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9900k-june-2022

Intel Core i9-9900K testing with a ASRock Z390M Pro4 (P4.20 BIOS) and Intel UHD 630 CFL GT2 3GB on Ubuntu 20.04 via the Phoronix Test Suite.

Automated Executive Summary

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

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

Stress-NG (Test: CPU Cache) at 1.368x
Stress-NG (Test: Futex) at 1.283x
perf-bench (Benchmark: Epoll Wait) at 1.215x
Renaissance (Test: In-Memory Database Shootout) at 1.198x
Stress-NG (Test: Atomic) at 1.17x
Renaissance (Test: Scala Dotty) at 1.125x
Stress-NG (Test: Context Switching) at 1.123x
libgav1 (Video Input: Chimera 1080p 10-bit) at 1.106x
perf-bench (Benchmark: Futex Lock-Pi) at 1.106x
Google Draco (Model: Lion) at 1.069x.

Test Systems:

A

AA

AAA

B

C

Processor: Intel Core i9-9900K @ 5.00GHz (8 Cores / 16 Threads), Motherboard: ASRock Z390M Pro4 (P4.20 BIOS), Chipset: Intel Cannon Lake PCH, Memory: 16GB, Disk: 240GB Corsair Force MP510, Graphics: Intel UHD 630 CFL GT2 3GB (1200MHz), Audio: Realtek ALC892, Monitor: MX279, Network: Intel I219-V

OS: Ubuntu 20.04, Kernel: 5.9.0-050900rc1daily20200819-generic (x86_64) 20200818, Desktop: GNOME Shell 3.36.4, Display Server: X Server 1.20.8, OpenGL: 4.6 Mesa 20.0.4, OpenCL: OpenCL 2.1, Compiler: GCC 9.3.0, 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-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none,hsa --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-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 (EPP: balance_performance) - CPU Microcode: 0xd6 - Thermald 1.9.1
Java Notes: OpenJDK Runtime Environment (build 11.0.8+10-post-Ubuntu-0ubuntu120.04)
Python Notes: Python 2.7.18rc1 + Python 3.8.2
Security Notes: itlb_multihit: KVM: Mitigation of VMX disabled + l1tf: Not affected + mds: Vulnerable; SMT vulnerable + meltdown: Not affected + spec_store_bypass: Vulnerable + spectre_v1: Vulnerable: __user pointer sanitization and usercopy barriers only; no swapgs barriers + spectre_v2: Vulnerable IBPB: disabled STIBP: disabled + srbds: Vulnerable + tsx_async_abort: Vulnerable

	A	AA	AAA	B	C
7-Zip Compression - Compression Rating (MIPS)			62169	**62800**	**61982**
Normalized			99%	100%	98.7%
7-Zip Compression - D.R (MIPS)			**53444**	53753	**53879**
Normalized			99.19%	99.77%	100%
Blender - BMW27 - CPU-Only (sec)			**177.06**	177.02	**176.91**
Normalized			99.92%	99.94%	100%
Blender - Classroom - CPU-Only (sec)			**498.2**	494.31	**490.96**
Normalized			98.55%	99.32%	100%
Blender - Fishy Cat - CPU-Only (sec)			**245.7**	**244.61**	244.67
Normalized			99.56%	100%	99.98%

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Blender - Barbershop - CPU-Only (sec)		1890	**1896**	**1886**
Normalized		99.76%	99.47%	100%
Blender - Pabellon Barcelona - CPU-Only (sec)		634.06	**637.82**	**629.52**
Normalized		99.28%	98.7%	100%
Etcpak - Multi-Threaded - ETC2 (Mpx/s)	2329	2329	**2330**	**2328**
Normalized	99.98%	99.98%	100%	99.93%
Etcpak - Single-Threaded - ETC2 (Mpx/s)	**260.269**	260.198	**259.413**	259.63
Normalized	100%	99.97%	99.67%	99.75%
Facebook RocksDB - Rand Read (Op/s)		**38980050**	**39334842**	39203565
Normalized		99.1%	100%	99.67%
Facebook RocksDB - Update Rand (Op/s)		**435602**	431472	**430318**
Normalized		100%	99.05%	98.79%
Facebook RocksDB - Read While Writing (Op/s)		**1692265**	**1748480**	1729311
Normalized		96.78%	100%	98.9%
Facebook RocksDB - R.R.W.R (Op/s)		**1495319**	**1464259**	1473776
Normalized		100%	97.92%	98.56%
Glibc Benchmarks - cos (ns)	73.6853	**73.6613**	**74.0071**	73.7043
Normalized	99.97%	100%	99.53%	99.94%
Glibc Benchmarks - exp (ns)	16.5304	16.5867	**16.6205**	**16.4973**
Normalized	99.8%	99.46%	99.26%	100%
Glibc Benchmarks - ffs (ns)	5.06493	**5.05835**	**5.06587**	5.06239
Normalized	99.87%	100%	99.85%	99.92%
Glibc Benchmarks - sin (ns)	**64.9632**	63.7587	63.7753	**63.7441**
Normalized	98.12%	99.98%	99.95%	100%
Glibc Benchmarks - log2 (ns)	21.1591	**21.176**	21.1531	**21.1459**
Normalized	99.94%	99.86%	99.97%	100%
Glibc Benchmarks - modf (ns)	5.79535	**5.79986**	5.79641	**5.79223**
Normalized	99.95%	99.87%	99.93%	100%
Glibc Benchmarks - sinh (ns)	26.3662	**26.3846**	26.3554	**26.3508**
Normalized	99.94%	99.87%	99.98%	100%
Glibc Benchmarks - sqrt (ns)	**5.07877**	5.07677	**5.07195**	5.07526
Normalized	99.87%	99.91%	100%	99.93%
Glibc Benchmarks - tanh (ns)	**37.5805**	37.2701	**37.2225**	37.2717
Normalized	99.05%	99.87%	100%	99.87%
Glibc Benchmarks - asinh (ns)	**29.5789**	29.4026	29.4267	**29.3922**
Normalized	99.37%	99.96%	99.88%	100%
Glibc Benchmarks - atanh (ns)	**34.7962**	34.3849	34.3748	**34.3682**
Normalized	98.77%	99.95%	99.98%	100%
Glibc Benchmarks - ffsll (ns)	**5.11607**	**5.06243**	5.06308	5.0631
Normalized	98.95%	100%	99.99%	99.99%
Glibc Benchmarks - sincos (ns)	**42.5467**	**42.2017**	42.2381	42.2156
Normalized	99.19%	100%	99.91%	99.97%

Glibc Benchmarks - pthread_once (ns)	**5.10061**	5.06094	5.05947	**5.05531**
Normalized	99.11%	99.89%	99.92%	100%
Google Draco - Lion (ms)		**4512**	4314	**4219**
Normalized		93.51%	97.8%	100%
Google Draco - Church Facade (ms)		**6349**	**6452**	6360
Normalized		100%	98.4%	99.83%
GPAW - Carbon Nanotube (sec)		**346.284**	**348.013**	346.929
Normalized		100%	99.5%	99.81%
GROMACS - MPI CPU - water_GMX50_bare (Ns/Day)		**0.854**	0.845	**0.839**
Normalized		100%	98.95%	98.24%
Java JMH - Throughput (Ops/s)		**16924749328**	16995883817	**17023434877**
Normalized		99.42%	99.84%	100%
libavif avifenc - 0 (sec)		203.008	**204.584**	**202.762**
Normalized		99.88%	99.11%	100%
libavif avifenc - 2 (sec)		92.823	**92.56**	**93.376**
Normalized		99.72%	100%	99.13%
libavif avifenc - 6 (sec)		**11.971**	**12.085**	11.977
Normalized		100%	99.06%	99.95%
libavif avifenc - 6, Lossless (sec)		**15.835**	**15.692**	15.712
Normalized		99.1%	100%	99.87%
libavif avifenc - 10, Lossless		**6.687**	6.663	**6.602**
Normalized		98.73%	99.08%	100%
libgav1 - Chimera 1080p (FPS)	214.37	214.47	**214.26**	**214.81**
Normalized	99.8%	99.84%	99.74%	100%
libgav1 - Summer Nature 4K	75.99	**76.51**	76.15	**75.79**
Normalized	99.32%	100%	99.53%	99.06%
libgav1 - S.N.1 (FPS)	**293.91**	293.02	292.86	**291.25**
Normalized	100%	99.7%	99.64%	99.09%
libgav1 - C.1.1.b (FPS)	66.44	**61.82**	**68.39**	68.16
Normalized	97.15%	90.39%	100%	99.66%
Nettle - aes256 (Mbyte/s)	**7913**	7907	**7878**	7904
Normalized	100%	99.92%	99.56%	99.89%
Nettle - chacha (Mbyte/s)	1545	**1544**	1545	**1546**
Normalized	99.92%	99.86%	99.92%	100%
Nettle - sha512 (Mbyte/s)	**625.88**	**626.53**	626.3	**625.88**
Normalized	99.9%	100%	99.96%	99.9%
Nettle - poly1305-aes (Mbyte/s)	4693	**4691**	**4698**	4692
Normalized	99.9%	99.86%	100%	99.87%
oneDNN - IP Shapes 1D - f32 - CPU (ms)		3.70266	**3.60186**	**3.76878**
Normalized		97.28%	100%	95.57%
oneDNN - IP Shapes 3D - f32 - CPU (ms)		**11.5136**	**11.6538**	11.6261
Normalized		100%	98.8%	99.03%
oneDNN - IP Shapes 1D - u8s8f32 - CPU (ms)		1.40629	**1.44768**	**1.37942**
Normalized		98.09%	95.28%	100%

oneDNN - IP Shapes 3D - u8s8f32 - CPU (ms)	**2.08948**	**2.07097**	2.07154
Normalized	99.11%	100%	99.97%
oneDNN - C.B.S.A - f32 - CPU (ms)	19.8572	**19.9209**	**19.8019**
Normalized	99.72%	99.4%	100%
oneDNN - D.B.s - f32 - CPU (ms)	**9.32842**	**9.49623**	9.44632
Normalized	100%	98.23%	98.75%
oneDNN - D.B.s - f32 - CPU (ms)	6.33016	**6.32909**	**6.33111**
Normalized	99.98%	100%	99.97%
oneDNN - C.B.S.A - u8s8f32 - CPU (ms)	17.4381	**17.7094**	**17.4203**
Normalized	99.9%	98.37%	100%
oneDNN - D.B.s - u8s8f32 - CPU (ms)	**2.04687**	**2.03075**	2.038
Normalized	99.21%	100%	99.64%
oneDNN - D.B.s - u8s8f32 - CPU (ms)	**3.72125**	3.72831	**3.77243**
Normalized	100%	99.81%	98.64%
oneDNN - R.N.N.T - f32 - CPU (ms)	**3768**	3767	**3764**
Normalized	99.89%	99.91%	100%
oneDNN - R.N.N.I - f32 - CPU	2086	**2090**	**2082**
Normalized	99.8%	99.6%	100%
oneDNN - R.N.N.T - u8s8f32 - CPU (ms)	**3771**	3776	**3779**
Normalized	100%	99.86%	99.78%
oneDNN - R.N.N.I - u8s8f32 - CPU (ms)	**2087**	2086	**2082**
Normalized	99.75%	99.8%	100%
oneDNN - M.M.B.S.T - f32 - CPU (ms)	**3.99825**	**4.01064**	4.00071
Normalized	100%	99.69%	99.94%
oneDNN - R.N.N.T - bf16bf16bf16 - CPU (ms)	**3773**	**3778**	3776
Normalized	100%	99.87%	99.92%
oneDNN - R.N.N.I - bf16bf16bf16 - CPU (ms)	2092	**2100**	**2091**
Normalized	99.94%	99.56%	100%
oneDNN - M.M.B.S.T - u8s8f32 - CPU (ms)	**1.53043**	**1.50304**	1.52413
Normalized	98.21%	100%	98.62%
OpenJPEG - N.C.P.M (ms)	**62229**	62273	**62421**
Normalized	100%	99.93%	99.69%
OSPray - particle_volume/ao/real_time (Items/sec)	**14.0319**	**14.1489**	14.13
Normalized	99.17%	100%	99.87%

OSPray - particle_volume/scivis/real_time (Items/sec)		13.7372	13.7356	13.7018
Normalized		100%	99.99%	99.74%
OSPray - particle_volume/pathtracer/real_time (Items/sec)		180.672	180.441	180.282
Normalized		100%	99.87%	99.78%
OSPray - gravity_spheres_volume/dim_512/ao/real_time (Items/sec)		2.0707	2.06833	2.08368
Normalized		99.38%	99.26%	100%
OSPray - gravity_spheres_volume/dim_512/scivis/real_time (Items/sec)		2.03096	2.04595	2.05277
Normalized		98.94%	99.67%	100%
OSPray - gravity_spheres_volume/dim_512/pathtracer/real_time		2.87137	2.87073	2.8848
Normalized		99.53%	99.51%	100%
OSPray Studio - 1 - 1080p - 1 - Path Tracer (ms)		3085	3073	3068
Normalized		99.45%	99.84%	100%
OSPray Studio - 2 - 1080p - 1 - Path Tracer (ms)		3202	3179	3169
Normalized		98.97%	99.69%	100%
OSPray Studio - 3 - 1080p - 1 - Path Tracer (ms)		3779	3754	3757
Normalized		99.34%	100%	99.92%
OSPray Studio - 1 - 1080p - 16 - Path Tracer (ms)		49465	49427	49335
Normalized		99.74%	99.81%	100%
OSPray Studio - 1 - 1080p - 32 - Path Tracer (ms)		108689	108562	108221
Normalized		99.57%	99.69%	100%
OSPray Studio - 2 - 1080p - 16 - Path Tracer (ms)		61058	60821	60595
Normalized		99.24%	99.63%	100%
OSPray Studio - 2 - 1080p - 32 - Path Tracer (ms)		111820	111361	111160
Normalized		99.41%	99.82%	100%
OSPray Studio - 3 - 1080p - 16 - Path Tracer (ms)		70402	70226	69963
Normalized		99.38%	99.63%	100%
OSPray Studio - 3 - 1080p - 32 - Path Tracer (ms)		131747	130461	130641
Normalized		99.02%	100%	99.86%
Parallel BZIP2 Compression - F.1.0.R.a.m.i.C (sec)		8.744	8.703	9.062
Normalized		99.53%	100%	96.04%
perf-bench - Epoll Wait (ops/sec)	148161	147698	148844	122552

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Normalized	99.54%	99.23%	100%	82.34%
perf-bench - Futex Hash	6662493	6992823	6635321	6659088
Normalized	95.28%	100%	94.89%	95.23%
perf-bench - Memcpy 1MB (GB/sec)	34.120632	32.967173	32.963167	32.933653
Normalized	100%	96.62%	96.61%	96.52%
perf-bench - Memset 1MB (GB/sec)	55.411731	54.343471	55.275955	54.497013
Normalized	100%	98.07%	99.75%	98.35%
perf-bench - Sched Pipe	286509	286406	294941	290628
Normalized	97.14%	97.11%	100%	98.54%
perf-bench - Futex Lock-Pi (ops/sec)	573	543	525	518
Normalized	100%	94.76%	91.62%	90.4%
perf-bench - Syscall Basic (ops/sec)	27249805	27172288	26439295	27312524
Normalized	99.77%	99.49%	96.8%	100%
Quantum ESPRESSO - AUSURF112 (sec)	763.58	752.03	757.3	756.22
Normalized	98.49%	100%	99.3%	99.45%
Renaissance - Scala Dotty (ms)	843.8	750.3	756.5	763.2
Normalized	88.92%	100%	99.18%	98.31%
Renaissance - Rand Forest (ms)	609.2	613.7	606.2	608.0
Normalized	99.51%	98.78%	100%	99.7%
Renaissance - ALS Movie Lens (ms)	15928	15998	15293	15409
Normalized	96.01%	95.59%	100%	99.25%
Renaissance - Apache Spark ALS (ms)	22434	22307	23569	23348
Normalized	99.43%	100%	94.65%	95.54%
Renaissance - Apache Spark Bayes (ms)	1807	1785	1795	1806
Normalized	98.78%	100%	99.44%	98.86%
Renaissance - Savina Reactors.IO (ms)	8470	8573	8630	8493
Normalized	100%	98.79%	98.14%	99.73%
Renaissance - A.S.P (ms)	3076	3108	2975	3154
Normalized	96.7%	95.7%	100%	94.32%
Renaissance - F.H.R (ms)	3886	3873	3956	3890
Normalized	99.66%	100%	97.9%	99.55%
Renaissance - I.M.D.S (ms)	3090	2905	3480	3464
Normalized	94%	100%	83.47%	83.87%
Renaissance - A.U.C.T (ms)	10471	10499	10431	10737
Normalized	99.62%	99.35%	100%	97.15%
Renaissance - G.A.U.J.F (ms)	2018	2051	1989	2118
Normalized	98.55%	96.99%	100%	93.92%
simdjson - Kostya (GB/s)	2.96	2.95	2.94	2.95
Normalized	100%	99.66%	99.32%	99.66%
simdjson - TopTweet (GB/s)	5.15	5.16	5.17	5.14
Normalized	99.61%	99.81%	100%	99.42%
simdjson - LargeRand (GB/s)	1.04	1.04	1.04	1.04
simdjson - PartialTweets (GB/s)	4.5	4.51	4.5	4.52

Normalized	99.56%	99.78%	99.56%	100%
simdjson - DistinctUserID (GB/s)	5.21	5.21	5.21	5.19
Normalized	100%	100%	100%	99.62%
Stress-NG - MMAP (Bogo Ops/s)		137.3	137.48	137.58
Normalized		99.8%	99.93%	100%
Stress-NG - NUMA (Bogo Ops/s)		170.24	173.55	175.11
Normalized		97.22%	99.11%	100%
Stress-NG - Futex (Bogo Ops/s)		1849514	1927725	1502492
Normalized		95.94%	100%	77.94%
Stress-NG - MEMFD (Bogo		855.14	877.33	850.12
Normalized		97.47%	100%	96.9%
Stress-NG - Atomic (Bogo Ops/s)		166632	166060	194270
Normalized		85.77%	85.48%	100%
Stress-NG - Crypto (Bogo Ops/s)		10907	11005	11124
Normalized		98.04%	98.93%	100%
Stress-NG - Malloc (Bogo Ops/s)		7796434	8002059	8032431
Normalized		97.06%	99.62%	100%
Stress-NG - Forking (Bogo		50907	50744	50286
Normalized		100%	99.68%	98.78%
Stress-NG - SENDFILE (Bogo Ops/s)		135386	135277	135086
Normalized		100%	99.92%	99.78%
Stress-NG - CPU Cache (Bogo Ops/s)		129.06	144.73	176.59
Normalized		73.08%	81.96%	100%
Stress-NG - CPU Stress (Bogo Ops/s)		18224	18161	18008
Normalized		100%	99.65%	98.81%
Stress-NG - Semaphores (Bogo Ops/s)		1081941	1081737	1081914
Normalized		100%	99.98%	100%
Stress-NG - Matrix Math (Bogo Ops/s)		45011	45293	46338
Normalized		97.14%	97.75%	100%
Stress-NG - Vector Math (Bogo Ops/s)		34182	34079	34308
Normalized		99.63%	99.33%	100%
Stress-NG - x86_64 RdRand (Bogo Ops/s)		156092	156093	156090
Normalized		100%	100%	100%
Stress-NG - Memory Copying (Bogo Ops/s)		2749	2756	2760
Normalized		99.6%	99.87%	100%
Stress-NG - Socket Activity (Bogo Ops/s)		6310	6664	6708
Normalized		94.06%	99.35%	100%
Stress-NG - Context Switching (Bogo Ops/s)		3879899	4059089	4355739
Normalized		89.08%	93.19%	100%
Stress-NG - G.C.S.F (Bogo		520052	523032	521893
Normalized		99.43%	100%	99.78%
Stress-NG - G.Q.D.S (Bogo Ops/s)		122.97	122.6	122.8

Normalized	100%	99.7%	99.86%
Stress-NG - S.V.M.P (Bogo	7833022	7808741	7828497
Normalized	100%	99.69%	99.94%
SVT-AV1 - Preset 4 - Bosphorus 4K (FPS)	1.648	1.64	1.648
Normalized	100%	99.51%	100%
SVT-AV1 - Preset 8 - Bosphorus 4K (FPS)	22.644	22.173	22.611
Normalized	100%	97.92%	99.85%
SVT-AV1 - Preset 10 - Bosphorus 4K (FPS)	64.965	65.545	65.005
Normalized	99.12%	100%	99.18%
SVT-AV1 - Preset 12 - Bosphorus 4K (FPS)	92.309	90.913	91.662
Normalized	100%	98.49%	99.3%
SVT-AV1 - Preset 4 - Bosphorus 1080p (FPS)	5.116	5.09	5.081
Normalized	100%	99.49%	99.32%
SVT-AV1 - Preset 8 - Bosphorus 1080p (FPS)	85.937	86.218	86.034
Normalized	99.67%	100%	99.79%
SVT-AV1 - Preset 10 - Bosphorus 1080p (FPS)	175.325	174.811	176.835
Normalized	99.15%	98.86%	100%
SVT-AV1 - Preset 12 - Bosphorus 1080p (FPS)	356.172	353.72	358.763
Normalized	99.28%	98.59%	100%
SVT-HEVC - 1 - Bosphorus 4K (FPS)	1.57	1.56	1.57
Normalized	100%	99.36%	100%
SVT-HEVC - 7 - Bosphorus 4K (FPS)	32.01	32.02	32.09
Normalized	99.75%	99.78%	100%
SVT-HEVC - 10 - Bosphorus 4K (FPS)	67.77	69.36	69.42
Normalized	97.62%	99.91%	100%
SVT-HEVC - 1 - Bosphorus 1080p (FPS)	6.29	6.26	6.28
Normalized	100%	99.52%	99.84%
SVT-HEVC - 7 - Bosphorus 1080p (FPS)	108.75	109.03	109.27
Normalized	99.52%	99.78%	100%
SVT-HEVC - 10 - Bosphorus 1080p (FPS)	228.31	227.53	228.31
Normalized	100%	99.66%	100%
SVT-VP9 - VMAF Optimized - Bosphorus 4K (FPS)	46.04	45.85	45.83
Normalized	100%	99.59%	99.54%
SVT-VP9 - VMAF Optimized - Bosphorus 1080p (FPS)	158.29	158.85	158.51
Normalized	99.65%	100%	99.79%

SVT-VP9 - P.S.O - Bosphorus 4K (FPS)	**47.78**	**48.02**	47.96
Normalized	99.5%	100%	99.88%
SVT-VP9 - P.S.O - Bosphorus 1080p (FPS)	**162.06**	159.51	**159.48**
Normalized	100%	98.43%	98.41%
SVT-VP9 - V.Q.O - Bosphorus 4K (FPS)	**41.34**	41.02	**41**
Normalized	100%	99.23%	99.18%
SVT-VP9 - V.Q.O - Bosphorus 1080p (FPS)	**135.21**	135.06	**134.94**
Normalized	100%	99.89%	99.8%
Tachyon - Total Time (sec)	**180.0366**	179.6673	**179.2075**
Normalized	99.54%	99.74%	100%
TensorFlow Lite - SqueezeNet	**3430**	3411	**3410**
Normalized	99.41%	99.97%	100%
TensorFlow Lite - Inception V4	**48552**	48651	**49632**
Normalized	100%	99.8%	97.82%
TensorFlow Lite - NASNet Mobile (us)	10214	**10304**	**10149**
Normalized	99.36%	98.49%	100%
TensorFlow Lite - Mobilenet Float (us)	**2311**	2324	**2382**
Normalized	100%	99.43%	96.99%
TensorFlow Lite - Mobilenet Quant (us)	4286	**4250**	**4414**
Normalized	99.16%	100%	96.28%
TensorFlow Lite - I.R.V (us)	45486	**44471**	**45990**
Normalized	97.77%	100%	96.7%
Timed Gem5 Compilation - Time To Compile (sec)	**523.204**	**521.934**	522.692
Normalized	99.76%	100%	99.85%
Timed Linux Kernel Compilation - defconfig (sec)	**110.221**	110.316	**110.458**
Normalized	100%	99.91%	99.79%
Timed Linux Kernel Compilation - allmodconfig (sec)	**1425**	1424	**1422**
Normalized	99.82%	99.84%	100%
Timed MPlayer Compilation - Time To Compile (sec)	**42.962**	**42.512**	42.777
Normalized	98.95%	100%	99.38%
WebP2 Image Encode - Default (sec)	**3.934**	**4.107**	4.046
Normalized	100%	95.79%	97.23%
WebP2 Image Encode - Q.7.C.E.7 (sec)	247.763	**249.352**	**246.636**
Normalized	99.55%	98.91%	100%
WebP2 Image Encode - Q.9.C.E.7 (sec)	**528.789**	529.315	**533.094**
Normalized	100%	99.9%	99.19%

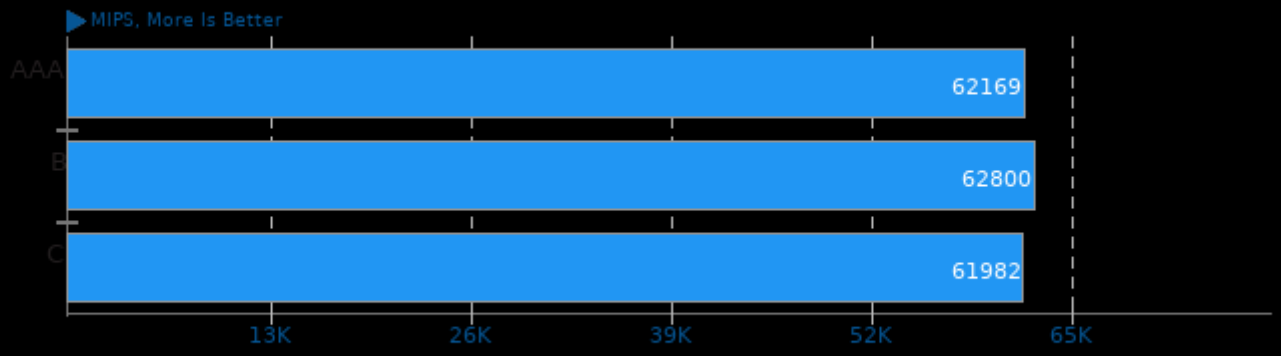
WebP2 Image Encode - Q.1.C.E.5 (sec)		7.117	**7.163**	**6.928**
Normalized		97.34%	96.72%	100%
WebP2 Image Encode - Q.1.L.C (sec)		1139	**1139**	**1136**
Normalized		99.7%	99.69%	100%
x264 - Bosphorus 4K (FPS)		**23.78**	**23.4**	23.69
Normalized		100%	98.4%	99.62%
x264 - Bosphorus 1080p (FPS)		103.74	**103.1**	**108.87**
Normalized		95.29%	94.7%	100%
yquake2 - Vulkan - On - On - 1920 x 1080 (FPS)	25.8	**25.7**	**26.1**	26
Normalized	98.85%	98.47%	100%	99.62%
yquake2 - Vulkan - Off - On - 1920 x 1080 (FPS)	**26.7**	26.8	**27.1**	27
Normalized	98.52%	98.89%	100%	99.63%
yquake2 - Vulkan - On - Off - 1920 x 1080 (FPS)	**258.9**	271.2	**272.5**	270.3
Normalized	95.01%	99.52%	100%	99.19%
yquake2 - Vulkan - Off - Off - 1920 x 1080 (FPS)	**273.6**	284.8	**287.5**	284.7
Normalized	95.17%	99.06%	100%	99.03%
yquake2 - OpenGL 3.x - On - On - 1920 x 1080 (FPS)	**133.6**	**140.7**	139.9	138.9
Normalized	94.95%	100%	99.43%	98.72%
yquake2 - OpenGL 3.x - Off - On - 1920 x 1080 (FPS)	**132.8**	**141.3**	140.7	139
Normalized	93.98%	100%	99.58%	98.37%
yquake2 - OpenGL 3.x - On - Off - 1920 x 1080 (FPS)	**389.2**	**411.5**	410.9	409.3
Normalized	94.58%	100%	99.85%	99.47%
yquake2 - OpenGL 3.x - Off - Off - 1920 x 1080 (FPS)	**426.5**	441.3	**444.8**	440.4
Normalized	95.89%	99.21%	100%	99.01%
yquake2 - Software CPU - On - On - 1920 x 1080 (FPS)	**109.6**	**110.7**	110.1	109.8
Normalized	99.01%	100%	99.46%	99.19%
yquake2 - OpenGL ES 3.x - On - On - 1920 x 1080 (FPS)	**133.7**	140	**140.4**	138.4
Normalized	95.23%	99.72%	100%	98.58%
yquake2 - Software CPU - Off - On - 1920 x 1080 (FPS)	**112.9**	**113.8**	113.4	**113.8**
Normalized	99.21%	100%	99.65%	100%
yquake2 - Software CPU - On - Off - 1920 x 1080 (FPS)	**109.4**	**110.6**	**110.6**	110.2
Normalized	98.92%	100%	100%	99.64%
yquake2 - OpenGL ES 3.x - Off - On - 1920 x 1080 (FPS)	**134.5**	**141.3**	140.9	139.1
Normalized	95.19%	100%	99.72%	98.44%

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yquake2 - OpenGL ES 3.x - On - Off - 1920 x 1080 (FPS)	**392.8**	**408.5**	402.3	406.4
Normalized	96.16%	100%	98.48%	99.49%
yquake2 - Software CPU - Off - Off - 1920 x 1080 (FPS)	113	**113.9**	**111.9**	**113.9**
Normalized	99.21%	100%	98.24%	100%
yquake2 - OpenGL ES 3.x - Off - Off - 1920 x 1080 (FPS)	**426.5**	443.2	**446.3**	444.4
Normalized	95.56%	99.31%	100%	99.57%
yquake2 - S.C.C.L - On - On - 1920 x 1080 (FPS)	103.3	**103.2**	**103.9**	**103.9**
Normalized	99.42%	99.33%	100%	100%
yquake2 - S.C.C.L - Off - On - 1920 x 1080 (FPS)	**105.2**	106.7	**107**	106.3
Normalized	98.32%	99.72%	100%	99.35%
yquake2 - S.C.C.L - On - Off - 1920 x 1080 (FPS)	103	**103.7**	103.4	**102.3**
Normalized	99.32%	100%	99.71%	98.65%
yquake2 - S.C.C.L - Off - Off - 1920 x 1080 (FPS)	**105.4**	**107.4**	106.7	106.6
Normalized	98.14%	100%	99.35%	99.26%

7-Zip Compression 22.00

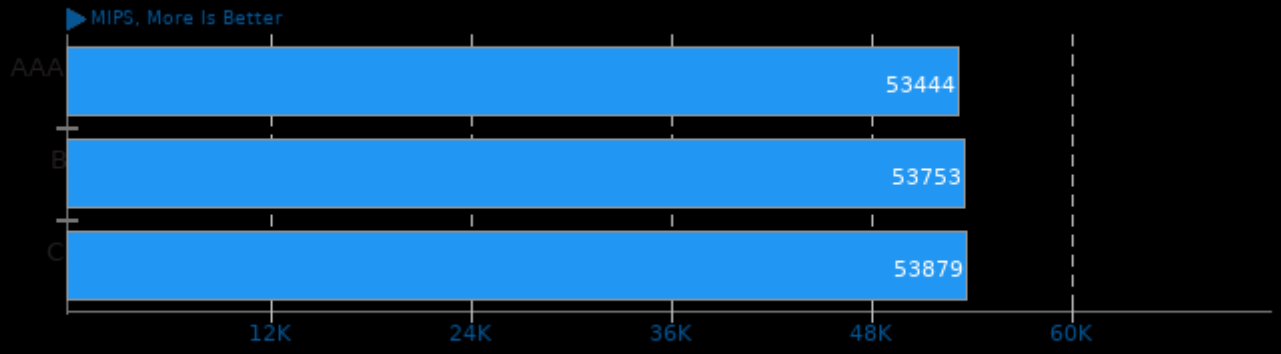
Test: Compression Rating



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

7-Zip Compression 22.00

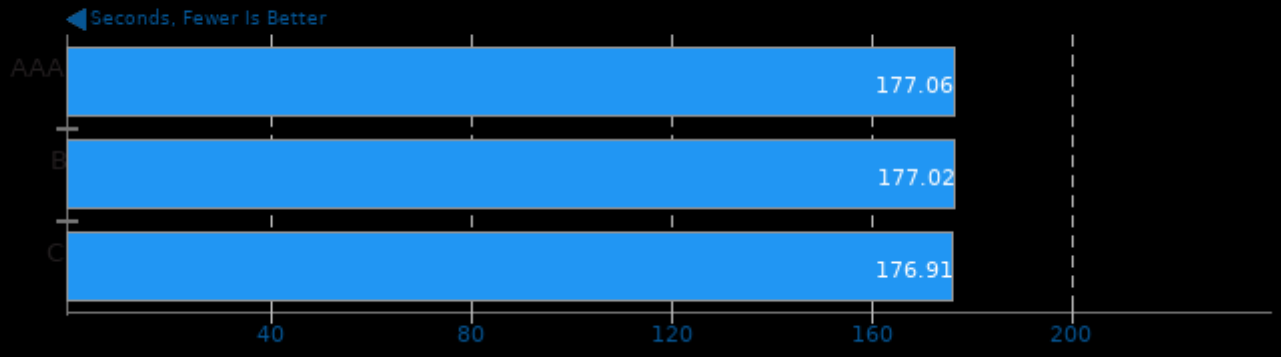
Test: Decompression Rating

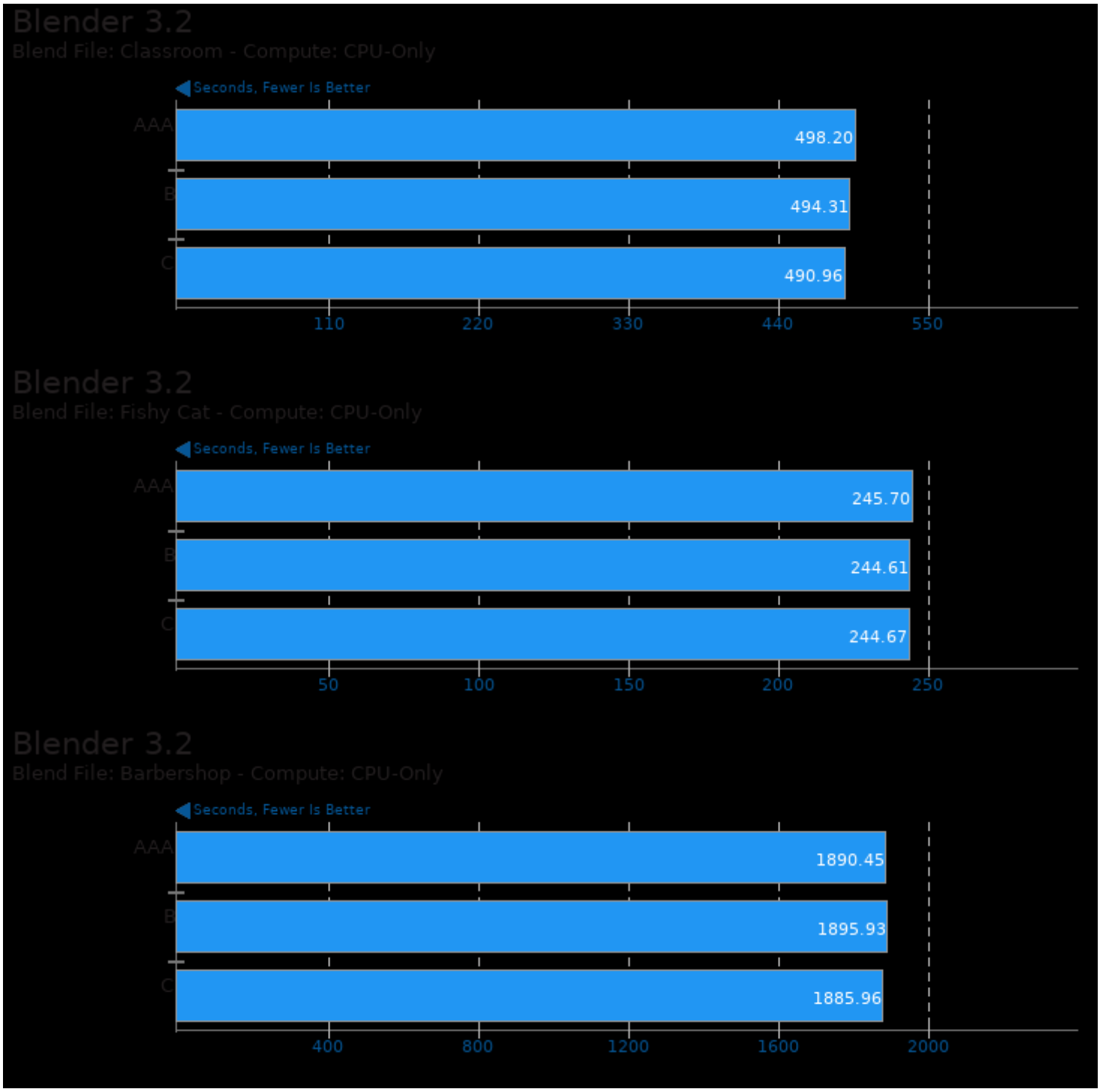


1. (CXX) g++ options: -lpthread -ldl -O2 -fPIC

Blender 3.2

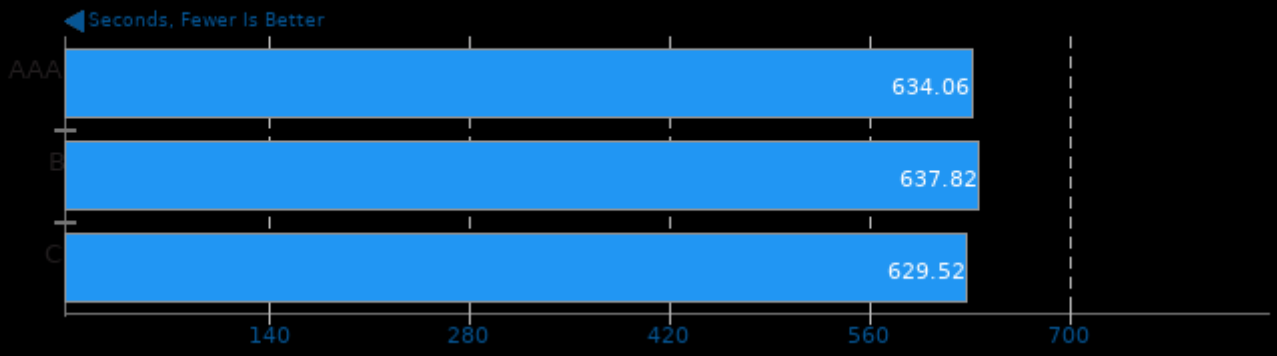
Blend File: BMW27 - Compute: CPU-Only




Blender 3.2
Blend File: Classroom - Compute: CPU-Only
Seconds, Fewer Is Better
AAA
B
C
498.20
494.31
490.96
110
220
330
440
550
Blender 3.2
Blend File: Fishy Cat - Compute: CPU-Only
Seconds, Fewer Is Better
AAA
B
C
245.70
244.61
244.67
50
100
150
200
250
Blender 3.2
Blend File: Barbershop - Compute: CPU-Only
Seconds, Fewer Is Better
AAA
B
C
1890.45
1895.93
1885.96
400
800
1200
1600
2000

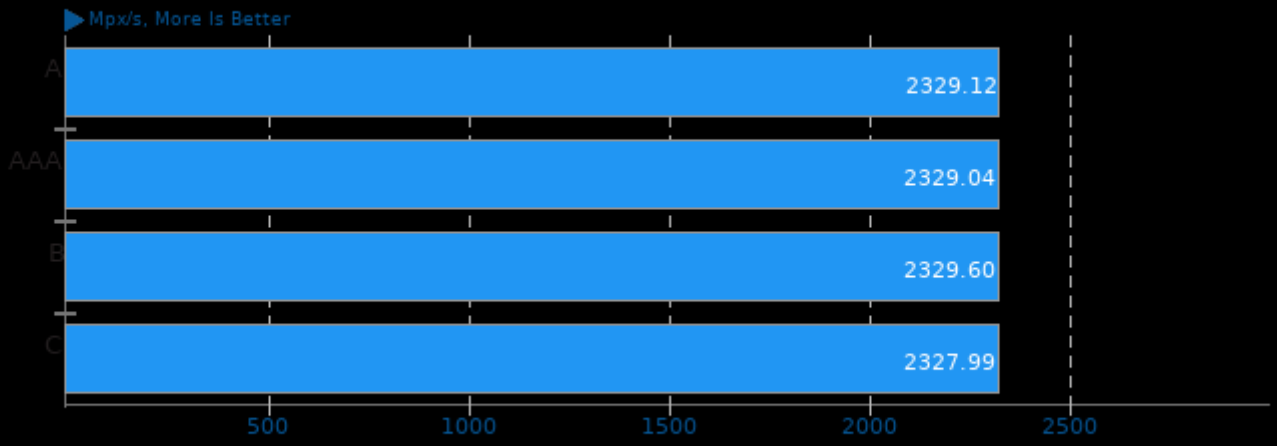
Blender 3.2

Blend File: Pabellon Barcelona - Compute: CPU-Only



Etcpak 1.0

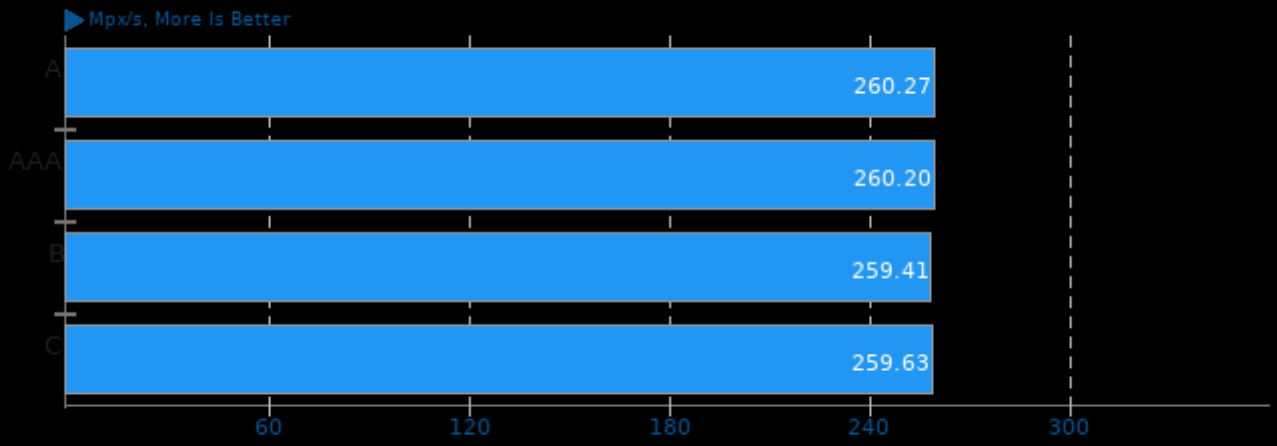
Benchmark: Multi-Threaded - Configuration: ETC2



1. (CXX) g++ options: -O3 -march=native -std=c++11 -lpthread

Etcpak 1.0

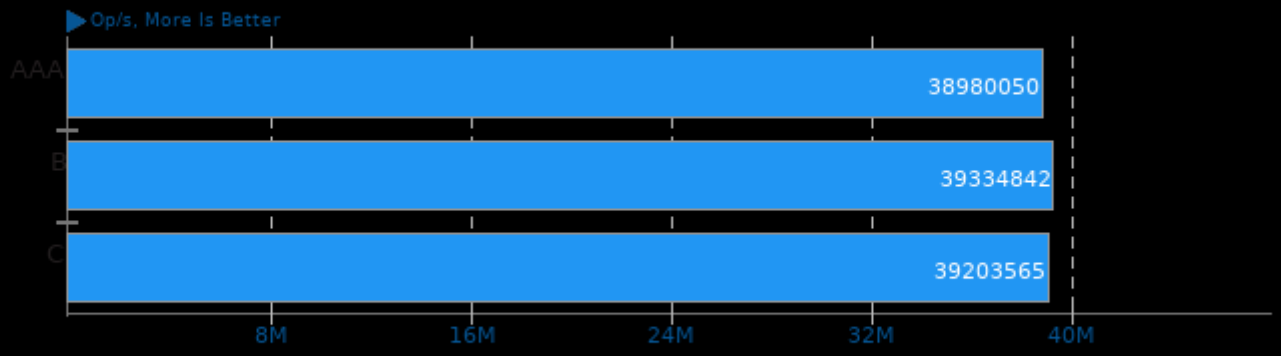
Benchmark: Single-Threaded - Configuration: ETC2



1. (CXX) g++ options: -O3 -march=native -std=c++11 -lpthread

Facebook RocksDB 7.0.1

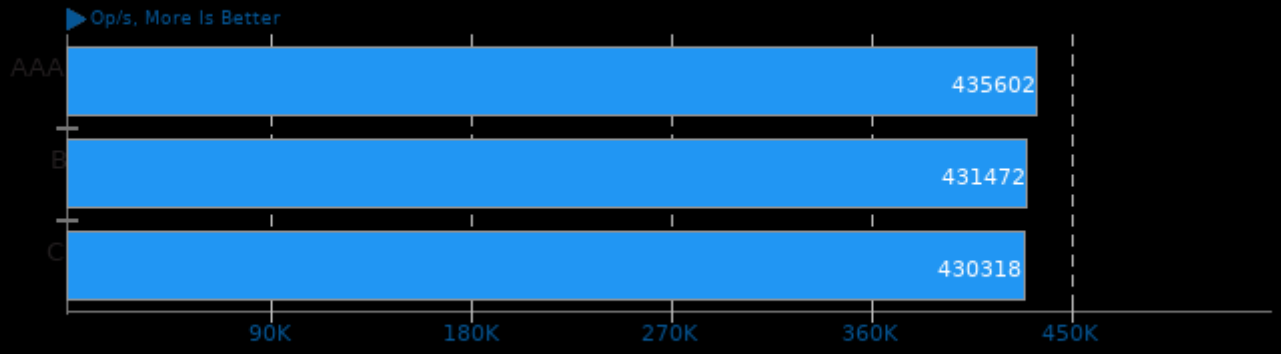
Test: Random Read



1. (CXX) g++ options: -O3 -march=native -pthread -fno-builtin-memcmp -fno-rtti -lpthread

Facebook RocksDB 7.0.1

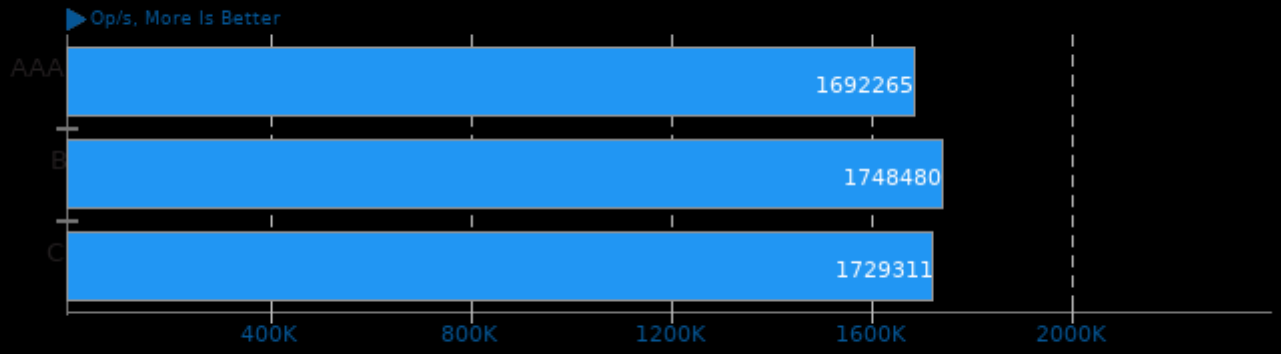
Test: Update Random



1. (CXX) g++ options: -O3 -march=native -pthread -fno-builtin-memcmp -fno-rtti -lpthread

Facebook RocksDB 7.0.1

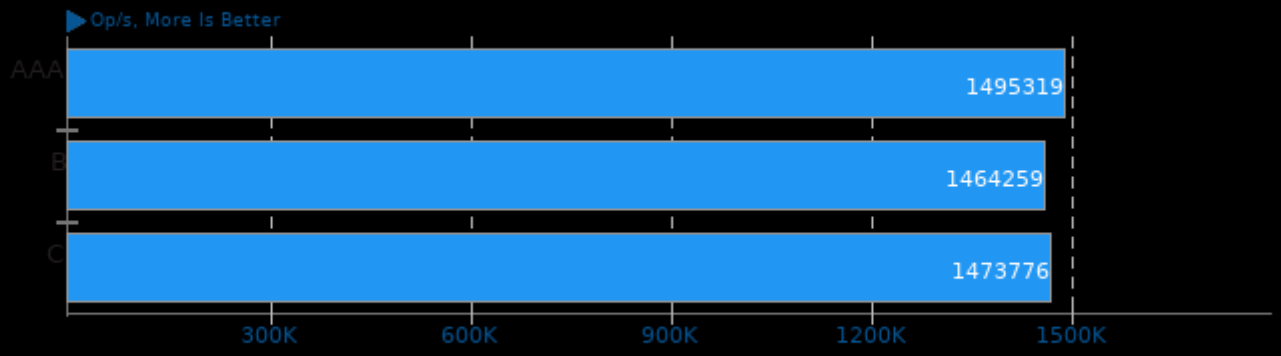
Test: Read While Writing



1. (CXX) g++ options: -O3 -march=native -pthread -fno-builtin-memcmp -fno-rtti -lpthread

Facebook RocksDB 7.0.1

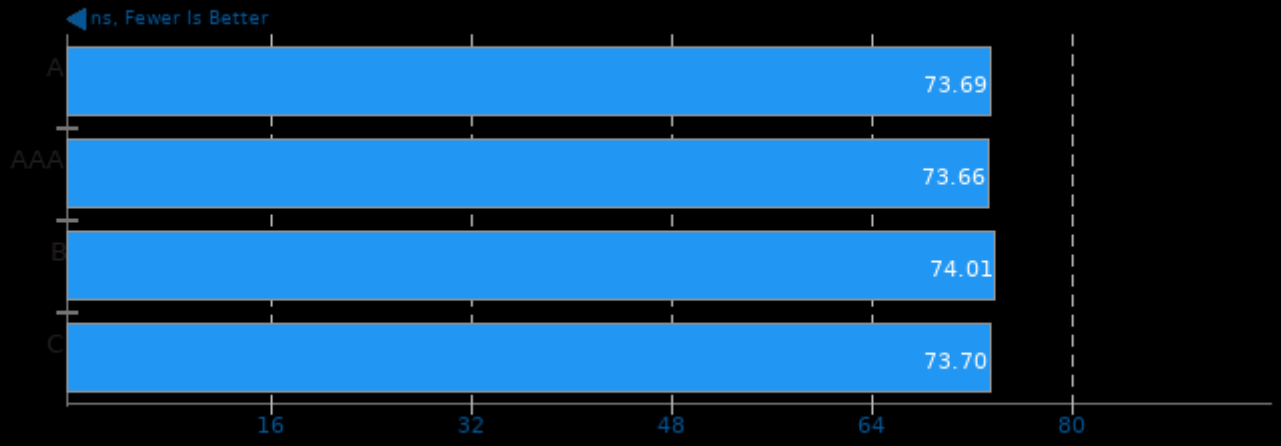
Test: Read Random Write Random



1. (CXX) g++ options: -O3 -march=native -pthread -fno-builtin-memcmp -fno-rtti -lpthread

Glibc Benchmarks

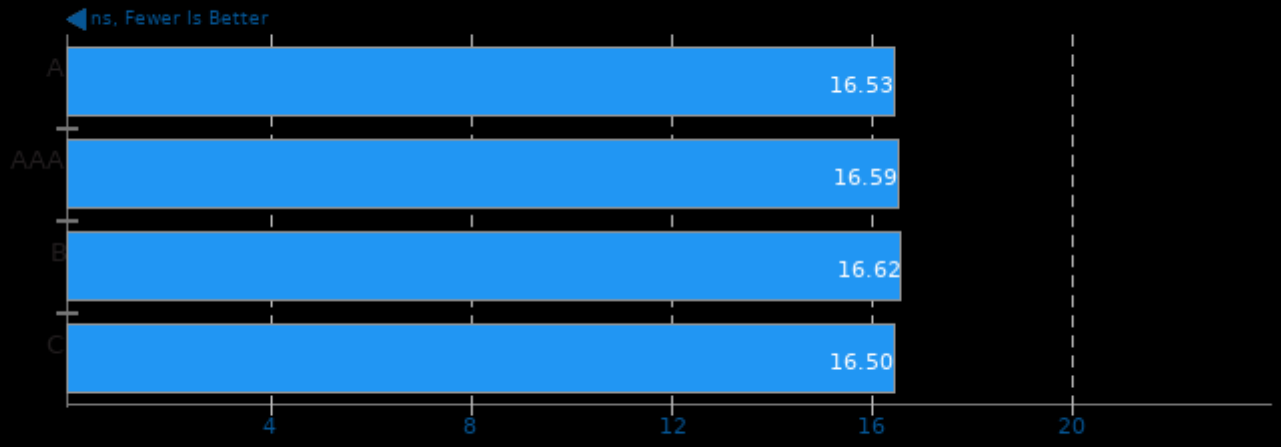
Benchmark: cos



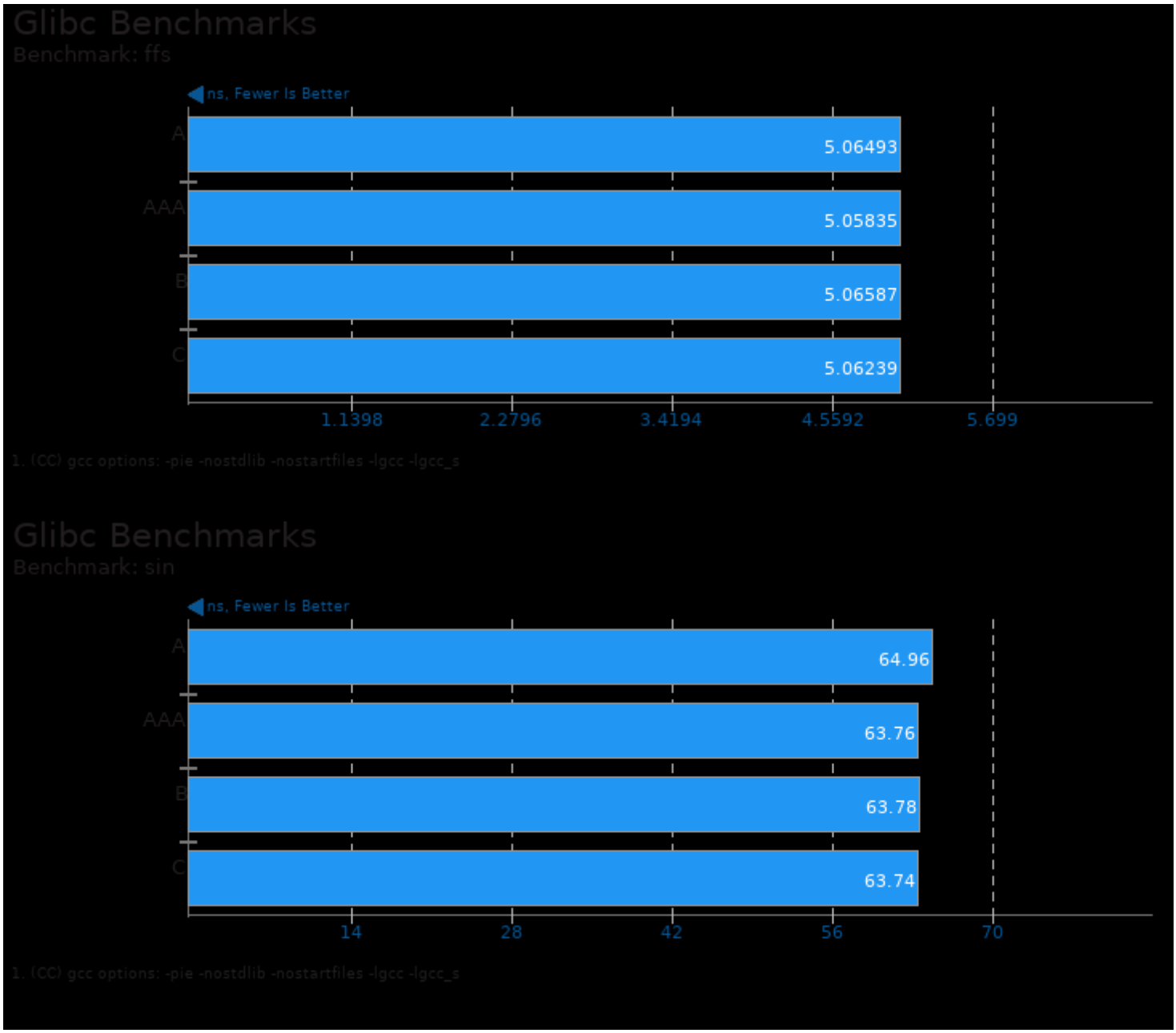
1. (CC) gcc options: -pie -nostdlib -nostartfiles -lgcc -lgcc_s

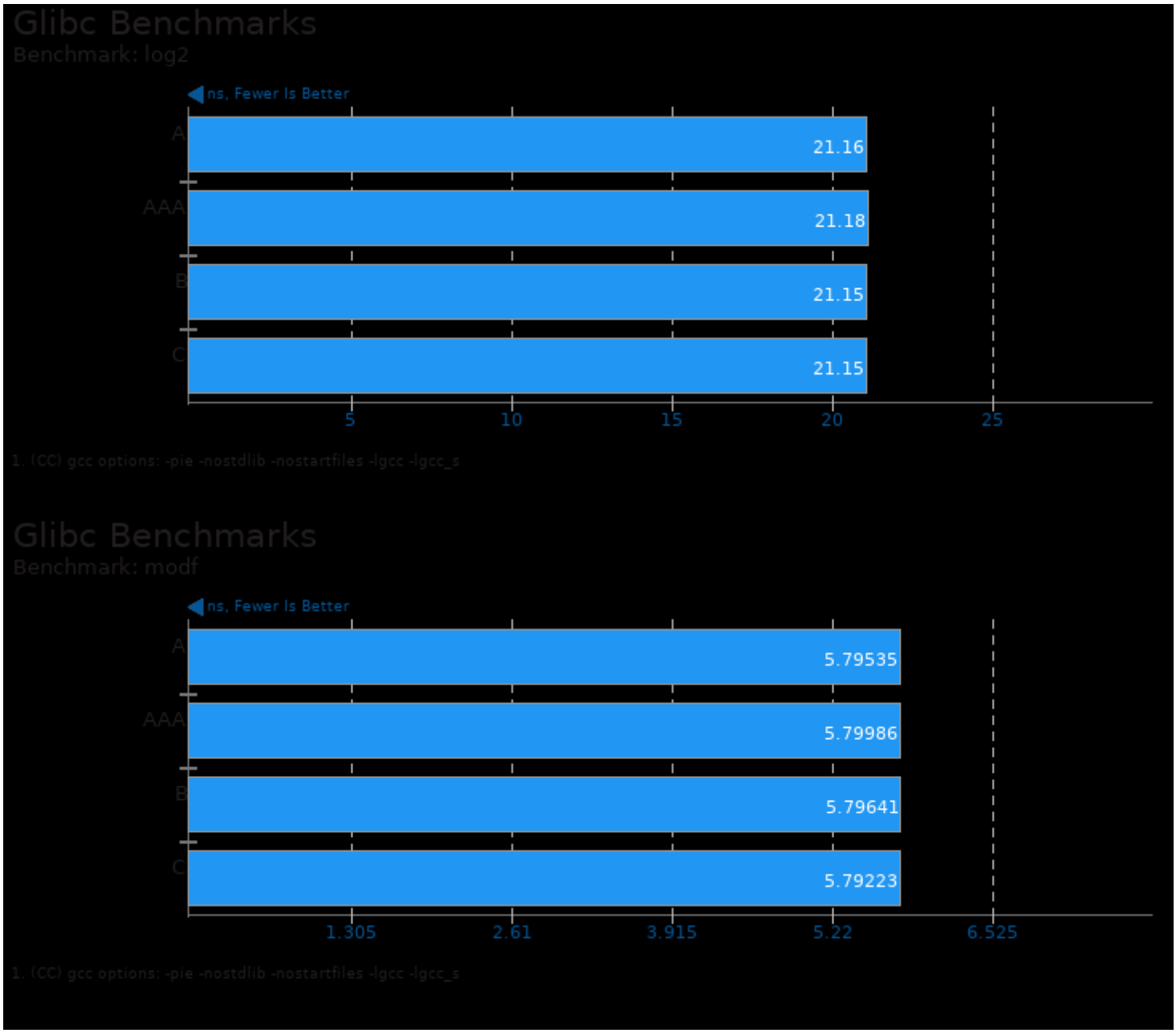
Glibc Benchmarks

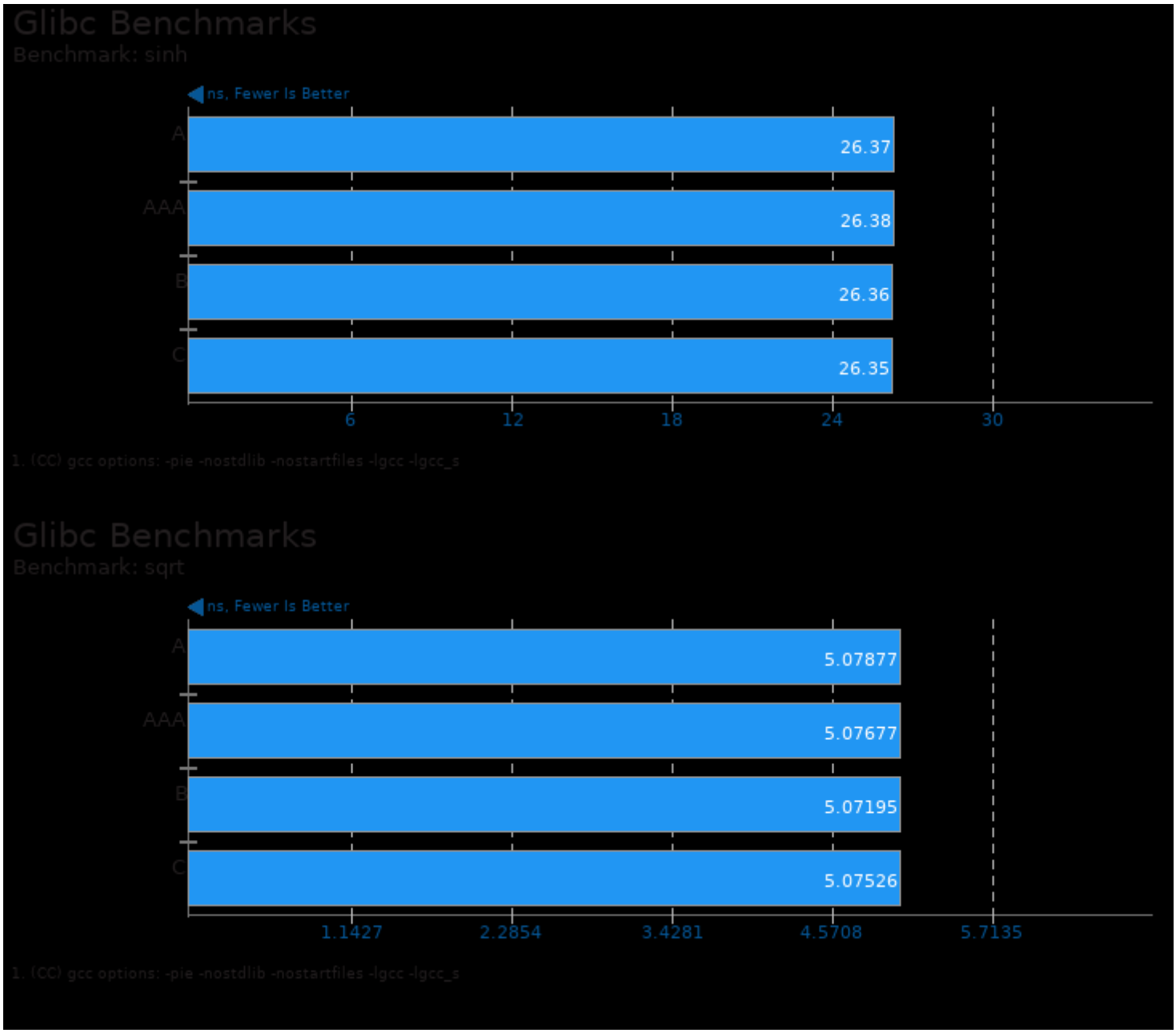
Benchmark: exp

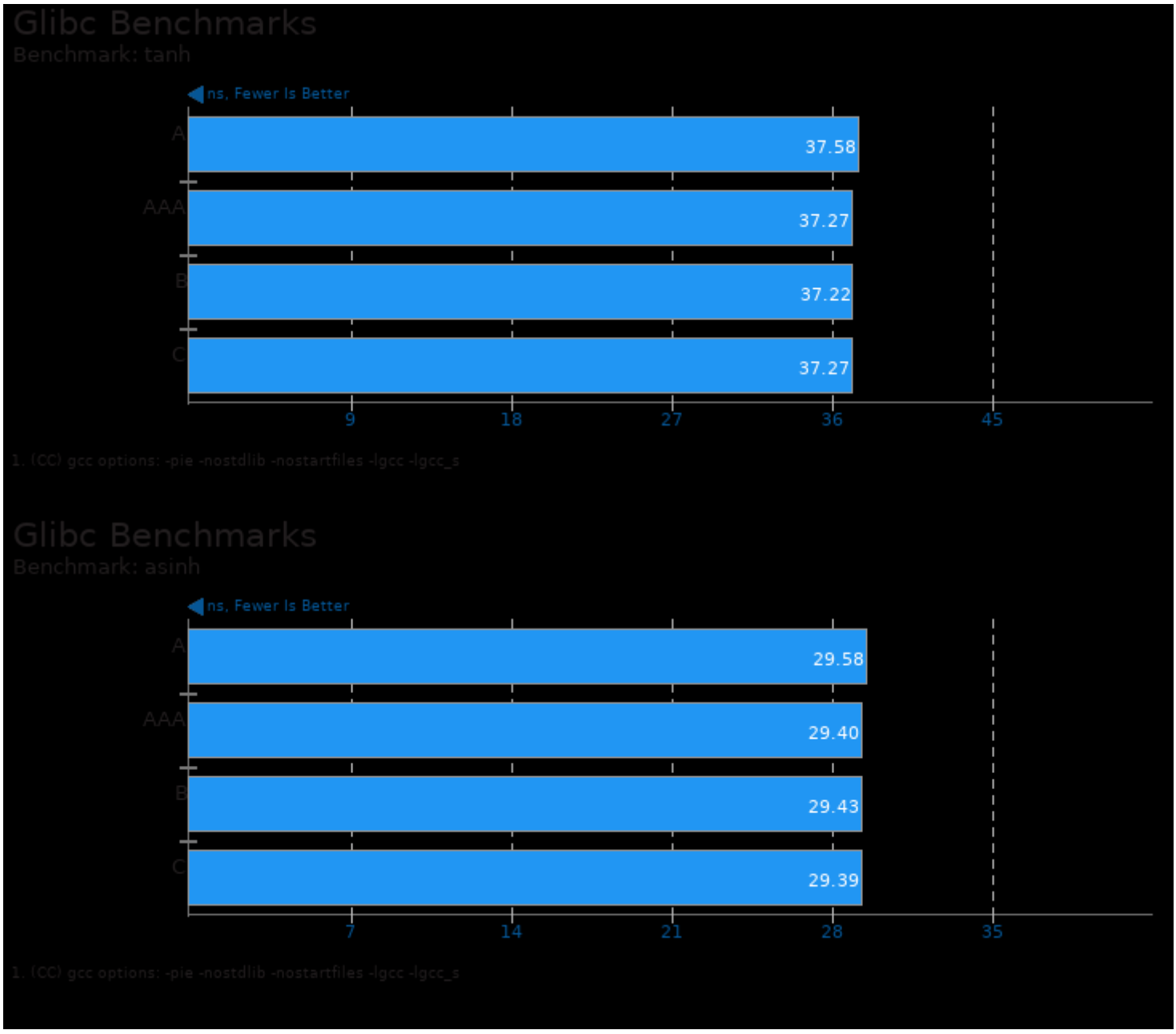


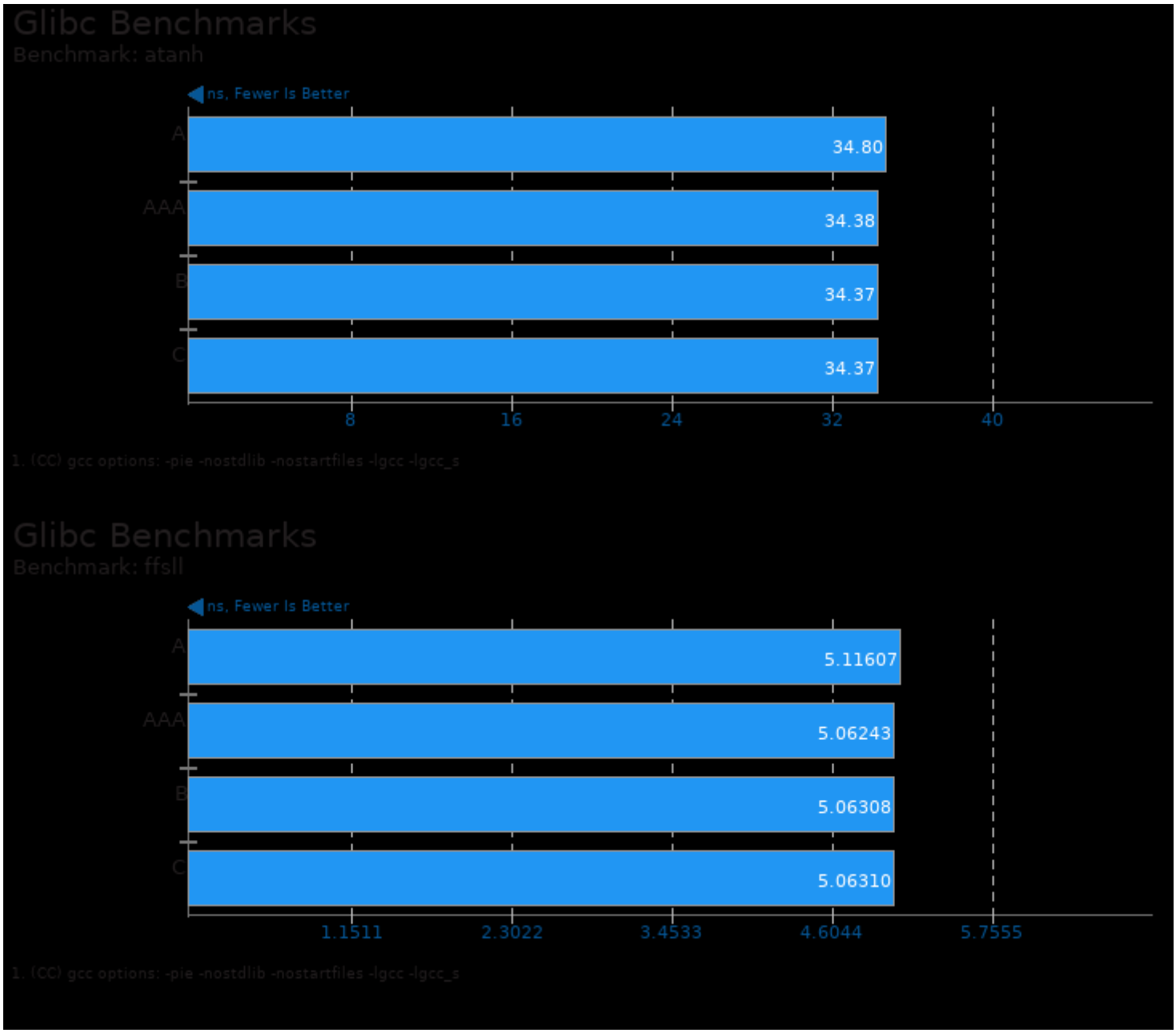
1. (CC) gcc options: -pie -nostdlib -nostartfiles -lgcc -lgcc_s


Glibc Benchmarks
Benchmark: ffs
ns, Fewer Is Better
A
AAA
B
C
5.06493
5.05835
5.06587
5.06239
1.1398
2.2796
3.4194
4.5592
5.699
1. (CC) gcc options: -pie -nostdlib -nostartfiles -lgcc -lgcc_s
Glibc Benchmarks
Benchmark: sin
ns, Fewer Is Better
A
AAA
B
C
64.96
63.76
63.78
63.74
14
28
42
56
70
1. (CC) gcc options: -pie -nostdlib -nostartfiles -lgcc -lgcc_s


Glibc Benchmarks
Benchmark: log2
ns, Fewer Is Better
A
AAA
B
C
21.16
21.18
21.15
21.15
5
10
15
20
25
1. (CC) gcc options: -pie -nostdlib -nostartfiles -lgcc -lgcc_s
Glibc Benchmarks
Benchmark: modf
ns, Fewer Is Better
A
AAA
B
C
5.79535
5.79986
5.79641
5.79223
1.305
2.61
3.915
5.22
6.525
1. (CC) gcc options: -pie -nostdlib -nostartfiles -lgcc -lgcc_s

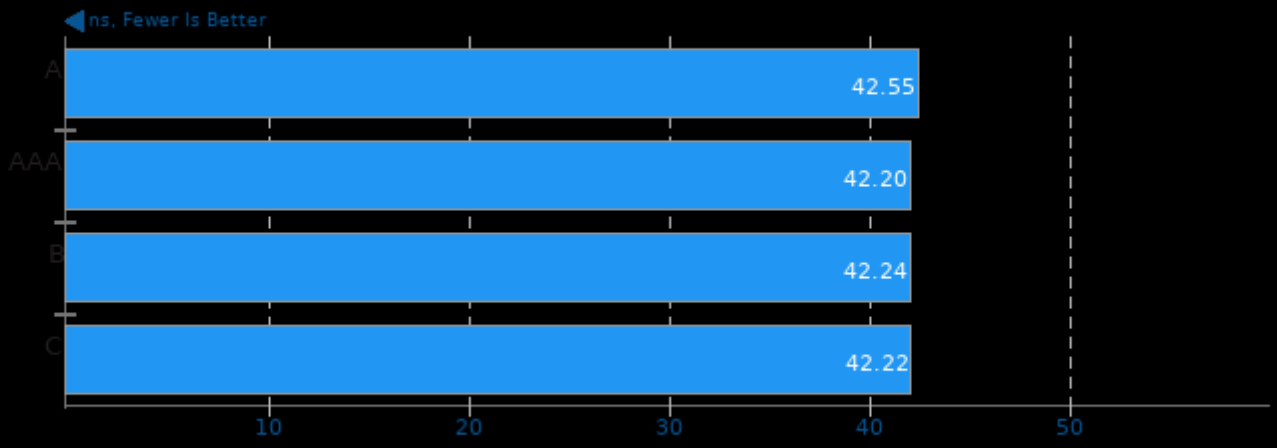

Glibc Benchmarks
Benchmark: sinh
ns, Fewer Is Better
A
AAA
B
C
26.37
26.38
26.36
26.35
6
12
18
24
30
1. (CC) gcc options: -pie -nostdlib -nostartfiles -lgcc -lgcc_s
Glibc Benchmarks
Benchmark: sqrt
ns, Fewer Is Better
A
AAA
B
C
5.07877
5.07677
5.07195
5.07526
1.1427
2.2854
3.4281
4.5708
5.7135
1. (CC) gcc options: -pie -nostdlib -nostartfiles -lgcc -lgcc_s


Glibc Benchmarks
Benchmark: tanh
ns, Fewer Is Better
A
AAA
B
C
37.58
37.27
37.22
37.27
9
18
27
36
45
1. (CC) gcc options: -pie -nostdlib -nostartfiles -lgcc -lgcc_s
Glibc Benchmarks
Benchmark: asinh
ns, Fewer Is Better
A
AAA
B
C
29.58
29.40
29.43
29.39
7
14
21
28
35
1. (CC) gcc options: -pie -nostdlib -nostartfiles -lgcc -lgcc_s


Glibc Benchmarks
Benchmark: atanh
ns, Fewer Is Better
A
AAA
B
C
34.80
34.38
34.37
34.37
8
16
24
32
40
1. (CC) gcc options: -pie -nostdlib -nostartfiles -lgcc -lgcc_s
Glibc Benchmarks
Benchmark: ffsll
ns, Fewer Is Better
A
AAA
B
C
5.11607
5.06243
5.06308
5.06310
1.1511
2.3022
3.4533
4.6044
5.7555
1. (CC) gcc options: -pie -nostdlib -nostartfiles -lgcc -lgcc_s

Glibc Benchmarks

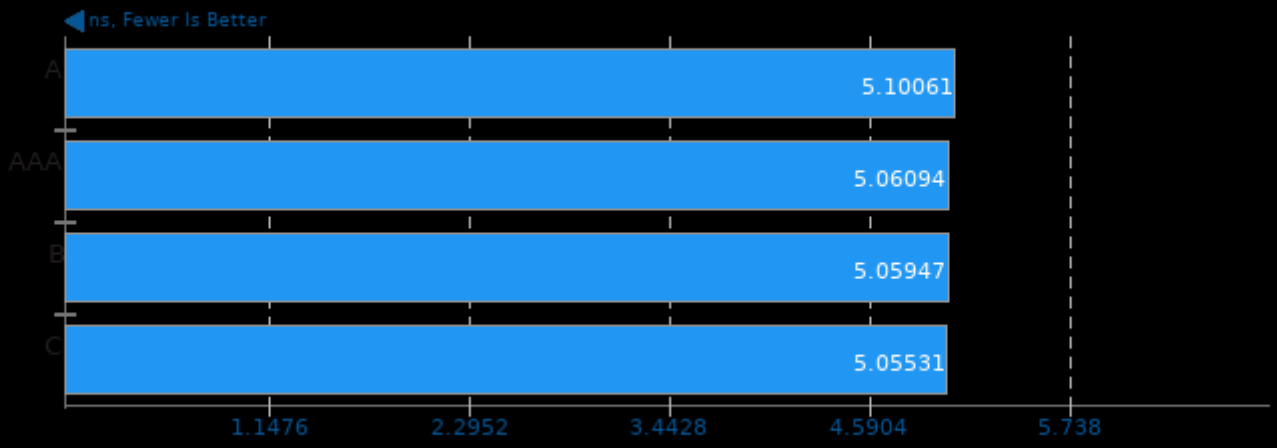
Benchmark: sincos



1. (CC) gcc options: -pie -nostdlib -nostartfiles -lgcc -lgcc_s

Glibc Benchmarks

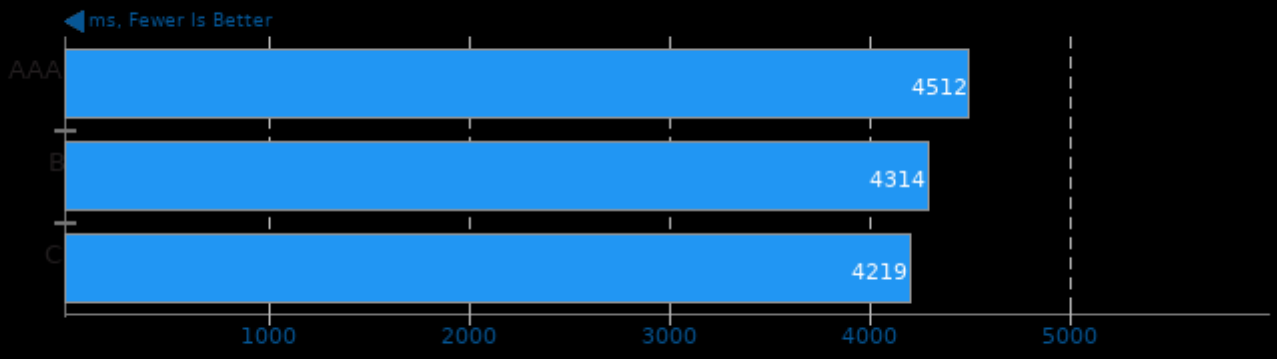
Benchmark: pthread_once



1. (CC) gcc options: -pie -nostdlib -nostartfiles -lgcc -lgcc_s

Google Draco 1.5.0

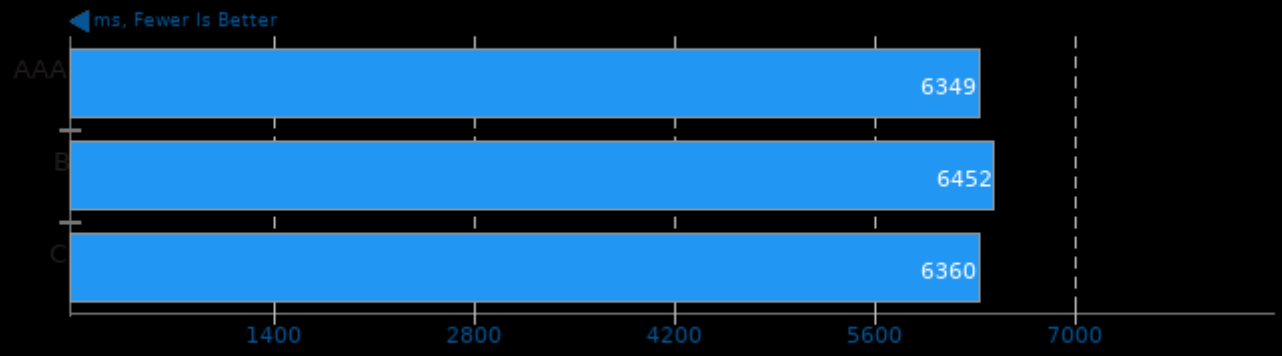
Model: Lion



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

Google Draco 1.5.0

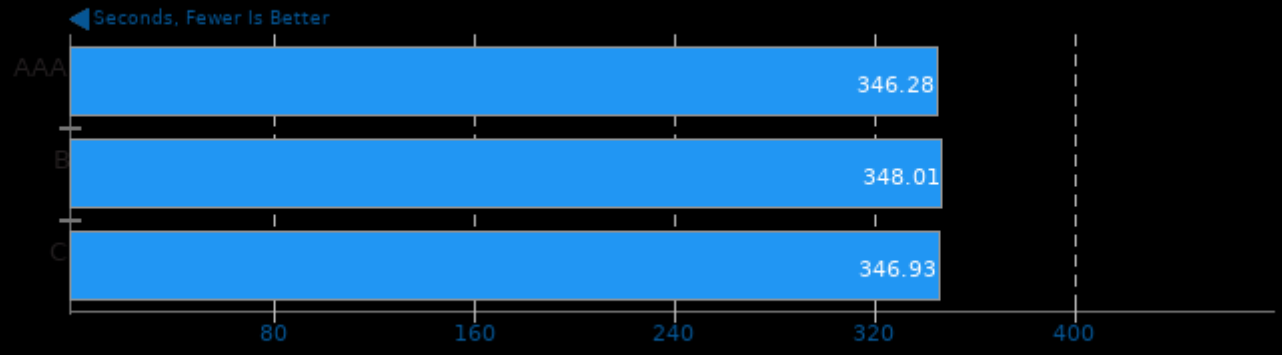
Model: Church Facade



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

GPAW 22.1

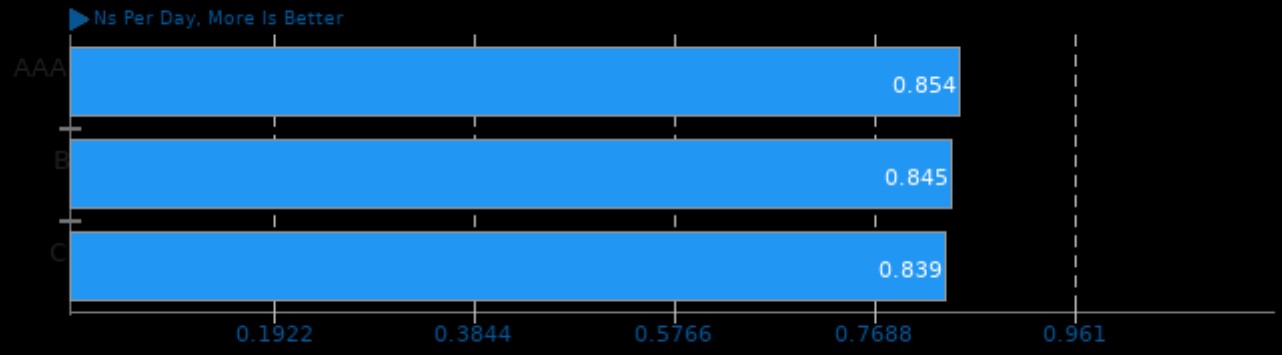
Input: Carbon Nanotube



1. (CC) gcc options: -pthread -shared -fwrapv -O2 -lxc -lblas -lmpi

GROMACS 2022.1

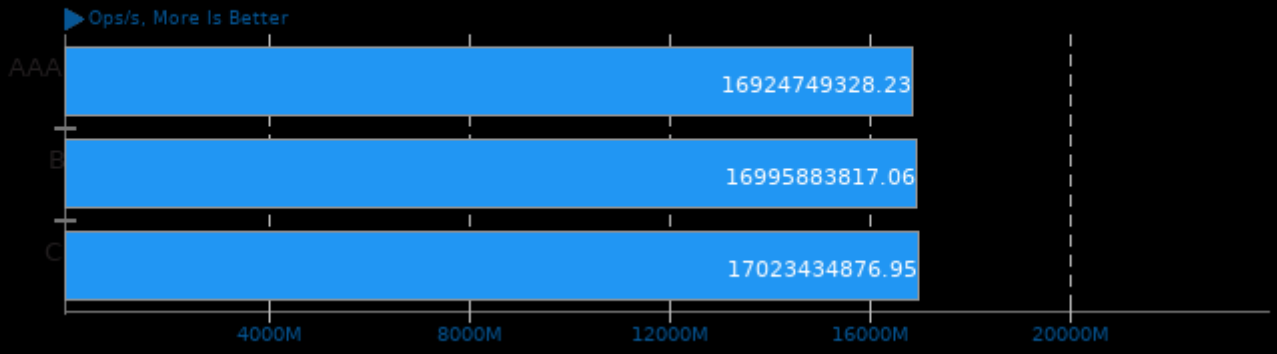
Implementation: MPI CPU - Input: water_GMX50_bare



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

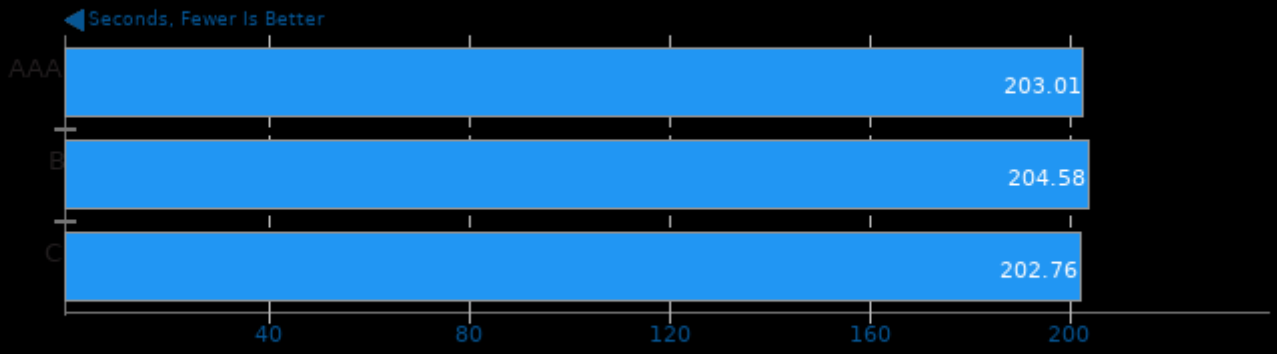
Java JMH

Throughput



libavif avifenc 0.10

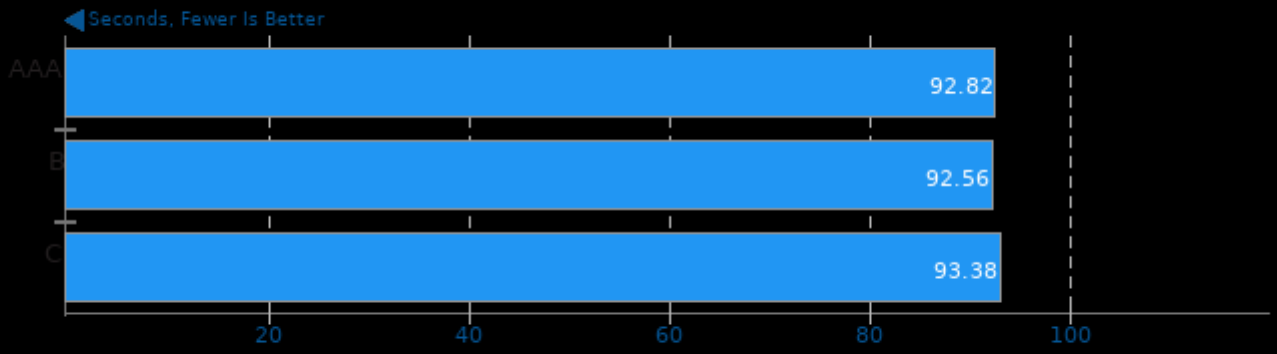
Encoder Speed: 0



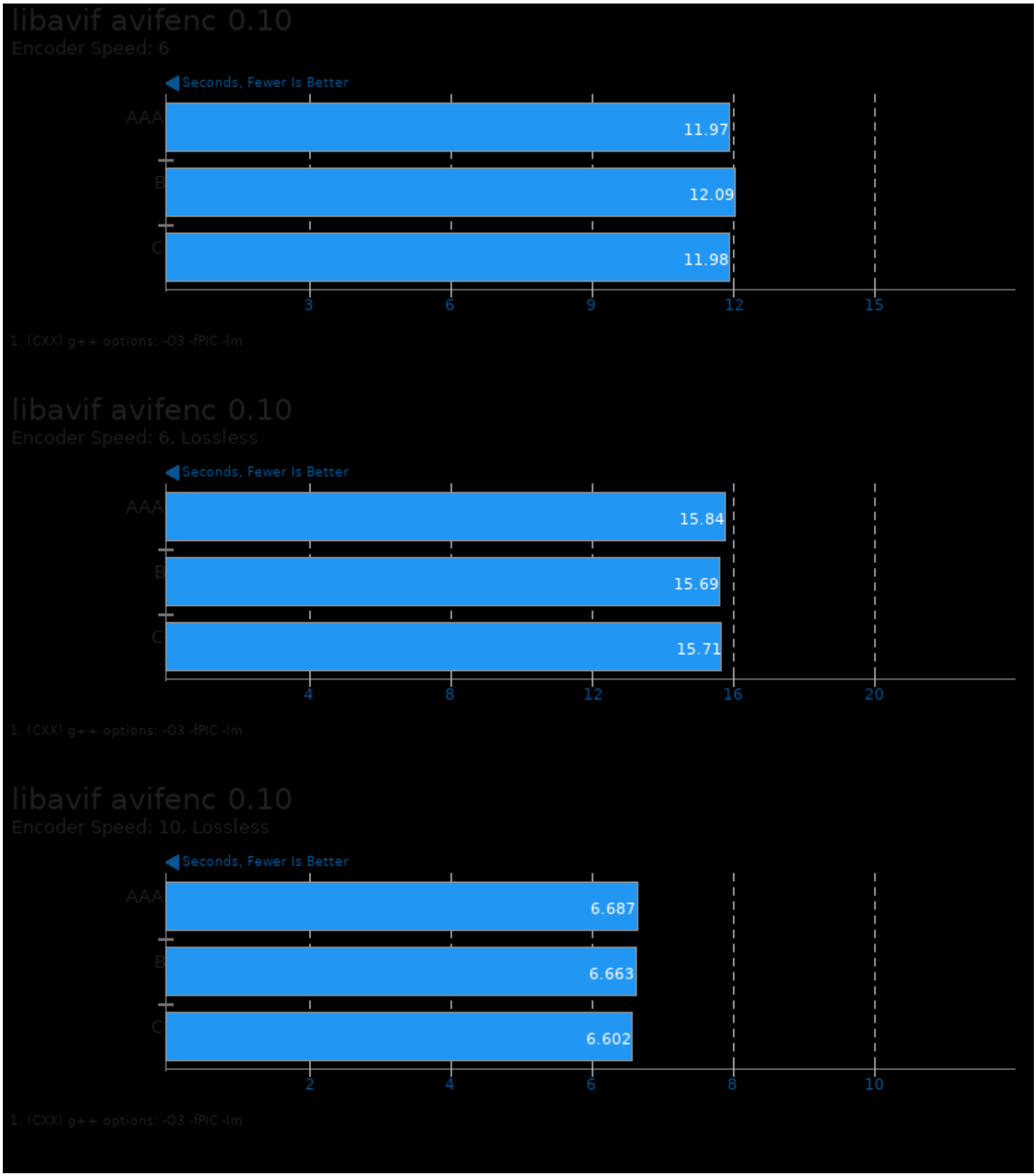
1. (CXX) g++ options: -O3 -fPIC -lm

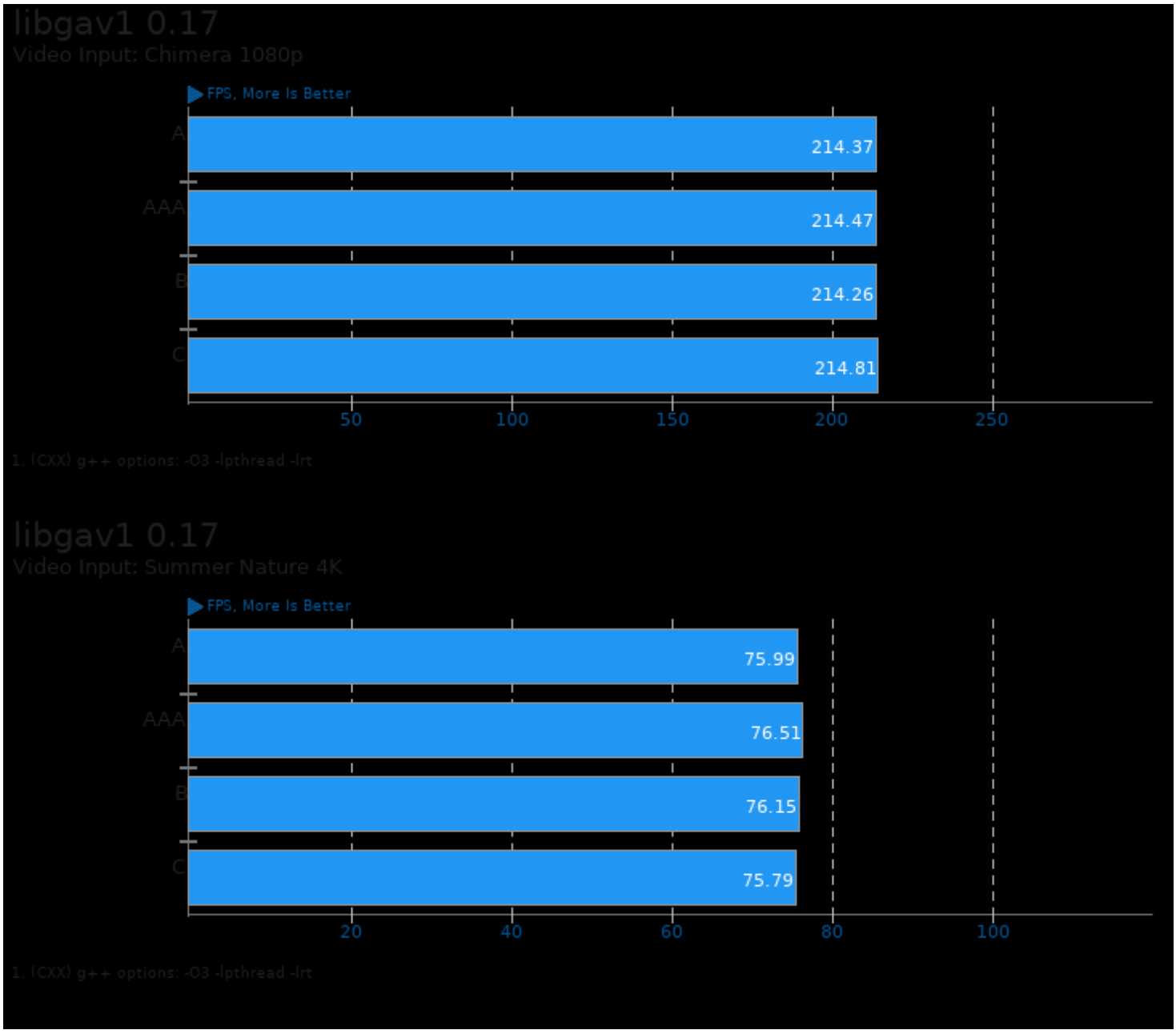
libavif avifenc 0.10

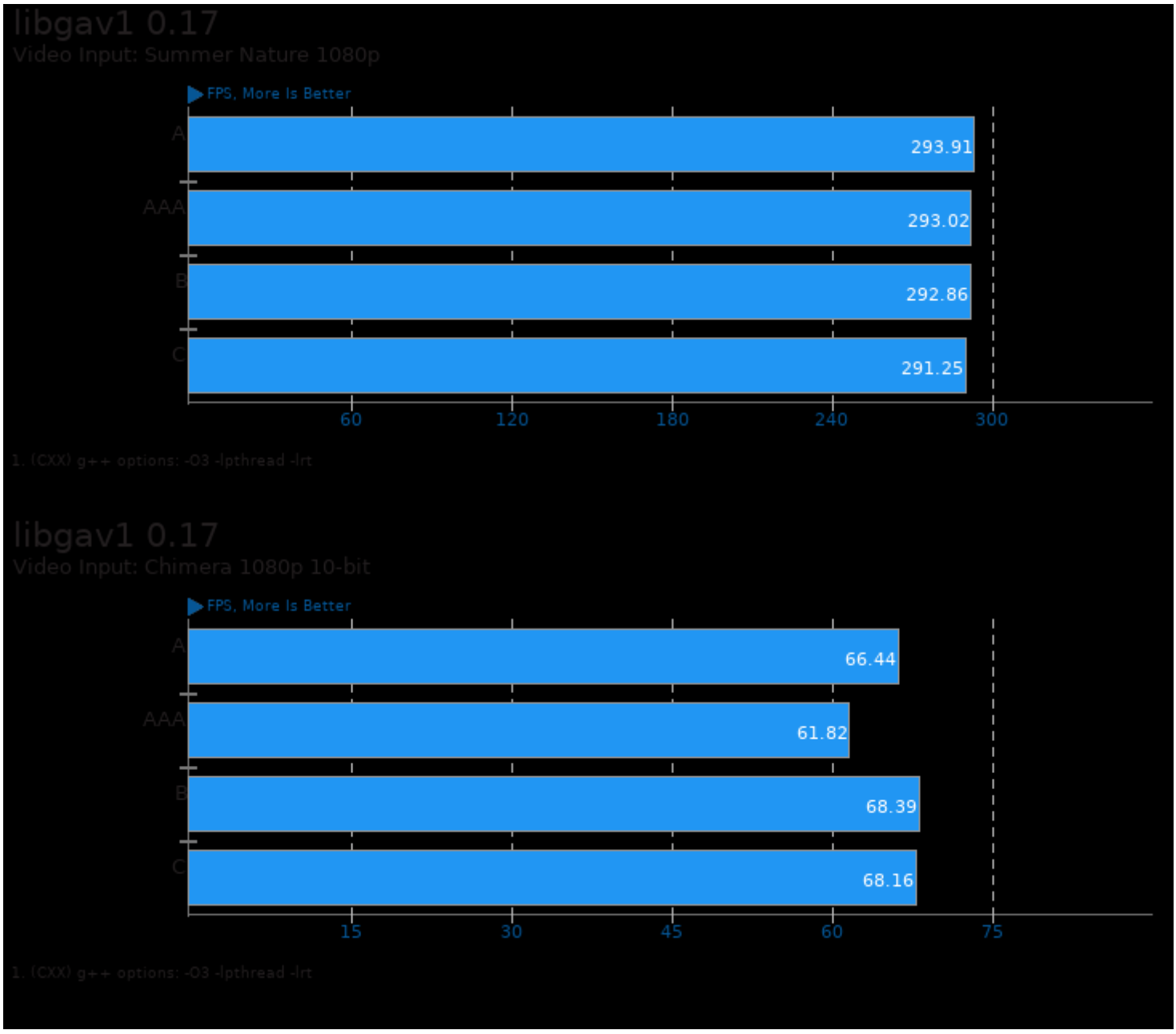
Encoder Speed: 2

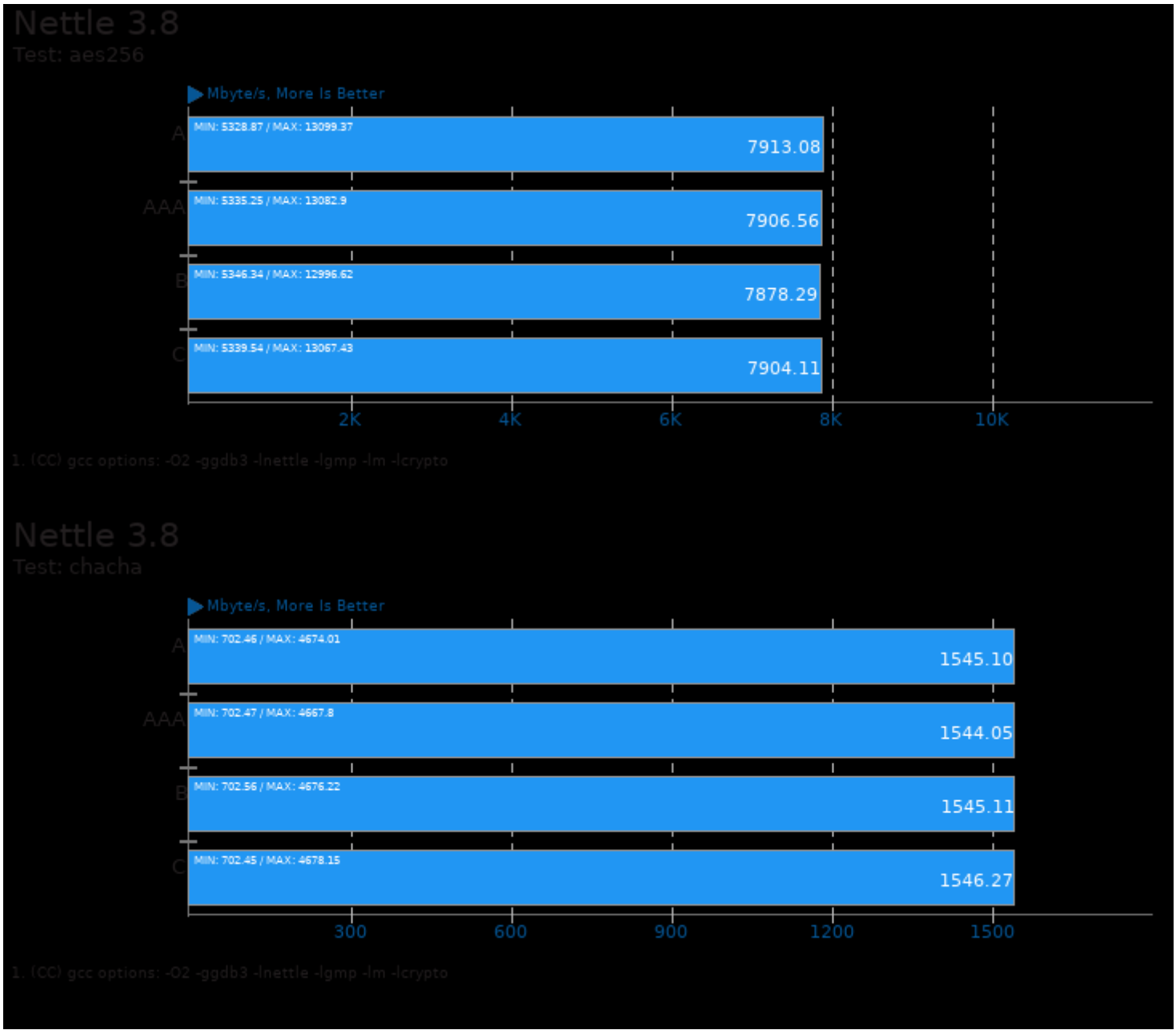


1. (CXX) g++ options: -O3 -fPIC -lm


libavif avifenc 0.10
Encoder Speed: 6
Seconds, Fewer Is Better
AAA
B
C
11.97
12.09
11.98
3
6
9
12
15
1. (CXX) g++ options: -O3 -fPIC -lm
libavif avifenc 0.10
Encoder Speed: 6, Lossless
Seconds, Fewer Is Better
AAA
B
C
15.84
15.69
15.71
4
8
12
16
20
1. (CXX) g++ options: -O3 -fPIC -lm
libavif avifenc 0.10
Encoder Speed: 10, Lossless
Seconds, Fewer Is Better
AAA
B
C
6.687
6.663
6.602
2
4
6
8
10
1. (CXX) g++ options: -O3 -fPIC -lm

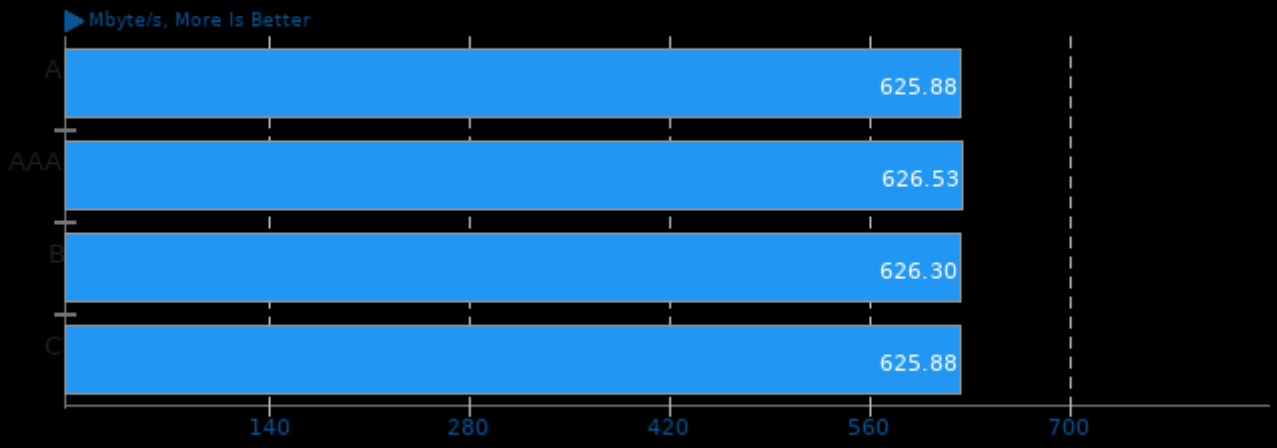

libgav1 0.17
Video Input: Chimera 1080p
FPS, More Is Better
A
AAA
B
C
214.37
214.47
214.26
214.81
50
100
150
200
250
1. (CXX) g++ options: -O3 -lpthread -lrt
libgav1 0.17
Video Input: Summer Nature 4K
FPS, More Is Better
A
AAA
B
C
75.99
76.51
76.15
75.79
20
40
60
80
100
1. (CXX) g++ options: -O3 -lpthread -lrt


libgav1 0.17
Video Input: Summer Nature 1080p
FPS, More Is Better
A
AAA
B
C
293.91
293.02
292.86
291.25
60
120
180
240
300
1. (CXX) g++ options: -O3 -lpthread -lrt
libgav1 0.17
Video Input: Chimera 1080p 10-bit
FPS, More Is Better
A
AAA
B
C
66.44
61.82
68.39
68.16
15
30
45
60
75
1. (CXX) g++ options: -O3 -lpthread -lrt


Nettle 3.8
Test: aes256
Mbyte/s, More Is Better
A
MIN: 5328.87 / MAX: 13099.37
7913.08
AAA
MIN: 5335.25 / MAX: 13082.9
7906.56
B
MIN: 5346.34 / MAX: 12996.62
7878.29
C
MIN: 5339.54 / MAX: 13067.43
7904.11
2K
4K
6K
8K
10K
1. (CC) gcc options: -O2 -ggdb3 -lnettle -lgmp -lm -lcrypto
Nettle 3.8
Test: chacha
Mbyte/s, More Is Better
A
MIN: 702.46 / MAX: 4674.01
1545.10
AAA
MIN: 702.47 / MAX: 4667.8
1544.05
B
MIN: 702.56 / MAX: 4676.22
1545.11
C
MIN: 702.45 / MAX: 4678.15
1546.27
300
600
900
1200
1500
1. (CC) gcc options: -O2 -ggdb3 -lnettle -lgmp -lm -lcrypto

Nettle 3.8

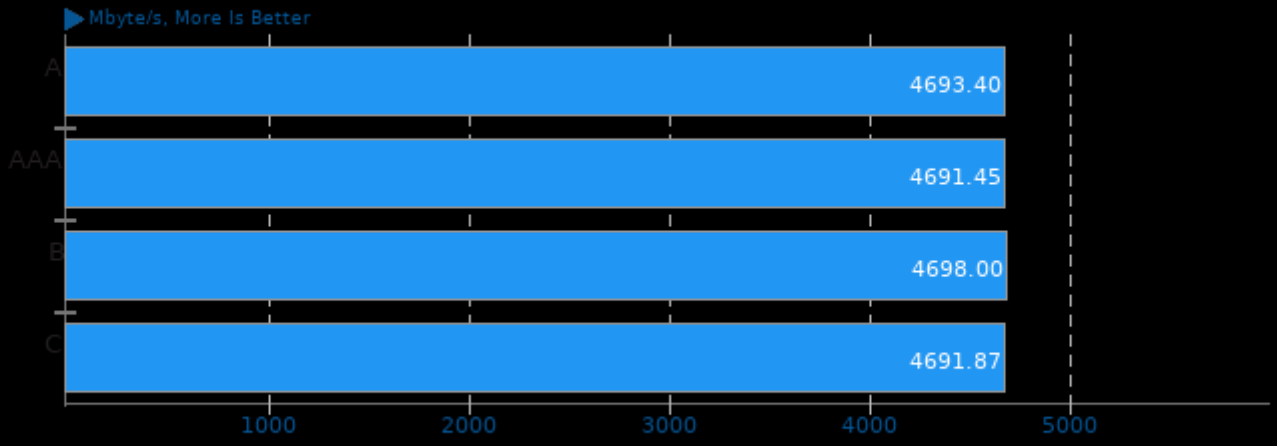
Test: sha512



1. (CC) gcc options: -O2 -ggdb3 -lnettle -lgmp -lm -lcrypto

Nettle 3.8

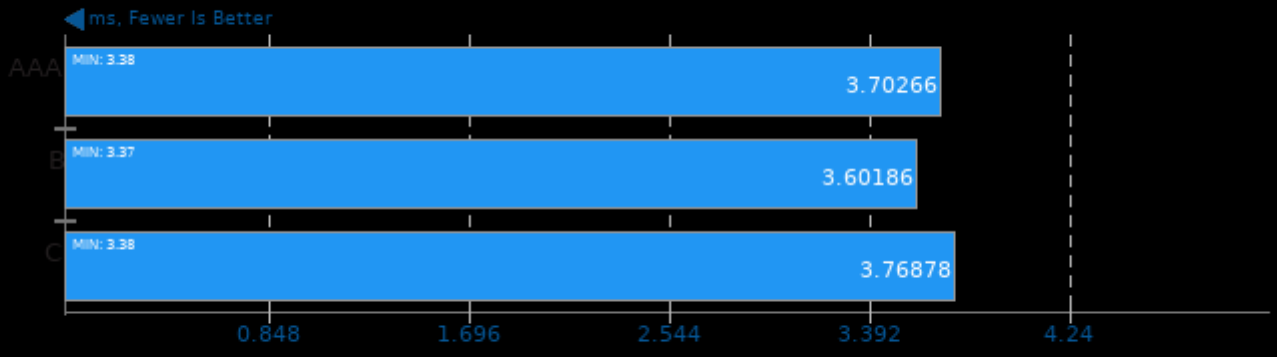
Test: poly1305-aes



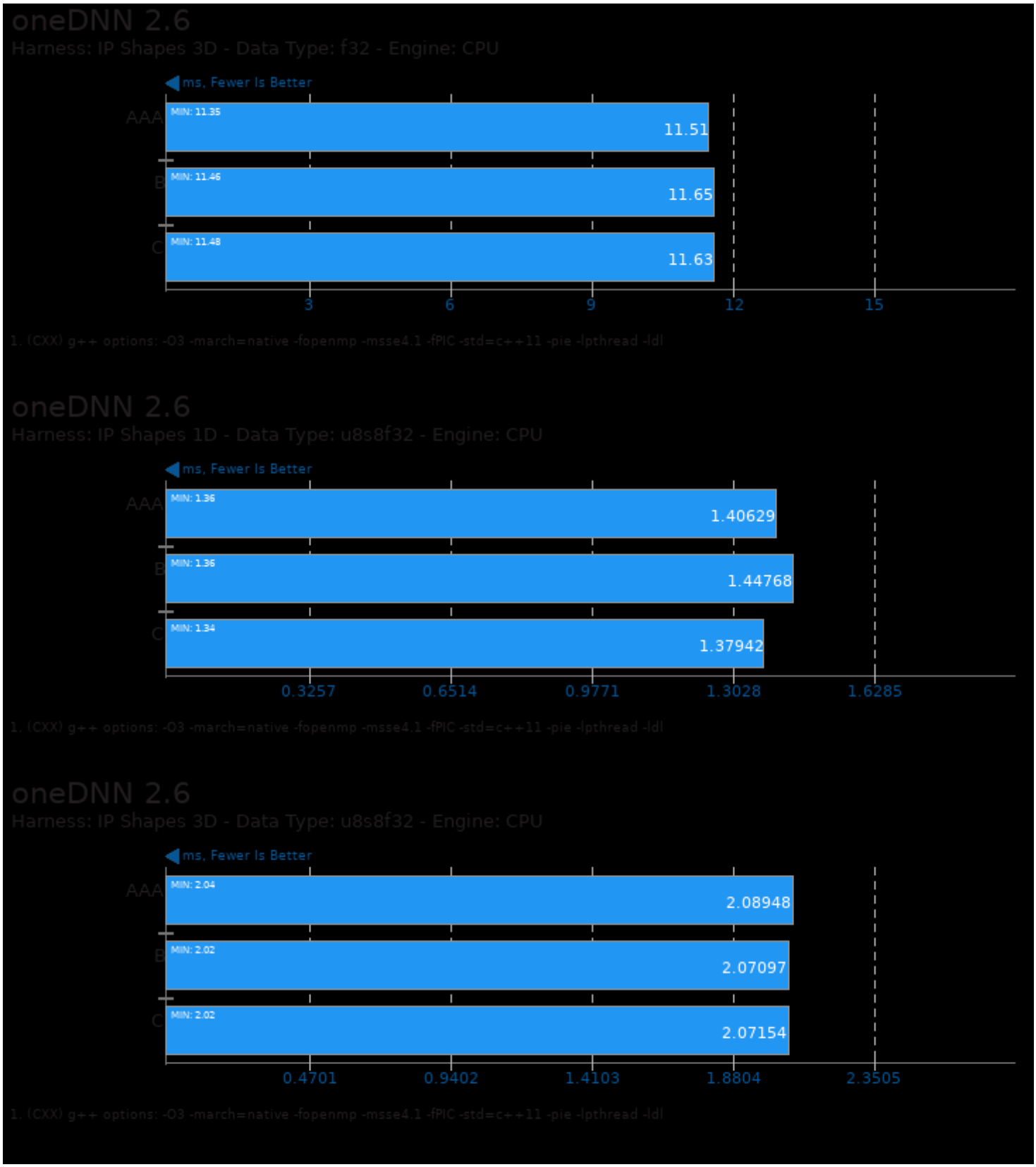
1. (CC) gcc options: -O2 -ggdb3 -lnettle -lgmp -lm -lcrypto

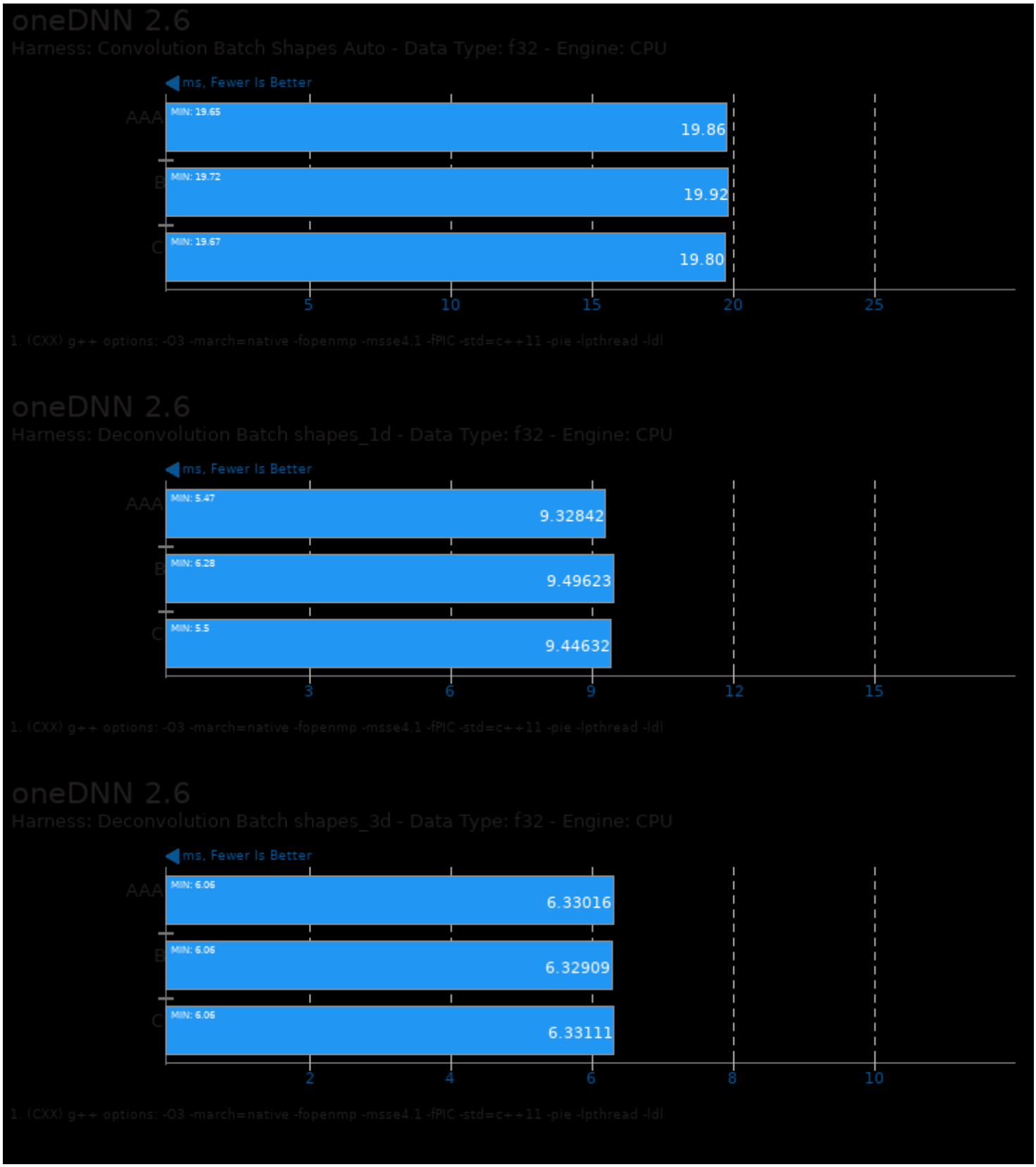
oneDNN 2.6

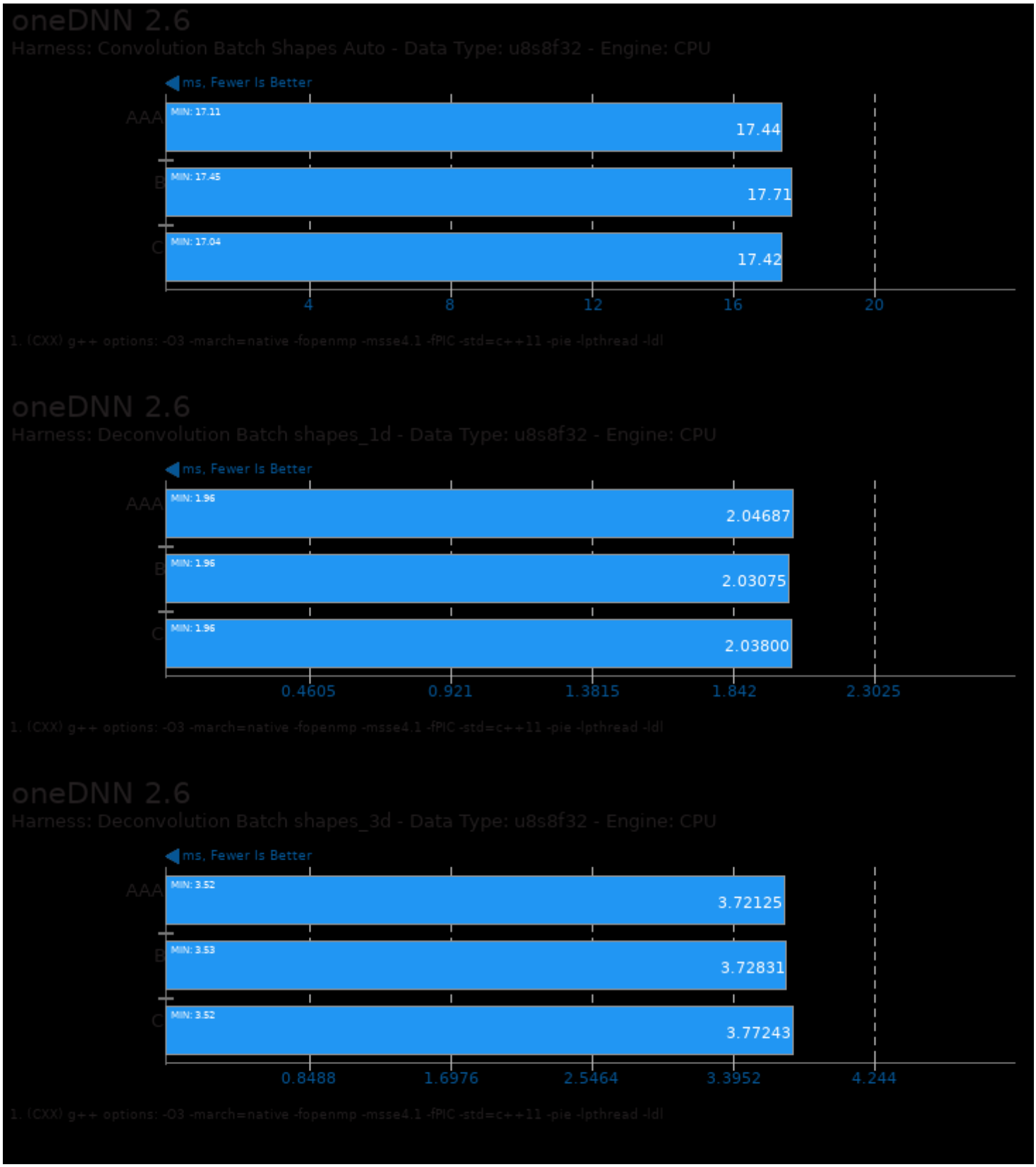
Harness: IP Shapes 1D - Data Type: f32 - Engine: CPU



1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -std=c++11 -pie -lpthread -ldl

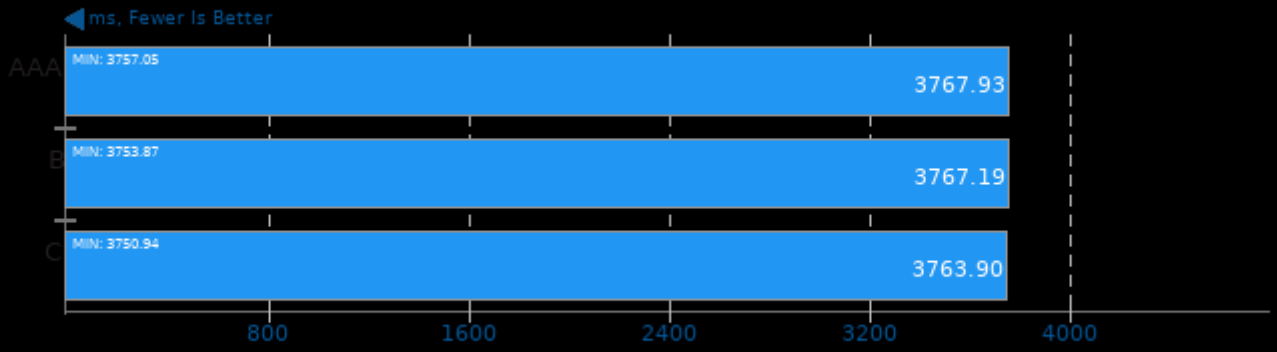

oneDNN 2.6
Harness: IP Shapes 3D - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
AAA
MIN: 11.35
11.51
B
MIN: 11.46
11.65
C
MIN: 11.48
11.63
3
6
9
12
15
1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -std=c++11 -pie -lpthread -ldl
oneDNN 2.6
Harness: IP Shapes 1D - Data Type: u8s8f32 - Engine: CPU
ms, Fewer Is Better
AAA
MIN: 1.36
1.40629
B
MIN: 1.36
1.44768
C
MIN: 1.34
1.37942
0.3257
0.6514
0.9771
1.3028
1.6285
1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -std=c++11 -pie -lpthread -ldl
oneDNN 2.6
Harness: IP Shapes 3D - Data Type: u8s8f32 - Engine: CPU
ms, Fewer Is Better
AAA
MIN: 2.04
2.08948
B
MIN: 2.02
2.07097
C
MIN: 2.02
2.07154
0.4701
0.9402
1.4103
1.8804
2.3505
1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -std=c++11 -pie -lpthread -ldl


oneDNN 2.6
Harness: Convolution Batch Shapes Auto - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
AAA
MIN: 19.65
19.86
B
MIN: 19.72
19.92
C
MIN: 19.67
19.80
5
10
15
20
25
1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -std=c++11 -pie -lpthread -ldl
oneDNN 2.6
Harness: Deconvolution Batch shapes_1d - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
AAA
MIN: 5.47
9.32842
B
MIN: 6.28
9.49623
C
MIN: 5.5
9.44632
3
6
9
12
15
1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -std=c++11 -pie -lpthread -ldl
oneDNN 2.6
Harness: Deconvolution Batch shapes_3d - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
AAA
MIN: 6.06
6.33016
B
MIN: 6.06
6.32909
C
MIN: 6.06
6.33111
2
4
6
8
10
1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -std=c++11 -pie -lpthread -ldl


oneDNN 2.6
Harness: Convolution Batch Shapes Auto - Data Type: u8s8f32 - Engine: CPU
ms, Fewer Is Better
AAA
MIN: 17.11
17.44
B
MIN: 17.45
17.71
C
MIN: 17.04
17.42
4
8
12
16
20
1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -std=c++11 -pie -lpthread -ldl
oneDNN 2.6
Harness: Deconvolution Batch shapes_1d - Data Type: u8s8f32 - Engine: CPU
ms, Fewer Is Better
AAA
MIN: 1.96
2.04687
B
MIN: 1.96
2.03075
C
MIN: 1.96
2.03800
0.4605
0.921
1.3815
1.842
2.3025
1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -std=c++11 -pie -lpthread -ldl
oneDNN 2.6
Harness: Deconvolution Batch shapes_3d - Data Type: u8s8f32 - Engine: CPU
ms, Fewer Is Better
AAA
MIN: 3.52
3.72125
B
MIN: 3.53
3.72831
C
MIN: 3.52
3.77243
0.8488
1.6976
2.5464
3.3952
4.244
1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -std=c++11 -pie -lpthread -ldl

oneDNN 2.6

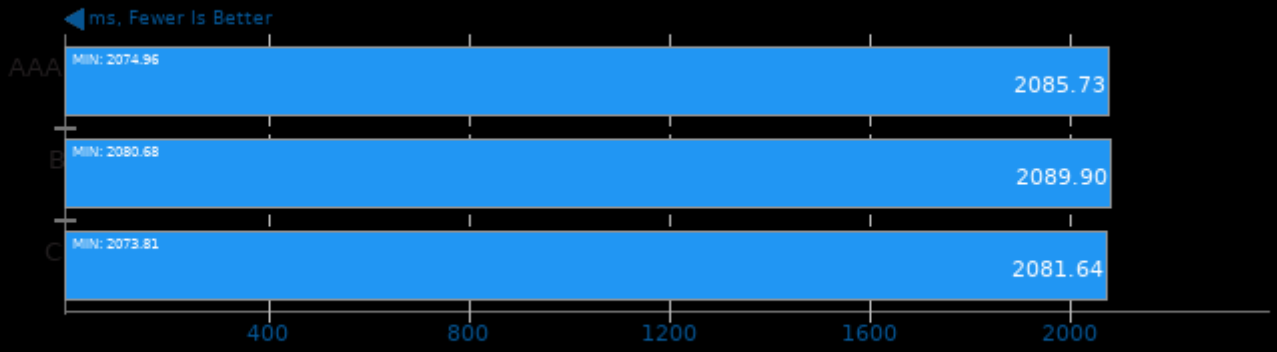
Harness: Recurrent Neural Network Training - Data Type: f32 - Engine: CPU



1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -std=c++11 -pie -lpthread -ldl

oneDNN 2.6

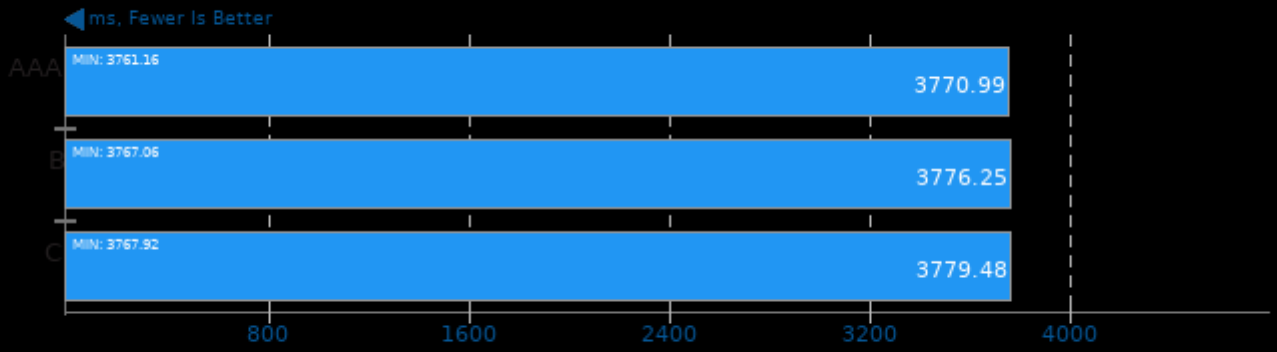
Harness: Recurrent Neural Network Inference - Data Type: f32 - Engine: CPU



1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -std=c++11 -pie -lpthread -ldl

oneDNN 2.6

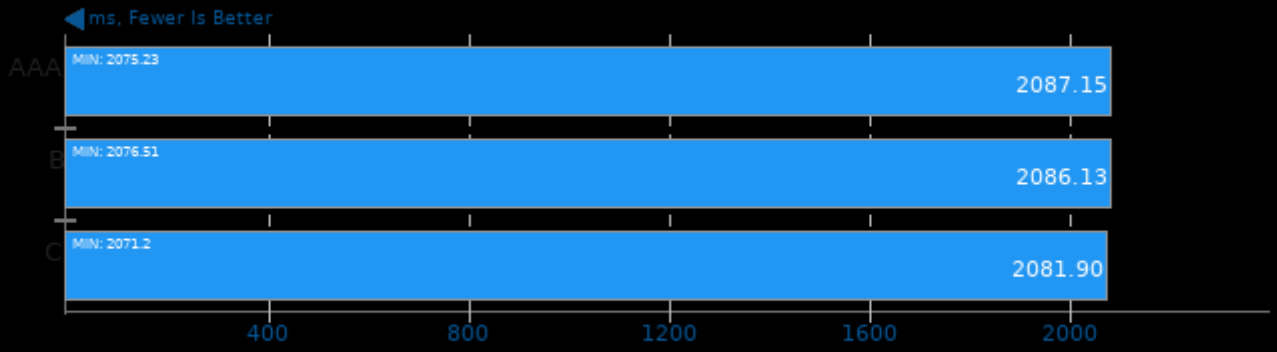
Harness: Recurrent Neural Network Training - Data Type: u8s8f32 - Engine: CPU



1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -std=c++11 -pie -lpthread -ldl

oneDNN 2.6

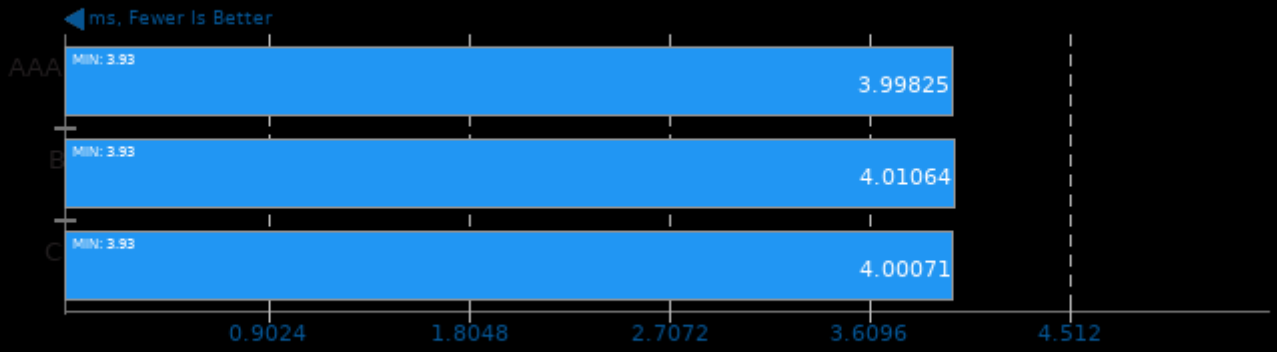
Harness: Recurrent Neural Network Inference - Data Type: u8s8f32 - Engine: CPU



1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -std=c++11 -pie -lpthread -ldl

oneDNN 2.6

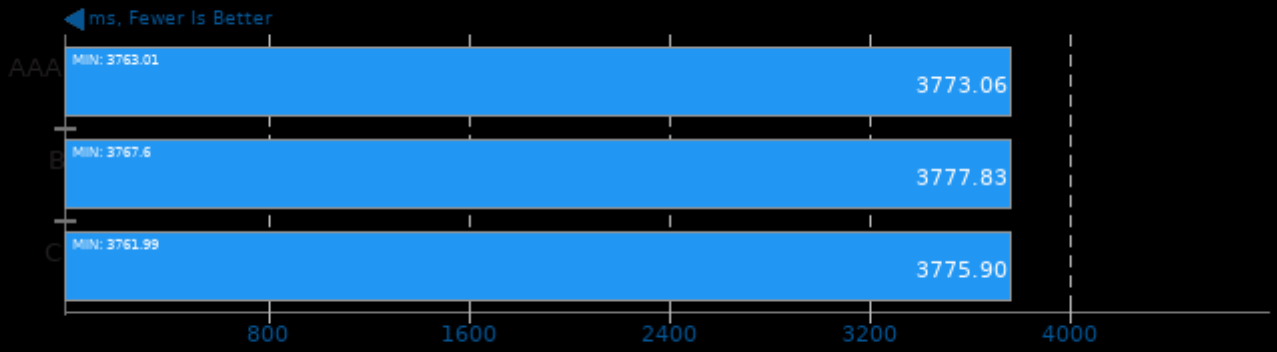
Harness: Matrix Multiply Batch Shapes Transformer - Data Type: f32 - Engine: CPU



1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -std=c++11 -pie -lpthread -ldl

oneDNN 2.6

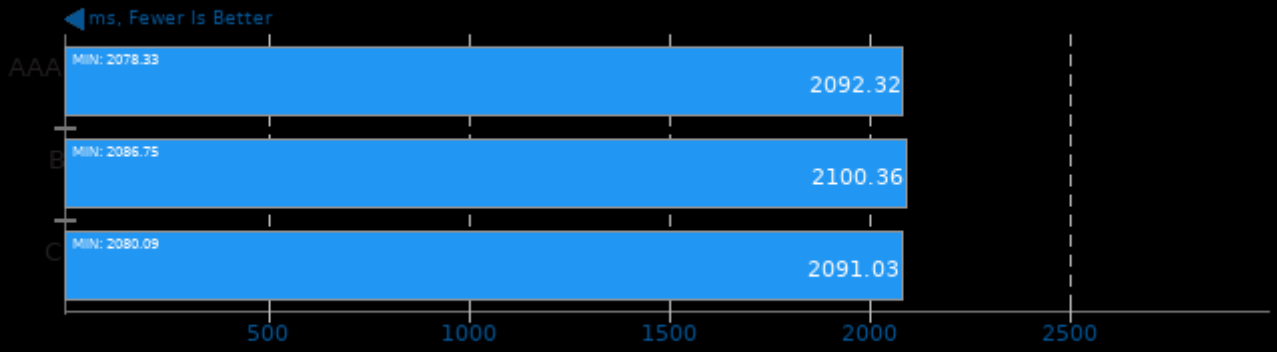
Harness: Recurrent Neural Network Training - Data Type: bf16bf16bf16 - Engine: CPU



1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -std=c++11 -pie -lpthread -ldl

oneDNN 2.6

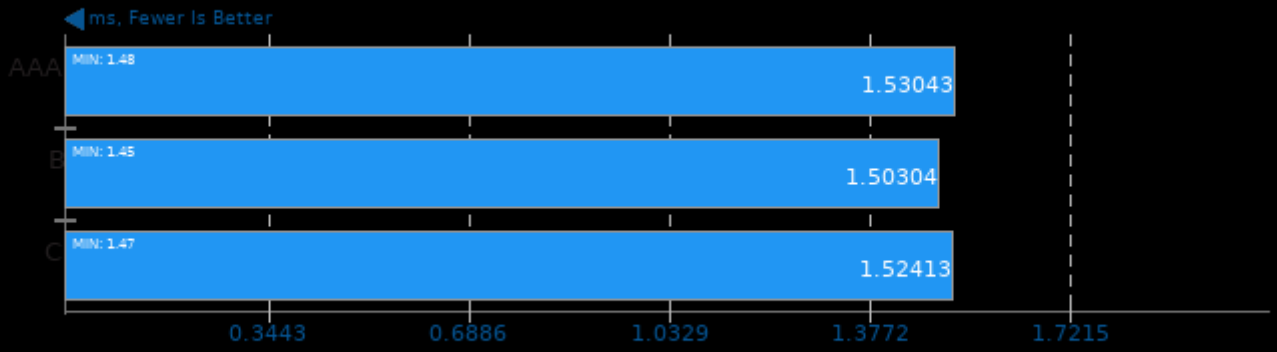
Harness: Recurrent Neural Network Inference - Data Type: bf16bf16bf16 - Engine: CPU



1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -std=c++11 -pie -lpthread -ldl

oneDNN 2.6

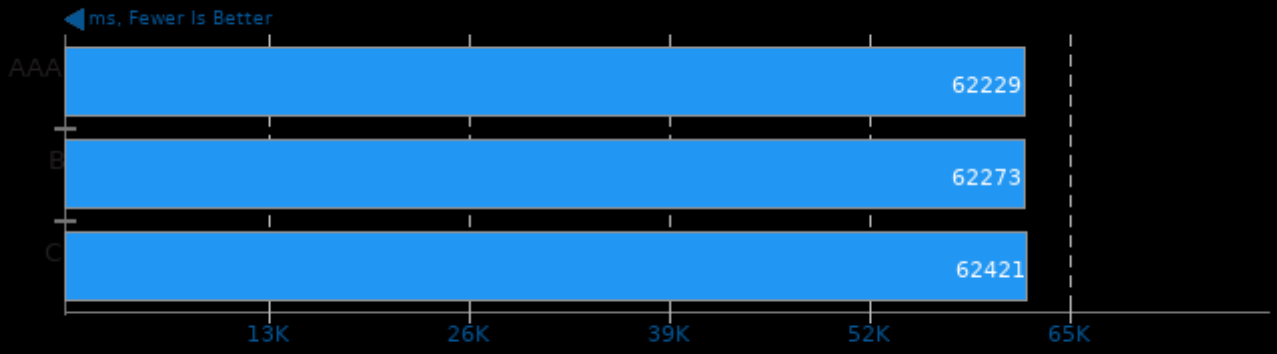
Harness: Matrix Multiply Batch Shapes Transformer - Data Type: u8s8f32 - Engine: CPU



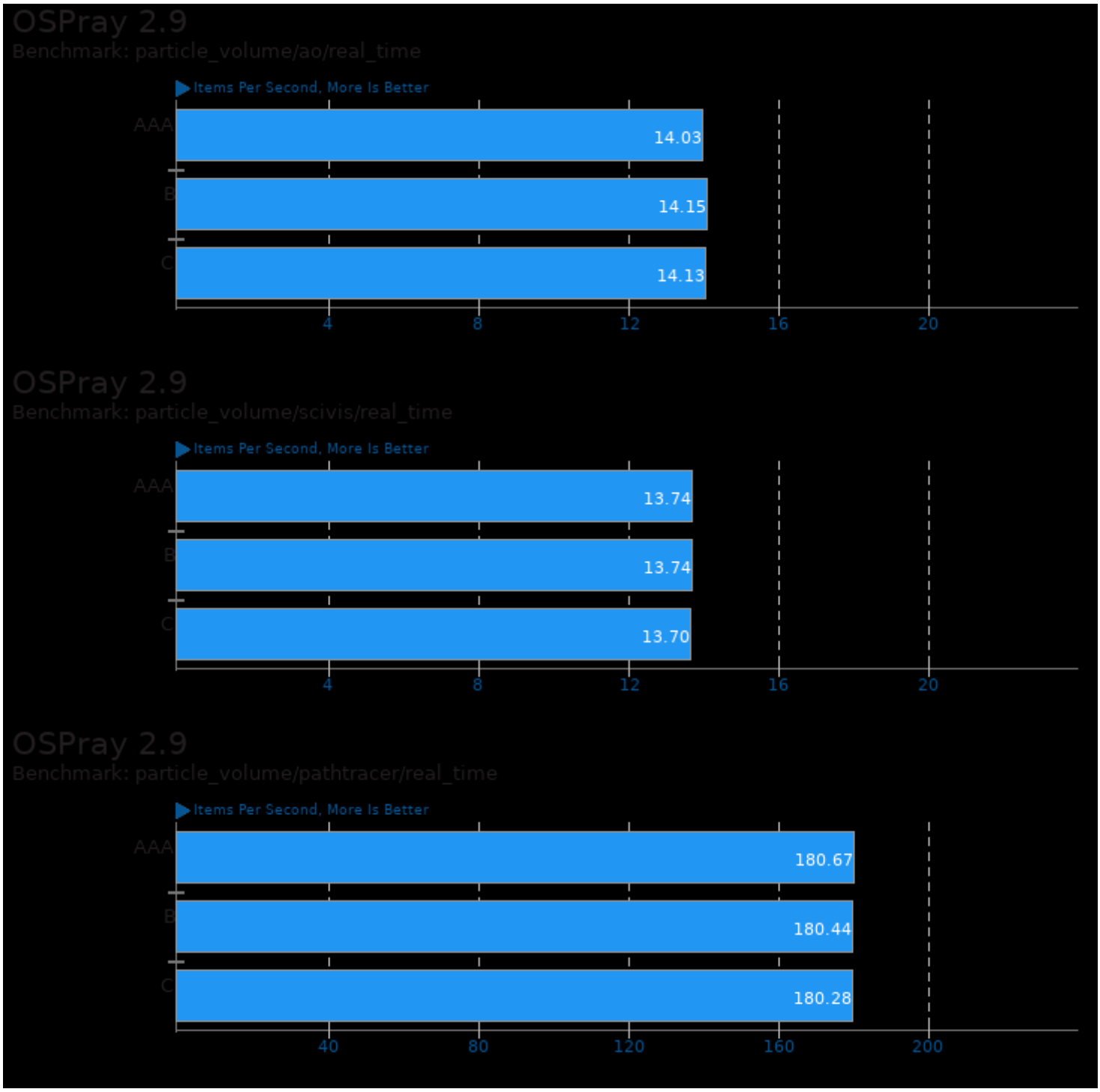
1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -std=c++11 -pie -lpthread -ldl

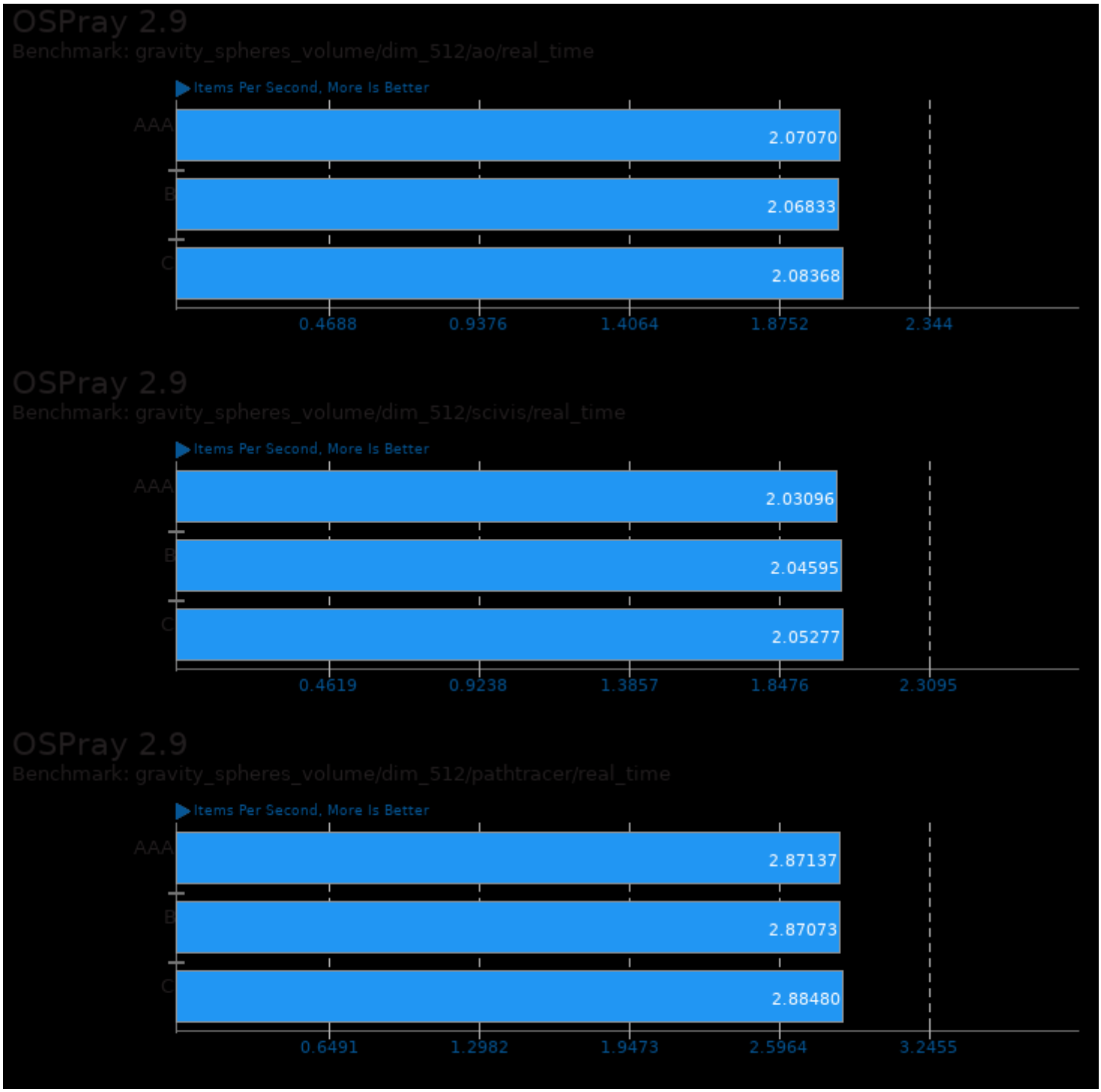
OpenJPEG 2.4

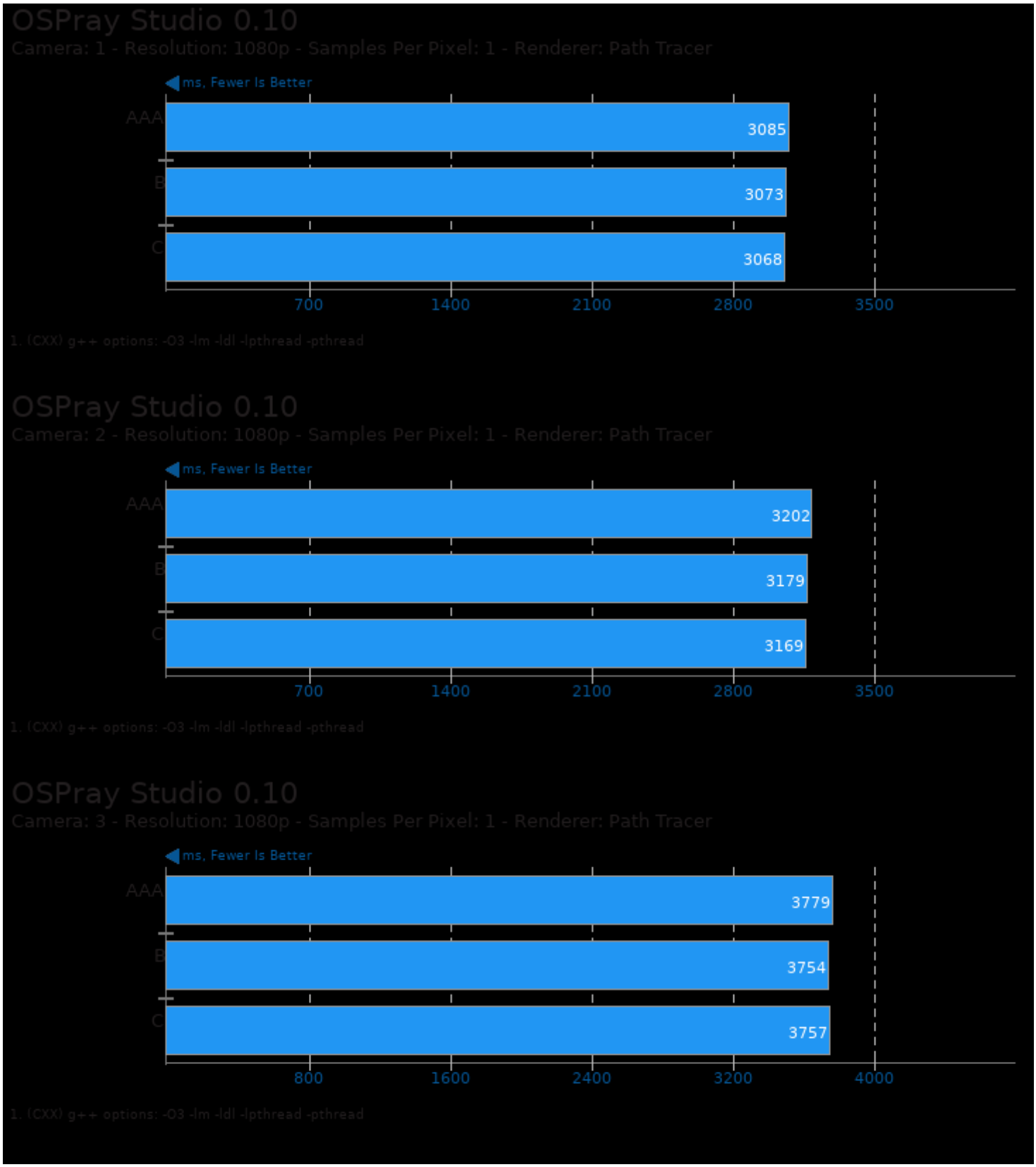
Encode: NASA Curiosity Panorama M34

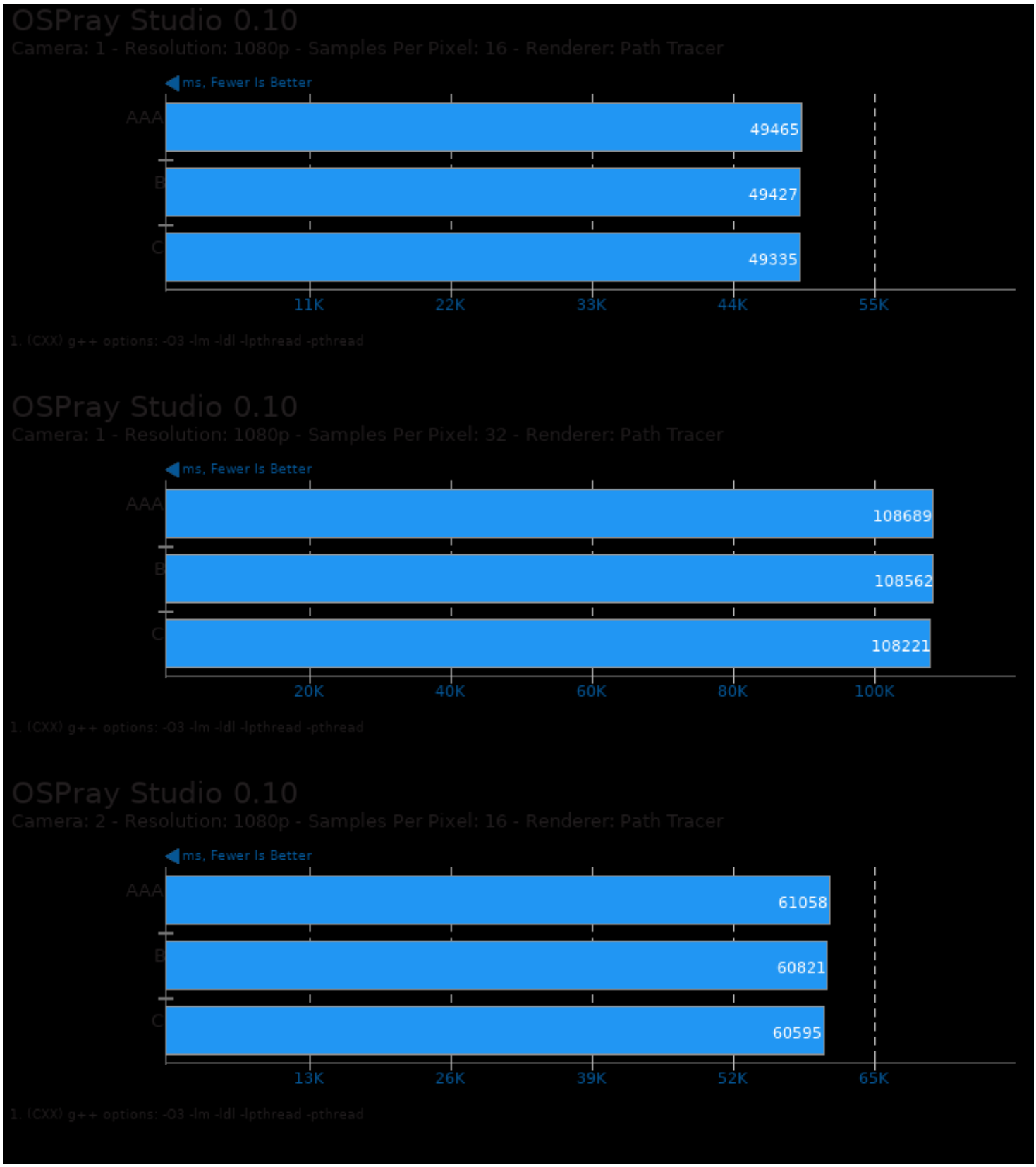


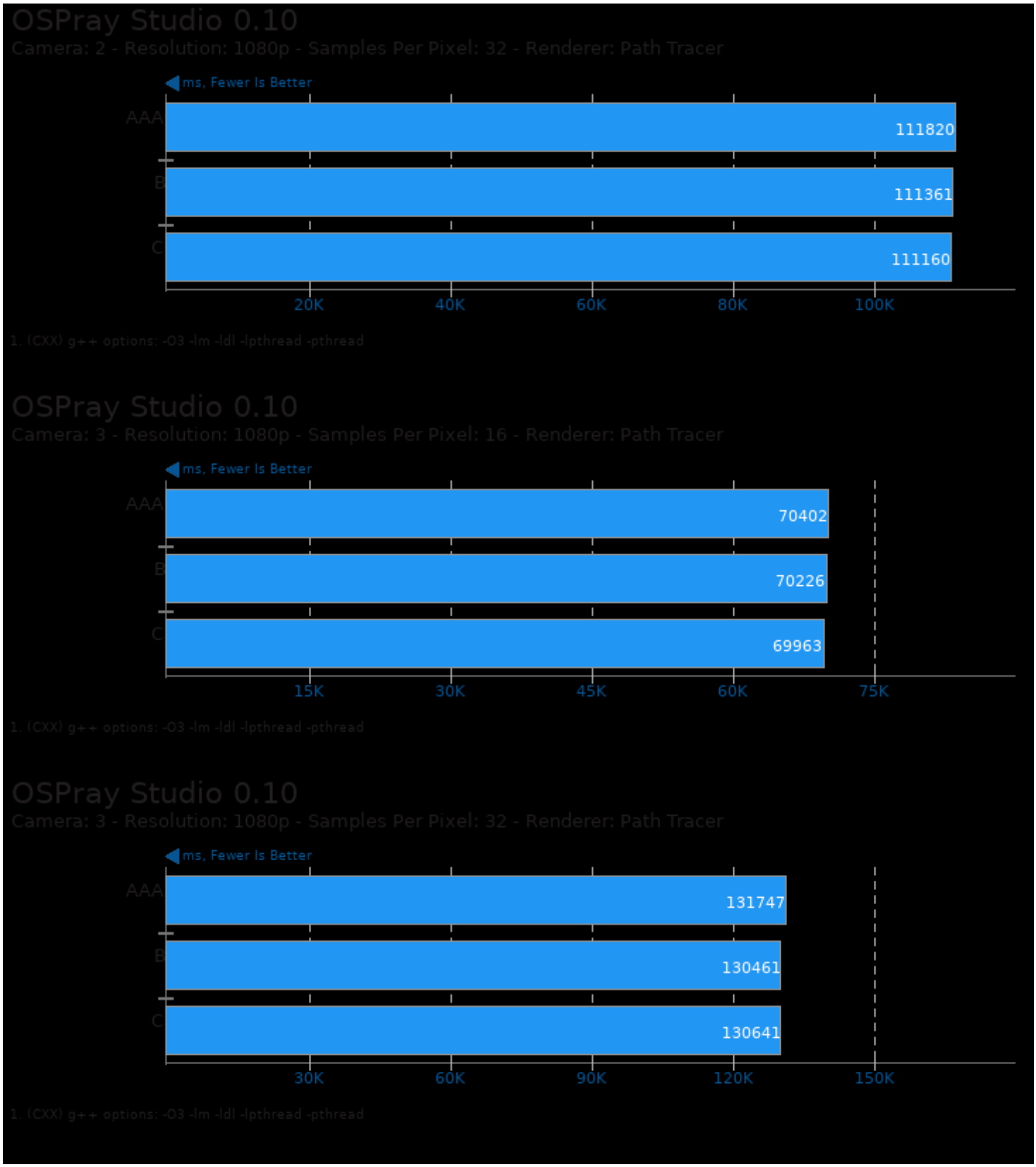
1. (CXX) g++ options: -rdynamic

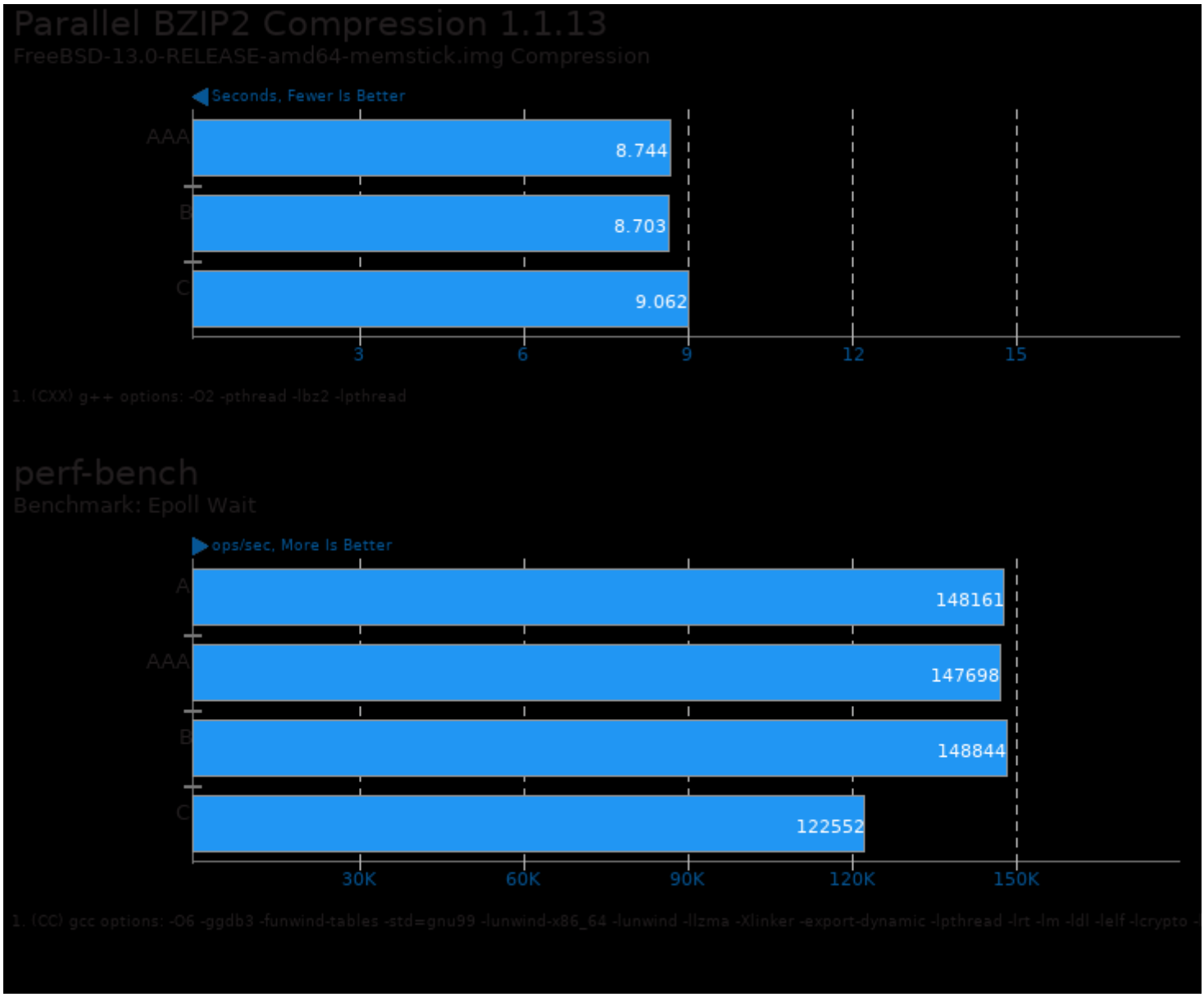

OSPray 2.9
Benchmark: particle_volume/ao/real_time
Items Per Second, More Is Better
AAA
B
C
14.03
14.15
14.13
4
8
12
16
20
OSPray 2.9
Benchmark: particle_volume/scivis/real_time
Items Per Second, More Is Better
AAA
B
C
13.74
13.74
13.70
4
8
12
16
20
OSPray 2.9
Benchmark: particle_volume/pathtracer/real_time
Items Per Second, More Is Better
AAA
B
C
180.67
180.44
180.28
40
80
120
160
200

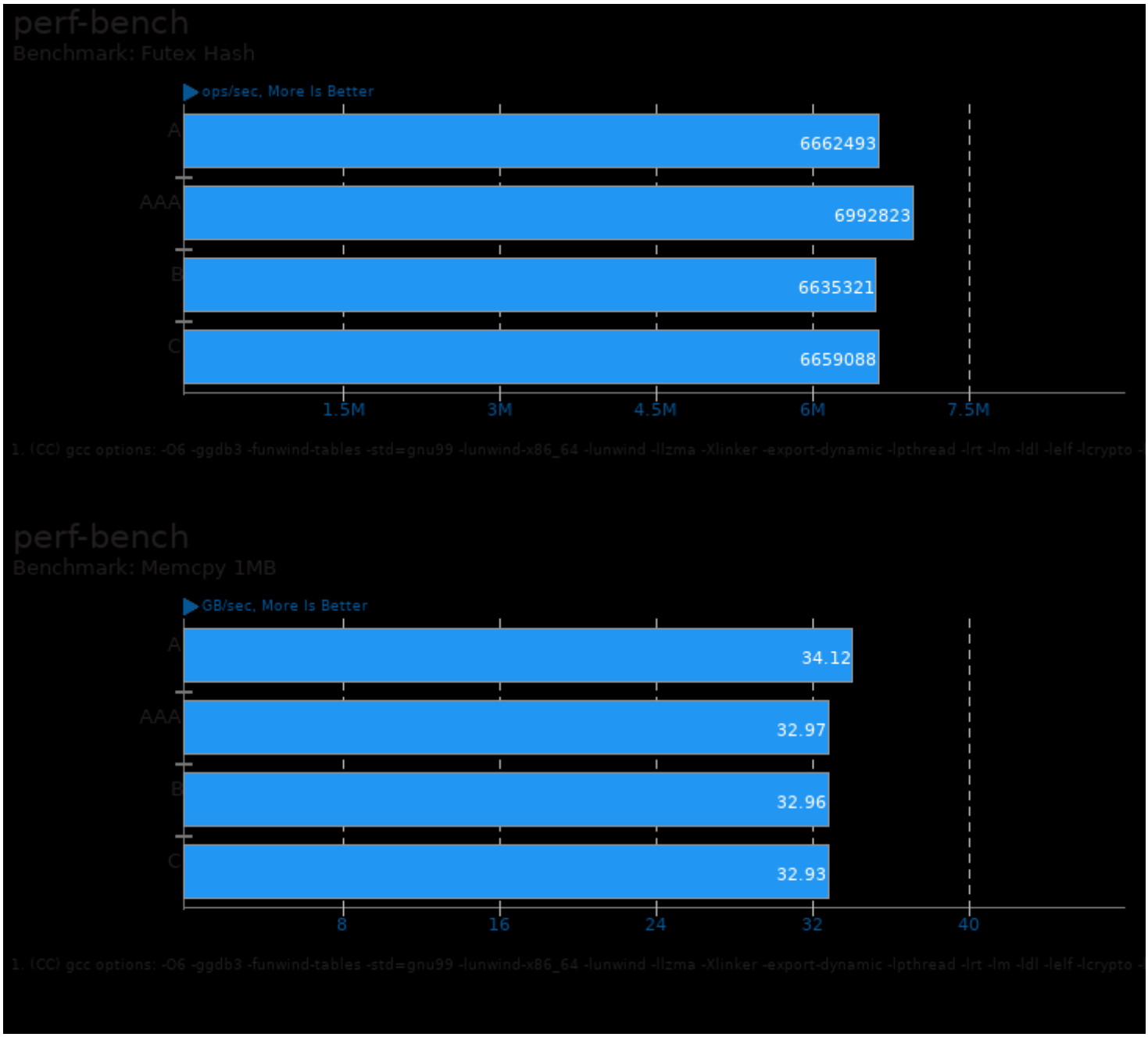

OSPray 2.9
Benchmark: gravity_spheres_volume/dim_512/ao/real_time
Items Per Second, More Is Better
AAA
2.07070
B
2.06833
C
2.08368
0.4688
0.9376
1.4064
1.8752
2.344
OSPray 2.9
Benchmark: gravity_spheres_volume/dim_512/scivis/real_time
Items Per Second, More Is Better
AAA
2.03096
B
2.04595
C
2.05277
0.4619
0.9238
1.3857
1.8476
2.3095
OSPray 2.9
Benchmark: gravity_spheres_volume/dim_512/pathtracer/real_time
Items Per Second, More Is Better
AAA
2.87137
B
2.87073
C
2.88480
0.6491
1.2982
1.9473
2.5964
3.2455

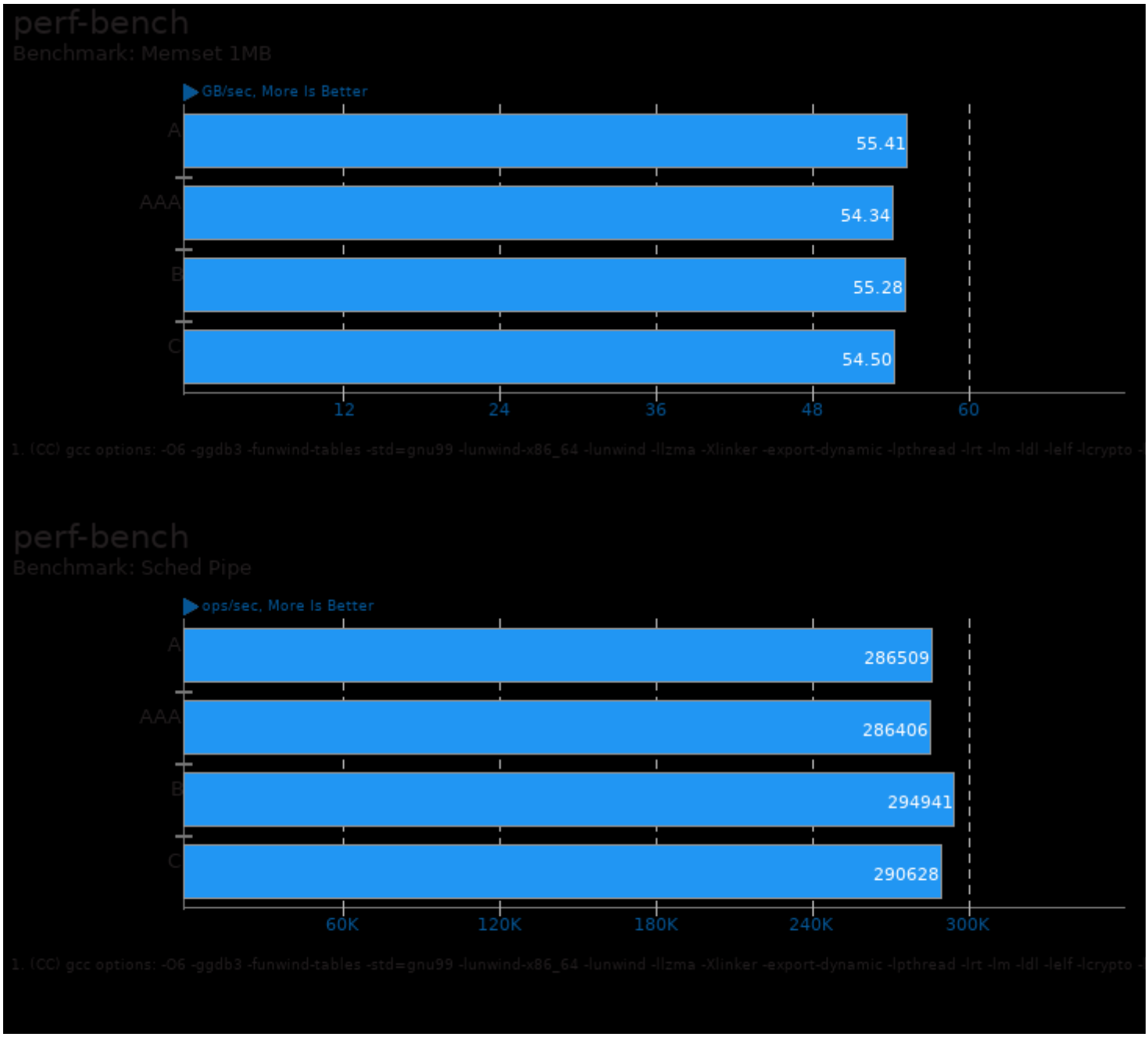

OSPray Studio 0.10
Camera: 1 - Resolution: 1080p - Samples Per Pixel: 1 - Renderer: Path Tracer
ms, Fewer Is Better
AAA
B
C
3085
3073
3068
700
1400
2100
2800
3500
1. (CXX) g++ options: -O3 -lm -ldl -lpthread -pthread
OSPray Studio 0.10
Camera: 2 - Resolution: 1080p - Samples Per Pixel: 1 - Renderer: Path Tracer
ms, Fewer Is Better
AAA
B
C
3202
3179
3169
700
1400
2100
2800
3500
1. (CXX) g++ options: -O3 -lm -ldl -lpthread -pthread
OSPray Studio 0.10
Camera: 3 - Resolution: 1080p - Samples Per Pixel: 1 - Renderer: Path Tracer
ms, Fewer Is Better
AAA
B
C
3779
3754
3757
800
1600
2400
3200
4000
1. (CXX) g++ options: -O3 -lm -ldl -lpthread -pthread

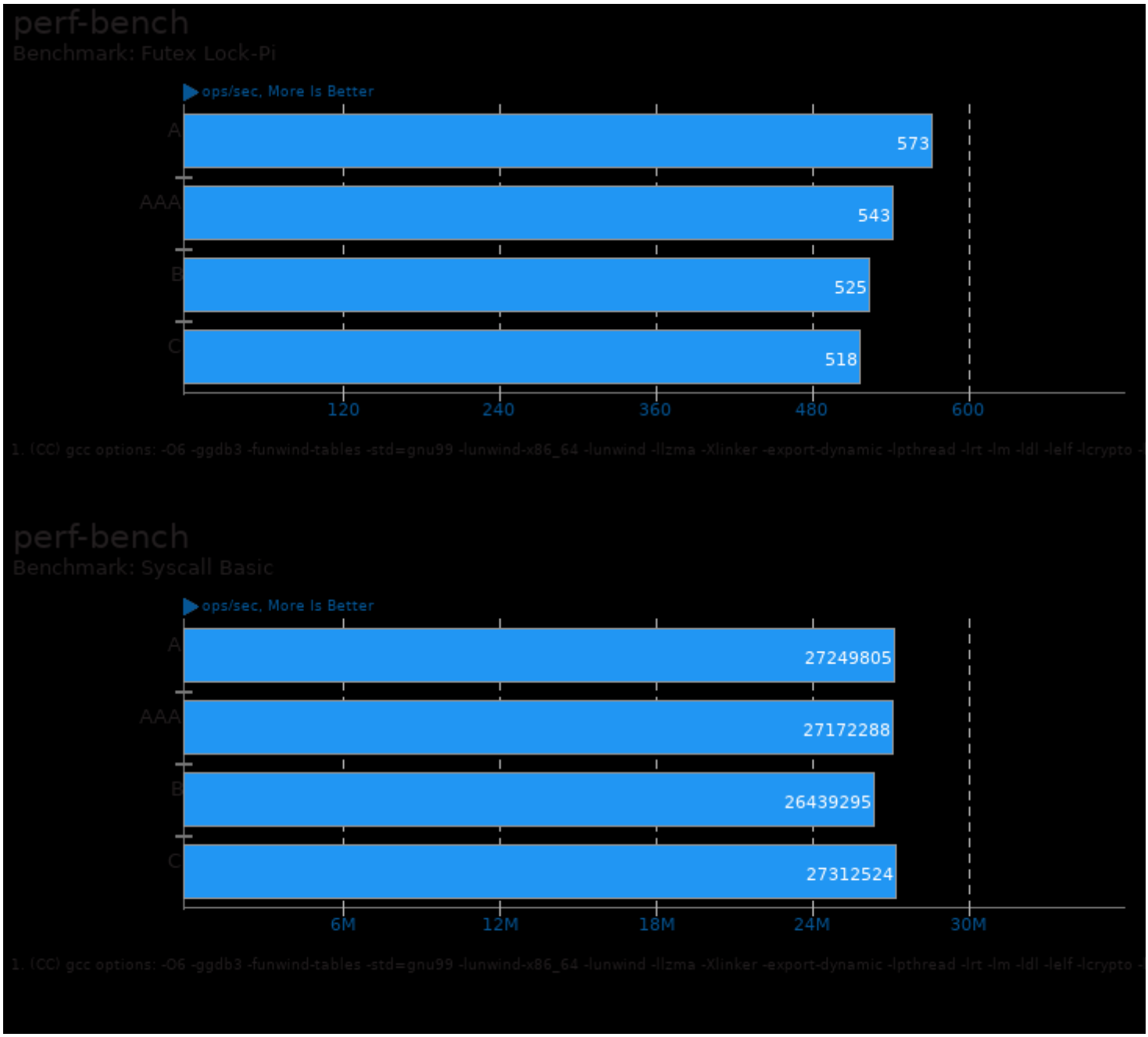

OSPray Studio 0.10
Camera: 1 - Resolution: 1080p - Samples Per Pixel: 16 - Renderer: Path Tracer
ms, Fewer Is Better
AAA
B
C
49465
49427
49335
11K
22K
33K
44K
55K
1. (CXX) g++ options: -O3 -lm -ldl -lpthread -pthread
OSPray Studio 0.10
Camera: 1 - Resolution: 1080p - Samples Per Pixel: 32 - Renderer: Path Tracer
ms, Fewer Is Better
AAA
B
C
108689
108562
108221
20K
40K
60K
80K
100K
1. (CXX) g++ options: -O3 -lm -ldl -lpthread -pthread
OSPray Studio 0.10
Camera: 2 - Resolution: 1080p - Samples Per Pixel: 16 - Renderer: Path Tracer
ms, Fewer Is Better
AAA
B
C
61058
60821
60595
13K
26K
39K
52K
65K
1. (CXX) g++ options: -O3 -lm -ldl -lpthread -pthread


OSPray Studio 0.10
Camera: 2 - Resolution: 1080p - Samples Per Pixel: 32 - Renderer: Path Tracer
ms, Fewer Is Better
AAA
B
C
111820
111361
111160
20K
40K
60K
80K
100K
1. (CXX) g++ options: -O3 -lm -ldl -lpthread -pthread
OSPray Studio 0.10
Camera: 3 - Resolution: 1080p - Samples Per Pixel: 16 - Renderer: Path Tracer
ms, Fewer Is Better
AAA
B
C
70402
70226
69963
15K
30K
45K
60K
75K
1. (CXX) g++ options: -O3 -lm -ldl -lpthread -pthread
OSPray Studio 0.10
Camera: 3 - Resolution: 1080p - Samples Per Pixel: 32 - Renderer: Path Tracer
ms, Fewer Is Better
AAA
B
C
131747
130461
130641
30K
60K
90K
120K
150K
1. (CXX) g++ options: -O3 -lm -ldl -lpthread -pthread


Parallel BZIP2 Compression 1.1.13
FreeBSD-13.0-RELEASE-amd64-memstick.img Compression
Seconds, Fewer Is Better
AAA
8.744
B
8.703
C
9.062
3
6
9
12
15
1. (CXX) g++ options: -O2 -pthread -lbz2 -lpthread
perf-bench
Benchmark: Epoll Wait
ops/sec, More Is Better
A
148161
AAA
147698
B
148844
C
122552
30K
60K
90K
120K
150K
1. (CC) gcc options: -O6 -ggdb3 -funwind-tables -std=gnu99 -lunwind-x86_64 -lunwind -llzma -Xlinker -export-dynamic -lpthread -lrt -lm -ldl -lelf -lcrypto

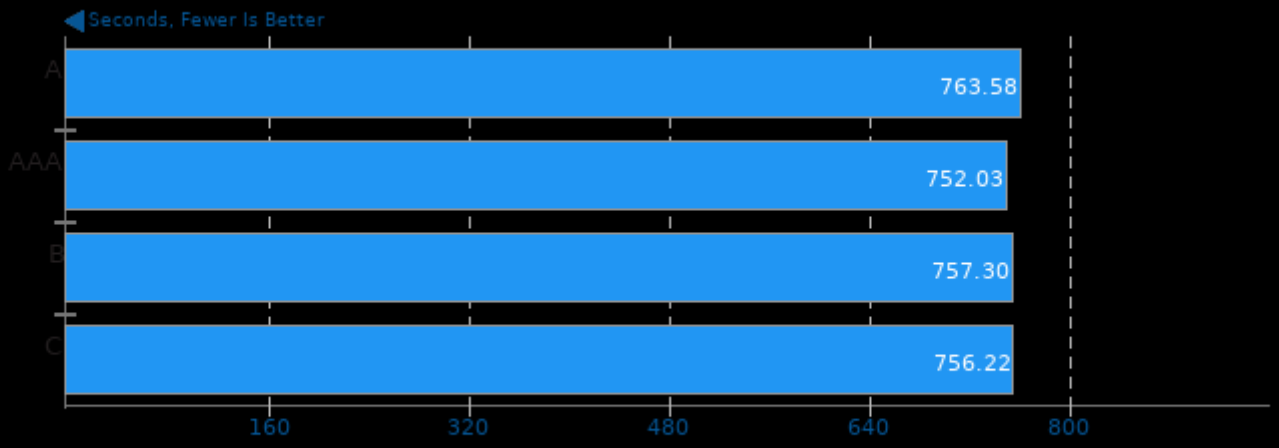

perf-bench
Benchmark: Futex Hash
ops/sec, More Is Better
A
AAA
B
C
6662493
6992823
6635321
6659088
1.5M
3M
4.5M
6M
7.5M
1. (CC) gcc options: -O6 -ggdb3 -funwind-tables -std=gnu99 -lunwind-x86_64 -lunwind -llzma -Xlinker -export-dynamic -lpthread -lrt -lm -ldl -lelf -lcrypto
perf-bench
Benchmark: Memcpy 1MB
GB/sec, More Is Better
A
AAA
B
C
34.12
32.97
32.96
32.93
8
16
24
32
40
1. (CC) gcc options: -O6 -ggdb3 -funwind-tables -std=gnu99 -lunwind-x86_64 -lunwind -llzma -Xlinker -export-dynamic -lpthread -lrt -lm -ldl -lelf -lcrypto


perf-bench
Benchmark: Memset 1MB
GB/sec, More Is Better
A
AAA
B
C
55.41
54.34
55.28
54.50
12
24
36
48
60
1. (CC) gcc options: -O6 -ggdb3 -funwind-tables -std=gnu99 -lunwind-x86_64 -lunwind -llzma -Xlinker -export-dynamic -lpthread -lrt -lm -ldl -lelf -lcrypto
perf-bench
Benchmark: Sched Pipe
ops/sec, More Is Better
A
AAA
B
C
286509
286406
294941
290628
60K
120K
180K
240K
300K
1. (CC) gcc options: -O6 -ggdb3 -funwind-tables -std=gnu99 -lunwind-x86_64 -lunwind -llzma -Xlinker -export-dynamic -lpthread -lrt -lm -ldl -lelf -lcrypto


perf-bench
Benchmark: Futex Lock-Pi
ops/sec, More Is Better
A
AAA
B
C
573
543
525
518
120
240
360
480
600
1. (CC) gcc options: -O6 -ggdb3 -funwind-tables -std=gnu99 -lunwind-x86_64 -lunwind -llzma -Xlinker -export-dynamic -lpthread -lrt -lm -ldl -lelf -lcrypto
perf-bench
Benchmark: Syscall Basic
ops/sec, More Is Better
A
AAA
B
C
27249805
27172288
26439295
27312524
6M
12M
18M
24M
30M
1. (CC) gcc options: -O6 -ggdb3 -funwind-tables -std=gnu99 -lunwind-x86_64 -lunwind -llzma -Xlinker -export-dynamic -lpthread -lrt -lm -ldl -lelf -lcrypto

Quantum ESPRESSO 7.0

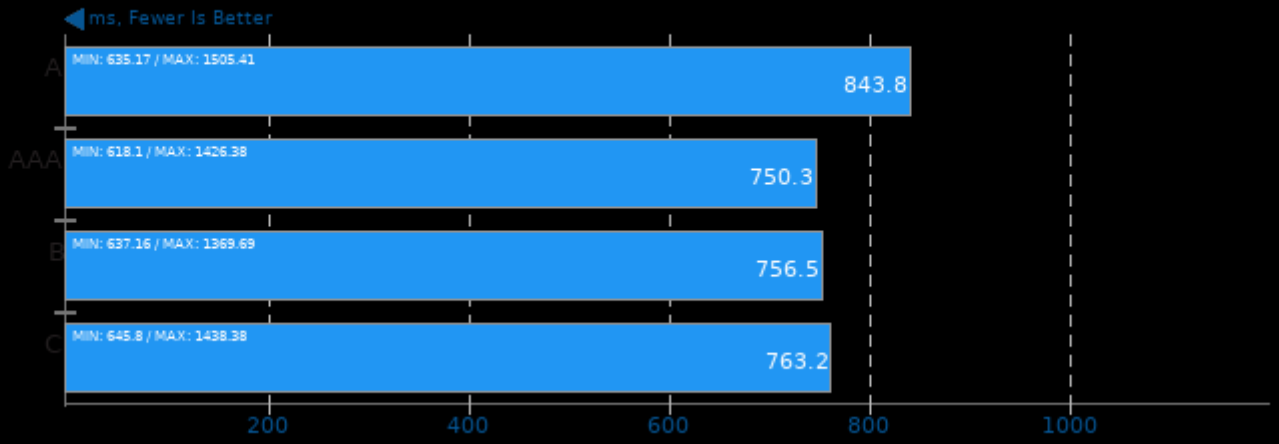
Input: AUSURF112



1. (F9X) gfortran options: -pthread -fopenmp -ldevXlib -lopenblas -lFoX_dom -lFoX_sax -lFoX_wxml -lFoX_common -lFoX_utils -lFoX_fsys -lfftw3_omp -lfftw

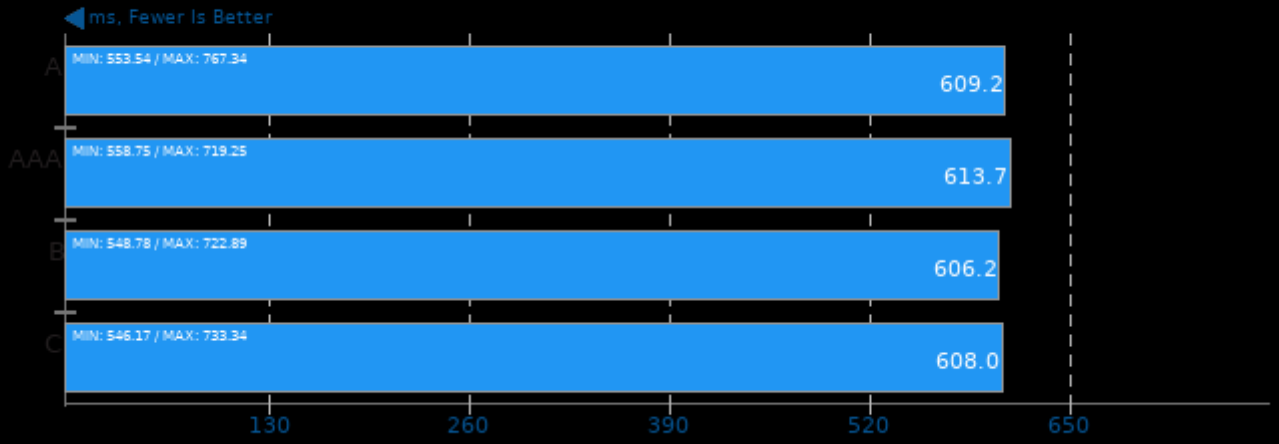
Renaissance 0.14

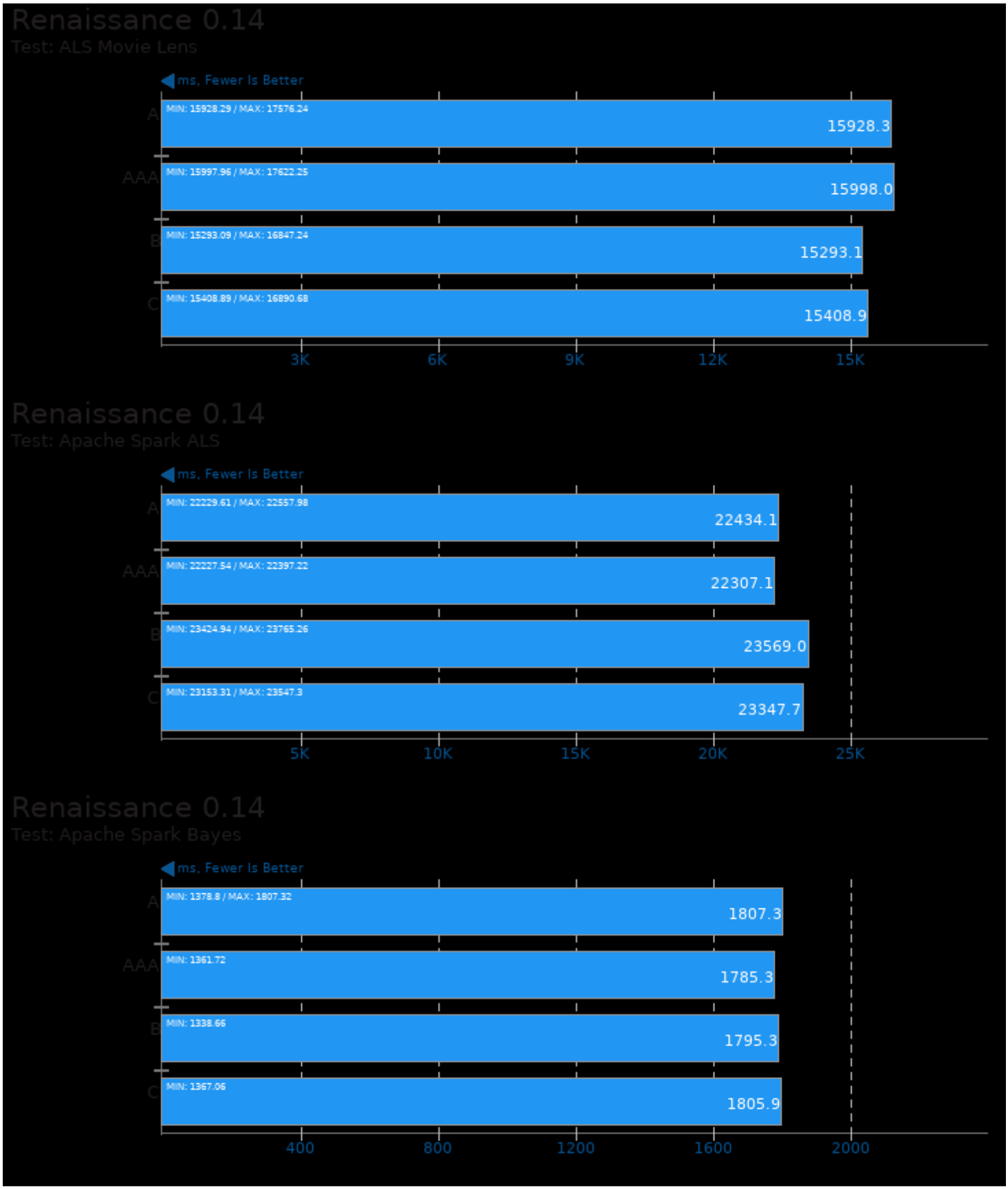
Test: Scala Dotty

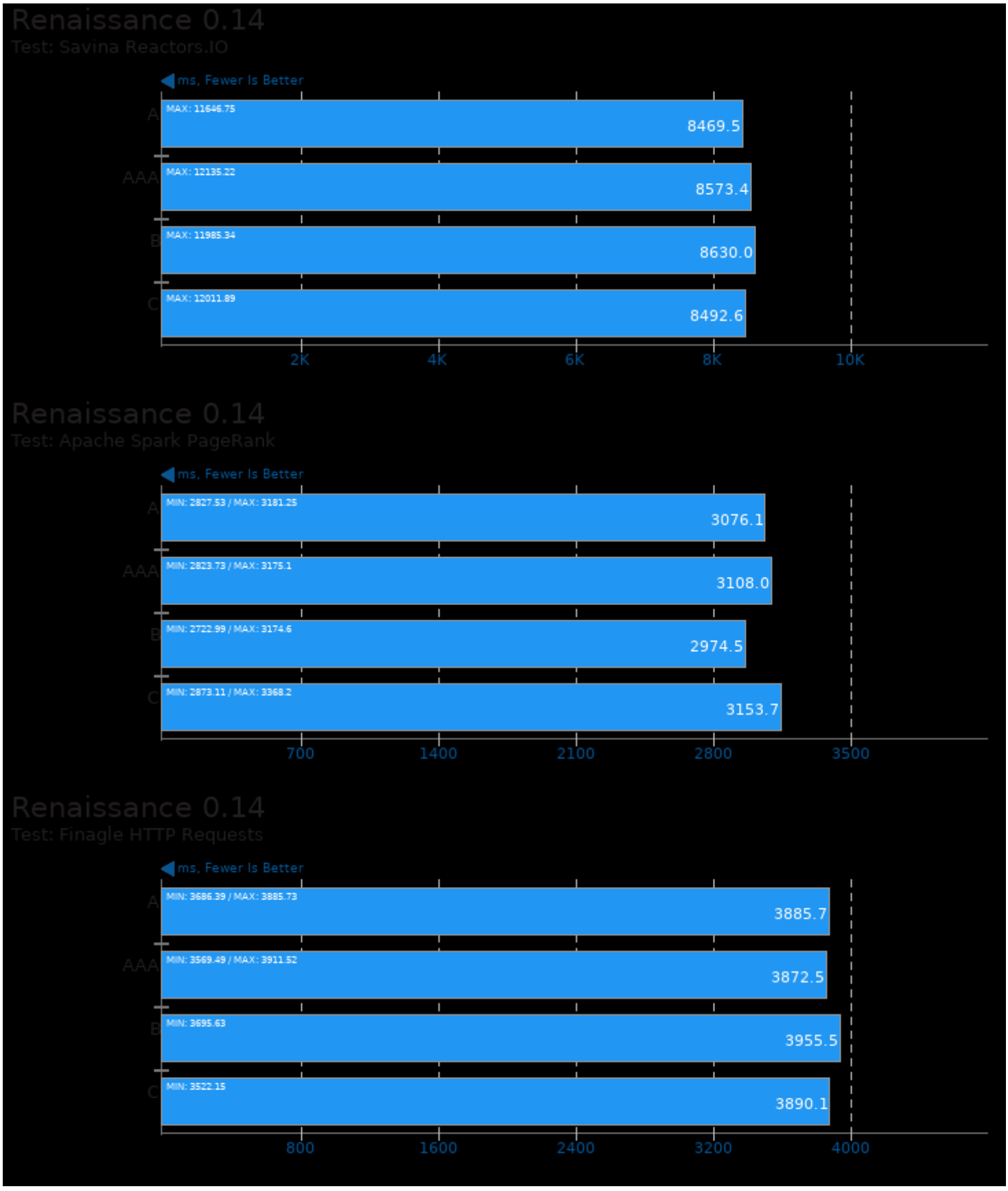


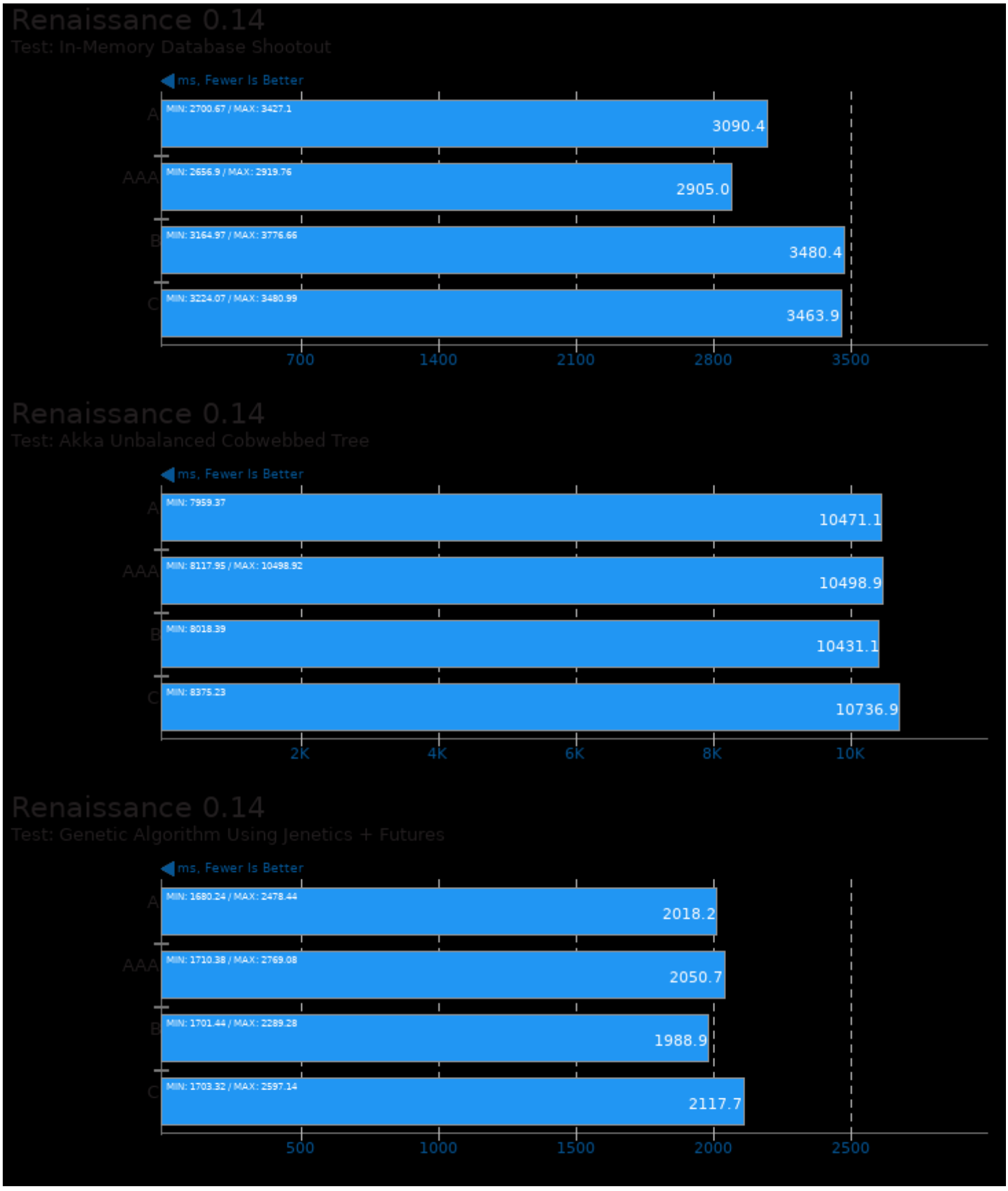
Renaissance 0.14

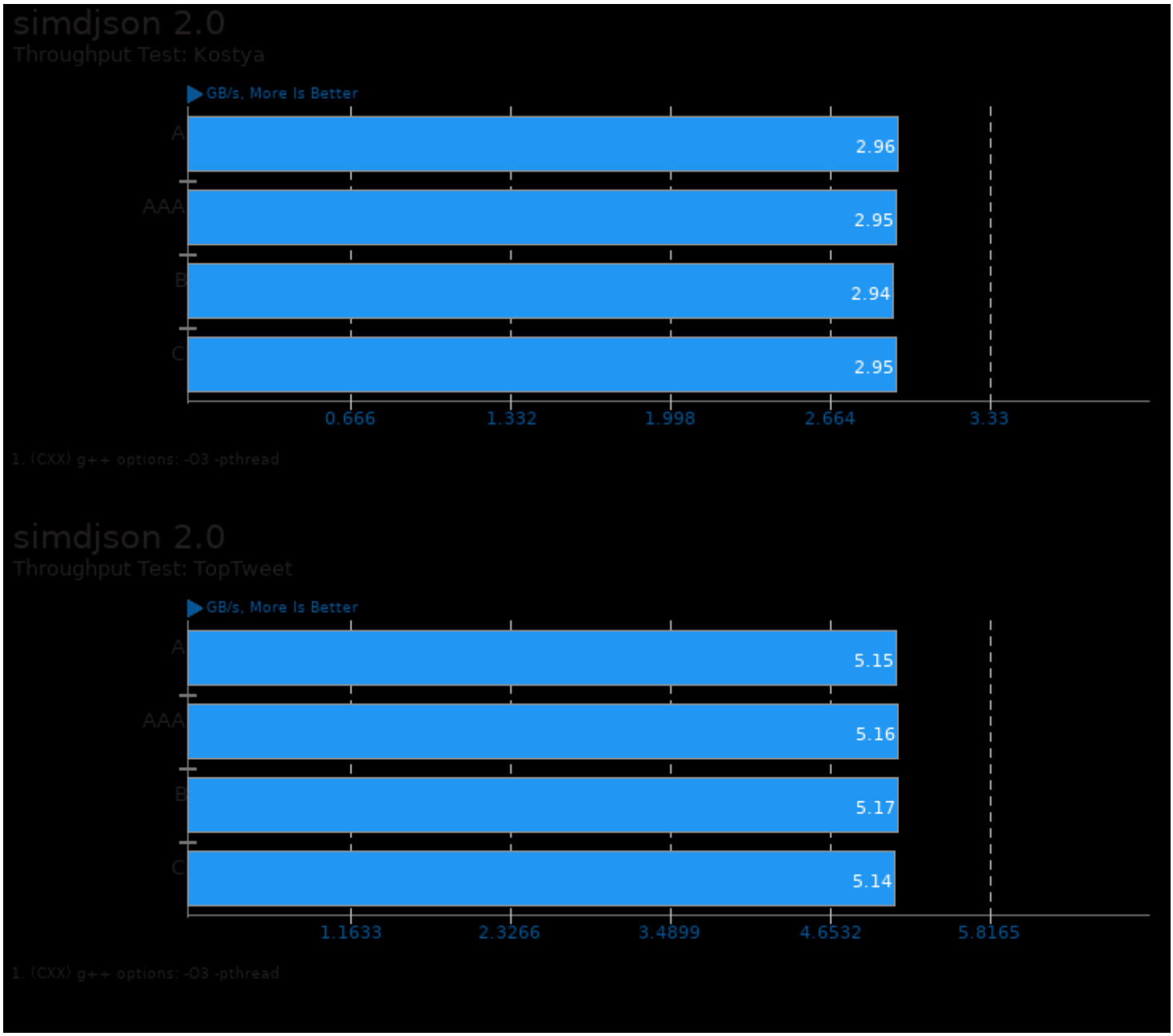
Test: Random Forest

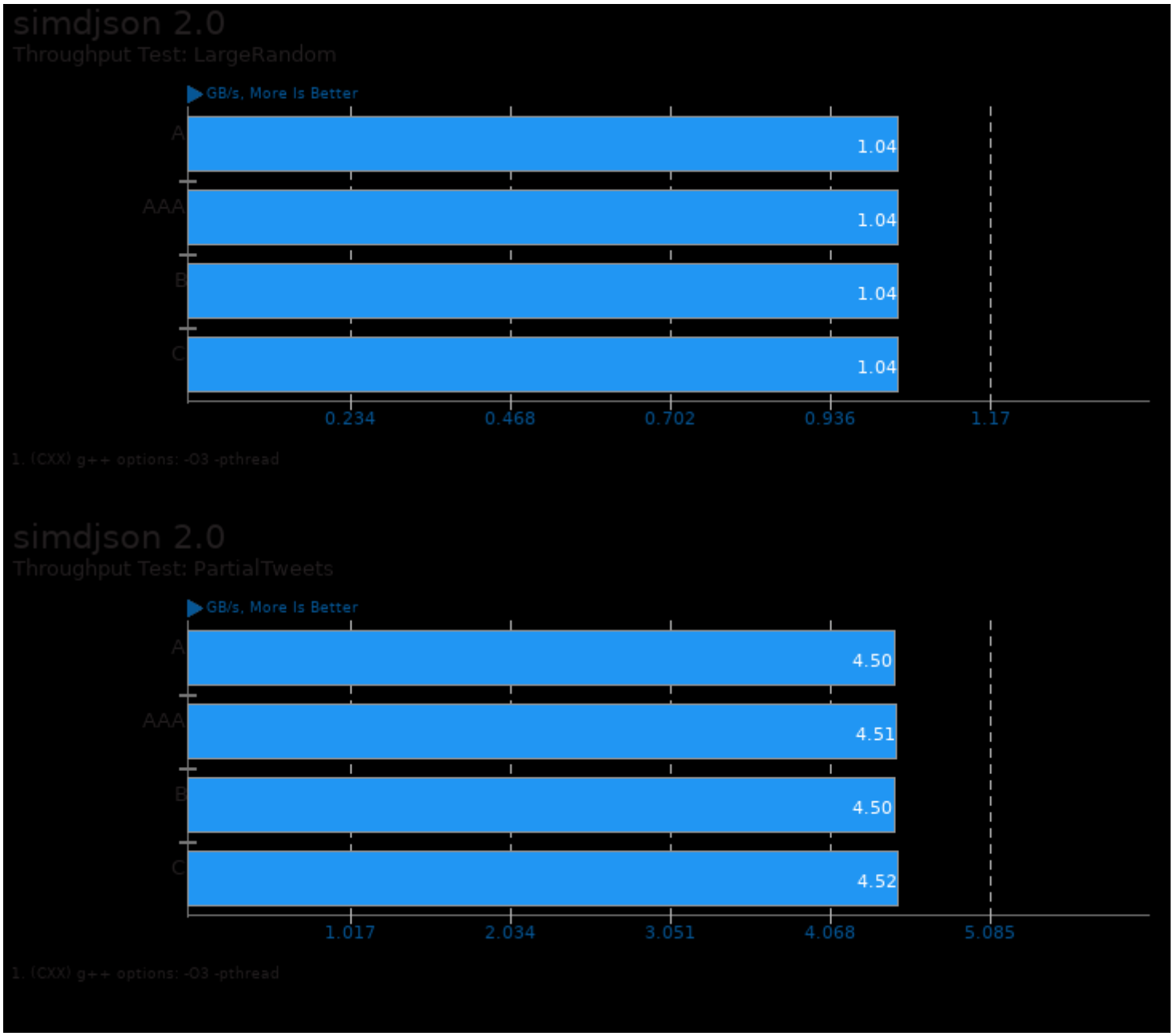



Renaissance 0.14
Test: ALS Movie Lens
ms, Fewer Is Better
A
MIN: 15928.29 / MAX: 17576.24
15928.3
AAA
MIN: 15997.96 / MAX: 17622.25
15998.0
B
MIN: 15293.09 / MAX: 16847.24
15293.1
C
MIN: 15408.89 / MAX: 16890.68
15408.9
3K
6K
9K
12K
15K
Renaissance 0.14
Test: Apache Spark ALS
ms, Fewer Is Better
A
MIN: 22229.61 / MAX: 22557.98
22434.1
AAA
MIN: 22227.54 / MAX: 22397.22
22307.1
B
MIN: 23424.94 / MAX: 23765.26
23569.0
C
MIN: 23153.31 / MAX: 23547.3
23347.7
5K
10K
15K
20K
25K
Renaissance 0.14
Test: Apache Spark Bayes
ms, Fewer Is Better
A
MIN: 1378.8 / MAX: 1807.32
1807.3
AAA
MIN: 1361.72
1785.3
B
MIN: 1338.66
1795.3
C
MIN: 1367.06
1805.9
400
800
1200
1600
2000


Renaissance 0.14
Test: Savina Reactors.IO
ms, Fewer Is Better
A
MAX: 11646.75
8469.5
AAA
MAX: 12135.22
8573.4
B
MAX: 11985.34
8630.0
C
MAX: 12011.89
8492.6
2K
4K
6K
8K
10K
Renaissance 0.14
Test: Apache Spark PageRank
ms, Fewer Is Better
A
MIN: 2827.53 / MAX: 3181.25
3076.1
AAA
MIN: 2823.73 / MAX: 3175.1
3108.0
B
MIN: 2722.99 / MAX: 3174.6
2974.5
C
MIN: 2873.11 / MAX: 3368.2
3153.7
700
1400
2100
2800
3500
Renaissance 0.14
Test: Finagle HTTP Requests
ms, Fewer Is Better
A
MIN: 3686.39 / MAX: 3885.73
3885.7
AAA
MIN: 3569.49 / MAX: 3911.52
3872.5
B
MIN: 3695.63
3955.5
C
MIN: 3522.15
3890.1
800
1600
2400
3200
4000

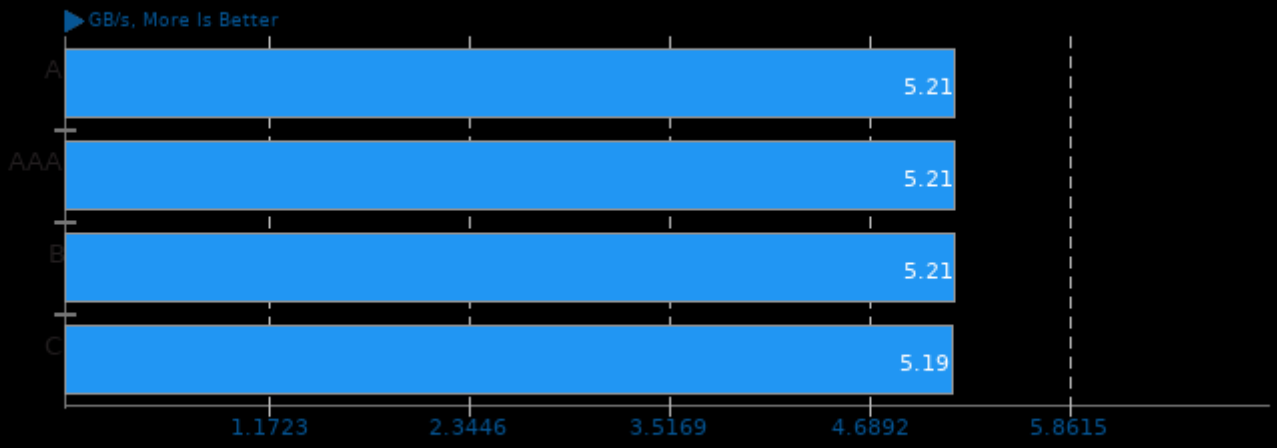

Renaissance 0.14
Test: In-Memory Database Shootout
ms, Fewer Is Better
A
MIN: 2700.67 / MAX: 3427.1
3090.4
AAA
MIN: 2656.9 / MAX: 2919.76
2905.0
B
MIN: 3164.97 / MAX: 3776.66
3480.4
C
MIN: 3224.07 / MAX: 3480.99
3463.9
700
1400
2100
2800
3500
Renaissance 0.14
Test: Akka Unbalanced Cobwebbed Tree
ms, Fewer Is Better
A
MIN: 7959.37
10471.1
AAA
MIN: 8117.95 / MAX: 10498.92
10498.9
B
MIN: 8018.39
10431.1
C
MIN: 8375.23
10736.9
2K
4K
6K
8K
10K
Renaissance 0.14
Test: Genetic Algorithm Using Jenetics + Futures
ms, Fewer Is Better
A
MIN: 1680.24 / MAX: 2478.44
2018.2
AAA
MIN: 1710.38 / MAX: 2769.08
2050.7
B
MIN: 1701.44 / MAX: 2289.28
1988.9
C
MIN: 1703.32 / MAX: 2597.14
2117.7
500
1000
1500
2000
2500


simdjson 2.0
Throughput Test: Kostya
GB/s, More Is Better
A
AAA
B
C
2.96
2.95
2.94
2.95
0.666
1.332
1.998
2.664
3.33
1. (CXX) g++ options: -O3 -pthread
simdjson 2.0
Throughput Test: TopTweet
GB/s, More Is Better
A
AAA
B
C
5.15
5.16
5.17
5.14
1.1633
2.3266
3.4899
4.6532
5.8165
1. (CXX) g++ options: -O3 -pthread


simdjson 2.0
Throughput Test: LargeRandom
GB/s, More Is Better
A
AAA
B
C
1.04
1.04
1.04
1.04
0.234
0.468
0.702
0.936
1.17
1. (CXX) g++ options: -O3 -pthread
simdjson 2.0
Throughput Test: PartialTweets
GB/s, More Is Better
A
AAA
B
C
4.50
4.51
4.50
4.52
1.017
2.034
3.051
4.068
5.085
1. (CXX) g++ options: -O3 -pthread

simdjson 2.0

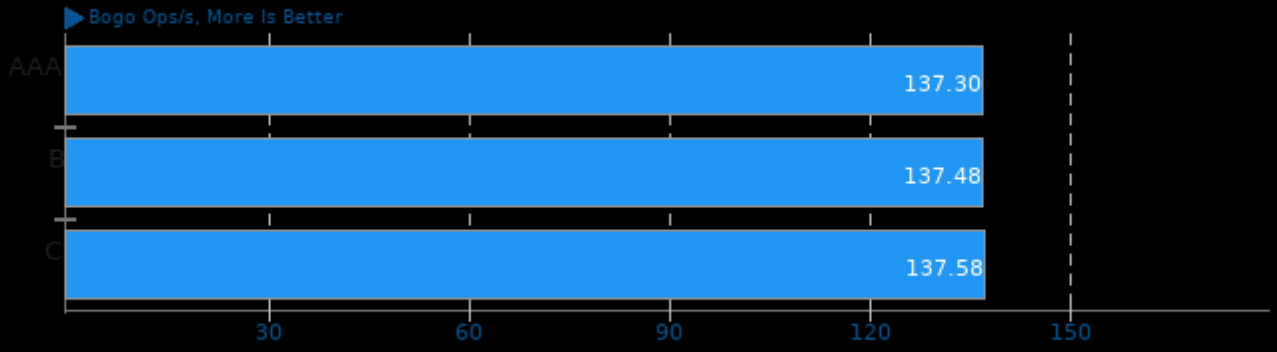
Throughput Test: DistinctUserID



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

Stress-NG 0.14

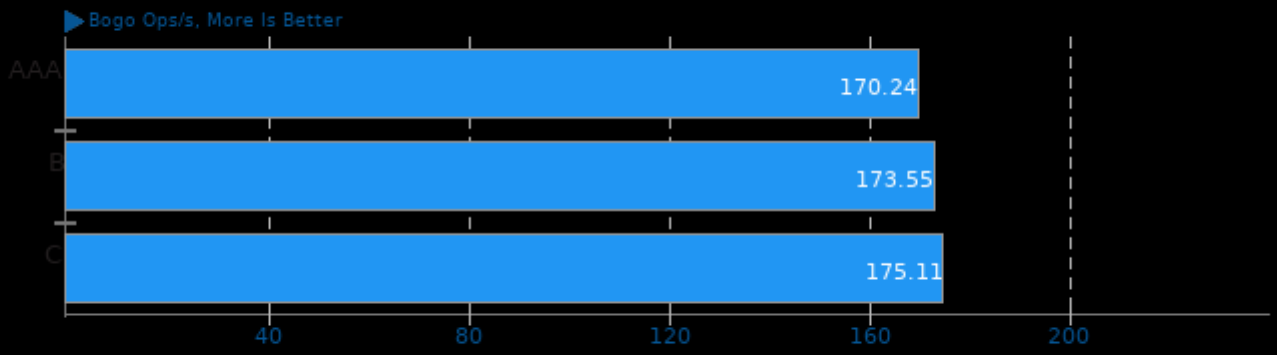
Test: MMAP



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lapparmor -latomic -lbsd -lc -lcrypt -ldl -ljpeg -lrt -lsctp -lz -pthread

Stress-NG 0.14

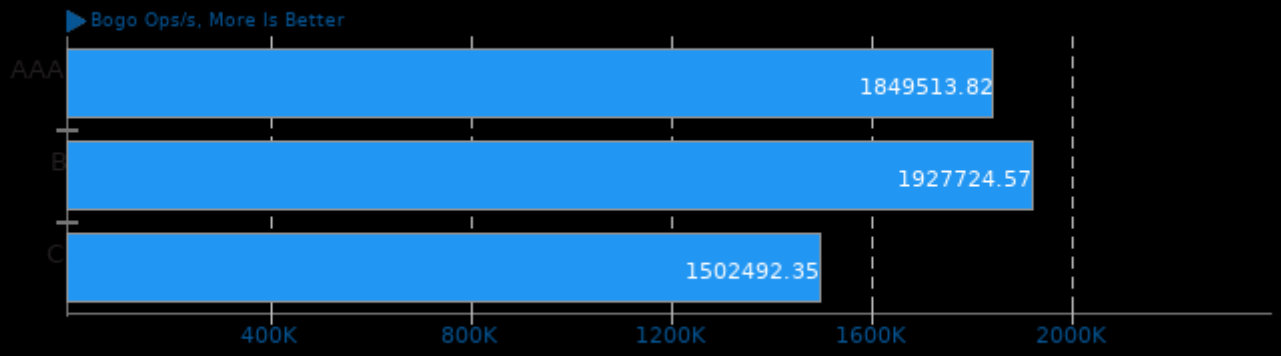
Test: NUMA



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lapparmor -latomic -lbsd -lc -lcrypt -ldl -ljpeg -lrt -lsctp -lz -pthread

Stress-NG 0.14

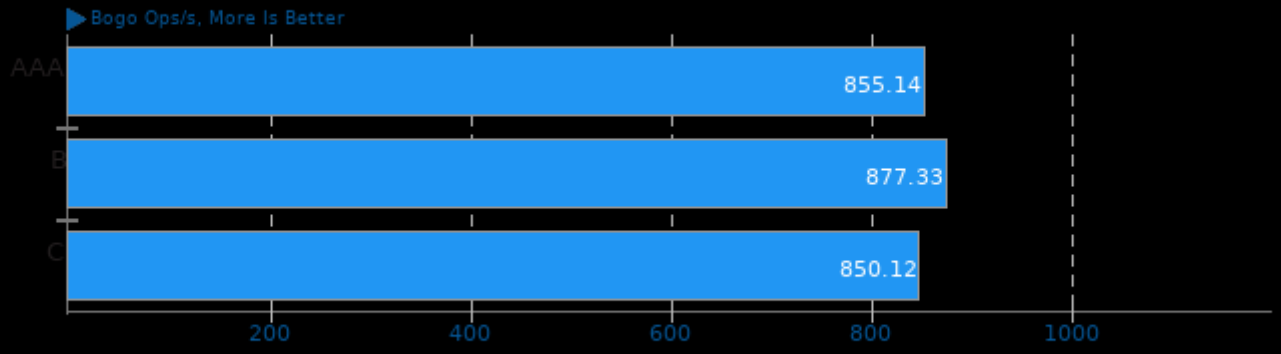
Test: Futex



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lapparmor -latomic -lbsd -lc -lcrypt -ldl -ljpeg -lrt -lsctp -lz -pthread

Stress-NG 0.14

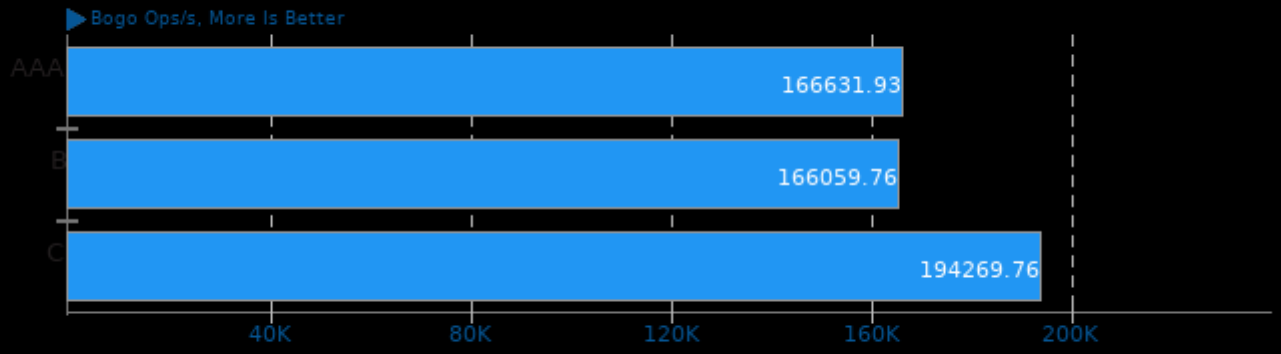
Test: MEMFD



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lapparmor -latomic -lbsd -lc -lcrypt -ldl -ljpeg -lrt -lsctp -lz -pthread

Stress-NG 0.14

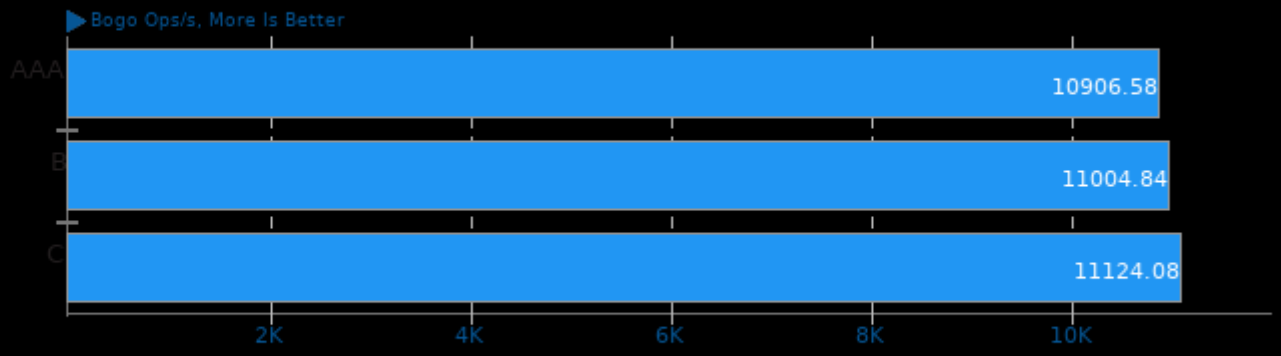
Test: Atomic



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lapparmor -latomic -lbsd -lc -lcrypt -ldl -ljpeg -lrt -lsctp -lz -pthread

Stress-NG 0.14

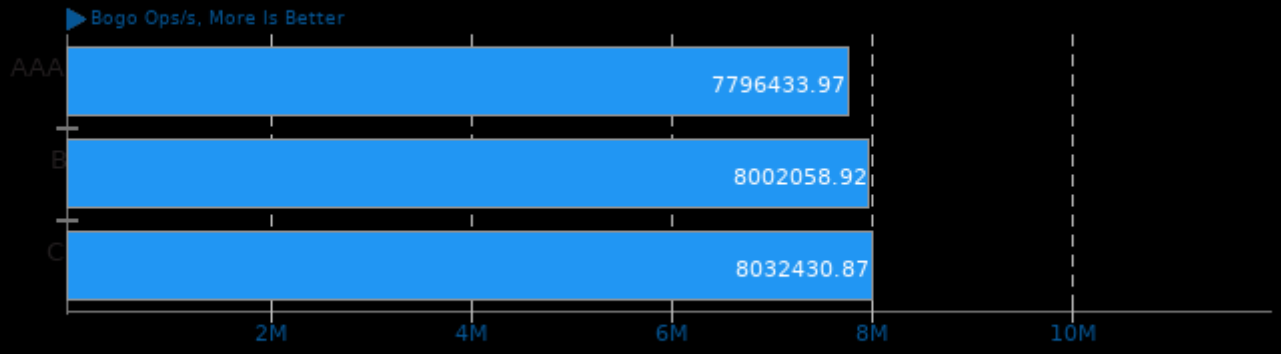
Test: Crypto



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lapparmor -latomic -lbsd -lc -lcrypt -ldl -ljpeg -lrt -lsctp -lz -pthread

Stress-NG 0.14

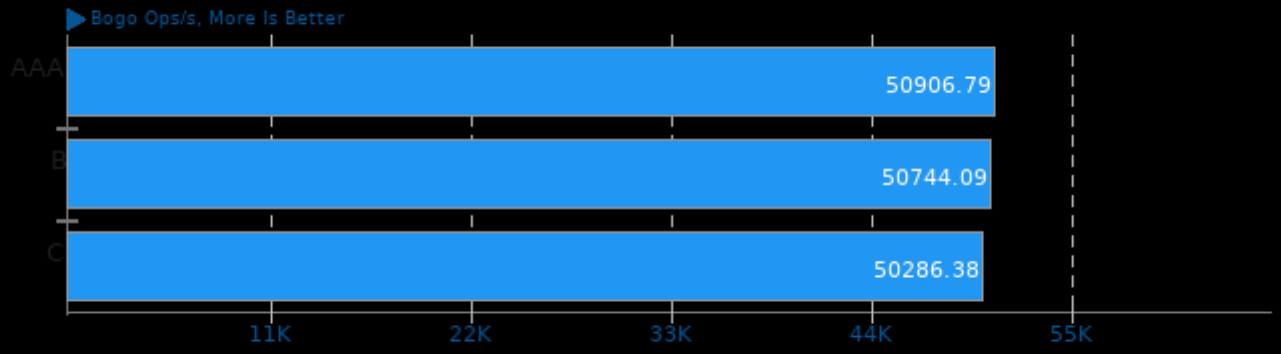
Test: Malloc



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lapparmor -latomic -lbsd -lc -lcrypt -ldl -ljpeg -lrt -lsctp -lz -pthread

Stress-NG 0.14

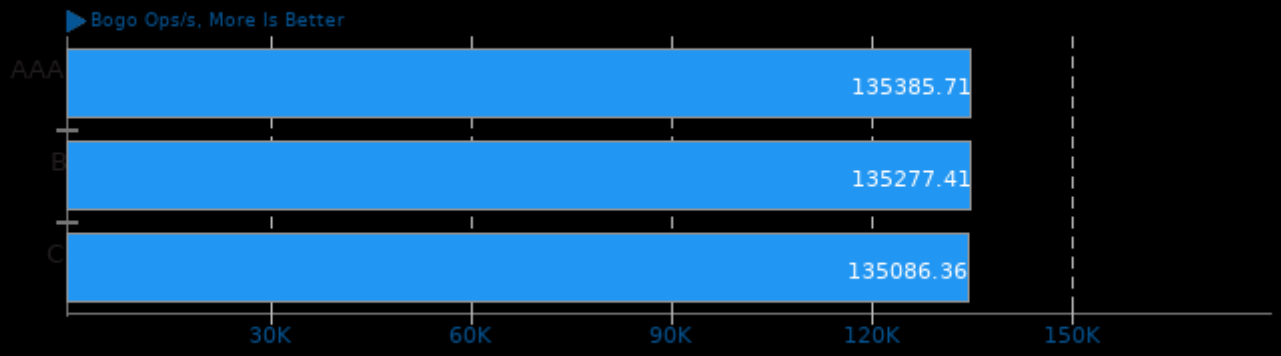
Test: Forking



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lapparmor -latomic -lbsd -lc -lcrypt -ldl -ljpeg -lrt -lsctp -lz -pthread

Stress-NG 0.14

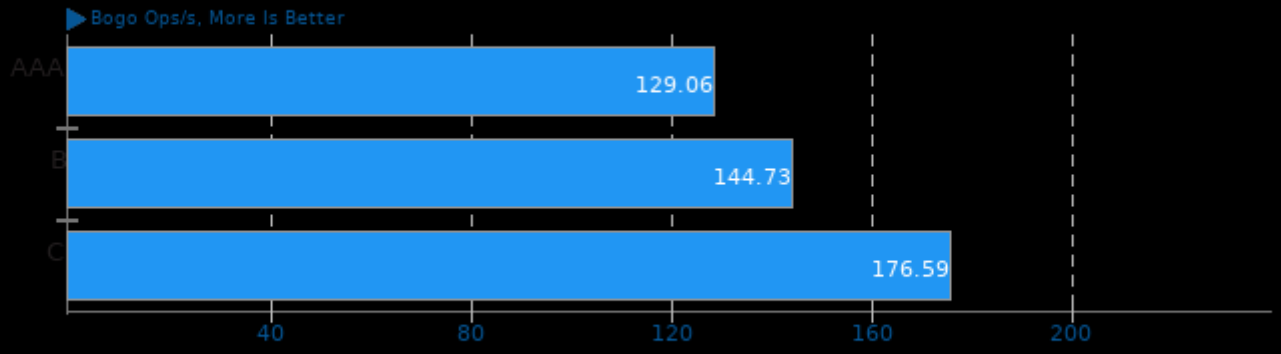
Test: SENDFILE



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lapparmor -latomic -lbsd -lc -lcrypt -ldl -ljpeg -lrt -lsctp -lz -pthread

Stress-NG 0.14

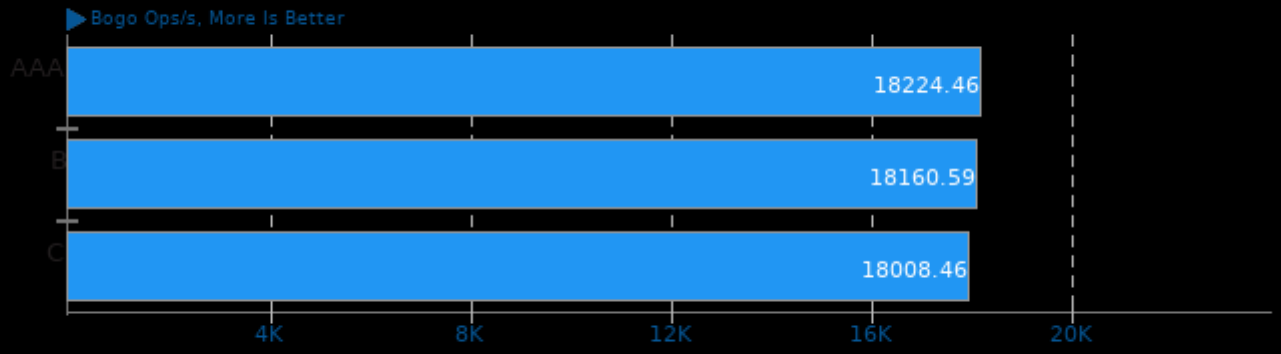
Test: CPU Cache



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lapparmor -latomic -lbsd -lc -lcrypt -ldl -ljpeg -lrt -lsctp -lz -pthread

Stress-NG 0.14

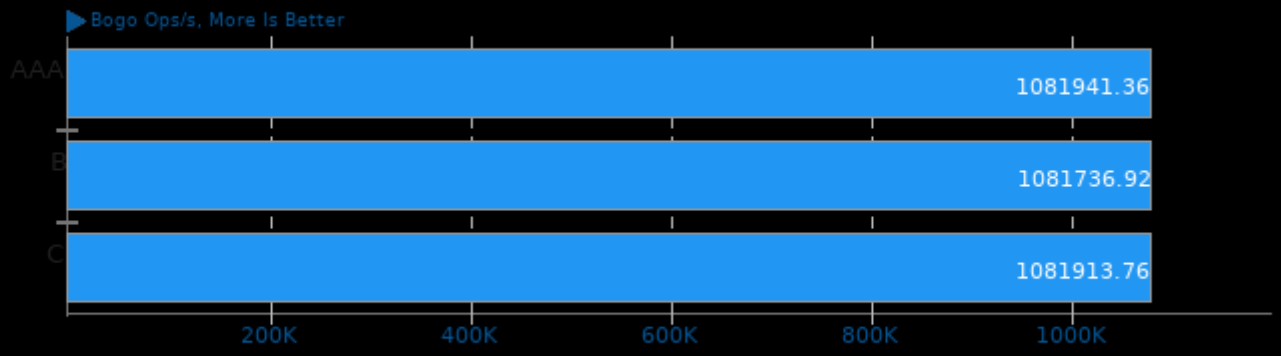
Test: CPU Stress



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lapparmor -latomic -lbsd -lc -lcrypt -ldl -ljpeg -lrt -lsctp -lz -pthread

Stress-NG 0.14

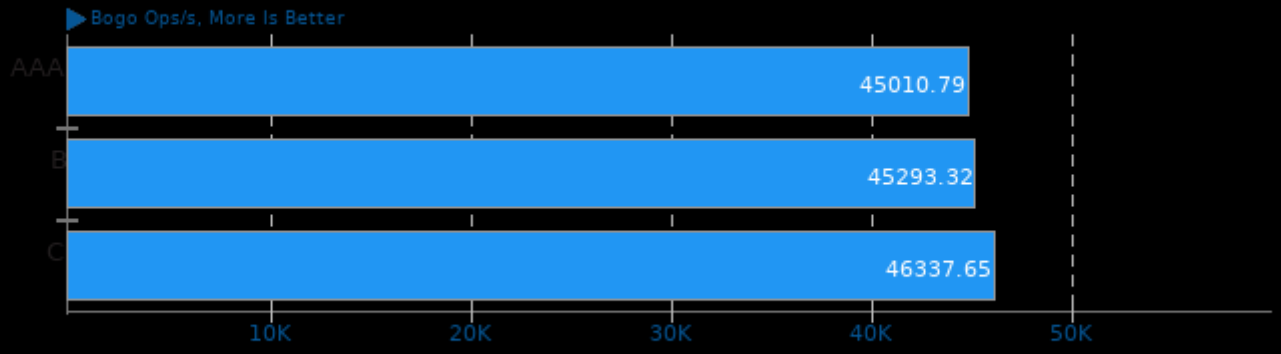
Test: Semaphores



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lapparmor -latomic -lbsd -lc -lcrypt -ldl -ljpeg -lrt -lsctp -lz -pthread

Stress-NG 0.14

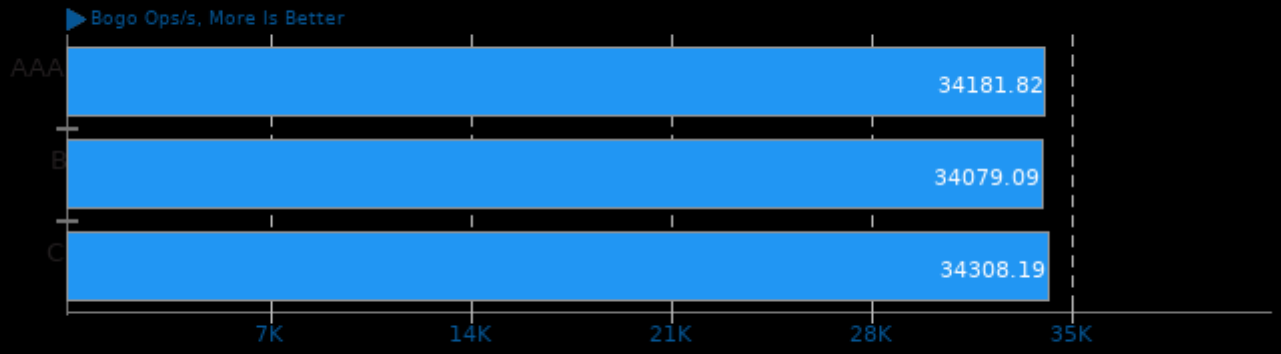
Test: Matrix Math



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lapparmor -latomic -lbsd -lc -lcrypt -ldl -ljpeg -lrt -lsctp -lz -pthread

Stress-NG 0.14

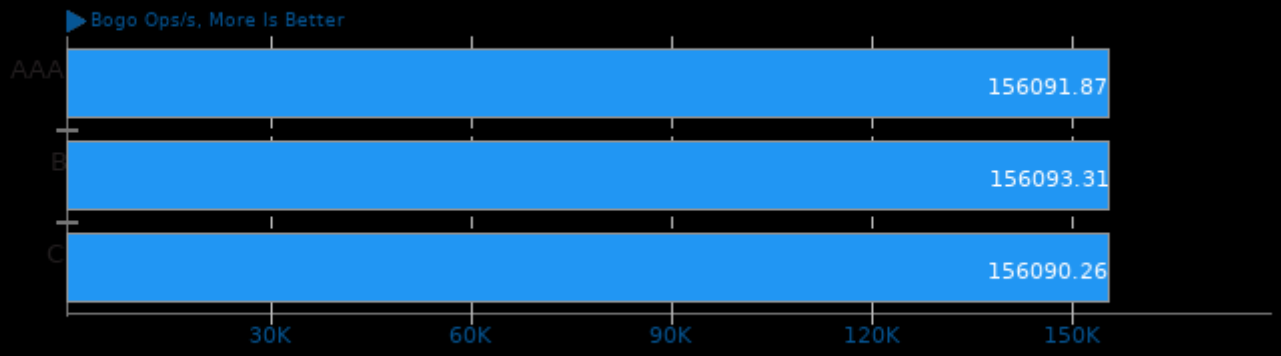
Test: Vector Math



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lapparmor -latomic -lbsd -lc -lcrypt -ldl -ljpeg -lrt -lsctp -lz -pthread

Stress-NG 0.14

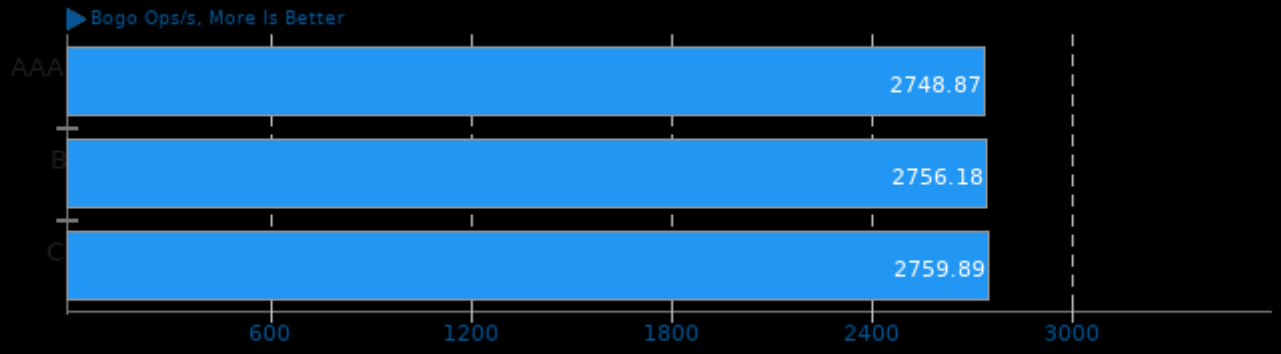
Test: x86_64 RdRand



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lapparmor -latomic -lbsd -lc -lcrypt -ldl -ljpeg -lrt -lsctp -lz -pthread

Stress-NG 0.14

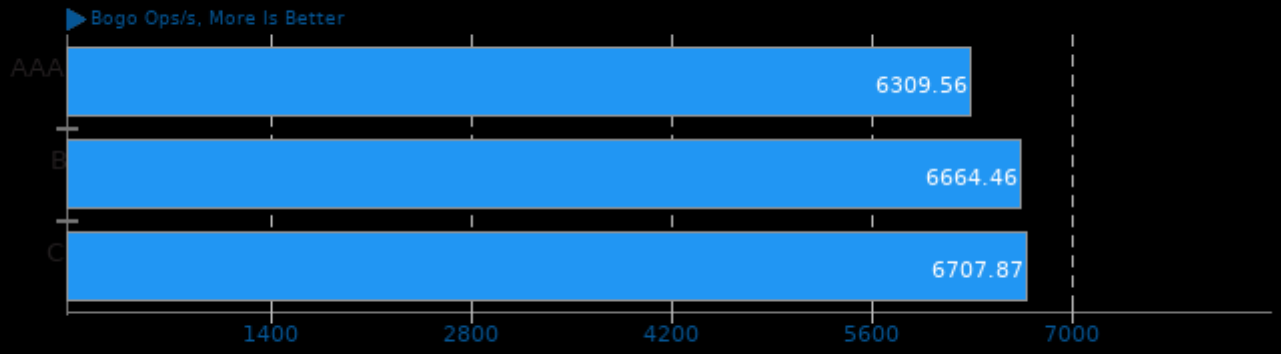
Test: Memory Copying



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lapparmor -latomic -lbsd -lc -lcrypt -ldl -ljpeg -lrt -lsctp -lz -pthread

Stress-NG 0.14

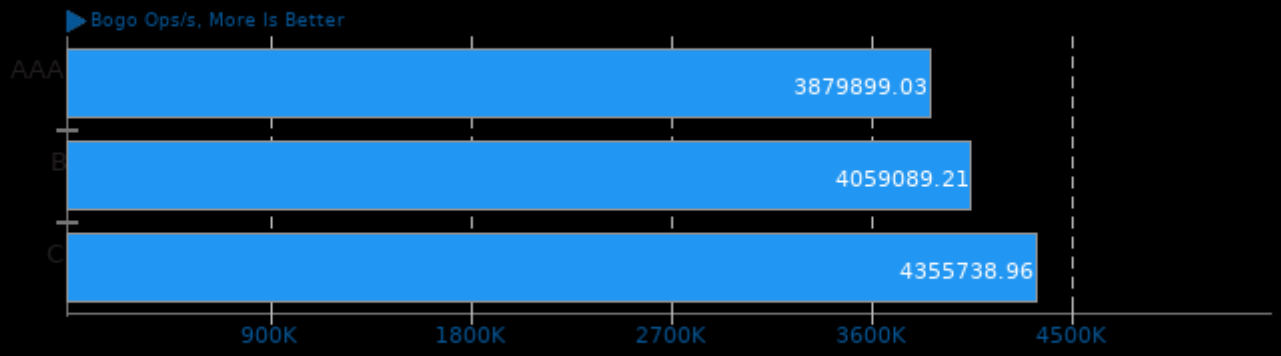
Test: Socket Activity



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lapparmor -latomic -lbsd -lc -lcrypt -ldl -ljpeg -lrt -lsctp -lz -pthread

Stress-NG 0.14

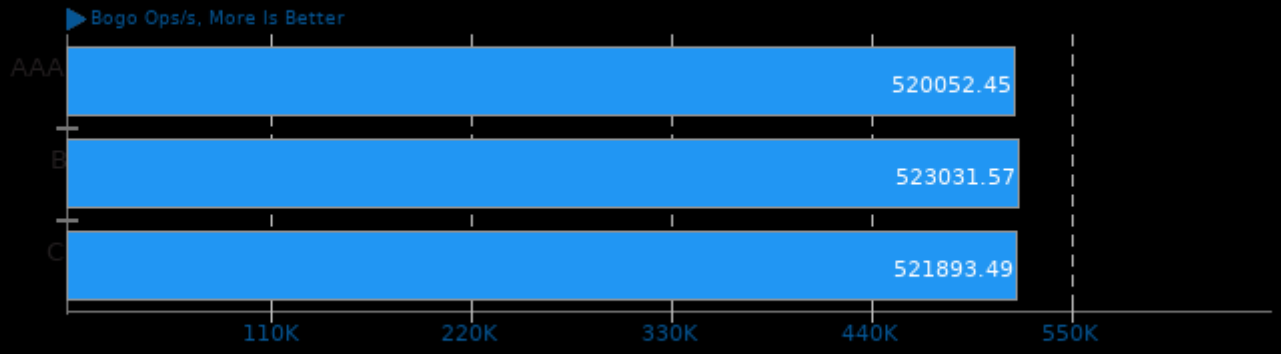
Test: Context Switching



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lapparmor -latomic -lbsd -lc -lcrypt -ldl -ljpeg -lrt -lsctp -lz -pthread

Stress-NG 0.14

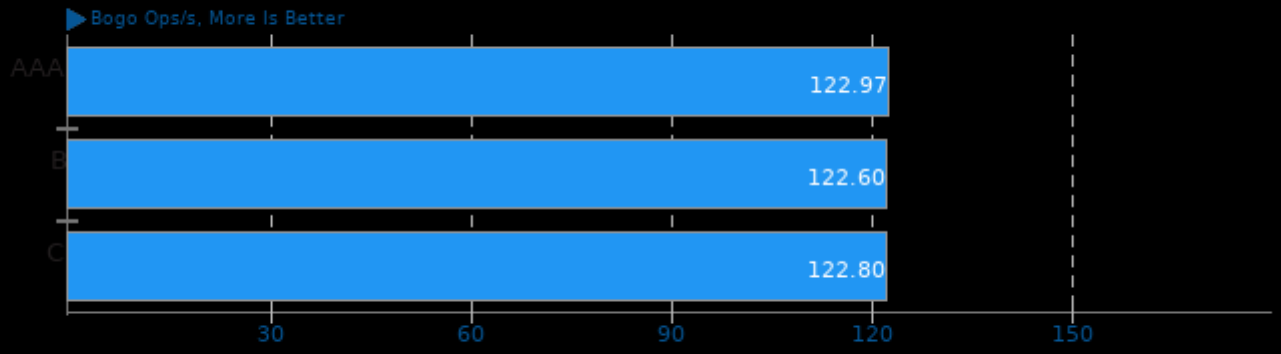
Test: Glibc C String Functions



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lapparmor -latomic -lbsd -lc -lcrypt -ldl -ljpeg -lrt -lsctp -lz -pthread

Stress-NG 0.14

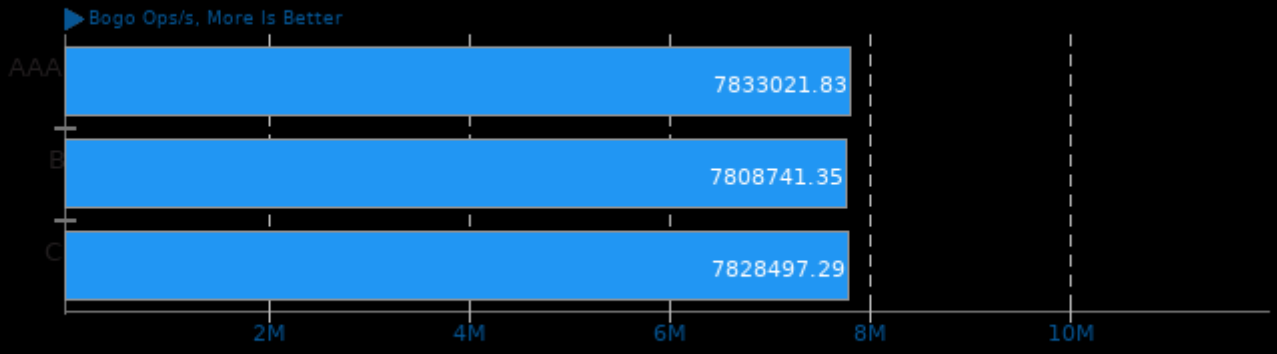
Test: Glibc Qsort Data Sorting



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lapparmor -latomic -lbsd -lc -lcrypt -ldl -ljpeg -lrt -lsctp -lz -pthread

Stress-NG 0.14

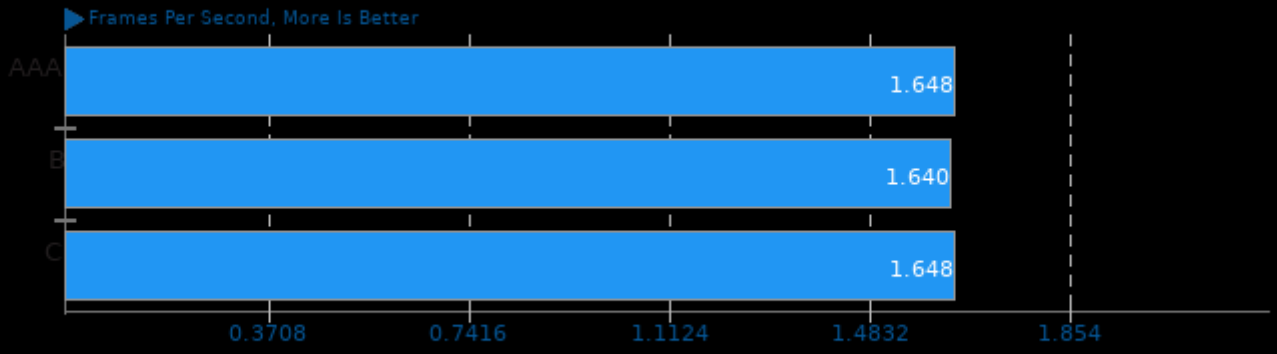
Test: System V Message Passing



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lapparmor -latomic -lbsd -lc -lcrypt -ldl -ljpeg -lrt -lsctp -lz -pthread

SVT-AV1 1.0

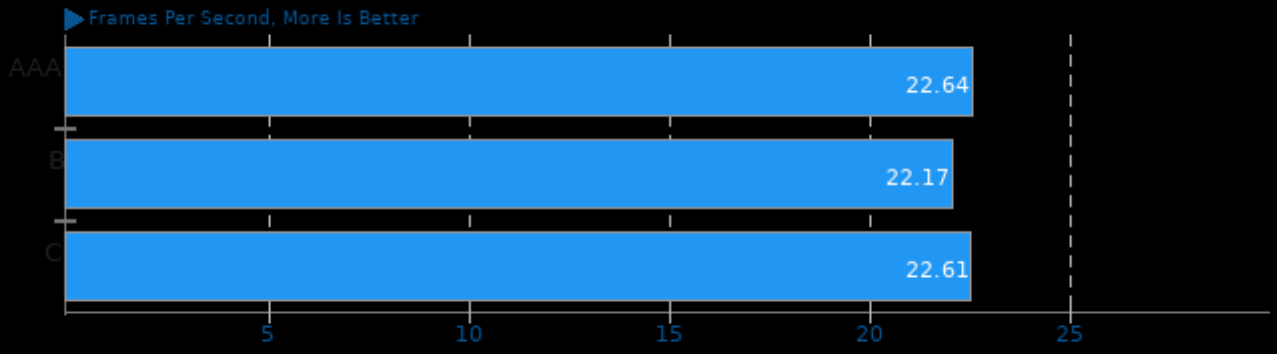
Encoder Mode: Preset 4 - Input: Bosphorus 4K



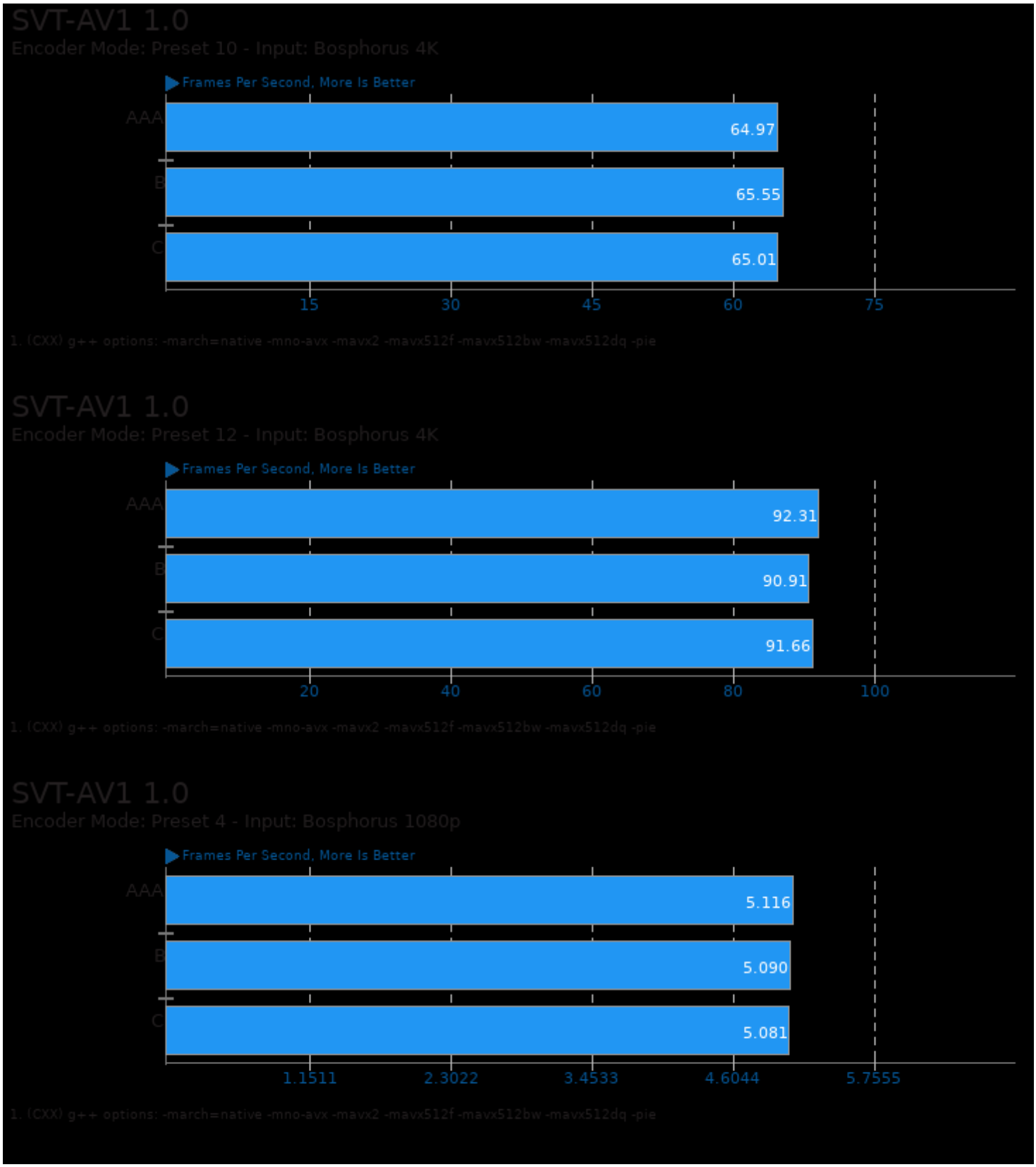
1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie

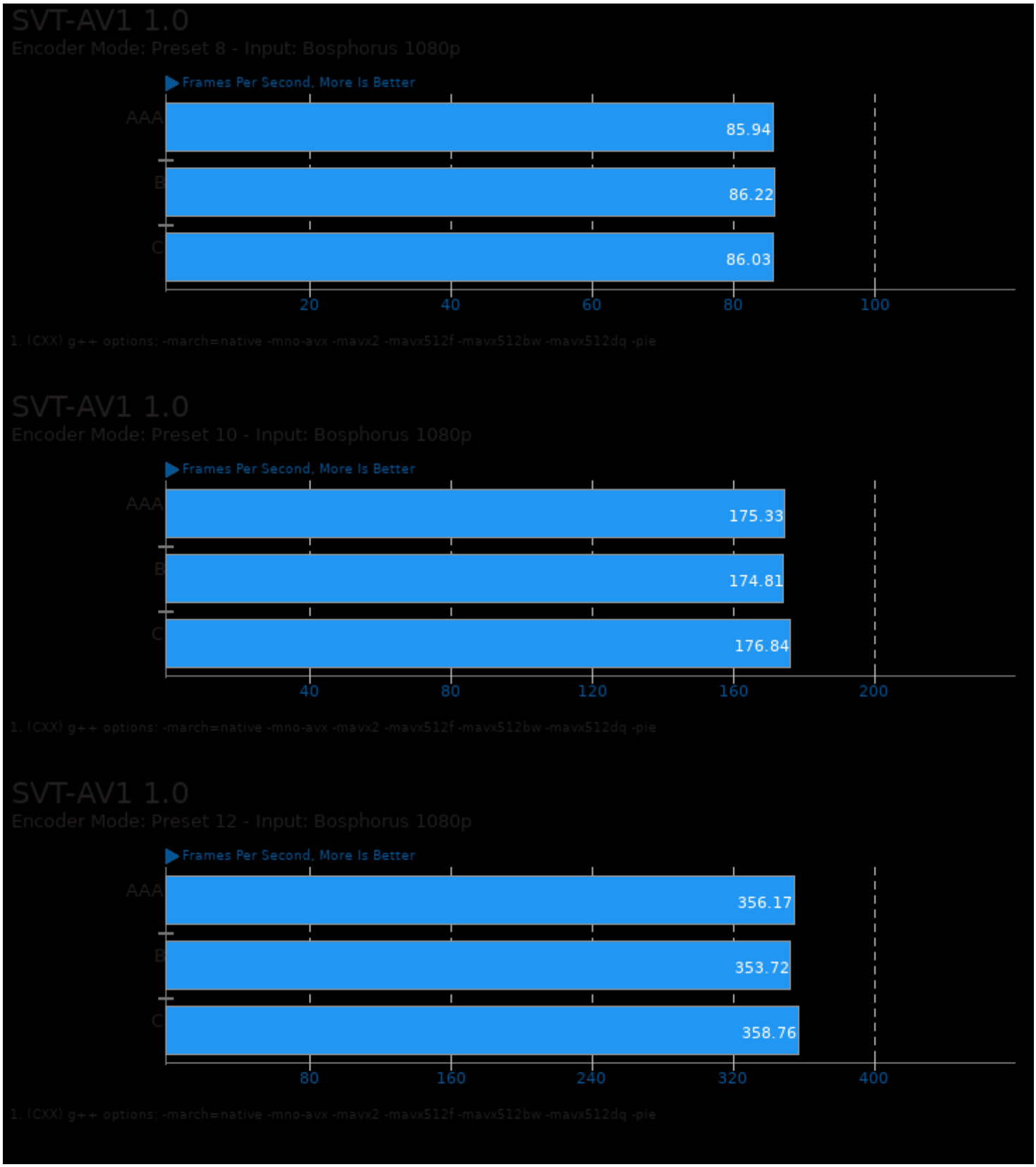
SVT-AV1 1.0

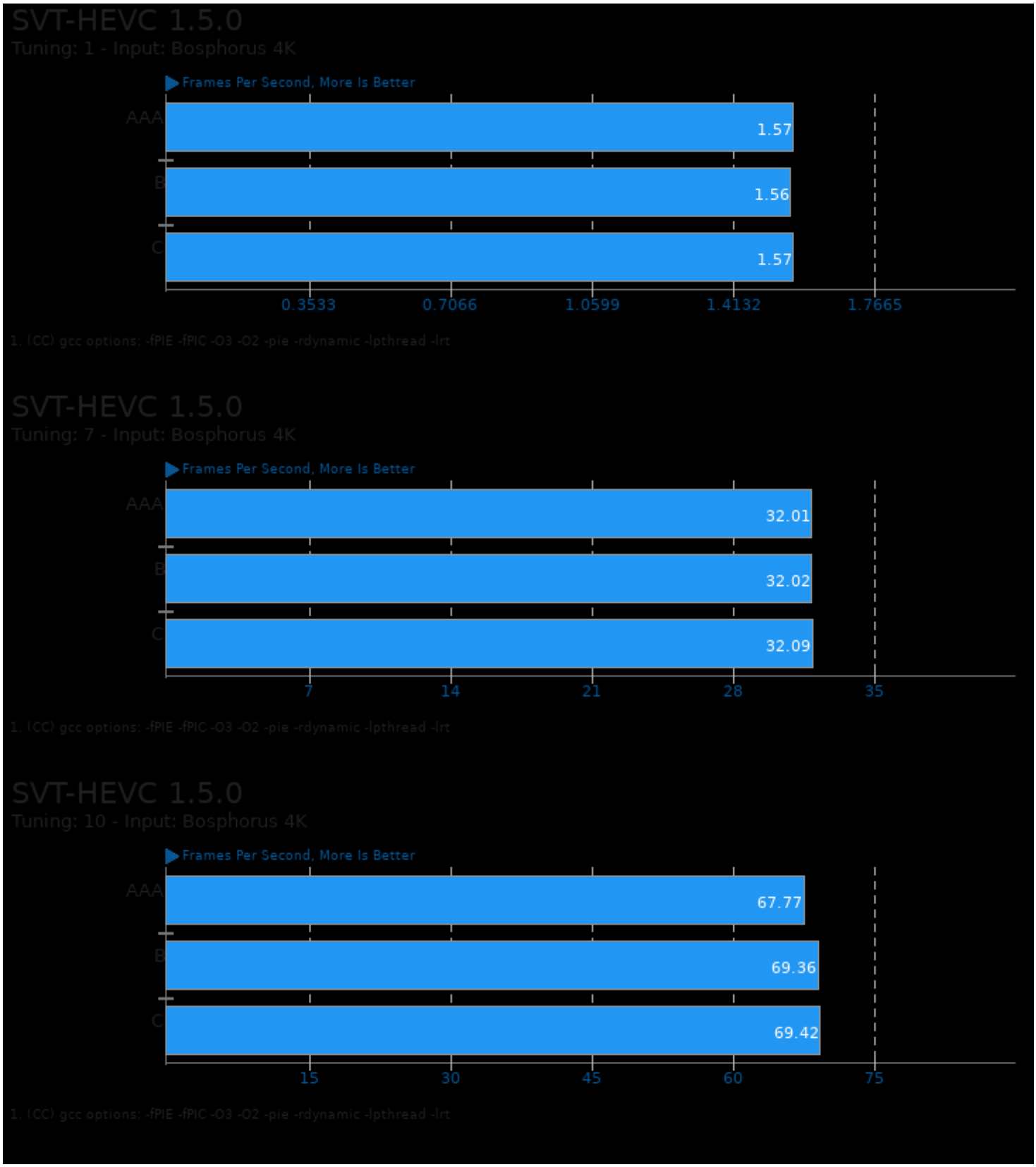
Encoder Mode: Preset 8 - Input: Bosphorus 4K

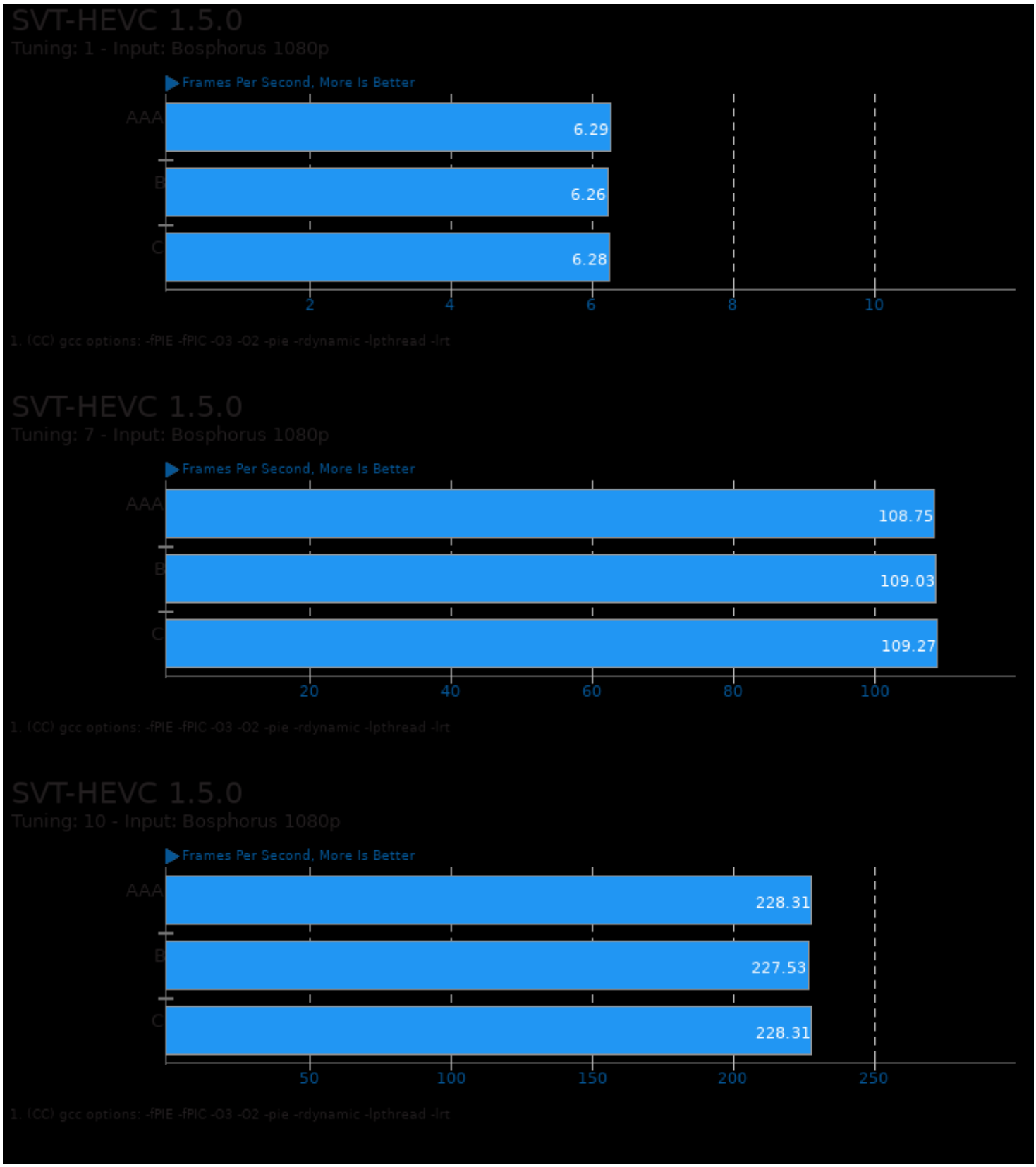


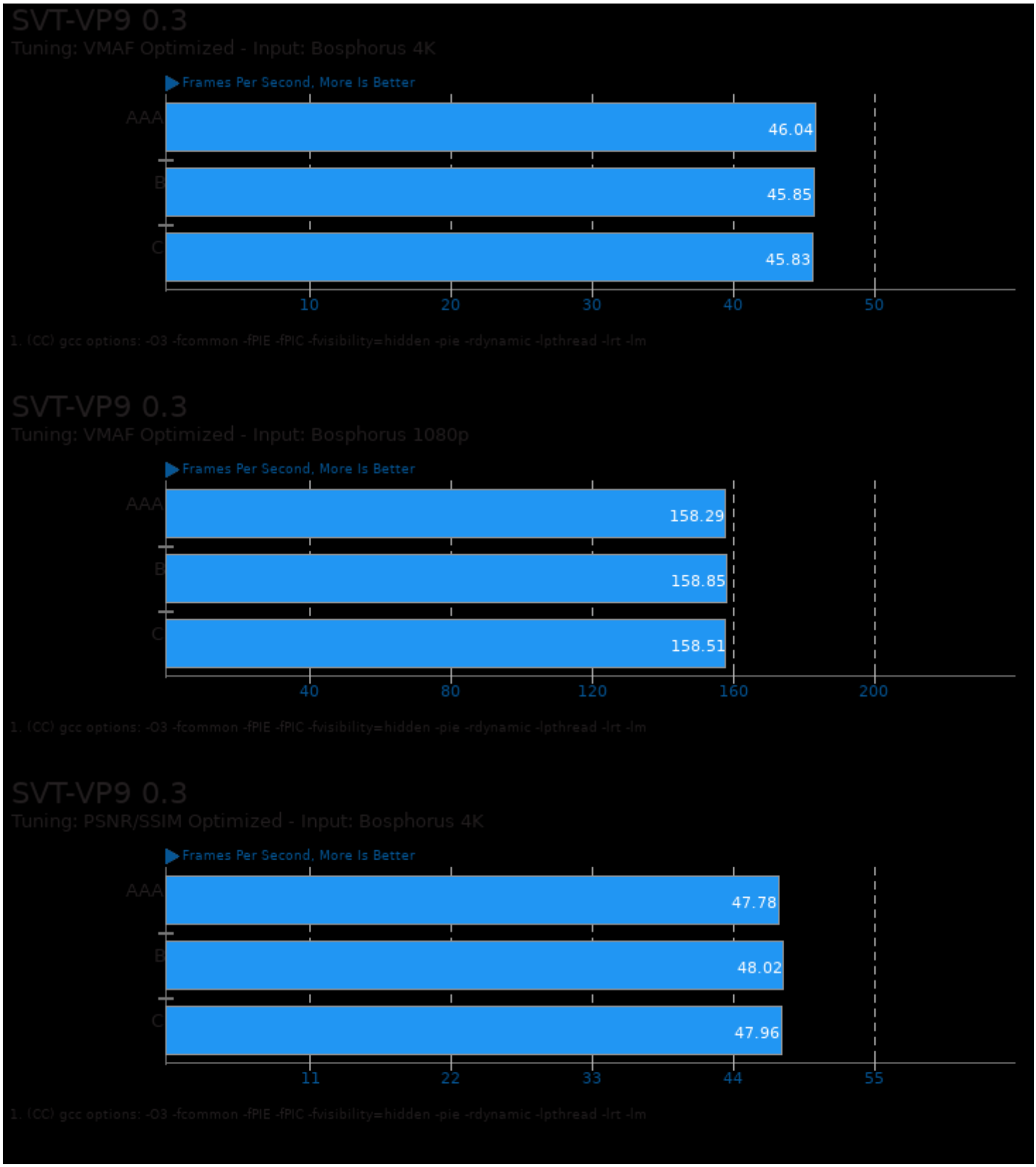
1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie

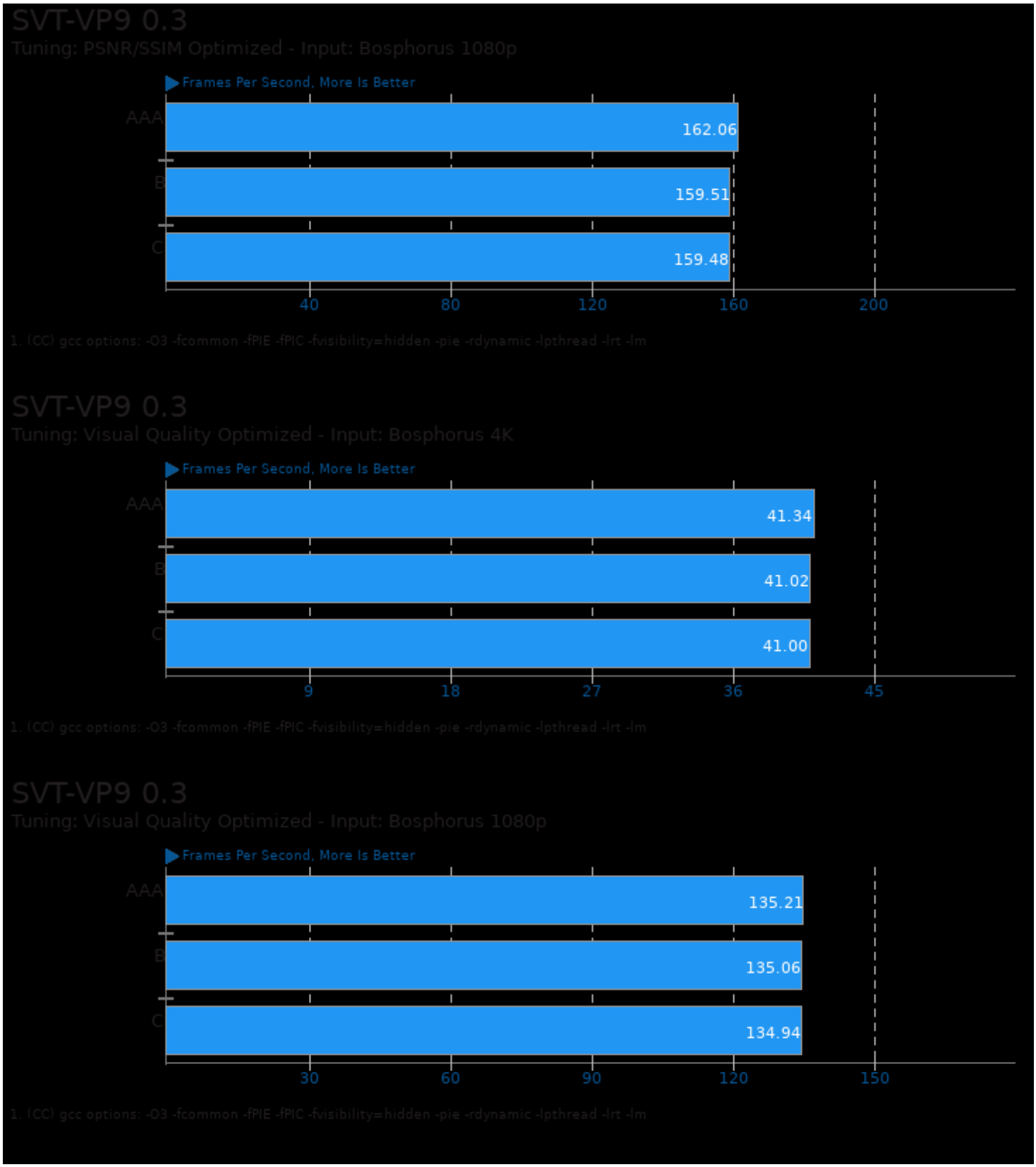

SVT-AV1 1.0
Encoder Mode: Preset 10 - Input: Bosphorus 4K
Frames Per Second, More Is Better
AAA
B
C
64.97
65.55
65.01
15
30
45
60
75
1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie
SVT-AV1 1.0
Encoder Mode: Preset 12 - Input: Bosphorus 4K
Frames Per Second, More Is Better
AAA
B
C
92.31
90.91
91.66
20
40
60
80
100
1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie
SVT-AV1 1.0
Encoder Mode: Preset 4 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
AAA
B
C
5.116
5.090
5.081
1.1511
2.3022
3.4533
4.6044
5.7555
1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie


SVT-AV1 1.0
Encoder Mode: Preset 8 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
AAA
B
C
85.94
86.22
86.03
20
40
60
80
100
1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie
SVT-AV1 1.0
Encoder Mode: Preset 10 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
AAA
B
C
175.33
174.81
176.84
40
80
120
160
200
1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie
SVT-AV1 1.0
Encoder Mode: Preset 12 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
AAA
B
C
356.17
353.72
358.76
80
160
240
320
400
1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie


SVT-HEVC 1.5.0
Tuning: 1 - Input: Bosphorus 4K
Frames Per Second, More Is Better
AAA
B
C
1.57
1.56
1.57
0.3533
0.7066
1.0599
1.4132
1.7665
1. (CC) gcc options: -fPIE -fPIC -O3 -O2 -pie -rdynamic -lpthread -lrt
SVT-HEVC 1.5.0
Tuning: 7 - Input: Bosphorus 4K
Frames Per Second, More Is Better
AAA
B
C
32.01
32.02
32.09
7
14
21
28
35
1. (CC) gcc options: -fPIE -fPIC -O3 -O2 -pie -rdynamic -lpthread -lrt
SVT-HEVC 1.5.0
Tuning: 10 - Input: Bosphorus 4K
Frames Per Second, More Is Better
AAA
B
C
67.77
69.36
69.42
15
30
45
60
75
1. (CC) gcc options: -fPIE -fPIC -O3 -O2 -pie -rdynamic -lpthread -lrt

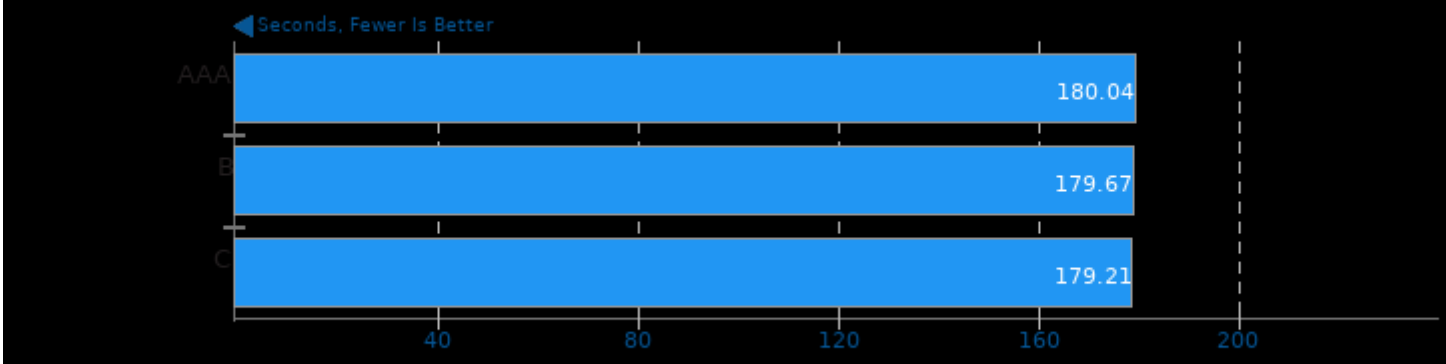

SVT-HEVC 1.5.0
Tuning: 1 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
AAA
B
C
6.29
6.26
6.28
2
4
6
8
10
1. (CC) gcc options: -fPIE -fPIC -O3 -O2 -pie -rdynamic -lpthread -lrt
SVT-HEVC 1.5.0
Tuning: 7 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
AAA
B
C
108.75
109.03
109.27
20
40
60
80
100
1. (CC) gcc options: -fPIE -fPIC -O3 -O2 -pie -rdynamic -lpthread -lrt
SVT-HEVC 1.5.0
Tuning: 10 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
AAA
B
C
228.31
227.53
228.31
50
100
150
200
250
1. (CC) gcc options: -fPIE -fPIC -O3 -O2 -pie -rdynamic -lpthread -lrt


SVT-VP9 0.3
Tuning: VMAF Optimized - Input: Bosphorus 4K
Frames Per Second, More Is Better
AAA
B
C
46.04
45.85
45.83
10
20
30
40
50
1. (CC) gcc options: -O3 -fcommon -fPIE -fPIC -fvisibility=hidden -pie -rdynamic -lpthread -lrt -lm
SVT-VP9 0.3
Tuning: VMAF Optimized - Input: Bosphorus 1080p
Frames Per Second, More Is Better
AAA
B
C
158.29
158.85
158.51
40
80
120
160
200
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 4K
Frames Per Second, More Is Better
AAA
B
C
47.78
48.02
47.96
11
22
33
44
55
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
Frames Per Second, More Is Better
AAA
B
C
162.06
159.51
159.48
40
80
120
160
200
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 4K
Frames Per Second, More Is Better
AAA
B
C
41.34
41.02
41.00
9
18
27
36
45
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
Frames Per Second, More Is Better
AAA
B
C
135.21
135.06
134.94
30
60
90
120
150
1. (CC) gcc options: -O3 -fcommon -fPIE -fPIC -fvisibility=hidden -pie -rdynamic -lpthread -lrt -lm

Tachyon 0.99.2

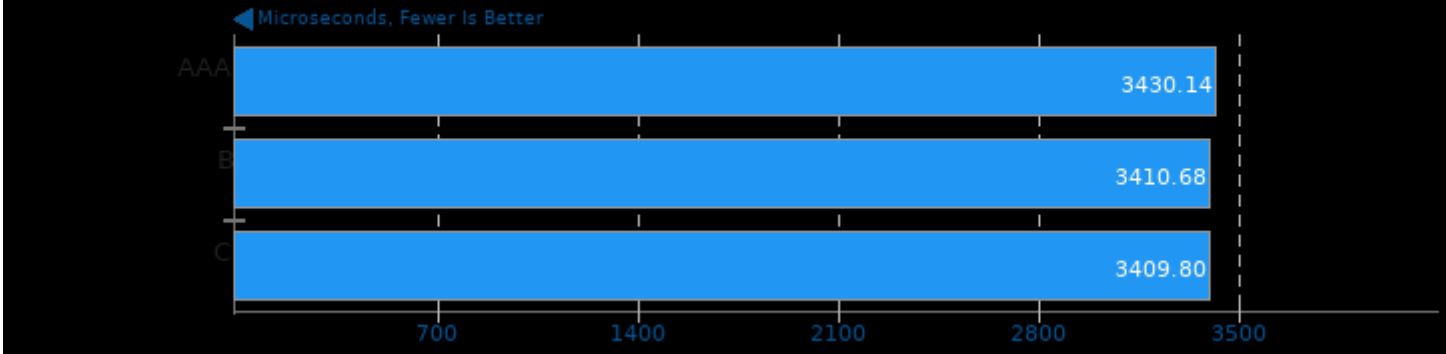
Total Time



1. (CC) gcc options: -m64 -O3 -fomit-frame-pointer -ffast-math -ltachyon -lm -lpthread

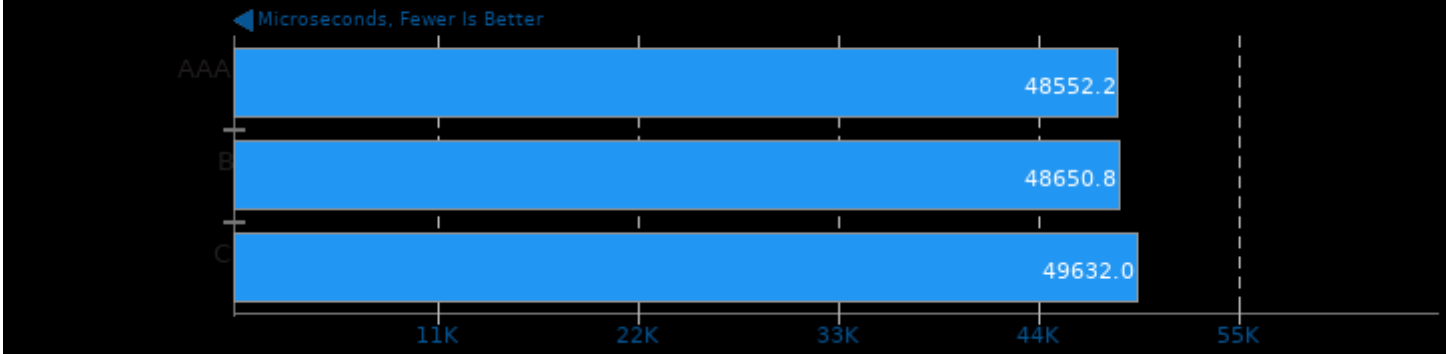
TensorFlow Lite 2022-05-18

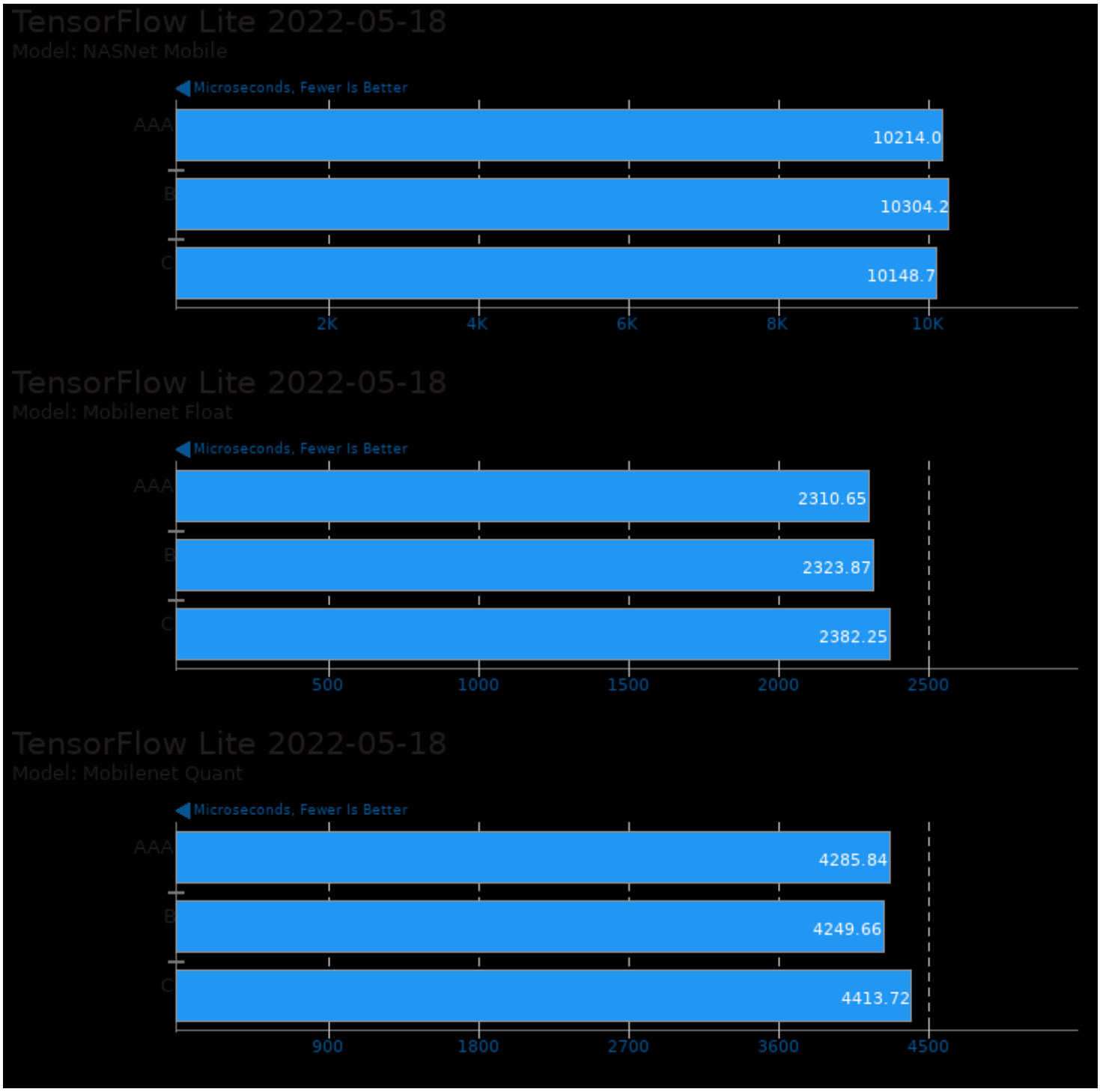
Model: SqueezeNet

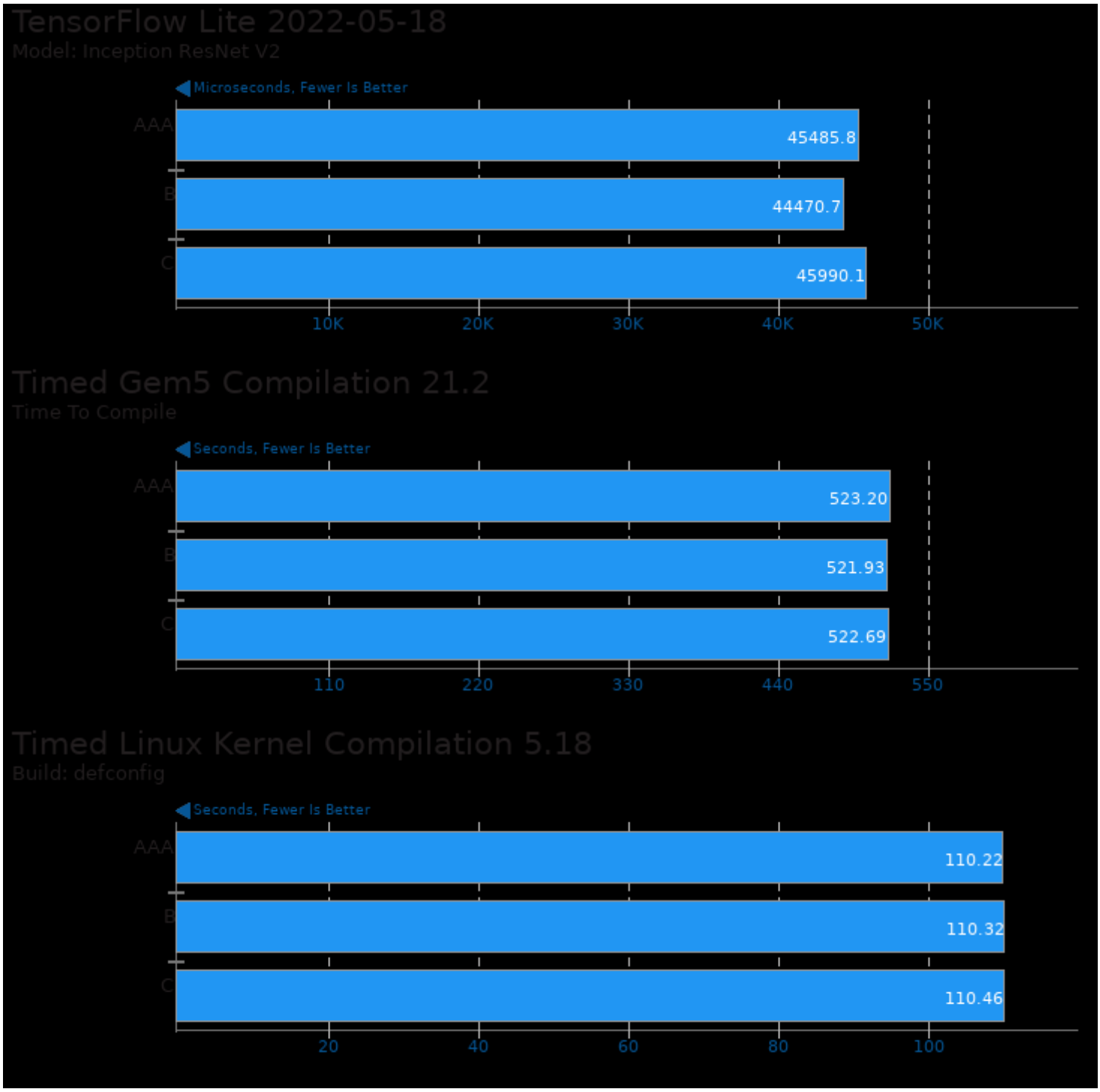


TensorFlow Lite 2022-05-18

Model: Inception V4

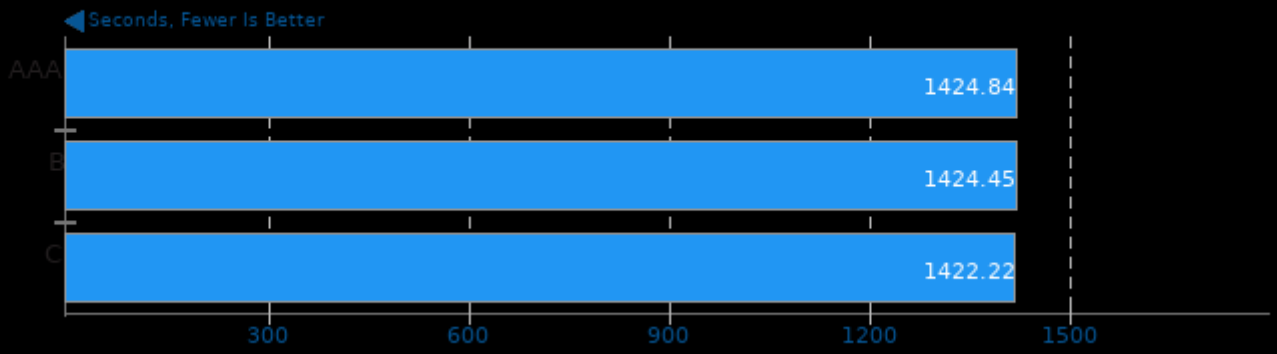



TensorFlow Lite 2022-05-18
Model: NASNet Mobile
Microseconds, Fewer Is Better
AAA
B
C
10214.0
10304.2
10148.7
2K
4K
6K
8K
10K
TensorFlow Lite 2022-05-18
Model: Mobilenet Float
Microseconds, Fewer Is Better
AAA
B
C
2310.65
2323.87
2382.25
500
1000
1500
2000
2500
TensorFlow Lite 2022-05-18
Model: Mobilenet Quant
Microseconds, Fewer Is Better
AAA
B
C
4285.84
4249.66
4413.72
900
1800
2700
3600
4500


TensorFlow Lite 2022-05-18
Model: Inception ResNet V2
Microseconds, Fewer Is Better
AAA
B
C
45485.8
44470.7
45990.1
10K
20K
30K
40K
50K
Timed Gem5 Compilation 21.2
Time To Compile
Seconds, Fewer Is Better
AAA
B
C
523.20
521.93
522.69
110
220
330
440
550
Timed Linux Kernel Compilation 5.18
Build: defconfig
Seconds, Fewer Is Better
AAA
B
C
110.22
110.32
110.46
20
40
60
80
100

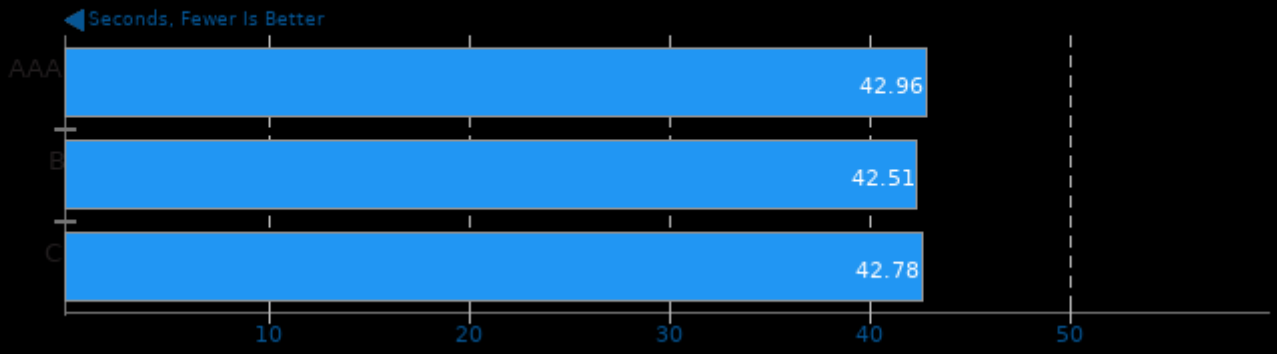
Timed Linux Kernel Compilation 5.18

Build: allmodconfig



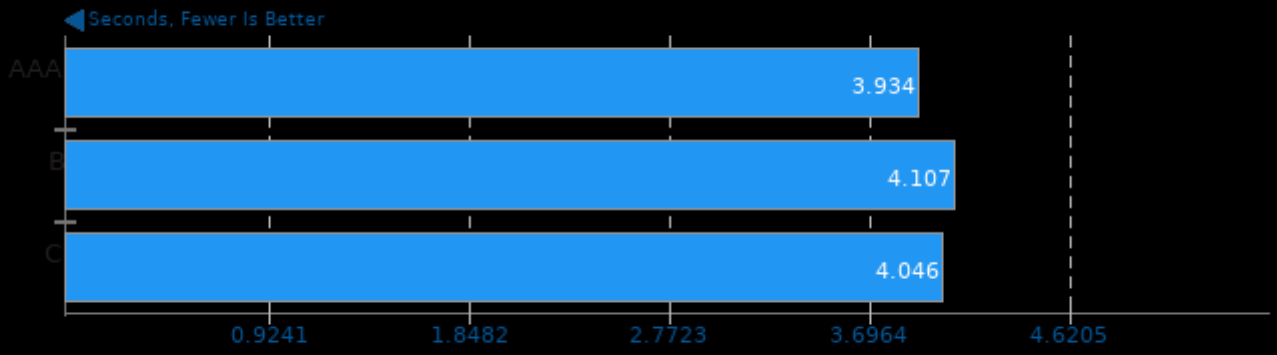
Timed MPlayer Compilation 1.5

Time To Compile

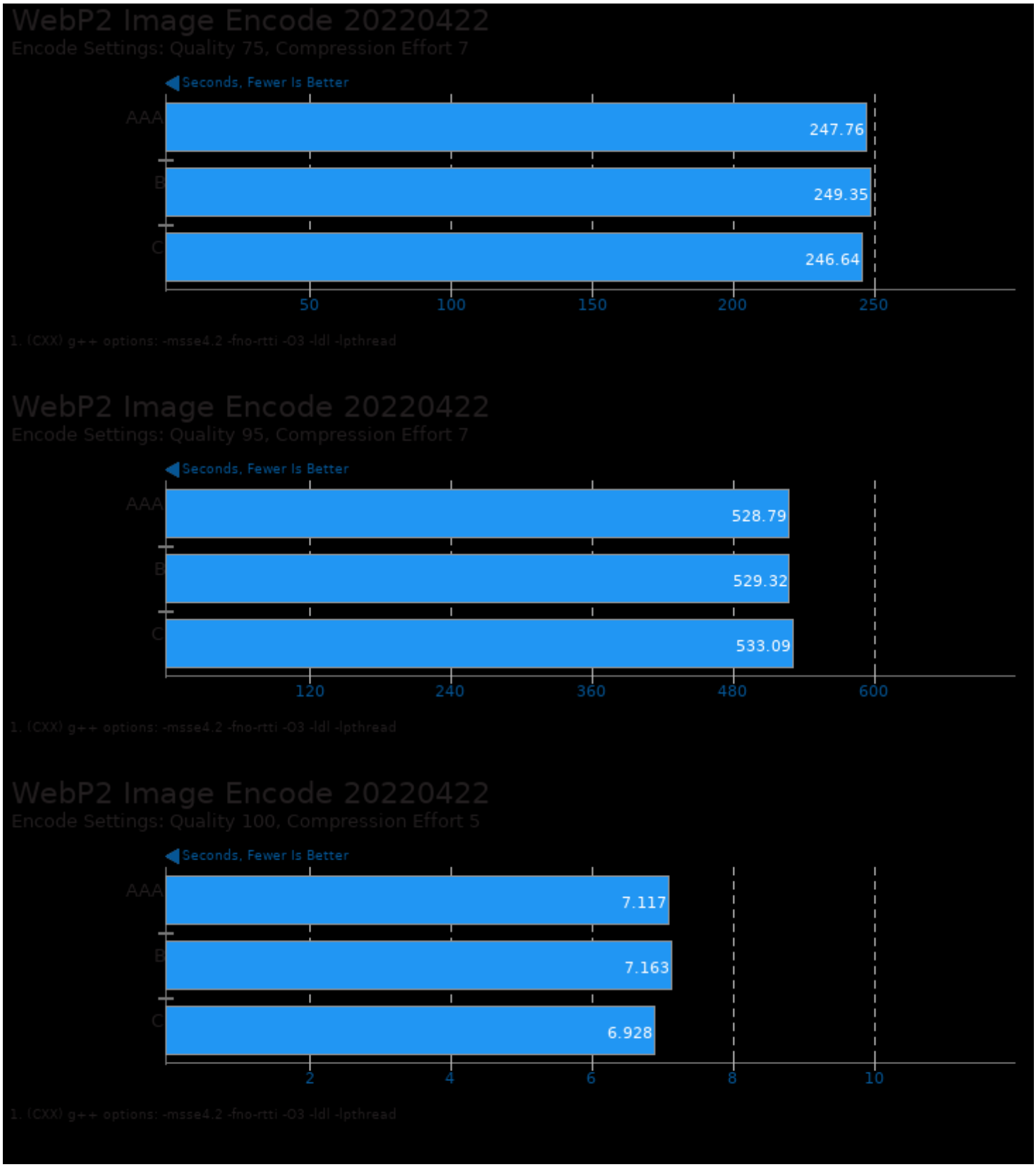


WebP2 Image Encode 20220422

Encode Settings: Default

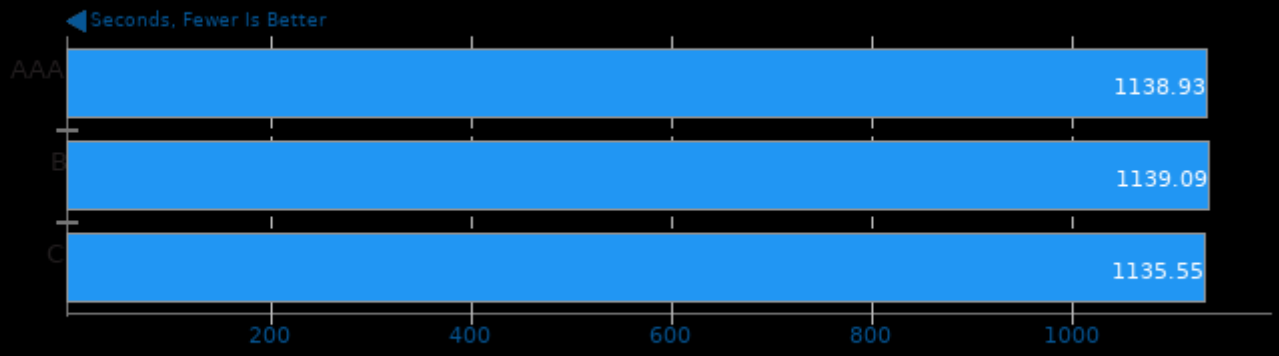


1. (CXX) g++ options: -msse4.2 -fno-rtti -O3 -ldl -lpthread


WebP2 Image Encode 20220422
Encode Settings: Quality 75, Compression Effort 7
Seconds, Fewer Is Better
AAA
B
C
247.76
249.35
246.64
50
100
150
200
250
1. (CXX) g++ options: -msse4.2 -fno-rtti -O3 -ldl -lpthread
WebP2 Image Encode 20220422
Encode Settings: Quality 95, Compression Effort 7
Seconds, Fewer Is Better
AAA
B
C
528.79
529.32
533.09
120
240
360
480
600
1. (CXX) g++ options: -msse4.2 -fno-rtti -O3 -ldl -lpthread
WebP2 Image Encode 20220422
Encode Settings: Quality 100, Compression Effort 5
Seconds, Fewer Is Better
AAA
B
C
7.117
7.163
6.928
2
4
6
8
10
1. (CXX) g++ options: -msse4.2 -fno-rtti -O3 -ldl -lpthread

WebP2 Image Encode 20220422

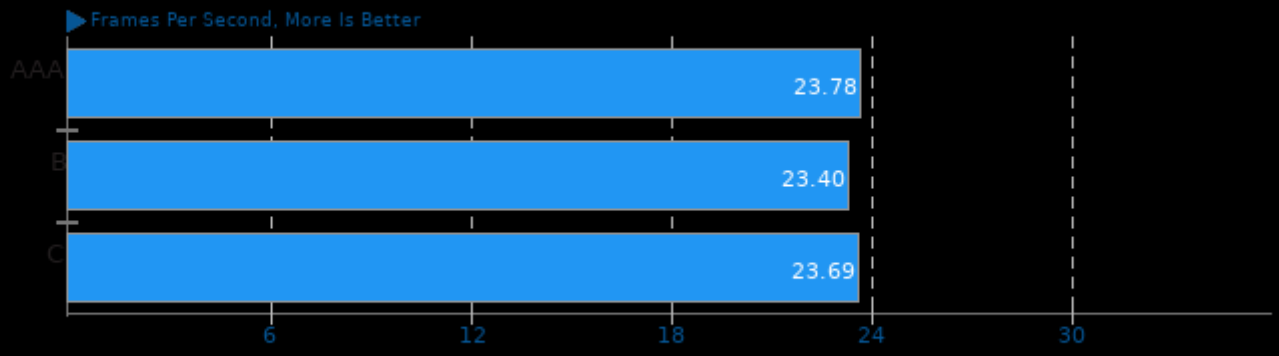
Encode Settings: Quality 100, Lossless Compression



1. (CXX) g++ options: -msse4.2 -fno-rtti -O3 -ldl -lpthread

x264 2022-02-22

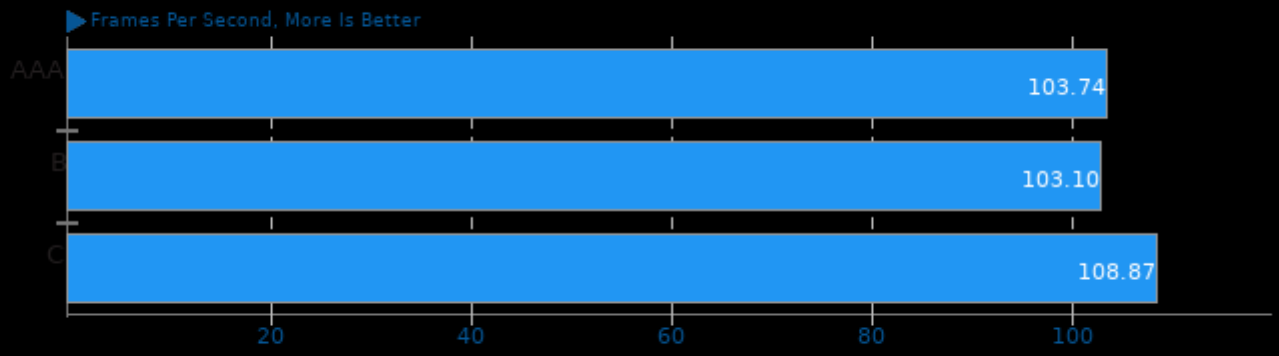
Video Input: Bosphorus 4K



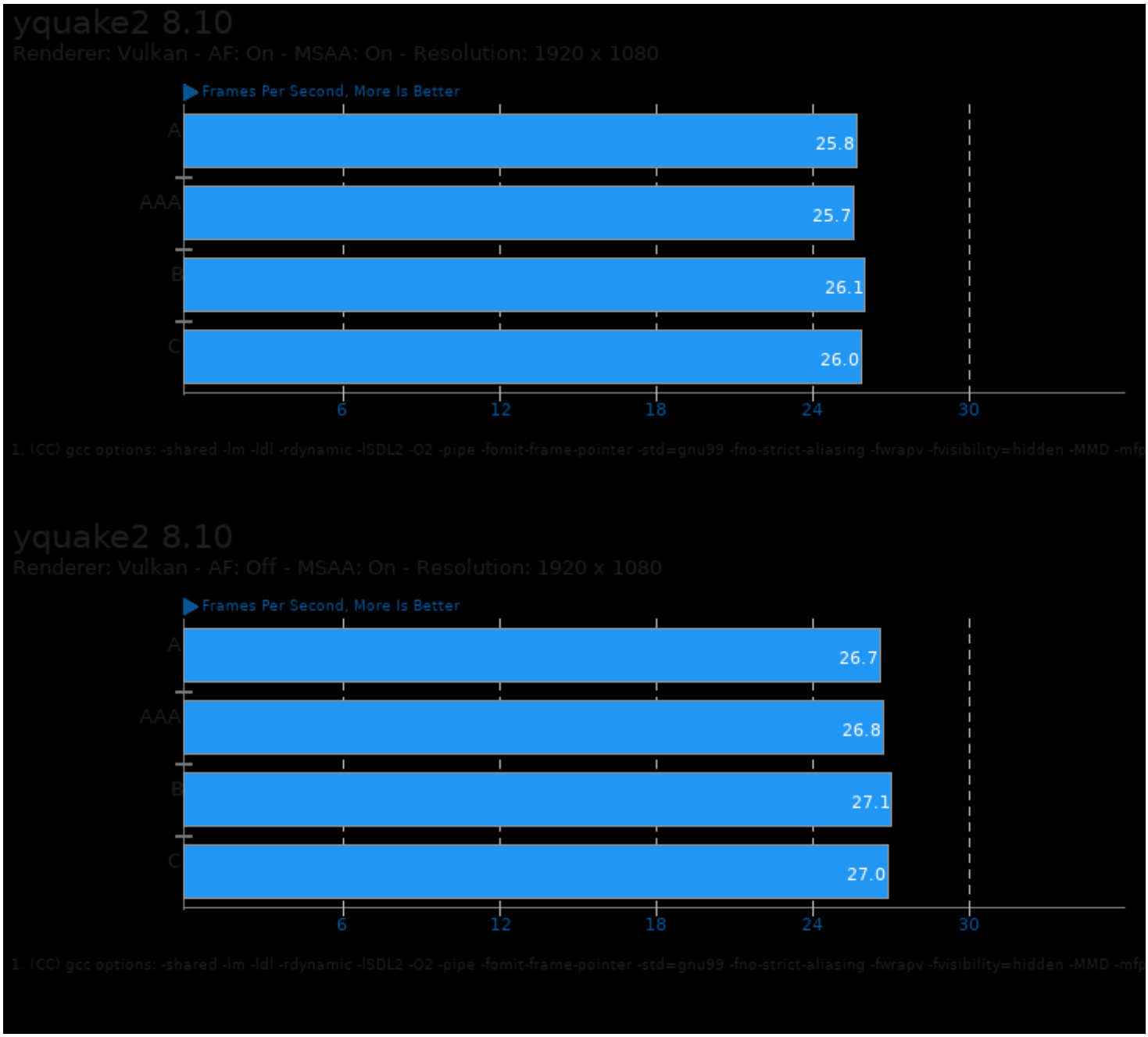
1. (CC) gcc options: -ldl -lavformat -lavcodec -lavutil -lswscale -m64 -lm -lpthread -O3 -flto

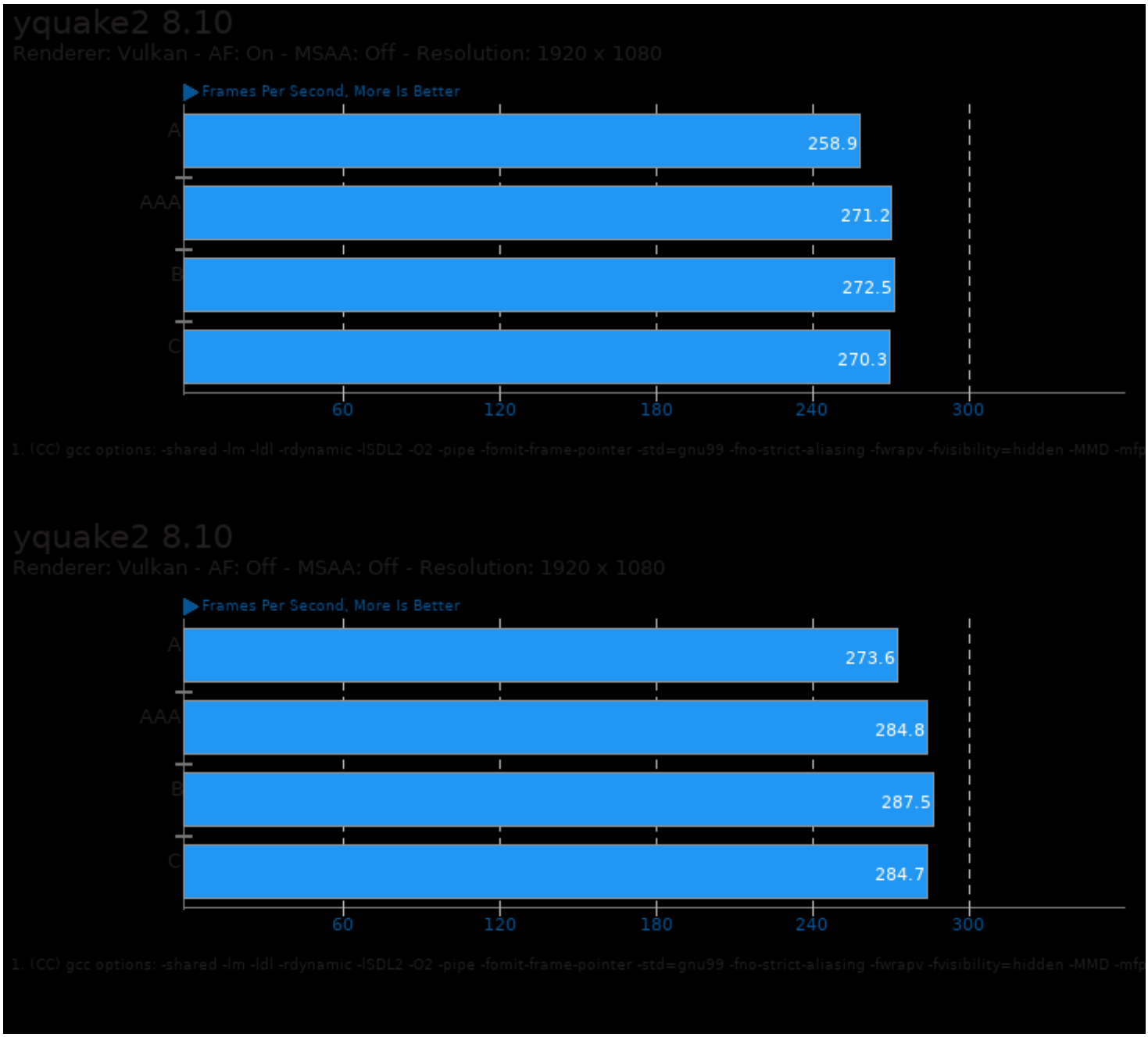
x264 2022-02-22

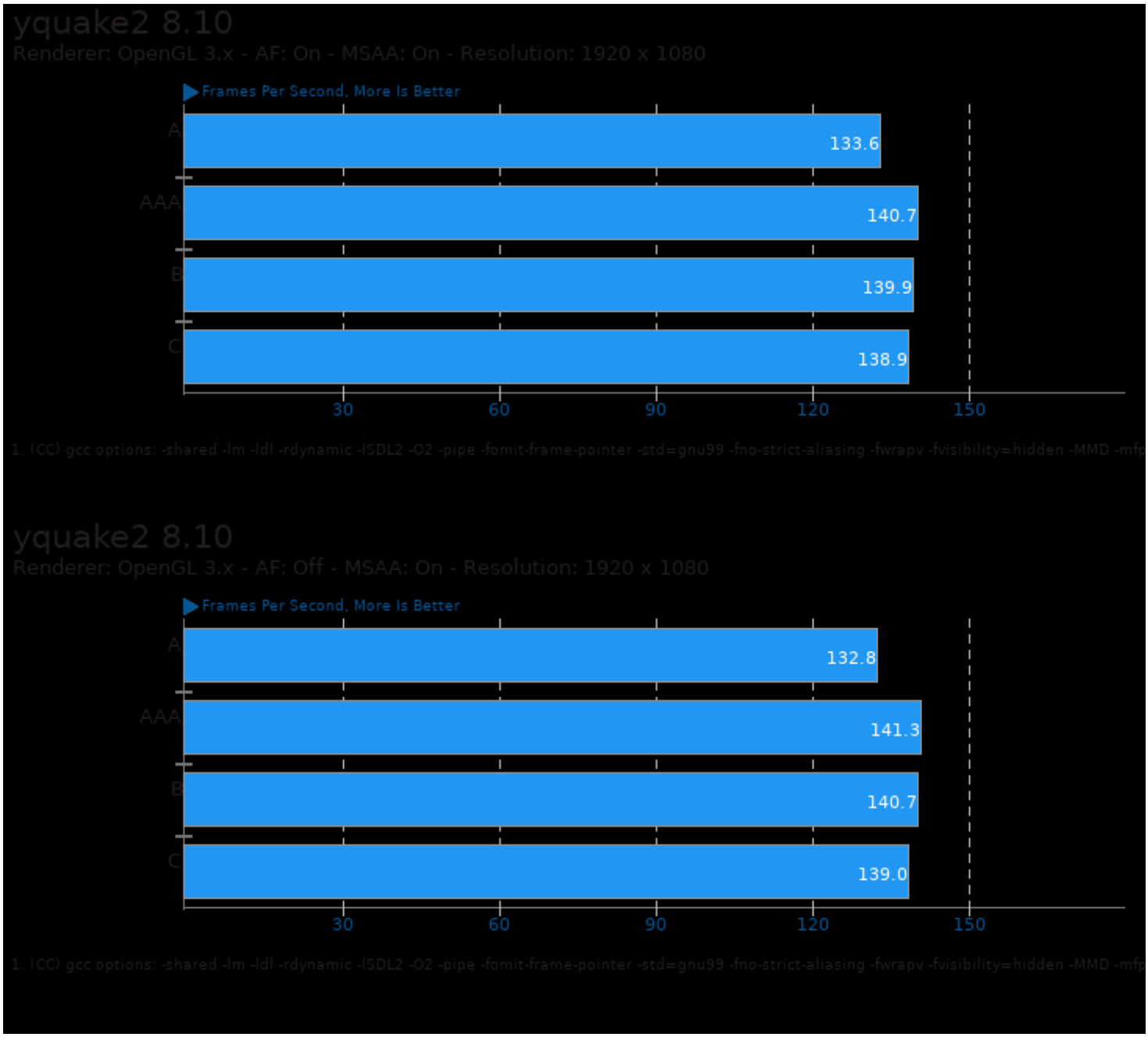
Video Input: Bosphorus 1080p

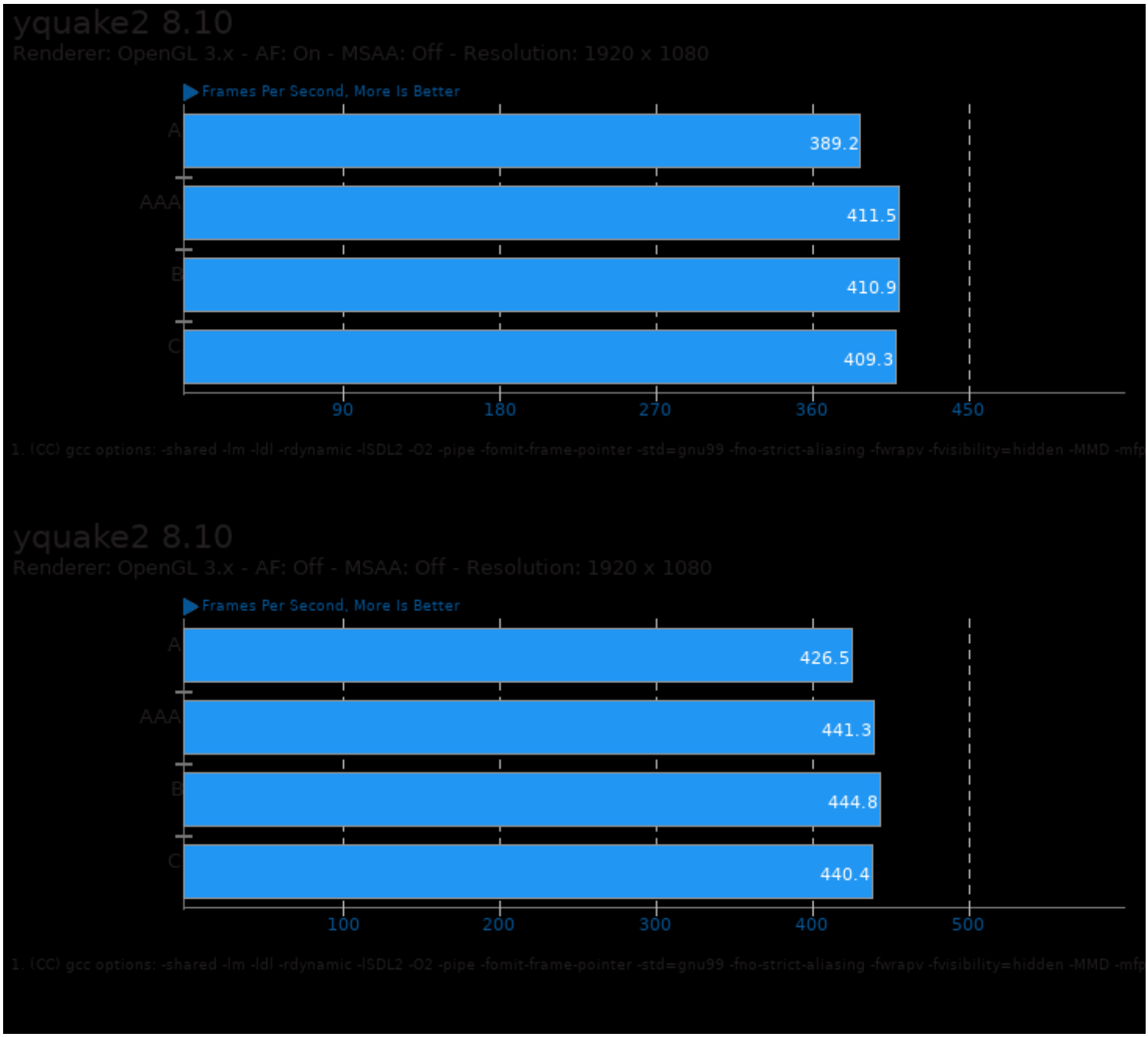


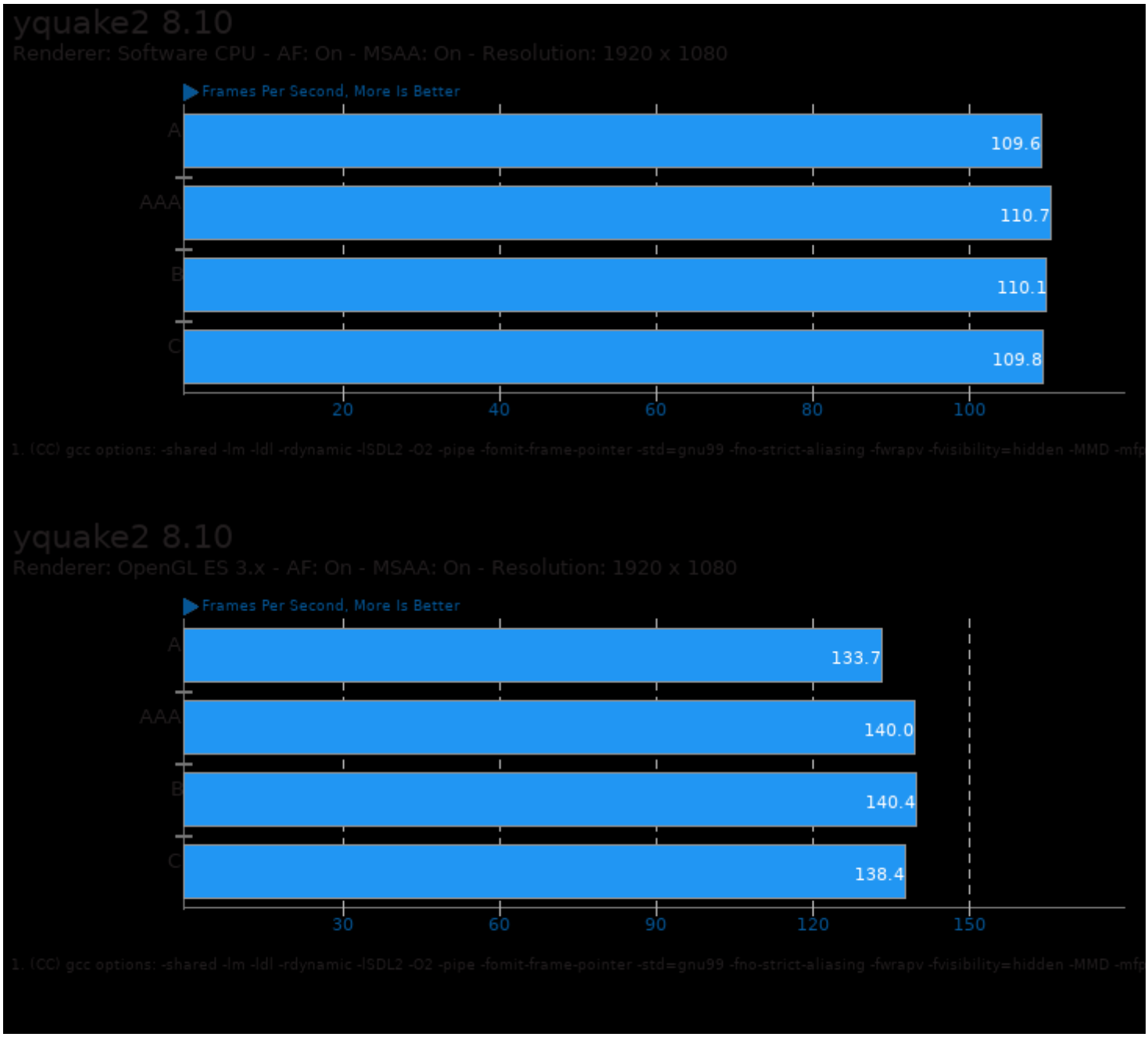
1. (CC) gcc options: -ldl -lavformat -lavcodec -lavutil -lswscale -m64 -lm -lpthread -O3 -flto

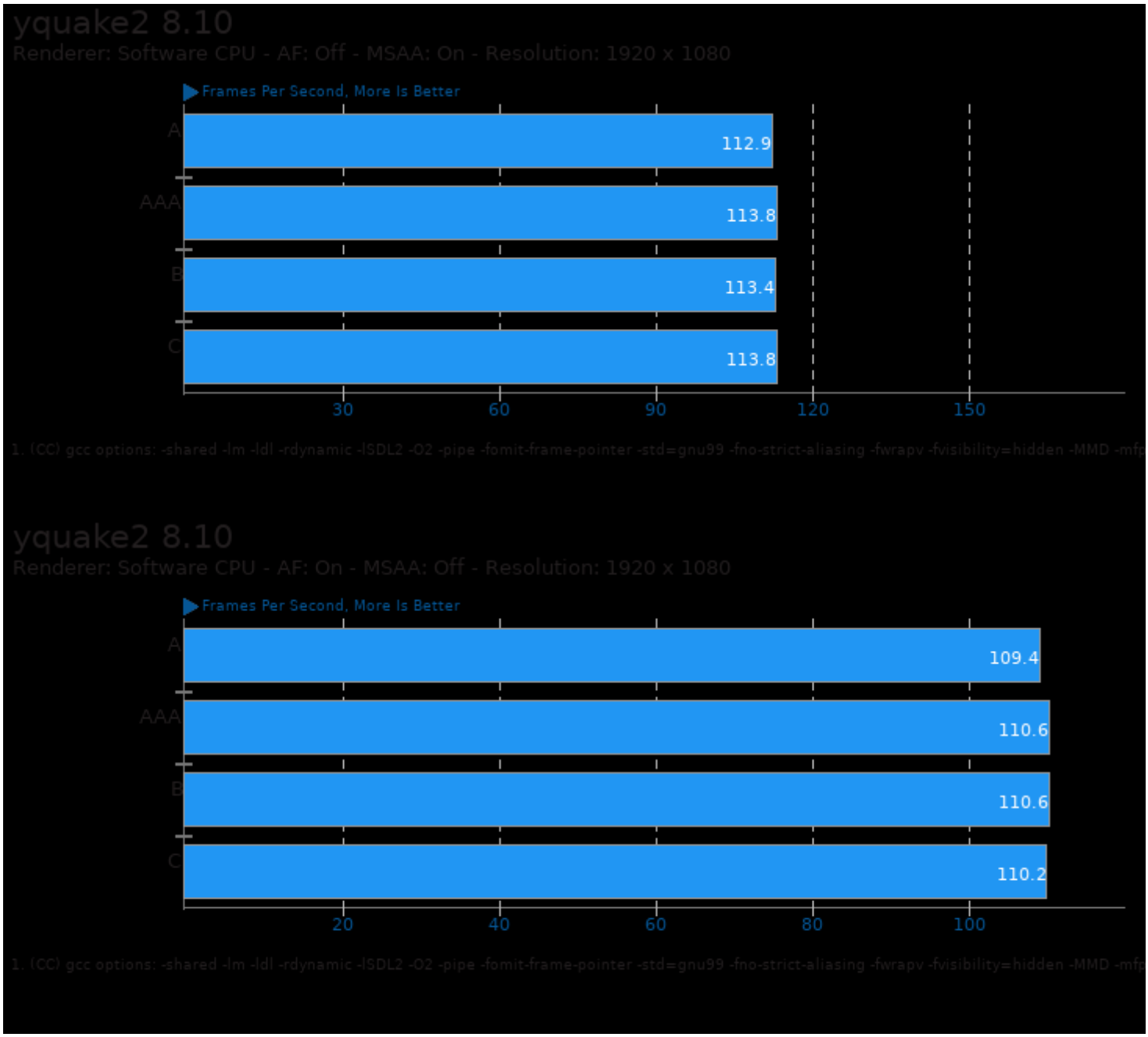

yquake2 8.10
Renderer: Vulkan - AF: On - MSAA: On - Resolution: 1920 x 1080
Frames Per Second, More Is Better
A
AAA
B
C
25.8
25.7
26.1
26.0
6
12
18
24
30
1. (CC) gcc options: -shared -lm -ldl -rdynamic -lSDL2 -O2 -pipe -fomit-frame-pointer -std=gnu99 -fno-strict-aliasing -fwrapv -fvisibility=hidden -MMD -mf
yquake2 8.10
Renderer: Vulkan - AF: Off - MSAA: On - Resolution: 1920 x 1080
Frames Per Second, More Is Better
A
AAA
B
C
26.7
26.8
27.1
27.0
6
12
18
24
30
1. (CC) gcc options: -shared -lm -ldl -rdynamic -lSDL2 -O2 -pipe -fomit-frame-pointer -std=gnu99 -fno-strict-aliasing -fwrapv -fvisibility=hidden -MMD -mf

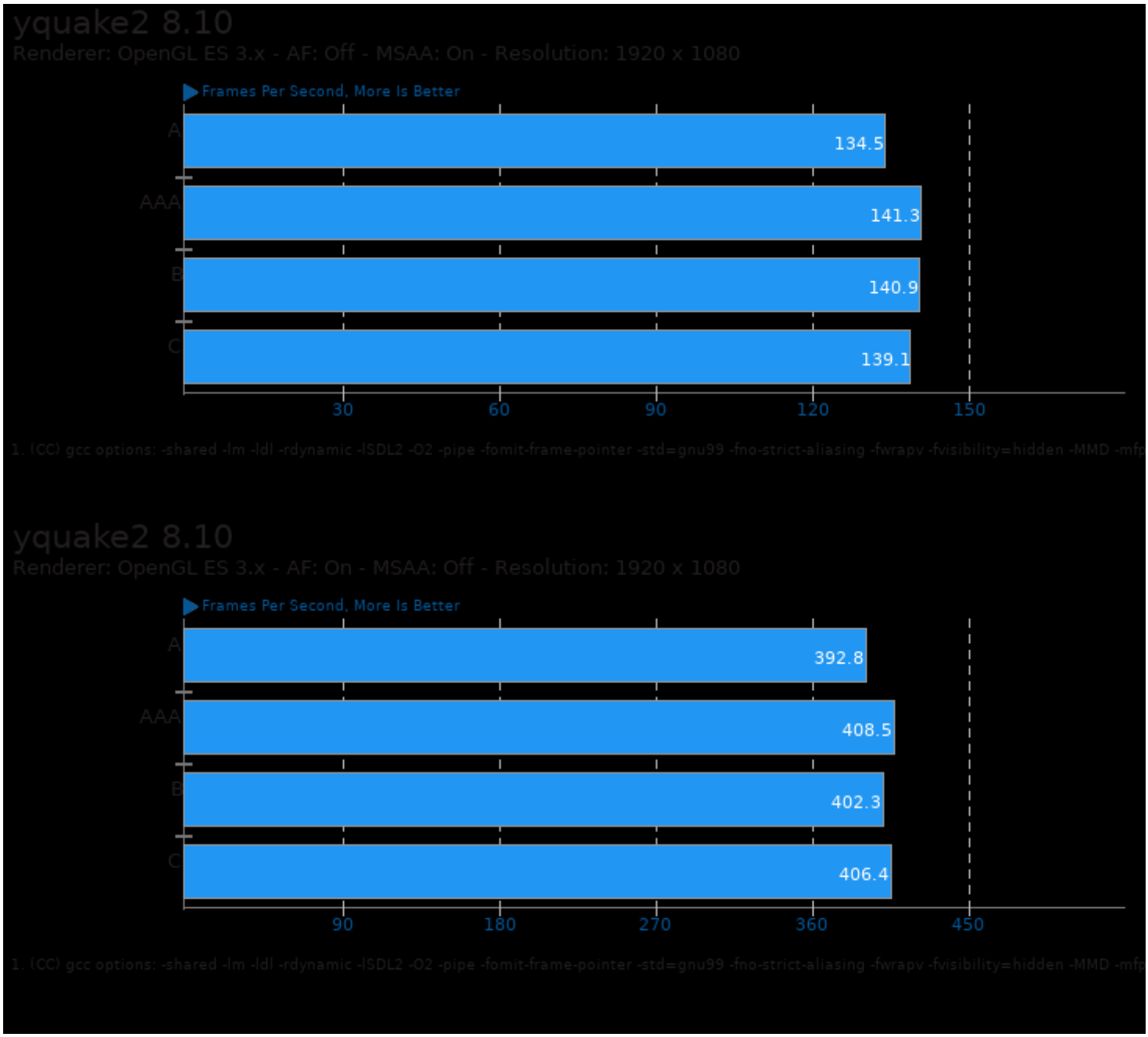

yquake2 8.10
Renderer: Vulkan - AF: On - MSAA: Off - Resolution: 1920 x 1080
Frames Per Second, More Is Better
A
AAA
B
C
258.9
271.2
272.5
270.3
60
120
180
240
300
1. (CC) gcc options: -shared -lm -ldl -rdynamic -lSDL2 -O2 -pipe -fomit-frame-pointer -std=gnu99 -fno-strict-aliasing -fwrapv -fvisibility=hidden -MMD -mf
yquake2 8.10
Renderer: Vulkan - AF: Off - MSAA: Off - Resolution: 1920 x 1080
Frames Per Second, More Is Better
A
AAA
B
C
273.6
284.8
287.5
284.7
60
120
180
240
300
1. (CC) gcc options: -shared -lm -ldl -rdynamic -lSDL2 -O2 -pipe -fomit-frame-pointer -std=gnu99 -fno-strict-aliasing -fwrapv -fvisibility=hidden -MMD -mf

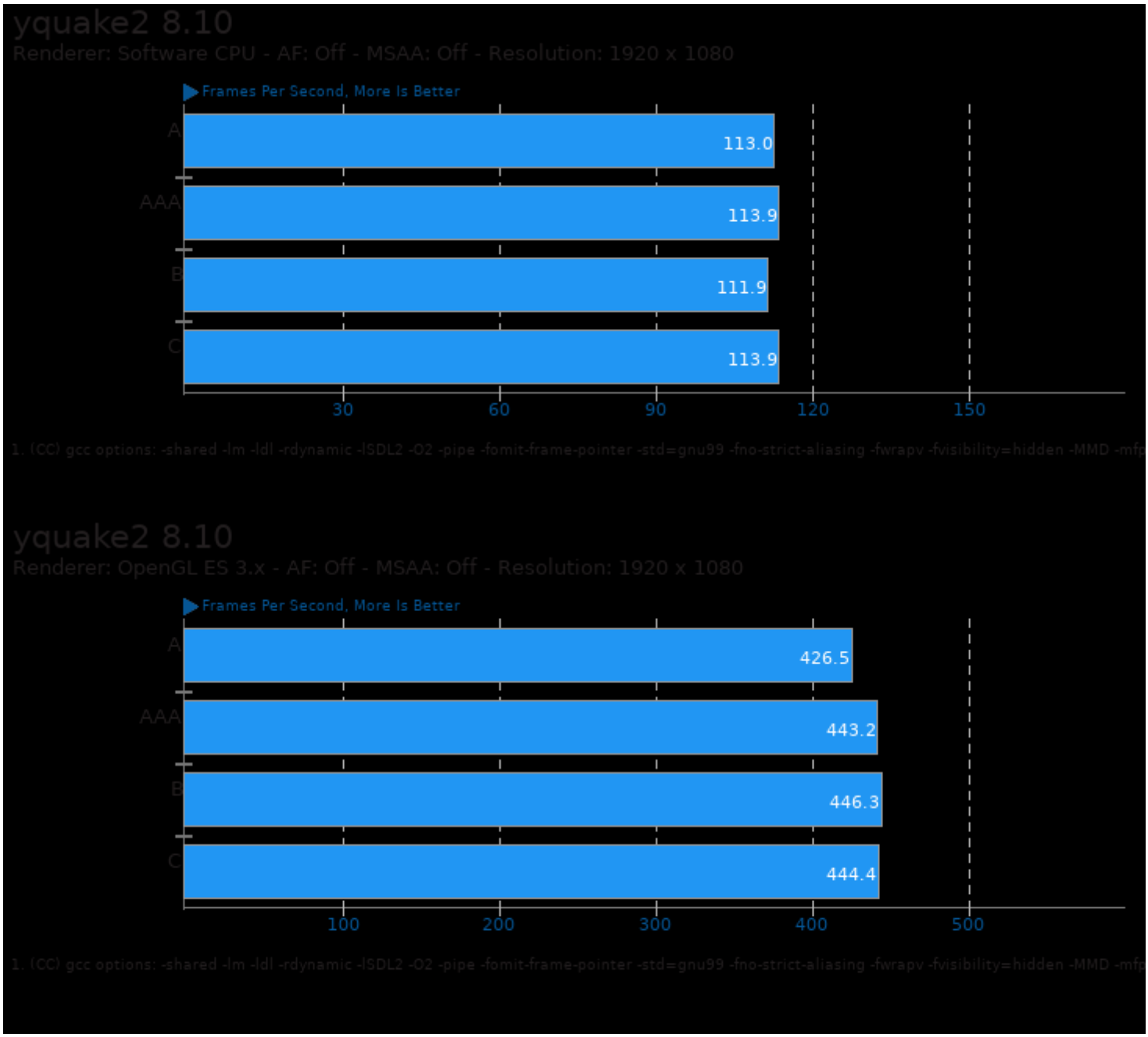

yquake2 8.10
Renderer: OpenGL 3.x - AF: On - MSAA: On - Resolution: 1920 x 1080
Frames Per Second, More Is Better
A
AAA
B
C
133.6
140.7
139.9
138.9
30
60
90
120
150
1. (CC) gcc options: -shared -lm -ldl -rdynamic -lSDL2 -O2 -pipe -fomit-frame-pointer -std=gnu99 -fno-strict-aliasing -fwrapv -fvisibility=hidden -MMD -mf
yquake2 8.10
Renderer: OpenGL 3.x - AF: Off - MSAA: On - Resolution: 1920 x 1080
Frames Per Second, More Is Better
A
AAA
B
C
132.8
141.3
140.7
139.0
30
60
90
120
150
1. (CC) gcc options: -shared -lm -ldl -rdynamic -lSDL2 -O2 -pipe -fomit-frame-pointer -std=gnu99 -fno-strict-aliasing -fwrapv -fvisibility=hidden -MMD -mf

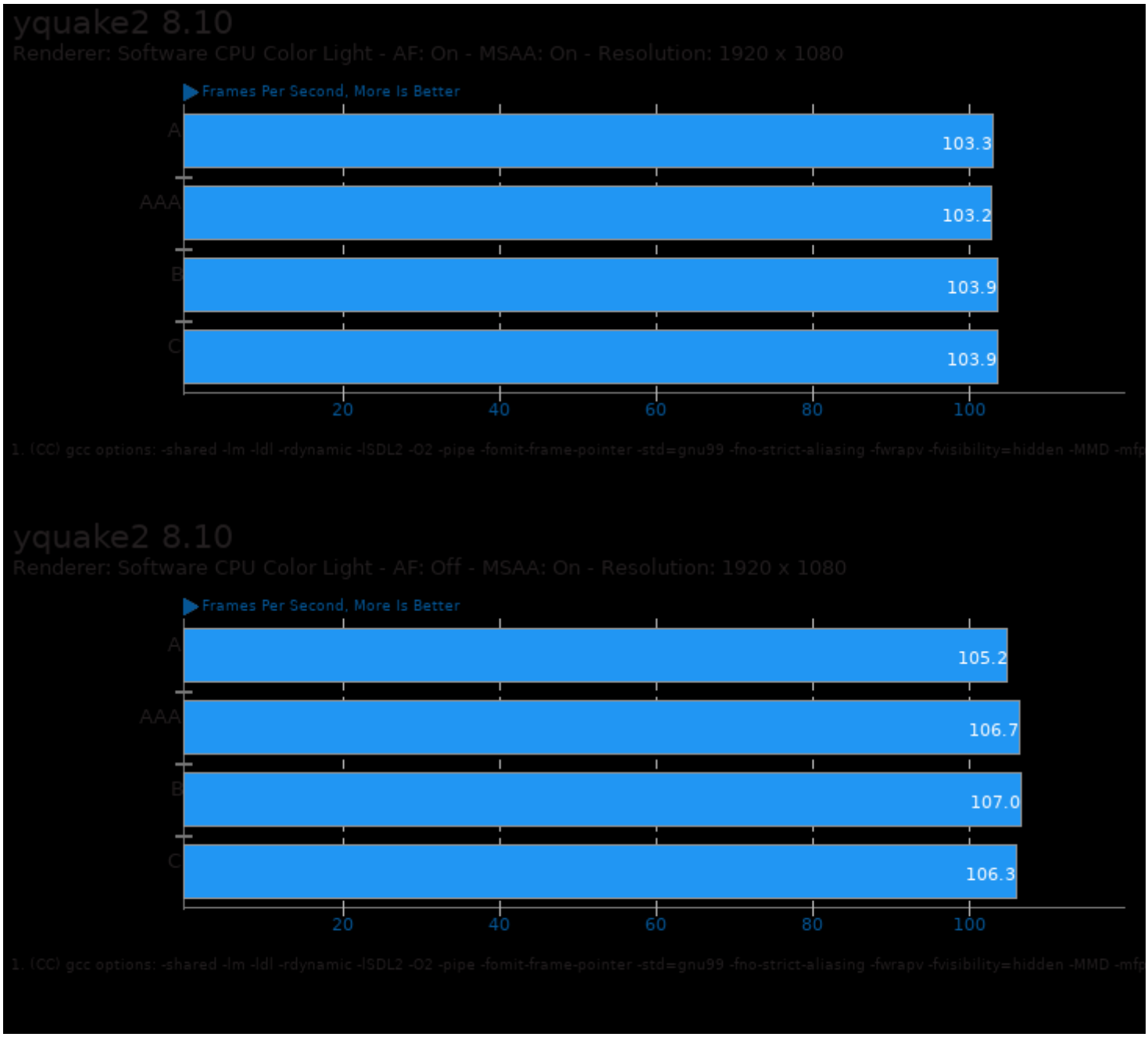

yquake2 8.10
Renderer: OpenGL 3.x - AF: On - MSAA: Off - Resolution: 1920 x 1080
Frames Per Second, More Is Better
A
AAA
B
C
389.2
411.5
410.9
409.3
90
180
270
360
450
1. (CC) gcc options: -shared -lm -ldl -rdynamic -lSDL2 -O2 -pipe -fomit-frame-pointer -std=gnu99 -fno-strict-aliasing -fwrapv -fvisibility=hidden -MMD -mf
yquake2 8.10
Renderer: OpenGL 3.x - AF: Off - MSAA: Off - Resolution: 1920 x 1080
Frames Per Second, More Is Better
A
AAA
B
C
426.5
441.3
444.8
440.4
100
200
300
400
500
1. (CC) gcc options: -shared -lm -ldl -rdynamic -lSDL2 -O2 -pipe -fomit-frame-pointer -std=gnu99 -fno-strict-aliasing -fwrapv -fvisibility=hidden -MMD -mf

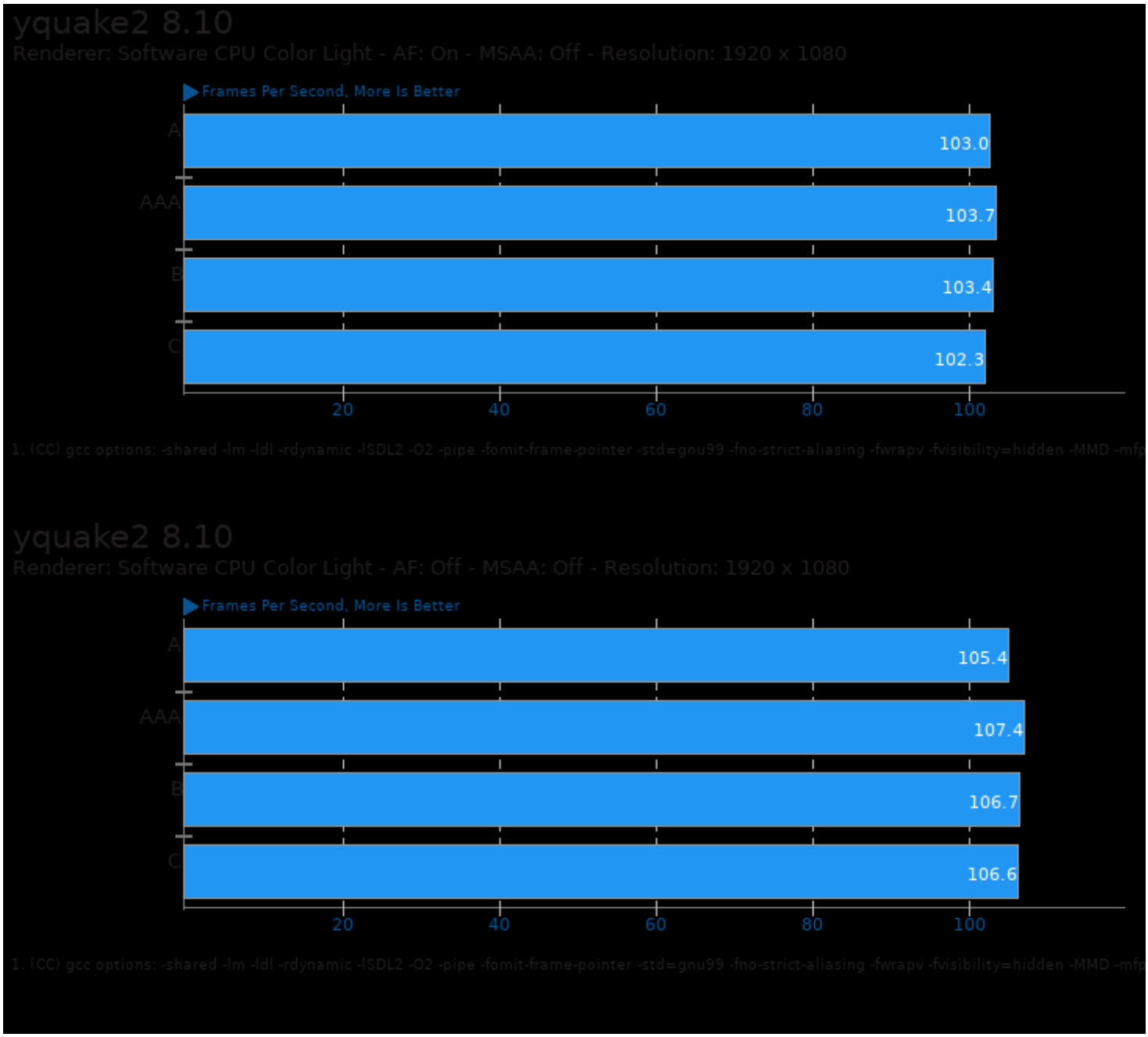

yquake2 8.10
Renderer: Software CPU - AF: On - MSAA: On - Resolution: 1920 x 1080
Frames Per Second, More Is Better
A
AAA
B
C
109.6
110.7
110.1
109.8
20
40
60
80
100
1. (CC) gcc options: -shared -lm -ldl -rdynamic -lSDL2 -O2 -pipe -fomit-frame-pointer -std=gnu99 -fno-strict-aliasing -fwrapv -fvisibility=hidden -MMD -mf
yquake2 8.10
Renderer: OpenGL ES 3.x - AF: On - MSAA: On - Resolution: 1920 x 1080
Frames Per Second, More Is Better
A
AAA
B
C
133.7
140.0
140.4
138.4
30
60
90
120
150
1. (CC) gcc options: -shared -lm -ldl -rdynamic -lSDL2 -O2 -pipe -fomit-frame-pointer -std=gnu99 -fno-strict-aliasing -fwrapv -fvisibility=hidden -MMD -mf


yquake2 8.10
Renderer: Software CPU - AF: Off - MSAA: On - Resolution: 1920 x 1080
Frames Per Second, More Is Better
A
AAA
B
C
112.9
113.8
113.4
113.8
30
60
90
120
150
1. (CC) gcc options: -shared -lm -ldl -rdynamic -lSDL2 -O2 -pipe -fomit-frame-pointer -std=gnu99 -fno-strict-aliasing -fwrapv -fvisibility=hidden -MMD -mf
yquake2 8.10
Renderer: Software CPU - AF: On - MSAA: Off - Resolution: 1920 x 1080
Frames Per Second, More Is Better
A
AAA
B
C
109.4
110.6
110.6
110.2
20
40
60
80
100
1. (CC) gcc options: -shared -lm -ldl -rdynamic -lSDL2 -O2 -pipe -fomit-frame-pointer -std=gnu99 -fno-strict-aliasing -fwrapv -fvisibility=hidden -MMD -mf


yquake2 8.10
Renderer: OpenGL ES 3.x - AF: Off - MSAA: On - Resolution: 1920 x 1080
Frames Per Second, More Is Better
A
AAA
B
C
134.5
141.3
140.9
139.1
30
60
90
120
150
1. (CC) gcc options: -shared -lm -ldl -rdynamic -lSDL2 -O2 -pipe -fomit-frame-pointer -std=gnu99 -fno-strict-aliasing -fwrapv -fvisibility=hidden -MMD -mf
yquake2 8.10
Renderer: OpenGL ES 3.x - AF: On - MSAA: Off - Resolution: 1920 x 1080
Frames Per Second, More Is Better
A
AAA
B
C
392.8
408.5
402.3
406.4
90
180
270
360
450
1. (CC) gcc options: -shared -lm -ldl -rdynamic -lSDL2 -O2 -pipe -fomit-frame-pointer -std=gnu99 -fno-strict-aliasing -fwrapv -fvisibility=hidden -MMD -mf


yquake2 8.10
Renderer: Software CPU - AF: Off - MSAA: Off - Resolution: 1920 x 1080
Frames Per Second, More Is Better
A
AAA
B
C
113.0
113.9
111.9
113.9
30
60
90
120
150
1. (CC) gcc options: -shared -lm -ldl -rdynamic -lSDL2 -O2 -pipe -fomit-frame-pointer -std=gnu99 -fno-strict-aliasing -fwrapv -fvisibility=hidden -MMD -mf
yquake2 8.10
Renderer: OpenGL ES 3.x - AF: Off - MSAA: Off - Resolution: 1920 x 1080
Frames Per Second, More Is Better
A
AAA
B
C
426.5
443.2
446.3
444.4
100
200
300
400
500
1. (CC) gcc options: -shared -lm -ldl -rdynamic -lSDL2 -O2 -pipe -fomit-frame-pointer -std=gnu99 -fno-strict-aliasing -fwrapv -fvisibility=hidden -MMD -mf


yquake2 8.10
Renderer: Software CPU Color Light - AF: On - MSAA: On - Resolution: 1920 x 1080
Frames Per Second, More Is Better
A
AAA
B
C
103.3
103.2
103.9
103.9
20
40
60
80
100
1. (CC) gcc options: -shared -lm -ldl -rdynamic -lSDL2 -O2 -pipe -fomit-frame-pointer -std=gnu99 -fno-strict-aliasing -fwrapv -fvisibility=hidden -MMD -mf
yquake2 8.10
Renderer: Software CPU Color Light - AF: Off - MSAA: On - Resolution: 1920 x 1080
Frames Per Second, More Is Better
A
AAA
B
C
105.2
106.7
107.0
106.3
20
40
60
80
100
1. (CC) gcc options: -shared -lm -ldl -rdynamic -lSDL2 -O2 -pipe -fomit-frame-pointer -std=gnu99 -fno-strict-aliasing -fwrapv -fvisibility=hidden -MMD -mf



This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 10:19.