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8100 March

Intel Core i3-8100 testing with a ASRock Z370M-ITX/ac (P4.10 BIOS) and Intel 8th Gen Core Gaussian Mixture Model 3GB on Ubuntu 20.04 via the Phoronix Test Suite.

Automated Executive Summary

3 had the most wins, coming in first place for 36% of the tests.

Based on the geometric mean of all complete results, the fastest (3) was 1.001x the speed of the slowest (2). 3 was 1x the speed of 4, 1 was 1x the speed of 3, 2 was 1x the speed of 1.

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

JPEG XL (Input: JPEG - Encode Speed: 5) at 1.017x
ET: Legacy (Resolution: 1920 x 1080) at 1.014x
JPEG XL (Input: JPEG - Encode Speed: 7) at 1.01x
JPEG XL (Input: PNG - Encode Speed: 5) at 1.01x
dav1d (Video Input: Summer Nature 1080p) at 1.01x
dav1d (Video Input: Chimera 1080p) at 1.008x
dav1d (Video Input: Summer Nature 4K) at 1.005x
JPEG XL (Input: PNG - Encode Speed: 7) at 1.005x
libavif avifenc (Encoder Speed: 10, Lossless) at 1.003x

libavif avifenc (Encoder Speed: 6, Lossless) at 1.002x.

Test Systems:

1

2

3

4

Processor: Intel Core i3-8100 @ 3.60GHz (4 Cores), Motherboard: ASRock Z370M-ITX/ac (P4.10 BIOS), Chipset: Intel 8th Gen Core 4-core Desktop, Memory: 8GB, Disk: 60GB DREVO X1 SSD, Graphics: Intel 8th Gen Core Gaussian Mixture Model 3GB (1100MHz), Audio: Realtek ALC892, Monitor: DELL S2409W, Network: Intel I219-V + Intel I211 + Intel Dual Band-AC 3168NGW

OS: Ubuntu 20.04, Kernel: 5.9.0-050900rc1daily20200819-generic (x86_64) 20200818, Desktop: GNOME Shell 3.36.4, Display Server: X Server 1.20.9, OpenGL: 4.6 Mesa 20.0.8, Vulkan: 1.2.131, 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 powersave - CPU Microcode: 0xde - Thermald 1.9.1
Security Notes: itlb_multihit: KVM: Mitigation of VMX disabled + l1tf: Mitigation of PTE Inversion; VMX: conditional cache flushes SMT disabled + mds: Mitigation of Clear buffers; SMT disabled + 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: disabled RSB filling + srbds: Mitigation of Microcode + tsx_async_abort: Not affected

	1	2	3	4
JPEG XL - PNG - 8 (MP/s)	0.62	0.62	0.62	0.62
Standard Deviation	0.9%	0%	0%	0%
dav1d - C.1.1.b (FPS)	69.64	**69.59**	**69.70**	
Normalized	99.91%	99.84%	100%	
Standard Deviation	0.1%	0.1%	0%	
toyBrot Fractal Generator - C++ Tasks (ms)	**182681**	**182725**	182705	182719
Normalized	100%	99.98%	99.99%	99.98%
Standard Deviation	0%	0%	0%	0%

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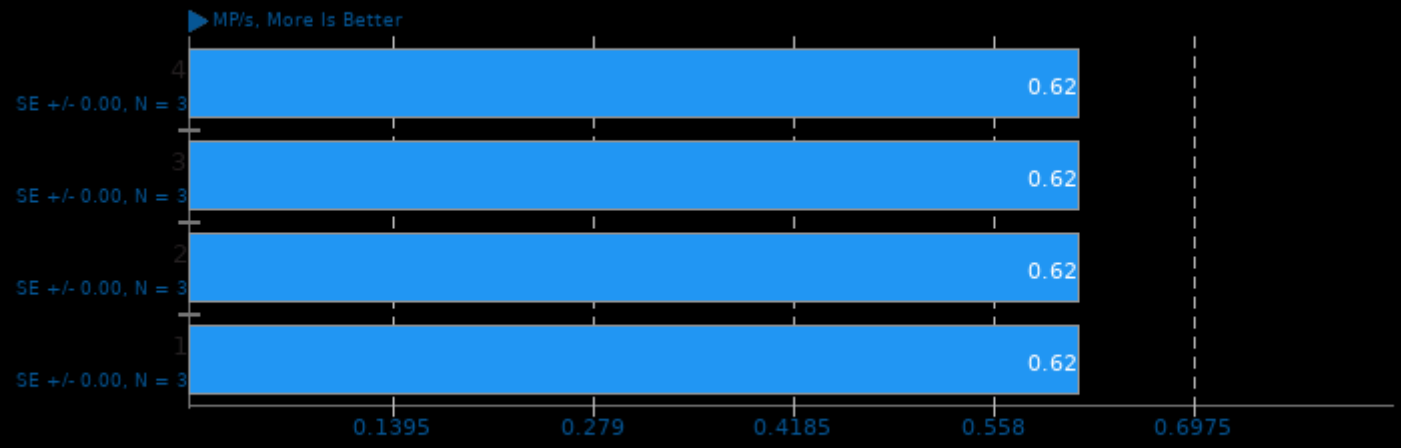
toyBrot Fractal Generator - C++ Threads (ms)	182407	182333	182320	182266
Normalized	99.92%	99.96%	99.97%	100%
Standard Deviation	0%	0.1%	0%	0.1%
toyBrot Fractal Generator - OpenMP (ms)	181925	181755	181863	181775
Normalized	99.91%	100%	99.94%	99.99%
Standard Deviation	0%	0.1%	0%	0.1%
libavif avifenc - 0 (sec)	156.975	157.175	156.893	
Normalized	99.95%	99.82%	100%	
Standard Deviation	0.2%	0.2%	0.1%	
libavif avifenc - 6, Lossless (sec)	156.413	156.101	156.048	
Normalized	99.77%	99.97%	100%	
Standard Deviation	1.2%	0.9%	0.7%	
JPEG XL - PNG - 7 (MP/s)	6.56	6.58	6.59	6.59
Normalized	99.54%	99.85%	100%	100%
Standard Deviation	0.3%	0.2%	0.2%	0.3%
JPEG XL Decoding - 1 (MP/s)	33.35	33.37	33.35	33.37
Normalized	99.94%	100%	99.94%	100%
Standard Deviation	0%	0%	0%	0.1%
libavif avifenc - 2 (sec)	79.669	79.583	79.652	
Normalized	99.89%	100%	99.91%	
Standard Deviation	0.1%	0.2%	0.2%	
JPEG XL Decoding - All (MP/s)	106.45	106.38	106.40	106.41
Normalized	100%	99.93%	99.95%	99.96%
Standard Deviation	0%	0%	0.1%	0%
dav1d - Summer Nature 4K (FPS)	70.66	70.42	70.32	70.63
Normalized	100%	99.66%	99.52%	99.96%
Standard Deviation	0.1%	0.2%	0.2%	0.1%
dav1d - Chimera 1080p (FPS)	258.87	256.99	256.89	257.84
Normalized	100%	99.27%	99.24%	99.6%
Standard Deviation	0.6%	0.1%	0.3%	0.2%
ET: Legacy - 1920 x 1080 (FPS)	156.3	158.5	158.0	
Normalized	98.61%	100%	99.68%	
Standard Deviation	0.7%	0.5%	1.4%	
JPEG XL - PNG - 5 (MP/s)	36.16	36.17	36.47	36.11
Normalized	99.15%	99.18%	100%	99.01%
Standard Deviation	0.4%	0.4%	0.3%	0.3%
JPEG XL - JPEG - 5 (MP/s)	42.91	42.89	43.18	42.47
Normalized	99.37%	99.33%	100%	98.36%
Standard Deviation	0.6%	1.7%	0.2%	0.5%
libavif avifenc - 6 (sec)	27.147	27.148	27.110	
Normalized	99.86%	99.86%	100%	
Standard Deviation	0.2%	0.3%	0.2%	
JPEG XL - JPEG - 7 (MP/s)	42.76	42.85	42.55	42.99
Normalized	99.46%	99.67%	98.98%	100%
Standard Deviation	0.5%	1.1%	0.3%	0.7%
dav1d - S.N.1 (FPS)	237.61	238.45	239.20	239.95
Normalized	99.02%	99.37%	99.69%	100%
Standard Deviation	1.6%	0.4%	0.5%	0.4%
JPEG XL - JPEG - 8 (MP/s)	20.50	20.48	20.47	20.50
Normalized	100%	99.9%	99.85%	100%
Standard Deviation	0.2%	0.5%	0.2%	0.5%
libavif avifenc - 10, Lossless (sec)	9.938	9.968	9.955	
Normalized	100%	99.7%	99.83%	

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Standard Deviation	0.4%	0.8%	0.6%
libavif avifenc - 10 (sec)	5.619	**5.628**	**5.615**
Normalized	99.93%	99.77%	100%
Standard Deviation	0.1%	0.1%	0.1%

JPEG XL 0.3.1

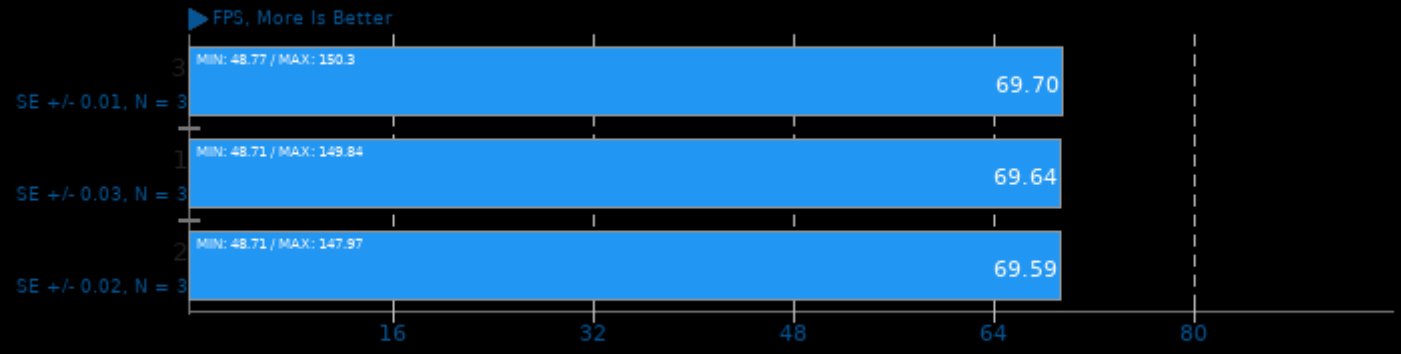
Input: PNG - Encode Speed: 8



1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie -pthread -ldl

dav1d 0.8.2

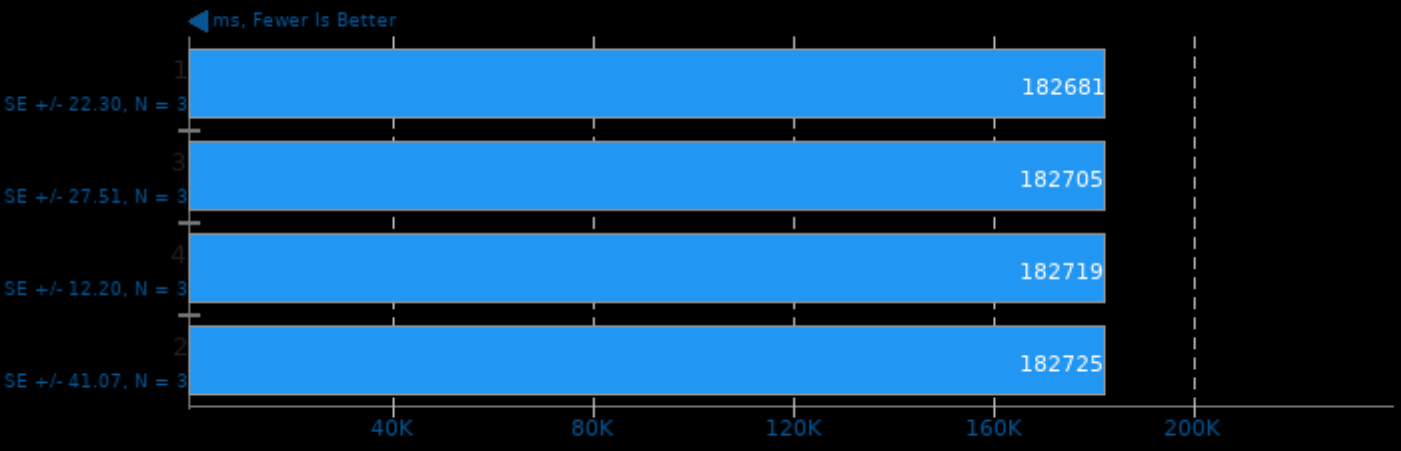
Video Input: Chimera 1080p 10-bit



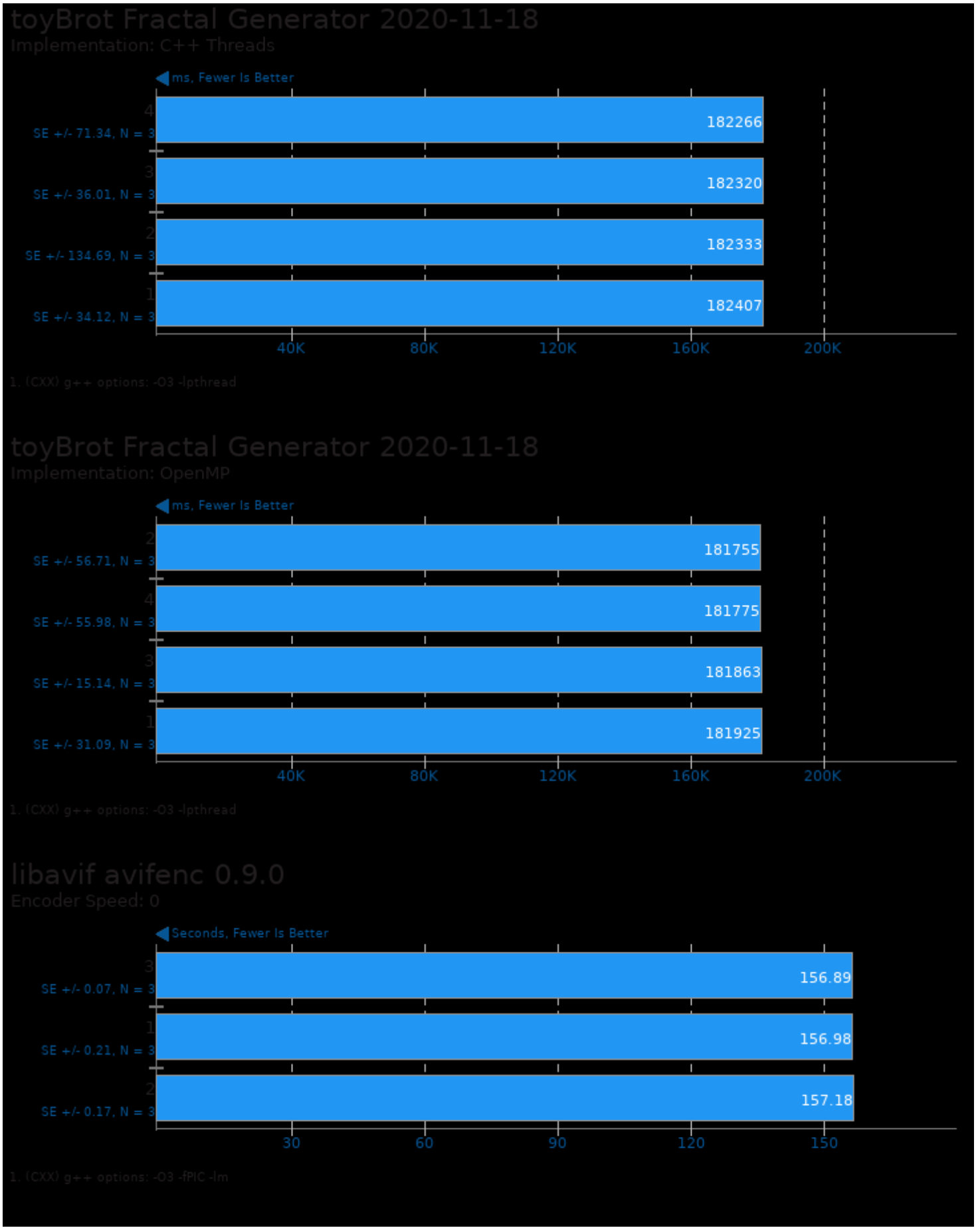
1. (CC) gcc options: -pthread -lm

toyBrot Fractal Generator 2020-11-18

Implementation: C++ Tasks

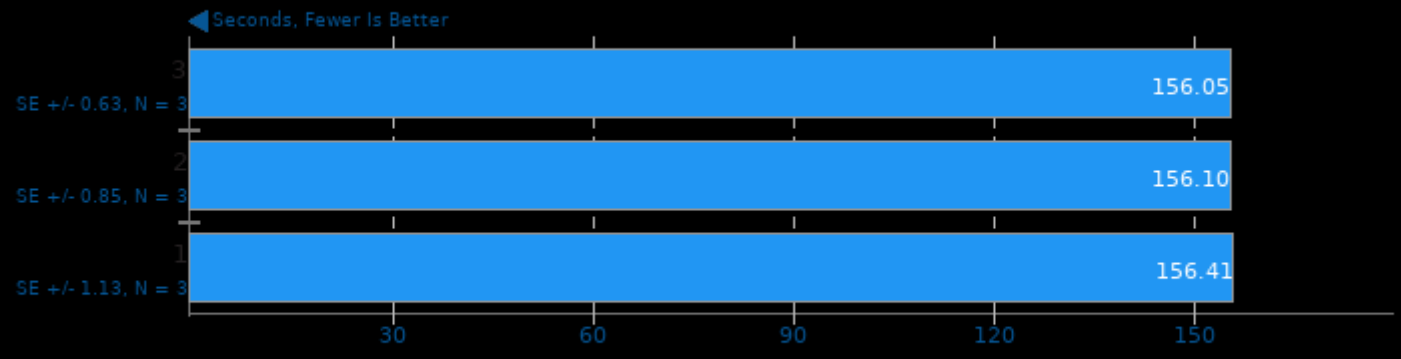


1. (CXX) g++ options: -O3 -lpthread


toyBrot Fractal Generator 2020-11-18
Implementation: C++ Threads
ms, Fewer Is Better
4
SE +/- 71.34, N = 3
182266
3
SE +/- 36.01, N = 3
182320
2
SE +/- 134.69, N = 3
182333
1
SE +/- 34.12, N = 3
182407
40K
80K
120K
160K
200K
1. (CXX) g++ options: -O3 -lpthread
toyBrot Fractal Generator 2020-11-18
Implementation: OpenMP
ms, Fewer Is Better
2
SE +/- 56.71, N = 3
181755
4
SE +/- 55.98, N = 3
181775
3
SE +/- 15.14, N = 3
181863
1
SE +/- 31.09, N = 3
181925
40K
80K
120K
160K
200K
1. (CXX) g++ options: -O3 -lpthread
libavif avifenc 0.9.0
Encoder Speed: 0
Seconds, Fewer Is Better
3
SE +/- 0.07, N = 3
156.89
1
SE +/- 0.21, N = 3
156.98
2
SE +/- 0.17, N = 3
157.18
30
60
90
120
150
1. (CXX) g++ options: -O3 -fPIC -lm

libavif avifenc 0.9.0

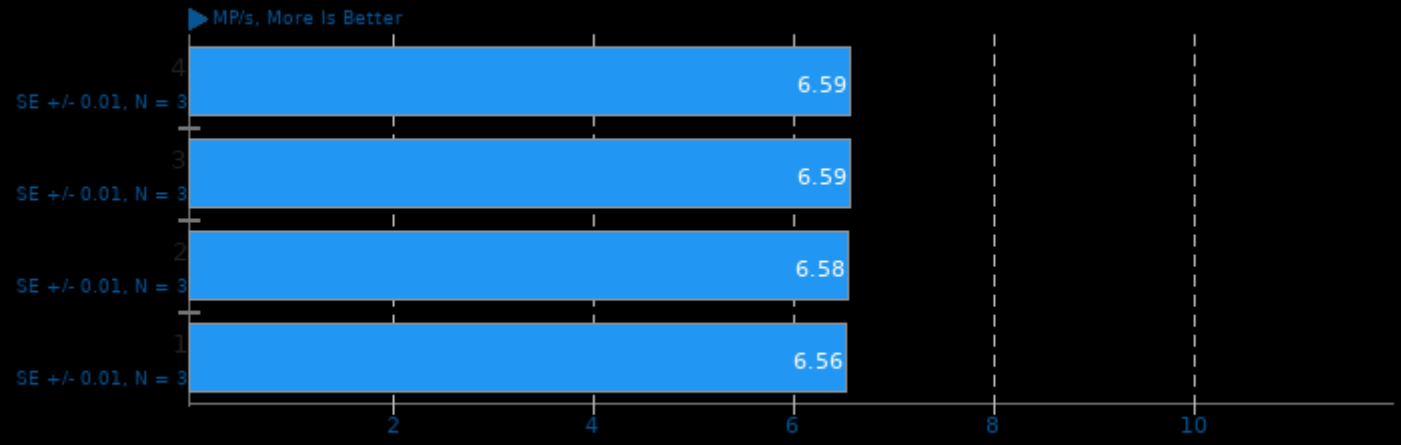
Encoder Speed: 6, Lossless



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

JPEG XL 0.3.1

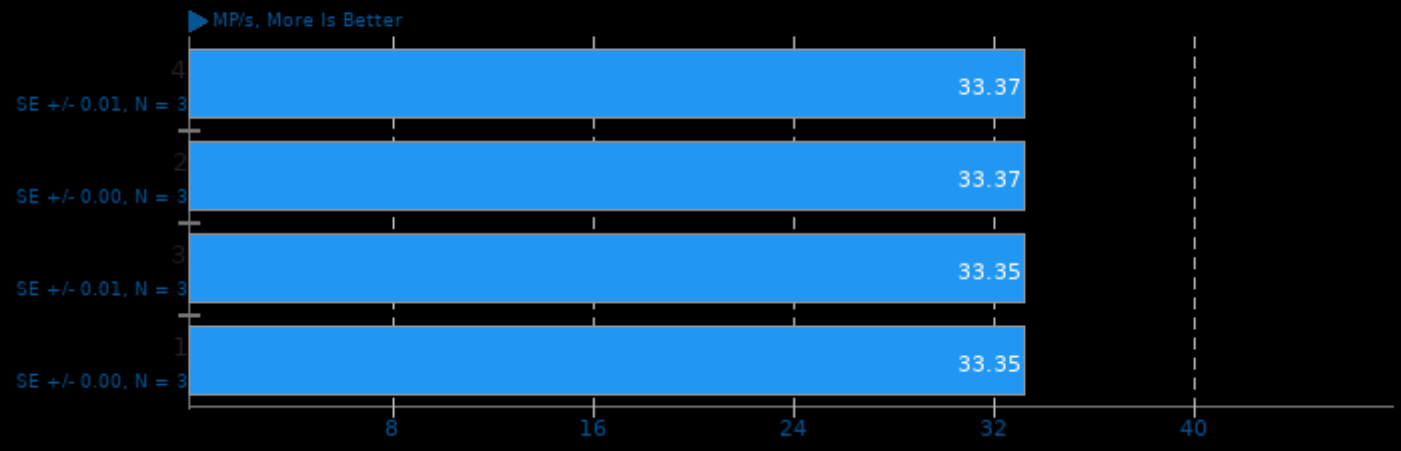
Input: PNG - Encode Speed: 7



1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie -pthread -ldl

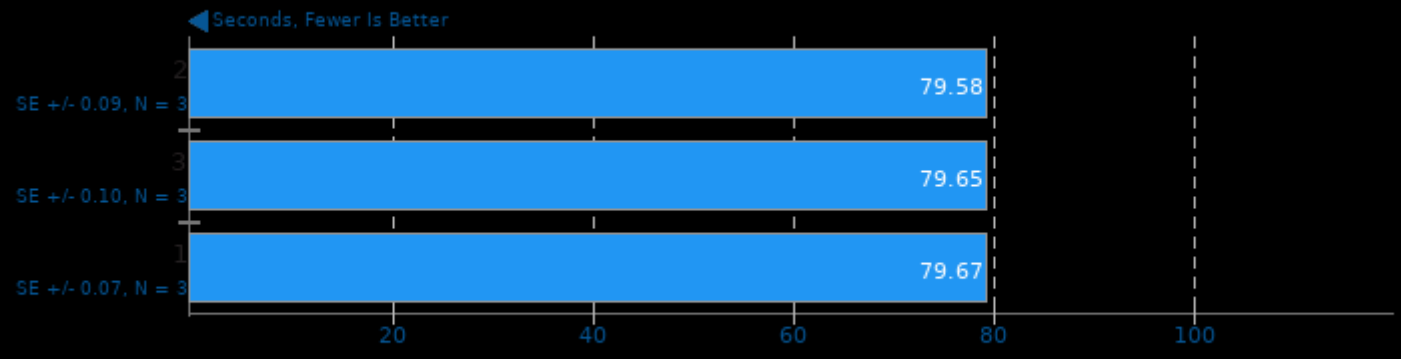
JPEG XL Decoding 0.3.1

CPU Threads: 1



libavif avifenc 0.9.0

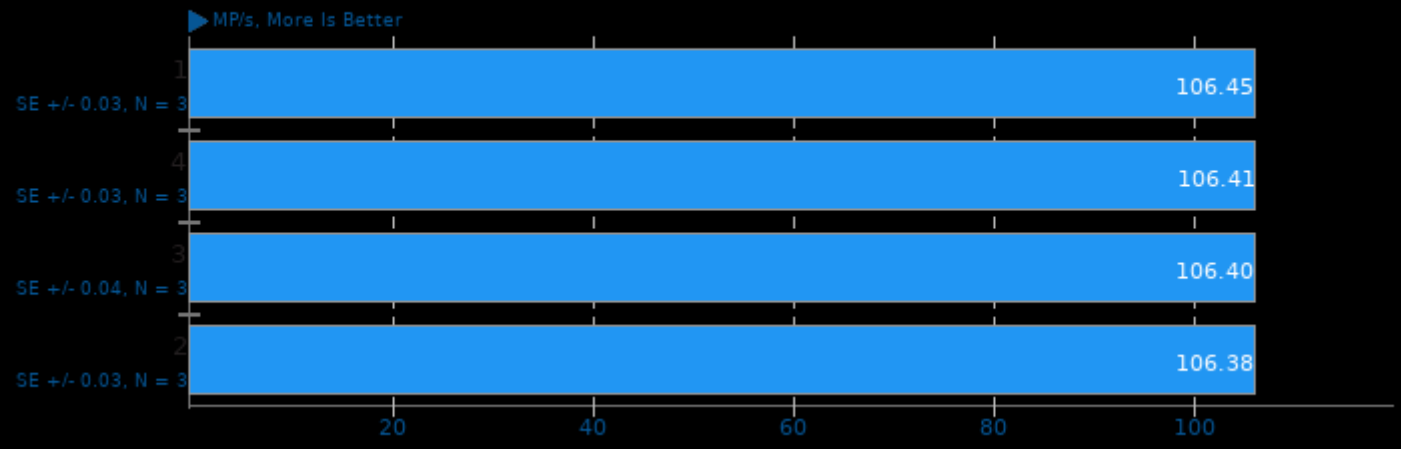
Encoder Speed: 2



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

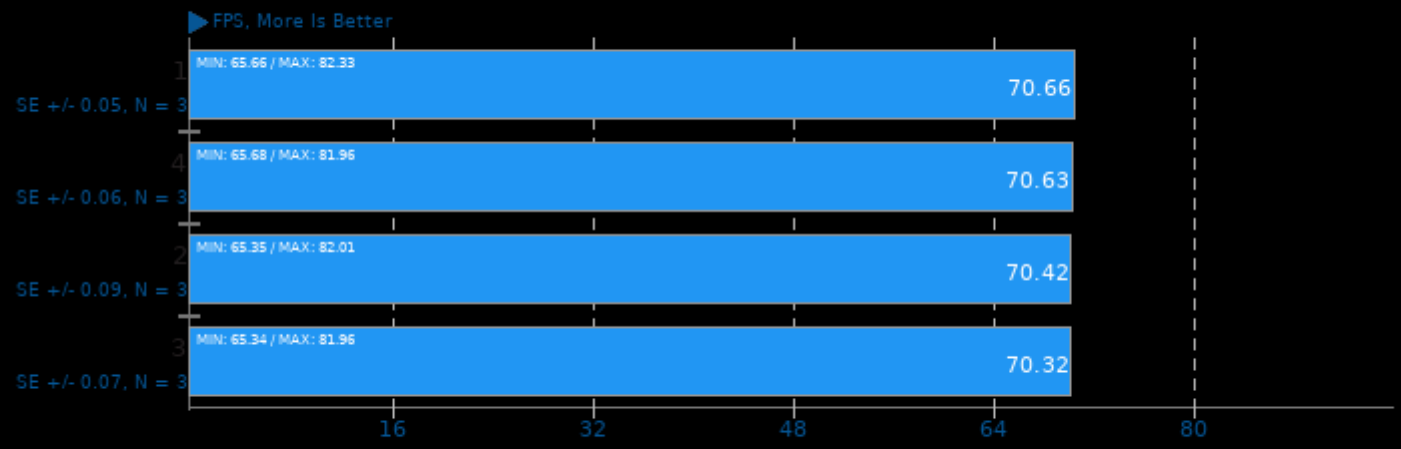
JPEG XL Decoding 0.3.1

CPU Threads: All



dav1d 0.8.2

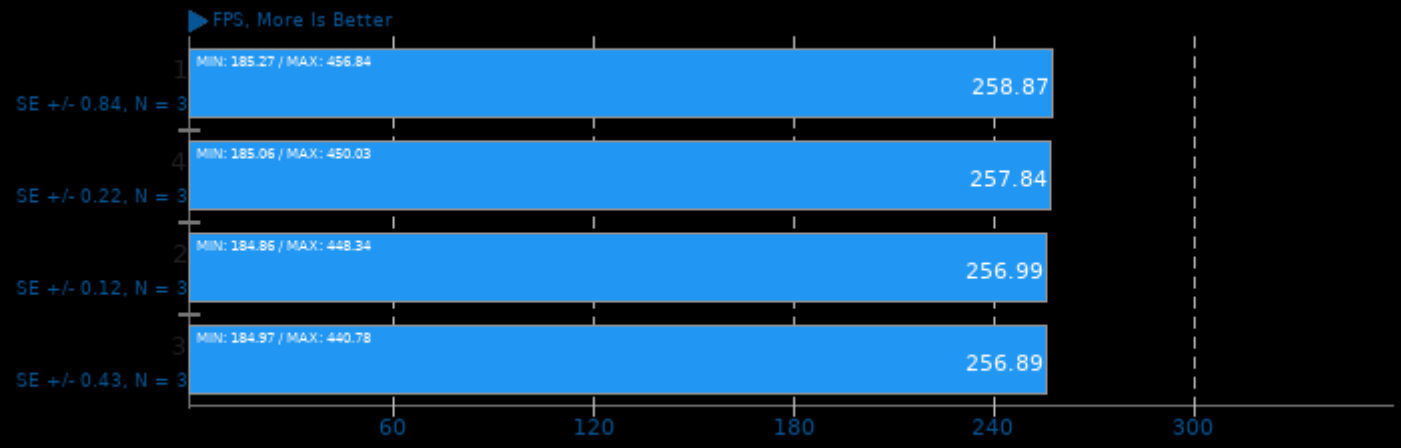
Video Input: Summer Nature 4K



1. (CC) gcc options: -pthread -lm

dav1d 0.8.2

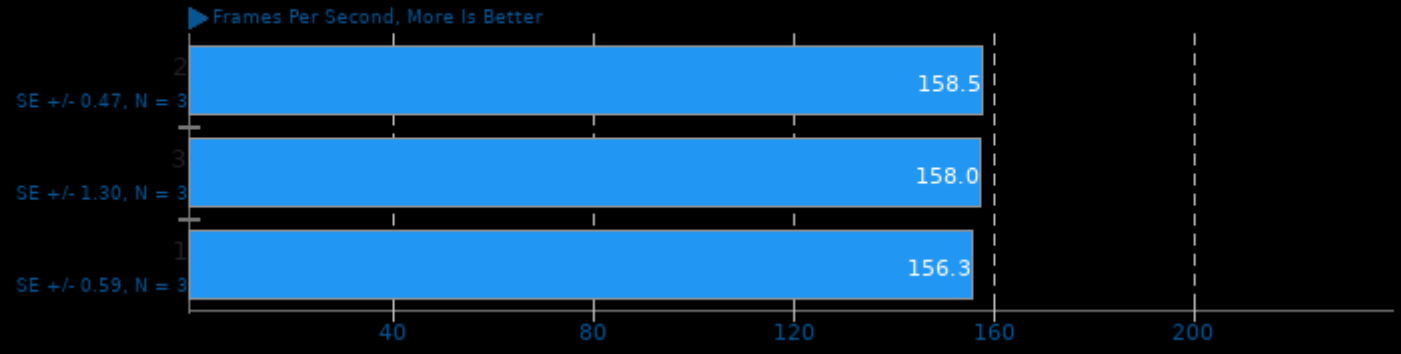
Video Input: Chimera 1080p



1. (CC) gcc options: -pthread -lm

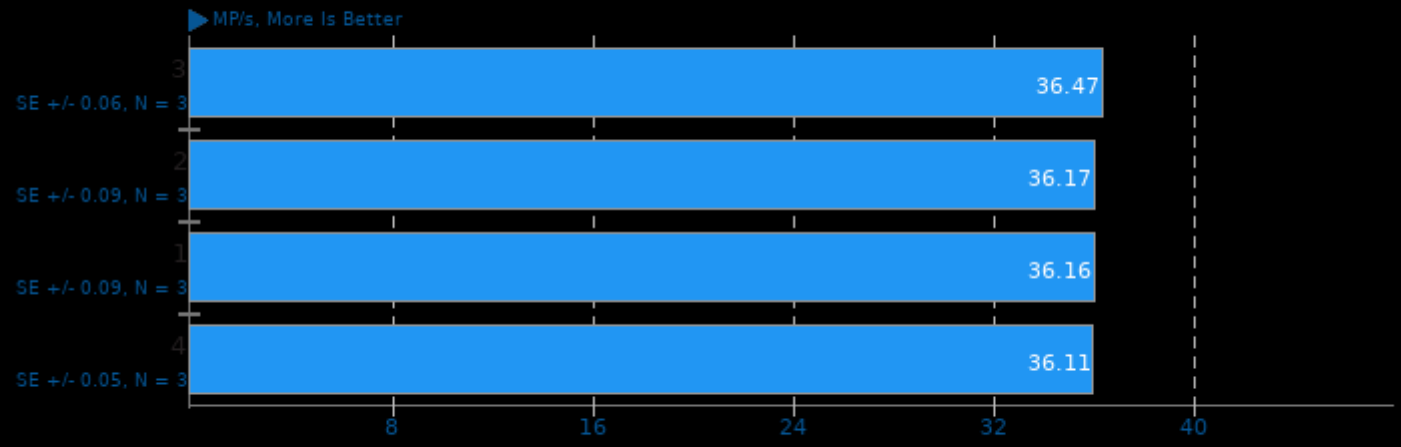
ET: Legacy 2.77

Resolution: 1920 x 1080

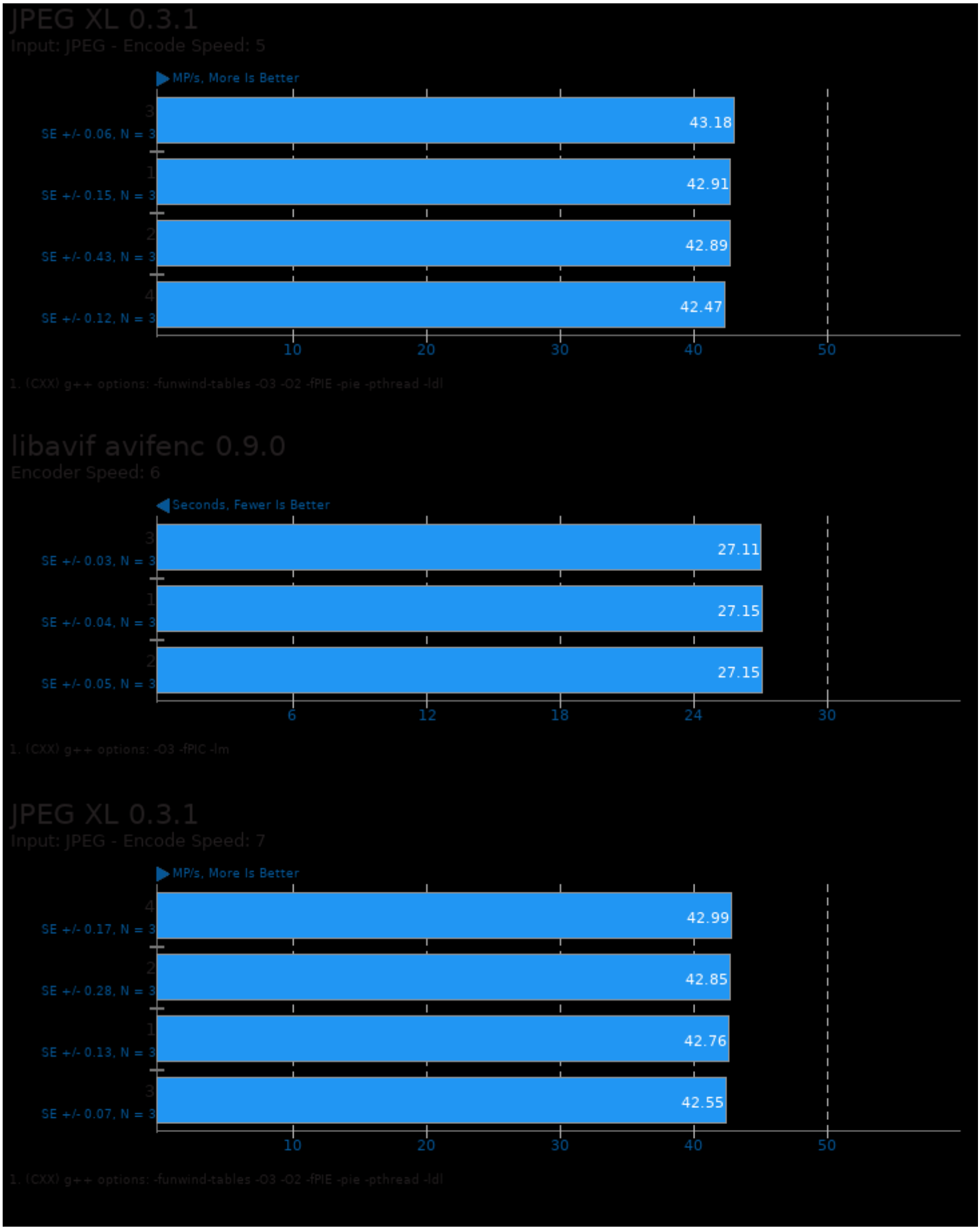


JPEG XL 0.3.1

Input: PNG - Encode Speed: 5

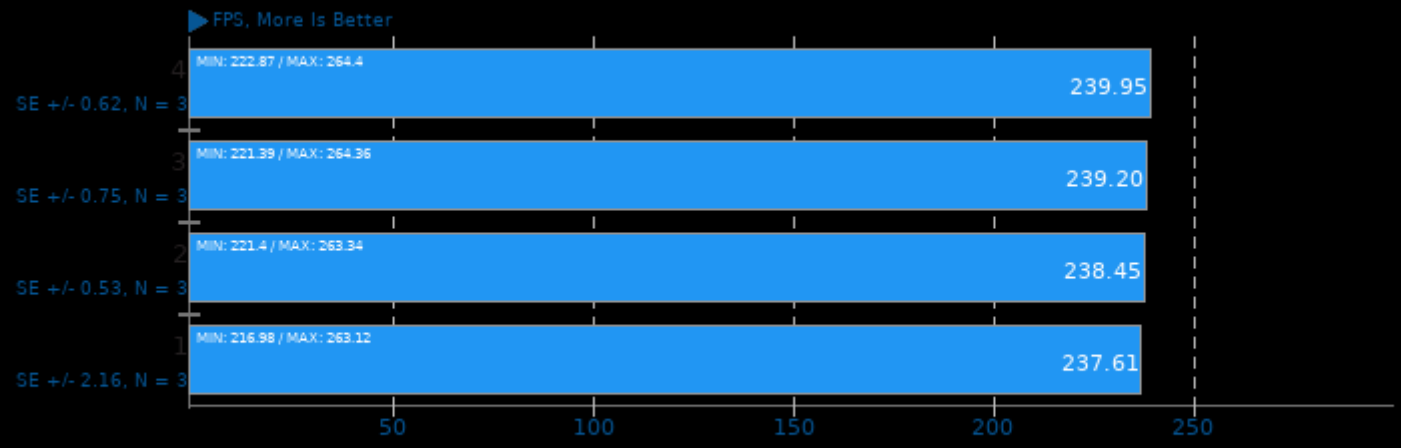


1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie -pthread -ldl


JPEG XL 0.3.1
Input: JPEG - Encode Speed: 5
MP/s, More Is Better
3
SE +/- 0.06, N = 3
43.18
1
SE +/- 0.15, N = 3
42.91
2
SE +/- 0.43, N = 3
42.89
4
SE +/- 0.12, N = 3
42.47
10
20
30
40
50
1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie -pthread -ldl
libavif avifenc 0.9.0
Encoder Speed: 6
Seconds, Fewer Is Better
3
SE +/- 0.03, N = 3
27.11
1
SE +/- 0.04, N = 3
27.15
2
SE +/- 0.05, N = 3
27.15
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
4
SE +/- 0.17, N = 3
42.99
2
SE +/- 0.28, N = 3
42.85
1
SE +/- 0.13, N = 3
42.76
3
SE +/- 0.07, N = 3
42.55
10
20
30
40
50
1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie -pthread -ldl

dav1d 0.8.2

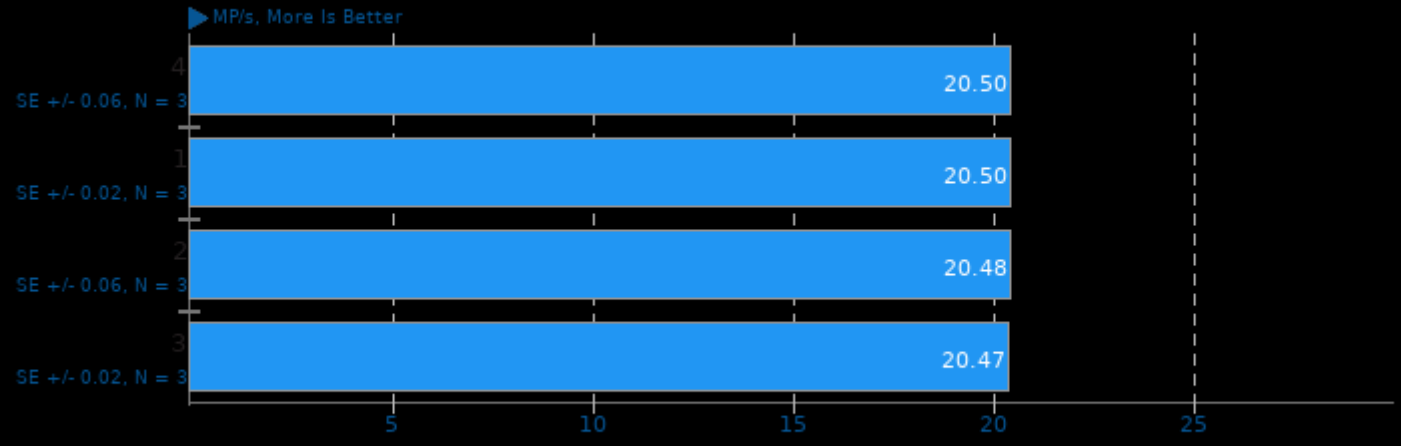
Video Input: Summer Nature 1080p



1. (CC) gcc options: -pthread -lm

JPEG XL 0.3.1

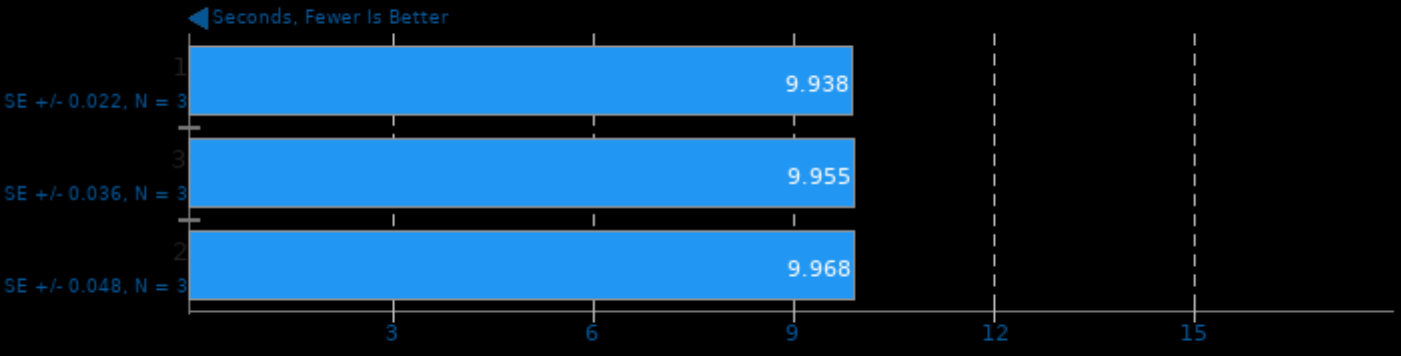
Input: JPEG - Encode Speed: 8



1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie -pthread -ldl

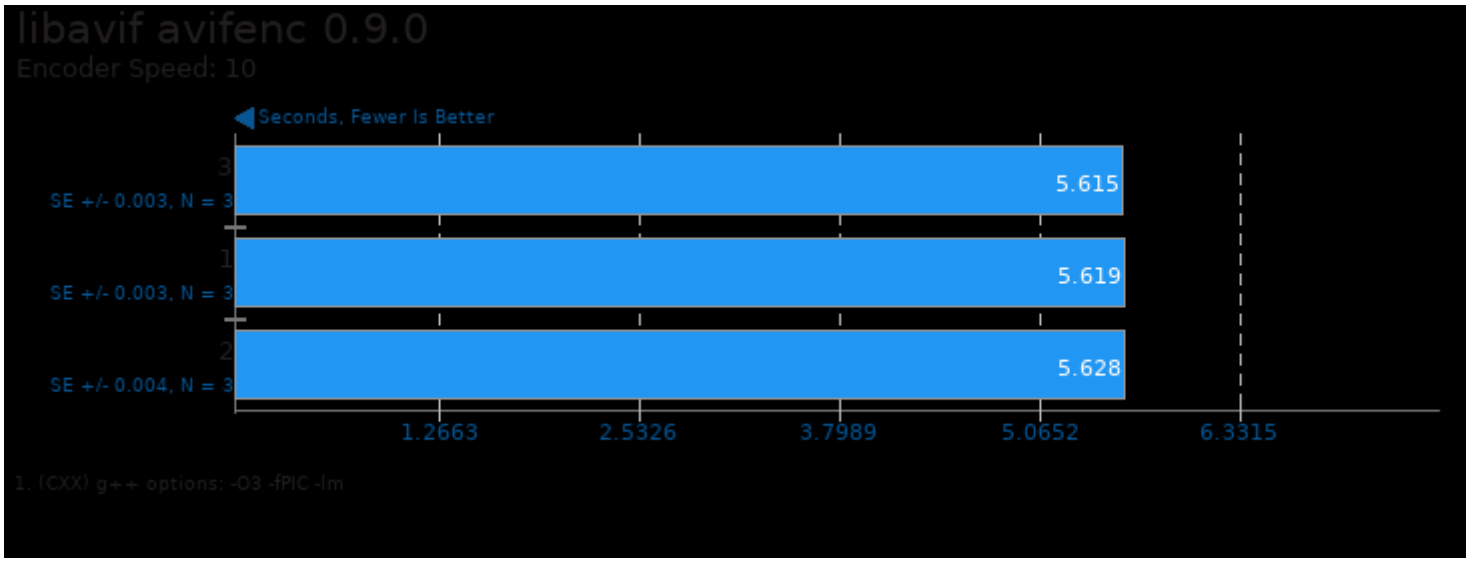
libavif avifenc 0.9.0

Encoder Speed: 10, Lossless



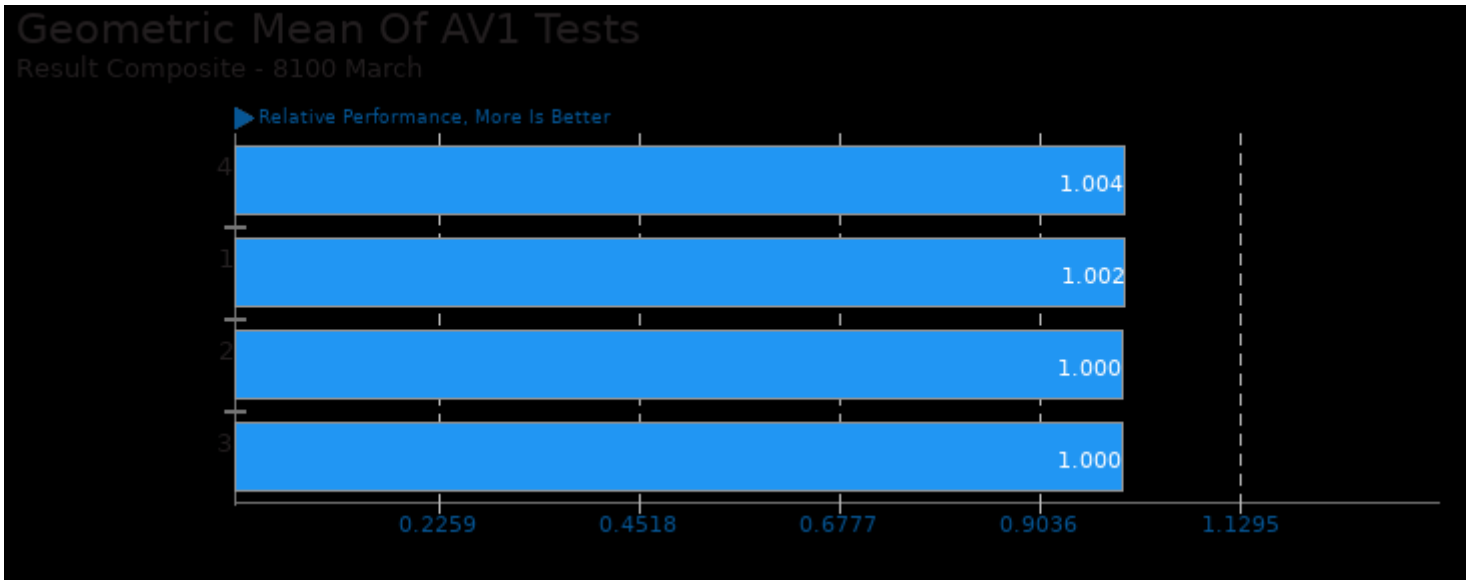
1. (CXX) g++ options: -O3 -fPIC -lm

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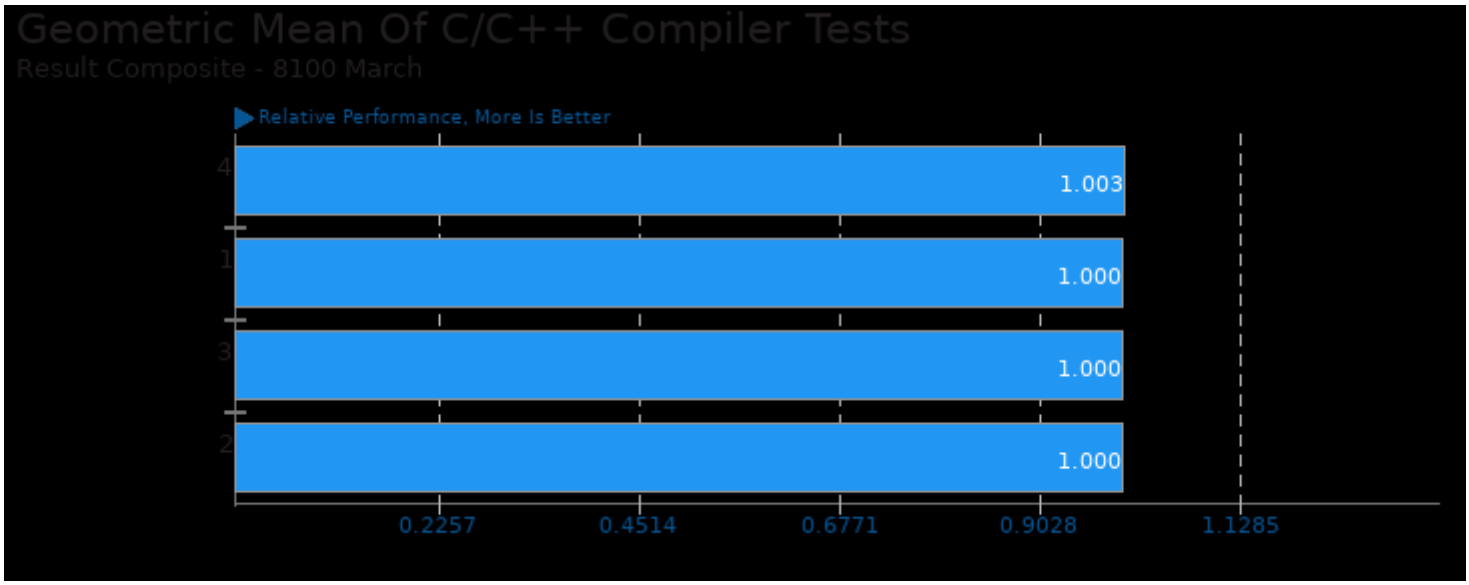

libavif avifenc 0.9.0
Encoder Speed: 10
Seconds, Fewer Is Better
3
SE +/- 0.003, N = 3
5.615
1
SE +/- 0.003, N = 3
5.619
2
SE +/- 0.004, N = 3
5.628
1.2663
2.5326
3.7989
5.0652
6.3315
1. (CXX) g++ options: -O3 -fPIC -lm

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

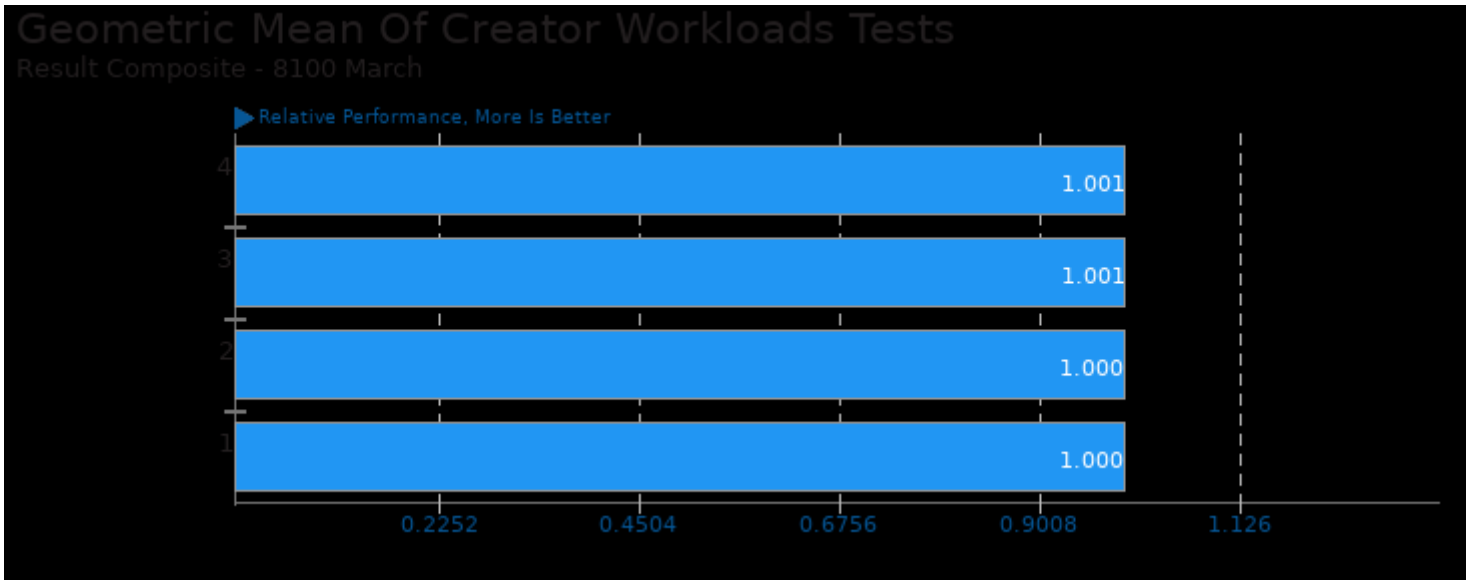


Geometric mean based upon tests: pts/dav1d and pts/avifenc

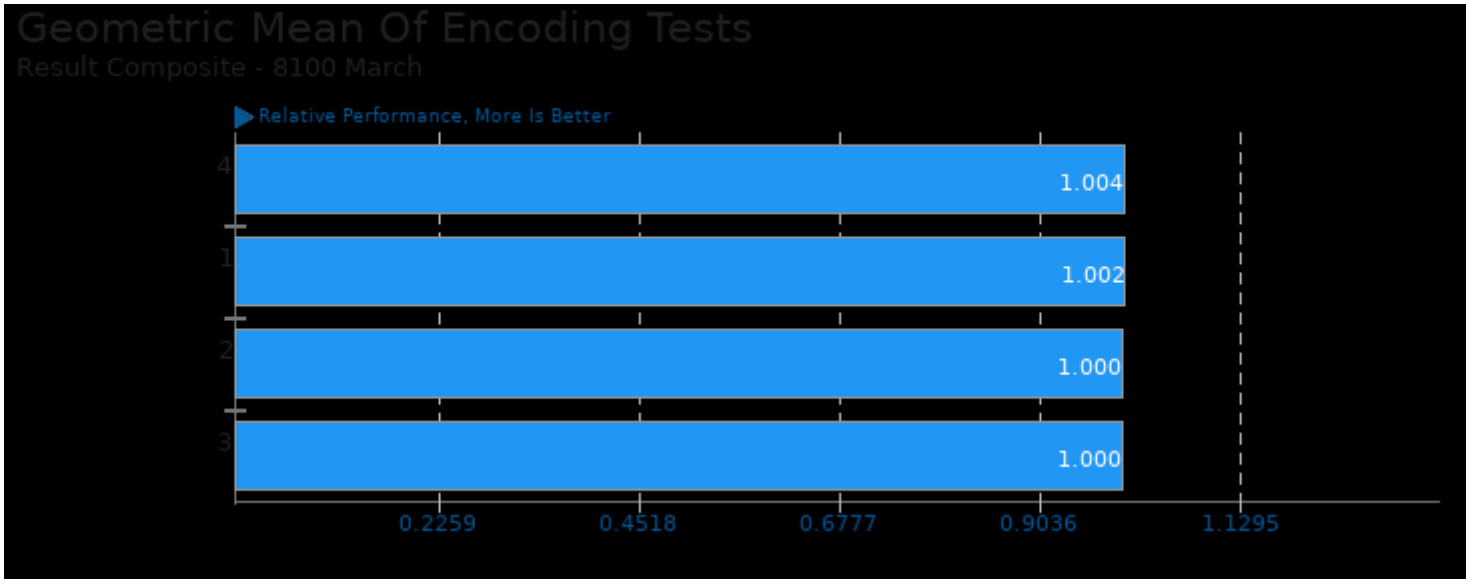


Geometric mean based upon tests: pts/dav1d and pts/toybrot

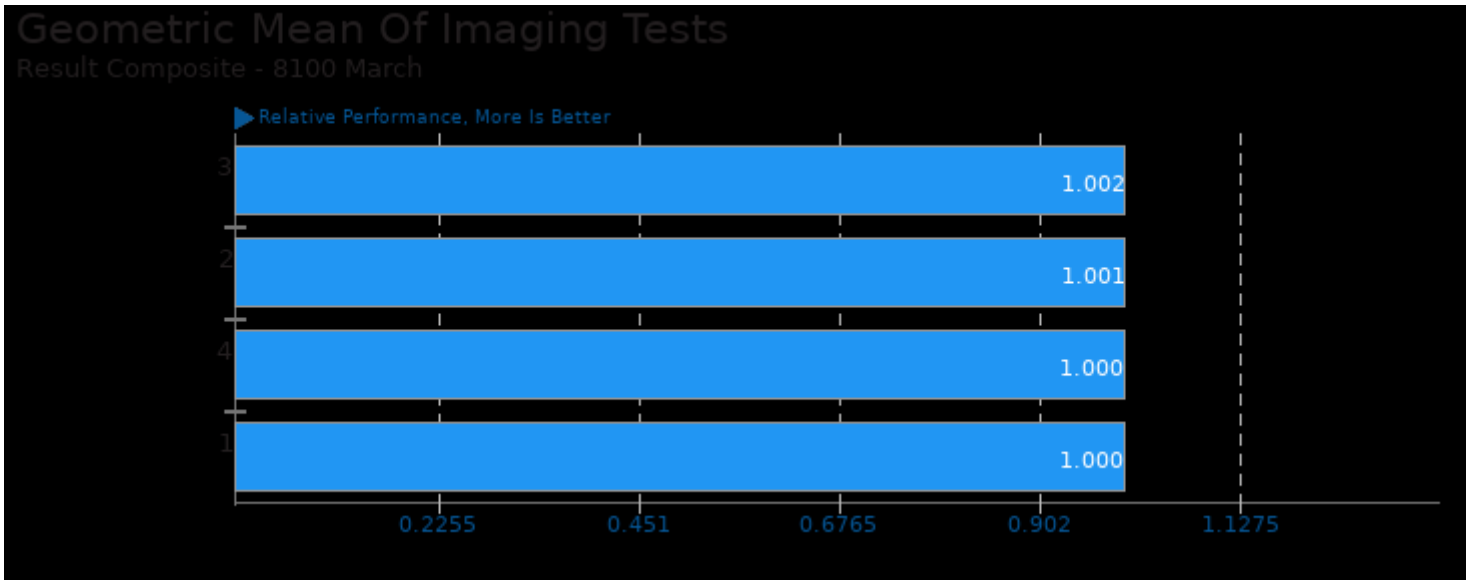
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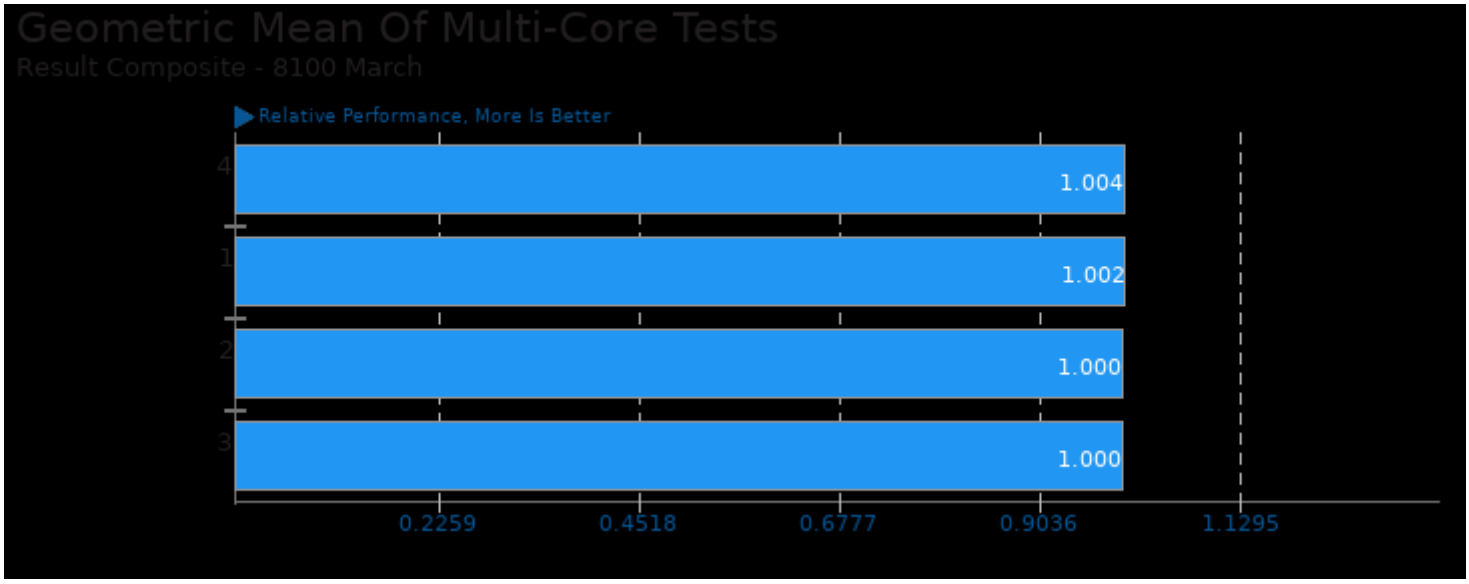
Geometric mean based upon tests: pts/dav1d, pts/avifenc, pts/jpegxl and pts/jpegxl-decode



Geometric mean based upon tests: pts/dav1d and pts/avifenc

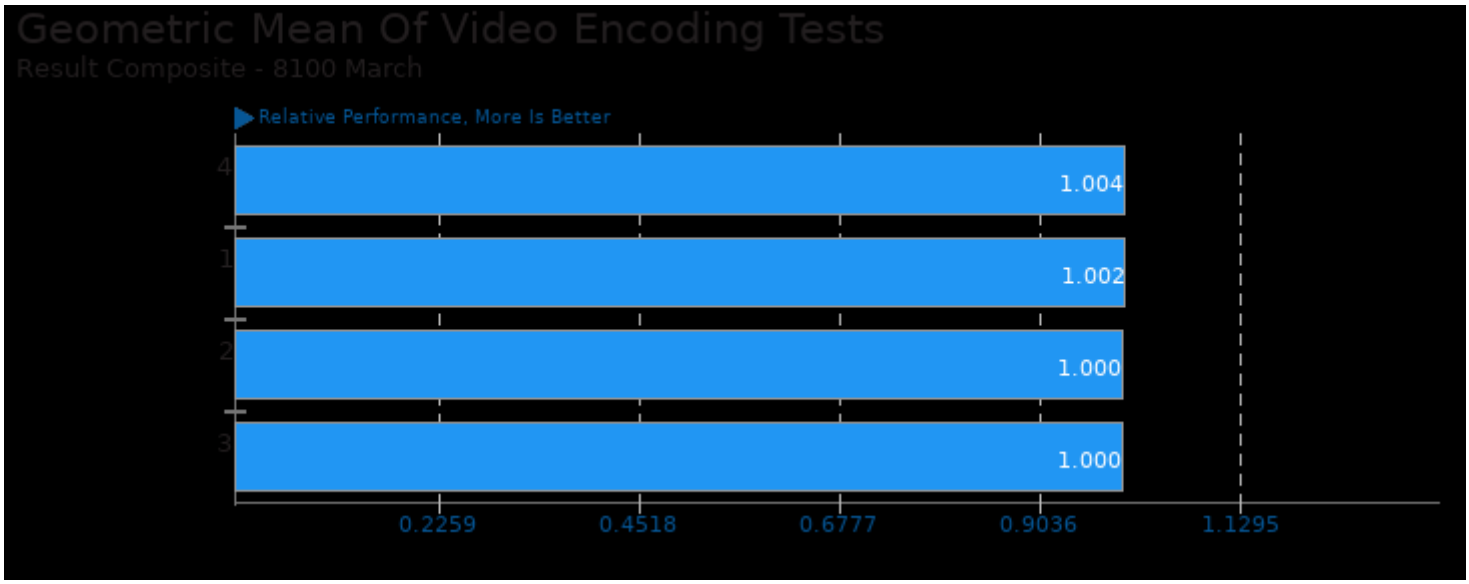


Geometric mean based upon tests: pts/jpegxl, pts/jpegxl-decode and pts/avifenc



Geometric mean based upon tests: pts/dav1d and pts/avifenc

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Geometric mean based upon tests: pts/dav1d and pts/avifenc

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 16:27.