



## epyc-march

2 x AMD EPYC 7742 64-Core testing with a Supermicro H11DSi-NT v2.00 (2.1 BIOS) and ASPEED on Ubuntu 20.04 via the Phoronix Test Suite.

### Automated Executive Summary

*EPYC 7742 2P had the most wins, coming in first place for 58% of the tests.*

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

*Rodinia (Test: OpenMP CFD Solver) at 20.643x*

*oneDNN (Harness: Convolution Batch Shapes Auto - Data Type: f32 - Engine: CPU) at 2.698x*

*Rodinia (Test: OpenMP HotSpot3D) at 1.338x*

*LeelaChessZero (Backend: Eigen) at 1.195x*

*LeelaChessZero (Backend: BLAS) at 1.181x*

*NAS Parallel Benchmarks (Test / Class: LU.C) at 1.101x*

*Rodinia (Test: OpenMP Leukocyte) at 1.099x*

*C-Blosc (Compressor: blosclz) at 1.085x*

*Rodinia (Test: OpenMP LavaMD) at 1.076x*

*Parboil (Test: OpenMP MRI Gridding) at 1.072x.*

## Test Systems:

### EPYC 7742 2P

2P

### 2 x AMD EPYC 7742 64-Core

### 7742 2P Repeat

Processor: 2 x AMD EPYC 7742 64-Core @ 2.25GHz (128 Cores / 256 Threads), Motherboard: Supermicro H11DSi-NT v2.00 (2.1 BIOS), Chipset: AMD Starship/Matisse, Memory: 16 x 8192 MB DDR4-3200MT/s HMA81GR7CJR8N-XN, Disk: 3841GB Micron\_9300\_MTFDHAL3T8TDP, Graphics: ASPEED, Monitor: VGA HDMI, Network: 2 x Intel 10G X550T

OS: Ubuntu 20.04, Kernel: 5.8.0-44-generic (x86\_64), 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

Disk Notes: NONE / errors=remount-ro,relatime,rw / Block Size: 4096

Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0x8301034

Java Notes: OpenJDK Runtime Environment (build 11.0.10+9-Ubuntu-0ubuntu1.20.04)

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/swaps barriers and \_\_user pointer sanitization + spectre\_v2: Mitigation of Full AMD retpoline IBPB: conditional IBRS\_FW STIBP: conditional RSB filling + srbds: Not affected + tsx\_async\_abort: Not affected

	EPYC 7742 2P	2P	2 x AMD EPYC 7742 64-Core	7742 2P Repeat
<b>IOR - 2MB (MB/s)</b>	<b>445.10</b>			<b>452.03</b>
Normalized	98.47%			100%
Standard Deviation	0.5%			2.5%
<b>IOR - 4MB (MB/s)</b>	<b>485.74</b>			<b>480.55</b>
Normalized	100%			98.93%
Standard Deviation	2.2%			1.1%
<b>IOR - 8MB (MB/s)</b>	<b>489.40</b>			<b>485.13</b>
Normalized	100%			99.13%
Standard Deviation	0.4%			1.3%
<b>IOR - 16MB (MB/s)</b>	<b>480.63</b>			<b>468.11</b>
Normalized	100%			97.4%
Standard Deviation	0.4%			2%
<b>C-Blosc - blosclz (MB/s)</b>	<b>3492</b>			<b>3788</b>
Normalized	92.17%			100%
Standard Deviation	1.2%			1.8%
<b>QuantLib (MFLOPS)</b>	<b>2016</b>			<b>2009</b>
Normalized	100%			99.67%
Standard Deviation	1.3%			1.1%

Etcpak - DXT1 (Mpx/s)	1040	1037
Normalized	100%	99.77%
Standard Deviation	0.6%	0.6%
Etcpak - ETC1 (Mpx/s)	236.722	237.245
Normalized	99.78%	100%
Standard Deviation	0.1%	0.1%
Etcpak - ETC2 (Mpx/s)	139.501	139.561
Normalized	99.96%	100%
Standard Deviation	0%	0.1%
Etcpak - ETC1 + Dithering (Mpx/s)	224.164	224.599
Normalized	99.81%	100%
Standard Deviation	0%	0%
High Performance Conjugate Gradient (GFLOP/s)	25.6364	25.9558
Normalized	98.77%	100%
Standard Deviation	2.5%	1.4%
HPL Linpack (GFLOPS)	153.59	
Standard Deviation	0.5%	
NAS Parallel Benchmarks - CG.C (Mop/s)	41060	39811
Normalized	100%	96.96%
Standard Deviation	1.6%	2.4%
NAS Parallel Benchmarks - EP.C (Mop/s)	8223	8108
Normalized	100%	98.6%
Standard Deviation	0.4%	0.2%
NAS Parallel Benchmarks - EP.D (Mop/s)	8426	7886
Normalized	100%	93.59%
Standard Deviation	0.3%	0.2%
NAS Parallel Benchmarks - FT.C (Mop/s)	76051	71133
Normalized	100%	93.53%
Standard Deviation	2.2%	0.6%
NAS Parallel Benchmarks - IS.D	3269	3313
Normalized	98.66%	100%
Standard Deviation	1.6%	0.5%
NAS Parallel Benchmarks - LU.C (Mop/s)	194295	176466
Normalized	100%	90.82%
Standard Deviation	0.7%	1.6%
NAS Parallel Benchmarks - MG.C (Mop/s)	72807	73255
Normalized	99.39%	100%
Standard Deviation	1.1%	0.4%
LeelaChessZero - BLAS (Nodes/s)	3936	3333
Normalized	100%	84.68%
Standard Deviation	3.8%	2.3%
LeelaChessZero - Eigen (Nodes/s)	4198	3512
Normalized	100%	83.66%
Standard Deviation	1.7%	4.2%
Parboil - OpenMP LBM (sec)	51.018187	74.068677
Normalized	100%	68.88%
Standard Deviation	9.9%	1.8%

<b>Parboil - OpenMP CUTCP (sec)</b>	<b>0.831875</b>	<b>0.852529</b>
Normalized	100%	97.58%
Standard Deviation	2.1%	4%
<b>Parboil - OpenMP Stencil (sec)</b>	<b>5.389561</b>	<b>5.544628</b>
Normalized	100%	97.2%
Standard Deviation	0.6%	1.3%
<b>Parboil - O.M.G (sec)</b>	<b>194.080744</b>	<b>208.037842</b>
Normalized	100%	93.29%
Standard Deviation	1%	1.5%
<b>miniFE - Small (CG Mflops)</b>	<b>11313</b>	<b>8169</b>
Normalized	100%	72.21%
Standard Deviation	14.2%	1.5%
<b>CloverLeaf - L.E.H (sec)</b>	<b>23.36</b>	<b>2994</b>
Normalized	100%	0.78%
Standard Deviation	6.3%	0%
<b>Rodinia - OpenMP LavaMD (sec)</b>	<b>30.21</b>	<b>32.511</b>
Normalized	100%	92.92%
Standard Deviation	1.5%	0.6%
<b>Rodinia - OpenMP HotSpot3D (sec)</b>	<b>112.829</b>	<b>150.965</b>
Normalized	100%	74.74%
Standard Deviation	4%	0.8%
<b>Rodinia - OpenMP Leukocyte (sec)</b>	<b>50.850</b>	<b>55.861</b>
Normalized	100%	91.03%
Standard Deviation	1.7%	3%
<b>Rodinia - OpenMP CFD Solver (sec)</b>	<b>10.627</b>	<b>219.378</b>
Normalized	100%	4.84%
Standard Deviation	2%	0.1%
<b>Rodinia - O.S (sec)</b>	<b>9.970</b>	<b>96.160</b>
Normalized	100%	10.37%
Standard Deviation	5.3%	15.2%
<b>NAMD - ATPase Simulation - 327,506 Atoms (days/ns)</b>	<b>0.27952</b>	<b>0.28306</b>
Normalized	100%	98.75%
Standard Deviation	1.2%	1.5%
<b>Dolfyn - C.F.D (sec)</b>	<b>20.206</b>	<b>20.201</b>
Normalized	99.98%	100%
Standard Deviation	0.4%	0.4%
<b>Nebular Empirical Analysis Tool (sec)</b>	<b>62.752</b>	<b>85.373</b>
Normalized	100%	73.5%
Standard Deviation	52.3%	30.6%
<b>Izbench - XZ 0 - Compression (MB/s)</b>	<b>32</b>	<b>32</b>
<b>Izbench - XZ 0 - Decompression</b>	<b>98</b>	<b>99</b>
Normalized	98.99%	100%
Standard Deviation	0.6%	
<b>Izbench - Zstd 1 - Compression (MB/s)</b>	<b>435</b>	<b>437</b>
Normalized	99.54%	100%
Standard Deviation	0.4%	0.3%
<b>Izbench - Zstd 1 - Decompression</b>	<b>1346</b>	<b>1334</b>
Normalized	100%	99.11%
Standard Deviation	0.2%	0.6%
<b>Izbench - Zstd 8 - Compression (MB/s)</b>	<b>82</b>	<b>83</b>
Normalized	98.8%	100%
Standard Deviation		1.4%
<b>Izbench - Zstd 8 - Decompression</b>	<b>1497</b>	<b>1487</b>
Normalized	100%	99.33%

	Standard Deviation	0.1%	0.1%
Izbench - Crush 0 - Compression		89	89
	Standard Deviation		1.3%
Izbench - Crush 0 - Decompression		<b>381</b>	<b>382</b>
	(MB/s)		
	Normalized	99.74%	100%
Izbench - Brotli 0 - Compression		<b>415</b>	<b>416</b>
	Normalized	99.76%	100%
	Standard Deviation	0.6%	0.3%
Izbench - Brotli 0 - Decompression		<b>482</b>	<b>481</b>
	(MB/s)		
	Normalized	100%	99.79%
	Standard Deviation	0.5%	0.7%
Izbench - Brotli 2 - Compression		165	165
	Standard Deviation	0.6%	0.7%
Izbench - Brotli 2 - Decompression		<b>571</b>	<b>569</b>
	(MB/s)		
	Normalized	100%	99.65%
	Standard Deviation	0.5%	
Izbench - Libdeflate 1 - Compression		<b>205</b>	<b>206</b>
	(MB/s)		
	Normalized	99.51%	100%
	Standard Deviation		0.3%
Izbench - Libdeflate 1 - Decompression		<b>959</b>	<b>961</b>
	(MB/s)		
	Normalized	99.79%	100%
	Standard Deviation	1%	0.1%
Algebraic Multi-Grid Benchmark		<b>1247427667</b>	<b>1246138667</b>
	(Figure Of Merit)		
	Normalized	100%	99.9%
	Standard Deviation	0.2%	0.1%
FFTE - N.2.3.C.F.R (MFLOPS)		<b>150713</b>	<b>148614</b>
	Normalized	100%	98.61%
	Standard Deviation	7.2%	10.2%
FFTW - Stock - 1D FFT Size 4096		<b>6874</b>	<b>6891</b>
	(Mflops)		
	Normalized	99.76%	100%
	Standard Deviation	0.2%	0.2%
FFTW - Stock - 2D FFT Size 2048		<b>6161</b>	<b>6087</b>
	(Mflops)		
	Normalized	100%	98.8%
	Standard Deviation	0.1%	1.3%
FFTW - Stock - 2D FFT Size 4096		<b>5388</b>	<b>5307</b>
	(Mflops)		
	Normalized	100%	98.5%
	Standard Deviation	0.4%	1.8%
FFTW - Float + SSE - 1D FFT Size 4096		<b>44939</b>	<b>44294</b>
	(Mflops)		
	Normalized	100%	98.56%
	Standard Deviation	1.3%	0.5%
FFTW - Float + SSE - 2D FFT Size 2048		<b>26509</b>	<b>26795</b>
	(Mflops)		
	Normalized	98.93%	100%

Standard Deviation	2.6%	0.9%
<b>FFTW - Float + SSE - 2D FFT Size 4096 (Mflops)</b>	<b>18663</b>	<b>17541</b>
Normalized	100%	93.99%
Standard Deviation		2.3%
<b>Pennant - sedovbig (Hydro Cycle Time - sec)</b>	<b>5.872848</b>	<b>5.875714</b>
Normalized	100%	99.95%
Standard Deviation	0.3%	0.8%
<b>Pennant - leblancbig (Hydro Cycle Time - sec)</b>	<b>3.949192</b>	<b>3.926446</b>
Normalized	99.42%	100%
Standard Deviation	1.2%	2.1%
<b>Timed MrBayes Analysis - P.P.A (sec)</b>	<b>108.673</b>	<b>109.158</b>
Normalized	100%	99.56%
Standard Deviation	0.3%	0.3%
<b>NWChem - C240 Buckyball (sec)</b>	<b>1963</b>	<b>1934</b>
Normalized	98.5%	100%
<b>QMCPACK - simple-H2O (Execution Time - sec)</b>	<b>44.322</b>	<b>46.283</b>
Normalized	100%	95.76%
Standard Deviation	1.1%	13.5%
<b>Timed HMMer Search - P.D.S (sec)</b>	<b>398.635</b>	<b>408.898</b>
Normalized	100%	97.49%
Standard Deviation	1.7%	2.4%
<b>Incompact3D - Cylinder (sec)</b>	<b>345.786885</b>	<b>348.516388</b>
Normalized	100%	99.22%
Standard Deviation	0.4%	0.7%
<b>Timed MAFFT Alignment - M.S.A - LSU RNA (sec)</b>	<b>10.266</b>	<b>10.468</b>
Normalized	100%	98.07%
Standard Deviation	2.3%	3.9%
<b>Monte Carlo Simulations of Ionised Nebulae - Dust 2D tau100.0 (sec)</b>	239	239
Standard Deviation	0.2%	
<b>OpenFOAM - Motorbike 30M (sec)</b>	<b>14.12</b>	<b>14.15</b>
Normalized	100%	99.79%
Standard Deviation	0.9%	1%
<b>OpenFOAM - Motorbike 60M (sec)</b>	<b>112.80</b>	<b>112.70</b>
Normalized	99.91%	100%
Standard Deviation	0.1%	0.2%
<b>Quantum ESPRESSO - AUSURF112 (sec)</b>	<b>1219</b>	<b>1225</b>
Normalized	100%	99.52%
Standard Deviation	0.6%	0.5%
<b>RELION - Basic - CPU (sec)</b>	<b>542.048</b>	<b>541.471</b>
Normalized	99.89%	100%
Standard Deviation	1.4%	2.3%
<b>LAMMPS Molecular Dynamics Simulator - 20k Atoms (ns/day)</b>	<b>31.977</b>	<b>31.833</b>
Normalized	100%	99.55%
Standard Deviation	0.3%	0.3%

<b>LAMMPS Molecular Dynamics Simulator - Rhodopsin Protein</b>	<b>29.000</b>	<b>28.183</b>
Normalized	100%	97.18%
Standard Deviation	2.4%	2.7%
<b>WebP Image Encode - Default (Encode Time - sec)</b>	<b>1.855</b>	<b>1.854</b>
Normalized	99.95%	100%
Standard Deviation	0.3%	0.2%
<b>WebP Image Encode - Quality 100 (Encode Time - sec)</b>	<b>2.863</b>	<b>2.864</b>
Normalized	100%	99.97%
Standard Deviation	0.1%	0.2%
<b>WebP Image Encode - Q.1.L (Encode Time - sec)</b>	<b>20.360</b>	<b>20.432</b>
Normalized	100%	99.65%
Standard Deviation	0.2%	0.3%
<b>WebP Image Encode - Q.1.H.C (Encode Time - sec)</b>	<b>8.904</b>	<b>8.864</b>
Normalized	99.55%	100%
Standard Deviation	0%	0%
<b>WebP Image Encode - Q.1.L.H.C (Encode Time - sec)</b>	<b>41.976</b>	<b>41.936</b>
Normalized	99.9%	100%
Standard Deviation	0.2%	0.1%
<b>libgav1 - Summer Nature 4K (FPS)</b>	<b>18.97</b>	
Standard Deviation	0.4%	
<b>libgav1 - S.N.1 (FPS)</b>	<b>72.74</b>	
Standard Deviation	5.1%	
<b>DaCapo Benchmark - H2 (msec)</b>	<b>5947</b>	<b>6295</b>
Normalized	100%	94.47%
Standard Deviation	8.2%	11.4%
<b>DaCapo Benchmark - Jython (msec)</b>	<b>5027</b>	<b>5096</b>
Normalized	100%	98.65%
Standard Deviation	2.4%	2.1%
<b>DaCapo Benchmark - Tradebeans (msec)</b>	<b>4866</b>	<b>4991</b>
Normalized	100%	97.5%
Standard Deviation	8.3%	10.5%
<b>LZ4 Compression - 1 - Compression Speed (MB/s)</b>	<b>9528</b>	<b>9289</b>
Normalized	100%	97.5%
Standard Deviation	1.2%	0.6%
<b>LZ4 Compression - 1 - D.S (MB/s)</b>	<b>11002</b>	<b>10869</b>
Normalized	100%	98.79%
Standard Deviation	1.4%	0.3%
<b>LZ4 Compression - 3 - Compression Speed (MB/s)</b>	<b>45.36</b>	<b>45.16</b>
Normalized	100%	99.56%
Standard Deviation	1.5%	1%
<b>LZ4 Compression - 3 - D.S (MB/s)</b>	<b>10188</b>	<b>10373</b>
Normalized	98.22%	100%
Standard Deviation	1.4%	0.5%

<b>LZ4 Compression - 9 - Compression Speed (MB/s)</b>	<b>44.86</b>		<b>43.49</b>
Normalized	100%		96.95%
Standard Deviation	1.3%		0.1%
<b>LZ4 Compression - 9 - D.S (MB/s)</b>	<b>10418</b>		<b>10279</b>
Normalized	100%		98.66%
Standard Deviation	0.7%		0.8%
<b>Zstd Compression - 8 - Compression Speed (MB/s)</b>	<b>1990</b>	<b>2244</b>	1993
Normalized	88.7%	100%	88.81%
Standard Deviation	13.7%	11%	14.2%
<b>Zstd Compression - 8 - D.S (MB/s)</b>	<b>2976</b>	<b>2983</b>	2978
Normalized	99.77%	100%	99.84%
Standard Deviation	0.4%	0.4%	0.4%
<b>Zstd Compression - 19 - Compression Speed (MB/s)</b>	70.7	<b>69.2</b>	<b>70.9</b>
Normalized	99.72%	97.6%	100%
Standard Deviation	1.7%	6.5%	6%
<b>Zstd Compression - 19 - D.S (MB/s)</b>	<b>2793</b>	<b>2782</b>	2792
Normalized	100%	99.61%	99.98%
Standard Deviation	0.4%	0.4%	0.4%
<b>Zstd Compression - 3, Long Mode - Compression Speed (MB/s)</b>	<b>629.2</b>		<b>620.5</b>
Normalized	100%		98.62%
Standard Deviation	8.5%		8.4%
<b>Zstd Compression - 3, Long Mode - D.S (MB/s)</b>	<b>3092</b>		<b>3090</b>
Normalized	100%		99.94%
Standard Deviation	0.4%		0.3%
<b>Zstd Compression - 8, Long Mode - Compression Speed (MB/s)</b>	<b>587.6</b>	<b>561.6</b>	566.1
Normalized	100%	95.58%	96.34%
Standard Deviation	6.9%	1.2%	1.8%
<b>Zstd Compression - 8, Long Mode - D.S (MB/s)</b>	3206	<b>3200</b>	<b>3206</b>
Normalized	99.99%	99.81%	100%
Standard Deviation	0.4%	0.5%	0.6%
<b>Zstd Compression - 19, Long Mode - Compression Speed (MB/s)</b>	<b>32.8</b>	33.0	<b>33.9</b>
Normalized	96.76%	97.35%	100%
Standard Deviation	6.9%	5.4%	6.8%
<b>Zstd Compression - 19, Long Mode - D.S (MB/s)</b>	<b>2829</b>	<b>2825</b>	2826
Normalized	100%	99.87%	99.9%
Standard Deviation	0.4%	0.3%	0.6%
<b>JPEG XL - PNG - 5 (MP/s)</b>	<b>63.73</b>		<b>64.40</b>
Normalized	98.96%		100%
Standard Deviation	3.5%		3.1%
<b>JPEG XL - PNG - 7 (MP/s)</b>	9.77		9.77
Standard Deviation	0.4%		0.5%
<b>JPEG XL - PNG - 8 (MP/s)</b>	0.70		0.70
Standard Deviation	0.8%		0.8%
<b>JPEG XL - JPEG - 5 (MP/s)</b>	<b>51.71</b>		<b>53.11</b>
Normalized	97.36%		100%

	Standard Deviation	2.5%		1.9%
JPEG XL - JPEG - 7 (MP/s)		<b>51.36</b>		<b>51.17</b>
	Normalized	100%		99.63%
	Standard Deviation	0.6%		2.5%
JPEG XL - JPEG - 8 (MP/s)		<b>22.91</b>		<b>22.72</b>
	Normalized	100%		99.17%
	Standard Deviation	2.9%		4.5%
JPEG XL Decoding - All (MP/s)		<b>99.54</b>		<b>99.32</b>
	Normalized	100%		99.78%
	Standard Deviation	1.3%		0.4%
srsLTE - OFDM_Test (Samples / Second)		98333333	<b>101100000</b>	<b>97960000</b>
	Normalized	97.26%	100%	96.89%
	Standard Deviation	0.9%	0.7%	2.5%
srsLTE - PHY_DL_Test (eNb Mb/s)		<b>197.7</b>	<b>207.6</b>	204.5
	Normalized	95.23%	100%	98.51%
	Standard Deviation	0.3%	0.2%	0.8%
srsLTE - PHY_DL_Test (UE Mb/s)		<b>83.0</b>	<b>87.5</b>	86.8
	Normalized	94.86%	100%	99.2%
	Standard Deviation	0.7%	0.1%	0.4%
LuaJIT - Composite (Mflops)		<b>1179</b>		<b>1200</b>
	Normalized	98.21%		100%
	Standard Deviation	2.5%		3.1%
LibRaw - P.P.B (Mpix/sec)		<b>30.99</b>		<b>29.78</b>
	Normalized	100%		96.1%
	Standard Deviation	2.4%		0.6%
Crafty - Elapsed Time (Nodes/s)		<b>6757787</b>		<b>6778608</b>
	Normalized	99.69%		100%
	Standard Deviation	0.3%		0.1%
TSCP - A.C.P (Nodes/s)		<b>1031813</b>		<b>1030655</b>
	Normalized	100%		99.89%
	Standard Deviation	0.3%		0.3%
GraphicsMagick - Swirl		<b>1721</b>		<b>1730</b>
	Normalized	99.48%		100%
	Standard Deviation	1.1%		1.4%
GraphicsMagick - Rotate		<b>543</b>		<b>523</b>
	Normalized	100%		96.32%
	Standard Deviation	2.4%		2.4%
GraphicsMagick - Sharpen (Iterations/min)		<b>833</b>		<b>829</b>
	Normalized	100%		99.52%
	Standard Deviation			1.1%
GraphicsMagick - Enhanced (Iterations/min)		<b>1199</b>		<b>1203</b>
	Normalized	99.67%		100%
	Standard Deviation	0.3%		0.1%
GraphicsMagick - Resizing (Iterations/min)		<b>69</b>		<b>68</b>
	Normalized	100%		98.55%
	Standard Deviation	2.2%		2.2%
GraphicsMagick - Noise-Gaussian (Iterations/min)		<b>650</b>		<b>654</b>
	Normalized	99.39%		100%
	Standard Deviation	3.6%		1.1%

GraphicsMagick - HWB Color Space (Iterations/min)	929	880
Normalized	100%	94.73%
Standard Deviation	5.5%	0.8%
oneDNN - IP Shapes 1D - f32 - CPU (ms)	2.07347	2.06564
Normalized	99.62%	100%
Standard Deviation	0.8%	0.6%
oneDNN - IP Shapes 3D - f32 - CPU (ms)	1.54650	2.49866
Normalized	100%	61.89%
Standard Deviation	6.8%	18.5%
oneDNN - IP Shapes 1D - u8s8f32 - CPU (ms)	2.13329	2.13758
Normalized	100%	99.8%
Standard Deviation	1.1%	0.5%
oneDNN - IP Shapes 3D - u8s8f32 - CPU (ms)	3.08917	2.88822
Normalized	93.5%	100%
Standard Deviation	2%	0.6%
oneDNN - C.B.S.A - f32 - CPU (ms)	0.724395	1.95461
Normalized	100%	37.06%
Standard Deviation	1.9%	2.4%
oneDNN - D.B.s - f32 - CPU (ms)	2.86937	2.86260
Normalized	99.76%	100%
Standard Deviation	1.1%	0.6%
oneDNN - D.B.s - f32 - CPU (ms)	2.88437	2.70898
Normalized	93.92%	100%
Standard Deviation	5.6%	0.6%
oneDNN - C.B.S.A - u8s8f32 - CPU (ms)	4.68078	5.59055
Normalized	100%	83.73%
Standard Deviation	12.2%	8.9%
oneDNN - D.B.s - u8s8f32 - CPU (ms)	2.20539	2.19937
Normalized	99.73%	100%
Standard Deviation	0.7%	0.3%
oneDNN - D.B.s - u8s8f32 - CPU (ms)	1.21032	1.20163
Normalized	99.28%	100%
Standard Deviation	3%	2.4%
oneDNN - R.N.N.T - f32 - CPU (ms)	2948	3126
Normalized	100%	94.31%
Standard Deviation	2.2%	7.5%
oneDNN - R.N.N.I - f32 - CPU (ms)	1267	1355
Normalized	100%	93.49%
Standard Deviation	4.7%	10%
oneDNN - R.N.N.T - u8s8f32 - CPU (ms)	2911	3152
Normalized	100%	92.35%
Standard Deviation	8.4%	10.2%
oneDNN - R.N.N.I - u8s8f32 - CPU (ms)	1282	1285
Normalized	100%	99.74%
Standard Deviation	6%	2%
oneDNN - M.M.B.S.T - f32 - CPU (ms)	0.712936	0.714842
Normalized	100%	99.73%
Standard Deviation	1%	2%

oneDNN - R.N.N.T - bf16bf16bf16 - <b>2923</b>	<b>3210</b>
<b>CPU (ms)</b>	
Normalized	100%
Standard Deviation	1.3%
oneDNN - R.N.N.I - bf16bf16bf16 - CPU	1246
<b>(ms)</b>	
Standard Deviation	5.3%
oneDNN - M.M.B.S.T - u8s8f32 - CPU	0.812990
<b>(ms)</b>	
Standard Deviation	0.5%
dav1d - Summer Nature 4K (FPS)	387.05
Standard Deviation	1%
dav1d - S.N.1 (FPS)	1246
Standard Deviation	3.6%
OSPray - San Miguel - SciVis (FPS)	83.33
Standard Deviation	0%
OSPray - XFrog Forest - SciVis (FPS)	19.74
Standard Deviation	1.1%
OSPray - San Miguel - Path Tracer	6.76
<b>(FPS)</b>	
Standard Deviation	2.4%
OSPray - NASA Streamlines - SciVis	125
<b>(FPS)</b>	
OSPray - XFrog Forest - Path Tracer	10.10
<b>(FPS)</b>	
Standard Deviation	1%
OSPray - M.R - SciVis (FPS)	45.45
Standard Deviation	0%
OSPray - NASA Streamlines - Path	30.30
<b>Tracer (FPS)</b>	
Standard Deviation	0%
OSPray - M.R - Path Tracer (FPS)	333.33
Standard Deviation	0%
TTSIOD 3D Renderer - P.R.W.S.S.M	581.879
<b>(FPS)</b>	
Standard Deviation	6.4%
AOM AV1 - Speed 6 Realtime (FPS)	18.47
Standard Deviation	1.1%
AOM AV1 - Speed 6 Two-Pass (FPS)	3.36
Standard Deviation	0.5%
AOM AV1 - Speed 8 Realtime (FPS)	31.89
Standard Deviation	2%
Embree - Pathtracer - Crown (FPS)	67.5868
Standard Deviation	0.7%
Embree - Pathtracer ISPC - Crown	59.3323
<b>(FPS)</b>	
Standard Deviation	1.5%
Embree - Pathtracer - Asian Dragon	44.9727
<b>(FPS)</b>	
Standard Deviation	1.2%

**Embree - Pathtracer - Asian Dragon** 39.0474  
**Obj (FPS)**  
 Standard Deviation 0.5%  
**Embree - Pathtracer ISPC - Asian** 42.1185  
**Dragon (FPS)**  
 Standard Deviation 0.6%  
**Embree - Pathtracer ISPC - Asian** 36.3283  
**Dragon Obj (FPS)**  
 Standard Deviation 1.5%  
**Kvazaar - Bosphorus 4K - Medium** 22.70  
 Standard Deviation 3.3%  
**Kvazaar - Bosphorus 1080p - Medium** 64.43  
**(FPS)**  
 Standard Deviation 1.2%  
**Kvazaar - Bosphorus 4K - Very Fast** 40.15  
**(FPS)**  
 Standard Deviation 8.9%  
**Kvazaar - Bosphorus 4K - Ultra Fast** 44.45  
**(FPS)**  
 Standard Deviation 13.8%  
**Kvazaar - Bosphorus 1080p - Very** 136.84  
**Fast (FPS)**  
 Standard Deviation 0.5%  
**Kvazaar - Bosphorus 1080p - Ultra** 181.14  
**Fast (FPS)**  
 Standard Deviation 5.8%  
**rav1e - 6 (FPS)** 1.460  
 Standard Deviation 2.2%  
**rav1e - 10 (FPS)** 3.102  
 Standard Deviation 1.1%  
**SVT-AV1 - Enc Mode 4 - 1080p (FPS)** 7.456  
 Standard Deviation 1.5%  
**SVT-AV1 - Enc Mode 8 - 1080p (FPS)** 85.786  
 Standard Deviation 0.7%  
**SVT-VP9 - VMAF Optimized -** 340.02  
**Bosphorus 1080p (FPS)**  
 Standard Deviation 14.3%  
**SVT-VP9 - P.S.O - Bosphorus 1080p** 363.96  
**(FPS)**  
 Standard Deviation 2.4%  
**SVT-VP9 - V.Q.O - Bosphorus 1080p** 274.56  
**(FPS)**  
 Standard Deviation 0.1%  
**VP9 libvpx Encoding - Speed 5 (FPS)** 20.85  
 Standard Deviation 4.3%  
**x264 - H.2.V.E (FPS)** 204.01  
 Standard Deviation 5.1%  
**x265 - Bosphorus 4K (FPS)** 18.77  
 Standard Deviation 0.8%  
**x265 - Bosphorus 1080p (FPS)** 61.36  
 Standard Deviation 3.9%  
**ACES DGEMM - S.F.P.R (GFLOP/s)** 28.494121

	Standard Deviation	0.8%		
Intel Open Image Denoise - Memorial		28.72		
	(Images / Sec)			
	Standard Deviation	1.2%		
OpenVKL - vkIIBenchmark (Items /		473		
	LuxCoreRender - DLSC (M	15.03		
	Standard Deviation	0.4%		
LuxCoreRender - R.C.a.P (M		16.89		
	samples/sec)			
	Standard Deviation	0.5%		
Himeno Benchmark - P.P.S (MFLOPS)		3962		
	Standard Deviation	0.9%		
7-Zip Compression - C.S.T (MIPS)		338315		
	Standard Deviation	4.6%		
Stockfish - Total Time (Nodes/s)		190042987		
	Standard Deviation	2.1%		
asmFish - 1.H.M.2.D (Nodes/s)		236093113		
	Standard Deviation	1.4%		
libavif avifenc - 0 (sec)		<b>60.112</b>		<b>60.626</b>
	Normalized	100%		99.15%
	Standard Deviation	0.6%		2.2%
libavif avifenc - 2 (sec)		<b>32.717</b>		<b>32.697</b>
	Normalized	99.94%		100%
	Standard Deviation	2.5%		2.6%
libavif avifenc - 6 (sec)		<b>12.103</b>		<b>12.958</b>
	Normalized	100%		93.4%
	Standard Deviation	2.2%		7.9%
libavif avifenc - 10 (sec)		<b>4.228</b>		<b>4.189</b>
	Normalized	99.08%		100%
	Standard Deviation	1.1%		2%
libavif avifenc - 6, Lossless (sec)		<b>34.934</b>		<b>35.432</b>
	Normalized	100%		98.59%
	Standard Deviation	0.4%		2%
libavif avifenc - 10, Lossless (sec)		<b>7.587</b>		<b>7.400</b>
	Normalized	97.54%		100%
	Standard Deviation	3.7%		0.9%
Timed Apache Compilation - Time To		24.677		
	Compile (sec)			
	Standard Deviation	0.1%		
Timed FFmpeg Compilation - Time To		19.748		
	Compile (sec)			
	Standard Deviation	0.8%		
Timed GCC Compilation - Time To		715.113		
	Compile (sec)			
	Standard Deviation	0.1%		
Timed GDB GNU Debugger		91.309		
Compilation - Time To Compile (sec)				
	Standard Deviation	0.4%		
Timed Godot Game Engine		61.407		
Compilation - Time To Compile (sec)				
	Standard Deviation	1.2%		

Timed ImageMagick Compilation -	15.667	
Time To Compile (sec)		
Standard Deviation	1.4%	
Timed Linux Kernel Compilation -	<b>21.500</b>	<b>21.552</b>
Time To Compile (sec)		
Normalized	100%	99.76%
Standard Deviation	2.6%	2.3%
Timed LLVM Compilation - Time To	200.816	
Compile (sec)		
Standard Deviation	0.9%	
Timed MPlayer Compilation - Time To	10.269	
Compile (sec)		
Standard Deviation	0.4%	
Timed PHP Compilation - Time To	41.668	
Compile (sec)		
Standard Deviation	0.8%	
Build2 - Time To Compile (sec)	64.213	
Standard Deviation	0.5%	
C-Ray - Total Time - 4.1.R.P.P (sec)	7.754	
Standard Deviation	7.4%	
POV-Ray - Trace Time (sec)	8.028	
Standard Deviation	0.6%	
Tungsten Renderer - Hair (sec)	5.61696	
Standard Deviation	3.5%	
Tungsten Renderer - Water Caustic	23.6008	
(sec)		
Standard Deviation	5.3%	
Tungsten Renderer - Non-Exponential	1.72256	
(sec)		
Standard Deviation	6.8%	
Tungsten Renderer - Volumetric	4.46136	
Caustic (sec)		
Standard Deviation	0.2%	
YafaRay - T.T.F.S.S (sec)	65.660	
Standard Deviation	3.6%	
rays1bench - Large Scene (mrays/s)	492.78	
Standard Deviation	0.8%	
Numpy Benchmark (Score)	305.72	
Standard Deviation	0.5%	
AOBench - 2048 x 2048 - Total Time	39.902	
(sec)		
Standard Deviation	0.1%	
Timed Eigen Compilation - Time To	94.909	
Compile (sec)		
Standard Deviation	0%	
Timed Erlang/OTP Compilation - Time	<b>190.789</b>	<b>185.824</b>
To Compile (sec)		
Normalized	97.4%	100%
Standard Deviation	2.4%	0.1%
Timed Wasmer Compilation - Time To	<b>68.219</b>	<b>68.433</b>
Compile (sec)		
Normalized	100%	99.69%

	Standard Deviation	1%	0.5%
<b>Gzip Compression - L.S.T.A.T.t.g (sec)</b>		41.888	
	Standard Deviation	0.3%	
<b>XZ Compression - C.u.1.0.3.s.i.i.C.L.9 (sec)</b>		26.581	
	Standard Deviation	4.7%	
<b>dcraw - R.T.P.I.C (sec)</b>		50.516	
	Standard Deviation	0.1%	
<b>DeepSpeech - CPU (sec)</b>		78.03710	
	Standard Deviation	13.3%	
<b>Monkey Audio Encoding - WAV To APE (sec)</b>		14.369	
	Standard Deviation	0.3%	
<b>FLAC Audio Encoding - WAV To FLAC (sec)</b>		9.830	
	Standard Deviation	0.2%	
<b>LAME MP3 Encoding - WAV To MP3 (sec)</b>		9.103	
	Standard Deviation	0.2%	
<b>Ogg Audio Encoding - WAV To Ogg (sec)</b>		23.699	
	Standard Deviation	0.3%	
<b>Opus Codec Encoding - WAV To Opus Encode (sec)</b>		9.150	
	Standard Deviation	0.5%	
<b>eSpeak-NG Speech Engine - T.T.S.S (sec)</b>		35.079	
	Standard Deviation	0.6%	
<b>m-queens - Time To Solve (sec)</b>		7.083	
	Standard Deviation	2.3%	
<b>Montage Astronomical Image Mosaic Engine - M.o.M.K.b.1.5.d.x.1.5.d (sec)</b>		93.077	
	Standard Deviation	0.1%	
<b>N-Queens - Elapsed Time (sec)</b>		1.770	
	Standard Deviation	14.9%	
<b>Ngspice - C2670 (sec)</b>		169.462	
	Standard Deviation	0.8%	
<b>Ngspice - C7552 (sec)</b>		130.441	
	Standard Deviation	0%	
<b>Radiance Benchmark - SMP Parallel (sec)</b>		213.866	
	Standard Deviation	0.3%	
<b>System GZIP Decompression (sec)</b>		3.600	
	Standard Deviation	2.3%	
<b>System XZ Decompression (sec)</b>		4.311	
	Standard Deviation	0.2%	
<b>Tachyon - Total Time (sec)</b>		9.8909	
	Standard Deviation	3.9%	
<b>WebP2 Image Encode - Default (sec)</b>		3.272	
	Standard Deviation	4.1%	
<b>WebP2 Image Encode - Q.7.C.E.7 (sec)</b>		136.405	

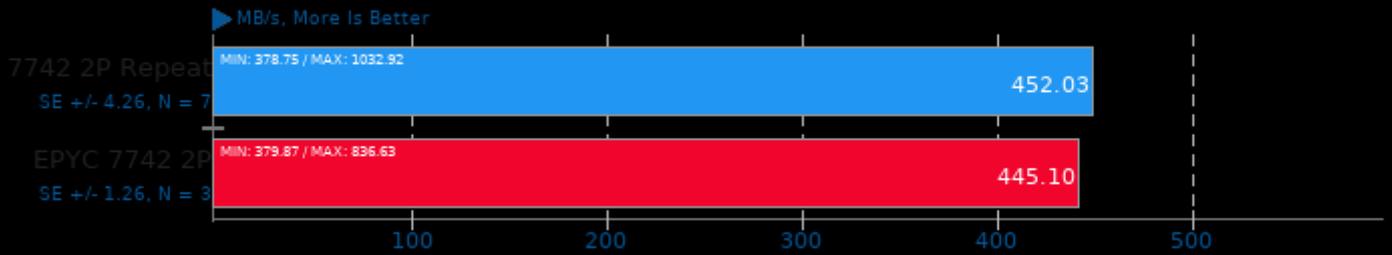
	Standard Deviation	0.2%	
<b>WebP2 Image Encode - Q.9.C.E.7</b>		251.434	
	Standard Deviation	0%	
<b>WebP2 Image Encode - Q.1.C.E.5</b>		7.721	
	Standard Deviation	0.6%	
<b>WebP2 Image Encode - Q.1.L.C (sec)</b>		440.928	
	Standard Deviation	0.2%	
<b>Google SynthMark - VoiceMark_100</b>		646.905	
	(Voices)		
	Standard Deviation	0.2%	
<b>System ZLIB Decompression (ms)</b>		2026	
	Standard Deviation	1.1%	
<b>Liquid-DSP - 1 - 256 - 57 (samples/s)</b>		<b>53594667</b>	<b>53579667</b>
	Normalized	100%	99.97%
	Standard Deviation	0.1%	0%
<b>Liquid-DSP - 2 - 256 - 57 (samples/s)</b>		<b>107143333</b>	<b>107166667</b>
	Normalized	99.98%	100%
	Standard Deviation	0.1%	0%
<b>Liquid-DSP - 4 - 256 - 57 (samples/s)</b>		<b>213280000</b>	<b>213286667</b>
	Normalized	100%	100%
	Standard Deviation	0.1%	0.1%
<b>Liquid-DSP - 8 - 256 - 57 (samples/s)</b>		<b>427203333</b>	<b>427276667</b>
	Normalized	99.98%	100%
	Standard Deviation	0%	0.1%
<b>Liquid-DSP - 16 - 256 - 57 (samples/s)</b>		<b>832276667</b>	<b>831613333</b>
	Normalized	100%	99.92%
	Standard Deviation	0.2%	0.1%
<b>Liquid-DSP - 32 - 256 - 57 (samples/s)</b>		<b>1616566667</b>	<b>1618000000</b>
	Normalized	99.91%	100%
	Standard Deviation	0.2%	0.1%
<b>Liquid-DSP - 64 - 256 - 57 (samples/s)</b>		<b>2703933333</b>	<b>2693766667</b>
	Normalized	100%	99.62%
	Standard Deviation	0.5%	1.1%
<b>Liquid-DSP - 128 - 256 - 57</b>		<b>3135600000</b>	<b>3218138462</b>
	Normalized	97.44%	100%
	Standard Deviation	0.7%	8.9%
<b>Liquid-DSP - 256 - 256 - 57</b>		<b>5525100000</b>	<b>5550733333</b>
	Normalized	99.54%	100%
	Standard Deviation	0.9%	0.5%
<b>Apache CouchDB - 100 - 1000 - 24</b>		112.558	
	Standard Deviation	1.5%	
<b>FinanceBench - Repo OpenMP (ms)</b>		52055	
	Standard Deviation	0.6%	
<b>FinanceBench - Bonds OpenMP (ms)</b>		89586	
	Standard Deviation	1.2%	
<b>ASKAP - tConvolve MT - Gridding</b>		5225	
	(Million Grid Points/sec)		
	Standard Deviation	2.8%	
<b>ASKAP - tConvolve MT - Degriding</b>		7117	
	(Million Grid Points/sec)		
	Standard Deviation	8.8%	

ASKAP - tConvolve MPI - Degridding	38292		
(Mpix/sec)			
Standard Deviation	1.9%		
ASKAP - tConvolve MPI - Gridding	37600		
(Mpix/sec)			
Standard Deviation	1%		
ASKAP - tConvolve OpenMP -	4827		
Gridding (Million Grid Points/sec)			
Standard Deviation	5.6%		
ASKAP - tConvolve OpenMP -	3992		
Degridding (Million Grid Points/sec)			
Standard Deviation	4.8%		
ASKAP - H.C.O (Iterations/sec)	217.823		
Standard Deviation	5.2%		
libjpeg-turbo tjbench - D.T	172.304423		
(Megapixels/sec)			
Standard Deviation	0%		
LuaRadio - F.B.t.B.F.F (MiB/s)	643.9	653.0	643.8
Normalized	98.61%	100%	98.59%
Standard Deviation	1.2%	2.3%	1%
LuaRadio - F.D.F (MiB/s)	346.8	343.0	347.1
Normalized	99.91%	98.82%	100%
Standard Deviation	0.1%	1.7%	0.1%
LuaRadio - Hilbert Transform (MiB/s)	84.4	84.4	84.6
Normalized	99.76%	99.76%	100%
Standard Deviation	0%	0.3%	0.1%
LuaRadio - Complex Phase (MiB/s)	532.7	532.5	534.5
Normalized	99.66%	99.63%	100%
Standard Deviation	0.2%	0.3%	0.2%
GNU Radio - F.B.t.B.F.F (MiB/s)	400.8	433.2	423.3
Normalized	92.52%	100%	97.71%
Standard Deviation	8.5%	8.4%	2.3%
GNU Radio - S.S.C (MiB/s)	3033	3041	3090
Normalized	98.14%	98.39%	100%
Standard Deviation	2.3%	1.9%	2.1%
GNU Radio - FIR Filter (MiB/s)	554.9	555.8	555.9
Normalized	99.82%	99.98%	100%
Standard Deviation	0.5%	0.6%	0.2%
GNU Radio - IIR Filter (MiB/s)	506.9	505.0	506.9
Normalized	100%	99.63%	100%
Standard Deviation	0.6%	0.7%	0.1%
GNU Radio - F.D.F (MiB/s)	744.6	751.2	747.2
Normalized	99.12%	100%	99.47%
Standard Deviation	3.6%	3.4%	5.2%
GNU Radio - Hilbert Transform (MiB/s)	436.5	436.2	437.6
Normalized	99.75%	99.68%	100%
Standard Deviation	0.4%	0.4%	0.5%
toyBrot Fractal Generator - TBB (ms)	3910		3886
Normalized	99.39%		100%
Standard Deviation	2.4%		1.4%
toyBrot Fractal Generator - OpenMP	5179		5141
(ms)			
Normalized	99.27%		100%
Standard Deviation	7.8%		7.5%

<b>toyBrot Fractal Generator - C++ Tasks</b>	<b>4295</b>	<b>4307</b>
<b>(ms)</b>		
Normalized	100%	99.72%
Standard Deviation	1%	1.2%
<b>toyBrot Fractal Generator - C++</b>	<b>4039</b>	<b>4050</b>
<b>Threads (ms)</b>		
Normalized	100%	99.73%
Standard Deviation	1.1%	1%
<b>GROMACS - water_GMX50_bare</b>		8.064
<b>(Ns/Day)</b>		
Standard Deviation		0.4%
<b>Blender - BMW27 - CPU-Only (sec)</b>		24.22
Standard Deviation		1.6%
<b>Blender - Classroom - CPU-Only (sec)</b>		49.06
Standard Deviation		1%
<b>Blender - Fishy Cat - CPU-Only (sec)</b>		36.02
Standard Deviation		1.5%
<b>Blender - Barbershop - CPU-Only</b>		81.79
Standard Deviation		4.2%
<b>Blender - Pabellon Barcelona -</b>		64.56
<b>CPU-Only (sec)</b>		
Standard Deviation		0.5%
<b>IOR - 32MB (MB/s)</b>		461.38
Standard Deviation		0.8%
<b>libgav1 - Chimera 1080p (FPS)</b>		51.20
Standard Deviation		2.4%
<b>Zstd Compression - 3 - Compression</b>		5054
<b>Speed (MB/s)</b>		
Standard Deviation		2.2%
<b>Zstd Compression - 3 - D.S (MB/s)</b>		2909
Standard Deviation		0.2%
<b>JPEG XL Decoding - 1 (MP/s)</b>		32.97
Standard Deviation		0.6%
<b>LuaJIT - Monte Carlo (Mflops)</b>		412.34
Standard Deviation		0.1%
<b>LuaJIT - F.F.T (Mflops)</b>		210.57
Standard Deviation		0.6%
<b>LuaJIT - S.M.M (Mflops)</b>		1009
Standard Deviation		1.1%
<b>LuaJIT - D.L.M.F (Mflops)</b>		2812
Standard Deviation		10.7%
<b>LuaJIT - J.S.O.R (Mflops)</b>		1644
Standard Deviation		0%

### IOR 3.3.0

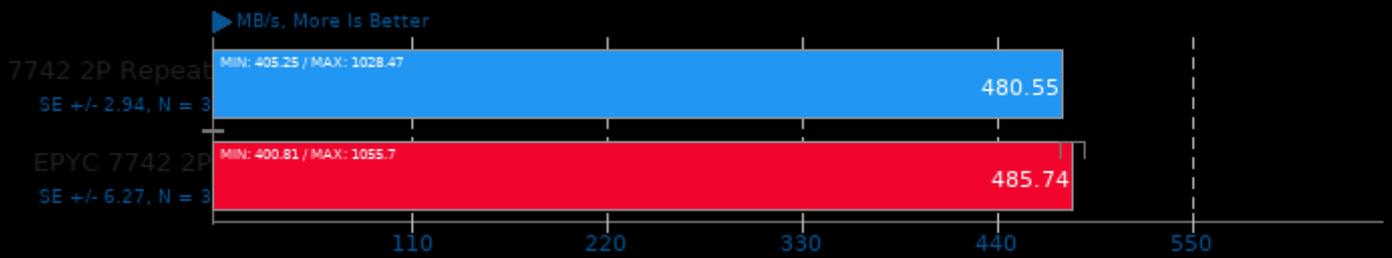
Block Size: 2MB - Disk Target: Default Test Directory



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

### IOR 3.3.0

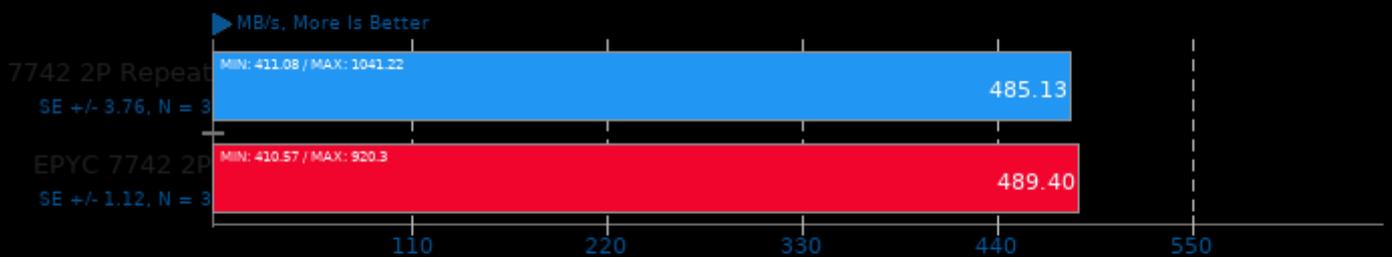
Block Size: 4MB - Disk Target: Default Test Directory



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

### IOR 3.3.0

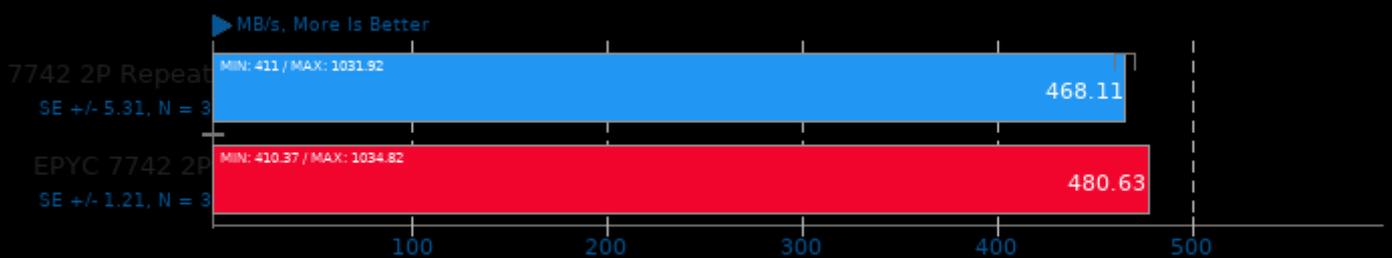
Block Size: 8MB - Disk Target: Default Test Directory



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

### IOR 3.3.0

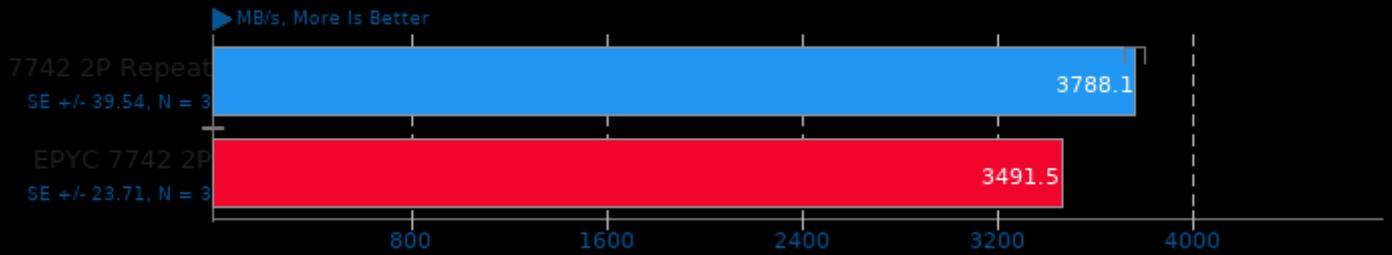
Block Size: 16MB - Disk Target: Default Test Directory



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

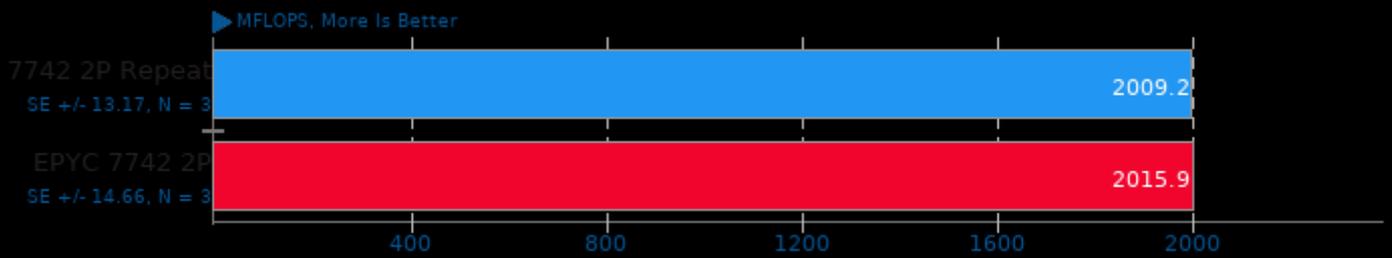
### C-Blosc 2.0 Beta 5

Compressor: blosclz



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

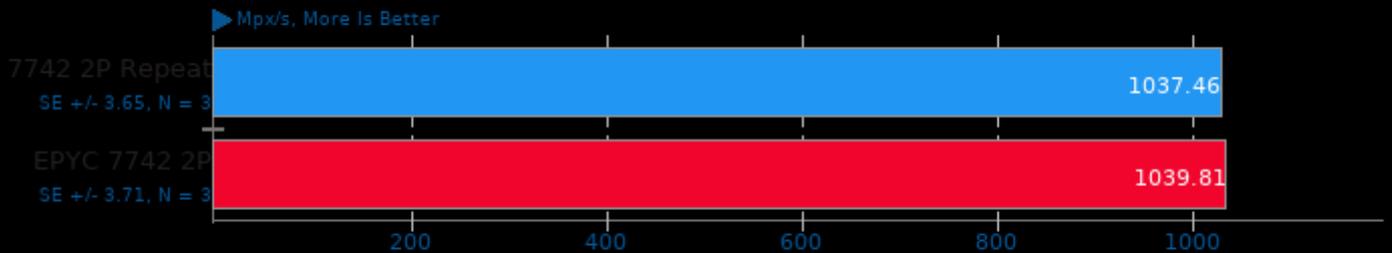
### QuantLib 1.21



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

### Etcpak 0.7

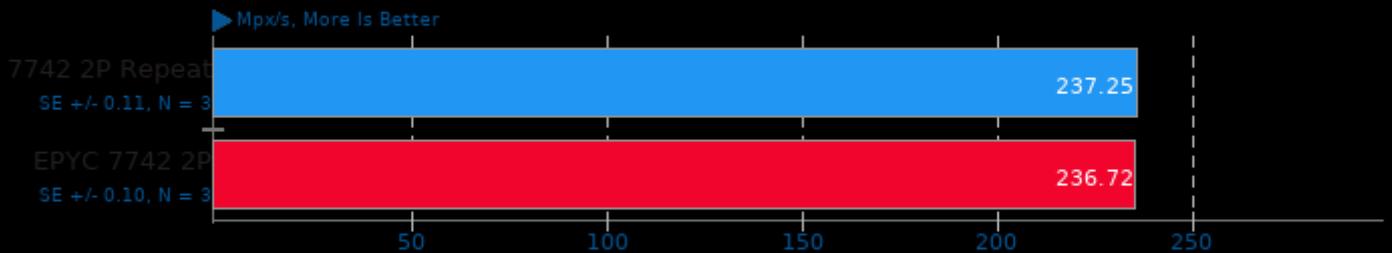
Configuration: DXT1



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

### Etcpak 0.7

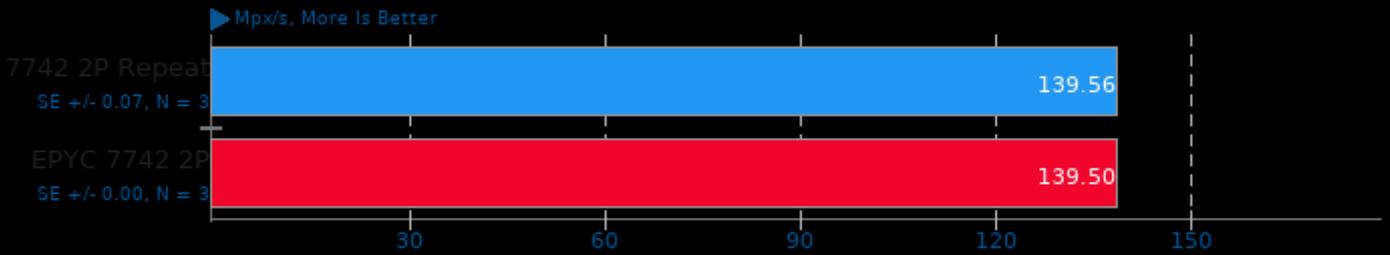
Configuration: ETC1



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

### Etcpak 0.7

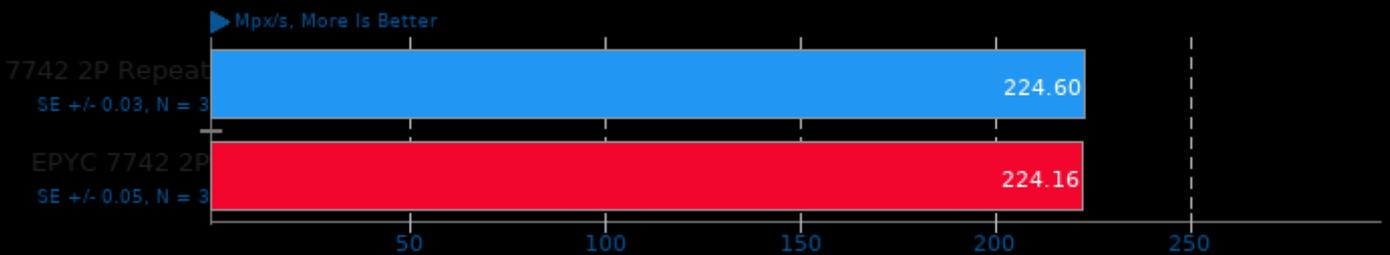
Configuration: ETC2



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

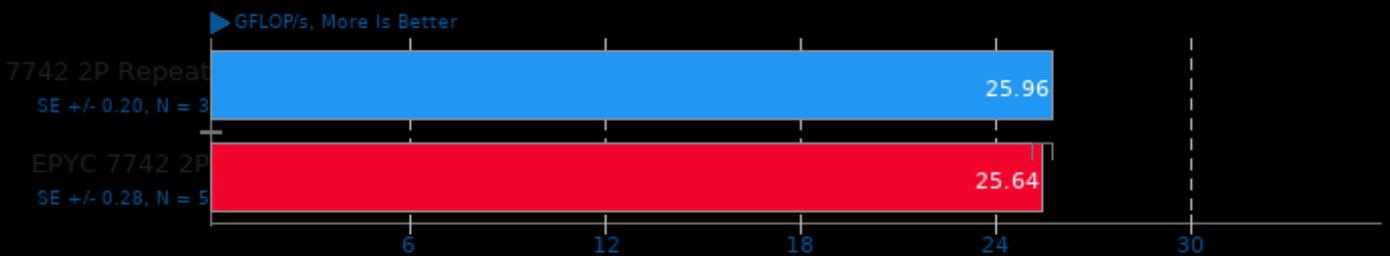
### Etcpak 0.7

Configuration: ETC1 + Dithering



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

### High Performance Conjugate Gradient 3.1



1. (CXX) g++ options: -O3 -ffast-math -ftree-vectorize -pthread -lmpi\_cxx -lmpi

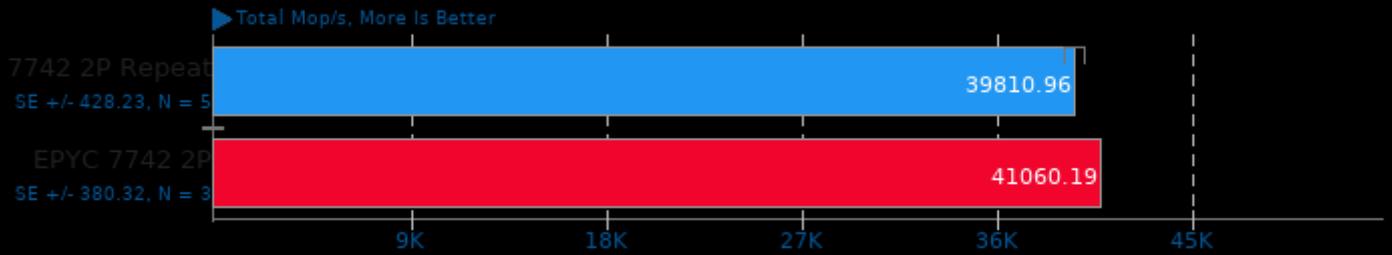
### HPL Linpack 2.3



1. (C) gcc options: -O2 -lopenblas -lm -pthread -lmpi

### NAS Parallel Benchmarks 3.4

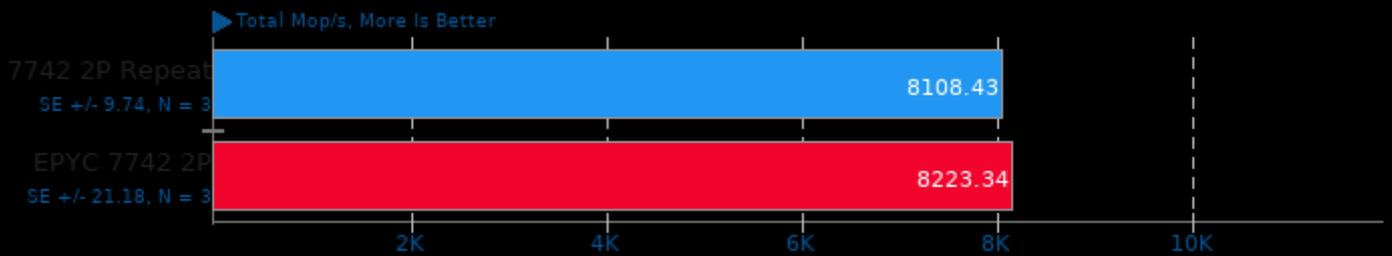
Test / Class: CG.C



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

### NAS Parallel Benchmarks 3.4

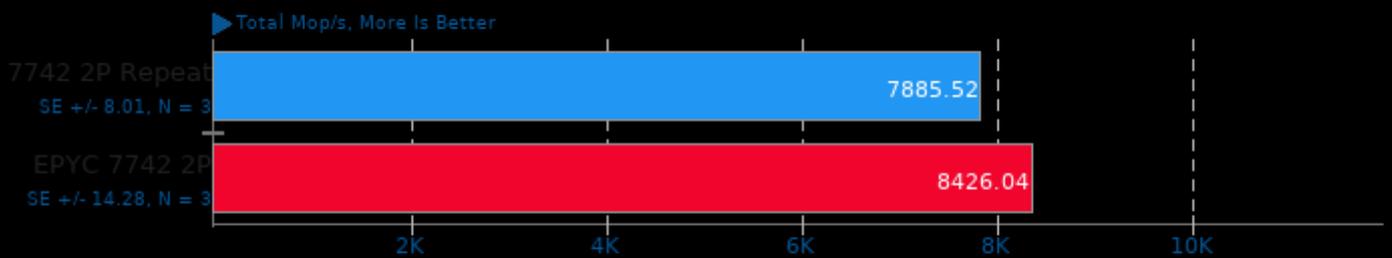
Test / Class: EP.C



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

### NAS Parallel Benchmarks 3.4

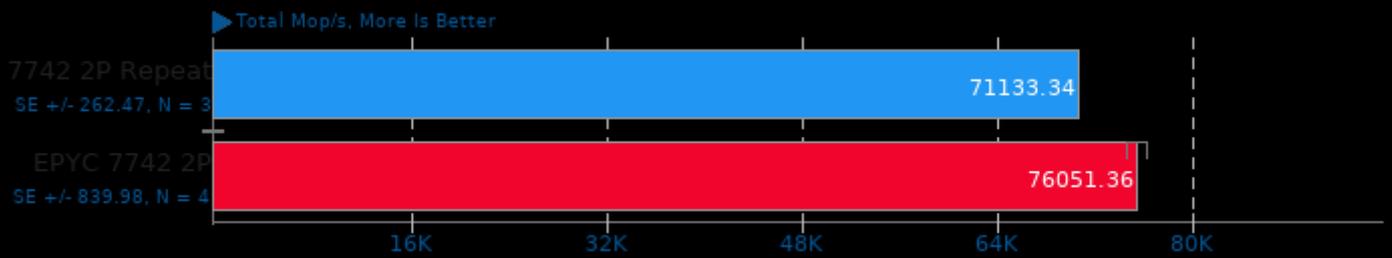
Test / Class: EP.D



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

### NAS Parallel Benchmarks 3.4

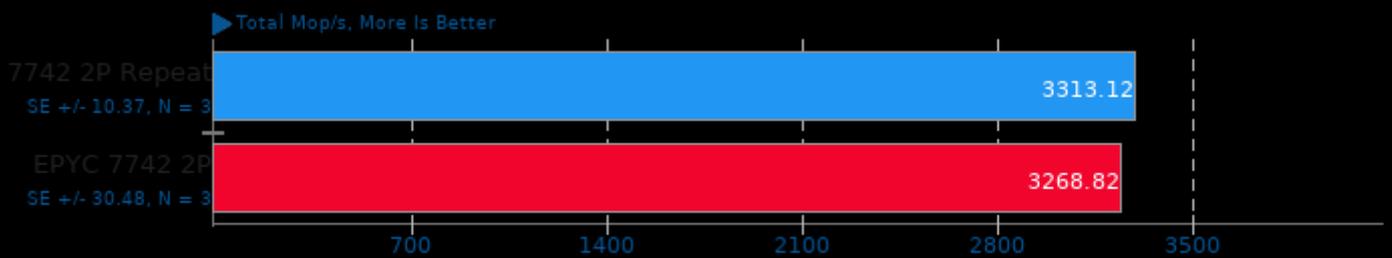
Test / Class: FT.C



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

### NAS Parallel Benchmarks 3.4

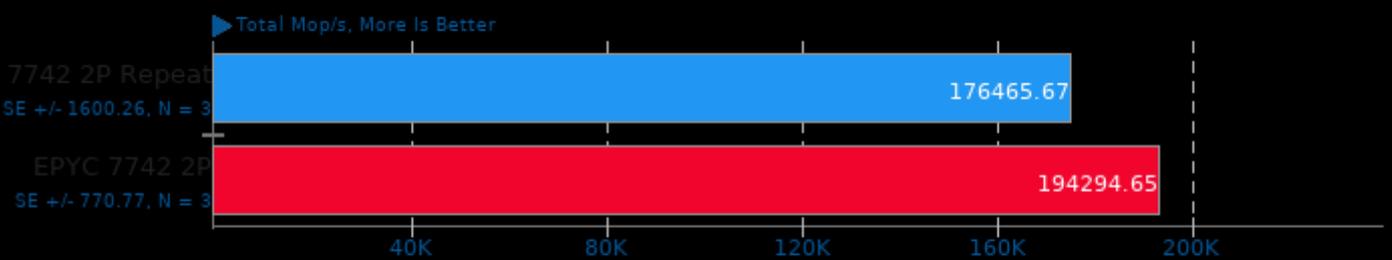
Test / Class: IS.D



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

### NAS Parallel Benchmarks 3.4

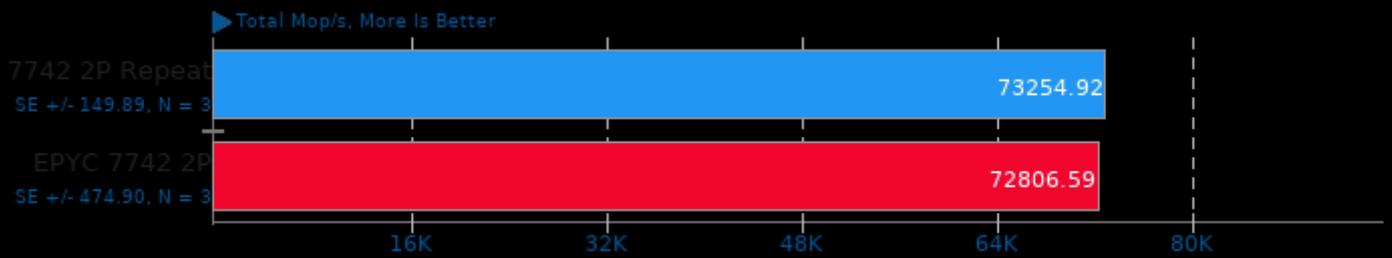
Test / Class: LU.C



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

## NAS Parallel Benchmarks 3.4

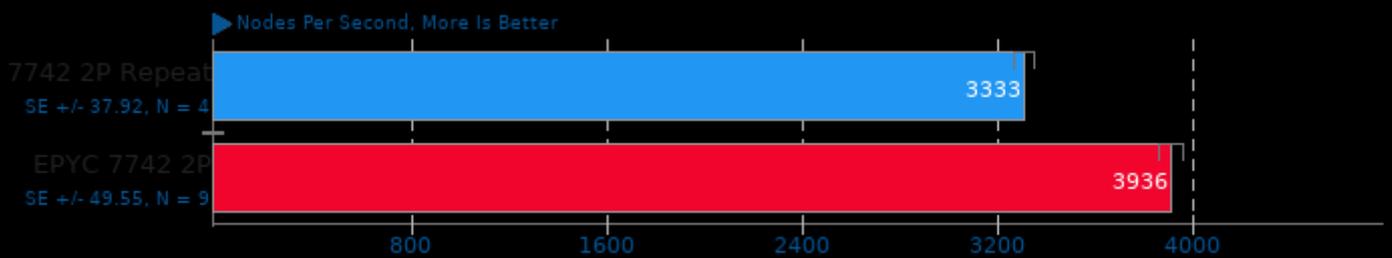
Test / Class: MG.C



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

## LeelaChessZero 0.26

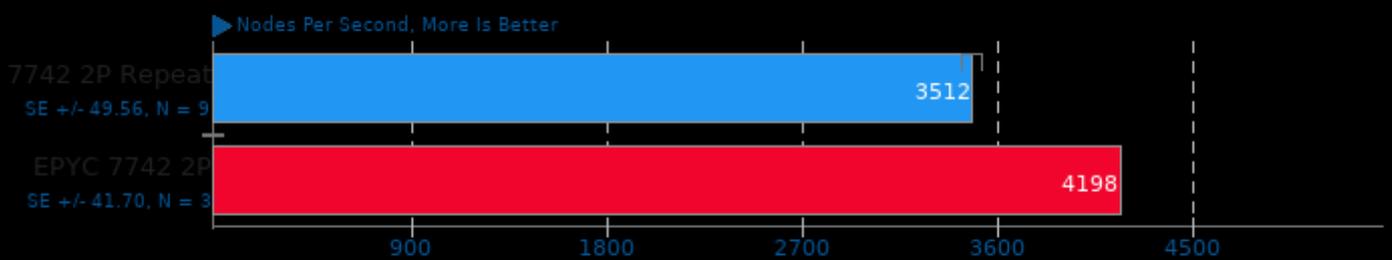
Backend: BLAS



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

## LeelaChessZero 0.26

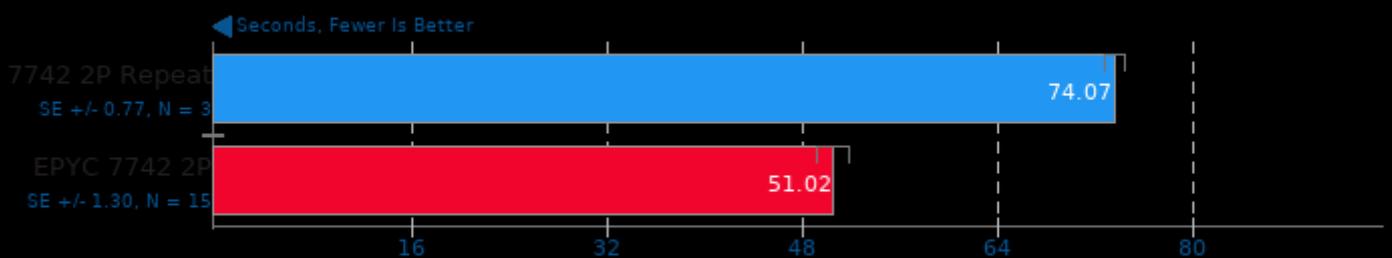
Backend: Eigen



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

## Parboil 2.5

Test: OpenMP LBM

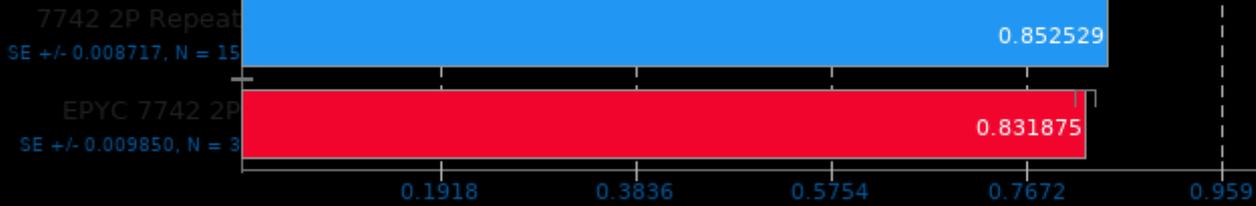


1. (CXX) g++ options: -lm -pthread -lgomp -O3 -ffast-math -fopenmp

### Parboil 2.5

Test: OpenMP CUTCP

◀ Seconds, Fewer Is Better

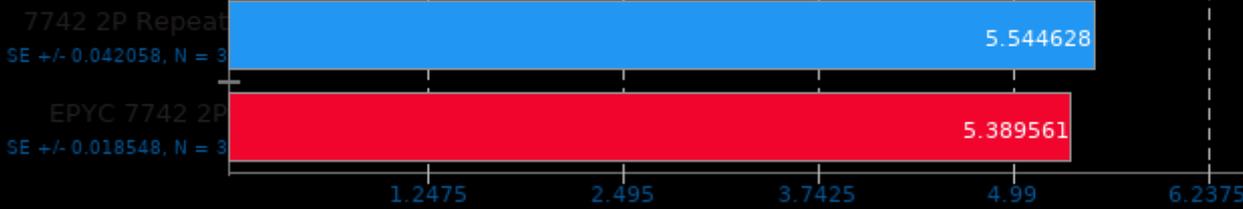


1. (CXX) g++ options: -lm -lpthread -lgomp -O3 -ffast-math -fopenmp

### Parboil 2.5

Test: OpenMP Stencil

◀ Seconds, Fewer Is Better

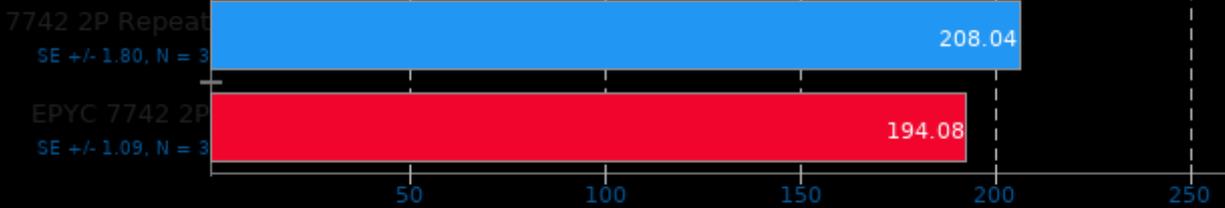


1. (CXX) g++ options: -lm -lpthread -lgomp -O3 -ffast-math -fopenmp

### Parboil 2.5

Test: OpenMP MRI Gridding

◀ Seconds, Fewer Is Better

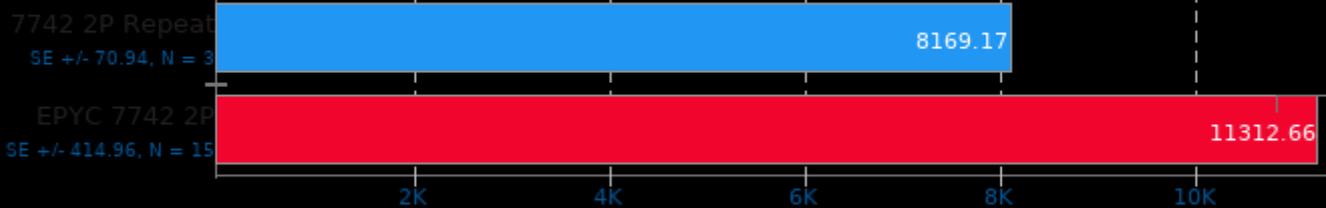


1. (CXX) g++ options: -lm -lpthread -lgomp -O3 -ffast-math -fopenmp

### miniFE 2.2

Problem Size: Small

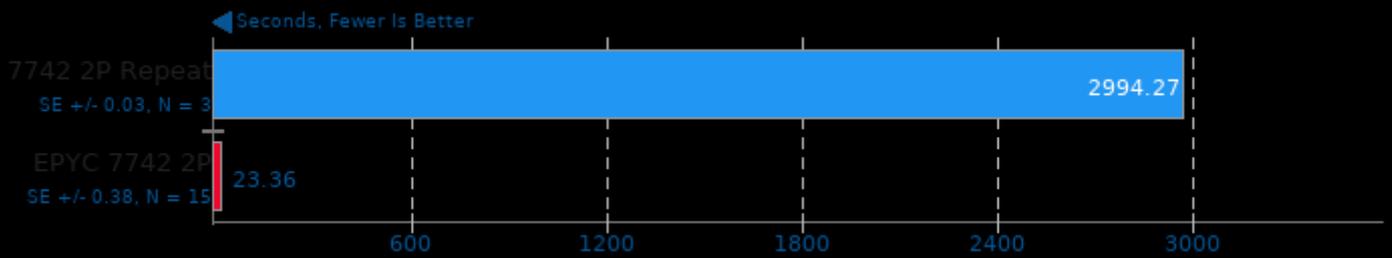
▶ CG Mflops, More Is Better



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

### CloverLeaf

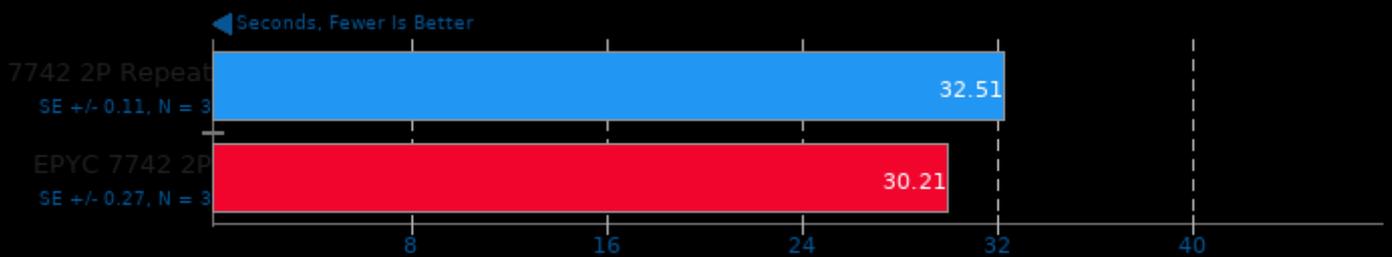
Lagrangian-Eulerian Hydrodynamics



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

### Rodinia 3.1

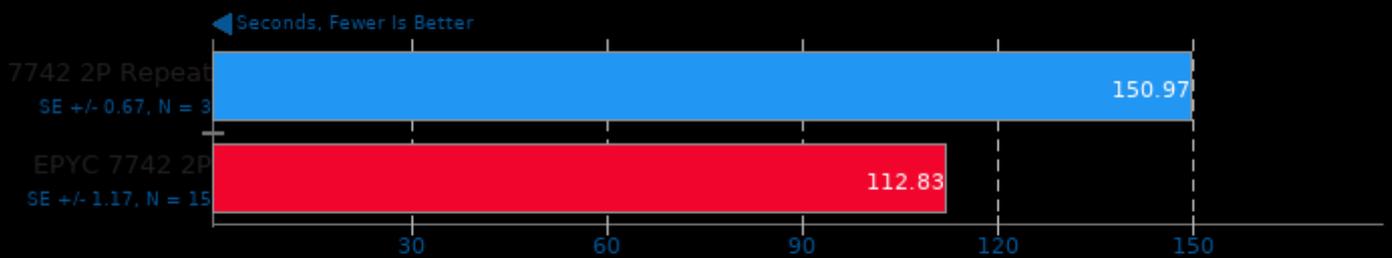
Test: OpenMP LavaMD



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

### Rodinia 3.1

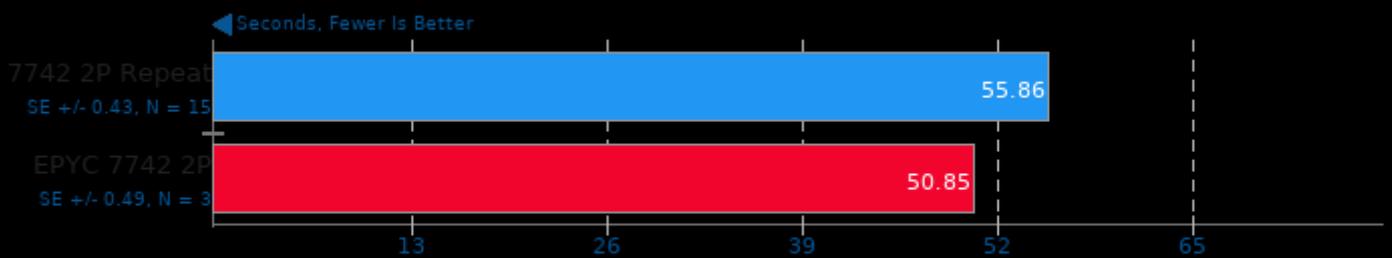
Test: OpenMP HotSpot3D



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

### Rodinia 3.1

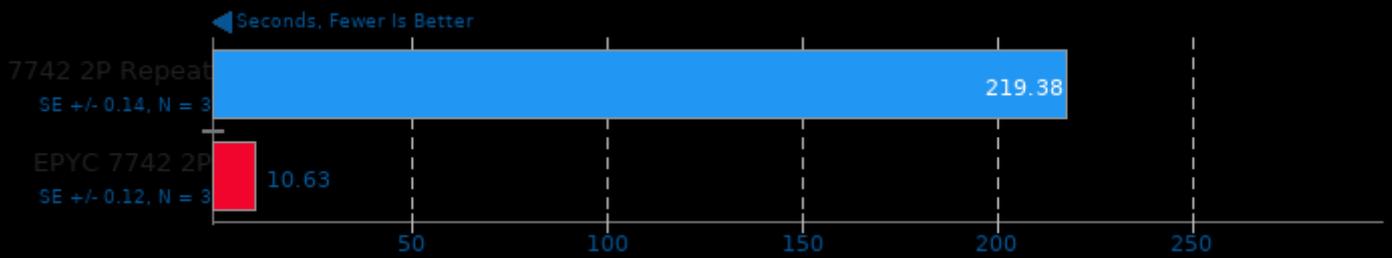
Test: OpenMP Leukocyte



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

### Rodinia 3.1

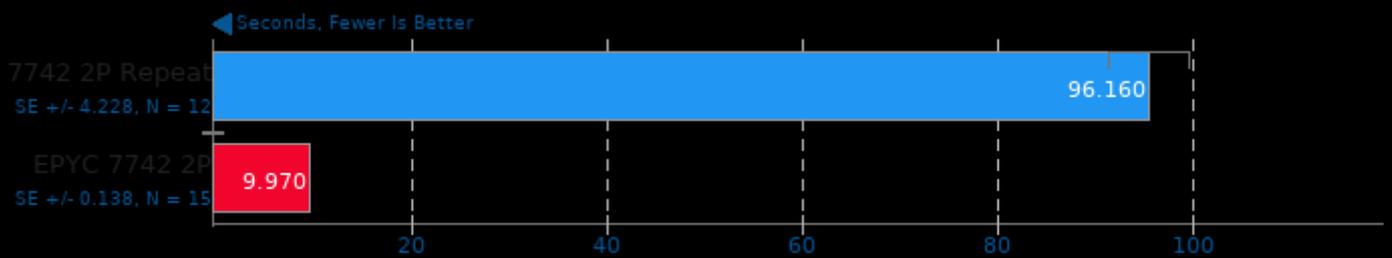
Test: OpenMP CFD Solver



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

### Rodinia 3.1

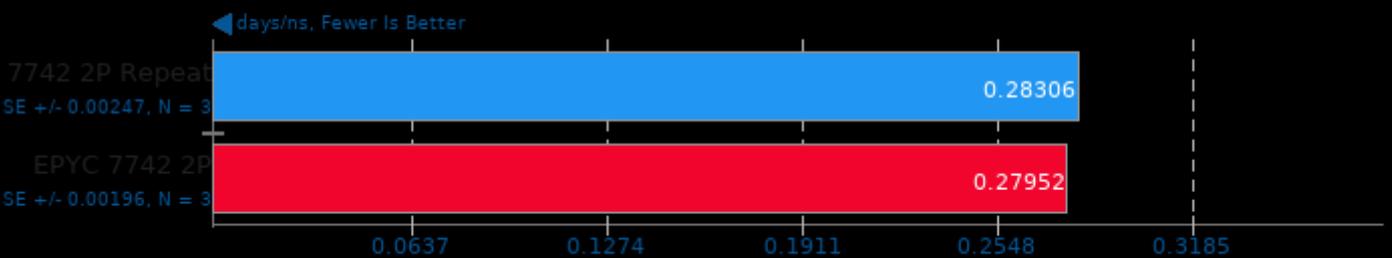
Test: OpenMP Streamcluster



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

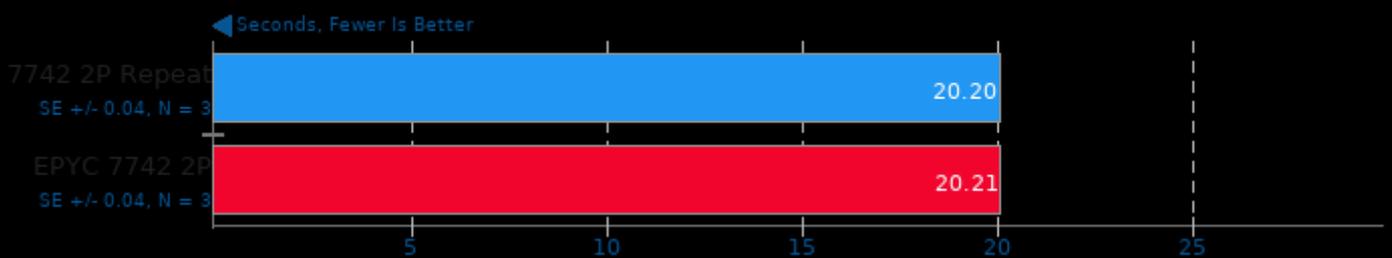
### NAMD 2.14

ATPase Simulation - 327,506 Atoms

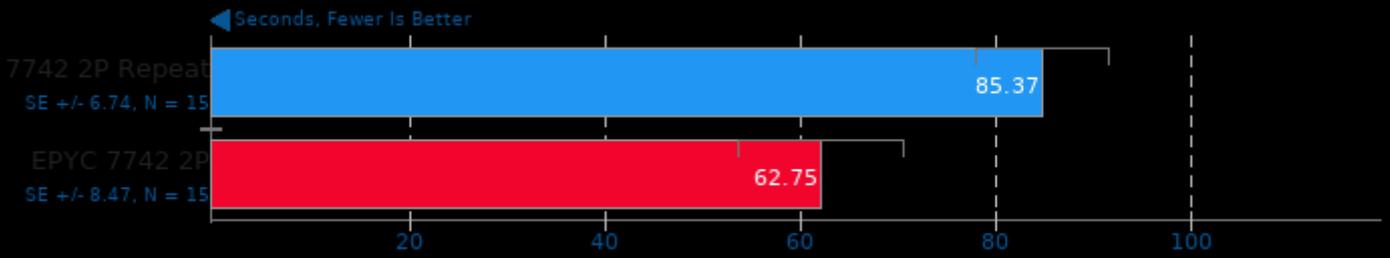


### Dolfyn 0.527

Computational Fluid Dynamics



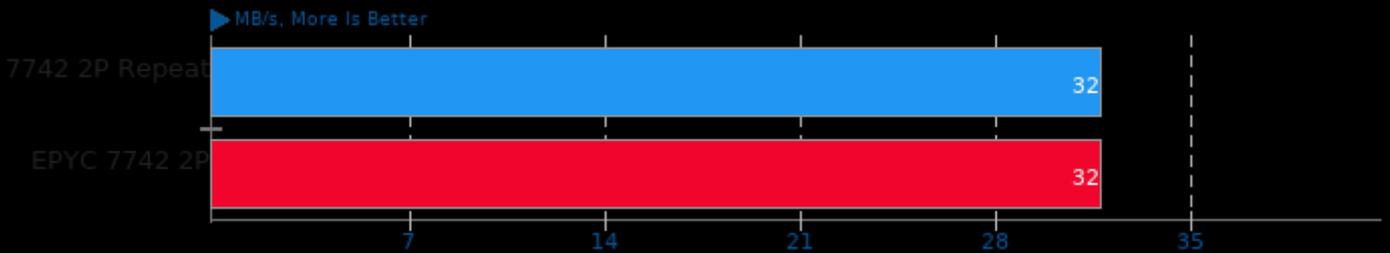
## Nebular Empirical Analysis Tool 2020-02-29



1. (F9X) gfortran options: -cpp -fno-line-length-0 -jsource/ -fopenmp -O3 -fno-backtrace

## Izbench 1.8

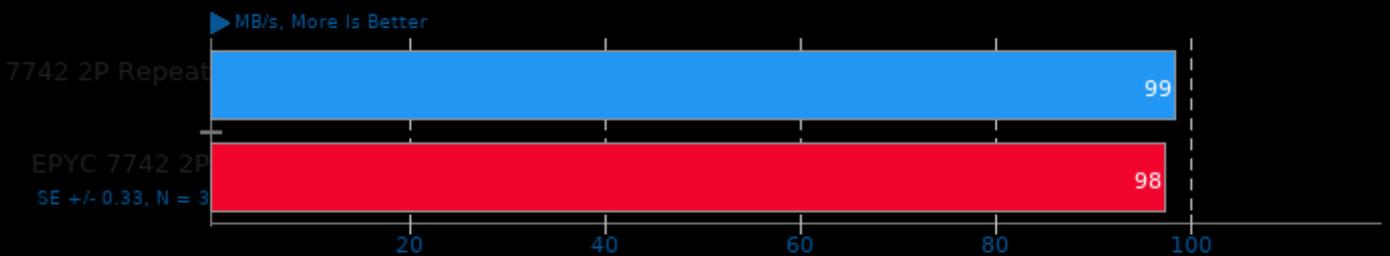
Test: XZ 0 - Process: Compression



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

## Izbench 1.8

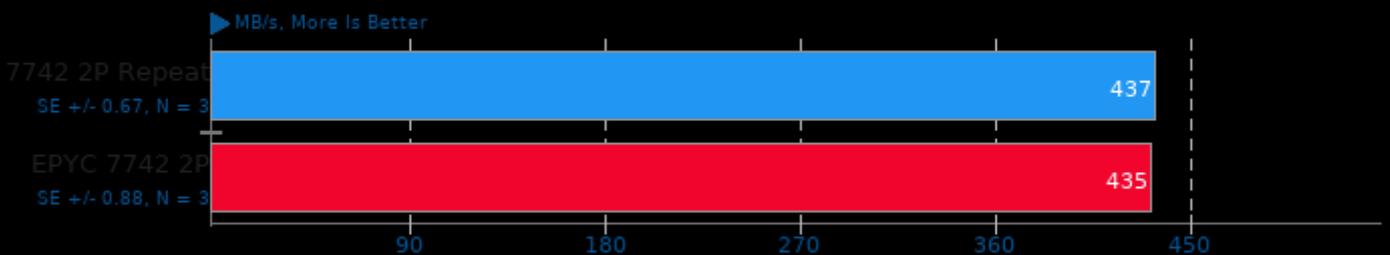
Test: XZ 0 - Process: Decompression



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

## Izbench 1.8

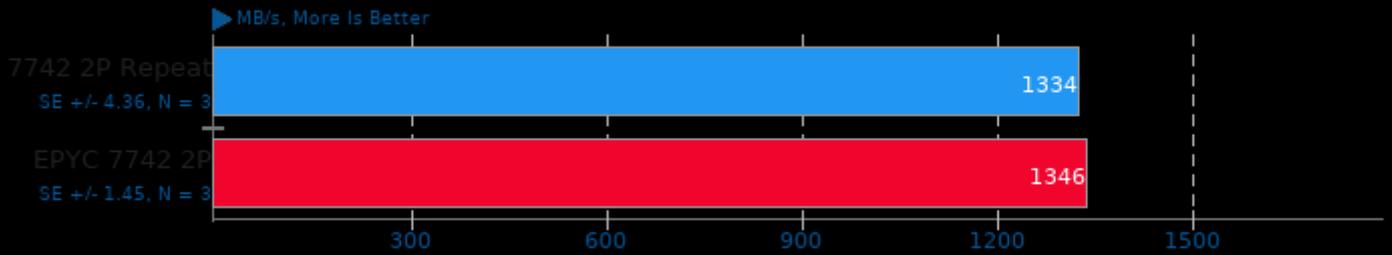
Test: Zstd 1 - Process: Compression



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

### Izbench 1.8

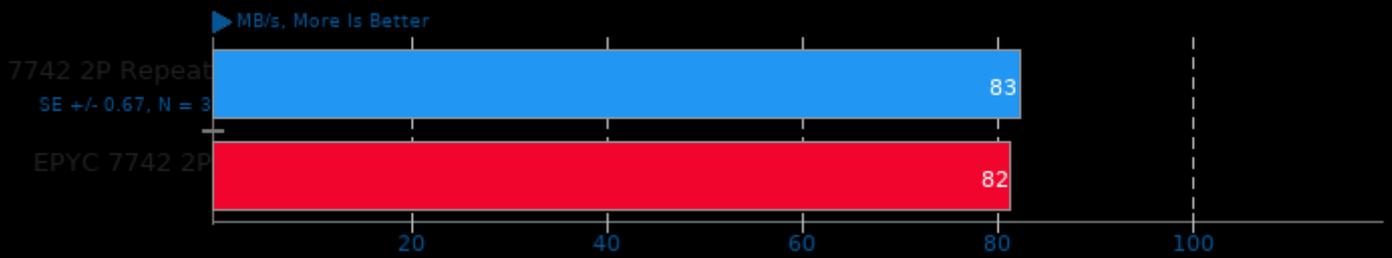
Test: Zstd 1 - Process: Decompression



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

### Izbench 1.8

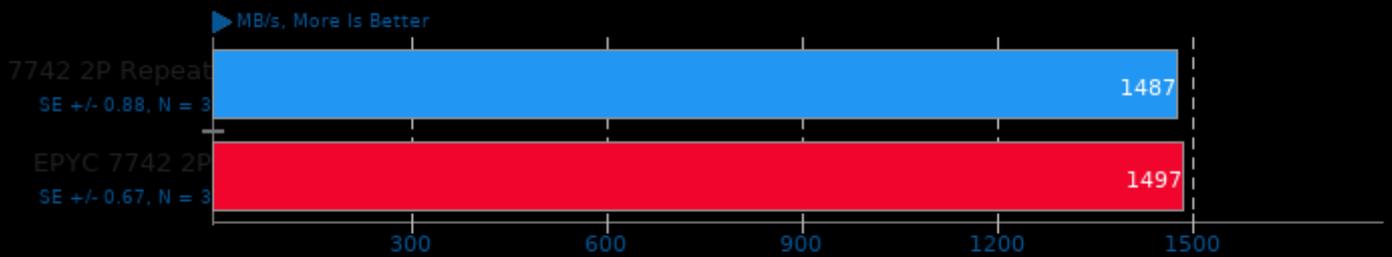
Test: Zstd 8 - Process: Compression



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

### Izbench 1.8

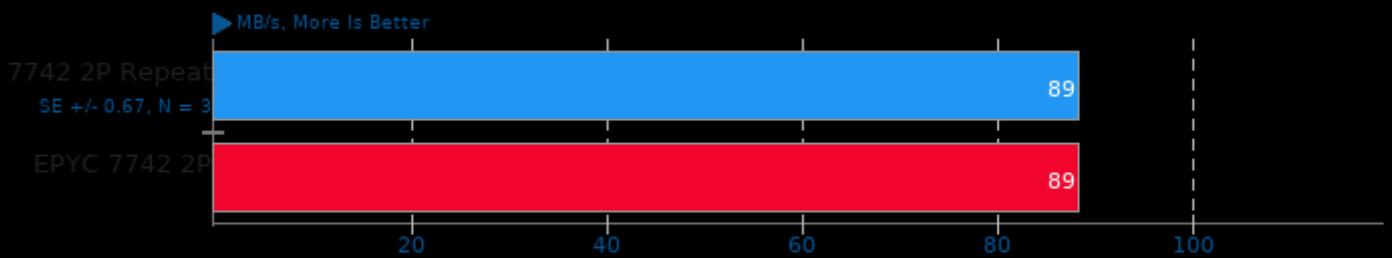
Test: Zstd 8 - Process: Decompression



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

### Izbench 1.8

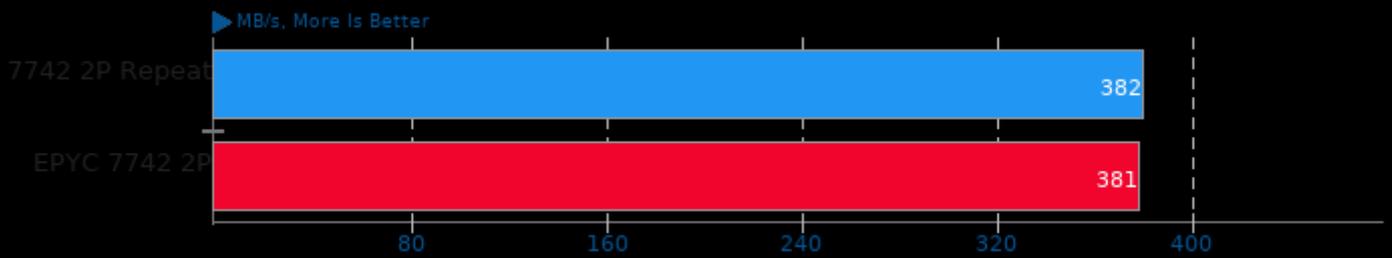
Test: Crush 0 - Process: Compression



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

### Izbench 1.8

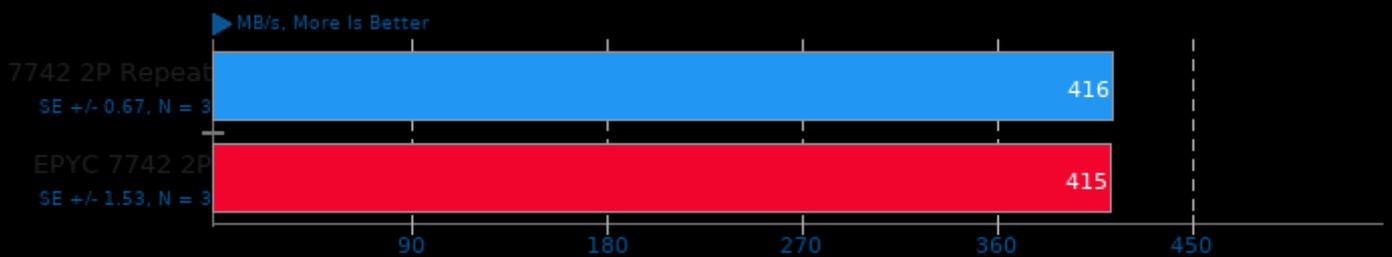
Test: Crush 0 - Process: Decompression



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

### Izbench 1.8

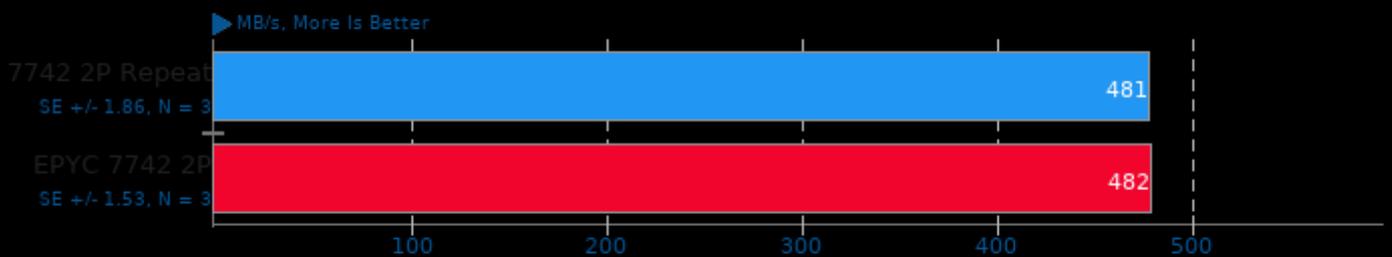
Test: Brotli 0 - Process: Compression



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

### Izbench 1.8

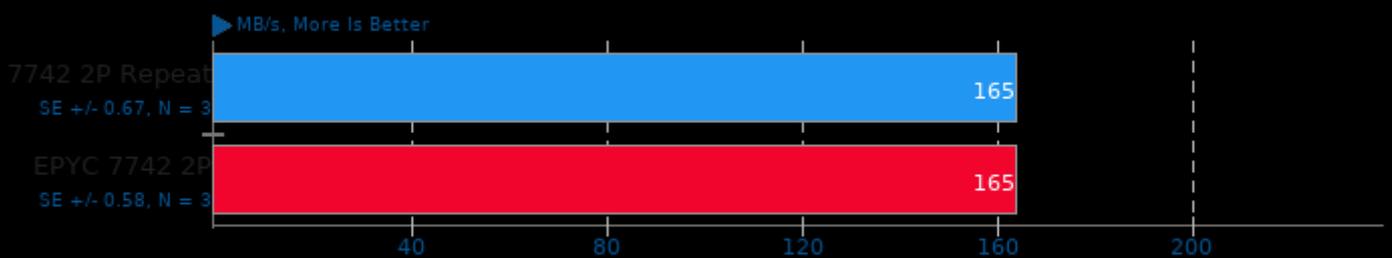
Test: Brotli 0 - Process: Decompression



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

### Izbench 1.8

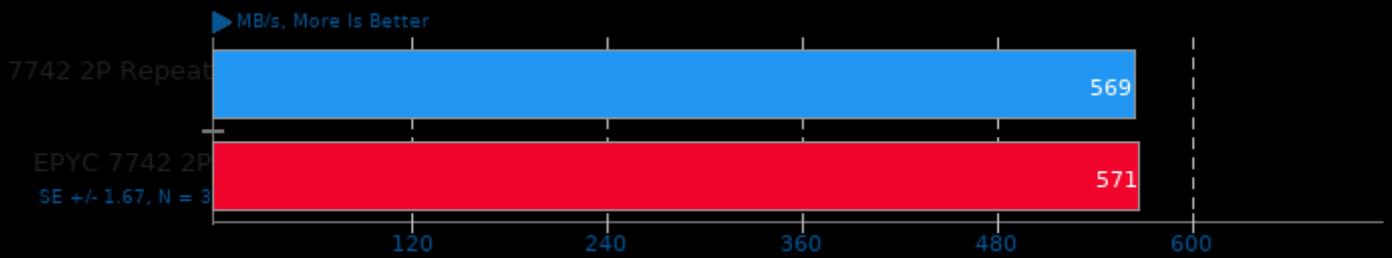
Test: Brotli 2 - Process: Compression



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

### Izbench 1.8

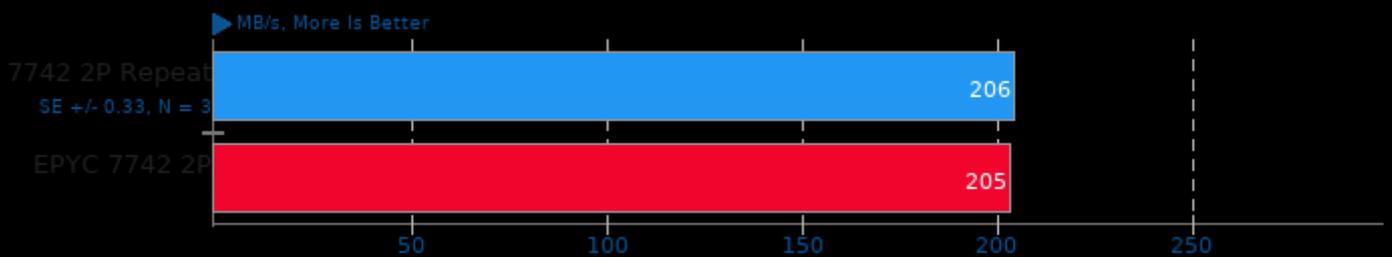
Test: Brotli 2 - Process: Decompression



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

### Izbench 1.8

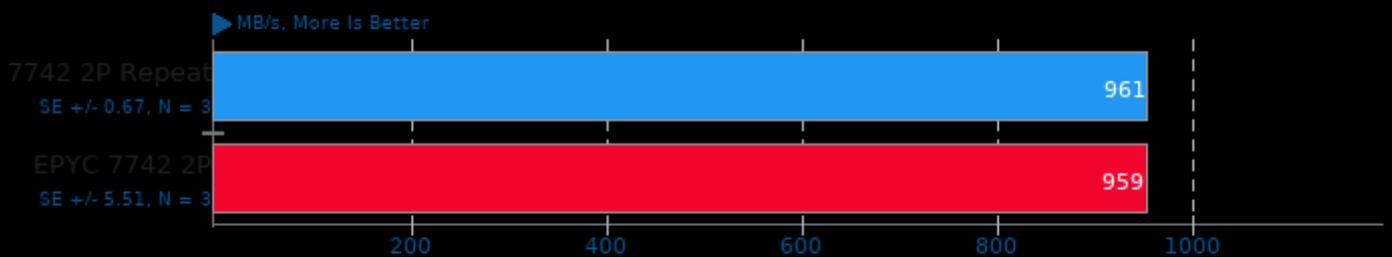
Test: Libdeflate 1 - Process: Compression



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

### Izbench 1.8

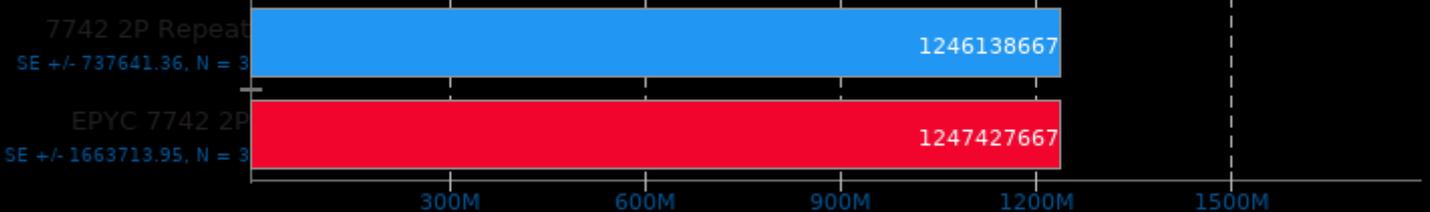
Test: Libdeflate 1 - Process: Decompression



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

### Algebraic Multi-Grid Benchmark 1.2

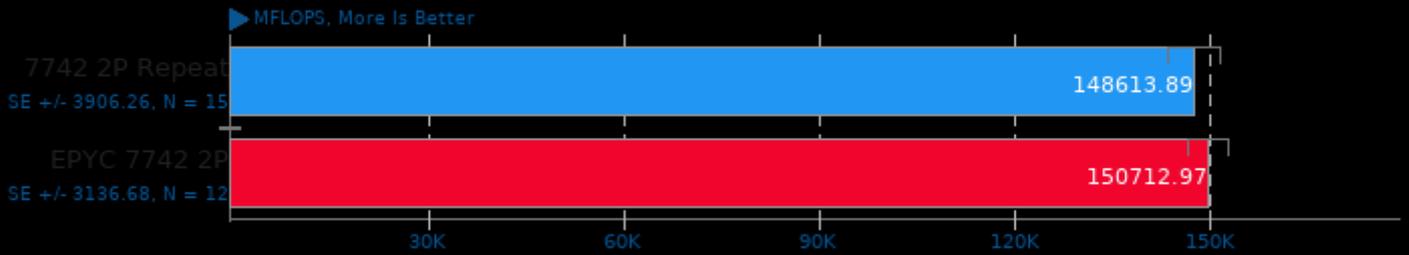
Figure Of Merit, More Is Better



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

### FFTE 7.0

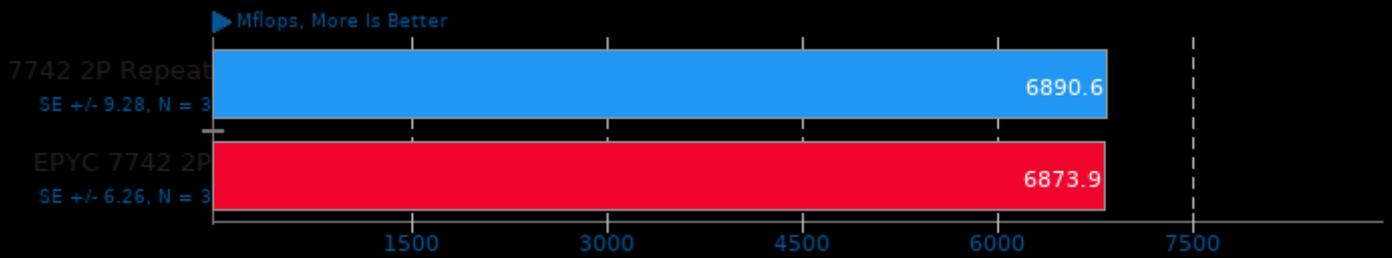
N=256, 3D Complex FFT Routine



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

### FFTW 3.3.6

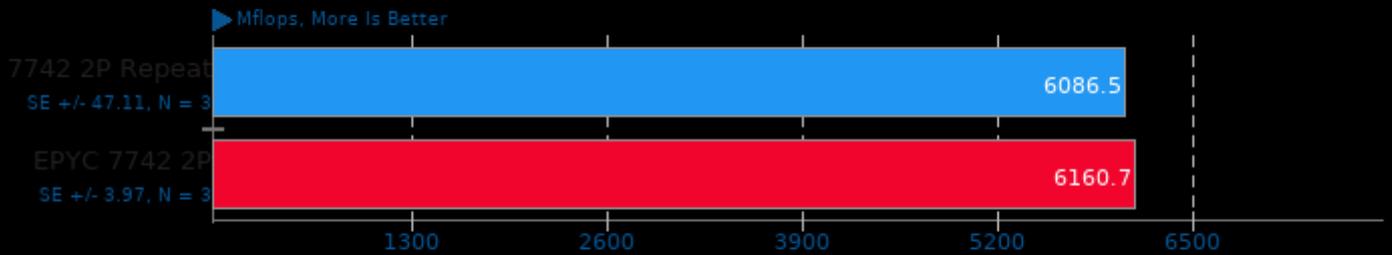
Build: Stock - Size: 1D FFT Size 4096



1. (CC) gcc options: -pthread -O3 -fomit-frame-pointer -mtune=native -malign-double -fstrict-aliasing -fno-schedule-insns -ffast-math -lm

### FFTW 3.3.6

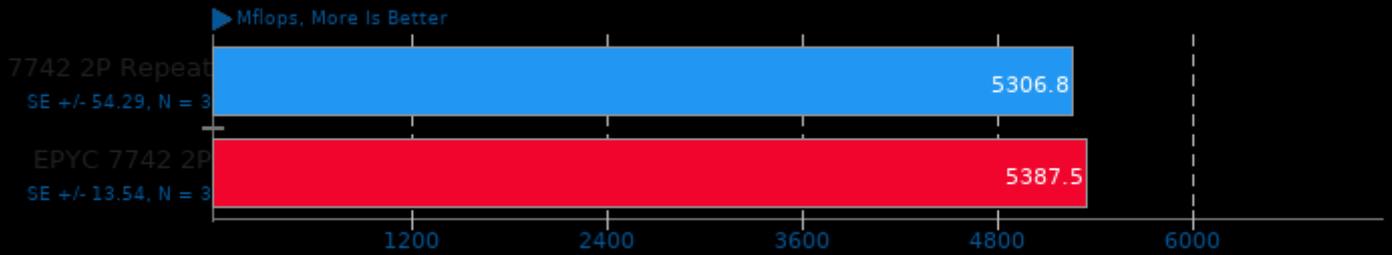
Build: Stock - Size: 2D FFT Size 2048



1. (CC) gcc options: -pthread -O3 -fomit-frame-pointer -mtune=native -malign-double -fstrict-aliasing -fno-schedule-insns -ffast-math -lm

### FFTW 3.3.6

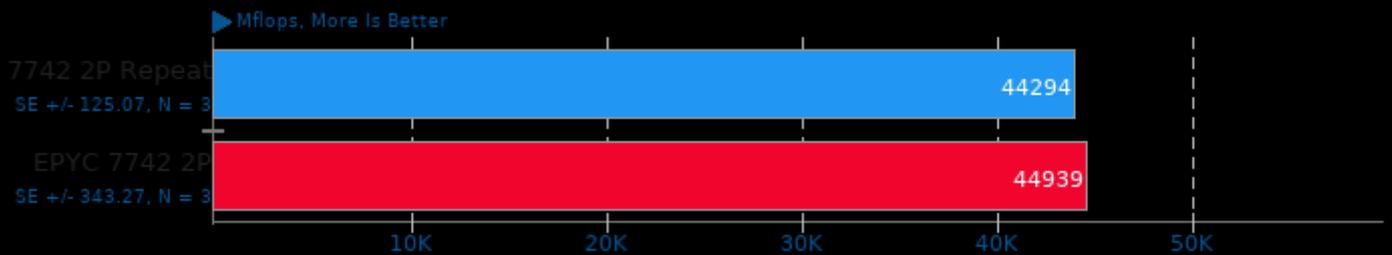
Build: Stock - Size: 2D FFT Size 4096



1. (CC) gcc options: -pthread -O3 -fomit-frame-pointer -mtune=native -malign-double -fstrict-aliasing -fno-schedule-insns -ffast-math -lm

### FFTW 3.3.6

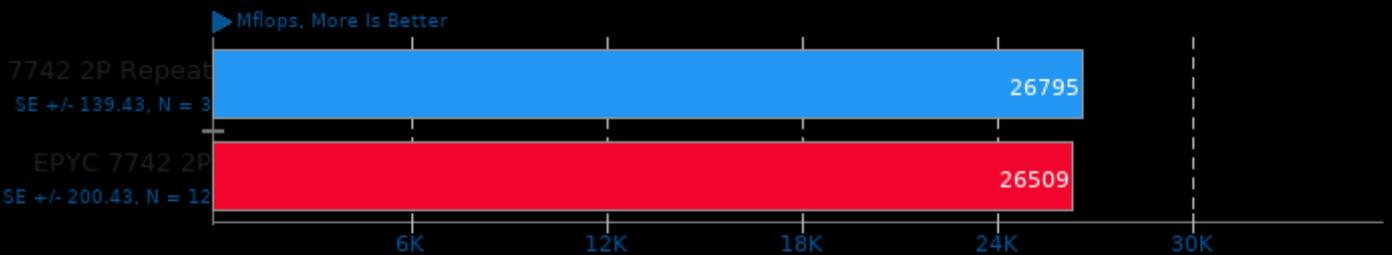
Build: Float + SSE - Size: 1D FFT Size 4096



1. (CC) gcc options: -pthread -O3 -fomit-frame-pointer -mtune=native -malign-double -fstrict-aliasing -fno-schedule-insns -ffast-math -lm

### FFTW 3.3.6

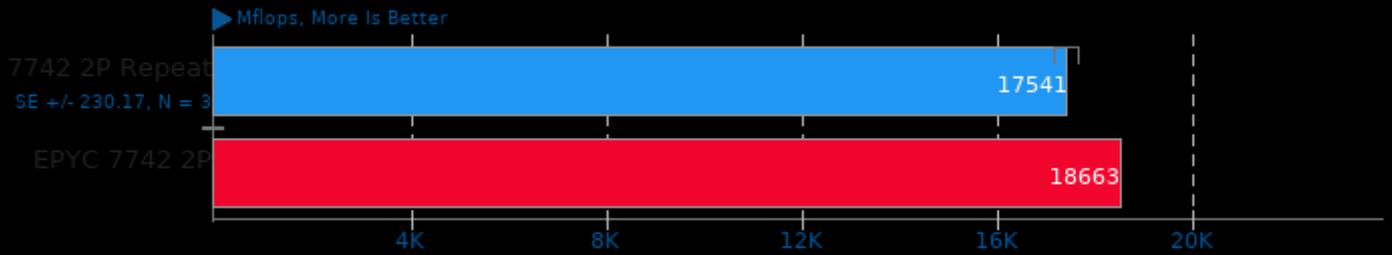
Build: Float + SSE - Size: 2D FFT Size 2048



1. (CC) gcc options: -pthread -O3 -fomit-frame-pointer -mtune=native -malign-double -fstrict-aliasing -fno-schedule-insns -ffast-math -lm

### FFTW 3.3.6

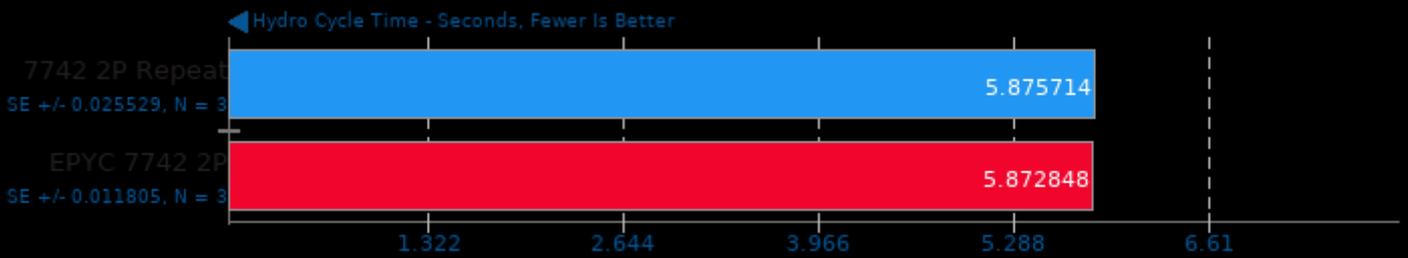
Build: Float + SSE - Size: 2D FFT Size 4096



1. (ICC) gcc options: -pthread -O3 -fomit-frame-pointer -mtune=native -malign-double -fstrict-aliasing -fno-schedule-insns -ffast-math -lm

### Pennant 1.0.1

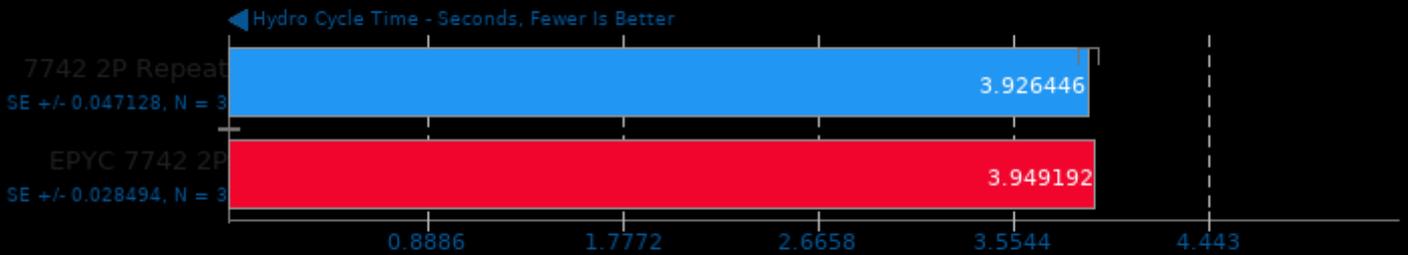
Test: sedovbig



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

### Pennant 1.0.1

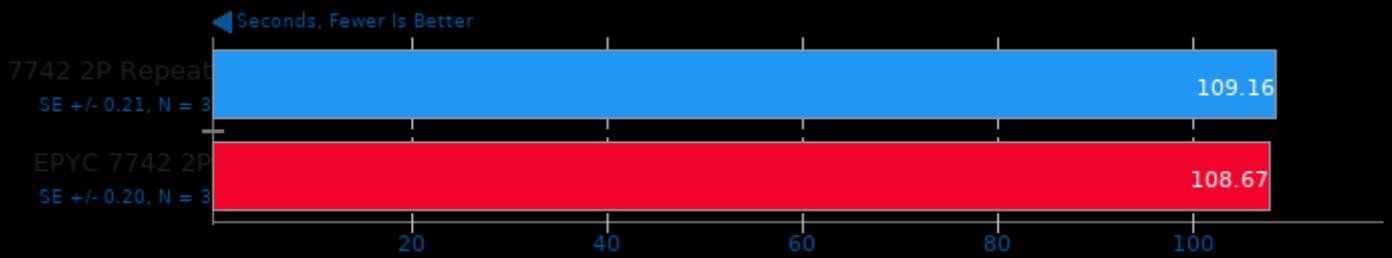
Test: leblancbig



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

### Timed MrBayes Analysis 3.2.7

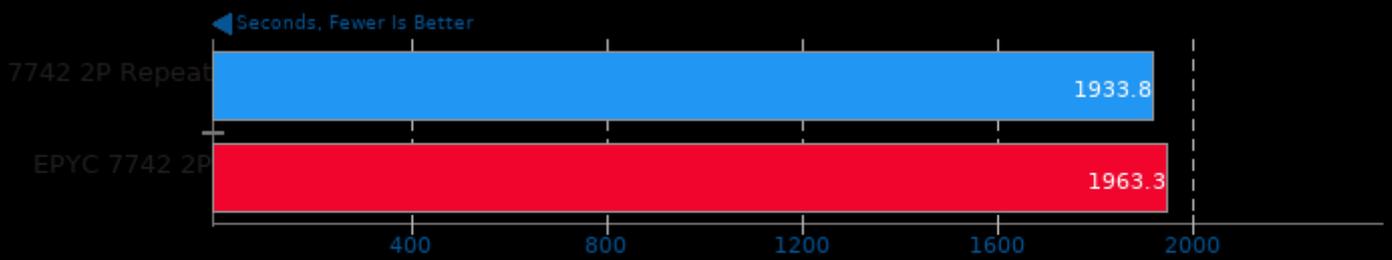
Primate Phylogeny Analysis



1. (ICC) gcc options: -mrmx -msse -msse2 -msse3 -msse3.1 -msse4.1 -msse4.2 -msse4a -msha -maes -mavx -mfma -mavx2 -mrdnd -mbmi -mbmi2 -madx

### NWChem 7.0.2

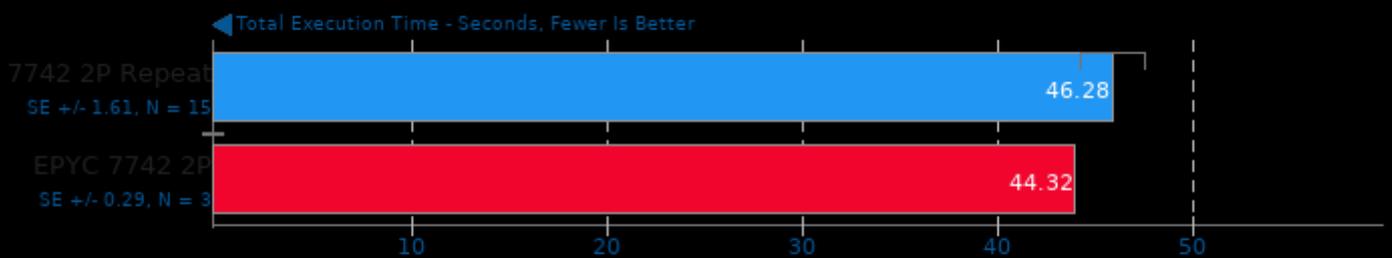
Input: C240 Buckyball



1. (F9X) gfortran options: -lnwctask -lccsd -lmcsf -lscf -lmp2 -lmoints -lstepper -ldriver -loptim -lnwdfc -lgradients -lcpfh -lesp -laddscf -ldangchang -lgu

### QMCPACK 3.10

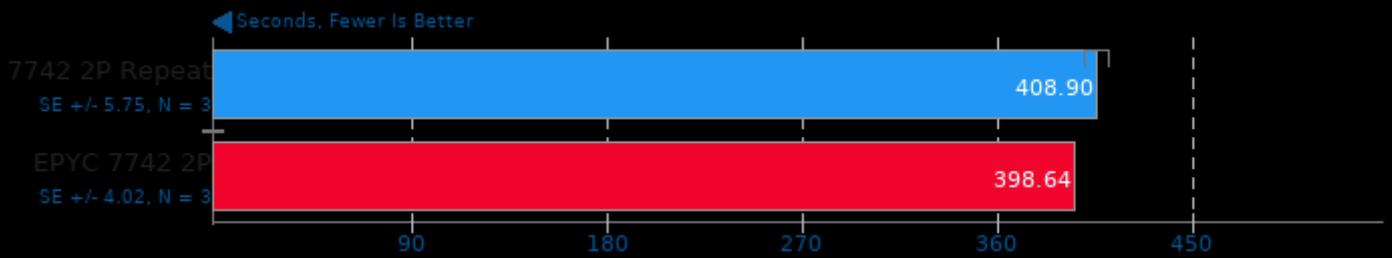
Input: simple-H2O



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

### Timed HMMer Search 3.3.1

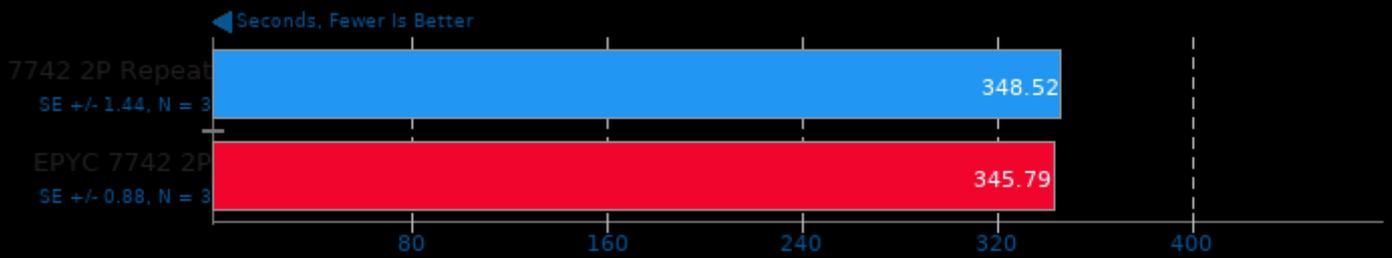
Pfam Database Search



1. (CC) gcc options: -O3 -pthread -lhmmmer -lease1 -lm

### Incompact3D 2020-09-17

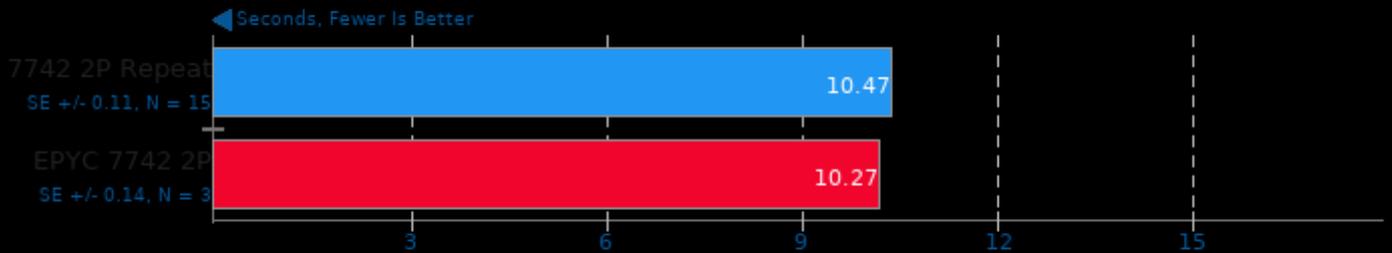
Input: Cylinder



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

### Timed MAFFT Alignment 7.471

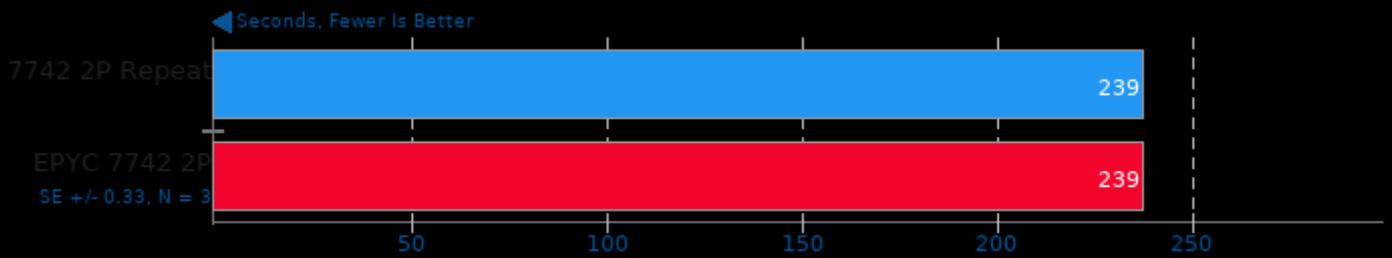
Multiple Sequence Alignment - LSU RNA



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

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

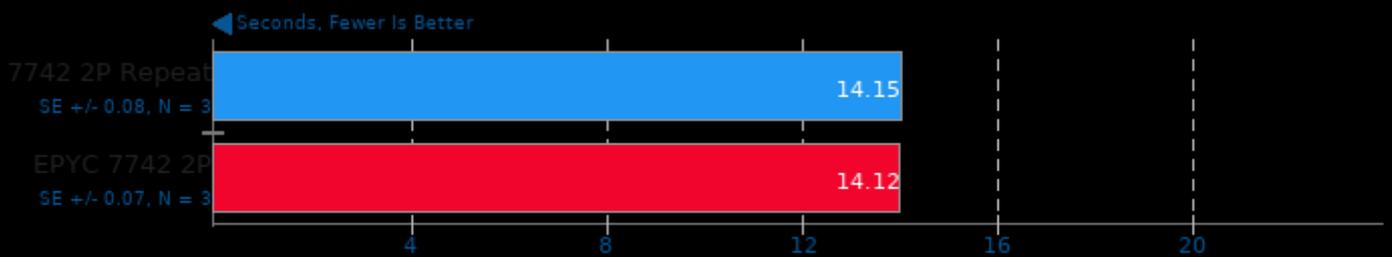
Input: Dust 2D tau100.0



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

### OpenFOAM 8

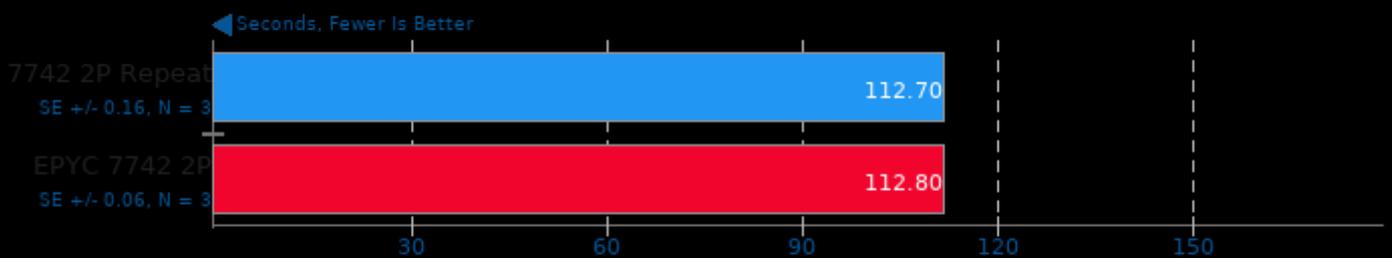
Input: Motorbike 30M



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

### OpenFOAM 8

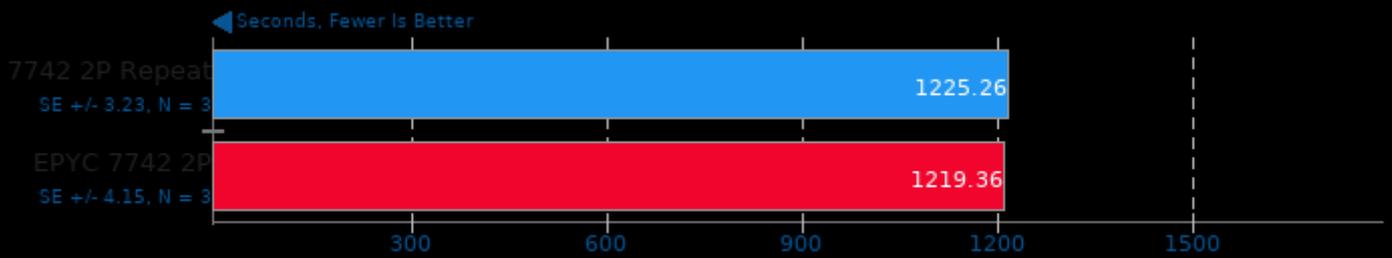
Input: Motorbike 60M



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

### Quantum ESPRESSO 6.7

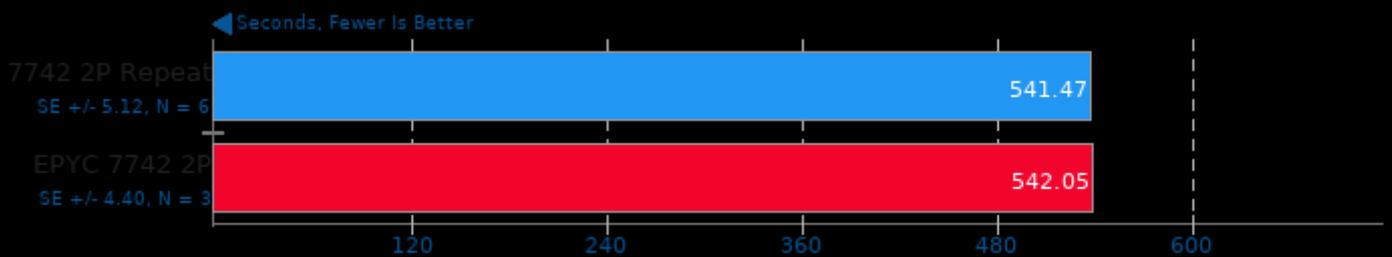
Input: AUSURF112



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

### RELION 3.1.1

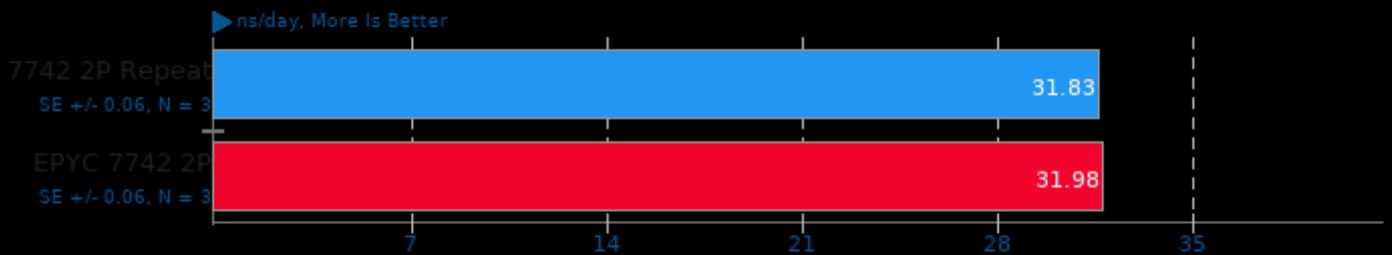
Test: Basic - Device: CPU



1. (CXX) g++ options: -fopenmp -std=c++0x -O3 -rdynamic -ldl -ltiff -lfftw3f -lfftw3 -lpng -pthread -lmpi\_cxx -lmpi

### LAMMPS Molecular Dynamics Simulator 29Oct2020

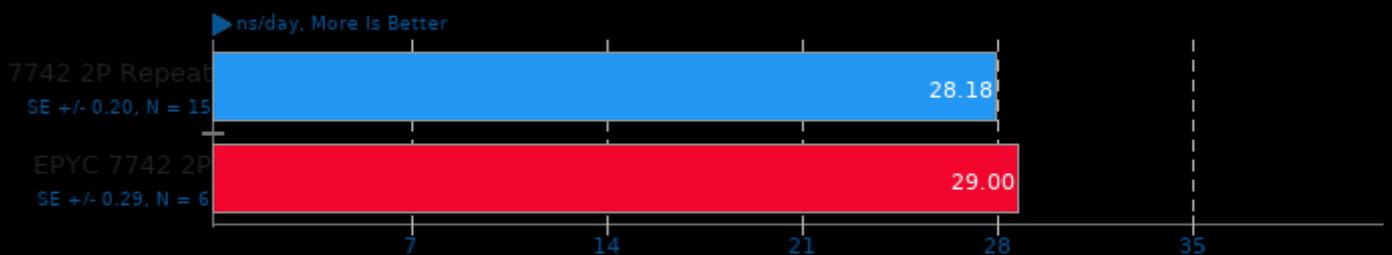
Model: 20k Atoms



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

### LAMMPS Molecular Dynamics Simulator 29Oct2020

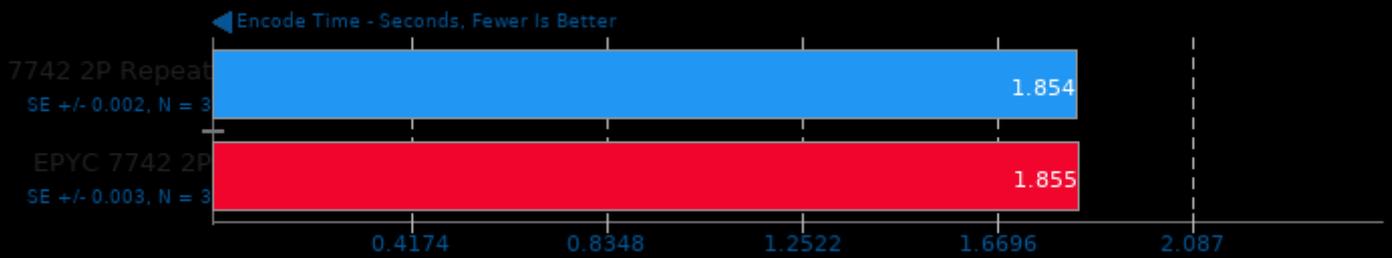
Model: Rhodopsin Protein



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

### WebP Image Encode 1.1

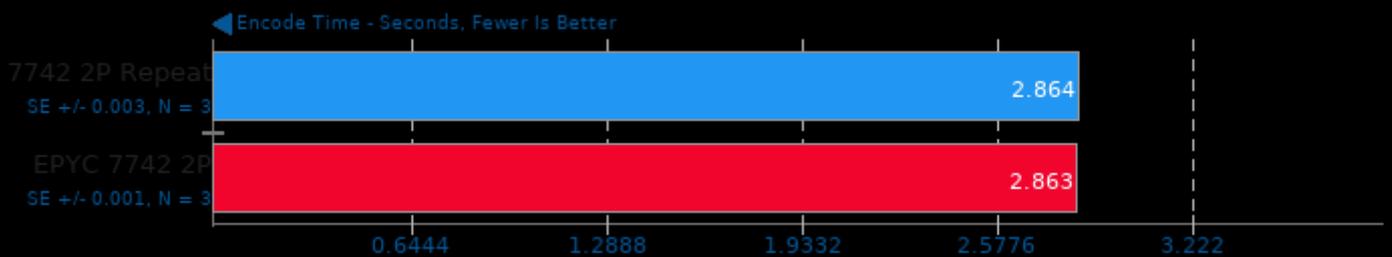
Encode Settings: Default



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

### WebP Image Encode 1.1

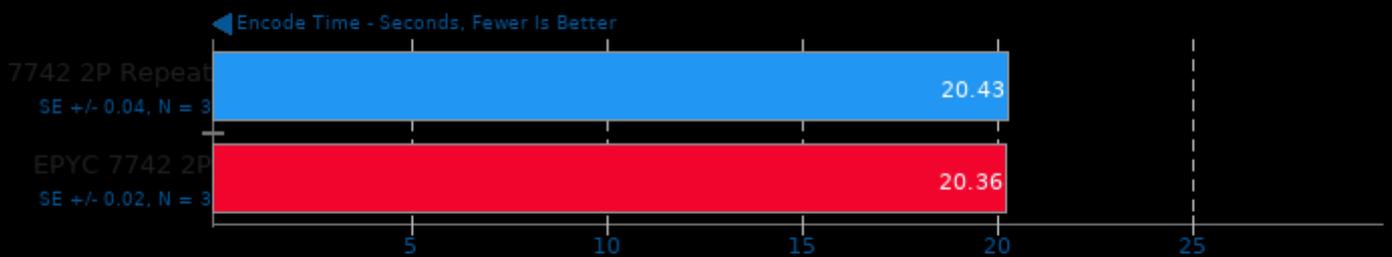
Encode Settings: Quality 100



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

### WebP Image Encode 1.1

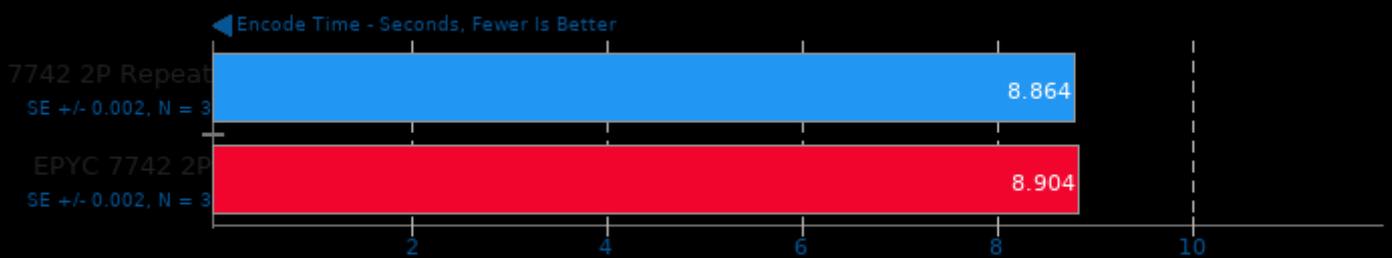
Encode Settings: Quality 100, Lossless



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

### WebP Image Encode 1.1

Encode Settings: Quality 100, Highest Compression

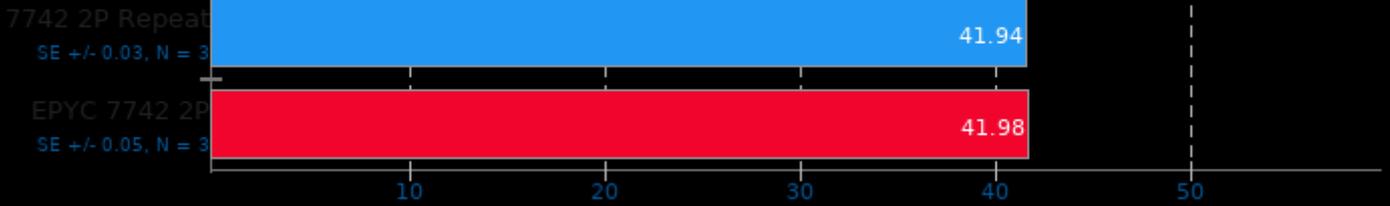


1. (CC) gcc options: -fvisibility=hidden -O2 -pthread -lm -ljpeg -lpng16 -ltiff

### WebP Image Encode 1.1

Encode Settings: Quality 100, Lossless, Highest Compression

Encode Time - Seconds, Fewer Is Better



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

### libgav1 2019-10-05

Video Input: Summer Nature 4K

FPS, More Is Better



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

### libgav1 2019-10-05

Video Input: Summer Nature 1080p

FPS, More Is Better

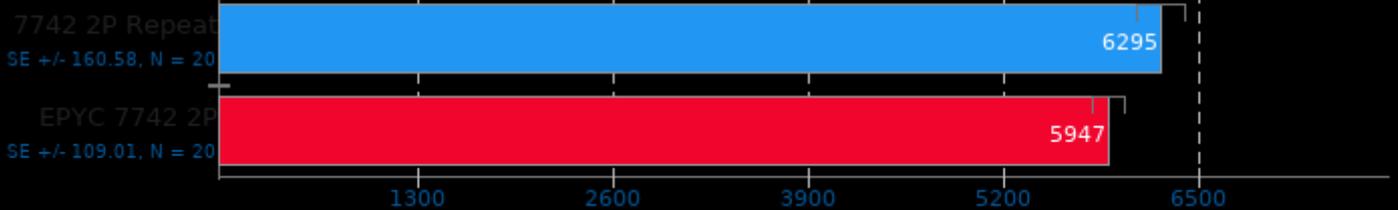


1. (CXX) g++ options: -O3 -pthread

### DaCapo Benchmark 9.12-MR1

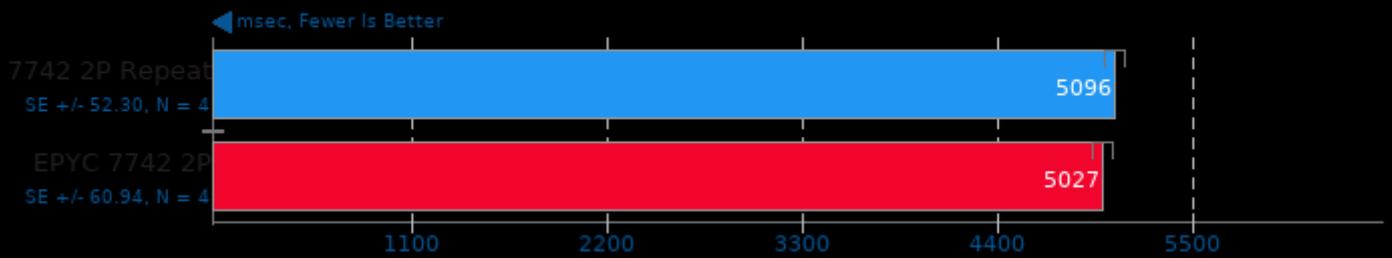
Java Test: H2

msec, Fewer Is Better



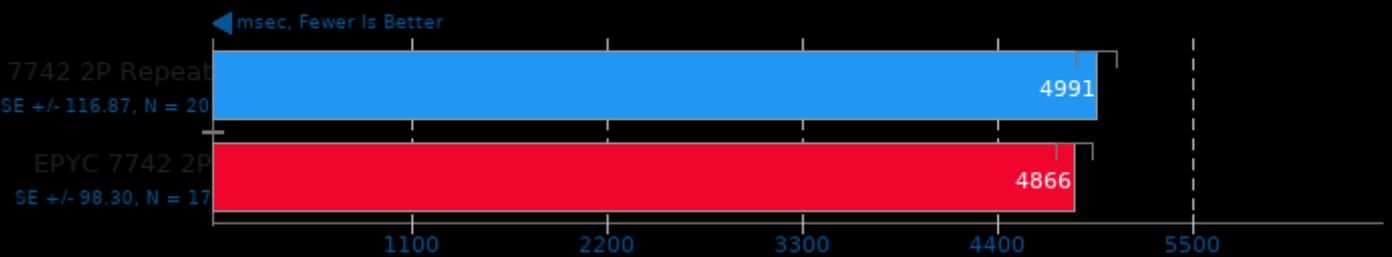
### DaCapo Benchmark 9.12-MR1

Java Test: Jython



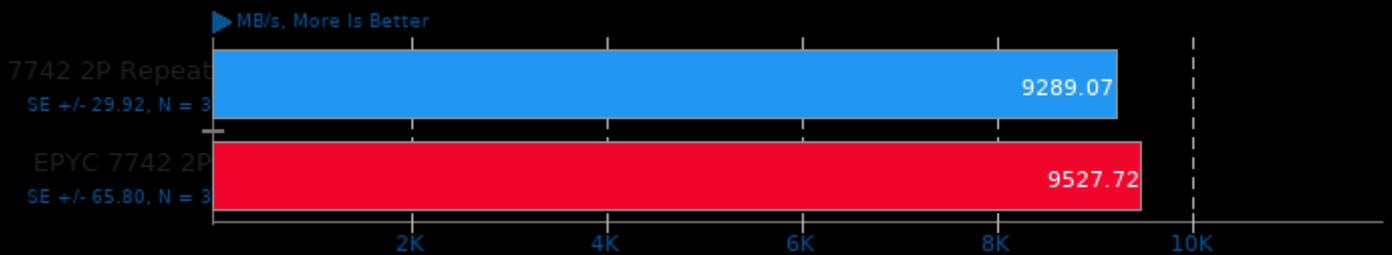
### DaCapo Benchmark 9.12-MR1

Java Test: Tradebeans



### LZ4 Compression 1.9.3

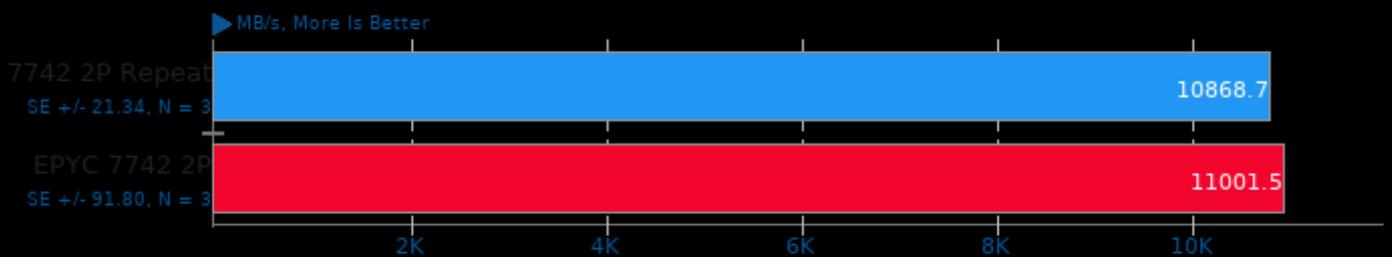
Compression Level: 1 - Compression Speed



1. (CC) gcc options: -O3

### LZ4 Compression 1.9.3

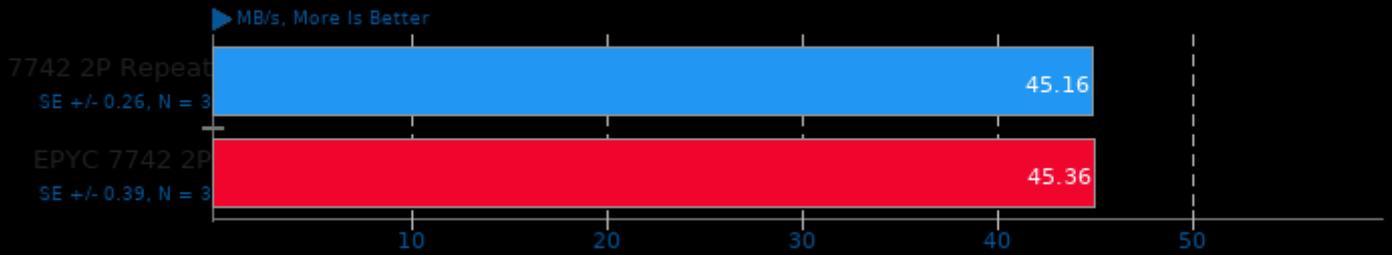
Compression Level: 1 - Decompression Speed



1. (CC) gcc options: -O3

### LZ4 Compression 1.9.3

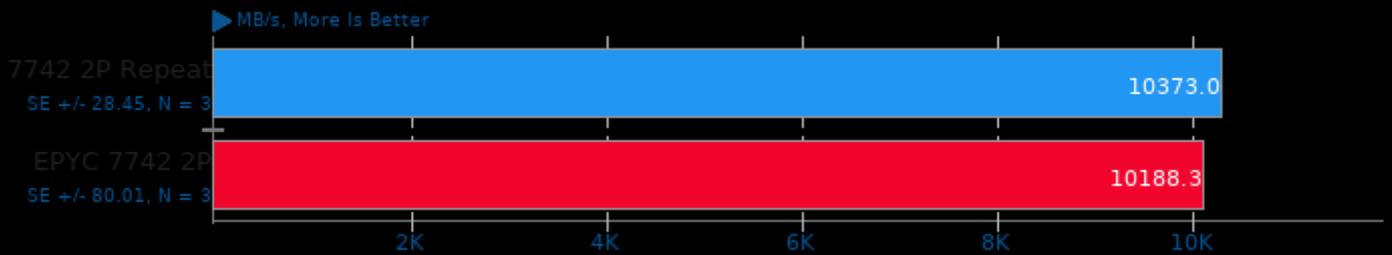
Compression Level: 3 - Compression Speed



1. (CC) gcc options: -O3

### LZ4 Compression 1.9.3

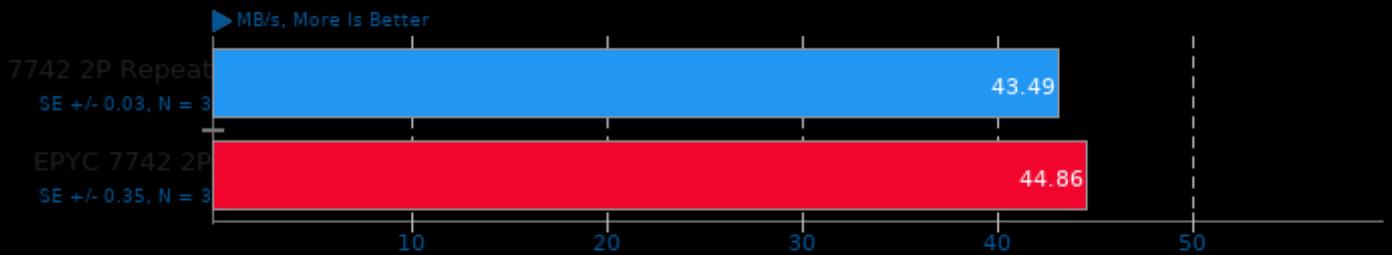
Compression Level: 3 - Decompression Speed



1. (CC) gcc options: -O3

### LZ4 Compression 1.9.3

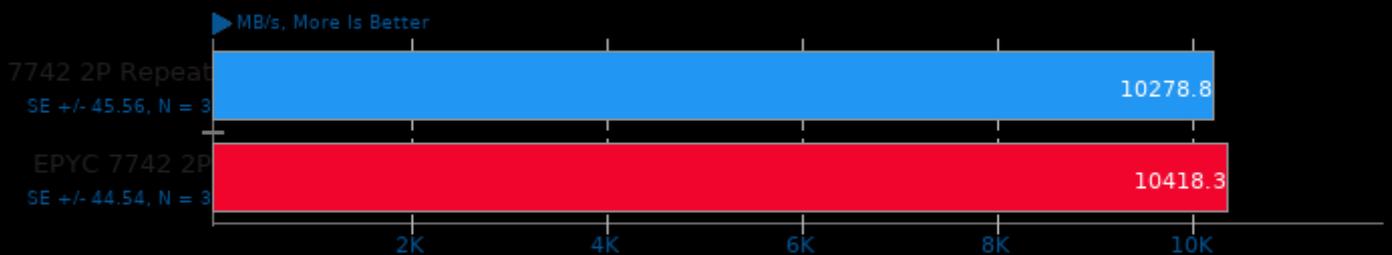
Compression Level: 9 - Compression Speed



1. (CC) gcc options: -O3

### LZ4 Compression 1.9.3

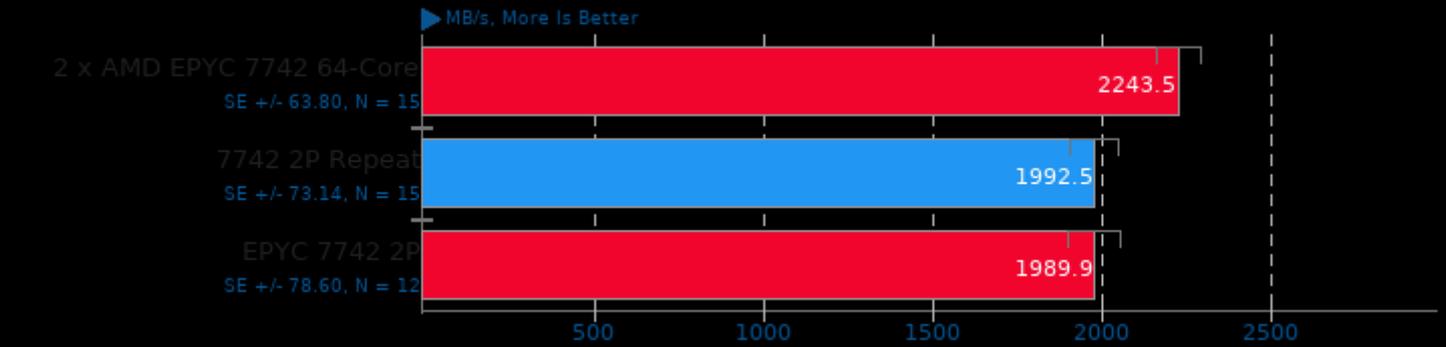
Compression Level: 9 - Decompression Speed



1. (CC) gcc options: -O3

### Zstd Compression 1.4.9

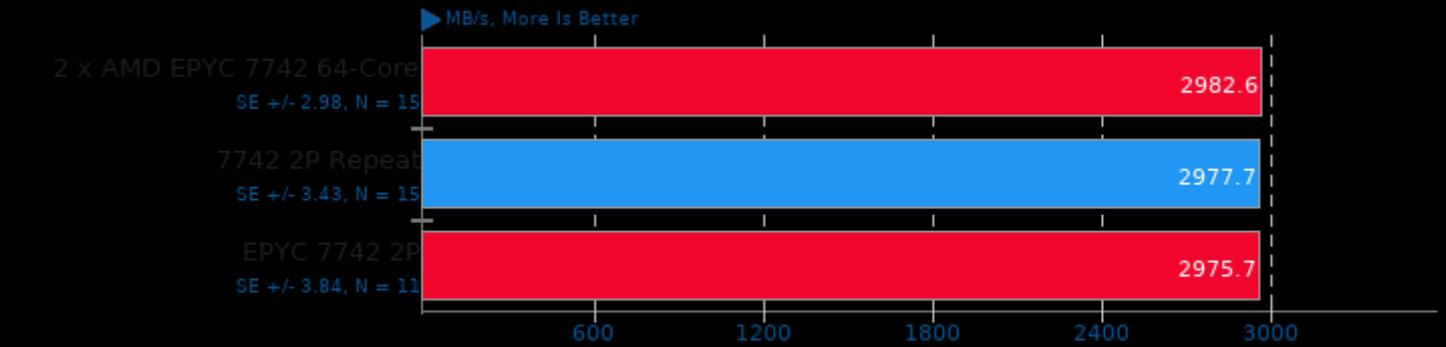
Compression Level: 8 - Compression Speed



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

### Zstd Compression 1.4.9

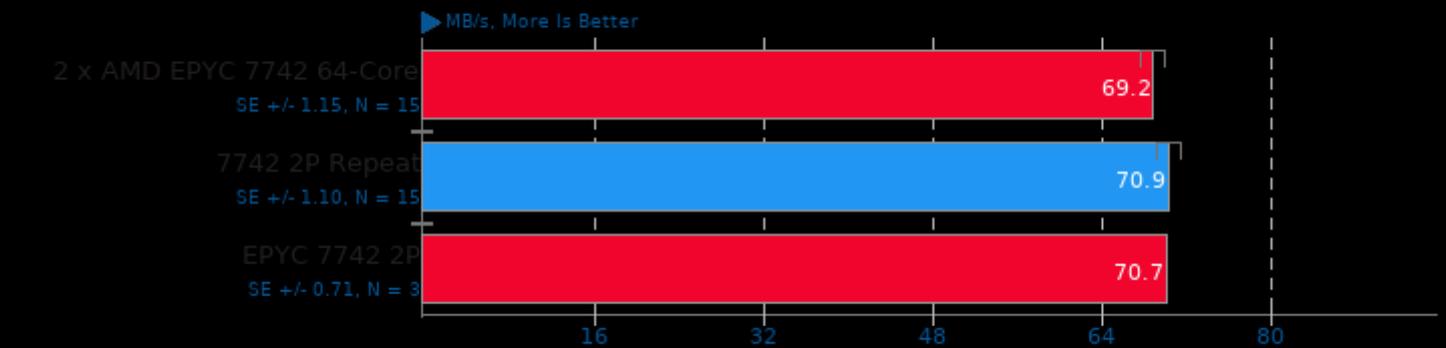
Compression Level: 8 - Decompression Speed



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

### Zstd Compression 1.4.9

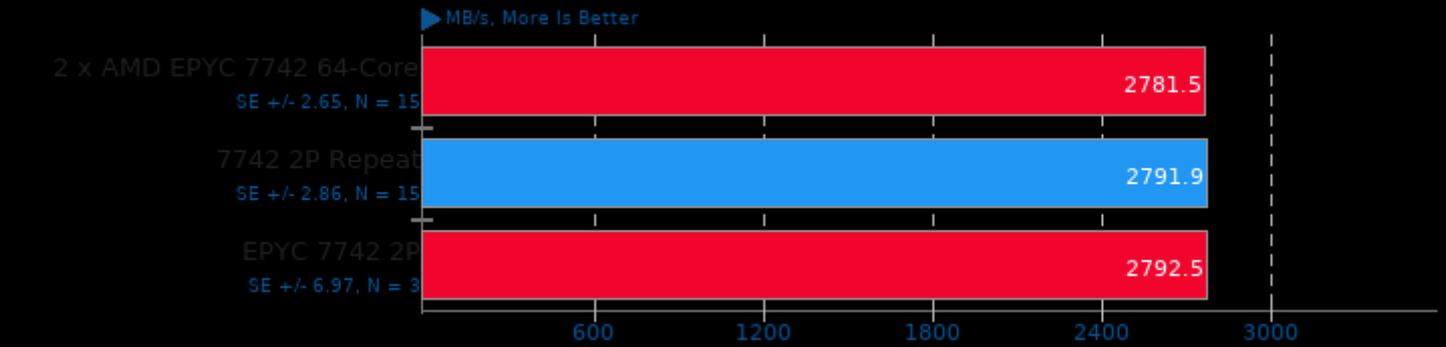
Compression Level: 19 - Compression Speed



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

### Zstd Compression 1.4.9

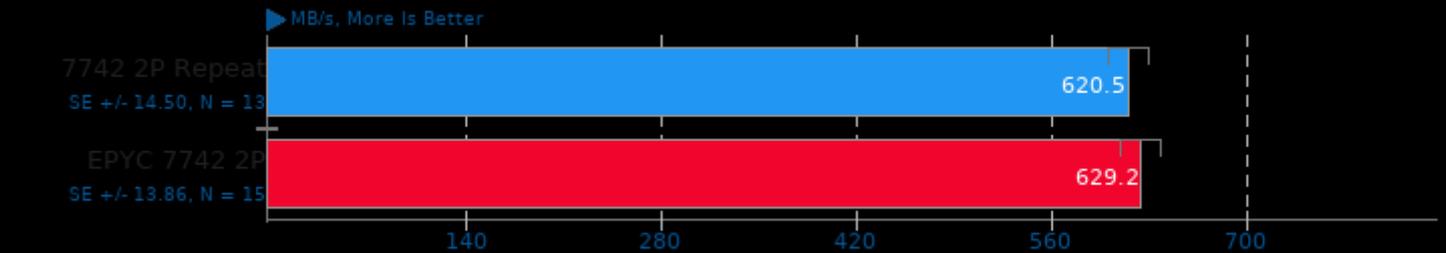
Compression Level: 19 - Decompression Speed



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

### Zstd Compression 1.4.9

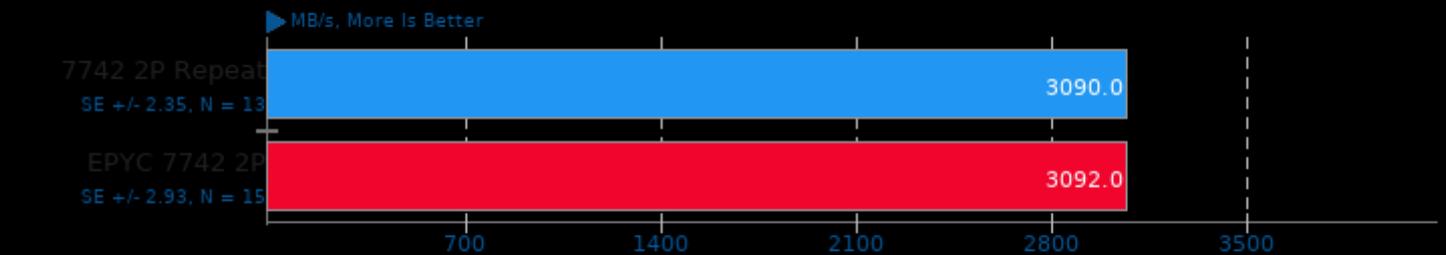
Compression Level: 3, Long Mode - Compression Speed



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

### Zstd Compression 1.4.9

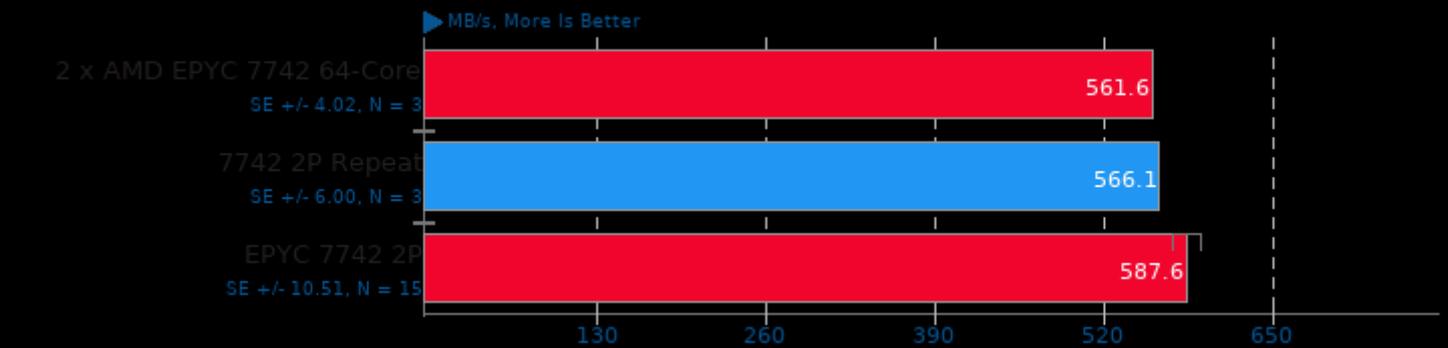
Compression Level: 3, Long Mode - Decompression Speed



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

### Zstd Compression 1.4.9

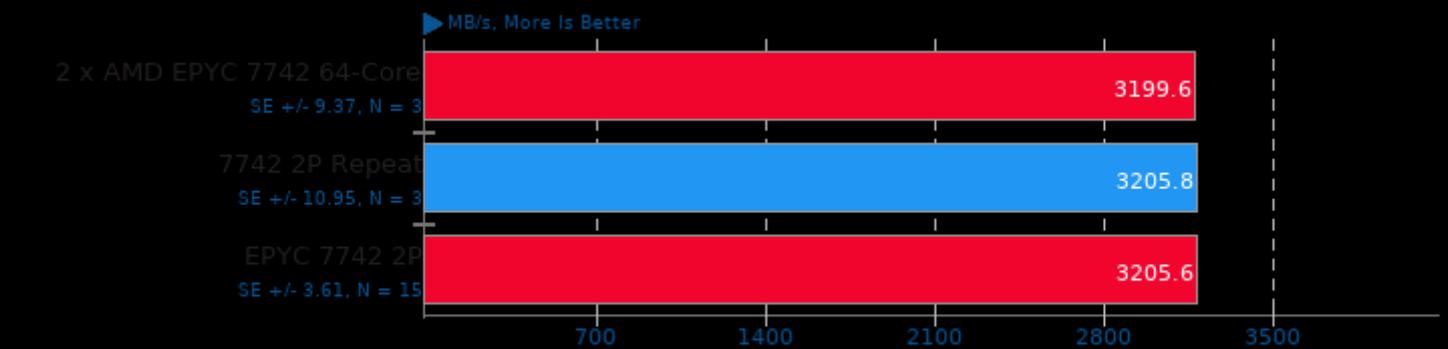
Compression Level: 8, Long Mode - Compression Speed



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

### Zstd Compression 1.4.9

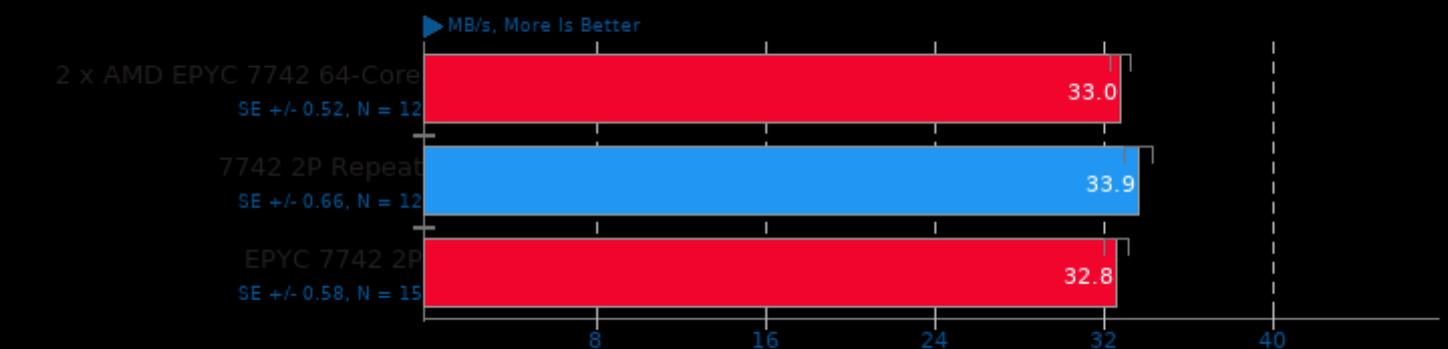
Compression Level: 8, Long Mode - Decompression Speed



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

### Zstd Compression 1.4.9

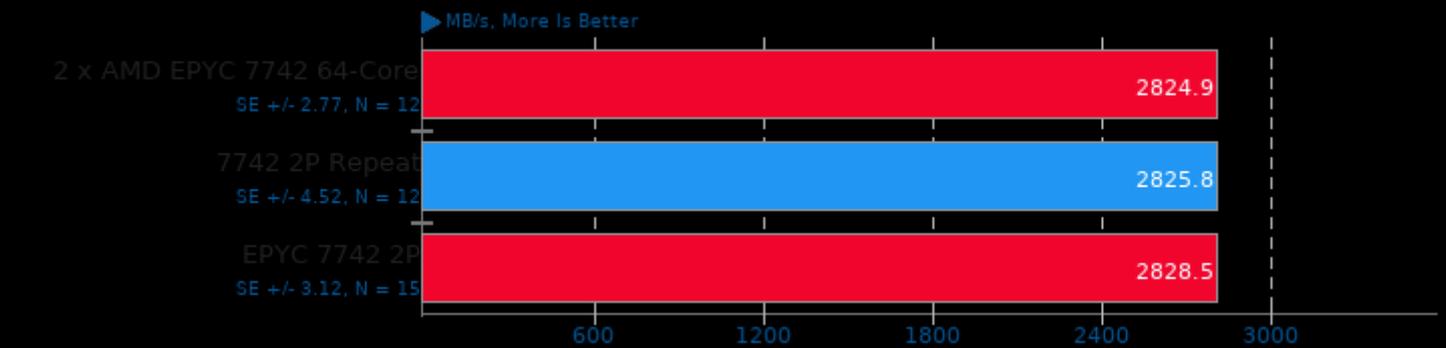
Compression Level: 19, Long Mode - Compression Speed



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

### Zstd Compression 1.4.9

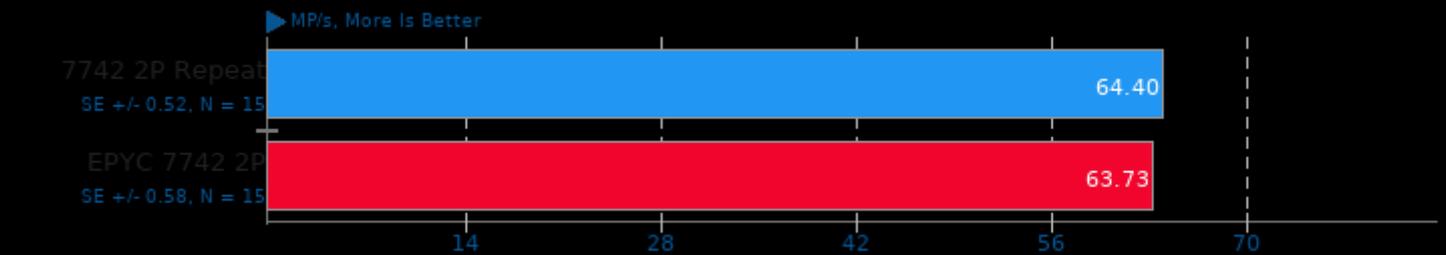
Compression Level: 19, Long Mode - Decompression Speed



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

### JPEG XL 0.3.1

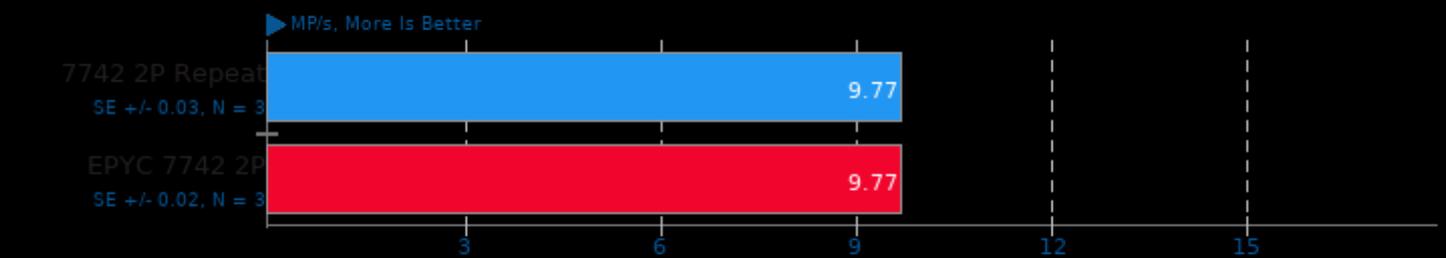
Input: PNG - Encode Speed: 5



1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie -pthread -ld

### JPEG XL 0.3.1

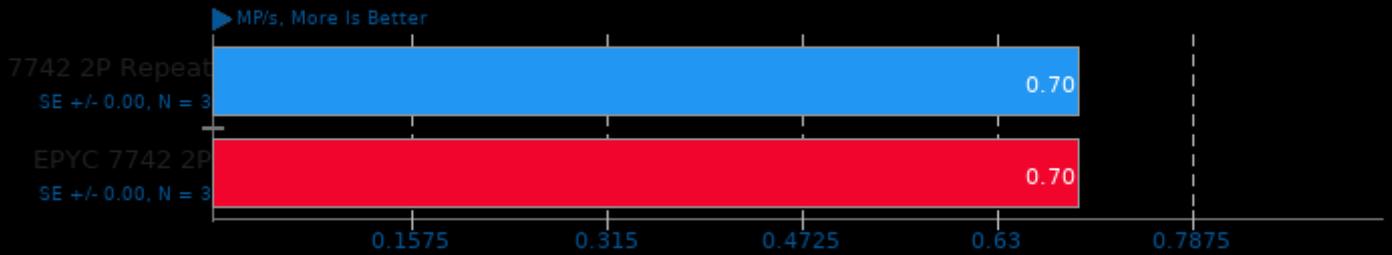
Input: PNG - Encode Speed: 7



1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie -pthread -ld

### JPEG XL 0.3.1

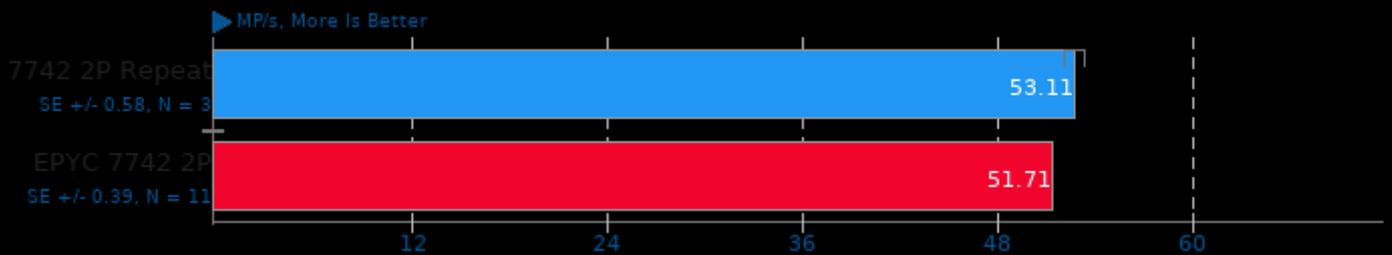
Input: PNG - Encode Speed: 8



1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie -pthread -ld

### JPEG XL 0.3.1

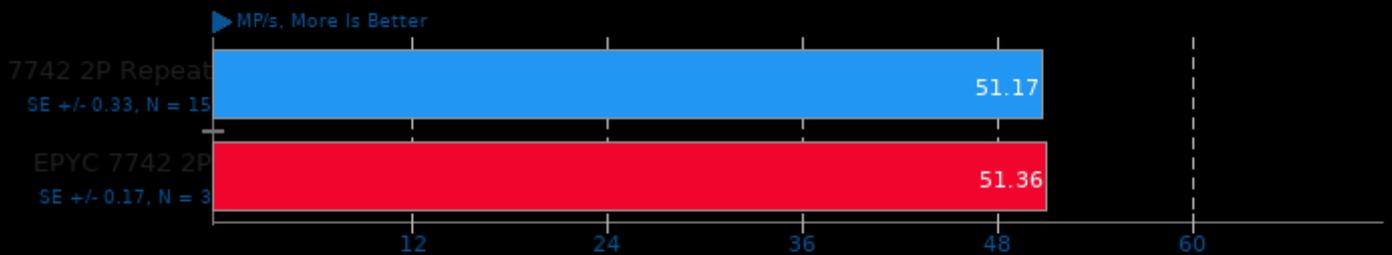
Input: JPEG - Encode Speed: 5



1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie -pthread -ld

### JPEG XL 0.3.1

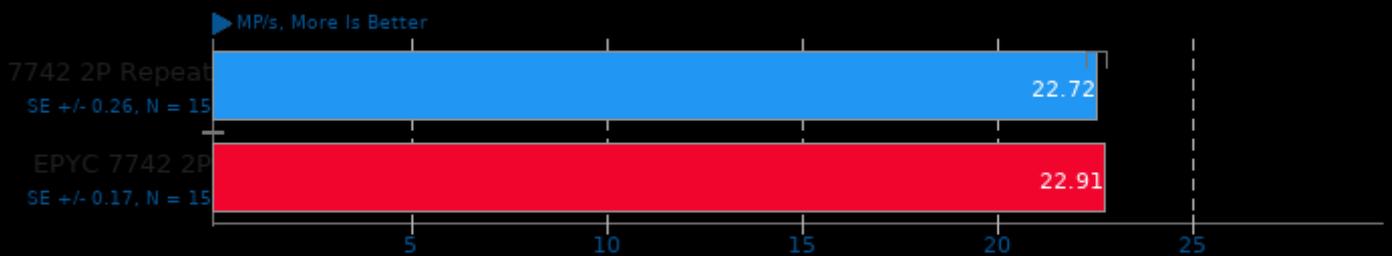
Input: JPEG - Encode Speed: 7



1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie -pthread -ld

### JPEG XL 0.3.1

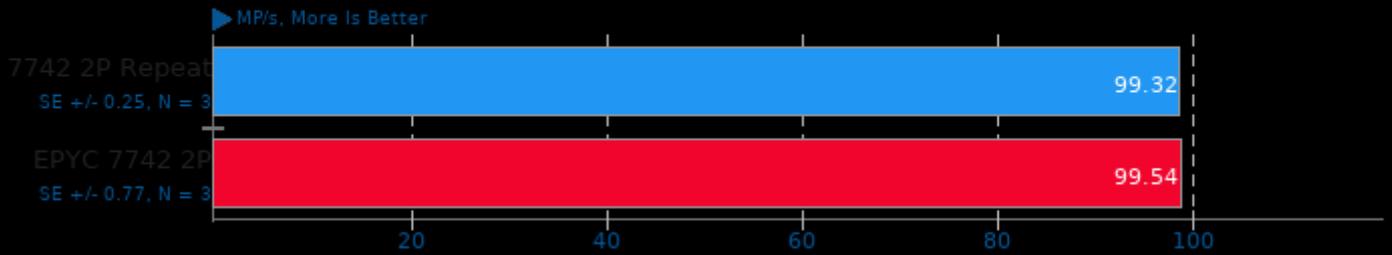
Input: JPEG - Encode Speed: 8



1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie -pthread -ld

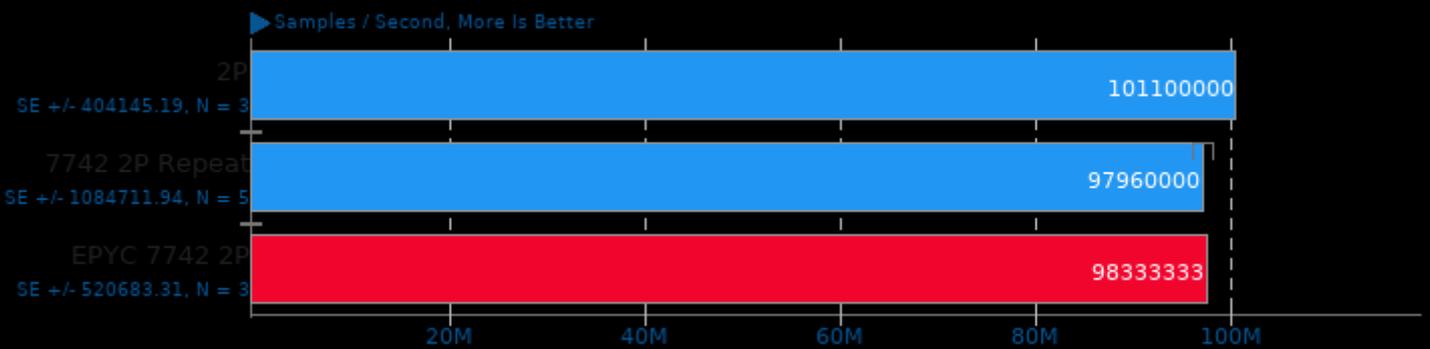
### JPEG XL Decoding 0.3.1

CPU Threads: All



### srsLTE 20.10.1

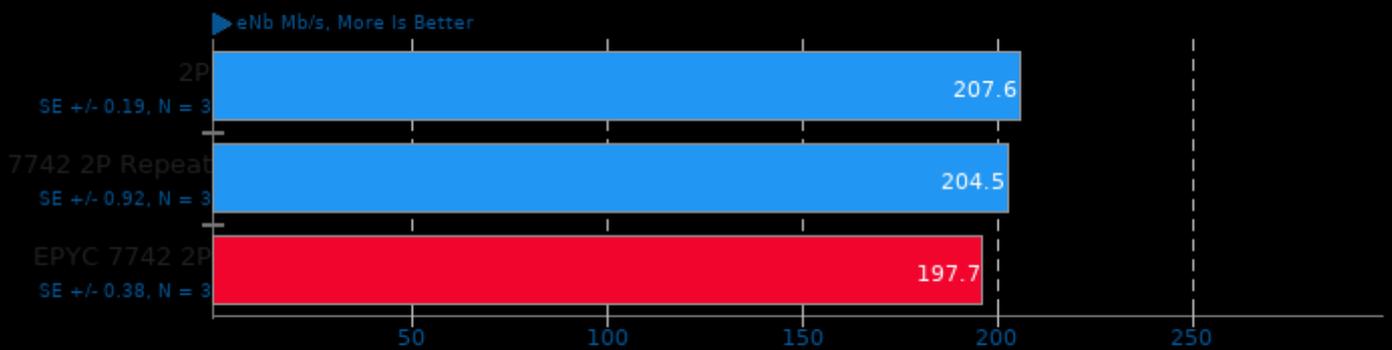
Test: OFDM\_Test



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

### srsLTE 20.10.1

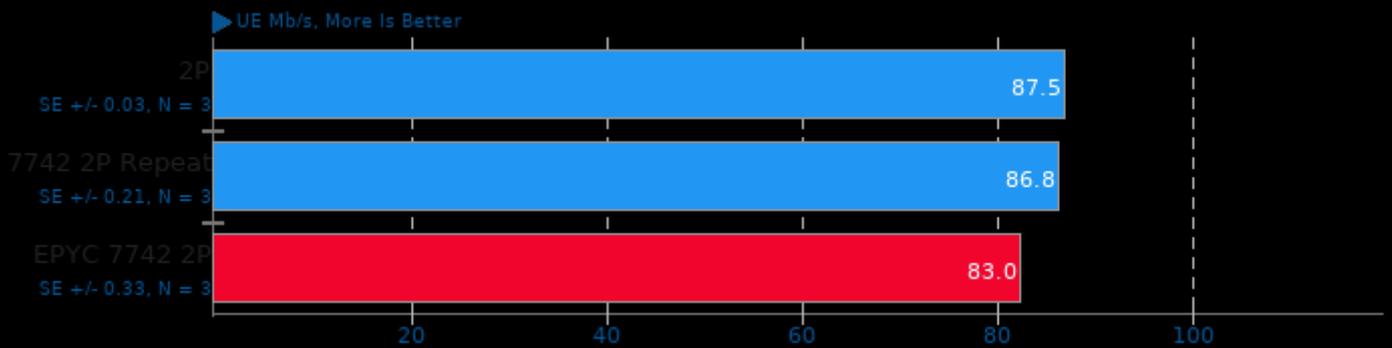
Test: PHY\_DL\_Test



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

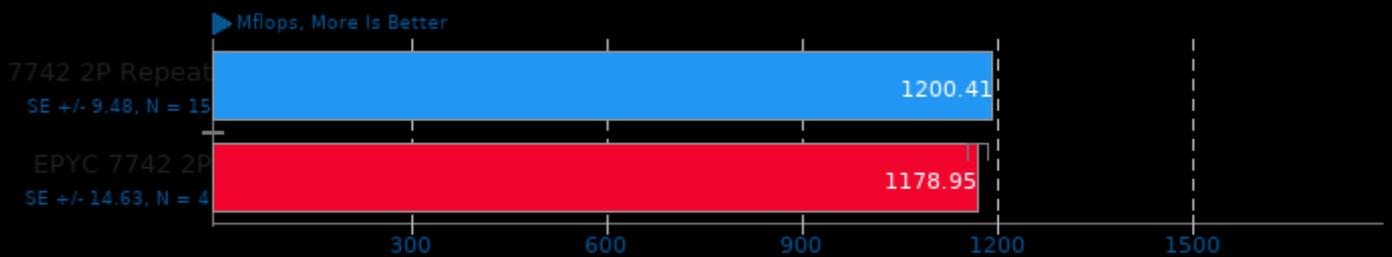
Test: PHY\_DL\_Test



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

### LuajIT 2.1-git

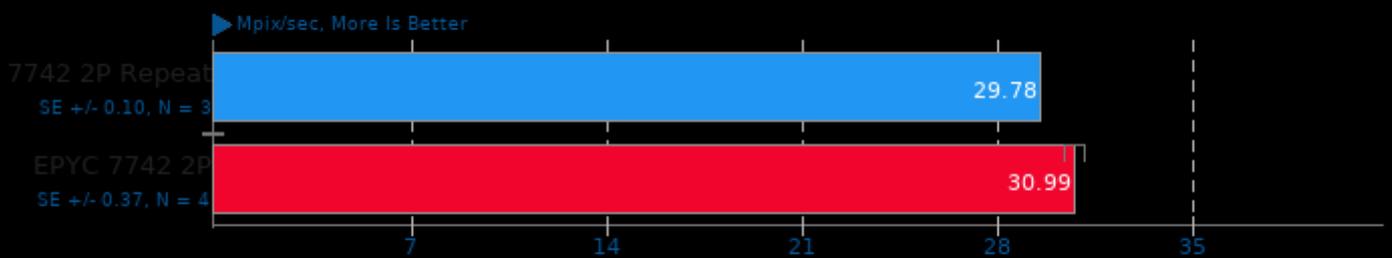
Test: Composite



1. (C) gcc options: -lm -ldl -O2 -fomit-frame-pointer -U\_FORTIFY\_SOURCE -fno-stack-protector

### LibRaw 0.20

Post-Processing Benchmark

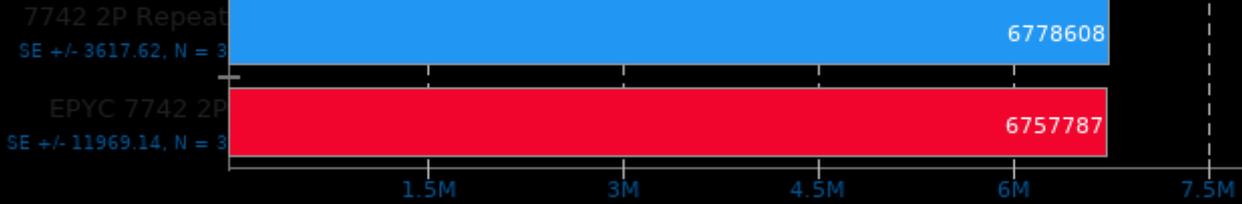


1. (CXX) g++ options: -O2 -fopenmp -ljpeg -lz -lm

### Crafty 25.2

Elapsed Time

Nodes Per Second, More Is Better

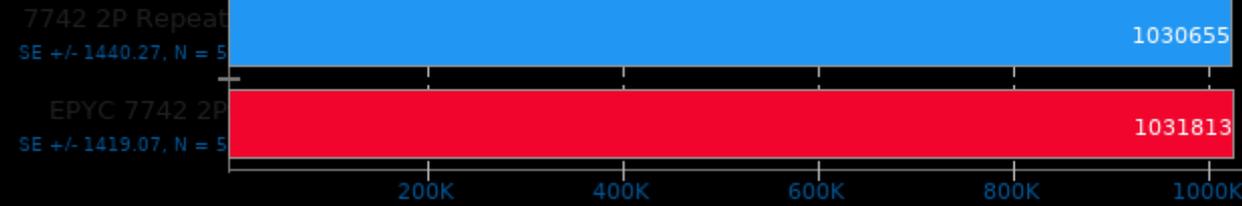


1. (CC) gcc options: -pthread -lstdc++ -fprofile-use -lm

### TSCP 1.81

AI Chess Performance

Nodes Per Second, More Is Better

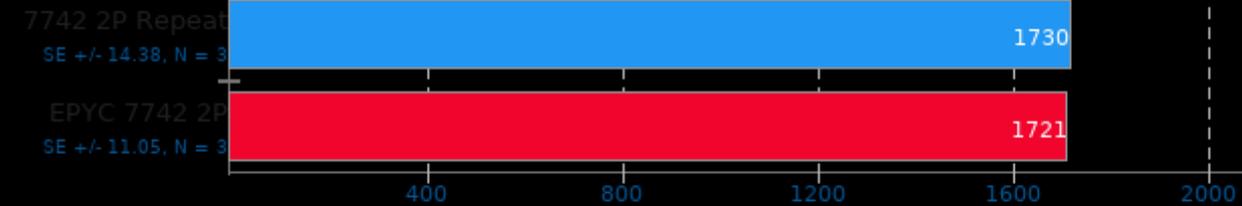


1. (CC) gcc options: -O3 -march=native

### GraphicsMagick 1.3.33

Operation: Swirl

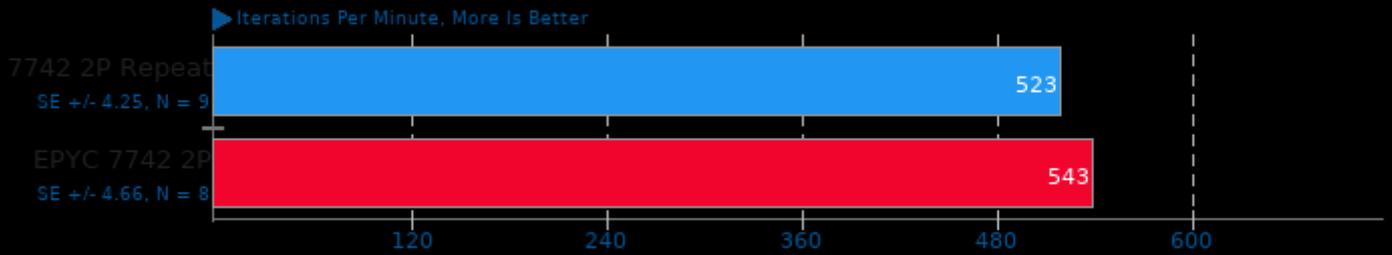
Iterations Per Minute, More Is Better



1. (CC) gcc options: -fopenmp -O2 -pthread -ljpeg -lwebp -lwebpmux -ltiff -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -llzma -lbz2 -lxml2 -lz -lm -lpthread

### GraphicsMagick 1.3.33

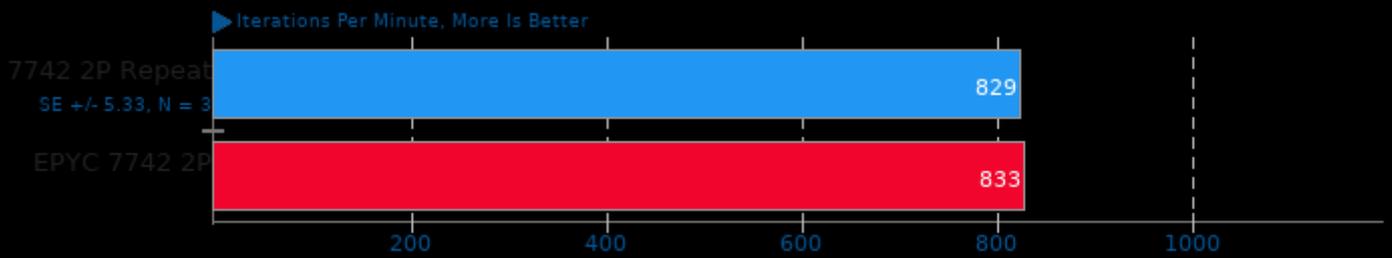
Operation: Rotate



1. (CC) gcc options: -fopenmp -O2 -pthread -ljpeg -lwebp -lwebpmux -ltiff -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -llzma -lbz2 -lxml2 -lz -lm -lpthread

### GraphicsMagick 1.3.33

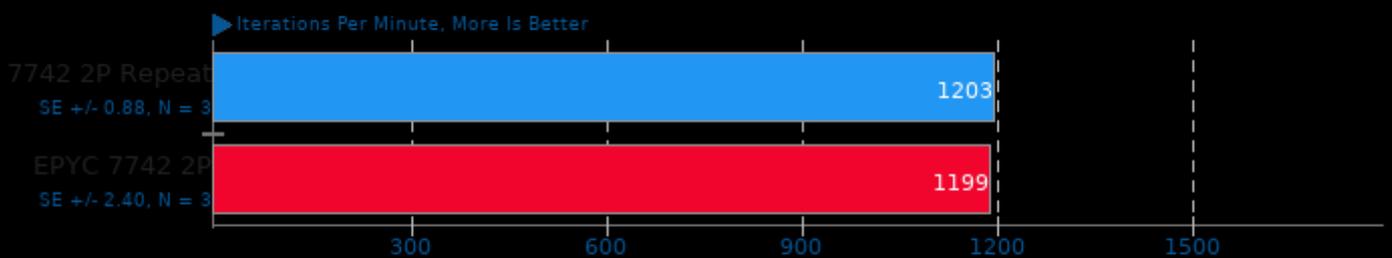
Operation: Sharpen



1. (CC) gcc options: -fopenmp -O2 -pthread -ljpeg -lwebp -lwebpmux -ltiff -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -llzma -lbz2 -lxml2 -lz -lm -lpthread

### GraphicsMagick 1.3.33

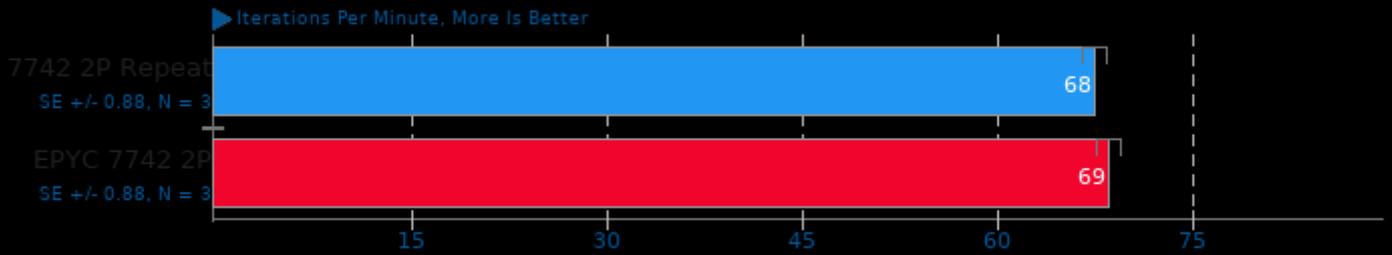
Operation: Enhanced



1. (CC) gcc options: -fopenmp -O2 -pthread -ljpeg -lwebp -lwebpmux -ltiff -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -llzma -lbz2 -lxml2 -lz -lm -lpthread

### GraphicsMagick 1.3.33

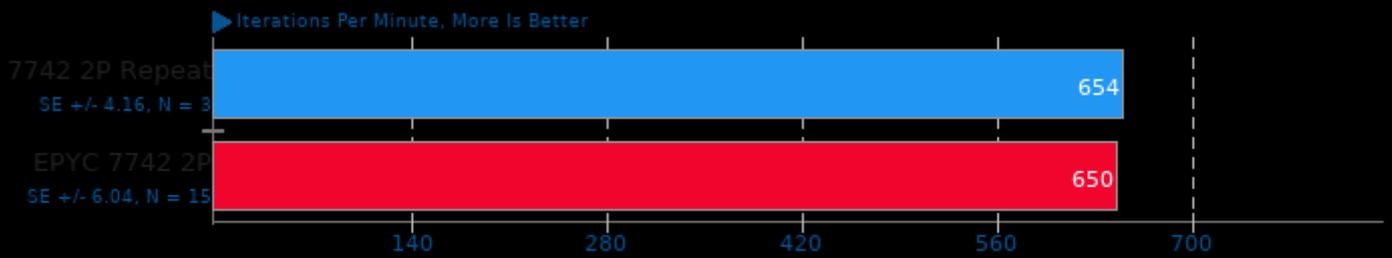
Operation: Resizing



1. (CC) gcc options: -fopenmp -O2 -pthread -ljpeg -lwebp -lwebpmux -ltiff -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -llzma -lbz2 -lxml2 -lz -lm -lpthread

### GraphicsMagick 1.3.33

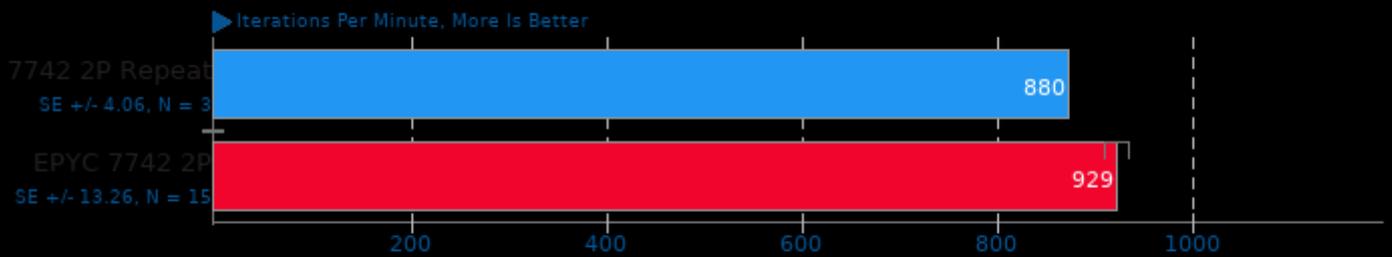
Operation: Noise-Gaussian



1. (CC) gcc options: -fopenmp -O2 -pthread -ljpeg -lwebp -lwebpmux -ltiff -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -llzma -lbz2 -lxml2 -lz -lm -lpthread

### GraphicsMagick 1.3.33

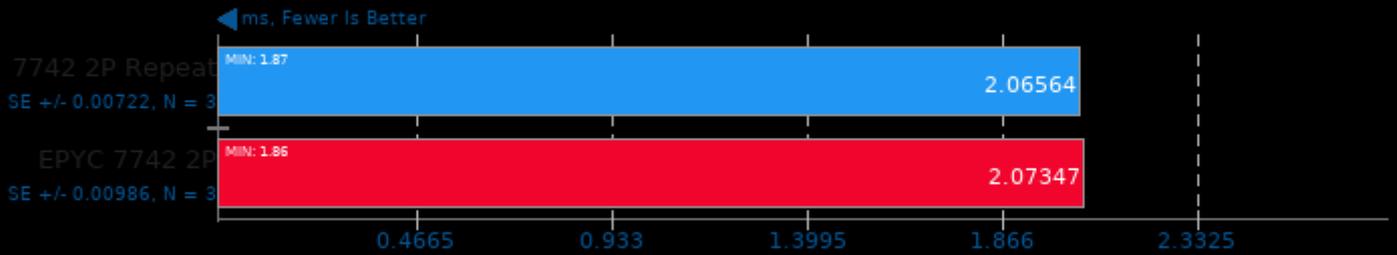
Operation: HWB Color Space



1. (CC) gcc options: -fopenmp -O2 -pthread -ljpeg -lwebp -lwebpmux -ltiff -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -llzma -lbz2 -lxml2 -lz -lm -lpthread

### oneDNN 2.0

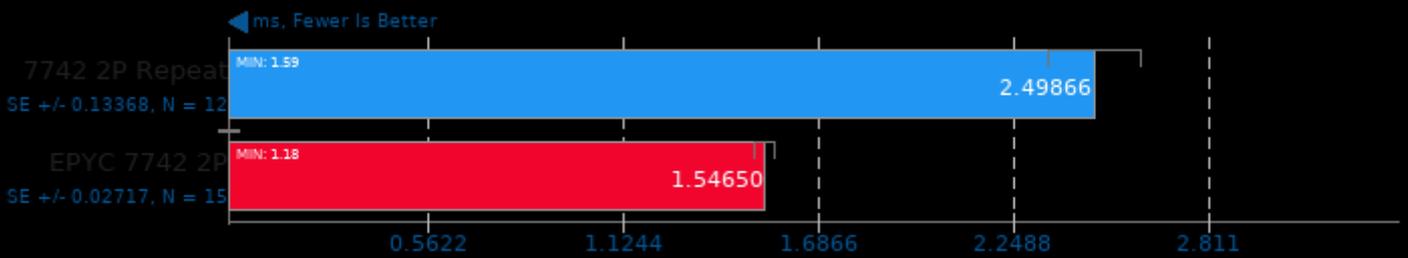
Harness: IP Shapes 1D - Data Type: f32 - Engine: CPU



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

### oneDNN 2.0

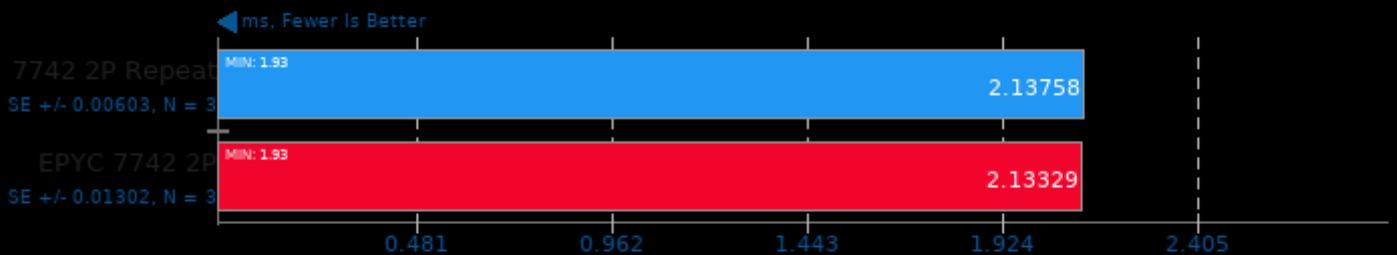
Harness: IP Shapes 3D - Data Type: f32 - Engine: CPU



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

### oneDNN 2.0

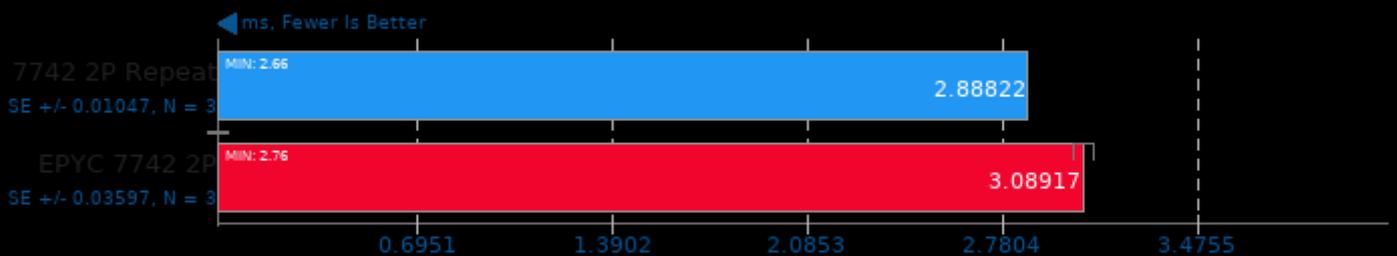
Harness: IP Shapes 1D - Data Type: u8s8f32 - Engine: CPU



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

### oneDNN 2.0

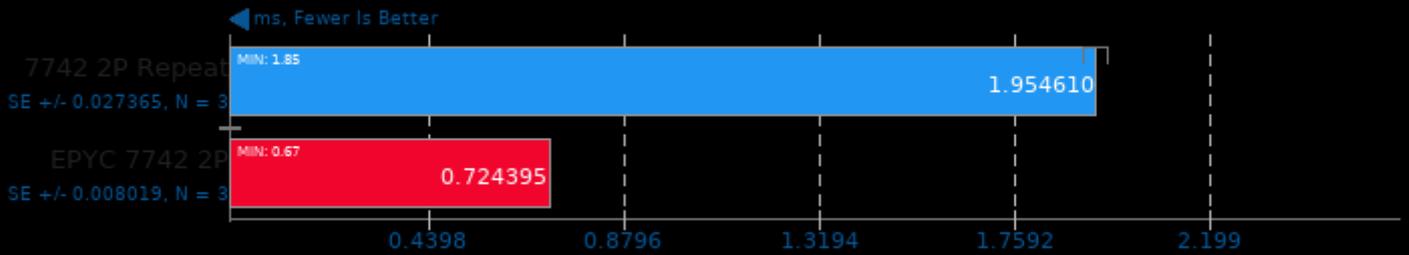
Harness: IP Shapes 3D - Data Type: u8s8f32 - Engine: CPU



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

### oneDNN 2.0

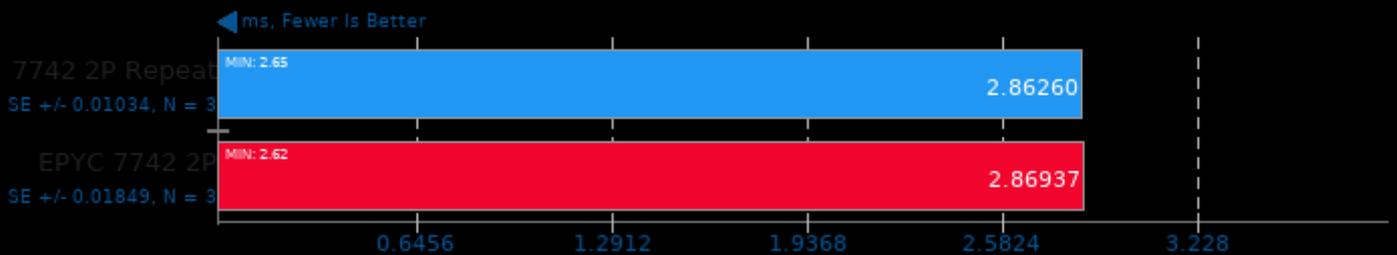
Harness: Convolution Batch Shapes Auto - Data Type: f32 - Engine: CPU



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

### oneDNN 2.0

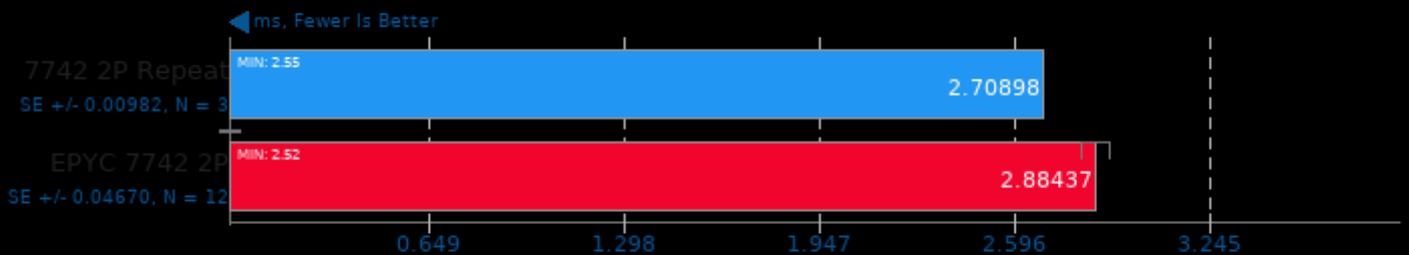
Harness: Deconvolution Batch shapes\_1d - Data Type: f32 - Engine: CPU



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

### oneDNN 2.0

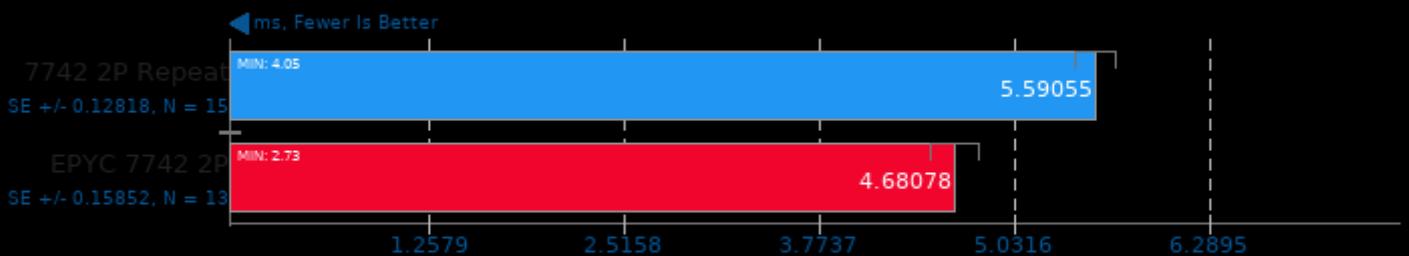
Harness: Deconvolution Batch shapes\_3d - Data Type: f32 - Engine: CPU



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

### oneDNN 2.0

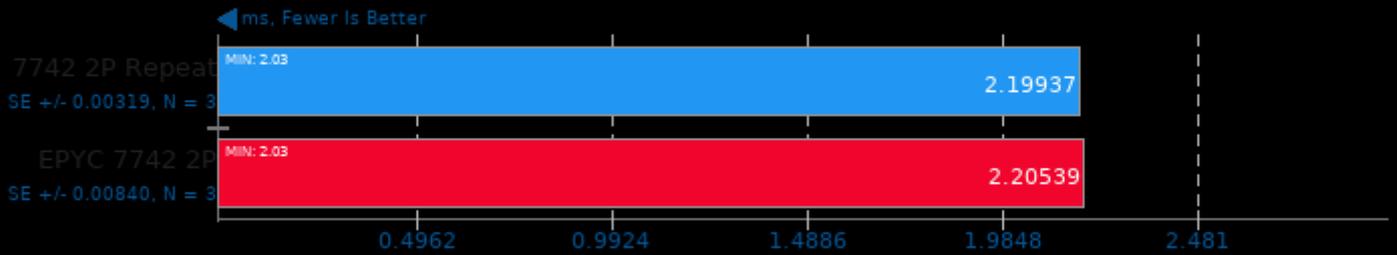
Harness: Convolution Batch Shapes Auto - Data Type: u8s8f32 - Engine: CPU



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

### oneDNN 2.0

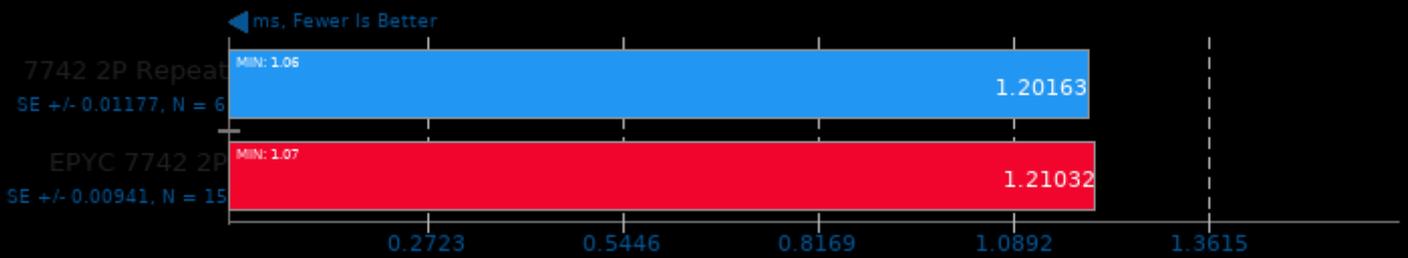
Harness: Deconvolution Batch shapes\_1d - Data Type: u8s8f32 - Engine: CPU



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

### oneDNN 2.0

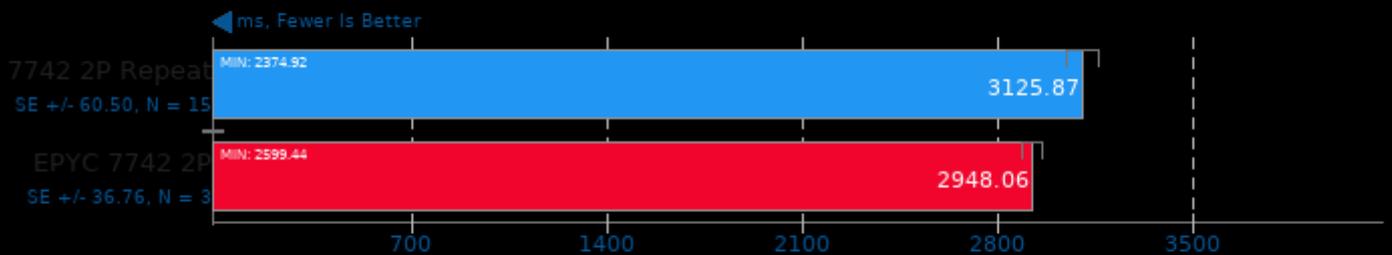
Harness: Deconvolution Batch shapes\_3d - Data Type: u8s8f32 - Engine: CPU



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

### oneDNN 2.0

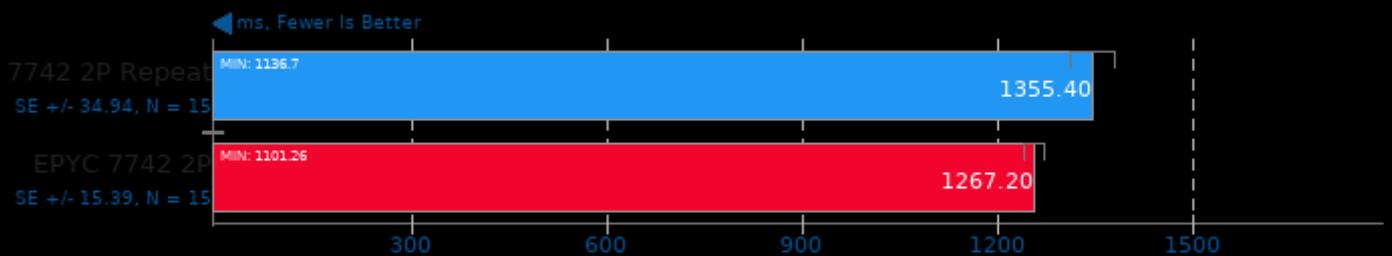
Harness: Recurrent Neural Network Training - Data Type: f32 - Engine: CPU



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

### oneDNN 2.0

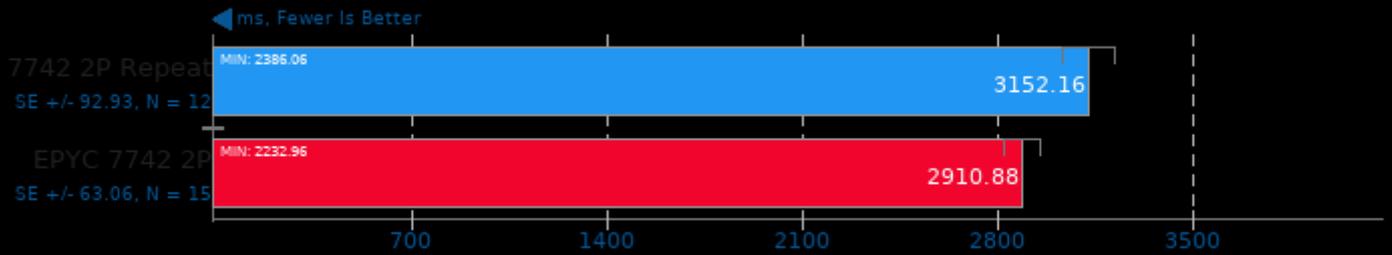
Harness: Recurrent Neural Network Inference - Data Type: f32 - Engine: CPU



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

### oneDNN 2.0

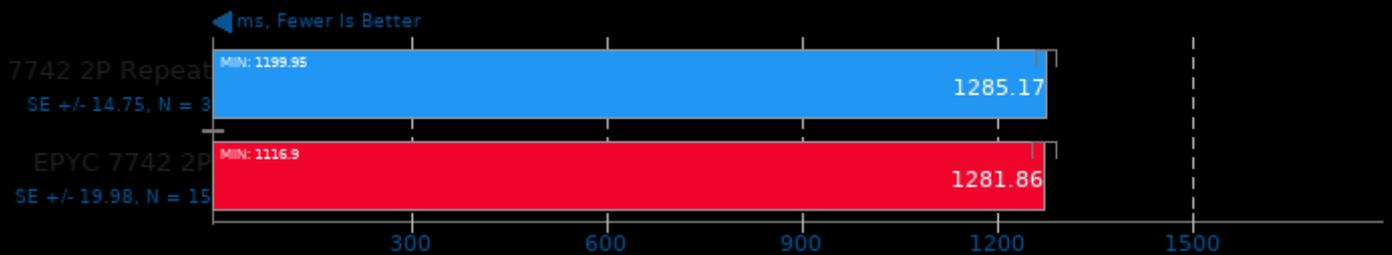
Harness: Recurrent Neural Network Training - Data Type: u8s8f32 - Engine: CPU



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

### oneDNN 2.0

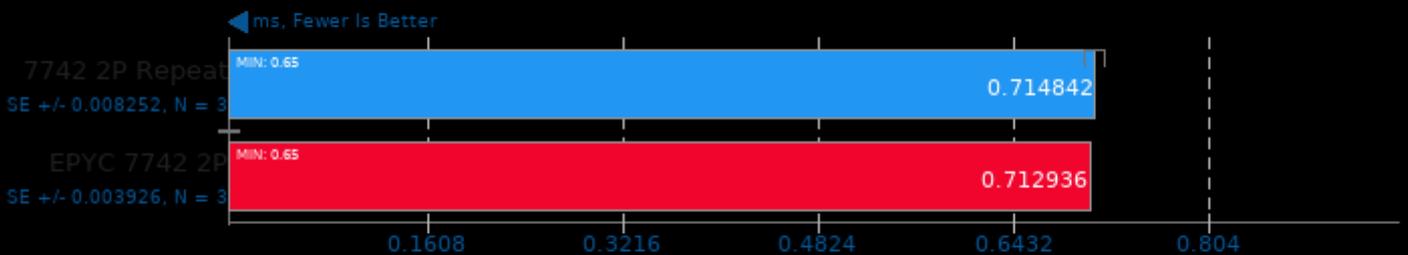
Harness: Recurrent Neural Network Inference - Data Type: u8s8f32 - Engine: CPU



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

### oneDNN 2.0

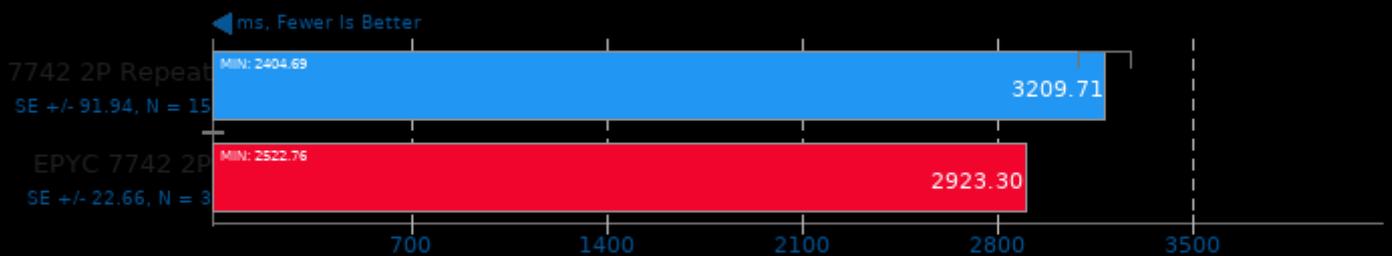
Harness: Matrix Multiply Batch Shapes Transformer - Data Type: f32 - Engine: CPU



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

### oneDNN 2.0

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



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

### oneDNN 2.0

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



1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -mssse4.1 -fpic -pie -pthread

### oneDNN 2.0

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



1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -mssse4.1 -fpic -pie -pthread

### dav1d 0.8.2

Video Input: Summer Nature 4K



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

### dav1d 0.8.2

Video Input: Summer Nature 1080p



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

### OSPray 1.8.5

Demo: San Miguel - Renderer: SciVis



### OSPray 1.8.5

Demo: XFrog Forest - Renderer: SciVis



### OSPray 1.8.5

Demo: San Miguel - Renderer: Path Tracer



### OSPray 1.8.5

Demo: NASA Streamlines - Renderer: SciVis



### OSPray 1.8.5

Demo: XFrog Forest - Renderer: Path Tracer



### OSPray 1.8.5

Demo: Magnetic Reconnection - Renderer: SciVis



### OSPray 1.8.5

Demo: NASA Streamlines - Renderer: Path Tracer



### OSPray 1.8.5

Demo: Magnetic Reconnection - Renderer: Path Tracer



### TTSIOD 3D Renderer 2.3b

Phong Rendering With Soft-Shadow Mapping



1. (CXX) g++ options: -O3 -fomit-frame-pointer -ffast-math -mtune=native -fno -msse -mrecip -mfpmath=sse -msse2 -mssse3 -fopenmp -fwhole-pr

### AOM AV1 2.0

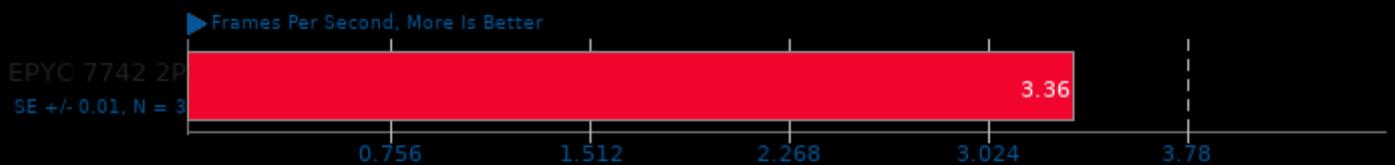
Encoder Mode: Speed 6 Realtime



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

### AOM AV1 2.0

Encoder Mode: Speed 6 Two-Pass



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

### AOM AV1 2.0

Encoder Mode: Speed 8 Realtime



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

### Embree 3.9.0

Binary: Pathtracer - Model: Crown



### Embree 3.9.0

Binary: Pathtracer ISPC - Model: Crown



### Embree 3.9.0

Binary: Pathtracer - Model: Asian Dragon



### Embree 3.9.0

Binary: Pathtracer - Model: Asian Dragon Obj



### Embree 3.9.0

Binary: Pathtracer ISPC - Model: Asian Dragon



### Embree 3.9.0

Binary: Pathtracer ISPC - Model: Asian Dragon Obj



### Kvazaar 2.0

Video Input: Bosphorus 4K - Video Preset: Medium



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

### Kvazaar 2.0

Video Input: Bosphorus 1080p - Video Preset: Medium



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

### Kvazaar 2.0

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



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

### Kvazaar 2.0

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



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

### Kvazaar 2.0

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



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

### Kvazaar 2.0

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



1. (GCC) gcc options: -pthread -free-vectorize -fvisibility=hidden -O2 -lthread -lm -lrt

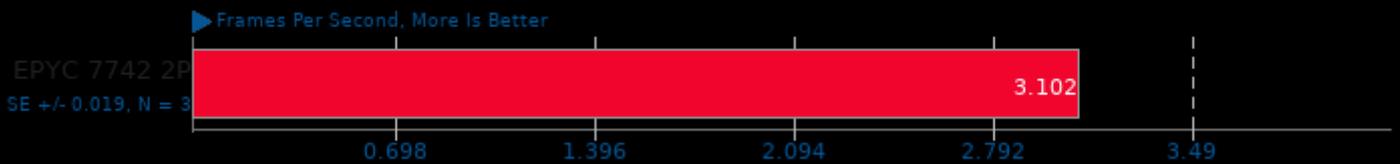
### rav1e 0.4

Speed: 6



### rav1e 0.4

Speed: 10



### SVT-AV1 0.8

Encoder Mode: Enc Mode 4 - Input: 1080p



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

### SVT-AV1 0.8

Encoder Mode: Enc Mode 8 - Input: 1080p



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

### SVT-VP9 0.1

Tuning: VMAF Optimized - Input: Bosphorus 1080p



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

### SVT-VP9 0.1

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



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

### SVT-VP9 0.1

Tuning: Visual Quality Optimized - Input: Bosphorus 1080p



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

### VP9 libvpx Encoding 1.8.2

Speed: Speed 5



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

### x264 2019-12-17

H.264 Video Encoding



1. (CC) gcc options: -ldl -lavformat -lavcodec -lavutil -lswscale -m64 -lm -lpthread -O3 -ffast-math -std=gnu99 -fPIC -fomit-frame-pointer -fno-tree-vectorize

### x265 3.4

Video Input: Bosphorus 4K



EPYC 7742 2P  
SE +/- 0.09, N = 3

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

### x265 3.4

Video Input: Bosphorus 1080p



EPYC 7742 2P  
SE +/- 0.62, N = 15

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

### ACES DGEMM 1.0

Sustained Floating-Point Rate



EPYC 7742 2P  
SE +/- 0.14, N = 3

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

### Intel Open Image Denoise 1.2.0

Scene: Memorial



EPYC 7742 2P  
SE +/- 0.20, N = 3

### OpenVKL 0.9

Benchmark: vklBenchmark



EPYC 7742 2P  
MIN: 1 / MAX: 1361

### LuxCoreRender 2.3

Scene: DLSC



### LuxCoreRender 2.3

Scene: Rainbow Colors and Prism



### Himeno Benchmark 3.0

Poisson Pressure Solver



1. (CC) gcc options: -O3 -mavx2

### 7-Zip Compression 16.02

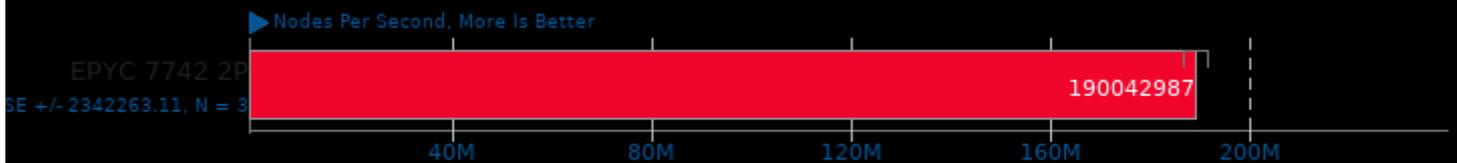
Compress Speed Test



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

### Stockfish 12

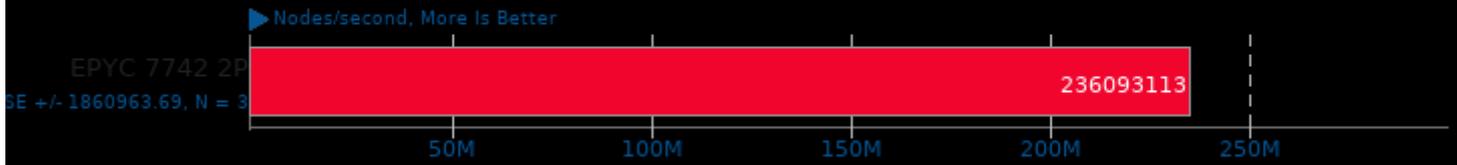
Total Time



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

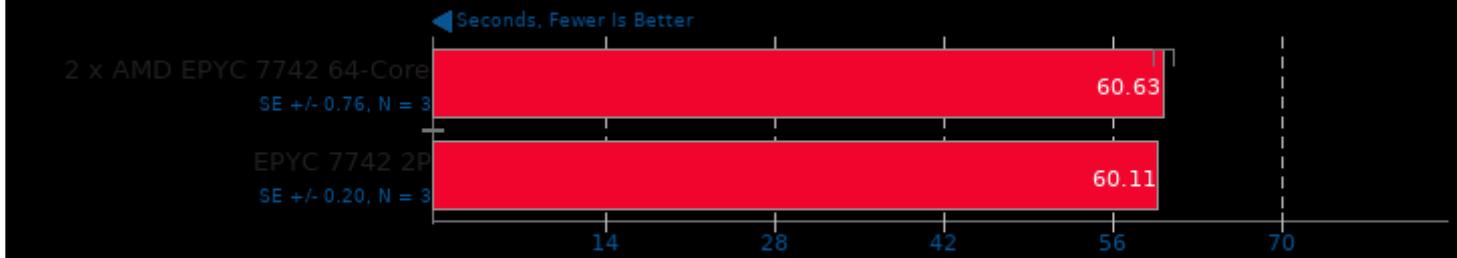
### asmFish 2018-07-23

1024 Hash Memory, 26 Depth



### libavif avifenc 0.9.0

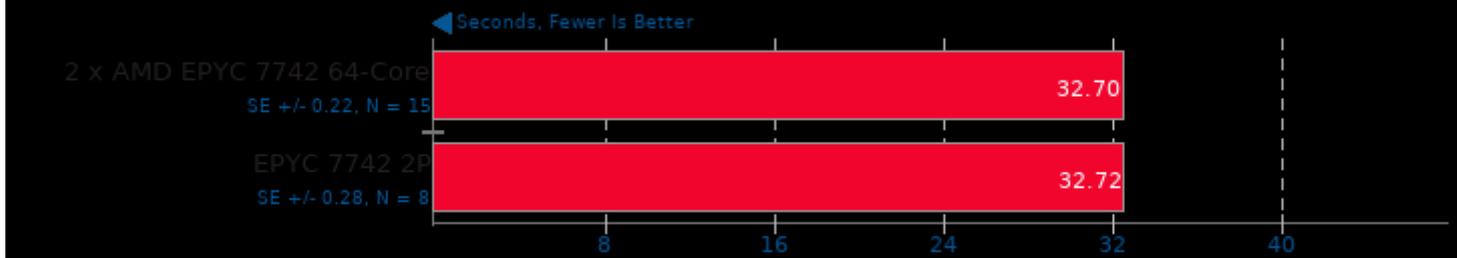
Encoder Speed: 0



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

### libavif avifenc 0.9.0

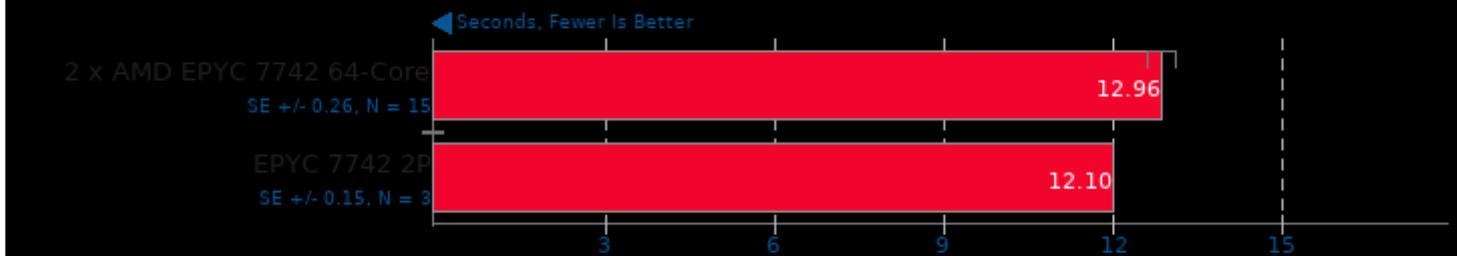
Encoder Speed: 2



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

### libavif avifenc 0.9.0

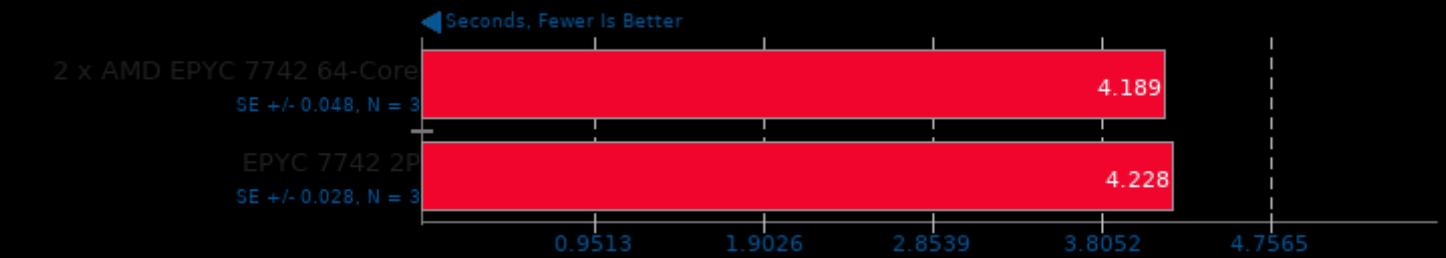
Encoder Speed: 6



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

### libavif avifenc 0.9.0

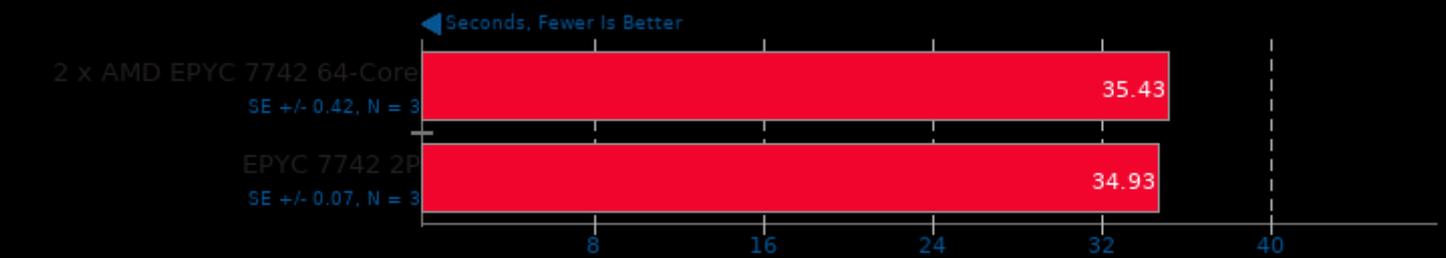
Encoder Speed: 10



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

### libavif avifenc 0.9.0

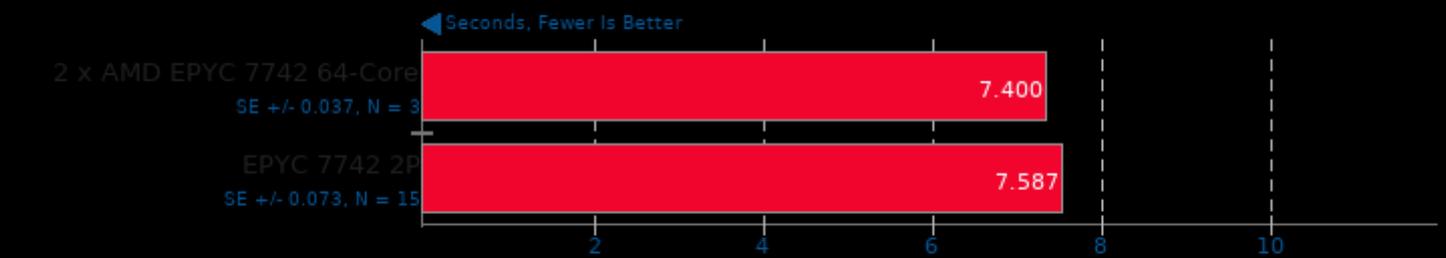
Encoder Speed: 6, Lossless



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

### libavif avifenc 0.9.0

Encoder Speed: 10, Lossless



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

### Timed Apache Compilation 2.4.41

Time To Compile



### Timed FFmpeg Compilation 4.2.2

Time To Compile



### Timed GCC Compilation 9.3.0

Time To Compile



### Timed GDB GNU Debugger Compilation 9.1

Time To Compile



### Timed Godot Game Engine Compilation 3.2.3

Time To Compile



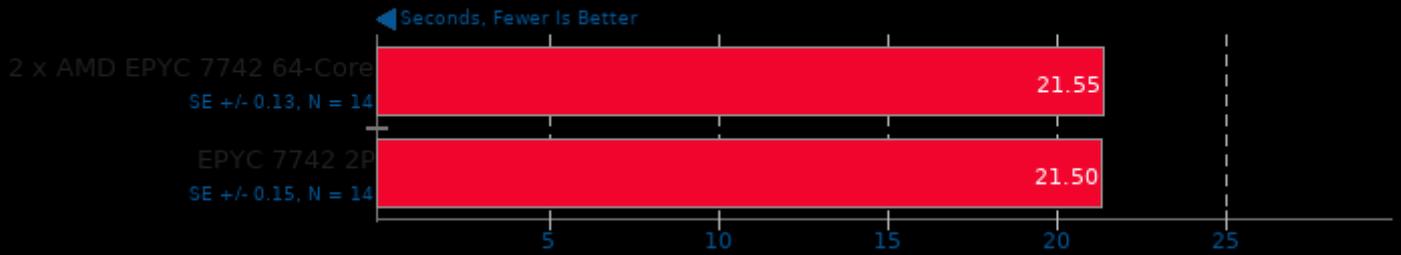
### Timed ImageMagick Compilation 6.9.0

Time To Compile



### Timed Linux Kernel Compilation 5.10.20

Time To Compile



### Timed LLVM Compilation 10.0

Time To Compile



### Timed MPlayer Compilation 1.4

Time To Compile



### Timed PHP Compilation 7.4.2

Time To Compile



### Build2 0.13

Time To Compile



### C-Ray 1.1

Total Time - 4K, 16 Rays Per Pixel



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

### POV-Ray 3.7.0.7

Trace Time



1. (CXX) g++ options: -pipe -O3 -ffast-math -march=native -pthread -fSDI -fXpm -fSM -fICE -fX11 -fllmimf -fllmath -fHalf -fJlex -fJlexMath -fllmThread -fpthrea

### Tungsten Renderer 0.2.2

Scene: Hair



1. (CXX) g++ options: -std=c++0x -march=znver1 -msse2 -msse3 -mssse3 -msse4.1 -msse4.2 -msse4a -mfma -mbmi2 -mno-avx -mno-avx2 -mno-xop -m

### Tungsten Renderer 0.2.2

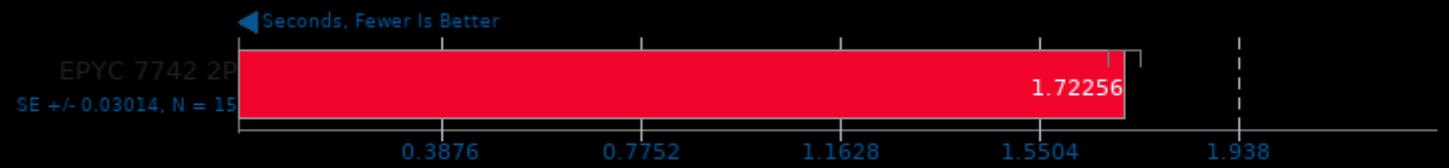
Scene: Water Caustic



1. (CXX) g++ options: -std=c++0x -march=znver1 -msse2 -msse3 -mssse3 -msse4.1 -msse4.2 -msse4a -mfma -mbmi2 -mno-avx -mno-avx2 -mno-xop -m

### Tungsten Renderer 0.2.2

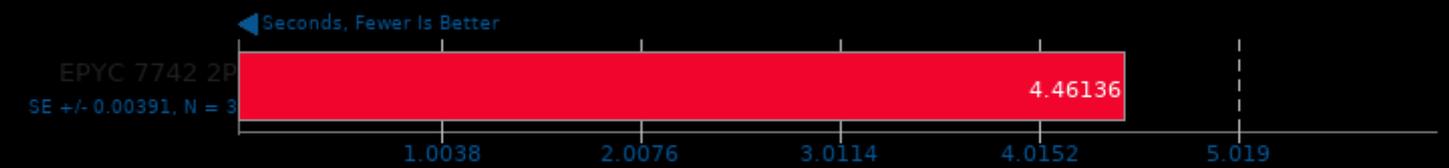
Scene: Non-Exponential



1. (CXX) g++ options: -std=c++0x -march=znver1 -msse2 -msse3 -mssse3 -msse4.1 -msse4.2 -msse4a -mfma -mbmi2 -mno-avx -mno-avx2 -mno-xop -m

### Tungsten Renderer 0.2.2

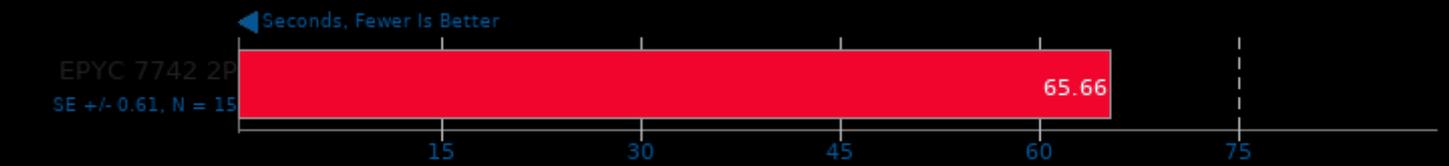
Scene: Volumetric Caustic



1. (CXX) g++ options: -std=c++0x -march=znver1 -msse2 -msse3 -mssse3 -msse4.1 -msse4.2 -msse4a -mfma -mbmi2 -mno-avx -mno-avx2 -mno-xop -m

### YafaRay 3.4.1

Total Time For Sample Scene



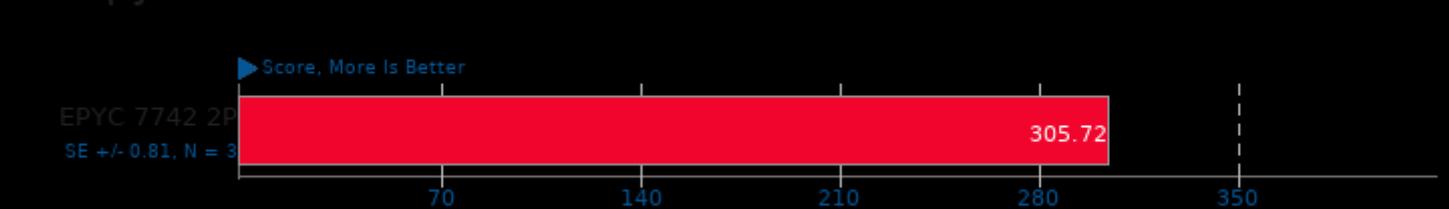
1. (CXX) g++ options: -std=c++11 -O3 -ffast-math -rdynamic -ldl -llmath -llm1mf -llax -lHalf -lz -llmThread -lxml2 -lfreetype -lpthread

### rays1bench 2020-01-09

Large Scene

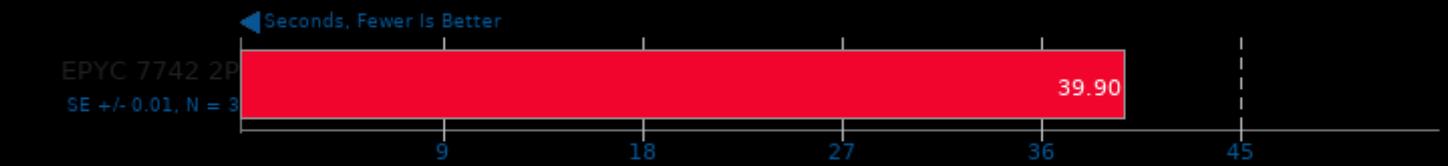


### Numpy Benchmark



### AOBench

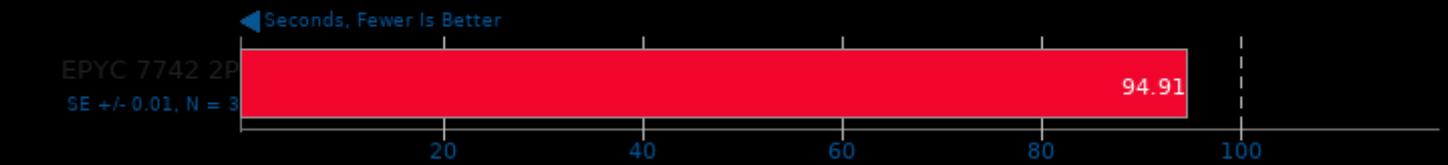
Size: 2048 x 2048 - Total Time



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

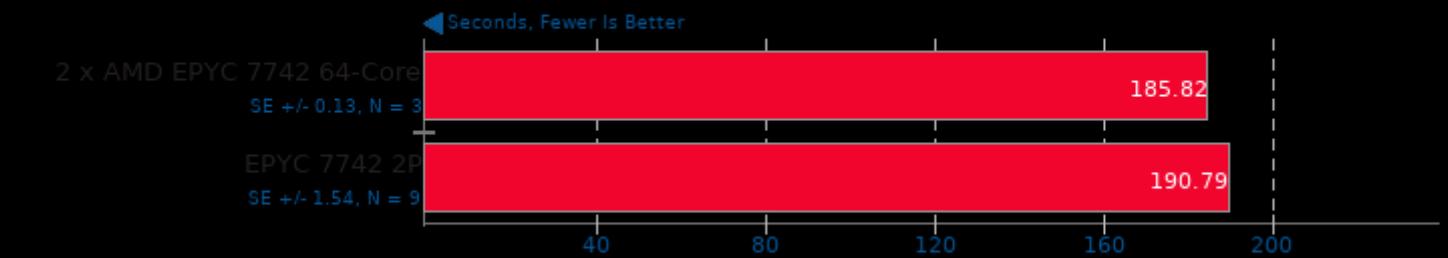
### Timed Eigen Compilation 3.3.9

Time To Compile



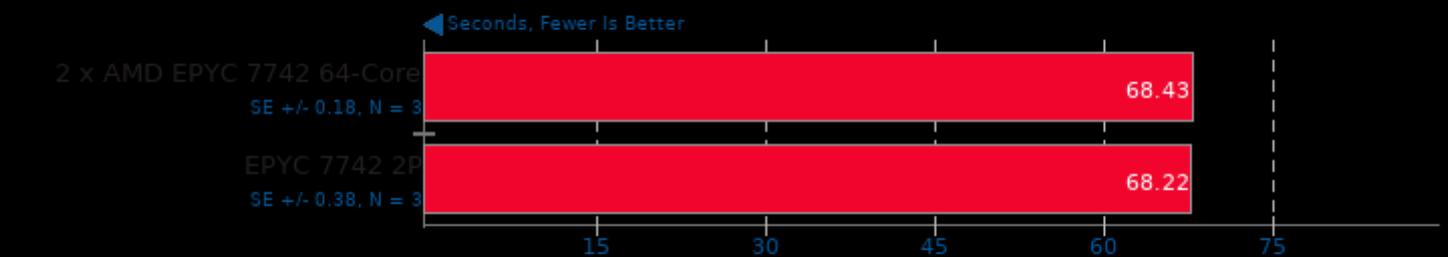
### Timed Erlang/OTP Compilation 23.2

Time To Compile



### Timed Wasmer Compilation 1.0.2

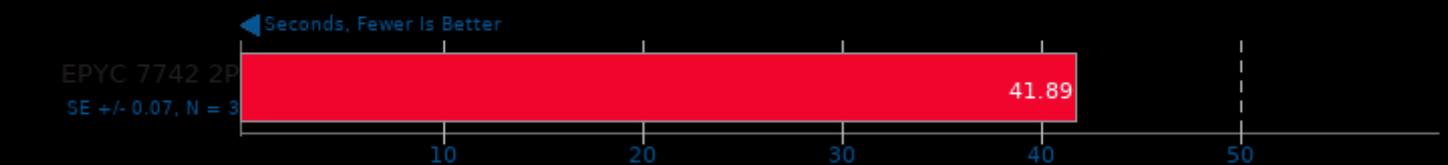
Time To Compile



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

### Gzip Compression

Linux Source Tree Archiving To .tar.gz



### XZ Compression 5.2.4

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



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

### dcraw

RAW To PPM Image Conversion



1. (CC) gcc options: -lm

### DeepSpeech 0.6

Acceleration: CPU



### Monkey Audio Encoding 3.99.6

WAV To APE



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

### FLAC Audio Encoding 1.3.2

WAV To FLAC



1. (CXX) g++ options: -O2 -fvisibility=hidden -logg -lm

## LAME MP3 Encoding 3.100

WAV To MP3



## Ogg Audio Encoding 1.3.4

WAV To Ogg



## Opus Codec Encoding 1.3.1

WAV To Opus Encode



## eSpeak-NG Speech Engine 20200907

Text-To-Speech Synthesis



## m-queens 1.2

Time To Solve



### Montage Astronomical Image Mosaic Engine 6.0

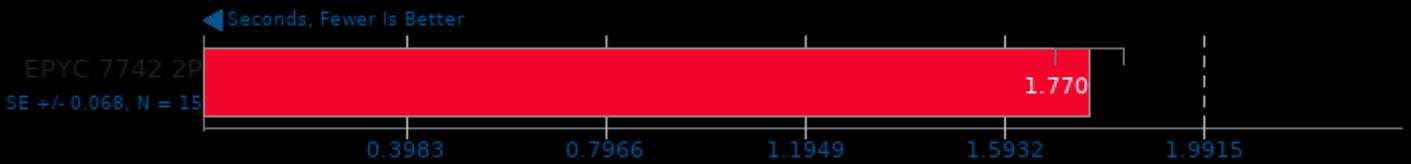
Mosaic of M17, K band, 1.5 deg x 1.5 deg



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

### N-Queens 1.0

Elapsed Time



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

### Ngspice 34

Circuit: C2670



1. (CC) gcc options: -O0 -fopenmp -lm -lstdc++ -lfftw3 -lXaw -lXmu -lXt -lXext -lX11 -lSM -lICE

### Ngspice 34

Circuit: C7552



1. (CC) gcc options: -O0 -fopenmp -lm -lstdc++ -lfftw3 -lXaw -lXmu -lXt -lXext -lX11 -lSM -lICE

### Radiance Benchmark 5.0

Test: SMP Parallel



### RNNoise 2020-06-28

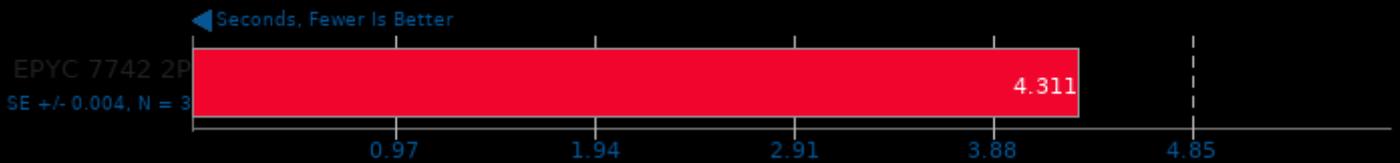


1. (CC) gcc options: -O2 -pedantic -fvisibility=hidden

### System GZIP Decompression



### System XZ Decompression



### Tachyon 0.99b6

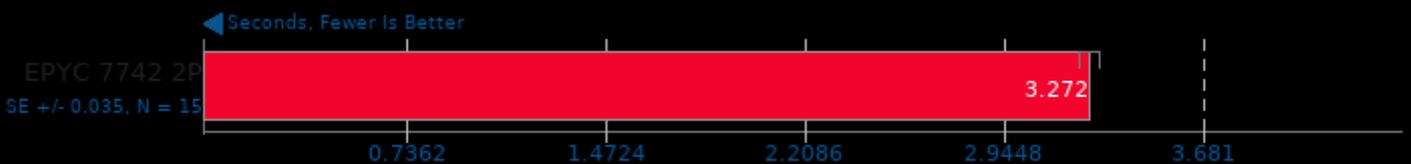
Total Time



1. (CC) gcc options: -m64 -O3 -fomit-frame-pointer -ffast-math -ltachyon -lm -lpthread

### WebP2 Image Encode 20210126

Encode Settings: Default



1. (CXX) g++ options: -mssse4.2 -fno-rtti -O3 -rdynamic -lpthread -ljpeg -lgif

### WebP2 Image Encode 20210126

Encode Settings: Quality 75, Compression Effort 7



EPYC 7742 2P  
SE +/- 0.15, N = 3

136.41

1. (CXX) g++ options: -msse4.2 -fno-rtti -O3 -rdynamic -lpthread -ljpeg -lgif

### WebP2 Image Encode 20210126

Encode Settings: Quality 95, Compression Effort 7



EPYC 7742 2P  
SE +/- 0.06, N = 3

251.43

1. (CXX) g++ options: -msse4.2 -fno-rtti -O3 -rdynamic -lpthread -ljpeg -lgif

### WebP2 Image Encode 20210126

Encode Settings: Quality 100, Compression Effort 5



EPYC 7742 2P  
SE +/- 0.027, N = 3

7.721

1. (CXX) g++ options: -msse4.2 -fno-rtti -O3 -rdynamic -lpthread -ljpeg -lgif

### WebP2 Image Encode 20210126

Encode Settings: Quality 100, Lossless Compression



EPYC 7742 2P  
SE +/- 0.44, N = 3

440.93

1. (CXX) g++ options: -msse4.2 -fno-rtti -O3 -rdynamic -lpthread -ljpeg -lgif

### Google SynthMark 20201109

Test: VoiceMark\_100



EPYC 7742 2P  
SE +/- 0.61, N = 3

646.91

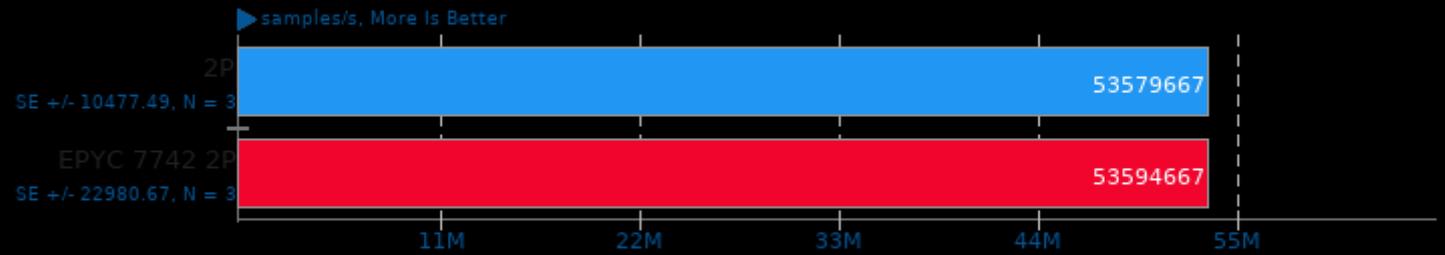
1. (CXX) g++ options: -lm -lpthread -std=c++11 -Ofast

### System ZLIB Decompression 1.2.7



### Liquid-DSP 2021.01.31

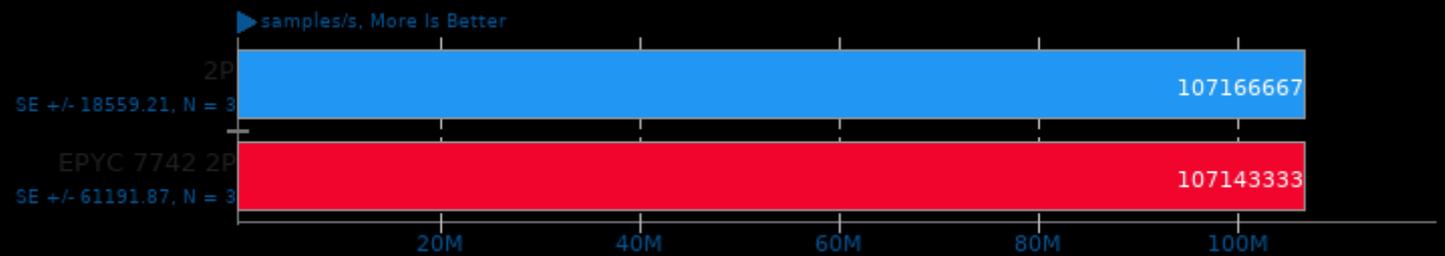
Threads: 1 - Buffer Length: 256 - Filter Length: 57



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

### Liquid-DSP 2021.01.31

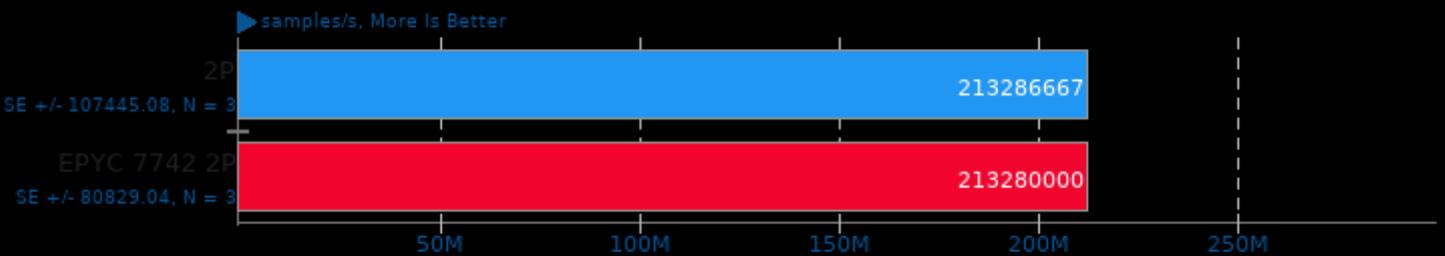
Threads: 2 - Buffer Length: 256 - Filter Length: 57



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

### Liquid-DSP 2021.01.31

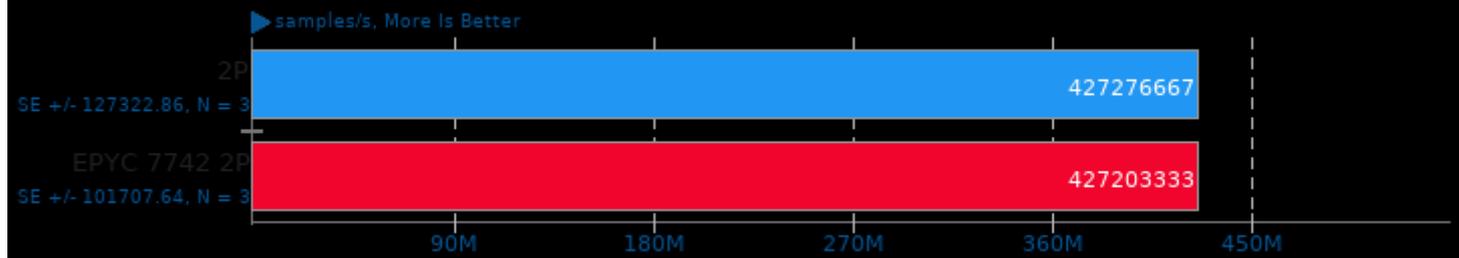
Threads: 4 - Buffer Length: 256 - Filter Length: 57



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

### Liquid-DSP 2021.01.31

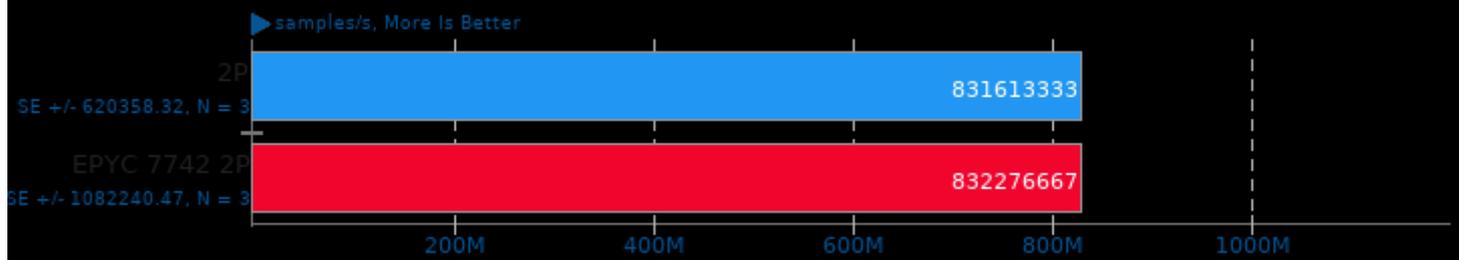
Threads: 8 - Buffer Length: 256 - Filter Length: 57



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

### Liquid-DSP 2021.01.31

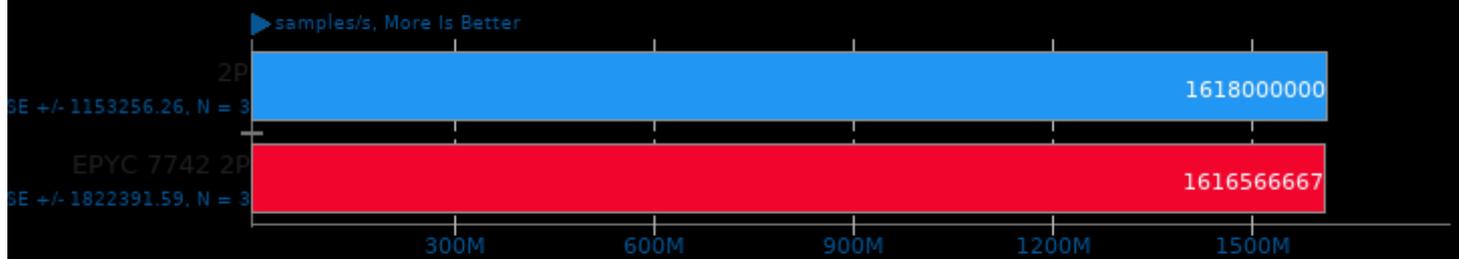
Threads: 16 - Buffer Length: 256 - Filter Length: 57



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

### Liquid-DSP 2021.01.31

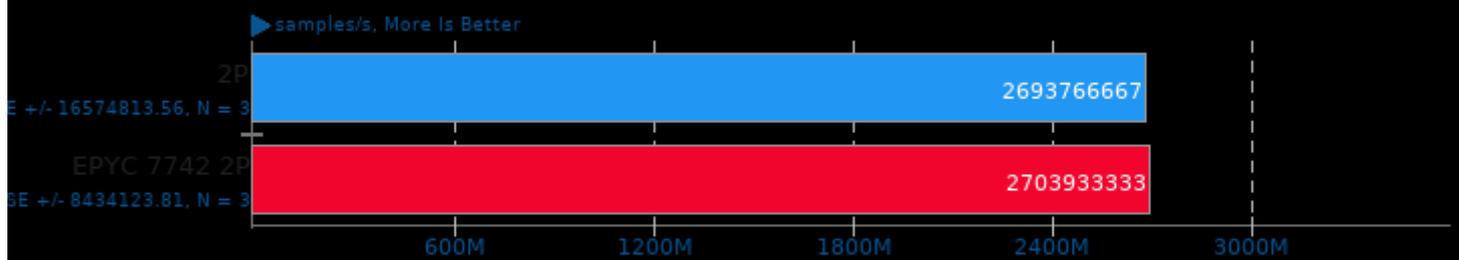
Threads: 32 - Buffer Length: 256 - Filter Length: 57



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

### Liquid-DSP 2021.01.31

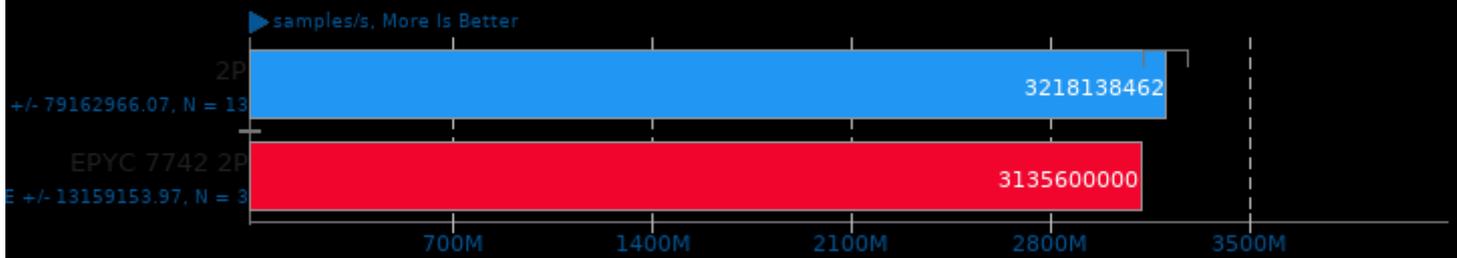
Threads: 64 - Buffer Length: 256 - Filter Length: 57



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

### Liquid-DSP 2021.01.31

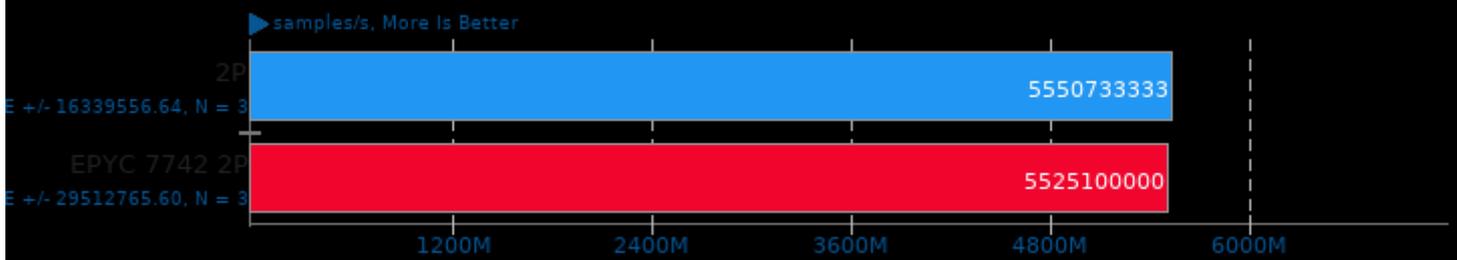
Threads: 128 - Buffer Length: 256 - Filter Length: 57



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

### Liquid-DSP 2021.01.31

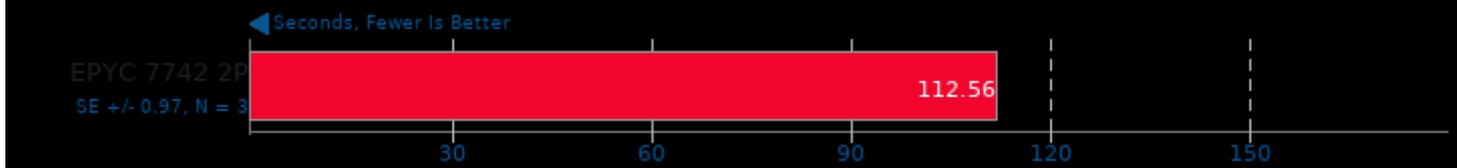
Threads: 256 - Buffer Length: 256 - Filter Length: 57



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

### Apache CouchDB 3.1.1

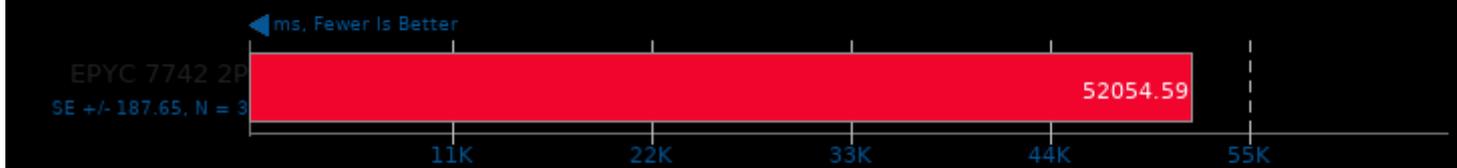
Bulk Size: 100 - Inserts: 1000 - Rounds: 24



1. (CXX) g++ options: -std=c++14 -lmozjs-68 -lm -lurl\_interface -lel -fPIC -MMD

### FinanceBench 2016-07-25

Benchmark: Repo OpenMP



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

## FinanceBench 2016-07-25

Benchmark: Bonds OpenMP



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

## ASKAP 1.0

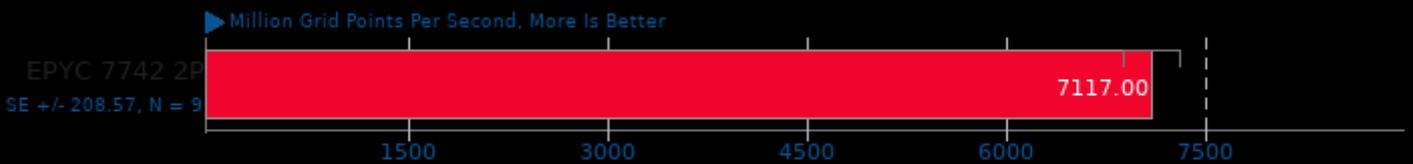
Test: tConvolve MT - Gridding



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

## ASKAP 1.0

Test: tConvolve MT - Degriding



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

## ASKAP 1.0

Test: tConvolve MPI - Degriding



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

## ASKAP 1.0

Test: tConvolve MPI - Gridding



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

### ASKAP 1.0

Test: tConvolve OpenMP - Gridding



### ASKAP 1.0

Test: tConvolve OpenMP - Degridding



### ASKAP 1.0

Test: Hogbom Clean OpenMP



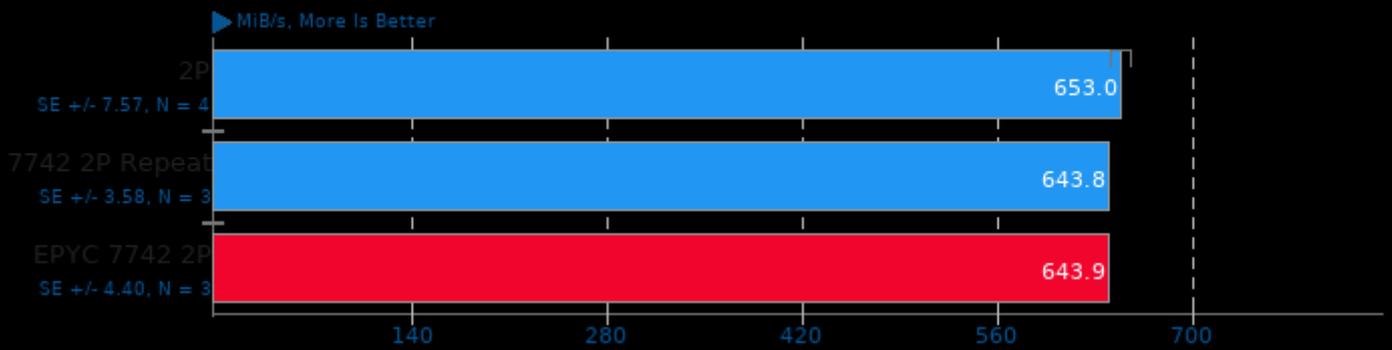
### libjpeg-turbo tjbench 2.0.2

Test: Decompression Throughput



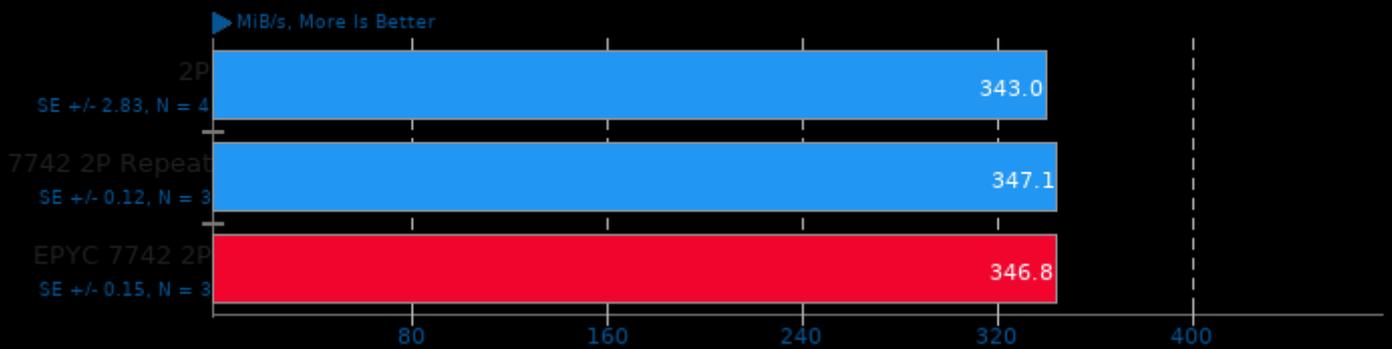
### LuaRadio 0.9.1

Test: Five Back to Back FIR Filters



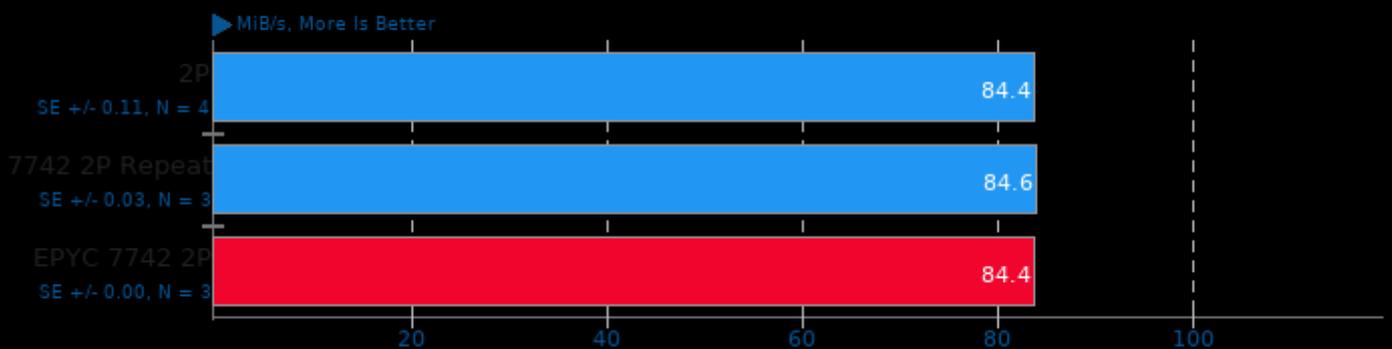
### LuaRadio 0.9.1

Test: FM Deemphasis Filter



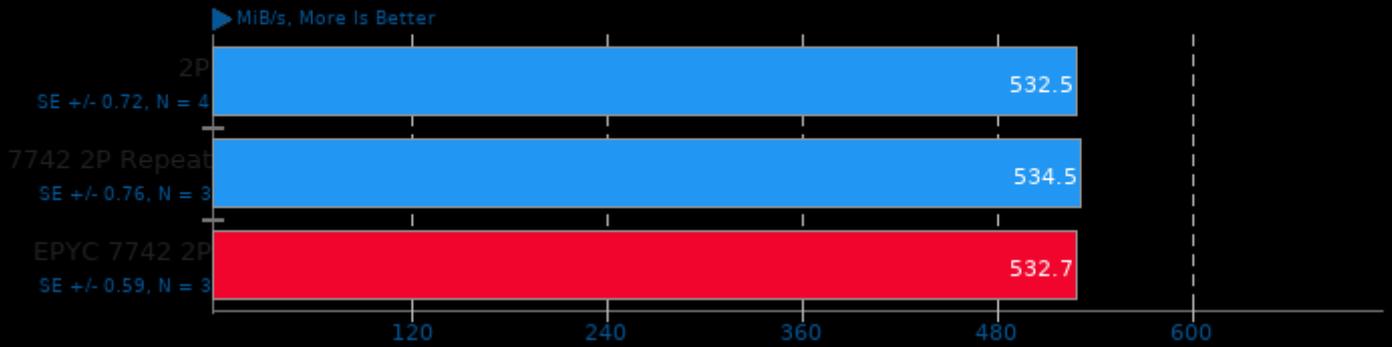
### LuaRadio 0.9.1

Test: Hilbert Transform



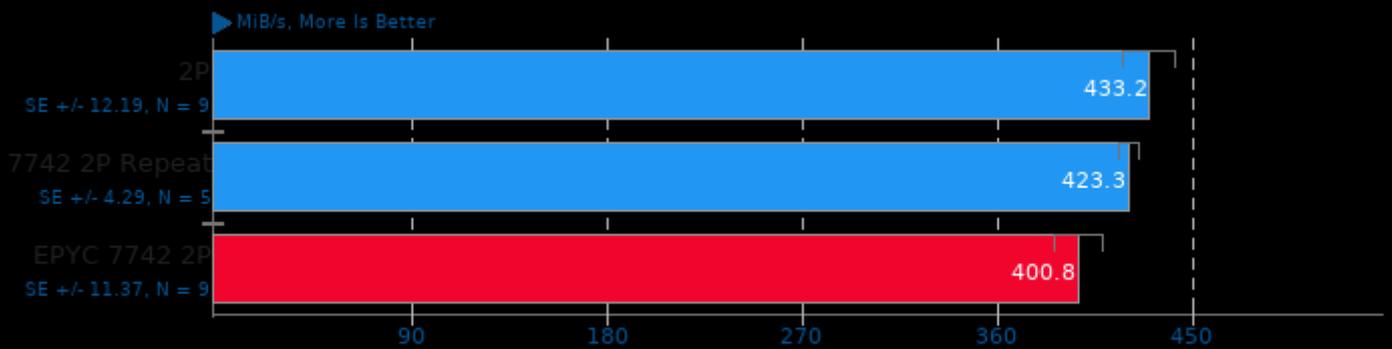
### LuaRadio 0.9.1

Test: Complex Phase



### GNU Radio

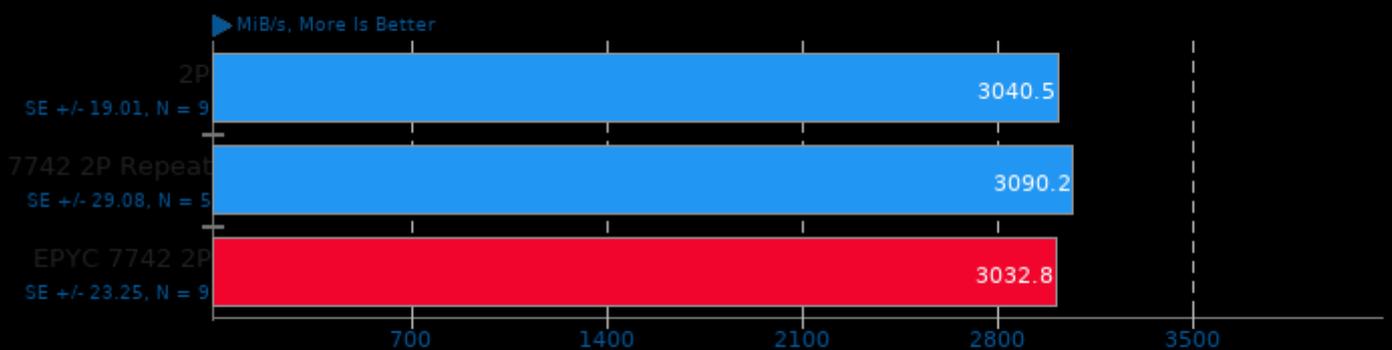
Test: Five Back to Back FIR Filters



1.3.8.1.0

### GNU Radio

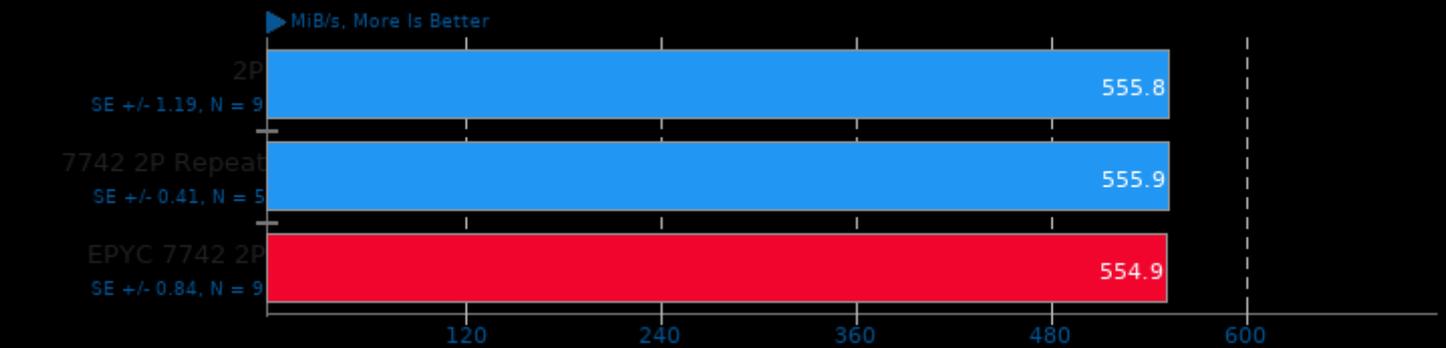
Test: Signal Source (Cosine)



1.3.8.1.0

### GNU Radio

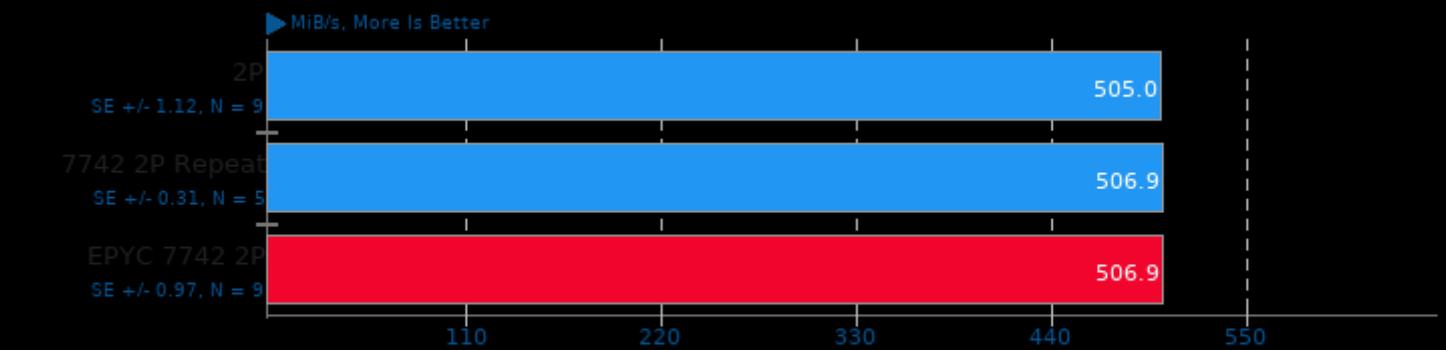
Test: FIR Filter



1.3.8.1.0

### GNU Radio

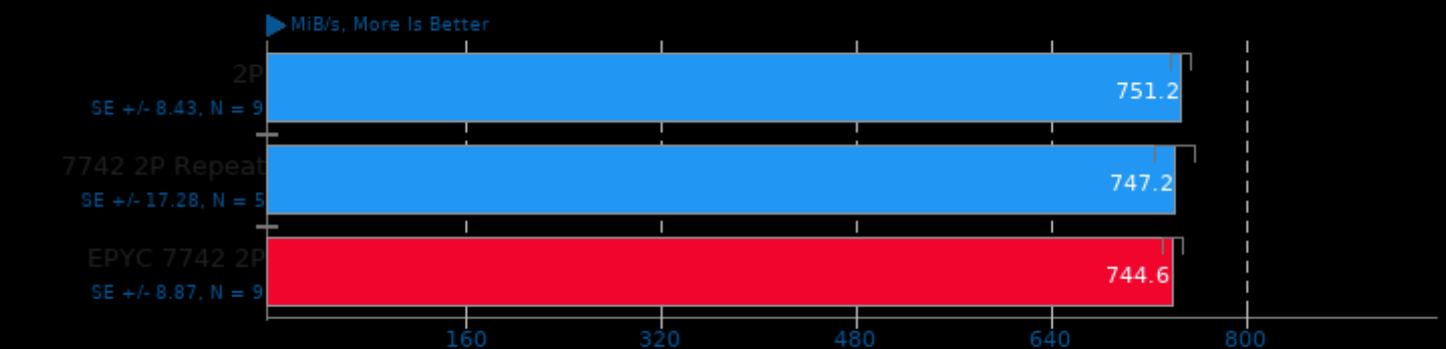
Test: IIR Filter



1.3.8.1.0

### GNU Radio

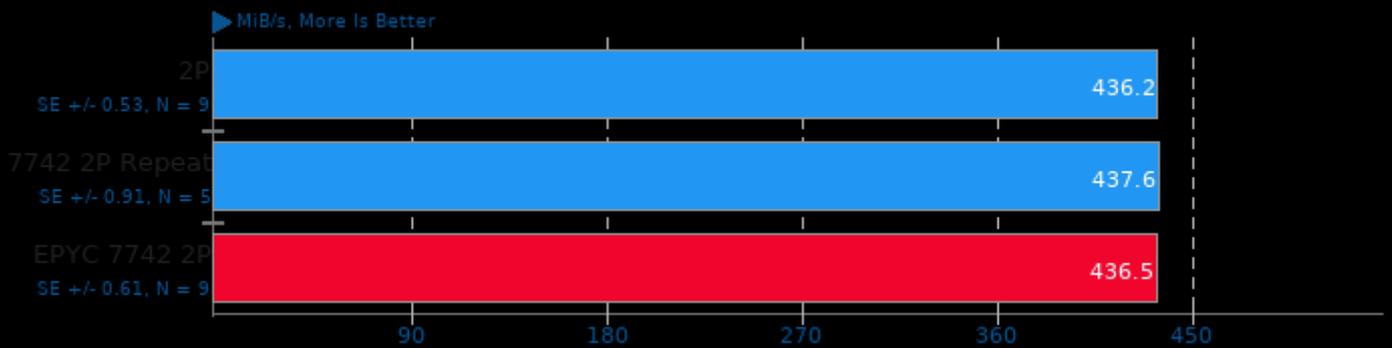
Test: FM Deemphasis Filter



1.3.8.1.0

### GNU Radio

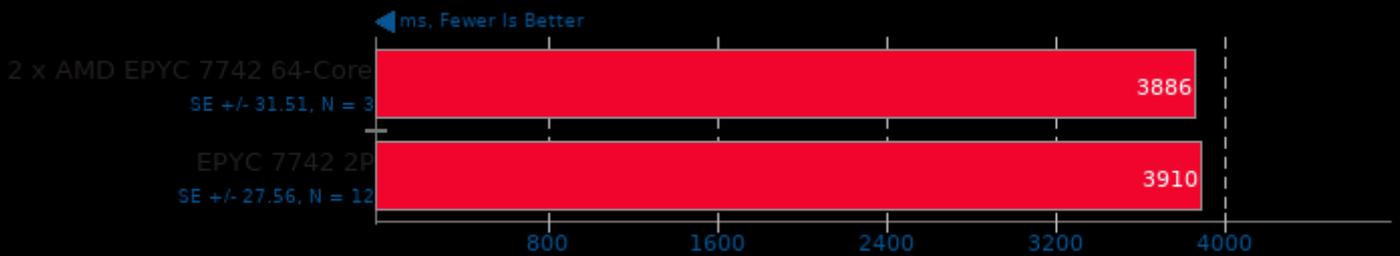
Test: Hilbert Transform



1.3.8.1.0

### toyBrot Fractal Generator 2020-11-18

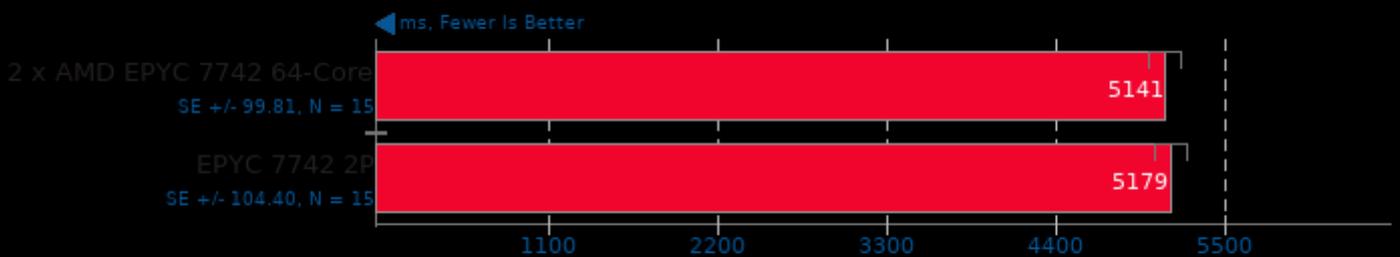
Implementation: TBB



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

### toyBrot Fractal Generator 2020-11-18

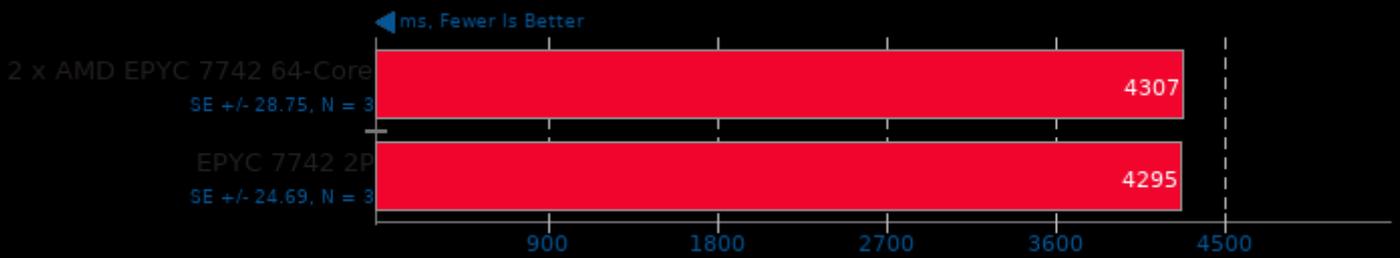
Implementation: OpenMP



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

## toyBrot Fractal Generator 2020-11-18

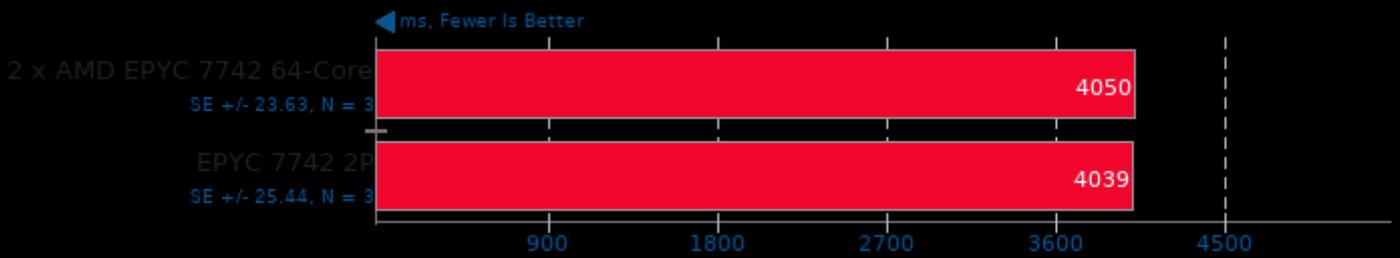
Implementation: C++ Tasks



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

## toyBrot Fractal Generator 2020-11-18

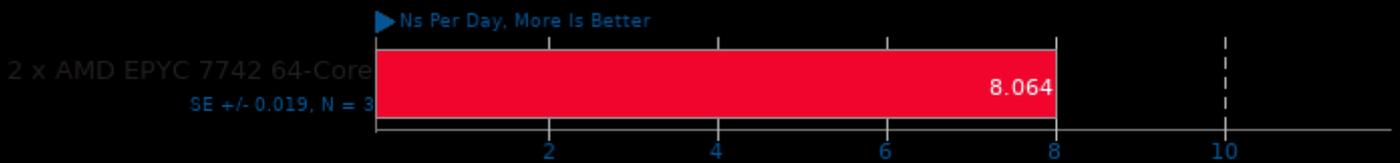
Implementation: C++ Threads



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

## GROMACS 2021

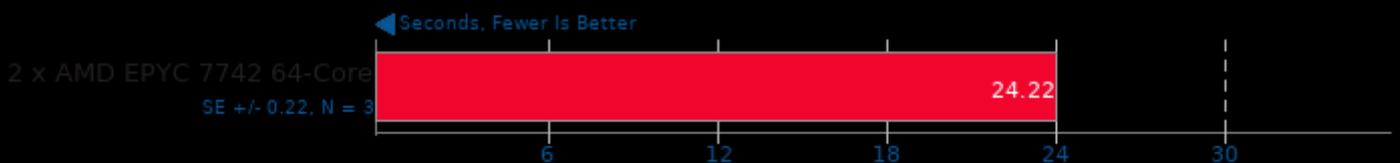
Input: water\_GMX50\_bare



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

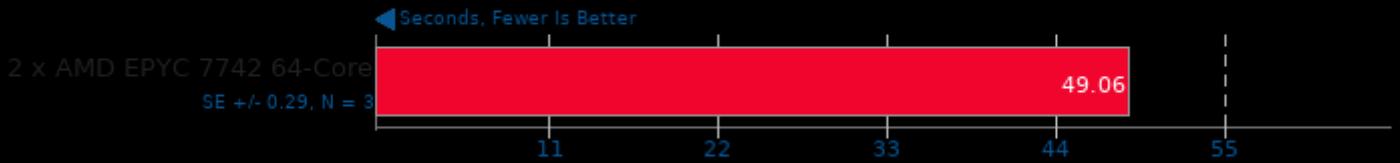
## Blender 2.92

Blend File: BMW27 - Compute: CPU-Only



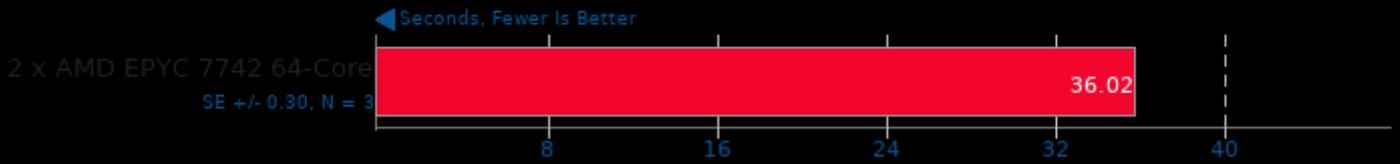
### Blender 2.92

Blend File: Classroom - Compute: CPU-Only



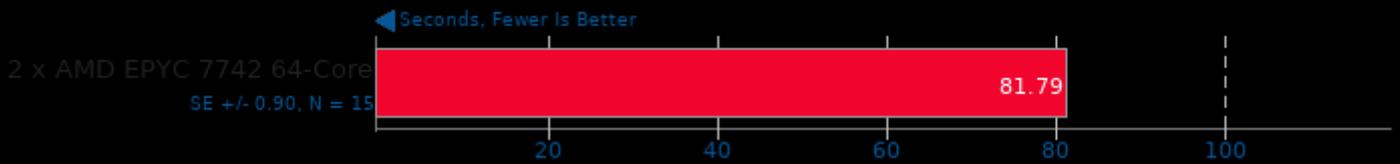
### Blender 2.92

Blend File: Fishy Cat - Compute: CPU-Only



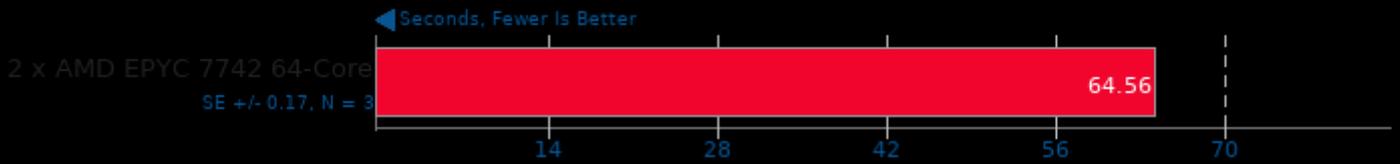
### Blender 2.92

Blend File: Barbershop - Compute: CPU-Only



### Blender 2.92

Blend File: Pabellon Barcelona - Compute: CPU-Only



### IOR 3.3.0

Block Size: 32MB - Disk Target: Default Test Directory



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

### libgav1 2019-10-05

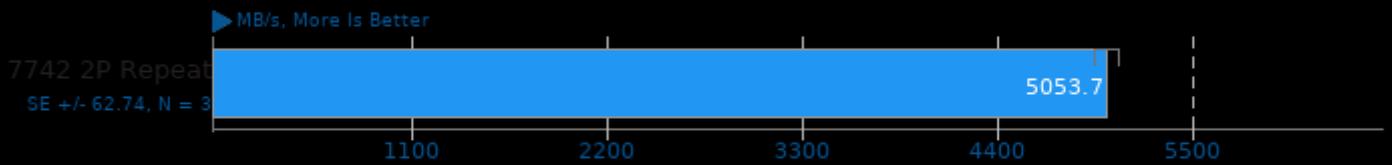
Video Input: Chimera 1080p



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

### Zstd Compression 1.4.9

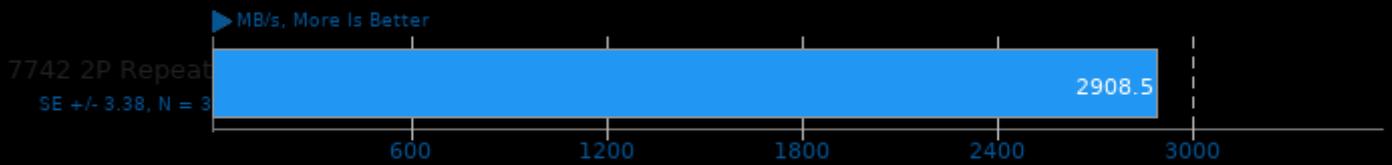
Compression Level: 3 - Compression Speed



1, (C) gcc options: -O3 -pthread -lz -lzma

### Zstd Compression 1.4.9

Compression Level: 3 - Decompression Speed



1, (C) gcc options: -O3 -pthread -lz -lzma

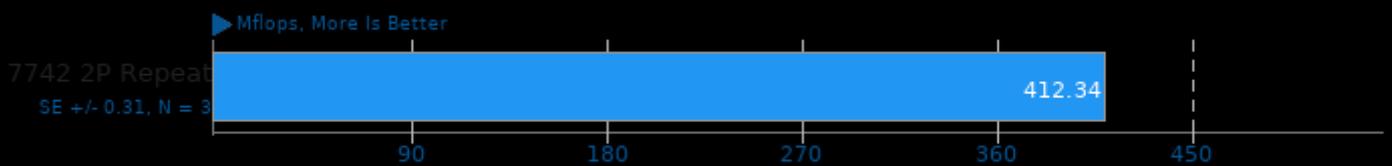
### JPEG XL Decoding 0.3.1

CPU Threads: 1



### LuajIT 2.1-git

Test: Monte Carlo



1, (C) gcc options: -lm -ldl -O2 -fomit-frame-pointer -U\_FORTIFY\_SOURCE -fno-stack-protector

### LuajIT 2.1-git

Test: Fast Fourier Transform



1. (CC) gcc options: -lm -ldl -O2 -fomit-frame-pointer -U\_FORTIFY\_SOURCE -fno-stack-protector

### LuajIT 2.1-git

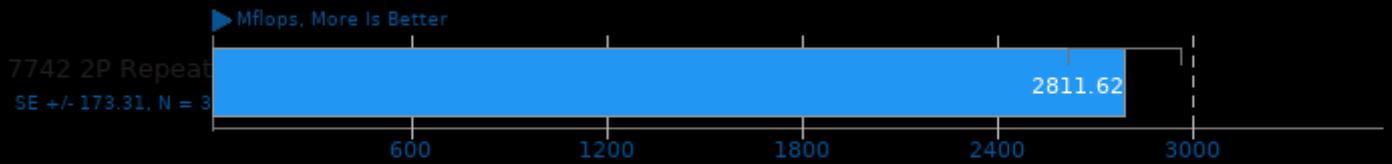
Test: Sparse Matrix Multiply



1. (CC) gcc options: -lm -ldl -O2 -fomit-frame-pointer -U\_FORTIFY\_SOURCE -fno-stack-protector

### LuajIT 2.1-git

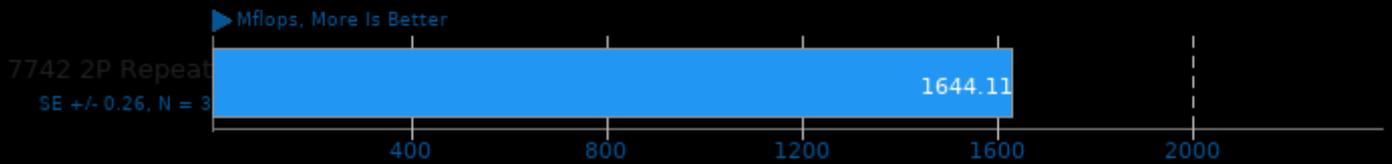
Test: Dense LU Matrix Factorization



1. (CC) gcc options: -lm -ldl -O2 -fomit-frame-pointer -U\_FORTIFY\_SOURCE -fno-stack-protector

### LuajIT 2.1-git

Test: Jacobi Successive Over-Relaxation



1. (CC) gcc options: -lm -ldl -O2 -fomit-frame-pointer -U\_FORTIFY\_SOURCE -fno-stack-protector

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