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blk-5900x-518

AMD Ryzen 9 5900X 12-Core testing with a ASUS ROG CROSSHAIR VIII HERO (4201 BIOS) and NVIDIA NV134 8GB on Ubuntu 22.04 via the Phoronix Test Suite.

Automated Executive Summary

A had the most wins, coming in first place for 64% of the tests.

Based on the geometric mean of all complete results, the fastest (B) was 1.013x the speed of the slowest (A).

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

AOM AV1 (Encoder Mode: Speed 6 Realtime - Input: Bosphorus 4K) at 1.121x
AOM AV1 (Encoder Mode: Speed 10 Realtime - Input: Bosphorus 1080p) at 1.094x
AOM AV1 (Encoder Mode: Speed 8 Realtime - Input: Bosphorus 1080p) at 1.062x
AOM AV1 (Encoder Mode: Speed 9 Realtime - Input: Bosphorus 1080p) at 1.06x
AOM AV1 (Encoder Mode: Speed 9 Realtime - Input: Bosphorus 4K) at 1.054x
AOM AV1 (Encoder Mode: Speed 6 Two-Pass - Input: Bosphorus 1080p) at 1.04x
AOM AV1 (Encoder Mode: Speed 10 Realtime - Input: Bosphorus 4K) at 1.025x
AOM AV1 (Encoder Mode: Speed 8 Realtime - Input: Bosphorus 4K) at 1.017x
7-Zip Compression (Test: Compression Rating) at 1.012x
AOM AV1 (Encoder Mode: Speed 6 Two-Pass - Input: Bosphorus 4K) at 1.01x.

Test Systems:

A

B

Processor: AMD Ryzen 9 5900X 12-Core @ 3.70GHz (12 Cores / 24 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (4201 BIOS), Chipset: AMD Starship/Matisse, Memory: 16GB, Disk: 1000GB Sabrent Rocket 4.0 1TB, Graphics: NVIDIA NV134 8GB, Audio: NVIDIA GP104 HD Audio, Monitor: MX279, Network: Realtek RTL8125 2.5GbE + Intel I211

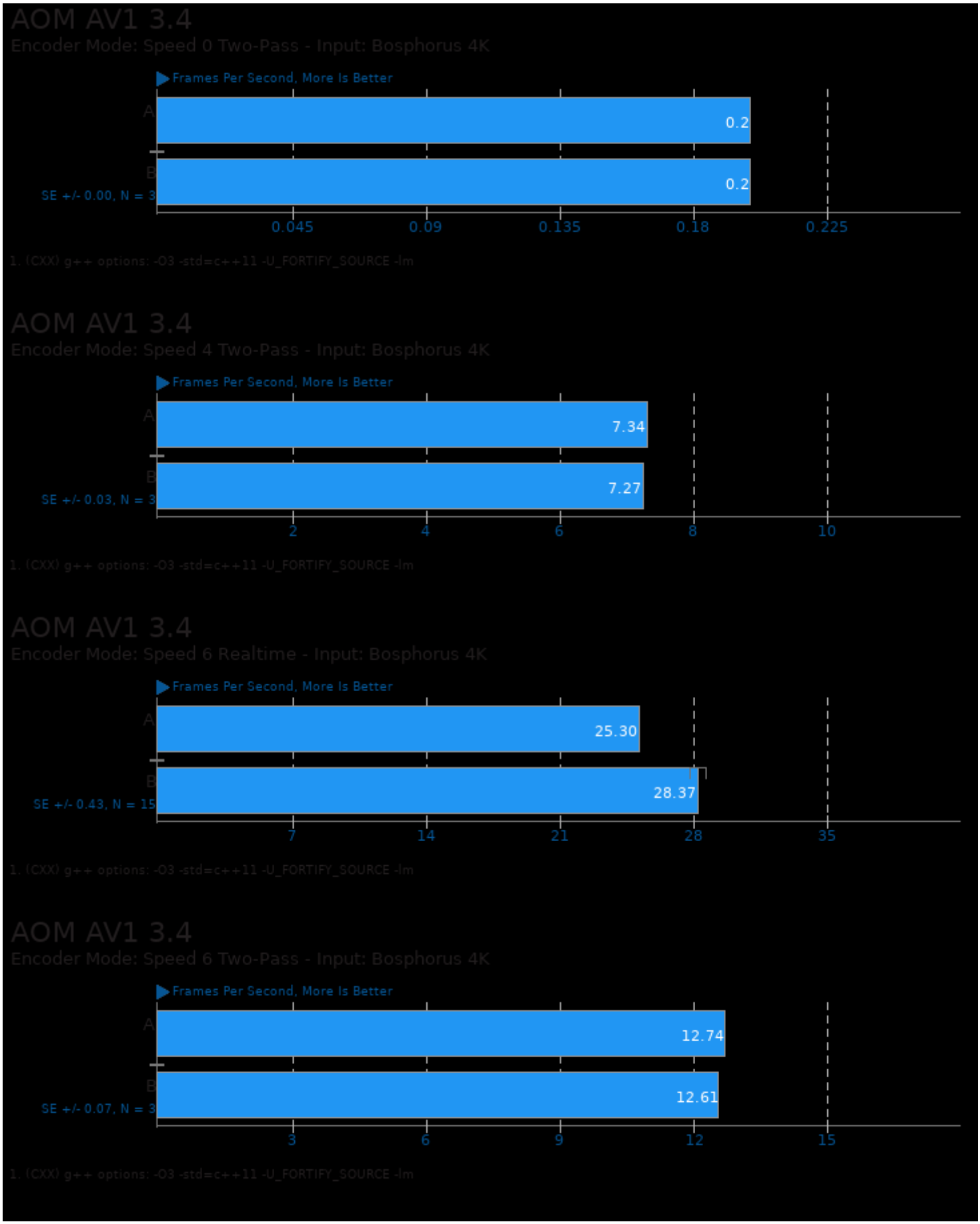
OS: Ubuntu 22.04, Kernel: 5.17.4-051704-generic (x86_64), Desktop: GNOME Shell 42.0, Display Server: X Server + Wayland, Display Driver: nouveau, OpenGL: 4.3 Mesa 22.2.0-devel (git-0588239 2022-05-14 jammy-oibaf-ppa), Vulkan: 1.3.211, Compiler: GCC 11.2.0, File-System: ext4, Screen Resolution: 1920x1080

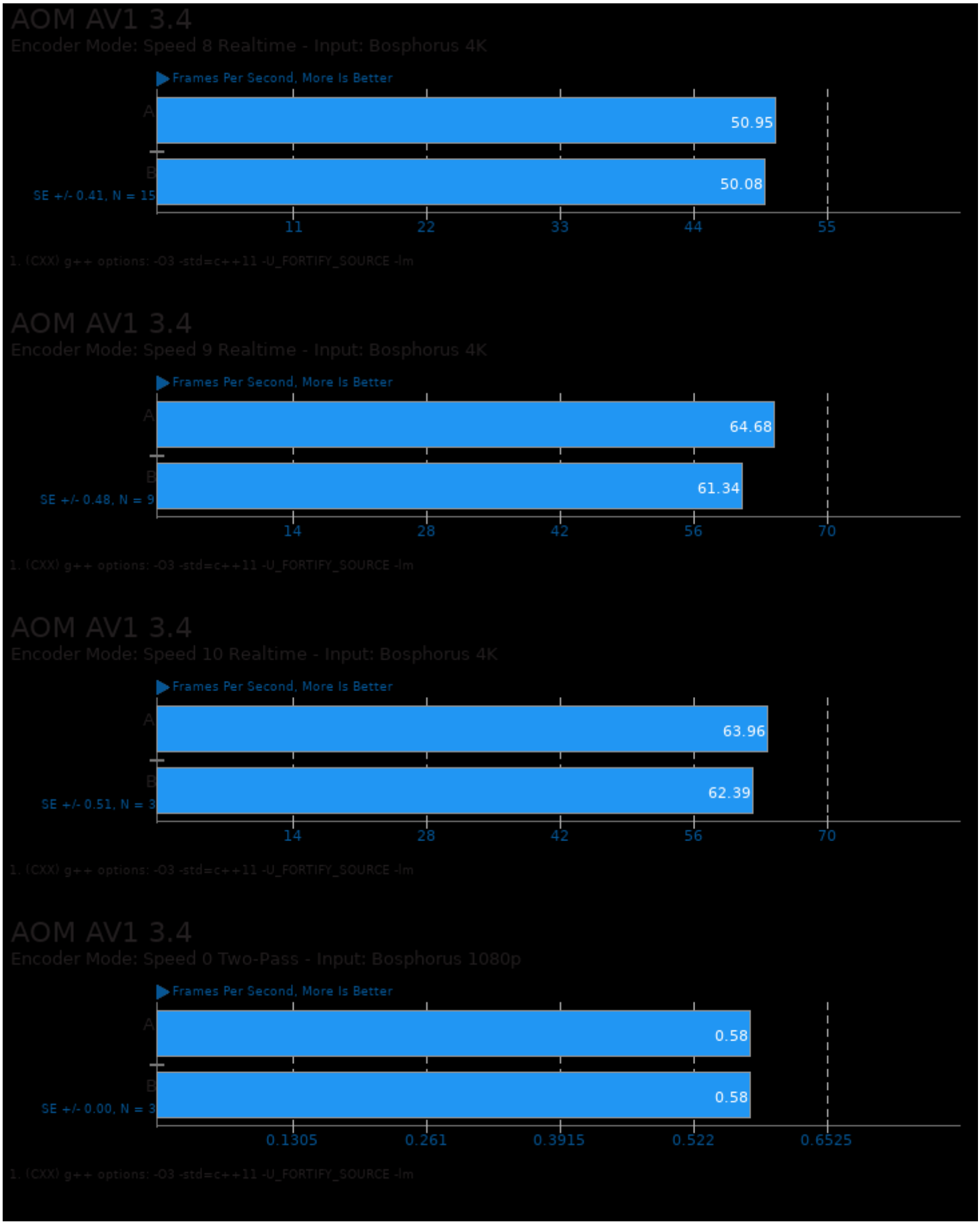
Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --enable-cet --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,m2 --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-gBFGDP/gcc-11-11.2.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-11-gBFGDP/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: 0xa201016
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Retpolines IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

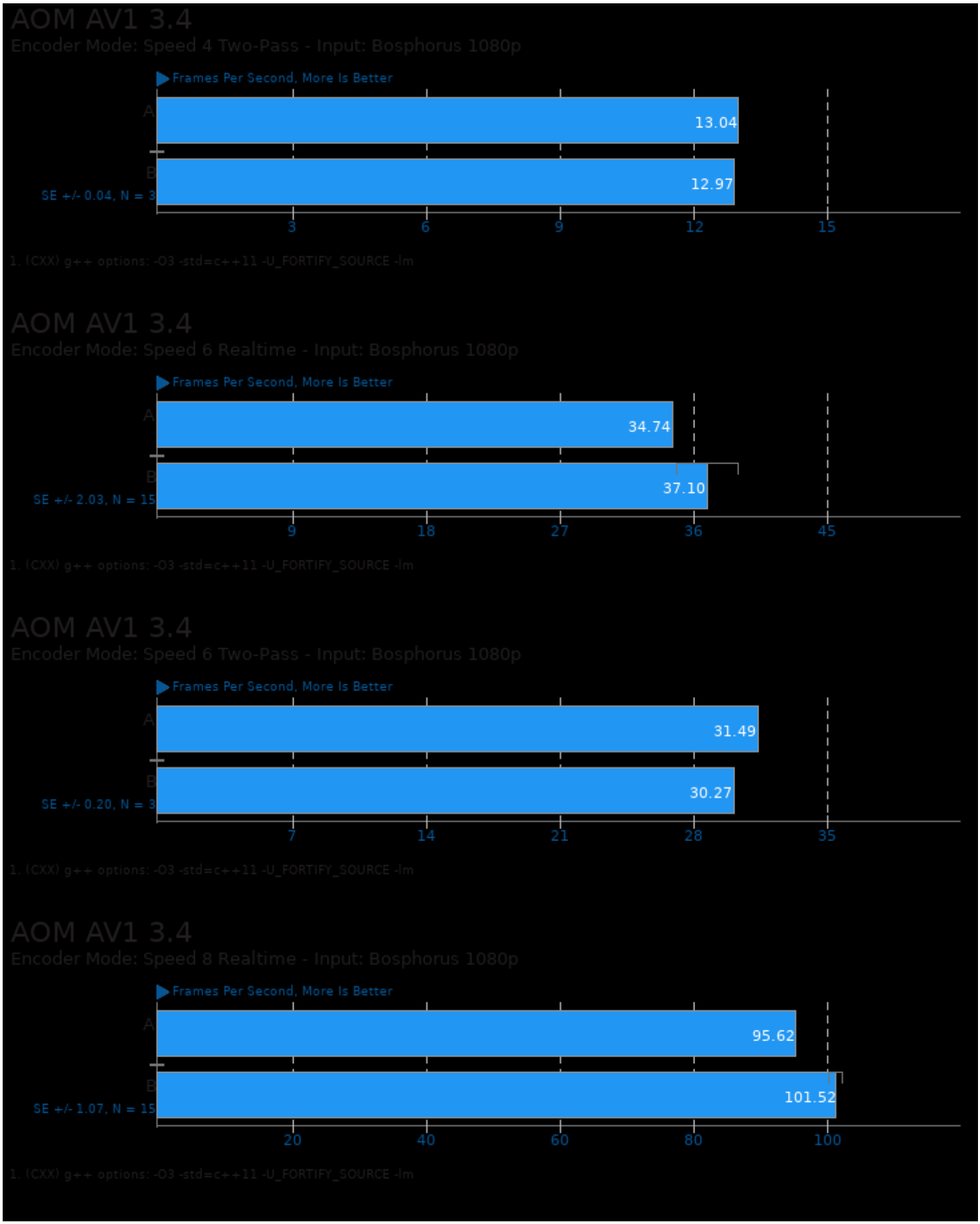
	A	B
AOM AV1 - Speed 0 Two-Pass - Bosphorus 4K (FPS)	0.2	0.2
Standard Deviation		0%
AOM AV1 - Speed 4 Two-Pass - Bosphorus 4K (FPS)	**7.34**	**7.27**
Normalized	100%	99.05%
Standard Deviation		0.7%
AOM AV1 - Speed 6 Realtime - Bosphorus 4K (FPS)	**25.3**	**28.37**
Normalized	89.18%	100%
Standard Deviation		5.9%
AOM AV1 - Speed 6 Two-Pass - Bosphorus 4K (FPS)	**12.74**	**12.61**
Normalized	100%	98.98%
Standard Deviation		0.9%
AOM AV1 - Speed 8 Realtime - Bosphorus 4K (FPS)	**50.95**	**50.08**
Normalized	100%	98.29%
Standard Deviation		3.2%
AOM AV1 - Speed 9 Realtime - Bosphorus 4K (FPS)	**64.68**	**61.34**
Normalized	100%	94.84%
Standard Deviation		2.3%
AOM AV1 - Speed 10 Realtime - Bosphorus 4K (FPS)	**63.96**	**62.39**
Normalized	100%	97.55%
Standard Deviation		1.4%
AOM AV1 - Speed 0 Two-Pass - Bosphorus 1080p	0.58	0.58
Standard Deviation		1%
AOM AV1 - Speed 4 Two-Pass - Bosphorus 1080p (FPS)	**13.04**	**12.97**

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Normalized	100%	99.46%
Standard Deviation		0.6%
AOM AV1 - Speed 6 Realtime - Bosphorus 1080p	**34.74**	**37.10**
Normalized	93.64%	100%
Standard Deviation		21.2%
AOM AV1 - Speed 6 Two-Pass - Bosphorus 1080p	**31.49**	**30.27**
Normalized	100%	96.13%
Standard Deviation		1.1%
AOM AV1 - Speed 8 Realtime - Bosphorus 1080p	**95.62**	**101.52**
Normalized	94.19%	100%
Standard Deviation		4.1%
AOM AV1 - Speed 9 Realtime - Bosphorus 1080p	**144.17**	**152.85**
Normalized	94.32%	100%
Standard Deviation		3.1%
AOM AV1 - Speed 10 Realtime - Bosphorus 1080p	**145.05**	**158.71**
Normalized	91.39%	100%
Standard Deviation		5.3%
7-Zip Compression - Compression Rating (MIPS)	**94759**	**93667**
Normalized	100%	98.85%
Standard Deviation		0.1%
7-Zip Compression - D.R (MIPS)	**110265**	**111237**
Normalized	99.13%	100%
Standard Deviation		0.4%
Timed Linux Kernel Compilation - defconfig (sec)	**58.98**	**59.145**
Normalized	100%	99.72%
Standard Deviation		0.7%
Timed Linux Kernel Compilation - allmodconfig (sec)		717.656
Standard Deviation		0.2%

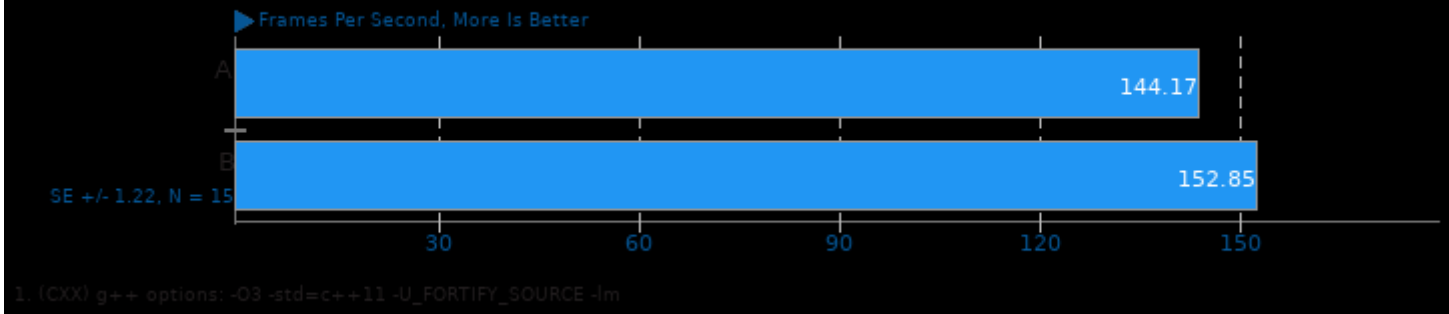

AOM AV1 3.4
Encoder Mode: Speed 0 Two-Pass - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
0.2
B
0.2
SE +/- 0.00, N = 3
0.045
0.09
0.135
0.18
0.225
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm
AOM AV1 3.4
Encoder Mode: Speed 4 Two-Pass - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
7.34
B
7.27
SE +/- 0.03, N = 3
2
4
6
8
10
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm
AOM AV1 3.4
Encoder Mode: Speed 6 Realtime - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
25.30
B
28.37
SE +/- 0.43, N = 15
7
14
21
28
35
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm
AOM AV1 3.4
Encoder Mode: Speed 6 Two-Pass - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
12.74
B
12.61
SE +/- 0.07, N = 3
3
6
9
12
15
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm


AOM AV1 3.4
Encoder Mode: Speed 8 Realtime - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
50.95
B
50.08
SE +/- 0.41, N = 15
11
22
33
44
55
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm
AOM AV1 3.4
Encoder Mode: Speed 9 Realtime - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
64.68
B
61.34
SE +/- 0.48, N = 9
14
28
42
56
70
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm
AOM AV1 3.4
Encoder Mode: Speed 10 Realtime - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
63.96
B
62.39
SE +/- 0.51, N = 3
14
28
42
56
70
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm
AOM AV1 3.4
Encoder Mode: Speed 0 Two-Pass - Input: Bosphorus 1080p
Frames Per Second, More Is Better
A
0.58
B
0.58
SE +/- 0.00, N = 3
0.1305
0.261
0.3915
0.522
0.6525
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm


AOM AV1 3.4
Encoder Mode: Speed 4 Two-Pass - Input: Bosphorus 1080p
Frames Per Second, More Is Better
A
13.04
B
12.97
SE +/- 0.04, N = 3
3
6
9
12
15
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm
AOM AV1 3.4
Encoder Mode: Speed 6 Realtime - Input: Bosphorus 1080p
Frames Per Second, More Is Better
A
34.74
B
37.10
SE +/- 2.03, N = 15
9
18
27
36
45
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm
AOM AV1 3.4
Encoder Mode: Speed 6 Two-Pass - Input: Bosphorus 1080p
Frames Per Second, More Is Better
A
31.49
B
30.27
SE +/- 0.20, N = 3
7
14
21
28
35
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm
AOM AV1 3.4
Encoder Mode: Speed 8 Realtime - Input: Bosphorus 1080p
Frames Per Second, More Is Better
A
95.62
B
101.52
SE +/- 1.07, N = 15
20
40
60
80
100
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm

AOM AV1 3.4

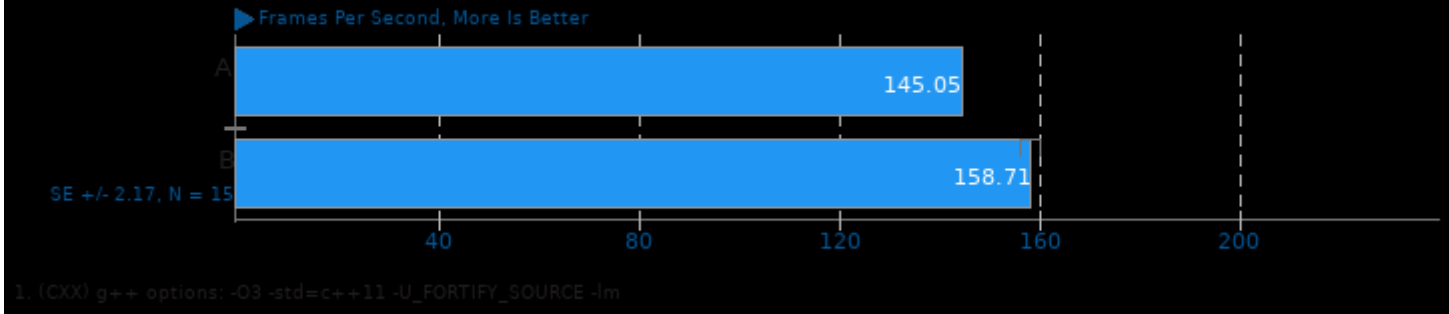
Encoder Mode: Speed 9 Realtime - Input: Bosphorus 1080p



1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm

AOM AV1 3.4

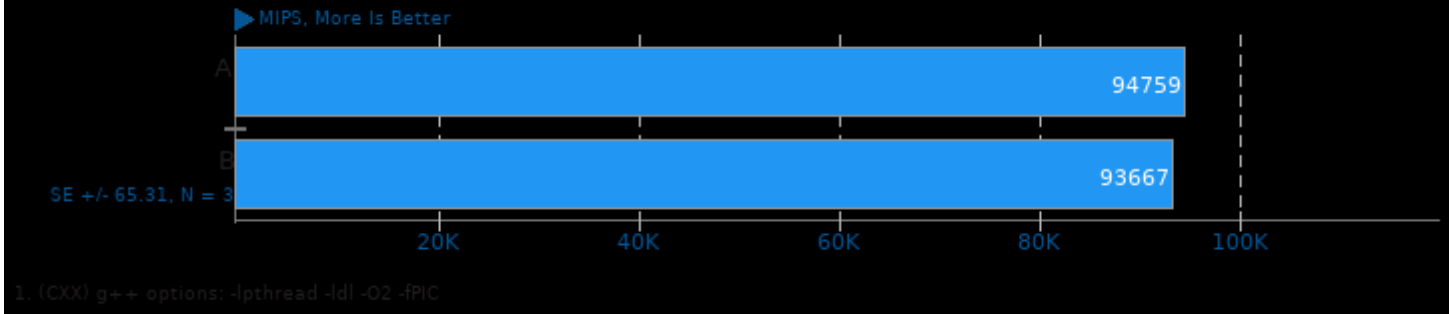
Encoder Mode: Speed 10 Realtime - Input: Bosphorus 1080p



1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm

7-Zip Compression 22.00

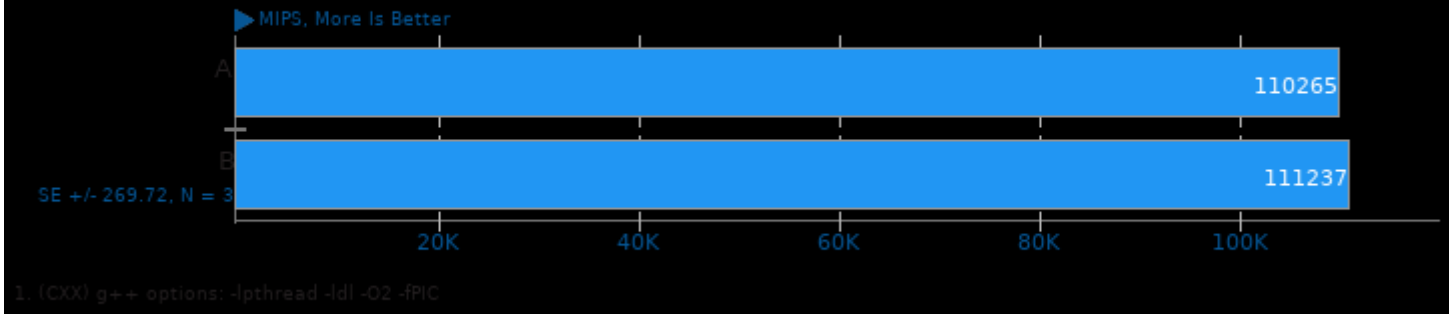
Test: Compression Rating



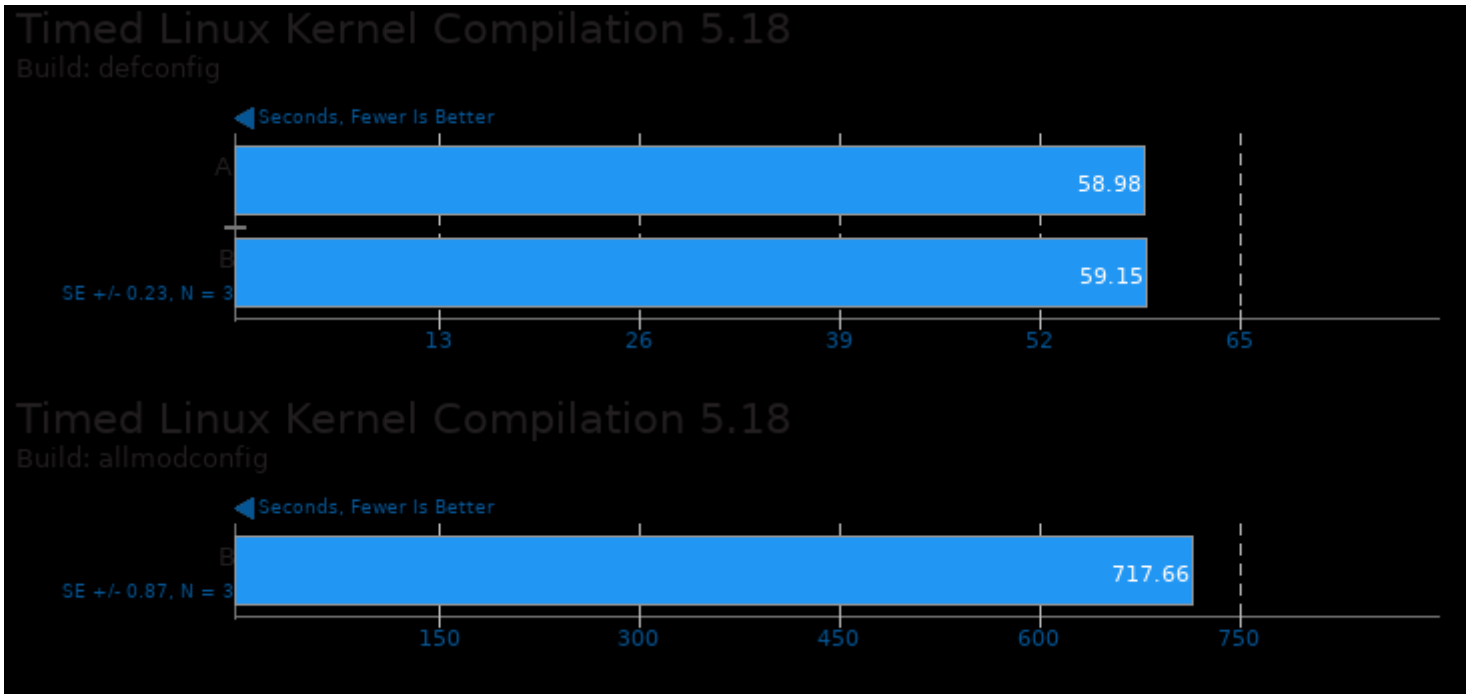
1. (CXX) g++ options: -lpthread -ldl -O2 -fPIC

7-Zip Compression 22.00

Test: Decompression Rating



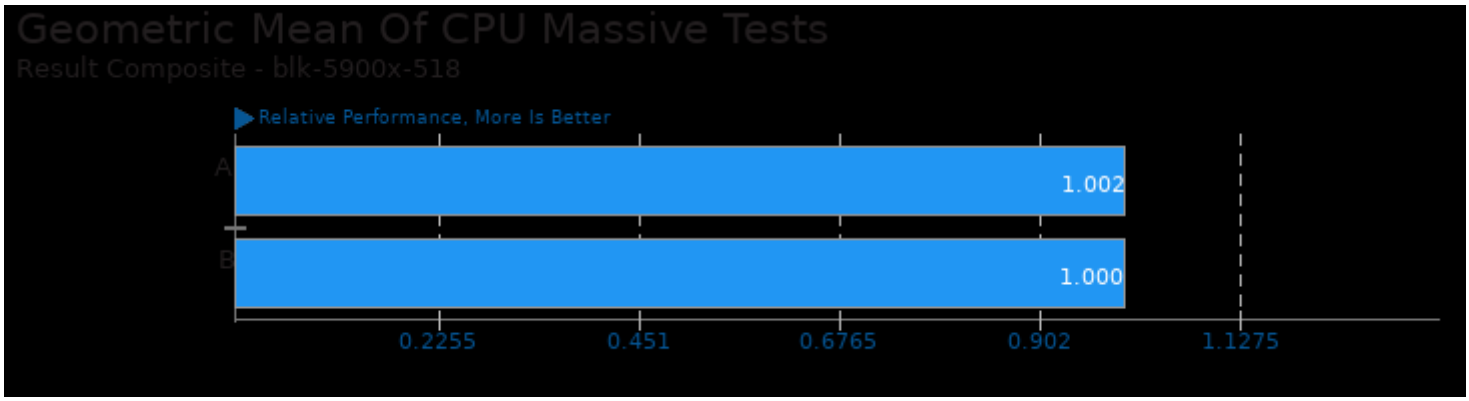
1. (CXX) g++ options: -lpthread -ldl -O2 -fPIC


Timed Linux Kernel Compilation 5.18
Build: defconfig
Seconds, Fewer Is Better
A
58.98
B
59.15
SE +/- 0.23, N = 3
13
26
39
52
65
Timed Linux Kernel Compilation 5.18
Build: allmodconfig
Seconds, Fewer Is Better
B
717.66
SE +/- 0.87, N = 3
150
300
450
600
750

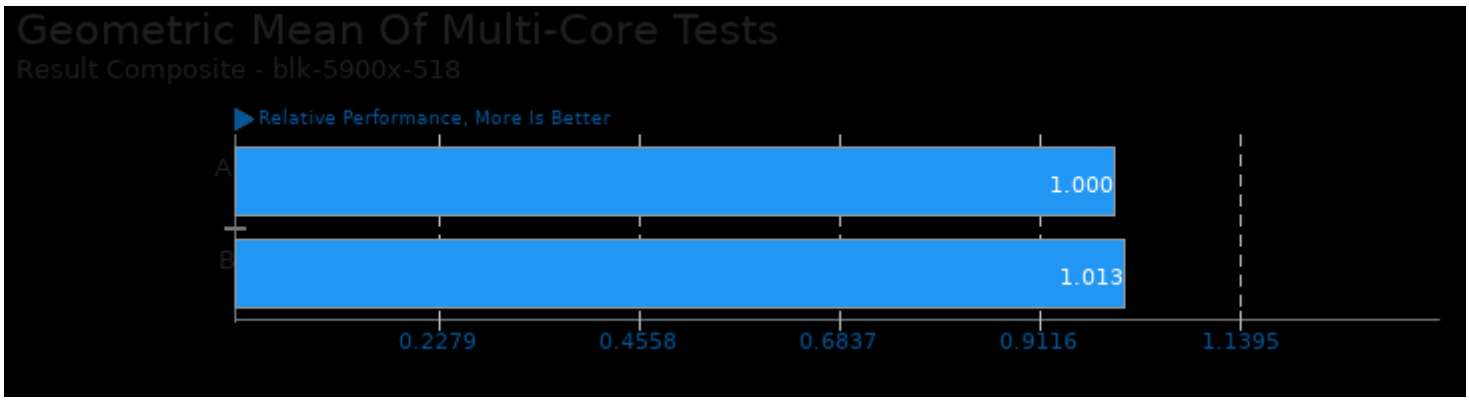
These geometric means are based upon test groupings / test suites for this result file.



Geometric mean based upon tests: pts/compress-7zip and pts/aom-av1

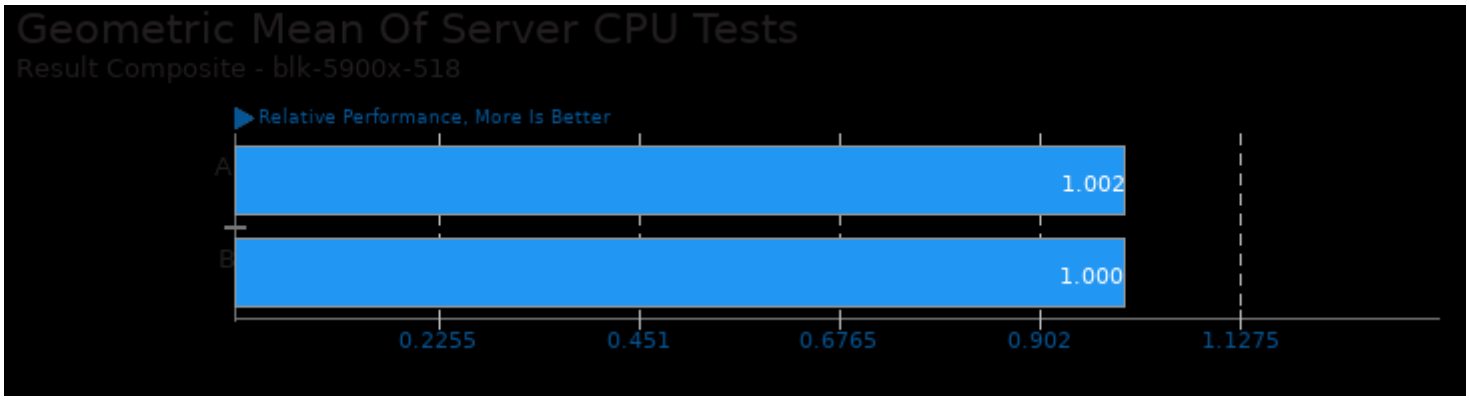


Geometric mean based upon tests: pts/build-linux-kernel and pts/compress-7zip



Geometric mean based upon tests: pts/aom-av1, pts/compress-7zip and pts/build-linux-kernel

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Geometric mean based upon tests: pts/compress-7zip and pts/build-linux-kernel

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 10:54.