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phoronix

2 x AMD Opteron 6238 testing with a HP ProLiant DL385 G7 (A18 BIOS) and AMD ES1000 128MB on AlmaLinux 8.5 via the Phoronix Test Suite.

Automated Executive Summary

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

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

C-Ray (Total Time) at 6.875x
Smallpt (Global Illumination Renderer; 100 Samples) at 4.163x
7-Zip Compression (Compress Speed Test) at 3.651x
Crafty (Elapsed Time) at 2.301x
Timed HMMer Search (Pfam Database Search) at 1.264x
Parallel BZIP2 Compression (256MB File Compression) at 1x
x264 (H.264 Video Encoding) at 1x
OpenSSL (RSA 4096-bit Performance) at 1x
Gcrypt Library (CAMELLIA256-ECB Cipher) at 1x
GraphicsMagick (Operation: Local Adaptive Thresholding) at 1x.

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

almalinux

Processor: 2 x AMD Opteron 6238 (12 Cores / 24 Threads), Motherboard: HP ProLiant DL385 G7 (A18 BIOS), Chipset: AMD RD890 + SB7x0/SB8x0/SB9x0, Memory: 4 x 8 GB DDR3-1333MT/s, Disk: 1800GB LOGICAL VOLUME, Graphics: AMD ES1000 128MB, Network: 4 x Broadcom NetXtreme II BCM5709 + 2 x Broadcom NetXtreme BCM5720 PCIe

OS: AlmaLinux 8.5, Kernel: 4.18.0-348.el8.x86_64 (x86_64), File-System: xfs, Screen Resolution: 1024x768

Kernel Notes: Transparent Huge Pages: always
Processor Notes: CPU Microcode: 0x600063e
Security Notes: SELinux + 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 STIBP: disabled RSB filling + srbds: Not affected + tsx_async_abort: Not affected

2 x AMD Opteron 6238

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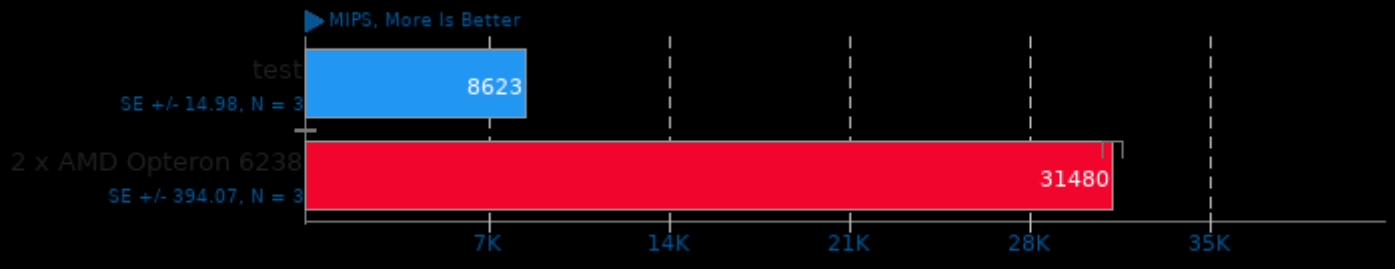
Kernel Notes: Transparent Huge Pages: always
Compiler Notes: --build=x86_64-redhat-linux --disable-libmpx --disable-libunwind-exceptions --enable-__cxa_atexit --enable-bootstrap --enable-cet --enable-checking=release --enable-gnu-indirect-function --enable-gnu-unique-object --enable-initfini-array --enable-languages=c,c++,fortran,lto --enable-multilib --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --mandir=/usr/share/man --with-arch_32=x86-64 --with-gcc-major-version-only --with-isl --with-linker-hash-style=gnu --with-tune=generic --without-cuda-driver
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	test	almalinux	2 x AMD Opteron
7-Zip Compression - C.S.T (MIPS)	**8623**		**31480**
Normalized	27.39%		100%
Standard Deviation	0.3%		2.2%

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**	**8410**
Normalized	40.42%	100%
Standard Deviation	0.1%	12%
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**	**253.910128**
Normalized	100%	49.9%
Standard Deviation	0.4%	6.3%
C-Ray - Total Time (sec)	**93.79**	**13.642**
Normalized	14.55%	100%
Standard Deviation	0%	0.2%
Smallpt - G.I.R.1.S (sec)	**204**	**49**
Normalized	24.02%	100%
Standard Deviation	0%	
Crafty - Elapsed Time (sec)	**113.59**	**261.35**
Normalized	100%	43.46%
Standard Deviation	0.4%	2.3%
Timed HMMer Search - P.D.S (sec)	**25.11**	**19.870**
Normalized	79.13%	100%
Standard Deviation	1%	0.8%
Timed MAFFT Alignment - M.S.A (sec)	**13.07**	**7.942**
Normalized	60.77%	100%
Standard Deviation	0%	10.3%
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	
Standard Deviation	0.8%	
NAS Parallel Benchmarks - IS.C (Mop/s)	**68.99**	**28.97**
Normalized	100%	41.99%
Standard Deviation	3.5%	9.5%
NAS Parallel Benchmarks - LU.A (Mop/s)	4446	
Standard Deviation	0.6%	
NAS Parallel Benchmarks - UA.A (Mop/s)	18.38	
Standard Deviation	1.1%	
Timed PHP Compilation - Time To Compile (sec)	**54.52**	**68.729**
Normalized	100%	79.33%
Standard Deviation	1.4%	11.1%

7-Zip Compression 9.20.1

Compress Speed Test



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

Parallel BZIP2 Compression 1.0.5

256MB File Compression



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

x264 2011-12-06

H.264 Video Encoding



OpenSSL 1.0.0e

RSA 4096-bit Performance



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

Gcrypt Library 1.4.4

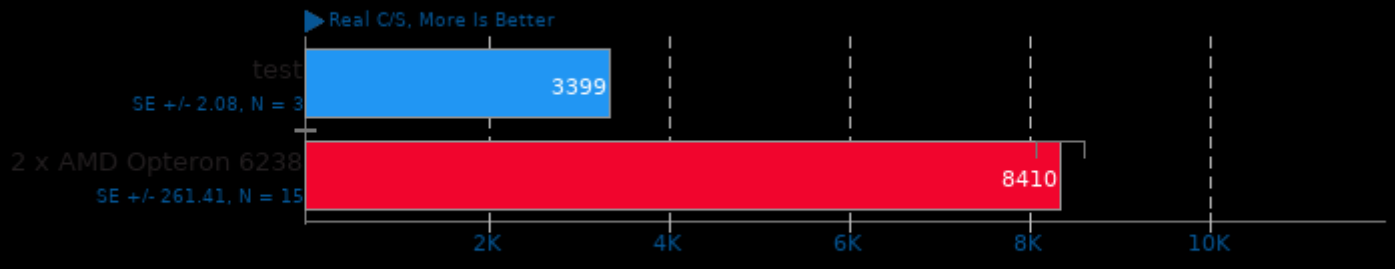
CAMELLIA256-ECB Cipher



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

John The Ripper 1.7.9

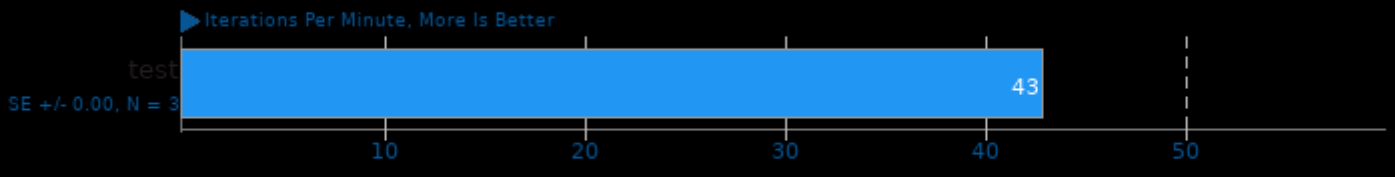
Test: Blowfish



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

GraphicsMagick 1.3.12

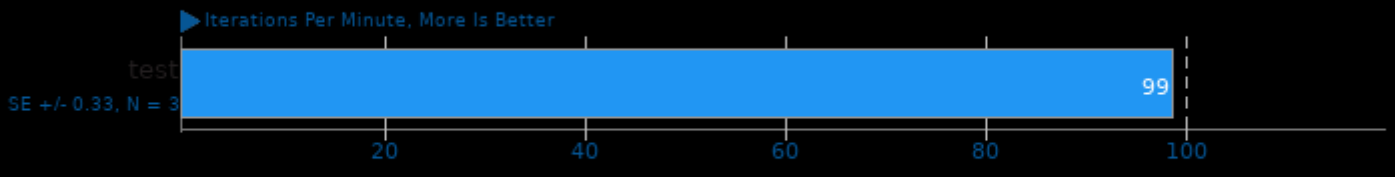
Operation: Local Adaptive Thresholding



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

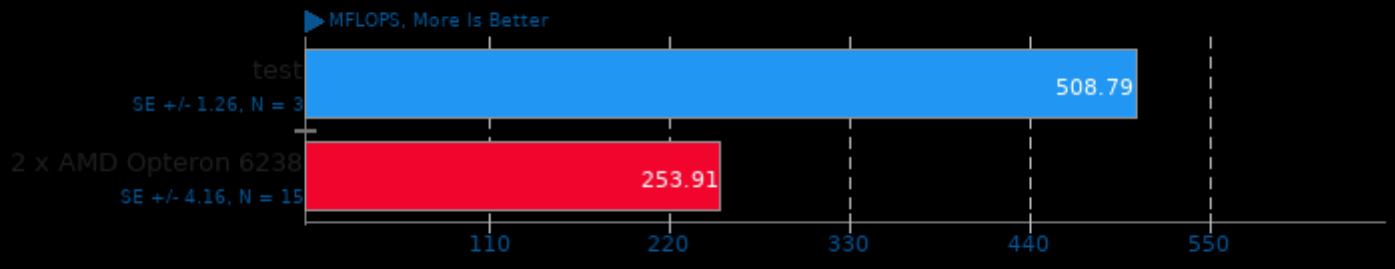
Operation: Resizing



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

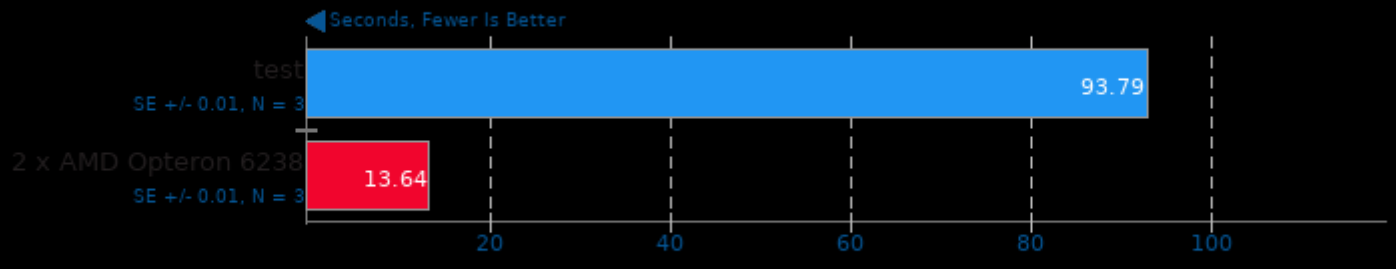
Poisson Pressure Solver



1. (CC) gcc options: -O3

C-Ray 1.1

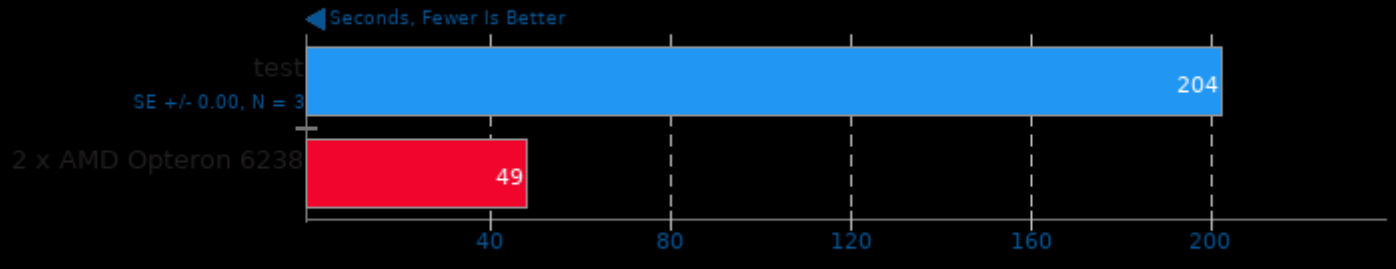
Total Time



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

Smallpt 1.0

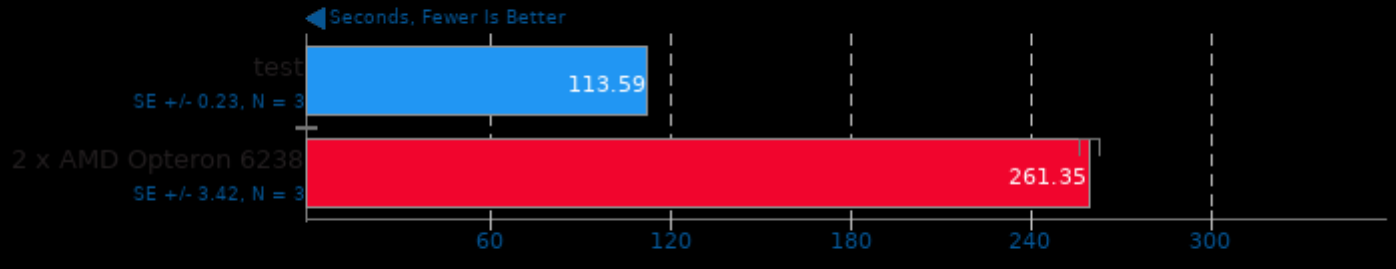
Global Illumination Renderer; 100 Samples



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

Crafty 23.4

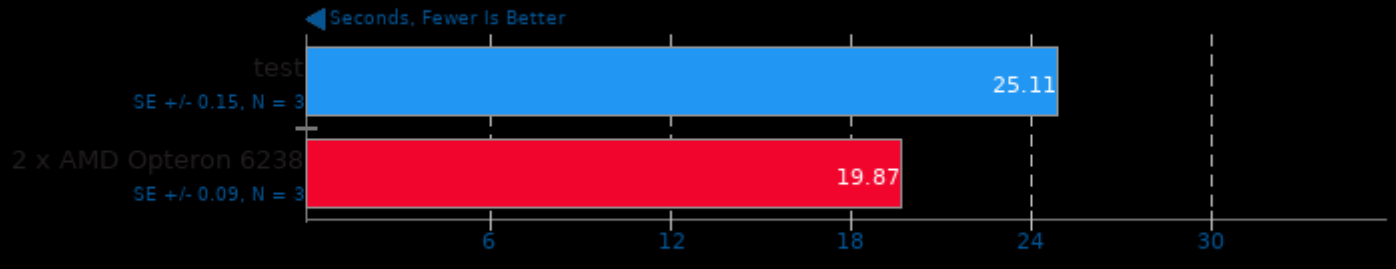
Elapsed Time



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

Timed HMMer Search 2.3.2

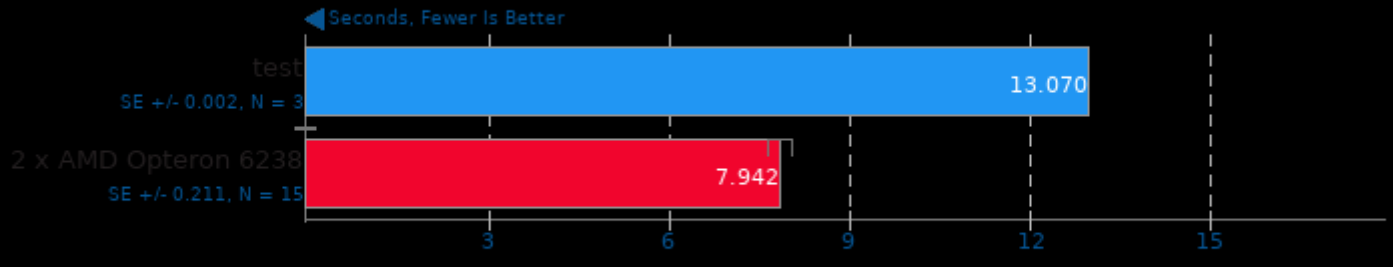
Pfam Database Search



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



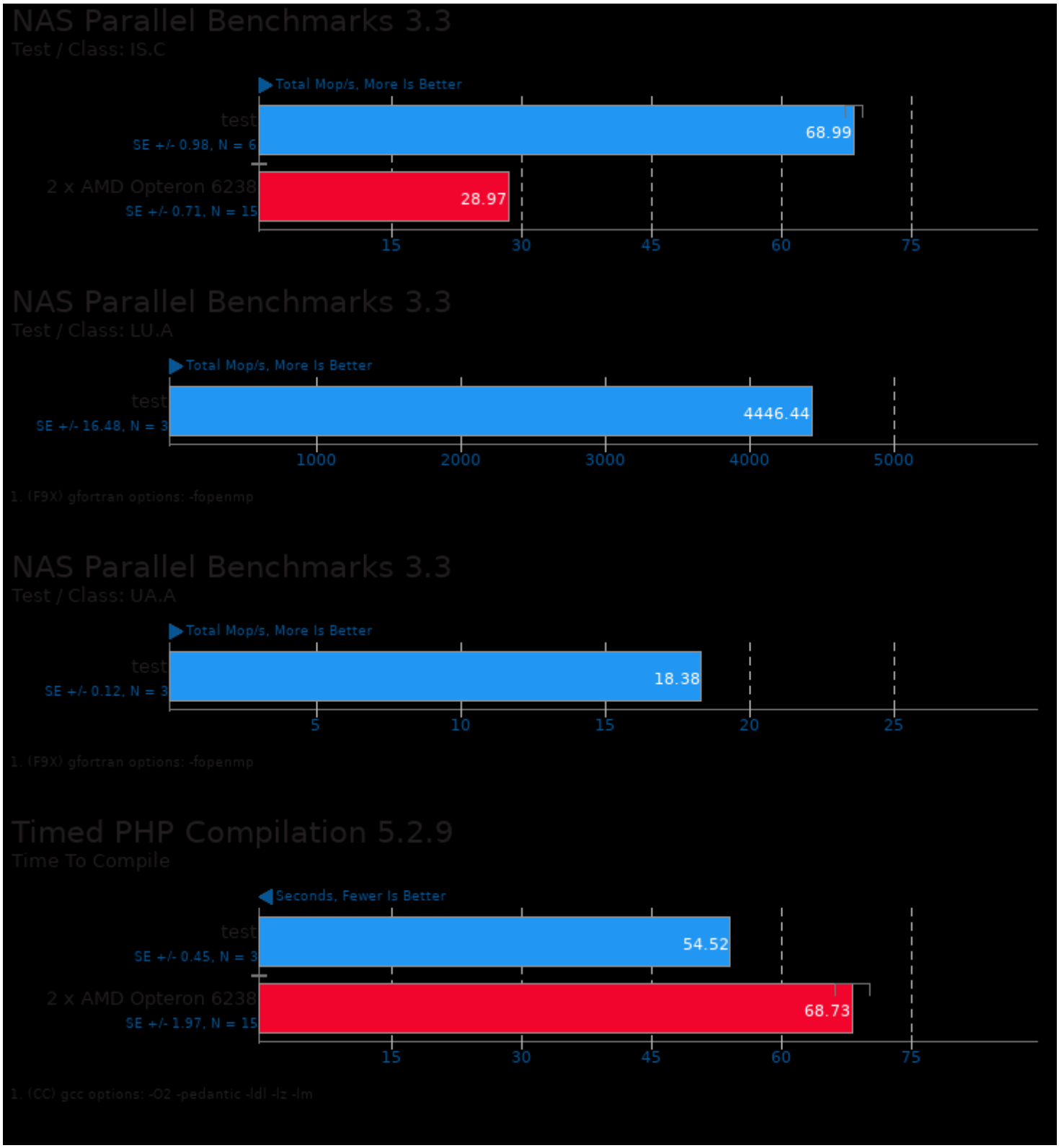
1. (CXX) g++ options: -O3 -fomit-frame-pointer -rdynamic -lboost_iostreams-mt -lz -lbz2

NAS Parallel Benchmarks 3.3

Test / Class: EP.B



1. (F9X) gfortran options: -fopenmp



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