



GCC Compiler Tests EOY2018

GCC 9 compiler benchmarks at end of 2018 by Michael Larabel compared to GCC7 and GCC 8.

Automated Executive Summary

GCC 9.0.0 had the most wins, coming in first place for 45% of the tests.

Based on the geometric mean of all complete results, the fastest (GCC 9.0.0) was 1.07x the speed of the slowest (GCC 7.4.0). GCC 8.2.0 was 0.994x the speed of GCC 9.0.0 and GCC 7.4.0 was 0.94x the speed of GCC 8.2.0.

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

Cpuminer-Opt (Algorithm: skein) at 1.314x
Cpuminer-Opt (Algorithm: lbry) at 1.254x
C-Ray (Total Time - 4K, 16 Rays Per Pixel) at 1.249x
LAME MP3 Encoding (WAV To MP3) at 1.198x
Redis (Test: GET) at 1.194x
Bullet Physics Engine (Test: 1000 Convex) at 1.19x
Cpuminer-Opt (Algorithm: myr-gr) at 1.188x
Bullet Physics Engine (Test: 1000 Stack) at 1.186x
Bullet Physics Engine (Test: Convex Trimesh) at 1.186x
Bullet Physics Engine (Test: Prim Trimesh) at 1.183x.

Test Systems:

GCC 7.4.0

Processor: Intel Core i9-7980XE @ 4.20GHz (18 Cores / 36 Threads), Motherboard: ASUS PRIME X299-A (1602 BIOS), Chipset: Intel Sky Lake-E DMI3 Registers, Memory: 16384MB, Disk: Samsung SSD 970 EVO 500GB, Graphics: NVIDIA NV120 12GB, Audio: Realtek ALC1220, Monitor: ASUS PB278, Network: Intel Connection

OS: Clear Linux OS 26890, Kernel: 4.19.12-675.native (x86_64), Desktop: GNOME Shell 3.30.2, Display Server: X Server 1.20.3, Display Driver: nouveau 1.0.15, OpenGL: 4.3 Mesa 19.0.0-devel, Compiler: GCC 7.4.0 + Clang 7.0.1 + LLVM 7.0.1, File-System: ext4, Screen Resolution: 2560x1440

Environment Notes:
CFLAGS=-g-O3-feliminate-unused-debug-types-pipe-Wall-Wp-D_FORTIFY_SOURCE=2-fexceptions-fstack-protector--param=ssp-buffer-size=32-Wl--copy-dt-needed-entries-m64-fasynchronous-unwind-tables-Wp-D_REENTRANT-ftree-loop-distribute-patterns-Wl-z-Wl now-Wl-z-Wl
relro-malign-data=abi-fno-semantic-interposition-ftree-vectorize-ftree-loop-vectorize-Wl-sort-common-Wl--enable-new-dtags MESA_GLSL_CACHE_DISABLE=0
CFLAGS=-O3-march=native CXXFLAGS=-O3-march=native
FFLAGS=-g-O3-feliminate-unused-debug-types-pipe-Wall-Wp-D_FORTIFY_SOURCE=2-fexceptions-fstack-protector--param=ssp-buffer-size=32-Wl--copy-dt-needed-entries-m64-fasynchronous-unwind-tables-Wp-D_REENTRANT-ftree-loop-distribute-patterns-Wl-z-Wl
relro-malign-data=abi-fno-semantic-interposition-ftree-vectorize-ftree-loop-vectorize-Wl--enable-new-dtags THEANO_FLAGS=floatX=float32 openmp=true
gcc.cxxflags="-ftree-vectorize-mavx"
Compiler Notes: --disable-multi-lib --disable-multilib --enable-checking=release
Processor Notes: Scaling Governor: intel_pstate performance
Security Notes: KPTI + __user pointer sanitization + Full generic retpoline IBPB: conditional IBRS_FW STIBP: conditional RSB filling + SSB disabled via prctl and seccomp + PTE Inversion; VMX: conditional cache flushes SMT vulnerable

GCC 8.2.0

Processor: Intel Core i9-7980XE @ 4.20GHz (18 Cores / 36 Threads), Motherboard: ASUS PRIME X299-A (1602 BIOS), Chipset: Intel Sky Lake-E DMI3 Registers, Memory: 16384MB, Disk: Samsung SSD 970 EVO 500GB, Graphics: NVIDIA NV120 12GB, Audio: Realtek ALC1220, Monitor: ASUS PB278, Network: Intel Connection

OS: Clear Linux OS 26890, Kernel: 4.19.12-675.native (x86_64), Desktop: GNOME Shell 3.30.2, Display Server: X Server 1.20.3, Display Driver: nouveau 1.0.15, OpenGL: 4.3 Mesa 19.0.0-devel, Compiler: GCC 8.2.0 + Clang 7.0.1 + LLVM 7.0.1, File-System: ext4, Screen Resolution: 2560x1440

Environment Notes:
CFLAGS=-g-O3-feliminate-unused-debug-types-pipe-Wall-Wp-D_FORTIFY_SOURCE=2-fexceptions-fstack-protector--param=ssp-buffer-size=32-Wl--copy-dt-needed-entries-m64-fasynchronous-unwind-tables-Wp-D_REENTRANT-ftree-loop-distribute-patterns-Wl-z-Wl now-Wl-z-Wl
relro-malign-data=abi-fno-semantic-interposition-ftree-vectorize-ftree-loop-vectorize-Wl-sort-common-Wl--enable-new-dtags MESA_GLSL_CACHE_DISABLE=0
CFLAGS=-O3-march=native CXXFLAGS=-O3-march=native
FFLAGS=-g-O3-feliminate-unused-debug-types-pipe-Wall-Wp-D_FORTIFY_SOURCE=2-fexceptions-fstack-protector--param=ssp-buffer-size=32-Wl--copy-dt-needed-entries-m64-fasynchronous-unwind-tables-Wp-D_REENTRANT-ftree-loop-distribute-patterns-Wl-z-Wl
relro-malign-data=abi-fno-semantic-interposition-ftree-vectorize-ftree-loop-vectorize-Wl--enable-new-dtags THEANO_FLAGS=floatX=float32 openmp=true
gcc.cxxflags="-ftree-vectorize-mavx"
Compiler Notes: --disable-multi-lib --disable-multilib --enable-checking=release
Processor Notes: Scaling Governor: intel_pstate performance
Security Notes: KPTI + __user pointer sanitization + Full generic retpoline IBPB: conditional IBRS_FW STIBP: conditional RSB filling + SSB disabled via prctl and seccomp + PTE Inversion; VMX: conditional cache flushes SMT vulnerable

GCC 9.0.0

Processor: Intel Core i9-7980XE @ 4.20GHz (18 Cores / 36 Threads), Motherboard: ASUS PRIME X299-A (1602 BIOS), Chipset: Intel Sky Lake-E DMI3 Registers, Memory: 16384MB, Disk: Samsung SSD 970 EVO 500GB, Graphics: NVIDIA NV120 12GB, Audio: Realtek ALC1220, Monitor: ASUS PB278, Network: Intel Connection

OS: Clear Linux OS 26890, Kernel: 4.19.12-675.native (x86_64), Desktop: GNOME Shell 3.30.2, Display Server: X Server 1.20.3, Display Driver: nouveau 1.0.15, OpenGL: 4.3 Mesa 19.0.0-devel, Compiler: GCC 9.0.0 20181228 + Clang 7.0.1 + LLVM 7.0.1, File-System: ext4, Screen Resolution: 2560x1440

Environment

CFFLAGS=-g-O3-feliminate-unused-debug-types-pipe-Wall-Wp-D_FORTIFY_SOURCE=2-fexceptions-fstack-protector--param=ssp-buffer-size=32-WI--copy-dt-needed-entries-m64-fasynchronous-unwind-tables-Wp-D_REENTRANT-ftree-loop-distribute-patterns-WI-z-WI
 relro-malign-data=abi-fno-semantic-interposition-ftree-vectorize-ftree-loop-vectorize-WI-sort-common-WI--enable-new-dtags MESA_GLSL_CACHE_DISABLE=0
 CFLAGS=-O3-march=native CXXFLAGS=-O3-march=native
 FFLAGS=-g-O3-feliminate-unused-debug-types-pipe-Wall-Wp-D_FORTIFY_SOURCE=2-fexceptions-fstack-protector--param=ssp-buffer-size=32-WI--copy-dt-needed-entries-m64-fasynchronous-unwind-tables-Wp-D_REENTRANT-ftree-loop-distribute-patterns-WI-z-WI
 relro-malign-data=abi-fno-semantic-interposition-ftree-vectorize-ftree-loop-vectorize-WI--enable-new-dtags THEANO_FLAGS=floatX=float32 openmp=true
 gcc.cxxflags="-ftree-vectorize-mavx"
 Compiler Notes: --disable-multi-lib --disable-multilib --enable-checking=release
 Processor Notes: Scaling Governor: intel_pstate performance
 Security Notes: KPTI + __user pointer sanitization + Full generic retpoline IBPB: conditional IBRS_FW STIBP: conditional RSB filling + SSB disabled via prctl and seccomp + PTE Inversion; VMX: conditional cache flushes SMT vulnerable

Notes:

	GCC 7.4.0	GCC 8.2.0	GCC 9.0.0
x264 - H.2.V.E (FPS)	141	141	138
Normalized	100%	100%	97.87%
Standard Deviation	0.6%	0.3%	3.3%
x265 - H.2.V.E (FPS)	54.94	58.43	59.79
Normalized	91.89%	97.73%	100%
Standard Deviation	0.3%	0.2%	0.4%
Cpuminer-Opt - m7m (kH/s - Hash Speed)	492	491	491
Normalized	100%	99.8%	99.8%
Standard Deviation	0.1%	0.1%	0.1%
Cpuminer-Opt - deep (kH/s - Hash Speed)	14093	14870	15583
Normalized	90.44%	95.42%	100%
Standard Deviation	1.2%	0.7%	0.4%
Cpuminer-Opt - lbry (kH/s - Hash Speed)	42540	49308	53360
Normalized	79.72%	92.41%	100%
Standard Deviation	1.3%	3.9%	1%
Cpuminer-Opt - skein (kH/s - Hash Speed)	47020	55953	61807
Normalized	76.08%	90.53%	100%
Standard Deviation	0%	0.2%	0%
Cpuminer-Opt - myr-gr (kH/s - Hash Speed)	15950	15157	13422
Normalized	100%	95.03%	84.15%
Standard Deviation	1.7%	2%	3.3%
Cpuminer-Opt - sha256t (kH/s - Hash Speed)	106920	112082	124670
Normalized	85.76%	89.9%	100%
Standard Deviation	0.3%	3.3%	1.9%
Xsbench (Lookups/s)	5068010	5078728	5048679
Normalized	99.79%	100%	99.41%
Standard Deviation	0.4%	0.2%	0.3%
SciMark - Composite (Mflops)	2657	2708	2724
Normalized	97.54%	99.41%	100%
Standard Deviation	0.4%	0.3%	0.2%
SciMark - Monte Carlo (Mflops)	900	971	970
Normalized	92.69%	100%	99.9%
Standard Deviation	0%	0.1%	0.3%
SciMark - F.F.T (Mflops)	525	554	593
Normalized	88.53%	93.42%	100%
Standard Deviation	0.4%	4.6%	1.9%
SciMark - S.M.M (Mflops)	3003	3466	3507
Normalized	85.63%	98.83%	100%
Standard Deviation	0.1%	1.4%	0.1%

SciMark - D.L.M.F (Mflops)	6708	6397	6397
Normalized	100%	95.36%	95.36%
Standard Deviation	1.5%	0%	0%
SciMark - J.S.O.R (Mflops)	2148	2151	2154
Normalized	99.72%	99.86%	100%
Standard Deviation	2.3%	0.2%	1.3%
Himeno Benchmark - P.P.S (MFLOPS)	2808	3238	3223
Normalized	86.72%	100%	99.54%
Standard Deviation	0.3%	0.5%	0.7%
7-Zip Compression - C.S.T (MIPS)	98468	100065	98325
Normalized	98.4%	100%	98.26%
Standard Deviation	0.7%	1.1%	3.4%
Crafty - Elapsed Time (Nodes/s)	8962714	9013487	8998828
Normalized	99.44%	100%	99.84%
Standard Deviation	0.1%	0.8%	0.7%
TSCP - A.C.P (Nodes/s)	1463297	1426890	1425415
Normalized	100%	97.51%	97.41%
Standard Deviation	0.4%	0.2%	0.2%
Stockfish - Total Time (Nodes/s)	45061710	48331019	47936449
Normalized	93.24%	100%	99.18%
Standard Deviation	1.5%	1.9%	0.8%
asmFish - 1.H.M.2.D (Nodes/s)	50644790	50255612	50929406
Normalized	99.44%	98.68%	100%
Standard Deviation	2.3%	0.8%	2.4%
ebizzy (Records/s)	593380	591523	615079
Normalized	96.47%	96.17%	100%
Standard Deviation	6.3%	2.4%	3%
Redis - LPOP (Reqs/sec)	2857346	3292792	3189837
Normalized	86.78%	100%	96.87%
Standard Deviation	1%	5.4%	7.4%
Redis - SADD (Reqs/sec)	2238394	2666781	2414720
Normalized	83.94%	100%	90.55%
Standard Deviation	2.9%	0.8%	7.7%
Redis - LPUSH (Reqs/sec)	1852471	2180235	2091151
Normalized	84.97%	100%	95.91%
Standard Deviation	2.2%	0.1%	6.6%
Redis - GET (Reqs/sec)	2767731	3304307	3075313
Normalized	83.76%	100%	93.07%
Standard Deviation	1.1%	1.2%	5.8%
Redis - SET (Reqs/sec)	2006702	2272060	2203421
Normalized	88.32%	100%	96.98%
Standard Deviation	0.3%	6.1%	6.9%
NGINX Benchmark - S.W.P.S (Reqs/sec)	41249	47447	46513
Normalized	86.94%	100%	98.03%
Standard Deviation	0.4%	0.4%	4.2%
Apache Benchmark - S.W.P.S (Reqs/sec)	32471	35432	35229
Normalized	91.64%	100%	99.43%
Standard Deviation	0.2%	0.5%	0.4%
PostgreSQL pgbench - Buffer Test - Normal Load - Read Only (TPS)	489044	494949	492593
Normalized	98.81%	100%	99.52%
Standard Deviation	0.5%	0.4%	0.4%

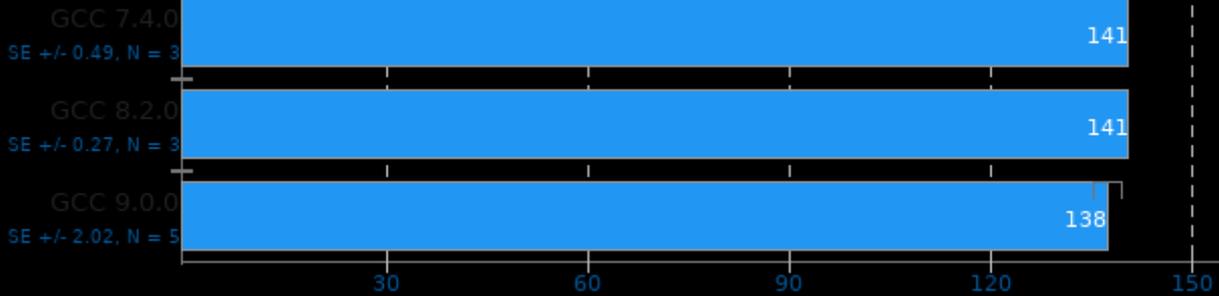
PostgreSQL pgbench - Buffer Test - Normal	5377	5333	5393
Load - Read Write (TPS)			
Normalized	99.7%	98.89%	100%
Standard Deviation	2.6%	3.4%	4.3%
BLAKE2 (Cycles/Byte)	4.02	3.47	3.44
Normalized	85.57%	99.14%	100%
Standard Deviation	0.1%	7.5%	2.9%
Timed HMMer Search - P.D.S (sec)	4.37	4.09	4.13
Normalized	93.59%	100%	99.03%
Standard Deviation	1.6%	0.6%	1%
Timed Linux Kernel Compilation - Time To Compile (sec)	41.69	43.73	44.17
Normalized	100%	95.34%	94.39%
Standard Deviation	3.1%	2.8%	3.4%
Timed PHP Compilation - Time To Compile (sec)	48.83	52.11	52.36
Normalized	100%	93.71%	93.26%
Standard Deviation	0.1%	0.1%	0.2%
C-Ray - Total Time - 4.1.R.P.P (sec)	42.01	37.67	33.63
Normalized	80.05%	89.28%	100%
Standard Deviation	0.2%	1.4%	0.1%
Smallpt - G.I.R.1.S (sec)	6.18	6.04	6.07
Normalized	97.73%	100%	99.51%
Standard Deviation	0.3%	0.2%	0.5%
AOBench - 2048 x 2048 - Total Time (sec)	30.10	30.81	30.97
Normalized	100%	97.7%	97.19%
Standard Deviation	0%	0.2%	0.8%
Bullet Physics Engine - 3000 Fall (sec)	4.14	3.55	3.58
Normalized	85.75%	100%	99.16%
Standard Deviation	0.9%	1.5%	1.3%
Bullet Physics Engine - 1000 Stack (sec)	4.71	4.03	3.97
Normalized	84.29%	98.51%	100%
Standard Deviation	0.2%	4.1%	2.5%
Bullet Physics Engine - 1000 Convex (sec)	4.58	3.98	3.85
Normalized	84.06%	96.73%	100%
Standard Deviation	0.6%	2.3%	1.7%
Bullet Physics Engine - 136 Ragdolls (sec)	2.65	2.30	2.26
Normalized	85.28%	98.26%	100%
Standard Deviation	0.5%	3.5%	0.3%
Bullet Physics Engine - Prim Trimesh (sec)	0.97	0.86	0.82
Normalized	84.54%	95.35%	100%
Standard Deviation	0.1%	2.8%	0.2%
Bullet Physics Engine - Convex Trimesh	1.15	1.01	0.97
Normalized	84.35%	96.04%	100%
Standard Deviation	0.1%	3%	0.4%
XZ Compression - C.u.1.0.3.s.i.i.C.L.9 (sec)	73.25	72.48	72.72
Normalized	98.95%	100%	99.67%
Standard Deviation	0.5%	0.7%	0.8%
Zstd Compression - C.u.1.0.3.s.i.i.C.L.1 (sec)	10.20	10.26	10.23
Normalized	100%	99.42%	99.71%
Standard Deviation	0.6%	0.8%	0.3%
dav1d - Summer Nature 4K (sec)	82.33	81.22	81.19
Normalized	98.62%	99.96%	100%
Standard Deviation	3.2%	3.5%	3.5%

dav1d - S.N.1 (sec)	19.98	19.60	19.58
Normalized	98%	99.9%	100%
Standard Deviation	4.7%	4%	4.7%
FLAC Audio Encoding - WAV To FLAC (sec)	9.69	9.27	9.25
Normalized	95.46%	99.78%	100%
Standard Deviation	0.3%	0.2%	0.3%
LAME MP3 Encoding - WAV To MP3 (sec)	11.12	9.73	9.28
Normalized	83.45%	95.38%	100%
Standard Deviation	0.1%	0.3%	0.2%
m-queens - Time To Solve (sec)	49.06	48.10	48.28
Normalized	98.04%	100%	99.63%
Standard Deviation	0.1%	0.1%	0.1%

x264 2018-09-25

H.264 Video Encoding

▶ Frames Per Second, More Is Better

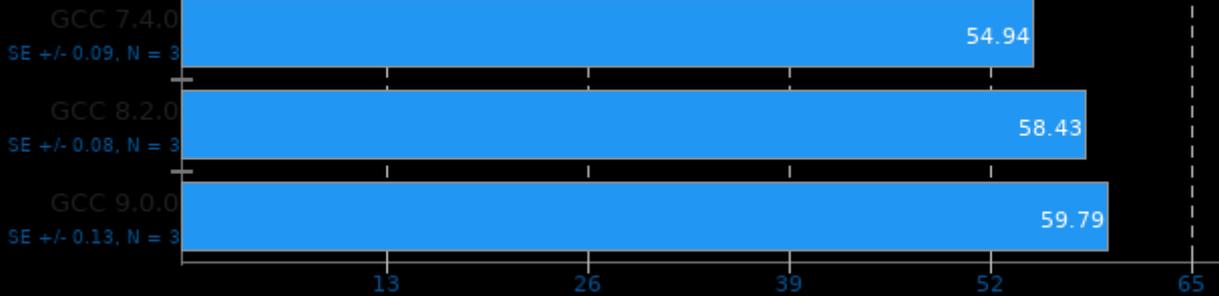


1. (GCC) gcc options: -ldl -m64 -lm -lpthread -O3 -ffast-math -march=native -std=gnu99 -fPIC -fomit-frame-pointer -fno-tree-vectorize

x265 2.8

H.265 Video Encoding

▶ Frames Per Second, More Is Better

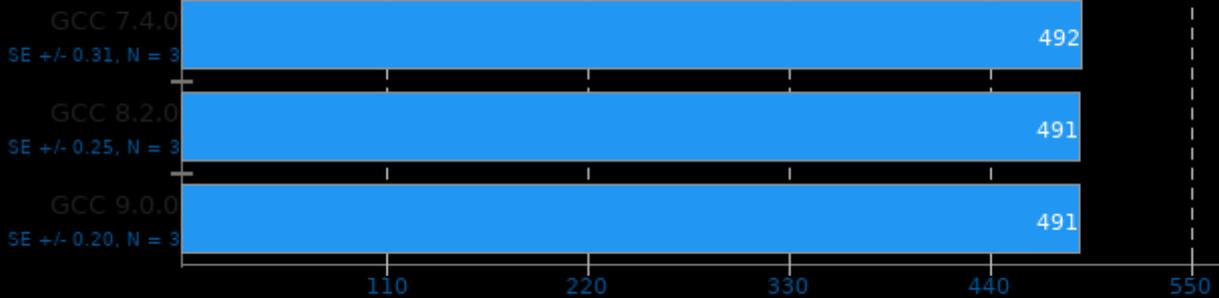


1. (CXX) g++ options: -O3 -march=native -rdynamic -lpthread -lrt -ldl -lnuma

Cpuminer-Opt 3.8.8.1

Algorithm: m7m

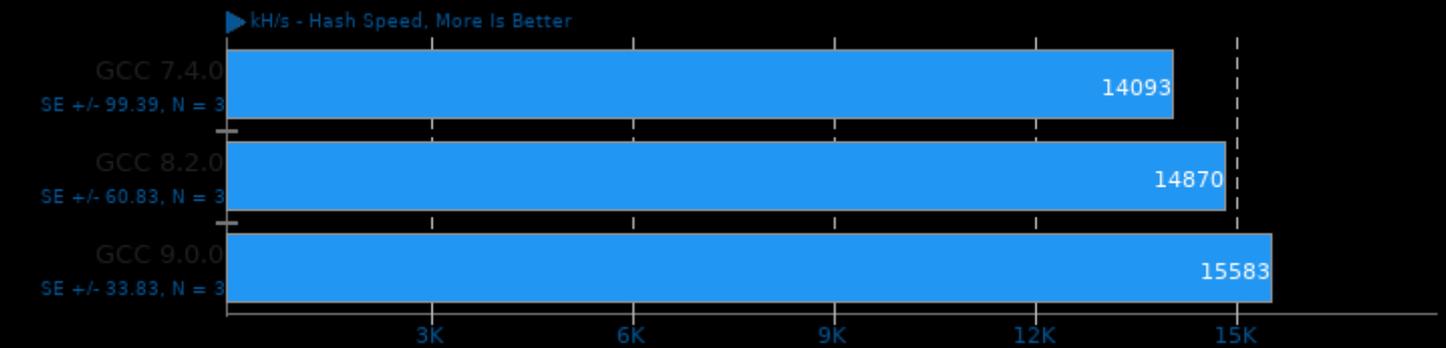
▶ kH/s - Hash Speed, More Is Better



1. (CXX) g++ options: -O3 -march=native -lcurl -lz -lpthread -lssl -lcrypto -lgmp

Cpuminer-Opt 3.8.8.1

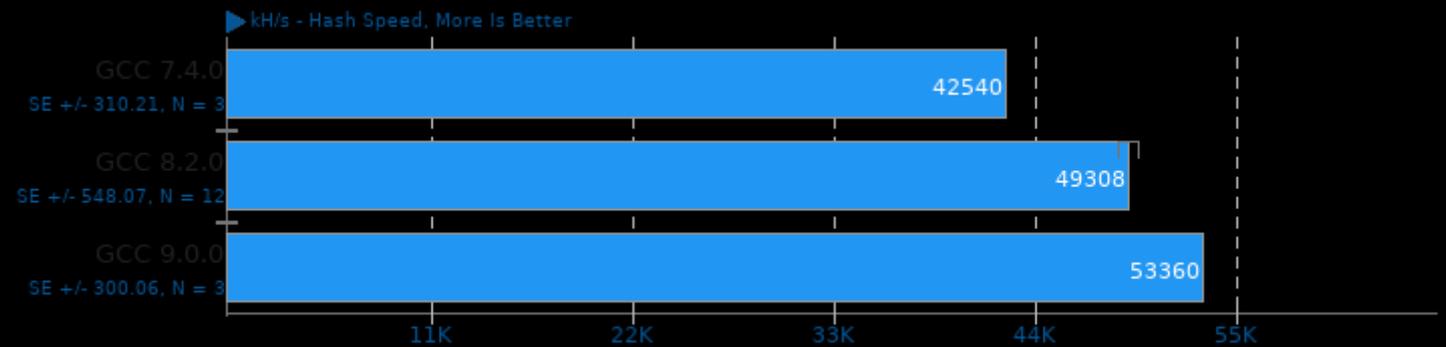
Algorithm: deep



1. (CXX) g++ options: -O3 -march=native -lcurl -lz -lpthread -lssl -lcrypto -lgmp

Cpuminer-Opt 3.8.8.1

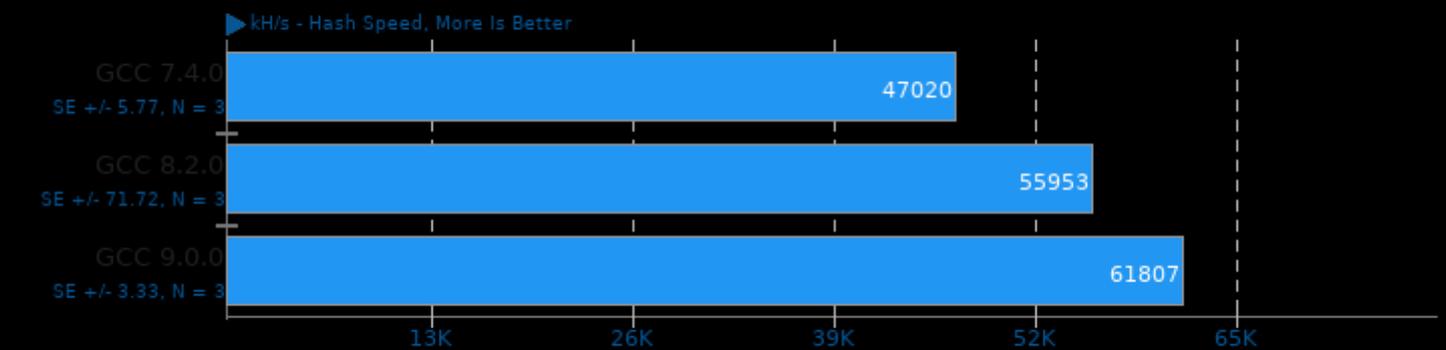
Algorithm: lbry



1. (CXX) g++ options: -O3 -march=native -lcurl -lz -lpthread -lssl -lcrypto -lgmp

Cpuminer-Opt 3.8.8.1

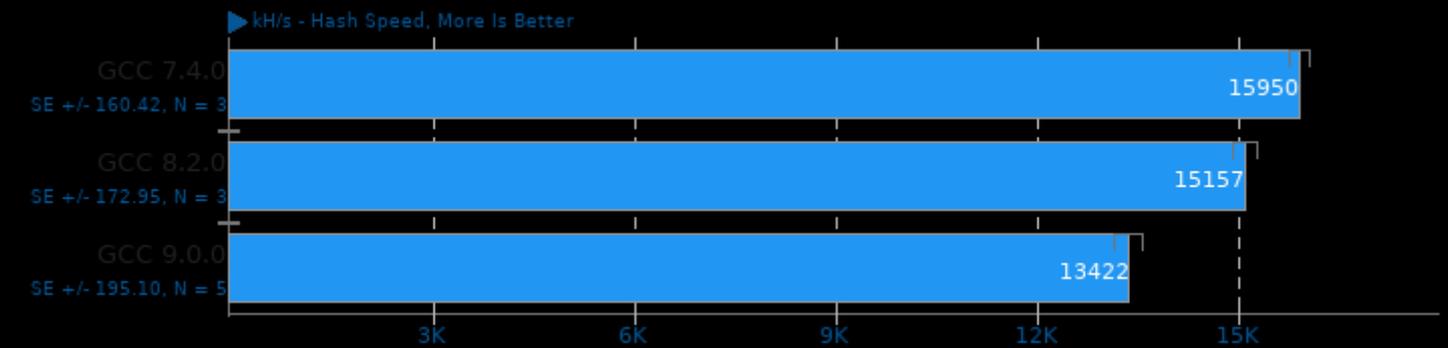
Algorithm: skein



1. (CXX) g++ options: -O3 -march=native -lcurl -lz -lpthread -lssl -lcrypto -lgmp

Cpuminer-Opt 3.8.8.1

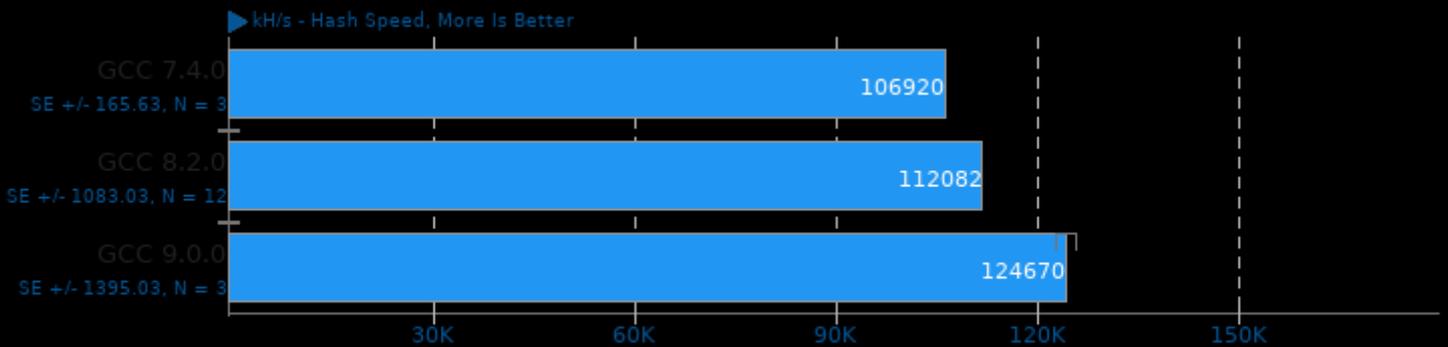
Algorithm: myr-gr



1. (CXX) g++ options: -O3 -march=native -lcurl -lz -lthread -lssl -lcrypto -lgmp

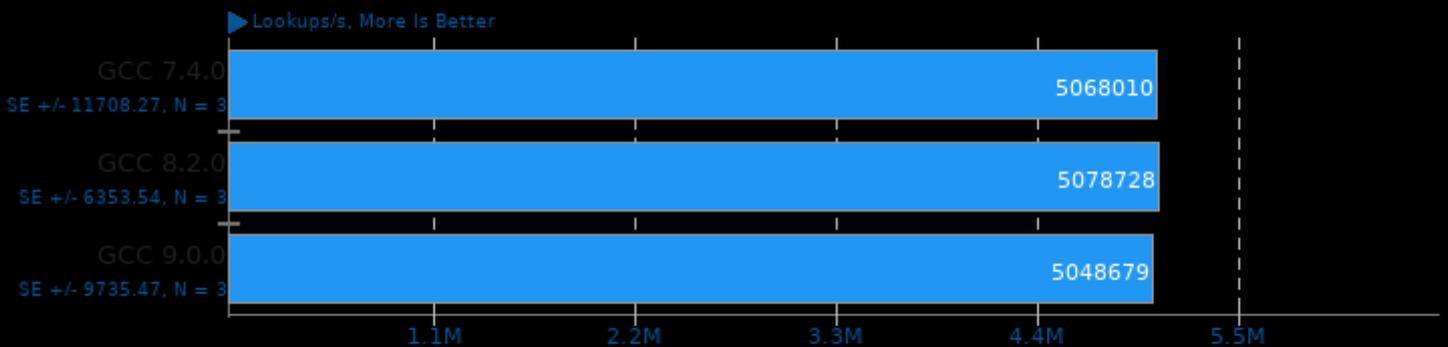
Cpuminer-Opt 3.8.8.1

Algorithm: sha256t



1. (CXX) g++ options: -O3 -march=native -lcurl -lz -lthread -lssl -lcrypto -lgmp

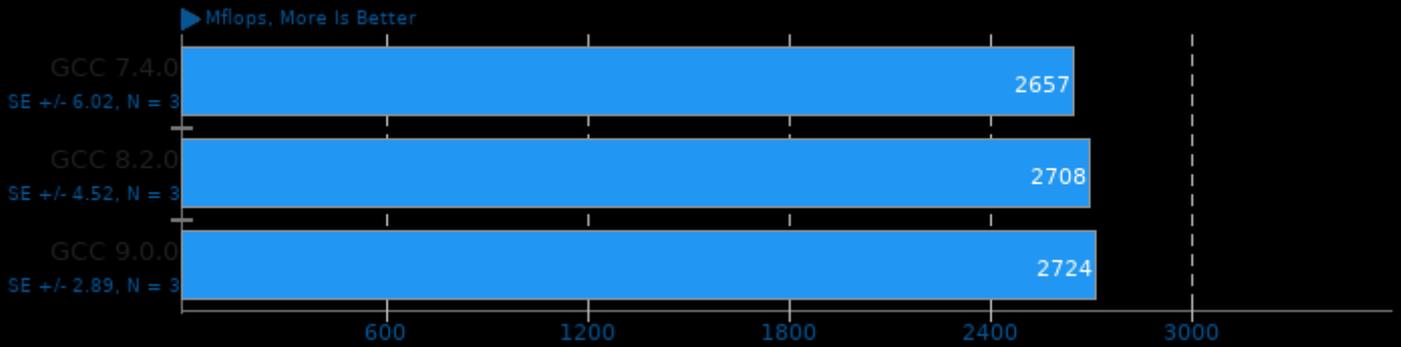
Xsbench 2017-07-06



1. (CC) gcc options: -std=gnu99 -fopenmp -O3 -lm

SciMark 2.0

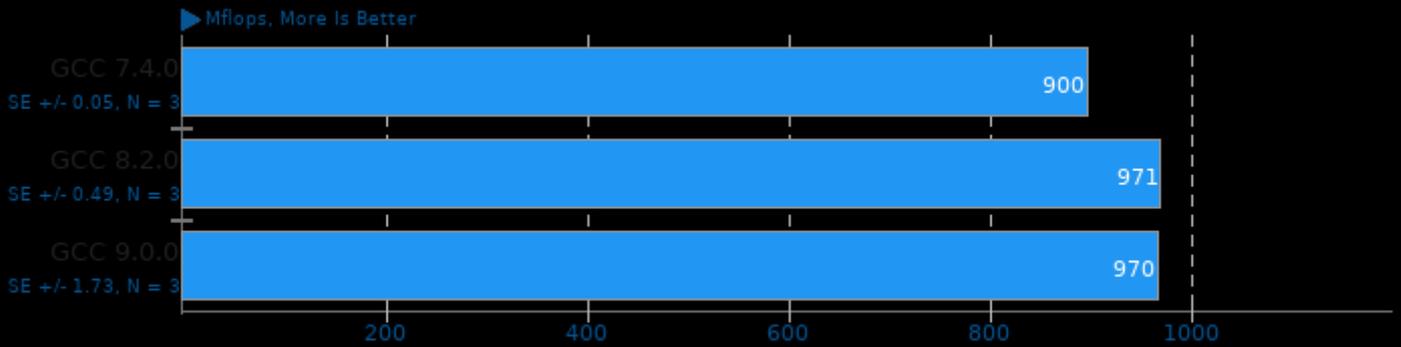
Computational Test: Composite



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

SciMark 2.0

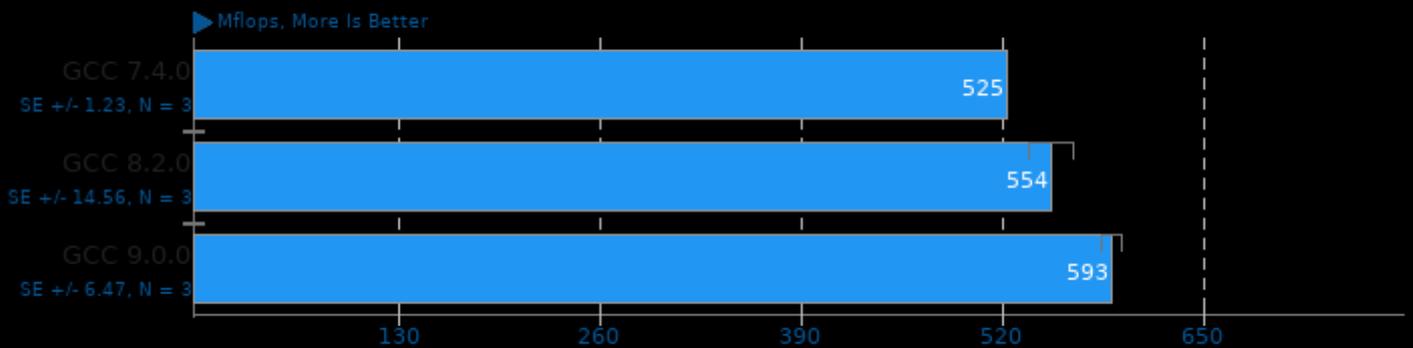
Computational Test: Monte Carlo



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

SciMark 2.0

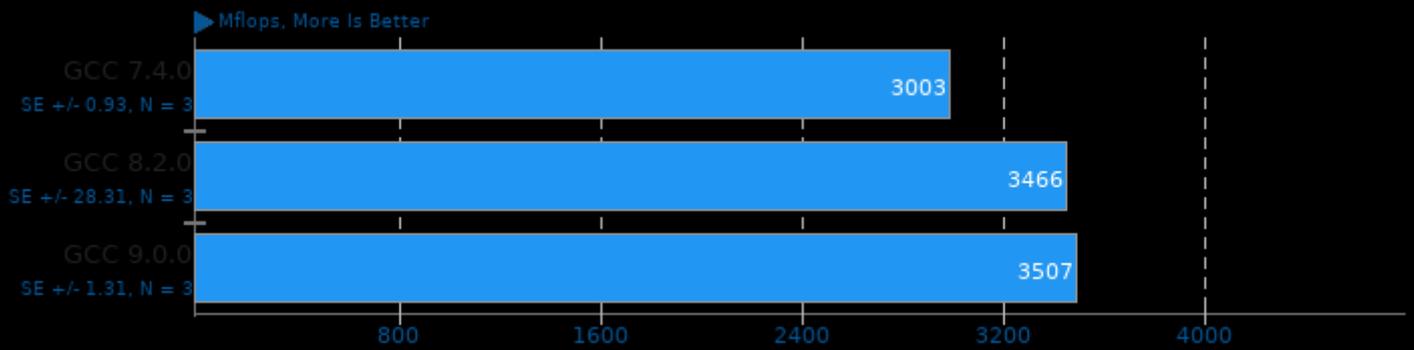
Computational Test: Fast Fourier Transform



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

SciMark 2.0

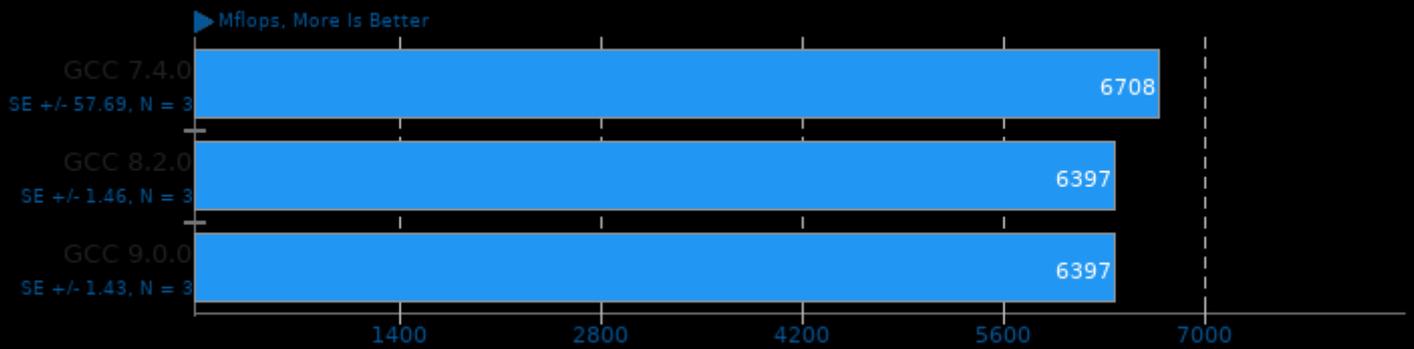
Computational Test: Sparse Matrix Multiply



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

SciMark 2.0

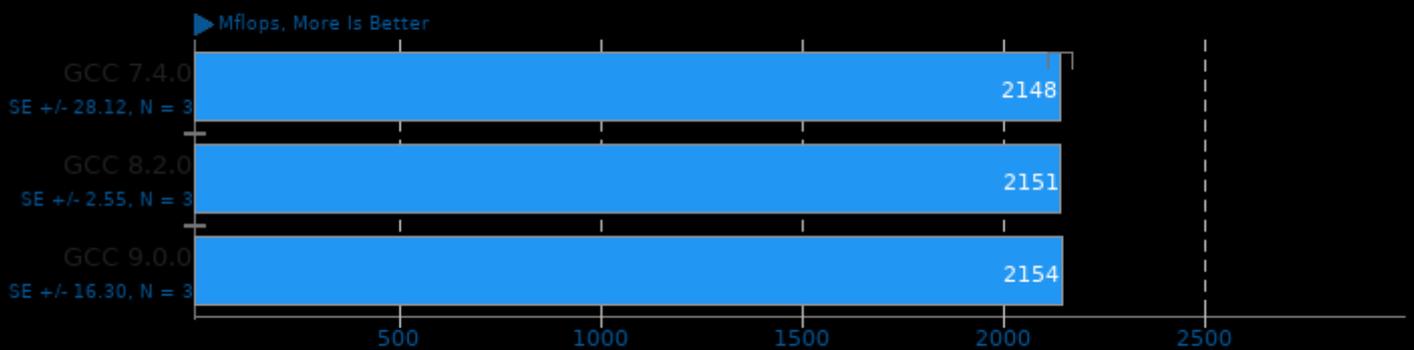
Computational Test: Dense LU Matrix Factorization



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

SciMark 2.0

Computational Test: Jacobi Successive Over-Relaxation

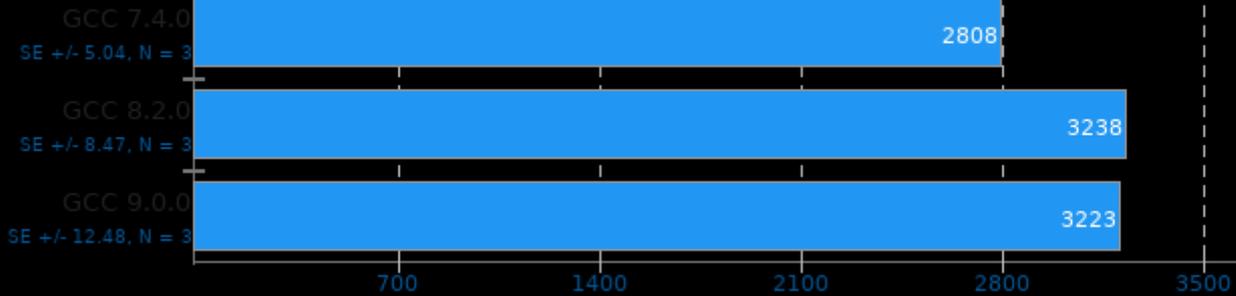


1. (CC) gcc options: -O3 -march=native -lm

Himeno Benchmark 3.0

Poisson Pressure Solver

► MFLOPS, More Is Better

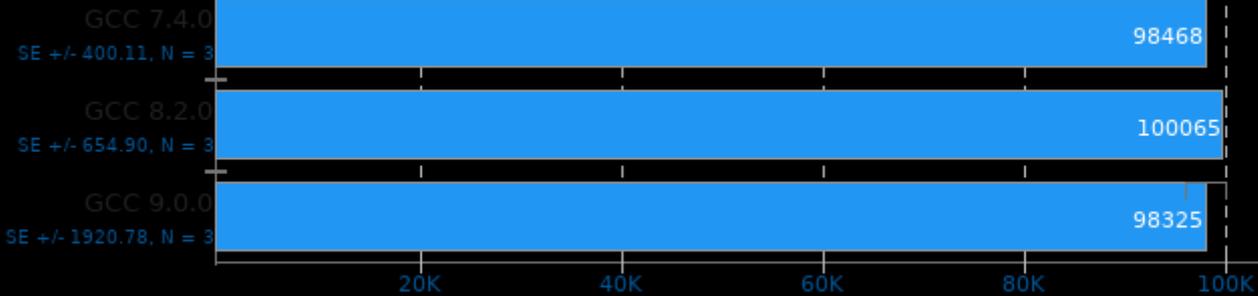


1. (CC) gcc options: -O3 -march=native -mavx2

7-Zip Compression 16.02

Compress Speed Test

► MIPS, More Is Better

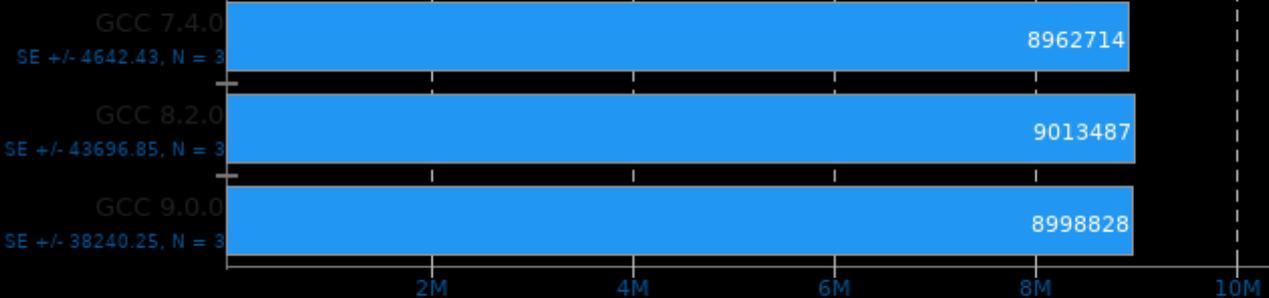


1. (CXX) g++ options: -pipe -lpthread

Crafty 25.2

Elapsed Time

► Nodes Per Second, More Is Better

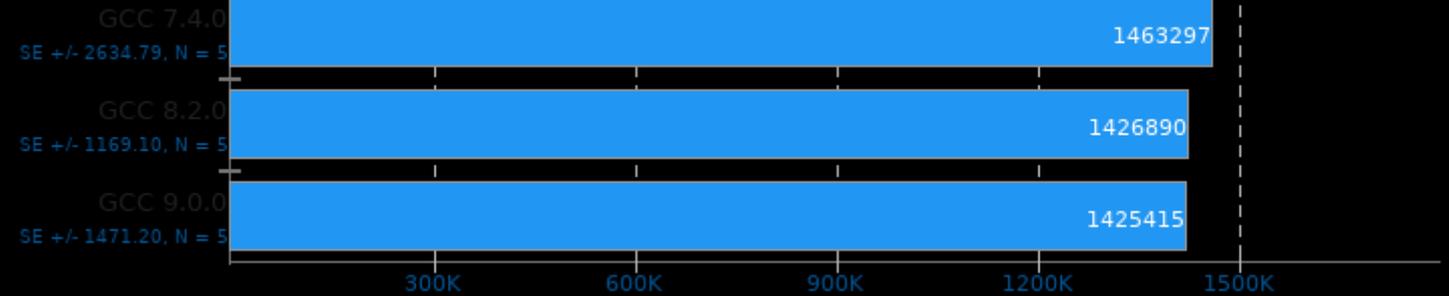


1. (CC) gcc options: -pthread -lstdc++ -fprofile-use -lm

TSCP 1.81

AI Chess Performance

► Nodes Per Second, More Is Better

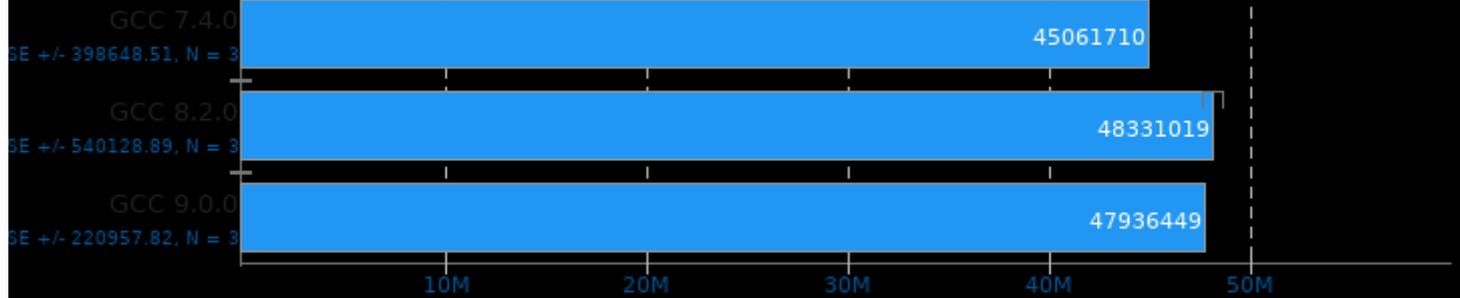


1. (CC) gcc options: -O3 -march=native

Stockfish 9

Total Time

► Nodes Per Second, More Is Better

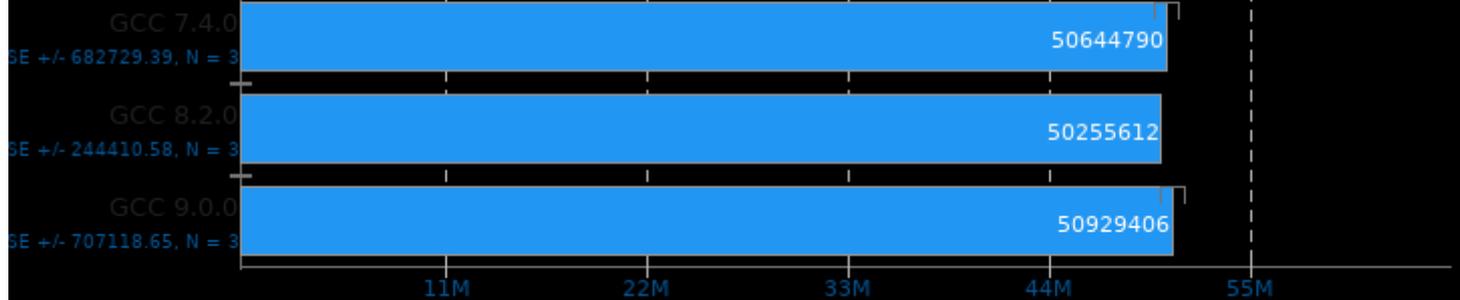


1. (CXX) g++ options: -m64 -pthread -O3 -march=native -fno-exceptions -std=c++11 -pedantic -msse -msse3 -mpopcnt -fno

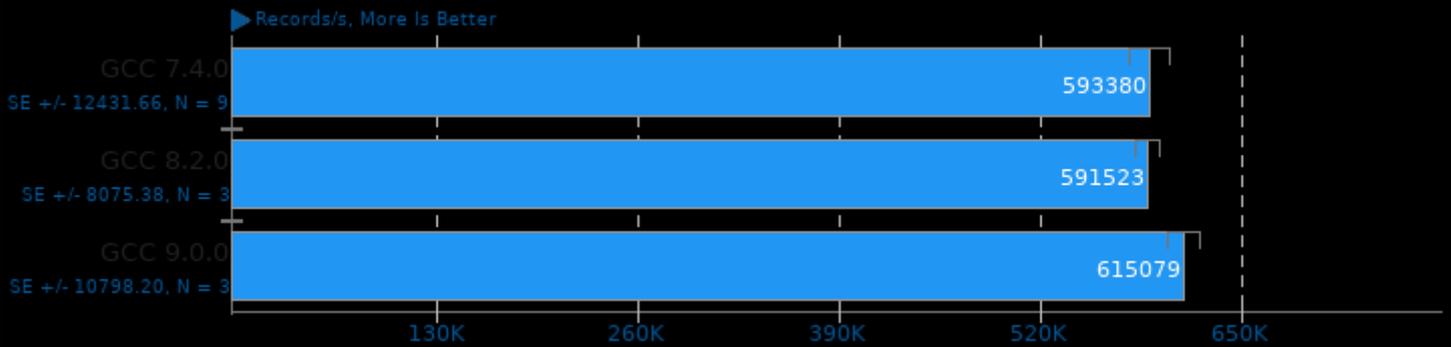
asmFish 2018-07-23

1024 Hash Memory, 26 Depth

► Nodes/second, More Is Better



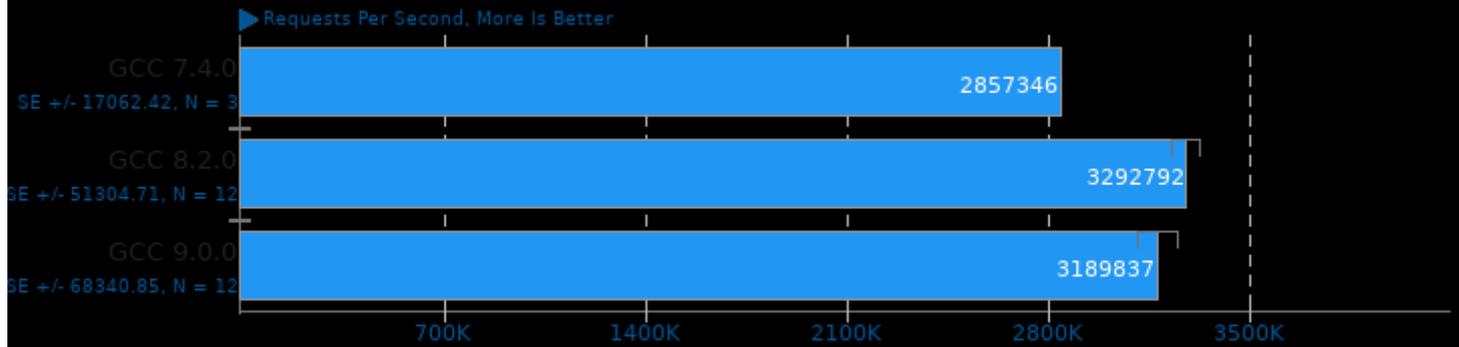
ebizzy 0.3



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

Redis 4.0.8

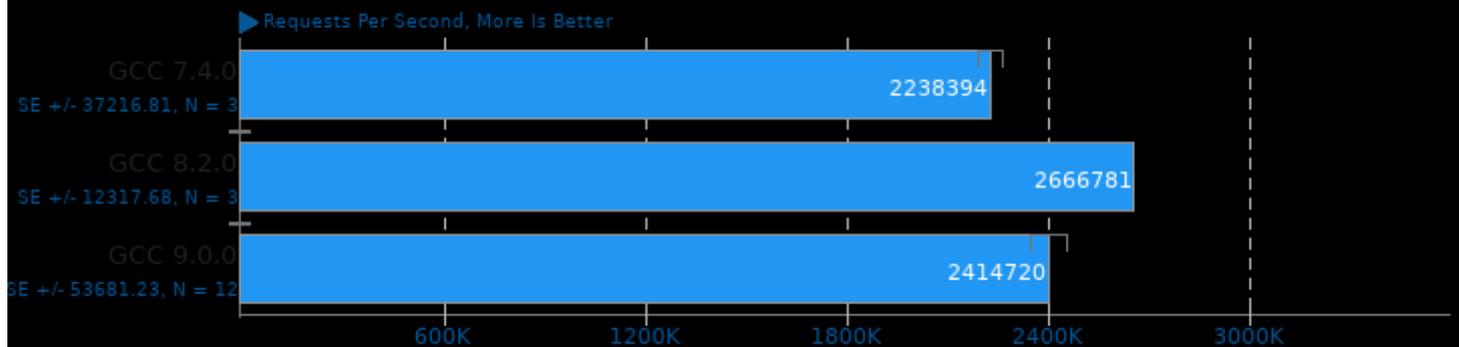
Test: LPOP



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

Redis 4.0.8

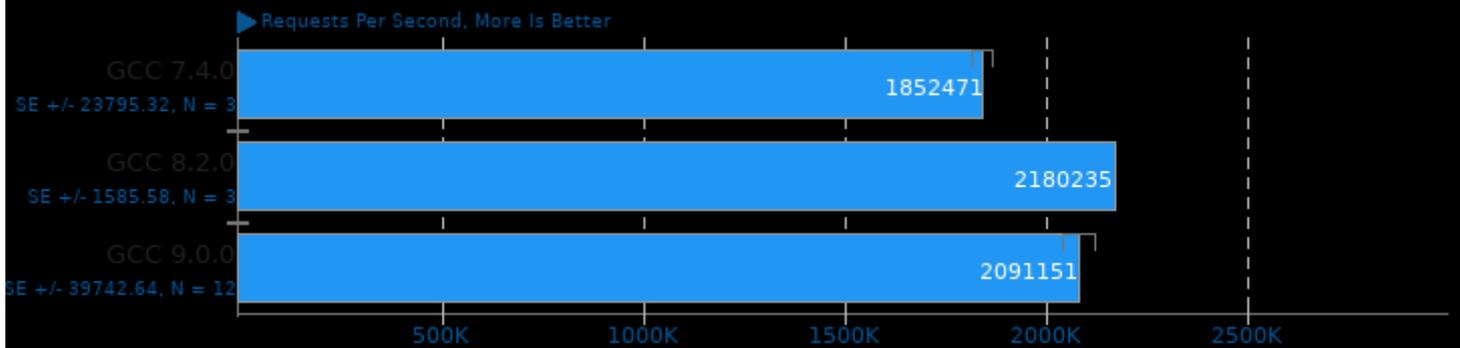
Test: SADD



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

Redis 4.0.8

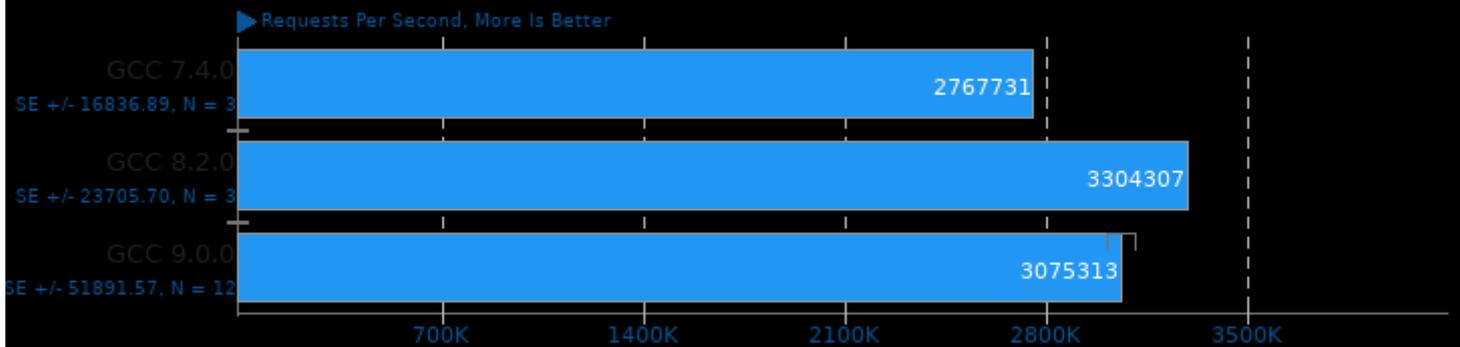
Test: LPUISH



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

Redis 4.0.8

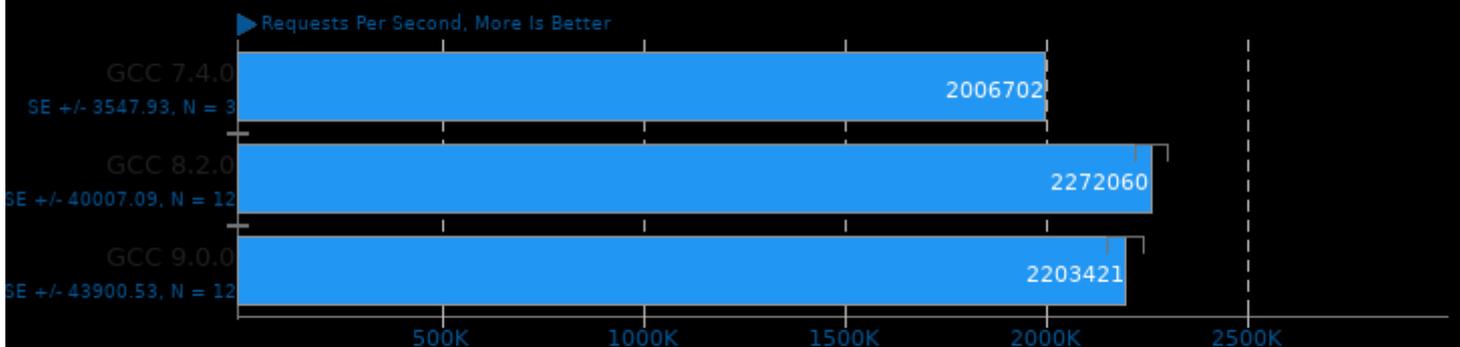
Test: GET



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

Redis 4.0.8

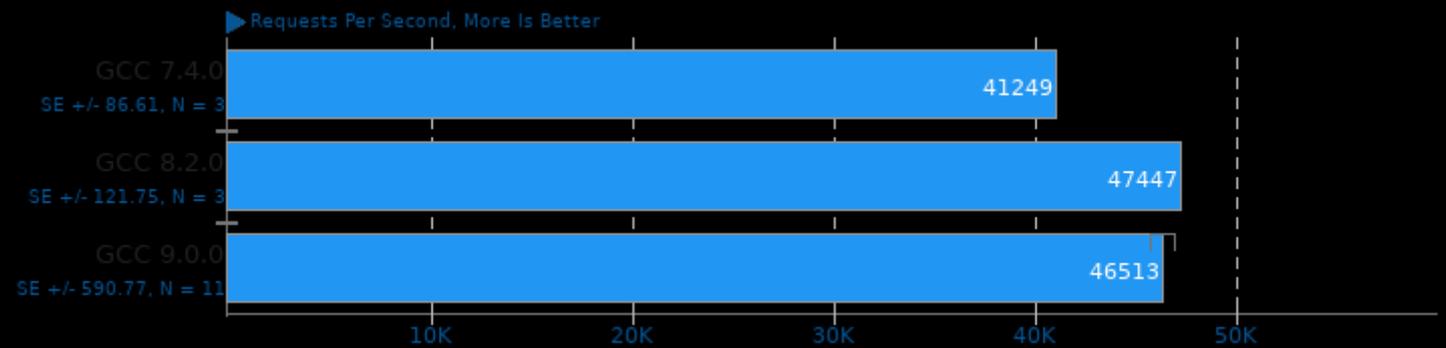
Test: SET



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

NGINX Benchmark 1.9.9

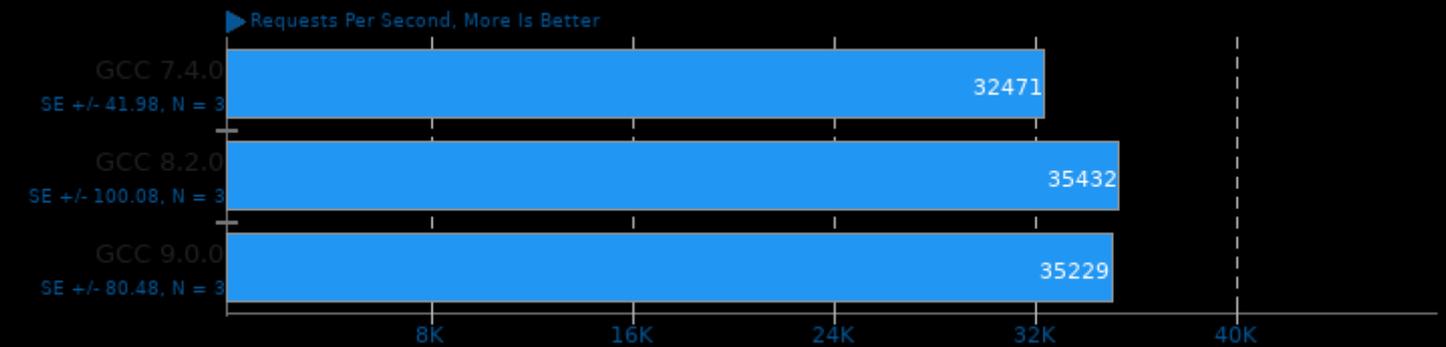
Static Web Page Serving



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

Apache Benchmark 2.4.29

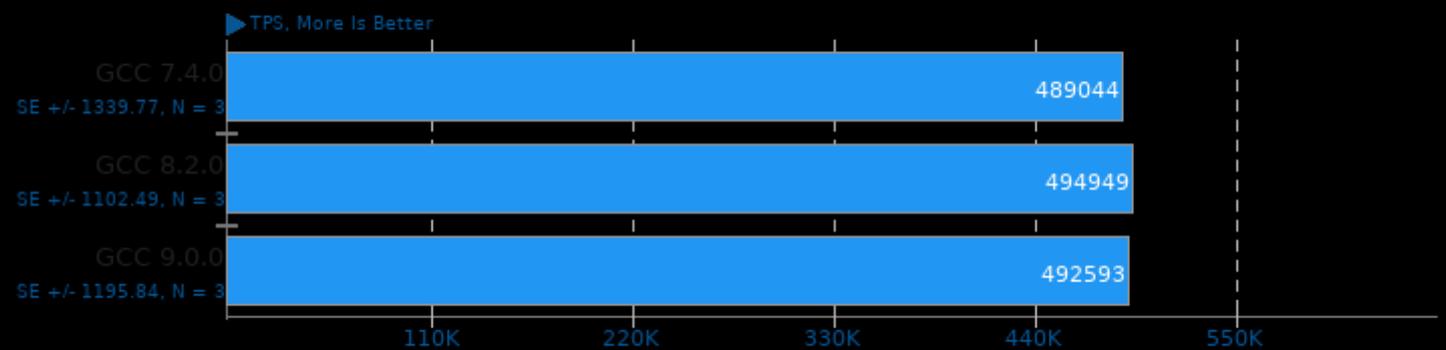
Static Web Page Serving



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

PostgreSQL pgbench 10.3

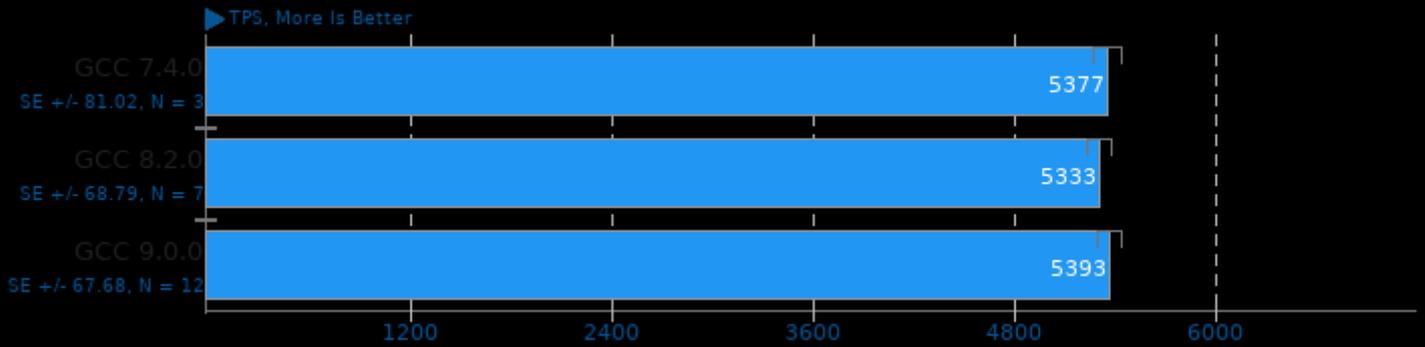
Scaling: Buffer Test - Test: Normal Load - Mode: Read Only



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O3 -march=native -lpgcommon -lpgport -lpq -pthread -lrt -lcrypt -ldl -lm

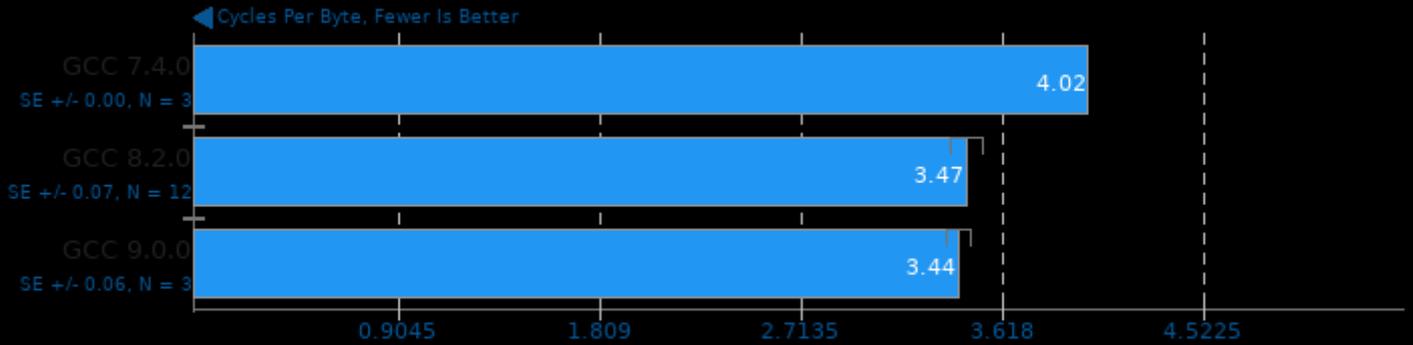
PostgreSQL pgbench 10.3

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



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O3 -march=native -lpgcommon -lpgport -lpq -lpthread -lrt -lcrypt -ldl -lm

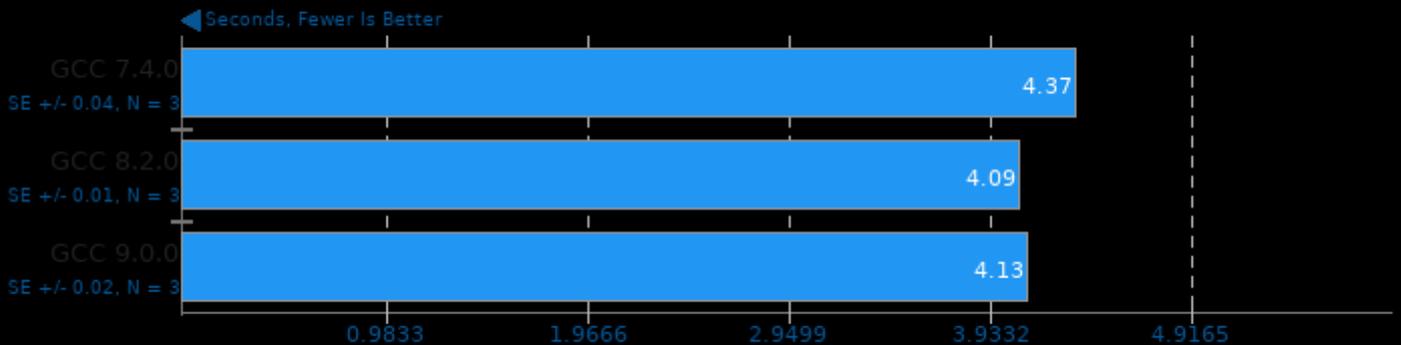
BLAKE2 20170307



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

Timed HMMer Search 2.3.2

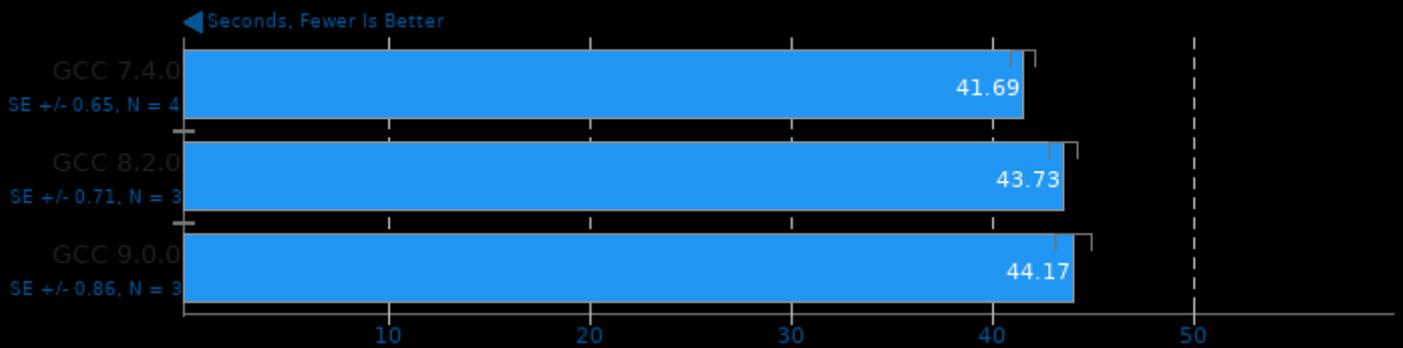
Pfam Database Search



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

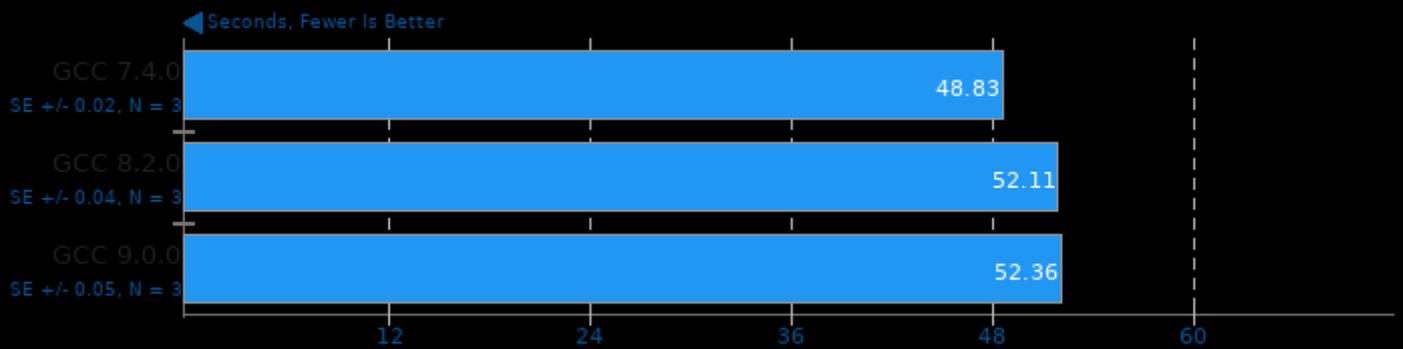
Timed Linux Kernel Compilation 4.18

Time To Compile



Timed PHP Compilation 7.1.9

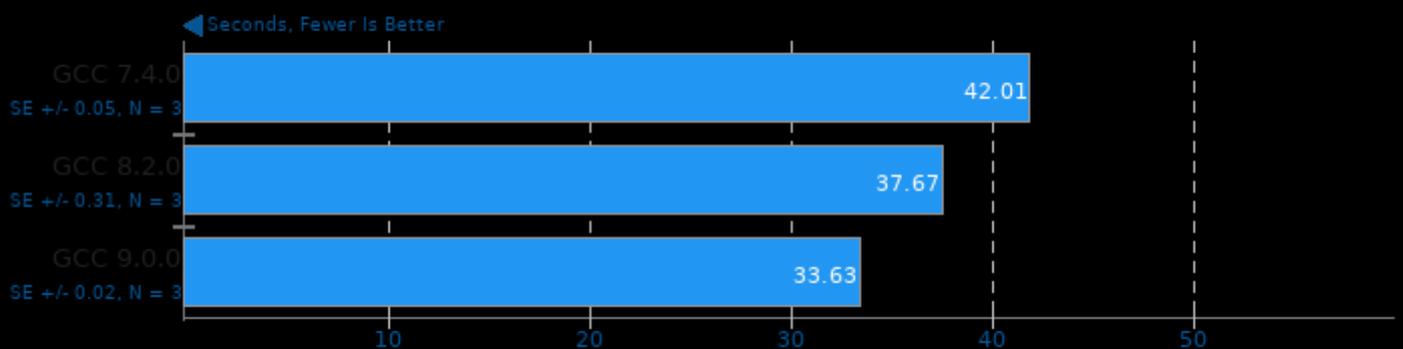
Time To Compile



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

C-Ray 1.1

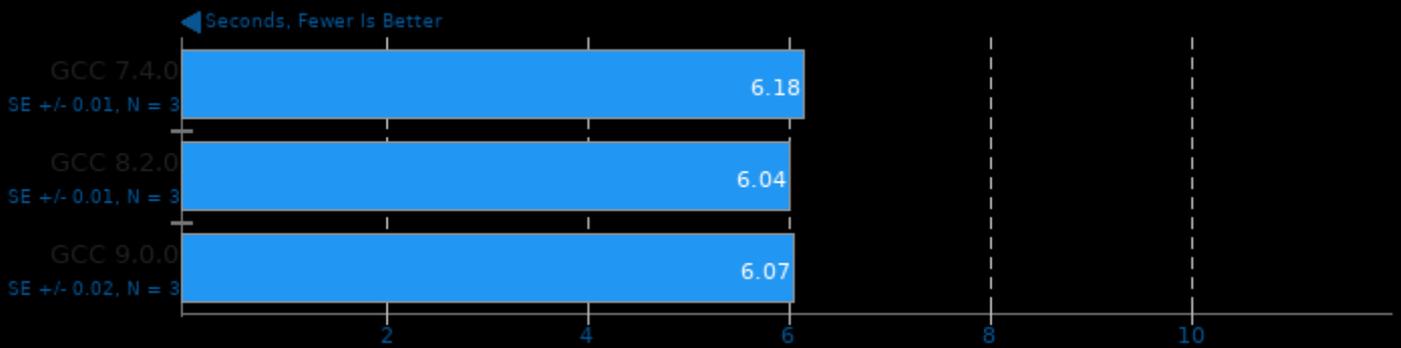
Total Time - 4K, 16 Rays Per Pixel



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

Smallpt 1.0

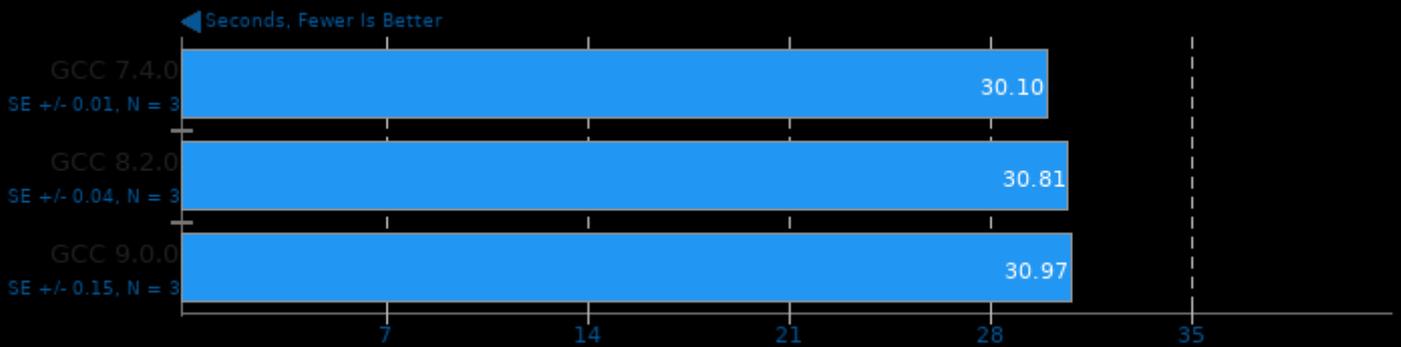
Global Illumination Renderer; 128 Samples



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

AOBench

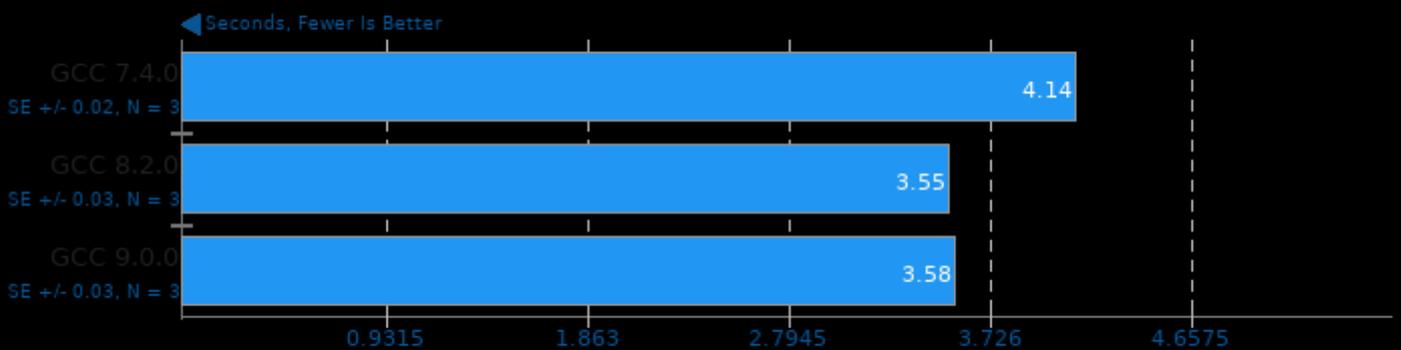
Size: 2048 x 2048 - Total Time



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

Bullet Physics Engine 2.81

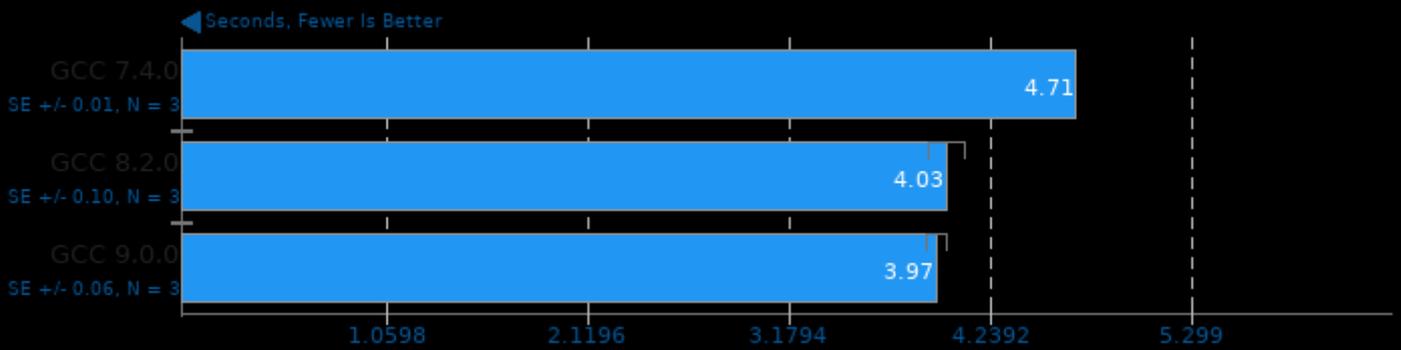
Test: 3000 Fall



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

Bullet Physics Engine 2.81

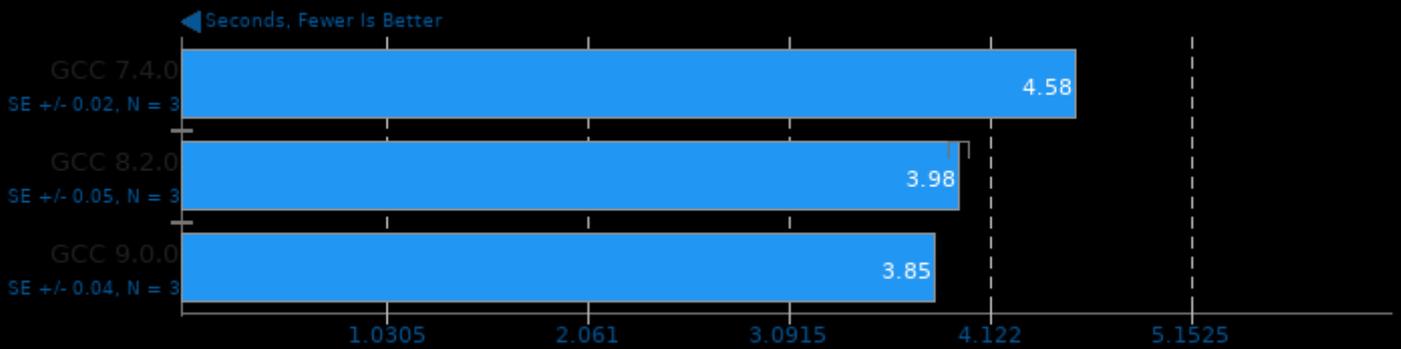
Test: 1000 Stack



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

Bullet Physics Engine 2.81

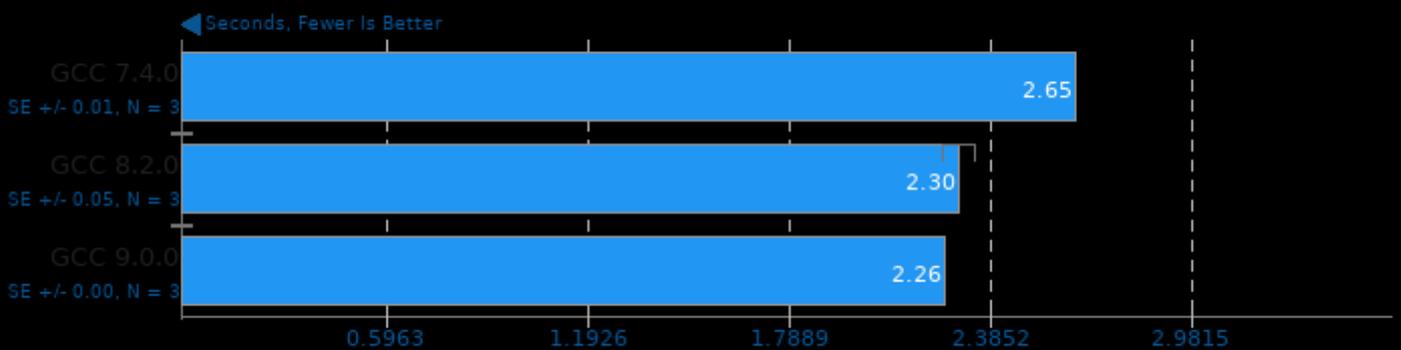
Test: 1000 Convex



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

Bullet Physics Engine 2.81

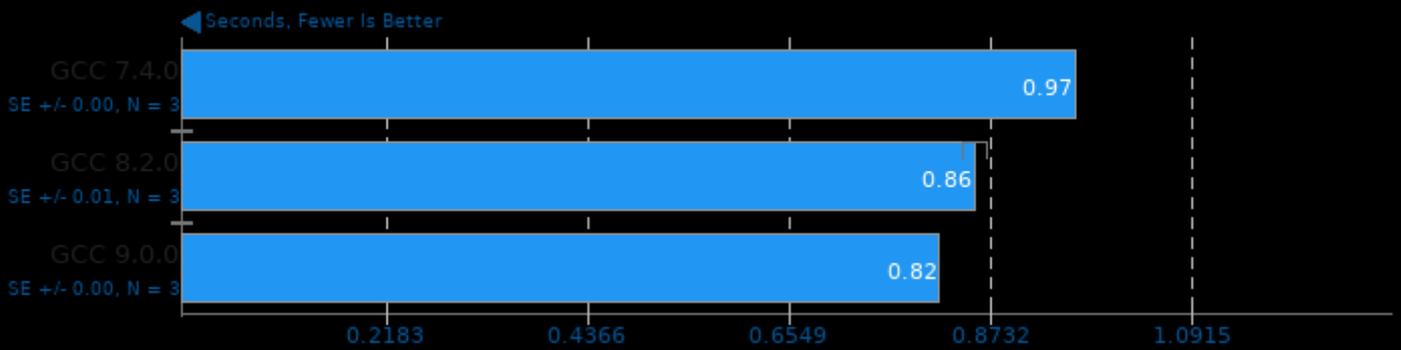
Test: 136 Ragdolls



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

Bullet Physics Engine 2.81

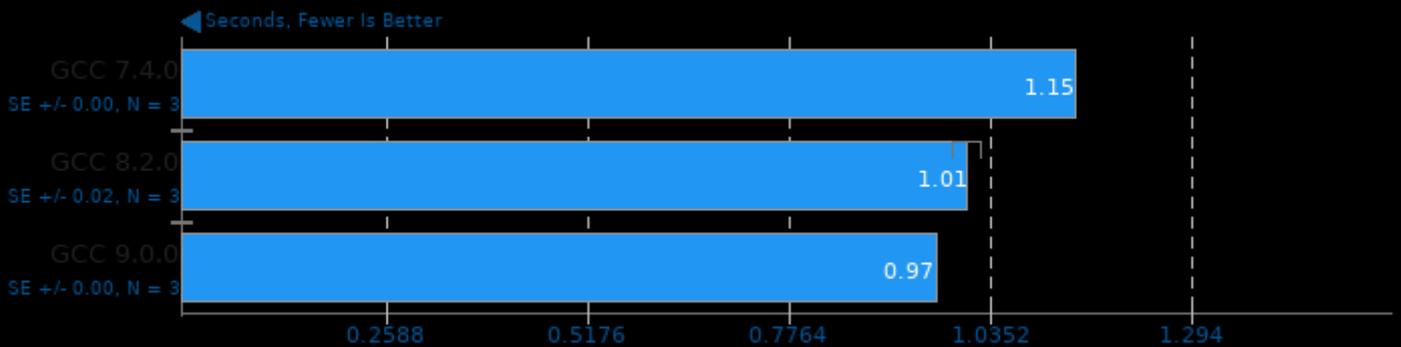
Test: Prim Trimesh



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

Bullet Physics Engine 2.81

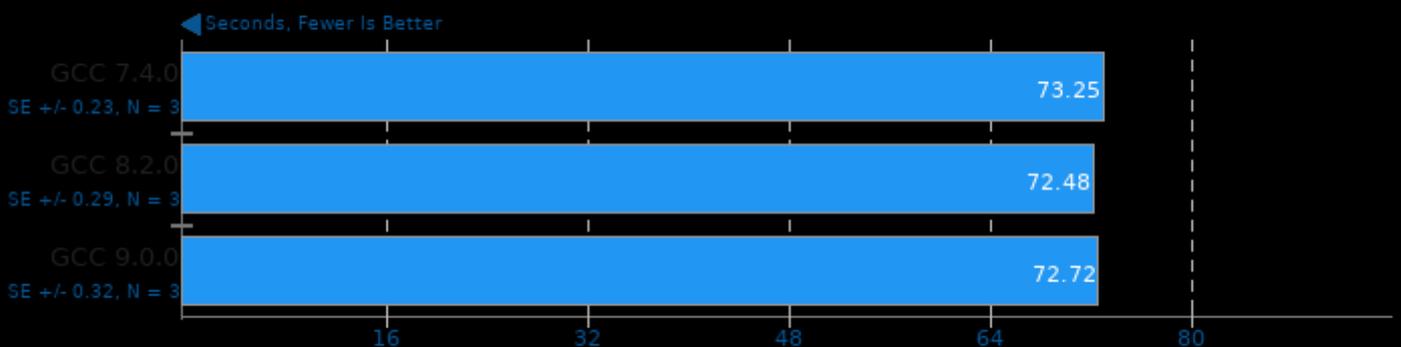
Test: Convex Trimesh



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

XZ Compression 5.2.4

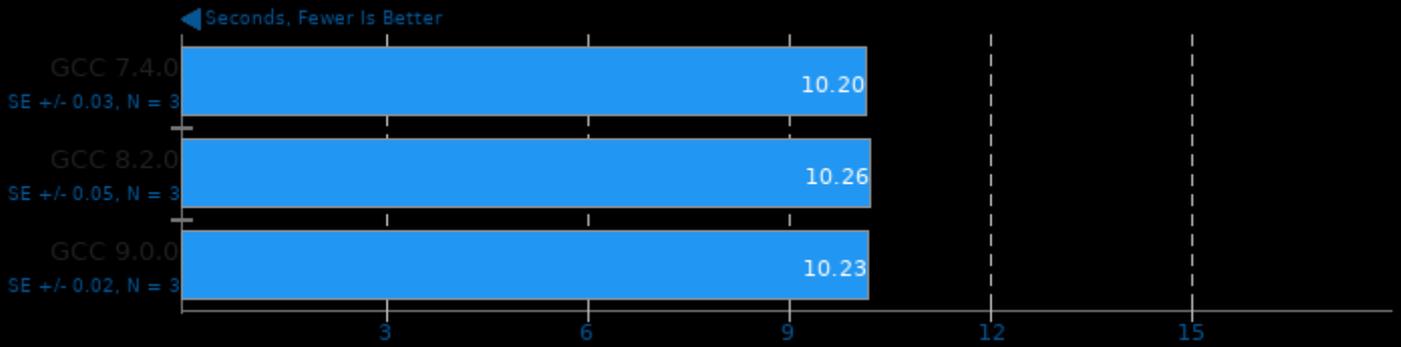
Compressing ubuntu-16.04.3-server-i386.img, Compression Level 9



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

Zstd Compression 1.3.4

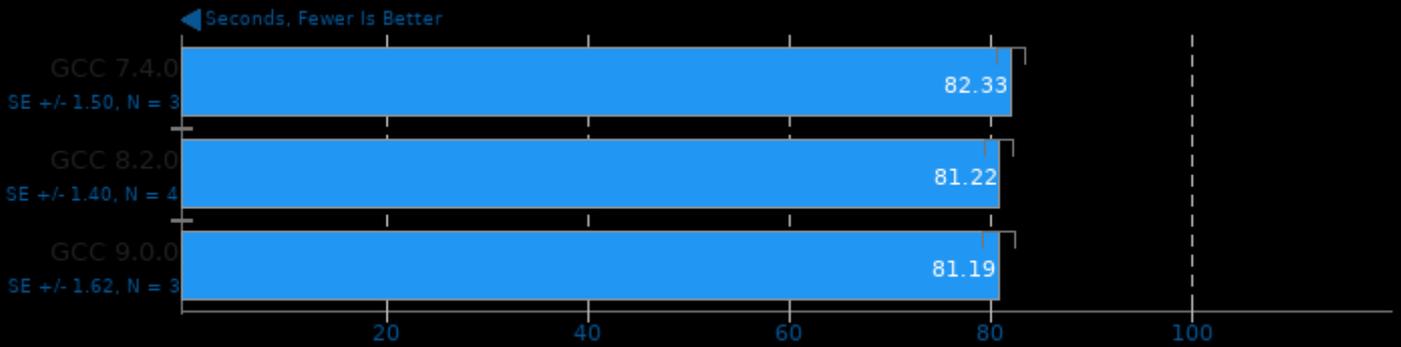
Compressing ubuntu-16.04.3-server-i386.img, Compression Level 19



1. (CC) gcc options: -O3 -march=native -pthread -lz -llzma -llz4

dav1d 0.1

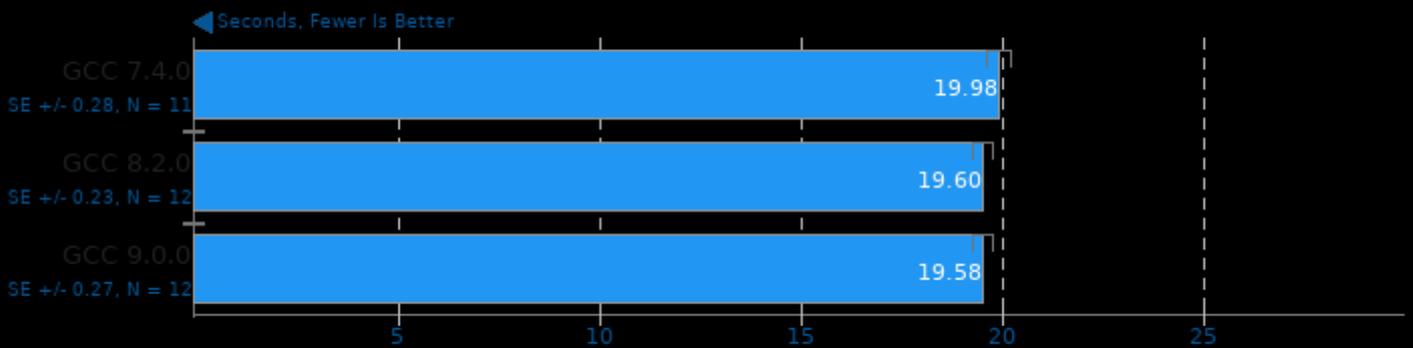
Video Input: Summer Nature 4K



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

dav1d 0.1

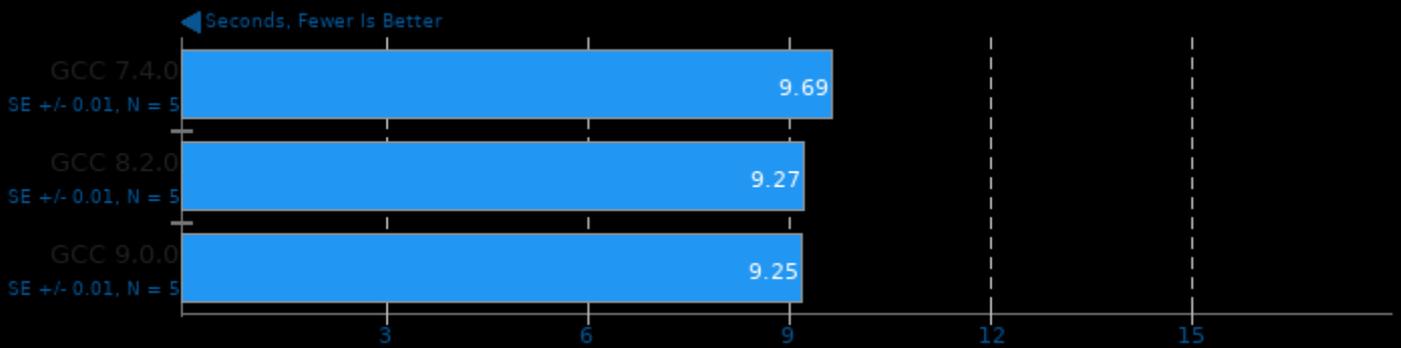
Video Input: Summer Nature 1080p



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

FLAC Audio Encoding 1.3.2

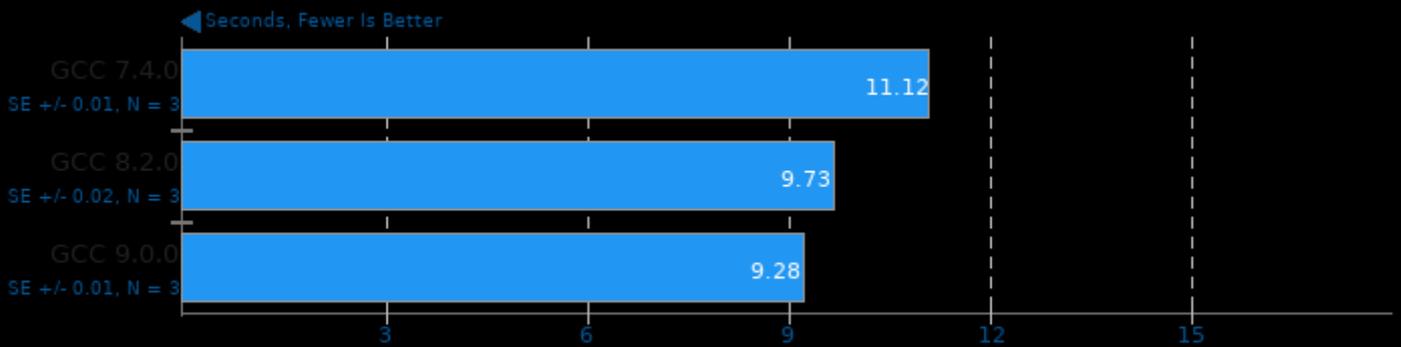
WAV To FLAC



1. (CXX) g++ options: -O3 -march=native -fvisibility=hidden -logg -lm

LAME MP3 Encoding 3.100

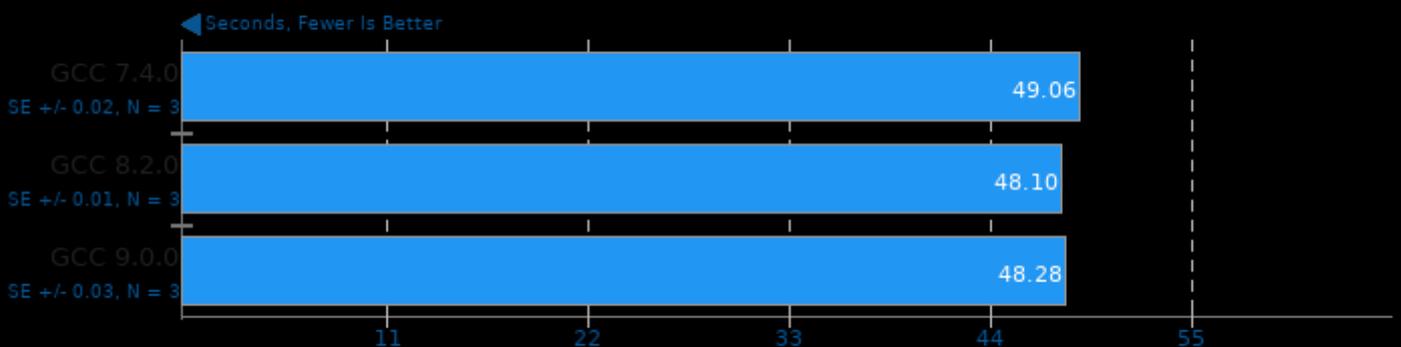
WAV To MP3



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

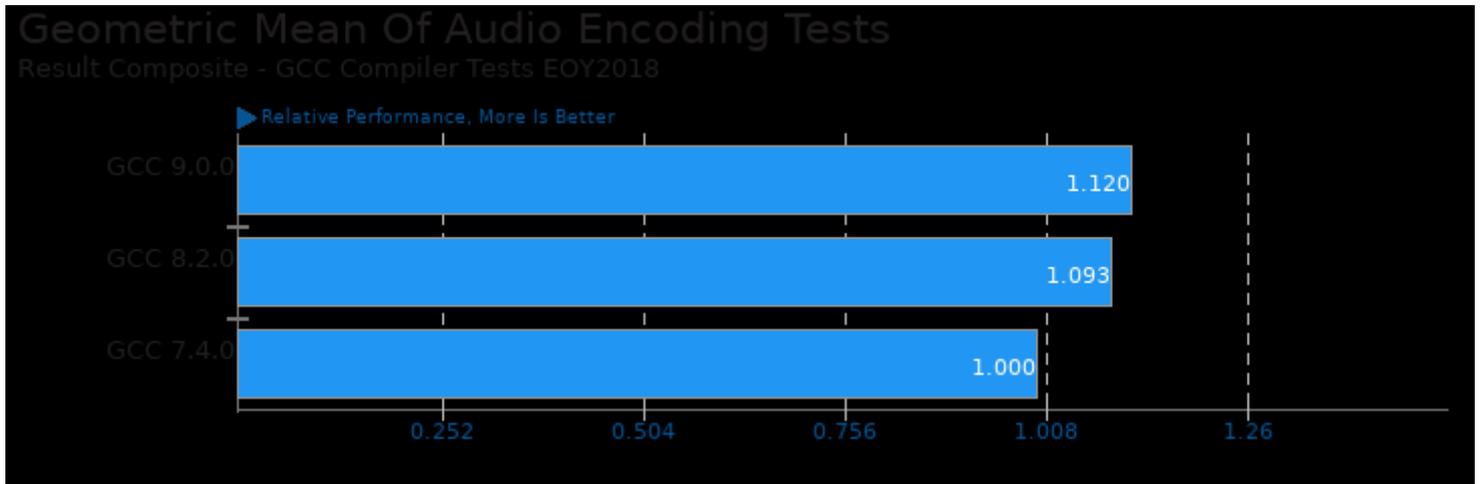
m-queens 1.2

Time To Solve

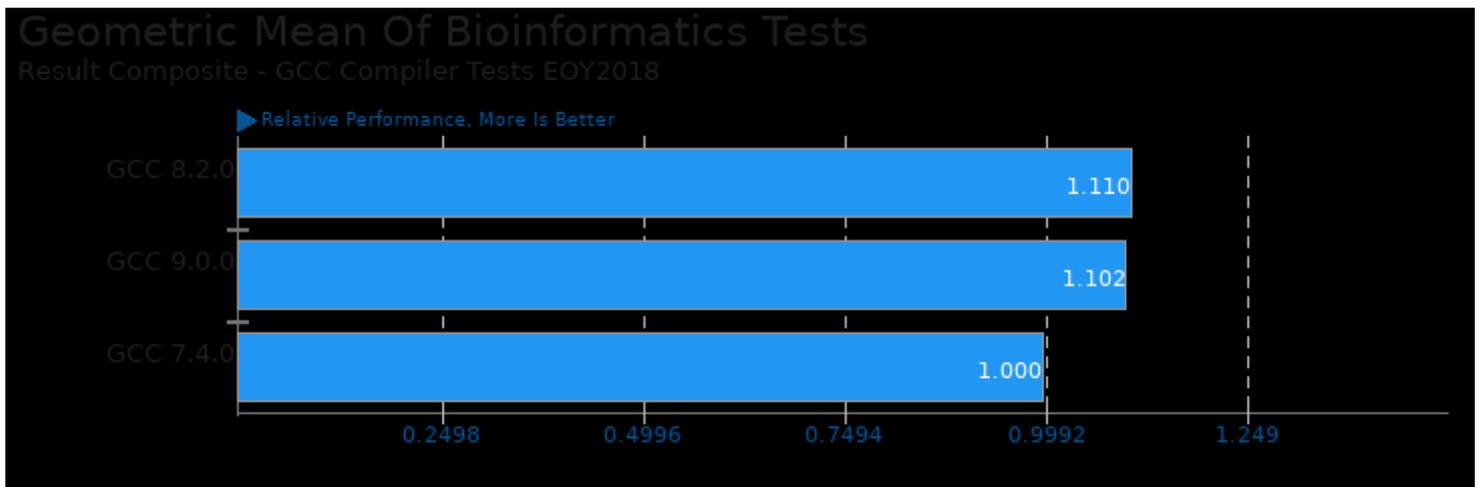


1. (CXX) g++ options: -fopenmp -O3 -march=native -O2

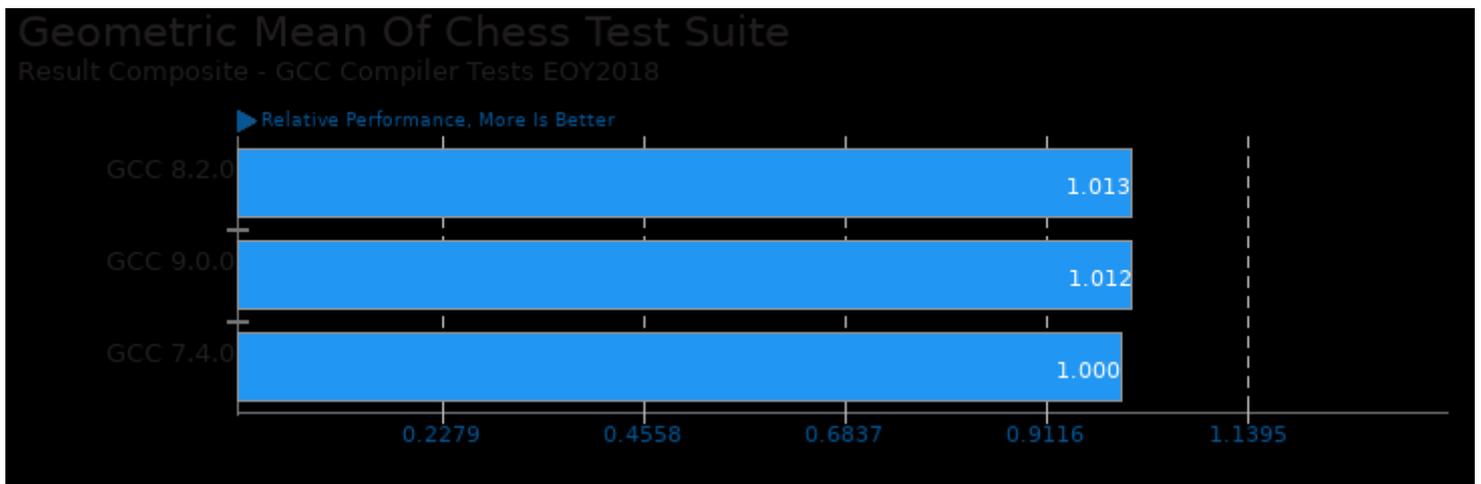
These geometric means are based upon test groupings / test suites for this result file.



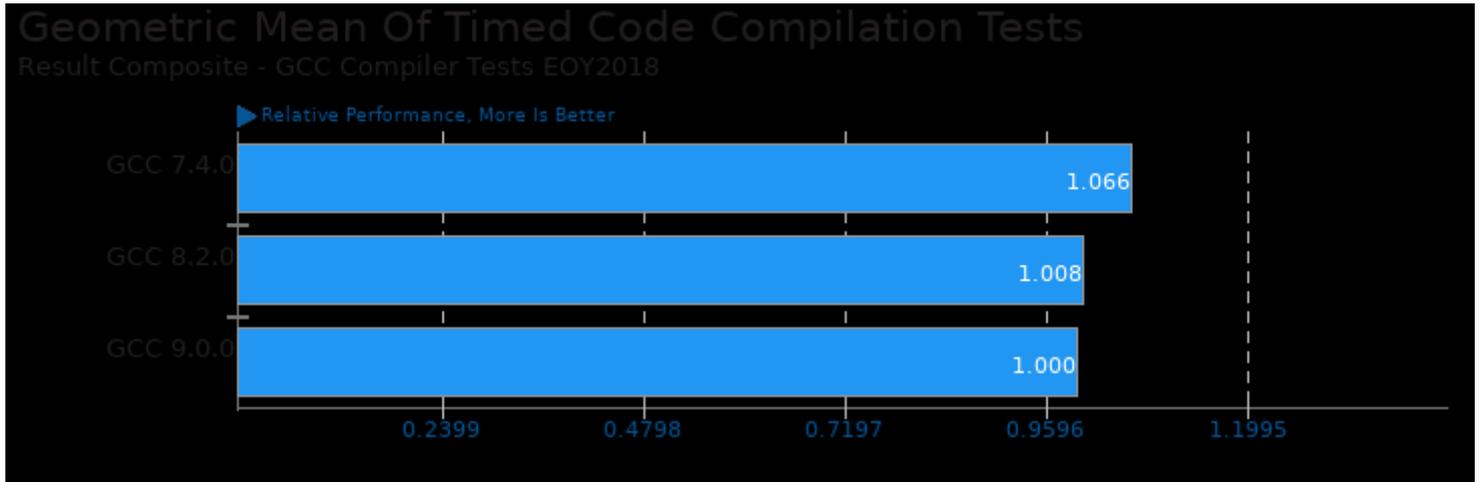
Geometric mean based upon tests: pts/encode-mp3 and pts/encode-flac



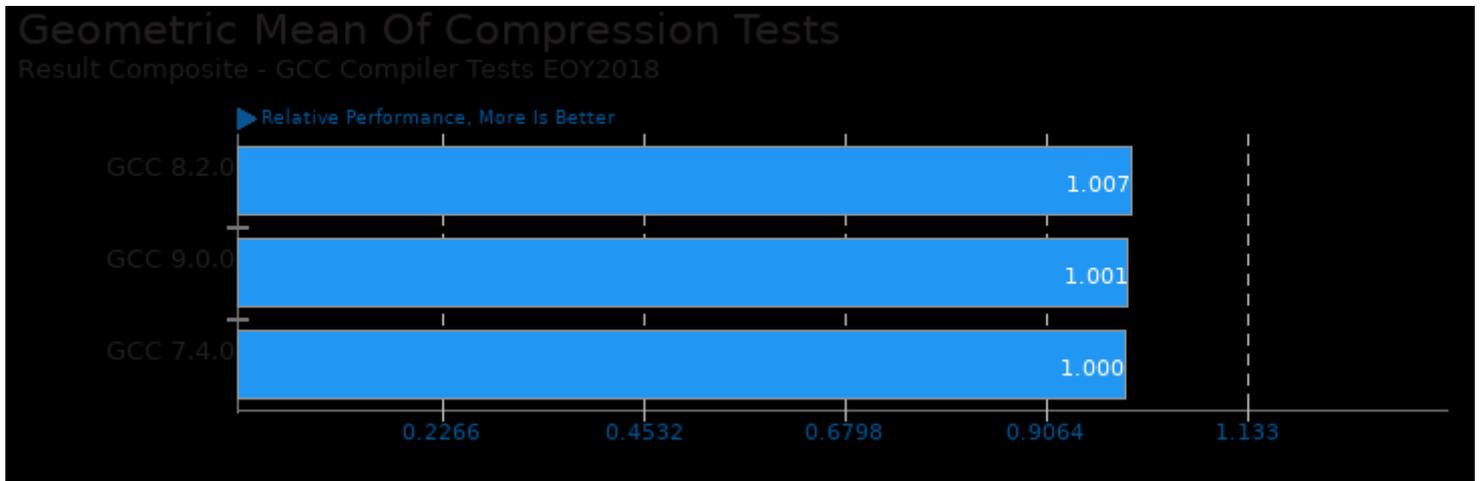
Geometric mean based upon tests: pts/himeno and pts/hmmer



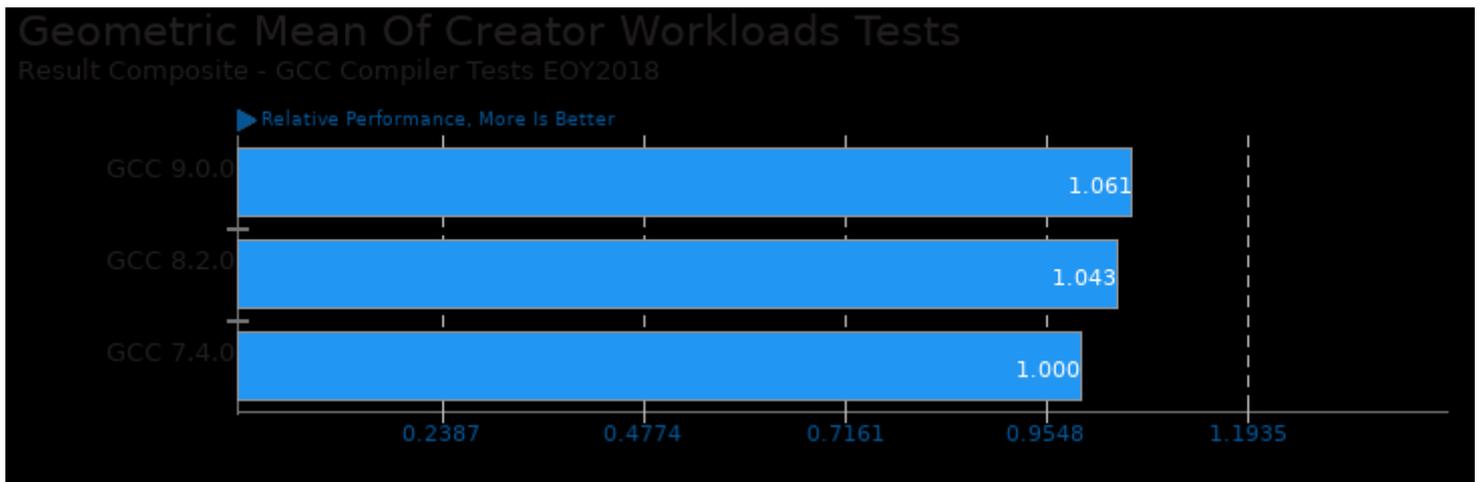
Geometric mean based upon tests: pts/crafty, pts/tscp, pts/stockfish, pts/asmfish and pts/m-queens



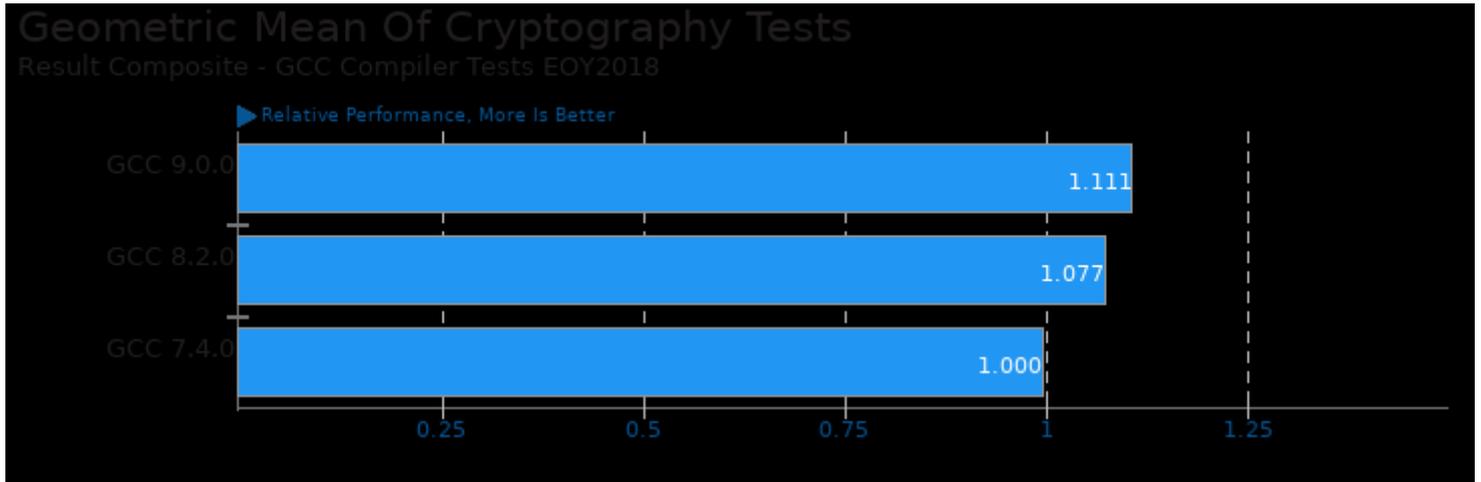
Geometric mean based upon tests: pts/build-php and pts/build-linux-kernel



Geometric mean based upon tests: pts/compress-7zip, pts/compress-zstd and pts/compress-xz



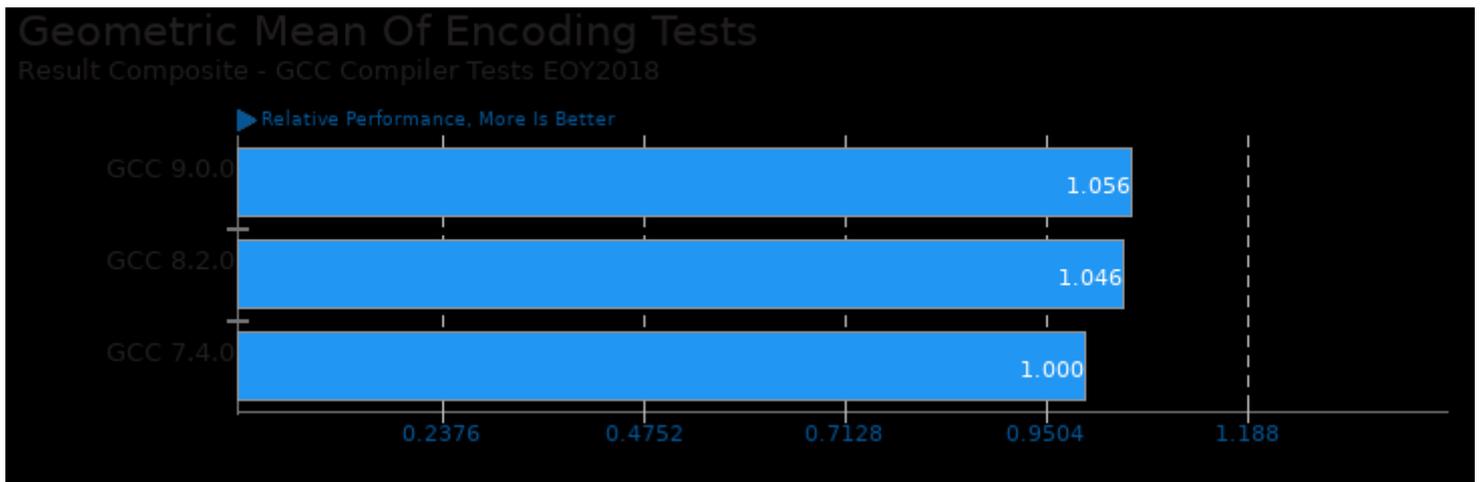
Geometric mean based upon tests: pts/c-ray, pts/aobench, pts/smallpt, pts/x264, pts/x265, pts/dav1d, pts/encode-mp3 and pts/encode-flac



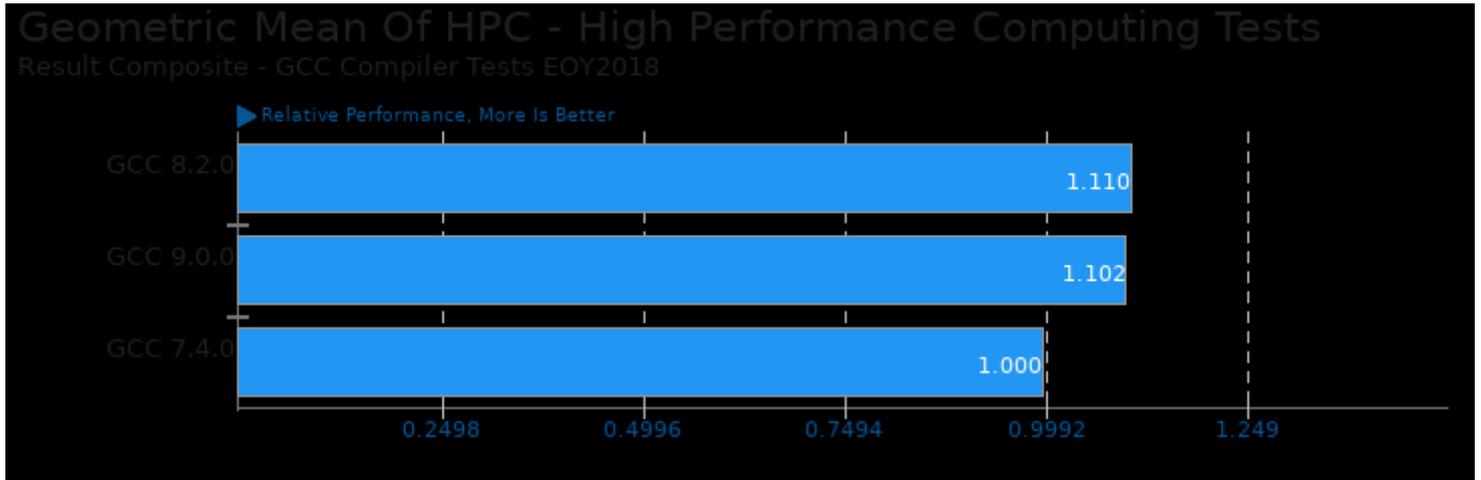
Geometric mean based upon tests: pts/blake2 and pts/cpuminer-opt



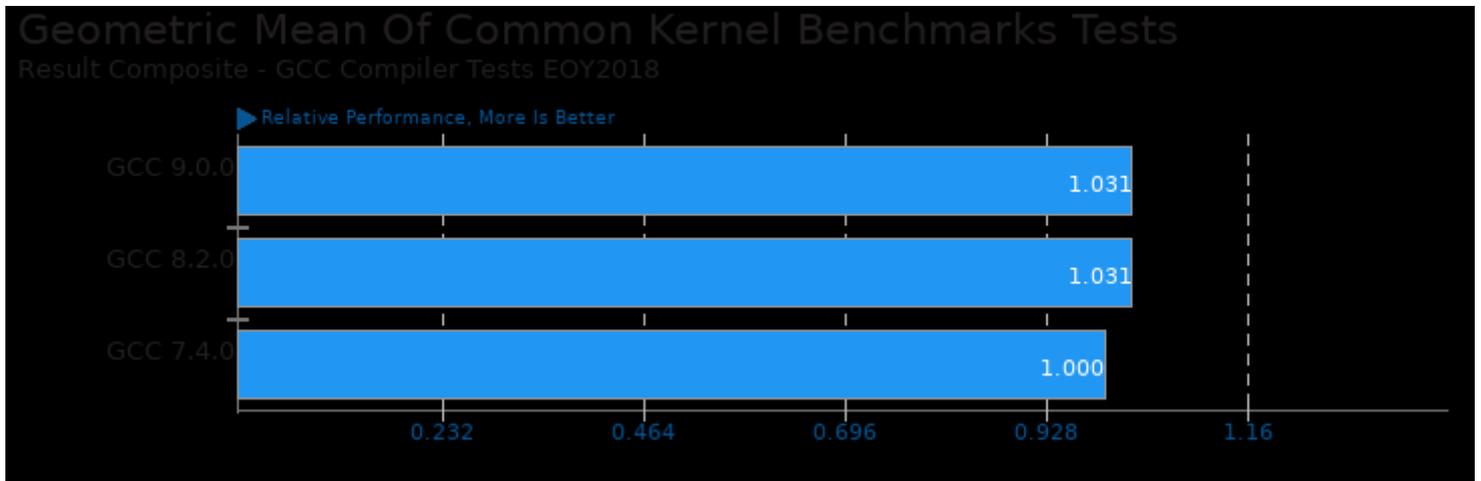
Geometric mean based upon tests: pts/redis and pts/pgbench



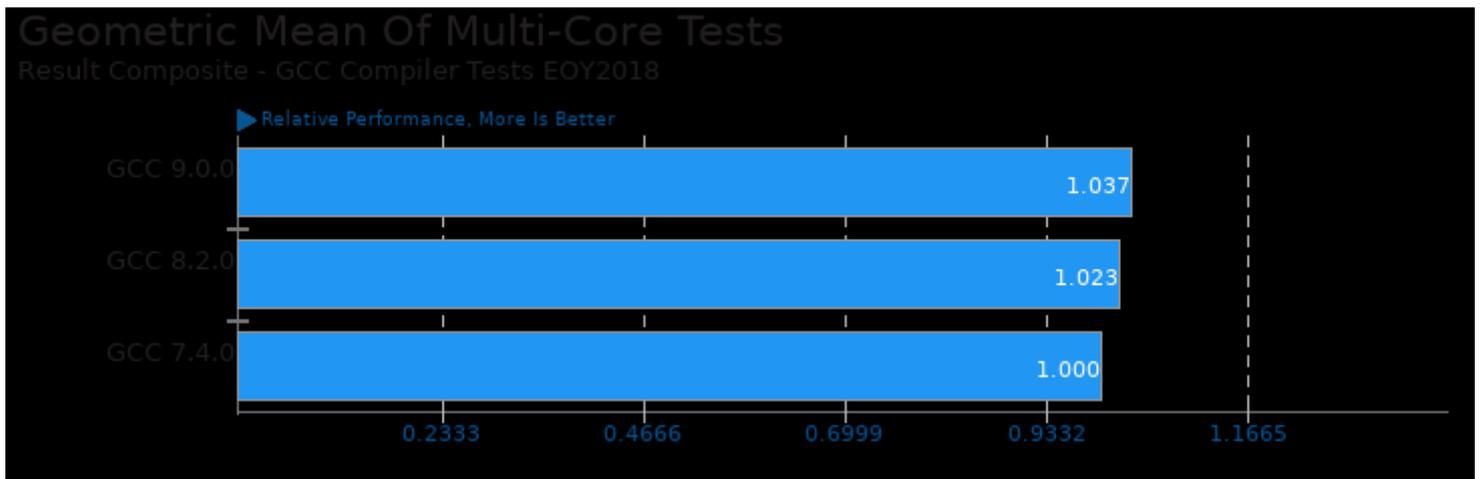
Geometric mean based upon tests: pts/encode-mp3, pts/encode-flac, pts/x264, pts/x265 and pts/dav1d



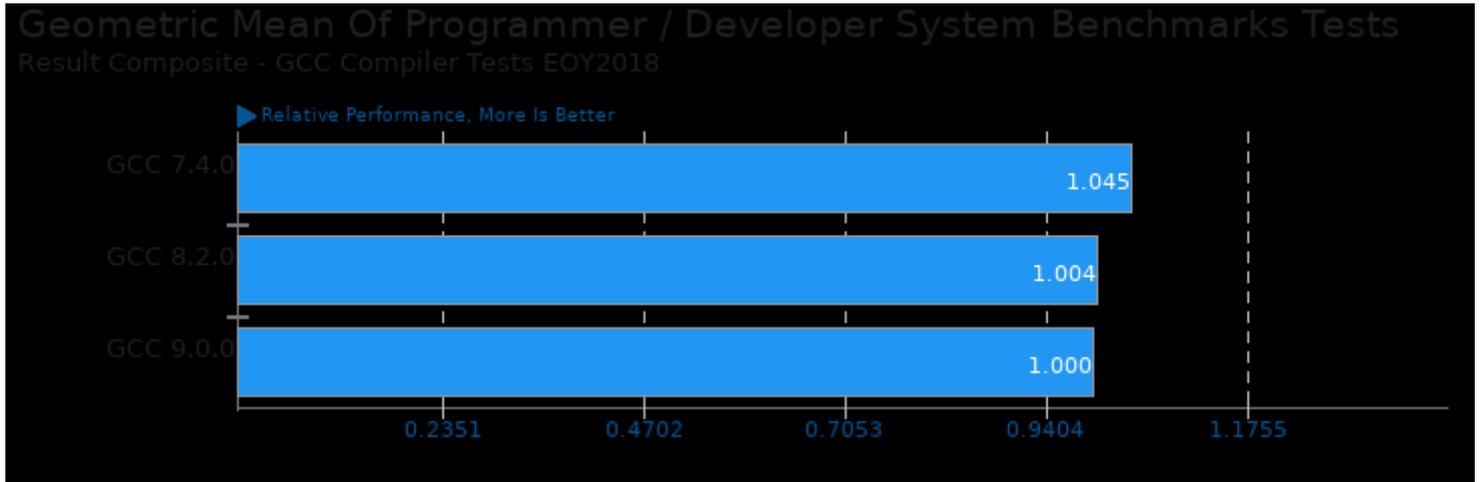
Geometric mean based upon tests: pts/himeno and pts/hmmer



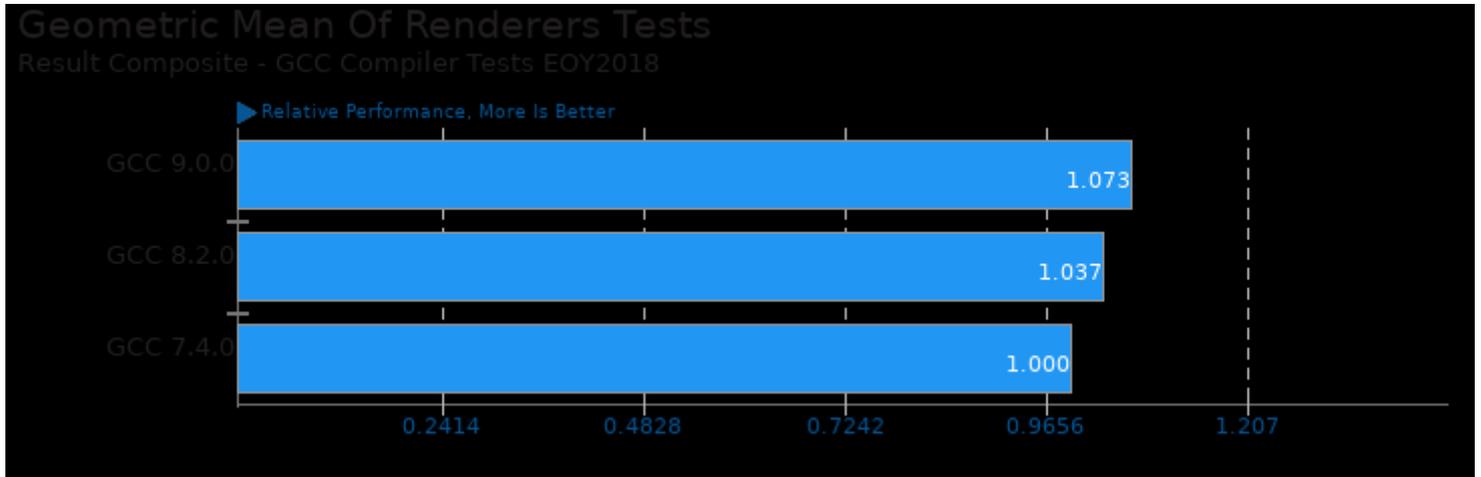
Geometric mean based upon tests: pts/apache and pts/pgbench



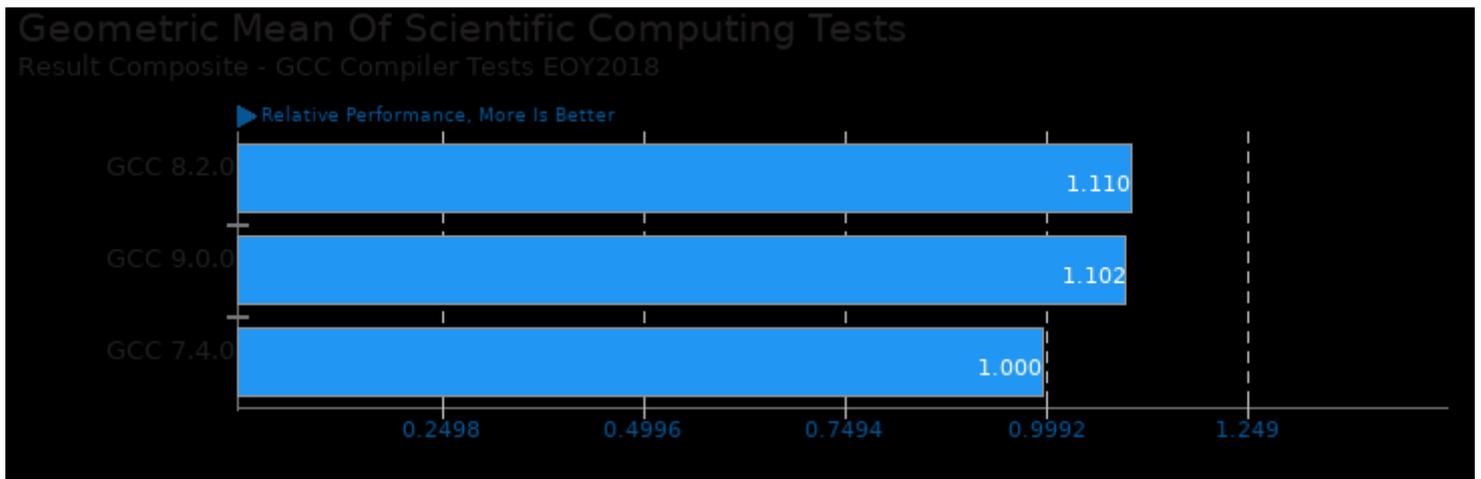
Geometric mean based upon tests: pts/cpuminer-opt, pts/c-ray, pts/stockfish, pts/m-queens, pts/x264, pts/x265, pts/dav1d, pts/smallpt, pts/asmfish, pts/ebizzy, pts/compress-7zip, pts/compress-zstd, pts/build-php, pts/build-linux-kernel, pts/aobench, pts/xsbench and pts/pgbench



Geometric mean based upon tests: pts/compress-zstd, pts/build-php and pts/build-linux-kernel



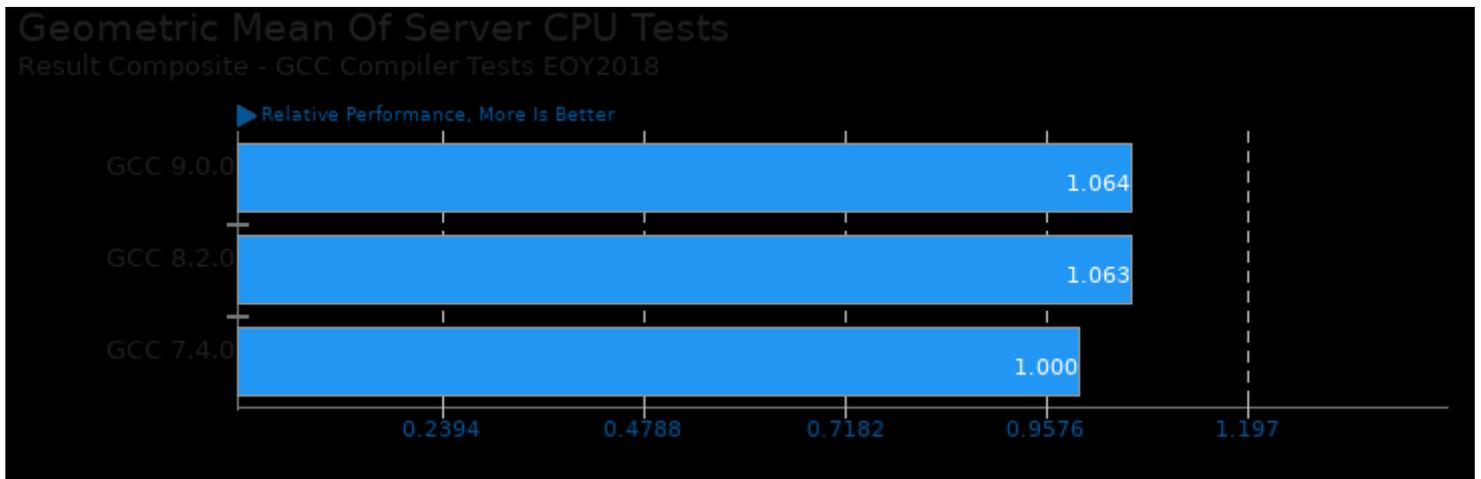
Geometric mean based upon tests: pts/c-ray, pts/aobench and pts/smallpt



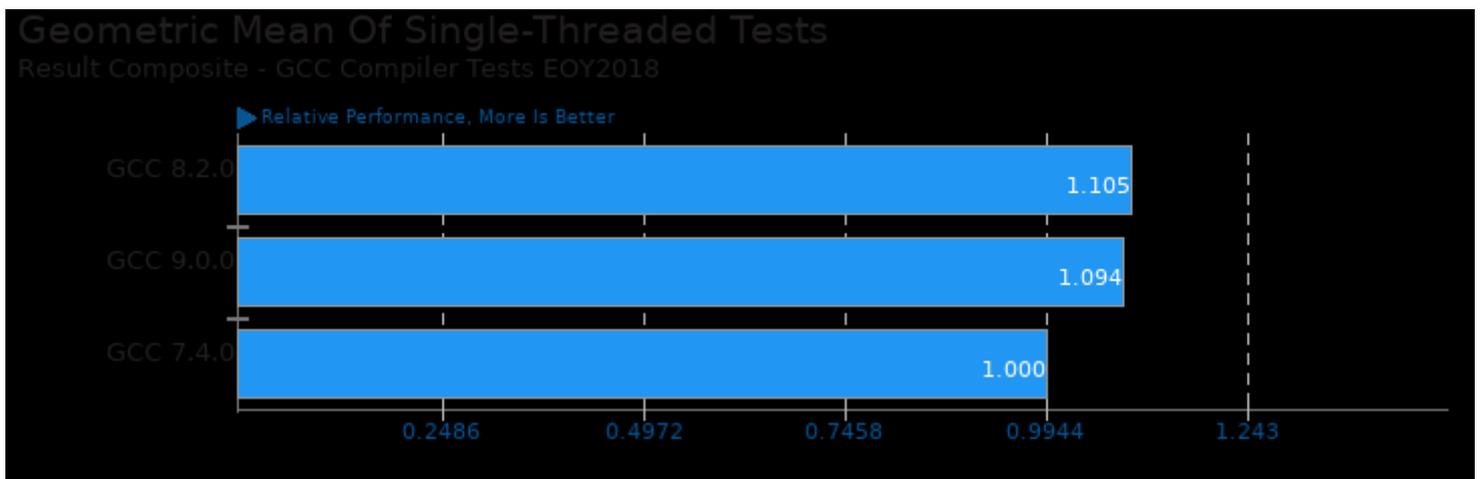
Geometric mean based upon tests: pts/himeno and pts/hmmer



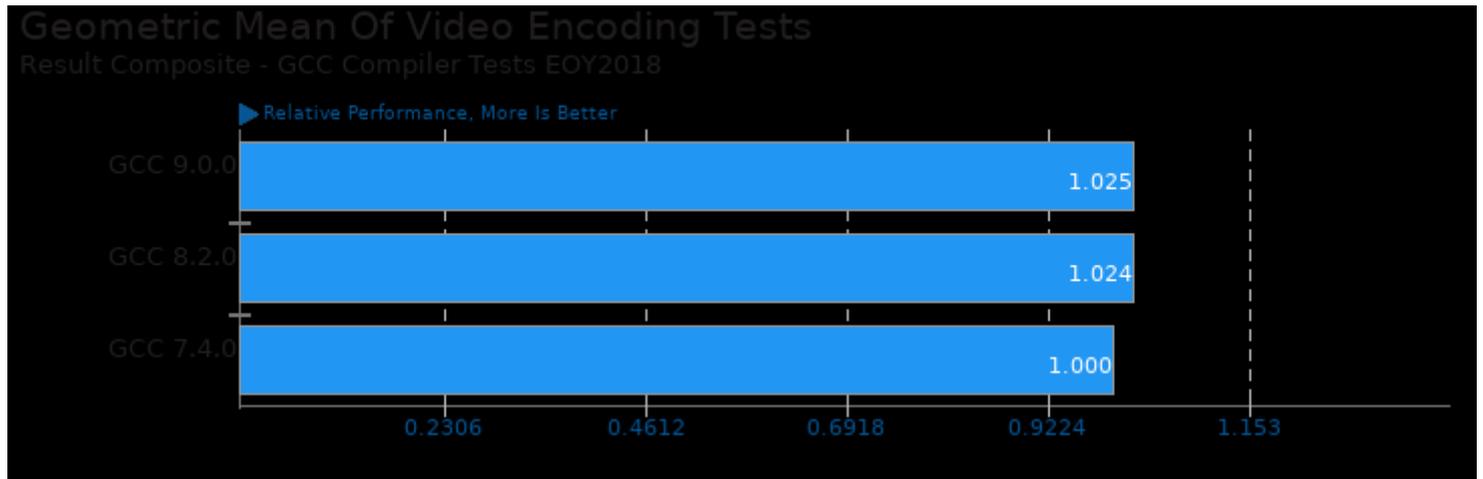
Geometric mean based upon tests: pts/apache, pts/nginx, pts/ebizzy, pts/pgbench and pts/redis



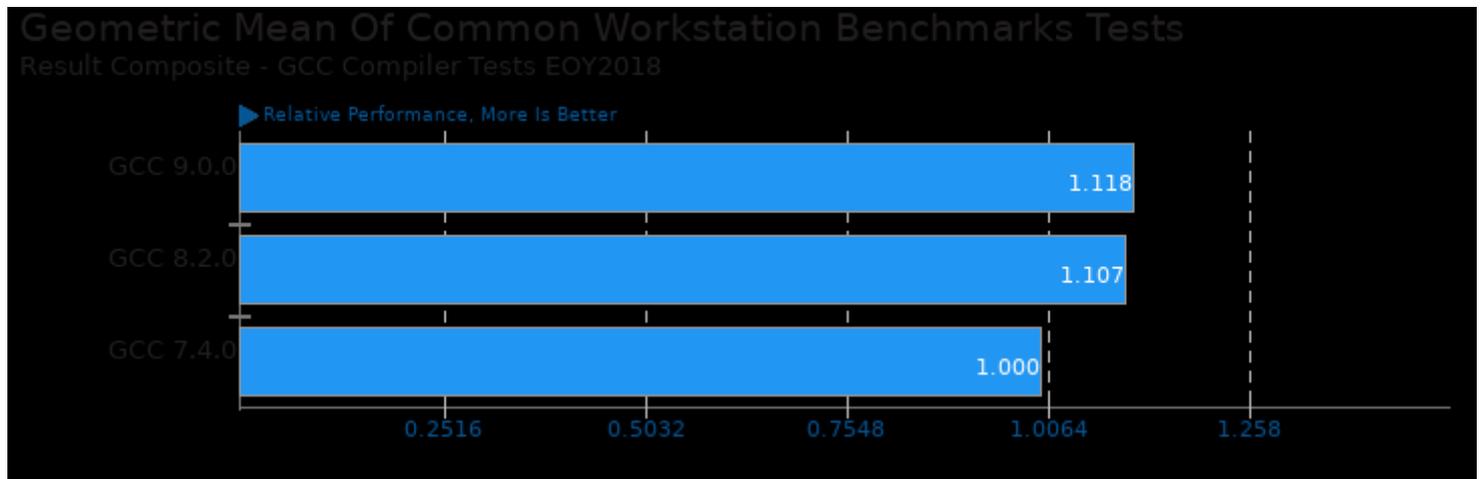
Geometric mean based upon tests: pts/x264, pts/x265, pts/dav1d, pts/himeno, pts/compress-7zip, pts/stockfish, pts/asmfish, pts/build-linux-kernel, pts/build-php, pts/c-ray, pts/compress-zstd, pts/m-queens, pts/redis and pts/cpuminer-opt



Geometric mean based upon tests: pts/blake2, pts/scimark2, pts/encode-flac, pts/encode-mp3, pts/redis and pts/nginx



Geometric mean based upon tests: pts/x264, pts/x265 and pts/dav1d



Geometric mean based upon tests: pts/himeno and pts/x265

This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 05:12.