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Clear Linux GCC7 Switchover

Intel Xeon E3-1260L v5 testing with a ASRock E3V5 WS and XFX NVIDIA GeForce GT 220 on Clear Linux 15080 via the Phoronix Test Suite.

Automated Executive Summary

Clear 15040 - GCC 6.3.0 had the most wins, coming in first place for 55% of the tests.

Based on the geometric mean of all complete results, the fastest (Clear 15040 - GCC 6.3.0) was 1.006x the speed of the slowest (Clear Linux 15080 - GCC 7.1.0).

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

C-Ray (Total Time) at 1.128x
Himeno Benchmark (Poisson Pressure Solver) at 1.046x
libjpeg-turbo tjbench (Test: Decompression Throughput) at 1.035x
Scikit-Learn (Phoronix Test Suite v7.2.0m2) at 1.031x
Timed PHP Compilation (Time To Compile) at 1.028x
Timed Apache Compilation (Time To Compile) at 1.021x
HPC Challenge (Test / Class: EP-DGEMM) at 1.021x
SciMark (Computational Test: Sparse Matrix Multiply) at 1.021x
PostgreSQL pgbench (Scaling: Buffer Test - Test: Heavy Contention - Mode: Read Write) at 1.02x

LAME MP3 Encoding (WAV To MP3) at 1.018x.

Test Systems:

Clear 15040 - GCC 6.3.0

Processor: Intel Xeon E3-1260L v5 @ 3.90GHz (8 Cores), Motherboard: ASRock E3V5 WS, Chipset: Intel Skylake, Memory: 8192MB, Disk: 120GB INTEL SSDSC2BW12, Graphics: XFX NVIDIA GeForce GT 220, Audio: Realtek ALC892, Network: Intel Connection

OS: Clear Linux 15040, Kernel: 4.10.13-338.native (x86_64), Vulkan: 1.0.39, Compiler: GCC 6.3.0 + Clang 4.0.0 + LLVM 4.0.0, File-System: ext4, Screen Resolution: 1024x768

Compiler Notes: --build=x86_64-generic-linux --disable-libunwind-exceptions --disable-multiarch --disable-vtable-verify --enable-__cxa_atexit --enable-bootstrap --enable-clocale=gnu --enable-gnu-indirect-function --enable-languages=c,c++,fortran,go --enable-ld=default --enable-libmpx --enable-libstdcxx-pch --enable-lto --enable-multilib --enable-plugin --enable-shared --enable-threads=posix --exec-prefix=/usr --includedir=/usr/include --target=x86_64-generic-linux --with-arch=westmere --with-glibc-version=2.19 --with-gnu-ld --with-isl --with-ppl=yes --with-tune=haswell
Processor Notes: Scaling Governor: intel_pstate performance

Clear Linux 15080 - GCC 7.1.0

Processor: Intel Xeon E3-1260L v5 @ 3.90GHz (8 Cores), Motherboard: ASRock E3V5 WS, Chipset: Intel Skylake, Memory: 8192MB, Disk: 120GB INTEL SSDSC2BW12, Graphics: XFX NVIDIA GeForce GT 220, Audio: Realtek ALC892, Network: Intel Connection

OS: Clear Linux 15080, Kernel: 4.10.13-339.native (x86_64), Vulkan: 1.0.39, Compiler: GCC 7.1.0 + Clang 4.0.0 + LLVM 4.0.0, File-System: ext4, Screen Resolution: 1024x768

Compiler Notes: --build=x86_64-generic-linux --disable-libunwind-exceptions --disable-multiarch --disable-vtable-verify --enable-__cxa_atexit --enable-bootstrap --enable-clocale=gnu --enable-gnu-indirect-function --enable-languages=c,c++,fortran,go --enable-ld=default --enable-libmpx --enable-libstdcxx-pch --enable-lto --enable-multilib --enable-plugin --enable-shared --enable-threads=posix --exec-prefix=/usr --includedir=/usr/include --target=x86_64-generic-linux --with-arch=westmere --with-glibc-version=2.19 --with-gnu-ld --with-isl --with-ppl=yes --with-tune=haswell
Processor Notes: Scaling Governor: intel_pstate performance

	Clear 15040 - GCC 6.3.0	Clear Linux 15080 - GCC 7.1.0
HPC Challenge - G-HPL (GFLOPS)	**102.04900**	**102.29000**
Normalized	99.76%	100%
Standard Deviation	0.2%	0.3%
HPC Challenge - G-Ffte (GFLOPS)	**4.52126**	**4.49108**
Normalized	100%	99.33%
Standard Deviation	0.6%	0.2%
HPC Challenge - G-Ffte (GFLOP/s)	**4.52126**	**4.49108**
Normalized	100%	99.33%
Standard Deviation	0.6%	0.2%
HPC Challenge - EP-DGEMM (GFLOPS)	**19.72793**	**19.32160**

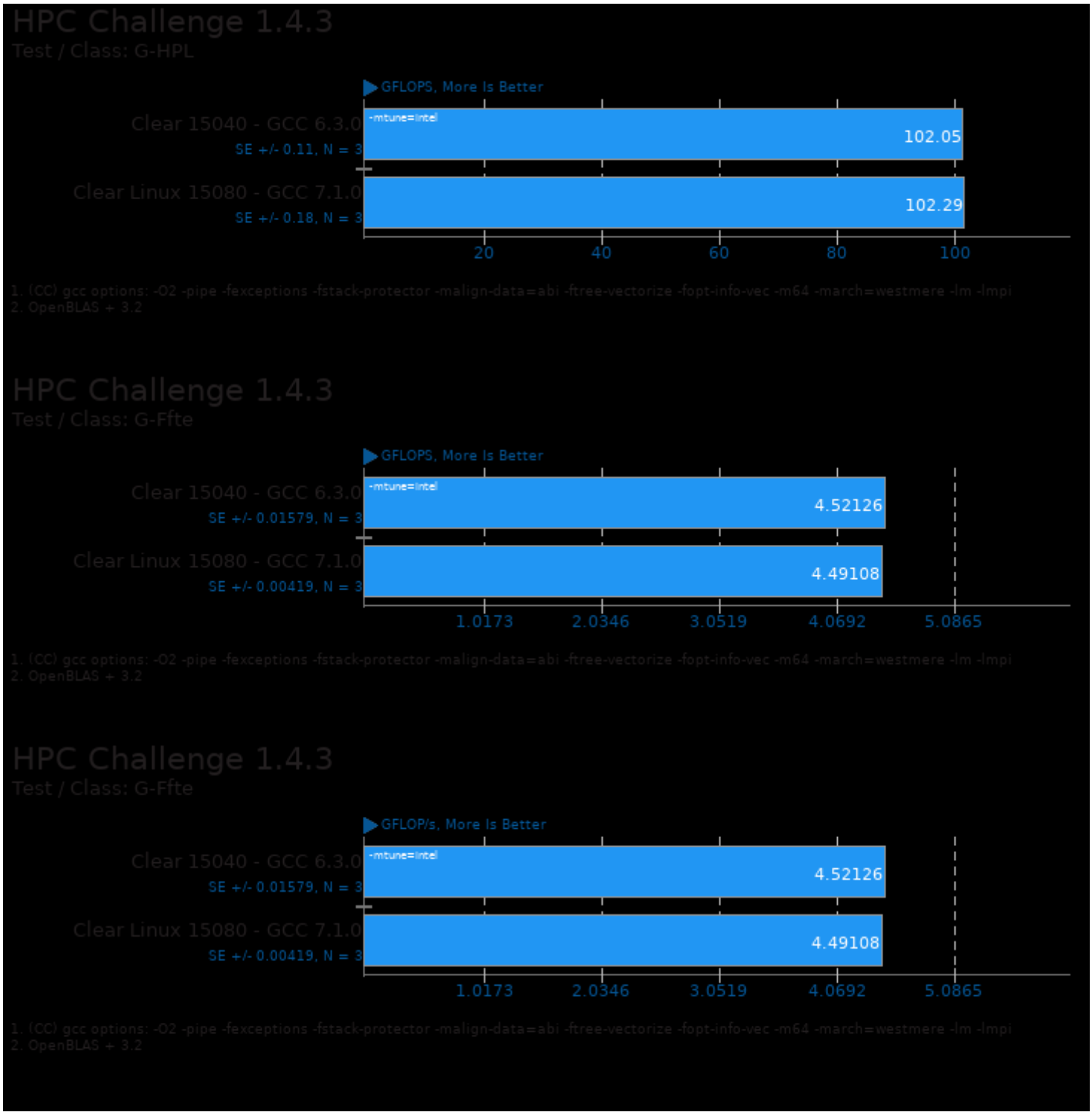
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Normalized	100%	97.94%
Standard Deviation	1.3%	0.8%
HPC Challenge - G-Ptrans (GB/s)	**2.77012**	**2.79829**
Normalized	98.99%	100%
Standard Deviation	1.5%	0.8%
HPC Challenge - EP-STREAM Triad (GB/s)	**2.40241**	**2.39610**
Normalized	100%	99.74%
Standard Deviation	0.8%	0.7%
SciMark - Composite (Mflops)	**2291**	**2265**
Normalized	100%	98.88%
Standard Deviation	0.5%	0.6%
SciMark - Monte Carlo (Mflops)	**799.67**	**803.81**
Normalized	99.48%	100%
Standard Deviation	0.5%	0.1%
SciMark - F.F.T (Mflops)	**348.25**	**349.66**
Normalized	99.6%	100%
Standard Deviation	0.7%	0.6%
SciMark - S.M.M (Mflops)	**2888**	**2828**
Normalized	100%	97.95%
Standard Deviation	0.2%	0.1%
SciMark - D.L.M.F (Mflops)	**5942**	**5879**
Normalized	100%	98.94%
Standard Deviation	1%	1.2%
SciMark - J.S.O.R (Mflops)	**1477**	**1466**
Normalized	100%	99.22%
Standard Deviation	0%	1.3%
John The Ripper - Blowfish (Real C/S)	**6768**	**6835**
Normalized	99.02%	100%
Standard Deviation		1.5%
GraphicsMagick - Resizing (Iterations/min)	**201**	**200**
Normalized	100%	99.5%
GraphicsMagick - HWB Color Space (Iterations/min)	229	229
Himeno Benchmark - P.P.S (MFLOPS)	**2554**	**2443**
Normalized	100%	95.65%
Standard Deviation	0.7%	4.6%
Timed Apache Compilation - Time To Compile (sec)	**27.51**	**28.09**
Normalized	100%	97.94%
Standard Deviation	0.5%	0.3%
Timed Linux Kernel Compilation - Time To Compile	**112.80**	**112.09**
Normalized	99.37%	100%
Standard Deviation	0.9%	0.9%
Timed PHP Compilation - Time To Compile (sec)	**28.87**	**29.68**
Normalized	100%	97.27%
Standard Deviation	0.3%	0.2%
C-Ray - Total Time (sec)	**20.76**	**23.42**
Normalized	100%	88.64%
Standard Deviation	0%	0.1%
Parallel BZIP2 Compression - 2.F.C (sec)	**8.89**	**8.84**
Normalized	99.44%	100%
Standard Deviation	0%	0.5%
Stockfish - Total Time (ms)	**3134**	**3097**
Normalized	98.82%	100%
Standard Deviation		0.1%
LAME MP3 Encoding - WAV To MP3 (sec)	**9.43**	**9.26**
Normalized	98.2%	100%

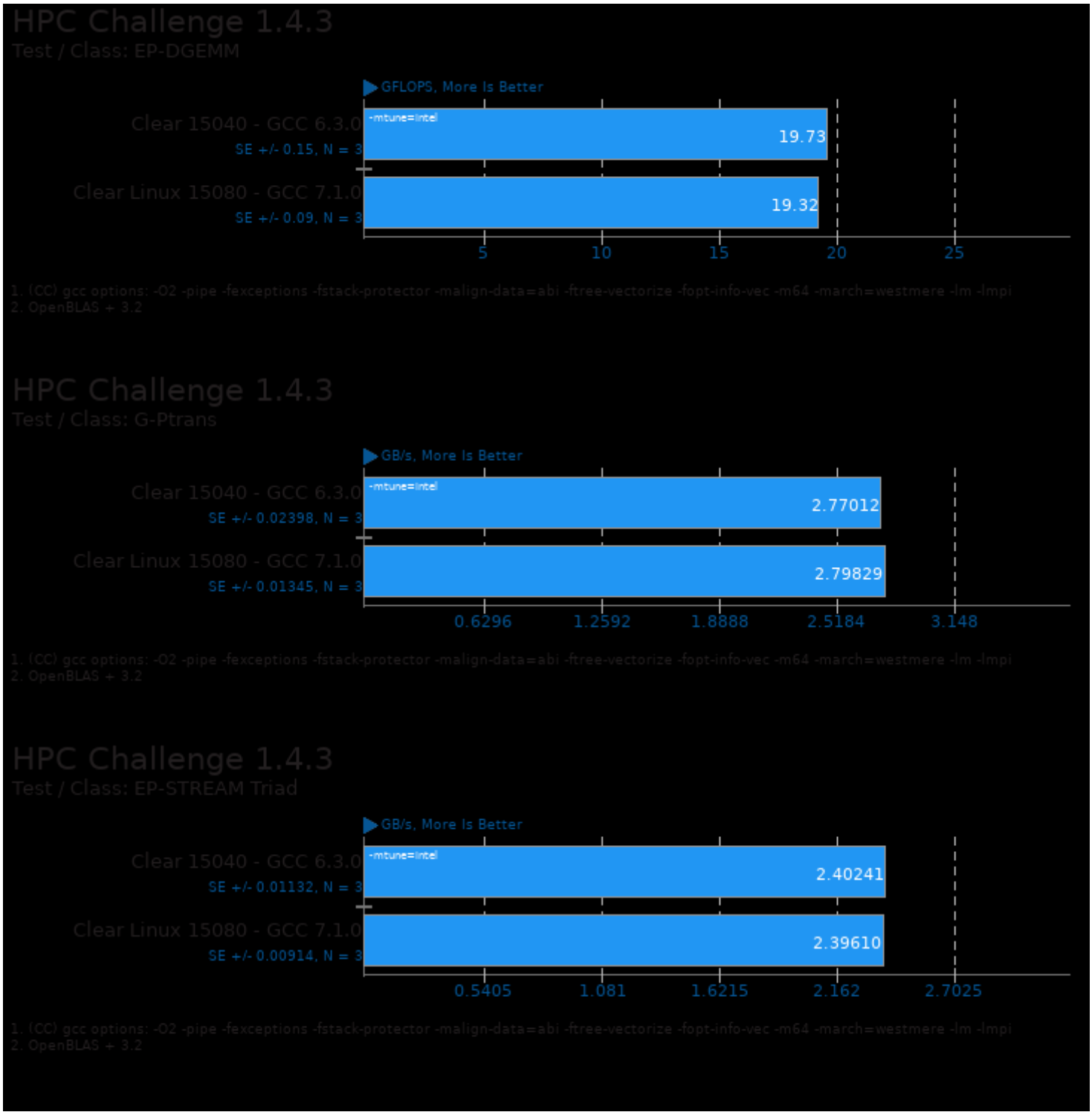
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Standard Deviation	0.9%	0.1%
WavPack Audio Encoding - WAV To WavPack (sec)	7.38	7.38
Standard Deviation	0.1%	0.4%
libjpeg-turbo tjbench - D.T (Megapixels/sec)	**170.26**	**164.47**
Normalized	100%	96.6%
Standard Deviation	0.6%	0.2%
Tensorflow - Cifar10 (sec)	**68.69**	**68.64**
Normalized	99.93%	100%
Standard Deviation	0.1%	0.1%
PostgreSQL pgbench - Buffer Test - Normal Load - Read Write (TPS)	**748.49**	**748.28**
Normalized	100%	99.97%
Standard Deviation	1.1%	1.3%
PostgreSQL pgbench - Buffer Test - Heavy Contention - Read Write (TPS)	**925.70**	**944.15**
Normalized	98.05%	100%
Standard Deviation	3.1%	3%
Darktable - Boat - CPU-only (sec)	**20.56**	**20.57**
Normalized	100%	99.95%
Standard Deviation	0.6%	0.4%
Darktable - Masskrug - CPU-only (sec)	**10.31**	**10.20**
Normalized	98.93%	100%
Standard Deviation	0.8%	0.1%
Darktable - Server Room - CPU-only (sec)	**8.11**	**8.08**
Normalized	99.63%	100%
Standard Deviation	0.8%	1%
Redis - GET (Reqs/sec)	**3141555**	**3137496**
Normalized	100%	99.87%
Standard Deviation	1%	3.4%
Redis - SET (Reqs/sec)	**2226461**	**2217964**
Normalized	100%	99.62%
Standard Deviation	2.5%	2.1%
Apache Benchmark - S.W.P.S (Reqs/sec)	**42627**	**42657**
Normalized	99.93%	100%
Standard Deviation	0.3%	1.3%
Scikit-Learn - P.T.S.v.2.0 (sec)	**13.10**	**12.71**
Normalized	97.02%	100%
Standard Deviation	2.3%	1.9%

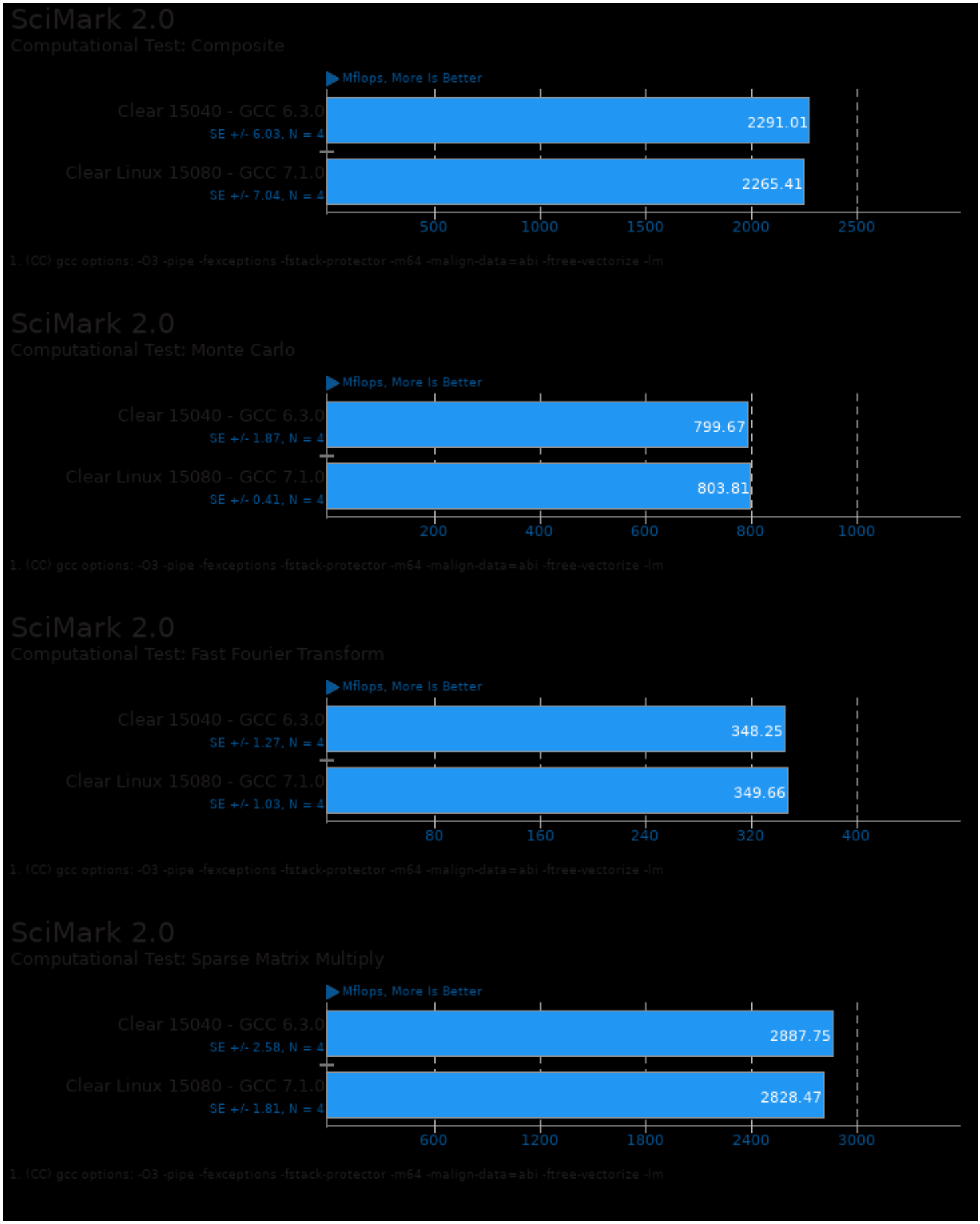
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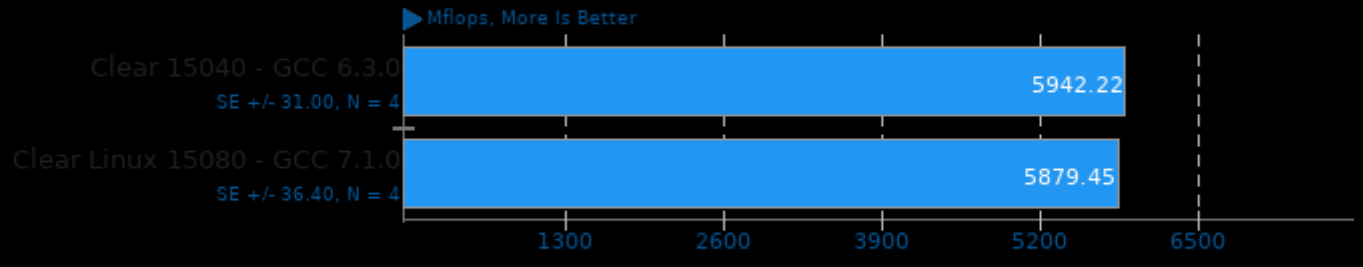
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SciMark 2.0

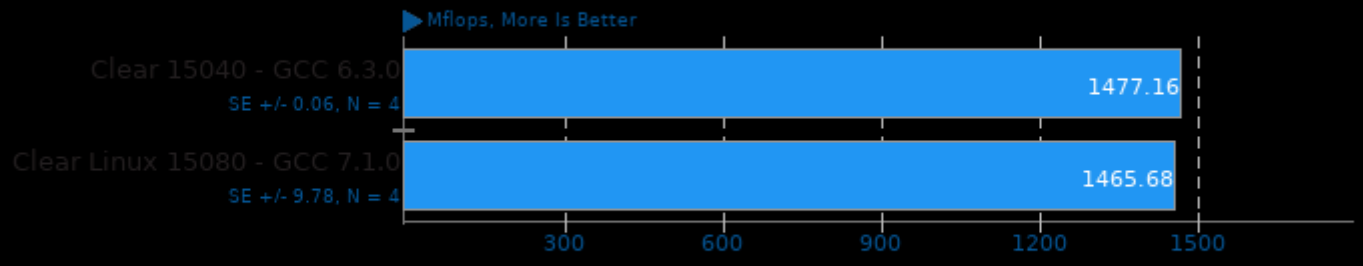
Computational Test: Dense LU Matrix Factorization



1. (CC) gcc options: -O3 -pipe -fexceptions -fstack-protector -m64 -malign-data=abi -ftree-vectorize -lm

SciMark 2.0

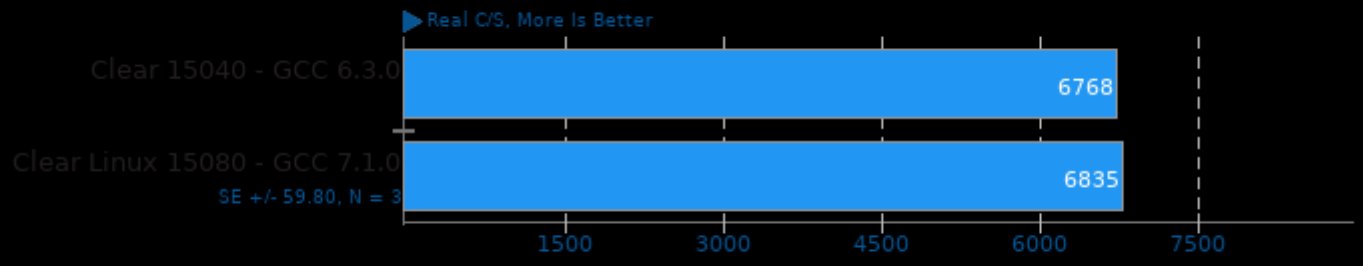
Computational Test: Jacobi Successive Over-Relaxation



1. (CC) gcc options: -O3 -pipe -fexceptions -fstack-protector -m64 -malign-data=abi -ftree-vectorize -lm

John The Ripper 1.8.0

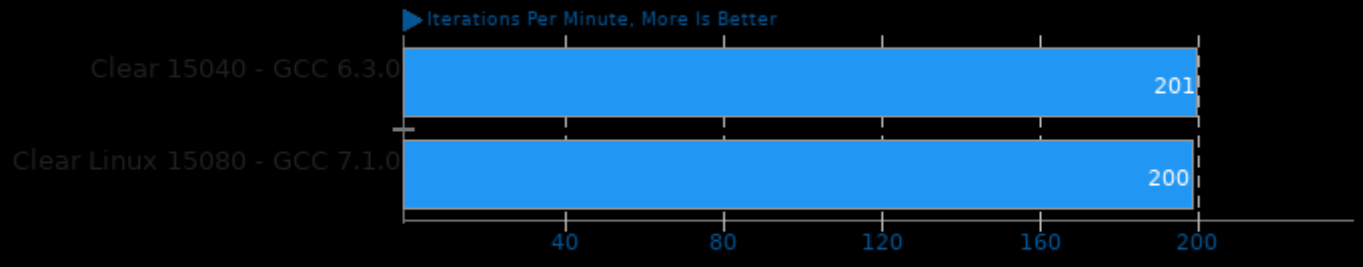
Test: Blowfish



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

GraphicsMagick 1.3.19

Operation: Resizing

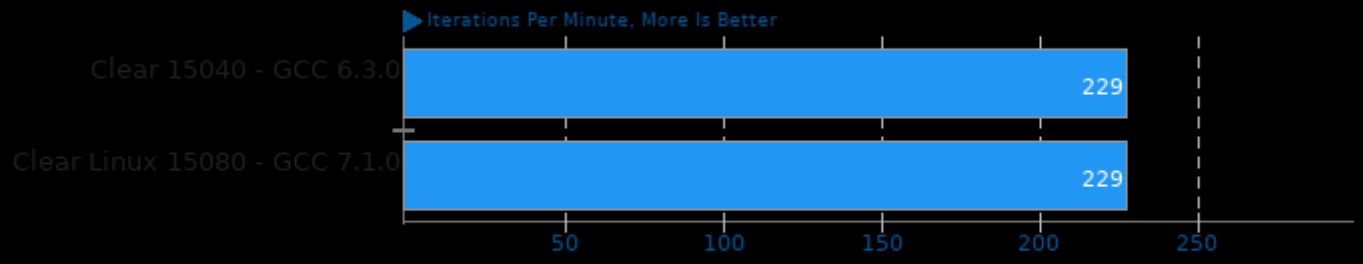


1. (CC) gcc options: -fopenmp -O3 -pipe -fexceptions -fstack-protector -m64 -malign-data=abi -ftree-vectorize -pthread -lfreetype -ljpeg -lXext -lX11 -lbz

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GraphicsMagick 1.3.19

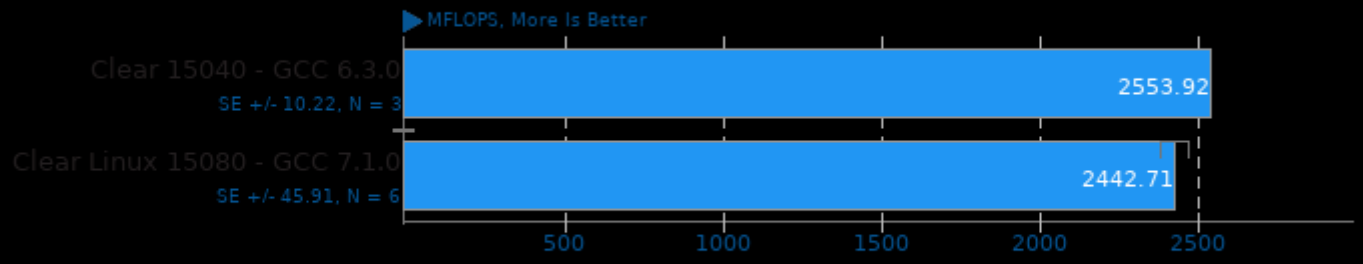
Operation: HWB Color Space



1. (CC) gcc options: -fopenmp -O3 -pipe -fexceptions -fstack-protector -m64 -malign-data=abi -ftree-vectorize -pthread -lfreetype -ljpeg -lXext -lX11 -lbz2

Himeno Benchmark 3.0

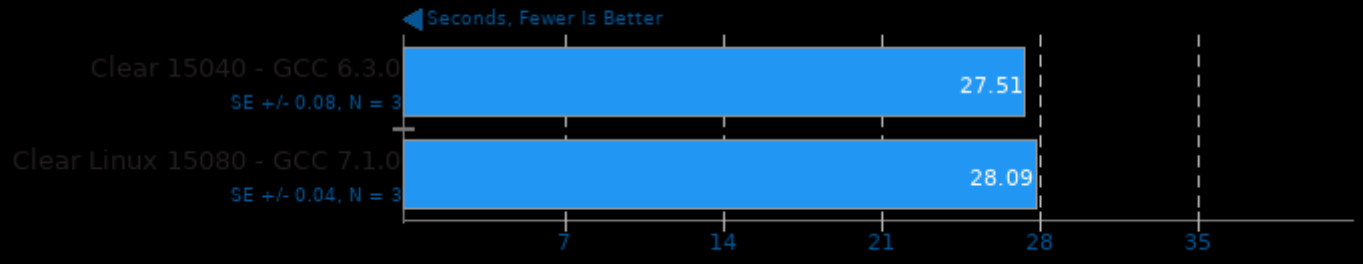
Poisson Pressure Solver



1. (CC) gcc options: -O3 -pipe -fexceptions -fstack-protector -m64 -malign-data=abi -ftree-vectorize -mavx2

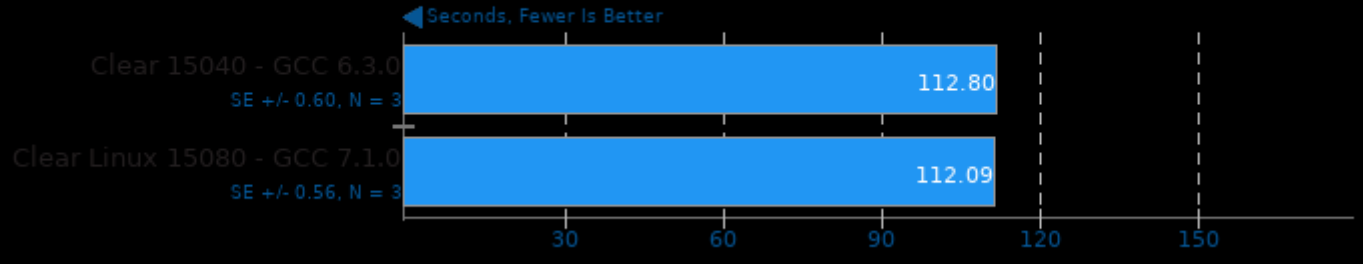
Timed Apache Compilation 2.4.7

Time To Compile



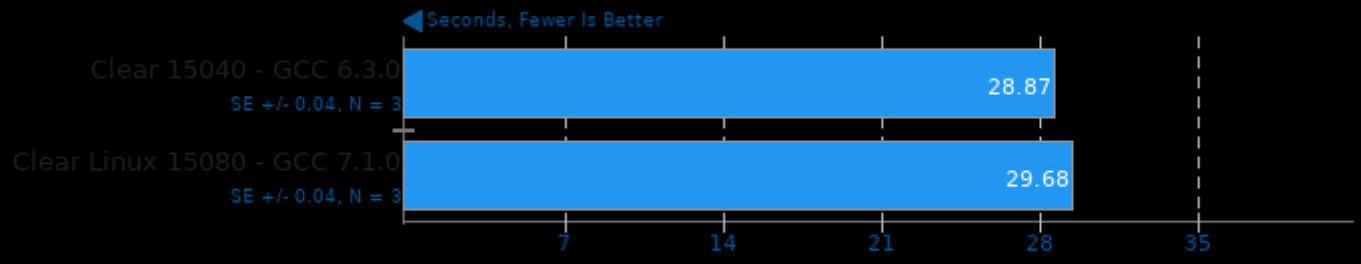
Timed Linux Kernel Compilation 4.9

Time To Compile



Timed PHP Compilation 5.2.9

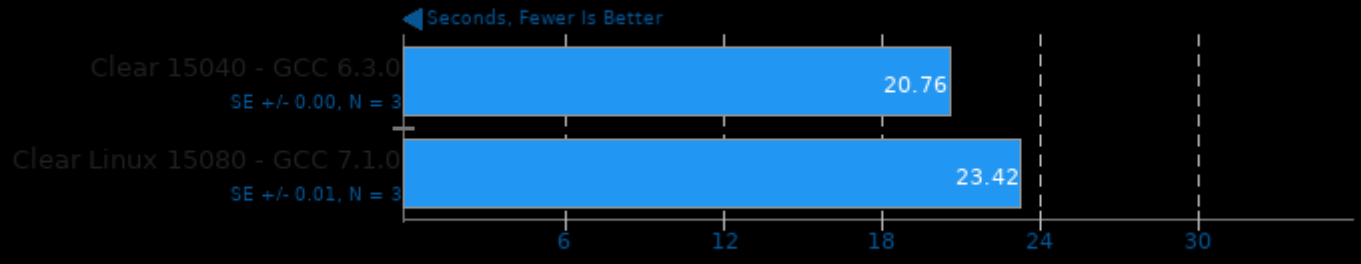
Time To Compile



1. (CC) gcc options: -O3 -pipe -fexceptions -fstack-protector -m64 -malign-data=abi -ftree-vectorize -pedantic -ldl -lz -lm

C-Ray 1.1

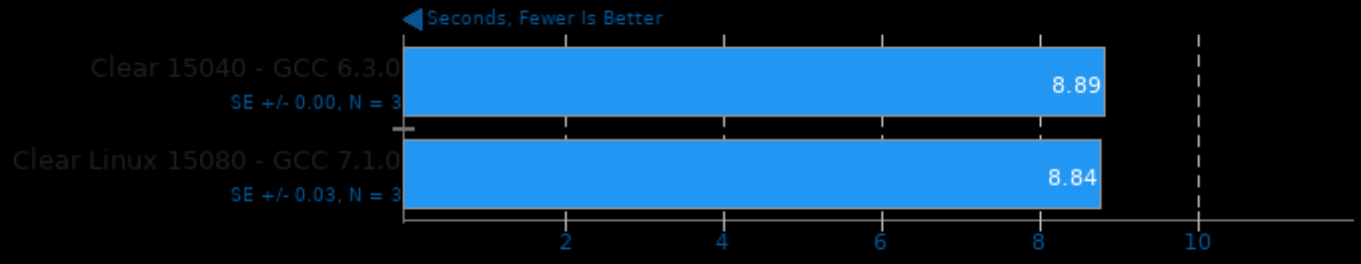
Total Time



1. (CC) gcc options: -lm -lpthread -O3 -pipe -fexceptions -fstack-protector -m64 -malign-data=abi -ftree-vectorize

Parallel BZIP2 Compression 1.1.12

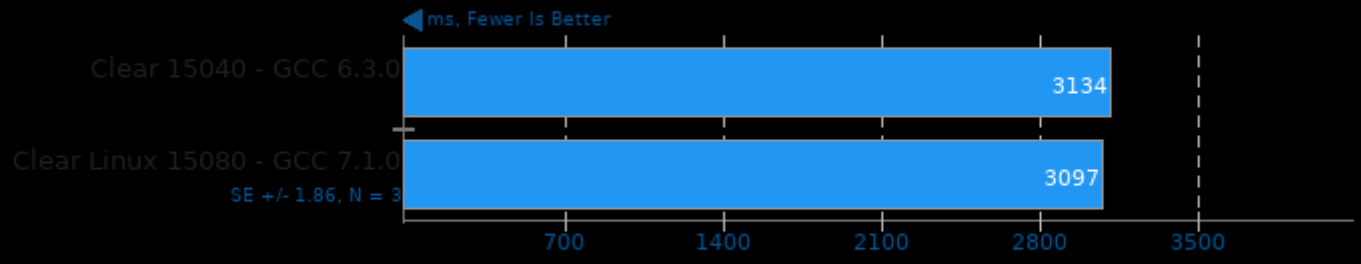
256MB File Compression



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

Stockfish 2014-11-26

Total Time

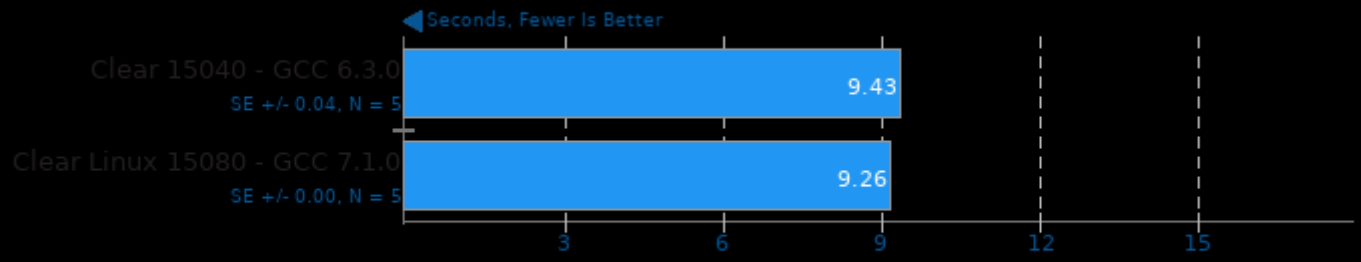


1. (CXX) g++ options: -lpthread -O3 -pipe -fexceptions -fstack-protector -m64 -malign-data=abi -ftree-vectorize -fno-exceptions -fno-rtti -ansi -pedantic

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LAME MP3 Encoding 3.99.3

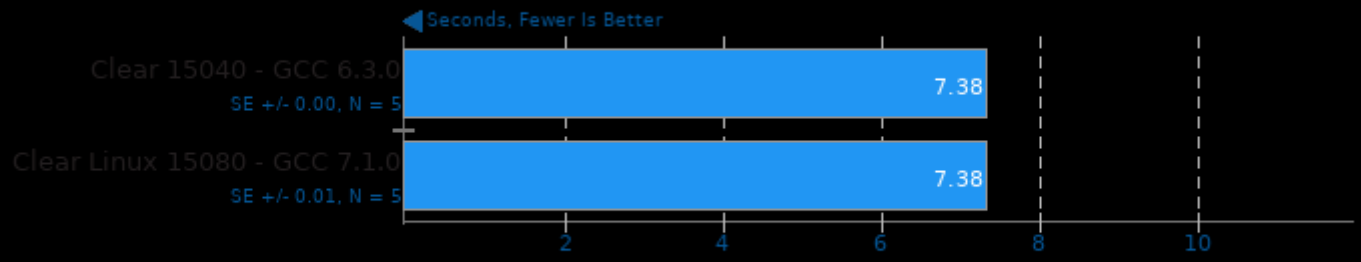
WAV To MP3



1. (CC) gcc options: -O3 -ffast-math -funroll-loops -fschedule-insns2 -fbranch-count-reg -fforce-addr -pipe -fexceptions -fstack-protector -m64 -malign-dat

WavPack Audio Encoding 5.1

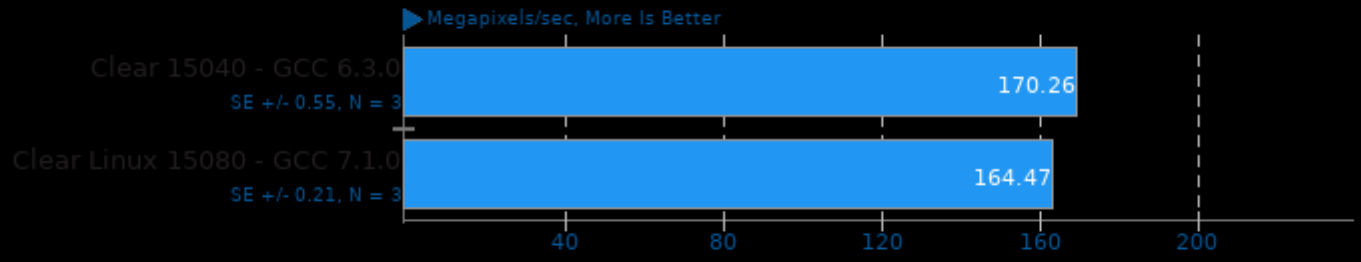
WAV To WavPack



1. (CC) gcc options: -O3 -pipe -fexceptions -fstack-protector -m64 -malign-data=abi -ftree-vectorize -lm

libjpeg-turbo tjbench 1.5.1

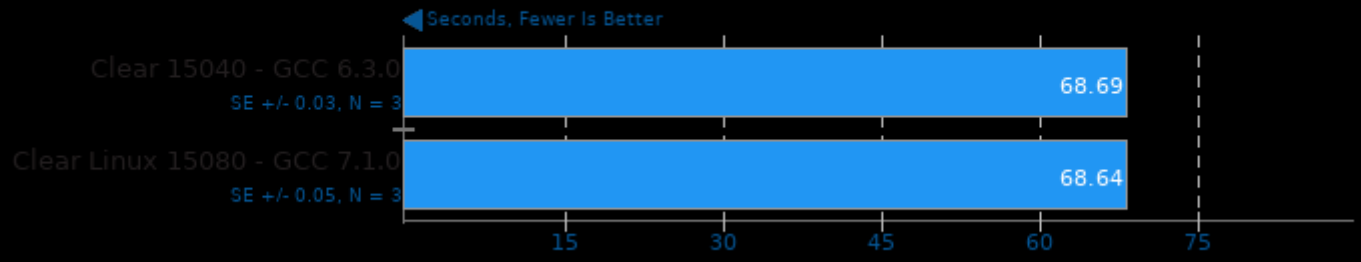
Test: Decompression Throughput



1. (CC) gcc options: -O3 -pipe -fexceptions -fstack-protector -m64 -malign-data=abi -ftree-vectorize -lm

Tensorflow 2017-02-03

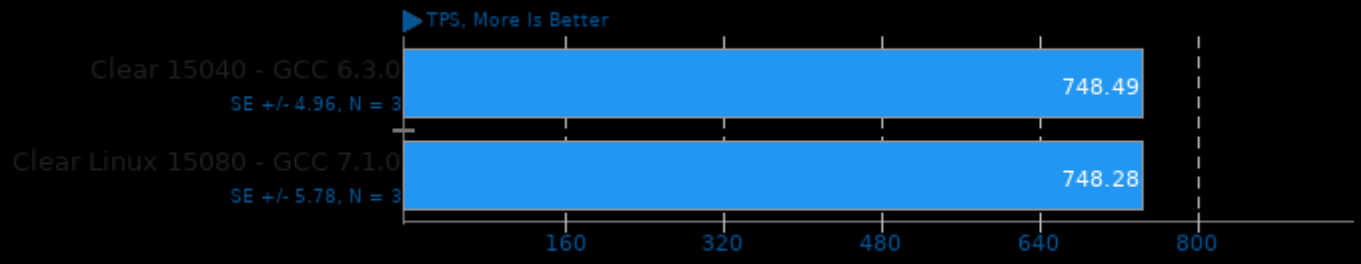
Build: Cifar10



Clear Linux GCC7 Switchover

PostgreSQL pgbench 9.4.3

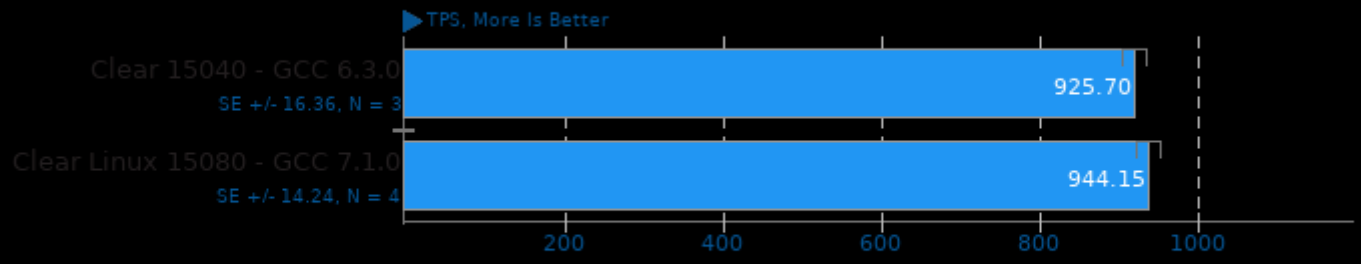
Scaling: Buffer Test - Test: Normal Load - Mode: Read Write



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O3 -pipe -fexceptions -fstack-protector -m64 -malign-data=abi -ftree-vectorize -pthread -lpgcommon -lpg

PostgreSQL pgbench 9.4.3

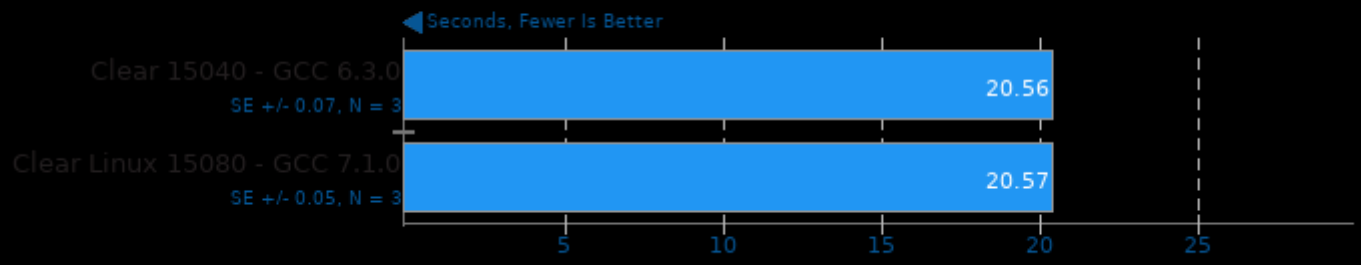
Scaling: Buffer Test - Test: Heavy Contention - Mode: Read Write



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O3 -pipe -fexceptions -fstack-protector -m64 -malign-data=abi -ftree-vectorize -pthread -lpgcommon -lpg

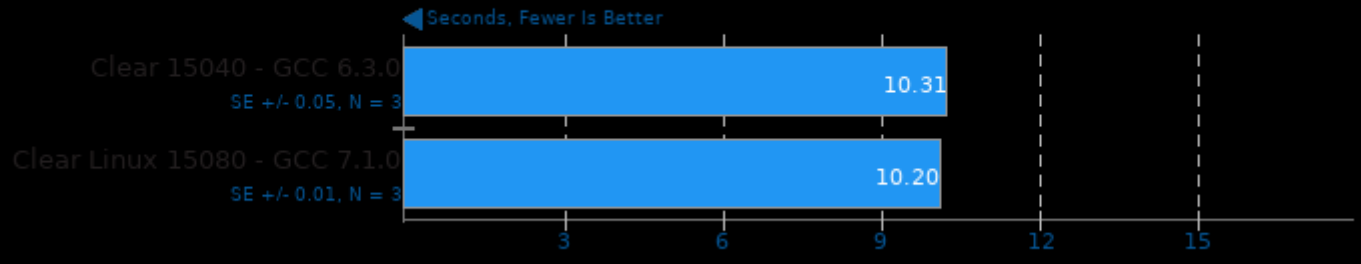
Darktable 2.2.4

Test: Boat - Acceleration: CPU-only



Darktable 2.2.4

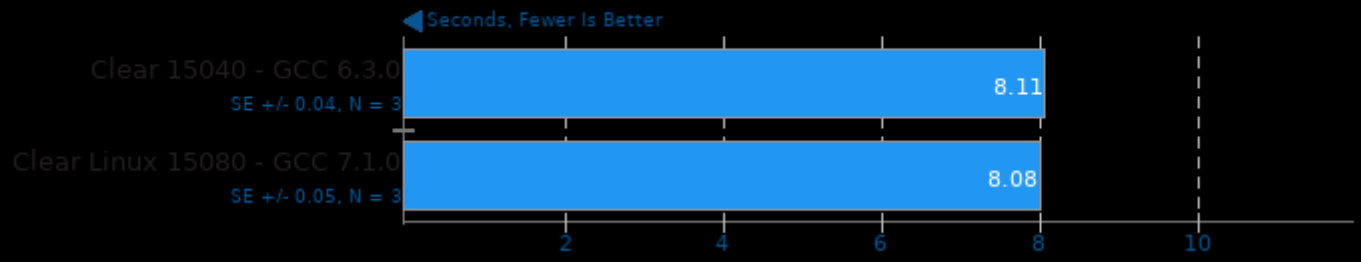
Test: Masskrug - Acceleration: CPU-only



Clear Linux GCC7 Switchover

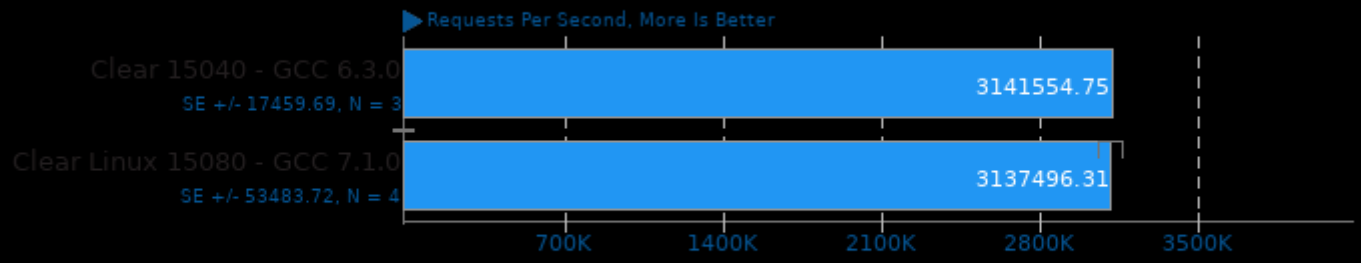
Darktable 2.2.4

Test: Server Room - Acceleration: CPU-only



Redis 3.0.1

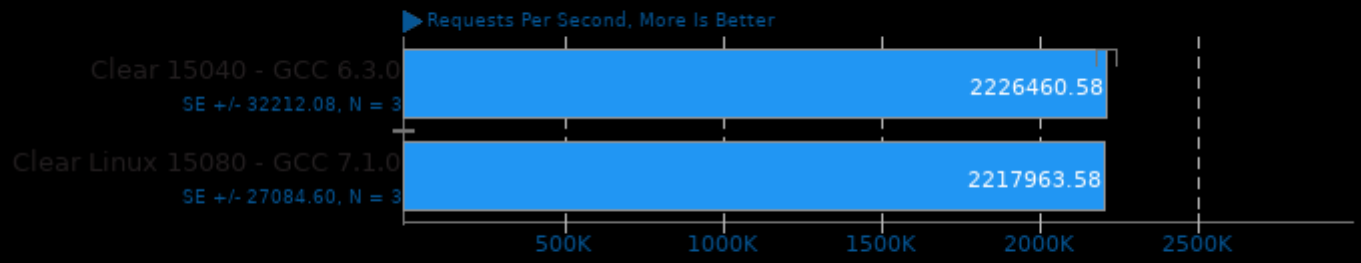
Test: GET



1. (CC) gcc options: -ggdb -rdynamic -lm -pthread -ldl -O2 -O3 -pipe -fexceptions -fstack-protector -m64 -malign-data=abi -ftree-vectorize

Redis 3.0.1

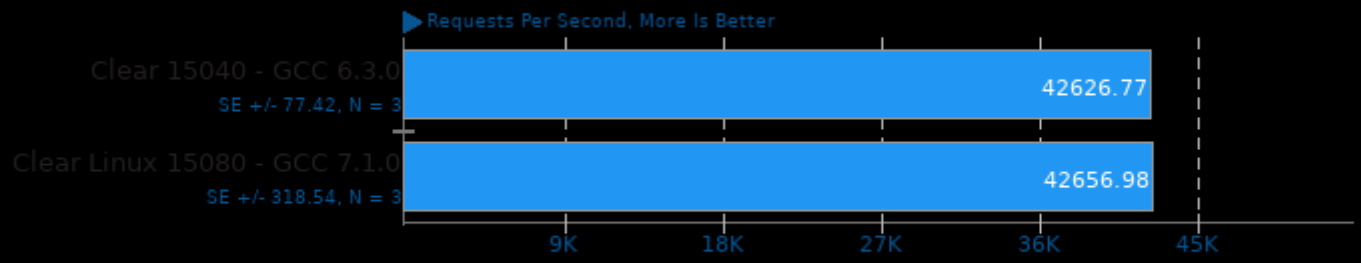
Test: SET



1. (CC) gcc options: -ggdb -rdynamic -lm -pthread -ldl -O2 -O3 -pipe -fexceptions -fstack-protector -m64 -malign-data=abi -ftree-vectorize

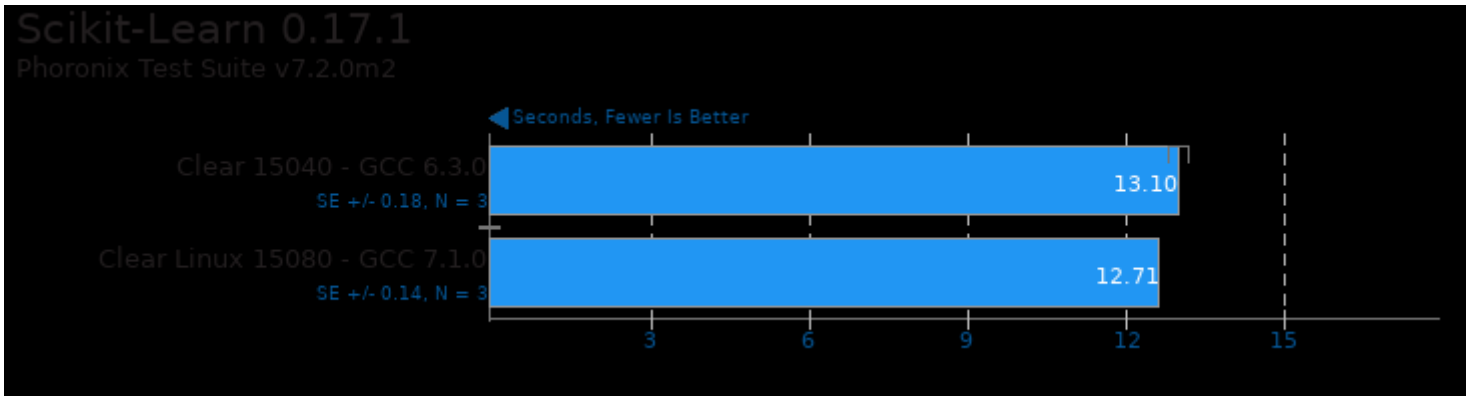
Apache Benchmark 2.4.7

Static Web Page Serving



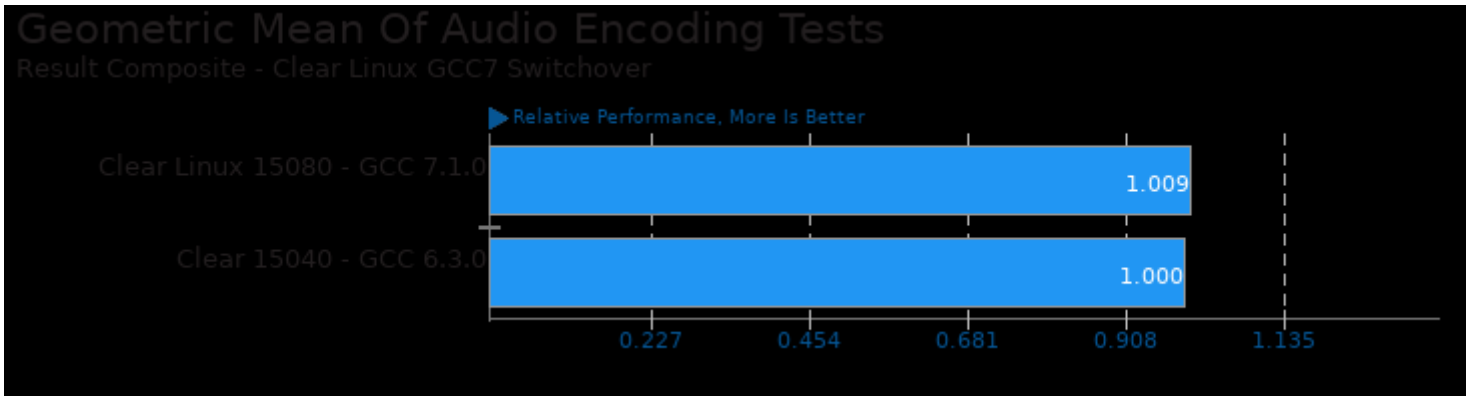
1. (CC) gcc options: -shared -fPIC -pthread -O3 -m64 -malign-data=abi

Clear Linux GCC7 Switchover

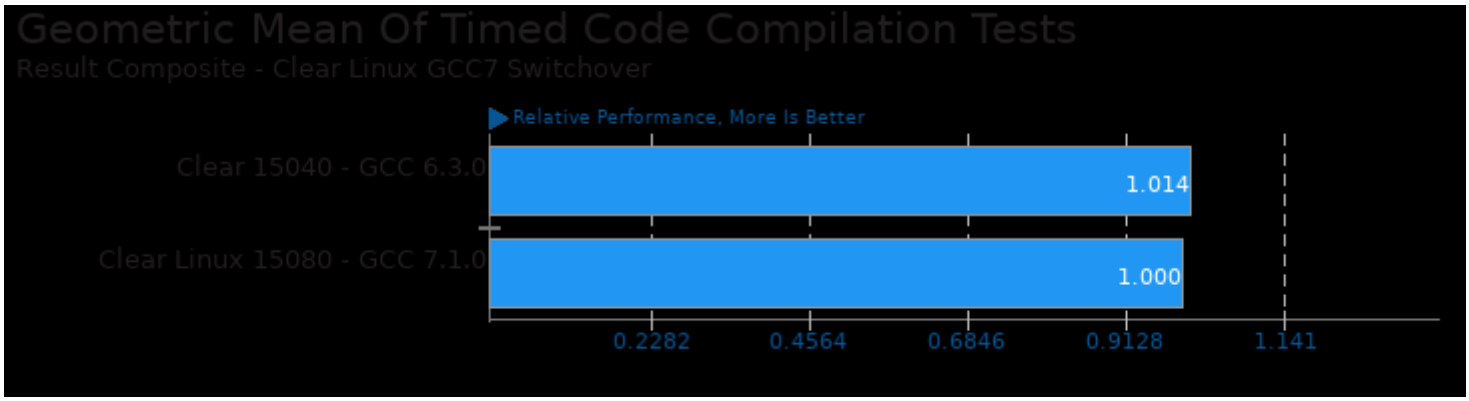


Clear Linux GCC7 Switchover

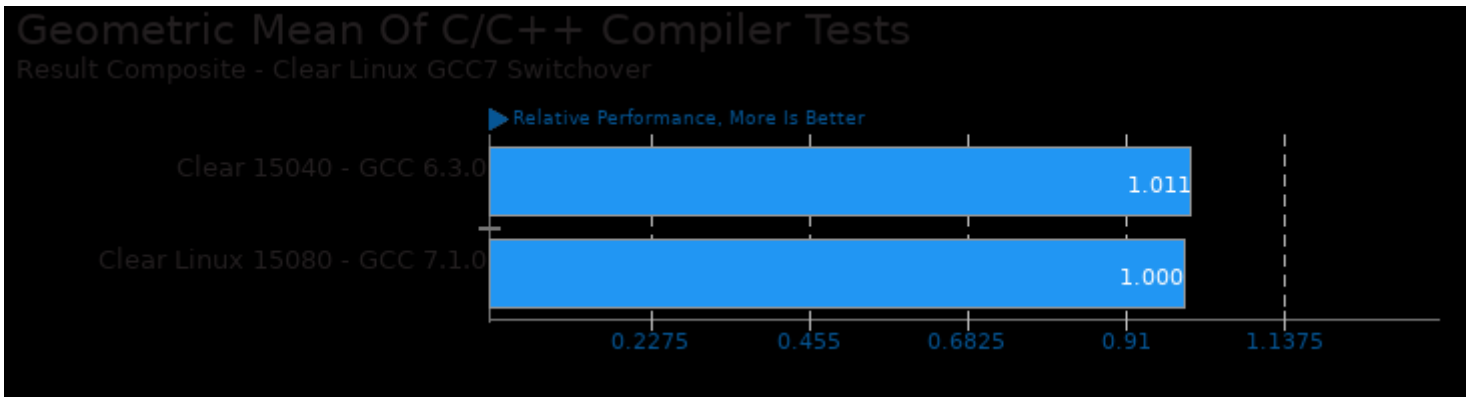
These geometric means are based upon test groupings / test suites for this result file.



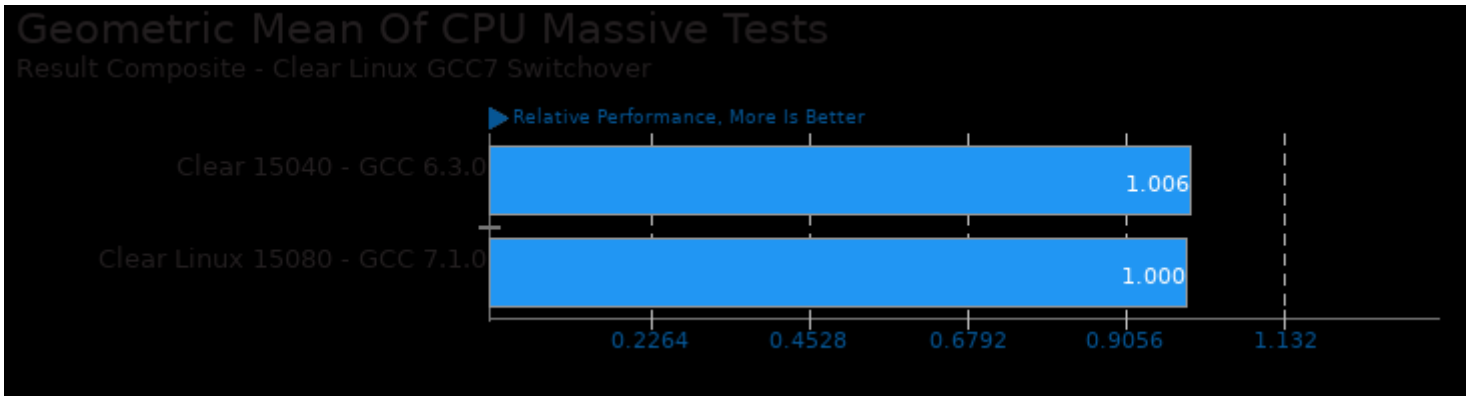
Geometric mean based upon tests: pts/encode-mp3 and pts/encode-wavpack



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



Geometric mean based upon tests: pts/scimark2, pts/graphics-magick, pts/himeno, pts/stockfish, pts/build-php, pts/c-ray, pts/encode-mp3, pts/pgbench, pts/apache, pts/john-the-ripper and pts/build-apache



Geometric mean based upon tests: pts/apache, pts/build-apache, pts/build-linux-kernel, pts/build-php, pts/c-ray, pts/compress-pbzip2, pts/encode-mp3, pts/graphics-magick, pts/himeno, pts/hpcc, pts/john-the-ripper, pts/pgbench, pts/redis, pts/scikit-learn, pts/stockfish, pts/tensorflow, system/darktable and pts/tjbench

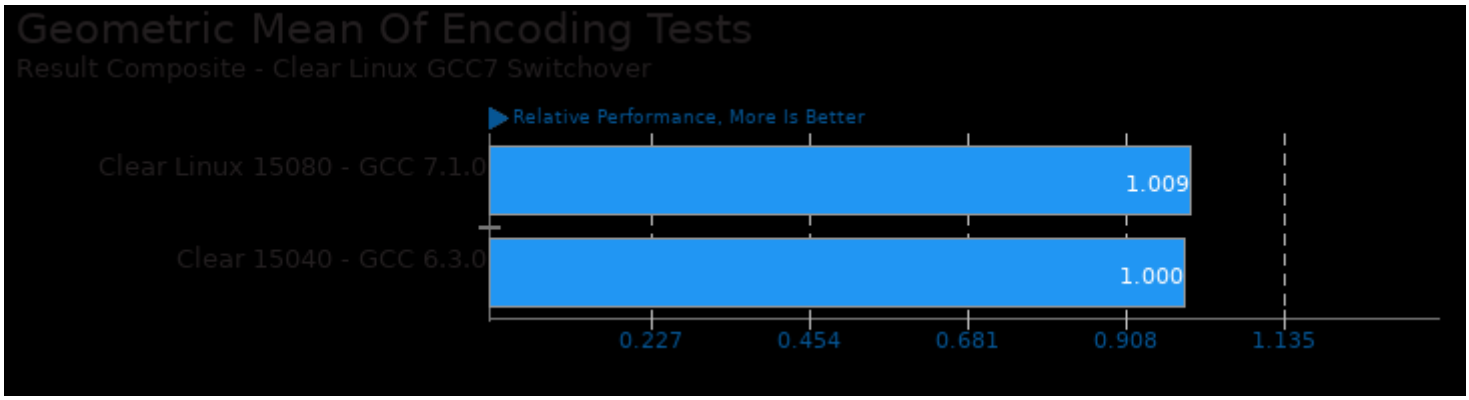


Geometric mean based upon tests: pts/c-ray, pts/encode-mp3, pts/encode-wavpack, pts/graphics-magick, pts/tjbench and system/darktable

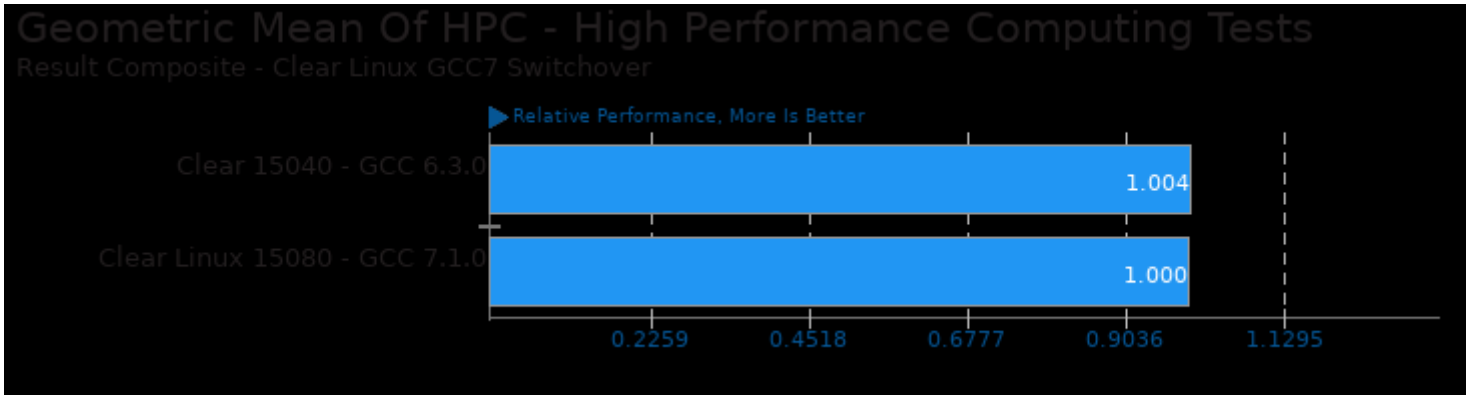


Geometric mean based upon tests: pts/redis and pts/pgbench

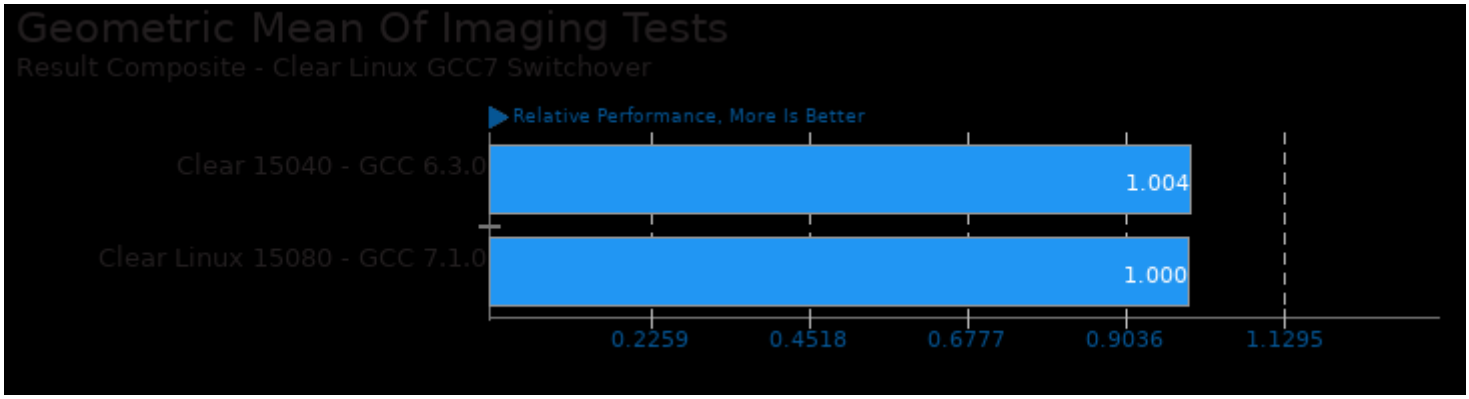
Clear Linux GCC7 Switchover



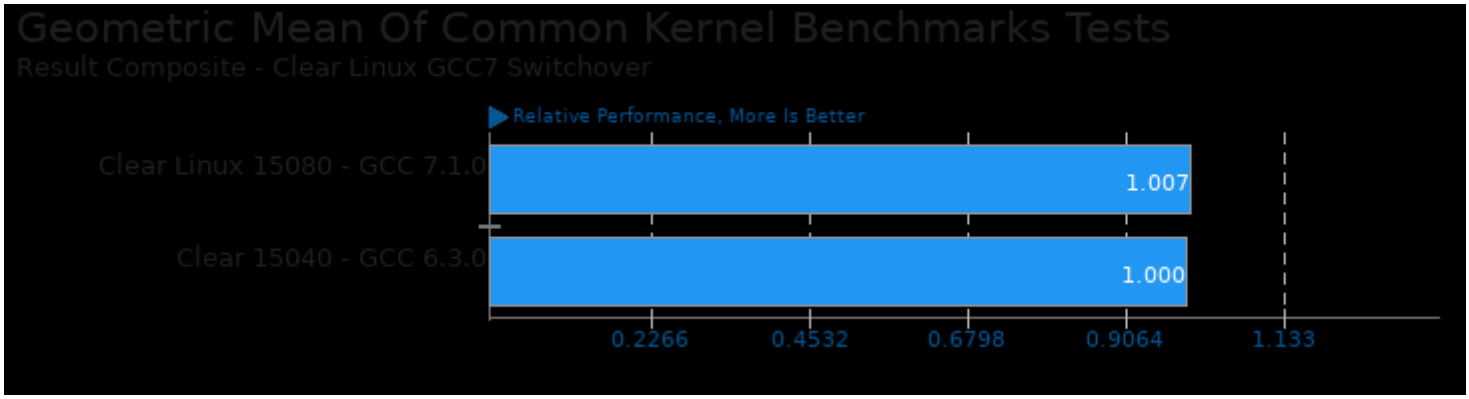
Geometric mean based upon tests: pts/encode-mp3 and pts/encode-wavpack



Geometric mean based upon tests: pts/hpcc, pts/himeno, pts/scikit-learn and pts/tensorflow



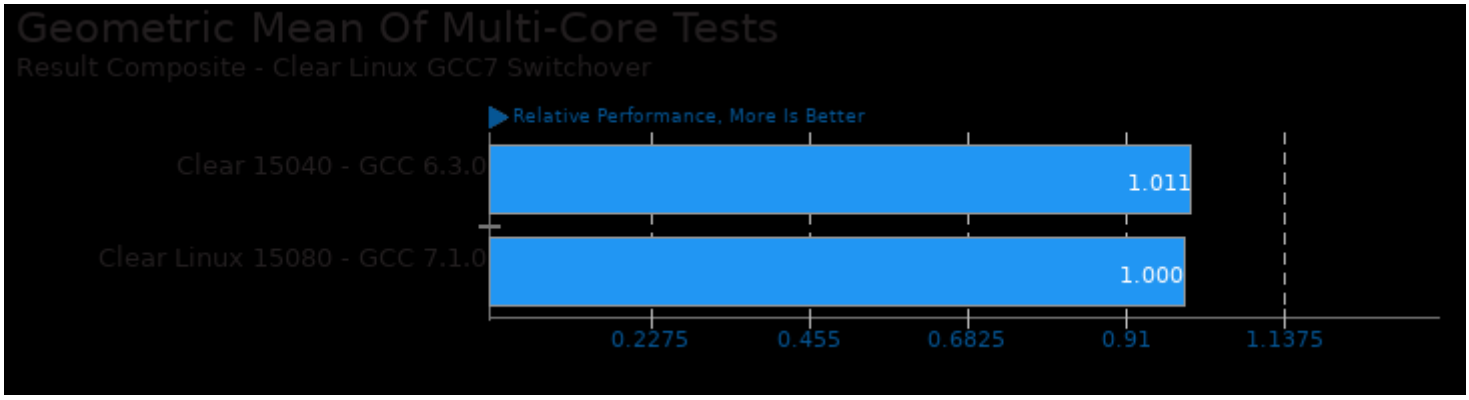
Geometric mean based upon tests: pts/graphics-magick, pts/tjbench and system/darktable



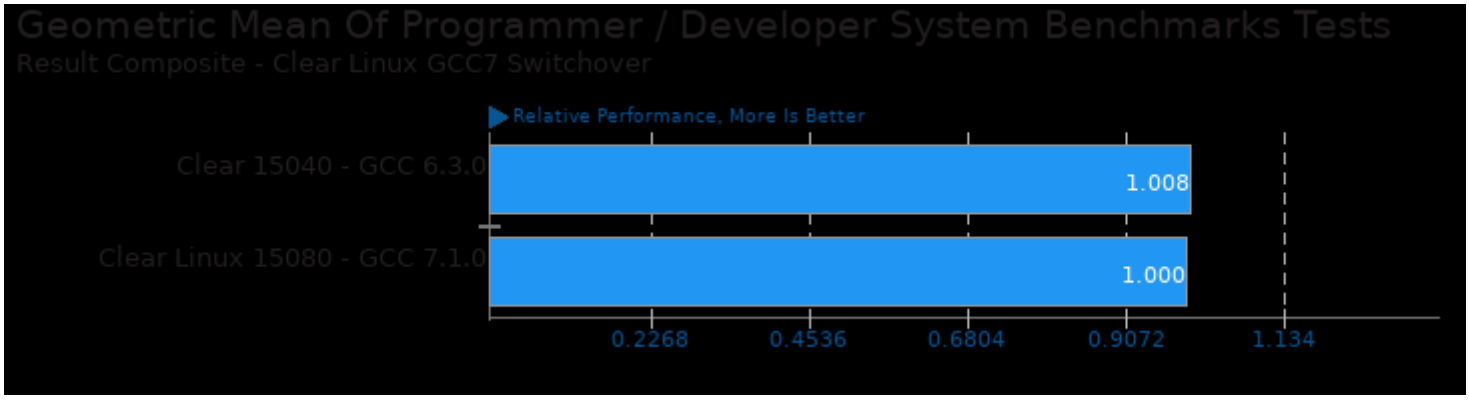
Geometric mean based upon tests: pts/apache and pts/pgbench



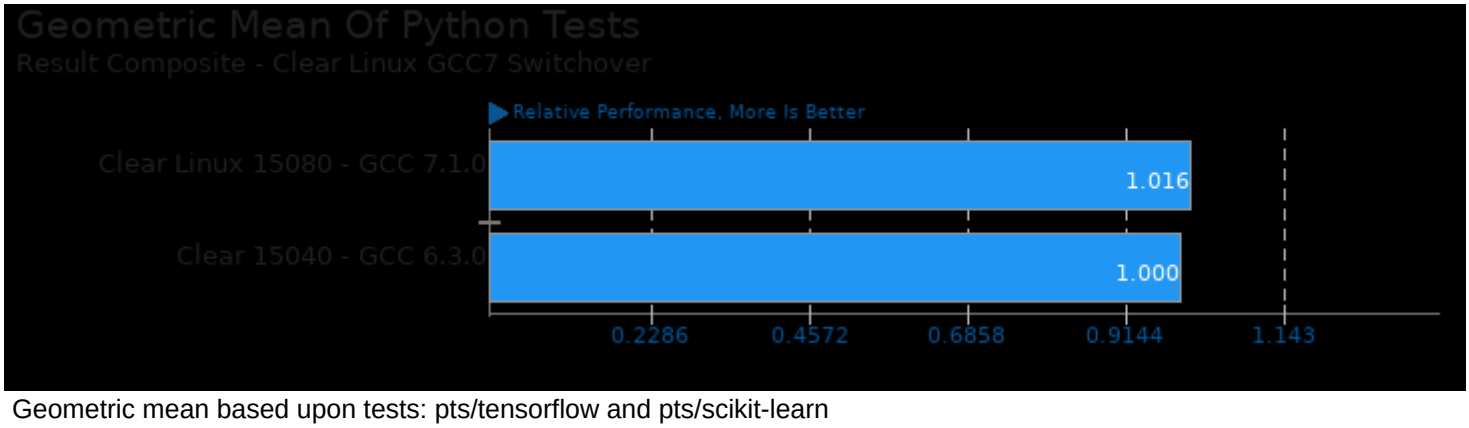
Geometric mean based upon tests: pts/scikit-learn and pts/tensorflow



Geometric mean based upon tests: pts/c-ray, pts/stockfish, pts/john-the-ripper, pts/graphics-magick, pts/compress-pbzip2, pts/build-apache, pts/build-php, pts/build-linux-kernel and pts/pgbench

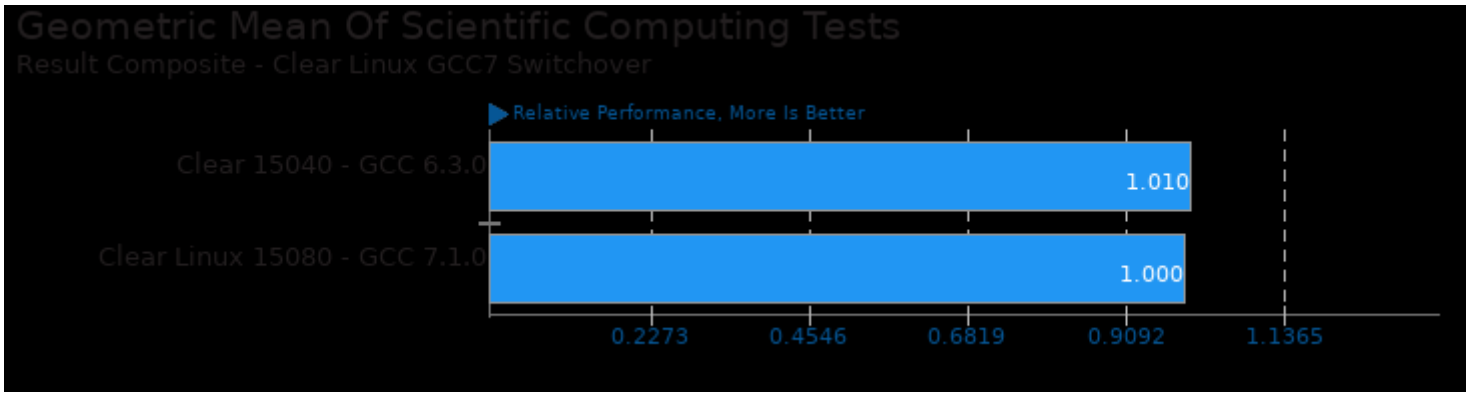


Geometric mean based upon tests: pts/build-apache, pts/build-php, pts/build-linux-kernel and pts/hpcc



Geometric mean based upon tests: pts/tensorflow and pts/scikit-learn

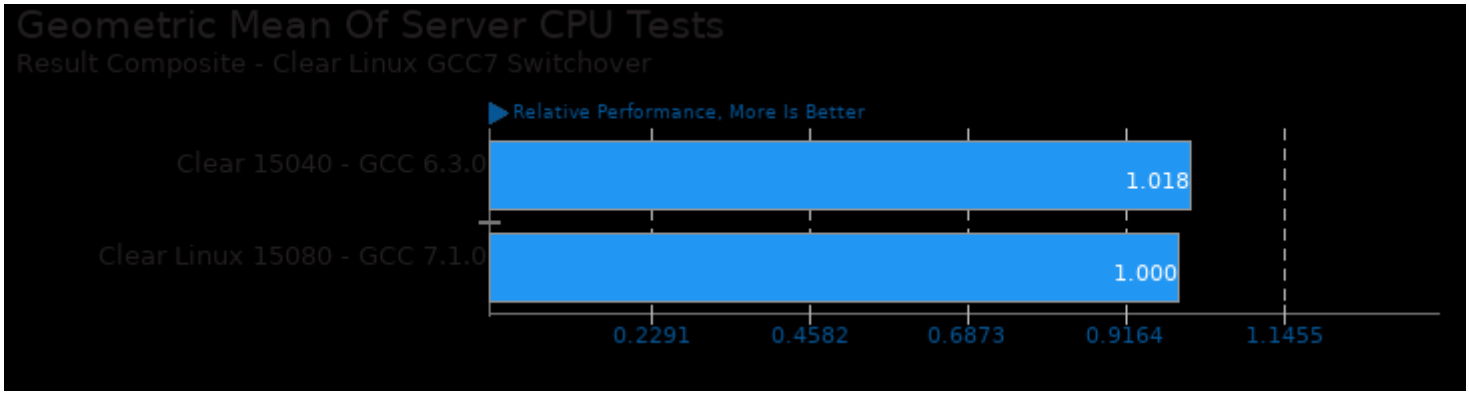
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Geometric mean based upon tests: pts/hpcc and pts/himeno



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



Geometric mean based upon tests: pts/john-the-ripper, pts/himeno, pts/stockfish, pts/build-linux-kernel, pts/build-php, pts/c-ray, pts/tjbench, pts/redis and pts/scikit-learn



Geometric mean based upon tests: pts/scimark2, pts/encode-mp3, pts/tjbench and pts/redis

Clear Linux GCC7 Switchover

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 08:04.