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## 1275 june

Intel Xeon E3-1275 v6 testing with a ASUS P10S-M WS (4401 BIOS) and Intel HD P630 on Ubuntu 20.04 via the Phoronix Test Suite.

### Automated Executive Summary

*1 had the most wins, coming in first place for 28% of the tests.*

*Based on the geometric mean of all complete results, the fastest (3) was 1.002x the speed of the slowest (4). 1 was 0.999x the speed of 3, 2 was 1x the speed of 1, 4 was 0.999x the speed of 2.*

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

*AOM AV1 (Encoder Mode: Speed 0 Two-Pass - Input: Bosphorus 1080p) at 1.048x*

*SVT-AV1 (Encoder Mode: Preset 4 - Input: Bosphorus 1080p) at 1.028x*

*Embree (Binary: Pathtracer - Model: Asian Dragon Obj) at 1.027x*

*srsLTE (Test: OFDM\_Test) at 1.026x*

*SVT-AV1 (Encoder Mode: Preset 4 - Input: Bosphorus 4K) at 1.024x*

*GROMACS (Implementation: MPI CPU - Input: water\_GMX50\_bare) at 1.024x*

*Embree (Binary: Pathtracer ISPC - Model: Asian Dragon) at 1.023x*

*Embree (Binary: Pathtracer - Model: Asian Dragon) at 1.022x*

*LuaRadio (Test: Complex Phase) at 1.022x*

Sysbench (Test: RAM / Memory) at 1.021x.

## Test Systems:

**1**

**2**

**3**

**4**

Processor: Intel Xeon E3-1275 v6 @ 4.20GHz (4 Cores / 8 Threads), Motherboard: ASUS P10S-M WS (4401 BIOS), Chipset: Intel Xeon E3-1200 v6/7th, Memory: 16GB, Disk: Samsung SSD 970 EVO Plus 500GB, Graphics: Intel HD P630 (1150MHz), Audio: Realtek ALC1150, Monitor: DELL S2409W, Network: 2 x Intel I210

OS: Ubuntu 20.04, Kernel: 5.9.0-050900rc8daily20201007-generic (x86\_64) 20201006, Display Server: X Server 1.20.8, OpenCL: OpenCL 2.1, Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: Transparent Huge Pages: madvise

Compiler Notes: --build=x86\_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale-gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-9-HskZEA/gcc-9.3.0/debian/tmp-nvptx/usr,hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86\_64-linux-gnu --program-prefix=x86\_64-linux-gnu- --target=x86\_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v

Processor Notes: Scaling Governor: intel\_pstate powersave - CPU Microcode: 0xde - ThermalD 1.9.1

Python Notes: Python 3.8.5

Security Notes: i1lb\_multihit: KVM: Mitigation of VMX disabled + l1tf: Mitigation of PTE Inversion; VMX: conditional cache flushes SMT vulnerable + mds: Mitigation of Clear buffers; SMT vulnerable + meltdown: Mitigation of PTI + spec\_store\_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre\_v1: Mitigation of usercopy/swaps barriers and \_\_user pointer sanitization + spectre\_v2: Mitigation of Full generic retpoline IBPB: conditional IBRS\_FW STIBP: conditional RSB filling + srbs: Mitigation of Microcode + tsx\_async\_abort: Mitigation of Clear buffers; SMT vulnerable

	1	2	3	4
<b>Timed LLVM Compilation - Unix</b>	<b>1616</b>	1611	<b>1606</b>	1615
<b>Makefiles (sec)</b>				
Normalized	99.38%	99.64%	100%	99.42%
Standard Deviation	0.3%			
<b>Timed LLVM Compilation - Ninja (sec)</b>	1592	1593	<b>1591</b>	<b>1593</b>
Normalized	99.91%	99.88%	100%	99.88%
Standard Deviation	0%			
<b>Helsing - 14 digit (sec)</b>	<b>1167</b>	1160	1150	<b>1150</b>
Normalized	98.5%	99.08%	100%	100%
Standard Deviation	2.7%			
<b>Timed Node.js Compilation - Time To Compile (sec)</b>	1017	<b>1017</b>	<b>1016</b>	1017
Normalized	99.87%	99.86%	100%	99.92%
Standard Deviation	0%			

KTX-Software toktx - U.4.Z.C.1 (sec)	779.275	<b>779.507</b>	779.269	<b>779.122</b>
Normalized	99.98%	99.95%	99.98%	100%
Standard Deviation	0%			
CP2K Molecular Dynamics - Fayalite-FIST (sec)	1030	<b>1029</b>	<b>1037</b>	
Normalized	99.87%	100%	99.22%	
Xmrig - Monero - 1M (H/s)	<b>1635</b>	1636	1636	<b>1638</b>
Normalized	99.86%	99.87%	99.9%	100%
Standard Deviation	0.1%			
BRL-CAD - V.P.M (VGR Performance Metric)	54865	54798	<b>54555</b>	<b>54971</b>
Normalized	99.81%	99.69%	99.24%	100%
Xmrig - Wownero - 1M (H/s)	2316	<b>2319</b>	2318	<b>2314</b>
Normalized	99.86%	100%	99.95%	99.79%
Standard Deviation	0.1%			
AOM AV1 - Speed 4 Two-Pass - Bosphorus 4K (FPS)	1.94	1.94	1.94	1.94
Standard Deviation	0.3%			
GNU Radio - Hilbert Transform (MiB/s)	506.4	<b>508.7</b>	506.6	<b>503.1</b>
Normalized	99.55%	100%	99.59%	98.9%
Standard Deviation	0.8%			
GNU Radio - F.D.F (MiB/s)	<b>684.8</b>	<b>681.7</b>	683.3	683.7
Normalized	100%	99.55%	99.78%	99.84%
Standard Deviation	0.3%			
GNU Radio - IIR Filter (MiB/s)	<b>541.4</b>	540.9	<b>540</b>	540.8
Normalized	100%	99.91%	99.74%	99.89%
Standard Deviation	0.1%			
GNU Radio - FIR Filter (MiB/s)	665.1	<b>669.9</b>	663.2	<b>661.1</b>
Normalized	99.28%	100%	99%	98.69%
Standard Deviation	0.3%			
GNU Radio - S.S.C (MiB/s)	2445	<b>2450</b>	2450	<b>2444</b>
Normalized	99.8%	100%	99.98%	99.73%
Standard Deviation	0.3%			
GNU Radio - F.b.t.B.F.F (MiB/s)	<b>637.3</b>	643.9	641.5	<b>644.6</b>
Normalized	98.87%	99.89%	99.52%	100%
Standard Deviation	0.4%			
GROMACS - MPI CPU - water_GMX50_bare (Ns/Day)	<b>0.556</b>	<b>0.543</b>	0.555	0.551
Normalized	100%	97.66%	99.82%	99.1%
Standard Deviation	0.3%			
Intel Open Image Denoise - AOM AV1 - Speed 0 Two-Pass - Bosphorus 4K (FPS)	0.09	0.09	0.09	0.09
Standard Deviation	0%			
RTLightmap.hdr.4096x4096 (Images / Sec)	0.07	0.07	0.07	0.07
Standard Deviation	0%			
SecureMark - SecureMark-TLS	<b>238497</b>	<b>239752</b>	238509	238756
Normalized	99.48%	100%	99.48%	99.58%
Standard Deviation	0.1%			
GNU GMP GMPbench - Total Time (GMPbench Score)	<b>5184</b>	<b>5211</b>	5190	5186
Normalized	99.49%	100%	99.61%	99.53%

<b>NAS Parallel Benchmarks - SP.C</b>	5240	<b>5248</b>	5241	<b>5213</b>
(Mop/s)				
Normalized	99.85%	100%	99.87%	99.34%
Standard Deviation	0%			
<b>LuaRadio - Complex Phase (MiB/s)</b>	573.4	<b>565.8</b>	576.2	<b>578.1</b>
Normalized	99.19%	97.87%	99.67%	100%
Standard Deviation	0.9%			
<b>LuaRadio - Hilbert Transform (MiB/s)</b>	72.9	<b>72.8</b>	72.9	<b>73.1</b>
Normalized	99.73%	99.59%	99.73%	100%
Standard Deviation	0.2%			
<b>LuaRadio - F.D.F (MiB/s)</b>	405.6	405.6	<b>406.4</b>	<b>402.8</b>
Normalized	99.8%	99.8%	100%	99.11%
Standard Deviation	0.1%			
<b>LuaRadio - F.b.t.B.F.F (MiB/s)</b>	<b>667.6</b>	<b>667.6</b>	668.8	<b>669.1</b>
Normalized	99.78%	99.78%	99.96%	100%
Standard Deviation	0.3%			
<b>NAS Parallel Benchmarks - EP.D</b>	<b>576.60</b>	<b>588.21</b>	587.1	587.85
(Mop/s)				
Normalized	98.03%	100%	99.81%	99.94%
Standard Deviation	2.9%			
<b>AOM AV1 - Speed 6 Two-Pass - Bosphorus 4K (FPS)</b>	3.66	3.66	3.66	3.66
Standard Deviation	0.2%			
<b>srsRAN - 5.P.T.2.P.S.2.Q (UE Mb/s)</b>	<b>71.8</b>	71.9	<b>72.1</b>	72
Normalized	99.58%	99.72%	100%	99.86%
Standard Deviation	0.2%			
<b>srsRAN - 5.P.T.2.P.S.2.Q (eNb Mb/s)</b>	<b>130.1</b>	<b>130.1</b>	130.4	<b>130.7</b>
Normalized	99.54%	99.54%	99.77%	100%
Standard Deviation	0.3%			
<b>libgav1 - C.1.1.b (FPS)</b>	40.73	40.72	<b>40.76</b>	<b>40.63</b>
Normalized	99.93%	99.9%	100%	99.68%
Standard Deviation	0.1%			
<b>SVT-AV1 - Preset 4 - Bosphorus 4K (FPS)</b>	<b>0.767</b>	0.765	0.766	<b>0.749</b>
Normalized	100%	99.74%	99.87%	97.65%
Standard Deviation	0.1%			
<b>Timed Linux Kernel Compilation - Time To Compile (sec)</b>	<b>199.756</b>	201.148	<b>201.358</b>	201.168
Normalized	100%	99.31%	99.2%	99.3%
Standard Deviation	0.7%			
<b>VP9 libvpx Encoding - Speed 0 - Bosphorus 4K (FPS)</b>	<b>3.17</b>	3.18	3.18	<b>3.19</b>
Normalized	99.37%	99.69%	99.69%	100%
Standard Deviation	0.2%			
<b>Xcompact3d Incompact3d - i.i.1.C.P.D</b>	180.771261	<b>180.650314</b>	180.711319	<b>181.330582</b>
(sec)				
Normalized	99.93%	100%	99.97%	99.62%
Standard Deviation	0.1%			
<b>SVT-HEVC - 1 - Bosphorus 1080p</b>	<b>3.33</b>	<b>3.33</b>	<b>3.34</b>	<b>3.34</b>
Normalized	99.7%	99.7%	100%	100%
Standard Deviation	0.2%			

<b>NAS Parallel Benchmarks - BT.C</b>	<b>16197</b>	16204	16218	<b>16261</b>
	(Mop/s)			
Normalized	99.61%	99.65%	99.74%	100%
Standard Deviation	0.2%			
<b>AOM AV1 - Speed 4 Two-Pass -</b>	4.25	<b>4.24</b>	<b>4.26</b>	4.25
<b>Bosphorus 1080p (FPS)</b>				
Normalized	99.77%	99.53%	100%	99.77%
Standard Deviation	0%			
<b>Intel Open Image Denoise -</b>	0.19	0.19	0.19	0.19
<b>RT.hdr_alb_nrm.3840x2160 (Images / Sec)</b>				
Standard Deviation	0%			
<b>Intel Open Image Denoise -</b>	0.19	0.19	0.19	0.19
<b>RT.ldr_alb_nrm.3840x2160 (Images / Sec)</b>				
Standard Deviation	0%			
<b>ASTC Encoder - Exhaustive (sec)</b>	<b>150.2763</b>	<b>150.3716</b>	150.2922	150.3307
Normalized	100%	99.94%	99.99%	99.96%
Standard Deviation	0.1%			
<b>Timed HMMer Search - P.D.S (sec)</b>	140.910	<b>140.785</b>	<b>141.017</b>	140.886
Normalized	99.91%	100%	99.84%	99.93%
Standard Deviation	0%			
<b>Embree - Pathtracer - Asian Dragon</b>	<b>4.9973</b>	5.0242	5.1296	<b>5.132</b>
<b>Obj (FPS)</b>				
Normalized	97.38%	97.9%	99.95%	100%
Standard Deviation	0.5%			
<b>Embree - Pathtracer - Crown (FPS)</b>	4.5522	4.5593	<b>4.5771</b>	<b>4.539</b>
Normalized	99.46%	99.61%	100%	99.17%
Standard Deviation	0.9%			
<b>Basis Universal - UASTC Level 3 (sec)</b>	133.336	<b>133.37</b>	<b>133.298</b>	133.359
Normalized	99.97%	99.95%	100%	99.95%
Standard Deviation	0%			
<b>Timed MrBayes Analysis - P.P.A (sec)</b>	<b>130.438</b>	129.947	<b>129.733</b>	129.953
Normalized	99.46%	99.84%	100%	99.83%
Standard Deviation	0.4%			
<b>Timed FFmpeg Compilation - Time To Compile (sec)</b>	<b>124.936</b>	125.108	<b>125.278</b>	125.001
Normalized	100%	99.86%	99.73%	99.95%
Standard Deviation	0.2%			
<b>Embree - Pathtracer ISPC - Asian Dragon Obj (FPS)</b>	<b>5.6719</b>	5.7302	<b>5.7695</b>	5.7396
Normalized	98.31%	99.32%	100%	99.48%
Standard Deviation	0.1%			
<b>NAS Parallel Benchmarks - LU.C</b>	<b>17096</b>	<b>17215</b>	17097	17209
	(Mop/s)			
Normalized	99.31%	100%	99.32%	99.97%
Standard Deviation	0.3%			
<b>Embree - Pathtracer ISPC - Crown</b>	5.2077	<b>5.2205</b>	<b>5.2057</b>	5.2144
<b>(FPS)</b>				
Normalized	99.75%	100%	99.72%	99.88%
Standard Deviation	0.2%			

Timed GDB GNU Debugger	<b>118.130</b>	118.682	<b>118.773</b>	118.419
Compilation - Time To Compile (sec)				
Normalized	100%	99.53%	99.46%	99.76%
Standard Deviation	0.2%			
Timed Mesa Compilation - Time To Compile (sec)	<b>115.505</b>	<b>115.742</b>	115.632	115.594
Normalized	100%	99.8%	99.89%	99.92%
Standard Deviation	0.1%			
Mobile Neural Network - inception-v3 (ms)	48.692	<b>49.18</b>	49	<b>48.222</b>
Normalized	99.03%	98.05%	98.41%	100%
Standard Deviation	1.2%			
Mobile Neural Network - mobilenet-v1-1.0 (ms)	4.092	<b>4.11</b>	4.099	<b>4.069</b>
Normalized	99.44%	99%	99.27%	100%
Standard Deviation	0.3%			
Mobile Neural Network - MobileNetV2_224 (ms)	3.590	3.605	<b>3.626</b>	<b>3.563</b>
Normalized	99.25%	98.83%	98.26%	100%
Standard Deviation	0.5%			
Mobile Neural Network - resnet-v2-50 (ms)	<b>39.980</b>	39.743	39.955	<b>39.733</b>
Normalized	99.38%	99.97%	99.44%	100%
Standard Deviation	0.1%			
Mobile Neural Network - SqueezeNetV1.0 (ms)	<b>6.732</b>	<b>6.692</b>	6.696	6.717
Normalized	99.41%	100%	99.94%	99.63%
Standard Deviation	0.2%			
Embree - Pathtracer - Asian Dragon (FPS)	5.5129	<b>5.4586</b>	<b>5.5777</b>	5.5576
Normalized	98.84%	97.86%	100%	99.64%
Standard Deviation	0.9%			
oneDNN - R.N.N.T - f32 - CPU (ms)	6778	<b>6778</b>	<b>6771</b>	6775
Normalized	99.9%	99.89%	100%	99.93%
Standard Deviation	0.2%			
oneDNN - R.N.N.T - u8s8f32 - CPU	6768	<b>6773</b>	<b>6763</b>	6770
Normalized	99.93%	99.85%	100%	99.89%
Standard Deviation	0%			
oneDNN - R.N.N.T - bf16bf16bf16 - CPU (ms)	<b>6769</b>	<b>6767</b>	6767	6767
Normalized	99.98%	100%	99.99%	100%
Standard Deviation	0%			
Embree - Pathtracer ISPC - Asian Dragon (FPS)	6.4542	<b>6.3638</b>	<b>6.5104</b>	6.4811
Normalized	99.14%	97.75%	100%	99.55%
Standard Deviation	0.9%			
AOM AV1 - Speed 0 Two-Pass - Bosphorus 1080p (FPS)	<b>0.21</b>	<b>0.21</b>	<b>0.22</b>	<b>0.21</b>
Normalized	95.45%	95.45%	100%	95.45%
Standard Deviation	2.7%			
Sysbench - CPU (Events/sec)	8484	<b>8481</b>	8485	<b>8485</b>
Normalized	99.99%	99.95%	100%	100%
Standard Deviation	0%			

<b>oneDNN - R.N.N.I - f32 - CPU (ms)</b>	3592	<b>3594</b>	3592	<b>3591</b>
Normalized	99.98%	99.91%	99.97%	100%
Standard Deviation	0.3%			
<b>oneDNN - R.N.N.I - u8s8f32 - CPU (ms)</b>	3589	<b>3591</b>	<b>3585</b>	<b>3592</b>
Normalized	99.9%	99.83%	100%	99.8%
Standard Deviation	0.1%			
<b>oneDNN - R.N.N.I - bf16bf16bf16 - CPU (ms)</b>	3591	<b>3590</b>	<b>3593</b>	3592
Normalized	99.96%	100%	99.92%	99.94%
Standard Deviation	0.1%			
<b>VP9 libvpx Encoding - Speed 0 - Bosphorus 1080p (FPS)</b>	<b>7.51</b>	<b>7.45</b>	7.46	<b>7.45</b>
Normalized	100%	99.2%	99.33%	99.2%
Standard Deviation	0.4%			
<b>AOM AV1 - Speed 6 Realtime - Bosphorus 4K (FPS)</b>	7.50	<b>7.48</b>	<b>7.51</b>	7.49
Normalized	99.87%	99.6%	100%	99.73%
Standard Deviation	0.1%			
<b>libgav1 - Summer Nature 4K (FPS)</b>	46.81	46.79	<b>46.85</b>	<b>46.47</b>
Normalized	99.91%	99.87%	100%	99.19%
Standard Deviation	0.2%			
<b>SVT-AV1 - Preset 8 - Bosphorus 4K (FPS)</b>	<b>7.994</b>	7.969	7.989	<b>7.956</b>
Normalized	100%	99.69%	99.94%	99.52%
Standard Deviation	0.6%			
<b>srsRAN - 4.P.1.P.M.2.Q (UE Mb/s)</b>	124.4	<b>124.6</b>	<b>124.2</b>	<b>124.2</b>
Normalized	99.84%	100%	99.68%	99.68%
Standard Deviation	0.4%			
<b>srsRAN - 4.P.1.P.M.2.Q (eNb Mb/s)</b>	376.0	<b>376.7</b>	375.8	<b>374.4</b>
Normalized	99.81%	100%	99.76%	99.39%
Standard Deviation	0.6%			
<b>NAS Parallel Benchmarks - SP.B (Mop/s)</b>	5136	<b>5147</b>	5136	<b>5104</b>
Normalized	99.77%	100%	99.78%	99.15%
Standard Deviation	0%			
<b>SVT-AV1 - Preset 4 - Bosphorus 1080p (FPS)</b>	2.359	<b>2.386</b>	2.364	<b>2.32</b>
Normalized	98.87%	100%	99.08%	97.23%
Standard Deviation	0.5%			
<b>Basis Universal - UASTC Level 2 (sec)</b>	<b>67.535</b>	67.529	<b>67.516</b>	67.525
Normalized	99.97%	99.98%	100%	99.99%
Standard Deviation	0%			
<b>AOM AV1 - Speed 6 Two-Pass - Bosphorus 1080p (FPS)</b>	11.48	<b>11.45</b>	<b>11.49</b>	<b>11.45</b>
Normalized	99.91%	99.65%	100%	99.65%
Standard Deviation	0.3%			
<b>PJSIP - INVITE (Responses/sec)</b>	<b>4001</b>	3999	<b>3994</b>	3996
Normalized	100%	99.95%	99.83%	99.88%
Standard Deviation	0%			
<b>VP9 libvpx Encoding - Speed 5 - Bosphorus 4K (FPS)</b>	<b>9.59</b>	<b>9.52</b>	9.54	<b>9.52</b>
Normalized	100%	99.27%	99.48%	99.27%
Standard Deviation	0.1%			

PJSIP - OPTIONS, Stateful (Responses/sec)	7782	<b>7764</b>	7783	<b>7789</b>
Normalized	99.91%	99.68%	99.92%	100%
Standard Deviation	0.1%			
srsRAN - 4.P.1.P.M.6.Q (UE Mb/s)	<b>114.4</b>	114.3	114.3	<b>113.6</b>
Normalized	100%	99.91%	99.91%	99.3%
Standard Deviation	0.1%			
srsRAN - 4.P.1.P.M.6.Q (eNb Mb/s)	343.3	<b>342.5</b>	<b>343.9</b>	<b>343.9</b>
Normalized	99.83%	99.59%	100%	100%
Standard Deviation	0.2%			
libgav1 - Chimera 1080p (FPS)	152.92	<b>151.98</b>	<b>153.02</b>	152.1
Normalized	99.93%	99.32%	100%	99.4%
Standard Deviation	0%			
Stockfish - Total Time (Nodes/s)	111116784	<b>11204831</b>	11157913	<b>11115255</b>
Normalized	99.21%	100%	99.58%	99.2%
Standard Deviation	0.9%			
Xcompact3d Incompact3d - i.i.1.C.P.D	53.3612290 (sec)	<b>53.2730637</b>	<b>53.4083862</b>	53.3947983
Normalized	99.83%	100%	99.75%	99.77%
Standard Deviation	0.2%			
srsLTE - PHY_DL_Test (UE Mb/s)	94.6	<b>95.7</b>	<b>95.7</b>	<b>94.5</b>
Normalized	98.85%	100%	100%	98.75%
Standard Deviation	1.2%			
srsLTE - PHY_DL_Test (eNb Mb/s)	249.5	249.5	<b>249.9</b>	<b>248.5</b>
Normalized	99.84%	99.84%	100%	99.44%
Standard Deviation	0.3%			
NAS Parallel Benchmarks - FT.C (Mop/s)	<b>9217</b>	<b>9295</b>	9294	9244
Normalized	99.16%	100%	99.99%	99.45%
Standard Deviation	0.3%			
dav1d - C.1.1.b (FPS)	268.49	<b>268.71</b>	268.54	<b>268.18</b>
Normalized	99.92%	100%	99.94%	99.8%
Standard Deviation	0.2%			
AOM AV1 - Speed 6 Realtime - Bosphorus 1080p (FPS)	13.83	13.76	<b>13.86</b>	<b>13.74</b>
Normalized	99.78%	99.28%	100%	99.13%
Standard Deviation	0%			
srsLTE - OFDM_Test (Samples / Second)	105566667	<b>107200000</b>	<b>104500000</b>	106900000
Normalized	98.48%	100%	97.48%	99.72%
Standard Deviation	0.4%			
srsRAN - OFDM_Test (Samples / Second)	<b>109566667</b>	<b>108000000</b>	108900000	108400000
Normalized	100%	98.57%	99.39%	98.94%
Standard Deviation	0.4%			
NAS Parallel Benchmarks - CG.C (Mop/s)	<b>3692</b>	3691	3687	<b>3683</b>
Normalized	100%	99.97%	99.86%	99.77%
Standard Deviation	0.1%			
dav1d - Summer Nature 4K (FPS)	95.34	<b>95.57</b>	95.36	<b>95.05</b>
Normalized	99.76%	100%	99.78%	99.46%
Standard Deviation	0.1%			
srsRAN - 5.P.T.5.P.S.6.Q (UE Mb/s)	<b>52.8</b>	<b>52.8</b>	<b>52.8</b>	<b>52.7</b>
Normalized	100%	100%	100%	99.81%

	Standard Deviation	0.3%		
srsRAN - 5.P.T.5.P.S.6.Q (eNb Mb/s)	115.6	<b>116.1</b>	<b>115.5</b>	115.7
Normalized	99.57%	100%	99.48%	99.66%
Standard Deviation	0.3%			
srsRAN - 4.P.1.P.S.2.Q (UE Mb/s)	<b>239.8</b>	240.5	<b>241.4</b>	239.9
Normalized	99.34%	99.63%	100%	99.38%
Standard Deviation	0.1%			
srsRAN - 4.P.1.P.S.2.Q (eNb Mb/s)	<b>379.5</b>	379.6	<b>379.5</b>	<b>380</b>
Normalized	99.87%	99.89%	99.87%	100%
Standard Deviation	0%			
Chia Blockchain VDF - Square Plain	128733	<b>128800</b>	<b>127700</b>	128600
C++ (IPS)				
Normalized	99.95%	100%	99.15%	99.84%
Standard Deviation	0.1%			
srsRAN - 4.P.1.P.S.6.Q (UE Mb/s)	201.3	<b>201.1</b>	201.2	<b>201.5</b>
Normalized	99.9%	99.8%	99.85%	100%
Standard Deviation	0.2%			
srsRAN - 4.P.1.P.S.6.Q (eNb Mb/s)	<b>348.7</b>	348.2	348.5	<b>347.4</b>
Normalized	100%	99.86%	99.94%	99.63%
Standard Deviation	0.1%			
PJSIP - OPTIONS, Stateless	<b>56587</b>	56590	<b>56690</b>	56677
(Responses/sec)				
Normalized	99.82%	99.82%	100%	99.98%
Standard Deviation	0.3%			
Basis Universal - ETC1S (sec)	34.501	<b>35.014</b>	<b>34.478</b>	34.569
Normalized	99.93%	98.47%	100%	99.74%
Standard Deviation	0.1%			
dav1d - Chimera 1080p (FPS)	356.15	356.06	<b>356.25</b>	<b>354.75</b>
Normalized	99.97%	99.95%	100%	99.58%
Standard Deviation	0.3%			
KTX-Software toktx - U.3.Z.C.1 (sec)	<b>32.959</b>	32.97	<b>33.069</b>	32.994
Normalized	100%	99.97%	99.67%	99.89%
Standard Deviation	0.1%			
Botan - AES-256 - Decrypt (MiB/s)	<b>4011</b>	4010	4010	<b>3987</b>
Normalized	100%	99.99%	99.99%	99.41%
Standard Deviation	0%			
Botan - AES-256 (MiB/s)	4015	<b>4016</b>	4015	<b>3988</b>
Normalized	99.98%	100%	99.99%	99.32%
Standard Deviation	0%			
ViennaCL - CPU BLAS - dGEMM-TT	15.9	15.9	15.9	15.9
(GFLOPs/s)				
Standard Deviation	0%			
ViennaCL - CPU BLAS - dGEMM-TN	<b>16.4</b>	<b>16.4</b>	<b>16.5</b>	<b>16.4</b>
(GFLOPs/s)				
Normalized	99.39%	99.39%	100%	99.39%
Standard Deviation	0%			
ViennaCL - CPU BLAS - dGEMM-NT	<b>15.4</b>	<b>15.4</b>	<b>15.4</b>	<b>15.3</b>
(GFLOPs/s)				
Normalized	100%	100%	100%	99.35%
Standard Deviation	0.4%			
ViennaCL - CPU BLAS - dGEMM-NN	15.8	15.8	15.8	15.8
(GFLOPs/s)				
Standard Deviation	0%			

ViennaCL - CPU BLAS - dGEMV-T (GB/s)	<b>30.2</b>	<b>30.3</b>	<b>30.3</b>	<b>30.2</b>
Normalized	99.67%	100%	100%	99.67%
Standard Deviation	0%			
ViennaCL - CPU BLAS - dGEMV-N (GB/s)	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>
ViennaCL - CPU BLAS - dDOT (GB/s)	<b>30.5</b>	<b>30.5</b>	<b>30.5</b>	<b>30.5</b>
Standard Deviation	0%			
ViennaCL - CPU BLAS - dAXPY (GB/s)	<b>29.7</b>	<b>29.7</b>	<b>29.8</b>	<b>29.8</b>
Normalized	99.66%	99.66%	100%	100%
Standard Deviation	0%			
ViennaCL - CPU BLAS - dCOPY (GB/s)	<b>19.9</b>	<b>19.9</b>	<b>19.9</b>	<b>19.9</b>
Standard Deviation	0%			
ViennaCL - CPU BLAS - sAXPY (GB/s)	<b>30.7</b>	<b>30.7</b>	<b>30.8</b>	<b>30.8</b>
Normalized	99.68%	99.68%	100%	100%
Standard Deviation	0.2%			
ViennaCL - CPU BLAS - sCOPY (GB/s)	<b>20.6</b>	<b>20.6</b>	<b>20.6</b>	<b>20.6</b>
Standard Deviation	0.3%			
Botan - ChaCha20Poly1305 - Decrypt (MiB/s)	<b>755.838</b>	<b>754.865</b>	755.484	755.708
Normalized	100%	99.87%	99.95%	99.98%
Standard Deviation	0.1%			
Botan - ChaCha20Poly1305 (MiB/s)	<b>760.804</b>	760.298	<b>759.725</b>	<b>760.921</b>
Normalized	99.98%	99.92%	99.84%	100%
Standard Deviation	0.1%			
Botan - Blowfish - Decrypt (MiB/s)	449.173	<b>450.58</b>	449.116	<b>448.814</b>
Normalized	99.69%	100%	99.68%	99.61%
Standard Deviation	0%			
Botan - Blowfish (MiB/s)	452.849	<b>451.874</b>	<b>452.93</b>	452.601
Normalized	99.98%	99.77%	100%	99.93%
Standard Deviation	0%			
Botan - Twofish - Decrypt (MiB/s)	<b>364.212</b>	364.534	<b>366.382</b>	365.736
Normalized	99.41%	99.5%	100%	99.82%
Standard Deviation	0.1%			
Botan - Twofish (MiB/s)	<b>363.083</b>	363.317	<b>365.144</b>	364.335
Normalized	99.44%	99.5%	100%	99.78%
Standard Deviation	0.1%			
Botan - CAST-256 - Decrypt (MiB/s)	<b>143.560</b>	<b>143.322</b>	143.405	143.42
Normalized	100%	99.83%	99.89%	99.9%
Standard Deviation	0.3%			
Botan - CAST-256 (MiB/s)	<b>143.474</b>	<b>143.226</b>	143.311	143.351
Normalized	100%	99.83%	99.89%	99.91%
Standard Deviation	0.3%			
Botan - KASUMI - Decrypt (MiB/s)	89.922	<b>89.931</b>	<b>89.801</b>	89.923
Normalized	99.99%	100%	99.86%	99.99%
Standard Deviation	0%			
Botan - KASUMI (MiB/s)	94.128	94.008	<b>93.894</b>	<b>94.151</b>
Normalized	99.98%	99.85%	99.73%	100%
Standard Deviation	0.1%			
KTX-Software toktx - UASTC 3 (sec)	<b>26.733</b>	26.763	26.765	<b>26.784</b>
Normalized	100%	99.89%	99.88%	99.81%
Standard Deviation	0%			
Chia Blockchain VDF - S.A.O (IPS)	192933	194100	<b>194500</b>	<b>192200</b>
Normalized	99.19%	99.79%	100%	98.82%

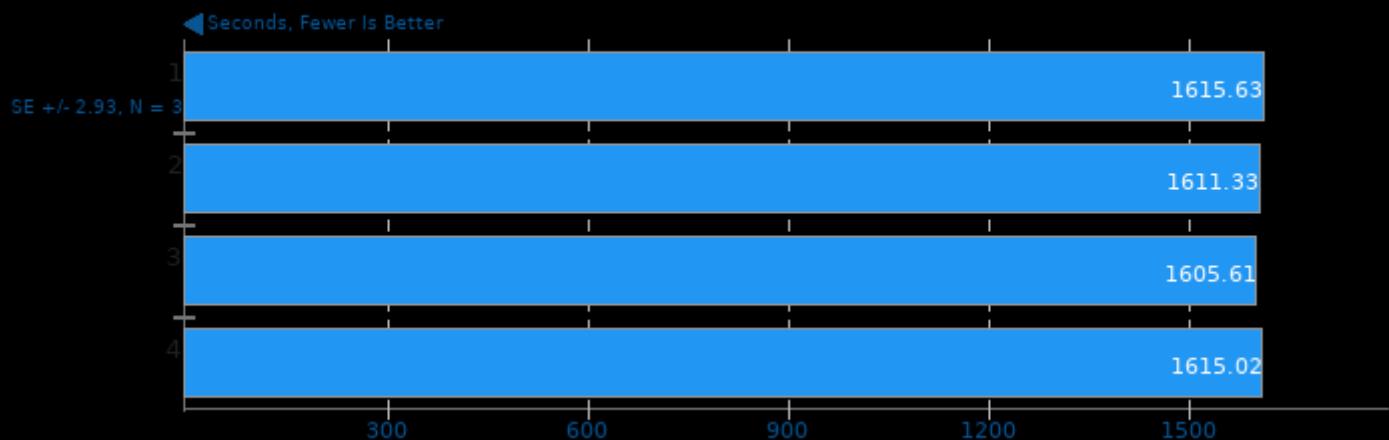
<b>AOM AV1 - Speed 8 Realtime -</b>	24.26	Standard Deviation 0.1%	
<b>Bosphorus 4K (FPS)</b>	<b>24.39</b>	24.24	<b>24.13</b>
Normalized 99.47%	100%	99.38%	98.93%
Standard Deviation 0.3%			
<b>VP9 libvpx Encoding - Speed 5 -</b>	24.21	<b>24.16</b>	<b>24.36</b>
<b>Bosphorus 1080p (FPS)</b>			24.23
Normalized 99.38%	99.18%	100%	99.47%
Standard Deviation 0.4%			
<b>libjpeg-turbo tjbench - D.T</b>	186.933814	186.914628	<b>186.73011</b>
<b>(Megapixels/sec)</b>			<b>186.973513</b>
Normalized 99.98%	99.97%	99.87%	100%
Standard Deviation 0.2%			
<b>KTX-Software toktx - Z.C.1 (sec)</b>	<b>21.965</b>	<b>22.024</b>	21.975
Normalized 100%	99.73%	99.95%	99.87%
Standard Deviation 0.1%			
<b>SVT-AV1 - Preset 8 - Bosphorus</b>	<b>27.930</b>	27.826	<b>27.81</b>
<b>1080p (FPS)</b>			
Normalized 100%	99.63%	99.78%	99.57%
Standard Deviation 0.3%			
<b>ASTC Encoder - Thorough (sec)</b>	16.2952	<b>16.3071</b>	<b>16.2781</b>
Normalized 99.9%	99.82%	100%	99.91%
Standard Deviation 0%			
<b>oneDNN - D.B.s - f32 - CPU (ms)</b>	13.8200	<b>13.8087</b>	<b>13.8285</b>
Normalized 99.92%	100%	99.87%	99.86%
Standard Deviation 0%			
<b>NAS Parallel Benchmarks - MG.C</b>	8274	8279	<b>8270</b>
<b>(Mop/s)</b>			<b>8286</b>
Normalized 99.86%	99.93%	99.81%	100%
Standard Deviation 0.1%			
<b>oneDNN - D.B.s - u8s8f32 - CPU (ms)</b>	4.41152	4.41663	<b>4.40059</b>
Normalized 99.75%	99.64%	100%	99.49%
Standard Deviation 0.2%			
<b>libgav1 - S.N.1 (FPS)</b>	177.57	<b>178.81</b>	<b>177.12</b>
Normalized 99.31%	100%	99.97%	99.05%
Standard Deviation 1.1%			
<b>VOSK Speech Recognition Toolkit</b>	<b>20.097</b>	20.207	<b>20.131</b>
Normalized 100%	99.46%	99.83%	97.96%
Standard Deviation 0.6%			
<b>Liquid-DSP - 1 - 256 - 57 (samples/s)</b>	56374000	56367000	<b>56378000</b>
Normalized 99.99%	99.98%	100%	98.74%
Standard Deviation 0%			
<b>Liquid-DSP - 2 - 256 - 57 (samples/s)</b>	<b>107200000</b>	107550000	<b>107410000</b>
Normalized 99.5%	99.82%	99.69%	100%
Standard Deviation 0.4%			
<b>Liquid-DSP - 8 - 256 - 57 (samples/s)</b>	235540000	<b>235560000</b>	<b>235470000</b>
Normalized 99.99%	100%	99.96%	99.96%
Standard Deviation 0%			
<b>Liquid-DSP - 4 - 256 - 57 (samples/s)</b>	202166667	<b>201800000</b>	<b>202230000</b>
Normalized 99.97%	99.79%	100%	99.94%
Standard Deviation 0.1%			
<b>AOM AV1 - Speed 9 Realtime -</b>	36.42	<b>36.44</b>	<b>36.33</b>
<b>Bosphorus 4K (FPS)</b>			
Normalized 99.95%	100%	99.97%	99.7%

Standard Deviation 0.1%			
<b>oneDNN - IP Shapes 1D - f32 - CPU</b> 7.30592	<b>7.33003</b>	7.29745	<b>7.29644</b>
(ms)			
Normalized 99.87%	99.54%	99.99%	100%
Standard Deviation 0%			
<b>oneDNN - IP Shapes 1D - u8s8f32 -</b> 3.35898	3.36223	<b>3.3628</b>	<b>3.35791</b>
CPU (ms)			
Normalized 99.97%	99.87%	99.85%	100%
Standard Deviation 0%			
<b>NAS Parallel Benchmarks - EP.C</b> 585.66	<b>586.61</b>	<b>585.5</b>	586.06
(Mop/s)			
Normalized 99.84%	100%	99.81%	99.91%
Standard Deviation 0.2%			
<b>oneDNN - M.M.B.S.T - f32 - CPU (ms)</b> 4.73352	<b>4.76037</b>	4.75196	4.74458
Normalized 100%	99.44%	99.61%	99.77%
Standard Deviation 0.2%			
<b>oneDNN - M.M.B.S.T - u8s8f32 - CPU</b> 5.43785	5.43991	5.44153	<b>5.4439</b>
(ms)			
Normalized 100%	99.96%	99.93%	99.89%
Standard Deviation 0.1%			
<b>SVT-HEVC - 7 - Bosphorus 1080p</b> 52.23	52.09	52.07	<b>52.06</b>
Normalized 100%	99.73%	99.69%	99.67%
Standard Deviation 0%			
<b>Helsing - 12 digit (sec)</b> 11.665	<b>11.658</b>	<b>11.666</b>	<b>11.666</b>
Normalized 99.94%	100%	99.93%	99.93%
Standard Deviation 0.1%			
<b>dav1d - S.N.1 (FPS)</b> 329.39	<b>329.26</b>	<b>330.9</b>	330.42
Normalized 99.54%	99.5%	100%	99.85%
Standard Deviation 0.4%			
<b>Basis Universal - UASTC Level 0 (sec)</b> 10.270	10.285	<b>10.352</b>	10.283
Normalized 100%	99.85%	99.21%	99.87%
Standard Deviation 0%			
<b>Google Draco - Church Facade (ms)</b> 8606	8562	<b>8606</b>	<b>8539</b>
Normalized 99.22%	99.73%	99.22%	100%
Standard Deviation 0.1%			
<b>oneDNN - IP Shapes 3D - f32 - CPU</b> 11.1328	<b>11.2402</b>	11.1387	11.2302
(ms)			
Normalized 100%	99.04%	99.95%	99.13%
Standard Deviation 0.1%			
<b>oneDNN - IP Shapes 3D - u8s8f32 -</b> 2.87684	2.87585	<b>2.86963</b>	2.87056
CPU (ms)			
Normalized 99.75%	99.78%	100%	99.97%
Standard Deviation 0.2%			
<b>SVT-VP9 - V.Q.O - Bosphorus 1080p</b> 77.31	77.3	<b>77.68</b>	<b>77.24</b>
(FPS)			
Normalized 99.52%	99.51%	100%	99.43%
Standard Deviation 0.1%			
<b>AOM AV1 - Speed 8 Realtime -</b> 79.50	<b>80.37</b>	80.2	<b>79.18</b>
Bosphorus 1080p (FPS)			
Normalized 98.92%	100%	99.79%	98.52%
Standard Deviation 0.3%			
<b>Google Draco - Lion (ms)</b> 5558	<b>5552</b>	<b>5650</b>	5561
Normalized 99.89%	100%	98.27%	99.84%
Standard Deviation 0.6%			

<b>ASTC Encoder - Medium (sec)</b>	<b>6.7030</b>	6.7145	6.714	<b>6.7194</b>
Normalized	100%	99.83%	99.84%	99.76%
Standard Deviation	0.1%			
<b>SVT-VP9 - VMAF Optimized -</b>	<b>96.91</b>	<b>95.57</b>	96.15	95.73
<b>Bosphorus 1080p (FPS)</b>				
Normalized	100%	98.62%	99.22%	98.78%
Standard Deviation	0.8%			
<b>SVT-VP9 - P.S.O - Bosphorus 1080p</b>	<b>97.75</b>	97.72	<b>97.97</b>	<b>97.42</b>
<b>(FPS)</b>				
Normalized	99.78%	99.74%	100%	99.44%
Standard Deviation	0.2%			
<b>oneDNN - C.B.S.A - f32 - CPU (ms)</b>	<b>18.2823</b>	18.2862	<b>18.2784</b>	<b>18.2923</b>
Normalized	99.98%	99.96%	100%	99.92%
Standard Deviation	0%			
<b>oneDNN - C.B.S.A - u8s8f32 - CPU</b>	<b>18.0745</b>	<b>18.1643</b>	18.0805	<b>18.0599</b>
Normalized	99.92%	99.43%	99.89%	100%
Standard Deviation	0%			
<b>AOM AV1 - Speed 9 Realtime -</b>	<b>99.97</b>	99.5	<b>100.01</b>	<b>98.74</b>
<b>Bosphorus 1080p (FPS)</b>				
Normalized	99.96%	99.49%	100%	98.73%
Standard Deviation	0.2%			
<b>SVT-HEVC - 10 - Bosphorus 1080p</b>	<b>111.84</b>	<b>112.09</b>	111.94	<b>111.82</b>
<b>(FPS)</b>				
Normalized	99.78%	100%	99.87%	99.76%
Standard Deviation	0.1%			
<b>Sysbench - RAM / Memory (MiB/sec)</b>	<b>17495</b>	<b>17861</b>	17764	17542
Normalized	97.95%	100%	99.46%	98.21%
Standard Deviation	1.1%			
<b>oneDNN - D.B.s - f32 - CPU (ms)</b>	<b>13.3095</b>	<b>13.4388</b>	13.3527	13.3883
Normalized	100%	99.04%	99.68%	99.41%
Standard Deviation	0.3%			
<b>oneDNN - D.B.s - u8s8f32 - CPU (ms)</b>	<b>7.76262</b>	7.77868	<b>7.86731</b>	7.83295
Normalized	100%	99.79%	98.67%	99.1%
Standard Deviation	0.1%			
<b>KTX-Software toktx - Zstd</b>	<b>3.077</b>	3.072	<b>3.077</b>	<b>3.052</b>
<b>Compression 9 (sec)</b>				
Normalized	99.19%	99.35%	99.19%	100%
Standard Deviation	0.6%			

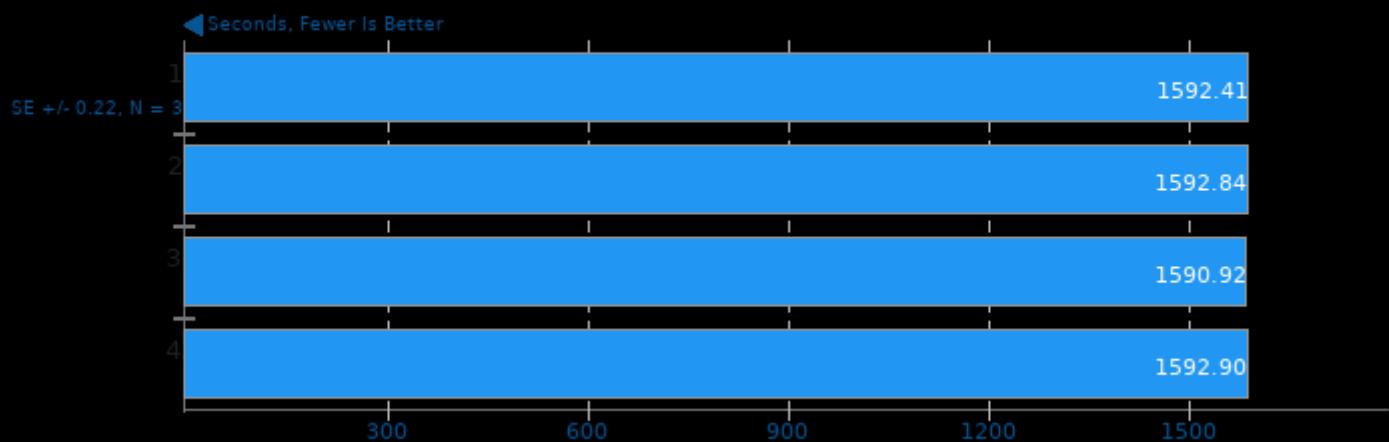
## Timed LLVM Compilation 12.0

Build System: Unix Makefiles



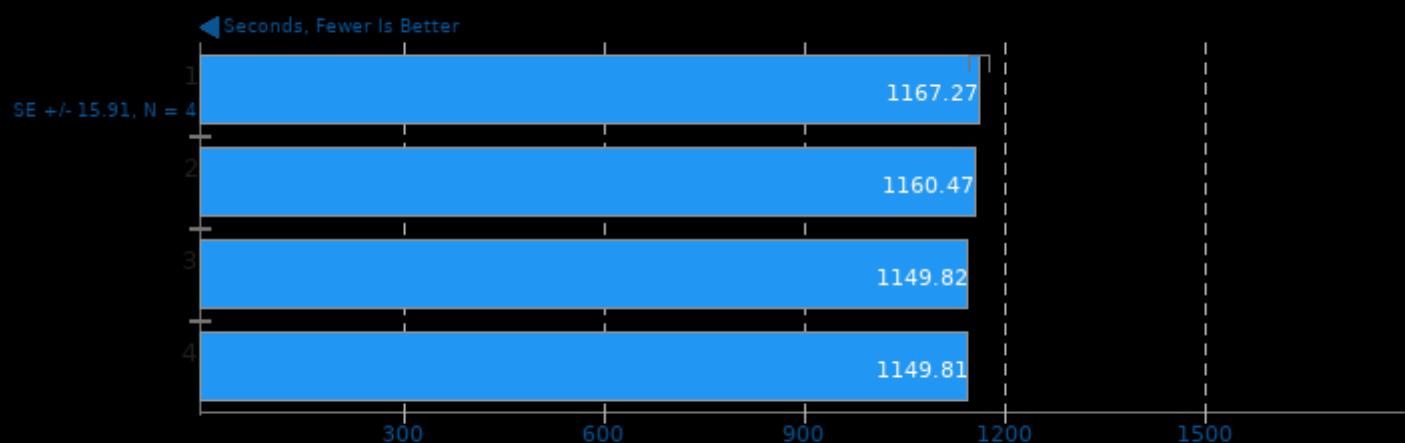
## Timed LLVM Compilation 12.0

Build System: Ninja



## Helsing 1.0-beta

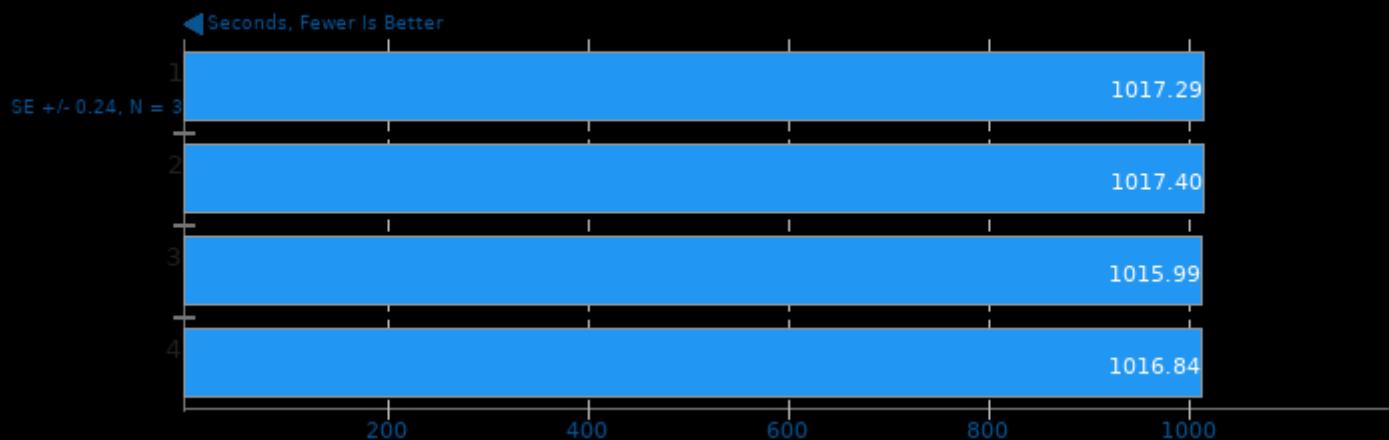
Digit Range: 14 digit



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

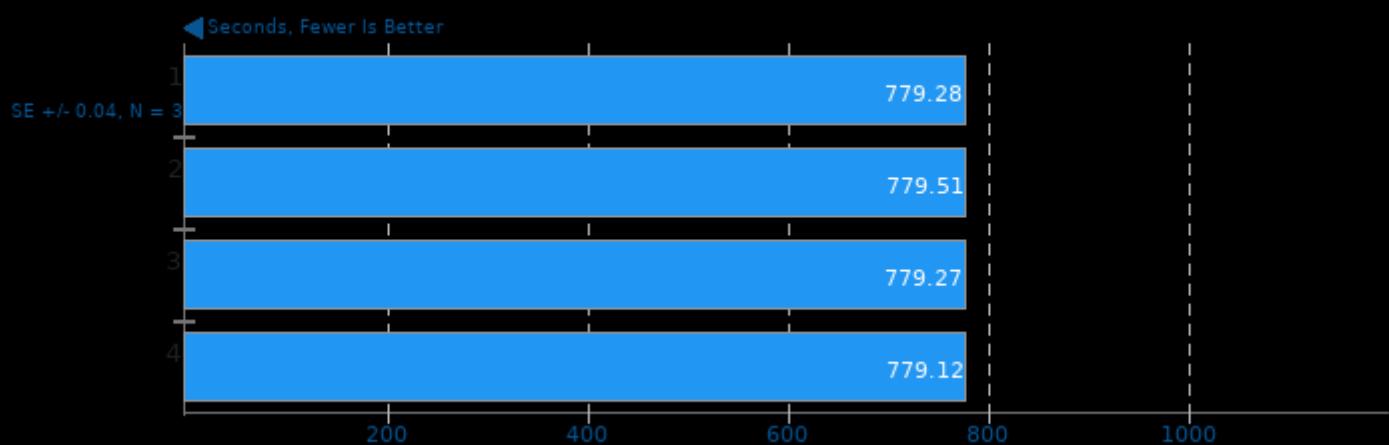
## Timed Node.js Compilation 15.11

Time To Compile



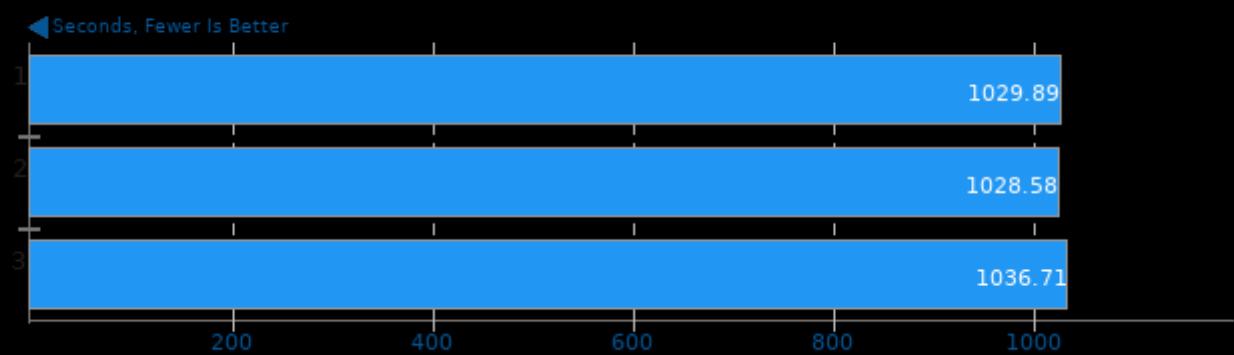
## KTX-Software toktx 4.0

Settings: UASTC 4 + Zstd Compression 19



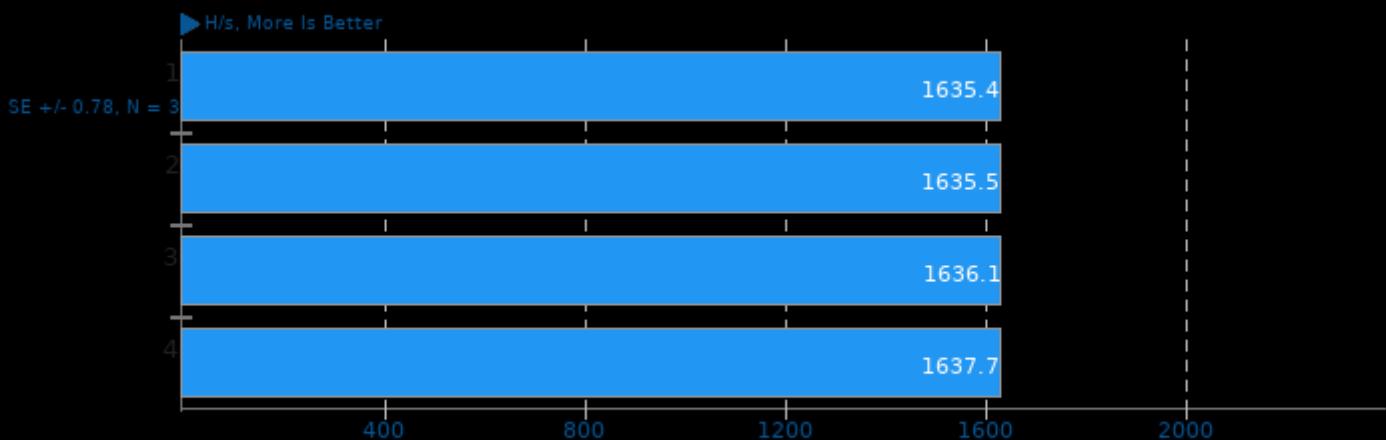
## CP2K Molecular Dynamics 8.1

Input: Fayalite-FIST



## Xmrig 6.12.1

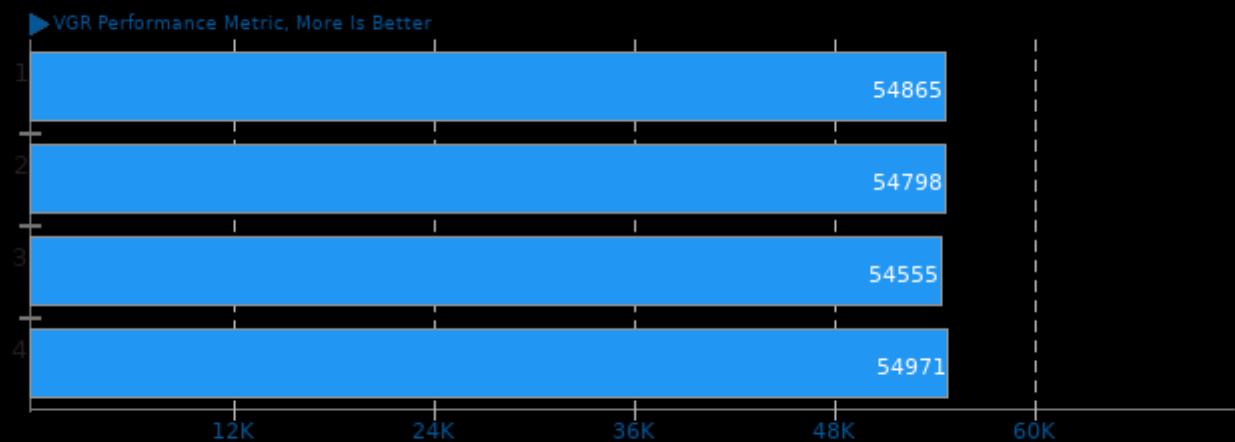
Variant: Monero - Hash Count: 1M



1. (CXX) g++ options: -fexceptions -fno-rtti -maes -O3 -Ofast -static-libgcc -static-libstdc++ -rdynamic -lssl -lcrypto -luv -lpthread -lrt -ldl -lhwloc

## BRL-CAD 7.32.2

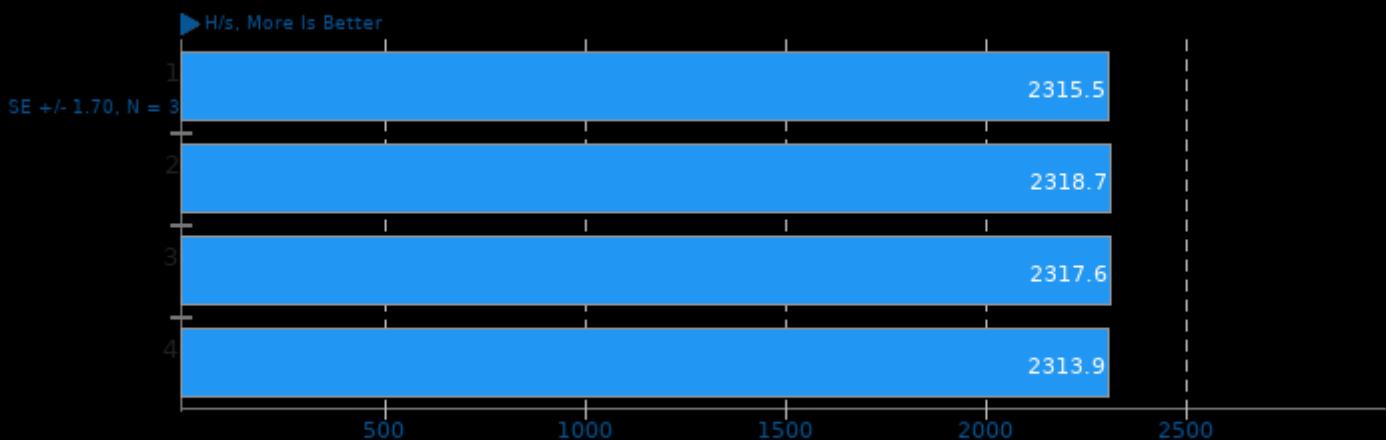
VGR Performance Metric



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

## Xmrig 6.12.1

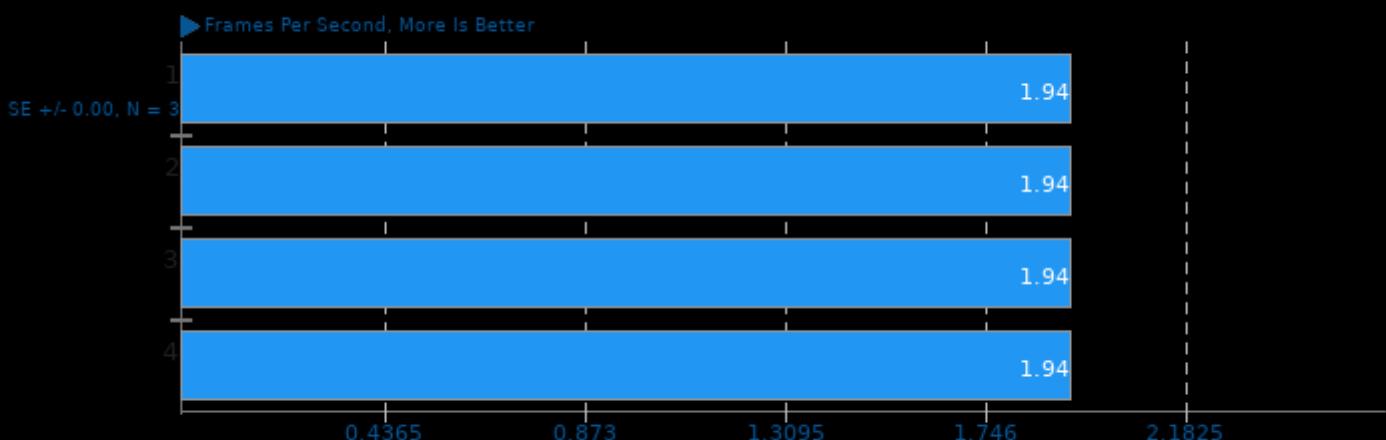
Variant: Wownero - Hash Count: 1M



1. (CXX) g++ options: -fexceptions -fno-rtti -maes -O3 -Ofast -static-libgcc -static-libstdc++ -rdynamic -lssl -lcrypto -luv -lpthread -lrt -ldl -lhwloc

## AOM AV1 3.1

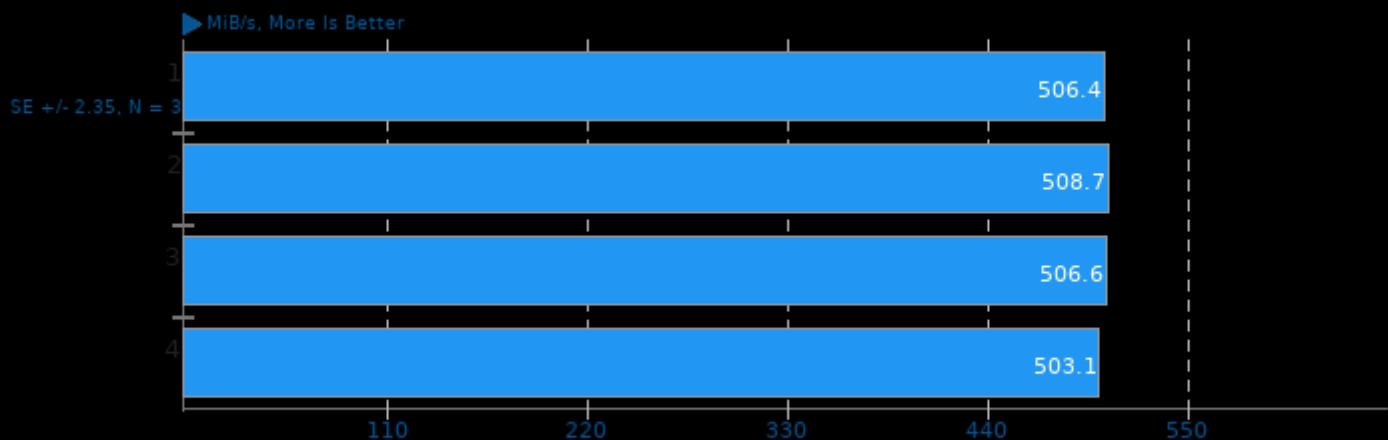
Encoder Mode: Speed 4 Two-Pass - Input: Bosphorus 4K



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

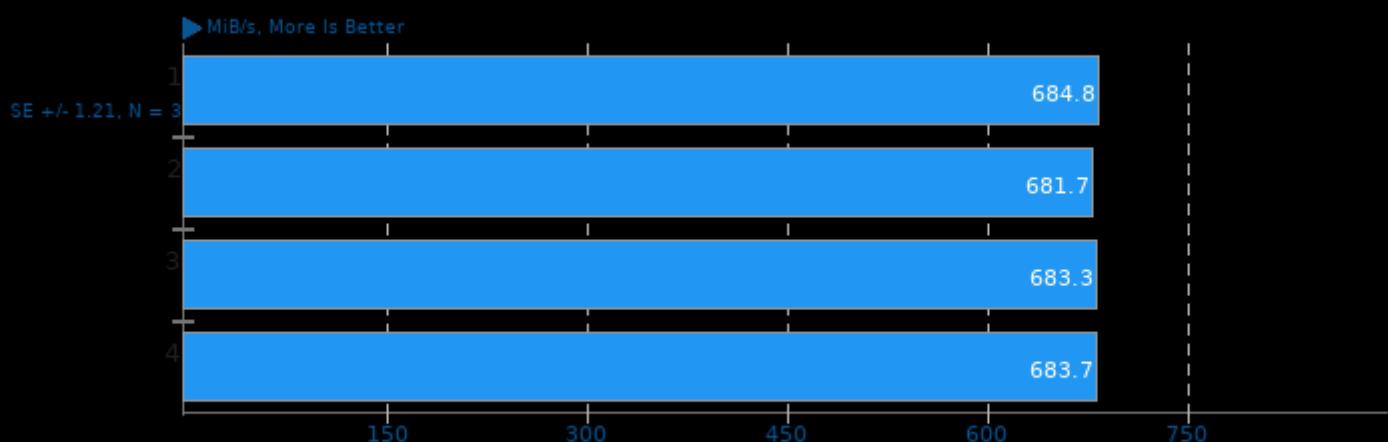
## GNU Radio

Test: Hilbert Transform



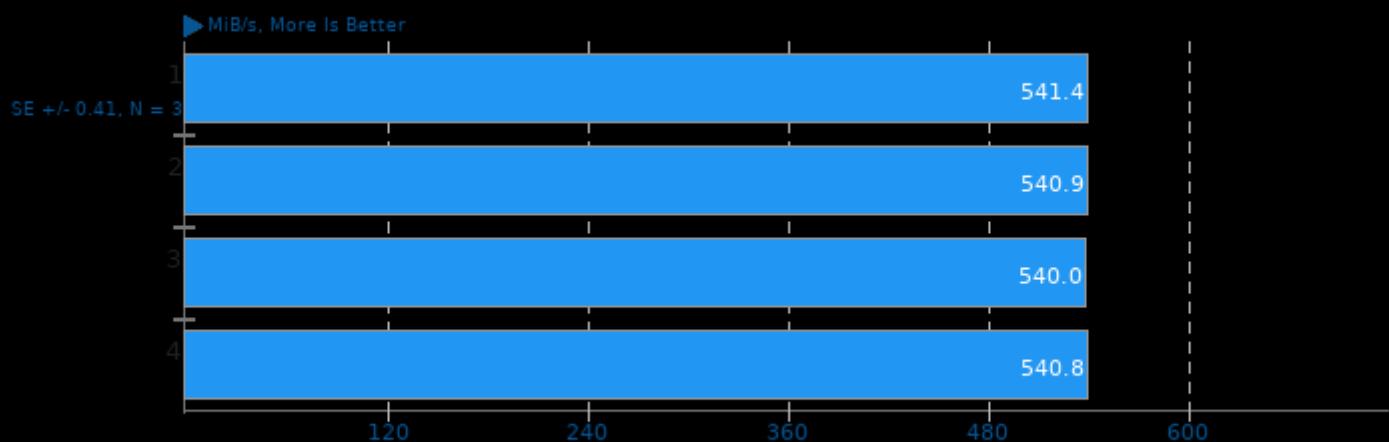
## GNU Radio

Test: FM Deemphasis Filter



**GNU Radio**

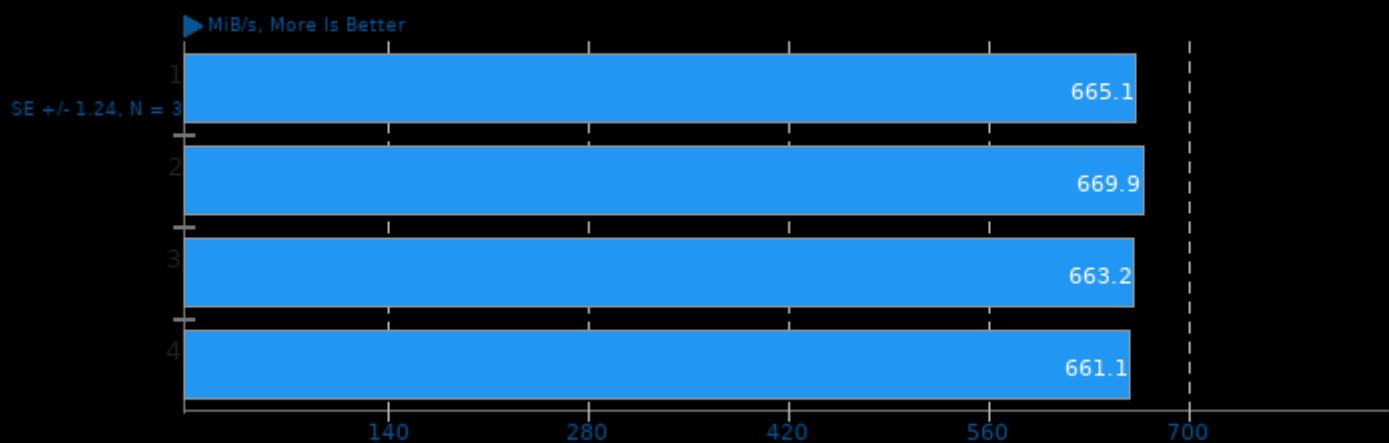
Test: IIR Filter



1. 3.8.1.0

**GNU Radio**

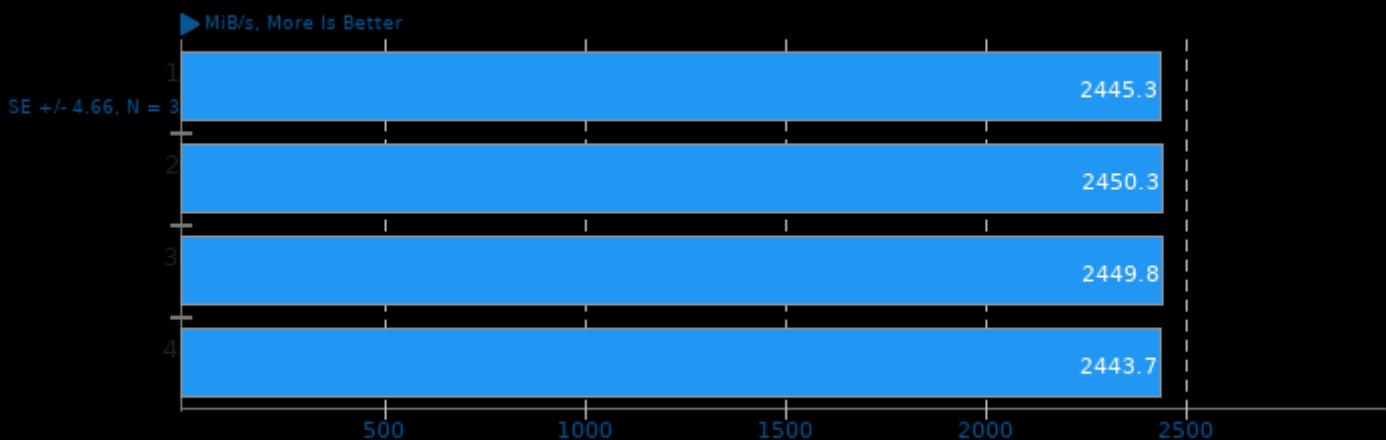
Test: FIR Filter



1. 3.8.1.0

## GNU Radio

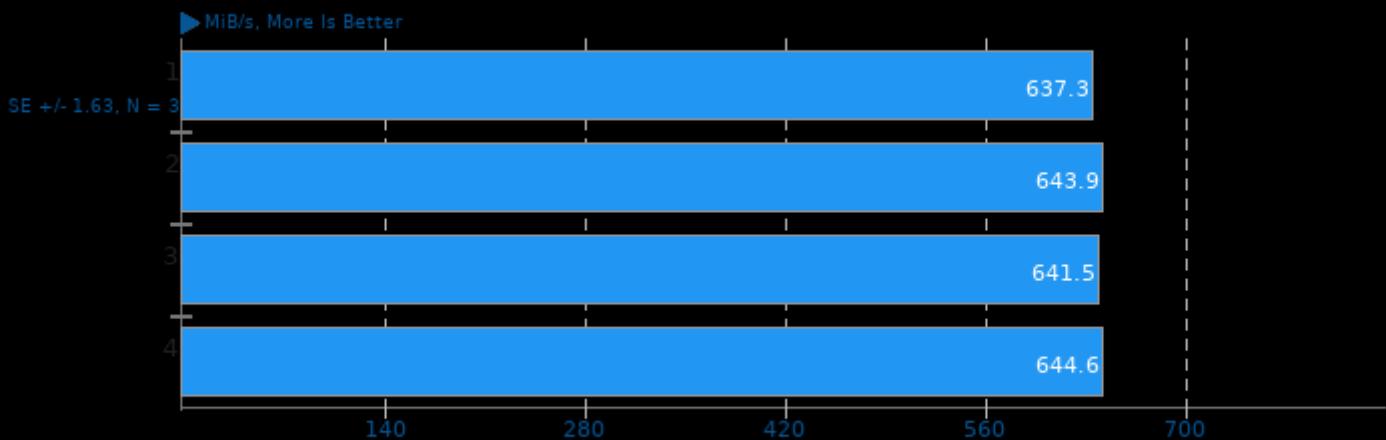
Test: Signal Source (Cosine)



1.3.8.1.0

## GNU Radio

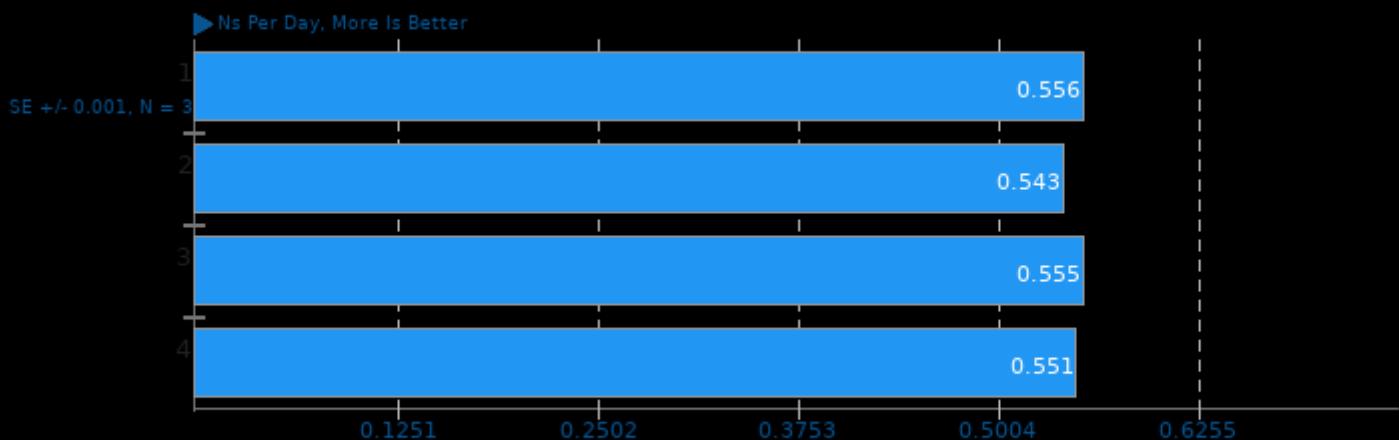
Test: Five Back to Back FIR Filters



1.3.8.1.0

## GROMACS 2021.2

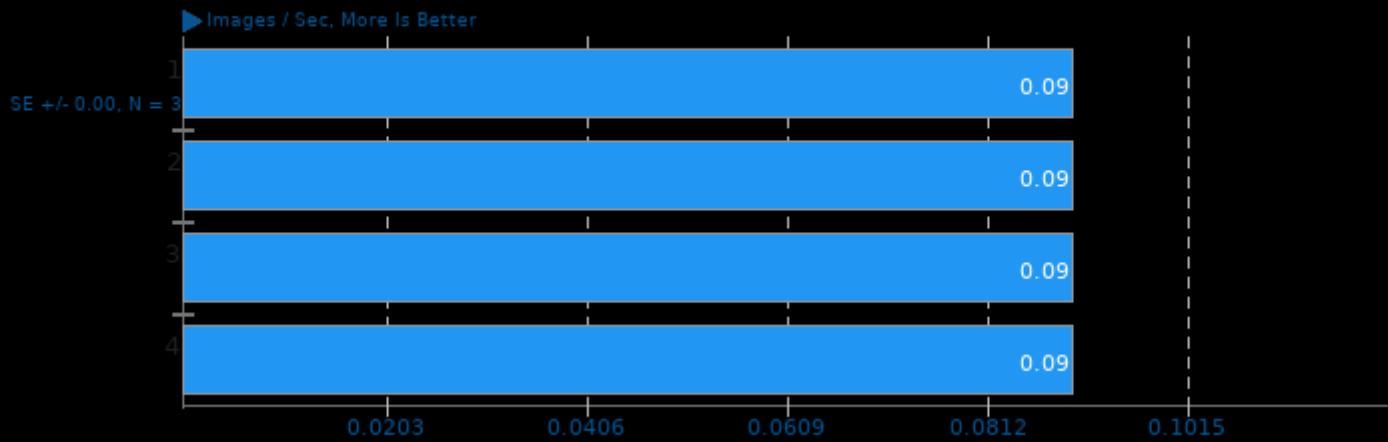
Implementation: MPI CPU - Input: water\_GMX50\_bare



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

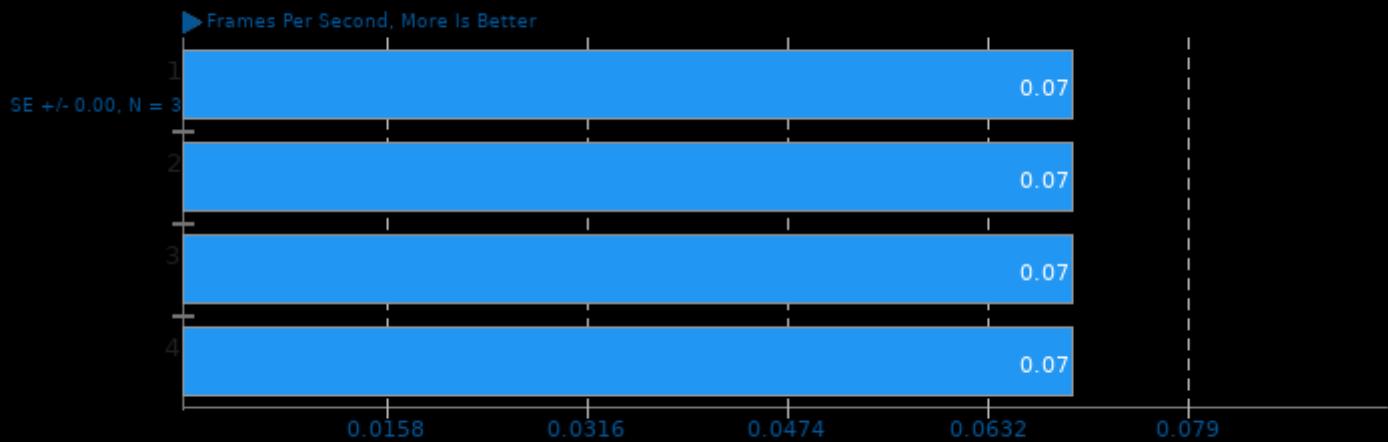
## Intel Open Image Denoise 1.4.0

Run: RTLightmap.hdr.4096x4096



## AOM AV1 3.1

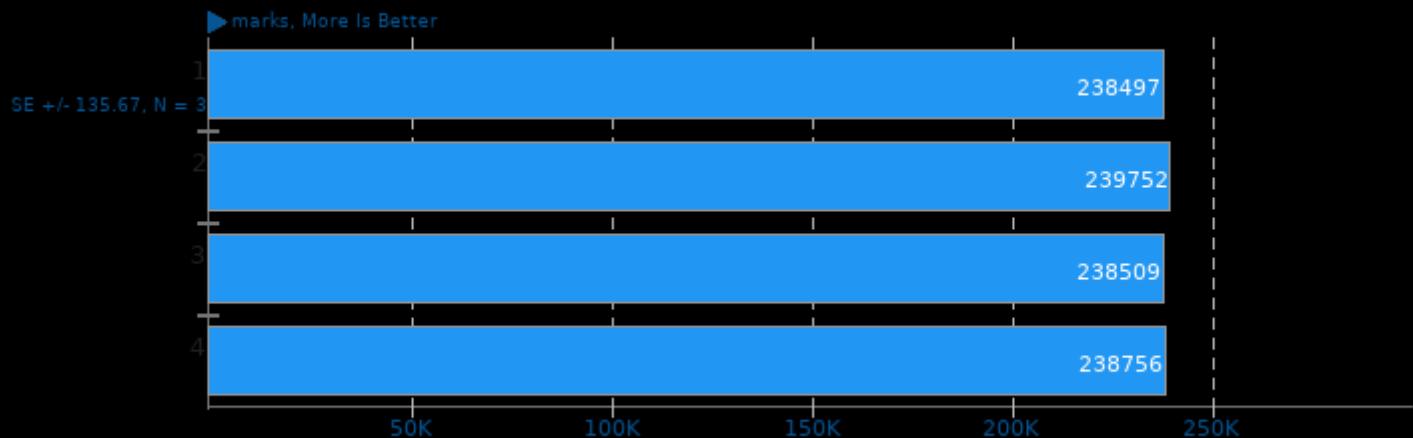
Encoder Mode: Speed 0 Two-Pass - Input: Bosphorus 4K



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

## SecureMark 1.0.4

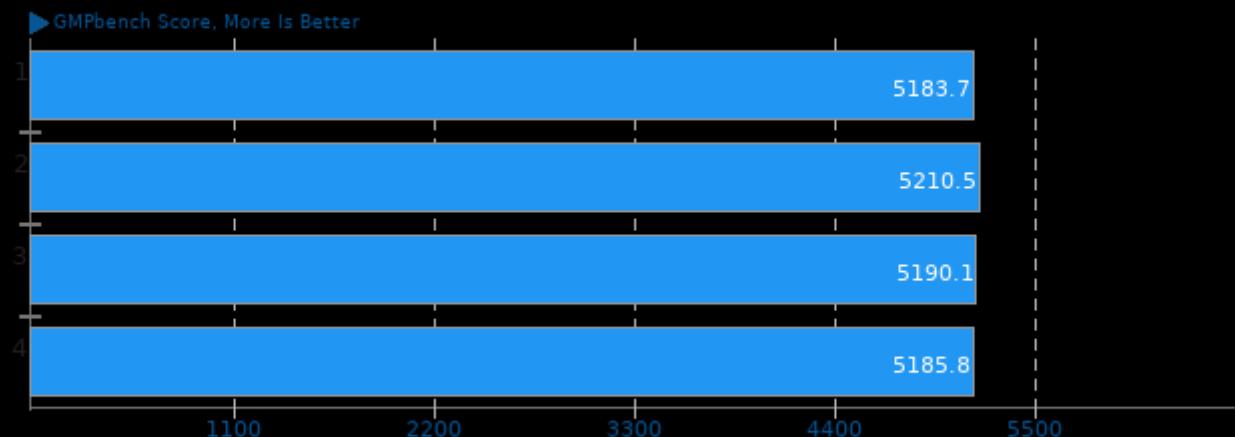
Benchmark: SecureMark-TLS



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

## GNU GMP GMPbench 6.2.1

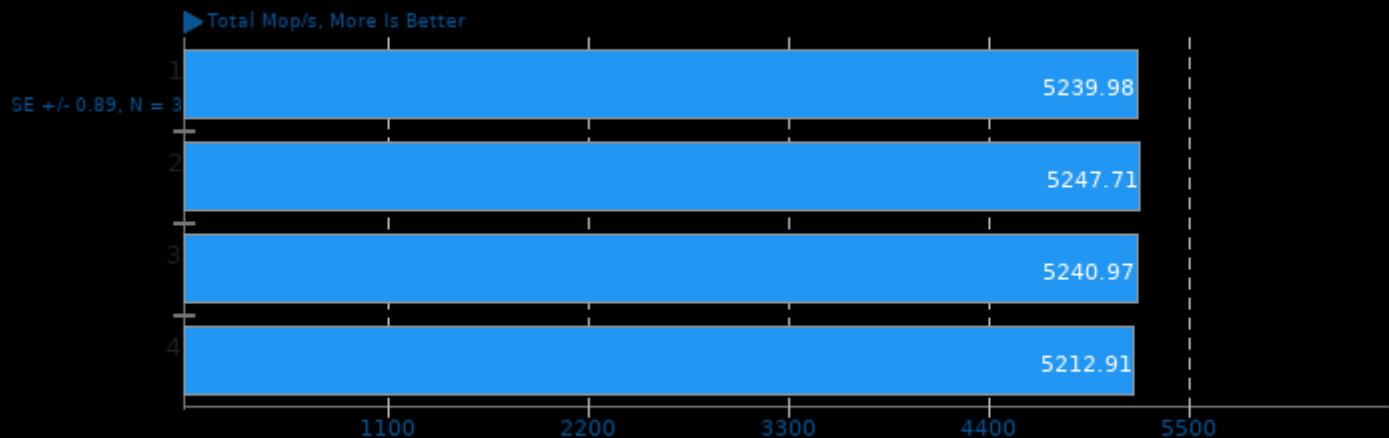
Total Time



1. (CC) gcc options: -O3 -fomit-frame-pointer -lm

## NAS Parallel Benchmarks 3.4

Test / Class: SPC

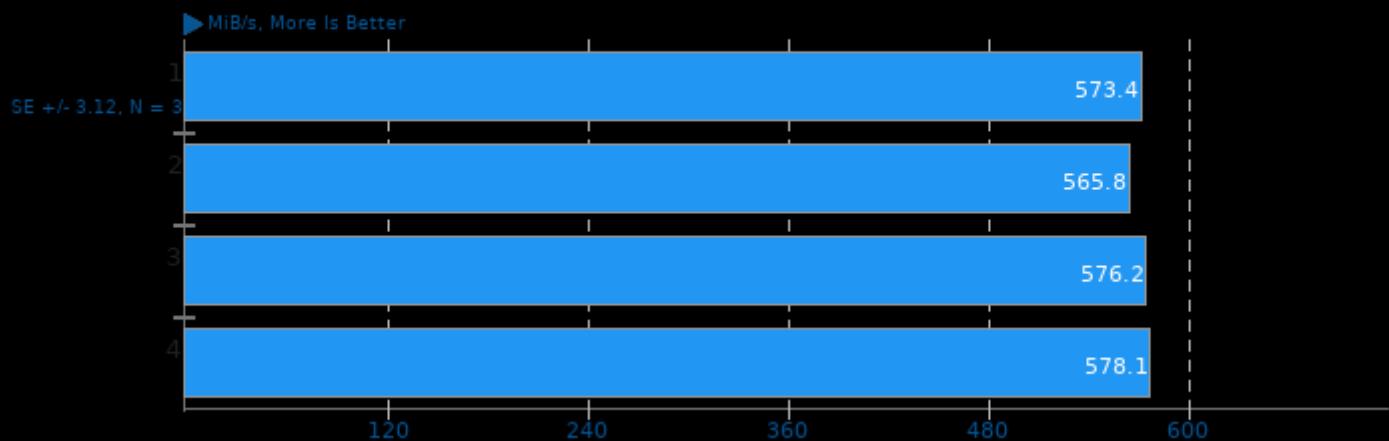


1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi\_usempif08 -lmpi\_mpifh -lmpi

2. Open MPI 4.0.3

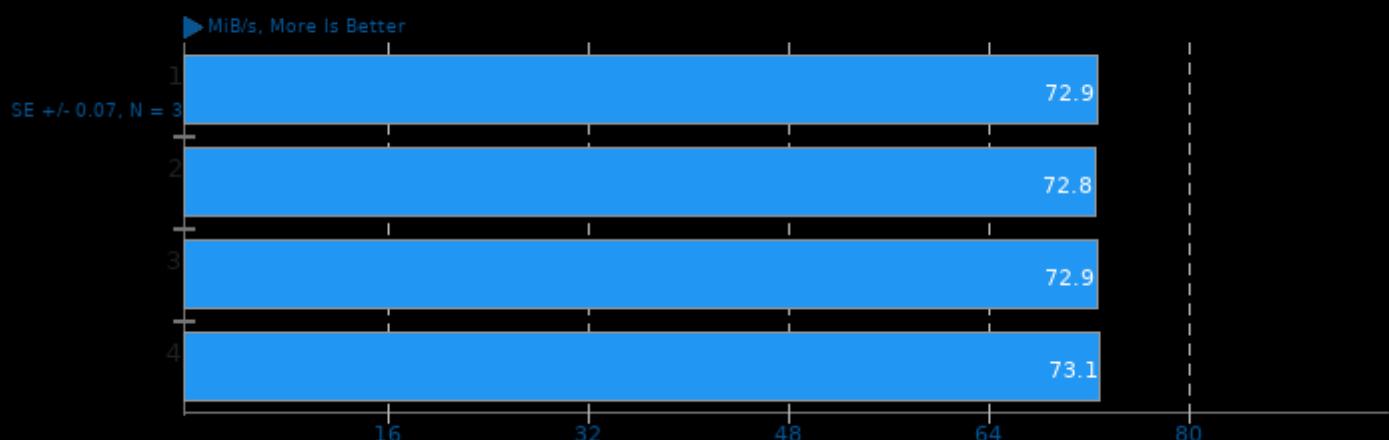
## LuaRadio 0.9.1

Test: Complex Phase



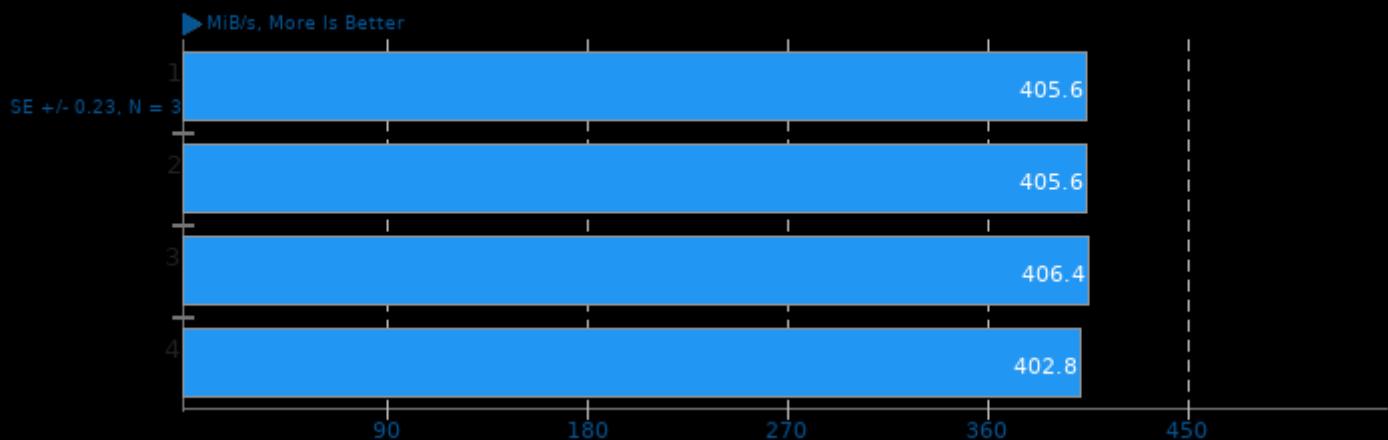
## LuaRadio 0.9.1

Test: Hilbert Transform



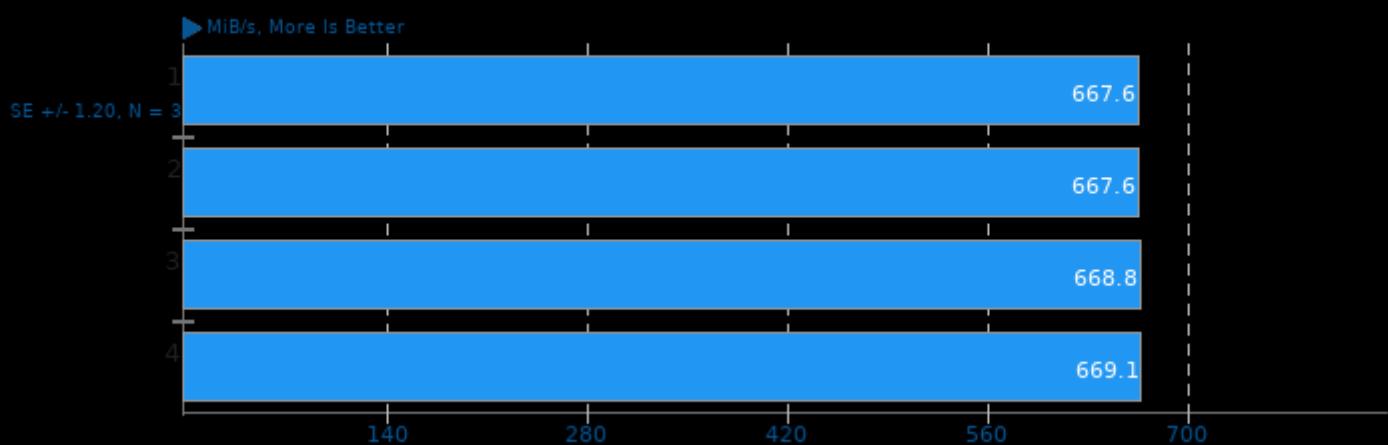
## LuaRadio 0.9.1

Test: FM Deemphasis Filter



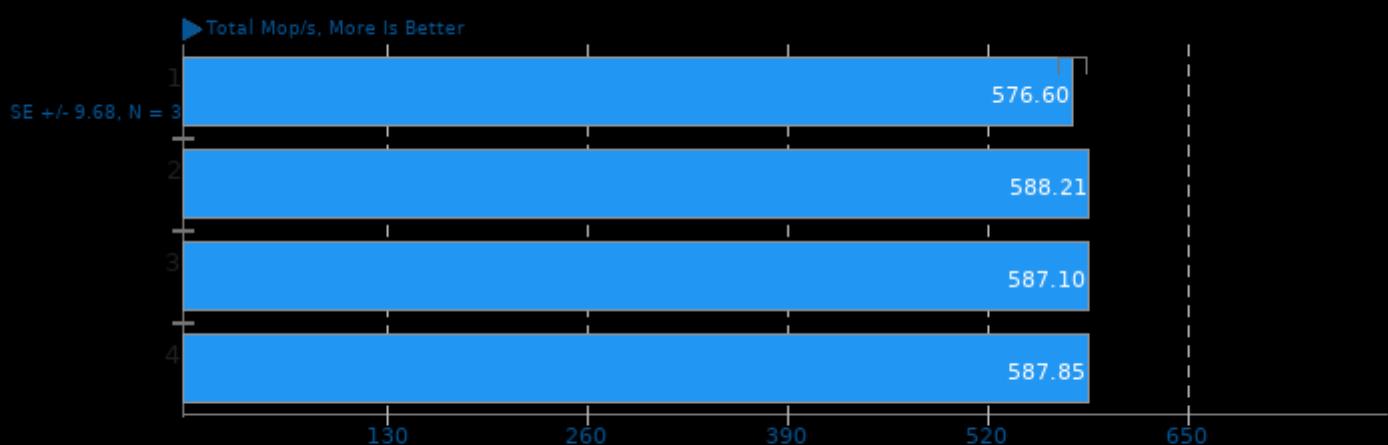
## LuaRadio 0.9.1

Test: Five Back to Back FIR Filters



## NAS Parallel Benchmarks 3.4

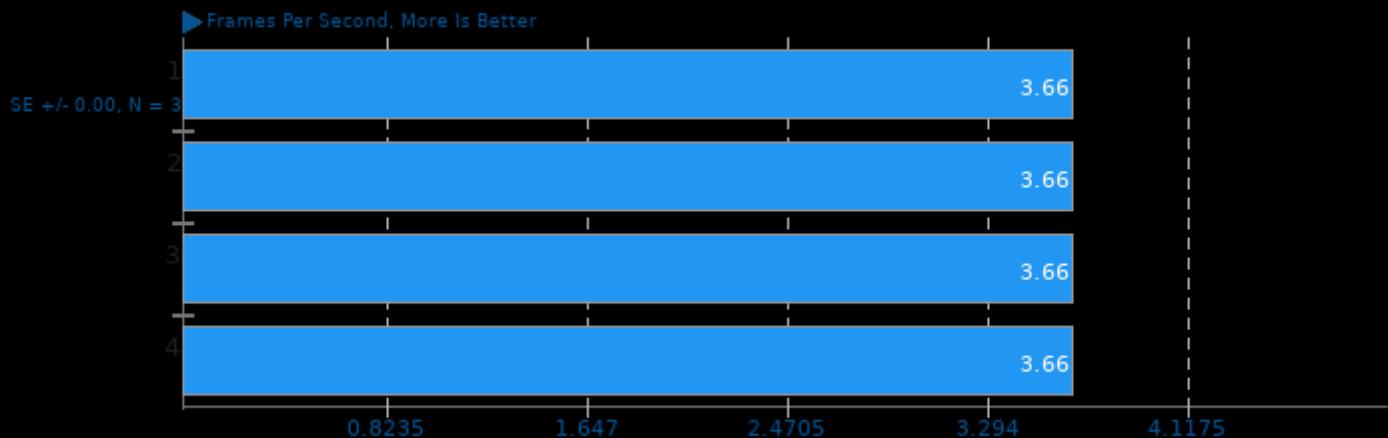
Test / Class: EP.D



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

## AOM AV1 3.1

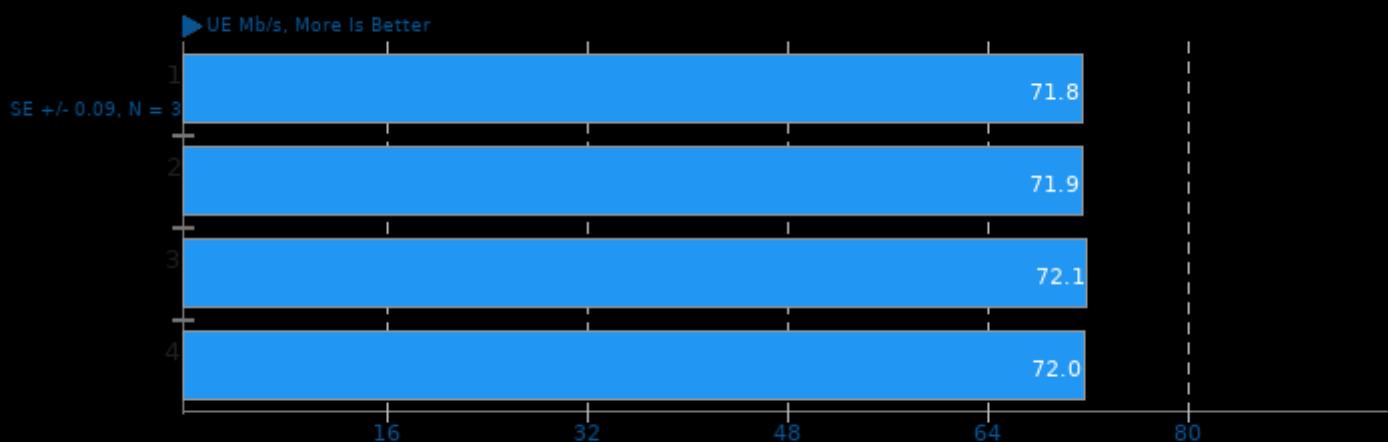
Encoder Mode: Speed 6 Two-Pass - Input: Bosphorus 4K



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

## srsRAN 21.04

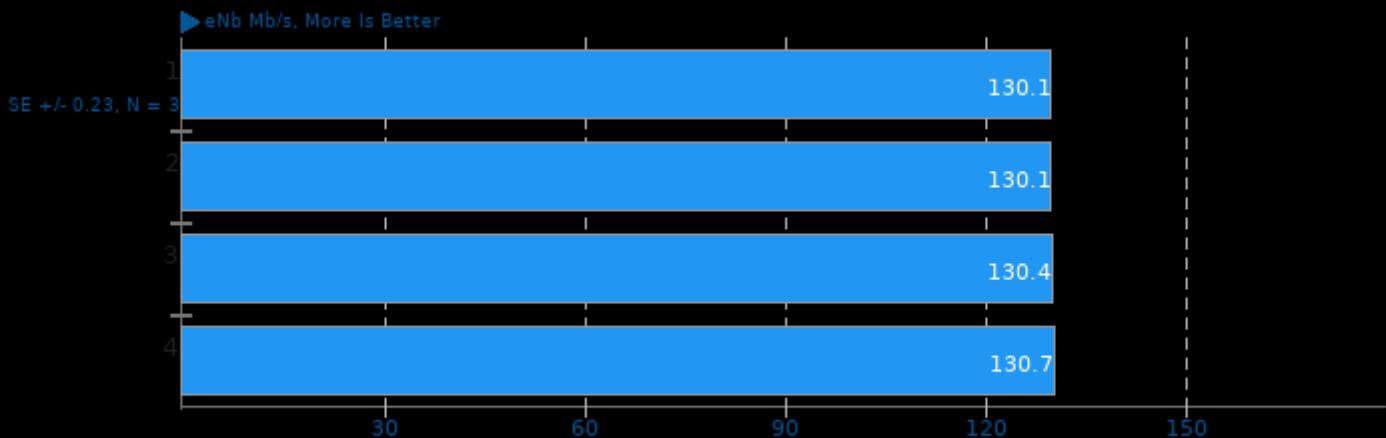
Test: 5G PHY\_DL\_NR Test 270 PRB SISO 256-QAM



1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

## srsRAN 21.04

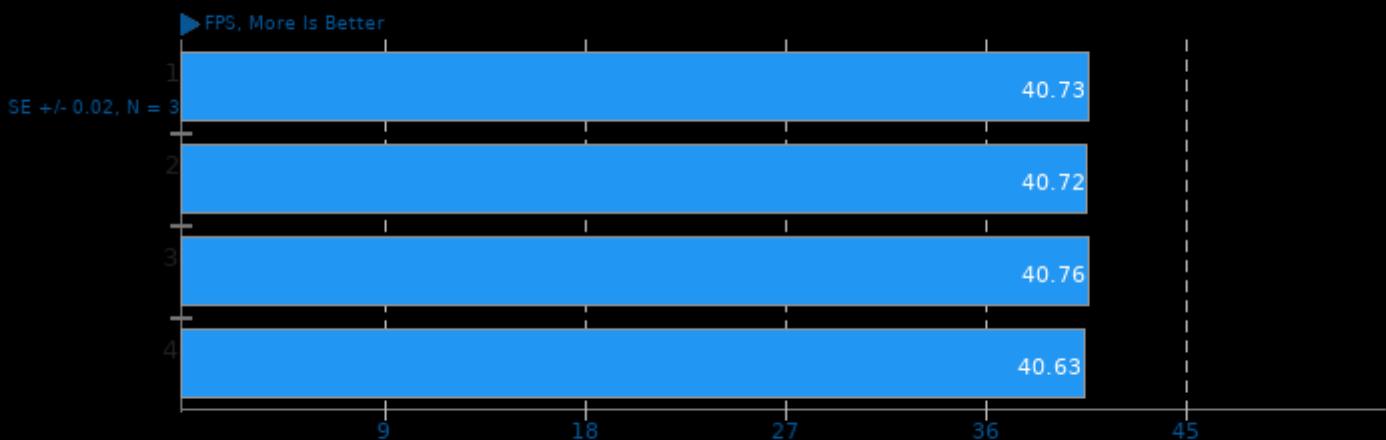
Test: 5G PHY\_DL\_NR Test 270 PRB SISO 256-QAM



1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

## libgav1 0.16.3

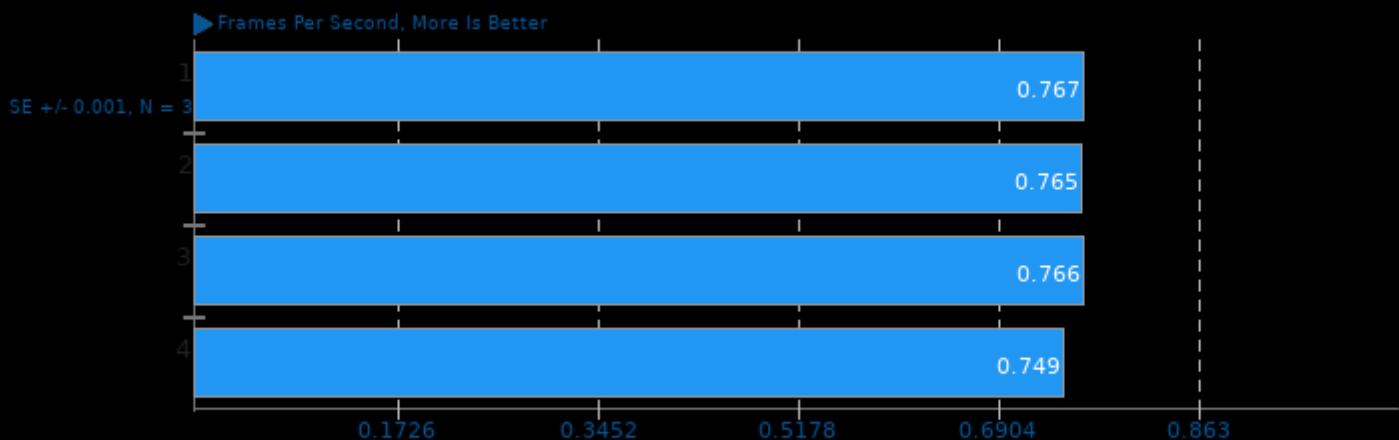
Video Input: Chimera 1080p 10-bit



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

## SVT-AV1 0.8.7

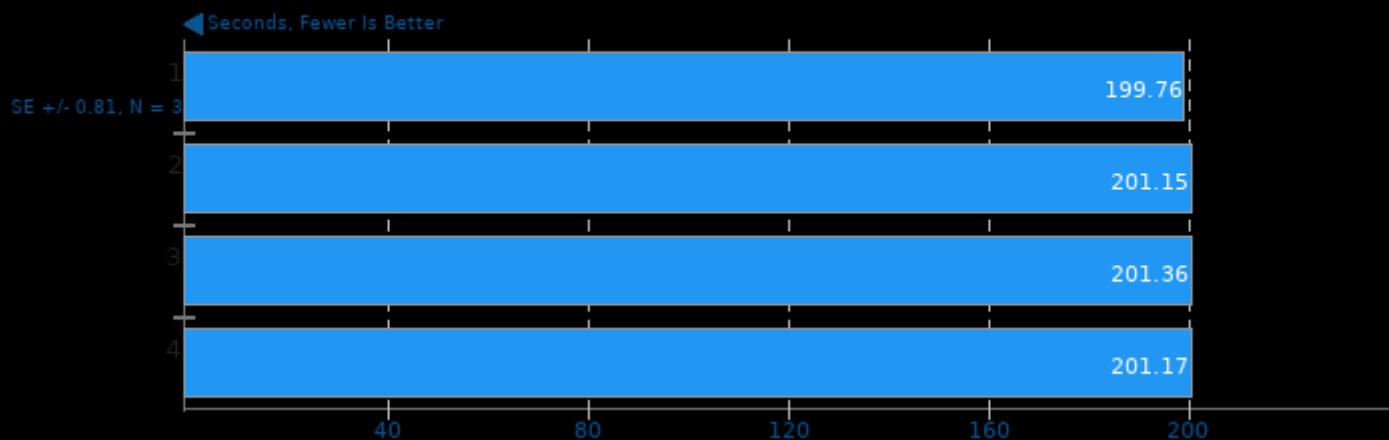
Encoder Mode: Preset 4 - Input: Bosphorus 4K



1. (CXX) g++ options: -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie

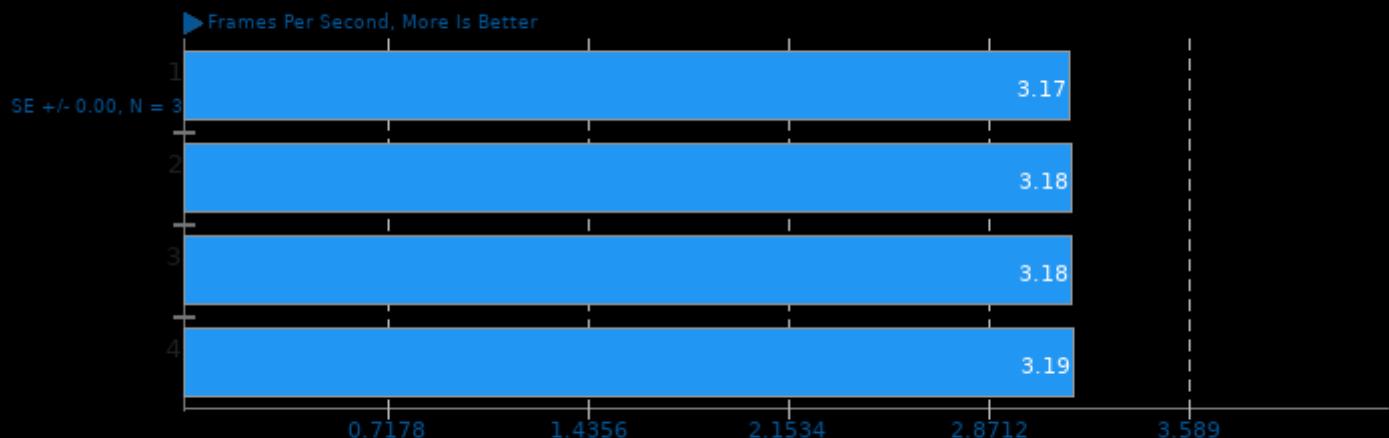
## Timed Linux Kernel Compilation 5.10.20

Time To Compile



## VP9 libvpx Encoding 1.10.0

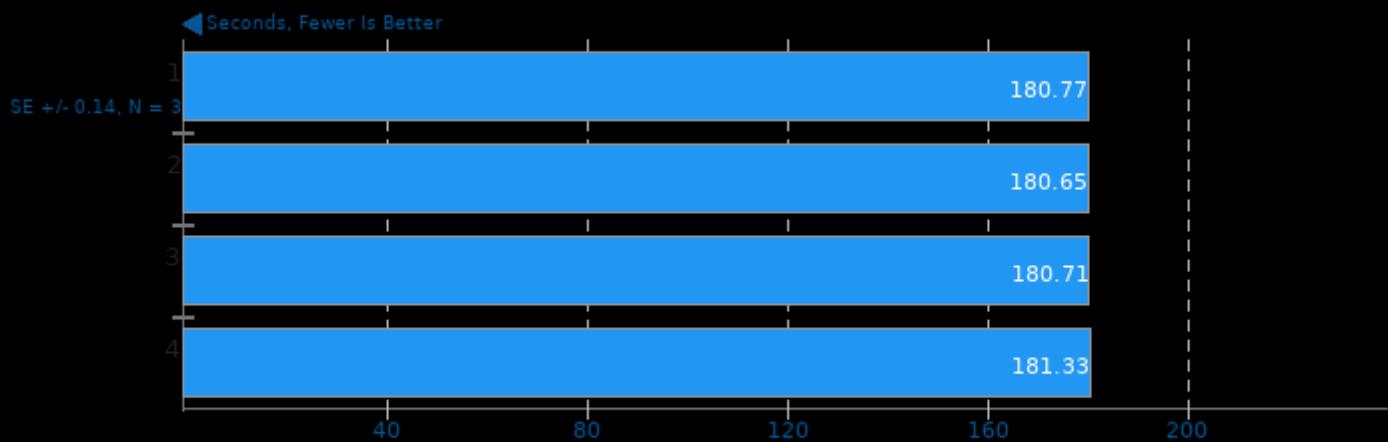
Speed: Speed 0 - Input: Bosphorus 4K



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

**Xcompact3d Incompact3d 2021-03-11**

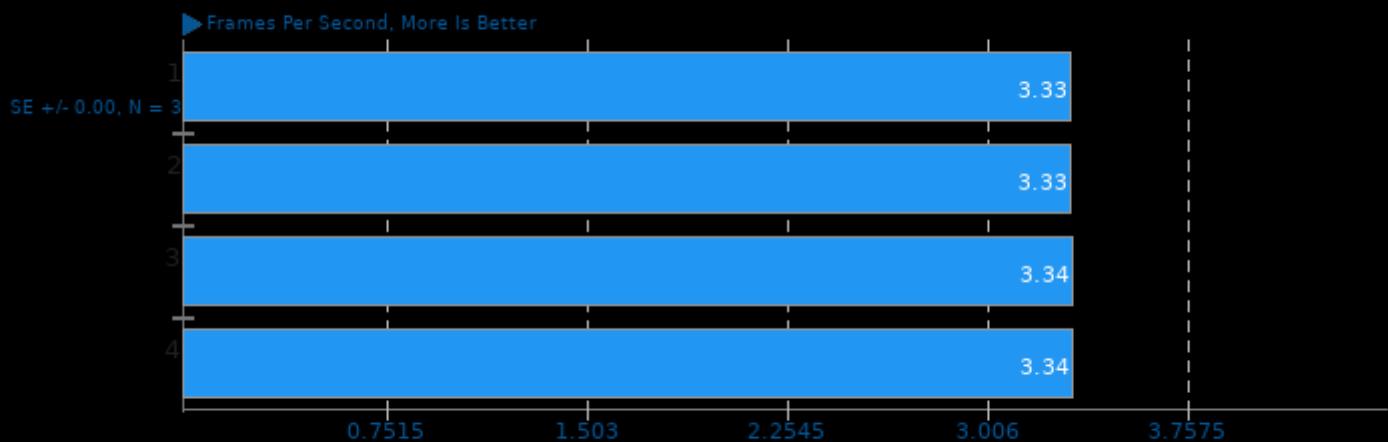
Input: input.i3d 193 Cells Per Direction



1. (F9X) gfortran options: -cpp -O2 -funroll-loops -floop-optimize -fcray-pointer -fbacktrace -pthread -lmpi\_usempif08 -lmpi\_mpifh -lmpi

**SVT-HEVC 1.5.0**

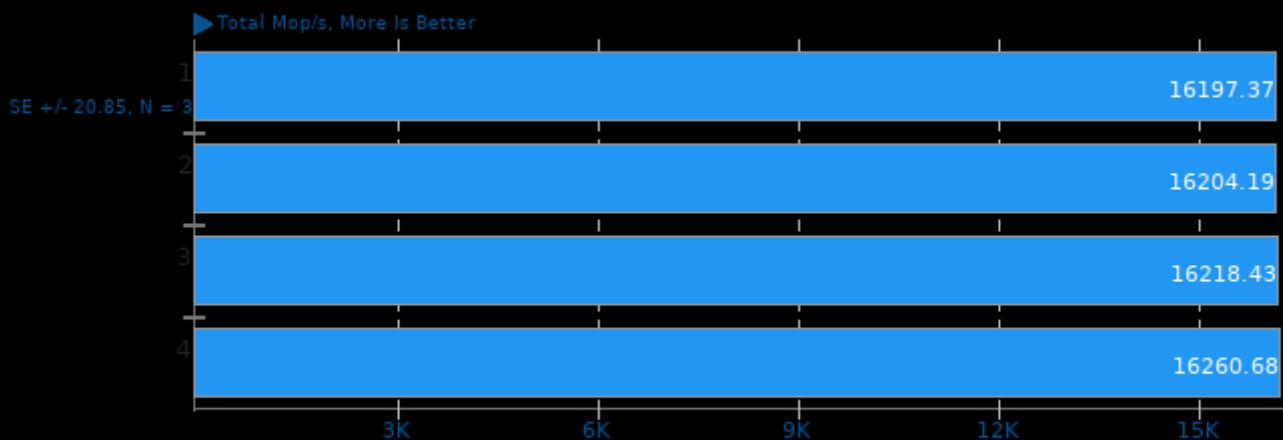
Tuning: 1 - Input: Bosphorus 1080p



1. (CC) gcc options: -fPIE -fPIC -O3 -O2 -pie -rdynamic -pthread -lrt

## NAS Parallel Benchmarks 3.4

Test / Class: BT.C

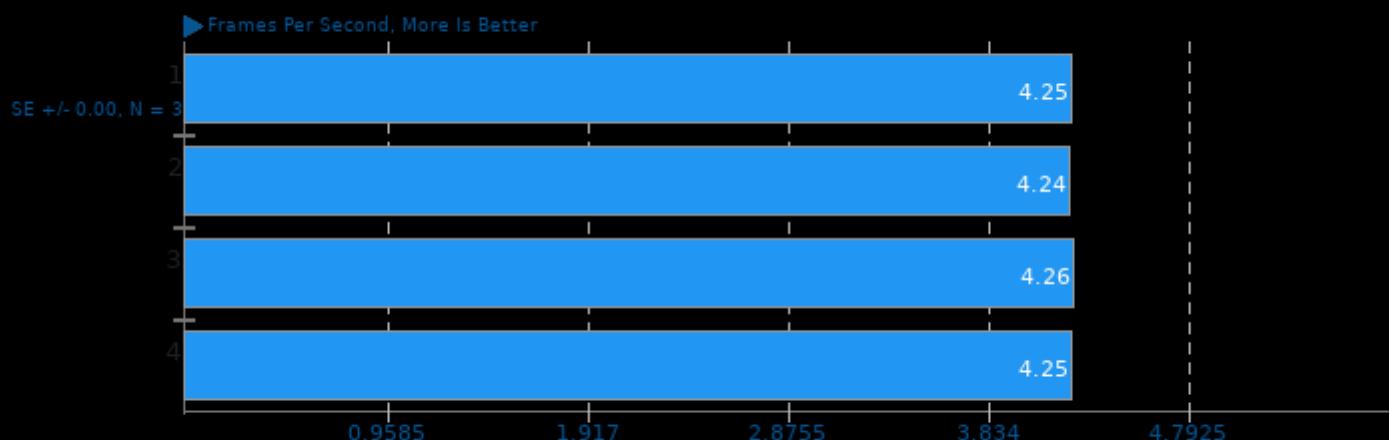


1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi\_usempif08 -lmpi\_mpifh -lmpi

2. Open MPI 4.0.3

## AOM AV1 3.1

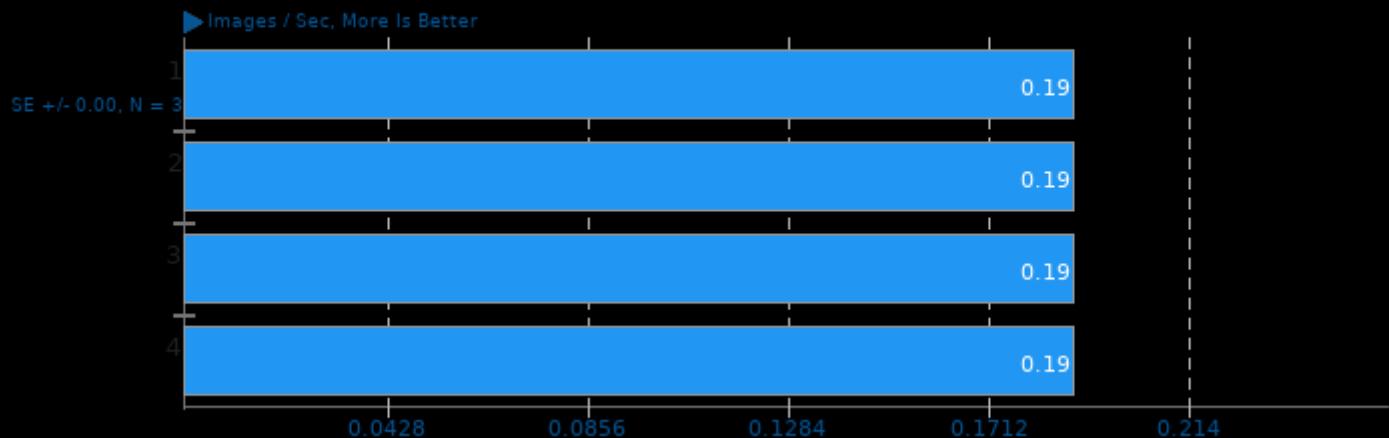
Encoder Mode: Speed 4 Two-Pass - Input: Bosphorus 1080p



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

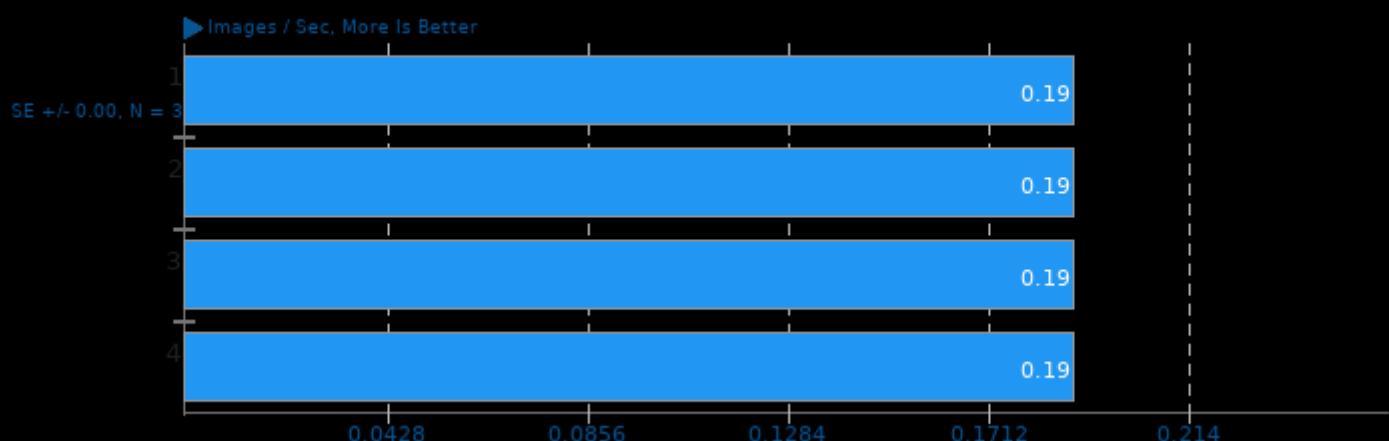
## Intel Open Image Denoise 1.4.0

Run: RT.hdr\_alb\_nrm.3840x2160



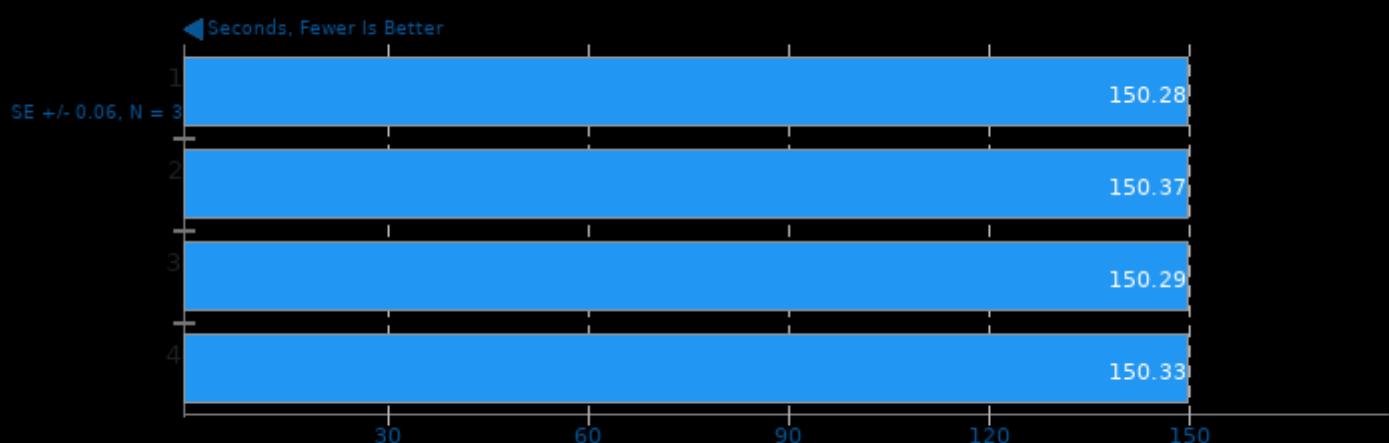
## Intel Open Image Denoise 1.4.0

Run: RT.Idr\_alb\_nrm.3840x2160



## ASTC Encoder 3.0

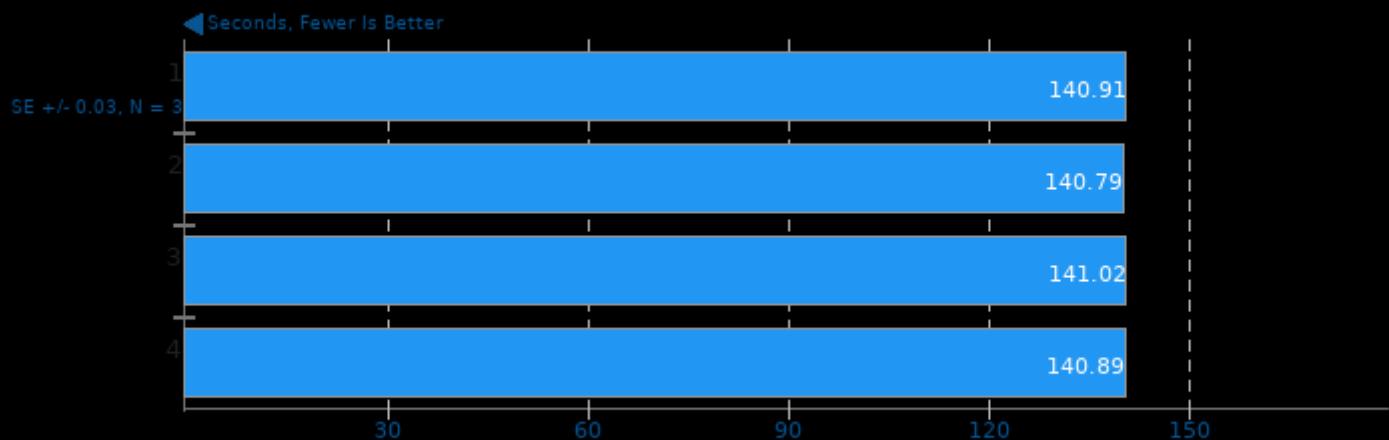
Preset: Exhaustive



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

## Timed HMMer Search 3.3.2

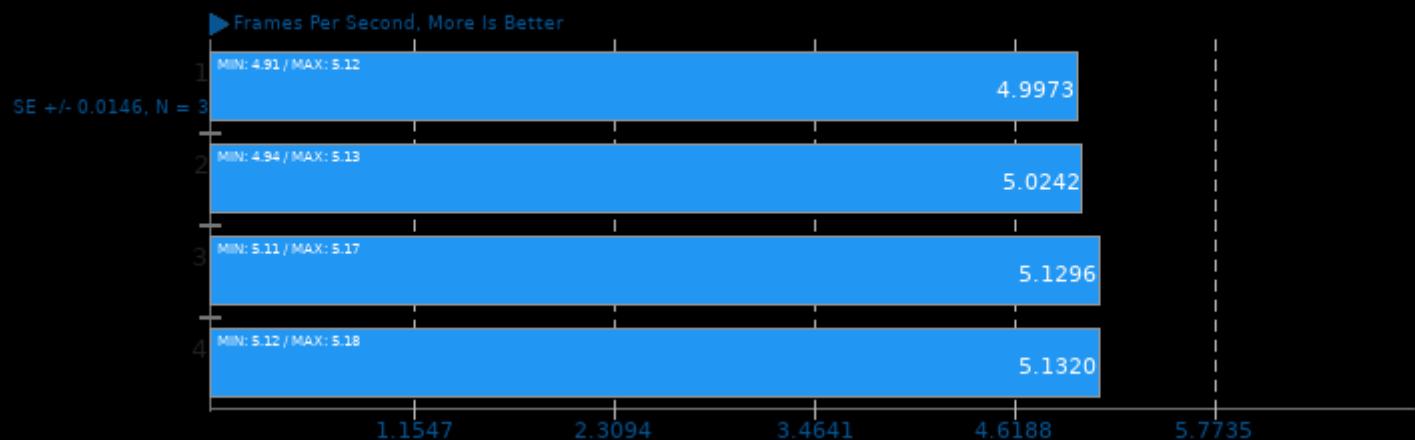
Pfam Database Search



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

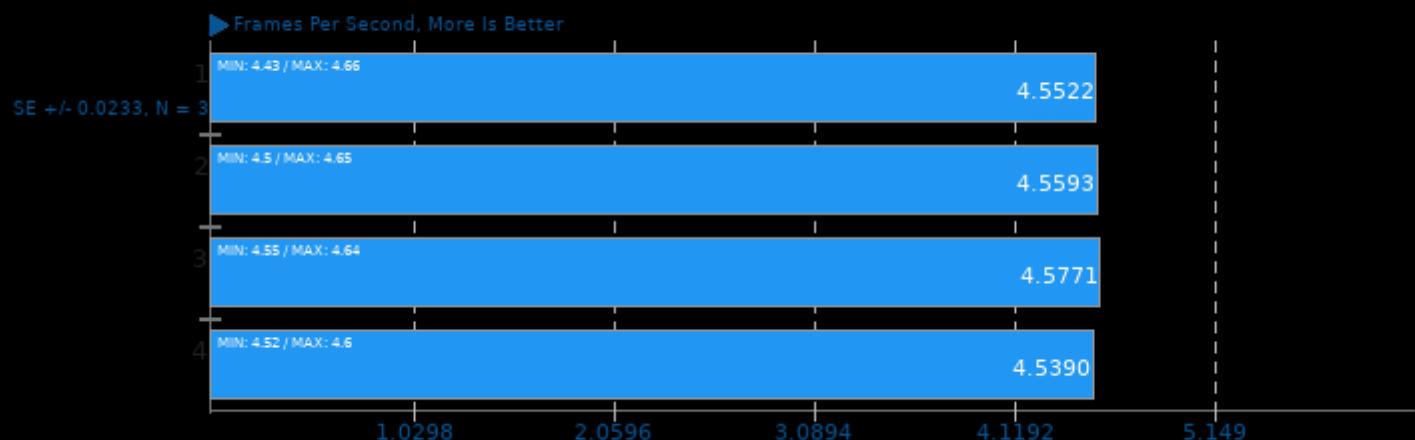
## Embree 3.13

Binary: Pathtracer - Model: Asian Dragon Obj



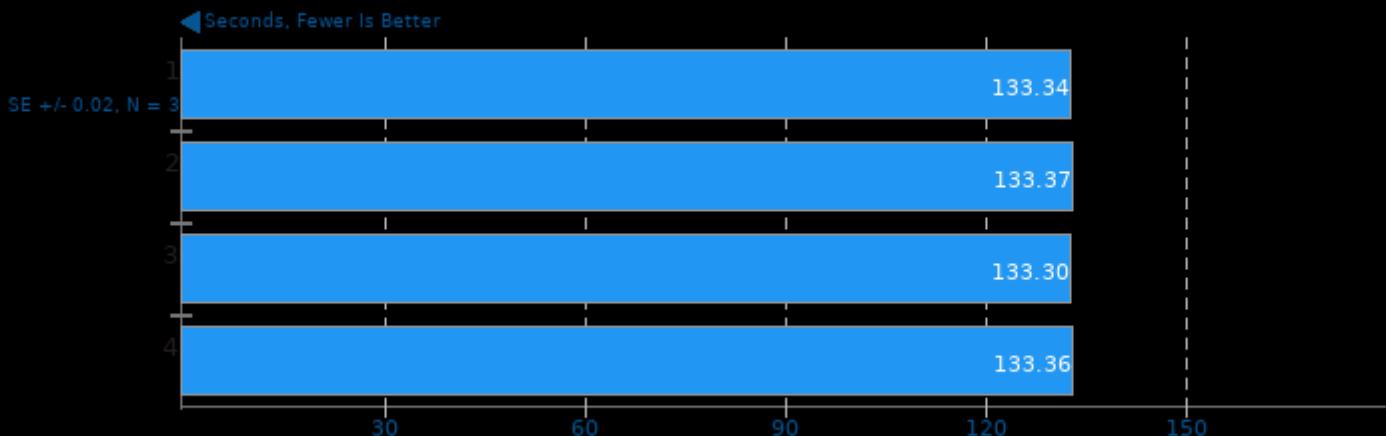
## Embree 3.13

Binary: Pathtracer - Model: Crown



## Basis Universal 1.13

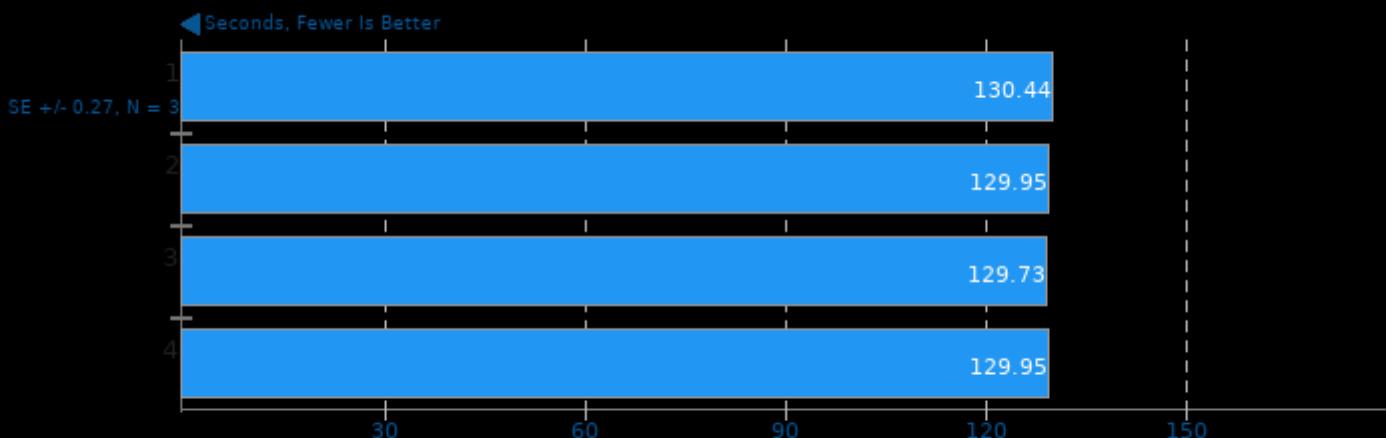
Settings: UASTC Level 3



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

## Timed MrBayes Analysis 3.2.7

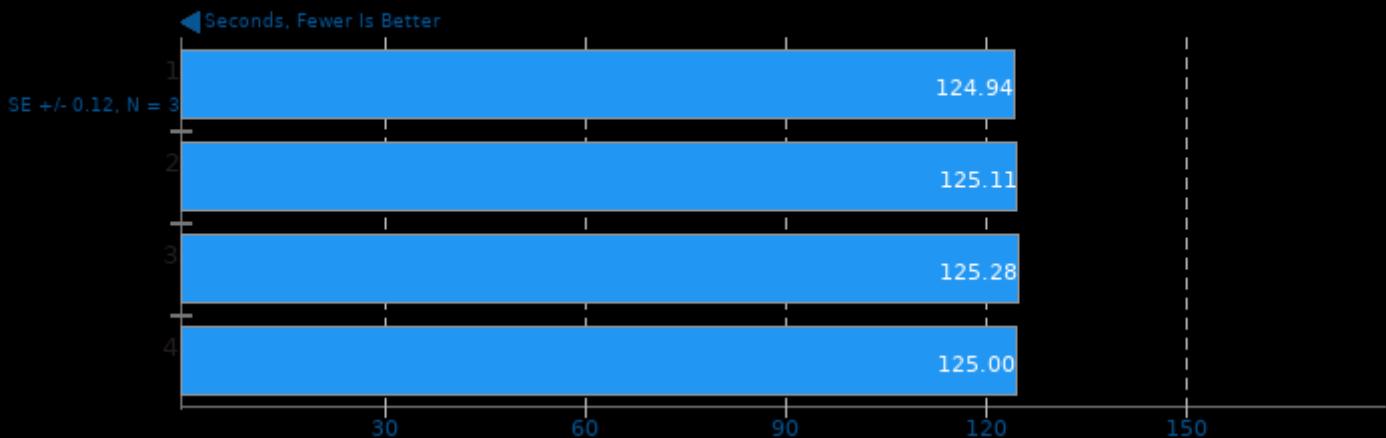
Primate Phylogeny Analysis



```
1. (CC) gcc options: -mmmx -msse -msse2 -msse3 -mssse3 -msse4.1 -msse4.2 -maes -mavx -mfma -mavx2 -mrdrnd -mbmi -mbmi2 -madx -mmpx -mabm
```

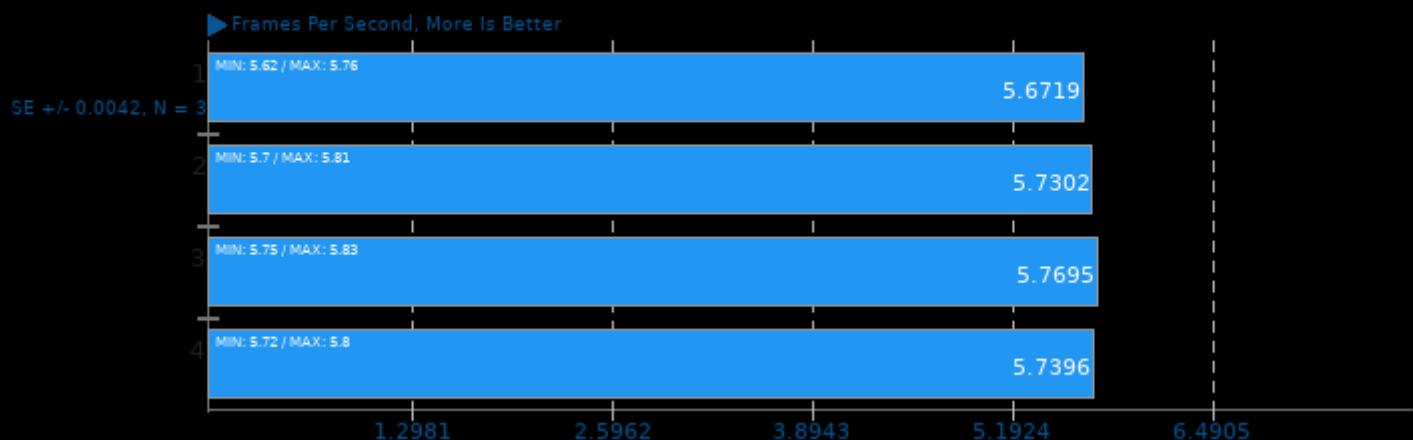
## Timed FFmpeg Compilation 4.4

Time To Compile



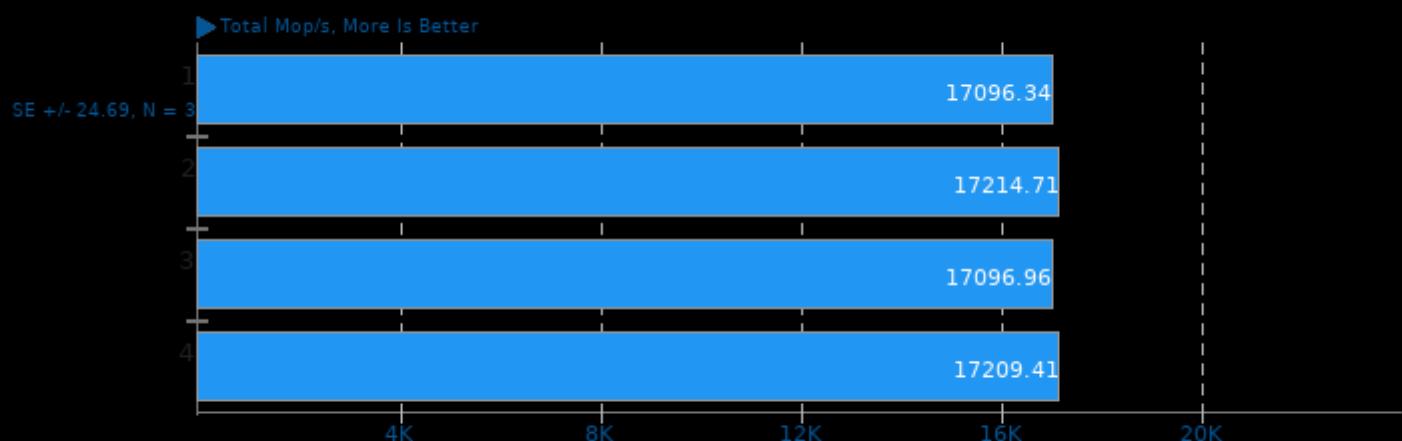
## Embree 3.13

Binary: Pathtracer ISPC - Model: Asian Dragon Obj



## NAS Parallel Benchmarks 3.4

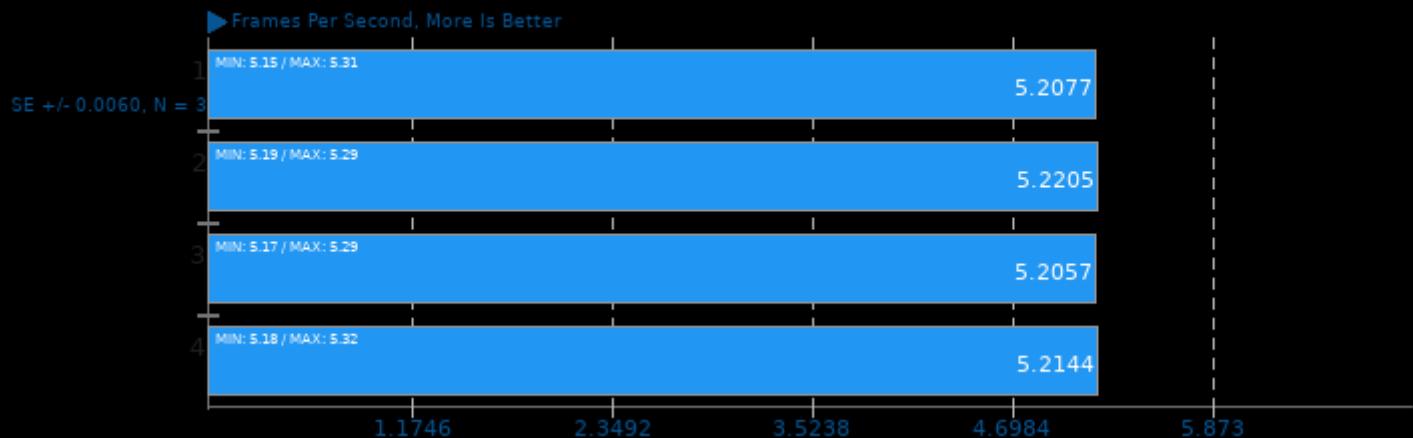
Test / Class: LU.C



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

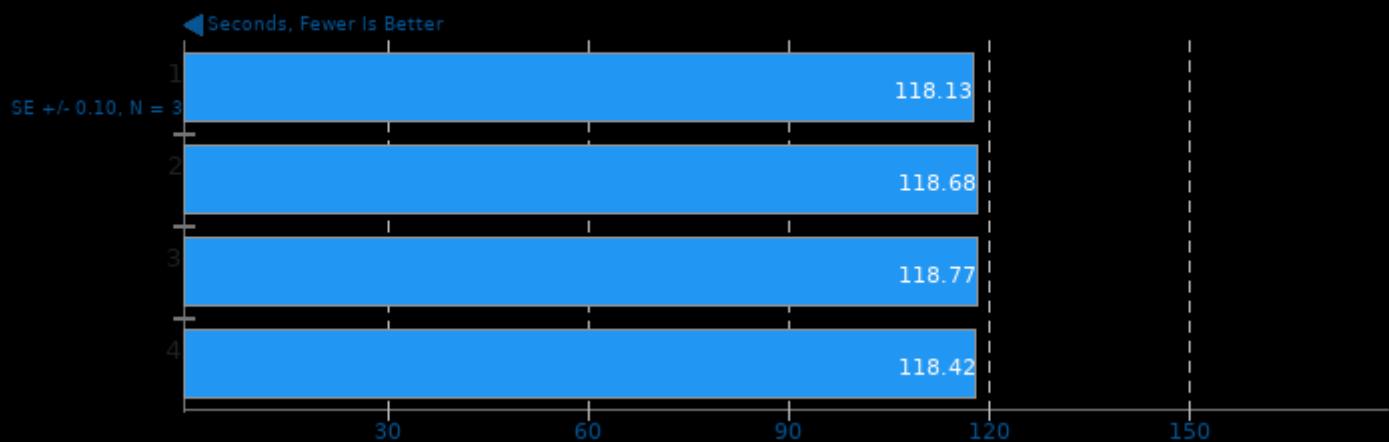
## Embree 3.13

Binary: Pathtracer ISPC - Model: Crown



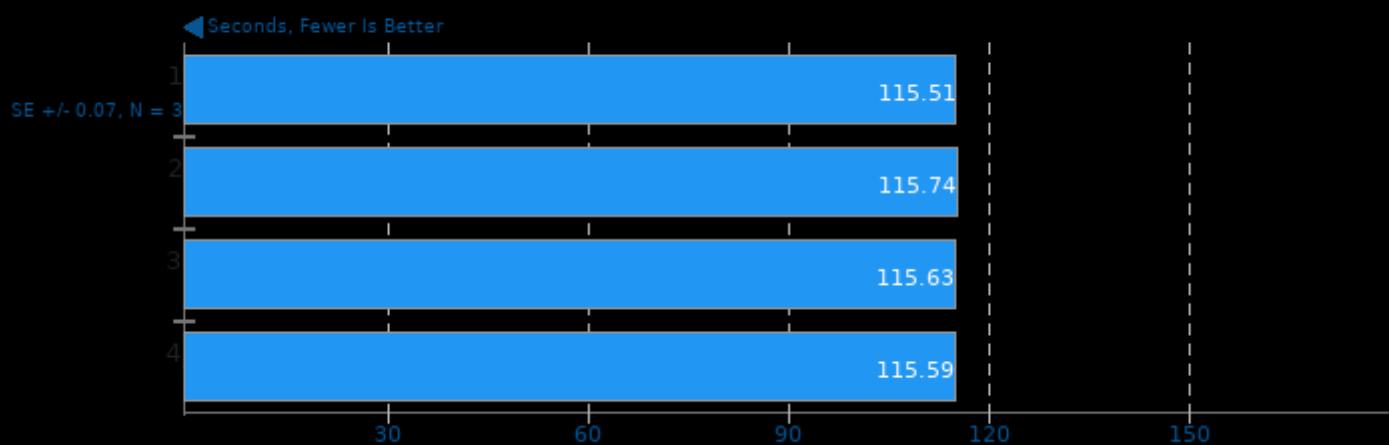
## Timed GDB GNU Debugger Compilation 10.2

Time To Compile



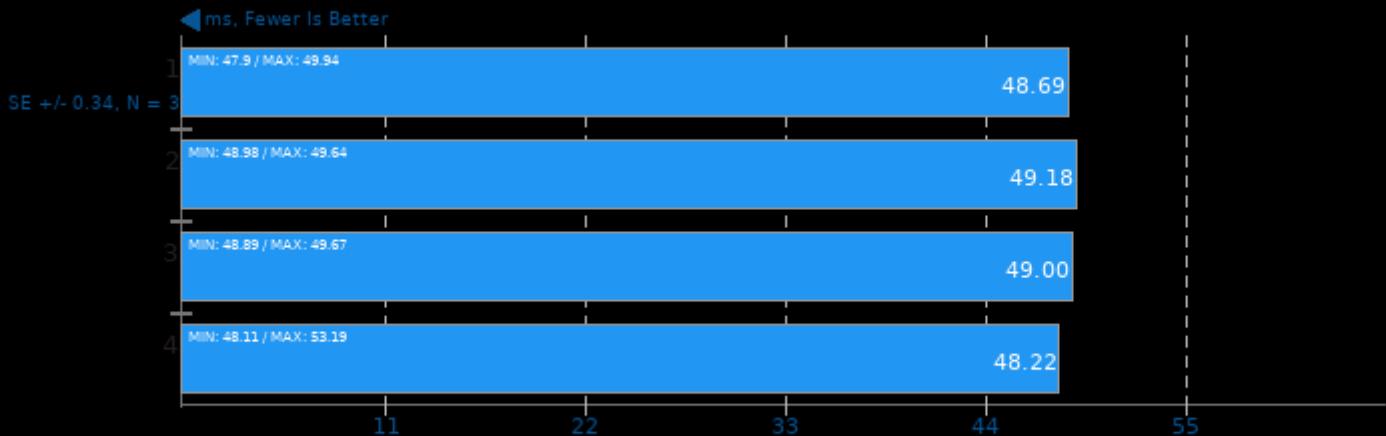
## Timed Mesa Compilation 21.0

Time To Compile



## Mobile Neural Network 1.1.3

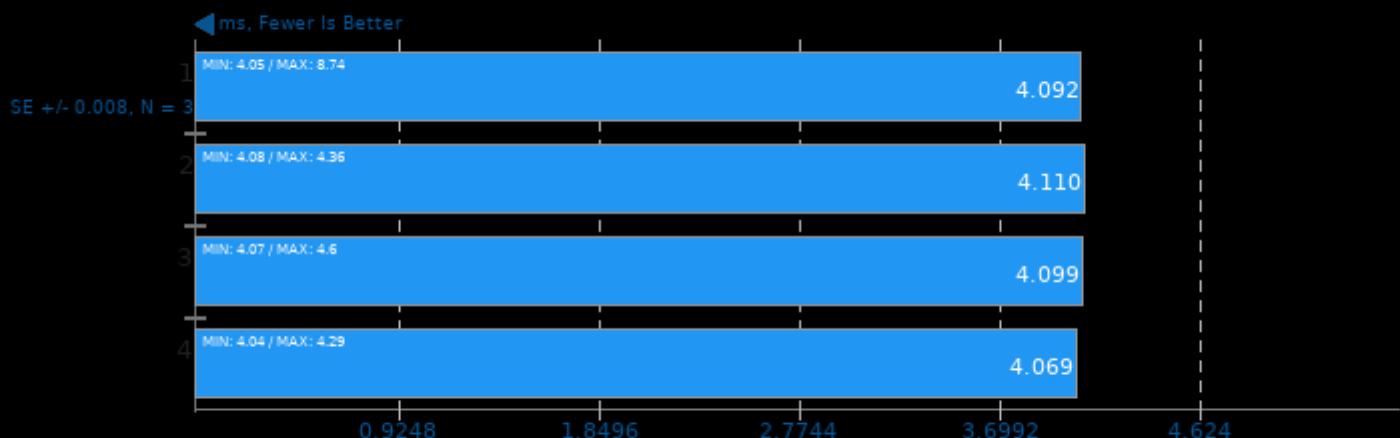
Model: inception-v3



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

## Mobile Neural Network 1.1.3

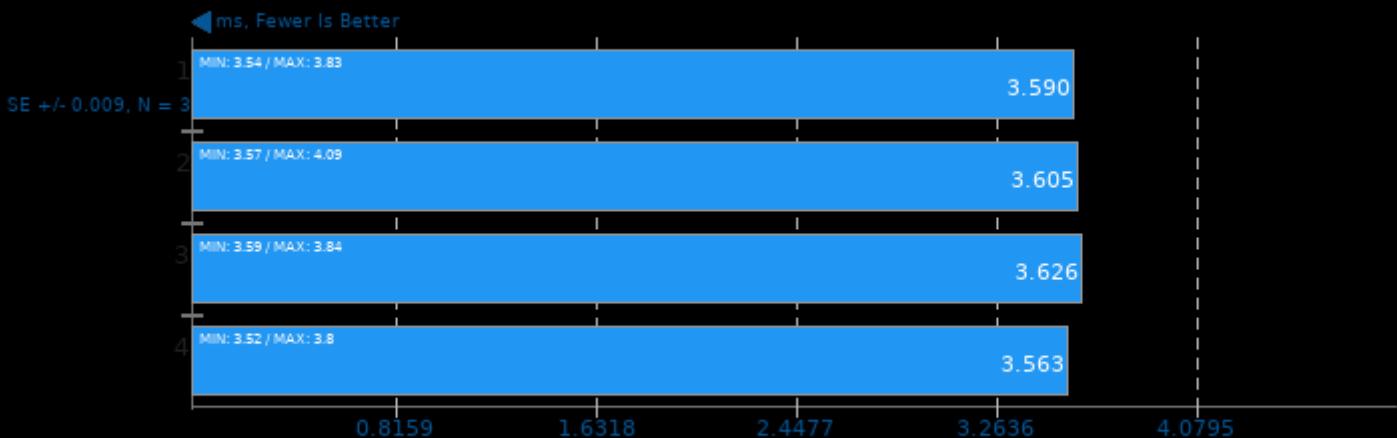
Model: mobilenet-v1-1.0



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

## Mobile Neural Network 1.1.3

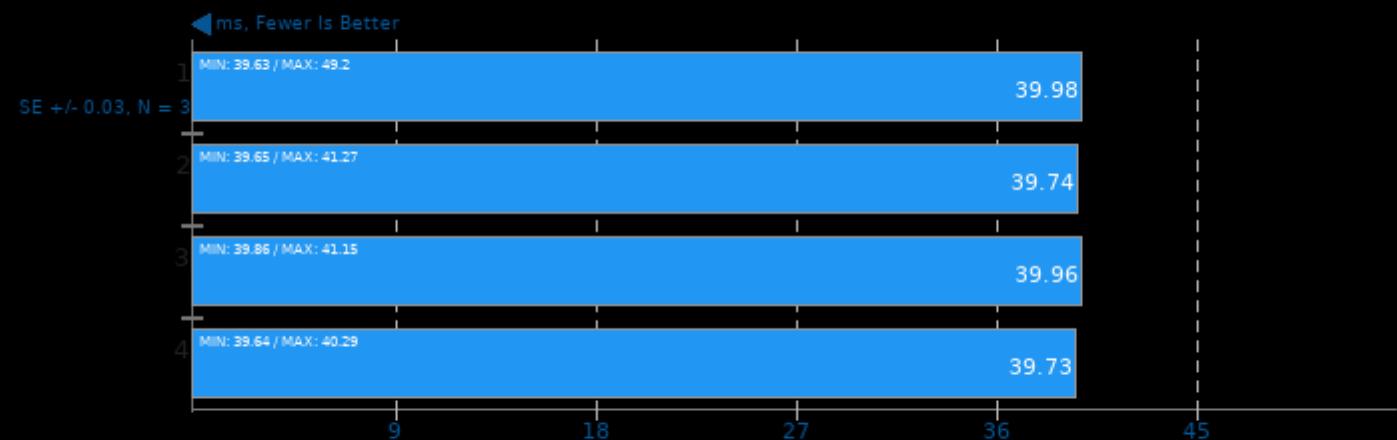
Model: MobileNetV2\_224



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

## Mobile Neural Network 1.1.3

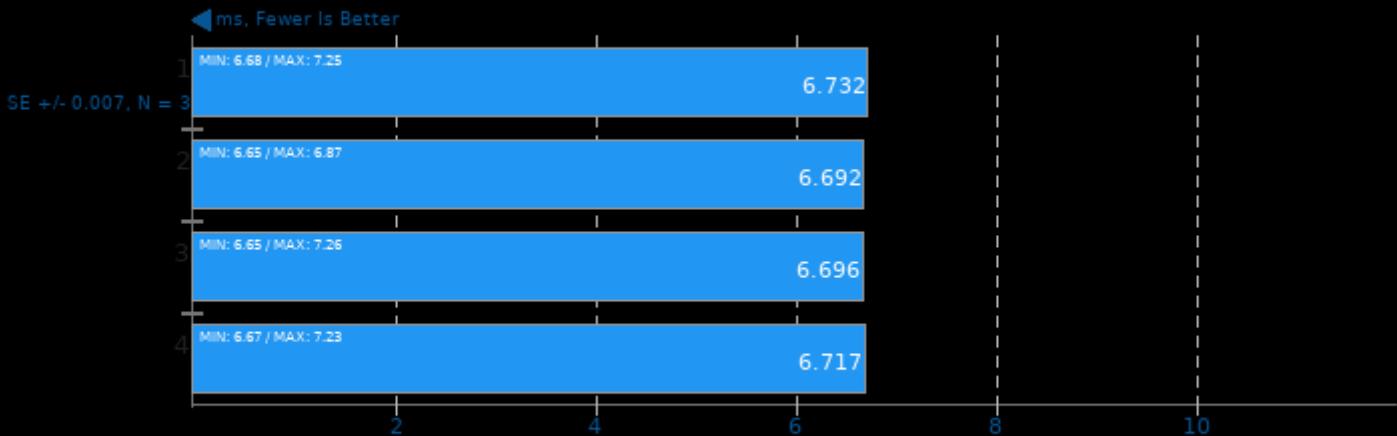
Model: resnet-v2-50



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

## Mobile Neural Network 1.1.3

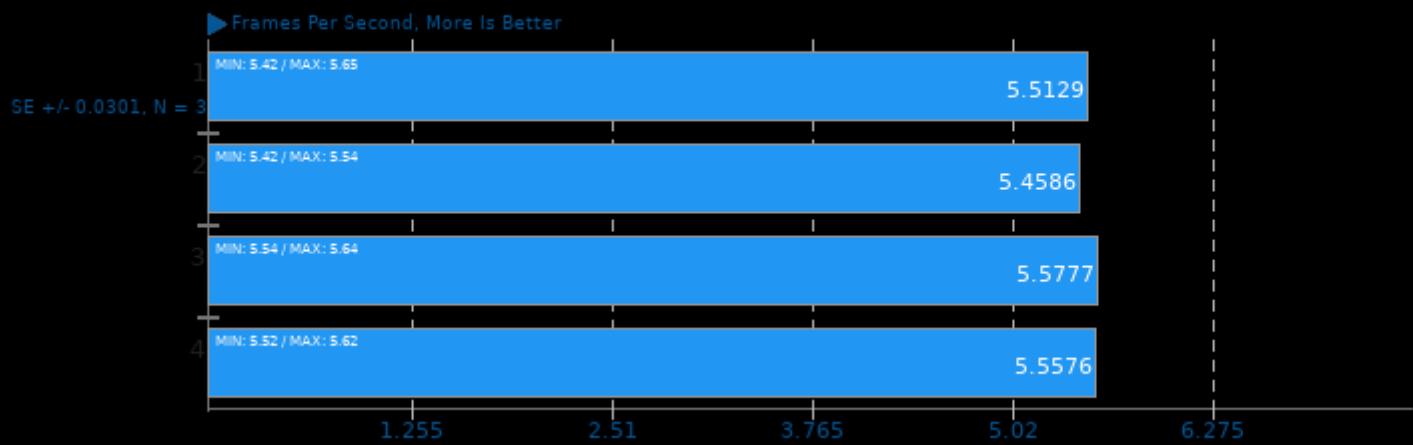
Model: SqueezeNetV1.0



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

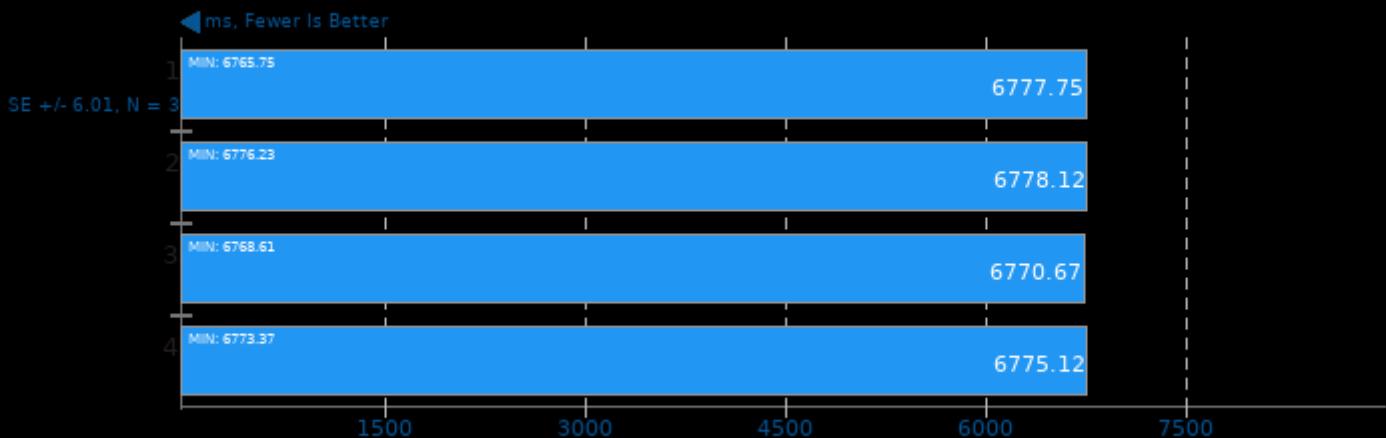
## Embree 3.13

Binary: Pathtracer - Model: Asian Dragon



## oneDNN 2.1.2

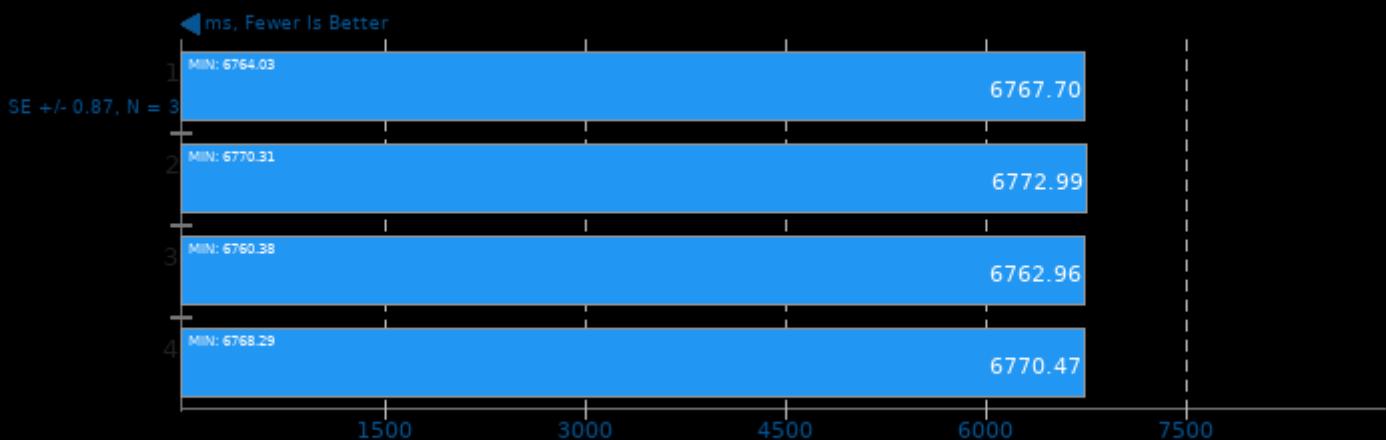
Harness: Recurrent Neural Network Training - Data Type: f32 - Engine: CPU



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

## oneDNN 2.1.2

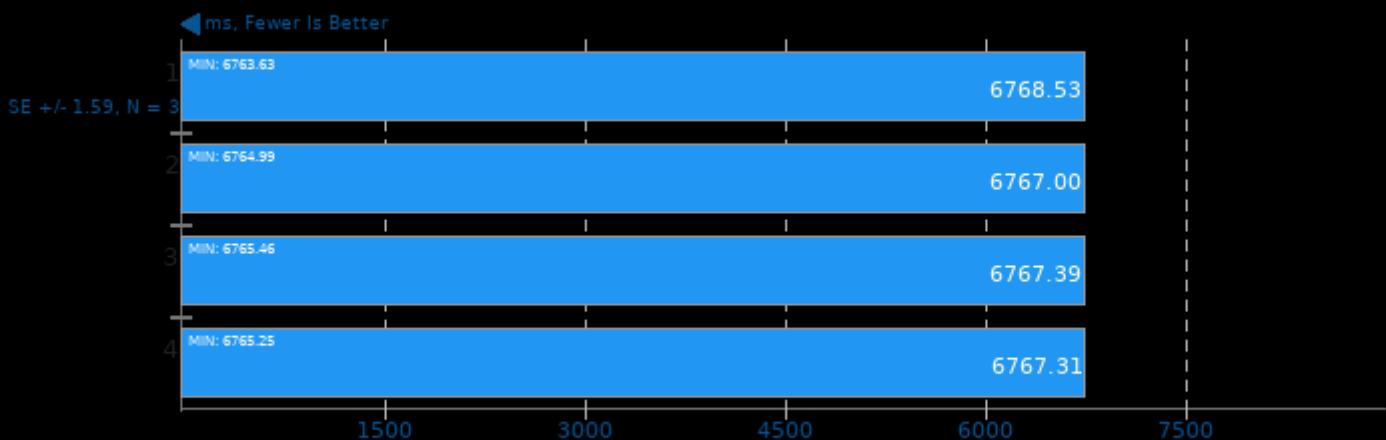
Harness: Recurrent Neural Network Training - Data Type: u8s8f32 - Engine: CPU



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

## oneDNN 2.1.2

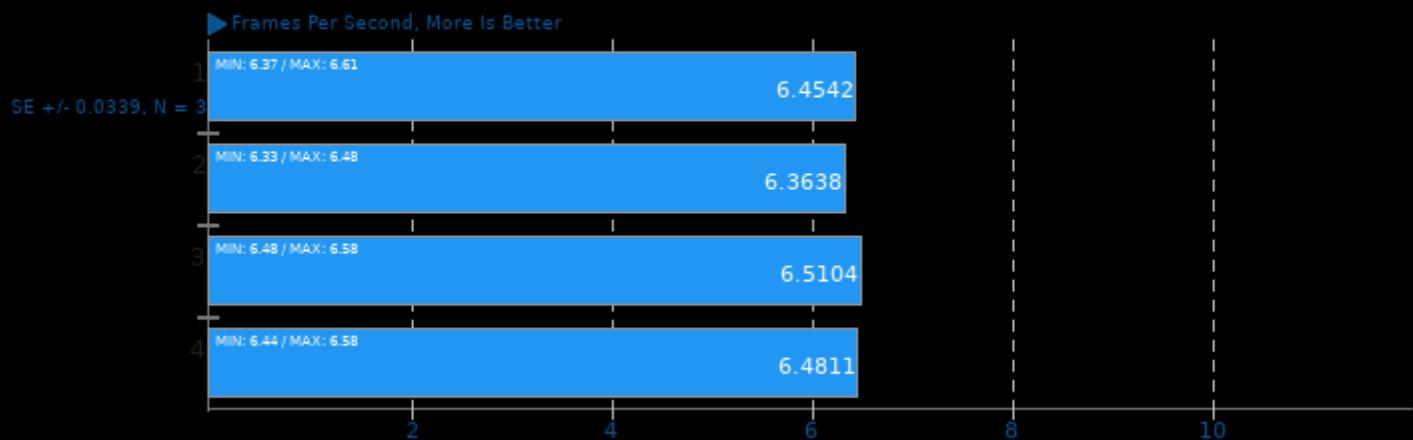
Harness: Recurrent Neural Network Training - Data Type: bf16bf16bf16 - Engine: CPU



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

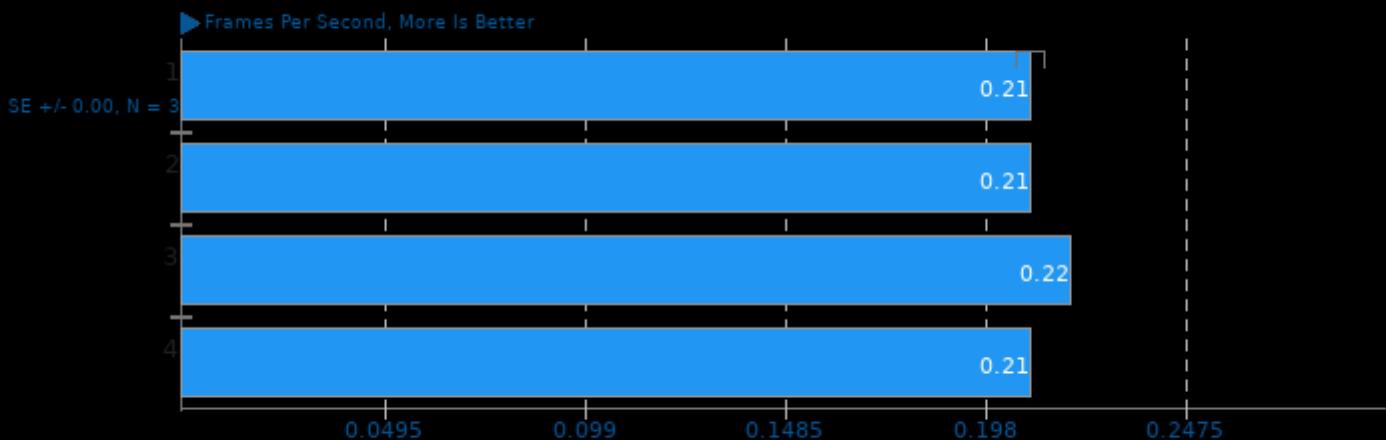
## Embree 3.13

Binary: Pathtracer ISPC - Model: Asian Dragon



## AOM AV1 3.1

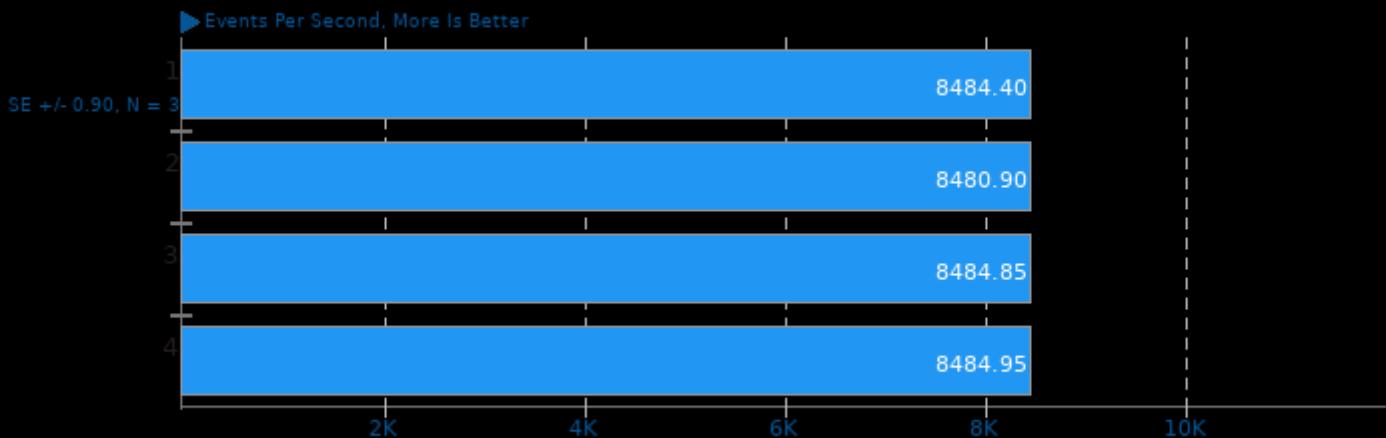
Encoder Mode: Speed 0 Two-Pass - Input: Bosphorus 1080p



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

## Sysbench 1.0.20

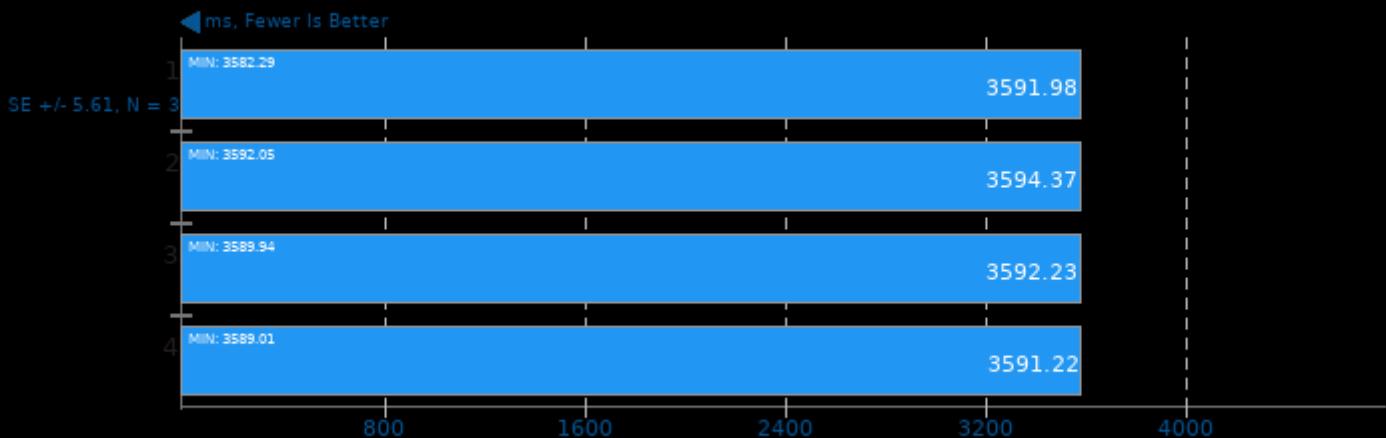
Test: CPU



1. (CC) gcc options: -pthread -O2 -funroll-loops -rdynamic -ldl -laio -lm

## oneDNN 2.1.2

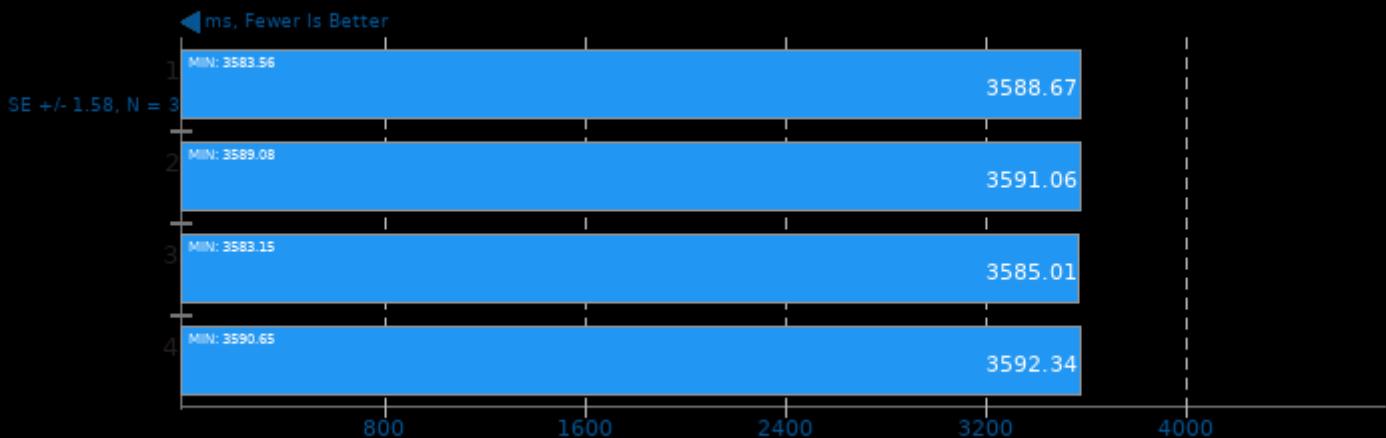
Harness: Recurrent Neural Network Inference - Data Type: f32 - Engine: CPU



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

## oneDNN 2.1.2

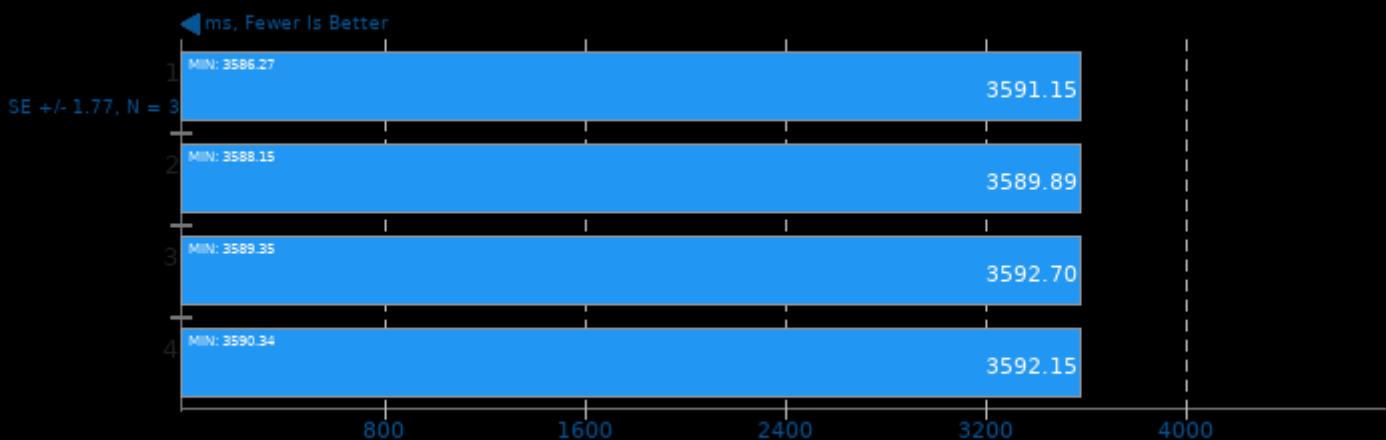
Harness: Recurrent Neural Network Inference - Data Type: u8s8f32 - Engine: CPU



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

## oneDNN 2.1.2

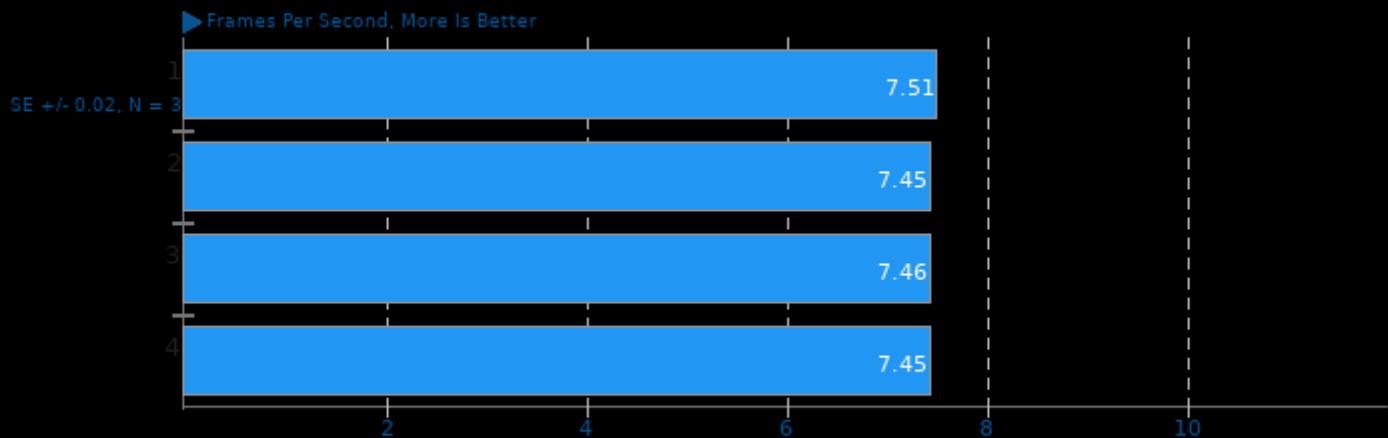
Harness: Recurrent Neural Network Inference - Data Type: bf16bf16bf16 - Engine: CPU



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

## VP9 libvpx Encoding 1.10.0

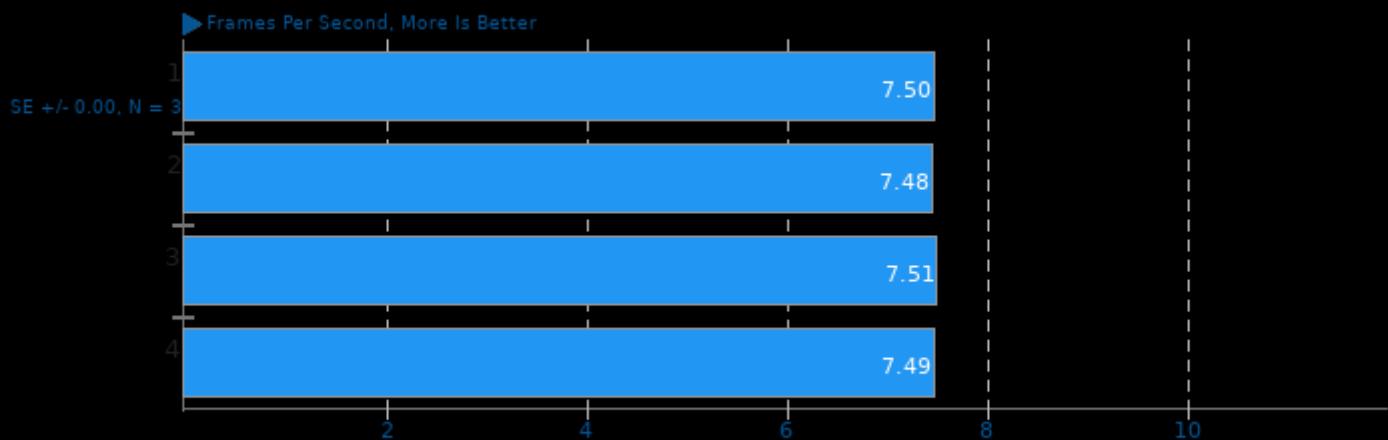
Speed: Speed 0 - Input: Bosphorus 1080p



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

## AOM AV1 3.1

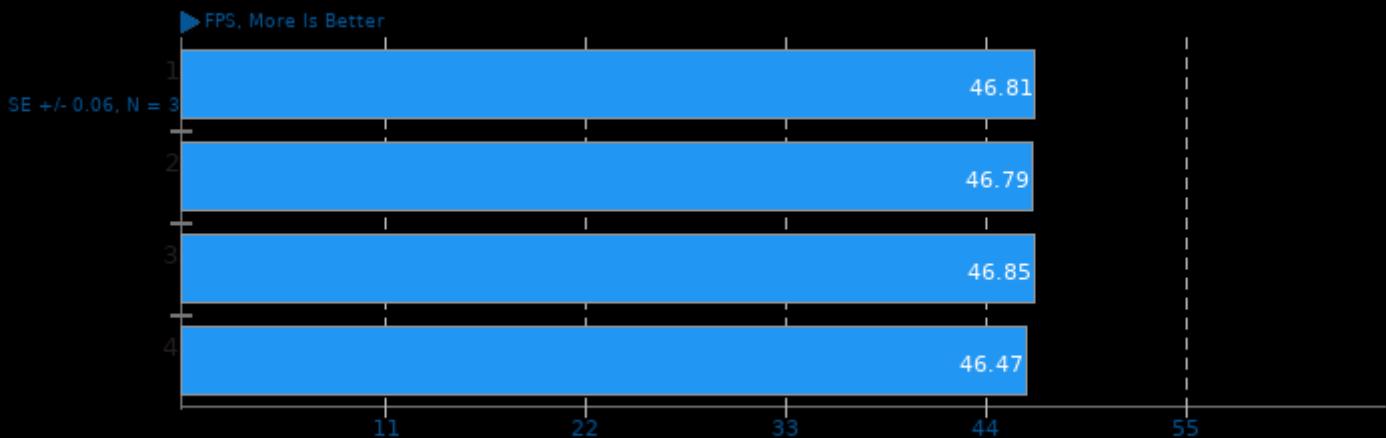
Encoder Mode: Speed 6 Realtime - Input: Bosphorus 4K



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

## libgav1 0.16.3

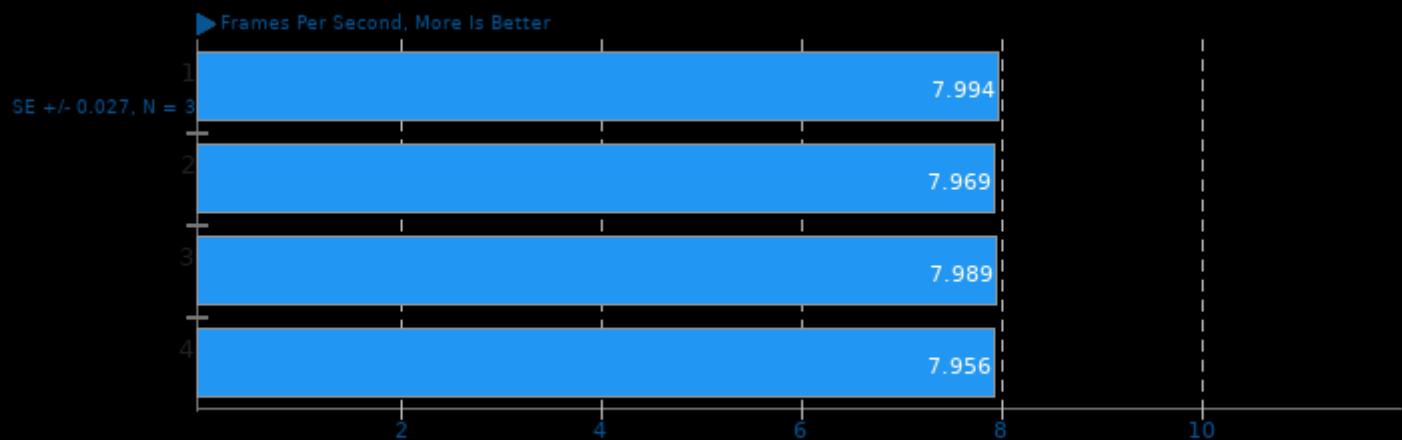
Video Input: Summer Nature 4K



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

## SVT-AV1 0.8.7

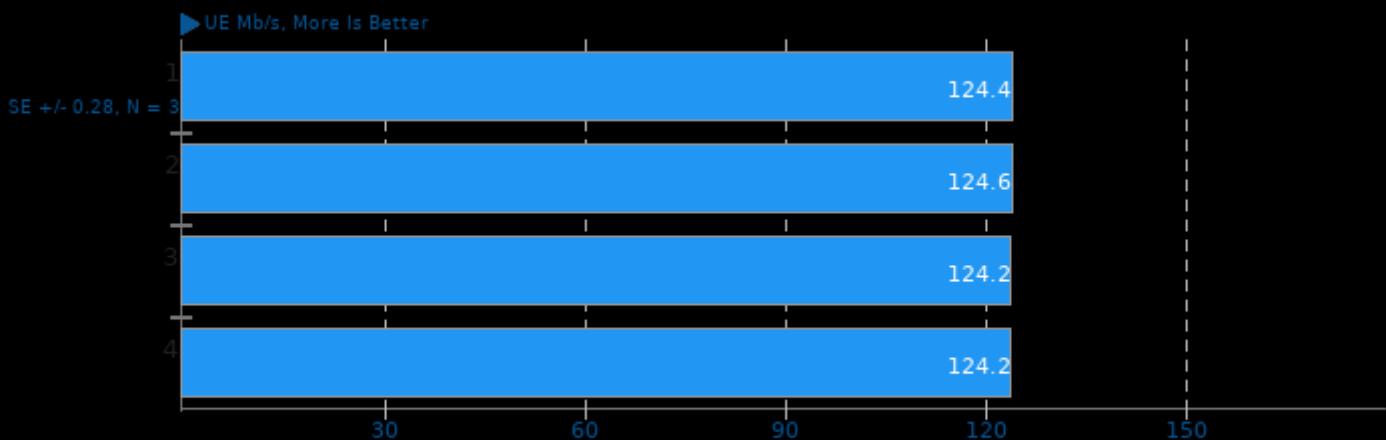
Encoder Mode: Preset 8 - Input: Bosphorus 4K



1. (CXX) g++ options: -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie

## srsRAN 21.04

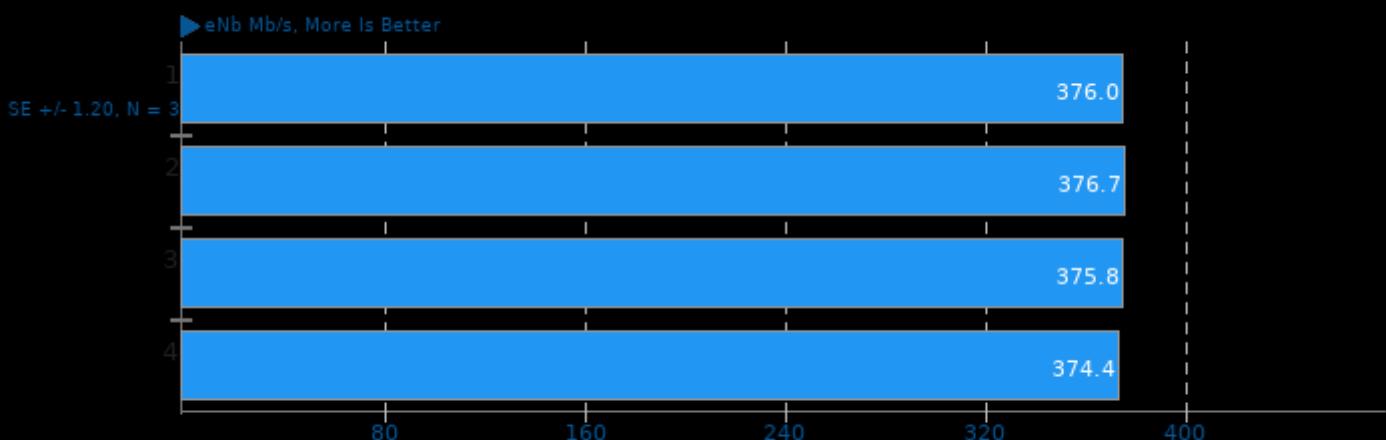
Test: 4G PHY\_DL\_Test 100 PRB MIMO 256-QAM



1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

## srsRAN 21.04

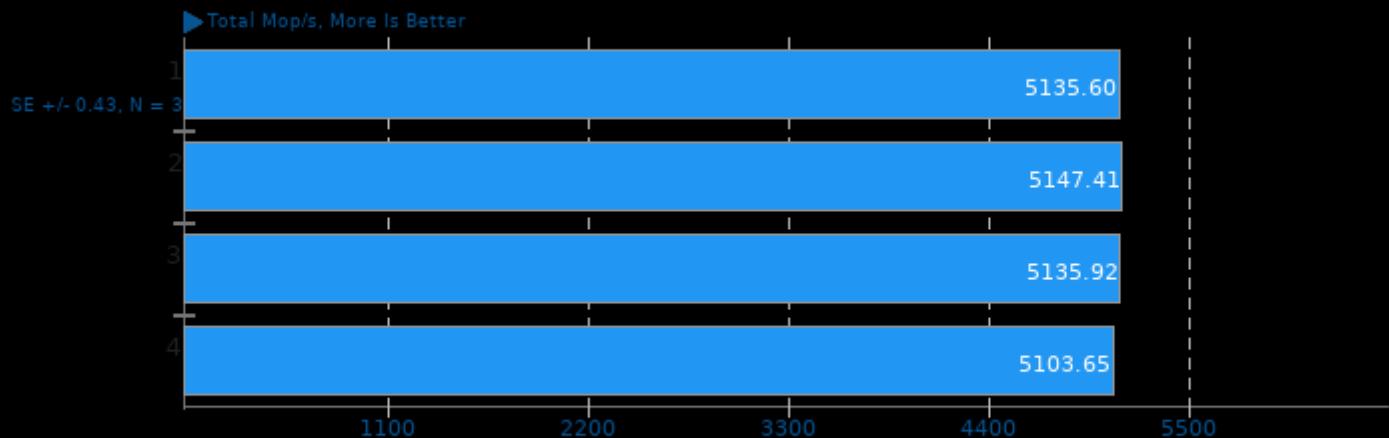
Test: 4G PHY\_DL\_Test 100 PRB MIMO 256-QAM



1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

## NAS Parallel Benchmarks 3.4

Test / Class: SP.B

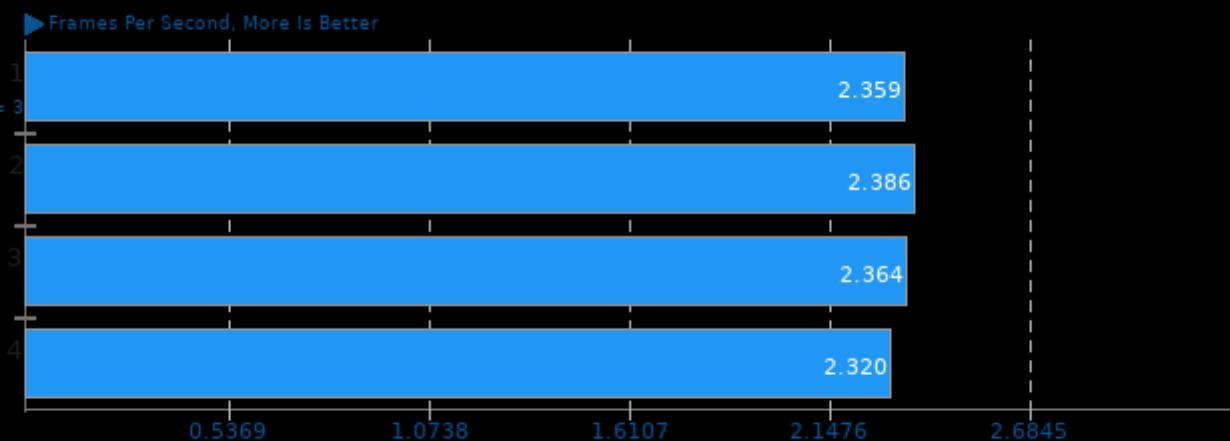


1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi\_usempif08 -lmpi\_mpifh -lmpi

2. Open MPI 4.0.3

## SVT-AV1 0.8.7

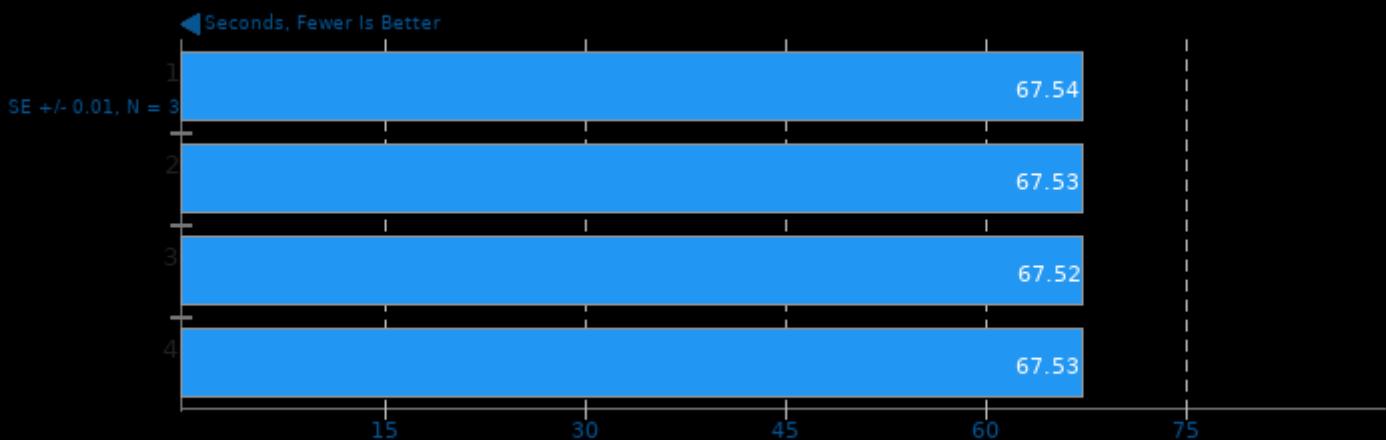
Encoder Mode: Preset 4 - Input: Bosphorus 1080p



1. (CXX) g++ options: -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie

## Basis Universal 1.13

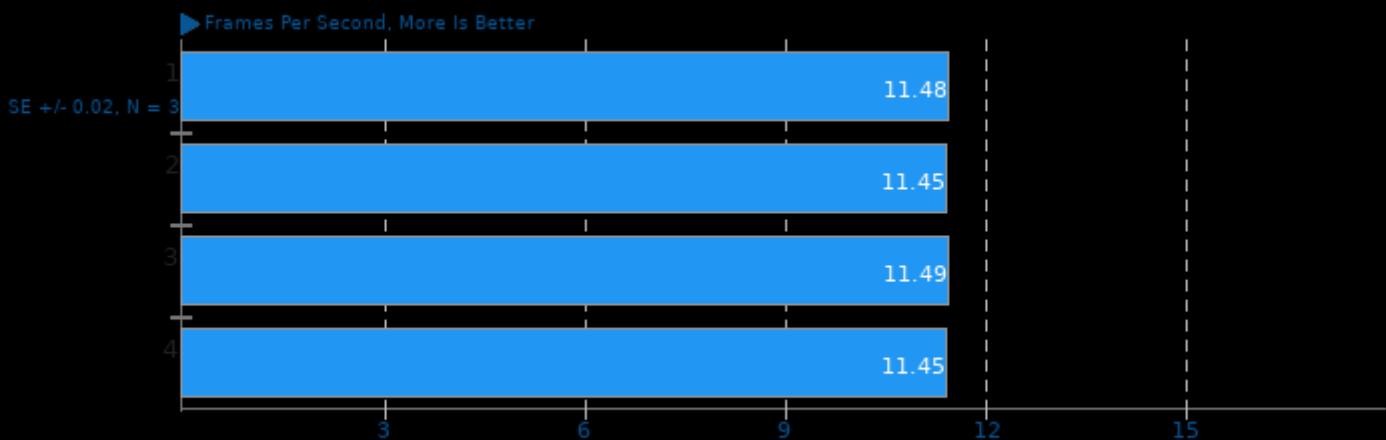
Settings: UASTC Level 2



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

## AOM AV1 3.1

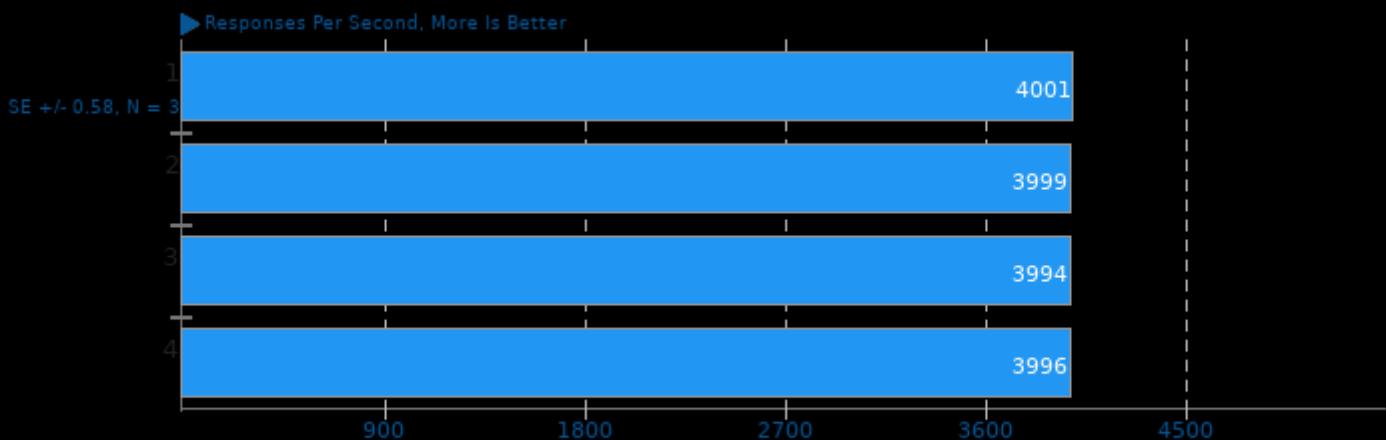
Encoder Mode: Speed 6 Two-Pass - Input: Bosphorus 1080p



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

**PJSIP 2.11**

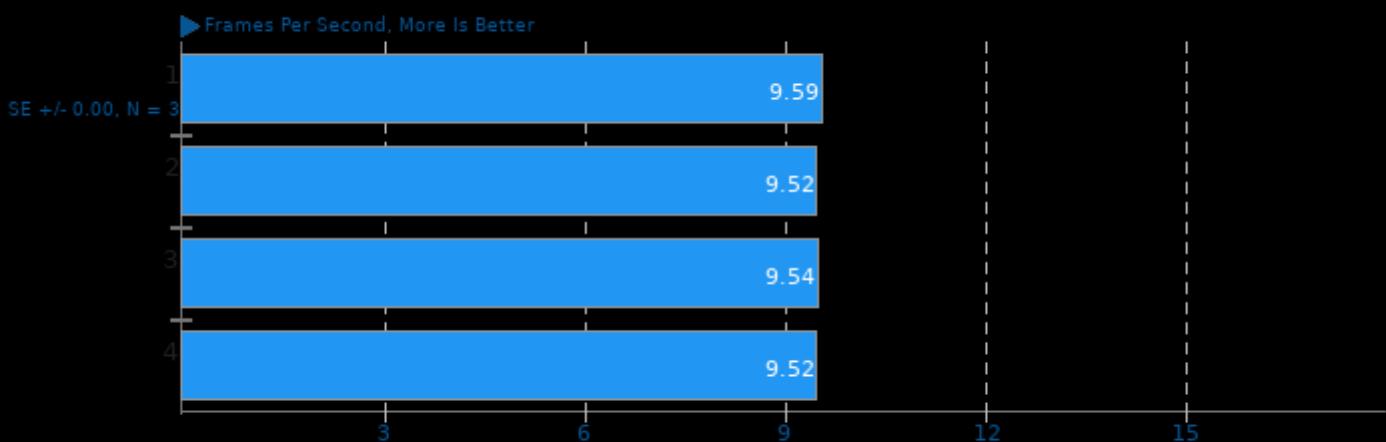
Method: INVITE



1. (CC) gcc options: -fSDL2 -lavformat -lavcodec -lswscale -lavutil -fstdc++ -fssl -lcrypto -luuid -lm -lrt -lpthread -lasound -O2

**VP9 libvpx Encoding 1.10.0**

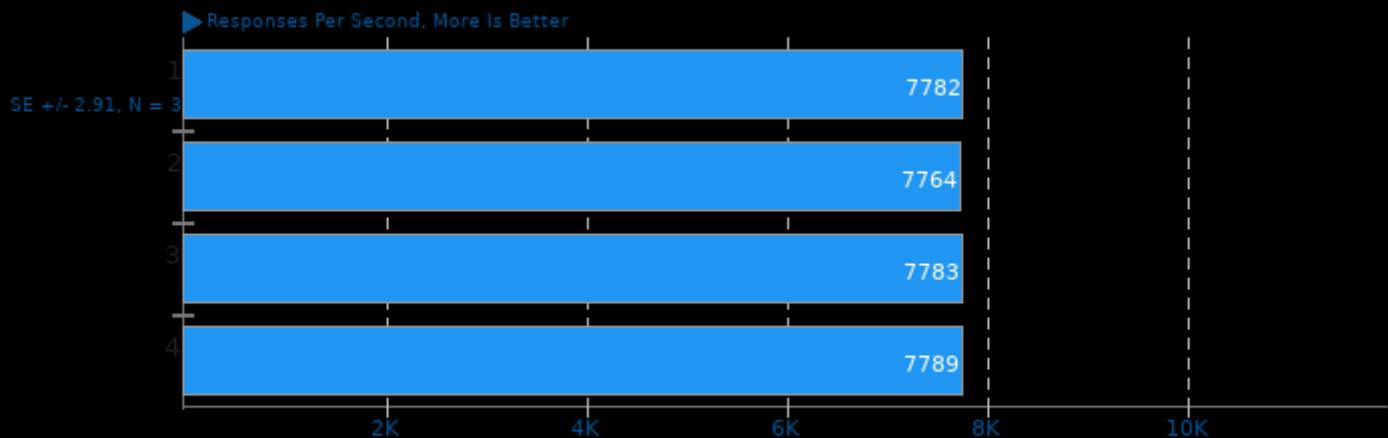
Speed: Speed 5 - Input: Bosphorus 4K



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

## PJSIP 2.11

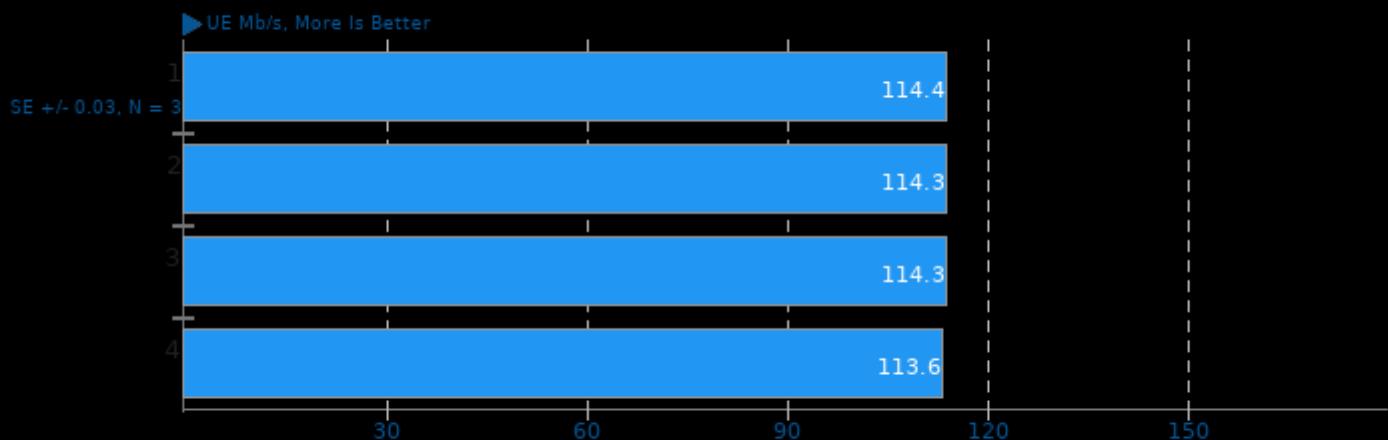
Method: OPTIONS, Stateful



```
1. (CC) gcc options: -fSDL2 -lavformat -lavcodec -lswscale -lavutil -fstdc++ -fssl -fcrypto -luuid -fim -fthread -fasound -O2
```

## srsRAN 21.04

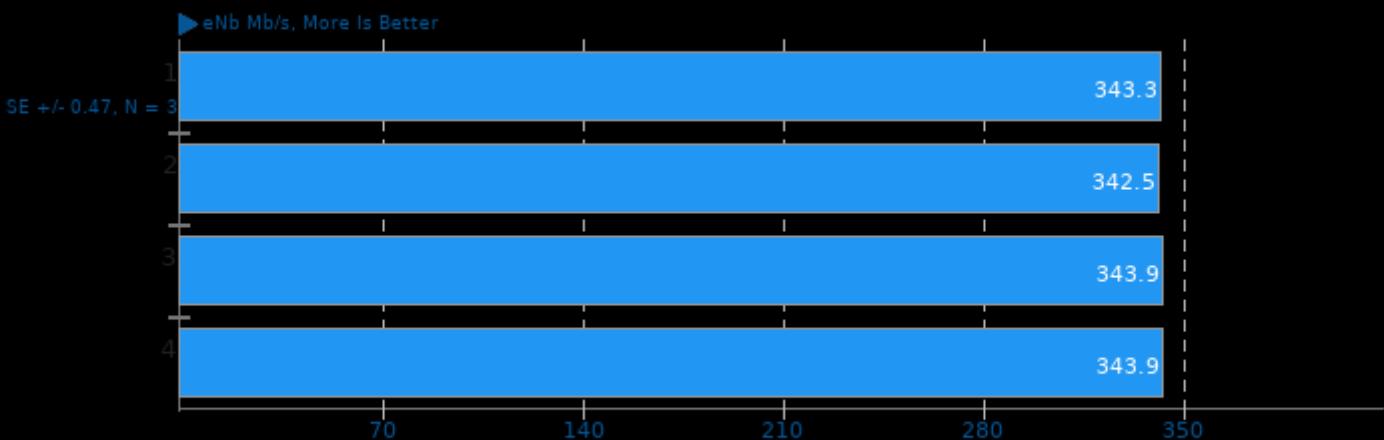
Test: 4G PHY\_DL\_Test 100 PRB MIMO 64-QAM



```
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno
```

## srsRAN 21.04

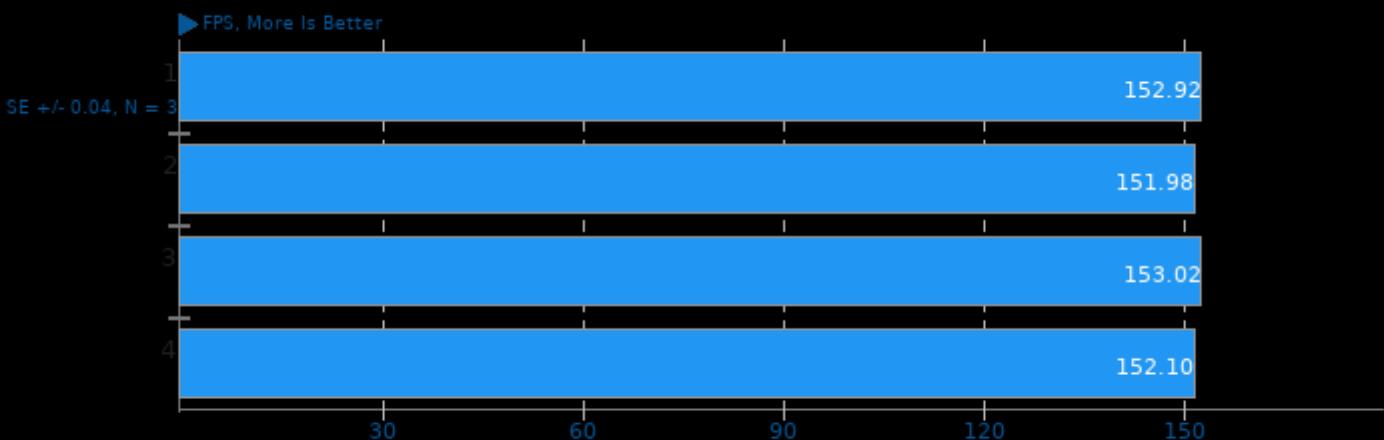
Test: 4G PHY\_DL\_Test 100 PRB MIMO 64-QAM



1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

## libgav1 0.16.3

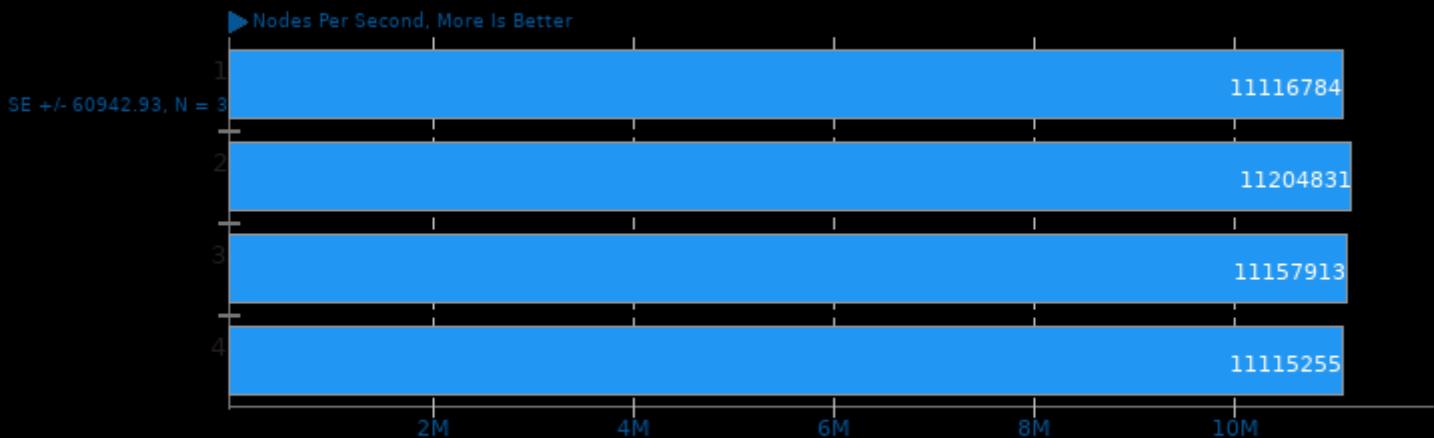
Video Input: Chimera 1080p



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

## Stockfish 13

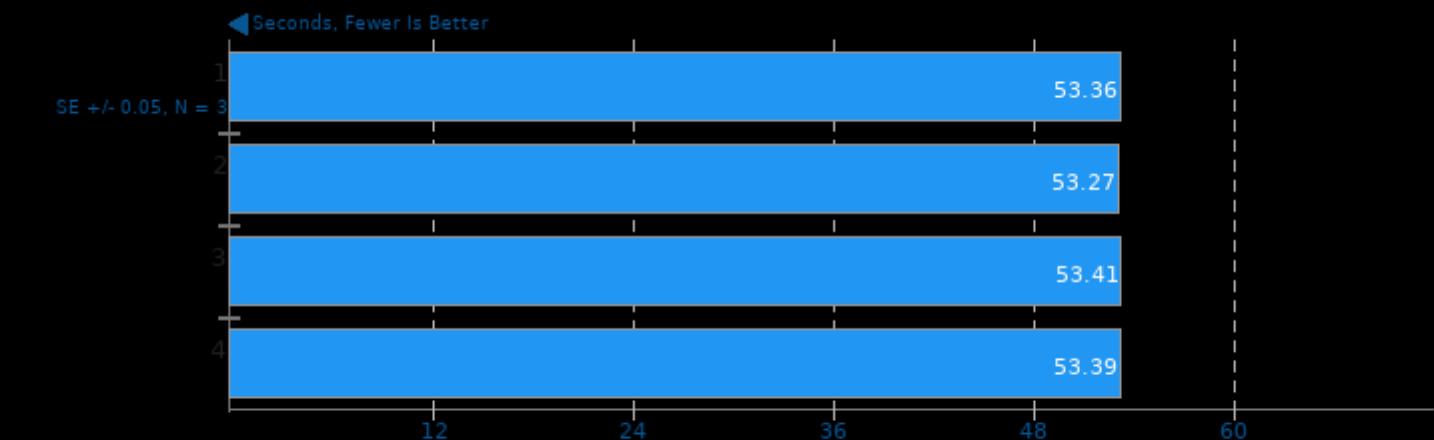
Total Time



1. (CXX) g++ options: -lgcov -m64 -lpthread -fno-exceptions -std=c++17 -fprofile-use -fno-peel-loops -fno-tracer -pedantic -O3 -msse -msse3 -mpopcnt -

## Xcompact3d Incompact3d 2021-03-11

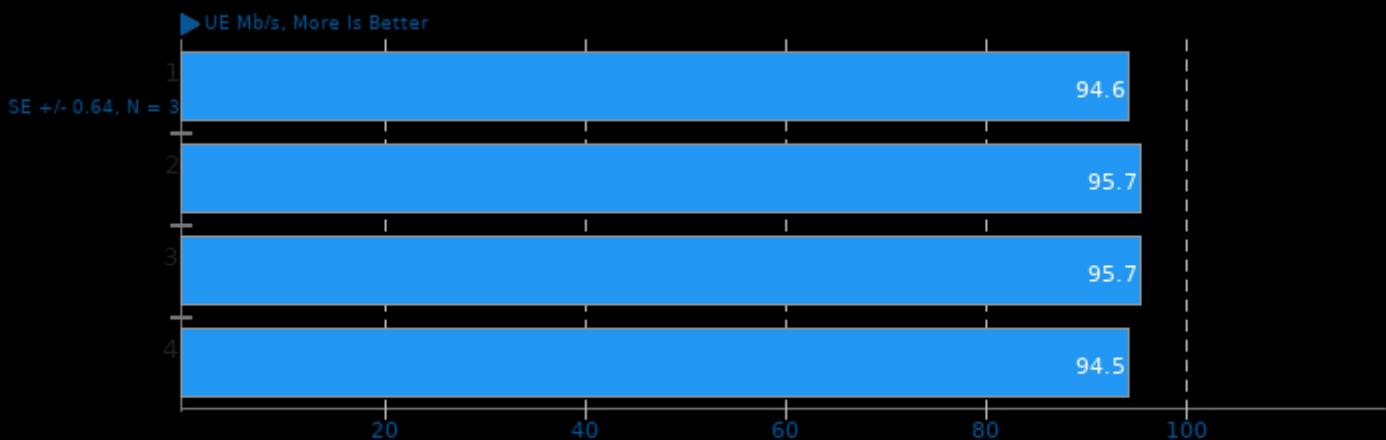
Input: input.i3d 129 Cells Per Direction



1. (F9X) gfortran options: -cpp -O2 -funroll-loops -floop-optimize -fcray-pointer -fbacktrace -pthread -lmpi\_usempif08 -lmpi\_mpifh -lmpi

**srsLTE 20.10.1**

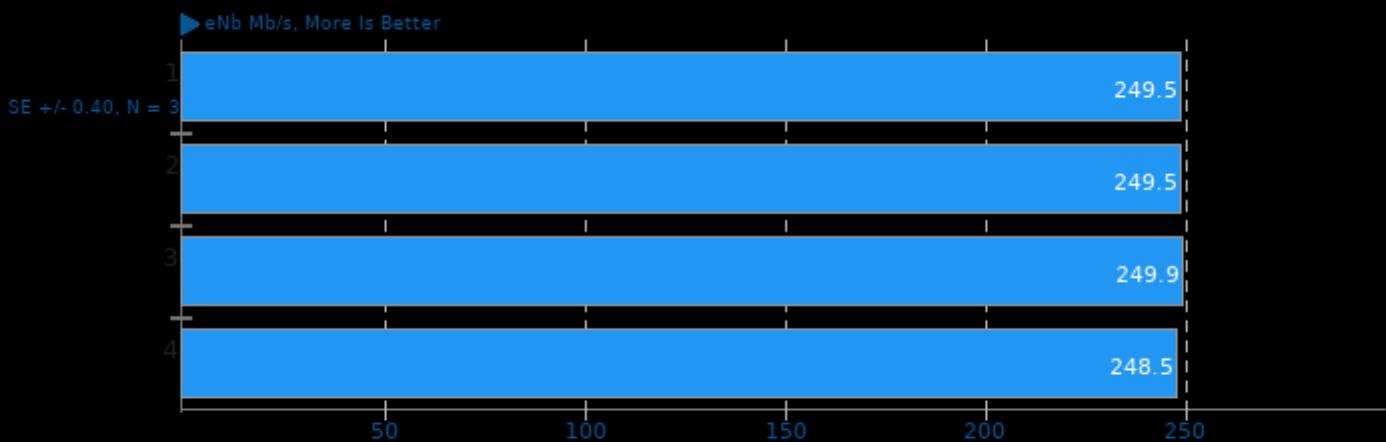
Test: PHY\_DL\_Test



```
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno
```

**srsLTE 20.10.1**

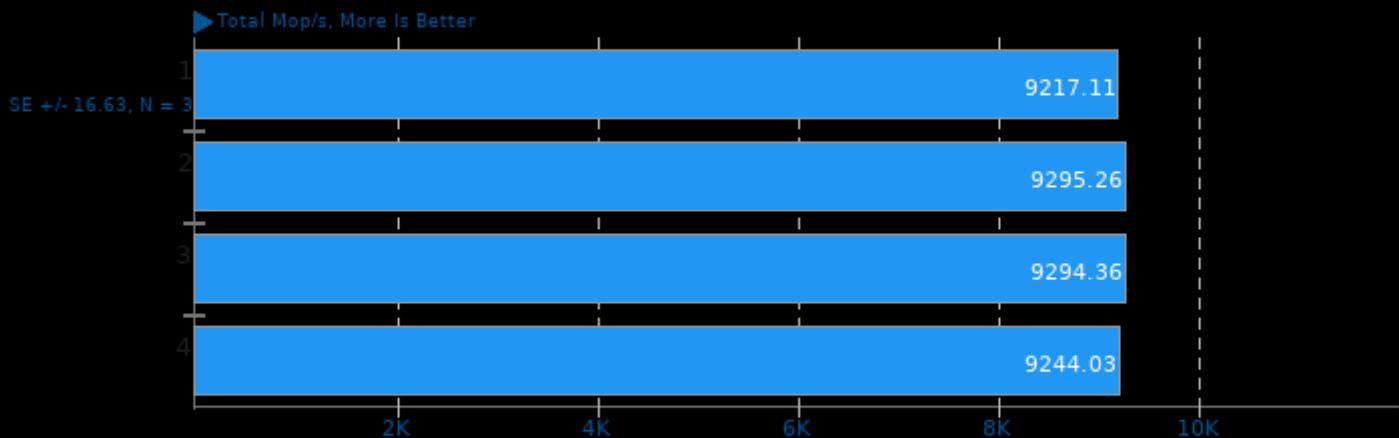
Test: PHY\_DL\_Test



```
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno
```

## NAS Parallel Benchmarks 3.4

Test / Class: FT.C

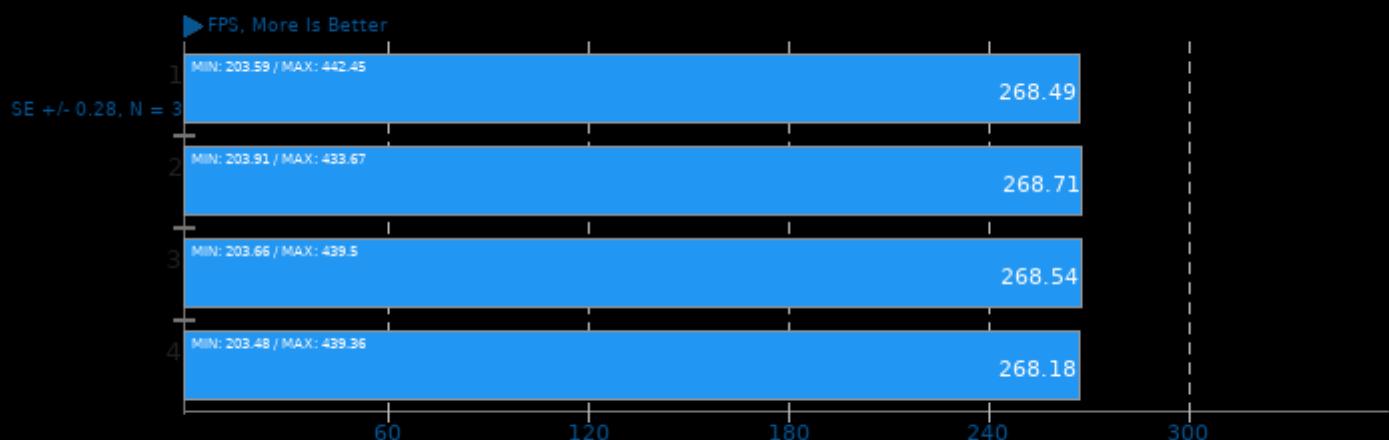


1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi\_usempif08 -lmpi\_mpifh -lmpi

2. Open MPI 4.0.3

## dav1d 0.9.0

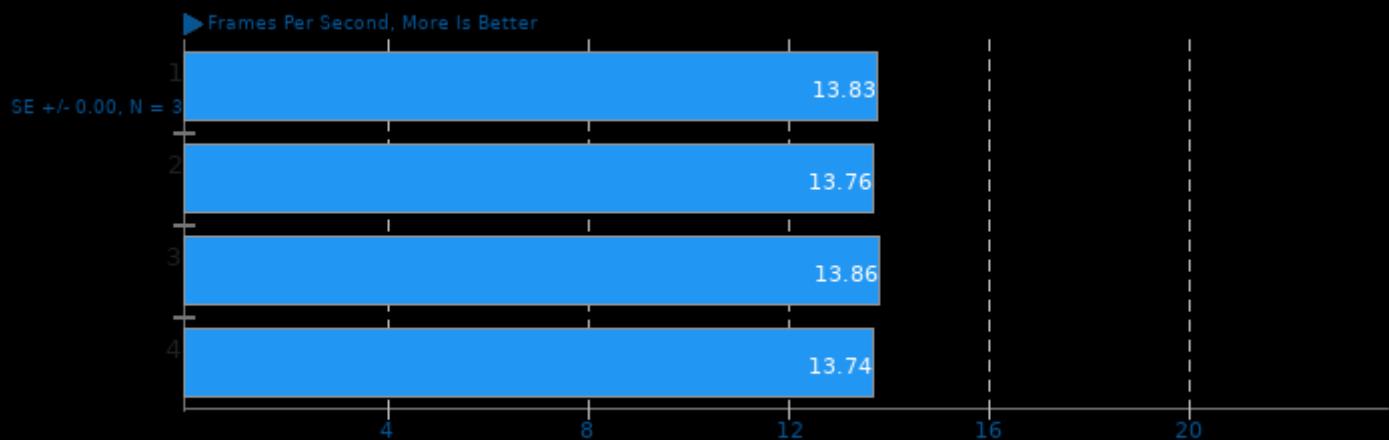
Video Input: Chimera 1080p 10-bit



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

## AOM AV1 3.1

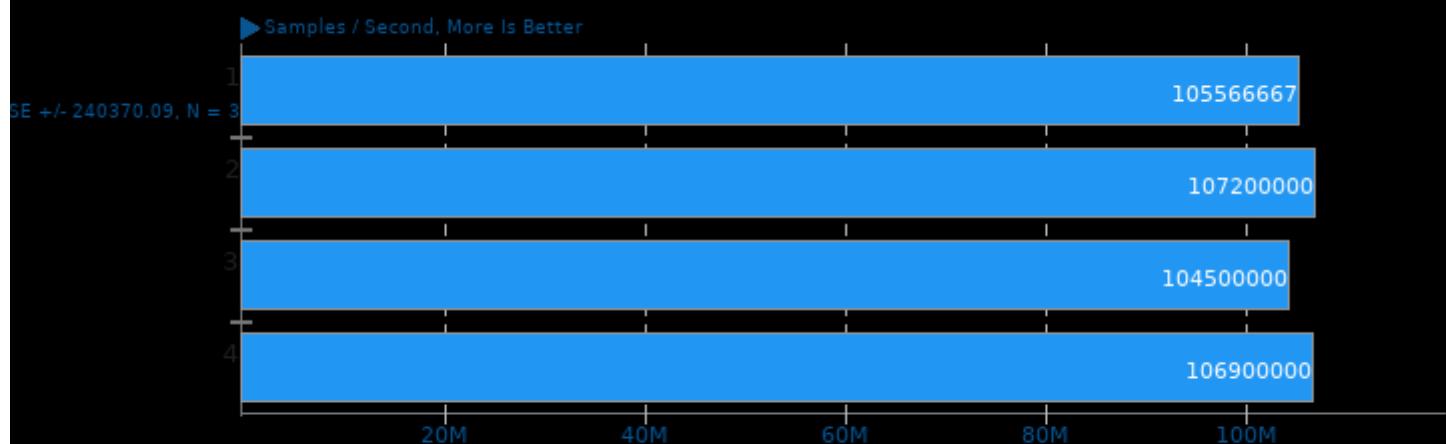
Encoder Mode: Speed 6 Realtime - Input: Bosphorus 1080p



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

## srsLTE 20.10.1

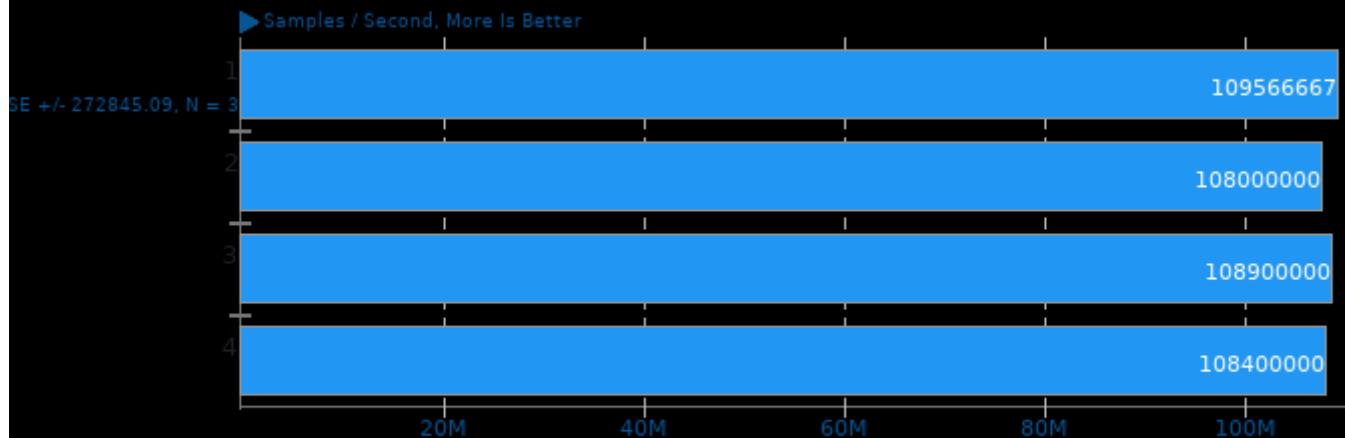
Test: OFDM\_Test



1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -maxx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

**srsRAN 21.04**

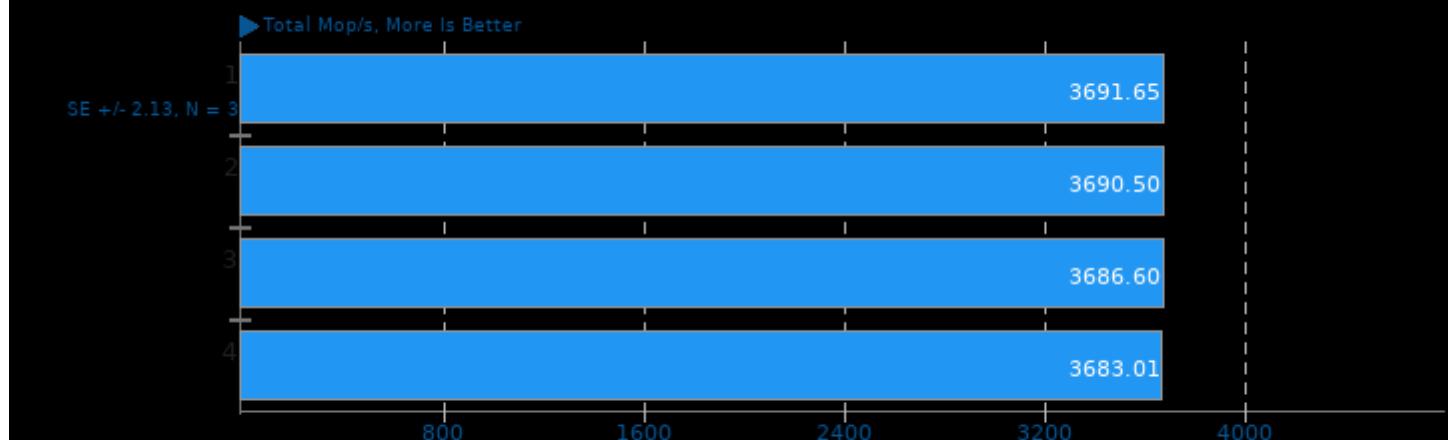
Test: OFDM\_Test



1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

**NAS Parallel Benchmarks 3.4**

Test / Class: CG.C

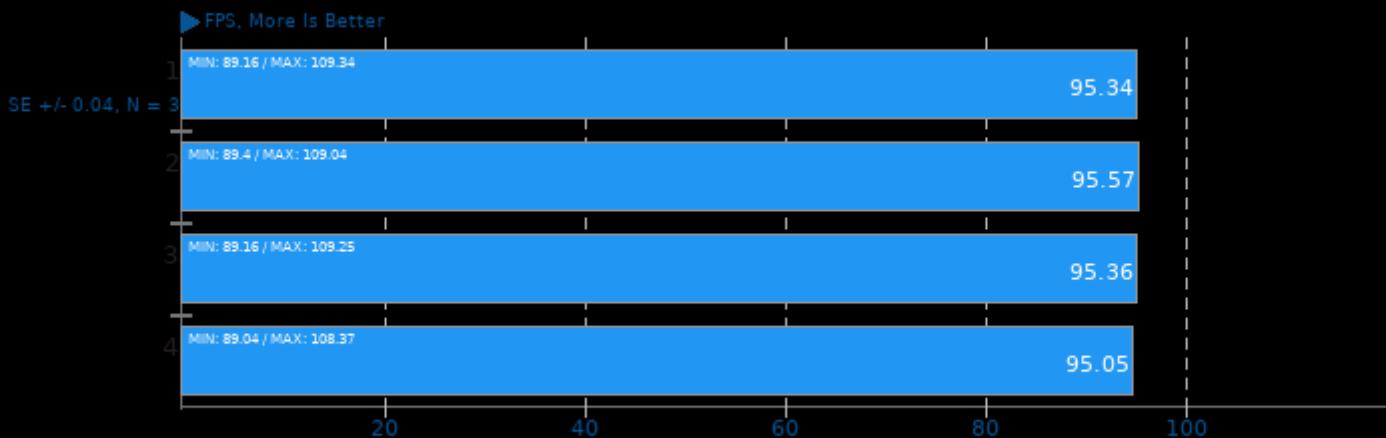


1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi\_usempif08 -lmpi\_mpifh -lmpi

2. Open MPI 4.0.3

## dav1d 0.9.0

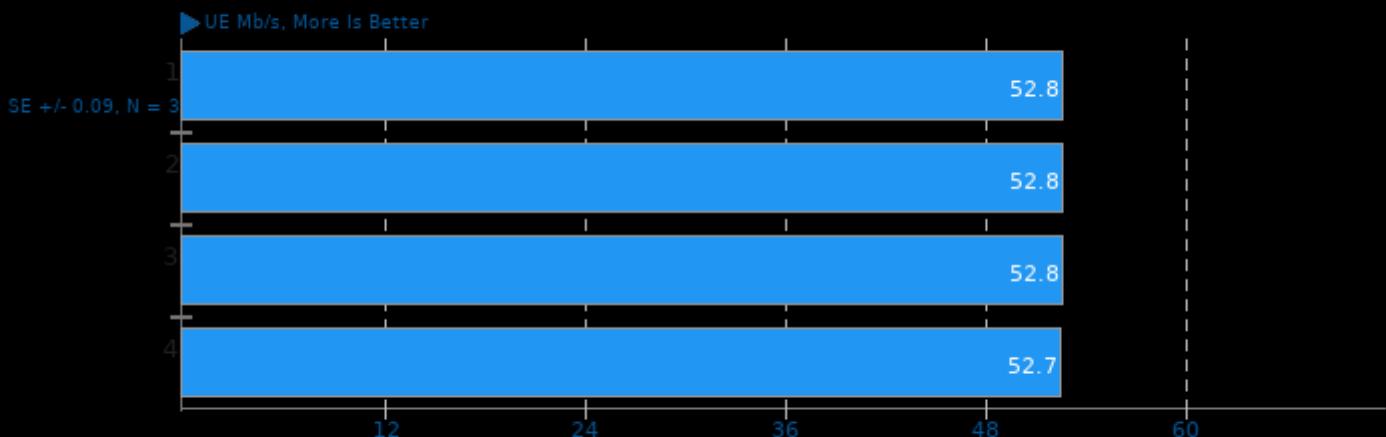
Video Input: Summer Nature 4K



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

## srsRAN 21.04

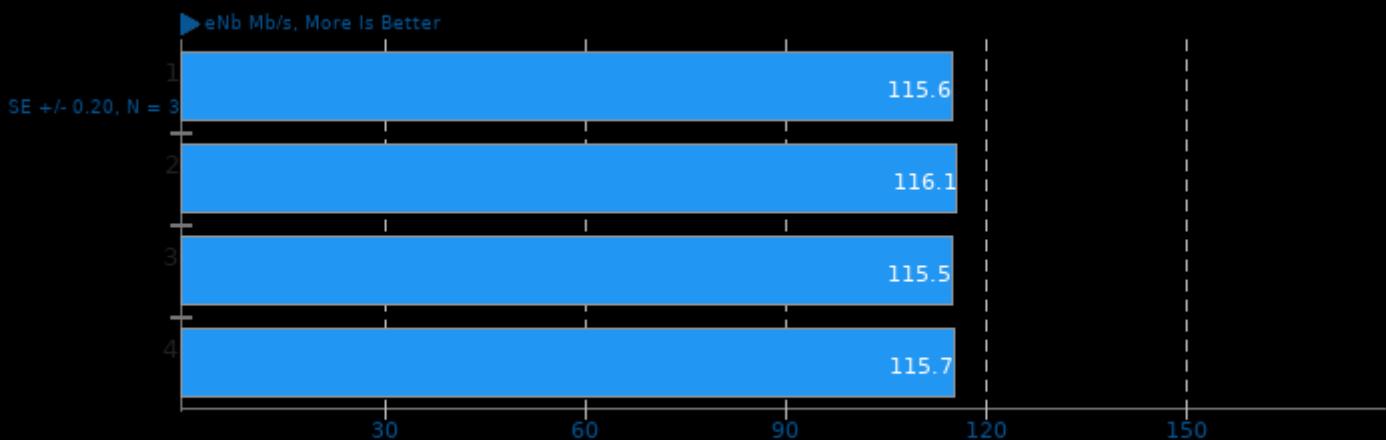
Test: 5G PHY\_DL\_NR Test 52 PRB SISO 64-QAM



1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

## srsRAN 21.04

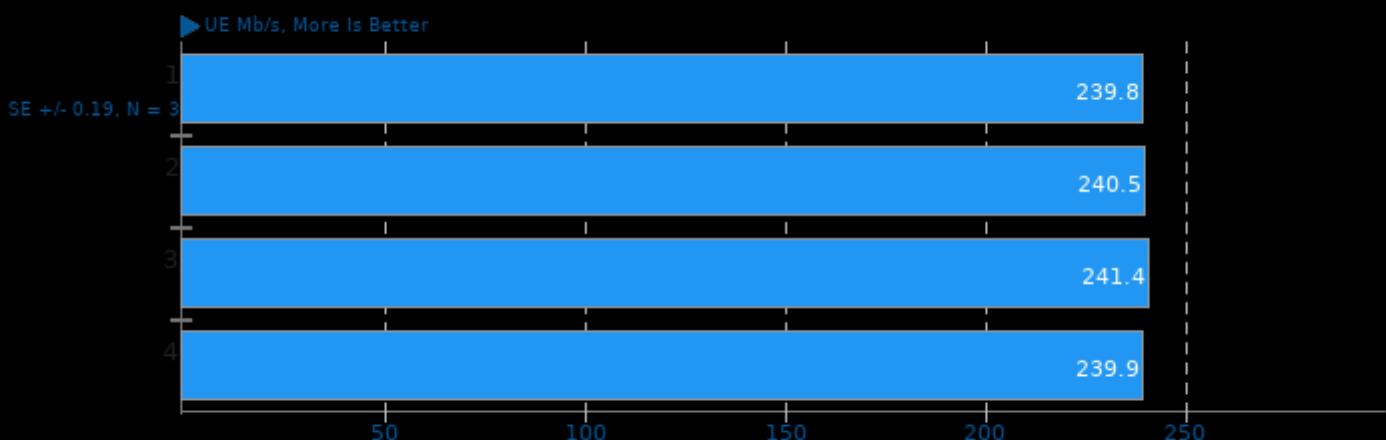
Test: 5G PHY\_DL\_NR Test 52 PRB SISO 64-QAM



1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

## srsRAN 21.04

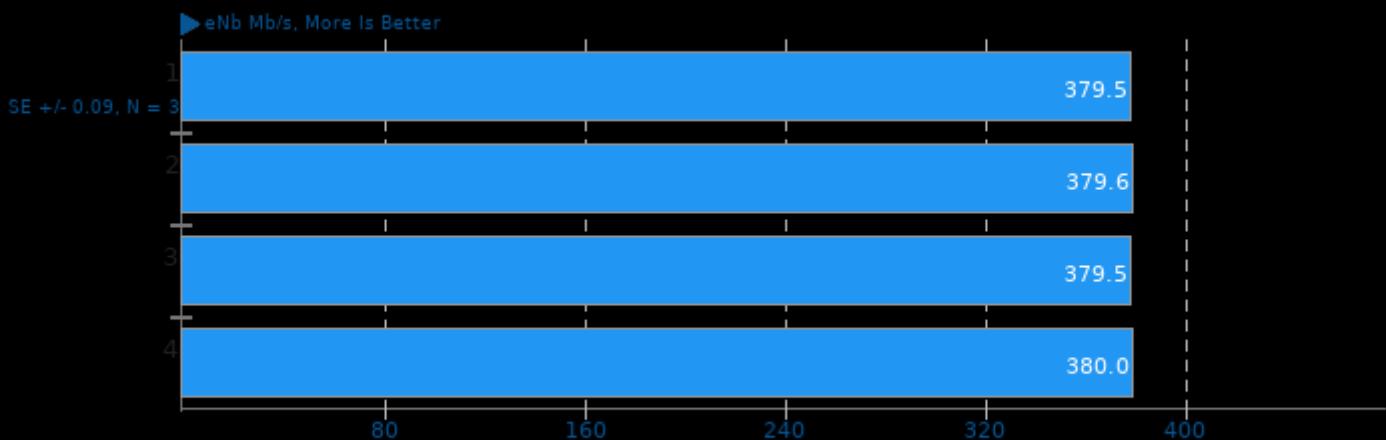
Test: 4G PHY\_DL\_Test 100 PRB SISO 256-QAM



1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

## srsRAN 21.04

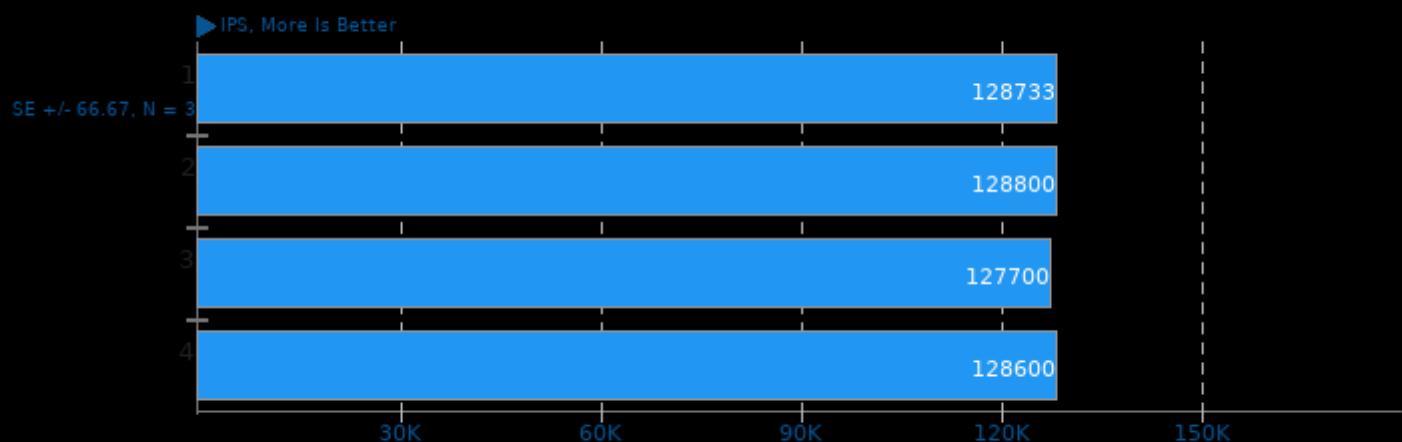
Test: 4G PHY\_DL\_Test 100 PRB SISO 256-QAM



1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

## Chia Blockchain VDF 1.0.1

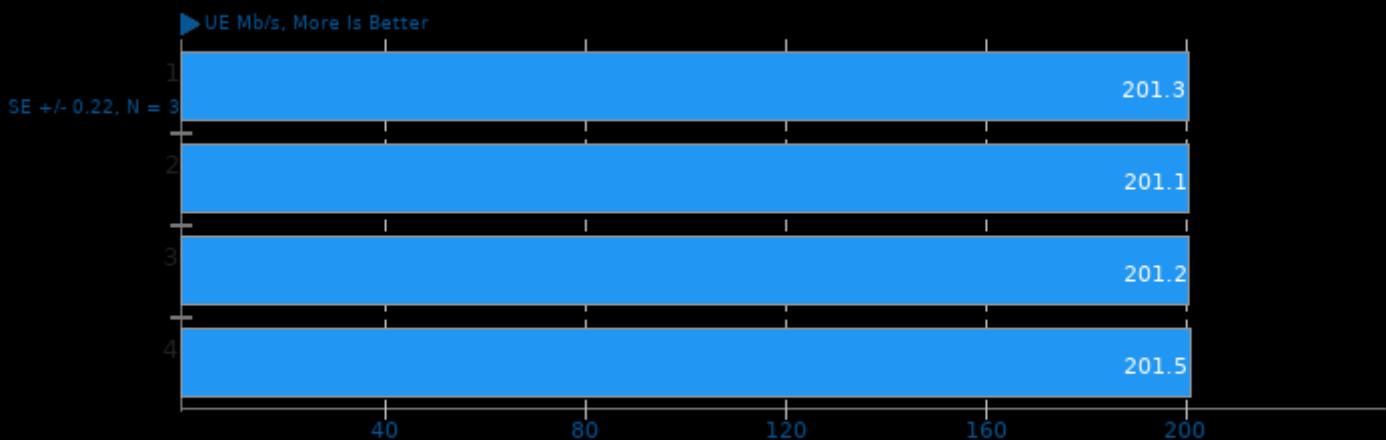
Test: Square Plain C++



1. (CXX) g++ options: -fno-pie -fno-PIE -lgmpxx -lgmp -lboost\_system -pthread

## srsRAN 21.04

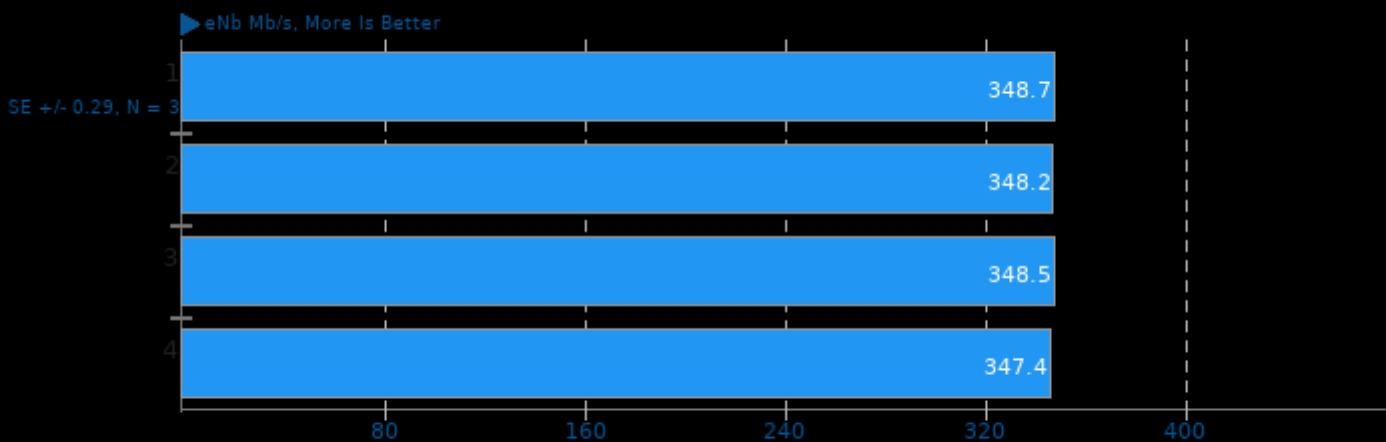
Test: 4G PHY\_DL\_Test 100 PRB SISO 64-QAM



1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

## srsRAN 21.04

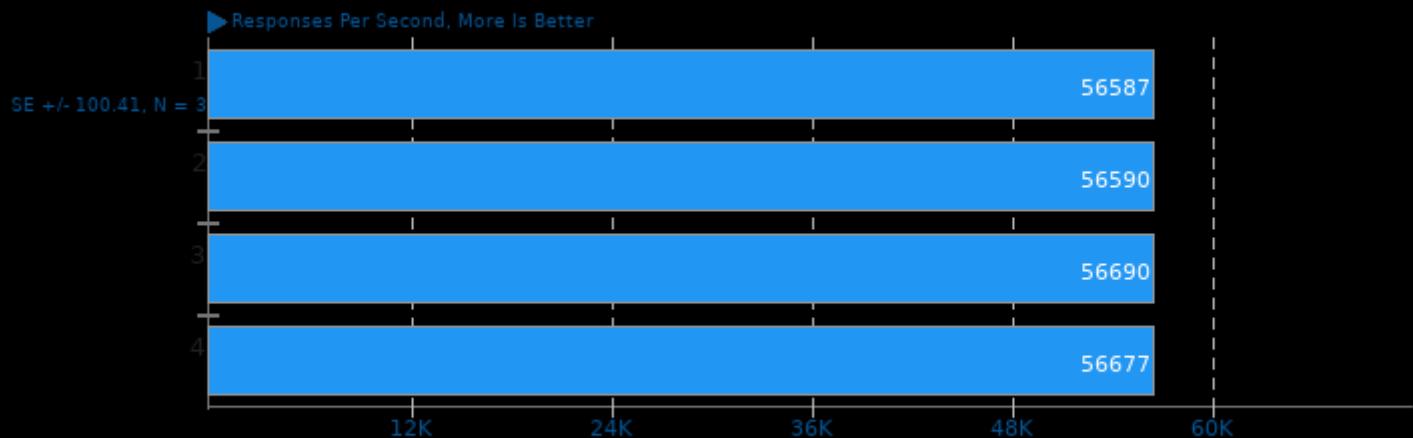
Test: 4G PHY\_DL\_Test 100 PRB SISO 64-QAM



1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

## PJSIP 2.11

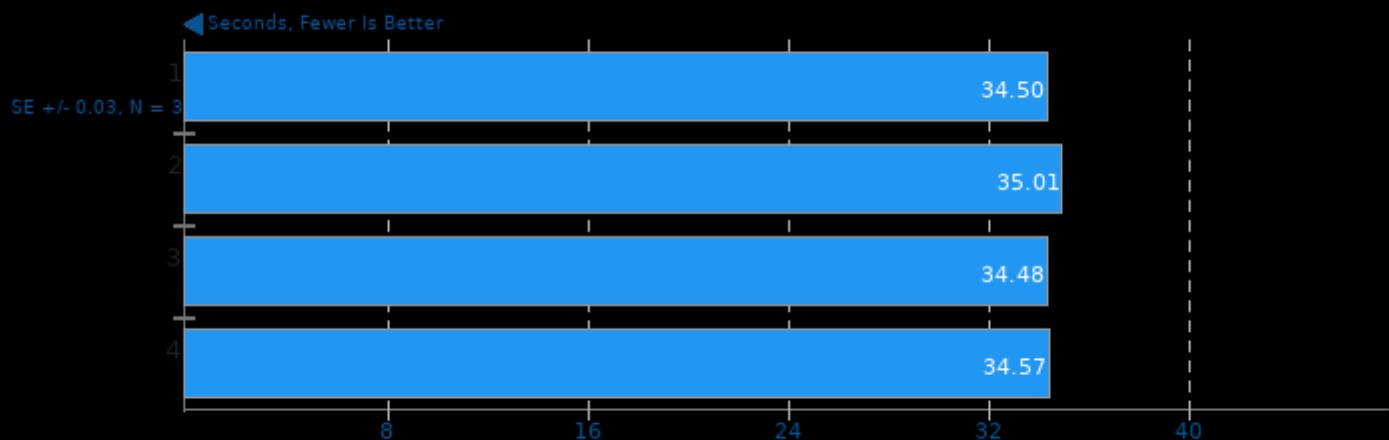
Method: OPTIONS, Stateless



1. (CC) gcc options: -fSDL2 -lavformat -lavcodec -lswscale -lavutil -fstdc++ -fssl -lcrypto -luuid -lm -fthread -lasound -O2

## Basis Universal 1.13

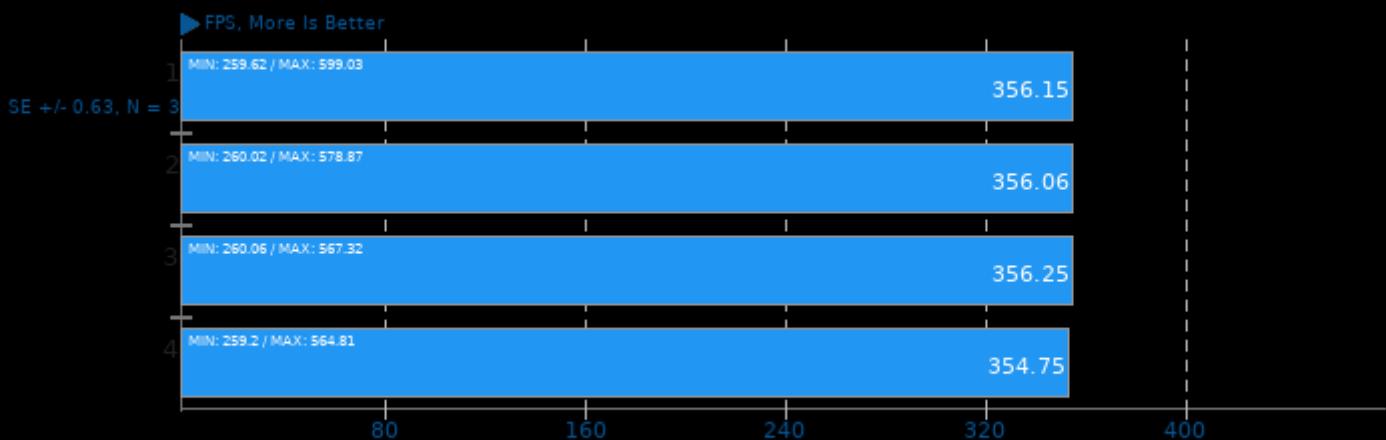
Settings: ETC1S



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

## dav1d 0.9.0

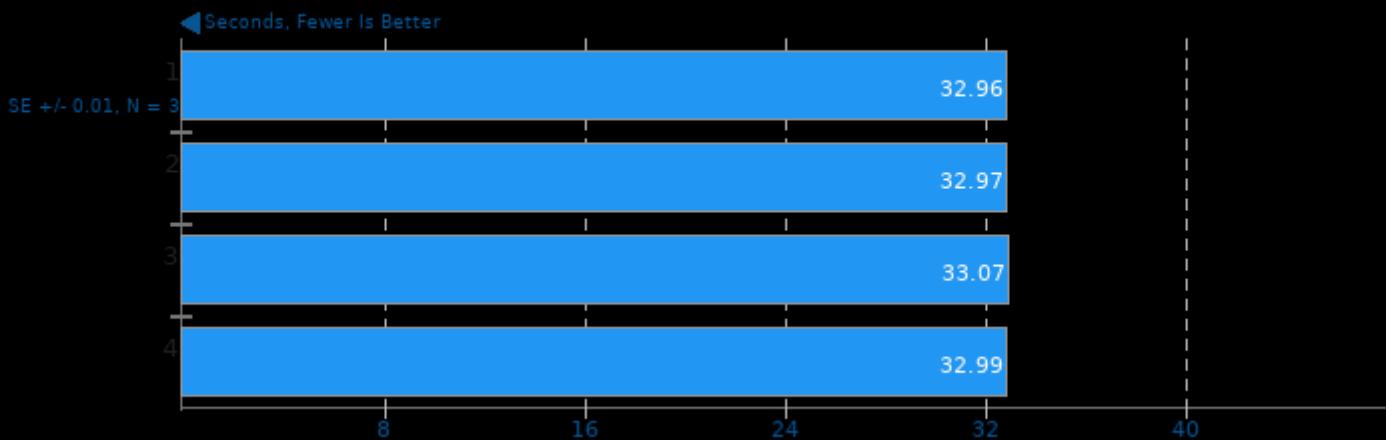
Video Input: Chimera 1080p



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

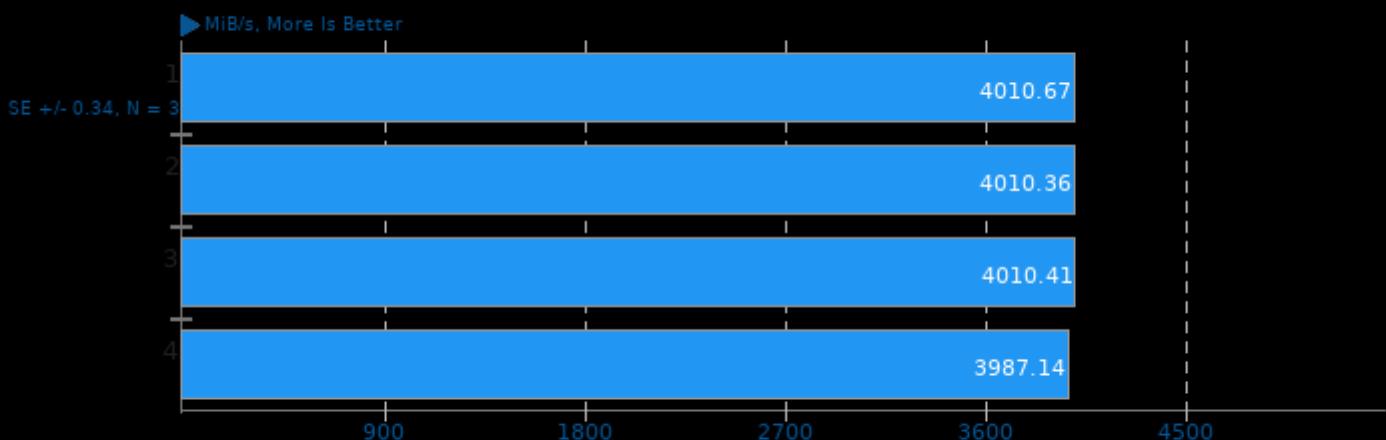
## KTX-Software toktx 4.0

Settings: UASTC 3 + Zstd Compression 19



## Botan 2.17.3

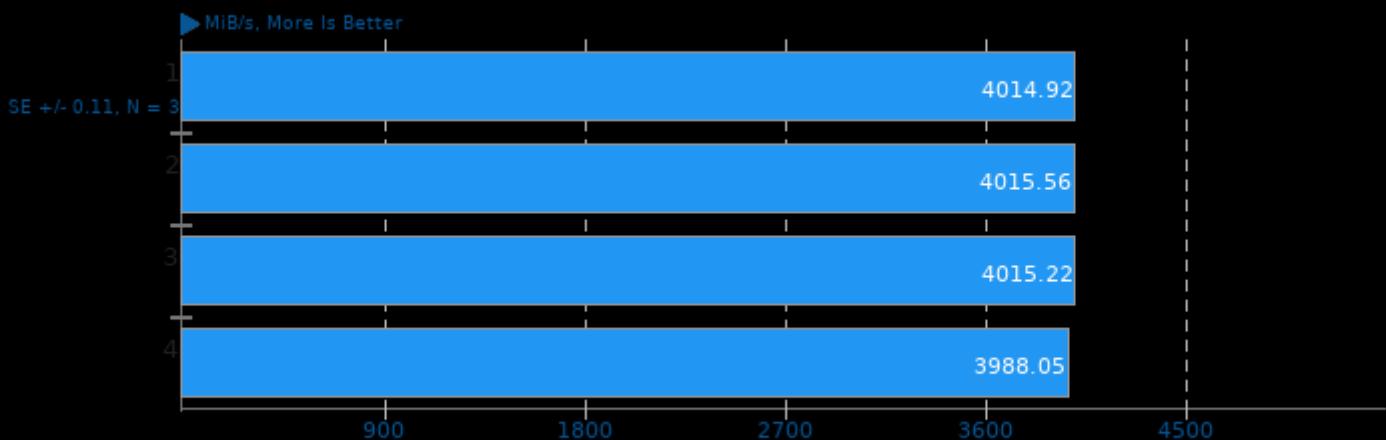
Test: AES-256 - Decrypt



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

## Botan 2.17.3

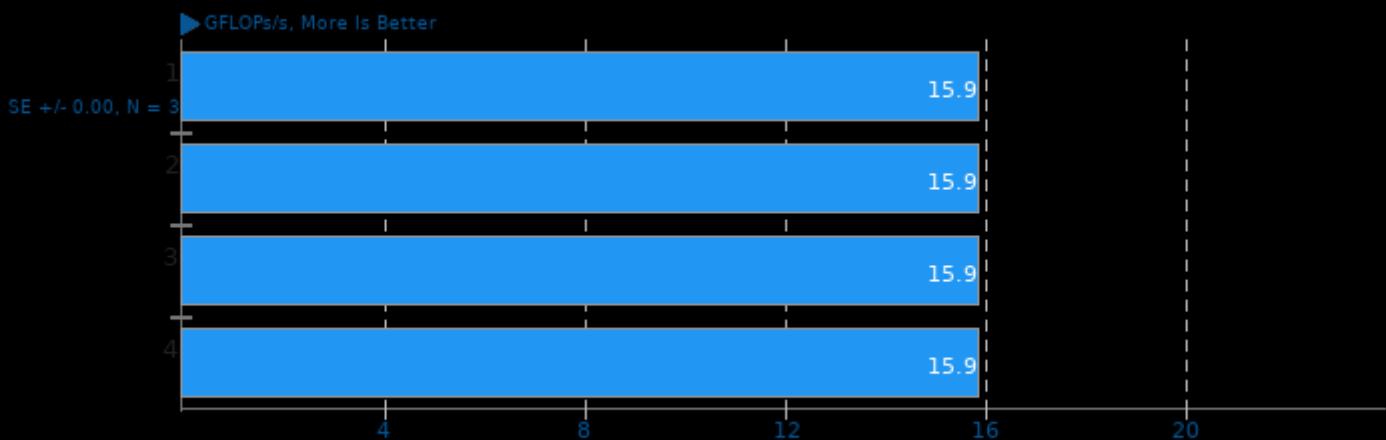
Test: AES-256



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

## ViennaCL 1.7.1

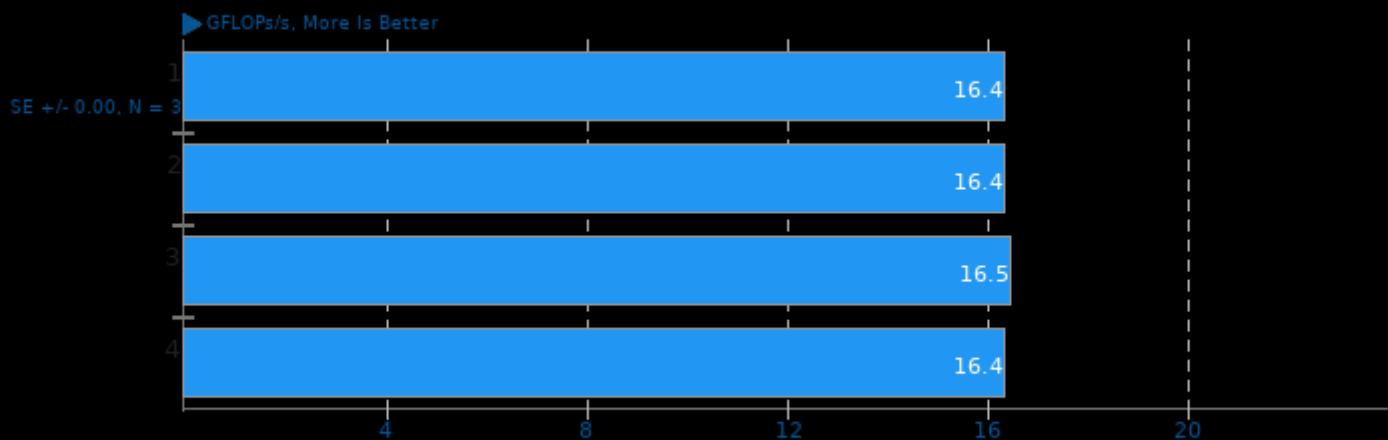
Test: CPU BLAS - dGEMM-TT



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

## ViennaCL 1.7.1

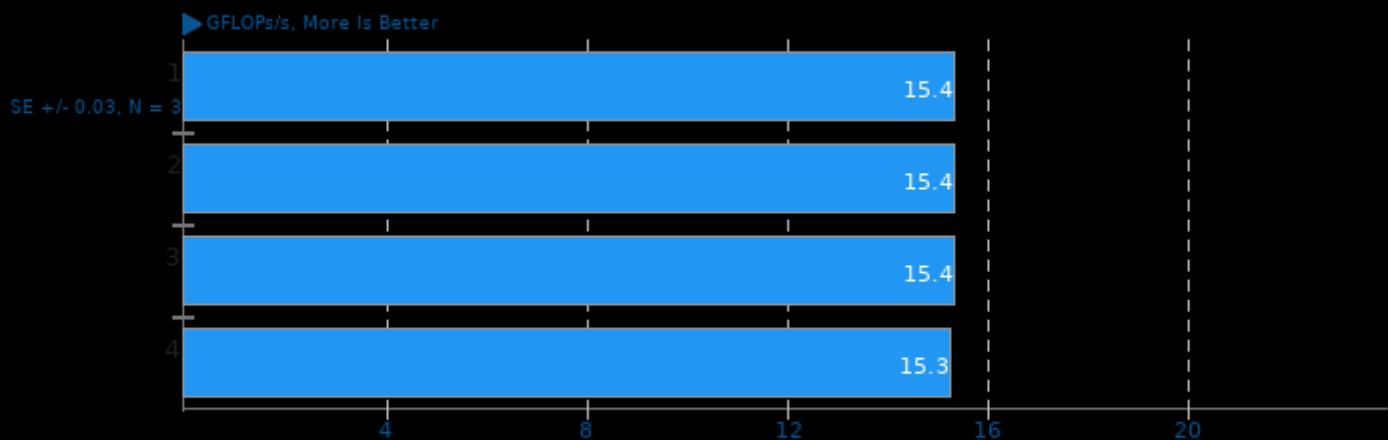
Test: CPU BLAS - dGEMM-TN



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

## ViennaCL 1.7.1

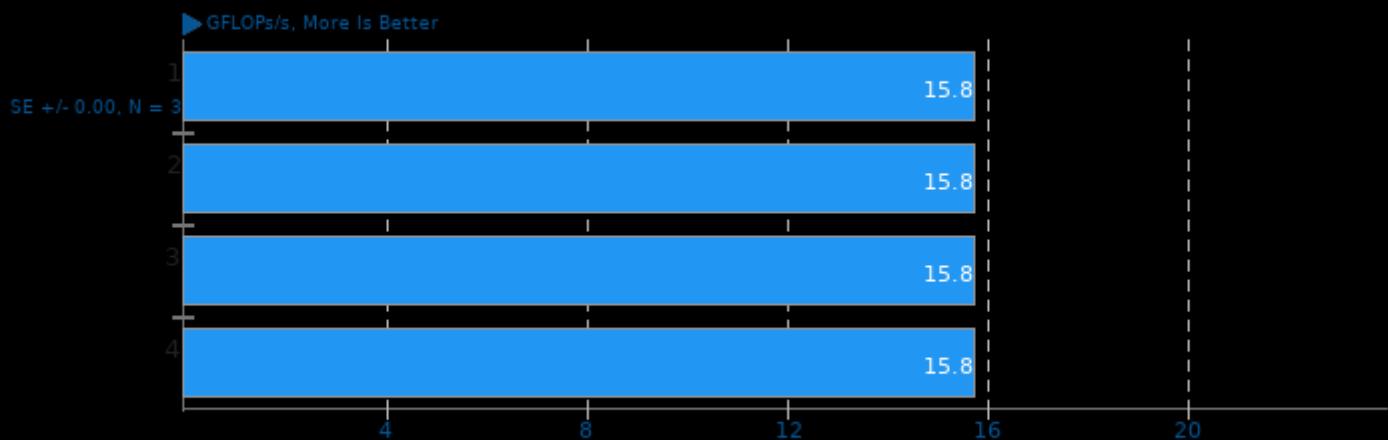
Test: CPU BLAS - dGEMM-NT



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

## ViennaCL 1.7.1

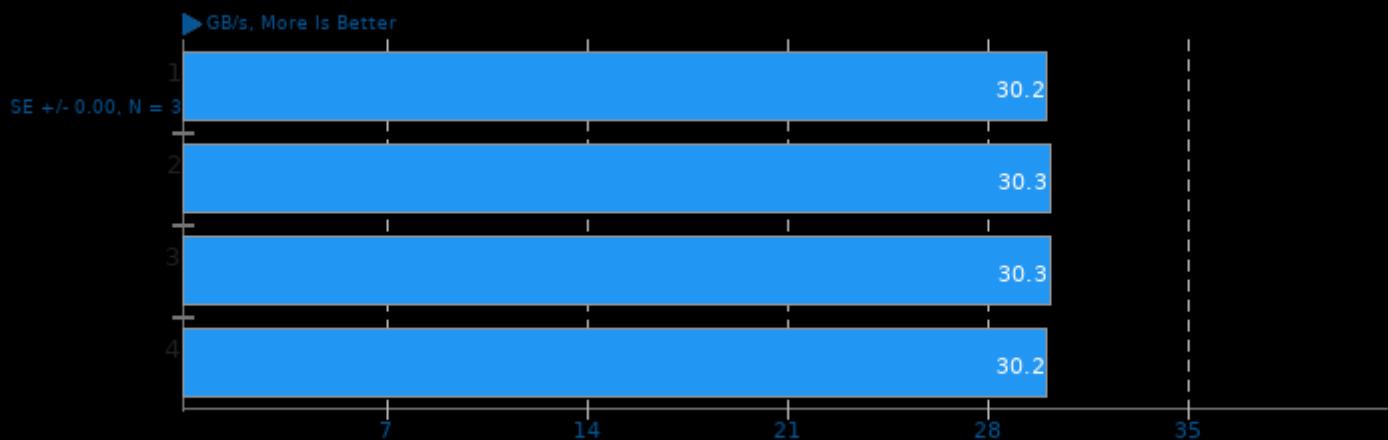
Test: CPU BLAS - dGEMM-NN



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

## ViennaCL 1.7.1

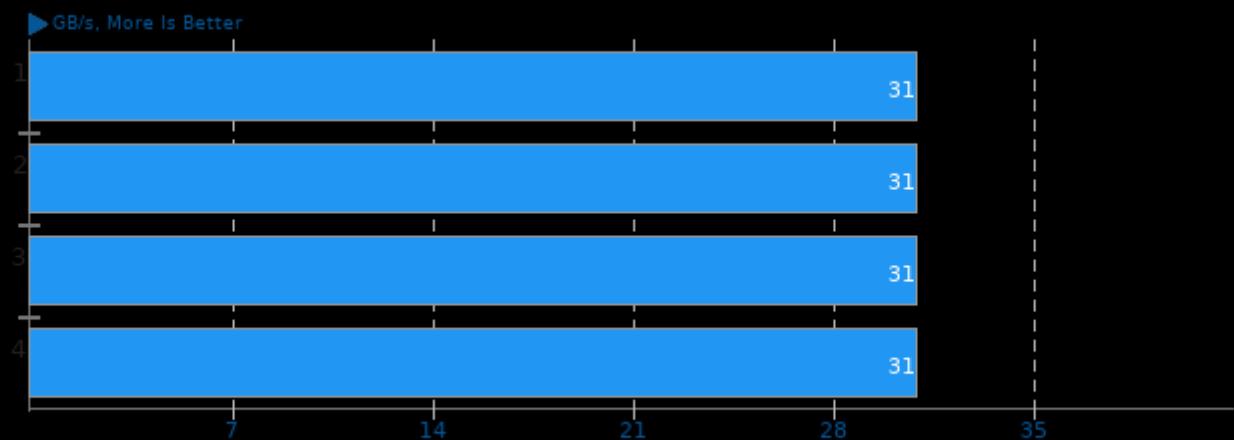
Test: CPU BLAS - dGEMV-T



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

## ViennaCL 1.7.1

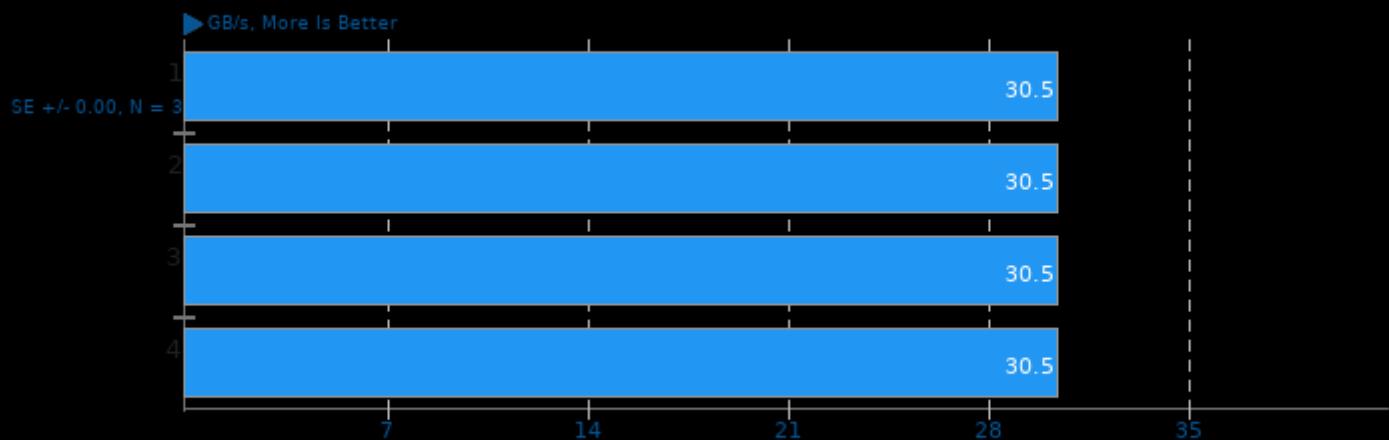
Test: CPU BLAS - dGEMV-N



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

## ViennaCL 1.7.1

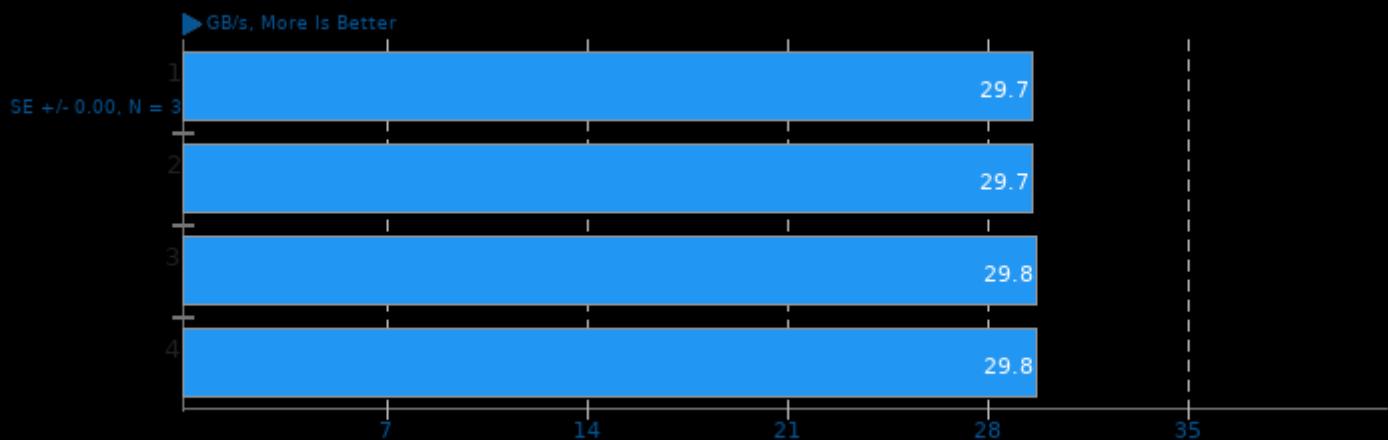
Test: CPU BLAS - dDOT



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

## ViennaCL 1.7.1

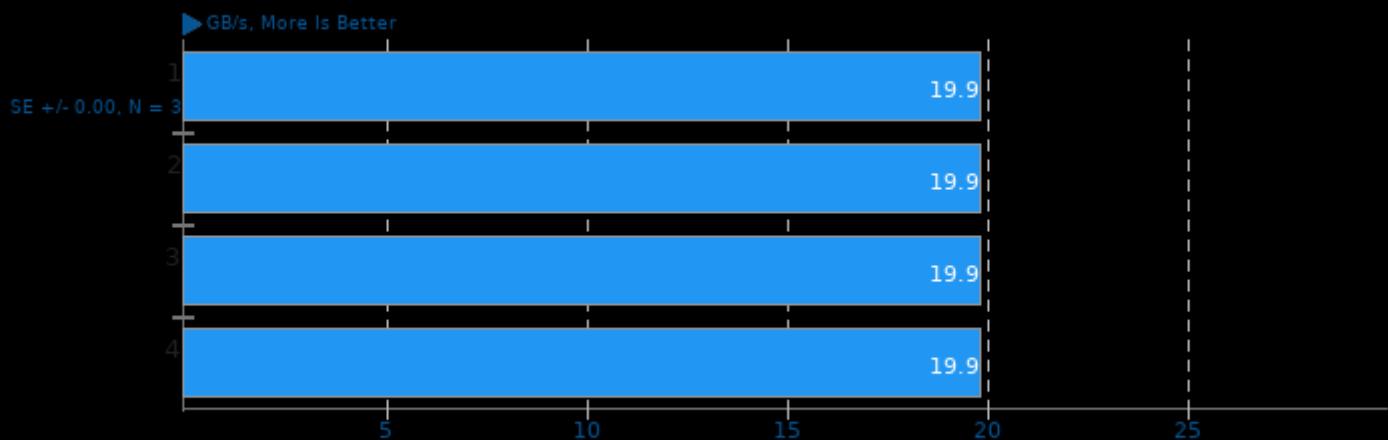
Test: CPU BLAS - dAXPY



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

## ViennaCL 1.7.1

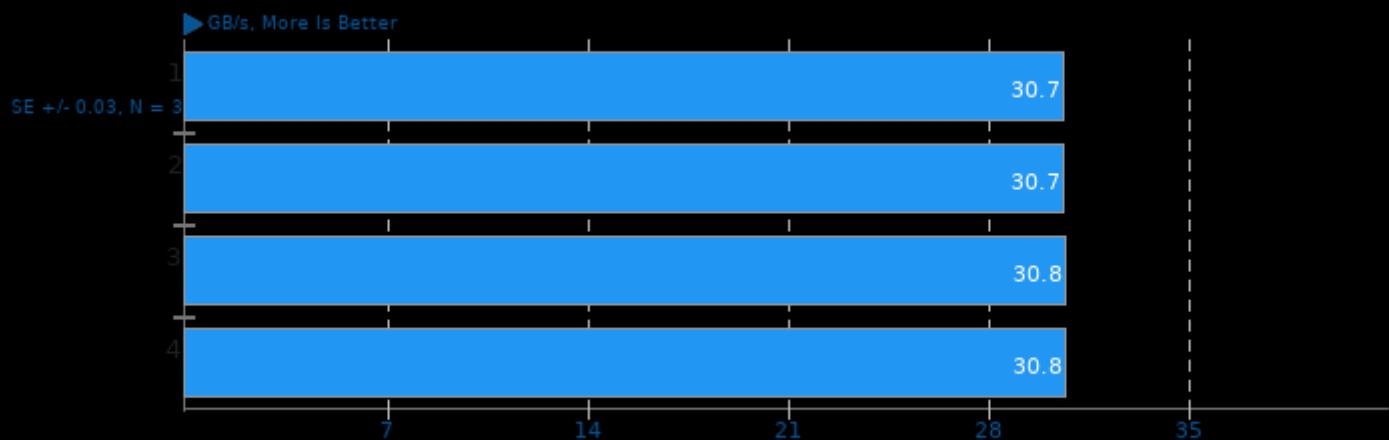
Test: CPU BLAS - dCOPY



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

## ViennaCL 1.7.1

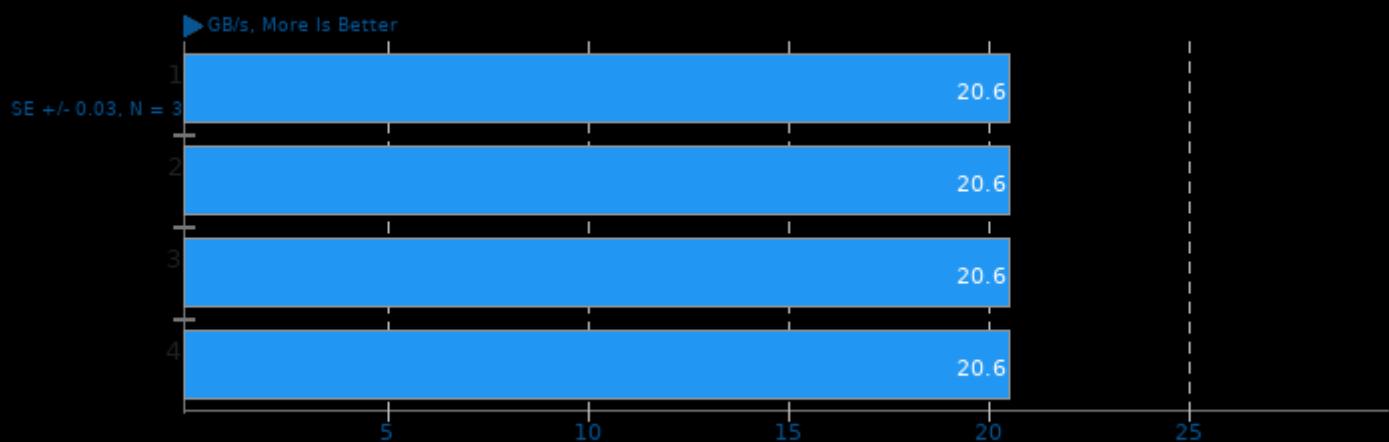
Test: CPU BLAS - sAXPY



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

## ViennaCL 1.7.1

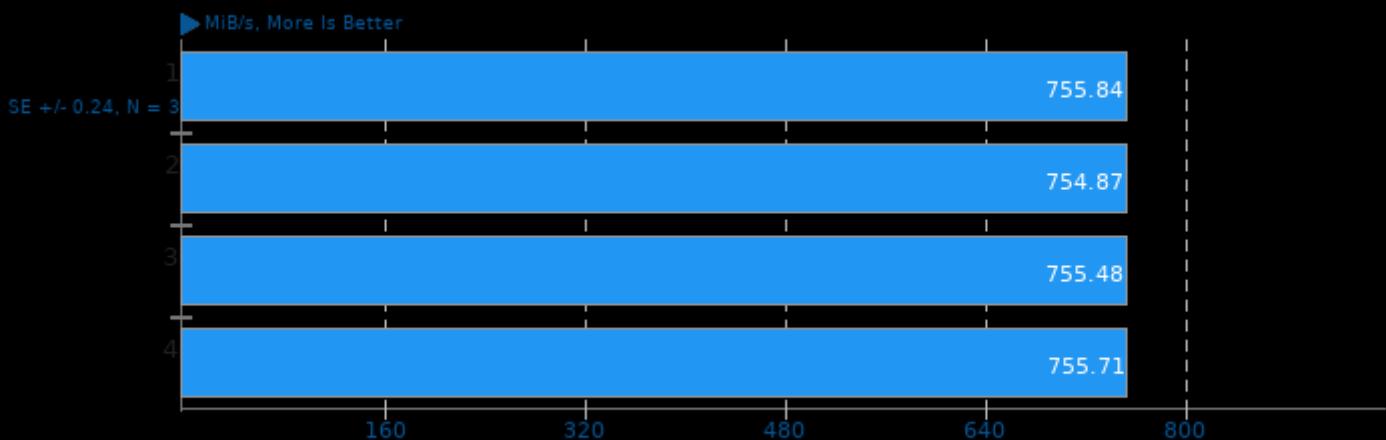
Test: CPU BLAS - sCOPY



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

## Botan 2.17.3

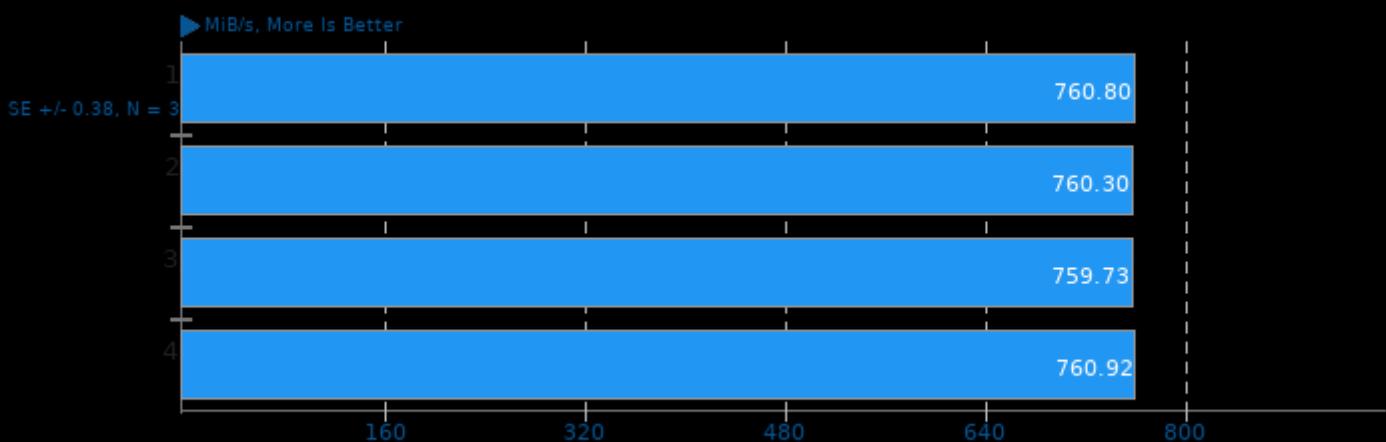
Test: ChaCha20Poly1305 - Decrypt



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

## Botan 2.17.3

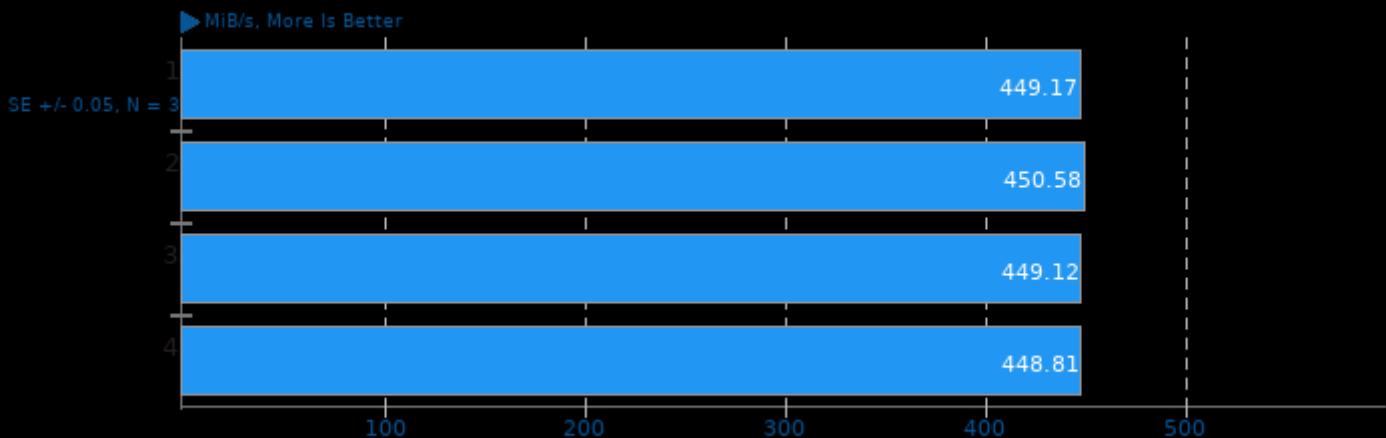
Test: ChaCha20Poly1305



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

## Botan 2.17.3

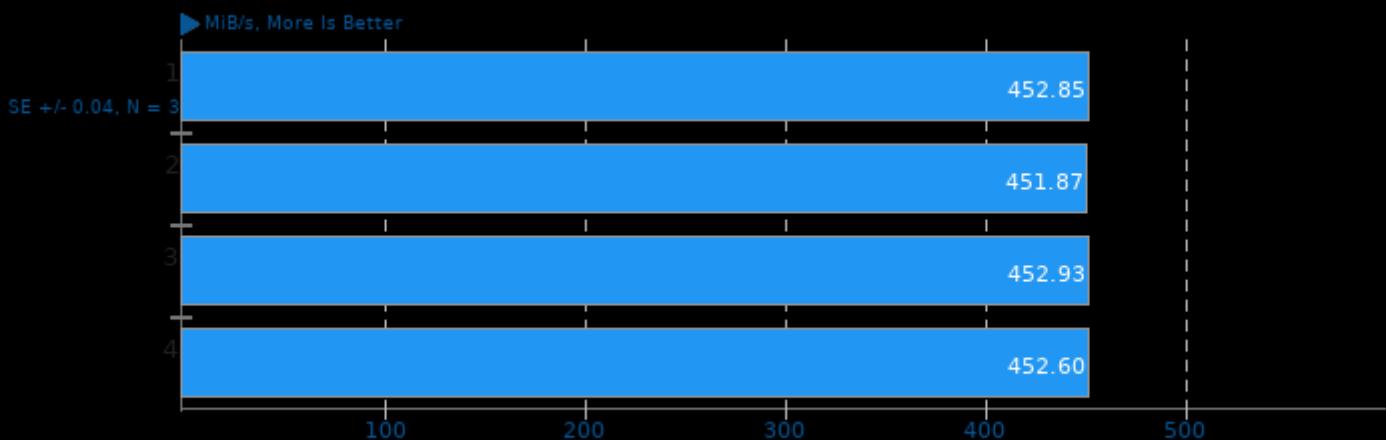
Test: Blowfish - Decrypt



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

## Botan 2.17.3

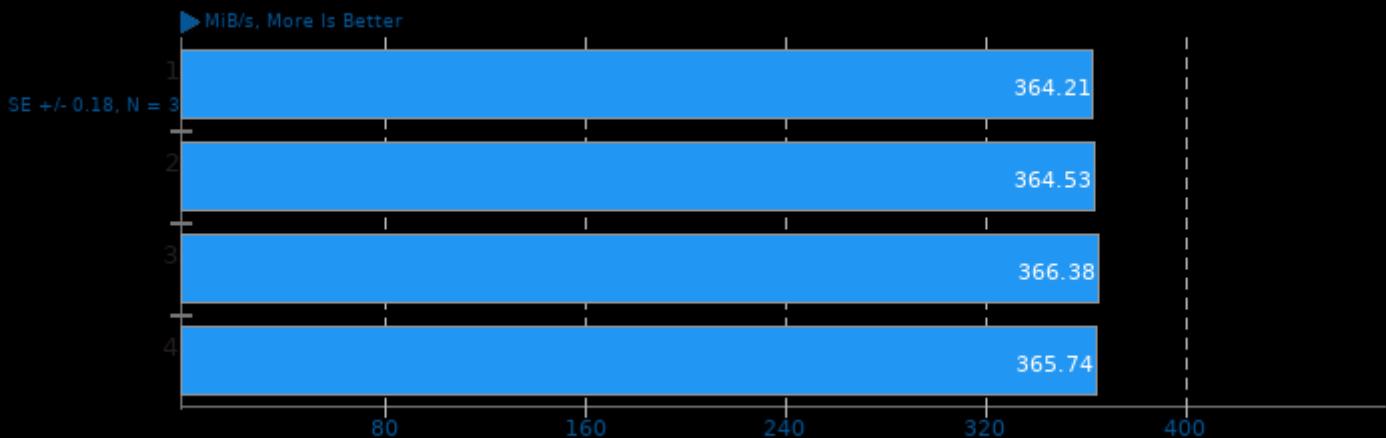
Test: Blowfish



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

## Botan 2.17.3

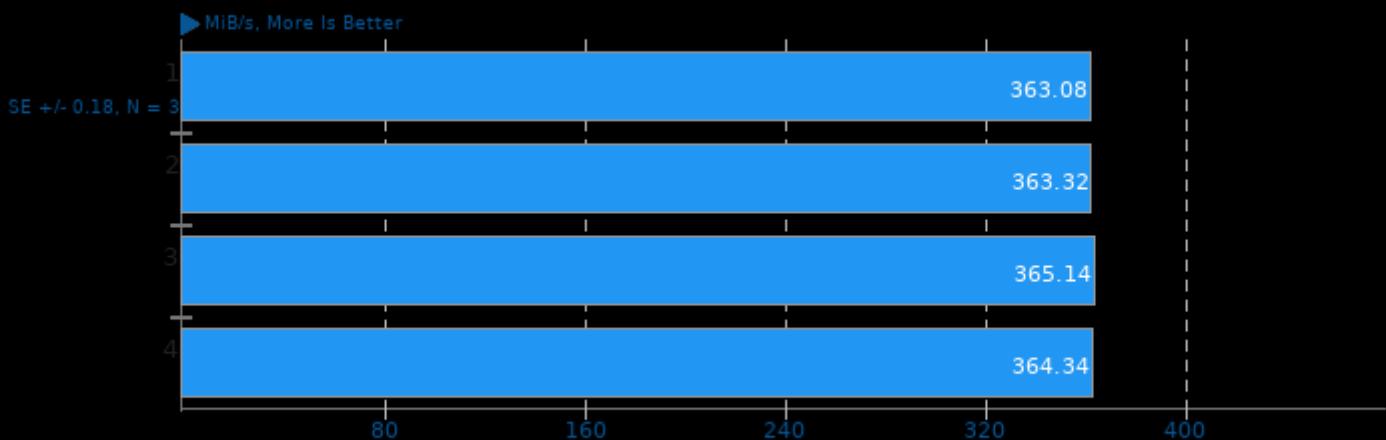
Test: Twofish - Decrypt



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

## Botan 2.17.3

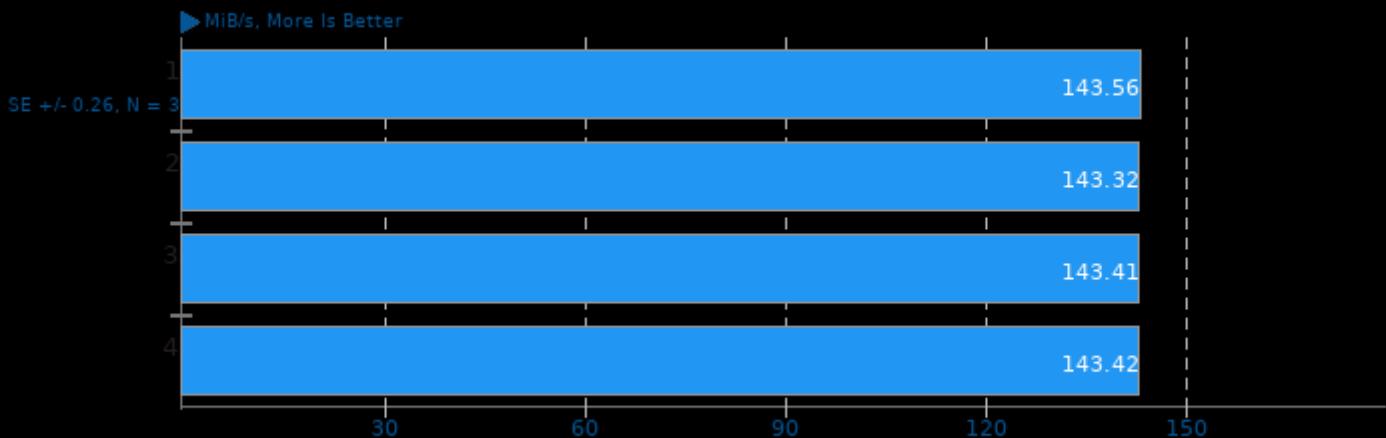
Test: Twofish



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

## Botan 2.17.3

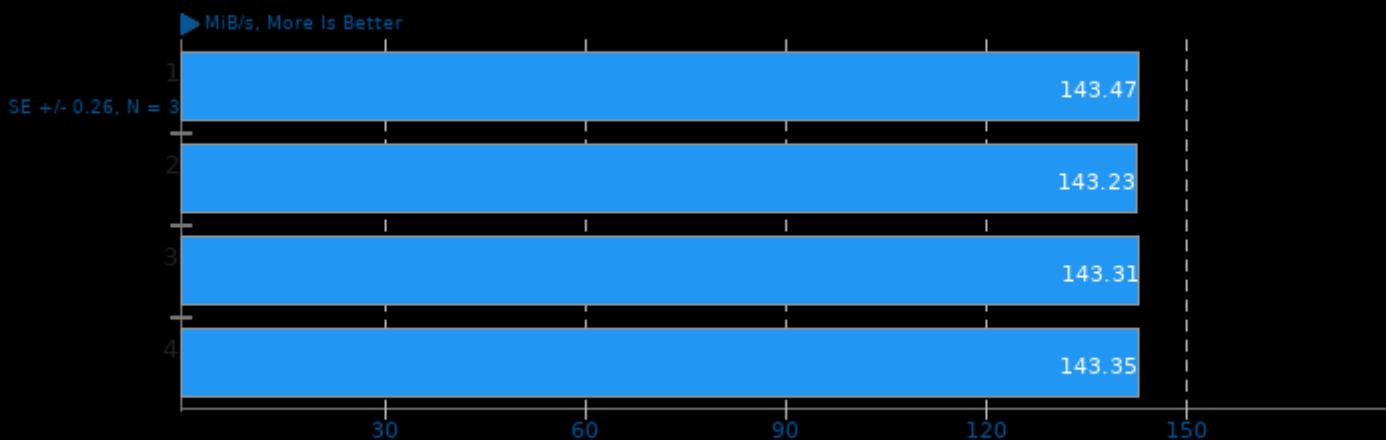
Test: CAST-256 - Decrypt



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

## Botan 2.17.3

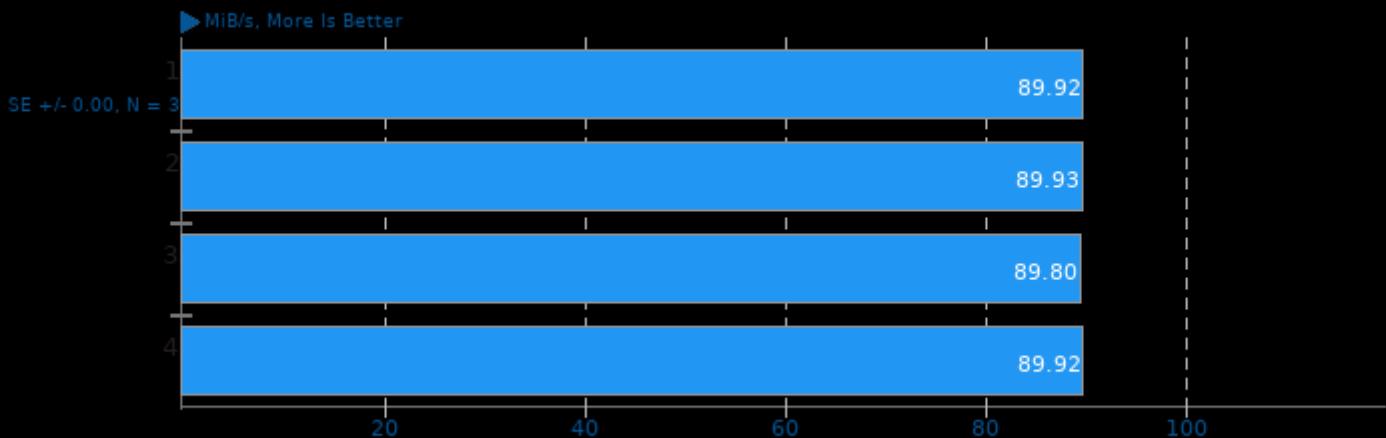
Test: CAST-256



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

## Botan 2.17.3

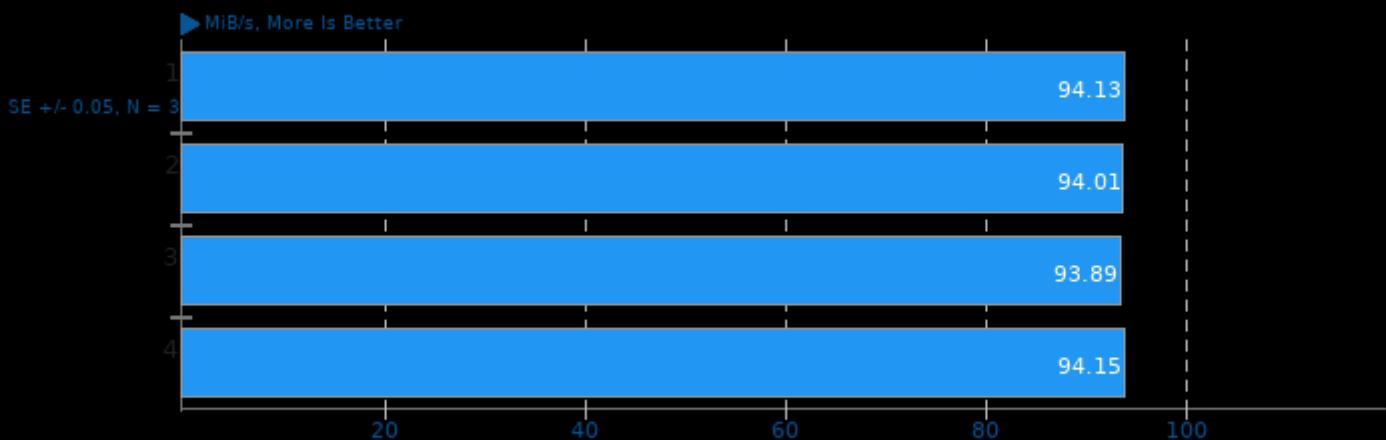
Test: KASUMI - Decrypt



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

## Botan 2.17.3

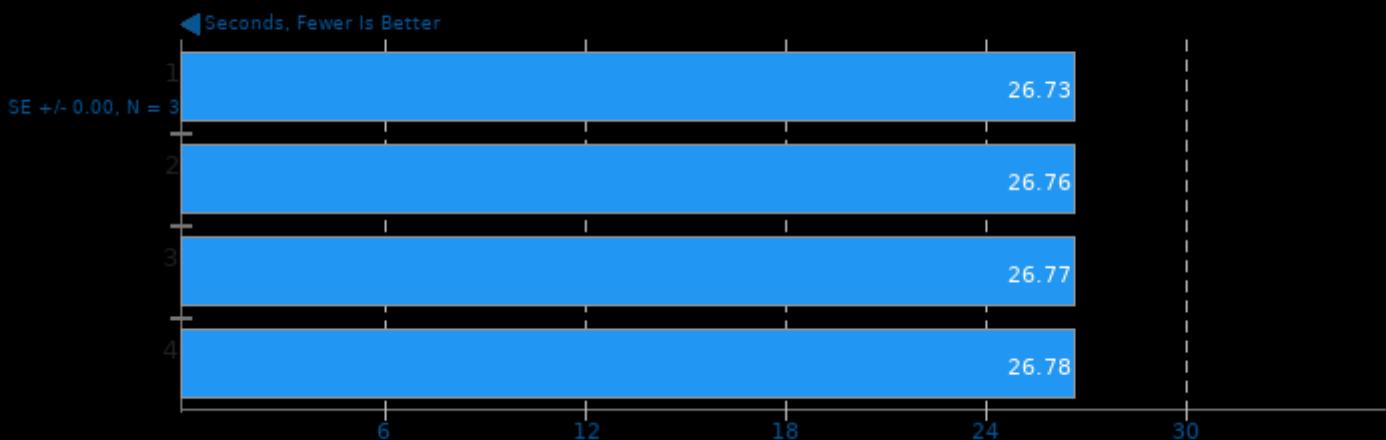
Test: KASUMI



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

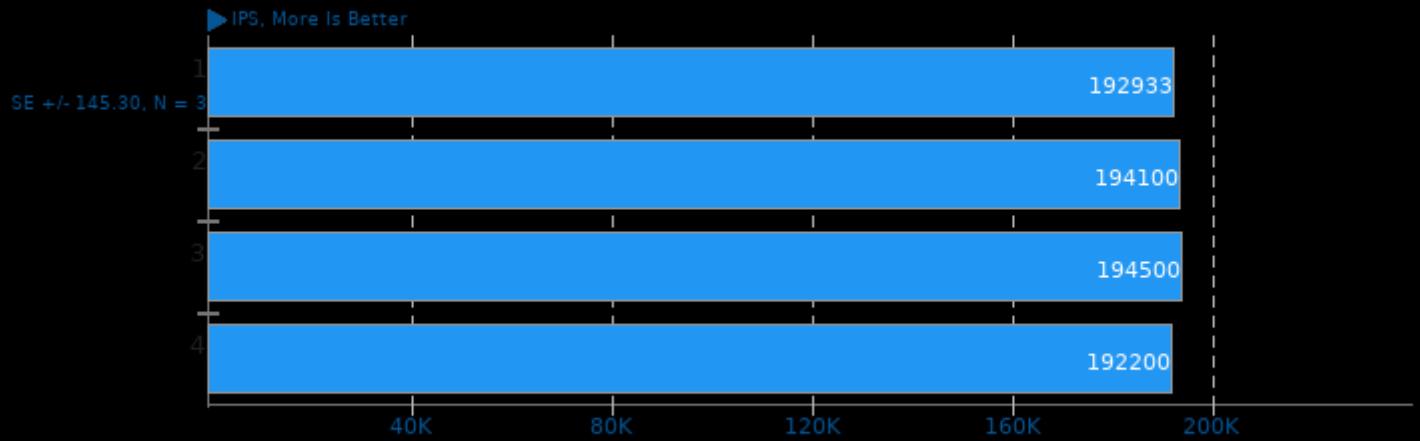
## KTX-Software toktx 4.0

Settings: UASTC 3



## Chia Blockchain VDF 1.0.1

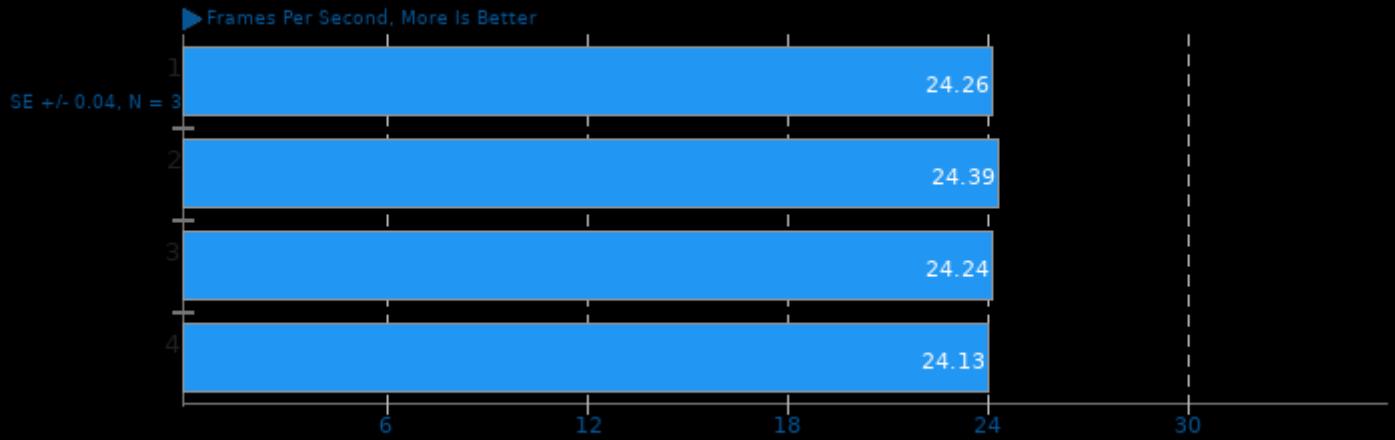
Test: Square Assembly Optimized



1. (CXX) g++ options: -fno-pie -lgmpxx -lgmp -lboost\_system -pthread

## AOM AV1 3.1

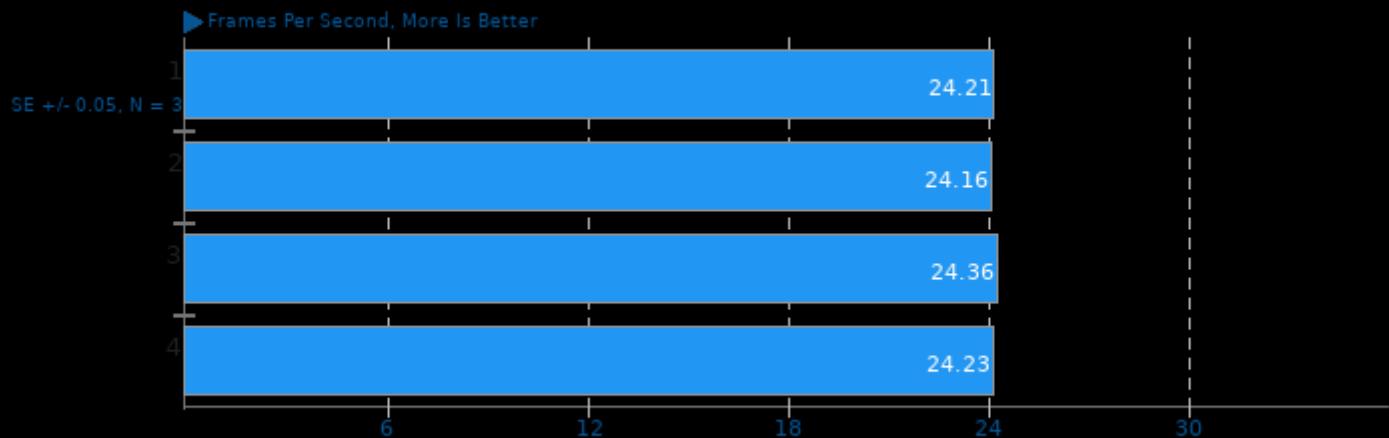
Encoder Mode: Speed 8 Realtime - Input: Bosphorus 4K



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

## VP9 libvpx Encoding 1.10.0

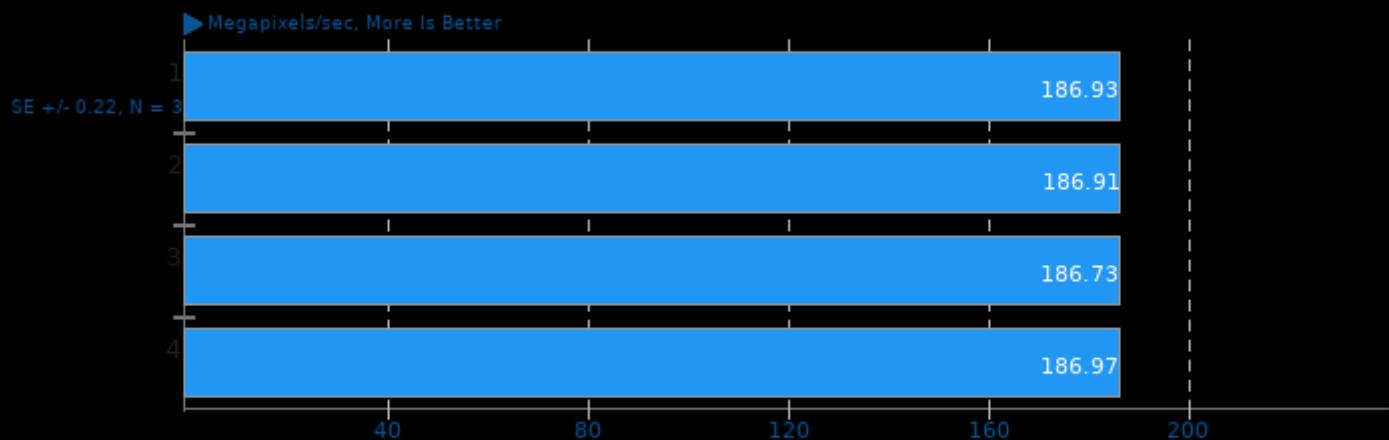
Speed: Speed 5 - Input: Bosphorus 1080p



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

## libjpeg-turbo tjbench 2.1.0

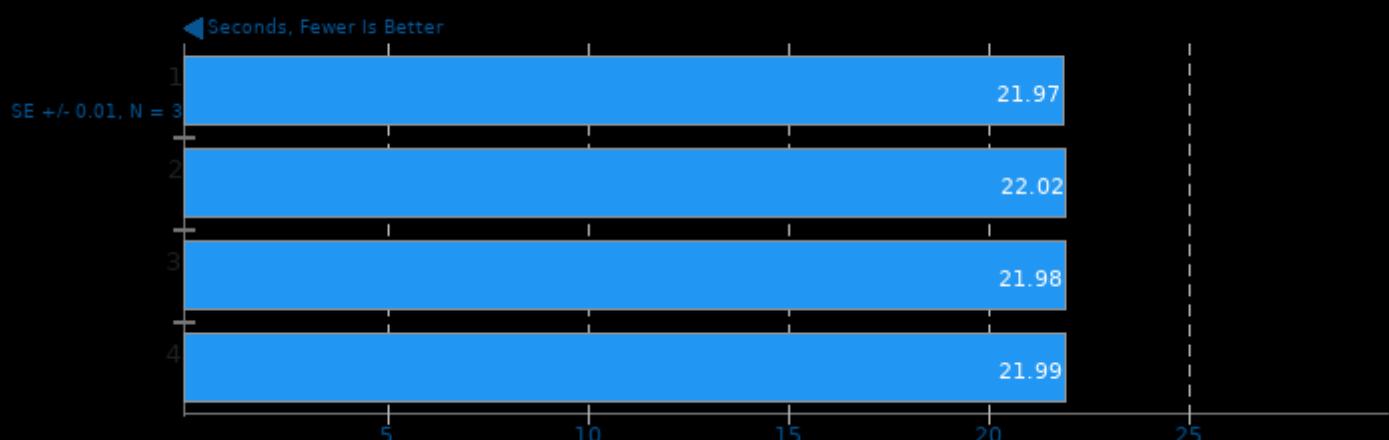
Test: Decompression Throughput



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

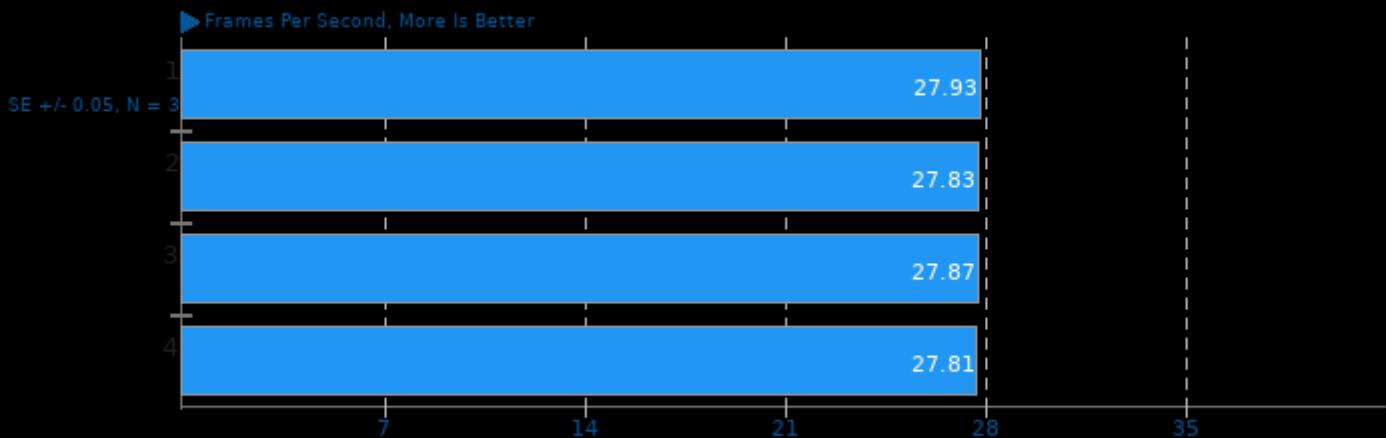
## KTX-Software toktx 4.0

Settings: Zstd Compression 19



## SVT-AV1 0.8.7

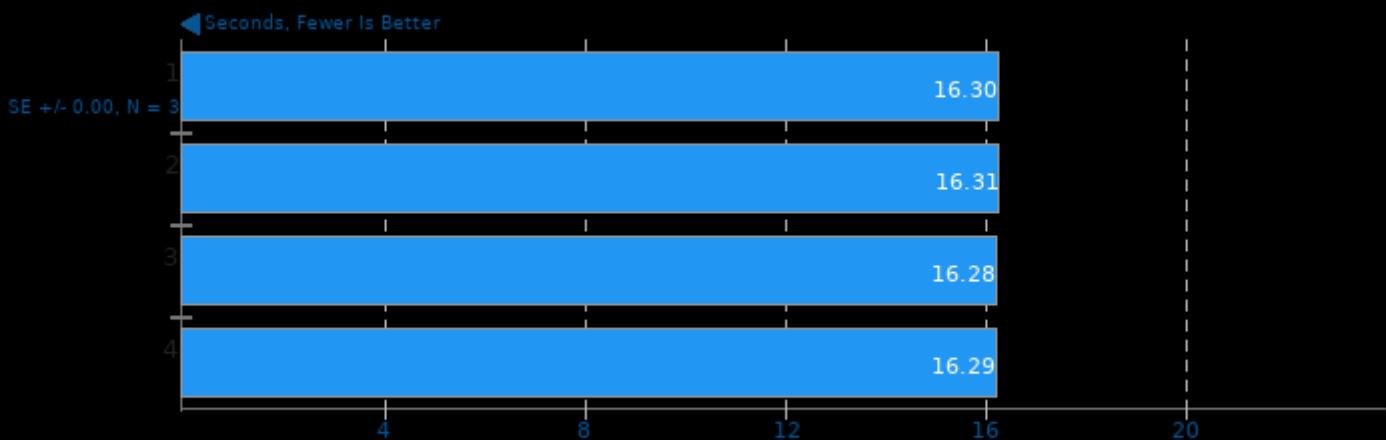
Encoder Mode: Preset 8 - Input: Bosphorus 1080p



1. (CXX) g++ options: -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie

## ASTC Encoder 3.0

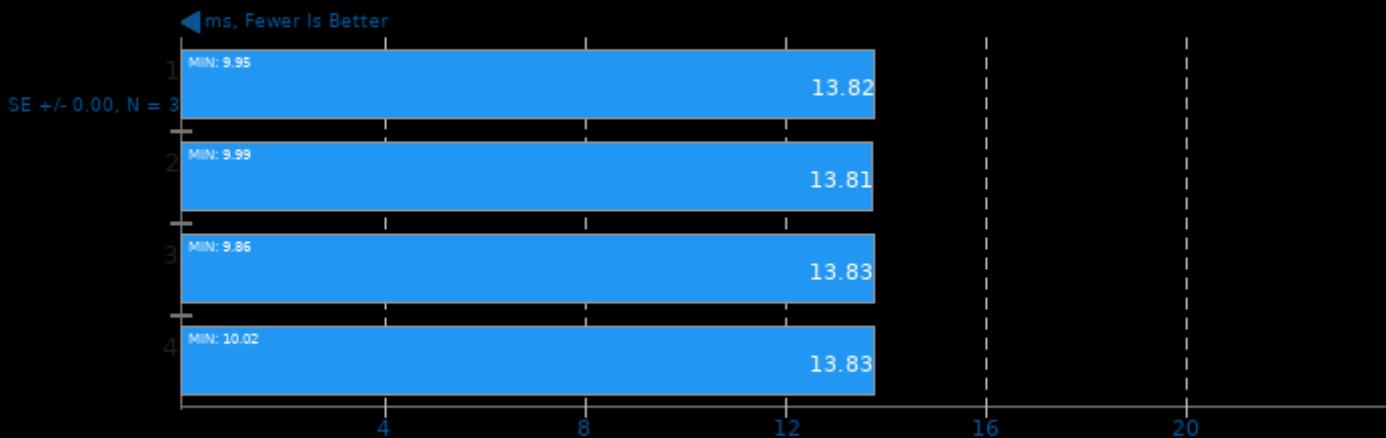
Preset: Thorough



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

## oneDNN 2.1.2

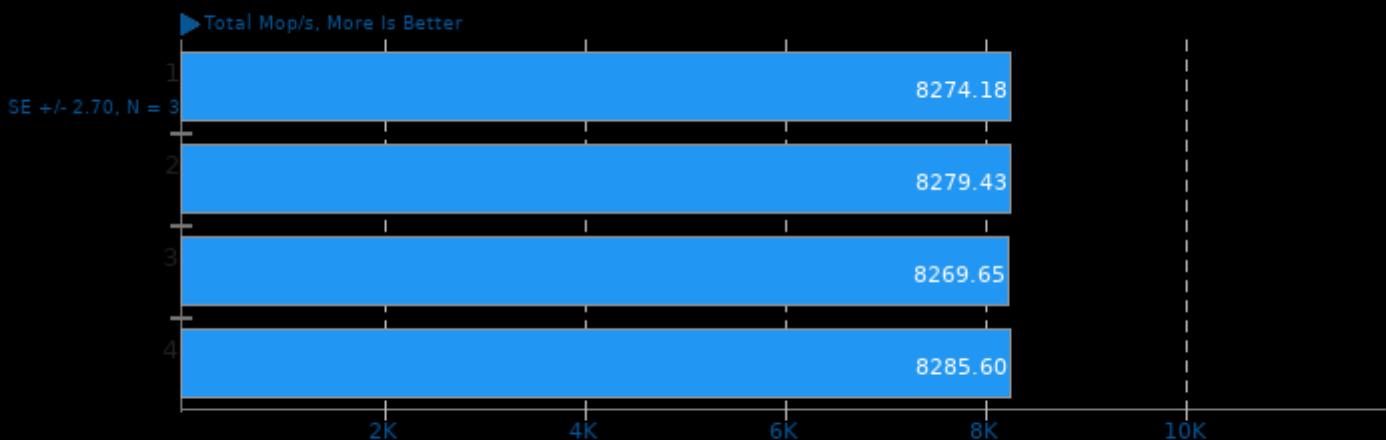
Harness: Deconvolution Batch shapes\_1d - Data Type: f32 - Engine: CPU



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

## NAS Parallel Benchmarks 3.4

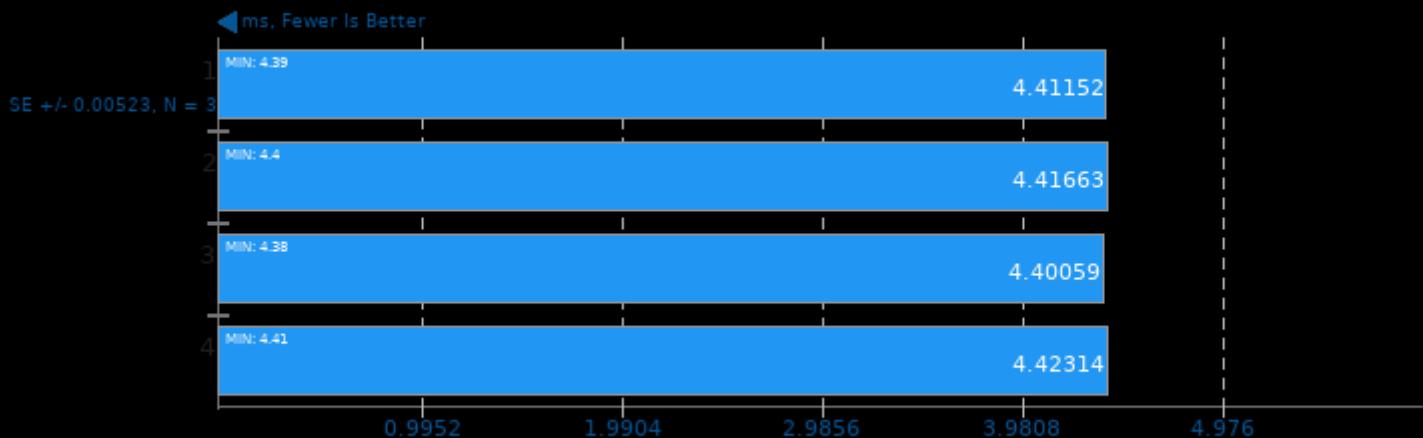
Test / Class: MG.C



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

## oneDNN 2.1.2

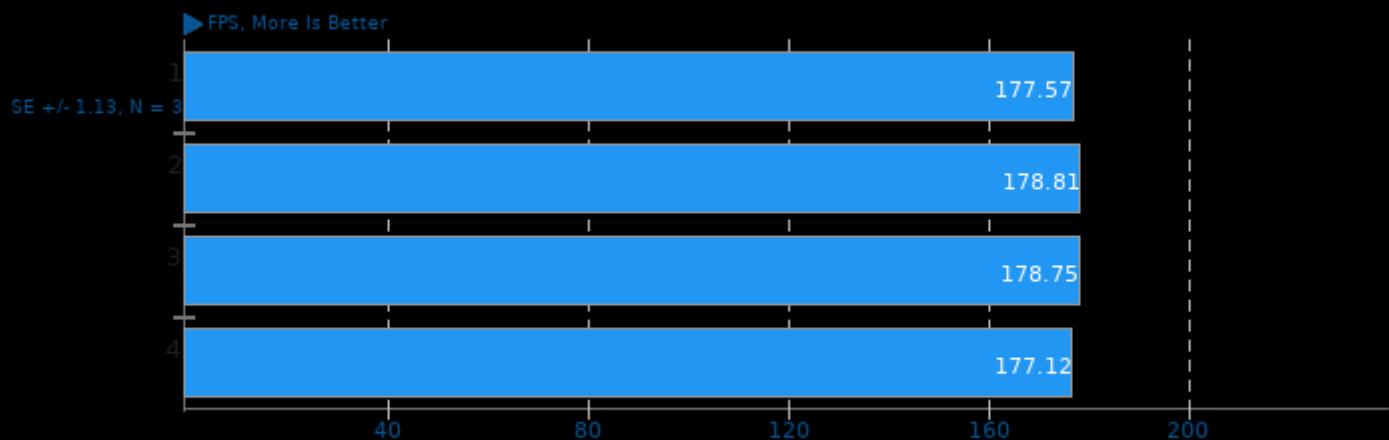
Harness: Deconvolution Batch shapes\_1d - Data Type: u8s8f32 - Engine: CPU



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

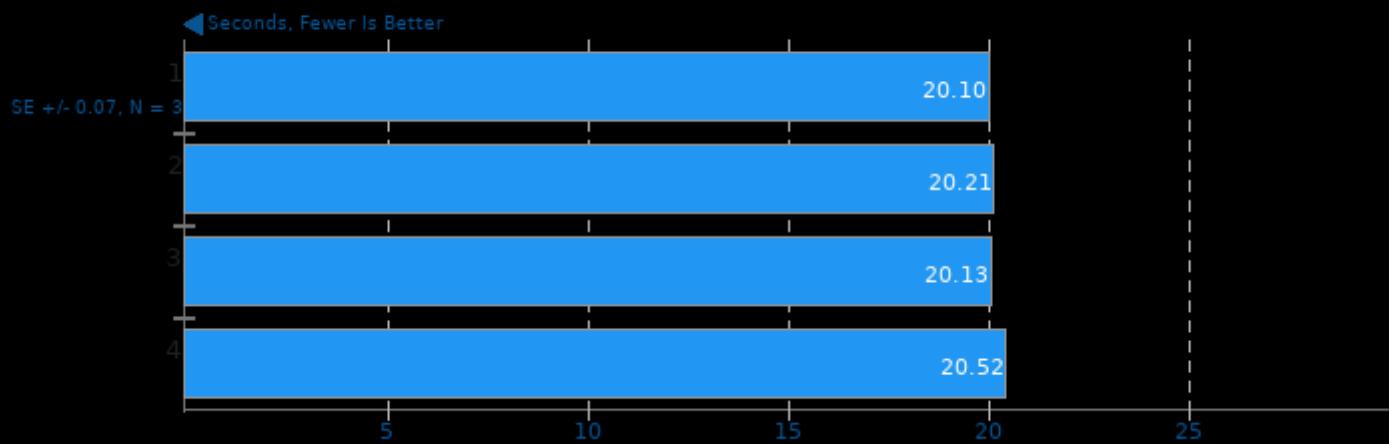
## libgav1 0.16.3

Video Input: Summer Nature 1080p



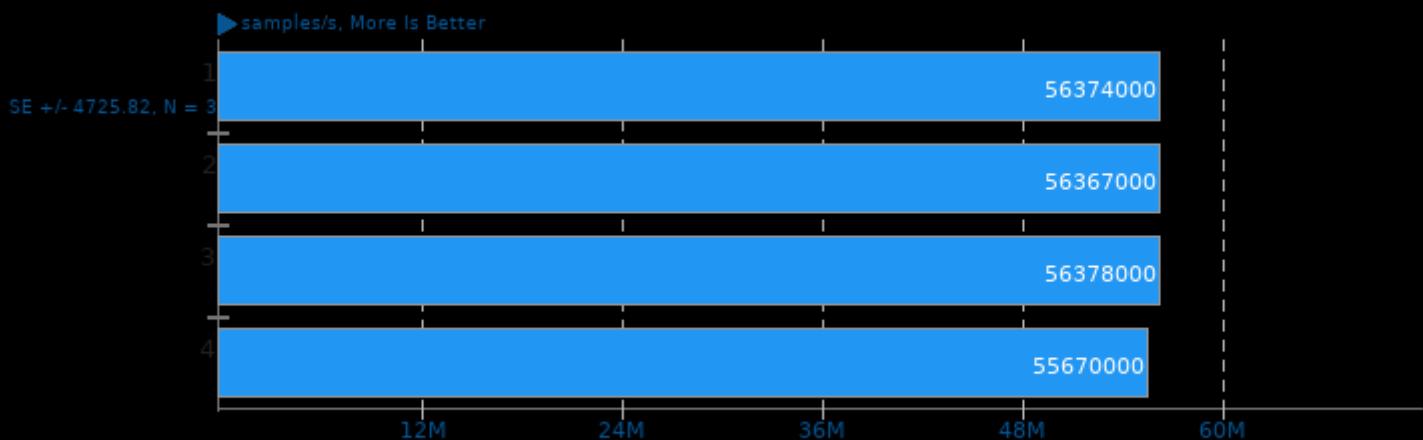
1. (CXX) g++ options: -O3 -lpthread -lrt

## VOSK Speech Recognition Toolkit 0.3.21



**Liquid-DSP 2021.01.31**

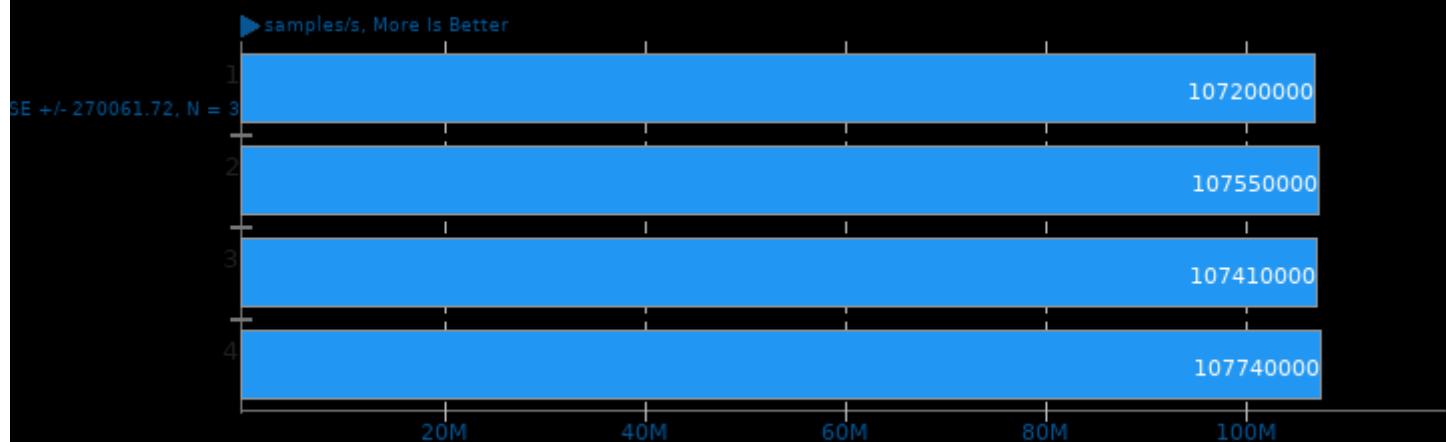
Threads: 1 - Buffer Length: 256 - Filter Length: 57



1. (CC) gcc options: -O3 -pthread -lm -lc -lliquid

**Liquid-DSP 2021.01.31**

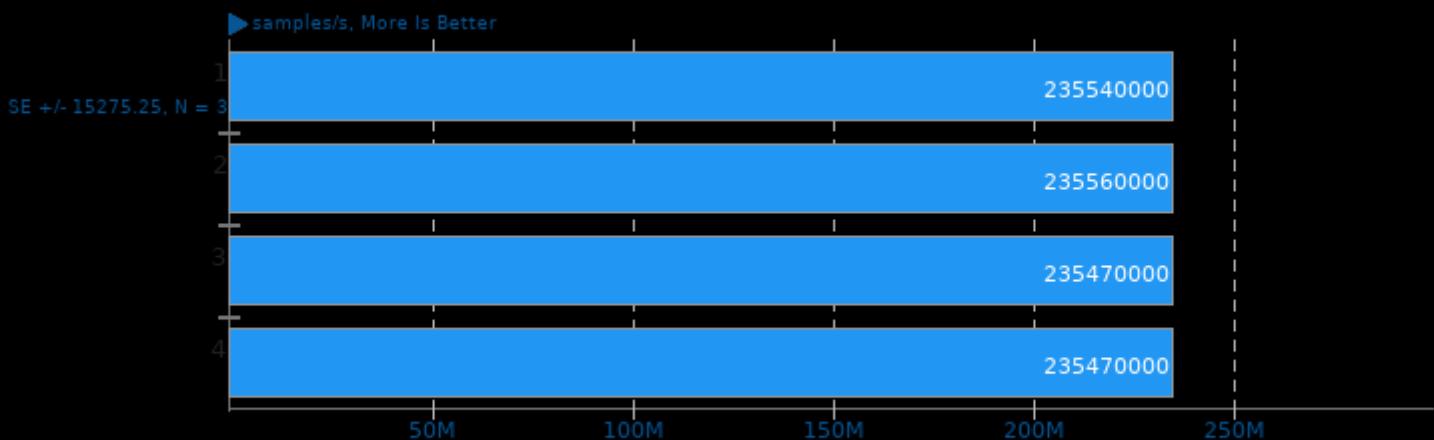
Threads: 2 - Buffer Length: 256 - Filter Length: 57



1. (CC) gcc options: -O3 -pthread -lm -lc -lliquid

**Liquid-DSP 2021.01.31**

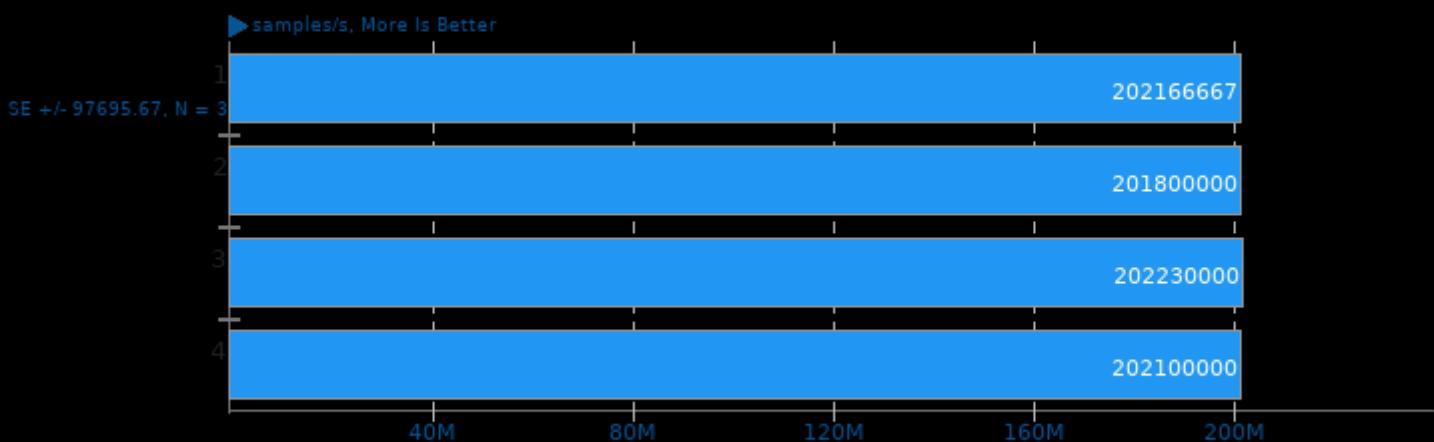
Threads: 8 - Buffer Length: 256 - Filter Length: 57



1. (CC) gcc options: -O3 -pthread -lm -lc -lliquid

**Liquid-DSP 2021.01.31**

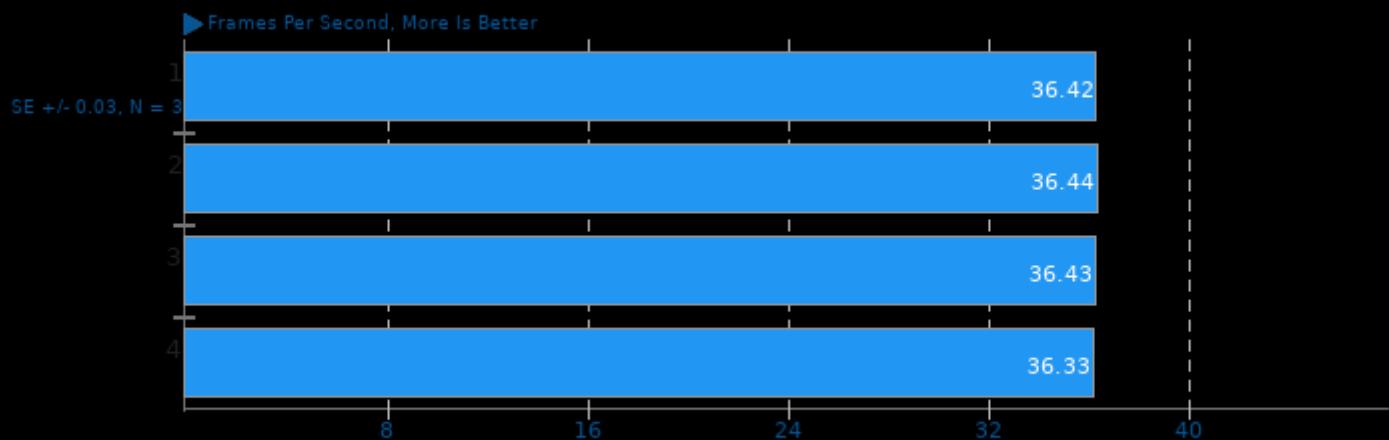
Threads: 4 - Buffer Length: 256 - Filter Length: 57



1. (CC) gcc options: -O3 -pthread -lm -lc -lliquid

## AOM AV1 3.1

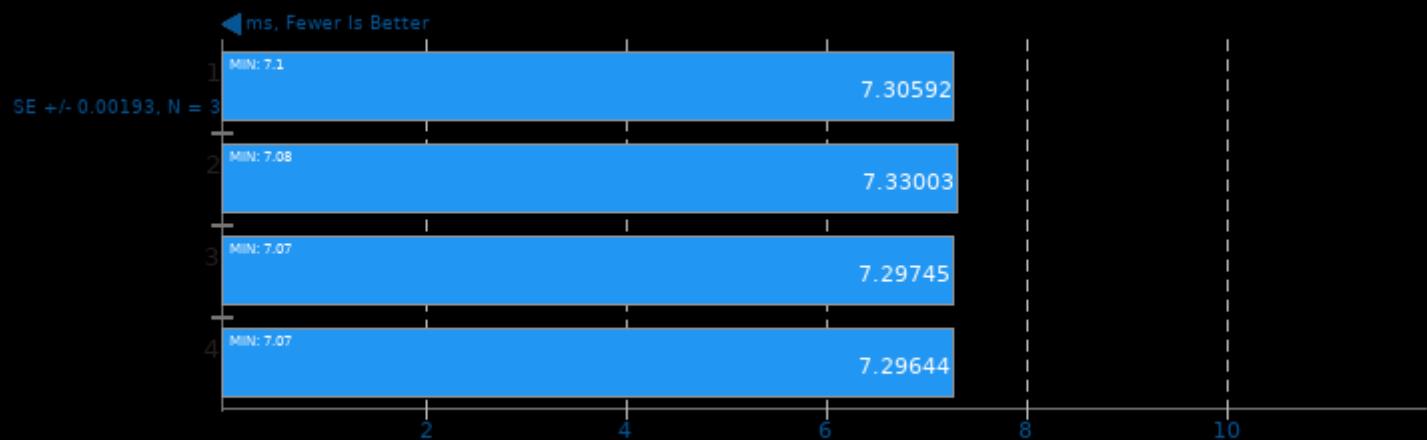
Encoder Mode: Speed 9 Realtime - Input: Bosphorus 4K



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

## oneDNN 2.1.2

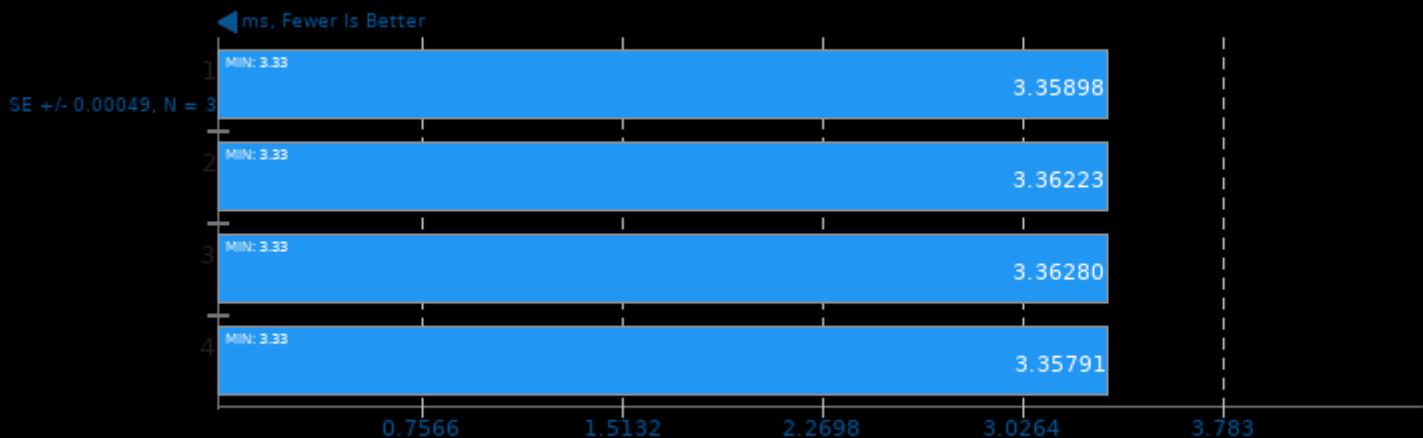
Harness: IP Shapes 1D - Data Type: f32 - Engine: CPU



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

## oneDNN 2.1.2

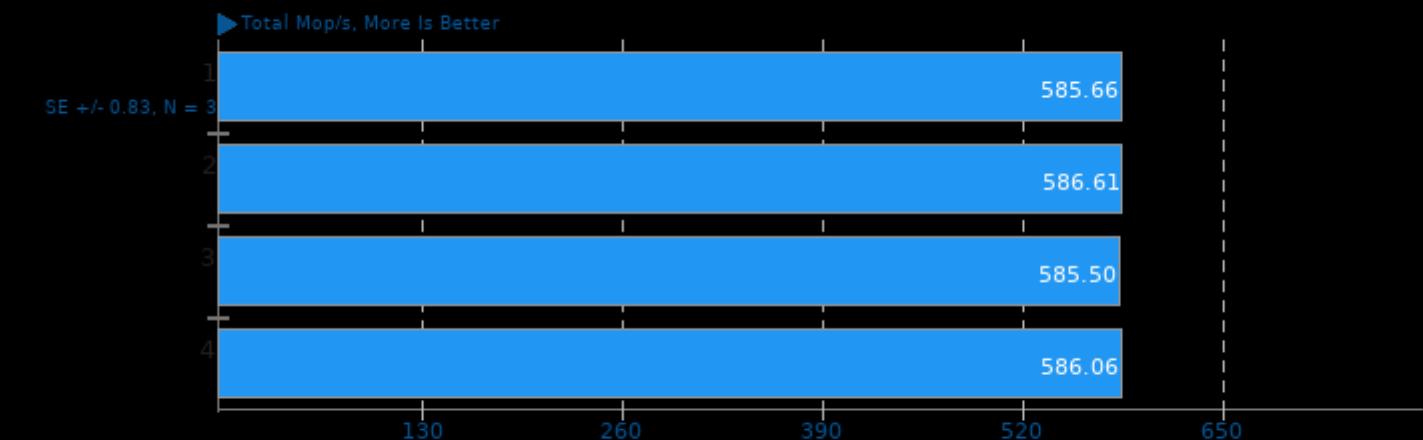
Harness: IP Shapes 1D - Data Type: u8s8f32 - Engine: CPU



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

## NAS Parallel Benchmarks 3.4

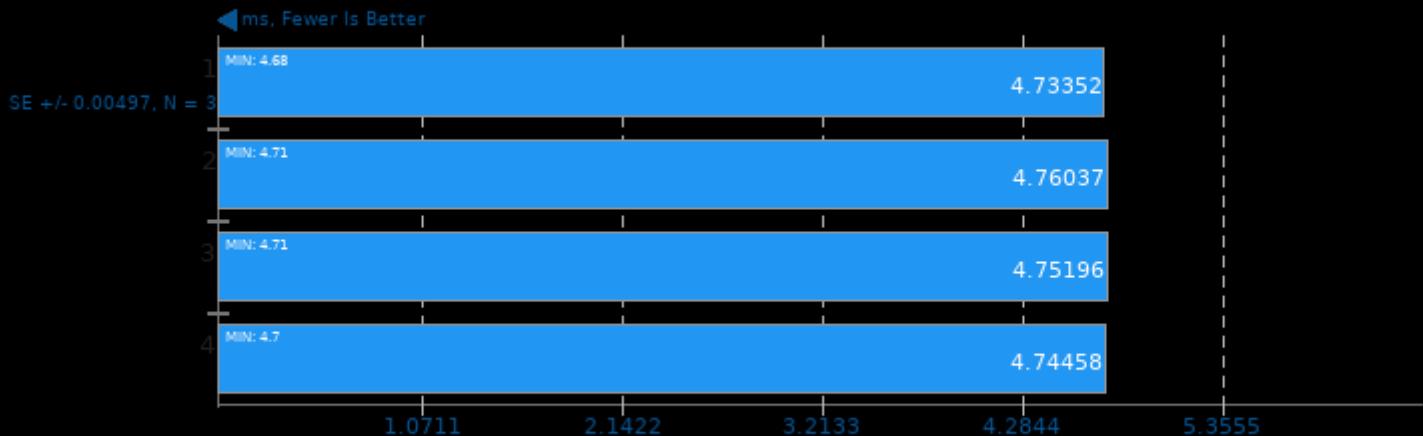
Test / Class: EP.C



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

## oneDNN 2.1.2

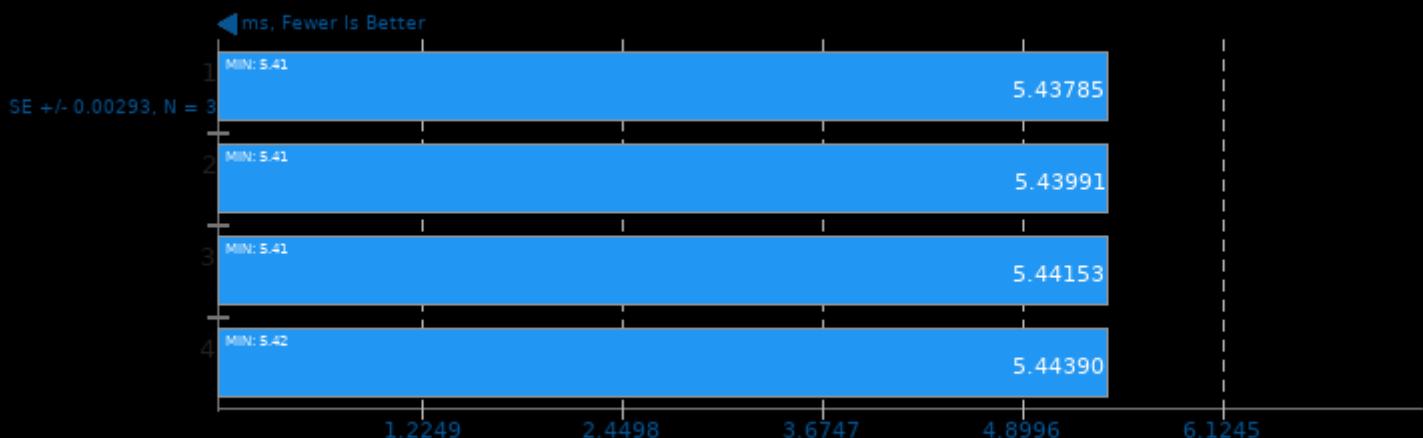
Harness: Matrix Multiply Batch Shapes Transformer - Data Type: f32 - Engine: CPU



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

## oneDNN 2.1.2

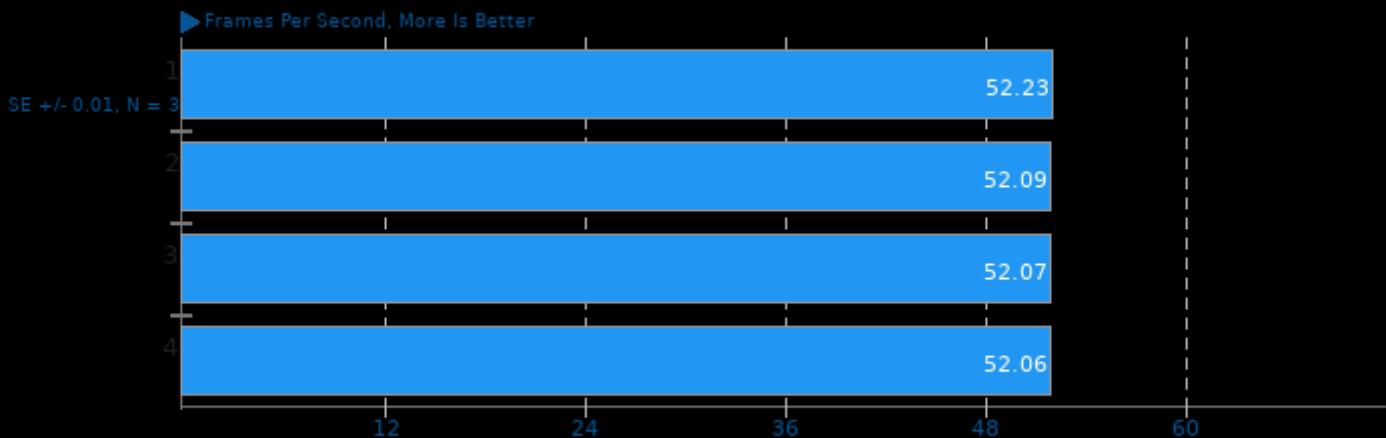
Harness: Matrix Multiply Batch Shapes Transformer - Data Type: u8s8f32 - Engine: CPU



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

## SVT-HEVC 1.5.0

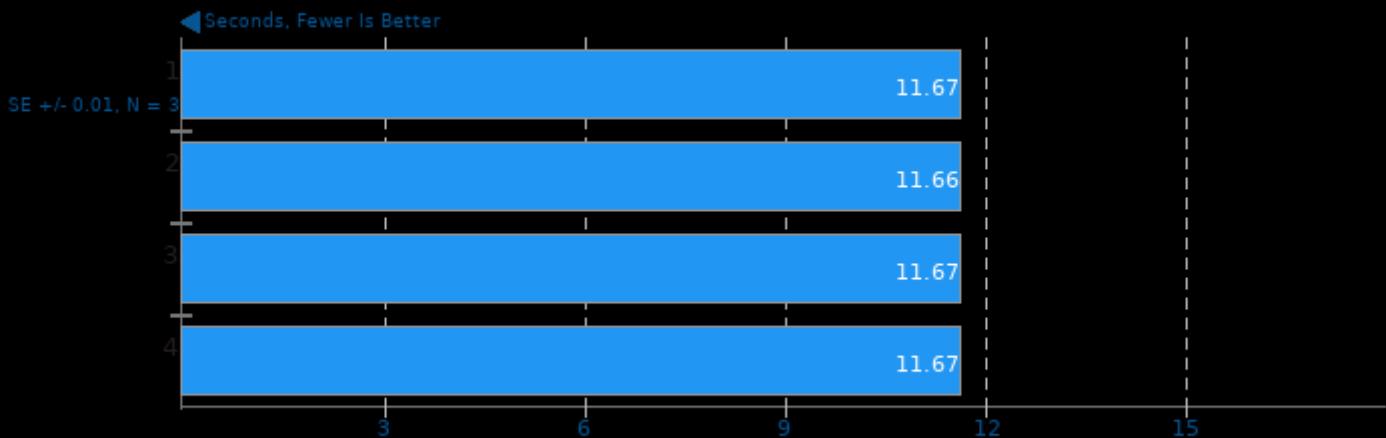
Tuning: 7 - Input: Bosphorus 1080p



1. (CC) gcc options: -fPIE -fPIC -O3 -O2 -pie -rdynamic -lpthread -lrt

## Helsing 1.0-beta

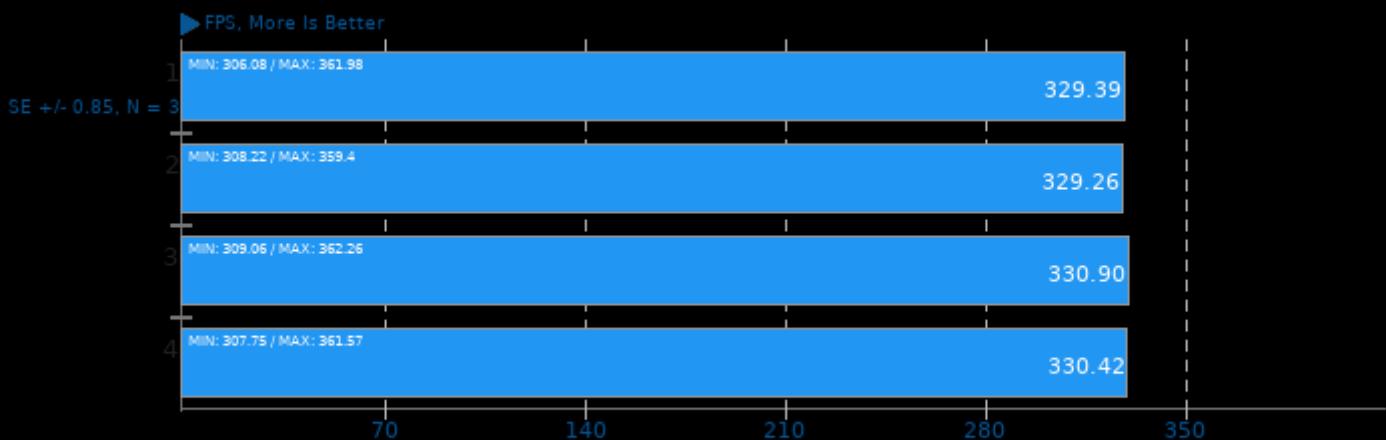
Digit Range: 12 digit



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

**dav1d 0.9.0**

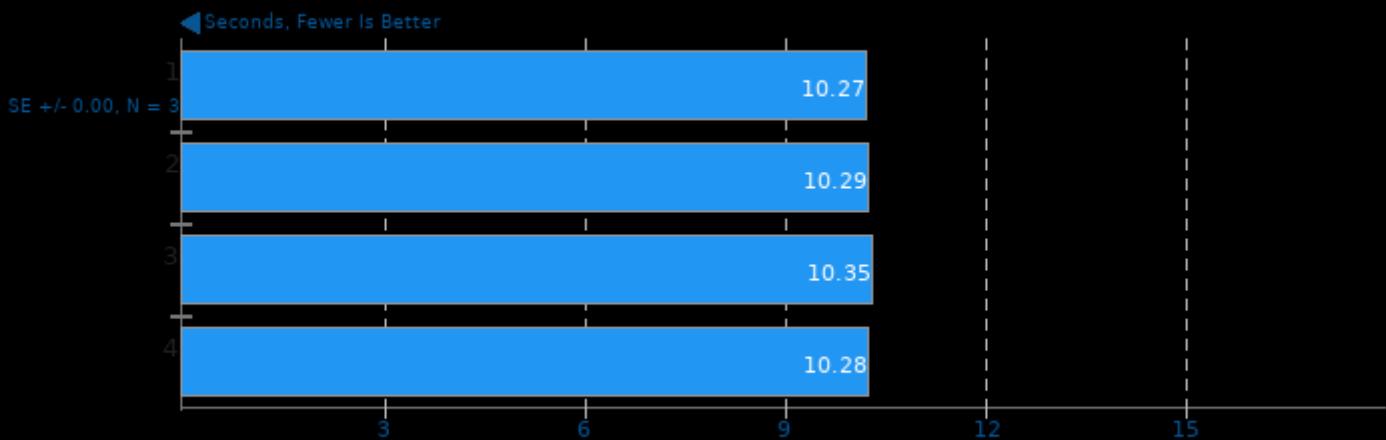
Video Input: Summer Nature 1080p



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

**Basis Universal 1.13**

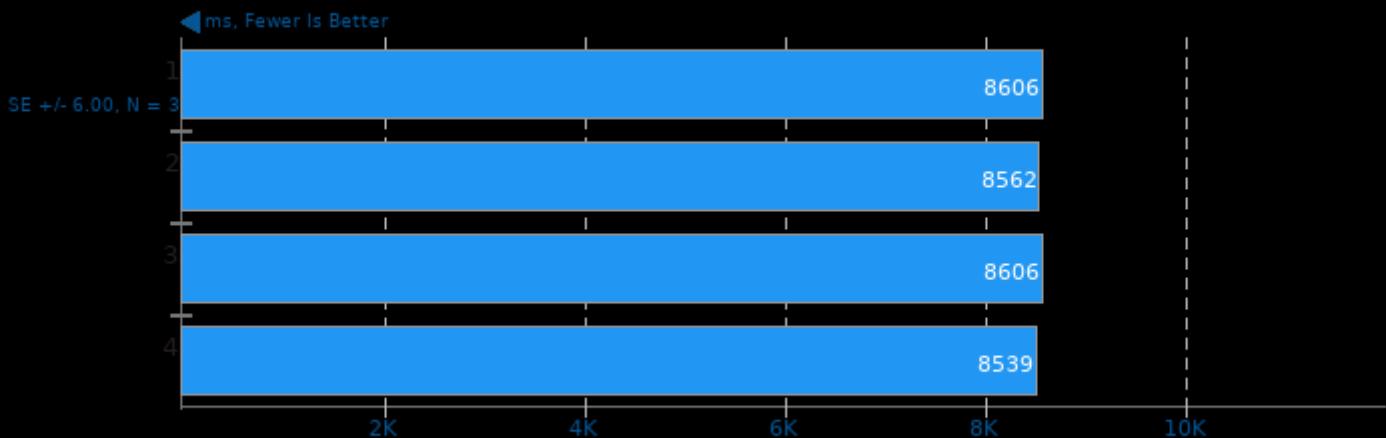
Settings: UASTC Level 0



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

## Google Draco 1.4.1

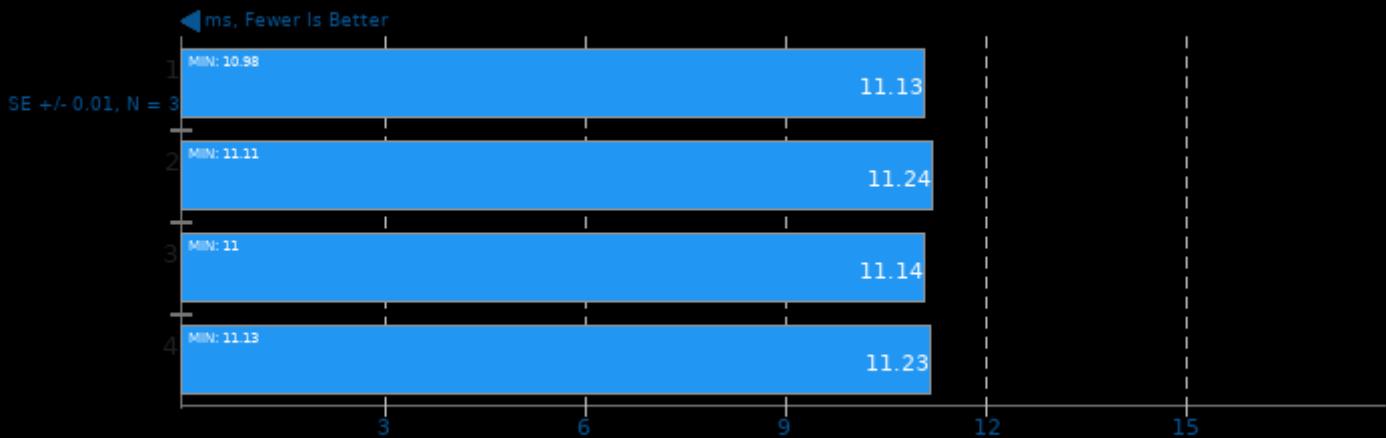
Model: Church Facade



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

## oneDNN 2.1.2

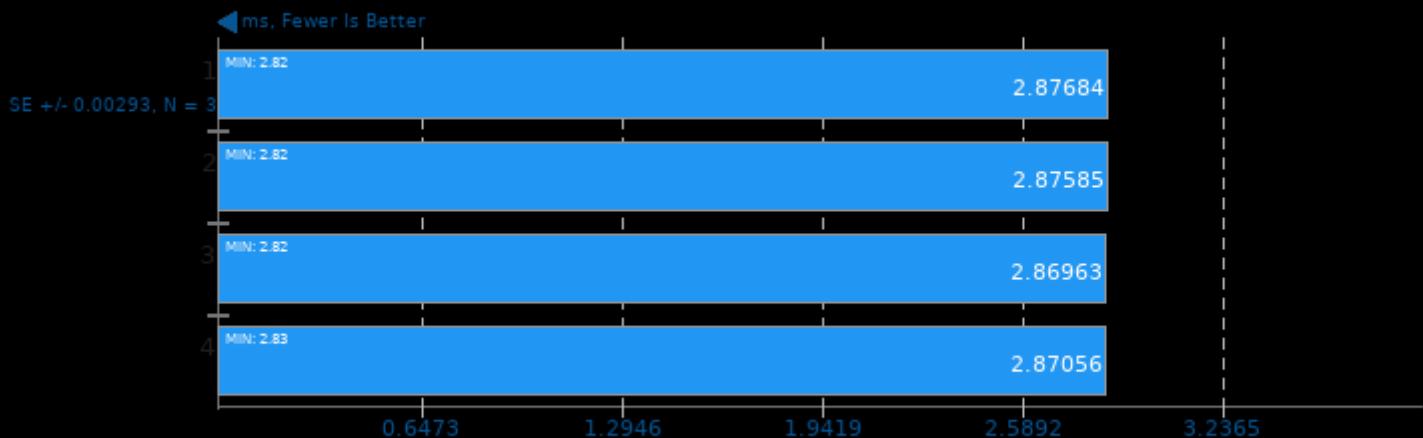
Harness: IP Shapes 3D - Data Type: f32 - Engine: CPU



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

## oneDNN 2.1.2

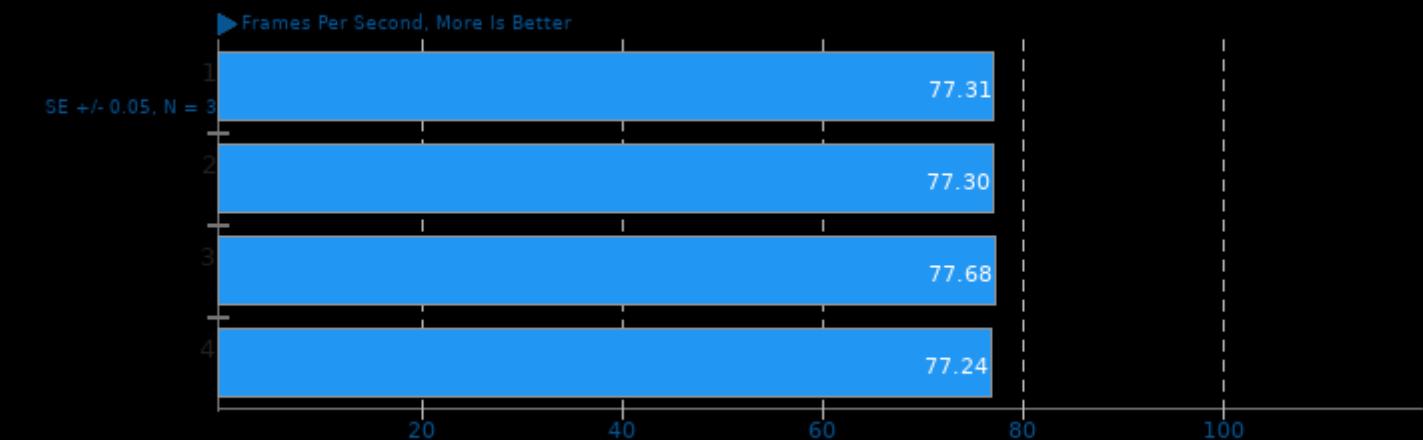
Harness: IP Shapes 3D - Data Type: u8s8f32 - Engine: CPU



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

## SVT-VP9 0.3

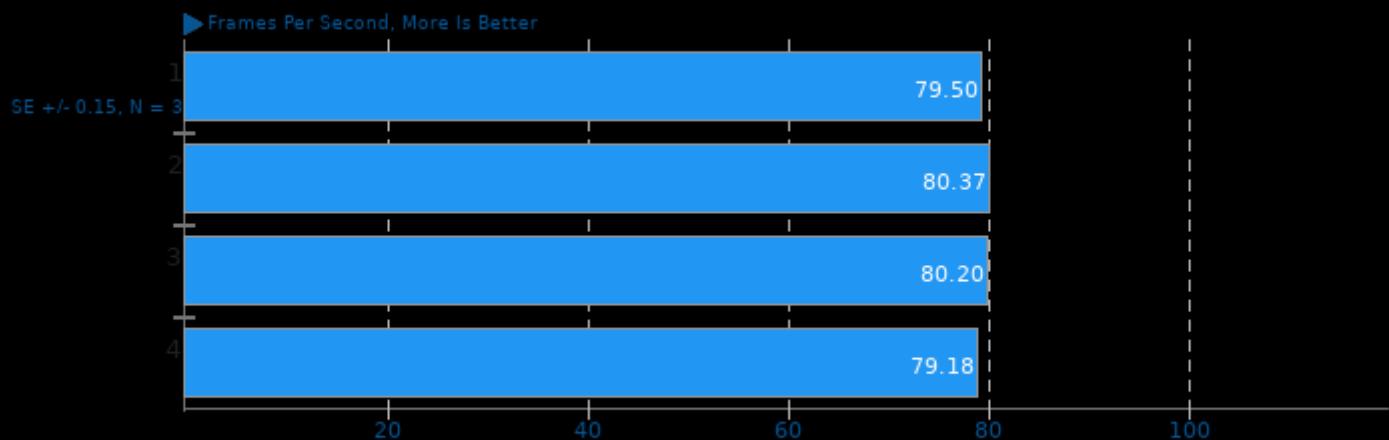
Tuning: Visual Quality Optimized - Input: Bosphorus 1080p



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

## AOM AV1 3.1

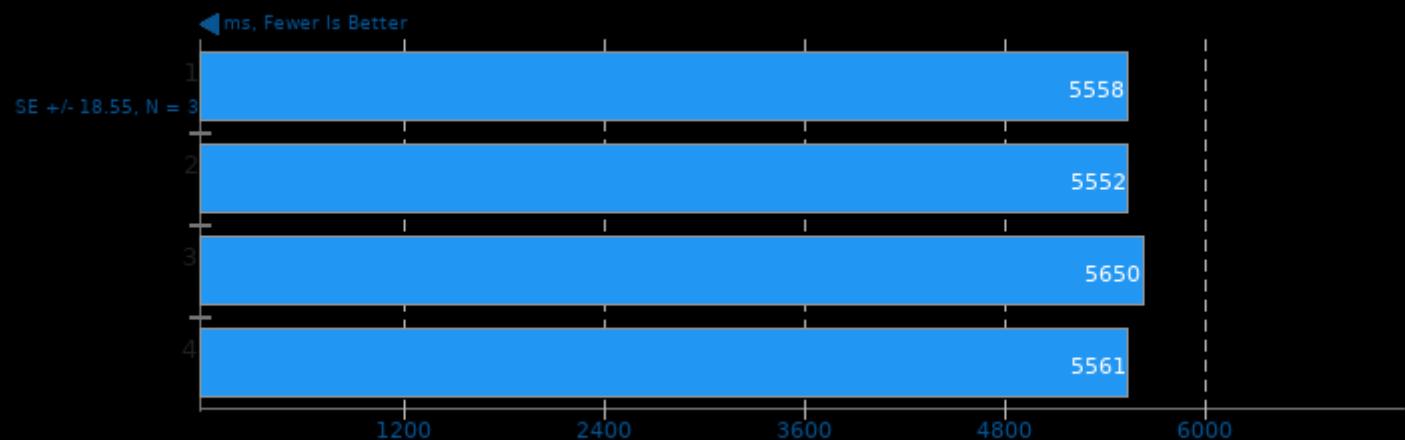
Encoder Mode: Speed 8 Realtime - Input: Bosphorus 1080p



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

## Google Draco 1.4.1

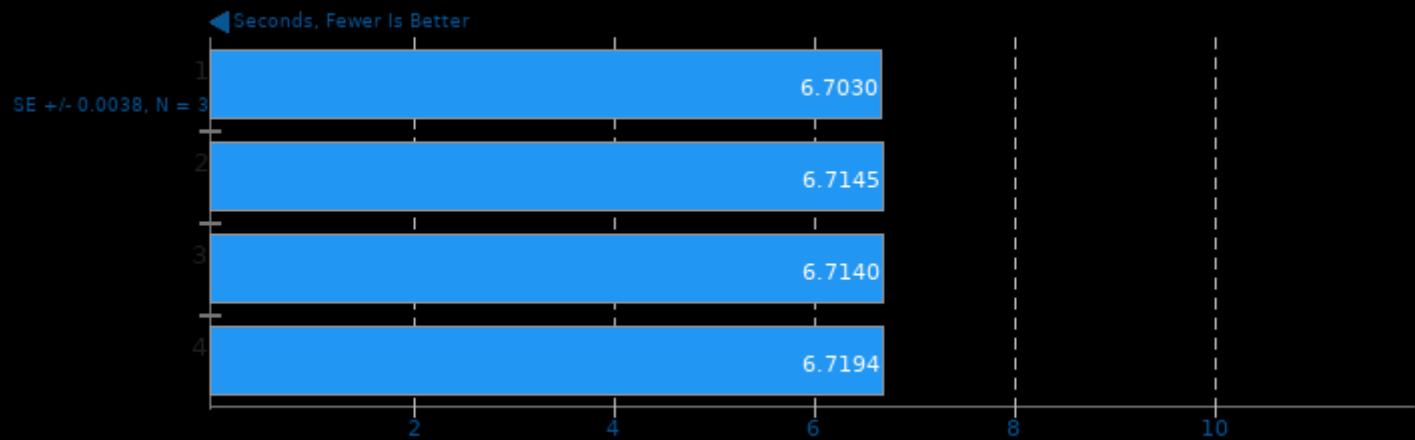
Model: Lion



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

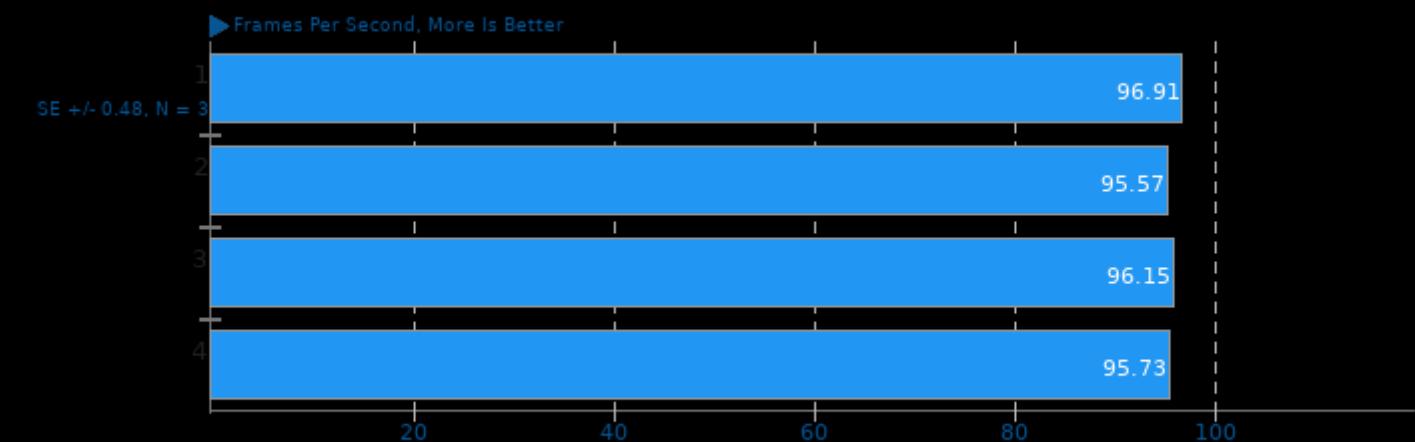
## ASTC Encoder 3.0

Preset: Medium



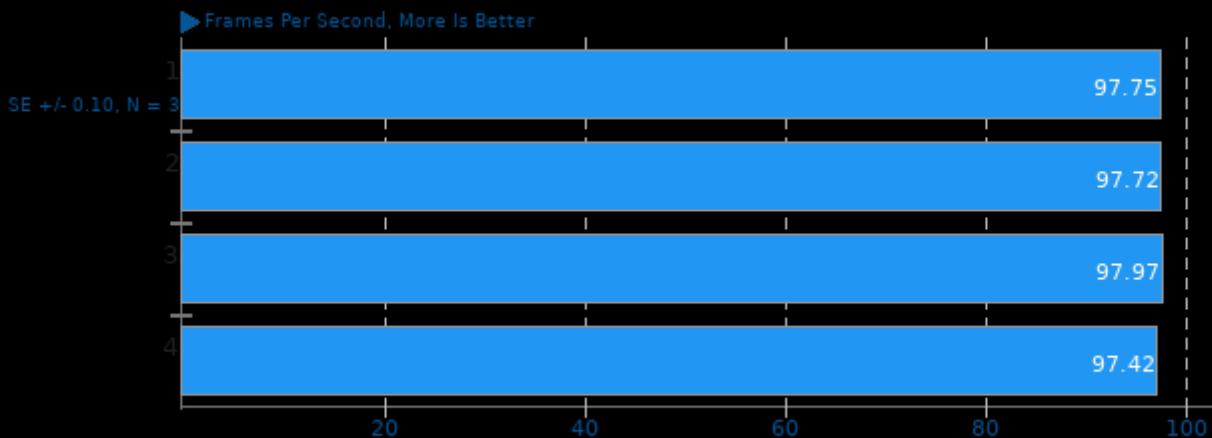
## SVT-VP9 0.3

Tuning: VMAF Optimized - Input: Bosphorus 1080p



## SVT-VP9 0.3

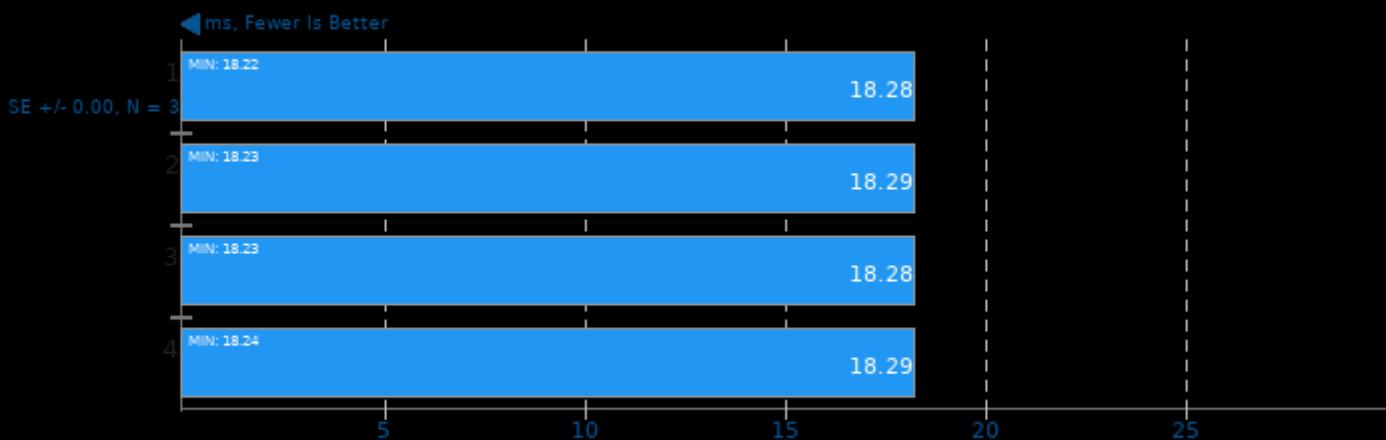
Tuning: PSNR/SSIM Optimized - Input: Bosphorus 1080p



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

## oneDNN 2.1.2

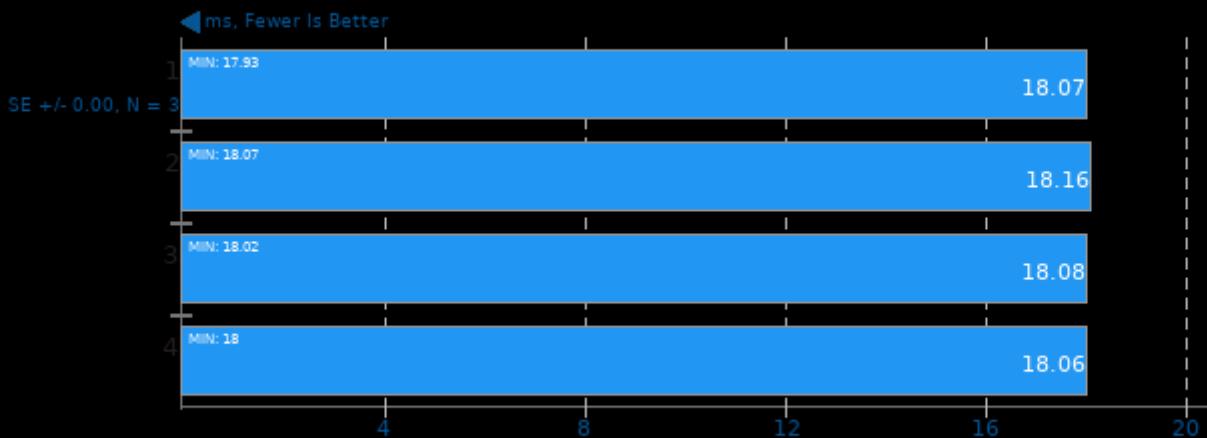
Harness: Convolution Batch Shapes Auto - Data Type: f32 - Engine: CPU



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

## oneDNN 2.1.2

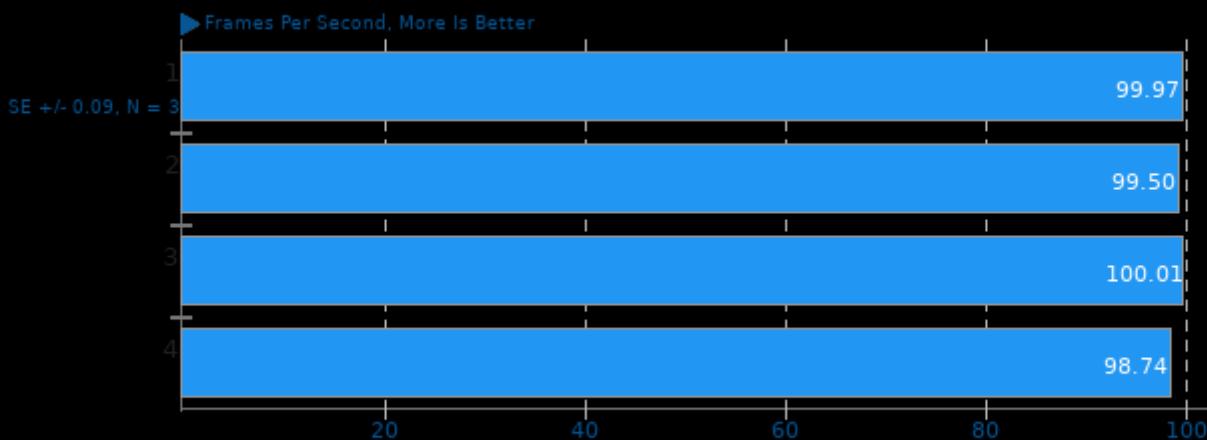
Harness: Convolution Batch Shapes Auto - Data Type: u8s8f32 - Engine: CPU



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

## AOM AV1 3.1

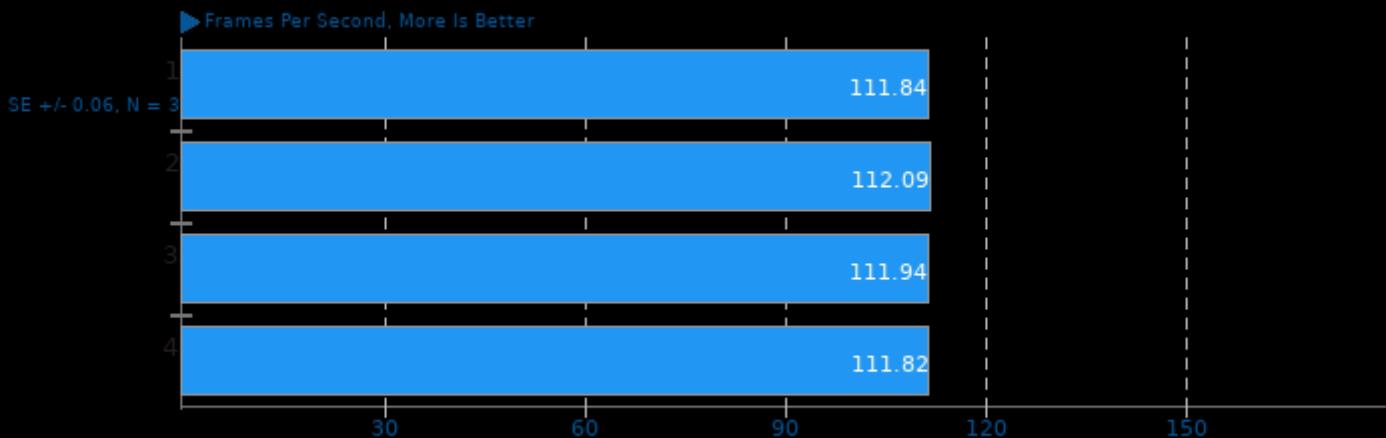
Encoder Mode: Speed 9 Realtime - Input: Bosphorus 1080p



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

## SVT-HEVC 1.5.0

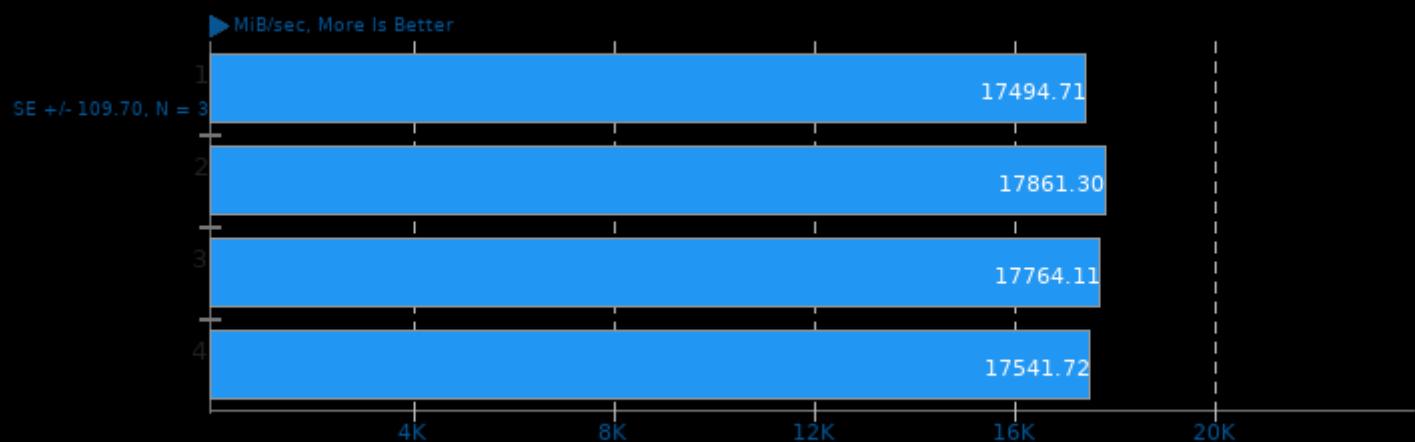
Tuning: 10 - Input: Bosphorus 1080p



1. (CC) gcc options: -fPIE -fPIC -O3 -O2 -pie -rdynamic -lpthread -lrt

## Sysbench 1.0.20

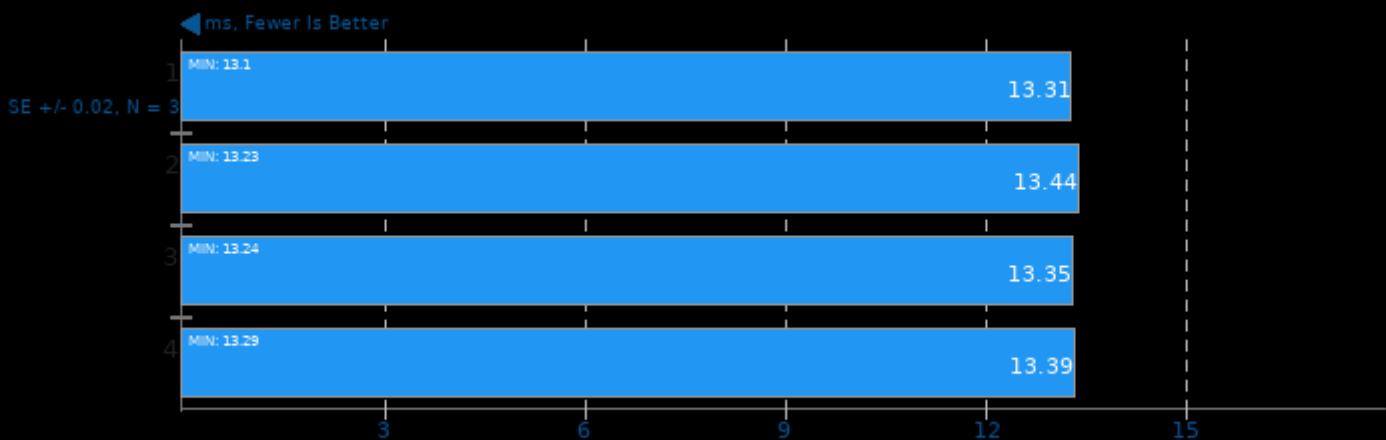
Test: RAM / Memory



1. (CC) gcc options: -pthread -O2 -funroll-loops -rdynamic -ldl -laio -lm

## oneDNN 2.1.2

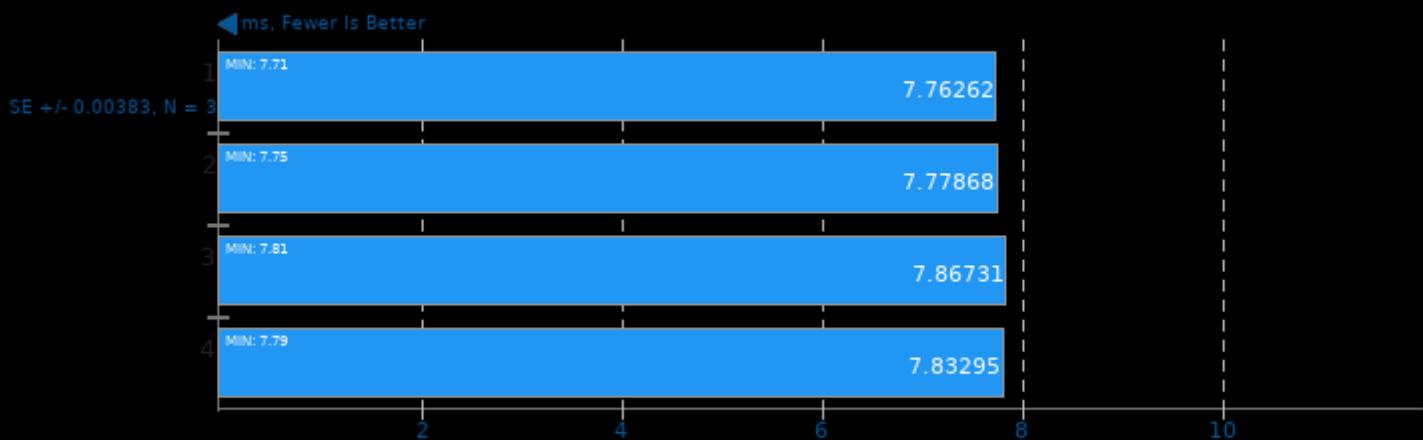
Harness: Deconvolution Batch shapes\_3d - Data Type: f32 - Engine: CPU



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

## oneDNN 2.1.2

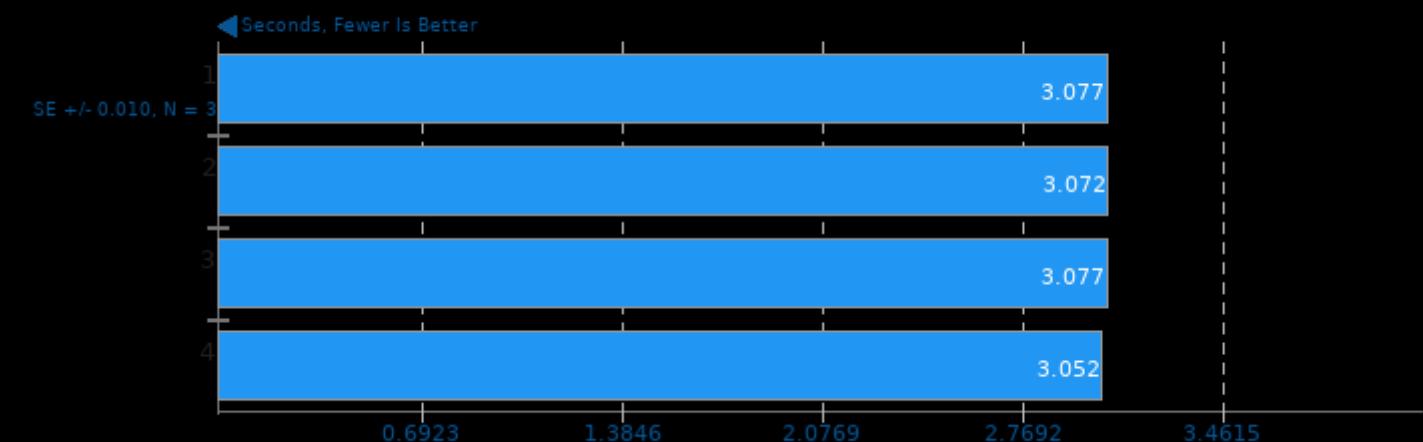
Harness: Deconvolution Batch shapes\_3d - Data Type: u8s8f32 - Engine: CPU



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

## KTX-Software toktx 4.0

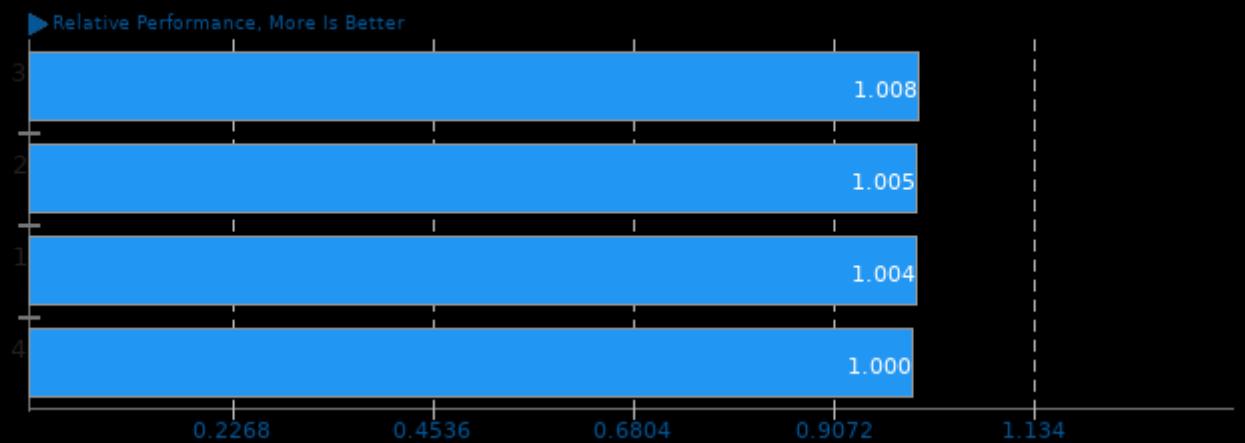
Settings: Zstd Compression 9



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

### Geometric Mean Of AV1 Tests

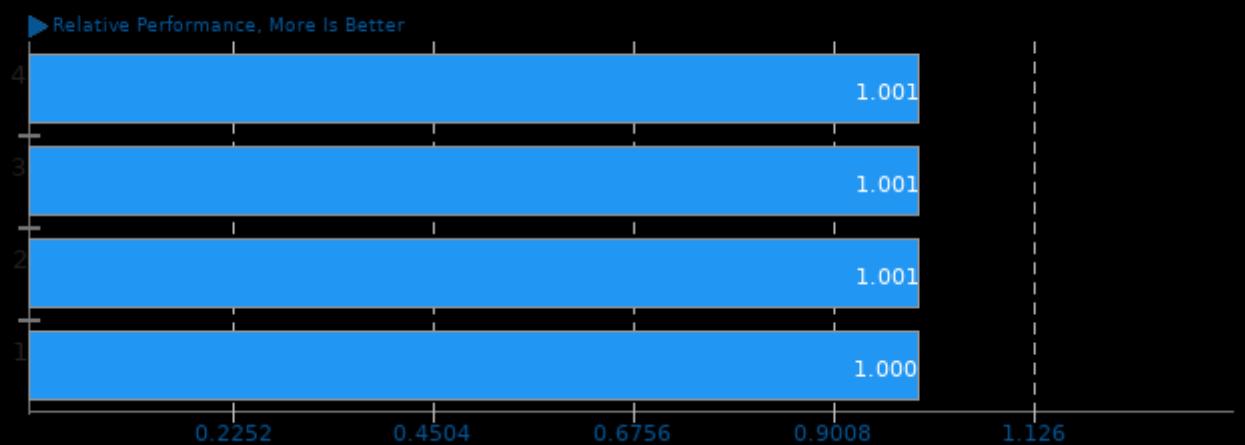
Result Composite - 1275 june



Geometric mean based upon tests: pts/dav1d, pts/aom-av1, pts/svt-av1 and pts/libgav1

### Geometric Mean Of Bioinformatics Tests

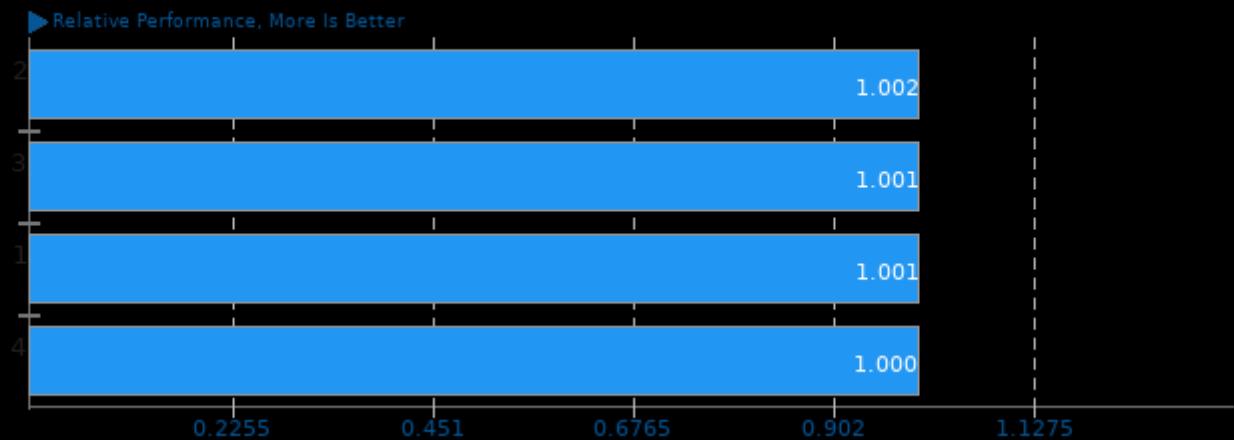
Result Composite - 1275 june



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

## Geometric Mean Of C++ Boost Tests

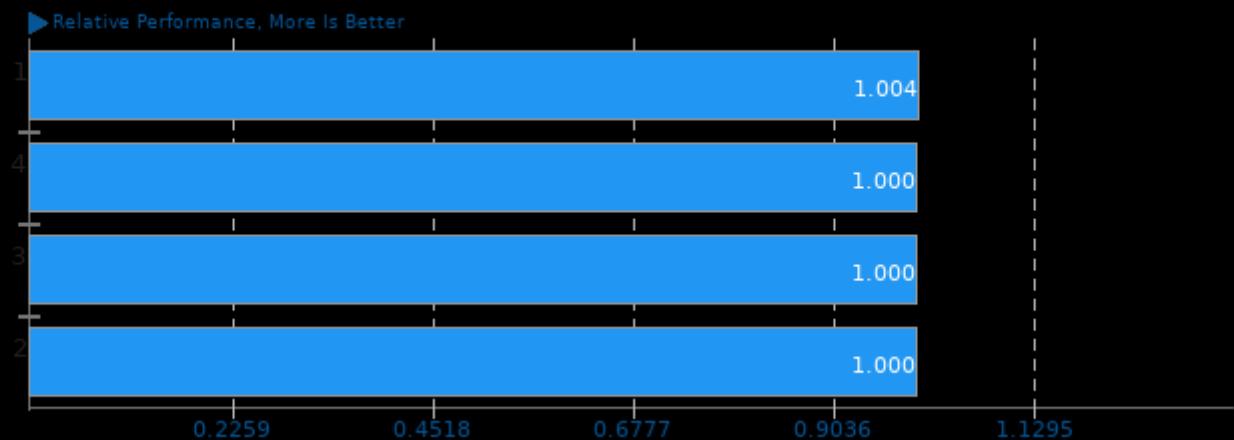
Result Composite - 1275 june



Geometric mean based upon tests: pts/srsran, pts/srlte and pts/chia-vdf

## Geometric Mean Of Timed Code Compilation Tests

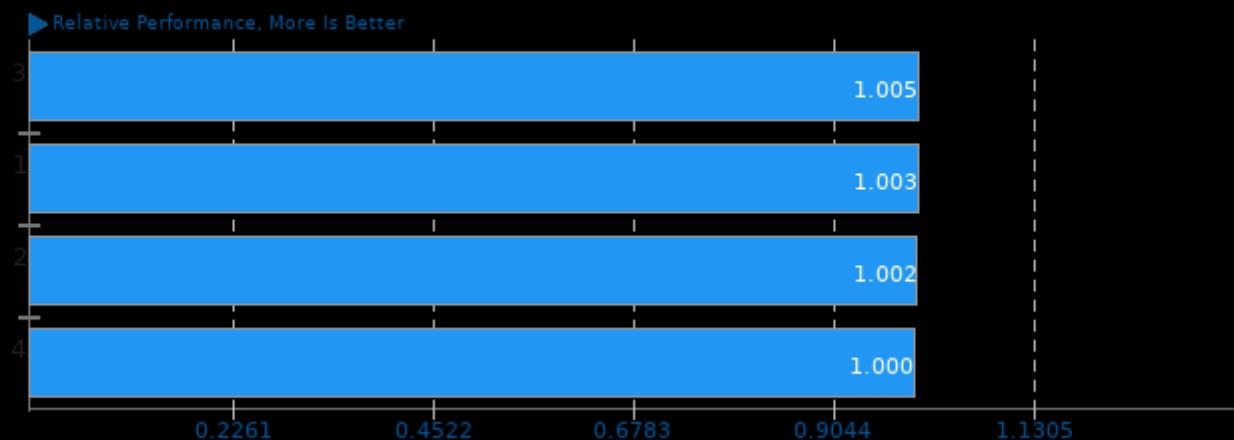
Result Composite - 1275 june



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

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

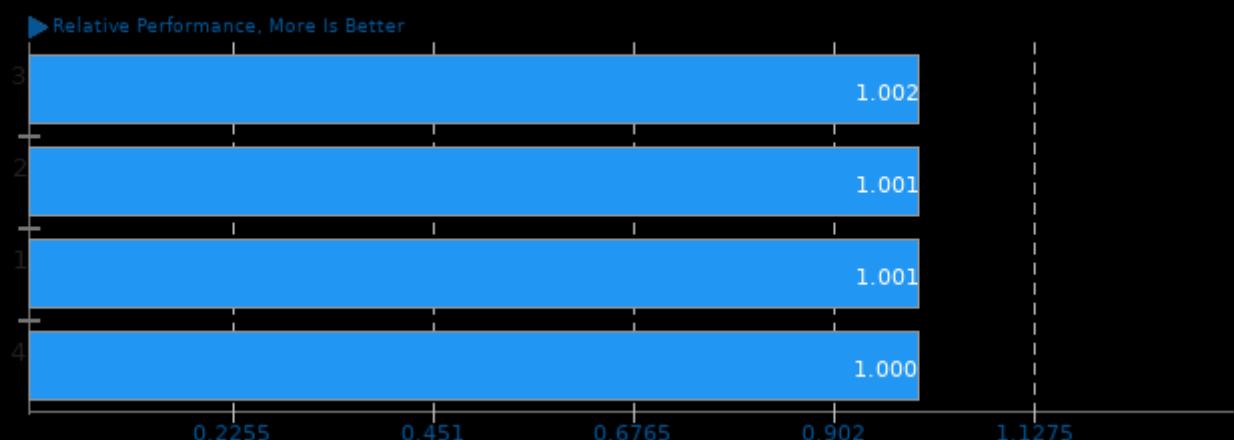
Result Composite - 1275 june



Geometric mean based upon tests: pts/vpxenc, pts/stockfish, pts/hammer, pts/build-llvm, pts/mrbayes, pts/libgav1, pts/dav1d, pts/aom-av1, pts/svt-av1, pts/svt-vp9, pts/gromacs, pts/build-gdb, pts/build-ffmpeg and pts/basis

## Geometric Mean Of CPU Massive Tests

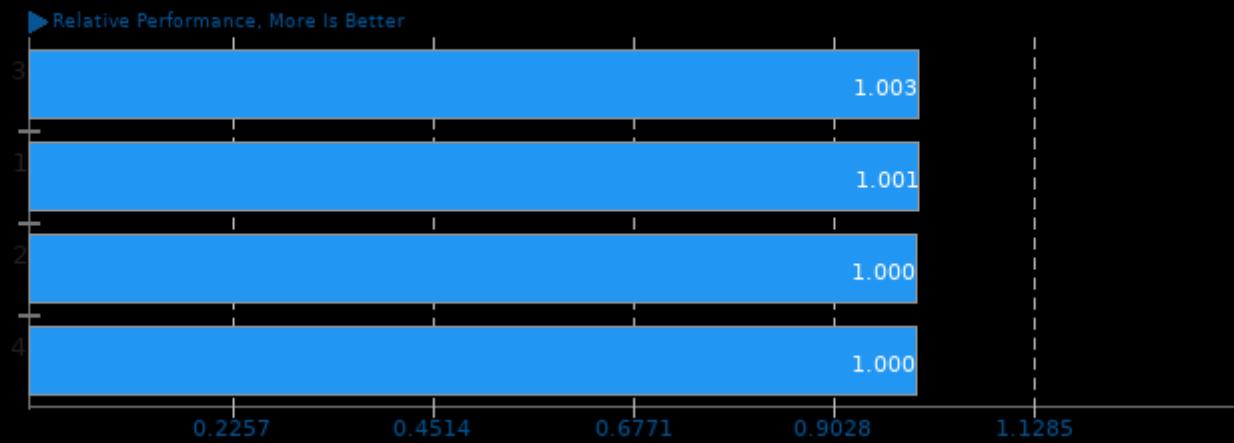
Result Composite - 1275 june



Geometric mean based upon tests: pts/brl-cad, pts/build-llvm, pts/build-linux-kernel, pts/dav1d, pts/svt-av1, pts/svt-hevc, pts/svt-vp9, pts/vpxenc, pts/hammer, pts/onnednn, pts/mrbayes, pts/npb, pts/stockfish, pts/sysbench, pts/botan and pts/tjbench

## Geometric Mean Of Creator Workloads Tests

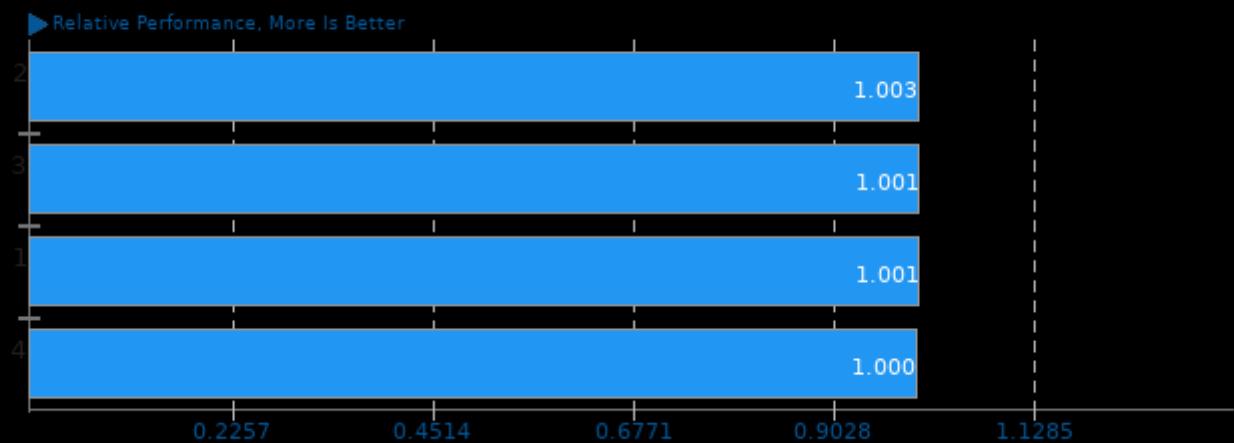
Result Composite - 1275 june



Geometric mean based upon tests: pts/svt-vp9, pts/svt-hevc, pts/vpxenc, pts/dav1d, pts/aom-av1, pts/svt-av1, pts/libgav1, pts/tjbench, pts/embree, pts/onednn, pts/oidn, pts/basis, pts/astcenc, pts/toktx, pts/draco, pts/vosk and pts/brl-cad

## Geometric Mean Of Cryptocurrency Benchmarks, CPU Mining Tests

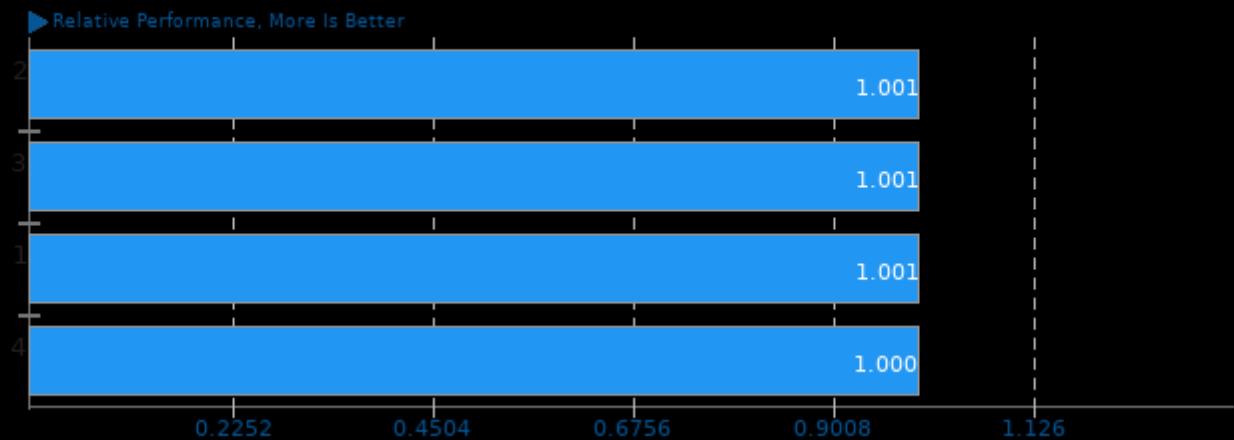
Result Composite - 1275 june



Geometric mean based upon tests: pts/xmrig and pts/chia-vdf

## Geometric Mean Of Cryptography Tests

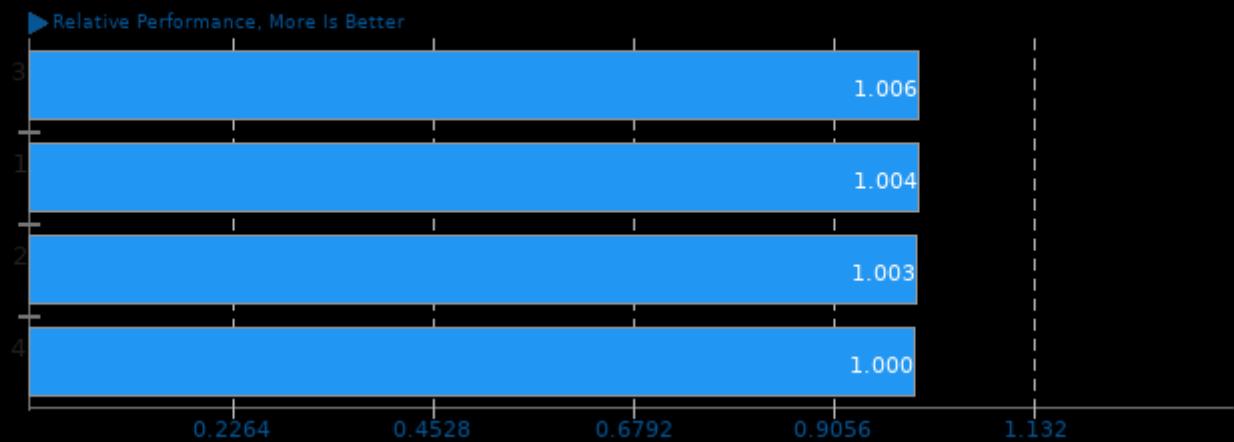
Result Composite - 1275 june



Geometric mean based upon tests: pts/botan, pts/securemark, pts/xmrig and pts/chia-vdf

## Geometric Mean Of Encoding Tests

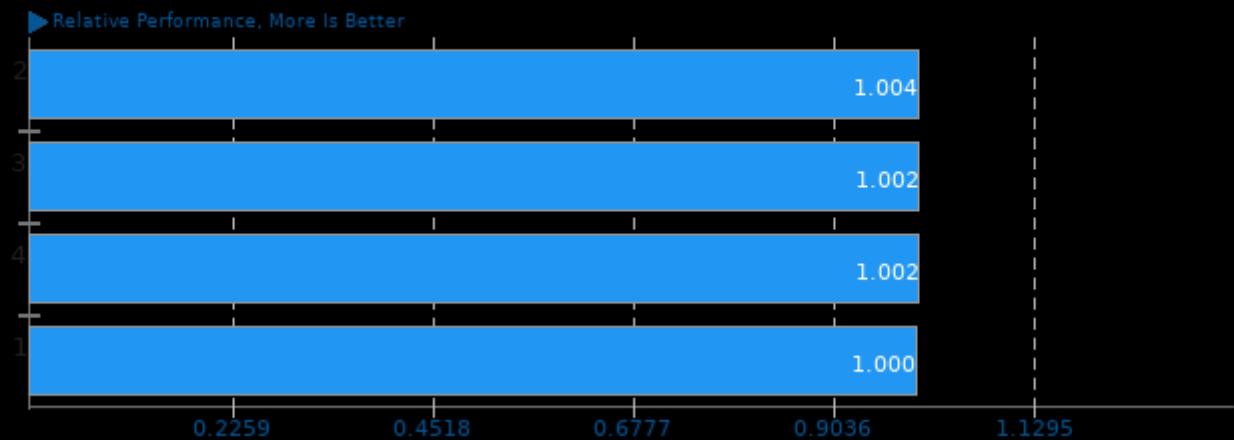
Result Composite - 1275 june



Geometric mean based upon tests: pts/svt-vp9, pts/svt-hevc, pts/vpxenc, pts/dav1d, pts/aom-av1, pts/svt-av1 and pts/libgav1

## Geometric Mean Of Fortran Tests

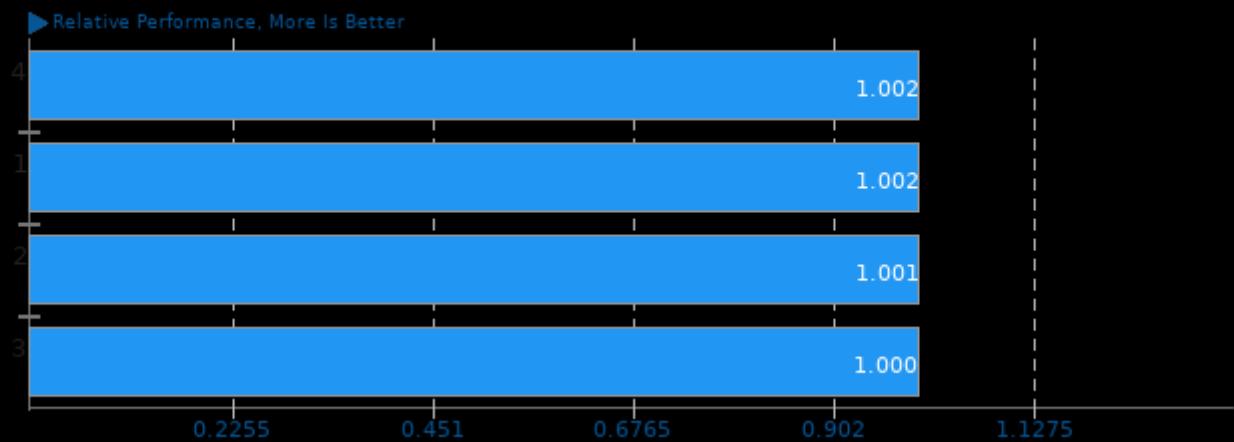
Result Composite - 1275 june



Geometric mean based upon tests: pts/npb and pts/incompact3d

## Geometric Mean Of Game Development Tests

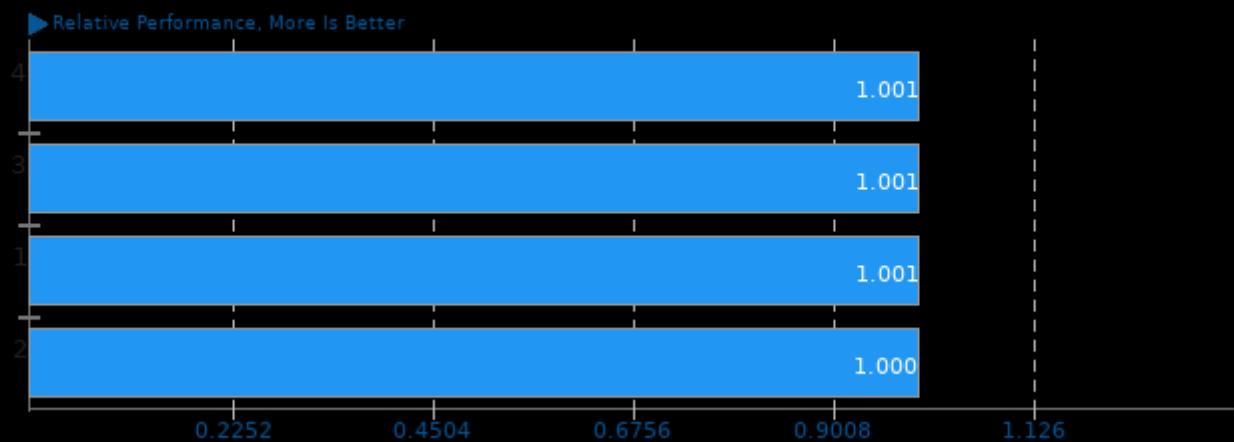
Result Composite - 1275 june



Geometric mean based upon tests: pts/basis, pts/astcenc, pts/toktx, pts/draco and pts/oidn

## Geometric Mean Of HPC - High Performance Computing Tests

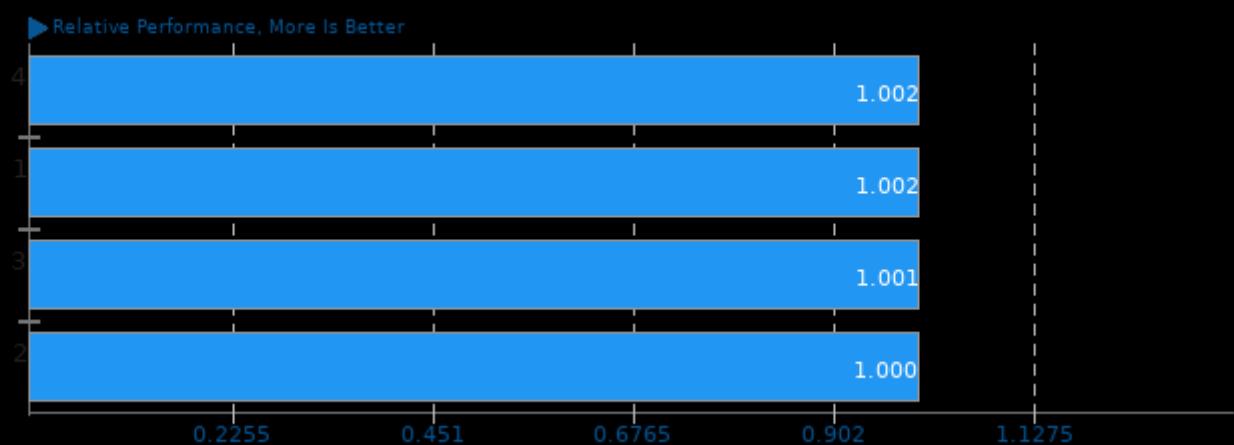
Result Composite - 1275 june



Geometric mean based upon tests: pts/npb, pts/gromacs, pts/cp2k, pts/incompact3d, pts/mrbayes, pts/hmmer, pts/mnn and pts/onnednn

## Geometric Mean Of Machine Learning Tests

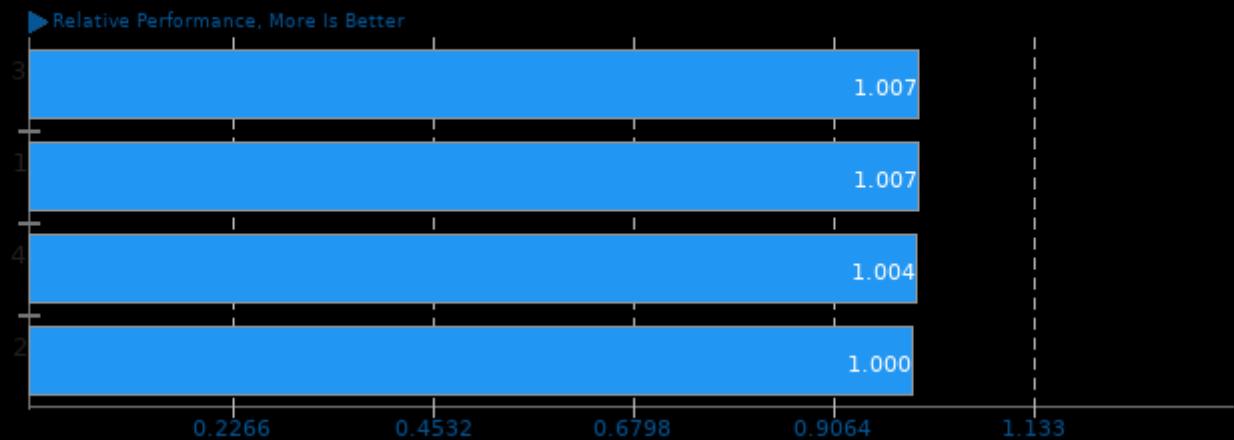
Result Composite - 1275 june



Geometric mean based upon tests: pts/mnn and pts/onnednn

## Geometric Mean Of Molecular Dynamics Tests

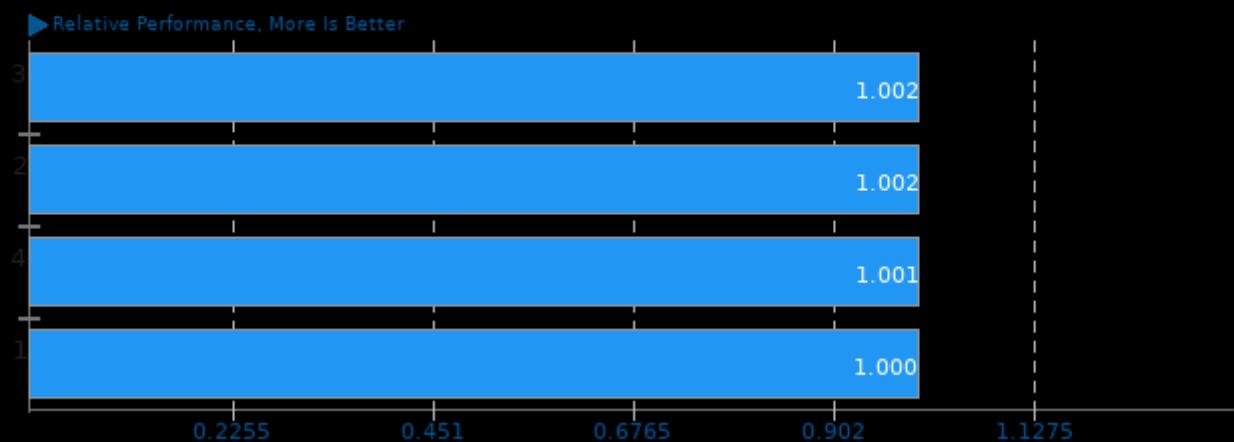
Result Composite - 1275 june



Geometric mean based upon tests: pts/gromacs, pts/cp2k and pts/incompact3d

## Geometric Mean Of MPI Benchmarks Tests

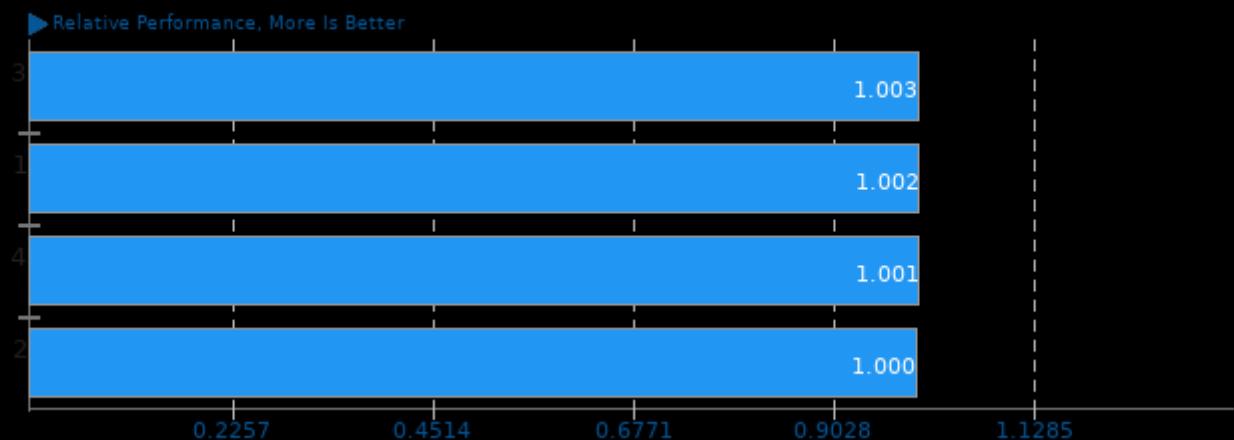
Result Composite - 1275 june



Geometric mean based upon tests: pts/incompact3d, pts/gromacs, pts/mrbayes and pts/npb

## Geometric Mean Of NVIDIA GPU Compute Tests

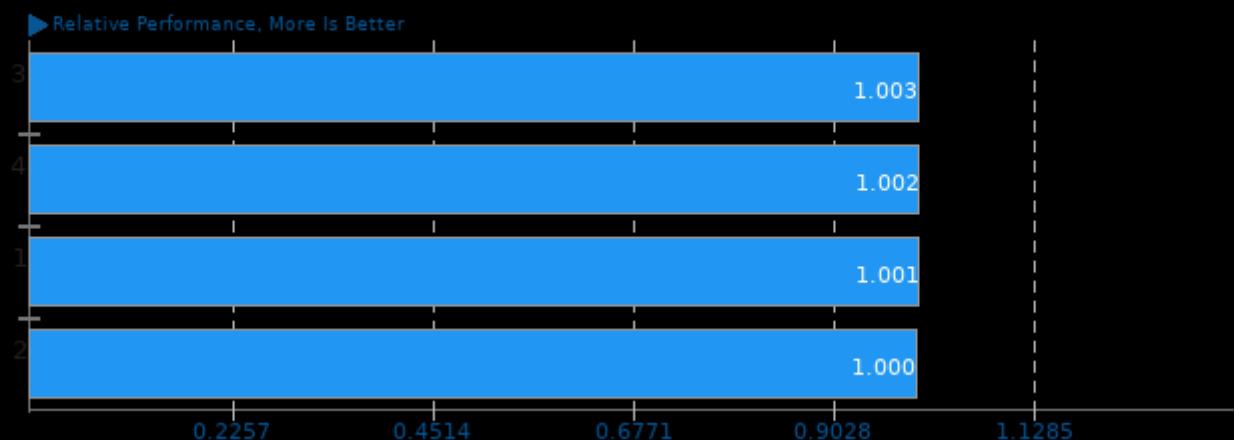
Result Composite - 1275 june



Geometric mean based upon tests: pts/gromacs and pts/viennacl

## Geometric Mean Of Intel oneAPI Tests

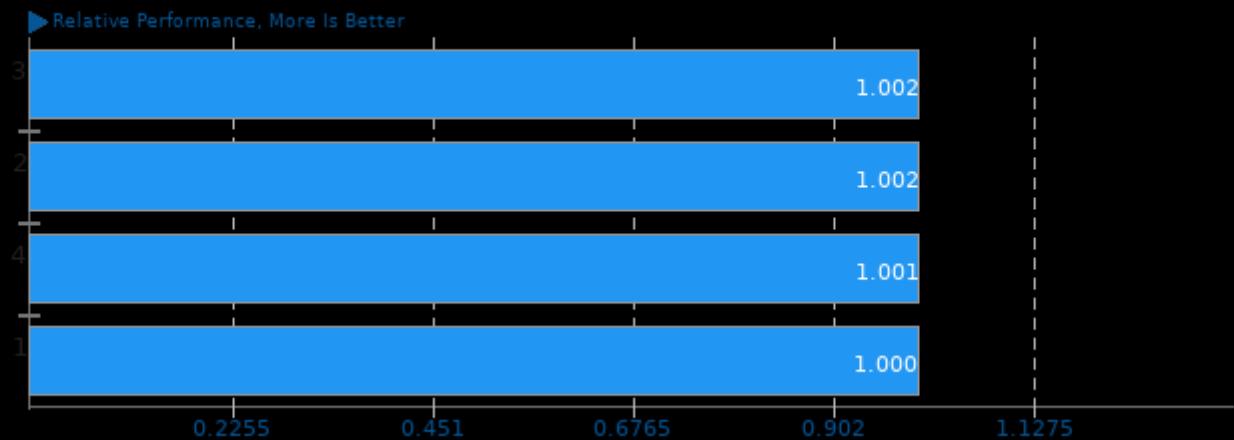
Result Composite - 1275 june



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

## Geometric Mean Of OpenMPI Tests

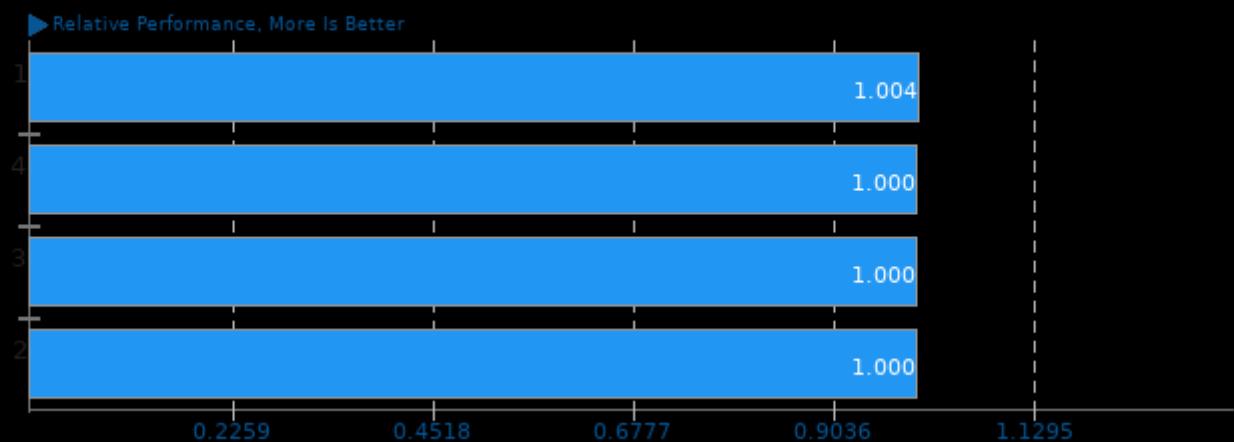
Result Composite - 1275 june



Geometric mean based upon tests: pts/cp2k, pts/gromacs, pts/npb, pts/incompact3d, pts/hmmer and pts/mrbayes

## Geometric Mean Of Programmer / Developer System Benchmarks Tests

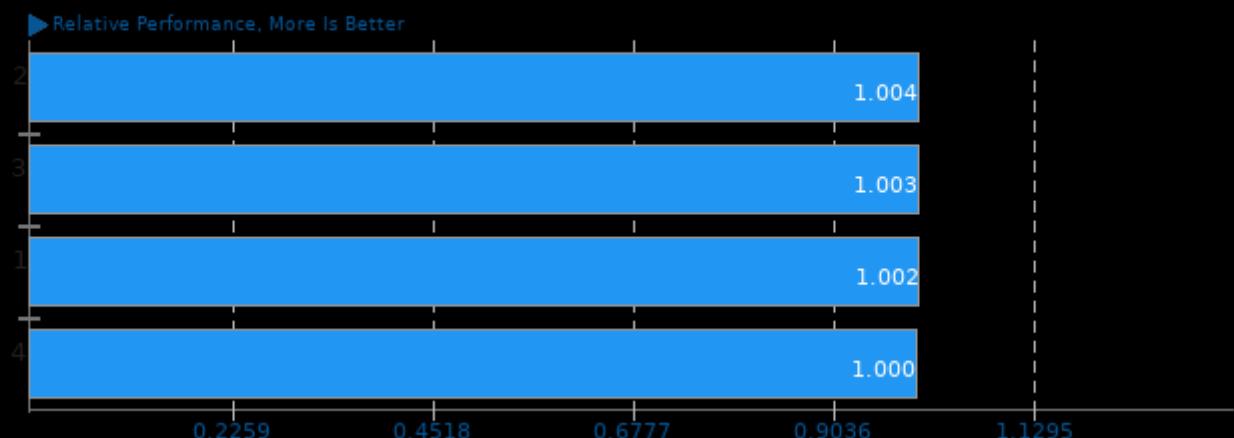
Result Composite - 1275 june



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

## Geometric Mean Of Python Tests

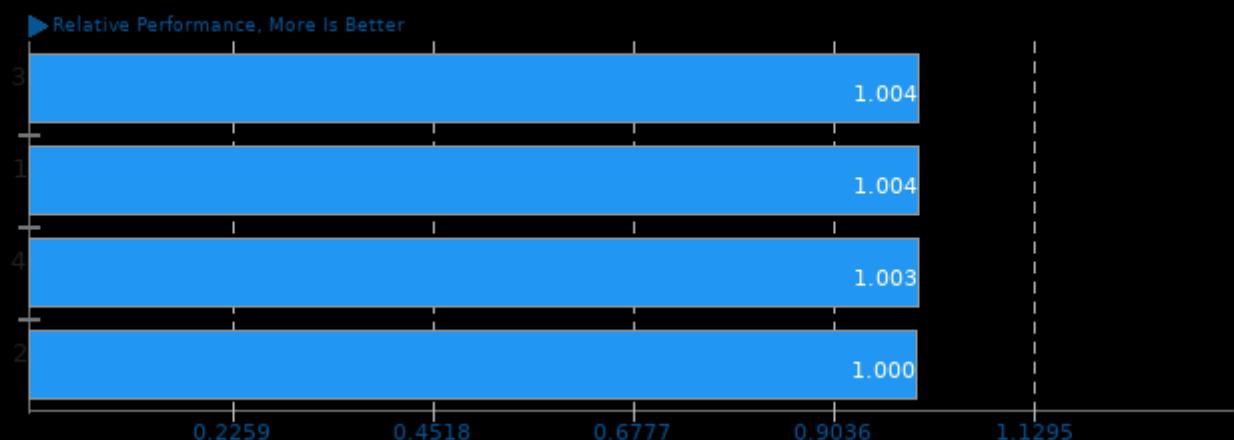
Result Composite - 1275 june



Geometric mean based upon tests: pts/build-llvm, pts/build-nodejs, system/gnuradio, pts/build-mesa, pts/chia-vdf and pts/vosk

## Geometric Mean Of Scientific Computing Tests

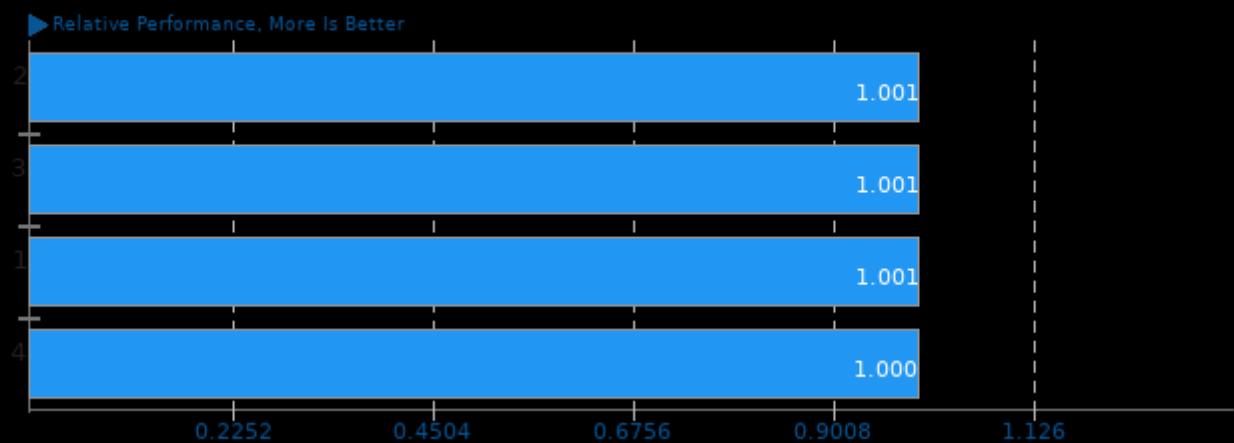
Result Composite - 1275 june



Geometric mean based upon tests: pts/gromacs, pts/cp2k, pts/incompact3d, pts/mrbayes and pts/hmmer

## Geometric Mean Of Software Defined Radio Tests

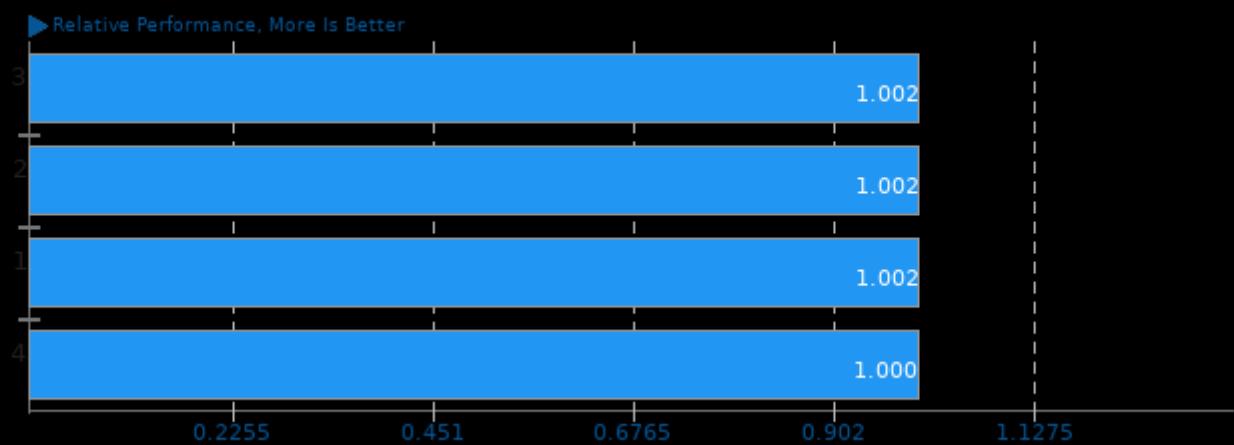
Result Composite - 1275 june



Geometric mean based upon tests: pts/liquid-dsp, pts/srsran, pts/srslite, pts/luaradio and system/gnuradio

## Geometric Mean Of Server CPU Tests

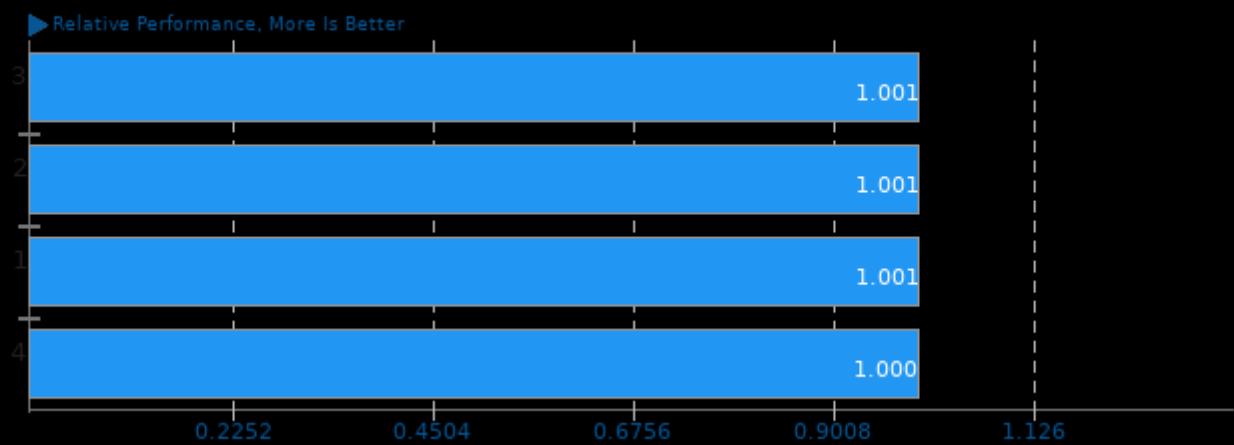
Result Composite - 1275 june



Geometric mean based upon tests: pts/npb, pts/cp2k, pts/onnednn, pts/svt-av1, pts/svt-hevc, pts/svt-vp9, pts/dav1d, pts/stockfish, pts/build-linux-kernel, pts/build-llvm, pts/tjbench and pts/sysbench

## Geometric Mean Of Single-Threaded Tests

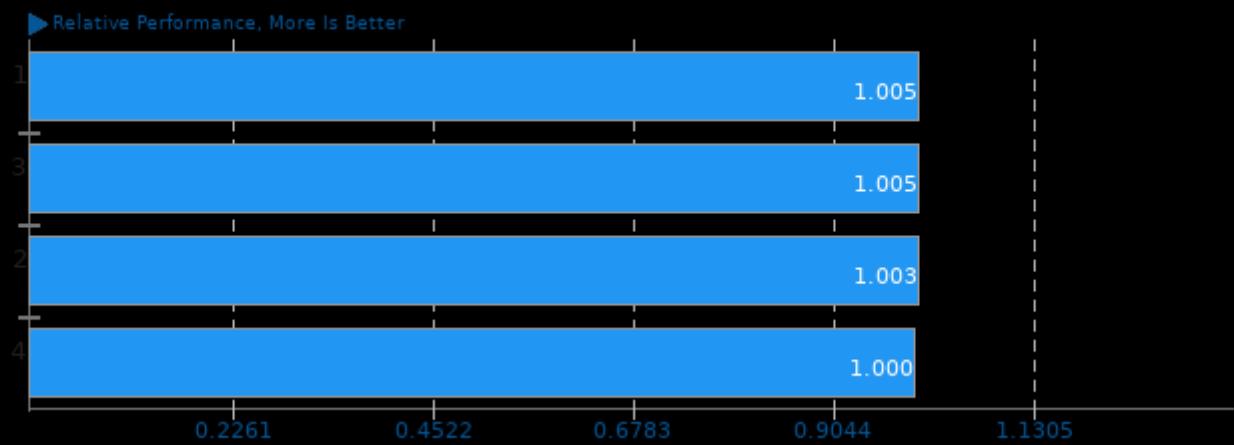
Result Composite - 1275 june



Geometric mean based upon tests: pts/gmpbench, pts/botan and pts/tjbench

## Geometric Mean Of Telephony Tests

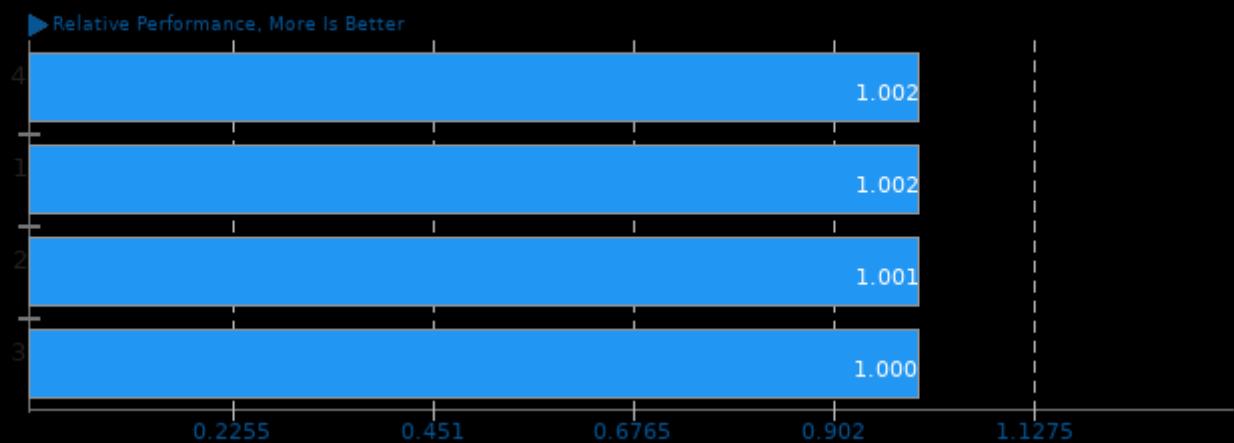
Result Composite - 1275 june



Geometric mean based upon tests: pts/pjsip and pts/vosk

## Geometric Mean Of Texture Compression Tests

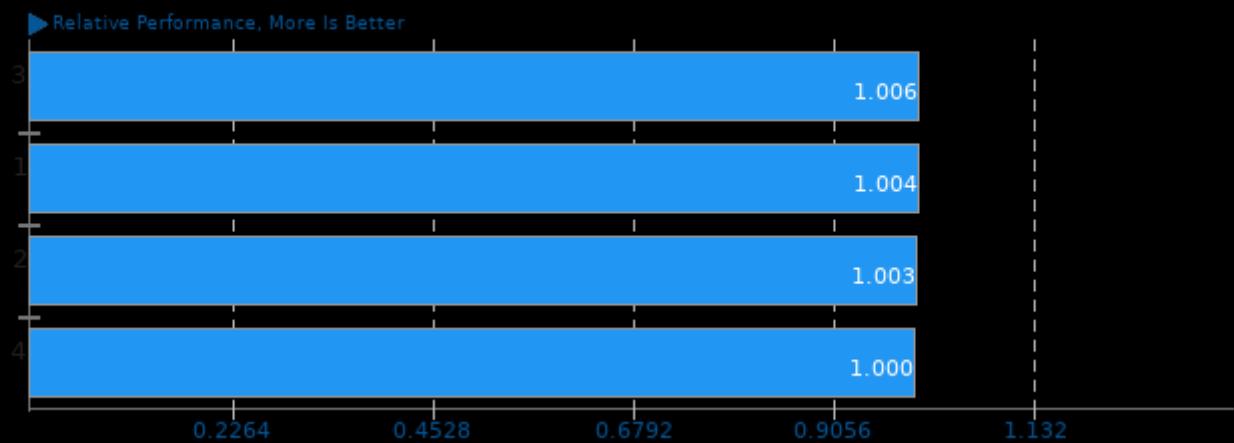
Result Composite - 1275 june



Geometric mean based upon tests: pts/basis, pts/astcenc, pts/toktx and pts/draco

## Geometric Mean Of Video Encoding Tests

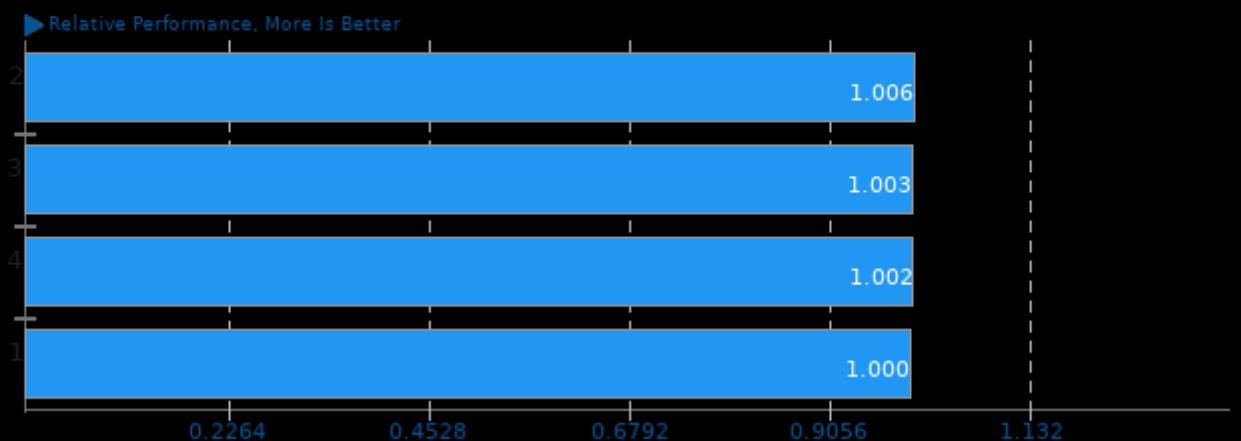
Result Composite - 1275 june



Geometric mean based upon tests: pts/svt-vp9, pts/svt-hevc, pts/vpxenc, pts/dav1d, pts/aom-av1, pts/svt-av1 and pts/libgav1

**Geometric Mean Of Common Workstation Benchmarks Tests**

Result Composite - 1275 june



Geometric mean based upon tests: pts/brl-cad and pts/sysbench

*This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 15:18.*