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11600K Nov

Intel Core i5-11600K testing with a ASUS ROG STRIX Z590-I GAMING WIFI (1007 BIOS) and ASUS Intel RKL GT1 3GB on Ubuntu 21.10 via the Phoronix Test Suite.

Automated Executive Summary

A 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 1.156x the speed of the slowest (C). B was 0.871x the speed of A and C was 0.993x the speed of B.

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

Sockperf (Test: Latency Under Load) at 6.149x
NAS Parallel Benchmarks (Test / Class: CG.C) at 1.909x
NAS Parallel Benchmarks (Test / Class: MG.C) at 1.808x
Stream (Type: Scale) at 1.591x
NAS Parallel Benchmarks (Test / Class: SP.C) at 1.525x
NAS Parallel Benchmarks (Test / Class: SP.B) at 1.516x
Stream (Type: Copy) at 1.457x
Stream (Type: Triad) at 1.454x
Stream (Type: Add) at 1.448x

Sockperf (Test: Throughput) at 1.363x.

Test Systems:

A

B

C

Processor: Intel Core i5-11600K @ 4.90GHz (6 Cores / 12 Threads), Motherboard: ASUS ROG STRIX Z590-I GAMING WIFI (1007 BIOS), Chipset: Intel Tiger Lake-H, Memory: 16GB, Disk: 1000GB Sabrent Rocket 4.0 Plus, Graphics: ASUS Intel RKL GT1 3GB (1300MHz), Audio: Intel Tiger Lake-H HD Audio, Monitor: MX279, Network: Intel I225-V + Intel Wi-Fi 6 AX210/AX211/AX411

OS: Ubuntu 21.10, Kernel: 5.13.0-21-generic (x86_64), Desktop: GNOME Shell 40.5, Display Server: X Server + Wayland, OpenGL: 4.6 Mesa 21.2.2, Vulkan: 1.2.182, 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-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: 0x40 - Thermald 2.4.6
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 Enhanced IBRS IBPB: conditional RSB filling + srbds: Not affected + tsx_async_abort: Not affected

	A	B	C
Stream - Copy (MB/s)	**40205**	27695	**27602**
Normalized	100%	68.88%	68.65%
Stream - Scale (MB/s)	**26537**	16865	**16678**
Normalized	100%	63.55%	62.85%
Stream - Triad (MB/s)	**26232**	18300	**18037**
Normalized	100%	69.76%	68.76%
Stream - Add (MB/s)	**26242**	18287	**18122**
Normalized	100%	69.69%	69.06%
Sockperf - Throughput (Messages/sec)	804168	**616939**	**840758**
Normalized	95.65%	73.38%	100%
Sockperf - Latency Ping Pong (usec)	2.87	**2.282**	**2.919**
Normalized	79.51%	100%	78.18%

11600K Nov

Sockperf - Latency Under Load (usec)	**3.101**	**19.069**	18.249
Normalized	100%	16.26%	16.99%
NAS Parallel Benchmarks - BT.C (Mop/s)	**23842**	17786	**17737**
Normalized	100%	74.6%	74.4%
NAS Parallel Benchmarks - CG.C (Mop/s)	**6573**	3492	**3443**
Normalized	100%	53.12%	52.38%
NAS Parallel Benchmarks - EP.C (Mop/s)	1215	**1218**	**1171**
Normalized	99.69%	100%	96.14%
NAS Parallel Benchmarks - EP.D (Mop/s)	**1107**	**1217**	1107
Normalized	90.95%	100%	90.96%
NAS Parallel Benchmarks - FT.C (Mop/s)	**13417**	10460	**10423**
Normalized	100%	77.96%	77.68%
NAS Parallel Benchmarks - LU.C (Mop/s)	**24367**	18328	**18269**
Normalized	100%	75.21%	74.97%
NAS Parallel Benchmarks - MG.C (Mop/s)	**12994**	7215	**7187**
Normalized	100%	55.53%	55.31%
NAS Parallel Benchmarks - SP.B (Mop/s)	**7027**	4644	**4635**
Normalized	100%	66.1%	65.96%
NAS Parallel Benchmarks - SP.C (Mop/s)	**7111**	4675	**4664**
Normalized	100%	65.75%	65.59%
BLAKE2 (Cycles/Byte)	4.89	4.89	4.89
Zstd Compression - 3 - Compression Speed (MB/s)	**2501**	2152	**2138**
Normalized	100%	86.03%	85.49%
Standard Deviation			0.9%
Zstd Compression - 3 - D.S (MB/s)	**4497**	**4273**	4279
Normalized	100%	95.03%	95.15%
Zstd Compression - 8 - Compression Speed (MB/s)	**312.1**	**266.1**	272.3
Normalized	100%	85.26%	87.25%
Zstd Compression - 8 - D.S (MB/s)	**4638**	4428	**4424**
Normalized	100%	95.48%	95.39%
Zstd Compression - 19 - Compression Speed (MB/s)	**31.1**	28.7	**28.6**
Normalized	100%	92.28%	91.96%
Zstd Compression - 19 - D.S (MB/s)	**4145**	3977	**3967**
Normalized	100%	95.94%	95.7%
Zstd Compression - 3, Long Mode - Compression Speed (MB/s)	329.9	**339**	**296.5**
Normalized	97.32%	100%	87.46%
Zstd Compression - 3, Long Mode - D.S	**4812**	4535	**4502**
Normalized	100%	94.24%	93.56%
Zstd Compression - 8, Long Mode - Compression Speed (MB/s)	**395.2**	361.1	**354.9**
Normalized	100%	91.37%	89.8%
Zstd Compression - 8, Long Mode - D.S	**5003**	4697	**4696**
Normalized	100%	93.88%	93.86%
Zstd Compression - 19, Long Mode - Compression Speed (MB/s)	**24.5**	23	**22.9**
Normalized	100%	93.88%	93.47%

11600K Nov

Zstd Compression - 19, Long Mode - D.S (MB/s)	**4262**	4016	**4009**
Normalized	100%	94.23%	94.08%
JPEG XL libjxl - PNG - 5 (MP/s)	**42.11**	42.93	**42.99**
Normalized	97.95%	99.86%	100%
JPEG XL libjxl - PNG - 7 (MP/s)	**9.02**	9.21	**9.23**
Normalized	97.72%	99.78%	100%
JPEG XL libjxl - PNG - 8 (MP/s)	**1**	**0.96**	**0.96**
Normalized	100%	96%	96%
JPEG XL libjxl - JPEG - 5 (MP/s)	**89.62**	89.18	**88.39**
Normalized	100%	99.51%	98.63%
JPEG XL libjxl - JPEG - 7 (MP/s)	**91.47**	89.11	**87.62**
Normalized	100%	97.42%	95.79%
JPEG XL libjxl - JPEG - 8 (MP/s)	35.23	**35.08**	**35.25**
Normalized	99.94%	99.52%	100%
JPEG XL Decoding libjxl - 1 (MP/s)	**73.91**	73.42	**73.26**
Normalized	100%	99.34%	99.12%
JPEG XL Decoding libjxl - All (MP/s)	**310.96**	278.15	**276.68**
Normalized	100%	89.45%	88.98%
dav1d - Chimera 1080p (FPS)	**644.03**	**560.07**	560.66
Normalized	100%	86.96%	87.05%
dav1d - Summer Nature 4K (FPS)	**169.2**	140.14	**140.11**
Normalized	100%	82.83%	82.81%
dav1d - S.N.1 (FPS)	**604.91**	**548.91**	549.42
Normalized	100%	90.74%	90.83%
dav1d - C.1.1.b (FPS)	**468.69**	363.73	**363.2**
Normalized	100%	77.61%	77.49%
AOM AV1 - Speed 0 Two-Pass - Bosphorus 4K (FPS)	**0.1**	**0.11**	**0.11**
Normalized	90.91%	100%	100%
AOM AV1 - Speed 4 Two-Pass - Bosphorus 4K (FPS)	**3.29**	**3.36**	**3.36**
Normalized	97.92%	100%	100%
AOM AV1 - Speed 6 Realtime - Bosphorus 4K (FPS)	**9.5**	**10.44**	10.27
Normalized	91%	100%	98.37%
Standard Deviation			0.7%
AOM AV1 - Speed 6 Two-Pass - Bosphorus 4K (FPS)	**6.98**	**7.07**	7.05
Normalized	98.73%	100%	99.72%
Standard Deviation			1.1%
AOM AV1 - Speed 8 Realtime - Bosphorus 4K (FPS)	**37.63**	36.89	**36.71**
Normalized	100%	98.03%	97.56%
Standard Deviation			0.1%
AOM AV1 - Speed 9 Realtime - Bosphorus 4K (FPS)	**55.57**	50.14	**49.84**
Normalized	100%	90.23%	89.69%
Standard Deviation			0%
AOM AV1 - Speed 10 Realtime - Bosphorus 4K (FPS)	**61.48**	55.47	**55.13**
Normalized	100%	90.22%	89.67%
Standard Deviation			0.1%

11600K Nov

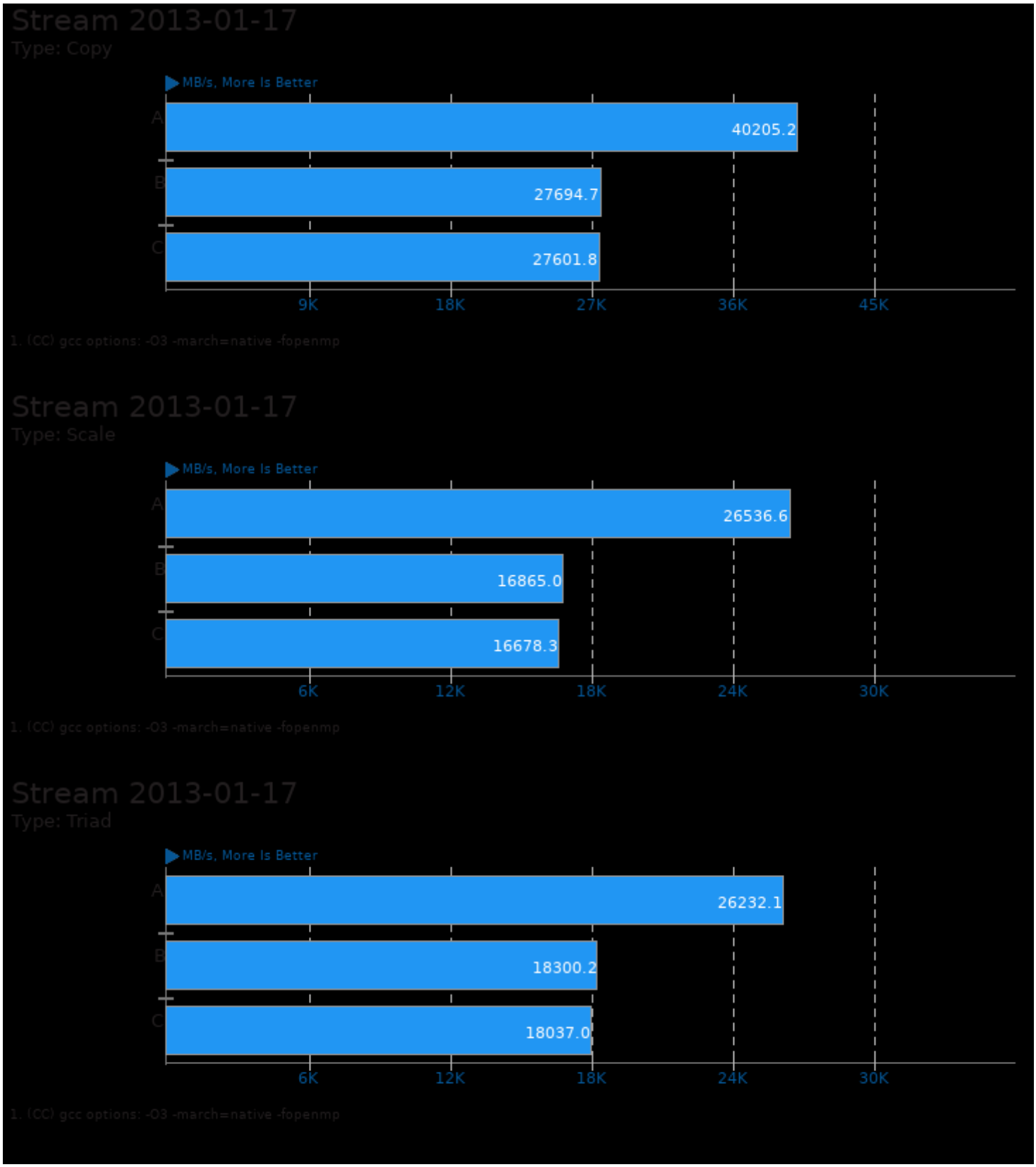
AOM AV1 - Speed 0 Two-Pass - Bosphorus 1080p (FPS)	**0.24**	**0.27**	0.26
Normalized	88.89%	100%	96.3%
Standard Deviation			0%
AOM AV1 - Speed 4 Two-Pass - Bosphorus 1080p (FPS)	**8**	**8.64**	8.59
Normalized	92.59%	100%	99.42%
Standard Deviation			0.4%
AOM AV1 - Speed 6 Realtime - Bosphorus 1080p (FPS)	**8.89**	9.23	**9.51**
Normalized	93.48%	97.06%	100%
Standard Deviation			1.5%
AOM AV1 - Speed 6 Two-Pass - Bosphorus 1080p (FPS)	**23.19**	**23.68**	23.52
Normalized	97.93%	100%	99.32%
Standard Deviation			0.5%
AOM AV1 - Speed 8 Realtime - Bosphorus 1080p (FPS)	**127.05**	119.31	**118.45**
Normalized	100%	93.91%	93.23%
Standard Deviation			0.4%
AOM AV1 - Speed 9 Realtime - Bosphorus 1080p (FPS)	**163.02**	147.51	**146.75**
Normalized	100%	90.49%	90.02%
Standard Deviation			0.1%
AOM AV1 - Speed 10 Realtime - Bosphorus 1080p (FPS)	**179.34**	162.27	**161.17**
Normalized	100%	90.48%	89.87%
Standard Deviation			0.3%
Kvazaar - Bosphorus 4K - Slow (FPS)	**5.32**	**5.97**	5.83
Normalized	89.11%	100%	97.65%
Standard Deviation			2.4%
Kvazaar - Bosphorus 4K - Medium (FPS)	**5.14**	**5.89**	
Normalized	87.27%	100%	
Kvazaar - Bosphorus 1080p - Slow (FPS)	**26.36**	**29.71**	
Normalized	88.72%	100%	
Kvazaar - Bosphorus 1080p - Medium (FPS)	**28.08**	**30.87**	
Normalized	90.96%	100%	
Kvazaar - Bosphorus 4K - Very Fast (FPS)	**12.49**	**13.48**	
Normalized	92.66%	100%	
Kvazaar - Bosphorus 4K - Ultra Fast (FPS)	**22.09**	**24.13**	
Normalized	91.55%	100%	
Kvazaar - Bosphorus 1080p - Very Fast (FPS)	**53.88**	**61.73**	
Normalized	87.28%	100%	
Kvazaar - Bosphorus 1080p - Ultra Fast	**105.83**	**107.68**	
Normalized	98.28%	100%	
rav1e - 1 (FPS)	**0.398**	**0.435**	
Normalized	91.49%	100%	
rav1e - 5 (FPS)	**2.296**	**2.462**	
Normalized	93.26%	100%	
rav1e - 6 (FPS)	**3.209**	**3.291**	
Normalized	97.51%	100%	
rav1e - 10 (FPS)	**8.974**	**8.951**	
Normalized	100%	99.74%	

11600K Nov

SVT-AV1 - Preset 4 - Bosphorus 4K (FPS)	1.25	1.364
Normalized	91.64%	100%
SVT-AV1 - Preset 8 - Bosphorus 4K (FPS)	13.96	14.895
Normalized	93.72%	100%
SVT-AV1 - Preset 4 - Bosphorus 1080p (FPS)	3.537	3.954
Normalized	89.45%	100%
SVT-AV1 - Preset 8 - Bosphorus 1080p (FPS)	48.273	48.942
Normalized	98.63%	100%
SVT-HEVC - 1 - Bosphorus 1080p (FPS)	5.36	6.47
Normalized	82.84%	100%
SVT-HEVC - 7 - Bosphorus 1080p (FPS)	92.31	97.66
Normalized	94.52%	100%
SVT-HEVC - 10 - Bosphorus 1080p (FPS)	219.86	185.01
Normalized	100%	84.15%
SVT-VP9 - VMAF Optimized - Bosphorus 1080p (FPS)	167.3	136.07
Normalized	100%	81.33%
SVT-VP9 - P.S.O - Bosphorus 1080p (FPS)	168.9	141.38
Normalized	100%	83.71%
SVT-VP9 - V.Q.O - Bosphorus 1080p (FPS)	138.55	122.44
Normalized	100%	88.37%
7-Zip Compression - Compression Rating (MIPS)	57770	54545
Normalized	100%	94.42%
7-Zip Compression - D.R (MIPS)	43003	44162
Normalized	97.38%	100%
Stargate Digital Audio Workstation - 44100 - 512 (Render Ratio)	2.372982	2.676719
Normalized	88.65%	100%
Stargate Digital Audio Workstation - 96000 - 512 (Render Ratio)	1.813621	2.037702
Normalized	89%	100%
Stargate Digital Audio Workstation - 192000 - 512 (Render Ratio)	1.279239	1.418939
Normalized	90.15%	100%
Stargate Digital Audio Workstation - 44100 - 1024 (Render Ratio)	2.404372	2.676609
Normalized	89.83%	100%
Stargate Digital Audio Workstation - 480000 - 512 (Render Ratio)	2.326589	2.578776
Normalized	90.22%	100%
Stargate Digital Audio Workstation - 96000 - 1024 (Render Ratio)	1.827187	2.062568
Normalized	88.59%	100%
Stargate Digital Audio Workstation - 192000 - 1024 (Render Ratio)	1.299802	1.43312
Normalized	90.7%	100%
Stargate Digital Audio Workstation - 480000 - 1024 (Render Ratio)	2.327644	2.630031
Normalized	88.5%	100%

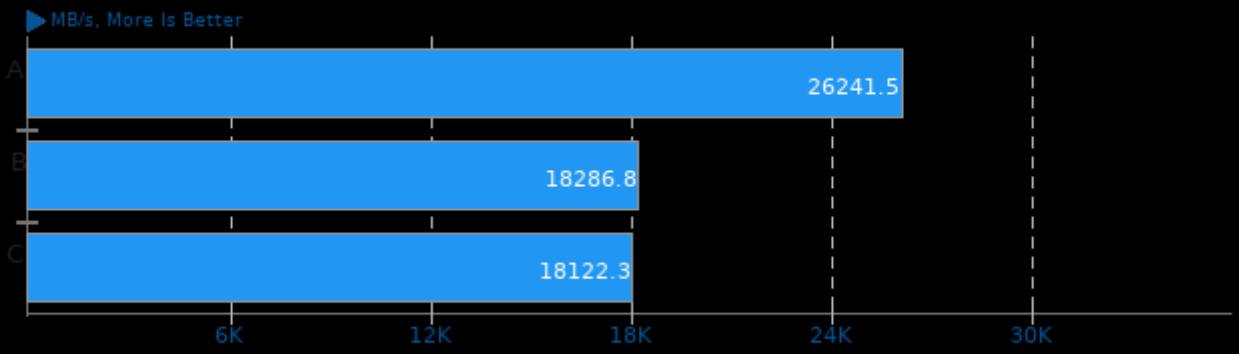
11600K Nov

Timed Linux Kernel Compilation - Time To Compile (sec)	115.958	109.308
Normalized	94.27%	100%
Timed LLVM Compilation - Ninja (sec)	874.082	849.594
Normalized	97.2%	100%
Timed LLVM Compilation - Unix Makefiles	886.478	873.463
Normalized	98.53%	100%
Timed Mesa Compilation - Time To Compile (sec)	62.458	62.091
Normalized	99.41%	100%
Timed MPlayer Compilation - Time To Compile (sec)	46.303	43.669
Normalized	94.31%	100%
Timed Node.js Compilation - Time To Compile (sec)	558.221	567.867
Normalized	100%	98.3%
Build2 - Time To Compile (sec)	166.895	158.881
Normalized	95.2%	100%
OpenSSL (sign/s)	1926	2218
Normalized	86.83%	100%
OpenSSL (verify/s)	124984	142923
Normalized	87.45%	100%
ASTC Encoder - Medium (sec)	4.1434	4.1681
Normalized	100%	99.41%
ASTC Encoder - Thorough (sec)	7.1463	6.9795
Normalized	97.67%	100%
ASTC Encoder - Exhaustive (sec)	76.1036	69.6184
Normalized	91.48%	100%
Darktable - Boat - CPU-only (sec)	5.647	5.495
Normalized	97.31%	100%
Darktable - Masskrug - CPU-only (sec)	4.93	5.644
Normalized	100%	87.35%
Darktable - Server Rack - CPU-only (sec)	0.238	0.295
Normalized	100%	80.68%
Darktable - Server Room - CPU-only (sec)	3.641	4.392
Normalized	100%	82.9%
GIMP - resize (sec)	6.613	6.645
Normalized	100%	99.52%
GIMP - rotate (sec)	8.45	8.66
Normalized	100%	97.58%
GIMP - auto-levels (sec)	8.822	8.897
Normalized	100%	99.16%
GIMP - unsharp-mask (sec)	10.47	10.996
Normalized	100%	95.22%
Hugin - P.P.A.S.T (sec)	39.607	39.861
Normalized	100%	99.36%


Stream 2013-01-17
Type: Copy
MB/s, More Is Better
A
B
C
40205.2
27694.7
27601.8
9K
18K
27K
36K
45K
1. (CC) gcc options: -O3 -march=native -fopenmp
Stream 2013-01-17
Type: Scale
MB/s, More Is Better
A
B
C
26536.6
16865.0
16678.3
6K
12K
18K
24K
30K
1. (CC) gcc options: -O3 -march=native -fopenmp
Stream 2013-01-17
Type: Triad
MB/s, More Is Better
A
B
C
26232.1
18300.2
18037.0
6K
12K
18K
24K
30K
1. (CC) gcc options: -O3 -march=native -fopenmp

Stream 2013-01-17

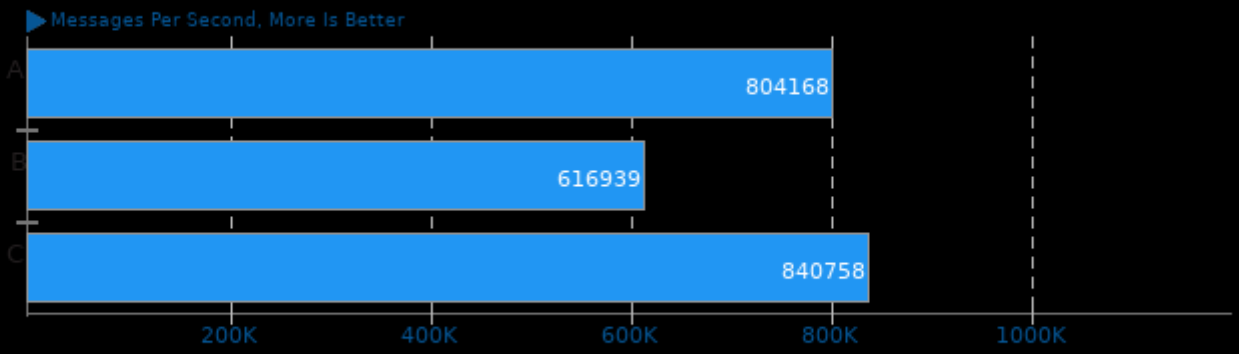
Type: Add



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

Sockperf 3.7

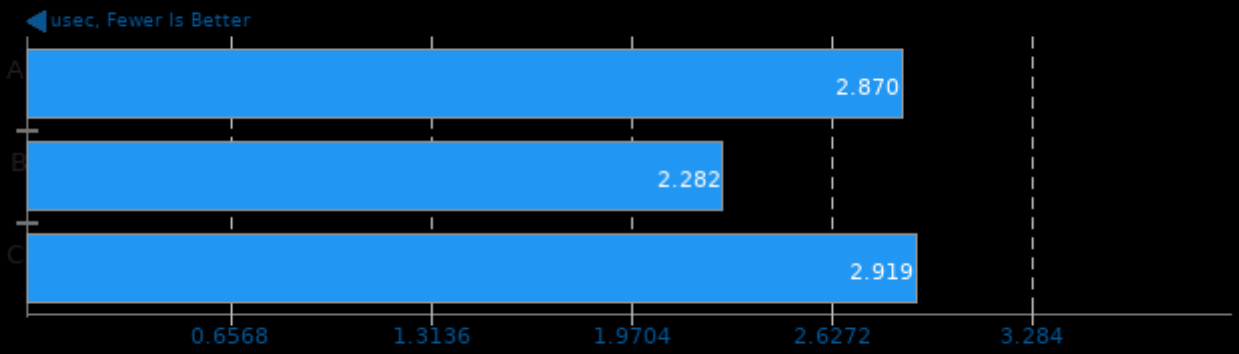
Test: Throughput



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

Sockperf 3.7

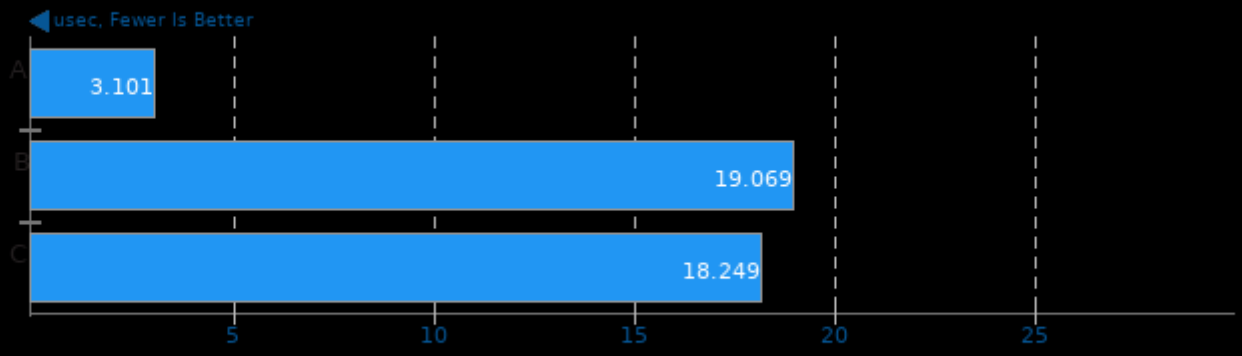
Test: Latency Ping Pong



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

Sockperf 3.7

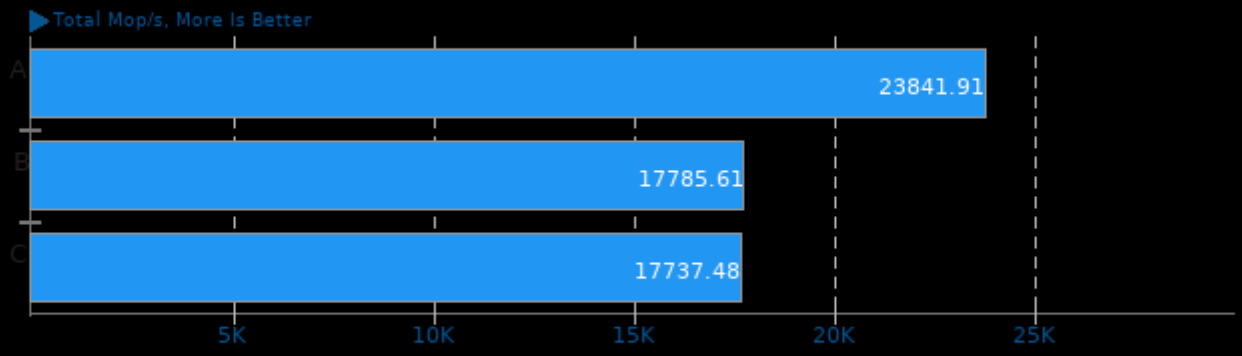
Test: Latency Under Load



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

NAS Parallel Benchmarks 3.4

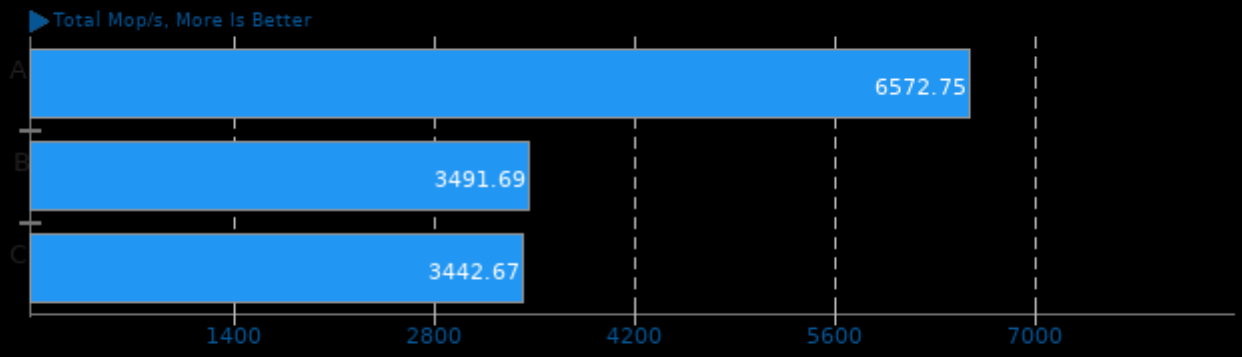
Test / Class: BT.C



1. (F9X) gfortran options: -O3 -march=native -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -levent_core -levent_pthreads -lm -lz
2. Open MPI 4.1.0

NAS Parallel Benchmarks 3.4

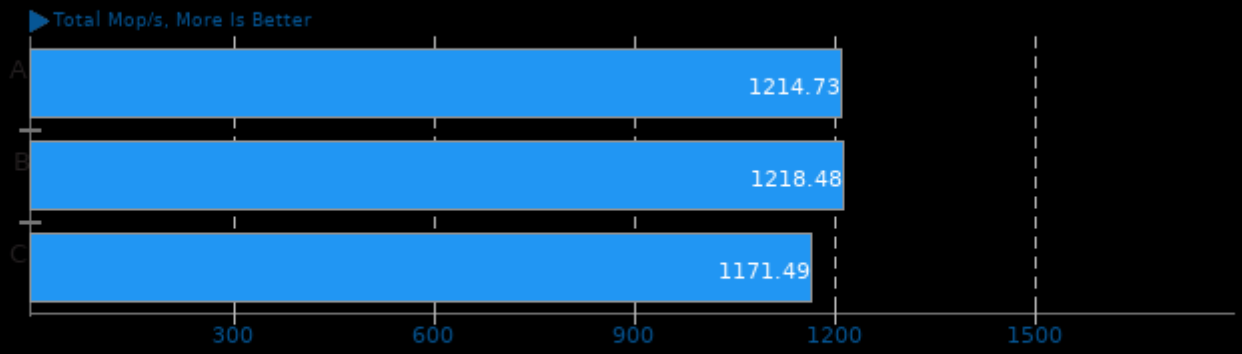
Test / Class: CG.C



1. (F9X) gfortran options: -O3 -march=native -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -levent_core -levent_pthreads -lm -lz
2. Open MPI 4.1.0

NAS Parallel Benchmarks 3.4

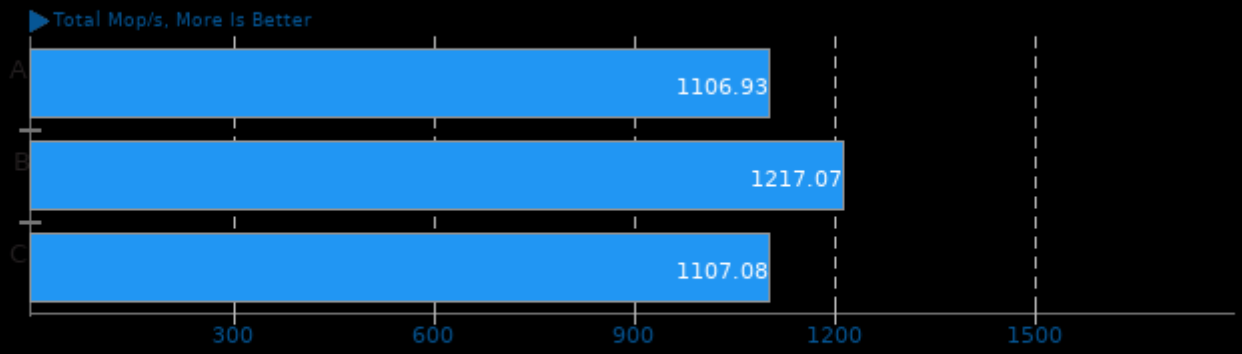
Test / Class: EP.C



1. (F9X) gfortran options: -O3 -march=native -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -levent_core -levent_pthreads -lm -lz
2. Open MPI 4.1.0

NAS Parallel Benchmarks 3.4

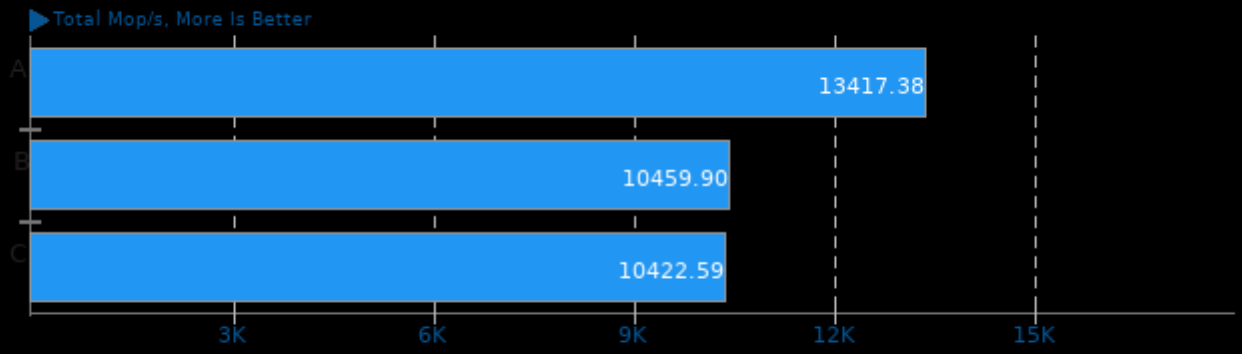
Test / Class: EP.D



1. (F9X) gfortran options: -O3 -march=native -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -levent_core -levent_pthreads -lm -lz
2. Open MPI 4.1.0

NAS Parallel Benchmarks 3.4

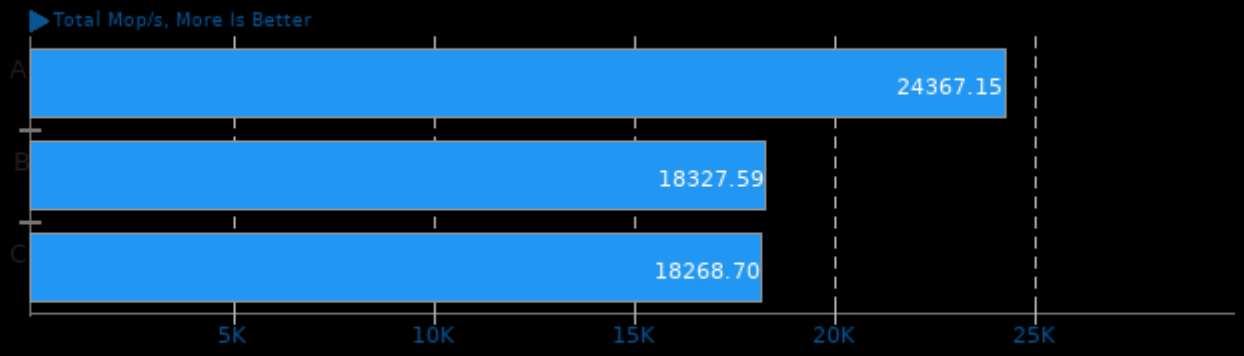
Test / Class: FT.C



1. (F9X) gfortran options: -O3 -march=native -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -levent_core -levent_pthreads -lm -lz
2. Open MPI 4.1.0

NAS Parallel Benchmarks 3.4

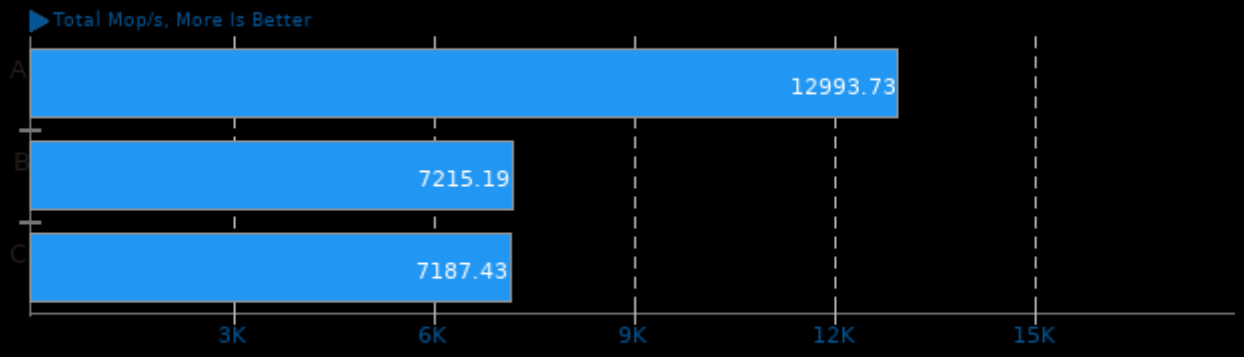
Test / Class: LU.C



1. (F9X) gfortran options: -O3 -march=native -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -levent_core -levent_pthreads -lm -lz
2. Open MPI 4.1.0

NAS Parallel Benchmarks 3.4

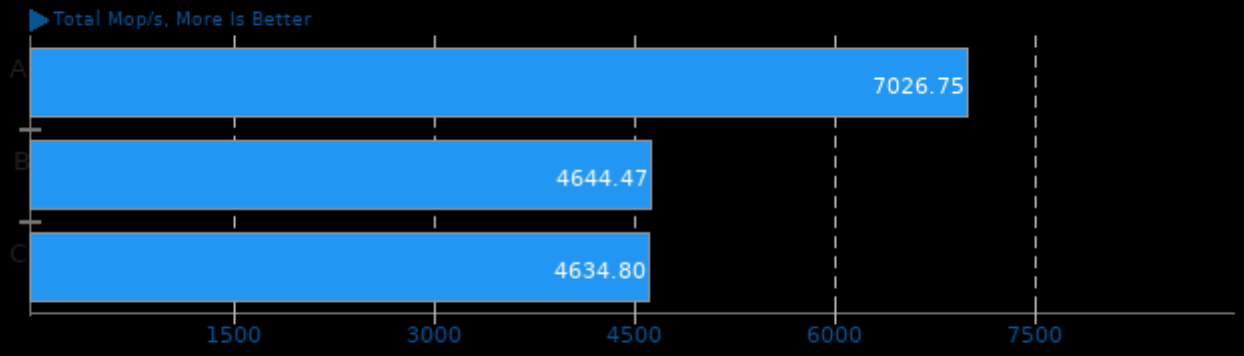
Test / Class: MG.C



1. (F9X) gfortran options: -O3 -march=native -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -levent_core -levent_pthreads -lm -lz
2. Open MPI 4.1.0

NAS Parallel Benchmarks 3.4

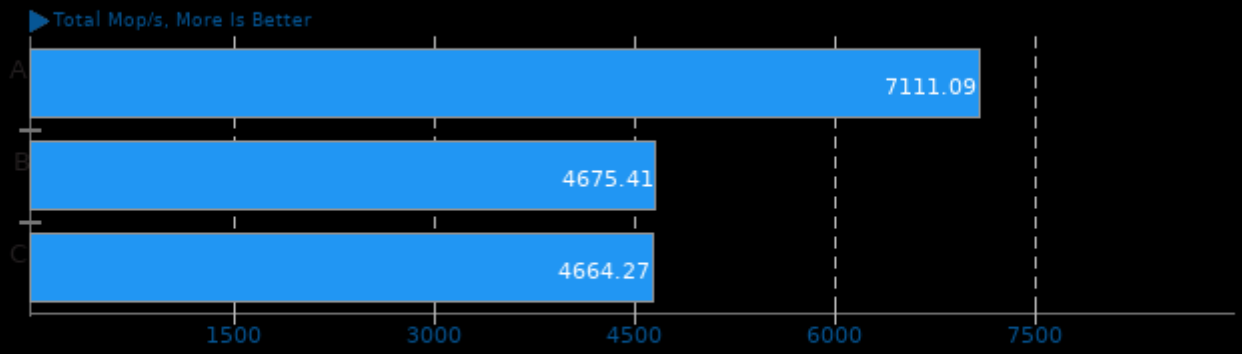
Test / Class: SP.B



1. (F9X) gfortran options: -O3 -march=native -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -levent_core -levent_pthreads -lm -lz
2. Open MPI 4.1.0

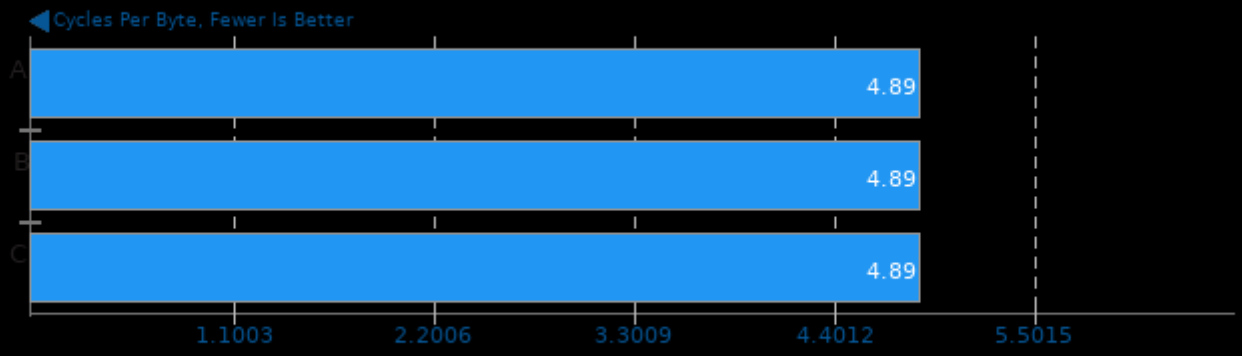
NAS Parallel Benchmarks 3.4

Test / Class: SP.C



1. (F9X) gfortran options: -O3 -march=native -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -levent_core -levent_pthreads -lm -lz
2. Open MPI 4.1.0

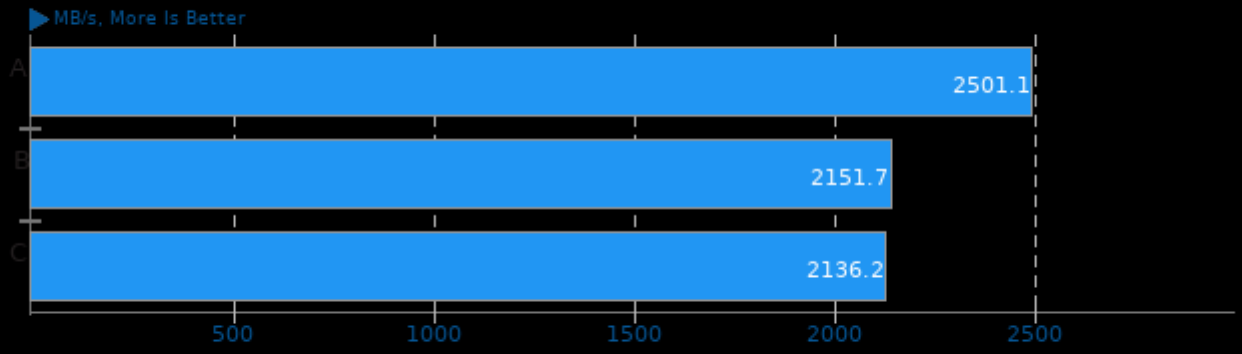
BLAKE2 20170307



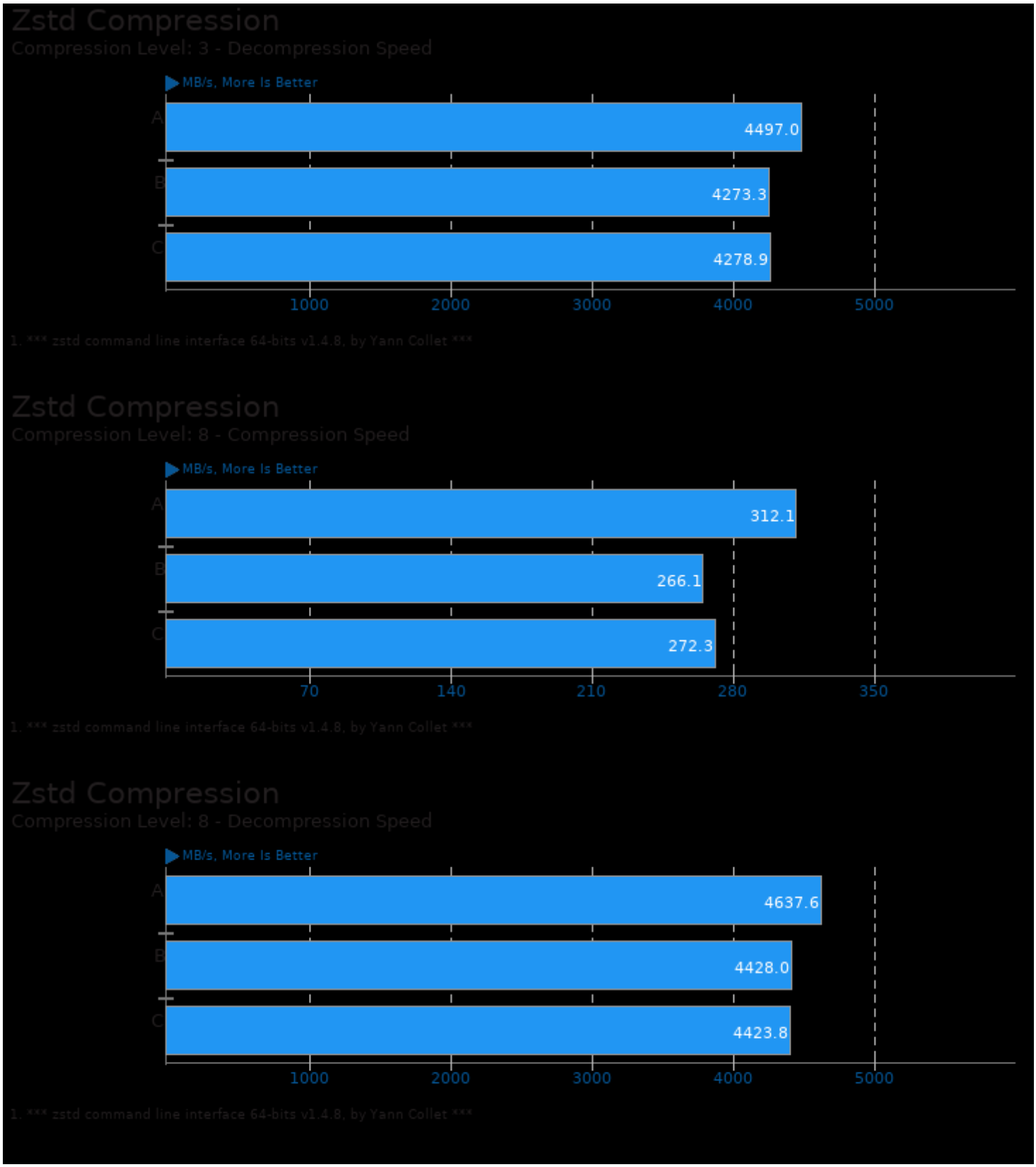
1. (CC) gcc options: -O3 -march=native -lcrypto -lz

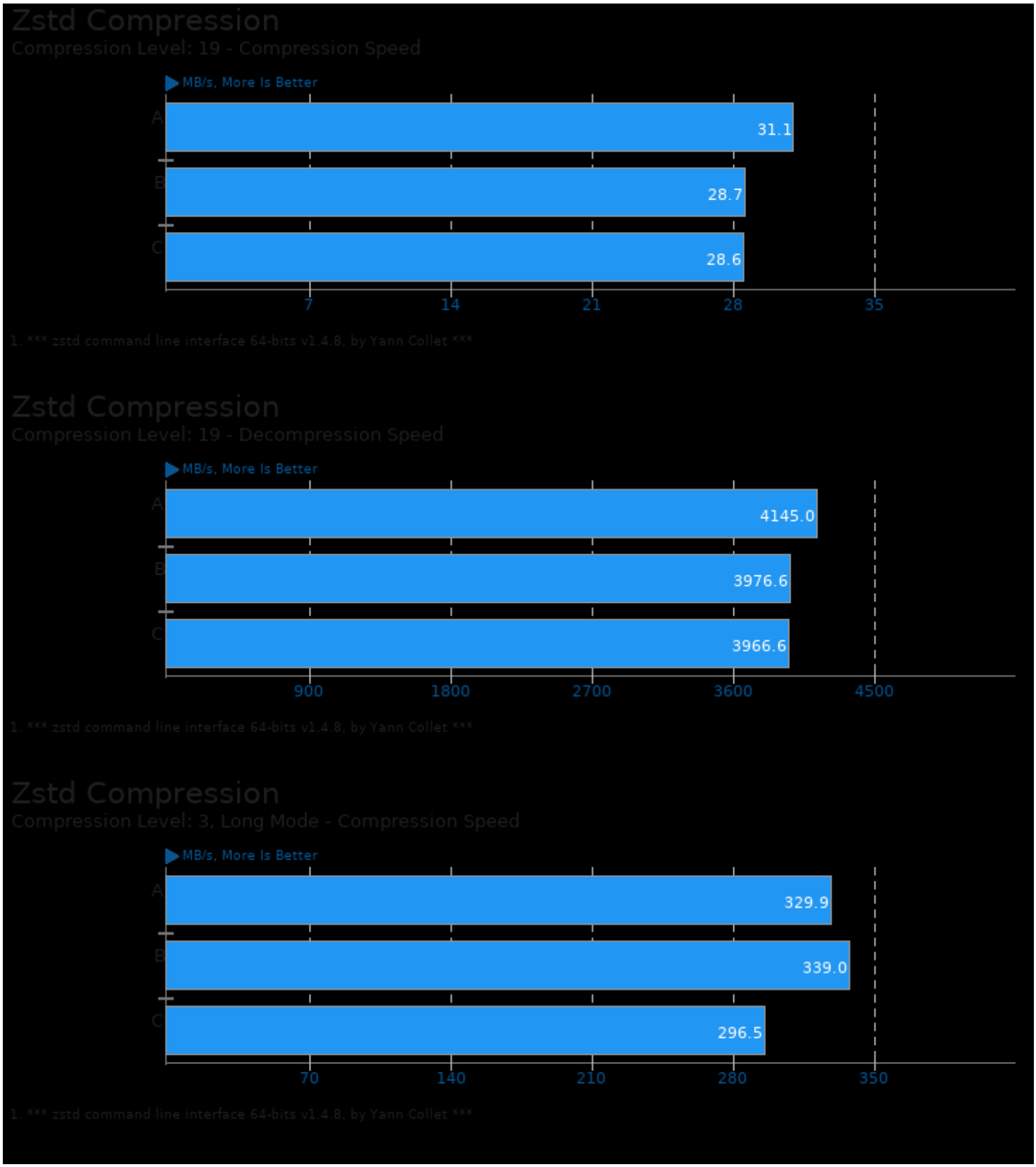
Zstd Compression

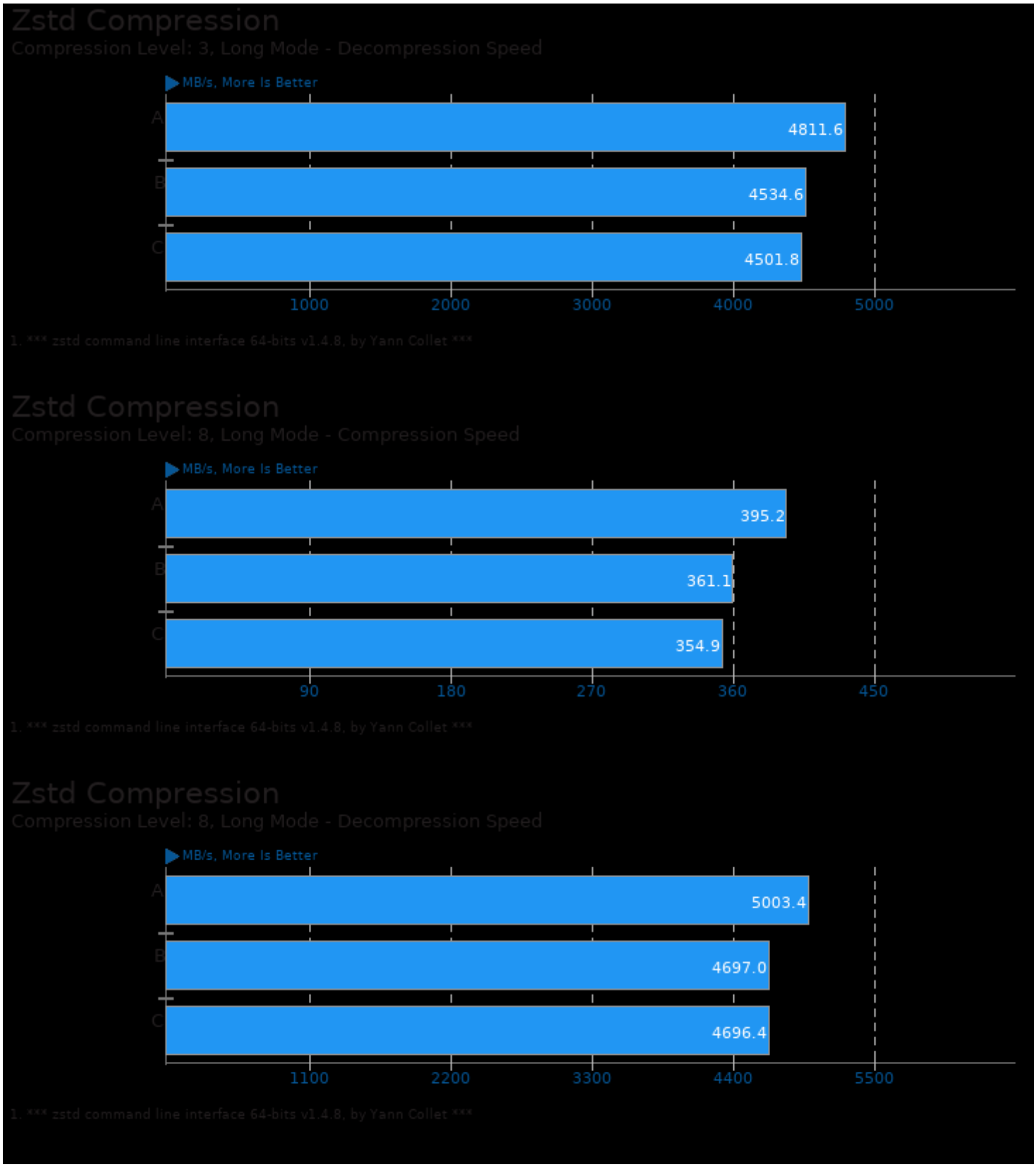
Compression Level: 3 - Compression Speed



1. *** zstd command line interface 64-bits v1.4.8, by Yann Collet ***

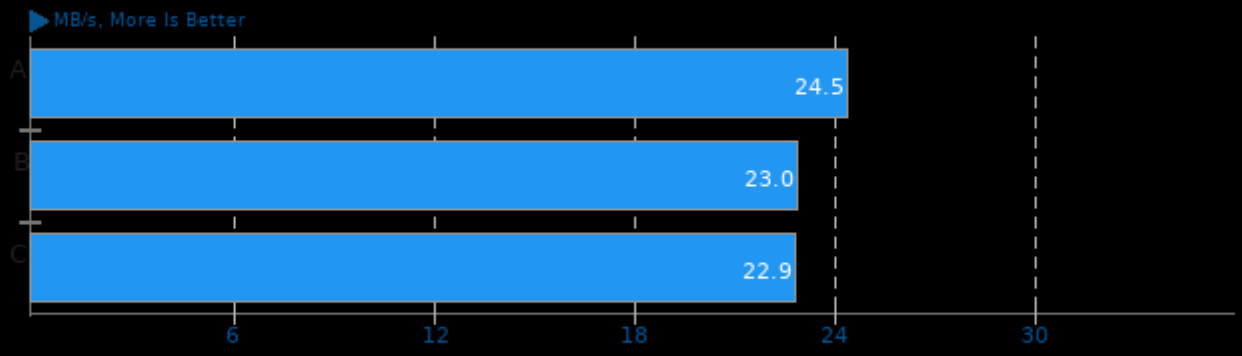

Zstd Compression
Compression Level: 3 - Decompression Speed
MB/s, More Is Better
A
B
C
4497.0
4273.3
4278.9
1000
2000
3000
4000
5000
1. *** zstd command line interface 64-bits v1.4.8, by Yann Collet ***
Zstd Compression
Compression Level: 8 - Compression Speed
MB/s, More Is Better
A
B
C
312.1
266.1
272.3
70
140
210
280
350
1. *** zstd command line interface 64-bits v1.4.8, by Yann Collet ***
Zstd Compression
Compression Level: 8 - Decompression Speed
MB/s, More Is Better
A
B
C
4637.6
4428.0
4423.8
1000
2000
3000
4000
5000
1. *** zstd command line interface 64-bits v1.4.8, by Yann Collet ***


Zstd Compression
Compression Level: 19 - Compression Speed
MB/s, More Is Better
A
B
C
31.1
28.7
28.6
7
14
21
28
35
1. *** zstd command line interface 64-bits v1.4.8, by Yann Collet ***
Zstd Compression
Compression Level: 19 - Decompression Speed
MB/s, More Is Better
A
B
C
4145.0
3976.6
3966.6
900
1800
2700
3600
4500
1. *** zstd command line interface 64-bits v1.4.8, by Yann Collet ***
Zstd Compression
Compression Level: 3, Long Mode - Compression Speed
MB/s, More Is Better
A
B
C
329.9
339.0
296.5
70
140
210
280
350
1. *** zstd command line interface 64-bits v1.4.8, by Yann Collet ***


Zstd Compression
Compression Level: 3, Long Mode - Decompression Speed
MB/s, More Is Better
A
B
C
4811.6
4534.6
4501.8
1000
2000
3000
4000
5000
1. *** zstd command line interface 64-bits v1.4.8, by Yann Collet ***
Zstd Compression
Compression Level: 8, Long Mode - Compression Speed
MB/s, More Is Better
A
B
C
395.2
361.1
354.9
90
180
270
360
450
1. *** zstd command line interface 64-bits v1.4.8, by Yann Collet ***
Zstd Compression
Compression Level: 8, Long Mode - Decompression Speed
MB/s, More Is Better
A
B
C
5003.4
4697.0
4696.4
1100
2200
3300
4400
5500
1. *** zstd command line interface 64-bits v1.4.8, by Yann Collet ***

Zstd Compression

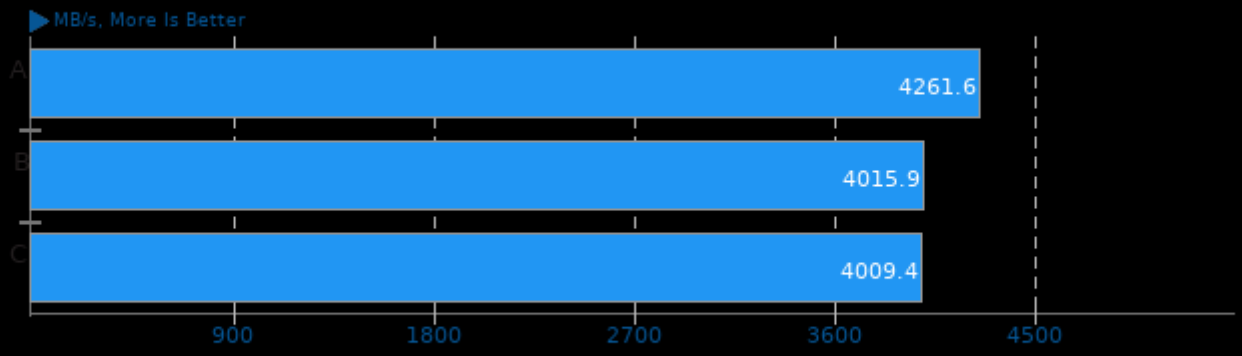
Compression Level: 19, Long Mode - Compression Speed



1. *** zstd command line interface 64-bits v1.4.8, by Yann Collet ***

Zstd Compression

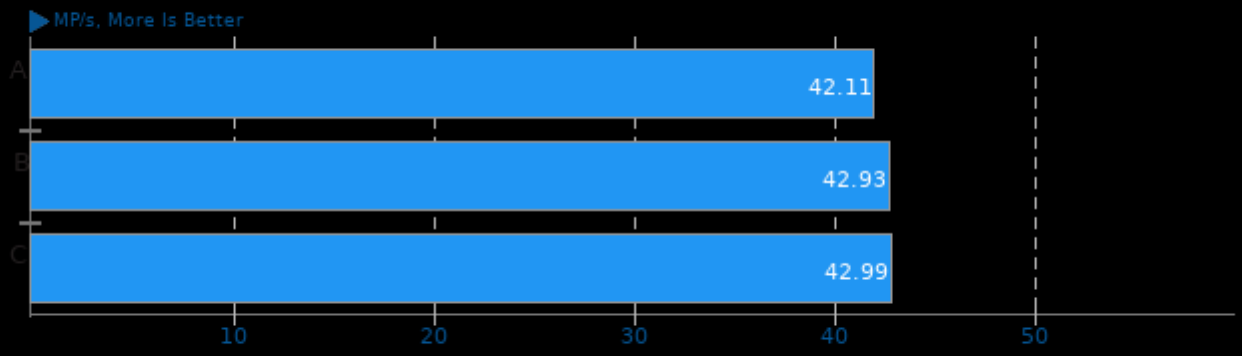
Compression Level: 19, Long Mode - Decompression Speed



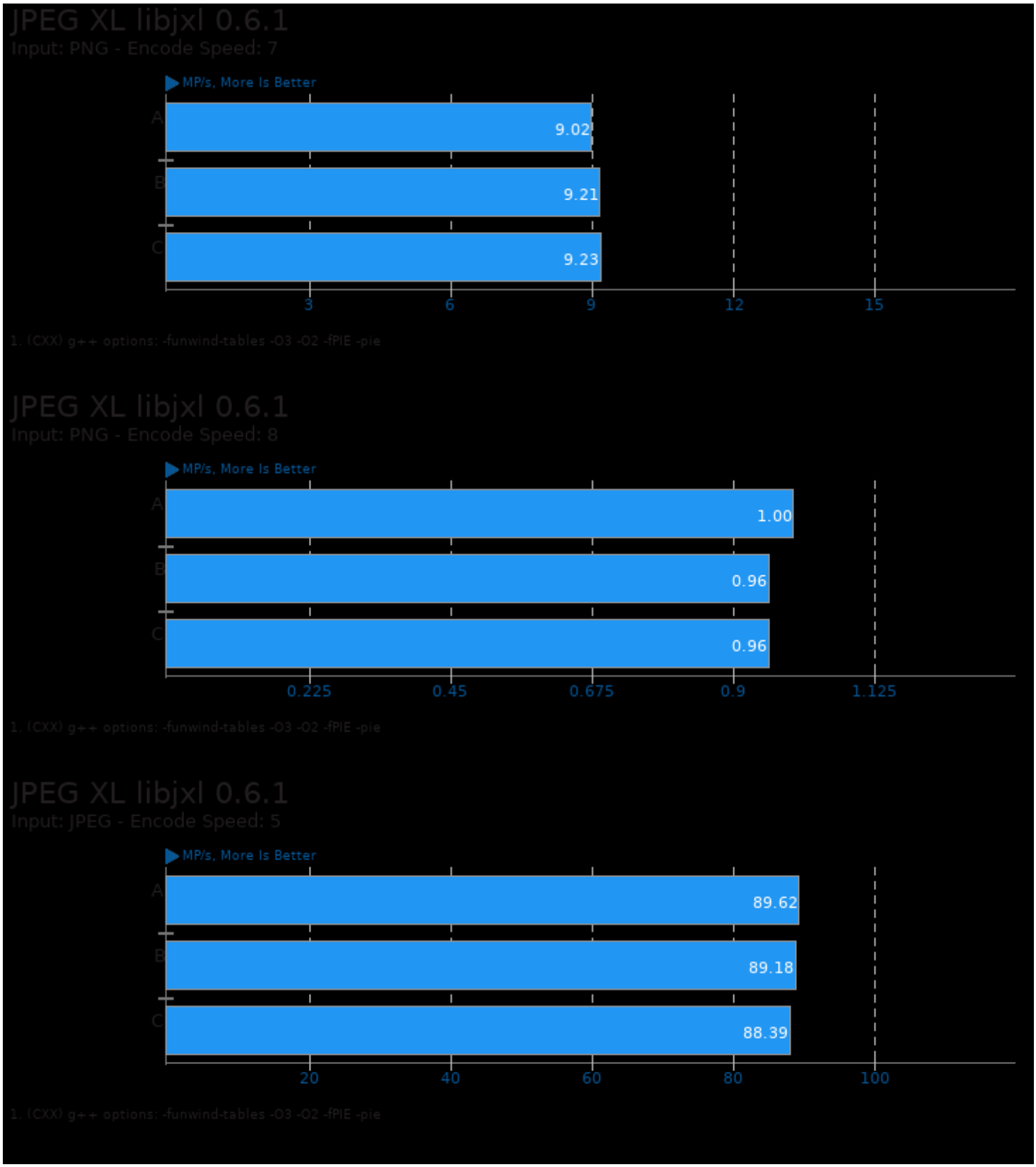
1. *** zstd command line interface 64-bits v1.4.8, by Yann Collet ***

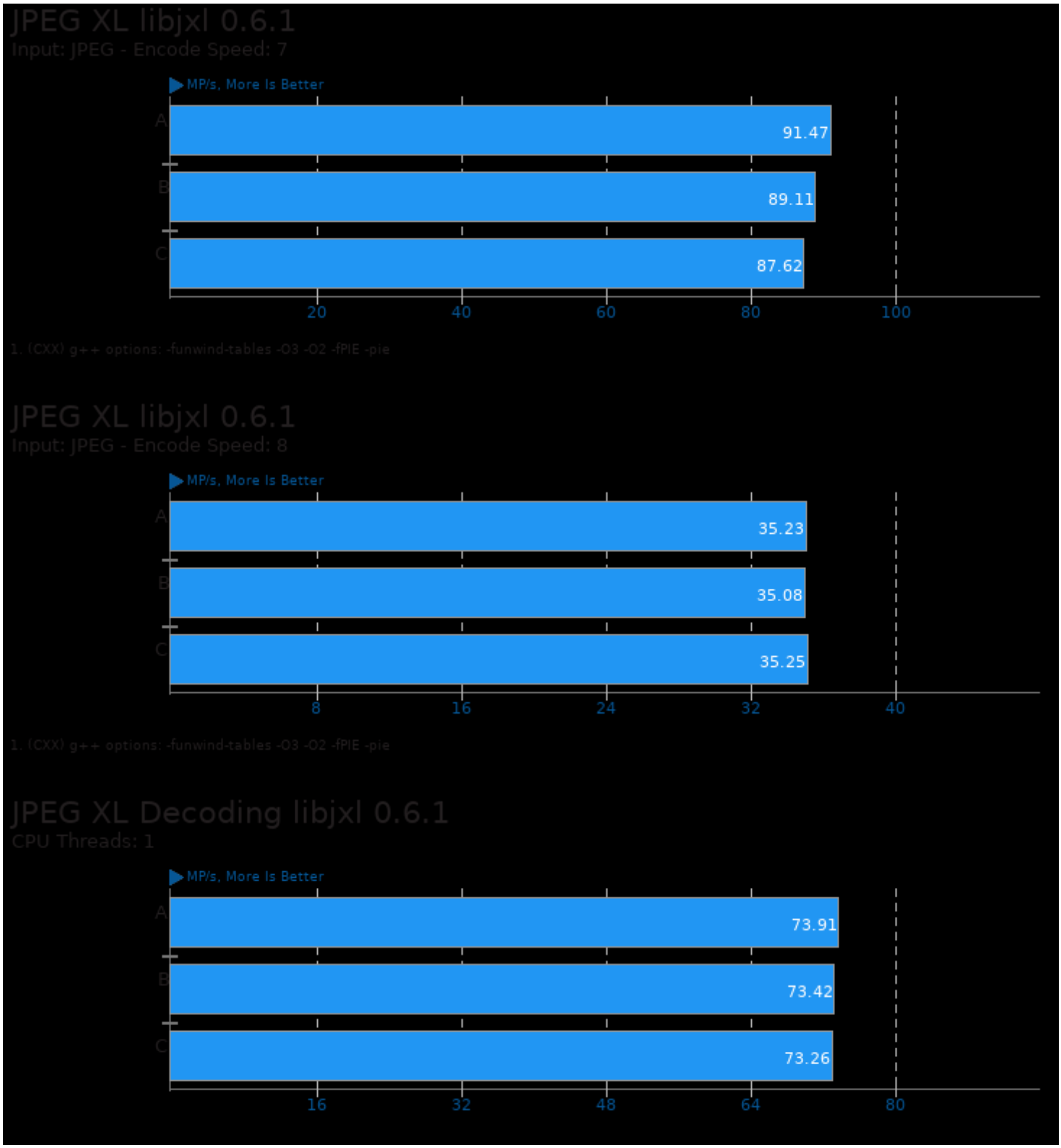
JPEG XL libjxl 0.6.1

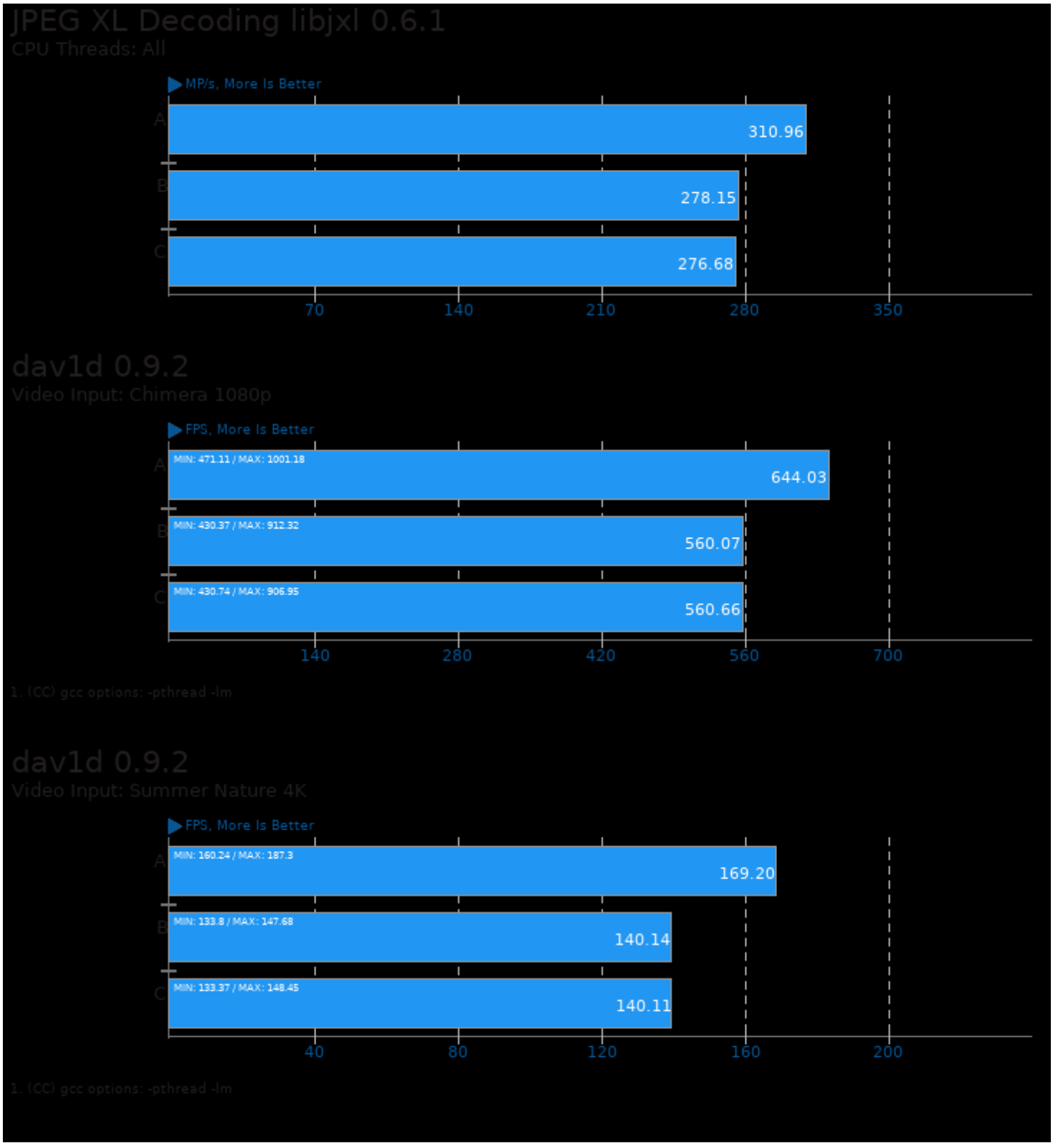
Input: PNG - Encode Speed: 5



1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie

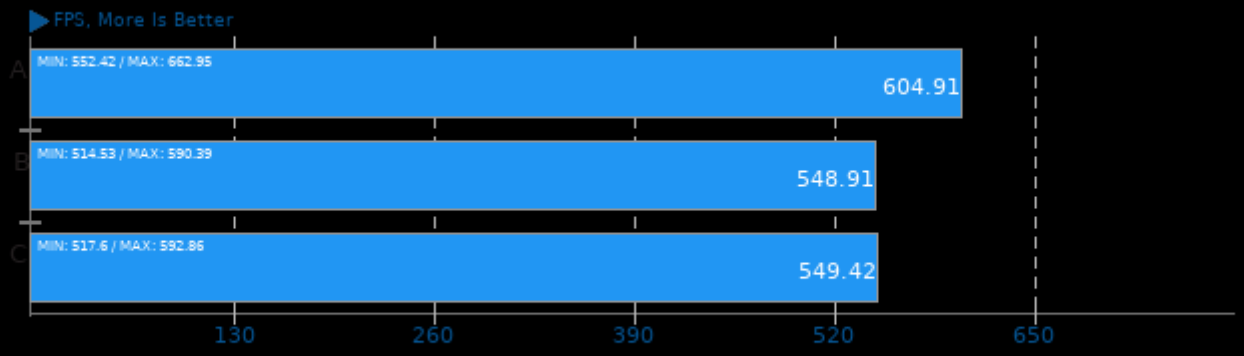

JPEG XL libjxl 0.6.1
Input: PNG - Encode Speed: 7
MP/s, More Is Better
A
B
C
9.02
9.21
9.23
3
6
9
12
15
1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie
JPEG XL libjxl 0.6.1
Input: PNG - Encode Speed: 8
MP/s, More Is Better
A
B
C
1.00
0.96
0.96
0.225
0.45
0.675
0.9
1.125
1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie
JPEG XL libjxl 0.6.1
Input: JPEG - Encode Speed: 5
MP/s, More Is Better
A
B
C
89.62
89.18
88.39
20
40
60
80
100
1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie


JPEG XL libjxl 0.6.1
Input: JPEG - Encode Speed: 7
MP/s, More Is Better
A
B
C
91.47
89.11
87.62
20
40
60
80
100
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
A
B
C
35.23
35.08
35.25
8
16
24
32
40
1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie
JPEG XL Decoding libjxl 0.6.1
CPU Threads: 1
MP/s, More Is Better
A
B
C
73.91
73.42
73.26
16
32
48
64
80


JPEG XL Decoding libjxl 0.6.1
CPU Threads: All
MP/s, More Is Better
A
310.96
B
278.15
C
276.68
70
140
210
280
350
dav1d 0.9.2
Video Input: Chimera 1080p
FPS, More Is Better
A
MIN: 471.11 / MAX: 1001.18
644.03
B
MIN: 430.37 / MAX: 912.32
560.07
C
MIN: 430.74 / MAX: 906.95
560.66
140
280
420
560
700
1. (CC) gcc options: -pthread -lm
dav1d 0.9.2
Video Input: Summer Nature 4K
FPS, More Is Better
A
MIN: 160.24 / MAX: 187.3
169.20
B
MIN: 133.8 / MAX: 147.68
140.14
C
MIN: 133.37 / MAX: 148.45
140.11
40
80
120
160
200
1. (CC) gcc options: -pthread -lm

dav1d 0.9.2

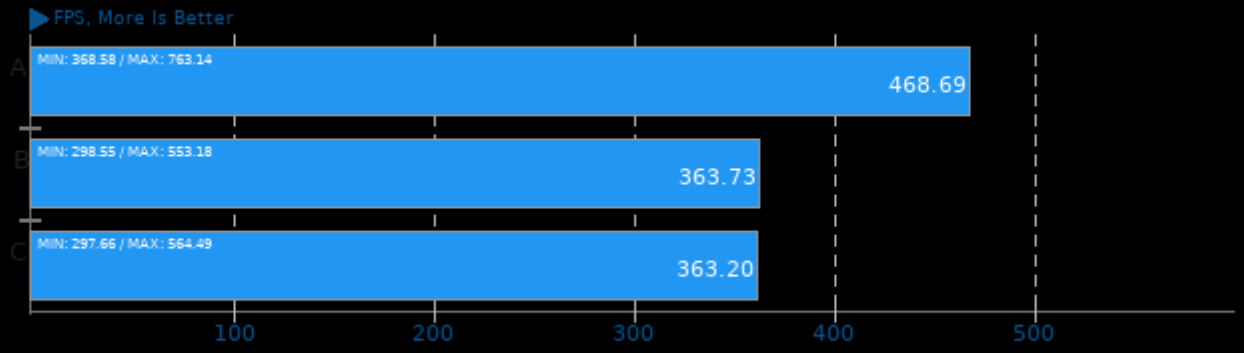
Video Input: Summer Nature 1080p



1. (CC) gcc options: -pthread -lm

dav1d 0.9.2

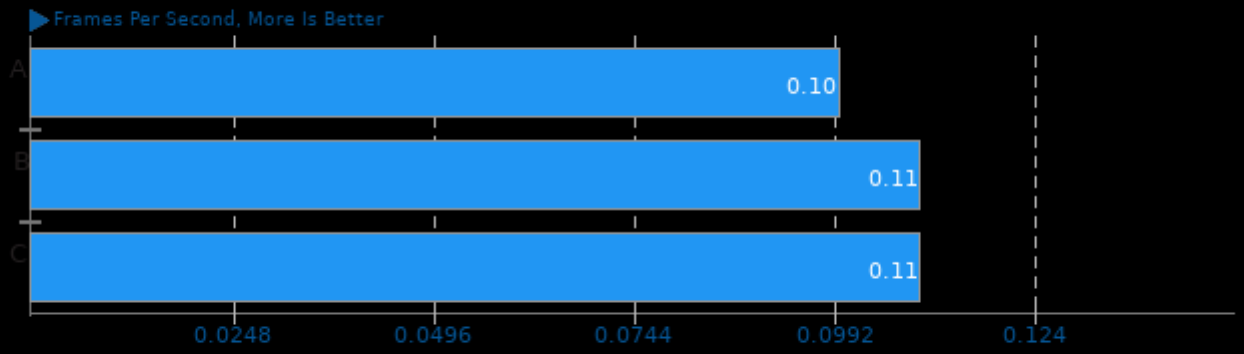
Video Input: Chimera 1080p 10-bit



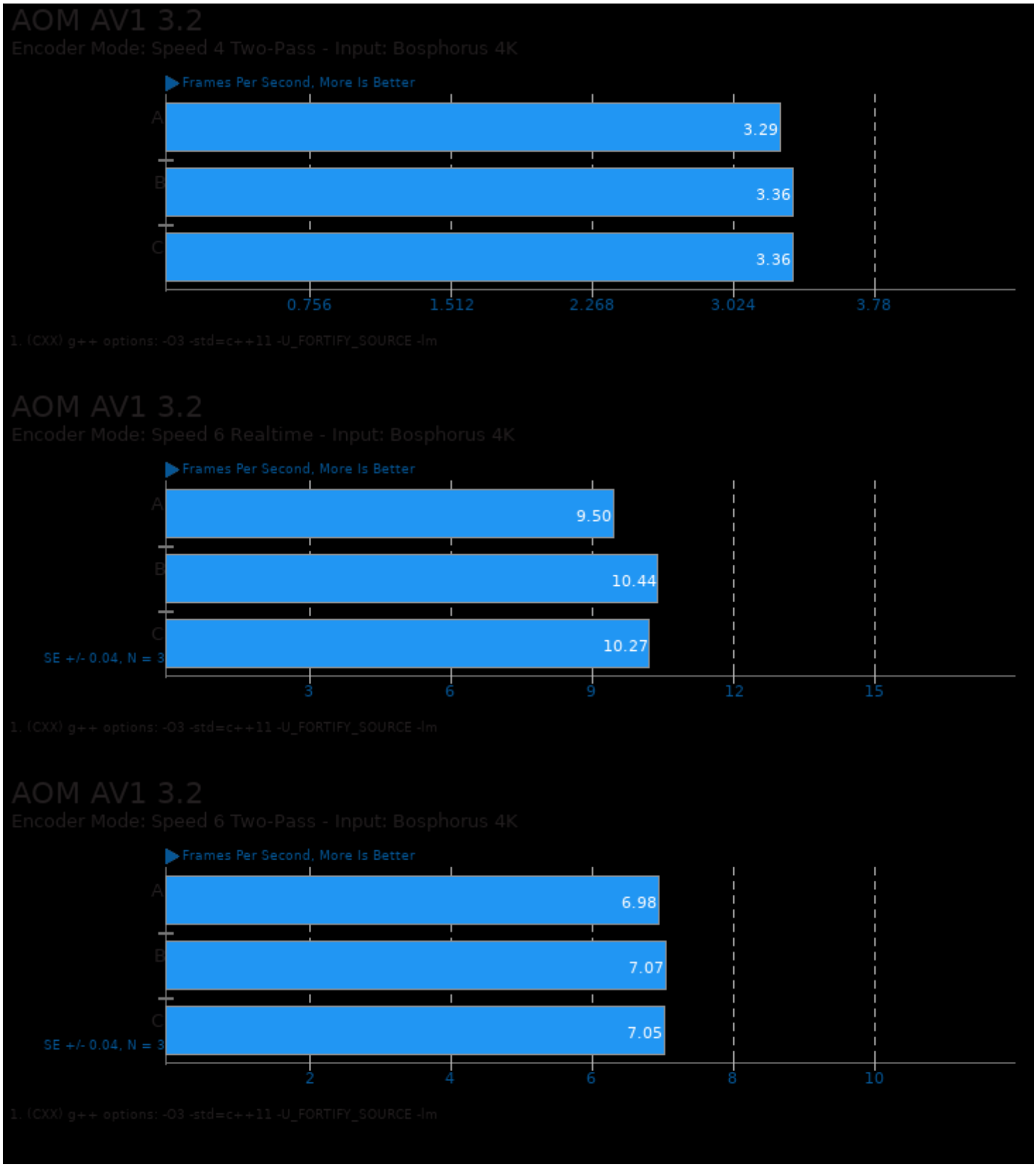
1. (CC) gcc options: -pthread -lm

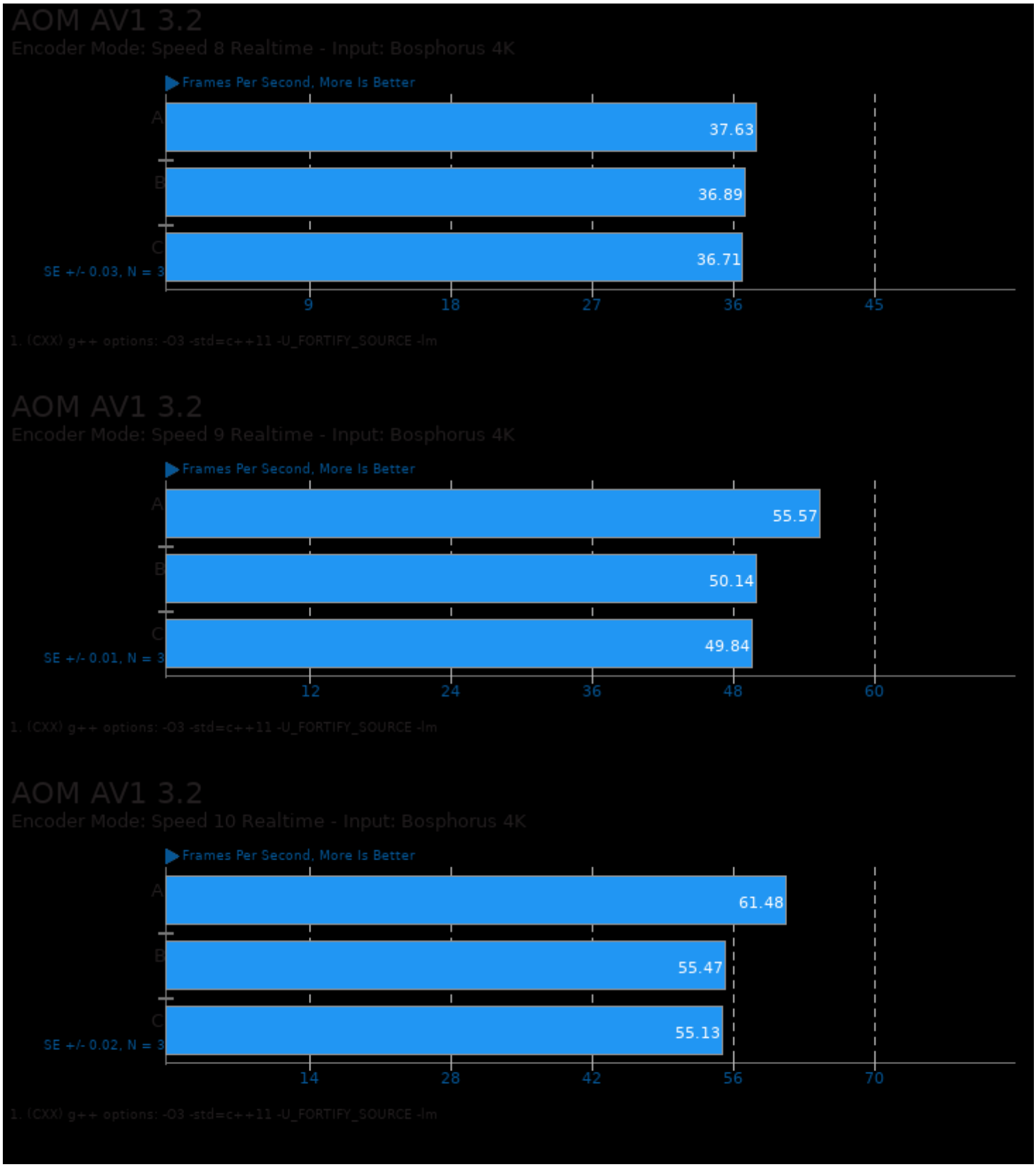
AOM AV1 3.2

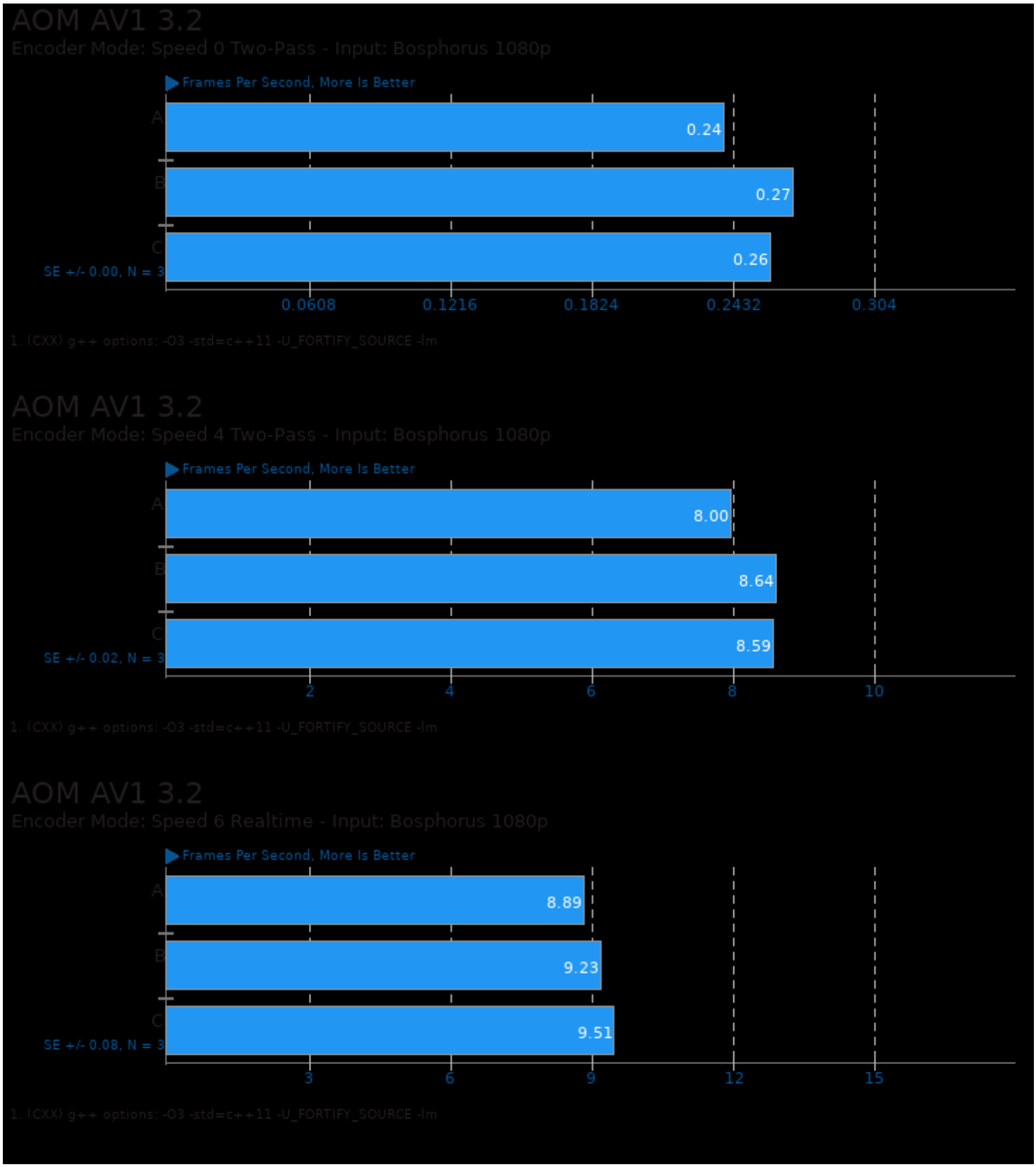
Encoder Mode: Speed 0 Two-Pass - Input: Bosphorus 4K

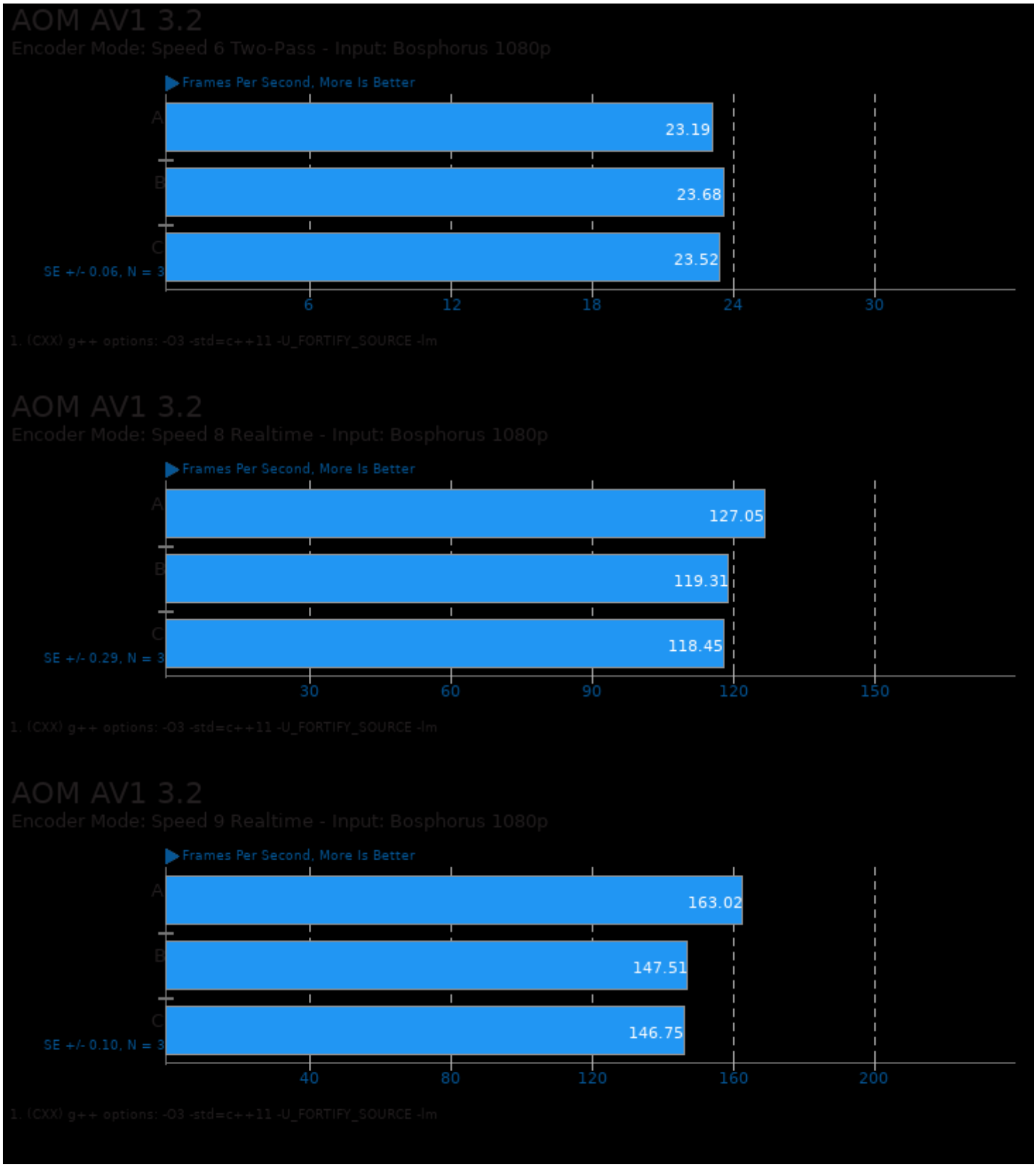


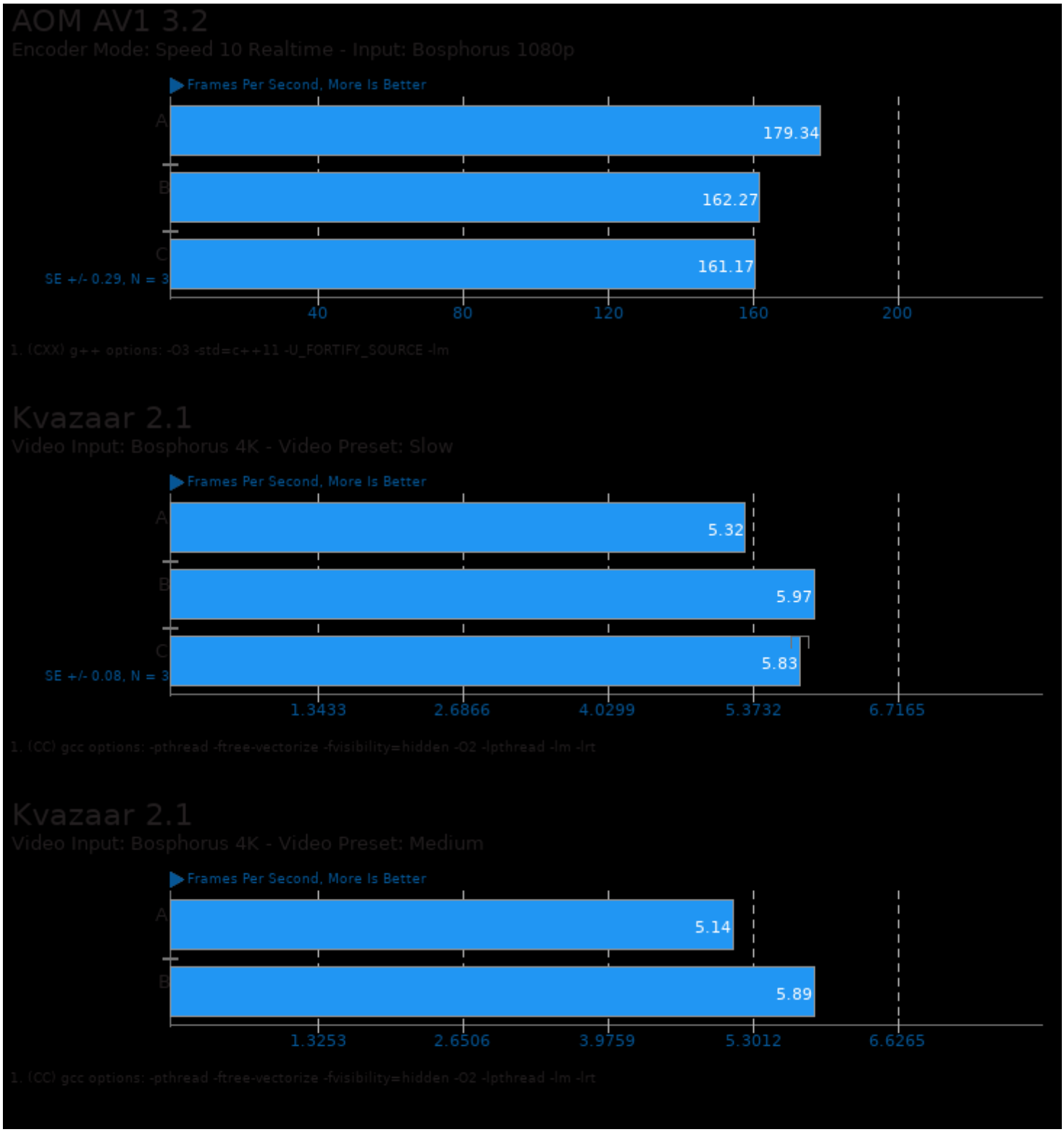
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm


AOM AV1 3.2
Encoder Mode: Speed 4 Two-Pass - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
B
C
3.29
3.36
3.36
0.756
1.512
2.268
3.024
3.78
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm
AOM AV1 3.2
Encoder Mode: Speed 6 Realtime - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
B
C
9.50
10.44
10.27
SE +/- 0.04, N = 3
3
6
9
12
15
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm
AOM AV1 3.2
Encoder Mode: Speed 6 Two-Pass - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
B
C
6.98
7.07
7.05
SE +/- 0.04, N = 3
2
4
6
8
10
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm


AOM AV1 3.2
Encoder Mode: Speed 8 Realtime - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
37.63
B
36.89
C
36.71
SE +/- 0.03, N = 3
9
18
27
36
45
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm
AOM AV1 3.2
Encoder Mode: Speed 9 Realtime - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
55.57
B
50.14
C
49.84
SE +/- 0.01, N = 3
12
24
36
48
60
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm
AOM AV1 3.2
Encoder Mode: Speed 10 Realtime - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
61.48
B
55.47
C
55.13
SE +/- 0.02, N = 3
14
28
42
56
70
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm

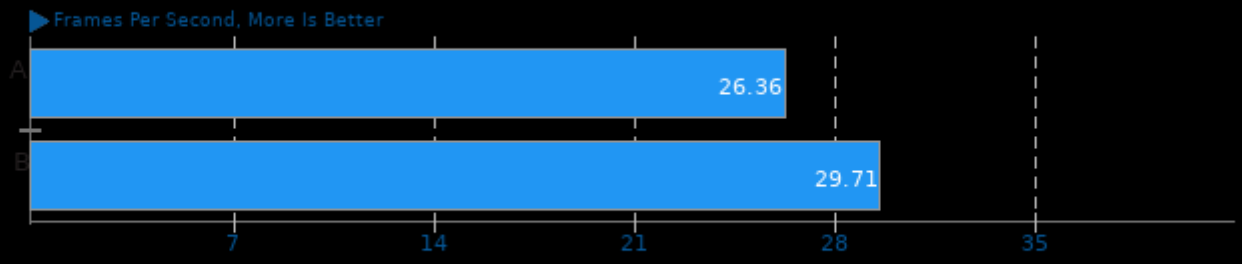

AOM AV1 3.2
Encoder Mode: Speed 0 Two-Pass - Input: Bosphorus 1080p
Frames Per Second, More Is Better
A
B
C
0.24
0.27
0.26
SE +/- 0.00, N = 3
0.0608
0.1216
0.1824
0.2432
0.304
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm
AOM AV1 3.2
Encoder Mode: Speed 4 Two-Pass - Input: Bosphorus 1080p
Frames Per Second, More Is Better
A
B
C
8.00
8.64
8.59
SE +/- 0.02, N = 3
2
4
6
8
10
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm
AOM AV1 3.2
Encoder Mode: Speed 6 Realtime - Input: Bosphorus 1080p
Frames Per Second, More Is Better
A
B
C
8.89
9.23
9.51
SE +/- 0.08, N = 3
3
6
9
12
15
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm


AOM AV1 3.2
Encoder Mode: Speed 6 Two-Pass - Input: Bosphorus 1080p
Frames Per Second, More Is Better
A
B
C
23.19
23.68
23.52
SE +/- 0.06, N = 3
6
12
18
24
30
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm
AOM AV1 3.2
Encoder Mode: Speed 8 Realtime - Input: Bosphorus 1080p
Frames Per Second, More Is Better
A
B
C
127.05
119.31
118.45
SE +/- 0.29, N = 3
30
60
90
120
150
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm
AOM AV1 3.2
Encoder Mode: Speed 9 Realtime - Input: Bosphorus 1080p
Frames Per Second, More Is Better
A
B
C
163.02
147.51
146.75
SE +/- 0.10, N = 3
40
80
120
160
200
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm


AOM AV1 3.2
Encoder Mode: Speed 10 Realtime - Input: Bosphorus 1080p
Frames Per Second, More Is Better
A
B
C
179.34
162.27
161.17
SE +/- 0.29, N = 3
40
80
120
160
200
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm
Kvazaar 2.1
Video Input: Bosphorus 4K - Video Preset: Slow
Frames Per Second, More Is Better
A
B
C
5.32
5.97
5.83
SE +/- 0.08, N = 3
1.3433
2.6866
4.0299
5.3732
6.7165
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt
Kvazaar 2.1
Video Input: Bosphorus 4K - Video Preset: Medium
Frames Per Second, More Is Better
A
B
5.14
5.89
1.3253
2.6506
3.9759
5.3012
6.6265
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt

Kvazaar 2.1

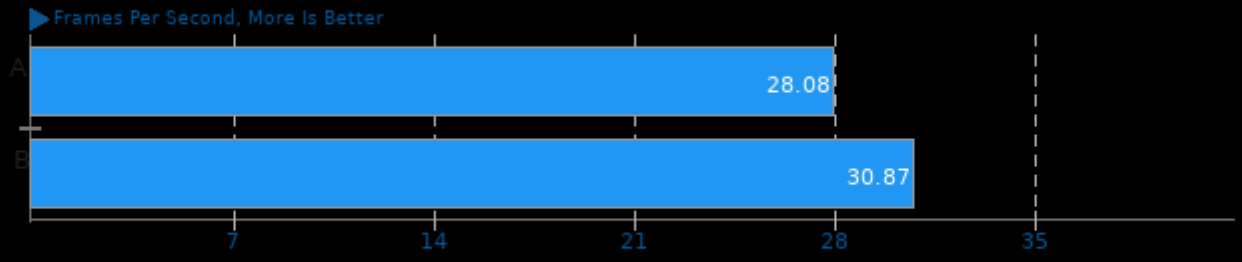
Video Input: Bosphorus 1080p - Video Preset: Slow



1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt

Kvazaar 2.1

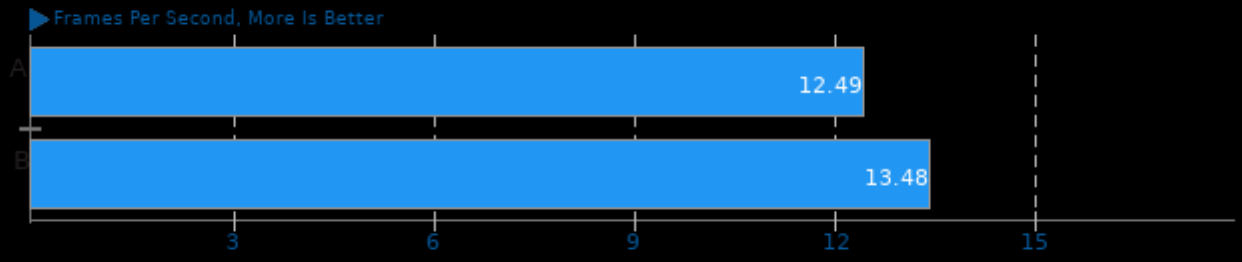
Video Input: Bosphorus 1080p - Video Preset: Medium



1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt

Kvazaar 2.1

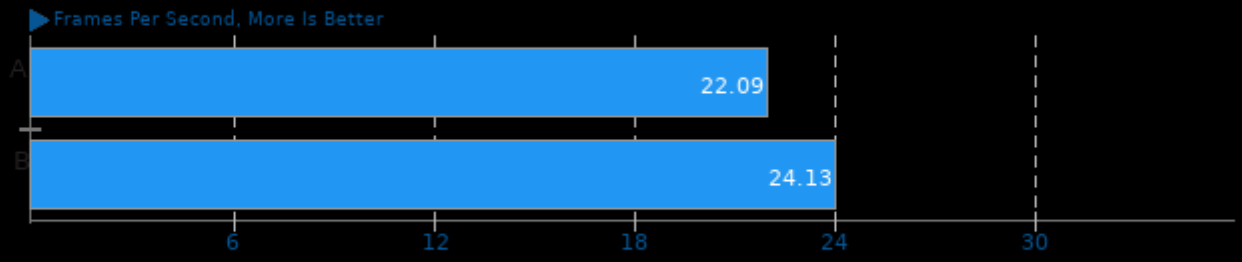
Video Input: Bosphorus 4K - Video Preset: Very Fast



1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt

Kvazaar 2.1

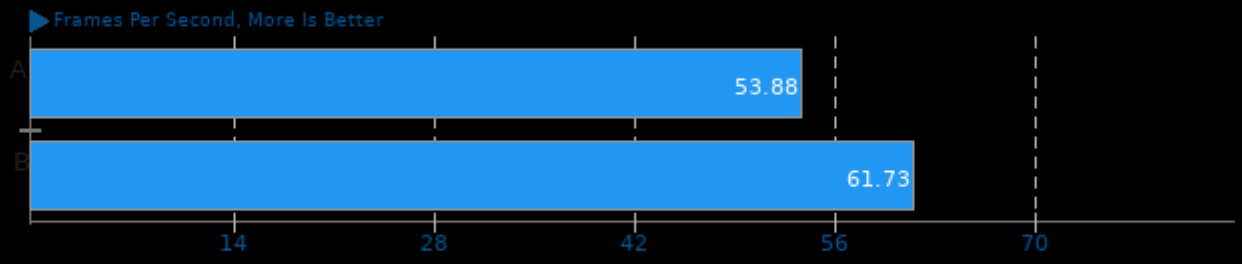
Video Input: Bosphorus 4K - Video Preset: Ultra Fast



1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt

Kvazaar 2.1

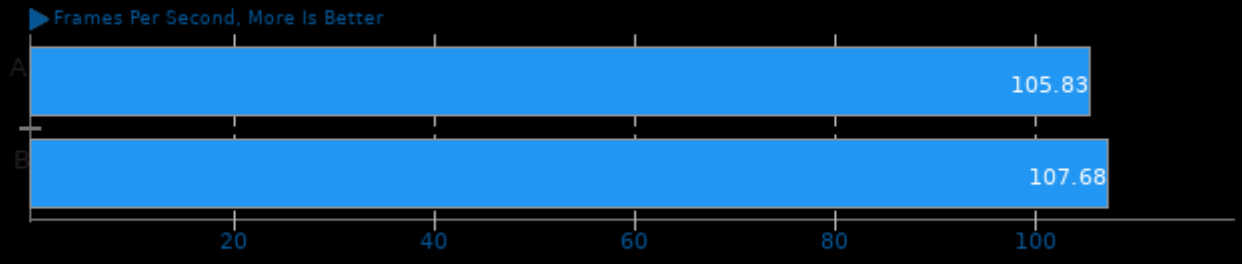
Video Input: Bosphorus 1080p - Video Preset: Very Fast



1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt

Kvazaar 2.1

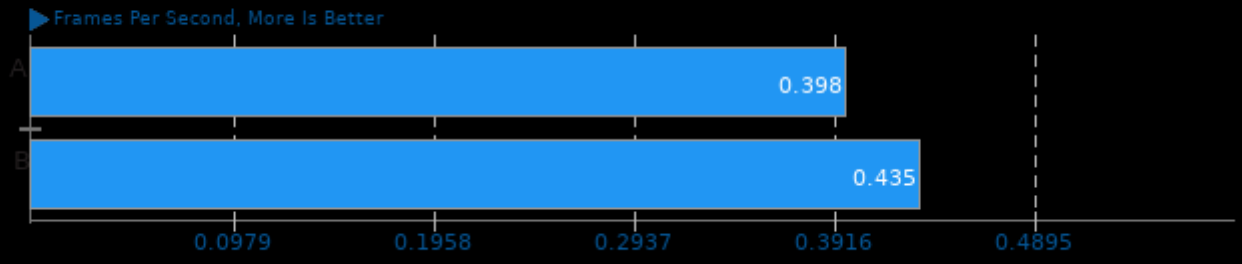
Video Input: Bosphorus 1080p - Video Preset: Ultra Fast



1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt

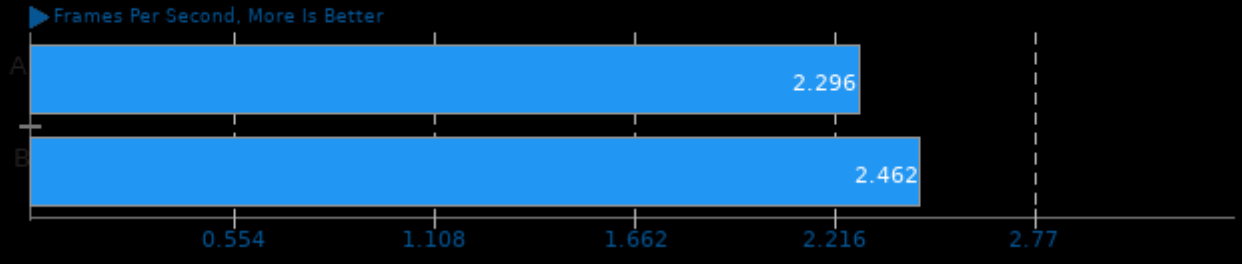
rav1e 0.5

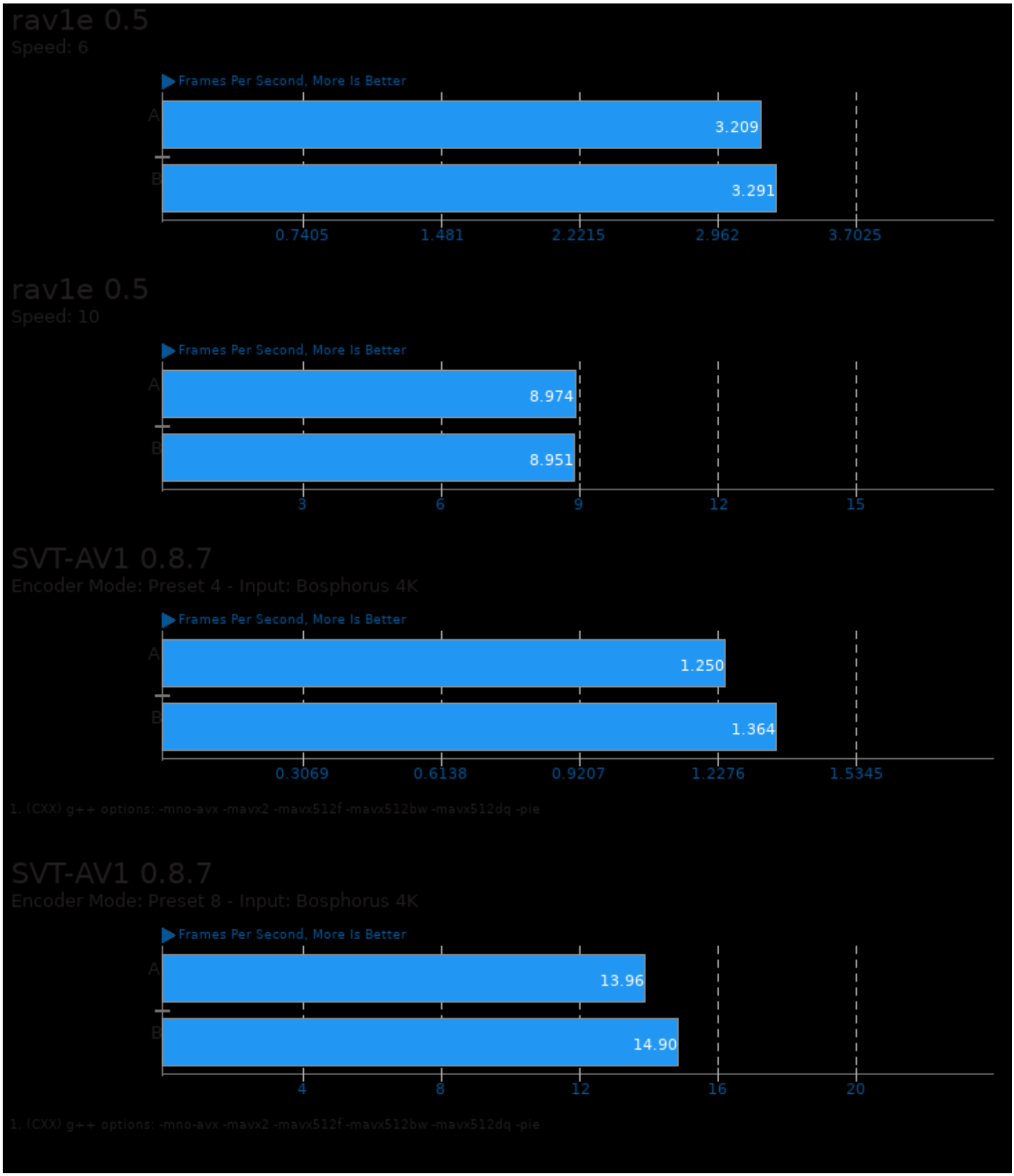
Speed: 1



rav1e 0.5

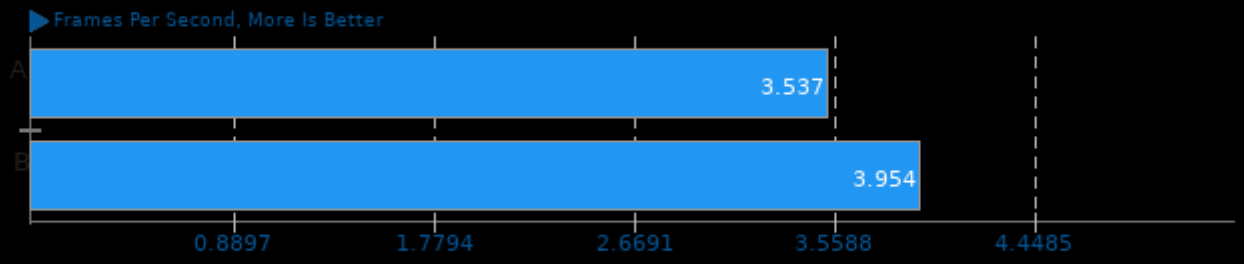
Speed: 5




rav1e 0.5
Speed: 6
Frames Per Second, More Is Better
A
3.209
B
3.291
0.7405
1.481
2.2215
2.962
3.7025
rav1e 0.5
Speed: 10
Frames Per Second, More Is Better
A
8.974
B
8.951
3
6
9
12
15
SVT-AV1 0.8.7
Encoder Mode: Preset 4 - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
1.250
B
1.364
0.3069
0.6138
0.9207
1.2276
1.5345
1. (CXX) g++ options: -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie
SVT-AV1 0.8.7
Encoder Mode: Preset 8 - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
13.96
B
14.90
4
8
12
16
20
1. (CXX) g++ options: -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie

SVT-AV1 0.8.7

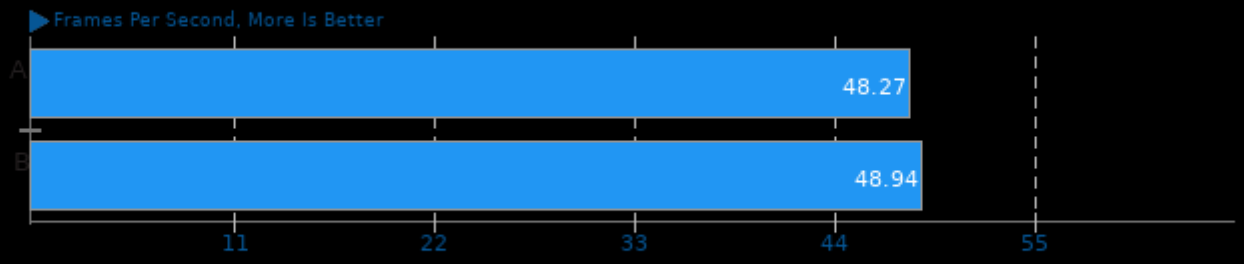
Encoder Mode: Preset 4 - Input: Bosphorus 1080p



1. (CXX) g++ options: -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie

SVT-AV1 0.8.7

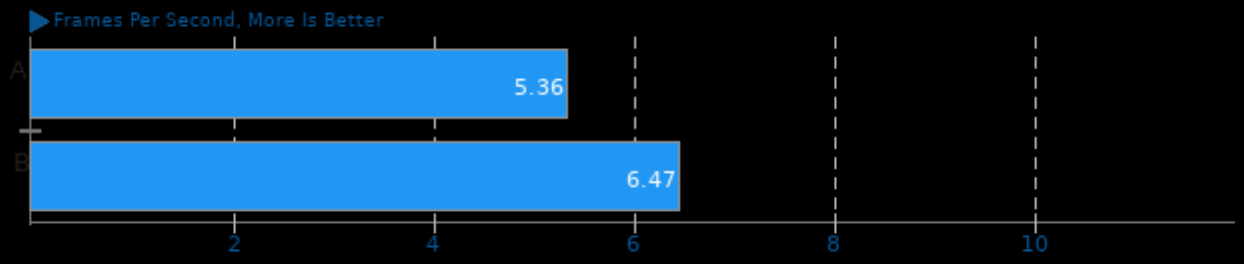
Encoder Mode: Preset 8 - Input: Bosphorus 1080p



1. (CXX) g++ options: -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie

SVT-HEVC 1.5.0

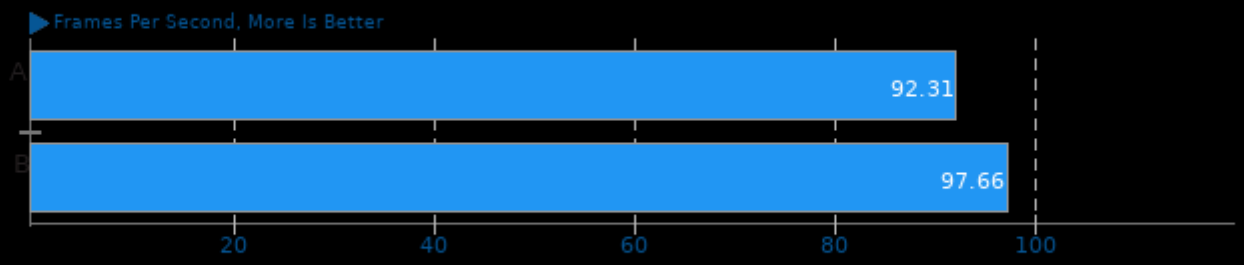
Tuning: 1 - Input: Bosphorus 1080p



1. (CC) gcc options: -fPIE -fPIC -O3 -O2 -pie -rdynamic -lpthread -lrt

SVT-HEVC 1.5.0

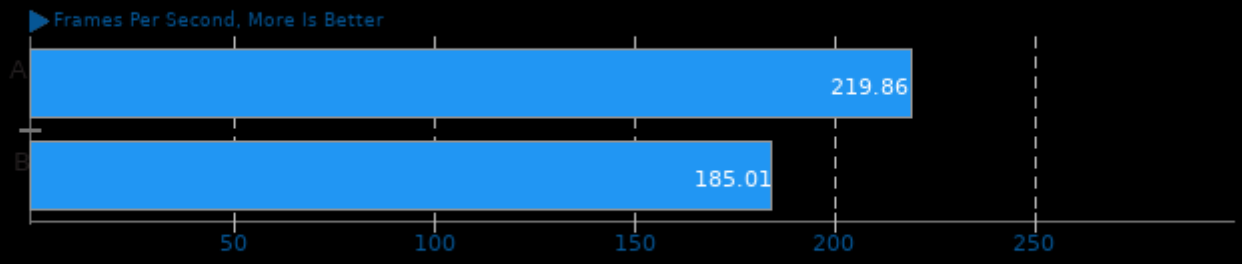
Tuning: 7 - Input: Bosphorus 1080p



1. (CC) gcc options: -fPIE -fPIC -O3 -O2 -pie -rdynamic -lpthread -lrt

SVT-HEVC 1.5.0

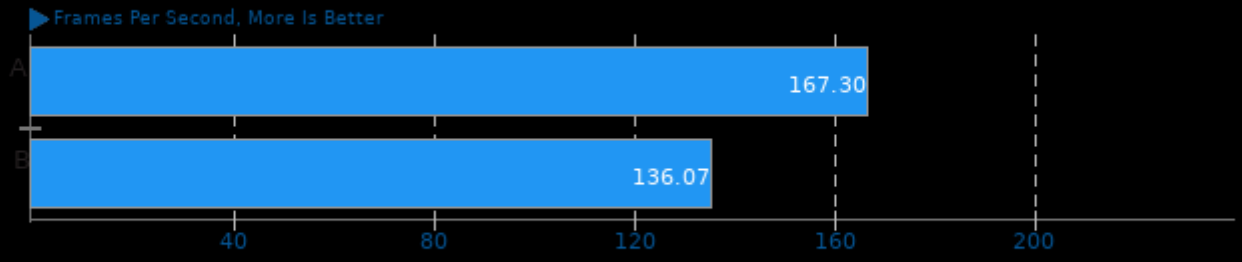
Tuning: 10 - Input: Bosphorus 1080p



1. (CC) gcc options: -fPIE -fPIC -O3 -O2 -pie -rdynamic -lpthread -lrt

SVT-VP9 0.3

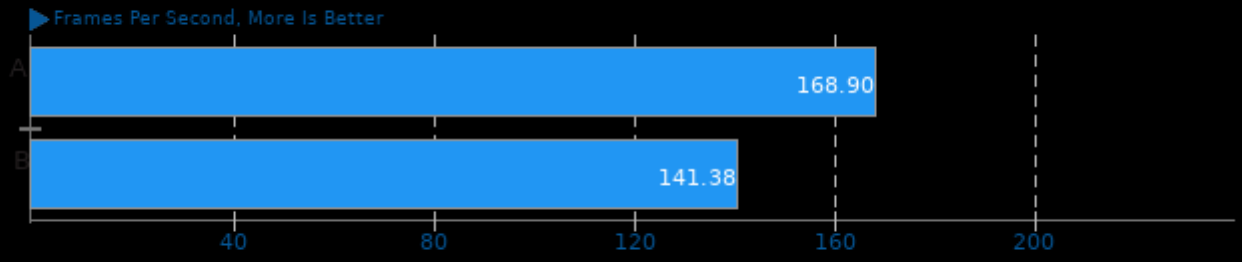
Tuning: VMAF Optimized - Input: Bosphorus 1080p



1. (CC) gcc options: -O3 -fcommon -fPIE -fPIC -fvisibility=hidden -pie -rdynamic -lpthread -lrt -lm

SVT-VP9 0.3

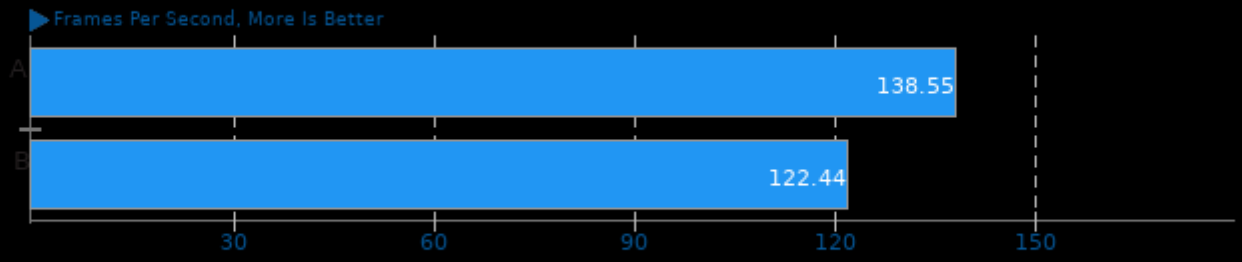
Tuning: PSNR/SSIM Optimized - Input: Bosphorus 1080p



1. (CC) gcc options: -O3 -fcommon -fPIE -fPIC -fvisibility=hidden -pie -rdynamic -lpthread -lrt -lm

SVT-VP9 0.3

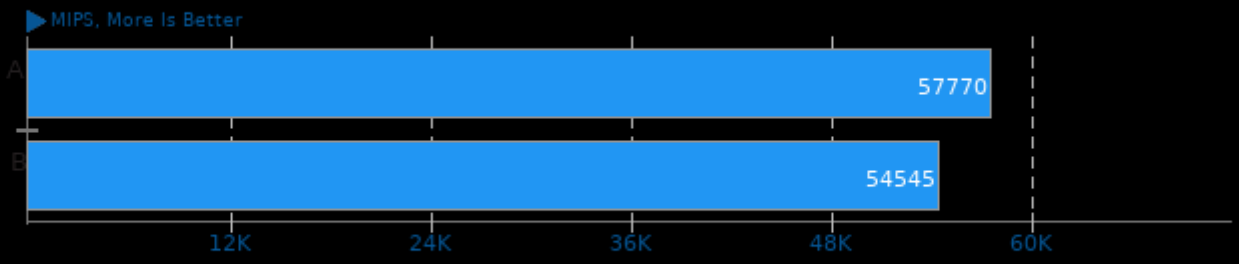
Tuning: Visual Quality Optimized - Input: Bosphorus 1080p



1. (CC) gcc options: -O3 -fcommon -fPIE -fPIC -fvisibility=hidden -pie -rdynamic -lpthread -lrt -lm

7-Zip Compression 21.06

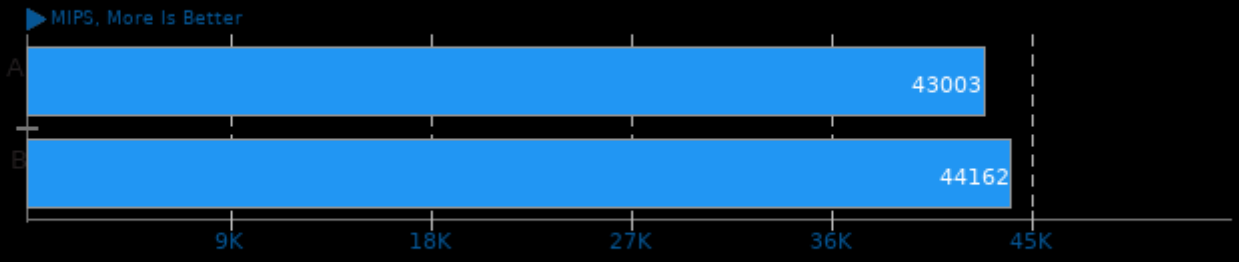
Test: Compression Rating



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

7-Zip Compression 21.06

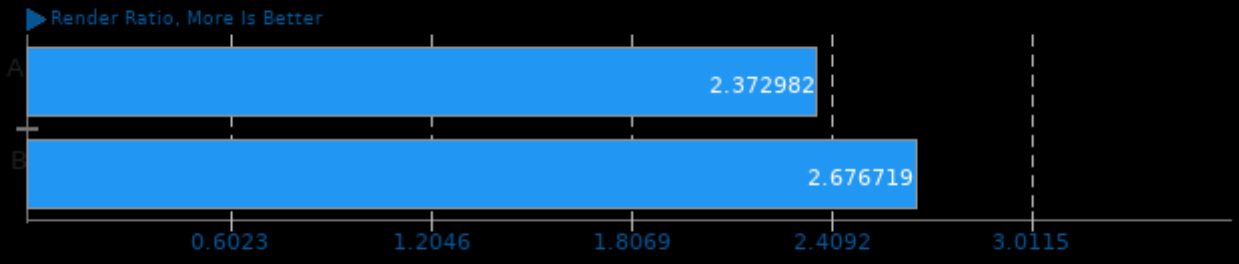
Test: Decompression Rating



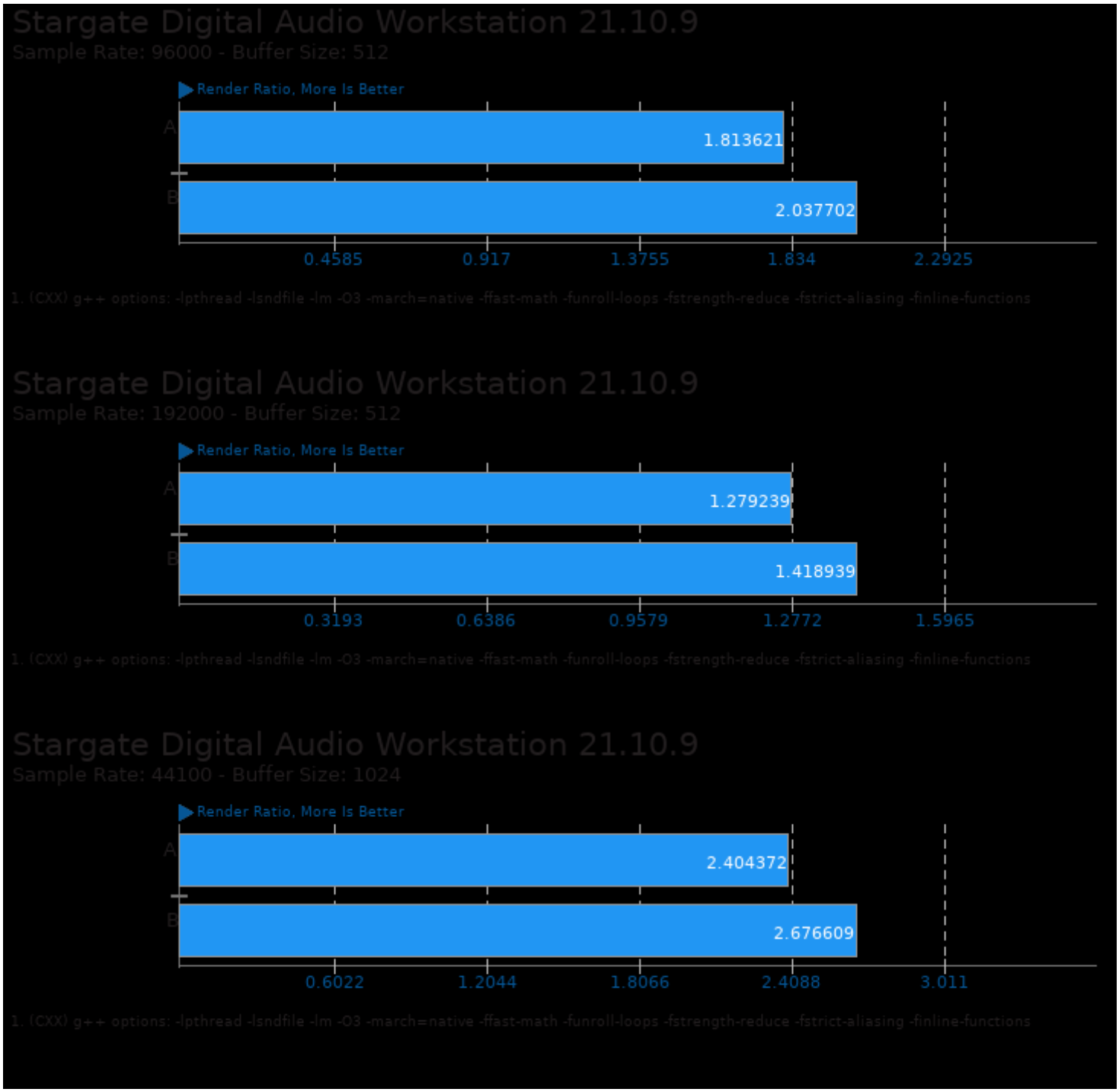
1. (CXX) g++ options: -lpthread -ldl -O2 -fPIC

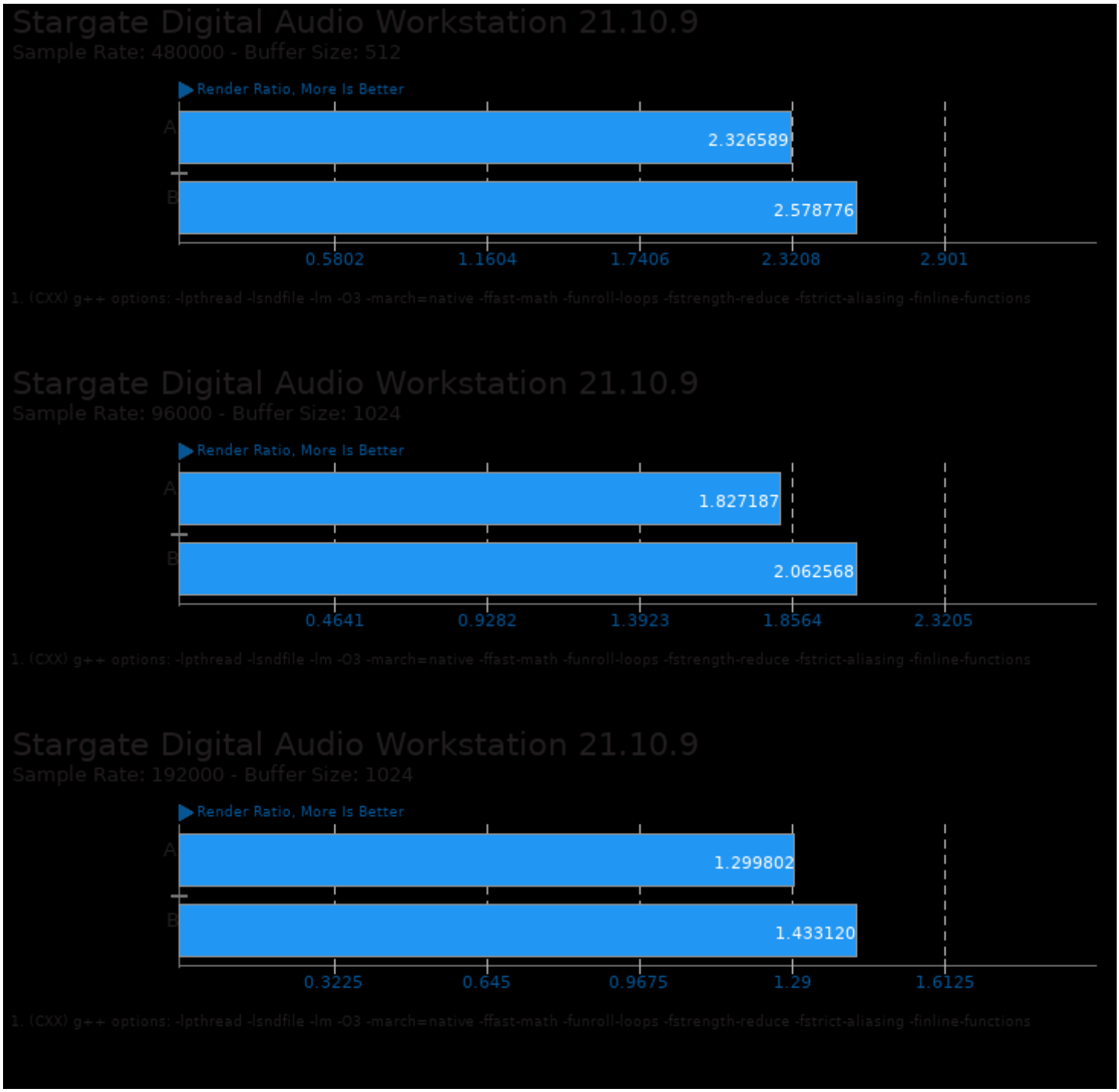
Stargate Digital Audio Workstation 21.10.9

Sample Rate: 44100 - Buffer Size: 512



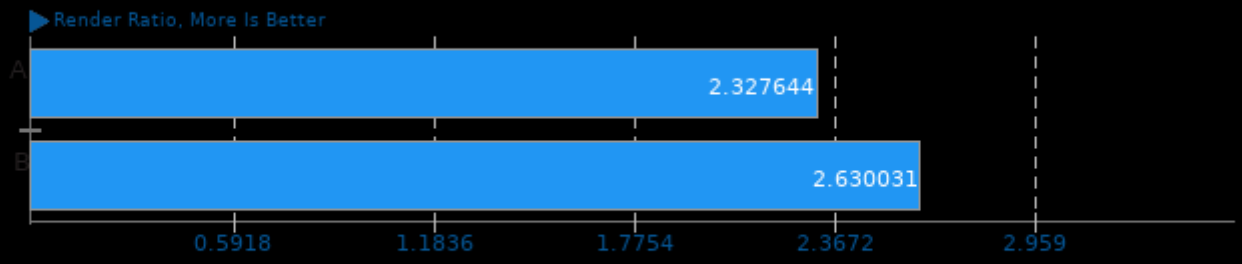
1. (CXX) g++ options: -lpthread -lsndfile -lm -O3 -march=native -ffast-math -funroll-loops -fstrength-reduce -fstrict-aliasing -finline-functions


Stargate Digital Audio Workstation 21.10.9
Sample Rate: 96000 - Buffer Size: 512
Render Ratio, More Is Better
A
1.813621
B
2.037702
0.4585
0.917
1.3755
1.834
2.2925
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
A
1.279239
B
1.418939
0.3193
0.6386
0.9579
1.2772
1.5965
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
2.404372
B
2.676609
0.6022
1.2044
1.8066
2.4088
3.011
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
A
2.326589
B
2.578776
0.5802
1.1604
1.7406
2.3208
2.901
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
A
1.827187
B
2.062568
0.4641
0.9282
1.3923
1.8564
2.3205
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
A
1.299802
B
1.433120
0.3225
0.645
0.9675
1.29
1.6125
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

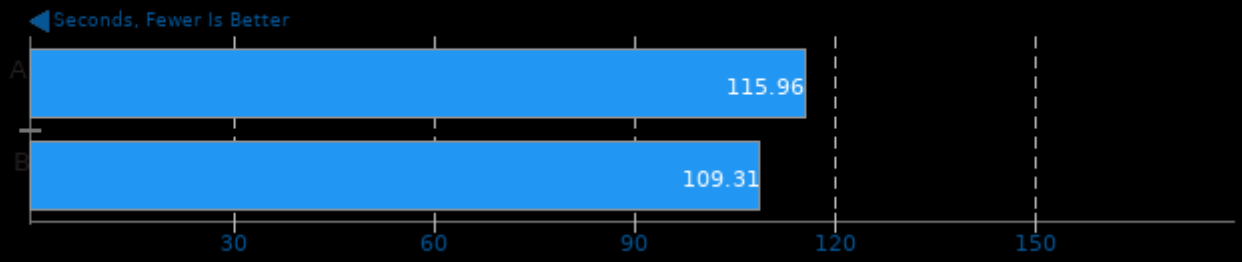
Sample Rate: 480000 - Buffer Size: 1024



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

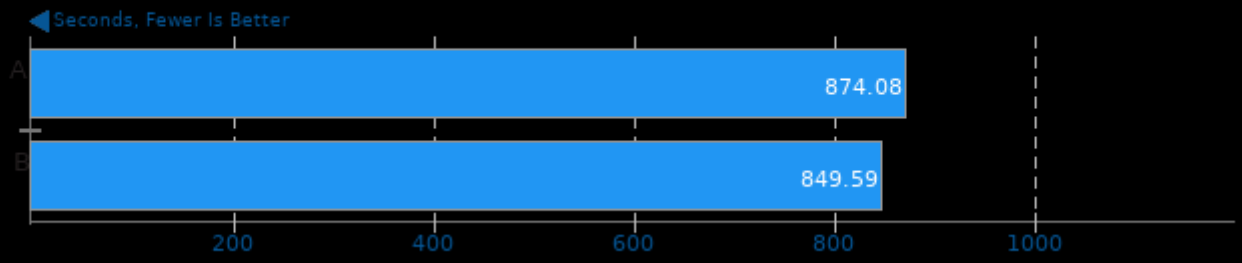
Timed Linux Kernel Compilation 5.14

Time To Compile



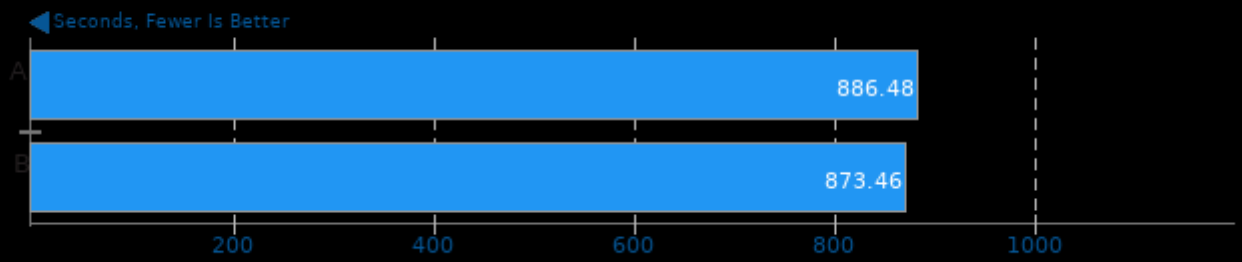
Timed LLVM Compilation 13.0

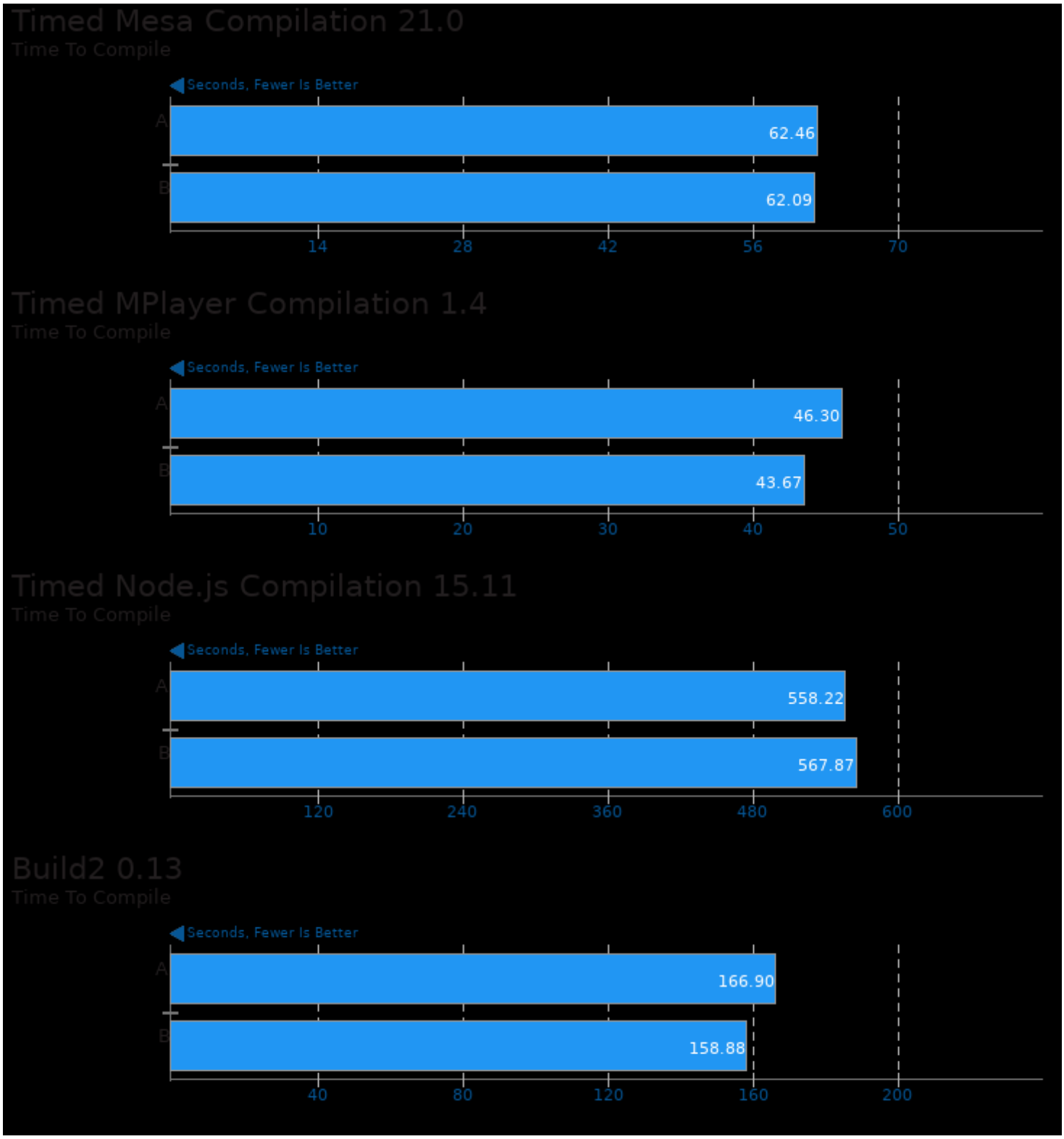
Build System: Ninja



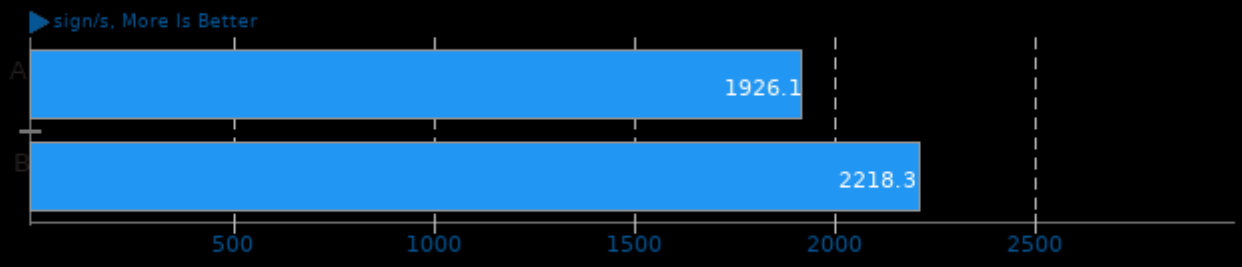
Timed LLVM Compilation 13.0

Build System: Unix Makefiles



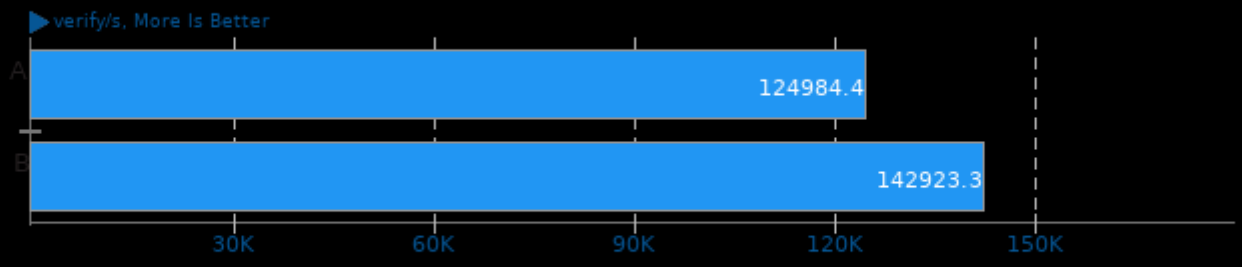

Timed Mesa Compilation 21.0
Time To Compile
Seconds, Fewer Is Better
A
62.46
B
62.09
14
28
42
56
70
Timed MPlayer Compilation 1.4
Time To Compile
Seconds, Fewer Is Better
A
46.30
B
43.67
10
20
30
40
50
Timed Node.js Compilation 15.11
Time To Compile
Seconds, Fewer Is Better
A
558.22
B
567.87
120
240
360
480
600
Build2 0.13
Time To Compile
Seconds, Fewer Is Better
A
166.90
B
158.88
40
80
120
160
200

OpenSSL



1. OpenSSL 1.1.1l 24 Aug 2021

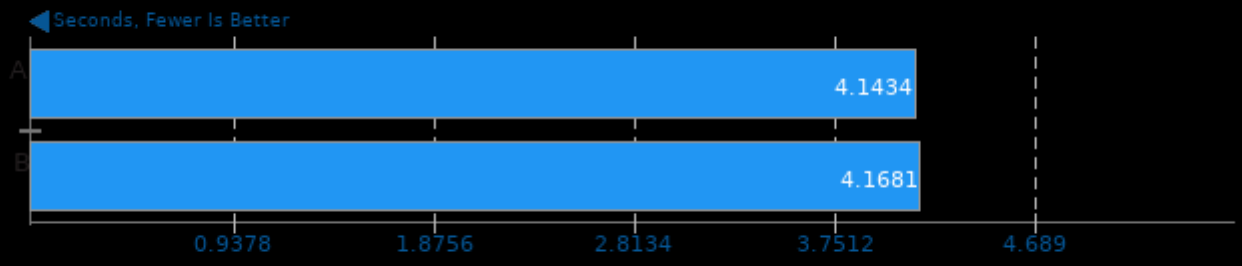
OpenSSL



1. OpenSSL 1.1.1l 24 Aug 2021

ASTC Encoder 3.2

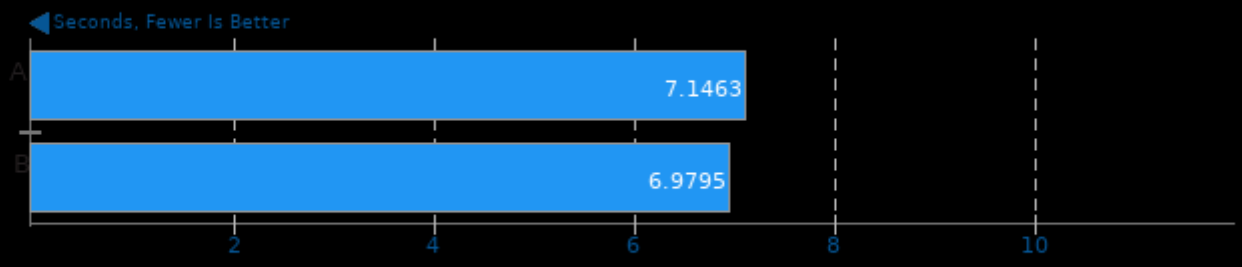
Preset: Medium



1. (CXX) g++ options: -O3 -flto -pthread

ASTC Encoder 3.2

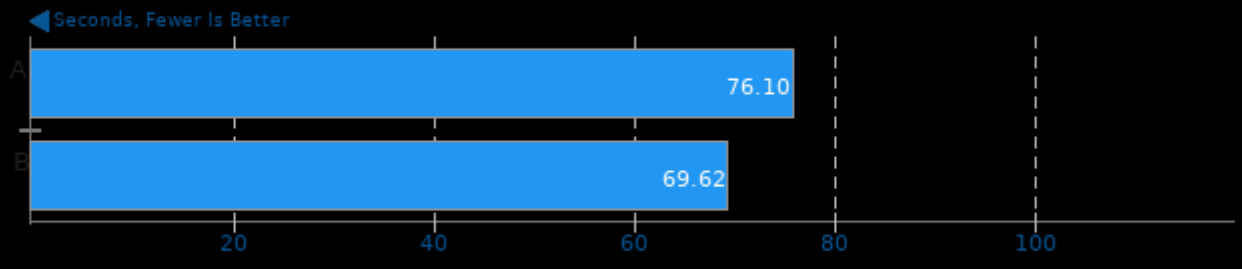
Preset: Thorough



1. (CXX) g++ options: -O3 -flto -pthread

ASTC Encoder 3.2

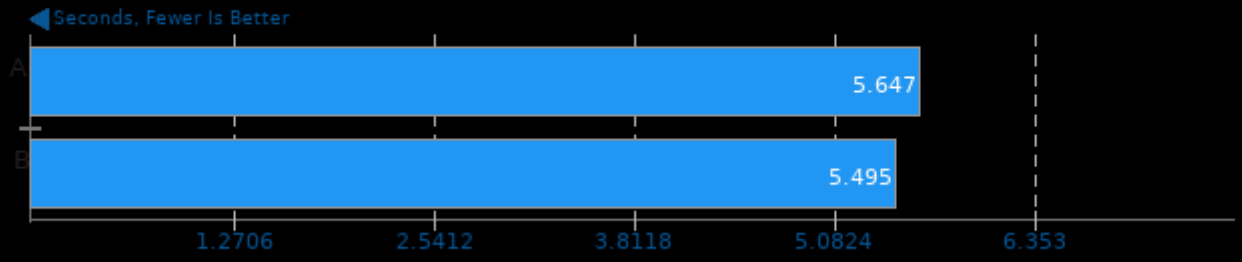
Preset: Exhaustive



1. (CXX) g++ options: -O3 -flto -pthread

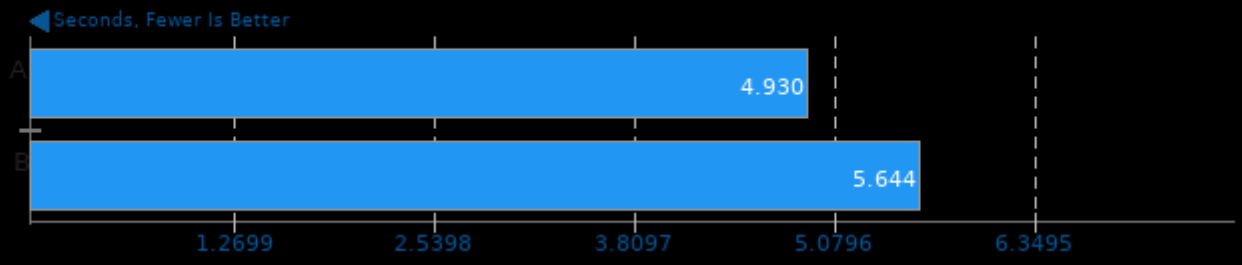
Darktable 3.6.0

Test: Boat - Acceleration: CPU-only



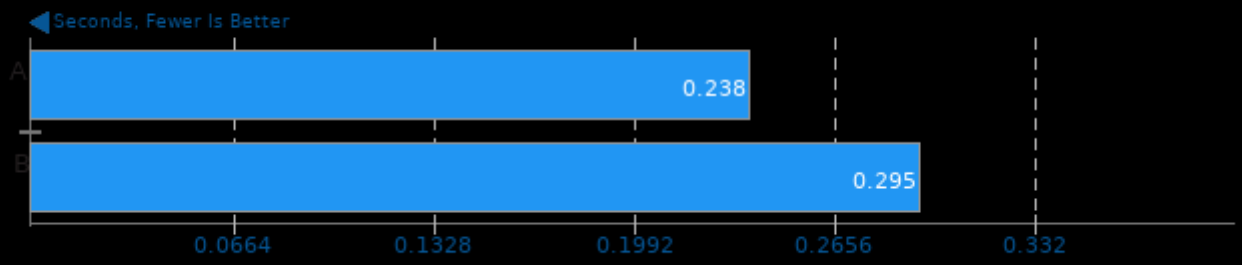
Darktable 3.6.0

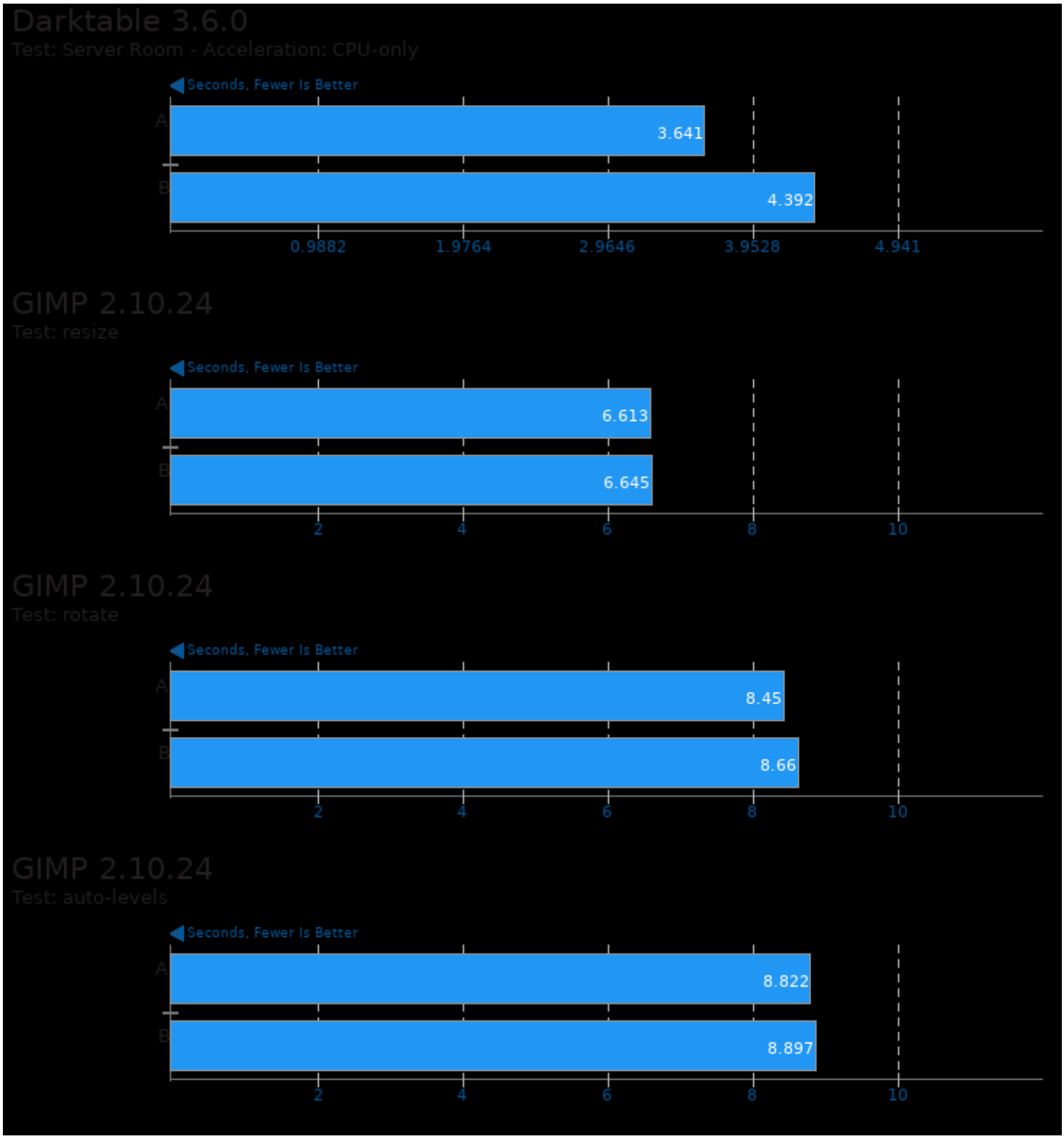
Test: Masskrug - Acceleration: CPU-only

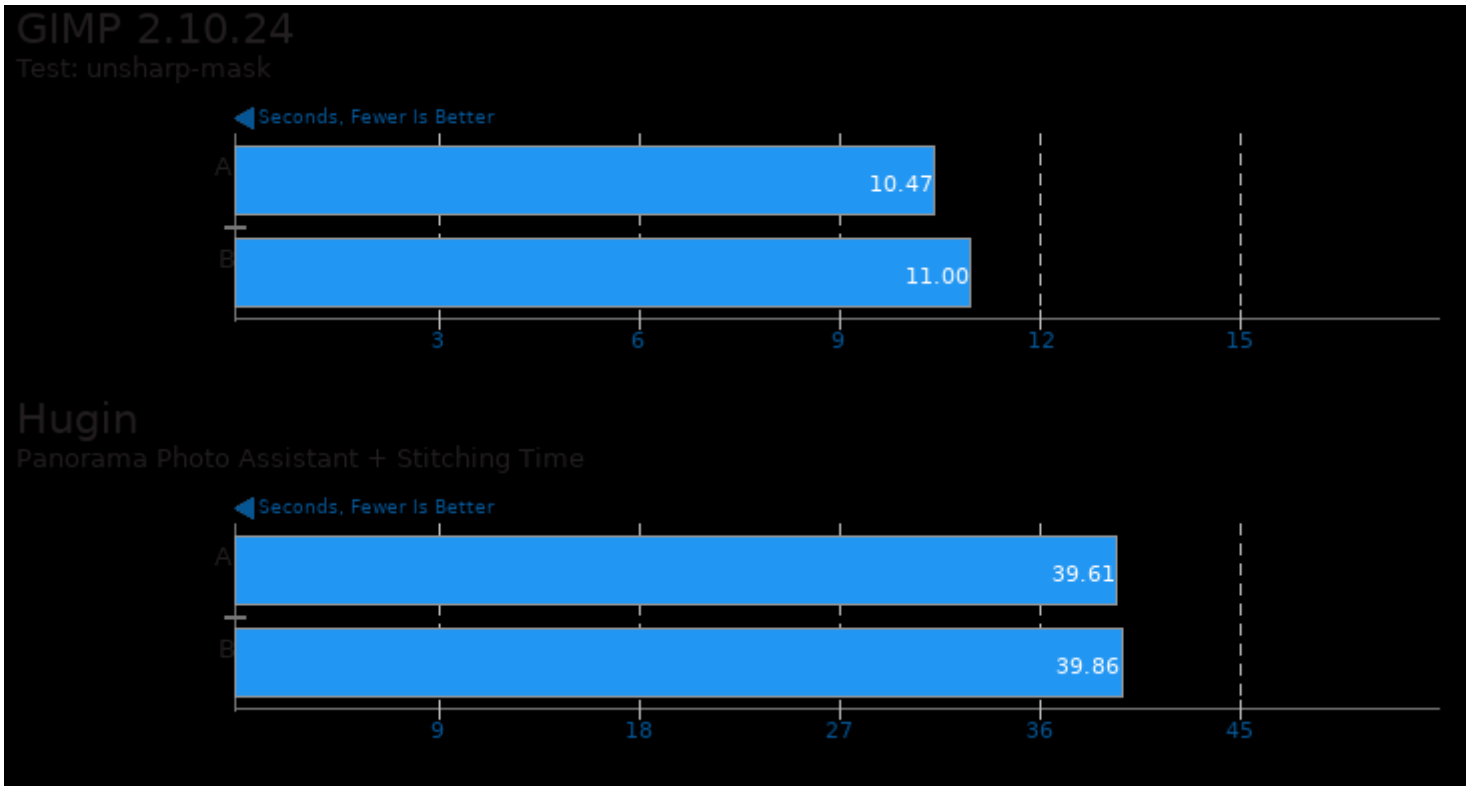


Darktable 3.6.0

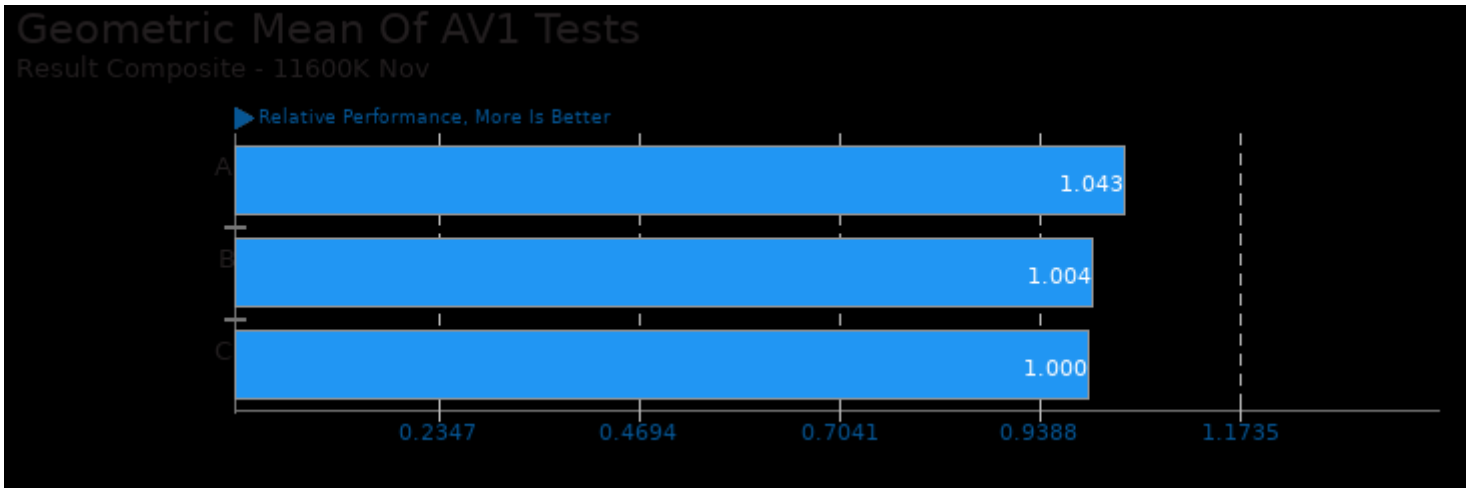
Test: Server Rack - Acceleration: CPU-only



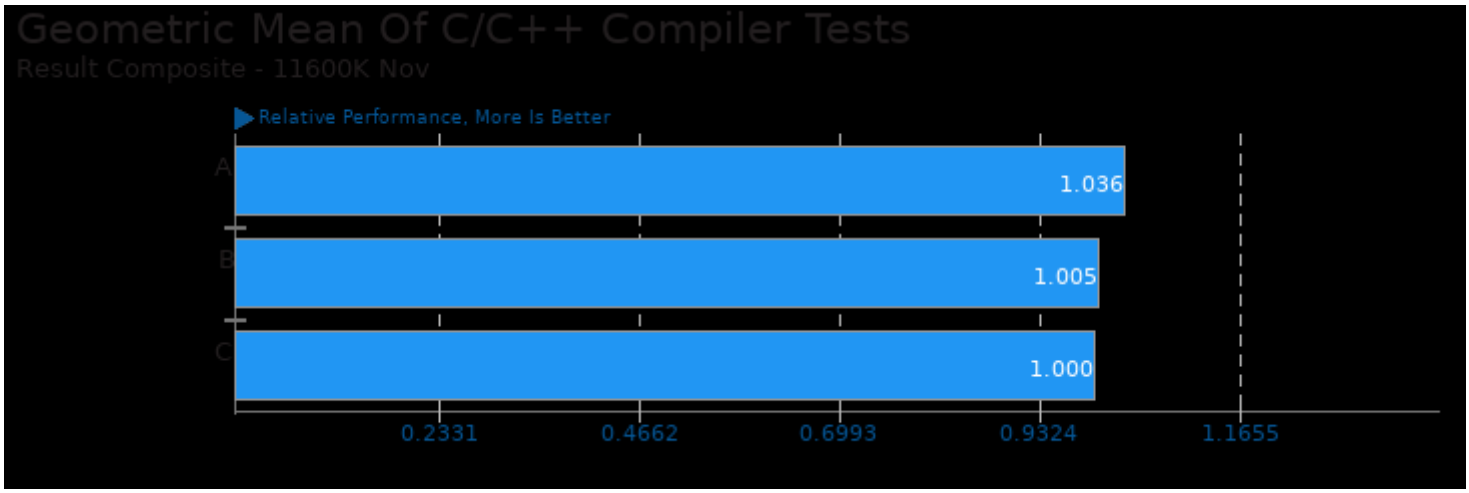

Darktable 3.6.0
Test: Server Room - Acceleration: CPU-only
Seconds, Fewer Is Better
A
3.641
B
4.392
0.9882
1.9764
2.9646
3.9528
4.941
GIMP 2.10.24
Test: resize
Seconds, Fewer Is Better
A
6.613
B
6.645
2
4
6
8
10
GIMP 2.10.24
Test: rotate
Seconds, Fewer Is Better
A
8.45
B
8.66
2
4
6
8
10
GIMP 2.10.24
Test: auto-levels
Seconds, Fewer Is Better
A
8.822
B
8.897
2
4
6
8
10


GIMP 2.10.24
Test: unsharp-mask
Seconds, Fewer Is Better
A
10.47
B
11.00
3
6
9
12
15
Hugin
Panorama Photo Assistant + Stitching Time
Seconds, Fewer Is Better
A
39.61
B
39.86
9
18
27
36
45

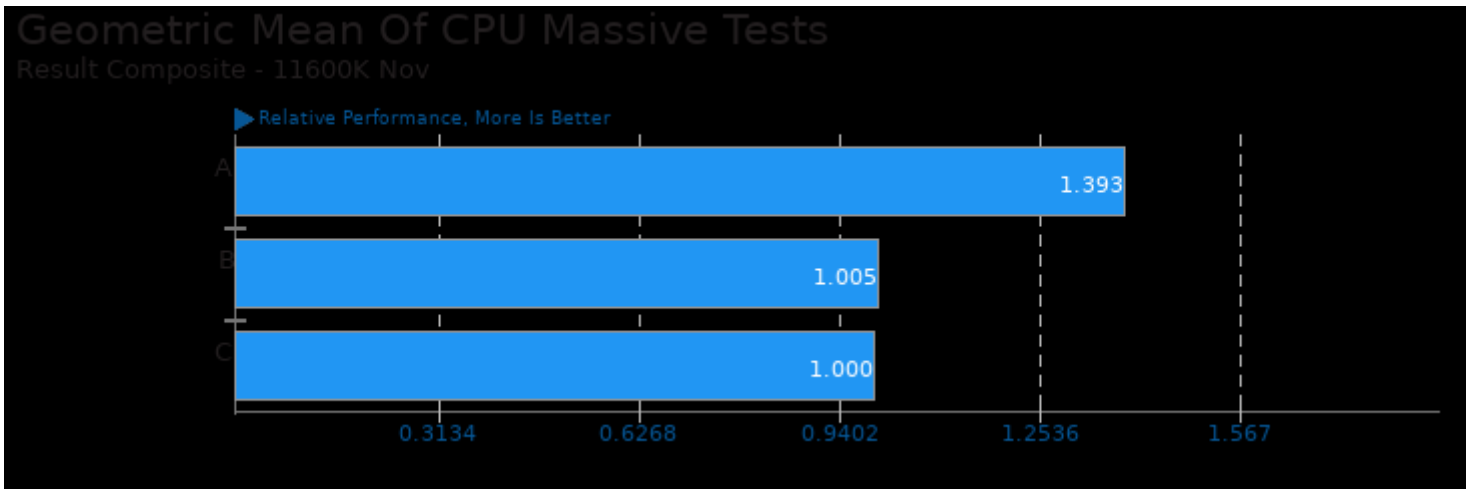
These geometric means are based upon test groupings / test suites for this result file.



Geometric mean based upon tests: pts/dav1d, pts/aom-av1, pts/svt-av1 and pts/rav1e



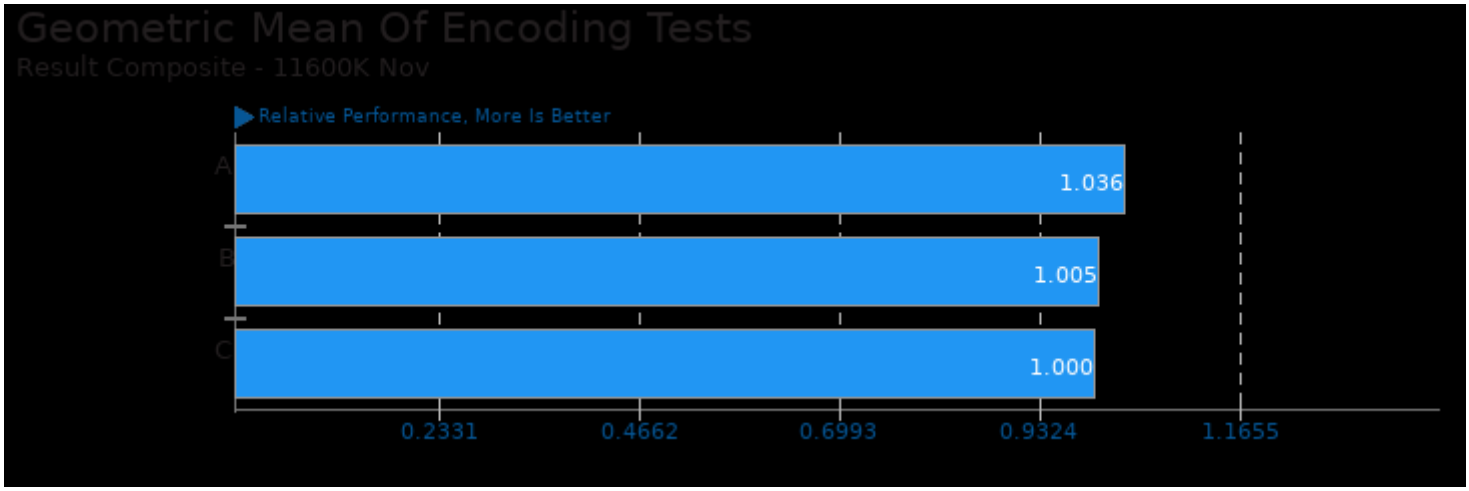
Geometric mean based upon tests: pts/build-llvm, pts/compress-7zip, pts/dav1d, pts/kvazaar, pts/aom-av1, pts/svt-av1, pts/svt-vp9 and pts/build-mplayer



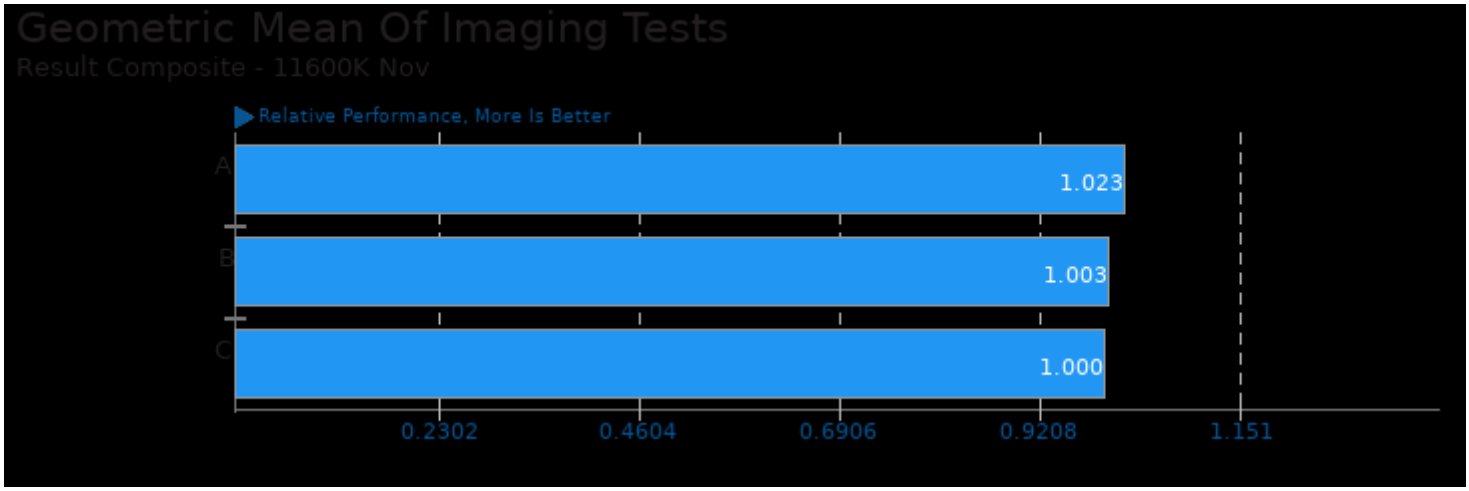
Geometric mean based upon tests: pts/blake2, pts/build-llvm, pts/build-linux-kernel, pts/compress-7zip, pts/dav1d, pts/svt-av1, pts/svt-hevc, pts/svt-vp9, pts/npb, pts/sockperf, pts/stream and system/darktable



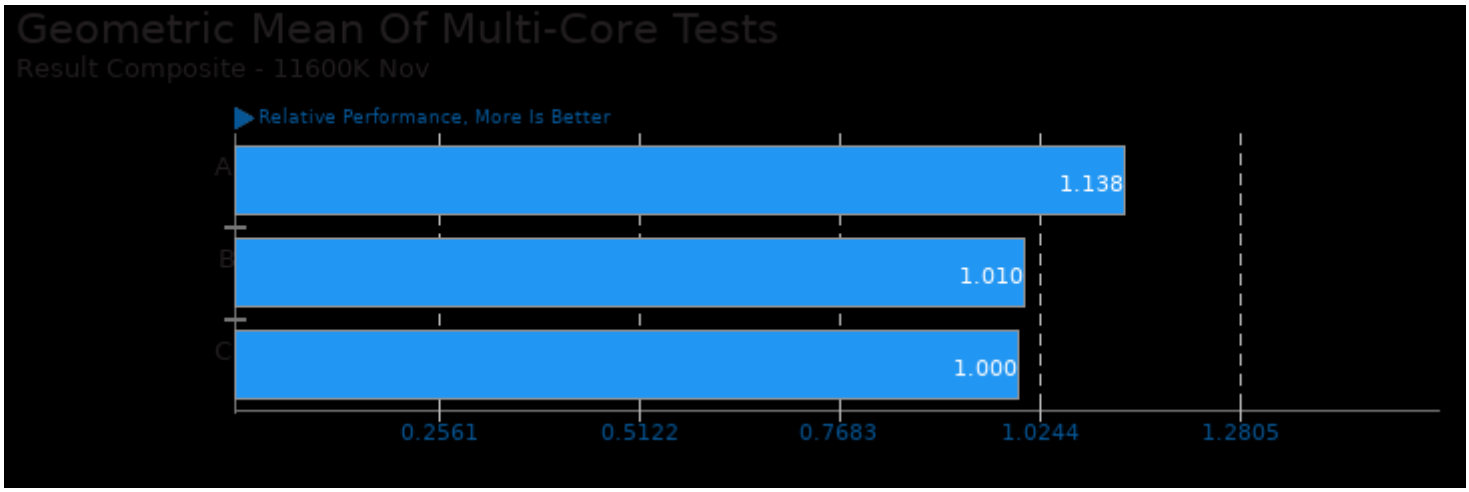
Geometric mean based upon tests: pts/svt-vp9, pts/svt-hevc, pts/kvazaar, pts/dav1d, pts/aom-av1, pts/svt-av1, pts/rav1e, pts/stargate, pts/jpegxl, pts/jpegxl-decode, system/gimp, system/hugin, system/darktable and pts/astcenc



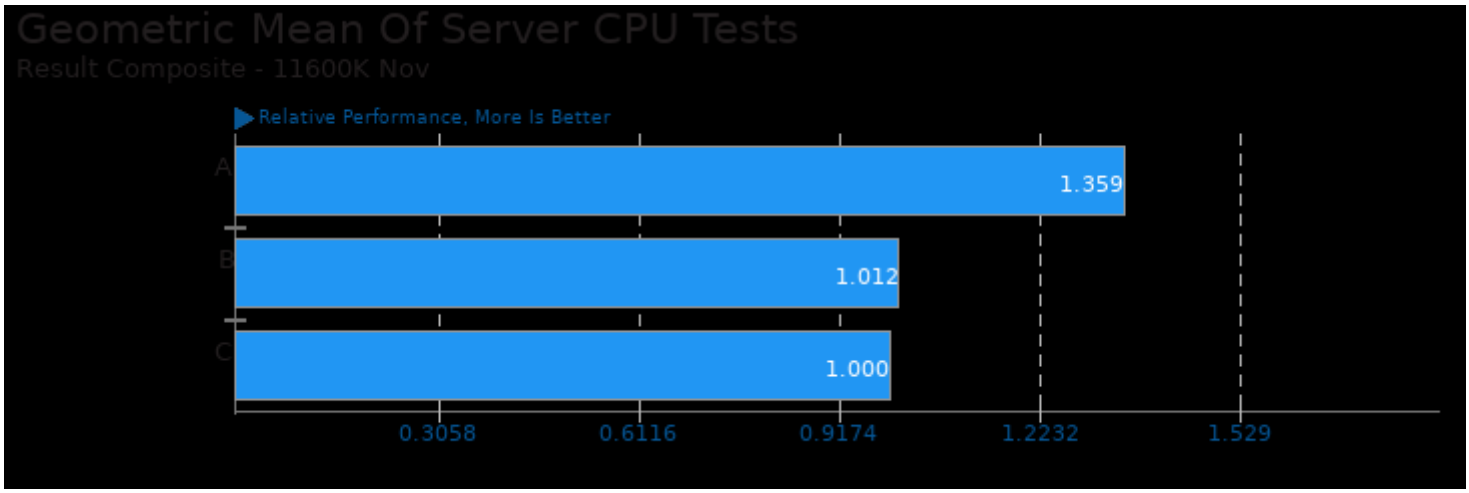
Geometric mean based upon tests: pts/stargate, pts/svt-vp9, pts/svt-hevc, pts/kvazaar, pts/dav1d, pts/aom-av1, pts/svt-av1 and pts/rav1e



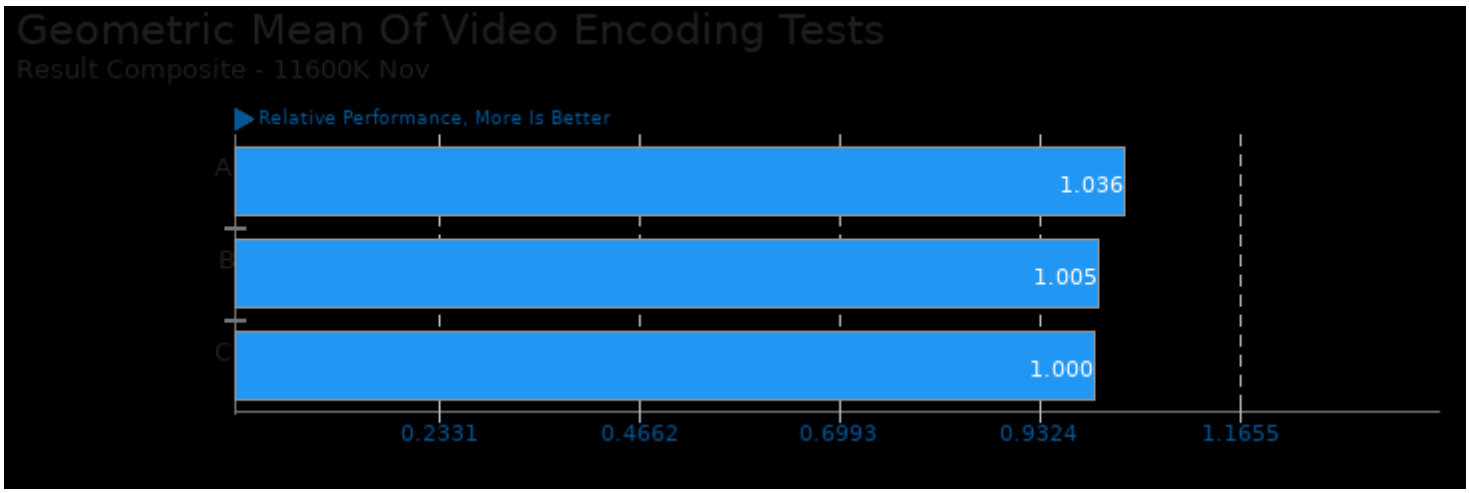
Geometric mean based upon tests: pts/jpegxl, pts/jpegxl-decode, system/gimp, system/hugin and system/darktable



Geometric mean based upon tests: pts/svt-vp9, pts/svt-hevc, pts/kvazaar, pts/dav1d, pts/aom-av1, pts/svt-av1, pts/rav1e, pts/npb, pts/compress-7zip, pts/build-linux-kernel, pts/build-llvm, pts/build-mplayer, pts/build2, pts/build-nodejs and pts/build-mesa



Geometric mean based upon tests: pts/npb, pts/svt-av1, pts/svt-hevc, pts/svt-vp9, pts/dav1d, pts/compress-7zip, pts/build-linux-kernel, pts/build-llvm, system/gimp and pts/stream



Geometric mean based upon tests: pts/svt-vp9, pts/svt-hevc, pts/kvazaar, pts/dav1d, pts/aom-av1, pts/svt-av1 and pts/rav1e

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This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 09:55.