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# av1 ryzen

AMD Ryzen 7 4700U testing with a LENOVO LNVNB161216 (DTCN18WWV1.04 BIOS) and AMD Renoir 512MB on Ubuntu 22.04 via the Phoronix Test Suite.

**Automated Executive Summary**

*c had the most wins, coming in first place for 50% of the tests.*

*Based on the geometric mean of all complete results, the fastest (a) was 1.018x the speed of the slowest (b). c was 0.99x the speed of a and b was 0.992x the speed of c.*

## Test Systems:

### a

### b

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## c

Processor: AMD Ryzen 7 4700U @ 2.00GHz (8 Cores), Motherboard: LENOVO LNVNB161216 (DTCN18WWV1.04 BIOS), Chipset: AMD Renoir/Cezanne, Memory: 16GB, Disk: 512GB SAMSUNG MZALQ512HALU-000L2, Graphics: AMD Renoir 512MB (1600/400MHz), Audio: AMD Renoir Radeon HD Audio, Network: Intel Wi-Fi 6 AX200

OS: Ubuntu 22.04, Kernel: 5.18.8-051808-generic (x86_64), Desktop: GNOME Shell 42.2, Display Server: X Server + Wayland, OpenGL: 4.6 Mesa 22.0.5 (LLVM 13.0.1 DRM 3.46), Vulkan: 1.3.204, Compiler: GCC 11.3.0, File-System: ext4, Screen Resolution: 1920x1080

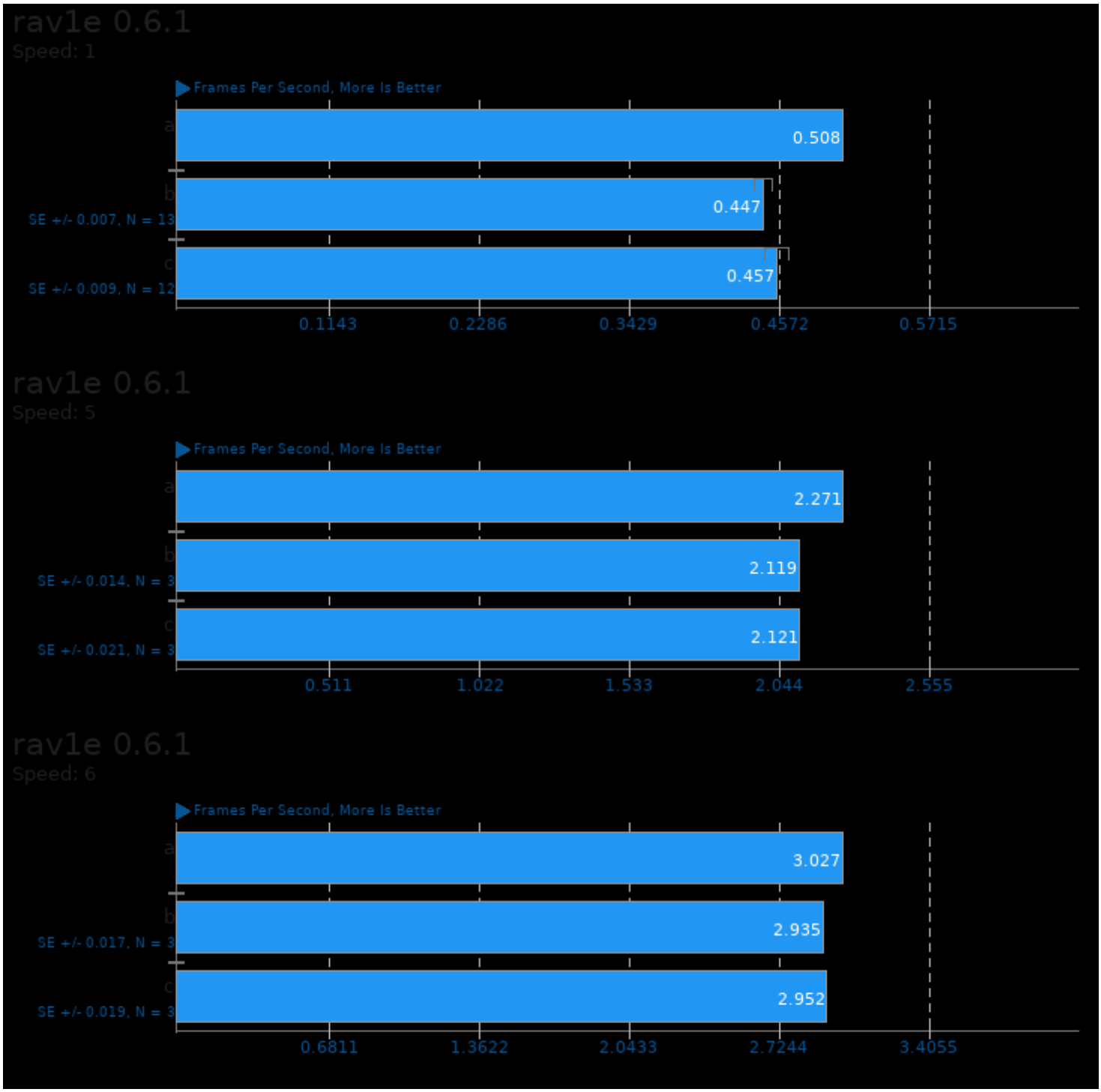
Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --enable-cet --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,m2 --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-xKiWfi/gcc-11-11.3.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-11-xKiWfi/gcc-11-11.3.0/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) - Platform Profile: balanced - CPU Microcode: 0x8600102 - ACPI Profile: balanced
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + mmio_stale_data: 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: disabled RSB filling + srbds: Not affected + tsx_async_abort: Not affected

| | a | b | c |
|---|---|---|---|
| **rav1e - 1 (FPS)** | **0.508** | **0.447** | 0.457 |
| **Normalized** | 100% | 87.99% | 89.96% |
| **Standard Deviation** | | 5.7% | 6.9% |
| **rav1e - 5 (FPS)** | **2.271** | **2.119** | 2.121 |
| **Normalized** | 100% | 93.31% | 93.39% |
| **Standard Deviation** | | 1.1% | 1.7% |
| **rav1e - 6 (FPS)** | **3.027** | **2.935** | 2.952 |
| **Normalized** | 100% | 96.96% | 97.52% |
| **Standard Deviation** | | 1% | 1.1% |
| **rav1e - 10 (FPS)** | 6.094 | **6.081** | **6.100** |
| **Normalized** | 99.9% | 99.69% | 100% |
| **Standard Deviation** | | 2.3% | 0.8% |
| **SVT-AV1 - Preset 4 - Bosphorus 4K (FPS)** | **1.71** | 1.472 | **1.470** |
| **Normalized** | 100% | 86.08% | 85.96% |
| **Standard Deviation** | | 2.5% | 4.1% |
| **SVT-AV1 - Preset 8 - Bosphorus 4K (FPS)** | **16.772** | 16.972 | **17.169** |
| **Normalized** | 97.69% | 98.85% | 100% |
| **Standard Deviation** | | 0.7% | 1.4% |
| **SVT-AV1 - Preset 12 - Bosphorus 4K (FPS)** | **50.983** | 52.559 | **53.500** |
| **Normalized** | 95.3% | 98.24% | 100% |
| **Standard Deviation** | | 0.6% | 1.6% |
| **SVT-AV1 - Preset 13 - Bosphorus 4K (FPS)** | 57.04 | **56.882** | **57.953** |
| **Normalized** | 98.42% | 98.15% | 100% |
| **Standard Deviation** | | 0.8% | 1% |
| **SVT-AV1 - Preset 4 - Bosphorus 1080p (FPS)** | **4.816** | 5.410 | **5.438** |
| **Normalized** | 88.56% | 99.49% | 100% |
| **Standard Deviation** | | 2.2% | 1.8% |
| **SVT-AV1 - Preset 8 - Bosphorus 1080p (FPS)** | **45.018** | **45.942** | 45.632 |
| **Normalized** | 97.99% | 100% | 99.33% |
| **Standard Deviation** | | 0.9% | 0.9% |

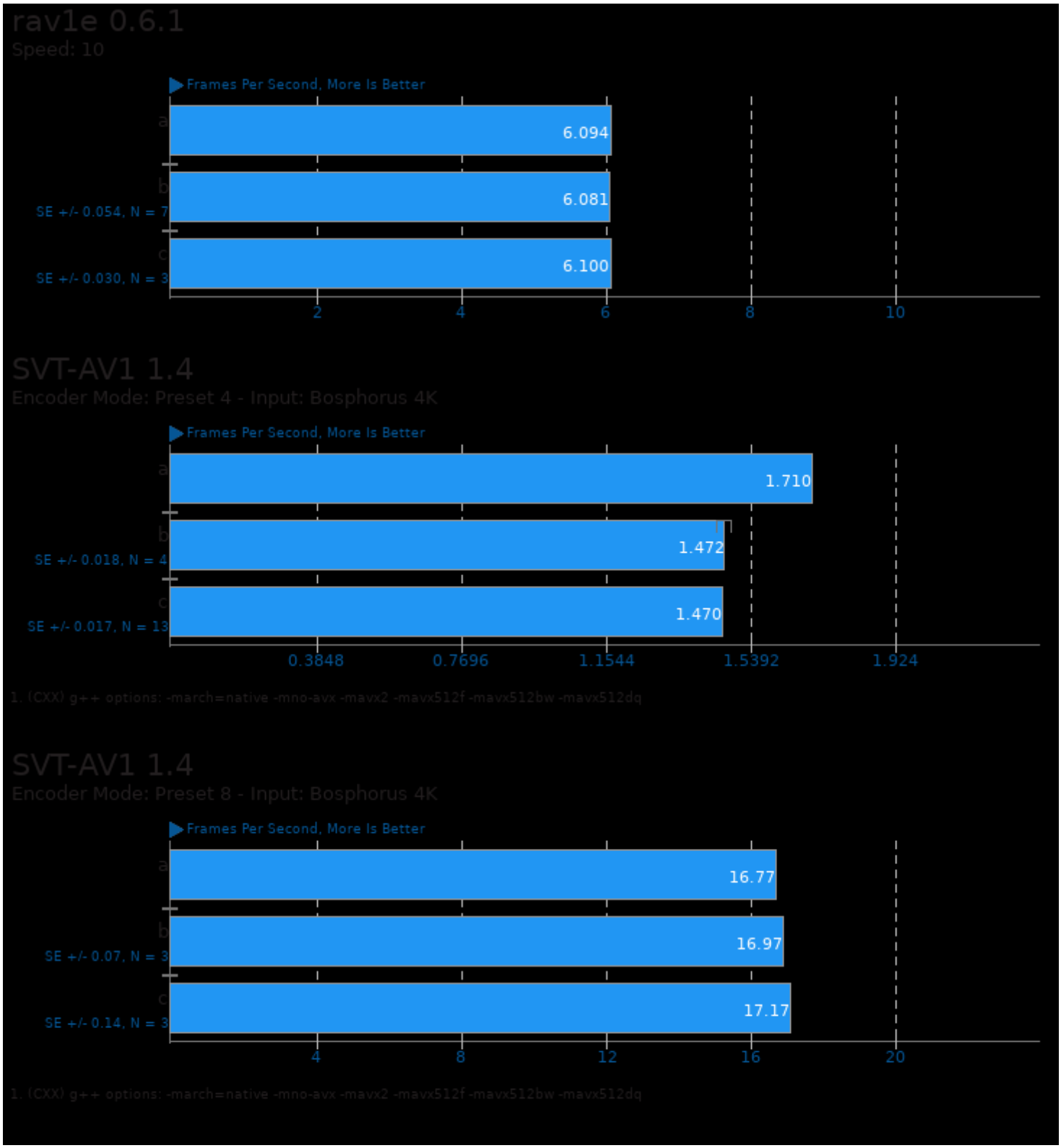
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| | | | |
|---|---|---|---|
| **SVT-AV1 - Preset 12 - Bosphorus 1080p** | **199.504** | 200.104 | **201.888** |
| **Normalized** | 98.82% | 99.12% | 100% |
| **Standard Deviation** | | 2.1% | 1.7% |
| **SVT-AV1 - Preset 13 - Bosphorus 1080p** | **222.006** | **218.543** | 220.230 |
| **Normalized** | 100% | 98.44% | 99.2% |
| **Standard Deviation** | | 1.5% | 1.7% |

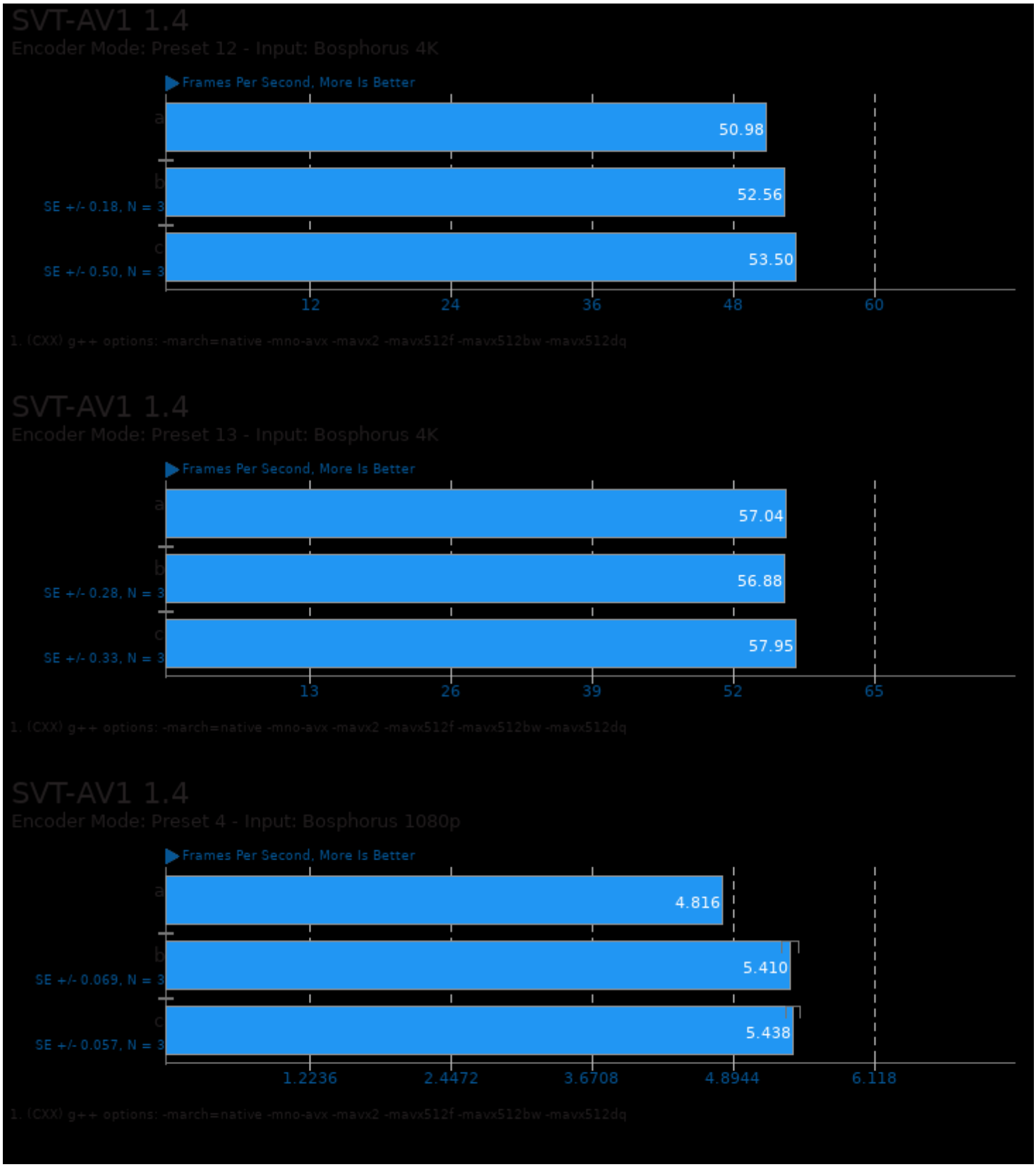
# av1 ryzen


rav1e 0.6.1
Speed: 1
Frames Per Second, More Is Better
a
0.508
b
0.447
SE +/- 0.007, N = 13
c
0.457
SE +/- 0.009, N = 12
0.1143
0.2286
0.3429
0.4572
0.5715
rav1e 0.6.1
Speed: 5
Frames Per Second, More Is Better
a
2.271
b
2.119
SE +/- 0.014, N = 3
c
2.121
SE +/- 0.021, N = 3
0.511
1.022
1.533
2.044
2.555
rav1e 0.6.1
Speed: 6
Frames Per Second, More Is Better
a
3.027
b
2.935
SE +/- 0.017, N = 3
c
2.952
SE +/- 0.019, N = 3
0.6811
1.3622
2.0433
2.7244
3.4055

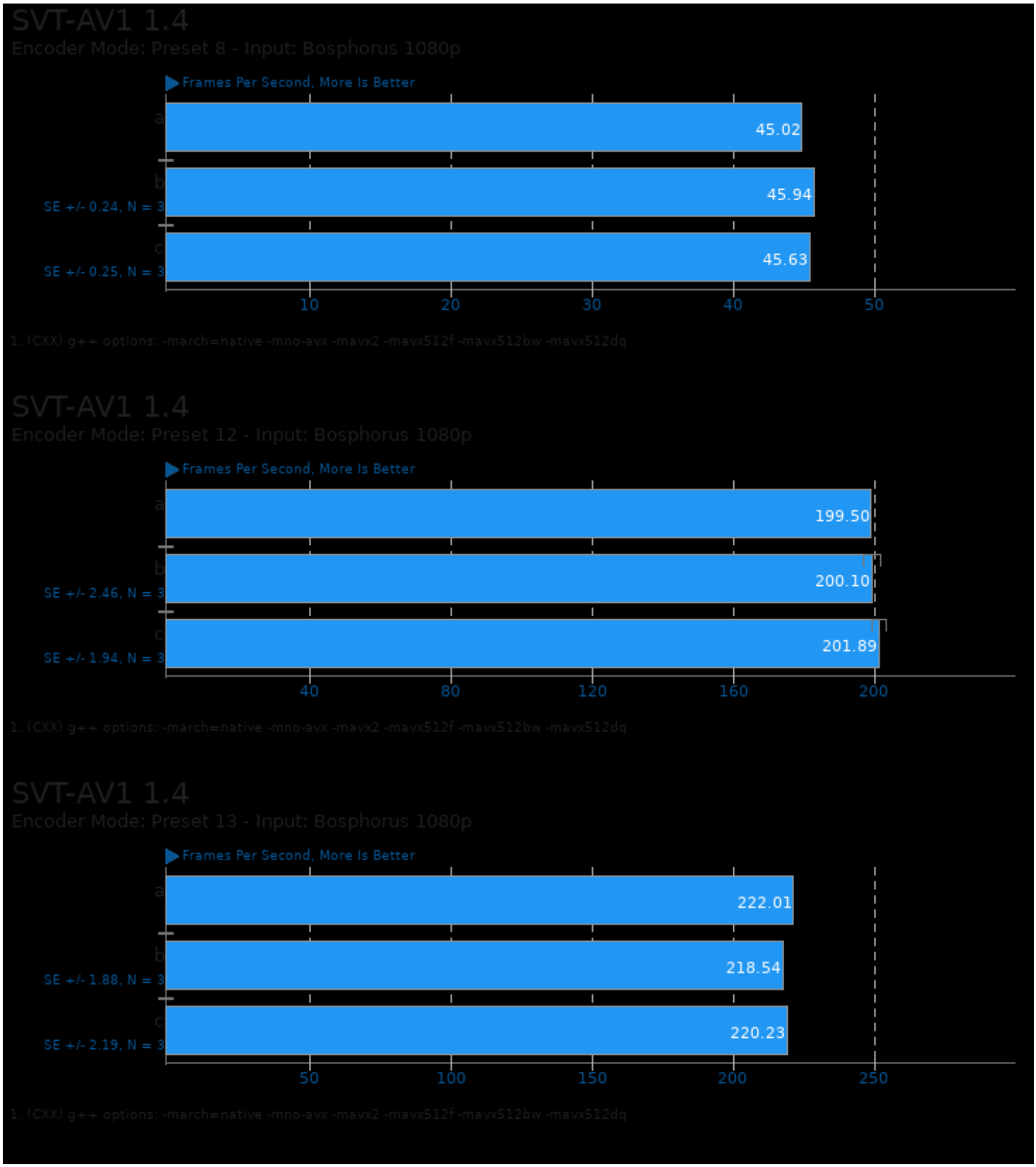
# av1 ryzen


rav1e 0.6.1
Speed: 10
Frames Per Second, More Is Better
a
6.094
b
6.081
SE +/- 0.054, N = 7
c
6.100
SE +/- 0.030, N = 3
2
4
6
8
10
SVT-AV1 1.4
Encoder Mode: Preset 4 - Input: Bosphorus 4K
Frames Per Second, More Is Better
a
1.710
b
1.472
SE +/- 0.018, N = 4
c
1.470
SE +/- 0.017, N = 13
0.3848
0.7696
1.1544
1.5392
1.924
1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq
SVT-AV1 1.4
Encoder Mode: Preset 8 - Input: Bosphorus 4K
Frames Per Second, More Is Better
a
16.77
b
16.97
SE +/- 0.07, N = 3
c
17.17
SE +/- 0.14, N = 3
4
8
12
16
20
1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq

# av1 ryzen

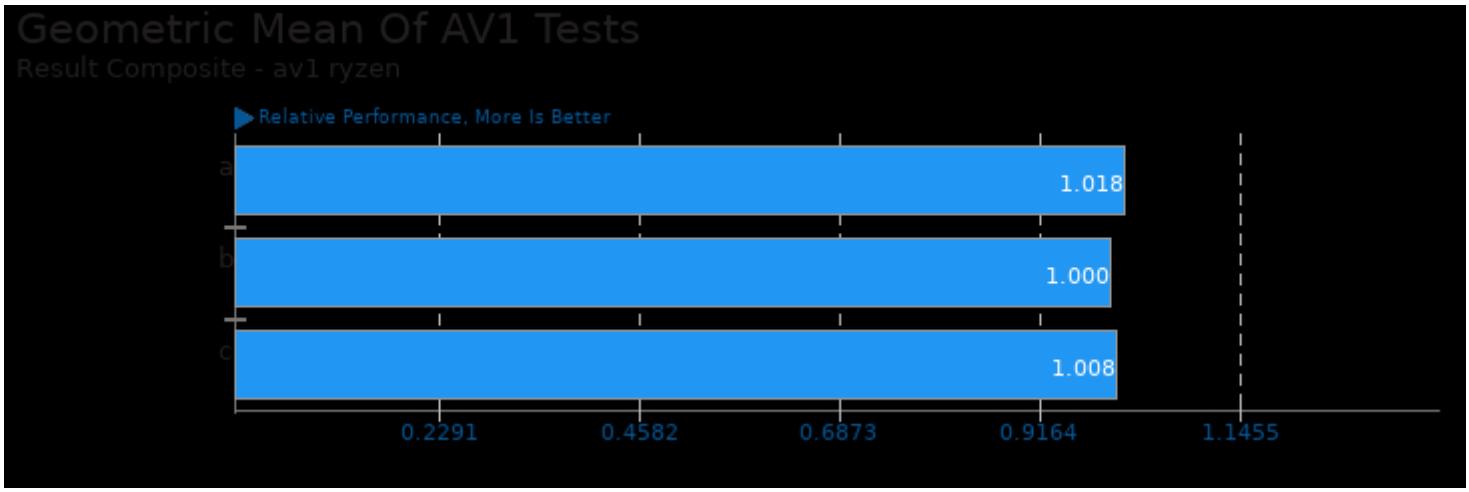

SVT-AV1 1.4
Encoder Mode: Preset 12 - Input: Bosphorus 4K
Frames Per Second, More Is Better
a
50.98
b
52.56
SE +/- 0.18, N = 3
c
53.50
SE +/- 0.50, N = 3
12
24
36
48
60
1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq
SVT-AV1 1.4
Encoder Mode: Preset 13 - Input: Bosphorus 4K
Frames Per Second, More Is Better
a
57.04
b
56.88
SE +/- 0.28, N = 3
c
57.95
SE +/- 0.33, N = 3
13
26
39
52
65
1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq
SVT-AV1 1.4
Encoder Mode: Preset 4 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
a
4.816
b
5.410
SE +/- 0.069, N = 3
c
5.438
SE +/- 0.057, N = 3
1.2236
2.4472
3.6708
4.8944
6.118
1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq

# av1 ryzen

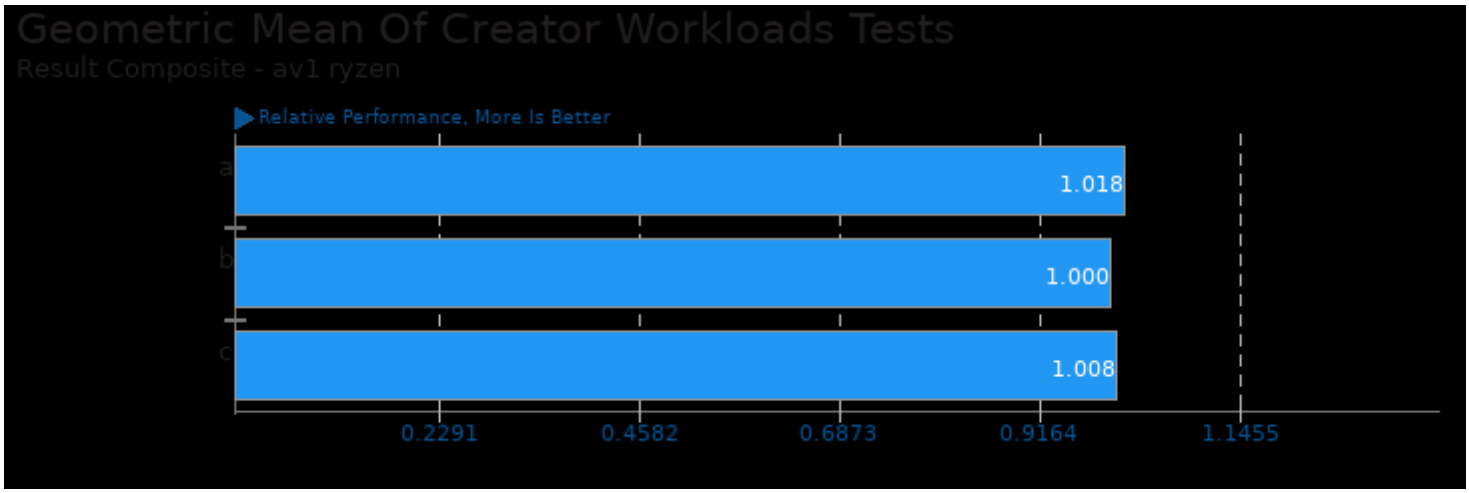

SVT-AV1 1.4
Encoder Mode: Preset 8 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
a
45.02
b
45.94
SE +/- 0.24, N = 3
c
45.63
SE +/- 0.25, N = 3
10
20
30
40
50
1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq
SVT-AV1 1.4
Encoder Mode: Preset 12 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
a
199.50
b
200.10
SE +/- 2.46, N = 3
c
201.89
SE +/- 1.94, N = 3
40
80
120
160
200
1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq
SVT-AV1 1.4
Encoder Mode: Preset 13 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
a
222.01
b
218.54
SE +/- 1.88, N = 3
c
220.23
SE +/- 2.19, N = 3
50
100
150
200
250
1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq

# av1 ryzen

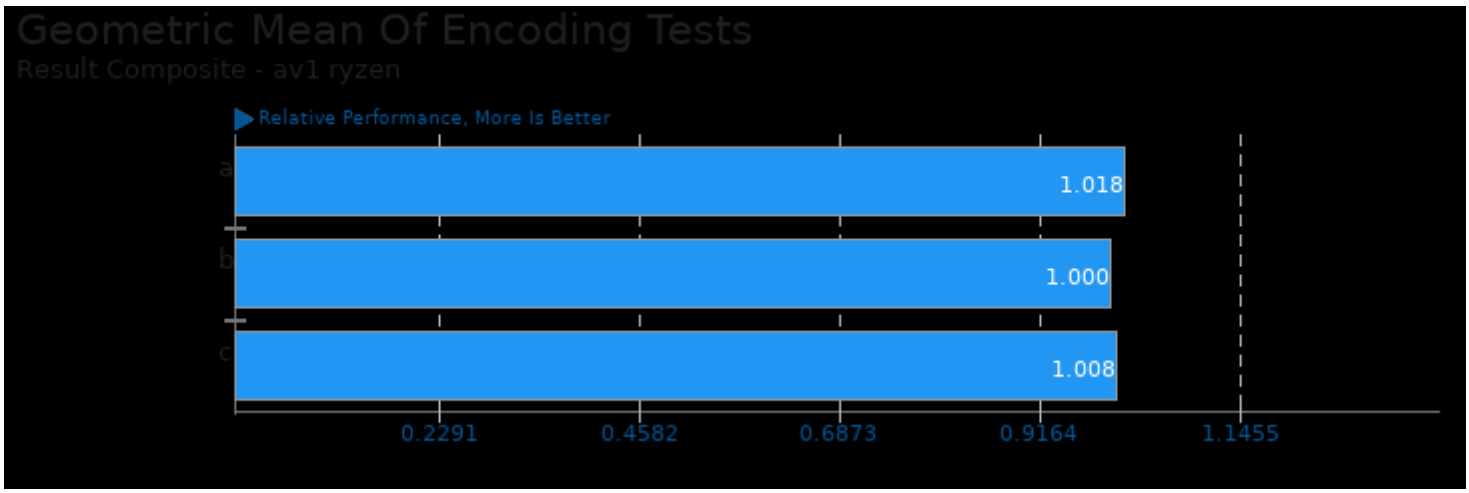
These geometric means are based upon test groupings / test suites for this result file.




Geometric mean based upon tests: pts/svt-av1 and pts/rav1e



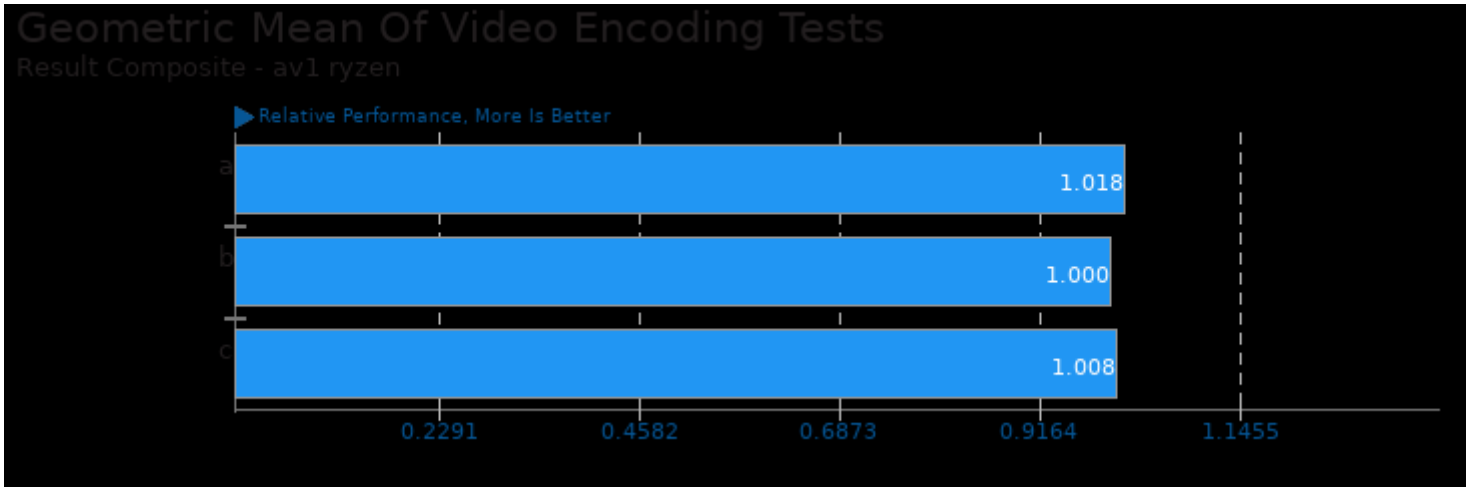

Geometric mean based upon tests: pts/svt-av1 and pts/rav1e




Geometric mean based upon tests: pts/svt-av1 and pts/rav1e




Geometric mean based upon tests: pts/svt-av1 and pts/rav1e




Geometric mean based upon tests: pts/svt-av1 and pts/rav1e

*This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 10:16.*