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Icelake OpenCV And More

Intel Core i7-1065G7 testing with a Dell 06CDVY (1.0.9 BIOS) and Intel Iris Plus G7 3GB on Ubuntu 20.04 via the Phoronix Test Suite.

Automated Executive Summary

Core i7 1065G7 had the most wins, coming in first place for 34% of the tests.

Based on the geometric mean of all complete results, the fastest (Intel Core i7 1065G7) was 1.009x the speed of the slowest (Core i7 1065G7). Intel 1065G7 was 0.996x the speed of Intel Core i7 1065G7 and Core i7 1065G7 was 0.995x the speed of Intel 1065G7.

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

OSBench (Test: Memory Allocations) at 1.039x
OSBench (Test: Create Processes) at 1.024x
eSpeak-NG Speech Engine (Text-To-Speech Synthesis) at 1.023x
perf-bench (Benchmark: Futex Hash) at 1.023x
perf-bench (Benchmark: Sched Pipe) at 1.022x
OSBench (Test: Create Threads) at 1.021x
OpenCV (Test: Features 2D) at 1.021x
perf-bench (Benchmark: Futex Lock-Pi) at 1.016x

perf-bench (Benchmark: Memset 1MB) at 1.015x
WebP Image Encode (Encode Settings: Quality 100, Lossless) at 1.013x.

Test Systems:

Core i7 1065G7

Intel Core i7 1065G7

Intel 1065G7

Processor: Intel Core i7-1065G7 @ 3.90GHz (4 Cores / 8 Threads), Motherboard: Dell 06CDVY (1.0.9 BIOS), Chipset: Intel Device 34ef, Memory: 16GB, Disk: KBG40ZPZ512G NVMe TOSHIBA 512GB, Graphics: Intel Iris Plus G7 3GB (1100MHz), Audio: Realtek ALC289, Network: Intel Killer Wi-Fi 6 AX1650i 160MHz

OS: Ubuntu 20.04, Kernel: 5.9.0-050900rc1daily20200819-generic (x86_64) 20200818, Desktop: GNOME Shell 3.36.4, Display Server: X Server 1.20.8, Display Driver: modesetting 1.20.8, OpenGL: 4.6 Mesa 20.0.4, Vulkan: 1.2.131, Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 1920x1200

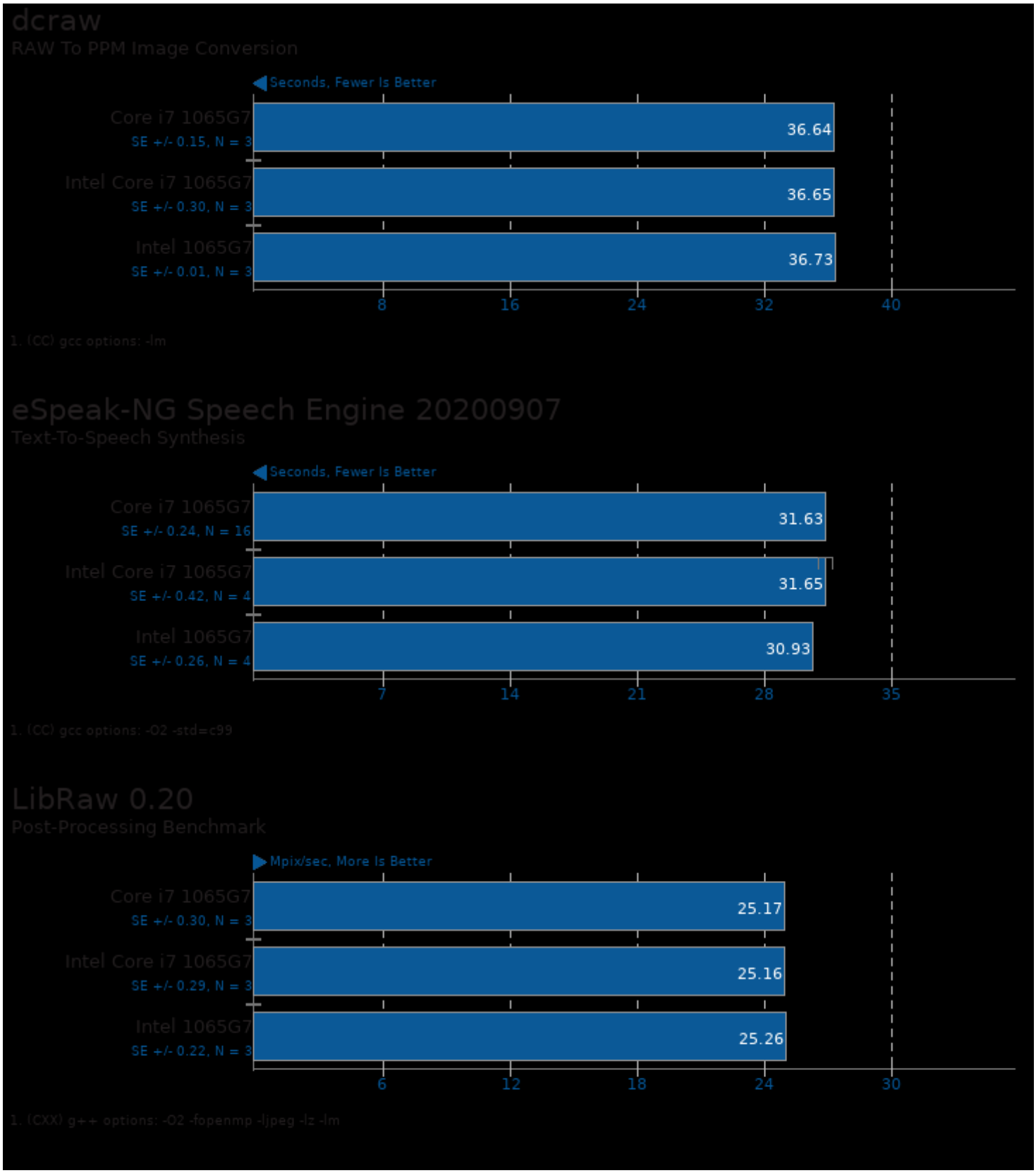
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none,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 powersave - CPU Microcode: 0x78
Security Notes: itlb_multihit: KVM: Mitigation of VMX disabled + 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 Enhanced IBRS IBPB: conditional RSB filling + srbds: Not affected + tsx_async_abort: Not affected

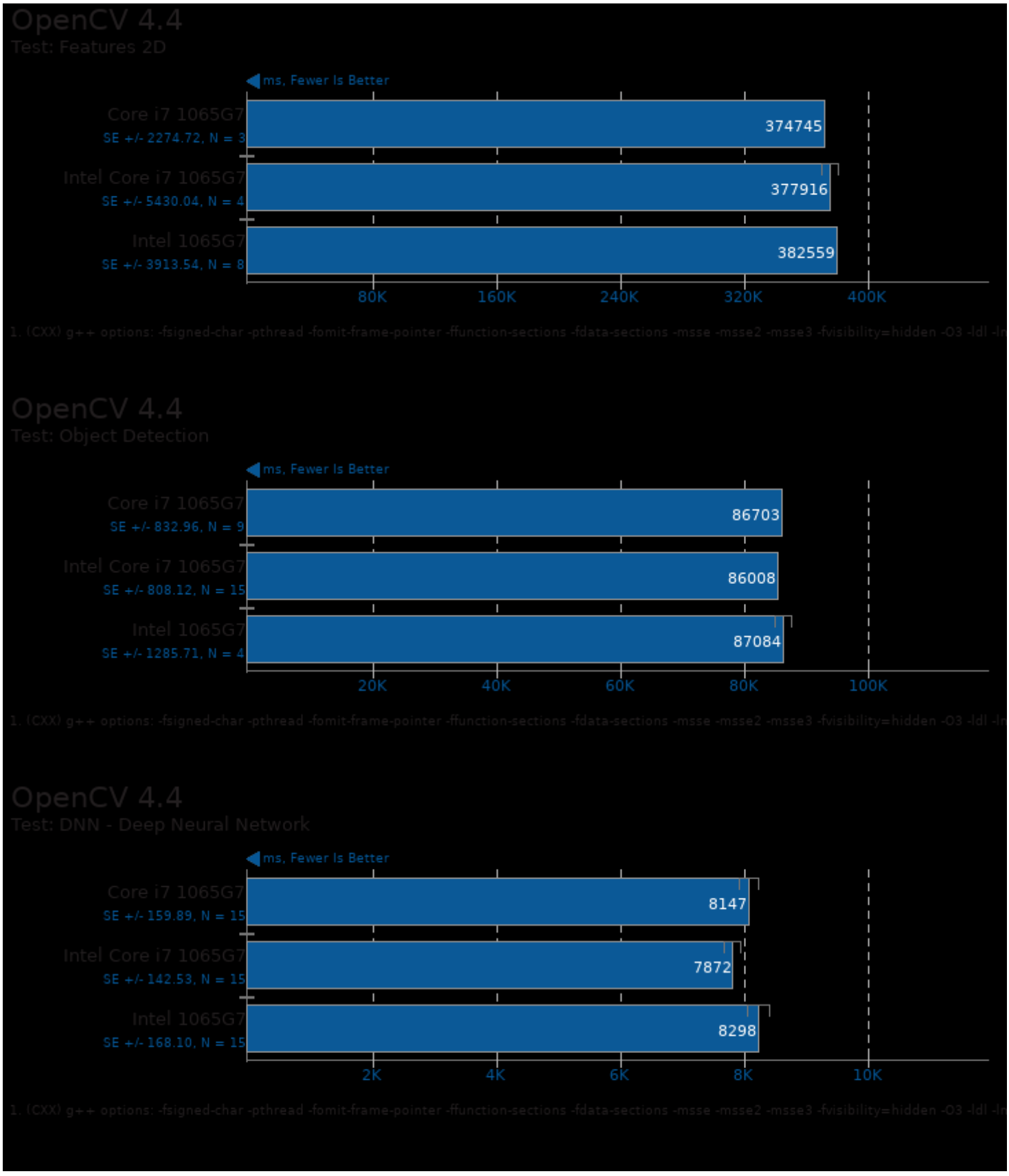
	Core i7 1065G7	Intel Core i7 1065G7	Intel 1065G7
dcraw - R.T.P.I.C (sec)	**36.640**	36.648	**36.732**
Normalized	100%	99.98%	99.75%
Standard Deviation	0.7%	1.4%	0.1%
eSpeak-NG Speech Engine - T.T.S.S (sec)	31.626	**31.649**	**30.929**
Normalized	97.8%	97.73%	100%
Standard Deviation	3%	2.6%	1.7%
LibRaw - P.P.B (Mpix/sec)	25.17	**25.16**	**25.26**
Normalized	99.64%	99.6%	100%
Standard Deviation	2.1%	2%	1.5%
OpenCV - Features 2D (ms)	**374745**	377916	**382559**
Normalized	100%	99.16%	97.96%
Standard Deviation	1.1%	2.9%	2.9%
OpenCV - Object Detection (ms)	86703	**86008**	**87084**
Normalized	99.2%	100%	98.76%
Standard Deviation	2.9%	3.6%	3%
OpenCV - DNN - D.N.N (ms)	8147	**7872**	**8298**

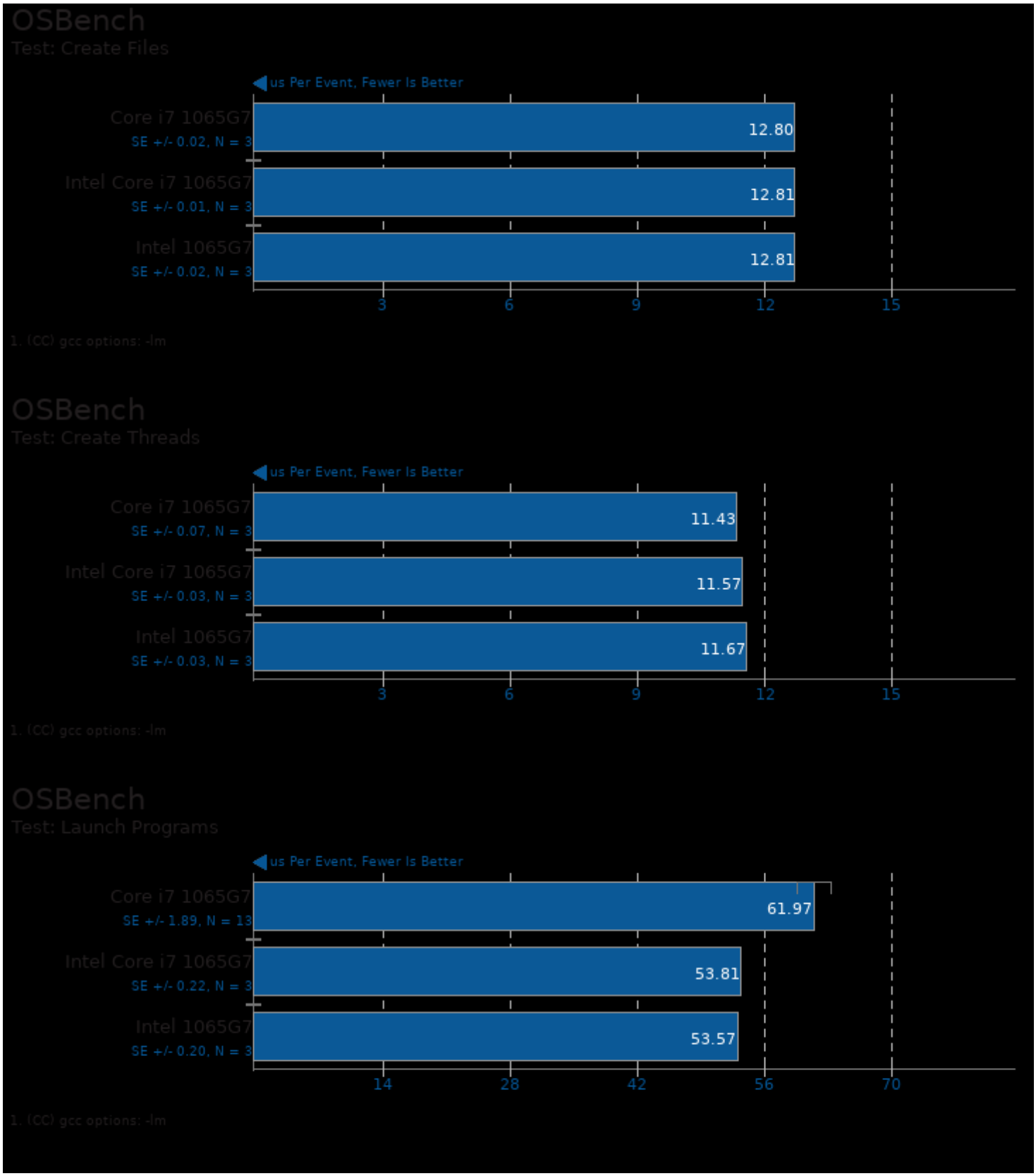
Normalized	96.62%	100%	94.87%
Standard Deviation	7.6%	7%	7.8%
OSBench - Create Files (us/Event)	**12.797316**	**12.812651**	12.809387
Normalized	100%	99.88%	99.91%
Standard Deviation	0.2%	0.1%	0.3%
OSBench - Create Threads (us/Event)	**11.426608**	11.565685	**11.666616**
Normalized	100%	98.8%	97.94%
Standard Deviation	1.1%	0.4%	0.5%
OSBench - Launch Programs (us/Event)	**61.973242**	53.806305	**53.565502**
Normalized	86.43%	99.55%	100%
Standard Deviation	11%	0.7%	0.6%
OSBench - Create Processes (us/Event)	**27.364095**	27.006467	**26.729902**
Normalized	97.68%	98.98%	100%
Standard Deviation	0.3%	0.9%	0.2%
OSBench - Memory Allocations (Ns/Event)	**69.727262**	**67.124764**	67.204714
Normalized	96.27%	100%	99.88%
Standard Deviation	0.1%	0.5%	0.2%
perf-bench - Epoll Wait (ops/sec)	**189806**	188194	**185613**
Normalized	100%	99.15%	97.79%
Standard Deviation	2.1%	3.6%	6.7%
perf-bench - Futex Hash (ops/sec)	3568951	**3580000**	**3501025**
Normalized	99.69%	100%	97.79%
Standard Deviation	2.9%	2.7%	2.9%
perf-bench - Memcpy 1MB (GB/sec)	**28.312936**	**28.382557**	28.314720
Normalized	99.75%	100%	99.76%
Standard Deviation	0.3%	0.2%	0.4%
perf-bench - Memset 1MB (GB/sec)	44.755593	**44.752193**	**45.413986**
Normalized	98.55%	98.54%	100%
Standard Deviation	1.1%	2.8%	1.9%
perf-bench - Sched Pipe (ops/sec)	**237658**	**232508**	233102
Normalized	100%	97.83%	98.08%
Standard Deviation	0.9%	2%	2%
perf-bench - Futex Lock-Pi (ops/sec)	**1959**	**1990**	1960
Normalized	98.44%	100%	98.49%
Standard Deviation	0.8%	3.1%	0.8%
perf-bench - Syscall Basic (ops/sec)	**15707589**	15598435	**15515976**
Normalized	100%	99.31%	98.78%
Standard Deviation	0.1%	1.6%	1.6%
WebP Image Encode - Default (Encode Time - sec)	**1.617**	**1.616**	**1.617**
Normalized	99.94%	100%	99.94%
Standard Deviation	0.3%	0.2%	0.1%
WebP Image Encode - Quality 100 (Encode Time - sec)	**2.490**	**2.496**	2.494
Normalized	100%	99.76%	99.84%
Standard Deviation	0.3%	0.4%	0.1%
WebP Image Encode - Q.1.L (Encode Time - sec)	**18.869**	18.646	**18.635**
Normalized	98.76%	99.94%	100%
Standard Deviation	1%	0.3%	0.1%
WebP Image Encode - Q.1.H.C (Encode Time - sec)	7.472	**7.481**	**7.471**
Normalized	99.99%	99.87%	100%
Standard Deviation	0.6%	0.2%	0.2%

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WebP Image Encode - Q.1.L.H.C (Encode Time - sec)	48.877	48.490	48.786
Normalized	99.21%	100%	99.39%
Standard Deviation	1.5%	1.3%	1.3%

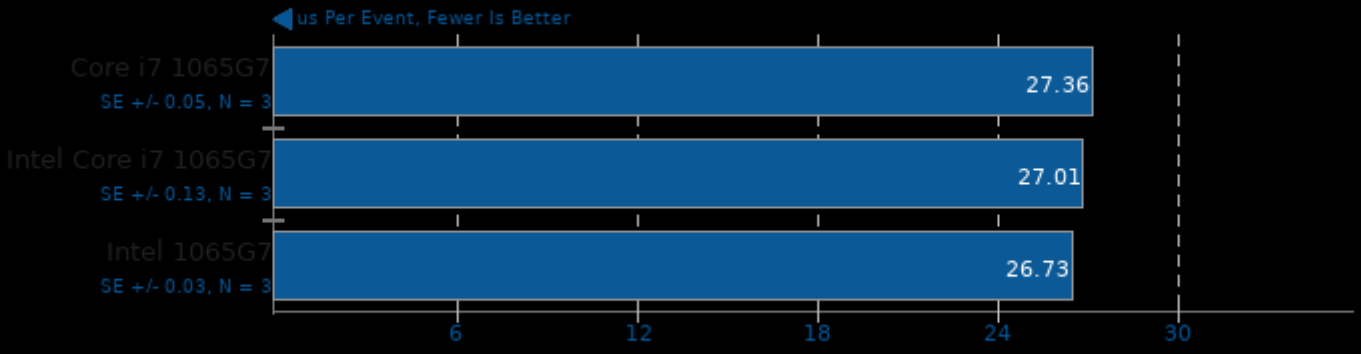

dcraw
RAW To PPM Image Conversion
Seconds, Fewer Is Better
Core i7 1065G7
SE +/- 0.15, N = 3
36.64
Intel Core i7 1065G7
SE +/- 0.30, N = 3
36.65
Intel 1065G7
SE +/- 0.01, N = 3
36.73
8
16
24
32
40
1. (CC) gcc options: -lm
eSpeak-NG Speech Engine 20200907
Text-To-Speech Synthesis
Seconds, Fewer Is Better
Core i7 1065G7
SE +/- 0.24, N = 16
31.63
Intel Core i7 1065G7
SE +/- 0.42, N = 4
31.65
Intel 1065G7
SE +/- 0.26, N = 4
30.93
7
14
21
28
35
1. (CC) gcc options: -O2 -std=c99
LibRaw 0.20
Post-Processing Benchmark
Mpix/sec, More Is Better
Core i7 1065G7
SE +/- 0.30, N = 3
25.17
Intel Core i7 1065G7
SE +/- 0.29, N = 3
25.16
Intel 1065G7
SE +/- 0.22, N = 3
25.26
6
12
18
24
30
1. (CXX) g++ options: -O2 -fopenmp -ljpeg -lz -lm


OpenCV 4.4
Test: Features 2D
ms, Fewer Is Better
Core i7 1065G7
SE +/- 2274.72, N = 3
374745
Intel Core i7 1065G7
SE +/- 5430.04, N = 4
377916
Intel 1065G7
SE +/- 3913.54, N = 8
382559
80K
160K
240K
320K
400K
1. (CXX) g++ options: -fsigned-char -pthread -fomit-frame-pointer -ffunction-sections -fdata-sections -msse -msse2 -msse3 -fvisibility=hidden -O3 -ldl
OpenCV 4.4
Test: Object Detection
ms, Fewer Is Better
Core i7 1065G7
SE +/- 832.96, N = 9
86703
Intel Core i7 1065G7
SE +/- 808.12, N = 15
86008
Intel 1065G7
SE +/- 1285.71, N = 4
87084
20K
40K
60K
80K
100K
1. (CXX) g++ options: -fsigned-char -pthread -fomit-frame-pointer -ffunction-sections -fdata-sections -msse -msse2 -msse3 -fvisibility=hidden -O3 -ldl
OpenCV 4.4
Test: DNN - Deep Neural Network
ms, Fewer Is Better
Core i7 1065G7
SE +/- 159.89, N = 15
8147
Intel Core i7 1065G7
SE +/- 142.53, N = 15
7872
Intel 1065G7
SE +/- 168.10, N = 15
8298
2K
4K
6K
8K
10K
1. (CXX) g++ options: -fsigned-char -pthread -fomit-frame-pointer -ffunction-sections -fdata-sections -msse -msse2 -msse3 -fvisibility=hidden -O3 -ldl


OSBench
Test: Create Files
us Per Event, Fewer Is Better
Core i7 1065G7
SE +/- 0.02, N = 3
12.80
Intel Core i7 1065G7
SE +/- 0.01, N = 3
12.81
Intel 1065G7
SE +/- 0.02, N = 3
12.81
3
6
9
12
15
1. (CC) gcc options: -lm
OSBench
Test: Create Threads
us Per Event, Fewer Is Better
Core i7 1065G7
SE +/- 0.07, N = 3
11.43
Intel Core i7 1065G7
SE +/- 0.03, N = 3
11.57
Intel 1065G7
SE +/- 0.03, N = 3
11.67
3
6
9
12
15
1. (CC) gcc options: -lm
OSBench
Test: Launch Programs
us Per Event, Fewer Is Better
Core i7 1065G7
SE +/- 1.89, N = 13
61.97
Intel Core i7 1065G7
SE +/- 0.22, N = 3
53.81
Intel 1065G7
SE +/- 0.20, N = 3
53.57
14
28
42
56
70
1. (CC) gcc options: -lm

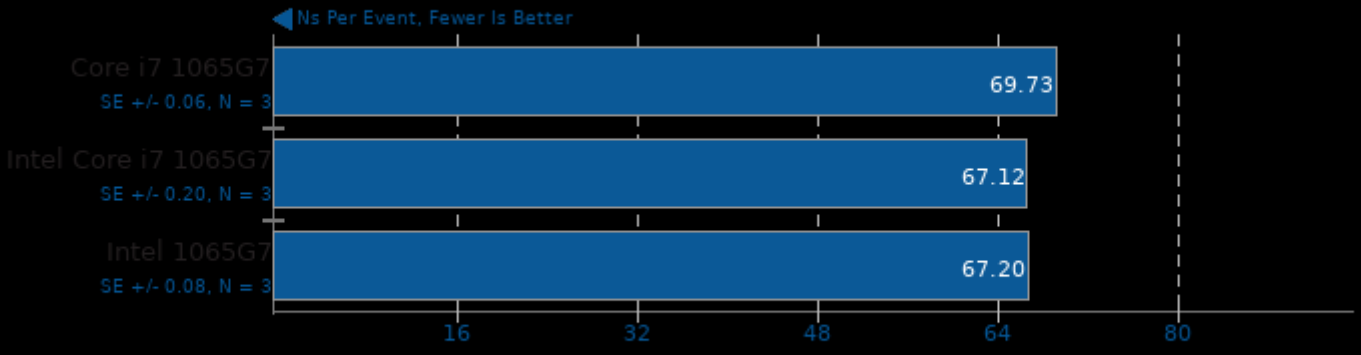
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OSBench
Test: Create Processes



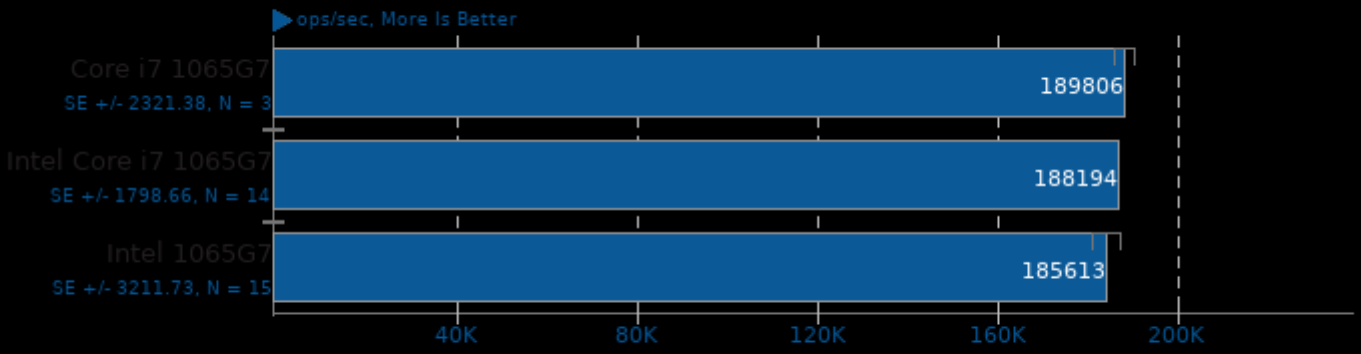
1. (CC) gcc options: -lm

OSBench
Test: Memory Allocations



1. (CC) gcc options: -lm

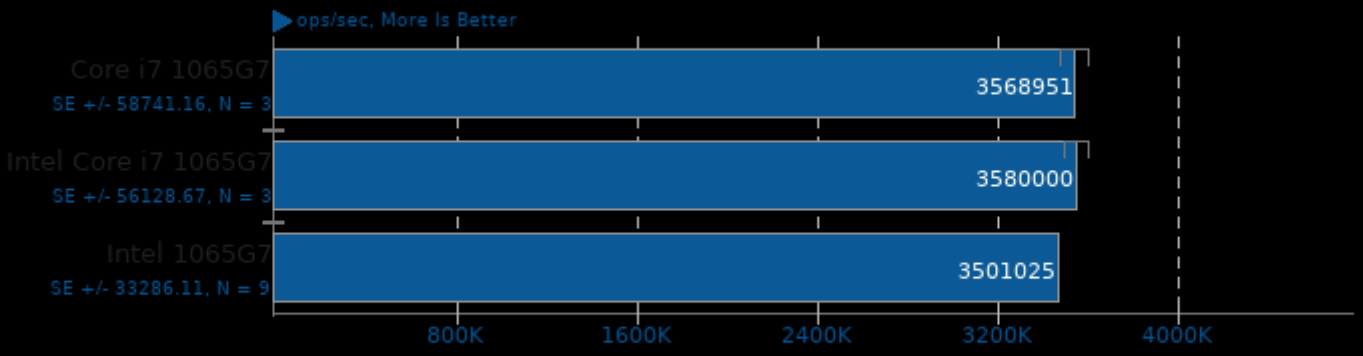
perf-bench
Benchmark: Epoll Wait



1. (CC) gcc options: -O6 -ggdb3 -funwind-tables -std=gnu99 -Xlinker -lpthread -lrt -lm -ldl -lelf -lcrypto -lslang -lz -llzma -lnuma

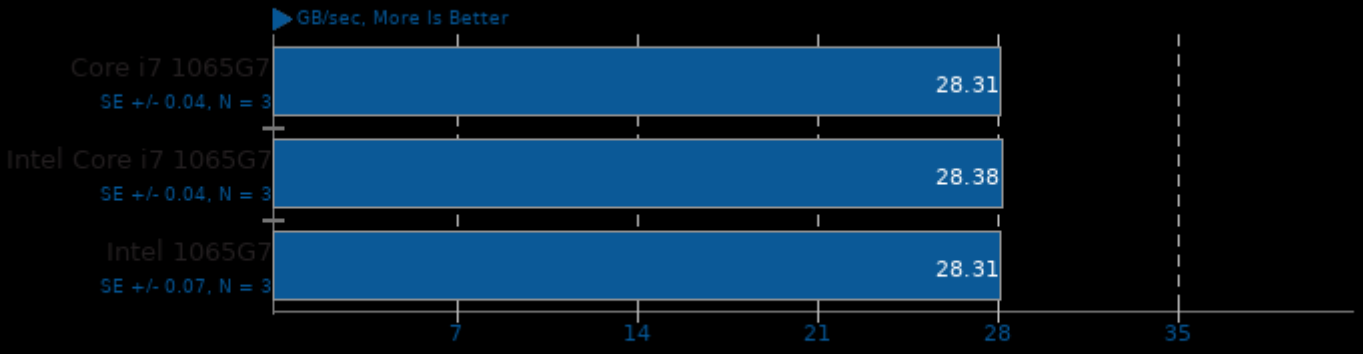
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perf-bench
Benchmark: Futex Hash



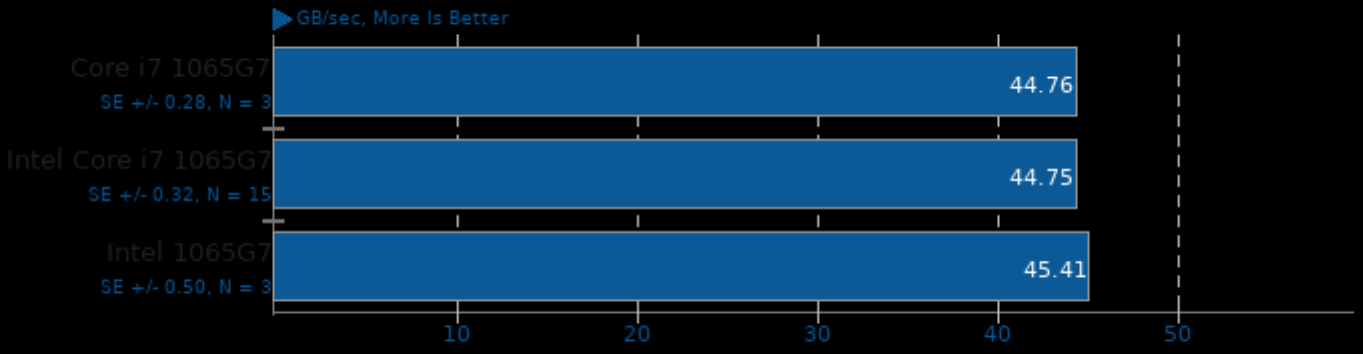
1. (CC) gcc options: -O6 -ggdb3 -funwind-tables -std=gnu99 -Xlinker -lpthread -lrt -lm -ldl -lelf -lcrypto -lslang -lz -llzma -lnuma

perf-bench
Benchmark: Memcpy 1MB



1. (CC) gcc options: -O6 -ggdb3 -funwind-tables -std=gnu99 -Xlinker -lpthread -lrt -lm -ldl -lelf -lcrypto -lslang -lz -llzma -lnuma

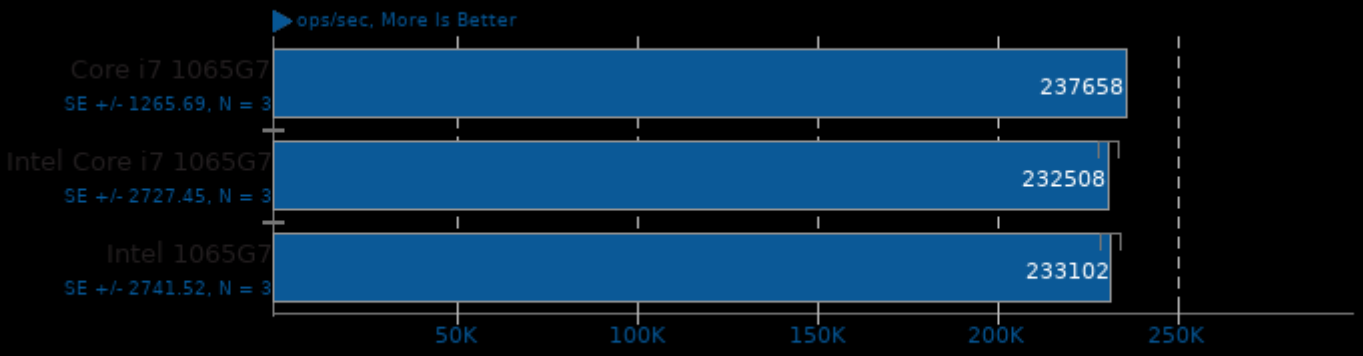
perf-bench
Benchmark: Memset 1MB



1. (CC) gcc options: -O6 -ggdb3 -funwind-tables -std=gnu99 -Xlinker -lpthread -lrt -lm -ldl -lelf -lcrypto -lslang -lz -llzma -lnuma

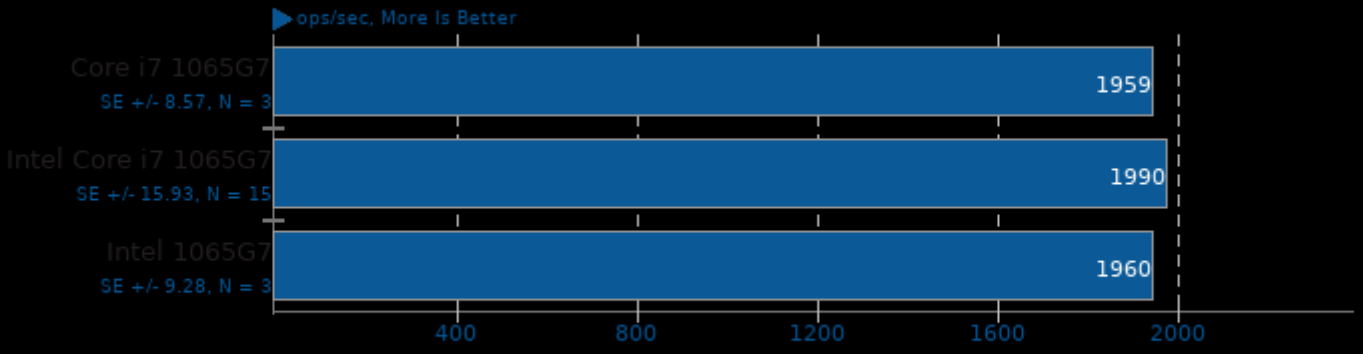
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perf-bench
Benchmark: Sched Pipe



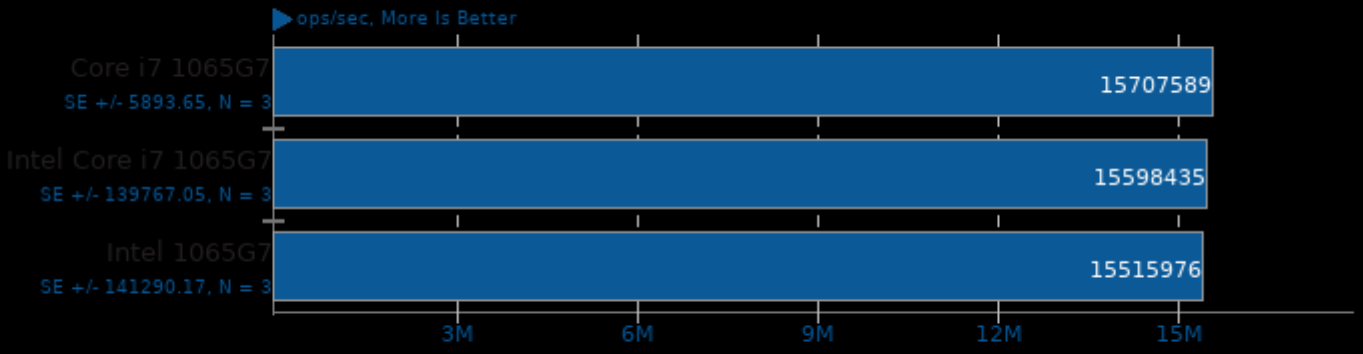
1. (CC) gcc options: -O6 -ggdb3 -funwind-tables -std=gnu99 -Xlinker -lpthread -lrt -lm -ldl -lelf -lcrypto -lslang -lz -llzma -lnuma

perf-bench
Benchmark: Futex Lock-Pi

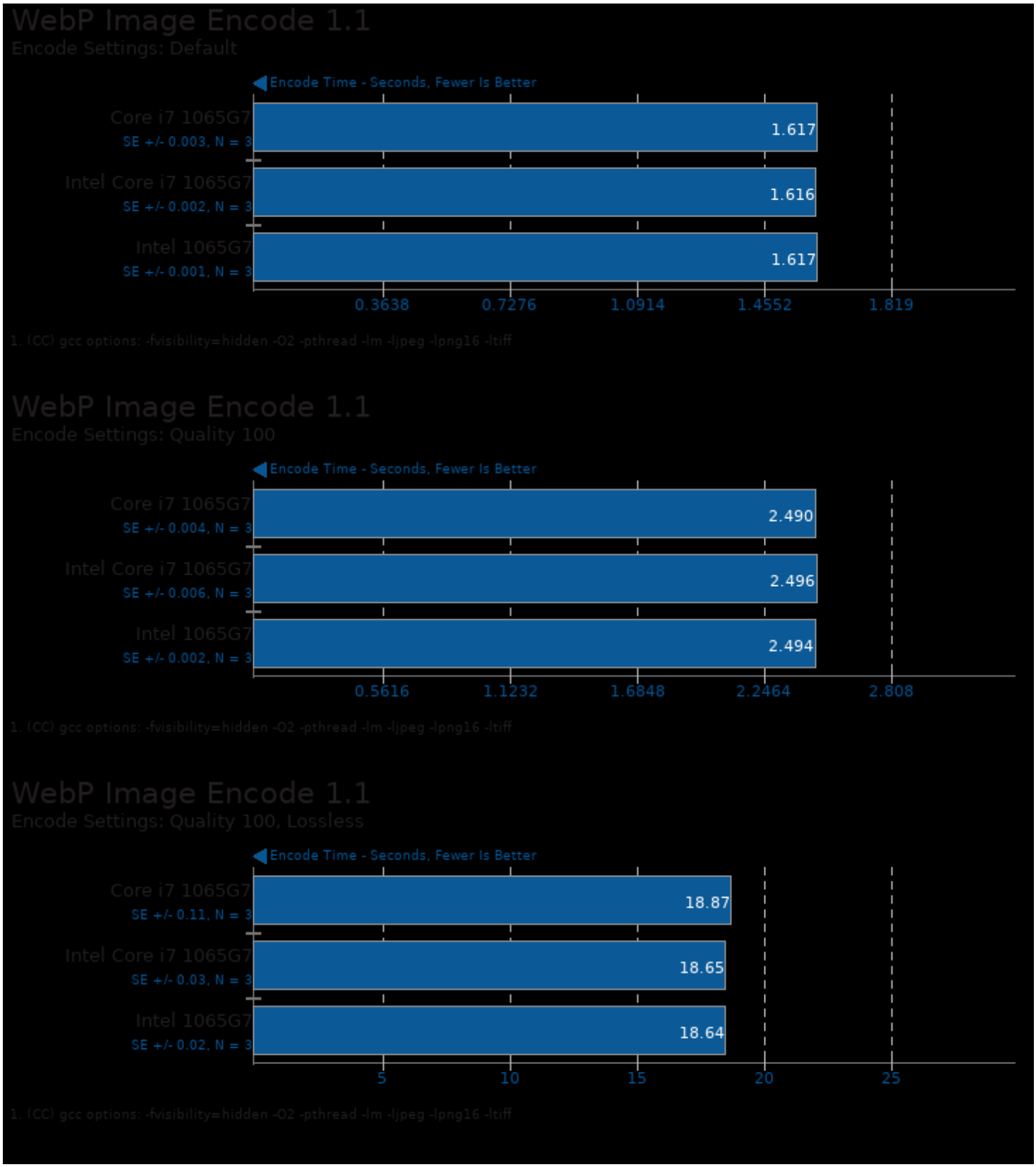


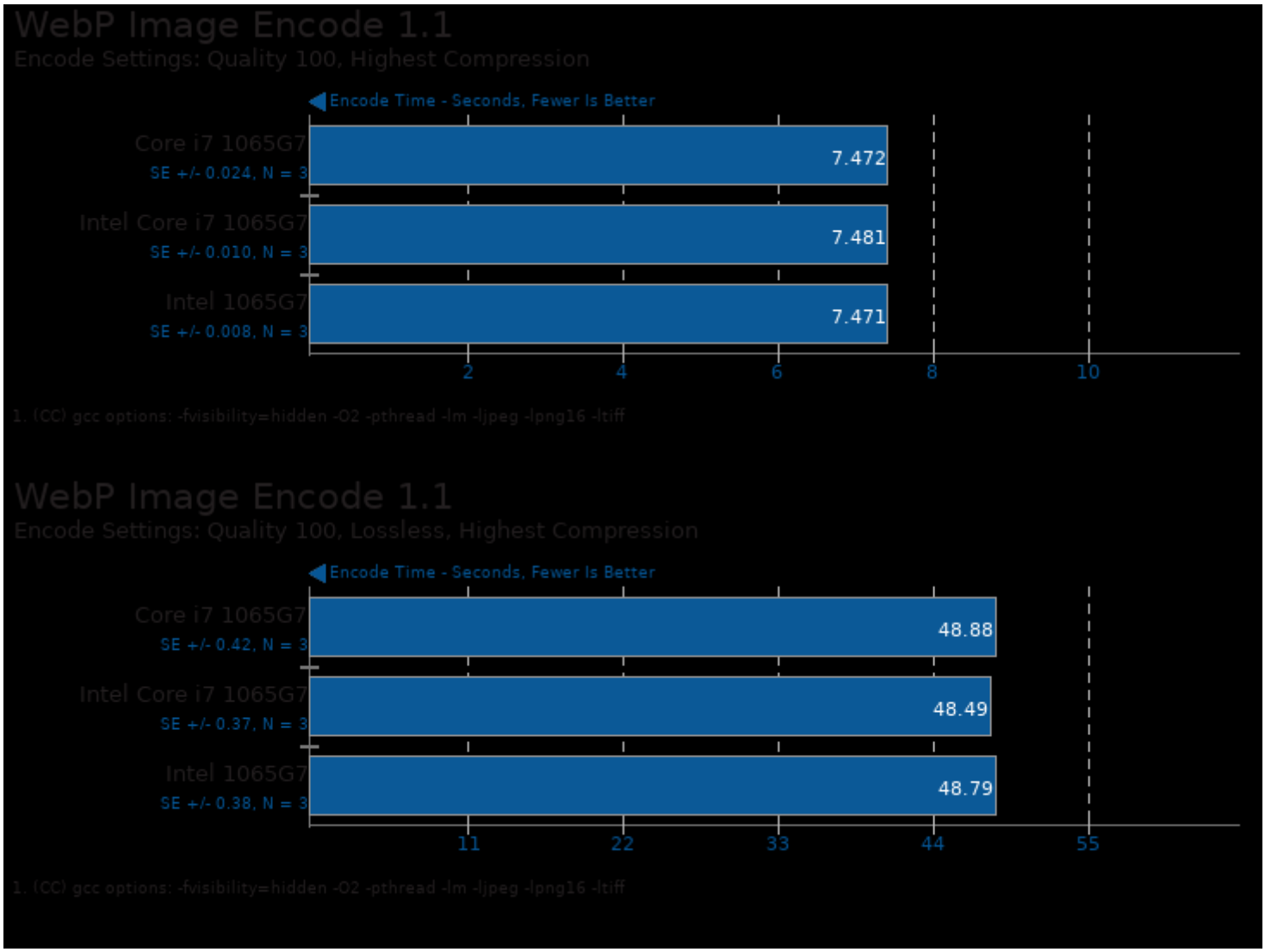
1. (CC) gcc options: -O6 -ggdb3 -funwind-tables -std=gnu99 -Xlinker -lpthread -lrt -lm -ldl -lelf -lcrypto -lslang -lz -llzma -lnuma

perf-bench
Benchmark: Syscall Basic

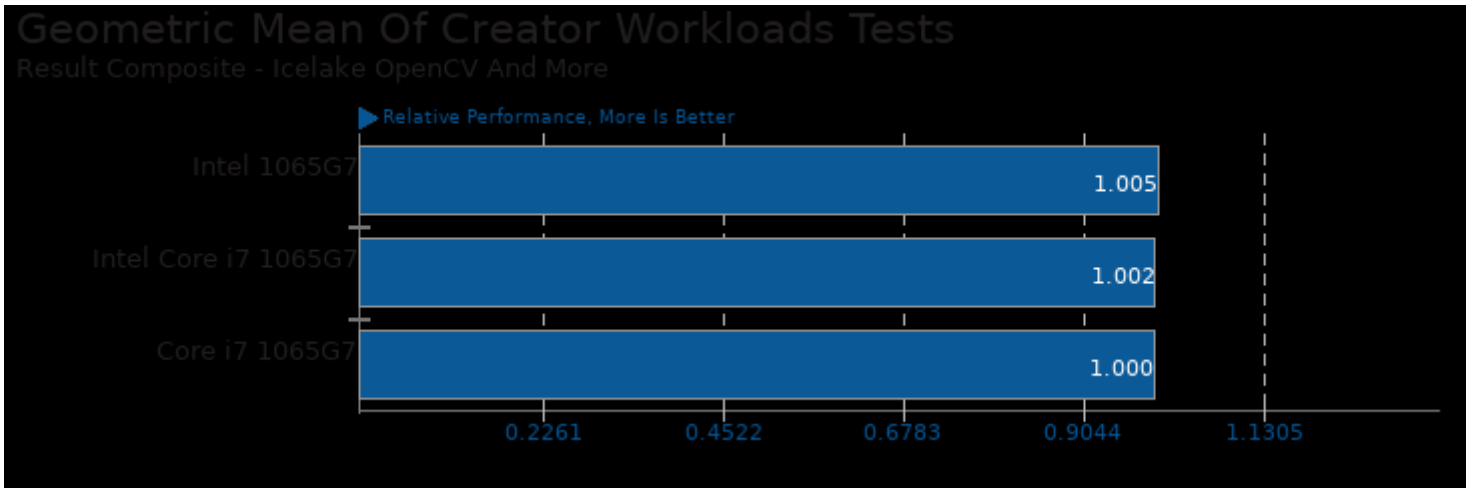


1. (CC) gcc options: -O6 -ggdb3 -funwind-tables -std=gnu99 -Xlinker -lpthread -lrt -lm -ldl -lelf -lcrypto -lslang -lz -llzma -lnuma

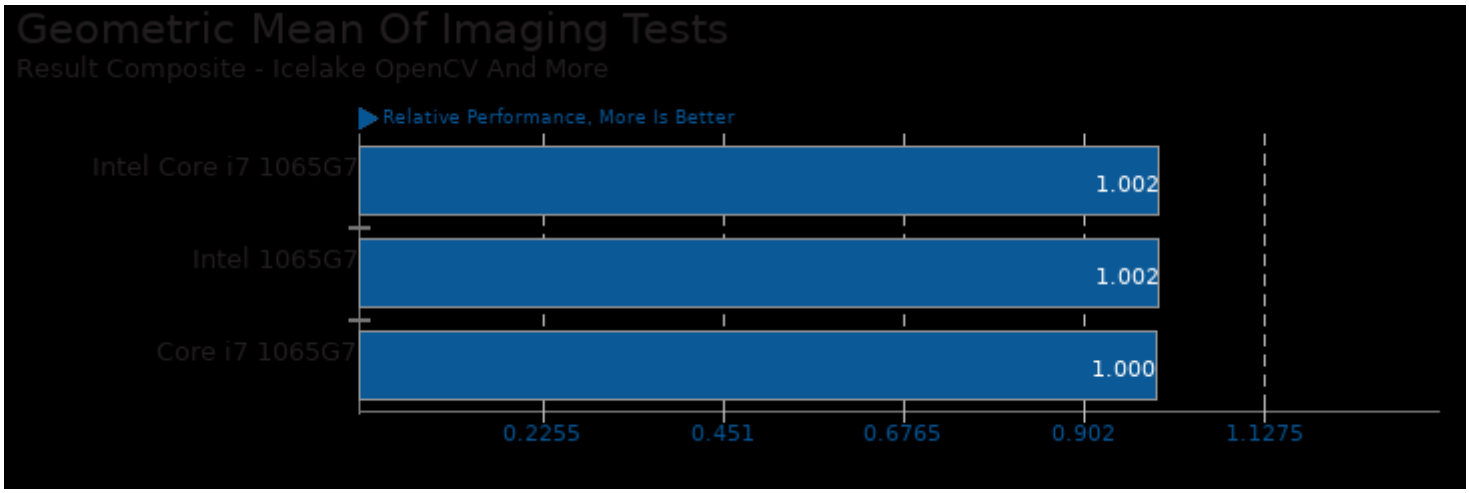

WebP Image Encode 1.1
Encode Settings: Default
Encode Time - Seconds, Fewer Is Better
Core i7 1065G7
SE +/- 0.003, N = 3
1.617
Intel Core i7 1065G7
SE +/- 0.002, N = 3
1.616
Intel 1065G7
SE +/- 0.001, N = 3
1.617
0.3638
0.7276
1.0914
1.4552
1.819
1. (CC) gcc options: -fvisibility=hidden -O2 -pthread -lm -ljpeg -lpng16 -ltiff
WebP Image Encode 1.1
Encode Settings: Quality 100
Encode Time - Seconds, Fewer Is Better
Core i7 1065G7
SE +/- 0.004, N = 3
2.490
Intel Core i7 1065G7
SE +/- 0.006, N = 3
2.496
Intel 1065G7
SE +/- 0.002, N = 3
2.494
0.5616
1.1232
1.6848
2.2464
2.808
1. (CC) gcc options: -fvisibility=hidden -O2 -pthread -lm -ljpeg -lpng16 -ltiff
WebP Image Encode 1.1
Encode Settings: Quality 100, Lossless
Encode Time - Seconds, Fewer Is Better
Core i7 1065G7
SE +/- 0.11, N = 3
18.87
Intel Core i7 1065G7
SE +/- 0.03, N = 3
18.65
Intel 1065G7
SE +/- 0.02, N = 3
18.64
5
10
15
20
25
1. (CC) gcc options: -fvisibility=hidden -O2 -pthread -lm -ljpeg -lpng16 -ltiff


WebP Image Encode 1.1
Encode Settings: Quality 100, Highest Compression
Encode Time - Seconds, Fewer Is Better
Core i7 1065G7
SE +/- 0.024, N = 3
7.472
Intel Core i7 1065G7
SE +/- 0.010, N = 3
7.481
Intel 1065G7
SE +/- 0.008, N = 3
7.471
2
4
6
8
10
1. (CC) gcc options: -fvisibility=hidden -O2 -pthread -lm -ljpeg -lpng16 -ltiff
WebP Image Encode 1.1
Encode Settings: Quality 100, Lossless, Highest Compression
Encode Time - Seconds, Fewer Is Better
Core i7 1065G7
SE +/- 0.42, N = 3
48.88
Intel Core i7 1065G7
SE +/- 0.37, N = 3
48.49
Intel 1065G7
SE +/- 0.38, N = 3
48.79
11
22
33
44
55
1. (CC) gcc options: -fvisibility=hidden -O2 -pthread -lm -ljpeg -lpng16 -ltiff

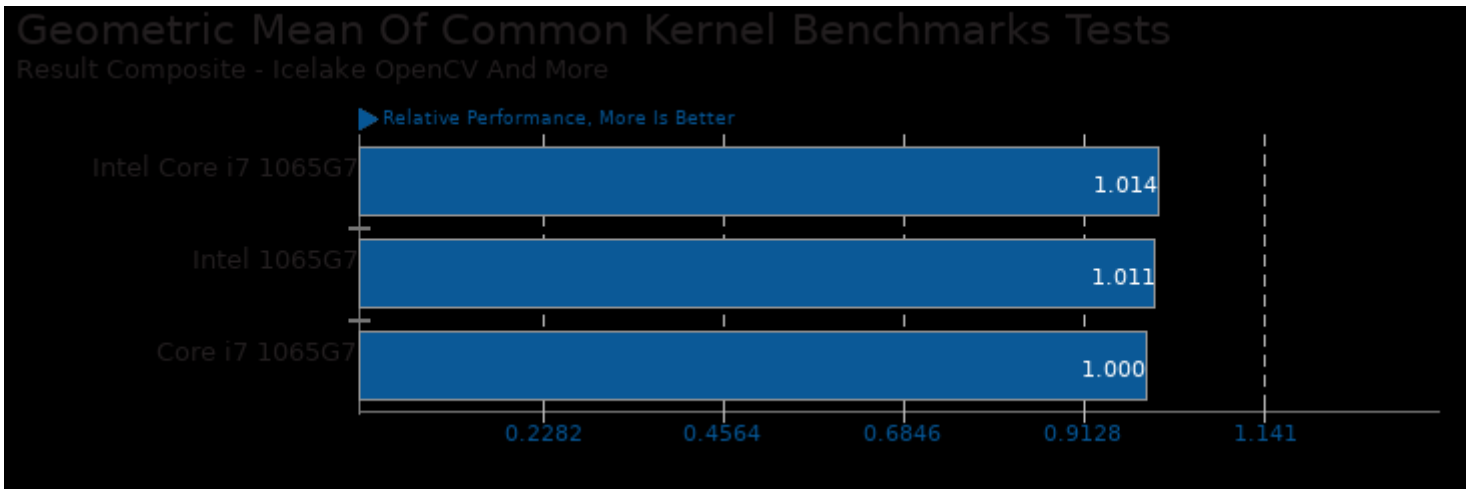
These geometric means are based upon test groupings / test suites for this result file.



Geometric mean based upon tests: pts/libraw, pts/webp, pts/dcraw and pts/espeak

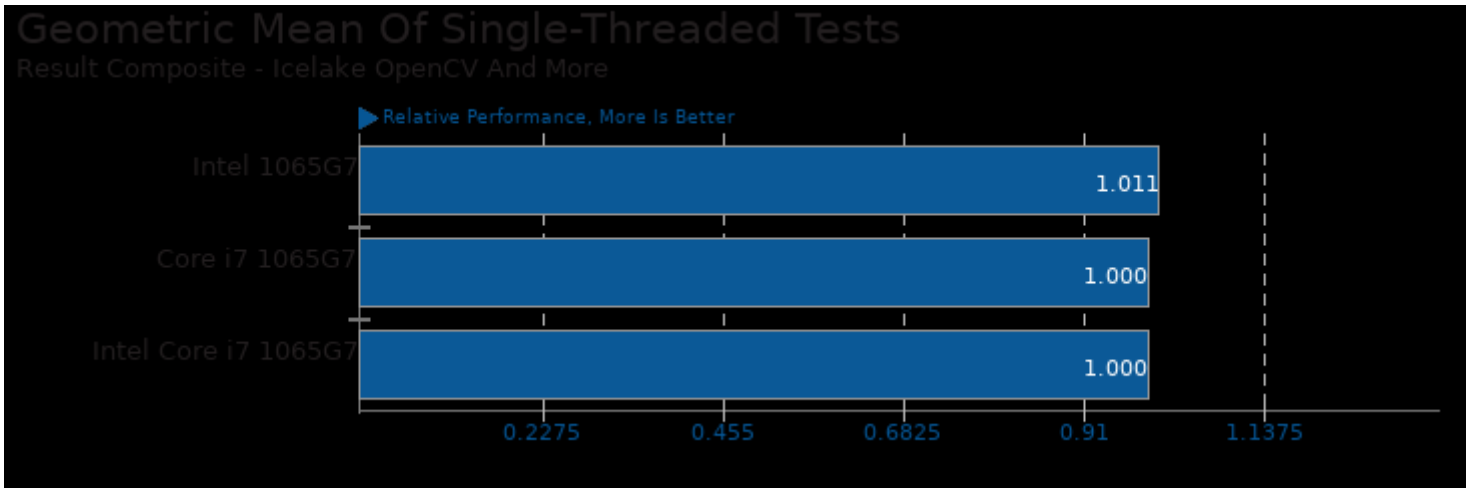


Geometric mean based upon tests: pts/libraw, pts/webp and pts/dcraw



Geometric mean based upon tests: pts/perf-bench and pts/osbench

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Geometric mean based upon tests: pts/dcraw and pts/espeak

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 19:29.