



[www.phoronix-test-suite.com](http://www.phoronix-test-suite.com)

## Ryzen 3 2200G 2021

AMD Ryzen 3 2200G testing with a ASUS PRIME B350M-E (5220 BIOS) and ASUS AMD Radeon Vega / Mobile 2GB on Ubuntu 20.10 via the Phoronix Test Suite.

### Automated Executive Summary

*1 had the most wins, coming in first place for 40% of the tests.*

*Based on the geometric mean of all complete results, the fastest (1) was 1.006x the speed of the slowest (2). 3 was 0.995x the speed of 1 and 2 was 0.999x the speed of 3.*

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

*Redis (Test: LPOP) at 1.797x*

*Kripke at 1.543x*

*LeelaChessZero (Backend: BLAS) at 1.224x*

*LeelaChessZero (Backend: Eigen) at 1.188x*

*Redis (Test: GET) at 1.07x*

*oneDNN (Harness: Matrix Multiply Batch Shapes Transformer - Data Type: u8s8f32 - Engine: CPU) at 1.05x*

*Sunflow Rendering System (Global Illumination + Image Synthesis) at 1.049x*

*Node.js V8 Web Tooling Benchmark at 1.049x*

*OSBench (Test: Memory Allocations) at 1.048x*

oneDNN (Harness: IP Shapes 1D - Data Type: u8s8f32 - Engine: CPU) at 1.039x.

## Test Systems:

**1**

**2**

**3**

Processor: AMD Ryzen 3 2200G @ 3.50GHz (4 Cores), Motherboard: ASUS PRIME B350M-E (5220 BIOS), Chipset: AMD Raven/Raven2, Memory: 6GB, Disk: Samsung SSD 970 EVO 250GB, Graphics: ASUS AMD Radeon Vega / Mobile 2GB (1100/1600MHz), Audio: AMD Raven/Raven2/Fenghuang, Monitor: G237HL, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 20.10, Kernel: 5.8.0-38-generic (x86\_64), Desktop: GNOME Shell 3.38.1, Display Server: X Server 1.20.9, Display Driver: modesetting 1.20.9, OpenGL: 4.6 Mesa 20.2.6 (LLVM 11.0.0), Vulkan: 1.2.131, Compiler: GCC 10.2.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86\_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale-gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-gcn/us r,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: 0x8101016

Graphics Notes: GLAMOR

Java Notes: OpenJDK Runtime Environment (build 11.0.9.1+1-Ubuntu-0ubuntu1.20.10)

Python Notes: Python 3.8.6

Security Notes: itlb\_multihit: Not affected + I1tf: Not affected + mds: Not affected + meltdown: Not affected + 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 AMD retpoline IBPB: conditional STIBP: disabled RSB filling + srbs: Not affected + tsx\_async\_abort: Not affected

	1	2	3
<b>Redis - LPOP (Reqs/sec)</b>	<b>2261211</b>	<b>1258381</b>	1275489
Normalized	100%	55.65%	56.41%
Standard Deviation	1.3%	1.6%	1.2%
<b>Kripke (Throughput FoM)</b>	<b>4811563</b>	<b>3117717</b>	
Normalized	100%	64.8%	
Standard Deviation	1.1%	2%	
<b>LeelaChessZero - BLAS (Nodes/s)</b>	<b>432</b>	374	<b>353</b>
Normalized	100%	86.57%	81.71%
Standard Deviation	3%	4.8%	1.2%
<b>LeelaChessZero - Eigen (Nodes/s)</b>	<b>448</b>	380	<b>377</b>
Normalized	100%	84.82%	84.15%
Standard Deviation	1.9%		4.1%

<b>Redis - GET (Reqs/sec)</b>	<b>2064795</b>	1931045	<b>1930168</b>
Normalized	100%	93.52%	93.48%
Standard Deviation	2.9%	2.7%	2%
<b>oneDNN - M.M.B.S.T - u8s8f32 - CPU (ms)</b>	<b>14.8215</b>	15.0825	<b>15.5619</b>
Normalized	100%	98.27%	95.24%
Standard Deviation	5.6%	4.6%	1%
<b>Sunflow Rendering System - G.I.I.S (sec)</b>	3.206	<b>3.148</b>	<b>3.302</b>
Normalized	98.19%	100%	95.34%
Standard Deviation	2.2%	1.8%	3.3%
<b>Node.js V8 Web Tooling Benchmark (runs/s)</b>	<b>7.38</b>	<b>7.74</b>	<b>7.38</b>
Normalized	95.35%	100%	95.35%
Standard Deviation	1.8%	0.7%	2.5%
<b>OSBench - Memory Allocations (Ns/Event)</b>	<b>81.742684</b>	81.999382	<b>85.632006</b>
Normalized	100%	99.69%	95.46%
Standard Deviation	0%	0.2%	2.9%
<b>oneDNN - IP Shapes 1D - u8s8f32 - CPU (ms)</b>	<b>14.6322</b>	14.8700	<b>15.1975</b>
Normalized	100%	98.4%	96.28%
Standard Deviation	1.3%	1.5%	1.3%
<b>NCNN - Vulkan GPU - resnet50 (ms)</b>	<b>71.68</b>	<b>74.10</b>	71.69
Normalized	100%	96.73%	99.99%
Standard Deviation	0.5%	1.7%	0.7%
<b>oneDNN - R.N.N.I - bf16bf16bf16 - CPU (ms)</b>	<b>7914</b>	<b>7668</b>	7750
Normalized	96.9%	100%	98.93%
Standard Deviation	2.2%	0.5%	0.3%
<b>TensorFlow Lite - Mobilenet Quant (us)</b>	<b>328733</b>	<b>318685</b>	327187
Normalized	96.94%	100%	97.4%
Standard Deviation	0.6%	0.6%	1%
<b>oneDNN - R.N.N.T - bf16bf16bf16 - CPU (ms)</b>	<b>8195</b>	<b>8439</b>	8427
Normalized	100%	97.12%	97.25%
Standard Deviation	2.7%	3%	1%
<b>Mobile Neural Network - mobilenet-v1-1.0</b>	7.395	<b>7.526</b>	<b>7.313</b>
Normalized	98.89%	97.17%	100%
Standard Deviation	0.5%	1.5%	0.7%
<b>oneDNN - C.B.S.A - f32 - CPU (ms)</b>	<b>23.0213</b>	<b>23.6791</b>	23.6697
Normalized	100%	97.22%	97.26%
Standard Deviation	2.5%	1.5%	1.1%
<b>rav1e - 10 (FPS)</b>	2.573	<b>2.566</b>	<b>2.639</b>
Normalized	97.5%	97.23%	100%
Standard Deviation	1%	0.5%	0.5%
<b>NCNN - Vulkan GPU - shufflenet-v2 (ms)</b>	<b>12.63</b>	<b>12.98</b>	12.75
Normalized	100%	97.3%	99.06%
Standard Deviation	1.3%	2.5%	2.8%
<b>oneDNN - R.N.N.T - u8s8f32 - CPU (ms)</b>	<b>8194</b>	8356	<b>8420</b>
Normalized	100%	98.05%	97.31%
Standard Deviation	2.7%	3%	0.6%
<b>Darktable - Boat - CPU-only (sec)</b>	<b>25.206</b>	<b>25.901</b>	25.451
Normalized	100%	97.32%	99.04%
Standard Deviation	0.6%	3.5%	0.6%
<b>NCNN - CPU-v2-v2 - mobilenet-v2 (ms)</b>	<b>11.20</b>	<b>10.91</b>	11.04
Normalized	97.41%	100%	98.82%
Standard Deviation	2.1%	1.3%	0.9%
<b>Mobile Neural Network - SqueezeNetV1.0</b>	9.732	<b>9.613</b>	<b>9.867</b>
Normalized	98.78%	100%	97.43%
Standard Deviation	2.3%	0.7%	1.2%
<b>oneDNN - D.B.s - u8s8f32 - CPU (ms)</b>	29.7098	<b>29.8889</b>	<b>29.1210</b>

	Normalized	98.02%	97.43%	100%
	Standard Deviation	0.5%	0.8%	1.7%
Sockperf - Latency Ping Pong (usec)	<b>6.927</b>	<b>6.751</b>	6.790	
	Normalized	97.46%	100%	99.43%
	Standard Deviation	2.1%	1.6%	2.4%
OSBench - Create Processes (us/Event)	<b>26.190281</b>	26.479562	<b>26.857058</b>	
	Normalized	100%	98.91%	97.52%
	Standard Deviation	0.6%	0.2%	1.3%
NCNN - Vulkan GPU - blazeface (ms)	<b>3.25</b>	3.31	<b>3.33</b>	
	Normalized	100%	98.19%	97.6%
	Standard Deviation	0.8%	1.4%	1.6%
NCNN - CPU - mnasnet (ms)	<b>10.50</b>	10.34	<b>10.25</b>	
	Normalized	97.62%	99.13%	100%
	Standard Deviation	0.8%	1.7%	1%
LULESH (z/s)	<b>1180</b>	<b>1208</b>	1208	
	Normalized	97.66%	100%	99.97%
	Standard Deviation	0.1%	0.1%	0.3%
FFTE - N.2.3.C.F.R (MFLOPS)	<b>15393</b>	<b>15756</b>	15437	
	Normalized	97.7%	100%	97.98%
	Standard Deviation	1.4%	1.2%	1.8%
LZ4 Compression - 3 - Compression Speed (MB/s)	<b>42.77</b>	42.34	<b>41.81</b>	
	Normalized	100%	98.99%	97.76%
	Standard Deviation	2.3%	3.9%	6%
TensorFlow Lite - Mobilenet Float (us)	309946	<b>306270</b>	<b>313216</b>	
	Normalized	98.81%	100%	97.78%
	Standard Deviation	0.1%	1%	1.3%
oneDNN - IP Shapes 3D - f32 - CPU (ms)	<b>13.0736</b>	13.1685	<b>13.3661</b>	
	Normalized	100%	99.28%	97.81%
	Standard Deviation	5.4%	5%	0.7%
LibRaw - P.P.B (Mpix/sec)	<b>19.36</b>	19.66	<b>19.79</b>	
	Normalized	97.83%	99.34%	100%
	Standard Deviation	0.5%	0.9%	1.1%
GROMACS - Water Benchmark (Ns/Day)	<b>0.333</b>	0.330	<b>0.326</b>	
	Normalized	100%	99.1%	97.9%
	Standard Deviation	1%	1.1%	2.7%
dav1d - C.1.1.b (FPS)	52.55	<b>52.39</b>	<b>53.51</b>	
	Normalized	98.21%	97.91%	100%
	Standard Deviation	0.5%	0.7%	1%
RNNoise (sec)	<b>22.238</b>	<b>22.693</b>	22.580	
	Normalized	100%	97.99%	98.49%
	Standard Deviation	0.2%	2.9%	2.7%
oneDNN - D.B.s - f32 - CPU (ms)	<b>30.8073</b>	<b>31.4147</b>	30.8208	
	Normalized	100%	98.07%	99.96%
	Standard Deviation	0.8%	1.6%	0.8%
oneDNN - R.N.N.T - f32 - CPU (ms)	<b>8437</b>	<b>8278</b>	8343	
	Normalized	98.11%	100%	99.22%
	Standard Deviation	2.7%	1.8%	1.3%
Hugin - P.P.A.S.T (sec)	<b>82.006</b>	<b>83.581</b>	82.188	
	Normalized	100%	98.12%	99.78%
	Standard Deviation	1.2%	0.5%	0.3%
NCNN - CPU - regnety_400m (ms)	<b>19.11</b>	18.87	<b>18.75</b>	
	Normalized	98.12%	99.36%	100%
	Standard Deviation	0.7%	0.9%	1.7%
NCNN - CPU - shufflenet-v2 (ms)	<b>12.65</b>	<b>12.89</b>	12.70	

Normalized	100%	98.14%	99.61%
Standard Deviation	1.6%	1.9%	1.9%
<b>NCNN - CPU-v3-v3 - mobilenet-v3 (ms)</b>	<b>9.67</b>	<b>9.49</b>	9.59
Normalized	98.14%	100%	98.96%
Standard Deviation	1.2%	0.9%	0.6%
<b>NCNN - CPU - vgg16 (ms)</b>	<b>117.19</b>	<b>119.38</b>	117.45
Normalized	100%	98.17%	99.78%
Standard Deviation	0.3%	0.3%	0.2%
<b>NCNN - CPU - efficientnet-b0 (ms)</b>	<b>17.07</b>	<b>16.76</b>	16.89
Normalized	98.18%	100%	99.23%
Standard Deviation	1.5%	0.3%	1.3%
<b>NCNN - CPU - resnet50 (ms)</b>	72.55	<b>73.14</b>	<b>71.82</b>
Normalized	98.99%	98.2%	100%
Standard Deviation	2%	0.9%	0.5%
<b>asmFish - 1.H.M.2.D (Nodes/s)</b>	7748047	<b>7802828</b>	<b>7669043</b>
Normalized	99.3%	100%	98.29%
Standard Deviation	0.6%	1.1%	0.7%
<b>Basis Universal - UASTC Level 0 (sec)</b>	11.898	<b>12.054</b>	<b>11.863</b>
Normalized	99.71%	98.42%	100%
Standard Deviation	0.3%	1.4%	0%
<b>Stockfish - Total Time (Nodes/s)</b>	<b>5718169</b>	<b>5628220</b>	5648589
Normalized	100%	98.43%	98.78%
Standard Deviation	1.5%	2.3%	1.2%
<b>oneDNN - D.B.s - f32 - CPU (ms)</b>	22.5413	<b>22.3144</b>	<b>22.6619</b>
Normalized	98.99%	100%	98.47%
Standard Deviation	2%	3.1%	1.1%
<b>Darktable - Server Room - CPU-only (sec)</b>	<b>20.695</b>	<b>21.008</b>	20.739
Normalized	100%	98.51%	99.79%
Standard Deviation	1.7%	1%	1.6%
<b>oneDNN - R.N.N.I - f32 - CPU (ms)</b>	<b>7721</b>	7794	<b>7838</b>
Normalized	100%	99.06%	98.51%
Standard Deviation	0.3%	1.9%	0.7%
<b>KeyDB (Ops/sec)</b>	<b>265074</b>	267213	<b>269044</b>
Normalized	98.52%	99.32%	100%
Standard Deviation	2.1%	1.3%	1.2%
<b>NCNN - Vulkan GPU - mobilenet (ms)</b>	46.40	<b>47.01</b>	<b>46.32</b>
Normalized	99.83%	98.53%	100%
Standard Deviation	0.1%	2.8%	0.3%
<b>Darktable - Server Rack - CPU-only (sec)</b>	<b>0.339</b>	0.342	<b>0.344</b>
Normalized	100%	99.12%	98.55%
Standard Deviation	0.7%	0.6%	2%
<b>Zstd Compression - 3 (MB/s)</b>	2346	<b>2358</b>	<b>2324</b>
Normalized	99.49%	100%	98.57%
Standard Deviation	2.1%	1.2%	0.6%
<b>AOM AV1 - Speed 4 Two-Pass (FPS)</b>	<b>1.38</b>	<b>1.38</b>	<b>1.40</b>
Normalized	98.57%	98.57%	100%
Standard Deviation	0.7%	0%	0.7%
<b>InfluxDB - 4 - 10000 - 2,5000,1 - 10000</b>	<b>706036</b>	<b>696010</b>	700555
Normalized	100%	98.58%	99.22%
Standard Deviation	2.1%	1.6%	1.4%
<b>Darktable - Masskrug - CPU-only (sec)</b>	<b>24.172</b>	<b>24.518</b>	24.194
Normalized	100%	98.59%	99.91%
Standard Deviation	0.2%	0.3%	0.6%
<b>Zstd Compression - 19 (MB/s)</b>	<b>14.0</b>	<b>14.2</b>	<b>14.2</b>
Normalized	98.59%	100%	100%

	Standard Deviation	2.9%	0.4%	0.7%
<b>OpenFOAM - Motorbike 30M (sec)</b>	<b>342.98</b>	339.54	<b>338.27</b>	
Normalized	98.63%	99.63%	100%	
	Standard Deviation	0.8%	0.1%	1.1%
<b>Redis - SADD (Reqs/sec)</b>	<b>1735687</b>	<b>1758201</b>	<b>1734496</b>	
Normalized	98.72%	100%	98.65%	
	Standard Deviation	1.2%	2.1%	0.4%
<b>AOM AV1 - Speed 6 Realtime (FPS)</b>	<b>10.13</b>	<b>10.12</b>	<b>10.25</b>	
Normalized	98.83%	98.73%	100%	
	Standard Deviation	0.7%	1.4%	2.1%
<b>TensorFlow Lite - SqueezeNet (us)</b>	<b>467745</b>	<b>461955</b>	467404	
Normalized	98.76%	100%	98.83%	
	Standard Deviation	0.1%	0.5%	0.2%
<b>Incompact3D - Cylinder (sec)</b>	<b>810.954712</b>	<b>821.055725</b>	820.322815	
Normalized	100%	98.77%	98.86%	
	Standard Deviation	0.8%	2.1%	0.5%
<b>NCNN - Vulkan GPU - vgg16 (ms)</b>	<b>117.46</b>	<b>118.91</b>	118.04	
Normalized	100%	98.78%	99.51%	
	Standard Deviation	0.5%	0.4%	0.2%
<b>TensorFlow Lite - Inception V4 (us)</b>	6441017	<b>6389943</b>	<b>6468567</b>	
Normalized	99.21%	100%	98.78%	
	Standard Deviation	0.7%	0.2%	0.1%
<b>NCNN - CPU - blazeface (ms)</b>	3.31	<b>3.33</b>	<b>3.29</b>	
Normalized	99.4%	98.8%	100%	
	Standard Deviation	0.6%	1.7%	1.8%
<b>oneDNN - C.B.S.A - u8s8f32 - CPU (ms)</b>	38.8392	<b>38.9728</b>	<b>38.5055</b>	
Normalized	99.14%	98.8%	100%	
	Standard Deviation	0.8%	1%	2.3%
<b>Redis - SET (Reqs/sec)</b>	<b>1489969</b>	1486412	<b>1472540</b>	
Normalized	100%	99.76%	98.83%	
	Standard Deviation	0.7%	2.2%	2.9%
<b>NAMD - ATPase Simulation - 327,506 Atoms</b>	<b>6.75407</b>	6.79902	<b>6.83284</b>	
(days/ns)				
Normalized	100%	99.34%	98.85%	
	Standard Deviation	0.4%	1%	2.9%
<b>Mobile Neural Network - inception-v3 (ms)</b>	63.415	<b>63.997</b>	<b>63.269</b>	
Normalized	99.77%	98.86%	100%	
	Standard Deviation	0.5%	0.9%	0.5%
<b>x265 - Bosphorus 1080p (FPS)</b>	<b>19.49</b>	19.60	<b>19.71</b>	
Normalized	98.88%	99.44%	100%	
	Standard Deviation	1.4%	0.7%	1%
<b>NCNN - CPU - googlenet (ms)</b>	32.59	<b>32.79</b>	<b>32.43</b>	
Normalized	99.51%	98.9%	100%	
	Standard Deviation	0.9%	0.3%	0.9%
<b>NCNN - CPU - mobilenet (ms)</b>	<b>46.83</b>	46.49	<b>46.32</b>	
Normalized	98.91%	99.63%	100%	
	Standard Deviation	1.7%	0.2%	0.2%
<b>OSBench - Create Files (us/Event)</b>	<b>18.245888</b>	18.315846	<b>18.441862</b>	
Normalized	100%	99.62%	98.94%	
	Standard Deviation	2.2%	2%	1.2%
<b>rav1e - 5 (FPS)</b>	<b>0.848</b>	0.844	<b>0.839</b>	
Normalized	100%	99.53%	98.94%	
	Standard Deviation	0.2%	0.2%	0%
<b>Crafty - Elapsed Time (Nodes/s)</b>	6274275	<b>6255015</b>	<b>6322069</b>	
Normalized	99.24%	98.94%	100%	

	Standard Deviation	0.1%	0.6%	0.6%
<b>dav1d - S.N.1 (FPS)</b>	<b>182.89</b>	183.50	<b>184.81</b>	
Normalized	98.96%	99.29%	100%	
Standard Deviation	0.8%	0.3%	0.3%	
<b>LAMMPS Molecular Dynamics Simulator - Rhodopsin Protein (ns/day)</b>	<b>2.603</b>	<b>2.586</b>	<b>2.613</b>	
Normalized	99.62%	98.97%	100%	
Standard Deviation	1%	2%	2%	
<b>NCNN - Vulkan GPU-v3-v3 - mobilenet-v3</b>	<b>9.59</b>	<b>9.69</b>	<b>9.60</b>	
Normalized	100%	98.97%	99.9%	
Standard Deviation	2.3%	2.9%	1.7%	
<b>NCNN - Vulkan GPU - alexnet (ms)</b>	<b>23.46</b>	<b>23.24</b>	<b>23.48</b>	
Normalized	99.06%	100%	98.98%	
Standard Deviation	0.6%	0.3%	0.2%	
<b>BYTE Unix Benchmark - Dhrystone 2 (LPS)</b>	<b>35499453</b>	<b>35791749</b>	<b>35427649</b>	
Normalized	99.18%	100%	98.98%	
Standard Deviation	1.4%	1%	2.5%	
<b>NCNN - Vulkan GPU - regnety_400m (ms)</b>	<b>18.88</b>	<b>19.06</b>	<b>19.07</b>	
Normalized	100%	99.06%	99%	
Standard Deviation	0.8%	1.6%	0.1%	
<b>Embree - Pathtracer - Asian Dragon (FPS)</b>	<b>3.3140</b>	<b>3.3113</b>	<b>3.3432</b>	
Normalized	99.13%	99.05%	100%	
Standard Deviation	1%	0.8%	1.5%	
<b>CP2K Molecular Dynamics - Fayalite-FIST</b>	<b>1449</b>	<b>1462</b>	<b>1452</b>	
<b>Data (sec)</b>				
Normalized	100%	99.09%	99.73%	
<b>NCNN - CPU - alexnet (ms)</b>	<b>23.30</b>	<b>23.42</b>	<b>23.51</b>	
Normalized	100%	99.49%	99.11%	
Standard Deviation	0.8%	0.5%	0.5%	
<b>AOM AV1 - Speed 6 Two-Pass (FPS)</b>	<b>2.22</b>	<b>2.22</b>	<b>2.24</b>	
Normalized	99.11%	99.11%	100%	
Standard Deviation	0.3%	0%	0.7%	
<b>LZ4 Compression - 1 - D.S (MB/s)</b>	<b>8722</b>	<b>8646</b>	<b>8690</b>	
Normalized	100%	99.13%	99.63%	
Standard Deviation	0.1%	0.2%	1.1%	
<b>SQLite Speedtest - Timed Time - Size 1,000</b>	<b>81.222</b>	<b>81.423</b>	<b>81.933</b>	
<b>(sec)</b>				
Normalized	100%	99.75%	99.13%	
Standard Deviation	0.3%	1.6%	1.5%	
<b>oneDNN - IP Shapes 3D - u8s8f32 - CPU (ms)</b>	<b>5.81417</b>	<b>5.84129</b>	<b>5.79119</b>	
Normalized	99.6%	99.14%	100%	
Standard Deviation	0.6%	0.4%	0.4%	
<b>yquake2 - OpenGL 3.x - 1920 x 1080 (FPS)</b>	<b>814.1</b>	<b>807.2</b>	<b>807.9</b>	
Normalized	100%	99.15%	99.24%	
Standard Deviation	0.9%	0.7%	1%	
<b>WebP Image Encode - Default (Encode Time - sec)</b>	<b>1.648</b>	<b>1.662</b>	<b>1.657</b>	
Normalized	100%	99.16%	99.46%	
Standard Deviation	0.2%	0.3%	1%	
<b>Redis - LPUSH (Reqs/sec)</b>	<b>1216336</b>	<b>1213155</b>	<b>1223284</b>	
Normalized	99.43%	99.17%	100%	
Standard Deviation	2.3%	0.4%	0.6%	
<b>Sockperf - Throughput (Messages/sec)</b>	<b>555055</b>	<b>559663</b>	<b>557665</b>	
Normalized	99.18%	100%	99.64%	
Standard Deviation	2.7%	1.4%	1.3%	

<b>Warsov - 1920 x 1080 (FPS)</b>	<b>158.1</b>	<b>159.4</b>	<b>159.4</b>
Normalized	99.18%	100%	100%
Standard Deviation	1.4%	0.1%	0.1%
<b>IndigoBench - CPU - Supercar (M samples/s)</b>	<b>1.107</b>	<b>1.098</b>	<b>1.106</b>
Normalized	100%	99.19%	99.91%
Standard Deviation	0.6%	1.4%	0.2%
<b>IndigoBench - CPU - Bedroom (M samples/s)</b>	<b>0.494</b>	<b>0.494</b>	<b>0.498</b>
Normalized	99.2%	99.2%	100%
Standard Deviation	0.4%	0.1%	0.6%
<b>WebP Image Encode - Q.1.L.H.C (Encode Time - sec)</b>	<b>57.670</b>	<b>57.216</b>	57.452
Normalized	99.21%	100%	99.59%
Standard Deviation	0.8%	0.1%	0.3%
<b>Numpy Benchmark (Score)</b>	242.34	<b>241.36</b>	<b>243.26</b>
Normalized	99.62%	99.22%	100%
Standard Deviation	0.2%	0.2%	0.4%
<b>PHPBench - P.B.S (Score)</b>	<b>508106</b>	506055	<b>504159</b>
Normalized	100%	99.6%	99.22%
Standard Deviation	0.1%	0.7%	0.8%
<b>Embree - Pathtracer ISPC - Asian Dragon Obj (FPS)</b>	2.8199	<b>2.8371</b>	<b>2.8151</b>
Normalized	99.39%	100%	99.22%
Standard Deviation	0.7%	1%	0.9%
<b>Coremark - CoreMark Size 666 - I.P.S (Iterations/Sec)</b>	<b>102524</b>	<b>101766</b>	102339
Normalized	100%	99.26%	99.82%
Standard Deviation	1.4%	0.5%	0.6%
<b>Embree - Pathtracer - Asian Dragon Obj</b>	<b>2.9903</b>	<b>2.9682</b>	2.9782
Normalized	100%	99.26%	99.6%
Standard Deviation	1.4%	0.8%	1.3%
<b>Caffe - AlexNet - CPU - 100 (ms)</b>	<b>41877</b>	41672	<b>41573</b>
Normalized	99.27%	99.76%	100%
Standard Deviation	0.8%	0.4%	0.6%
<b>Dolfyn - C.F.D (sec)</b>	21.069	<b>21.139</b>	<b>20.988</b>
Normalized	99.62%	99.29%	100%
Standard Deviation	0.6%	0.4%	0.3%
<b>NCNN - Vulkan GPU - resnet18 (ms)</b>	29.17	<b>29.08</b>	<b>29.28</b>
Normalized	99.69%	100%	99.32%
Standard Deviation	1.5%	0.9%	0.1%
<b>NCNN - Vulkan GPU - yolov4-tiny (ms)</b>	<b>59.00</b>	<b>59.40</b>	59.28
Normalized	100%	99.33%	99.53%
Standard Deviation	0.1%	0.2%	0.5%
<b>OSBench - Launch Programs (us/Event)</b>	<b>81.523260</b>	81.967513	<b>82.073212</b>
Normalized	100%	99.46%	99.33%
Standard Deviation	0.6%	0.1%	0.2%
<b>Kvazaar - Bosphorus 4K - Medium (FPS)</b>	<b>1.49</b>	<b>1.49</b>	<b>1.50</b>
Normalized	99.33%	99.33%	100%
Standard Deviation	0%	0%	0.4%
<b>OSBench - Create Threads (us/Event)</b>	<b>14.920235</b>	<b>14.823278</b>	14.909108
Normalized	99.35%	100%	99.42%
Standard Deviation	0.3%	1.1%	1.7%
<b>rav1e - 6 (FPS)</b>	<b>1.082</b>	1.083	<b>1.089</b>
Normalized	99.36%	99.45%	100%
Standard Deviation	0.8%	0.1%	0.4%

<b>Embree - Pathtracer - Crown (FPS)</b>	<b>2.7601</b>	2.7659	<b>2.7779</b>
Normalized	99.36%	99.57%	100%
Standard Deviation	0.9%	0.3%	0.5%
<b>Kvazaar - Bosphorus 1080p - Very Fast (FPS)</b>	<b>15.60</b>	<b>15.52</b>	<b>15.62</b>
Normalized	99.87%	99.36%	100%
Standard Deviation	0.6%	0.7%	0.4%
<b>oneDNN - M.M.B.S.T - f32 - CPU (ms)</b>	<b>7.35744</b>	<b>7.36061</b>	<b>7.31351</b>
Normalized	99.4%	99.36%	100%
Standard Deviation	0.6%	0.2%	0.2%
<b>WavPack Audio Encoding - WAV To WavPack (sec)</b>	<b>15.082</b>	<b>15.077</b>	<b>15.174</b>
Normalized	99.97%	100%	99.36%
Standard Deviation	0.1%	0.2%	2.6%
<b>ASTC Encoder - Medium (sec)</b>	<b>12.77</b>	<b>12.83</b>	<b>12.75</b>
Normalized	99.84%	99.38%	100%
Standard Deviation	0.4%	0.5%	0.4%
<b>NCNN - CPU - squeezenet_ssd (ms)</b>	<b>59.39</b>	<b>59.71</b>	<b>59.34</b>
Normalized	99.92%	99.38%	100%
Standard Deviation	0.1%	0.6%	0.8%
<b>ASTC Encoder - Fast (sec)</b>	<b>9.75</b>	<b>9.74</b>	<b>9.80</b>
Normalized	99.9%	100%	99.39%
Standard Deviation	1.2%	0.8%	1.1%
<b>Embree - Pathtracer ISPC - Crown (FPS)</b>	<b>2.5819</b>	<b>2.5670</b>	<b>2.5828</b>
Normalized	99.97%	99.39%	100%
Standard Deviation	0.3%	0.7%	1.1%
<b>Timed Eigen Compilation - Time To Compile (sec)</b>	<b>113.520</b>	<b>113.654</b>	<b>112.964</b>
Normalized	99.51%	99.39%	100%
Standard Deviation	0.8%	0.3%	0.3%
<b>OCRMyPDF - P.6.P.P.D (sec)</b>	<b>52.675</b>	52.741	<b>52.986</b>
Normalized	100%	99.87%	99.41%
Standard Deviation	0.4%	0.3%	0.3%
<b>Monte Carlo Simulations of Ionised Nebulae - Dust 2D tau100.0 (sec)</b>	<b>342</b>	<b>340</b>	341
Normalized	99.42%	100%	99.71%
Standard Deviation		0.9%	0.3%
<b>oneDNN - R.N.N.I - u8s8f32 - CPU (ms)</b>	<b>7747</b>	7726	<b>7702</b>
Normalized	99.42%	99.69%	100%
Standard Deviation	0.9%	0.6%	0.4%
<b>NCNN - Vulkan GPU - mnasnet (ms)</b>	<b>10.38</b>	<b>10.44</b>	10.43
Normalized	100%	99.43%	99.52%
Standard Deviation	1.4%	3.8%	1.2%
<b>NCNN - Vulkan GPU - squeezenet_ssd (ms)</b>	<b>59.28</b>	<b>59.16</b>	<b>59.50</b>
Normalized	99.8%	100%	99.43%
Standard Deviation	0.2%	0.5%	0.5%
<b>Timed Godot Game Engine Compilation - Time To Compile (sec)</b>	<b>501.200</b>	<b>503.977</b>	502.608
Normalized	100%	99.45%	99.72%
Standard Deviation	0.1%	0.1%	0.1%
<b>Mobile Neural Network - resnet-v2-50 (ms)</b>	<b>50.216</b>	50.269	<b>50.489</b>
Normalized	100%	99.89%	99.46%
Standard Deviation	1.8%	1.1%	0.9%
<b>eSpeak-NG Speech Engine - T.T.S.S (sec)</b>	<b>35.134</b>	<b>35.319</b>	35.312
Normalized	100%	99.48%	99.5%
Standard Deviation	0.6%	0.7%	0.6%

InfluxDB - 64 - 10000 - 2,5000,1 - 10000 (val/sec)	<b>721428</b>	<b>725224</b>	723222
Normalized	99.48%	100%	99.72%
Standard Deviation	0.5%	0.4%	0.8%
NCNN - CPU - resnet18 (ms)	<b>29.04</b>	<b>29.04</b>	<b>29.18</b>
Normalized	100%	100%	99.52%
Standard Deviation	1%	0.7%	2%
Mobile Neural Network - MobileNetV2_224	<b>5.424</b>	5.419	<b>5.398</b>
Normalized	99.52%	99.61%	100%
Standard Deviation	0.6%	1.2%	1.2%
NCNN - Vulkan GPU - efficientnet-b0 (ms)	<b>16.98</b>	16.95	<b>16.90</b>
Normalized	99.53%	99.71%	100%
Standard Deviation	0.7%	3.1%	1.5%
Timed FFmpeg Compilation - Time To Compile (sec)	<b>182.189</b>	<b>183.024</b>	182.601
Normalized	100%	99.54%	99.77%
Standard Deviation	0.3%	0.2%	0.7%
Google SynthMark - VoiceMark_100 (Voices)	596.254	<b>596.615</b>	<b>593.909</b>
Normalized	99.94%	100%	99.55%
Standard Deviation	0.5%	0.3%	0.3%
TensorFlow Lite - NASNet Mobile (us)	316112	<b>317213</b>	<b>315790</b>
Normalized	99.9%	99.55%	100%
Standard Deviation	0.5%	0.2%	0.3%
GIMP - auto-levels (sec)	<b>15.924</b>	<b>15.853</b>	15.894
Normalized	99.55%	100%	99.74%
Standard Deviation	0.1%	1.2%	0.7%
Waifu2x-NCNN Vulkan - 2x - 3 - No (sec)	<b>4.115</b>	4.110	<b>4.097</b>
Normalized	99.56%	99.68%	100%
Standard Deviation	1%	0.2%	0.2%
GIMP - rotate (sec)	<b>14.487</b>	14.470	<b>14.424</b>
Normalized	99.57%	99.68%	100%
Standard Deviation	0.1%	0.5%	0.4%
yquake2 - Software CPU - 1920 x 1080 (FPS)	<b>92.9</b>	<b>93.3</b>	<b>93.3</b>
Normalized	99.57%	100%	100%
Standard Deviation	0.7%	0.1%	0.1%
WebP Image Encode - Quality 100 (Encode Time - sec)	2.595	<b>2.601</b>	<b>2.590</b>
Normalized	99.81%	99.58%	100%
Standard Deviation	0.6%	0.5%	0.2%
x265 - Bosphorus 4K (FPS)	<b>4.81</b>	<b>4.83</b>	<b>4.83</b>
Normalized	99.59%	100%	100%
Standard Deviation	0.5%	0.4%	0.8%
oneDNN - IP Shapes 1D - f32 - CPU (ms)	<b>16.5429</b>	16.5558	<b>16.6108</b>
Normalized	100%	99.92%	99.59%
Standard Deviation	1.8%	1.9%	2.5%
AOM AV1 - Speed 8 Realtime (FPS)	27.20	<b>27.18</b>	<b>27.29</b>
Normalized	99.67%	99.6%	100%
Standard Deviation	0.1%	0.2%	0.1%
Build2 - Time To Compile (sec)	<b>514.482</b>	<b>516.516</b>	514.799
Normalized	100%	99.61%	99.94%
Standard Deviation	0.1%	0.7%	0.4%
Timed HMMer Search - P.D.S (sec)	<b>127.149</b>	<b>127.645</b>	127.385
Normalized	100%	99.61%	99.81%
Standard Deviation	0%	0.3%	0.1%

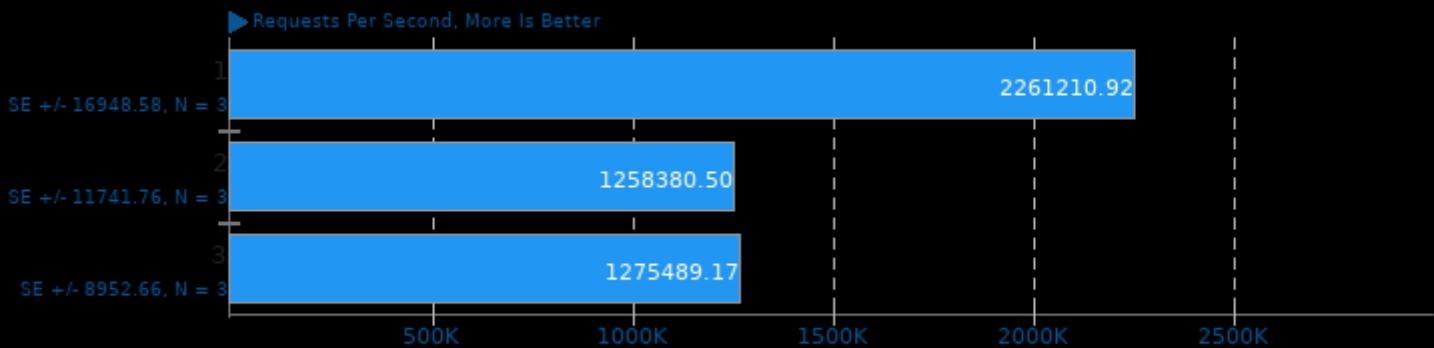
TNN - CPU - SqueezeNet v1.1 (ms)	<b>287.255</b>	287.063	<b>286.140</b>
Normalized	99.61%	99.68%	100%
Standard Deviation	0.1%	0.2%	0%
LZ4 Compression - 1 - Compression Speed (MB/s)	<b>7994</b>	8015	<b>8022</b>
Normalized	99.65%	99.91%	100%
Standard Deviation	1.1%	0.9%	2%
Algebraic Multi-Grid Benchmark (Figure Of Merit)	<b>213491533</b>	<b>214232233</b>	214072633
Normalized	99.65%	100%	99.93%
Standard Deviation	0.3%	0.4%	0.4%
ASTC Encoder - Thorough (sec)	<b>84.33</b>	<b>84.61</b>	84.49
Normalized	100%	99.67%	99.81%
Standard Deviation	0.4%	0.4%	0.1%
dav1d - Summer Nature 4K (FPS)	<b>51.92</b>	52.00	<b>52.09</b>
Normalized	99.67%	99.83%	100%
Standard Deviation	1.2%	1.2%	1.5%
ASTC Encoder - Exhaustive (sec)	696.05	<b>697.50</b>	<b>695.24</b>
Normalized	99.88%	99.68%	100%
Standard Deviation	0.3%	0.1%	0.1%
GIMP - resize (sec)	12.855	<b>12.866</b>	<b>12.826</b>
Normalized	99.77%	99.69%	100%
Standard Deviation	1.2%	0.9%	1.4%
Kvazaar - Bosphorus 4K - Ultra Fast (FPS)	6.84	<b>6.85</b>	<b>6.83</b>
Normalized	99.85%	100%	99.71%
Standard Deviation	0.5%	1%	0.5%
Timed MAFFT Alignment - M.S.A - LSU RNA (sec)	<b>15.042</b>	<b>15.000</b>	15.035
Normalized	99.72%	100%	99.77%
Standard Deviation	2.5%	0.7%	1.2%
RawTherapee - T.B.T (sec)	<b>123.684</b>	123.405	<b>123.339</b>
Normalized	99.72%	99.95%	100%
Standard Deviation	0.1%	0.3%	0.2%
Kvazaar - Bosphorus 4K - Very Fast (FPS)	<b>3.94</b>	<b>3.94</b>	<b>3.95</b>
Normalized	99.75%	99.75%	100%
Standard Deviation	0.1%	0.1%	0.4%
WebP Image Encode - Q.1.L (Encode Time - sec)	<b>24.894</b>	<b>24.957</b>	24.900
Normalized	100%	99.75%	99.98%
Standard Deviation	0.2%	0.7%	1.5%
VKMark - 1920 x 1080 (VKMark Score)	<b>1199</b>	<b>1199</b>	<b>1196</b>
Normalized	100%	100%	99.75%
Monkey Audio Encoding - WAV To APE (sec)	<b>15.955</b>	15.994	<b>15.995</b>
Normalized	100%	99.76%	99.75%
Standard Deviation	0.7%	1.1%	0.7%
NCNN - Vulkan GPU - googlenet (ms)	<b>32.56</b>	<b>32.64</b>	32.59
Normalized	100%	99.75%	99.91%
Standard Deviation	1.1%	0.7%	0.7%
NCNN - CPU - yolov4-tiny (ms)	<b>59.28</b>	<b>59.42</b>	<b>59.28</b>
Normalized	100%	99.76%	100%
Standard Deviation	0.2%	0.2%	0.2%
Opus Codec Encoding - WAV To Opus (Encode (sec))	<b>8.936</b>	8.923	<b>8.915</b>
Normalized	99.76%	99.91%	100%

	Standard Deviation	0.8%	0.8%	0.5%
<b>Basis Universal - UASTC Level 2 (sec)</b>	86.479	<b>86.540</b>	<b>86.340</b>	
	Normalized	99.84%	99.77%	100%
	Standard Deviation	0.5%	0.4%	0.3%
<b>CloverLeaf - L.E.H (sec)</b>	191.41	<b>191.45</b>	<b>191.01</b>	
	Normalized	99.79%	99.77%	100%
	Standard Deviation	0.2%	0.1%	0.1%
<b>Embree - Pathtracer ISPC - Asian Dragon (FPS)</b>	<b>3.2431</b>	<b>3.2504</b>	3.2482	
	Normalized	99.78%	100%	99.93%
	Standard Deviation	0.7%	0.7%	0.1%
<b>Kvazaar - Bosphorus 1080p - Ultra Fast</b>	<b>27.01</b>	<b>27.07</b>	27.05	
	Normalized	99.78%	100%	99.93%
	Standard Deviation	1%	0.3%	0.2%
<b>Caffe - GoogleNet - CPU - 100 (ms)</b>	<b>110084</b>	<b>110320</b>	110157	
	Normalized	100%	99.79%	99.93%
	Standard Deviation	0.2%	0.1%	0.4%
<b>Unpacking Firefox - firefox-84.0.source.tar.xz (sec)</b>	<b>23.847</b>	<b>23.799</b>	23.806	
	Normalized	99.8%	100%	99.97%
	Standard Deviation	0.2%	0.3%	0.7%
<b>dav1d - Chimera 1080p (FPS)</b>	<b>184.25</b>	184.17	<b>183.88</b>	
	Normalized	100%	99.96%	99.8%
	Standard Deviation	0%	1.7%	1.8%
<b>Hierarchical INTegration - FLOAT (QUIPs)</b>	301333350	<b>301687480</b>	<b>301185317</b>	
	Normalized	99.88%	100%	99.83%
	Standard Deviation	0.1%	0.1%	0.4%
<b>GLmark2 - 1920 x 1080 (Score)</b>	<b>1849</b>	1851	<b>1852</b>	
	Normalized	99.84%	99.95%	100%
<b>Kvazaar - Bosphorus 1080p - Medium (FPS)</b>	<b>6.51</b>	<b>6.51</b>	<b>6.50</b>	
	Normalized	100%	100%	99.85%
	Standard Deviation	0.3%	0.3%	0.5%
<b>LZ4 Compression - 9 - D.S (MB/s)</b>	<b>8565</b>	<b>8552</b>	8563	
	Normalized	100%	99.85%	99.97%
	Standard Deviation	0.3%	0.3%	0.2%
<b>Basis Universal - ETC1S (sec)</b>	<b>82.060</b>	<b>82.178</b>	82.076	
	Normalized	100%	99.86%	99.98%
	Standard Deviation	0.1%	0.3%	0.1%
<b>TensorFlow Lite - I.R.V (us)</b>	5691310	<b>5697083</b>	<b>5689070</b>	
	Normalized	99.96%	99.86%	100%
	Standard Deviation	0.1%	0.1%	0.2%
<b>TNN - CPU - MobileNet v2 (ms)</b>	279.339	<b>279.626</b>	<b>279.278</b>	
	Normalized	99.98%	99.88%	100%
	Standard Deviation	0%	0.3%	0.2%
<b>GIMP - unsharp-mask (sec)</b>	<b>17.332</b>	<b>17.317</b>	17.328	
	Normalized	99.91%	100%	99.94%
	Standard Deviation	0.2%	0.4%	0.2%
<b>LZ4 Compression - 3 - D.S (MB/s)</b>	<b>8554</b>	8548	<b>8547</b>	
	Normalized	100%	99.92%	99.92%
	Standard Deviation	0.5%	0.4%	0.3%
<b>RealSR-NCNN - 4x - Yes (sec)</b>	482.609	<b>482.839</b>	<b>482.551</b>	
	Normalized	99.99%	99.94%	100%
	Standard Deviation	0%	0%	0%
<b>Waifu2x-NCNN Vulkan - 2x - 3 - Yes (sec)</b>	26.675	<b>26.685</b>	<b>26.673</b>	
	Normalized	99.99%	99.96%	100%

	Standard Deviation	0%		0%	
<b>RealSR-NCNN - 4x - No (sec)</b>	<b>63.028</b>	63.023	<b>63.002</b>	63.002	
Normalized	99.96%	99.97%	100%	100%	
Standard Deviation	0.1%	0.1%	0.1%	0.1%	
<b>WebP Image Encode - Q.1.H.C (Encode Time - sec)</b>	<b>8.872</b>	8.871	<b>8.869</b>	8.869	
Normalized	99.97%	99.98%	100%	100%	
Standard Deviation	0%	0.2%	0.3%	0.3%	
<b>simdjson - DistinctUserID (GB/s)</b>	<b>0.46</b>	0.46	<b>0.46</b>	0.46	
Normalized	0%	0%	0%	0%	
<b>simdjson - PartialTweets (GB/s)</b>	<b>0.45</b>	0.45	<b>0.45</b>	0.45	
Normalized	1.3%	0%	0%	0%	
<b>simdjson - LargeRand (GB/s)</b>	<b>0.35</b>	0.35	<b>0.35</b>	0.35	
Normalized	0%	0%	1.7%	1.7%	
<b>simdjson - Kostya (GB/s)</b>	<b>0.38</b>	0.38	<b>0.38</b>	0.38	
Normalized	0%	0%	0%	0%	
<b>CLOMP - Static OMP Speedup (Speedup)</b>	<b>2</b>	2.0	<b>2</b>	2	
Standard Deviation		2.9%			
<b>NCNN - Vulkan GPU-v2-v2 - mobilenet-v2</b>	<b>10.88</b>	<b>11.30</b>	<b>10.68</b>	10.68	
Normalized	98.16%	94.51%	100%	100%	
Standard Deviation	0.2%	3.8%	6.2%	6.2%	
<b>oneDNN - D.B.s - u8s8f32 - CPU (ms)</b>	<b>36.5596</b>	35.8461	<b>33.0587</b>	33.0587	
Normalized	90.42%	92.22%	100%	100%	
Standard Deviation	16.8%	19.1%	15.1%	15.1%	
<b>LZ4 Compression - 9 - Compression Speed (MB/s)</b>	<b>42.22</b>	<b>41.02</b>	41.23	41.23	
Normalized	100%	97.16%	97.66%	97.66%	
Standard Deviation	6.2%	5.2%	4.4%	4.4%	
<b>Sockperf - Latency Under Load (usec)</b>	<b>53.775</b>	52.758	<b>50.699</b>	50.699	
Normalized	94.28%	96.1%	100%	100%	
Standard Deviation	18.7%	17.8%	19.1%	19.1%	

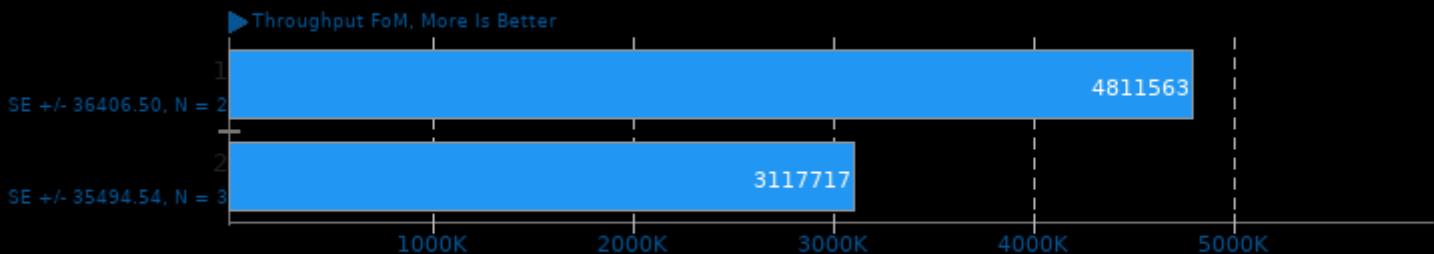
## Redis 6.0.9

Test: LPOP



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

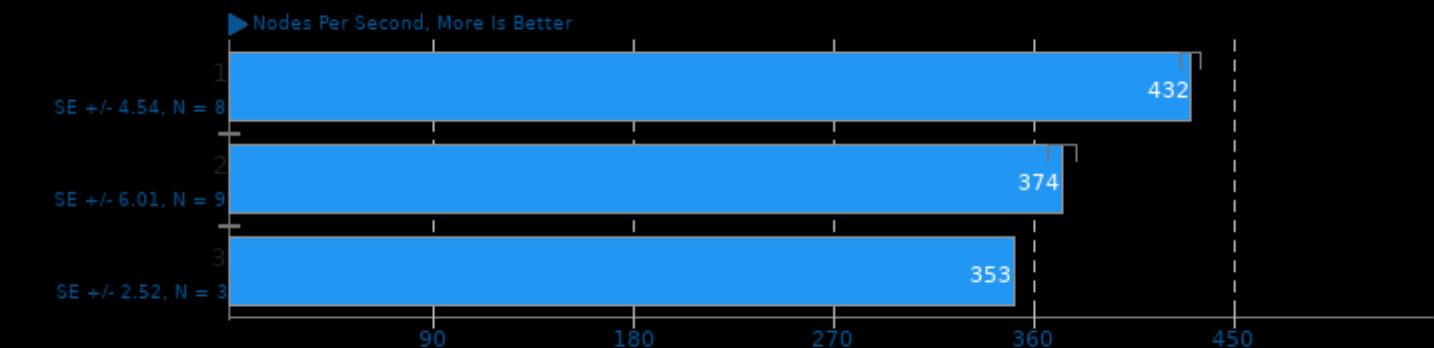
## Kripke 1.2.4



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

## LeelaChessZero 0.26

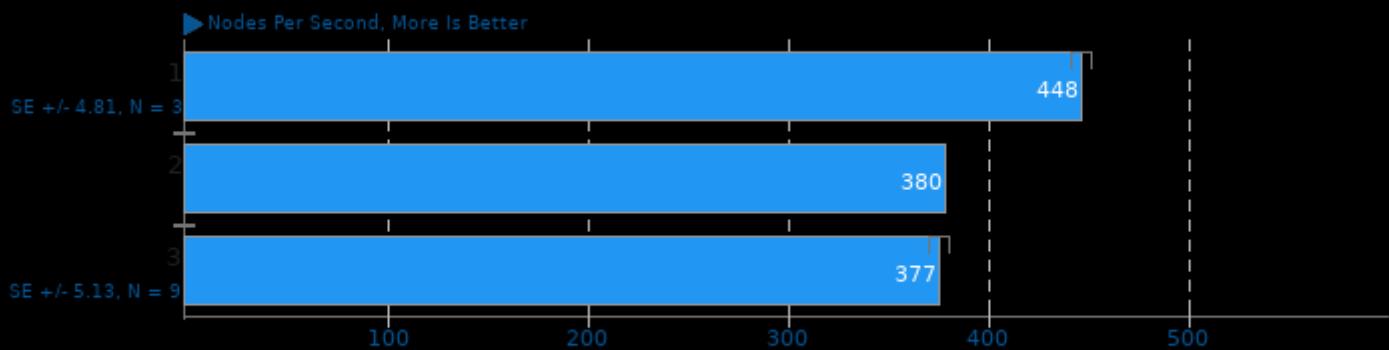
Backend: BLAS



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

## LeelaChessZero 0.26

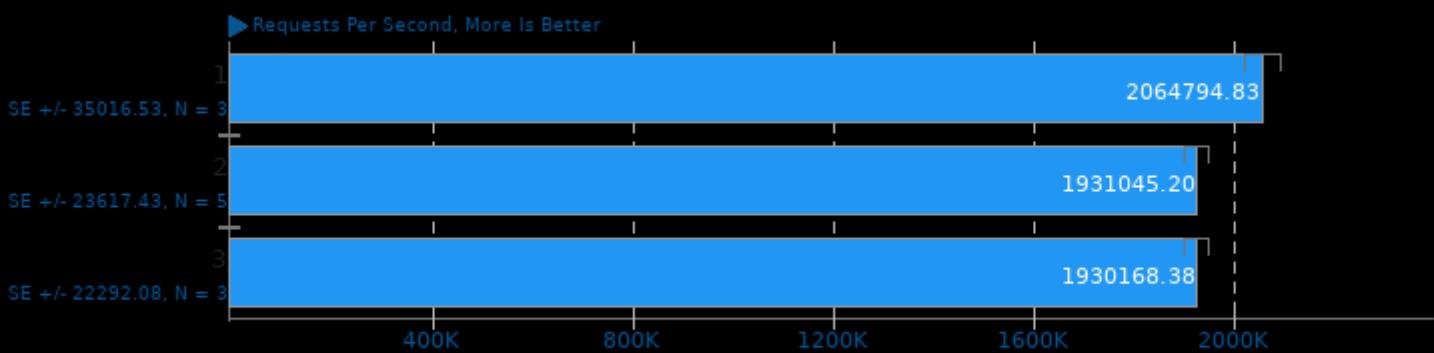
Backend: Eigen



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

## Redis 6.0.9

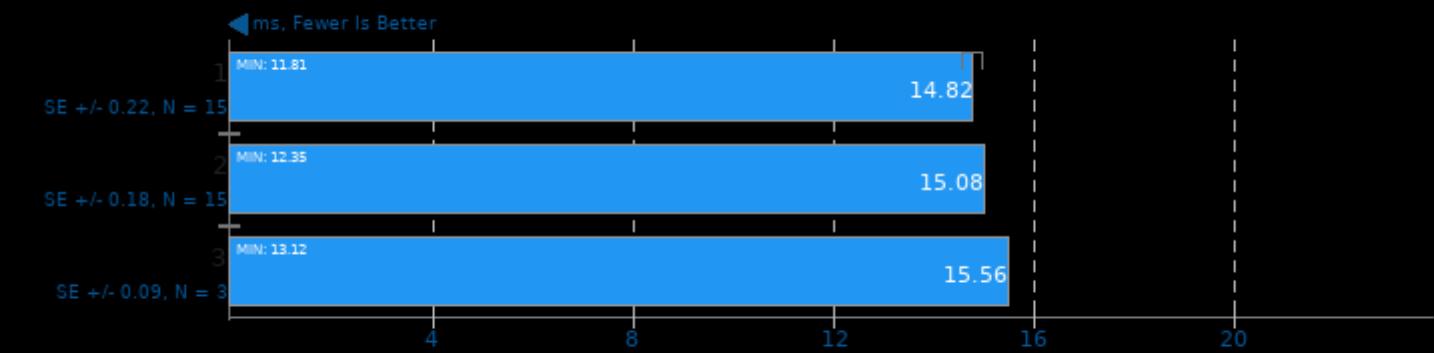
Test: GET



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

## oneDNN 2.0

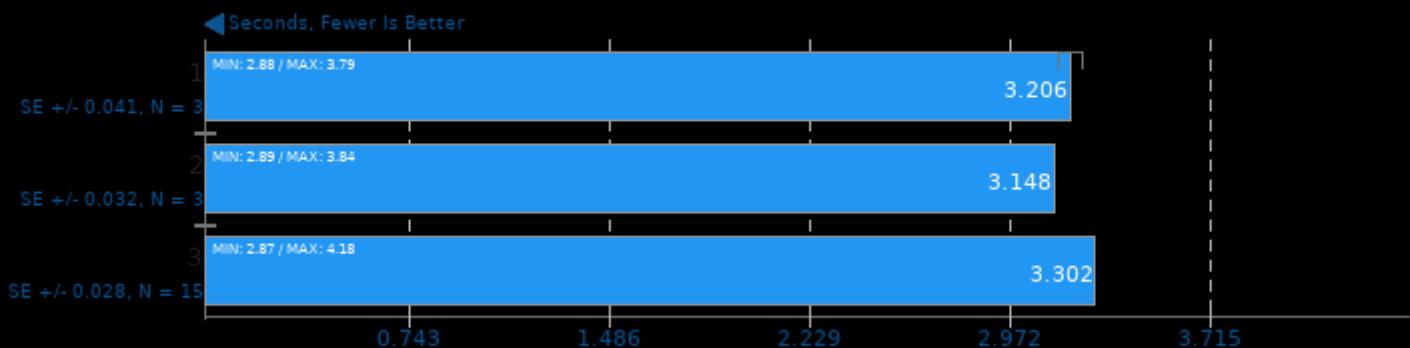
Harness: Matrix Multiply Batch Shapes Transformer - Data Type: u8s8f32 - Engine: CPU



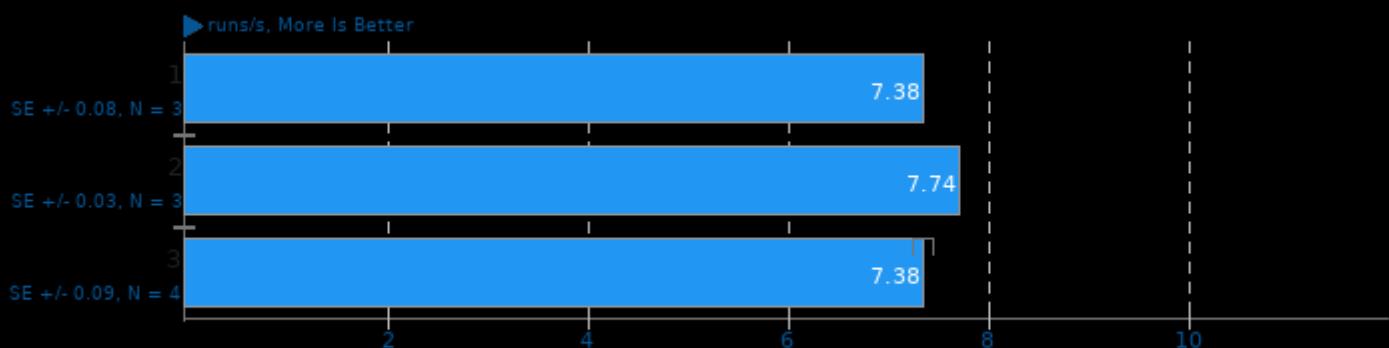
1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -pthread

## Sunflow Rendering System 0.07.2

Global Illumination + Image Synthesis



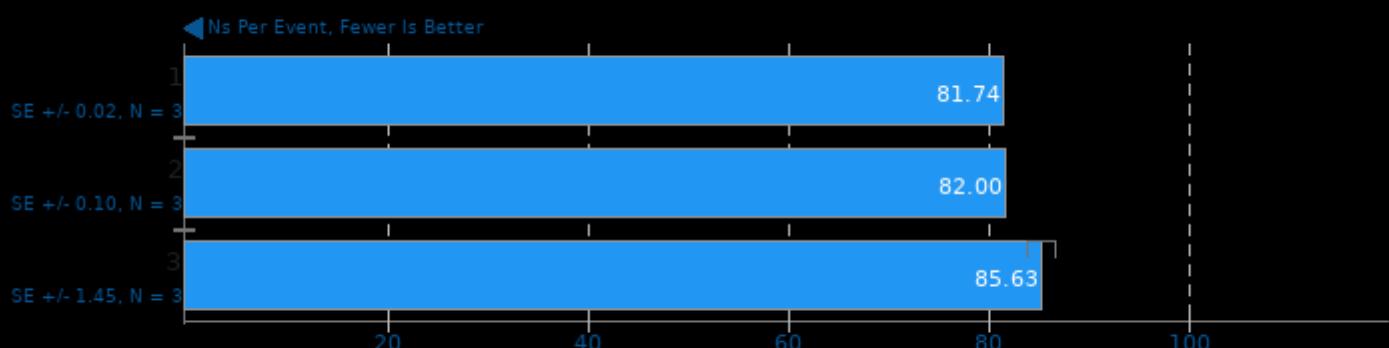
## Node.js V8 Web Tooling Benchmark



1. Nodejs  
v12.18.2

## OSBench

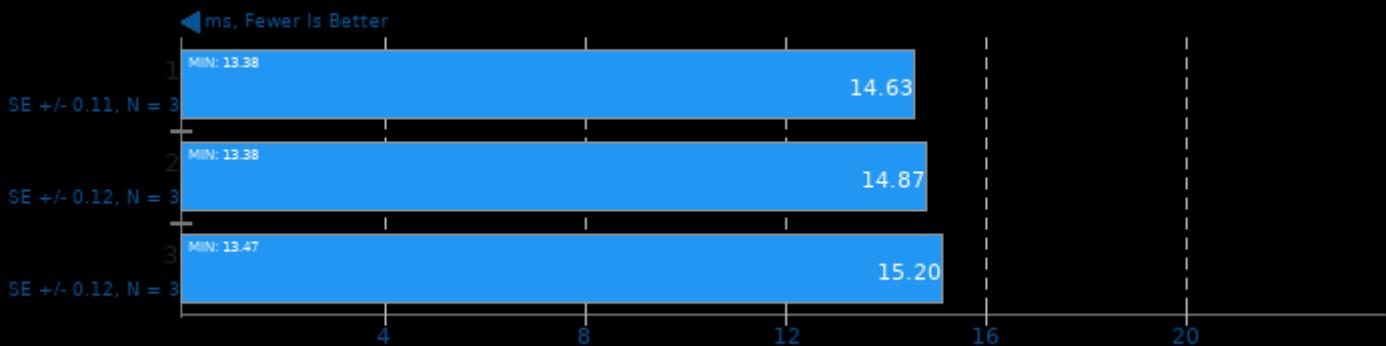
Test: Memory Allocations



1. (CC) gcc options: -f

## oneDNN 2.0

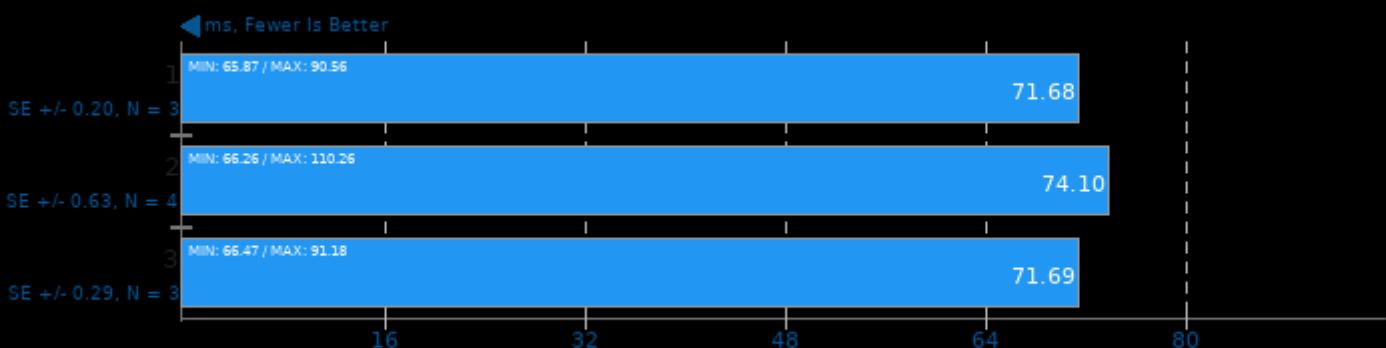
Harness: IP Shapes 1D - Data Type: u8s8f32 - Engine: CPU



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

## NCNN 20201218

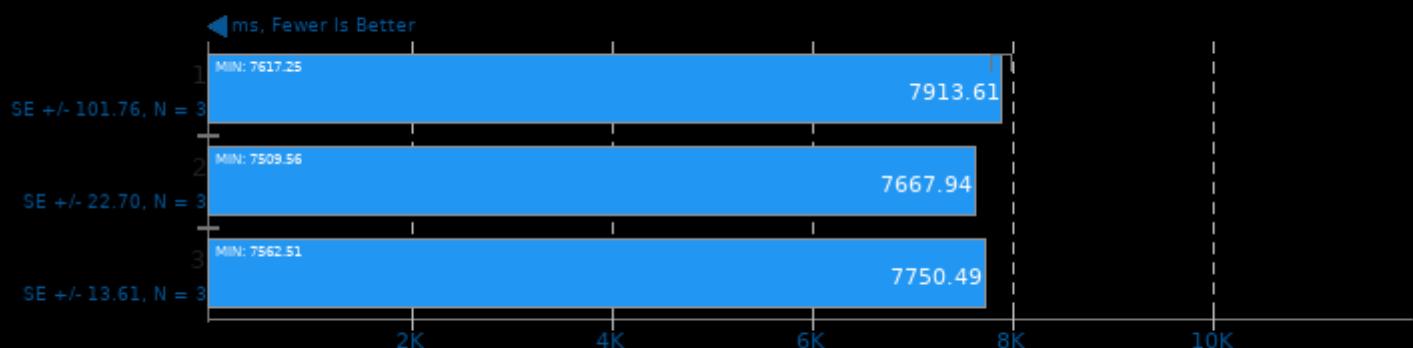
Target: Vulkan GPU - Model: resnet50



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

## oneDNN 2.0

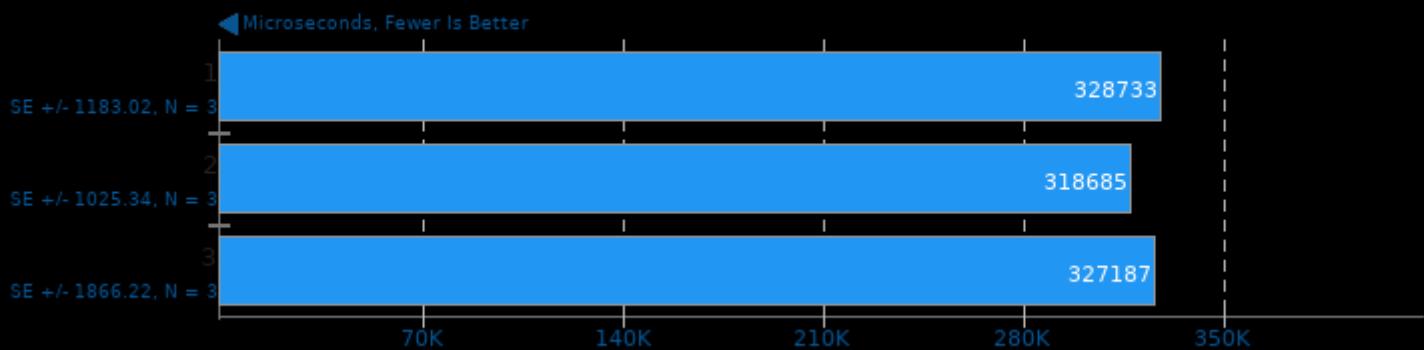
Harness: Recurrent Neural Network Inference - Data Type: bf16bf16bf16 - Engine: CPU



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

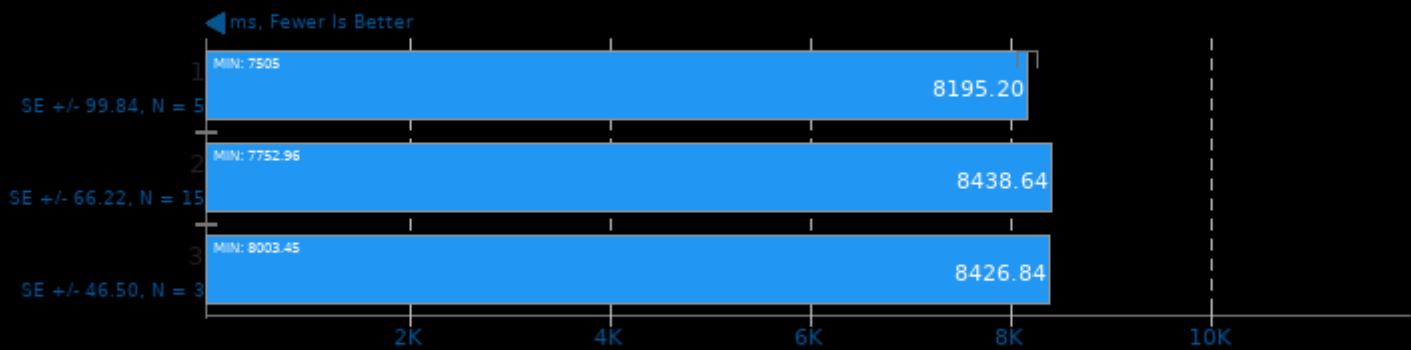
## TensorFlow Lite 2020-08-23

Model: Mobilenet Quant



## oneDNN 2.0

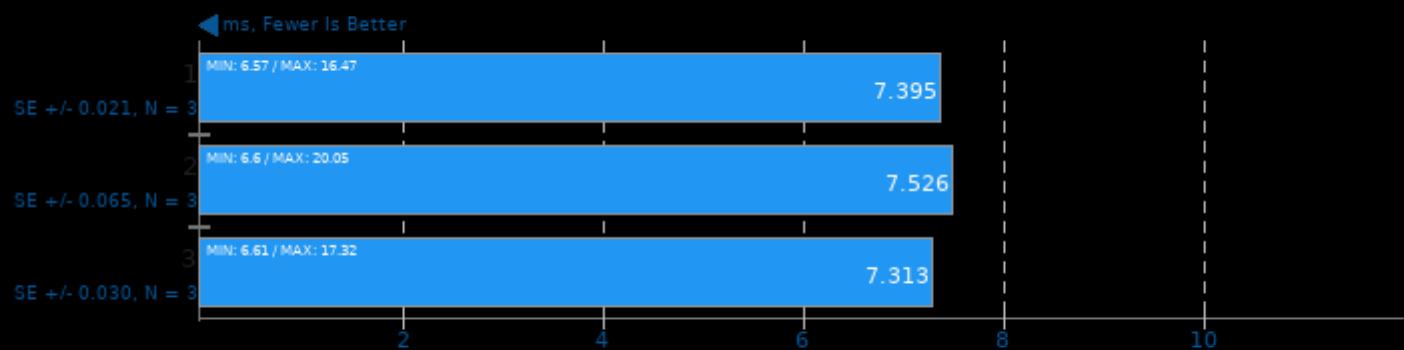
Harness: Recurrent Neural Network Training - Data Type: bf16bf16bf16 - Engine: CPU



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

## Mobile Neural Network 1.1.1

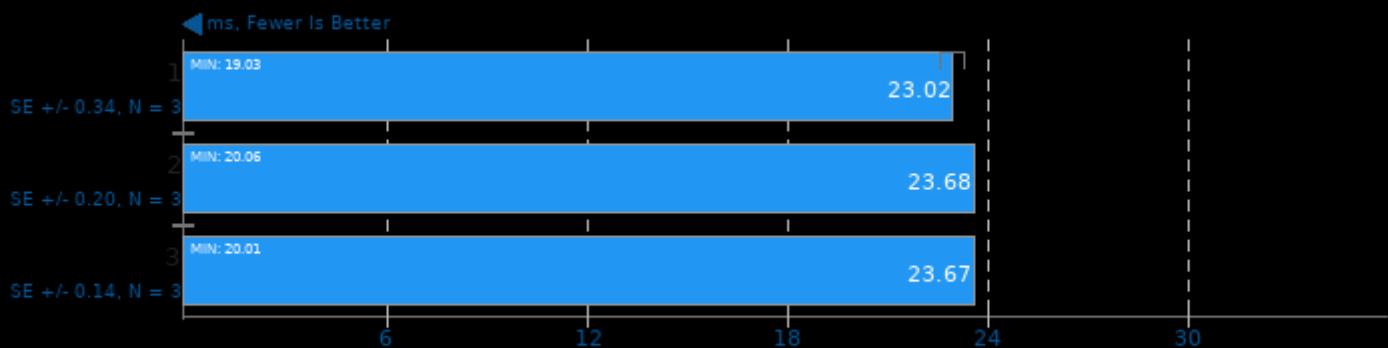
Model: mobilenet-v1-1.0



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

## oneDNN 2.0

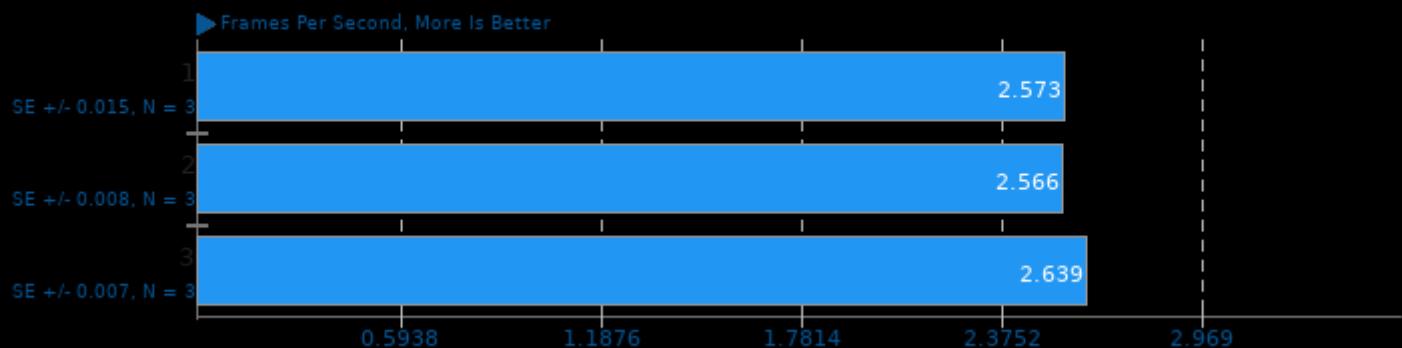
Harness: Convolution Batch Shapes Auto - Data Type: f32 - Engine: CPU



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

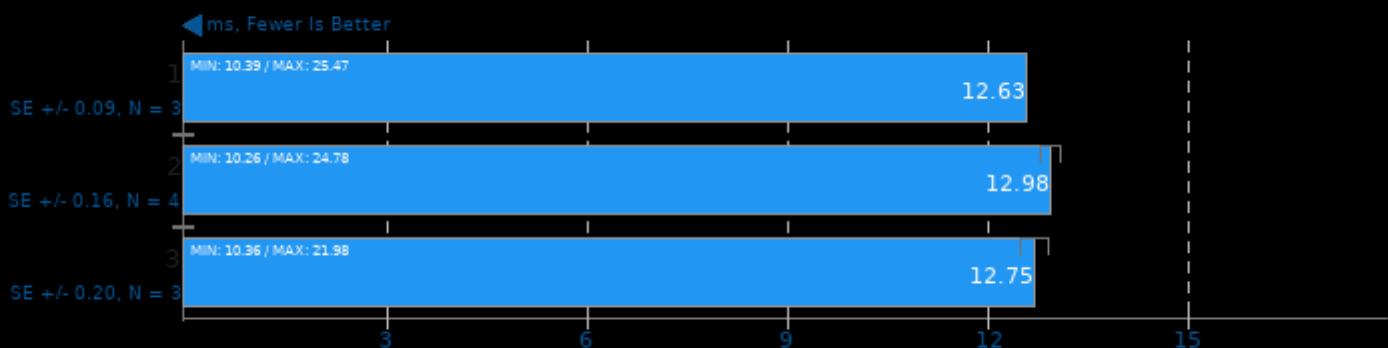
## ravle 0.4

Speed: 10



## NCNN 20201218

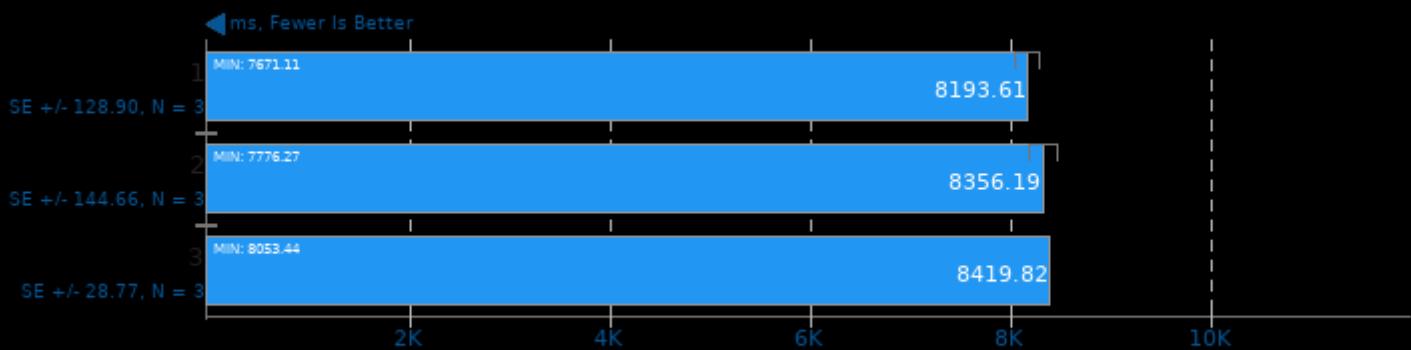
Target: Vulkan GPU - Model: shufflenet-v2



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

## oneDNN 2.0

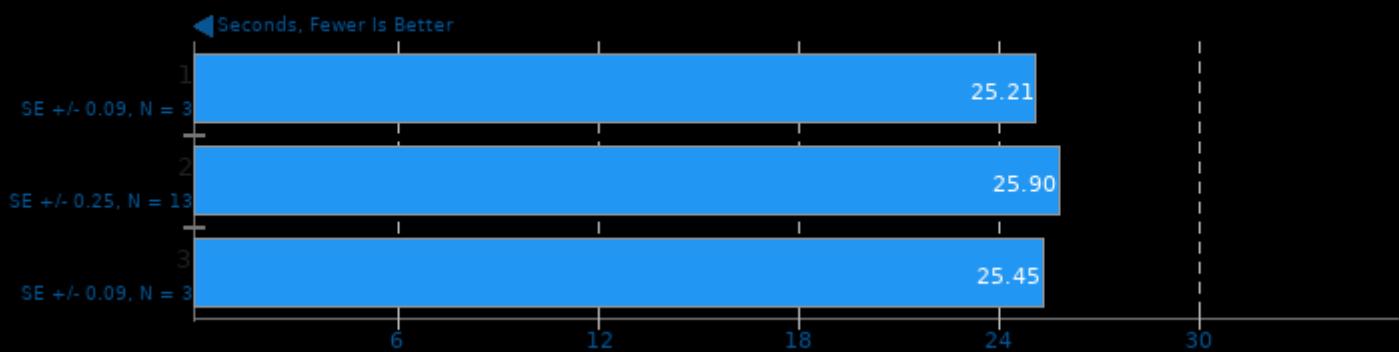
Harness: Recurrent Neural Network Training - Data Type: u8s8f32 - Engine: CPU



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

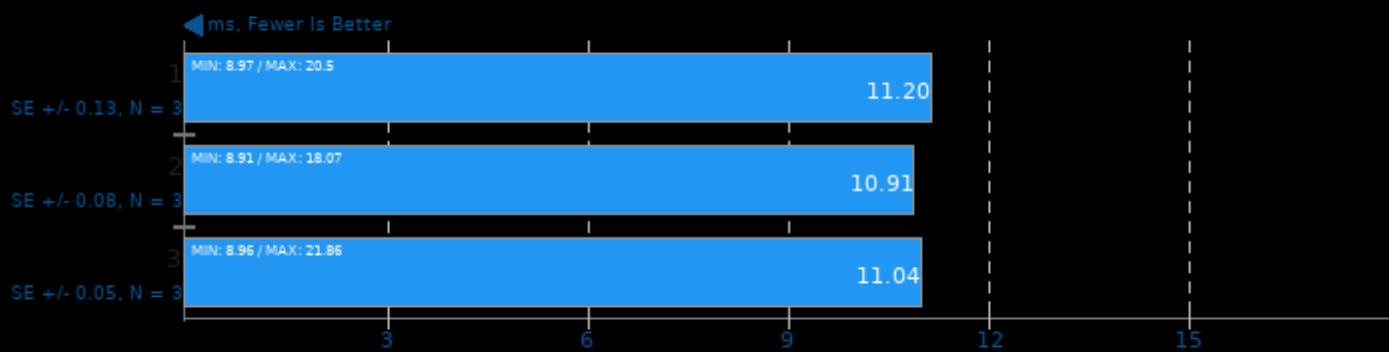
## Darktable 3.2.1

Test: Boat - Acceleration: CPU-only



## NCNN 20201218

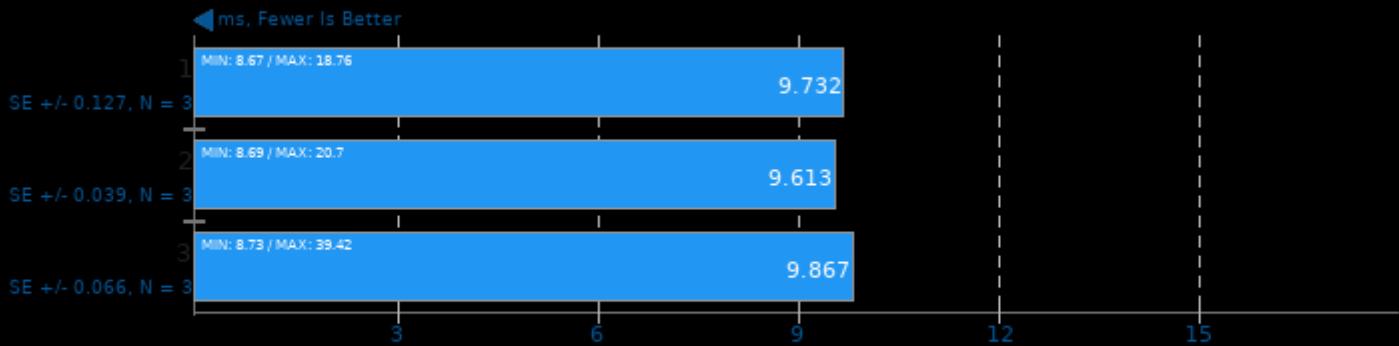
Target: CPU-v2-v2 - Model: mobilenet-v2



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

## Mobile Neural Network 1.1.1

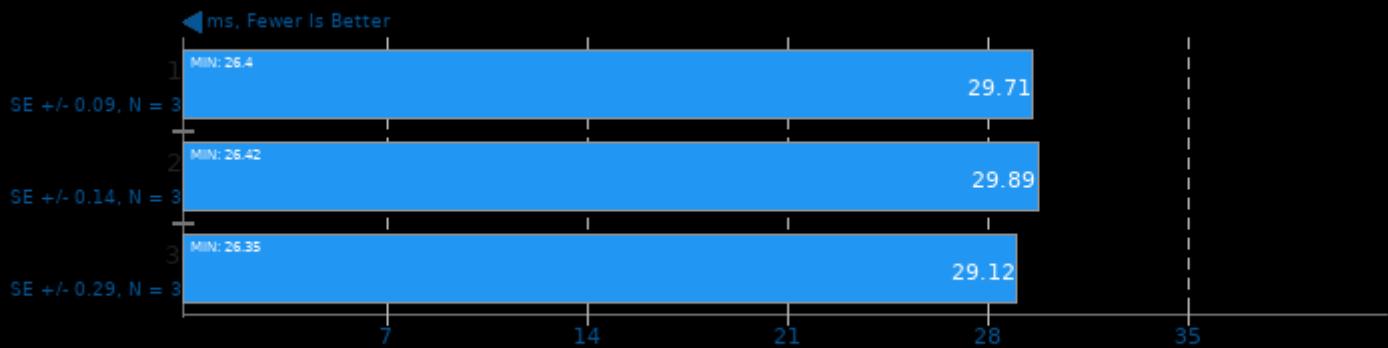
Model: SqueezeNetV1.0



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

## oneDNN 2.0

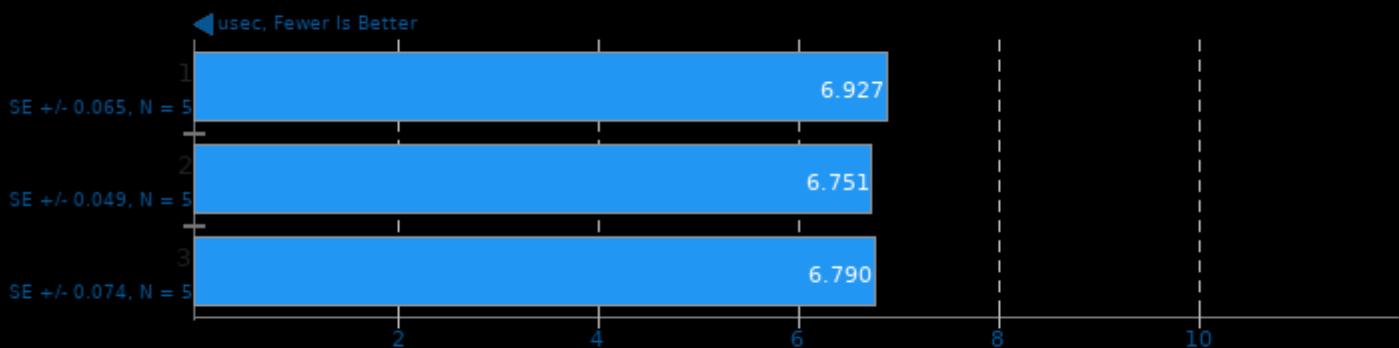
Harness: Deconvolution Batch shapes\_3d - Data Type: u8s8f32 - Engine: CPU



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

## Sockperf 3.4

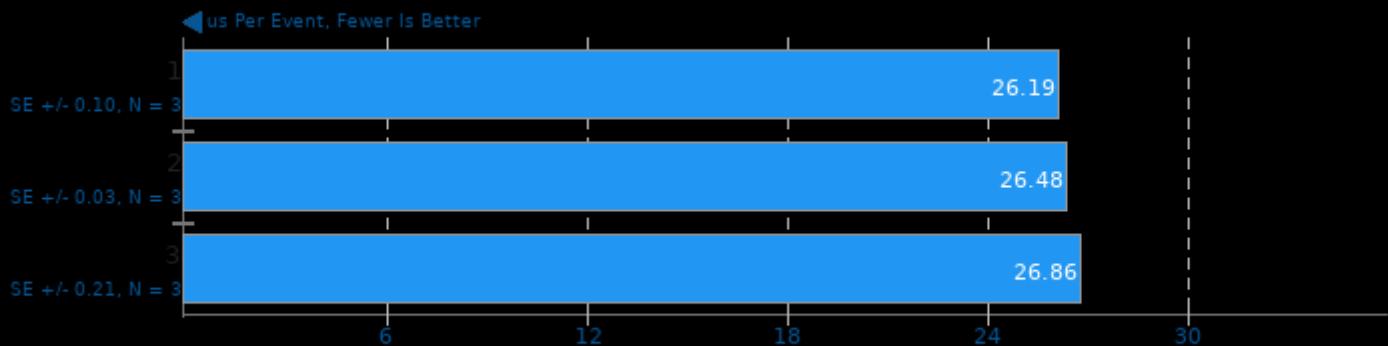
Test: Latency Ping Pong



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

## OSBench

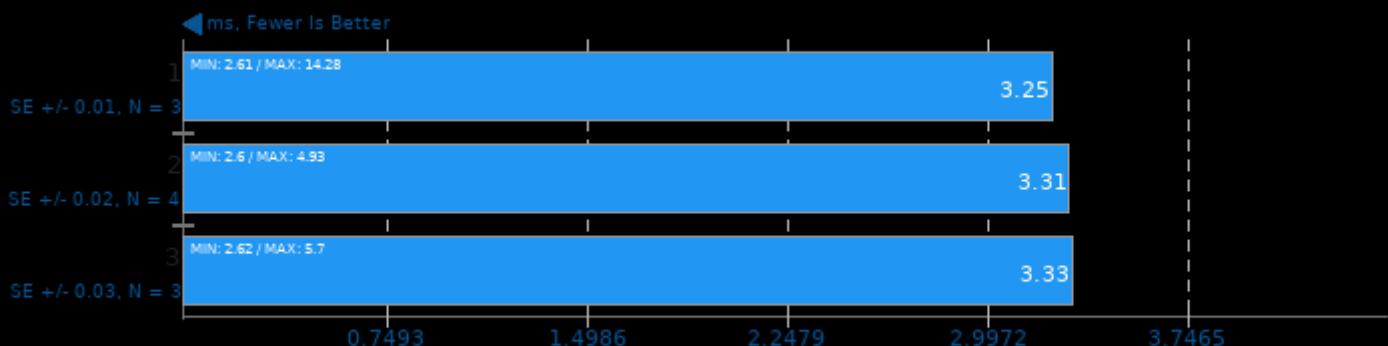
Test: Create Processes



1. (CC) gcc options: -lm

## NCNN 20201218

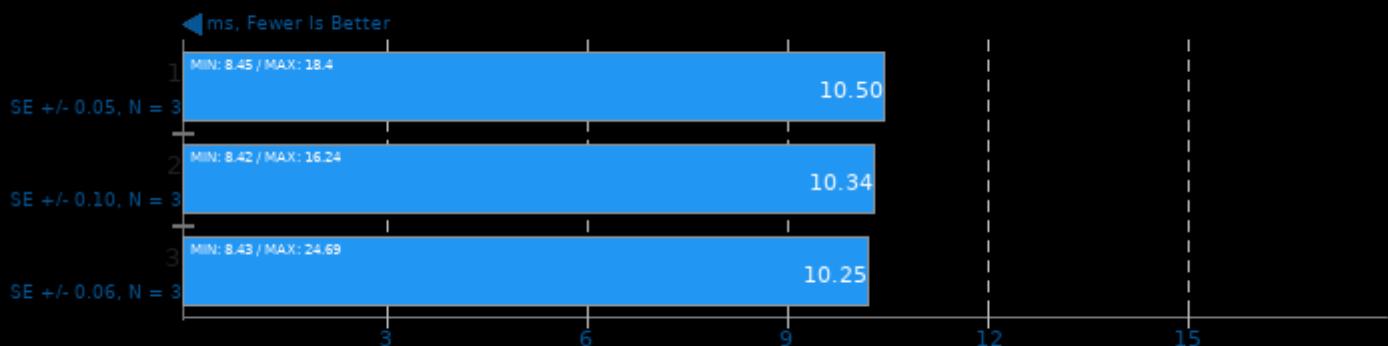
Target: Vulkan GPU - Model: blazeface



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

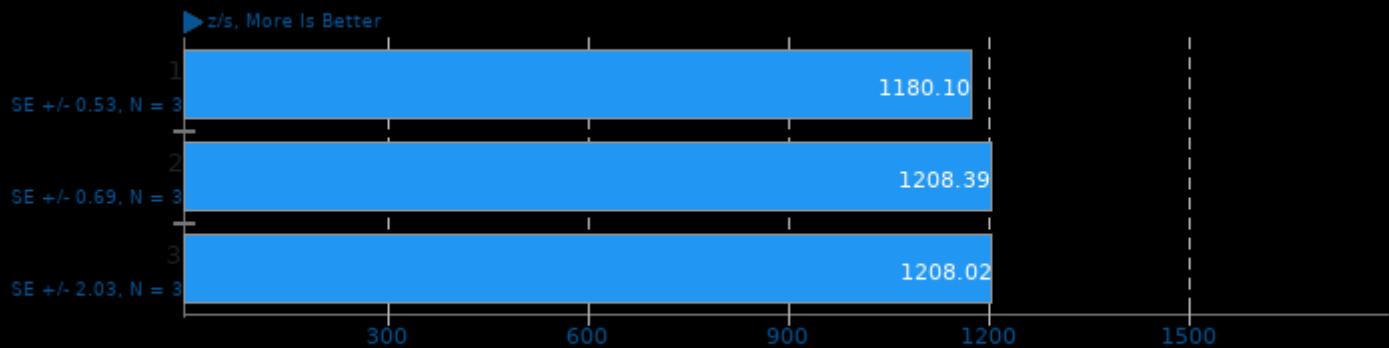
## NCNN 20201218

Target: CPU - Model: mnasnet



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

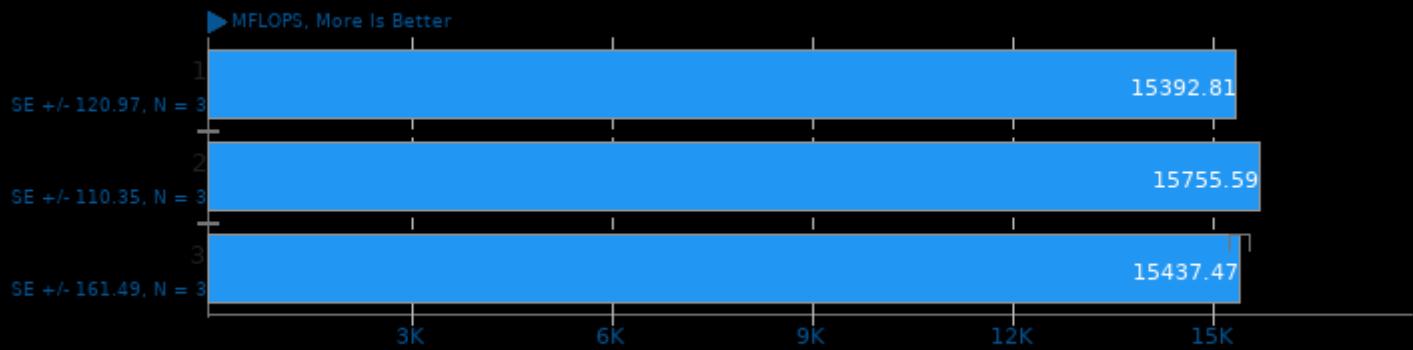
## LULESH 2.0.3



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

## FFTE 7.0

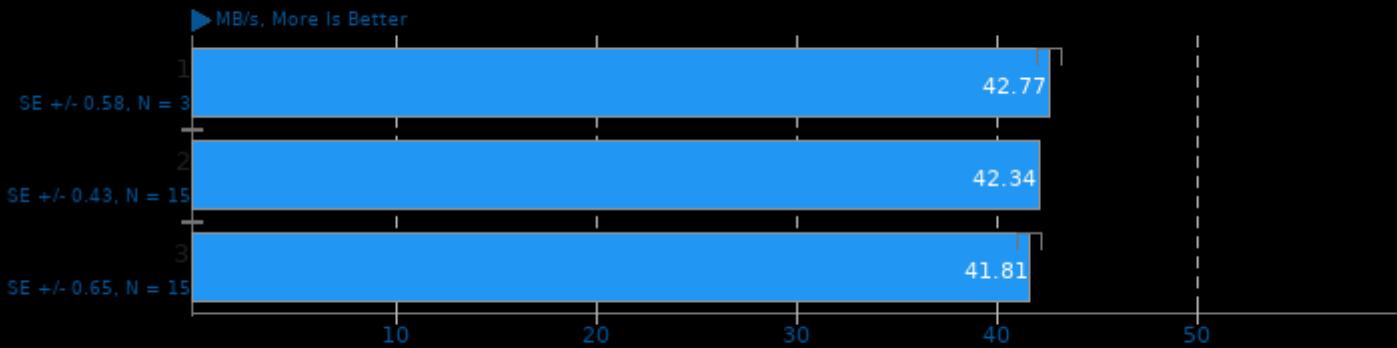
N=256, 3D Complex FFT Routine



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

## LZ4 Compression 1.9.3

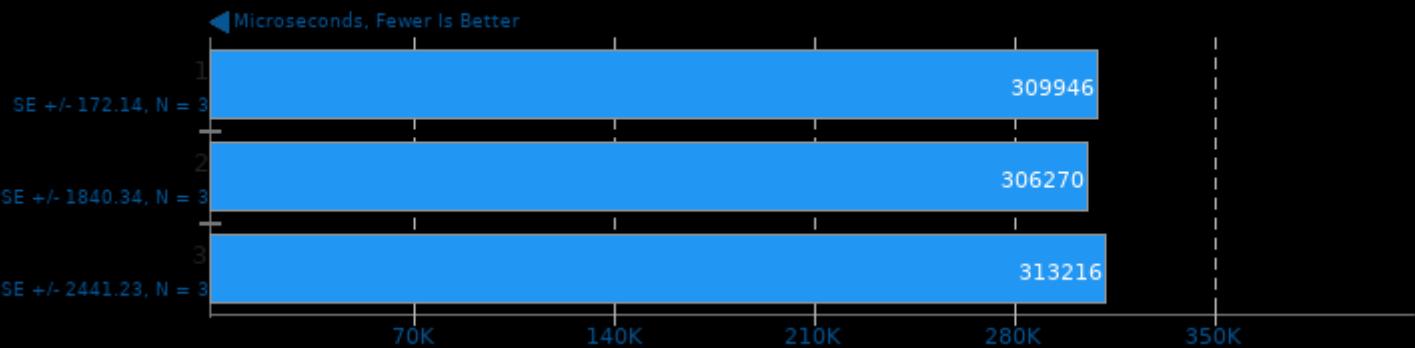
Compression Level: 3 - Compression Speed



1. (ICC) gcc options: -O3

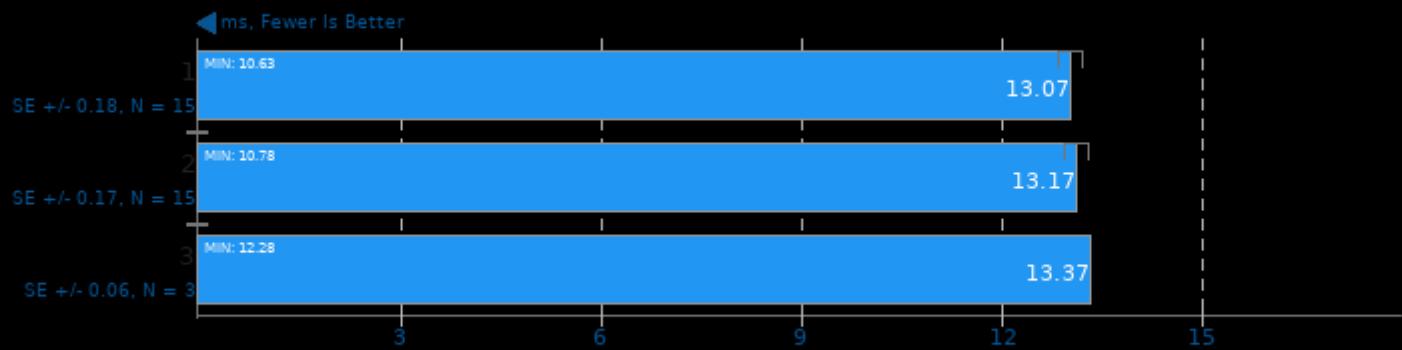
## TensorFlow Lite 2020-08-23

Model: Mobilenet Float



## oneDNN 2.0

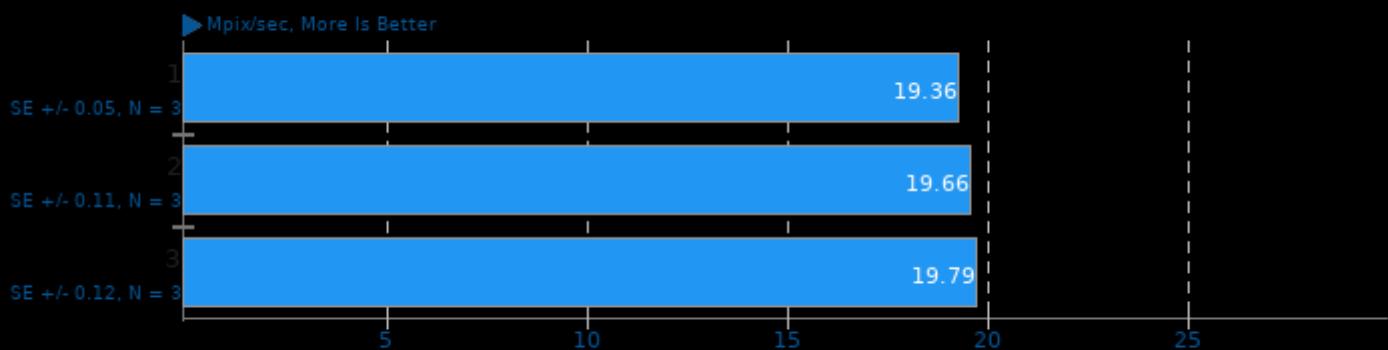
Harness: IP Shapes 3D - Data Type: f32 - Engine: CPU



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

## LibRaw 0.20

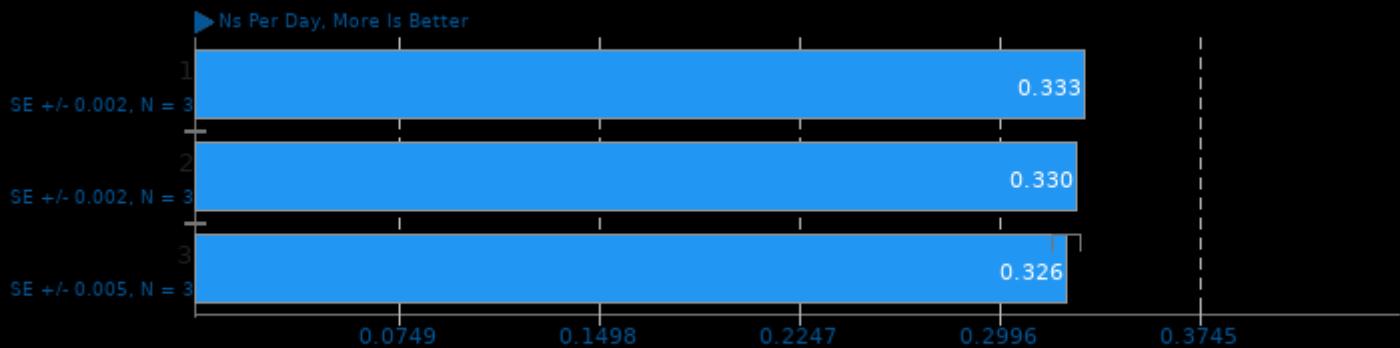
Post-Processing Benchmark



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

## GROMACS 2020.3

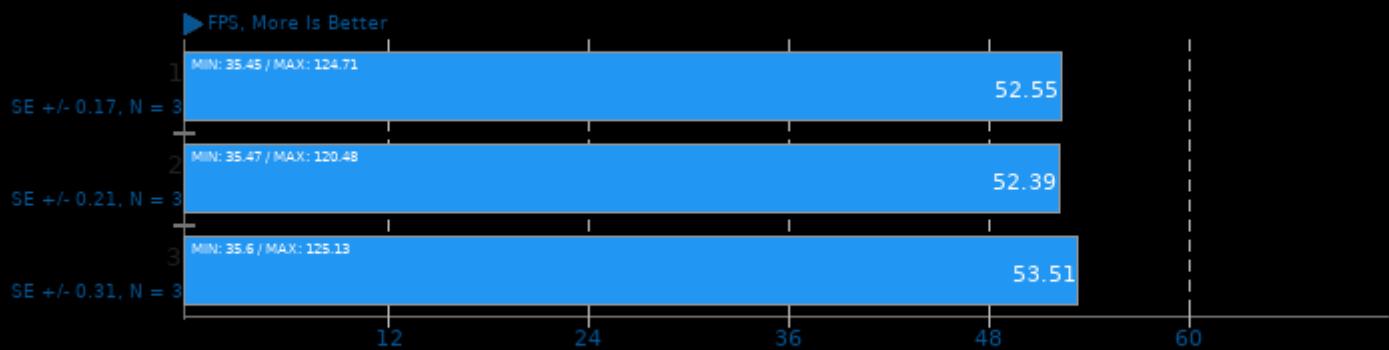
Water Benchmark



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

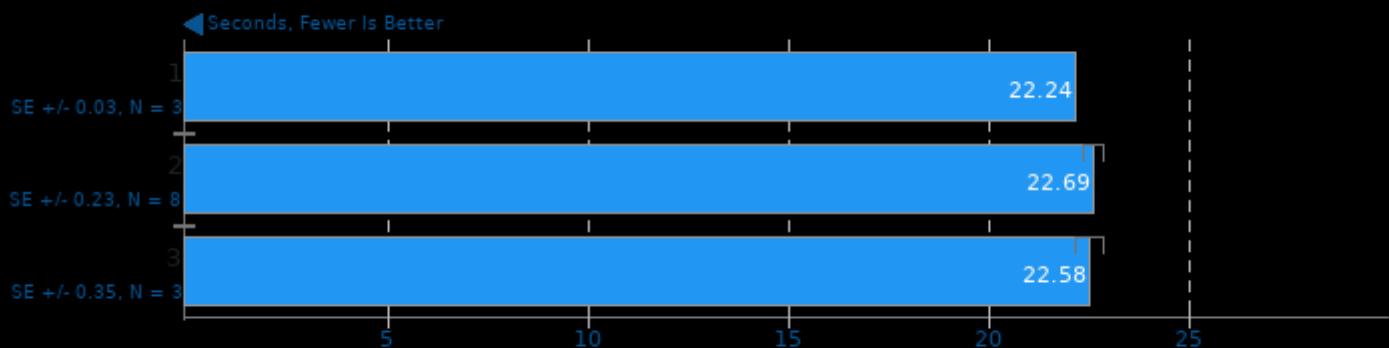
## dav1d 0.8.1

Video Input: Chimera 1080p 10-bit



1. (CC) gcc options: -pthread -ldl -lm

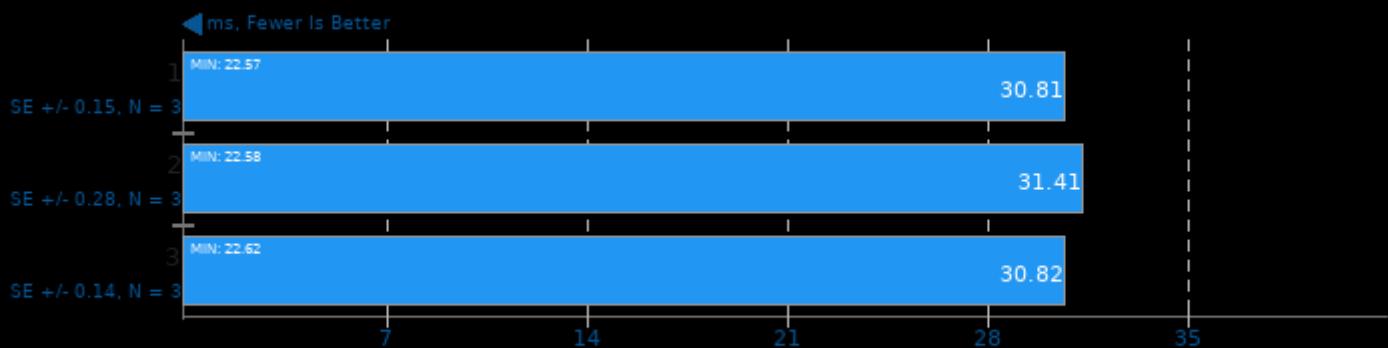
## RNNoise 2020-06-28



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

## oneDNN 2.0

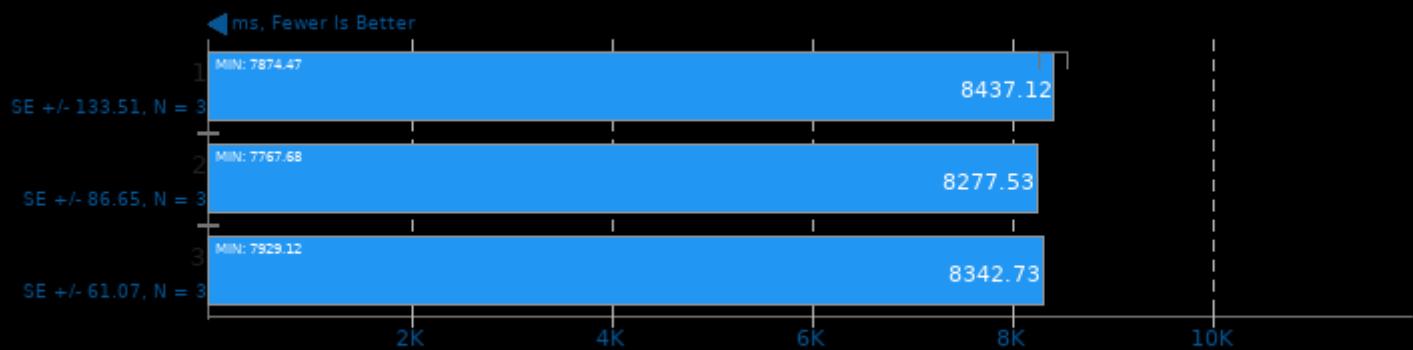
Harness: Deconvolution Batch shapes\_3d - Data Type: f32 - Engine: CPU



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

## oneDNN 2.0

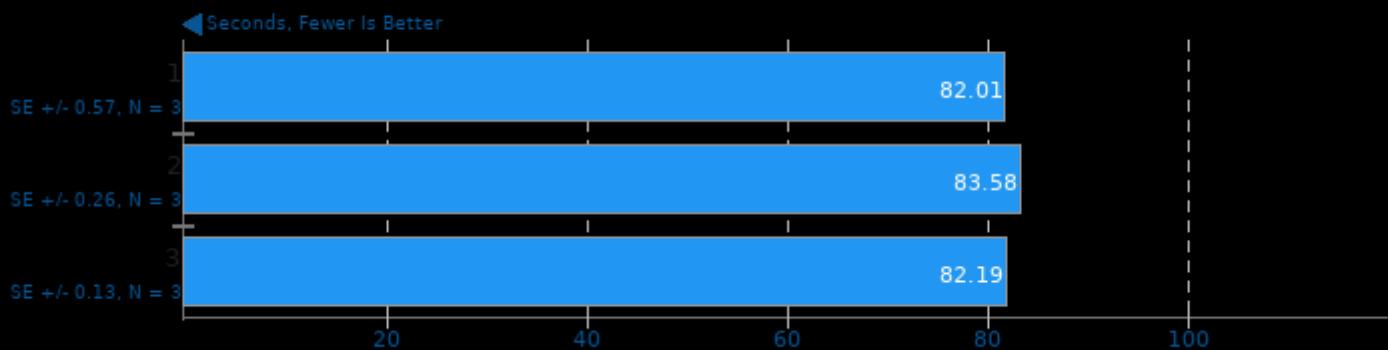
Harness: Recurrent Neural Network Training - Data Type: f32 - Engine: CPU



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

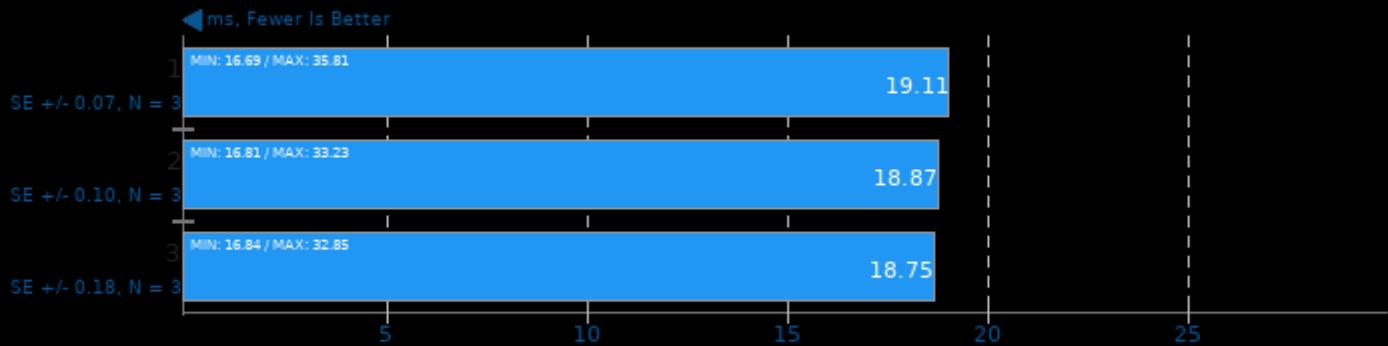
## Hugin

Panorama Photo Assistant + Stitching Time



## NCNN 20201218

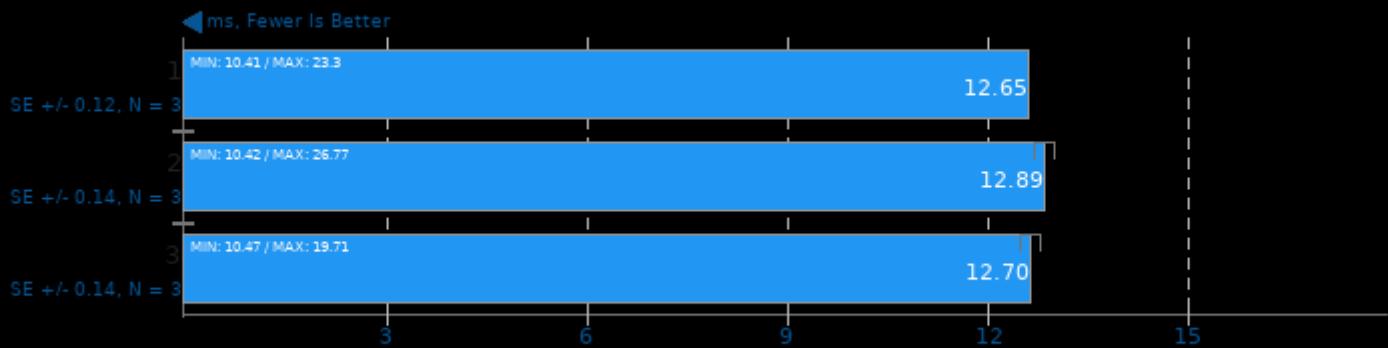
Target: CPU - Model: regnety\_400m



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

## NCNN 20201218

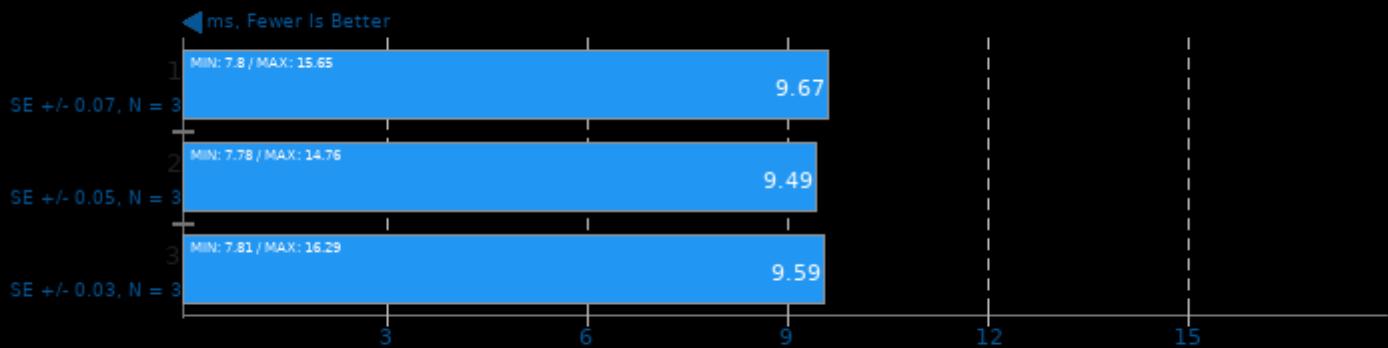
Target: CPU - Model: shufflenet-v2



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

## NCNN 20201218

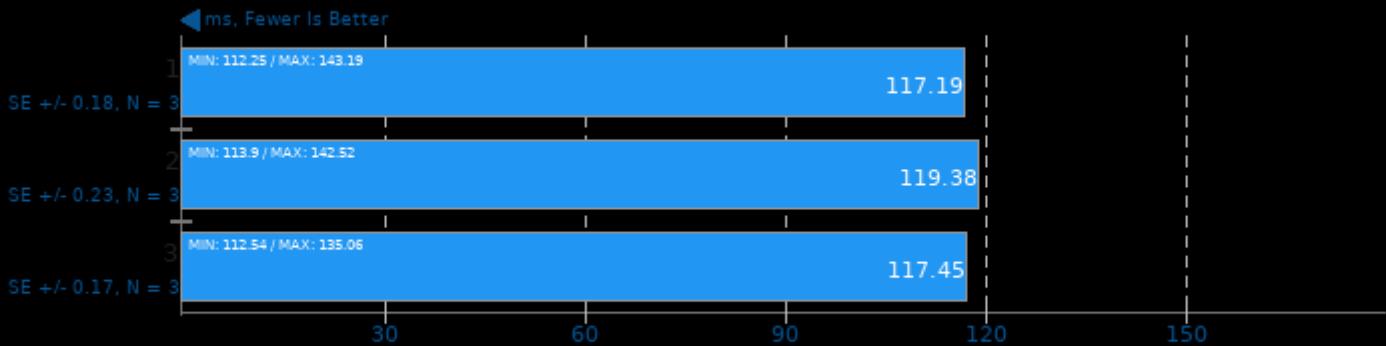
Target: CPU-v3-v3 - Model: mobilenet-v3



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

## NCNN 20201218

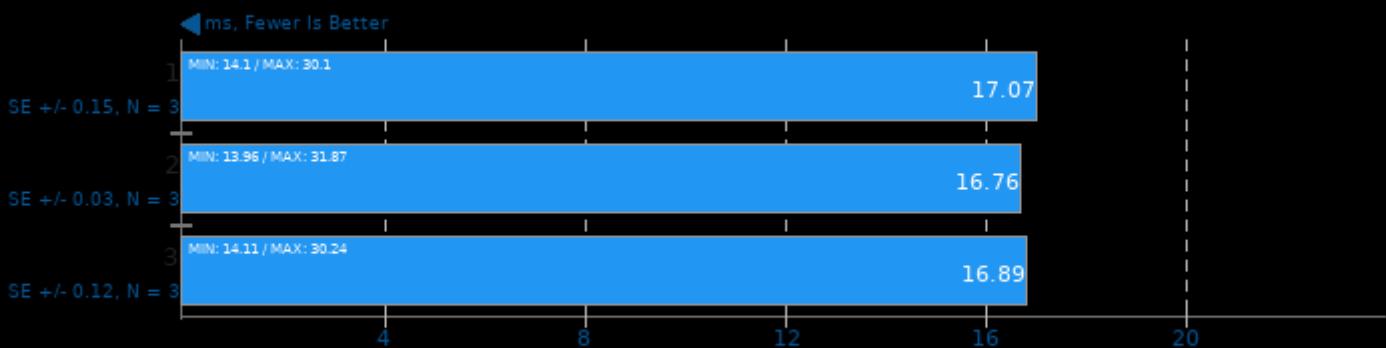
Target: CPU - Model: vgg16



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

## NCNN 20201218

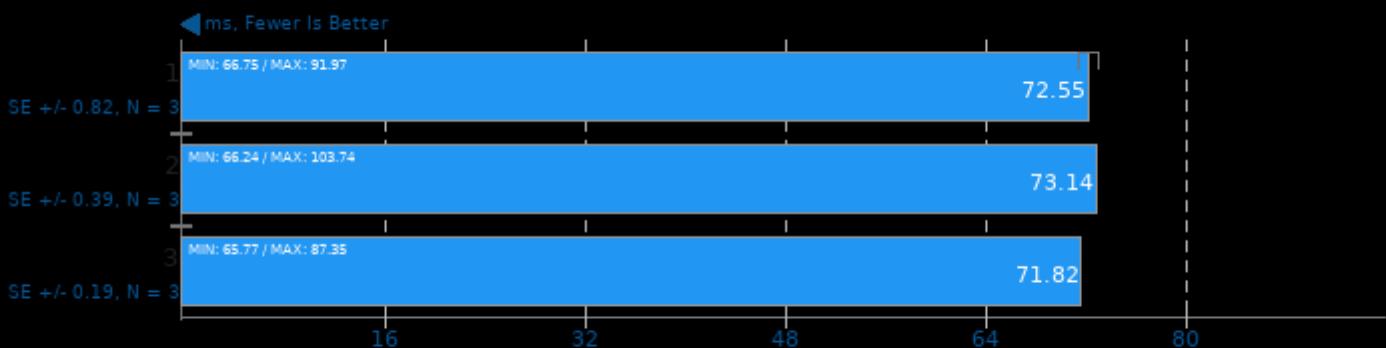
Target: CPU - Model: efficientnet-b0



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

## NCNN 20201218

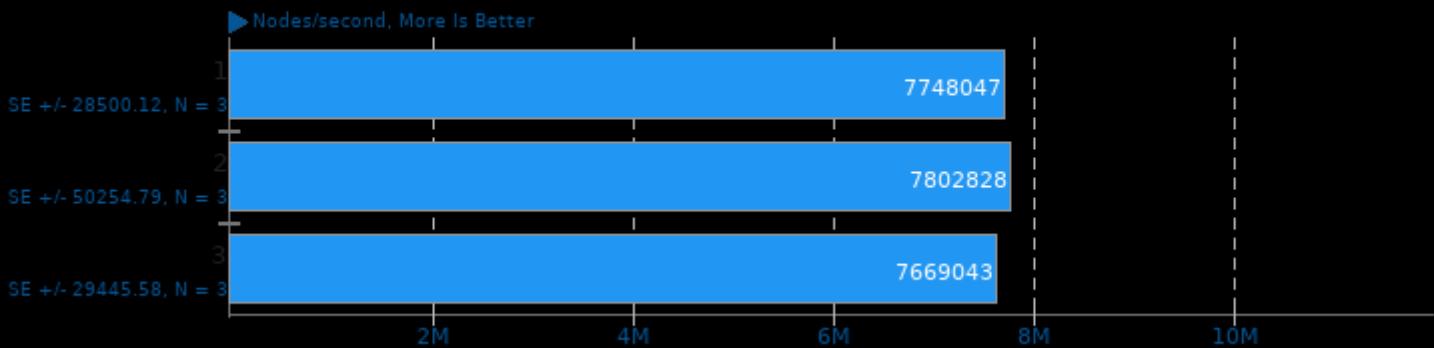
Target: CPU - Model: resnet50



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

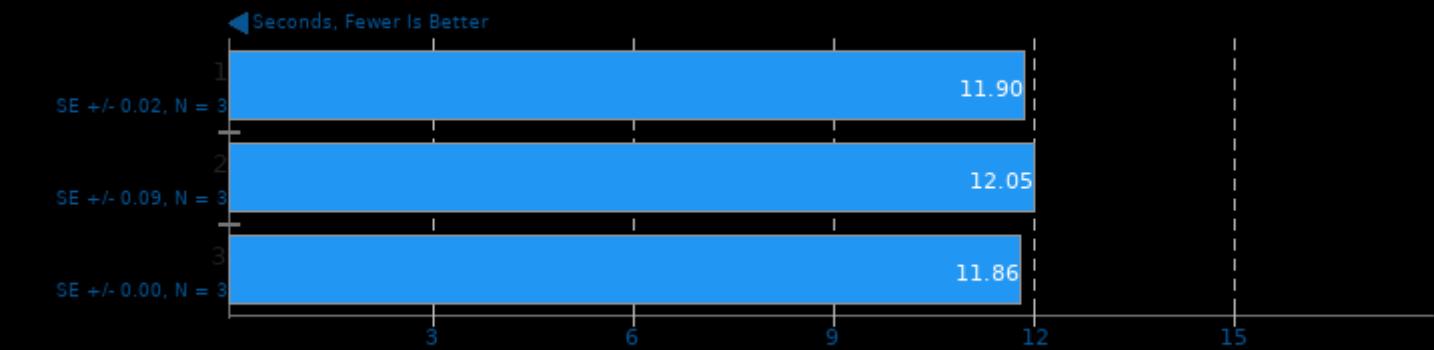
## asmFish 2018-07-23

1024 Hash Memory, 26 Depth



## Basis Universal 1.12

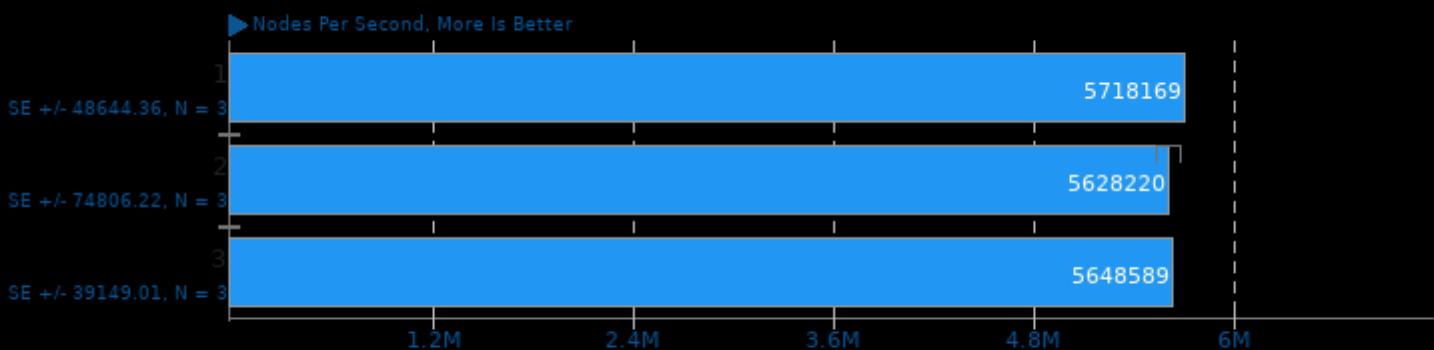
Settings: UASTC Level 0



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

## Stockfish 12

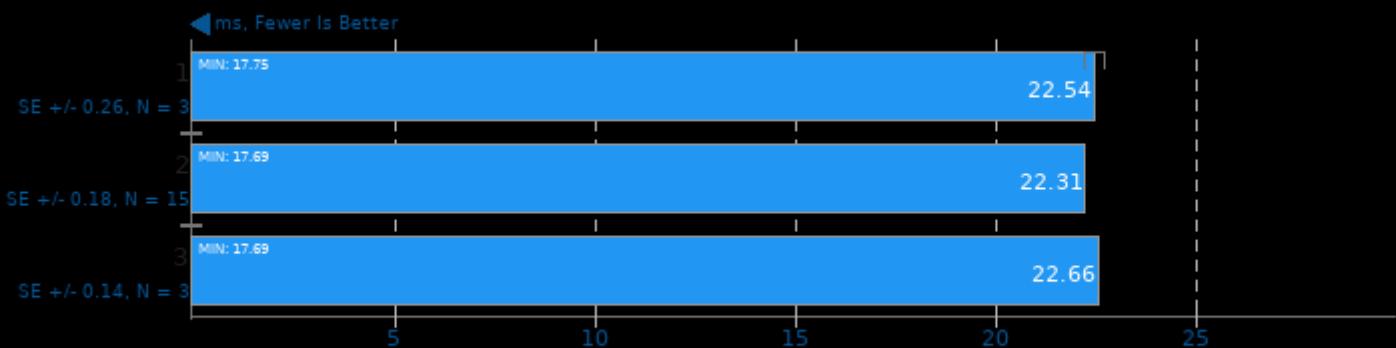
Total Time



1. (CXX) g++ options: -m64 -lpthread -fno-exceptions -std=c++17 -pedantic -O3 -msse -msse3 -mpopcnt -msse4.1 -mssse3 -msse2 -fno-jobserver

## oneDNN 2.0

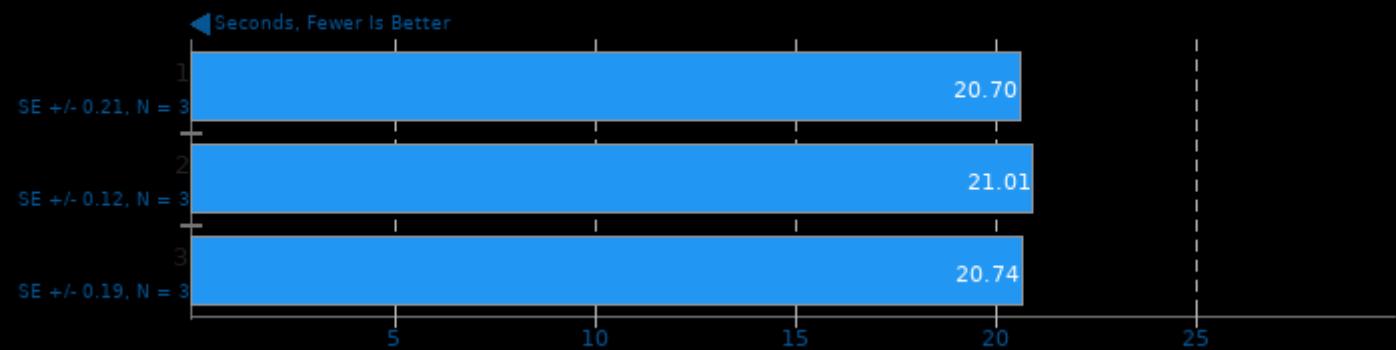
Harness: Deconvolution Batch shapes\_1d - Data Type: f32 - Engine: CPU



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

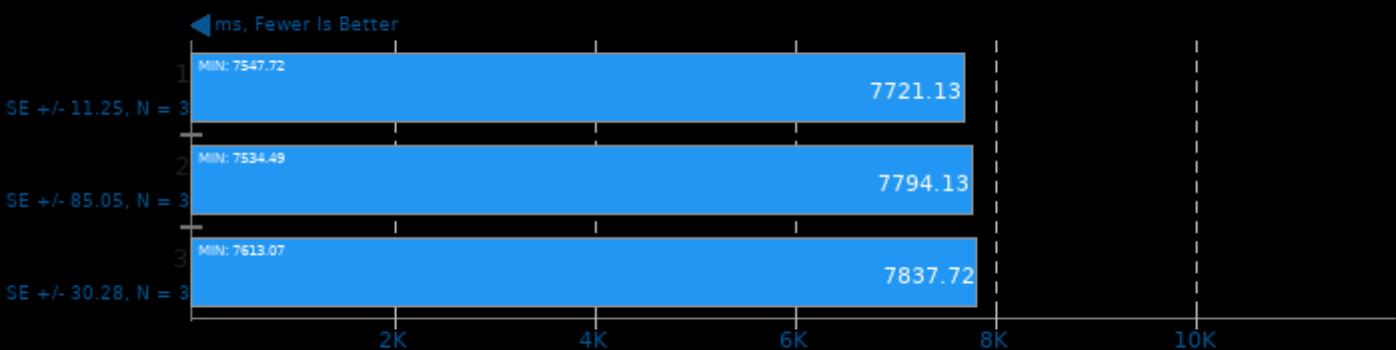
## Darktable 3.2.1

Test: Server Room - Acceleration: CPU-only



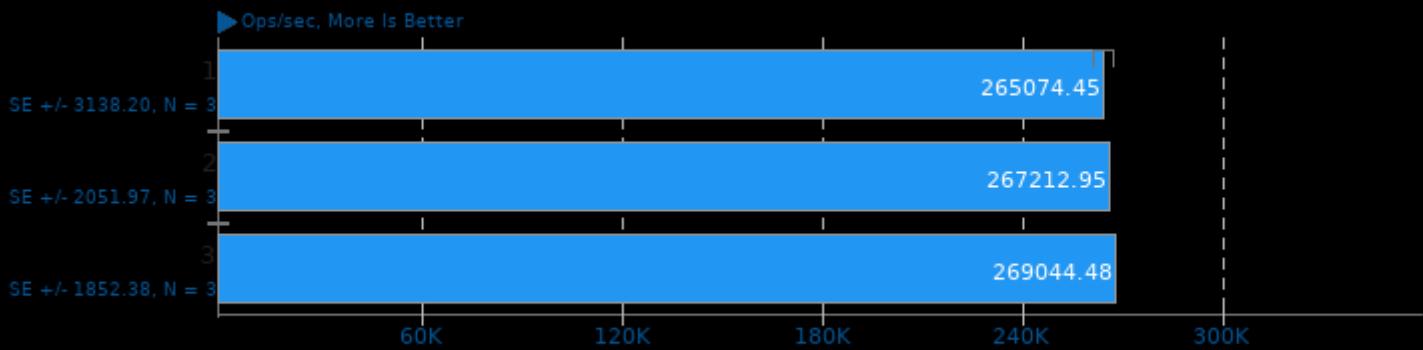
## oneDNN 2.0

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



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

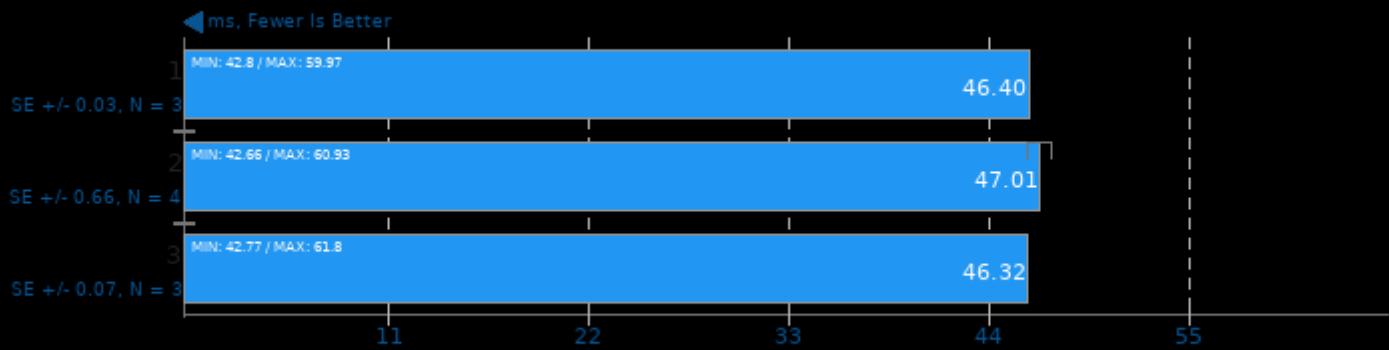
## KeyDB 6.0.16



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

## NCNN 20201218

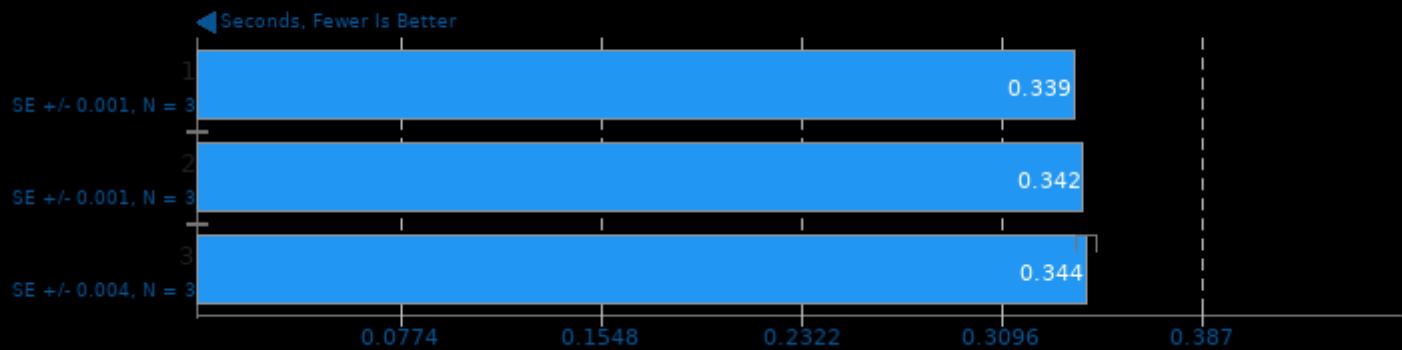
Target: Vulkan GPU - Model: mobilenet



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

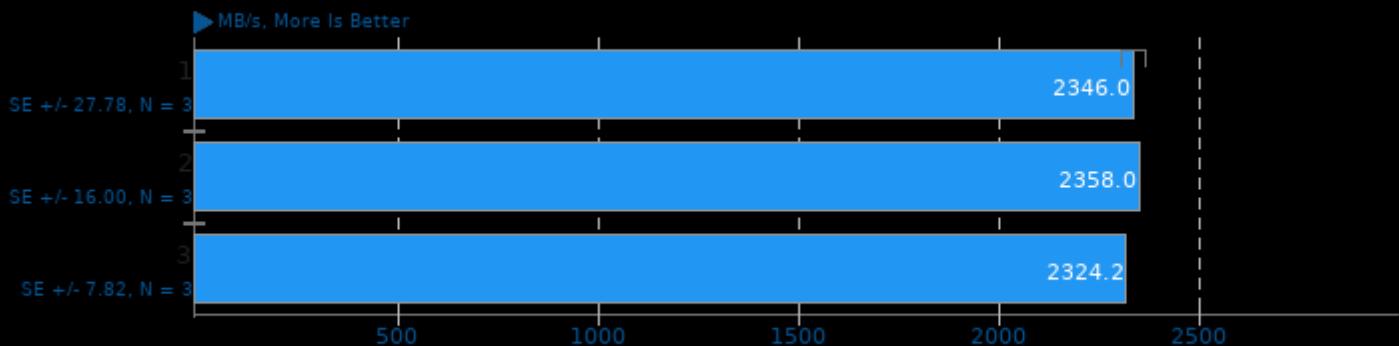
## Darktable 3.2.1

Test: Server Rack - Acceleration: CPU-only



## Zstd Compression 1.4.5

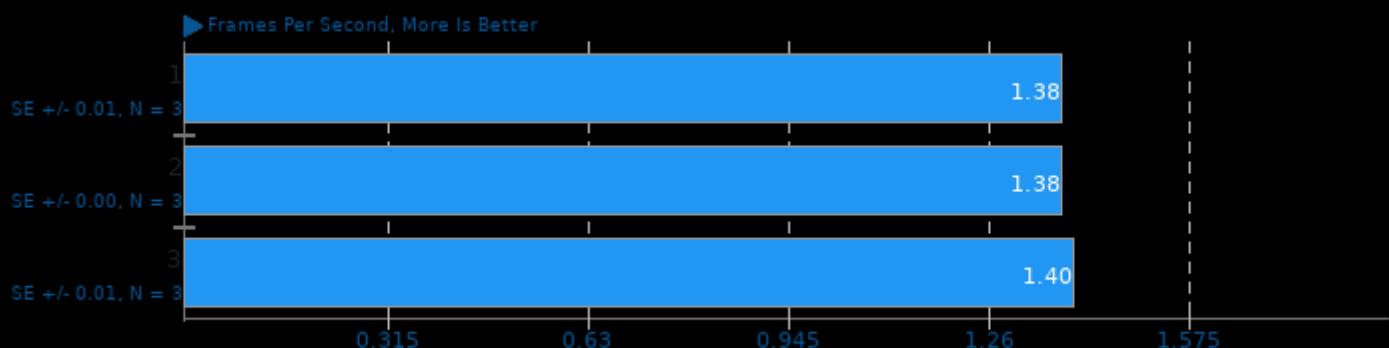
Compression Level: 3



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

## AOM AV1 2.0

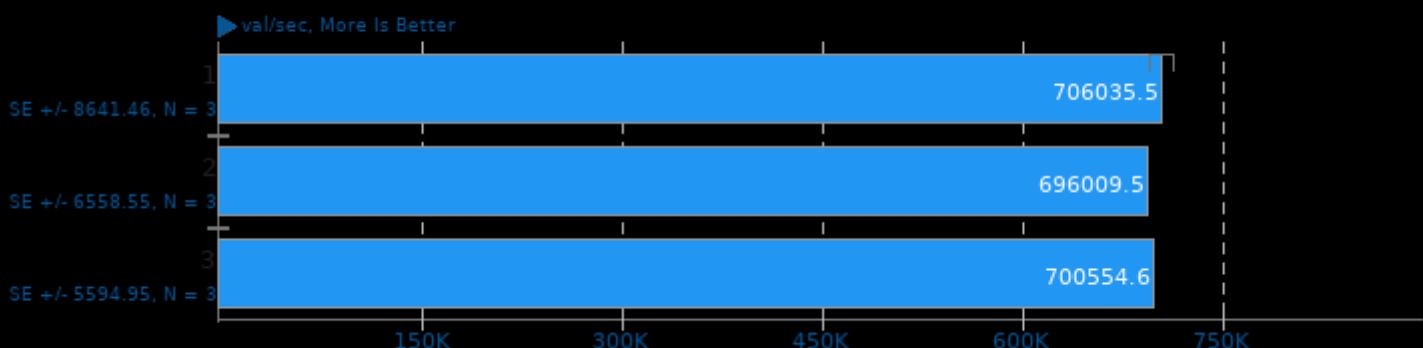
Encoder Mode: Speed 4 Two-Pass



1. (CXX) g++ options: -O3 -std=c++11 -U\_FORTIFY\_SOURCE -fno-plt -fno-threadsafe-statics

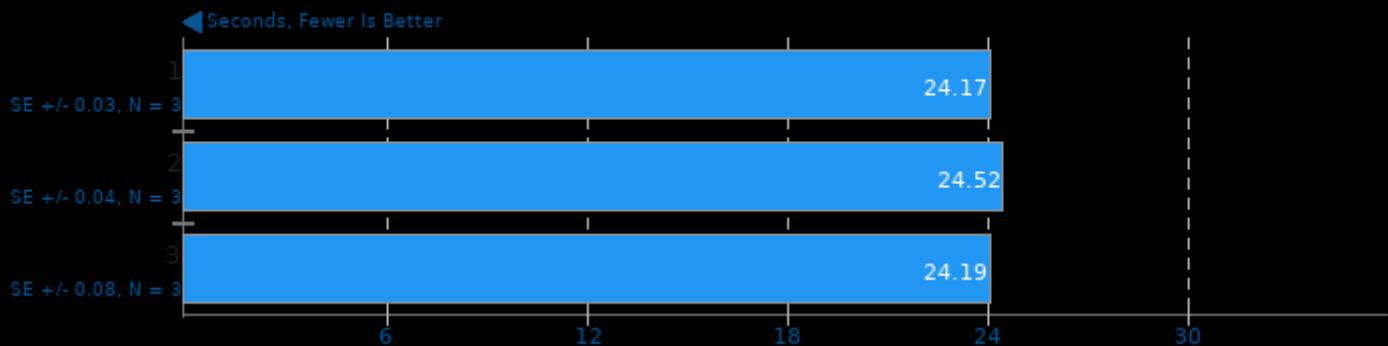
## InfluxDB 1.8.2

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



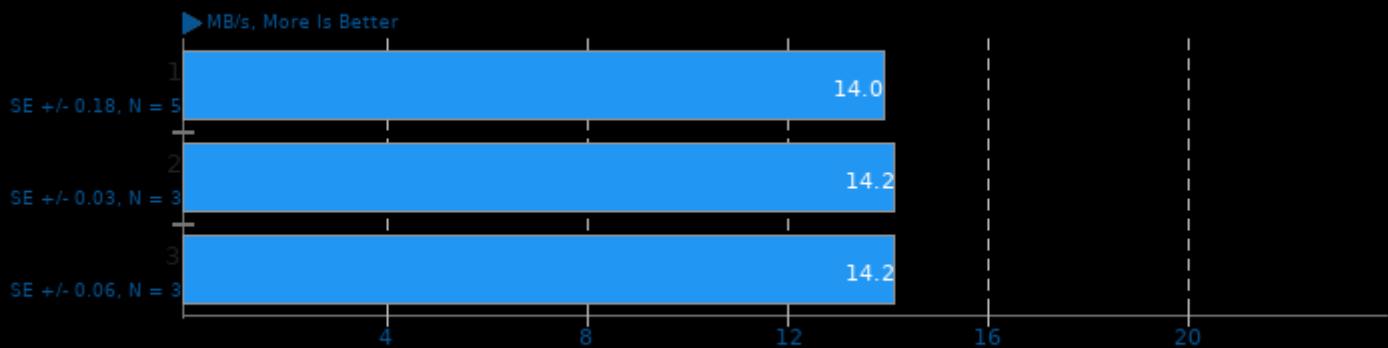
## Darktable 3.2.1

Test: Masskrug - Acceleration: CPU-only



## Zstd Compression 1.4.5

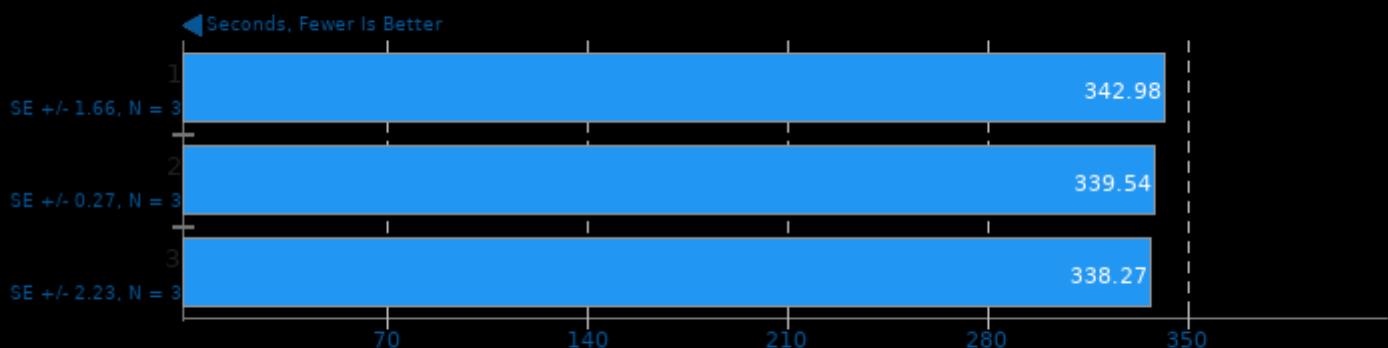
Compression Level: 19



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

## OpenFOAM 8

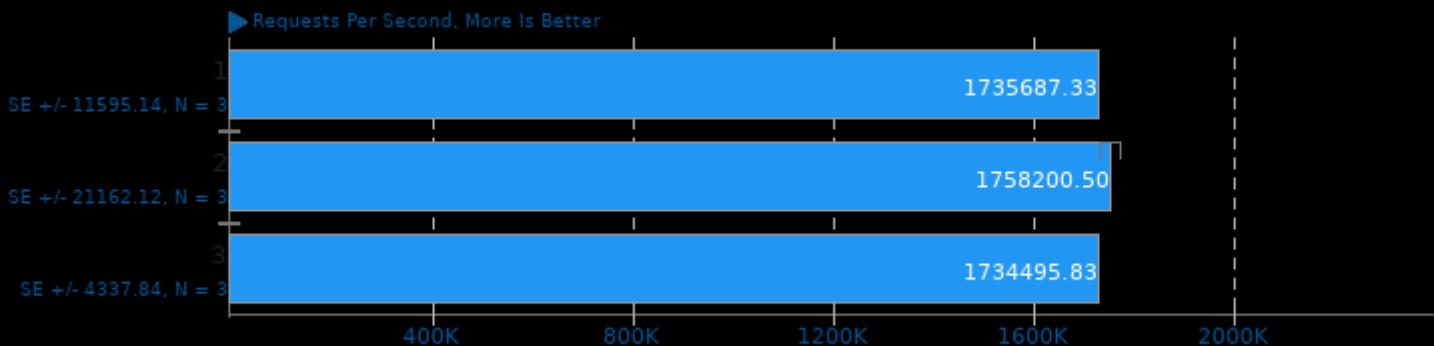
Input: Motorbike 30M



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

## Redis 6.0.9

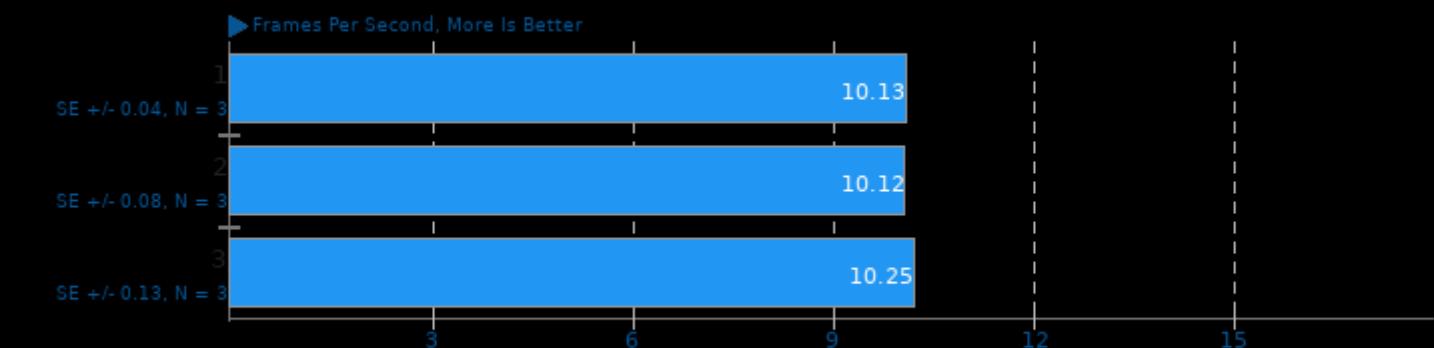
Test: SADD



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

## AOM AV1 2.0

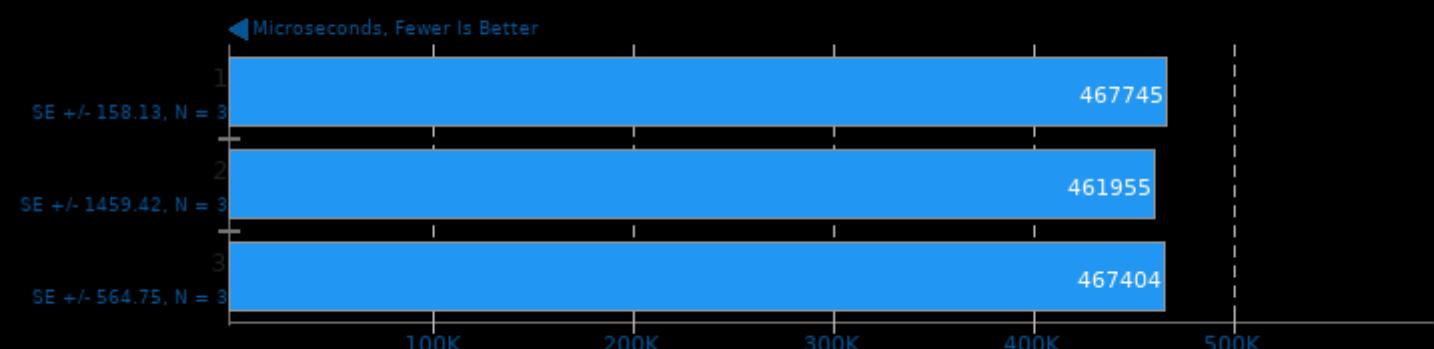
Encoder Mode: Speed 6 Realtime



1. (CXX) g++ options: -O3 -std=c++11 -U\_FORTIFY\_SOURCE -fno-rtti -fno-threadsafe-statics

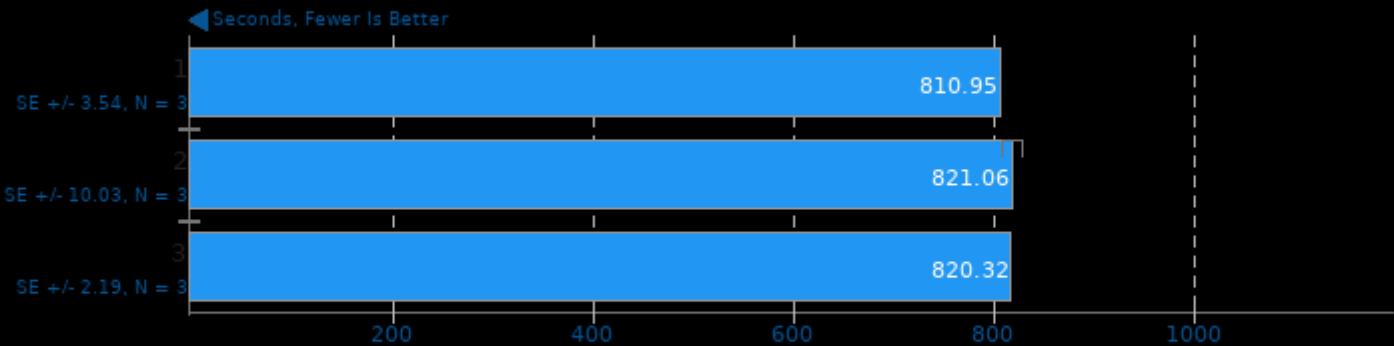
## TensorFlow Lite 2020-08-23

Model: SqueezeNet



## Incompact3D 2020-09-17

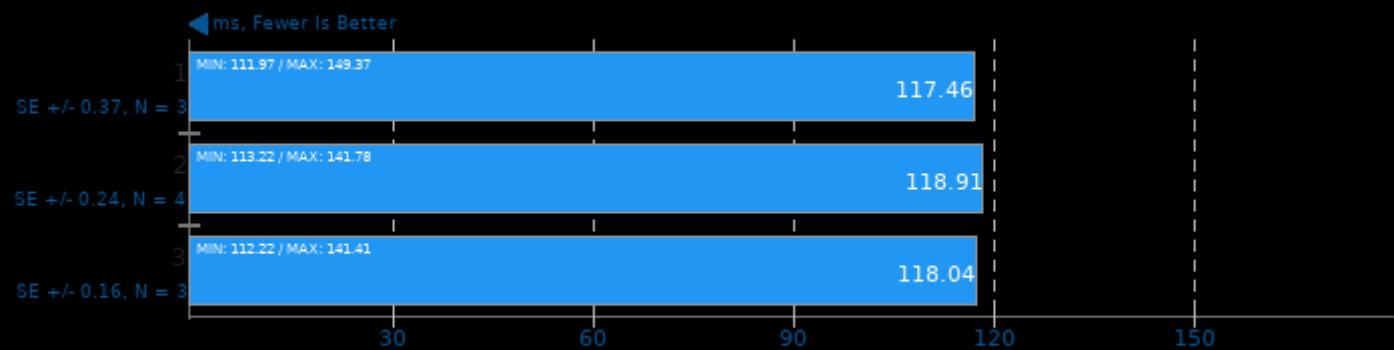
Input: Cylinder



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

## NCNN 20201218

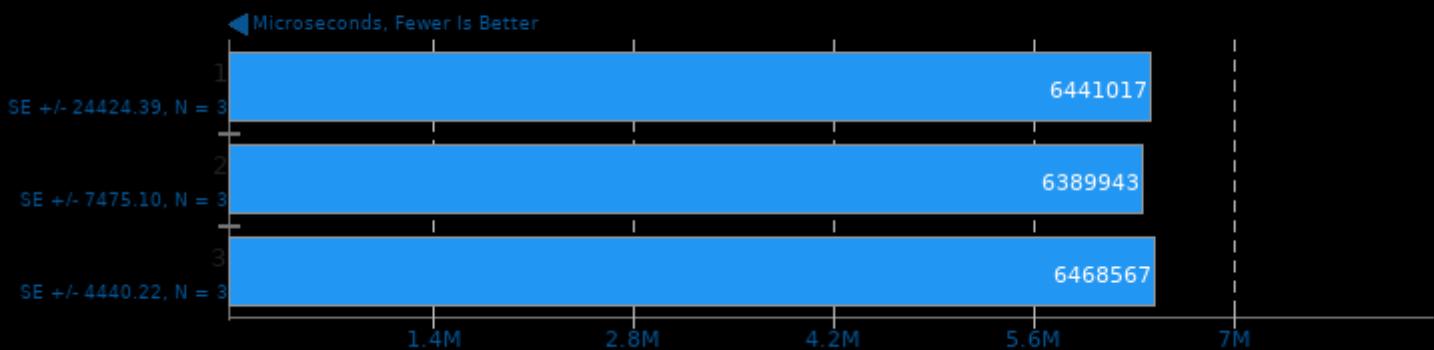
Target: Vulkan GPU - Model: vgg16



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

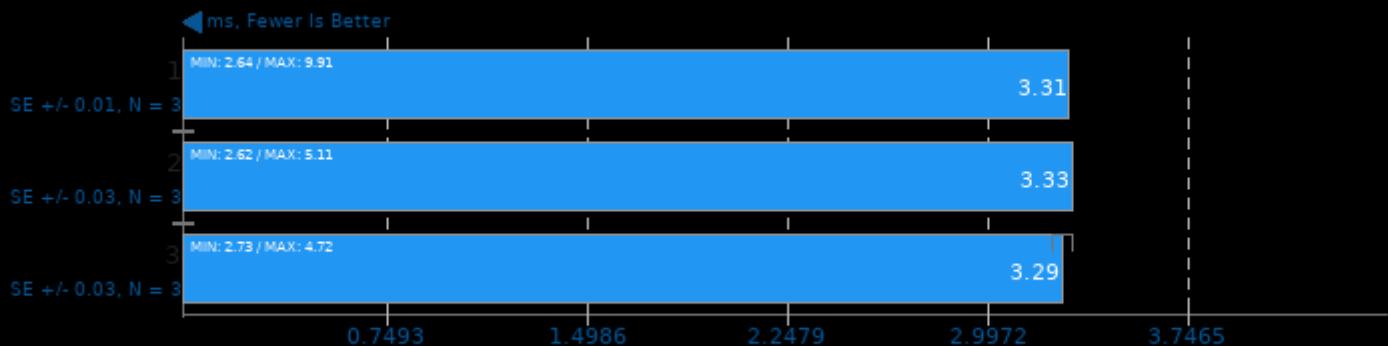
## TensorFlow Lite 2020-08-23

Model: Inception V4



## NCNN 20201218

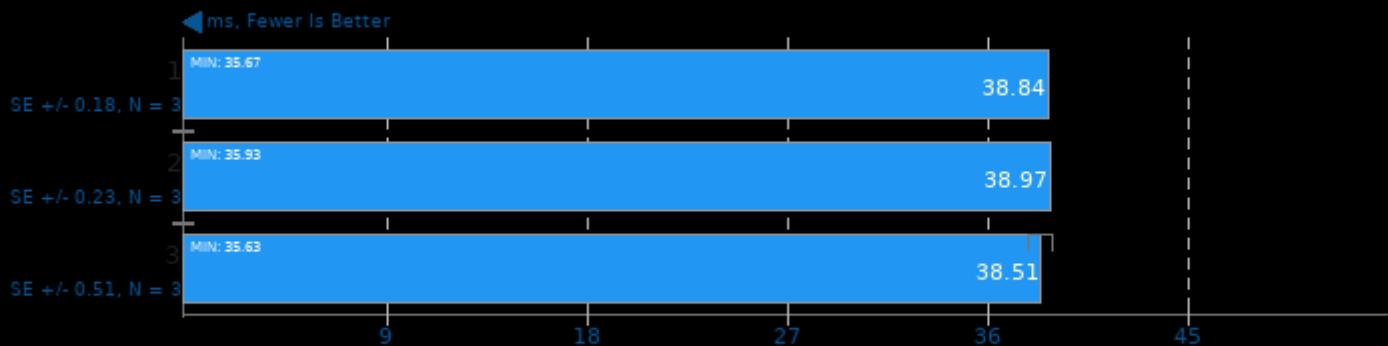
Target: CPU - Model: blazeface



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

## oneDNN 2.0

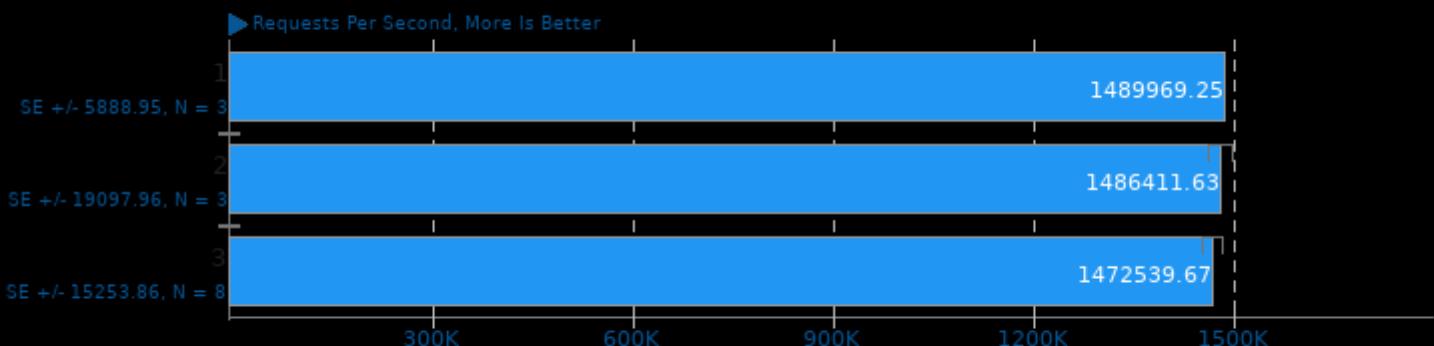
Harness: Convolution Batch Shapes Auto - Data Type: u8s8f32 - Engine: CPU



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

## Redis 6.0.9

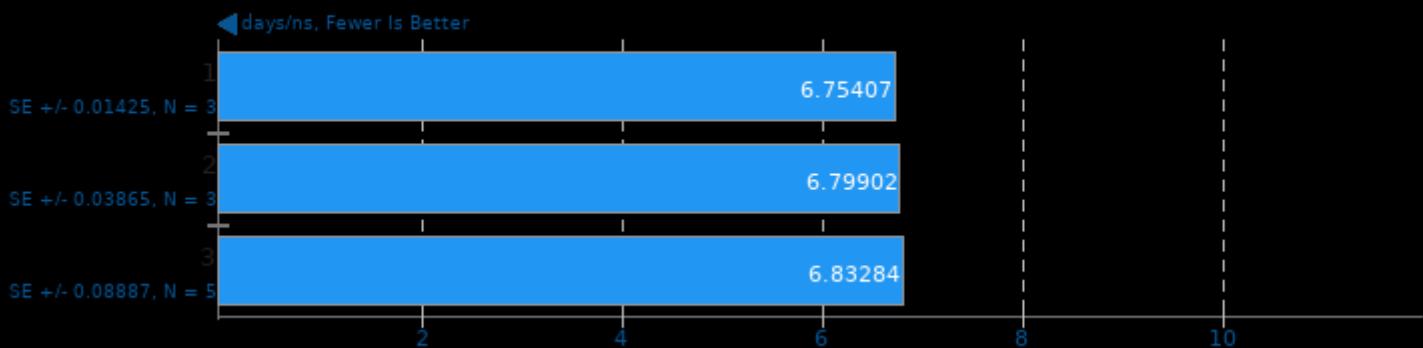
Test: SET



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

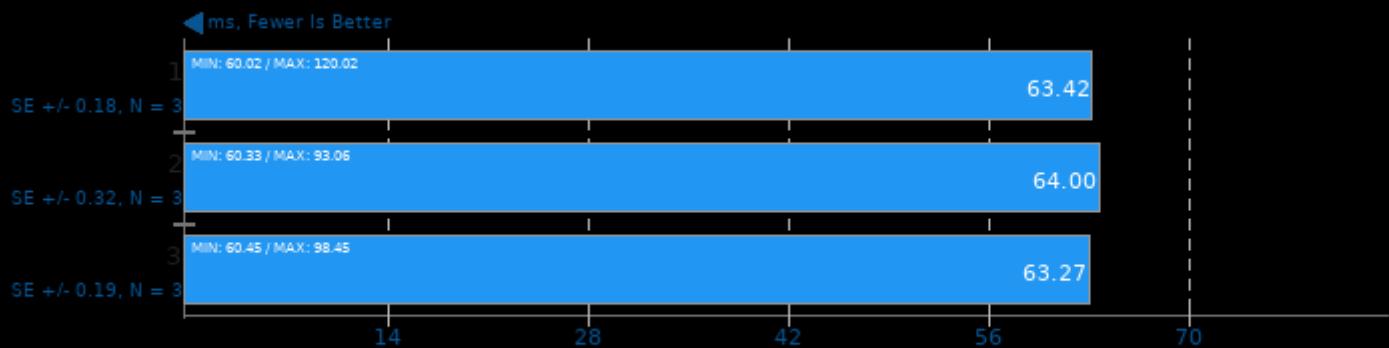
## NAMD 2.14

ATPase Simulation - 327,506 Atoms



## Mobile Neural Network 1.1.1

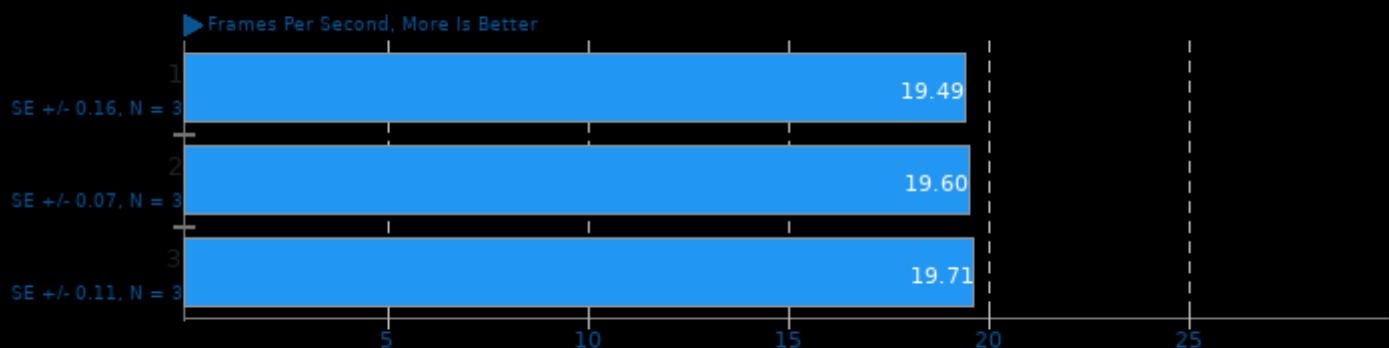
Model: inception-v3



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

## x265 3.4

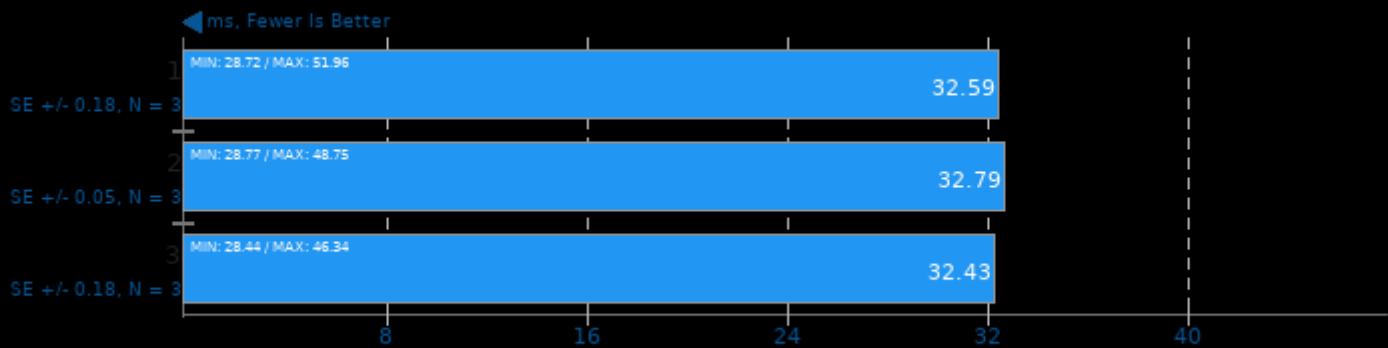
Video Input: Bosphorus 1080p



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

## NCNN 20201218

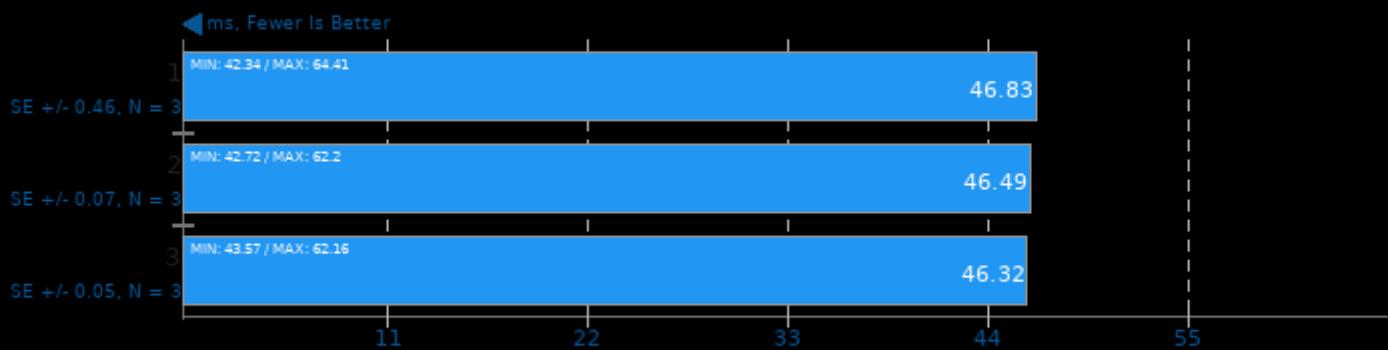
Target: CPU - Model: googlenet



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

## NCNN 20201218

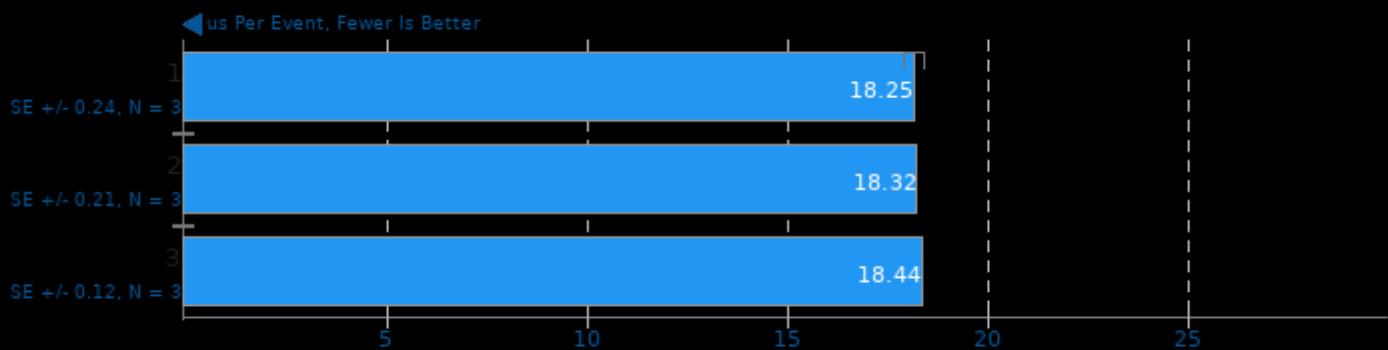
Target: CPU - Model: mobilenet



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

## OSBench

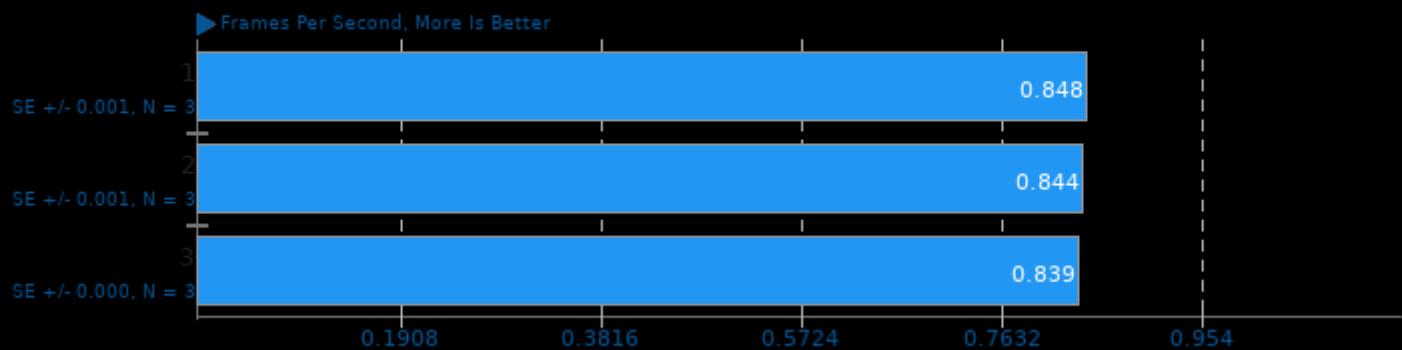
Test: Create Files



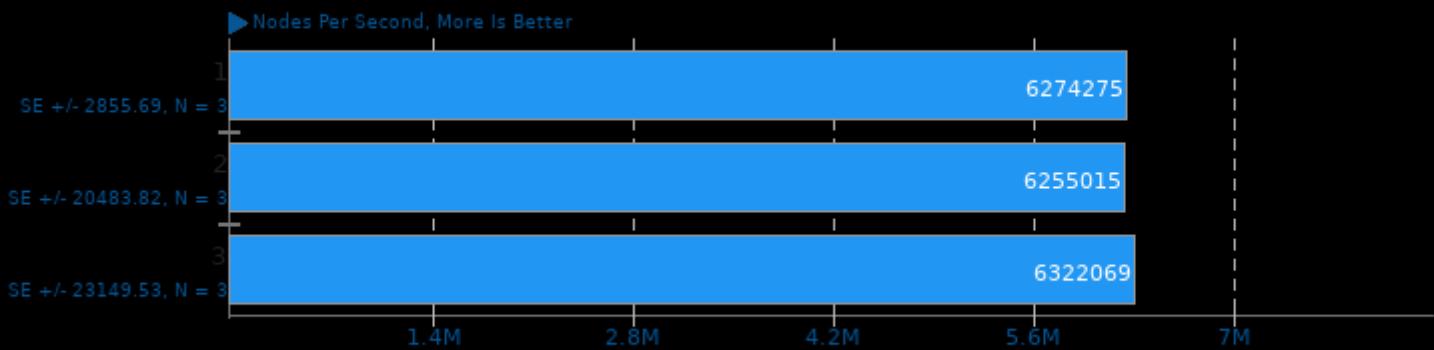
1. (CC) gcc options: -lm

**rav1e 0.4**

Speed: 5

**Crafty 25.2**

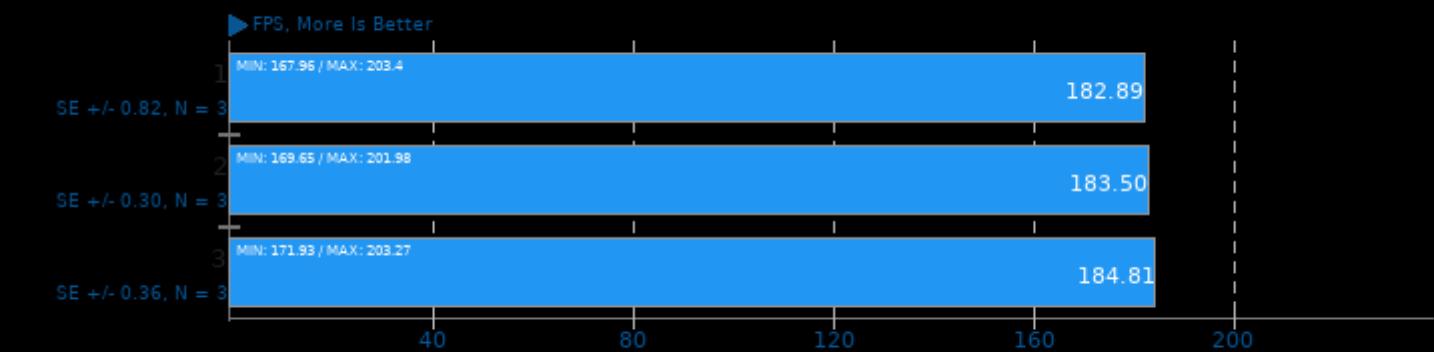
Elapsed Time



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

**dav1d 0.8.1**

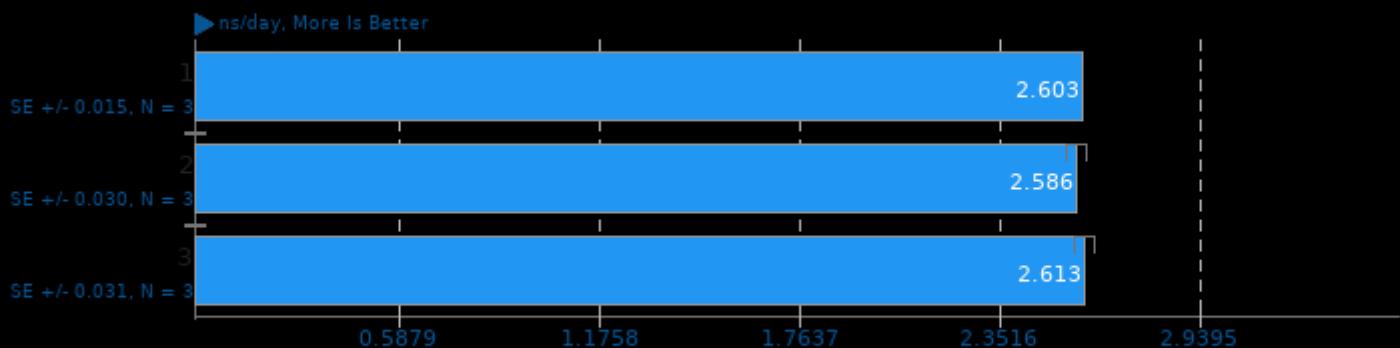
Video Input: Summer Nature 1080p



1. (CC) gcc options: -pthread -ldl -lm

## LAMMPS Molecular Dynamics Simulator 29Oct2020

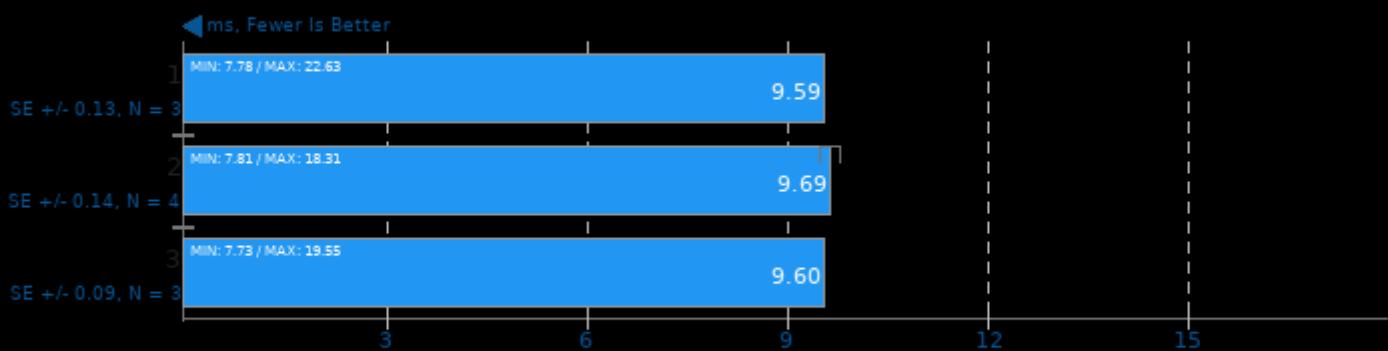
Model: Rhodopsin Protein



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

## NCNN 20201218

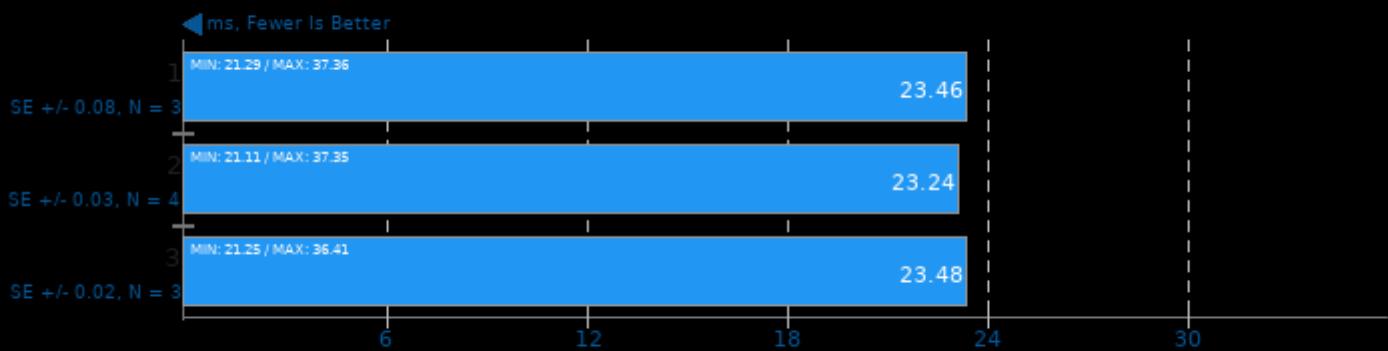
Target: Vulkan GPU-v3-v3 - Model: mobilenet-v3



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

## NCNN 20201218

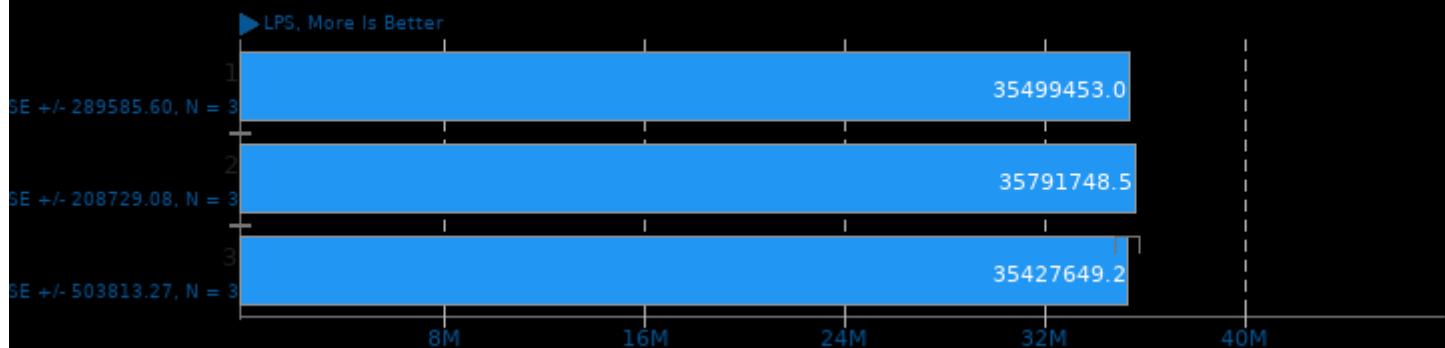
Target: Vulkan GPU - Model: alexnet



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

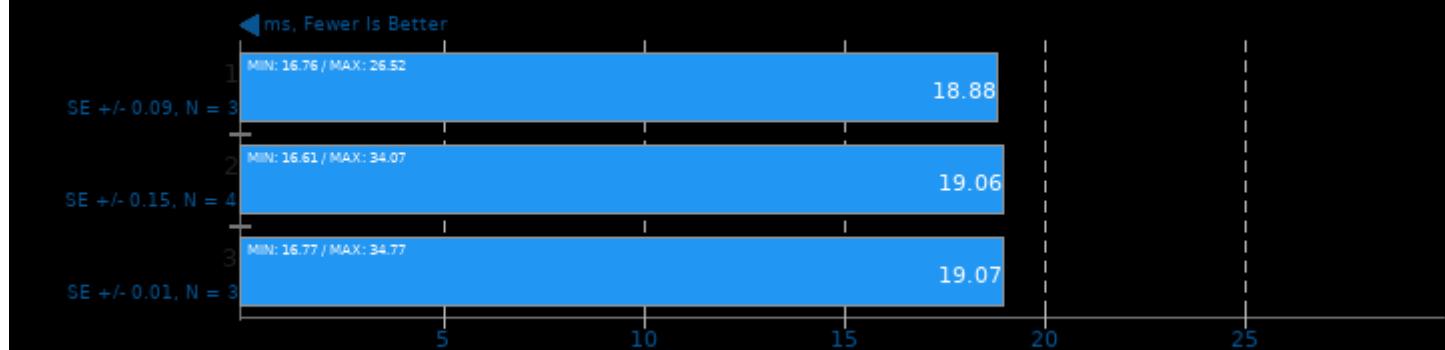
## BYTE Unix Benchmark 3.6

Computational Test: Dhrystone 2



## NCNN 20201218

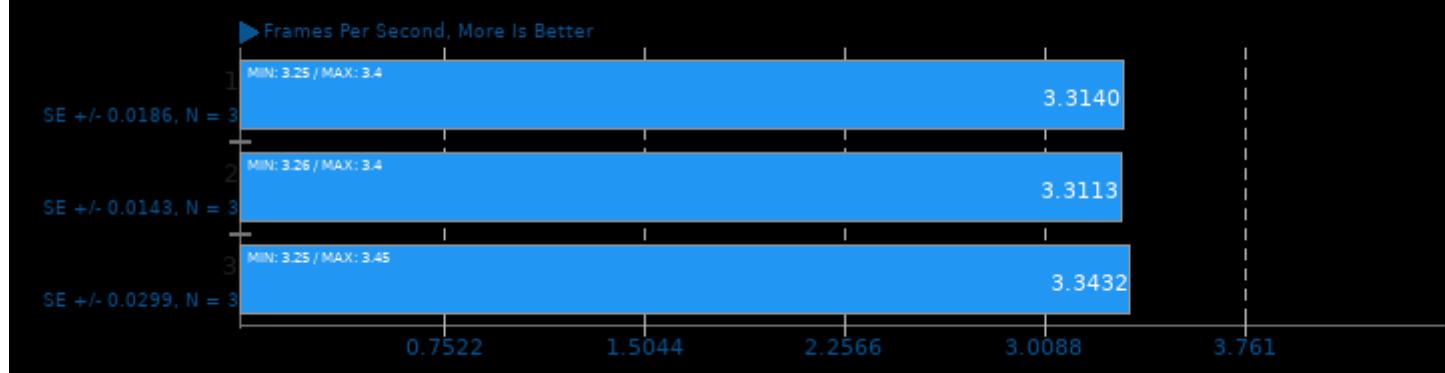
Target: Vulkan GPU - Model: regnety\_400m



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

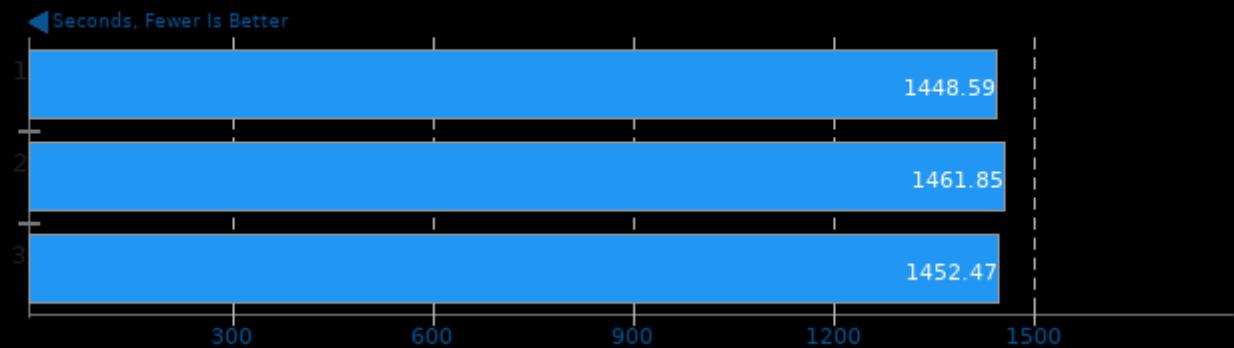
## Embree 3.9.0

Binary: Pathtracer - Model: Asian Dragon



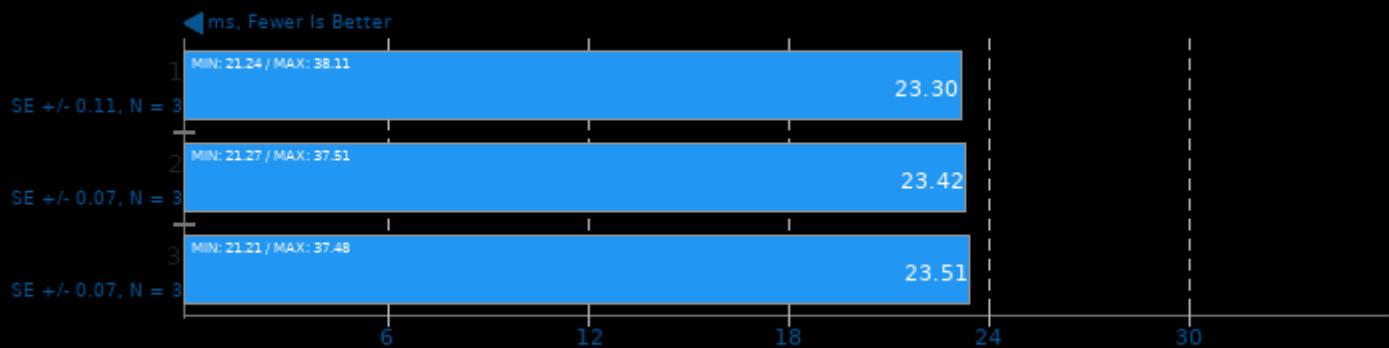
## CP2K Molecular Dynamics 8.1

Fayalite-FIST Data



## NCNN 20201218

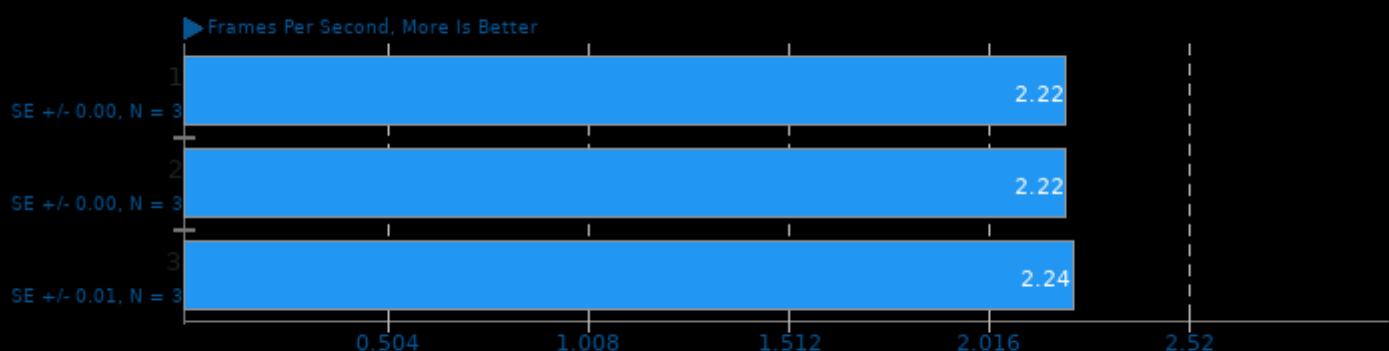
Target: CPU - Model: alexnet



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

## AOM AV1 2.0

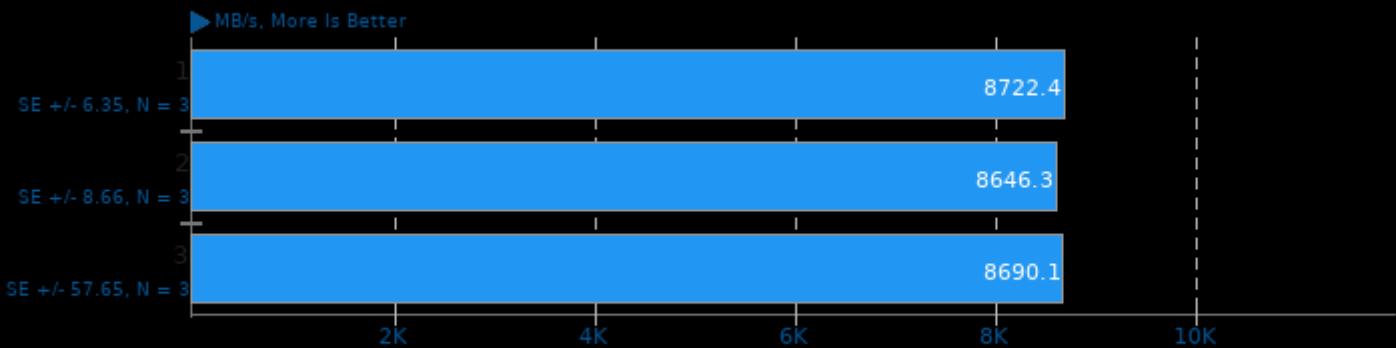
Encoder Mode: Speed 6 Two-Pass



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

## LZ4 Compression 1.9.3

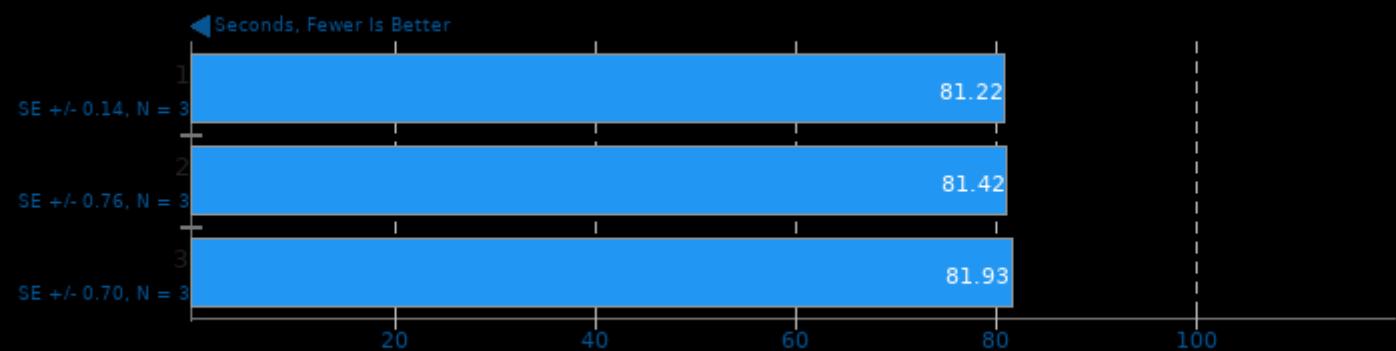
Compression Level: 1 - Decompression Speed



1. (CC) gcc options: -O3

## SQLite Speedtest 3.30

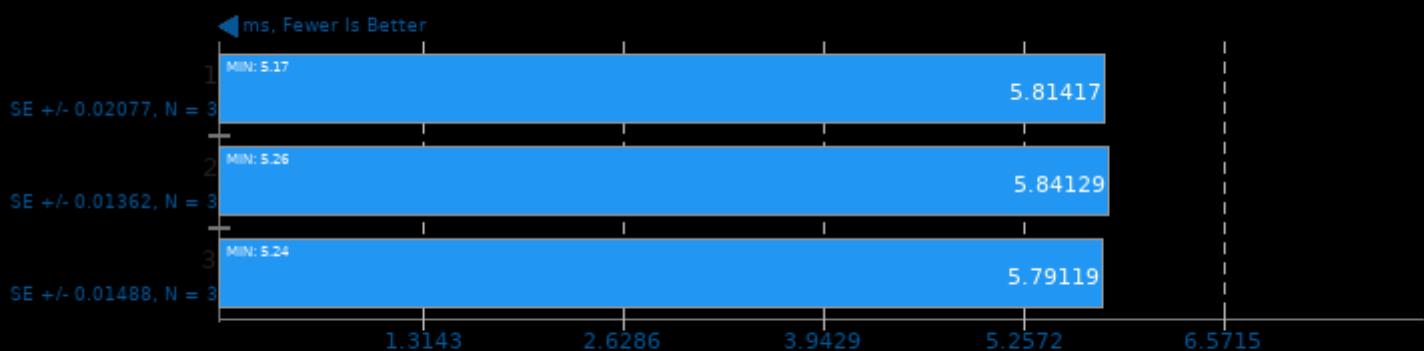
Timed Time - Size 1,000



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

## oneDNN 2.0

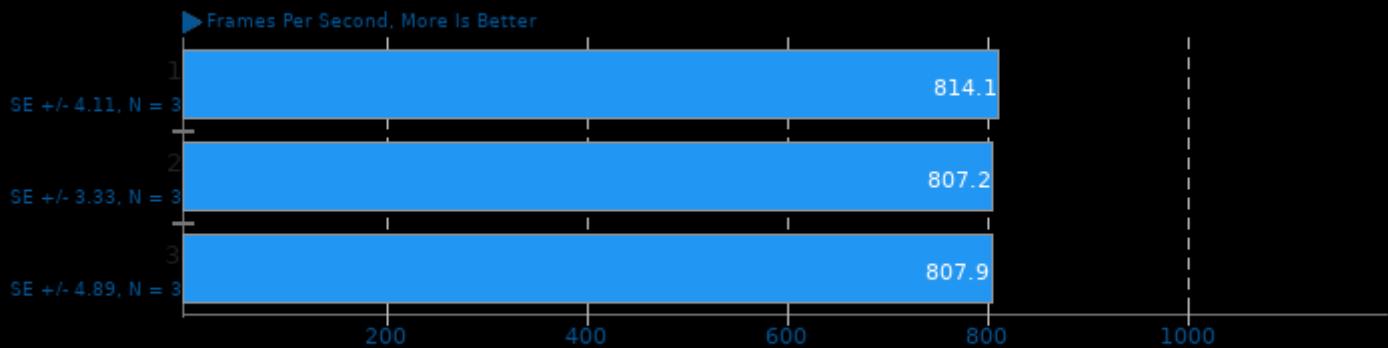
Harness: IP Shapes 3D - Data Type: u8s8f32 - Engine: CPU



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

## yquake2 7.45

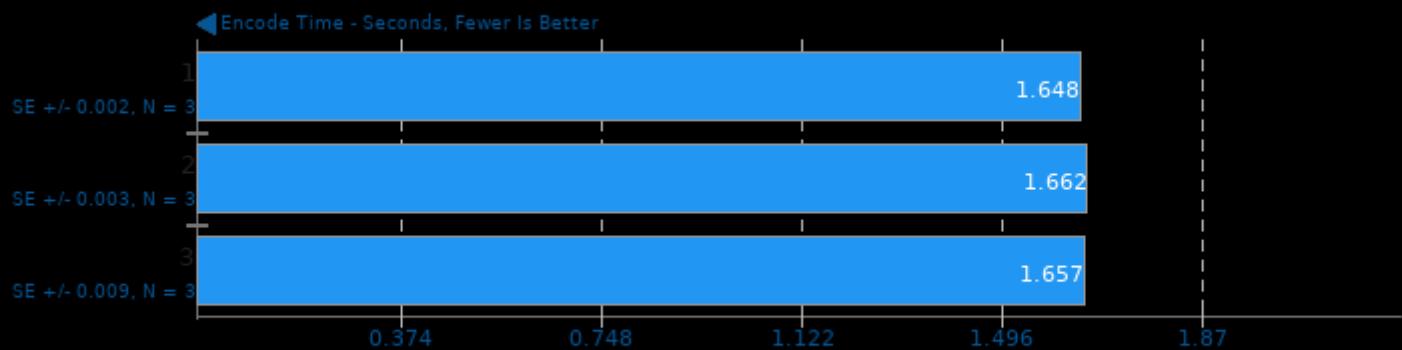
Renderer: OpenGL 3.x - Resolution: 1920 x 1080



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

## WebP Image Encode 1.1

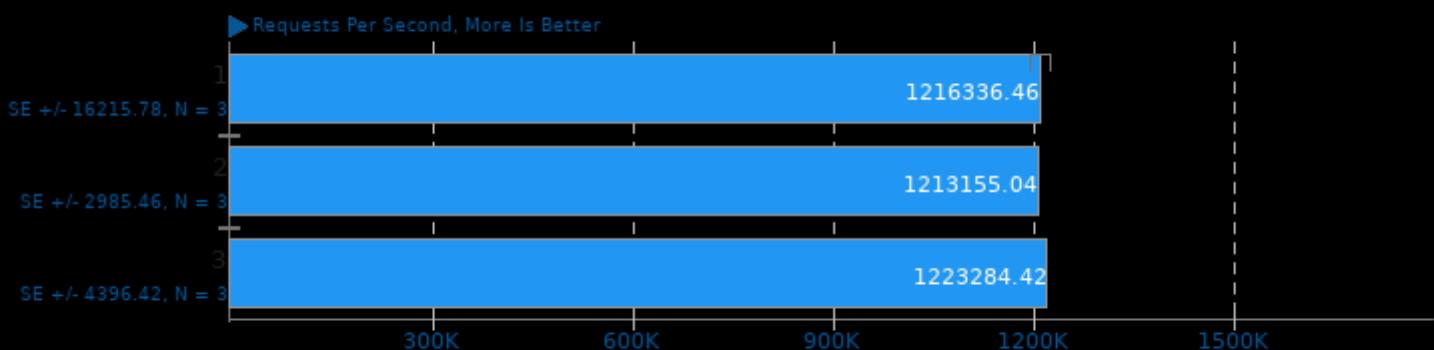
Encode Settings: Default



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

## Redis 6.0.9

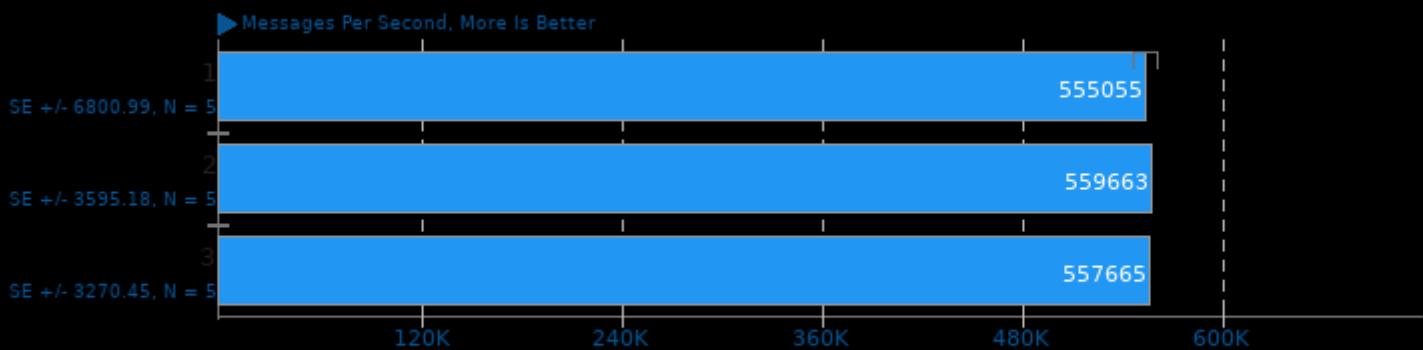
Test: LPUSH



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

## Sockperf 3.4

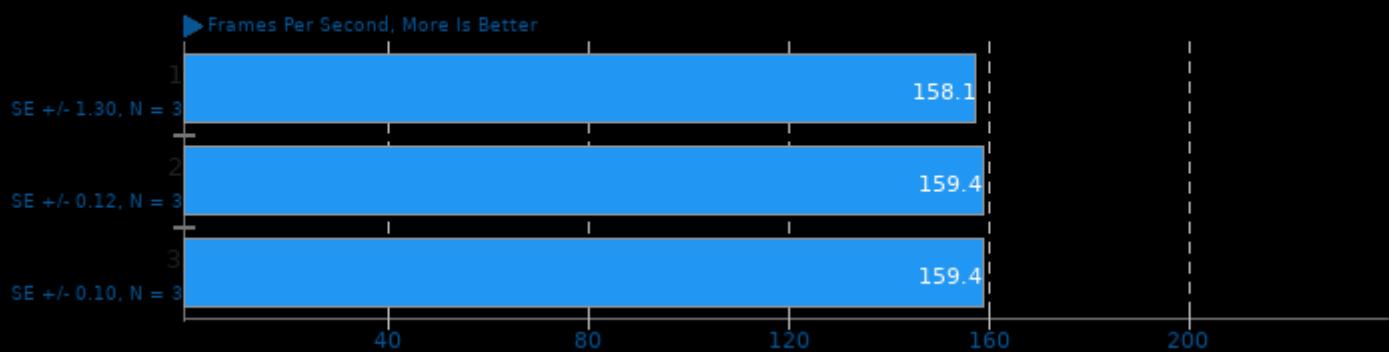
Test: Throughput



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

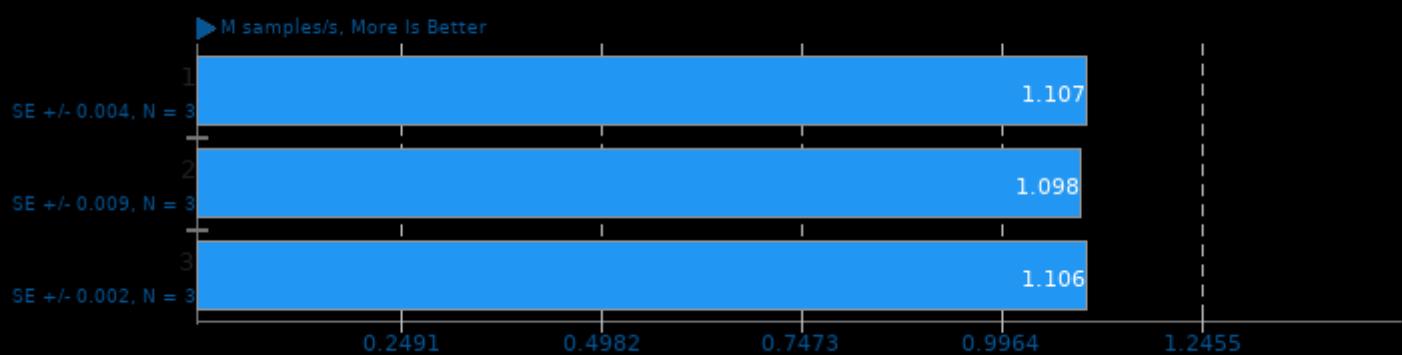
## Warsow 2.5 Beta

Resolution: 1920 x 1080



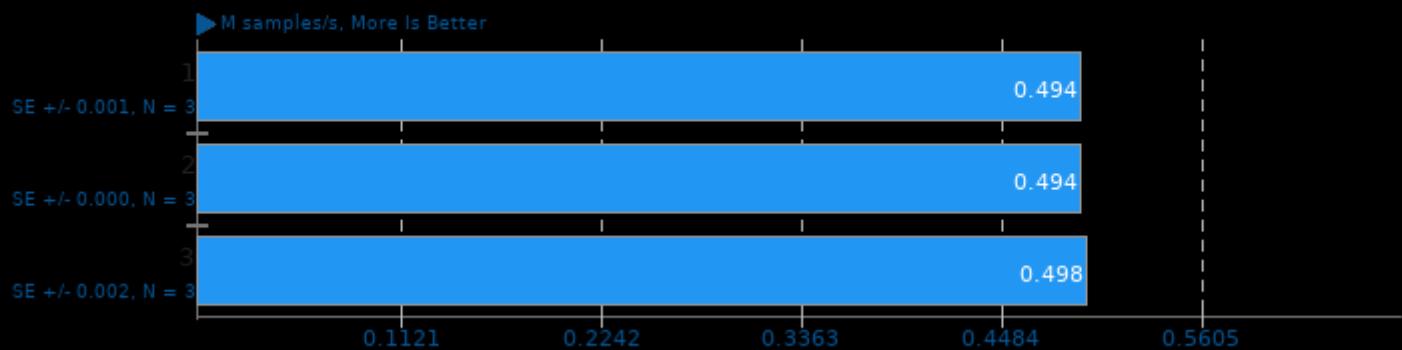
## IndigoBench 4.4

Acceleration: CPU - Scene: Supercar



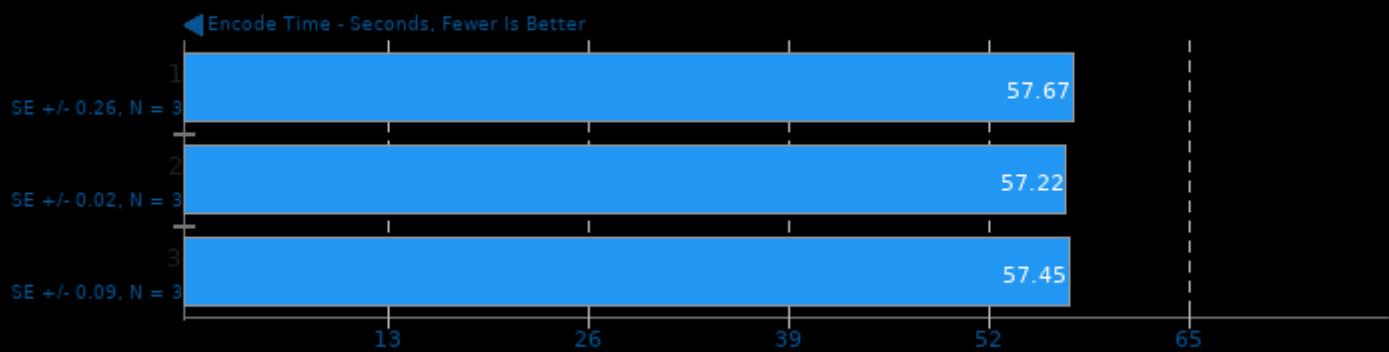
## IndigoBench 4.4

Acceleration: CPU - Scene: Bedroom



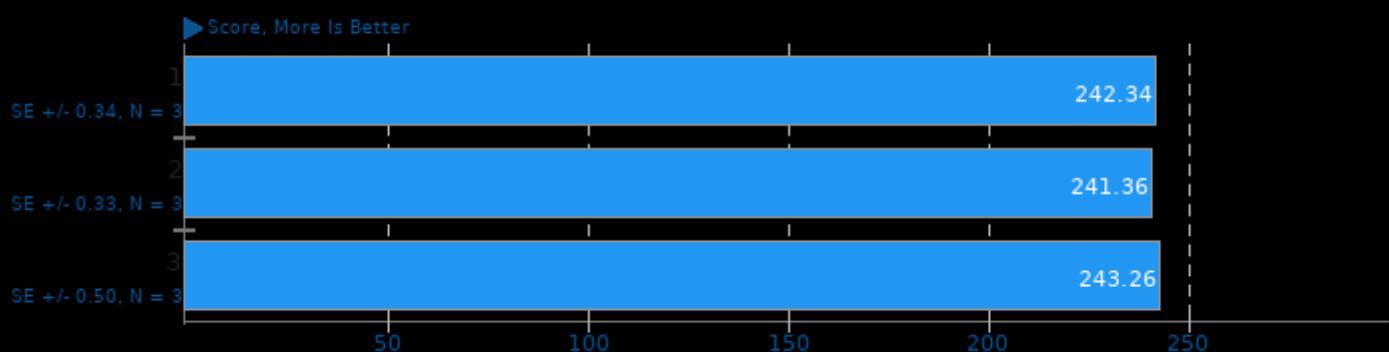
## WebP Image Encode 1.1

Encode Settings: Quality 100, Lossless, Highest Compression



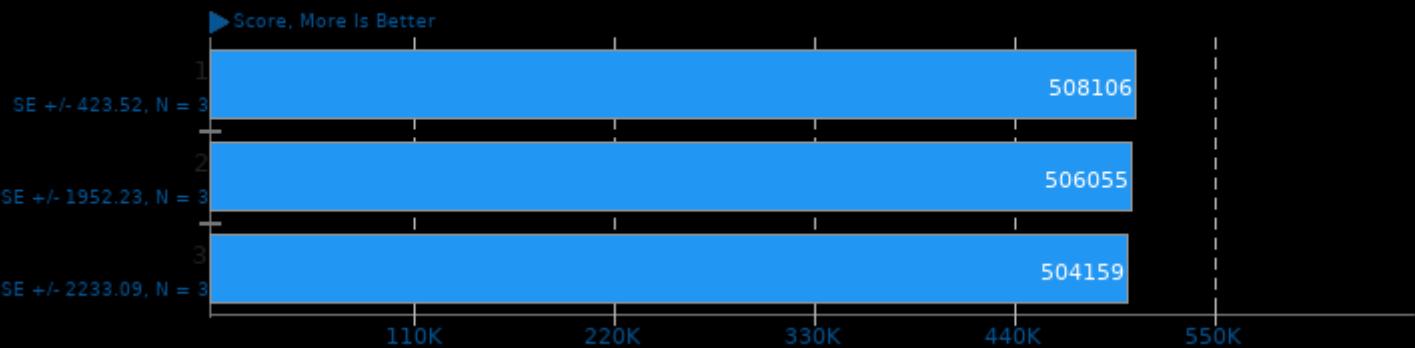
1. (CC) gcc options: -fvisibility=hidden -O2 -pthread -lm -ljpeg -lpng16 -ltiff

## Numpy Benchmark



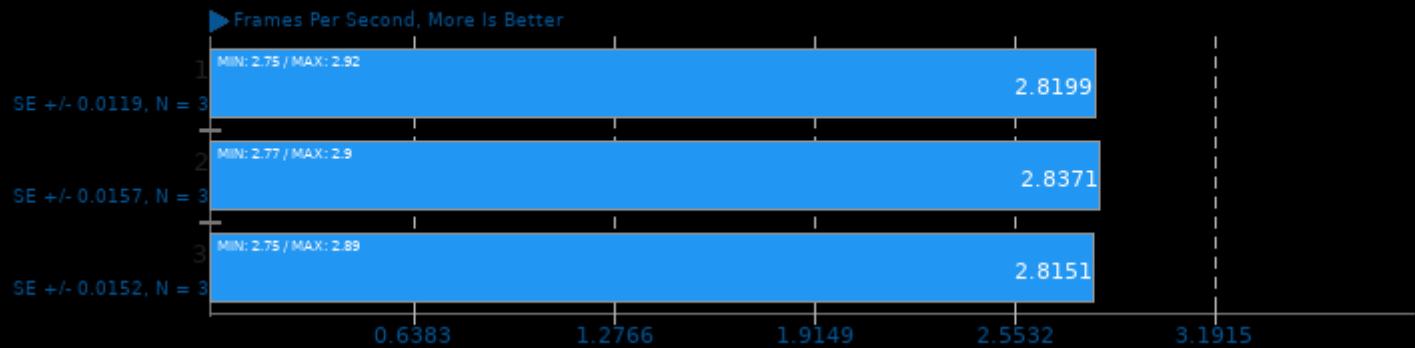
## PHPBench 0.8.1

PHP Benchmark Suite



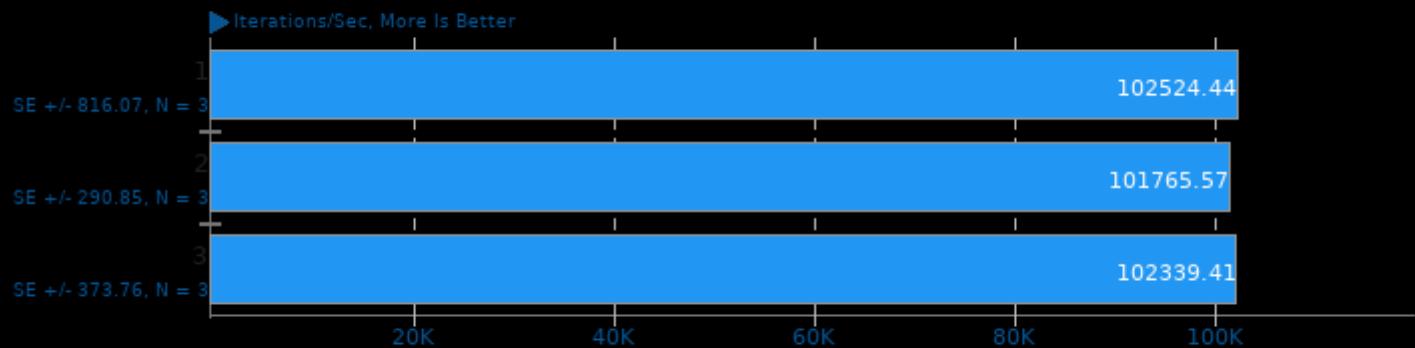
## Embree 3.9.0

Binary: Pathtracer ISPC - Model: Asian Dragon Obj



## Coremark 1.0

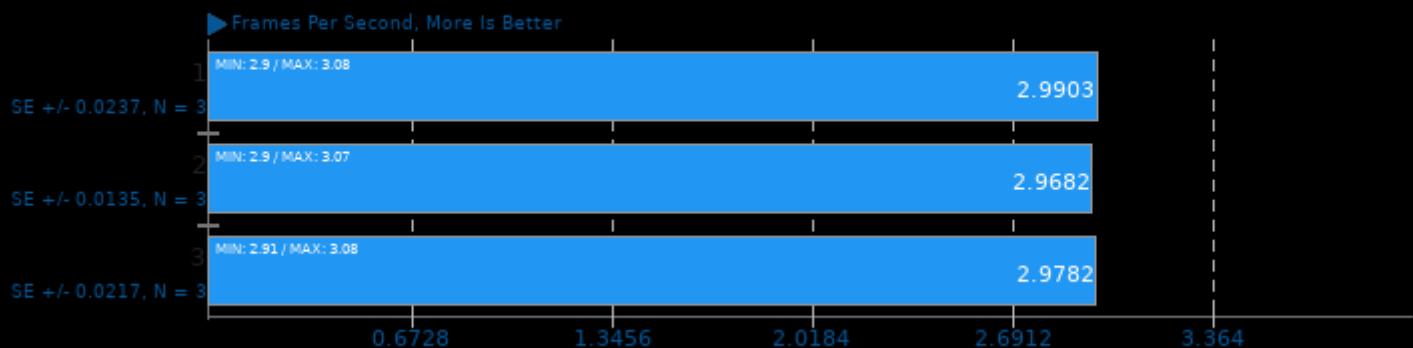
CoreMark Size 666 - Iterations Per Second



1. (CC) gcc options: -O2 -fipa -firt

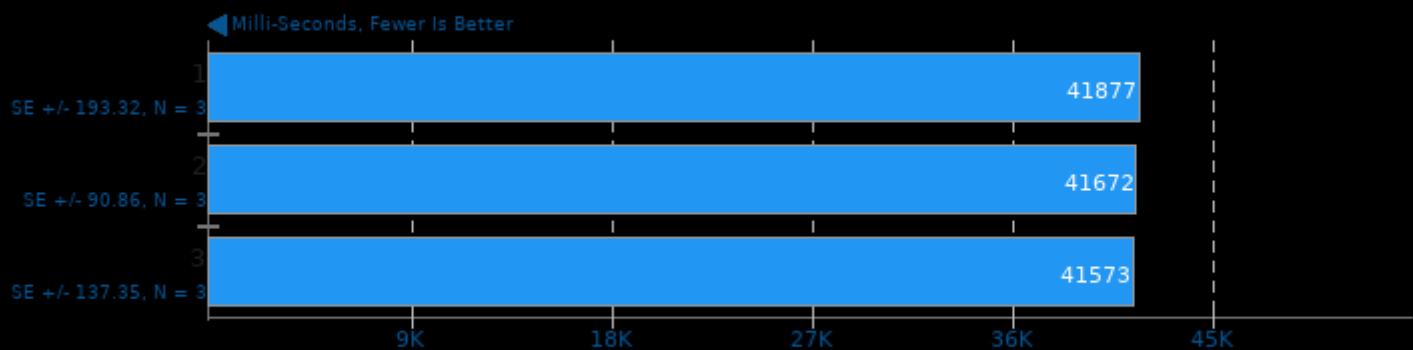
## Embree 3.9.0

Binary: Pathtracer - Model: Asian Dragon Obj



## Caffe 2020-02-13

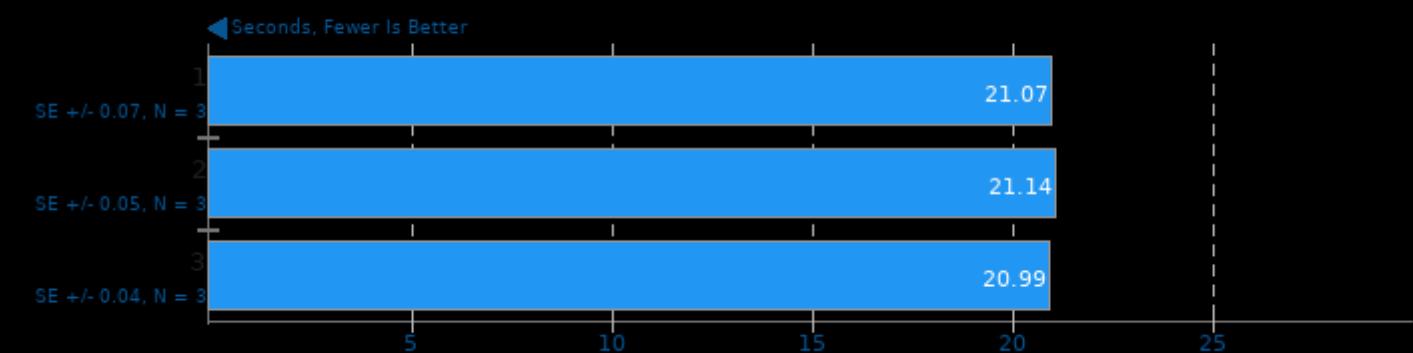
Model: AlexNet - Acceleration: CPU - Iterations: 100



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

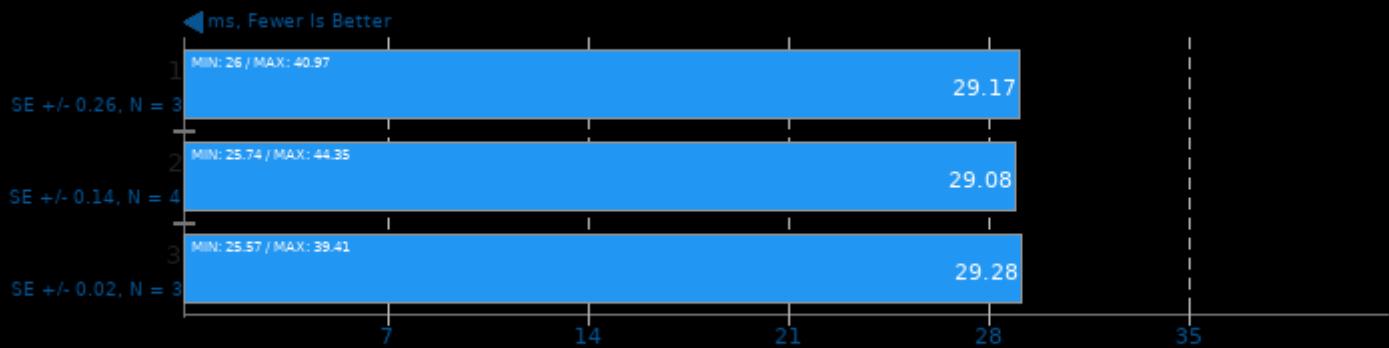
## Dolfyn 0.527

Computational Fluid Dynamics



## NCNN 20201218

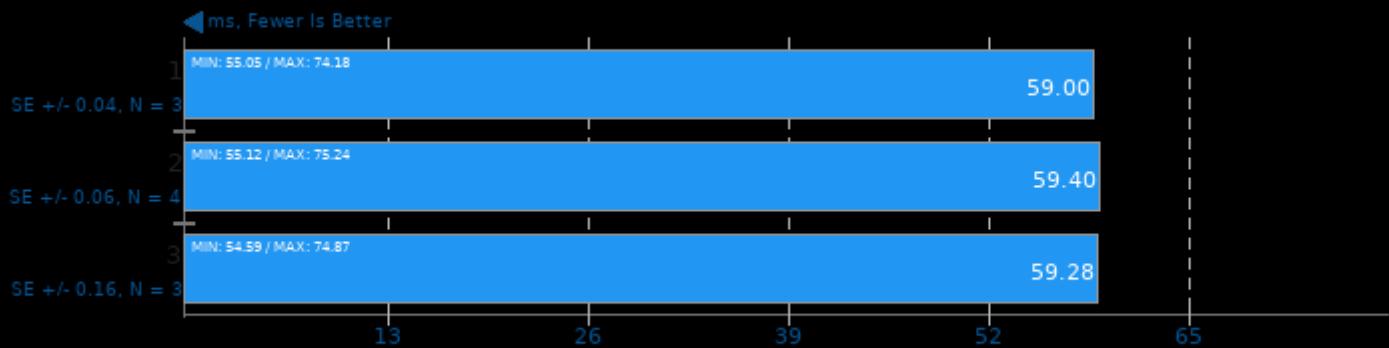
Target: Vulkan GPU - Model: resnet18



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

## NCNN 20201218

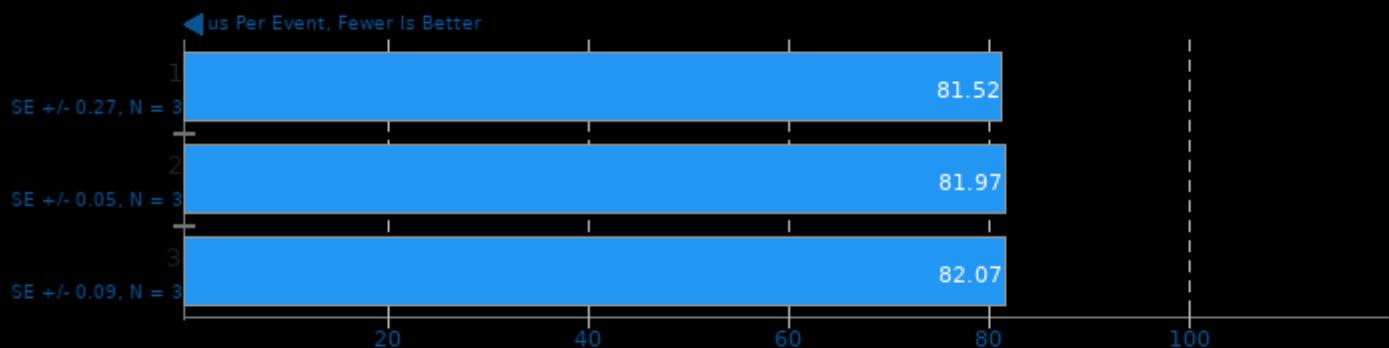
Target: Vulkan GPU - Model: yolov4-tiny



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

## OSBench

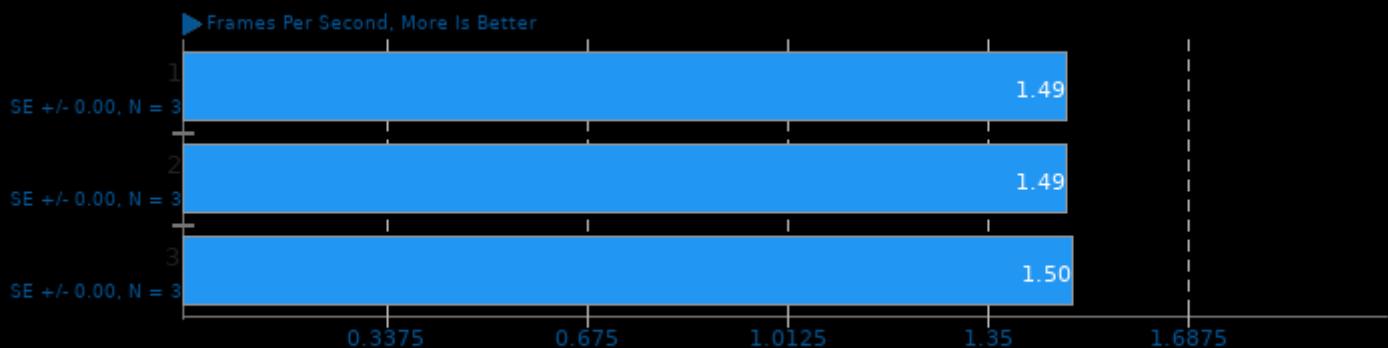
Test: Launch Programs



1. (CC) gcc options: -lm

## Kvazaar 2.0

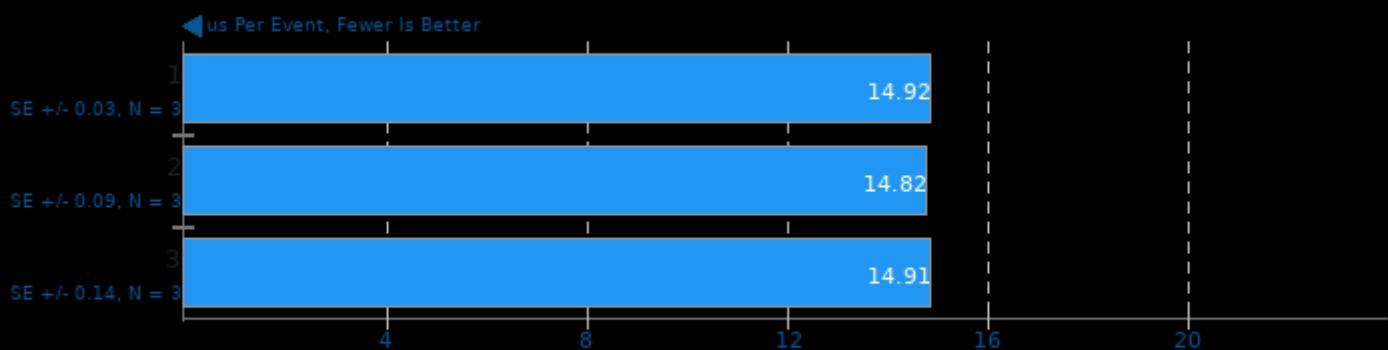
Video Input: Bosphorus 4K - Video Preset: Medium



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

## OSBench

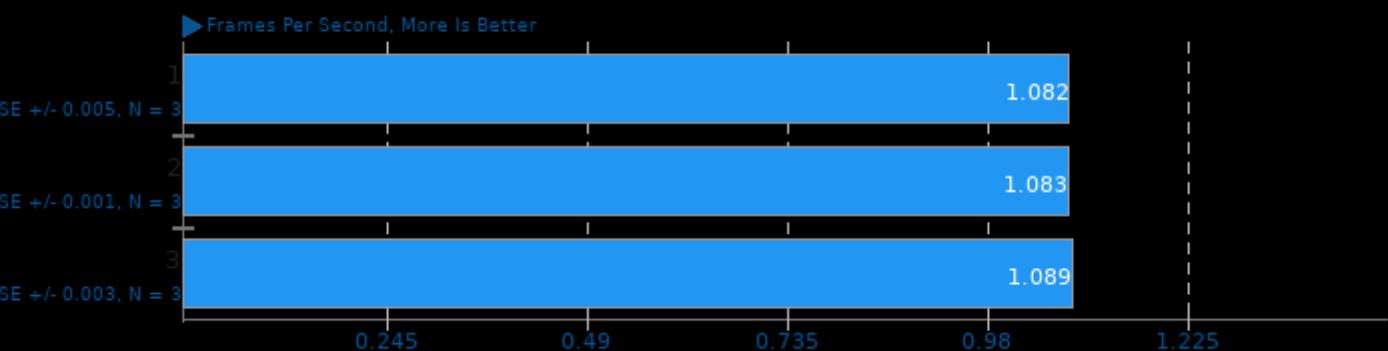
Test: Create Threads



1. (CC) gcc options: -lm

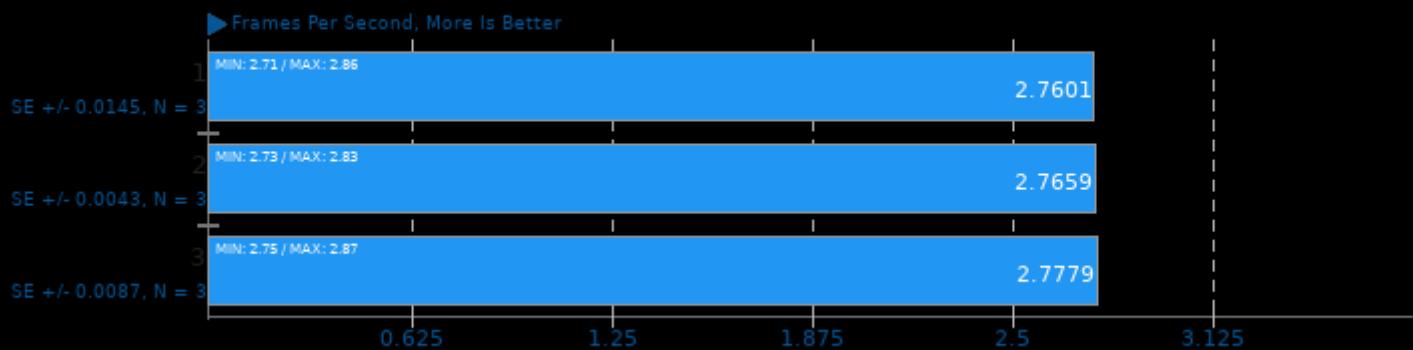
## rav1e 0.4

Speed: 6



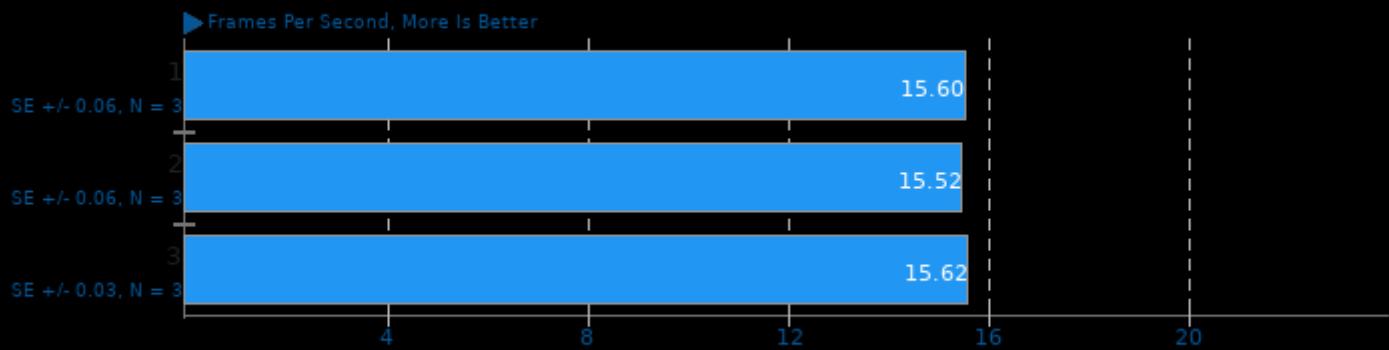
## Embree 3.9.0

Binary: Pathtracer - Model: Crown



## Kvazaar 2.0

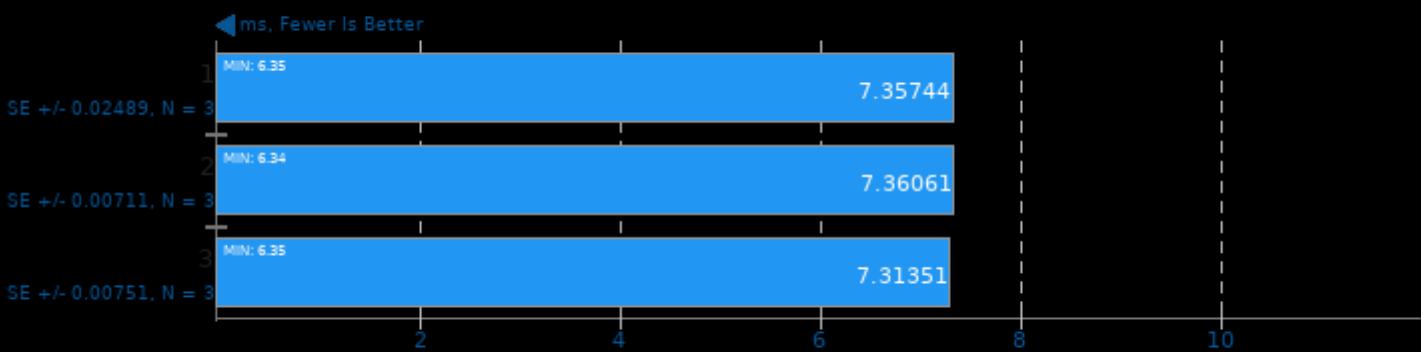
Video Input: Bosphorus 1080p - Video Preset: Very Fast



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

## oneDNN 2.0

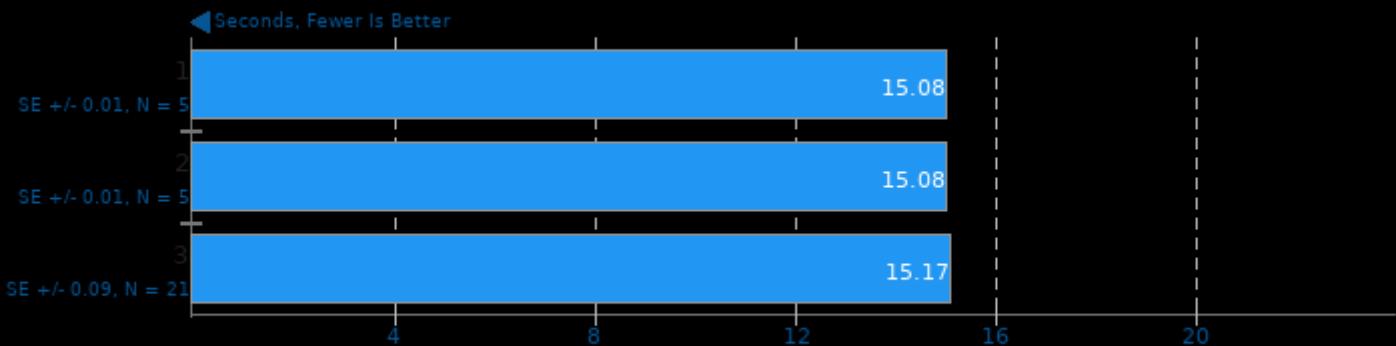
Harness: Matrix Multiply Batch Shapes Transformer - Data Type: f32 - Engine: CPU



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

## WavPack Audio Encoding 5.3

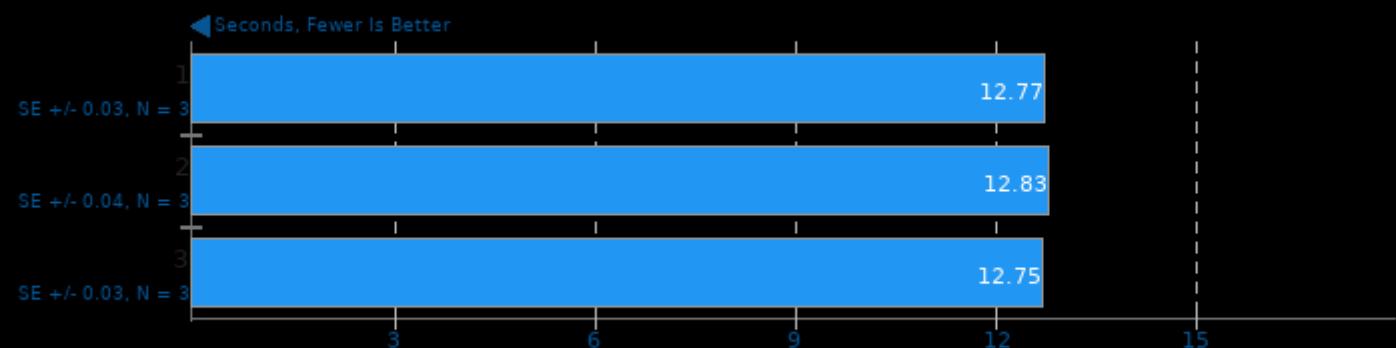
WAV To WavPack



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

## ASTC Encoder 2.0

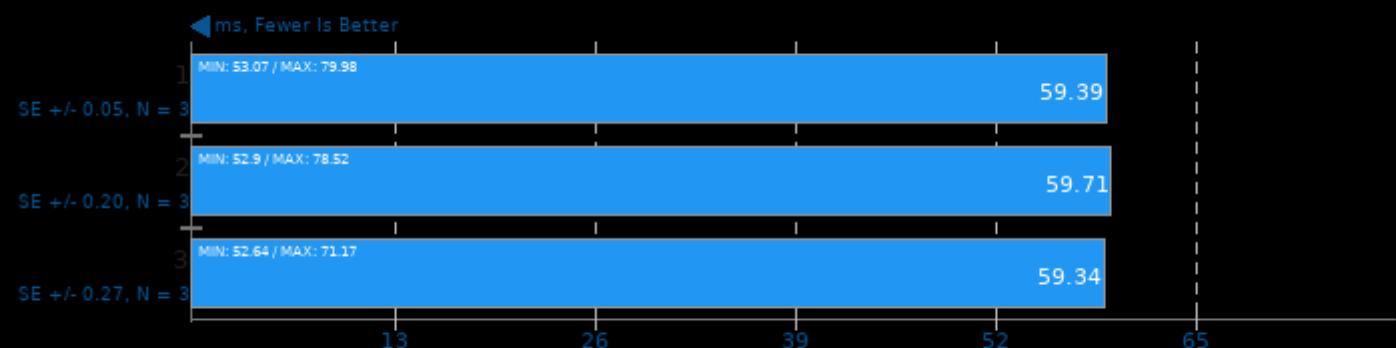
Preset: Medium



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

## NCNN 20201218

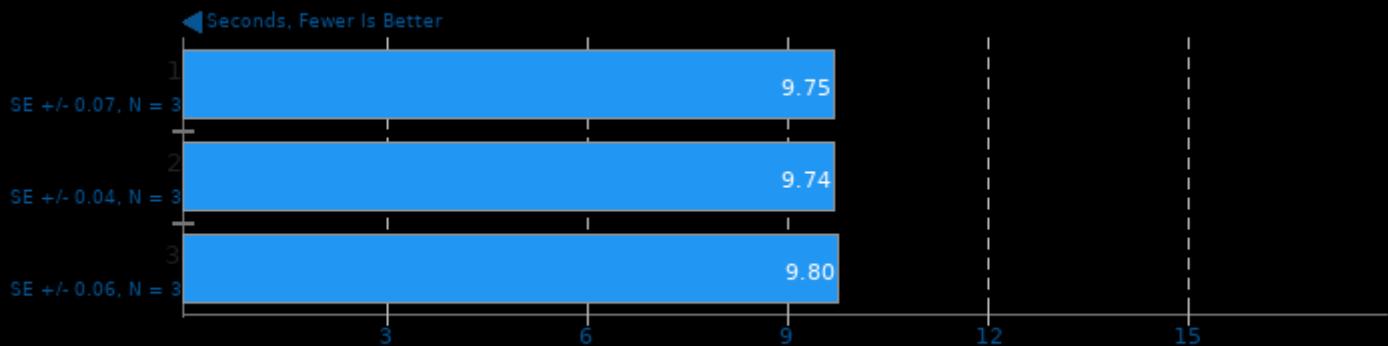
Target: CPU - Model: squeeze\_neet\_ssd



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

## ASTC Encoder 2.0

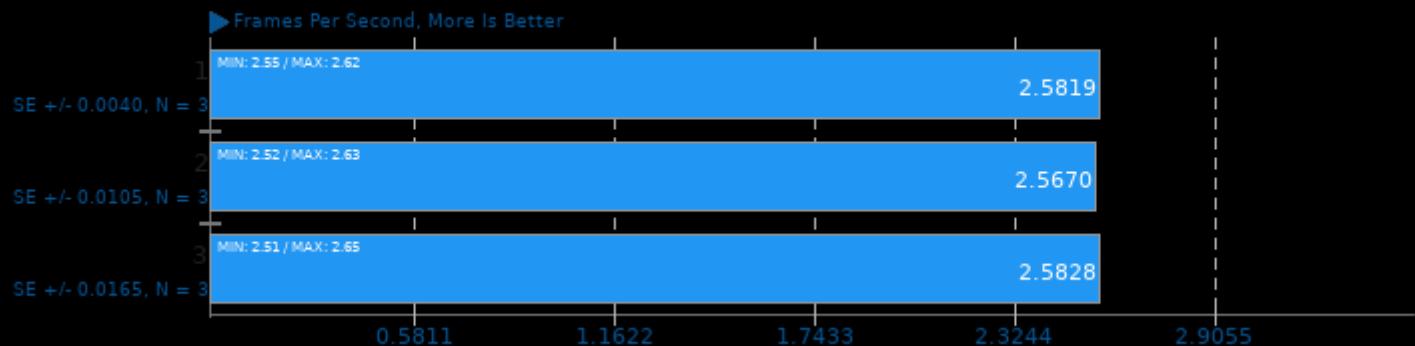
Preset: Fast



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

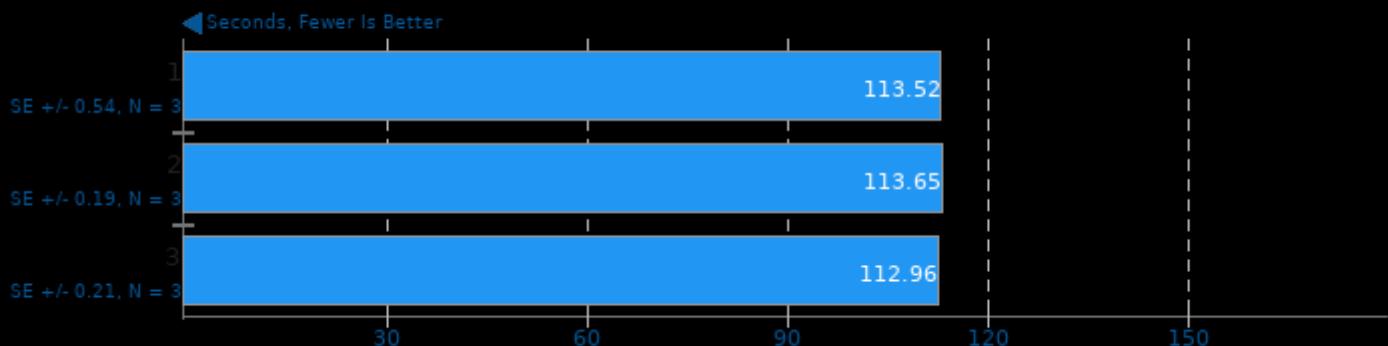
## Embree 3.9.0

Binary: Pathtracer ISPC - Model: Crown



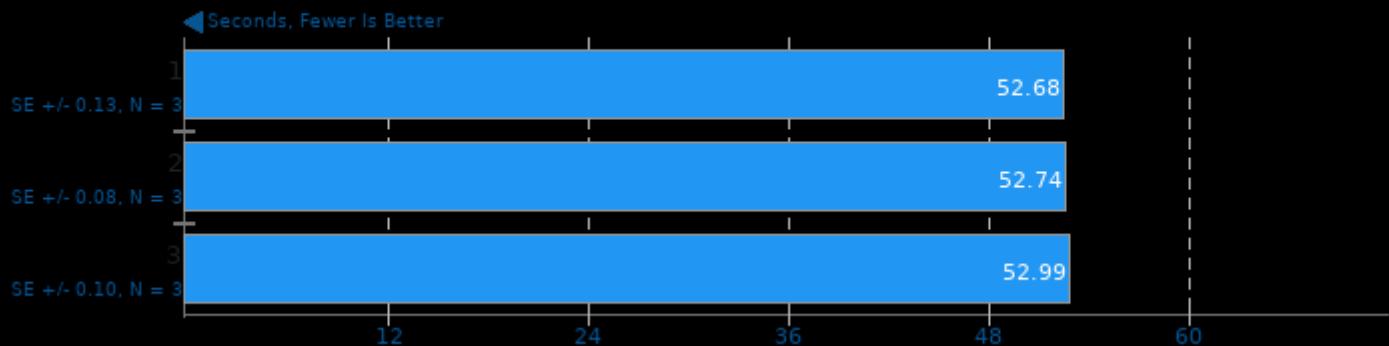
## Timed Eigen Compilation 3.3.9

Time To Compile



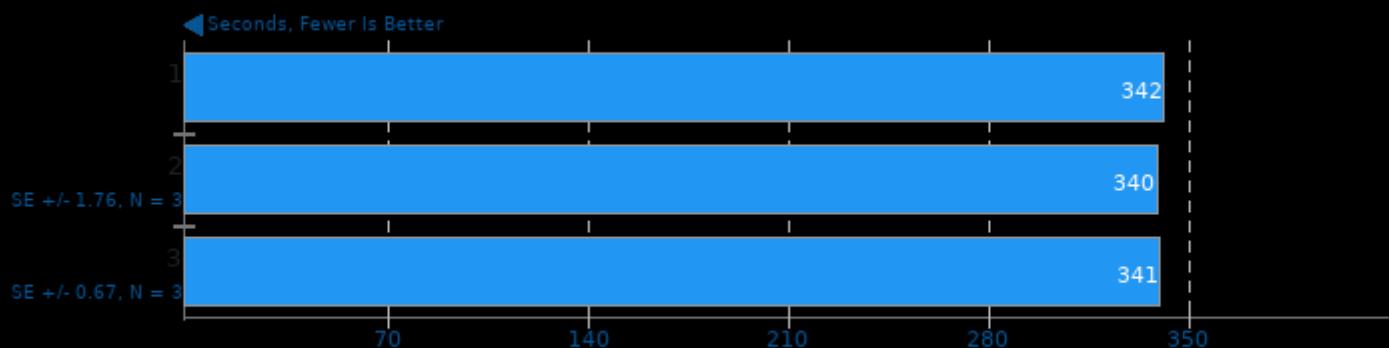
## OCRMyPDF 10.3.1+dfsg

Processing 60 Page PDF Document



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

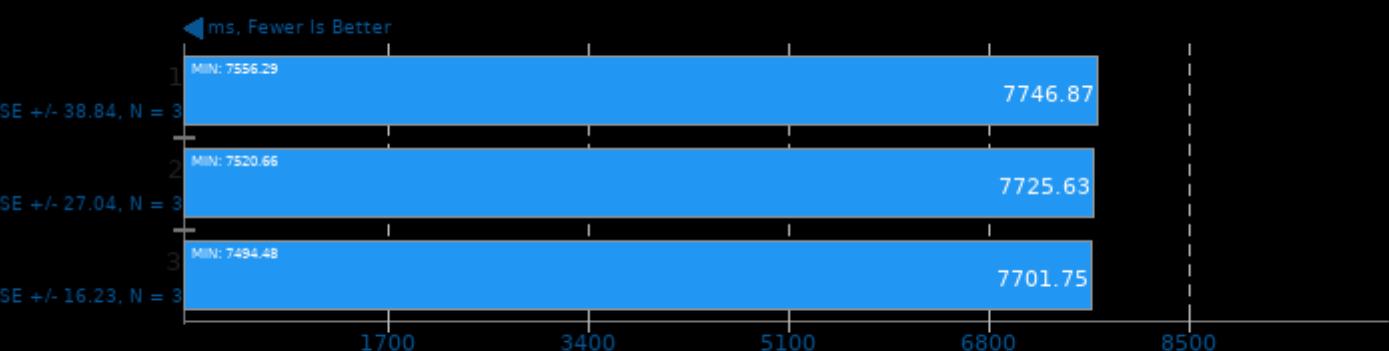
Input: Dust 2D tau100.0



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

## oneDNN 2.0

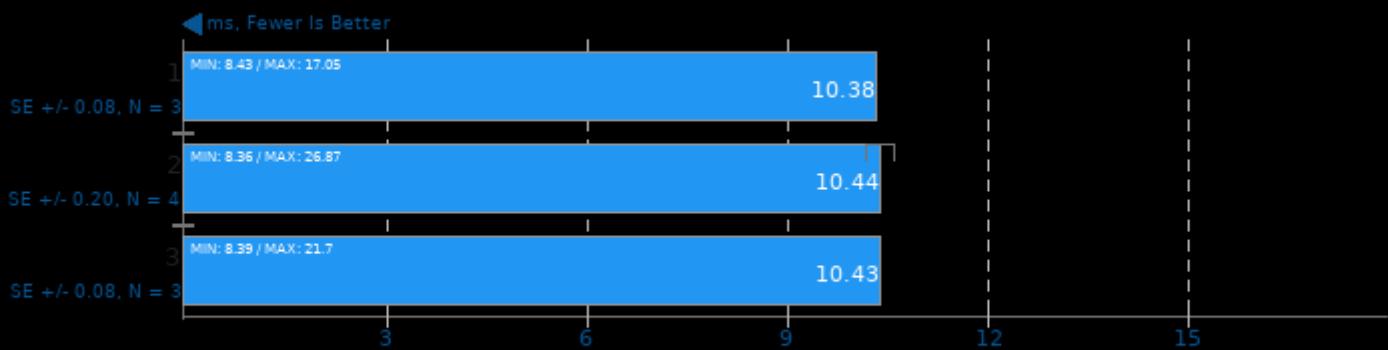
Harness: Recurrent Neural Network Inference - Data Type: u8s8f32 - Engine: CPU



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

## NCNN 20201218

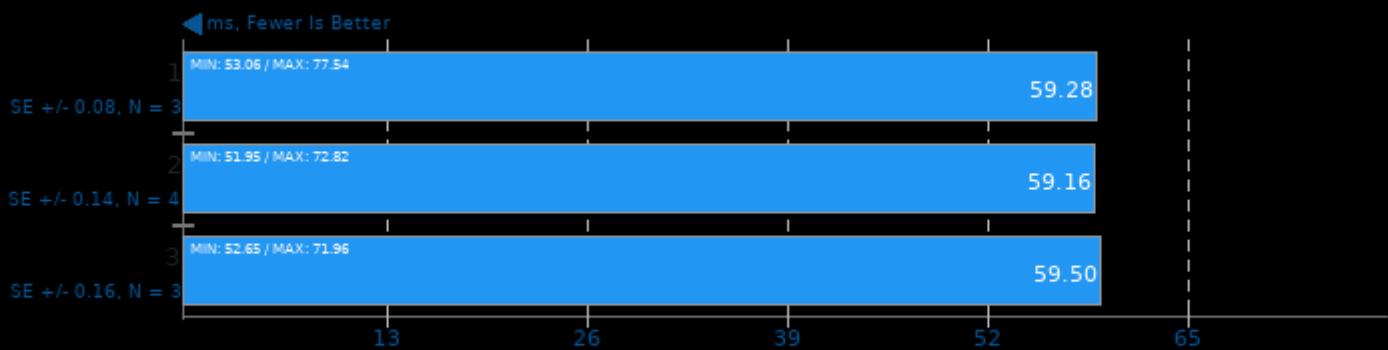
Target: Vulkan GPU - Model: mnasnet



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

## NCNN 20201218

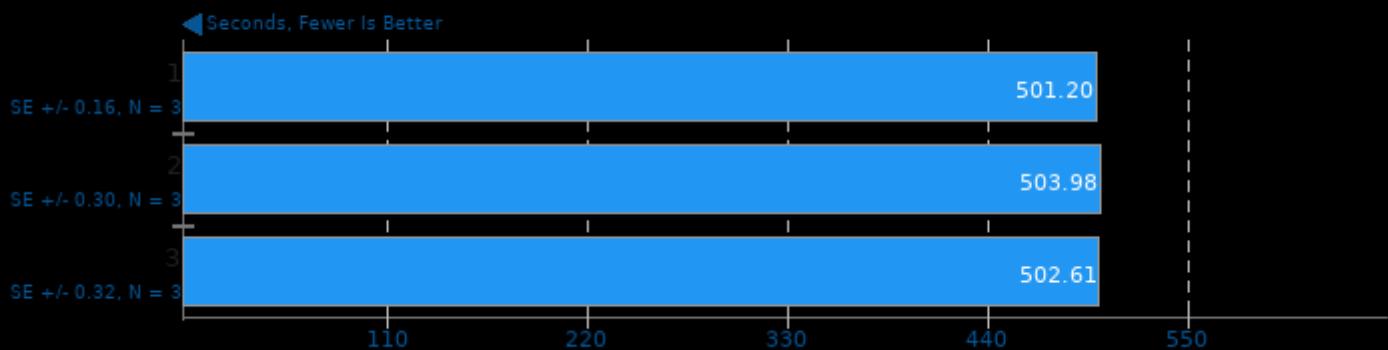
Target: Vulkan GPU - Model: squeezenet\_ss



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

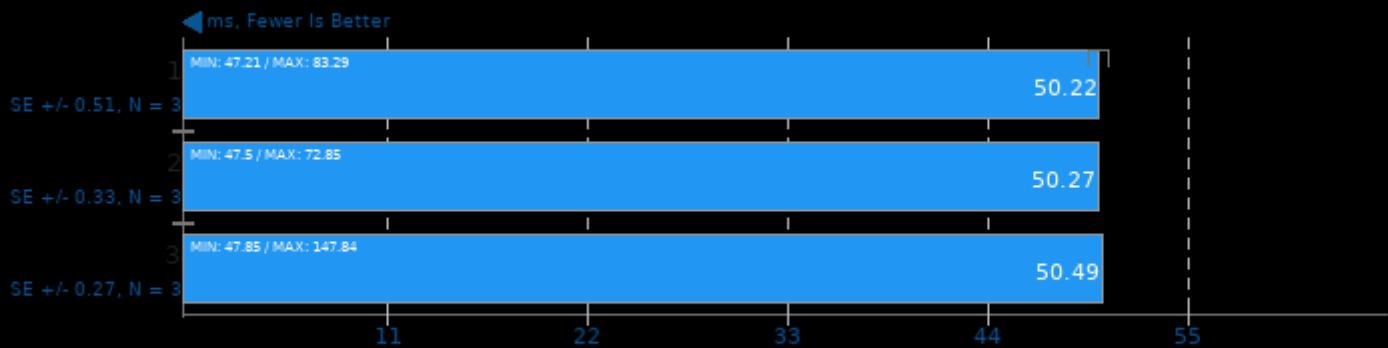
## Timed Godot Game Engine Compilation 3.2.3

Time To Compile



## Mobile Neural Network 1.1.1

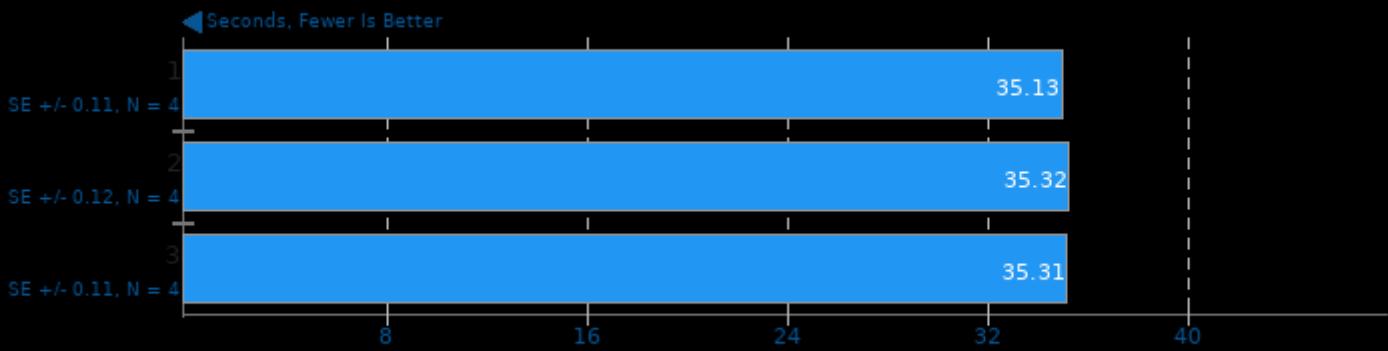
Model: resnet-v2-50



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

## eSpeak-NG Speech Engine 20200907

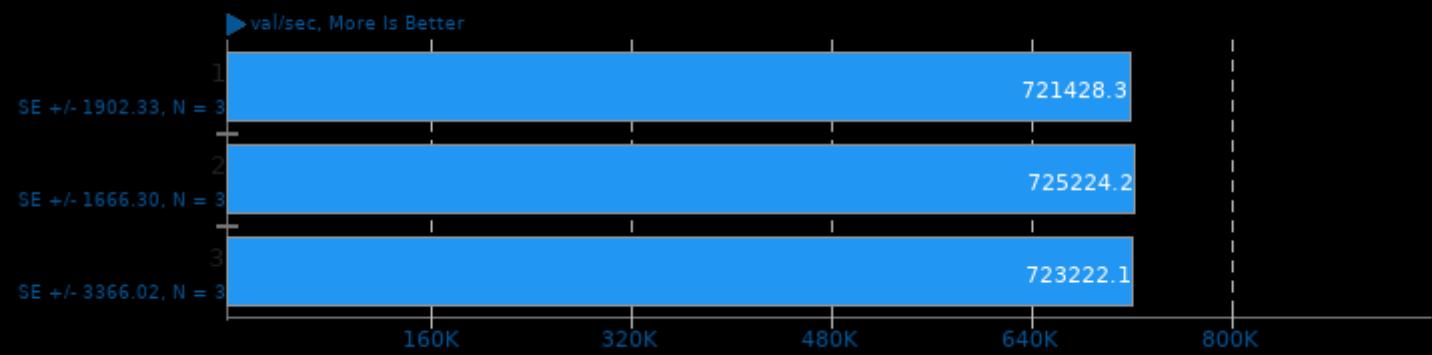
Text-To-Speech Synthesis



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

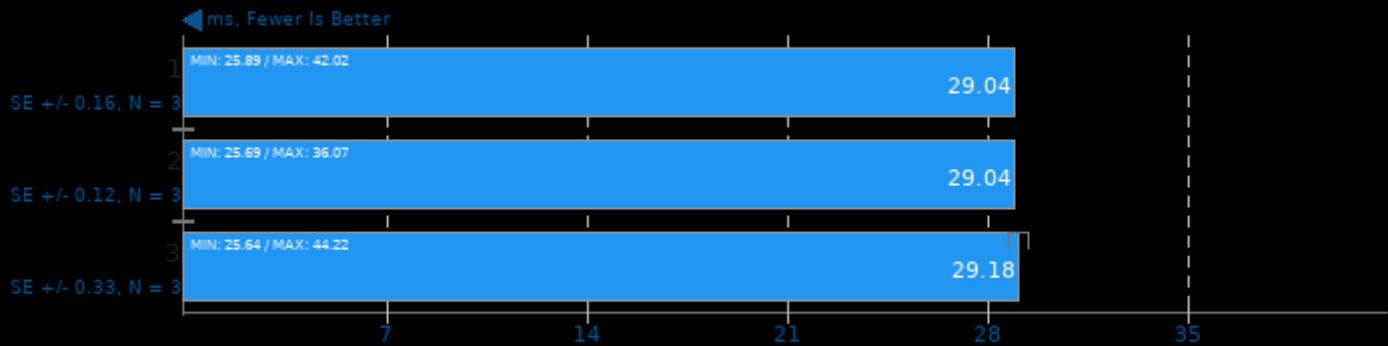
## InfluxDB 1.8.2

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



## NCNN 20201218

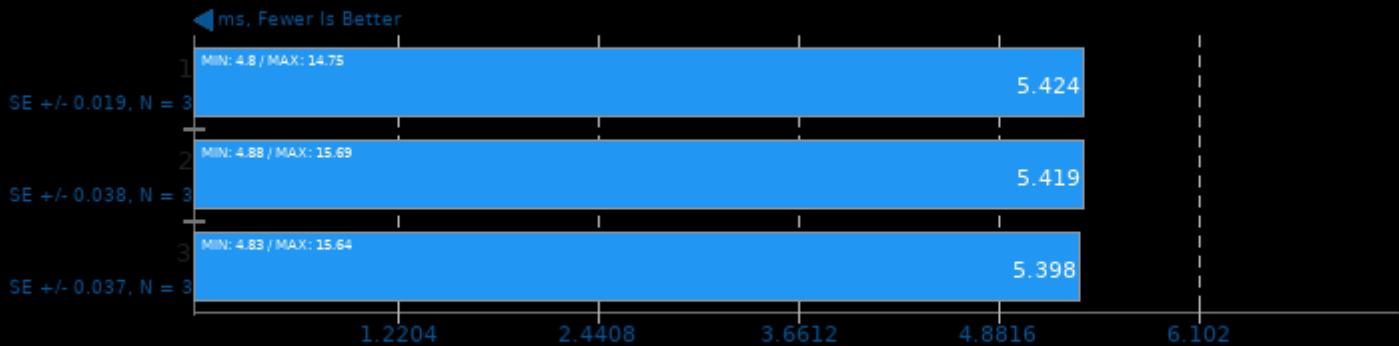
Target: CPU - Model: resnet18



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

## Mobile Neural Network 1.1.1

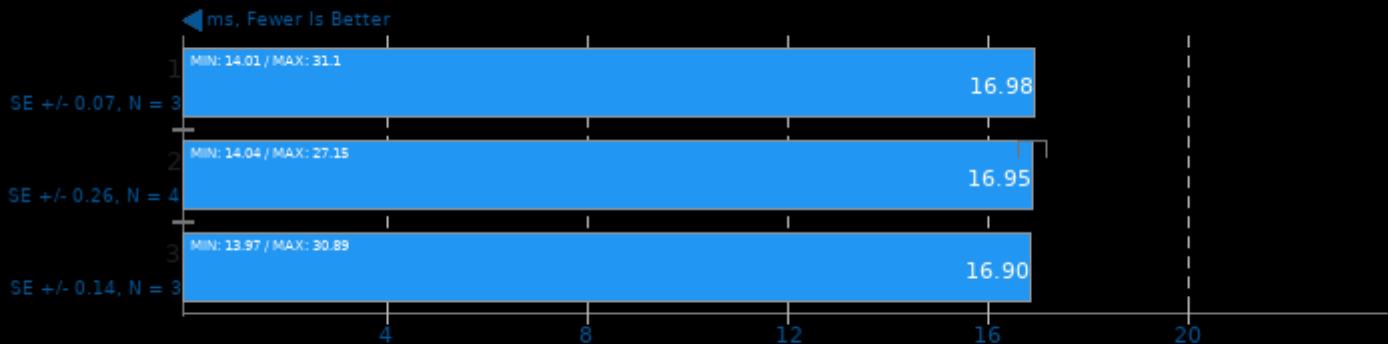
Model: MobileNetV2\_224



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

## NCNN 20201218

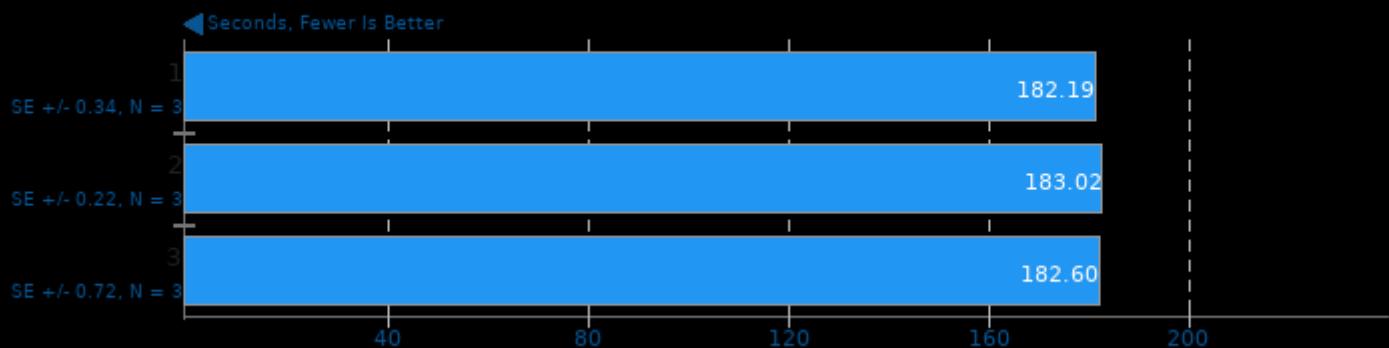
Target: Vulkan GPU - Model: efficientnet-b0



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

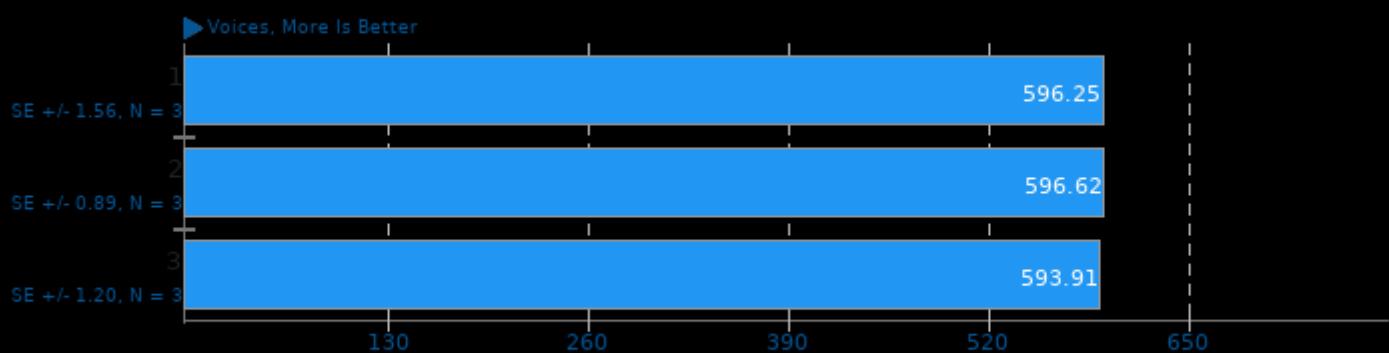
## Timed FFmpeg Compilation 4.2.2

Time To Compile



## Google SynthMark 20201109

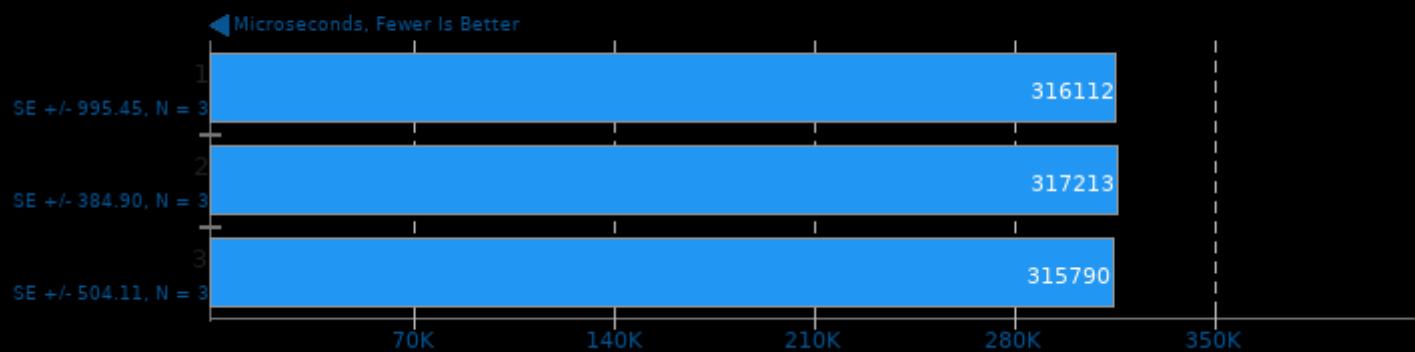
Test: VoiceMark\_100



1. (CXX) g++ options: -fno-rtti -fno-threadsafe-statics -std=c++11 -Ofast

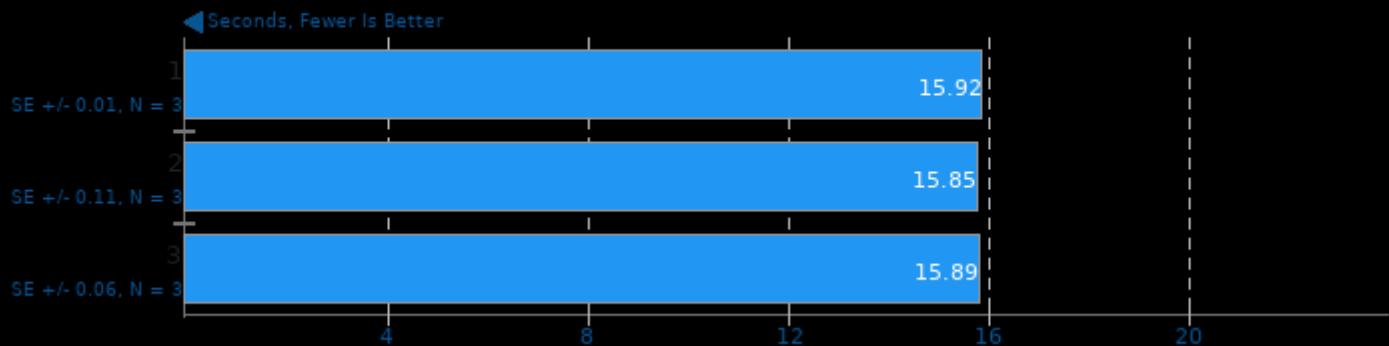
## TensorFlow Lite 2020-08-23

Model: NASNet Mobile



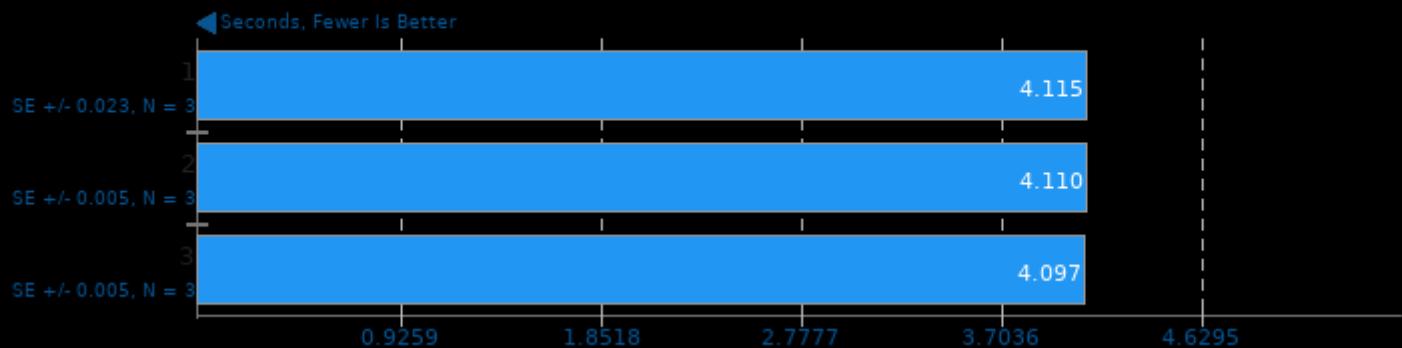
## GIMP 2.10.18

Test: auto-levels



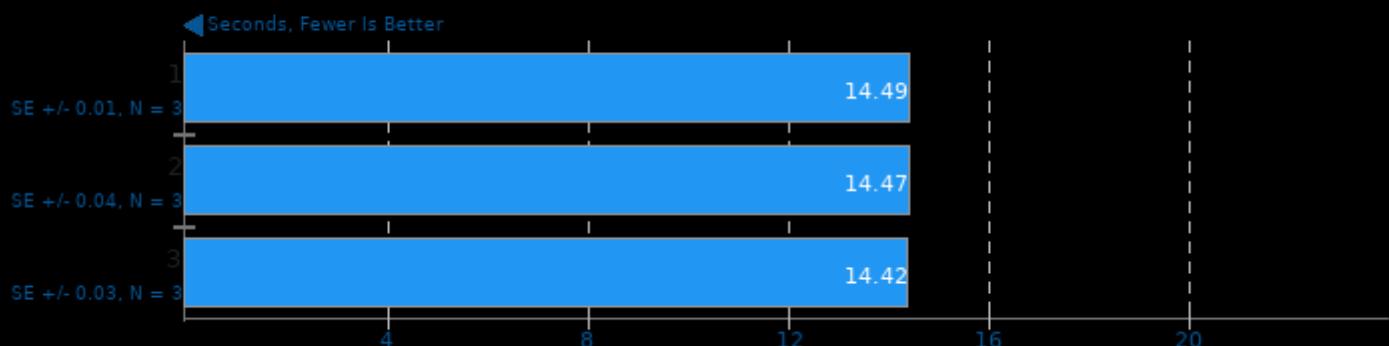
## Waifu2x-NCNN Vulkan 20200818

Scale: 2x - Denoise: 3 - TAA: No



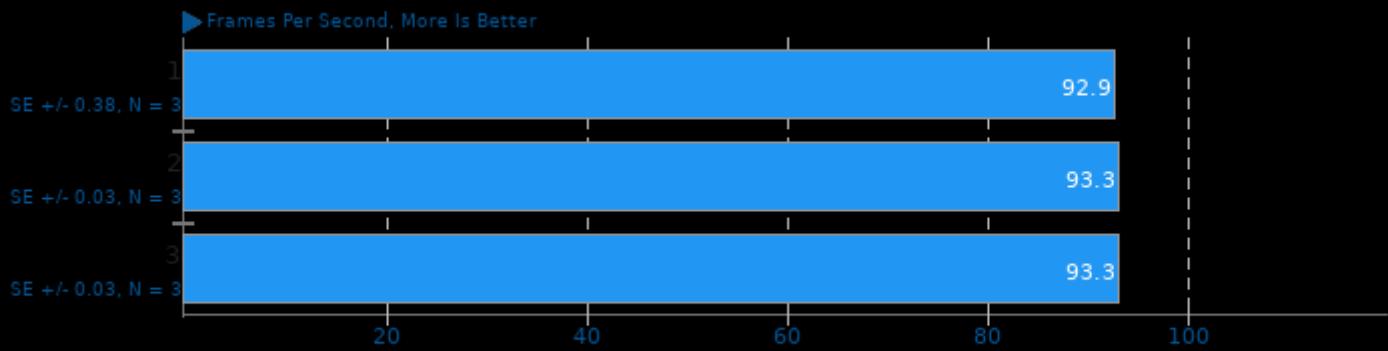
## GIMP 2.10.18

Test: rotate



## yquake2 7.45

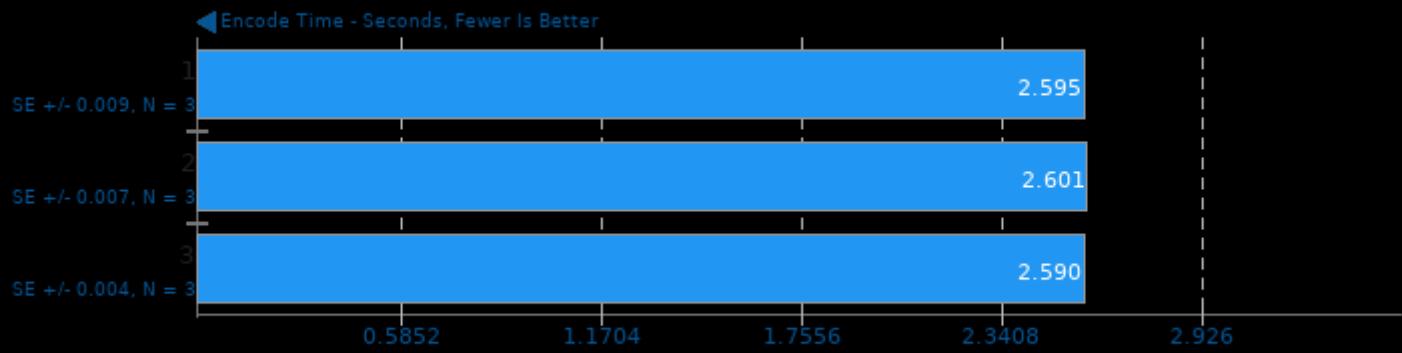
Renderer: Software CPU - Resolution: 1920 x 1080



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

## WebP Image Encode 1.1

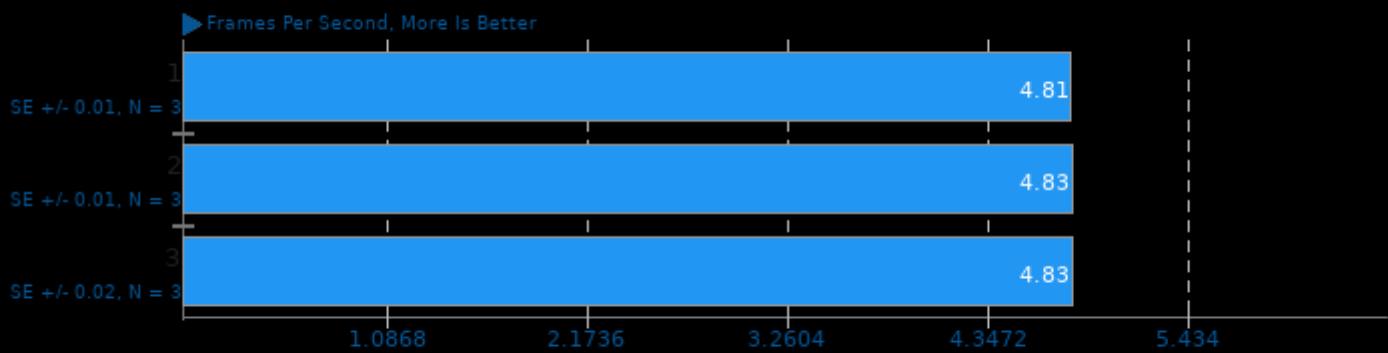
Encode Settings: Quality 100



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

## x265 3.4

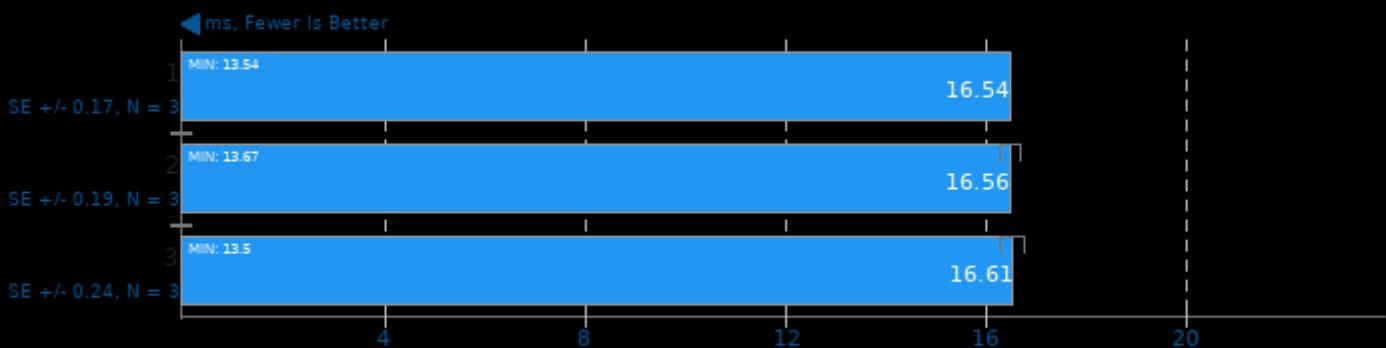
Video Input: Bosphorus 4K



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

## oneDNN 2.0

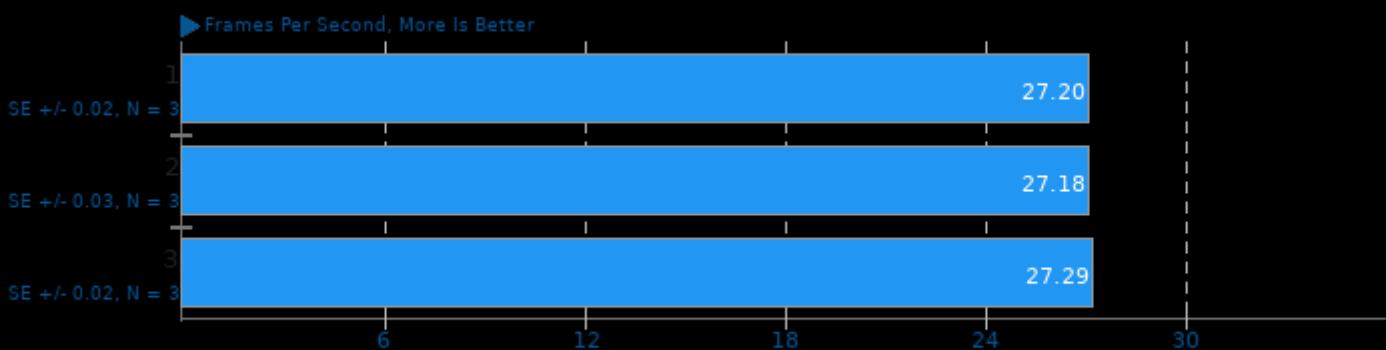
Harness: IP Shapes 1D - Data Type: f32 - Engine: CPU



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

## AOM AV1 2.0

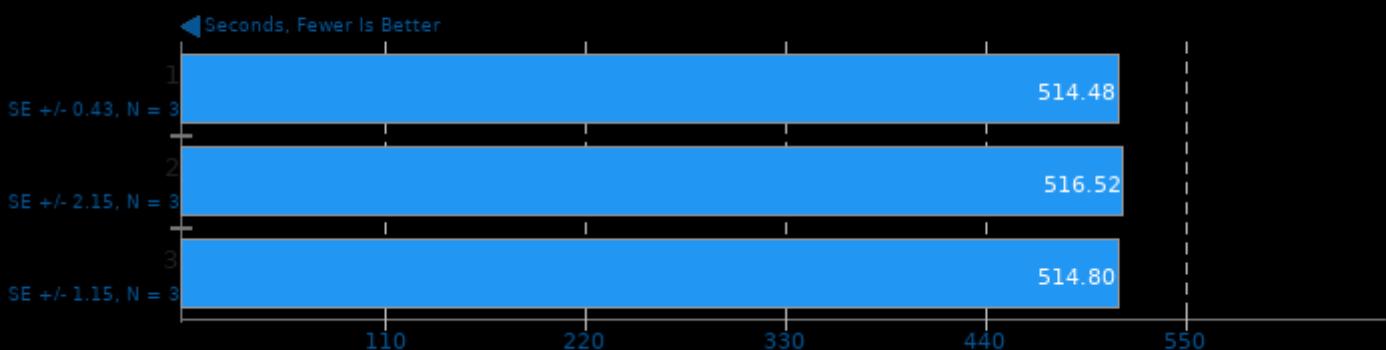
Encoder Mode: Speed 8 Realtime



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

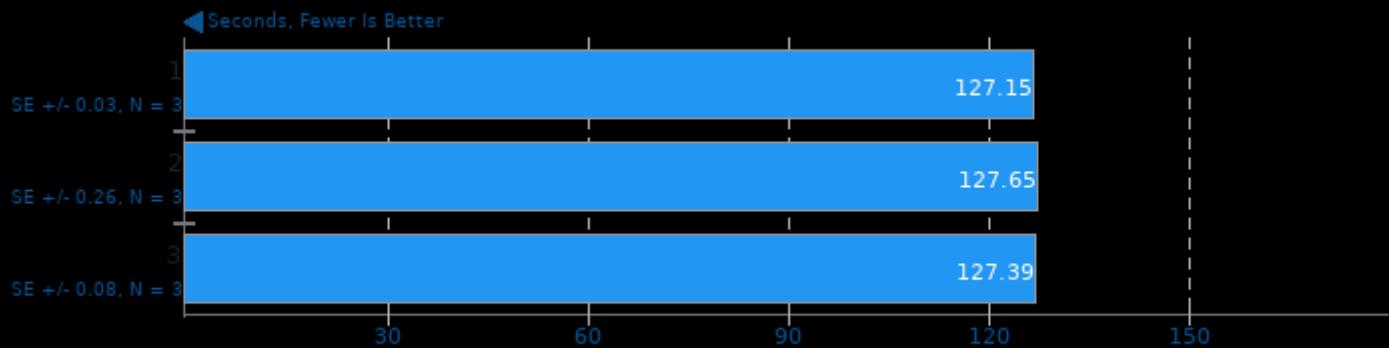
## Build2 0.13

Time To Compile



## Timed HMMer Search 3.3.1

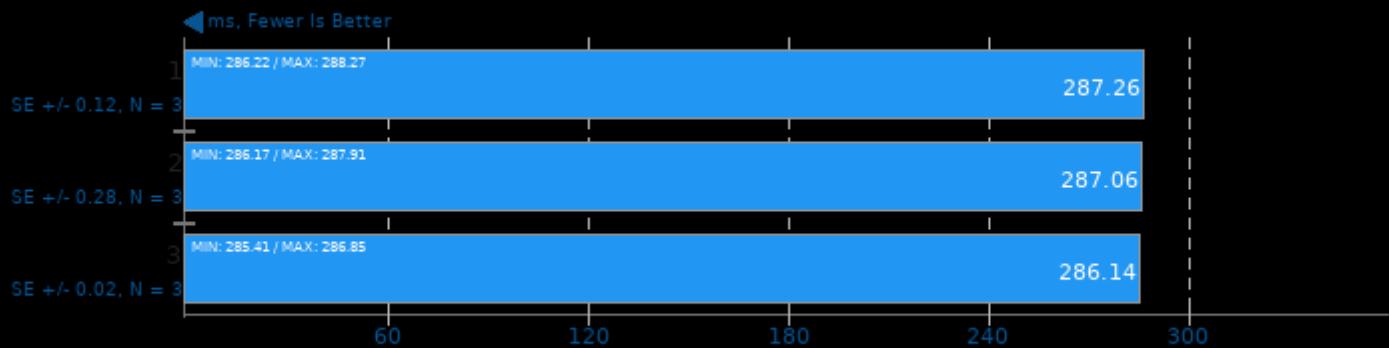
Pfam Database Search



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

## TNN 0.2.3

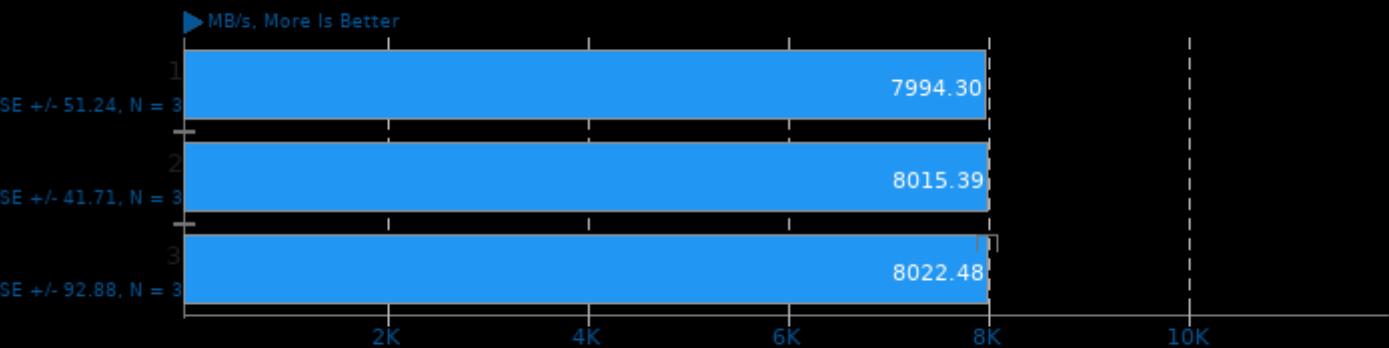
Target: CPU - Model: SqueezeNet v1.1



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

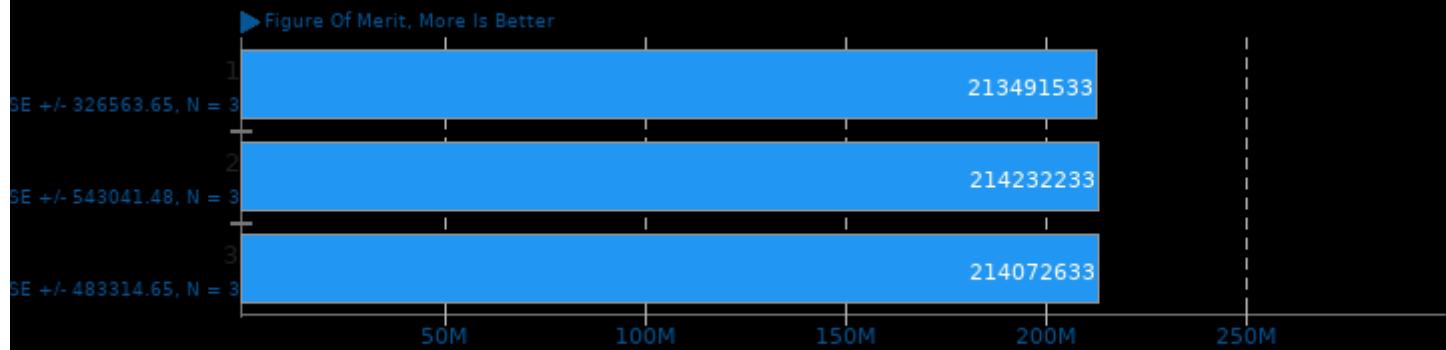
## LZ4 Compression 1.9.3

Compression Level: 1 - Compression Speed



1. (CC) gcc options: -O3

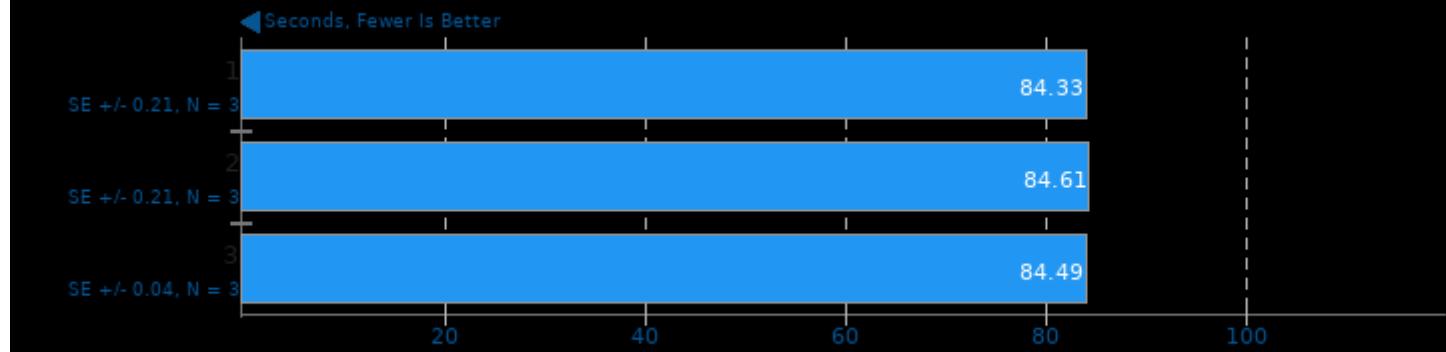
## Algebraic Multi-Grid Benchmark 1.2



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

## ASTC Encoder 2.0

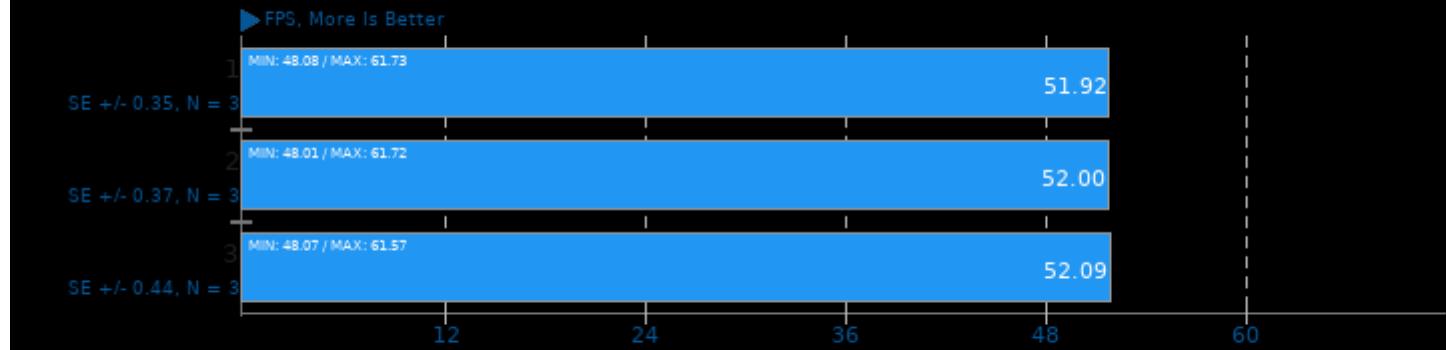
Preset: Thorough



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

## dav1d 0.8.1

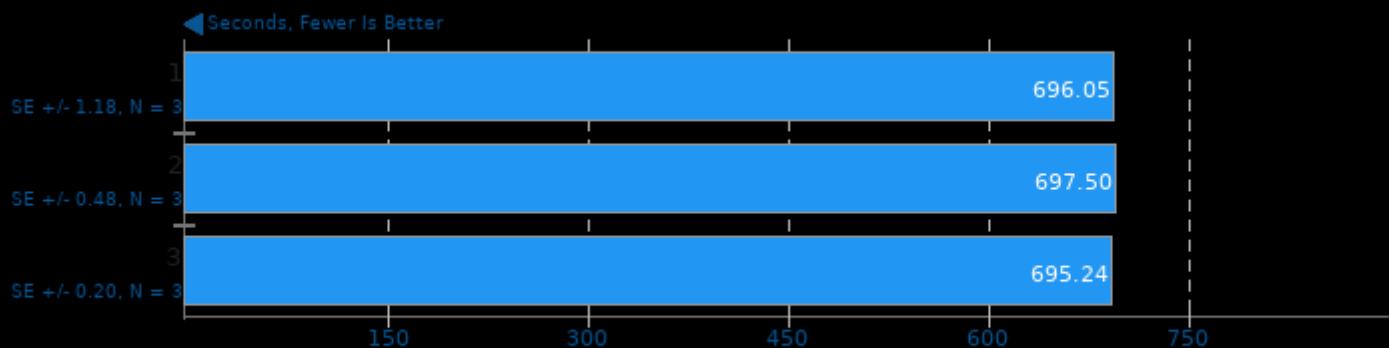
Video Input: Summer Nature 4K



1. (CC) gcc options: -pthread -ldl -lm

## ASTC Encoder 2.0

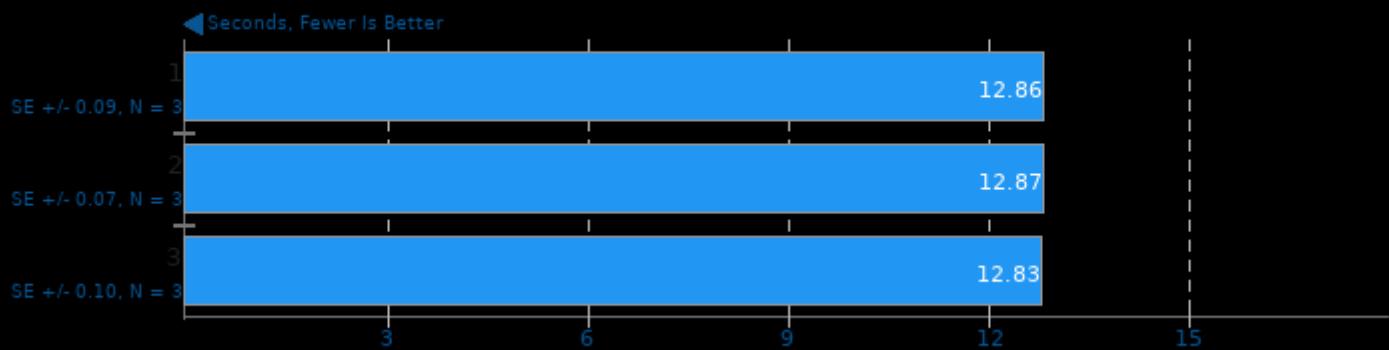
Preset: Exhaustive



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

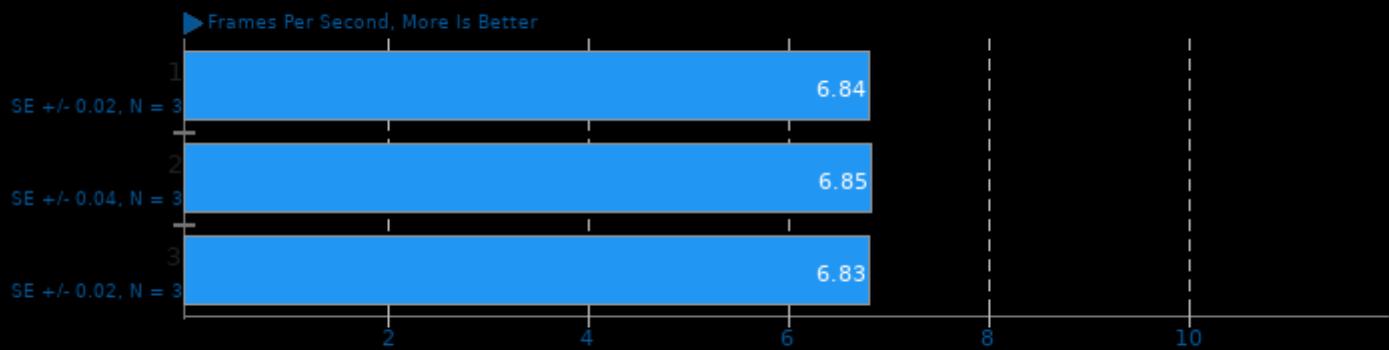
## GIMP 2.10.18

Test: resize



## Kvazaar 2.0

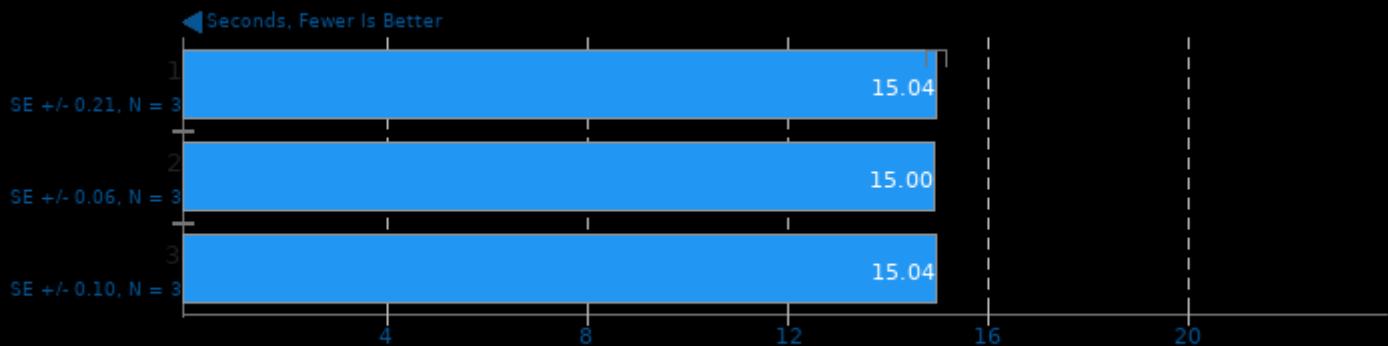
Video Input: Bosphorus 4K - Video Preset: Ultra Fast



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

## Timed MAFFT Alignment 7.471

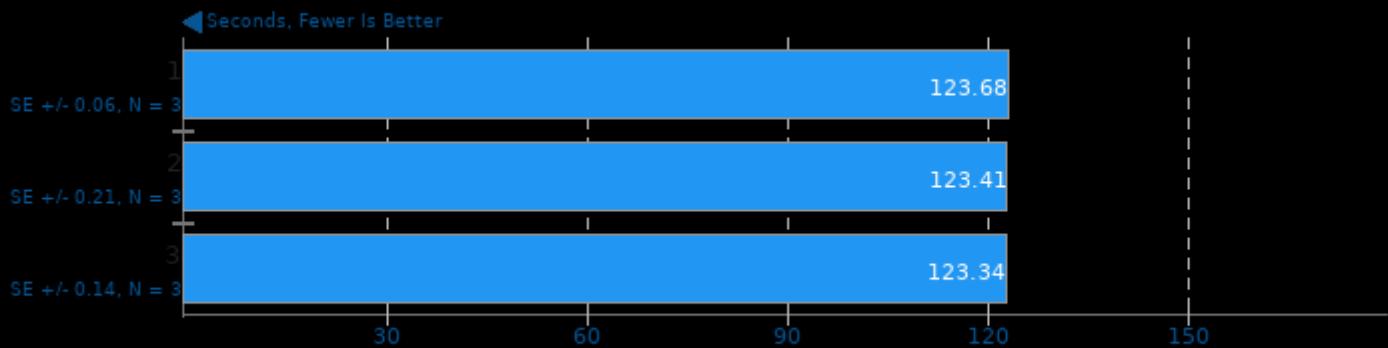
Multiple Sequence Alignment - LSU RNA



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

## RawTherapee

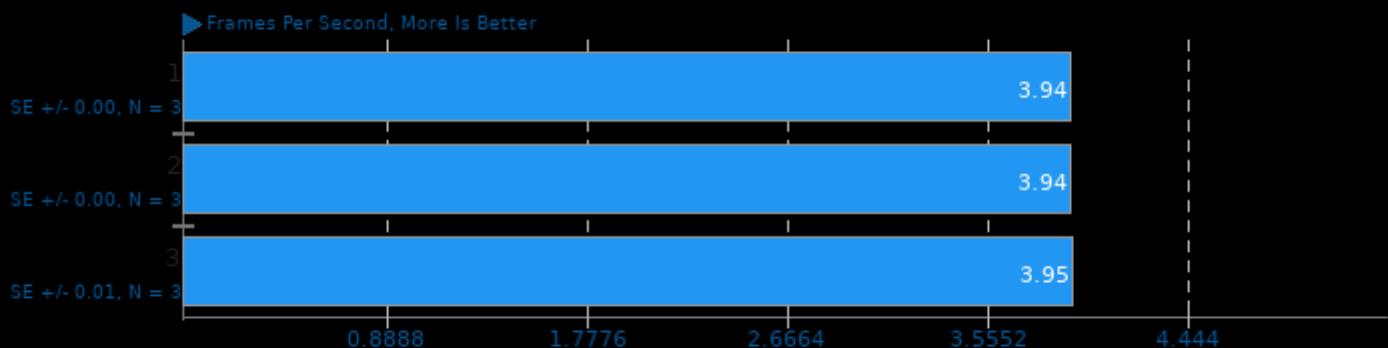
Total Benchmark Time



1. RawTherapee, version 5.8, command line.

## Kvazaar 2.0

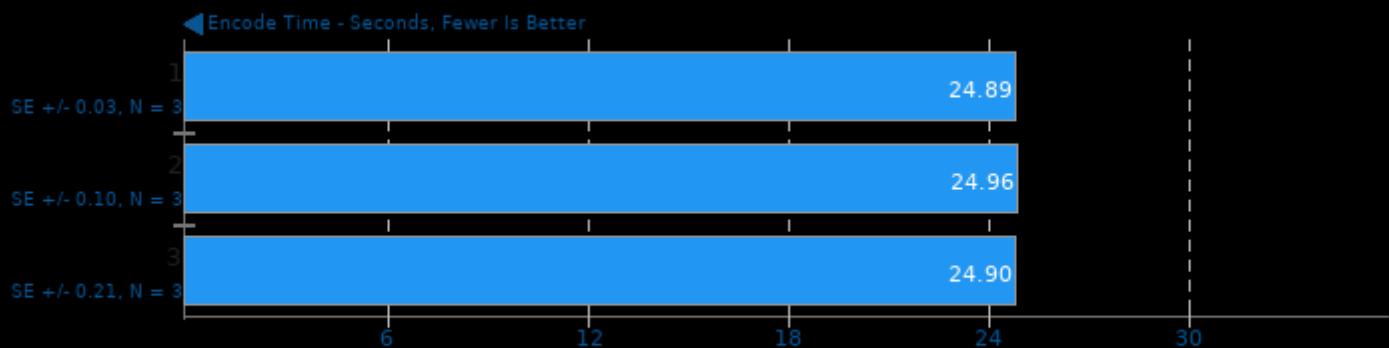
Video Input: Bosphorus 4K - Video Preset: Very Fast



1. (CC) gcc options: -pthread -ftree-vectorize -visibility=hidden -O2 -lpthread -lm -rt

## WebP Image Encode 1.1

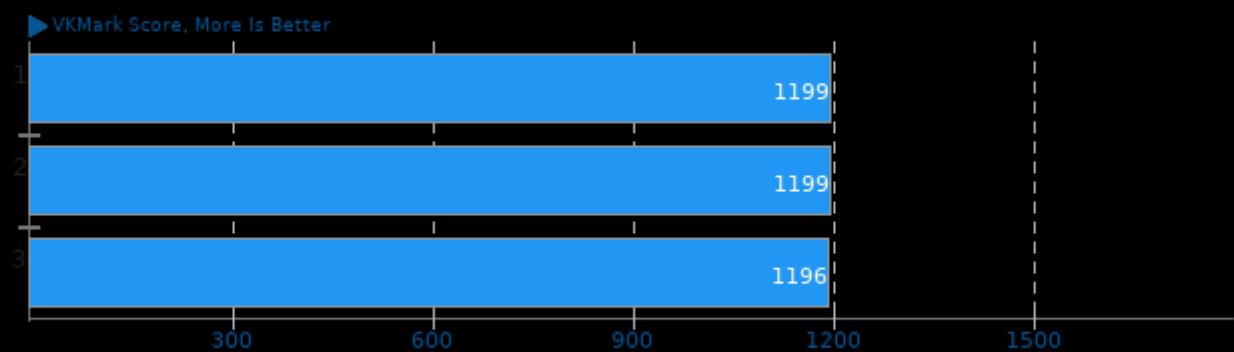
Encode Settings: Quality 100, Lossless



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

## VKMark 2020-05-21

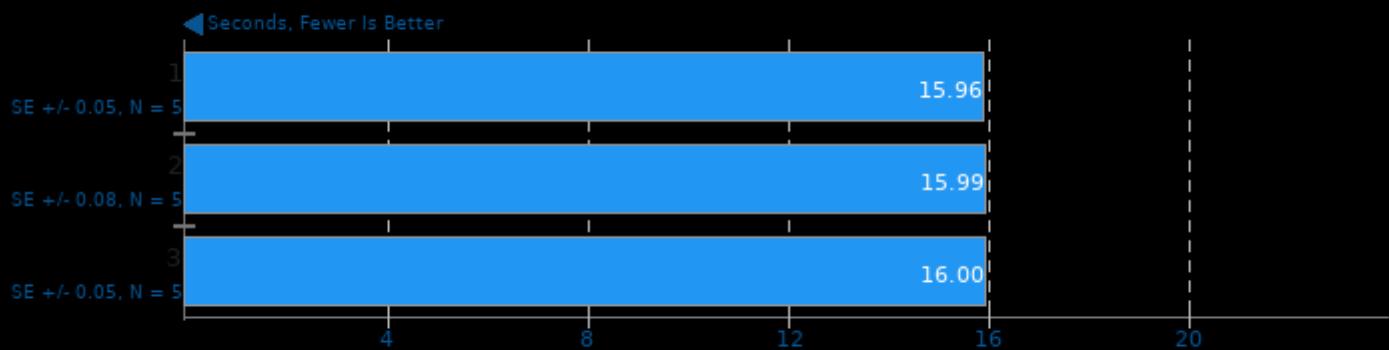
Resolution: 1920 x 1080



1. (CXX) g++ options: -pthread -ldl -pipe -std=c++14 -MD -MQ -MF

## Monkey Audio Encoding 3.99.6

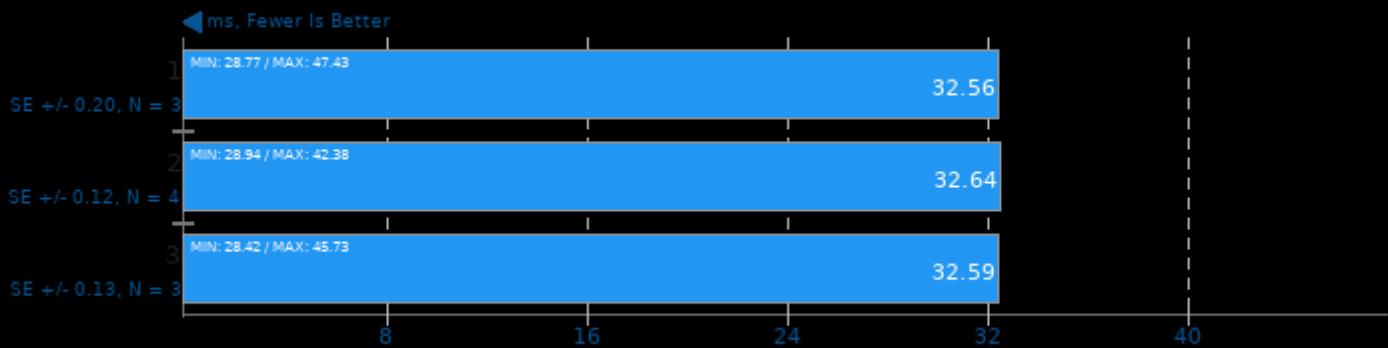
WAV To APE



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

## NCNN 20201218

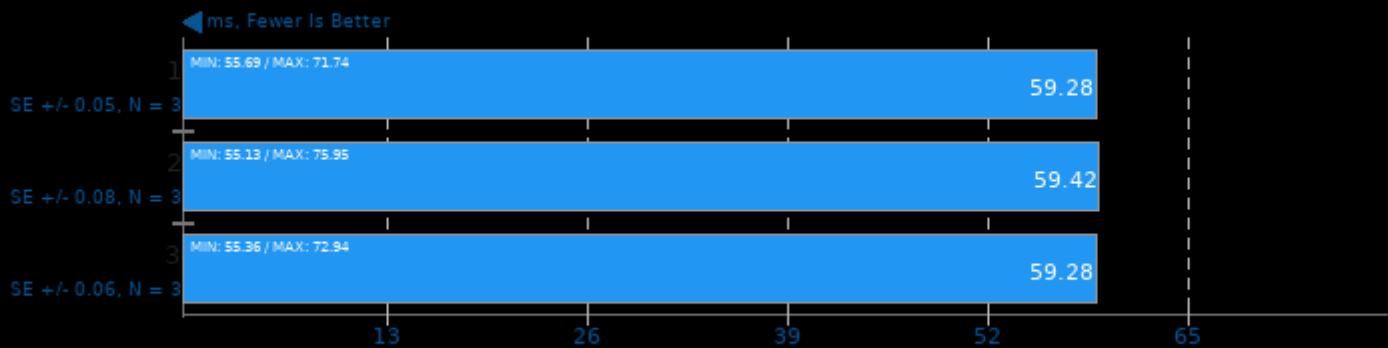
Target: Vulkan GPU - Model: googlenet



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

## NCNN 20201218

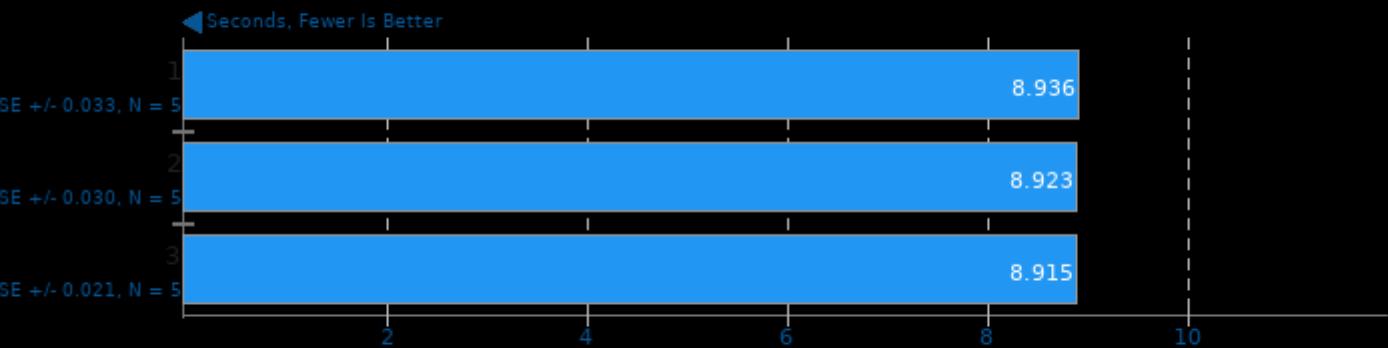
Target: CPU - Model: yolov4-tiny



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

## Opus Codec Encoding 1.3.1

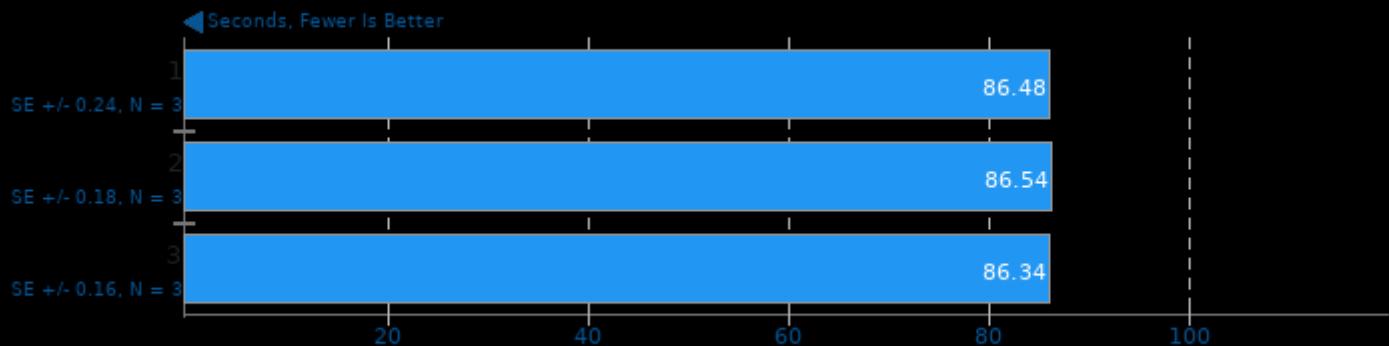
WAV To Opus Encode



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

## Basis Universal 1.12

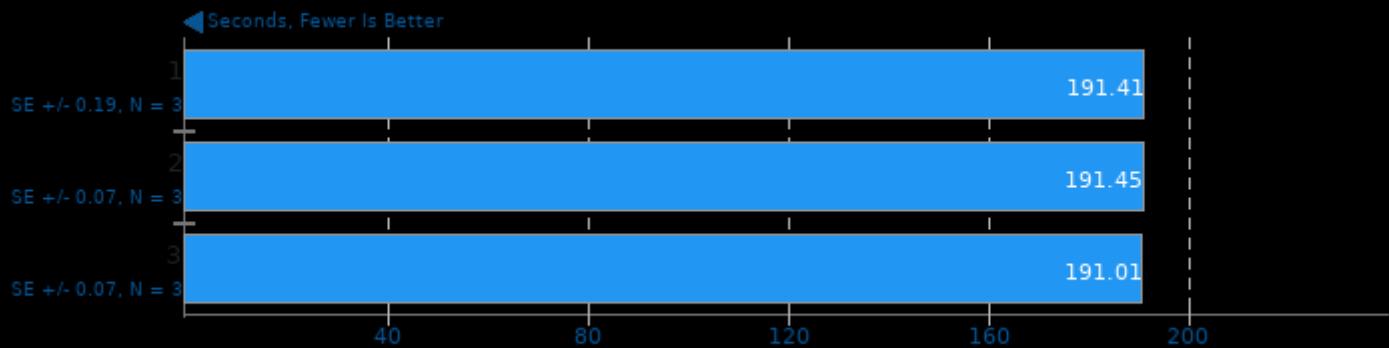
Settings: UASTC Level 2



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

## CloverLeaf

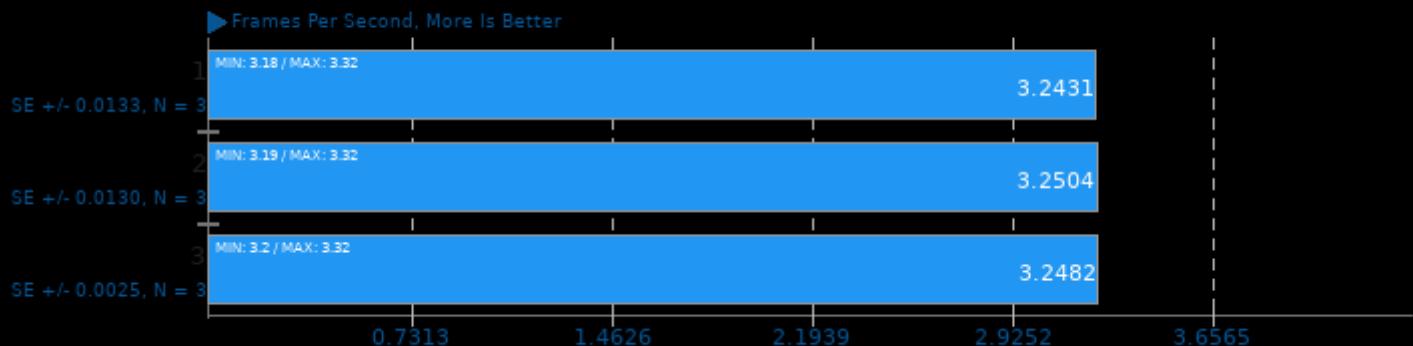
Lagrangian-Eulerian Hydrodynamics



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

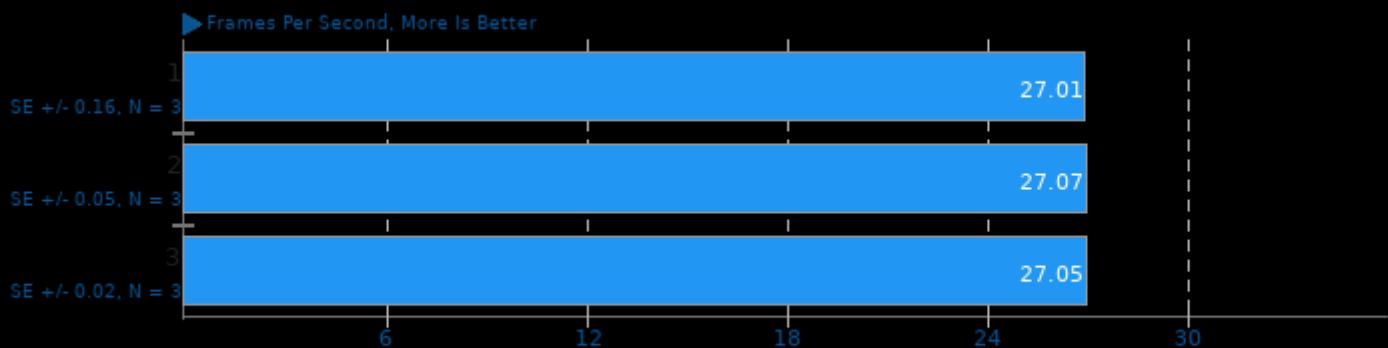
## Embree 3.9.0

Binary: Pathtracer ISPC - Model: Asian Dragon



## Kvazaar 2.0

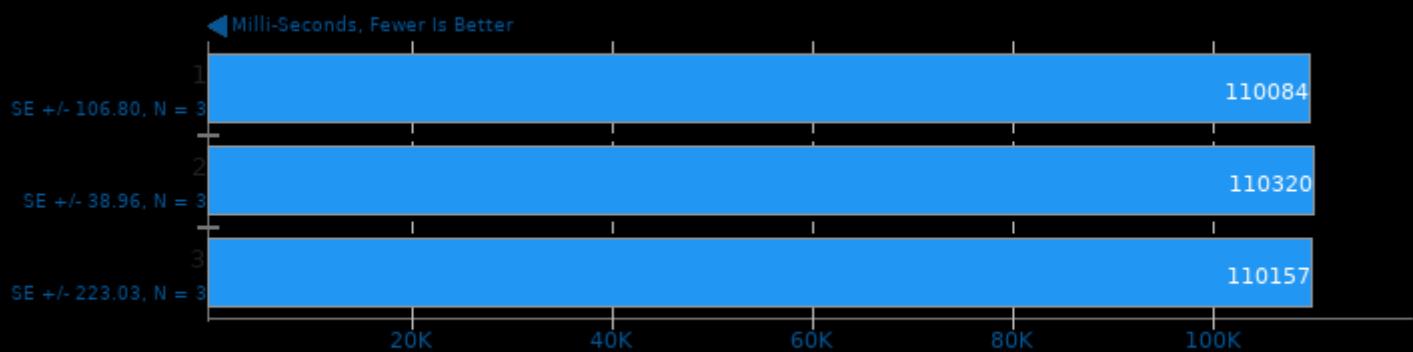
Video Input: Bosphorus 1080p - Video Preset: Ultra Fast



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

## Caffe 2020-02-13

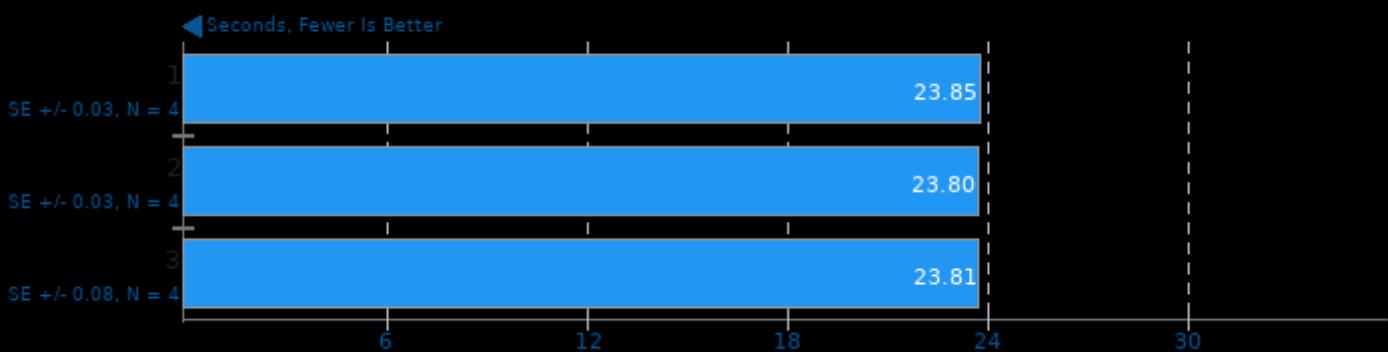
Model: GoogleNet - Acceleration: CPU - Iterations: 100



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

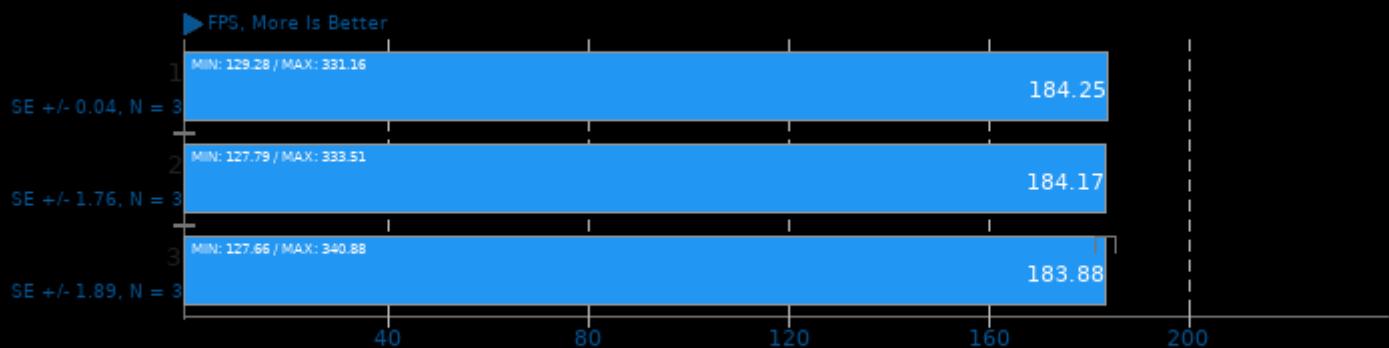
## Unpacking Firefox 84.0

Extracting: firefox-84.0.source.tar.xz



## dav1d 0.8.1

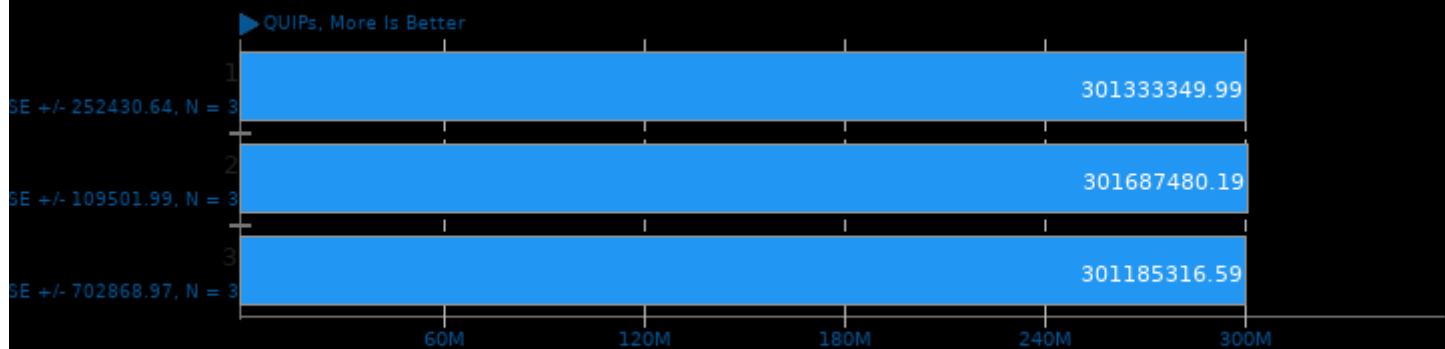
Video Input: Chimera 1080p



1. (CC) gcc options: -pthread -ldl -lm

## Hierarchical INTegration 1.0

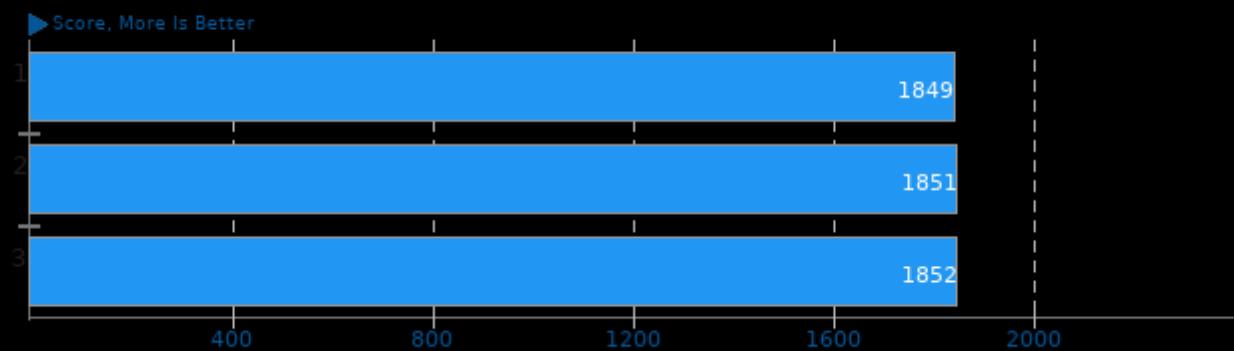
Test: FLOAT



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

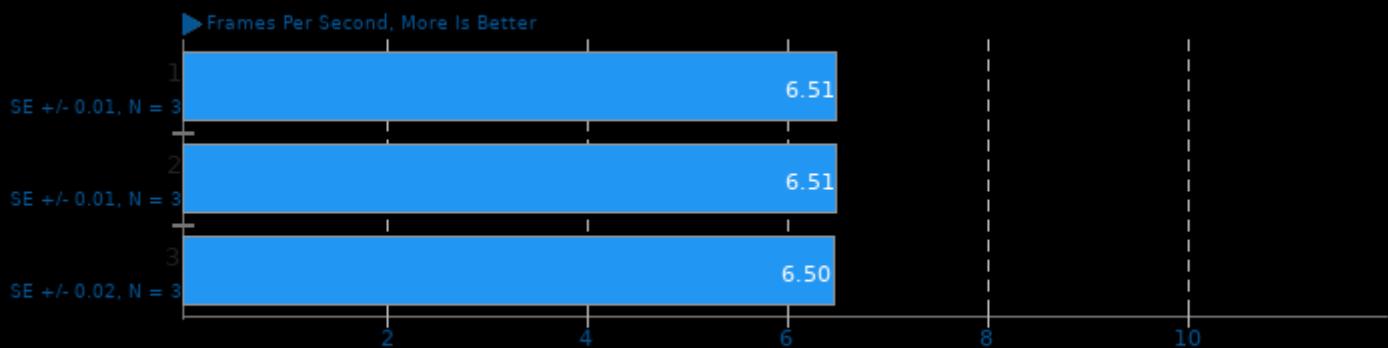
## GLmark2 2020.04

Resolution: 1920 x 1080



## Kvazaar 2.0

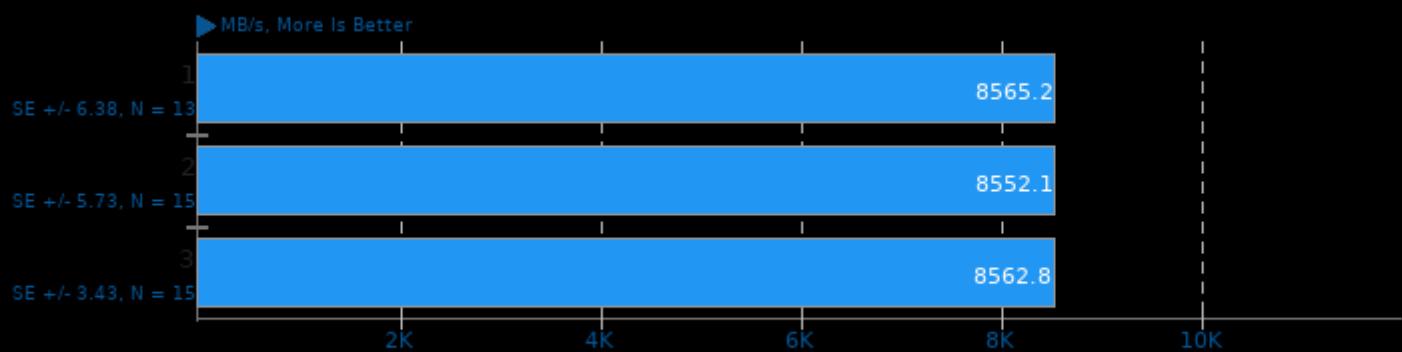
Video Input: Bosphorus 1080p - Video Preset: Medium



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

## LZ4 Compression 1.9.3

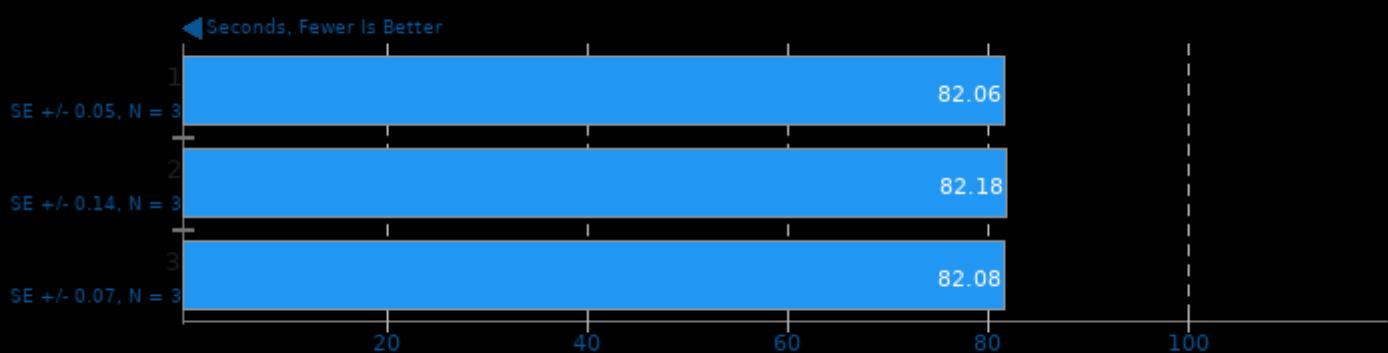
Compression Level: 9 - Decompression Speed



1. (CC) gcc options: -O3

## Basis Universal 1.12

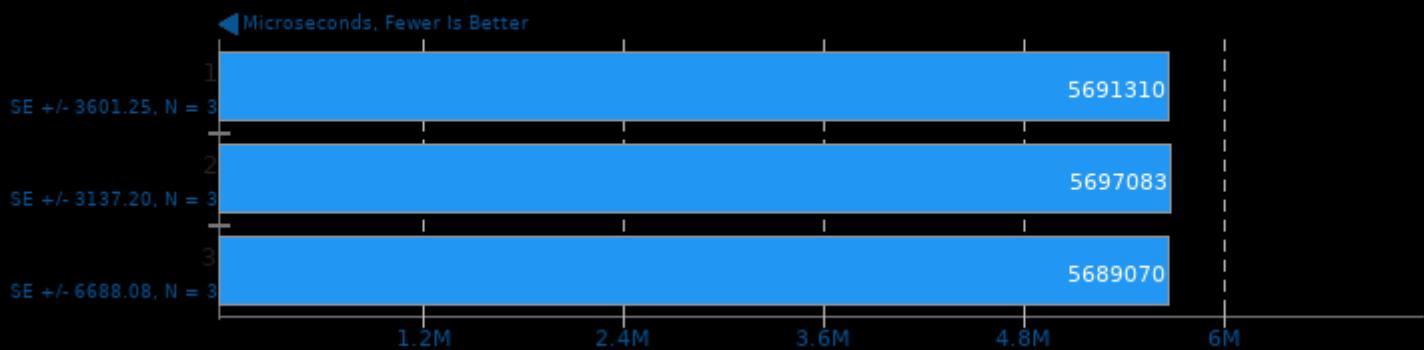
Settings: ETC1S



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

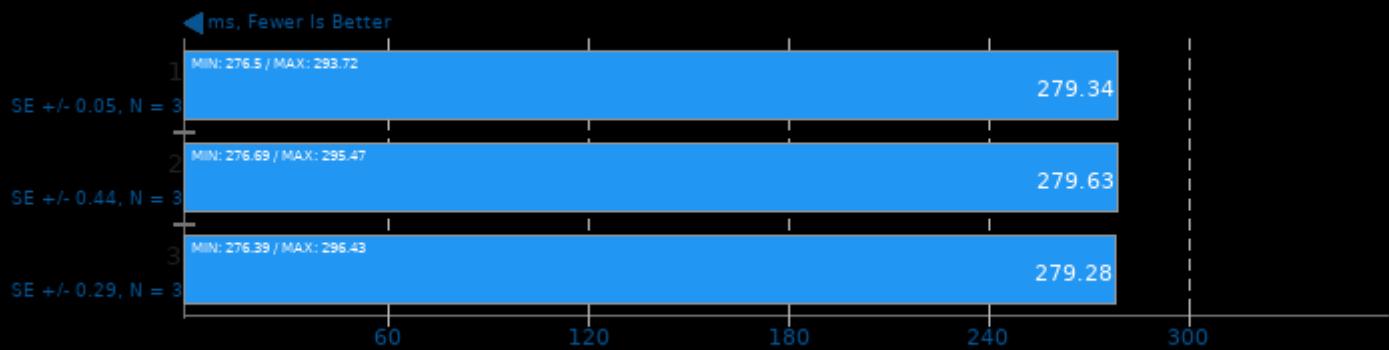
## TensorFlow Lite 2020-08-23

Model: Inception ResNet V2



## TNN 0.2.3

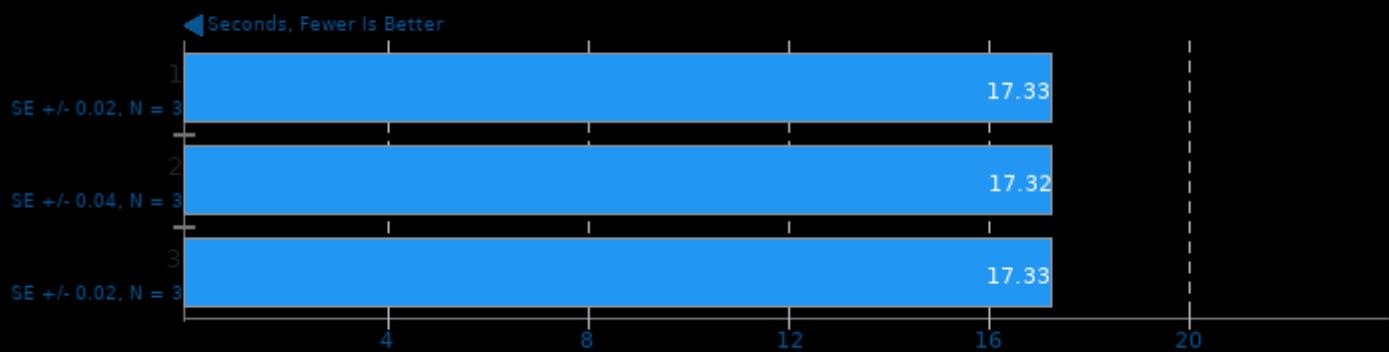
Target: CPU - Model: MobileNet v2



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

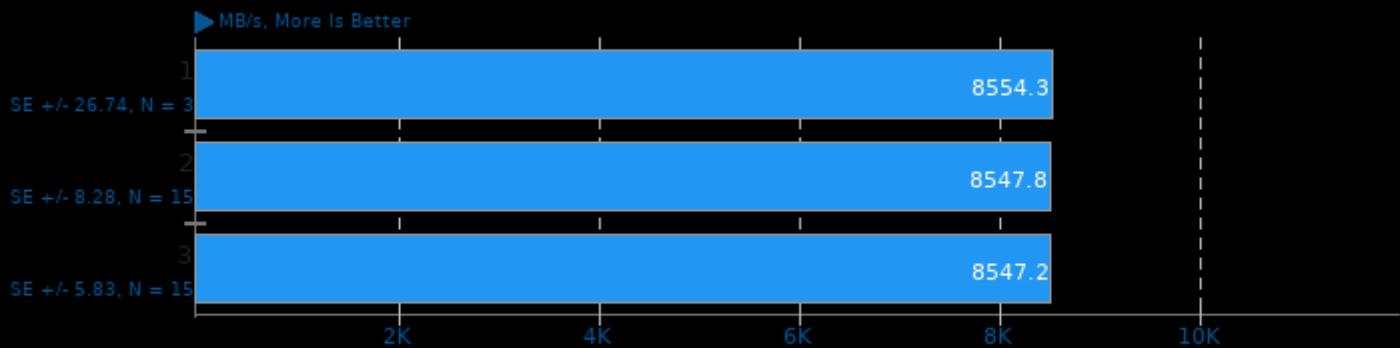
## GIMP 2.10.18

Test: unsharp-mask



## LZ4 Compression 1.9.3

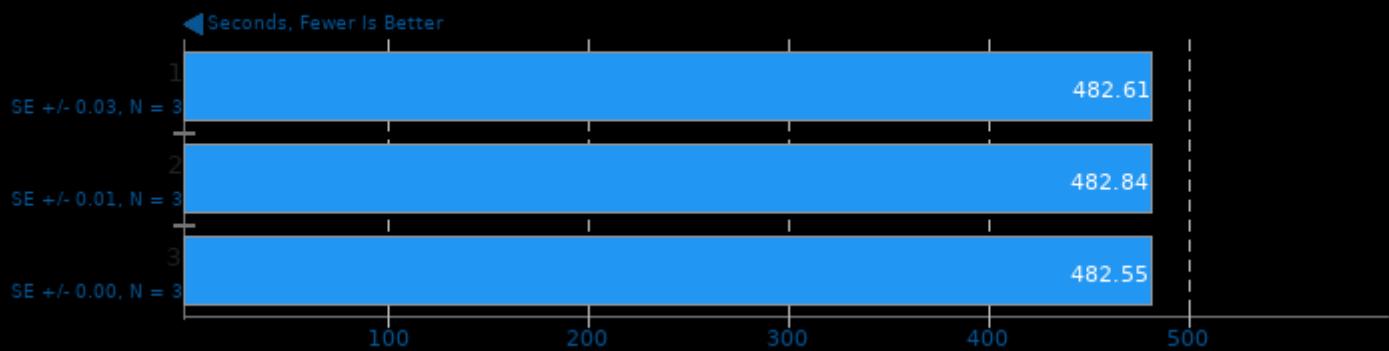
Compression Level: 3 - Decompression Speed



1. (CC) gcc options: -O3

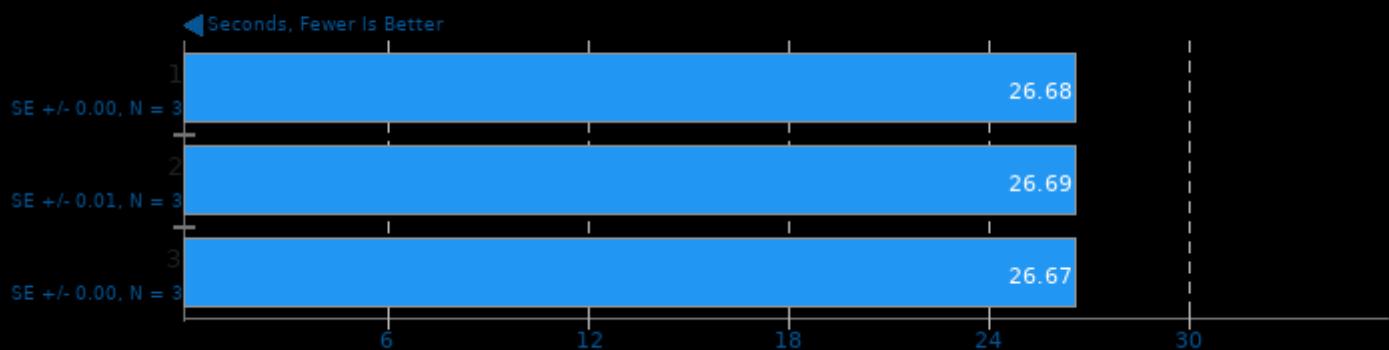
## RealSR-NCNN 20200818

Scale: 4x - TAA: Yes



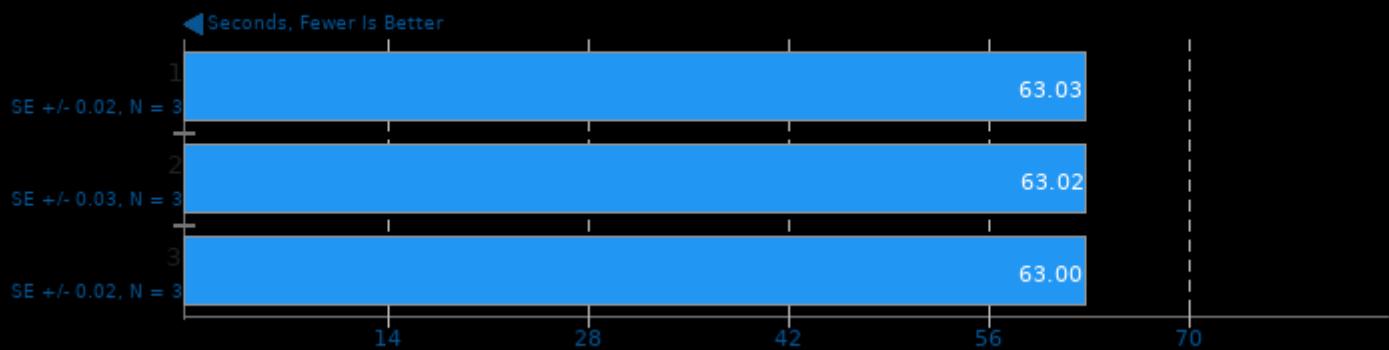
## Waifu2x-NCNN Vulkan 20200818

Scale: 2x - Denoise: 3 - TAA: Yes

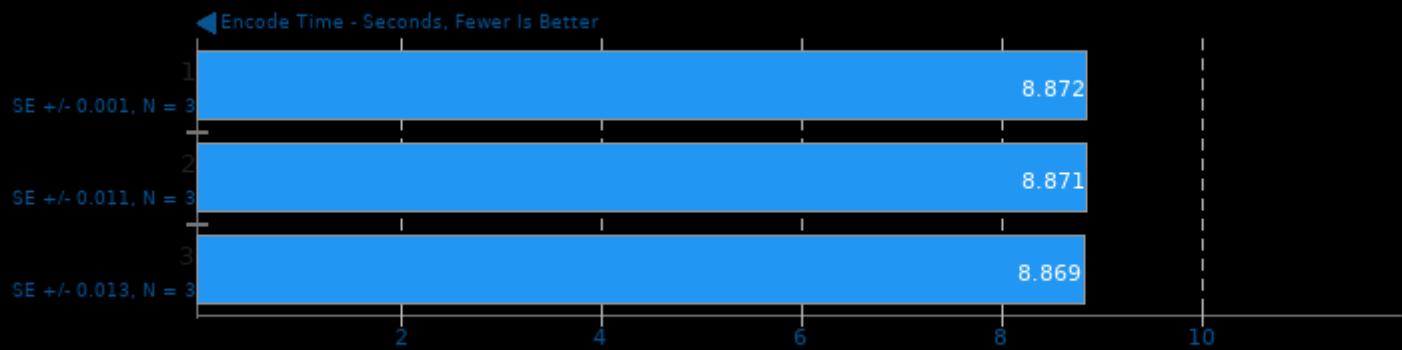


**RealSR-NCNN 20200818**

Scale: 4x - TAA: No

**WebP Image Encode 1.1**

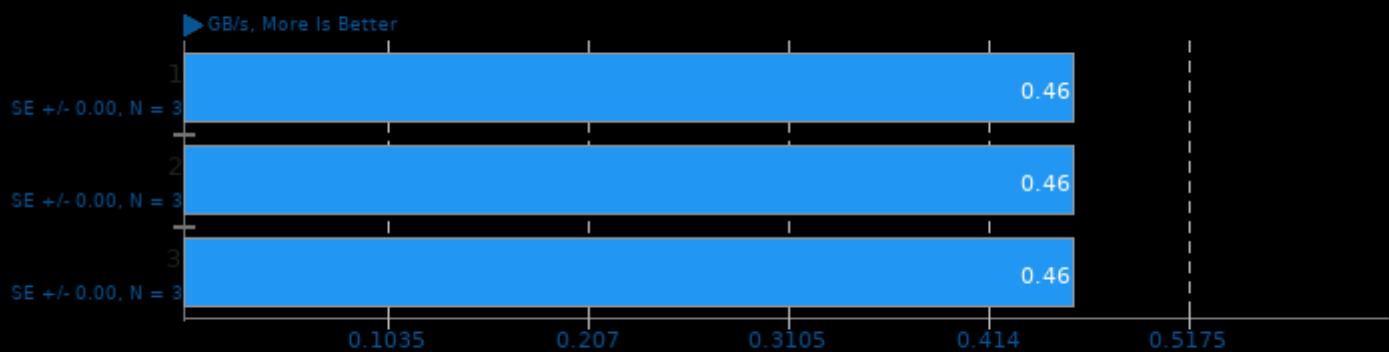
Encode Settings: Quality 100, Highest Compression



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

**simdjson 0.7.1**

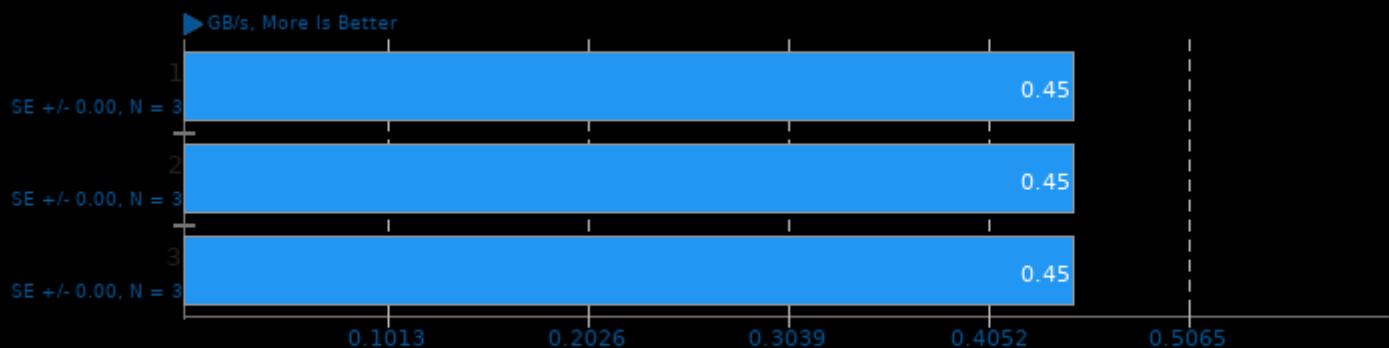
Throughput Test: DistinctUserID



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

## simdjson 0.7.1

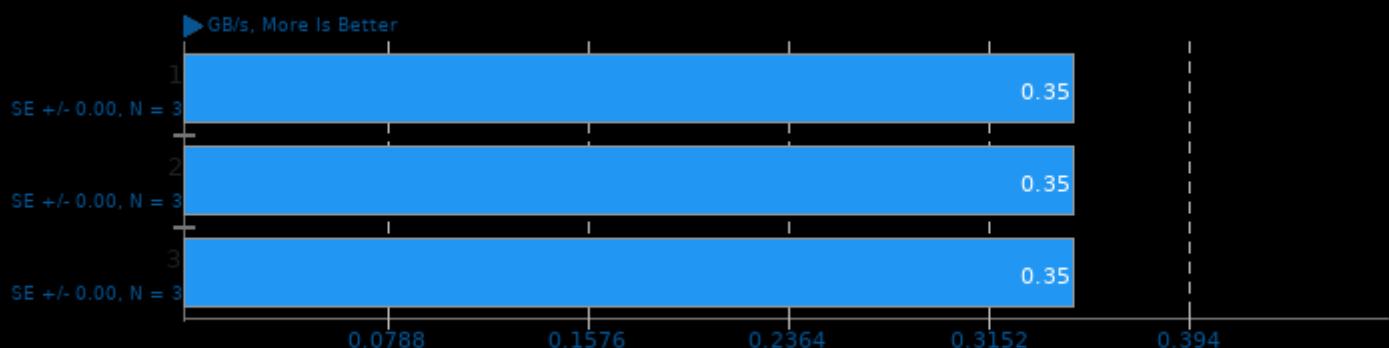
Throughput Test: PartialTweets



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

## simdjson 0.7.1

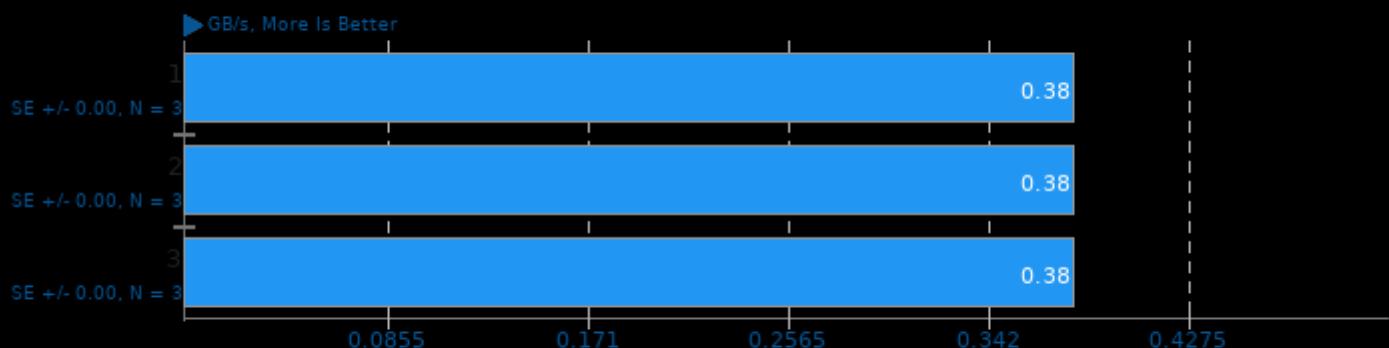
Throughput Test: LargeRandom



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

## simdjson 0.7.1

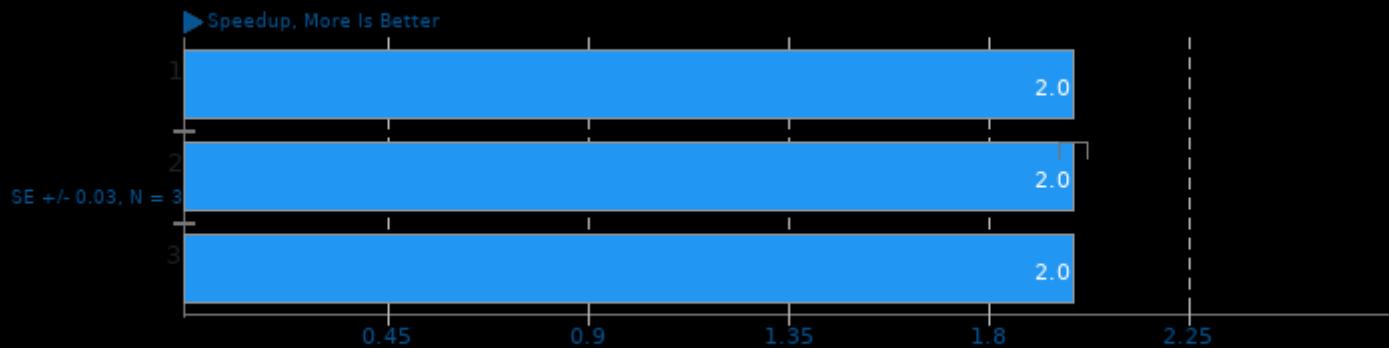
Throughput Test: Kostya



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

## CLOMP 1.2

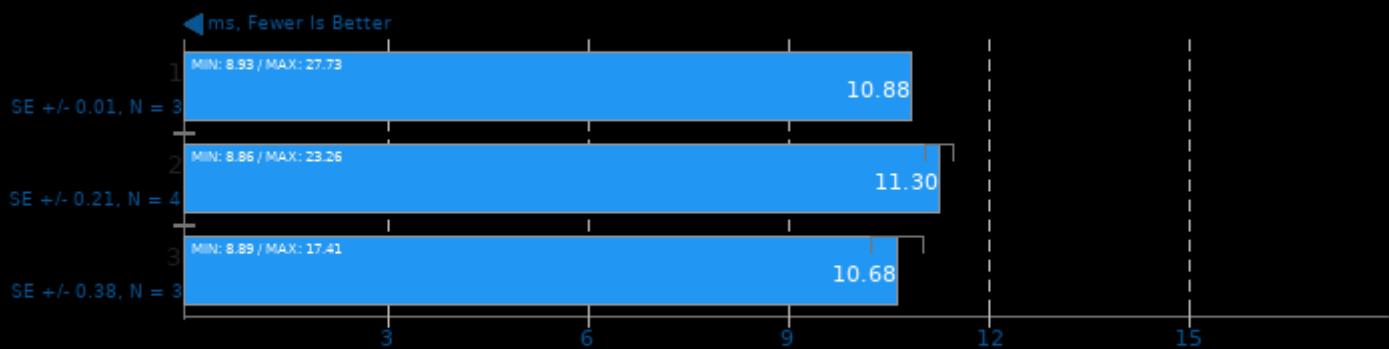
Static OMP Speedup



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

## NCNN 20201218

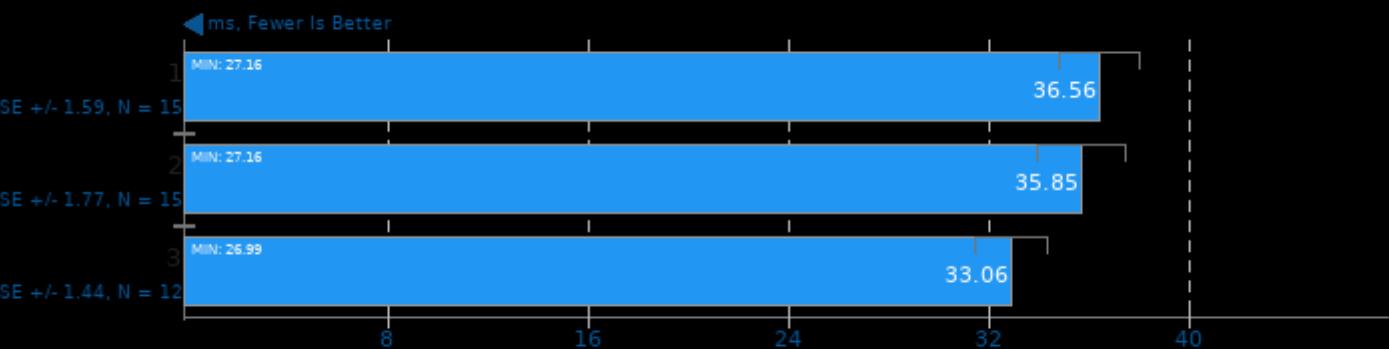
Target: Vulkan GPU-v2-v2 - Model: mobilenet-v2



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

## oneDNN 2.0

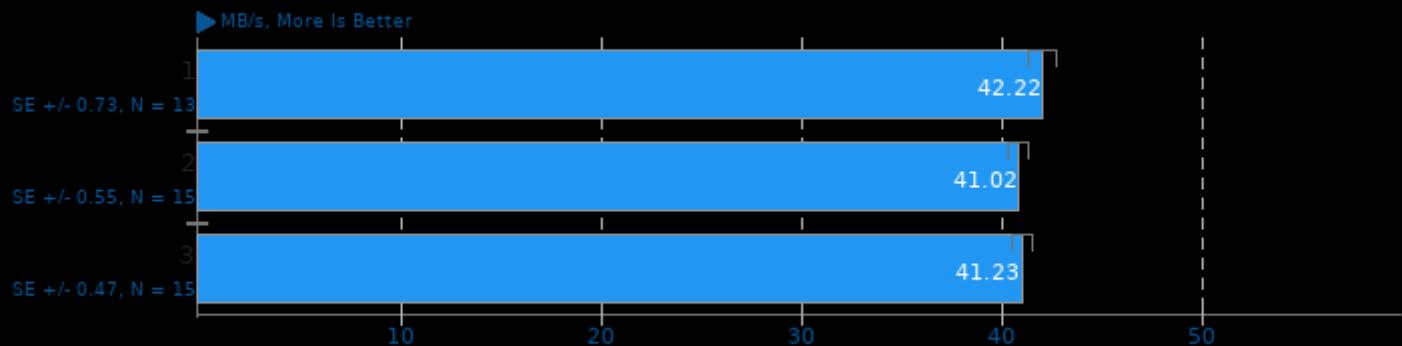
Harness: Deconvolution Batch shapes\_1d - Data Type: u8s8f32 - Engine: CPU



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

## LZ4 Compression 1.9.3

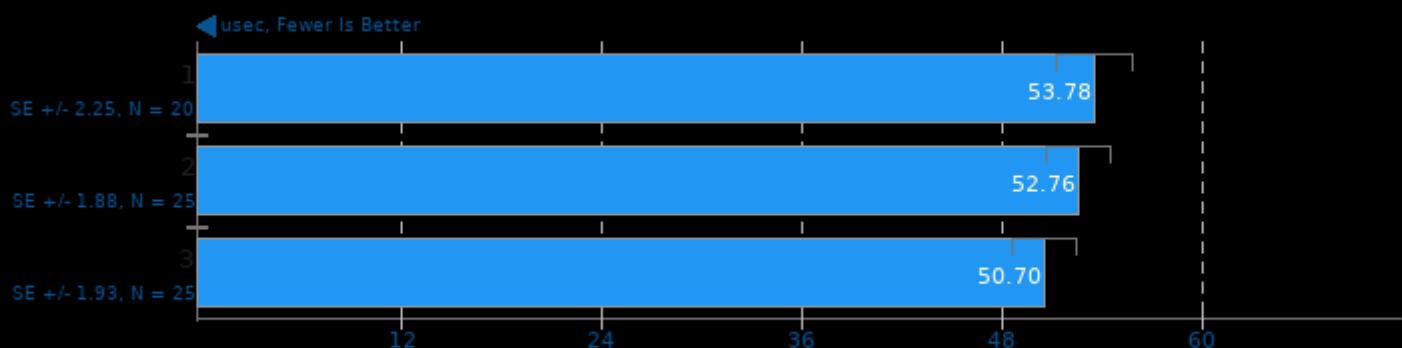
Compression Level: 9 - Compression Speed



1. (CC) gcc options: -O3

## Sockperf 3.4

Test: Latency Under Load

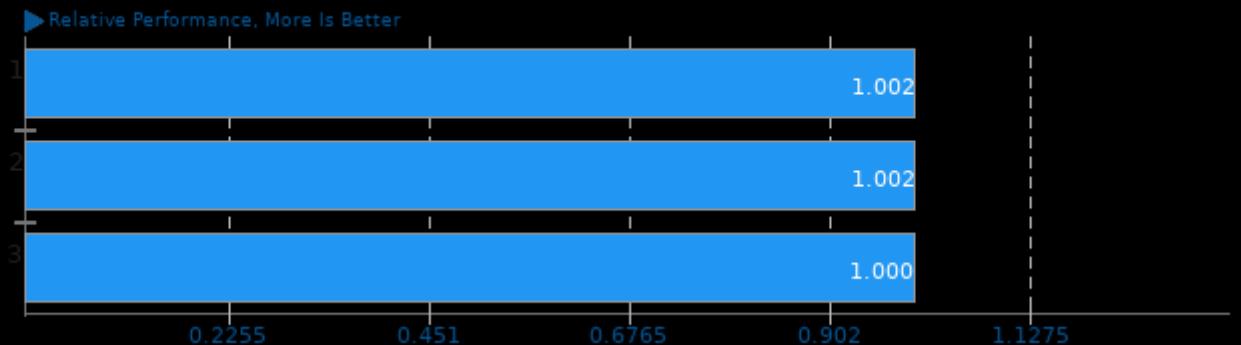


1. (CXX) g++ options: --param -O3 -rdynamic -ldl -lpthread

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

### Geometric Mean Of Audio Encoding Tests

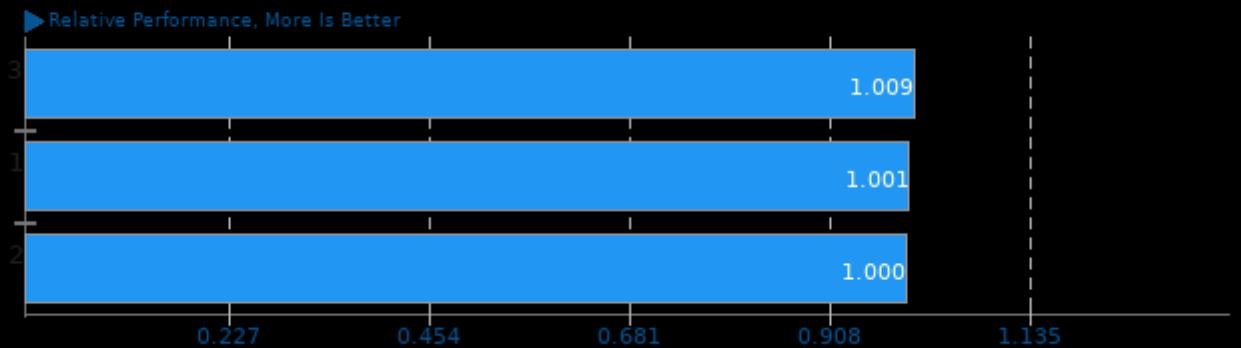
Result Composite - Ryzen 3 2200G 2021



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

### Geometric Mean Of AV1 Tests

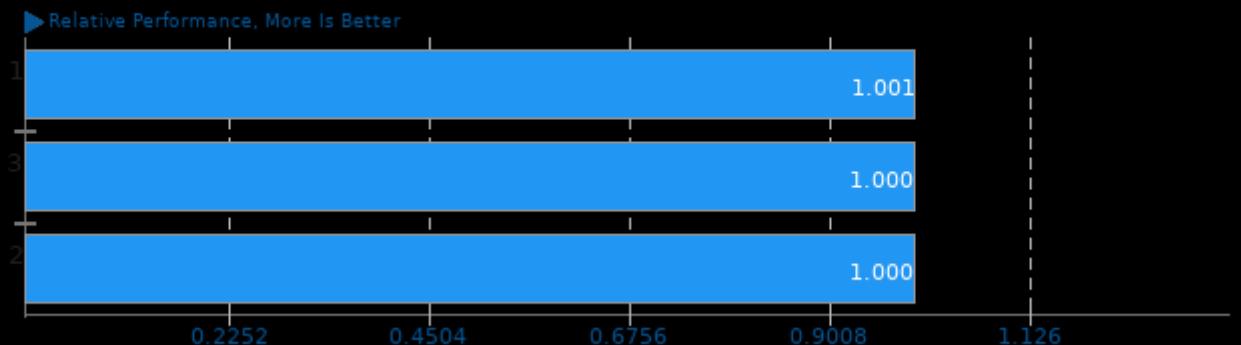
Result Composite - Ryzen 3 2200G 2021



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

### Geometric Mean Of Bioinformatics Tests

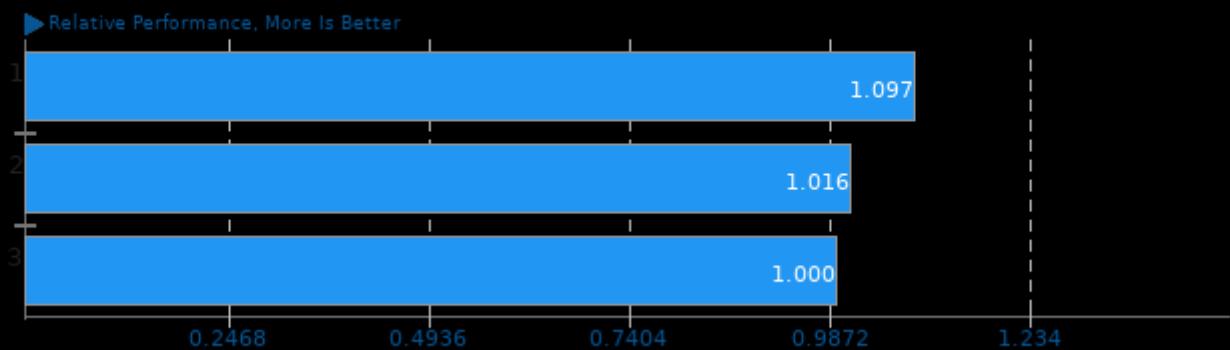
Result Composite - Ryzen 3 2200G 2021



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

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

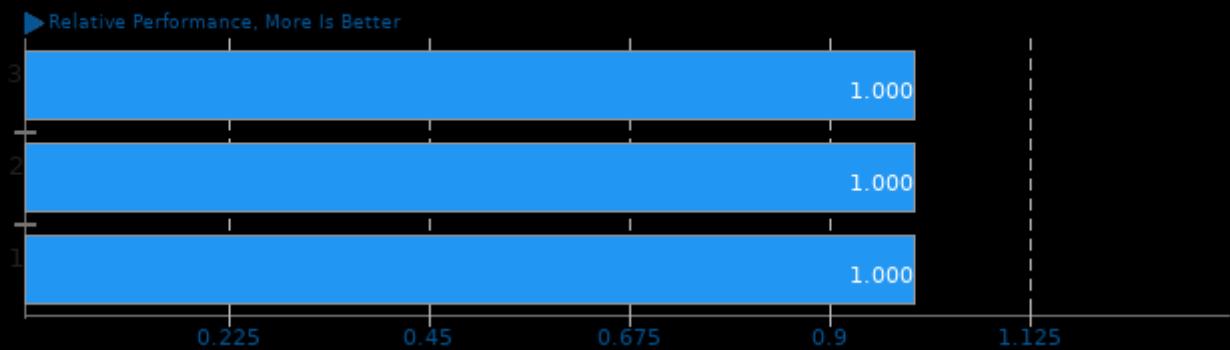
Result Composite - Ryzen 3 2200G 2021



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

**Geometric Mean Of C++ Boost Tests**

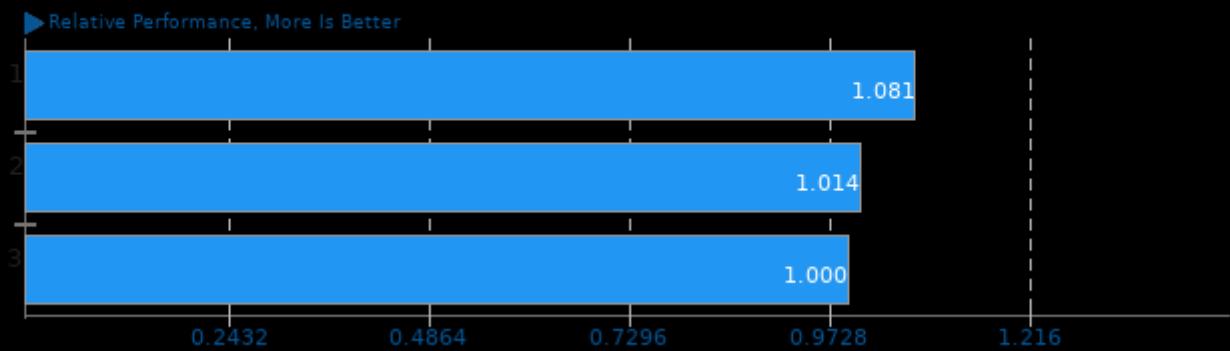
Result Composite - Ryzen 3 2200G 2021



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

**Geometric Mean Of Chess Test Suite**

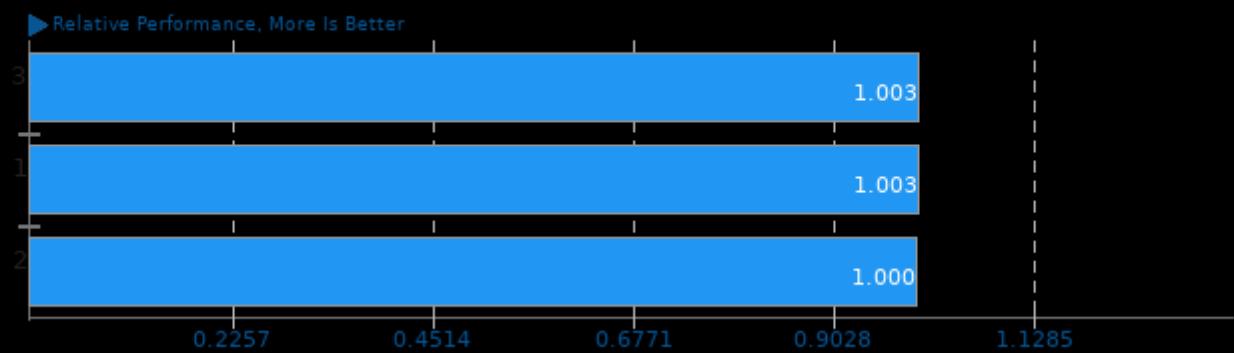
Result Composite - Ryzen 3 2200G 2021



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

## Geometric Mean Of Timed Code Compilation Tests

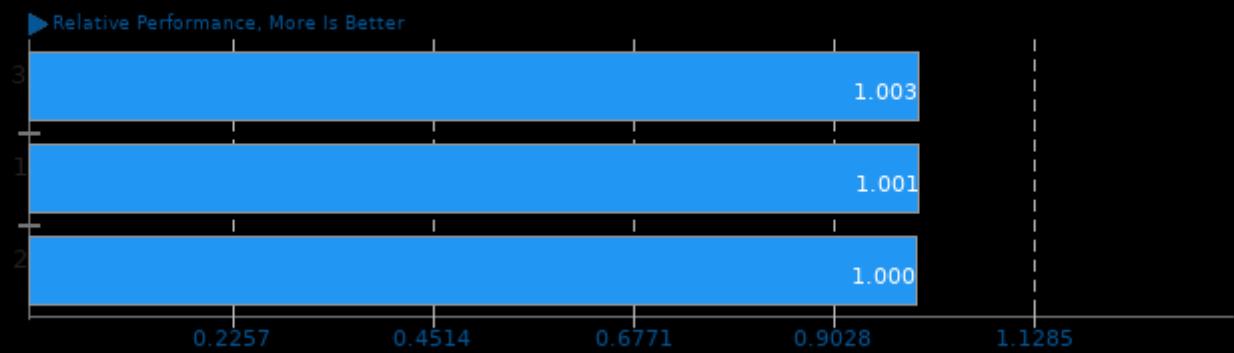
Result Composite - Ryzen 3 2200G 2021



Geometric mean based upon tests: pts/build-eigen, pts/build-ffmpeg, pts/build2 and pts/build-godot

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

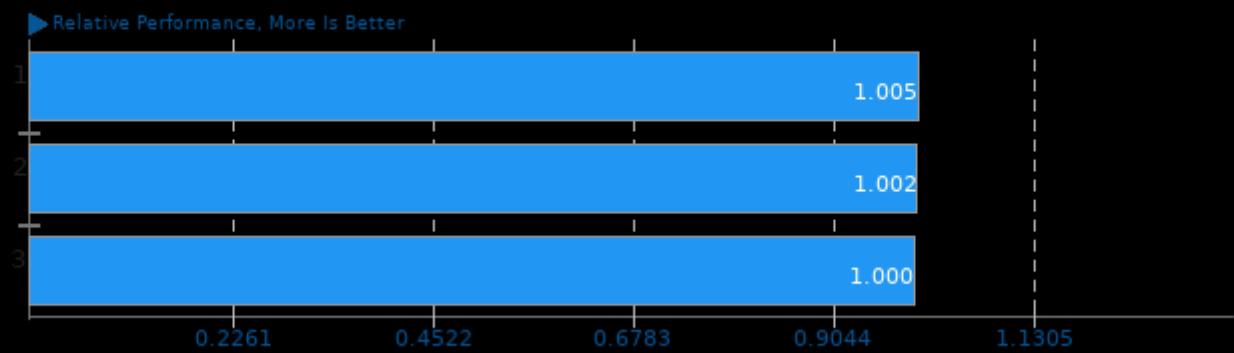
Result Composite - Ryzen 3 2200G 2021



Geometric mean based upon tests: pts/mafft, pts/stockfish, pts/hmmer, pts/sqlite-speedtest, pts/dav1d, pts/x265, pts/kvazaar, pts/clomp, pts/compress-zstd, pts/lammps, pts/aom-av1, pts/gromacs, pts/build-ffmpeg, pts/keydb and pts/basis

## Geometric Mean Of Compression Tests

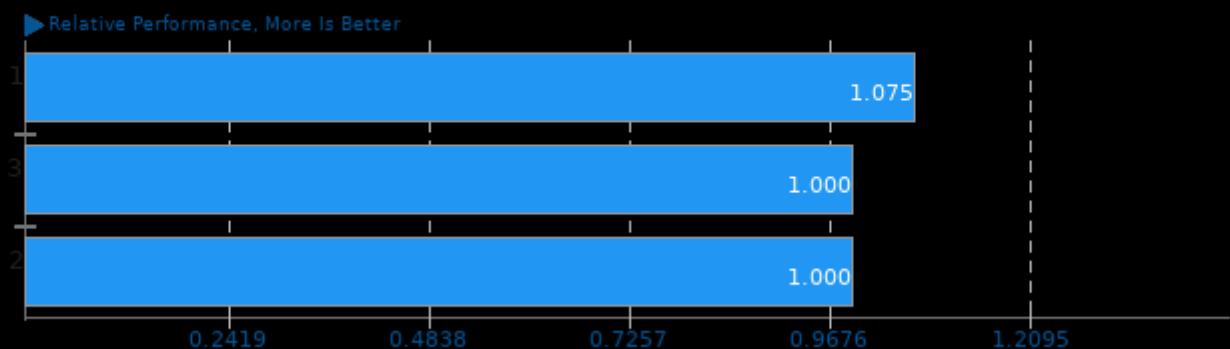
Result Composite - Ryzen 3 2200G 2021



Geometric mean based upon tests: pts/compress-zstd and pts/compress-lz4

## Geometric Mean Of Database Test Suite

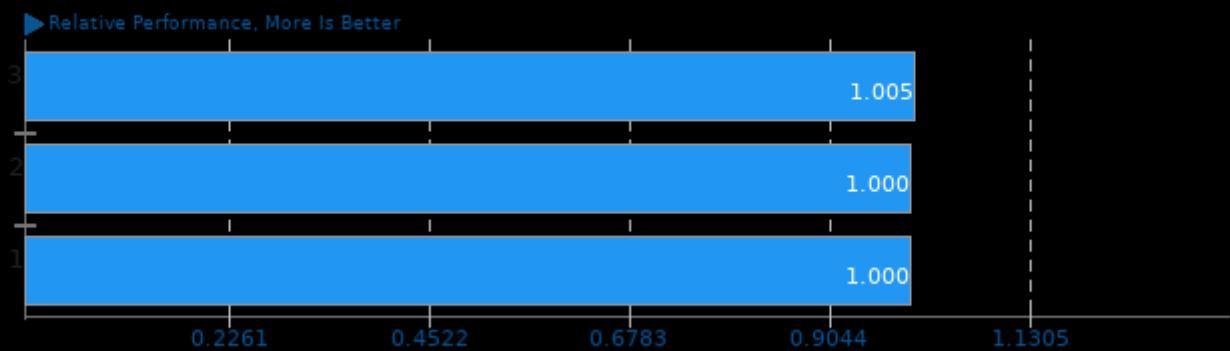
Result Composite - Ryzen 3 2200G 2021



Geometric mean based upon tests: pts/sqlite-speedtest, pts/redis, pts/keydb and pts/influxdb

## Geometric Mean Of Encoding Tests

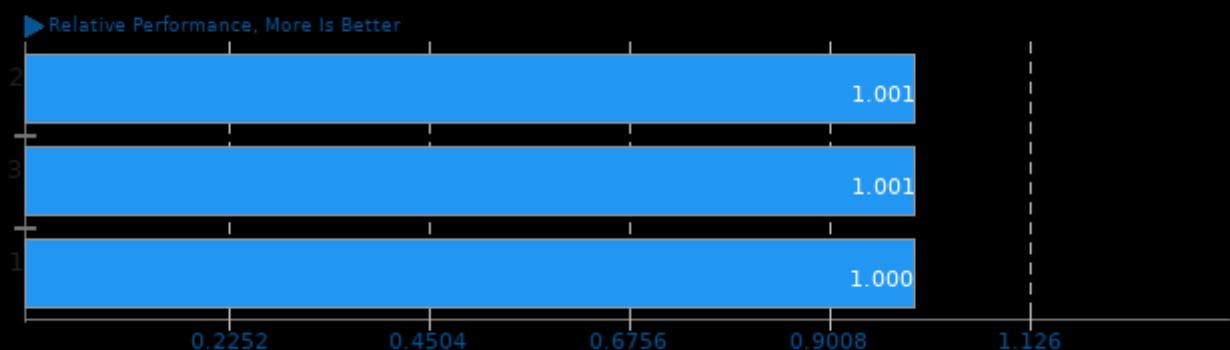
Result Composite - Ryzen 3 2200G 2021



Geometric mean based upon tests: pts/encode-ape, pts/encode-wavpack, pts/encode-opus, pts/x265, pts/kvazaar, pts/dav1d, pts/aom-av1 and pts/rav1e

## Geometric Mean Of Fortran Tests

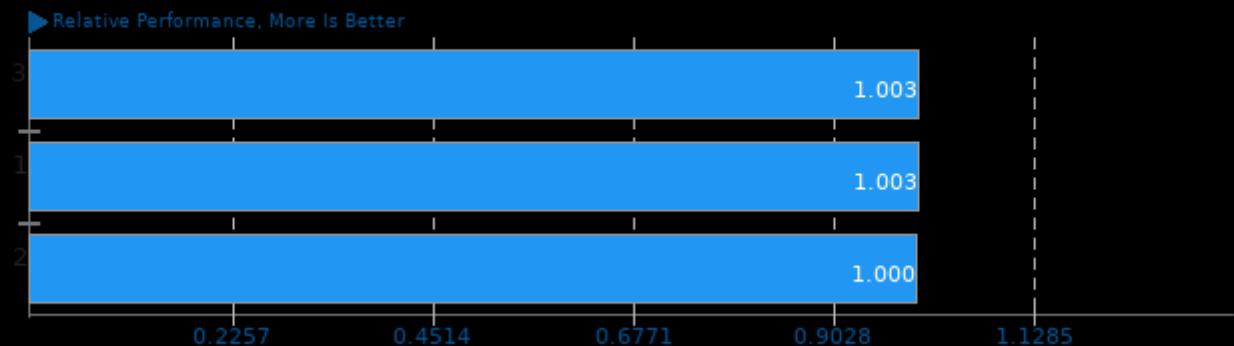
Result Composite - Ryzen 3 2200G 2021



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

## Geometric Mean Of Game Development Tests

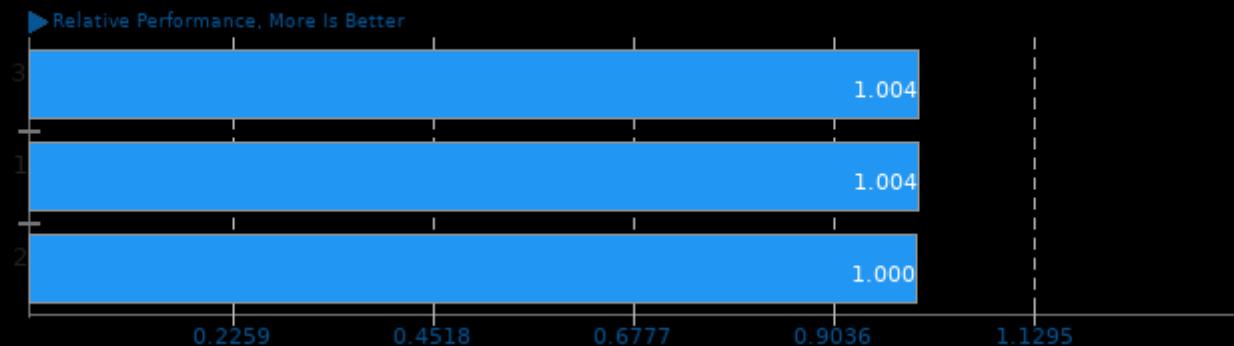
Result Composite - Ryzen 3 2200G 2021



Geometric mean based upon tests: pts/basis, pts/astcenc and pts/build-godot

## Geometric Mean Of Imaging Tests

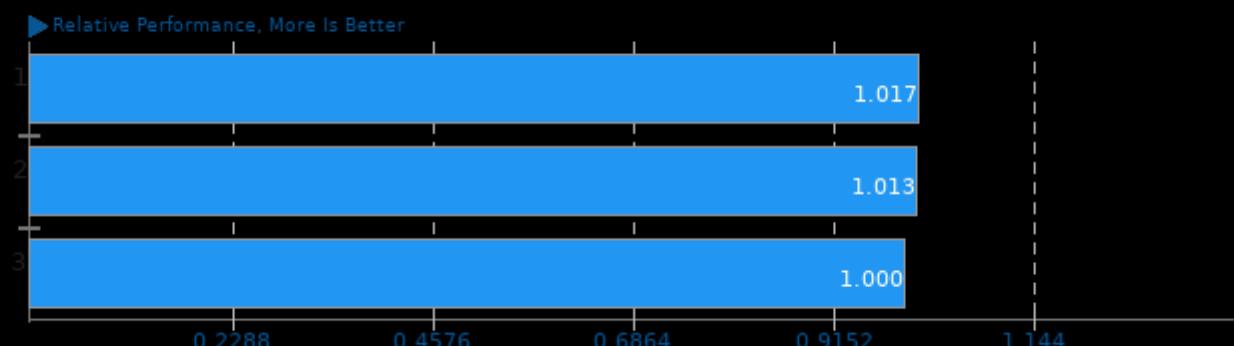
Result Composite - Ryzen 3 2200G 2021



Geometric mean based upon tests: pts/libraw, pts/webp, system/rawtherapee, system/gimp, system/hugin and system/darktable

## Geometric Mean Of Common Kernel Benchmarks Tests

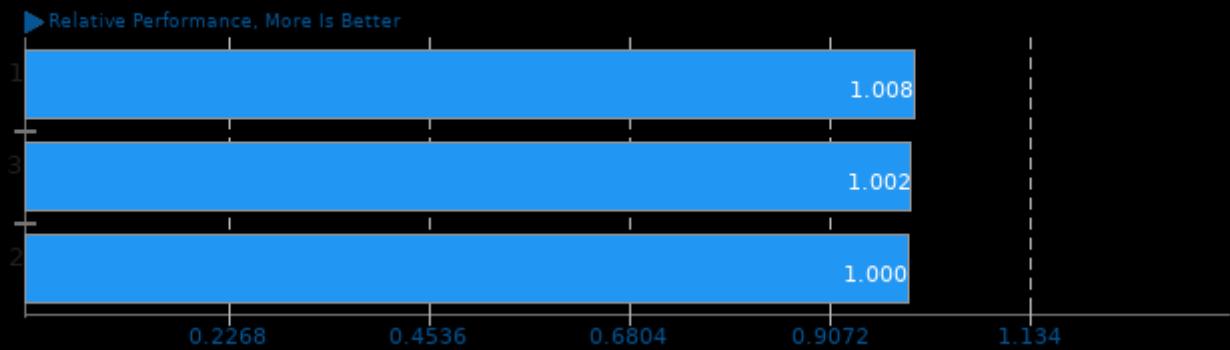
Result Composite - Ryzen 3 2200G 2021



Geometric mean based upon tests: pts/sqlite-speedtest and pts/osbench

## Geometric Mean Of Machine Learning Tests

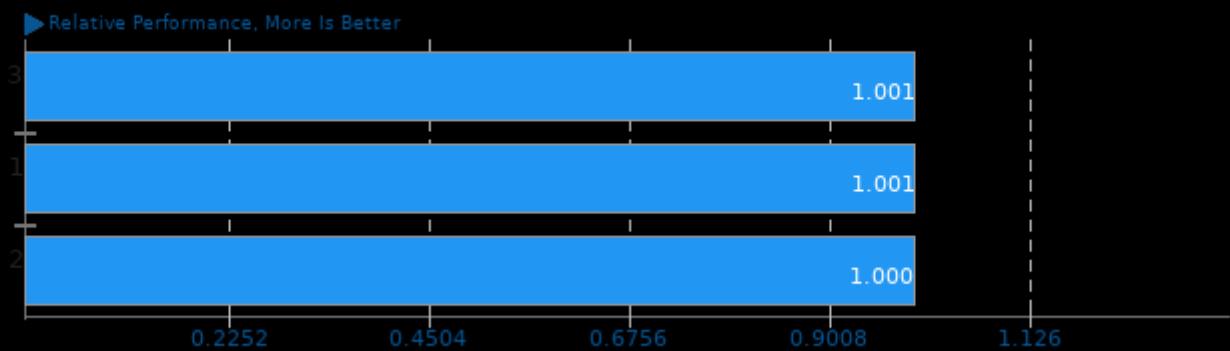
Result Composite - Ryzen 3 2200G 2021



Geometric mean based upon tests: pts/mnn, pts/ncnn, pts/tnn, pts/caffe, pts/numpy, pts/rnnoise, pts/tensorflow-lite, pts/oneden and pts/lczero

## Geometric Mean Of Molecular Dynamics Tests

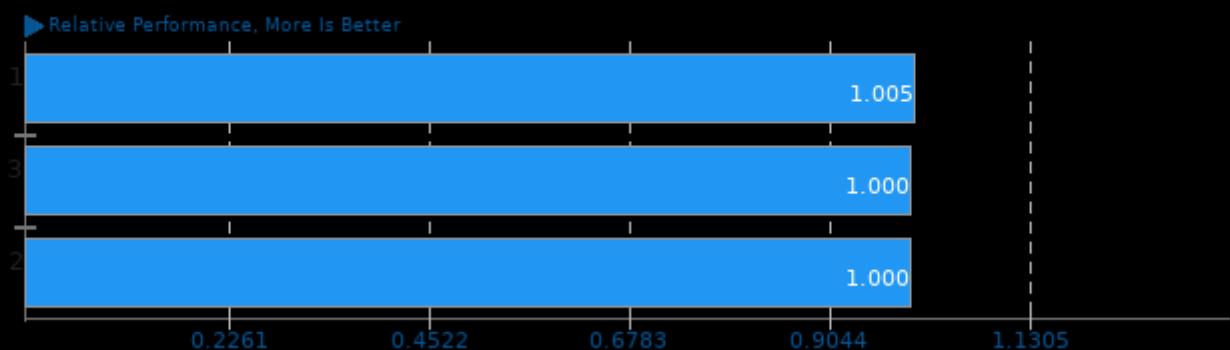
Result Composite - Ryzen 3 2200G 2021



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

## Geometric Mean Of MPI Benchmarks Tests

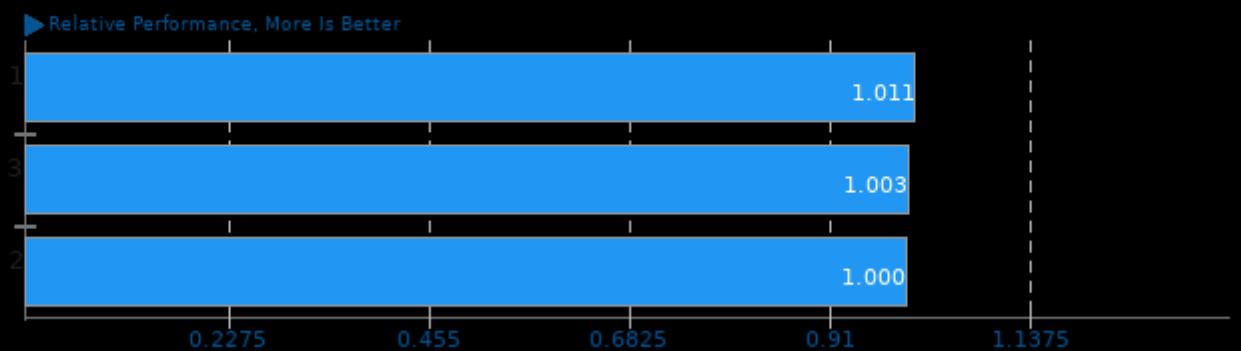
Result Composite - Ryzen 3 2200G 2021



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

**Geometric Mean Of NVIDIA GPU Compute Tests**

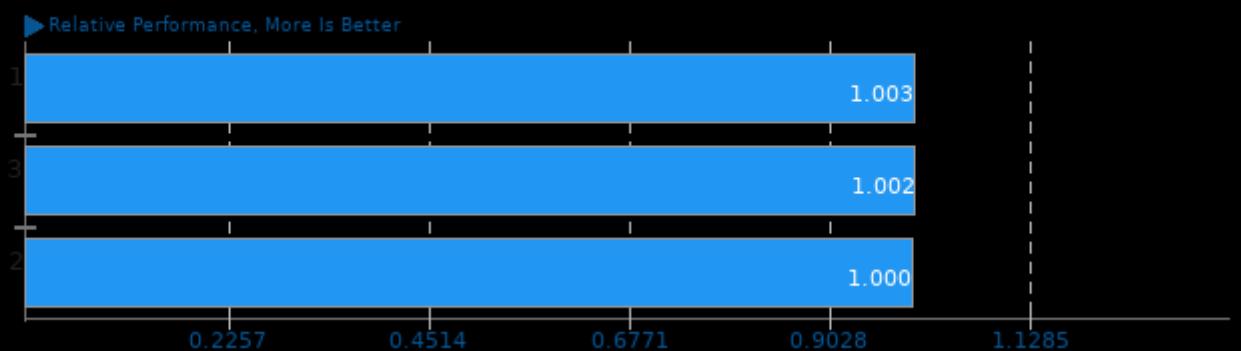
Result Composite - Ryzen 3 2200G 2021



Geometric mean based upon tests: pts/gromacs, pts/lczero, pts/indigobench, pts/caffe, pts/ncnn, pts/realsr-ncnn and pts/waifu2x-ncnn

**Geometric Mean Of Intel oneAPI Tests**

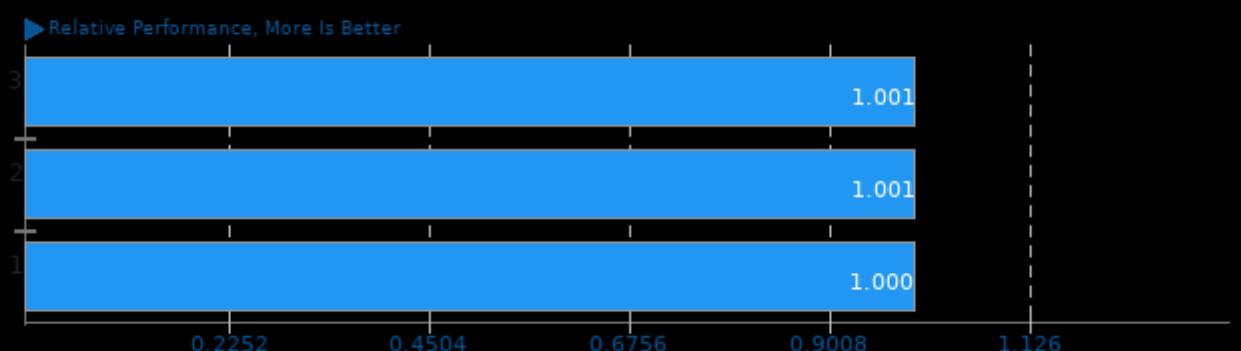
Result Composite - Ryzen 3 2200G 2021



Geometric mean based upon tests: pts/embree and pts/oneden

**Geometric Mean Of OpenMPI Tests**

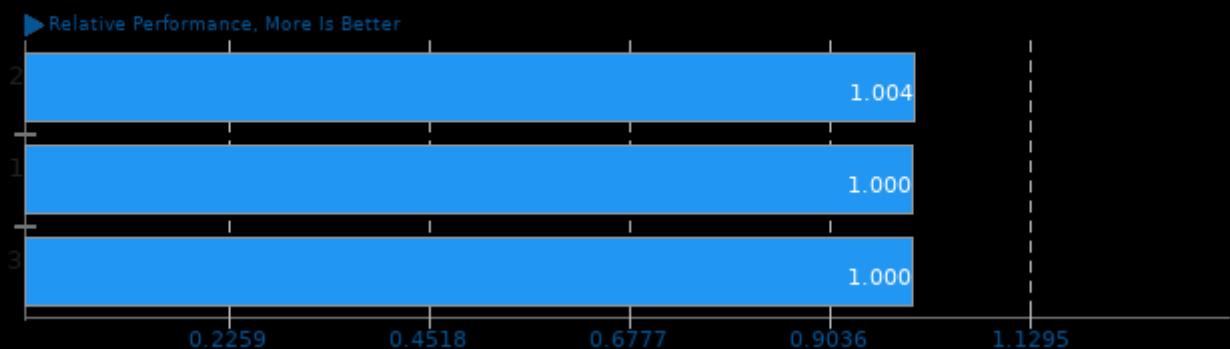
Result Composite - Ryzen 3 2200G 2021



Geometric mean based upon tests: pts/lulesh, pts/gromacs, pts/openfoam, pts/incompact3d, pts/lammps, pts/cp2k, pts/mocassin, pts/amg and pts/cloverleaf

## Geometric Mean Of Programmer / Developer System Benchmarks Tests

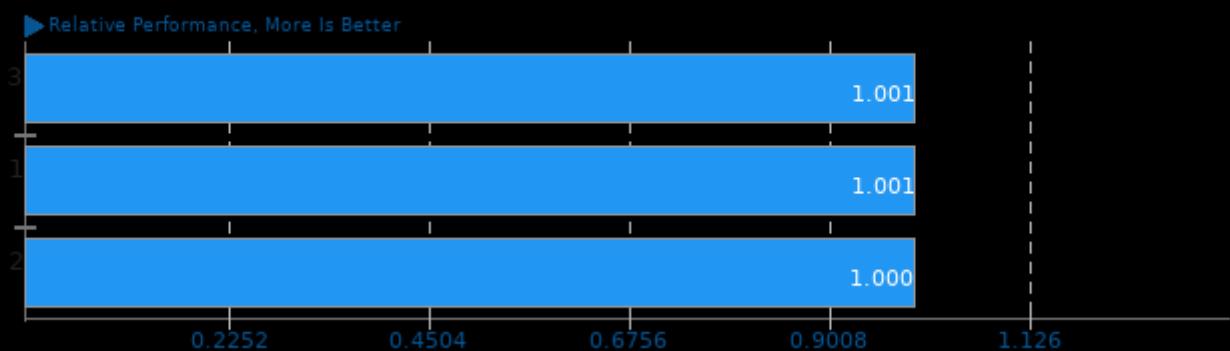
Result Composite - Ryzen 3 2200G 2021



Geometric mean based upon tests: pts/simdjson, pts/sqlite-speedtest, pts/node-web-tooling, pts/compress-zstd, pts/build-eigen, pts/build-ffmpeg, pts/build2, pts/build-godot and pts/amg

## Geometric Mean Of Python Tests

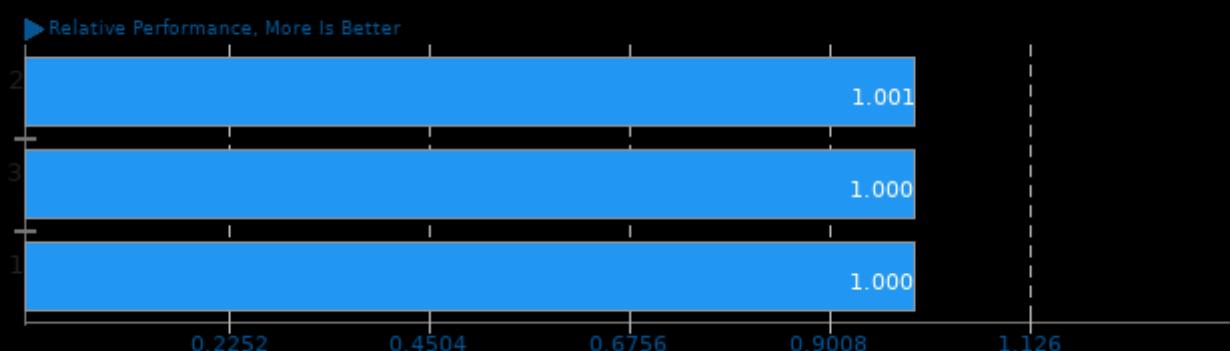
Result Composite - Ryzen 3 2200G 2021



Geometric mean based upon tests: pts/numpy, pts/caffe, system/ocrmypdf, pts/build-godot and pts/glmark2

## Geometric Mean Of Scientific Computing Tests

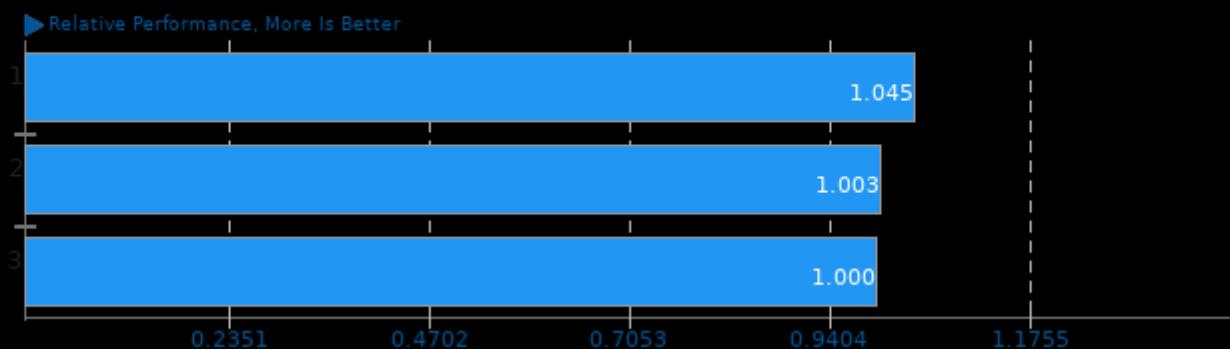
Result Composite - Ryzen 3 2200G 2021



Geometric mean based upon tests: pts/ffte, pts/amg, pts/namd, pts/gromacs, pts/cp2k, pts/dolfin, pts/cloverleaf, pts/lammps, pts/lulesh, pts/incompact3d, pts/openfoam, pts/hmmer, pts/mafft, pts/mocassin and pts/kripke

## Geometric Mean Of Server Tests

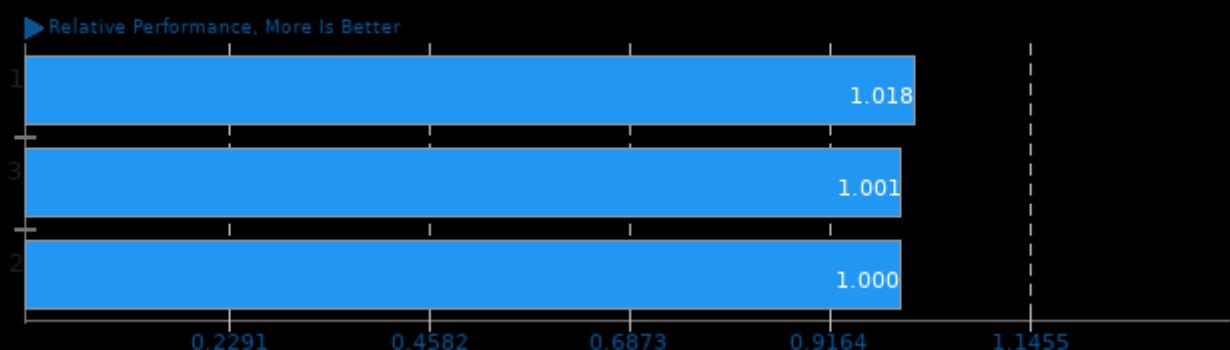
Result Composite - Ryzen 3 2200G 2021



Geometric mean based upon tests: pts/redis, pts/keydb, pts/phpbench, pts/simdjson, pts/node-web-tooling, pts/sqlite-speedtest and pts/influxdb

## Geometric Mean Of Server CPU Tests

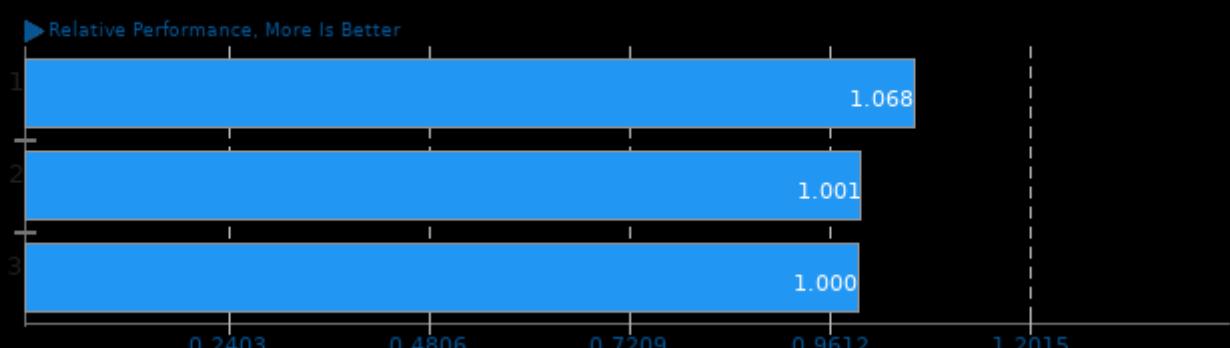
Result Composite - Ryzen 3 2200G 2021



Geometric mean based upon tests: pts/cp2k, pts/namd, pts/onnednn, pts/x265, pts/dav1d, pts/stockfish, pts/asfmish, pts/compress-zstd, system/gimp, pts/redis, pts/numpy and pts/phpbench

## Geometric Mean Of Single-Threaded Tests

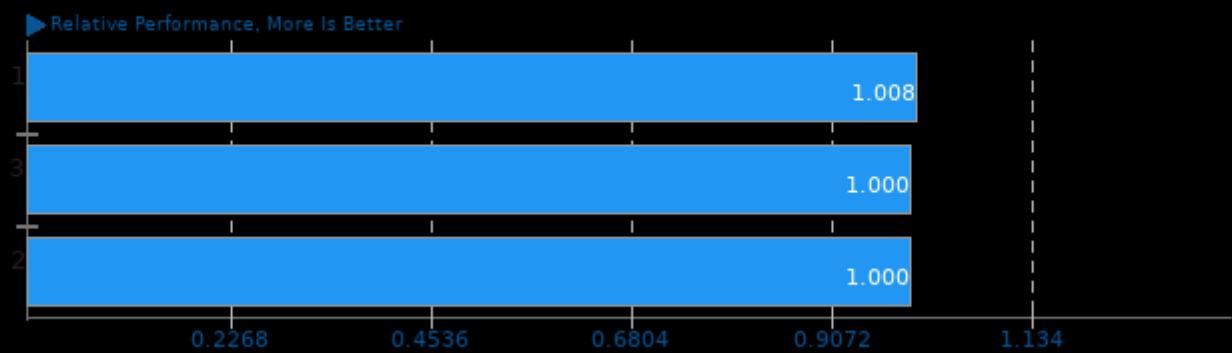
Result Composite - Ryzen 3 2200G 2021



Geometric mean based upon tests: pts/byte, pts/humpy, pts/espeak, pts/redis, pts/phpbench and pts/hint

## Geometric Mean Of Speech Tests

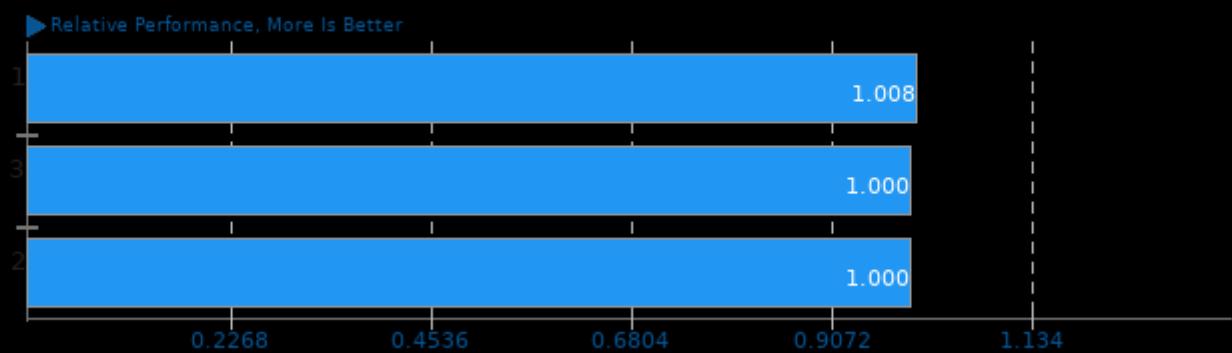
Result Composite - Ryzen 3 2200G 2021



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

## Geometric Mean Of Telephony Tests

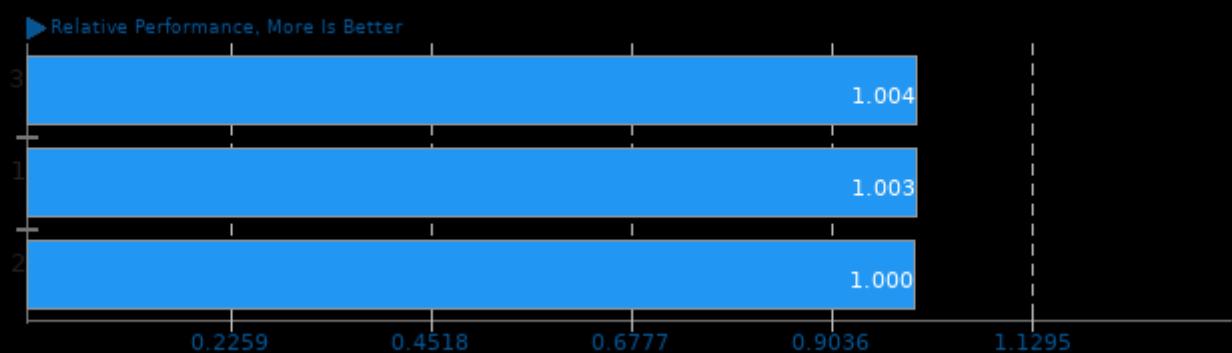
Result Composite - Ryzen 3 2200G 2021



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

## Geometric Mean Of Texture Compression Tests

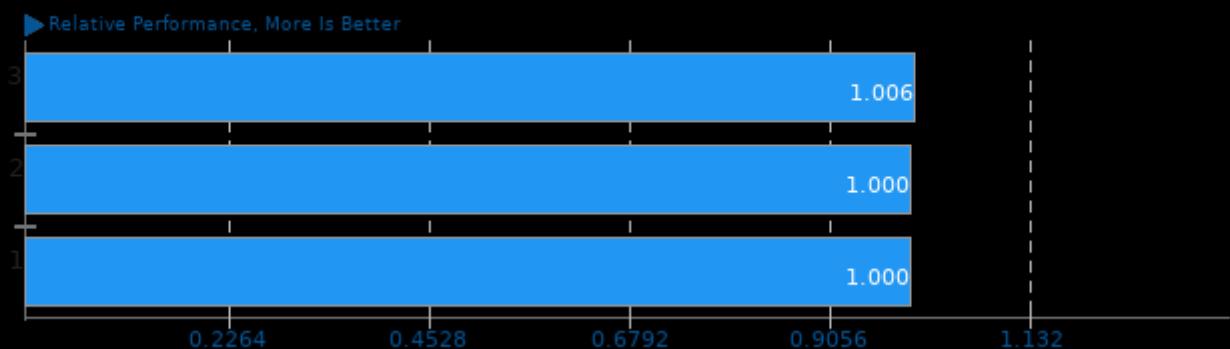
Result Composite - Ryzen 3 2200G 2021



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

## Geometric Mean Of Video Encoding Tests

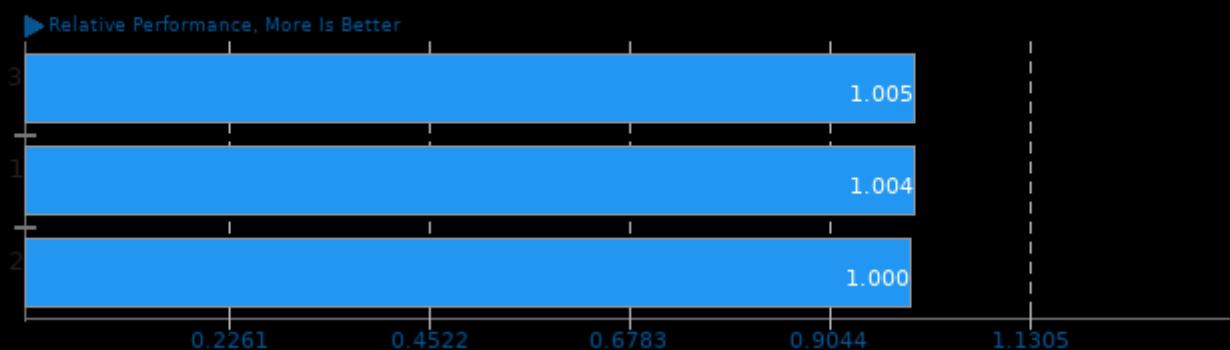
Result Composite - Ryzen 3 2200G 2021



Geometric mean based upon tests: pts/x265, pts/kvazaar, pts/dav1d, pts/aom-av1 and pts/rav1e

## Geometric Mean Of Vulkan Compute Tests

Result Composite - Ryzen 3 2200G 2021



Geometric mean based upon tests: pts/ncnn, pts/realsr-ncnn and pts/waifu2x-ncnn

*This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 00:45.*