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## xeon-platinum-8380-2p-smoke-run

2 x Intel Xeon Platinum 8380 testing with a Intel M50CYP2SB2U (SE5C6200.86B.0022.D08.2103221623 BIOS) and ASPEED on Ubuntu 20.04 via the Phoronix Test Suite.

### Automated Executive Summary

*r1a had the most wins, coming in first place for 41% of the tests.*

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

*oneDNN (Harness: Deconvolution Batch shapes\_1d - Data Type: f32 - Engine: CPU) at 3.798x  
AOM AV1 (Encoder Mode: Speed 9 Realtime - Input: Bosphorus 1080p) at 2.956x  
AOM AV1 (Encoder Mode: Speed 8 Realtime - Input: Bosphorus 1080p) at 2.882x  
AOM AV1 (Encoder Mode: Speed 6 Two-Pass - Input: Bosphorus 1080p) at 2.879x  
AOM AV1 (Encoder Mode: Speed 6 Realtime - Input: Bosphorus 1080p) at 2.758x  
AOM AV1 (Encoder Mode: Speed 6 Realtime - Input: Bosphorus 4K) at 2.544x  
AOM AV1 (Encoder Mode: Speed 8 Realtime - Input: Bosphorus 4K) at 2.446x  
AOM AV1 (Encoder Mode: Speed 6 Two-Pass - Input: Bosphorus 4K) at 2.359x  
AOM AV1 (Encoder Mode: Speed 9 Realtime - Input: Bosphorus 4K) at 2.352x  
SVT-VP9 (Tuning: PSNR/SSIM Optimized - Input: Bosphorus 1080p) at 2.279x.*

## Test Systems:

**r1**

Processor: 2 x Intel Xeon Platinum 8380 @ 3.40GHz (80 Cores / 160 Threads), Motherboard: Intel M50CYP2SB2U (SE5C6200.86B.0022.D08.2103221623 BIOS), Chipset: Intel Device 0998, Memory: 16 x 32 GB DDR4-3200MT/s Hynix HMA84GR7CJR4N-XN, Disk: 2 x 7682GB INTEL SSDPF2KX076TZ + 2 x 800GB INTEL SSDPF21Q800GB + 3841GB Micron\_9300\_MTFDHAL3T8TDP + 960GB INTEL SSDSC2KG96, Graphics: ASPEED, Monitor: VE228, Network: 2 x Intel X710 for 10GBASE-T + 2 x Intel E810-C for QSFP

OS: Ubuntu 20.04, Kernel: 5.11.0-051100-generic (x86\_64), Desktop: GNOME Shell 3.36.4, Display Server: X Server 1.20.8, Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: Transparent Huge Pages: madvise  
Compiler Notes: --build=x86\_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale-gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-9-HskZEa/gcc-9-9.3.0/debian/tmp-nvptx/usr.hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86\_64-linux-gnu --program-prefix=x86\_64-linux-gnu- --target=x86\_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v  
Processor Notes: Scaling Governor: intel\_pstate performance - CPU Microcode: 0xd000270  
Python Notes: Python 2.7.18 + Python 3.8.5  
Security Notes: itlb\_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec\_store\_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre\_v1: Mitigation of usercopy/swapgs barriers and \_\_user pointer sanitization + spectre\_v2: Mitigation of Enhanced IBRS IBPB: conditional RSB filling + srbds: Not affected + tsx\_async\_abort: Not affected

**r1a**

**r2**

**r2a**

**r2b**

**r3**

**r4**

**r5**

Processor: 2 x Intel Xeon Platinum 8380 @ 3.40GHz (80 Cores / 160 Threads), Motherboard: Intel M50CYP2SB2U (SE5C6200.86B.0022.D08.2103221623 BIOS), Chipset: Intel Device 0998, Memory: 16 x 32 GB DDR4-3200MT/s Hynix HMA84GR7CJR4N-XN, Disk: 2 x 7682GB INTEL SSDPF2KX076TZ + 2 x 800GB INTEL SSDPF21Q800GB + 3841GB Micron\_9300\_MTFDHAL3T8TDP + 960GB INTEL SSDSC2KG96, Graphics: ASPEED, Network: 2 x Intel X710 for 10GBASE-T + 2 x Intel E810-C for QSFP

OS: Ubuntu 20.04, Kernel: 5.11.0-051100-generic (x86\_64), Desktop: GNOME Shell 3.36.4, Display Server: X Server 1.20.8, Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 1024x768

Kernel Notes: Transparent Huge Pages: madvise  
Compiler Notes: --build=x86\_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale-gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-9-HskZEa/gcc-9-9.3.0/debian/tmp-nvptx/usr.hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86\_64-linux-gnu --program-prefix=x86\_64-linux-gnu- --target=x86\_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v  
Processor Notes: Scaling Governor: intel\_pstate powersave - CPU Microcode: 0xd000270  
Python Notes: Python 2.7.18 + Python 3.8.5  
Security Notes: itlb\_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec\_store\_bypass: Mitigation of SSB disabled via prctl and

seccomp + spectre\_v1: Mitigation of usercopy/swapgs barriers and \_\_user pointer sanitization + spectre\_v2: Mitigation of Enhanced IBRS IBPB: conditional RSB filling + srbd: Not affected + tsx\_async\_abort: Not affected

	r1	r1a	r2	r2a	r2b	r3	r4	r5
<b>HammerDB - MariaDB - 167809</b>								
<b>128 - 250</b>								
<b>(Transactions/min)</b>								
Standard Deviation 4.7%								
<b>HammerDB - MariaDB - 55415</b>								
<b>128 - 250 (New Orders/min)</b>								
<b>Standard Deviation 4.6%</b>								
<b>HammerDB - MariaDB - 173288</b>	<b>173288</b>	<b>173228</b>						
<b>128 - 500</b>								
<b>(Transactions/min)</b>								
Normalized 100%	100%	99.97%						
Standard Deviation 4.7%	4.7%	2.4%						
<b>HammerDB - MariaDB - 57190</b>	<b>57190</b>	<b>57242</b>						
<b>128 - 500 (New Orders/min)</b>								
Normalized 99.91%	99.91%	100%						
Standard Deviation 4.7%	4.7%	2.5%						
<b>HammerDB - MariaDB - 191397</b>								
<b>64 - 250</b>								
<b>(Transactions/min)</b>								
Standard Deviation 4.4%								
<b>HammerDB - MariaDB - 63279</b>								
<b>64 - 250 (New Orders/min)</b>								
Standard Deviation 4.4%								
<b>HammerDB - MariaDB - 209254</b>								
<b>32 - 250</b>								
<b>(Transactions/min)</b>								
Standard Deviation 4.9%								
<b>HammerDB - MariaDB - 69054</b>								
<b>32 - 250 (New Orders/min)</b>								
Standard Deviation 4.7%								
<b>HammerDB - MariaDB - 195258</b>								
<b>16 - 500</b>								
<b>(Transactions/min)</b>								
Standard Deviation 4.9%								
<b>HammerDB - MariaDB - 64477</b>								
<b>16 - 500 (New Orders/min)</b>								
Standard Deviation 4.8%								

**HammerDB - MariaDB - 208419**
**32 - 500**
**(Transactions/min)**

Standard Deviation 4.2%

**HammerDB - MariaDB - 68818**
**32 - 500 (New**
**Orders/min)**

Standard Deviation 4%

**MariaDB - 256**

160

**(Queries/sec)**

Standard Deviation

0.2%

**MariaDB - 512**

166

**(Queries/sec)**

Standard Deviation

0.9%

**MariaDB - 128**
**192 189**
**(Queries/sec)**

Normalized

100% 98.44%

Standard Deviation

0.6% 0.3%

**HammerDB - MariaDB - 194684 188761**
**64 - 500**
**(Transactions/min)**

Normalized 100% 96.96%

Standard Deviation 1.9% 3.3%

**HammerDB - MariaDB - 64298 62311**
**64 - 500 (New**
**Orders/min)**

Normalized 100% 96.91%

Standard Deviation 1.7% 3.5%

**Xcompact3d** 313.920451 311.960785

**307.622108 386.390001 389.698280**
**Incompact3d - X.b.i.i**
**(sec)**

Normalized 97.99% 98.61%

100% 79.61% 78.94%

Standard Deviation 0.3% 0.1%

2.7% 3.4% 3%

**GNU Radio - Hilbert** **459.3** 459.1

**357.4** 408.0 373.8

**Transform (MiB/s)**

Normalized 100% 99.96%

77.81% 88.83% 81.38%

Standard Deviation 0.8% 0.6%

23.2% 12.8% 19.8%

**GNU Radio - F.D.F** **734.0** 727.4

**645.8** **621.0** 622.0

**(MiB/s)**

Normalized 100% 99.1%

87.98% 84.6% 84.74%

Standard Deviation 0.5% 0.2%

14.3% 15.3% 15.4%

**GNU Radio - IIR Filter** **610.6** 609.5

**498.2** **487.4** 487.7

**(MiB/s)**

Normalized 100% 99.82%

81.59% 79.82% 79.87%

Standard Deviation 0.1% 0.1%

15.7% 16.3% 15.8%

**GNU Radio - FIR Filter** 603.0 **604.8**
**470.0** 502.0 515.6

**(MiB/s)**

Normalized 99.7% 100%

77.71% 83% 85.25%

Standard Deviation 0.4% 0.1%

16.4% 9.7% 6.5%

**GNU Radio - S.S.C** **2184** 2175

**1684** **1724** **1619**
**(MiB/s)**

Normalized 100% 99.62%

77.14% 78.95% 74.16%

Standard Deviation	0.1%	0.2%		17.3%	12.6%	15.2%
<b>GNU Radio - F.B.t.B.F.F</b>	<b>1024</b>	1015	<b>111.2</b>	580.5	487.9	
(MiB/s)						
Normalized	100%	99.11%		10.86%	56.67%	47.63%
Standard Deviation	0.4%	0.4%		1.7%	20.5%	29.7%
<b>MariaDB - 64</b>	<b>403</b>		<b>404</b>			
(Queries/sec)						
Normalized				99.75%	100%	
Standard Deviation				0.3%	0.1%	
<b>AOM AV1 - Speed 4</b>	<b>4.17</b>		<b>2.01</b>	2.05	2.10	
Two-Pass - Bosphorus						
<b>4K (FPS)</b>	<b>1375</b>					
Normalized				48.2%	49.16%	50.36%
Standard Deviation				2.3%	2.8%	0.5%
<b>CP2K Molecular</b>						
Dynamics -						
<b>Fayalite-FIST (sec)</b>						
<b>HammerDB - MariaDB -</b>	<b>192913</b>					
16 - 250						
(Transactions/min)						
Standard Deviation	2.4%					
<b>HammerDB - MariaDB -</b>	<b>63757</b>					
16 - 250 (New						
Orders/min)						
Standard Deviation	2.4%					
<b>LuaRadio - Complex</b>	<b>546.8</b>	<b>548.2</b>	<b>458.7</b>	<b>458.2</b>	<b>452.7</b>	
Phase (MiB/s)						
Normalized	99.74%	100%		83.67%	83.58%	82.58%
Standard Deviation	0.1%	0.2%		2.4%	2.3%	2.4%
<b>LuaRadio - Hilbert</b>	<b>80.3</b>	<b>80.3</b>	<b>78.2</b>	<b>78.2</b>	78.4	
Transform (MiB/s)						
Normalized	100%	100%		97.38%	97.38%	97.63%
Standard Deviation	0%	0%		1.6%	1.5%	1.9%
<b>LuaRadio - F.D.F</b>	<b>410.0</b>	409.6	370.1	370.3	<b>368.0</b>	
Normalized	100%	99.9%		90.27%	90.32%	89.76%
Standard Deviation	0.1%	0.6%		4.3%	3.2%	0.8%
<b>LuaRadio - F.B.t.B.F.F</b>	<b>1095</b>	1095	804.5	<b>662.8</b>	706.1	
(MiB/s)						
Normalized	100%	99.97%		73.48%	60.54%	64.5%
Standard Deviation	0.4%	0.1%		8.5%	27.5%	25.4%
<b>HammerDB - MariaDB -</b>	<b>290082</b>					
8 - 250						
(Transactions/min)						
Standard Deviation	1.2%					
<b>HammerDB - MariaDB -</b>	<b>95768</b>					
8 - 250 (New						
Standard Deviation	1.2%					

**HammerDB - MariaDB - 285984**
**8 - 500**
**(Transactions/min)**

Standard Deviation 1.4%

**HammerDB - MariaDB - 94379**
**8 - 500 (New**

Standard Deviation 1.3%

**AOM AV1 - Speed 6** 7.37

**7.55**

3.22

**3.20**

3.23

**Two-Pass - Bosphorus**
**4K (FPS)**

Normalized 97.62%

100%

42.65%

42.38%

42.78%

Standard Deviation 4.5%

1.5%

3%

2.2%

2.4%

**Mobile Neural Network**
**- inception-v3 (ms)**

Normalized

Standard Deviation

**Mobile Neural Network**
**- mobilenet-v1-1.0 (ms)**

Normalized

Standard Deviation

**Mobile Neural Network**
**- MobileNetV2\_224 (ms)**

Normalized

Standard Deviation

**Mobile Neural Network**
**- resnet-v2-50 (ms)**

Normalized

Standard Deviation

**Mobile Neural Network**
**- SqueezeNetV1.0 (ms)**

Normalized

Standard Deviation

**MariaDB - 1**
**(Queries/sec)**

Normalized

Standard Deviation

**SecureMark -**
**225412**

225366

225343

**3458**
**222747**
**SecureMark-TLS**

Normalized

Standard Deviation

**AOM AV1 - Speed 0**
**0.19**

0.14

0.15

**0.14**
**Two-Pass - Bosphorus**
**4K (FPS)**

Normalized

Standard Deviation

**MariaDB - 32**
**(Queries/sec)**

Normalized

Standard Deviation

**Timed LLVM**

216.323

**215.760**
**226.440**

226.199

224.290

**Compilation - Unix**

Normalized 99.74%

100%

95.28%

95.39%

96.2%

Standard Deviation 0.7%

0.6%

0.6%

1%

0.3%

AOM AV1 - Speed 4	<b>6.89</b>		<b>3.30</b>	3.36	3.36
Two-Pass - Bosphorus					
1080p (FPS)					
Normalized	100%		47.9%	48.77%	48.77%
Standard Deviation	0.5%		1.6%	2.4%	0.6%
LuxCoreRender -	<b>14.36</b>	14.26	14.28	<b>13.89</b>	13.94
Orange Juice - CPU (M samples/sec)					
Normalized	100%	99.3%	99.44%	96.73%	97.08%
Standard Deviation	1.5%	2.5%	2.2%	3.3%	3.7%
MariaDB - 16 (Queries/sec)			<b>1264</b>	<b>1262</b>	
Normalized			100%	99.84%	
Standard Deviation			0.3%	0.5%	
Timed Erlang/OTP	114.550	<b>113.800</b>	191.746	192.245	<b>193.839</b>
Compilation - Time To Compile (sec)					
Normalized	99.35%	100%	59.35%	59.2%	58.71%
Standard Deviation	0.3%	0.6%	1%	0.3%	1.4%
LuxCoreRender - DLSC - CPU (M samples/sec)	<b>9.70</b>	9.61	9.27	<b>9.24</b>	9.25
Intel Memory Latency	<b>325767</b>	<b>325185</b>	325260	325410	325219
Checker - Max Bandwidth - Stream-Triad Like					
Normalized	100%	99.82%	99.84%	99.89%	99.83%
Standard Deviation	0%	0%	0%	0%	0%
Intel Memory Latency	<b>439497</b>	441408	<b>442460</b>	441733	440939
Checker - Max Bandwidth - 1:1 Reads-Writes (MB/s)					
Normalized	99.33%	99.76%	100%	99.84%	99.66%
Standard Deviation	0.3%	0.4%	0.7%	1.2%	0.1%
Intel Memory Latency	<b>459455</b>	456630	<b>456546</b>	459227	457141
Checker - Max Bandwidth - 2:1 Reads-Writes (MB/s)					
Normalized	100%	99.39%	99.37%	99.95%	99.5%
Standard Deviation	0%	0%	0%	0%	0%
Intel Memory Latency	<b>426149</b>	<b>424613</b>	424819	425997	424926
Checker - Max Bandwidth - 3:1 Reads-Writes (MB/s)					
Normalized	100%	99.64%	99.69%	99.96%	99.71%
Standard Deviation	0%	0.2%	0.2%	0%	0%

<b>Intel Memory Latency Checker - Max Bandwidth - All Reads (MB/s)</b>	<b>357285</b>	358365	<b>358456</b>	357774	358268	357926	357551
Normalized	99.67%	99.97%	100%	99.81%	99.95%	99.85%	99.75%
Standard Deviation	0%	0.1%	0.1%	0%	0%	0%	0%
<b>MariaDB - 8 (Queries/sec)</b>			<b>1413</b>	<b>1420</b>			
Normalized			99.51%	100%			
Standard Deviation			1.3%	0.4%			
<b>Timed LLVM Compilation - Ninja</b>	145.717	<b>145.550</b>	<b>148.484</b>	147.163	146.909		
Normalized	99.89%	100%	98.02%	98.9%	99.07%		
Standard Deviation	0.6%	0.9%	1.3%	0.4%	0.7%		
<b>AOM AV1 - Speed 6</b>	15.09	<b>15.19</b>	<b>5.97</b>	<b>5.97</b>	6.00		
<b>Realtime - Bosphorus 4K (FPS)</b>							
Normalized	99.34%	100%	39.3%	39.3%	39.5%		
Standard Deviation	0.6%	0.4%	1.6%	3.9%	0.3%		
<b>oneDNN - R.N.N.T -</b>	804.392	793.363	<b>791.695</b>	793.916	<b>811.941</b>		
<b>bf16bf16bf16 - CPU</b>							
Normalized	98.42%	99.79%	100%	99.72%	97.51%		
Standard Deviation	1.5%	0.3%	0.1%	0.2%	7.8%		
<b>MariaDB - 4 (Queries/sec)</b>			<b>1614</b>	<b>1580</b>			
Normalized			100%	97.89%			
Standard Deviation			1.7%	0.8%			
<b>AOM AV1 - Speed 8</b>	<b>29.20</b>	28.99	12.03	<b>11.94</b>	12.10		
<b>Realtime - Bosphorus 4K (FPS)</b>							
Normalized	100%	99.28%	41.2%	40.89%	41.44%		
Standard Deviation	1.1%	2.2%	2.7%	3.9%	2.4%		
<b>GNU GMP GMPbench -</b>	4642	<b>4643</b>	4525	<b>4505</b>	4526		
<b>Total Time (GMPbench Score)</b>							
Normalized	99.98%	100%	97.45%	97.02%	97.48%		
<b>Blender - Barbershop - CPU-Only (sec)</b>			<b>110.02</b>		<b>109.96</b>		
Normalized			99.95%		100%		
Standard Deviation			0.3%		0.9%		
<b>Timed Node.js</b>	101.101	<b>100.446</b>	110.930	<b>111.790</b>	111.673		
<b>Compilation - Time To Compile (sec)</b>							
Normalized	99.35%	100%	90.55%	89.85%	89.95%		
Standard Deviation	0.5%	0.5%	0.8%	1%	1.2%		
<b>ViennaCL - CPU BLAS -</b>	76.3	<b>77.2</b>	<b>54.7</b>	61.7	63.7		
<b>dGEMM-TT (GFLOPs/s)</b>							
Normalized	98.83%	100%	70.85%	79.92%	82.51%		
Standard Deviation	6.8%	2%	12.4%	14.6%	17.9%		
<b>ViennaCL - CPU BLAS -</b>	76.0	<b>77.4</b>	<b>62.3</b>	66.9	67.6		
<b>dGEMM-TN (GFLOPs/s)</b>							
Normalized	98.19%	100%	80.49%	86.43%	87.34%		

Standard Deviation	7.9%	1.6%	12.6%	10.9%	13.4%
ViennaCL - CPU BLAS -	75.6	<b>76.8</b>	<b>59.8</b>	68.9	72.4
dGEMM-NT (GFLOPs/s)					
Normalized	98.44%	100%	77.86%	89.71%	94.27%
Standard Deviation	9%	2.3%	7.4%	11.2%	10.6%
ViennaCL - CPU BLAS -	<b>73.5</b>	72.3	<b>61.9</b>	66.4	70.8
dGEMM-NN (GFLOPs/s)					
Normalized	100%	98.37%	84.22%	90.34%	96.33%
Standard Deviation	7.2%	7.5%	12.9%	12.7%	10.7%
ViennaCL - CPU BLAS -	<b>719</b>	<b>319</b>	389.9	647	647
dGEMV-T (GB/s)					
Normalized	100%	44.37%	54.23%	89.99%	89.99%
Standard Deviation	1.2%	2.7%	27.3%	1.2%	1.9%
ViennaCL - CPU BLAS -	<b>72.3</b>	63.6	<b>62.3</b>	64.3	70.2
dGEMV-N (GB/s)					
Normalized	100%	87.97%	86.17%	88.93%	97.1%
Standard Deviation	1.9%	7.9%	23.3%	23.7%	1.4%
ViennaCL - CPU BLAS -	720	<b>371</b>	447.65	713.47	<b>765</b>
dDOT (GB/s)					
Normalized	94.12%	48.5%	58.52%	93.26%	100%
Standard Deviation	3.3%	16.1%	28.7%	27.4%	1.4%
ViennaCL - CPU BLAS -	1058	<b>392</b>	507.1	1024	<b>1158</b>
dAXPY (GB/s)					
Normalized	91.36%	33.85%	43.79%	88.45%	100%
Standard Deviation	7.3%	10.2%	31.2%	31.1%	1.9%
ViennaCL - CPU BLAS -	843	<b>335</b>	422.2	913	<b>936</b>
dCOPY (GB/s)					
Normalized	90.06%	35.79%	45.11%	97.54%	100%
Standard Deviation	11.3%	15.5%	32.2%	11.4%	4%
ViennaCL - CPU BLAS -	<b>620</b>	<b>277</b>	349	532	535
sDOT (GB/s)					
Normalized	100%	44.68%	56.29%	85.81%	86.29%
Standard Deviation	1.4%	7.3%	6.2%	1.9%	1.8%
ViennaCL - CPU BLAS -	<b>1003</b>	<b>370</b>	474	862	855
sAXPY (GB/s)					
Normalized	100%	36.89%	47.26%	85.94%	85.24%
Standard Deviation	2.5%	7.1%	8.5%	3.6%	5.1%
ViennaCL - CPU BLAS -	<b>1834</b>	<b>504</b>	691	1135	1167
sCOPY (GB/s)					
Normalized	100%	27.48%	37.68%	61.89%	63.63%
Standard Deviation	3.4%	1.4%	12.4%	17.5%	18.1%
Xmrig - Monero - 1M	<b>19300</b>	19452	19311	<b>20653</b>	20575
(H/s)					
Normalized	93.45%	94.19%	93.5%	100%	99.62%
Standard Deviation	0.2%	0.2%	1.4%	2.1%	4.6%
AOM AV1 - Speed 6		<b>21.25</b>	7.45	<b>7.38</b>	7.43
Two-Pass - Bosphorus					
1080p (FPS)					
Normalized	100%		35.06%	34.73%	34.96%
Standard Deviation	1.4%		0.2%	1.5%	1.1%

<b>Timed Linux Kernel</b>	24.382	<b>24.360</b>	27.997	28.018	<b>28.094</b>
<b>Compilation - Time To Compile (sec)</b>					
Normalized	99.91%	100%	87.01%	86.94%	86.71%
Standard Deviation	2.5%	2.3%	4.3%	5.5%	4.9%
<b>Sysbench - CPU (Events/sec)</b>			<b>214211</b>		<b>214241</b>
Normalized			99.99%		100%
Standard Deviation			0.2%		0.2%
<b>Blender - Pabellon</b>		<b>88.57</b>			<b>88.68</b>
<b>Barcelona - CPU-Only (sec)</b>					
Normalized			100%		99.88%
Standard Deviation			0.2%		0.5%
<b>Timed Wasmer</b>	62.160	<b>61.930</b>	<b>71.928</b>	71.130	70.758
<b>Compilation - Time To Compile (sec)</b>					
Normalized	99.63%	100%	86.1%	87.07%	87.52%
Standard Deviation	0.6%	1.7%	1%	2.5%	1.3%
<b>oneDNN - R.N.N.T - f32</b>	801.409	804.323	<b>808.289</b>	796.689	<b>792.296</b>
- CPU (ms)					
Normalized	98.86%	98.5%	98.02%	99.45%	100%
Standard Deviation	1.6%	1%	2.1%	0.2%	0.6%
<b>oneDNN - R.N.N.T - u8s8f32 - CPU (ms)</b>	792.831	791.927	<b>789.836</b>	<b>793.080</b>	792.049
Normalized	99.62%	99.74%	100%	99.59%	99.72%
Standard Deviation	0.5%	0.8%	0.3%	0.5%	0.4%
<b>oneDNN - IP Shapes 1D</b>	<b>1.21594</b>	1.22278	1.23796	<b>1.24508</b>	1.24116
- u8s8f32 - CPU (ms)					
Normalized	100%	99.44%	98.22%	97.66%	97.97%
Standard Deviation	3.4%	3.6%	3.7%	3.3%	2.8%
<b>oneDNN - R.N.N.I - f32 - CPU (ms)</b>	447.971	447.308	<b>446.389</b>	<b>450.648</b>	446.536
Normalized	99.65%	99.79%	100%	99.05%	99.97%
Standard Deviation	0.2%	0.3%	0.3%	0.9%	0.4%
<b>oneDNN - R.N.N.I - bf16bf16bf16 - CPU</b>	<b>445.144</b>	446.936	447.287	447.144	<b>448.906</b>
Normalized	100%	99.6%	99.52%	99.55%	99.16%
Standard Deviation	0.2%	0.7%	0.3%	0.5%	1.4%
<b>oneDNN - R.N.N.I - u8s8f32 - CPU (ms)</b>	<b>445.519</b>	447.436	447.701	446.917	<b>447.958</b>
Normalized	100%	99.57%	99.51%	99.69%	99.46%
Standard Deviation	0.3%	0.8%	0.4%	0%	1%
<b>AOM AV1 - Speed 9</b>	<b>33.07</b>	32.51	14.30	<b>14.06</b>	14.73
<b>Realtime - Bosphorus 4K (FPS)</b>					
Normalized	100%	98.31%	43.24%	42.52%	44.54%
Standard Deviation	1.5%	1.5%	4.1%	2.5%	0.9%
<b>Blender - Classroom - CPU-Only (sec)</b>			<b>71.78</b>		<b>72.29</b>
Normalized			100%		99.29%
Standard Deviation			0.2%		0.3%

<b>KTX-Software toktx - U.4.Z.C.1 (sec)</b>		<b>56.660</b>		<b>56.770</b>
Normalized		100%		99.81%
Standard Deviation		2.4%		2.3%
<b>oneDNN - D.B.s - f32 - CPU (ms)</b>	<b>7.49467</b>	7.50059	28.4023	28.1815
Normalized	100%	99.92%	26.39%	26.59%
Standard Deviation	0.5%	0.4%	4%	4.2%
<b>LuxCoreRender - LuxCore Benchmark - CPU (M samples/sec)</b>	<b>7.42</b>	<b>7.55</b>	5.73	<b>5.65</b>
Normalized	100%	98.28%	75.89%	74.83%
Standard Deviation	1.9%	2.2%	1.2%	2.1%
<b>LuxCoreRender - libavif avifenc - 0 (sec)</b>	<b>7.84</b>	<b>8.04</b>	<b>5.84</b>	5.92
Normalized	97.51%	100%	72.64%	73.63%
Standard Deviation	1.1%	0.3%	0.6%	0.4%
<b>AOM AV1 - Speed 0</b>	<b>57.975</b>	<b>57.710</b>	64.971	<b>65.960</b>
Normalized	99.54%	100%	88.82%	87.49%
Standard Deviation	0.6%	0.7%	0.6%	0.5%
<b>Two-Pass - Bosphorus 1080p (FPS)</b>		<b>0.51</b>	<b>0.32</b>	0.33
Normalized	100%	62.75%	64.71%	64.71%
Standard Deviation	1.1%	1.8%	0%	0%
<b>LuxCoreRender - R.C.a.P - CPU (M samples/sec)</b>	<b>17.04</b>	<b>13.34</b>	13.42	16.47
Normalized	100%	78.29%	78.76%	96.65%
Standard Deviation	23.9%	13.5%	23.4%	23.7%
<b>AOM AV1 - Speed 6</b>	<b>28.66</b>		<b>10.39</b>	<b>10.39</b>
<b>Realtime - Bosphorus 1080p (FPS)</b>				10.54
Normalized	100%	36.25%	36.25%	36.78%
Standard Deviation	0.3%	0.5%	0.1%	0.8%
<b>Blender - Fishy Cat - CPU-Only (sec)</b>		<b>46.38</b>		<b>46.73</b>
Normalized		100%		99.25%
Standard Deviation		0.6%		0.9%
<b>oneDNN - IP Shapes 1D - bf16bf16bf16 - CPU (ms)</b>	<b>2.96135</b>	2.96857	3.00464	<b>3.00929</b>
Normalized	100%	99.76%	98.56%	98.41%
Standard Deviation	0.1%	0.2%	2.7%	3.1%
<b>VOSK Speech Recognition Toolkit</b>	<b>35.918</b>	<b>35.009</b>	<b>36.424</b>	35.581
Normalized	100%	100%	96.12%	98.39%
Standard Deviation	1.5%	2.4%	2%	2.1%
<b>Stockfish - Total Time (Nodes/s)</b>	<b>181644819</b>	186263552	<b>181554218</b>	<b>189214499</b>
Normalized	97.47%	98.44%	95.95%	100%
Standard Deviation	1.5%	2.2%	1.9%	1.8%

<b>libavif avifenc - 6, Lossless (sec)</b>	<b>31.624</b>	38.395	<b>38.590</b>	38.507
Normalized	98.48%	100%	82.36%	82.13%
Standard Deviation	0.2%	0.5%	1.1%	2.3%
<b>srsLTE - PHY_DL_Test (UE Mb/s)</b>	<b>76.9</b>	77.3	<b>75.0</b>	<b>76.1</b>
Normalized	98.21%	98.72%	95.79%	100%
Standard Deviation	1.7%	2.6%	0.9%	1.4%
<b>srsLTE - PHY_DL_Test (eNb Mb/s)</b>	<b>183.4</b>	<b>184.2</b>	<b>181.6</b>	<b>181.6</b>
Normalized	99.57%	100%	98.59%	99.73%
Standard Deviation	1.1%	0.3%	1.2%	0.5%
<b>libavif avifenc - 6 (sec)</b>	<b>13.247</b>	13.328	<b>16.065</b>	<b>16.615</b>
Normalized	100%	99.39%	82.46%	81.72%
Standard Deviation	0.7%	1.1%	2.4%	2.9%
<b>srsLTE - OFDM_Test (Samples / Second)</b>	<b>120133333</b>	120733333	<b>120833333</b>	120666667
Normalized	99.56%	99.42%	99.92%	99.86%
Standard Deviation	0.9%	0.3%	0.5%	0.3%
<b>Sysbench - RAM / Memory (MiB/sec)</b>			<b>12511</b>	<b>12553</b>
Normalized			99.66%	100%
Standard Deviation			3.9%	3.7%
<b>libavif avifenc - 2 (sec)</b>	<b>31.479</b>	<b>38.372</b>	38.313	37.796
Normalized	99.81%	100%	82.04%	83.29%
Standard Deviation	0.5%	0.2%	1.8%	0.4%
<b>Botan - AES-256 - Decrypt (MiB/s)</b>	<b>5664</b>	5663	5662	<b>5650</b>
Normalized	99.99%	100%	99.99%	99.76%
Standard Deviation	0%	0%	0%	0.4%
<b>Botan - AES-256</b>	<b>5670</b>	<b>5607</b>	<b>5593</b>	5612
Normalized	99.98%	100%	98.87%	98.96%
Standard Deviation	0%	0%	1.7%	1.6%
<b>Basis Universal - ETC1S (sec)</b>		<b>34.237</b>		<b>34.420</b>
Normalized		100%		99.47%
Standard Deviation		1%		2.1%
<b>Basis Universal - UASTC Level 0 (sec)</b>		<b>11.251</b>		<b>11.226</b>
Normalized		99.78%		100%
Standard Deviation		2.9%		1.2%
<b>libavif avifenc - 10, Lossless (sec)</b>	<b>8.812</b>	<b>10.282</b>	10.088	10.208
Normalized	99.55%	100%	85.7%	86.32%
Standard Deviation	0.7%	0.3%	5.8%	6%
<b>AOM AV1 - Speed 9</b>	<b>125.25</b>	43.26	43.42	<b>42.37</b>
<b>Realtime - Bosphorus 1080p (FPS)</b>				
Normalized	100%	34.54%	34.67%	33.83%
Standard Deviation	2.5%	2%	2.7%	1.1%
<b>Blender - BMW27 - CPU-Only (sec)</b>		<b>29.56</b>		<b>29.69</b>
Normalized		100%		99.56%

Standard Deviation					
Botan - ChaCha20Poly1305 - Decrypt (MiB/s)	619.458	619.538	0.4%	612.438	612.149
Standard Deviation					1.8%
Botan - ChaCha20Poly1305 (MiB/s)	623.494	623.198	98.85%	616.501	615.975
Normalized	99.99%	100%	98.81%	99.42%	
Standard Deviation	0.1%	0.2%	1%	1.1%	0.8%
Botan - Blowfish - Decrypt (MiB/s)	363.255	363.326	615.806	619.638	
Standard Deviation	0%	0%	1%	0.9%	0.8%
Botan - Blowfish	363.038	363.615	363.196	363.314	363.279
Normalized	99.84%	100%	99.81%	98.86%	98.89%
Standard Deviation	0.3%	0%	0.1%	1.8%	1.7%
Botan - Twofish - Decrypt (MiB/s)	292.736	292.374	292.396	292.827	292.610
Standard Deviation	0.1%	0.1%	0.1%	0%	0%
Botan - Twofish (MiB/s)	289.126	288.852	288.562	286.180	286.004
Normalized	100%	99.91%	99.8%	98.98%	98.92%
Standard Deviation	0.1%	0.1%	0.1%	1.6%	1.7%
Botan - CAST-256 - Decrypt (MiB/s)	116.074	116.069	116.080	115.723	116.070
Standard Deviation					
Botan - CAST-256 (MiB/s)	115.972	115.970	114.663	114.517	114.646
Normalized	99.99%	99.99%	100%	99.69%	99.99%
Standard Deviation	0%	0%	0%	0.5%	0%
Botan - KASUMI - Decrypt (MiB/s)	74.320	74.288	74.275	74.309	74.292
Standard Deviation					
Botan - KASUMI (MiB/s)	77.287	77.310	76.286	76.407	76.403
Normalized	100%	100%	98.87%	98.75%	98.86%
Standard Deviation	0%	0%	1.7%	2%	1.8%
toyBrot Fractal Generator - TBB (ms)	6850	6964	6984	7003	7016
Standard Deviation					
Xmrig - Wownero - 1M (H/s)	48052	50166	49908	49813	49937
Normalized	100%	98.36%	98.08%	97.82%	97.63%
Standard Deviation	3.3%	2%	4.1%	3.8%	4.5%
Intel Memory Latency Checker - P.I.B - Stream-Triad Like	324377	323924	323827	324210	324227
Standard Deviation					
Normalized	95.78%	100%	99.49%	99.3%	99.54%
Standard Deviation	2.3%	2%	0.8%	1.2%	0.8%
Phoronix Test Suite v10.8.4	www.phoronix-test-suite.com				

<b>Intel Memory Latency</b>	442422	442843	442144	<b>440455</b>	<b>449554</b>	446396	448800
<b>Checker - P.I.B - 1:1</b>							
<b>Reads-Writes (MB/s)</b>							
Normalized	98.41%	98.51%	98.35%	97.98%	100%	99.3%	99.83%
Standard Deviation	0.5%	0.1%	0.1%	0.1%	0.1%	0.6%	0.3%
<b>Intel Memory Latency</b>	459039	<b>456260</b>	456409	<b>459310</b>	457191	458942	458831
<b>Checker - P.I.B - 2:1</b>							
<b>Reads-Writes (MB/s)</b>							
Normalized	99.94%	99.34%	99.37%	100%	99.54%	99.92%	99.9%
Standard Deviation	0.1%	0%	0%	0%	0%	0%	0%
<b>Intel Memory Latency</b>	<b>425934</b>	424097	<b>424077</b>	425926	424905	425822	425508
<b>Checker - P.I.B - 3:1</b>							
<b>Reads-Writes (MB/s)</b>							
Normalized	100%	99.57%	99.56%	100%	99.76%	99.97%	99.9%
Standard Deviation	0.1%	0%	0.1%	0%	0%	0%	0%
<b>Intel Memory Latency</b>	<b>356476</b>	358386	358270	357743	<b>358464</b>	358111	357723
<b>Checker - P.I.B - All</b>							
<b>Reads (MB/s)</b>							
Normalized	99.45%	99.98%	99.95%	99.8%	100%	99.9%	99.79%
Standard Deviation	0.3%	0%	0%	0%	0%	0%	0%
<b>oneDNN - D.B.s -</b>	<b>0.338327</b>	0.341663		0.341893	<b>0.341955</b>	0.340243	
<b>u8s8f32 - CPU (ms)</b>							
Normalized	100%	99.02%	98.96%	98.94%	99.44%		
Standard Deviation	0.4%	1.3%	2.3%	2.4%	2.1%		
<b>oneDNN - M.M.B.S.T -</b>	0.215115	<b>0.213643</b>		<b>0.216806</b>	0.216586	0.215085	
<b>u8s8f32 - CPU (ms)</b>							
Normalized	99.32%	100%	98.54%	98.64%	99.33%		
Standard Deviation	0.7%	0.6%	2.5%	2.5%	2.5%		
<b>Helsing - 14 digit (sec)</b>	<b>77.872</b>	78.159	78.33	78.079	<b>78.539</b>		
<b>Normalized</b>	100%	99.63%	99.42%	99.73%	99.15%		
<b>libjpeg-turbo tjbench -</b>	<b>161.634619</b>	<b>156.969016</b>	160.262559	159.187038	159.237752		
<b>D.T (Megapixels/sec)</b>							
Normalized	100%	97.11%	99.15%	98.49%	98.52%		
Standard Deviation	0.2%	0.4%	0.1%	1.1%	0.5%		
<b>ASTC Encoder -</b>			<b>9.2907</b>		<b>9.3091</b>		
<b>Thorough (sec)</b>							
Normalized			100%		99.8%		
Standard Deviation			2.4%		2.5%		
<b>ASTC Encoder -</b>			<b>16.3621</b>		<b>16.3729</b>		
<b>Exhaustive (sec)</b>							
Normalized			100%		99.93%		
Standard Deviation			0%		0.2%		
<b>libavif avifenc - 10 (sec)</b>	<b>5.477</b>	5.505	6.656	6.597	<b>6.746</b>		
<b>Normalized</b>	100%	99.49%	82.29%	83.02%	81.19%		
<b>Standard Deviation</b>	1.2%	0.4%	6.8%	8.5%	7.4%		
<b>ASTC Encoder -</b>			<b>7.1887</b>		<b>7.1472</b>		
<b>Medium (sec)</b>							
Normalized			99.42%		100%		
Standard Deviation			4.9%		0.7%		
<b>Timed Mesa</b>	20.952	<b>20.379</b>	<b>21.575</b>	21.369	21.313		
<b>Compilation - Time To</b>							
Normalized	97.27%	100%	94.46%	95.37%	95.62%		
Standard Deviation	0.2%	1%	0.3%	1.2%	0.9%		

<b>oneDNN - D.B.s -</b>	<b>3.53026</b>	3.54367	3.53121	<b>3.56224</b>	3.54783
<b>bf16bf16bf16 - CPU</b>					
Normalized	100%	99.62%	99.97%	99.1%	99.5%
Standard Deviation	0.1%	0.4%	0.4%	0.6%	0.3%
<b>oneDNN - IP Shapes 3D</b>	0.398282	<b>0.395588</b>	0.403409	<b>0.406877</b>	0.402919
<b>- u8s8f32 - CPU (ms)</b>					
Normalized	99.32%	100%	98.06%	97.23%	98.18%
Standard Deviation	0.5%	0.5%	2.1%	2.5%	2.2%
<b>SVT-HEVC - 1 -</b>	36.91	<b>37.34</b>	<b>27.80</b>	28.22	28.01
<b>Bosphorus 1080p (FPS)</b>					
Normalized	98.85%	100%	74.45%	75.58%	75.01%
Standard Deviation	1.4%	1.1%	0.6%	0.9%	1.9%
<b>AOM AV1 - Speed 8</b>		<b>103.92</b>	36.20	<b>36.06</b>	36.35
<b>Realtime - Bosphorus</b>					
<b>    1080p (FPS)</b>					
Normalized		100%	34.83%	34.7%	34.98%
Standard Deviation		3.8%	0.9%	1.2%	1.3%
<b>Liquid-DSP - 160 - 256 -</b>	314480000	<b>316206666</b>	<b>313186666</b>	314330000	314026666
<b>    57 (samples/s)</b>	0	<b>7</b>	<b>7</b>	0	7
Normalized	99.45%	100%	99.04%	99.41%	99.31%
Standard Deviation	0.9%	0.1%	0.8%	0.8%	0.9%
<b>Liquid-DSP - 128 - 256 -</b>	<b>341593333</b>	<b>335273333</b>	340006666	341100000	339880000
<b>    57 (samples/s)</b>	<b>3</b>	<b>3</b>	7	0	0
Normalized	100%	98.15%	99.54%	99.86%	99.5%
Standard Deviation	0.4%	2%	0.7%	0.4%	0.8%
<b>Liquid-DSP - 64 - 256 -</b>	<b>326713333</b>	326370000	<b>322743333</b>	323270000	324566666
<b>    57 (samples/s)</b>	<b>3</b>	0	<b>3</b>	0	7
Normalized	100%	99.89%	98.78%	98.95%	99.34%
Standard Deviation	0.3%	0.1%	0.9%	0.8%	0.7%
<b>Liquid-DSP - 32 - 256 -</b>	173510000	<b>173680000</b>	169933333	170450000	<b>169750000</b>
<b>    57 (samples/s)</b>	0	<b>0</b>	3	0	<b>0</b>
Normalized	99.9%	100%	97.84%	98.14%	97.74%
Standard Deviation	0.4%	0.3%	1%	0.4%	0.7%
<b>Liquid-DSP - 16 - 256 -</b>	885320000	<b>890273333</b>	862890000	865410000	<b>860046667</b>
<b>    57 (samples/s)</b>					
Normalized	99.44%	100%	96.92%	97.21%	96.6%
Standard Deviation	0.1%	0.1%	0.7%	0.2%	2.1%
<b>Liquid-DSP - 8 - 256 -</b>	<b>441953333</b>		<b>428100000</b>	432170000	432013333
<b>    57 (samples/s)</b>					
Normalized	100%		96.87%	97.79%	97.75%
Standard Deviation	0.2%		1%	0.5%	1.1%
<b>Liquid-DSP - 4 - 256 -</b>	<b>217643333</b>		<b>213203333</b>	215343333	216773333
<b>    57 (samples/s)</b>					
Normalized	100%		97.96%	98.94%	99.6%
Standard Deviation	0.9%		0.7%	1.3%	1.6%
<b>Liquid-DSP - 2 - 256 -</b>	110713333		110173333	<b>111510000</b>	<b>109430000</b>
<b>    57 (samples/s)</b>					
Normalized	99.29%		98.8%	100%	98.13%
Standard Deviation	1.1%		1.4%	0.7%	0.2%
<b>Liquid-DSP - 1 - 256 -</b>	<b>57792000</b>		56230333	57197667	<b>55251667</b>
<b>    57 (samples/s)</b>					
Normalized	100%		97.3%	98.97%	95.6%
Standard Deviation	0.5%		1.9%	1.7%	1.7%

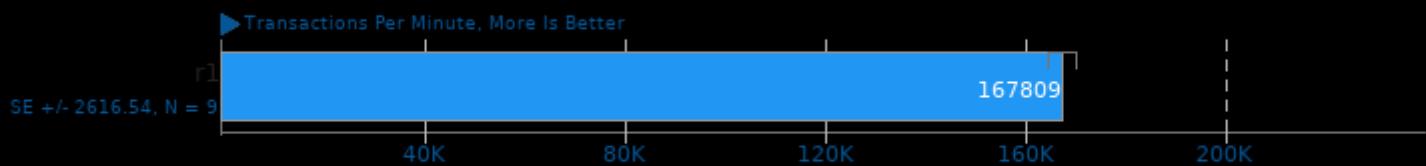
KTX-Software toktx -			<b>19.781</b>		<b>20.082</b>
Z.C.1 (sec)					
Normalized			100%		98.5%
Standard Deviation			1.9%		1.7%
Basis Universal -			<b>17.163</b>		<b>17.185</b>
UASTC Level 3 (sec)					
Normalized			100%		99.87%
Standard Deviation			0.2%		0.1%
oneDNN - M.M.B.S.T -	<b>0.239989</b>	0.240122		0.243026	<b>0.243308</b>
f32 - CPU (ms)					0.242450
Normalized	100%	99.94%		98.75%	98.64%
Standard Deviation	0.6%	0.5%		2.3%	2.3%
SVT-VP9 - VMAF	386.29	<b>393.46</b>		<b>182.26</b>	185.53
Optimized - Bosphorus					
1080p (FPS)					
Normalized	98.18%	100%		46.32%	47.15%
Standard Deviation	13.8%	14.1%		7.7%	1.5%
KTX-Software toktx -				<b>5.664</b>	
UASTC 3 (sec)					
Normalized			98.2%		100%
Standard Deviation			3.6%		0.3%
oneDNN - IP Shapes 3D	1.24809	1.25267		<b>1.25313</b>	<b>1.24176</b>
-f32 - CPU (ms)					1.24222
Normalized	99.49%	99.13%		99.09%	100%
Standard Deviation	0.2%	4.9%		1.3%	1.7%
Intel Memory Latency	35.1	33.0	67.5	<b>32.5</b>	
Checker - Idle Latency					
(ns)					
Normalized	92.59%	98.48%	48.15%	100%	
Standard Deviation	0.5%	2.1%	0.2%	2.4%	
oneDNN - IP Shapes 1D	0.918568	<b>0.912279</b>		<b>0.943624</b>	0.936941
-f32 - CPU (ms)					0.940714
Normalized	99.32%	100%		96.68%	97.37%
Standard Deviation	0.4%	0.4%		2.1%	1.3%
Basis Universal -				<b>13.979</b>	
UASTC Level 2 (sec)					
Normalized			100%		98.73%
Standard Deviation			2.3%		1.9%
Xcompact3d	11.3586022	<b>11.2727114</b>		11.5617158	14.5982965
Incompact3d -					<b>14.6577489</b>
i.i.1.C.P.D (sec)					
Normalized	99.24%	100%		97.5%	77.22%
Standard Deviation	0.4%	0.5%		0.6%	0.3%
KTX-Software toktx -				<b>10.011</b>	
U.3.Z.C.1 (sec)					
Normalized			100%		99.82%
Standard Deviation			1.1%		2.5%
oneDNN - D.B.s -	0.210919	0.210728		<b>0.210324</b>	<b>0.218349</b>
u8s8f32 - CPU (ms)					0.217941
Normalized	99.72%	99.81%		100%	96.32%
Standard Deviation	4%	0.9%		8.2%	6%

<b>oneDNN - M.M.B.S.T -</b>	<b>0.593042</b>	0.595661	0.602122	<b>0.602314</b>	0.602038
<b>bf16bf16bf16 - CPU</b>					
Normalized	100%	99.56%	98.49%	98.46%	98.51%
Standard Deviation	0.5%	0.2%	1.2%	1.3%	1%
<b>Xcompact3d</b>	2.74370996	<b>2.73859096</b>	3.02281992	3.56592774	<b>3.57278153</b>
<b>Incompact3d -</b>					
<b>i.i.1.C.P.D (sec)</b>					
Normalized	99.81%	100%	90.6%	76.8%	76.65%
Standard Deviation	0.5%	1%	1.6%	3.3%	3.1%
<b>KTX-Software toktx -</b>			<b>3.470</b>		<b>3.697</b>
<b>Zstd Compression 9</b>					
(sec)					
Normalized			100%		93.86%
Standard Deviation			0.1%		6.7%
<b>oneDNN - D.B.s -</b>	<b>3.57247</b>	3.57662	3.64232	3.64033	<b>3.64319</b>
<b>bf16bf16bf16 - CPU</b>					
Normalized	100%	99.88%	98.08%	98.14%	98.06%
Standard Deviation	0.4%	0.4%	5.6%	5.8%	5.8%
<b>oneDNN - D.B.s - f32 -</b>	0.864164	<b>0.863214</b>	0.874080	0.874968	<b>0.876227</b>
<b>CPU (ms)</b>					
Normalized	99.89%	100%	98.76%	98.66%	98.51%
Standard Deviation	0.5%	0.4%	3.6%	3.4%	3.2%
<b>toyBrot Fractal</b>	7879	<b>7724</b>	<b>8050</b>	8048	8037
<b>Generator - C++ Tasks</b>					
Normalized	98.03%	100%	95.95%	95.97%	96.11%
Standard Deviation	1%	2.1%	2.2%	2.3%	2.1%
<b>Google Draco - Church</b>			<b>7001</b>		<b>7082</b>
<b>Facade (ms)</b>					
Normalized			100%		98.86%
Standard Deviation			0.5%		0.1%
<b>oneDNN - IP Shapes 3D</b>	1.80046	<b>1.79881</b>	1.81774	<b>1.84339</b>	1.81913
<b>- bf16bf16bf16 - CPU</b>					
(ms)					
Normalized	99.91%	100%	98.96%	97.58%	98.88%
Standard Deviation	0.6%	0.1%	1.3%	1.9%	0.9%
<b>Google Draco - Lion</b>			<b>6126</b>		<b>6170</b>
<b>toyBrot Fractal</b>	7318	<b>7308</b>	7412	<b>7439</b>	7429
<b>Generator - OpenMP</b>					
Normalized	99.86%	100%	98.6%	98.24%	98.37%
Standard Deviation	0.1%	0%	2.4%	2.3%	2.5%
<b>toyBrot Fractal</b>	7018	<b>6980</b>	7149	<b>7203</b>	7141
<b>Generator - C++</b>					
Normalized	99.46%	100%	97.64%	96.9%	97.75%
Standard Deviation	1.2%	0.7%	2.2%	2.4%	2.2%
<b>SVT-VP9 - V.Q.O -</b>	327.87	<b>329.53</b>	164.32	164.51	<b>162.21</b>
<b>Bosphorus 1080p (FPS)</b>					
Normalized	99.5%	100%	49.86%	49.92%	49.22%
Standard Deviation	0.6%	0.6%	1.2%	1.7%	1.7%

<b>SVT-VP9 - P.S.O -</b>	401.29	<b>408.24</b>		182.17	181.52	<b>179.13</b>
<b>Bosphorus 1080p (FPS)</b>						
Normalized	98.3%	100%		44.62%	44.46%	43.88%
Standard Deviation	0.6%	0.3%		0.9%	2.1%	0.5%
<b>oneDNN - C.B.S.A - f32</b>	<b>1.10991</b>	1.12224		1.11874	<b>1.14578</b>	1.11811
-CPU (ms)						
Normalized	100%	98.9%		99.21%	96.87%	99.27%
Standard Deviation	0.4%	0.2%		0.5%	1.5%	1.8%
<b>oneDNN - C.B.S.A -</b>	0.877815	0.879137		<b>0.869978</b>	<b>0.901823</b>	0.875421
<b>u8s8f32 - CPU (ms)</b>						
Normalized	99.11%	98.96%		100%	96.47%	99.38%
Standard Deviation	1.2%	0.8%		1%	1.3%	1%
<b>oneDNN - C.B.S.A -</b>	<b>2.07944</b>	2.08532		<b>2.11712</b>	2.10841	2.10837
<b>bf16bf16bf16 - CPU</b>						
Normalized	100%	99.72%		98.22%	98.63%	98.63%
Standard Deviation	0.1%	0.1%		1.6%	1.6%	1.5%
<b>SVT-HEVC - 10 -</b>	<b>499.23</b>	493.51		234.51	234.39	<b>233.96</b>
<b>Bosphorus 1080p (FPS)</b>						
Normalized	100%	98.85%		46.97%	46.95%	46.86%
Standard Deviation	1.3%	1.7%		2.2%	2.4%	0.8%
<b>SVT-HEVC - 7 -</b>	<b>290.67</b>	288.99		158.16	157.83	<b>156.26</b>
<b>Bosphorus 1080p (FPS)</b>						
Normalized	100%	99.42%		54.41%	54.3%	53.76%
Standard Deviation	1%	0.8%		2.5%	1.8%	1.4%

## HammerDB - MariaDB 10.5.9

Virtual Users: 128 - Warehouses: 250



1. (CXX) g++ options: -fPIC -pie -fstack-protector -O2 -shared -lpthread -lbz2 -lsnappy -ldl -lz -lrt

## HammerDB - MariaDB 10.5.9

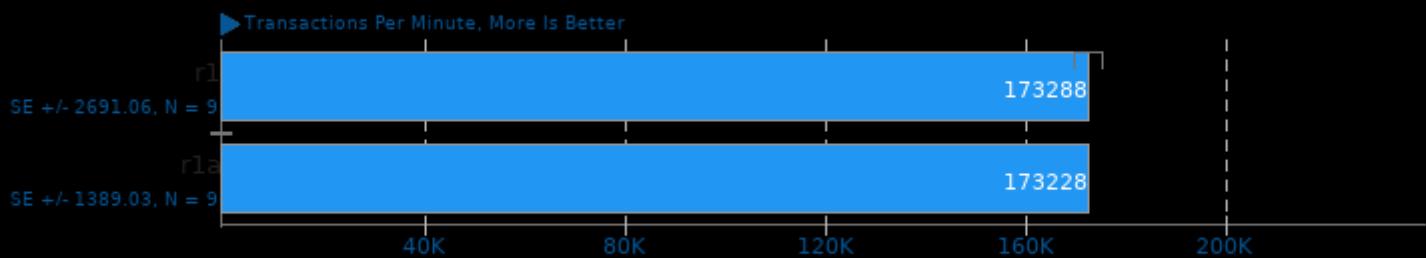
Virtual Users: 128 - Warehouses: 250



1. (CXX) g++ options: -fPIC -pie -fstack-protector -O2 -shared -lpthread -lbz2 -lsnappy -ldl -lz -lrt

## HammerDB - MariaDB 10.5.9

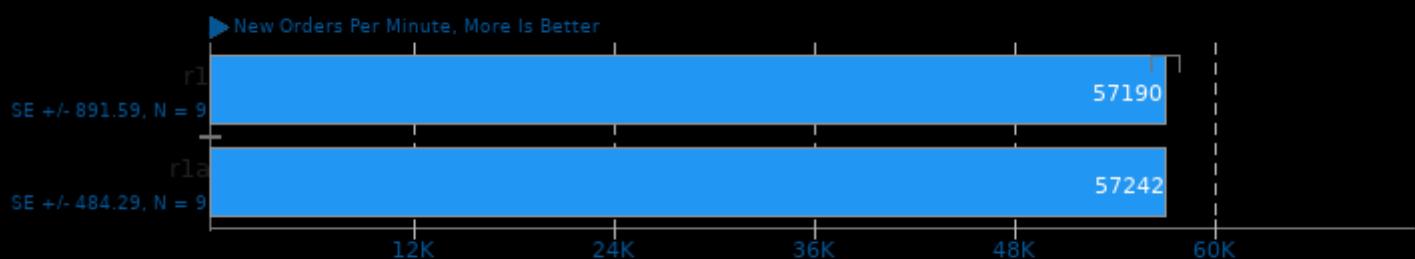
Virtual Users: 128 - Warehouses: 500



1. (CXX) g++ options: -fPIC -pie -fstack-protector -O2 -shared -lpthread -lbz2 -lsnappy -ldl -lz -lrt

## HammerDB - MariaDB 10.5.9

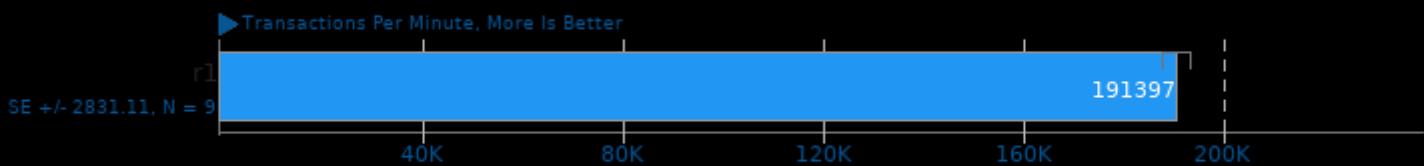
Virtual Users: 128 - Warehouses: 500



1. (CXX) g++ options: -fPIC -pie -fstack-protector -O2 -shared -lpthread -lbz2 -lsnappy -ldl -lz -lrt

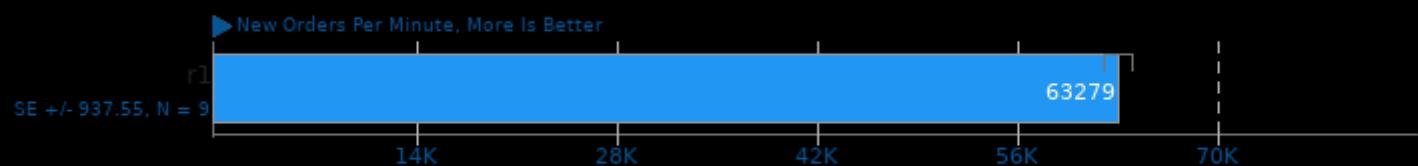
## HammerDB - MariaDB 10.5.9

Virtual Users: 64 - Warehouses: 250



## HammerDB - MariaDB 10.5.9

Virtual Users: 64 - Warehouses: 250



## HammerDB - MariaDB 10.5.9

Virtual Users: 32 - Warehouses: 250



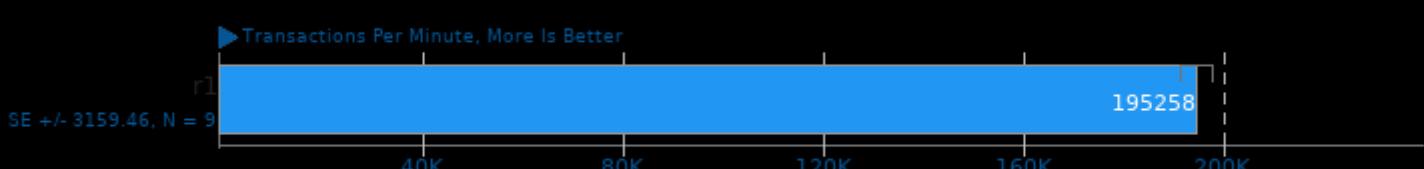
## HammerDB - MariaDB 10.5.9

Virtual Users: 32 - Warehouses: 250



## HammerDB - MariaDB 10.5.9

Virtual Users: 16 - Warehouses: 500



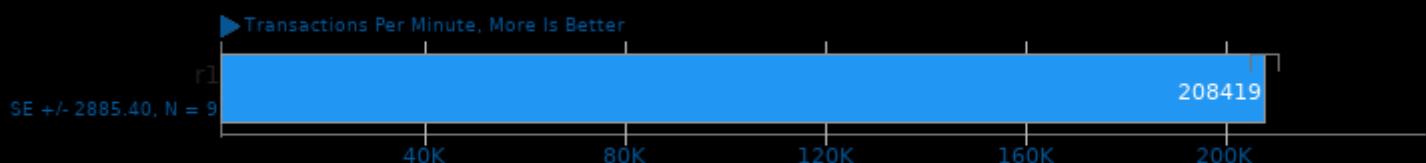
## HammerDB - MariaDB 10.5.9

Virtual Users: 16 - Warehouses: 500



## HammerDB - MariaDB 10.5.9

Virtual Users: 32 - Warehouses: 500



## HammerDB - MariaDB 10.5.9

Virtual Users: 32 - Warehouses: 500



## MariaDB 10.5.2

Clients: 256



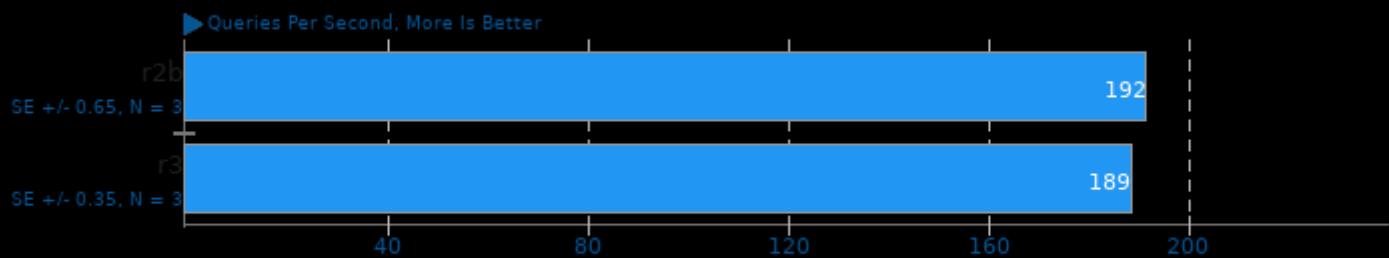
## MariaDB 10.5.2

Clients: 512



## MariaDB 10.5.2

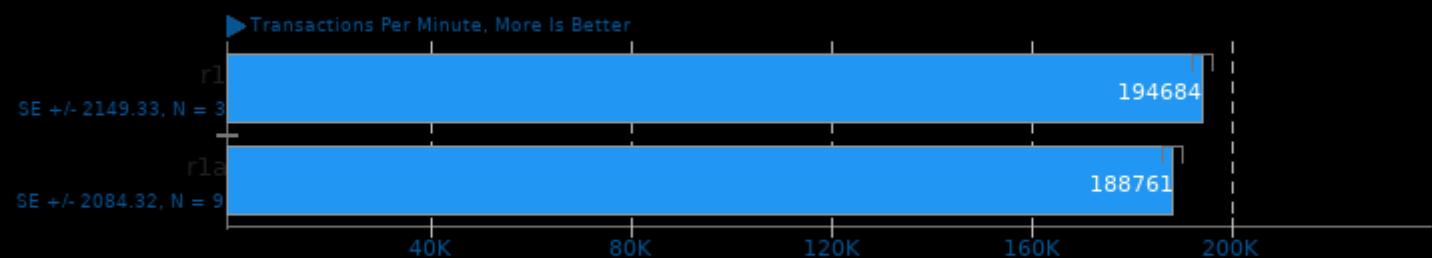
Clients: 128



1. (CXX) g++ options: -fPIC -pie -fstack-protector -O2 -shared -lpthread -lsnappy -ldl -lz -lrt

## HammerDB - MariaDB 10.5.9

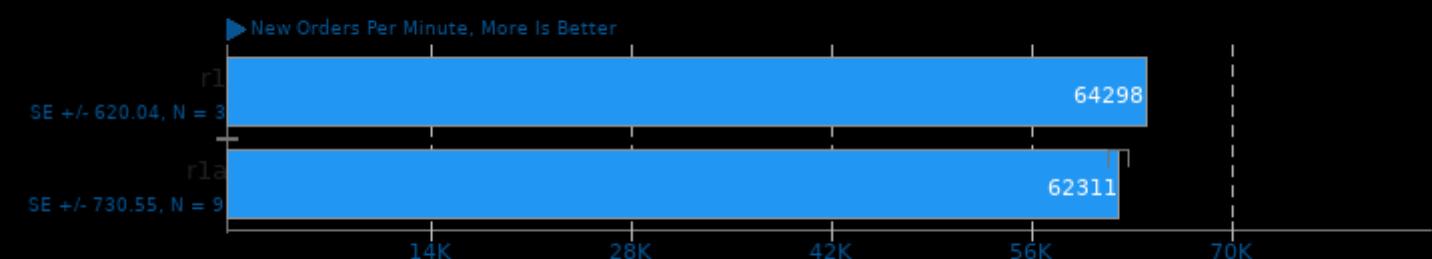
Virtual Users: 64 - Warehouses: 500



1. (CXX) g++ options: -fPIC -pie -fstack-protector -O2 -shared -lpthread -lbz2 -lsnappy -ldl -lz -lrt

## HammerDB - MariaDB 10.5.9

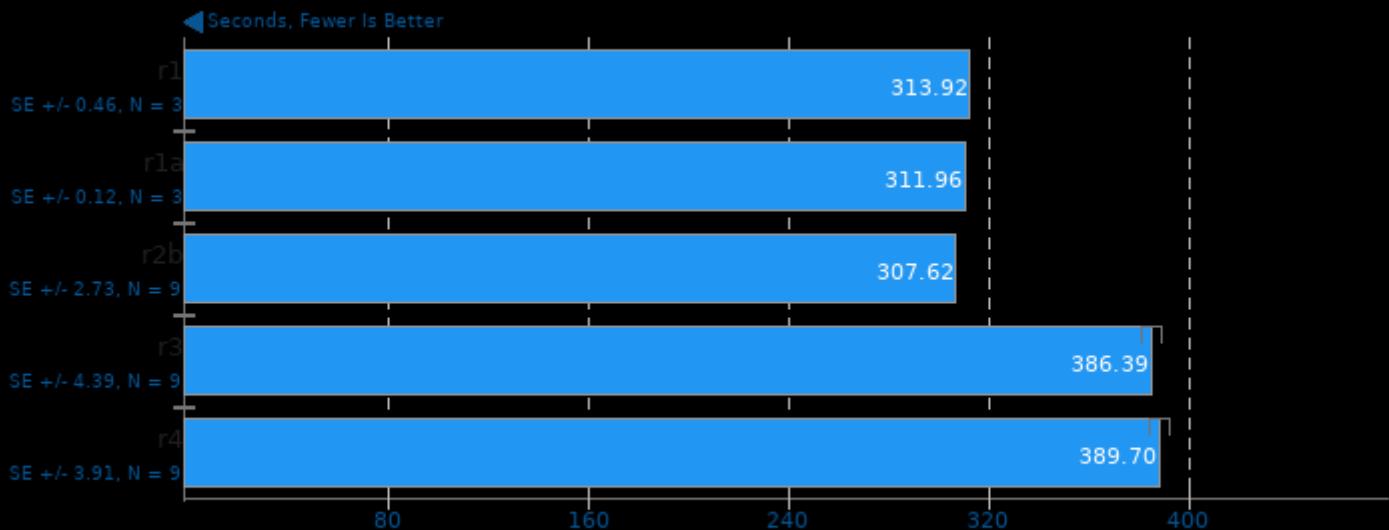
Virtual Users: 64 - Warehouses: 500



1. (CXX) g++ options: -fPIC -pie -fstack-protector -O2 -shared -lpthread -lbz2 -lsnappy -ldl -lz -lrt

## Xcompact3d Incompact3d 2021-03-11

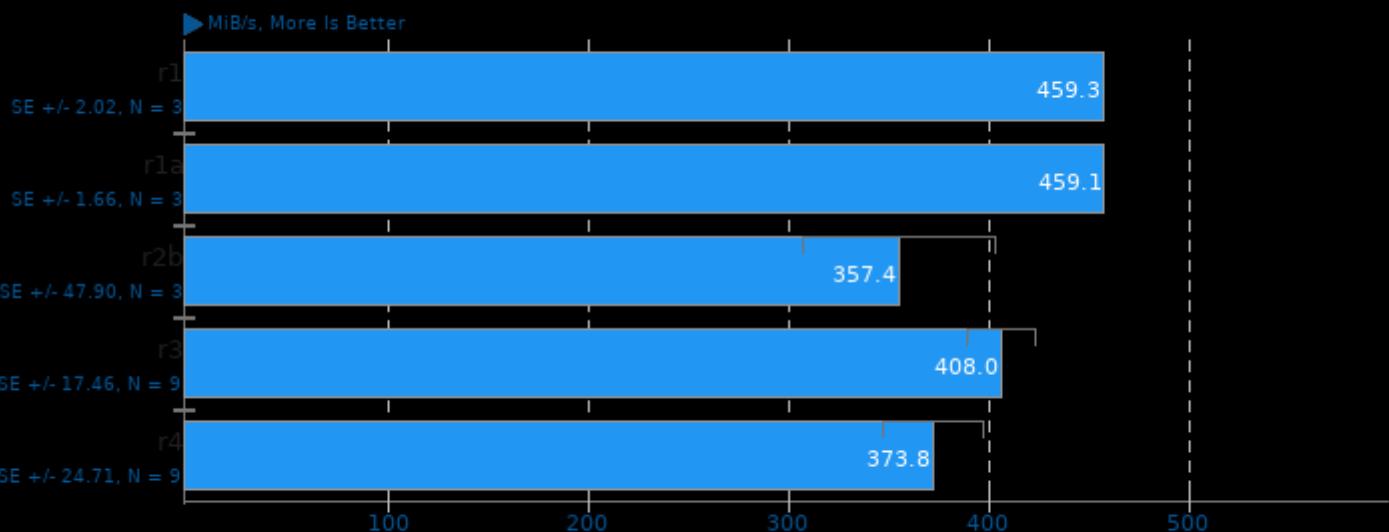
Input: X3D-benchmarking input.i3d



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

## GNU Radio

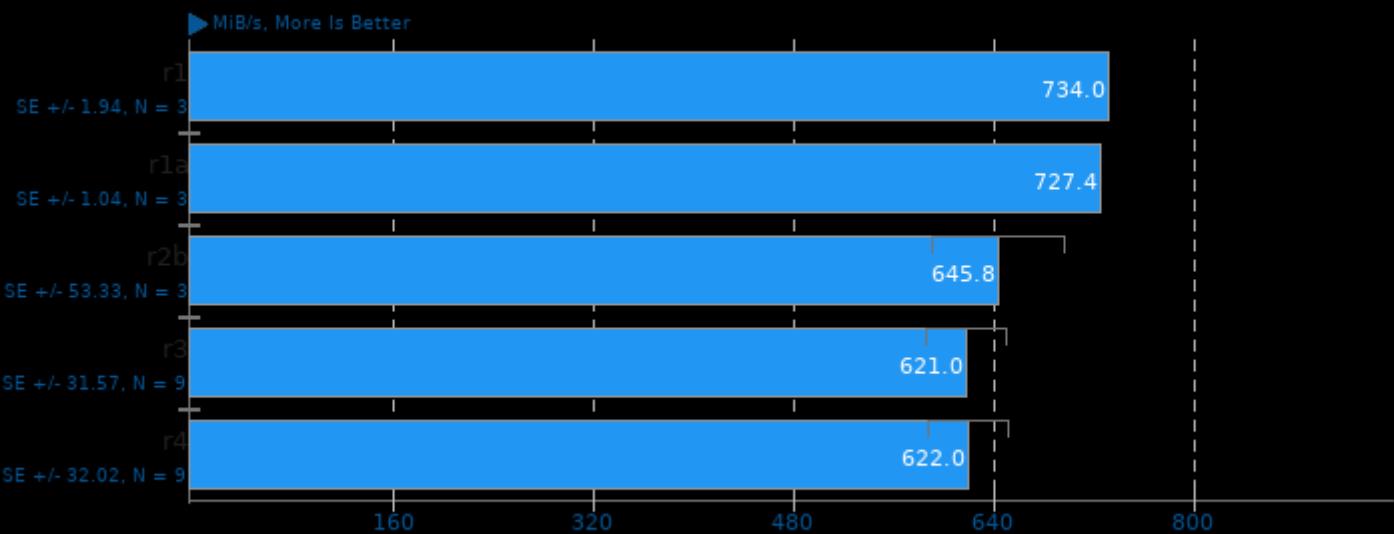
Test: Hilbert Transform



1. 3.8.1.0

## GNU Radio

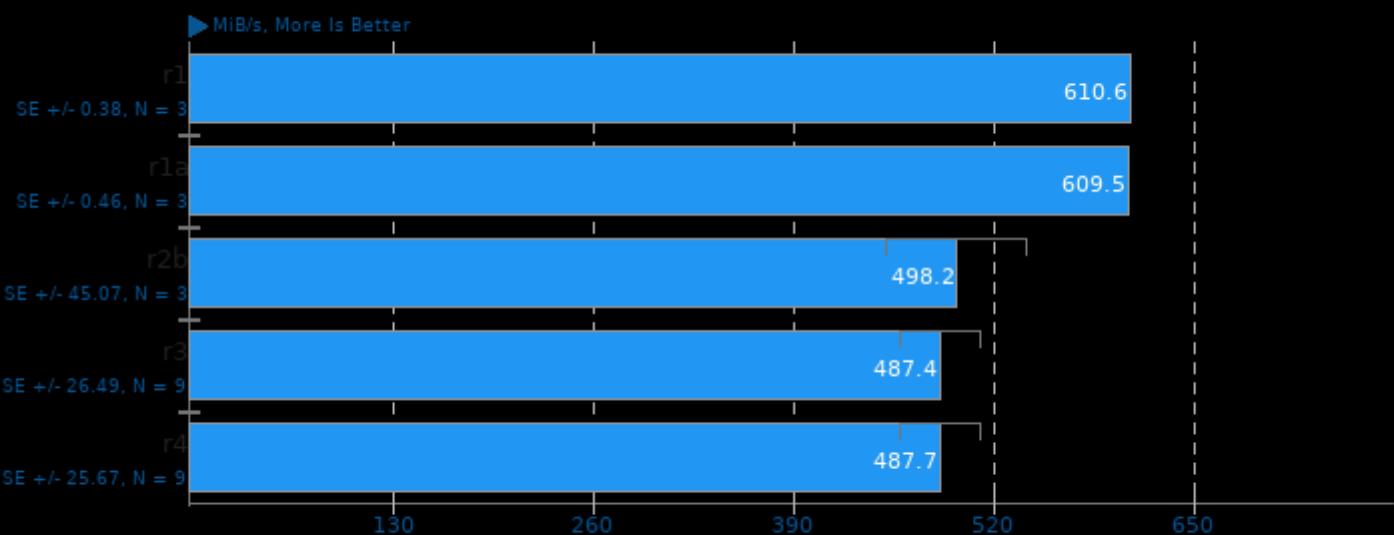
Test: FM Deemphasis Filter



1. 3.8.1.0

## GNU Radio

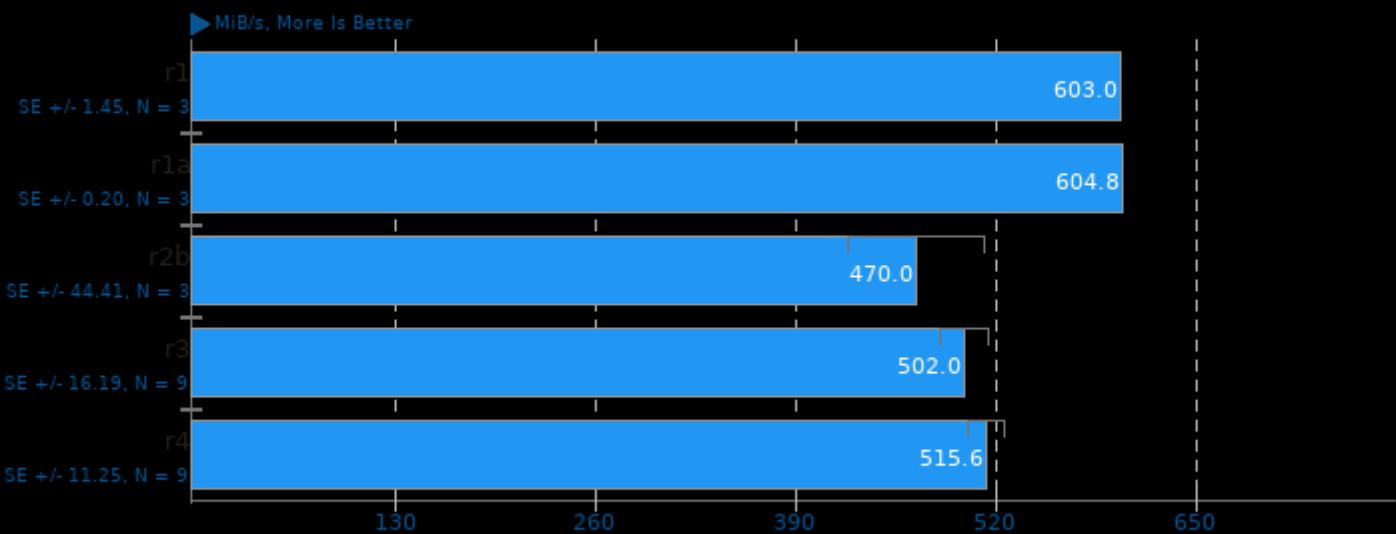
Test: IIR Filter



1. 3.8.1.0

## GNU Radio

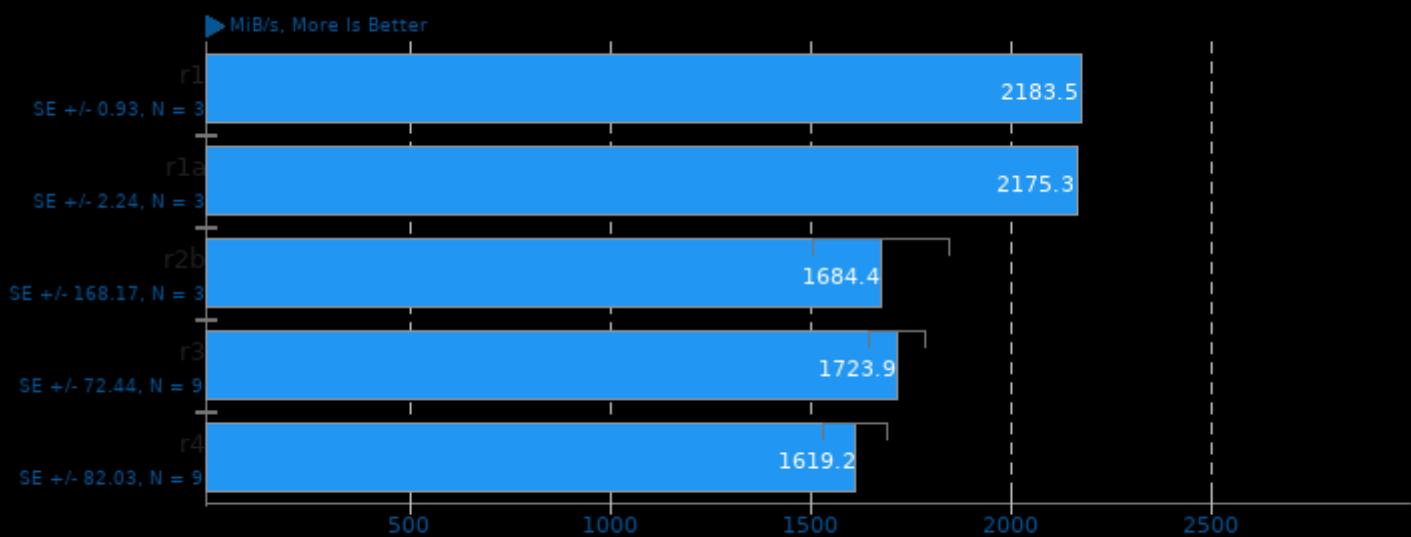
Test: FIR Filter



1. 3.8.1.0

## GNU Radio

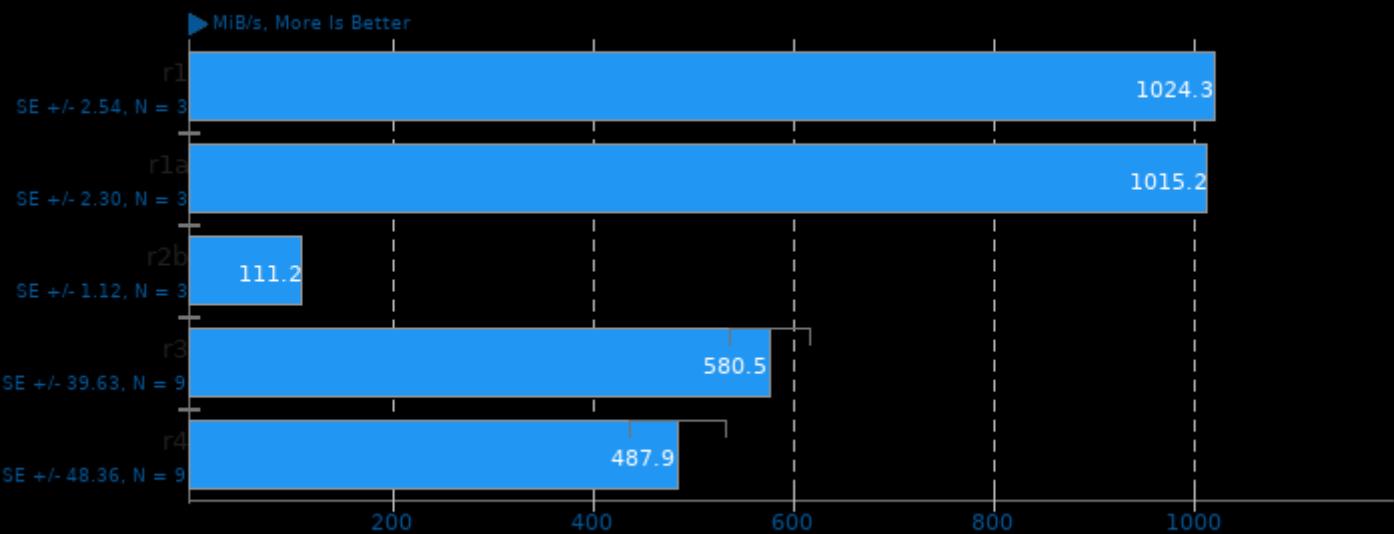
Test: Signal Source (Cosine)



1. 3.8.1.0

## GNU Radio

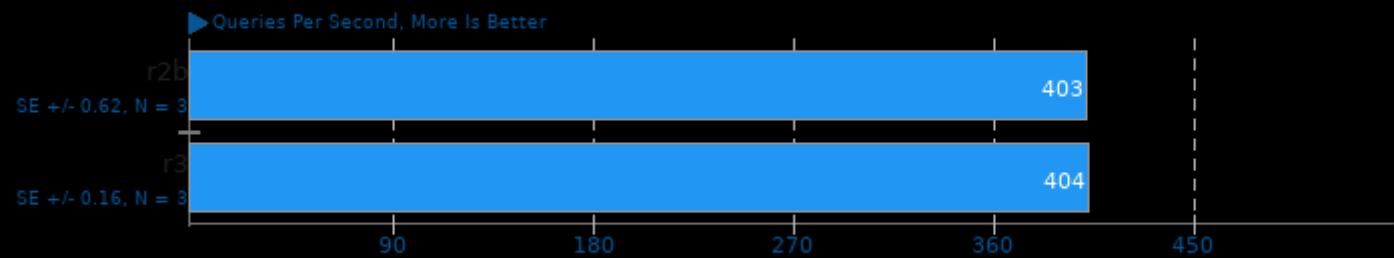
Test: Five Back to Back FIR Filters



1. 3.8.1.0

## MariaDB 10.5.2

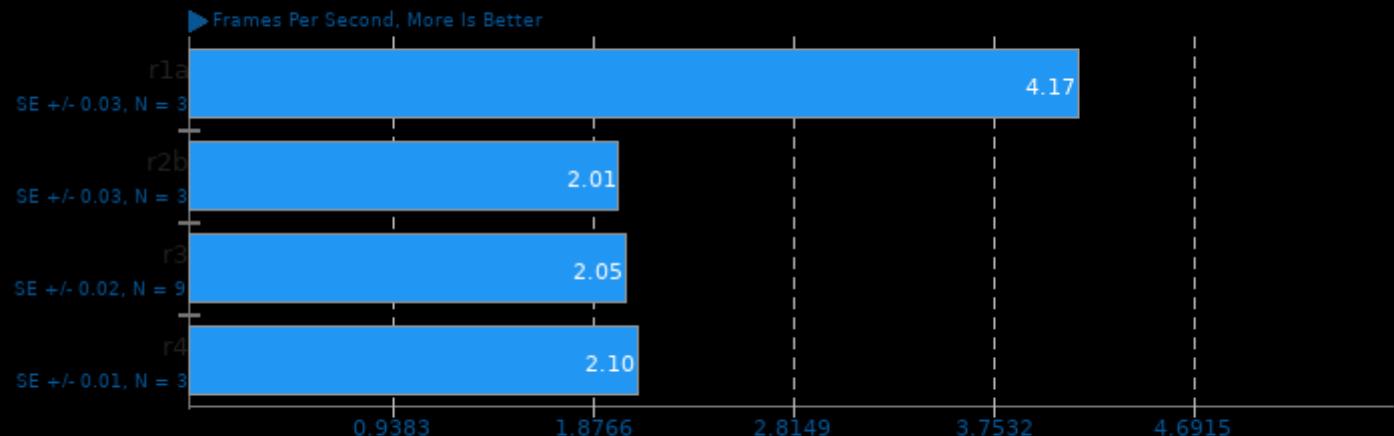
Clients: 64



1. (CXX) g++ options: -fPIC -pie -fstack-protector -O2 -shared -lpthread -lsnappy -ldl -lz -lrt

## AOM AV1 3.0

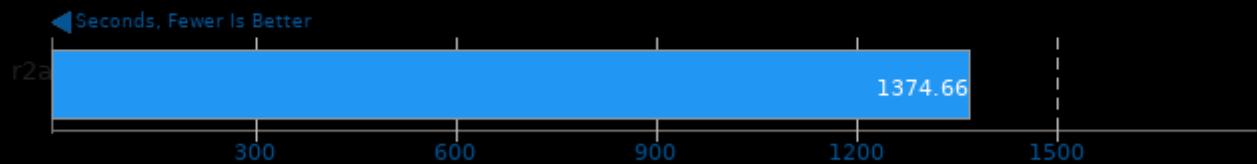
Encoder Mode: Speed 4 Two-Pass - Input: Bosphorus 4K



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

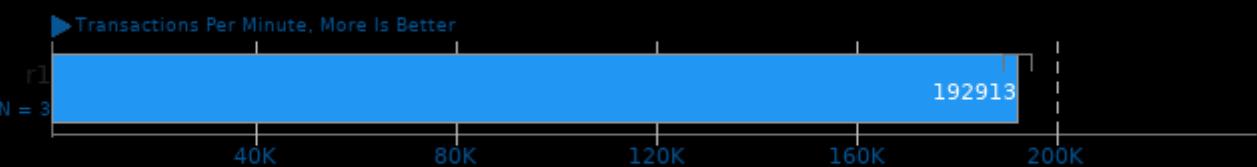
## CP2K Molecular Dynamics 8.1

Input: Fayalite-FIST



## HammerDB - MariaDB 10.5.9

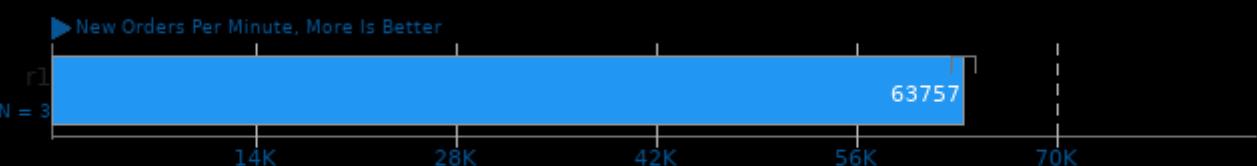
Virtual Users: 16 - Warehouses: 250



1. (CXX) g++ options: -fPIC -pie -fstack-protector -O2 -shared -lpthread -lbz2 -lsnappy -ldl -lz -lrt

## HammerDB - MariaDB 10.5.9

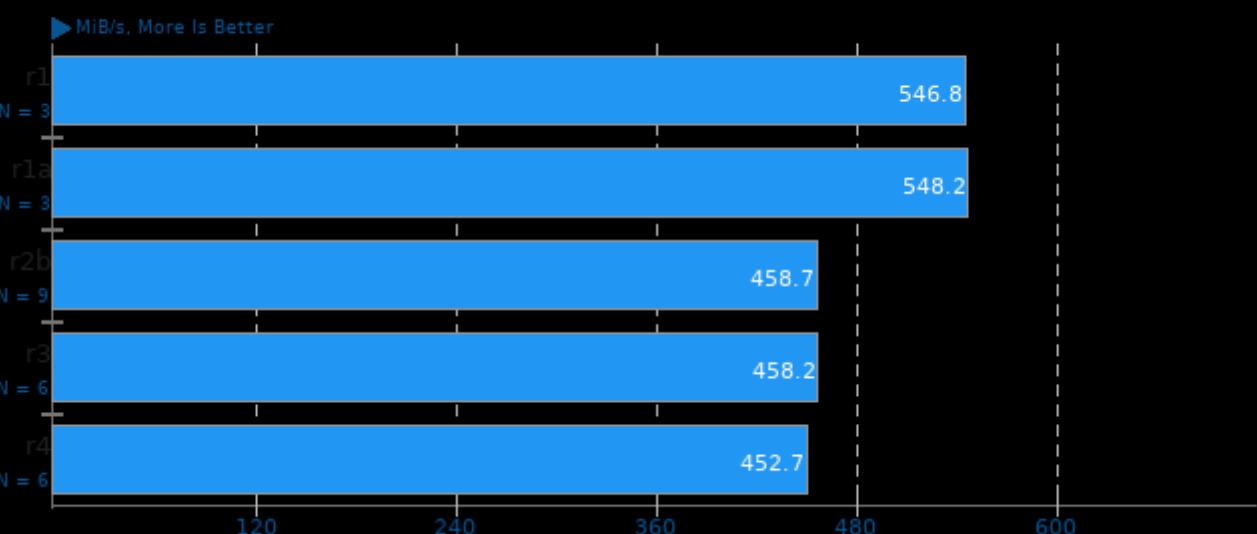
Virtual Users: 16 - Warehouses: 250



1. (CXX) g++ options: -fPIC -pie -fstack-protector -O2 -shared -lpthread -lbz2 -lsnappy -ldl -lz -lrt

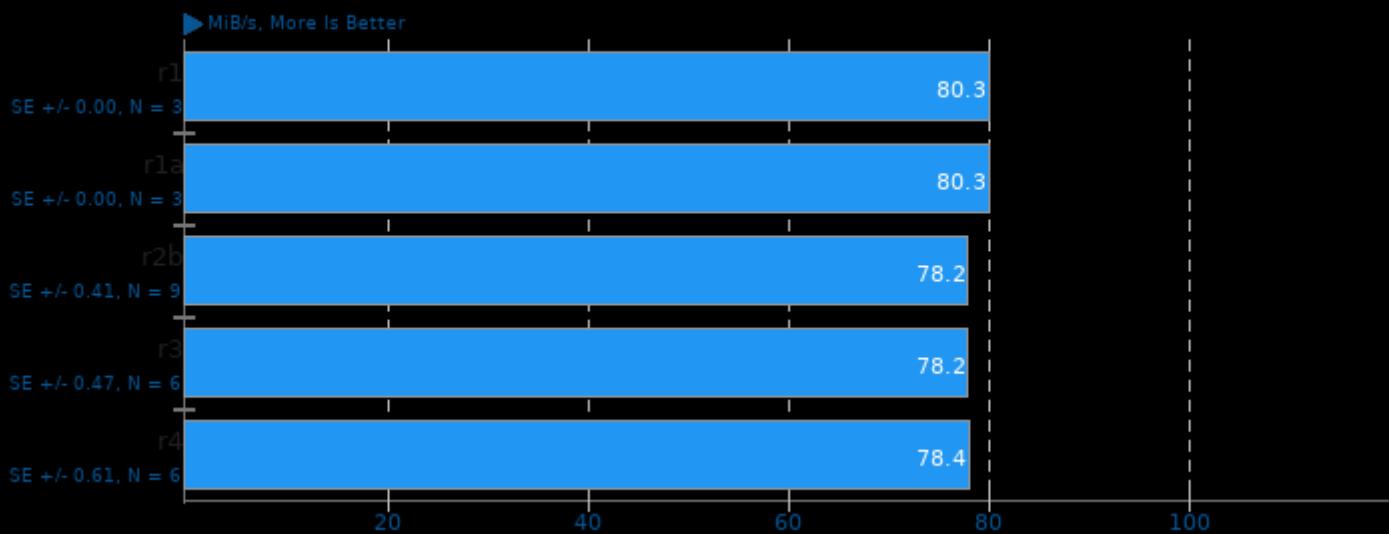
## LuaRadio 0.9.1

Test: Complex Phase



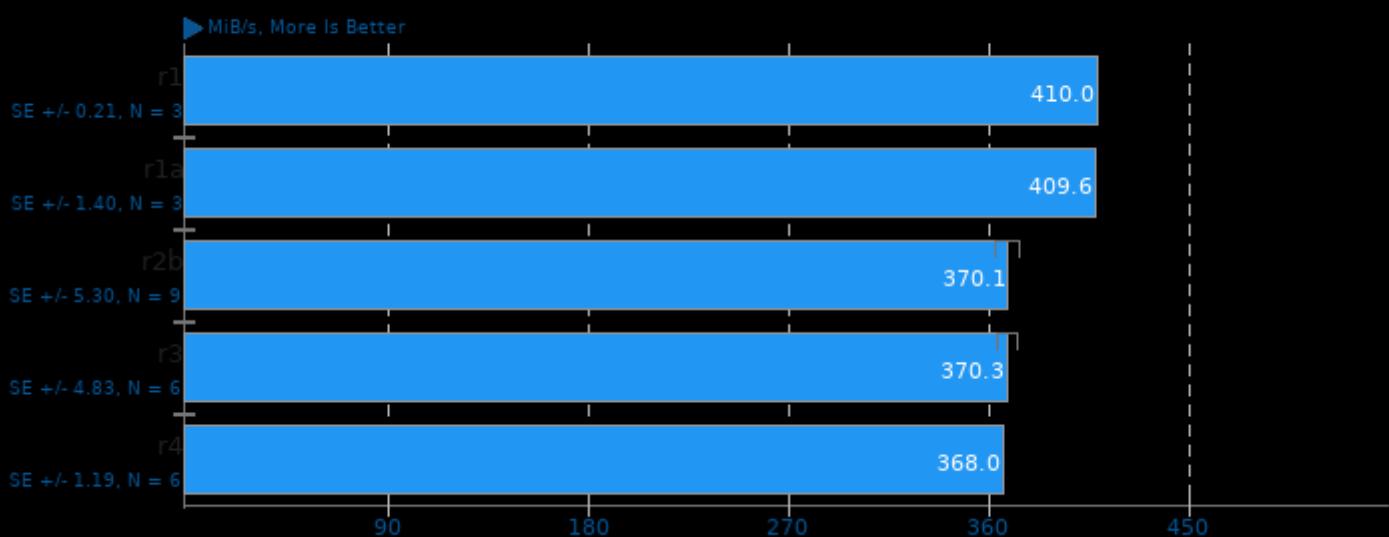
## LuaRadio 0.9.1

Test: Hilbert Transform



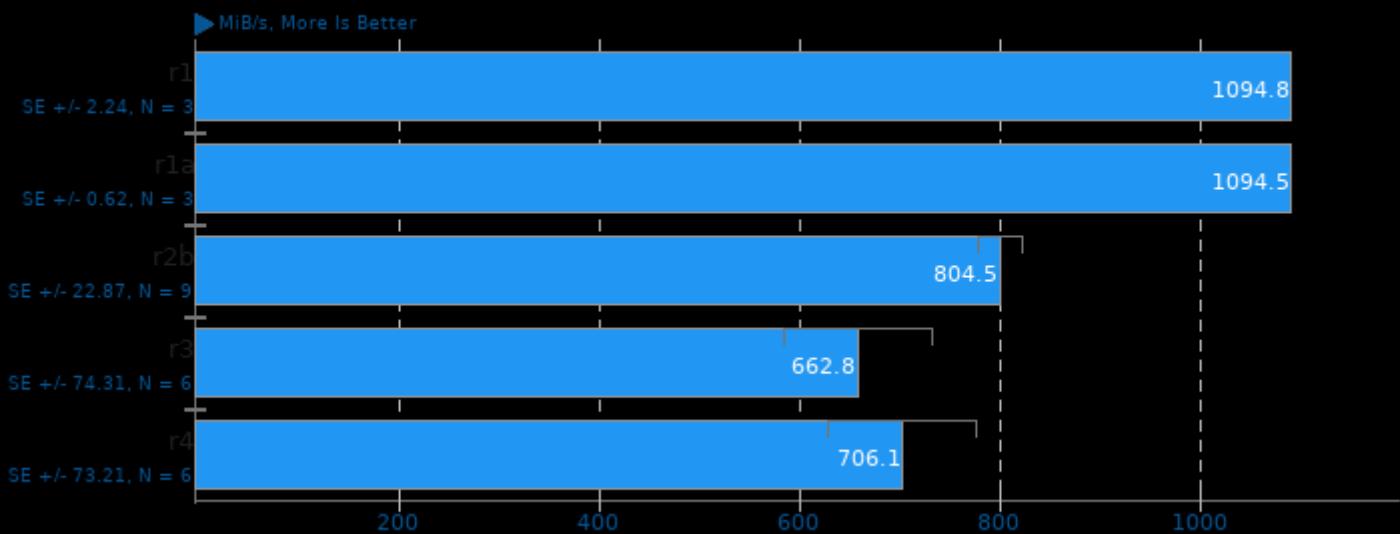
## LuaRadio 0.9.1

Test: FM Deemphasing Filter



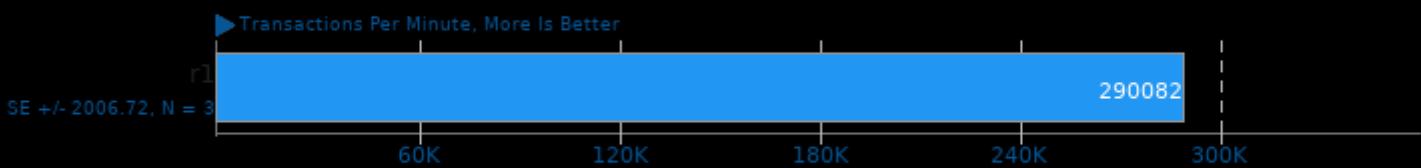
## LuaRadio 0.9.1

Test: Five Back to Back FIR Filters



## HammerDB - MariaDB 10.5.9

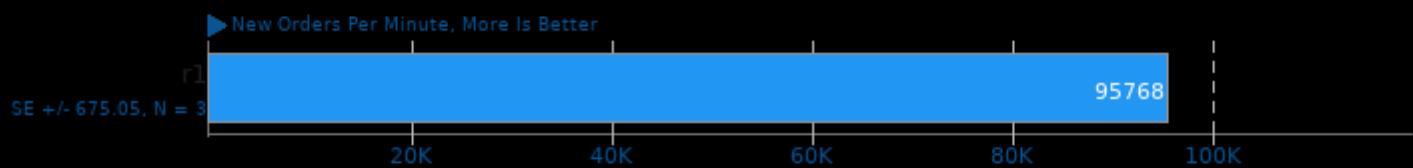
Virtual Users: 8 - Warehouses: 250



1. (CXX) g++ options: -fPIC -pie -fstack-protector -O2 -shared -lpthread -l bz2 -lsnappy -ldl -lz -lrt

## HammerDB - MariaDB 10.5.9

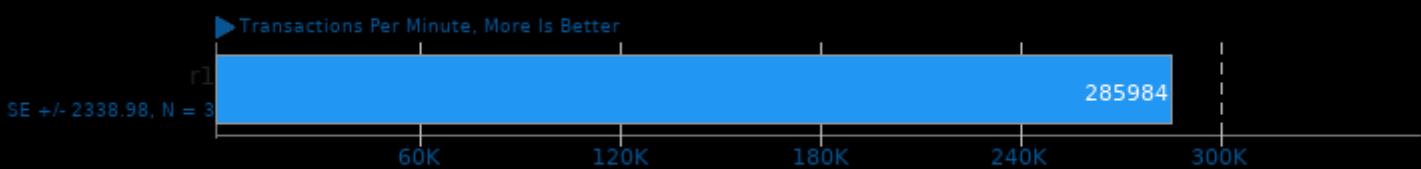
Virtual Users: 8 - Warehouses: 250



1. (CXX) g++ options: -fPIC -pie -fstack-protector -O2 -shared -lpthread -l bz2 -lsnappy -ldl -lz -lrt

## HammerDB - MariaDB 10.5.9

Virtual Users: 8 - Warehouses: 500



1. (CXX) g++ options: -fPIC -pie -fstack-protector -O2 -shared -lpthread -l bz2 -lsnappy -ldl -lz -lrt

## HammerDB - MariaDB 10.5.9

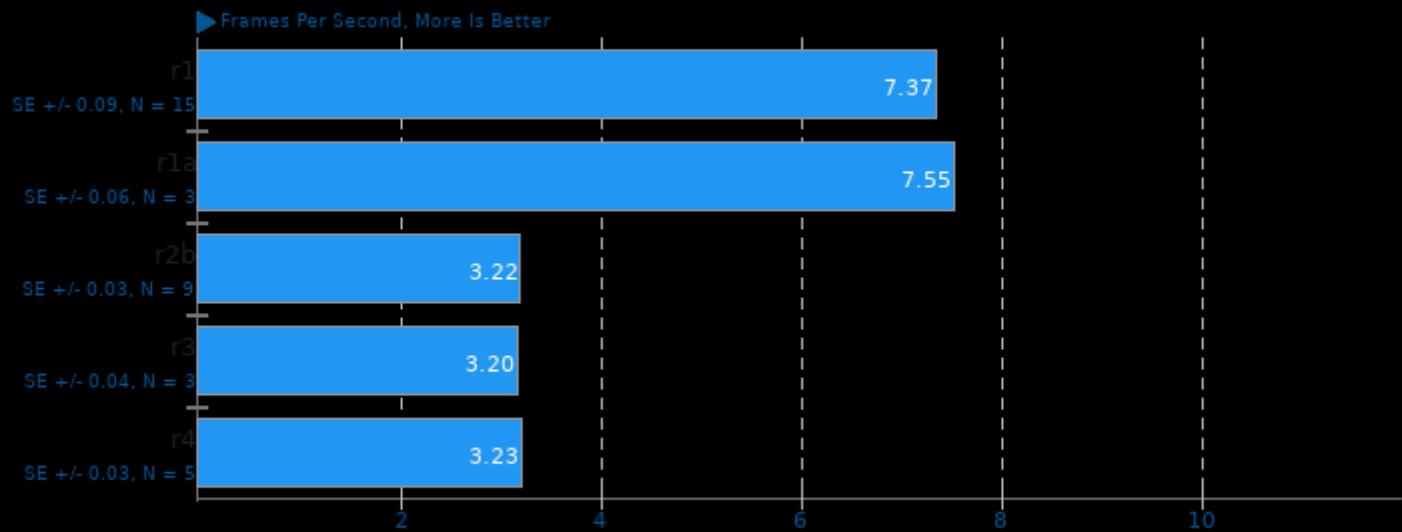
Virtual Users: 8 - Warehouses: 500



1. (CXX) g++ options: -fPIC -pie -fstack-protector -O2 -shared -lpthread -lbz2 -lsnappy -ldl -lz -lrt

## AOM AV1 3.0

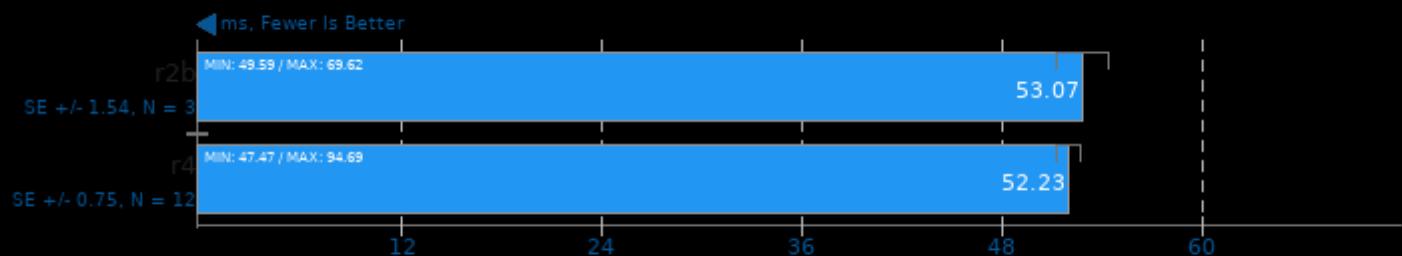
Encoder Mode: Speed 6 Two-Pass - Input: Bosphorus 4K



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

## Mobile Neural Network 1.1.3

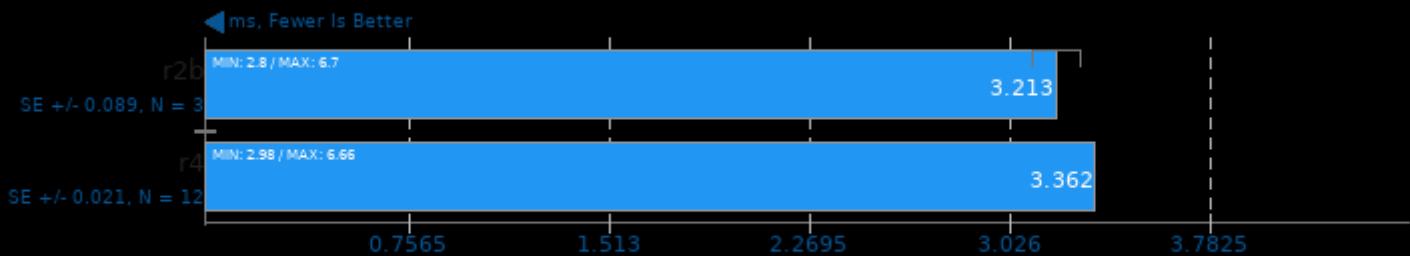
Model: inception-v3



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

## Mobile Neural Network 1.1.3

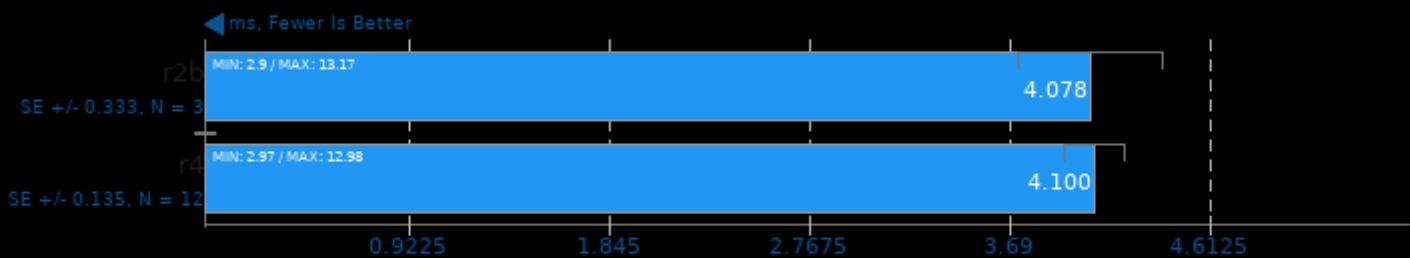
Model: mobilenet-v1-1.0



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

## Mobile Neural Network 1.1.3

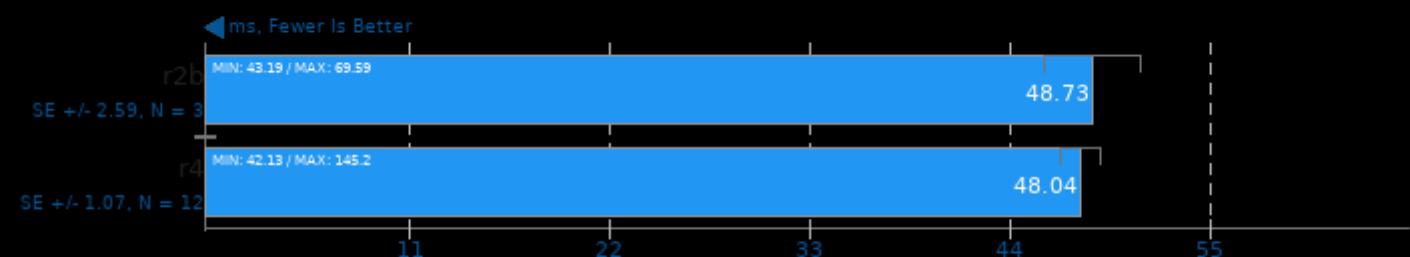
Model: MobileNetV2\_224



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

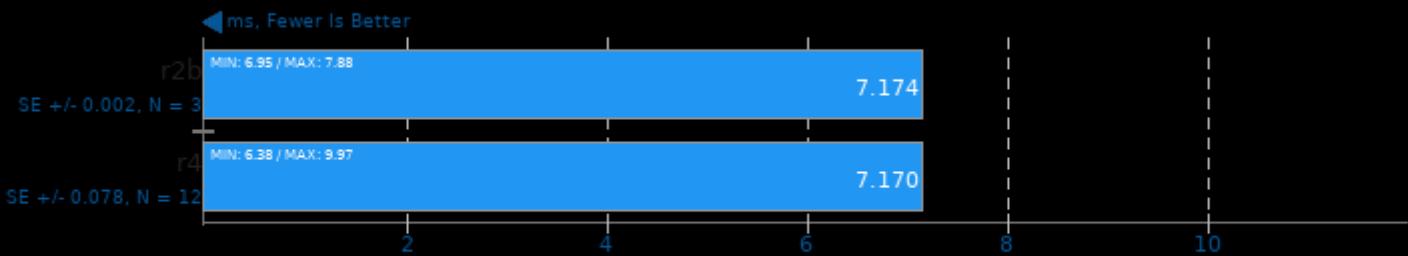
Model: resnet-v2-50



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

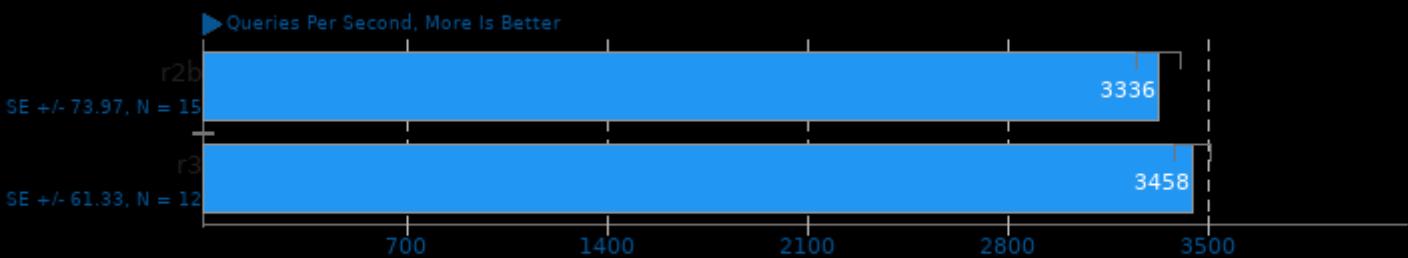
Model: SqueezeNetV1.0



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

## MariaDB 10.5.2

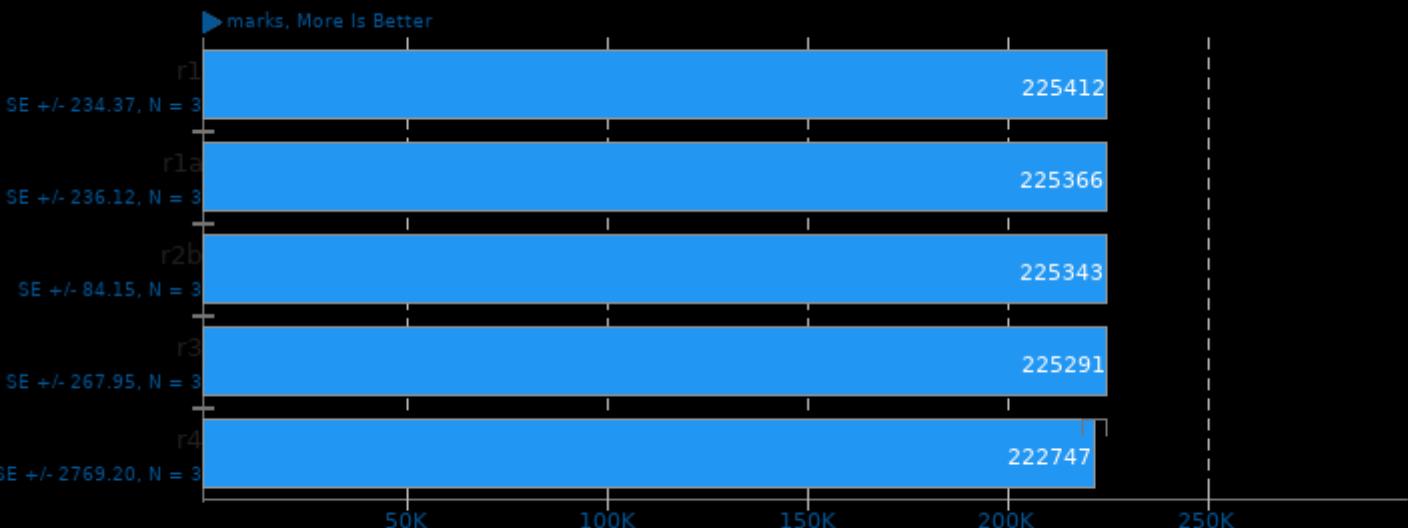
Clients: 1



1. (CXX) g++ options: -fPIC -pie -fstack-protector -O2 -shared -lpthread -lsnappy -ldl -lz -lrt

## SecureMark 1.0.4

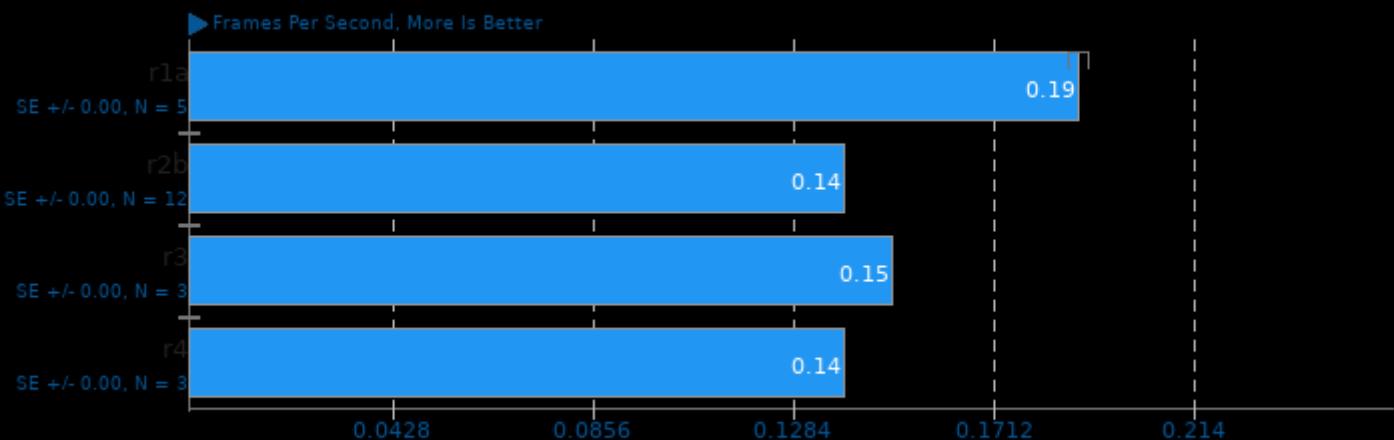
Benchmark: SecureMark-TLS



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

## AOM AV1 3.0

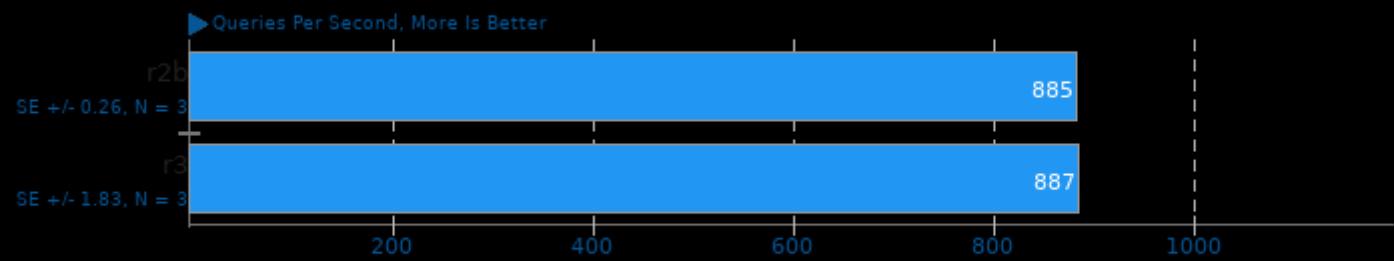
Encoder Mode: Speed 0 Two-Pass - Input: Bosphorus 4K



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

## MariaDB 10.5.2

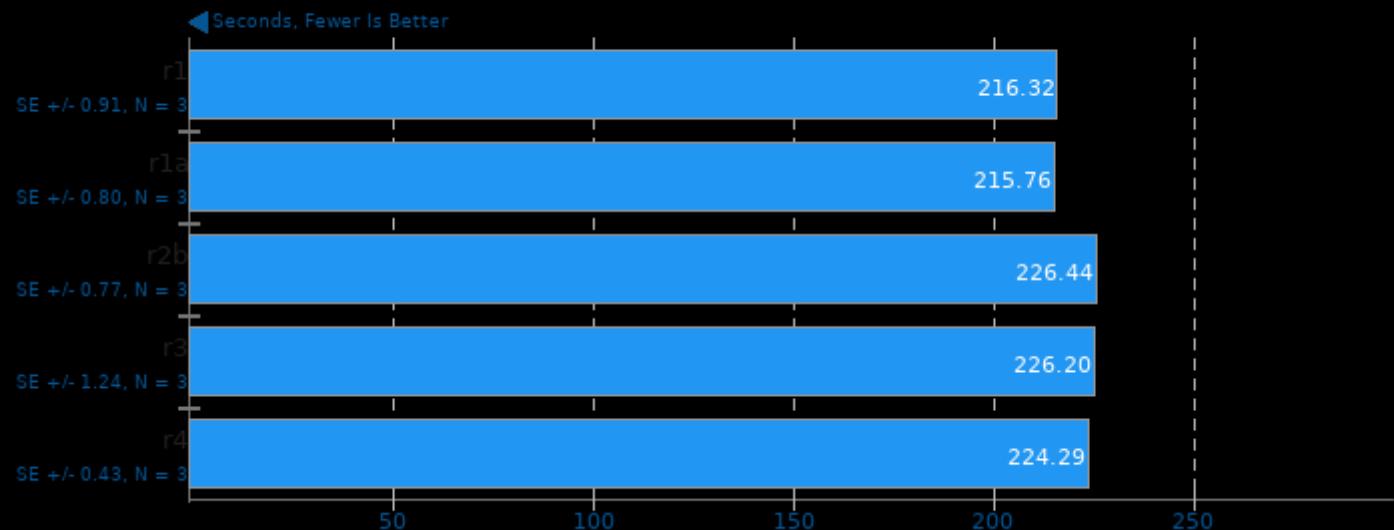
Clients: 32



1. (CXX) g++ options: -fPIC -pie -fstack-protector -O2 -shared -lpthread -lsnappy -ldl -lz -lrt

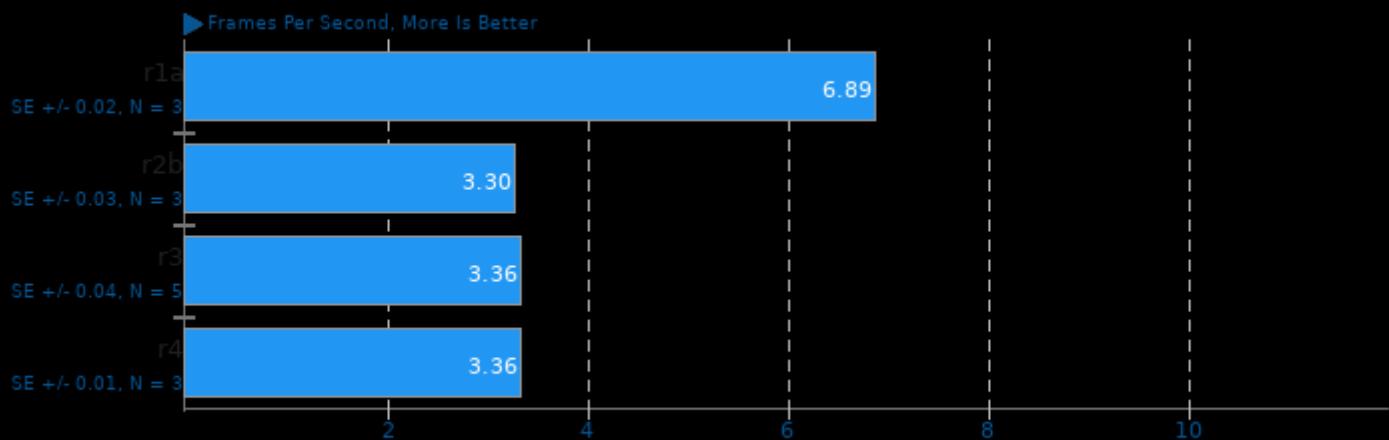
## Timed LLVM Compilation 12.0

Build System: Unix Makefiles



## AOM AV1 3.0

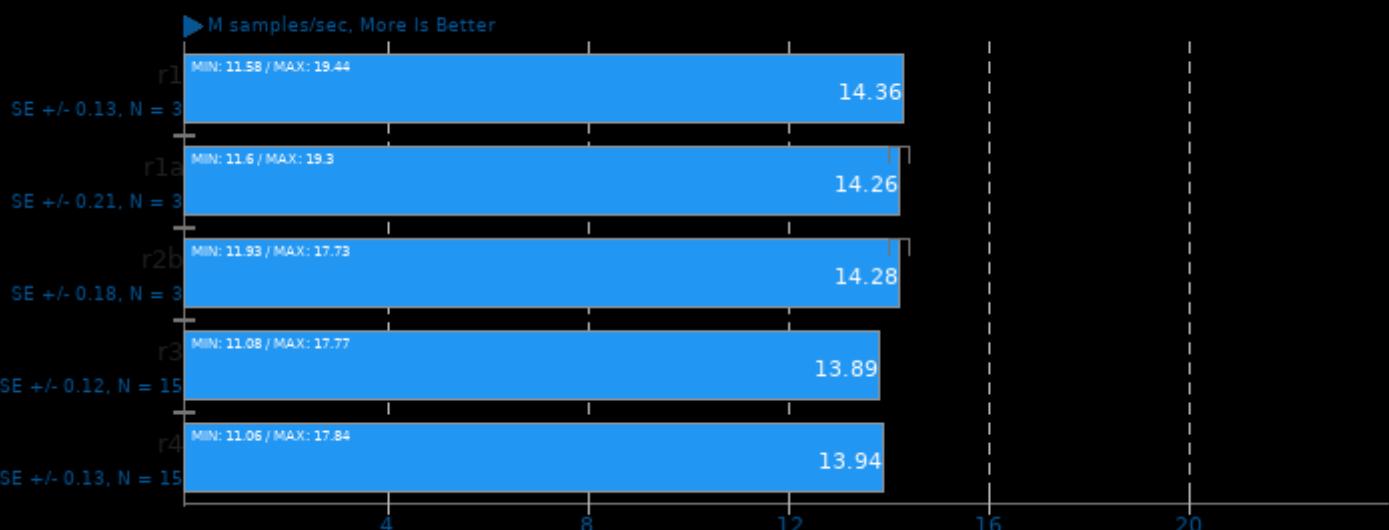
Encoder Mode: Speed 4 Two-Pass - Input: Bosphorus 1080p



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

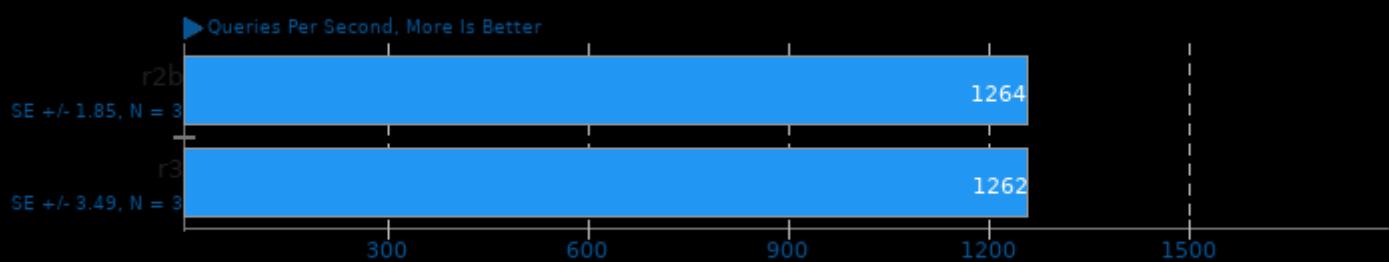
## LuxCoreRender 2.5

Scene: Orange Juice - Acceleration: CPU



## MariaDB 10.5.2

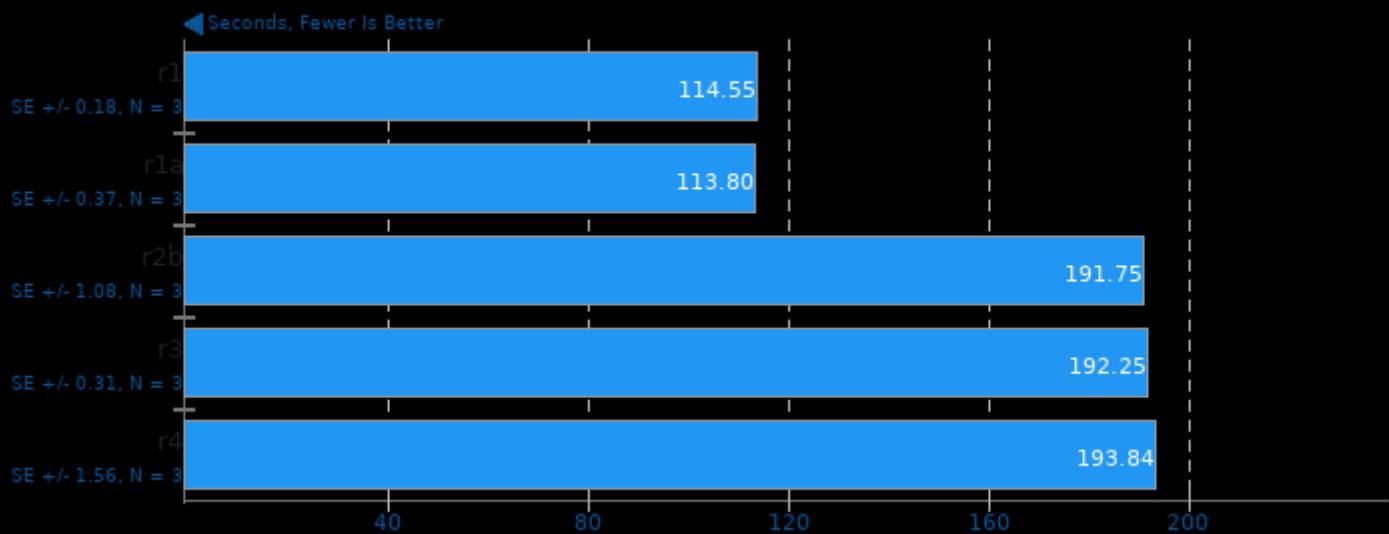
Clients: 16



1. (CXX) g++ options: -fPIC -pie -fstack-protector -O2 -shared -lpthread -lsnappy -ldl -lz -lrt

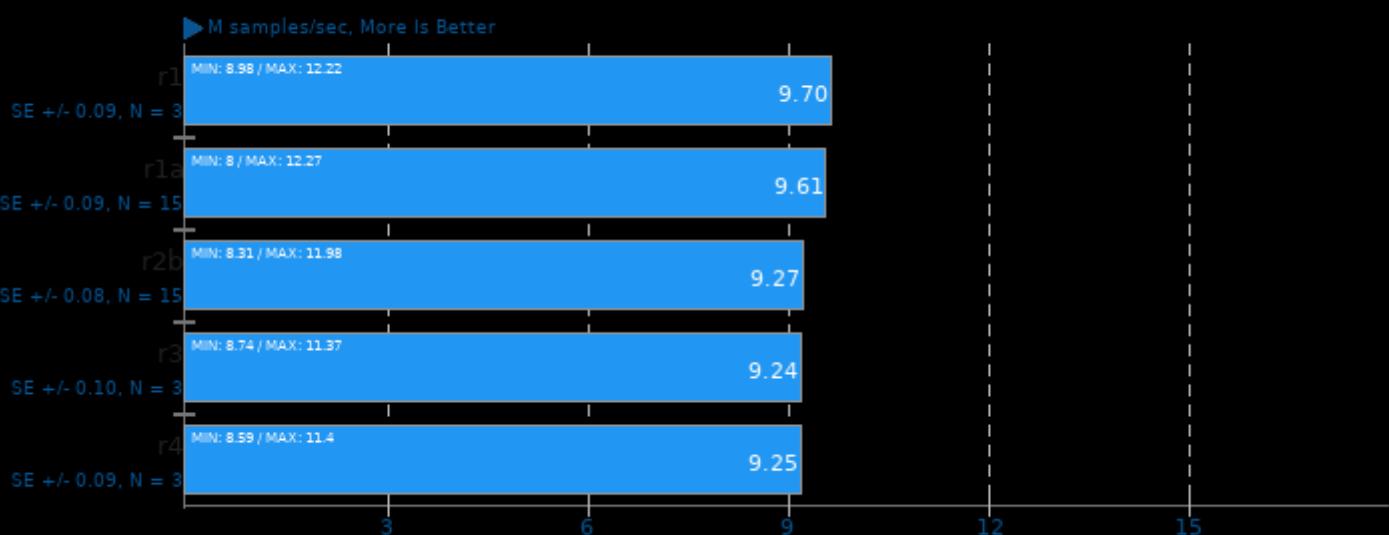
## Timed Erlang/OTP Compilation 23.2

Time To Compile



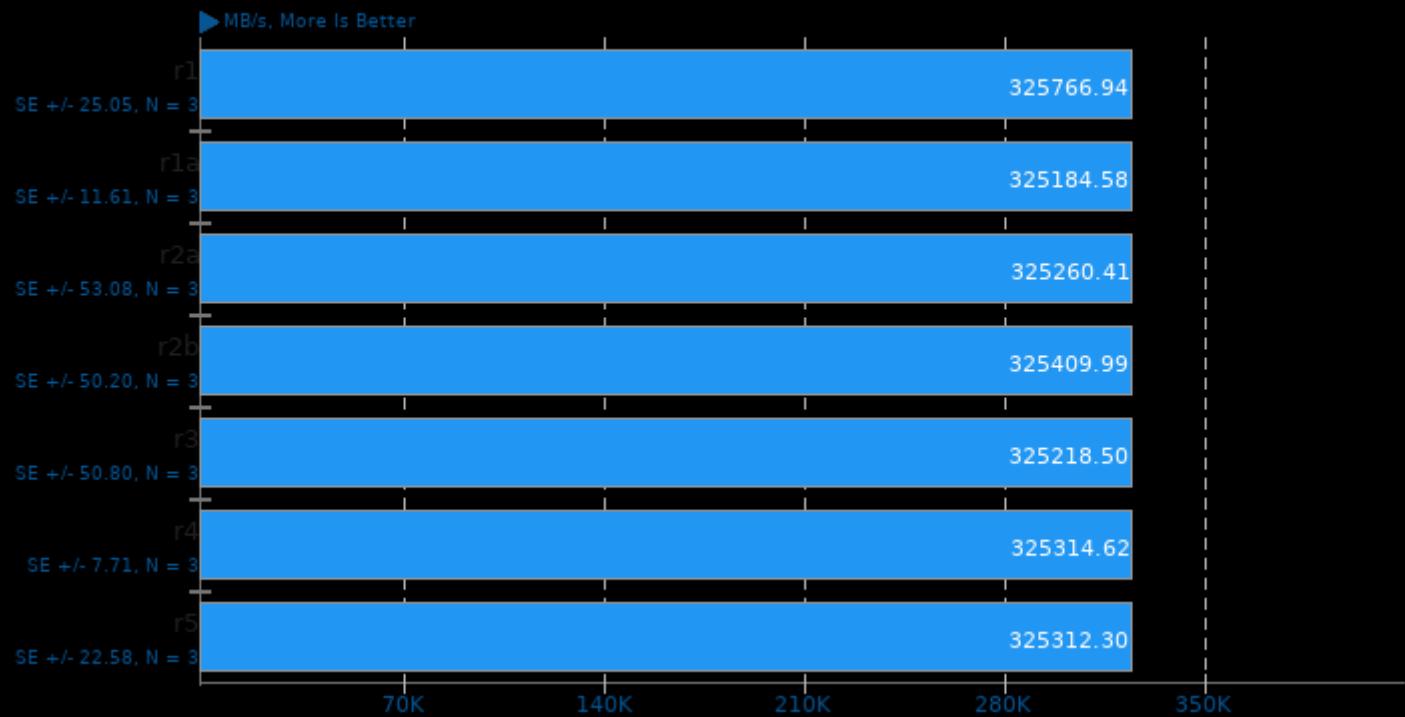
## LuxCoreRender 2.5

Scene: DLSC - Acceleration: CPU



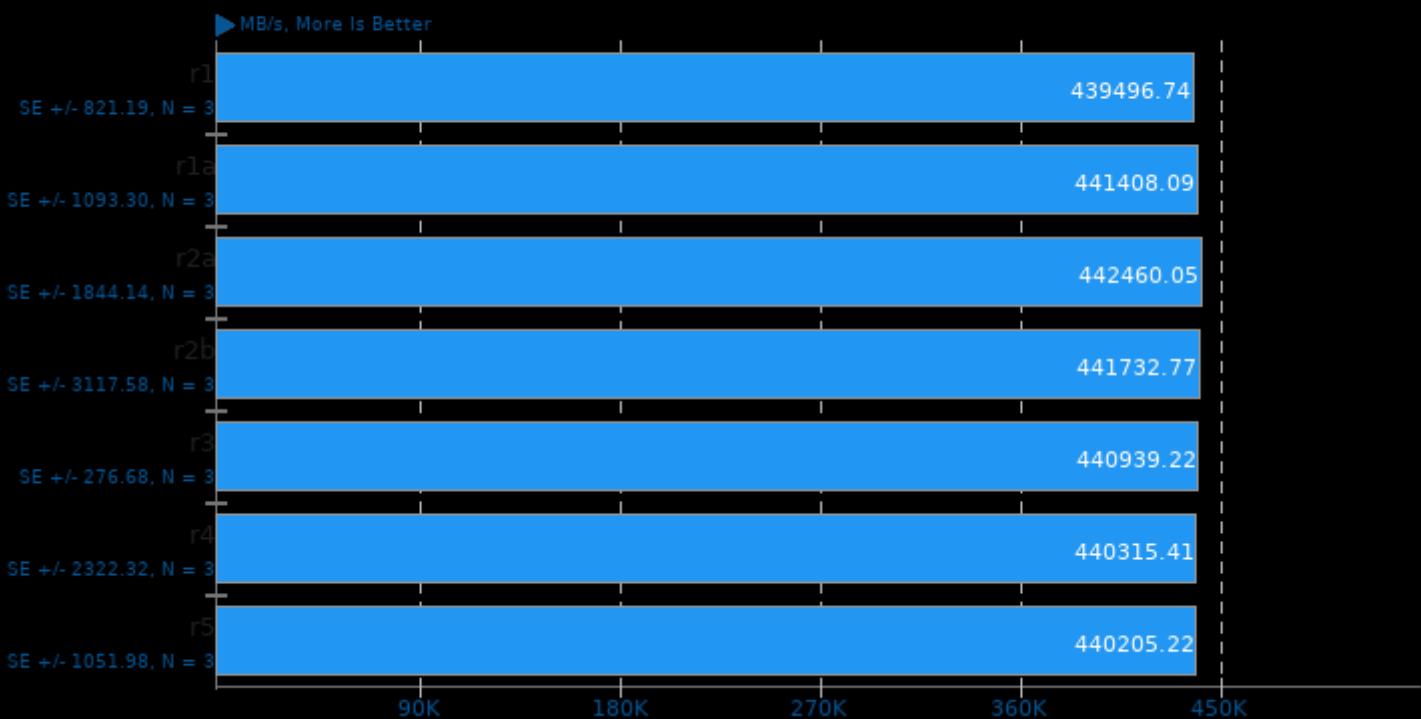
## Intel Memory Latency Checker

Test: Max Bandwidth - Stream-Triad Like



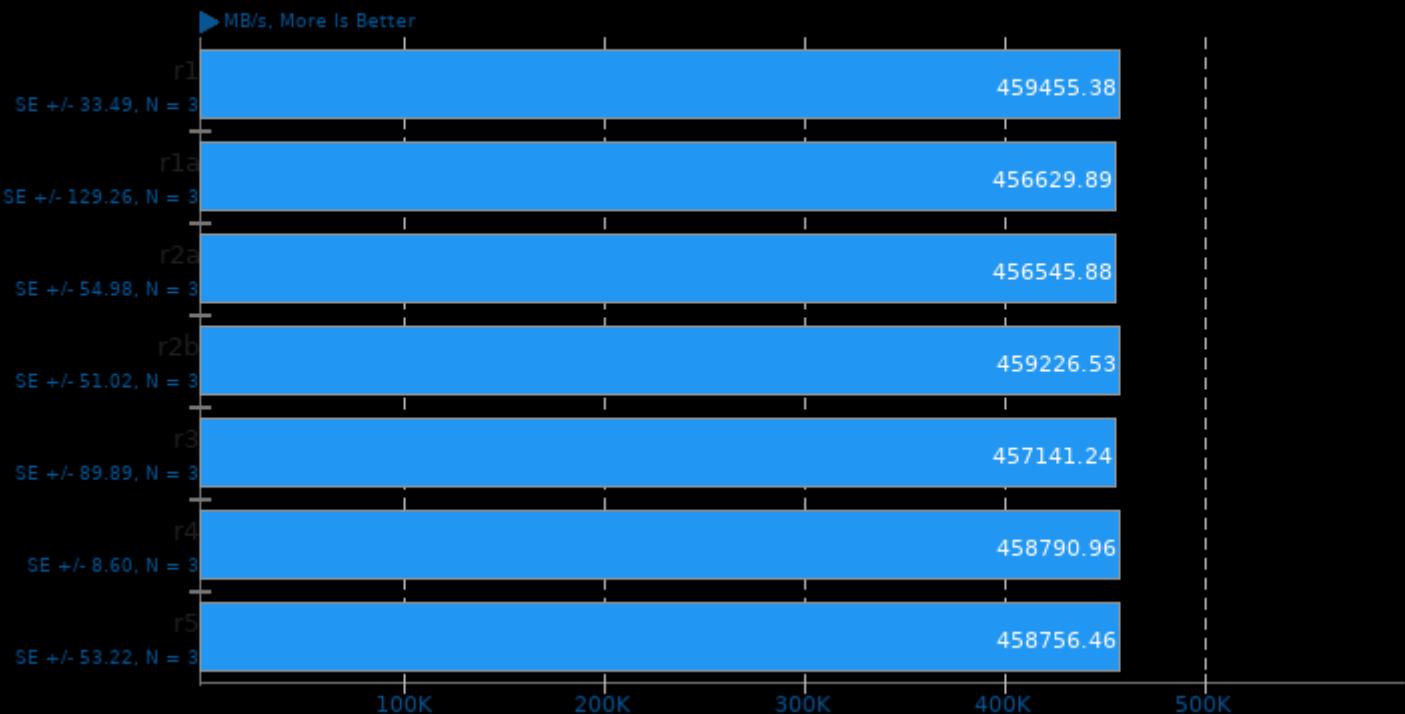
## Intel Memory Latency Checker

Test: Max Bandwidth - 1:1 Reads-Writes



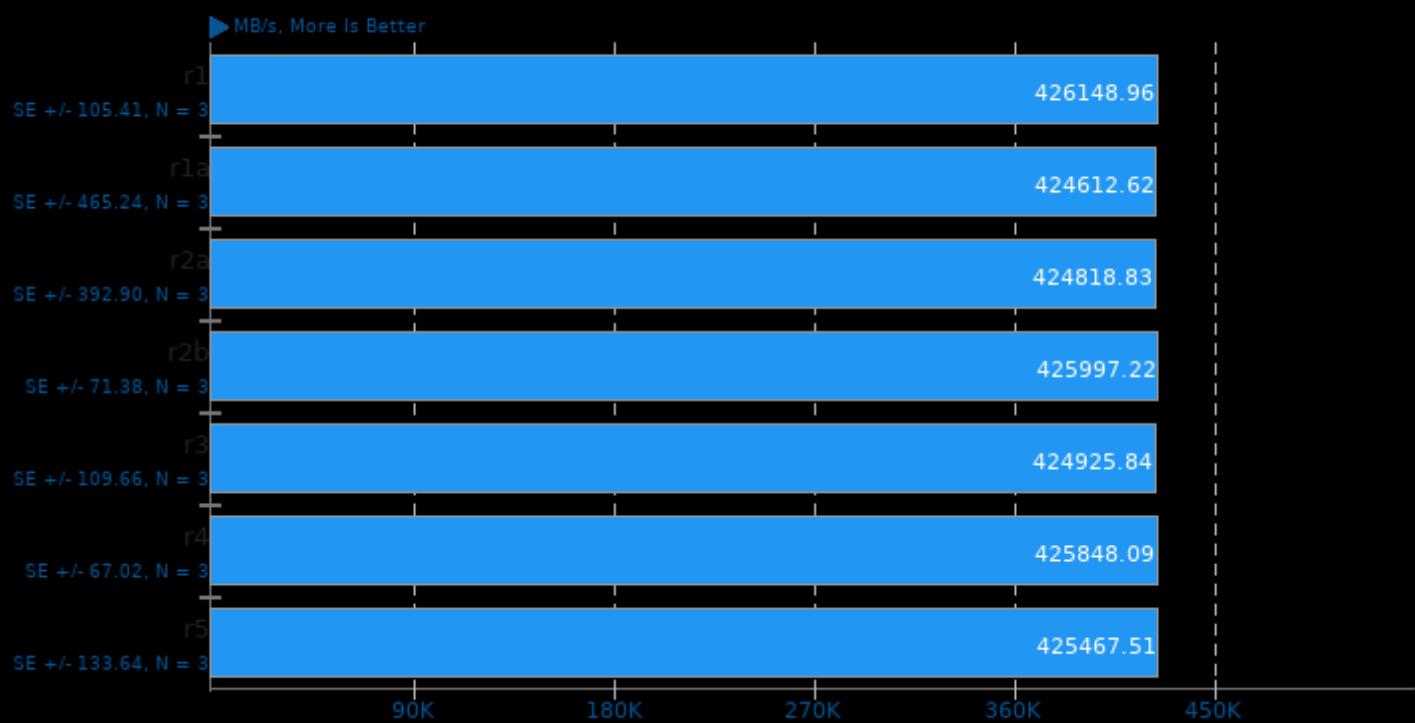
## Intel Memory Latency Checker

Test: Max Bandwidth - 2:1 Reads-Writes



## Intel Memory Latency Checker

Test: Max Bandwidth - 3:1 Reads-Writes



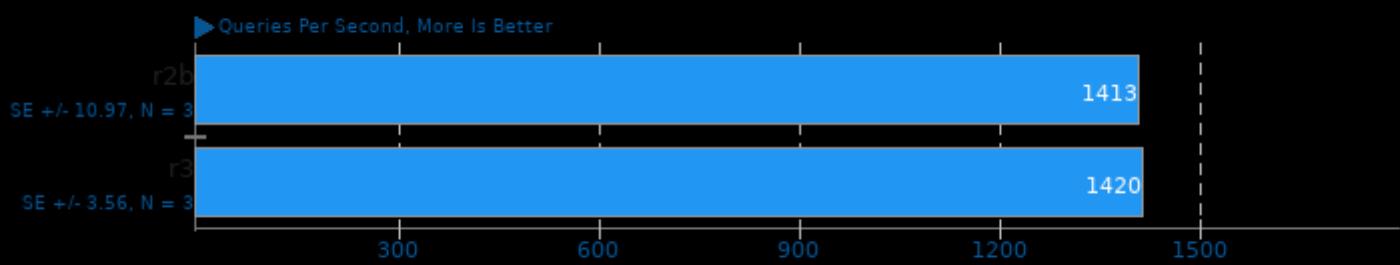
## Intel Memory Latency Checker

Test: Max Bandwidth - All Reads



## MariaDB 10.5.2

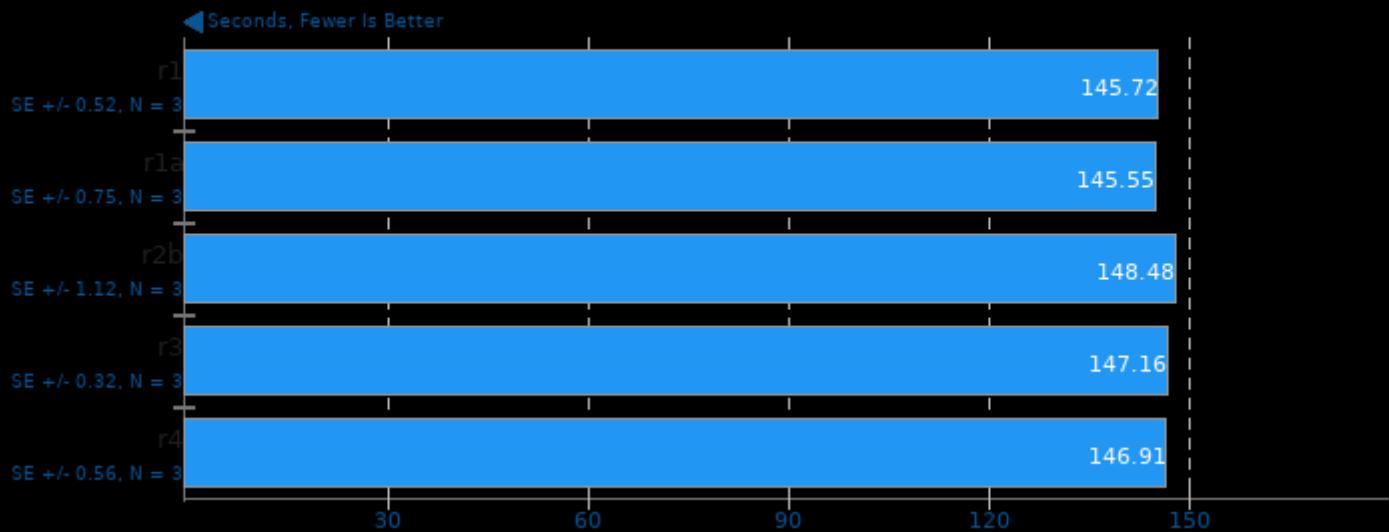
Clients: 8



1. (CXX) g++ options: -fPIC -pie -fstack-protector -O2 -shared -lpthread -lsnappy -ldl -lz -lrt

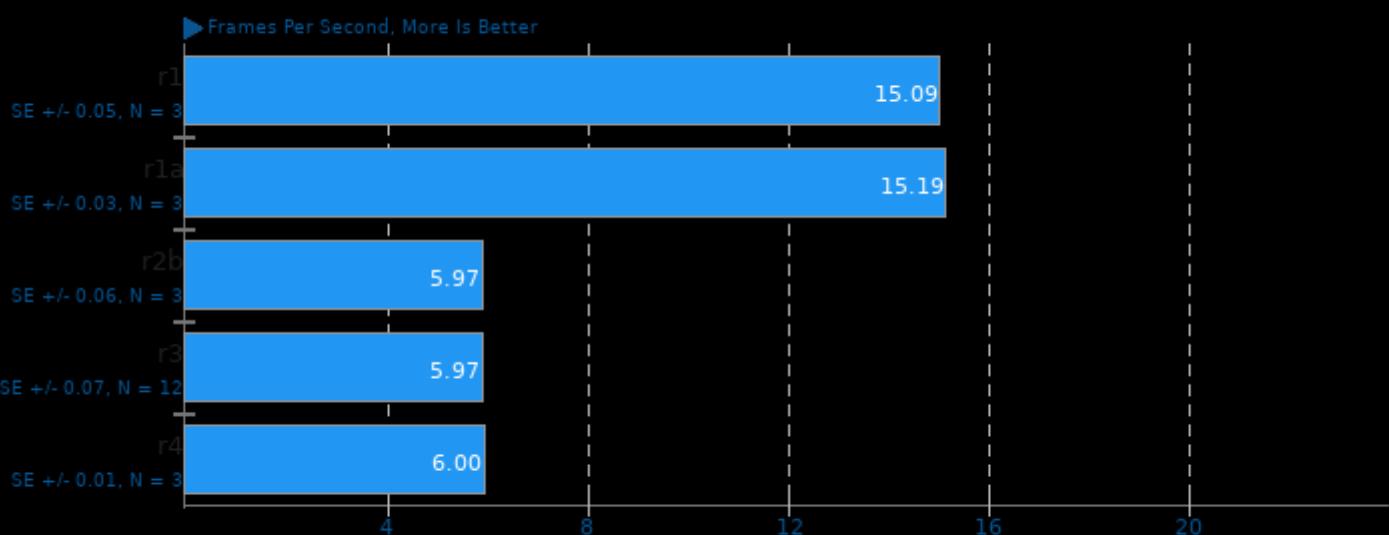
## Timed LLVM Compilation 12.0

Build System: Ninja



## AOM AV1 3.0

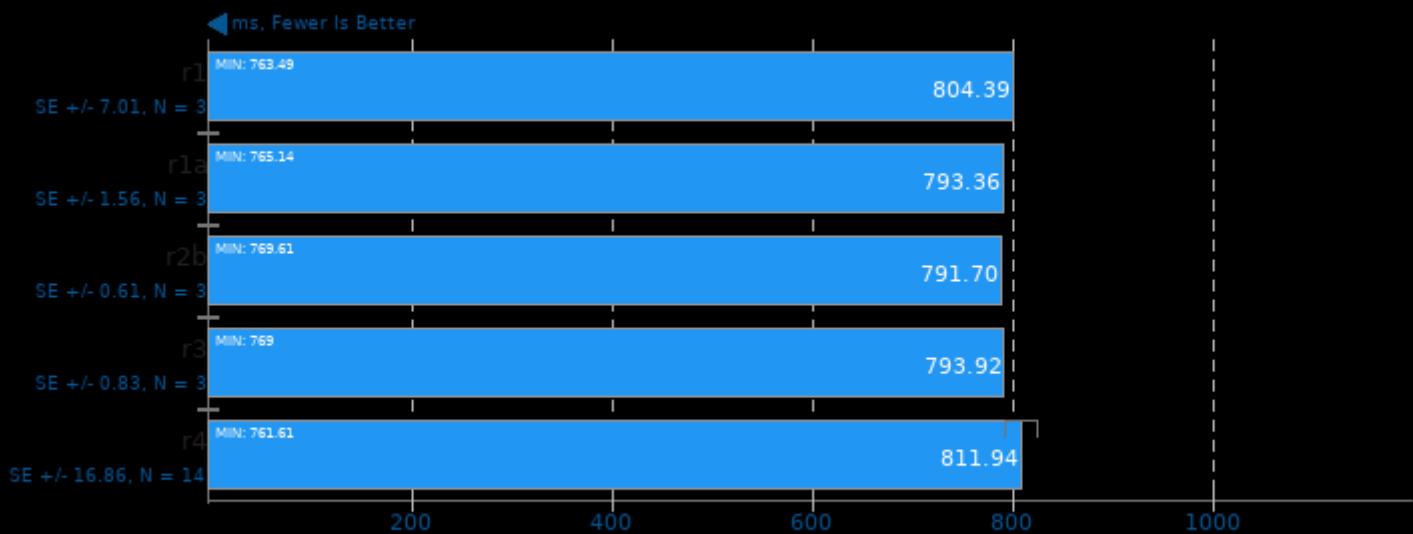
Encoder Mode: Speed 6 Realtime - Input: Bosphorus 4K



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

## oneDNN 2.1.2

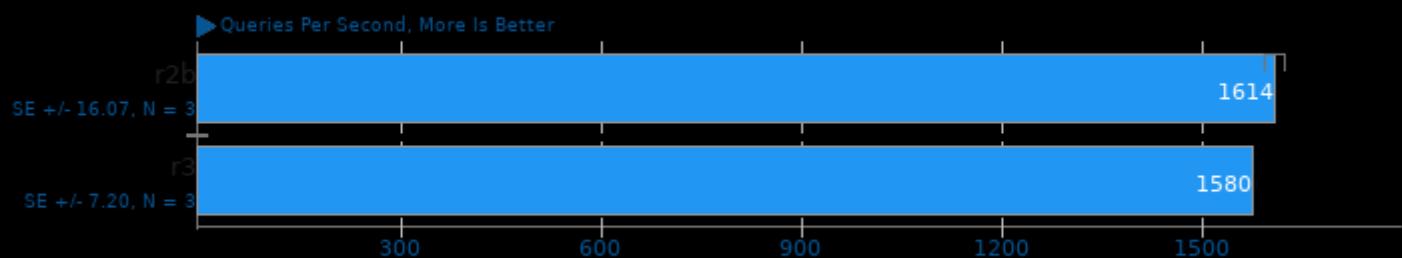
Harness: Recurrent Neural Network Training - Data Type: bf16bf16bf16 - Engine: CPU



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

## MariaDB 10.5.2

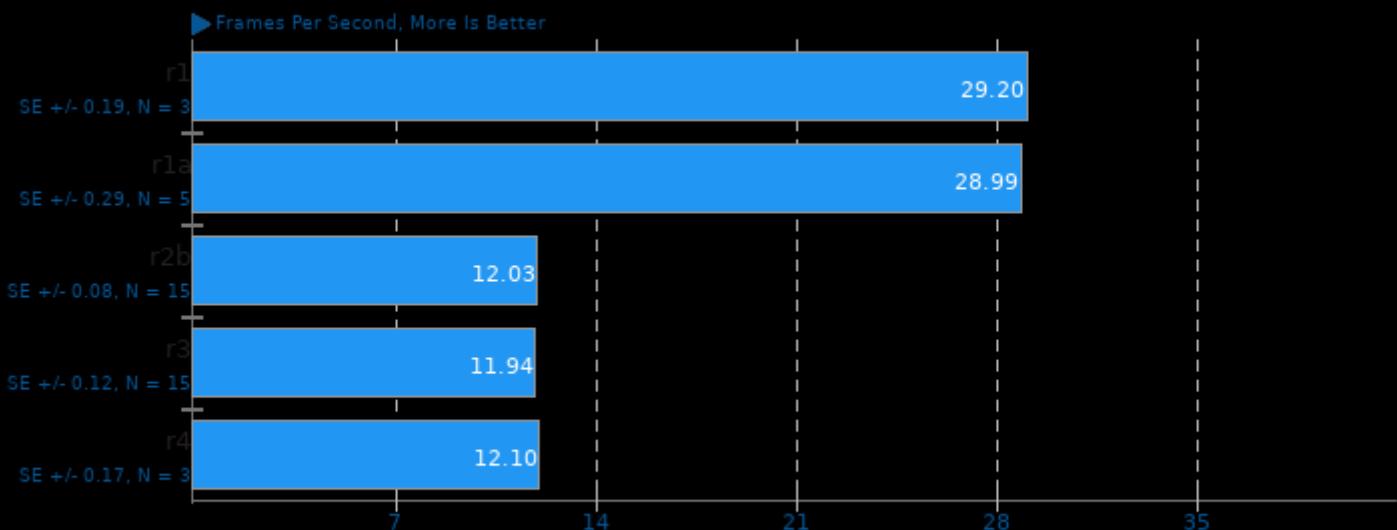
Clients: 4



1. (CXX) g++ options: -fPIC -pie -fstack-protector -O2 -shared -lpthread -lsnappy -ldl -lz -lrt

## AOM AV1 3.0

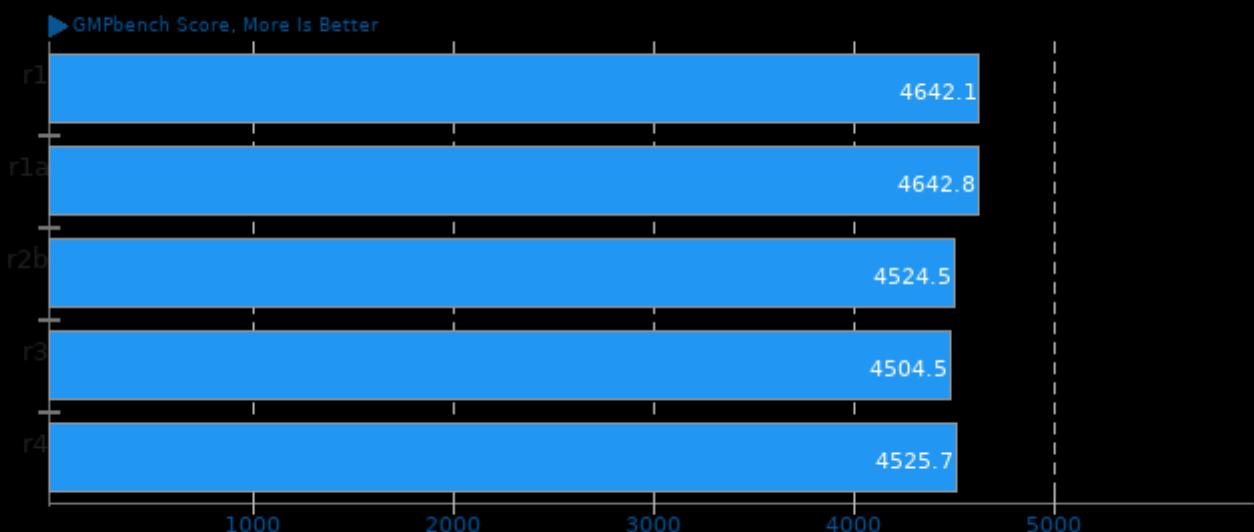
Encoder Mode: Speed 8 Realtime - Input: Bosphorus 4K



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

## GNU GMP GMPbench 6.2.1

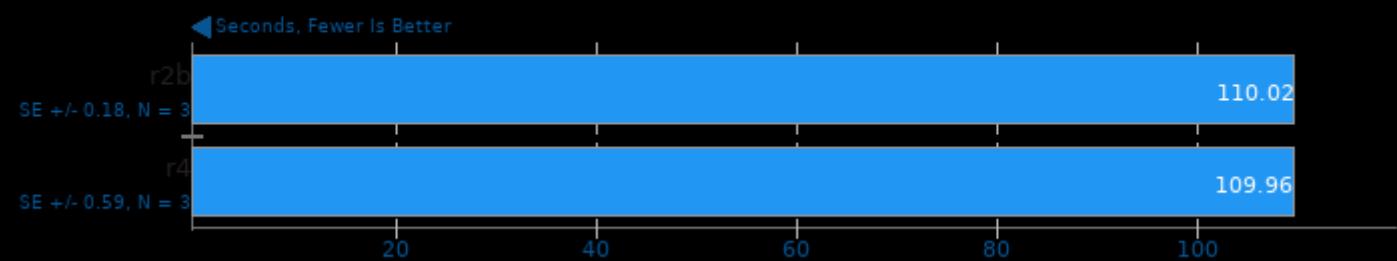
Total Time



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

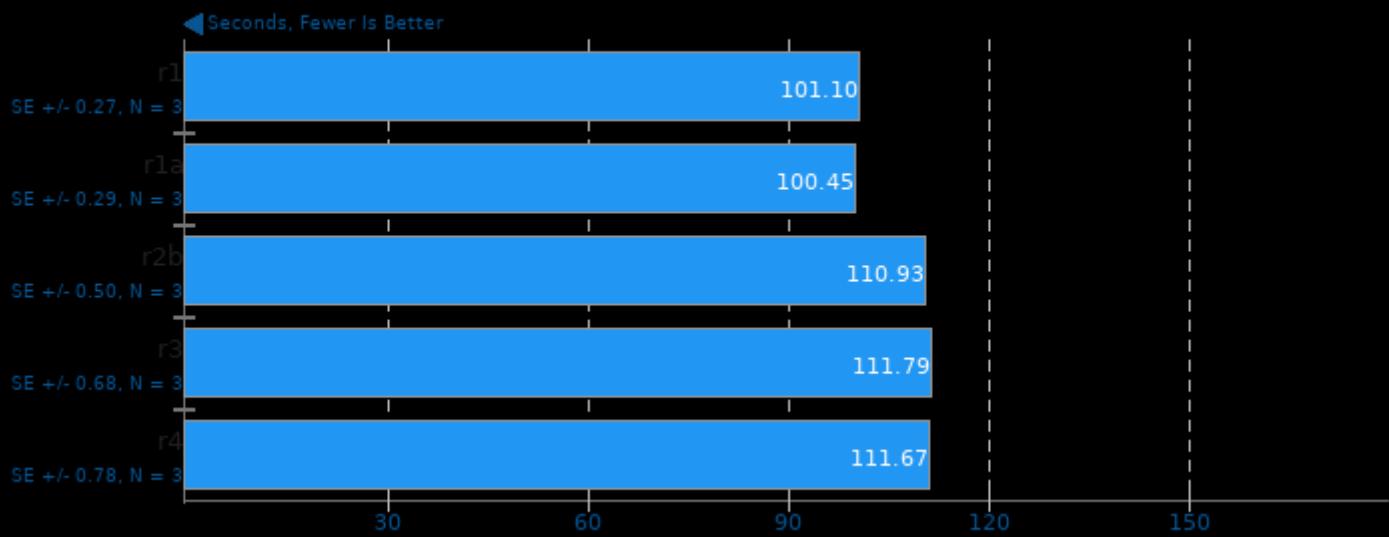
## Blender 2.92

Blend File: Barbershop - Compute: CPU-Only



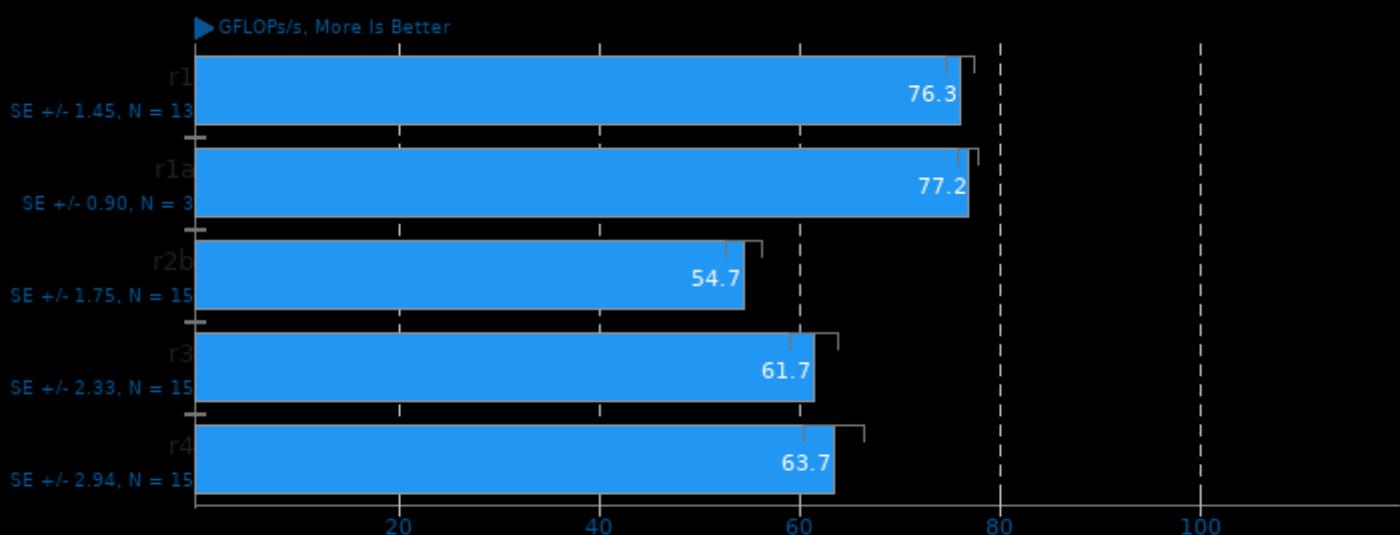
## Timed Node.js Compilation 15.11

Time To Compile



## ViennaCL 1.7.1

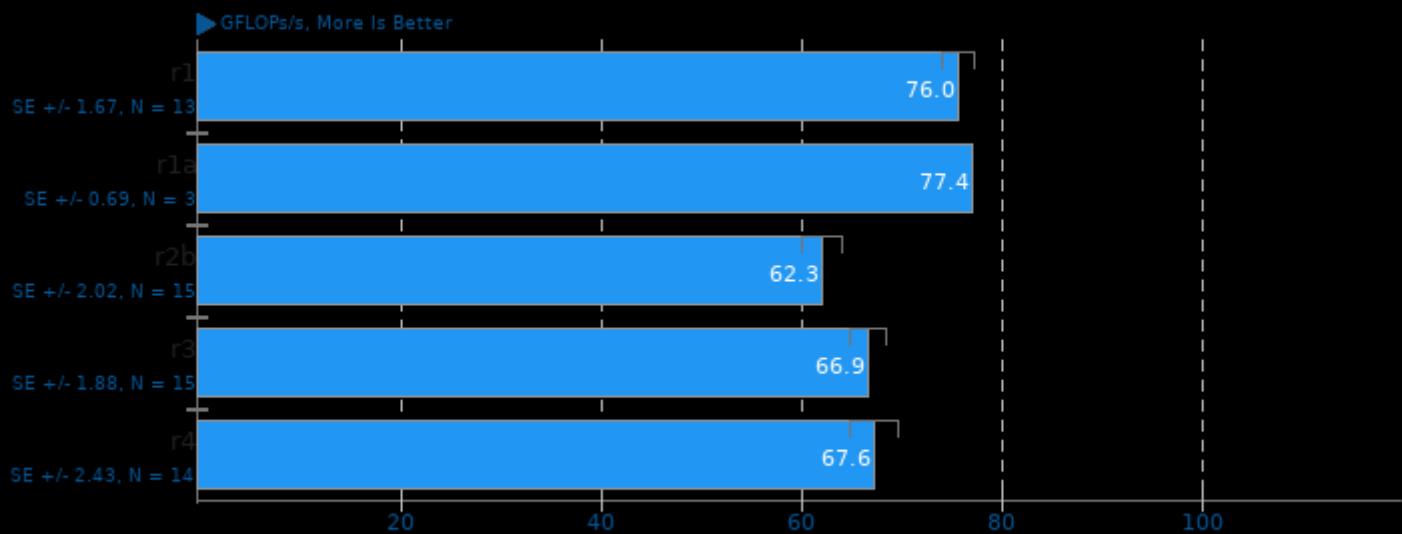
Test: CPU BLAS - dGEMM-TT



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

## ViennaCL 1.7.1

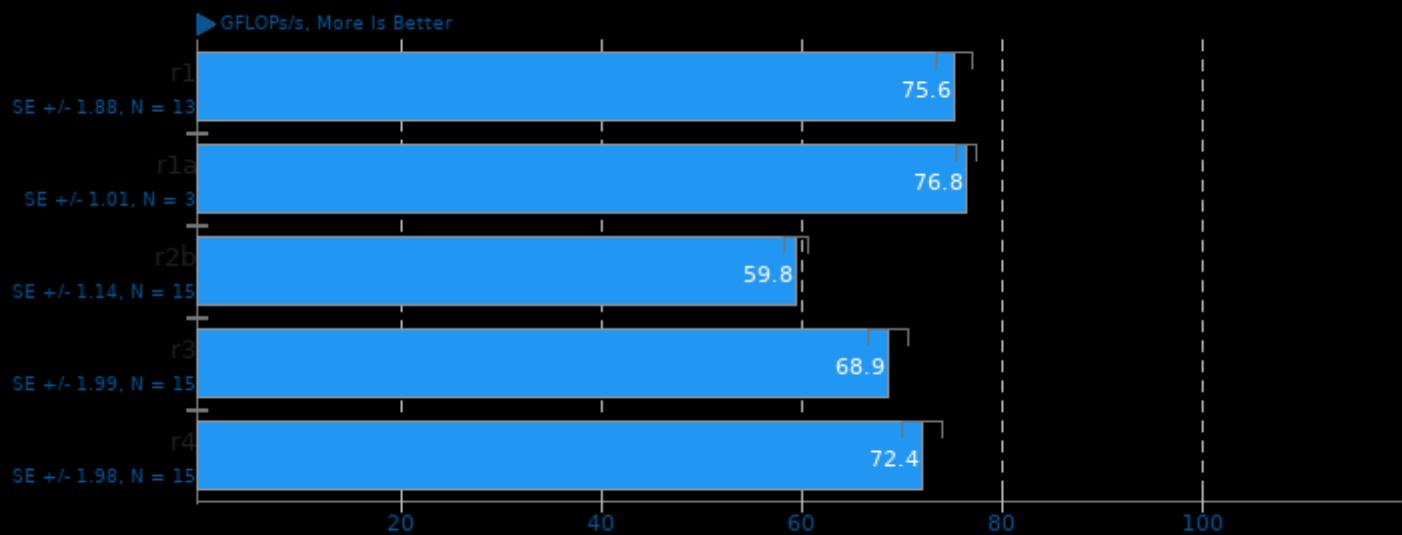
Test: CPU BLAS - dGEMM-TN



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

## ViennaCL 1.7.1

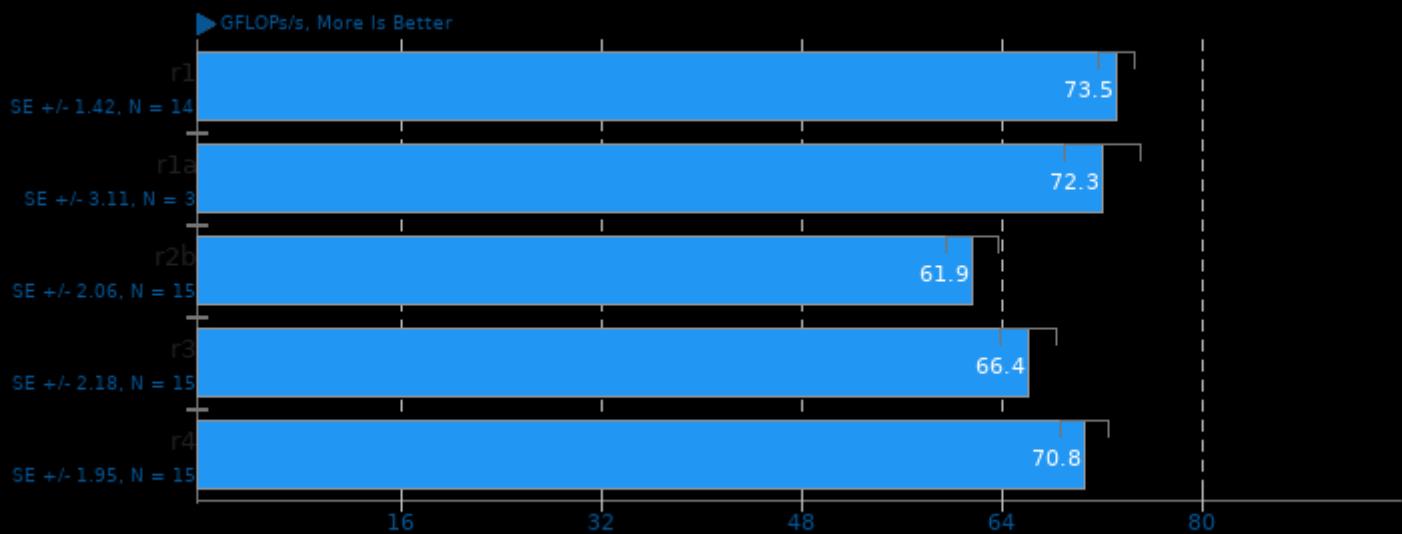
Test: CPU BLAS - dGEMM-NT



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

## ViennaCL 1.7.1

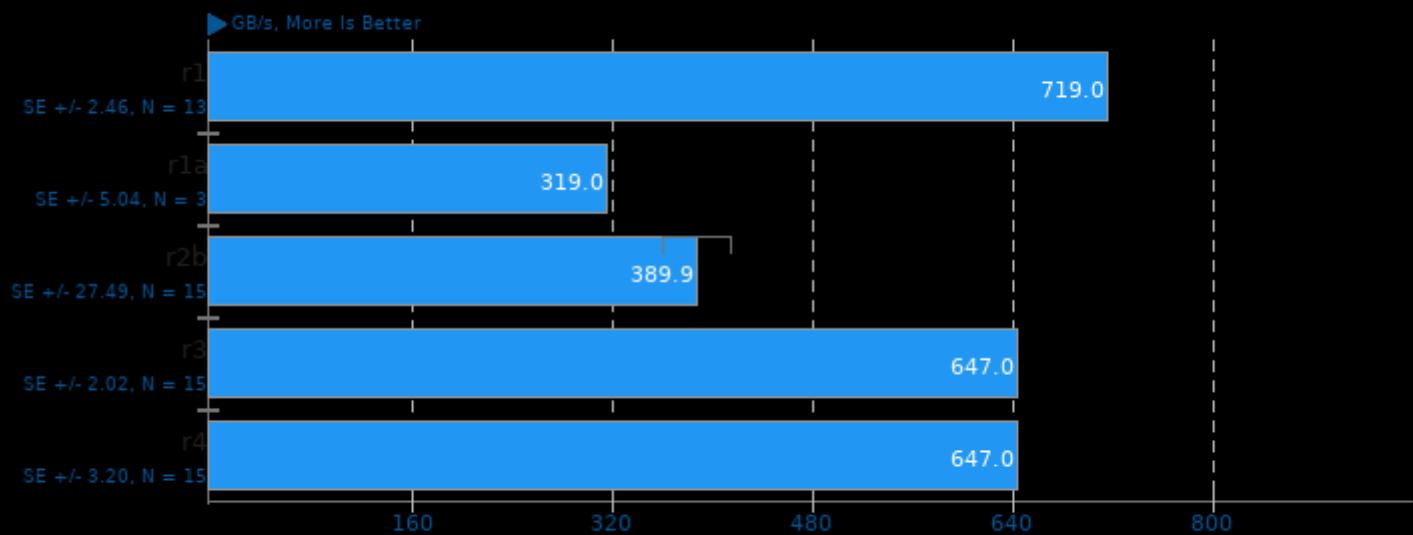
Test: CPU BLAS - dGEMM-NN



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

## ViennaCL 1.7.1

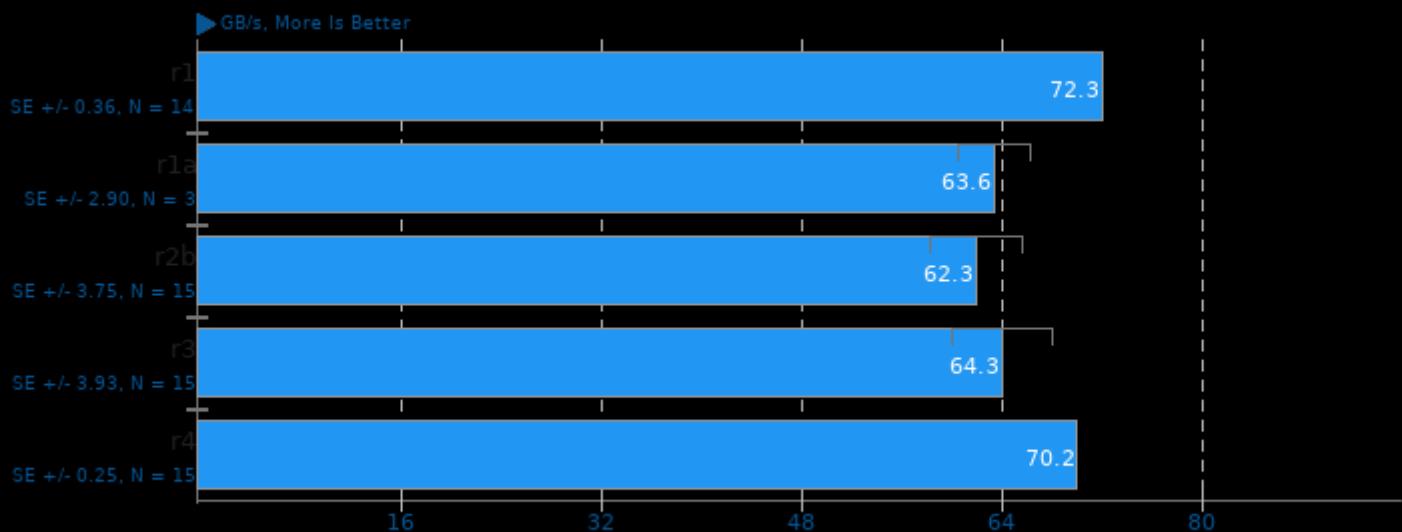
Test: CPU BLAS - dGEMV-T



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

## ViennaCL 1.7.1

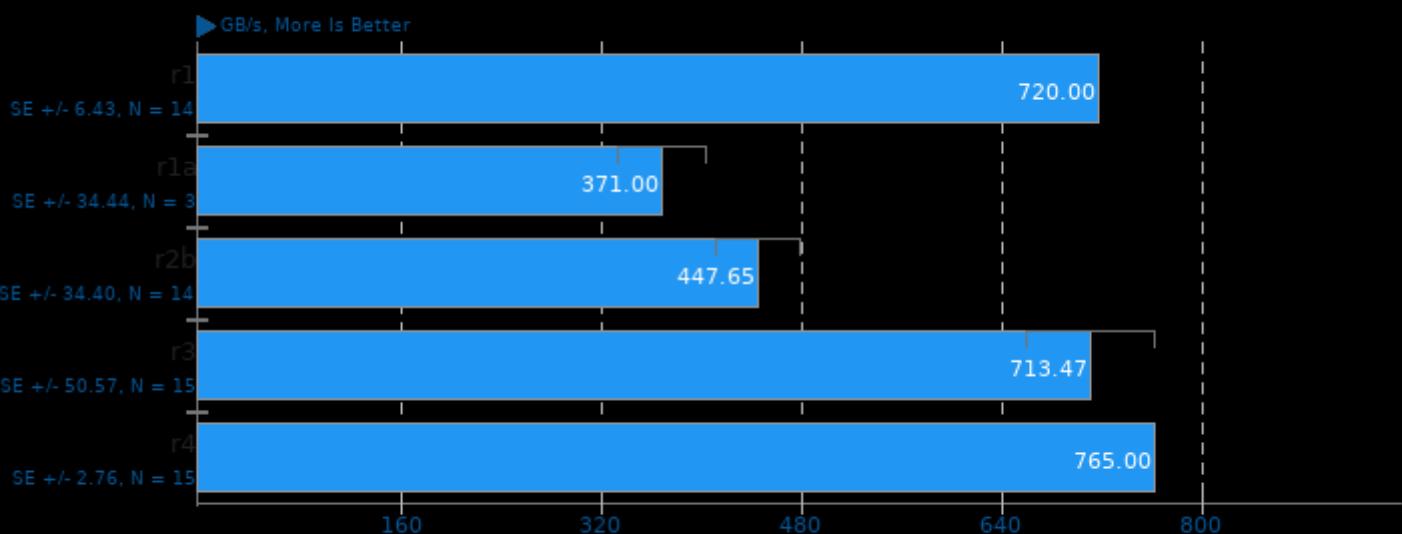
Test: CPU BLAS - dGEMV-N



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

## ViennaCL 1.7.1

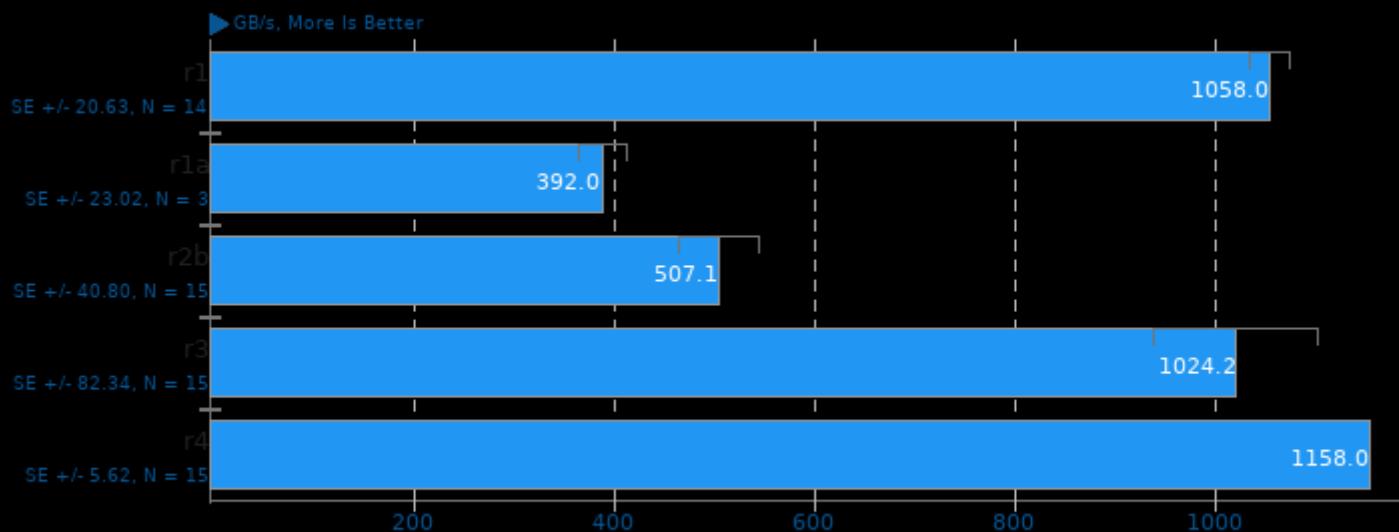
Test: CPU BLAS - dDOT



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

**ViennaCL 1.7.1**

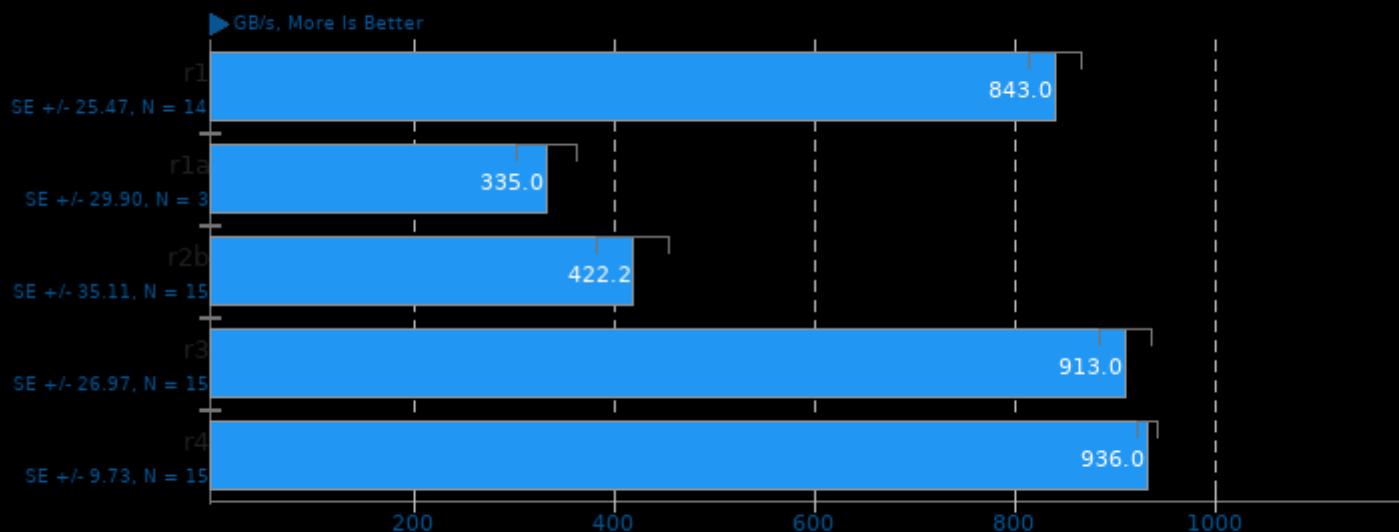
Test: CPU BLAS - dAXPY



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

**ViennaCL 1.7.1**

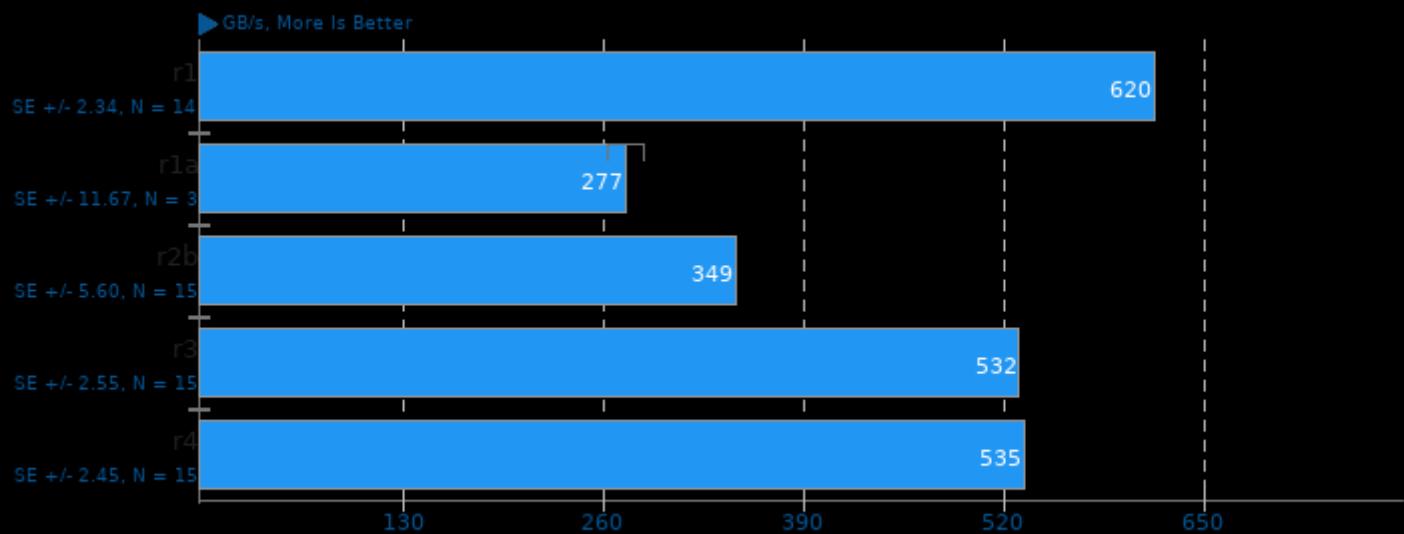
Test: CPU BLAS - dCOPY



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

## ViennaCL 1.7.1

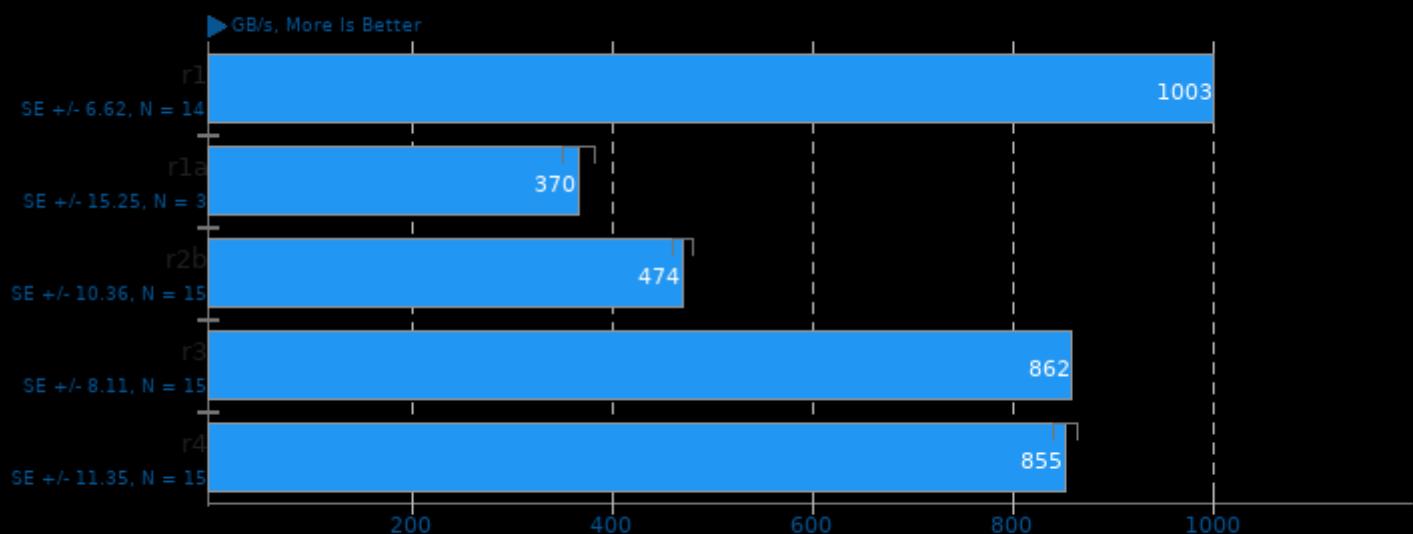
Test: CPU BLAS - sDOT



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

## ViennaCL 1.7.1

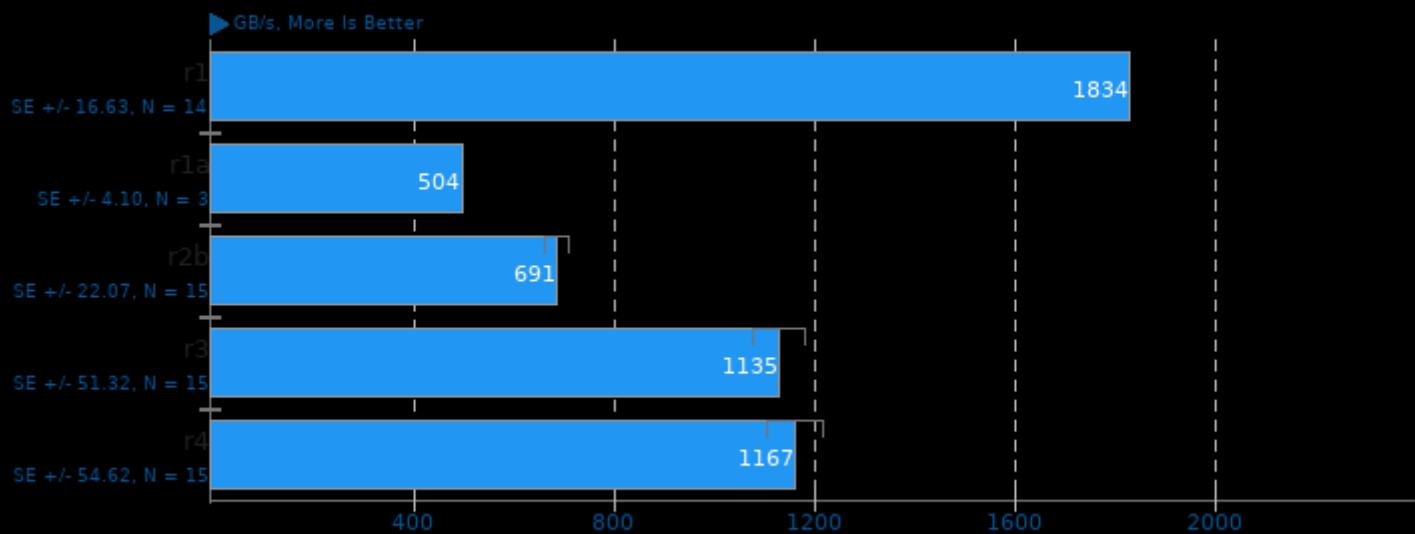
Test: CPU BLAS - sAXPY



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

## ViennaCL 1.7.1

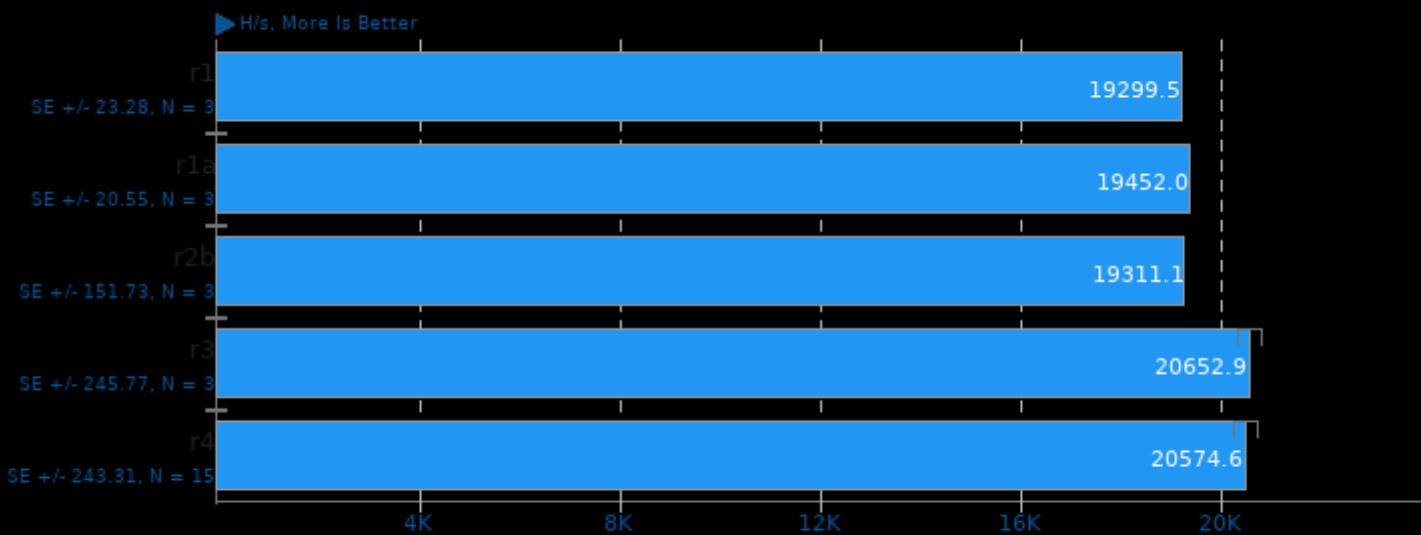
Test: CPU BLAS - sCOPY



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

## Xmrig 6.12.1

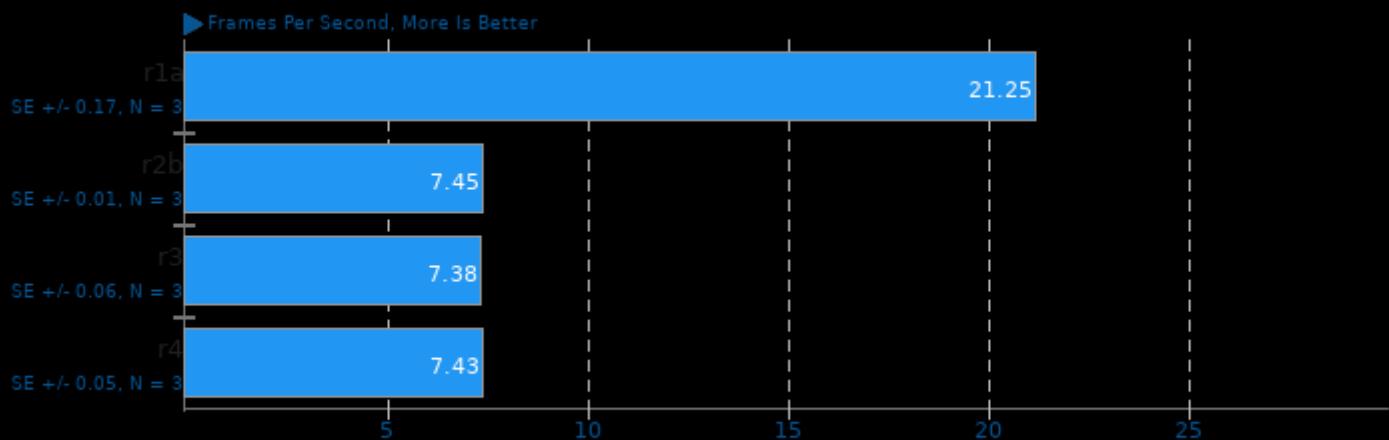
Variant: Monero - Hash Count: 1M



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

## AOM AV1 3.0

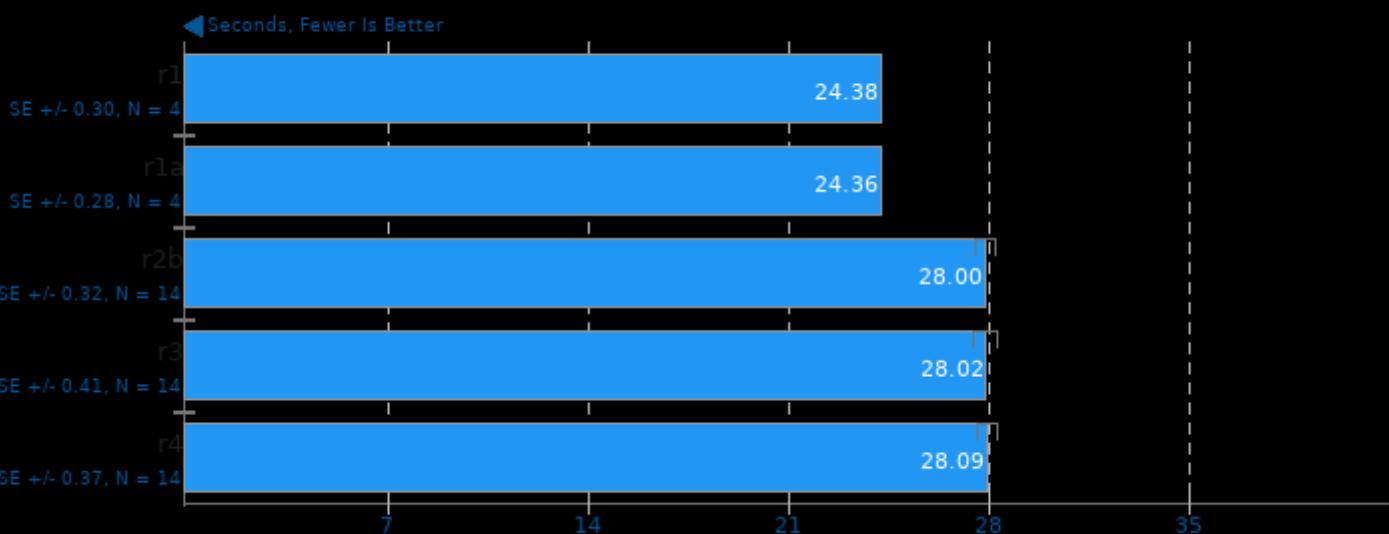
Encoder Mode: Speed 6 Two-Pass - Input: Bosphorus 1080p



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

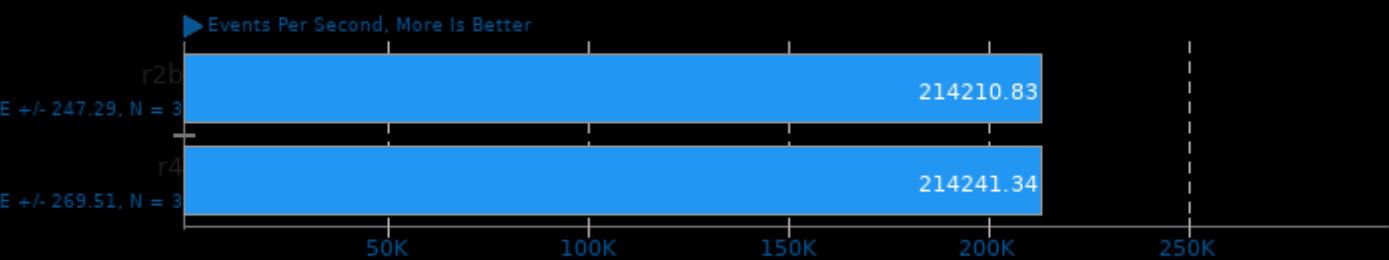
## Timed Linux Kernel Compilation 5.10.20

Time To Compile



## Sysbench 1.0.20

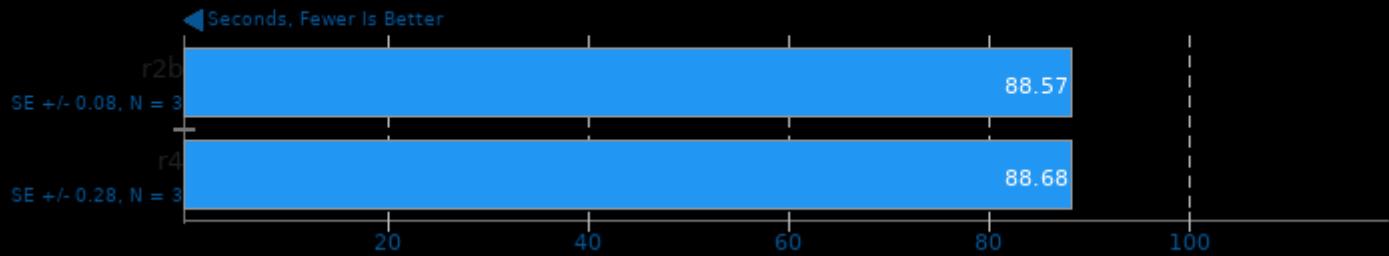
Test: CPU



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

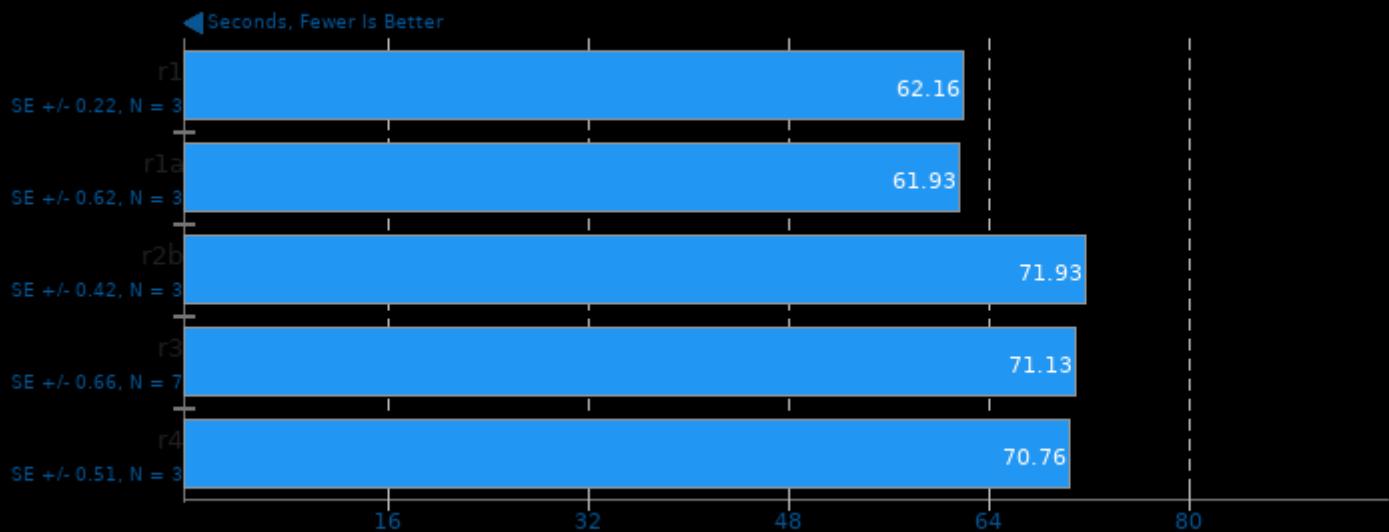
## Blender 2.92

Blend File: Pabellon Barcelona - Compute: CPU-Only



## Timed Wasmer Compilation 1.0.2

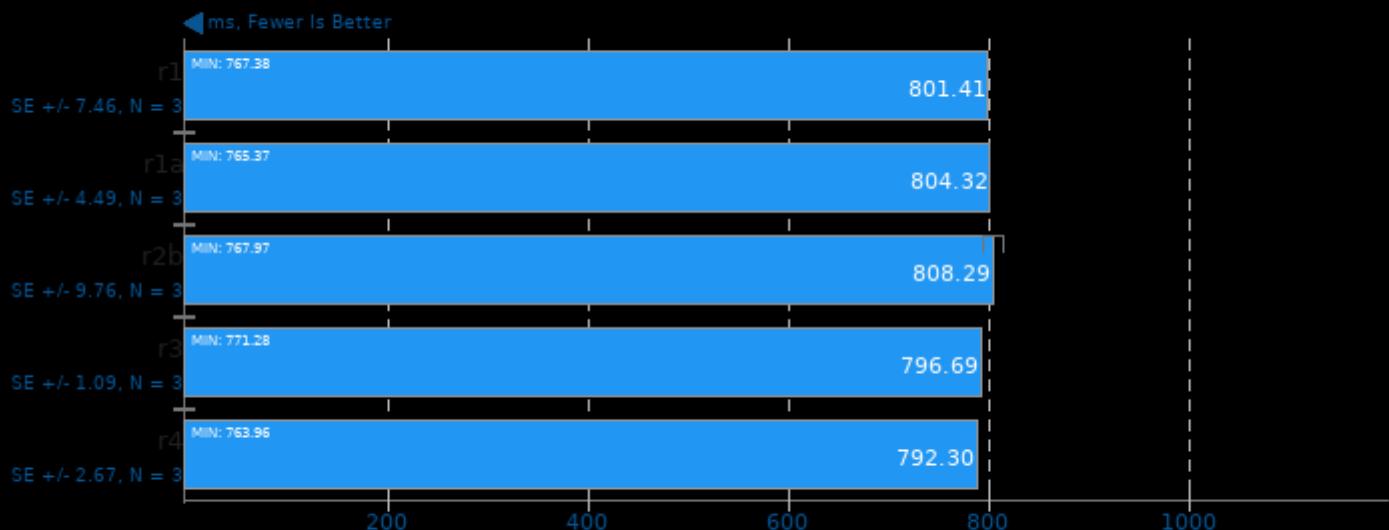
Time To Compile



1. (CC) gcc options: -m64 -pie -nodefaultlibs -ldl -lrt -lpthread -lgcc\_s -lc -lm -lutil

## oneDNN 2.1.2

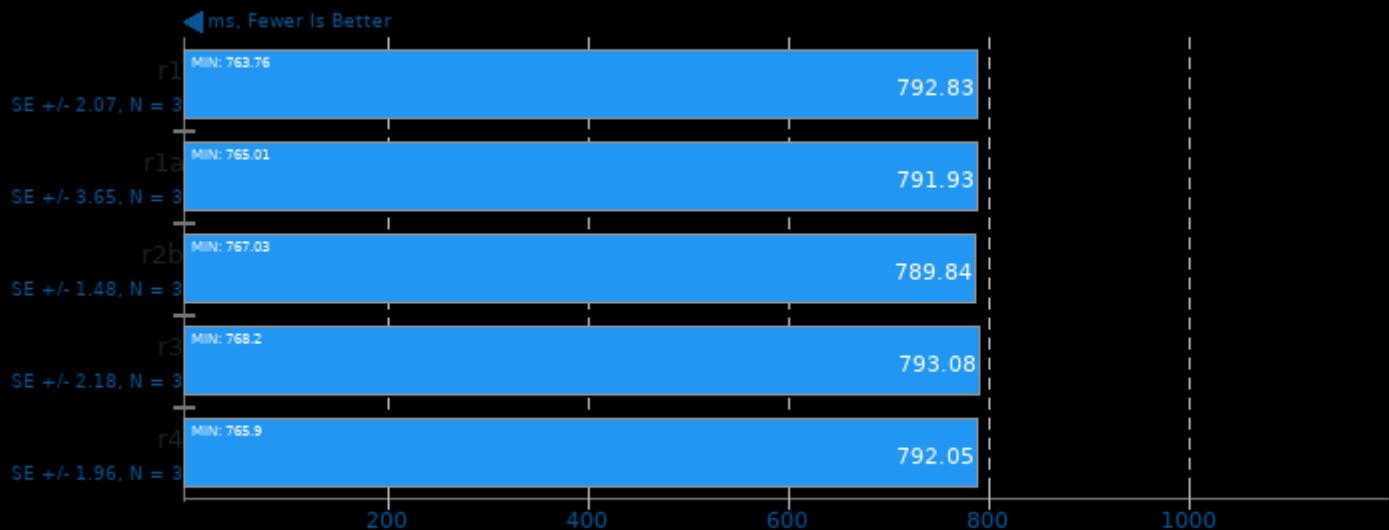
Harness: Recurrent Neural Network Training - Data Type: f32 - Engine: CPU



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

## oneDNN 2.1.2

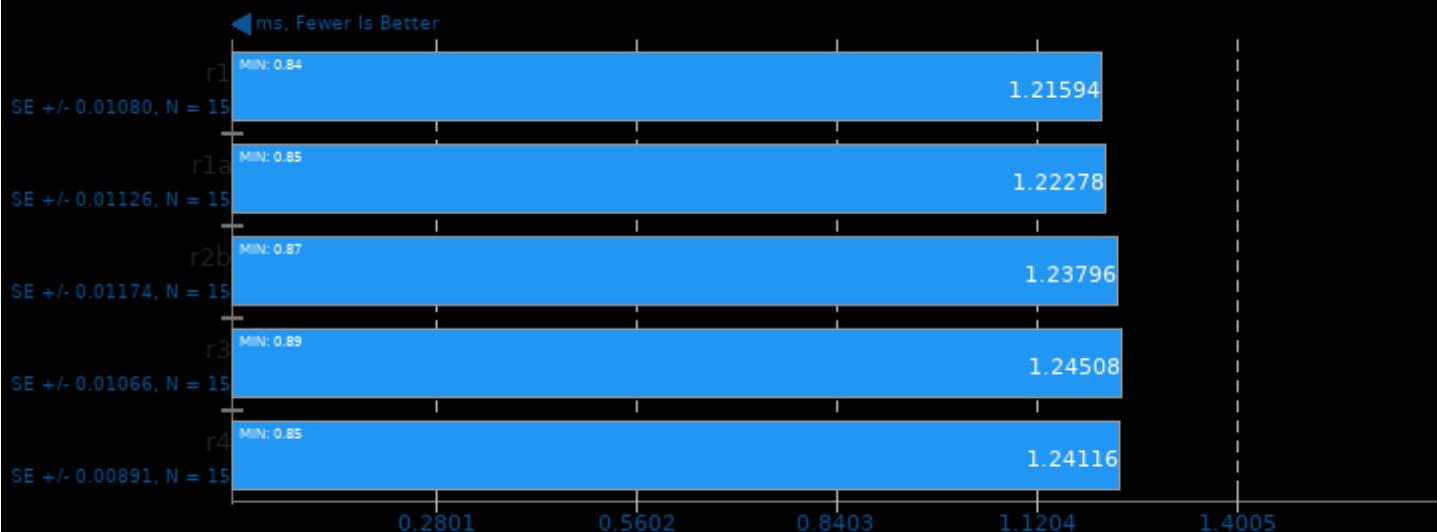
Harness: Recurrent Neural Network Training - Data Type: u8s8f32 - Engine: CPU



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

## oneDNN 2.1.2

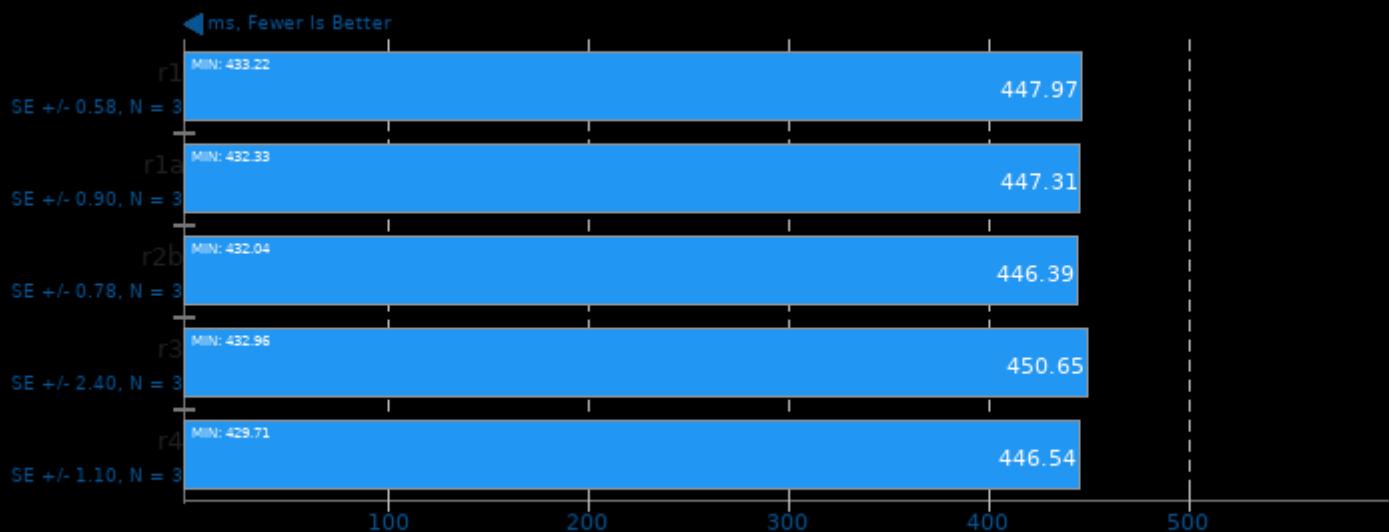
Harness: IP Shapes 1D - Data Type: u8s8f32 - Engine: CPU



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

## oneDNN 2.1.2

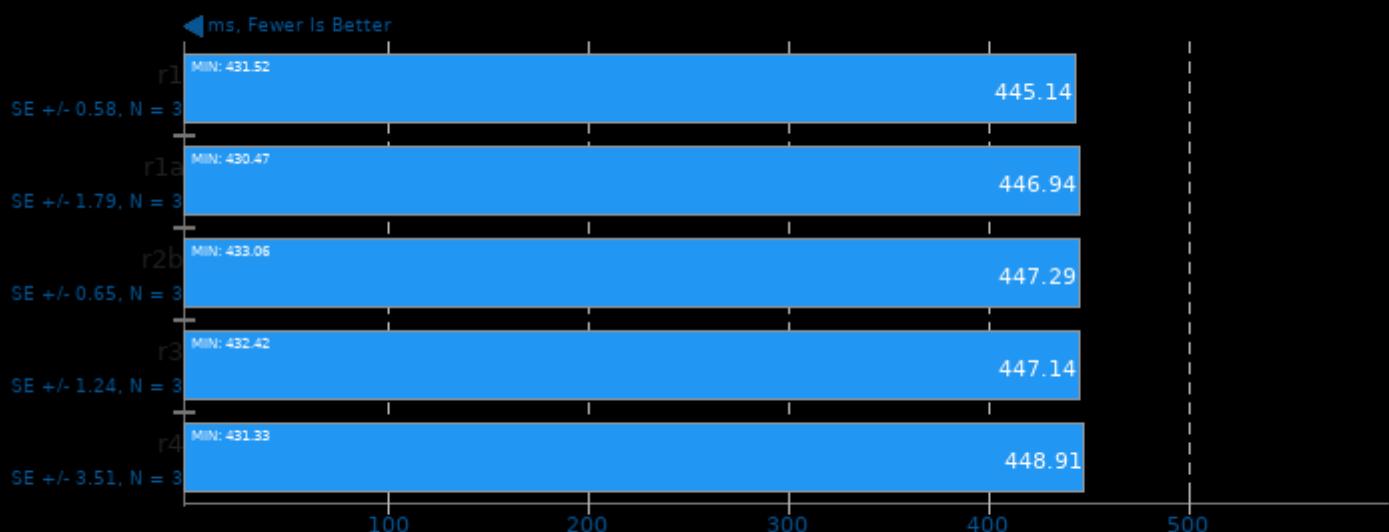
Harness: Recurrent Neural Network Inference - Data Type: f32 - Engine: CPU



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

## oneDNN 2.1.2

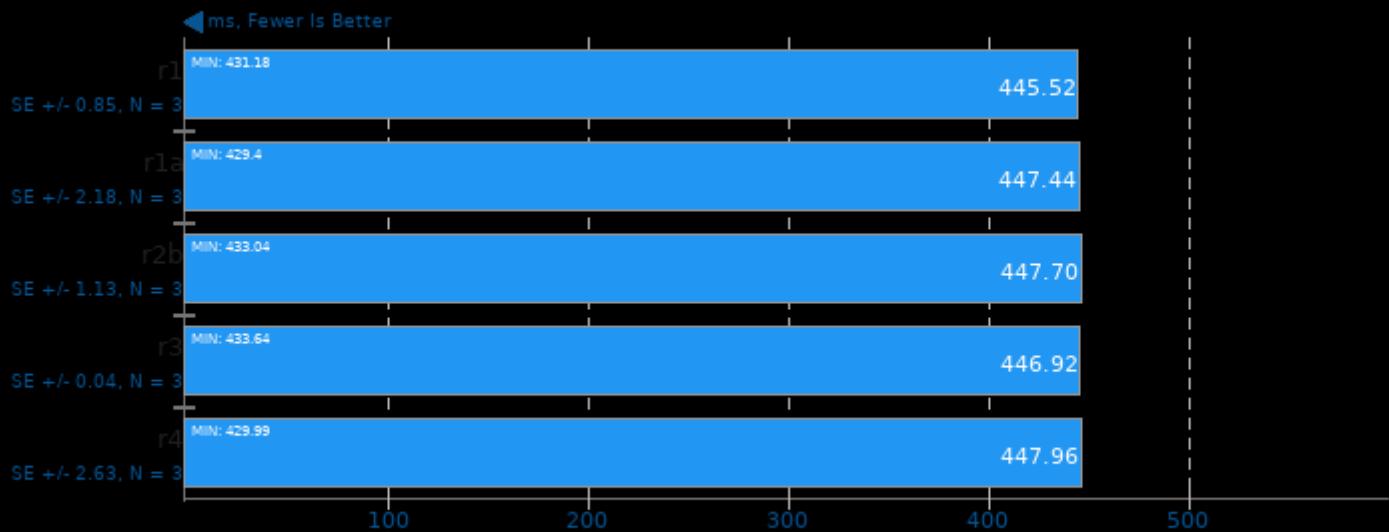
Harness: Recurrent Neural Network Inference - Data Type: bf16bf16bf16 - Engine: CPU



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

## oneDNN 2.1.2

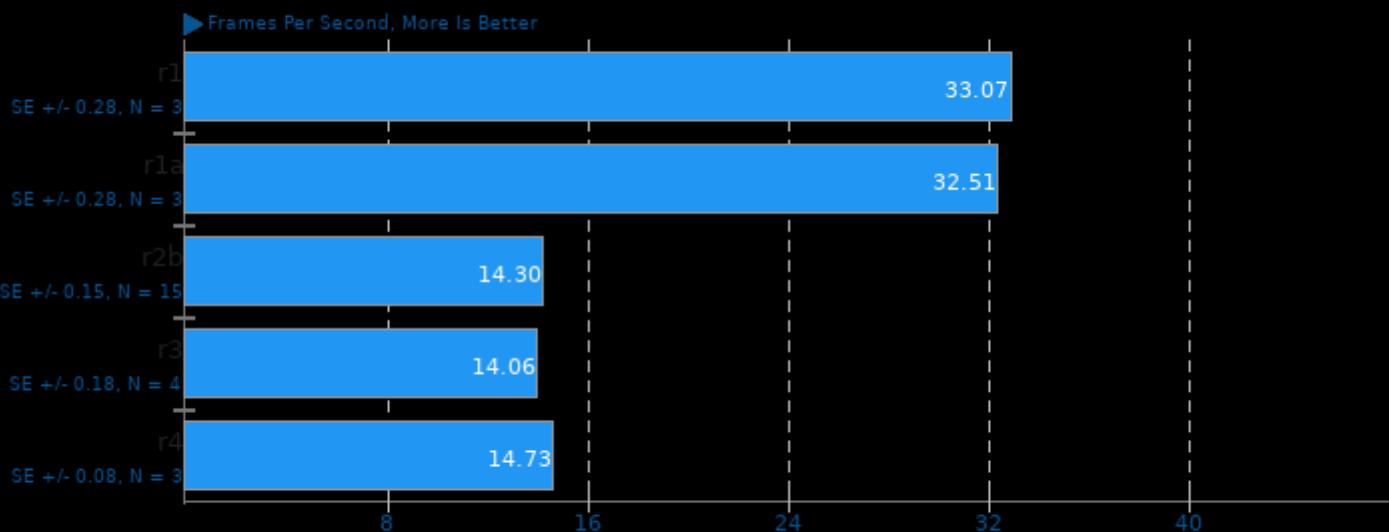
Harness: Recurrent Neural Network Inference - Data Type: u8s8f32 - Engine: CPU



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

## AOM AV1 3.0

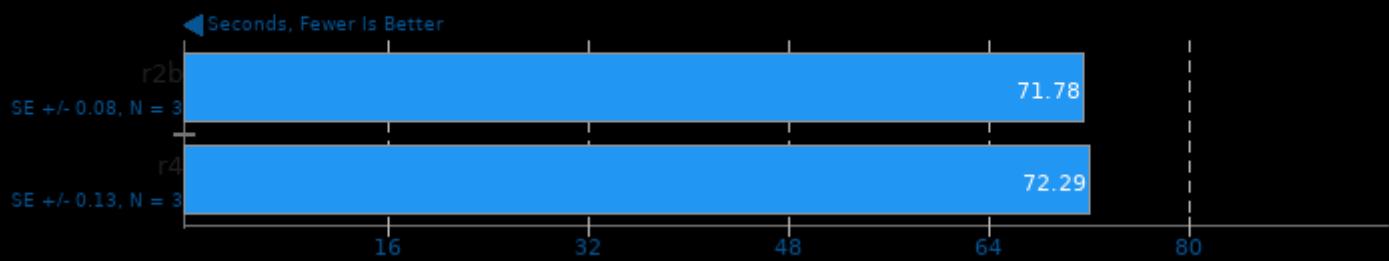
Encoder Mode: Speed 9 Realtime - Input: Bosphorus 4K



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

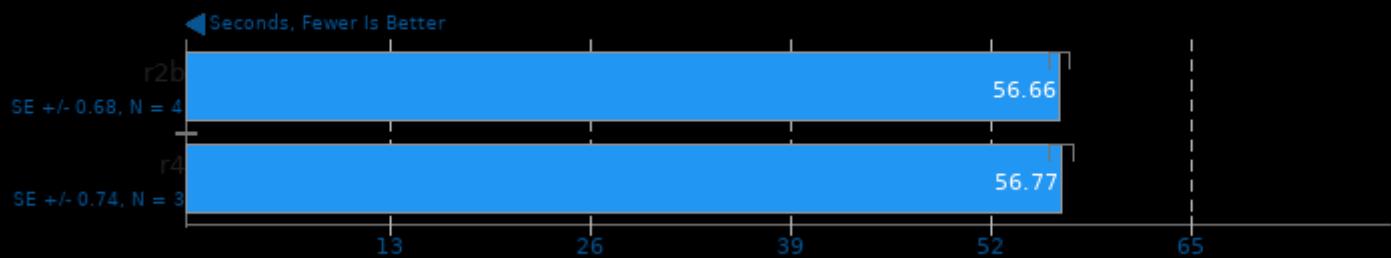
## Blender 2.92

Blend File: Classroom - Compute: CPU-Only



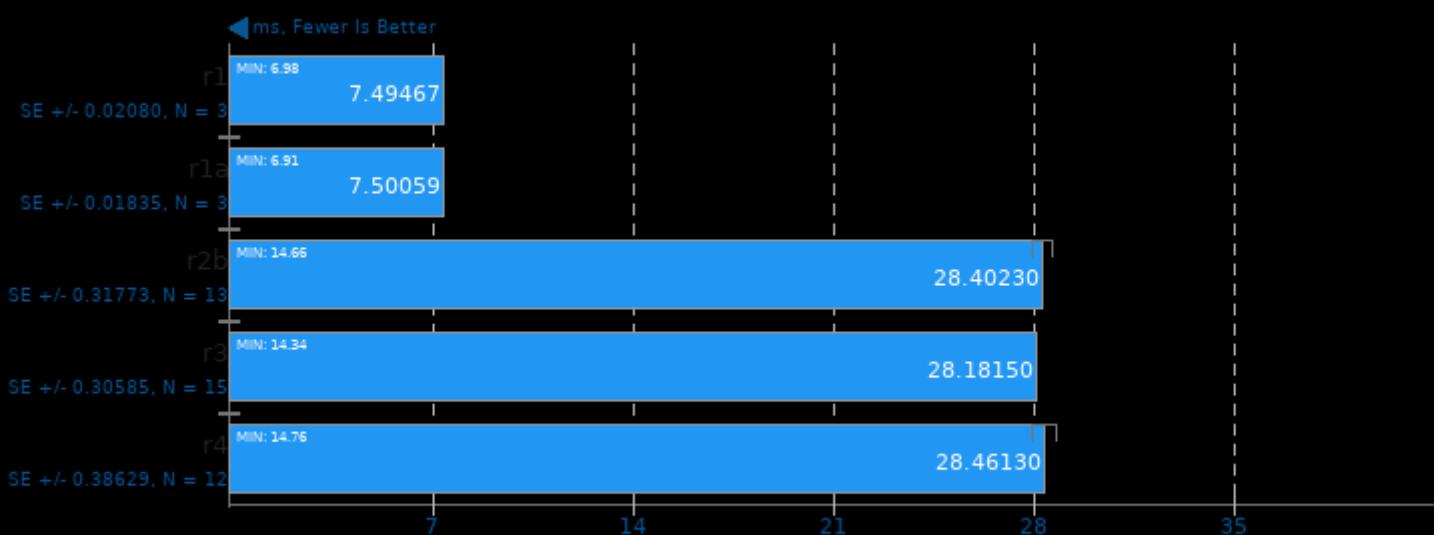
## KTX-Software toktx 4.0

Settings: UASTC 4 + Zstd Compression 19



## oneDNN 2.1.2

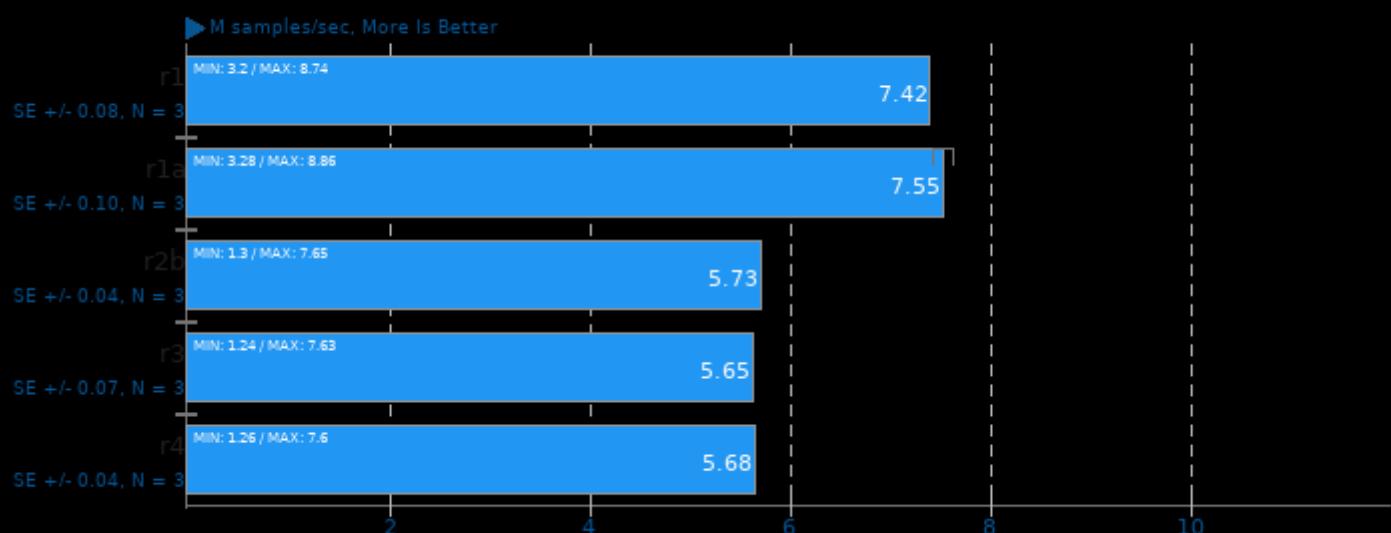
Harness: Deconvolution Batch shapes\_1d - Data Type: f32 - Engine: CPU



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

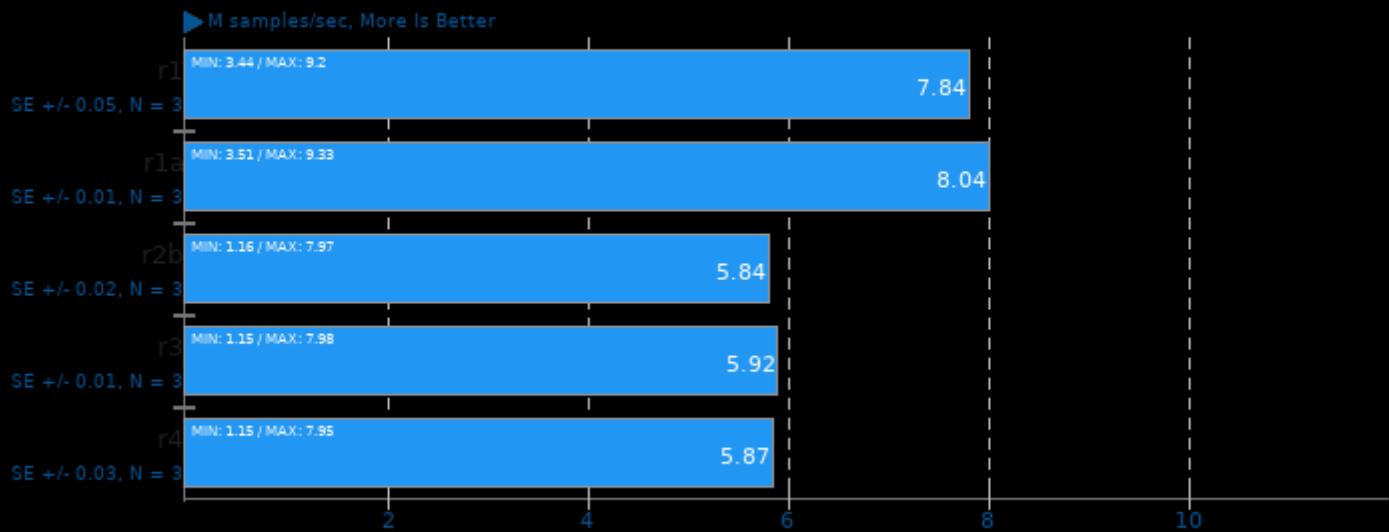
## LuxCoreRender 2.5

Scene: Danish Mood - Acceleration: CPU



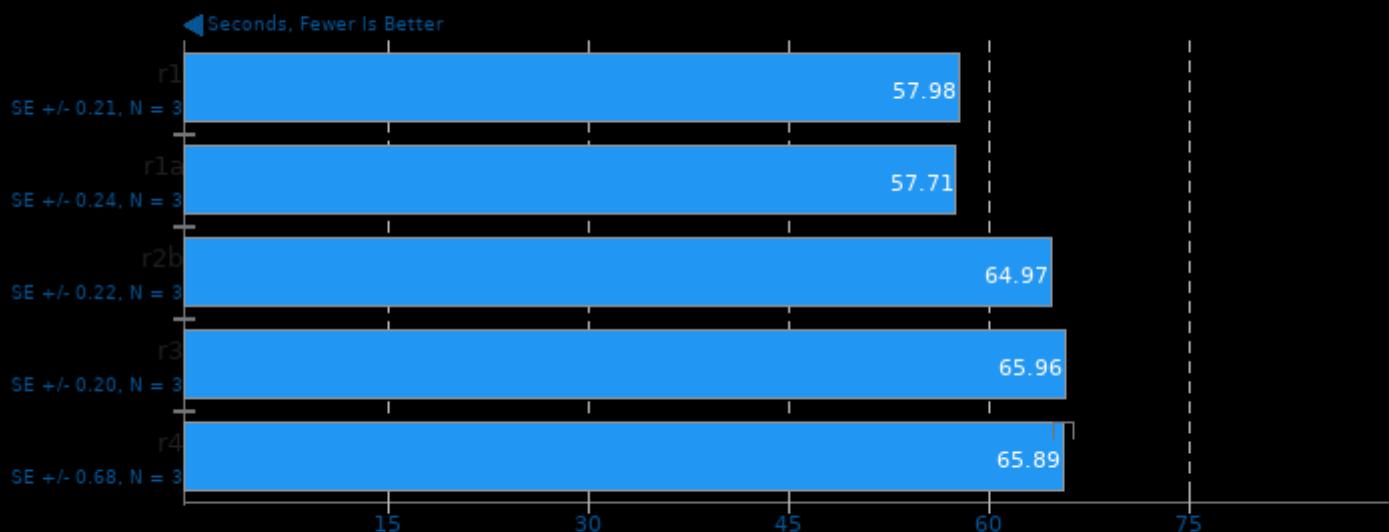
## LuxCoreRender 2.5

Scene: LuxCore Benchmark - Acceleration: CPU



## libavif avifenc 0.9.0

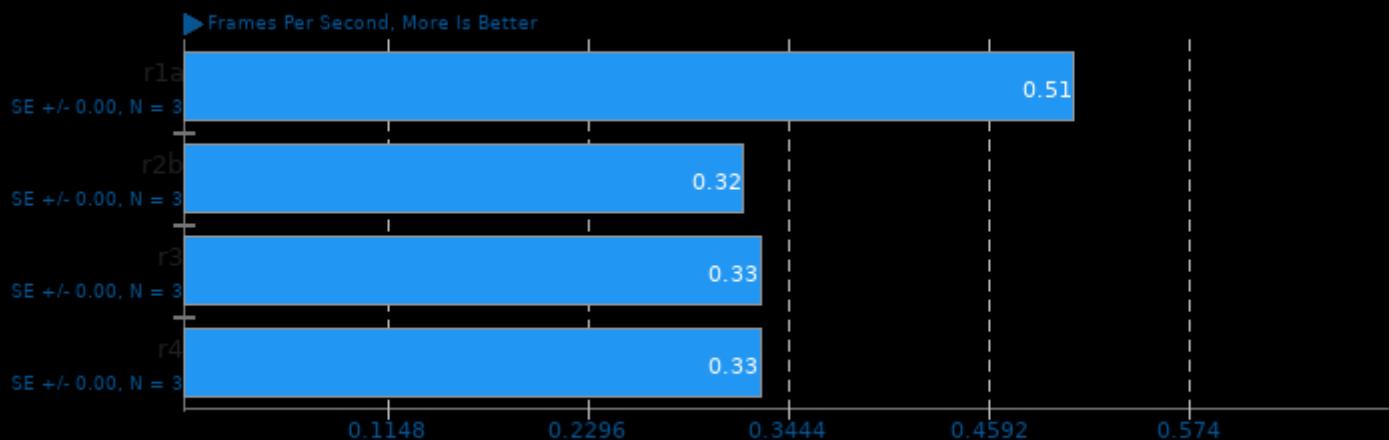
Encoder Speed: 0



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

## AOM AV1 3.0

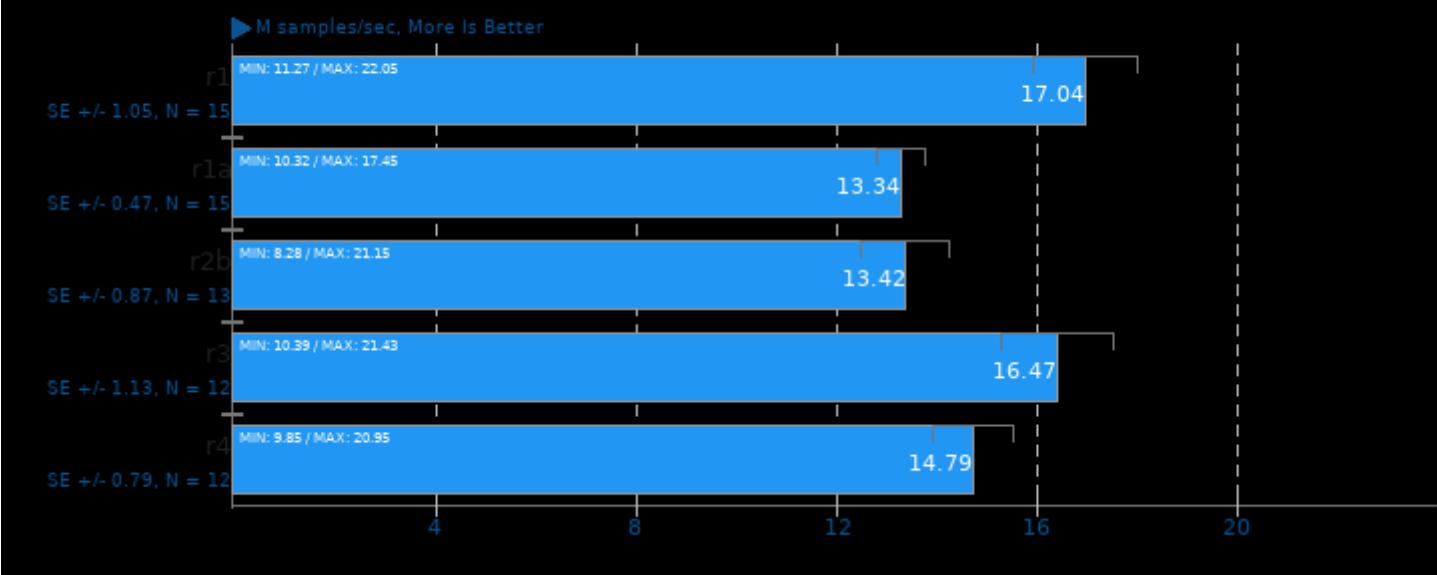
Encoder Mode: Speed 0 Two-Pass - Input: Bosphorus 1080p



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

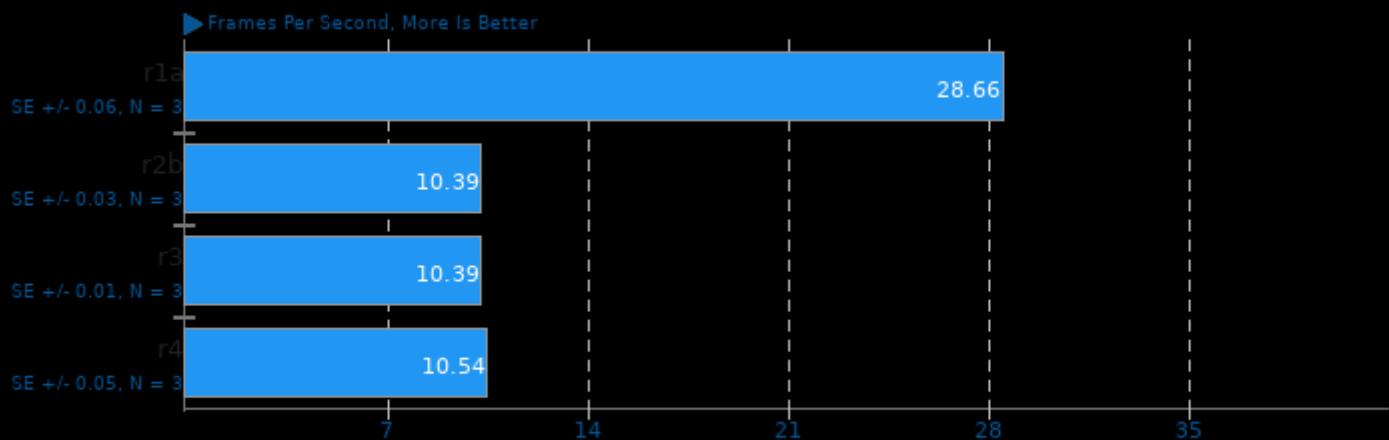
## LuxCoreRender 2.5

Scene: Rainbow Colors and Prism - Acceleration: CPU



## AOM AV1 3.0

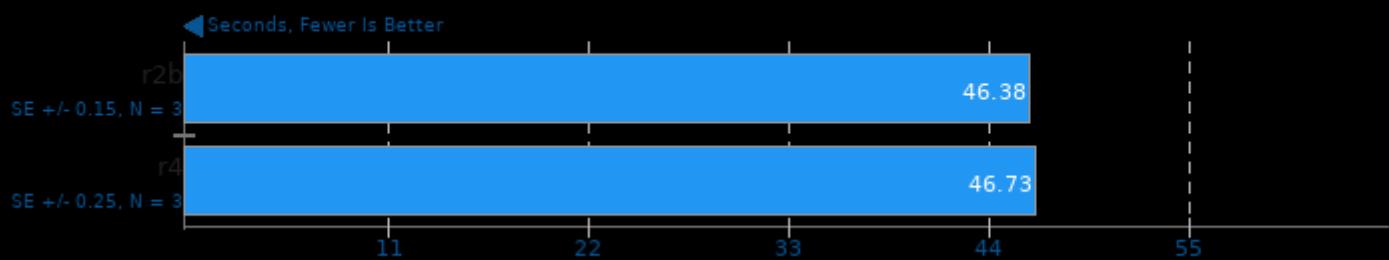
Encoder Mode: Speed 6 Realtime - Input: Bosphorus 1080p



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

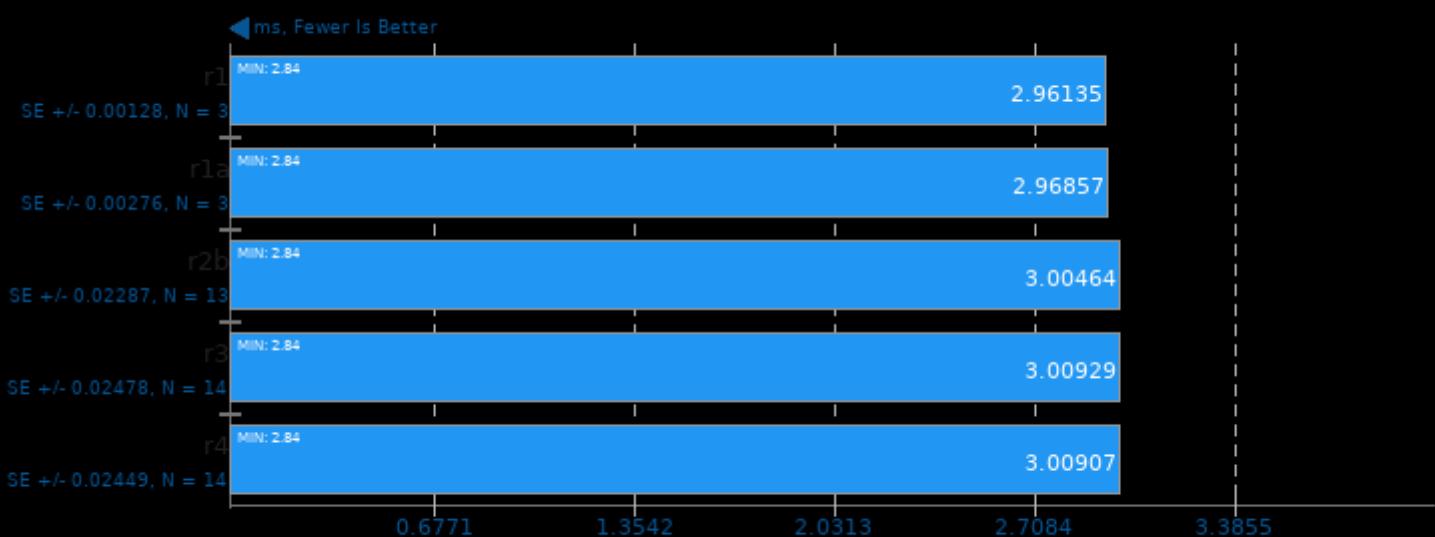
## Blender 2.92

Blend File: Fishy Cat - Compute: CPU-Only



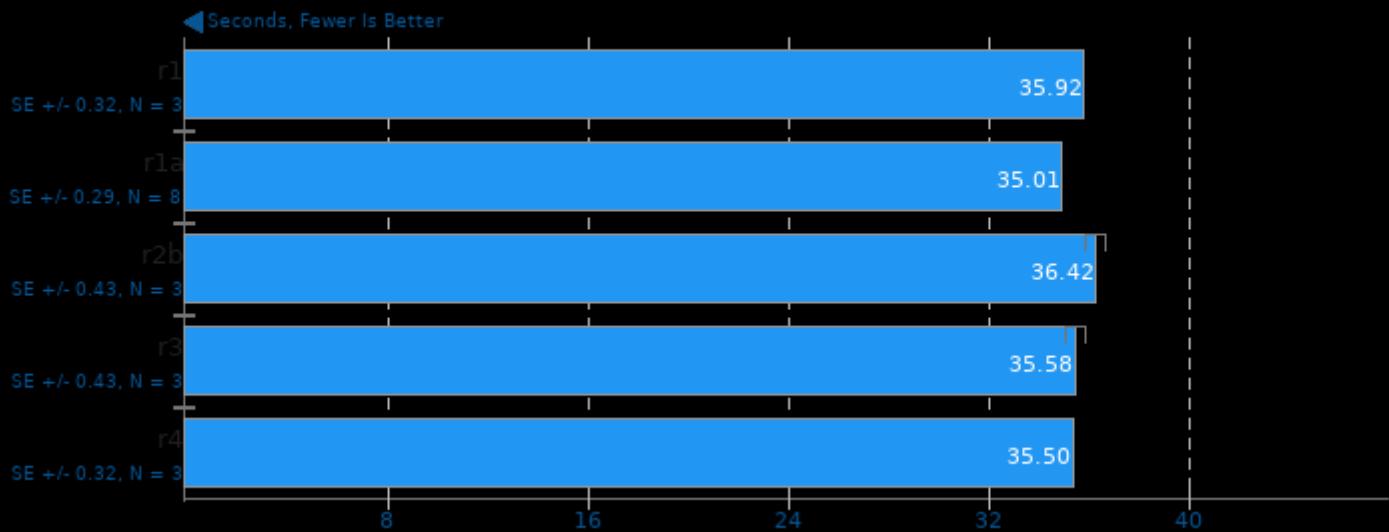
## oneDNN 2.1.2

Harness: IP Shapes 1D - Data Type: bf16bf16bf16 - Engine: CPU



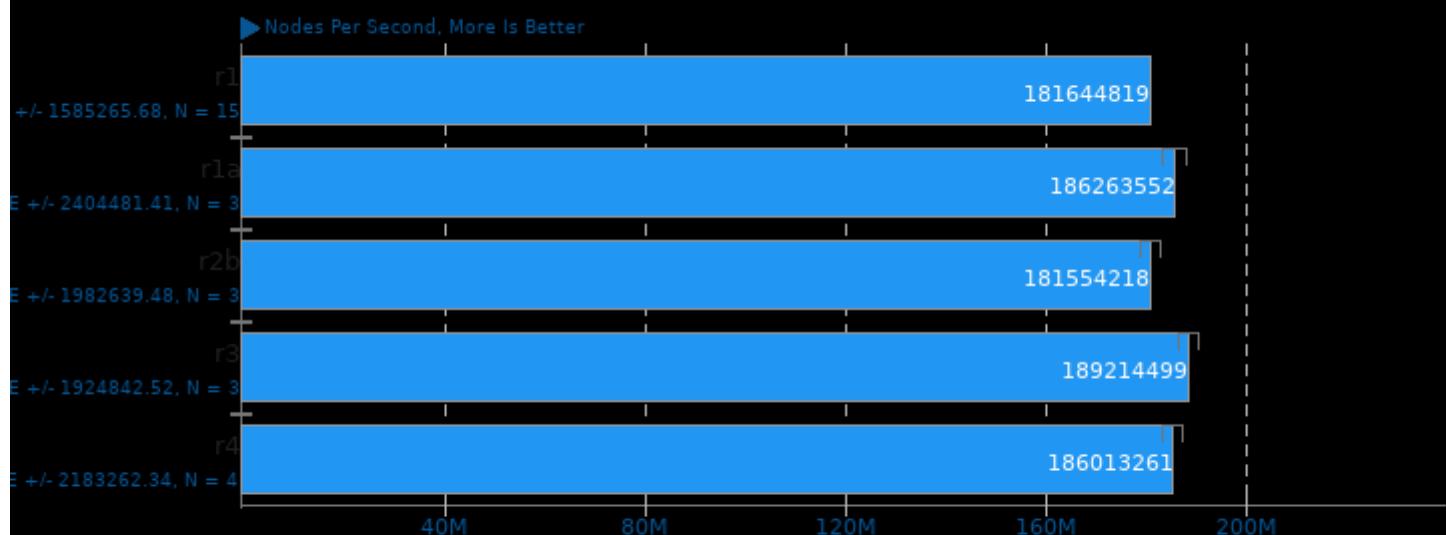
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl

## VOSK Speech Recognition Toolkit 0.3.21



## Stockfish 13

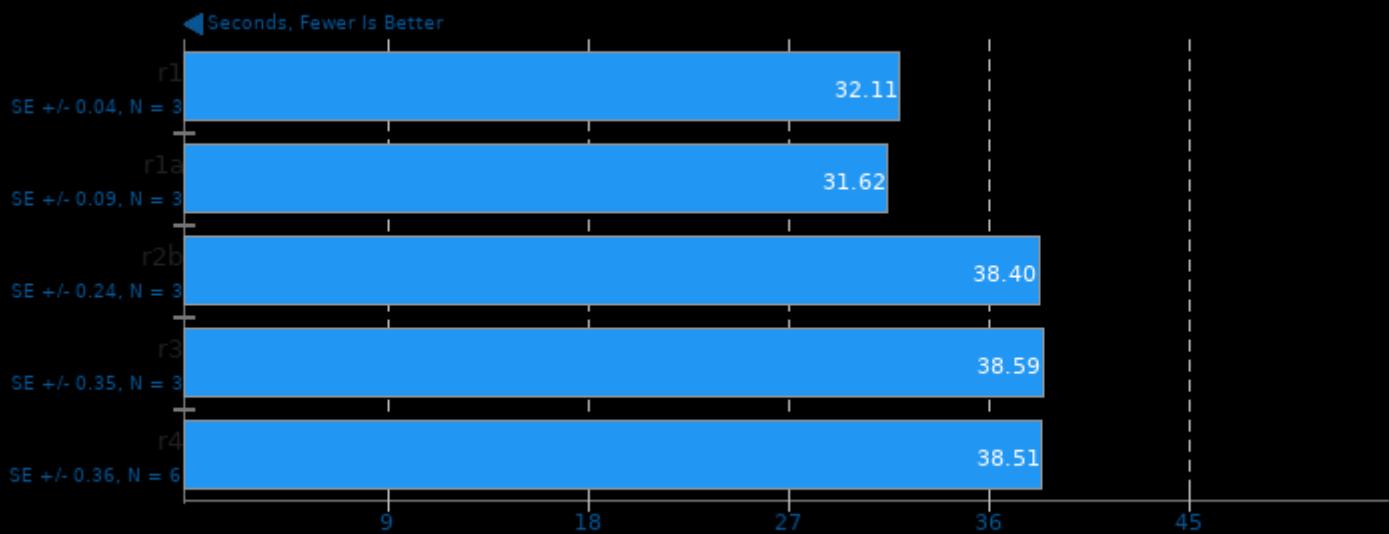
Total Time



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

## libavif avifenc 0.9.0

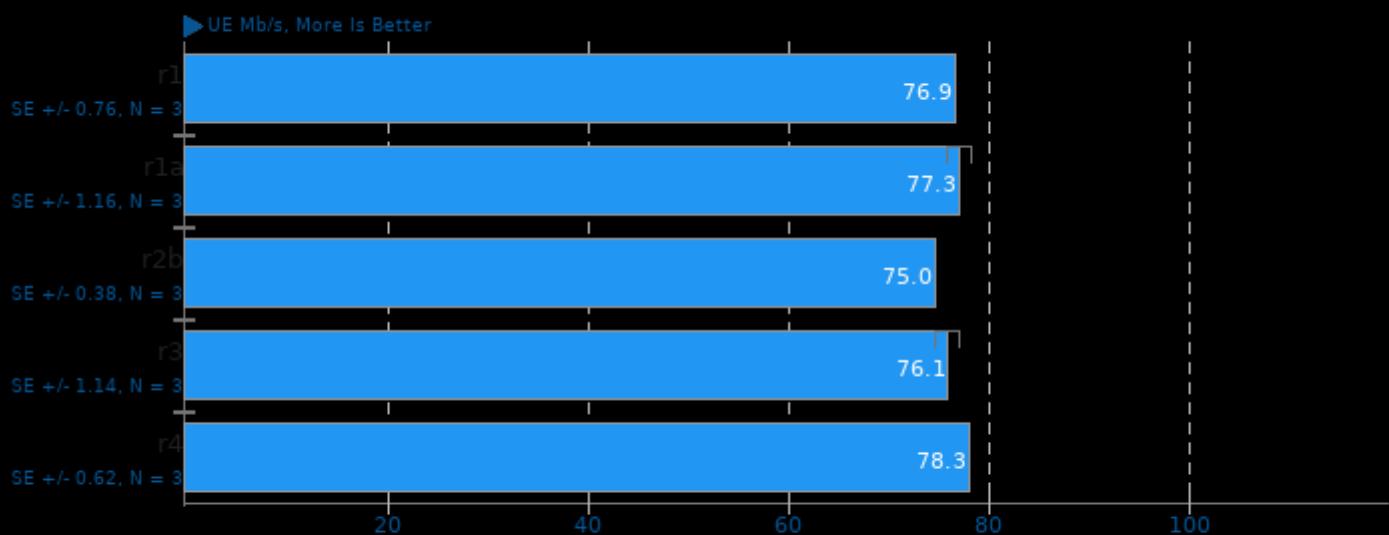
Encoder Speed: 6, Lossless



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

## srsLTE 20.10.1

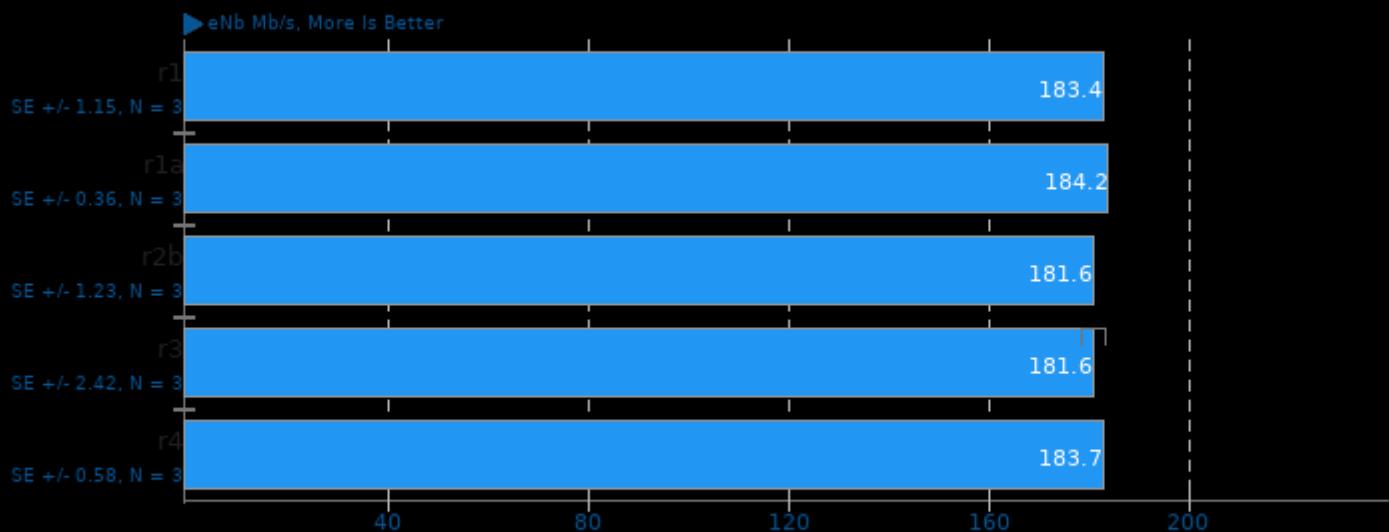
Test: PHY\_DL\_Test



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

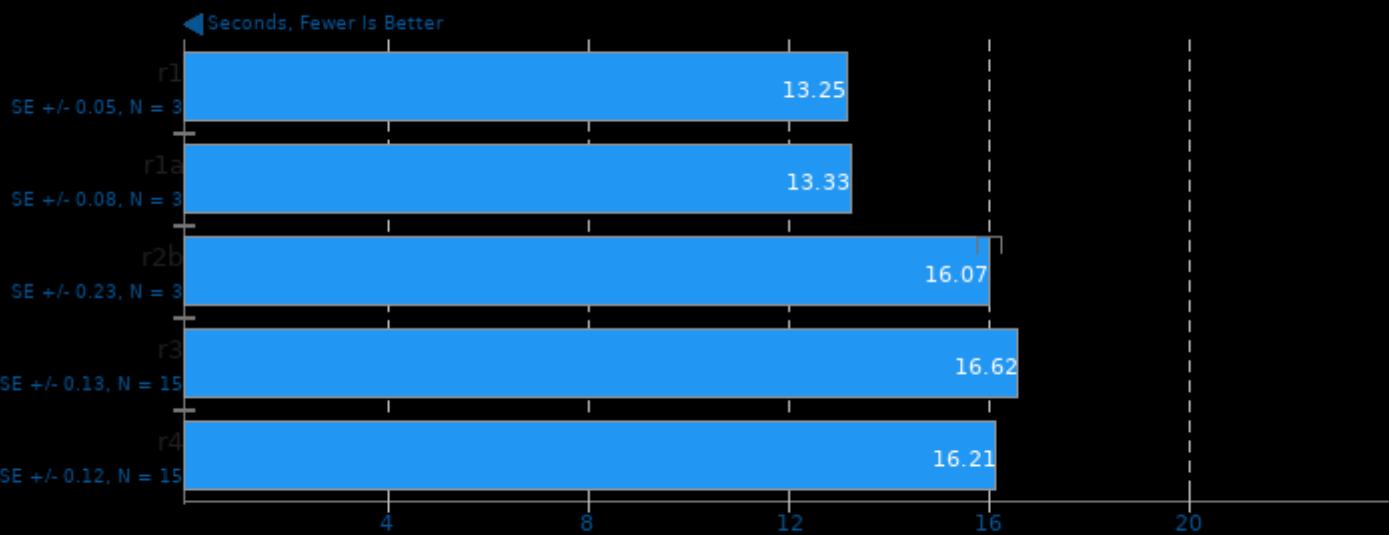
Test: PHY\_DL\_Test



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

## libavif avifenc 0.9.0

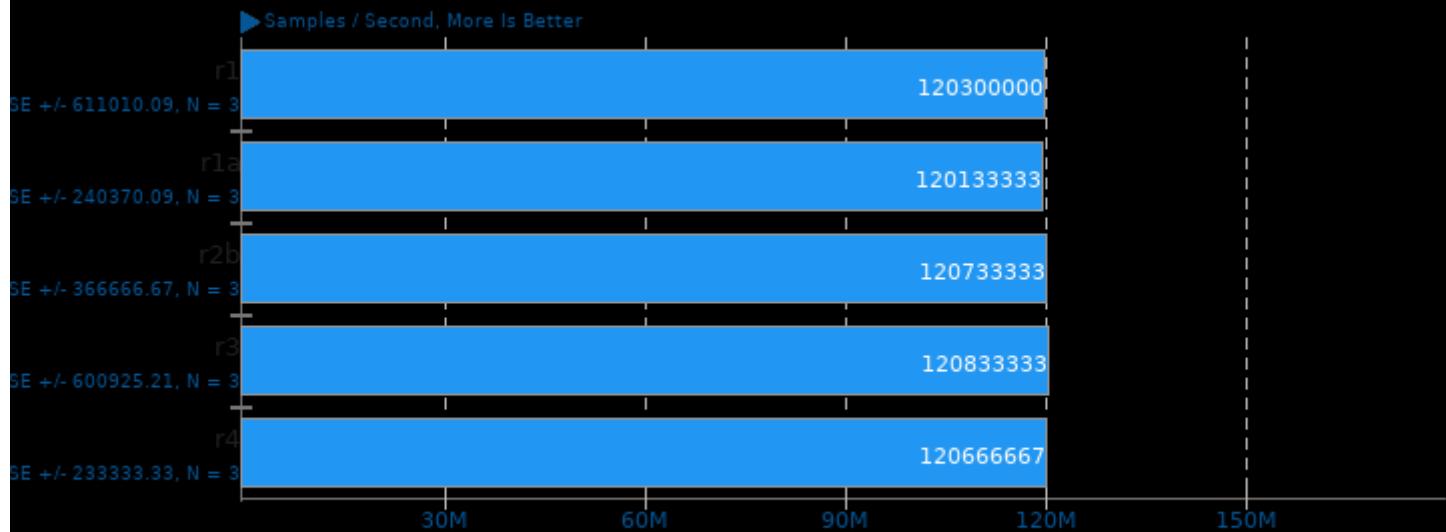
Encoder Speed: 6



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

## srsLTE 20.10.1

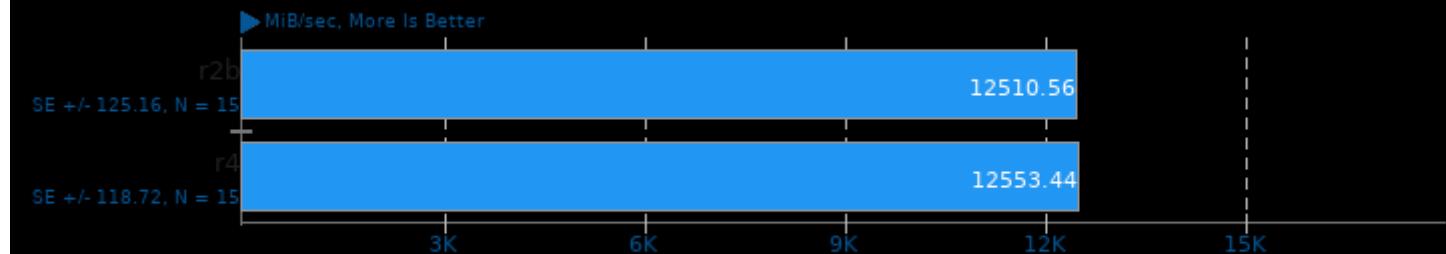
Test: OFDM\_Test



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

## Sysbench 1.0.20

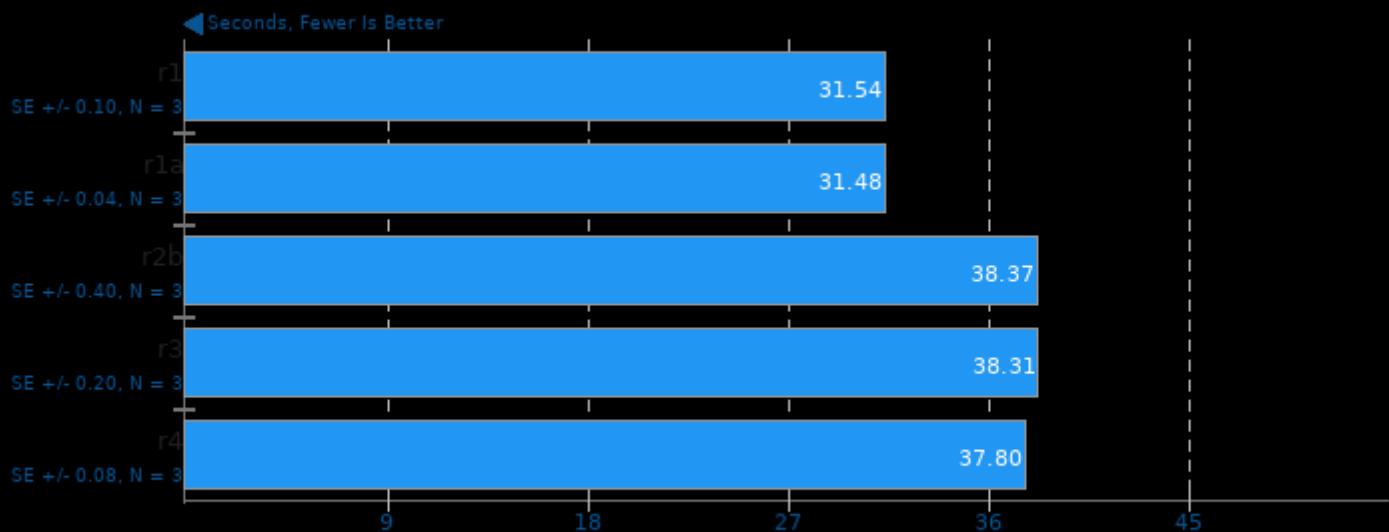
Test: RAM / Memory



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

**libavif avifenc 0.9.0**

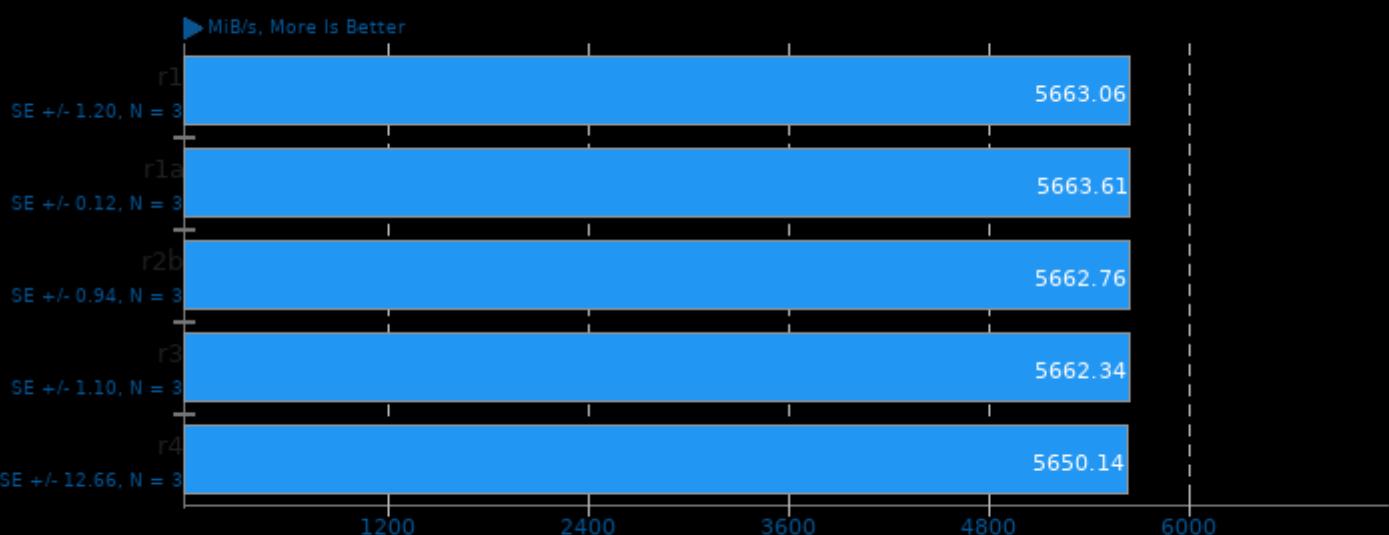
Encoder Speed: 2



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

**Botan 2.17.3**

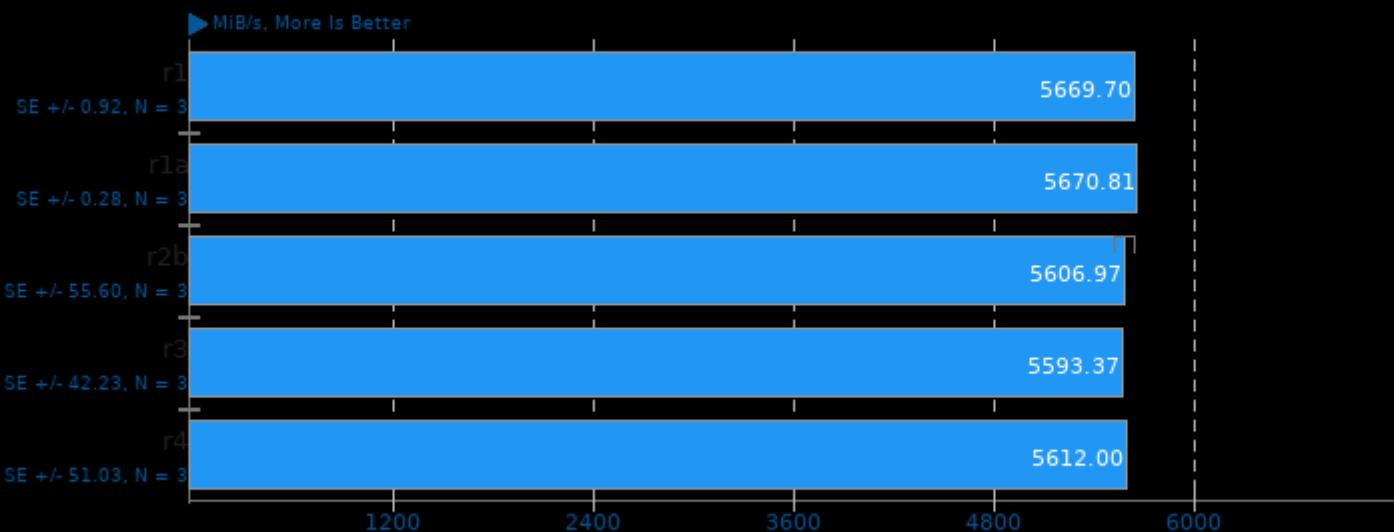
Test: AES-256 - Decrypt



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

## Botan 2.17.3

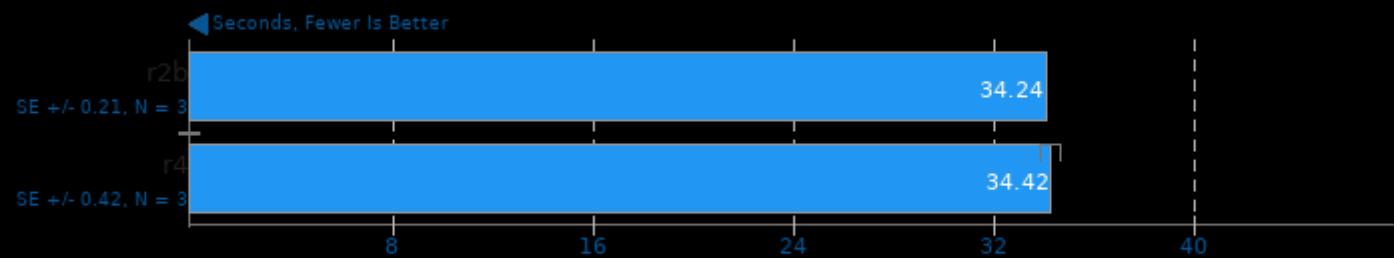
Test: AES-256



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

## Basis Universal 1.13

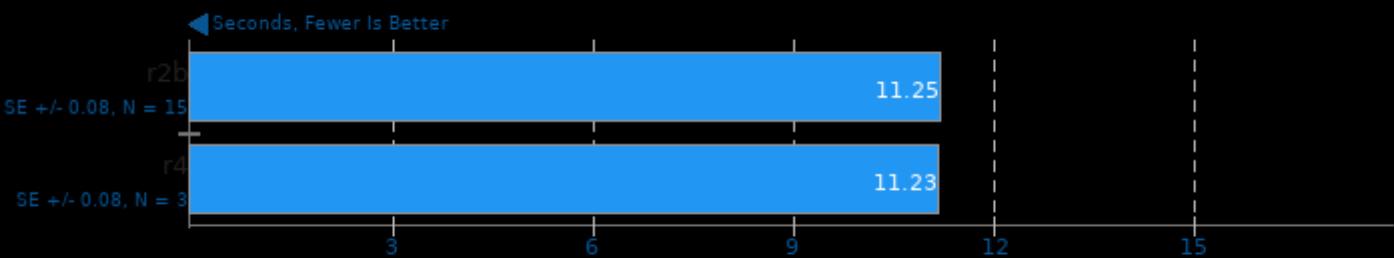
Settings: ETC1S



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

## Basis Universal 1.13

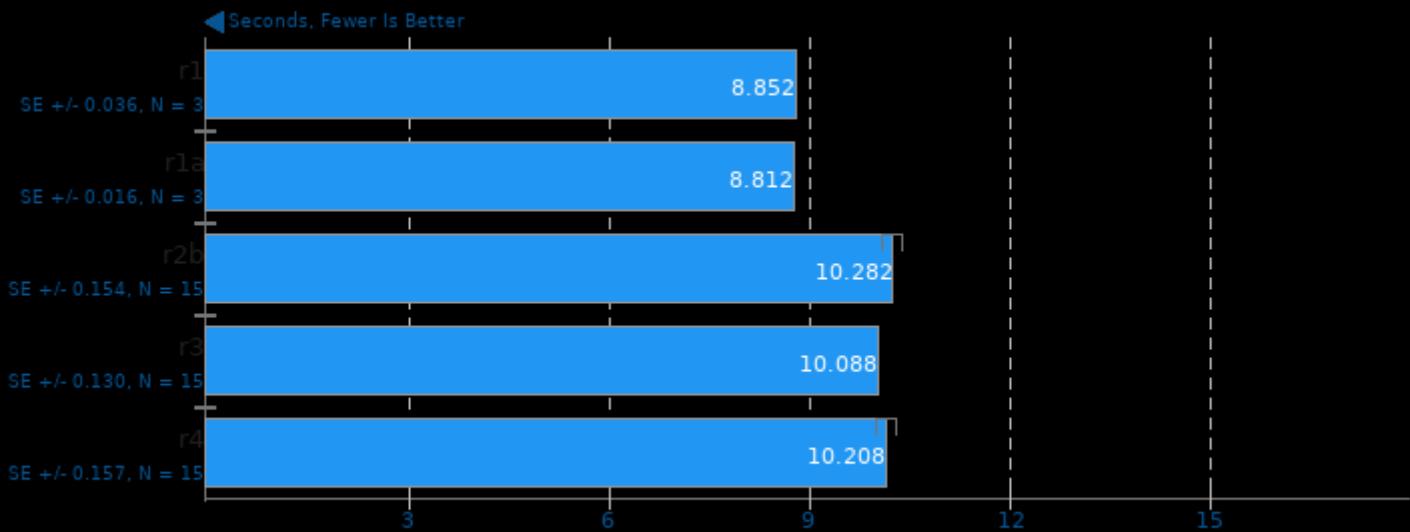
Settings: UASTC Level 0



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

## libavif avifenc 0.9.0

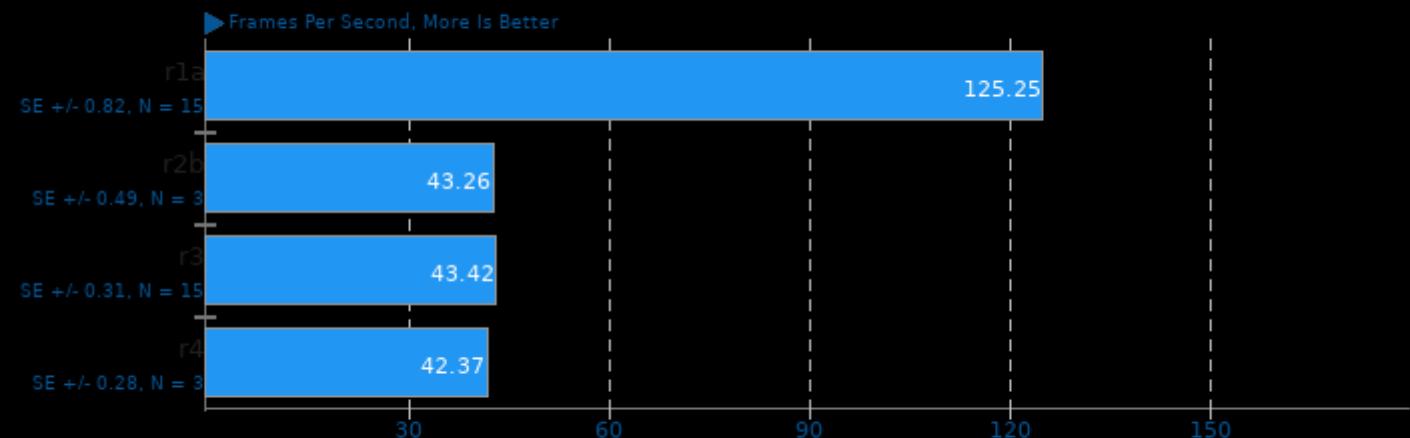
Encoder Speed: 10, Lossless



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

## AOM AV1 3.0

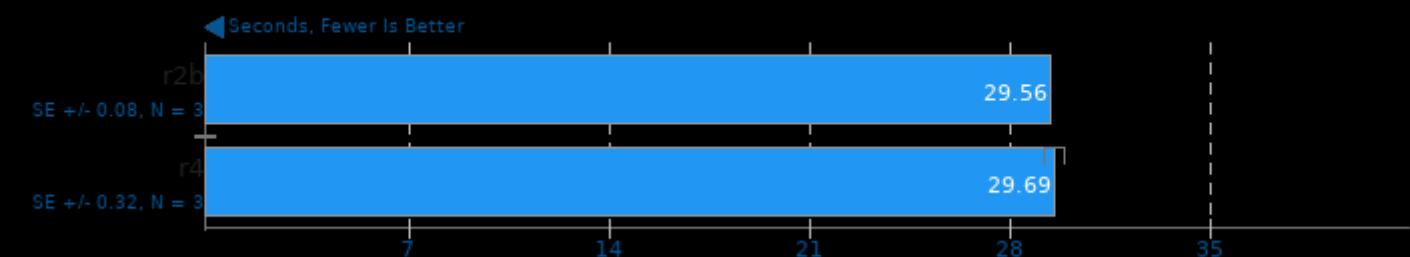
Encoder Mode: Speed 9 Realtime - Input: Bosphorus 1080p



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

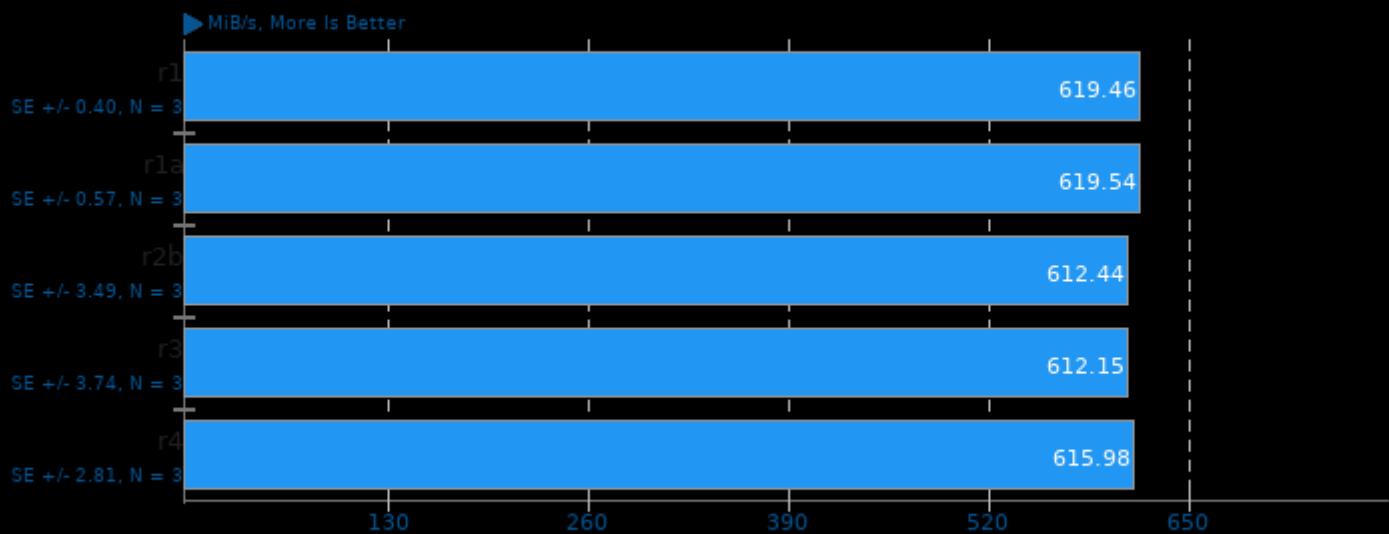
## Blender 2.92

Blend File: BMW27 - Compute: CPU-Only



## Botan 2.17.3

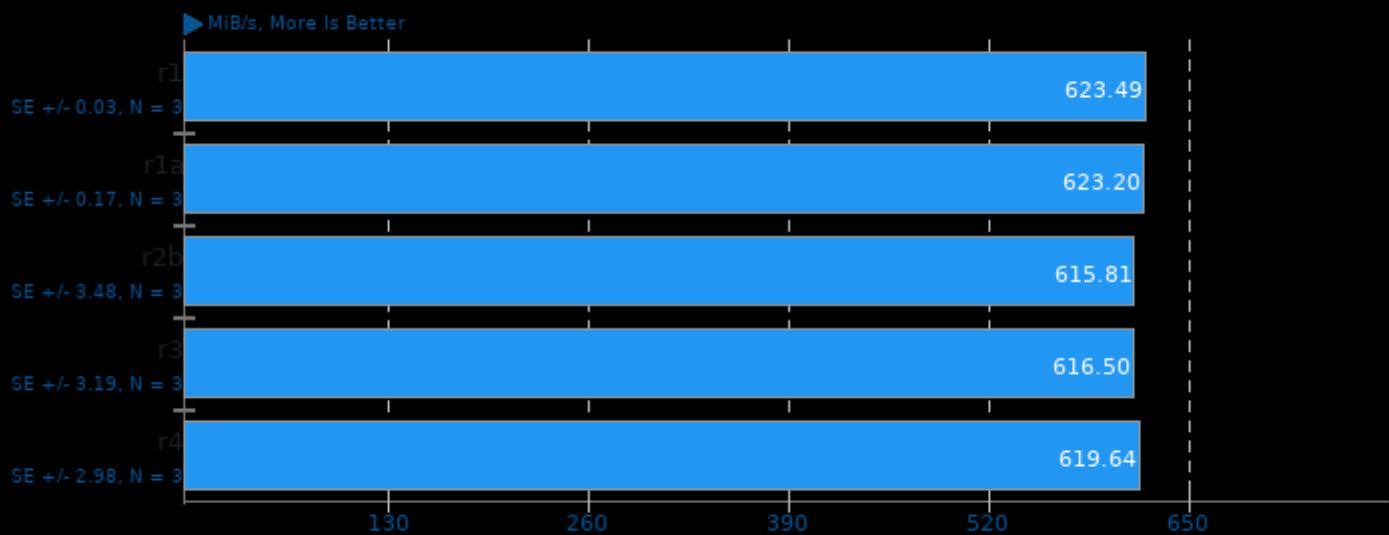
Test: ChaCha20Poly1305 - Decrypt



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

## Botan 2.17.3

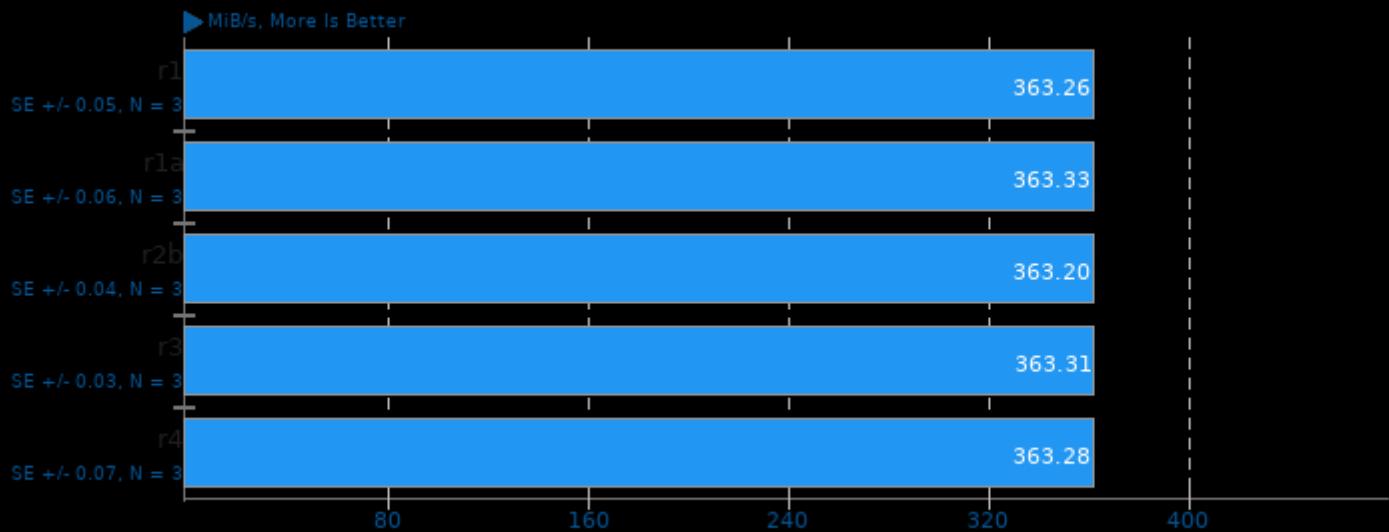
Test: ChaCha20Poly1305



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

## Botan 2.17.3

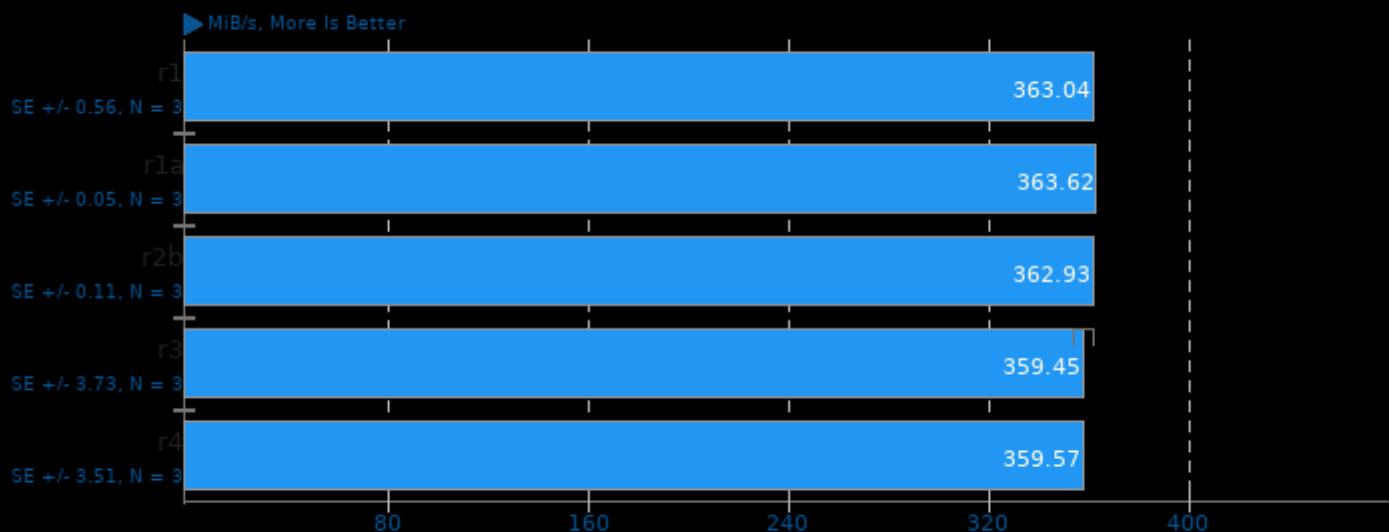
Test: Blowfish - Decrypt



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

## Botan 2.17.3

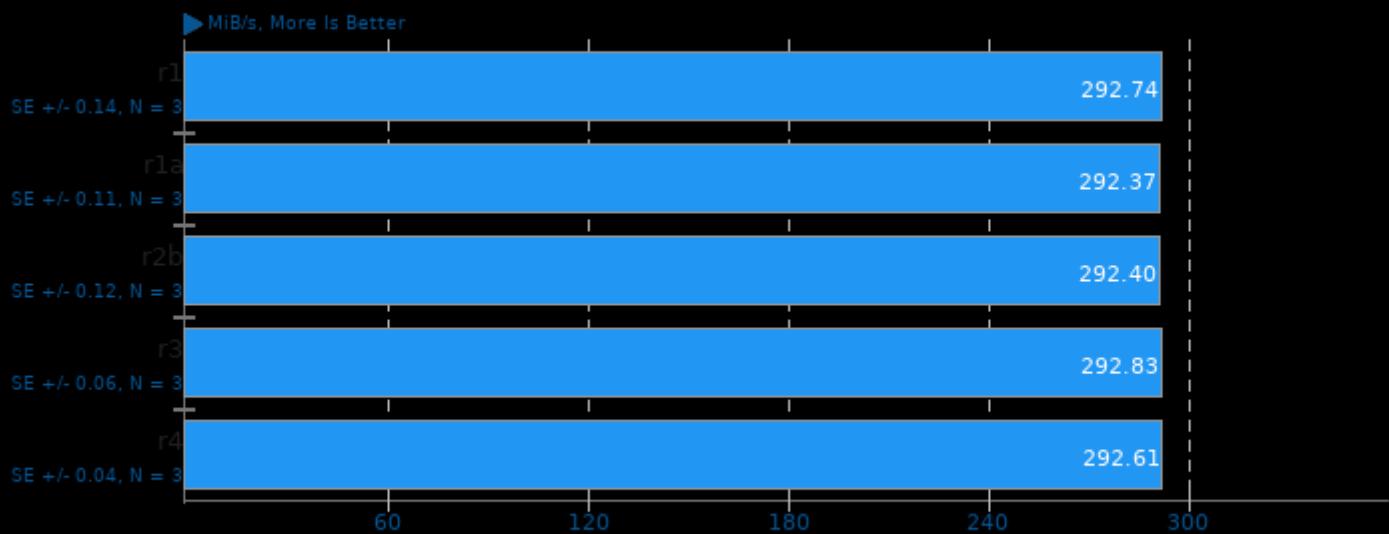
Test: Blowfish



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

## Botan 2.17.3

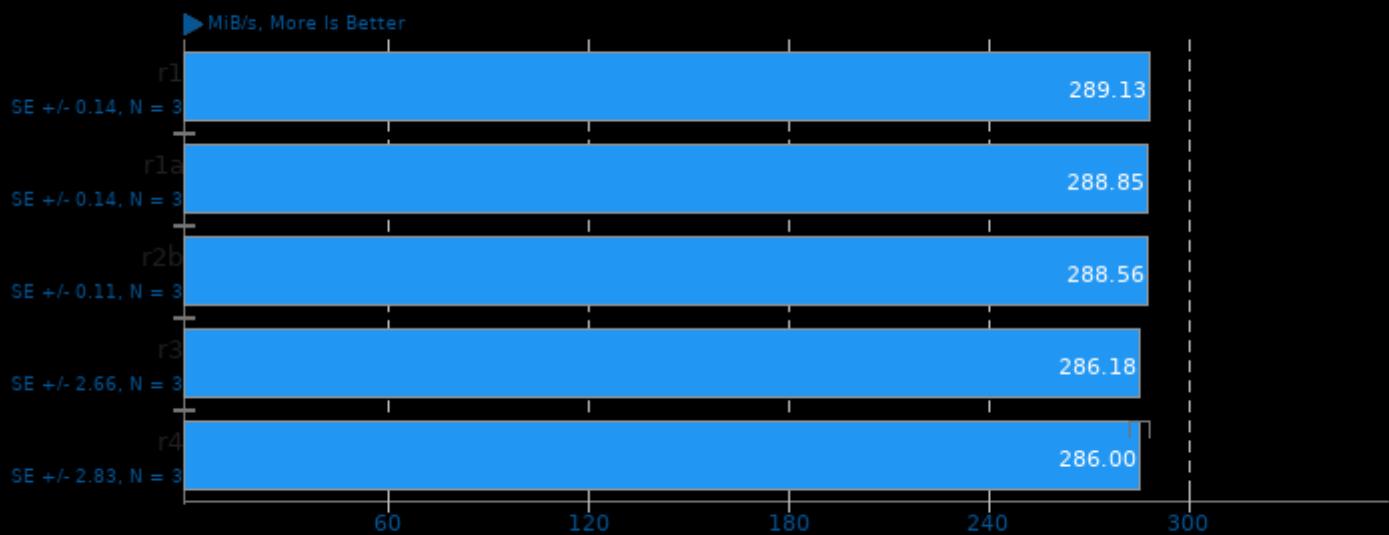
Test: Twofish - Decrypt



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

## Botan 2.17.3

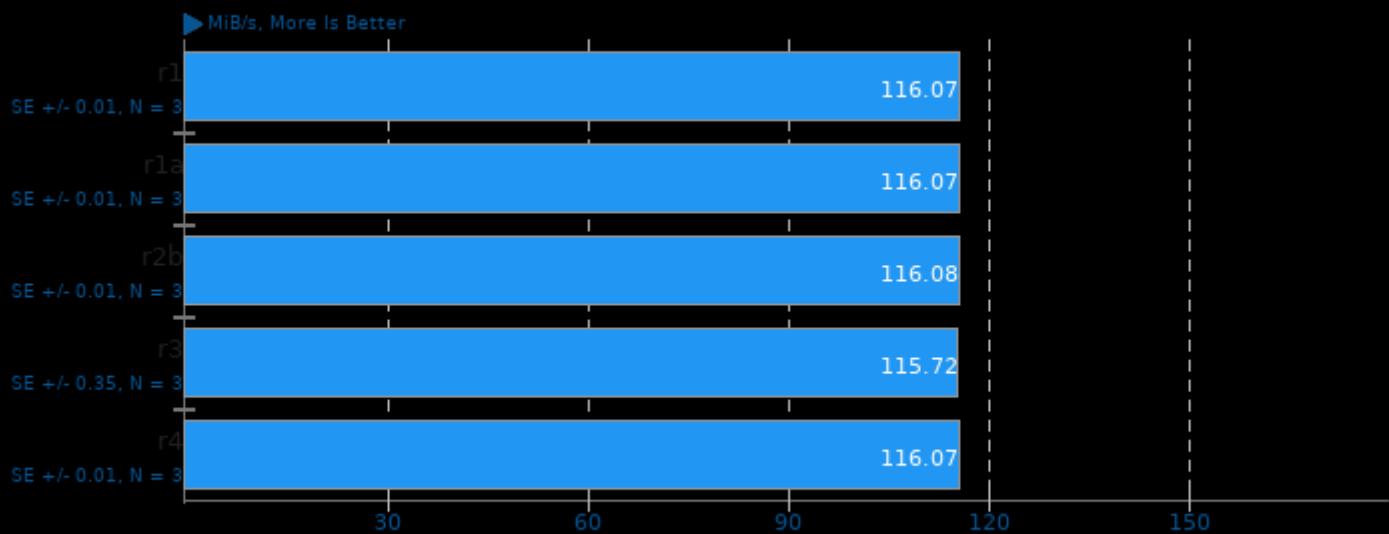
Test: Twofish



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

## Botan 2.17.3

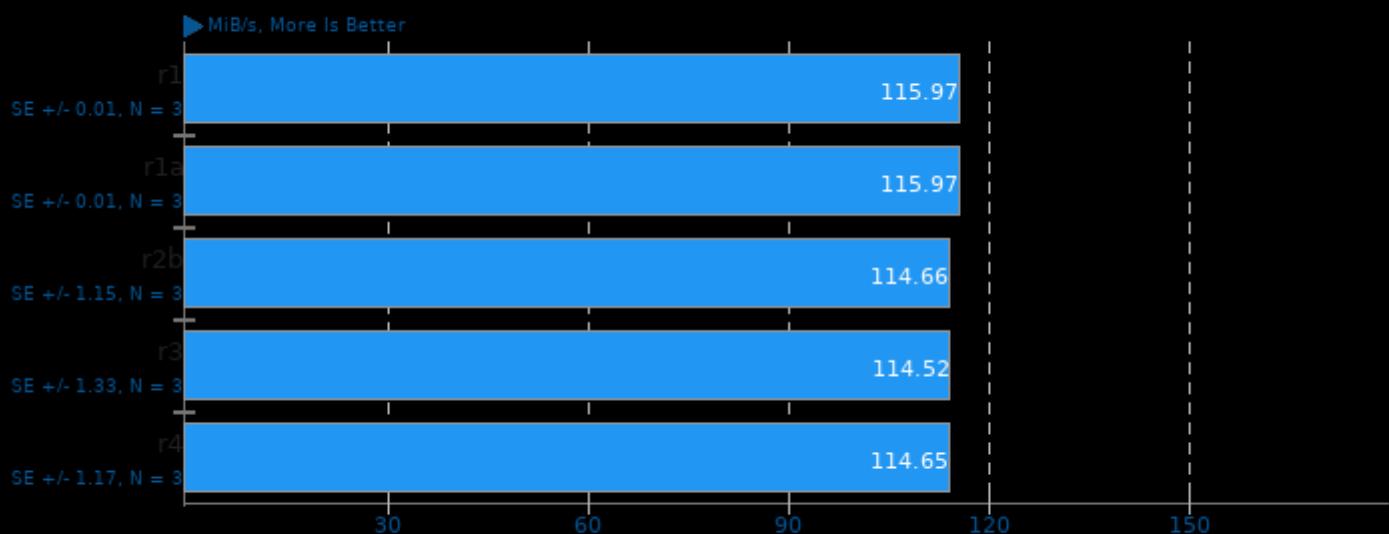
Test: CAST-256 - Decrypt



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

## Botan 2.17.3

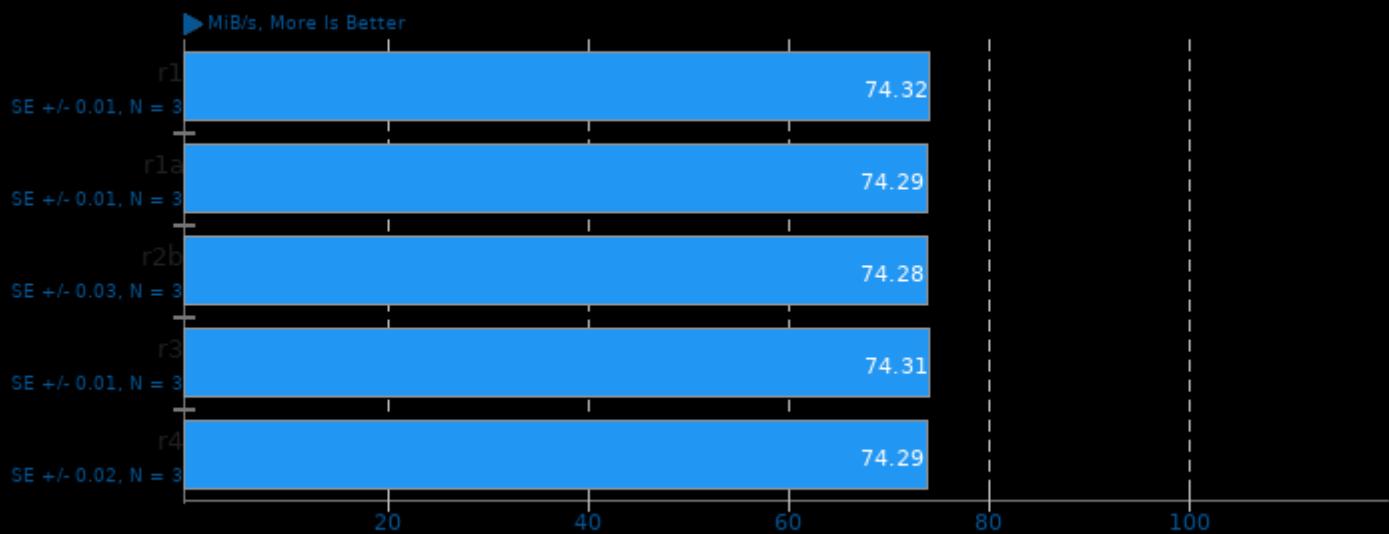
Test: CAST-256



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

## Botan 2.17.3

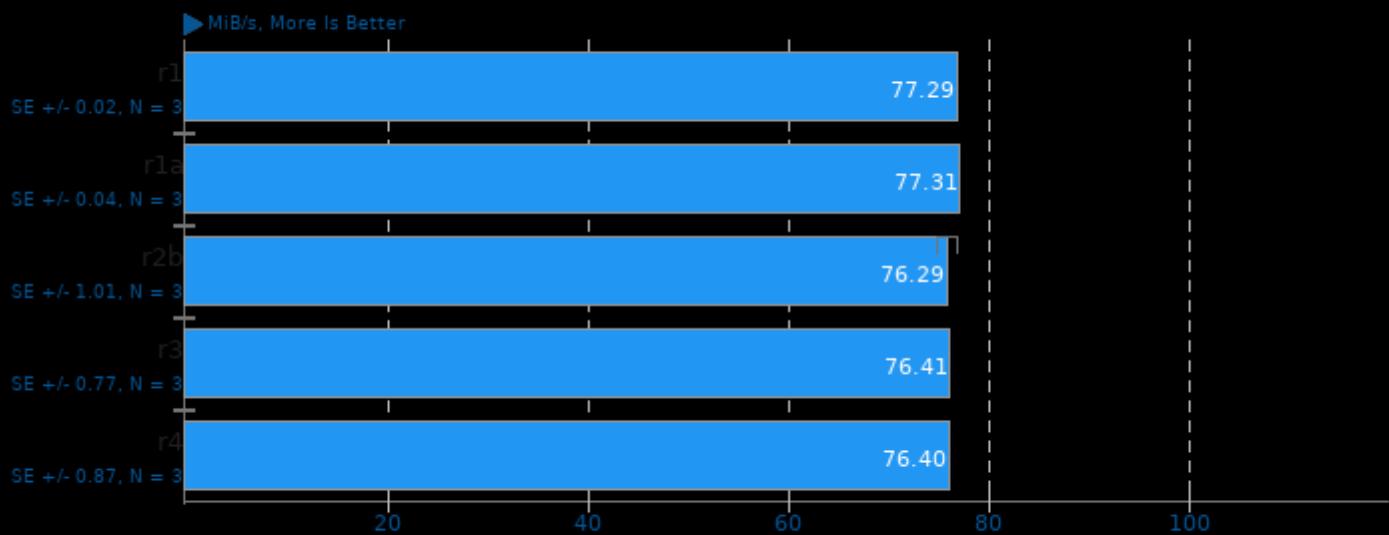
Test: KASUMI - Decrypt



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

## Botan 2.17.3

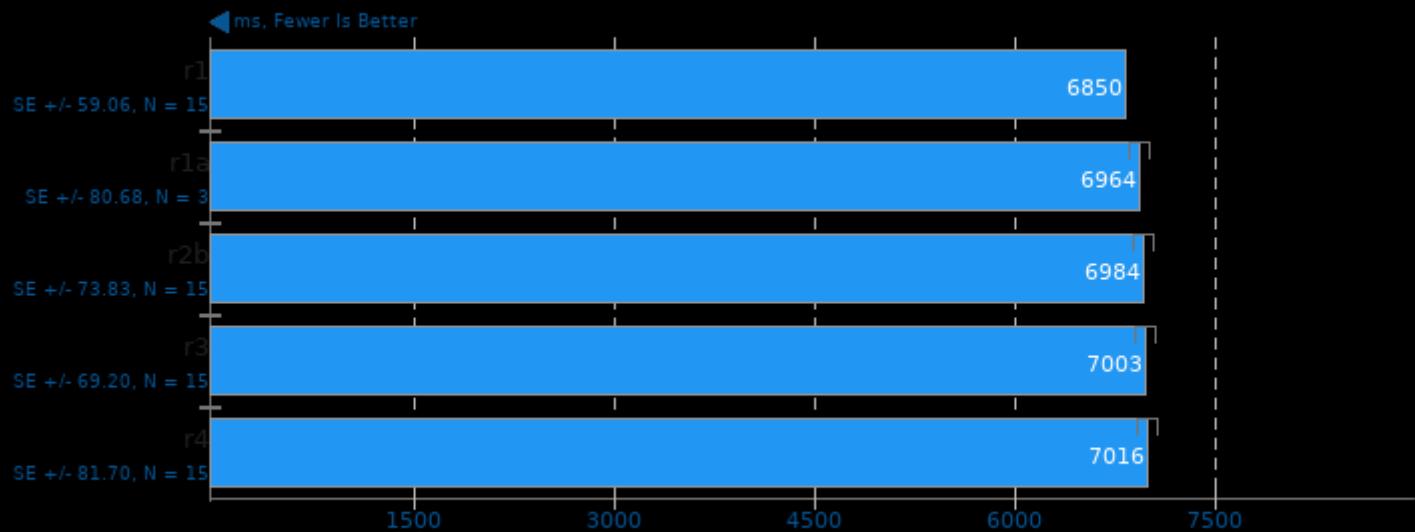
Test: KASUMI



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

## toyBrot Fractal Generator 2020-11-18

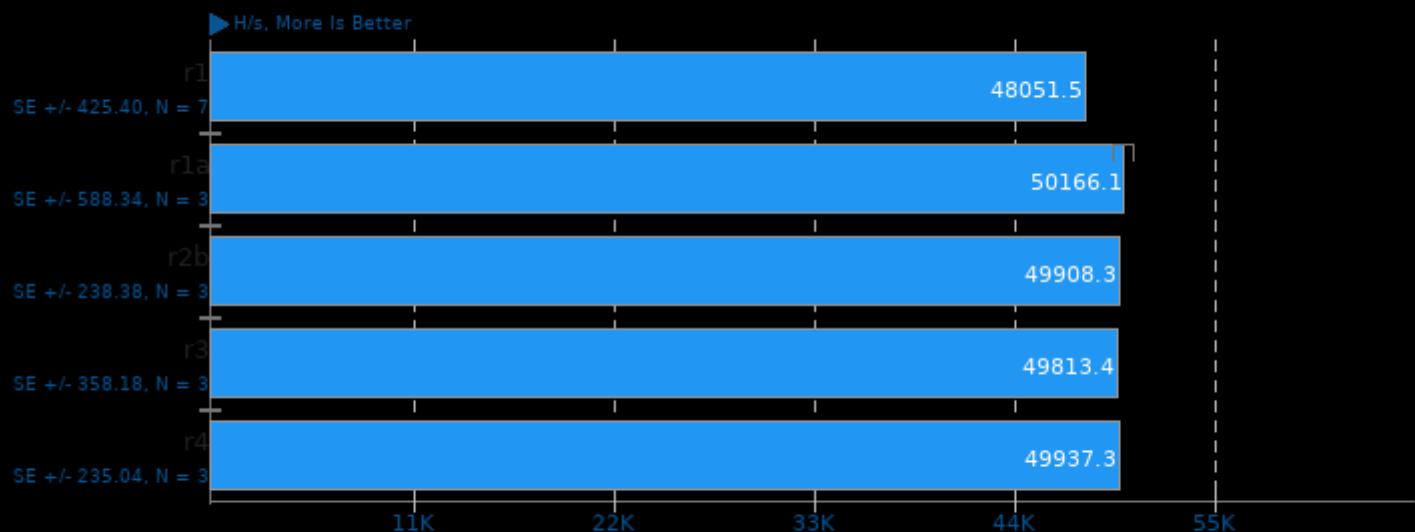
Implementation: TBB



1. (CXX) g++ options: -O3 -pthread -lm -lgcc -lgcc\_s -lc

## Xmrig 6.12.1

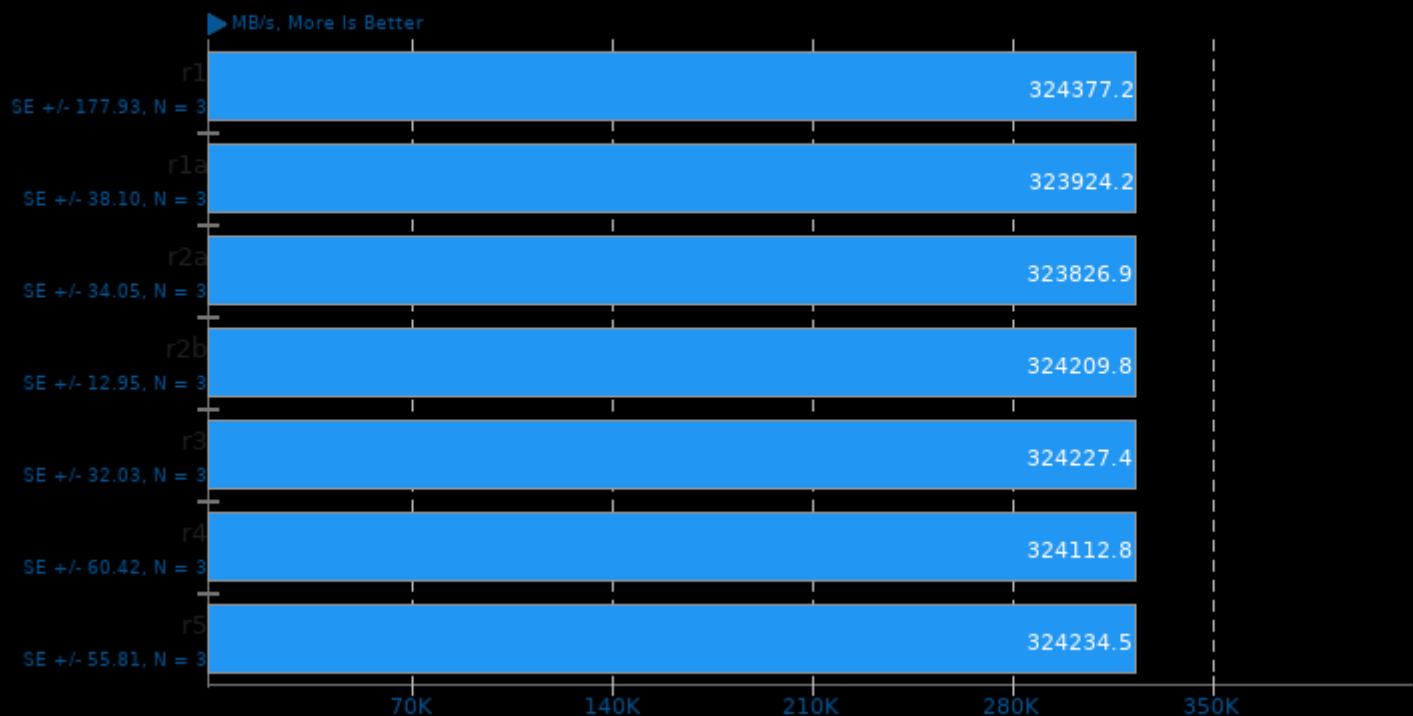
Variant: Wownero - Hash Count: 1M



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

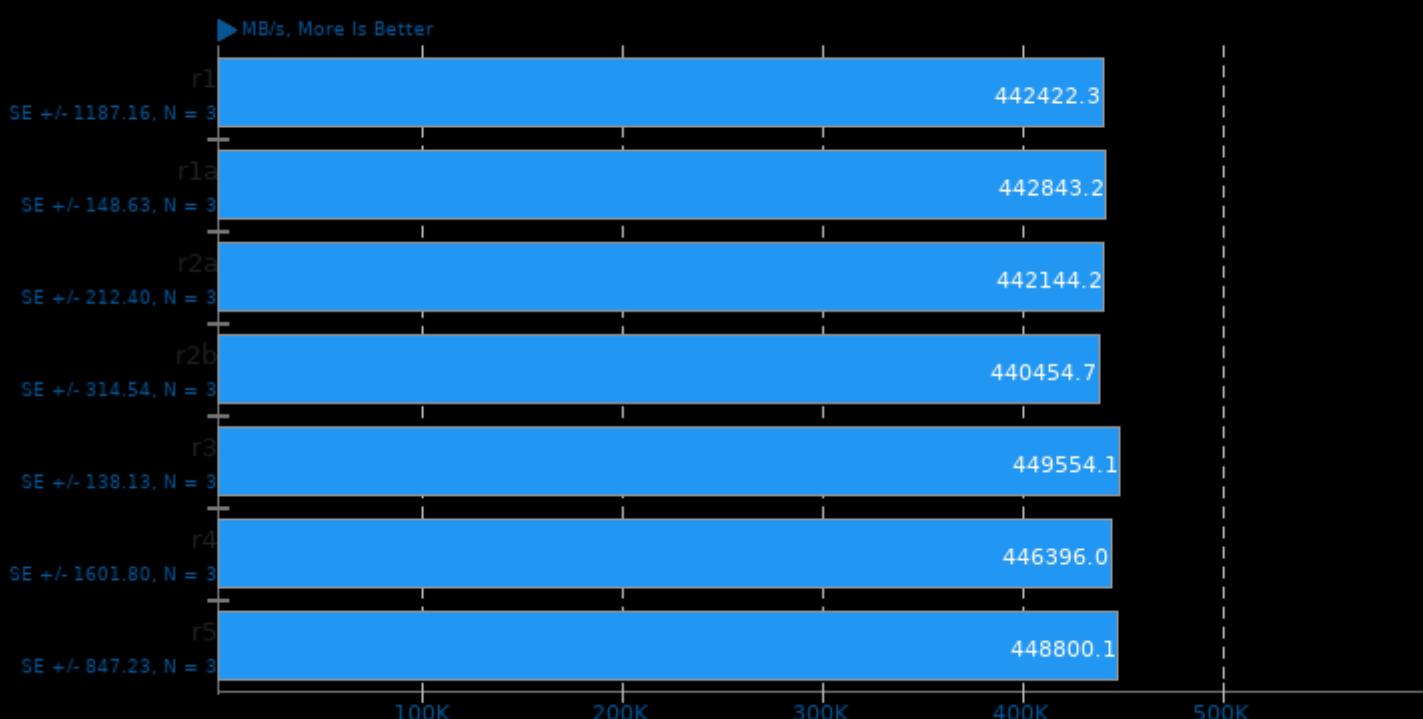
## Intel Memory Latency Checker

Test: Peak Injection Bandwidth - Stream-Triad Like



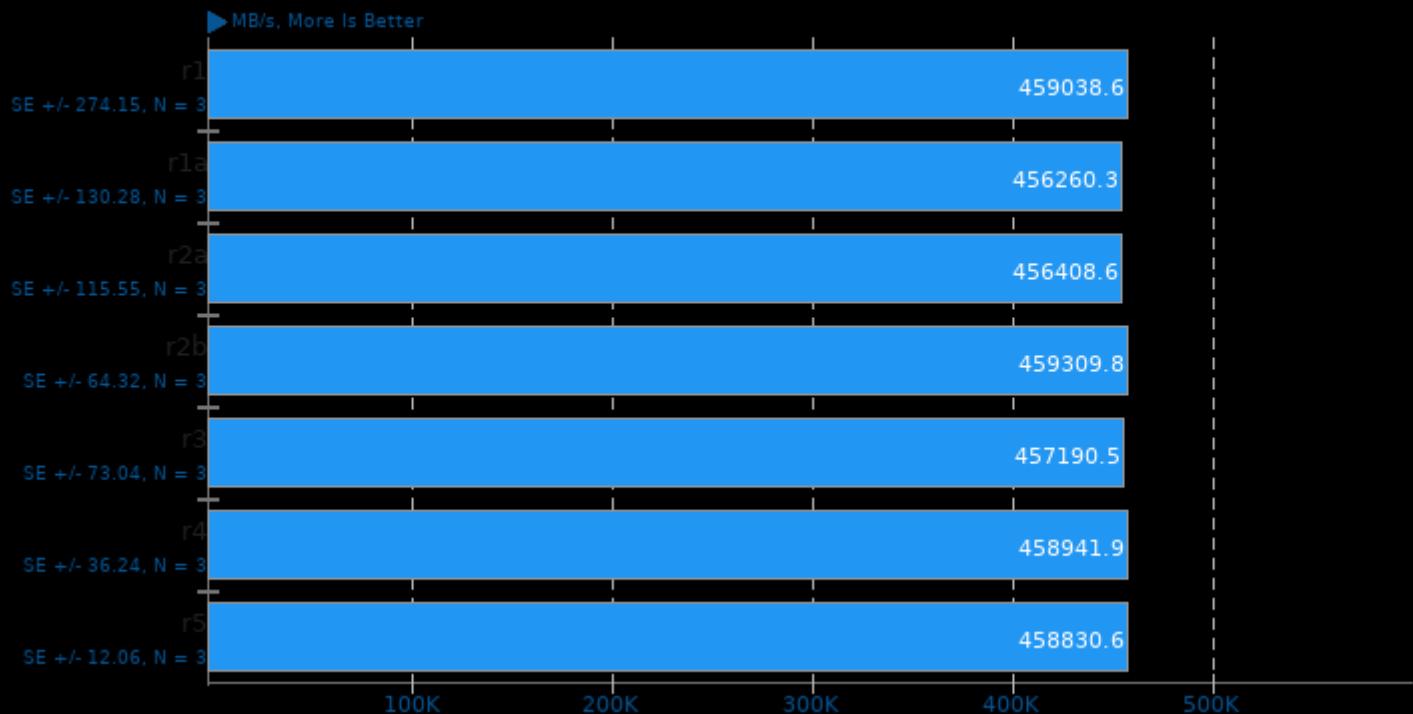
## Intel Memory Latency Checker

Test: Peak Injection Bandwidth - 1:1 Reads-Writes

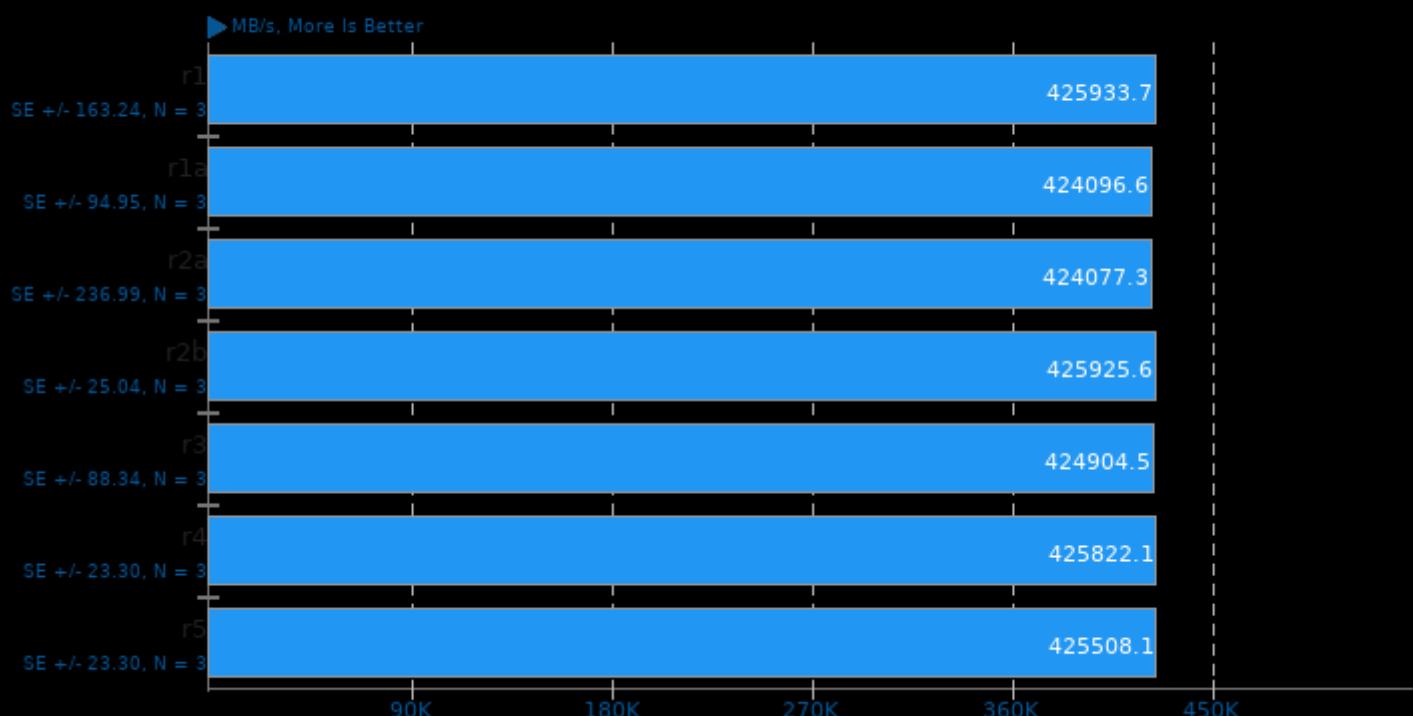


**Intel Memory Latency Checker**

Test: Peak Injection Bandwidth - 2:1 Reads-Writes

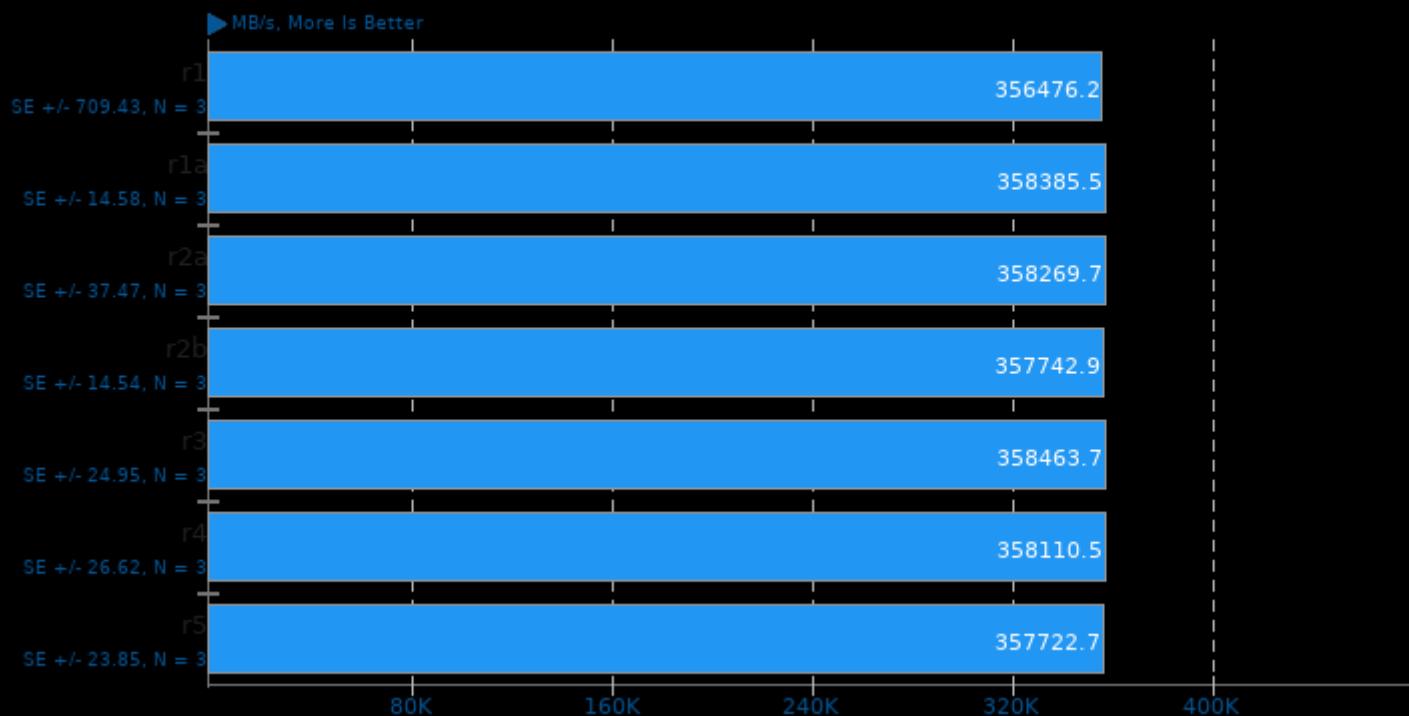
**Intel Memory Latency Checker**

Test: Peak Injection Bandwidth - 3:1 Reads-Writes



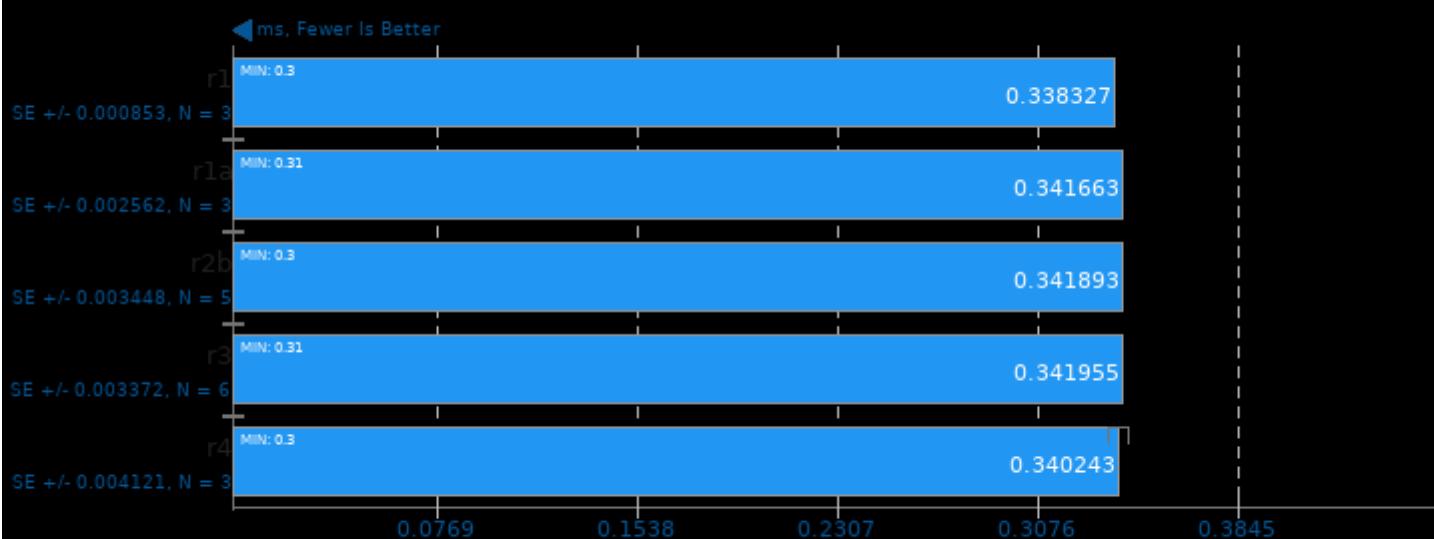
## Intel Memory Latency Checker

Test: Peak Injection Bandwidth - All Reads



## oneDNN 2.1.2

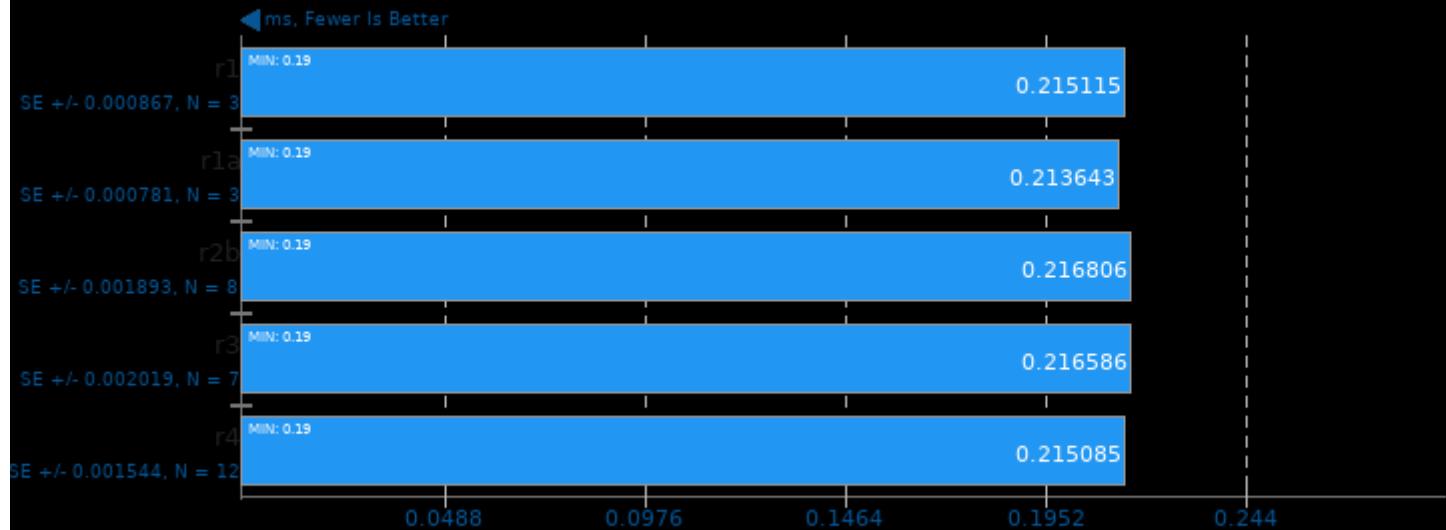
Harness: Deconvolution Batch shapes\_1d - Data Type: u8s8f32 - Engine: CPU



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

## oneDNN 2.1.2

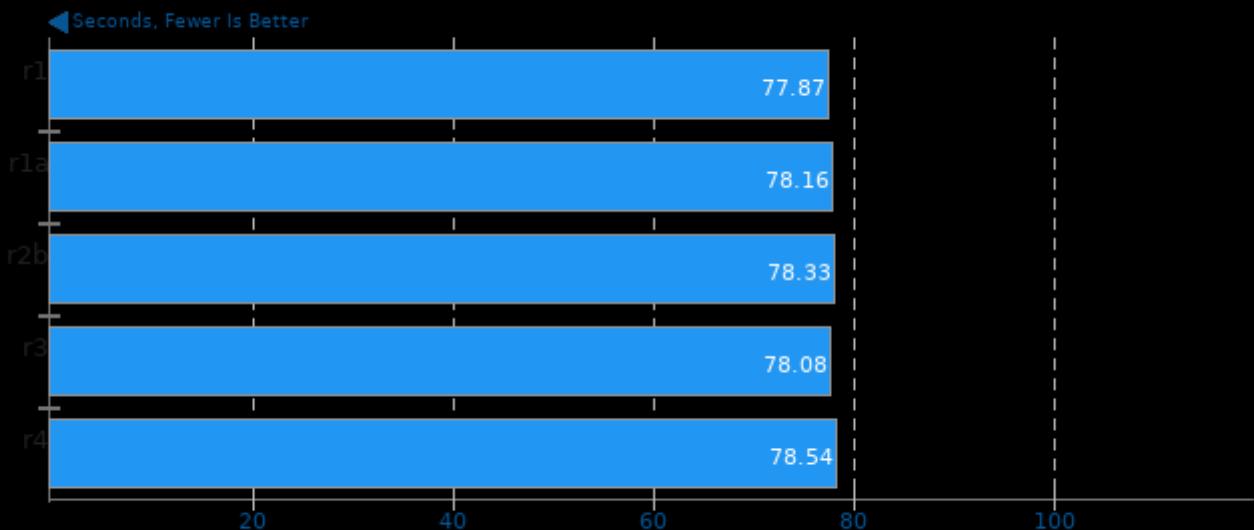
Harness: Matrix Multiply Batch Shapes Transformer - Data Type: u8s8f32 - Engine: CPU



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

## Helsing 1.0-beta

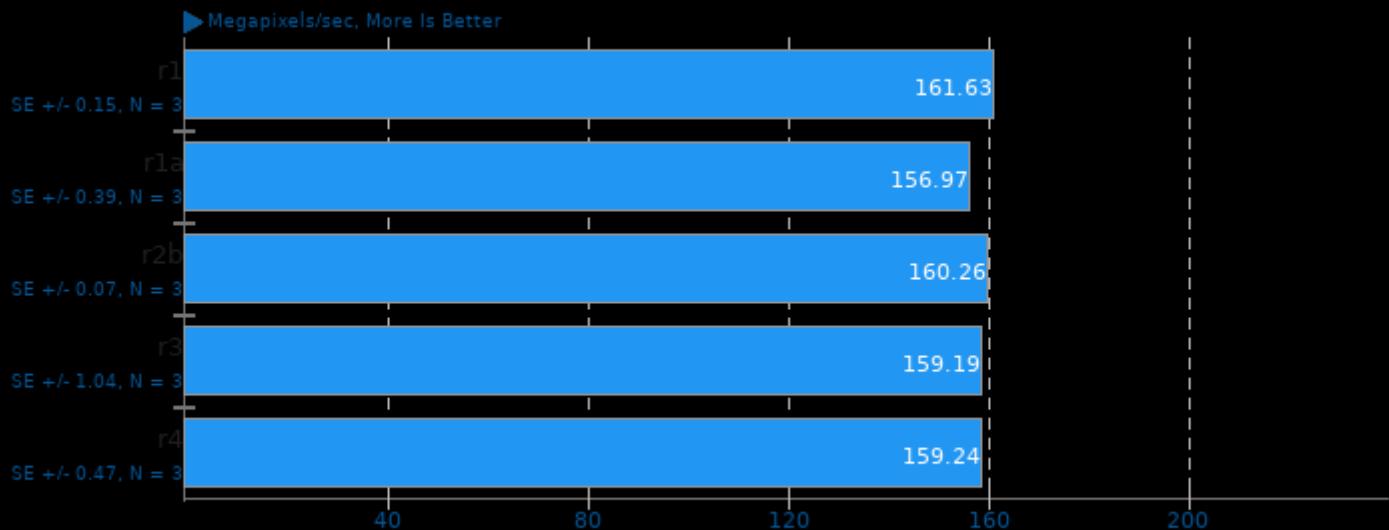
Digit Range: 14 digit



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

**libjpeg-turbo tjbench 2.1.0**

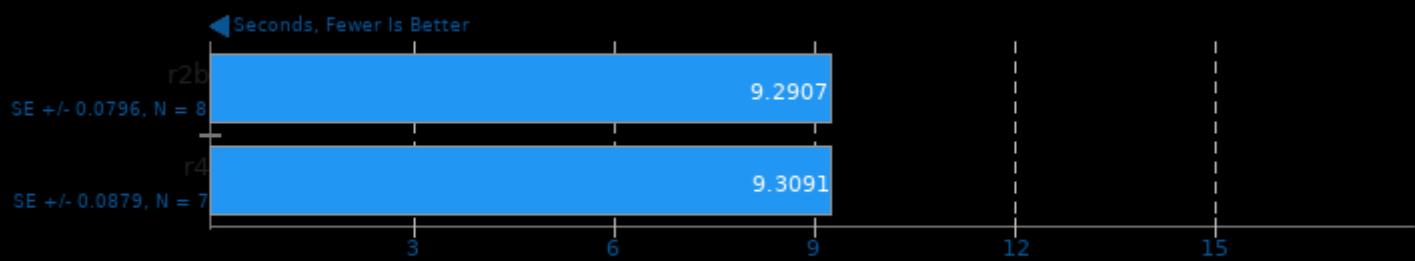
Test: Decompression Throughput



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

**ASTC Encoder 2.4**

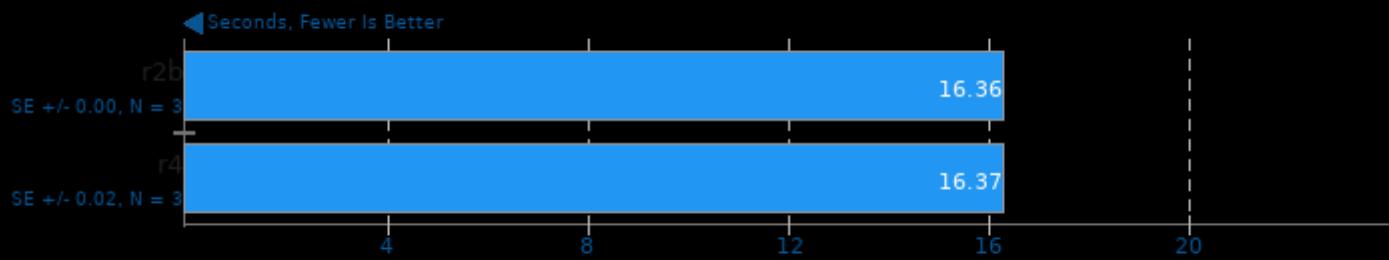
Preset: Thorough



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

**ASTC Encoder 2.4**

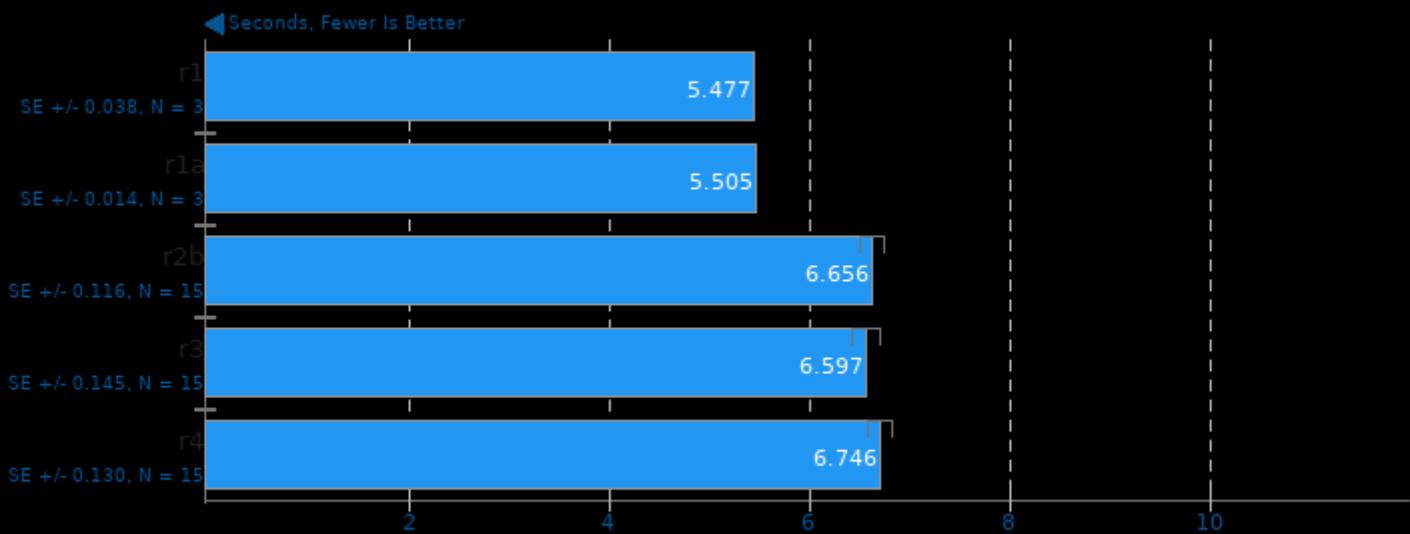
Preset: Exhaustive



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

## libavif avifenc 0.9.0

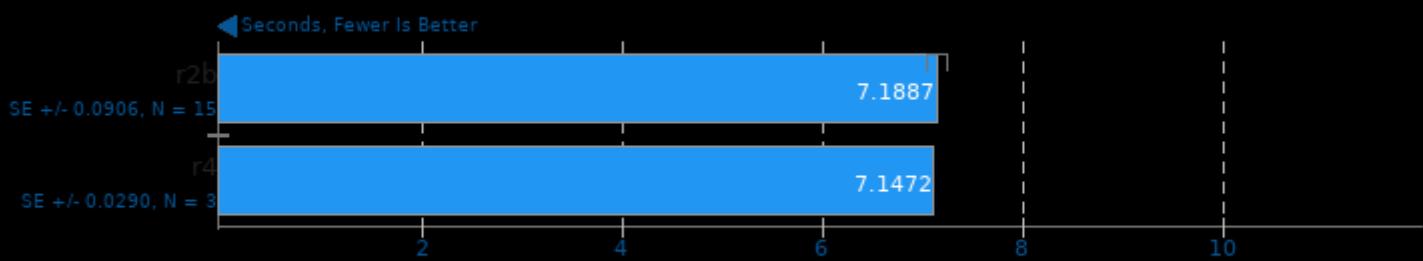
Encoder Speed: 10



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

## ASTC Encoder 2.4

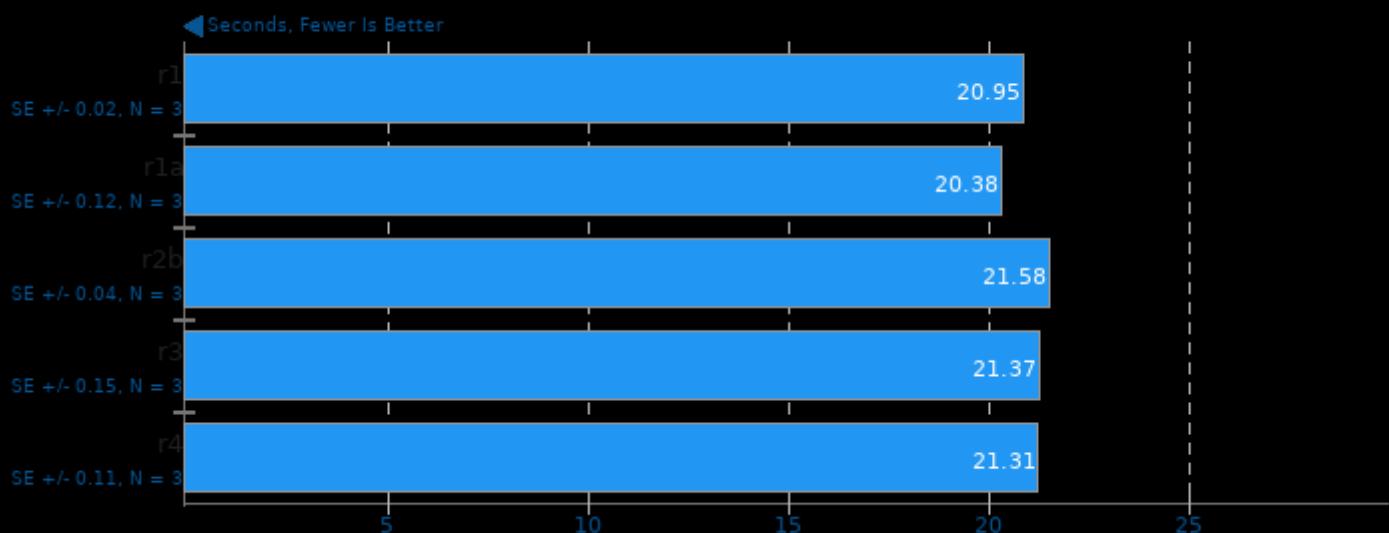
Preset: Medium



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

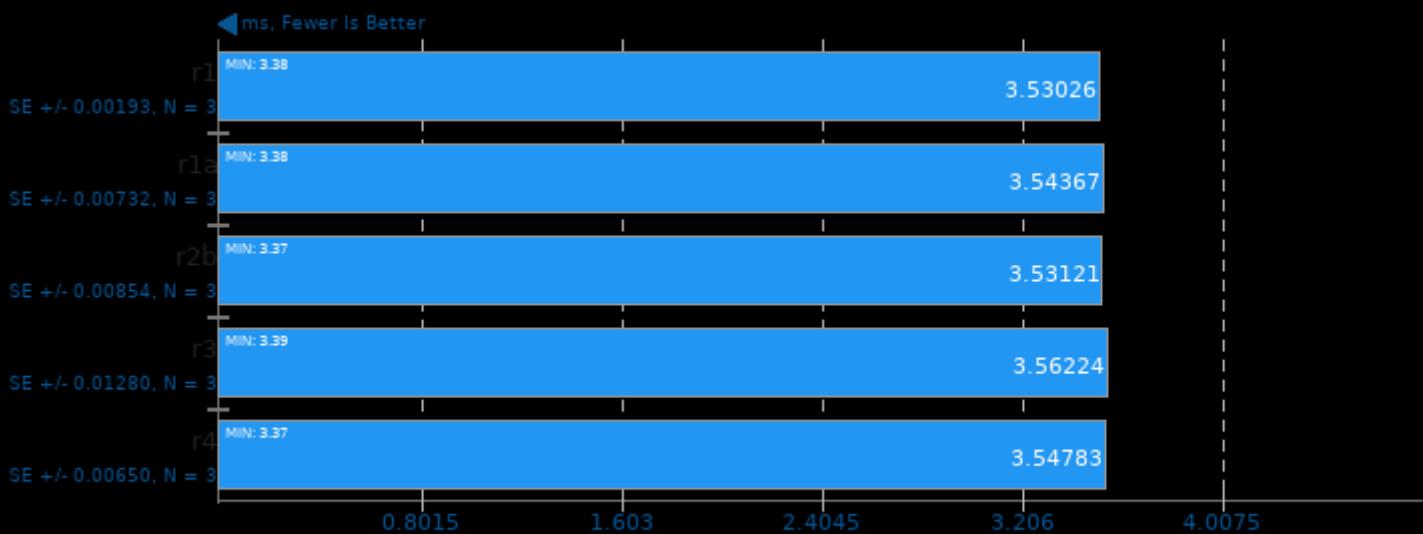
## Timed Mesa Compilation 21.0

Time To Compile



## oneDNN 2.1.2

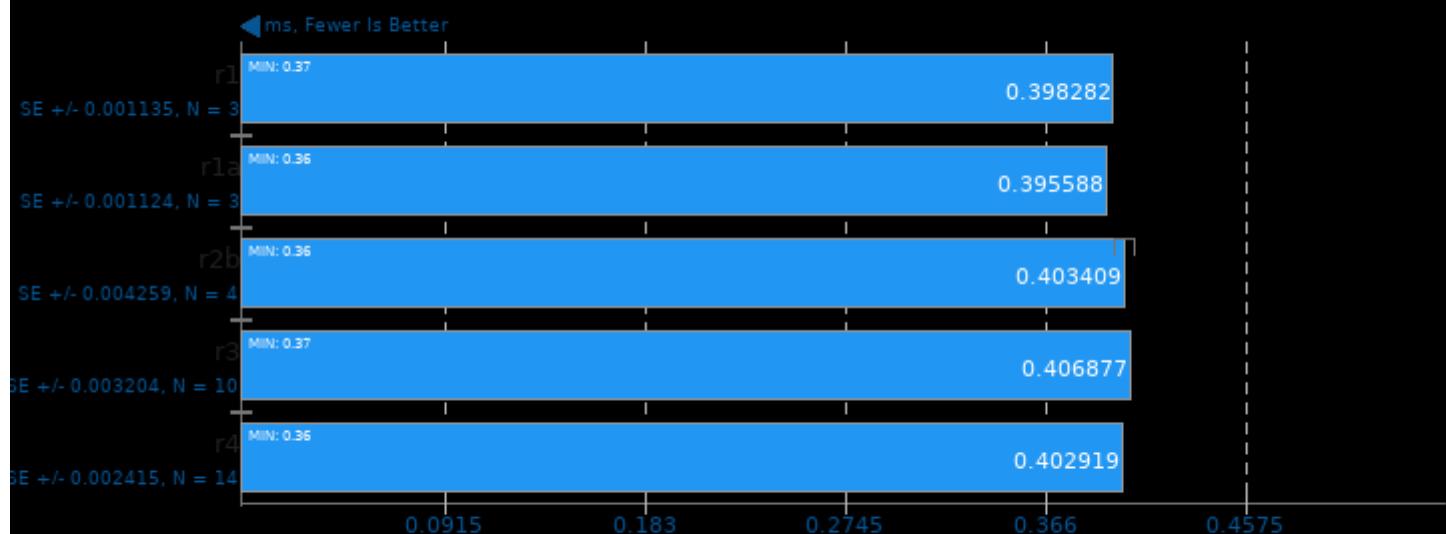
Harness: Deconvolution Batch shapes\_1d - Data Type: bf16bf16bf16 - Engine: CPU



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

## oneDNN 2.1.2

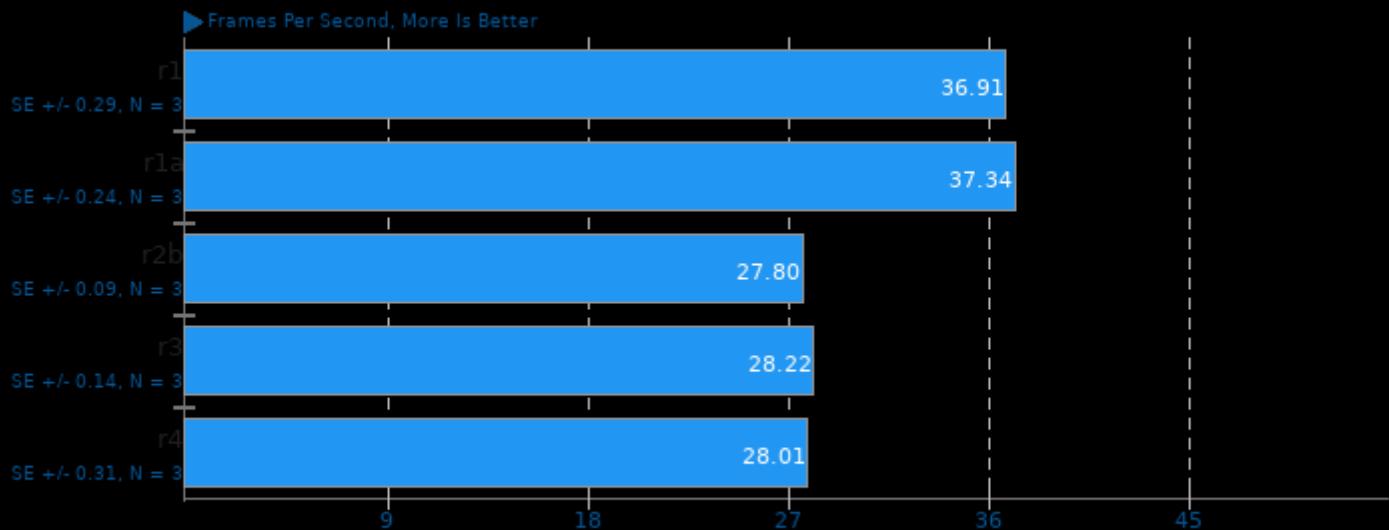
Harness: IP Shapes 3D - Data Type: u8s8f32 - Engine: CPU



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

## SVT-HEVC 1.5.0

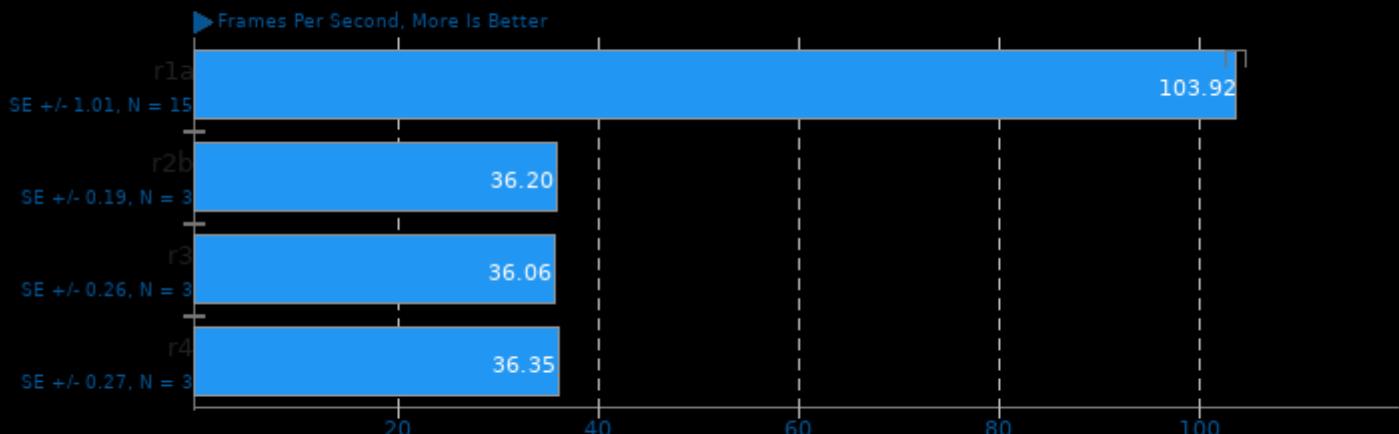
Tuning: 1 - Input: Bosphorus 1080p



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

## AOM AV1 3.0

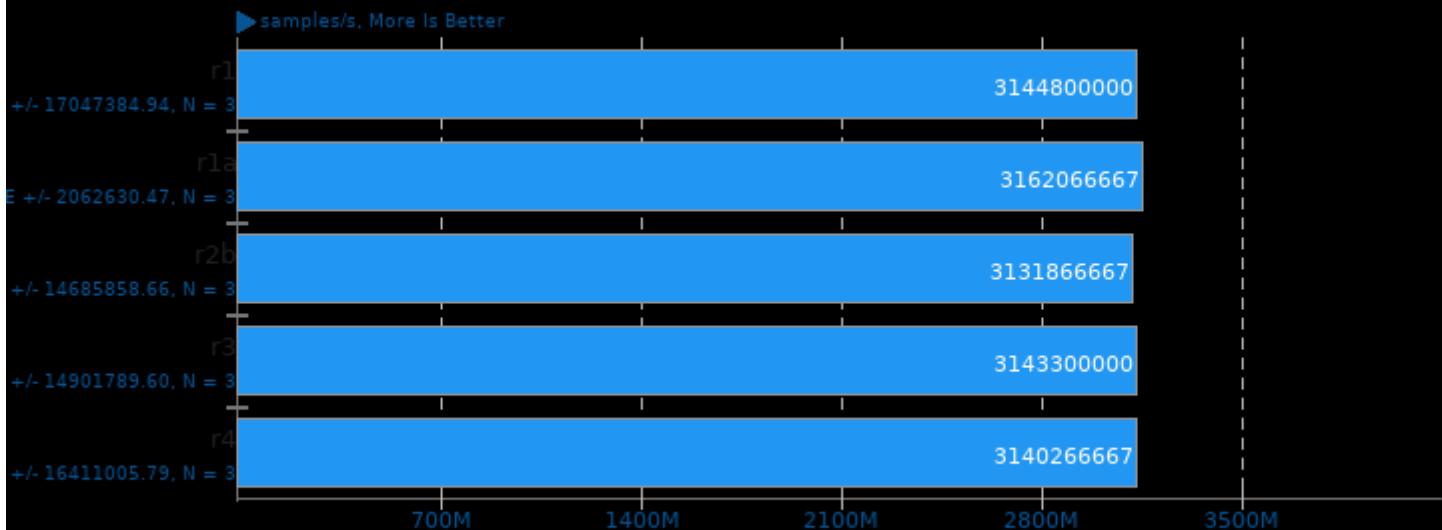
Encoder Mode: Speed 8 Realtime - Input: Bosphorus 1080p



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

**Liquid-DSP 2021.01.31**

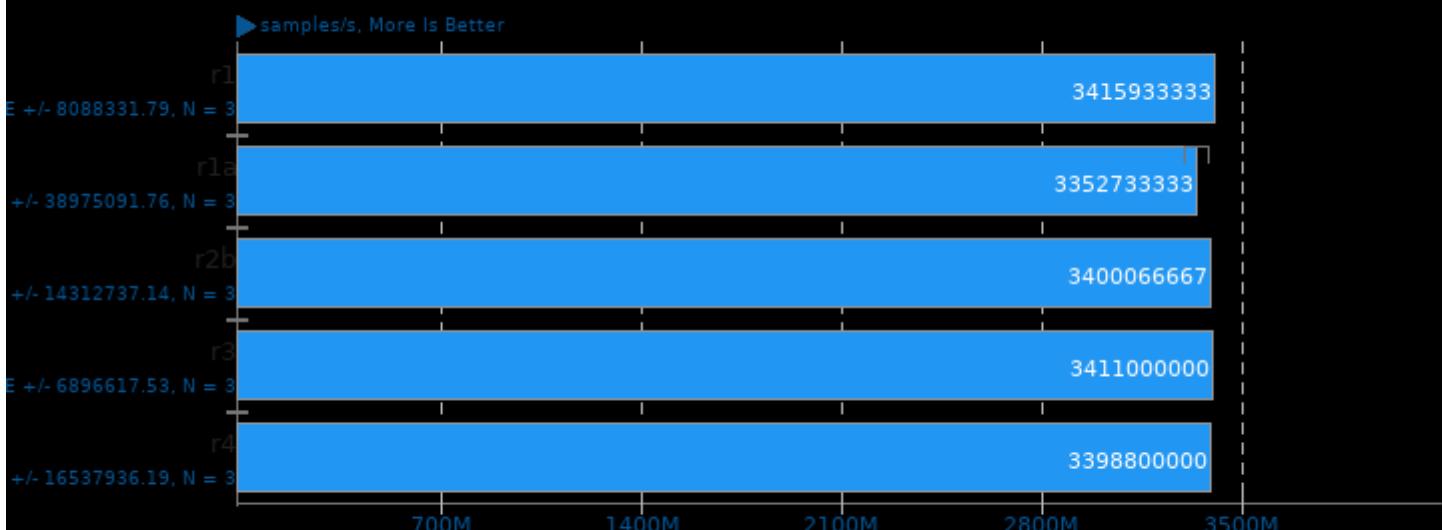
Threads: 160 - Buffer Length: 256 - Filter Length: 57



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

**Liquid-DSP 2021.01.31**

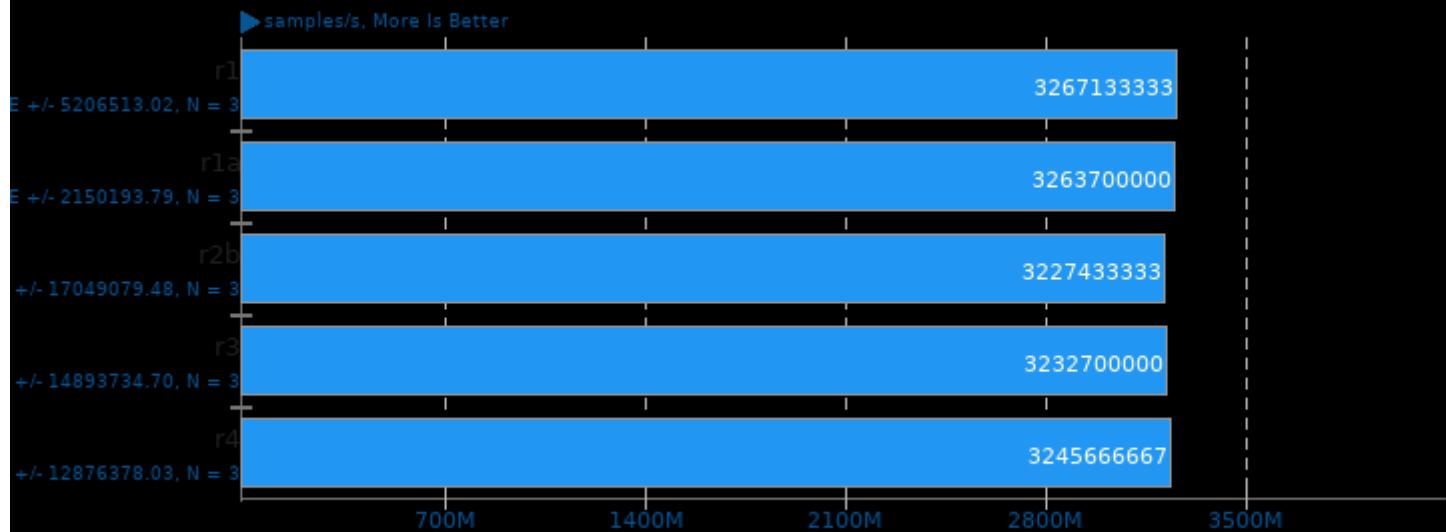
Threads: 128 - Buffer Length: 256 - Filter Length: 57



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

**Liquid-DSP 2021.01.31**

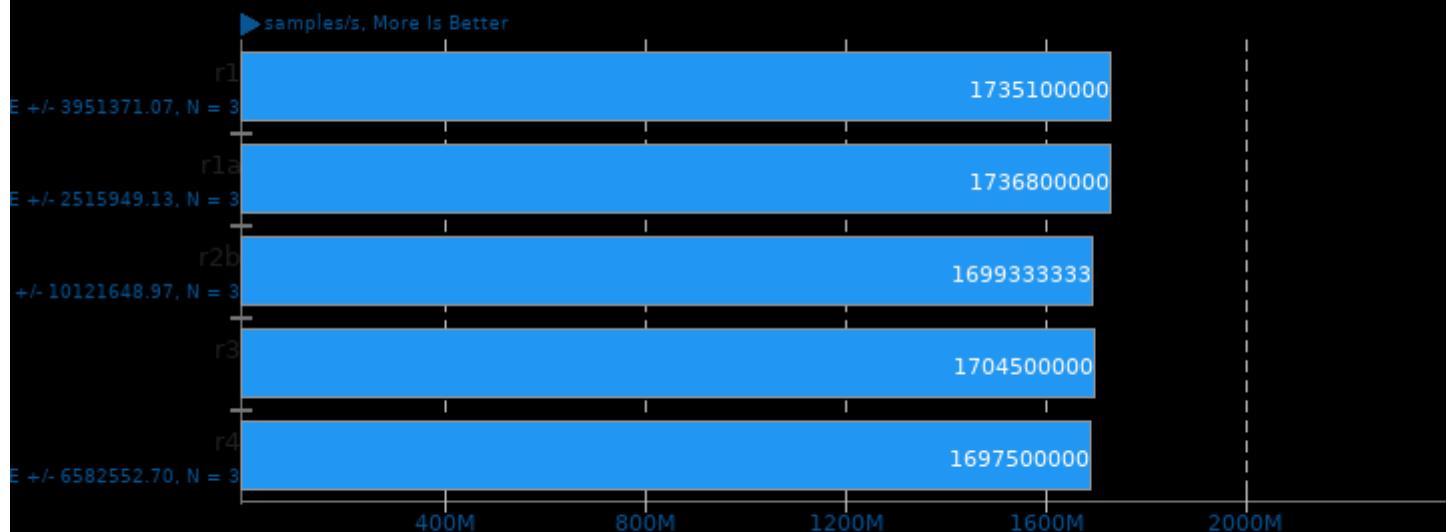
Threads: 64 - Buffer Length: 256 - Filter Length: 57



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

**Liquid-DSP 2021.01.31**

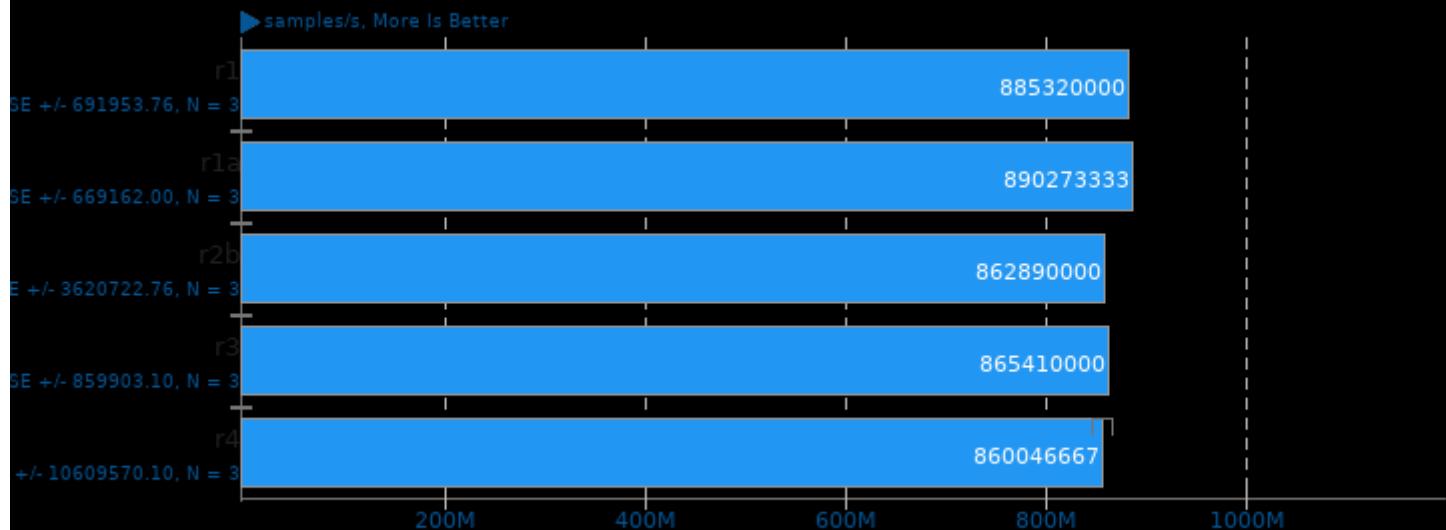
Threads: 32 - Buffer Length: 256 - Filter Length: 57



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

**Liquid-DSP 2021.01.31**

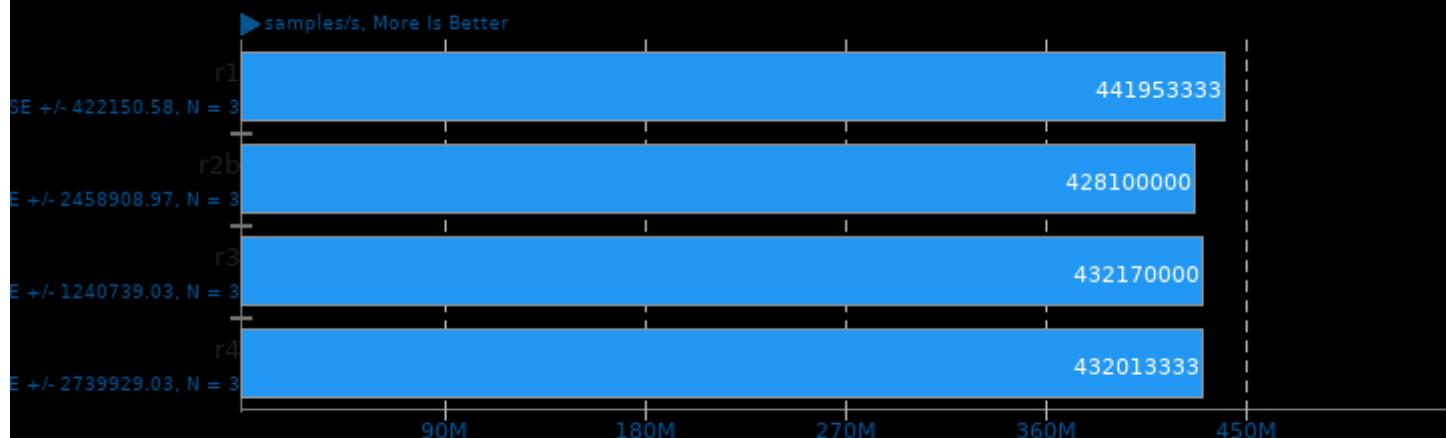
Threads: 16 - Buffer Length: 256 - Filter Length: 57



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

**Liquid-DSP 2021.01.31**

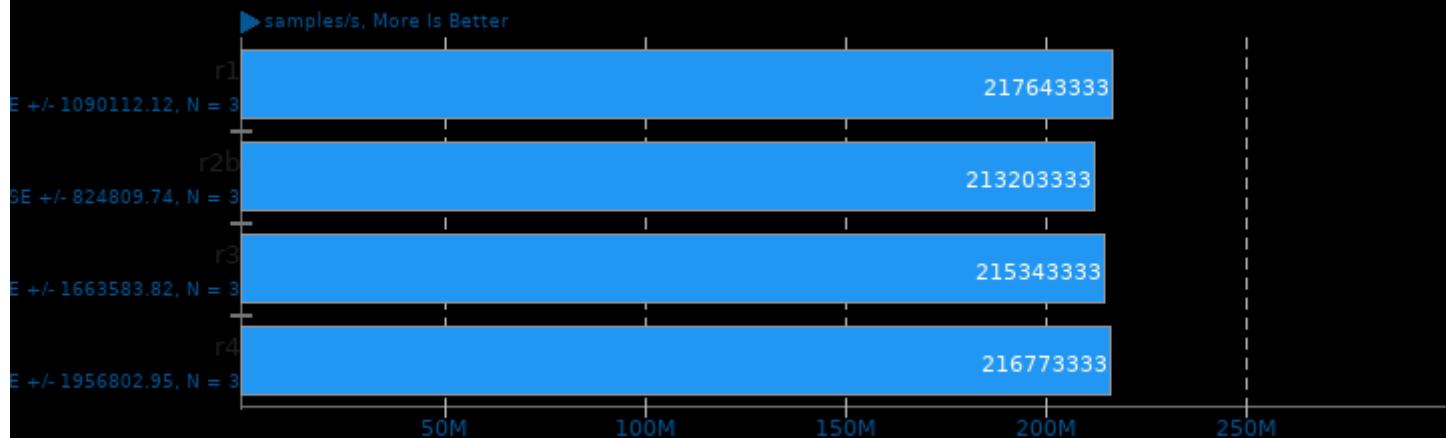
Threads: 8 - Buffer Length: 256 - Filter Length: 57



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

**Liquid-DSP 2021.01.31**

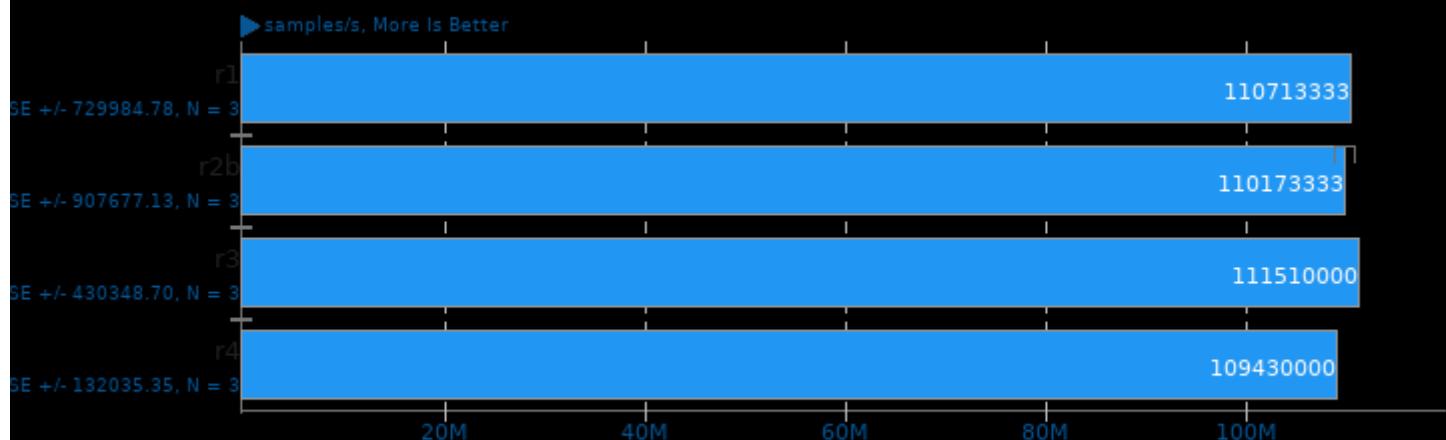
Threads: 4 - Buffer Length: 256 - Filter Length: 57



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

**Liquid-DSP 2021.01.31**

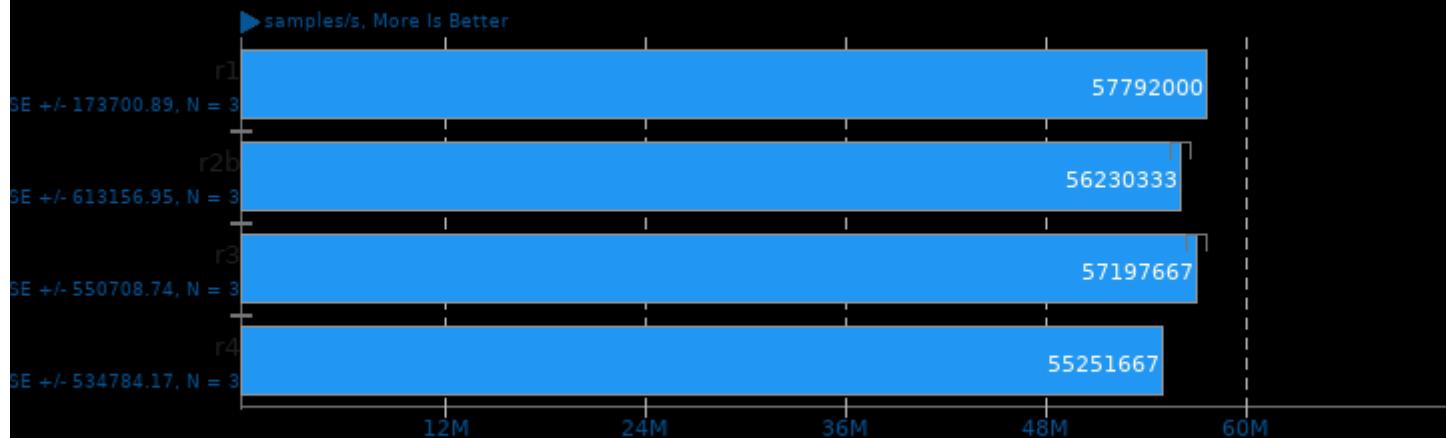
Threads: 2 - Buffer Length: 256 - Filter Length: 57



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

## Liquid-DSP 2021.01.31

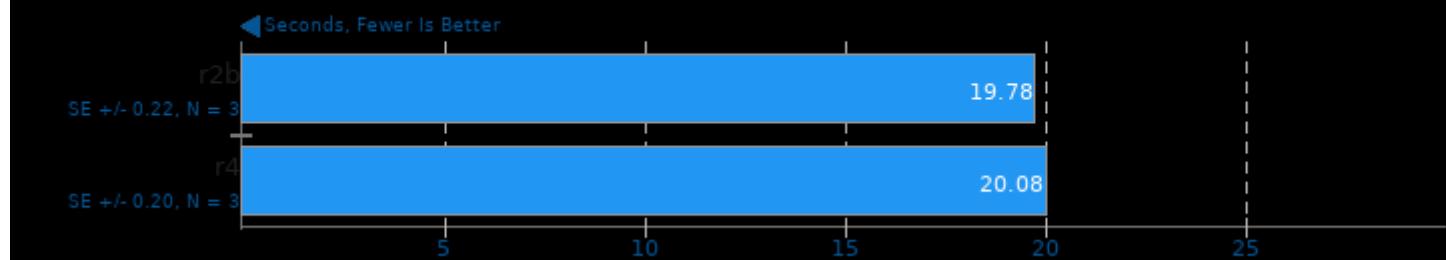
Threads: 1 - Buffer Length: 256 - Filter Length: 57



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

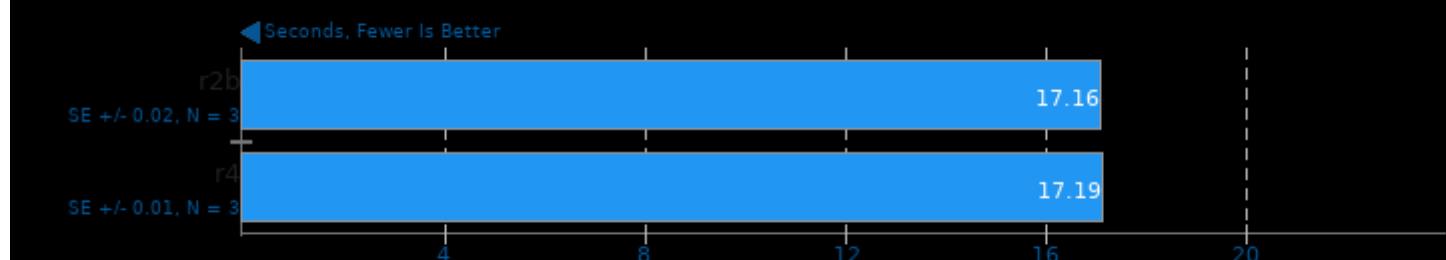
## KTX-Software toktx 4.0

Settings: Zstd Compression 19



## Basis Universal 1.13

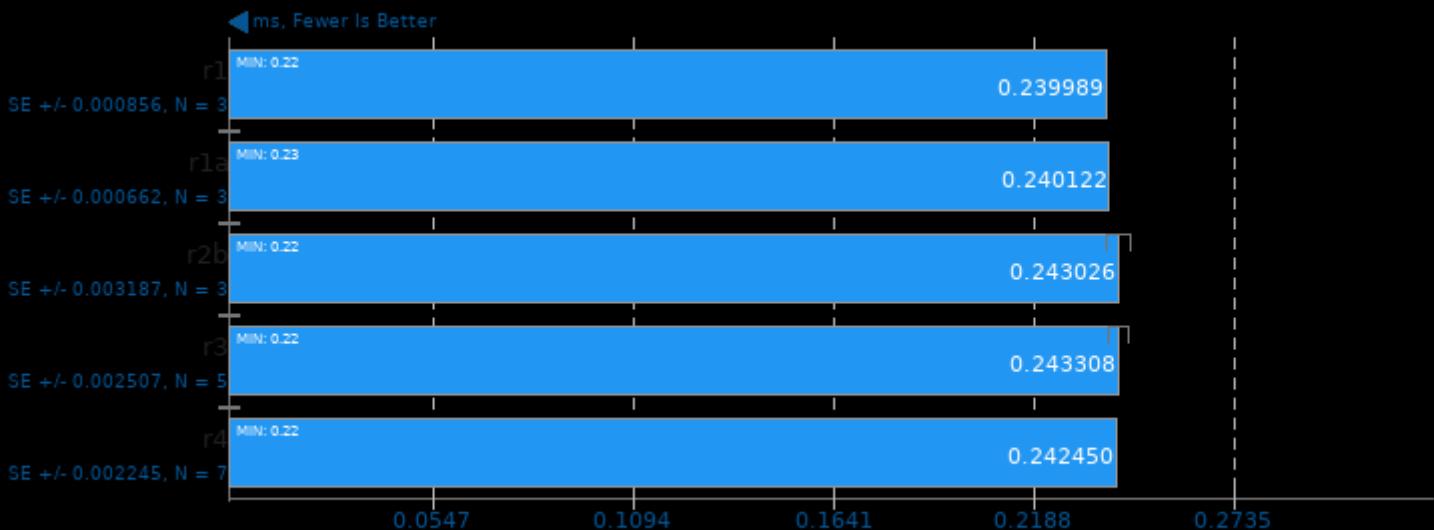
Settings: UASTC Level 3



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

## oneDNN 2.1.2

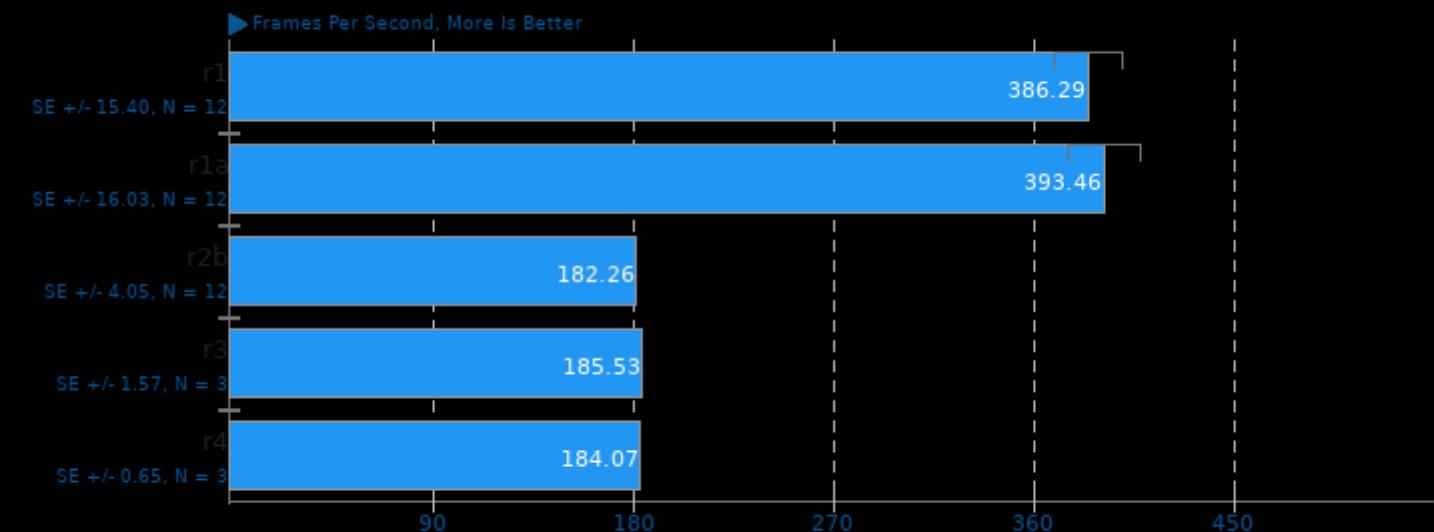
Harness: Matrix Multiply Batch Shapes Transformer - Data Type: f32 - Engine: CPU



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

## SVT-VP9 0.3

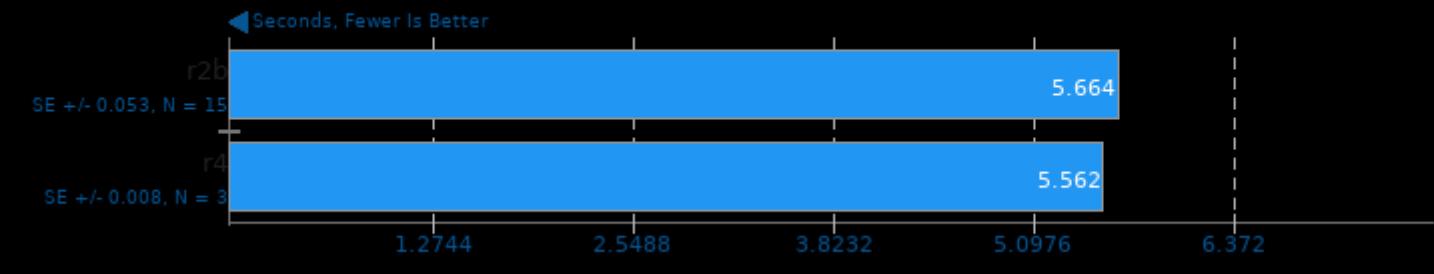
Tuning: VMAF Optimized - Input: Bosphorus 1080p



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

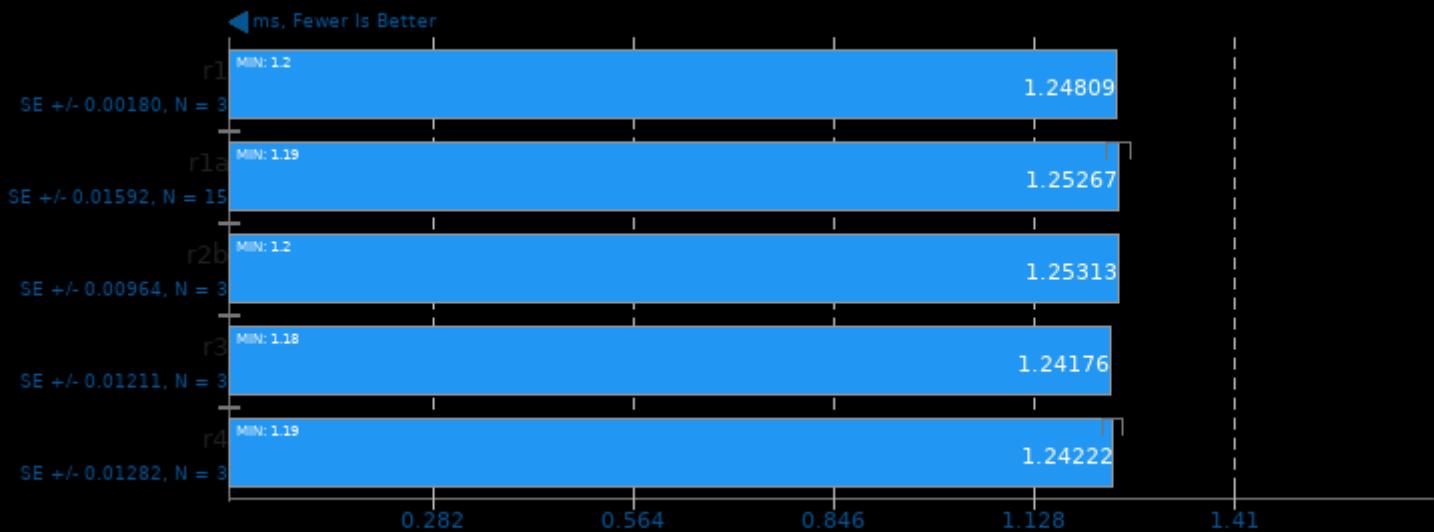
## KTX-Software toktx 4.0

Settings: UASTC 3



## oneDNN 2.1.2

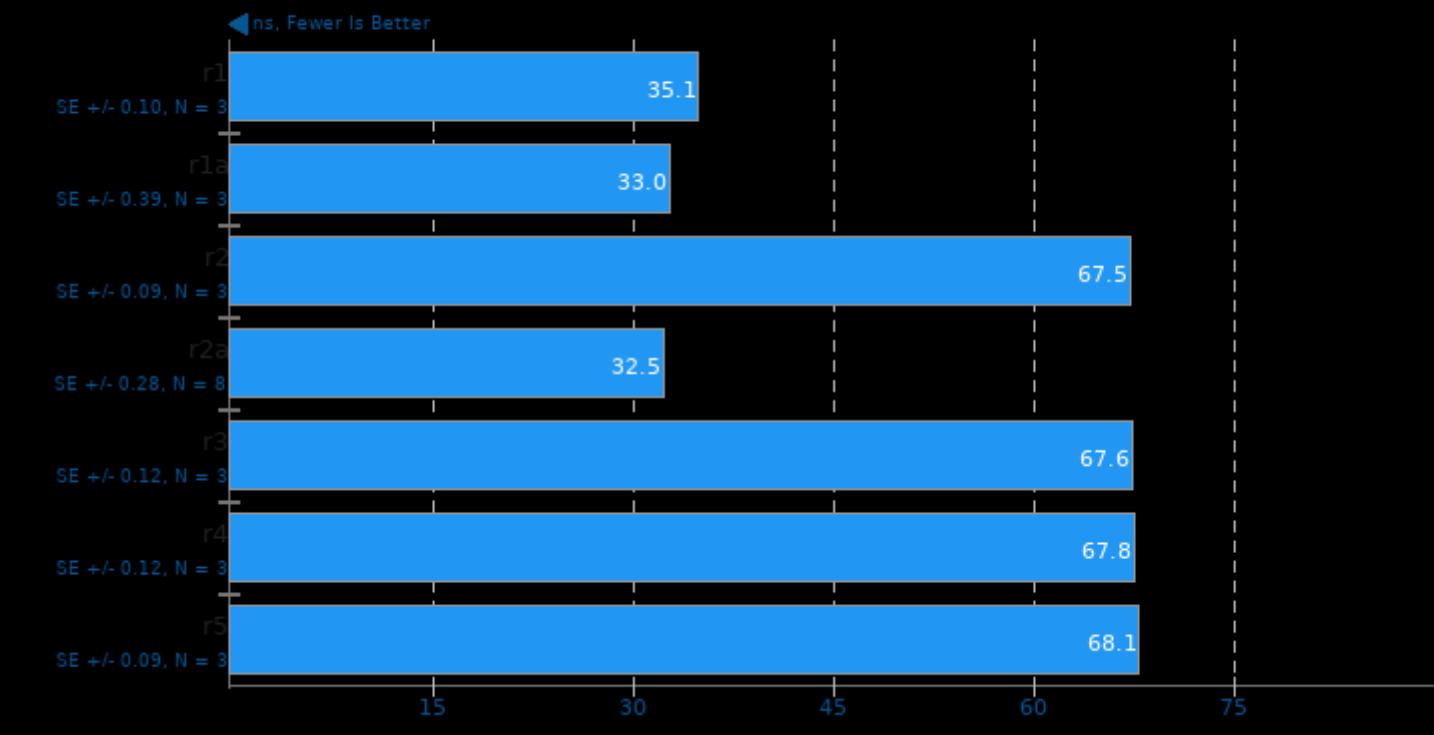
Harness: IP Shapes 3D - Data Type: f32 - Engine: CPU



1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -mmse4.1 -fPIC -pie -lpthread -ldl

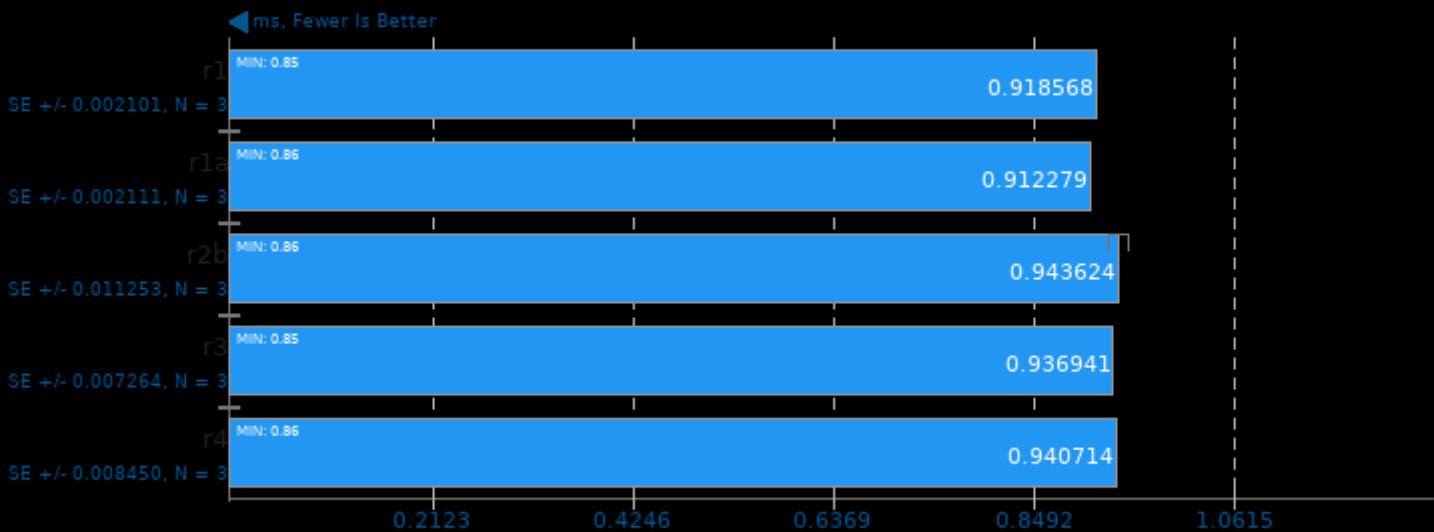
## Intel Memory Latency Checker

Test: Idle Latency



## oneDNN 2.1.2

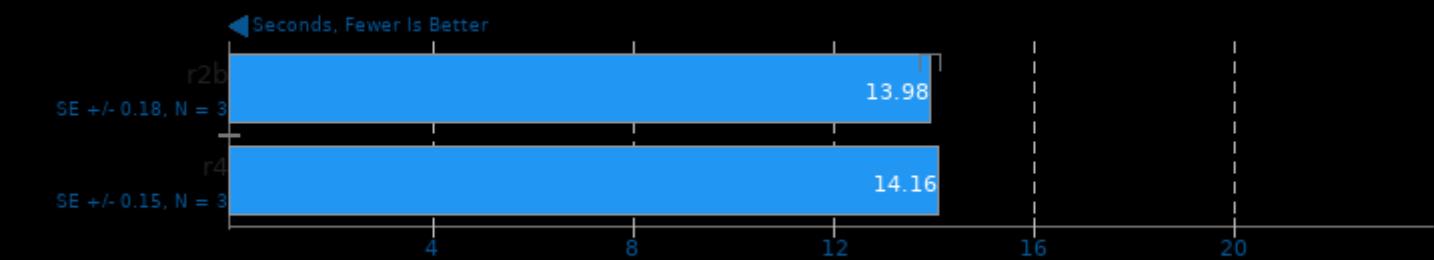
Harness: IP Shapes 1D - Data Type: f32 - Engine: CPU



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

## Basis Universal 1.13

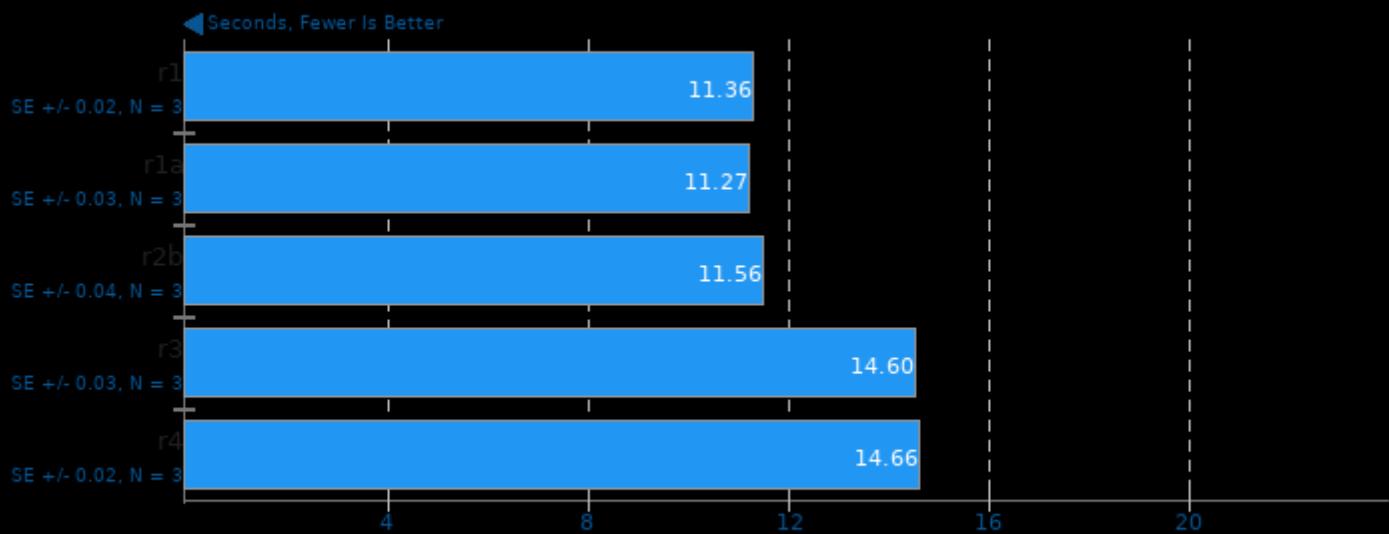
Settings: UASTC Level 2



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

**Xcompact3d Incompact3d 2021-03-11**

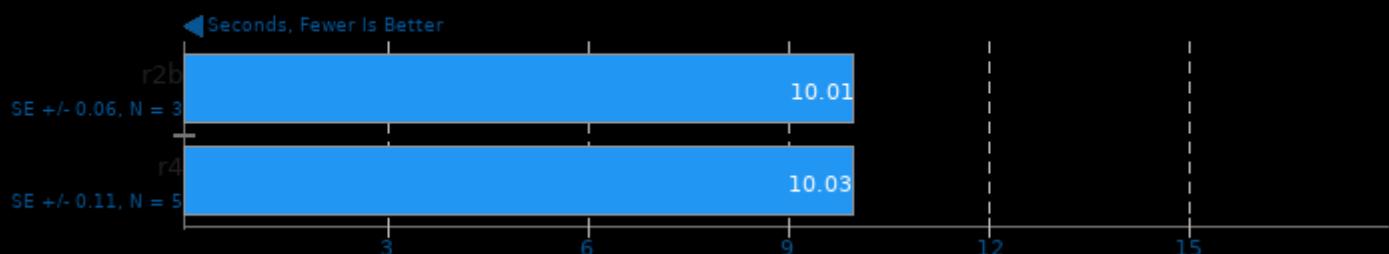
Input: input.i3d 193 Cells Per Direction



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

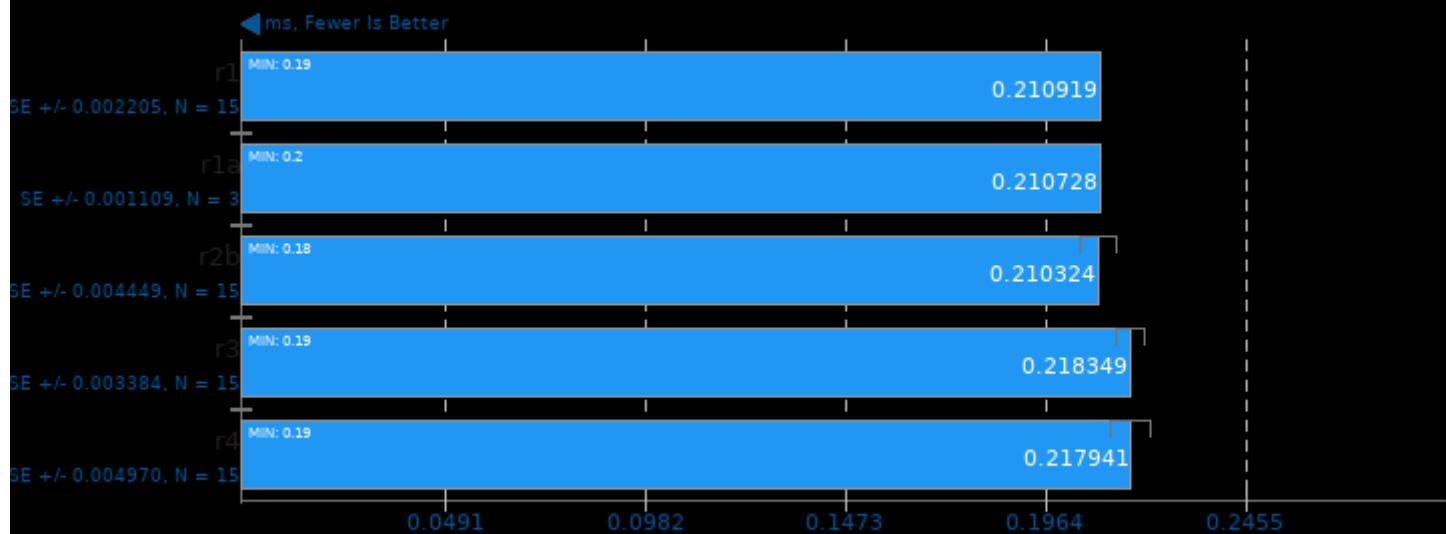
**KTX-Software toktx 4.0**

Settings: UASTC 3 + Zstd Compression 19



## oneDNN 2.1.2

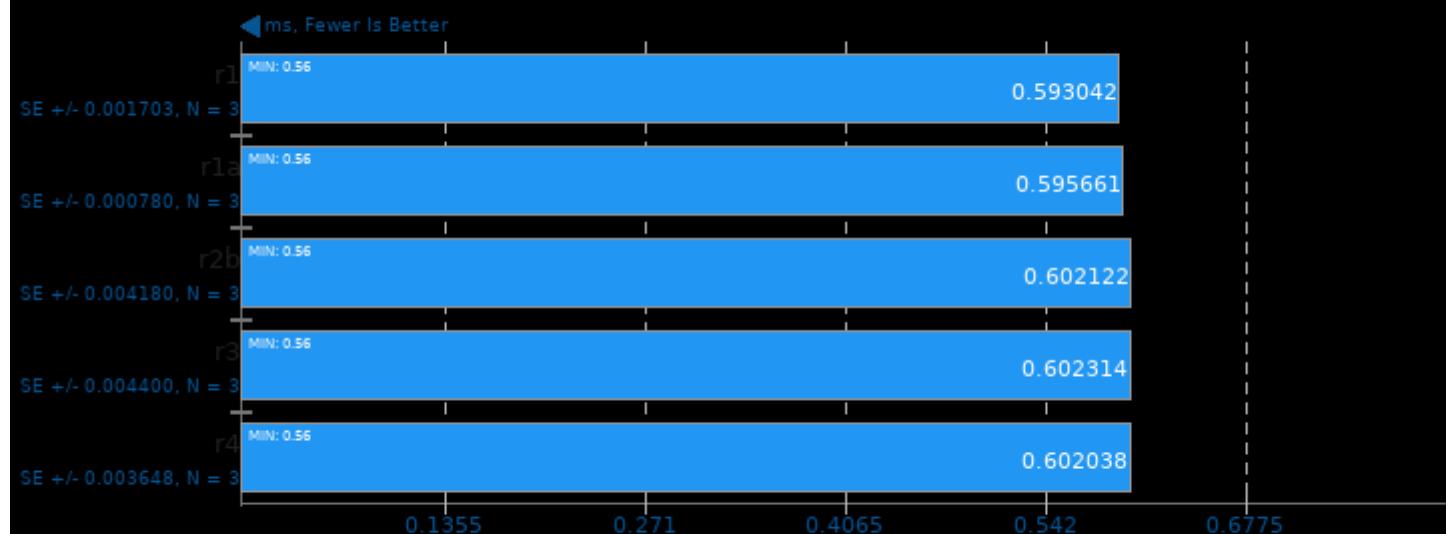
Harness: Deconvolution Batch shapes\_3d - Data Type: u8s8f32 - Engine: CPU



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

## oneDNN 2.1.2

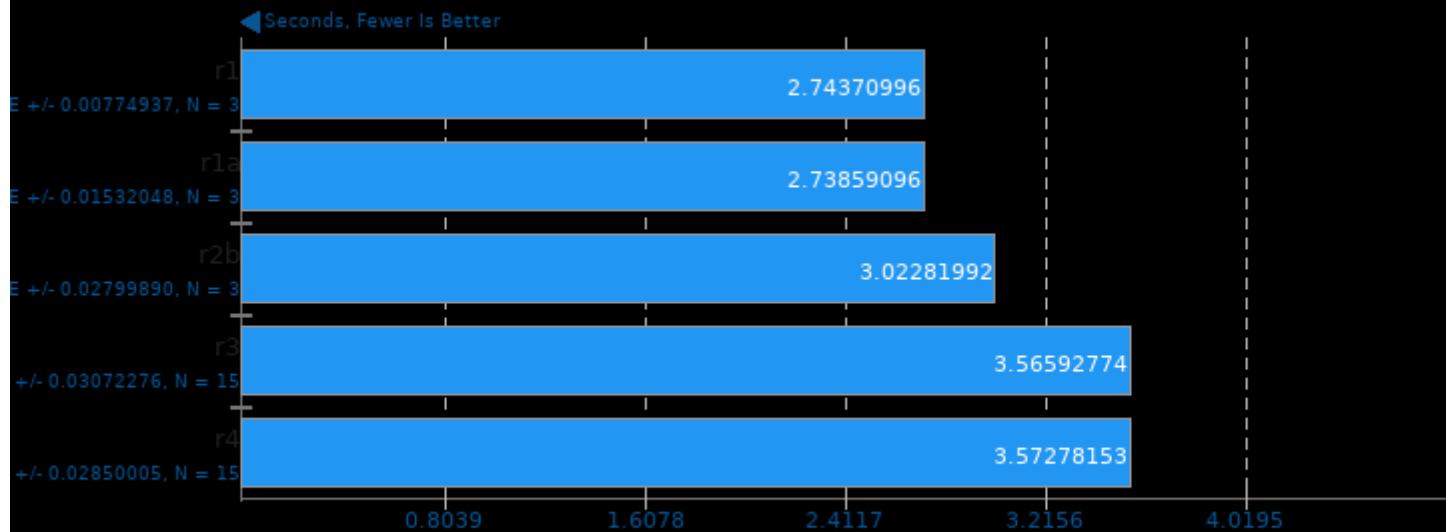
Harness: Matrix Multiply Batch Shapes Transformer - Data Type: bf16bf16bf16 - Engine: CPU



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

**Xcompact3d Incompact3d 2021-03-11**

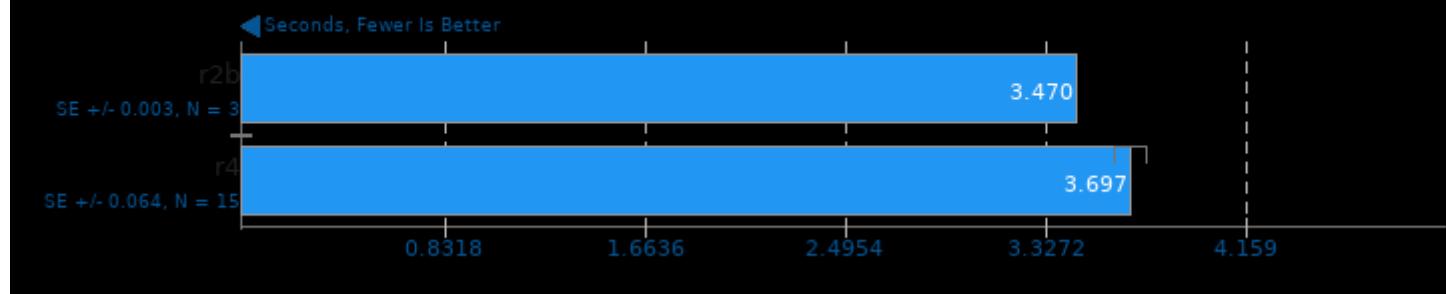
Input: input.i3d 129 Cells Per Direction



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

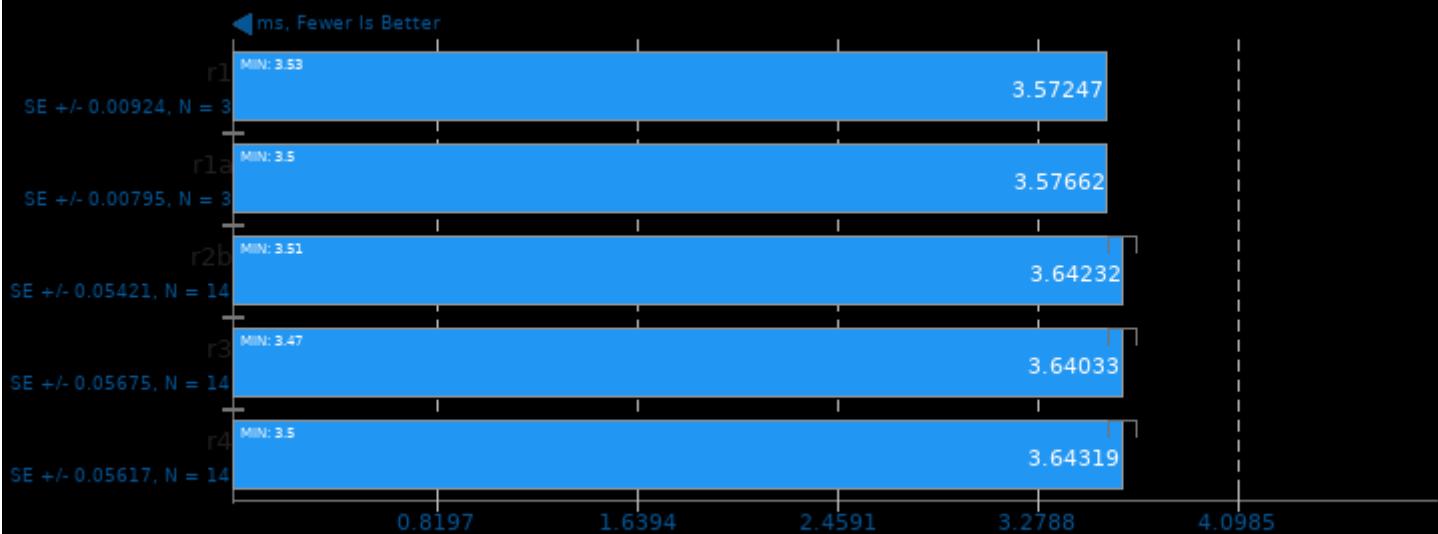
**KTX-Software toktx 4.0**

Settings: Zstd Compression 9



## oneDNN 2.1.2

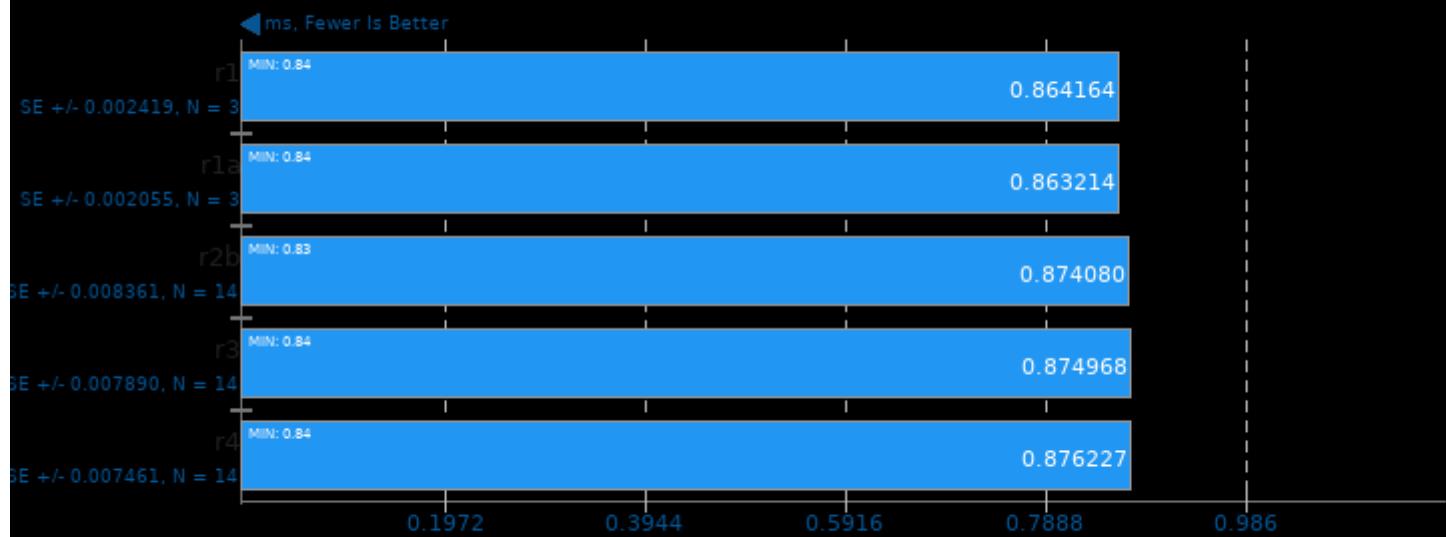
Harness: Deconvolution Batch shapes\_3d - Data Type: bf16bf16bf16 - Engine: CPU



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

## oneDNN 2.1.2

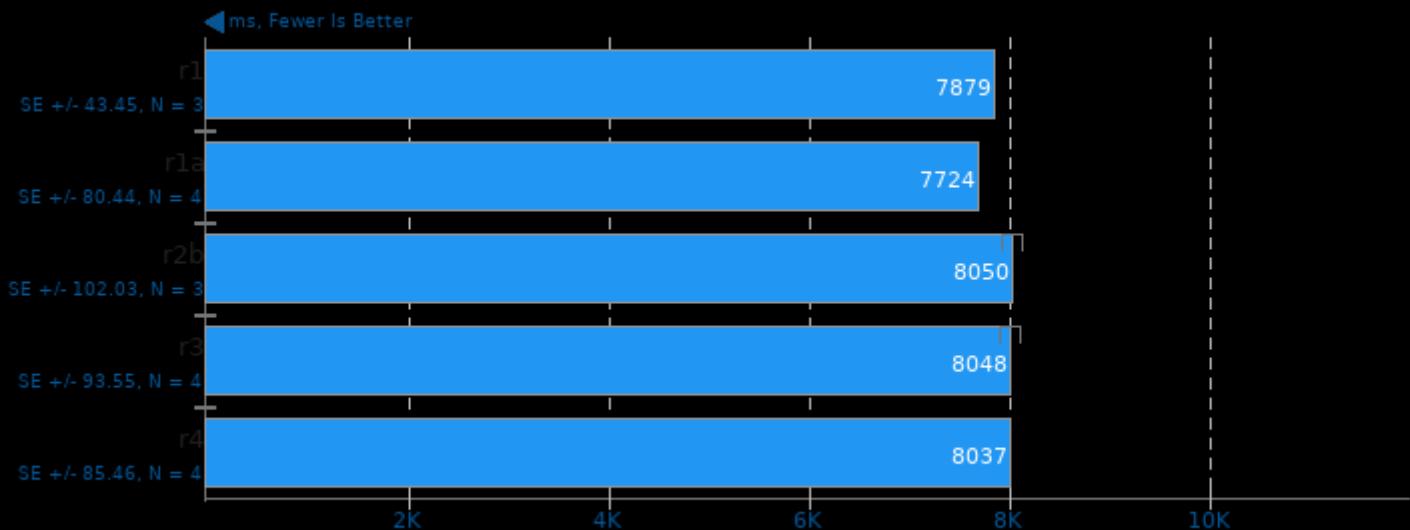
Harness: Deconvolution Batch shapes\_3d - Data Type: f32 - Engine: CPU



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

**toyBrot Fractal Generator 2020-11-18**

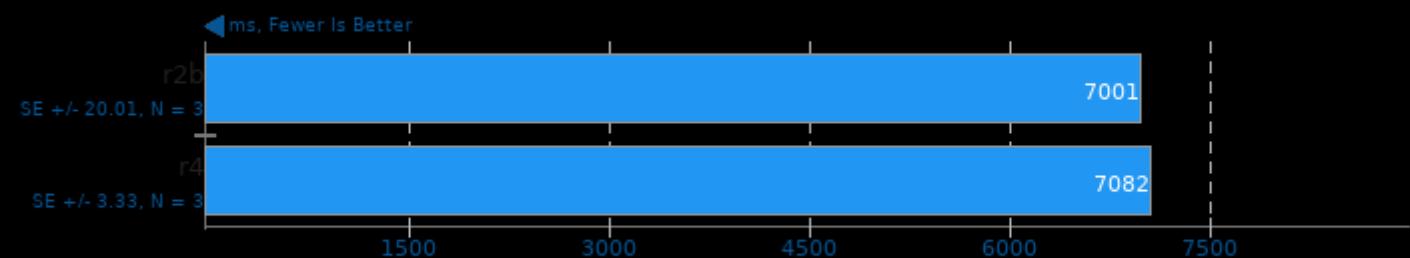
Implementation: C++ Tasks



1. (CXX) g++ options: -O3 -lpthread -lm -lgcc -lgcc\_s -lc

**Google Draco 1.4.1**

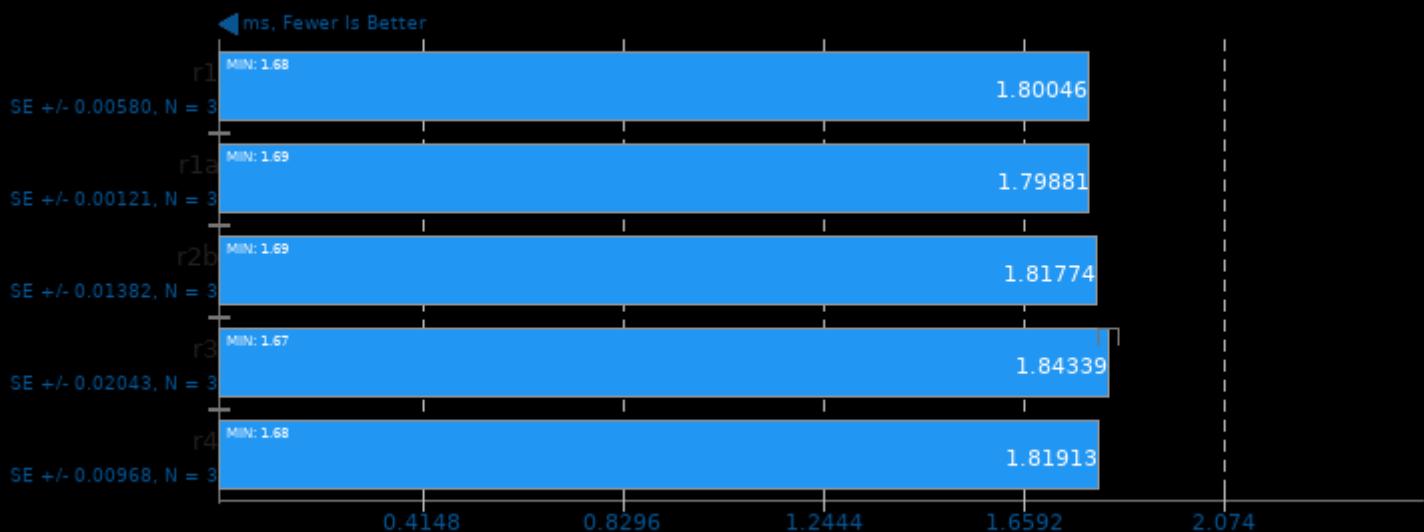
Model: Church Facade



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

## oneDNN 2.1.2

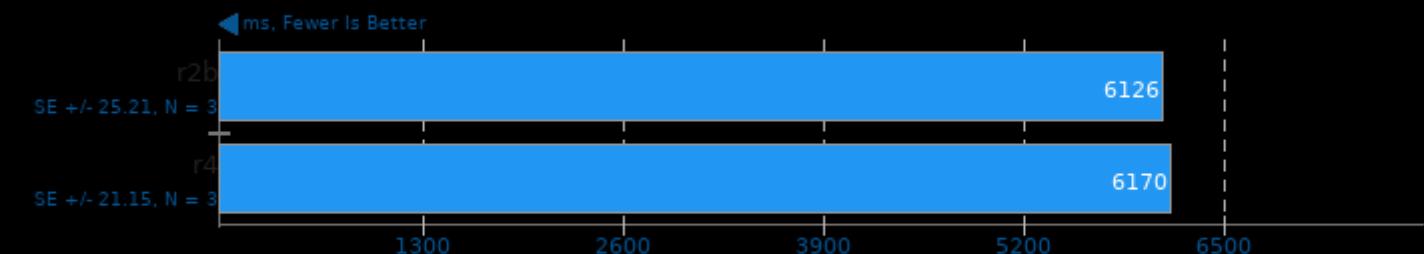
Harness: IP Shapes 3D - Data Type: bf16bf16bf16 - Engine: CPU



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

## Google Draco 1.4.1

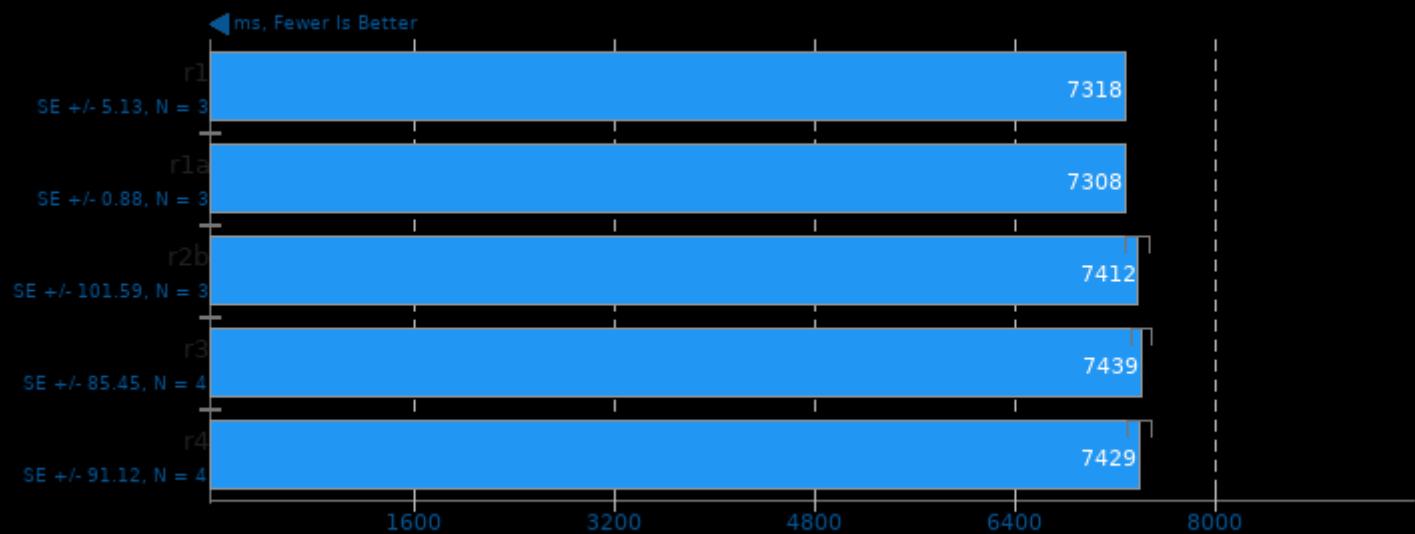
Model: Lion



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

**toyBrot Fractal Generator 2020-11-18**

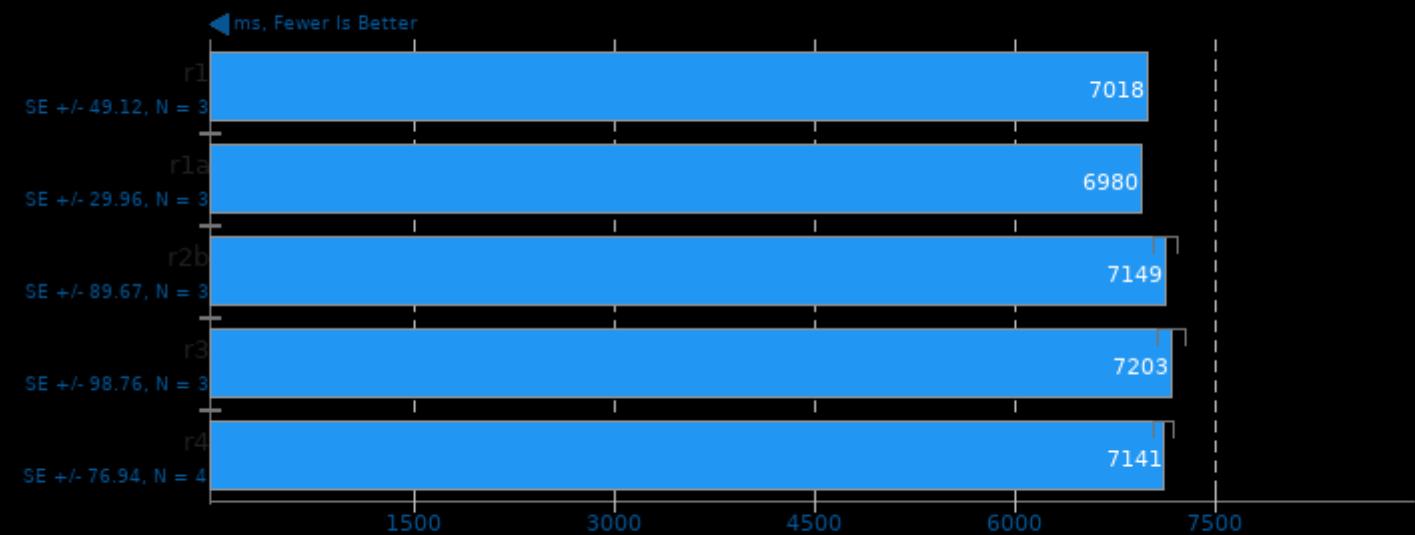
Implementation: OpenMP



1. (CXX) g++ options: -O3 -fthread -lm -lgcc -lgcc\_s -lc

**toyBrot Fractal Generator 2020-11-18**

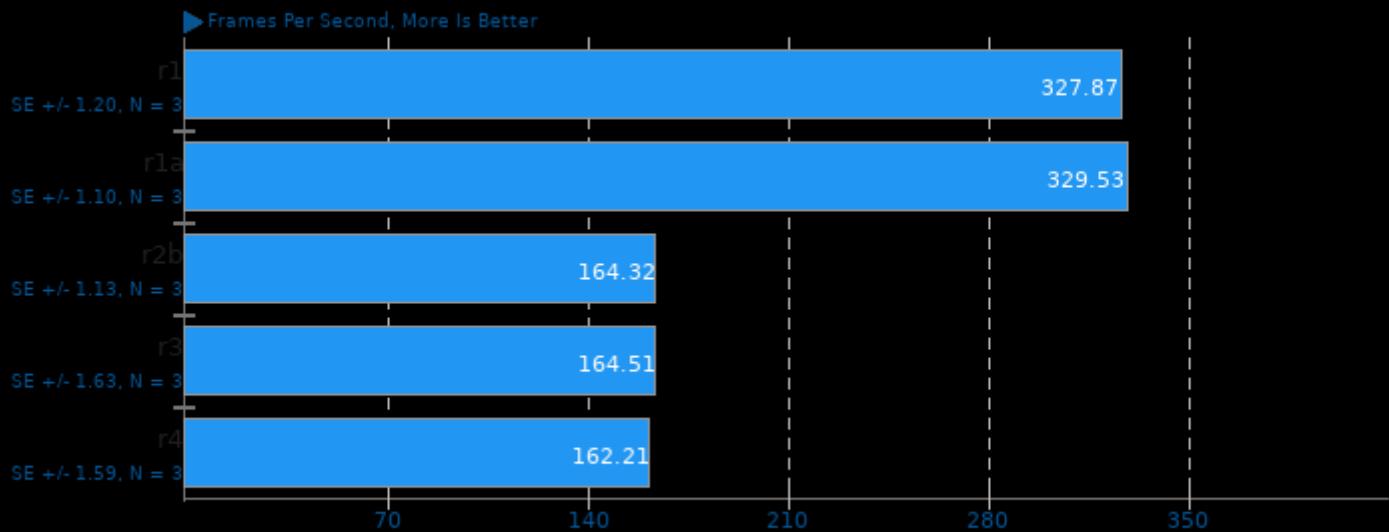
Implementation: C++ Threads



1. (CXX) g++ options: -O3 -fthread -lm -lgcc -lgcc\_s -lc

## SVT-VP9 0.3

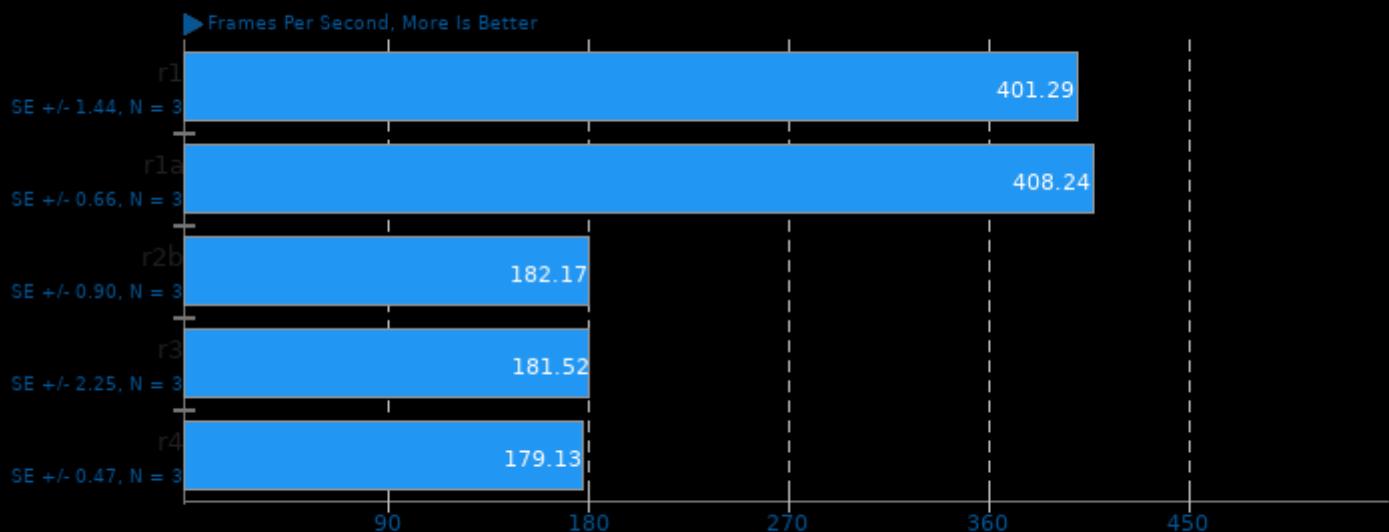
Tuning: Visual Quality Optimized - Input: Bosphorus 1080p



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

## SVT-VP9 0.3

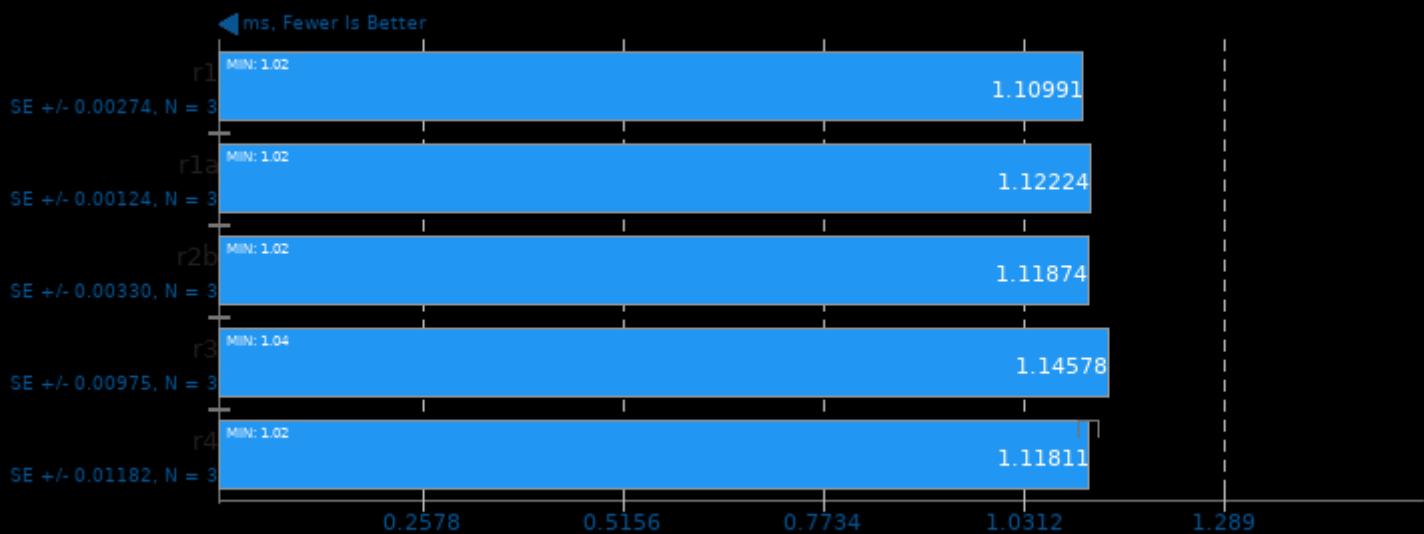
Tuning: PSNR/SSIM Optimized - Input: Bosphorus 1080p



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

## oneDNN 2.1.2

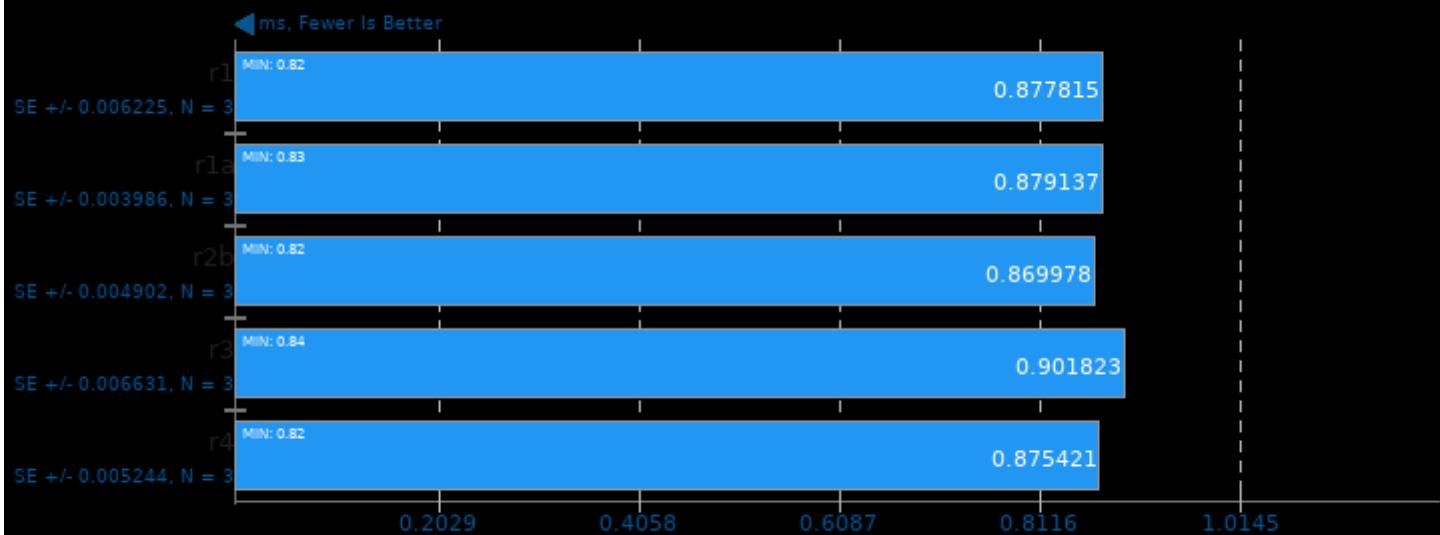
Harness: Convolution Batch Shapes Auto - Data Type: f32 - Engine: CPU



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

## oneDNN 2.1.2

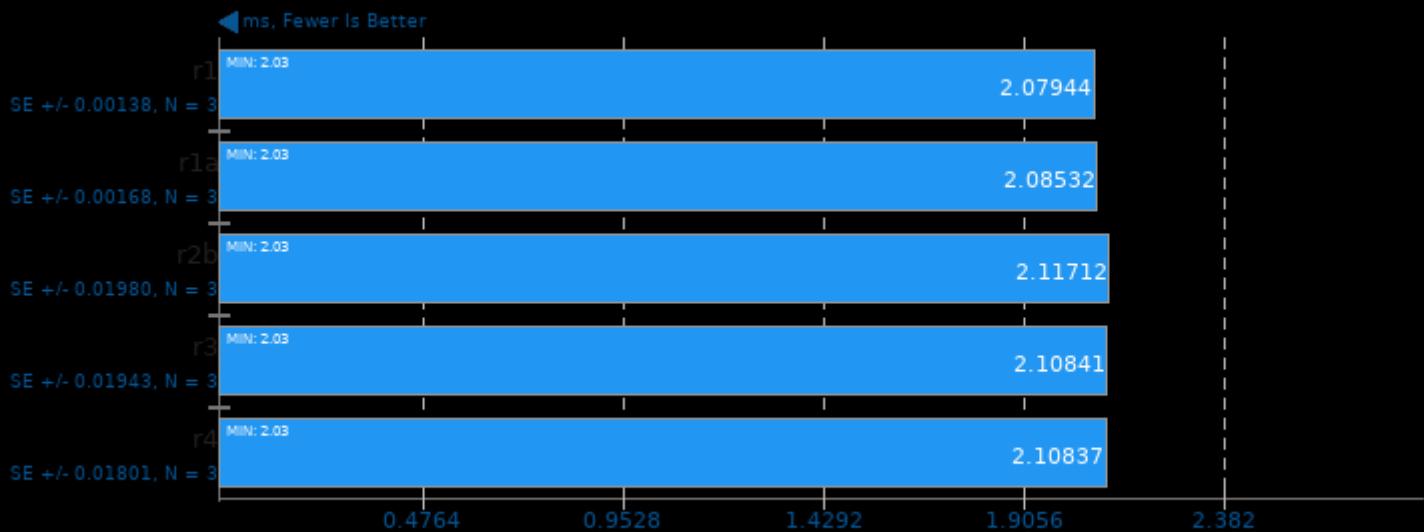
Harness: Convolution Batch Shapes Auto - Data Type: u8s8f32 - Engine: CPU



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

## oneDNN 2.1.2

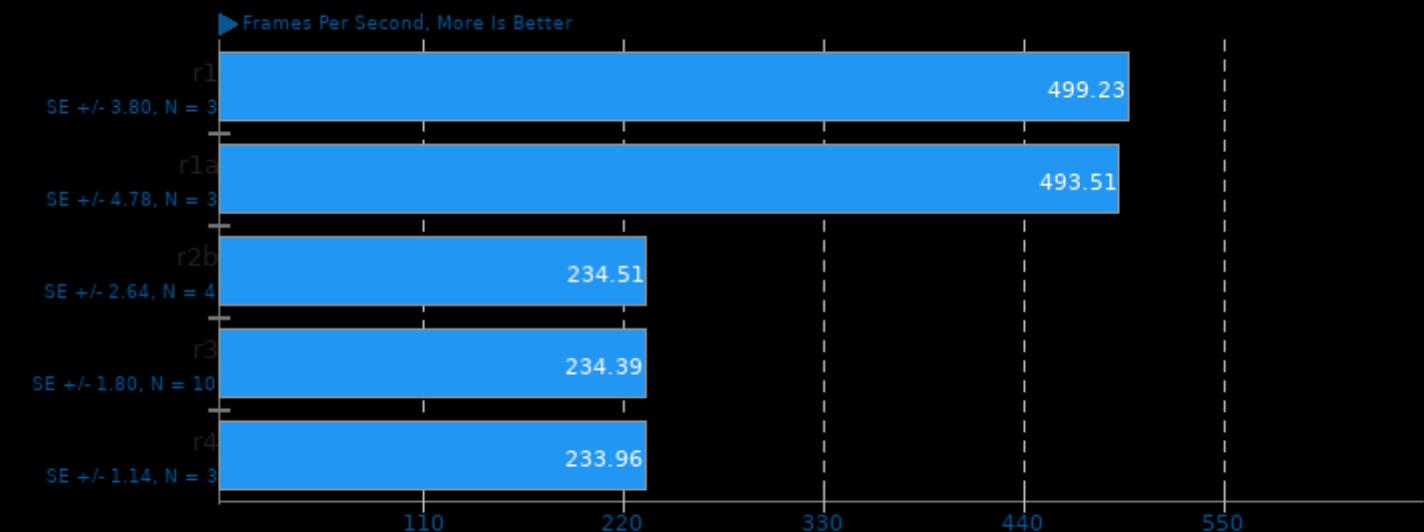
Harness: Convolution Batch Shapes Auto - Data Type: bf16bf16bf16 - Engine: CPU



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

## SVT-HEVC 1.5.0

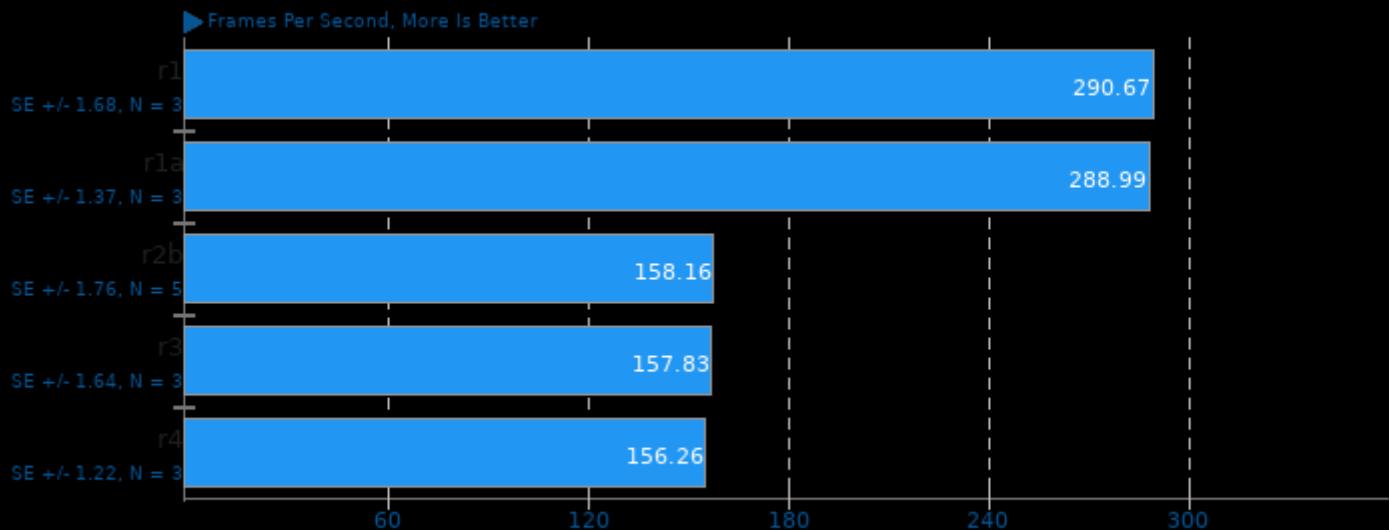
Tuning: 10 - Input: Bosphorus 1080p



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

**SVT-HEVC 1.5.0**

Tuning: 7 - Input: Bosphorus 1080p



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

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