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3900XT November

AMD Ryzen 9 3900XT 12-Core testing with a MSI MEG X570 GODLIKE (MS-7C34) v1.0 (1.B3 BIOS) and AMD Radeon RX 56/64 8GB on Ubuntu 21.10 via the Phoronix Test Suite.

Automated Executive Summary

B had the most wins, coming in first place for 33% of the tests.

Based on the geometric mean of all complete results, the fastest (C) was 1.137x the speed of the slowest (B). D was 0.985x the speed of C, A was 0.992x the speed of D, B was 0.9x the speed of A.

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

Sockperf (Test: Latency Under Load) at 10.001x
Sockperf (Test: Latency Ping Pong) at 1.087x
Stargate Digital Audio Workstation (Sample Rate: 192000 - Buffer Size: 1024) at 1.085x
Stargate Digital Audio Workstation (Sample Rate: 480000 - Buffer Size: 512) at 1.078x
Stargate Digital Audio Workstation (Sample Rate: 480000 - Buffer Size: 1024) at 1.07x
BLAKE2 at 1.063x
Stargate Digital Audio Workstation (Sample Rate: 192000 - Buffer Size: 512) at 1.045x
Sockperf (Test: Throughput) at 1.043x
Stargate Digital Audio Workstation (Sample Rate: 96000 - Buffer Size: 1024) at 1.042x

Stargate Digital Audio Workstation (Sample Rate: 96000 - Buffer Size: 512) at 1.021x.

Test Systems:

A

B

C

D

Processor: AMD Ryzen 9 3900XT 12-Core @ 3.80GHz (12 Cores / 24 Threads), Motherboard: MSI MEG X570 GODLIKE (MS-7C34) v1.0 (1.B3 BIOS), Chipset: AMD Starship/Matisse, Memory: 16GB, Disk: 500GB Seagate FireCuda 520 SSD ZP500GM30002, Graphics: AMD Radeon RX 56/64 8GB (1630/945MHz), Audio: AMD Vega 10 HDMI Audio, Monitor: ASUS MG28U, Network: Realtek Device 2600 + Realtek Killer E3000 2.5GbE + Intel Wi-Fi 6 AX200

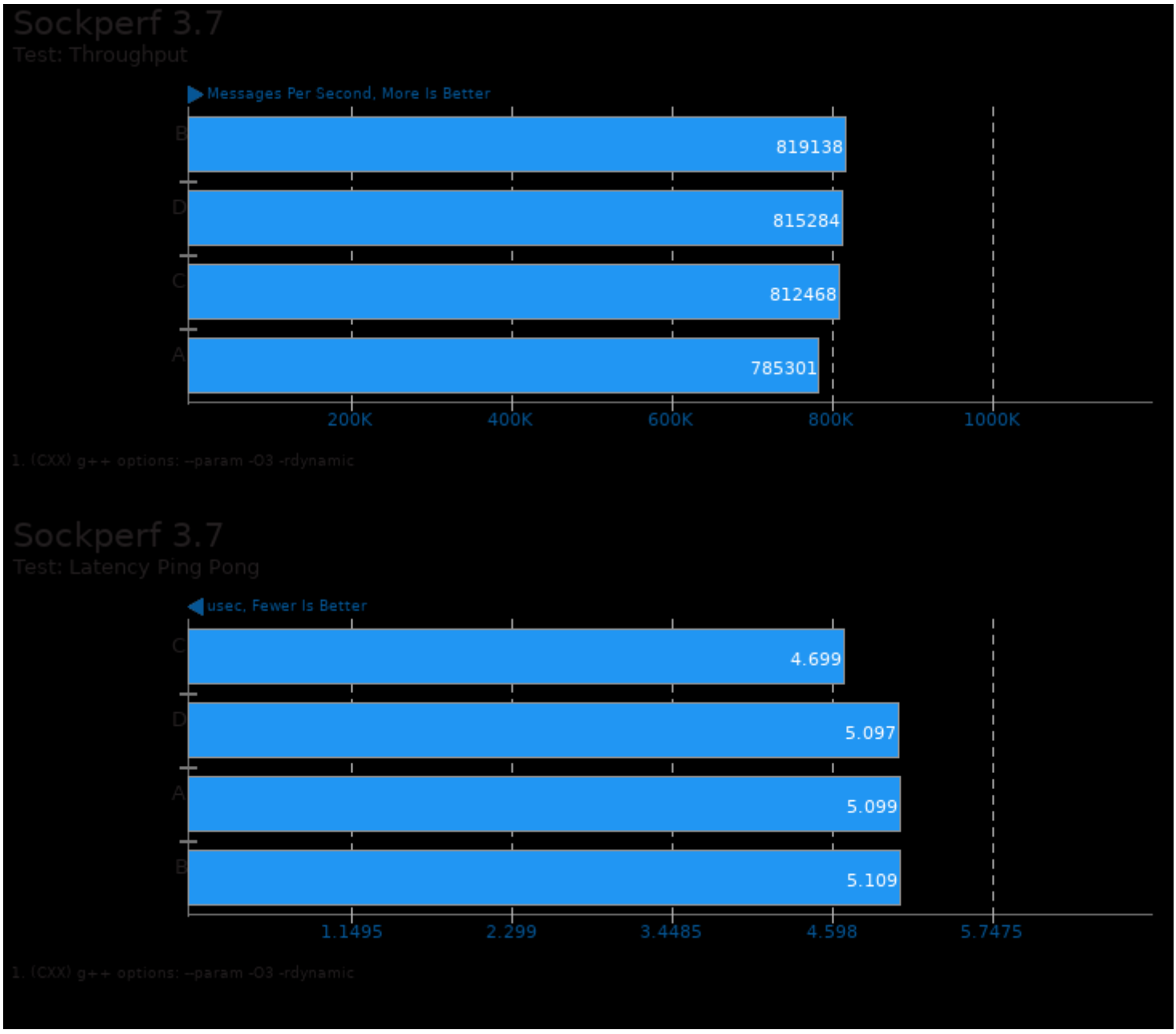
OS: Ubuntu 21.10, Kernel: 5.13.0-16-generic (x86_64), Desktop: GNOME Shell 40.5, Display Server: X Server + Wayland, OpenGL: 4.6 Mesa 21.2.2 (LLVM 12.0.1), Vulkan: 1.2.182, Compiler: GCC 11.2.0, File-System: ext4, Screen Resolution: 3840x2160

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: acpi-cpufreq schedutil (Boost: Enabled) - CPU Microcode: 0x8701021
Python Notes: Python 3.9.7
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

	A	B	C	D
Sockperf - Throughput	785301	819138	812468	815284
Normalized	95.87%	100%	99.19%	99.53%
Sockperf - Latency Ping Pong (usec)	5.099	5.109	4.699	5.097
Normalized	92.16%	91.97%	100%	92.19%
Sockperf - Latency Under Load (usec)	15.319	146.268	14.625	17.35
Normalized	95.47%	10%	100%	84.29%
BLAKE2 (Cycles/Byte)	5.42	5.1	5.36	5.34
Normalized	94.1%	100%	95.15%	95.51%
rav1e - 1 (FPS)	0.491	0.49	0.491	0.491

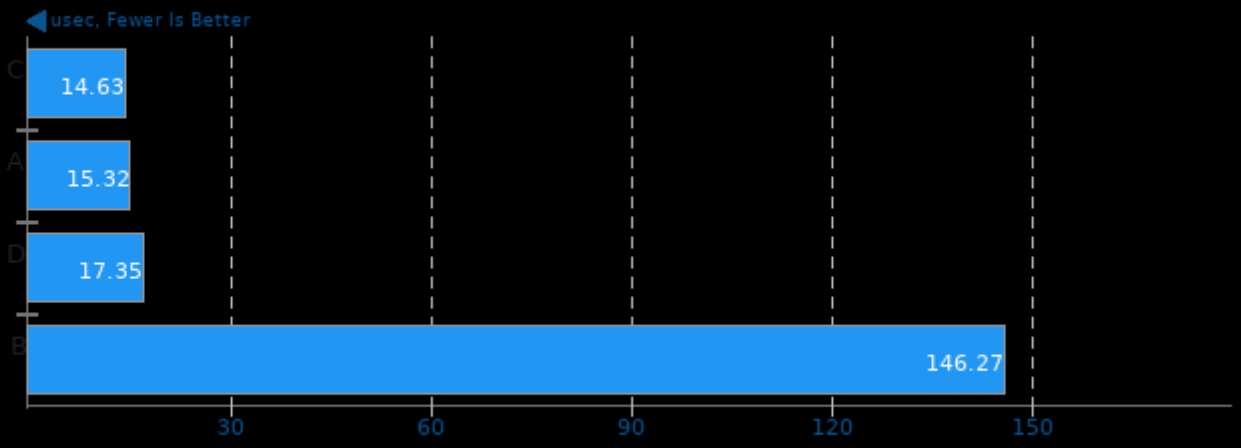
3900XT November

Normalized	100%	99.8%	100%	100%
rav1e - 5 (FPS)	2.514	2.513	2.537	2.519
Normalized	99.09%	99.05%	100%	99.29%
rav1e - 6 (FPS)	3.428	3.463	3.448	3.471
Normalized	98.76%	99.77%	99.34%	100%
rav1e - 10 (FPS)	8.508	8.546	8.66	8.519
Normalized	98.24%	98.68%	100%	98.37%
7-Zip Compression - Compression Rating (MIPS)	88549	88011	88637	88818
Normalized	99.7%	99.09%	99.8%	100%
7-Zip Compression - D.R (MIPS)	91398	91313	91278	91308
Normalized	100%	99.91%	99.87%	99.9%
Stargate Digital Audio Workstation - 44100 - 512 (Render Ratio)	3.76374	3.777295	3.787636	3.764622
Normalized	99.37%	99.73%	100%	99.39%
Stargate Digital Audio Workstation - 96000 - 512 (Render Ratio)	2.842193	2.810802	2.782999	2.835032
Normalized	100%	98.9%	97.92%	99.75%
Stargate Digital Audio Workstation - 192000 - 512 (Render Ratio)	1.941937	1.948835	1.948718	1.86481
Normalized	99.65%	100%	99.99%	95.69%
Stargate Digital Audio Workstation - 44100 - 1024 (Render Ratio)	3.886225	3.853415	3.87201	3.846362
Normalized	100%	99.16%	99.63%	98.97%
Stargate Digital Audio Workstation - 480000 - 512 (Render Ratio)	3.389645	3.654129	3.610276	3.651925
Normalized	92.76%	100%	98.8%	99.94%
Stargate Digital Audio Workstation - 96000 - 1024 (Render Ratio)	2.821171	2.93932	2.911913	2.939877
Normalized	95.96%	99.98%	99.05%	100%
Stargate Digital Audio Workstation - 192000 - 1024 (Render Ratio)	1.896334	2.057562	2.053796	2.055243
Normalized	92.16%	100%	99.82%	99.89%
Stargate Digital Audio Workstation - 480000 - 1024 (Render Ratio)	3.539576	3.786688	3.723661	3.751881
Normalized	93.47%	100%	98.34%	99.08%


Sockperf 3.7
Test: Throughput
Messages Per Second, More Is Better
B
819138
D
815284
C
812468
A
785301
200K
400K
600K
800K
1000K
1. (CXX) g++ options: -param -O3 -rdynamic
Sockperf 3.7
Test: Latency Ping Pong
usec, Fewer Is Better
C
4.699
D
5.097
A
5.099
B
5.109
1.1495
2.299
3.4485
4.598
5.7475
1. (CXX) g++ options: -param -O3 -rdynamic

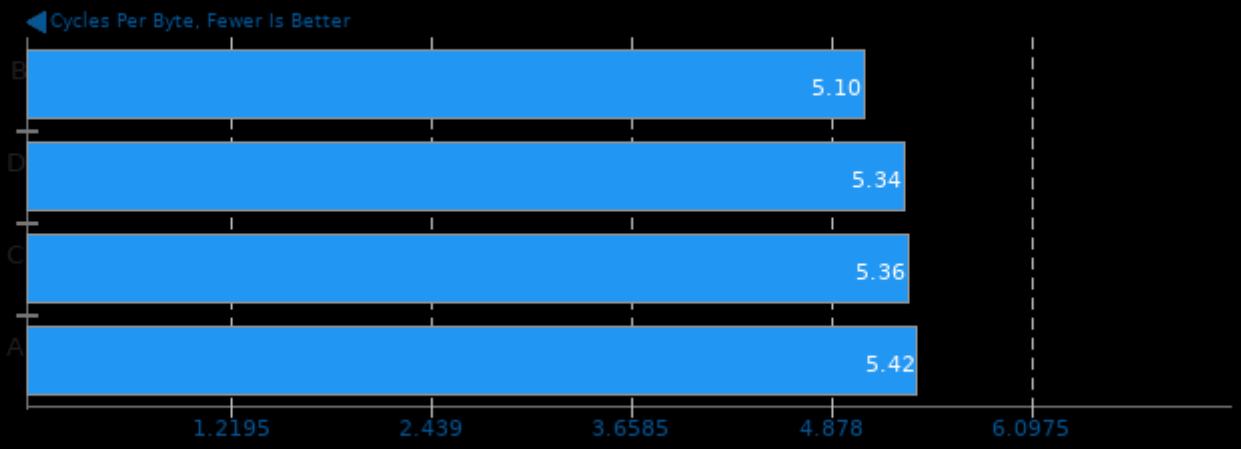
Sockperf 3.7

Test: Latency Under Load



1. (CXX) g++ options: -param -O3 -rdynamic

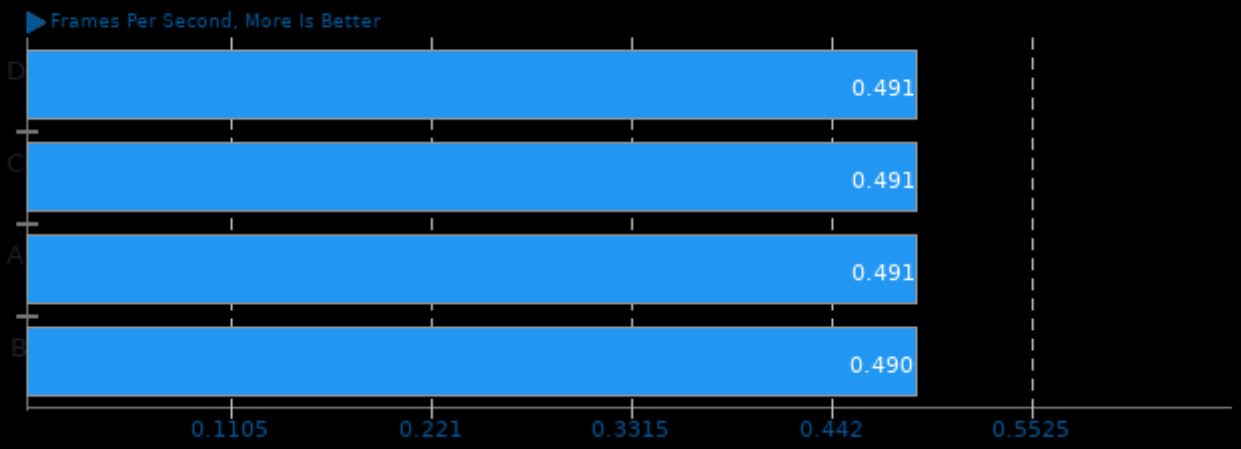
BLAKE2 20170307

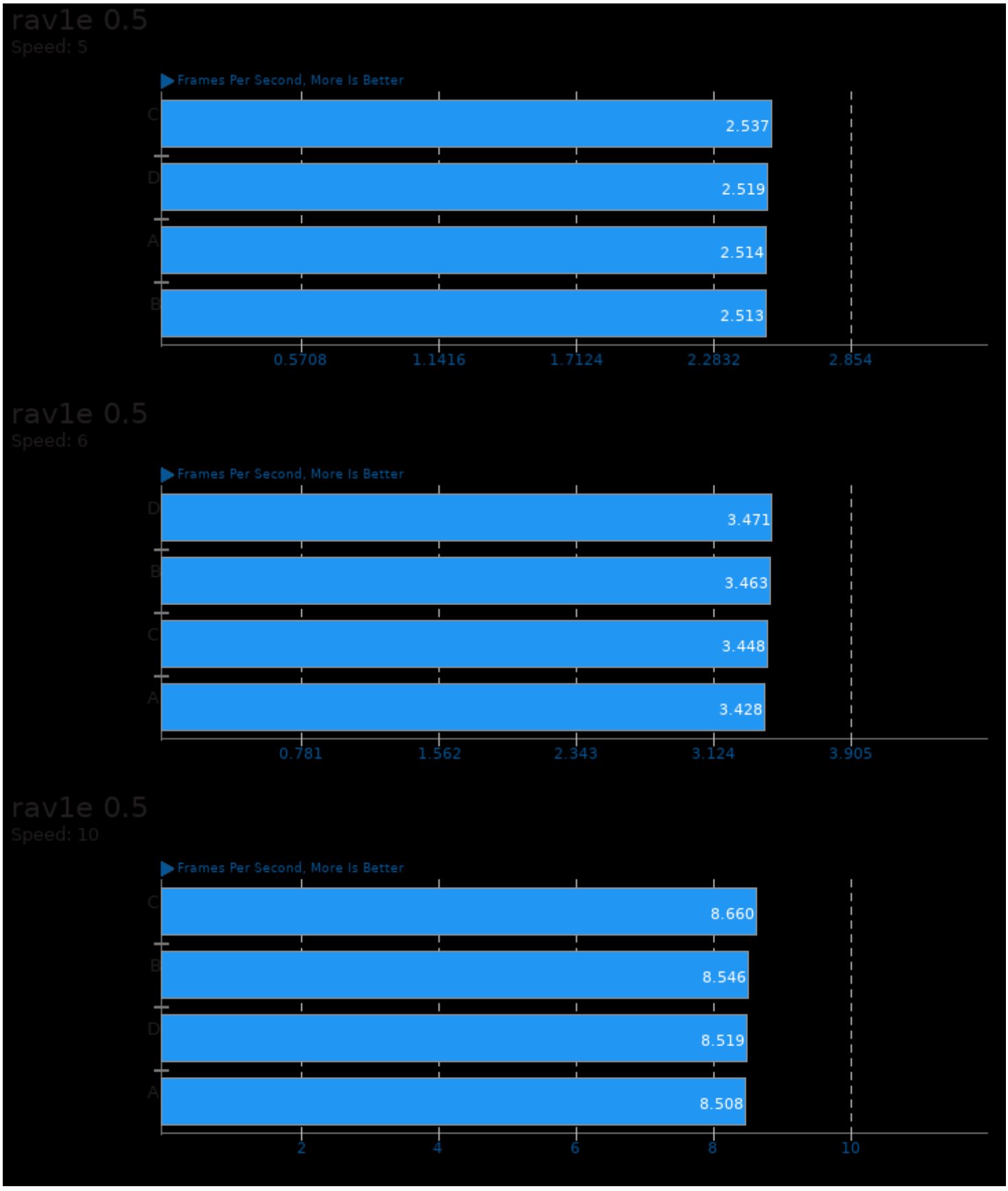


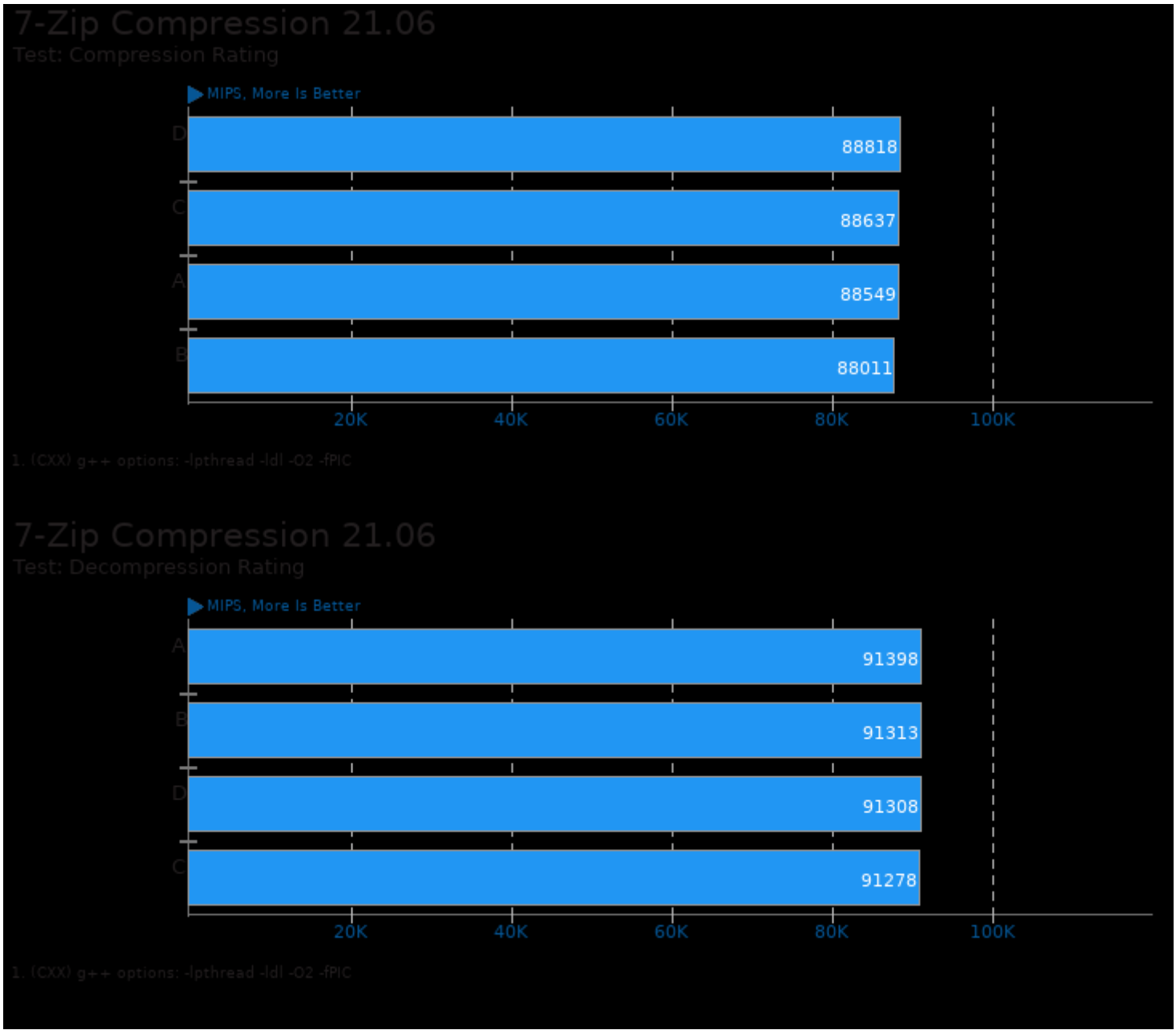
1. (CC) gcc options: -O3 -march=native -lcrypto -lz

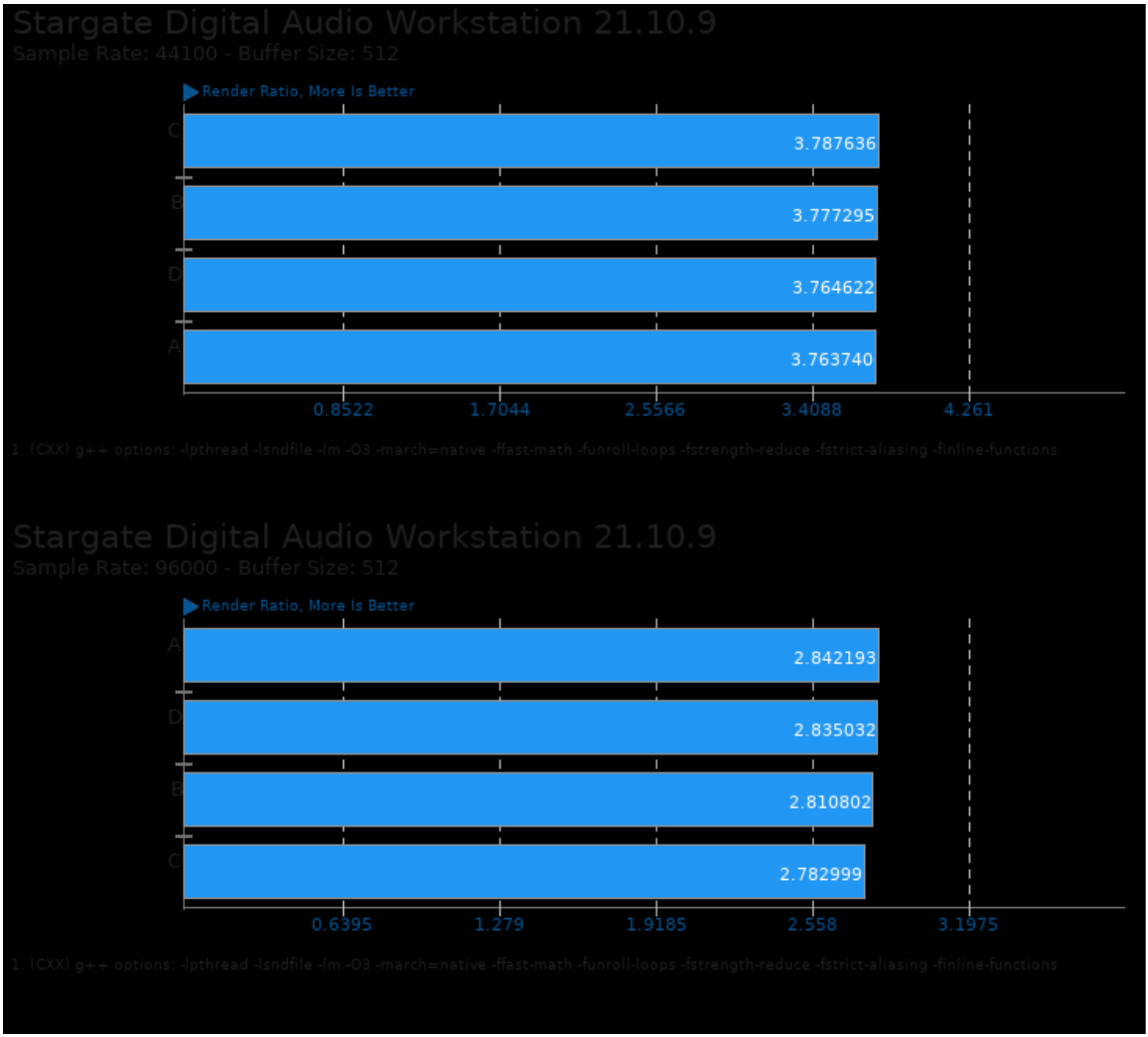
rav1e 0.5

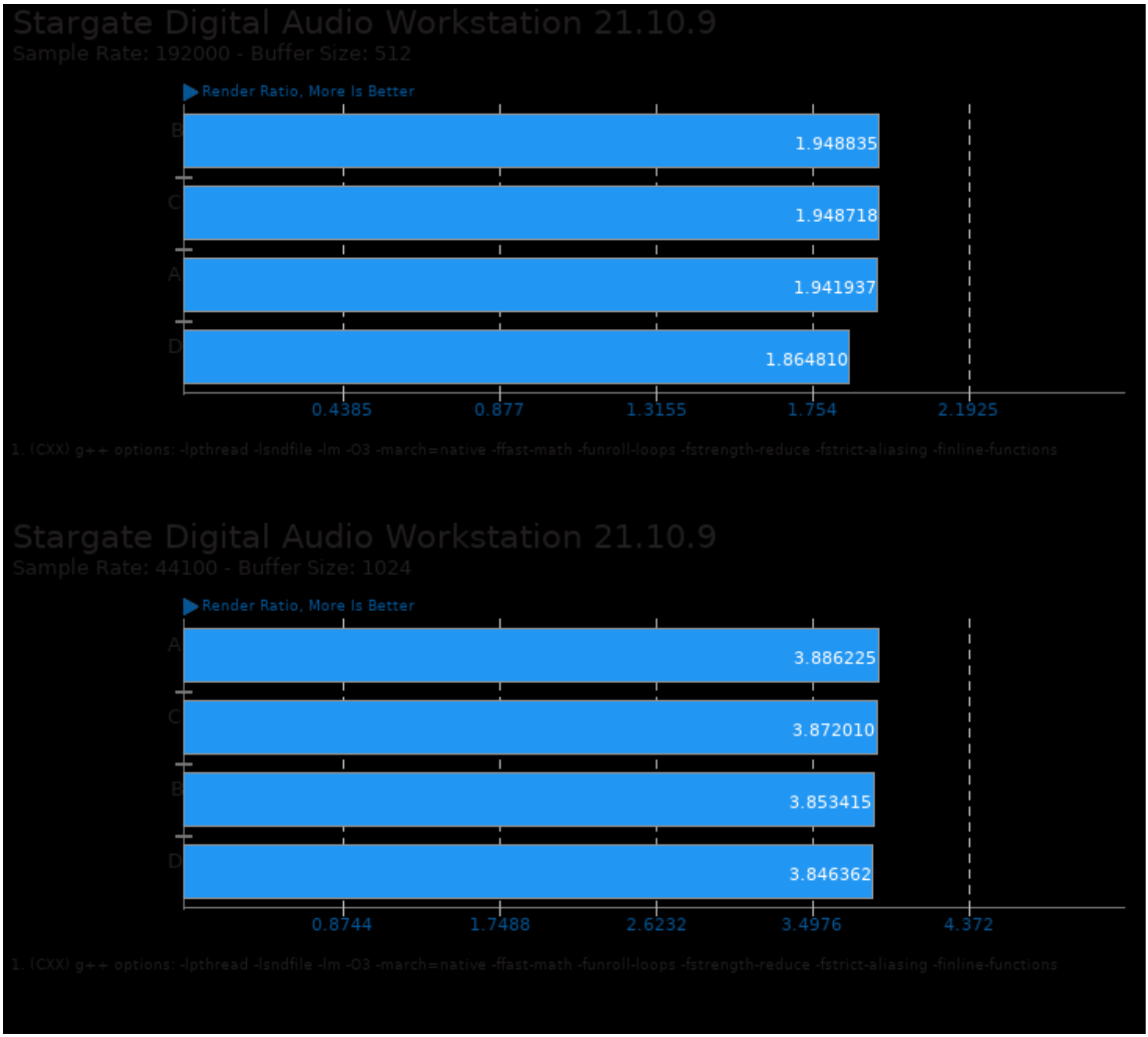
Speed: 1

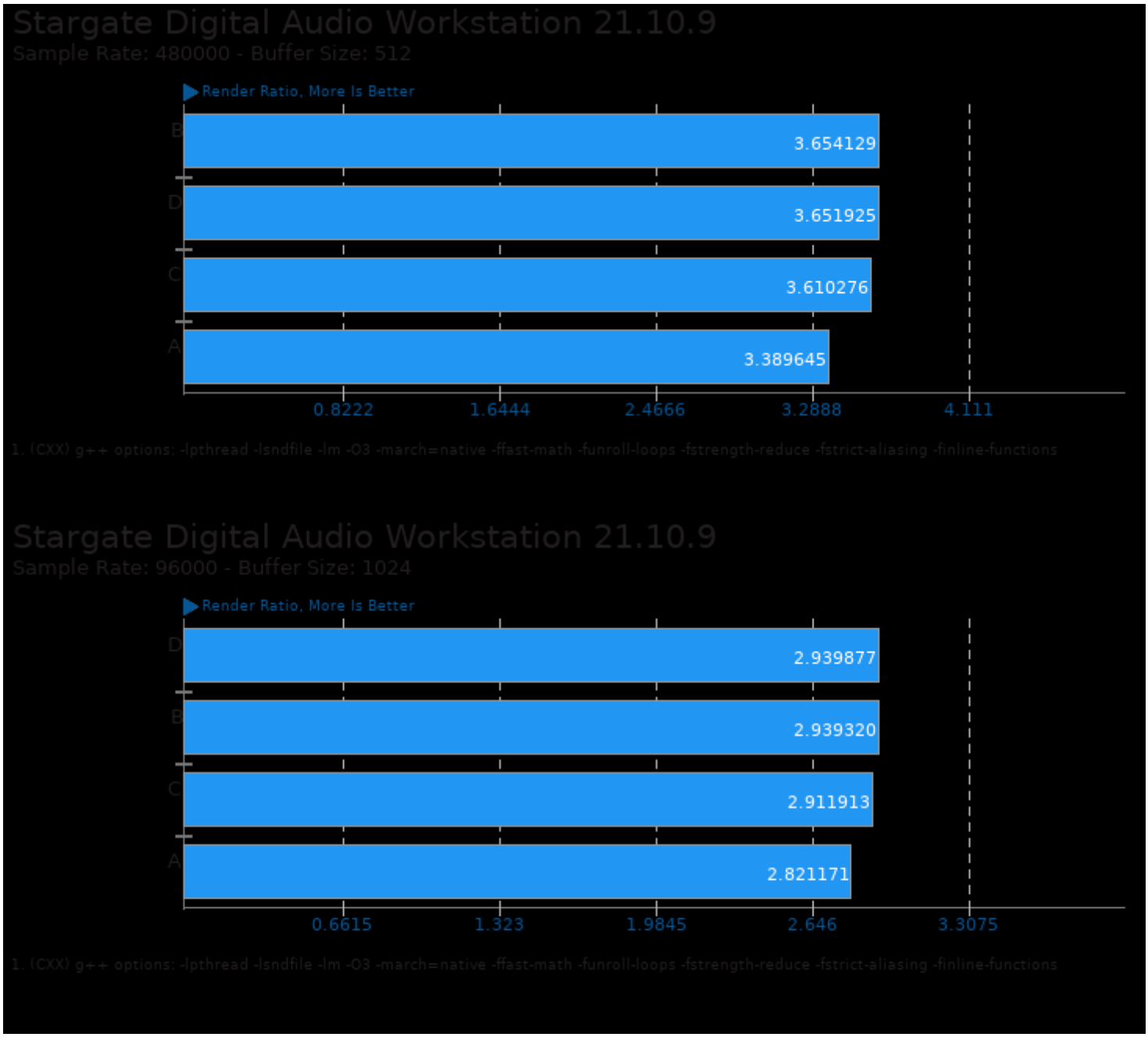


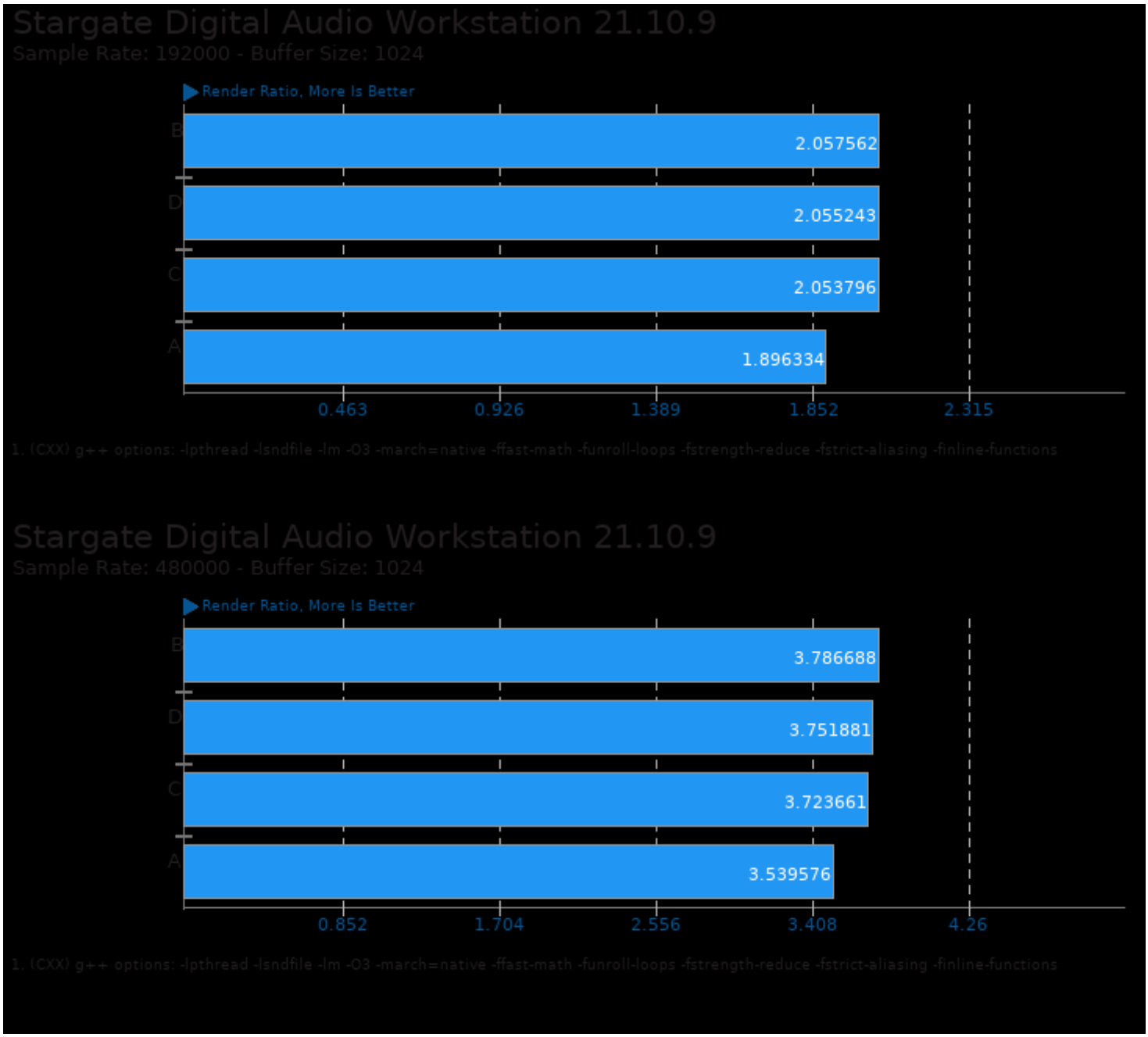

rav1e 0.5
Speed: 5
Frames Per Second, More Is Better
C
2.537
D
2.519
A
2.514
B
2.513
0.5708
1.1416
1.7124
2.2832
2.854
rav1e 0.5
Speed: 6
Frames Per Second, More Is Better
D
3.471
B
3.463
C
3.448
A
3.428
0.781
1.562
2.343
3.124
3.905
rav1e 0.5
Speed: 10
Frames Per Second, More Is Better
C
8.660
B
8.546
D
8.519
A
8.508
2
4
6
8
10


7-Zip Compression 21.06
Test: Compression Rating
MIPS, More Is Better
D
C
A
B
88818
88637
88549
88011
20K
40K
60K
80K
100K
1. (CXX) g++ options: -lpthread -ldl -O2 -fPIC
7-Zip Compression 21.06
Test: Decompression Rating
MIPS, More Is Better
A
B
D
C
91398
91313
91308
91278
20K
40K
60K
80K
100K
1. (CXX) g++ options: -lpthread -ldl -O2 -fPIC

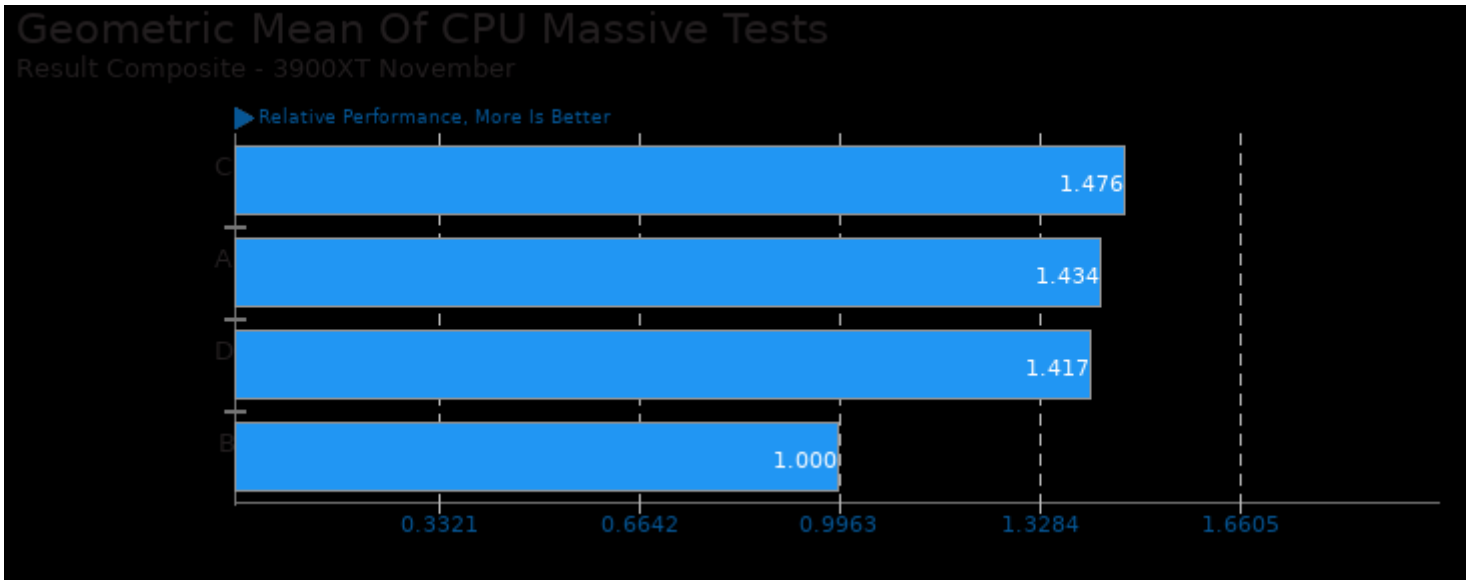

Stargate Digital Audio Workstation 21.10.9
Sample Rate: 44100 - Buffer Size: 512
Render Ratio, More Is Better
C
3.787636
B
3.777295
D
3.764622
A
3.763740
0.8522
1.7044
2.5566
3.4088
4.261
1. (CXX) g++ options: -lpthread -lsndfile -lm -O3 -march=native -ffast-math -funroll-loops -fstrength-reduce -fstrict-aliasing -finline-functions
Stargate Digital Audio Workstation 21.10.9
Sample Rate: 96000 - Buffer Size: 512
Render Ratio, More Is Better
A
2.842193
D
2.835032
B
2.810802
C
2.782999
0.6395
1.279
1.9185
2.558
3.1975
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
B
1.948835
C
1.948718
A
1.941937
D
1.864810
0.4385
0.877
1.3155
1.754
2.1925
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
A
3.886225
C
3.872010
B
3.853415
D
3.846362
0.8744
1.7488
2.6232
3.4976
4.372
1. (CXX) g++ options: -lpthread -lsndfile -lm -O3 -march=native -ffast-math -funroll-loops -fstrength-reduce -fstrict-aliasing -finline-functions

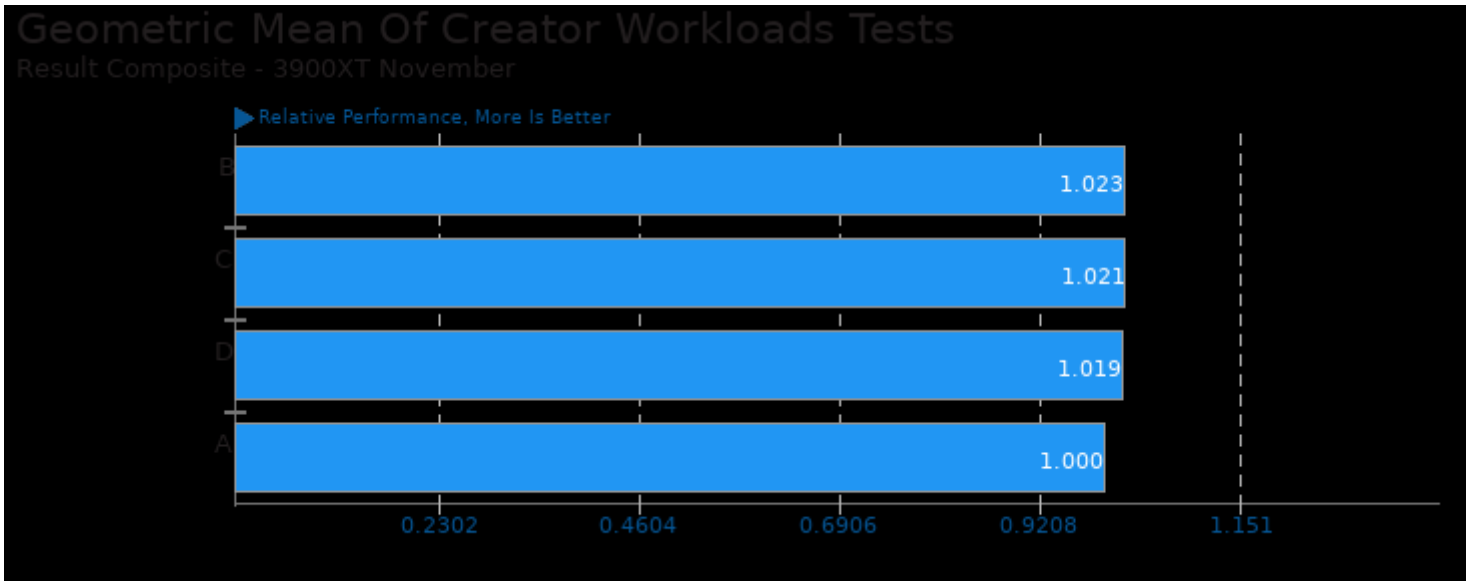

Stargate Digital Audio Workstation 21.10.9
Sample Rate: 480000 - Buffer Size: 512
Render Ratio, More Is Better
B
D
C
A
3.654129
3.651925
3.610276
3.389645
0.8222
1.6444
2.4666
3.2888
4.111
1. (CXX) g++ options: -lpthread -lsndfile -lm -O3 -march=native -ffast-math -funroll-loops -fstrength-reduce -fstrict-aliasing -finline-functions
Stargate Digital Audio Workstation 21.10.9
Sample Rate: 96000 - Buffer Size: 1024
Render Ratio, More Is Better
D
B
C
A
2.939877
2.939320
2.911913
2.821171
0.6615
1.323
1.9845
2.646
3.3075
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: 1024
Render Ratio, More Is Better
B
D
C
A
2.057562
2.055243
2.053796
1.896334
0.463
0.926
1.389
1.852
2.315
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
B
D
C
A
3.786688
3.751881
3.723661
3.539576
0.852
1.704
2.556
3.408
4.26
1. (CXX) g++ options: -lpthread -lsndfile -lm -O3 -march=native -ffast-math -funroll-loops -fstrength-reduce -fstrict-aliasing -finline-functions

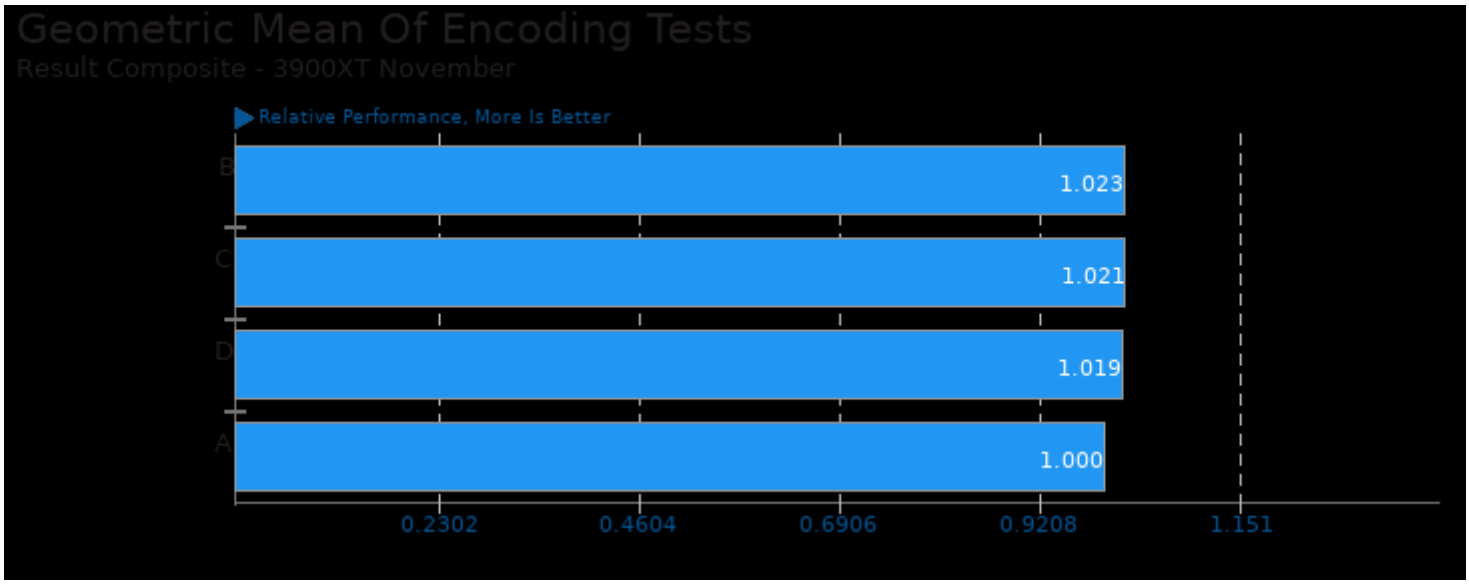
These geometric means are based upon test groupings / test suites for this result file.



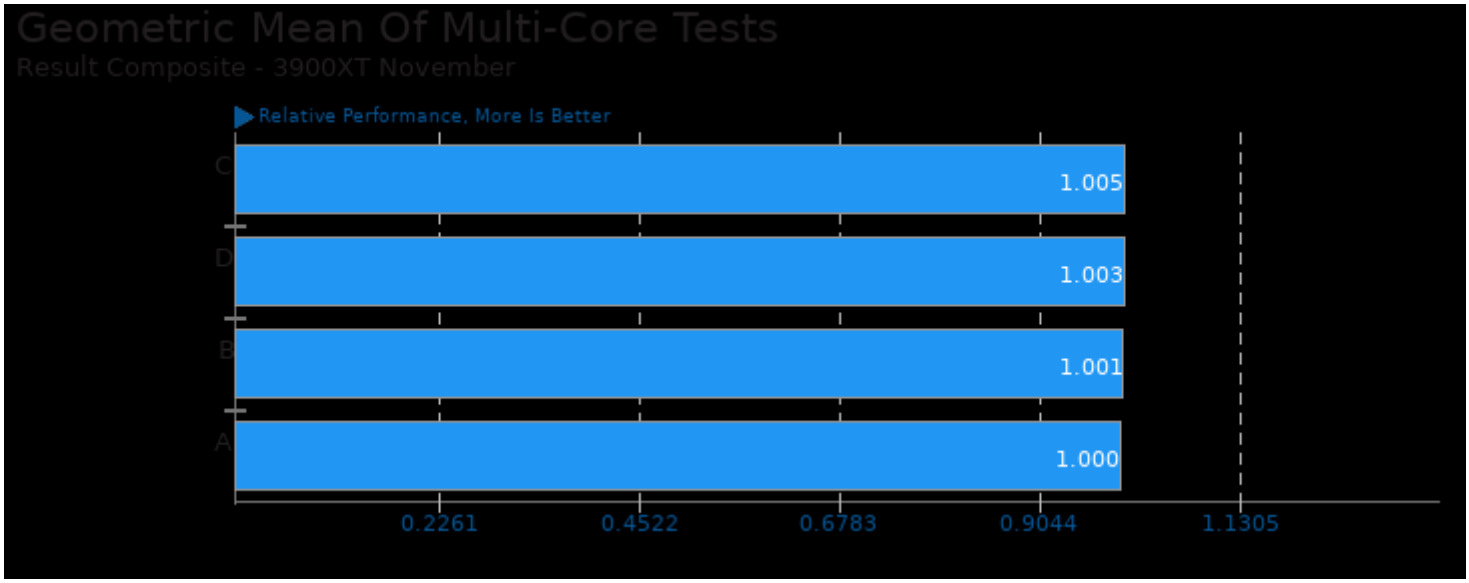
Geometric mean based upon tests: pts/blake2, pts/compress-7zip and pts/sockperf



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



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



Geometric mean based upon tests: pts/rav1e and pts/compress-7zip

This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 11:34.