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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

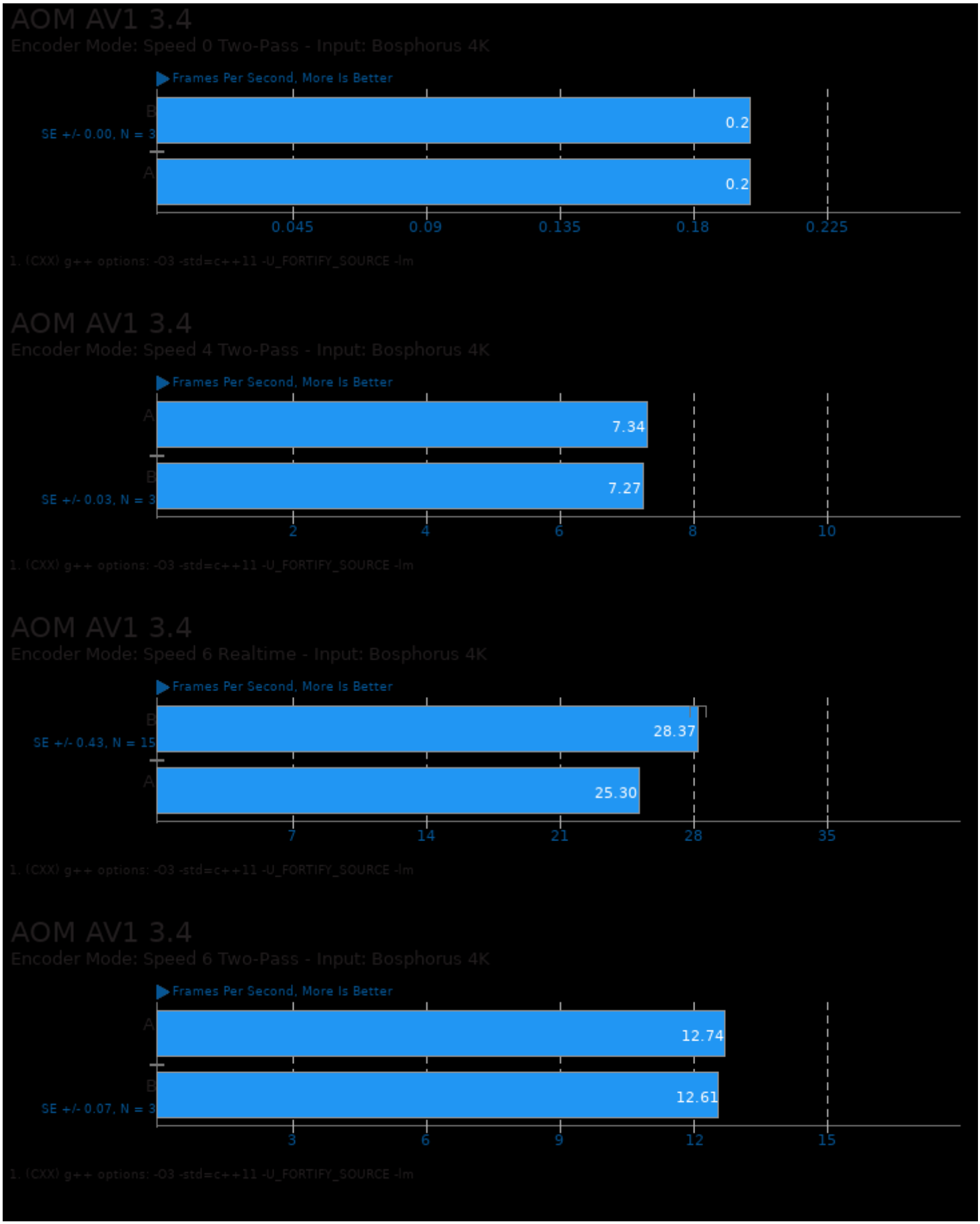
OS: Ubuntu 22.04, Kernel: 5.17.4-051704-generic (x86_64), Desktop: GNOME Shell 42.0, Display Server: X Server + Wayland, Display Driver: nouveau, OpenGL: 4.3 Mesa 22.2.0-devel (git-0588239 2022-05-14 jammy-oibaf-ppa), Vulkan: 1.3.211, Compiler: GCC 11.2.0, File-System: ext4, Screen Resolution: 1920x1080

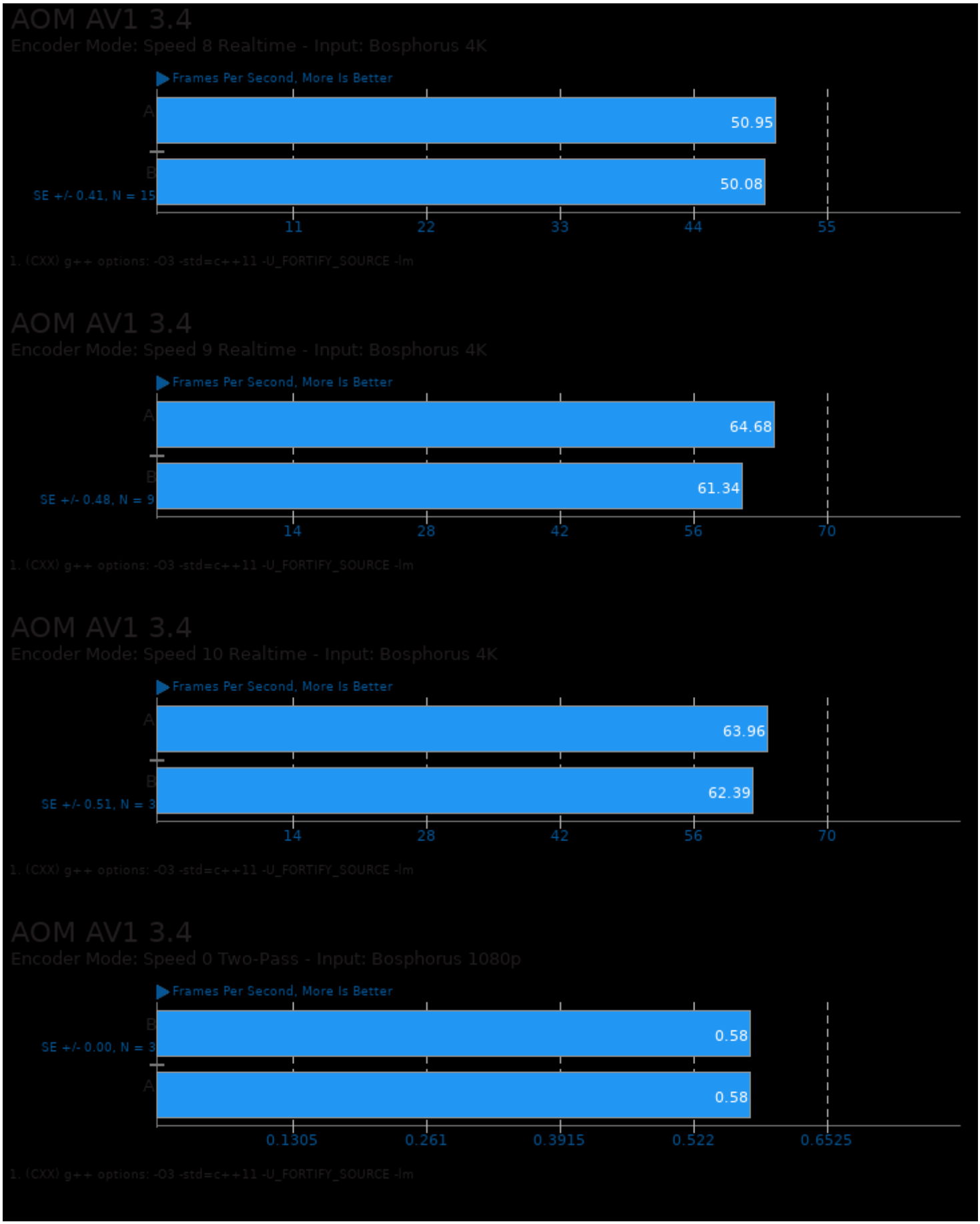
Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --enable-cet --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,m2 --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

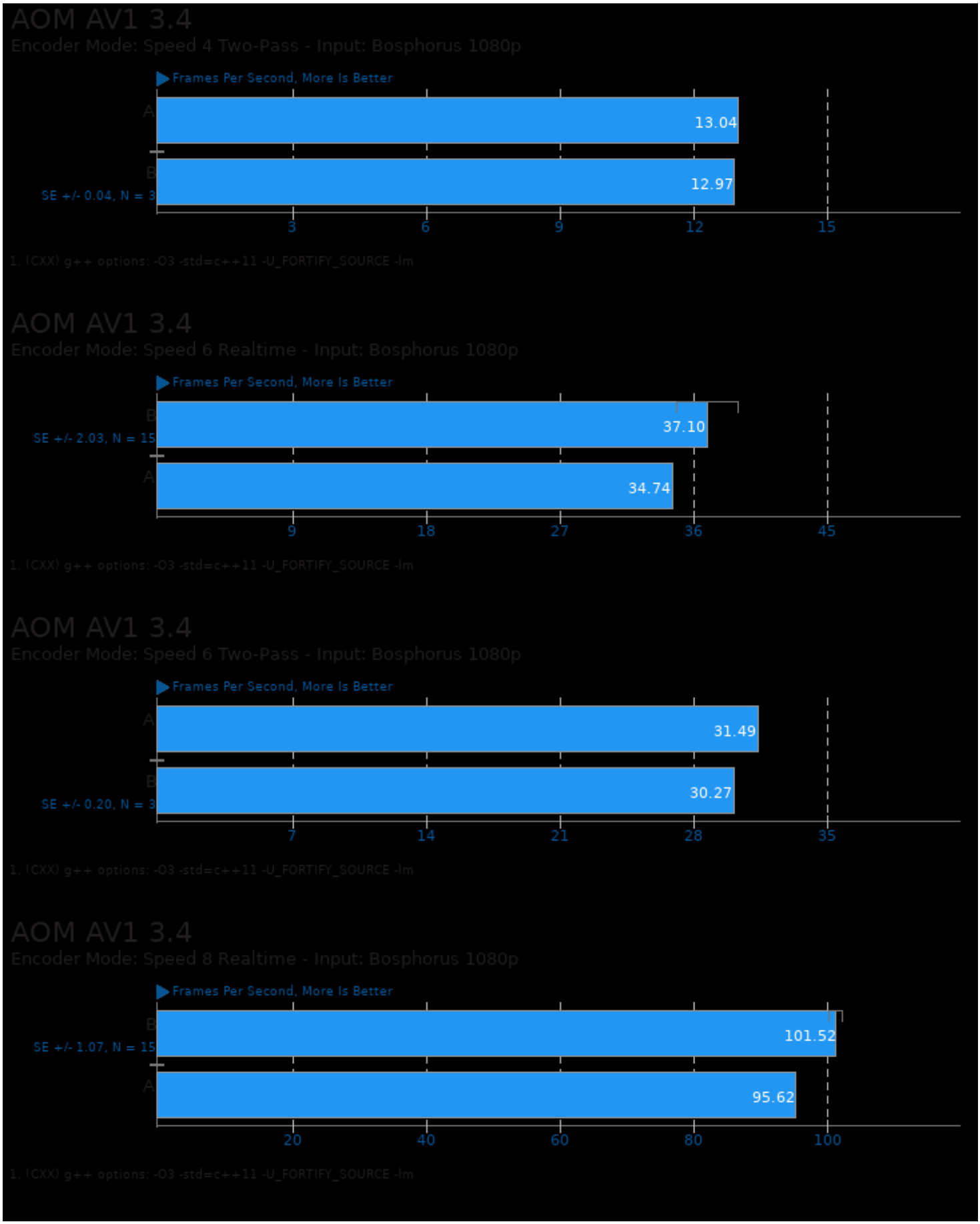
| | A | B |
|---|---|---|
| **AOM AV1 - Speed 0 Two-Pass - Bosphorus 4K (FPS)** | 0.2 | 0.2 |
| **Standard Deviation** | | 0% |
| **AOM AV1 - Speed 4 Two-Pass - Bosphorus 4K (FPS)** | **7.34** | **7.27** |
| **Normalized** | 100% | 99.05% |
| **Standard Deviation** | | 0.7% |
| **AOM AV1 - Speed 6 Realtime - 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% |

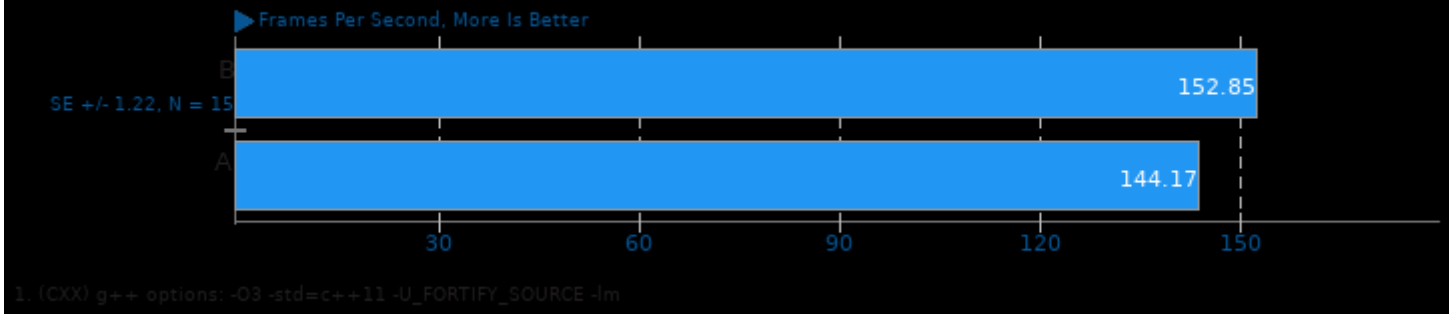

AOM AV1 3.4
Encoder Mode: Speed 0 Two-Pass - Input: Bosphorus 4K
Frames Per Second, More Is Better
B
A
SE +/- 0.00, N = 3
0.2
0.2
0.045
0.09
0.135
0.18
0.225
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm
AOM AV1 3.4
Encoder Mode: Speed 4 Two-Pass - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
B
SE +/- 0.03, N = 3
7.34
7.27
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
B
A
SE +/- 0.43, N = 15
28.37
25.30
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
B
SE +/- 0.07, N = 3
12.74
12.61
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
B
0.58
SE +/- 0.00, N = 3
A
0.58
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
B
13.04
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
B
A
37.10
34.74
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
B
31.49
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
B
A
101.52
95.62
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

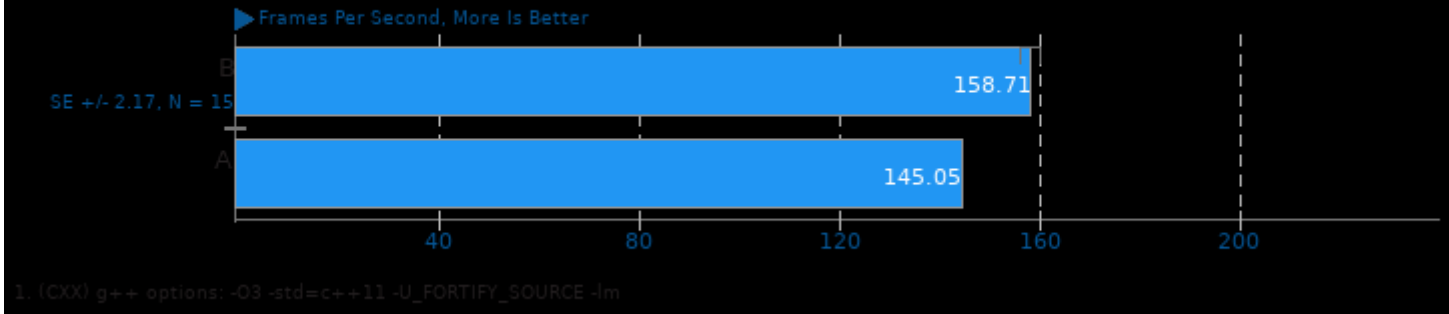
Encoder Mode: Speed 9 Realtime - Input: Bosphorus 1080p




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

## AOM AV1 3.4

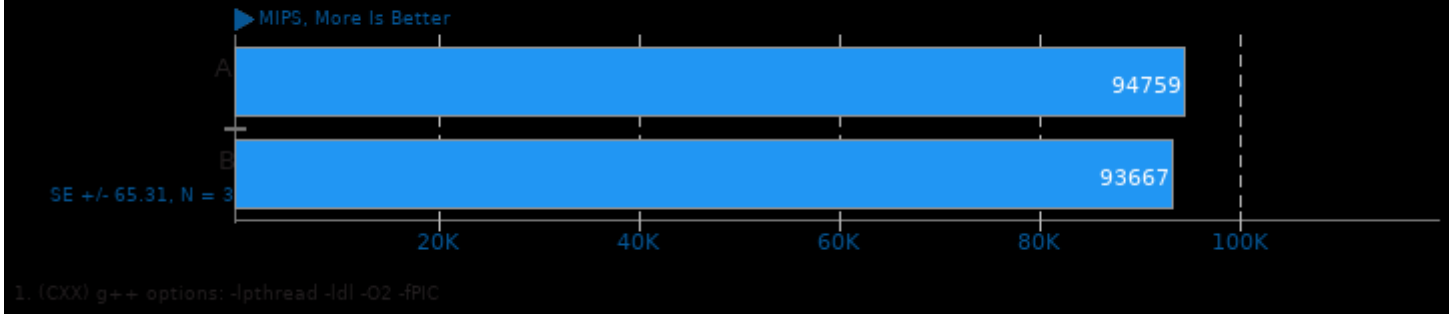
Encoder Mode: Speed 10 Realtime - Input: Bosphorus 1080p




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

## 7-Zip Compression 22.00

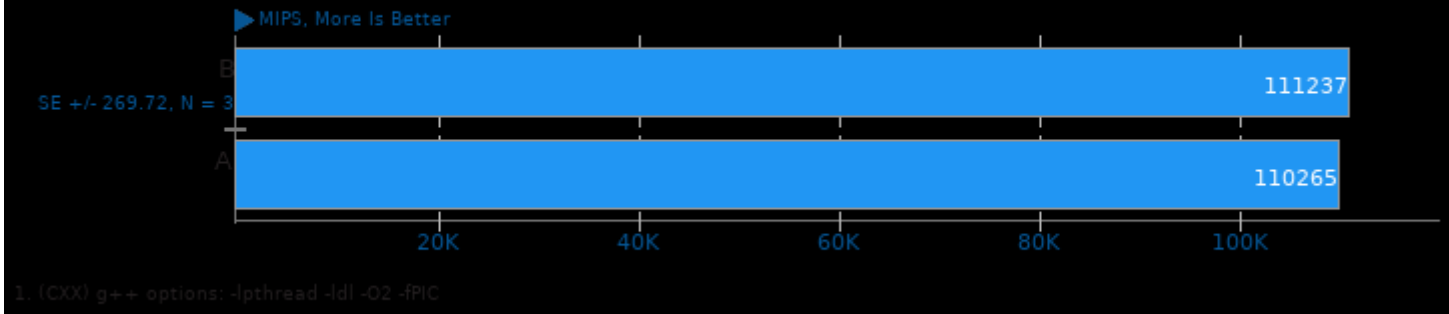
Test: Compression Rating



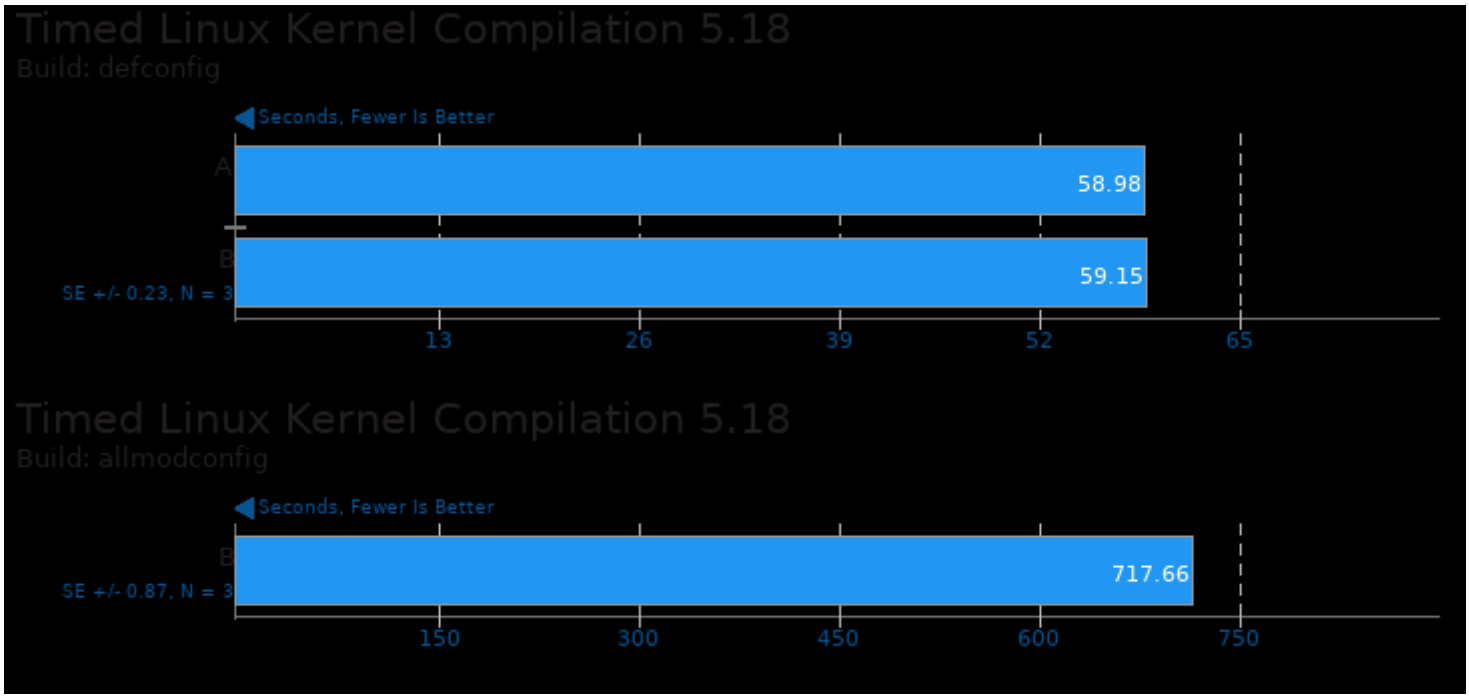

1. (CXX) g++ options: -lpthread -ldl -O2 -fPIC

## 7-Zip Compression 22.00

Test: Decompression Rating



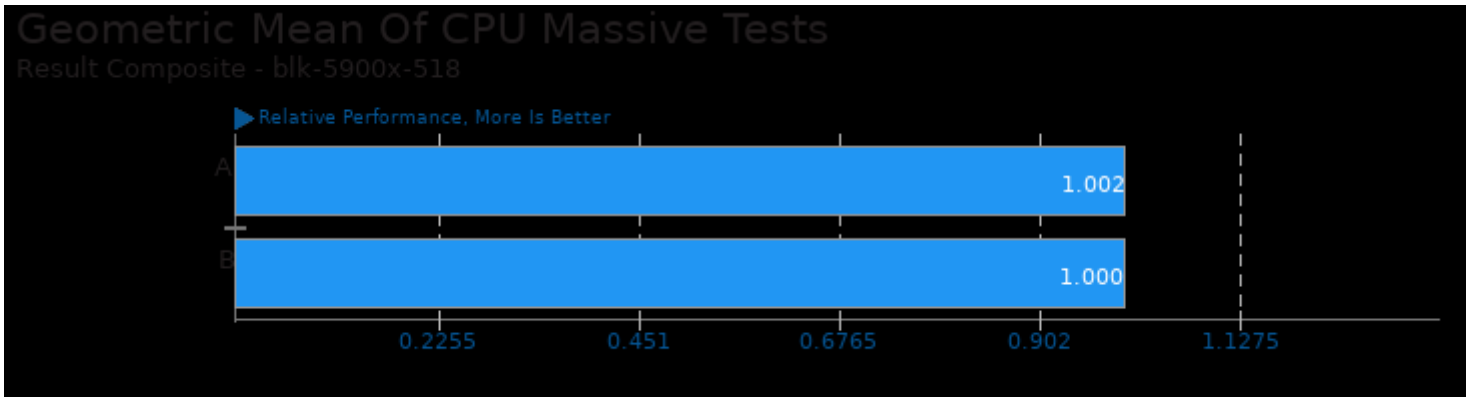

1. (CXX) g++ options: -lpthread -ldl -O2 -fPIC


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

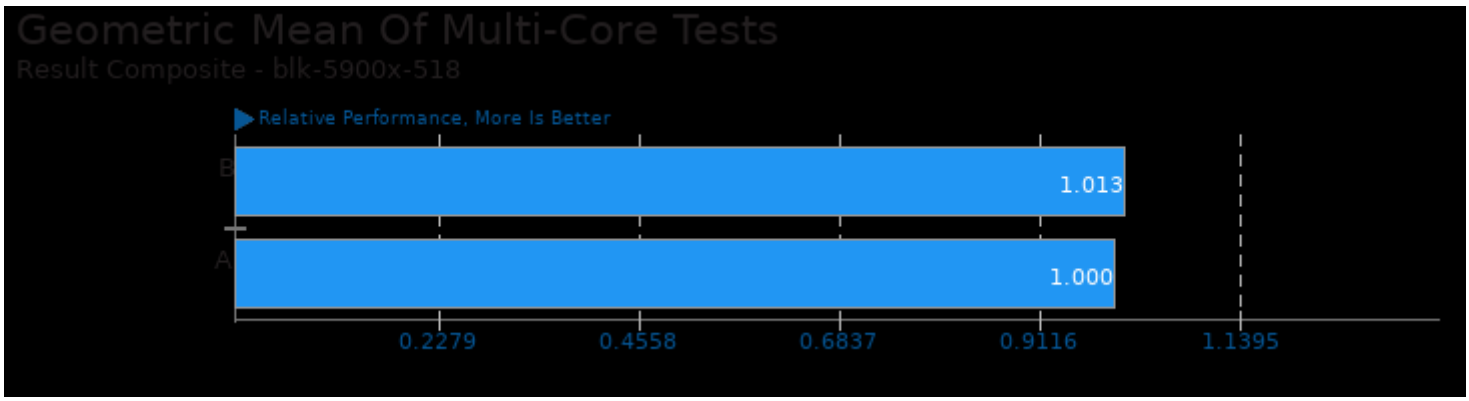
These geometric means are based upon test groupings / test suites for this result file.



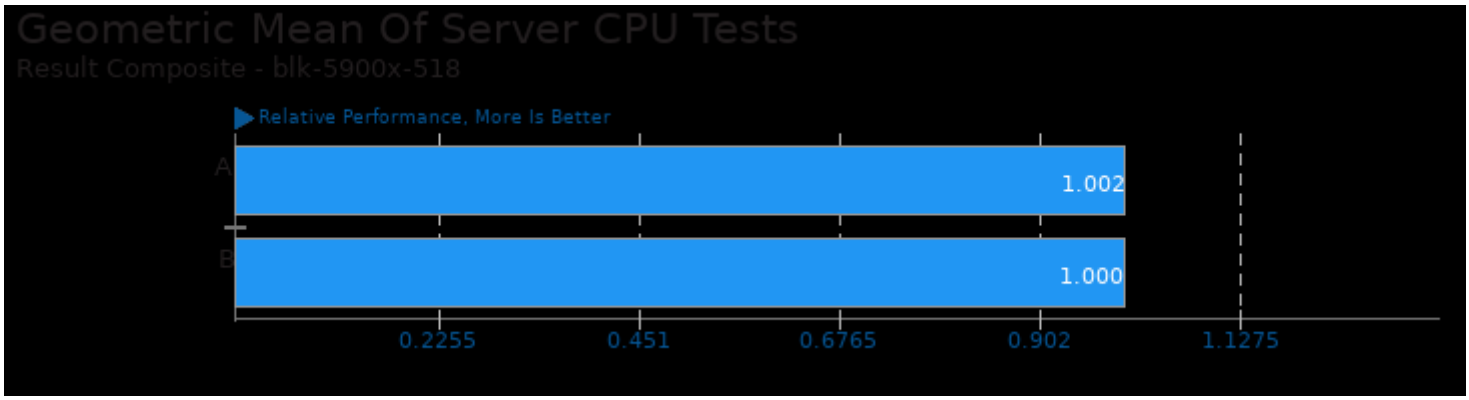

Geometric mean based upon tests: pts/compress-7zip and pts/aom-av1




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




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 Friday, 29 March 2024 05:22.*