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broadwell march

Intel Core i7-5775C testing with a MSI Z97-G45 GAMING (MS-7821) v1.0 (V2.9 BIOS) and MSI Intel Iris Pro 6200 3GB on Ubuntu 18.10 via the Phoronix Test Suite.

Automated Executive Summary

1 had the most wins, coming in first place for 47% of the tests.

Based on the geometric mean of all complete results, the fastest (1) was 1x the speed of the slowest (1). 3 was 1x the speed of 4, 2 was 1x the speed of 3, 1 was 1x the speed of 2.

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

JPEG XL Decoding (CPU Threads: All) at 1.02x
libavif avifenc (Encoder Speed: 6, Lossless) at 1.016x
JPEG XL Decoding (CPU Threads: 1) at 1.014x
ET: Legacy (Resolution: 1920 x 1080) at 1.008x
libavif avifenc (Encoder Speed: 0) at 1.007x
JPEG XL (Input: JPEG - Encode Speed: 7) at 1.007x
libavif avifenc (Encoder Speed: 6) at 1.005x
libavif avifenc (Encoder Speed: 10) at 1.004x
JPEG XL (Input: JPEG - Encode Speed: 5) at 1.004x

libavif avifenc (Encoder Speed: 10, Lossless) at 1.004x.

Test Systems:

1

2

3

4

Processor: Intel Core i7-5775C @ 3.70GHz (4 Cores / 8 Threads), Motherboard: MSI Z97-G45 GAMING (MS-7821) v1.0 (V2.9 BIOS), Chipset: Intel Broadwell-U DMI, Memory: 16GB, Disk: 120GB CT120BX100SSD1, Graphics: MSI Intel Iris Pro 6200 3GB (1150MHz), Audio: Intel Broadwell-U Audio, Monitor: DELL S2409W, Network: Qualcomm Atheros Killer E220x

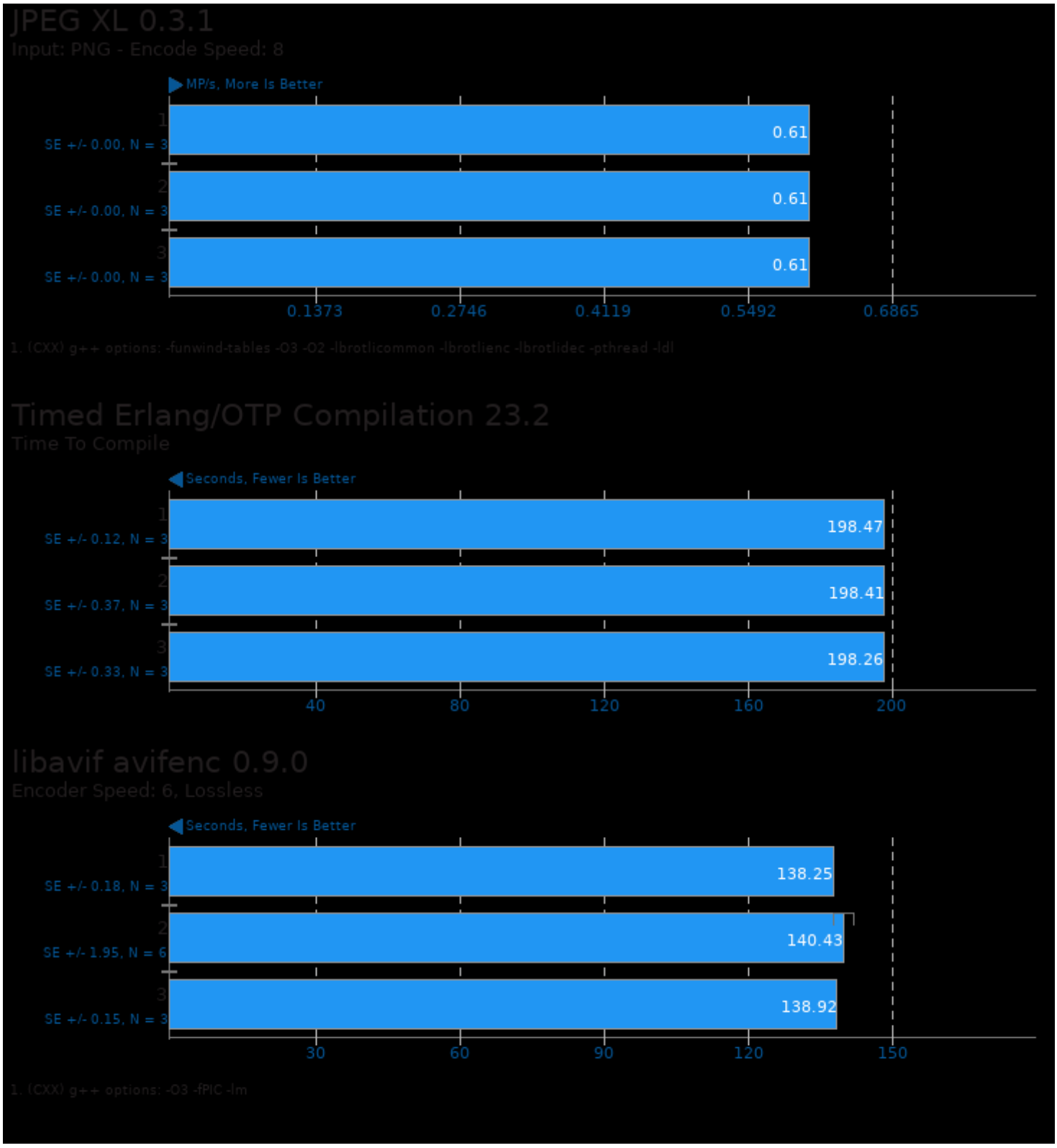
OS: Ubuntu 18.10, Kernel: 5.0.0-999-generic (x86_64) 20190223, Desktop: GNOME Shell 3.30.2, Display Server: X Server 1.20.1, OpenGL: 4.5 Mesa 19.2.0-devel (git-2631fd3 2019-07-24 cosmic-oibaf-ppa), Vulkan: 1.1.102, Compiler: GCC 8.3.0, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --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++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --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 --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: intel_pstate powersave - CPU Microcode: 0x20 - Thermald 1.7
Security Notes: l1tf: Mitigation of PTE Inversion; VMX: conditional cache flushes SMT vulnerable + meltdown: Mitigation of PTI + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of __user pointer sanitization + spectre_v2: Mitigation of Full generic retpoline IBPB: conditional IBRS_FW STIBP: conditional RSB filling

	1	2	3	4
JPEG XL - PNG - 8 (MP/s)	0.61	0.61	0.61	
Standard Deviation	0%	0%	0%	
Timed Erlang/OTP Compilation - Time To Compile (sec)	**198.468**	198.406	**198.264**	
Normalized	99.9%	99.93%	100%	
Standard Deviation	0.1%	0.3%	0.3%	
libavif avifenc - 6, Lossless (sec)	**138.249**	**140.427**	138.918	
Normalized	100%	98.45%	99.52%	
Standard Deviation	0.2%	3.4%	0.2%	
libavif avifenc - 0 (sec)	150.077	**150.473**	**149.485**	
Normalized	99.61%	99.34%	100%	
Standard Deviation	0.4%	1.5%	0.3%	

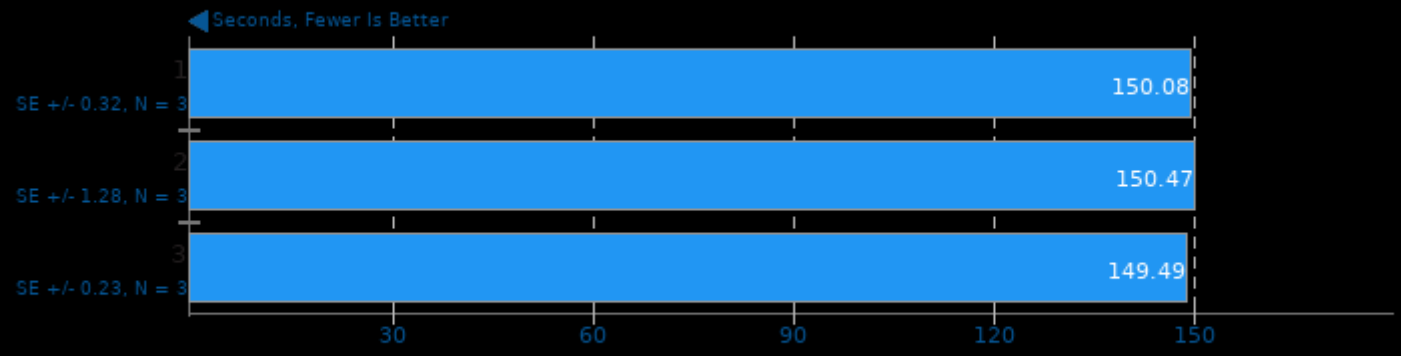
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toyBrot Fractal Generator - OpenMP (ms)	146099	**146098**	**146282**	146159
Normalized	100%	100%	99.87%	99.96%
Standard Deviation	0%	0%	0%	0.1%
toyBrot Fractal Generator - C++ Tasks (ms)	145579	145572	**145590**	**145541**
Normalized	99.97%	99.98%	99.97%	100%
Standard Deviation	0%	0.1%	0%	0%
toyBrot Fractal Generator - C++ Threads (ms)	**145517**	145544	145574	**145580**
Normalized	100%	99.98%	99.96%	99.96%
Standard Deviation	0%	0%	0%	0.1%
JPEG XL - PNG - 7 (MP/s)	**6.67**	6.66	**6.65**	**6.67**
Normalized	100%	99.85%	99.7%	100%
Standard Deviation	0%	0%	0.6%	0.1%
JPEG XL Decoding - 1 (MP/s)	**32.29**	**31.84**	32.24	
Normalized	100%	98.61%	99.85%	
Standard Deviation	0.1%	2.3%	0.1%	
JPEG XL Decoding - All (MP/s)	103.08	**103.52**	**101.49**	
Normalized	99.57%	100%	98.04%	
Standard Deviation	1.6%	0.1%	3.3%	
libavif avifenc - 2 (sec)	**76.169**	75.986	**75.954**	
Normalized	99.72%	99.96%	100%	
Standard Deviation	0.4%	0.1%	0.1%	
ET: Legacy - 1920 x 1080 (FPS)	226.3	227.6	**226.2**	**227.9**
Normalized	99.3%	99.87%	99.25%	100%
Standard Deviation	1.4%	1.3%	3.2%	0.7%
JPEG XL - PNG - 5 (MP/s)	**34.68**	**34.57**	34.63	34.63
Normalized	100%	99.68%	99.86%	99.86%
Standard Deviation	0.2%	0.1%	0.1%	0.1%
JPEG XL - JPEG - 5 (MP/s)	**42.97**	**42.81**	42.93	
Normalized	100%	99.63%	99.91%	
Standard Deviation	0.4%	0.1%	0.5%	
libavif avifenc - 6 (sec)	**25.582**	**25.452**	25.480	
Normalized	99.49%	100%	99.89%	
Standard Deviation	0.4%	0.2%	0.3%	
JPEG XL - JPEG - 7 (MP/s)	**43.10**	**42.82**	42.97	
Normalized	100%	99.35%	99.7%	
Standard Deviation	0.6%	0.2%	0.6%	
JPEG XL - JPEG - 8 (MP/s)	**20.47**	**20.51**	20.48	
Normalized	99.8%	100%	99.85%	
Standard Deviation	0.2%	0%	0%	
libavif avifenc - 10, Lossless (sec)	**9.130**	9.139	**9.164**	
Normalized	100%	99.9%	99.63%	
Standard Deviation	0.5%	0.4%	0.2%	
libavif avifenc - 10 (sec)	5.231	**5.244**	**5.224**	
Normalized	99.87%	99.62%	100%	
Standard Deviation	0.5%	0.3%	0.4%	


JPEG XL 0.3.1
Input: PNG - Encode Speed: 8
MP/s, More Is Better
1
SE +/- 0.00, N = 3
0.61
2
SE +/- 0.00, N = 3
0.61
3
SE +/- 0.00, N = 3
0.61
0.1373
0.2746
0.4119
0.5492
0.6865
1. (CXX) g++ options: -funwind-tables -O3 -O2 -lbrotlicommon -lbrotlienc -lbrotlidec -pthread -ldl
Timed Erlang/OTP Compilation 23.2
Time To Compile
Seconds, Fewer Is Better
1
SE +/- 0.12, N = 3
198.47
2
SE +/- 0.37, N = 3
198.41
3
SE +/- 0.33, N = 3
198.26
40
80
120
160
200
libavif avifenc 0.9.0
Encoder Speed: 6, Lossless
Seconds, Fewer Is Better
1
SE +/- 0.18, N = 3
138.25
2
SE +/- 1.95, N = 6
140.43
3
SE +/- 0.15, N = 3
138.92
30
60
90
120
150
1. (CXX) g++ options: -O3 -fPIC -lm

libavif avifenc 0.9.0

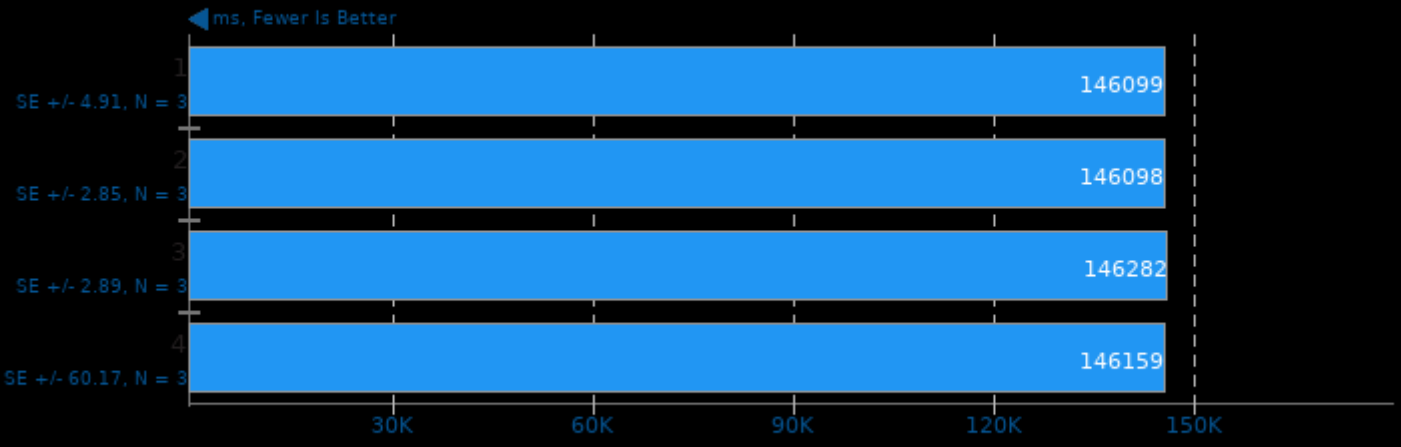
Encoder Speed: 0



1. (CXX) g++ options: -O3 -fPIC -lm

toyBrot Fractal Generator 2020-11-18

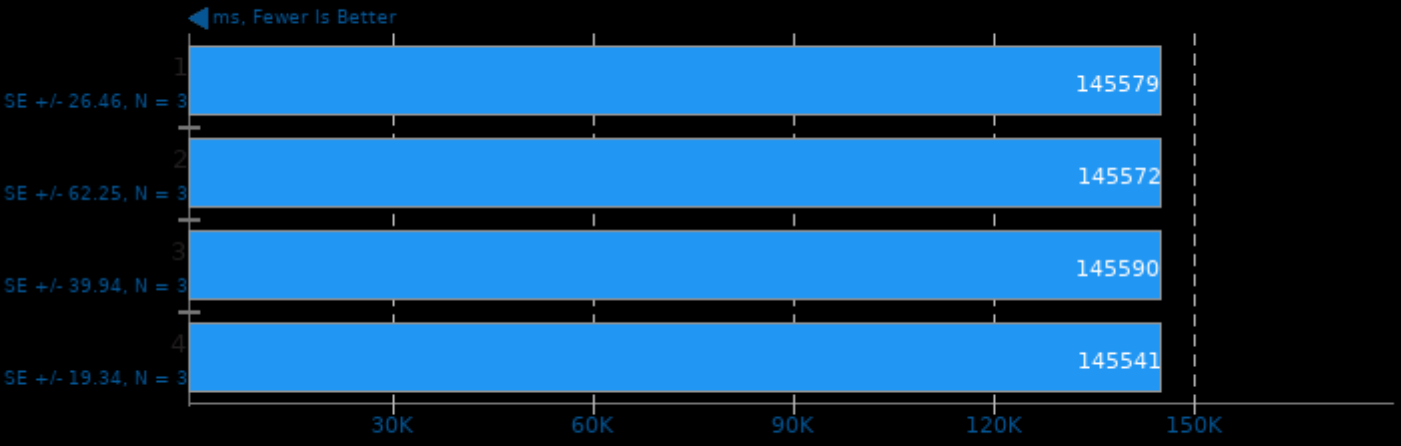
Implementation: OpenMP



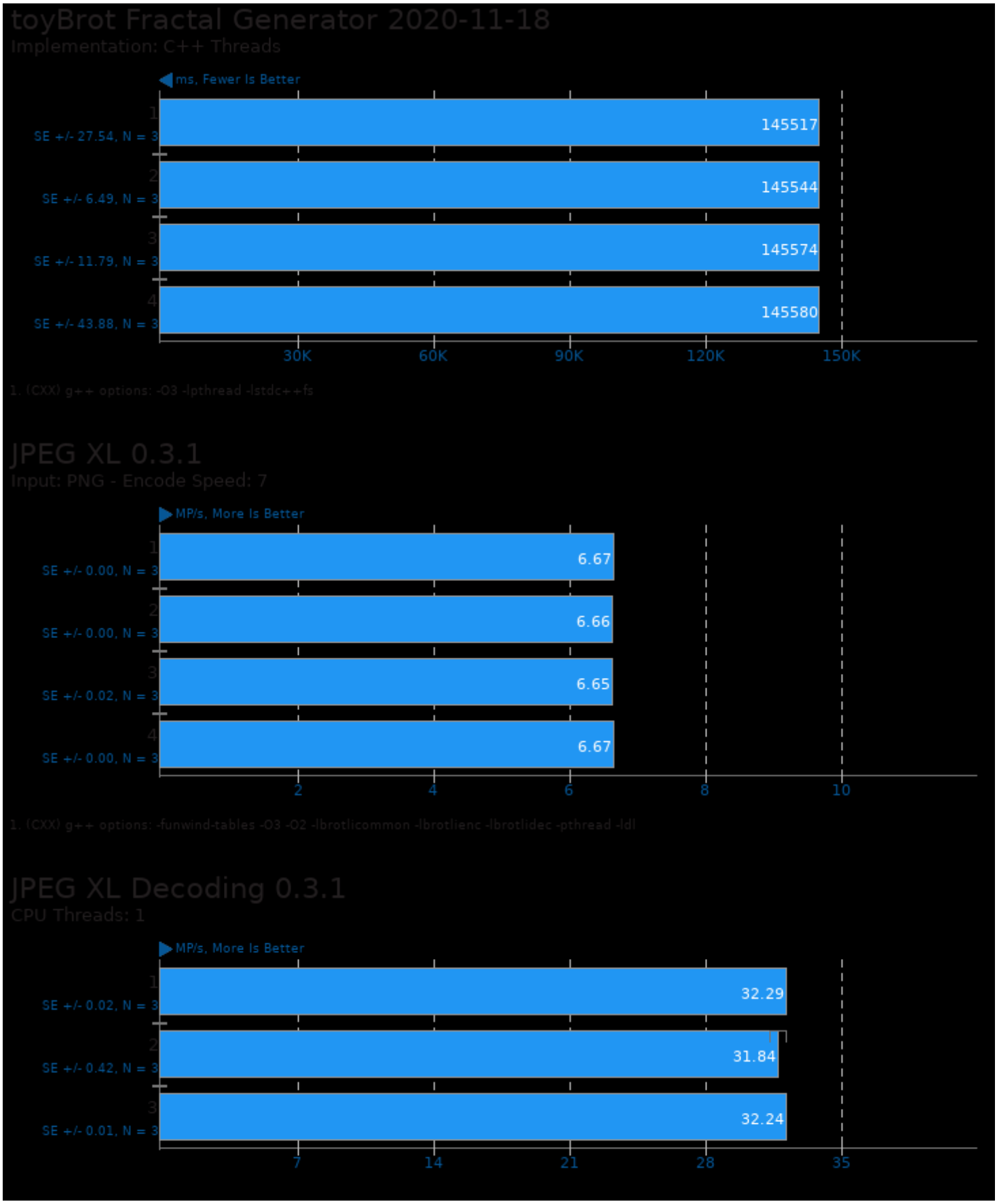
1. (CXX) g++ options: -O3 -lpthread -lstdc++fs

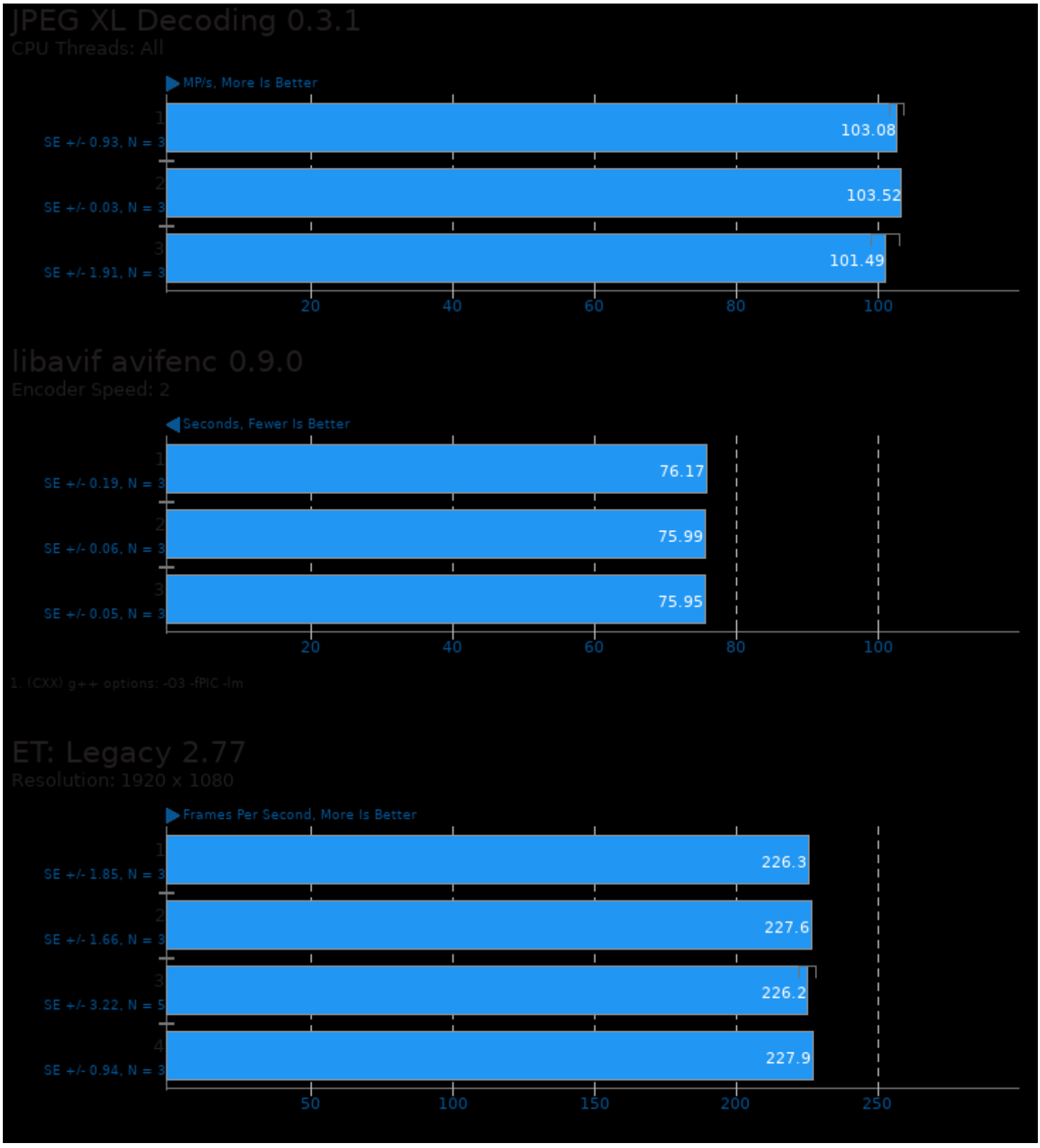
toyBrot Fractal Generator 2020-11-18

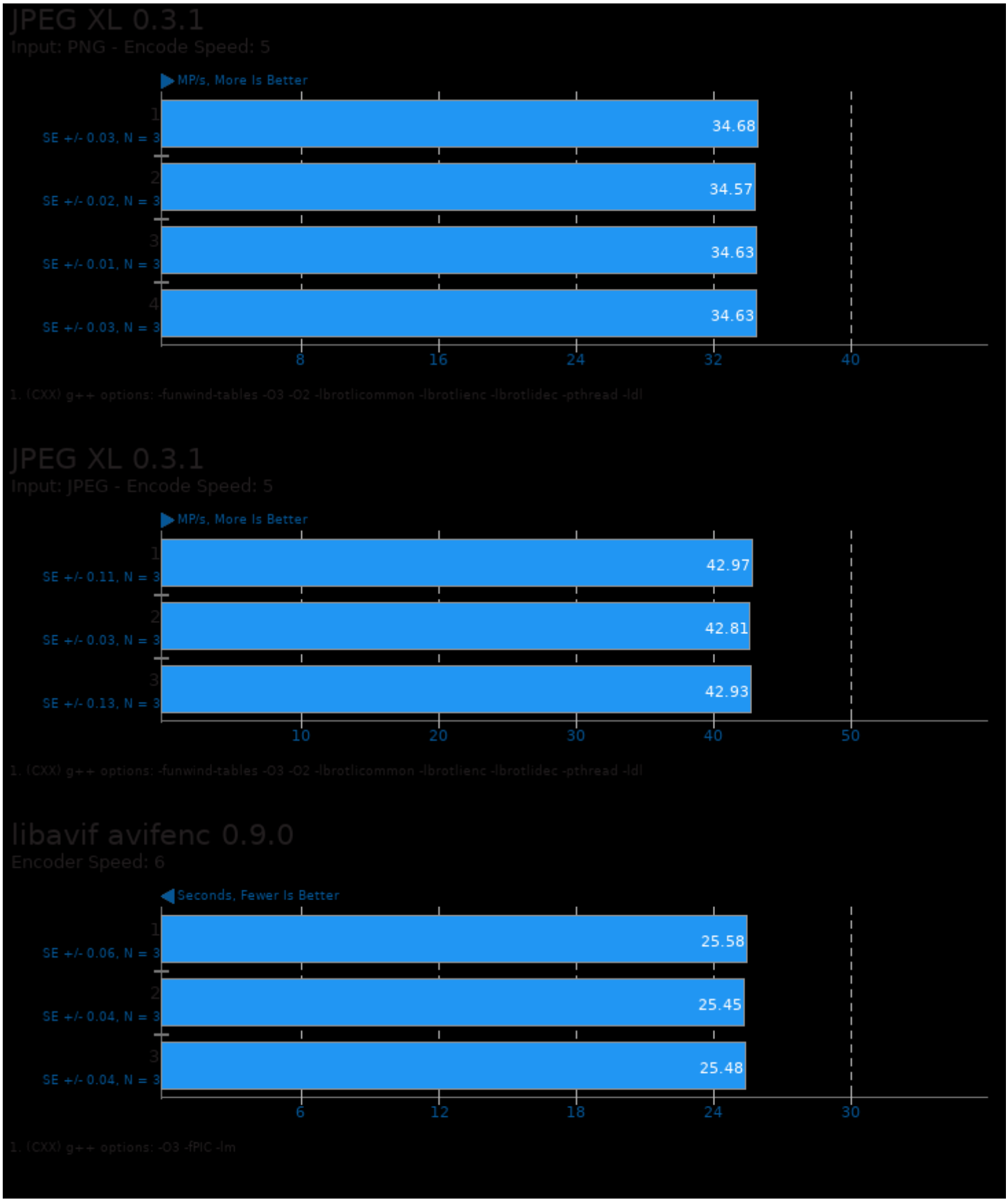
Implementation: C++ Tasks

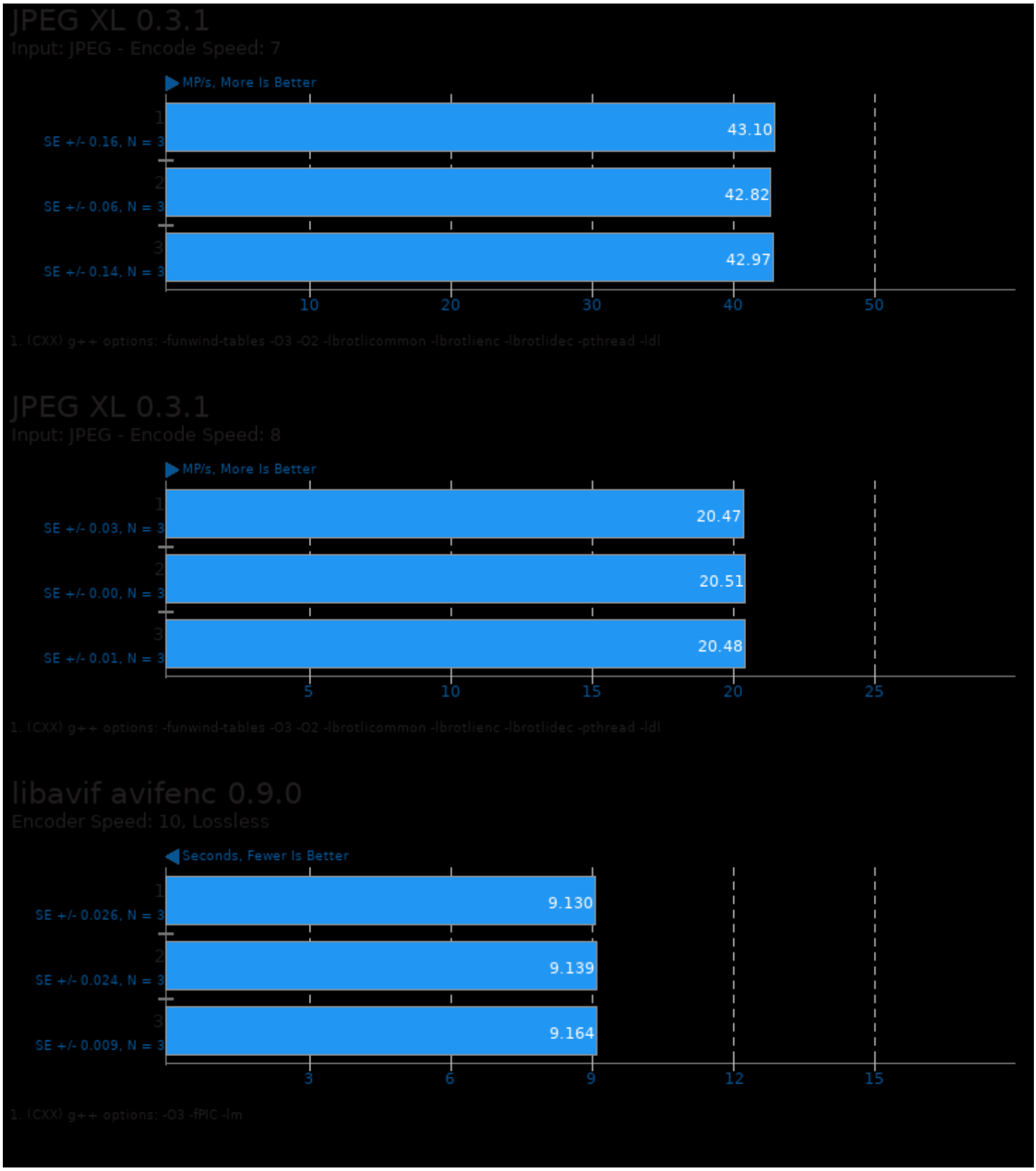


1. (CXX) g++ options: -O3 -lpthread -lstdc++fs

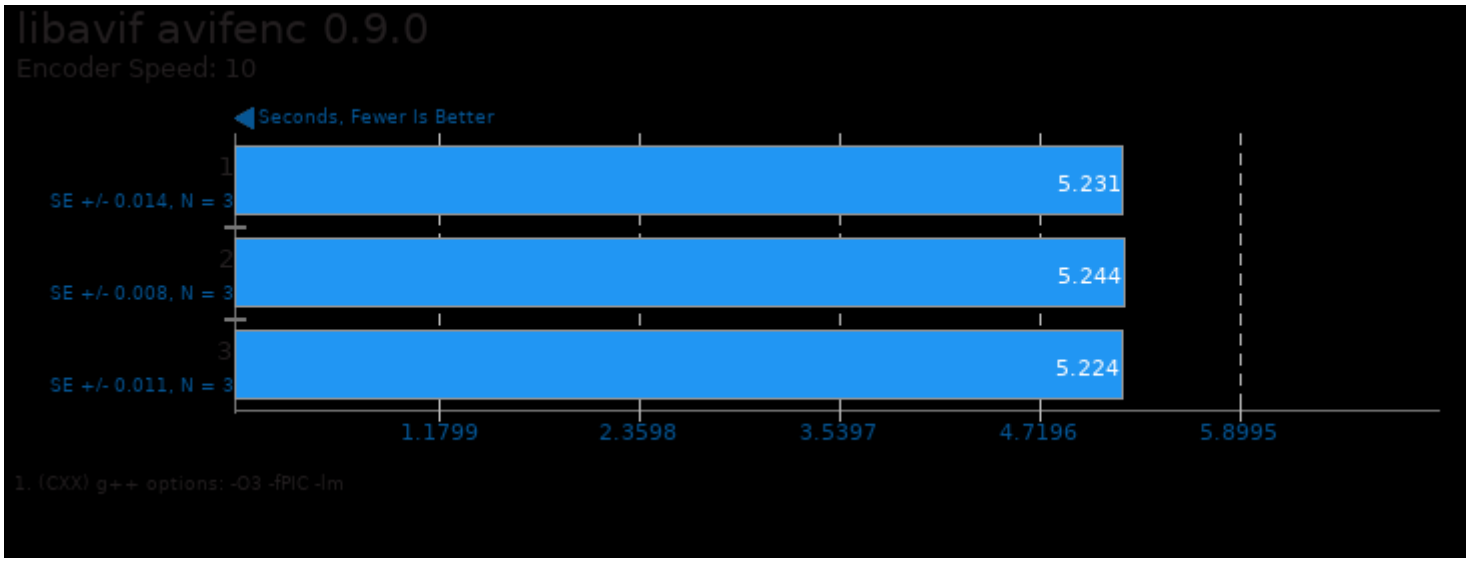

toyBrot Fractal Generator 2020-11-18
Implementation: C++ Threads
ms, Fewer Is Better
1
SE +/- 27.54, N = 3
145517
2
SE +/- 6.49, N = 3
145544
3
SE +/- 11.79, N = 3
145574
4
SE +/- 43.88, N = 3
145580
30K
60K
90K
120K
150K
1. (CXX) g++ options: -O3 -lpthread -lstdc++fs
JPEG XL 0.3.1
Input: PNG - Encode Speed: 7
MP/s, More Is Better
1
SE +/- 0.00, N = 3
6.67
2
SE +/- 0.00, N = 3
6.66
3
SE +/- 0.02, N = 3
6.65
4
SE +/- 0.00, N = 3
6.67
2
4
6
8
10
1. (CXX) g++ options: -funwind-tables -O3 -O2 -lbrotlicommon -lbrotlienc -lbrotlidec -pthread -ldl
JPEG XL Decoding 0.3.1
CPU Threads: 1
MP/s, More Is Better
1
SE +/- 0.02, N = 3
32.29
2
SE +/- 0.42, N = 3
31.84
3
SE +/- 0.01, N = 3
32.24
7
14
21
28
35


JPEG XL Decoding 0.3.1
CPU Threads: All
MP/s, More Is Better
1
SE +/- 0.93, N = 3
103.08
2
SE +/- 0.03, N = 3
103.52
3
SE +/- 1.91, N = 3
101.49
20
40
60
80
100
libavif avifenc 0.9.0
Encoder Speed: 2
Seconds, Fewer Is Better
1
SE +/- 0.19, N = 3
76.17
2
SE +/- 0.06, N = 3
75.99
3
SE +/- 0.05, N = 3
75.95
20
40
60
80
100
1. (CXX) g++ options: -O3 -fPIC -lm
ET: Legacy 2.77
Resolution: 1920 x 1080
Frames Per Second, More Is Better
1
SE +/- 1.85, N = 3
226.3
2
SE +/- 1.66, N = 3
227.6
3
SE +/- 3.22, N = 5
226.2
4
SE +/- 0.94, N = 3
227.9
50
100
150
200
250

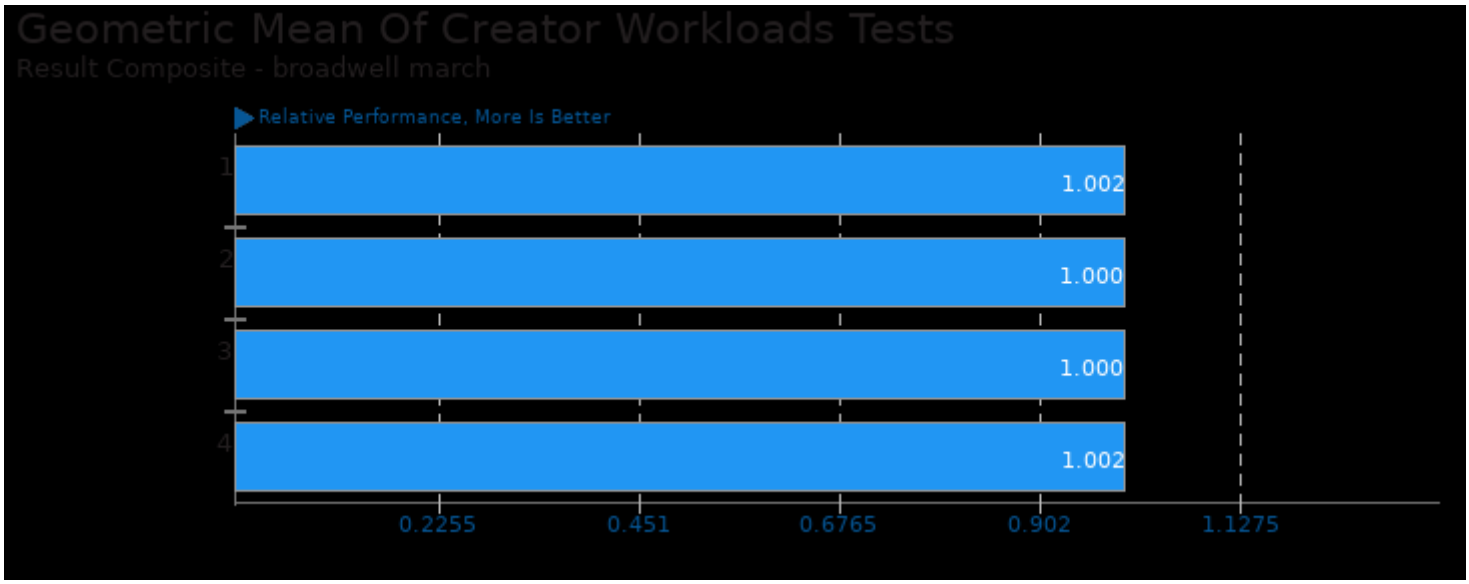

JPEG XL 0.3.1
Input: PNG - Encode Speed: 5
MP/s, More Is Better
1
SE +/- 0.03, N = 3
34.68
2
SE +/- 0.02, N = 3
34.57
3
SE +/- 0.01, N = 3
34.63
4
SE +/- 0.03, N = 3
34.63
8
16
24
32
40
1. (CXX) g++ options: -funwind-tables -O3 -O2 -lbrotlicommon -lbrotlienc -lbrotlidec -pthread -ldl
JPEG XL 0.3.1
Input: JPEG - Encode Speed: 5
MP/s, More Is Better
1
SE +/- 0.11, N = 3
42.97
2
SE +/- 0.03, N = 3
42.81
3
SE +/- 0.13, N = 3
42.93
10
20
30
40
50
1. (CXX) g++ options: -funwind-tables -O3 -O2 -lbrotlicommon -lbrotlienc -lbrotlidec -pthread -ldl
libavif avifenc 0.9.0
Encoder Speed: 6
Seconds, Fewer Is Better
1
SE +/- 0.06, N = 3
25.58
2
SE +/- 0.04, N = 3
25.45
3
SE +/- 0.04, N = 3
25.48
6
12
18
24
30
1. (CXX) g++ options: -O3 -fPIC -lm


JPEG XL 0.3.1
Input: JPEG - Encode Speed: 7
MP/s, More Is Better
1
SE +/- 0.16, N = 3
43.10
2
SE +/- 0.06, N = 3
42.82
3
SE +/- 0.14, N = 3
42.97
10
20
30
40
50
1. (CXX) g++ options: -funwind-tables -O3 -O2 -lbrotlicommon -lbrotlienc -lbrotlidec -pthread -ldl
JPEG XL 0.3.1
Input: JPEG - Encode Speed: 8
MP/s, More Is Better
1
SE +/- 0.03, N = 3
20.47
2
SE +/- 0.00, N = 3
20.51
3
SE +/- 0.01, N = 3
20.48
5
10
15
20
25
1. (CXX) g++ options: -funwind-tables -O3 -O2 -lbrotlicommon -lbrotlienc -lbrotlidec -pthread -ldl
libavif avifenc 0.9.0
Encoder Speed: 10, Lossless
Seconds, Fewer Is Better
1
SE +/- 0.026, N = 3
9.130
2
SE +/- 0.024, N = 3
9.139
3
SE +/- 0.009, N = 3
9.164
3
6
9
12
15
1. (CXX) g++ options: -O3 -fPIC -lm

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



Geometric mean based upon tests: pts/avifenc, pts/jpegxl and pts/jpegxl-decode



Geometric mean based upon tests: pts/jpegxl, pts/jpegxl-decode and pts/avifenc

This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 10:44.