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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*

*Gcrypt Library (CAMELLIA256-ECB Cipher) at 1x*

*GraphicsMagick (Operation: Local Adaptive Thresholding) at 1x*

*GraphicsMagick (Operation: Resizing) at 1x*

*Minion (Benchmark: Quasigroup) at 1x*

*NAS Parallel Benchmarks (Test / Class: EP.B) 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 retrpoline IBPB: conditional STIBP: disabled RSB filling + srbds: Not affected + tsx\_async\_abort: Not affected

### 2 x AMD Opteron 6238

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), Compiler: GCC 8.5.0 20210514, File-System: xfs, Screen Resolution: 1024x768

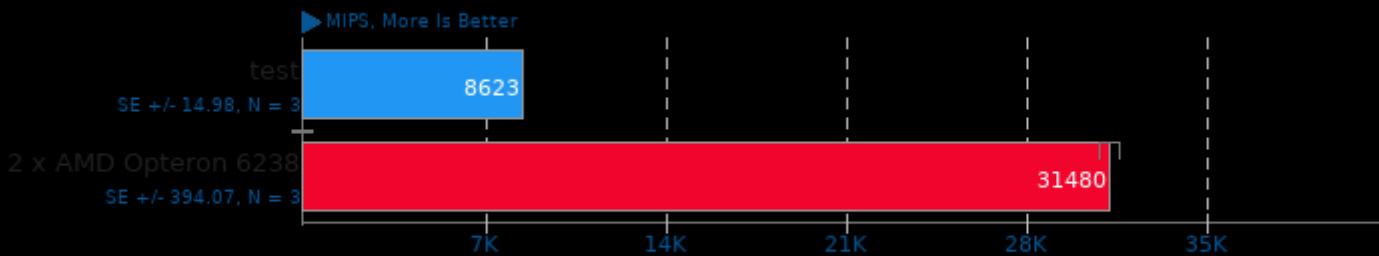
Kernel Notes: Transparent Huge Pages: always  
 Compiler Notes: --build=x86\_64-redhat-linux --disable-libmpx --disable-libunwind-exceptions --enable-\_\_cxa\_atexit --enable-bootstrap --enable-cet --enable-checking=release --enable-gnu-indirect-function --enable-gnu-unique-object --enable-initfini-array --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  
 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 retrpoline IBPB: conditional STIBP: disabled RSB filling + srbds: Not affected + tsx\_async\_abort: Not affected

	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%

<b>C-Ray - Total Time (sec)</b>	<b>93.79</b>	<b>13.642</b>
Normalized	14.55%	100%
Standard Deviation	0%	0.2%
<b>Crafty - Elapsed Time (sec)</b>	<b>113.59</b>	<b>261.35</b>
Normalized	100%	43.46%
Standard Deviation	0.4%	2.3%
<b>Gcrypt Library - C.E.C (us)</b>	3200	
Standard Deviation	0.3%	
<b>GraphicsMagick - L.A.T (Iterations/min)</b>	43	
Standard Deviation	0%	
<b>GraphicsMagick - Resizing (Iterations/min)</b>	99	
Standard Deviation	0.6%	
<b>Himeno Benchmark - P.P.S (MFLOPS)</b>	<b>508.79</b>	<b>253.910128</b>
Normalized	100%	49.9%
Standard Deviation	0.4%	6.3%
<b>John The Ripper - Blowfish (Real C/S)</b>	<b>3399</b>	<b>8410</b>
Normalized	40.42%	100%
Standard Deviation	0.1%	12%
<b>Minion - Quasigroup (sec)</b>	233.02	
Standard Deviation	1.3%	
<b>Minion - Solitaire (sec)</b>	389.58	
Standard Deviation	35.3%	
<b>NAS Parallel Benchmarks - EP.B (Mop/s)</b>	87.64	
Standard Deviation	0.8%	
<b>NAS Parallel Benchmarks - IS.C (Mop/s)</b>	<b>68.99</b>	<b>28.97</b>
Normalized	100%	41.99%
Standard Deviation	3.5%	9.5%
<b>NAS Parallel Benchmarks - LU.A (Mop/s)</b>	4446	
Standard Deviation	0.6%	
<b>NAS Parallel Benchmarks - UA.A (Mop/s)</b>	18.38	
Standard Deviation	1.1%	
<b>OpenSSL - R.4.b.P (Signs/sec)</b>	56.65	
Standard Deviation	0.2%	
<b>Parallel BZIP2 Compression - 2.F.C (sec)</b>	17.14	
Standard Deviation	0.2%	
<b>Smallpt - G.I.R.1.S (sec)</b>	<b>204</b>	<b>49</b>
Normalized	24.02%	100%
Standard Deviation	0%	
<b>Timed HMMer Search - P.D.S (sec)</b>	<b>25.11</b>	<b>19.870</b>
Normalized	79.13%	100%
Standard Deviation	1%	0.8%
<b>Timed MAFFT Alignment - M.S.A (sec)</b>	<b>13.07</b>	<b>7.942</b>
Normalized	60.77%	100%
Standard Deviation	0%	10.3%
<b>Timed PHP Compilation - Time To Compile (sec)</b>	<b>54.52</b>	<b>68.729</b>
Normalized	100%	79.33%
Standard Deviation	1.4%	11.1%
<b>x264 - H.2.V.E (FPS)</b>	63.26	
Standard Deviation	0.3%	

## 7-Zip Compression 9.20.1

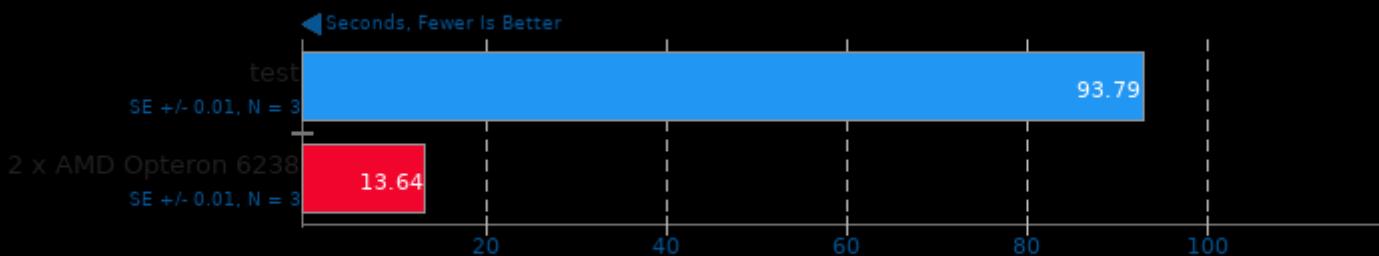
Compress Speed Test



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

## C-Ray 1.1

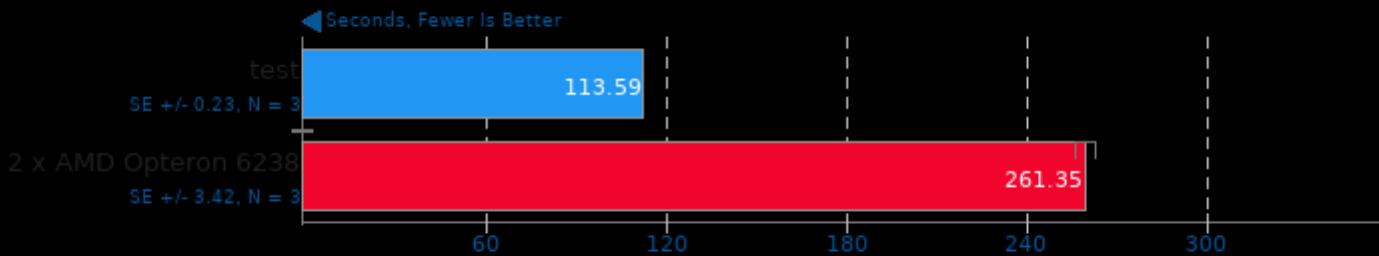
Total Time



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

## Crafty 23.4

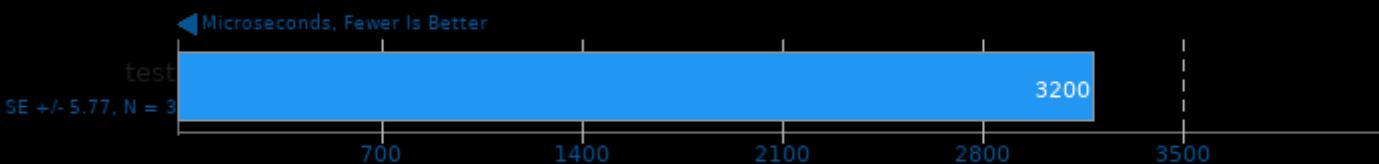
Elapsed Time



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

## Gcrypt Library 1.4.4

CAMELLIA256-ECB Cipher



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

## GraphicsMagick 1.3.12

Operation: Local Adaptive Thresholding



1. (CC) gcc options: -std=gnu99 -fopenmp -O2 -pthread -lcms -ltiff -lfreetype -jasper -jpeg -lwmflite -Xext -IS -ICE -X11 -bz2 -xml2 -lz -lm -lrt -lpthread

## GraphicsMagick 1.3.12

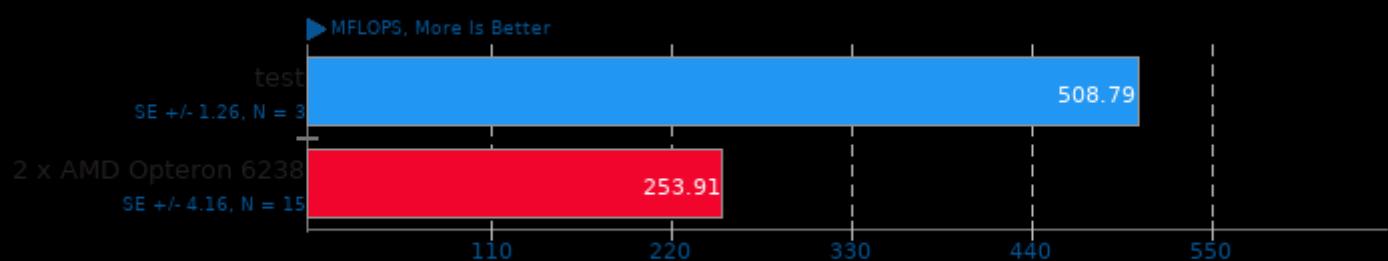
Operation: Resizing



1. (CC) gcc options: -std=gnu99 -fopenmp -O2 -pthread -lcms -ltiff -lfreetype -jasper -jpeg -lwmflite -Xext -IS -ICE -X11 -bz2 -xml2 -lz -lm -lrt -lpthread

## Himeno Benchmark 3.0

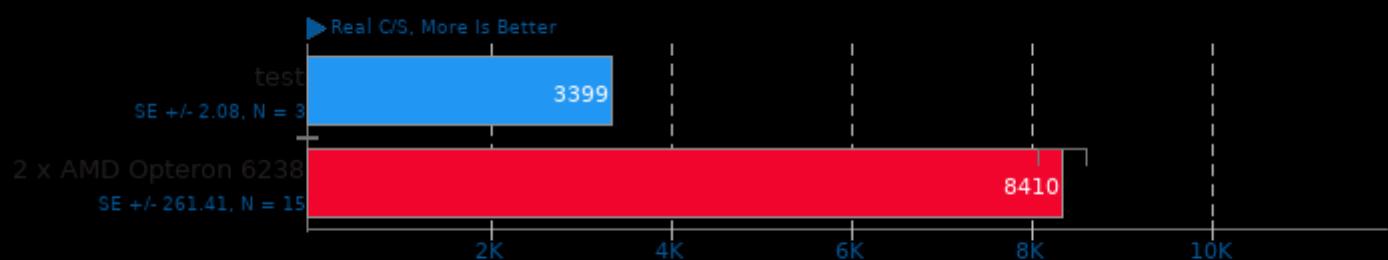
Poisson Pressure Solver



1. (CC) gcc options: -O3

## John The Ripper 1.7.9

Test: Blowfish



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

## 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

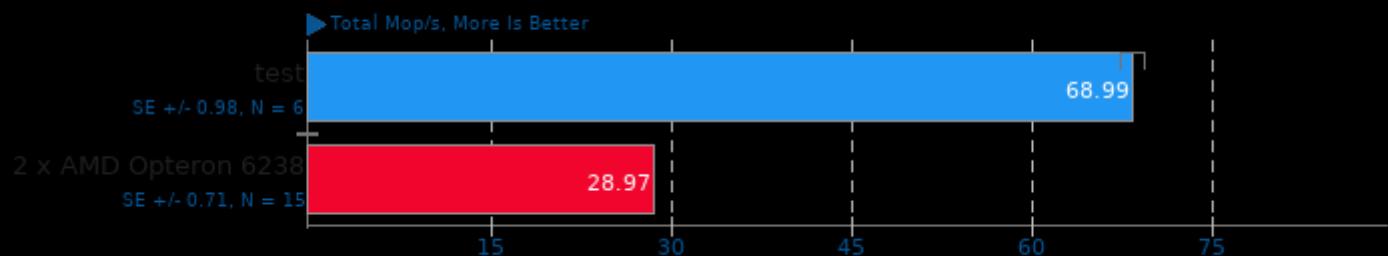
Test / Class: EP.B



1. (F9X) gfortran options: -fopenmp

## NAS Parallel Benchmarks 3.3

Test / Class: IS.C



## NAS Parallel Benchmarks 3.3

Test / Class: LU.A



1. (F9X) gfortran options: -fopenmp

## NAS Parallel Benchmarks 3.3

Test / Class: UA.A



1. (F9X) gfortran options: -fopenmp

## OpenSSL 1.0.0e

RSA 4096-bit Performance



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

## Parallel BZIP2 Compression 1.0.5

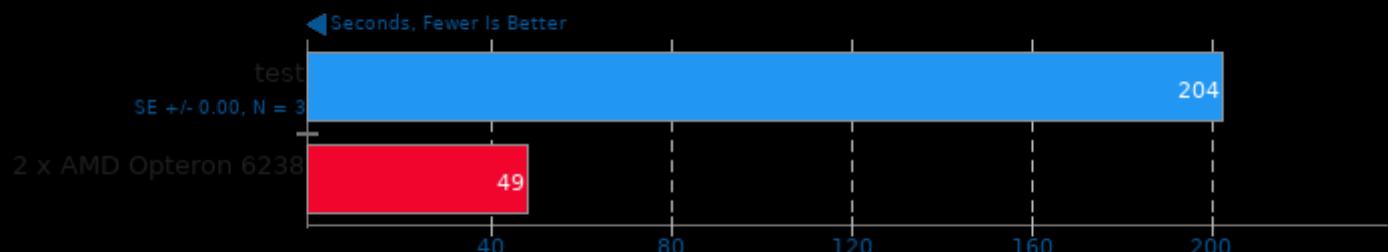
256MB File Compression



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

## Smallpt 1.0

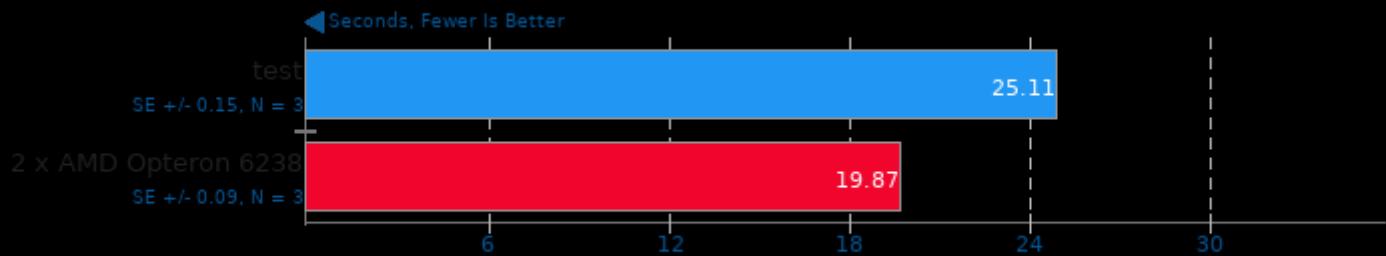
Global Illumination Renderer; 100 Samples



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

## Timed HMMer Search 2.3.2

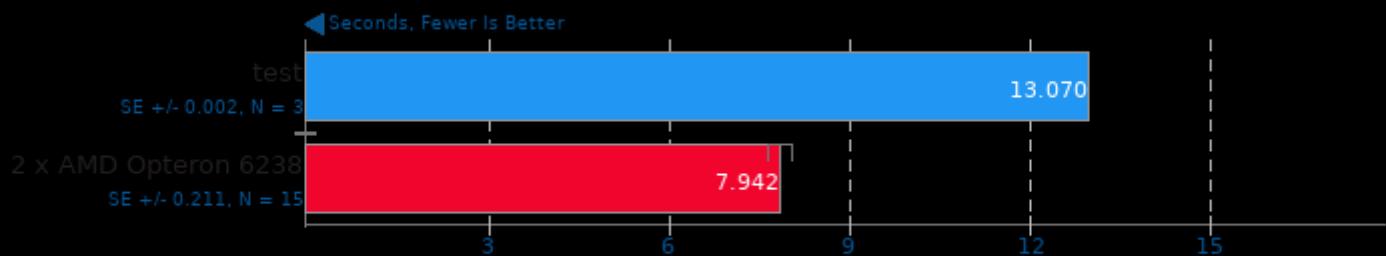
Pfam Database Search



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

## Timed MAFFT Alignment 6.864

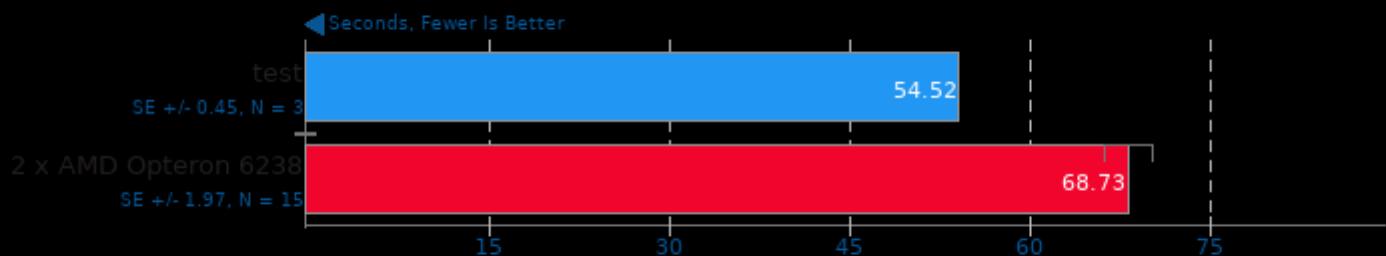
Multiple Sequence Alignment



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

## Timed PHP Compilation 5.2.9

Time To Compile



1. (CC) gcc options: -O2 -pedantic -ldl -lz -lm

## x264 2011-12-06

H.264 Video Encoding



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