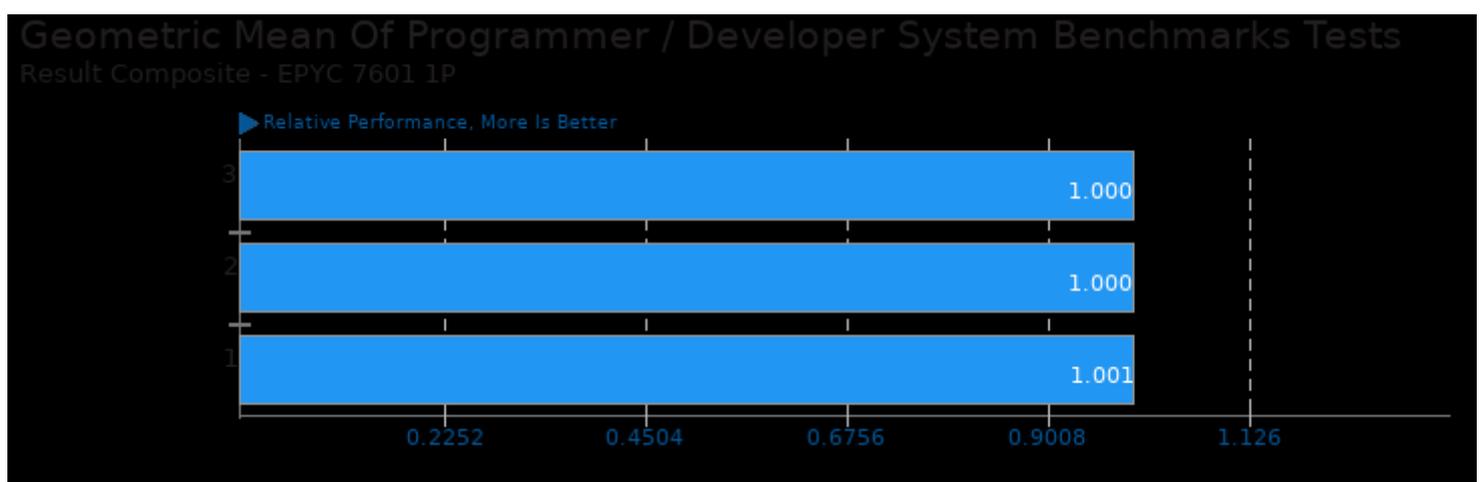
Geometric mean based upon tests: pts/askap, pts/qmcpack and pts/npb



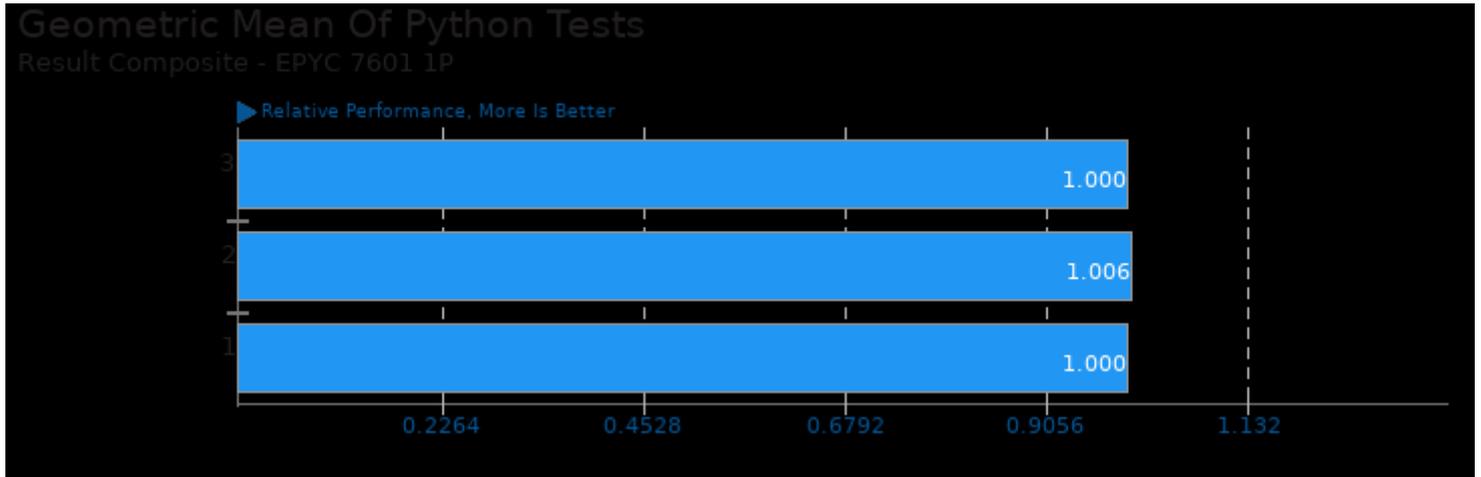
Geometric mean based upon tests: pts/cpuminer-opt, pts/askap, pts/dav1d, pts/rav1e, pts/npb and pts/build-godot



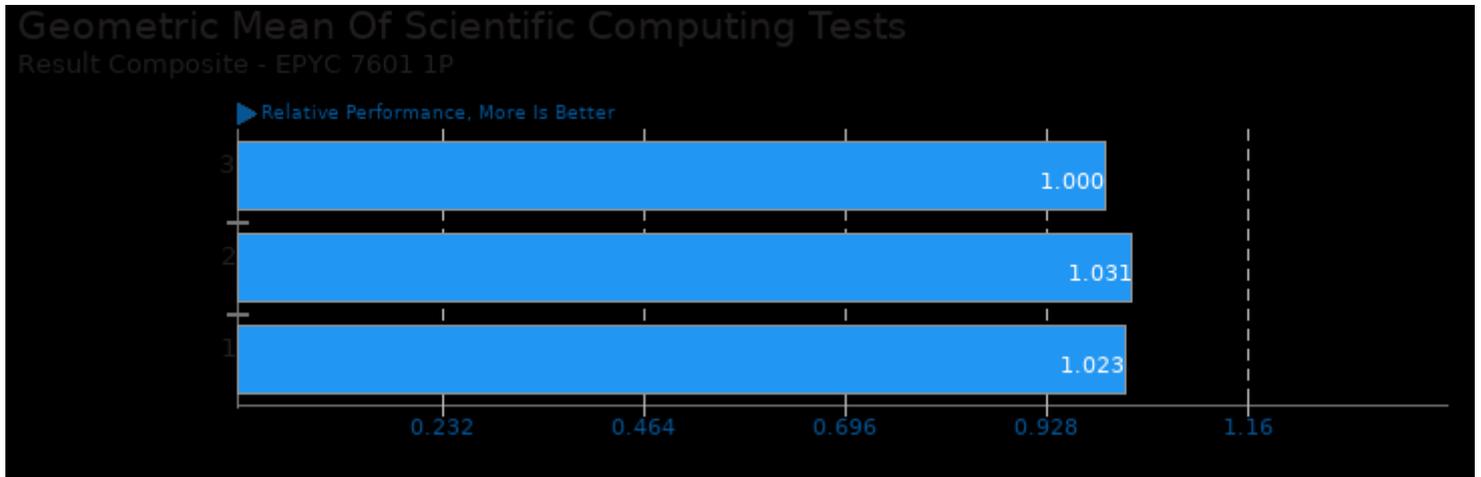
Geometric mean based upon tests: pts/npb, pts/cloverleaf, pts/amg, pts/qmcpack, pts/openfoam, pts/qe, pts/lulesh and pts/askap



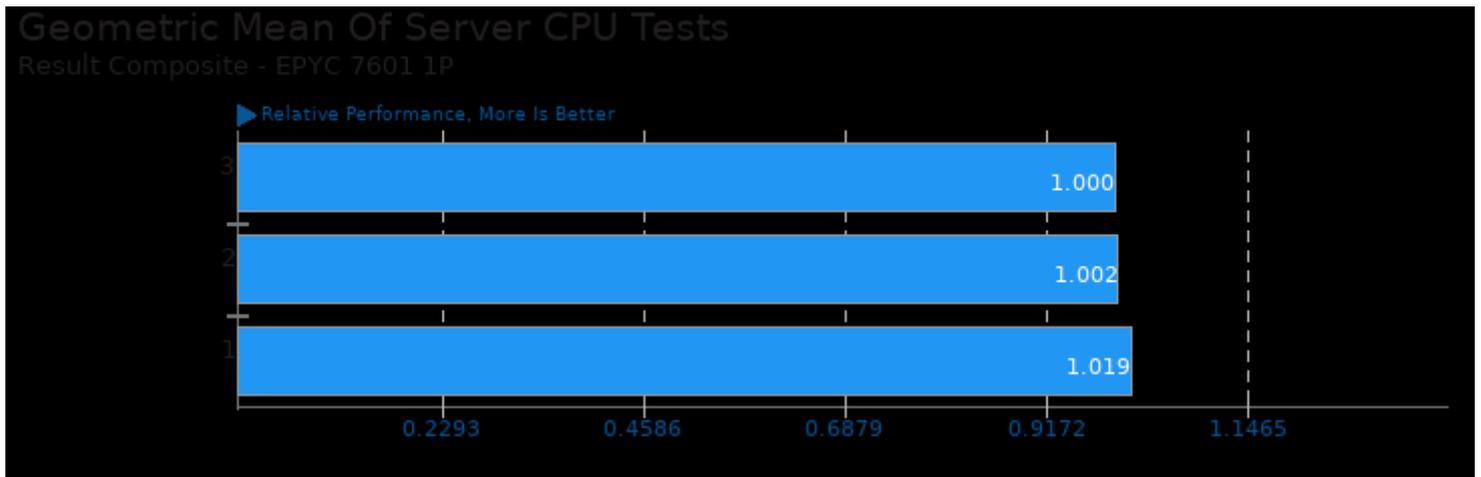
Geometric mean based upon tests: system/cryptsetup, pts/build-godot and pts/amg



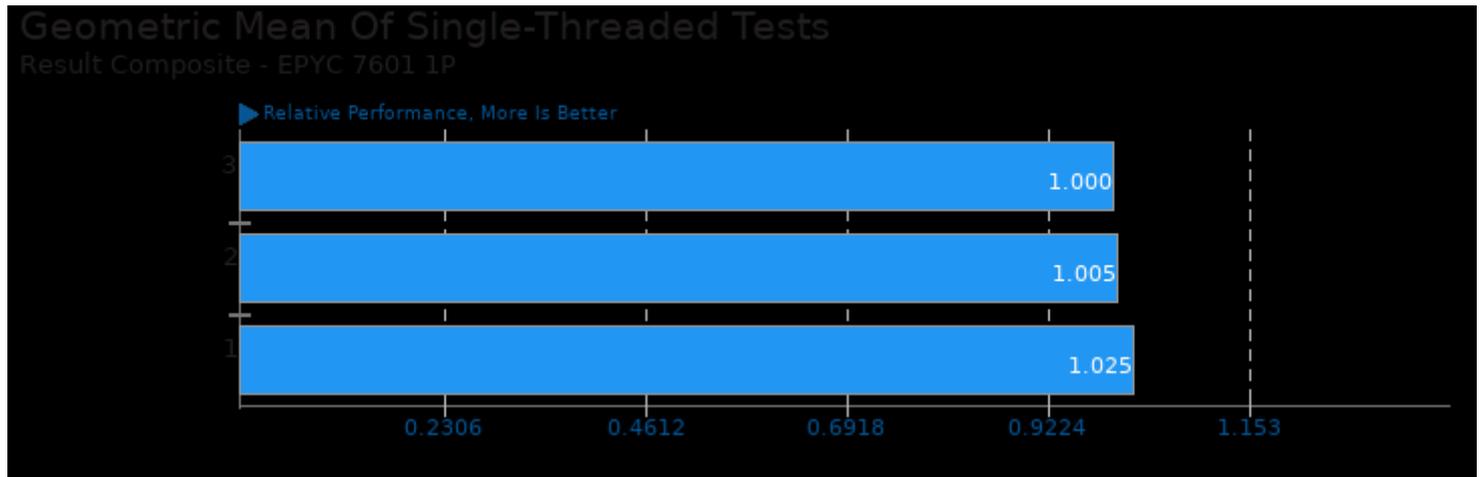
Geometric mean based upon tests: pts/build-godot and pts/onnx



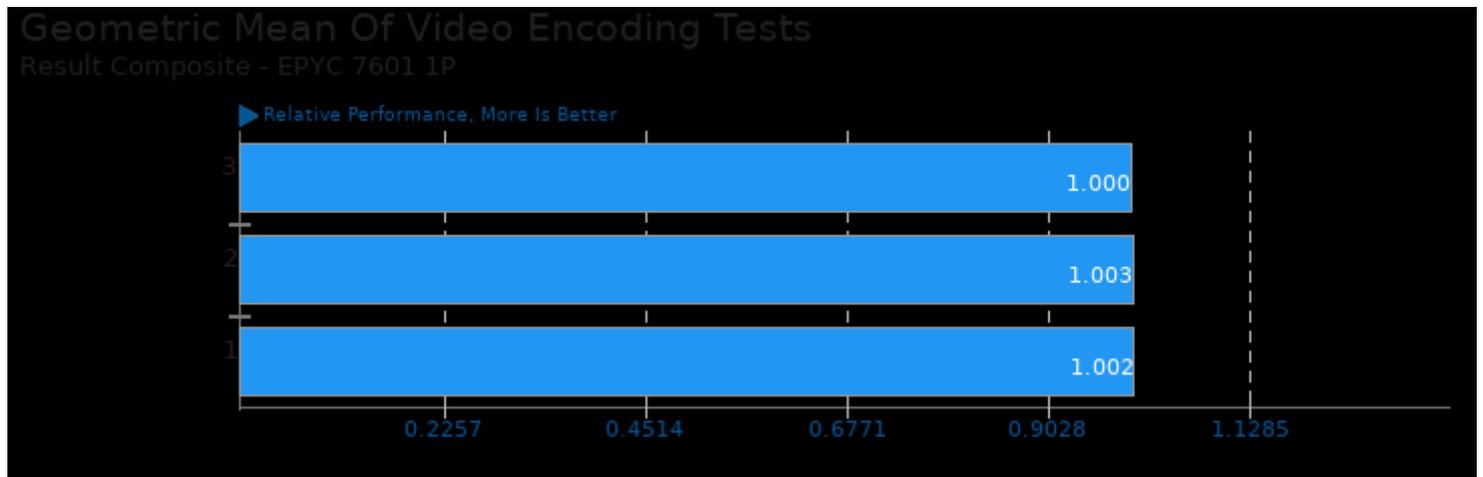
Geometric mean based upon tests: pts/amg, pts/cloverleaf, pts/lulesh, pts/openfoam, pts/qmcpack, pts/qe and pts/kripke



Geometric mean based upon tests: pts/npb, pts/dav1d, pts/redis and pts/cpuminer-opt



Geometric mean based upon tests: pts/lzbench, pts/gnupg and pts/redis



Geometric mean based upon tests: pts/dav1d and pts/rav1e

*This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 19:40.*