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AMD Ryzen 9 5900X 12-Core testing with a MSI B550M PRO-VDH WIFI (MS-7C95) v1.0 (2.H2 BIOS) and MSI NVIDIA GeForce GTX 1650 4GB on Ubuntu 18.04 via the Phoronix Test Suite.

Automated Executive Summary

Test1 had the most wins, coming in first place for 66% of the tests.

Based on the geometric mean of all complete results, the fastest (Test1) was 9.704x the speed of the slowest (test). Test1withupdate was 0.994x the speed of Test1 and test was 0.104x the speed of Test1withupdate.

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

C-Ray (Total Time) at 19.106x
NAS Parallel Benchmarks (Test / Class: UA.A) at 15.01x
NAS Parallel Benchmarks (Test / Class: EP.B) at 14.171x
NAS Parallel Benchmarks (Test / Class: LU.A) at 14.156x
7-Zip Compression (Compress Speed Test) at 11.602x
Smallpt (Global Illumination Renderer; 100 Samples) at 10.737x
John The Ripper (Test: Blowfish) at 7.84x
Timed PHP Compilation (Time To Compile) at 6.641x
Timed HMMer Search (Pfam Database Search) at 6.159x

NAS Parallel Benchmarks (Test / Class: IS.C) at 4.894x.

Test Systems:

test

Processor: AMD Phenom II X4 945 @ 3.00GHz (4 Cores), Motherboard: Gigabyte GA-MA78GM-S2H, Memory: 6144MB, Disk: 160GB Seagate ST3160215AS, Graphics: Gallium 0.4 on AMD RS780 512MB, Audio: Realtek ALC889A, Monitor: PLE2607WS

OS: Calculate Linux Desktop 11.15 GNOME, Kernel: 3.3.3-calculate (x86_64), Desktop: GNOME Shell 3.2.2.1, Display Server: X Server 1.11.2, OpenGL: 2.1 Mesa 7.11.2 Gallium 0.4, Compiler: GCC 4.5.3 + LLVM 2.9, File-System: ext4, Screen Resolution: 1920x1200

Test1

Processor: AMD Ryzen 9 5900X 12-Core @ 3.70GHz (24 Cores), Motherboard: MSI B550M PRO-VDH WIFI (MS-7C95) v1.0, Chipset: AMD Device 1480, Memory: 32768MB, Disk: 1000GB External USB 3.0, Graphics: MSI NVIDIA GeForce GTX 1650 4096MB (300/405MHz), Audio: NVIDIA Device 1aeb, Network: Realtek RTL8111/8168/8411 + Intel Dual Band Wireless-AC 3168NGW

OS: Ubuntu 18.04, Kernel: 5.4.0-70-generic (x86_64), Desktop: LXDE 0.9.3, Display Server: X Server vt.handoff=1, Display Driver: NVIDIA 450.102.04, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --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
Processor Notes: Scaling Governor: acpi-cpufreq ondemand

Test1withupdate

Processor: AMD Ryzen 9 5900X 12-Core @ 3.70GHz (12 Cores / 24 Threads), Motherboard: MSI B550M PRO-VDH WIFI (MS-7C95) v1.0 (2.H2 BIOS), Chipset: AMD Device 1480, Memory: 32GB, Disk: 1000GB Samsung SSD 980 PRO 1TB, Graphics: MSI NVIDIA GeForce GTX 1650 4GB, Audio: NVIDIA Device 1aeb, Monitor: DELL P2719H, Network: Realtek RTL8111/8168/8411 + Intel Dual Band-AC 3168NGW

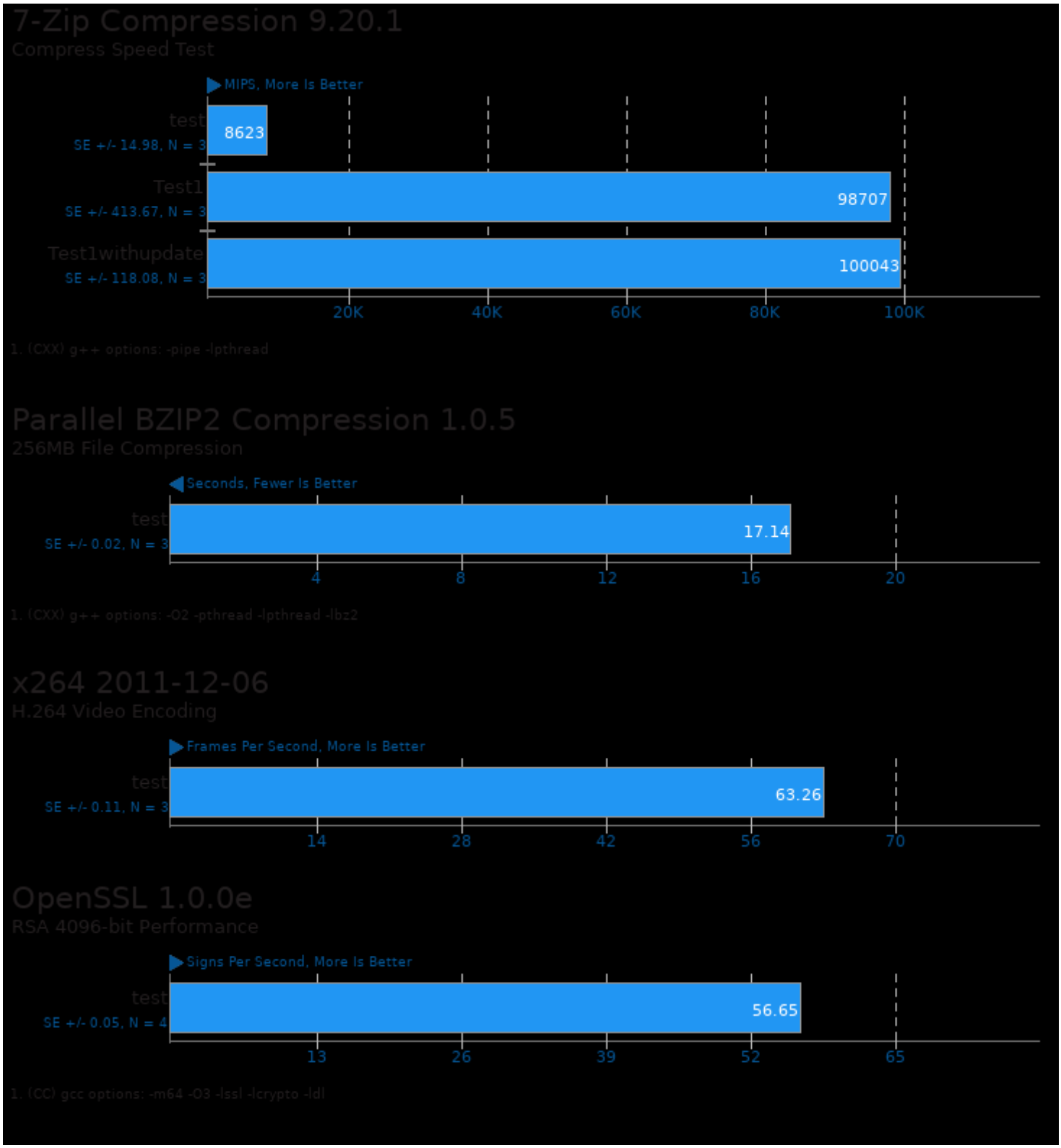
OS: Ubuntu 18.04, Kernel: 5.4.0-70-generic (x86_64), Desktop: LXDE 0.9.3, Display Server: X Server 1.20.8, Display Driver: NVIDIA 450.102.04, OpenGL: 4.6.0, Vulkan: 1.2.133, Compiler: GCC 7.5.0, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --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
Processor Notes: Scaling Governor: acpi-cpufreq ondemand (Boost: Enabled) - CPU Microcode: 0xa201009
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and

seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

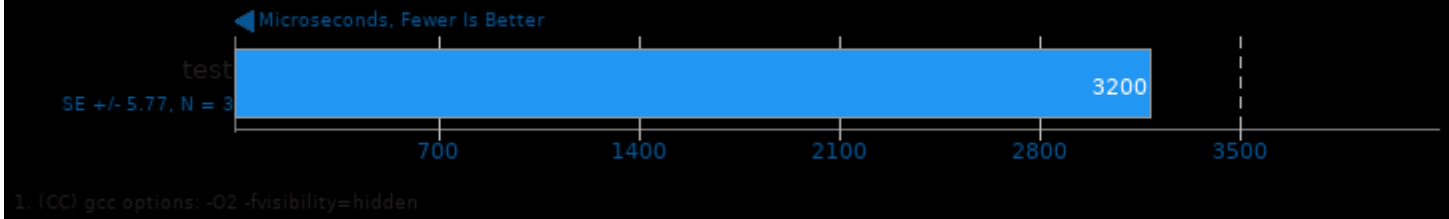
	test	Test1	Test1withupdate
7-Zip Compression - C.S.T (MIPS)	8623	98707	100043
Normalized	8.62%	98.66%	100%
Standard Deviation	0.3%	0.7%	0.2%
Parallel BZIP2 Compression - 2.F.C (sec)	17.14		
Standard Deviation	0.2%		
x264 - H.2.V.E (FPS)	63.26		
Standard Deviation	0.3%		
OpenSSL - R.4.b.P (Signs/sec)	56.65		
Standard Deviation	0.2%		
Gcrypt Library - C.E.C (us)	3200		
Standard Deviation	0.3%		
John The Ripper - Blowfish (Real C/S)	3399	26649	26419
Normalized	12.75%	100%	99.14%
Standard Deviation	0.1%	0.1%	1.5%
GraphicsMagick - L.A.T (Iterations/min)	43		
Standard Deviation	0%		
GraphicsMagick - Resizing (Iterations/min)	99		
Standard Deviation	0.6%		
Himeno Benchmark - P.P.S (MFLOPS)	508.79	2104	2080
Normalized	24.18%	100%	98.83%
Standard Deviation	0.4%	1.8%	0.6%
C-Ray - Total Time (sec)	93.79	4.94	4.909
Normalized	5.23%	99.37%	100%
Standard Deviation	0%	0.3%	0.3%
Smallpt - G.I.R.1.S (sec)	204	19	19
Normalized	9.31%	100%	100%
Standard Deviation	0%	3%	
Crafty - Elapsed Time (sec)	113.59		42.52
Normalized	37.43%		100%
Standard Deviation	0.4%		0.4%
Timed HMMer Search - P.D.S (sec)	25.11		4.077
Normalized	16.24%		100%
Standard Deviation	1%		0.2%
Timed MAFFT Alignment - M.S.A (sec)	13.07		
Standard Deviation	0%		
Minion - Quasigroup (sec)	233.02		
Standard Deviation	1.3%		
Minion - Solitaire (sec)	389.58		
Standard Deviation	35.3%		
NAS Parallel Benchmarks - EP.B (Mop/s)	87.64	1242	1237
Normalized	7.06%	100%	99.61%
Standard Deviation	0.8%	1.2%	0.1%
NAS Parallel Benchmarks - IS.C (Mop/s)	68.99	337.65	324.53
Normalized	20.43%	100%	96.11%
Standard Deviation	3.5%	0.1%	0.1%
NAS Parallel Benchmarks - LU.A (Mop/s)	4446	62945	62913
Normalized	7.06%	100%	99.95%

Standard Deviation	0.6%	0.8%	1.1%
NAS Parallel Benchmarks - UA.A (Mop/s)	**18.38**	**275.89**	272.92
Normalized	6.66%	100%	98.92%
Standard Deviation	1.1%	1.6%	0%
Timed PHP Compilation - Time To Compile (sec)	**54.52**	**8.21**	8.236
Normalized	15.06%	100%	99.68%
Standard Deviation	1.4%	0.5%	0.6%


7-Zip Compression 9.20.1
Compress Speed Test
MIPS, More Is Better
test
SE +/- 14.98, N = 3
8623
Test1
SE +/- 413.67, N = 3
98707
Test1withupdate
SE +/- 118.08, N = 3
100043
20K
40K
60K
80K
100K
1. (CXX) g++ options: -pipe -lpthread
Parallel BZIP2 Compression 1.0.5
256MB File Compression
Seconds, Fewer Is Better
test
SE +/- 0.02, N = 3
17.14
4
8
12
16
20
1. (CXX) g++ options: -O2 -pthread -lpthread -lbz2
x264 2011-12-06
H.264 Video Encoding
Frames Per Second, More Is Better
test
SE +/- 0.11, N = 3
63.26
14
28
42
56
70
OpenSSL 1.0.0e
RSA 4096-bit Performance
Signs Per Second, More Is Better
test
SE +/- 0.05, N = 4
56.65
13
26
39
52
65
1. (CC) gcc options: -m64 -O3 -lssl -lcrypto -ldl

Gcrypt Library 1.4.4

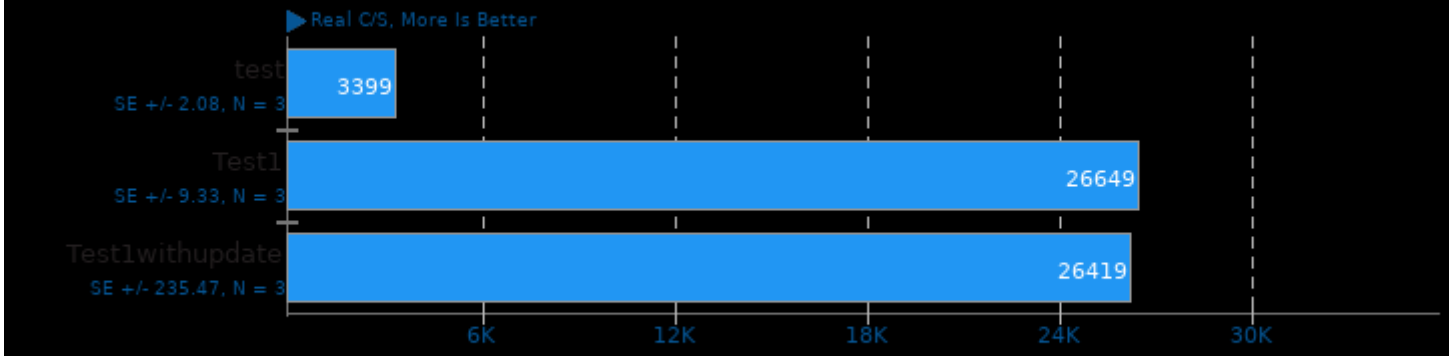
CAMELLIA256-ECB Cipher



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

John The Ripper 1.7.9

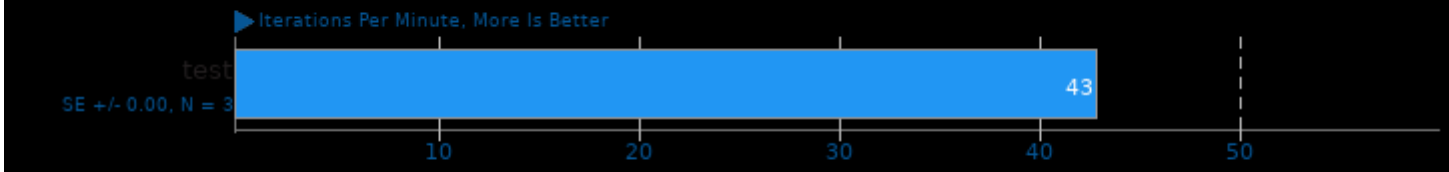
Test: Blowfish



1. (CC) gcc options: -fopenmp -lcrypt

GraphicsMagick 1.3.12

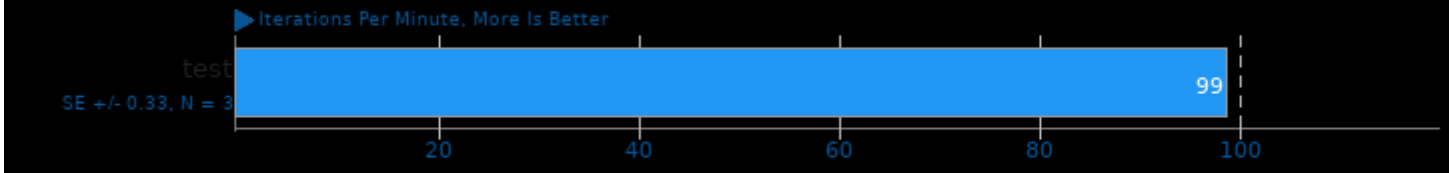
Operation: Local Adaptive Thresholding



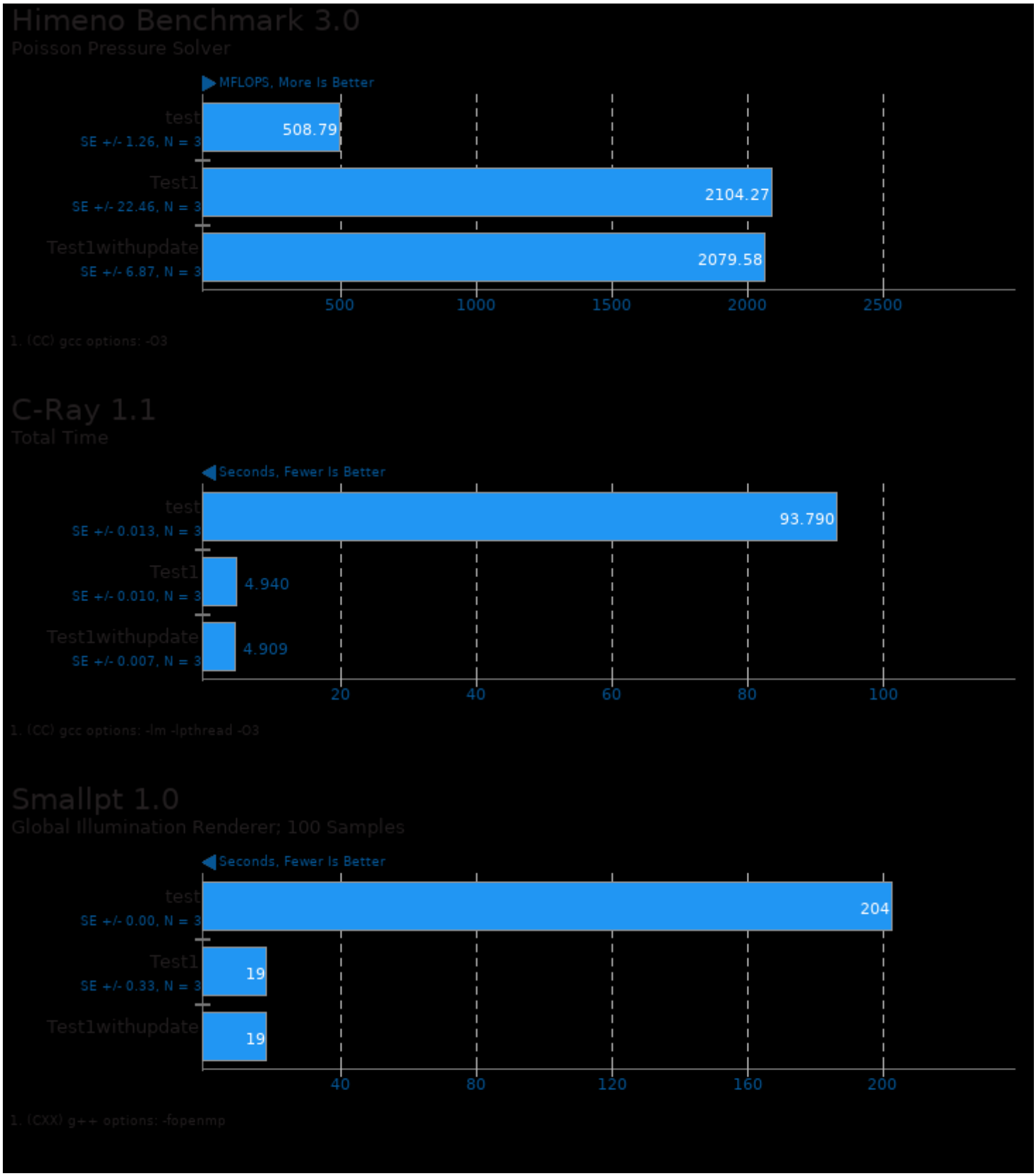
1. (CC) gcc options: -std=gnu99 -fopenmp -O2 -pthread -llcms -ltiff -lfreetype -ljasper -ljpeg -lwmflite -lXext -lSM -lICE -lX11 -lbz2 -lxml2 -lz -lm -lrt -lpthre

GraphicsMagick 1.3.12

Operation: Resizing

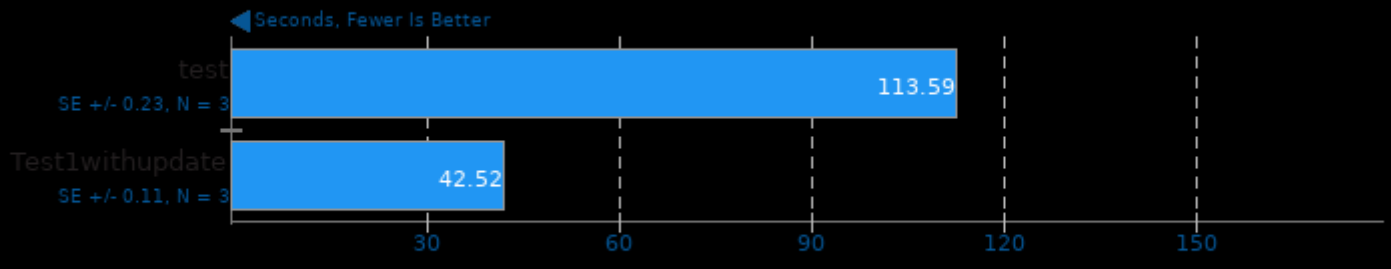


1. (CC) gcc options: -std=gnu99 -fopenmp -O2 -pthread -llcms -ltiff -lfreetype -ljasper -ljpeg -lwmflite -lXext -lSM -lICE -lX11 -lbz2 -lxml2 -lz -lm -lrt -lpthre


Himeno Benchmark 3.0
Poisson Pressure Solver
MFLOPS, More Is Better
test
SE +/- 1.26, N = 3
508.79
Test1
SE +/- 22.46, N = 3
2104.27
Test1withupdate
SE +/- 6.87, N = 3
2079.58
500
1000
1500
2000
2500
1. (CC) gcc options: -O3
C-Ray 1.1
Total Time
Seconds, Fewer Is Better
test
SE +/- 0.013, N = 3
93.790
Test1
SE +/- 0.010, N = 3
4.940
Test1withupdate
SE +/- 0.007, N = 3
4.909
20
40
60
80
100
1. (CC) gcc options: -lm -lpthread -O3
Smallpt 1.0
Global Illumination Renderer; 100 Samples
Seconds, Fewer Is Better
test
SE +/- 0.00, N = 3
204
Test1
SE +/- 0.33, N = 3
19
Test1withupdate
19
40
80
120
160
200
1. (CXX) g++ options: -fopenmp

Crafty 23.4

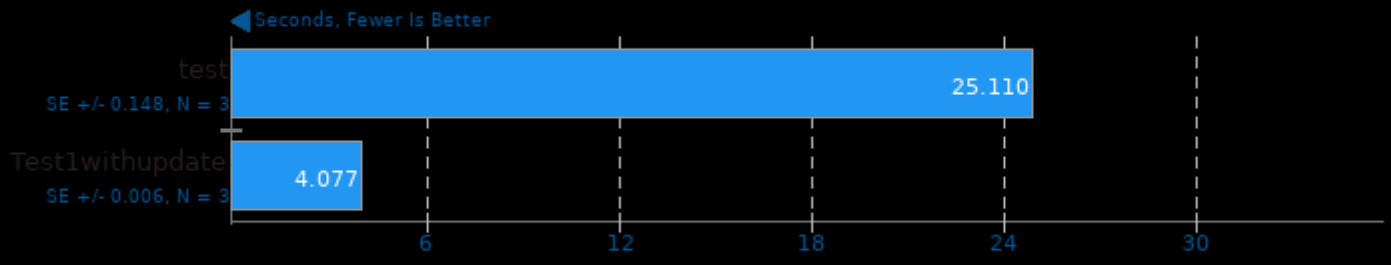
Elapsed Time



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

Timed HMMer Search 2.3.2

Pfam Database Search



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

Timed MAFFT Alignment 6.864

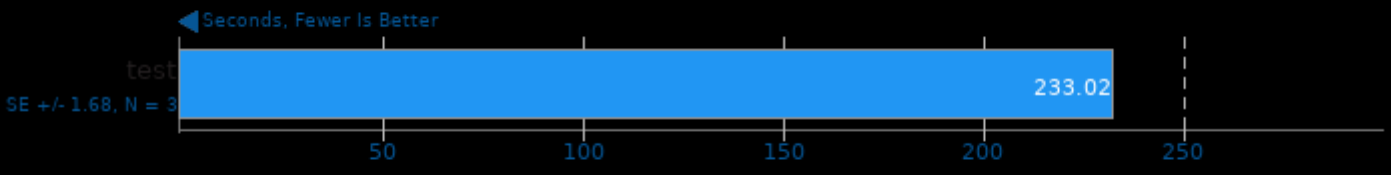
Multiple Sequence Alignment



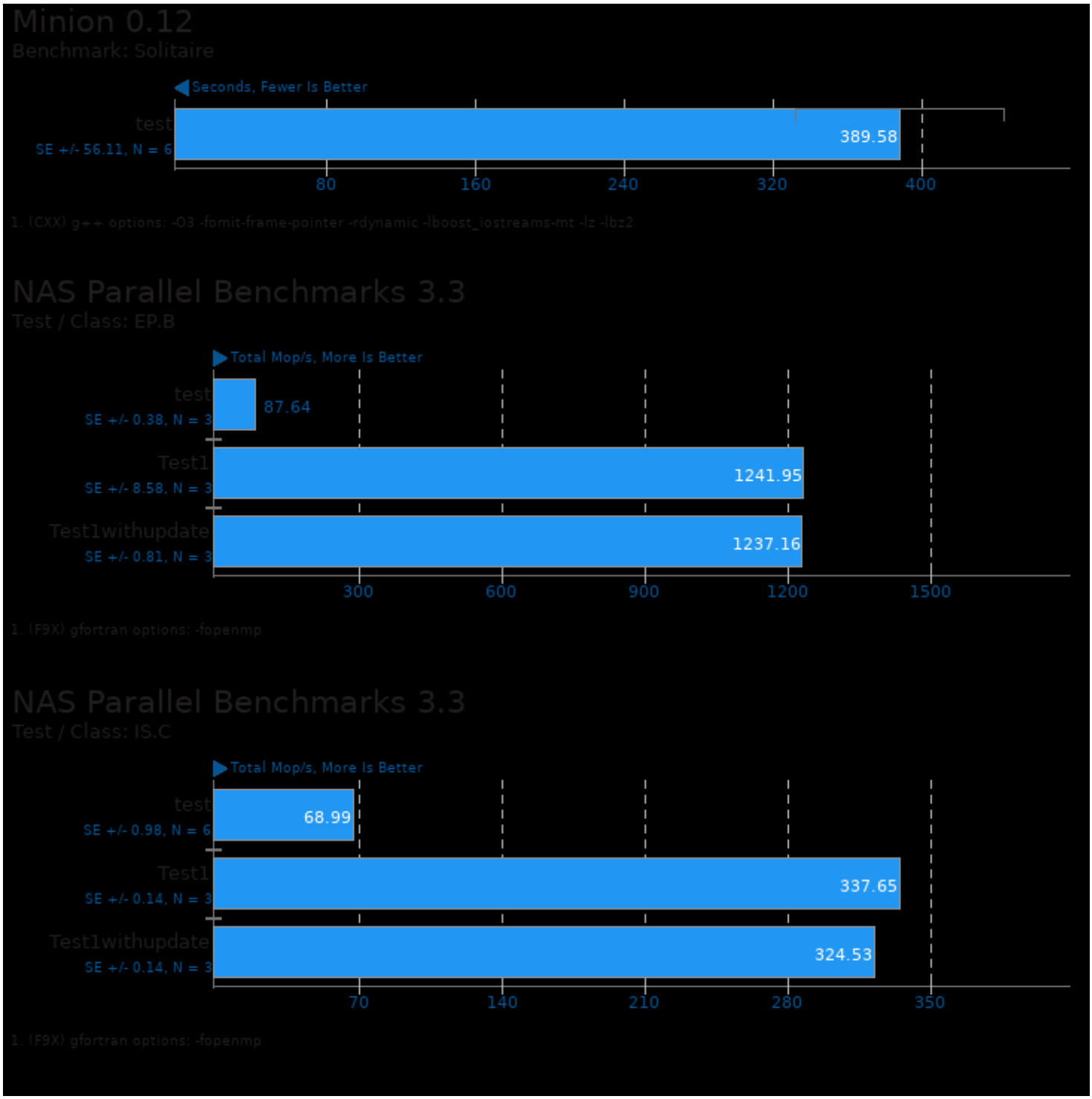
1. (CC) gcc options: -O3 -lm -lpthread

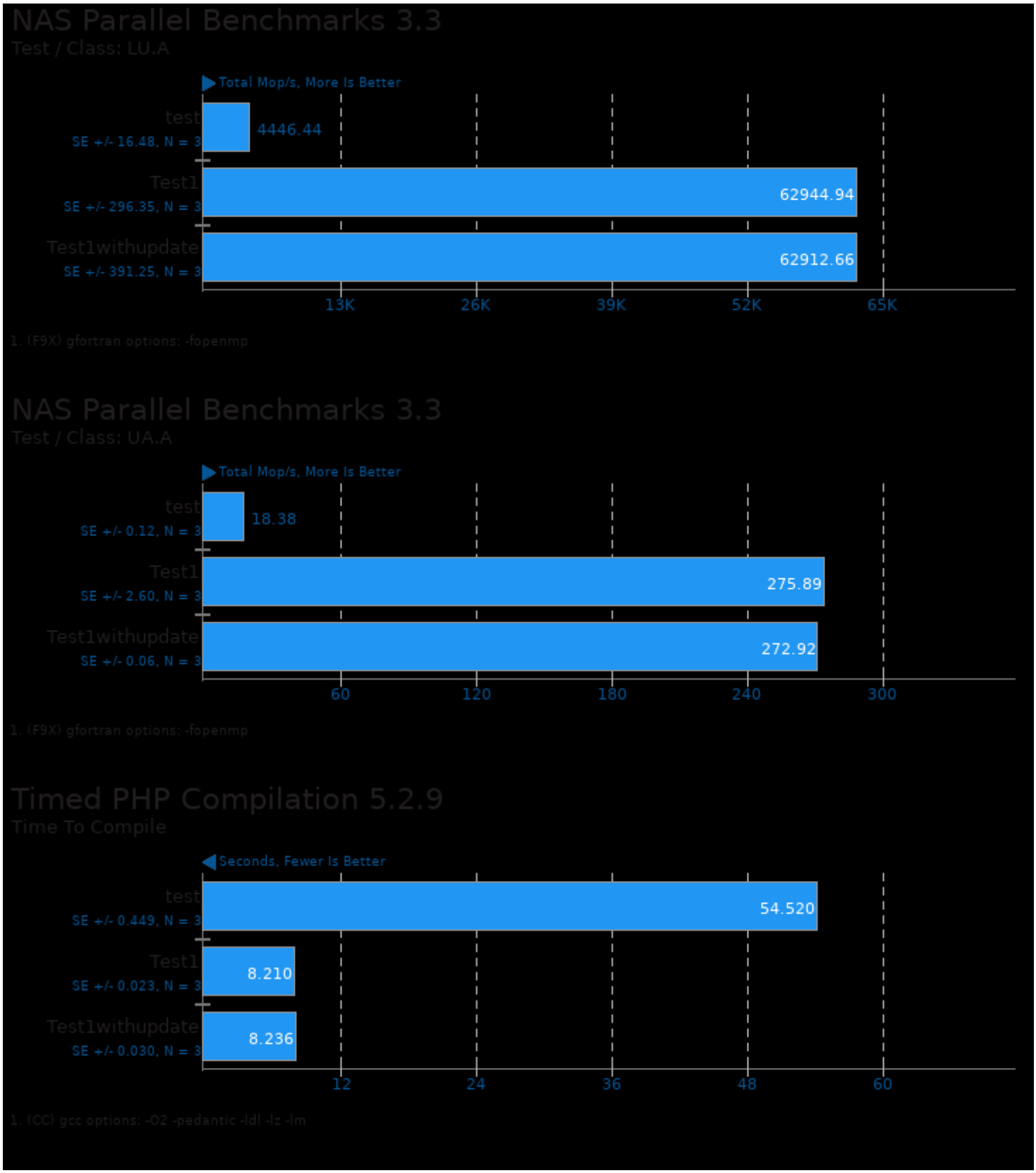
Minion 0.12

Benchmark: Quasigroup

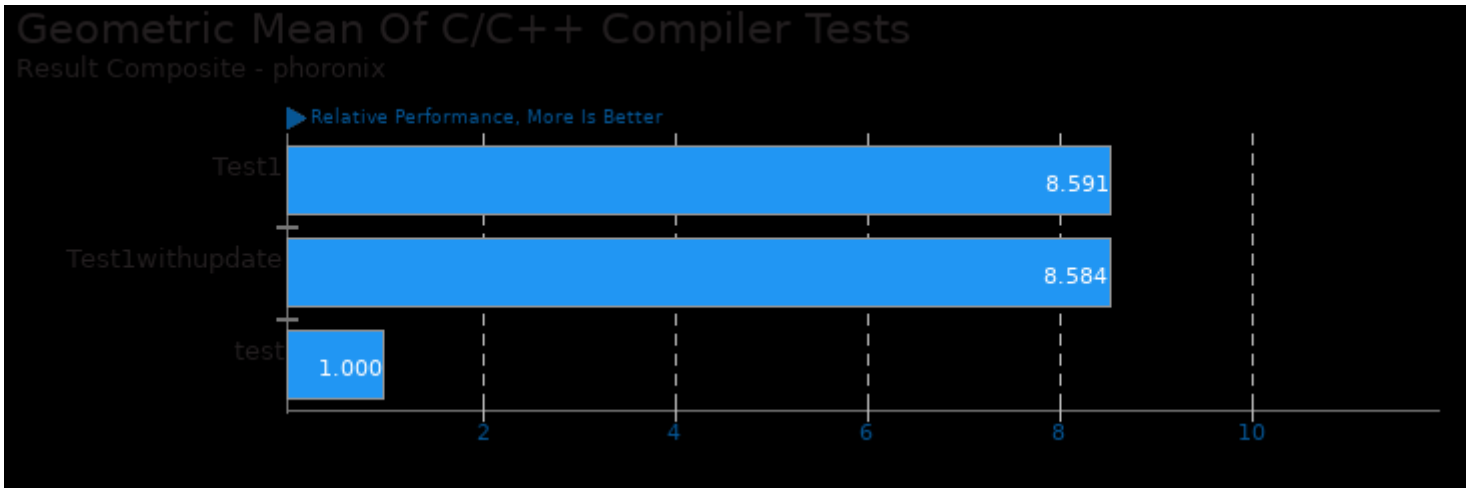


1. (CXX) g++ options: -O3 -fomit-frame-pointer -rdynamic -lboost_iostreams-mt -lz -lbz2

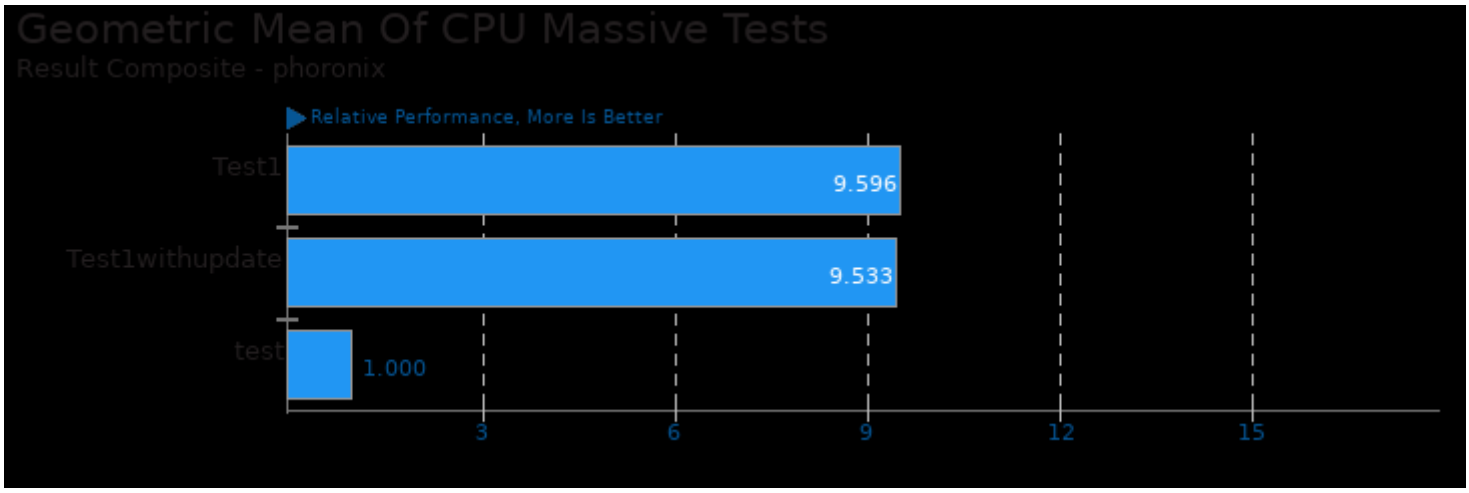

Minion 0.12
Benchmark: Solitaire
Seconds, Fewer Is Better
test
SE +/- 56.11, N = 6
389.58
80
160
240
320
400
1. (CXX) g++ options: -O3 -fomit-frame-pointer -rdynamic -lboost_iostreams-mt -lz -lbz2
NAS Parallel Benchmarks 3.3
Test / Class: EP.B
Total Mop/s, More Is Better
test
SE +/- 0.38, N = 3
87.64
Test1
SE +/- 8.58, N = 3
1241.95
Test1withupdate
SE +/- 0.81, N = 3
1237.16
300
600
900
1200
1500
1. (F9X) gfortran options: -fopenmp
NAS Parallel Benchmarks 3.3
Test / Class: IS.C
Total Mop/s, More Is Better
test
SE +/- 0.98, N = 6
68.99
Test1
SE +/- 0.14, N = 3
337.65
Test1withupdate
SE +/- 0.14, N = 3
324.53
70
140
210
280
350
1. (F9X) gfortran options: -fopenmp


NAS Parallel Benchmarks 3.3
Test / Class: LU.A
Total Mop/s, More Is Better
test
SE +/- 16.48, N = 3
4446.44
Test1
SE +/- 296.35, N = 3
62944.94
Test1withupdate
SE +/- 391.25, N = 3
62912.66
13K
26K
39K
52K
65K
1. (F9X) gfortran options: -fopenmp
NAS Parallel Benchmarks 3.3
Test / Class: UA.A
Total Mop/s, More Is Better
test
SE +/- 0.12, N = 3
18.38
Test1
SE +/- 2.60, N = 3
275.89
Test1withupdate
SE +/- 0.06, N = 3
272.92
60
120
180
240
300
1. (F9X) gfortran options: -fopenmp
Timed PHP Compilation 5.2.9
Time To Compile
Seconds, Fewer Is Better
test
SE +/- 0.449, N = 3
54.520
Test1
SE +/- 0.023, N = 3
8.210
Test1withupdate
SE +/- 0.030, N = 3
8.236
12
24
36
48
60
1. (CC) gcc options: -O2 -pedantic -ldl -lz -lm

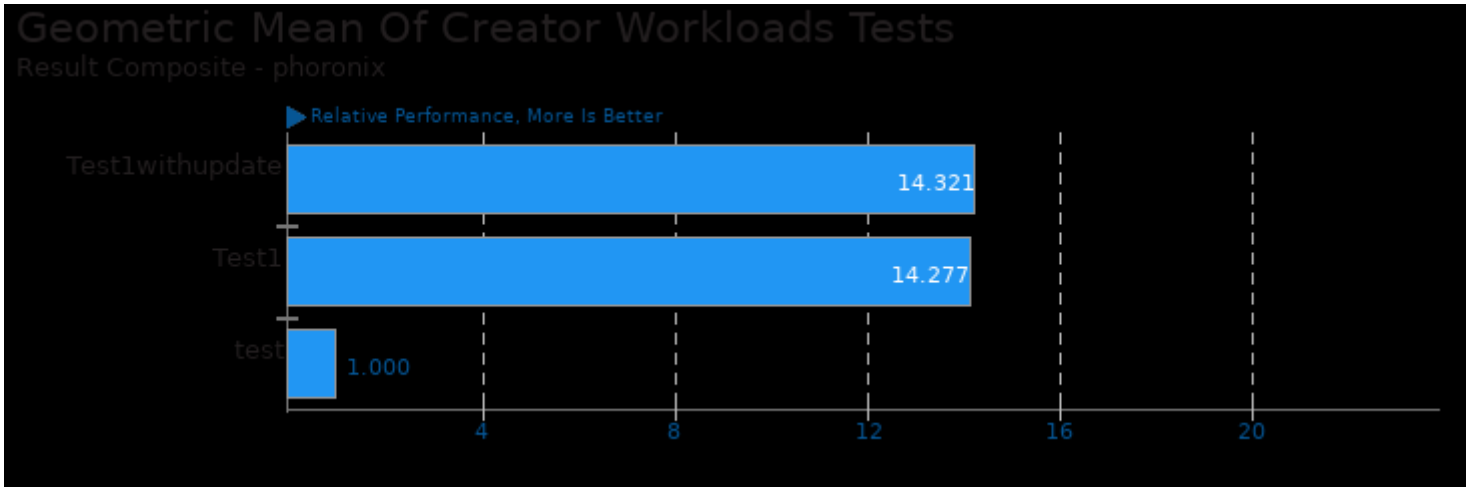
These geometric means are based upon test groupings / test suites for this result file.



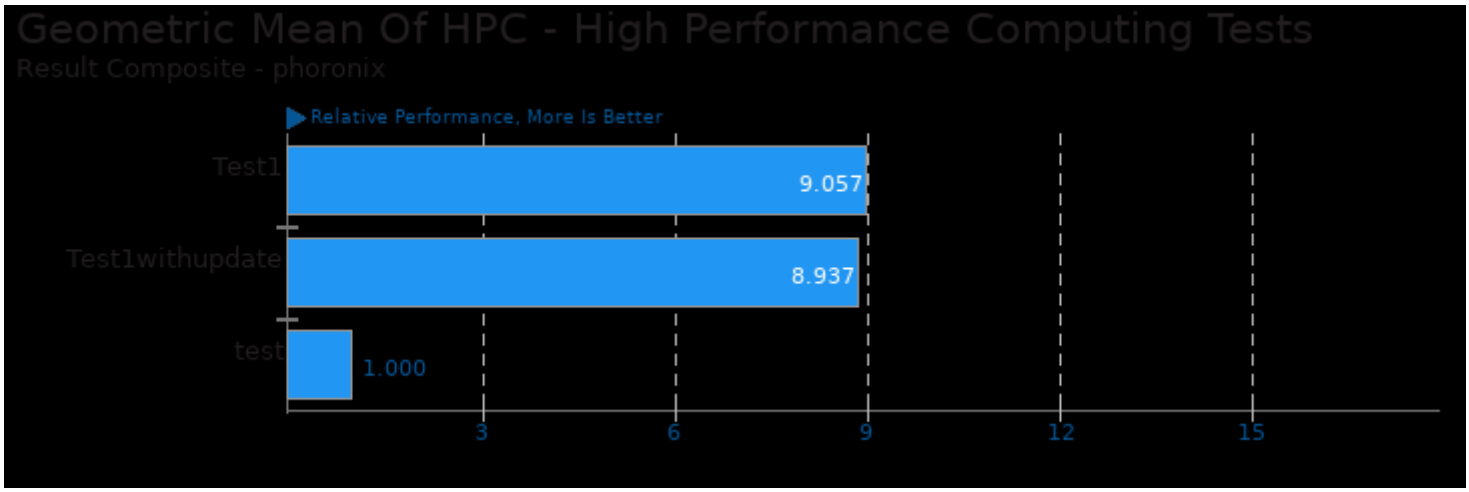
Geometric mean based upon tests: pts/mafft, pts/graphics-magick, pts/himeno, pts/hmmer, pts/build-php, pts/c-ray, pts/compress-7zip, pts/john-the-ripper, pts/x264 and pts/openssl



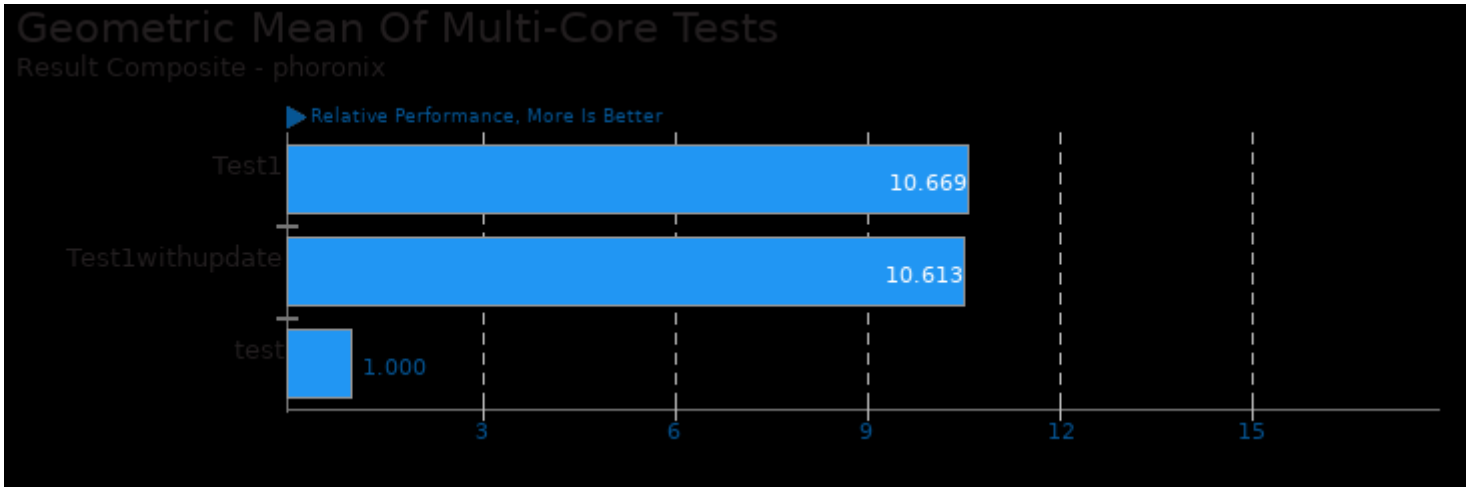
Geometric mean based upon tests: pts/build-php, pts/c-ray, pts/compress-7zip, pts/compress-pbzip2, pts/crafty, pts/x264, pts/graphics-magick, pts/himeno, pts/hmmer, pts/john-the-ripper, pts/openssl, pts/mafft, pts/minion and pts/npb



Geometric mean based upon tests: pts/c-ray, pts/smallpt, pts/x264 and pts/graphics-magick



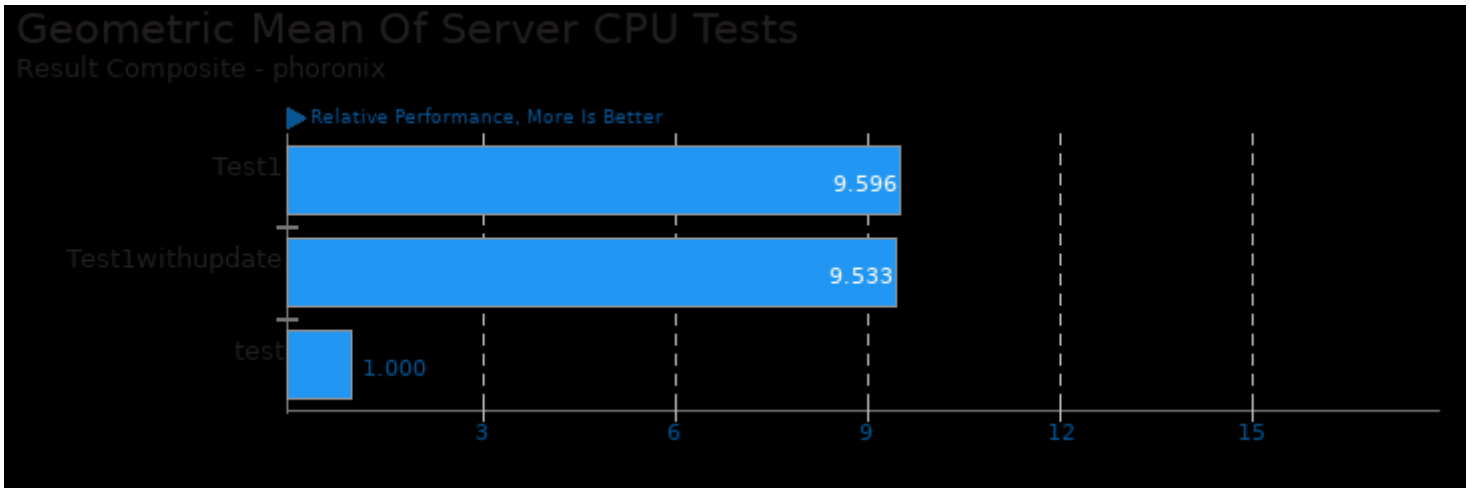
Geometric mean based upon tests: pts/npb, pts/himeno, pts/hmmer and pts/mafft



Geometric mean based upon tests: pts/c-ray, pts/x264, pts/npb, pts/john-the-ripper, pts/smallpt, pts/graphics-magick, pts/compress-7zip, pts/compress-pbzip2 and pts/build-php



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



Geometric mean based upon tests: pts/npb, pts/john-the-ripper, pts/x264, pts/himeno, pts/compress-7zip, pts/build-php, pts/c-ray and pts/openssl

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 19:47.