



www.phoronix-test-suite.com

Dual AMD EPYC 7601 Linux CPU Core/Thread Benchmarks

2 x AMD EPYC 7601 32-Core testing for a future article on Phoronix.com..

Automated Executive Summary

128 Threads had the most wins, coming in first place for 79% of the tests.

Based on the geometric mean of all complete results, the fastest (128 Threads) was 16.233x the speed of the slowest (2 Threads). 64 Threads was 0.884x the speed of 128 Threads, 32 Threads was 0.595x the speed of 64 Threads, 16 Threads was 0.625x the speed of 32 Threads, 8 Threads was 0.58x the speed of 16 Threads, 4 Threads was 0.584x the speed of 8 Threads, 2 Threads was 0.553x the speed of 4 Threads.

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

*BRL-CAD (VGR Performance Metric) at 75.387x
Smallpt (Global Illumination Renderer; 128 Samples) at 51.561x
C-Ray (Total Time - 4K, 16 Rays Per Pixel) at 49.176x
Rodinia (Test: OpenMP LavaMD) at 48.797x
asmFish (1024 Hash Memory, 26 Depth) at 44.996x
NAMD (ATPase Simulation - 327,506 Atoms) at 43.691x
Stockfish (Total Time) at 42.447x
Primesieve (1e12 Prime Number Generation) at 39.421x*

*m-queens (Time To Solve) at 38.274x
POV-Ray (Trace Time) at 38.174x.*

Test Systems:

2 Threads

Processor: 2 x AMD EPYC 7601 32-Core @ 2.68GHz (2 Cores), Motherboard: Dell 02MJ3T (1.2.5 BIOS), Chipset: AMD Family 17h, Memory: 16 x 32 GB DDR4-2400MT/s 36ASF4G72PZ-2G6D2, Disk: 120GB SSDSCKJB120G7R + 20 x 500GB Samsung SSD 860, Graphics: Matrox Matrox G200eW3, Monitor: VE228, Network: Broadcom Limited BCM57416 NetXtreme-E 10GBase-T RDMA

OS: Ubuntu 18.04, Kernel: 4.19.0-041900rc6-generic (x86_64) 20180930, Desktop: GNOME Shell 3.28.3, Compiler: GCC 7.3.0, File-System: ext4, Screen Resolution: 1600x1200

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++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --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 --with-tune=generic --without-cuda-driver -v
Python Notes: Python 2.7.15rc1 + Python 3.6.6
Security Notes: __user pointer sanitization + Full AMD retrpoline IBPB + SSB disabled via prctl and seccomp

4 Threads

Processor: 2 x AMD EPYC 7601 32-Core @ 2.69GHz (4 Cores), Motherboard: Dell 02MJ3T (1.2.5 BIOS), Chipset: AMD Family 17h, Memory: 16 x 32 GB DDR4-2400MT/s 36ASF4G72PZ-2G6D2, Disk: 20 x 500GB Samsung SSD 860 + 120GB SSDSCKJB120G7R, Graphics: Matrox Matrox G200eW3, Monitor: VE228, Network: Broadcom Limited BCM57416 NetXtreme-E 10GBase-T RDMA

OS: Ubuntu 18.04, Kernel: 4.19.0-041900rc6-generic (x86_64) 20180930, Desktop: GNOME Shell 3.28.3, Compiler: GCC 7.3.0, File-System: ext4, Screen Resolution: 1600x1200

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++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --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 --with-tune=generic --without-cuda-driver -v
Python Notes: Python 2.7.15rc1 + Python 3.6.6
Security Notes: __user pointer sanitization + Full AMD retrpoline IBPB + SSB disabled via prctl and seccomp

8 Threads

Processor: 2 x AMD EPYC 7601 32-Core @ 2.69GHz (8 Cores), Motherboard: Dell 02MJ3T (1.2.5 BIOS), Chipset: AMD Family 17h, Memory: 16 x 32 GB DDR4-2400MT/s 36ASF4G72PZ-2G6D2, Disk: 20 x 500GB Samsung SSD 860 + 120GB SSDSCKJB120G7R, Graphics: Matrox Matrox G200eW3, Monitor: VE228, Network: Broadcom Limited BCM57416 NetXtreme-E 10GBase-T RDMA

OS: Ubuntu 18.04, Kernel: 4.19.0-041900rc6-generic (x86_64) 20180930, Desktop: GNOME Shell 3.28.3, Compiler: GCC 7.3.0, File-System: ext4, Screen Resolution: 1600x1200

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++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-ns --enable-objc-gc=auto --enable-offload-targets=nvptx-none --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 --with-tune=generic --without-cuda-driver -v

Python Notes: Python 2.7.15rc1 + Python 3.6.6

Security Notes: __user pointer sanitization + Full AMD retpoline IBPB + SSB disabled via prctl and seccomp

16 Threads

Processor: 2 x AMD EPYC 7601 32-Core @ 2.70GHz (16 Cores), Motherboard: Dell 02MJ3T (1.2.5 BIOS), Chipset: AMD Family 17h, Memory: 16 x 32 GB DDR4-2400MT/s 36ASF4G72PZ-2G6D2, Disk: 20 x 500GB Samsung SSD 860 + 120GB SSDSCKJB120G7R, Graphics: Matrox Matrox G200eW3, Monitor: VE228, Network: Broadcom Limited BCM57416 NetXtreme-E 10GBase-T RDMA

OS: Ubuntu 18.04, Kernel: 4.19.0-041900rc6-generic (x86_64) 20180930, Desktop: GNOME Shell 3.28.3, Compiler: GCC 7.3.0, File-System: ext4, Screen Resolution: 1600x1200

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++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-ns --enable-objc-gc=auto --enable-offload-targets=nvptx-none --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 --with-tune=generic --without-cuda-driver -v

Python Notes: Python 2.7.15rc1 + Python 3.6.6

Security Notes: __user pointer sanitization + Full AMD retpoline IBPB + SSB disabled via prctl and seccomp

32 Threads

Processor: 2 x AMD EPYC 7601 32-Core @ 2.69GHz (32 Cores), Motherboard: Dell 02MJ3T (1.2.5 BIOS), Chipset: AMD Family 17h, Memory: 16 x 32 GB DDR4-2400MT/s 36ASF4G72PZ-2G6D2, Disk: 20 x 500GB Samsung SSD 860 + 120GB SSDSCKJB120G7R, Graphics: Matrox Matrox G200eW3, Monitor: VE228, Network: Broadcom Limited BCM57416 NetXtreme-E 10GBase-T RDMA

OS: Ubuntu 18.04, Kernel: 4.19.0-041900rc6-generic (x86_64) 20180930, Desktop: GNOME Shell 3.28.3, Compiler: GCC 7.3.0, File-System: ext4, Screen Resolution: 1600x1200

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++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-ns --enable-objc-gc=auto --enable-offload-targets=nvptx-none --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 --with-tune=generic --without-cuda-driver -v

Python Notes: Python 2.7.15rc1 + Python 3.6.6

Security Notes: __user pointer sanitization + Full AMD retpoline IBPB + SSB disabled via prctl and seccomp

64 Threads

Processor: 2 x AMD EPYC 7601 32-Core @ 3.10GHz (64 Cores), Motherboard: Dell 02MJ3T (1.2.5 BIOS), Chipset: AMD Family 17h, Memory: 16 x 32 GB DDR4-2400MT/s 36ASF4G72PZ-2G6D2, Disk: 20 x 500GB Samsung SSD 860 + 120GB SSDSCKJB120G7R, Graphics: Matrox Matrox G200eW3, Monitor: VE228, Network: Broadcom Limited BCM57416 NetXtreme-E 10GBase-T RDMA

OS: Ubuntu 18.04, Kernel: 4.19.0-041900rc6-generic (x86_64) 20180930, Desktop: GNOME Shell 3.28.3, Compiler: GCC 7.3.0, File-System: ext4, Screen Resolution: 1600x1200

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++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-ns --enable-objc-gc=auto --enable-offload-targets=nvptx-none --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 --with-tune=generic --without-cuda-driver -v

Python Notes: Python 2.7.15rc1 + Python 3.6.6

Security Notes: __user pointer sanitization + Full AMD retpoline IBPB + SSB disabled via prctl and seccomp

128 Threads

Processor: 2 x AMD EPYC 7601 32-Core @ 3.12GHz (64 Cores / 128 Threads), Motherboard: Dell 02MJ3T (1.2.5 BIOS), Chipset: AMD Family 17h, Memory: 16 x 32 GB DDR4-2400MT/s 36ASF4G72PZ-2G6D2, Disk: 120GB SSDSCKJB120G7R + 20 x 500GB Samsung SSD 860, Graphics: Matrox Matrox G200eW3, Monitor: VE228, Network: Broadcom Limited BCM57416 NetXtreme-E 10GBase-T RDMA

OS: Ubuntu 18.04, Kernel: 4.19.0-041900rc6-generic (x86_64) 20180930, Desktop: GNOME Shell 3.28.3, Compiler: GCC 7.3.0, File-System: ext4, Screen Resolution: 1600x1200

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++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --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 --with-tune=generic --without-cuda-driver -v

Python Notes: Python 2.7.15rc1 + Python 3.6.6

Security Notes: __user pointer sanitization + Full AMD retrpoline IBPB + SSB disabled via prctl and seccomp

	2 Threads	4 Threads	8 Threads	16 Threads	32 Threads	64 Threads	128 Threads
Rodinia - OpenMP	825.65	419.17	211.36	107.09	53.96	20.53	16.92
LavaMD (sec)							
Normalized	2.05%	4.04%	8.01%	15.8%	31.36%	82.42%	100%
Standard Deviation	0.1%	0.2%	0.5%	0.3%	0.1%	1.5%	2.9%
Rodinia - OpenMP CFD	145.85	74.65	42.86	27.53	18.04	13.67	11.97
Solver (sec)							
Normalized	8.21%	16.03%	27.93%	43.48%	66.35%	87.56%	100%
Standard Deviation	3.4%	0.4%	0.5%	8.1%	5%	35%	11.4%
NAMD - ATPase	19.70173	9.91730	4.98168	2.50156	1.25996	0.51265	0.45093
Simulation - 327,506							
Normalized	2.29%	4.55%	9.05%	18.03%	35.79%	87.96%	100%
Standard Deviation	0.1%	0.2%	0.1%	0.2%	0.1%	0.8%	0.2%
DaCapo Benchmark - Jython (msec)	10541	8879	8756	8210	8164	6630	6470
Normalized	61.38%	72.87%	73.89%	78.81%	79.25%	97.59%	100%
Standard Deviation	2%	0.8%	3%	1.4%	0.8%	0.8%	1.7%
TTSIOD 3D Renderer - P.R.W.S.S.M (FPS)	33.14	53.96	95.35	159	246	386	365
Normalized	8.59%	13.98%	24.7%	41.19%	63.73%	100%	94.56%
Standard Deviation	0.5%	0.4%	0.3%	0.5%	1.6%	5.5%	7%
x264 - H.2.V.E (FPS)	11.06	17.71	33.72	64.34	119	156	148
Normalized	7.09%	11.35%	21.62%	41.24%	76.28%	100%	94.87%
Standard Deviation	0.9%	0.1%	0.3%	0.4%	0.2%	0.3%	0.7%
GraphicsMagick - Swirl (Iterations/min)	64	91	116	133	145	175	196
Normalized	32.65%	46.43%	59.18%	67.86%	73.98%	89.29%	100%
Standard Deviation	0.9%			0.9%	1.1%	5.7%	
GraphicsMagick - Sharpen (Iterations/min)	31	52	79	106	128	161	181
Normalized	17.13%	28.73%	43.65%	58.56%	70.72%	88.95%	100%
Standard Deviation				0.5%	0.4%	4.9%	0.3%

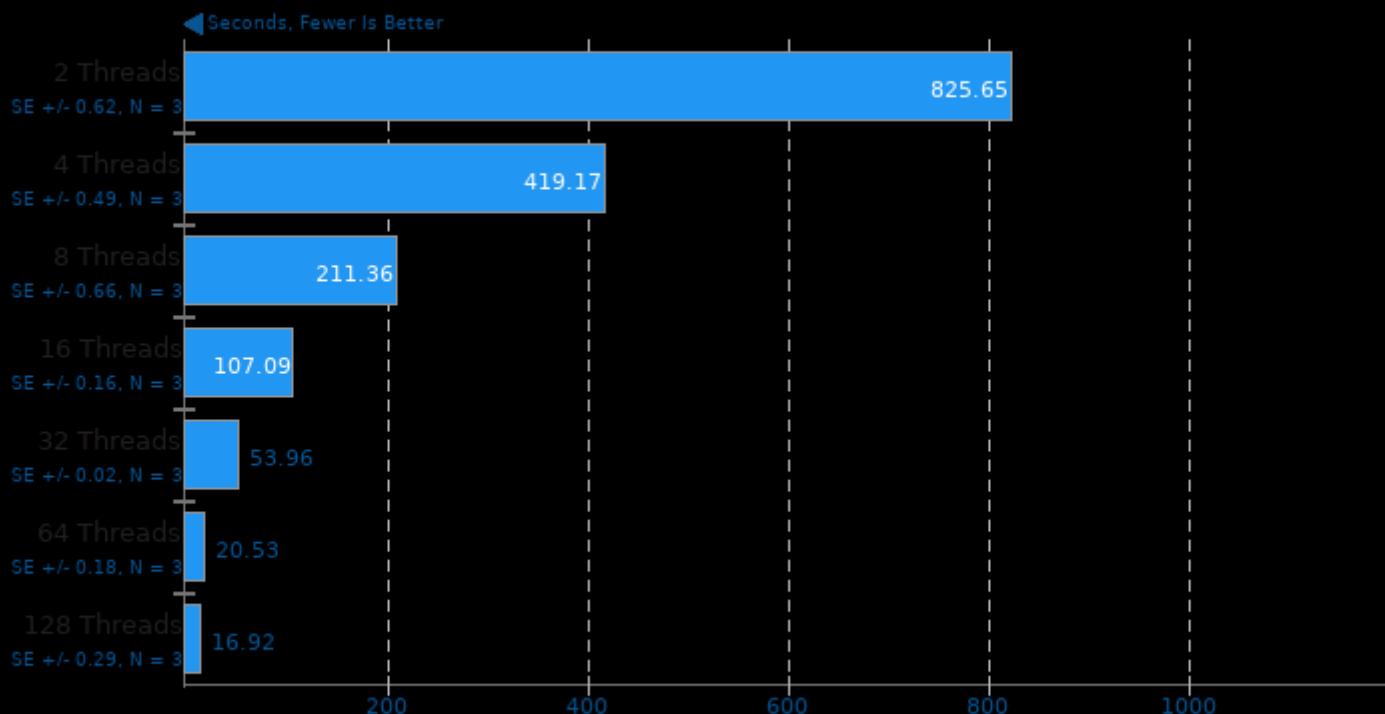
GraphicsMagick - Enhanced (Iterations/min)	36	60	87	112	132	169	188
Normalized	19.15%	31.91%	46.28%	59.57%	70.21%	89.89%	100%
Standard Deviation	3.2%				1.2%	6.7%	0.6%
GraphicsMagick - Noise-Gaussian (Iterations/min)	21	36	60	89	117	150	180
Normalized	11.67%	20%	33.33%	49.44%	65%	83.33%	100%
Standard Deviation						3.9%	
Himeno Benchmark - P.P.S (MFLOPS)	539	535	188	699	784	842	1004
Normalized	53.69%	53.29%	18.73%	69.62%	78.09%	83.86%	100%
Standard Deviation	26.4%	17.5%	80.3%	12.5%	0.4%	0.5%	0.4%
7-Zip Compression - C.S.T (MIPS)	5070	9914	19092	37357	74751	151861	148114
Normalized	3.34%	6.53%	12.57%	24.6%	49.22%	100%	97.53%
Standard Deviation	0.9%	2.2%	0.8%	2.4%	3%	3%	5%
Stockfish - Total Time (Nodes/s)	2434846	4658151	8910242	17247144	34765371	73945885	103351936
Normalized	2.36%	4.51%	8.62%	16.69%	33.64%	71.55%	100%
Standard Deviation	1.1%	0.5%	0.5%	0.5%	0.9%	1.1%	1%
asmFish - 1.H.M.2.D (Nodes/s)	2667766	5297822	10677009	20917149	41744957	87578363	120037694
Normalized	2.22%	4.41%	8.89%	17.43%	34.78%	72.96%	100%
Standard Deviation	0.5%	1.4%	0.5%	1.3%	0.6%	0.8%	0.6%
ebizzy (Records/s)	91998	183887	362148	692003	1266780	1833221	1964128
Normalized	4.68%	9.36%	18.44%	35.23%	64.5%	93.34%	100%
Standard Deviation	0.1%	0.2%	3.1%	3.5%	2.4%	6.5%	4.4%
Timed ImageMagick	194.81	108.08	62.80	43.62	33.97	27.15	24.18
Compilation - Time To Compile (sec)							
Normalized	12.41%	22.37%	38.5%	55.43%	71.18%	89.06%	100%
Standard Deviation	0.2%	0.6%	1.3%	0.5%	1%	1.7%	2.9%
Timed Linux Kernel	592.71		160.03	87.06	50.44	30.87	25.47
Compilation - Time To Compile (sec)							
Normalized	4.3%		15.92%	29.26%	50.5%	82.51%	100%
Standard Deviation	0.5%		1.5%	2.5%	3.4%	3.8%	3.5%
Timed LLVM Compilation - Time To Compile (sec)	3532	2048	893	472	272	163	154
Normalized	4.36%	7.52%	17.25%	32.63%	56.62%	94.48%	100%
C-Ray - Total Time - 4.1.R.P.P (sec)	753.87	376.36	188.41	94.46	47.66	16.71	15.33
Normalized	2.03%	4.07%	8.14%	16.23%	32.17%	91.74%	100%
Standard Deviation	0.2%	0.1%	0.1%	0.1%	0.2%	0.3%	0.4%
POV-Ray - Trace Time (sec)	478.70	239.22	120.79	62.22	33.72	17.63	12.54
Normalized	2.62%	5.24%	10.38%	20.15%	37.19%	71.13%	100%
Standard Deviation	0.2%	0.2%	0.1%	0.2%	0.7%	0.6%	1.4%
Primesieve - 1.P.N.G (sec)	232.19	116.55	58.39	29.30	14.83	6.25	5.89
Normalized	2.54%	5.05%	10.09%	20.1%	39.72%	94.24%	100%
Standard Deviation	0.2%	0.1%	0.3%	0.2%	0.3%	0.2%	1%

Rust Mandelbrot - T.T.C.S.P.M (sec)	234.44	142.97	95.87	73.09	61.37	59.18	47.62
Normalized	20.31%	33.31%	49.67%	65.15%	77.59%	80.47%	100%
Standard Deviation	0.1%	0.7%	0%	0.6%	0%	2.3%	0.3%
Smallpt - G.I.R.1.S (sec)	465.60	233.60	117.51	59.35	30.42	12.35	9.03
Normalized	1.94%	3.87%	7.68%	15.21%	29.68%	73.12%	100%
Standard Deviation	0.1%	0.2%	0.2%	0.2%	0.4%	1.7%	1.7%
m-queens - Time To Solve (sec)	712.67	357.69	180.67	92.08	47.31	26.30	18.62
Normalized	2.61%	5.21%	10.31%	20.22%	39.36%	70.8%	100%
Standard Deviation	0%	0.1%	0%	0%	0%	0.2%	0.5%
Tachyon - Total Time	55.70	27.80	14.17	7.04	3.59	1.95	1.47
Normalized	2.64%	5.29%	10.37%	20.88%	40.95%	75.38%	100%
Standard Deviation	0.3%	0.4%	2.8%	0.3%	0.7%	6.8%	6.5%
OpenSSL - R.4.b.P (Signs/sec)	269	538	1075	2149	4296	8632	9238
Normalized	2.91%	5.82%	11.64%	23.26%	46.5%	93.44%	100%
Standard Deviation	0.1%	0.1%	0%	0.1%	0.1%	0.1%	0.1%
Aircrack-ng (k/s)	2308	4616	9289	18569	37049	78269	81032
Normalized	2.85%	5.7%	11.46%	22.92%	45.72%	96.59%	100%
Standard Deviation	0.8%	0.2%	0%	0.2%	0.2%	0.3%	0.3%
Cpuminer-Opt - m7m (kH/s - Hash Speed)					429	1426	1788
Normalized					23.99%	79.75%	100%
Standard Deviation					21%	0.8%	0.4%
Cpuminer-Opt - deep (kH/s - Hash Speed)	343				7469	23253	26607
Normalized	1.29%				28.07%	87.39%	100%
Standard Deviation					59.4%	1.1%	0%
Cpuminer-Opt - lbry (kH/s - Hash Speed)	1885	3690	8251	22290	29670	58944	65192
Normalized	2.89%	5.66%	12.66%	34.19%	45.51%	90.42%	100%
Standard Deviation	7.7%	1.6%	49.8%	2.3%	0.9%	21.3%	3.5%
Cpuminer-Opt - skein (kH/s - Hash Speed)	3482	5767	12503	27403	46647	99653	105883
Normalized	3.29%	5.45%	11.81%	25.88%	44.06%	94.12%	100%
Standard Deviation	46.8%	0.3%	143.2%	10.9%	0.7%	1.9%	2.1%
Cpuminer-Opt - myr-gr (kH/s - Hash Speed)	920	1882	1371	984	1827	3863	6319
Normalized	14.56%	29.78%	21.7%	15.57%	28.91%	61.13%	100%
Standard Deviation	27.9%	2.6%	3.2%	36.3%	2%	3.8%	0.2%
Cpuminer-Opt - sha256 (kH/s - Hash Speed)	4592	9133	28088	52233	76435	159987	158933
Normalized	2.87%	5.71%	17.56%	32.65%	47.78%	100%	99.34%
Standard Deviation	0.1%	0.3%	3.3%	7.5%	3.5%	0.8%	0%
Tensorflow - Cifar10 (sec)	304.99	225.24	131.67	97.78	78.29	59.05	65.18
Normalized	19.36%	26.22%	44.85%	60.39%	75.42%	100%	90.6%
Standard Deviation	0.1%	0.1%	0.3%	0.1%	0.3%	0.9%	1.1%
PostgreSQL pgbench - Buffer Test - Normal Load - Read Only (TPS)	17375	35792	65014	115290	208984	388357	534013
Normalized	3.25%	6.7%	12.17%	21.59%	39.13%	72.72%	100%
Standard Deviation	1.9%	0.4%	3.1%	0.6%	1.3%	0.5%	0.9%

Darktable - Boat -	48.74	25.63	14.09	8.07	5.49	4.03	4.27
CPU-only (sec)							
Normalized	8.27%	15.72%	28.6%	49.94%	73.41%	100%	94.38%
Standard Deviation	1.4%	2%	1.2%	3.4%	1.4%	1.8%	2.1%
Darktable - Masskrug -	43.83	24.11	14.77	9.86	7.90	6.10	6.71
CPU-only (sec)							
Normalized	13.92%	25.3%	41.3%	61.87%	77.22%	100%	90.91%
Standard Deviation	2.9%	1.2%	3.2%	1.7%	1.6%	0.3%	5.1%
Darktable - Server Rack -	0.91	0.53	0.35	0.25	0.19	0.14	0.15
CPU-only (sec)							
Normalized	15.38%	26.42%	40%	56%	73.68%	100%	93.33%
Standard Deviation	0.4%	2.6%	3.5%	9.2%	5.1%	4%	4.3%
Darktable - Server Room -	23.16	12.51	7.04	4.56	3.00	3.16	4.24
CPU-only (sec)							
Normalized	12.95%	23.98%	42.61%	65.79%	100%	94.94%	70.75%
Standard Deviation	0.3%	2%	3.2%	1.6%	5.7%	0.7%	0.3%
Blender - BMW27 -	2305	1165	586.30	297.51	158.49	82.20	61.21
CPU-Only (sec)							
Normalized	2.66%	5.25%	10.44%	20.57%	38.62%	74.46%	100%
Standard Deviation	0.2%	0.4%	0.1%	0.1%	0.2%	0.3%	0.1%
Blender - Fishy Cat -	3292	1646	822.54	413.42	213.52	111.44	88.68
CPU-Only (sec)							
Normalized	2.69%	5.39%	10.78%	21.45%	41.53%	79.58%	100%
Standard Deviation	0.2%	0.2%	0.1%	0.1%	0.2%	0.1%	0.4%
Chaos Group V-RAY -	735.06	372.96	190.17	97.99	54.35	28.48	24.32
CPU (sec)							
Normalized	3.31%	6.52%	12.79%	24.82%	44.75%	85.39%	100%
Standard Deviation	0.6%	0.3%	0.8%	0.6%	0.3%	0.6%	1.7%
Tesseract OCR - T.T.O.7.I	93.13	58.84	57.98	53.33	52.02	48.92	41.90
(sec)							
Normalized	44.99%	71.21%	72.27%	78.57%	80.55%	85.65%	100%
Standard Deviation	0.6%	0.7%	1.1%	2%	1.3%	2.4%	1.5%
BRL-CAD - V.P.M (VGR Performance Metric)	5684	13045	28440	58199	119461	354090	428502
Normalized	1.33%	3.04%	6.64%	13.58%	27.88%	82.63%	100%

Rodinia 2.4

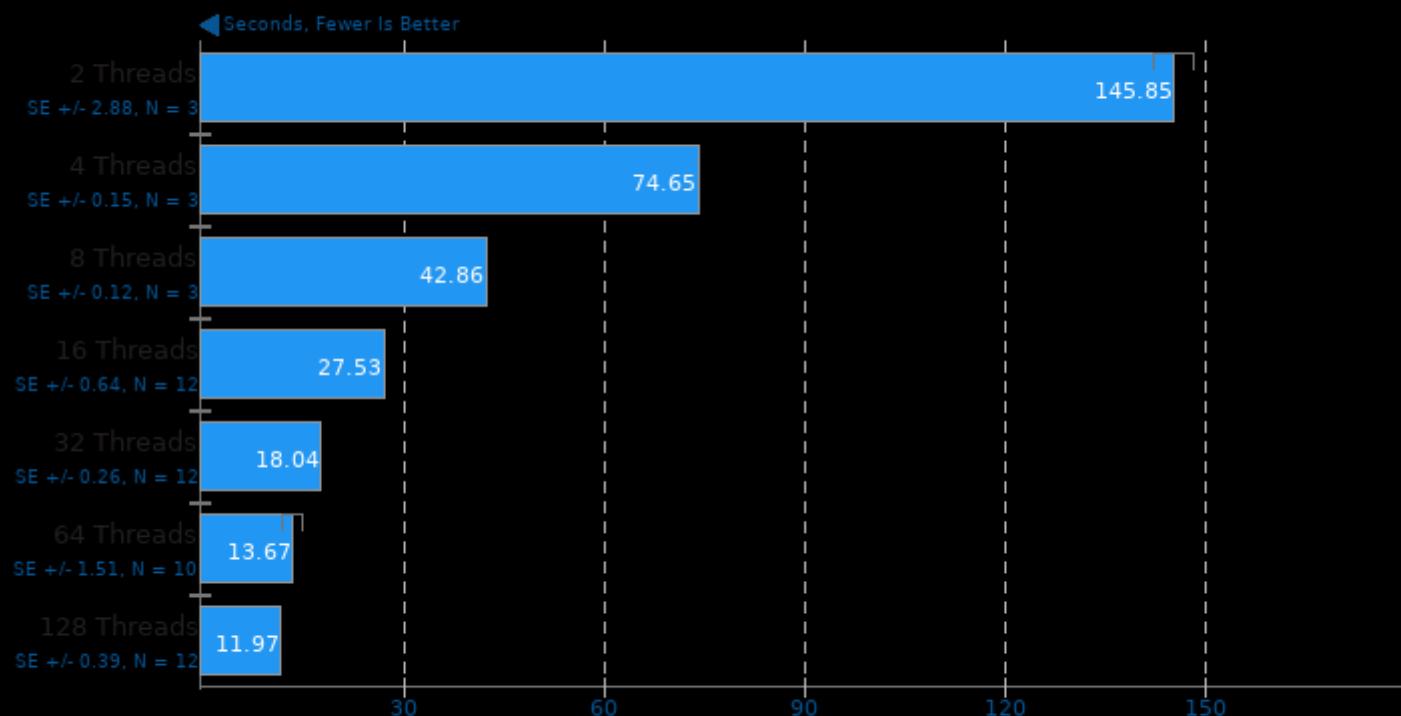
Test: OpenMP LavaMD



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

Rodinia 2.4

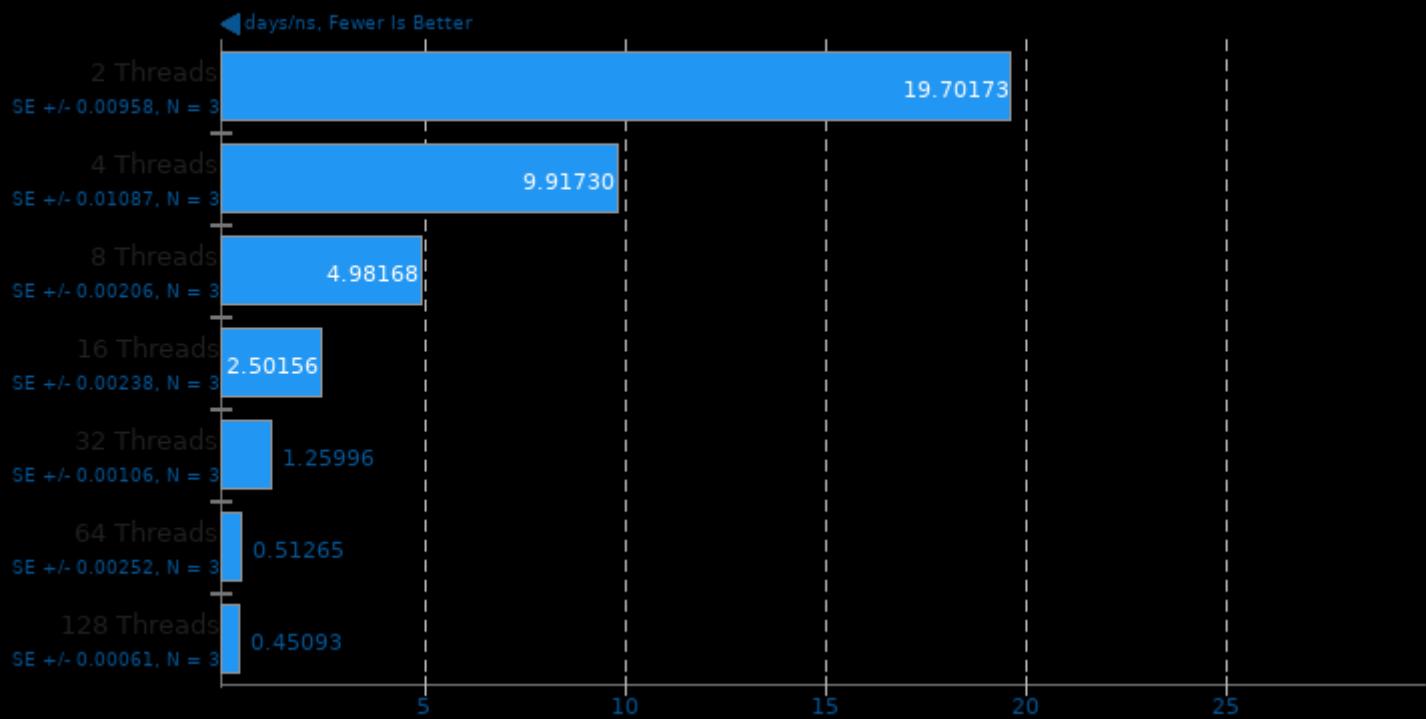
Test: OpenMP CFD Solver



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

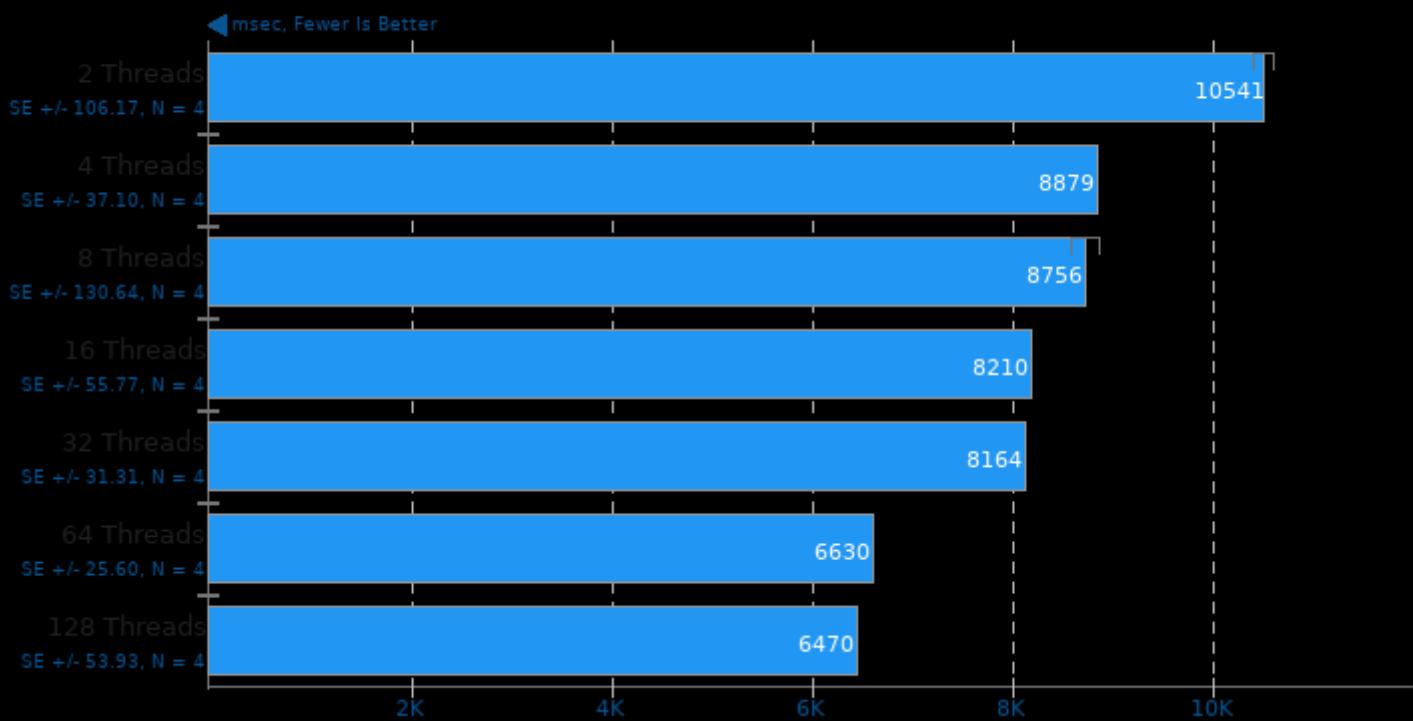
NAMD 2.13b1

ATPase Simulation - 327,506 Atoms



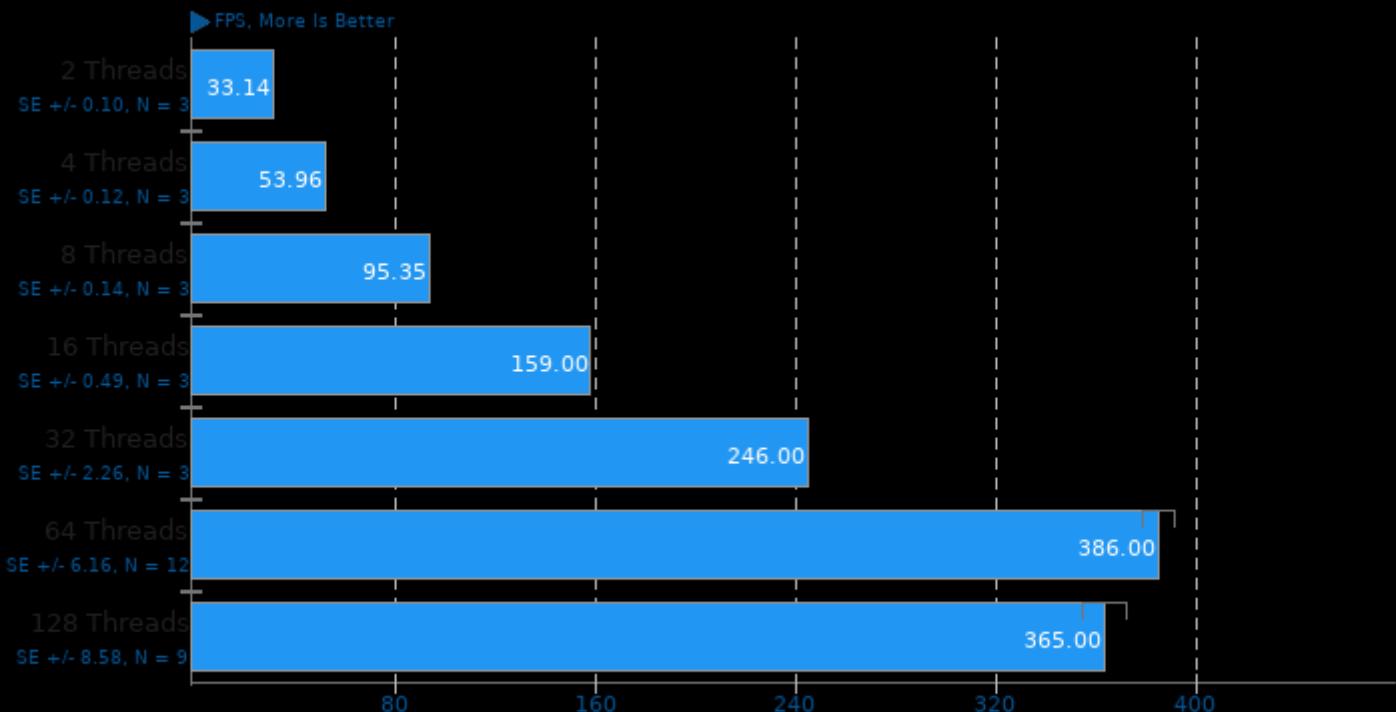
DaCapo Benchmark 9.12-MR1

Java Test: Jython



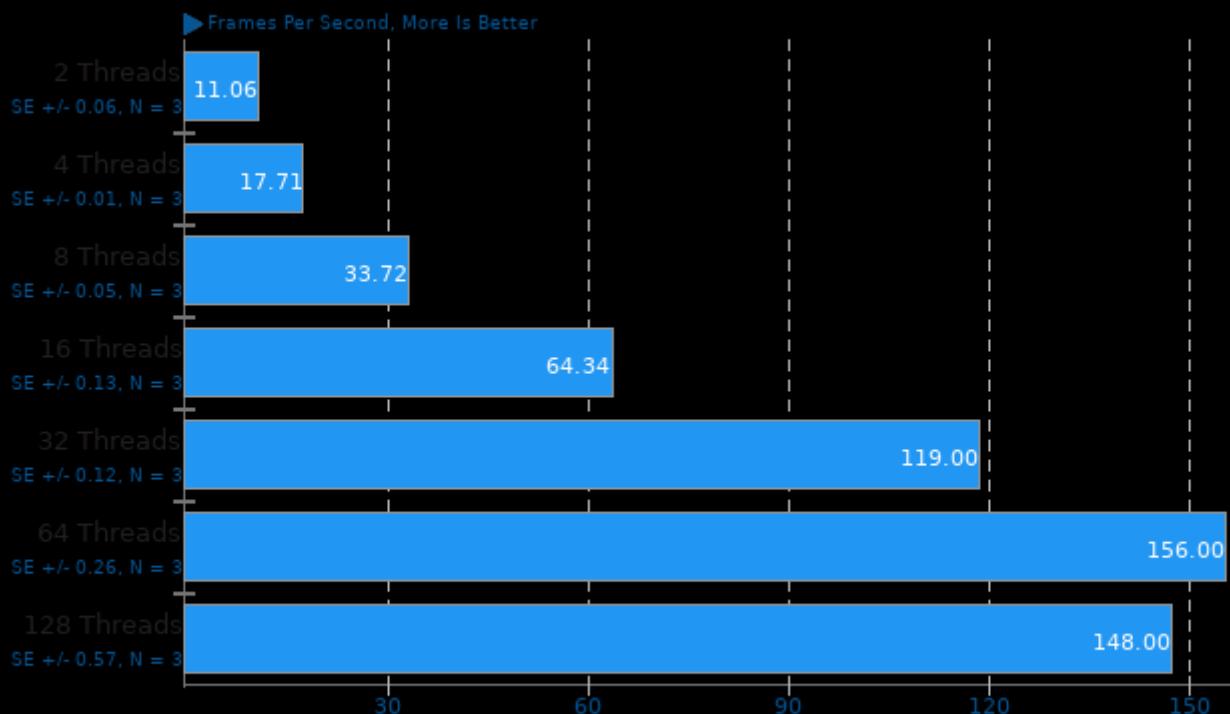
TTSIOD 3D Renderer 2.3b

Phong Rendering With Soft-Shadow Mapping



1. (CXX) g++ options: -O3 -fomit-frame-pointer -ffast-math -mtune=native -fno -msse -mrecip -mfpmath=sse -msse2 -msse3 -fopenmp -fwhole-pr

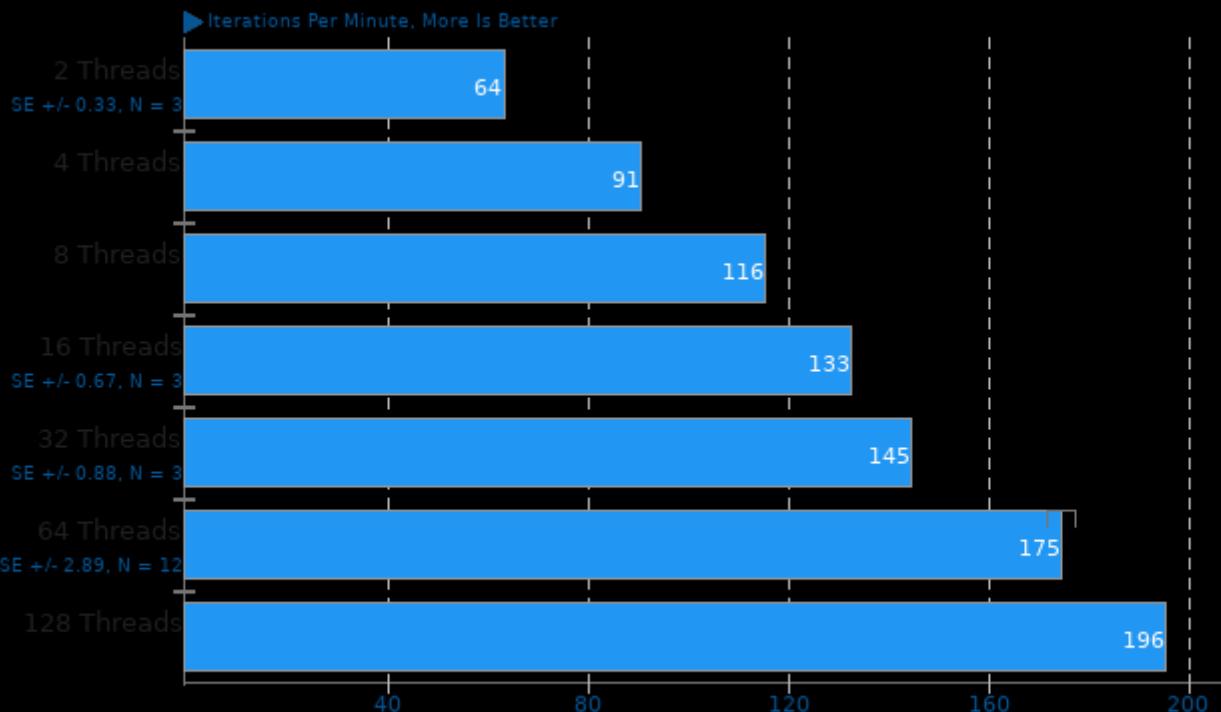
x264 2018-07-28



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

GraphicsMagick 1.3.30

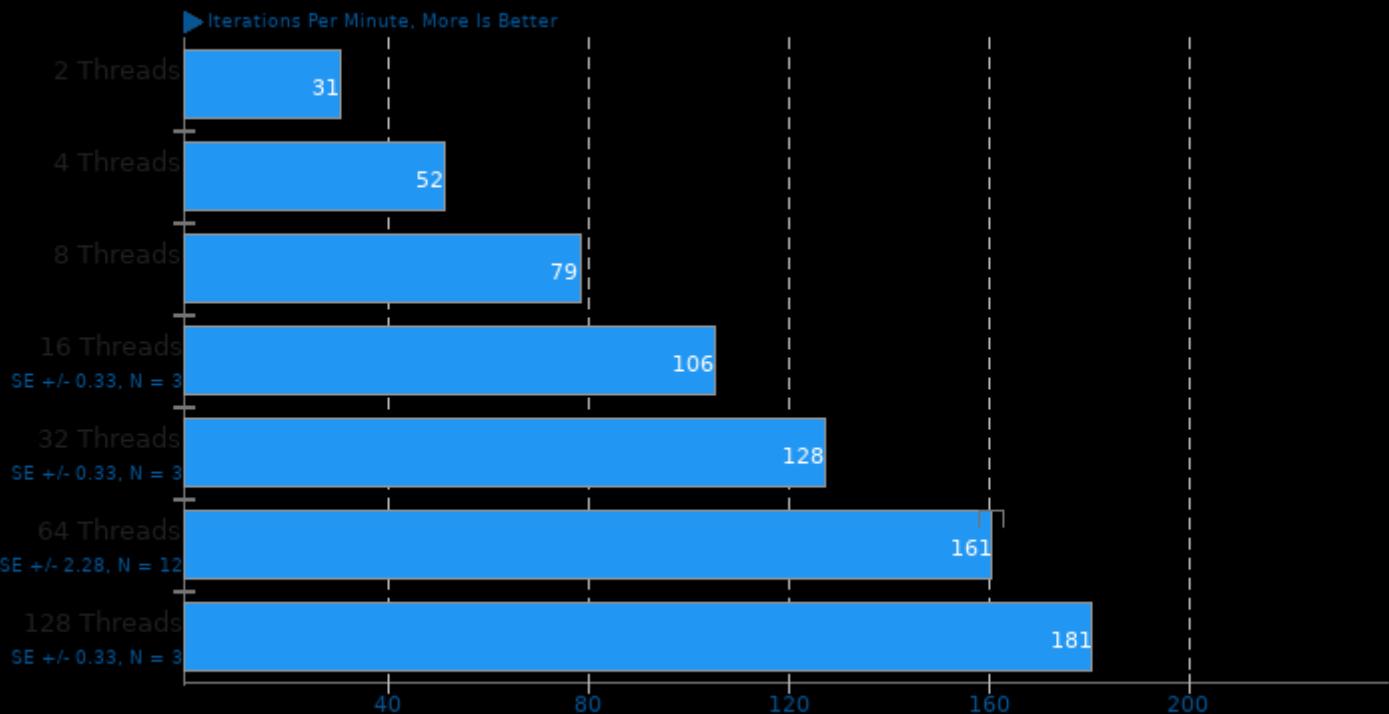
Operation: Swirl



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

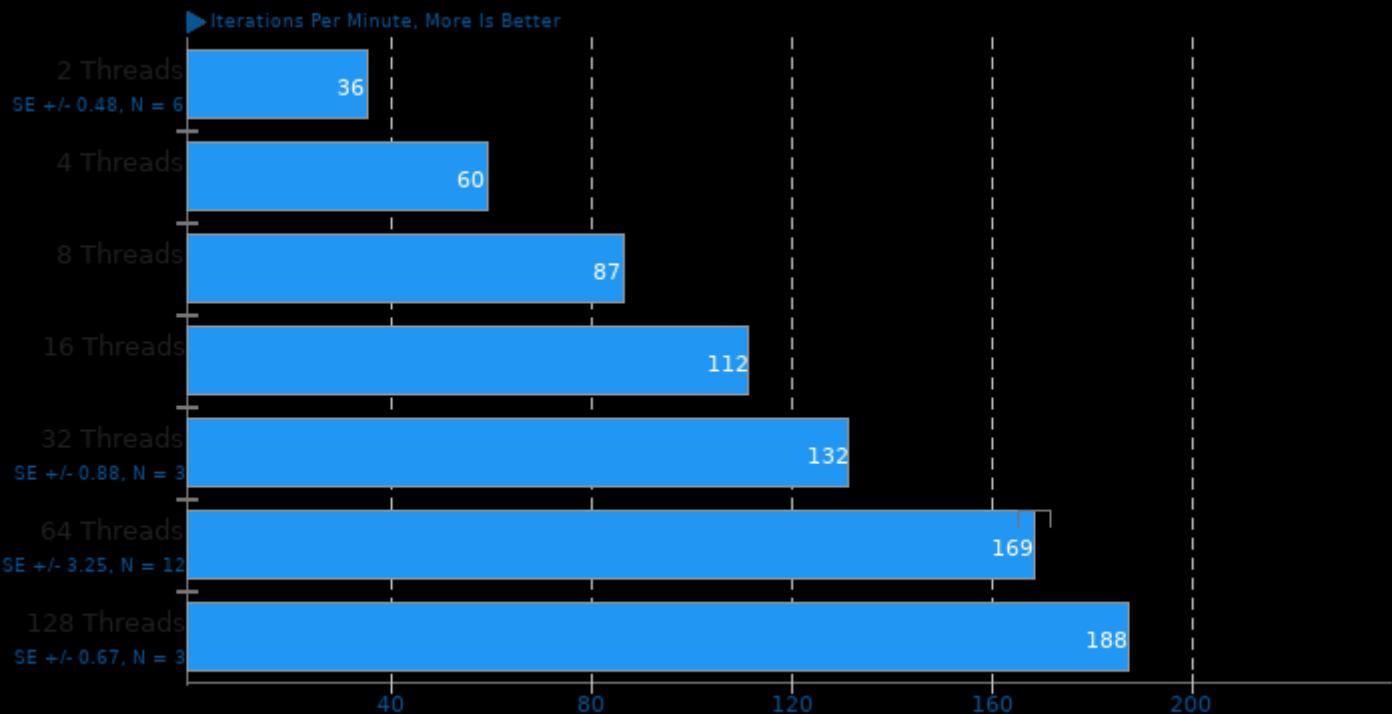
GraphicsMagick 1.3.30

Operation: Sharpen



GraphicsMagick 1.3.30

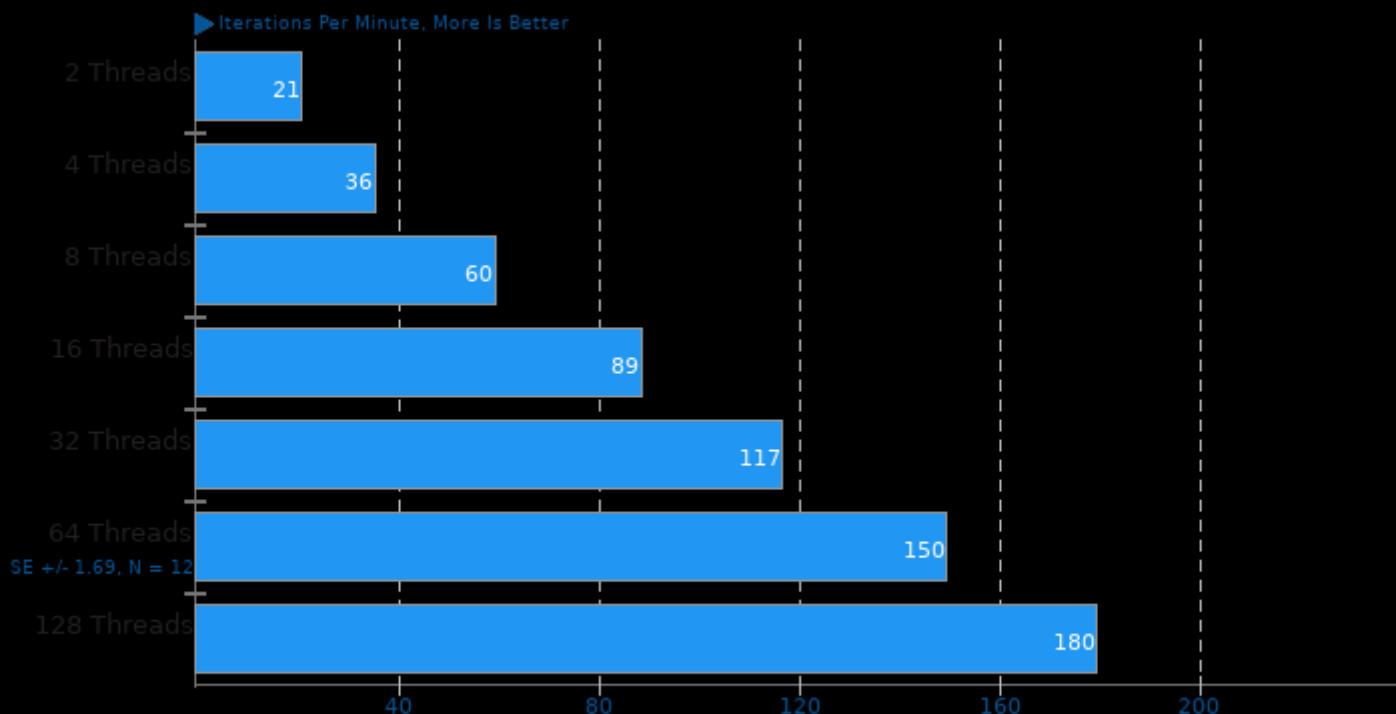
Operation: Enhanced



1. (CC) gcc options: -fopenmp -O2 -pthread -ljbig -lwebp -lwebpmux -ltiff -jpeg -lXext -lSM -ICE -lX11 -lzma -lbz2 -lz -lm -lgomp -lpthread

GraphicsMagick 1.3.30

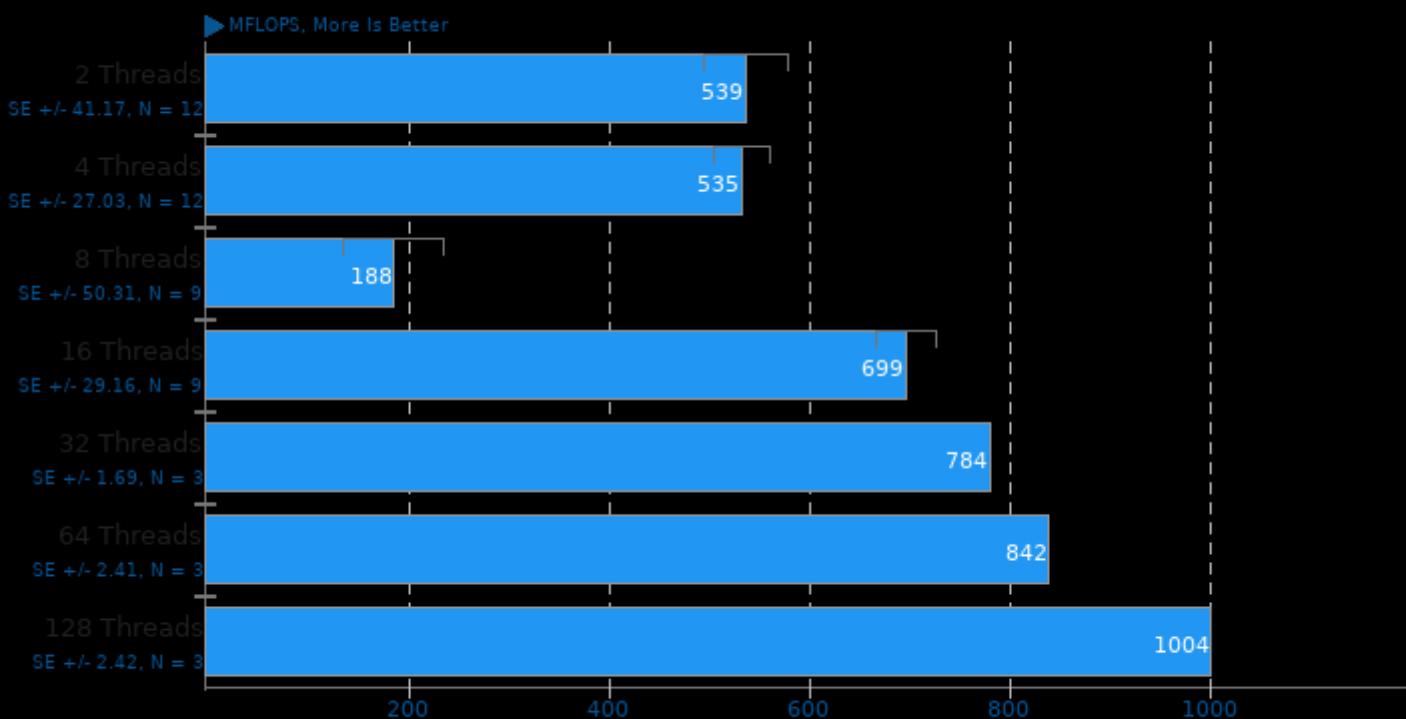
Operation: Noise-Gaussian



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

Himeno Benchmark 3.0

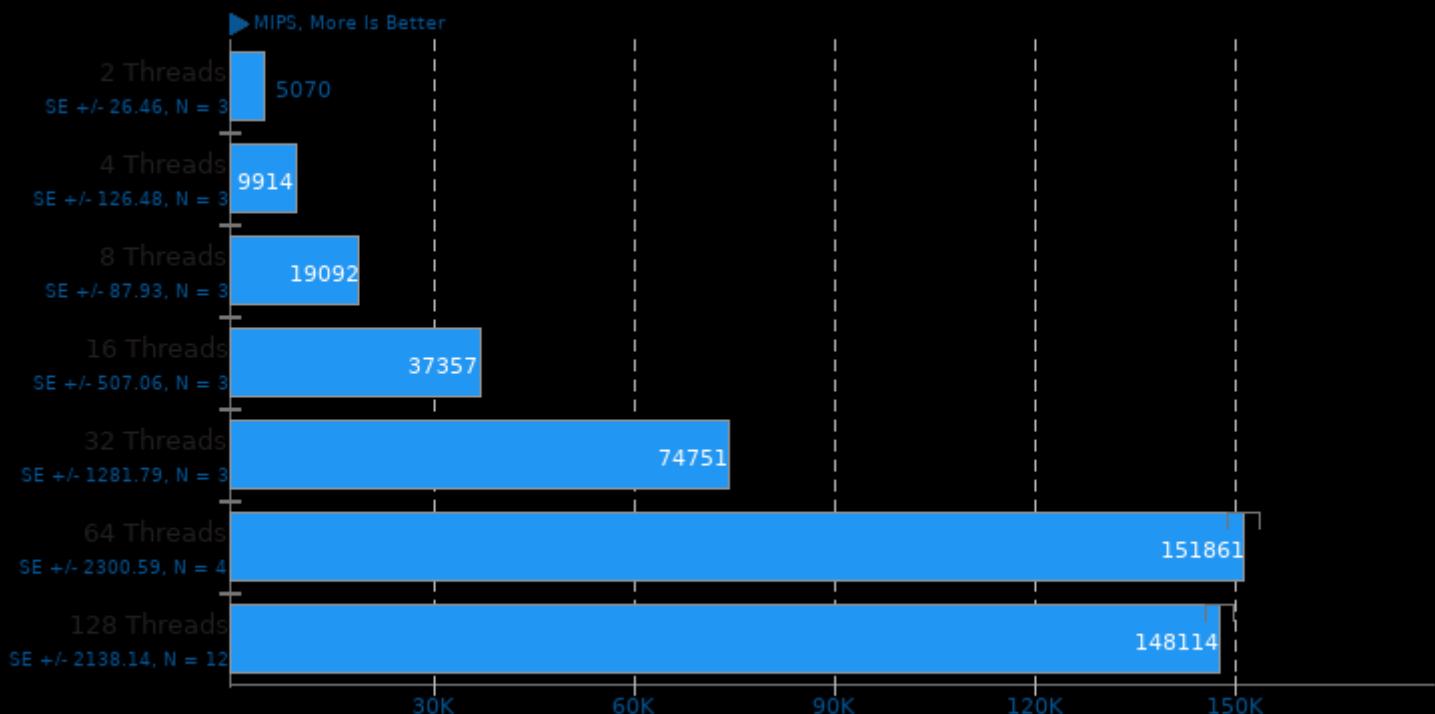
Poisson Pressure Solver



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

7-Zip Compression 16.02

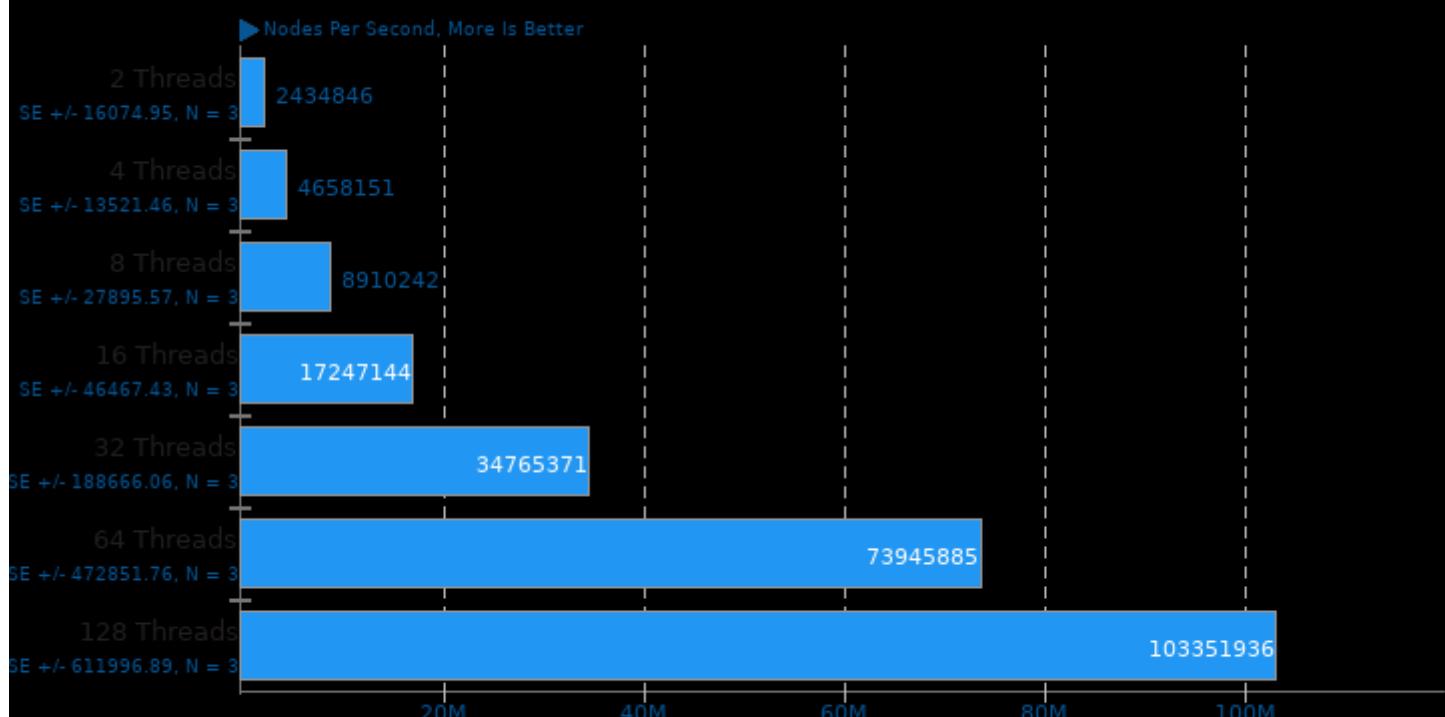
Compress Speed Test



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

Stockfish 9

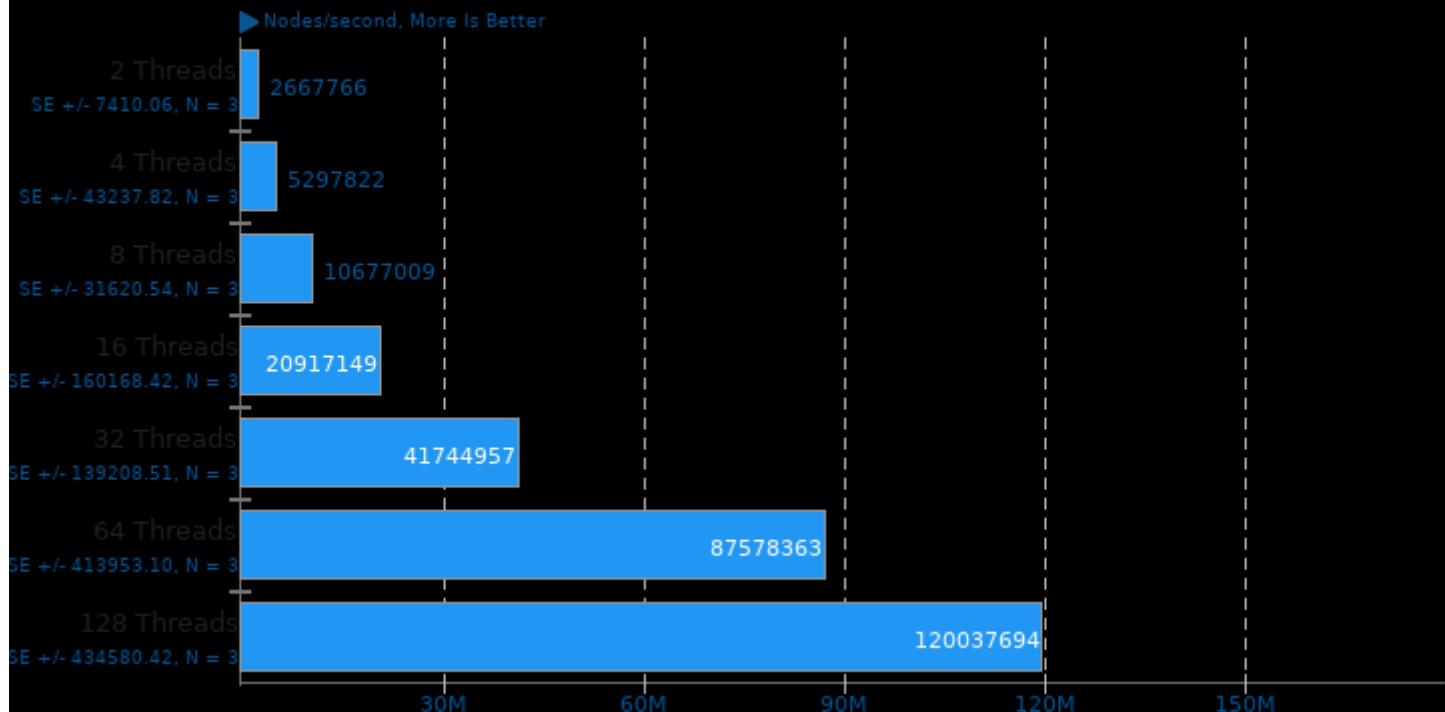
Total Time



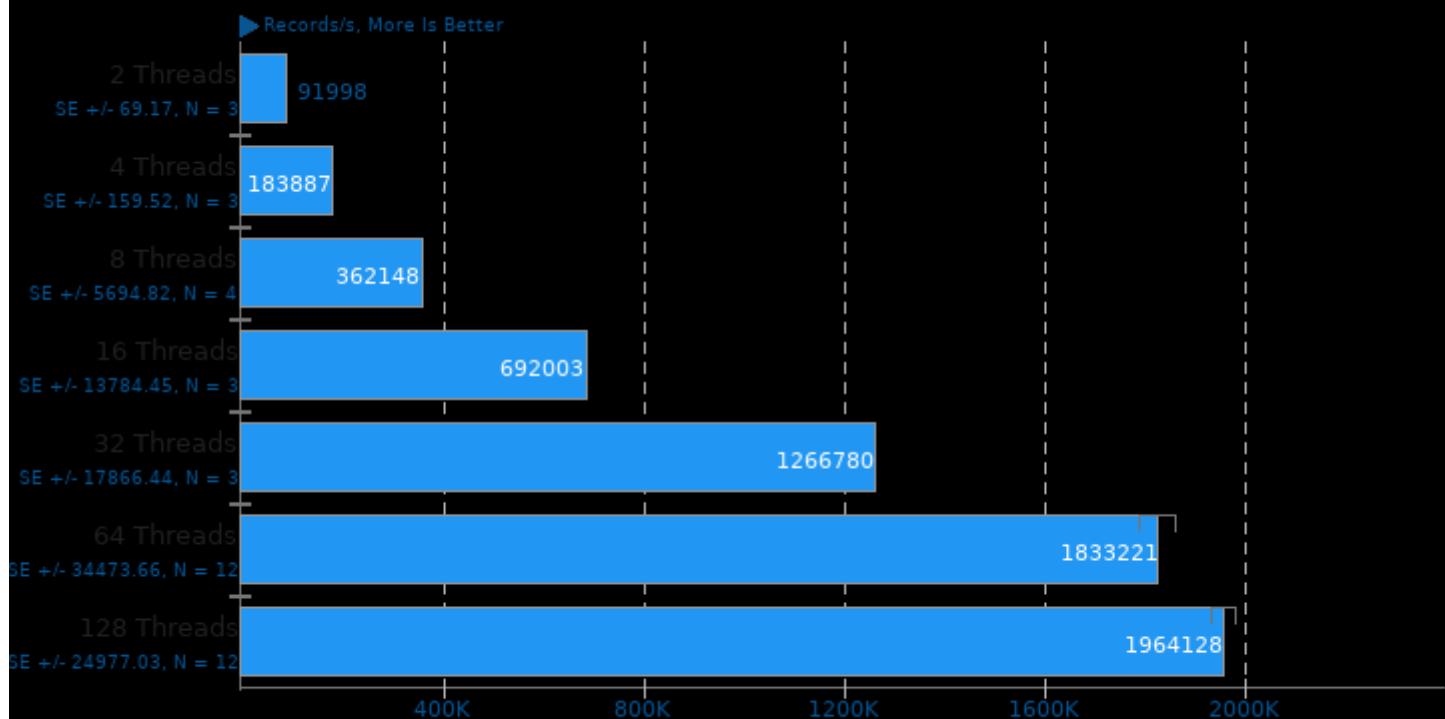
1. (CXX) g++ options: -m64 -lpthread -fno-exceptions -std=c++11 -pedantic -O3 -msse -msse3 -mpopcnt -fno-

asmFish 2017-09-19

1024 Hash Memory, 26 Depth



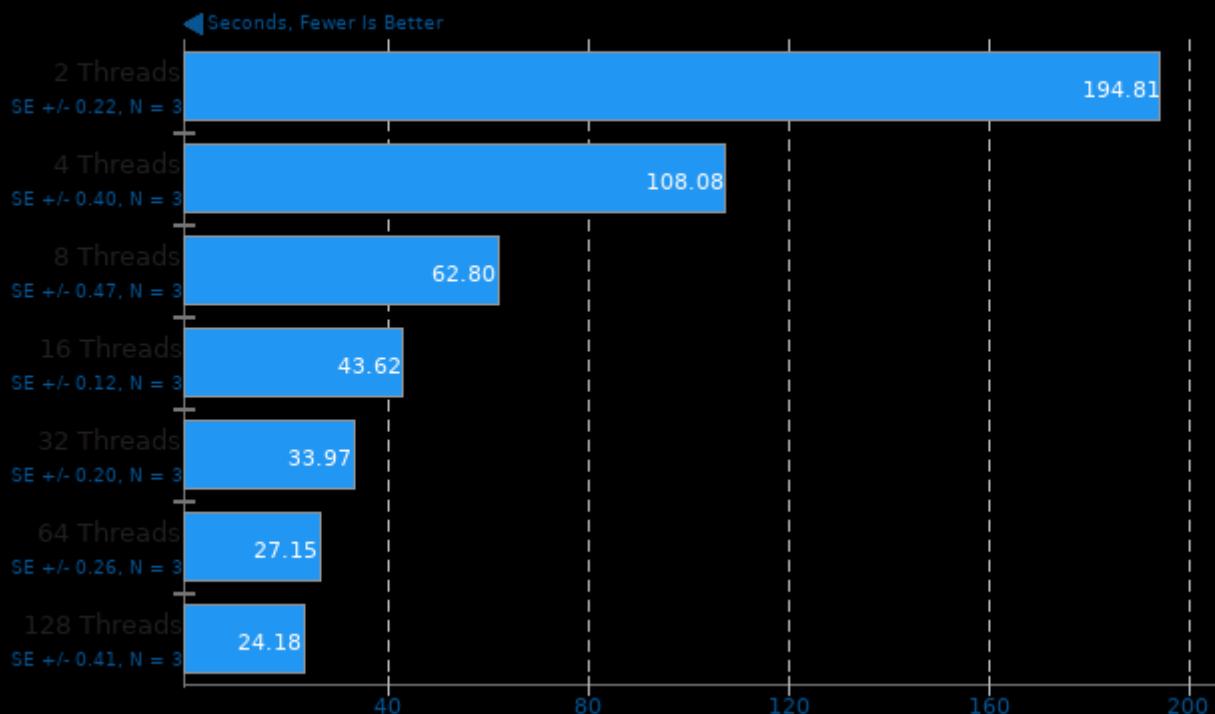
ebizzy 0.3



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

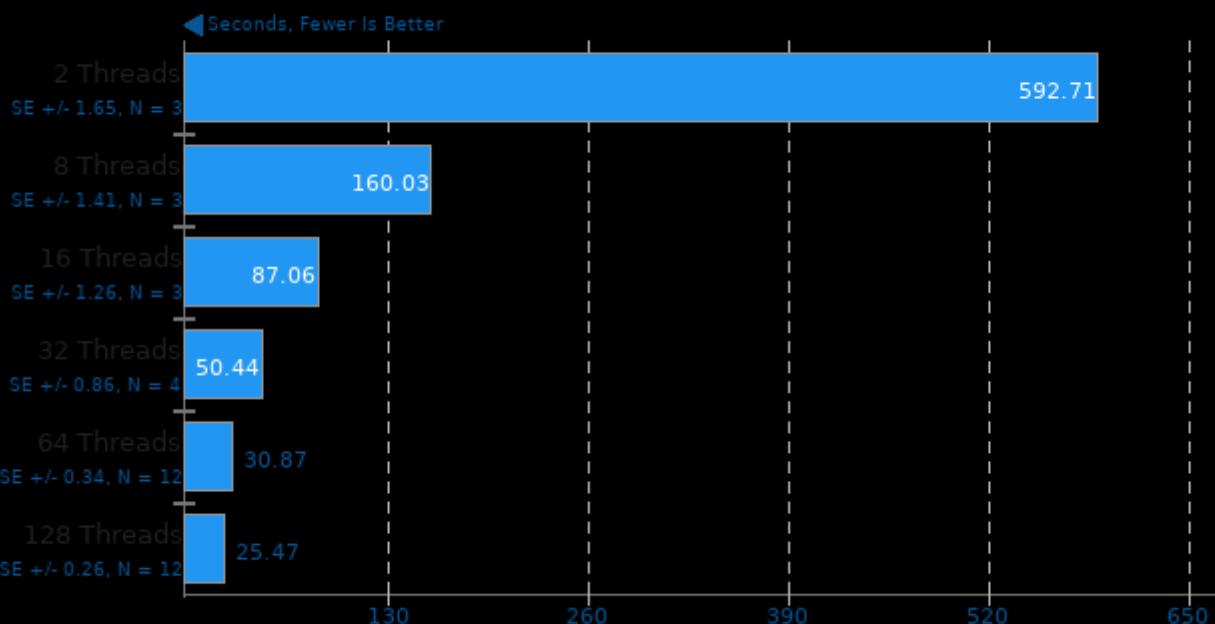
Timed ImageMagick Compilation 6.9.0

Time To Compile



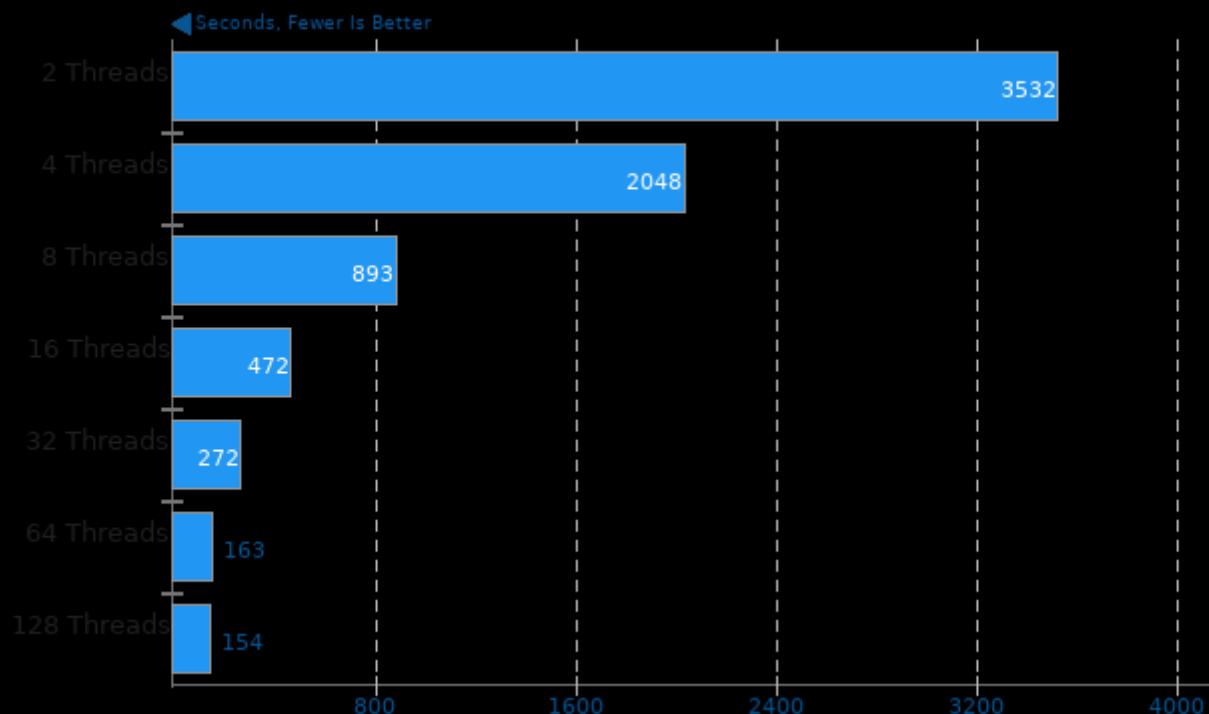
Timed Linux Kernel Compilation 4.18

Time To Compile



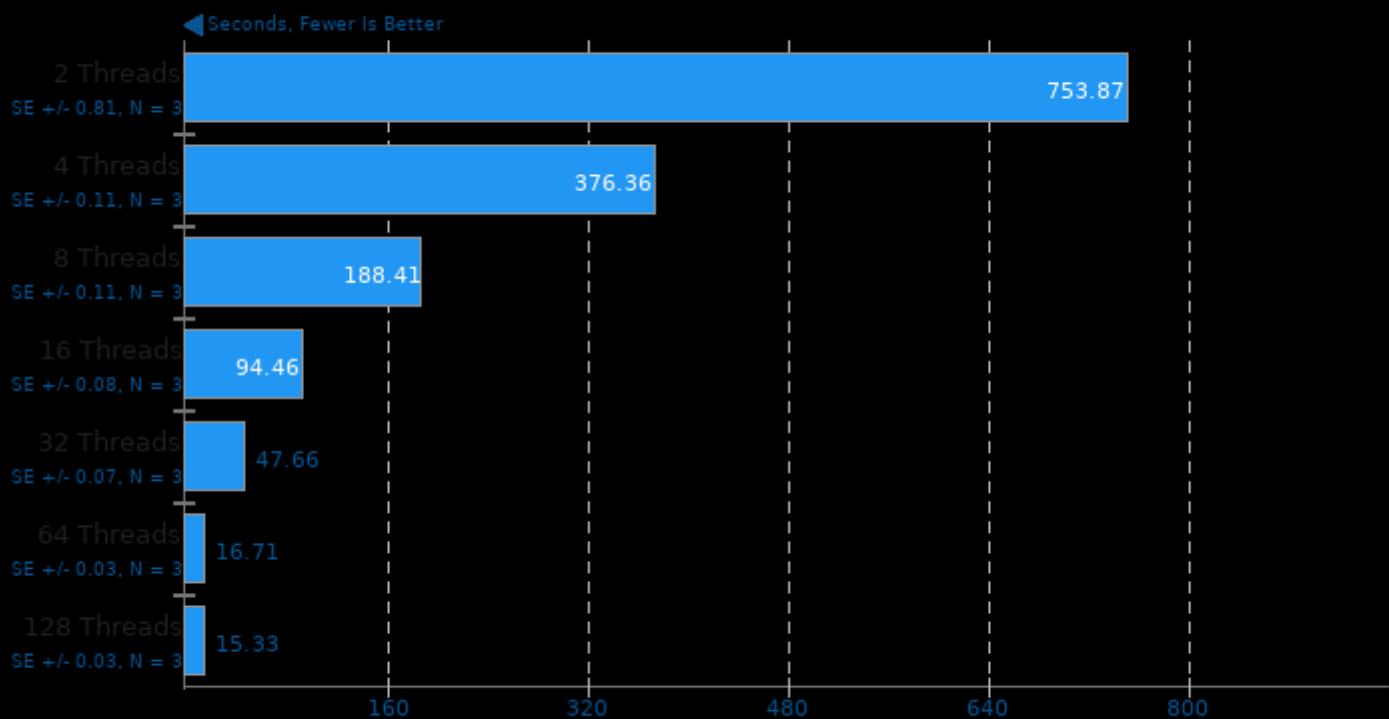
Timed LLVM Compilation 6.0.1

Time To Compile



C-Ray 1.1

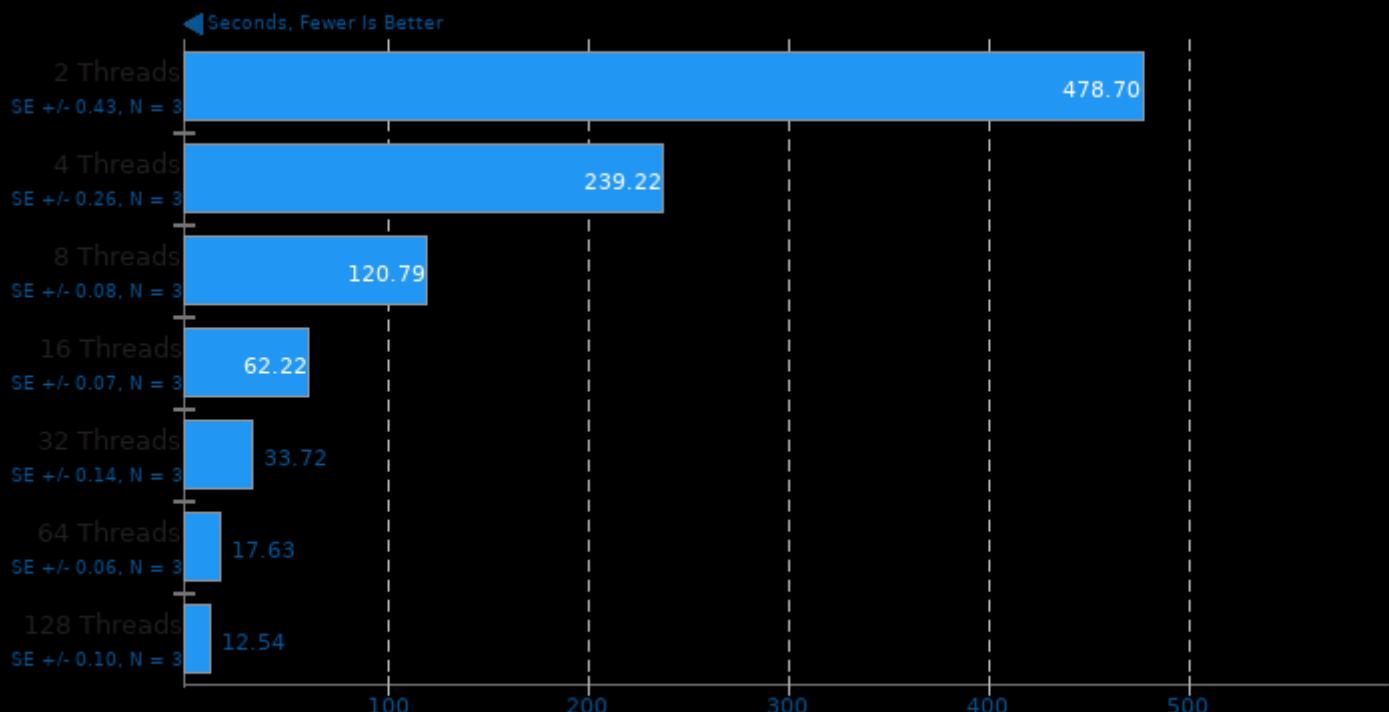
Total Time - 4K, 16 Rays Per Pixel



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

POV-Ray 3.7.0.7

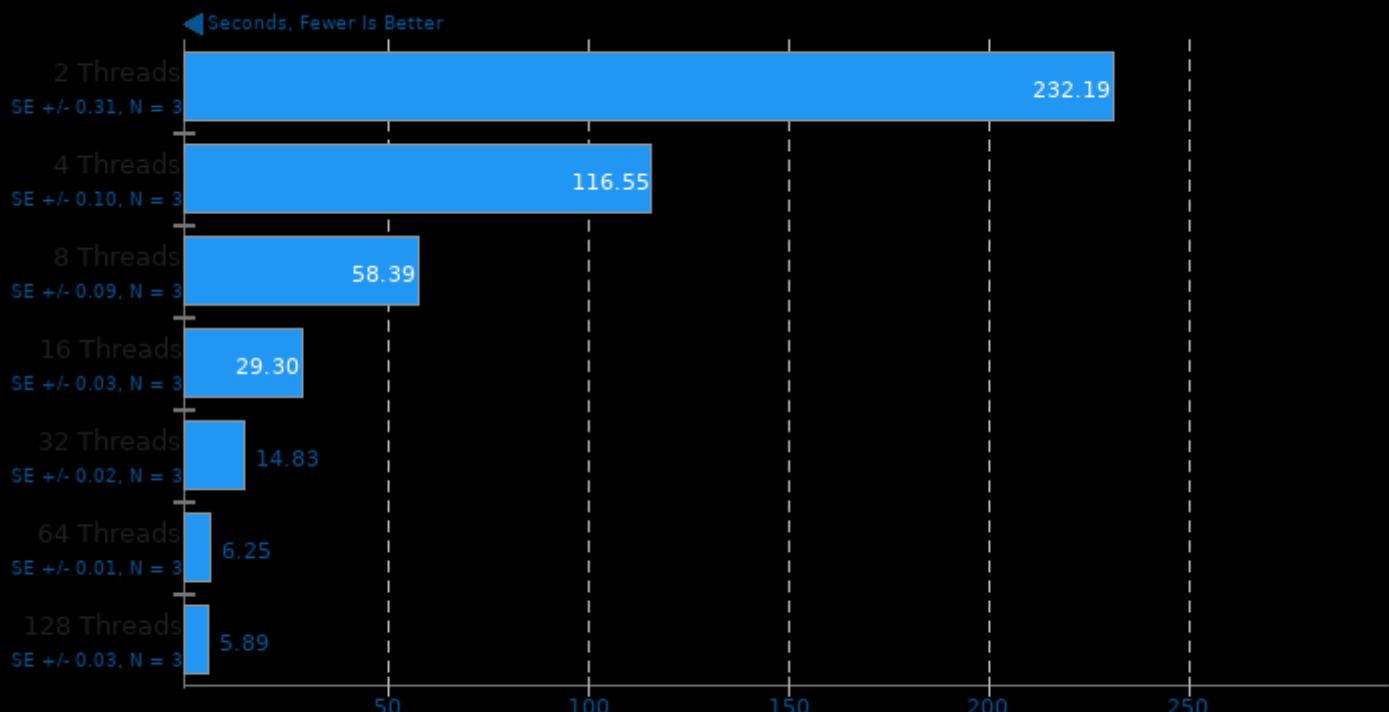
Trace Time



1. (CXX) g++ options: -pipe -O3 -ffast-math -march=native -pthread -fSDLC -fSM -fICE -fX11 -fImlmf -fImath -fHalf -fLex -fLexMath -fImlThread -fpthre

Primesieve 7.1

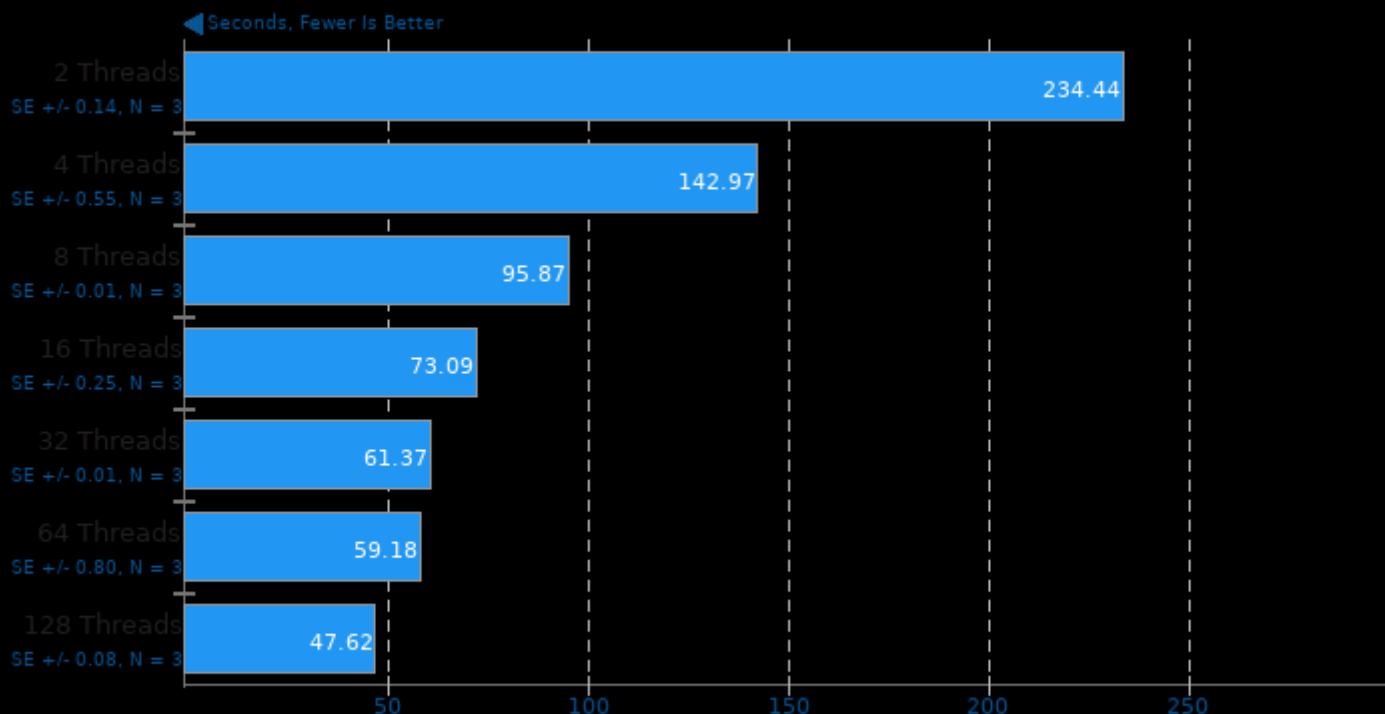
1e12 Prime Number Generation



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

Rust Mandelbrot

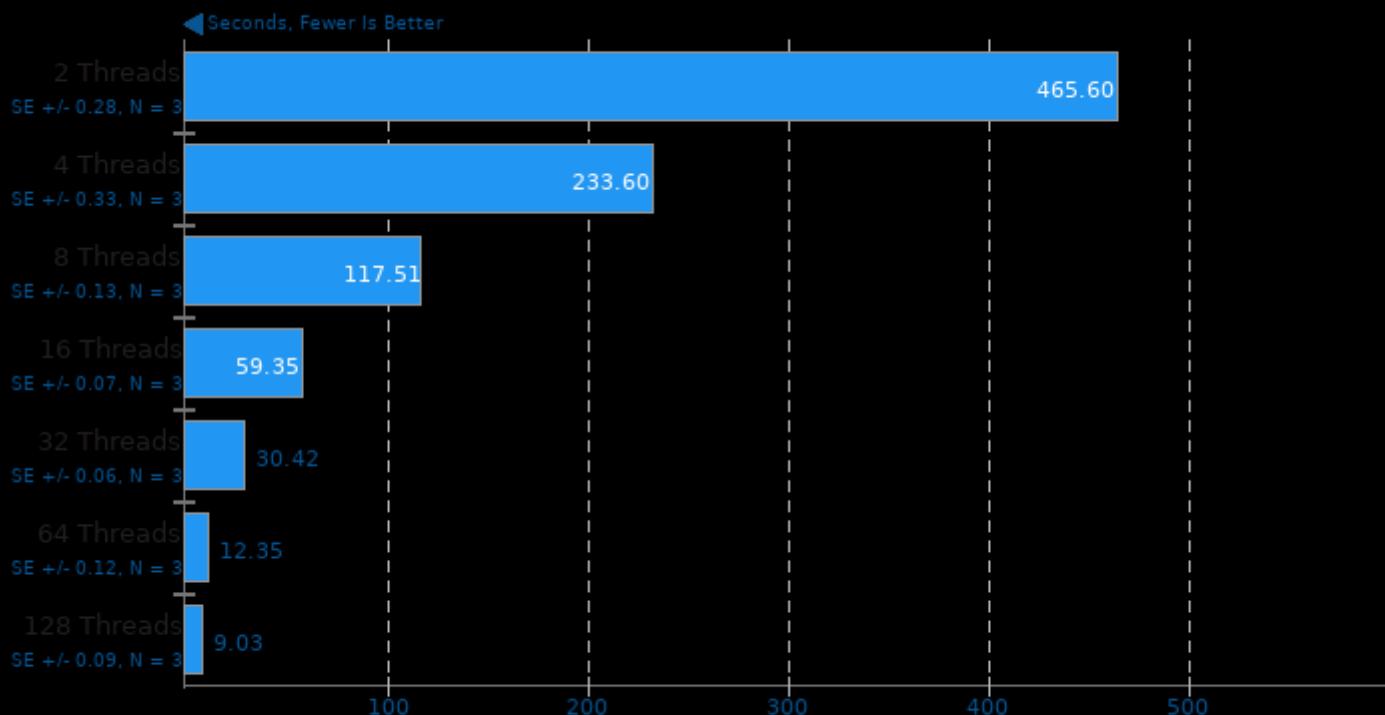
Time To Complete Serial/Parallel Mandelbrot



1. (CC) gcc options: -m64 -pie -nodefaultlibs

Smallpt 1.0

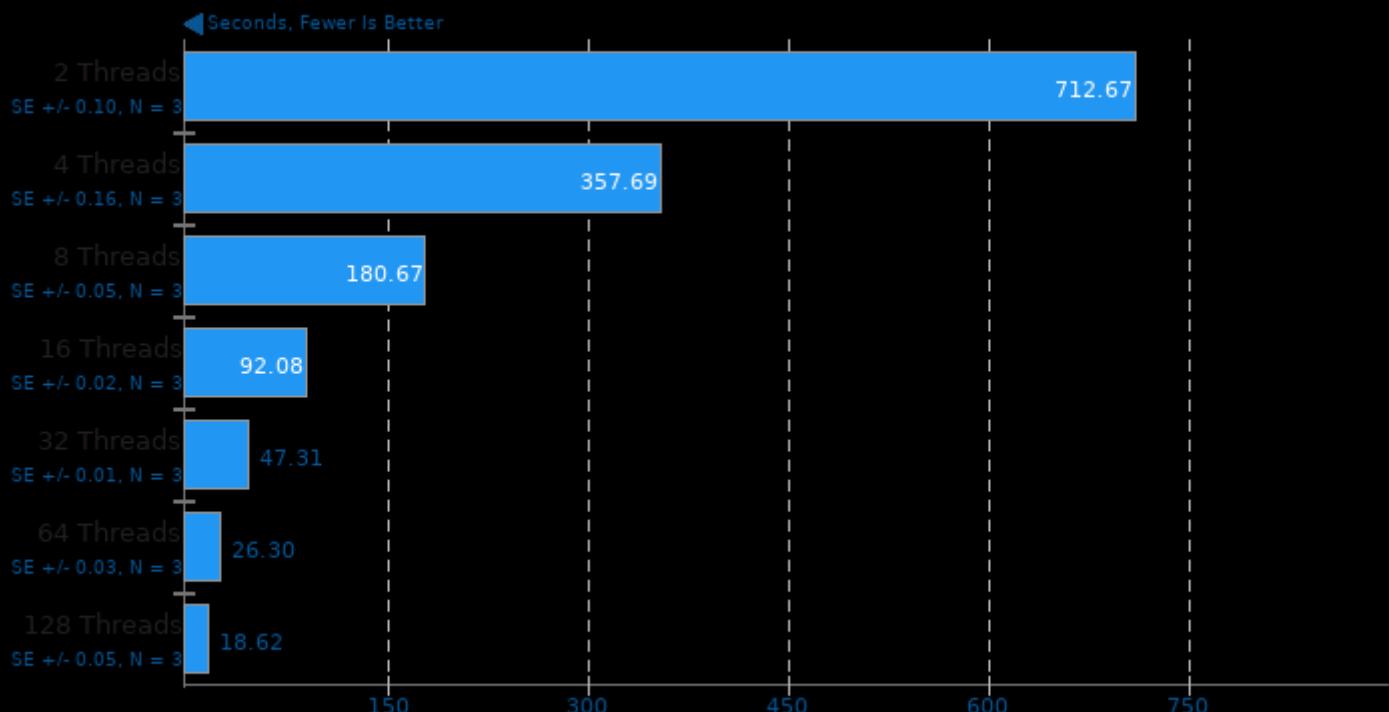
Global Illumination Renderer; 128 Samples



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

m-queens 1.1

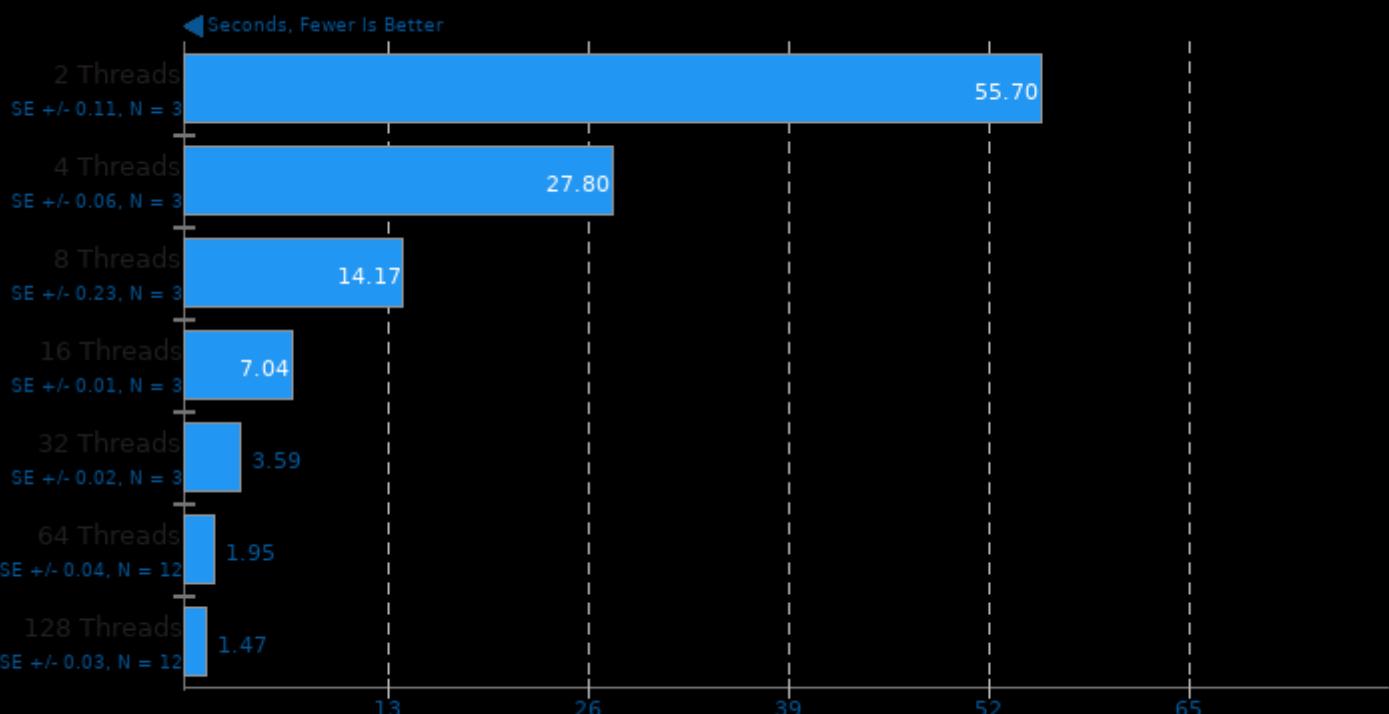
Time To Solve



1. (CXX) g++ options: -fopenmp -O2 -march=native

Tachyon 0.98.9

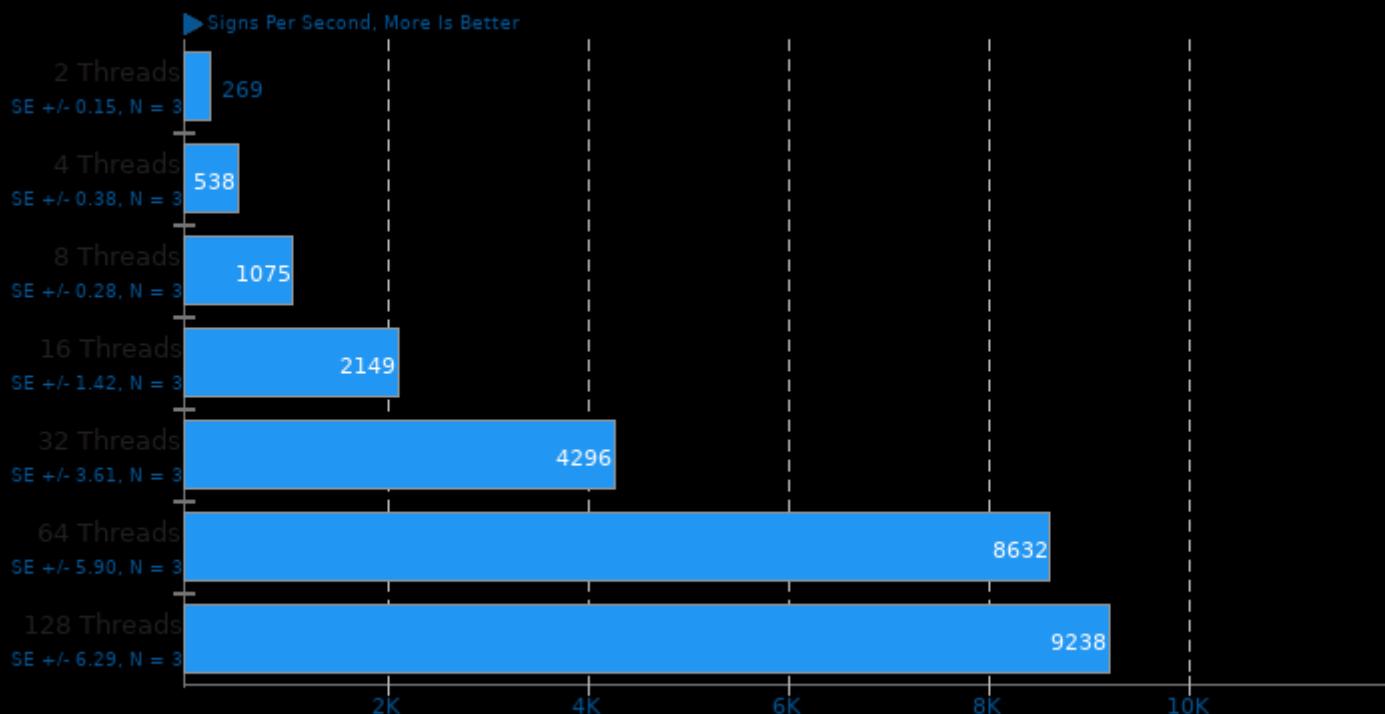
Total Time



1. (CC) gcc options: -m32 -O3 -fomit-frame-pointer -ffast-math -ltachyon -lm -lpthread

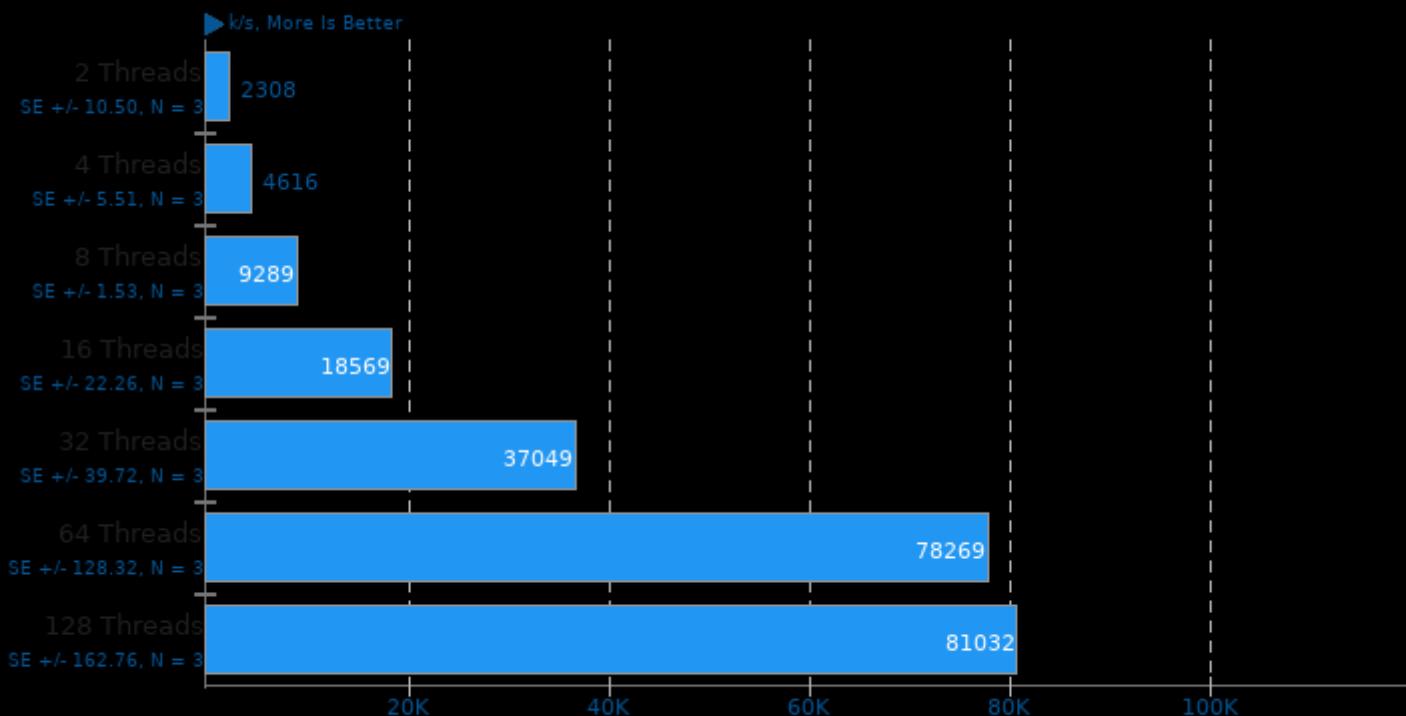
OpenSSL 1.1.1

RSA 4096-bit Performance



1. (CC) gcc options: -pthread -m64 -O3 -lssl -lcrypto -ldl

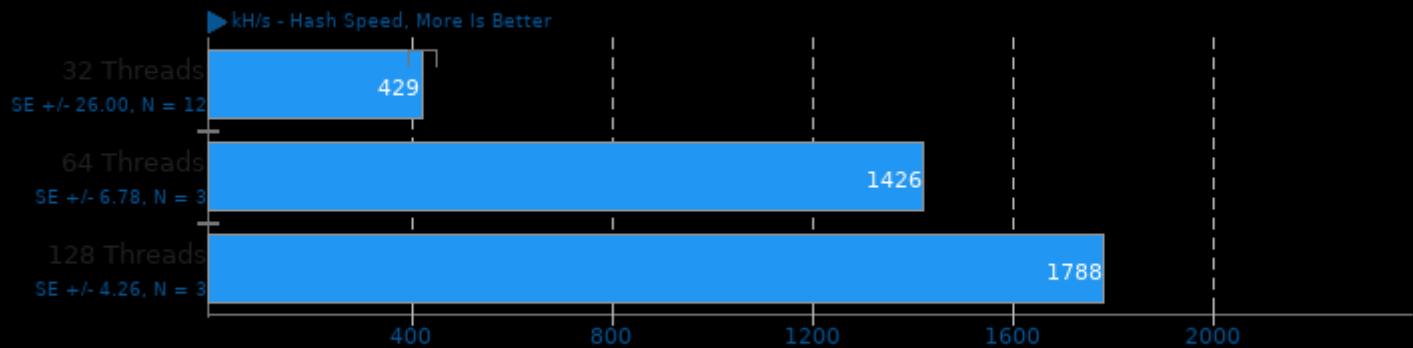
Aircrack-ng 1.3



1. (CXX) g++ options: -O3 -fvisibility=hidden -masm=intel -pthread -lcrypto -lz -ldl -lm -pthread

Cpuminer-Opt 3.8.8.1

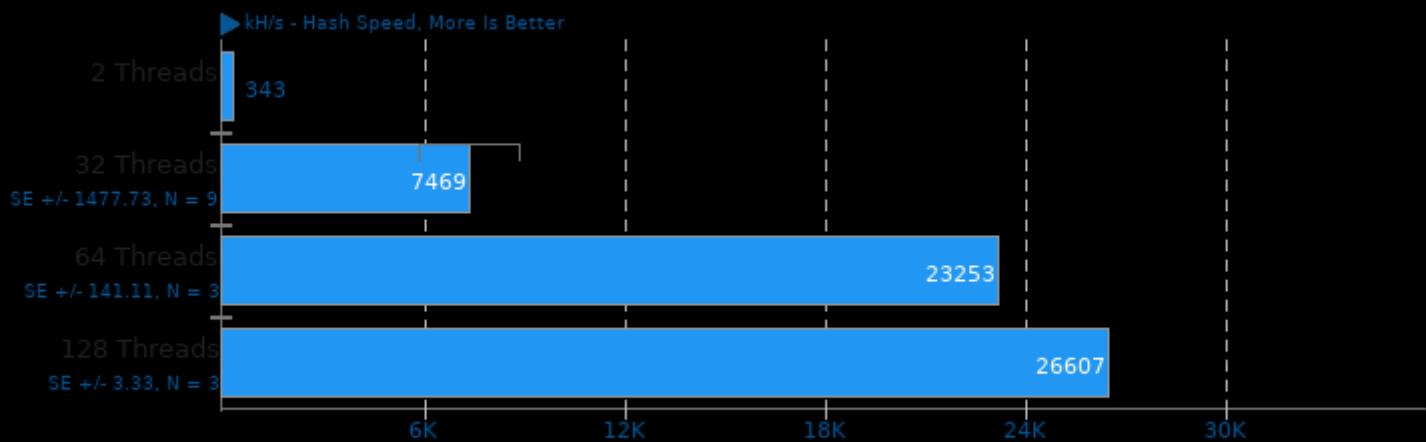
Algorithm: m7m



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

Cpuminer-Opt 3.8.8.1

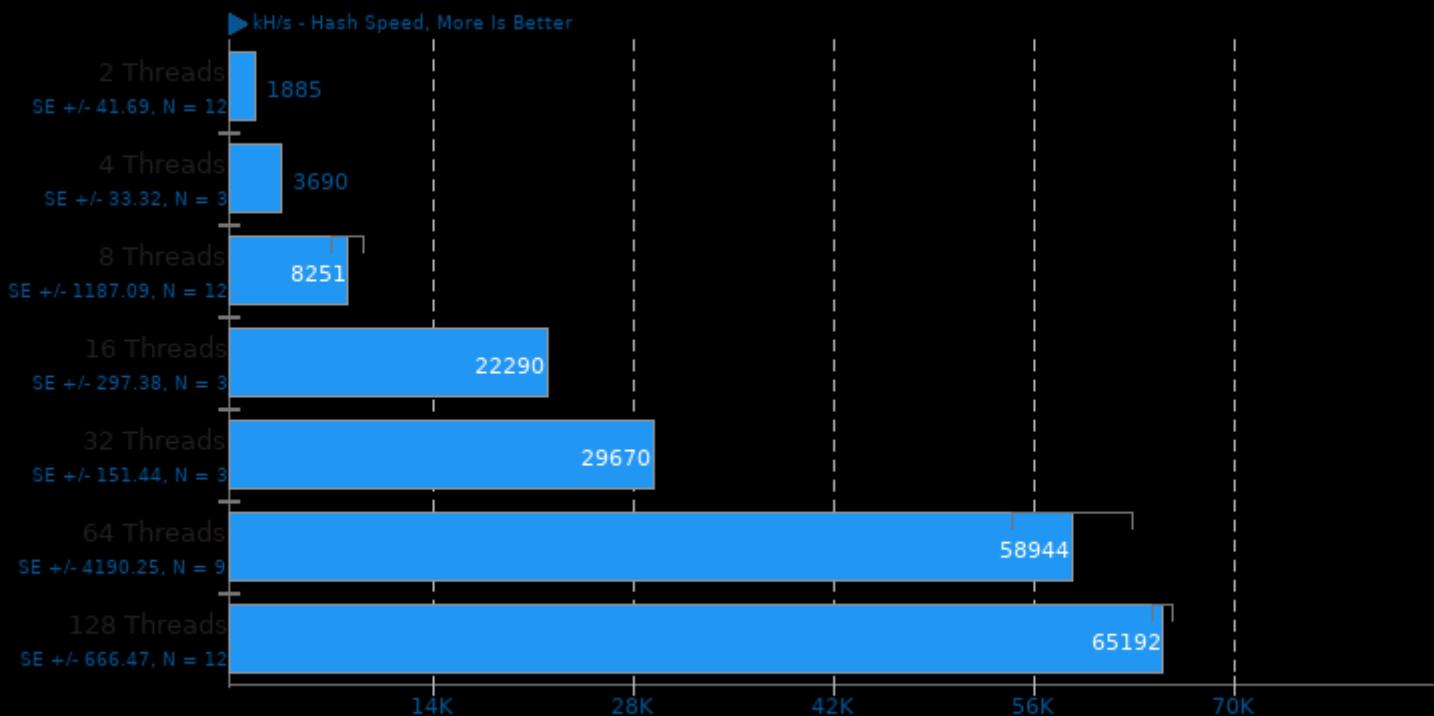
Algorithm: deep



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

Cpuminer-Opt 3.8.8.1

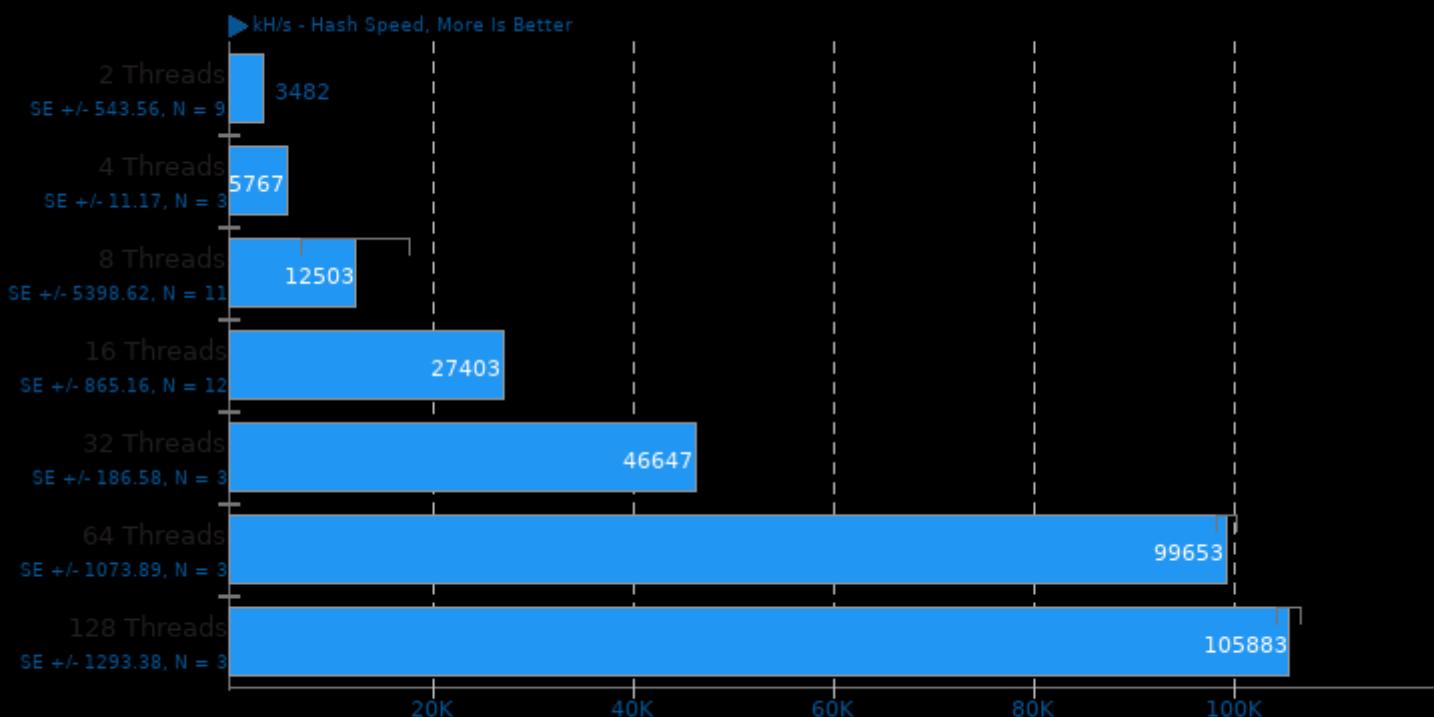
Algorithm: lbry



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

Cpuminer-Opt 3.8.8.1

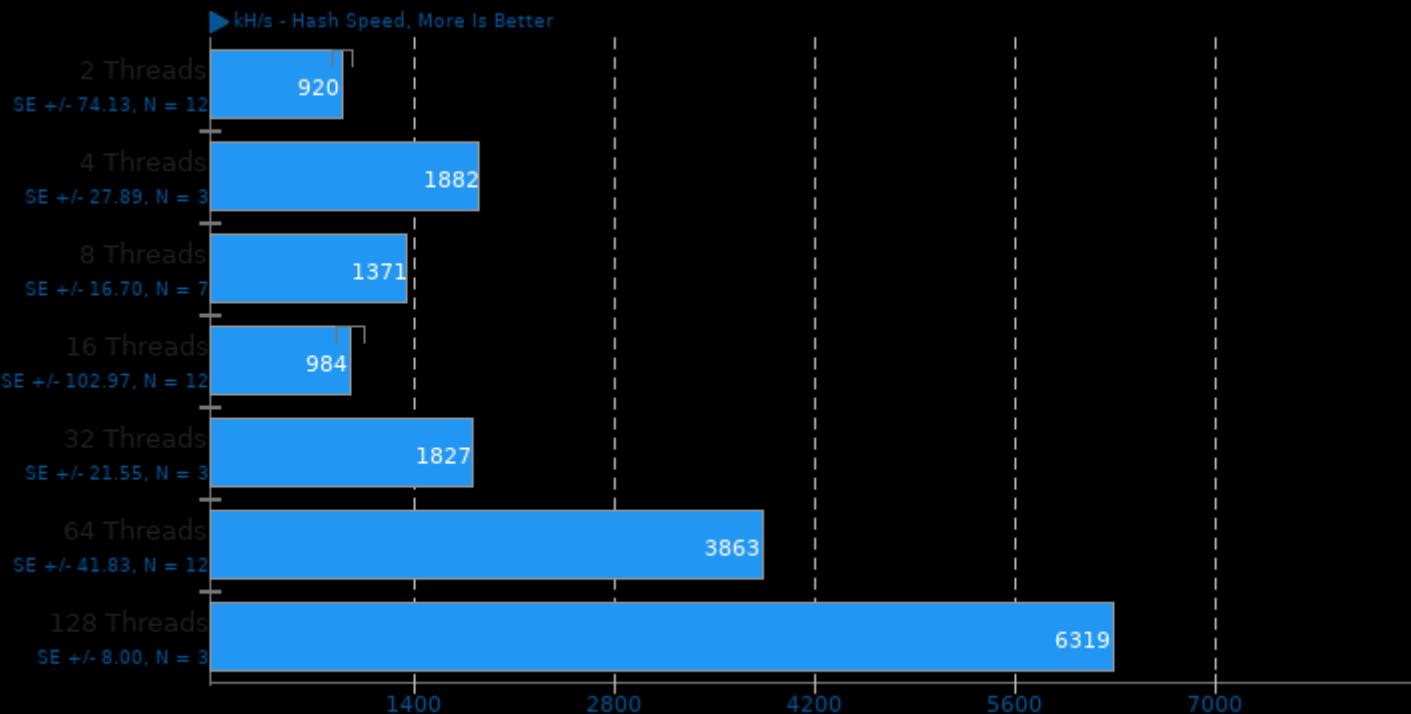
Algorithm: skein



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

Cpuminer-Opt 3.8.8.1

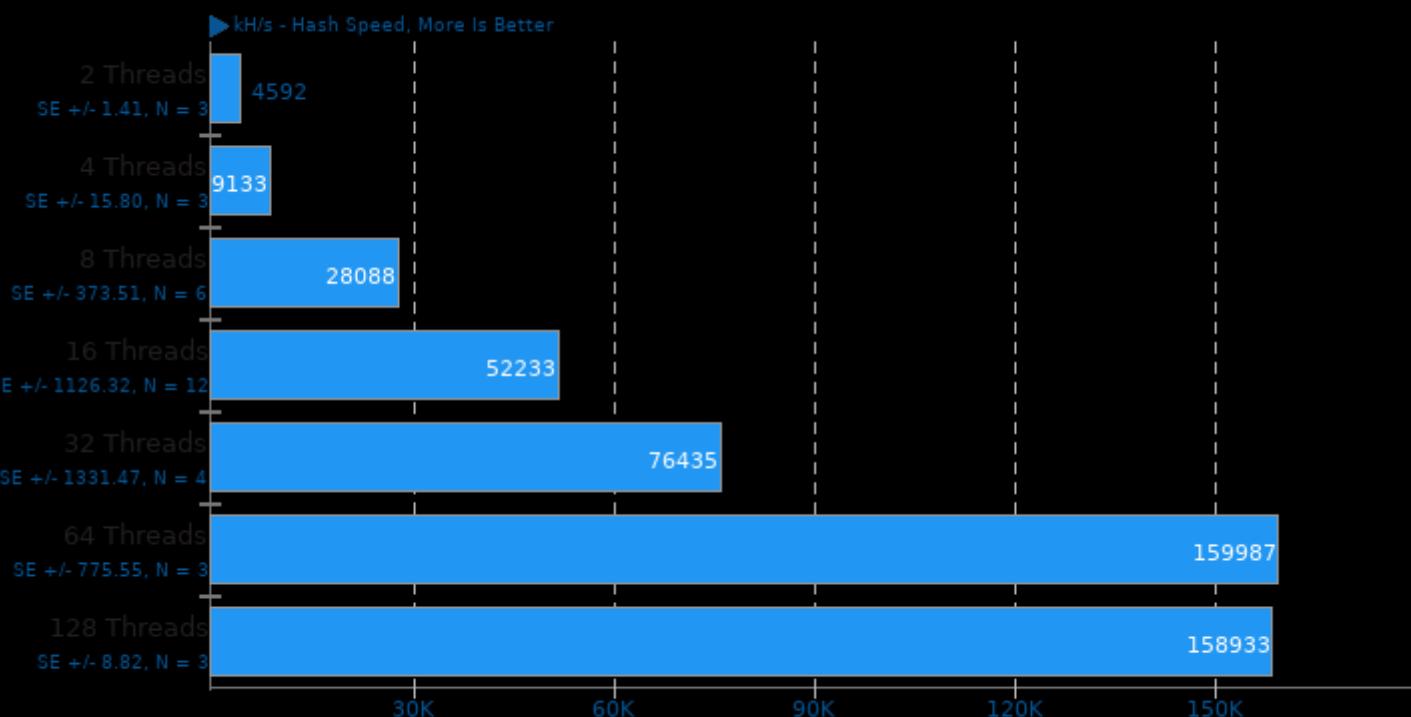
Algorithm: myr-gr



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

Cpuminer-Opt 3.8.8.1

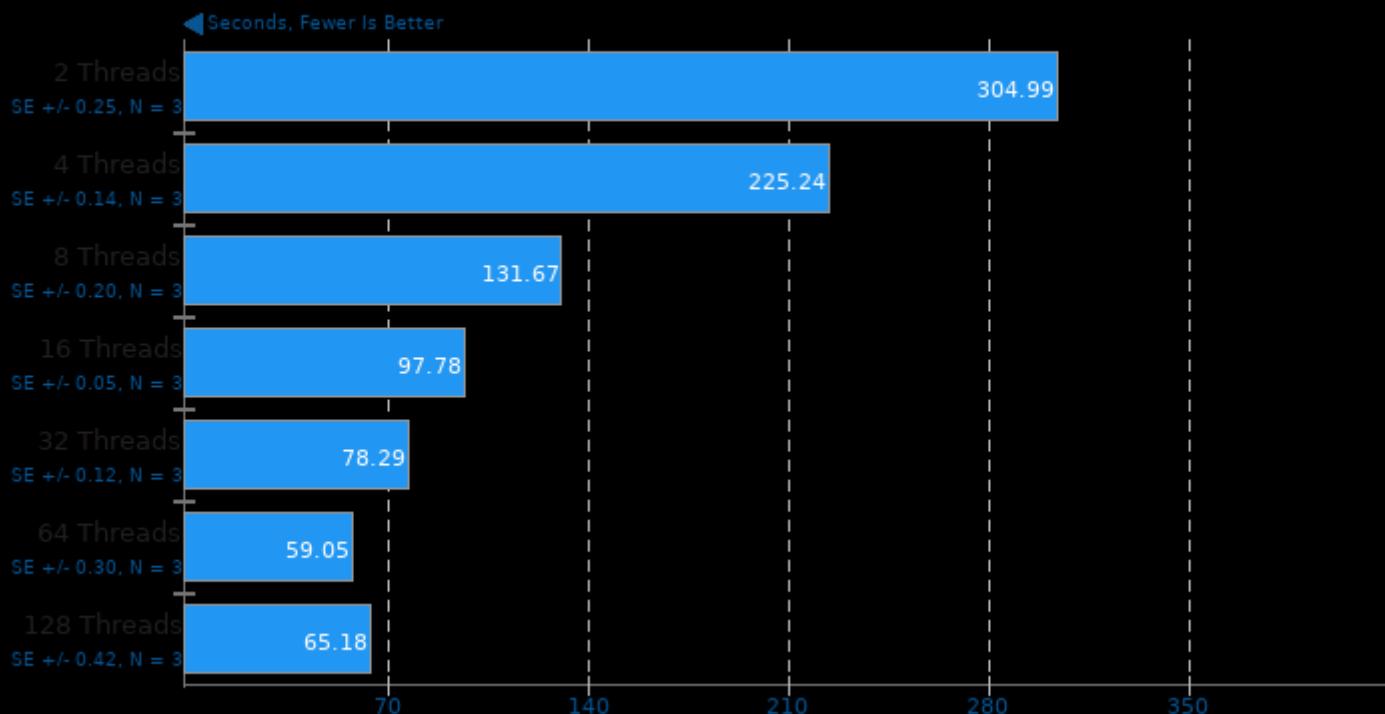
Algorithm: sha256t



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

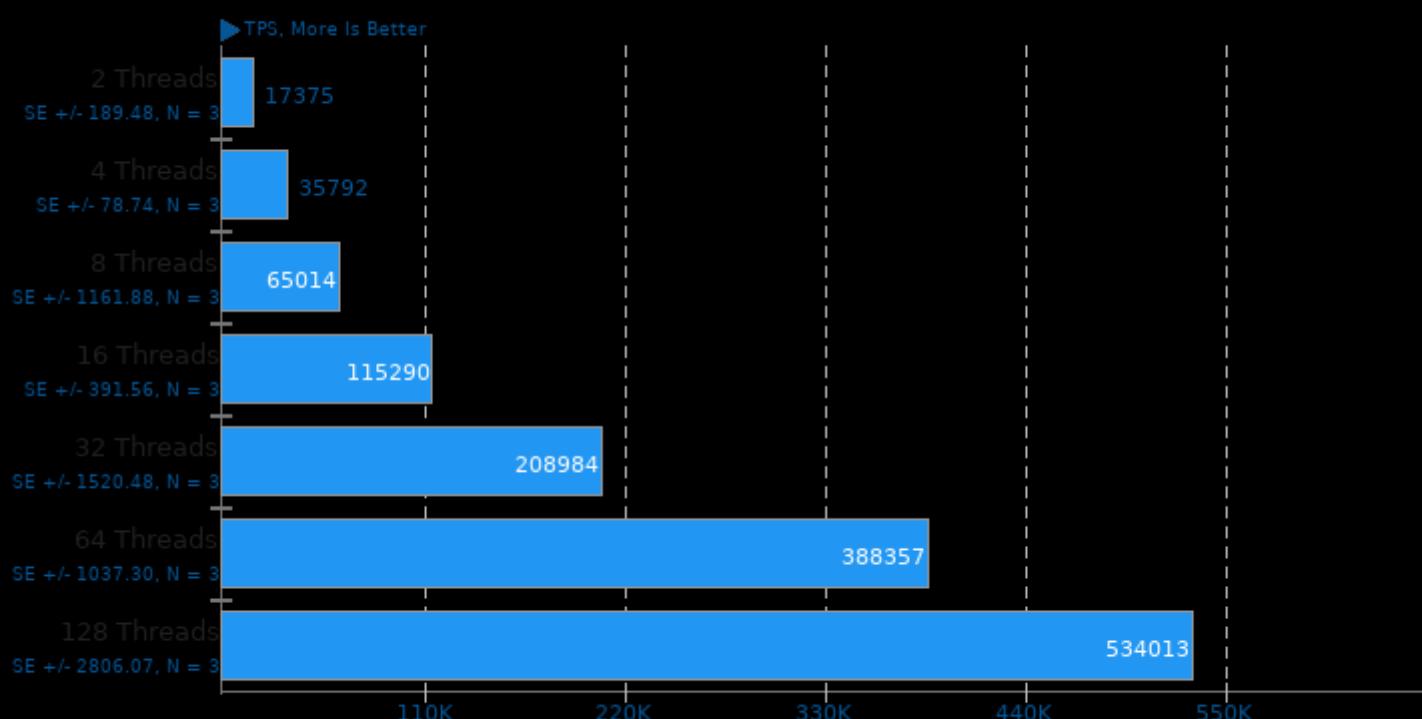
Tensorflow 2017-02-03

Build: Cifar10



PostgreSQL pgbench 10.3

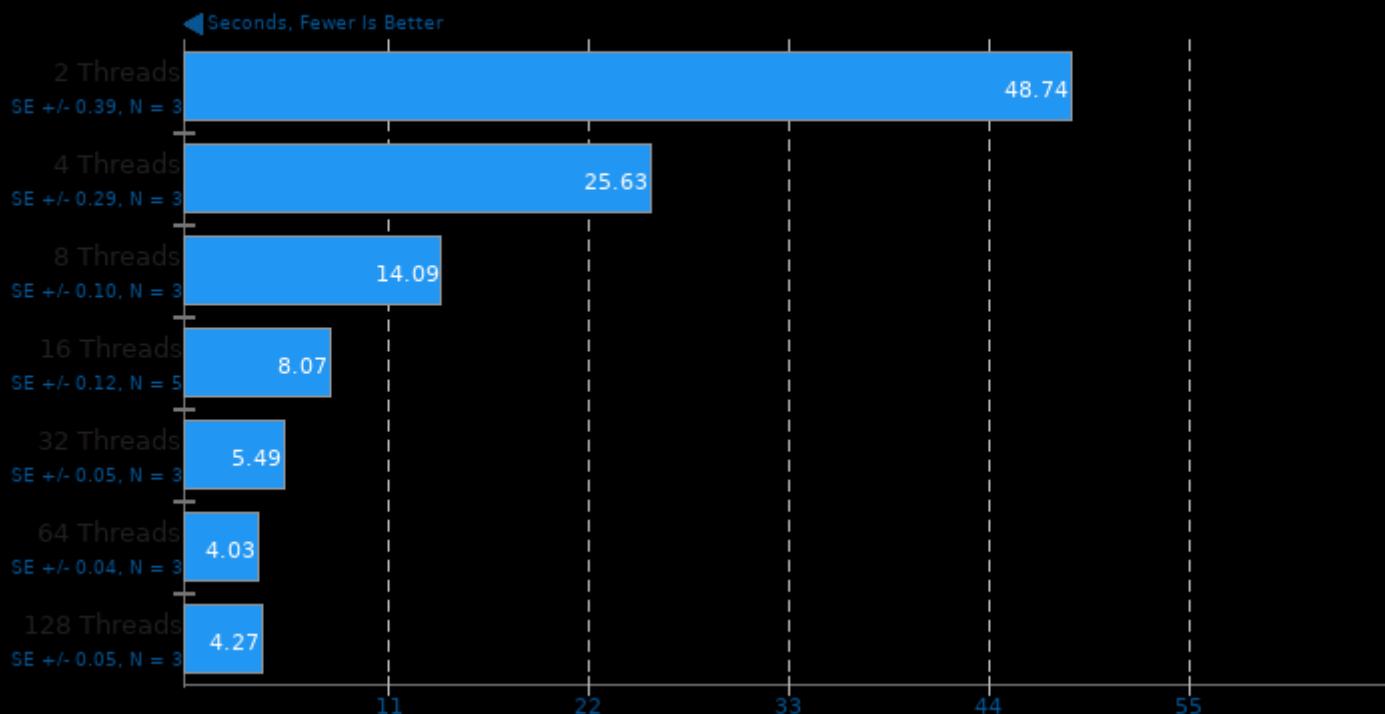
Scaling: Buffer Test - Test: Normal Load - Mode: Read Only



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -pthread -lrt -lcrypt -ldl -lm

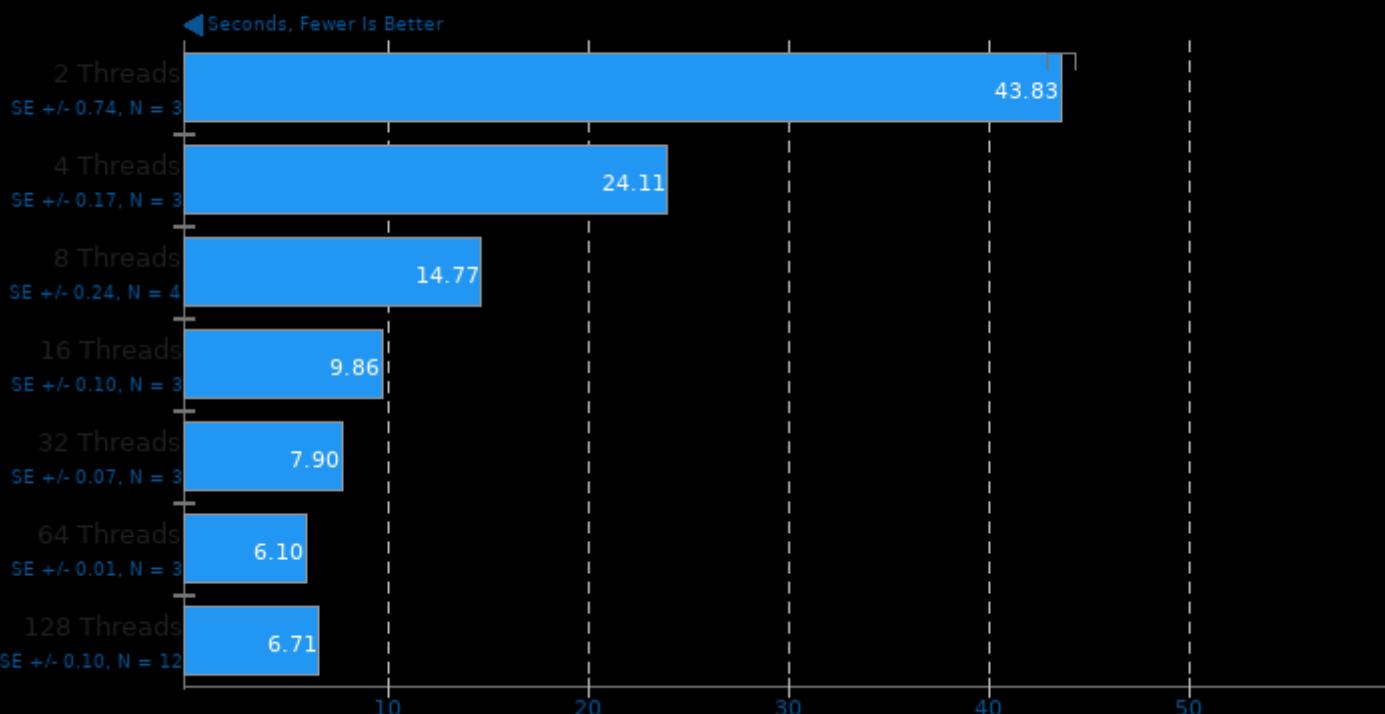
Darktable 2.4.2

Test: Boat - Acceleration: CPU-only



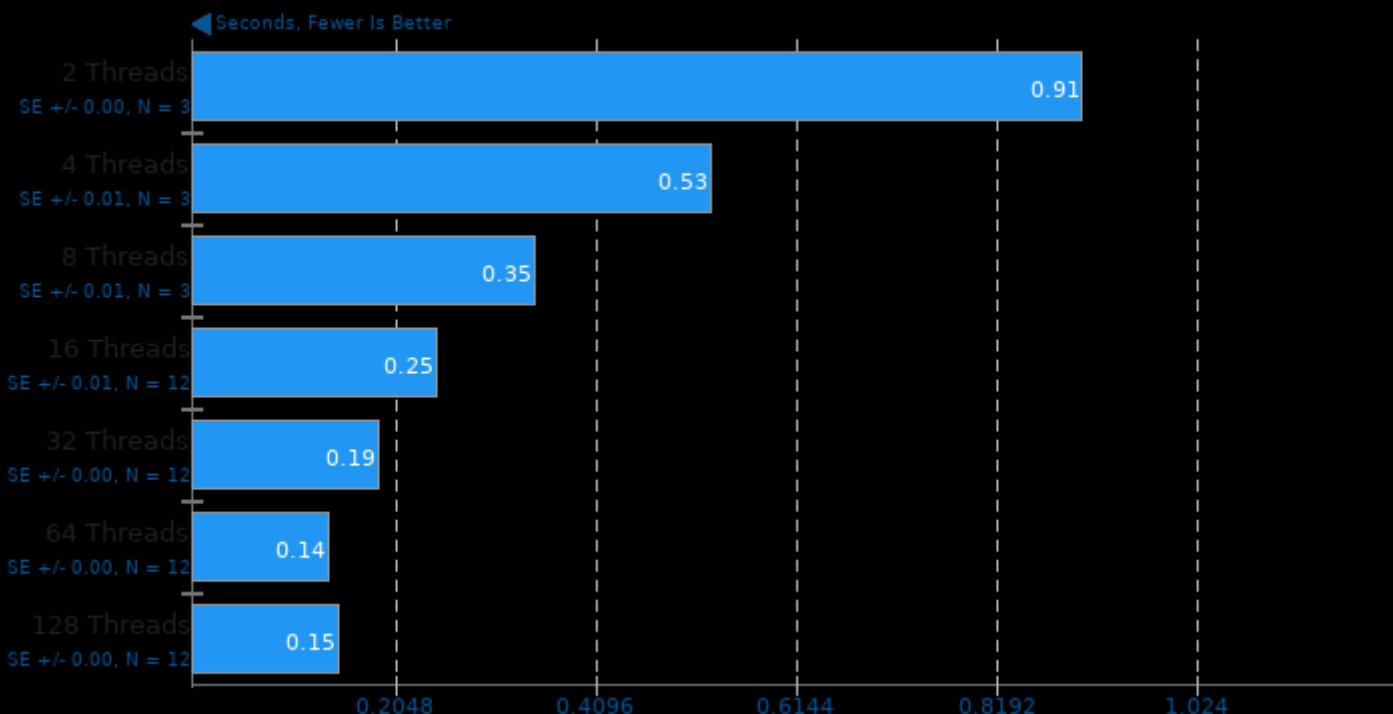
Darktable 2.4.2

Test: Masskrug - Acceleration: CPU-only



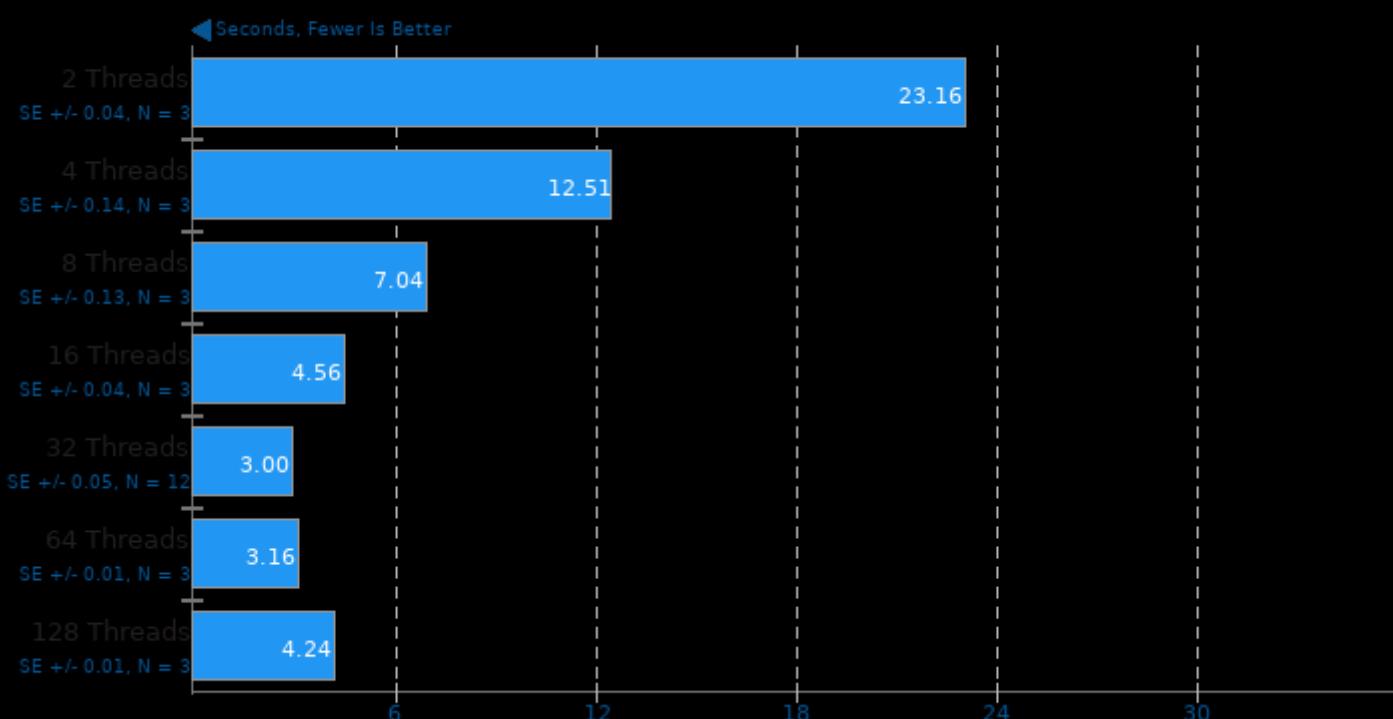
Darktable 2.4.2

Test: Server Rack - Acceleration: CPU-only



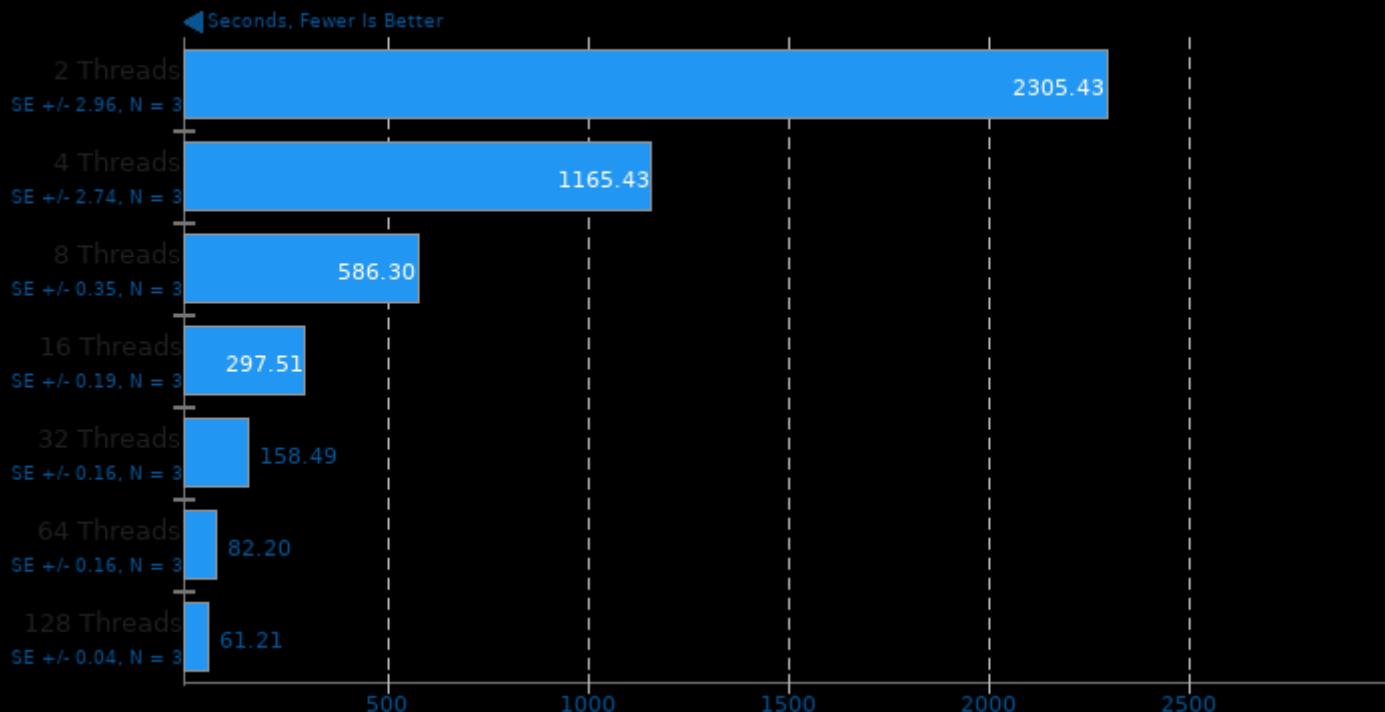
Darktable 2.4.2

Test: Server Room - Acceleration: CPU-only



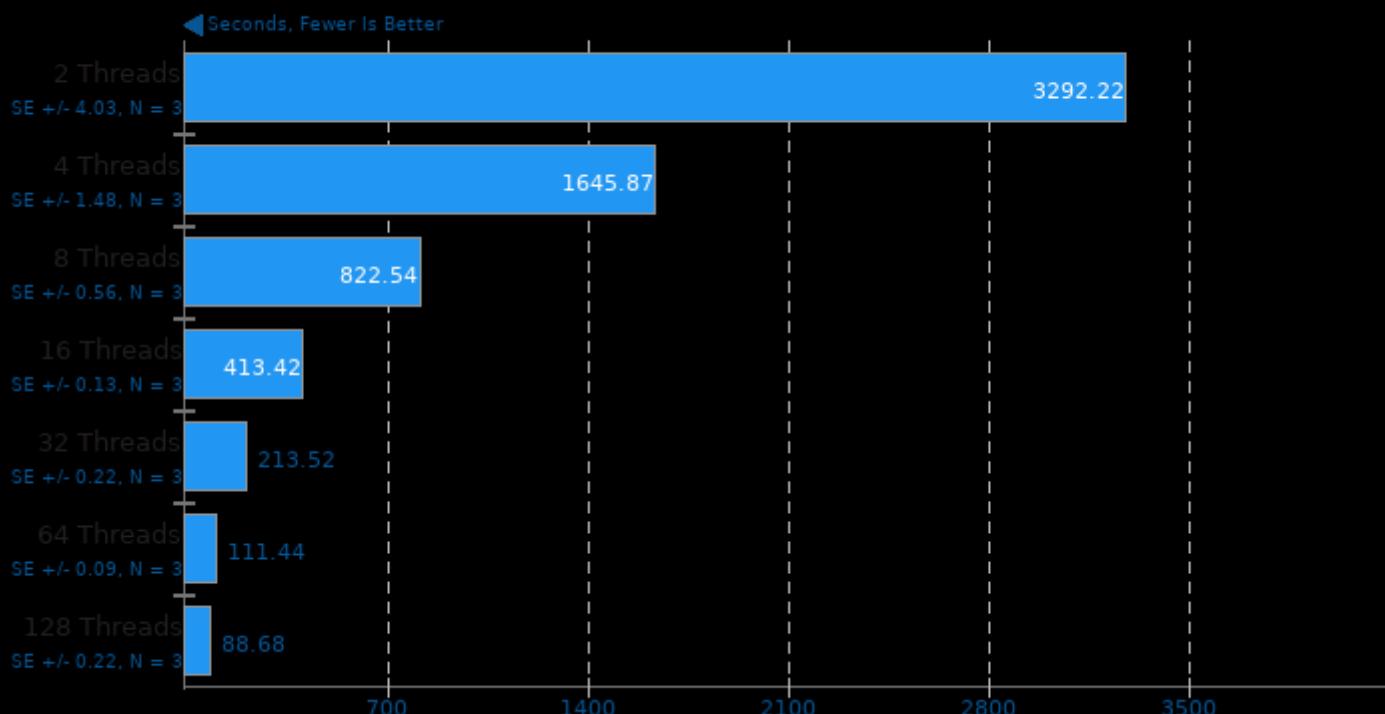
Blender 2.79

Blend File: BMW27 - Compute: CPU-Only



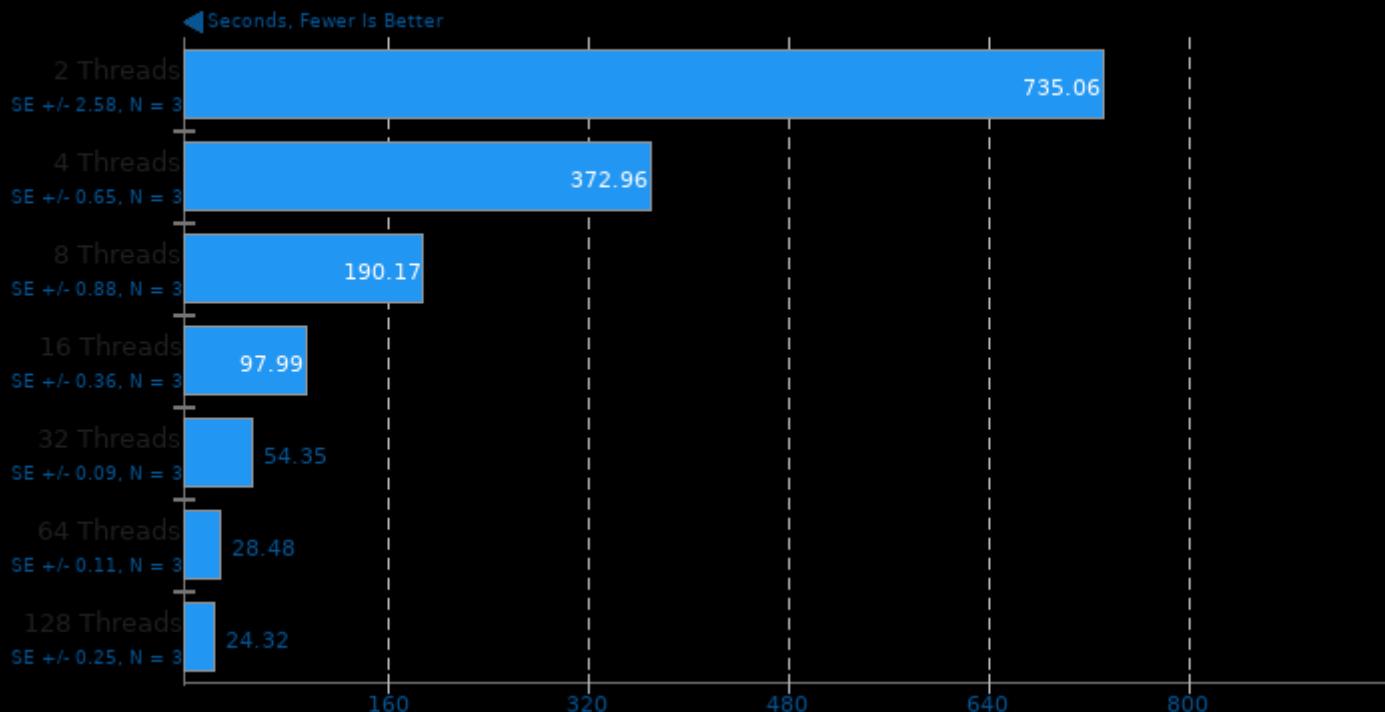
Blender 2.79

Blend File: Fishy Cat - Compute: CPU-Only



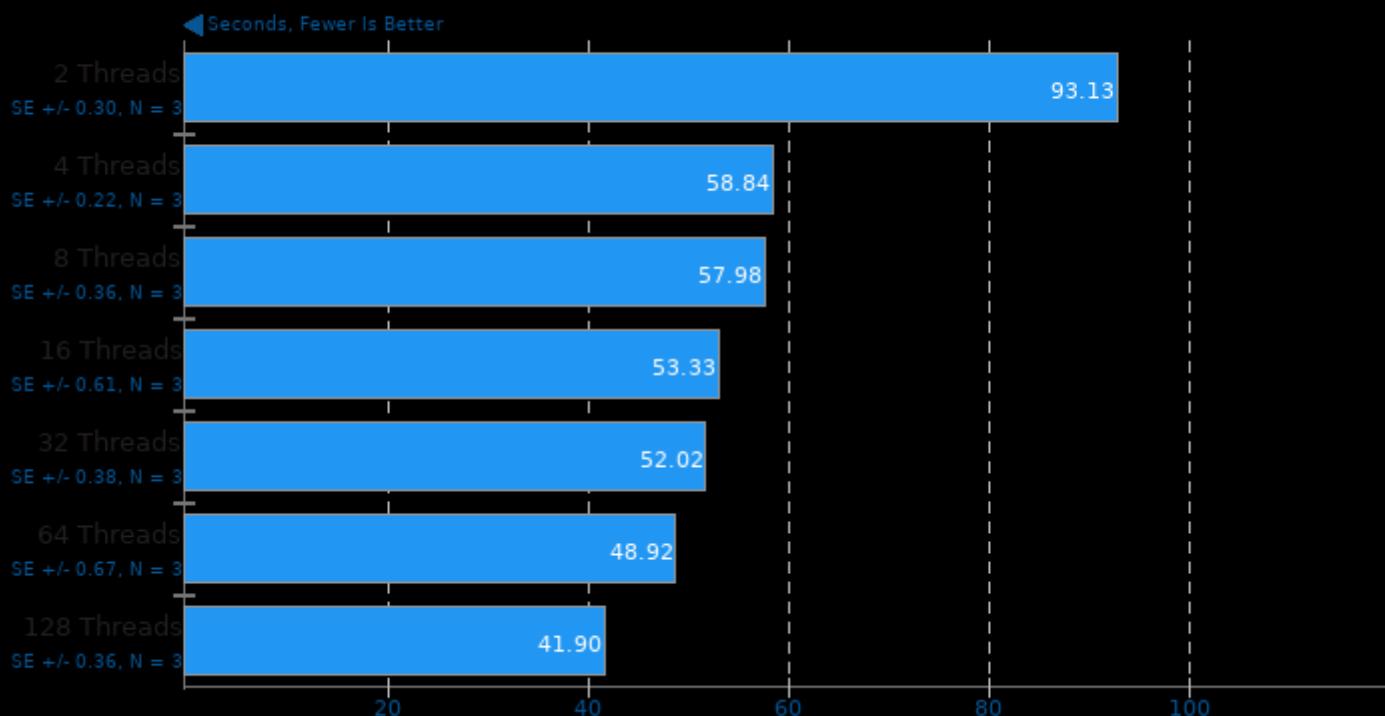
Chaos Group V-RAY 1.1.0

Mode: CPU



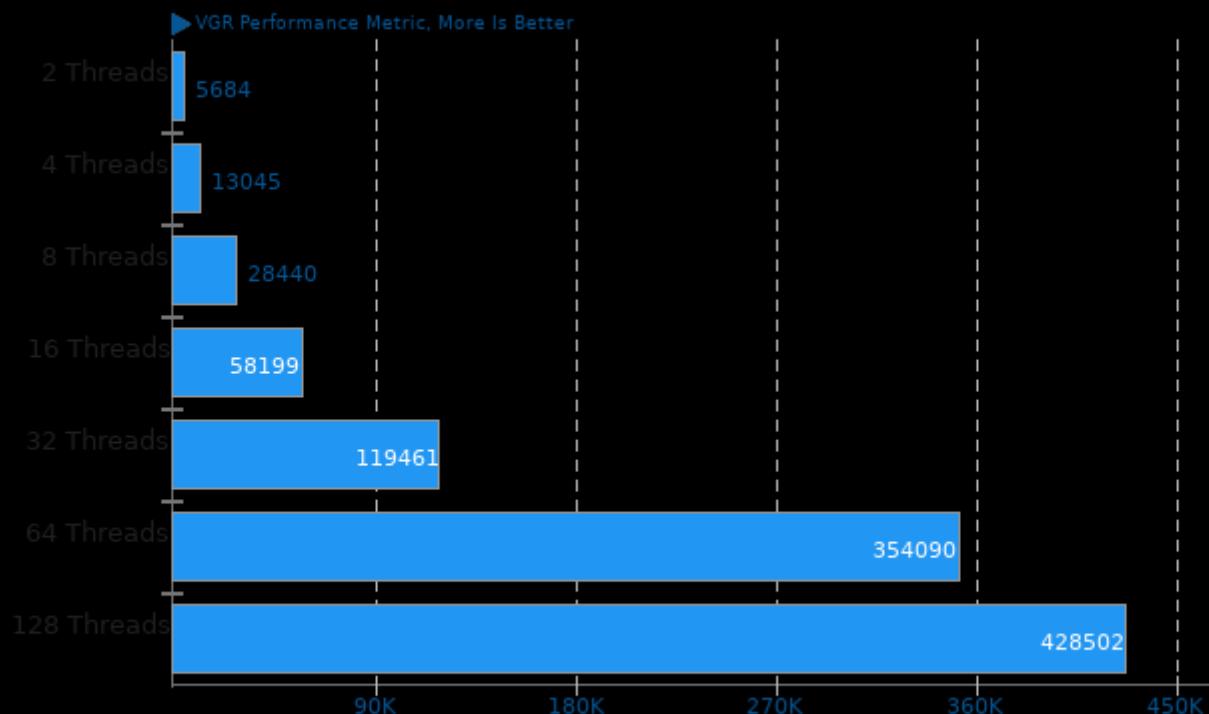
Tesseract OCR 4.0.0-beta.1

Time To OCR 7 Images



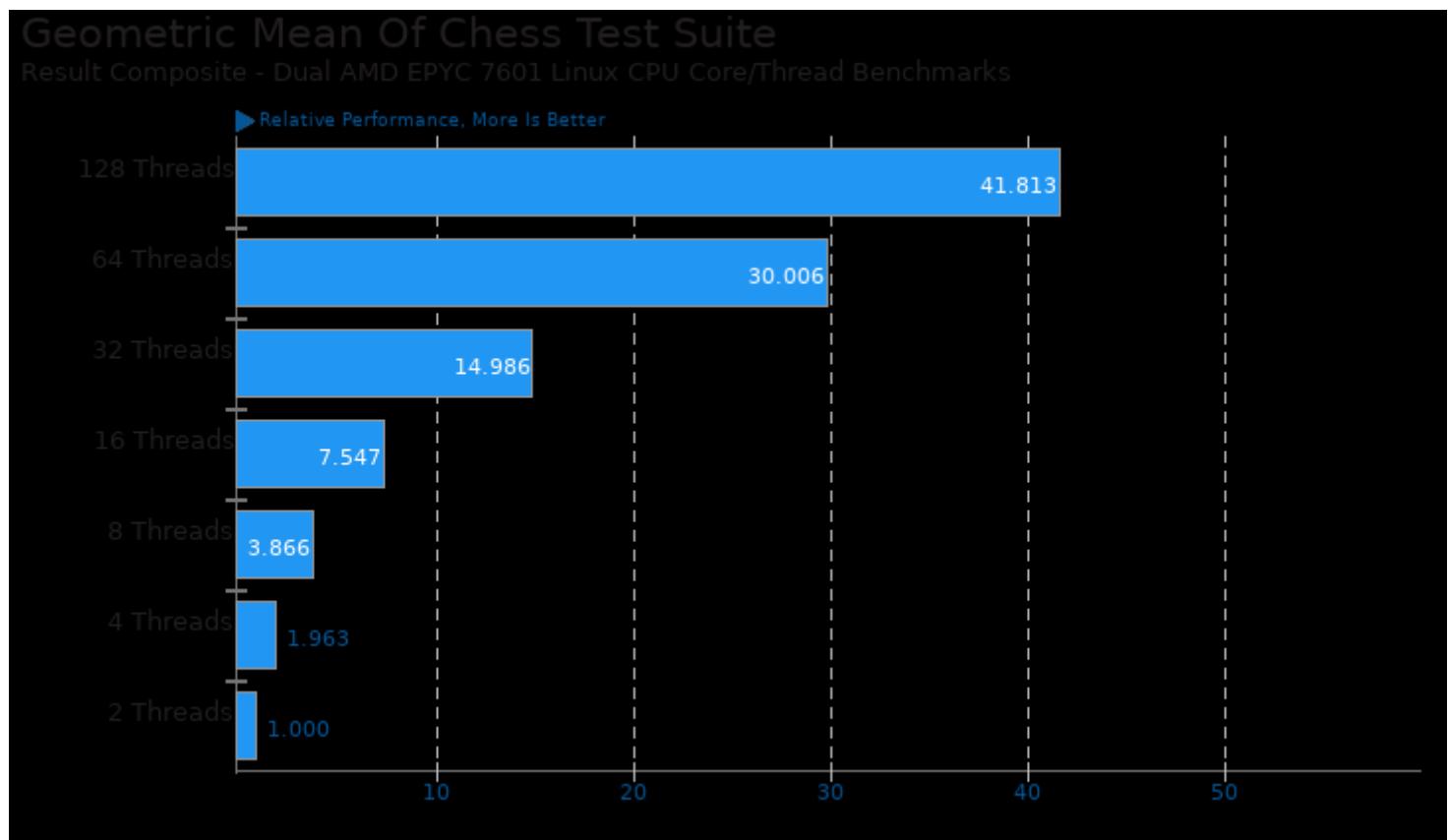
BRL-CAD 7.28.0

VGR Performance Metric

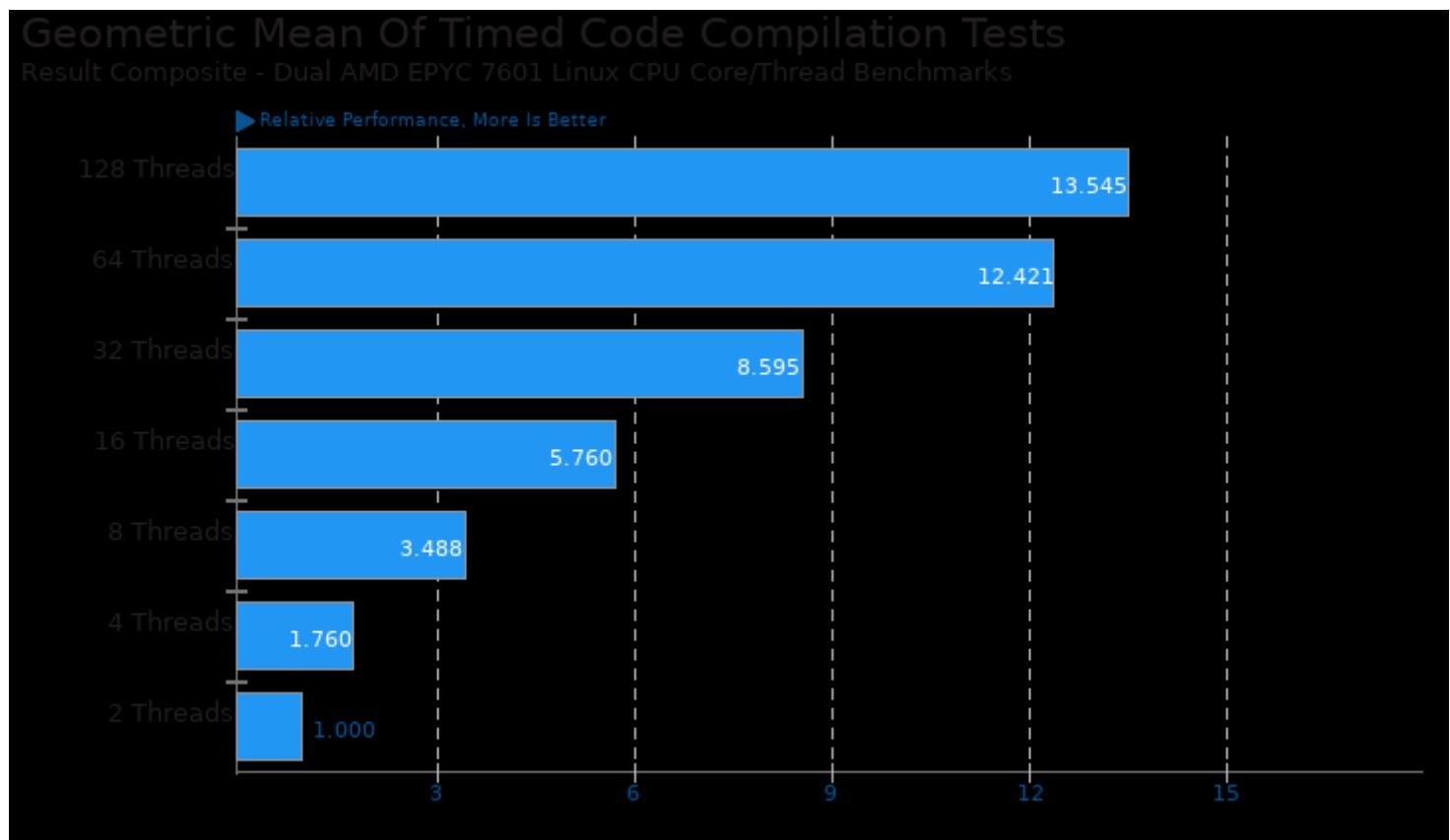


1. (CXX) g++ options: -std=c++98 -pipe -fno-strict-aliasing -fno-common -fexceptions -ftemplate-depth=128 -m64 -ggdb3 -O3 -fipa-pta -fstrength-reduce

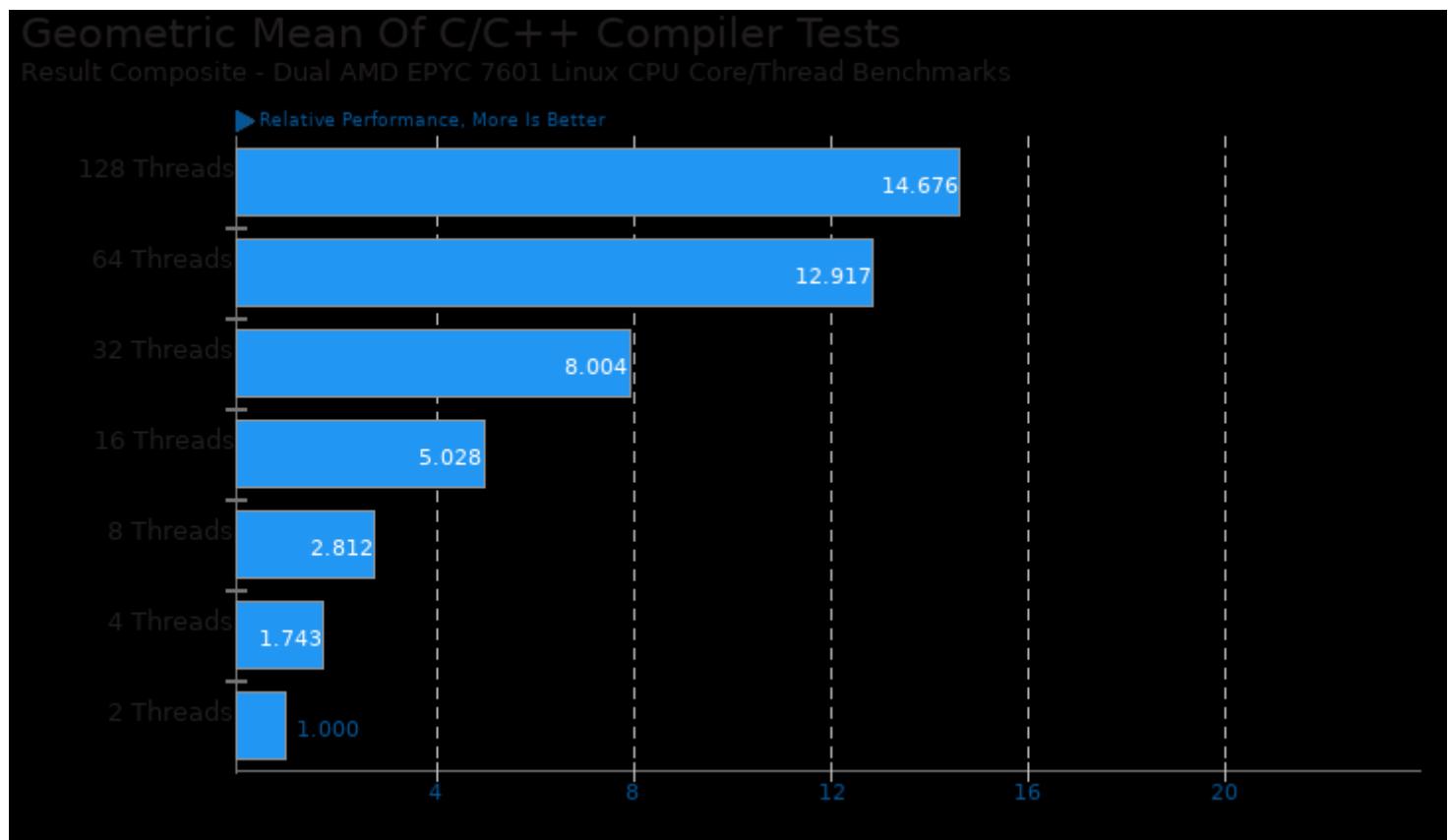
These geometric means are based upon test groupings / test suites for this result file.



Geometric mean based upon tests: pts/stockfish, pts/asmfish and pts/m-queens



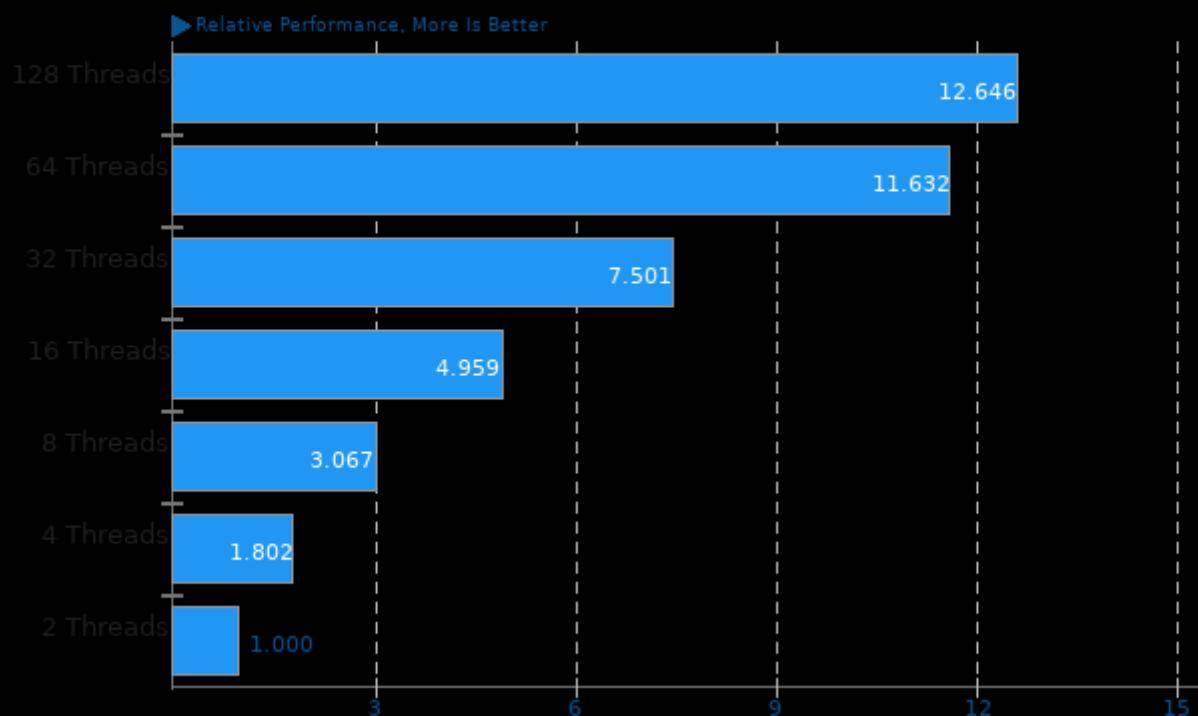
Geometric mean based upon tests: pts/build-linux-kernel, pts/build-imagemagick and pts/build-llvm



Geometric mean based upon tests: pts/graphics-magick, pts/himenzo, pts/stockfish, pts/build-imagemagick, pts/build-llvm, pts/c-ray, pts/compress-7zip, pts/pgbench, pts/x264, pts/openssl, pts/aircrack-ng and pts/tachyon

Geometric Mean Of Creator Workloads Tests

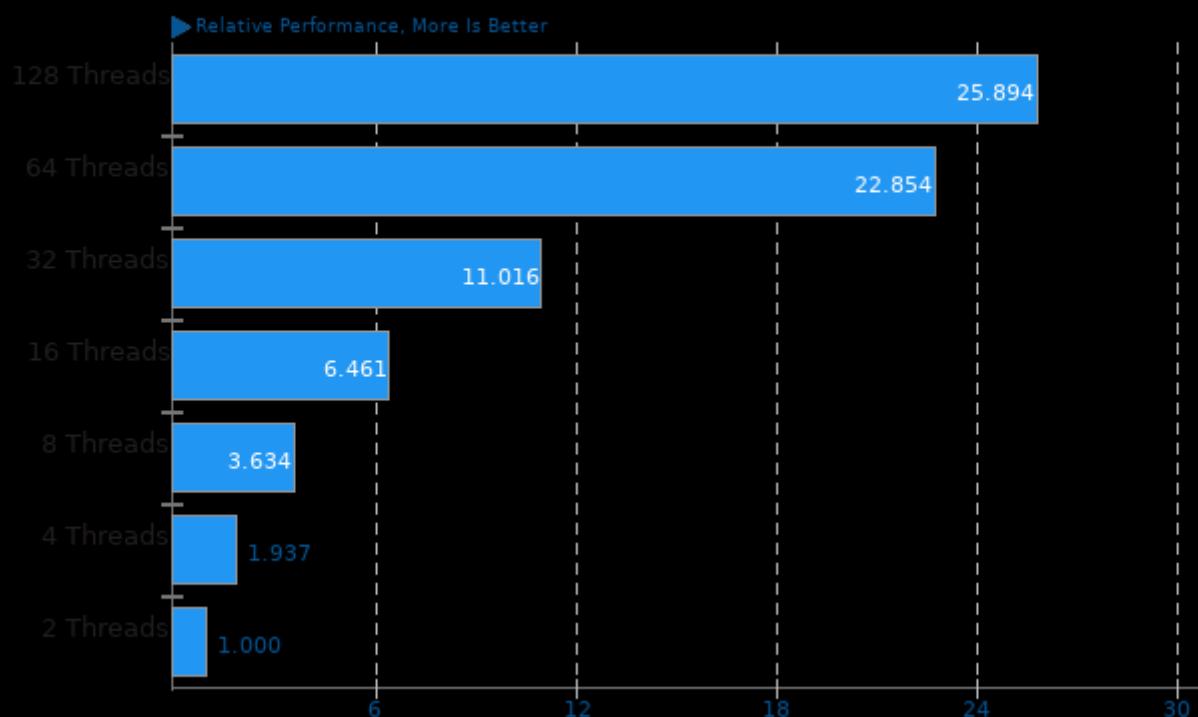
Result Composite - Dual AMD EPYC 7601 Linux CPU Core/Thread Benchmarks



Geometric mean based upon tests: pts/c-ray, pts/tachyon, pts/povray, pts/smallpt, pts/ttsiod-renderer, pts/v-ray, system/tesseract-ocr, pts/x264, pts/graphics-magick, system/darktable and pts/brl-cad

Geometric Mean Of Cryptography Tests

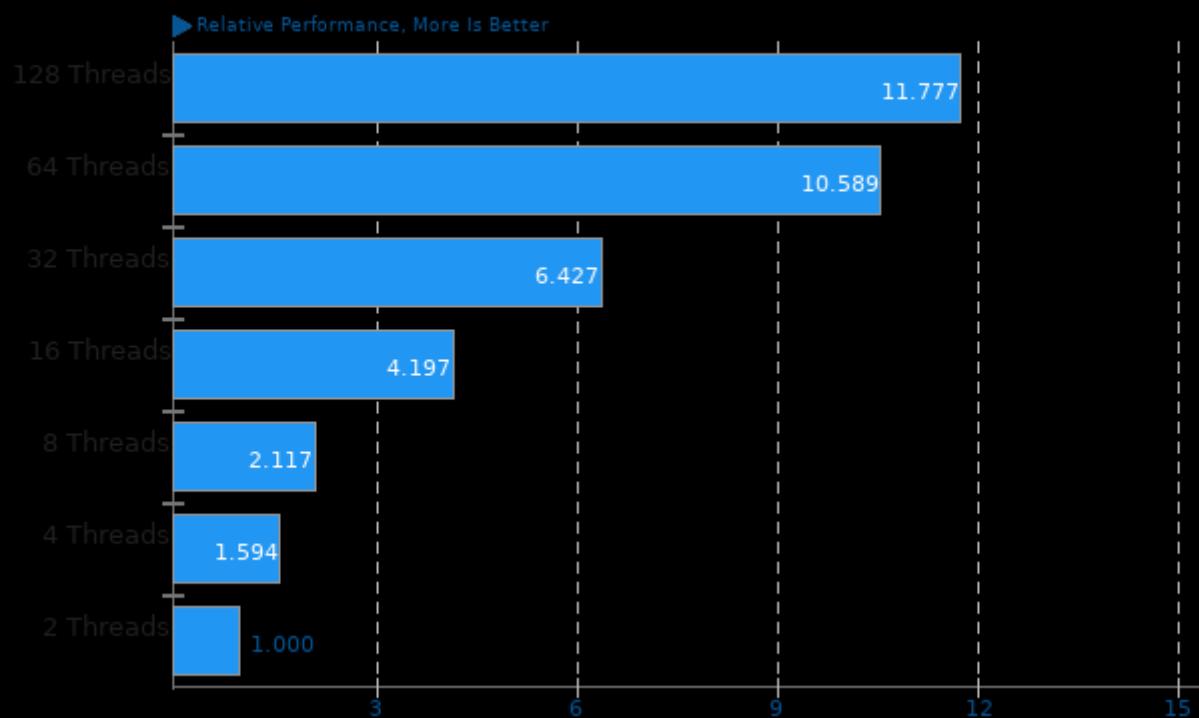
Result Composite - Dual AMD EPYC 7601 Linux CPU Core/Thread Benchmarks



Geometric mean based upon tests: pts/openssl, pts/aircrack-ng and pts/cpuminer-opt

Geometric Mean Of HPC - High Performance Computing Tests

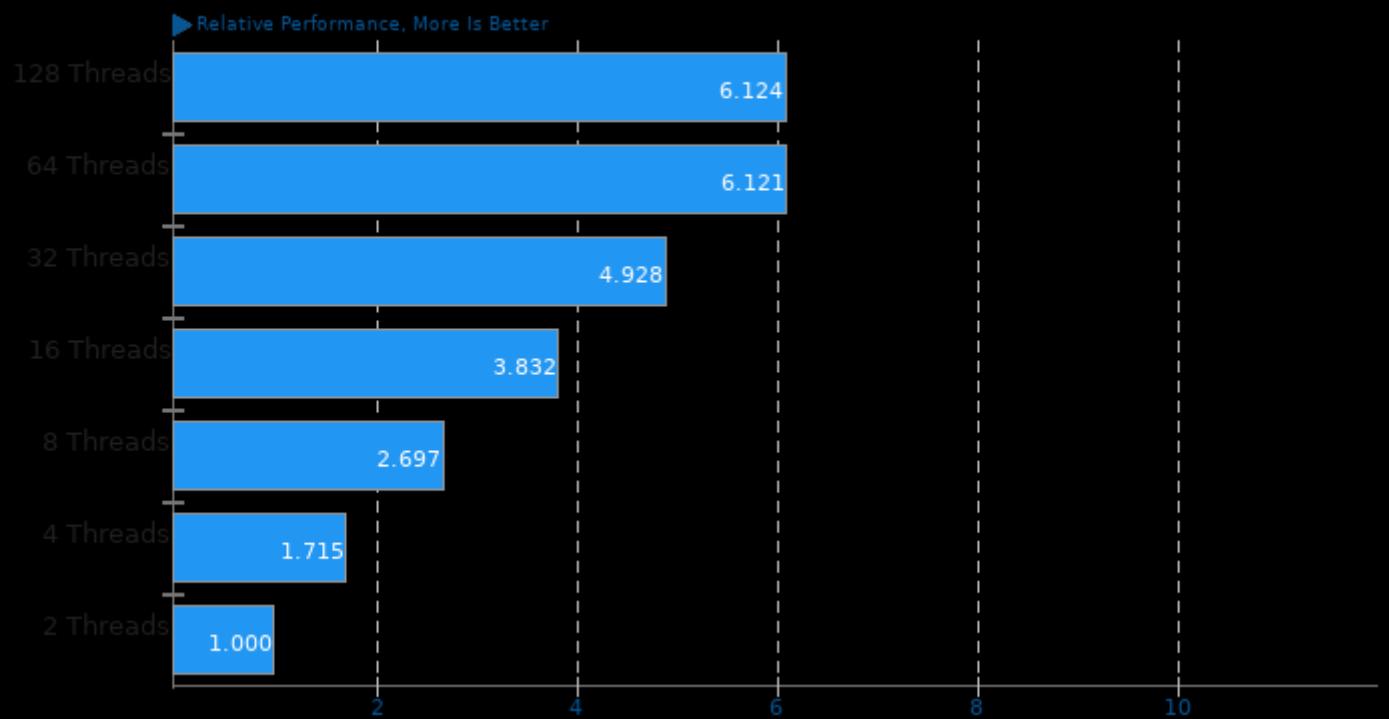
Result Composite - Dual AMD EPYC 7601 Linux CPU Core/Thread Benchmarks



Geometric mean based upon tests: pts/rodinia, pts/namd, pts/himeno and pts/tensorflow

Geometric Mean Of Imaging Tests

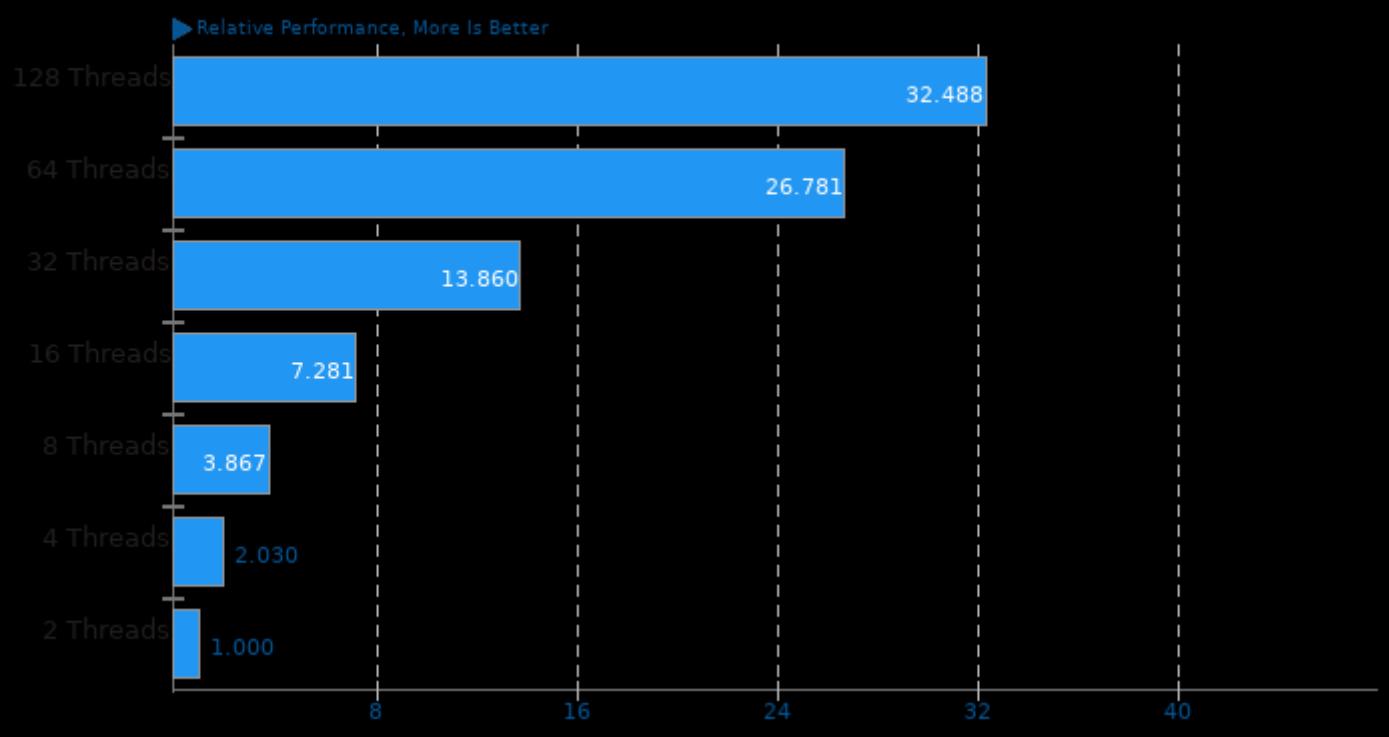
Result Composite - Dual AMD EPYC 7601 Linux CPU Core/Thread Benchmarks



Geometric mean based upon tests: pts/graphics-magick and system/darktable

Geometric Mean Of Common Kernel Benchmarks Tests

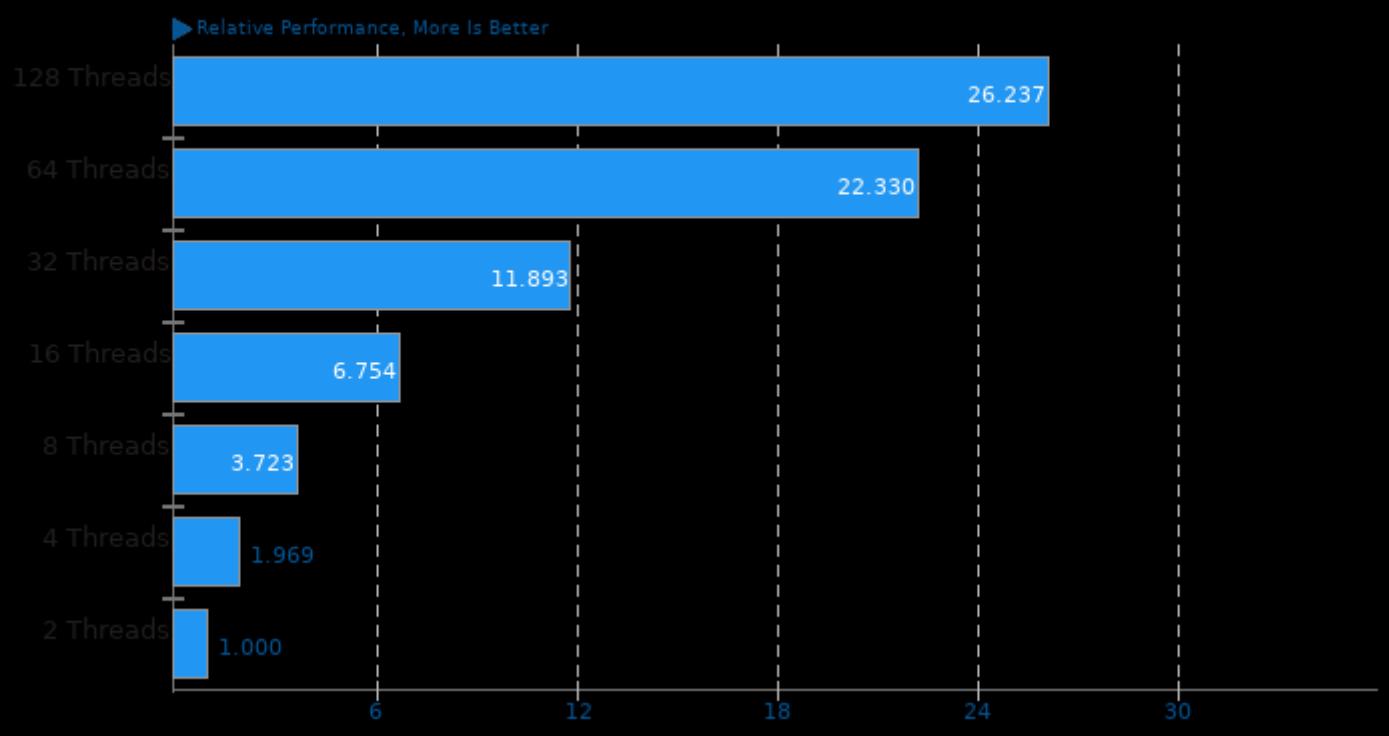
Result Composite - Dual AMD EPYC 7601 Linux CPU Core/Thread Benchmarks



Geometric mean based upon tests: pts/pgbench and pts/openssl

Geometric Mean Of NVIDIA GPU Compute Tests

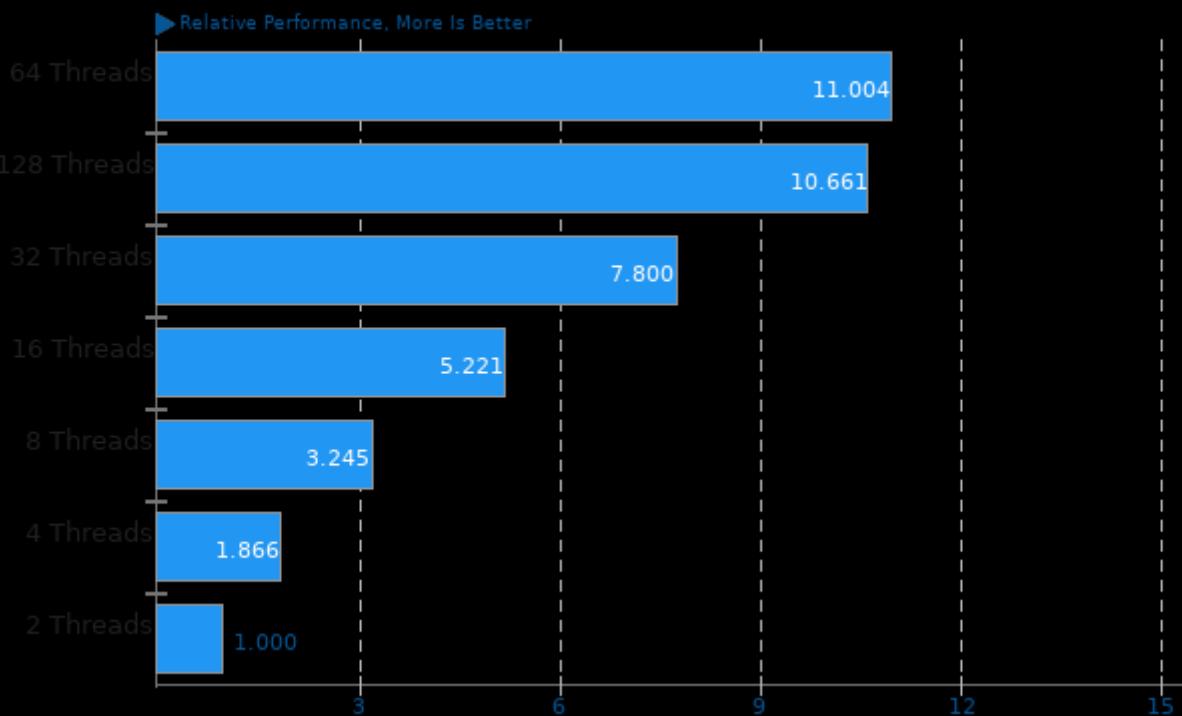
Result Composite - Dual AMD EPYC 7601 Linux CPU Core/Thread Benchmarks



Geometric mean based upon tests: pts/rodrinia and pts/v-ray

Geometric Mean Of OpenCL Tests

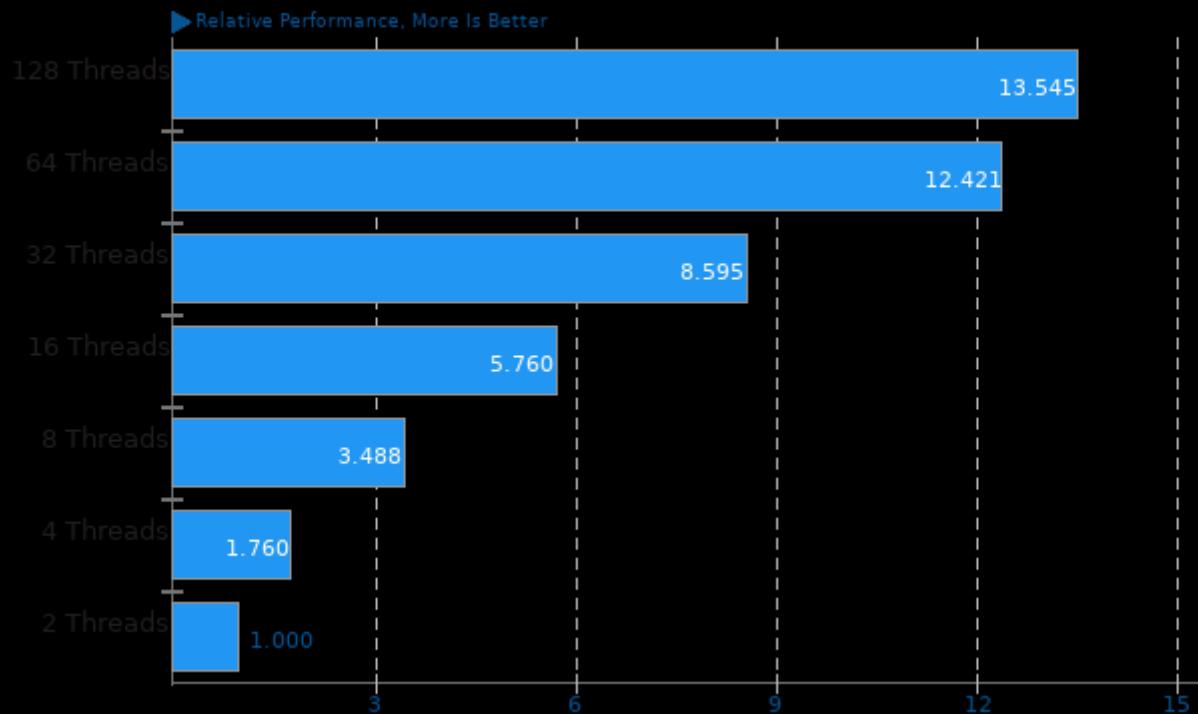
Result Composite - Dual AMD EPYC 7601 Linux CPU Core/Thread Benchmarks



Geometric mean based upon tests: pts/rodinia and system/darktable

Geometric Mean Of Programmer / Developer System Benchmarks Tests

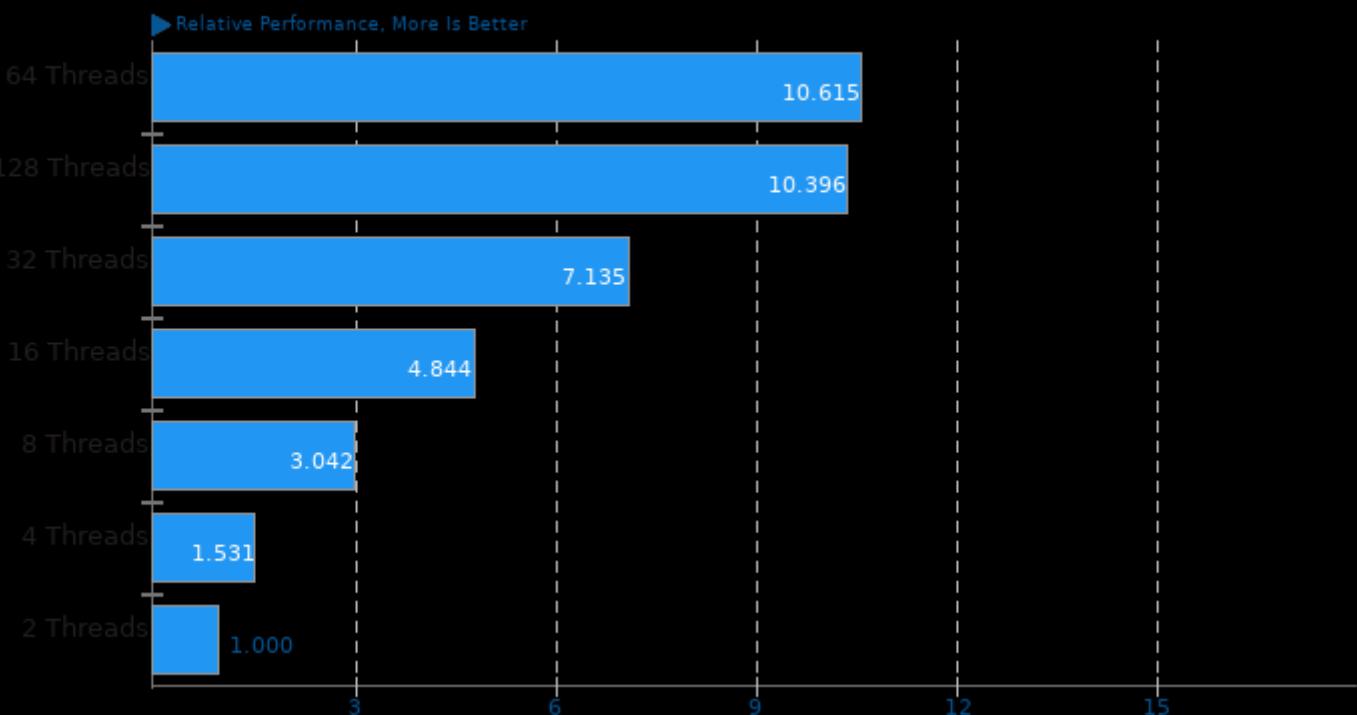
Result Composite - Dual AMD EPYC 7601 Linux CPU Core/Thread Benchmarks



Geometric mean based upon tests: pts/build-linux-kernel, pts/build-imagemagick and pts/build-llvm

Geometric Mean Of Python Tests

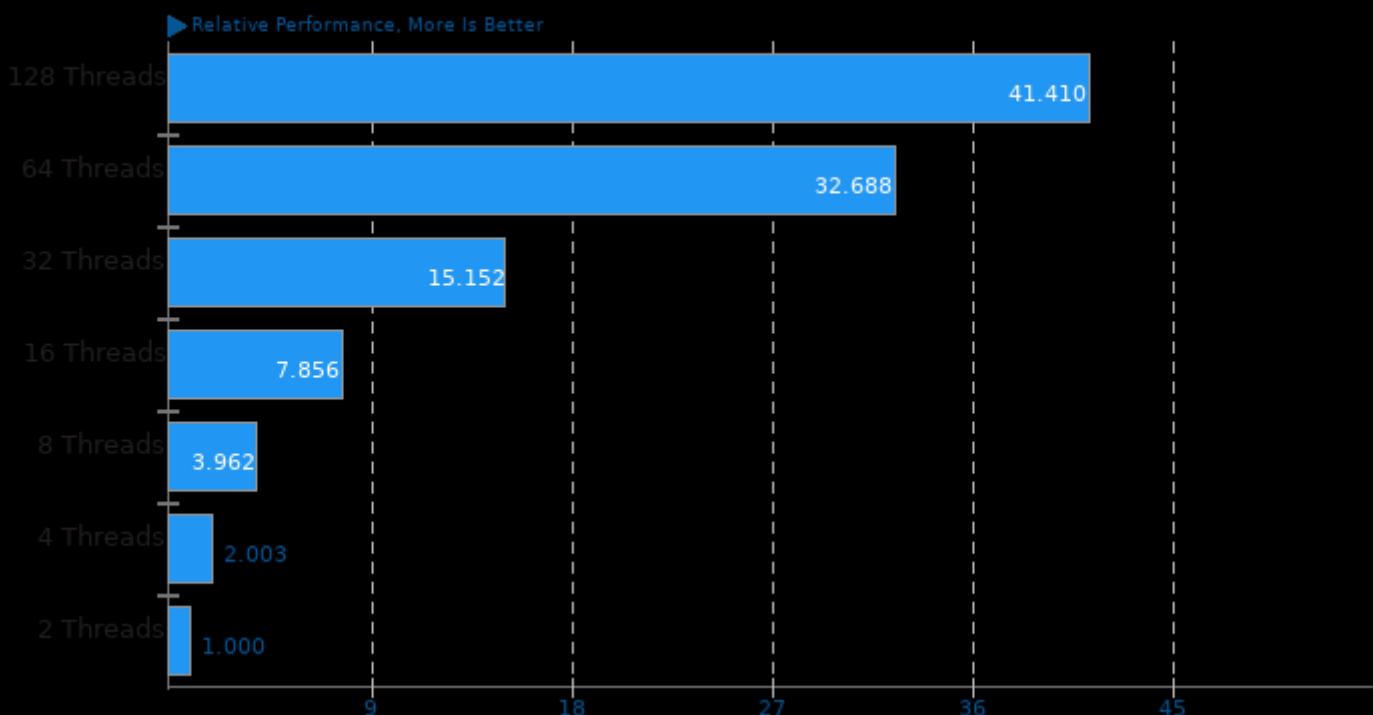
Result Composite - Dual AMD EPYC 7601 Linux CPU Core/Thread Benchmarks



Geometric mean based upon tests: pts/build-llvm and pts/tensorflow

Geometric Mean Of Raytracing Tests

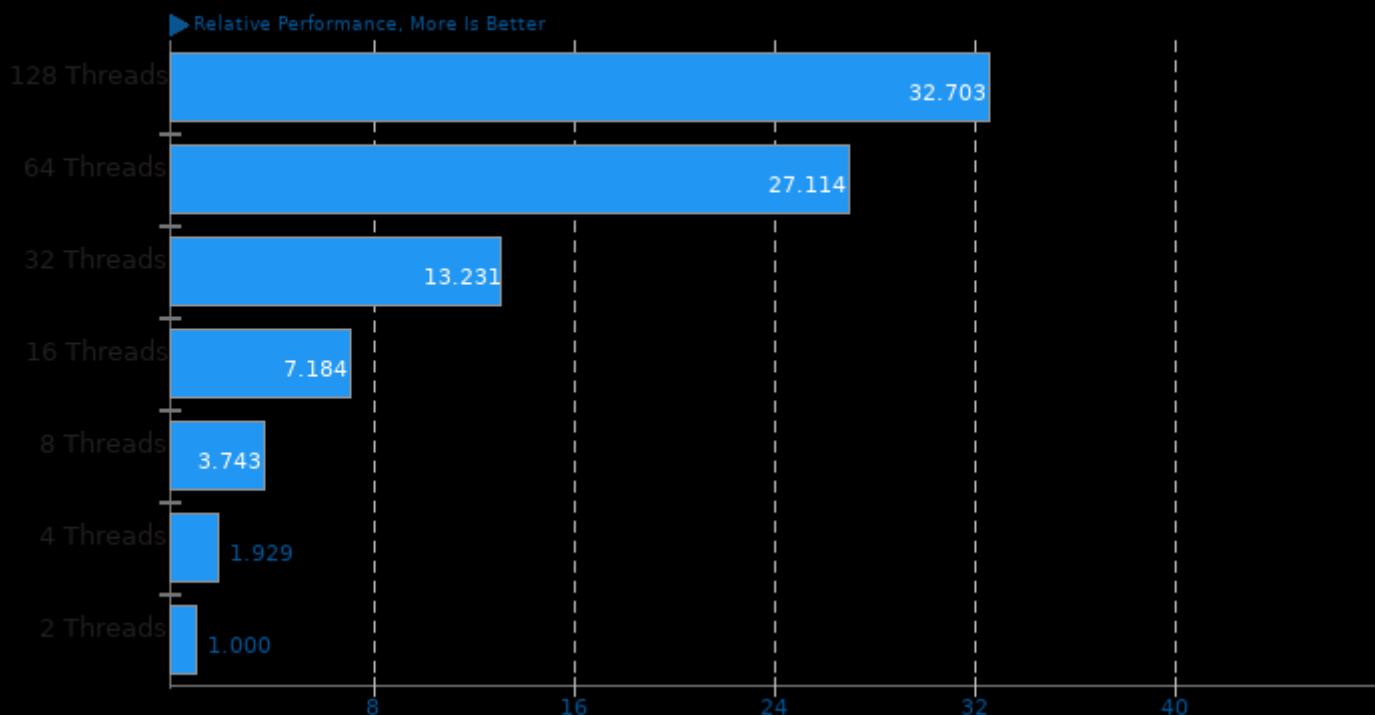
Result Composite - Dual AMD EPYC 7601 Linux CPU Core/Thread Benchmarks



Geometric mean based upon tests: pts/c-ray, pts/tachyon and pts/povray

Geometric Mean Of Renderers Tests

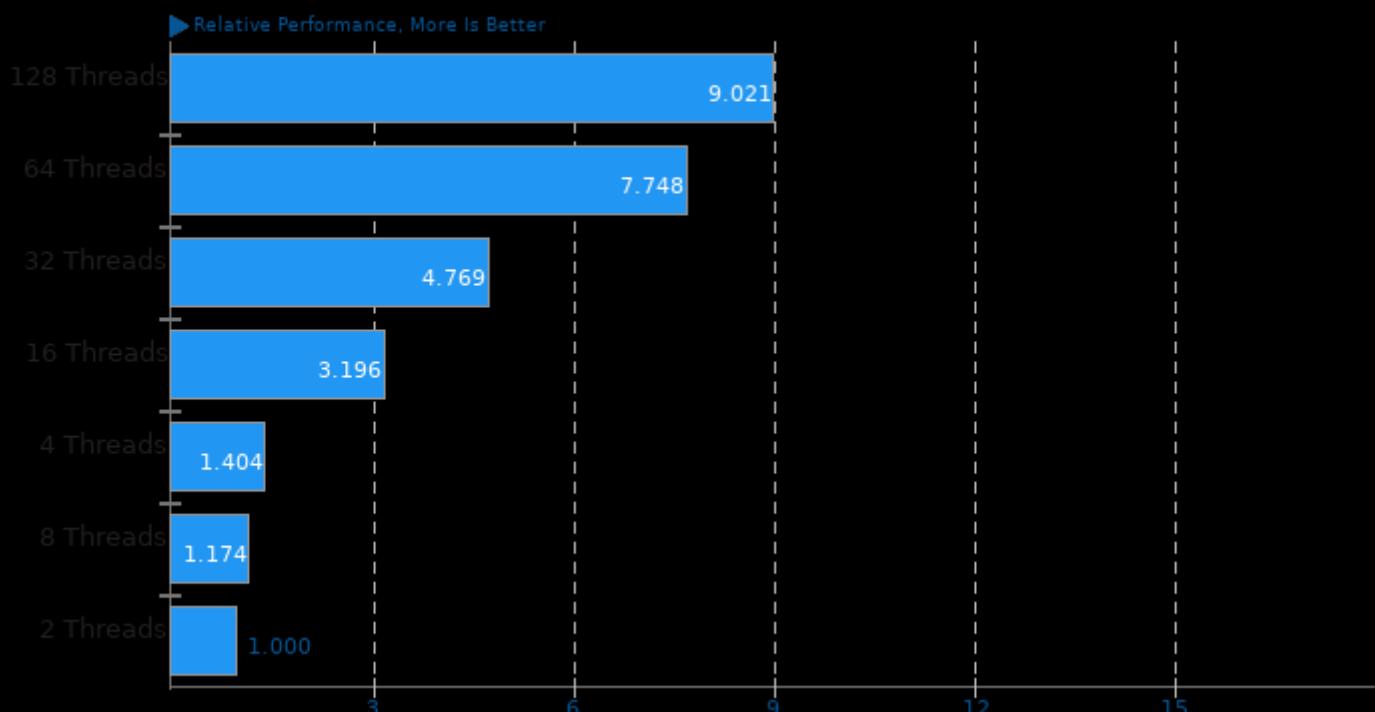
Result Composite - Dual AMD EPYC 7601 Linux CPU Core/Thread Benchmarks



Geometric mean based upon tests: pts/c-ray, pts/tachyon, pts/povray, pts/smallpt, pts/ttsiod-renderer and pts/v-ray

Geometric Mean Of Scientific Computing Tests

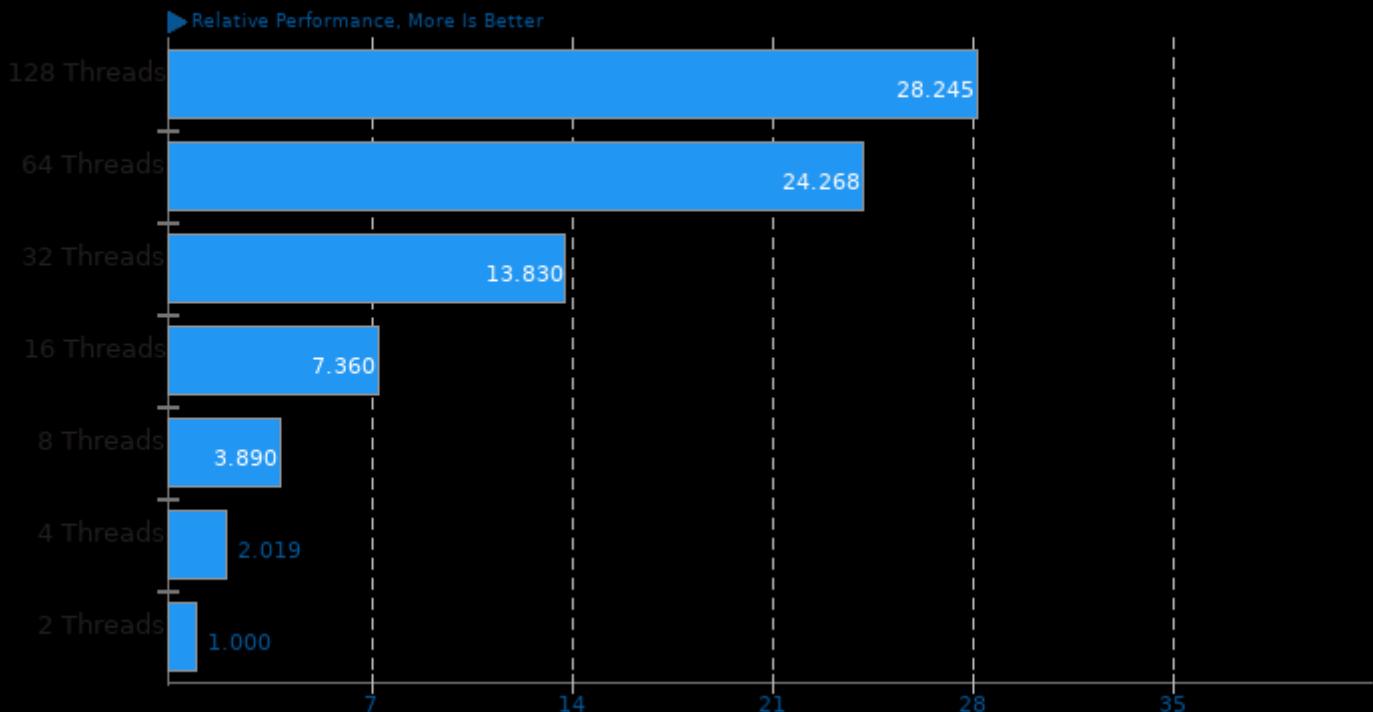
Result Composite - Dual AMD EPYC 7601 Linux CPU Core/Thread Benchmarks



Geometric mean based upon tests: pts/namd and pts/himeno

Geometric Mean Of Server Tests

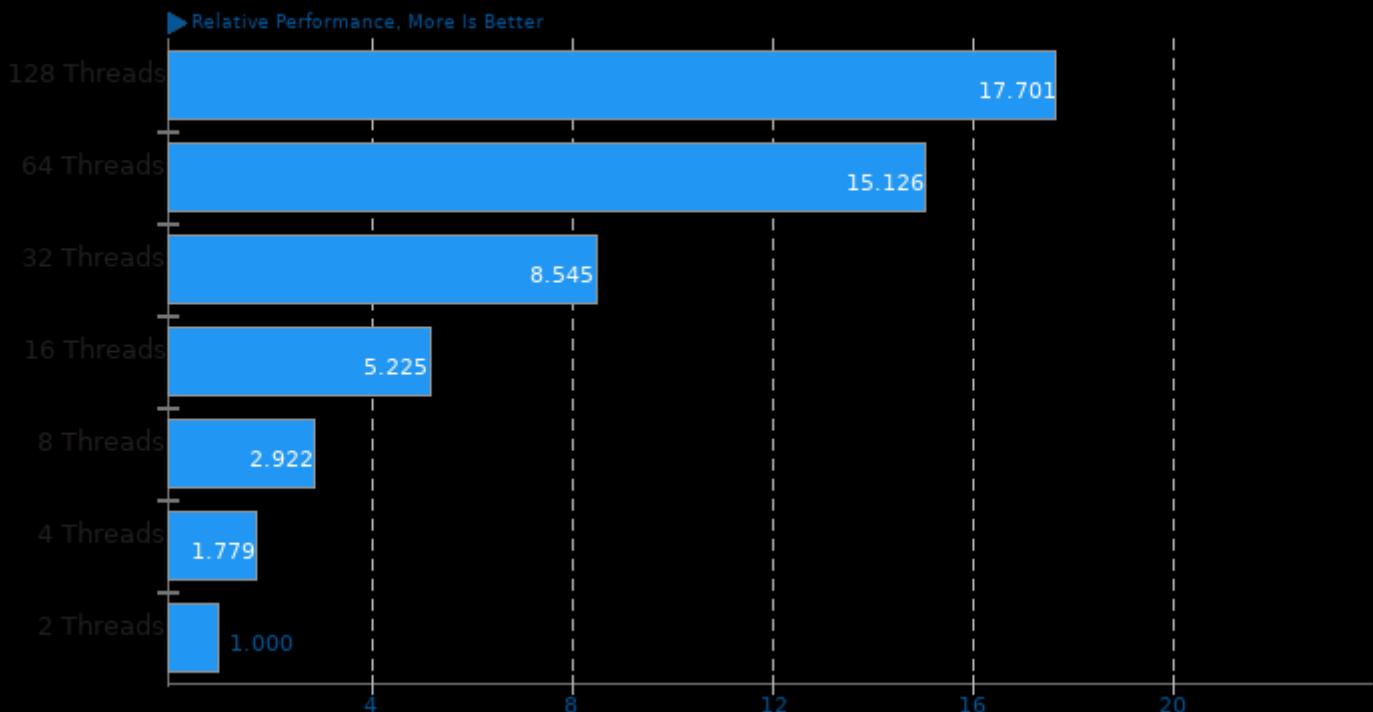
Result Composite - Dual AMD EPYC 7601 Linux CPU Core/Thread Benchmarks



Geometric mean based upon tests: pts/ebizzy, pts/pgbench and pts/openssl

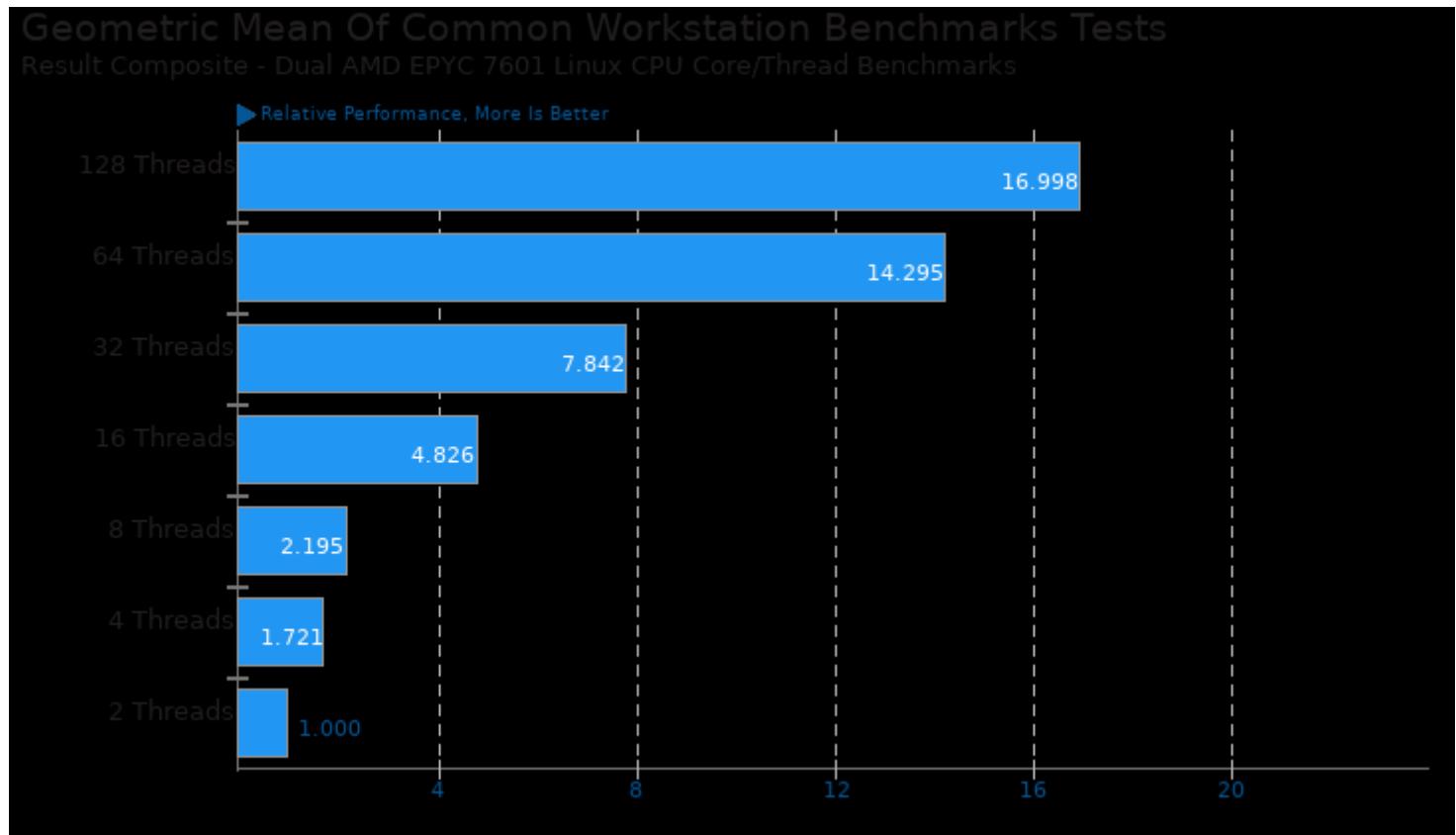
Geometric Mean Of Server CPU Tests

Result Composite - Dual AMD EPYC 7601 Linux CPU Core/Thread Benchmarks



Geometric mean based upon tests: pts/rodinia, pts/namd, pts/dacapobench, pts/x264, pts/himeno, pts/compress-7zip, pts/stockfish, pts/asmfish, pts/build-linux-kernel, pts/build-llvm, pts/c-ray, pts/povray, pts/rust-mandel, pts/m-queens,

pts/openssl, system/tesseract-ocr and pts/cpuminer-opt



Geometric mean based upon tests: pts/rodinia, pts/himeno and pts/brl-cad

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 19:33.