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Intel Core i7-8850H testing with a HP 842A (Q70 Ver. 01.17.00 BIOS) and NVIDIA Quadro P2000 Mobile 4GB on Ubuntu 20.04 via the Phoronix Test Suite.

Automated Executive Summary

Intel Core i7-8850H #4 had the most wins, coming in first place for 45% of the tests.

Based on the geometric mean of all complete results, the fastest (Intel Core i7-8850H #3) was 2.79x the speed of the slowest (Intel Core i7-8850H). Intel Core i7-8850H #4 was 0.997x the speed of Intel Core i7-8850H #3, Intel Core i7-8850H #1 was 0.999x the speed of Intel Core i7-8850H #4, Intel Core i7-8850H #2 was 0.966x the speed of Intel Core i7-8850H #1, Intel Core i7-8850H was 0.372x the speed of Intel Core i7-8850H #2.

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

GraphicsMagick (Operation: HWB Color Space) at 1.186x
Stockfish (Total Time) at 1.118x
Timed MrBayes Analysis (Primate Phylogeny Analysis) at 1.117x
7-Zip Compression (Compress Speed Test) at 1.103x
C-Ray (Total Time - 4K, 16 Rays Per Pixel) at 1.09x
dav1d (Video Input: Summer Nature 1080p) at 1.085x
LAME MP3 Encoding (WAV To MP3) at 1.075x

Basis Universal (Settings: ETC1S) at 1.073x
System XZ Decompression at 1.055x
AOBench (Size: 2048 x 2048 - Total Time) at 1.047x.

Test Systems:

Intel Core i7-8850H #1

Intel Core i7-8850H #2

Intel Core i7-8850H #3

Intel Core i7-8850H #4

Processor: Intel Core i7-8850H @ 4.30GHz (6 Cores / 12 Threads), Motherboard: HP 842A (Q70 Ver. 01.17.00 BIOS), Chipset: Intel Cannon Lake PCH, Memory: 2 x 16384 MB DDR4-2667MT/s HMA82GS6JJR8N-VK, Disk: 512GB Toshiba KXG5AZNV512G, Graphics: NVIDIA Quadro P2000 Mobile 4GB, Audio: Conexant CX11970, Network: Intel I219-LM + Intel-AC 9560

OS: Ubuntu 20.04, Kernel: 5.11.0-27-generic (x86_64), Desktop: GNOME Shell 3.36.9, Display Server: X Server 1.20.11, Vulkan: 1.0.2, Compiler: GCC 9.3.0, 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-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-9-HskZEa/gcc-9-9.3.0/debian/tmp-nvptx/usr,hsa --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=auto --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: intel_pstate performance - CPU Microcode: 0xea - Thermald 1.9.1
Security Notes: itlb_multihit: KVM: Mitigation of VMX disabled + l1tf: Mitigation of PTE Inversion; VMX: conditional cache flushes SMT vulnerable + mds: Mitigation of Clear buffers; SMT vulnerable + meltdown: Mitigation of PTI + 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 generic retpoline IBPB: conditional IBRS_FW STIBP: conditional RSB filling + srbds: Mitigation of Microcode + tsx_async_abort: Mitigation of Clear buffers; SMT vulnerable

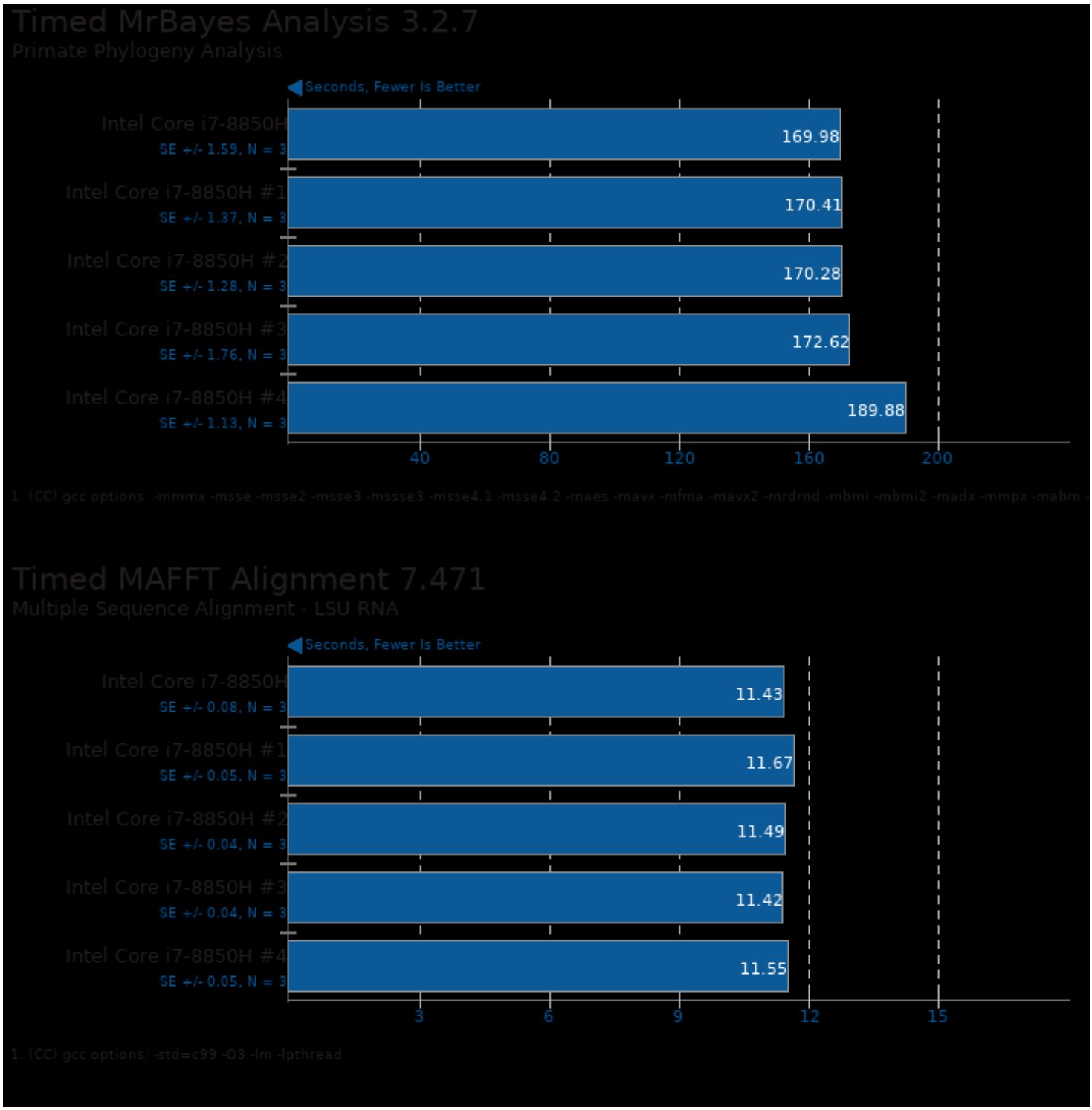
	Intel Core i7-8850H #1	Intel Core i7-8850H #2	Intel Core i7-8850H #3	Intel Core i7-8850H #4
Timed MrBayes Analysis - P.P.A (sec)	170.409	170.283	172.623	**189.878**
Normalized	99.75%	99.82%	98.47%	89.52%
Standard Deviation	1.4%	1.3%	1.8%	1%
Timed MAFFT Alignment - M.S.A - LSU RNA (sec)	**11.673**	11.491	**11.422**	11.549
Normalized	97.85%	99.4%	100%	98.9%
Standard Deviation	0.8%	0.6%	0.7%	0.7%

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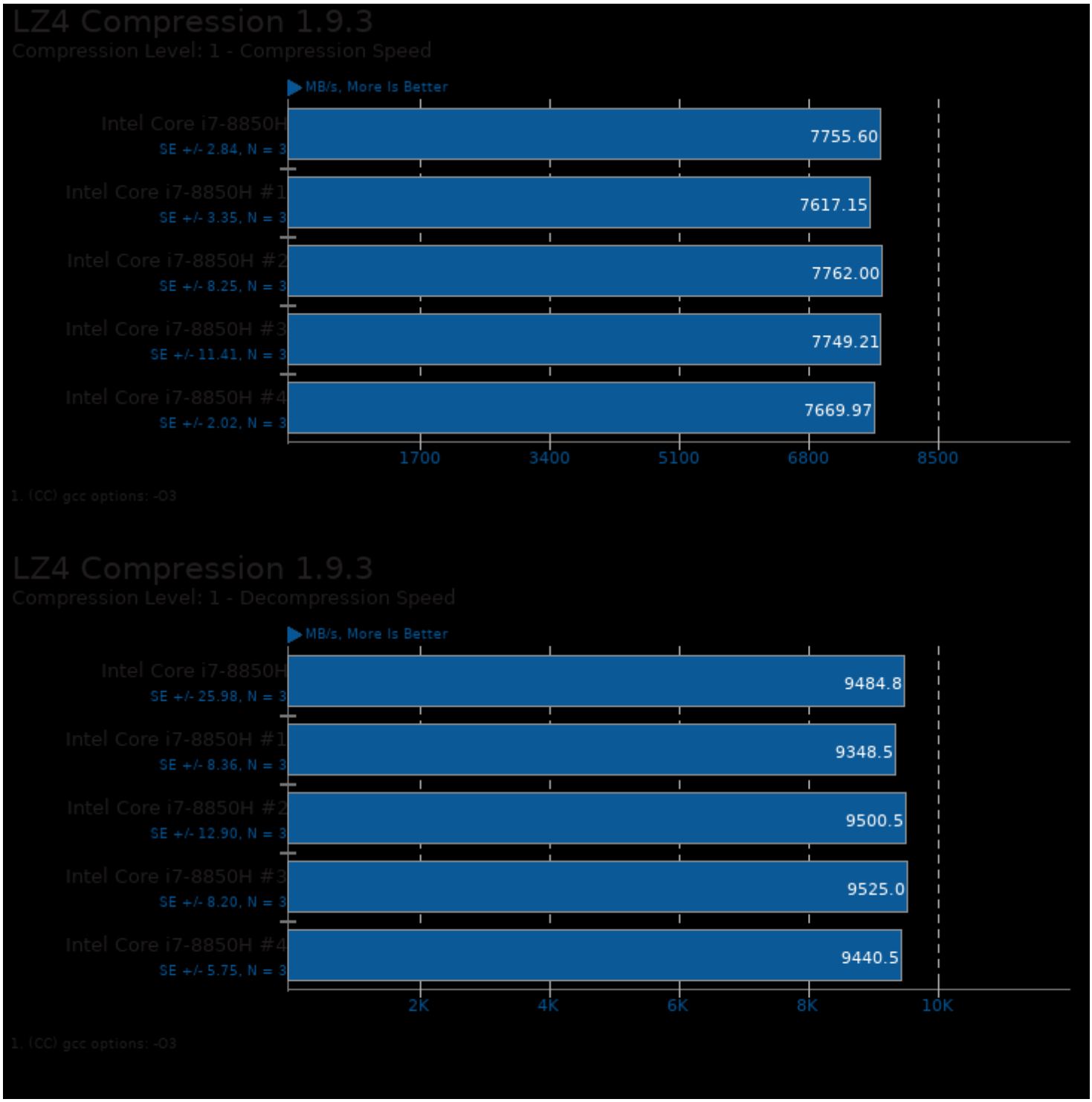
LZ4 Compression - 1 - Compression Speed (MB/s)	**7617**	**7762**	7749	7670
Normalized	98.13%	100%	99.84%	98.81%
Standard Deviation	0.1%	0.2%	0.3%	0%
LZ4 Compression - 1 - D.S (MB/s)	**9349**	9501	**9525**	9441
Normalized	98.15%	99.74%	100%	99.11%
Standard Deviation	0.2%	0.2%	0.1%	0.1%
Zstd Compression - 3 - Compression Speed (MB/s)	1384	**1346**	1393	**1394**
Normalized	99.32%	96.61%	99.95%	100%
Standard Deviation	0.7%	0.3%	0.3%	0.8%
Zstd Compression - 3 - D.S (MB/s)	**3413**	3422	**3435**	3430
Normalized	99.36%	99.63%	100%	99.88%
Standard Deviation	0.4%	0.7%	0.6%	0.3%
Zstd Compression - 3 - Compression Speed (MB/s)	1237	1224	**1239**	**1221**
Normalized	99.81%	98.76%	100%	98.48%
Standard Deviation	0.9%	1.3%	0.8%	1.8%
Zstd Compression - 3 - D.S (MB/s)	**3190**	3201	**3237**	3218
Normalized	98.56%	98.88%	100%	99.4%
Standard Deviation	0.3%	0.5%	0.2%	0.9%
SciMark - Composite (Mflops)	**634.67**	**628.73**	629.03	631.88
Normalized	100%	99.06%	99.11%	99.56%
Standard Deviation	1.6%	0.2%	0.5%	0.2%
John The Ripper - Blowfish (Real C/S)	9490	**9507**	**9476**	9499
Normalized	99.82%	100%	99.67%	99.92%
Standard Deviation	2.4%	2.4%	2.4%	2.4%
John The Ripper - MD5 (Real C/S)	**509606**	511424	510413	**512192**
Normalized	99.5%	99.85%	99.65%	100%
Standard Deviation	1.8%	1.8%	1.8%	1.9%
GraphicsMagick - HWB Color Space (Iterations/min)	681	**592**	695	**702**
Normalized	97.01%	84.33%	99%	100%
Standard Deviation	0.5%	1.7%	0.9%	0.2%
dav1d - S.N.1 (FPS)	**389.11**	**358.66**	388.14	388.31
Normalized	100%	92.17%	99.75%	99.79%
Standard Deviation	0.3%	1.8%	0.4%	0.2%
7-Zip Compression - C.S.T (MIPS)	30174	**27379**	**30205**	30162
Normalized	99.9%	90.64%	100%	99.86%
Standard Deviation	1.3%	1.4%	2.3%	2.3%
Stockfish - Total Time (Nodes/s)	12881140	**11599977**	12874170	**12965933**
Normalized	99.35%	89.47%	99.29%	100%
Standard Deviation	1.5%	1.3%	2.4%	0.4%
C-Ray - Total Time - 4.1.R.P.P (sec)	132.674	**144.113**	132.356	**132.186**
Normalized	99.63%	91.72%	99.87%	100%
Standard Deviation	0.4%	0.1%	0.3%	0.3%
AOBench - 2048 x 2048 - Total Time (sec)	33.536	**34.421**	33.162	**32.890**
Normalized	98.07%	95.55%	99.18%	100%
Standard Deviation	1.5%	1.3%	1.2%	0.1%
FLAC Audio Encoding - WAV To FLAC (sec)	**17.244**	**17.972**	17.530	17.391
Normalized	100%	95.95%	98.37%	99.15%
Standard Deviation	0.7%	0.8%	1.5%	2.2%

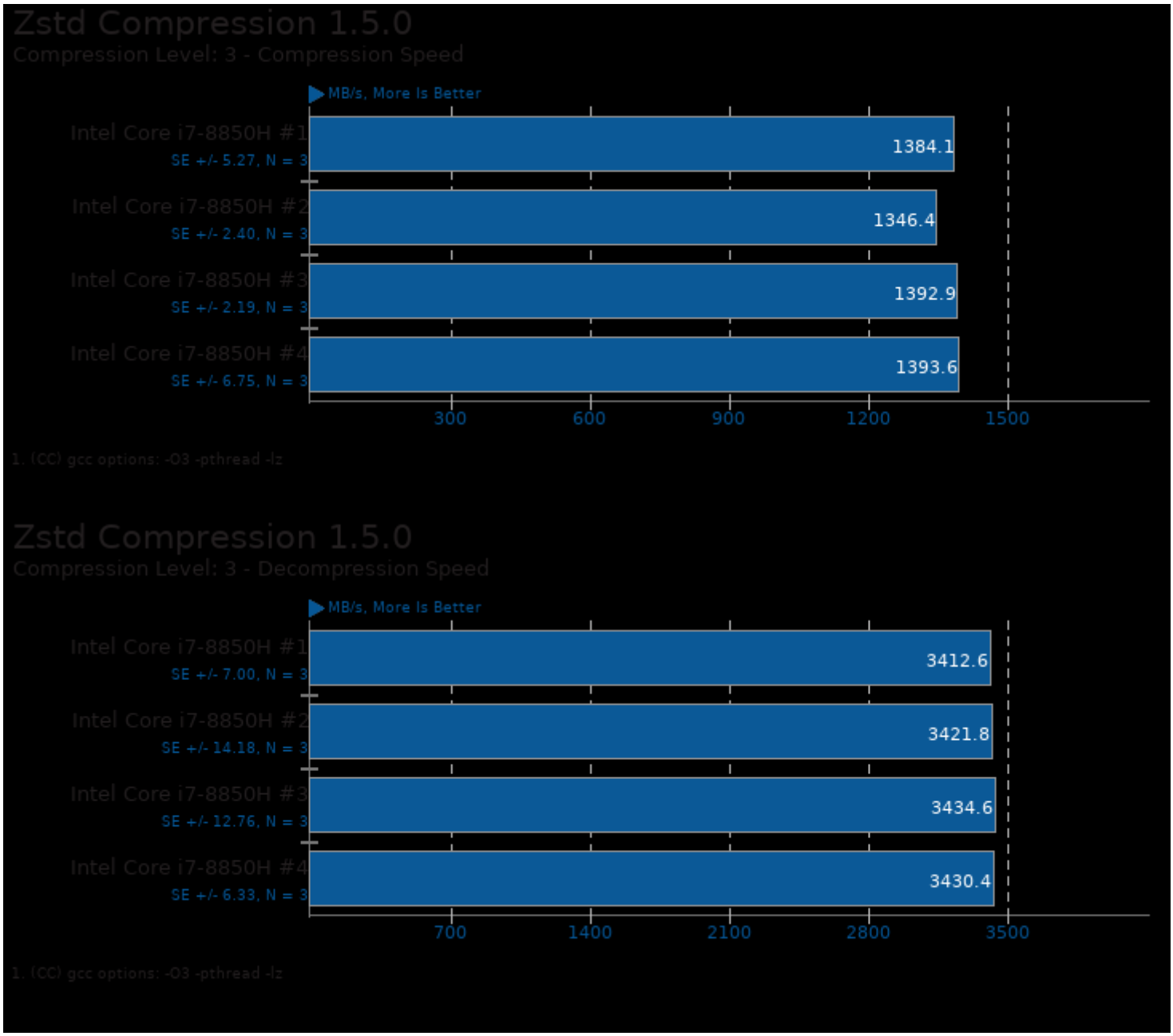
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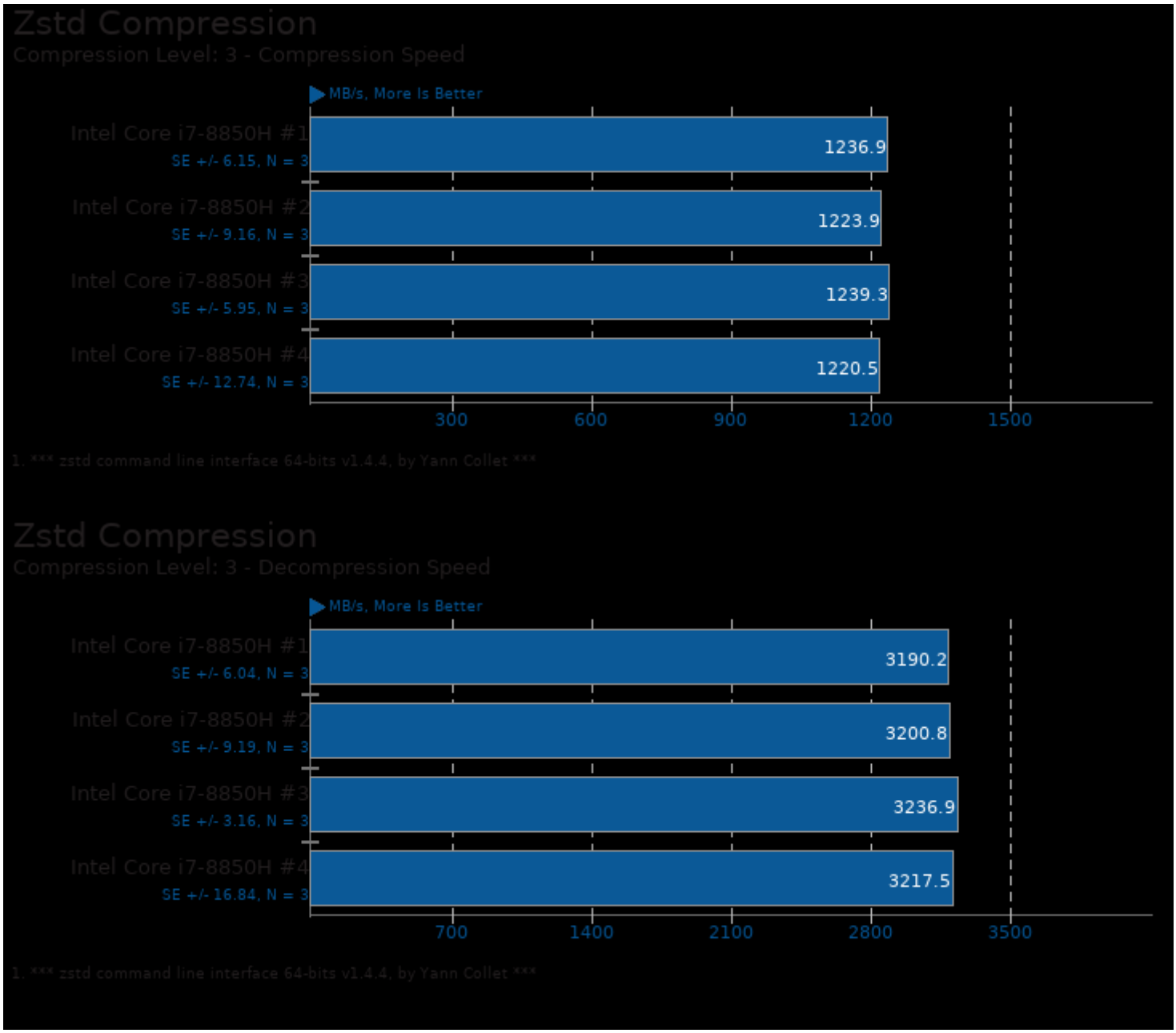
LAME MP3 Encoding - WAV To MP3 (sec)	8.886	**9.221**	8.702	**8.576**
Normalized	96.51%	93.01%	98.55%	100%
Standard Deviation	0.3%	2.5%	0.4%	1%
System GZIP Decompression (sec)	3.023	**3.138**	3.026	**3.015**
Normalized	99.74%	96.08%	99.64%	100%
Standard Deviation	3.7%	2.6%	3.7%	3.6%
System XZ Decompression (sec)	3.791	**3.991**	3.800	**3.782**
Normalized	99.76%	94.76%	99.53%	100%
Standard Deviation	0.5%	1.5%	0.4%	0.3%
Basis Universal - ETC1S (sec)	30.824	**33.029**	30.915	**30.791**
Normalized	99.89%	93.22%	99.6%	100%
Standard Deviation	0.5%	0.3%	0.3%	0.4%


Timed MrBayes Analysis 3.2.7
Primate Phylogeny Analysis
Seconds, Fewer Is Better
Intel Core i7-8850H
SE +/- 1.59, N = 3
169.98
Intel Core i7-8850H #1
SE +/- 1.37, N = 3
170.41
Intel Core i7-8850H #2
SE +/- 1.28, N = 3
170.28
Intel Core i7-8850H #3
SE +/- 1.76, N = 3
172.62
Intel Core i7-8850H #4
SE +/- 1.13, N = 3
189.88
40
80
120
160
200
1. (CC) gcc options: -mmmx -msse -msse2 -msse3 -mssse3 -msse4.1 -msse4.2 -maes -mavx -mfma -mavx2 -mrdrnd -mbmi -mbmi2 -madx -mmpx -mabm
Timed MAFFT Alignment 7.471
Multiple Sequence Alignment - LSU RNA
Seconds, Fewer Is Better
Intel Core i7-8850H
SE +/- 0.08, N = 3
11.43
Intel Core i7-8850H #1
SE +/- 0.05, N = 3
11.67
Intel Core i7-8850H #2
SE +/- 0.04, N = 3
11.49
Intel Core i7-8850H #3
SE +/- 0.04, N = 3
11.42
Intel Core i7-8850H #4
SE +/- 0.05, N = 3
11.55
3
6
9
12
15
1. (CC) gcc options: -std=c99 -O3 -lm -lpthread

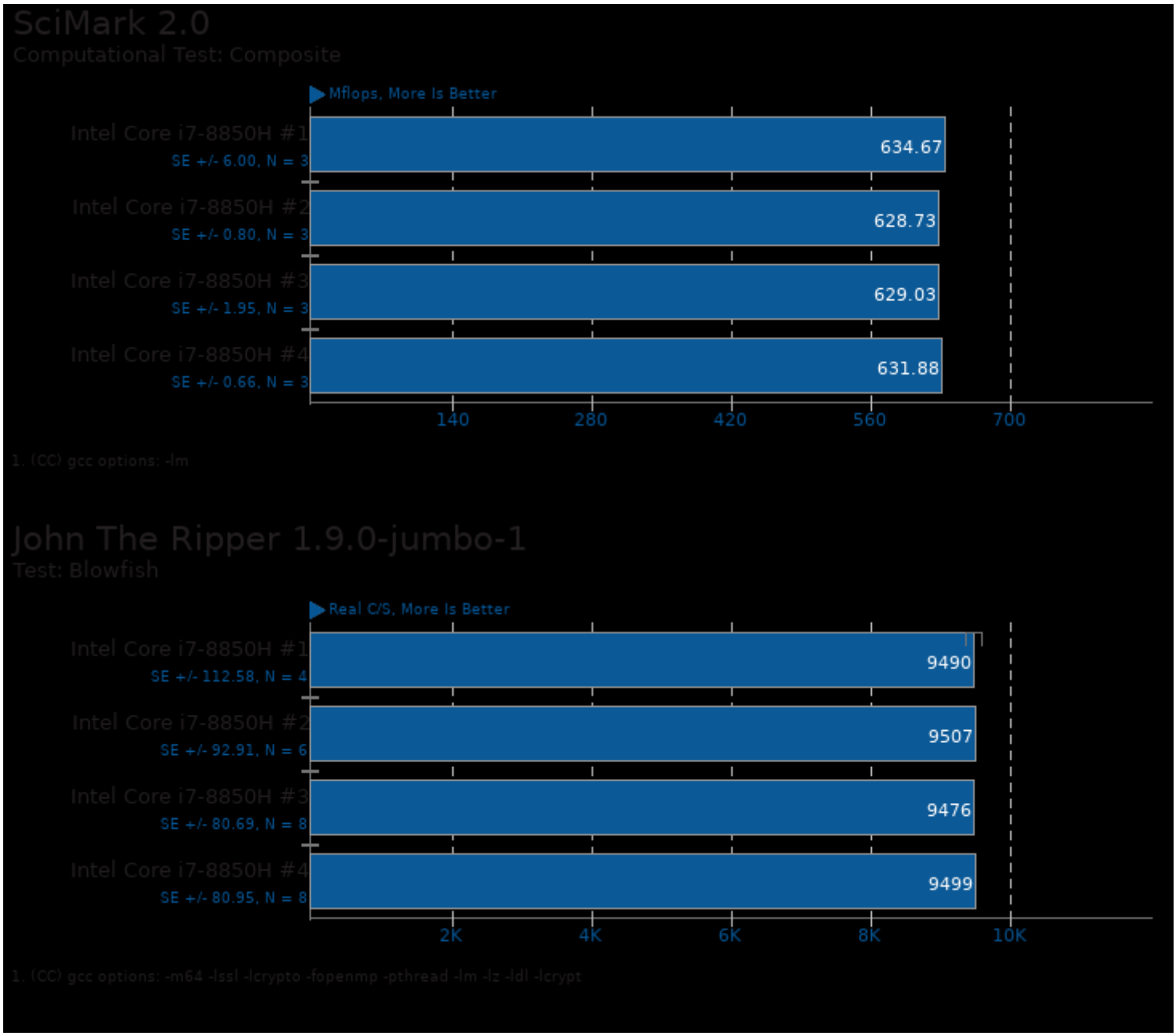
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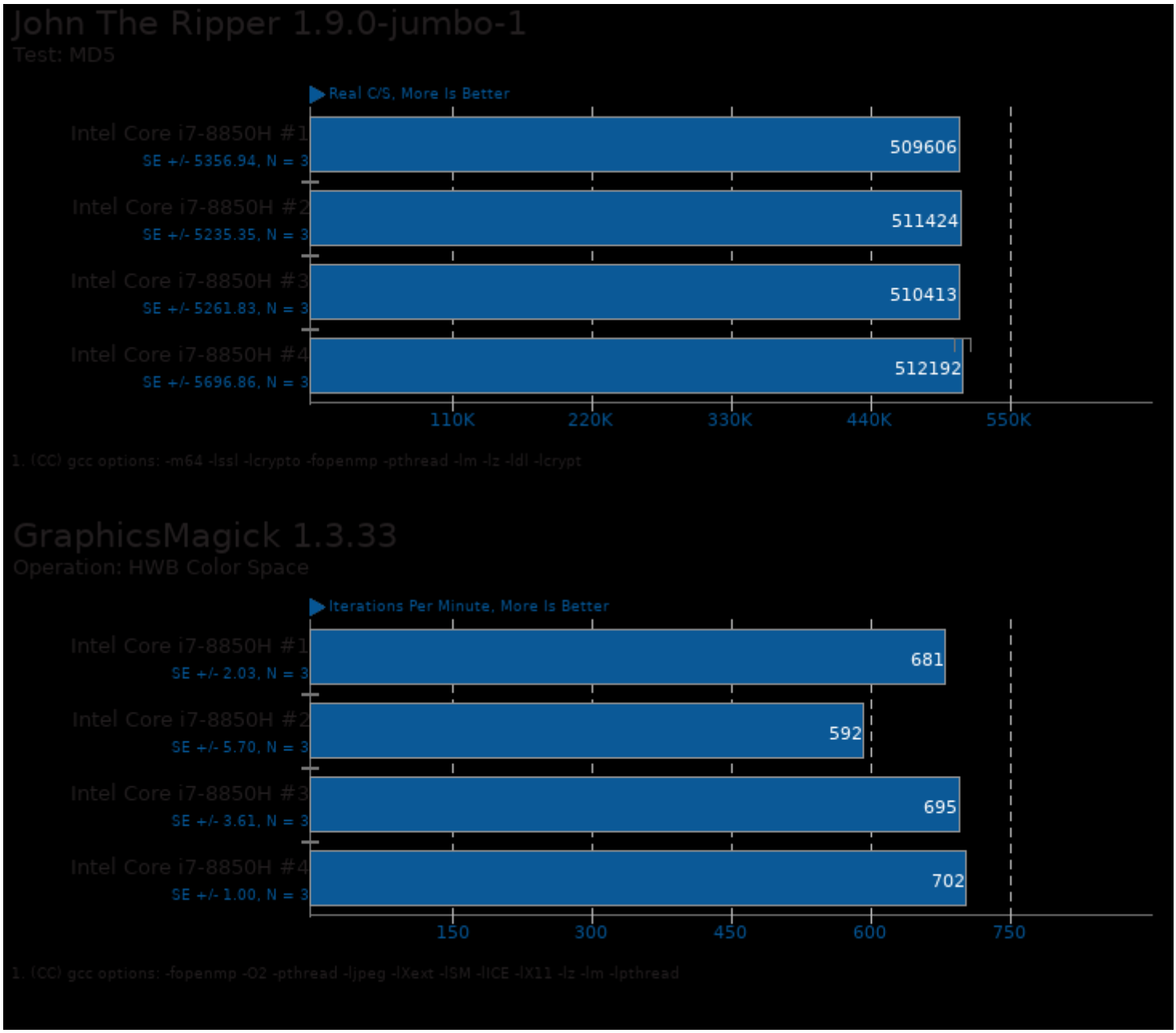



Zstd Compression 1.5.0
Compression Level: 3 - Compression Speed
MB/s, More Is Better
Intel Core i7-8850H #1
SE +/- 5.27, N = 3
1384.1
Intel Core i7-8850H #2
SE +/- 2.40, N = 3
1346.4
Intel Core i7-8850H #3
SE +/- 2.19, N = 3
1392.9
Intel Core i7-8850H #4
SE +/- 6.75, N = 3
1393.6
300
600
900
1200
1500
1. (CC) gcc options: -O3 -pthread -lz
Zstd Compression 1.5.0
Compression Level: 3 - Decompression Speed
MB/s, More Is Better
Intel Core i7-8850H #1
SE +/- 7.00, N = 3
3412.6
Intel Core i7-8850H #2
SE +/- 14.18, N = 3
3421.8
Intel Core i7-8850H #3
SE +/- 12.76, N = 3
3434.6
Intel Core i7-8850H #4
SE +/- 6.33, N = 3
3430.4
700
1400
2100
2800
3500
1. (CC) gcc options: -O3 -pthread -lz

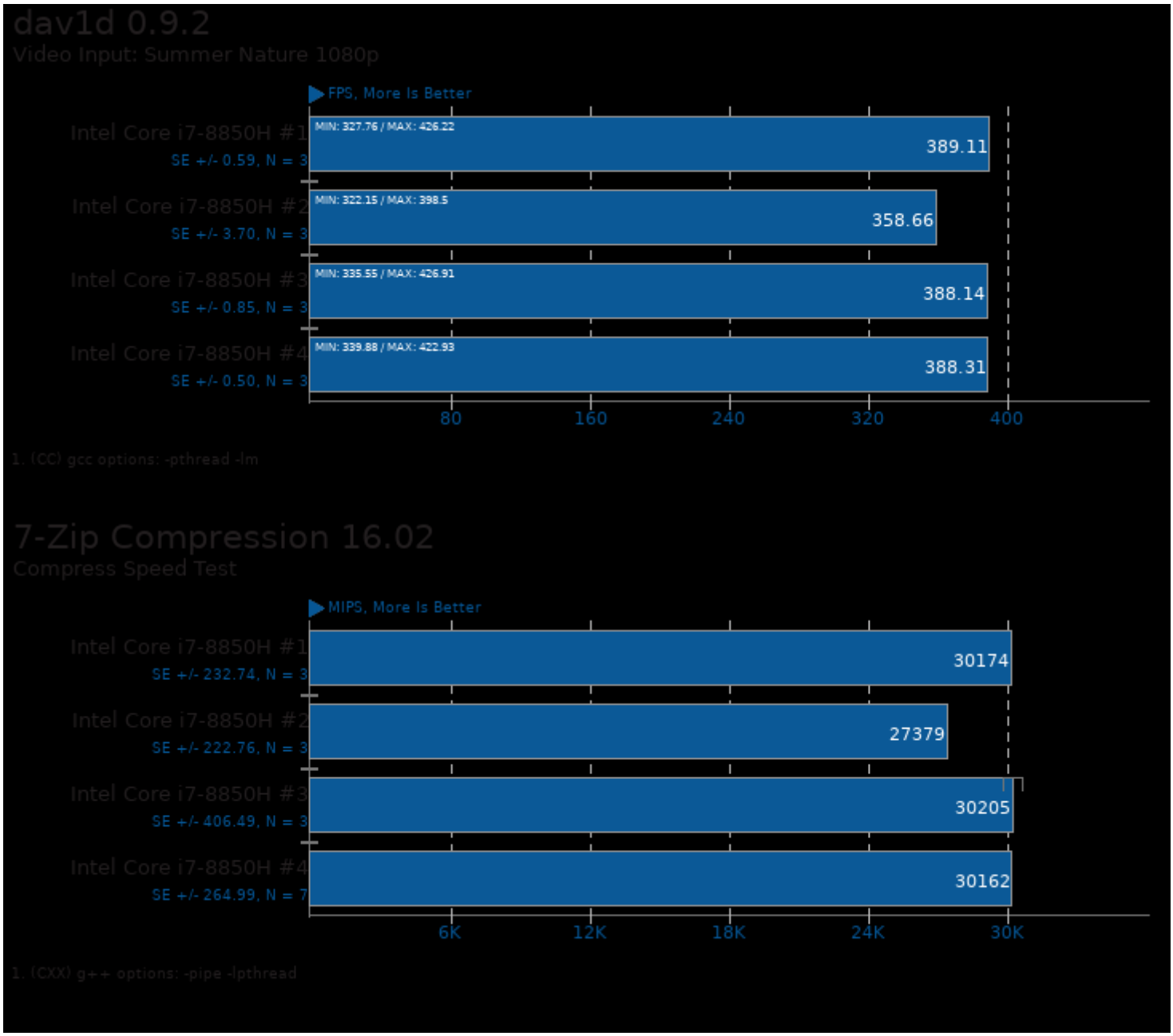

Zstd Compression
Compression Level: 3 - Compression Speed
MB/s, More Is Better
Intel Core i7-8850H #1
SE +/- 6.15, N = 3
1236.9
Intel Core i7-8850H #2
SE +/- 9.16, N = 3
1223.9
Intel Core i7-8850H #3
SE +/- 5.95, N = 3
1239.3
Intel Core i7-8850H #4
SE +/- 12.74, N = 3
1220.5
300
600
900
1200
1500
1. *** zstd command line interface 64-bits v1.4.4, by Yann Collet ***
Zstd Compression
Compression Level: 3 - Decompression Speed
MB/s, More Is Better
Intel Core i7-8850H #1
SE +/- 6.04, N = 3
3190.2
Intel Core i7-8850H #2
SE +/- 9.19, N = 3
3200.8
Intel Core i7-8850H #3
SE +/- 3.16, N = 3
3236.9
Intel Core i7-8850H #4
SE +/- 16.84, N = 3
3217.5
700
1400
2100
2800
3500
1. *** zstd command line interface 64-bits v1.4.4, by Yann Collet ***

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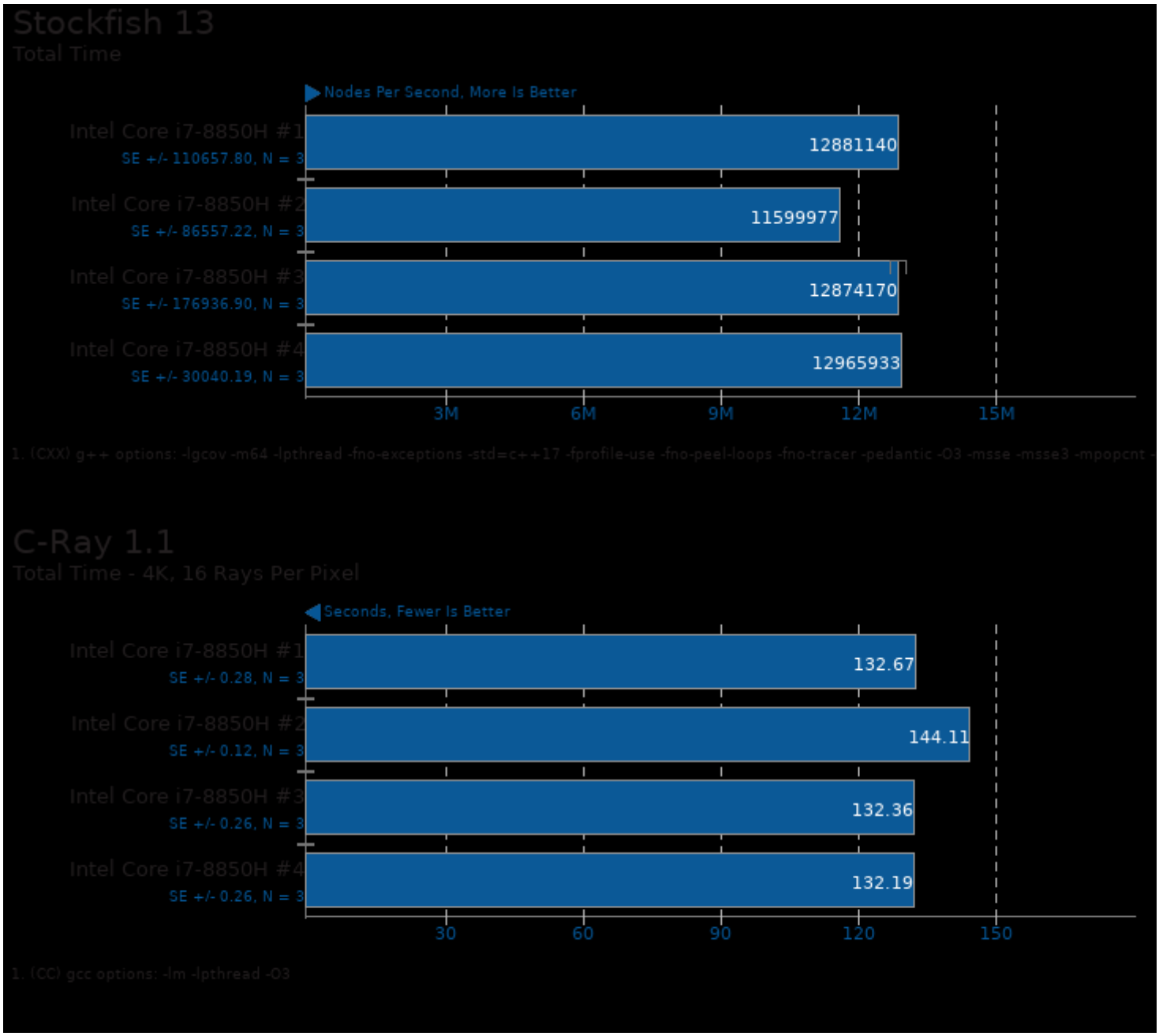



John The Ripper 1.9.0-jumbo-1
Test: MD5
Real C/S, More Is Better
Intel Core i7-8850H #1
SE +/- 5356.94, N = 3
509606
Intel Core i7-8850H #2
SE +/- 5235.35, N = 3
511424
Intel Core i7-8850H #3
SE +/- 5261.83, N = 3
510413
Intel Core i7-8850H #4
SE +/- 5696.86, N = 3
512192
110K
220K
330K
440K
550K
1. (CC) gcc options: -m64 -lssl -lcrypto -fopenmp -pthread -lm -lz -ldl -lcrypt
GraphicsMagick 1.3.33
Operation: HWB Color Space
Iterations Per Minute, More Is Better
Intel Core i7-8850H #1
SE +/- 2.03, N = 3
681
Intel Core i7-8850H #2
SE +/- 5.70, N = 3
592
Intel Core i7-8850H #3
SE +/- 3.61, N = 3
695
Intel Core i7-8850H #4
SE +/- 1.00, N = 3
702
150
300
450
600
750
1. (CC) gcc options: -fopenmp -O2 -pthread -ljpeg -lXext -lSM -lICE -lX11 -lz -lm -lpthread

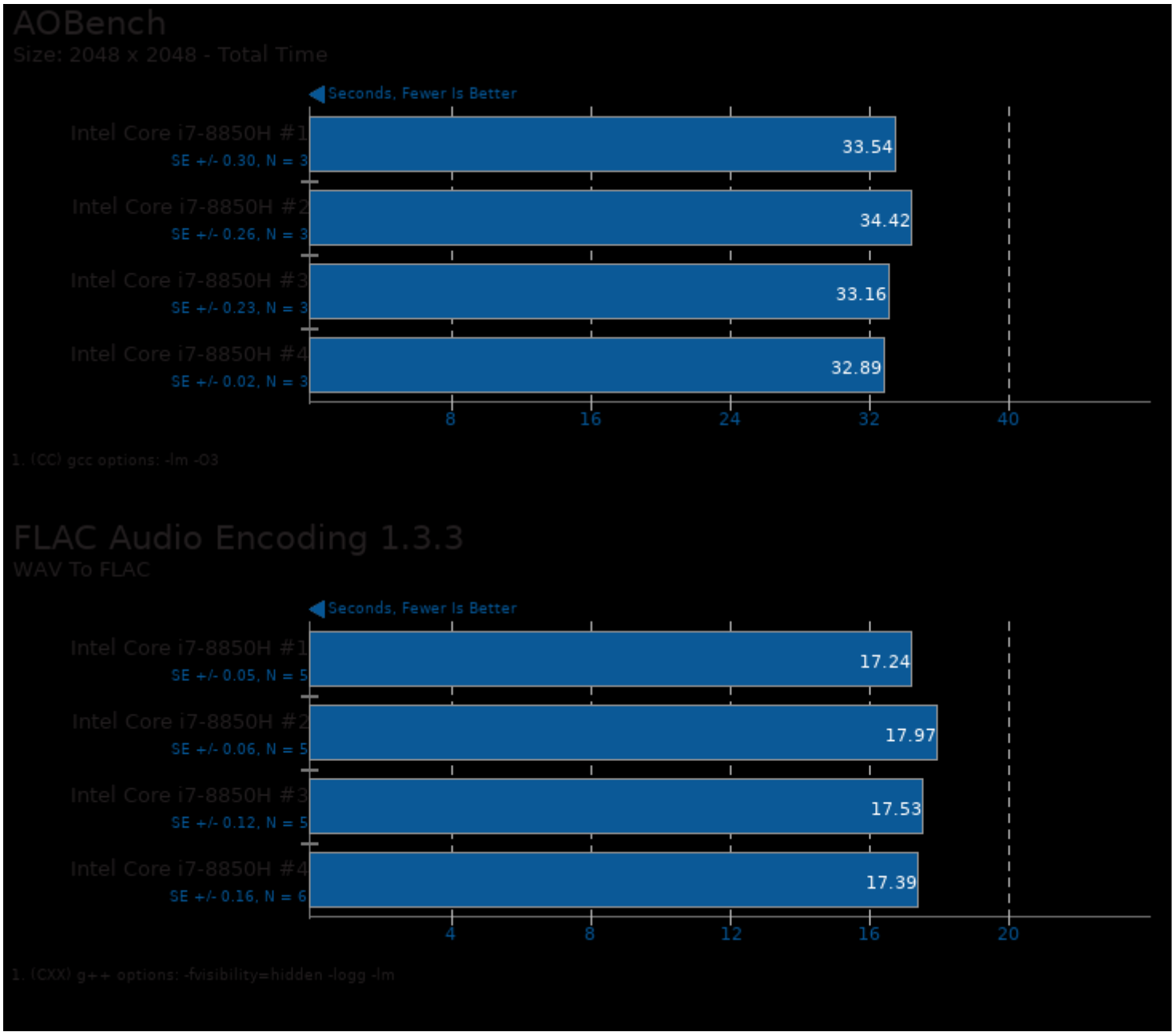
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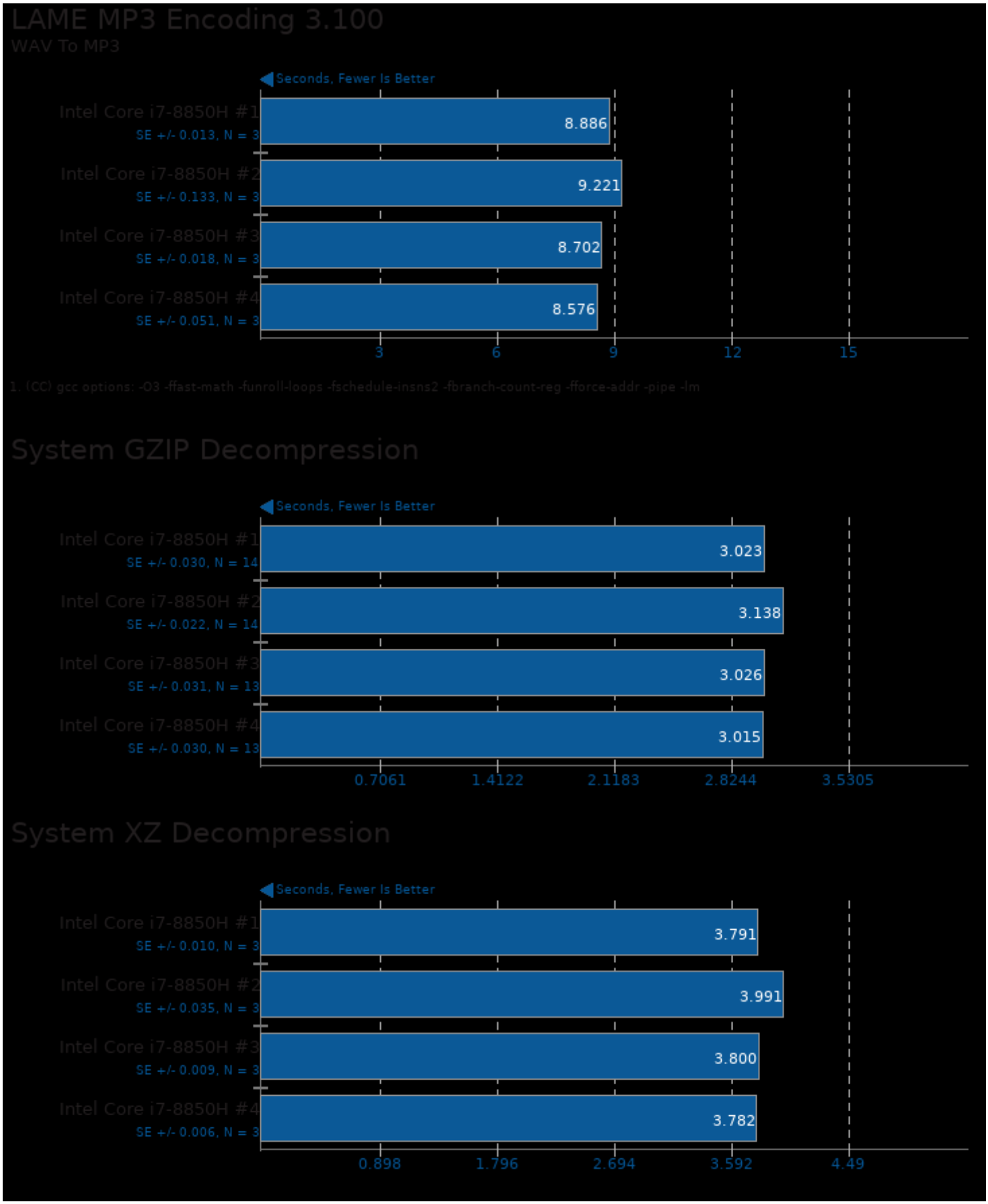


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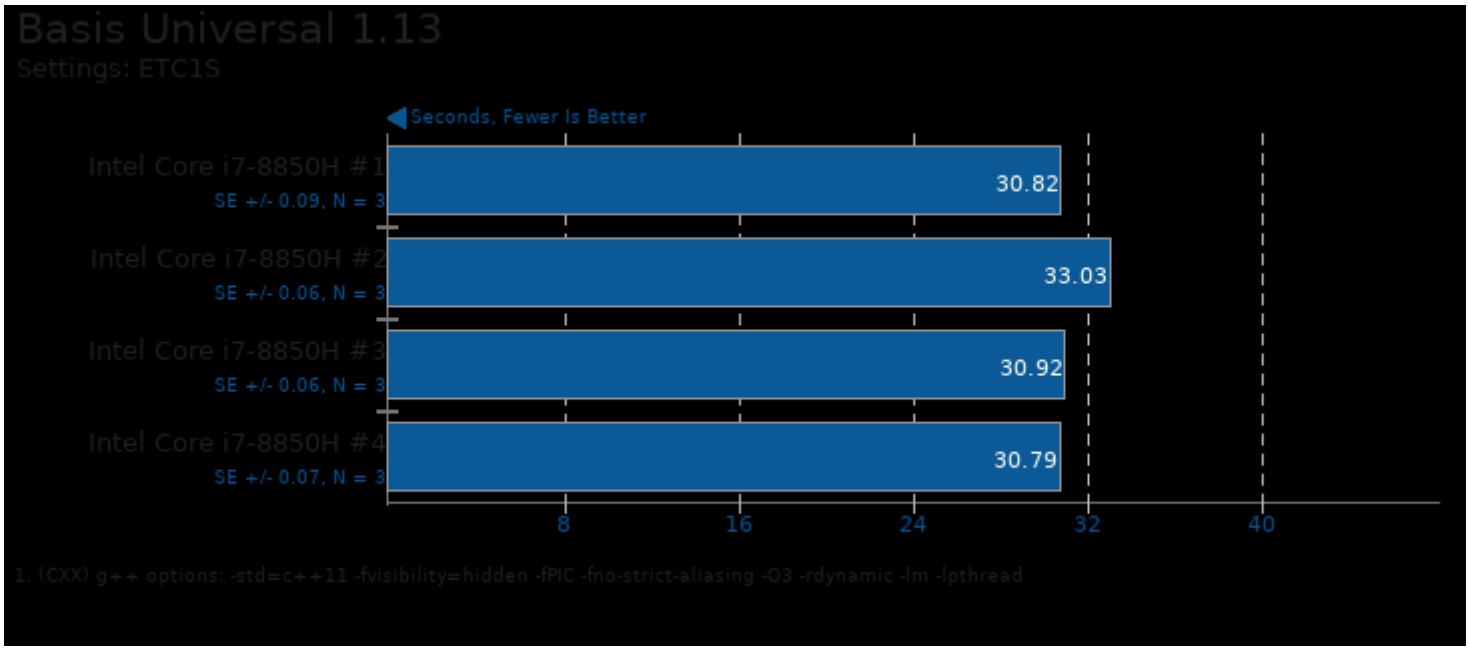


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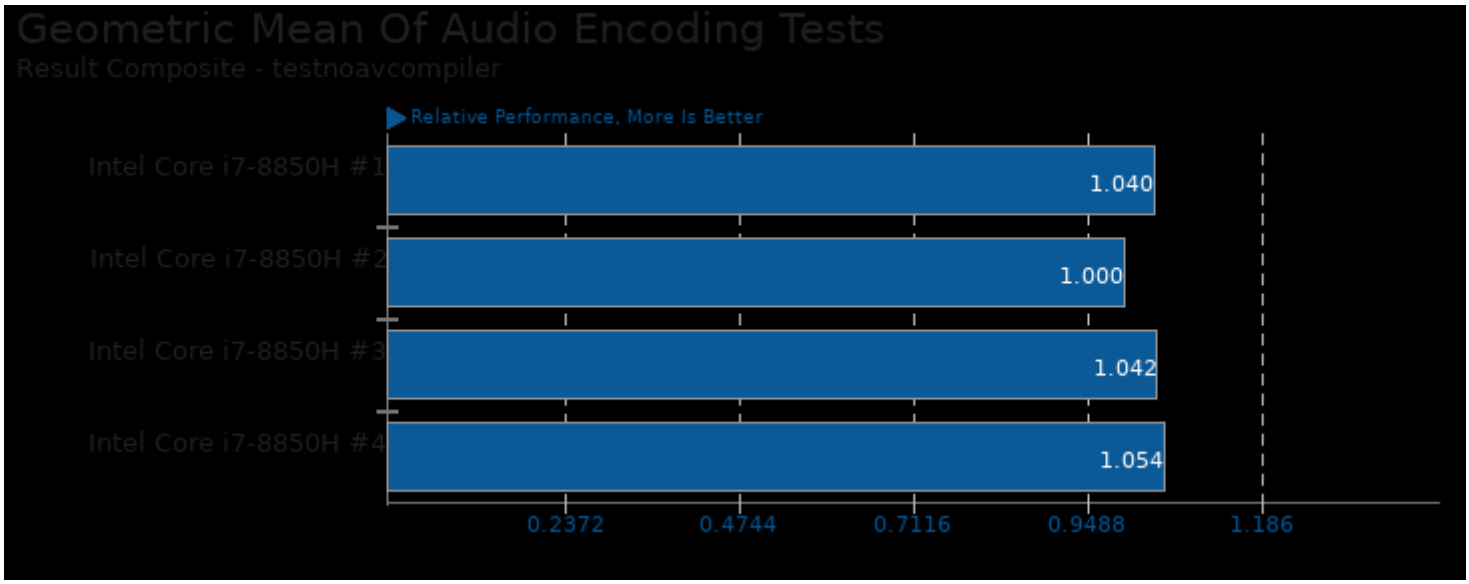



LAME MP3 Encoding 3.100
WAV To MP3
Seconds, Fewer Is Better
Intel Core i7-8850H #1
SE +/- 0.013, N = 3
8.886
Intel Core i7-8850H #2
SE +/- 0.133, N = 3
9.221
Intel Core i7-8850H #3
SE +/- 0.018, N = 3
8.702
Intel Core i7-8850H #4
SE +/- 0.051, N = 3
8.576
3
6
9
12
15
1. (CC) gcc options: -O3 -ffast-math -funroll-loops -fschedule-insns2 -fbranch-count-reg -fforce-addr -pipe -lm
System GZIP Decompression
Seconds, Fewer Is Better
Intel Core i7-8850H #1
SE +/- 0.030, N = 14
3.023
Intel Core i7-8850H #2
SE +/- 0.022, N = 14
3.138
Intel Core i7-8850H #3
SE +/- 0.031, N = 13
3.026
Intel Core i7-8850H #4
SE +/- 0.030, N = 13
3.015
0.7061
1.4122
2.1183
2.8244
3.5305
System XZ Decompression
Seconds, Fewer Is Better
Intel Core i7-8850H #1
SE +/- 0.010, N = 3
3.791
Intel Core i7-8850H #2
SE +/- 0.035, N = 3
3.991
Intel Core i7-8850H #3
SE +/- 0.009, N = 3
3.800
Intel Core i7-8850H #4
SE +/- 0.006, N = 3
3.782
0.898
1.796
2.694
3.592
4.49

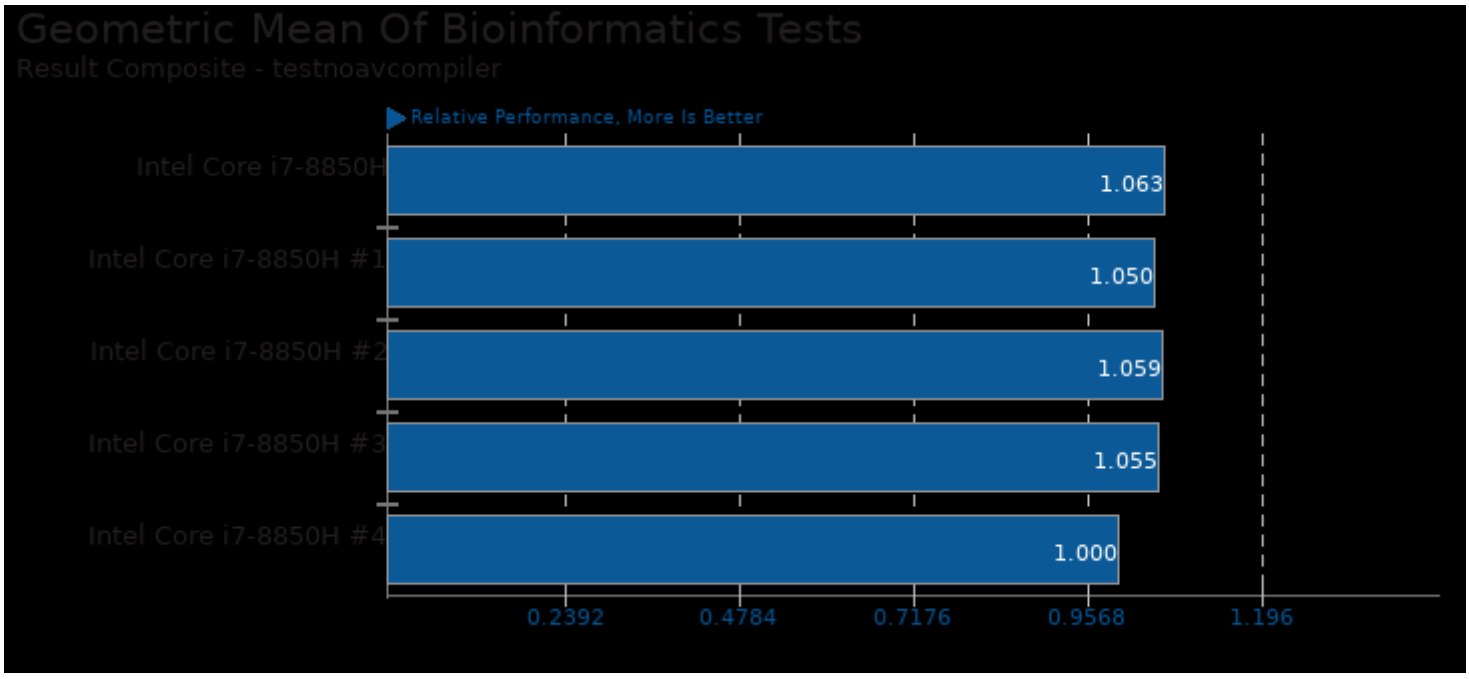
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These geometric means are based upon test groupings / test suites for this result file.

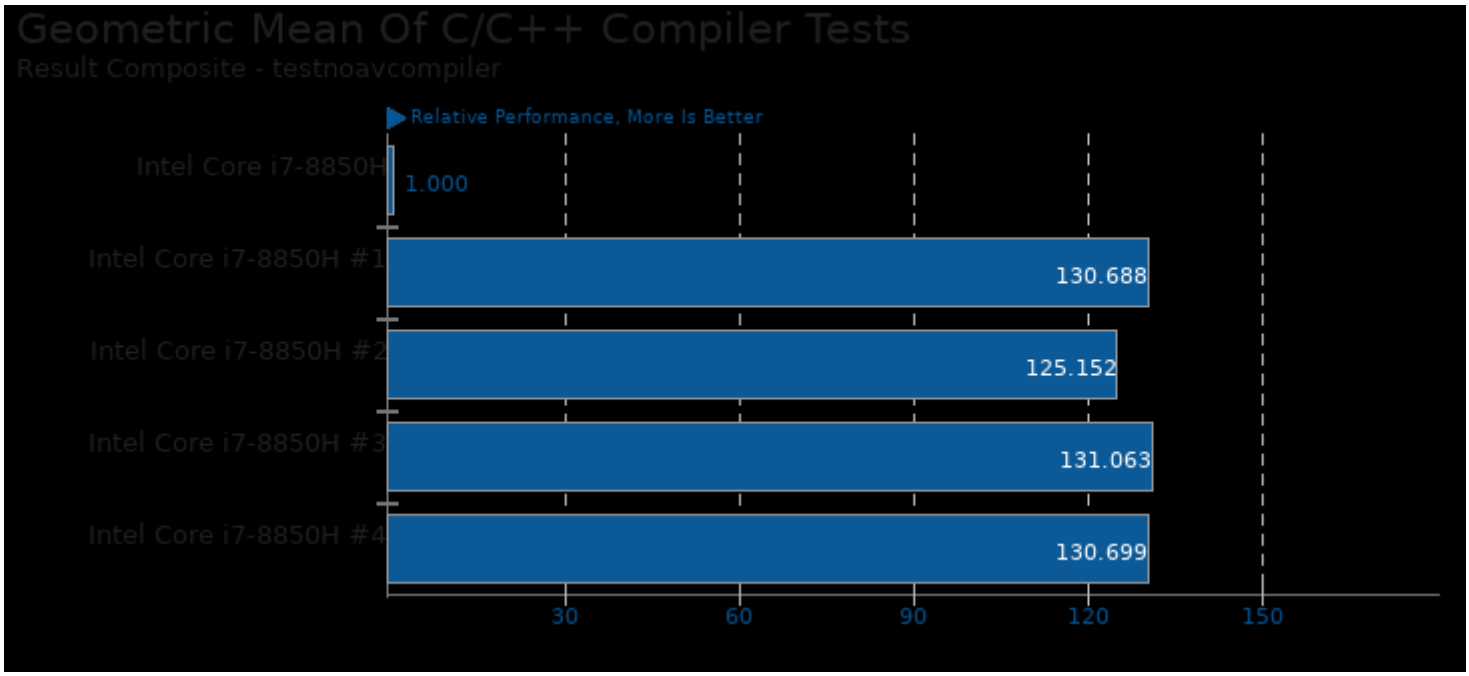


Geometric mean based upon tests: pts/encode-mp3 and pts/encode-flac

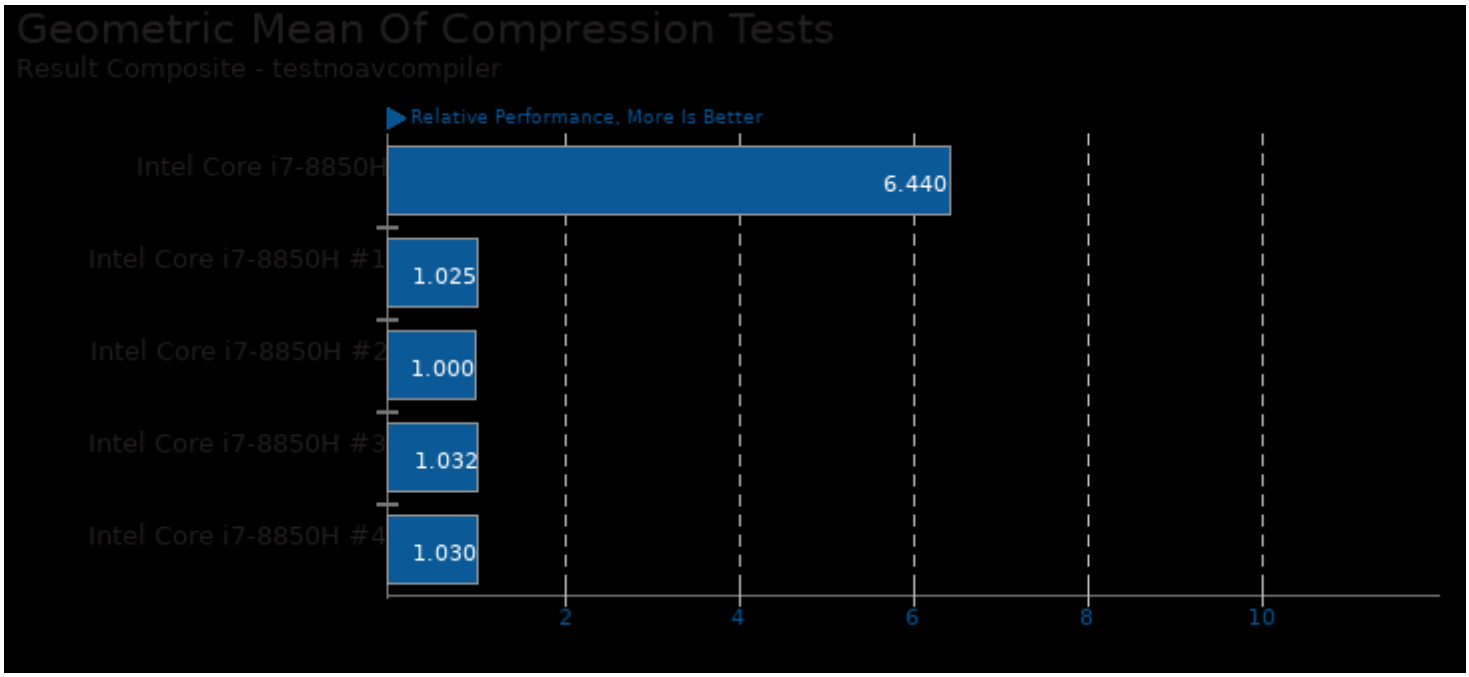


Geometric mean based upon tests: pts/mrbayes and pts/mafft

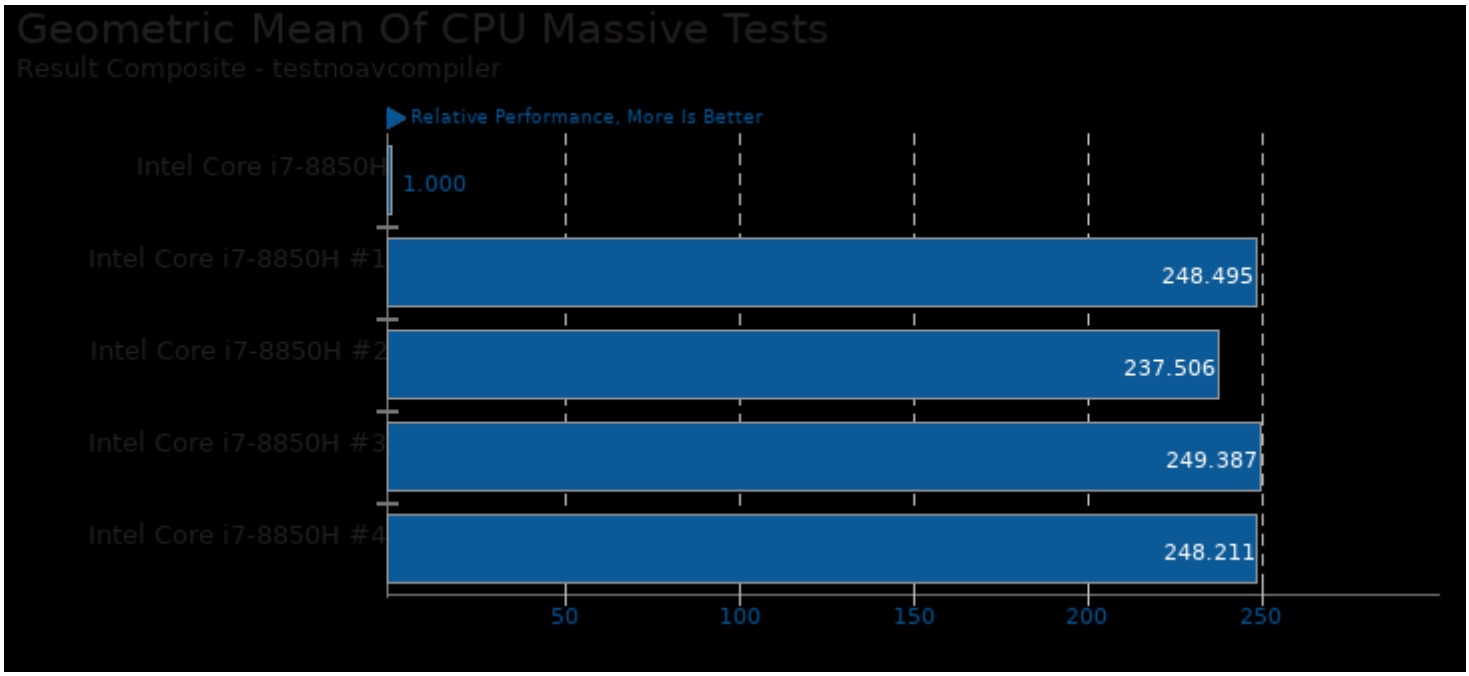
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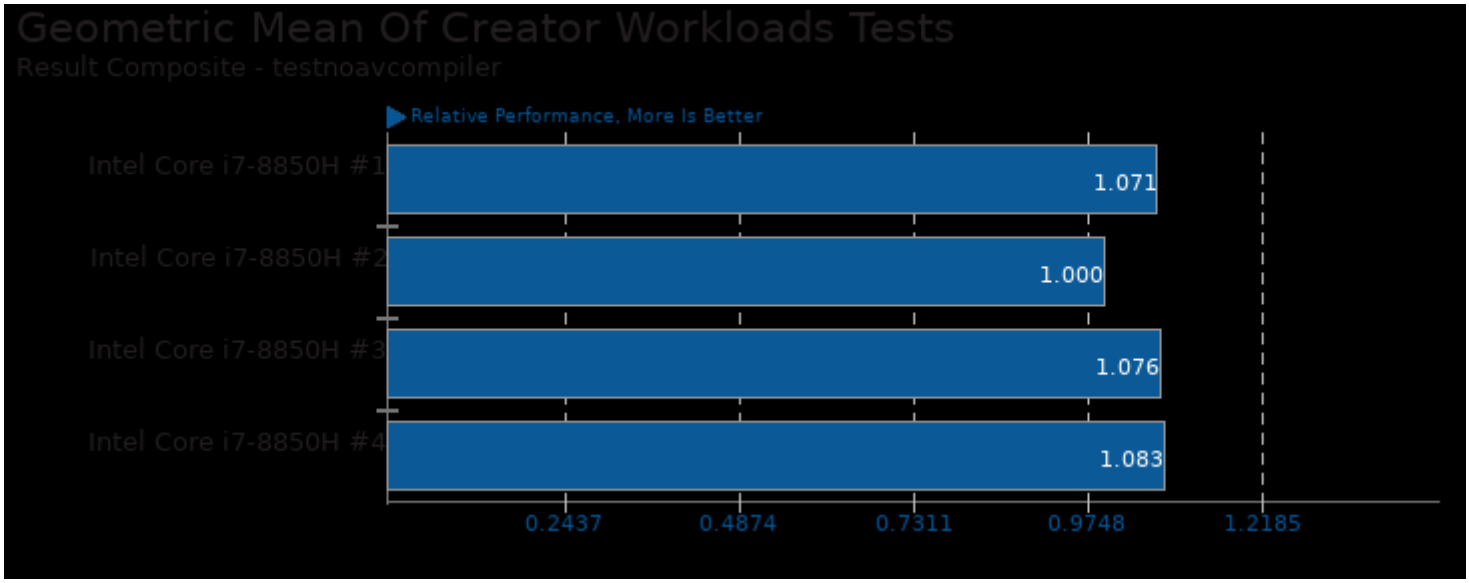
Geometric mean based upon tests: pts/mafft, pts/scimark2, pts/aobench, pts/graphics-magick, pts/stockfish, pts/c-ray, pts/compress-7zip, pts/encode-mp3, pts/encode-flac, pts/mrbayes, pts/john-the-ripper, pts/dav1d, pts/compress-zstd and pts/basis



Geometric mean based upon tests: pts/compress-7zip, pts/compress-zstd, pts/compress-lz4, pts/system-decompress-xz and pts/system-decompress-gzip



Geometric mean based upon tests: pts/c-ray, pts/compress-7zip, pts/compress-zstd, pts/dav1d, pts/encode-flac, pts/encode-mp3, pts/graphics-magick, pts/john-the-ripper, pts/mafft, pts/mrbayes and pts/stockfish

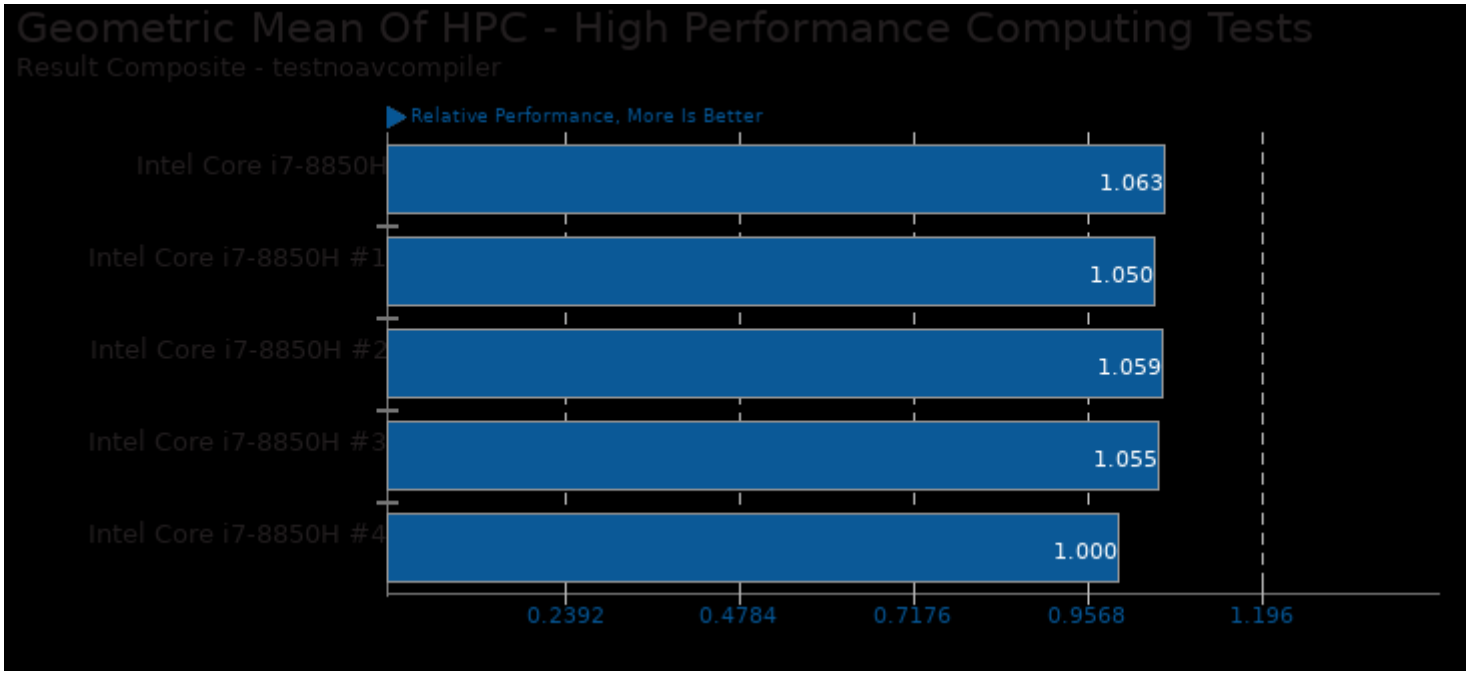


Geometric mean based upon tests: pts/c-ray, pts/aobench, pts/dav1d, pts/encode-mp3, pts/encode-flac, pts/graphics-magick and pts/basis

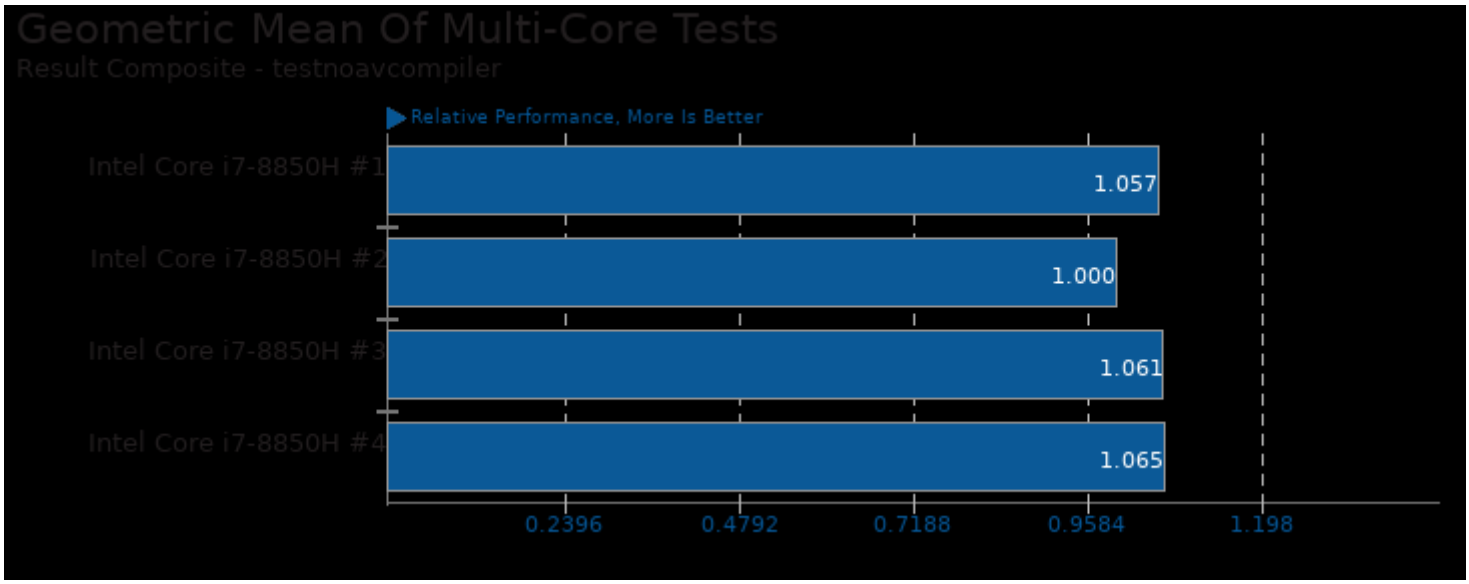
testnoavcompiler



Geometric mean based upon tests: pts/encode-mp3, pts/encode-flac and pts/dav1d



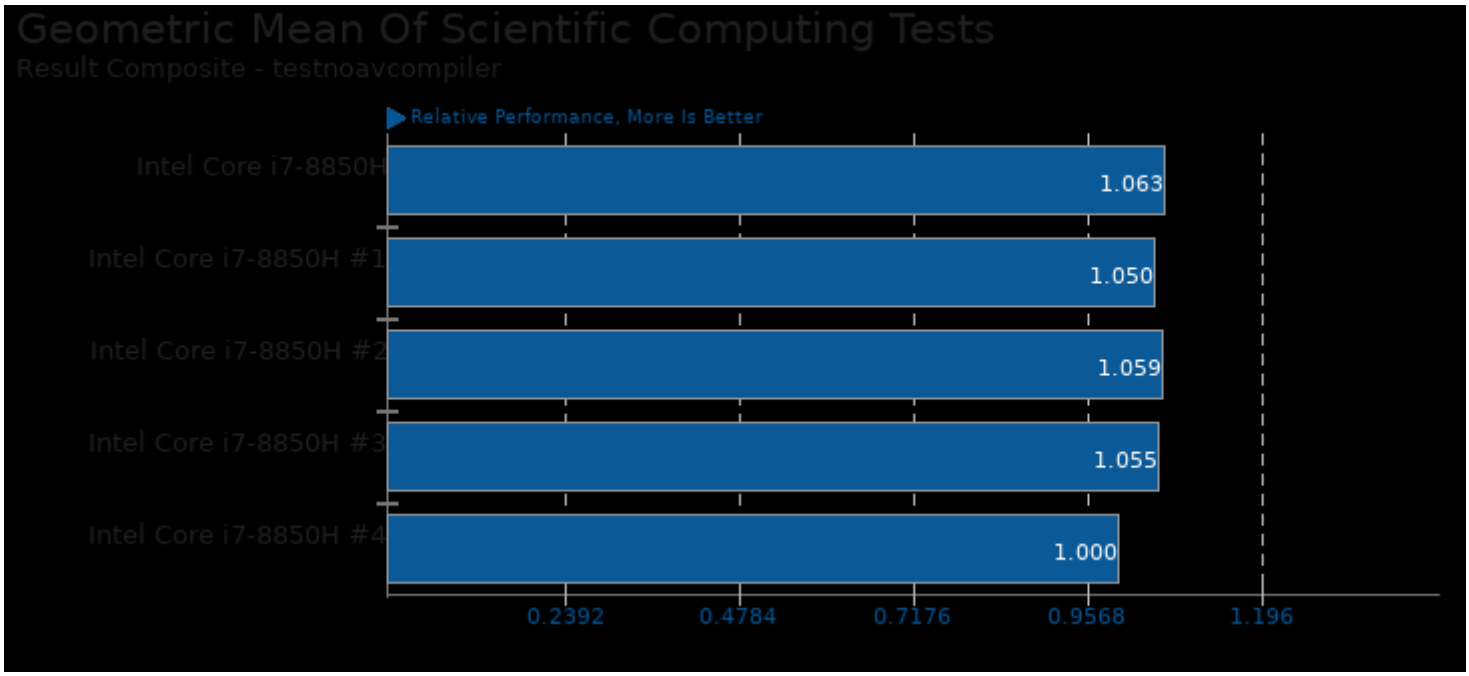
Geometric mean based upon tests: pts/mrbayes and pts/mafft



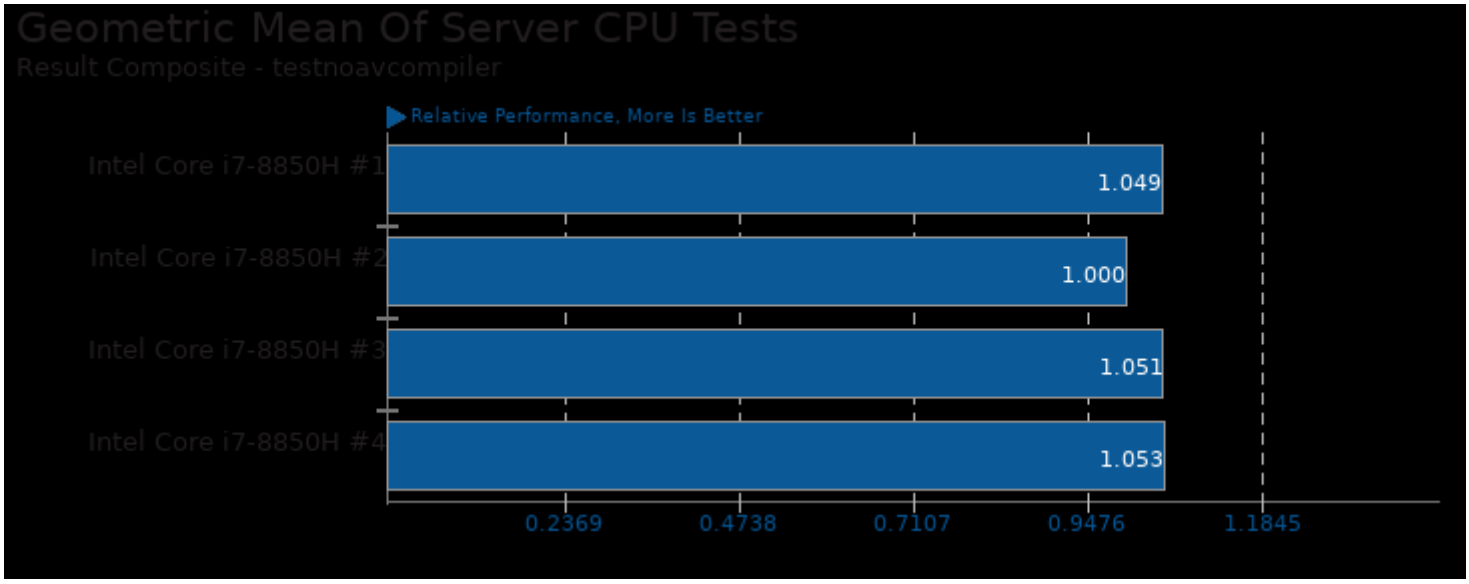
Geometric mean based upon tests: pts/c-ray, pts/stockfish, pts/dav1d, pts/john-the-ripper, pts/graphics-magick, pts/compress-7zip, pts/compress-zstd and pts/aobench



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



Geometric mean based upon tests: pts/mrbayes and pts/mafft



Geometric mean based upon tests: pts/john-the-ripper, pts/dav1d, pts/compress-7zip, pts/stockfish, pts/c-ray and pts/compress-zstd

testnoavcompiler



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

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 11:32.