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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

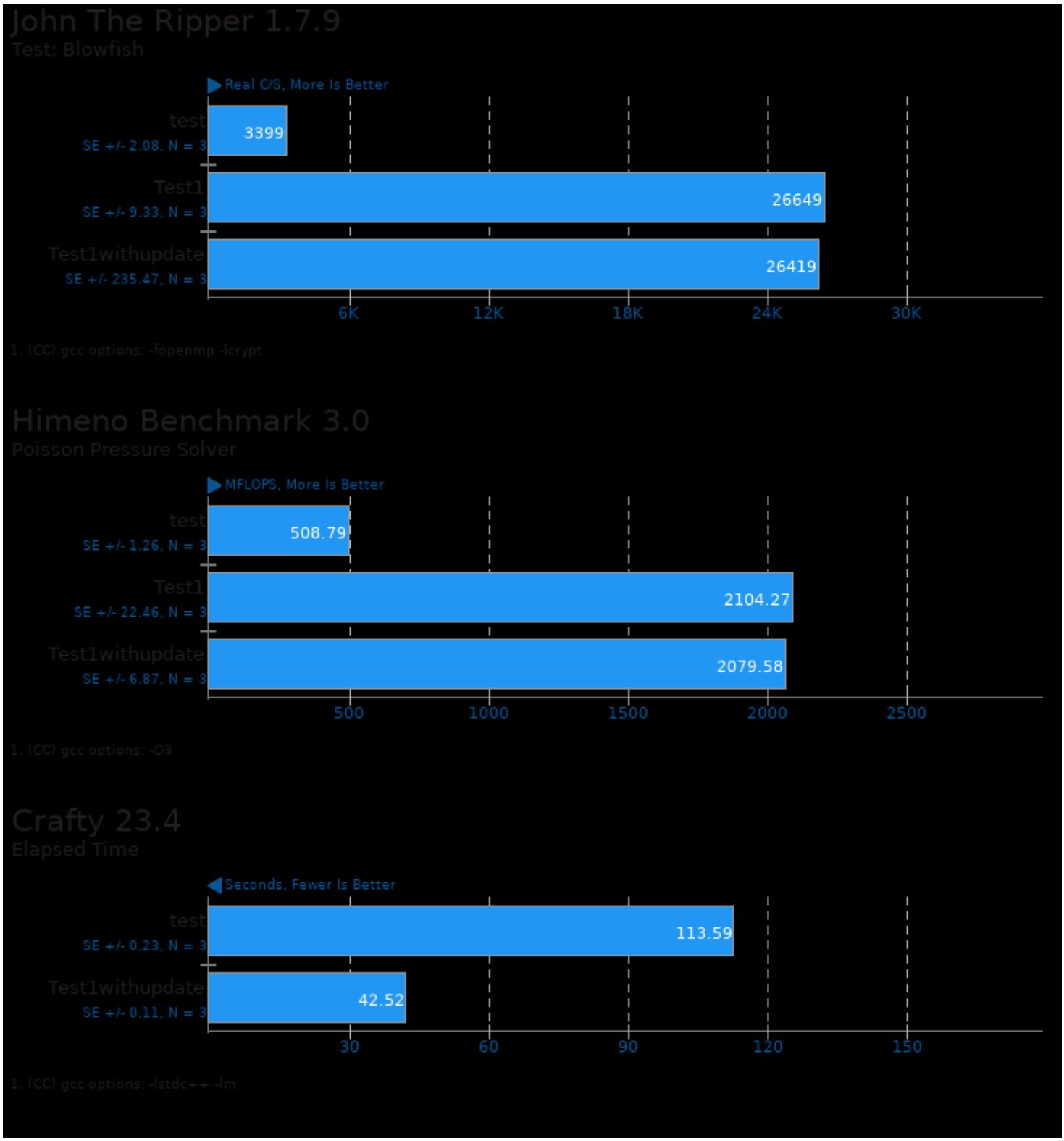
Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --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
John The Ripper - Blowfish (Real C/S)	**3399**	**26649**	26419
Normalized	12.75%	100%	99.14%
Standard Deviation	0.1%	0.1%	1.5%
Himeno Benchmark - P.P.S (MFLOPS)	**508.79**	**2104**	2080
Normalized	24.18%	100%	98.83%
Standard Deviation	0.4%	1.8%	0.6%
Crafty - Elapsed Time (sec)	**113.59**		**42.52**
Normalized	37.43%		100%
Standard Deviation	0.4%		0.4%
Smallpt - G.I.R.1.S (sec)	**204**	**19**	**19**
Normalized	9.31%	100%	100%
Standard Deviation	0%	3%	
7-Zip Compression - C.S.T (MIPS)	**8623**	98707	**100043**
Normalized	8.62%	98.66%	100%
Standard Deviation	0.3%	0.7%	0.2%
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%
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%
C-Ray - Total Time (sec)	**93.79**	4.94	**4.909**
Normalized	5.23%	99.37%	100%
Standard Deviation	0%	0.3%	0.3%
Timed HMMer Search - P.D.S (sec)	**25.11**		**4.077**
Normalized	16.24%		100%
Standard Deviation	1%		0.2%
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%
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 - EP.B (Mop/s)	**87.64**	**1242**	1237
Normalized	7.06%	100%	99.61%
Standard Deviation	0.8%	1.2%	0.1%
Minion - Solitaire (sec)	389.58		
Standard Deviation	35.3%		
Minion - Quasigroup (sec)	233.02		
Standard Deviation	1.3%		
Timed MAFFT Alignment - M.S.A (sec)	13.07		
Standard Deviation	0%		
GraphicsMagick - Resizing (Iterations/min)	99		
Standard Deviation	0.6%		
GraphicsMagick - L.A.T (Iterations/min)	43		
Standard Deviation	0%		

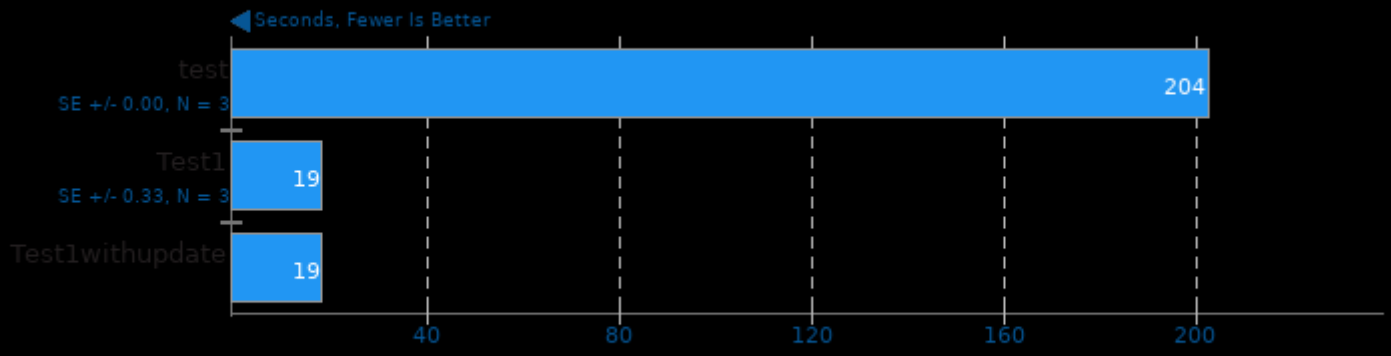
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Gcrypt Library - C.E.C (us)	3200
Standard Deviation	0.3%
OpenSSL - R.4.b.P (Signs/sec)	56.65
Standard Deviation	0.2%
x264 - H.2.V.E (FPS)	63.26
Standard Deviation	0.3%
Parallel BZIP2 Compression - 2.F.C (sec)	17.14
Standard Deviation	0.2%


John The Ripper 1.7.9
Test: Blowfish
Real C/S, More Is Better
test
SE +/- 2.08, N = 3
3399
Test1
SE +/- 9.33, N = 3
26649
Test1withupdate
SE +/- 235.47, N = 3
26419
6K
12K
18K
24K
30K
1. (CC) gcc options: -fopenmp -lcrypt
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
Crafty 23.4
Elapsed Time
Seconds, Fewer Is Better
test
SE +/- 0.23, N = 3
113.59
Test1withupdate
SE +/- 0.11, N = 3
42.52
30
60
90
120
150
1. (CC) gcc options: -lstdc++ -lm

Smallpt 1.0

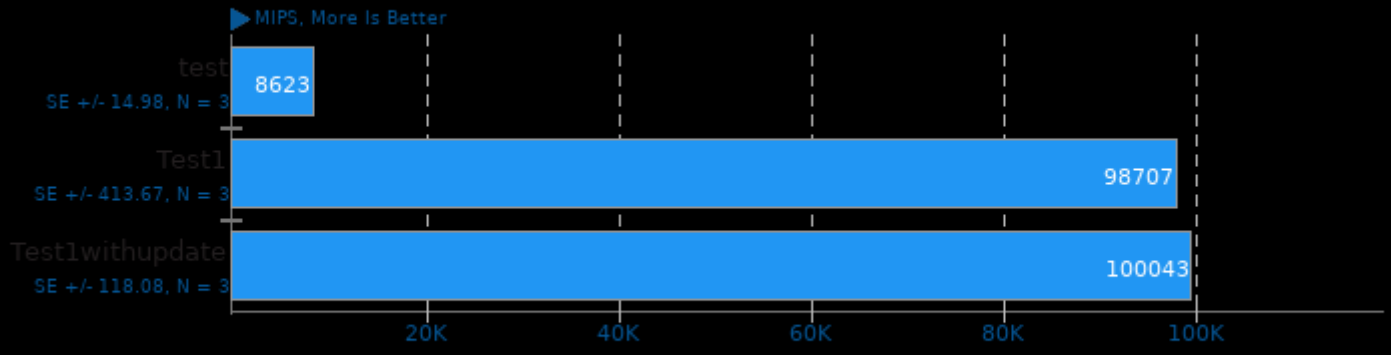
Global Illumination Renderer; 100 Samples



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

7-Zip Compression 9.20.1

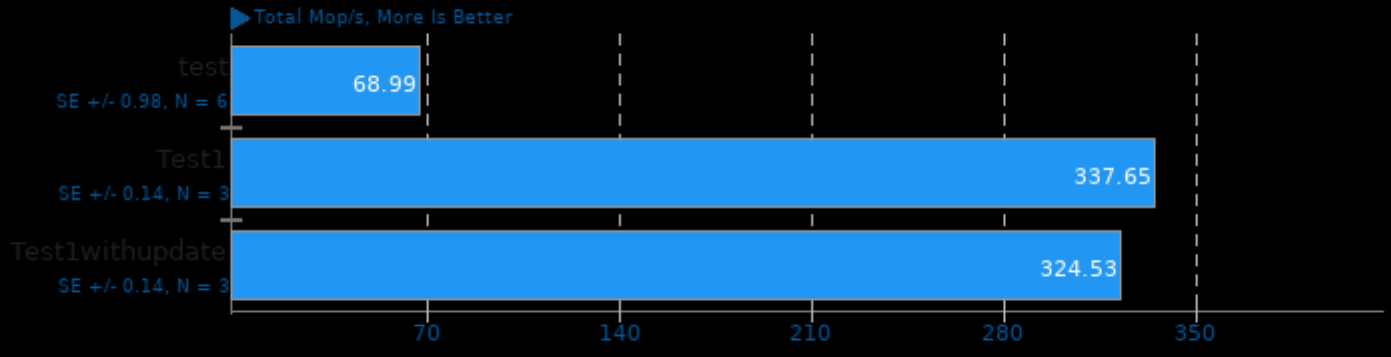
Compress Speed Test



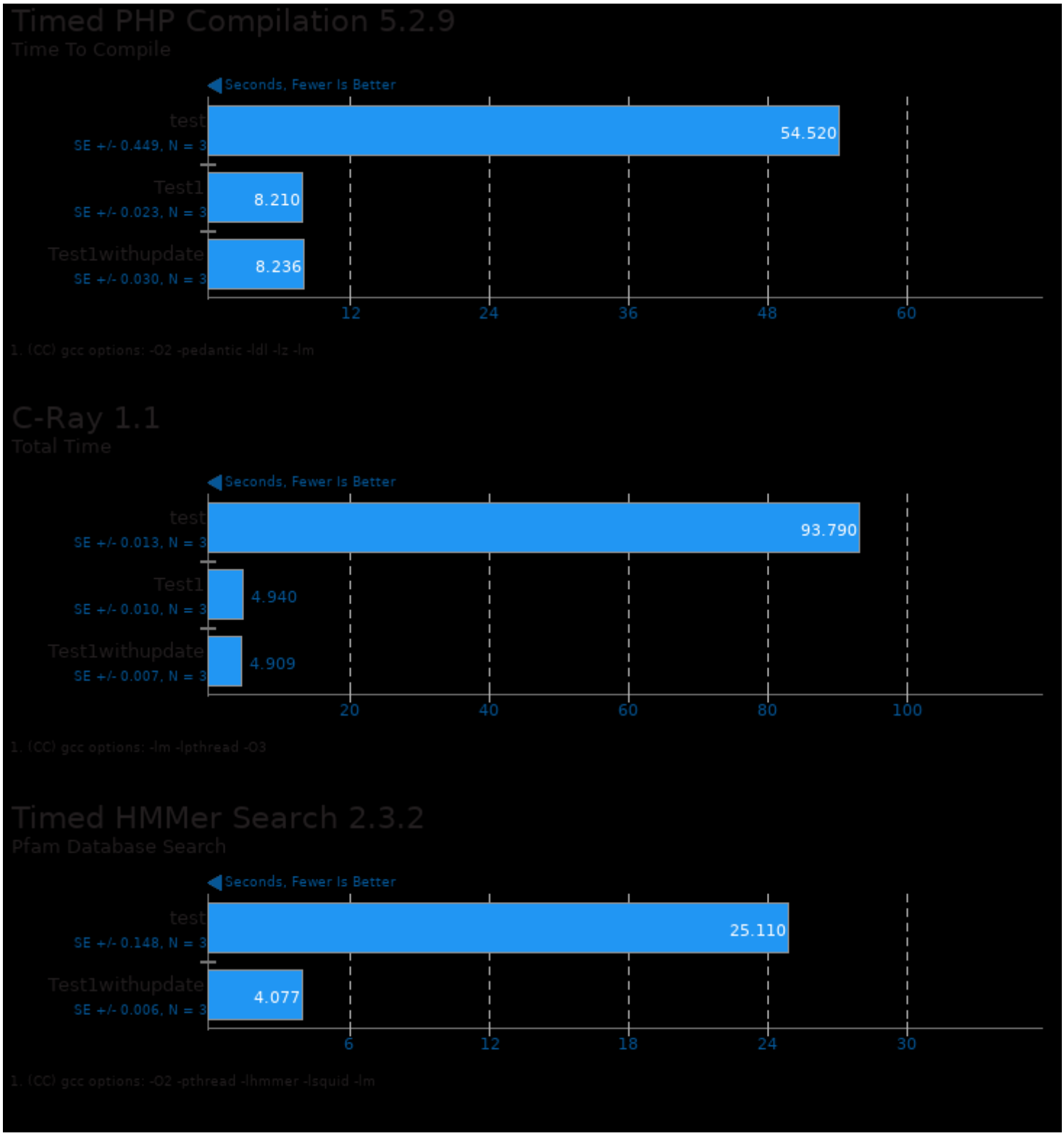
1. (CXX) g++ options: -pipe -lpthread

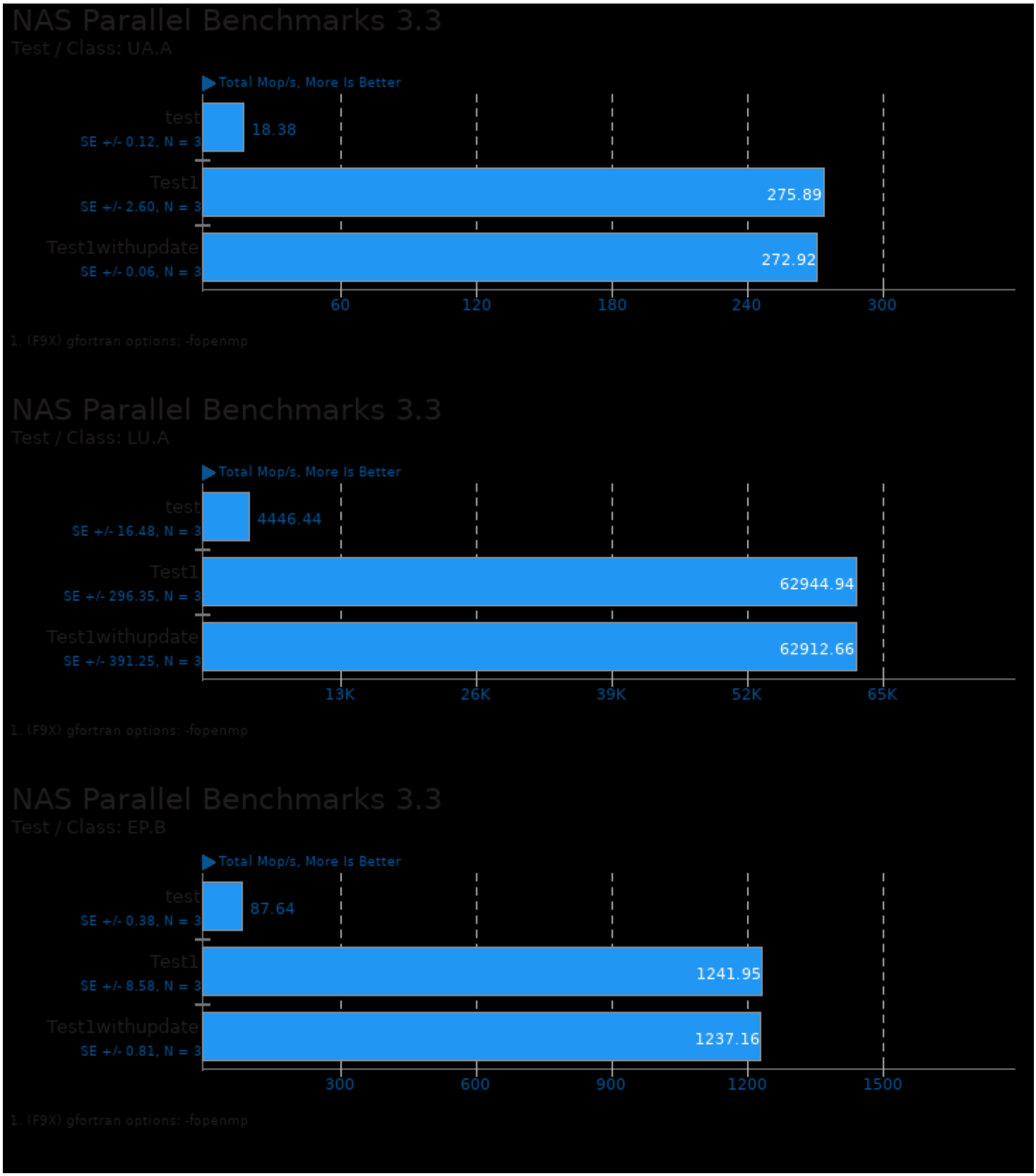
NAS Parallel Benchmarks 3.3

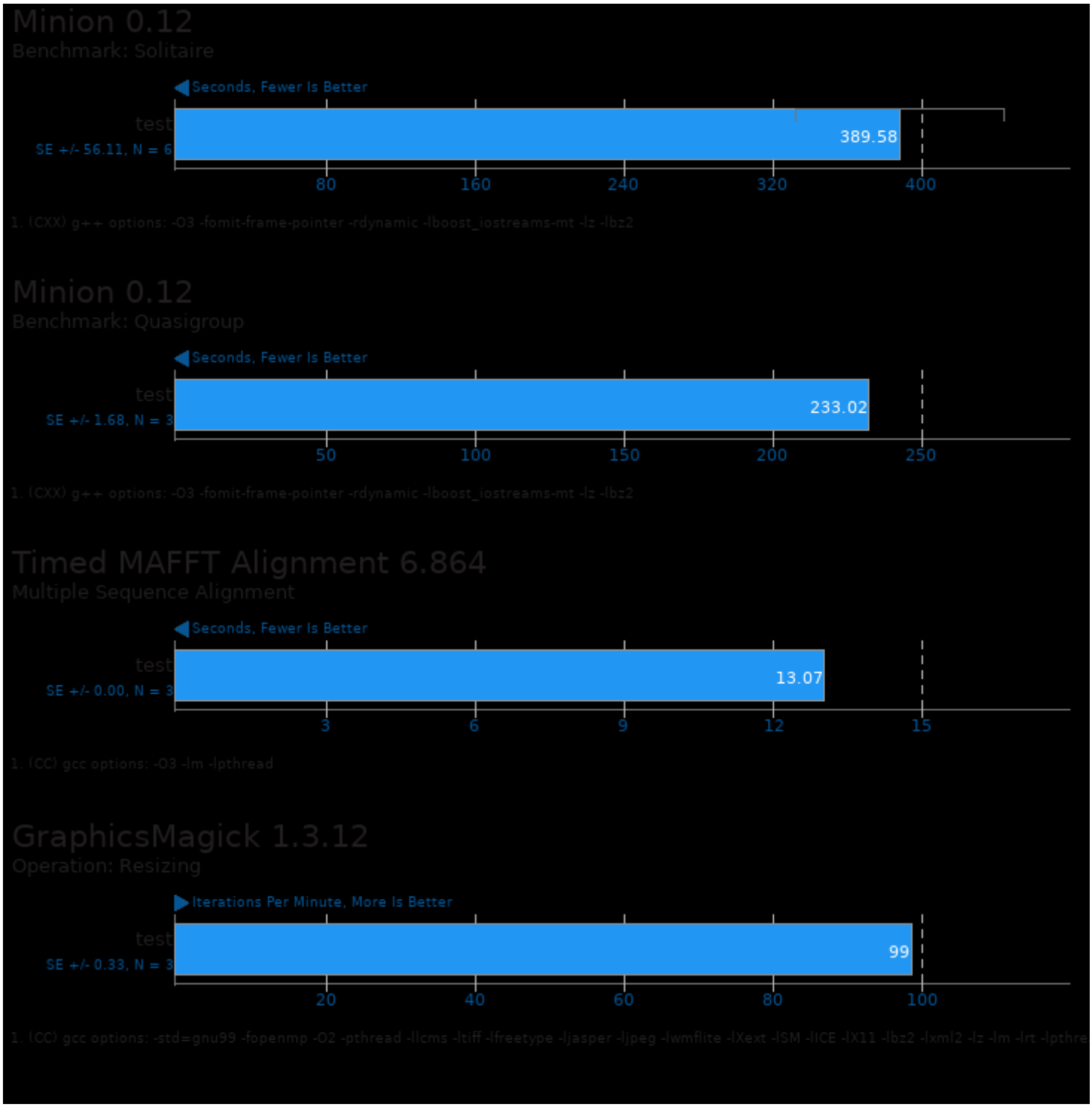
Test / Class: IS.C



1. (F9X) gfortran options: -fopenmp

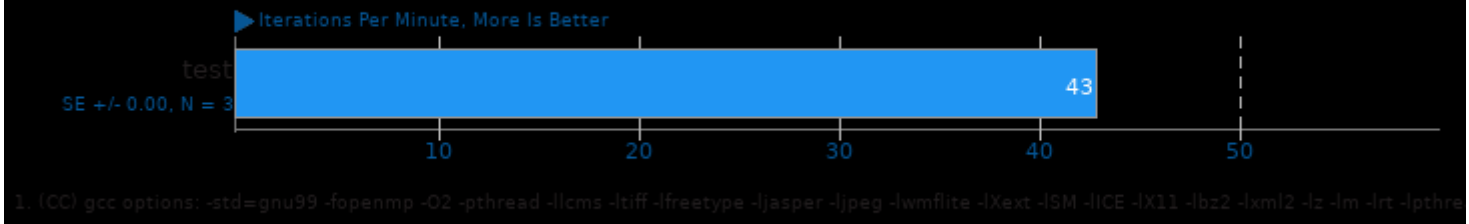

Timed PHP Compilation 5.2.9
Time To Compile
Seconds, Fewer Is Better
test
SE +/- 0.449, N = 3
54.520
Test1
SE +/- 0.023, N = 3
8.210
Test1withupdate
SE +/- 0.030, N = 3
8.236
12
24
36
48
60
1. (CC) gcc options: -O2 -pedantic -ldl -lz -lm
C-Ray 1.1
Total Time
Seconds, Fewer Is Better
test
SE +/- 0.013, 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
Timed HMMer Search 2.3.2
Pfam Database Search
Seconds, Fewer Is Better
test
SE +/- 0.148, N = 3
25.110
Test1withupdate
SE +/- 0.006, N = 3
4.077
6
12
18
24
30
1. (CC) gcc options: -O2 -pthread -lhmmer -lsquid -lm


NAS Parallel Benchmarks 3.3
Test / Class: UA.A
Total Mop/s, More Is Better
test
18.38
SE +/- 0.12, N = 3
Test1
275.89
SE +/- 2.60, N = 3
Test1withupdate
272.92
SE +/- 0.06, N = 3
60
120
180
240
300
1. (F9X) gfortran options: -fopenmp
NAS Parallel Benchmarks 3.3
Test / Class: LU.A
Total Mop/s, More Is Better
test
4446.44
SE +/- 16.48, N = 3
Test1
62944.94
SE +/- 296.35, N = 3
Test1withupdate
62912.66
SE +/- 391.25, N = 3
13K
26K
39K
52K
65K
1. (F9X) gfortran options: -fopenmp
NAS Parallel Benchmarks 3.3
Test / Class: EP.B
Total Mop/s, More Is Better
test
87.64
SE +/- 0.38, N = 3
Test1
1241.95
SE +/- 8.58, N = 3
Test1withupdate
1237.16
SE +/- 0.81, N = 3
300
600
900
1200
1500
1. (F9X) gfortran options: -fopenmp


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
Minion 0.12
Benchmark: Quasigroup
Seconds, Fewer Is Better
test
SE +/- 1.68, N = 3
233.02
50
100
150
200
250
1. (CXX) g++ options: -O3 -fomit-frame-pointer -rdynamic -lboost_iostreams-mt -lz -lbz2
Timed MAFFT Alignment 6.864
Multiple Sequence Alignment
Seconds, Fewer Is Better
test
SE +/- 0.00, N = 3
13.07
3
6
9
12
15
1. (CC) gcc options: -O3 -lm -lpthread
GraphicsMagick 1.3.12
Operation: Resizing
Iterations Per Minute, More Is Better
test
SE +/- 0.33, N = 3
99
20
40
60
80
100
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

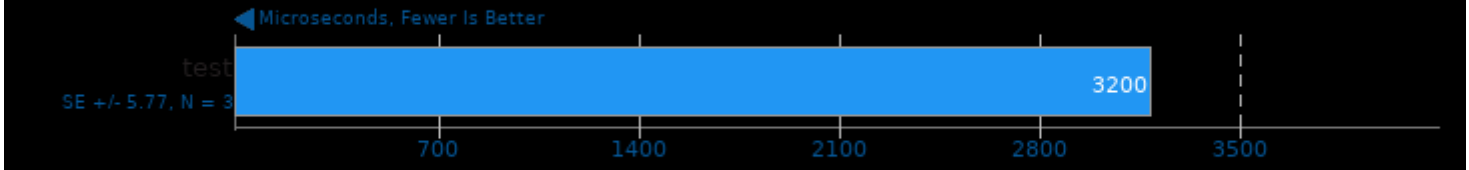
Operation: Local Adaptive Thresholding



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

Gcrypt Library 1.4.4

CAMELLIA256-ECB Cipher



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

OpenSSL 1.0.0e

RSA 4096-bit Performance



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

x264 2011-12-06

H.264 Video Encoding



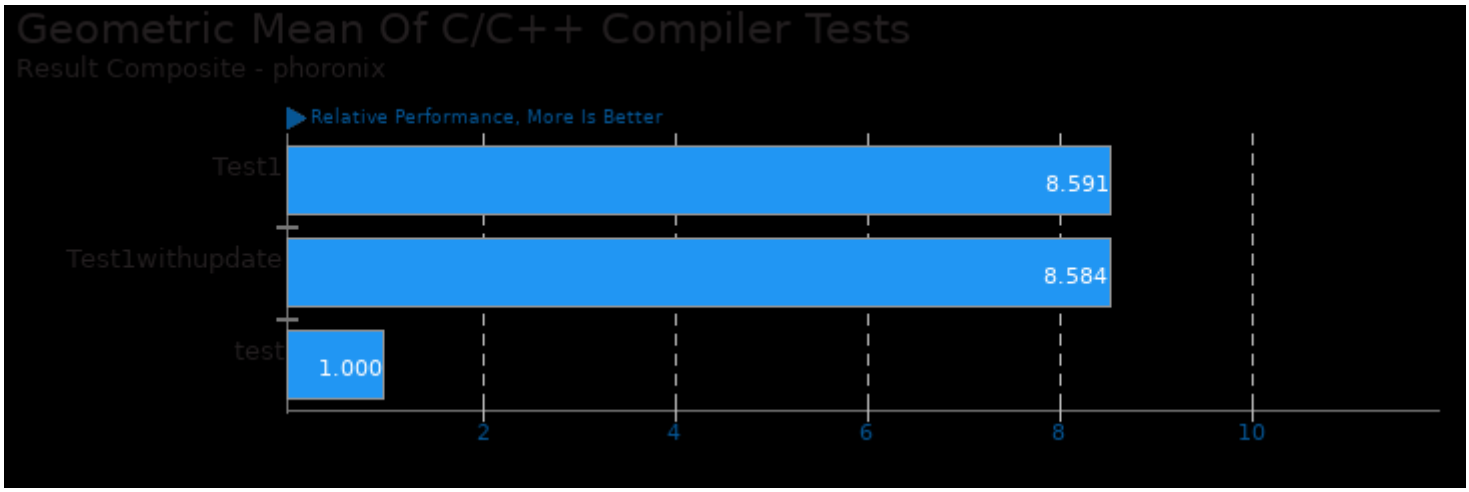
Parallel BZIP2 Compression 1.0.5

256MB File Compression

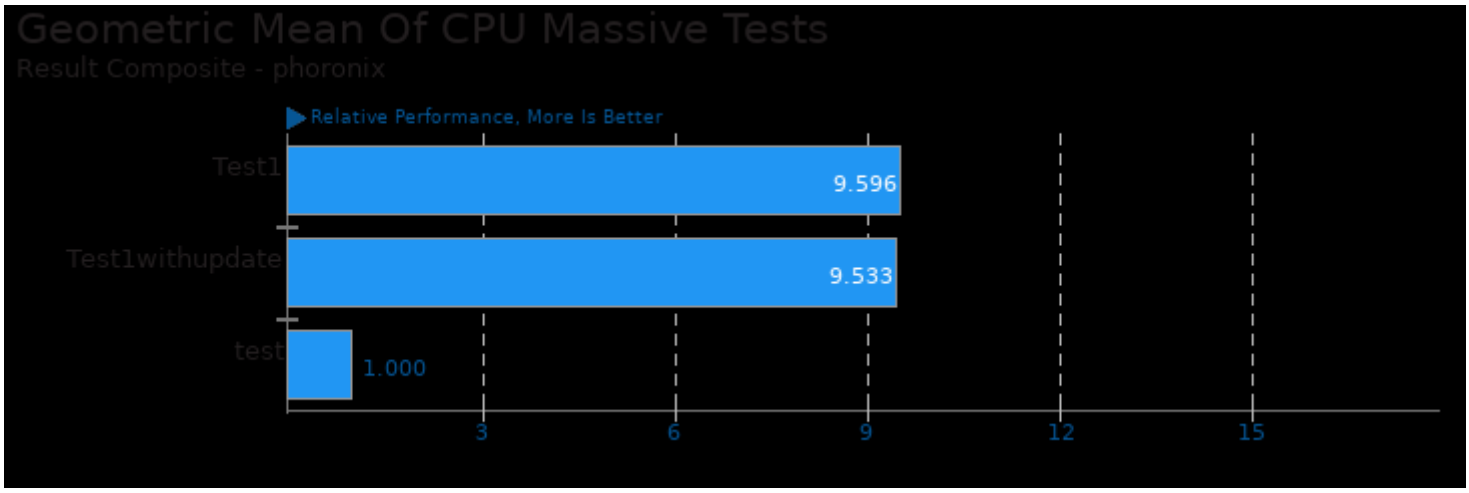


1. (CXX) g++ options: -O2 -pthread -lpthread -lbz2

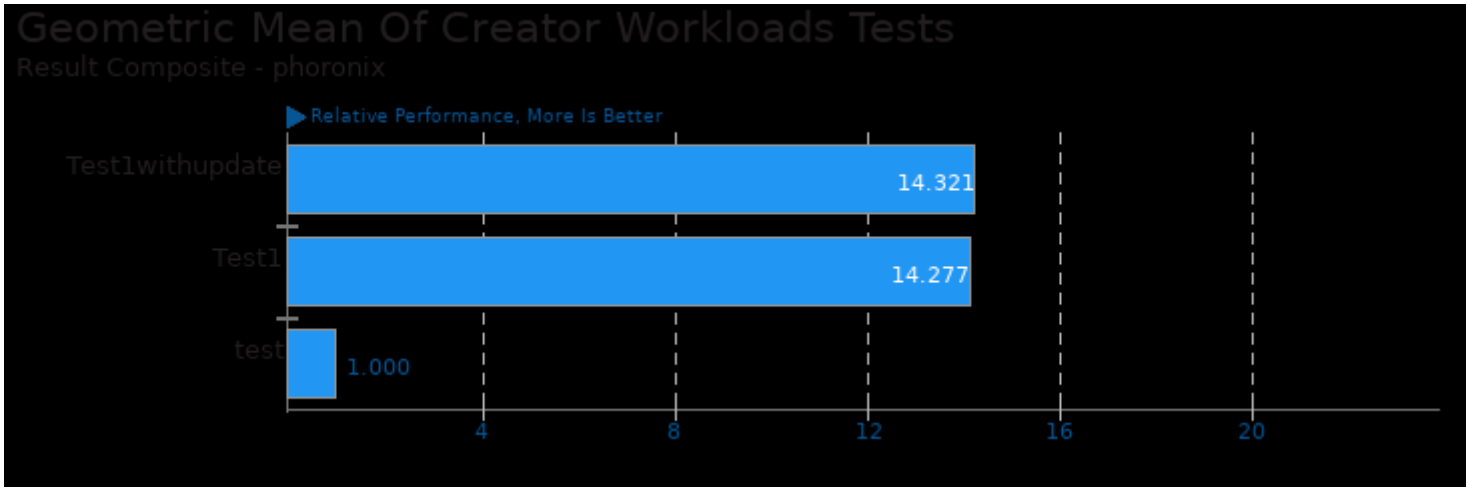
These geometric means are based upon test groupings / test suites for this result file.



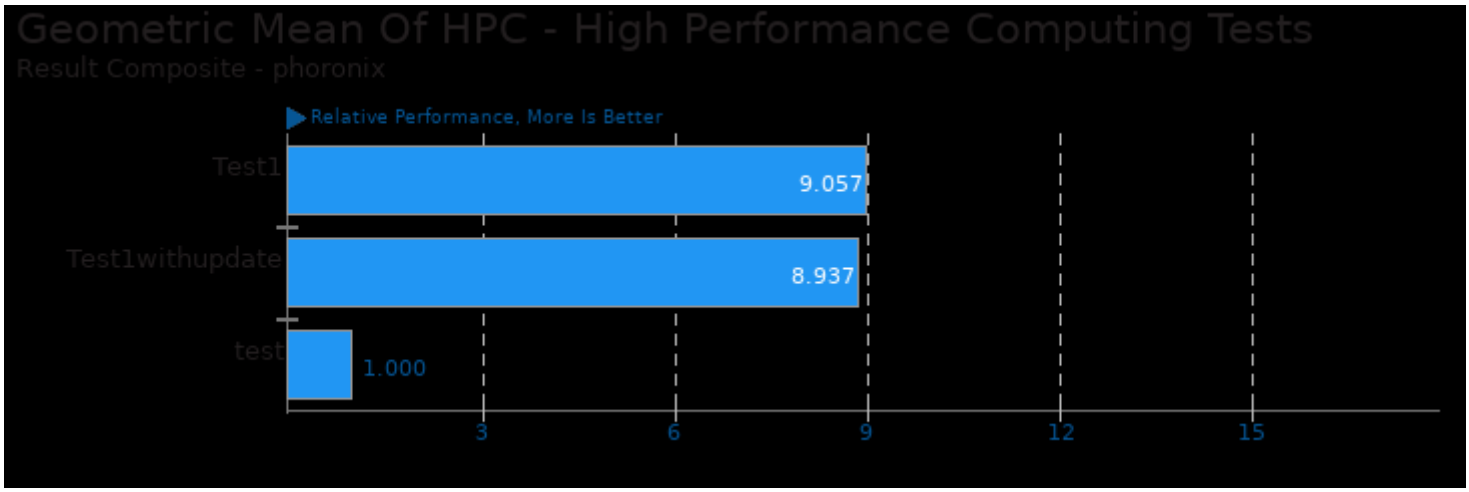
Geometric mean based upon tests: pts/mafft, pts/graphics-magick, pts/himeno, pts/hmmer, pts/build-php, pts/c-ray, pts/compress-7zip, pts/john-the-ripper, pts/x264 and pts/openssl



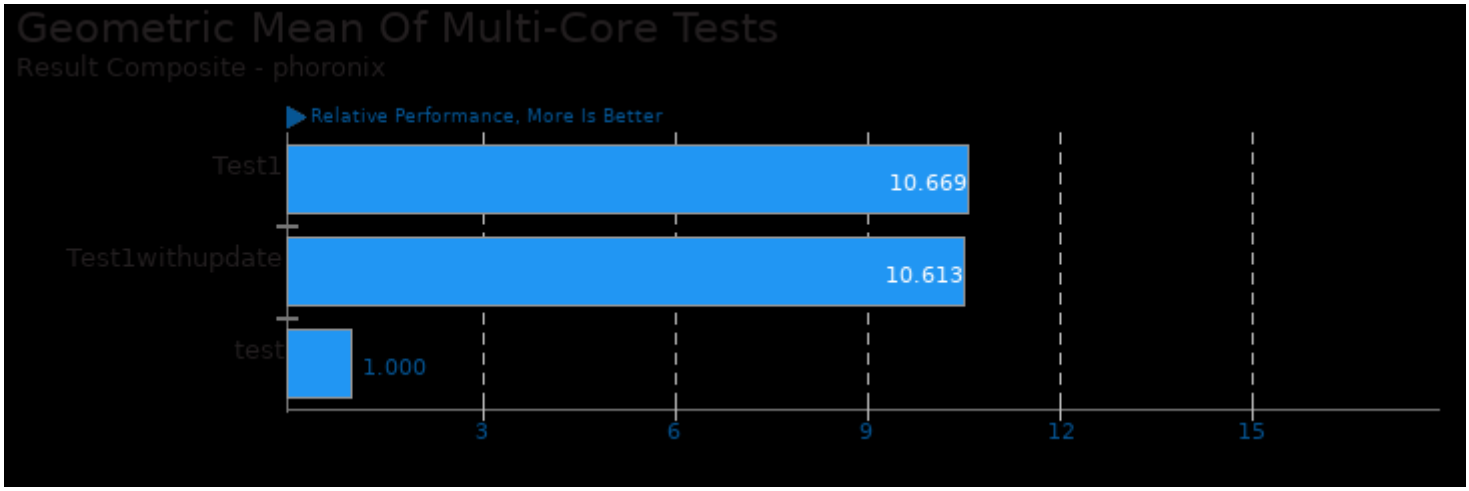
Geometric mean based upon tests: pts/build-php, pts/c-ray, pts/compress-7zip, pts/compress-pbzip2, pts/crafty, pts/x264, pts/graphics-magick, pts/himeno, pts/hmmer, pts/john-the-ripper, pts/openssl, pts/mafft, pts/minion and pts/npb



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



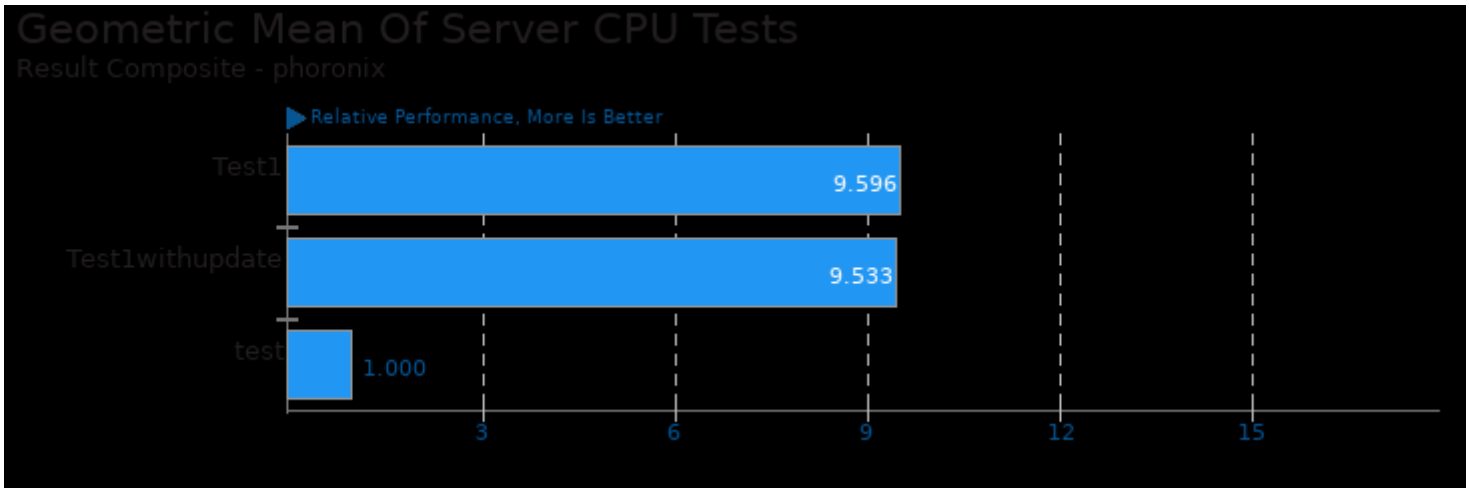
Geometric mean based upon tests: pts/npb, pts/himeno, pts/hmmer and pts/mafft



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 Friday, 29 March 2024 04:46.