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3600XT Linux Feb 2021

AMD Ryzen 5 3600XT 6-Core testing with a MSI X470 GAMING M7 AC (MS-7B77) v1.0 (1.E0 BIOS) and MSI AMD Radeon R7 370 / R9 270/370 OEM 4GB on Ubuntu 20.10 via the Phoronix Test Suite.

Automated Executive Summary

1 had the most wins, coming in first place for 70% of the tests.

Based on the geometric mean of all complete results, the fastest (1) was 1.01x the speed of the slowest (3). 2 was 0.995x the speed of 1 and 3 was 0.995x the speed of 2.

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

JPEG XL Decoding (CPU Threads: All) at 1.046x
JPEG XL Decoding (CPU Threads: 1) at 1.024x
JPEG XL (Input: JPEG - Encode Speed: 7) at 1.023x
JPEG XL (Input: JPEG - Encode Speed: 5) at 1.022x
JPEG XL (Input: JPEG - Encode Speed: 8) at 1.018x
GROMACS (Input: water_GMX50_bare) at 1.018x
Xonotic (Resolution: 1920 x 1080 - Effects Quality: Low) at 1.017x
dav1d (Video Input: Summer Nature 4K) at 1.013x
Xonotic (Resolution: 1920 x 1080 - Effects Quality: High) at 1.01x

JPEG XL (Input: PNG - Encode Speed: 7) at 1.009x.

Test Systems:

1

2

3

Processor: AMD Ryzen 5 3600XT 6-Core @ 3.80GHz (6 Cores / 12 Threads), Motherboard: MSI X470 GAMING M7 AC (MS-7B77) v1.0 (1.E0 BIOS), Chipset: AMD Starship/Matisse, Memory: 16GB, Disk: 500GB CT500P2SSD8, Graphics: MSI AMD Radeon R7 370 / R9 270/370 OEM 4GB, Audio: AMD Oland/Hainan/Cape, Monitor: G237HL, Network: Qualcomm Atheros Killer E2500 + Intel 8265 / 8275

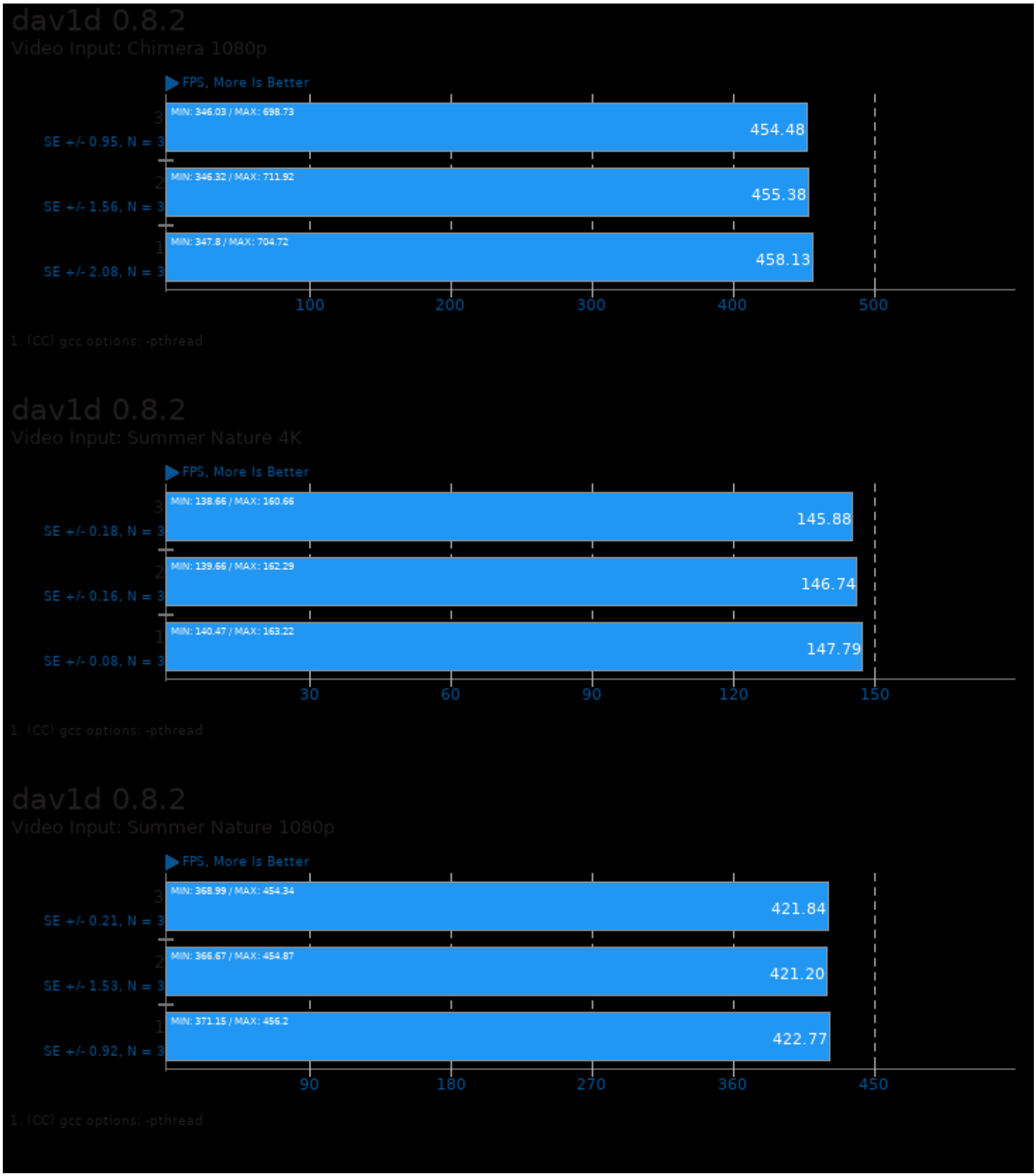
OS: Ubuntu 20.10, Kernel: 5.8.0-41-generic (x86_64), Desktop: GNOME Shell 3.38.1, Display Server: X Server 1.20.9, OpenGL: 4.5 Mesa 20.2.1 (LLVM 11.0.0), Compiler: GCC 10.2.0, File-System: ext4, Screen Resolution: 1920x1080

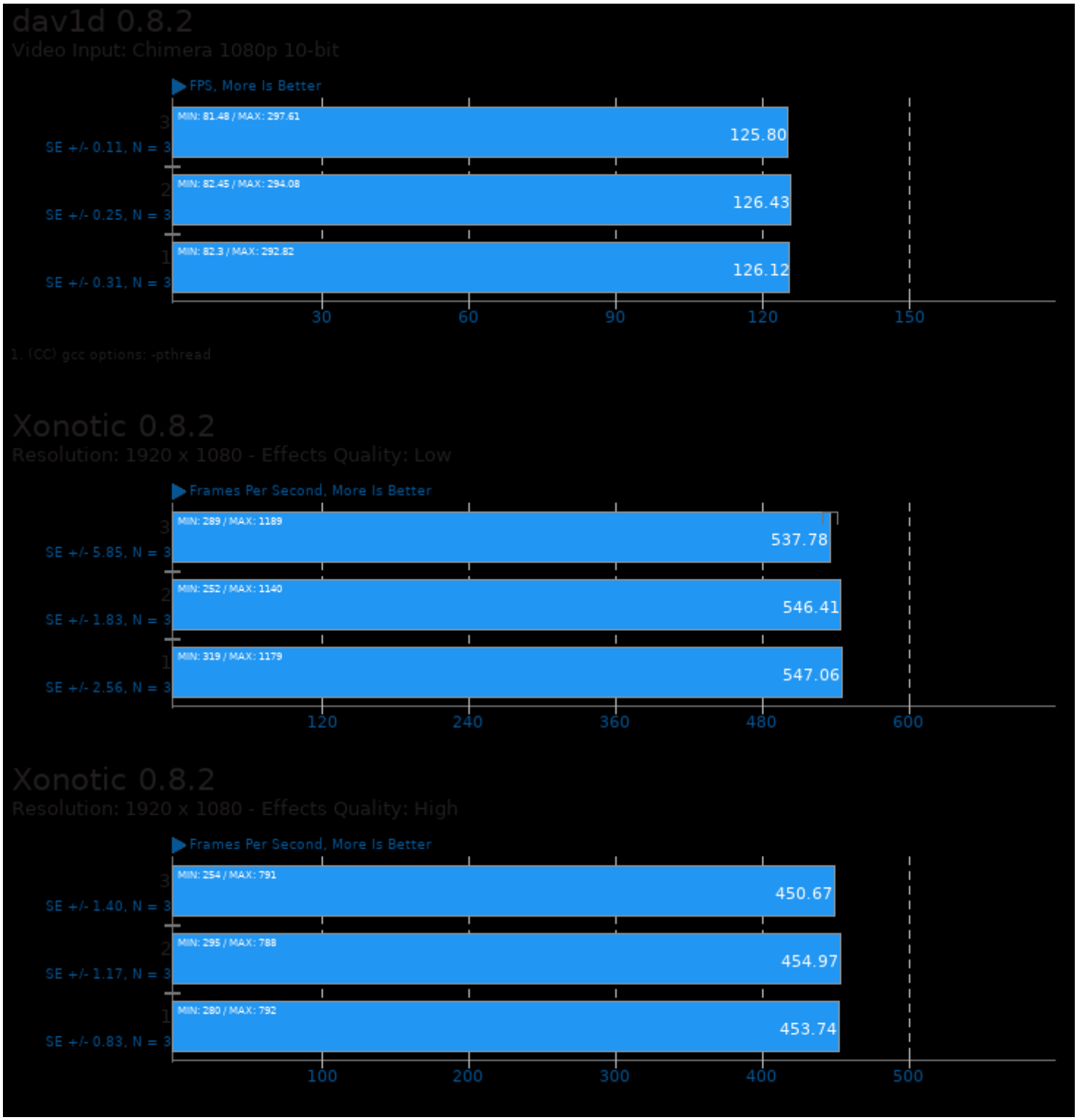
Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-gcn/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: acpi-cpufreq ondemand (Boost: Enabled) - CPU Microcode: 0x8701021
Graphics Notes: GLAMOR
Security Notes: itlb_multihit: Not affected + 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 Full AMD retpoline IBPB: conditional STIBP: conditional RSB filling + srbds: Not affected + tsx_async_abort: Not affected

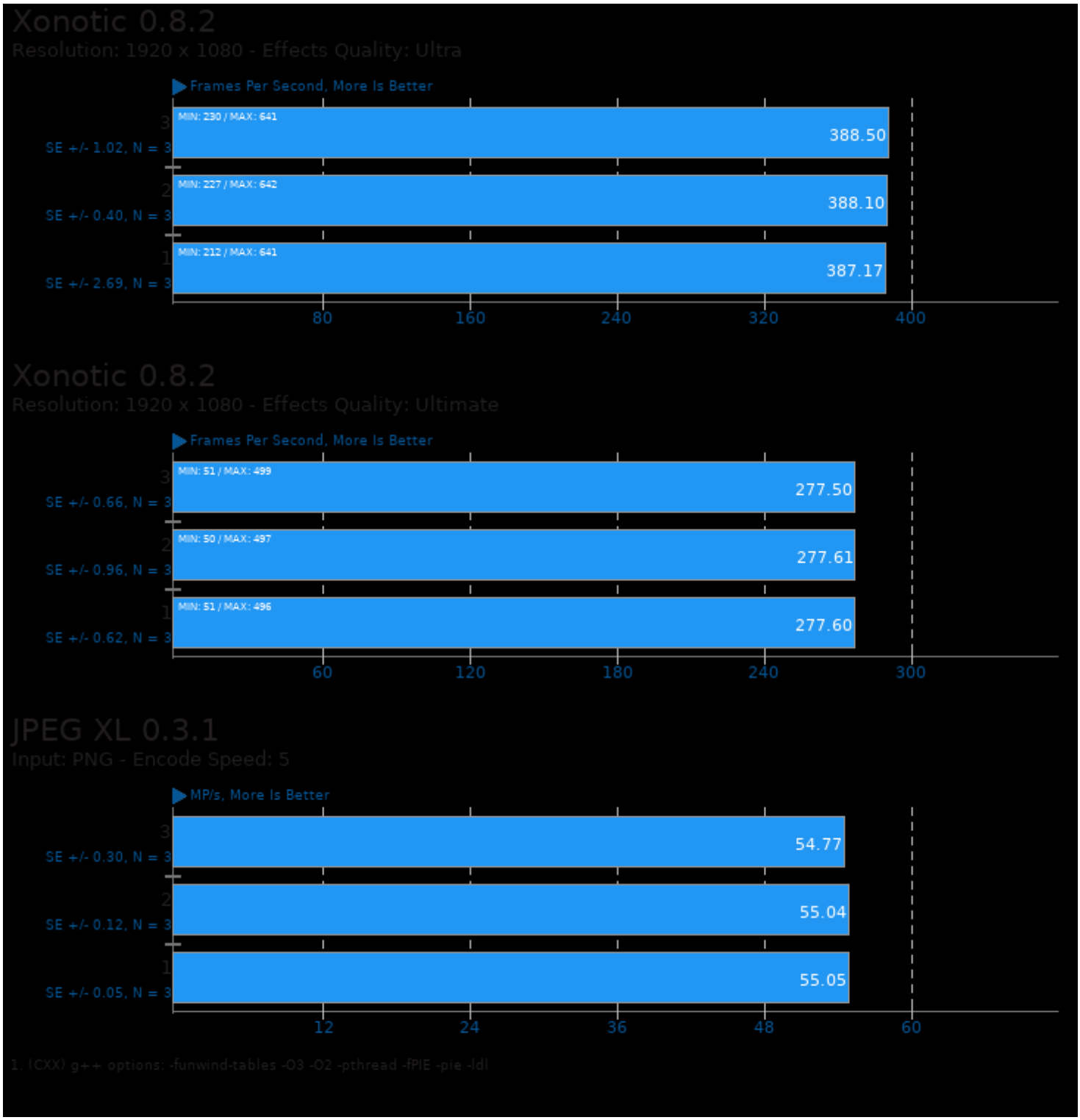
	1	2	3
dav1d - Chimera 1080p (FPS)	**458.13**	455.38	**454.48**
Normalized	100%	99.4%	99.2%
Standard Deviation	0.8%	0.6%	0.4%
dav1d - Summer Nature 4K (FPS)	**147.79**	146.74	**145.88**
Normalized	100%	99.29%	98.71%
Standard Deviation	0.1%	0.2%	0.2%
dav1d - S.N.1 (FPS)	**422.77**	**421.20**	421.84
Normalized	100%	99.63%	99.78%
Standard Deviation	0.4%	0.6%	0.1%
dav1d - C.1.1.b (FPS)	126.12	**126.43**	**125.80**
Normalized	99.75%	100%	99.5%
Standard Deviation	0.4%	0.3%	0.1%
Xonotic - 1920 x 1080 - Low (FPS)	**547.0570509**	546.4090160	**537.7793063**
Normalized	100%	99.88%	98.3%

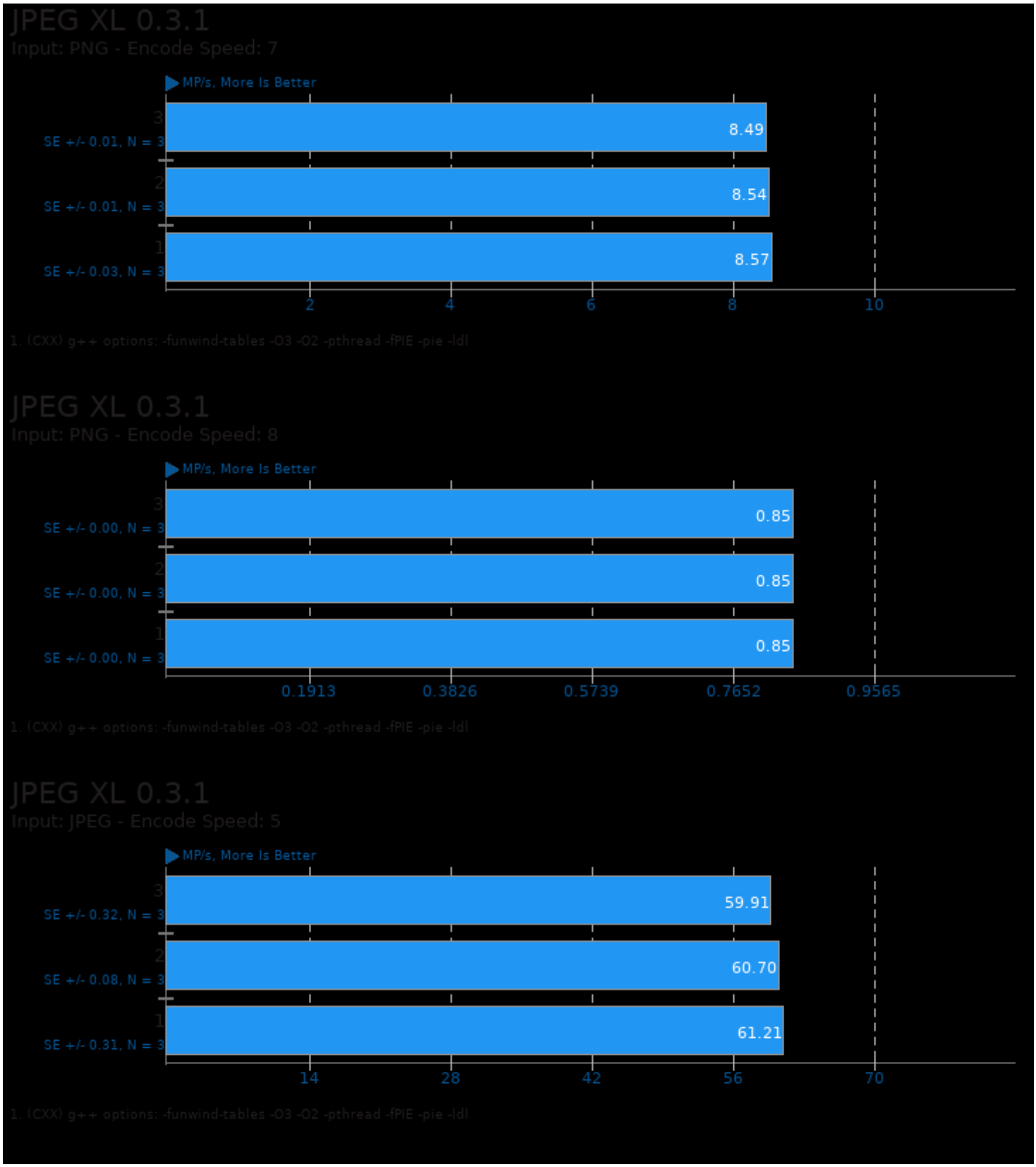
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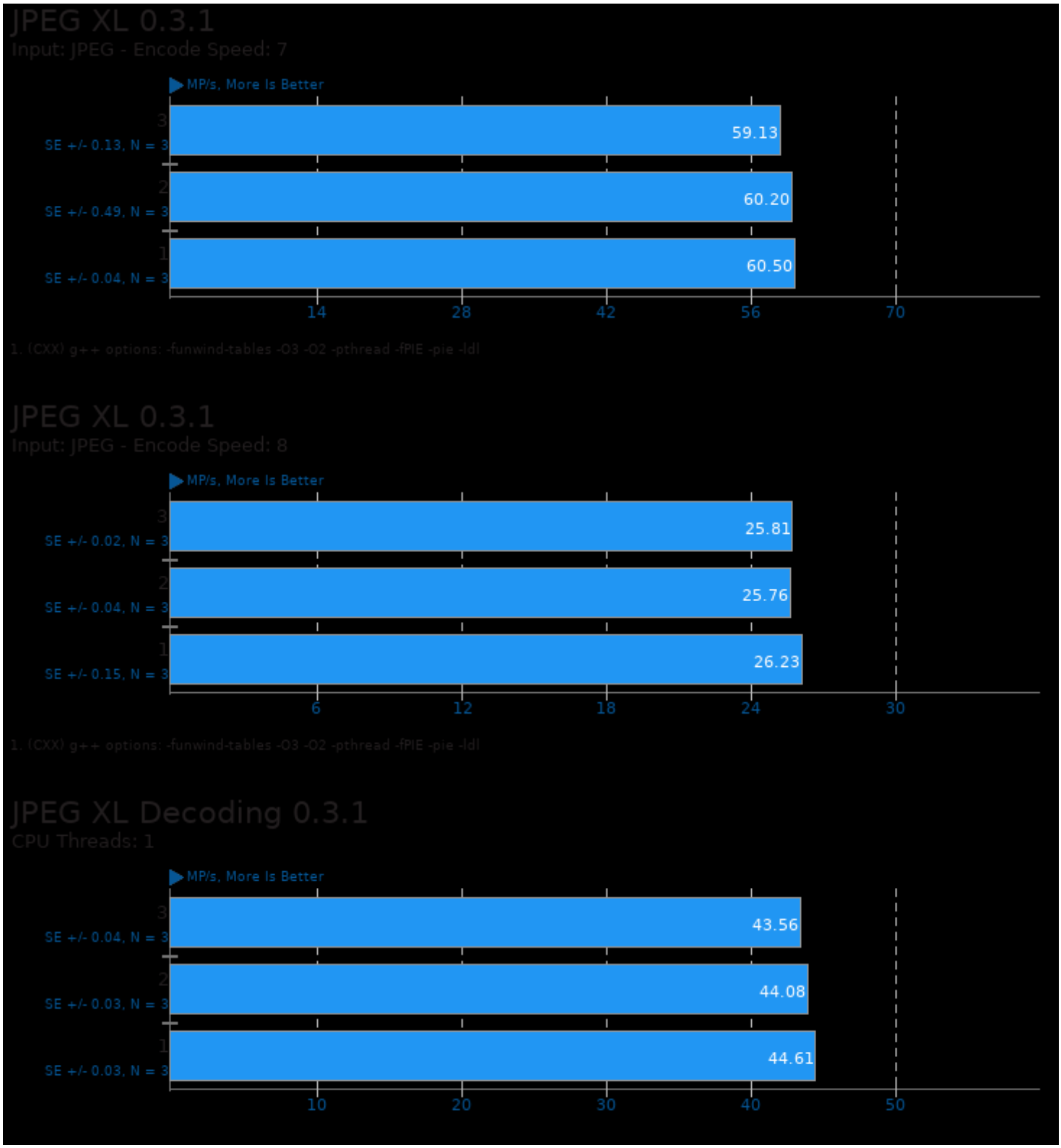
Standard Deviation	0.8%	0.6%	1.9%
Xonotic - 1920 x 1080 - High (FPS)	453.7385325	**454.9709926**	**450.6655191**
Normalized	99.73%	100%	99.05%
Standard Deviation	0.3%	0.4%	0.5%
Xonotic - 1920 x 1080 - Ultra (FPS)	**387.1714159**	388.0991079	**388.5035149**
Normalized	99.66%	99.9%	100%
Standard Deviation	1.2%	0.2%	0.5%
Xonotic - 1920 x 1080 - Ultimate (FPS)	277.5975628	**277.6071917**	**277.5042456**
Normalized	100%	100%	99.96%
Standard Deviation	0.4%	0.6%	0.4%
JPEG XL - PNG - 5 (MP/s)	**55.05**	55.04	**54.77**
Normalized	100%	99.98%	99.49%
Standard Deviation	0.2%	0.4%	0.9%
JPEG XL - PNG - 7 (MP/s)	**8.57**	8.54	**8.49**
Normalized	100%	99.65%	99.07%
Standard Deviation	0.5%	0.2%	0.1%
JPEG XL - PNG - 8 (MP/s)	0.85	0.85	0.85
Standard Deviation	0.7%	0%	0%
JPEG XL - JPEG - 5 (MP/s)	**61.21**	60.70	**59.91**
Normalized	100%	99.17%	97.88%
Standard Deviation	0.9%	0.2%	0.9%
JPEG XL - JPEG - 7 (MP/s)	**60.50**	60.20	**59.13**
Normalized	100%	99.5%	97.74%
Standard Deviation	0.1%	1.4%	0.4%
JPEG XL - JPEG - 8 (MP/s)	**26.23**	**25.76**	25.81
Normalized	100%	98.21%	98.4%
Standard Deviation	1%	0.2%	0.1%
JPEG XL Decoding - 1 (MP/s)	**44.61**	44.08	**43.56**
Normalized	100%	98.81%	97.65%
Standard Deviation	0.1%	0.1%	0.2%
JPEG XL Decoding - All (MP/s)	**167.53**	164.20	**160.14**
Normalized	100%	98.01%	95.59%
Standard Deviation	0.1%	0.3%	0.2%
GROMACS - water_GMX50_bare (Ns/Day)	**0.687**	**0.675**	0.681
Normalized	100%	98.25%	99.13%
Standard Deviation	0.1%	2.6%	0.2%
toyBrot Fractal Generator - OpenMP (ms)	53438	**53421**	**53519**
Normalized	99.97%	100%	99.82%
Standard Deviation	0.1%	0.4%	0.1%
toyBrot Fractal Generator - C++ Tasks (ms)	**54076**	54136	**54196**
Normalized	100%	99.89%	99.78%
Standard Deviation	0.4%	0.2%	0.1%
toyBrot Fractal Generator - C++ Threads	54136	**54107**	**54173**
Normalized	99.95%	100%	99.88%
Standard Deviation	0.3%	0.4%	0.1%

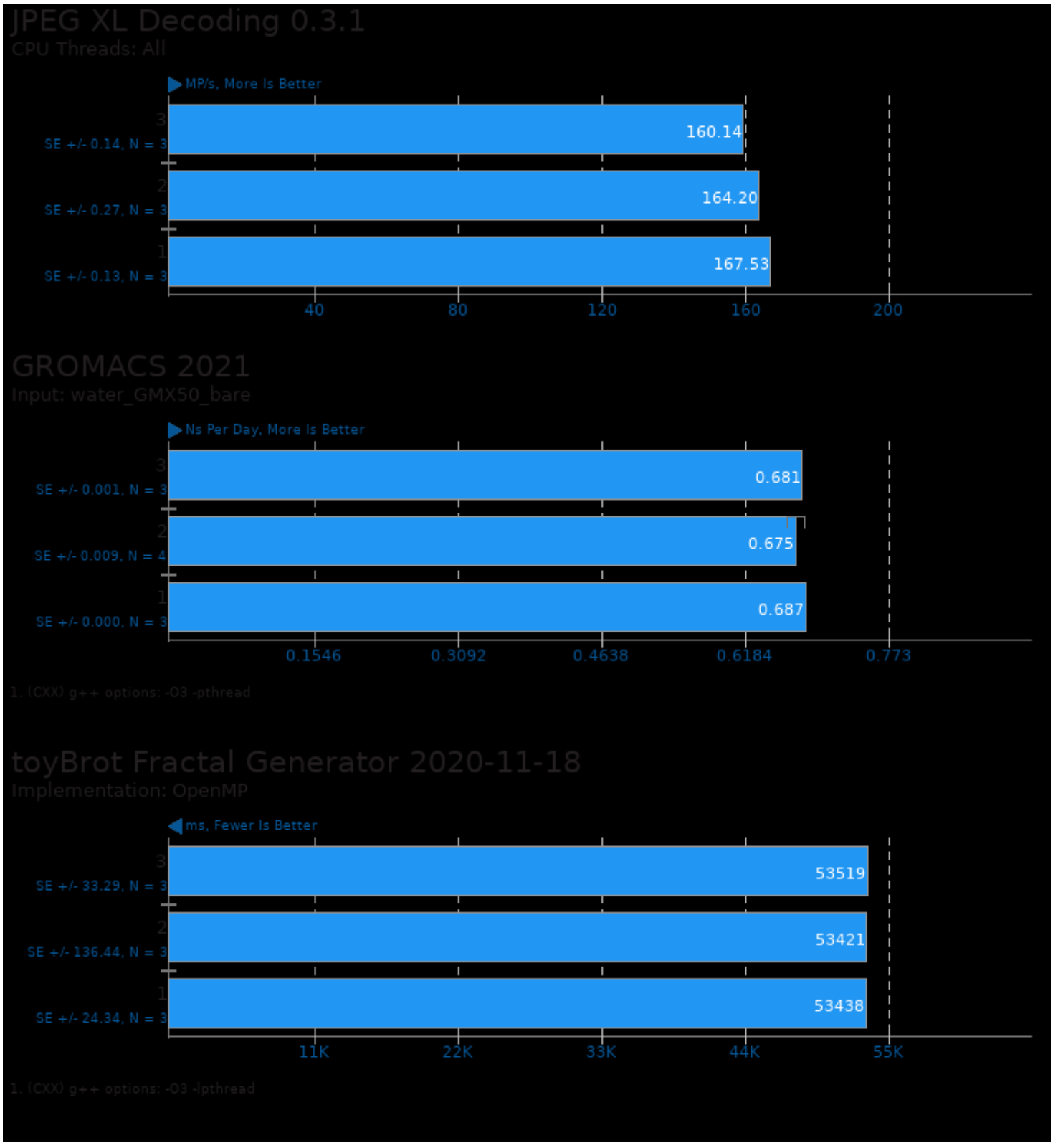

dav1d 0.8.2
Video Input: Chimera 1080p
FPS, More Is Better
MIN: 346.03 / MAX: 698.73
454.48
SE +/- 0.95, N = 3
MIN: 346.32 / MAX: 711.92
455.38
SE +/- 1.56, N = 3
MIN: 347.8 / MAX: 704.72
458.13
SE +/- 2.08, N = 3
100
200
300
400
500
1. (CC) gcc options: -pthread
dav1d 0.8.2
Video Input: Summer Nature 4K
FPS, More Is Better
MIN: 138.66 / MAX: 160.66
145.88
SE +/- 0.18, N = 3
MIN: 139.66 / MAX: 162.29
146.74
SE +/- 0.16, N = 3
MIN: 140.47 / MAX: 163.22
147.79
SE +/- 0.08, N = 3
30
60
90
120
150
1. (CC) gcc options: -pthread
dav1d 0.8.2
Video Input: Summer Nature 1080p
FPS, More Is Better
MIN: 368.99 / MAX: 454.34
421.84
SE +/- 0.21, N = 3
MIN: 366.67 / MAX: 454.87
421.20
SE +/- 1.53, N = 3
MIN: 371.15 / MAX: 456.2
422.77
SE +/- 0.92, N = 3
90
180
270
360
450
1. (CC) gcc options: -pthread

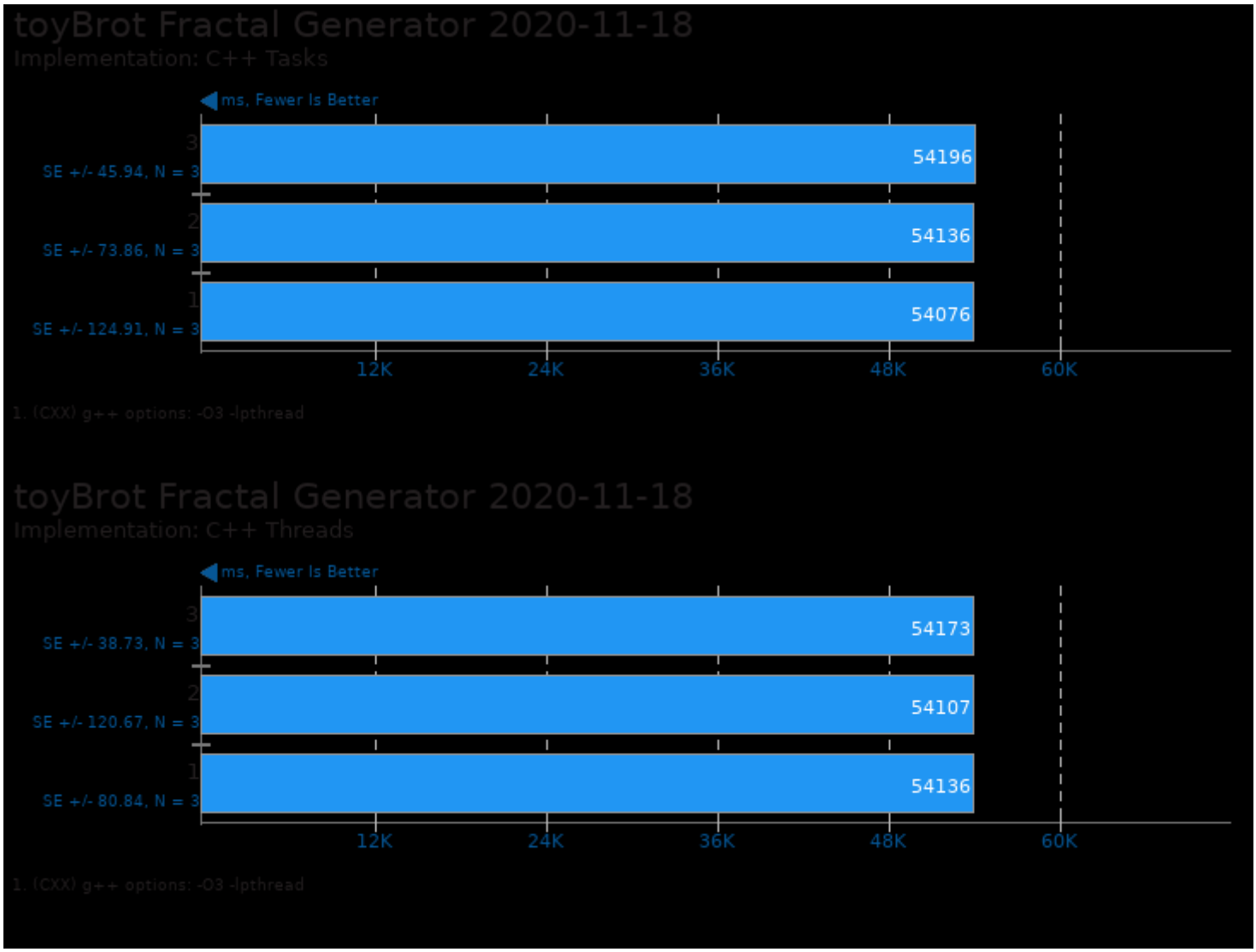

dav1d 0.8.2
Video Input: Chimera 1080p 10-bit
FPS, More Is Better
MIN: 81.48 / MAX: 297.61
125.80
SE +/- 0.11, N = 3
MIN: 82.45 / MAX: 294.08
126.43
SE +/- 0.25, N = 3
MIN: 82.3 / MAX: 292.82
126.12
SE +/- 0.31, N = 3
30
60
90
120
150
1. (CC) gcc options: -pthread
Xonotic 0.8.2
Resolution: 1920 x 1080 - Effects Quality: Low
Frames Per Second, More Is Better
MIN: 289 / MAX: 1189
537.78
SE +/- 5.85, N = 3
MIN: 252 / MAX: 1140
546.41
SE +/- 1.83, N = 3
MIN: 319 / MAX: 1179
547.06
SE +/- 2.56, N = 3
120
240
360
480
600
Xonotic 0.8.2
Resolution: 1920 x 1080 - Effects Quality: High
Frames Per Second, More Is Better
MIN: 254 / MAX: 791
450.67
SE +/- 1.40, N = 3
MIN: 295 / MAX: 788
454.97
SE +/- 1.17, N = 3
MIN: 280 / MAX: 792
453.74
SE +/- 0.83, N = 3
100
200
300
400
500


Xonotic 0.8.2
Resolution: 1920 x 1080 - Effects Quality: Ultra
Frames Per Second, More Is Better
3
MIN: 230 / MAX: 641
388.50
SE +/- 1.02, N = 3
2
MIN: 227 / MAX: 642
388.10
SE +/- 0.40, N = 3
1
MIN: 212 / MAX: 641
387.17
SE +/- 2.69, N = 3
80
160
240
320
400
Xonotic 0.8.2
Resolution: 1920 x 1080 - Effects Quality: Ultimate
Frames Per Second, More Is Better
3
MIN: 51 / MAX: 499
277.50
SE +/- 0.66, N = 3
2
MIN: 50 / MAX: 497
277.61
SE +/- 0.96, N = 3
1
MIN: 51 / MAX: 496
277.60
SE +/- 0.62, N = 3
60
120
180
240
300
JPEG XL 0.3.1
Input: PNG - Encode Speed: 5
MP/s, More Is Better
3
54.77
SE +/- 0.30, N = 3
2
55.04
SE +/- 0.12, N = 3
1
55.05
SE +/- 0.05, N = 3
12
24
36
48
60
1. (CXX) g++ options: -funwind-tables -O3 -O2 -pthread -fPIE -pie -ldl

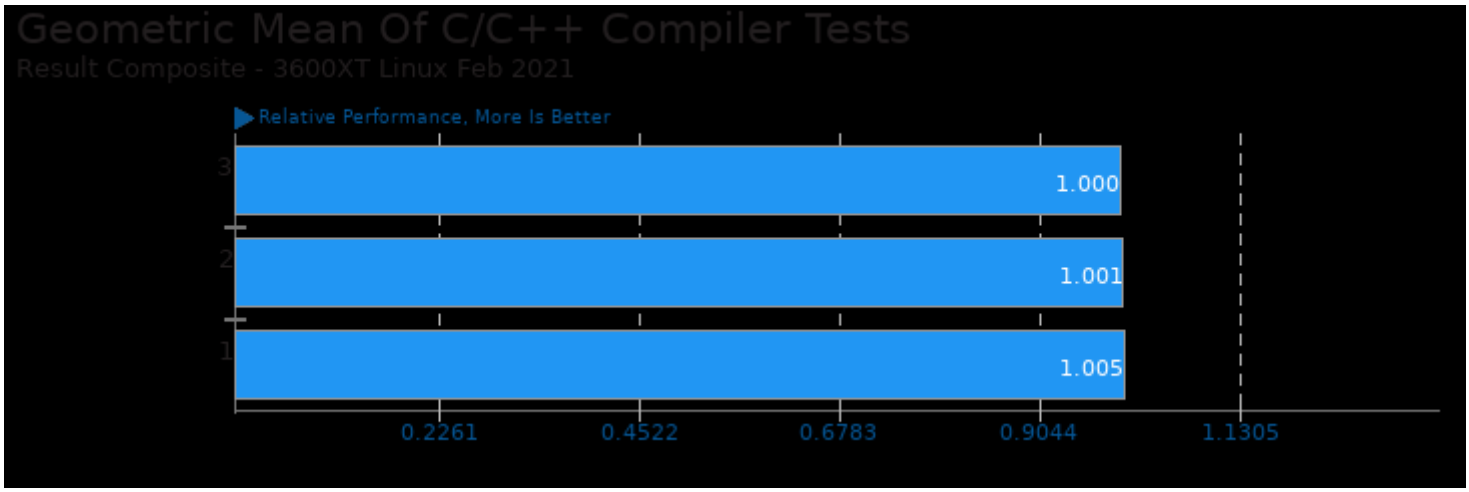

JPEG XL 0.3.1
Input: PNG - Encode Speed: 7
MP/s, More Is Better
3
SE +/- 0.01, N = 3
8.49
2
SE +/- 0.01, N = 3
8.54
1
SE +/- 0.03, N = 3
8.57
2
4
6
8
10
1. (CXX) g++ options: -funwind-tables -O3 -O2 -pthread -fPIE -pie -ldl
JPEG XL 0.3.1
Input: PNG - Encode Speed: 8
MP/s, More Is Better
3
SE +/- 0.00, N = 3
0.85
2
SE +/- 0.00, N = 3
0.85
1
SE +/- 0.00, N = 3
0.85
0.1913
0.3826
0.5739
0.7652
0.9565
1. (CXX) g++ options: -funwind-tables -O3 -O2 -pthread -fPIE -pie -ldl
JPEG XL 0.3.1
Input: JPEG - Encode Speed: 5
MP/s, More Is Better
3
SE +/- 0.32, N = 3
59.91
2
SE +/- 0.08, N = 3
60.70
1
SE +/- 0.31, N = 3
61.21
14
28
42
56
70
1. (CXX) g++ options: -funwind-tables -O3 -O2 -pthread -fPIE -pie -ldl


JPEG XL 0.3.1
Input: JPEG - Encode Speed: 7
MP/s, More Is Better
3
SE +/- 0.13, N = 3
59.13
2
SE +/- 0.49, N = 3
60.20
1
SE +/- 0.04, N = 3
60.50
14
28
42
56
70
1. (CXX) g++ options: -funwind-tables -O3 -O2 -pthread -fPIE -pie -ldl
JPEG XL 0.3.1
Input: JPEG - Encode Speed: 8
MP/s, More Is Better
3
SE +/- 0.02, N = 3
25.81
2
SE +/- 0.04, N = 3
25.76
1
SE +/- 0.15, N = 3
26.23
6
12
18
24
30
1. (CXX) g++ options: -funwind-tables -O3 -O2 -pthread -fPIE -pie -ldl
JPEG XL Decoding 0.3.1
CPU Threads: 1
MP/s, More Is Better
3
SE +/- 0.04, N = 3
43.56
2
SE +/- 0.03, N = 3
44.08
1
SE +/- 0.03, N = 3
44.61
10
20
30
40
50

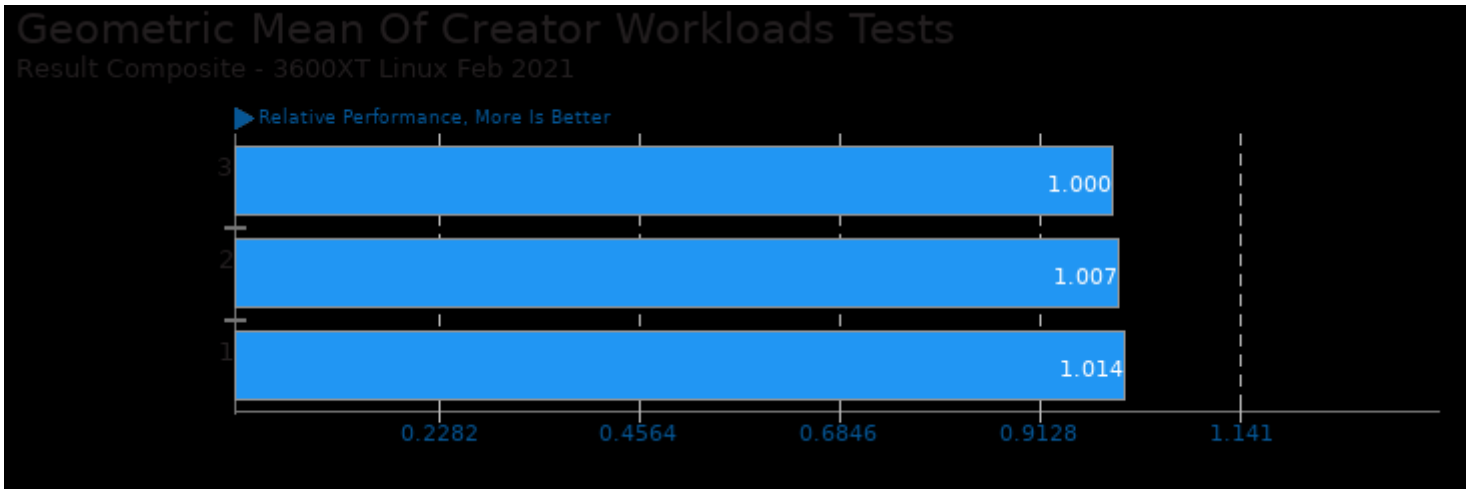

JPEG XL Decoding 0.3.1
CPU Threads: All
MP/s, More Is Better
3
SE +/- 0.14, N = 3
160.14
2
SE +/- 0.27, N = 3
164.20
1
SE +/- 0.13, N = 3
167.53
40
80
120
160
200
GROMACS 2021
Input: water_GMX50_bare
Ns Per Day, More Is Better
3
SE +/- 0.001, N = 3
0.681
2
SE +/- 0.009, N = 4
0.675
1
SE +/- 0.000, N = 3
0.687
0.1546
0.3092
0.4638
0.6184
0.773
1. (CXX) g++ options: -O3 -pthread
toyBrot Fractal Generator 2020-11-18
Implementation: OpenMP
ms, Fewer Is Better
3
SE +/- 33.29, N = 3
53519
2
SE +/- 136.44, N = 3
53421
1
SE +/- 24.34, N = 3
53438
11K
22K
33K
44K
55K
1. (CXX) g++ options: -O3 -lpthread


toyBrot Fractal Generator 2020-11-18
Implementation: C++ Tasks
ms, Fewer Is Better
3
SE +/- 45.94, N = 3
54196
2
SE +/- 73.86, N = 3
54136
1
SE +/- 124.91, N = 3
54076
12K
24K
36K
48K
60K
1. (CXX) g++ options: -O3 -lpthread
toyBrot Fractal Generator 2020-11-18
Implementation: C++ Threads
ms, Fewer Is Better
3
SE +/- 38.73, N = 3
54173
2
SE +/- 120.67, N = 3
54107
1
SE +/- 80.84, N = 3
54136
12K
24K
36K
48K
60K
1. (CXX) g++ options: -O3 -lpthread

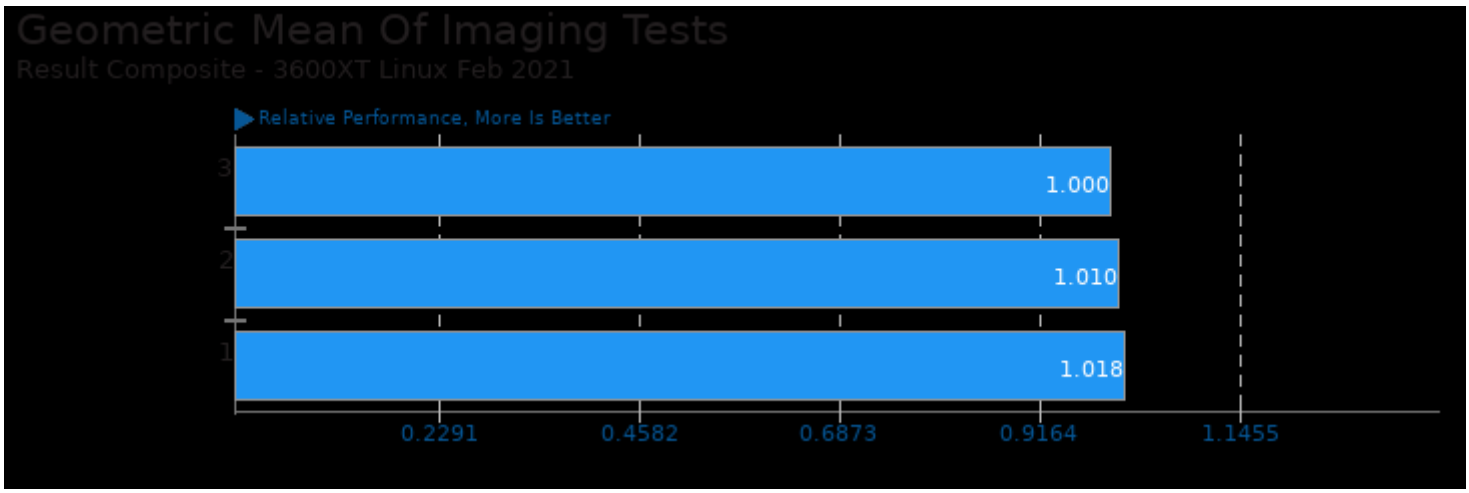
These geometric means are based upon test groupings / test suites for this result file.



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



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



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

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

This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 07:41.