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# new tests nov 10900K

Intel Core i9-10900K testing with a Gigabyte Z490 AORUS MASTER (F21c BIOS) and Sapphire AMD Radeon RX 5600 OEM/5600 XT / 5700/5700 6GB on Ubuntu 21.10 via the Phoronix Test Suite.

**Automated Executive Summary**

*C had the most wins, coming in first place for 59% of the tests.*

*Based on the geometric mean of all complete results, the fastest (A) was 1.01x the speed of the slowest (C). B was 0.992x the speed of A and C was 0.998x the speed of B.*

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

*CP2K Molecular Dynamics (Input: Fayalite-FIST) at 1.341x*
*rav1e (Speed: 10) at 1.035x*
*rav1e (Speed: 6) at 1.021x*
*JPEG XL libjxl (Input: JPEG - Encode Speed: 5) at 1.02x*
*JPEG XL Decoding libjxl (CPU Threads: All) at 1.019x*
*JPEG XL libjxl (Input: JPEG - Encode Speed: 7) at 1.017x*
*rav1e (Speed: 5) at 1.013x*
*Stargate Digital Audio Workstation (Sample Rate: 96000 - Buffer Size: 512) at 1.011x*
*JPEG XL Decoding libjxl (CPU Threads: 1) at 1.009x*

*Stargate Digital Audio Workstation (Sample Rate: 480000 - Buffer Size: 512) at 1.008x.*

# Test Systems:

## A

## B

## C

Processor: Intel Core i9-10900K @ 5.30GHz (10 Cores / 20 Threads), Motherboard: Gigabyte Z490 AORUS MASTER (F21c BIOS), Chipset: Intel Comet Lake PCH, Memory: 16GB, Disk: Samsung SSD 970 EVO 500GB, Graphics: Sapphire AMD Radeon RX 5600 OEM/5600 XT / 5700/5700 6GB (1780/875MHz), Audio: Realtek ALC1220, Monitor: ASUS MG28U, Network: Intel I225-V + Intel Comet Lake PCH CNVi WiFi

OS: Ubuntu 21.10, Kernel: 5.13.0-20-generic (x86_64), Desktop: GNOME Shell 40.5, Display Server: X Server 1.20.13 + Wayland, OpenGL: 4.6 Mesa 21.2.2 (LLVM 12.0.1), Vulkan: 1.2.182, Compiler: GCC 11.2.0, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --enable-cet --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-link-serialization=2 --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-11-ZPT0kp/gcc-11-11.2.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-11-ZPT0kp/gcc-11-11.2.0/debian/tmp-gcn/usr --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-build-config=bootstrap-lto-lean --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: 0xec - Thermald 2.4.6
Python Notes: Python 3.9.7
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

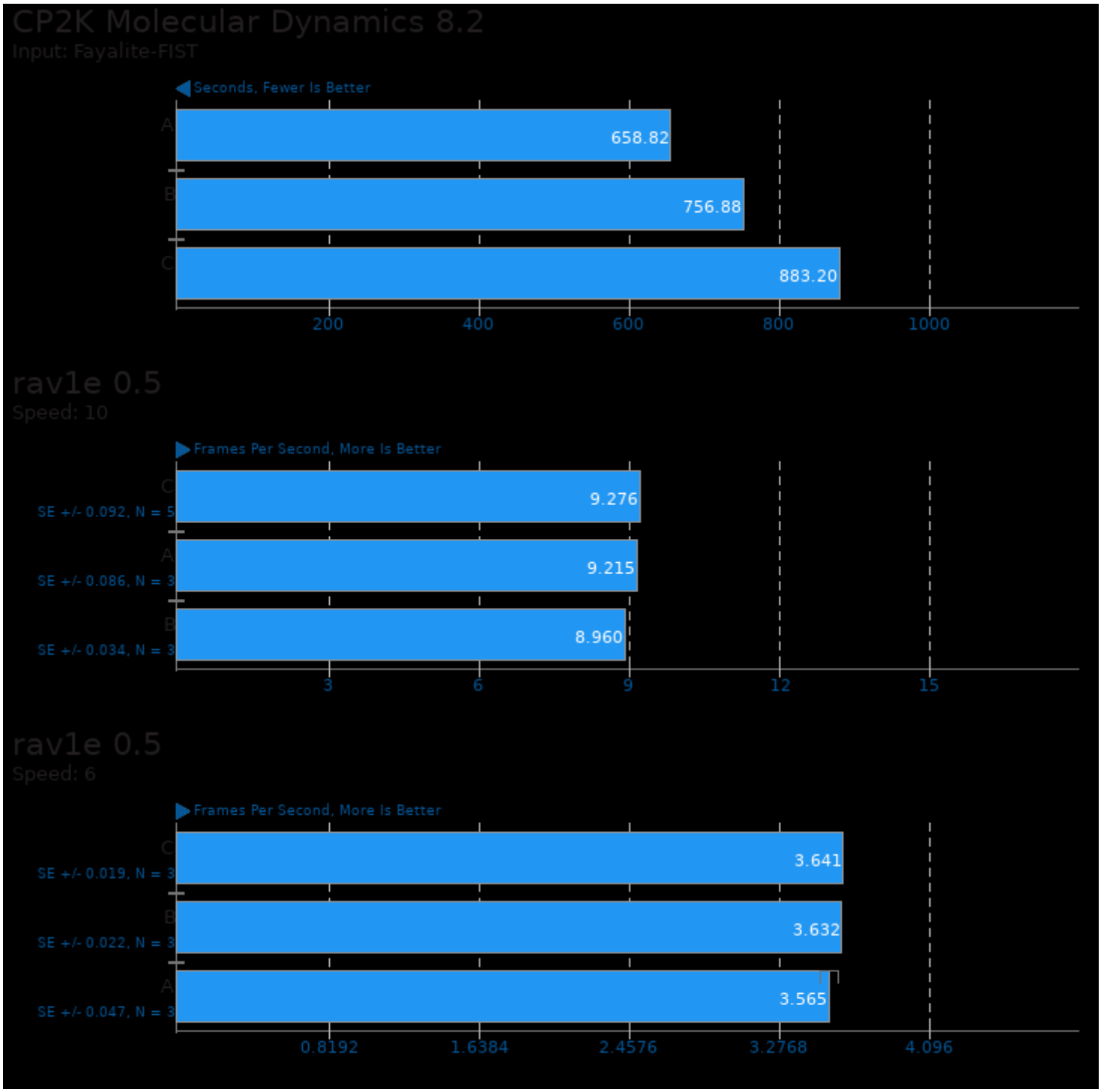
| | A | B | C |
|---|---|---|---|
| **CP2K Molecular Dynamics - Fayalite-FIST** | **658.823** | 756.875 | **883.198** |
| **Normalized** | 100% | 87.05% | 74.6% |
| **rav1e - 10 (FPS)** | 9.215 | **8.960** | **9.276** |
| **Normalized** | 99.34% | 96.59% | 100% |
| **Standard Deviation** | 1.6% | 0.7% | 2.2% |
| **rav1e - 6 (FPS)** | **3.565** | 3.632 | **3.641** |
| **Normalized** | 97.91% | 99.75% | 100% |
| **Standard Deviation** | 2.3% | 1.1% | 0.9% |
| **JPEG XL libjxl - JPEG - 5 (MP/s)** | **87.04** | **85.34** | 86.60 |
| **Normalized** | 100% | 98.05% | 99.49% |
| **Standard Deviation** | 1.8% | 0.5% | 1.2% |
| **JPEG XL Decoding libjxl - All (MP/s)** | **304.88** | **299.05** | 303.61 |
| **Normalized** | 100% | 98.09% | 99.58% |

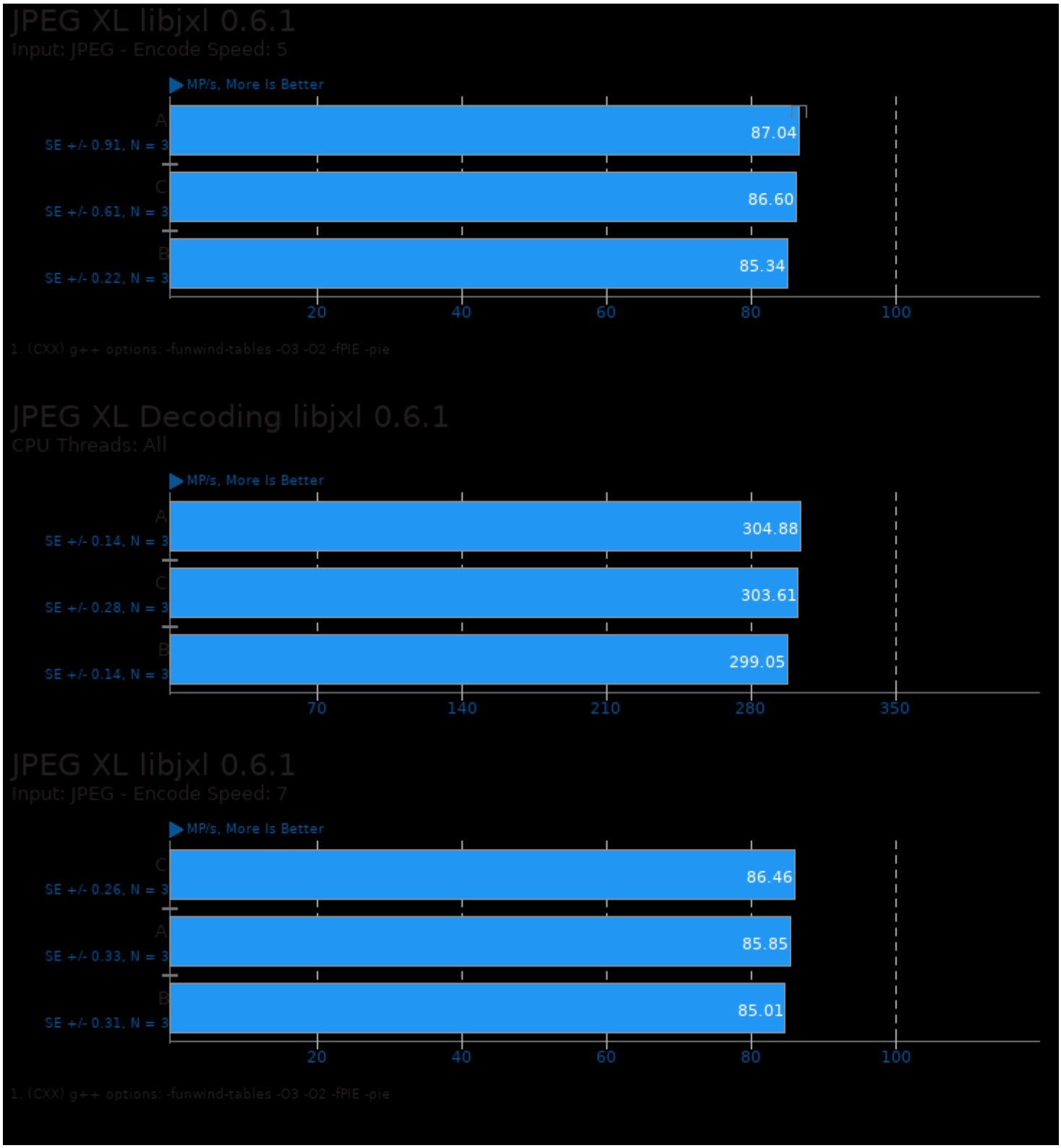
# new tests nov 10900K

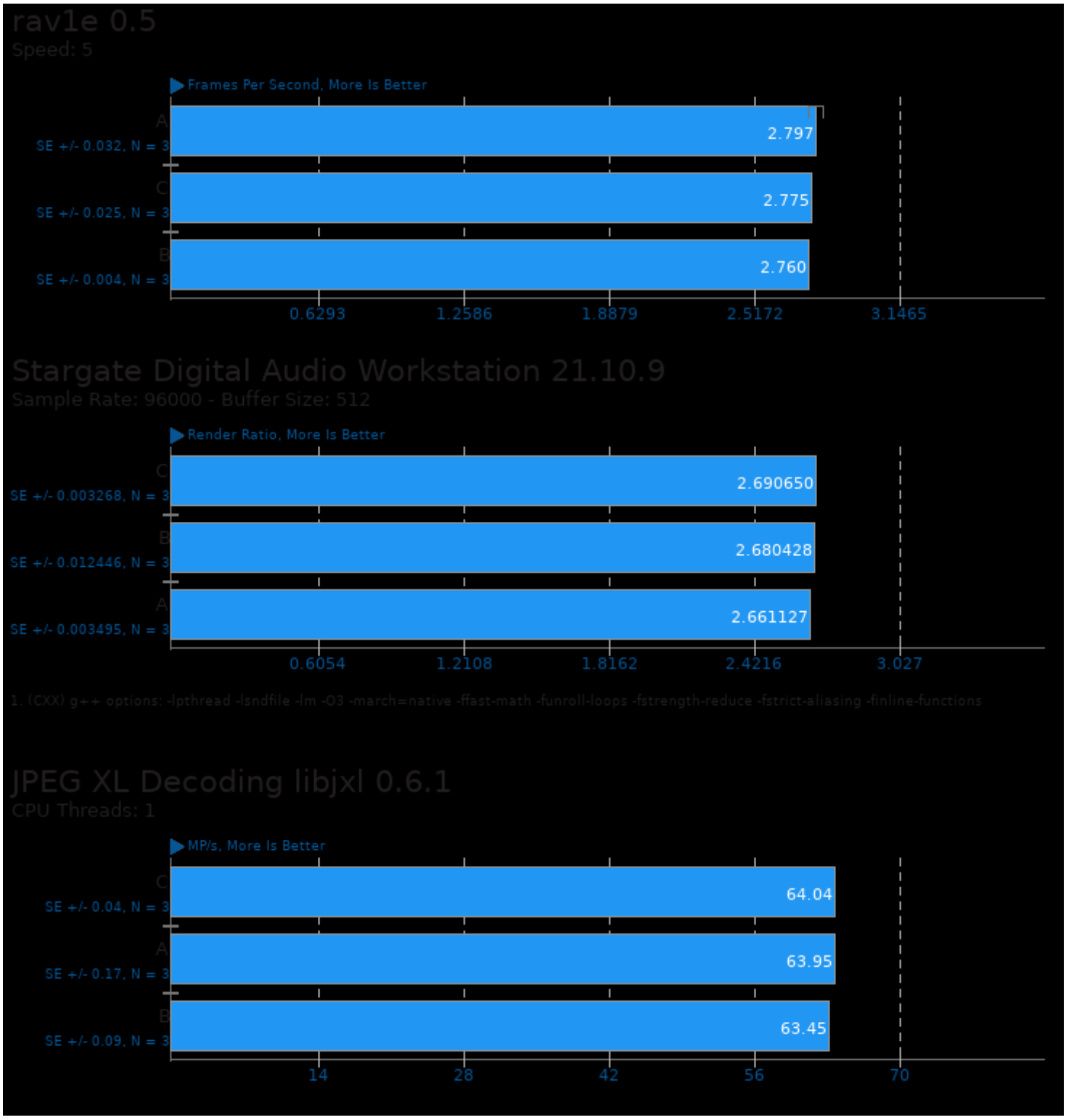
| | | | |
|---|---|---|---|
| Standard Deviation | 0.1% | 0.1% | 0.2% |
| **JPEG XL libjxl - JPEG - 7 (MP/s)** | 85.85 | **85.01** | **86.46** |
| Normalized | 99.29% | 98.32% | 100% |
| Standard Deviation | 0.7% | 0.6% | 0.5% |
| **rav1e - 5 (FPS)** | **2.797** | **2.760** | 2.775 |
| Normalized | 100% | 98.68% | 99.21% |
| Standard Deviation | 2% | 0.2% | 1.5% |
| **Stargate Digital Audio Workstation - 96000 - 512 (Render Ratio)** | **2.661127** | 2.680428 | **2.690650** |
| Normalized | 98.9% | 99.62% | 100% |
| Standard Deviation | 0.2% | 0.8% | 0.2% |
| **JPEG XL Decoding libjxl - 1 (MP/s)** | 63.95 | **63.45** | **64.04** |
| Normalized | 99.86% | 99.08% | 100% |
| Standard Deviation | 0.4% | 0.2% | 0.1% |
| **Stargate Digital Audio Workstation - 480000 - 512 (Render Ratio)** | 3.479603 | **3.504313** | **3.477528** |
| Normalized | 99.29% | 100% | 99.24% |
| Standard Deviation | 1.2% | 0.2% | 1.4% |
| **Stargate Digital Audio Workstation - 192000 - 512 (Render Ratio)** | **1.843625** | 1.847541 | **1.855482** |
| Normalized | 99.36% | 99.57% | 100% |
| Standard Deviation | 1% | 0.5% | 0.2% |
| **Stargate Digital Audio Workstation - 44100 - 1024 (Render Ratio)** | **3.730297** | 3.734330 | **3.753059** |
| Normalized | 99.39% | 99.5% | 100% |
| Standard Deviation | 0.5% | 0.3% | 0.1% |
| **Stargate Digital Audio Workstation - 44100 - 512 (Render Ratio)** | 3.648598 | **3.647594** | **3.669495** |
| Normalized | 99.43% | 99.4% | 100% |
| Standard Deviation | 1.4% | 0.6% | 0.4% |
| **GnuPG - 2.7.S.F.E (sec)** | **54.201** | **53.883** | 54.039 |
| Normalized | 99.41% | 100% | 99.71% |
| Standard Deviation | 1.6% | 0.2% | 1% |
| **rav1e - 1 (FPS)** | **0.539** | 0.540 | **0.542** |
| Normalized | 99.45% | 99.63% | 100% |
| Standard Deviation | 0.8% | 0.6% | 0.7% |
| **Stargate Digital Audio Workstation - 192000 - 1024 (Render Ratio)** | **1.887763** | 1.888239 | **1.897574** |
| Normalized | 99.48% | 99.51% | 100% |
| Standard Deviation | 0.4% | 0.4% | 0.9% |
| **JPEG XL libjxl - PNG - 5 (MP/s)** | **48.65** | **48.89** | 48.83 |
| Normalized | 99.51% | 100% | 99.88% |
| Standard Deviation | 0.5% | 0.1% | 0.1% |
| **JPEG XL libjxl - PNG - 7 (MP/s)** | **9.55** | **9.59** | 9.57 |
| Normalized | 99.58% | 100% | 99.79% |
| Standard Deviation | 0.1% | 0.2% | 0.2% |
| **JPEG XL libjxl - JPEG - 8 (MP/s)** | 31.22 | **31.20** | **31.32** |
| Normalized | 99.68% | 99.62% | 100% |
| Standard Deviation | 0.9% | 0.4% | 0.1% |
| **Stargate Digital Audio Workstation - 96000 - 1024 (Render Ratio)** | **2.735957** | 2.740994 | **2.743969** |
| Normalized | 99.71% | 99.89% | 100% |
| Standard Deviation | 0.5% | 0.2% | 0.5% |

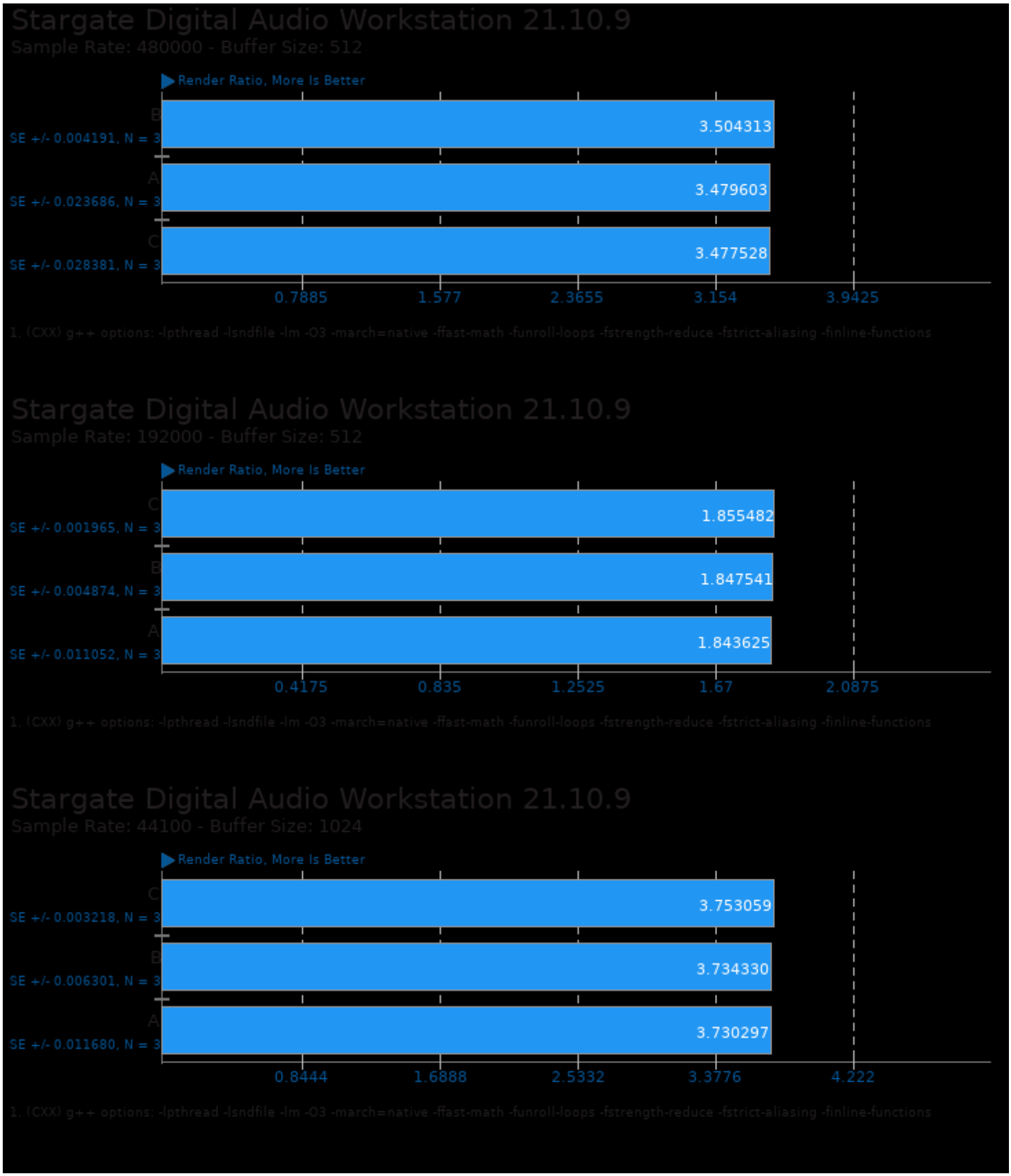
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| | | | |
|---|---|---|---|
| **Stargate Digital Audio Workstation - 480000 - 1024 (Render Ratio)** | **3.571985** | 3.575784 | **3.578801** |
| **Normalized** | 99.81% | 99.92% | 100% |
| **Standard Deviation** | 0.5% | 0.5% | 0.3% |
| **JPEG XL libjxl - PNG - 8 (MP/s)** | 0.93 | 0.93 | 0.93 |
| **Standard Deviation** | 1.6% | 1.1% | 0.6% |


CP2K Molecular Dynamics 8.2
Input: Fayalite-FIST
Seconds, Fewer Is Better
A
658.82
B
756.88
C
883.20
200
400
600
800
1000
rav1e 0.5
Speed: 10
Frames Per Second, More Is Better
C
SE +/- 0.092, N = 5
9.276
A
SE +/- 0.086, N = 3
9.215
B
SE +/- 0.034, N = 3
8.960
3
6
9
12
15
rav1e 0.5
Speed: 6
Frames Per Second, More Is Better
C
SE +/- 0.019, N = 3
3.641
B
SE +/- 0.022, N = 3
3.632
A
SE +/- 0.047, N = 3
3.565
0.8192
1.6384
2.4576
3.2768
4.096

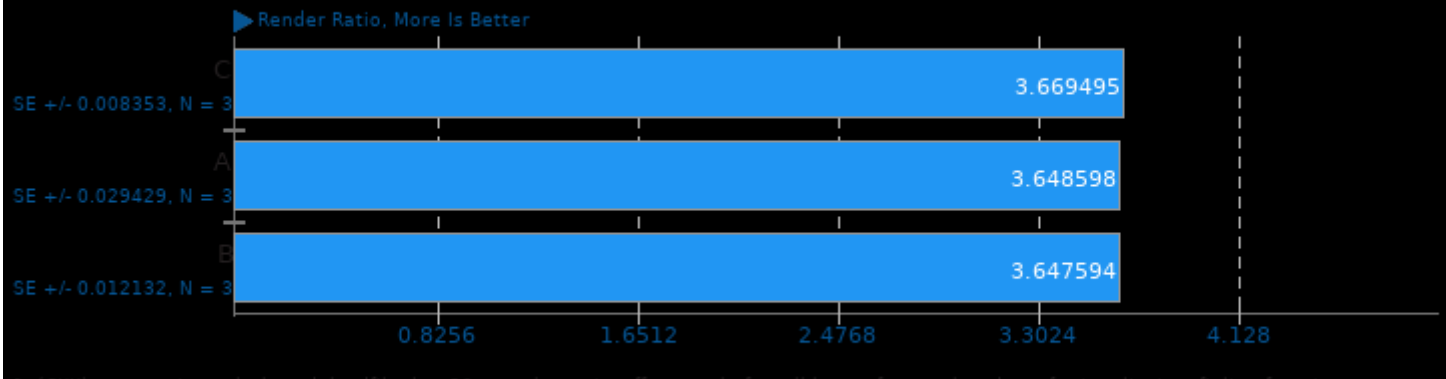

JPEG XL libjxl 0.6.1
Input: JPEG - Encode Speed: 5
MP/s, More Is Better
A
SE +/- 0.91, N = 3
87.04
C
SE +/- 0.61, N = 3
86.60
B
SE +/- 0.22, N = 3
85.34
20
40
60
80
100
1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie
JPEG XL Decoding libjxl 0.6.1
CPU Threads: All
MP/s, More Is Better
A
SE +/- 0.14, N = 3
304.88
C
SE +/- 0.28, N = 3
303.61
B
SE +/- 0.14, N = 3
299.05
70
140
210
280
350
JPEG XL libjxl 0.6.1
Input: JPEG - Encode Speed: 7
MP/s, More Is Better
C
SE +/- 0.26, N = 3
86.46
A
SE +/- 0.33, N = 3
85.85
B
SE +/- 0.31, N = 3
85.01
20
40
60
80
100
1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie


rav1e 0.5
Speed: 5
Frames Per Second, More Is Better
A
SE +/- 0.032, N = 3
2.797
C
SE +/- 0.025, N = 3
2.775
B
SE +/- 0.004, N = 3
2.760
0.6293
1.2586
1.8879
2.5172
3.1465
Stargate Digital Audio Workstation 21.10.9
Sample Rate: 96000 - Buffer Size: 512
Render Ratio, More Is Better
C
SE +/- 0.003268, N = 3
2.690650
B
SE +/- 0.012446, N = 3
2.680428
A
SE +/- 0.003495, N = 3
2.661127
0.6054
1.2108
1.8162
2.4216
3.027
1. (CXX) g++ options: -lpthread -lsndfile -lm -O3 -march=native -ffast-math -funroll-loops -fstrength-reduce -fstrict-aliasing -finline-functions
JPEG XL Decoding libjxl 0.6.1
CPU Threads: 1
MP/s, More Is Better
C
SE +/- 0.04, N = 3
64.04
A
SE +/- 0.17, N = 3
63.95
B
SE +/- 0.09, N = 3
63.45
14
28
42
56
70


Stargate Digital Audio Workstation 21.10.9
Sample Rate: 480000 - Buffer Size: 512
Render Ratio, More Is Better
B
SE +/- 0.004191, N = 3
3.504313
A
SE +/- 0.023686, N = 3
3.479603
C
SE +/- 0.028381, N = 3
3.477528
0.7885
1.577
2.3655
3.154
3.9425
1. (CXX) g++ options: -lpthread -lsndfile -lm -O3 -march=native -ffast-math -funroll-loops -fstrength-reduce -fstrict-aliasing -finline-functions
Stargate Digital Audio Workstation 21.10.9
Sample Rate: 192000 - Buffer Size: 512
Render Ratio, More Is Better
C
SE +/- 0.001965, N = 3
1.855482
B
SE +/- 0.004874, N = 3
1.847541
A
SE +/- 0.011052, N = 3
1.843625
0.4175
0.835
1.2525
1.67
2.0875
1. (CXX) g++ options: -lpthread -lsndfile -lm -O3 -march=native -ffast-math -funroll-loops -fstrength-reduce -fstrict-aliasing -finline-functions
Stargate Digital Audio Workstation 21.10.9
Sample Rate: 44100 - Buffer Size: 1024
Render Ratio, More Is Better
C
SE +/- 0.003218, N = 3
3.753059
B
SE +/- 0.006301, N = 3
3.734330
A
SE +/- 0.011680, N = 3
3.730297
0.8444
1.6888
2.5332
3.3776
4.222
1. (CXX) g++ options: -lpthread -lsndfile -lm -O3 -march=native -ffast-math -funroll-loops -fstrength-reduce -fstrict-aliasing -finline-functions

## Stargate Digital Audio Workstation 21.10.9

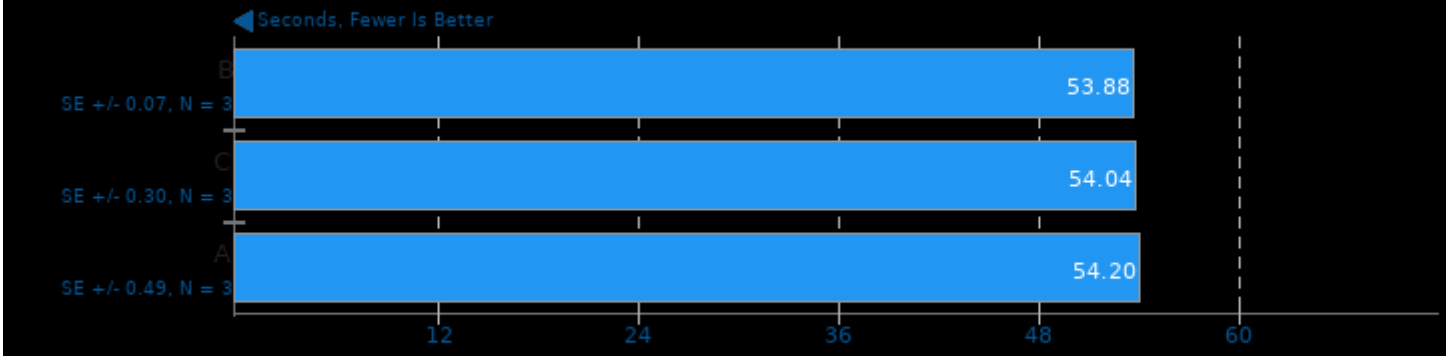
Sample Rate: 44100 - Buffer Size: 512




1. (CXX) g++ options: -lpthread -lsndfile -lm -O3 -march=native -ffast-math -funroll-loops -fstrength-reduce -fstrict-aliasing -finline-functions

## GnuPG 2.2.27

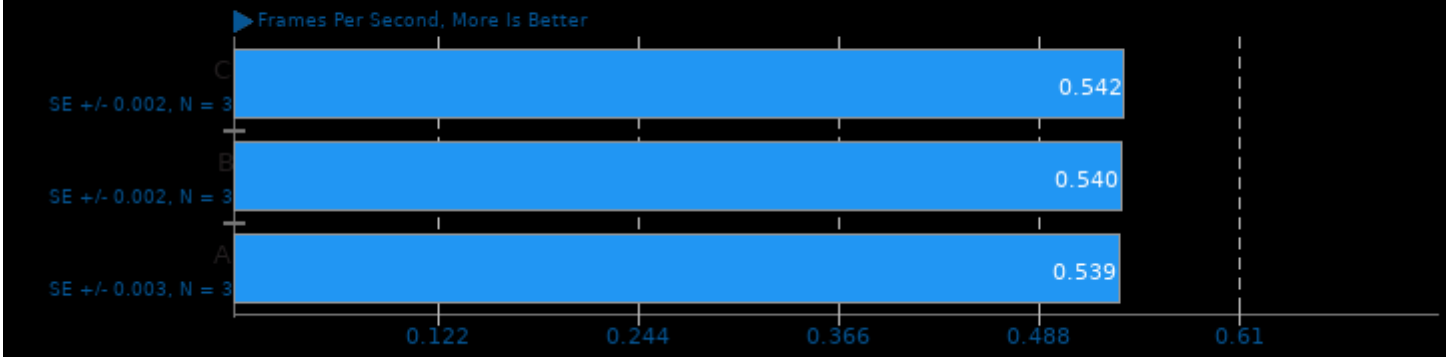
2.7GB Sample File Encryption

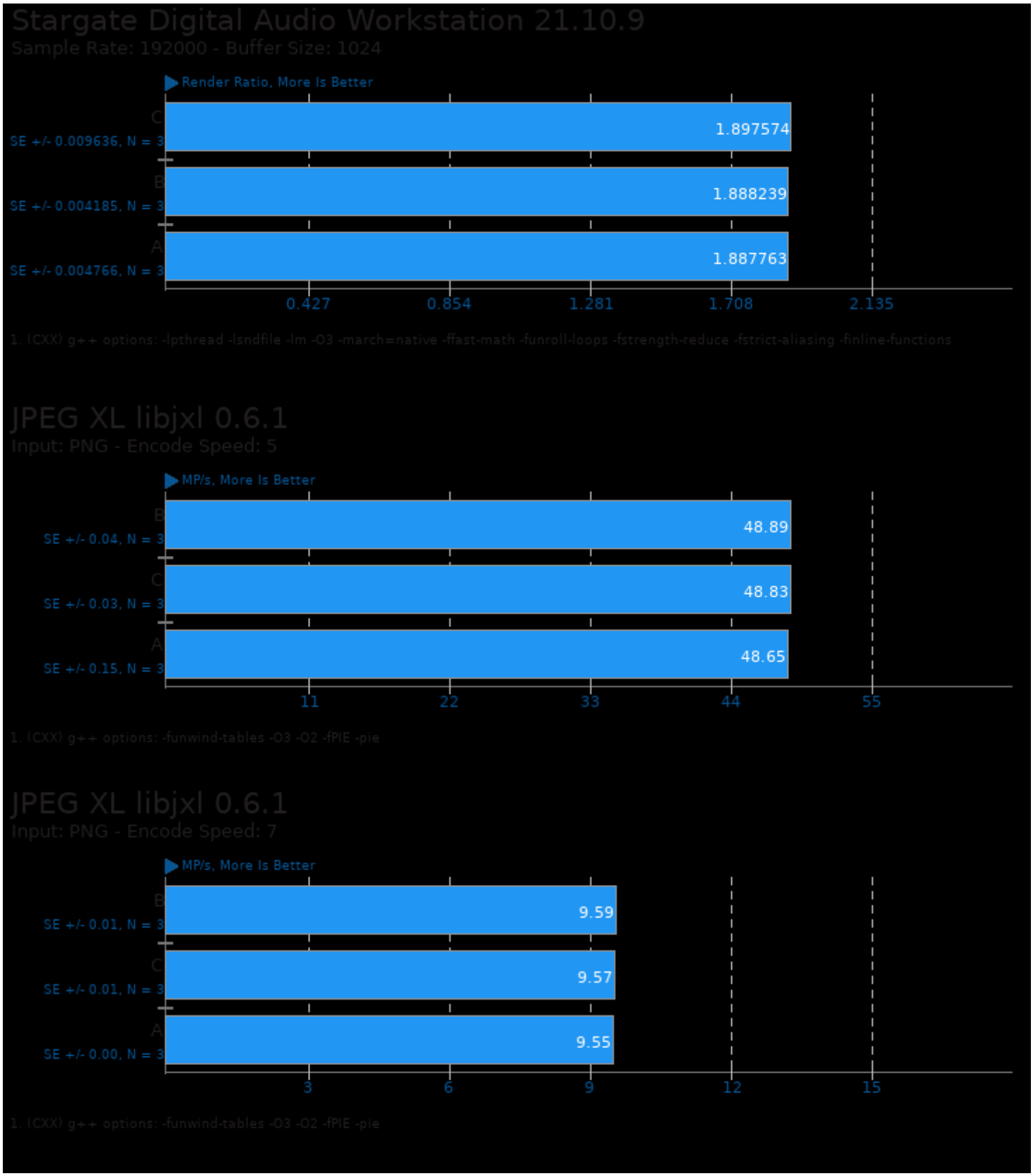


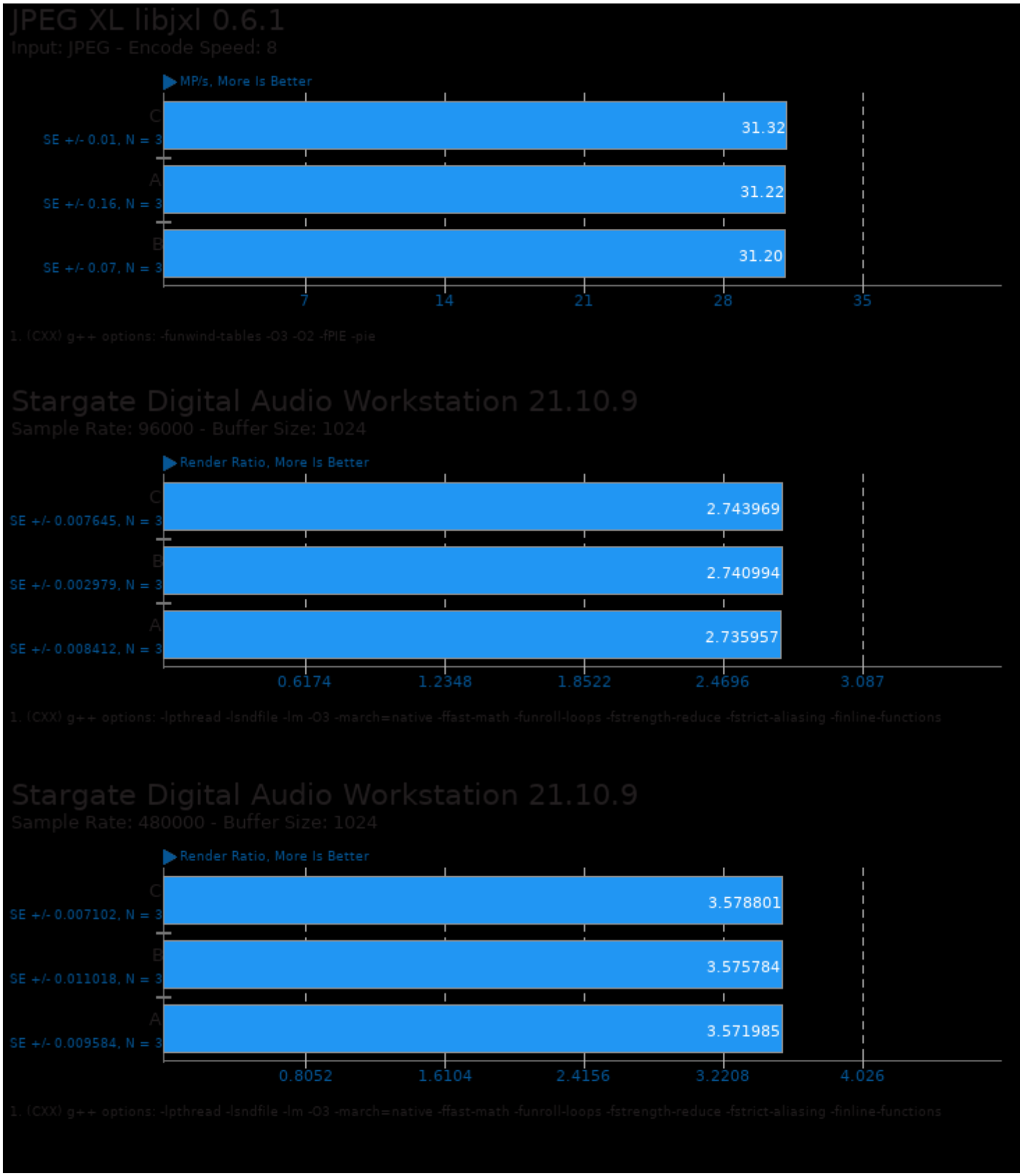

1. (CC) gcc options: -O2

## rav1e 0.5

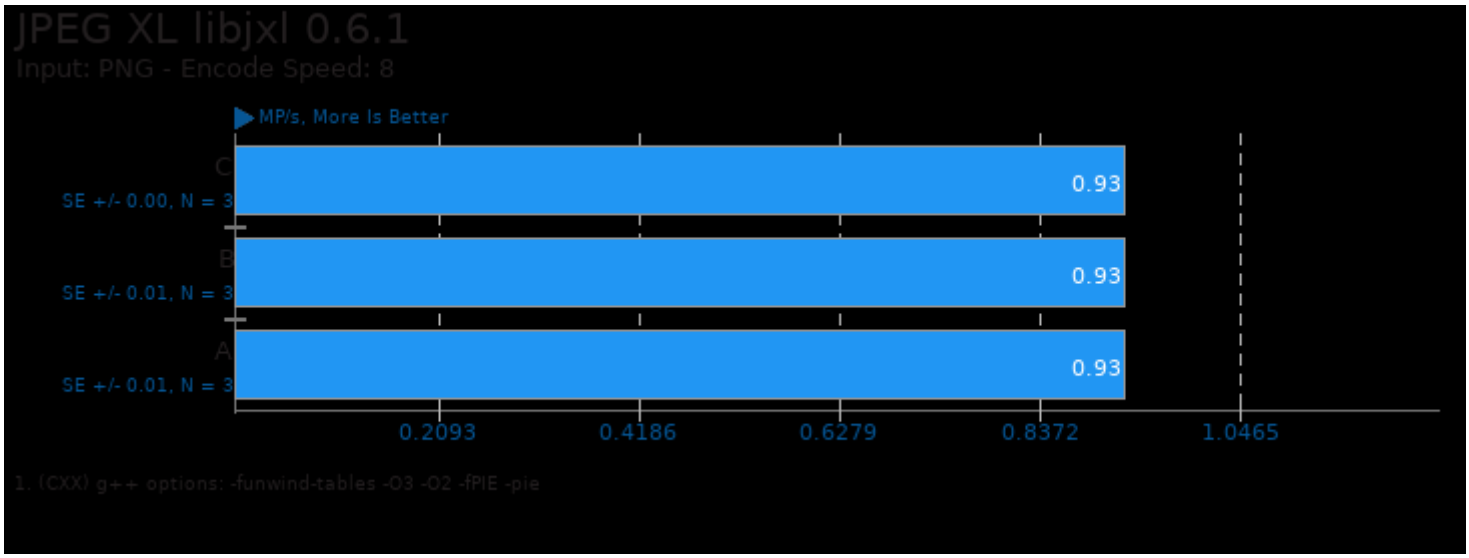
Speed: 1




Stargate Digital Audio Workstation 21.10.9
Sample Rate: 192000 - Buffer Size: 1024
Render Ratio, More Is Better
C
SE +/- 0.009636, N = 3
1.897574
B
SE +/- 0.004185, N = 3
1.888239
A
SE +/- 0.004766, N = 3
1.887763
0.427
0.854
1.281
1.708
2.135
1. (CXX) g++ options: -lpthread -lsndfile -lm -O3 -march=native -ffast-math -funroll-loops -fstrength-reduce -fstrict-aliasing -finline-functions
JPEG XL libjxl 0.6.1
Input: PNG - Encode Speed: 5
MP/s, More Is Better
B
SE +/- 0.04, N = 3
48.89
C
SE +/- 0.03, N = 3
48.83
A
SE +/- 0.15, N = 3
48.65
11
22
33
44
55
1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie
JPEG XL libjxl 0.6.1
Input: PNG - Encode Speed: 7
MP/s, More Is Better
B
SE +/- 0.01, N = 3
9.59
C
SE +/- 0.01, N = 3
9.57
A
SE +/- 0.00, N = 3
9.55
3
6
9
12
15
1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie


JPEG XL libjxl 0.6.1
Input: JPEG - Encode Speed: 8
MP/s, More Is Better
C
SE +/- 0.01, N = 3
31.32
A
SE +/- 0.16, N = 3
31.22
B
SE +/- 0.07, N = 3
31.20
7
14
21
28
35
1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie
Stargate Digital Audio Workstation 21.10.9
Sample Rate: 96000 - Buffer Size: 1024
Render Ratio, More Is Better
C
SE +/- 0.007645, N = 3
2.743969
B
SE +/- 0.002979, N = 3
2.740994
A
SE +/- 0.008412, N = 3
2.735957
0.6174
1.2348
1.8522
2.4696
3.087
1. (CXX) g++ options: -lpthread -lsndfile -lm -O3 -march=native -ffast-math -funroll-loops -fstrength-reduce -fstrict-aliasing -finline-functions
Stargate Digital Audio Workstation 21.10.9
Sample Rate: 480000 - Buffer Size: 1024
Render Ratio, More Is Better
C
SE +/- 0.007102, N = 3
3.578801
B
SE +/- 0.011018, N = 3
3.575784
A
SE +/- 0.009584, N = 3
3.571985
0.8052
1.6104
2.4156
3.2208
4.026
1. (CXX) g++ options: -lpthread -lsndfile -lm -O3 -march=native -ffast-math -funroll-loops -fstrength-reduce -fstrict-aliasing -finline-functions

# new tests nov 10900K

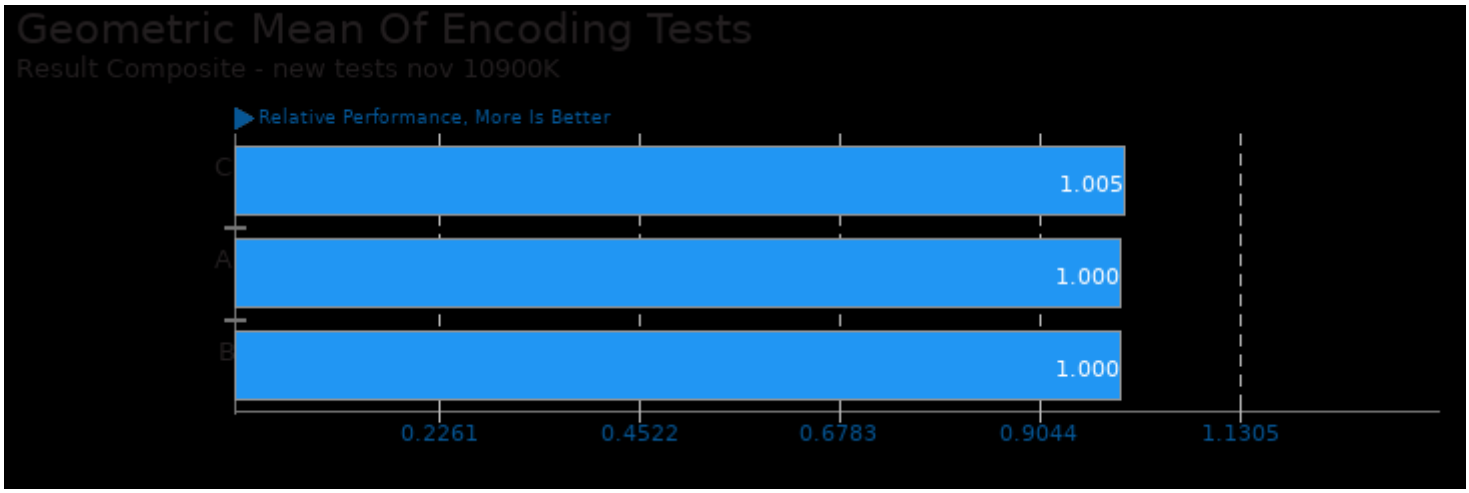


# new tests nov 10900K

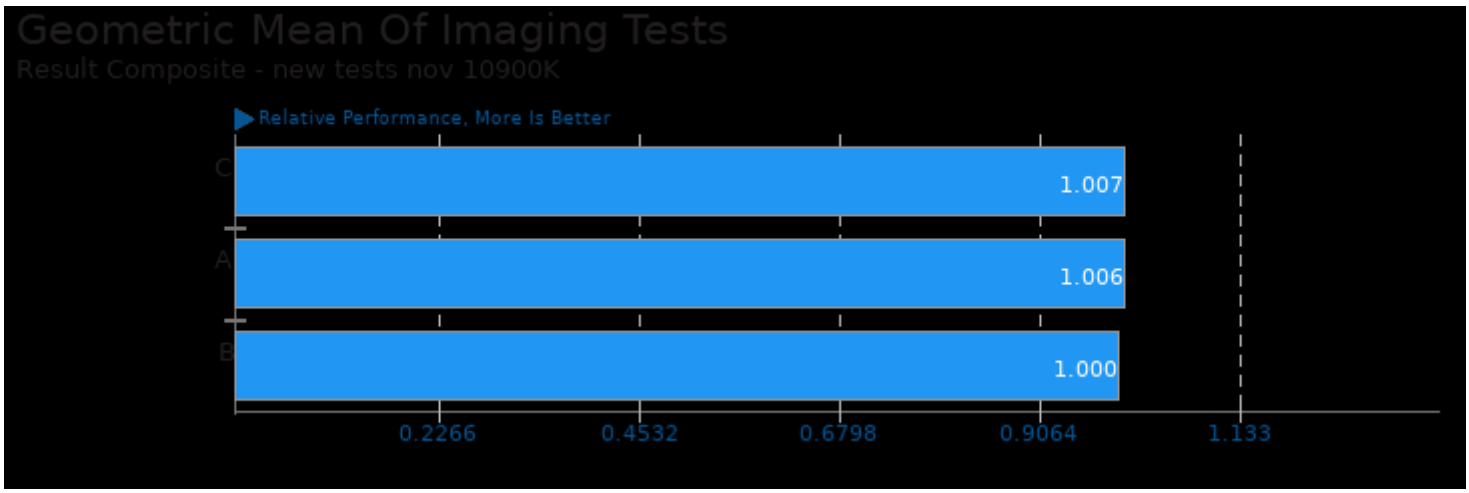
These geometric means are based upon test groupings / test suites for this result file.




Geometric mean based upon tests: pts/rav1e, pts/stargate, pts/jpegxl and pts/jpegxl-decode




Geometric mean based upon tests: pts/stargate and pts/rav1e




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

*This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 21:51.*