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AMD EPYC Rome

AMD EPYC 7F52 16-Core testing with a Supermicro H11DSi-NT v2.00 (2.1 BIOS) and llvmpipe on Ubuntu 21.10 via the Phoronix Test Suite.

Automated Executive Summary

A had the most wins, coming in first place for 32% of the tests.

Based on the geometric mean of all complete results, the fastest (A) was 1.003x the speed of the slowest (B). C was 0.998x the speed of A, D was 1x the speed of C, B was 0.999x the speed of D.

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

Redis (Test: LPOP) at 1.551x
Stress-NG (Test: Glibc C String Functions) at 1.305x
ONNX Runtime (Model: shufflenet-v2-10 - Device: OpenMP CPU) at 1.267x
NCNN (Target: CPU - Model: mnasnet) at 1.266x
NCNN (Target: CPU - Model: shufflenet-v2) at 1.219x
Mobile Neural Network (Model: MobileNetV2_224) at 1.186x
NCNN (Target: CPU - Model: mobilenet) at 1.186x
PostgreSQL pgbench (Scaling Factor: 1 - Clients: 500 - Mode: Read Write) at 1.181x
PostgreSQL pgbench (Scaling Factor: 1 - Clients: 500 - Mode: Read Write - Average Latency) at 1.181x

LuxCoreRender (Scene: Rainbow Colors and Prism - Acceleration: CPU) at 1.173x.

Test Systems:

A

B

C

D

Processor: AMD EPYC 7F52 16-Core @ 3.50GHz (16 Cores / 32 Threads), Motherboard: Supermicro H11DSi-NT v2.00 (2.1 BIOS), Chipset: AMD Starship/Matisse, Memory: 64GB, Disk: 280GB INTEL SSDPE21D280GA, Graphics: llvmpipe, Monitor: VE228, Network: 2 x Intel 10G X550T

OS: Ubuntu 21.10, Kernel: 5.13.0-19-generic (x86_64), Desktop: GNOME Shell 40.5, Display Server: X Server + Wayland, OpenGL: 4.5 Mesa 21.2.2 (LLVM 12.0.1 256 bits), Vulkan: 1.1.182, 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: acpi-cpufreq schedutil (Boost: Enabled) - CPU Microcode: 0x8301034
Java Notes: OpenJDK Runtime Environment (build 11.0.12+7-Ubuntu-0ubuntu3)
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 Full AMD retpoline IBPB: conditional IBRS_FW STIBP: conditional RSB filling + srbds: Not affected + tsx_async_abort: Not affected

	A	B	C	D
C-Blosc - blosclz (MB/s)	**22706**	23099	**23169**	22943
Normalized	98%	99.7%	100%	99.02%
QuantLib (MFLOPS)	**2626**	2615	**2589**	2604
Normalized	100%	99.58%	98.59%	99.14%
High Performance Conjugate Gradient (GFLOP/s)	**16.68**	16.8433	16.8117	**17.0044**
Normalized	98.09%	99.05%	98.87%	100%
LeelaChessZero - BLAS (Nodes/s)	1642	**1685**	**1479**	1622
Normalized	97.45%	100%	87.77%	96.26%
LeelaChessZero - Eigen (Nodes/s)	1519	**1633**	**1471**	1517
Normalized	93.02%	100%	90.08%	92.9%

AMD EPYC Rome

CloverLeaf - L.E.H (sec)	19.36	19.23	19.28	19.33
Normalized	99.33%	100%	99.74%	99.48%
NAMD - ATPase Simulation - 327,506 Atoms (days/ns)	1.13482	1.13454	1.13262	1.13357
Normalized	99.81%	99.83%	100%	99.92%
Pennant - sedovbig (Hydro Cycle Time - sec)	24.91585	24.78892	24.69115	24.74505
Normalized	99.1%	99.61%	100%	99.78%
Pennant - leblancbig (Hydro Cycle Time - sec)	14.71975	14.58812	14.68187	14.54555
Normalized	98.82%	99.71%	99.07%	100%
Timed MrBayes Analysis - P.P.A (sec)	104.234	104.336	104.27	105.034
Normalized	100%	99.9%	99.97%	99.24%
NWChem - C240 Buckyball (sec)	6249	6217	6182	6212
Normalized	98.94%	99.45%	100%	99.52%
Timed HMMer Search - P.D.S (sec)	100.066	100.272	99.996	100.217
Normalized	99.93%	99.72%	100%	99.78%
Xcompact3d Incompact3d - i.i.1.C.P.D (sec)	8.85260391	8.9701004	8.94024277	8.92117882
Normalized	100%	98.69%	99.02%	99.23%
Xcompact3d Incompact3d - i.i.1.C.P.D (sec)	36.0911446	35.2049751	36.1263733	35.2909126
Normalized	97.54%	100%	97.45%	99.76%
OpenFOAM - Motorbike 30M (sec)	32.73	32.56	32.09	31.81
Normalized	97.19%	97.7%	99.13%	100%
OpenFOAM - Motorbike 60M (sec)	264.66	264.52	263.38	264.69
Normalized	99.52%	99.57%	100%	99.51%
Quantum ESPRESSO - AUSURF112 (sec)	396.99	396.29	395.13	397.14
Normalized	99.53%	99.71%	100%	99.49%
LULESH (z/s)	8623	8573	8663	8682
Normalized	99.31%	98.74%	99.77%	100%
simdjson - Kostya (GB/s)	2.44	2.4	2.46	2.43
Normalized	99.19%	97.56%	100%	98.78%
simdjson - LargeRand (GB/s)	0.9	0.9	0.9	0.9
simdjson - PartialTweets (GB/s)	3.51	3.51	3.51	3.51
simdjson - DistinctUserID (GB/s)	3.95	3.95	3.96	3.95
Normalized	99.75%	99.75%	100%	99.75%
GNU GMP GMPbench - Total Time (GMPbench Score)	5315	5313	5313	5313
Normalized	100%	99.97%	99.97%	99.96%
Xmrig - Monero - 1M (H/s)	13522	13573	13559	13619
Normalized	99.28%	99.66%	99.56%	100%
Xmrig - Wownero - 1M (H/s)	14146	14149	14164	14184
Normalized	99.73%	99.75%	99.86%	100%
Chia Blockchain VDF - Square Plain C++ (IPS)	150100	149700	150000	150100
Normalized	100%	99.73%	99.93%	100%
Chia Blockchain VDF - S.A.O (IPS)	117200	121500	117100	119600
Normalized	96.46%	100%	96.38%	98.44%
Renaissance - Scala Dotty (ms)	884.6	884.9	1005	889.7
Normalized	100%	99.97%	88.04%	99.43%

AMD EPYC Rome

Renaissance - Rand Forest (ms)	**903.2**	876.9	891.3	**876.8**
Normalized	97.08%	99.99%	98.37%	100%
Renaissance - ALS Movie Lens (ms)	8165	**8008**	8326	**8404**
Normalized	98.07%	100%	96.18%	95.29%
Renaissance - Apache Spark ALS	**1660**	**1727**	1662	1713
Normalized	100%	96.17%	99.89%	96.95%
Renaissance - Apache Spark Bayes (ms)	**690.4**	772.6	719.7	**779.9**
Normalized	100%	89.36%	95.93%	88.52%
Renaissance - Savina Reactors.IO	10392	**10786**	**10237**	10325
Normalized	98.51%	94.91%	100%	99.15%
Renaissance - A.S.P (ms)	4174	**3976**	4032	**4178**
Normalized	95.25%	100%	98.6%	95.16%
Renaissance - F.H.R (ms)	**2804**	2873	**2888**	2831
Normalized	100%	97.59%	97.11%	99.04%
Renaissance - I.M.D.S (ms)	5278	**5249**	**5322**	5263
Normalized	99.44%	100%	98.61%	99.73%
Renaissance - A.U.C.T (ms)	19929	20122	**20215**	**19826**
Normalized	99.48%	98.53%	98.07%	100%
Renaissance - G.A.U.J.F (ms)	2325	**2418**	2328	**2287**
Normalized	98.37%	94.59%	98.23%	100%
JPEG XL libjxl - PNG - 5 (MP/s)	**51.84**	52.21	52.32	**52.53**
Normalized	98.69%	99.39%	99.6%	100%
JPEG XL libjxl - PNG - 7 (MP/s)	**7.86**	7.95	**7.97**	7.89
Normalized	98.62%	99.75%	100%	99%
JPEG XL libjxl - PNG - 8 (MP/s)	0.81	0.81	0.81	0.81
JPEG XL libjxl - JPEG - 5 (MP/s)	**69.61**	70.81	**71.55**	70.85
Normalized	97.29%	98.97%	100%	99.02%
JPEG XL libjxl - JPEG - 7 (MP/s)	**68.87**	70.65	**70.74**	70.58
Normalized	97.36%	99.87%	100%	99.77%
JPEG XL libjxl - JPEG - 8 (MP/s)	**26.16**	26.4	**26.54**	26.31
Normalized	98.57%	99.47%	100%	99.13%
JPEG XL Decoding libjxl - 1 (MP/s)	**51.15**	51.98	**52.52**	51.76
Normalized	97.39%	98.97%	100%	98.55%
JPEG XL Decoding libjxl - All (MP/s)	**262.97**	276.19	**286.01**	275.56
Normalized	91.94%	96.57%	100%	96.35%
Botan - KASUMI (MiB/s)	**89.862**	**89.806**	89.821	89.842
Normalized	100%	99.94%	99.95%	99.98%
Botan - KASUMI - Decrypt (MiB/s)	86.995	**87.096**	**86.945**	87.006
Normalized	99.88%	100%	99.83%	99.9%
Botan - AES-256 (MiB/s)	5211	**5183**	**5213**	5190
Normalized	99.97%	99.43%	100%	99.56%
Botan - AES-256 - Decrypt (MiB/s)	5192	**5185**	5190	**5195**
Normalized	99.95%	99.82%	99.91%	100%
Botan - Twofish (MiB/s)	328.028	**328.129**	327.992	**327.858**
Normalized	99.97%	100%	99.96%	99.92%
Botan - Twofish - Decrypt (MiB/s)	**332.674**	332.781	332.835	**332.94**
Normalized	99.92%	99.95%	99.97%	100%
Botan - Blowfish (MiB/s)	**374.672**	394.704	**394.833**	394.492
Normalized	94.89%	99.97%	100%	99.91%
Botan - Blowfish - Decrypt (MiB/s)	**373.929**	**393.96**	393.819	393.33
Normalized	94.92%	100%	99.96%	99.84%
Botan - CAST-256 (MiB/s)	136.899	136.883	**136.733**	**136.912**

	Normalized	99.99%	99.98%	99.87%	100%
Botan - CAST-256 - Decrypt (MiB/s)	136.993	136.963	**136.85**	**137.025**
	Normalized	99.98%	99.95%	99.87%	100%
Botan - ChaCha20Poly1305 (MiB/s)	**752.58**	753.482	753.052	**753.542**
	Normalized	99.87%	99.99%	99.93%	100%
Botan - ChaCha20Poly1305 - Decrypt (MiB/s)	**745.229**	745.261	**748.043**	746.984
	Normalized	99.62%	99.63%	100%	99.86%
LuaRadio - F.B.t.B.F.F (MiB/s)	460.6	446.9	**460.9**	**425.4**
	Normalized	99.93%	96.96%	100%	92.3%
LuaRadio - F.D.F (MiB/s)	**377.1**	372.3	**369.5**	375
	Normalized	100%	98.73%	97.98%	99.44%
LuaRadio - Hilbert Transform (MiB/s)	**97.4**	**97.4**	**97.4**	**97.3**
	Normalized	100%	100%	100%	99.9%
LuaRadio - Complex Phase (MiB/s)	**497.1**	**512.5**	507.8	504.6
	Normalized	97%	100%	99.08%	98.46%
GNU Radio - F.B.t.B.F.F (MiB/s)	**450.8**	518.2	523.2	**523.5**
	Normalized	86.11%	98.99%	99.94%	100%
GNU Radio - S.S.C (MiB/s)	**3391**	3337	3339	**3309**
	Normalized	100%	98.4%	98.46%	97.57%
GNU Radio - FIR Filter (MiB/s)	**653.2**	651.4	**646.1**	647.9
	Normalized	100%	99.72%	98.91%	99.19%
GNU Radio - IIR Filter (MiB/s)	572.5	**566.5**	567.8	**578.6**
	Normalized	98.95%	97.91%	98.13%	100%
GNU Radio - F.D.F (MiB/s)	846.5	**761.9**	849.9	**864**
	Normalized	97.97%	88.18%	98.37%	100%
GNU Radio - Hilbert Transform (MiB/s)	**401.6**	**405.9**	402.1	402.6
	Normalized	98.94%	100%	99.06%	99.19%
LuxCoreRender - DLSC - CPU (M samples/sec)	3.18	**3.27**	**3.17**	3.26
	Normalized	97.25%	100%	96.94%	99.69%
LuxCoreRender - Danish Mood - CPU (M samples/sec)	2.27	**2.18**	**2.28**	2.22
	Normalized	99.56%	95.61%	100%	97.37%
LuxCoreRender - Orange Juice - CPU (M samples/sec)	**5.14**	**4.98**	5.01	5
	Normalized	100%	96.89%	97.47%	97.28%
LuxCoreRender - LuxCore Benchmark - CPU (M samples/sec)	2.55	**2.58**	2.52	**2.5**
	Normalized	98.84%	100%	97.67%	96.9%
LuxCoreRender - R.C.a.P - CPU (M samples/sec)	8.99	**8.91**	9.47	**10.45**
	Normalized	86.03%	85.26%	90.62%	100%
dav1d - Chimera 1080p (FPS)	**558.94**	561.7	**564.18**	561.87
	Normalized	99.07%	99.56%	100%	99.59%
dav1d - Summer Nature 4K (FPS)	245.29	**248.77**	247.21	**244.28**
	Normalized	98.6%	100%	99.37%	98.2%
dav1d - S.N.1 (FPS)	**511.36**	510.59	509.25	**508.23**
	Normalized	100%	99.85%	99.59%	99.39%
dav1d - C.1.1.b (FPS)	**444.53**	**446.95**	446.07	445.75
	Normalized	99.46%	100%	99.8%	99.73%
OSPray - San Miguel - SciVis (FPS)	24.39	24.39	24.39	24.39

AMD EPYC Rome

OSPray - XFrog Forest - SciVis (FPS)	4.72	4.72	4.72	4.72
OSPray - San Miguel - Path Tracer (FPS)	1.88	1.88	1.88	1.87
Normalized	100%	100%	100%	99.47%
OSPray - NASA Streamlines - SciVis (FPS)	33.33	33.33	33.33	33.33
OSPray - XFrog Forest - Path Tracer (FPS)	2.51	2.52	2.52	2.51
Normalized	99.6%	100%	100%	99.6%
OSPray - M.R - SciVis (FPS)	15.87	15.625	15.625	15.87
Normalized	100%	98.46%	98.46%	100%
OSPray - NASA Streamlines - Path Tracer (FPS)	7.19	7.19	7.19	7.19
OSPray - M.R - Path Tracer (FPS)	250	250	250	250
AOM AV1 - Speed 0 Two-Pass - Bosphorus 4K (FPS)	0.18	0.18	0.17	0.18
Normalized	100%	100%	94.44%	100%
AOM AV1 - Speed 4 Two-Pass - Bosphorus 4K (FPS)	3.75	3.79	3.8	3.78
Normalized	98.68%	99.74%	100%	99.47%
AOM AV1 - Speed 6 Realtime - Bosphorus 4K (FPS)	12.83	12.82	12.89	12.89
Normalized	99.53%	99.46%	100%	100%
AOM AV1 - Speed 6 Two-Pass - Bosphorus 4K (FPS)	7.29	7.15	7.06	7.08
Normalized	100%	98.08%	96.84%	97.12%
AOM AV1 - Speed 8 Realtime - Bosphorus 4K (FPS)	35	34.74	35.16	35.19
Normalized	99.46%	98.72%	99.91%	100%
AOM AV1 - Speed 9 Realtime - Bosphorus 4K (FPS)	48.73	48.16	48	46.38
Normalized	100%	98.83%	98.5%	95.18%
AOM AV1 - Speed 0 Two-Pass - Bosphorus 1080p (FPS)	0.48	0.48	0.47	0.48
Normalized	100%	100%	97.92%	100%
AOM AV1 - Speed 4 Two-Pass - Bosphorus 1080p (FPS)	5.85	5.87	5.85	5.77
Normalized	99.66%	100%	99.66%	98.3%
AOM AV1 - Speed 6 Realtime - Bosphorus 1080p (FPS)	21.9	21.95	21.95	21.95
Normalized	99.77%	100%	100%	100%
AOM AV1 - Speed 6 Two-Pass - Bosphorus 1080p (FPS)	17.74	17.23	17.27	17.15
Normalized	100%	97.13%	97.35%	96.67%
AOM AV1 - Speed 8 Realtime - Bosphorus 1080p (FPS)	85.73	83.44	83.49	86.88
Normalized	98.68%	96.04%	96.1%	100%
AOM AV1 - Speed 9 Realtime - Bosphorus 1080p (FPS)	100.5	98.24	99.97	100.75
Normalized	99.75%	97.51%	99.23%	100%
Embree - Pathtracer - Crown (FPS)	19.7658	19.8041	19.717	19.9637

Normalized	99.01%	99.2%	98.76%	100%
Embree - Pathtracer ISPC - Crown (FPS)	17.8444	17.9471	17.8879	17.8512
Normalized	99.43%	100%	99.67%	99.47%
Embree - Pathtracer - Asian Dragon (FPS)	20.9192	21.2924	20.8512	20.8215
Normalized	98.25%	100%	97.93%	97.79%
Embree - Pathtracer - Asian Dragon Obj (FPS)	20.3608	20.3787	20.3231	20.4835
Normalized	99.4%	99.49%	99.22%	100%
Embree - Pathtracer ISPC - Asian Dragon (FPS)	19.2697	19.3379	19.0974	19.0713
Normalized	99.65%	100%	98.76%	98.62%
Embree - Pathtracer ISPC - Asian Dragon Obj (FPS)	17.3294	17.2741	17.3047	17.309
Normalized	100%	99.68%	99.86%	99.88%
SVT-AV1 - Preset 4 - Bosphorus 4K (FPS)	1.611	1.603	1.599	1.606
Normalized	100%	99.5%	99.26%	99.69%
SVT-AV1 - Preset 8 - Bosphorus 4K (FPS)	16.662	16.649	16.553	16.574
Normalized	100%	99.92%	99.35%	99.47%
SVT-AV1 - Preset 4 - Bosphorus 1080p (FPS)	4.982	5.026	5.003	4.989
Normalized	99.12%	100%	99.54%	99.26%
SVT-AV1 - Preset 8 - Bosphorus 1080p (FPS)	56.35	56.757	56.205	56.962
Normalized	98.93%	99.64%	98.67%	100%
SVT-HEVC - 1 - Bosphorus 1080p	14.21	14.18	14.17	14.14
Normalized	100%	99.79%	99.72%	99.51%
SVT-HEVC - 7 - Bosphorus 1080p	174.52	176.42	176.94	174.27
Normalized	98.63%	99.71%	100%	98.49%
SVT-HEVC - 10 - Bosphorus 1080p (FPS)	336.89	342.08	337.84	336.13
Normalized	98.48%	100%	98.76%	98.26%
SVT-VP9 - VMAF Optimized - Bosphorus 1080p (FPS)	265.49	272.58	275.08	266.6
Normalized	96.51%	99.09%	100%	96.92%
SVT-VP9 - P.S.O - Bosphorus 1080p (FPS)	282.43	283.76	280.67	286.32
Normalized	98.64%	99.11%	98.03%	100%
SVT-VP9 - V.Q.O - Bosphorus 1080p (FPS)	223.16	225.78	224.39	225.52
Normalized	98.84%	100%	99.38%	99.88%
VP9 libvpx Encoding - Speed 0 - Bosphorus 4K (FPS)	5.85	5.84	5.75	5.87
Normalized	99.66%	99.49%	97.96%	100%
VP9 libvpx Encoding - Speed 5 - Bosphorus 4K (FPS)	10.92	11.4	11.27	11.57
Normalized	94.38%	98.53%	97.41%	100%

VP9 libvpx Encoding - Speed 0 - Bosphorus 1080p (FPS)	12.27	12.15	12.19	12.15
Normalized	100%	99.02%	99.35%	99.02%
VP9 libvpx Encoding - Speed 5 - Bosphorus 1080p (FPS)	26.77	26.26	26.6	26.41
Normalized	100%	98.09%	99.36%	98.66%
Intel Open Image Denoise - RT.hdr_alb_nrm.3840x2160 (Images / Sec)	0.69	0.69	0.69	0.69
Intel Open Image Denoise - RT.ldr_alb_nrm.3840x2160 (Images / Sec)	0.69	0.69	0.69	0.69
Intel Open Image Denoise - RTLightmap.hdr.4096x4096 (Images / Sec)	0.34	0.34	0.34	0.34
OpenVKL - vklBenchmark ISPC (Items / Sec)	52	52	51	52
Normalized	100%	100%	98.08%	100%
OpenVKL - v.S (Items / Sec)	32	32	32	32
Coremark - CoreMark Size 666 - I.P.S (Iterations/Sec)	704458	709849	710085	706363
Normalized	99.21%	99.97%	100%	99.48%
Stockfish - Total Time (Nodes/s)	48524647	49976300	47479804	47751831
Normalized	97.1%	100%	95%	95.55%
asmFish - 1.H.M.2.D (Nodes/s)	46412228	44632377	46468751	45400632
Normalized	99.88%	96.05%	100%	97.7%
libavif avifenc - 0 (sec)	54.876	54.155	53.83	55.272
Normalized	98.09%	99.4%	100%	97.39%
libavif avifenc - 2 (sec)	29.365	28.909	29.331	29.245
Normalized	98.45%	100%	98.56%	98.85%
libavif avifenc - 6 (sec)	11.162	10.926	11.006	10.961
Normalized	97.89%	100%	99.27%	99.68%
libavif avifenc - 10 (sec)	3.725	3.657	3.719	3.688
Normalized	98.17%	100%	98.33%	99.16%
libavif avifenc - 6, Lossless (sec)	37.423	38.027	37.198	37.052
Normalized	99.01%	97.44%	99.61%	100%
libavif avifenc - 10, Lossless (sec)	6.481	6.459	6.423	6.443
Normalized	99.11%	99.44%	100%	99.69%
Timed FFmpeg Compilation - Time To Compile (sec)	31.001	30.858	30.961	30.778
Normalized	99.28%	99.74%	99.41%	100%
Timed GCC Compilation - Time To Compile (sec)	834.032	831.694	833.296	832.13
Normalized	99.72%	100%	99.81%	99.95%
Timed Godot Game Engine Compilation - Time To Compile (sec)	73.111	72.531	72.889	72.782
Normalized	99.21%	100%	99.51%	99.66%
Timed Linux Kernel Compilation - Time To Compile (sec)	48.113	47.227	48.33	47.599
Normalized	98.16%	100%	97.72%	99.22%
Timed LLVM Compilation - Ninja (sec)	299.277	299.978	299.705	299.137

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	Normalized	99.95%	99.72%	99.81%	100%
Timed LLVM Compilation - Unix Makefiles (sec)		335.626	335.751	339.467	350.808
	Normalized	100%	99.96%	98.87%	95.67%
Timed Mesa Compilation - Time To Compile (sec)		27.594	27.419	27.625	27.218
	Normalized	98.64%	99.27%	98.53%	100%
C-Ray - Total Time - 4.1.R.P.P (sec)		33.395	33.405	33.459	33.407
	Normalized	100%	99.97%	99.81%	99.96%
Smallpt - G.I.R.1.S (sec)		5.661	5.62	5.63	5.617
	Normalized	99.22%	99.95%	99.77%	100%
Numpy Benchmark (Score)		351.67	347.27	338.88	349.04
	Normalized	100%	98.75%	96.36%	99.25%
Timed Erlang/OTP Compilation - Time To Compile (sec)		120.25	120.447	120.832	120.983
	Normalized	100%	99.84%	99.52%	99.39%
Timed Wasmer Compilation - Time To Compile (sec)		59.821	59.382	61.419	60.426
	Normalized	99.27%	100%	96.68%	98.27%
Cython Benchmark - N-Queens (sec)		26.19	25.905	25.716	25.967
	Normalized	98.19%	99.27%	100%	99.03%
FLAC Audio Encoding - WAV To FLAC (sec)		15.213	15.215	15.231	15.212
	Normalized	99.99%	99.98%	99.88%	100%
Helsing - 12 digit (sec)		3.011	3.001	2.984	3.002
	Normalized	99.1%	99.43%	100%	99.4%
Helsing - 14 digit (sec)		267.234	266.576	267.956	266.813
	Normalized	99.75%	100%	99.48%	99.91%
Ngspice - C2670 (sec)		168.869	169.765	170.504	166.074
	Normalized	98.34%	97.83%	97.4%	100%
Ngspice - C7552 (sec)		126.181	127.204	127.089	124.193
	Normalized	98.42%	97.63%	97.72%	100%
VOSK Speech Recognition Toolkit		20.482	20.449	20.396	20.355
	Normalized	99.38%	99.54%	99.8%	100%
Google SynthMark - VoiceMark_100 (Voices)		694.791	693.633	694.297	693.943
	Normalized	100%	99.83%	99.93%	99.88%
Cpuminer-Opt - Magi (kH/s)		872.74	865.65	863.62	864.06
	Normalized	100%	99.19%	98.96%	99.01%
Cpuminer-Opt - x25x (kH/s)		543.96	543.58	529.75	536.74
	Normalized	100%	99.93%	97.39%	98.67%
Cpuminer-Opt - Deepcoin (kH/s)		14960	15050	14970	14990
	Normalized	99.4%	100%	99.47%	99.6%
Cpuminer-Opt - Ringcoin (kH/s)		1864	1819	2014	1812
	Normalized	92.52%	90.32%	100%	89.97%
Cpuminer-Opt - Blake-2 S (kH/s)		590120	580970	586380	586560
	Normalized	100%	98.45%	99.37%	99.4%
Cpuminer-Opt - Garlicoin (kH/s)		1528	1586	1559	1710
	Normalized	89.37%	92.76%	91.2%	100%
Cpuminer-Opt - Skeincoin (kH/s)		136560	136480	136590	135430
	Normalized	99.98%	99.92%	100%	99.15%
Cpuminer-Opt - Myriad-Groestl (kH/s)		7974	7949	7961	7977
	Normalized	99.97%	99.64%	99.8%	100%

Cpuminer-Opt - LBC, LBRY Credits (kH/s)	**40450**	40810	40800	**40820**
Normalized	99.09%	99.98%	99.95%	100%
Cpuminer-Opt - Q.S.2.P (kH/s)	131500	**132410**	132130	**130090**
Normalized	99.31%	100%	99.79%	98.25%
Cpuminer-Opt - T.S.2.O (kH/s)	266640	**265370**	266840	**269680**
Normalized	98.87%	98.4%	98.95%	100%
SecureMark - SecureMark-TLS	205382	**205334**	**207575**	206091
Normalized	98.94%	98.92%	100%	99.29%
OpenSSL - SHA256 (byte/s)	**22548674150**	**21862246290**	22192533750	22179182190
Normalized	100%	96.96%	98.42%	98.36%
OpenSSL - RSA4096 (sign/s)	**4608**	4610	**4613**	**4613**
Normalized	99.9%	99.94%	100%	100%
OpenSSL - RSA4096 (verify/s)	**298680**	298909	**298994**	298990
Normalized	99.89%	99.97%	100%	100%
ASKAP - tConvolve MT - Gridding (Million Grid Points/sec)	**3600**	3544	3547	**3535**
Normalized	100%	98.46%	98.54%	98.22%
ASKAP - tConvolve MT - Degridding (Million Grid Points/sec)	**5594**	5508	5511	**5493**
Normalized	100%	98.45%	98.51%	98.19%
ASKAP - tConvolve MPI - Degridding (Mpix/sec)	**13456**	**13456**	**13810**	**13456**
Normalized	97.44%	97.44%	100%	97.44%
ASKAP - tConvolve MPI - Gridding (Mpix/sec)	16400	16400	16400	16400
ASKAP - tConvolve OpenMP - Gridding (Million Grid Points/sec)	**6827**	**6656**	**6827**	**6827**
Normalized	100%	97.5%	100%	100%
ASKAP - tConvolve OpenMP - Degridding (Million Grid Points/sec)	**6339**	**6051**	**6339**	6192
Normalized	100%	95.45%	100%	97.67%
ASKAP - H.C.O (Iterations/sec)	**487.805**	**480.769**	483.092	**480.769**
Normalized	100%	98.56%	99.03%	98.56%
libjpeg-turbo tjbench - D.T (Megapixels/sec)	200.781752	**200.393346**	200.715385	**200.87627**
Normalized	99.95%	99.76%	99.92%	100%
PostgreSQL pgbench - 1 - 1 - Read Only (TPS)	**29125**	29084	**28967**	29028
Normalized	100%	99.86%	99.46%	99.67%
PostgreSQL pgbench - 1 - 1 - Read Only - Average Latency (ms)	**0.034**	**0.034**	**0.035**	**0.034**
Normalized	100%	100%	97.14%	100%
PostgreSQL pgbench - 1 - 1 - Read Write (TPS)	3897	**3876**	**3929**	3900
Normalized	99.19%	98.65%	100%	99.26%
PostgreSQL pgbench - 1 - 1 - Read Write - Average Latency (ms)	0.257	**0.258**	**0.254**	0.256
Normalized	98.83%	98.45%	100%	99.22%

PostgreSQL pgbench - 1 - 50 - Read Only (TPS)	525560	**516049**	**528188**	518400
Normalized	99.5%	97.7%	100%	98.15%
PostgreSQL pgbench - 1 - 50 - Read Only - Average Latency (ms)	**0.095**	**0.097**	**0.095**	0.096
Normalized	100%	97.94%	100%	98.96%
PostgreSQL pgbench - 1 - 100 - Read Only (TPS)	**521657**	519120	521028	**516354**
Normalized	100%	99.51%	99.88%	98.98%
PostgreSQL pgbench - 1 - 100 - Read Only - Average Latency (ms)	**0.192**	0.193	**0.192**	**0.194**
Normalized	100%	99.48%	100%	98.97%
PostgreSQL pgbench - 1 - 250 - Read Only (TPS)	580488	**578469**	**582157**	580507
Normalized	99.71%	99.37%	100%	99.72%
PostgreSQL pgbench - 1 - 250 - Read Only - Average Latency (ms)	0.431	**0.432**	**0.429**	0.431
Normalized	99.54%	99.31%	100%	99.54%
PostgreSQL pgbench - 1 - 50 - Read Write (TPS)	**4658**	4659	**4668**	4666
Normalized	99.79%	99.81%	100%	99.96%
PostgreSQL pgbench - 1 - 50 - Read Write - Average Latency (ms)	**10.734**	10.733	**10.711**	10.716
Normalized	99.79%	99.8%	100%	99.95%
PostgreSQL pgbench - 1 - 500 - Read Only (TPS)	573673	572324	**577533**	**562348**
Normalized	99.33%	99.1%	100%	97.37%
PostgreSQL pgbench - 1 - 500 - Read Only - Average Latency (ms)	0.872	0.874	**0.866**	**0.889**
Normalized	99.31%	99.08%	100%	97.41%
PostgreSQL pgbench - 100 - 1 - Read Only (TPS)	**26125**	26056	26095	**26003**
Normalized	100%	99.74%	99.89%	99.53%
PostgreSQL pgbench - 100 - 1 - Read Only - Average Latency (ms)	0.038	0.038	0.038	0.038
PostgreSQL pgbench - 1 - 100 - Read Write (TPS)	3535	**3480**	**3539**	3528
Normalized	99.89%	98.33%	100%	99.69%
PostgreSQL pgbench - 1 - 100 - Read Write - Average Latency (ms)	28.292	**28.738**	**28.259**	28.345
Normalized	99.88%	98.33%	100%	99.7%
PostgreSQL pgbench - 1 - 250 - Read Write (TPS)	**1869**	**1810**	1851	1845
Normalized	100%	96.84%	99.04%	98.72%
PostgreSQL pgbench - 1 - 250 - Read Write - Average Latency (ms)	**133.728**	**138.086**	135.085	135.506
Normalized	100%	96.84%	99%	98.69%
PostgreSQL pgbench - 1 - 500 - Read Write (TPS)	**1005**	884	**851**	887
Normalized	100%	87.96%	84.68%	88.26%

PostgreSQL pgbench - 1 - 500 - Read Write - Average Latency (ms)	497.701	565.773	587.746	563.748
Normalized	100%	87.97%	84.68%	88.28%
PostgreSQL pgbench - 100 - 1 - Read Write (TPS)	3480	3499	3521	3493
Normalized	98.84%	99.38%	100%	99.2%
PostgreSQL pgbench - 100 - 1 - Read Write - Average Latency (ms)	0.287	0.286	0.284	0.286
Normalized	98.95%	99.3%	100%	99.3%
PostgreSQL pgbench - 100 - 50 - Read Only (TPS)	485159	489595	488382	488259
Normalized	99.09%	100%	99.75%	99.73%
PostgreSQL pgbench - 100 - 50 - Read Only - Average Latency (ms)	0.103	0.102	0.102	0.102
Normalized	99.03%	100%	100%	100%
PostgreSQL pgbench - 100 - 100 - Read Only (TPS)	490976	487642	490149	489530
Normalized	100%	99.32%	99.83%	99.71%
PostgreSQL pgbench - 100 - 100 - Read Only - Average Latency (ms)	0.204	0.205	0.204	0.204
Normalized	100%	99.51%	100%	100%
PostgreSQL pgbench - 100 - 250 - Read Only (TPS)	536452	538247	538933	539686
Normalized	99.4%	99.73%	99.86%	100%
PostgreSQL pgbench - 100 - 250 - Read Only - Average Latency (ms)	0.466	0.464	0.464	0.463
Normalized	99.36%	99.78%	99.78%	100%
PostgreSQL pgbench - 100 - 50 - Read Write (TPS)	44898	44893	44922	45127
Normalized	99.49%	99.48%	99.55%	100%
PostgreSQL pgbench - 100 - 50 - Read Write - Average Latency (ms)	1.114	1.114	1.113	1.108
Normalized	99.46%	99.46%	99.55%	100%
PostgreSQL pgbench - 100 - 500 - Read Only (TPS)	554442	548201	542035	535062
Normalized	100%	98.87%	97.76%	96.5%
PostgreSQL pgbench - 100 - 500 - Read Only - Average Latency (ms)	0.902	0.912	0.922	0.934
Normalized	100%	98.9%	97.83%	96.57%
PostgreSQL pgbench - 100 - 100 - Read Write (TPS)	41797	41645	41433	41779
Normalized	100%	99.64%	99.13%	99.96%
PostgreSQL pgbench - 100 - 100 - Read Write - Average Latency (ms)	2.393	2.401	2.414	2.394
Normalized	100%	99.67%	99.13%	99.96%
PostgreSQL pgbench - 100 - 250 - Read Write (TPS)	38118	37852	38001	37927
Normalized	100%	99.3%	99.69%	99.5%
PostgreSQL pgbench - 100 - 250 - Read Write - Average Latency (ms)	6.559	6.605	6.579	6.592
Normalized	100%	99.3%	99.7%	99.5%

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PostgreSQL pgbench - 100 - 500 - Read Write (TPS)	32217	32284	32423	32277
Normalized	99.36%	99.57%	100%	99.55%
PostgreSQL pgbench - 100 - 500 - Read Write - Average Latency (ms)	15.52	15.487	15.421	15.491
Normalized	99.36%	99.57%	100%	99.55%
ASTC Encoder - Medium (sec)	4.5472	4.534	4.5525	4.5354
Normalized	99.71%	100%	99.59%	99.97%
ASTC Encoder - Thorough (sec)	9.327	9.3121	9.3619	9.3172
Normalized	99.84%	100%	99.47%	99.95%
ASTC Encoder - Exhaustive (sec)	42.1821	42.1897	42.1944	42.1761
Normalized	99.99%	99.97%	99.96%	100%
OpenSCAD - Pistol (sec)	117.187	116.512	117.977	117.151
Normalized	99.42%	100%	98.76%	99.45%
OpenSCAD - Retro Car (sec)	5.445	5.45	5.452	5.453
Normalized	100%	99.91%	99.87%	99.85%
OpenSCAD - Mini-ITX Case (sec)	53.37	53.421	53.289	53.335
Normalized	99.85%	99.75%	100%	99.91%
OpenSCAD - P.M.S (sec)	10.598	10.582	10.484	10.474
Normalized	98.83%	98.98%	99.9%	100%
OpenSCAD - L.P.C.S (sec)	21.484	21.272	21.364	21.238
Normalized	98.85%	99.84%	99.41%	100%
Redis - LPOP (Reqs/sec)	2140425	1403554	1380471	1418239
Normalized	100%	65.57%	64.5%	66.26%
Redis - SADD (Reqs/sec)	1684952	1763702	1638807	1670865
Normalized	95.53%	100%	92.92%	94.74%
Redis - LPUSH (Reqs/sec)	1329792	1342642	1333524	1373842
Normalized	96.79%	97.73%	97.07%	100%
Redis - GET (Reqs/sec)	1956953	1872665	1769912	1845036
Normalized	100%	95.69%	90.44%	94.28%
Redis - SET (Reqs/sec)	1404530	1471694	1513098	1532836
Normalized	91.63%	96.01%	98.71%	100%
Stress-NG - MMAP (Bogo Ops/s)	256.62	256.55	256.45	255.29
Normalized	100%	99.97%	99.93%	99.48%
Stress-NG - NUMA (Bogo Ops/s)	295.14	299.07	311.37	301.29
Normalized	94.79%	96.05%	100%	96.76%
Stress-NG - MEMFD (Bogo Ops/s)	706.5	706	706.22	706.3
Normalized	100%	99.93%	99.96%	99.97%
Stress-NG - Atomic (Bogo Ops/s)	400787	400262	401960	400423
Normalized	99.71%	99.58%	100%	99.62%
Stress-NG - Crypto (Bogo Ops/s)	4593	4595	4595	4594
Normalized	99.96%	100%	100%	99.98%
Stress-NG - Malloc (Bogo Ops/s)	338162843	338408972	337236125	339623981
Normalized	99.57%	99.64%	99.3%	100%
Stress-NG - Forking (Bogo Ops/s)	46396	45983	45813	46157
Normalized	100%	99.11%	98.75%	99.49%
Stress-NG - IO_uring (Bogo Ops/s)	130359	129816	137570	131254
Normalized	94.76%	94.36%	100%	95.41%
Stress-NG - SENDFILE (Bogo Ops/s)	325878	326781	325627	326904
Normalized	99.69%	99.96%	99.61%	100%
Stress-NG - CPU Cache (Bogo Ops/s)	144.39	142.79	154.72	156.73
Normalized	92.13%	91.11%	98.72%	100%
Stress-NG - CPU Stress (Bogo Ops/s)	46336	46471	46608	46564

Normalized	99.42%	99.7%	100%	99.9%
Stress-NG - Semaphores (Bogo	2368813	2366432	2368622	2370631
Normalized	99.92%	99.82%	99.92%	100%
Stress-NG - Matrix Math (Bogo Ops/s)	78189	77266	77864	78234
Normalized	99.94%	98.76%	99.53%	100%
Stress-NG - Vector Math (Bogo Ops/s)	91516	91525	91528	91525
Normalized	99.99%	100%	100%	100%
Stress-NG - Memory Copying (Bogo Ops/s)	4389	4421	4414	4384
Normalized	99.27%	100%	99.83%	99.15%
Stress-NG - Socket Activity (Bogo	10652	10718	10734	10746
Normalized	99.12%	99.74%	99.89%	100%
Stress-NG - Context Switching (Bogo Ops/s)	7581039	7456534	7474093	7443653
Normalized	100%	98.36%	98.59%	98.19%
Stress-NG - G.C.S.F (Bogo Ops/s)	2698915	2067583	2695017	2643031
Normalized	100%	76.61%	99.86%	97.93%
Stress-NG - G.Q.D.S (Bogo Ops/s)	281.2	276.8	277.5	280.83
Normalized	100%	98.44%	98.68%	99.87%
Stress-NG - S.V.M.P (Bogo Ops/s)	3813479	3824110	3828562	3794218
Normalized	99.61%	99.88%	100%	99.1%
Mobile Neural Network - mobilenetV3 (ms)	3.799	3.831	3.871	3.817
Normalized	100%	99.16%	98.14%	99.53%
Mobile Neural Network - squeezenetv1.1 (ms)	6.6	6.653	6.636	6.545
Normalized	99.17%	98.38%	98.63%	100%
Mobile Neural Network - resnet-v2-50 (ms)	24.445	24.387	24.686	24.48
Normalized	99.76%	100%	98.79%	99.62%
Mobile Neural Network - SqueezeNetV1.0 (ms)	8.652	7.881	8.658	8.577
Normalized	91.09%	100%	91.03%	91.89%
Mobile Neural Network - MobileNetV2_224 (ms)	4.892	4.98	5.803	5.021
Normalized	100%	98.23%	84.3%	97.43%
Mobile Neural Network - mobilenet-v1-1.0 (ms)	3.384	3.383	3.404	3.398
Normalized	99.97%	100%	99.38%	99.56%
Mobile Neural Network - inception-v3 (ms)	29.955	29.295	30.045	29.241
Normalized	97.62%	99.82%	97.32%	100%
NCNN - CPU - mobilenet (ms)	19.64	19.96	19.68	16.83
Normalized	85.69%	84.32%	85.52%	100%
NCNN - CPU-v2-v2 - mobilenet-v2 (ms)	8.16	8.31	7.96	8.36
Normalized	97.55%	95.79%	100%	95.22%
NCNN - CPU-v3-v3 - mobilenet-v3 (ms)	7.43	7.82	7.48	7.86
Normalized	100%	95.01%	99.33%	94.53%
NCNN - CPU - shufflenet-v2 (ms)	9.26	9.15	8.83	10.76
Normalized	95.36%	96.5%	100%	82.06%
NCNN - CPU - mnasnet (ms)	7.15	7.58	7.31	9.05
Normalized	100%	94.33%	97.81%	79.01%

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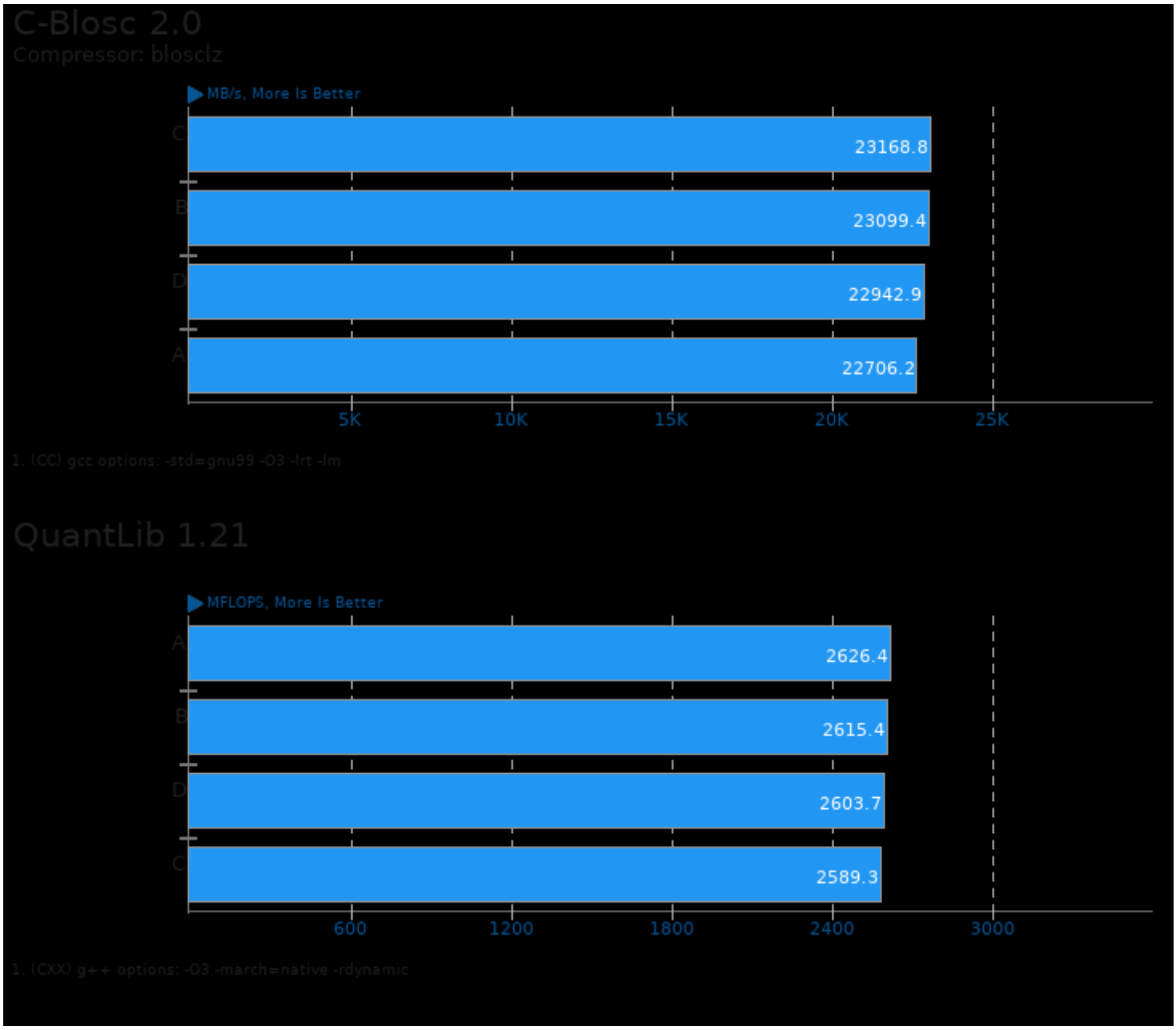
NCNN - CPU - efficientnet-b0 (ms)	10.97	**10.93**	11.03	**11.6**
Normalized	99.64%	100%	99.09%	94.22%
NCNN - CPU - blazeface (ms)	3.4	3.37	**3.33**	**3.41**
Normalized	97.94%	98.81%	100%	97.65%
NCNN - CPU - googlenet (ms)	16.9	16.8	**16.79**	**17.49**
Normalized	99.35%	99.94%	100%	96%
NCNN - CPU - vgg16 (ms)	**28.43**	28.58	28.6	**28.79**
Normalized	100%	99.48%	99.41%	98.75%
NCNN - CPU - resnet18 (ms)	**10.46**	10.48	10.62	**10.66**
Normalized	100%	99.81%	98.49%	98.12%
NCNN - CPU - alexnet (ms)	6.66	**6.62**	**6.62**	**7.21**
Normalized	99.4%	100%	100%	91.82%
NCNN - CPU - resnet50 (ms)	**20.05**	20.04	19.94	**19.78**
Normalized	98.65%	98.7%	99.2%	100%
NCNN - CPU - yolov4-tiny (ms)	24.6	**24.16**	24.2	**24.87**
Normalized	98.21%	100%	99.83%	97.15%
NCNN - CPU - squeezenet_ssd (ms)	**21.28**	21.11	20.87	**19.14**
Normalized	89.94%	90.67%	91.71%	100%
NCNN - CPU - regnety_400m (ms)	20.34	**20.51**	**19.96**	20.27
Normalized	98.13%	97.32%	100%	98.47%
TNN - CPU - DenseNet (ms)	**3157**	**3144**	3152	3153
Normalized	99.58%	100%	99.76%	99.71%
TNN - CPU - MobileNet v2 (ms)	**289.415**	288.876	**288.63**	289.096
Normalized	99.73%	99.91%	100%	99.84%
TNN - CPU - SqueezeNet v2 (ms)	**76.418**	77.526	**78.241**	77.547
Normalized	100%	98.57%	97.67%	98.54%
TNN - CPU - SqueezeNet v1.1 (ms)	266.958	**266.849**	266.854	**267.216**
Normalized	99.96%	100%	100%	99.86%
Sysbench - RAM / Memory (MiB/sec)	2965	2972	**2964**	**2973**
Normalized	99.71%	99.96%	99.69%	100%
Sysbench - CPU (Events/sec)	32725	**32729**	32726	**32722**
Normalized	99.99%	100%	99.99%	99.98%
Apache Cassandra - Reads (Op/s)	**124837**	**141964**	125421	131780
Normalized	87.94%	100%	88.35%	92.83%
Apache Cassandra - Writes (Op/s)	**146054**	**149481**	148165	148621
Normalized	97.71%	100%	99.12%	99.42%
Facebook RocksDB - Rand Fill (Op/s)	636626	643776	**631805**	**653731**
Normalized	97.38%	98.48%	96.65%	100%
Facebook RocksDB - Rand Read	**97009030**	95632732	96077569	**94296782**
Normalized	100%	98.58%	99.04%	97.2%
Facebook RocksDB - Update Rand (Op/s)	**522631**	524704	523413	**525165**
Normalized	99.52%	99.91%	99.67%	100%
Facebook RocksDB - Seq Fill (Op/s)	**720049**	**734629**	723670	725238
Normalized	98.02%	100%	98.51%	98.72%
Facebook RocksDB - Rand Fill Sync (Op/s)	**150877**	150802	150417	**149765**
Normalized	100%	99.95%	99.7%	99.26%
Facebook RocksDB - Read While Writing (Op/s)	2844661	**3107833**	2849465	**2810480**
Normalized	91.53%	100%	91.69%	90.43%
Facebook RocksDB - R.R.W.R (Op/s)	**1981347**	**1941074**	1962192	1950083
Normalized	100%	97.97%	99.03%	98.42%

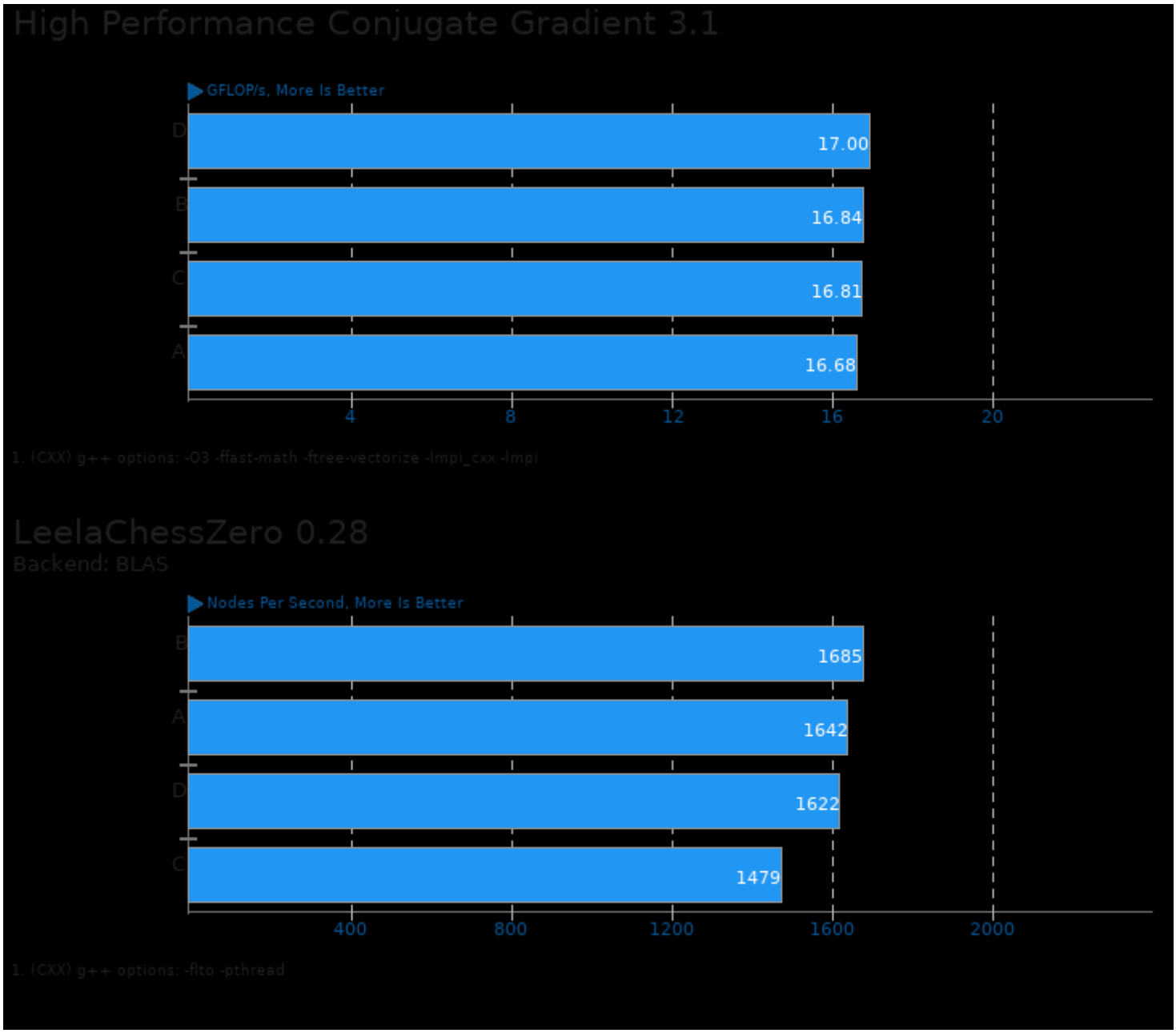
AMD EPYC Rome

Blender - BMW27 - CPU-Only (sec)	80.98	80.62	**81.04**	**80.41**
Normalized	99.3%	99.74%	99.22%	100%
Blender - Classroom - CPU-Only (sec)	232.6	233.58	**235.6**	**231.1**
Normalized	99.36%	98.94%	98.09%	100%
Blender - Fishy Cat - CPU-Only (sec)	105.77	**105.61**	105.77	**105.84**
Normalized	99.85%	100%	99.85%	99.78%
Blender - Barbershop - CPU-Only	341.81	342.26	**341.41**	**342.38**
Normalized	99.88%	99.75%	100%	99.72%
Blender - Pabellon Barcelona - CPU-Only (sec)	259.17	**258.67**	**259.83**	258.96
Normalized	99.81%	100%	99.55%	99.89%
ONNX Runtime - yolov4 - OpenMP CPU (Inferences/min)	**350**	347	**340**	349
Normalized	100%	99.14%	97.14%	99.71%
ONNX Runtime - bertsquad-10 - OpenMP CPU (Inferences/min)	625	**616**	**722**	650
Normalized	86.57%	85.32%	100%	90.03%
ONNX Runtime - fcn-resnet101-11 - OpenMP CPU (Inferences/min)	**152**	**149**	150	150
Normalized	100%	98.03%	98.68%	98.68%
ONNX Runtime - shufflenet-v2-10 - OpenMP CPU (Inferences/min)	13835	**10986**	13855	**13919**
Normalized	99.4%	78.93%	99.54%	100%
ONNX Runtime - super-resolution-10 - OpenMP CPU (Inferences/min)	4800	**5499**	4967	**4718**
Normalized	87.29%	100%	90.33%	85.8%
ECP-CANDLE - P1B2 (sec)	**37.952**	37.629	**37.34**	37.412
Normalized	98.39%	99.23%	100%	99.81%
ECP-CANDLE - P3B1 (sec)	**654.725**	648.971	**643.356**	654.497
Normalized	98.26%	99.13%	100%	98.3%
ECP-CANDLE - P3B2 (sec)	**925.644**	925.987	**928.633**	926.744
Normalized	100%	99.96%	99.68%	99.88%
nginx - 1 (Reqs/sec)	58574	**58947**	**58558**	58652
Normalized	99.37%	100%	99.34%	99.5%
nginx - 20 (Reqs/sec)	154119	**154503**	**154065**	154316
Normalized	99.75%	100%	99.72%	99.88%
nginx - 100 (Reqs/sec)	152400	**153477**	**152392**	152662
Normalized	99.3%	100%	99.29%	99.47%
nginx - 200 (Reqs/sec)	**154272**	152931	152122	**151621**
Normalized	100%	99.13%	98.61%	98.28%
nginx - 500 (Reqs/sec)	**151387**	152313	151991	**152906**
Normalized	99.01%	99.61%	99.4%	100%
nginx - 1000 (Reqs/sec)	151655	**151880**	**149229**	149645
Normalized	99.85%	100%	98.25%	98.53%
Natron - Spaceship (FPS)	3.9	**3.8**	**3.8**	**4.1**
Normalized	95.12%	92.68%	92.68%	100%
Apache HTTP Server - 1 (Reqs/sec)	**8316**	**7486**	7692	7893
Normalized	100%	90.01%	92.49%	94.91%
Apache HTTP Server - 20 (Reqs/sec)	**41568**	43419	**43492**	42383
Normalized	95.58%	99.83%	100%	97.45%
Apache HTTP Server - 100 (Reqs/sec)	95744	95782	**95516**	**96103**
Normalized	99.63%	99.67%	99.39%	100%

AMD EPYC Rome

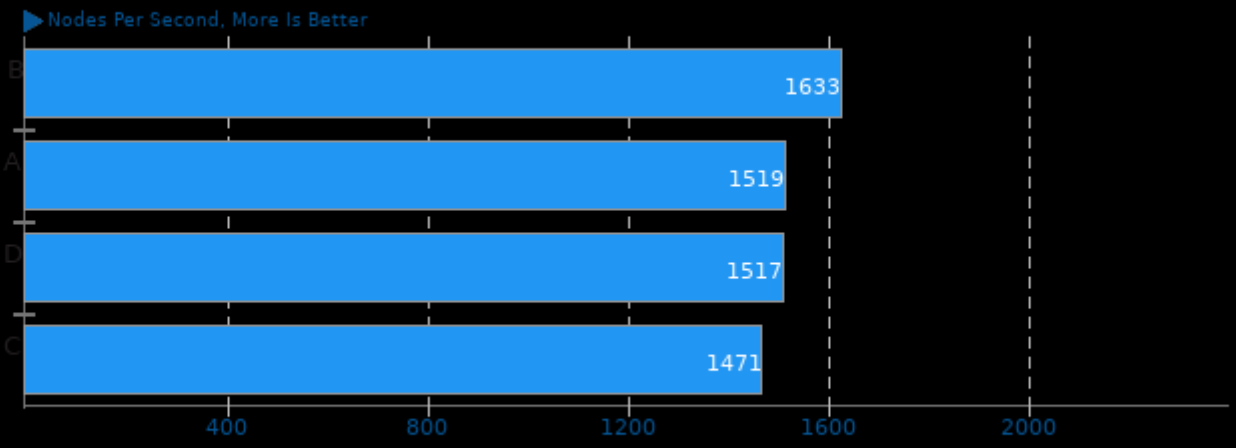
Apache HTTP Server - 200 (Reqs/sec)	111393	**111903**	**111050**	111859
Normalized	99.54%	100%	99.24%	99.96%
Apache HTTP Server - 500 (Reqs/sec)	**103813**	104247	104137	**104744**
Normalized	99.11%	99.53%	99.42%	100%
Apache HTTP Server - 1000	104416	**104544**	**103843**	104279
Normalized	99.88%	100%	99.33%	99.75%
Appleseed - Emily (sec)	**223.350141**	224.96032	225.169673	**226.453861**
Normalized	100%	99.28%	99.19%	98.63%
Appleseed - Disney Material (sec)	122.625317	124.392365	**121.794447**	**126.276707**
Normalized	99.32%	97.91%	100%	96.45%
Appleseed - Material Tester (sec)	**185.13305**	185.830833	185.471834	**185.880503**
Normalized	100%	99.62%	99.82%	99.6%
PHPBench - P.B.S (Score)	671804	678069	**670281**	**679880**
Normalized	98.81%	99.73%	98.59%	100%
Kripke (Throughput FoM)	**154286200**	156477700	**168730500**	162211600
Normalized	91.44%	92.74%	100%	96.14%
BRL-CAD - V.P.M (VGR Performance Metric)	**243883**	**246890**	245406	
Normalized	98.78%	100%	99.4%	
Chaos Group V-RAY - CPU (vsamples)	**19484**	**19914**	19768	
Normalized	97.84%	100%	99.27%	


C-Blosc 2.0
Compressor: blosclz
MB/s, More Is Better
C
23168.8
B
23099.4
D
22942.9
A
22706.2
5K
10K
15K
20K
25K
1. (CC) gcc options: -std=gnu99 -O3 -lrt -lm
QuantLib 1.21
MFLOPS, More Is Better
A
2626.4
B
2615.4
D
2603.7
C
2589.3
600
1200
1800
2400
3000
1. (CXX) g++ options: -O3 -march=native -rdynamic


High Performance Conjugate Gradient 3.1
GFLOP/s, More Is Better
D
17.00
B
16.84
C
16.81
A
16.68
4
8
12
16
20
1. (CXX) g++ options: -O3 -ffast-math -ftree-vectorize -lmpi_cxx -lmpi
LeelaChessZero 0.28
Backend: BLAS
Nodes Per Second, More Is Better
B
1685
A
1642
D
1622
C
1479
400
800
1200
1600
2000
1. (CXX) g++ options: -flto -pthread

LeelaChessZero 0.28

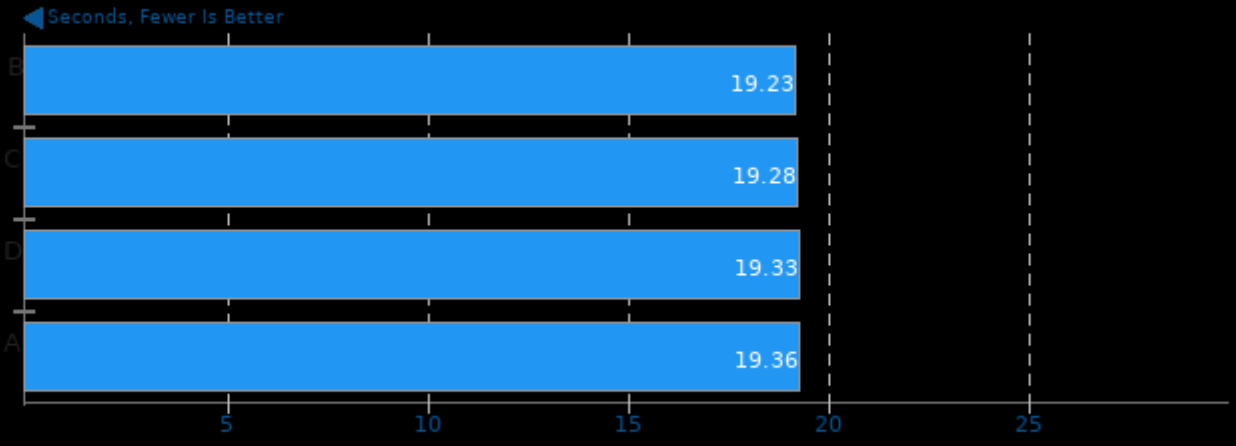
Backend: Eigen



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

CloverLeaf

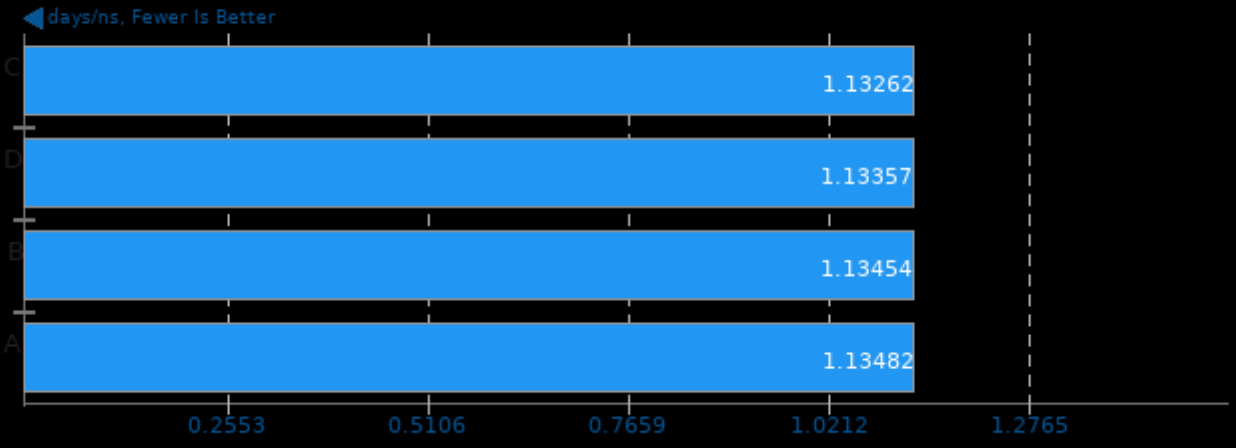
Lagrangian-Eulerian Hydrodynamics

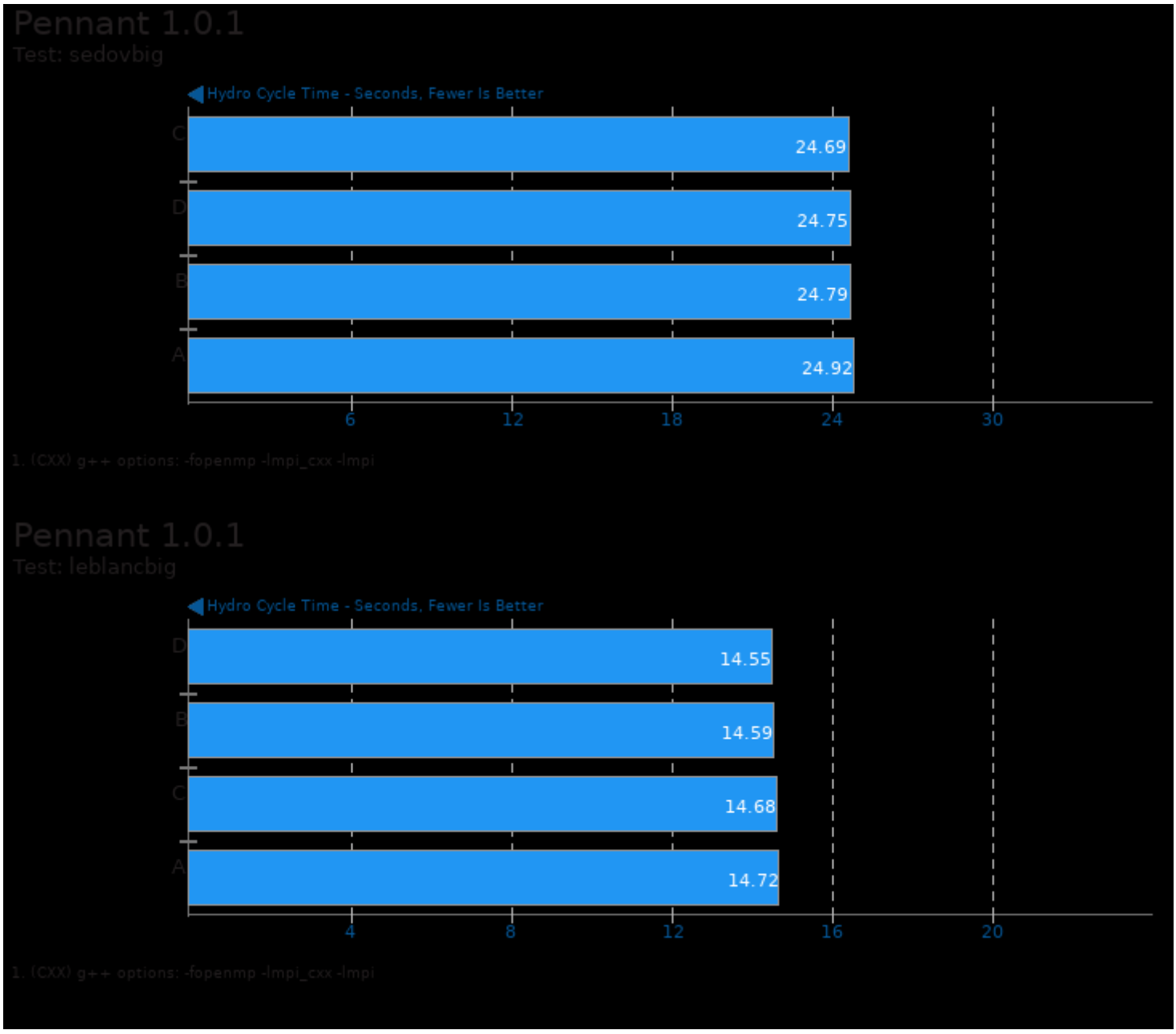


1. (F9X) gfortran options: -O3 -march=native -funroll-loops -fopenmp

NAMD 2.14

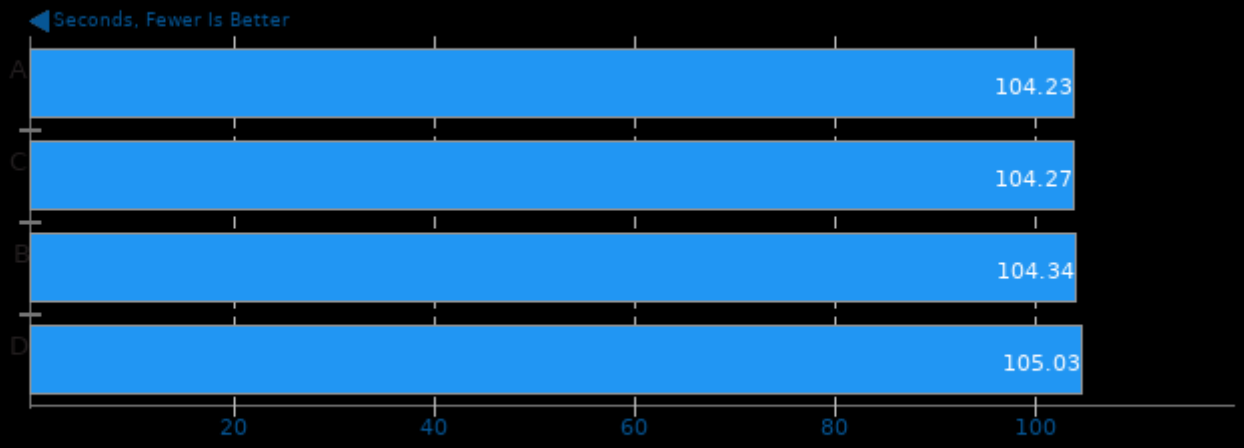
ATPase Simulation - 327,506 Atoms




Pennant 1.0.1
Test: sedovbig
Hydro Cycle Time - Seconds, Fewer Is Better
C
24.69
D
24.75
B
24.79
A
24.92
6
12
18
24
30
1. (CXX) g++ options: -fopenmp -lmpi_cxx -lmpi
Pennant 1.0.1
Test: leblancbig
Hydro Cycle Time - Seconds, Fewer Is Better
D
14.55
B
14.59
C
14.68
A
14.72
4
8
12
16
20
1. (CXX) g++ options: -fopenmp -lmpi_cxx -lmpi

Timed MrBayes Analysis 3.2.7

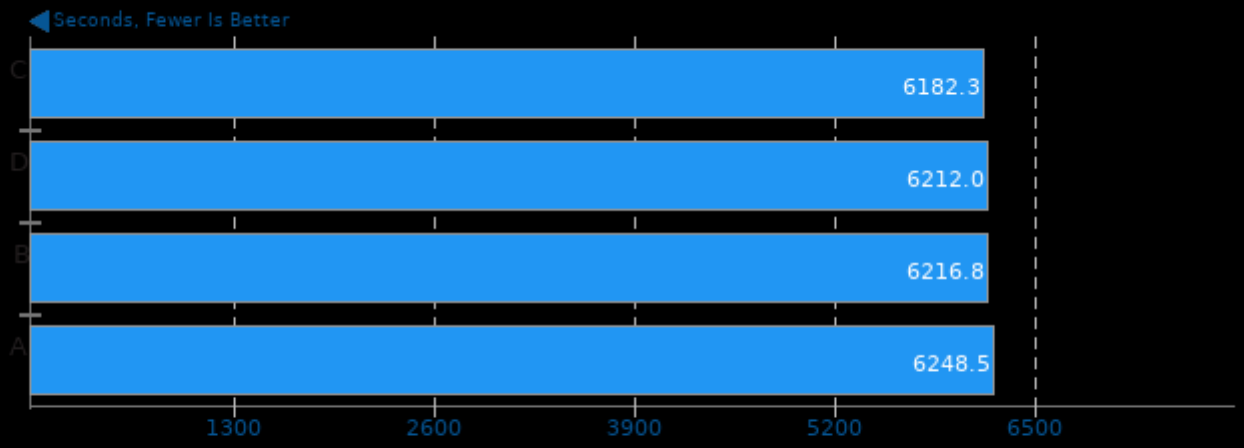
Primate Phylogeny Analysis



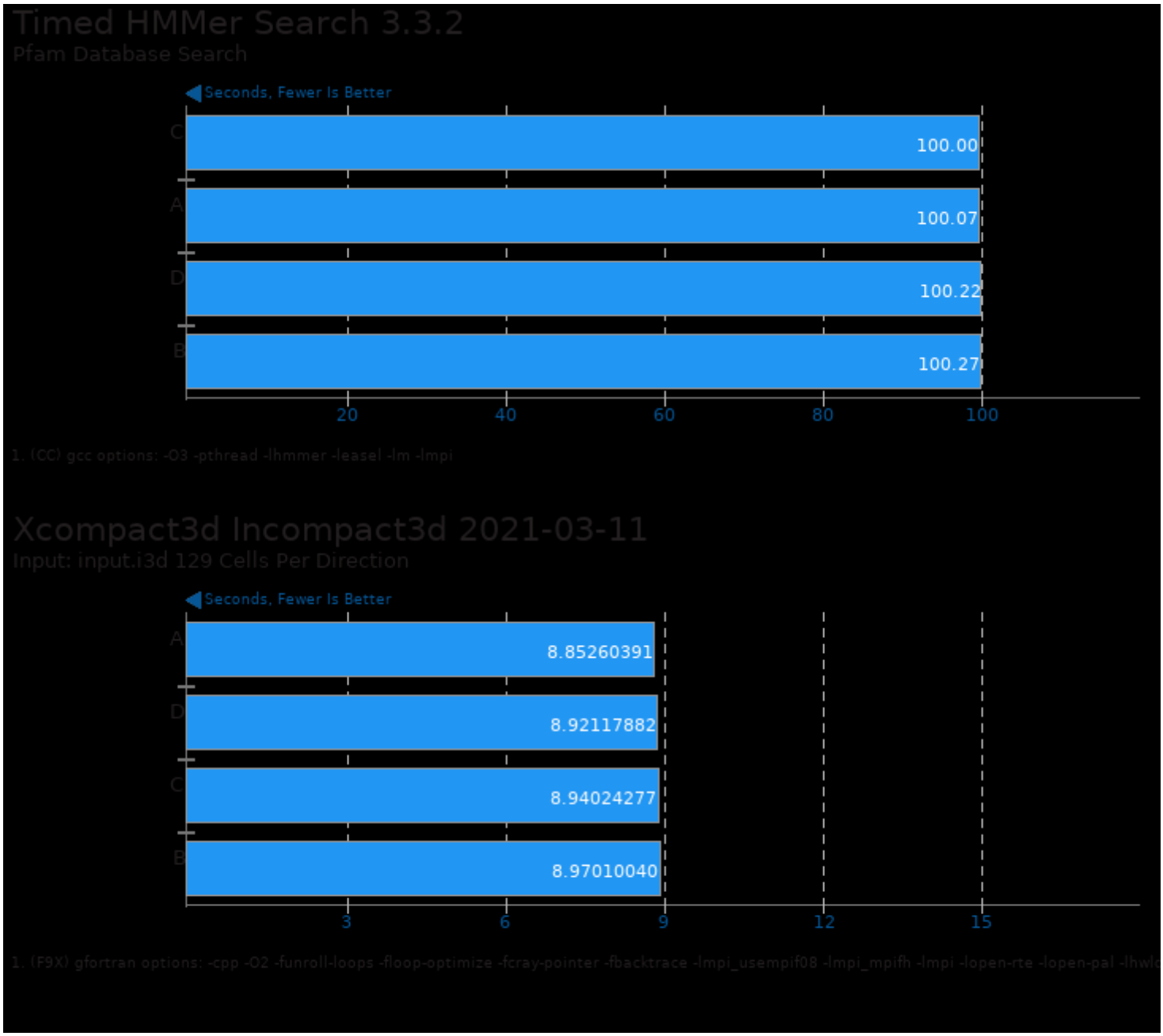
1. (CC) gcc options: -mmmx -msse -msse2 -msse3 -mssse3 -msse4.1 -msse4.2 -msse4a -msha -maes -mavx -mfma -mavx2 -mrdrnd -mbmi -mbmi2 -madx

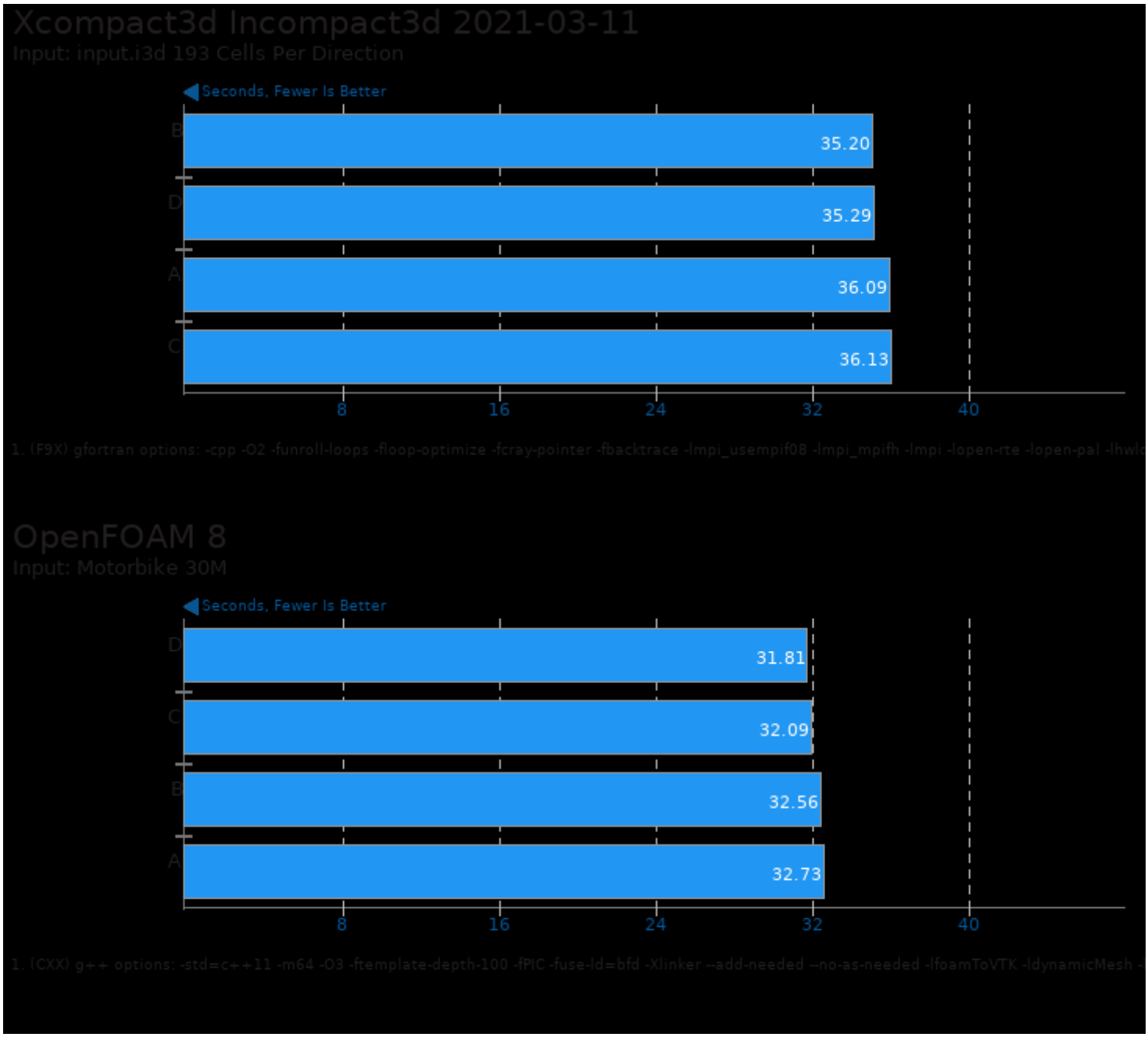
NWChem 7.0.2

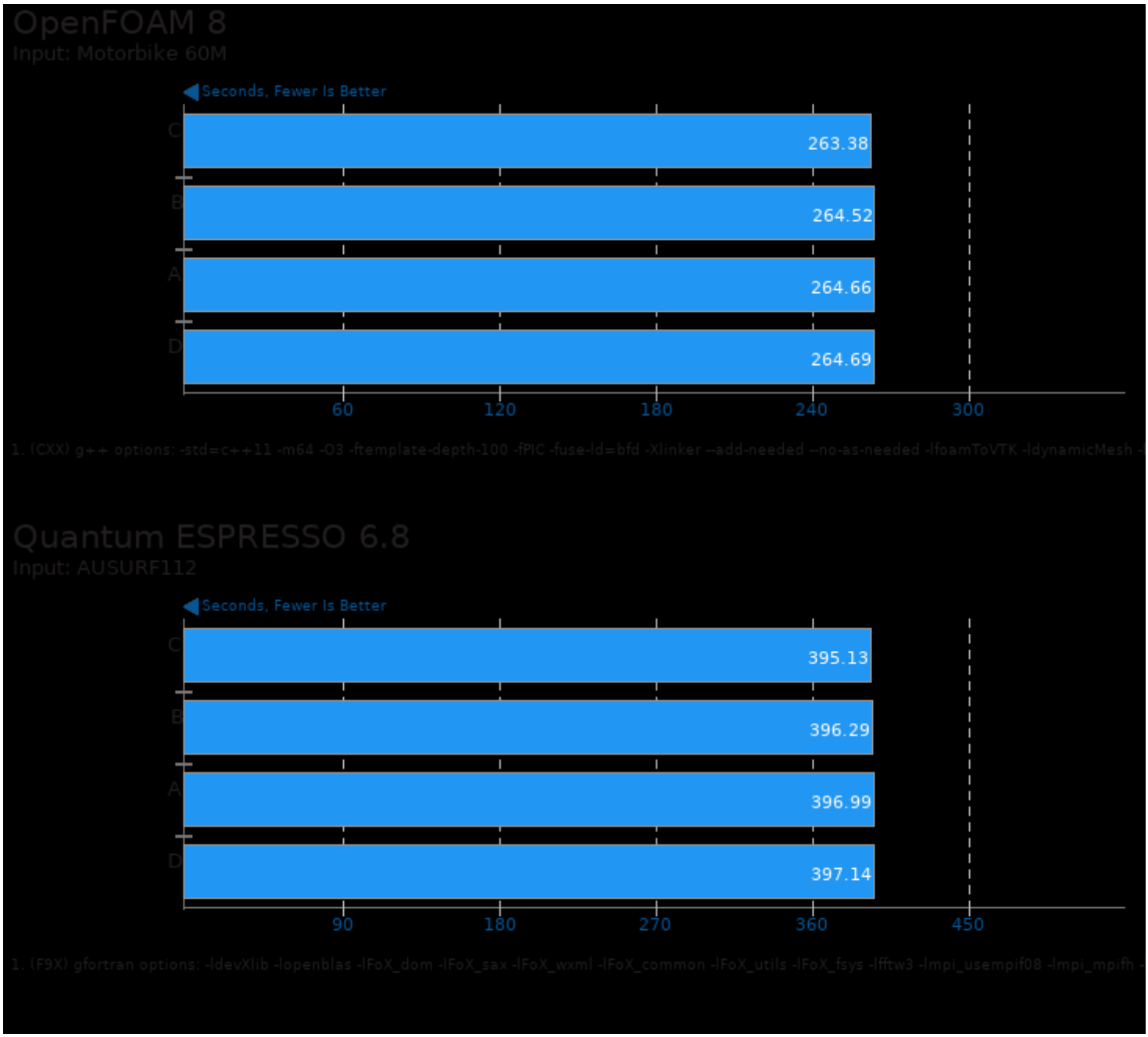
Input: C240 Buckyball

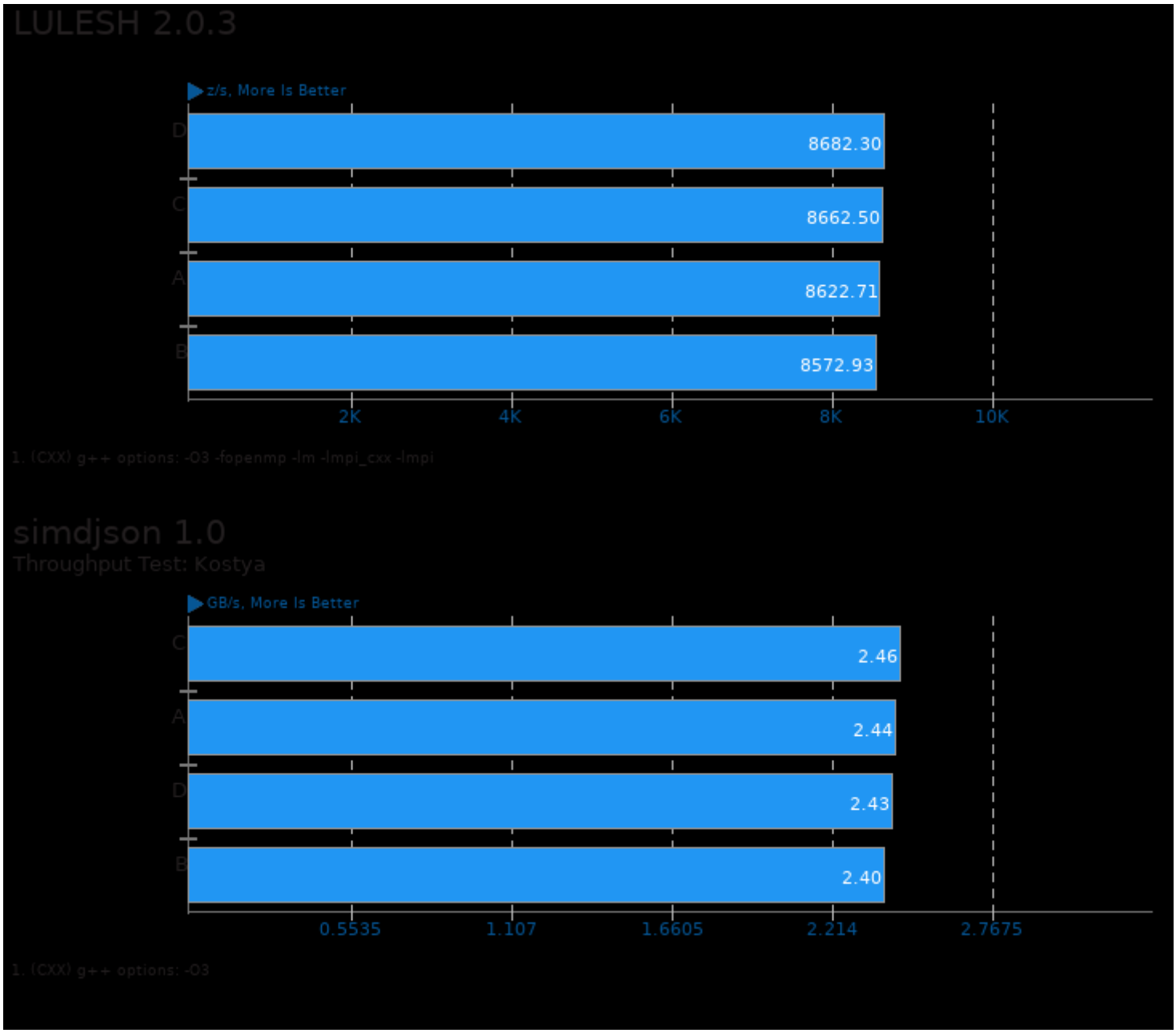


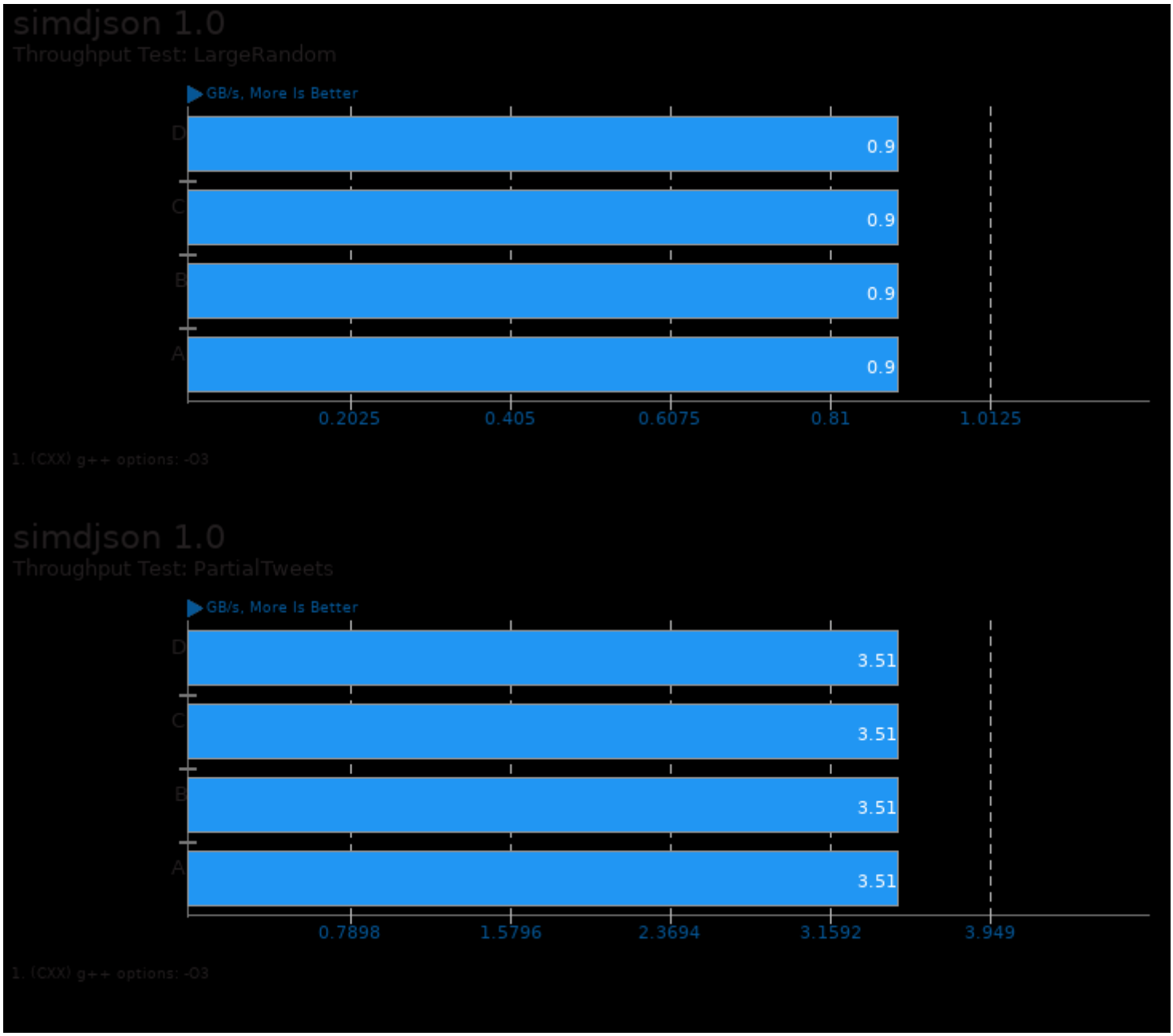
1. (F9X) gfortran options: -lnwctask -lccsd -lmcscf -lselci -lmp2 -lmoints -lstepper -ldriver -loptim -lnwdft -lgradients -lcphf -lesp -lddscf -ldangchang -lgue

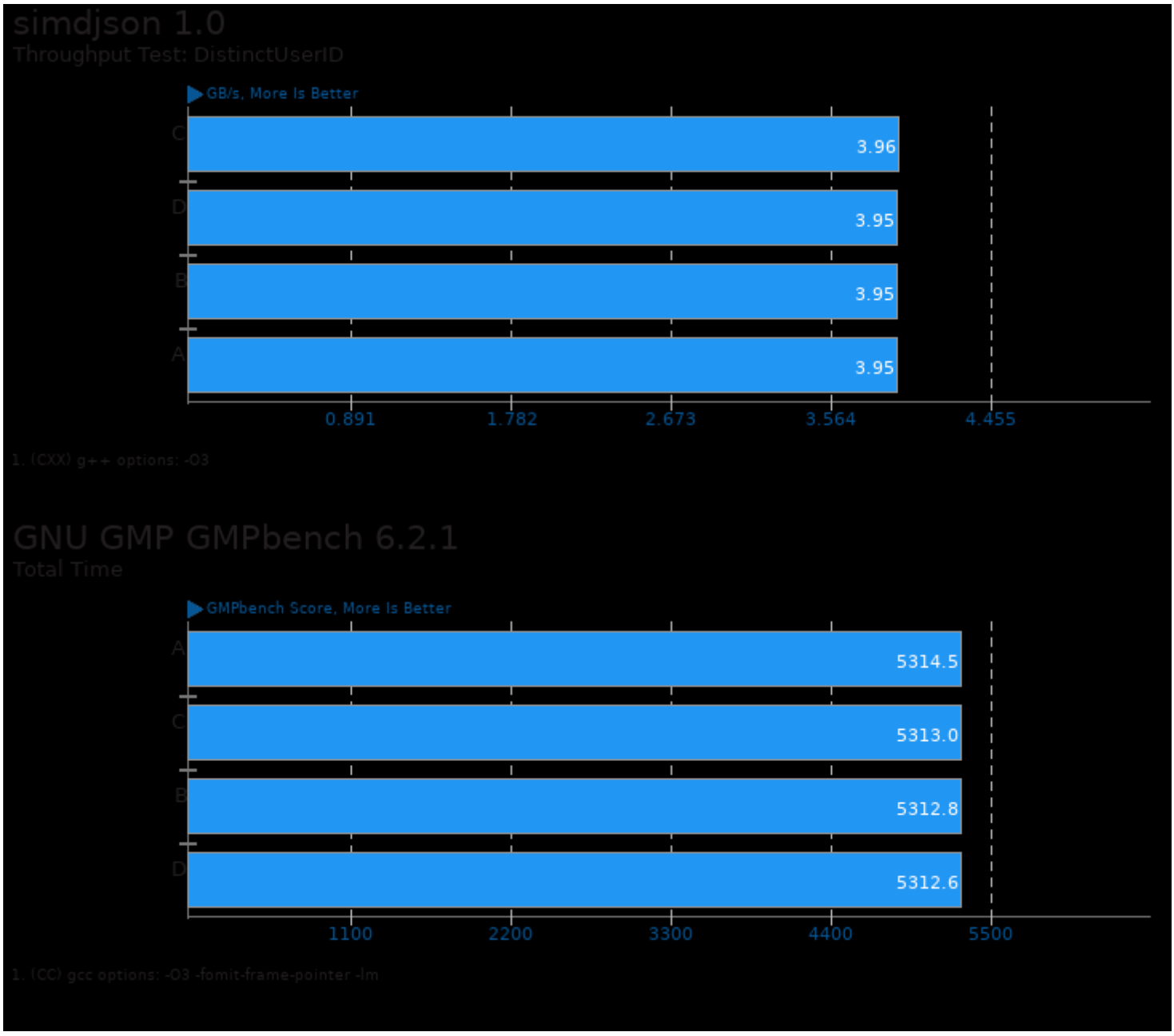

Timed HMMer Search 3.3.2
Pfam Database Search
Seconds, Fewer Is Better
C
A
D
B
100.00
100.07
100.22
100.27
20
40
60
80
100
1. (CC) gcc options: -O3 -pthread -lhmmer -leasel -lm -lmpi
Xcompact3d Incompact3d 2021-03-11
Input: input.i3d 129 Cells Per Direction
Seconds, Fewer Is Better
A
D
C
B
8.85260391
8.92117882
8.94024277
8.97010040
3
6
9
12
15
1. (F9X) gfortran options: -cpp -O2 -funroll-loops -floop-optimize -fcray-pointer -fbacktrace -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwl

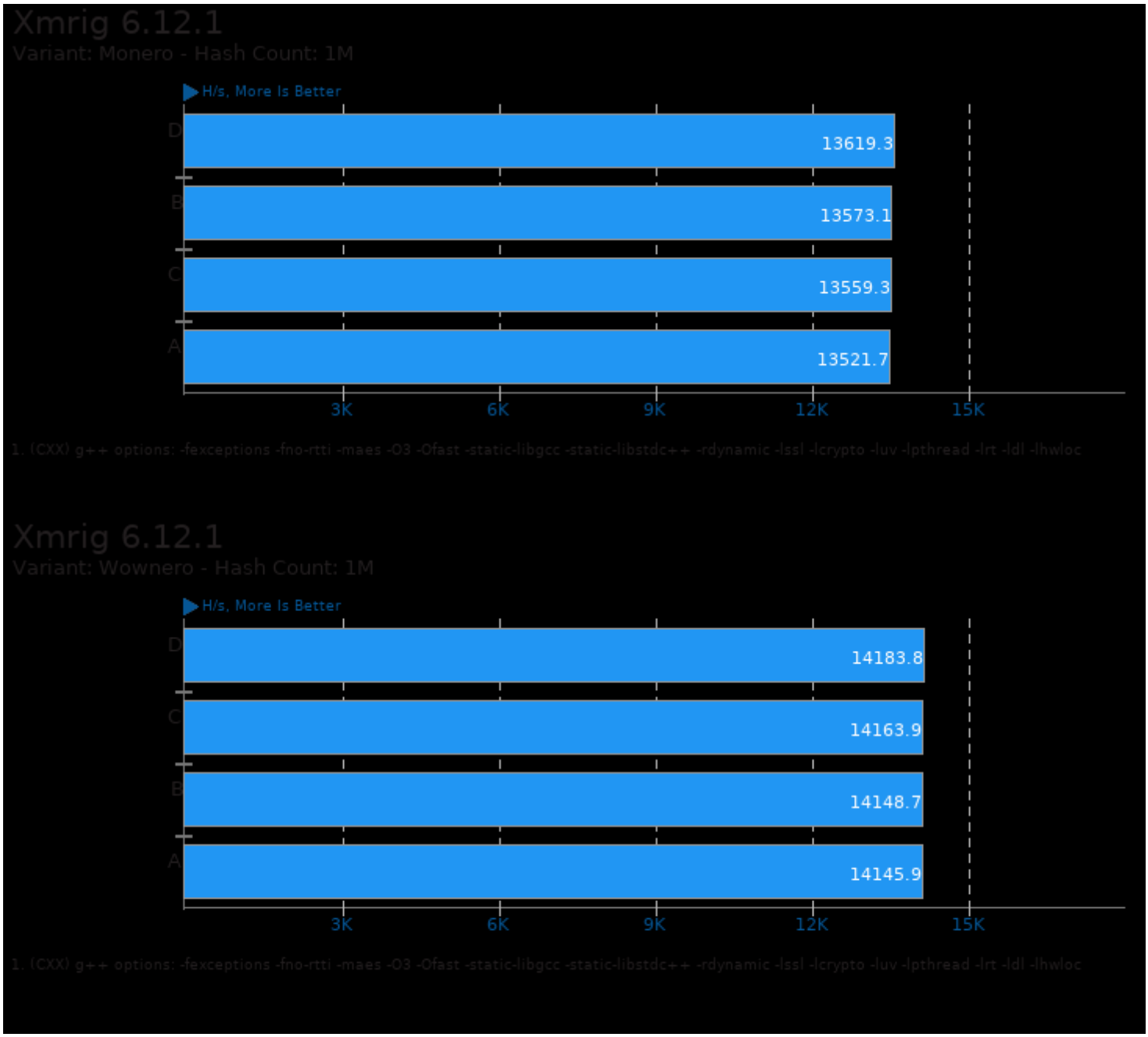

Xcompact3d Incompact3d 2021-03-11
Input: input.i3d 193 Cells Per Direction
Seconds, Fewer Is Better
B
D
A
C
35.20
35.29
36.09
36.13
8
16
24
32
40
1. (F9X) gfortran options: -cpp -O2 -funroll-loops -floop-optimize -fcray-pointer -fbacktrace -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwl
OpenFOAM 8
Input: Motorbike 30M
Seconds, Fewer Is Better
D
C
B
A
31.81
32.09
32.56
32.73
8
16
24
32
40
1. (CXX) g++ options: -std=c++11 -m64 -O3 -ftemplate-depth-100 -fPIC -fuse-ld=bfd -Xlinker --add-needed --no-as-needed -lfoamToVTK -ldynamicMesh


OpenFOAM 8
Input: Motorbike 60M
Seconds, Fewer Is Better
C
263.38
B
264.52
A
264.66
D
264.69
60
120
180
240
300
1. (CXX) g++ options: -std=c++11 -m64 -O3 -ftemplate-depth-100 -fPIC -fuse-ld=bfd -Xlinker --add-needed --no-as-needed -lfoamToVTK -ldynamicMesh
Quantum ESPRESSO 6.8
Input: AUSURF112
Seconds, Fewer Is Better
C
395.13
B
396.29
A
396.99
D
397.14
90
180
270
360
450
1. (F9X) gfortran options: -ldevXlib -lopenblas -lFoX_dom -lFoX_sax -lFoX_wxml -lFoX_common -lFoX_utils -lFoX_fsys -lfftw3 -lmpi_usempif08 -lmpi_mpifh


LULESH 2.0.3
z/s, More Is Better
D
8682.30
C
8662.50
A
8622.71
B
8572.93
2K
4K
6K
8K
10K
1. (CXX) g++ options: -O3 -fopenmp -lm -lmpi_cxx -lmpi
simdjson 1.0
Throughput Test: Kostya
GB/s, More Is Better
C
2.46
A
2.44
D
2.43
B
2.40
0.5535
1.107
1.6605
2.214
2.7675
1. (CXX) g++ options: -O3

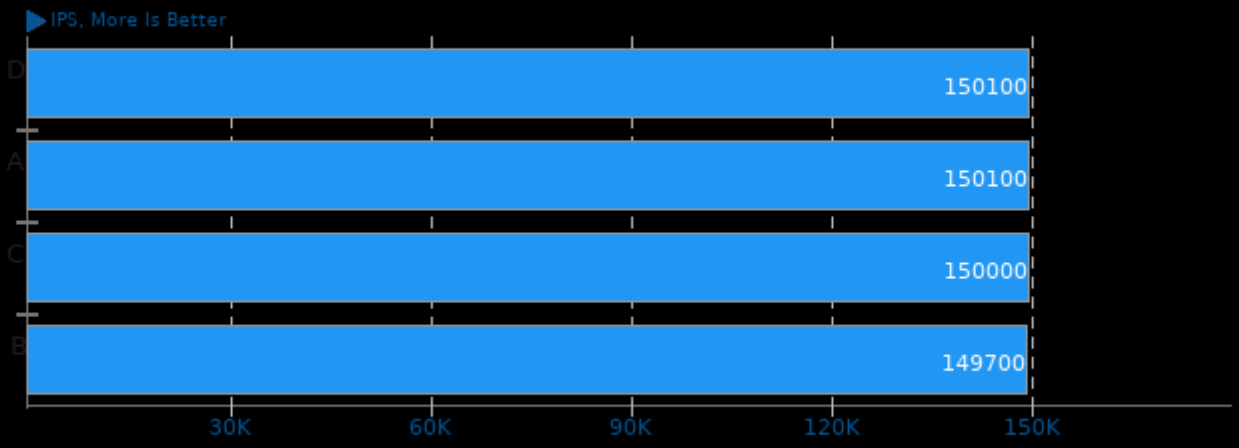

simdjson 1.0
Throughput Test: LargeRandom
GB/s, More Is Better
D
C
B
A
0.9
0.9
0.9
0.9
0.2025
0.405
0.6075
0.81
1.0125
1. (CXX) g++ options: -O3
simdjson 1.0
Throughput Test: PartialTweets
GB/s, More Is Better
D
C
B
A
3.51
3.51
3.51
3.51
0.7898
1.5796
2.3694
3.1592
3.949
1. (CXX) g++ options: -O3


simdjson 1.0
Throughput Test: DistinctUserID
GB/s, More Is Better
C
D
B
A
3.96
3.95
3.95
3.95
0.891
1.782
2.673
3.564
4.455
1. (CXX) g++ options: -O3
GNU GMP GMPbench 6.2.1
Total Time
GMPbench Score, More Is Better
A
C
B
D
5314.5
5313.0
5312.8
5312.6
1100
2200
3300
4400
5500
1. (CC) gcc options: -O3 -fomit-frame-pointer -lm


Xmrig 6.12.1
Variant: Monero - Hash Count: 1M
H/s, More Is Better
D
B
C
A
13619.3
13573.1
13559.3
13521.7
3K
6K
9K
12K
15K
1. (CXX) g++ options: -fexceptions -fno-rtti -maes -O3 -Ofast -static-libgcc -static-libstdc++ -rdynamic -lssl -lcrypto -luv -lpthread -lrt -ldl -lhwloc
Xmrig 6.12.1
Variant: Wownero - Hash Count: 1M
H/s, More Is Better
D
C
B
A
14183.8
14163.9
14148.7
14145.9
3K
6K
9K
12K
15K
1. (CXX) g++ options: -fexceptions -fno-rtti -maes -O3 -Ofast -static-libgcc -static-libstdc++ -rdynamic -lssl -lcrypto -luv -lpthread -lrt -ldl -lhwloc

Chia Blockchain VDF 1.0.1

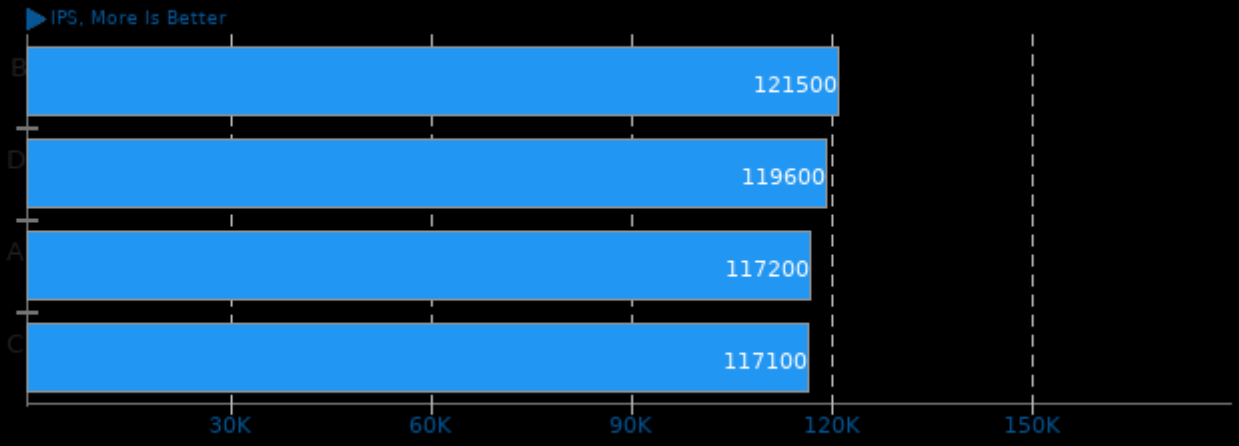
Test: Square Plain C++



1. (CXX) g++ options: -flto -no-pie -lgmpxx -lgmp -lboost_system -pthread

Chia Blockchain VDF 1.0.1

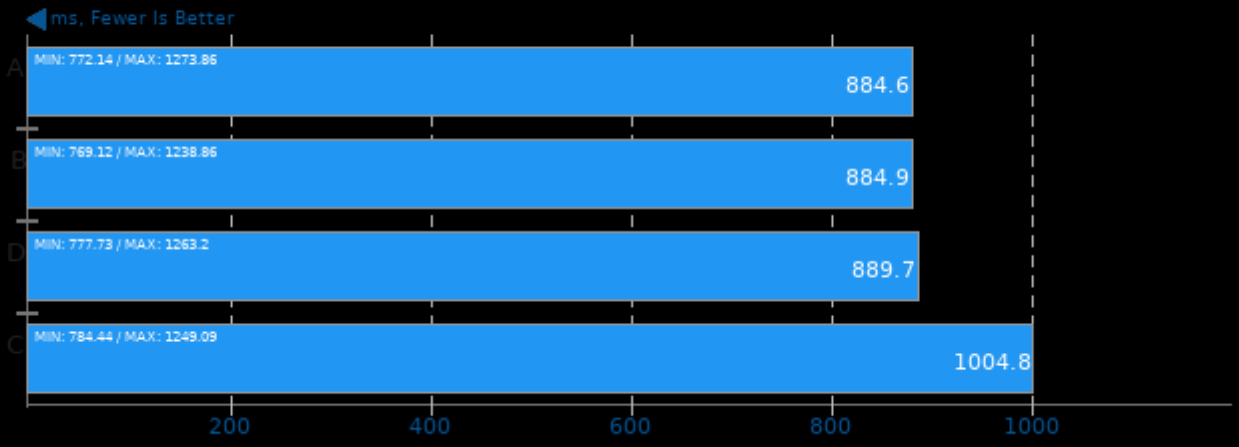
Test: Square Assembly Optimized

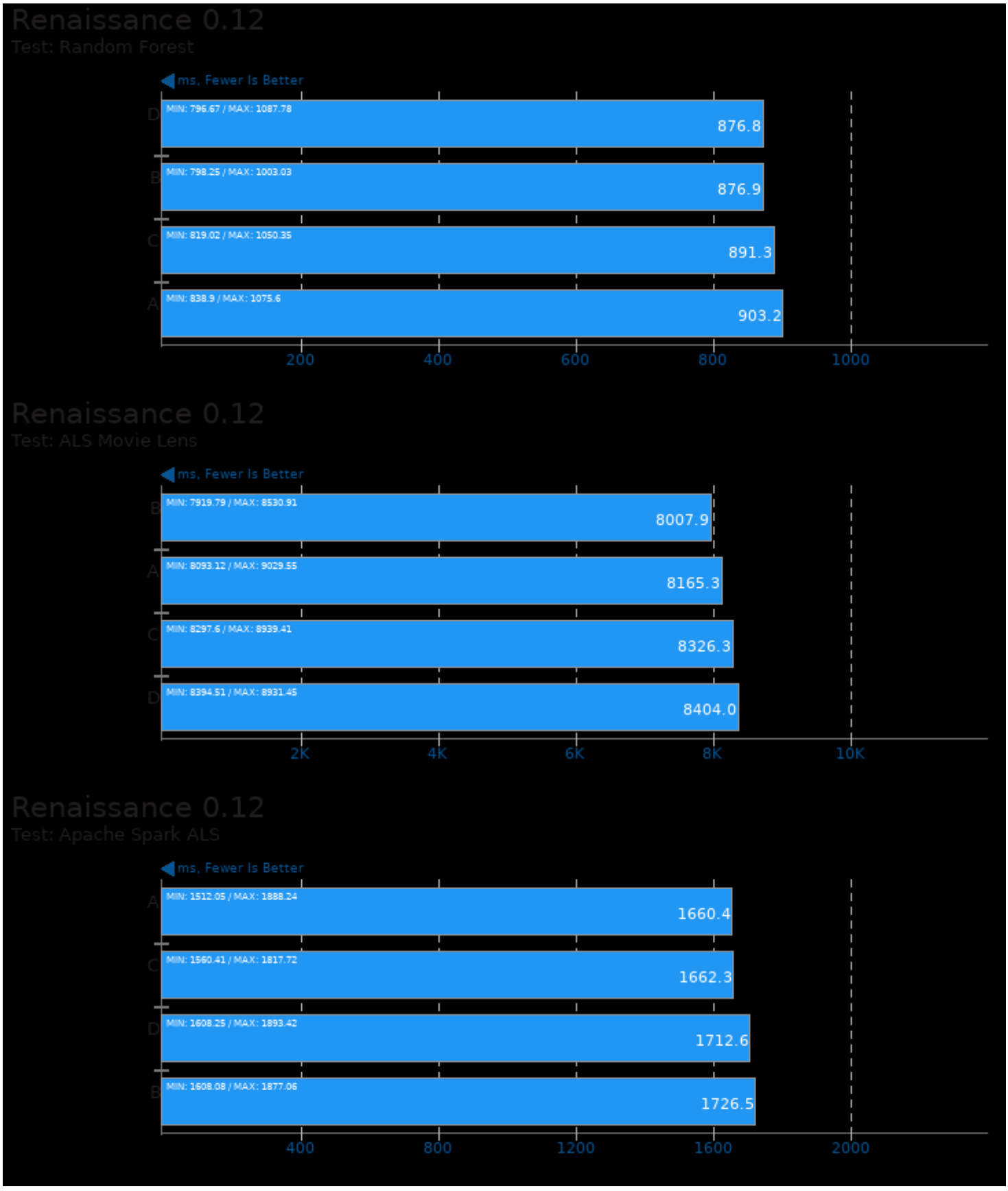


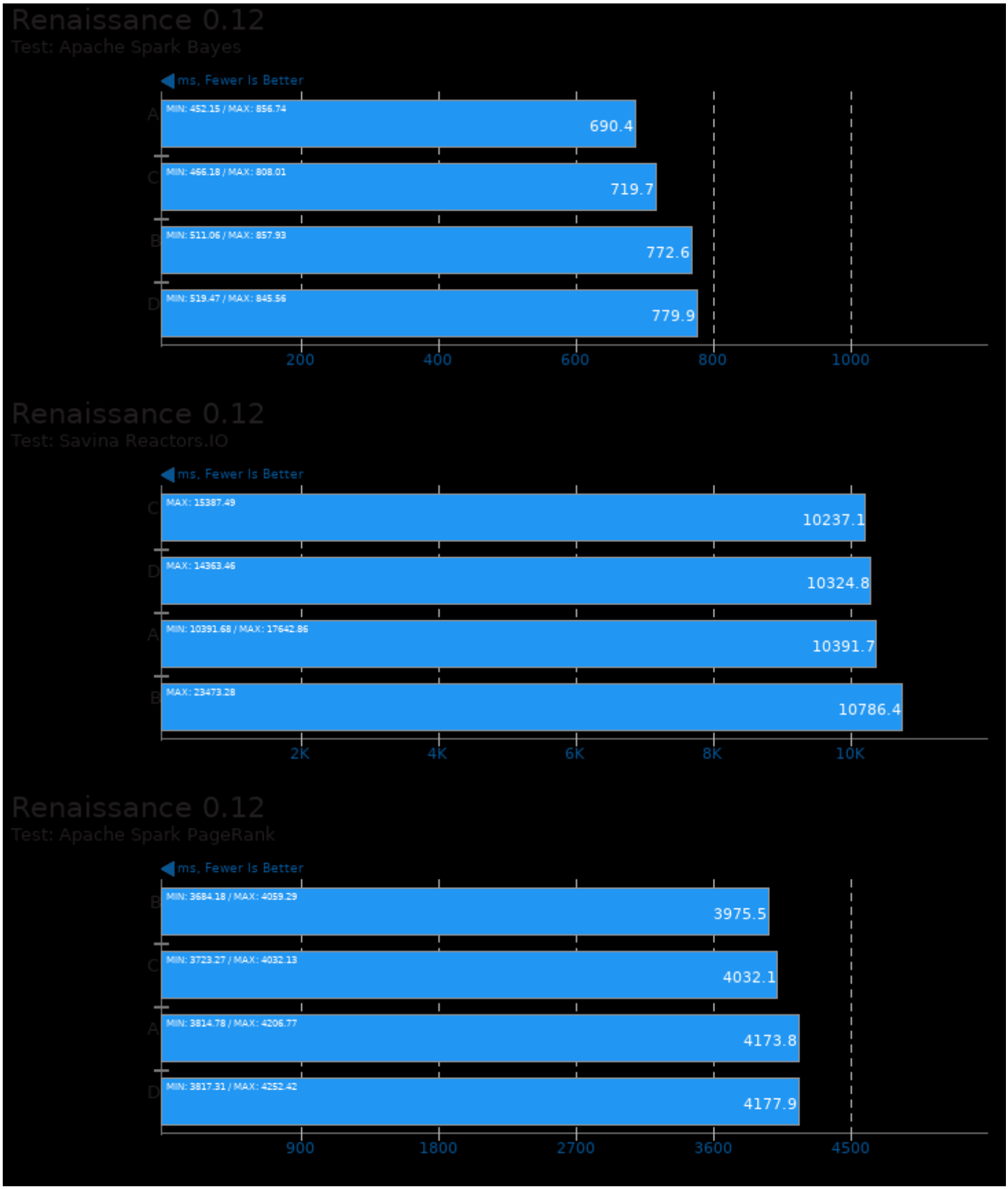
1. (CXX) g++ options: -flto -no-pie -lgmpxx -lgmp -lboost_system -pthread

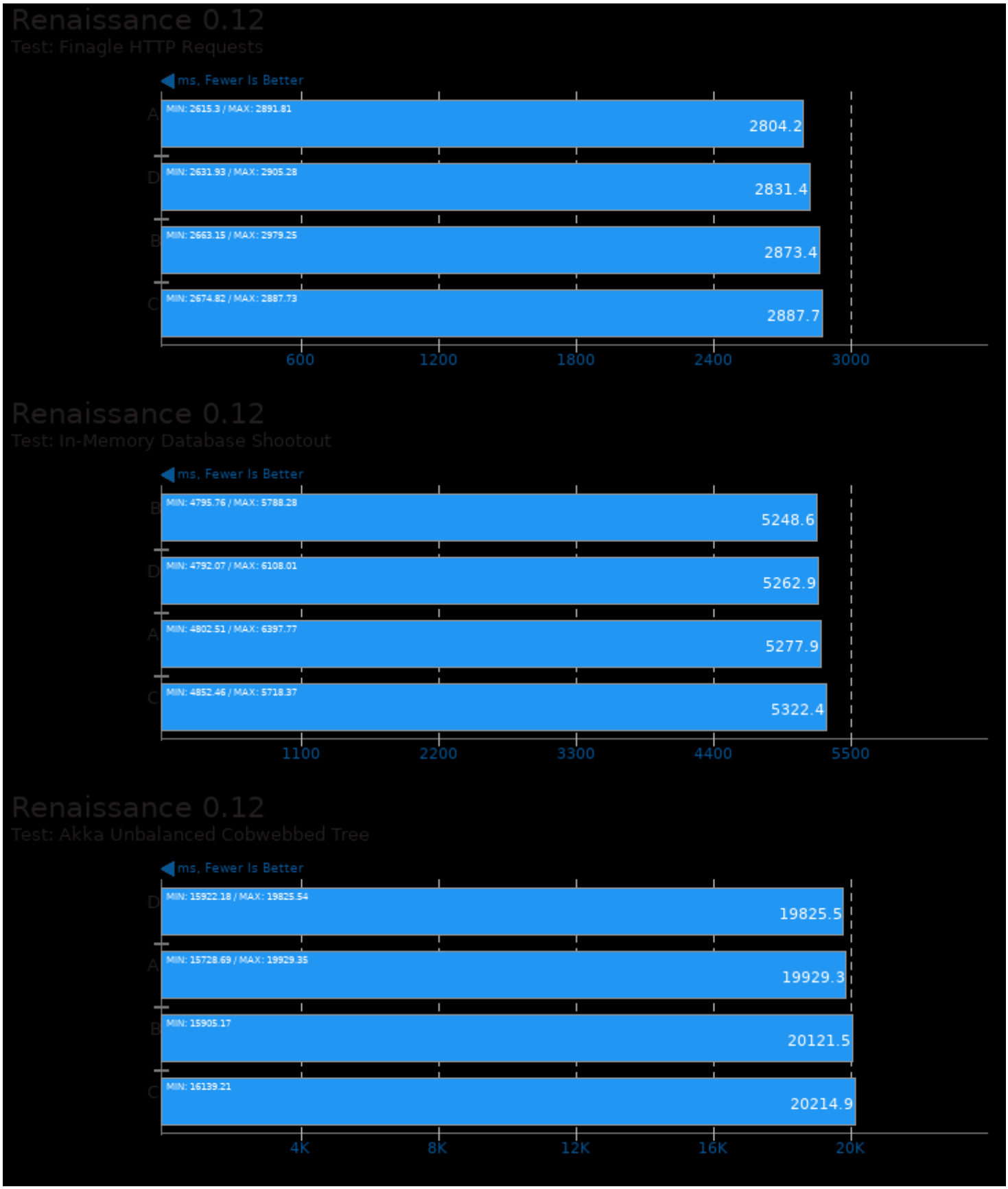
Renaissance 0.12

Test: Scala Dotty



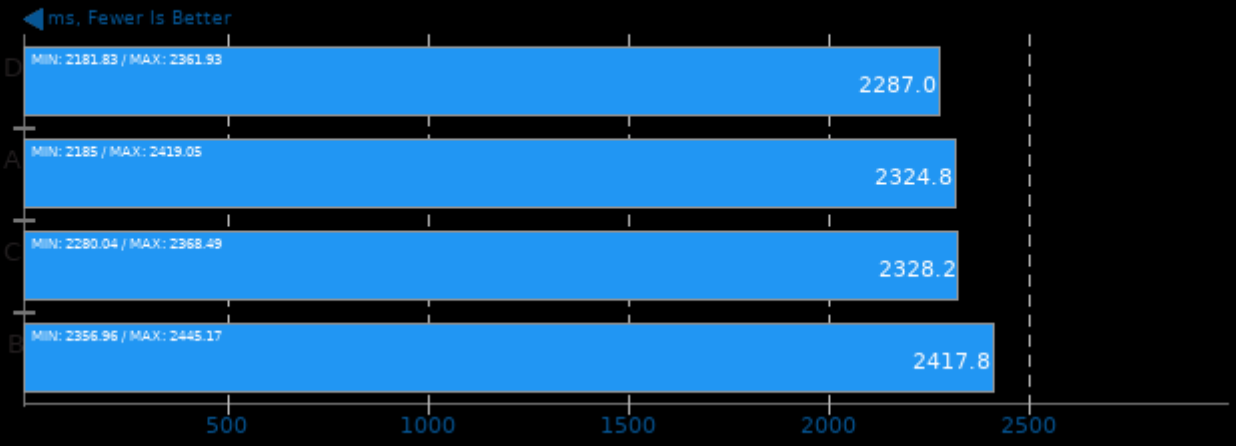

Renaissance 0.12
Test: Random Forest
ms, Fewer Is Better
D
MIN: 796.67 / MAX: 1087.78
876.8
B
MIN: 798.25 / MAX: 1003.03
876.9
C
MIN: 819.02 / MAX: 1050.35
891.3
A
MIN: 838.9 / MAX: 1075.6
903.2
200
400
600
800
1000
Renaissance 0.12
Test: ALS Movie Lens
ms, Fewer Is Better
B
MIN: 7919.79 / MAX: 8530.91
8007.9
A
MIN: 8093.12 / MAX: 9029.55
8165.3
C
MIN: 8297.6 / MAX: 8939.41
8326.3
D
MIN: 8394.51 / MAX: 8931.45
8404.0
2K
4K
6K
8K
10K
Renaissance 0.12
Test: Apache Spark ALS
ms, Fewer Is Better
A
MIN: 1512.05 / MAX: 1888.24
1660.4
C
MIN: 1560.41 / MAX: 1817.72
1662.3
D
MIN: 1608.25 / MAX: 1893.42
1712.6
B
MIN: 1608.08 / MAX: 1877.06
1726.5
400
800
1200
1600
2000


Renaissance 0.12
Test: Apache Spark Bayes
ms, Fewer Is Better
A
MIN: 452.15 / MAX: 856.74
690.4
C
MIN: 466.18 / MAX: 808.01
719.7
B
MIN: 511.06 / MAX: 857.93
772.6
D
MIN: 519.47 / MAX: 845.56
779.9
200
400
600
800
1000
Renaissance 0.12
Test: Savina Reactors.IO
ms, Fewer Is Better
C
MAX: 15387.49
10237.1
D
MAX: 14363.46
10324.8
A
MIN: 10391.68 / MAX: 17642.86
10391.7
B
MAX: 23473.28
10786.4
2K
4K
6K
8K
10K
Renaissance 0.12
Test: Apache Spark PageRank
ms, Fewer Is Better
B
MIN: 3684.18 / MAX: 4059.29
3975.5
C
MIN: 3723.27 / MAX: 4032.13
4032.1
A
MIN: 3814.78 / MAX: 4206.77
4173.8
D
MIN: 3817.31 / MAX: 4252.42
4177.9
900
1800
2700
3600
4500


Renaissance 0.12
Test: Finagle HTTP Requests
ms, Fewer Is Better
A
MIN: 2615.3 / MAX: 2891.81
2804.2
D
MIN: 2631.93 / MAX: 2905.28
2831.4
B
MIN: 2663.15 / MAX: 2979.25
2873.4
C
MIN: 2674.82 / MAX: 2887.73
2887.7
600
1200
1800
2400
3000
Renaissance 0.12
Test: In-Memory Database Shootout
ms, Fewer Is Better
B
MIN: 4795.76 / MAX: 5788.28
5248.6
D
MIN: 4792.07 / MAX: 6108.01
5262.9
A
MIN: 4802.51 / MAX: 6397.77
5277.9
C
MIN: 4852.46 / MAX: 5718.37
5322.4
1100
2200
3300
4400
5500
Renaissance 0.12
Test: Akka Unbalanced Cobwebbed Tree
ms, Fewer Is Better
D
MIN: 15922.18 / MAX: 19825.54
19825.5
A
MIN: 15728.69 / MAX: 19929.35
19929.3
B
MIN: 15905.17
20121.5
C
MIN: 16139.21
20214.9
4K
8K
12K
16K
20K

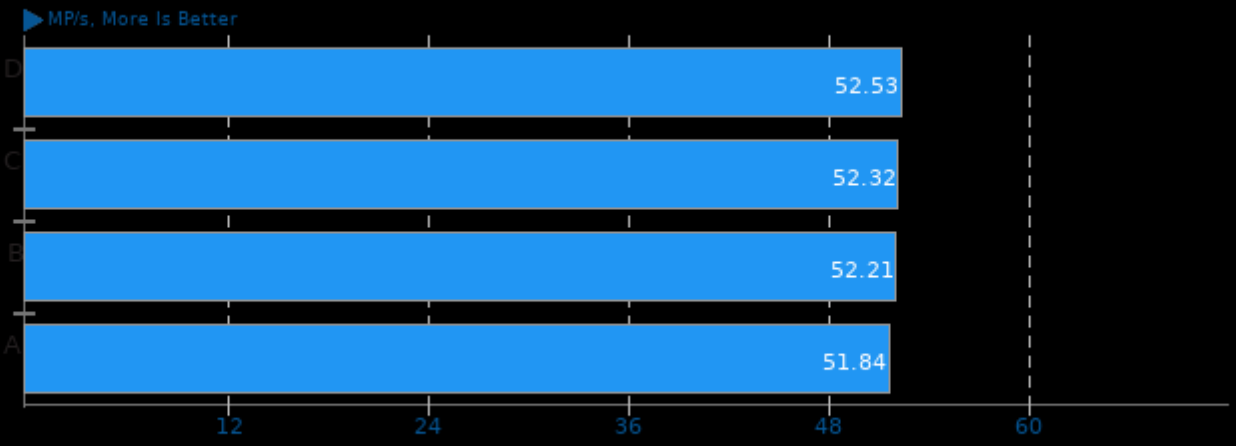
Renaissance 0.12

Test: Genetic Algorithm Using Jenetics + Futures



JPEG XL libjxl 0.5

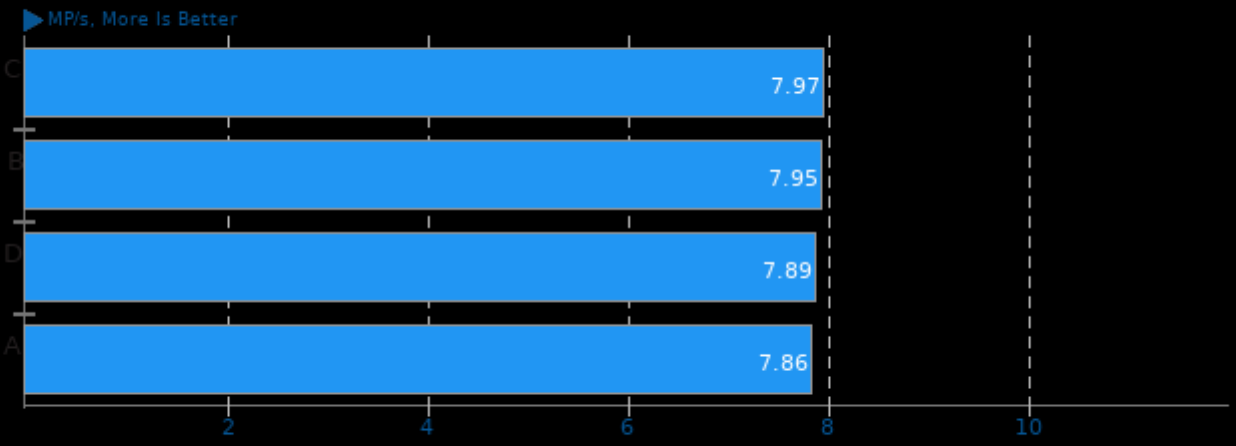
Input: PNG - Encode Speed: 5



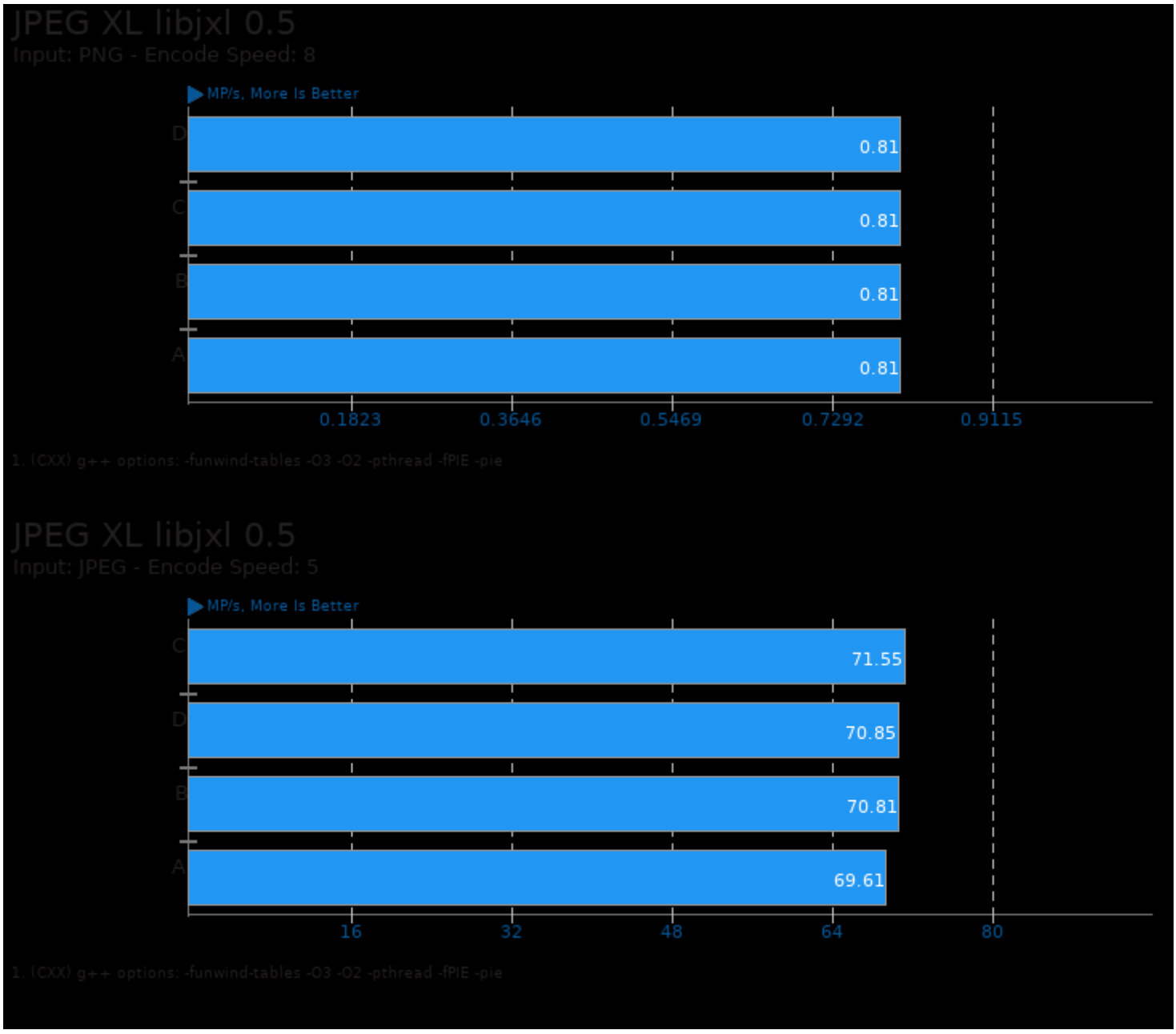
1. (CXX) g++ options: -funwind-tables -O3 -O2 -pthread -fPIE -pie

JPEG XL libjxl 0.5

Input: PNG - Encode Speed: 7

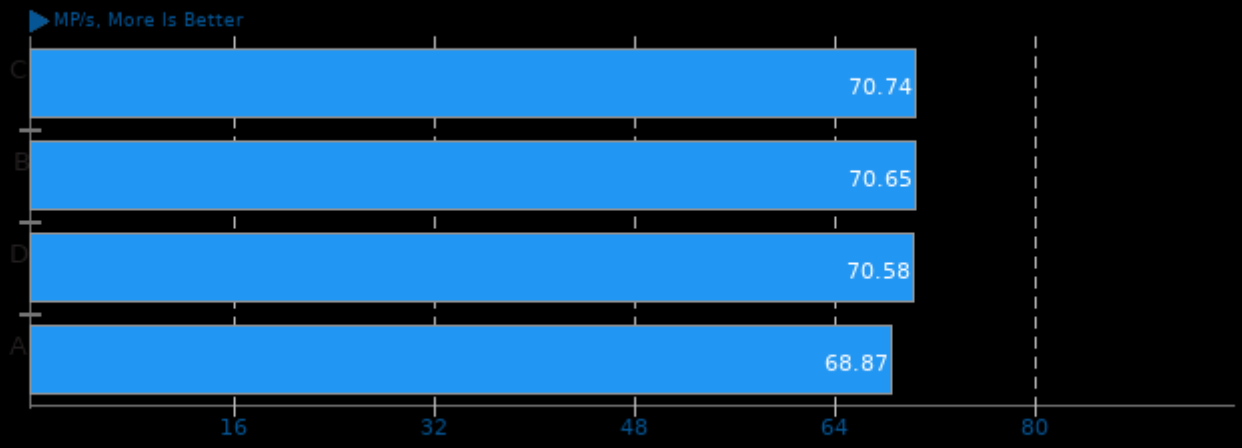


1. (CXX) g++ options: -funwind-tables -O3 -O2 -pthread -fPIE -pie


JPEG XL libjxl 0.5
Input: PNG - Encode Speed: 8
MP/s, More Is Better
D
C
B
A
0.81
0.81
0.81
0.81
0.1823
0.3646
0.5469
0.7292
0.9115
1. (CXX) g++ options: -funwind-tables -O3 -O2 -pthread -fPIE -pie
JPEG XL libjxl 0.5
Input: JPEG - Encode Speed: 5
MP/s, More Is Better
C
D
B
A
71.55
70.85
70.81
69.61
16
32
48
64
80
1. (CXX) g++ options: -funwind-tables -O3 -O2 -pthread -fPIE -pie

JPEG XL libjxl 0.5

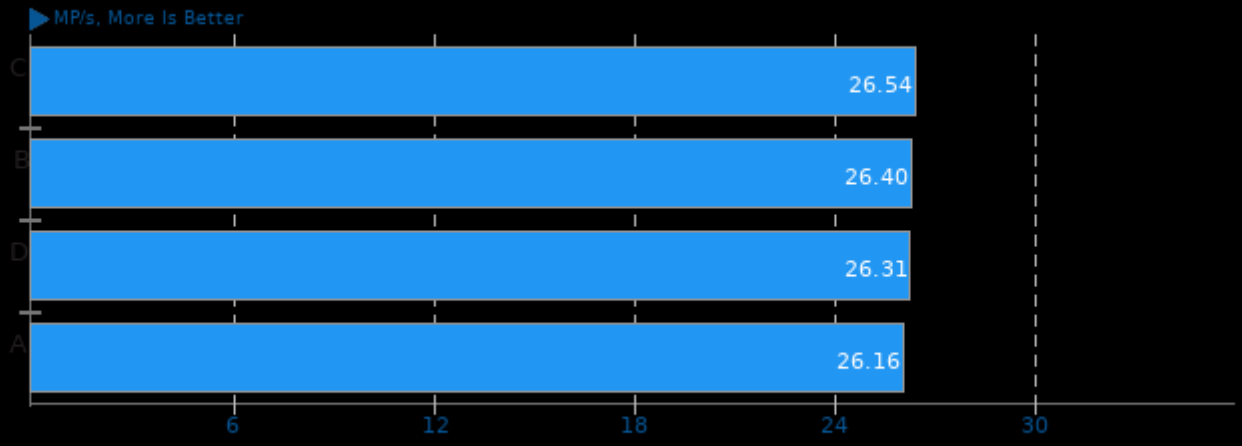
Input: JPEG - Encode Speed: 7



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

JPEG XL libjxl 0.5

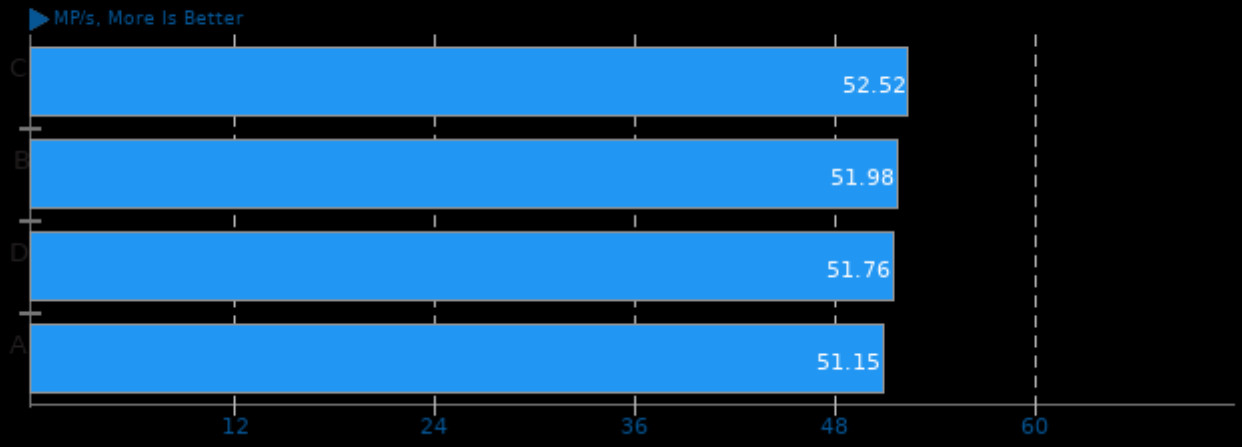
Input: JPEG - Encode Speed: 8



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

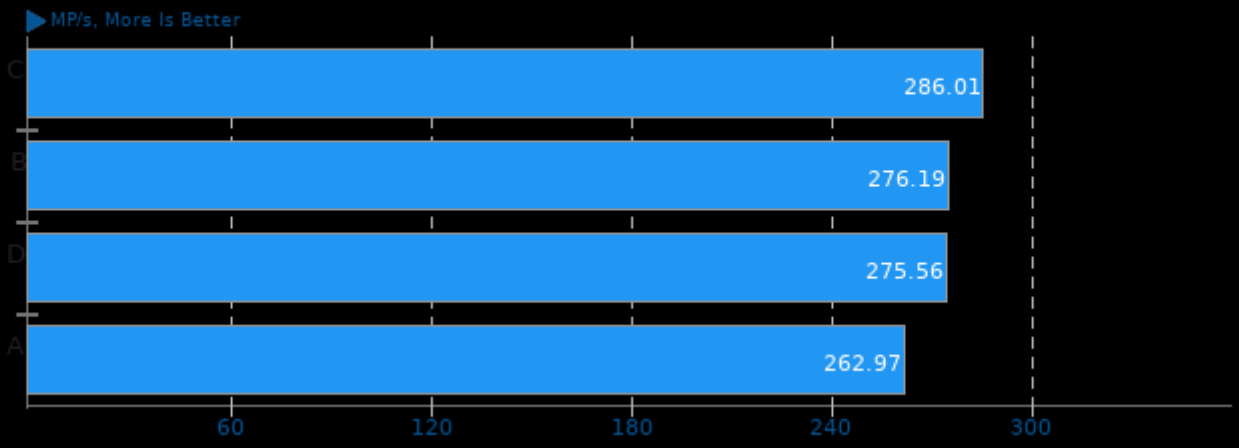
JPEG XL Decoding libjxl 0.5

CPU Threads: 1



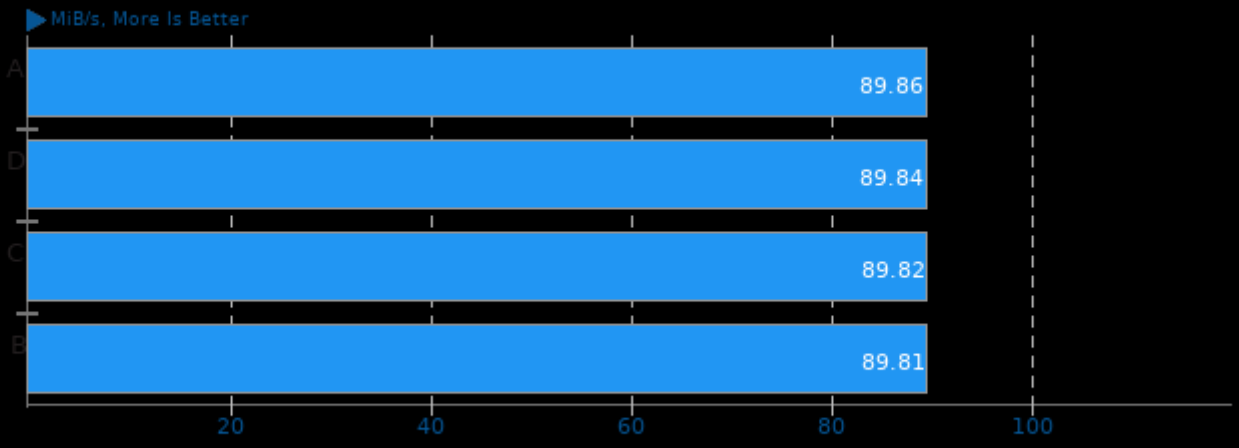
JPEG XL Decoding libjxl 0.5

CPU Threads: All



Botan 2.17.3

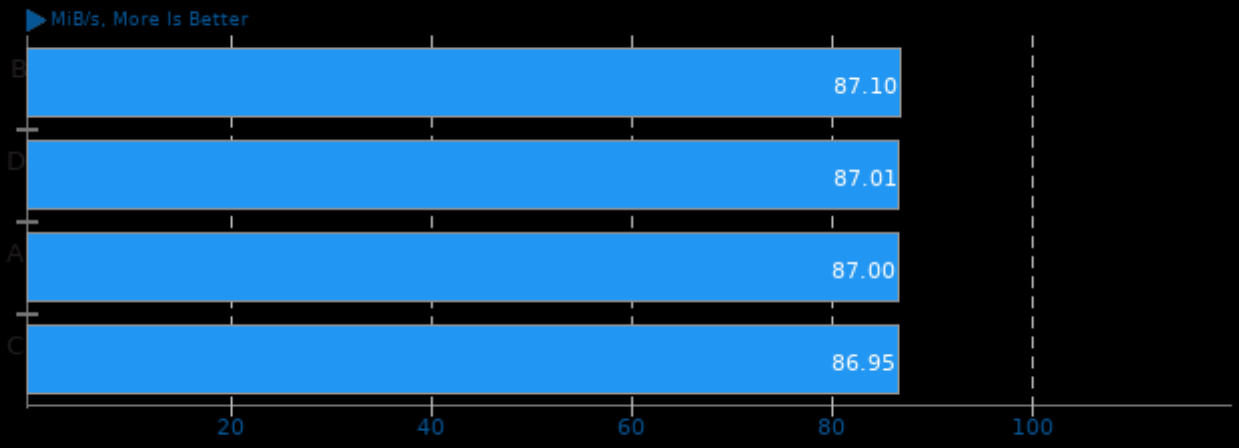
Test: KASUMI



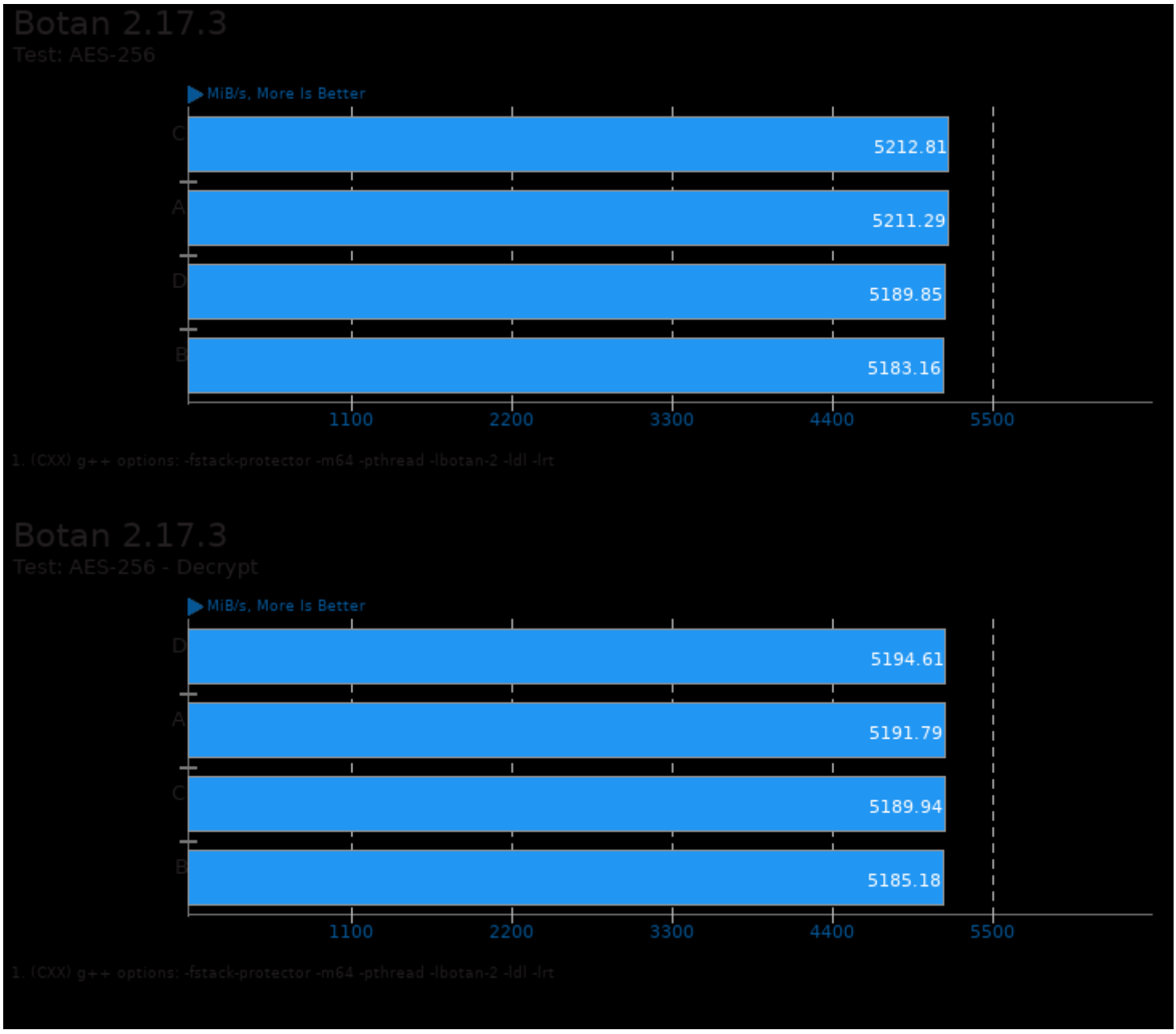
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

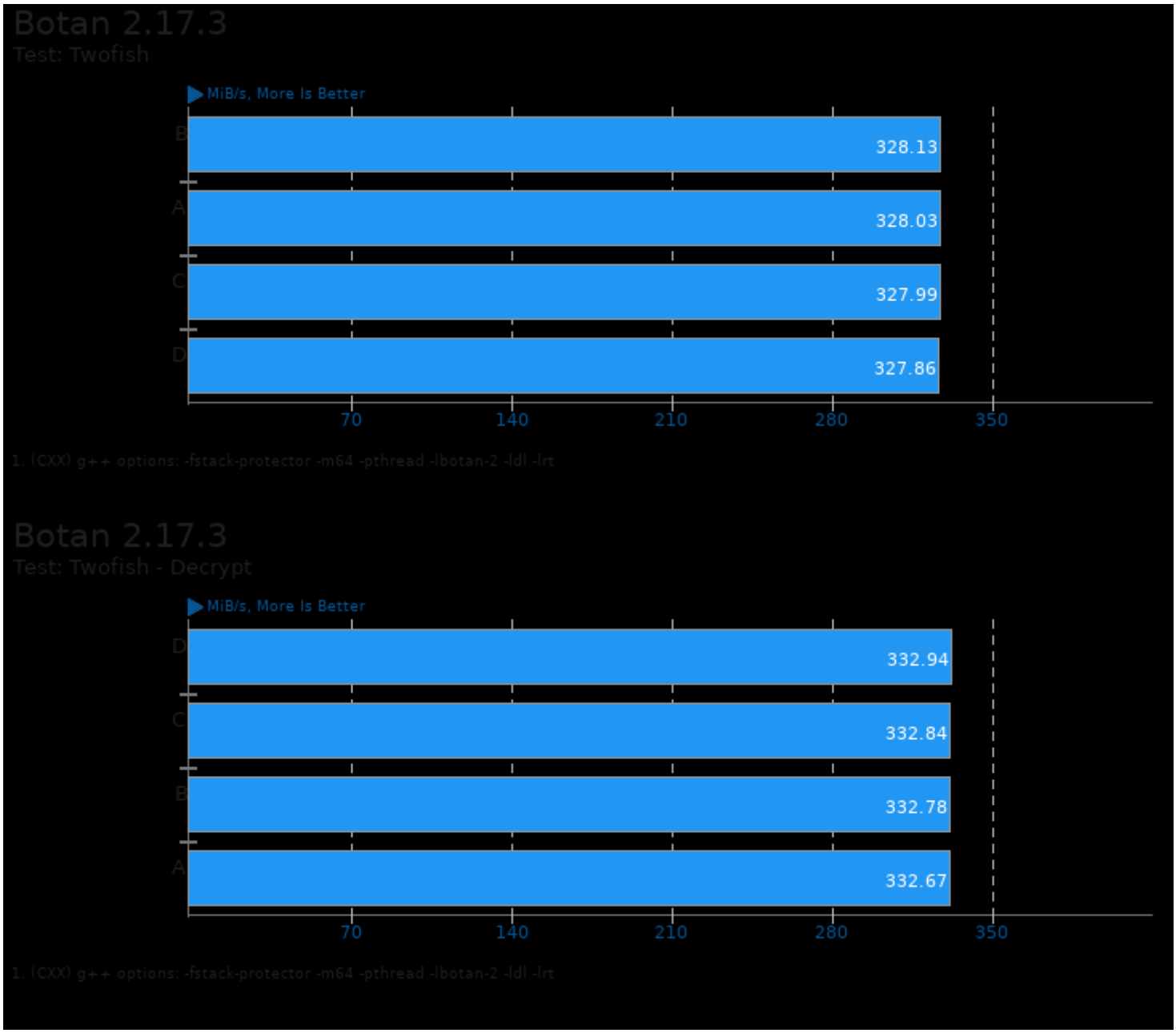
Botan 2.17.3

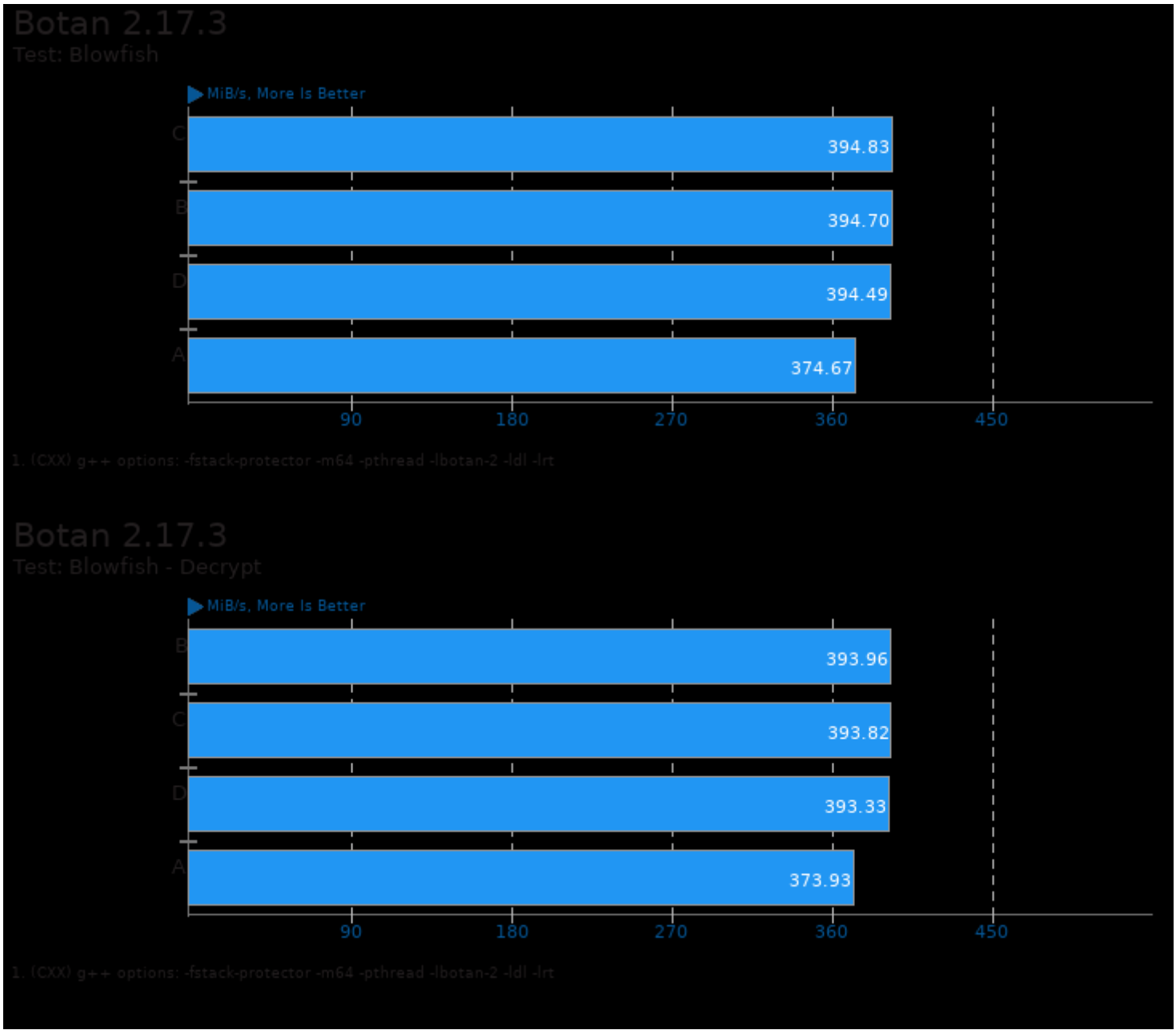
Test: KASUMI - Decrypt

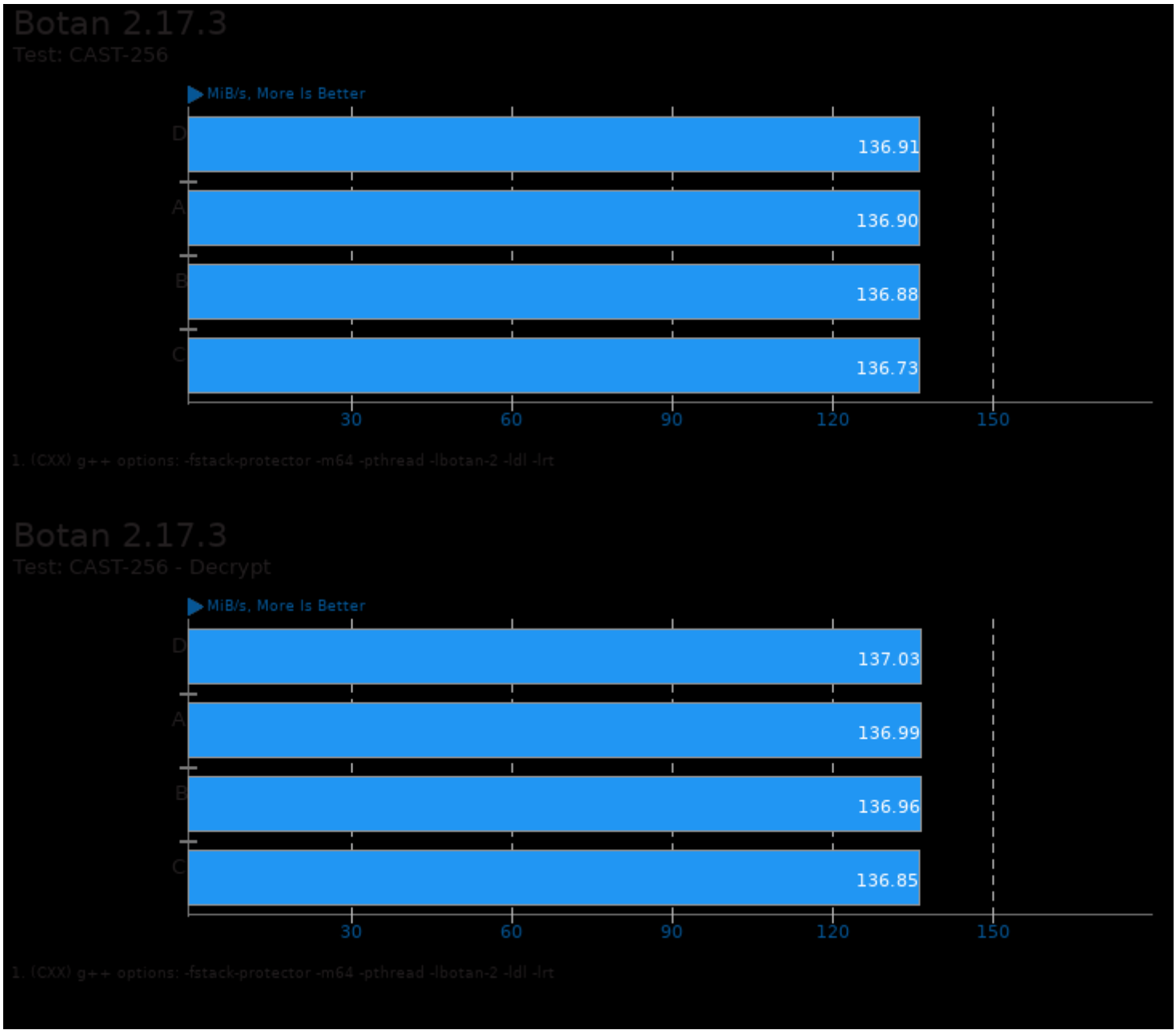


1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt


Botan 2.17.3
Test: AES-256
MiB/s, More Is Better
C
A
D
B
5212.81
5211.29
5189.85
5183.16
1100
2200
3300
4400
5500
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt
Botan 2.17.3
Test: AES-256 - Decrypt
MiB/s, More Is Better
D
A
C
B
5194.61
5191.79
5189.94
5185.18
1100
2200
3300
4400
5500
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

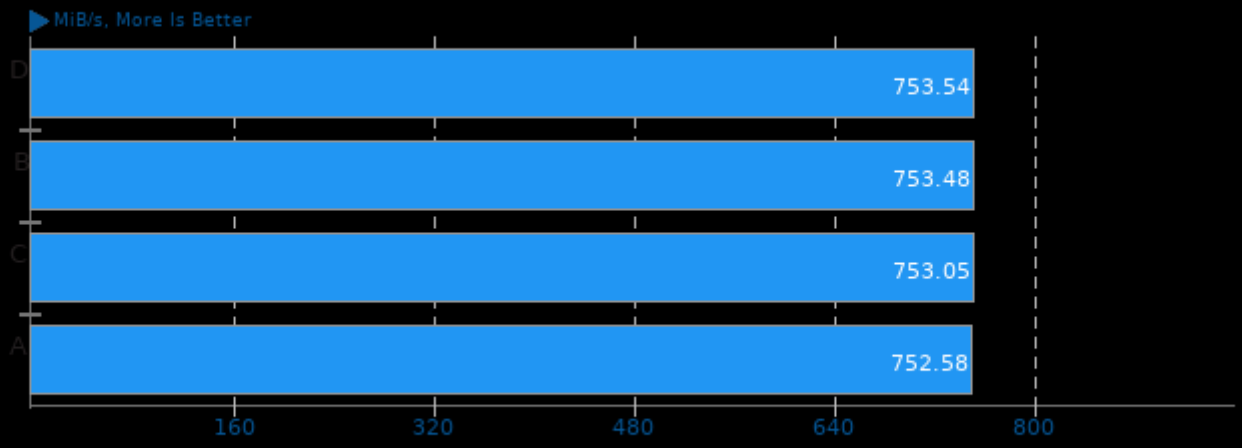

Botan 2.17.3
Test: Twofish
MiB/s, More Is Better
B
A
C
D
328.13
328.03
327.99
327.86
70
140
210
280
350
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt
Botan 2.17.3
Test: Twofish - Decrypt
MiB/s, More Is Better
D
C
B
A
332.94
332.84
332.78
332.67
70
140
210
280
350
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt


Botan 2.17.3
Test: Blowfish
MiB/s, More Is Better
C
394.83
B
394.70
D
394.49
A
374.67
90
180
270
360
450
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt
Botan 2.17.3
Test: Blowfish - Decrypt
MiB/s, More Is Better
B
393.96
C
393.82
D
393.33
A
373.93
90
180
270
360
450
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt


Botan 2.17.3
Test: CAST-256
MiB/s, More Is Better
D
A
B
C
136.91
136.90
136.88
136.73
30
60
90
120
150
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt
Botan 2.17.3
Test: CAST-256 - Decrypt
MiB/s, More Is Better
D
A
B
C
137.03
136.99
136.96
136.85
30
60
90
120
150
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

Botan 2.17.3

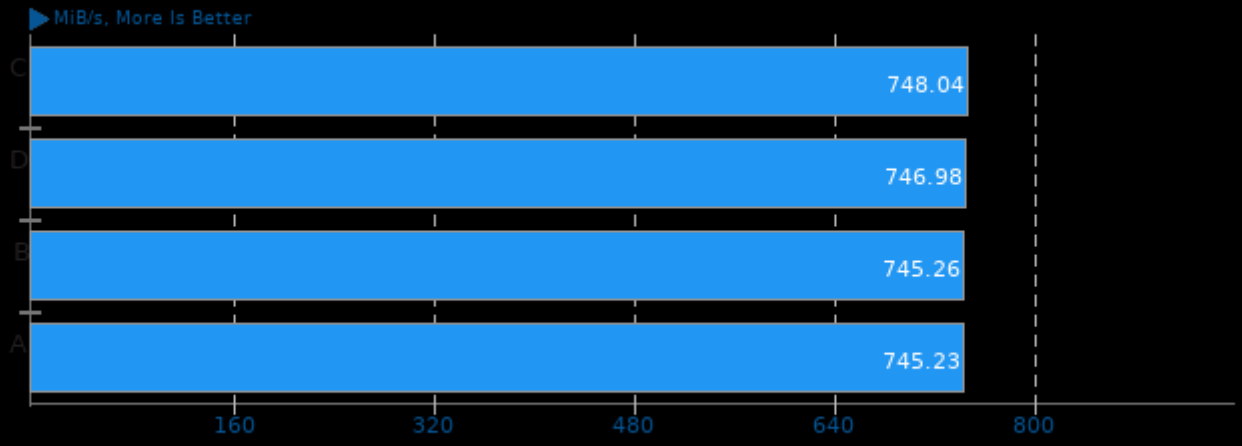
Test: ChaCha20Poly1305



1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

Botan 2.17.3

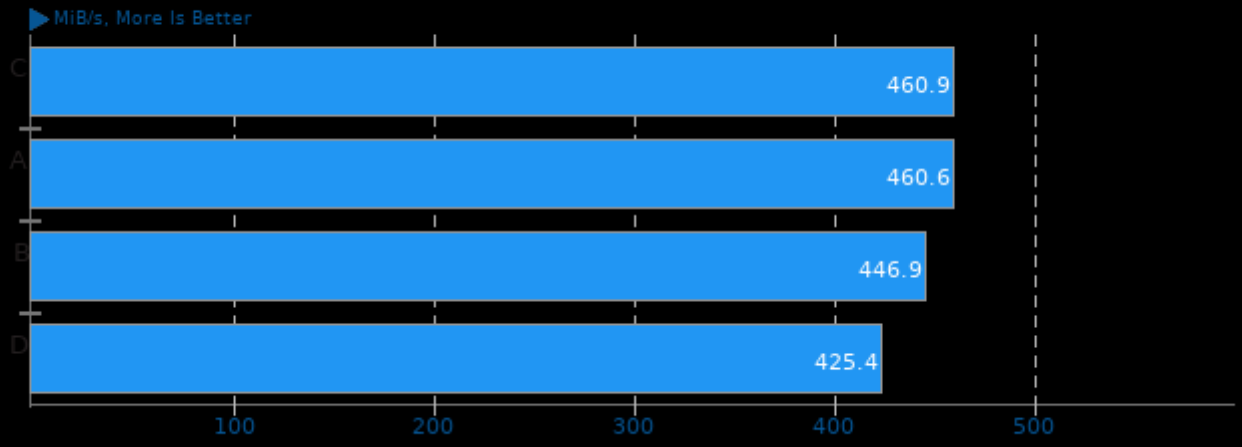
Test: ChaCha20Poly1305 - Decrypt

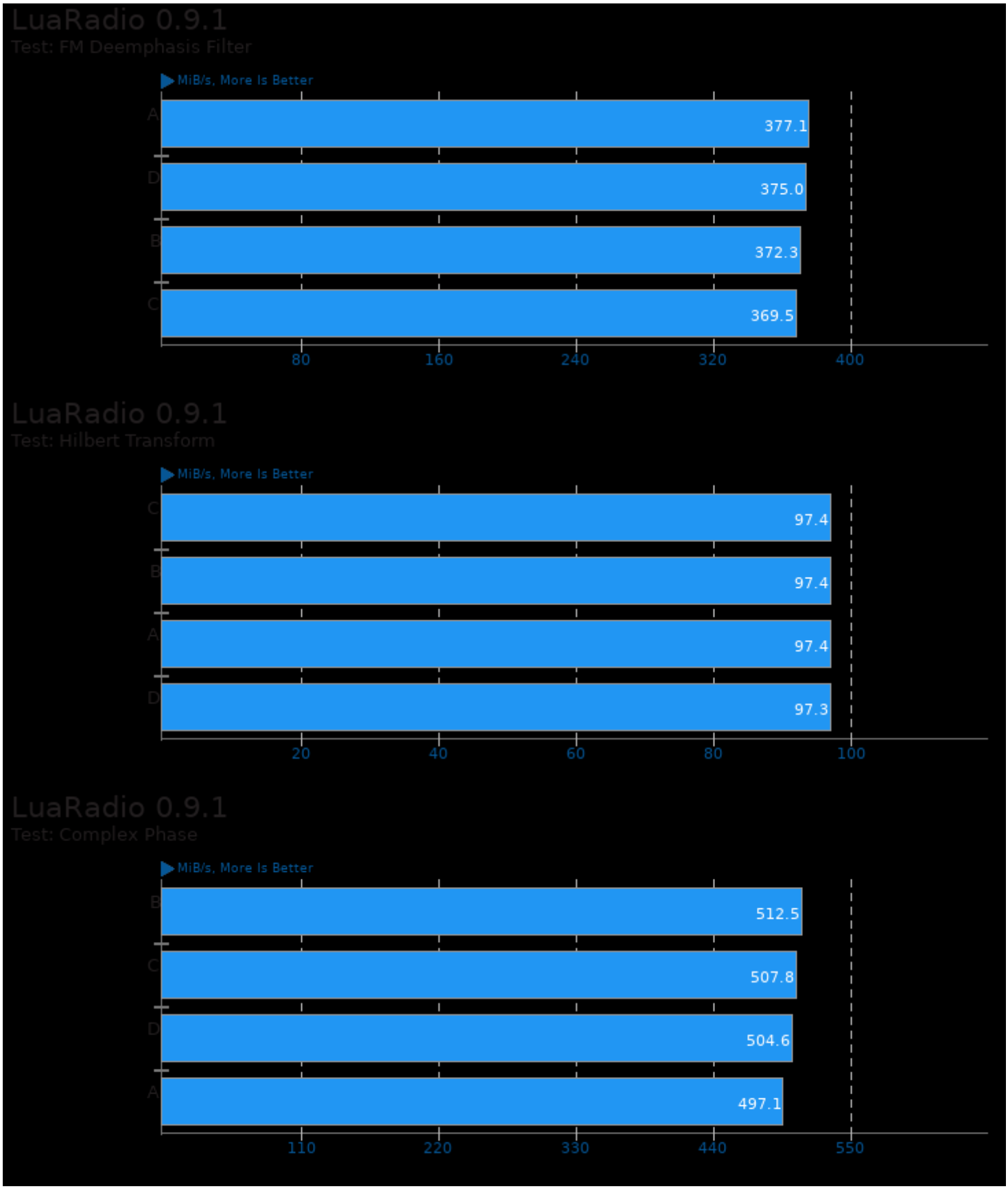


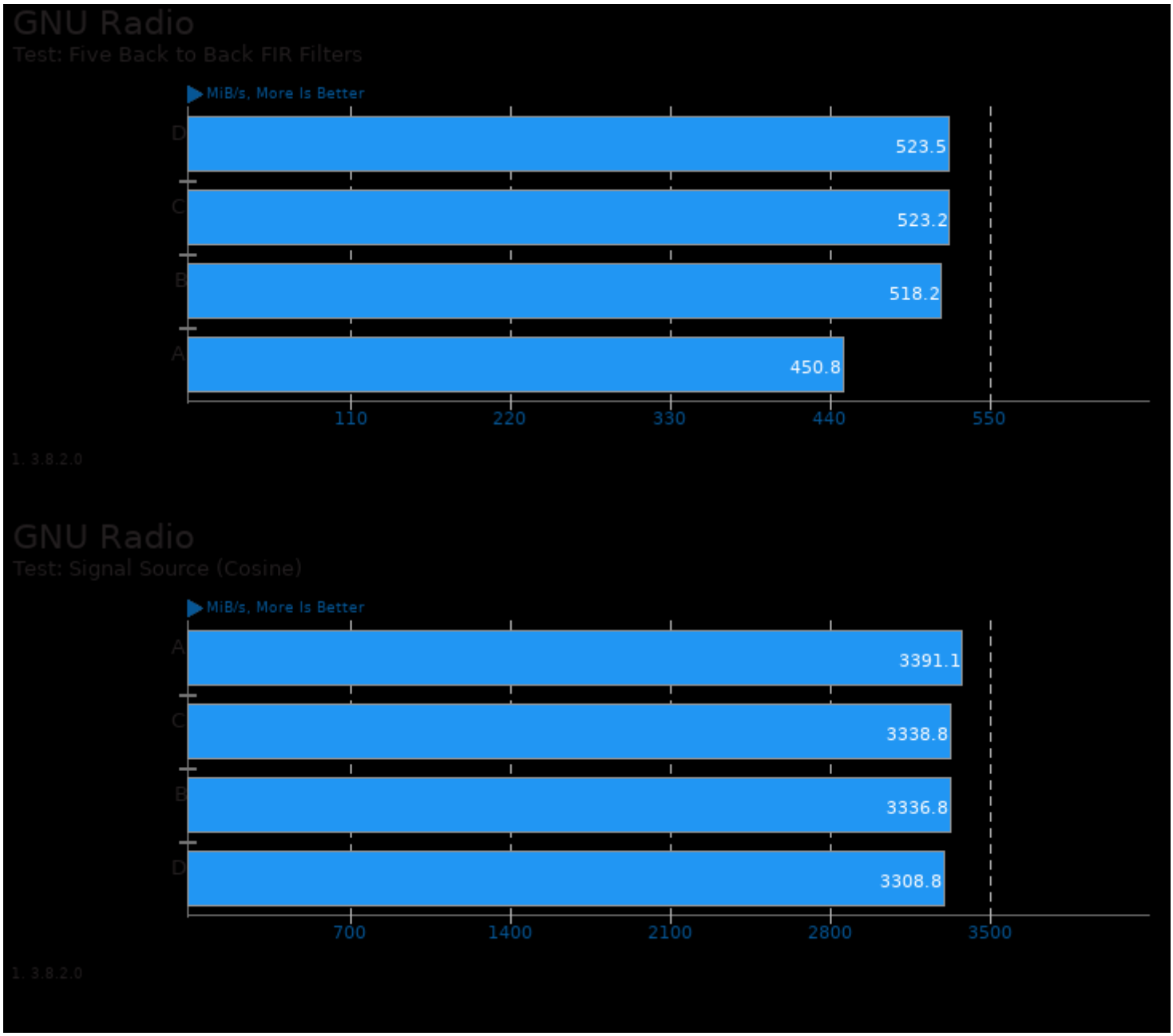
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

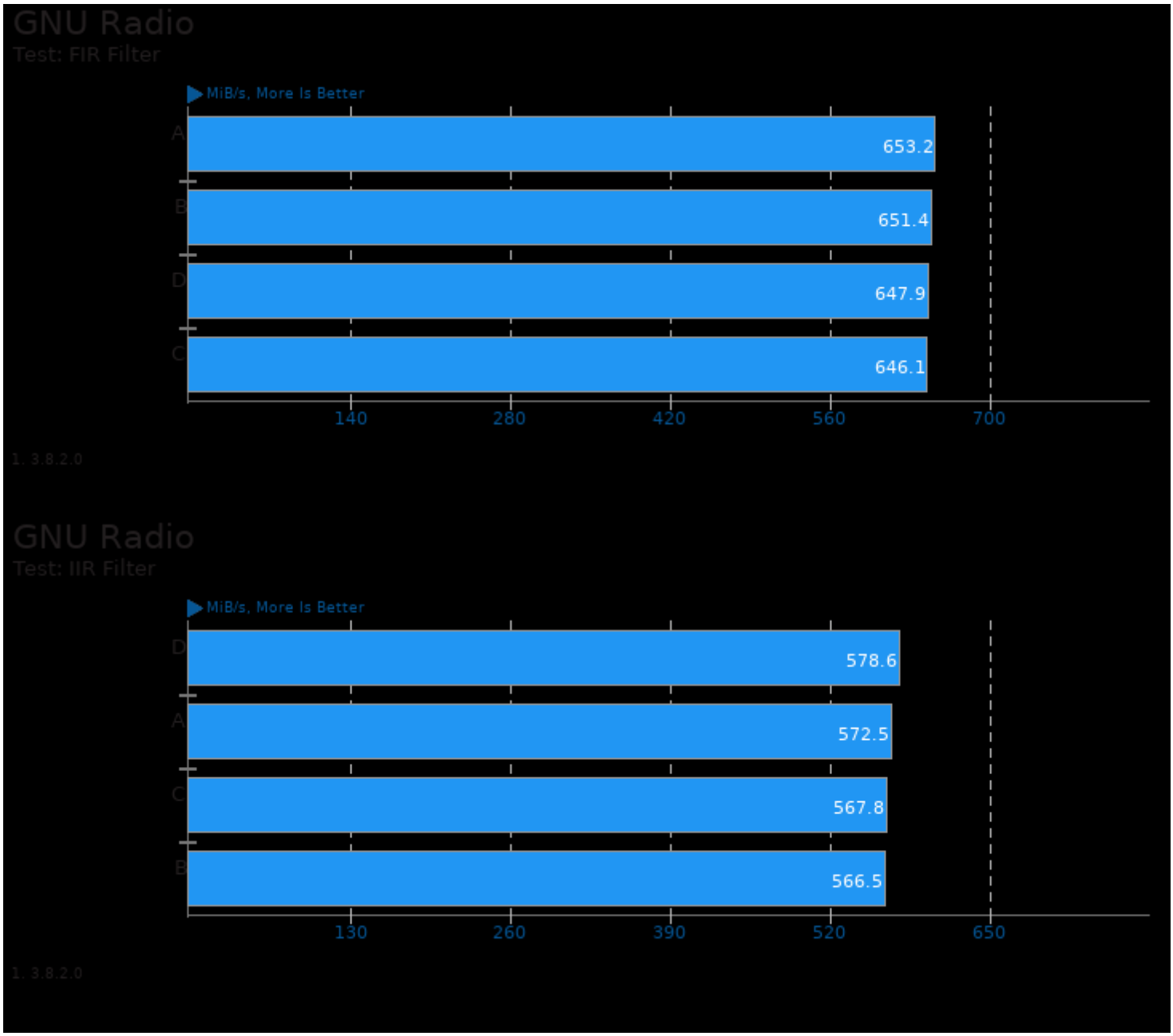
LuaRadio 0.9.1

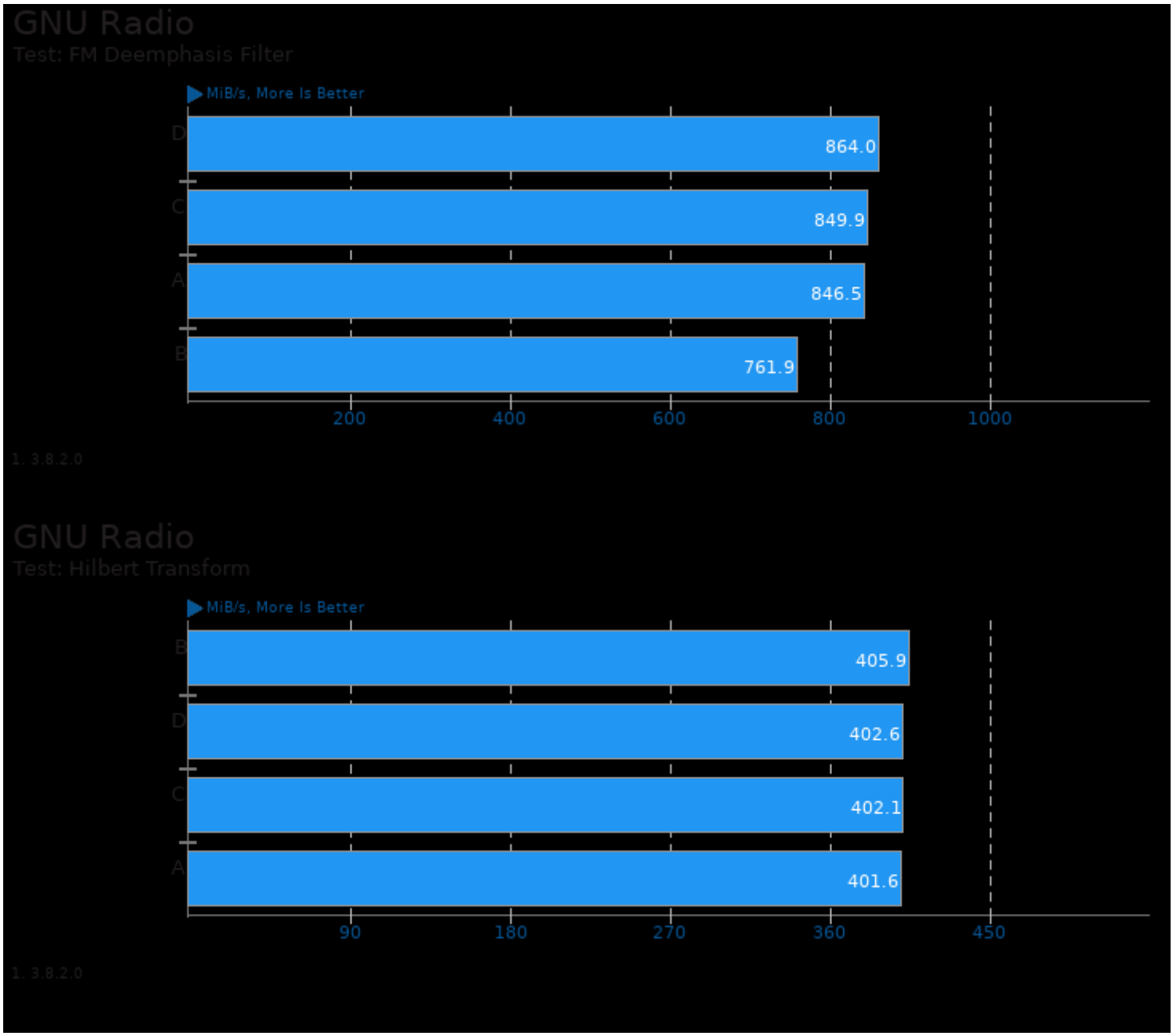
Test: Five Back to Back FIR Filters

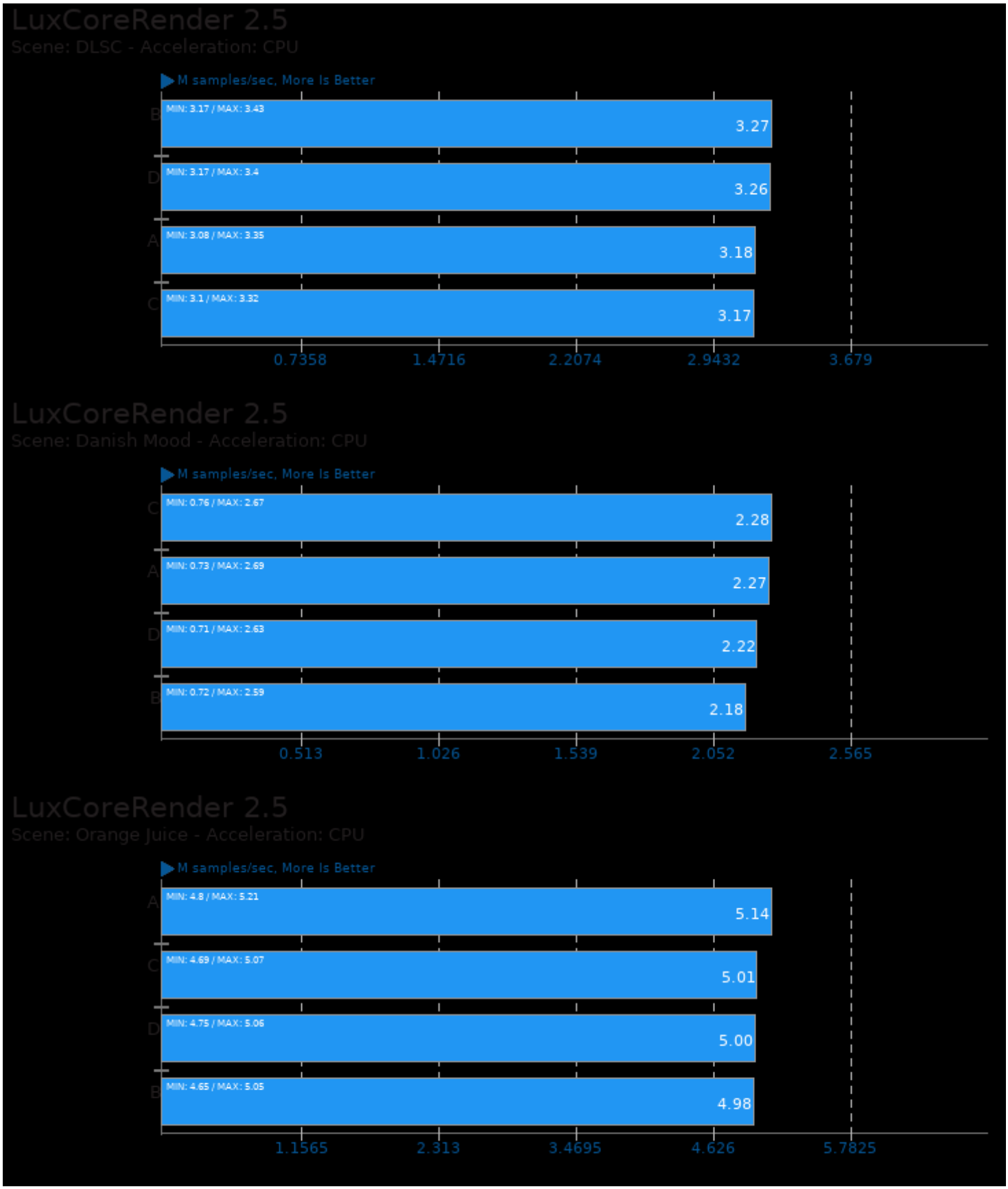



LuaRadio 0.9.1
Test: FM Deemphasis Filter
MiB/s, More Is Better
A
D
B
C
377.1
375.0
372.3
369.5
80
160
240
320
400
LuaRadio 0.9.1
Test: Hilbert Transform
MiB/s, More Is Better
C
B
A
D
97.4
97.4
97.4
97.3
20
40
60
80
100
LuaRadio 0.9.1
Test: Complex Phase
MiB/s, More Is Better
B
C
D
A
512.5
507.8
504.6
497.1
110
220
330
440
550


GNU Radio
Test: Five Back to Back FIR Filters
MiB/s, More Is Better
D
C
B
A
523.5
523.2
518.2
450.8
110
220
330
440
550
1. 3.8.2.0
GNU Radio
Test: Signal Source (Cosine)
MiB/s, More Is Better
A
C
B
D
3391.1
3338.8
3336.8
3308.8
700
1400
2100
2800
3500
1. 3.8.2.0

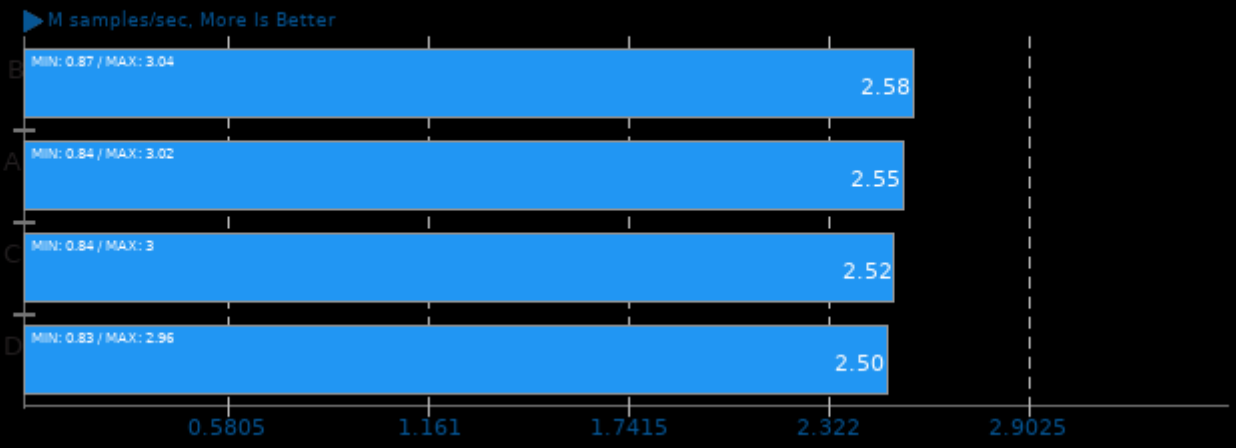

GNU Radio
Test: FIR Filter
MiB/s, More Is Better
A
B
D
C
653.2
651.4
647.9
646.1
140
280
420
560
700
1. 3.8.2.0
GNU Radio
Test: IIR Filter
MiB/s, More Is Better
D
A
C
B
578.6
572.5
567.8
566.5
130
260
390
520
650
1. 3.8.2.0


GNU Radio
Test: FM Deemphasis Filter
MiB/s, More Is Better
D
C
A
B
864.0
849.9
846.5
761.9
200
400
600
800
1000
1. 3.8.2.0
GNU Radio
Test: Hilbert Transform
MiB/s, More Is Better
B
D
C
A
405.9
402.6
402.1
401.6
90
180
270
360
450
1. 3.8.2.0


LuxCoreRender 2.5
Scene: DLSC - Acceleration: CPU
M samples/sec, More Is Better
B
MIN: 3.17 / MAX: 3.43
3.27
D
MIN: 3.17 / MAX: 3.4
3.26
A
MIN: 3.08 / MAX: 3.35
3.18
C
MIN: 3.1 / MAX: 3.32
3.17
0.7358
1.4716
2.2074
2.9432
3.679
LuxCoreRender 2.5
Scene: Danish Mood - Acceleration: CPU
M samples/sec, More Is Better
C
MIN: 0.76 / MAX: 2.67
2.28
A
MIN: 0.73 / MAX: 2.69
2.27
D
MIN: 0.71 / MAX: 2.63
2.22
B
MIN: 0.72 / MAX: 2.59
2.18
0.513
1.026
1.539
2.052
2.565
LuxCoreRender 2.5
Scene: Orange Juice - Acceleration: CPU
M samples/sec, More Is Better
A
MIN: 4.8 / MAX: 5.21
5.14
C
MIN: 4.69 / MAX: 5.07
5.01
D
MIN: 4.75 / MAX: 5.06
5.00
B
MIN: 4.65 / MAX: 5.05
4.98
1.1565
2.313
3.4695
4.626
5.7825

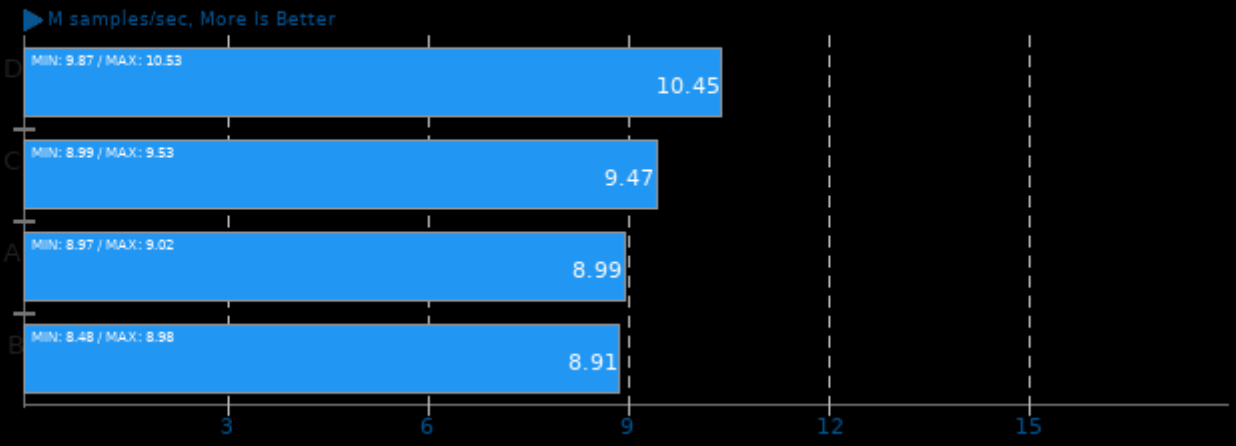
LuxCoreRender 2.5

Scene: LuxCore Benchmark - Acceleration: CPU



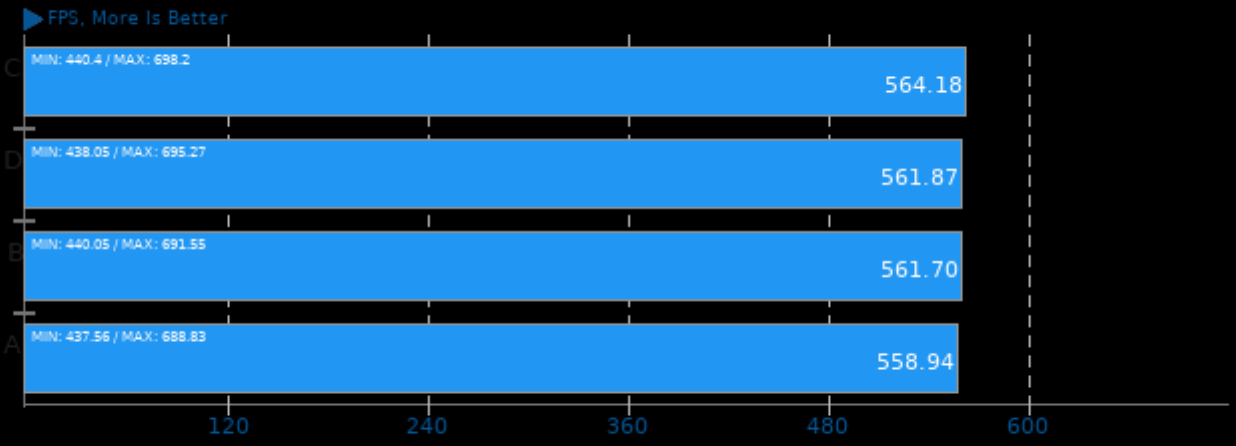
LuxCoreRender 2.5

Scene: Rainbow Colors and Prism - Acceleration: CPU

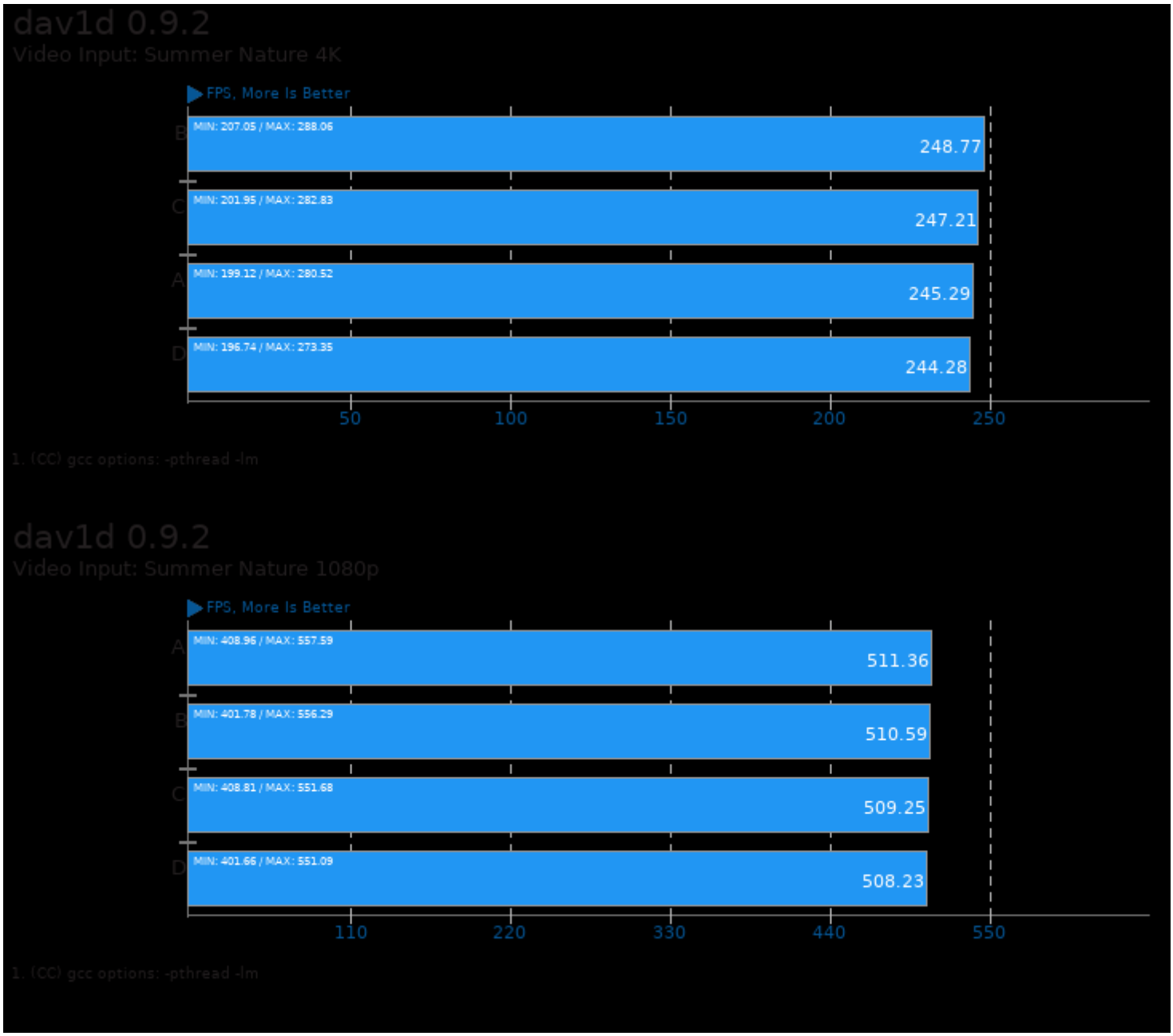


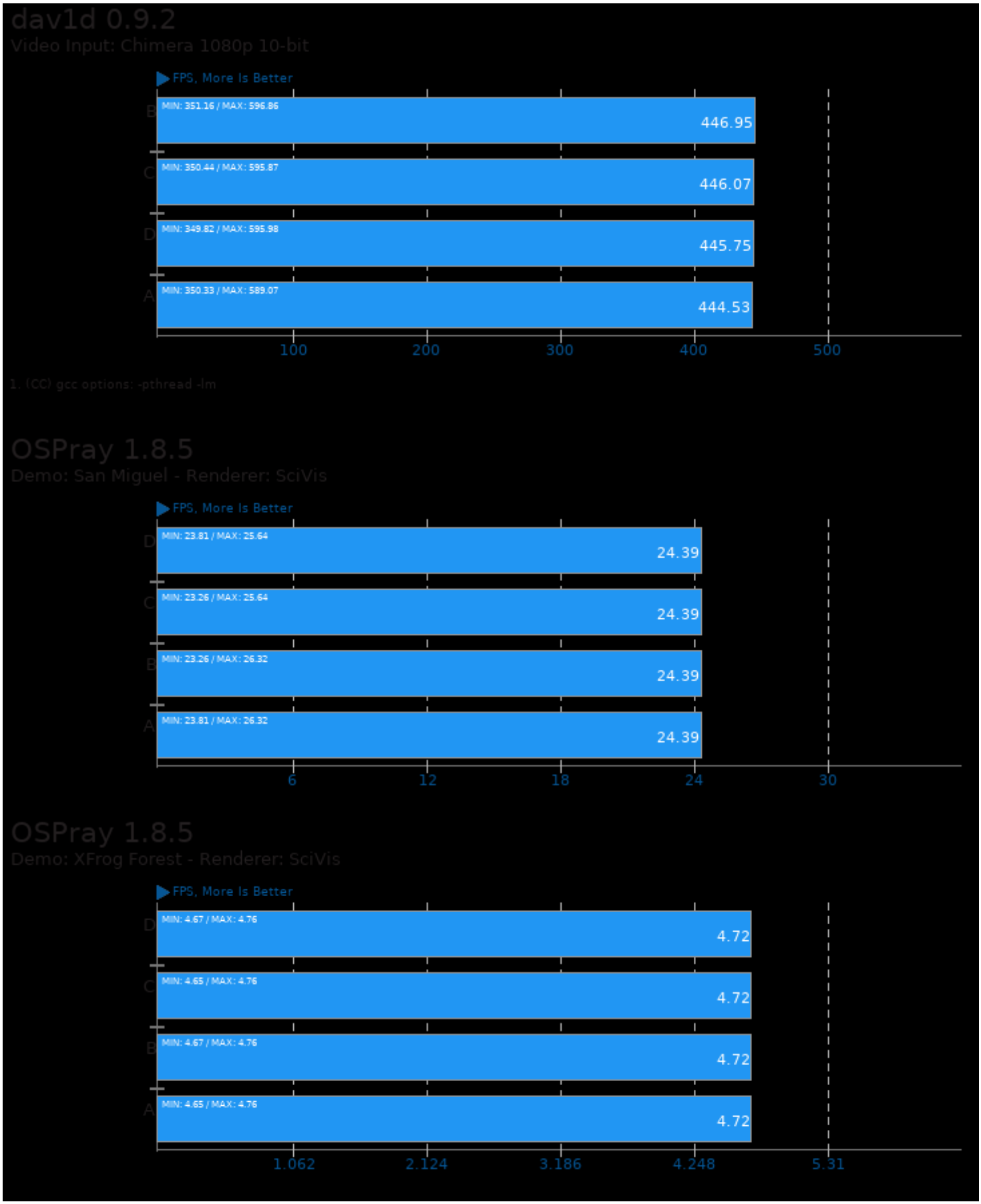
dav1d 0.9.2

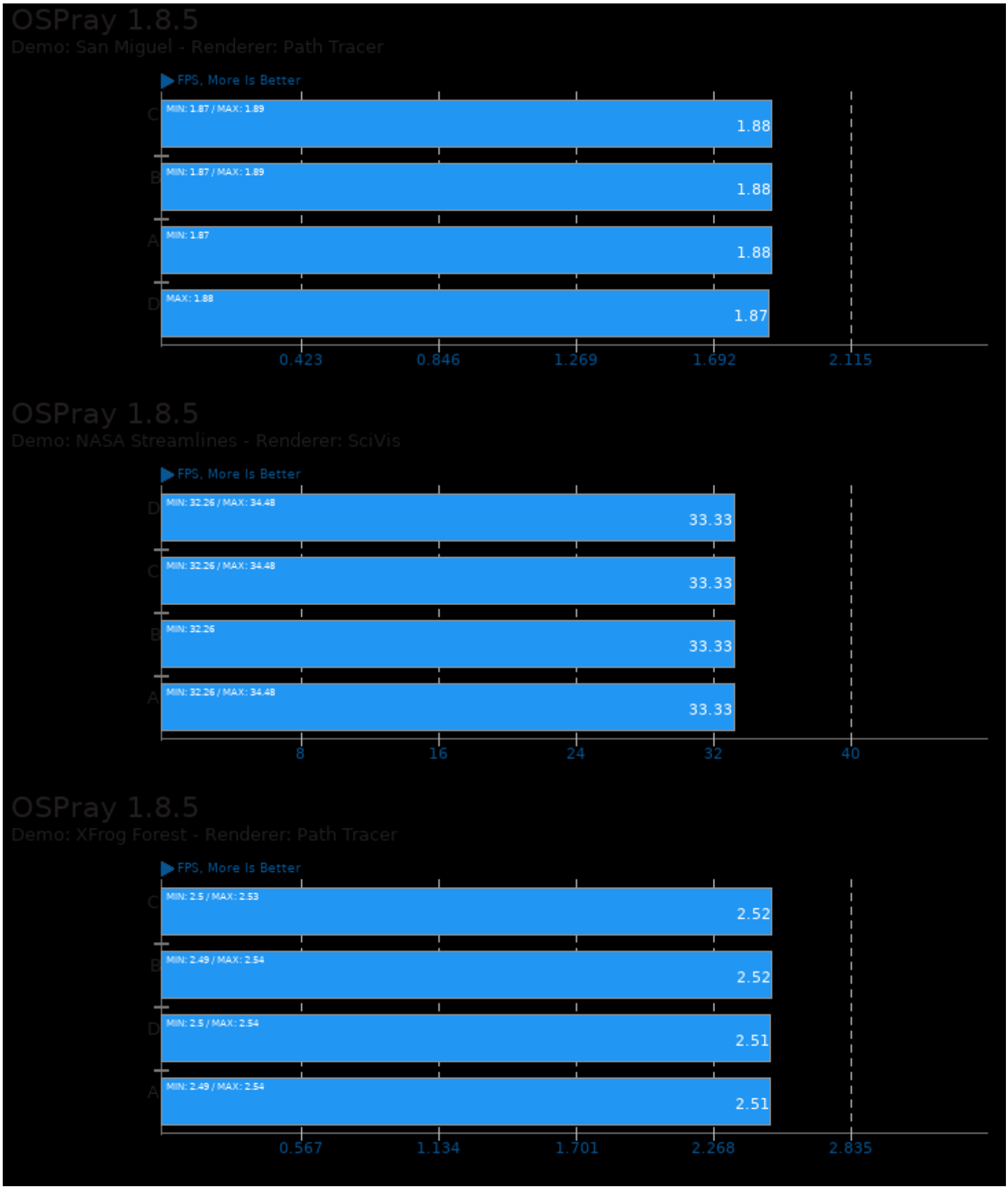
Video Input: Chimera 1080p

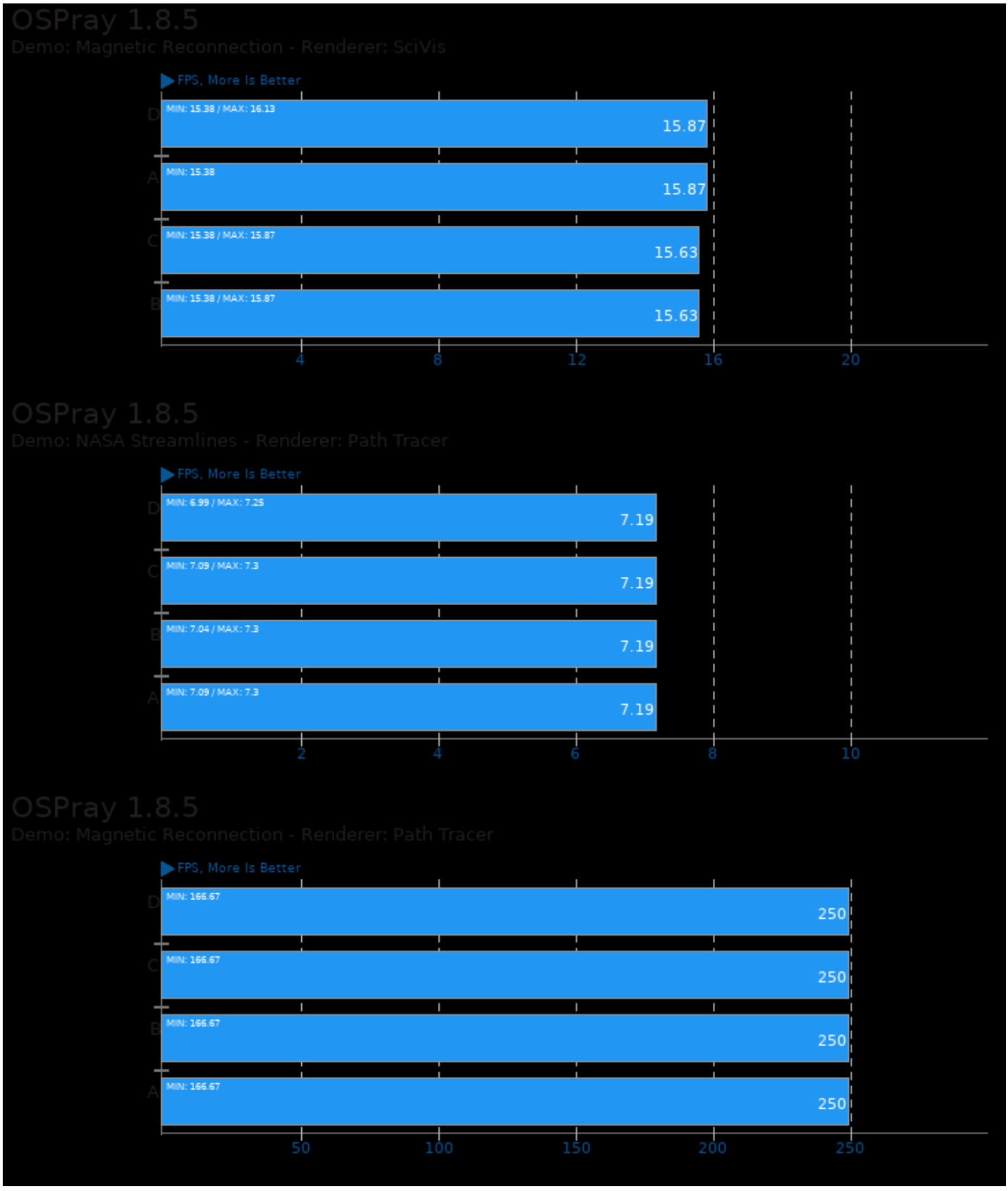


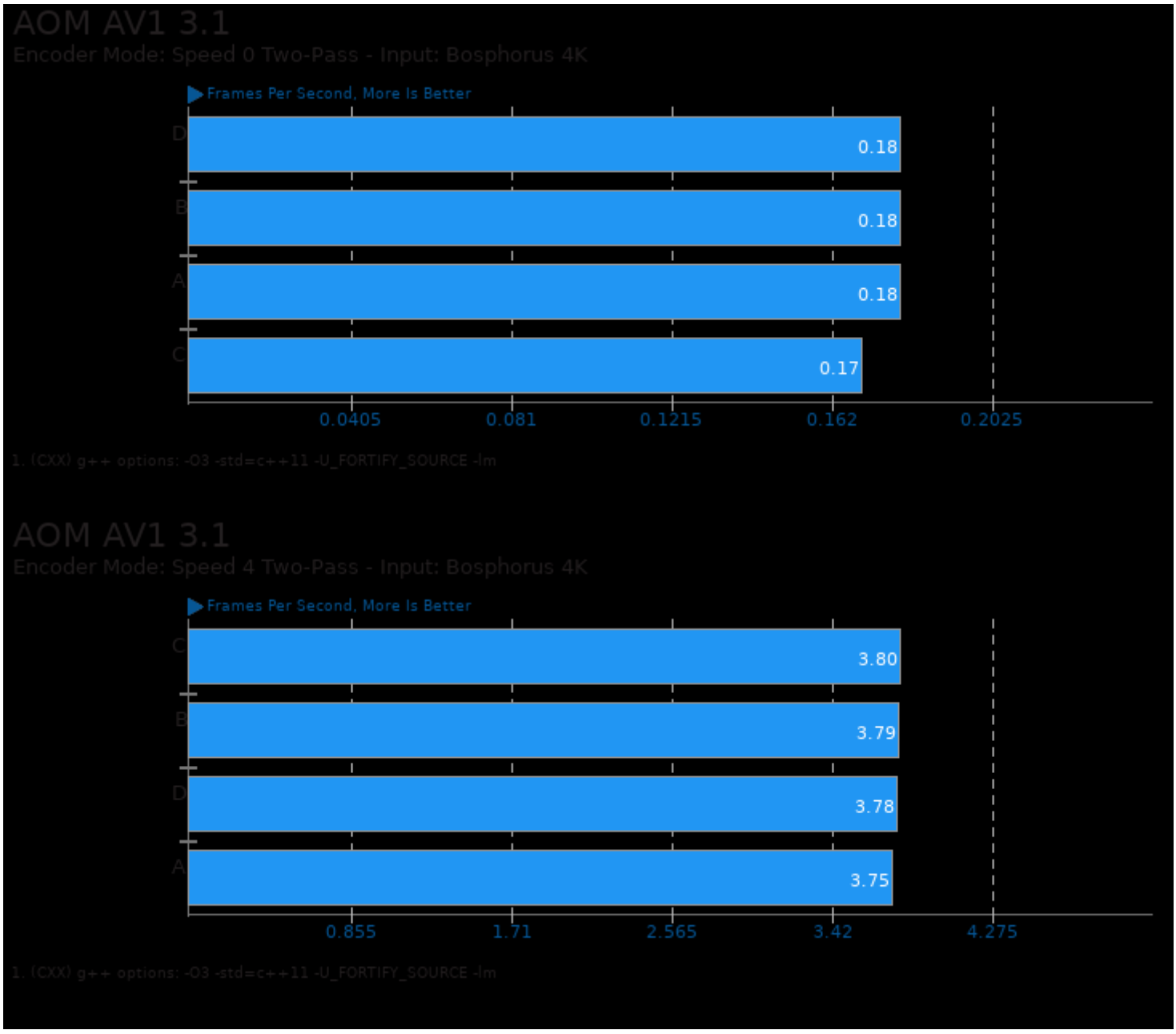
1. (CC) gcc options: -pthread -lm

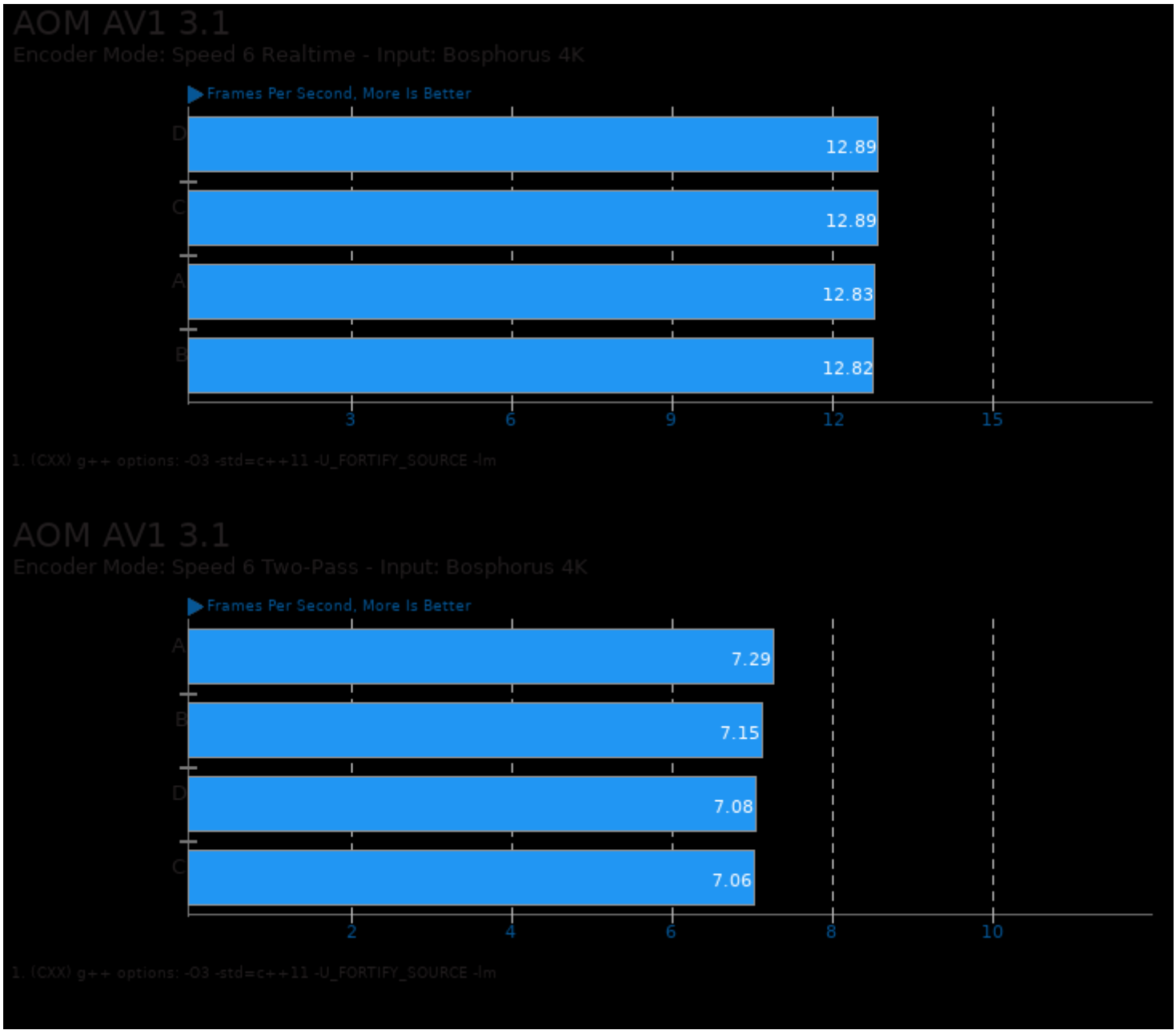

dav1d 0.9.2
Video Input: Summer Nature 4K
FPS, More Is Better
B
MIN: 207.05 / MAX: 288.06
248.77
C
MIN: 201.95 / MAX: 282.83
247.21
A
MIN: 199.12 / MAX: 280.52
245.29
D
MIN: 196.74 / MAX: 273.35
244.28
50
100
150
200
250
1. (CC) gcc options: -pthread -lm
dav1d 0.9.2
Video Input: Summer Nature 1080p
FPS, More Is Better
A
MIN: 408.96 / MAX: 557.59
511.36
B
MIN: 401.78 / MAX: 556.29
510.59
C
MIN: 408.81 / MAX: 551.68
509.25
D
MIN: 401.66 / MAX: 551.09
508.23
110
220
330
440
550
1. (CC) gcc options: -pthread -lm

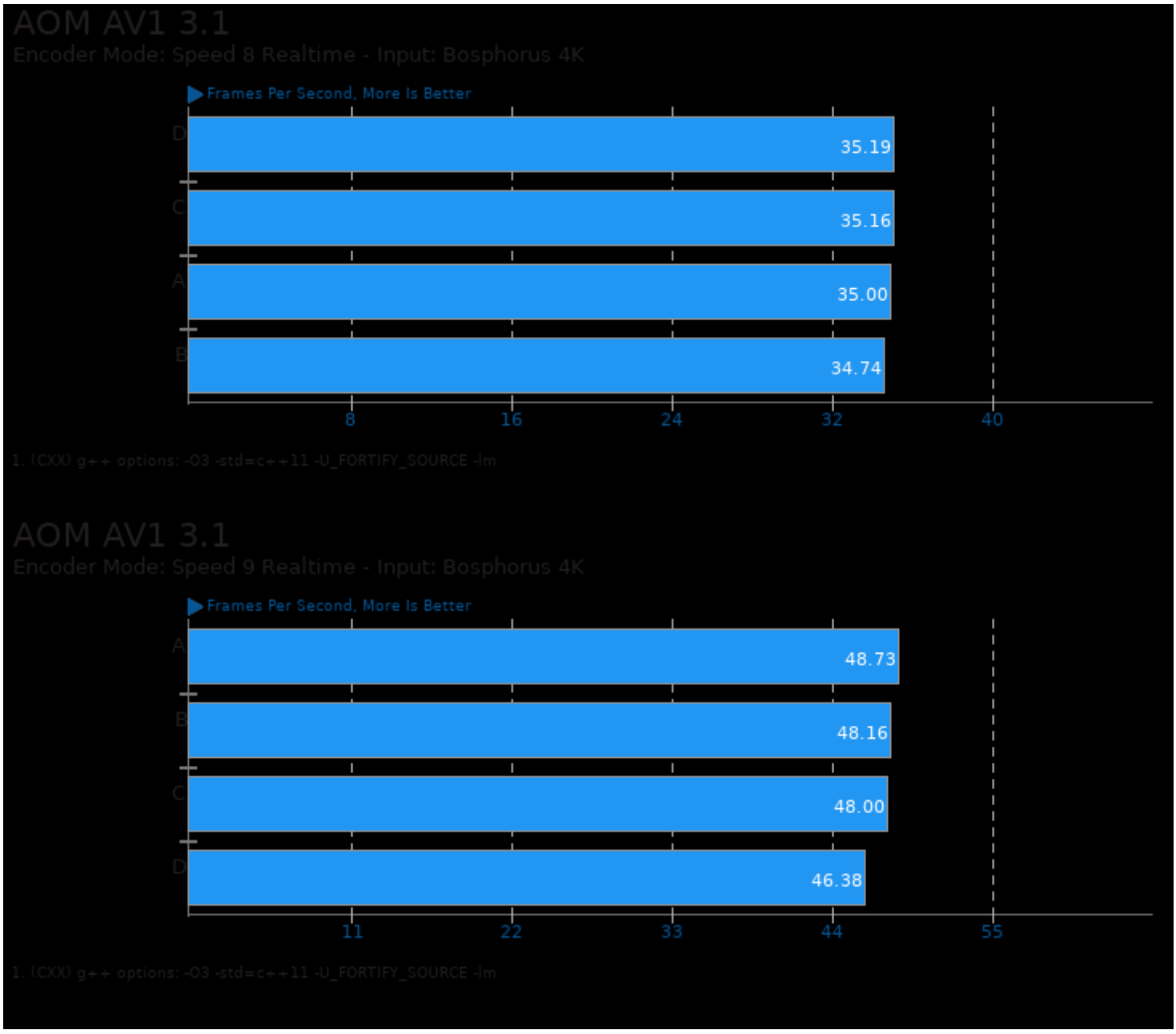

dav1d 0.9.2
Video Input: Chimera 1080p 10-bit
FPS, More Is Better
B
MIN: 351.16 / MAX: 596.86
446.95
C
MIN: 350.44 / MAX: 595.87
446.07
D
MIN: 349.82 / MAX: 595.98
445.75
A
MIN: 350.33 / MAX: 589.07
444.53
100
200
300
400
500
1. (CC) gcc options: -pthread -lm
OSPray 1.8.5
Demo: San Miguel - Renderer: SciVis
FPS, More Is Better
D
MIN: 23.81 / MAX: 25.64
24.39
C
MIN: 23.26 / MAX: 25.64
24.39
B
MIN: 23.26 / MAX: 26.32
24.39
A
MIN: 23.81 / MAX: 26.32
24.39
6
12
18
24
30
OSPray 1.8.5
Demo: XFrog Forest - Renderer: SciVis
FPS, More Is Better
D
MIN: 4.67 / MAX: 4.76
4.72
C
MIN: 4.65 / MAX: 4.76
4.72
B
MIN: 4.67 / MAX: 4.76
4.72
A
MIN: 4.65 / MAX: 4.76
4.72
1.062
2.124
3.186
4.248
5.31

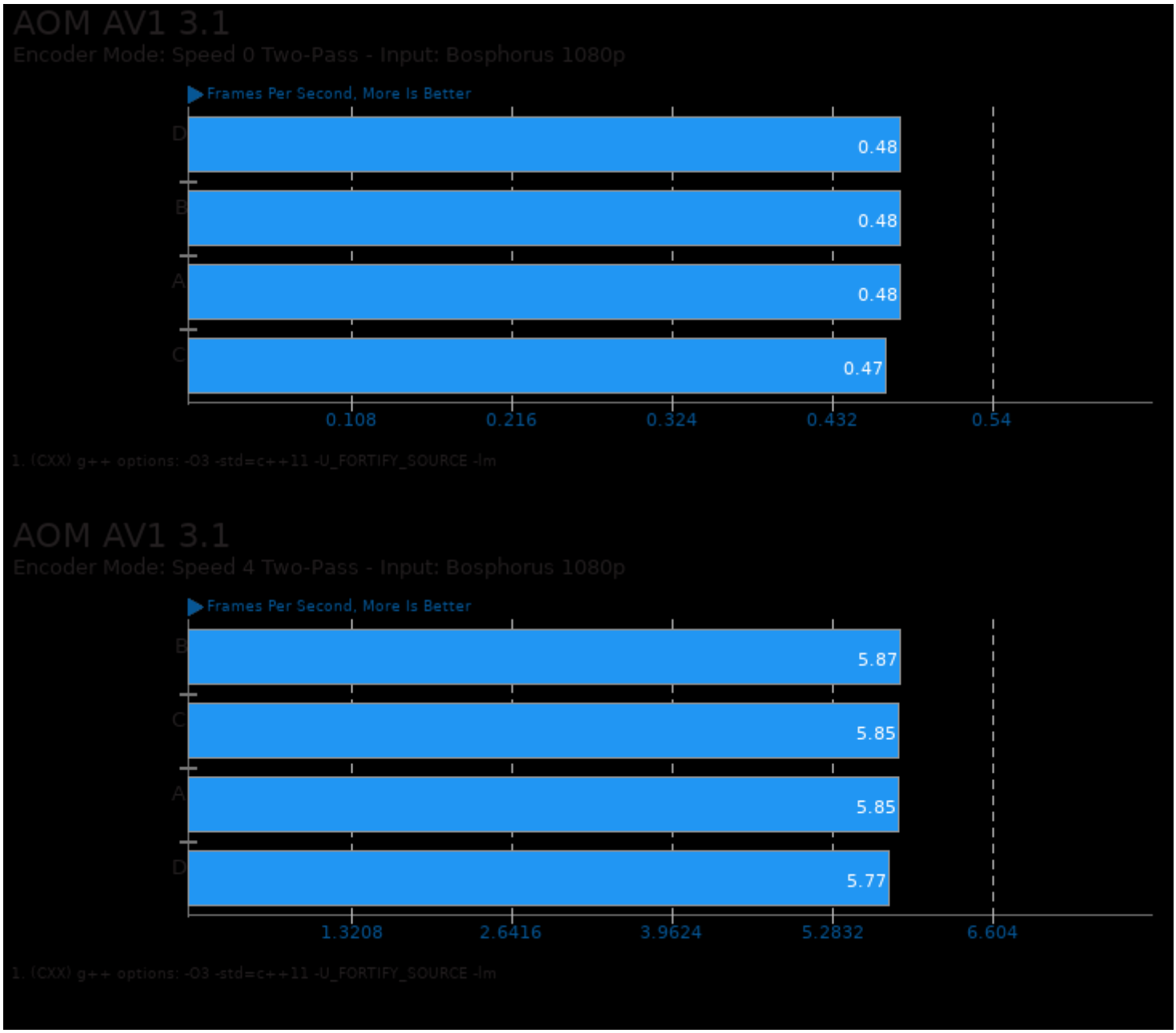

OSPray 1.8.5
Demo: San Miguel - Renderer: Path Tracer
FPS, More Is Better
C
MIN: 1.87 / MAX: 1.89
1.88
B
MIN: 1.87 / MAX: 1.89
1.88
A
MIN: 1.87
1.88
D
MAX: 1.88
1.87
0.423
0.846
1.269
1.692
2.115
OSPray 1.8.5
Demo: NASA Streamlines - Renderer: SciVis
FPS, More Is Better
D
MIN: 32.26 / MAX: 34.48
33.33
C
MIN: 32.26 / MAX: 34.48
33.33
B
MIN: 32.26
33.33
A
MIN: 32.26 / MAX: 34.48
33.33
8
16
24
32
40
OSPray 1.8.5
Demo: XFrog Forest - Renderer: Path Tracer
FPS, More Is Better
C
MIN: 2.5 / MAX: 2.53
2.52
B
MIN: 2.49 / MAX: 2.54
2.52
D
MIN: 2.5 / MAX: 2.54
2.51
A
MIN: 2.49 / MAX: 2.54
2.51
0.567
1.134
1.701
2.268
2.835

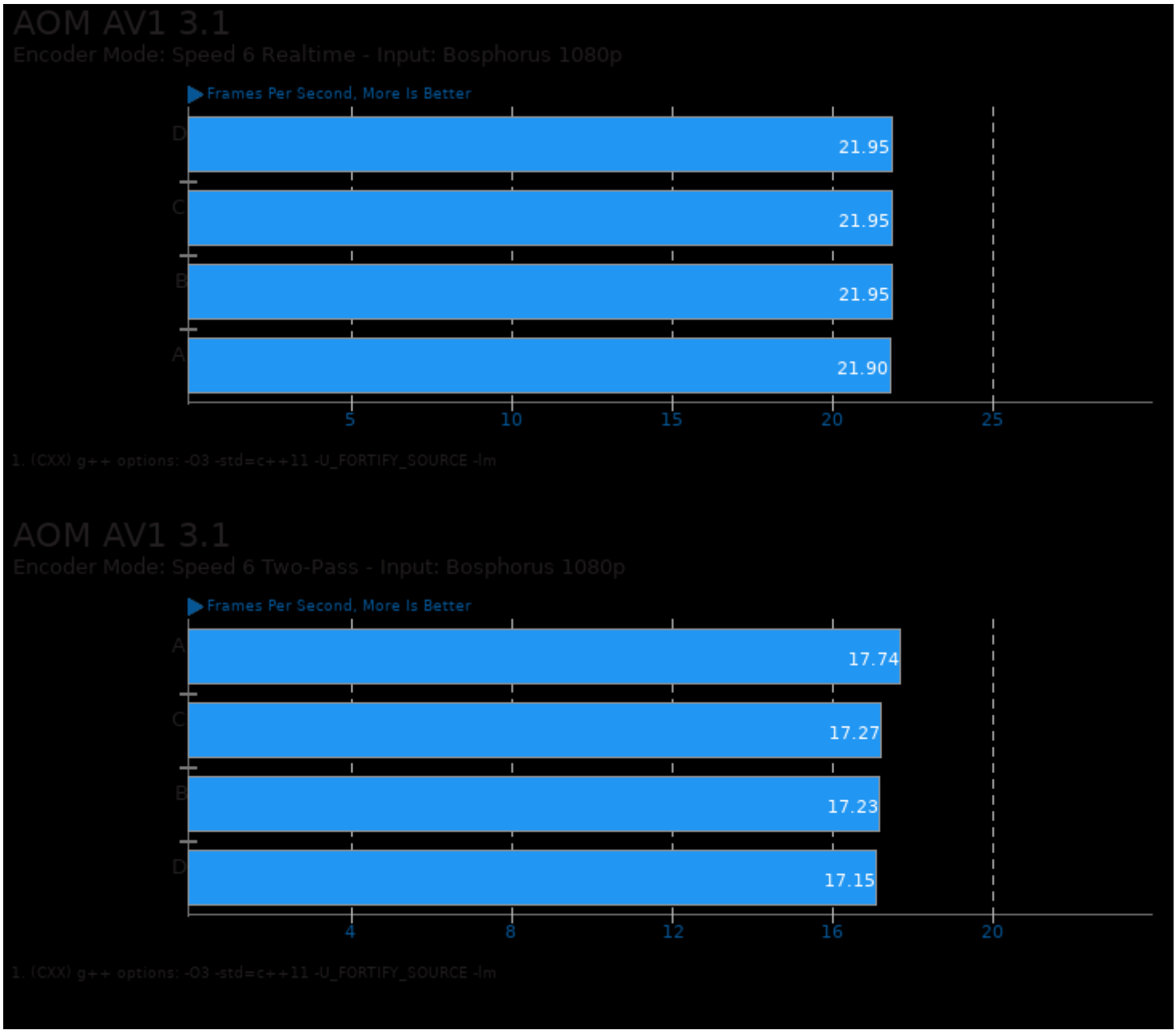

OSPray 1.8.5
Demo: Magnetic Reconnection - Renderer: SciVis
FPS, More Is Better
D
MIN: 15.38 / MAX: 16.13
15.87
A
MIN: 15.38
15.87
C
MIN: 15.38 / MAX: 15.87
15.63
B
MIN: 15.38 / MAX: 15.87
15.63
4
8
12
16
20
OSPray 1.8.5
Demo: NASA Streamlines - Renderer: Path Tracer
FPS, More Is Better
D
MIN: 6.99 / MAX: 7.25
7.19
C
MIN: 7.09 / MAX: 7.3
7.19
B
MIN: 7.04 / MAX: 7.3
7.19
A
MIN: 7.09 / MAX: 7.3
7.19
2
4
6
8
10
OSPray 1.8.5
Demo: Magnetic Reconnection - Renderer: Path Tracer
FPS, More Is Better
D
MIN: 166.67
250
C
MIN: 166.67
250
B
MIN: 166.67
250
A
MIN: 166.67
250
50
100
150
200
250


AOM AV1 3.1
Encoder Mode: Speed 0 Two-Pass - Input: Bosphorus 4K
Frames Per Second, More Is Better
D
B
A
C
0.18
0.18
0.18
0.17
0.0405
0.081
0.1215
0.162
0.2025
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm
AOM AV1 3.1
Encoder Mode: Speed 4 Two-Pass - Input: Bosphorus 4K
Frames Per Second, More Is Better
C
B
D
A
3.80
3.79
3.78
3.75
0.855
1.71
2.565
3.42
4.275
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm


AOM AV1 3.1
Encoder Mode: Speed 6 Realtime - Input: Bosphorus 4K
Frames Per Second, More Is Better
D
C
A
B
12.89
12.89
12.83
12.82
3
6
9
12
15
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm
AOM AV1 3.1
Encoder Mode: Speed 6 Two-Pass - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
B
D
C
7.29
7.15
7.08
7.06
2
4
6
8
10
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm

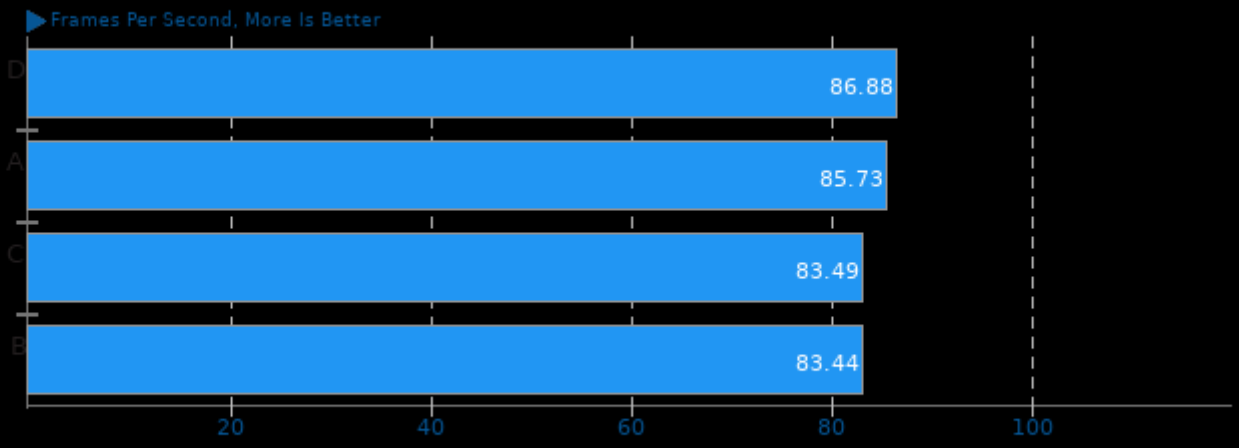

AOM AV1 3.1
Encoder Mode: Speed 8 Realtime - Input: Bosphorus 4K
Frames Per Second, More Is Better
D
C
A
B
35.19
35.16
35.00
34.74
8
16
24
32
40
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm
AOM AV1 3.1
Encoder Mode: Speed 9 Realtime - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
B
C
D
48.73
48.16
48.00
46.38
11
22
33
44
55
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm


AOM AV1 3.1
Encoder Mode: Speed 0 Two-Pass - Input: Bosphorus 1080p
Frames Per Second, More Is Better
D
B
A
C
0.48
0.48
0.48
0.47
0.108
0.216
0.324
0.432
0.54
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm
AOM AV1 3.1
Encoder Mode: Speed 4 Two-Pass - Input: Bosphorus 1080p
Frames Per Second, More Is Better
B
C
A
D
5.87
5.85
5.85
5.77
1.3208
2.6416
3.9624
5.2832
6.604
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm


AOM AV1 3.1
Encoder Mode: Speed 6 Realtime - Input: Bosphorus 1080p
Frames Per Second, More Is Better
D
C
B
A
21.95
21.95
21.95
21.90
5
10
15
20
25
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm
AOM AV1 3.1
Encoder Mode: Speed 6 Two-Pass - Input: Bosphorus 1080p
Frames Per Second, More Is Better
A
C
B
D
17.74
17.27
17.23
17.15
4
8
12
16
20
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm

AOM AV1 3.1

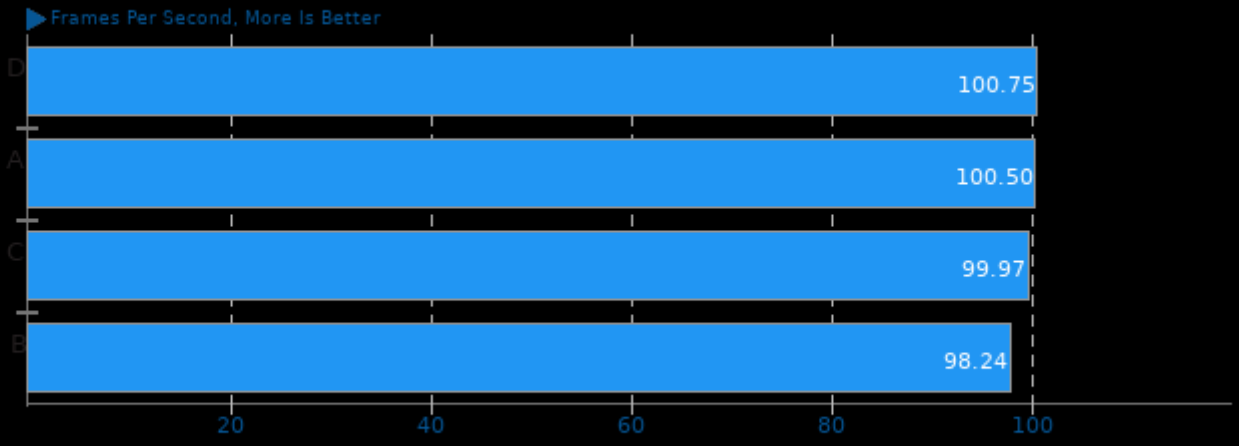
Encoder Mode: Speed 8 Realtime - Input: Bosphorus 1080p



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

AOM AV1 3.1

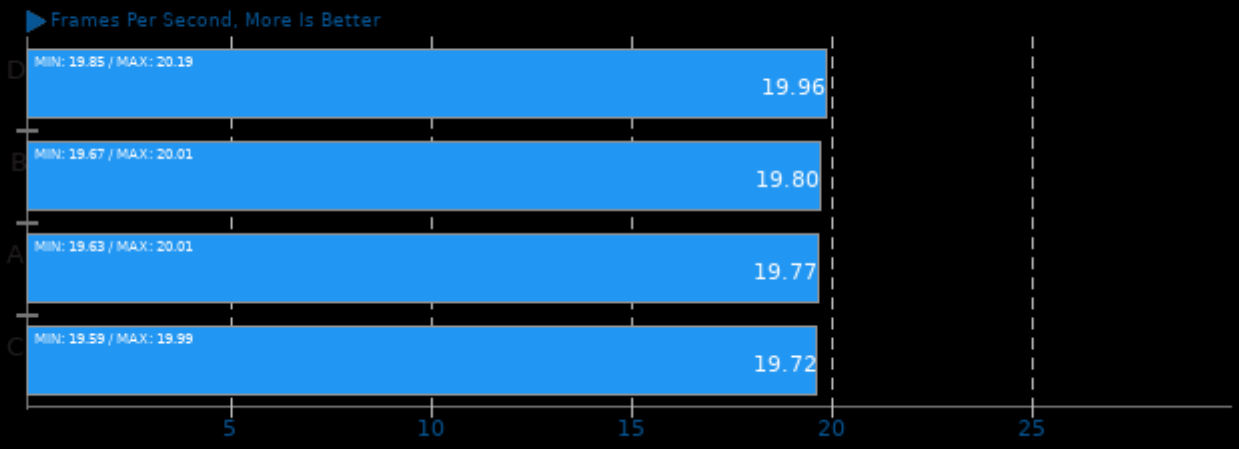
Encoder Mode: Speed 9 Realtime - Input: Bosphorus 1080p

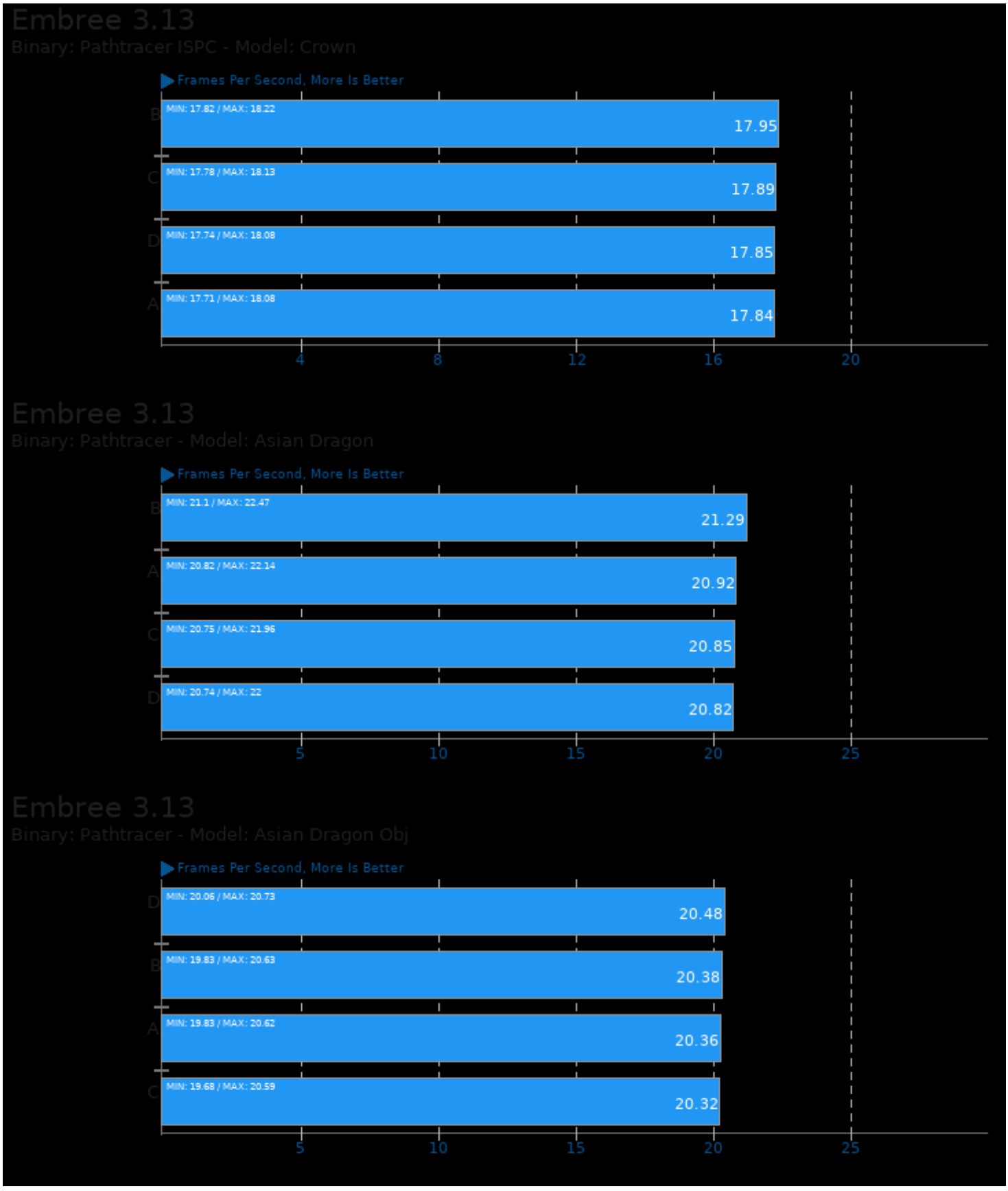


1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm

Embree 3.13

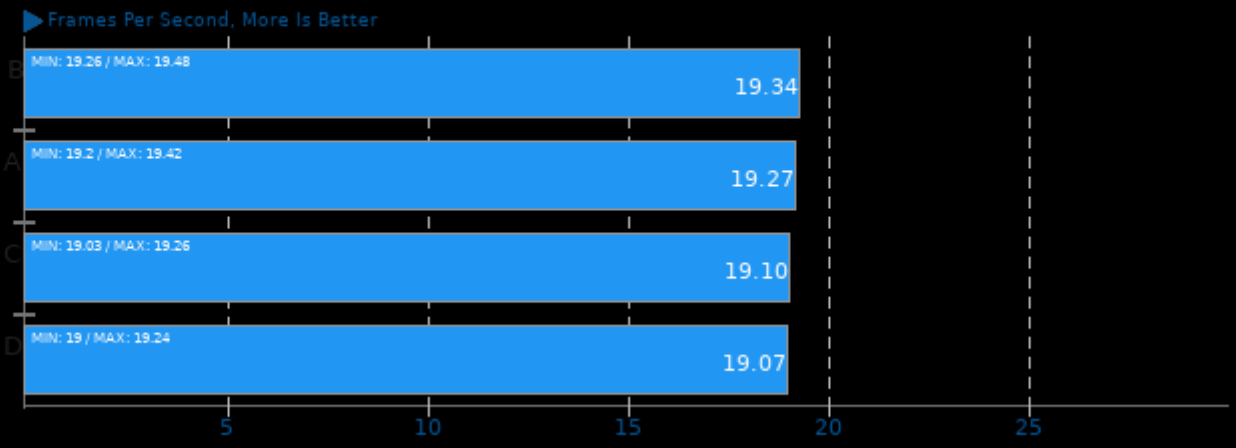
Binary: Pathtracer - Model: Crown




Embree 3.13
Binary: Pathtracer ISPC - Model: Crown
Frames Per Second, More Is Better
B
MIN: 17.82 / MAX: 18.22
17.95
C
MIN: 17.78 / MAX: 18.13
17.89
D
MIN: 17.74 / MAX: 18.08
17.85
A
MIN: 17.71 / MAX: 18.08
17.84
4
8
12
16
20
Embree 3.13
Binary: Pathtracer - Model: Asian Dragon
Frames Per Second, More Is Better
B
MIN: 21.1 / MAX: 22.47
21.29
A
MIN: 20.82 / MAX: 22.14
20.92
C
MIN: 20.75 / MAX: 21.96
20.85
D
MIN: 20.74 / MAX: 22
20.82
5
10
15
20
25
Embree 3.13
Binary: Pathtracer - Model: Asian Dragon Obj
Frames Per Second, More Is Better
D
MIN: 20.06 / MAX: 20.73
20.48
B
MIN: 19.83 / MAX: 20.63
20.38
A
MIN: 19.83 / MAX: 20.62
20.36
C
MIN: 19.68 / MAX: 20.59
20.32
5
10
15
20
25

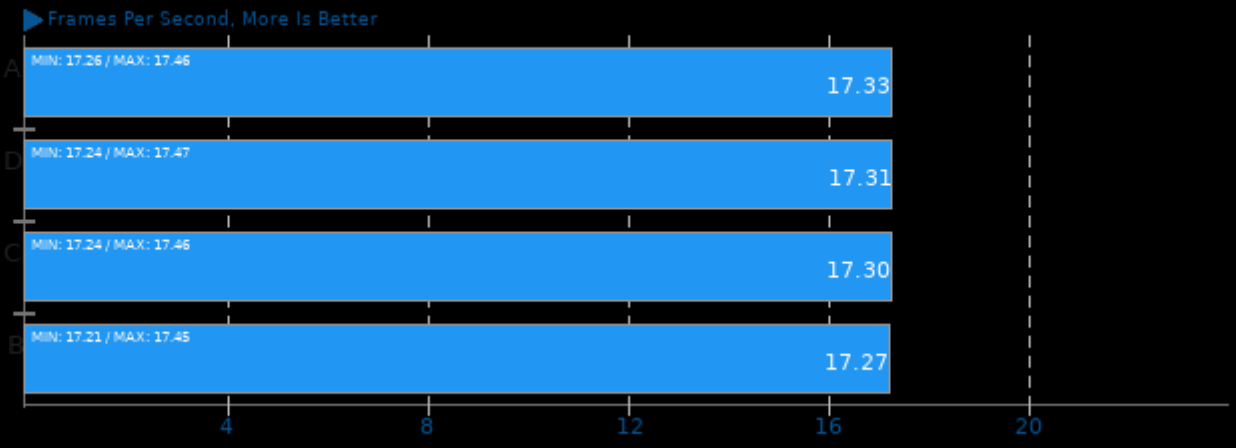
Embree 3.13

Binary: Pathtracer ISPC - Model: Asian Dragon



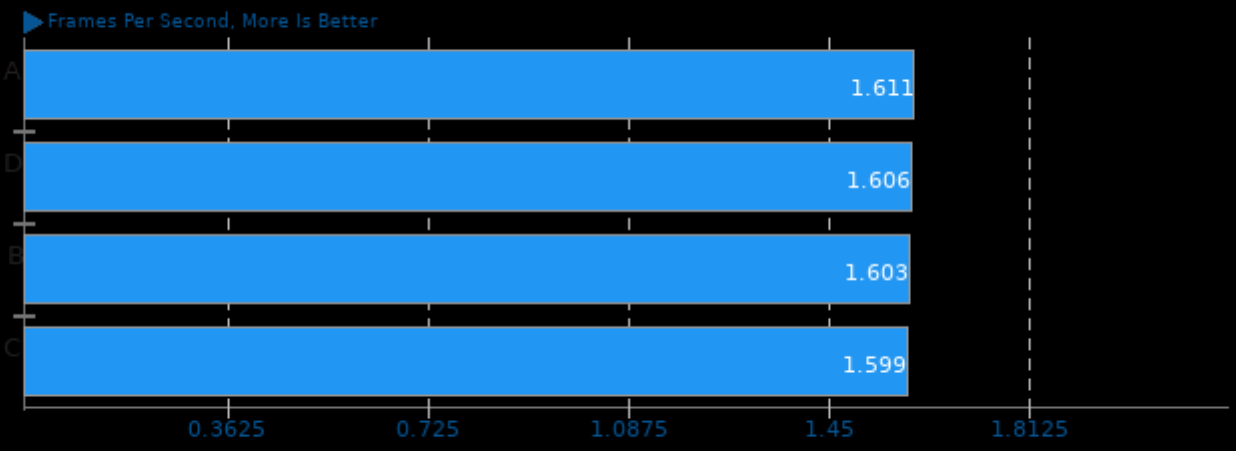
Embree 3.13

Binary: Pathtracer ISPC - Model: Asian Dragon Obj

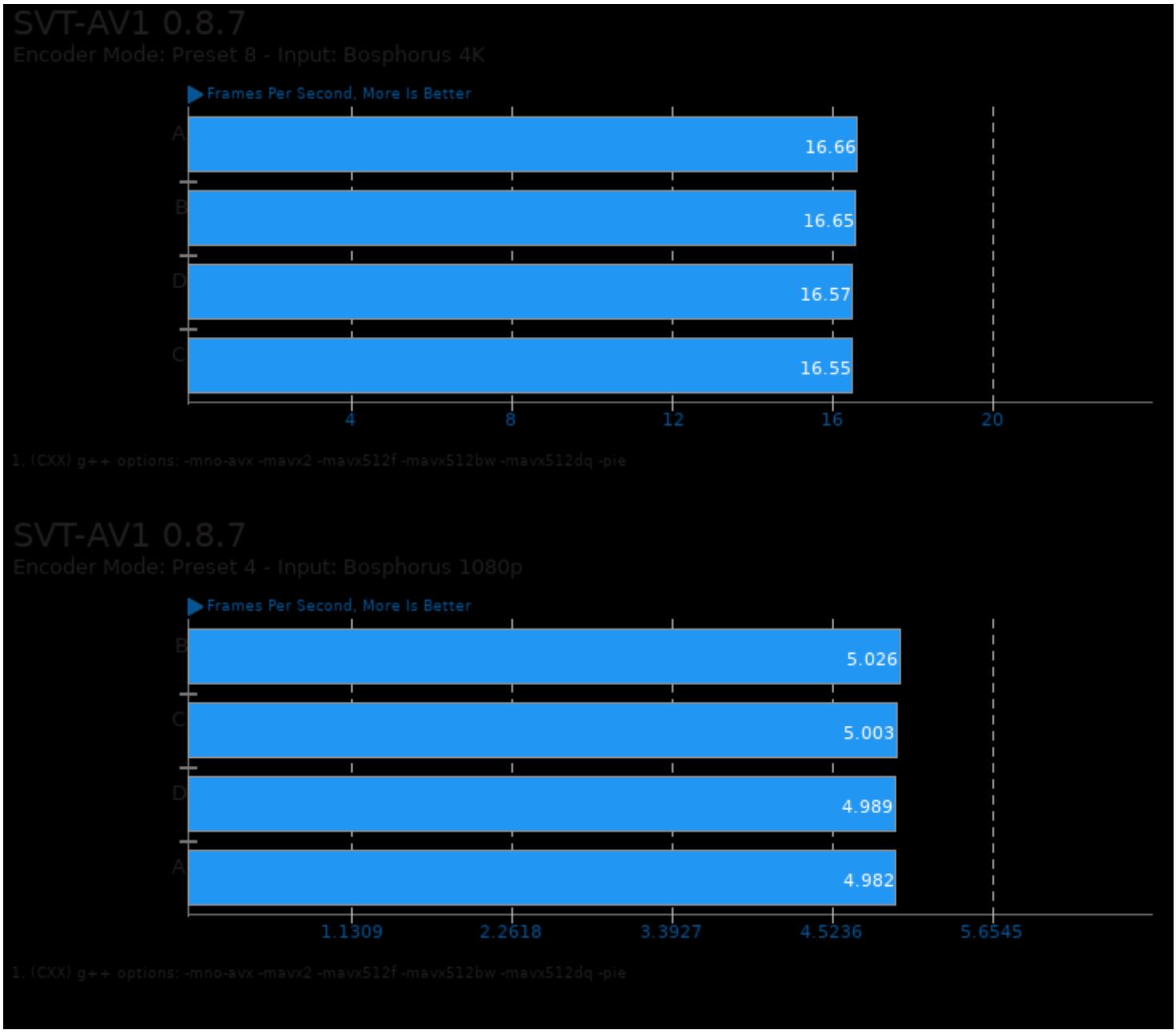


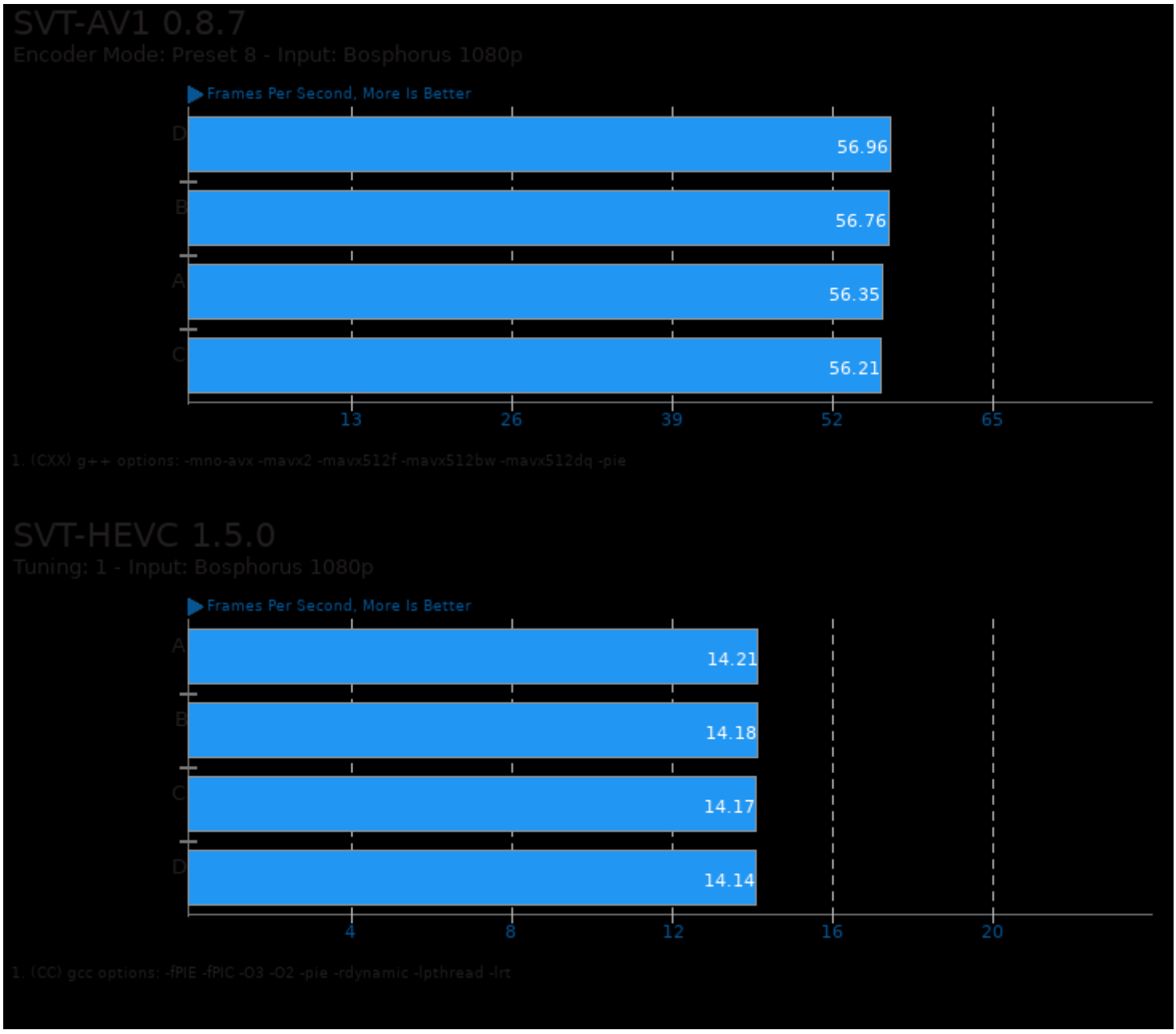
SVT-AV1 0.8.7

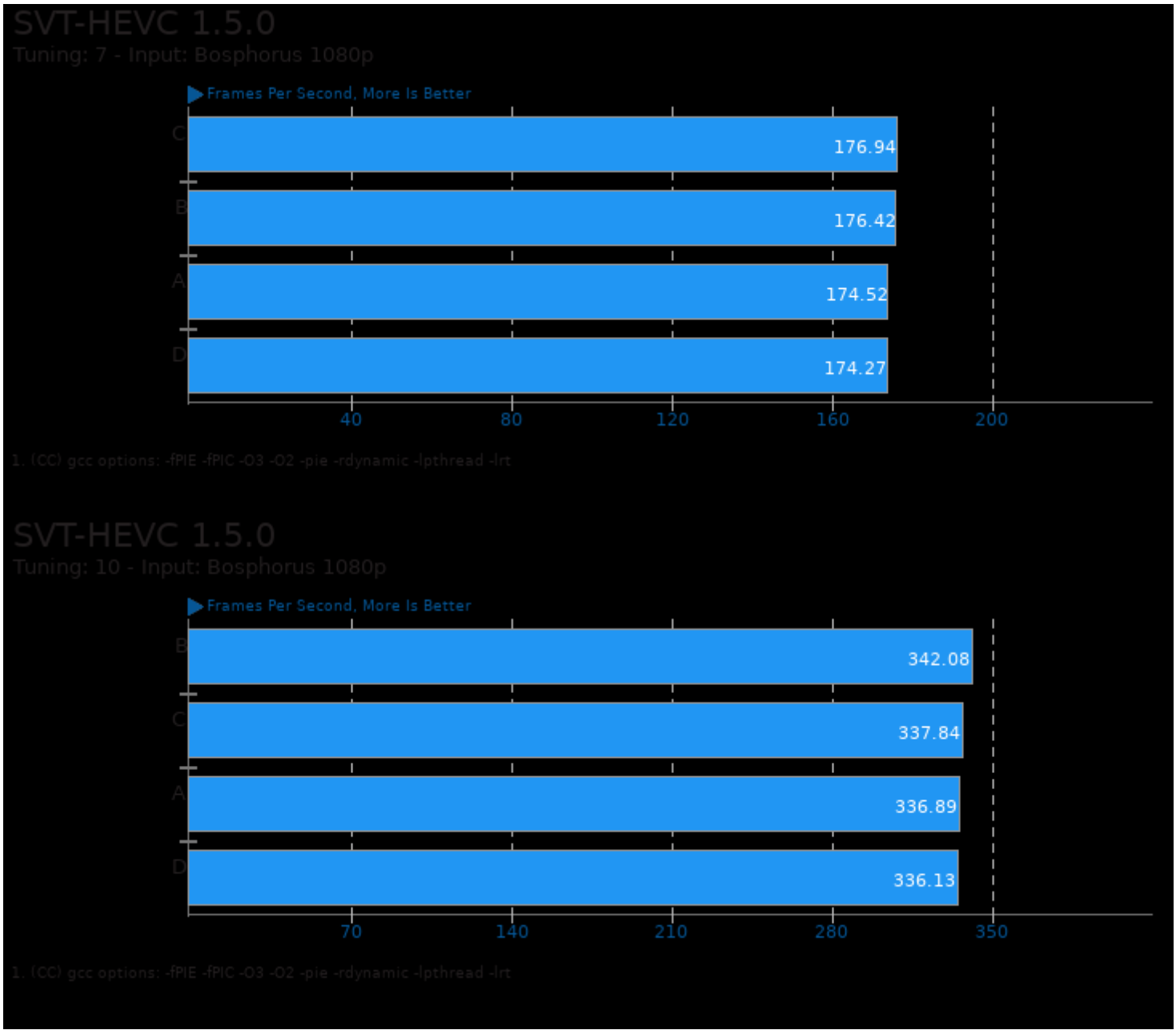
Encoder Mode: Preset 4 - Input: Bosphorus 4K

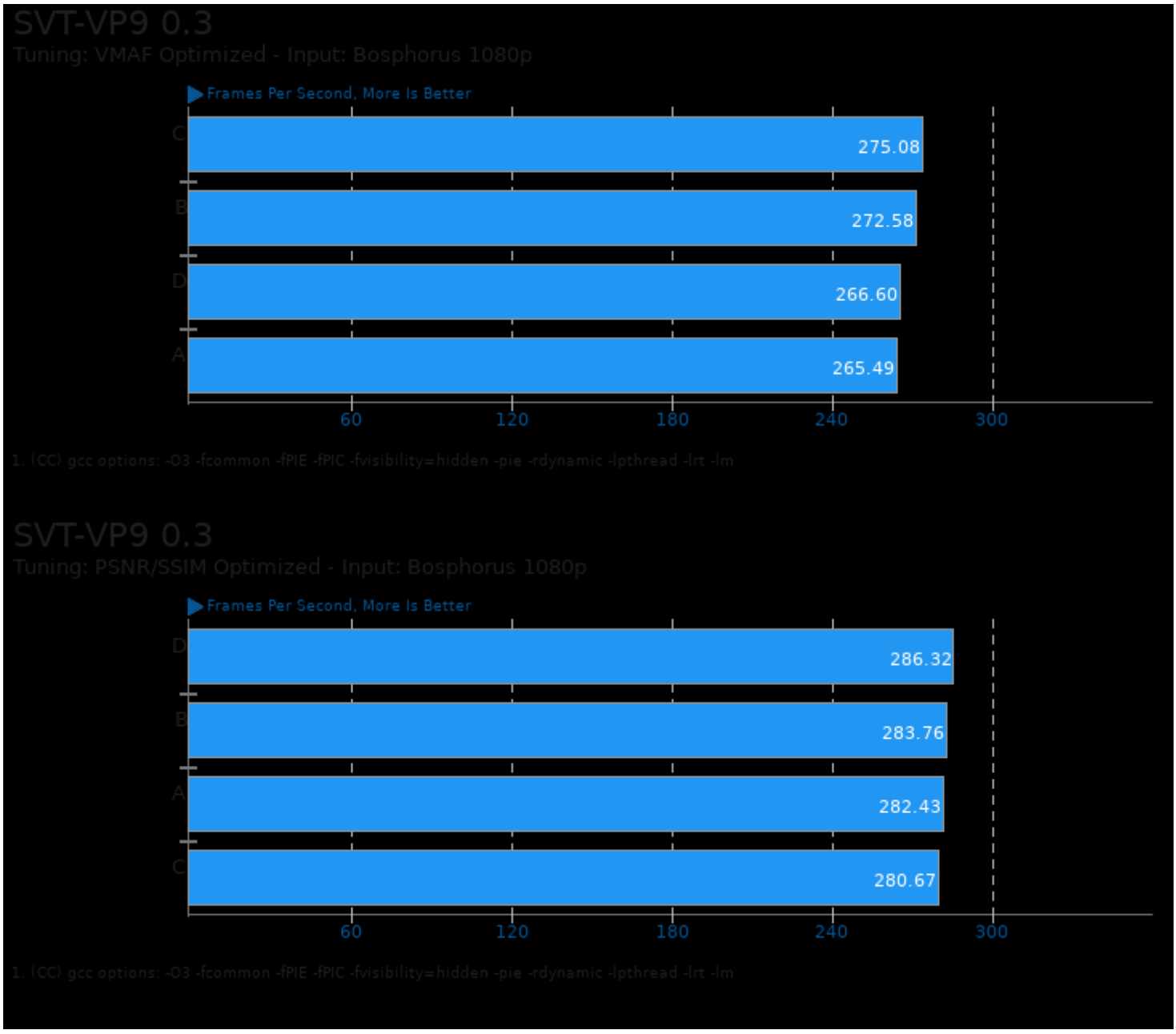


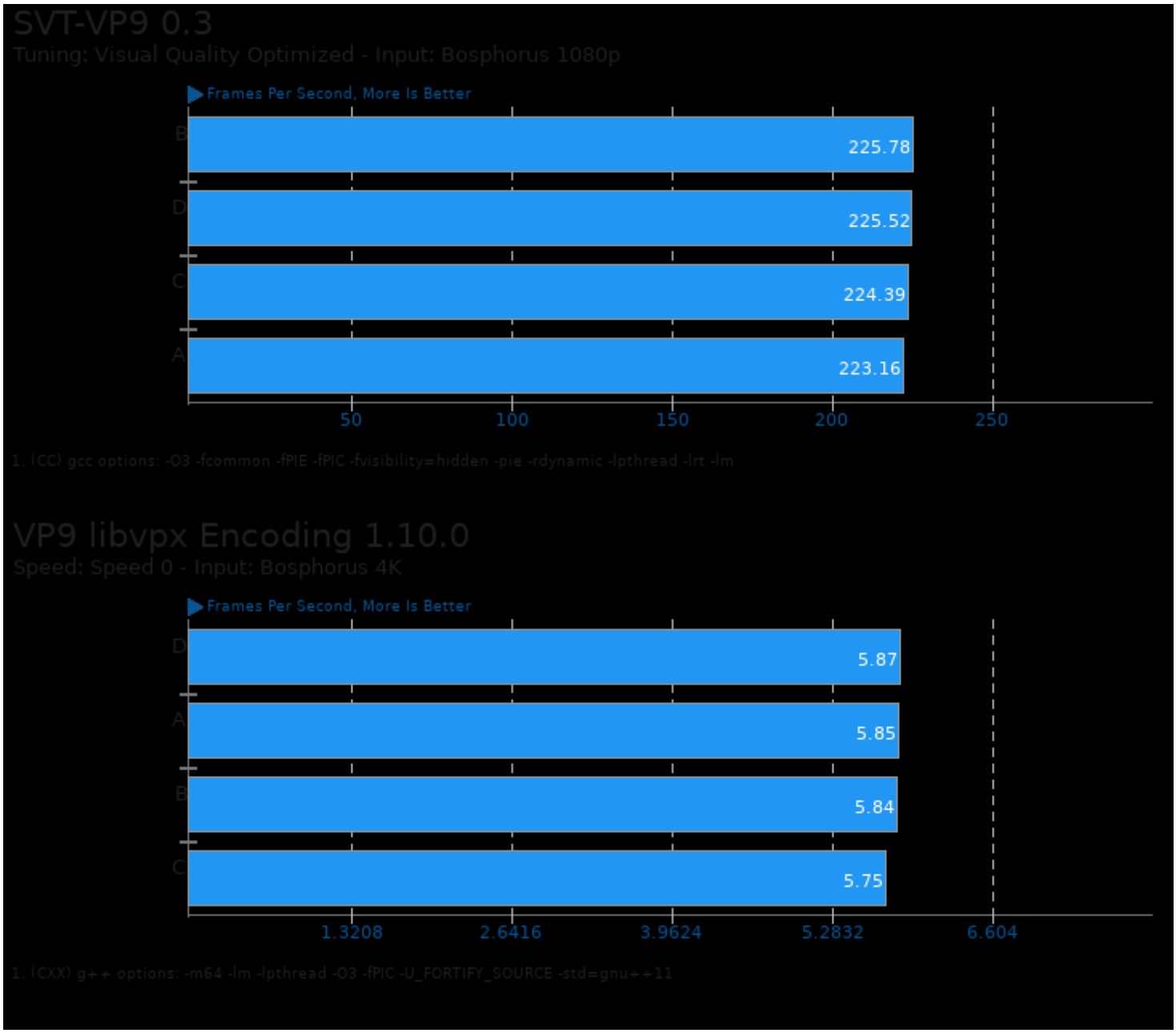
1. (CXX) g++ options: -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie

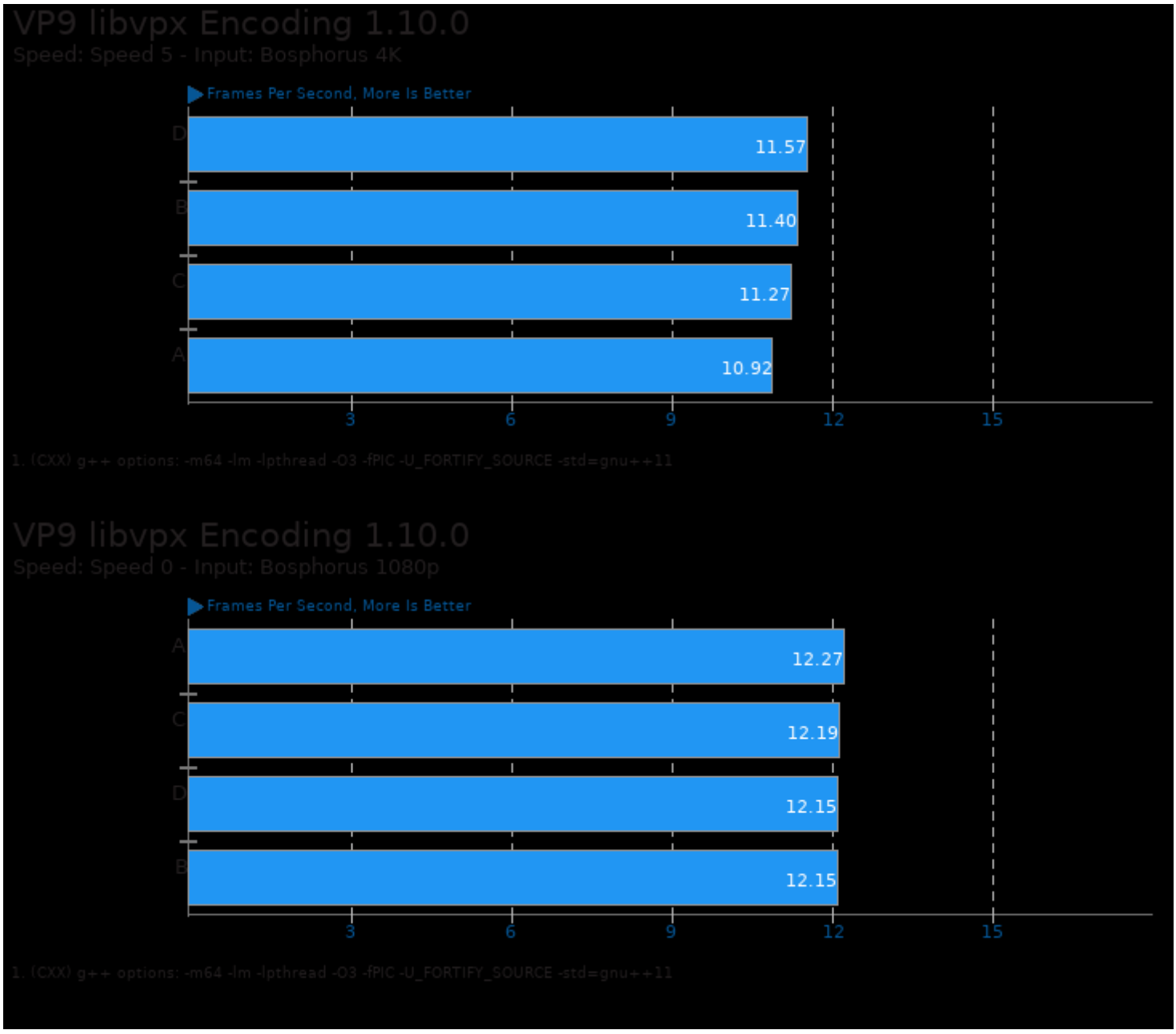

SVT-AV1 0.8.7
Encoder Mode: Preset 8 - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
B
D
C
16.66
16.65
16.57
16.55
4
8
12
16
20
1. (CXX) g++ options: -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie
SVT-AV1 0.8.7
Encoder Mode: Preset 4 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
B
C
D
A
5.026
5.003
4.989
4.982
1.1309
2.2618
3.3927
4.5236
5.6545
1. (CXX) g++ options: -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie


SVT-AV1 0.8.7
Encoder Mode: Preset 8 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
D
56.96
B
56.76
A
56.35
C
56.21
13
26
39
52
65
1. (CXX) g++ options: -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie
SVT-HEVC 1.5.0
Tuning: 1 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
A
14.21
B
14.18
C
14.17
D
14.14
4
8
12
16
20
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
C
B
A
D
176.94
176.42
174.52
174.27
40
80
120
160
200
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
B
C
A
D
342.08
337.84
336.89
336.13
70
140
210
280
350
1. (CC) gcc options: -fPIE -fPIC -O3 -O2 -pie -rdynamic -lpthread -lrt

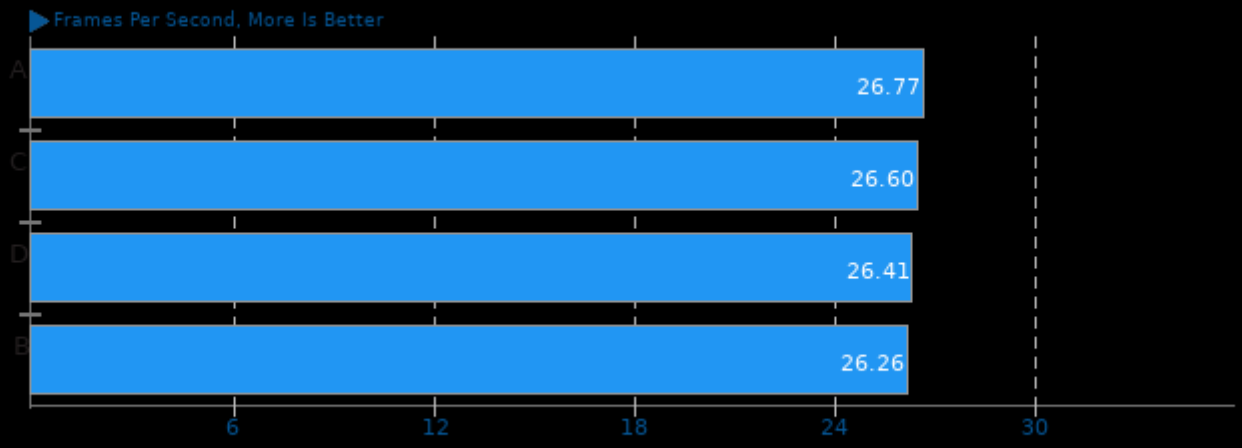

SVT-VP9 0.3
Tuning: VMAF Optimized - Input: Bosphorus 1080p
Frames Per Second, More Is Better
C
B
D
A
275.08
272.58
266.60
265.49
60
120
180
240
300
1. (CC) gcc options: -O3 -fcommon -fPIE -fPIC -fvisibility=hidden -pie -rdynamic -lpthread -lrt -lm
SVT-VP9 0.3
Tuning: PSNR/SSIM Optimized - Input: Bosphorus 1080p
Frames Per Second, More Is Better
D
B
A
C
286.32
283.76
282.43
280.67
60
120
180
240
300
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
B
D
C
A
225.78
225.52
224.39
223.16
50
100
150
200
250
1. (CC) gcc options: -O3 -fcommon -fPIE -fPIC -fvisibility=hidden -pie -rdynamic -lpthread -lrt -lm
VP9 libvpx Encoding 1.10.0
Speed: Speed 0 - Input: Bosphorus 4K
Frames Per Second, More Is Better
D
A
B
C
5.87
5.85
5.84
5.75
1.3208
2.6416
3.9624
5.2832
6.604
1. (CXX) g++ options: -m64 -lm -lpthread -O3 -fPIC -U_FORTIFY_SOURCE -std=gnu++11


VP9 libvpx Encoding 1.10.0
Speed: Speed 5 - Input: Bosphorus 4K
Frames Per Second, More Is Better
D
11.57
B
11.40
C
11.27
A
10.92
3
6
9
12
15
1. (CXX) g++ options: -m64 -lm -lpthread -O3 -fPIC -U_FORTIFY_SOURCE -std=gnu++11
VP9 libvpx Encoding 1.10.0
Speed: Speed 0 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
A
12.27
C
12.19
D
12.15
B
12.15
3
6
9
12
15
1. (CXX) g++ options: -m64 -lm -lpthread -O3 -fPIC -U_FORTIFY_SOURCE -std=gnu++11

VP9 libvpx Encoding 1.10.0

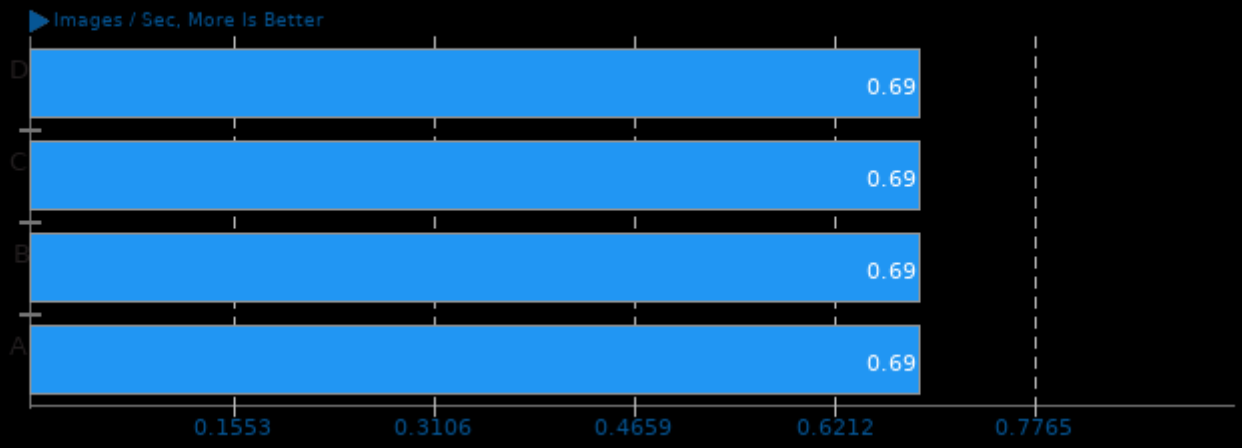
Speed: Speed 5 - Input: Bosphorus 1080p



1. (CXX) g++ options: -m64 -lm -lpthread -O3 -fPIC -U_FORTIFY_SOURCE -std=gnu++11

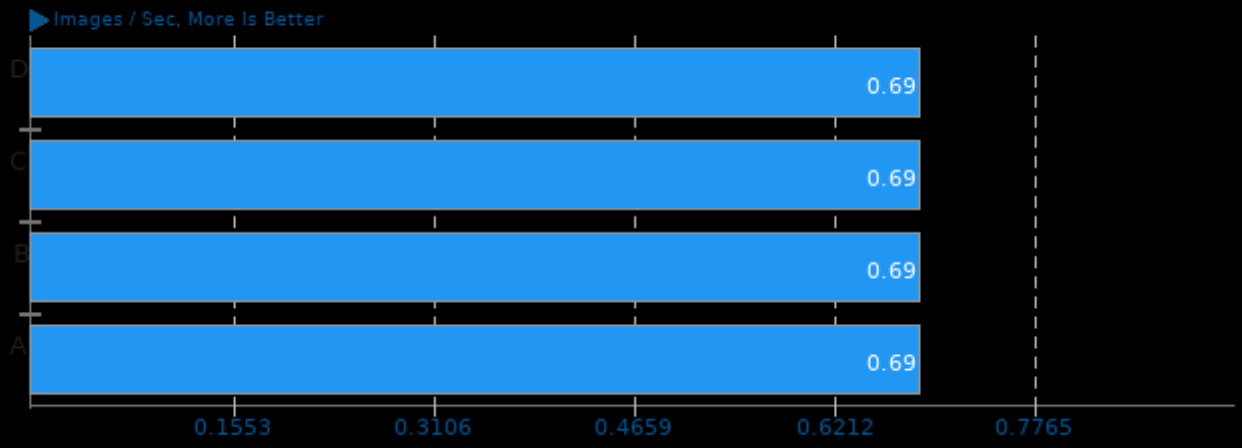
Intel Open Image Denoise 1.4.0

Run: RT.hdr_alb_nrm.3840x2160



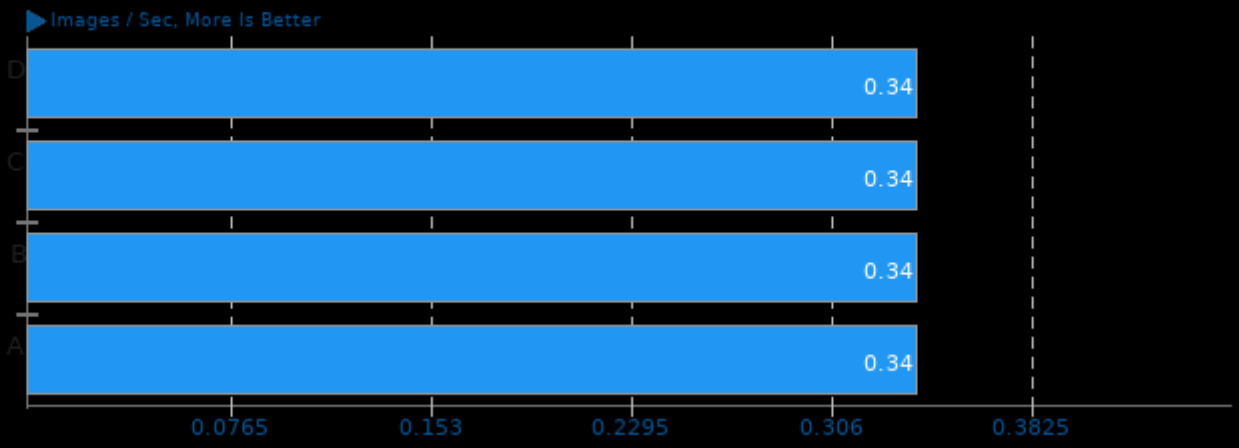
Intel Open Image Denoise 1.4.0

Run: RT.ldr_alb_nrm.3840x2160



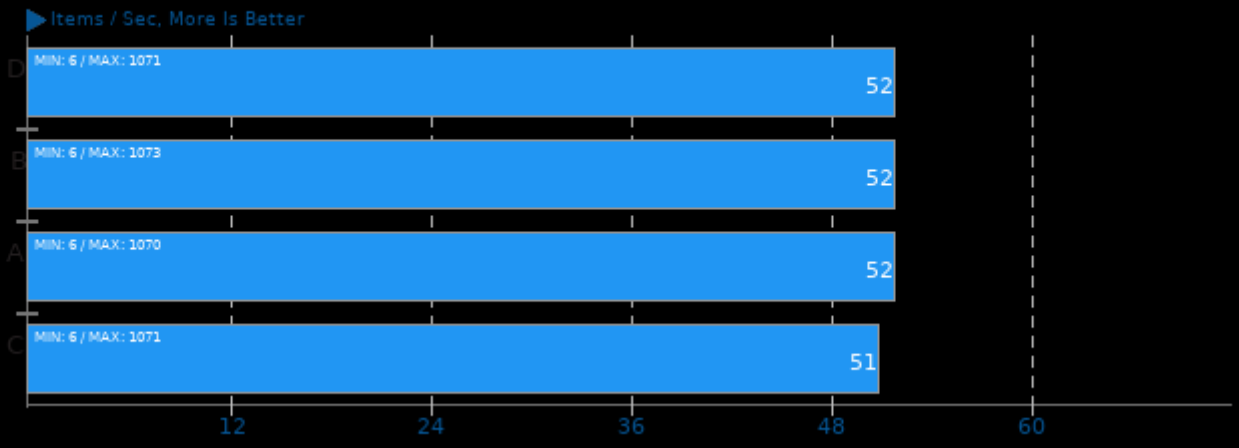
Intel Open Image Denoise 1.4.0

Run: RTLightmap.hdr.4096x4096



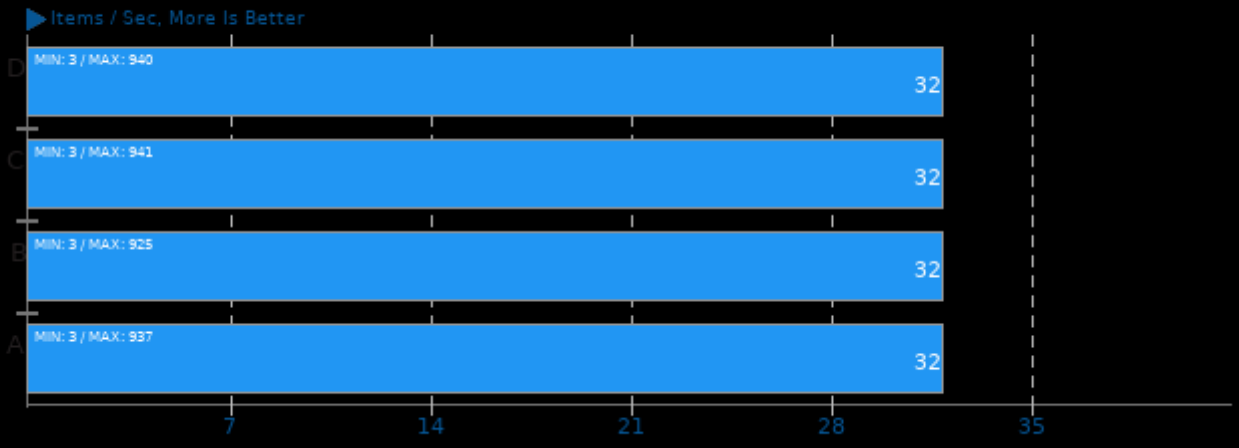
OpenVKL 1.0

Benchmark: vklBenchmark ISPC



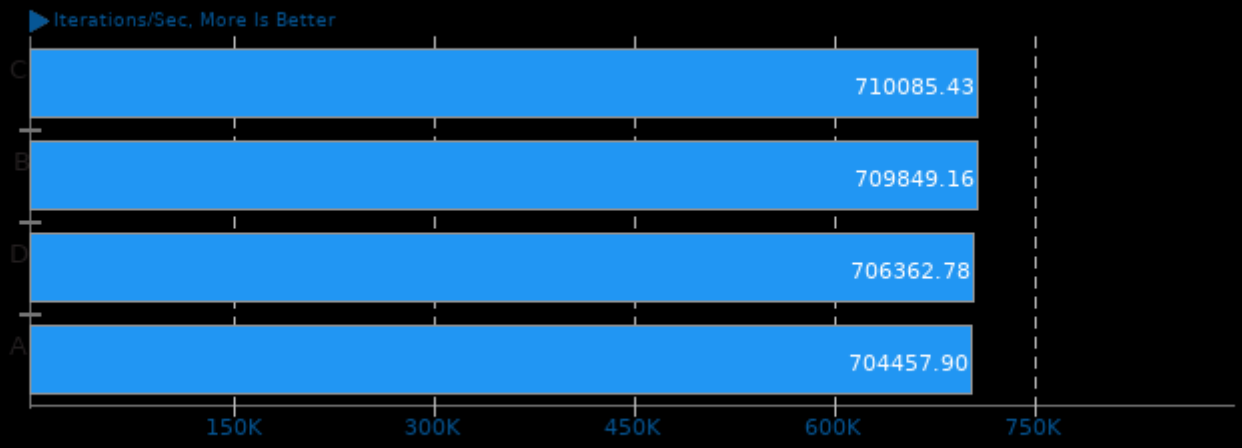
OpenVKL 1.0

Benchmark: vklBenchmark Scalar



Coremark 1.0

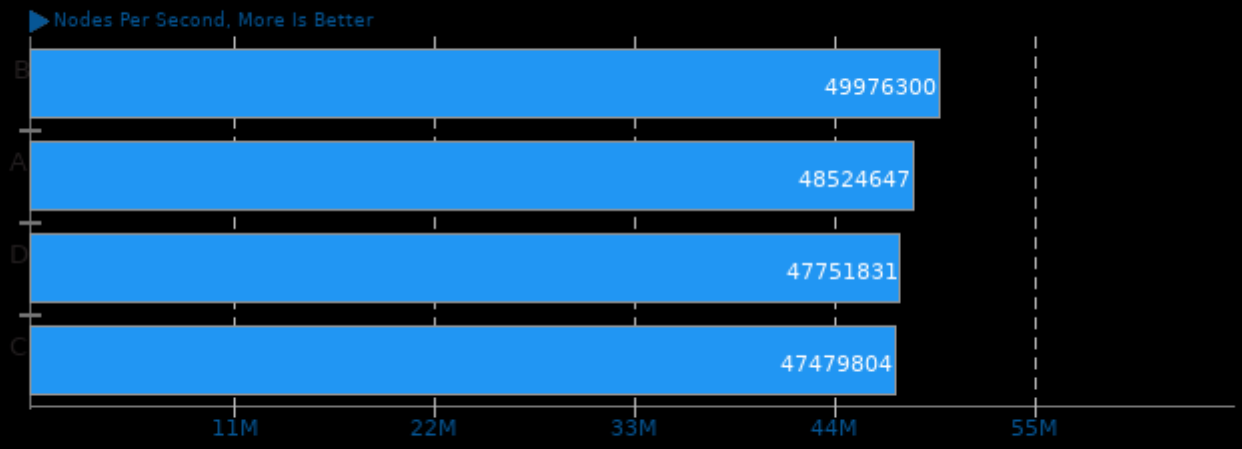
CoreMark Size 666 - Iterations Per Second



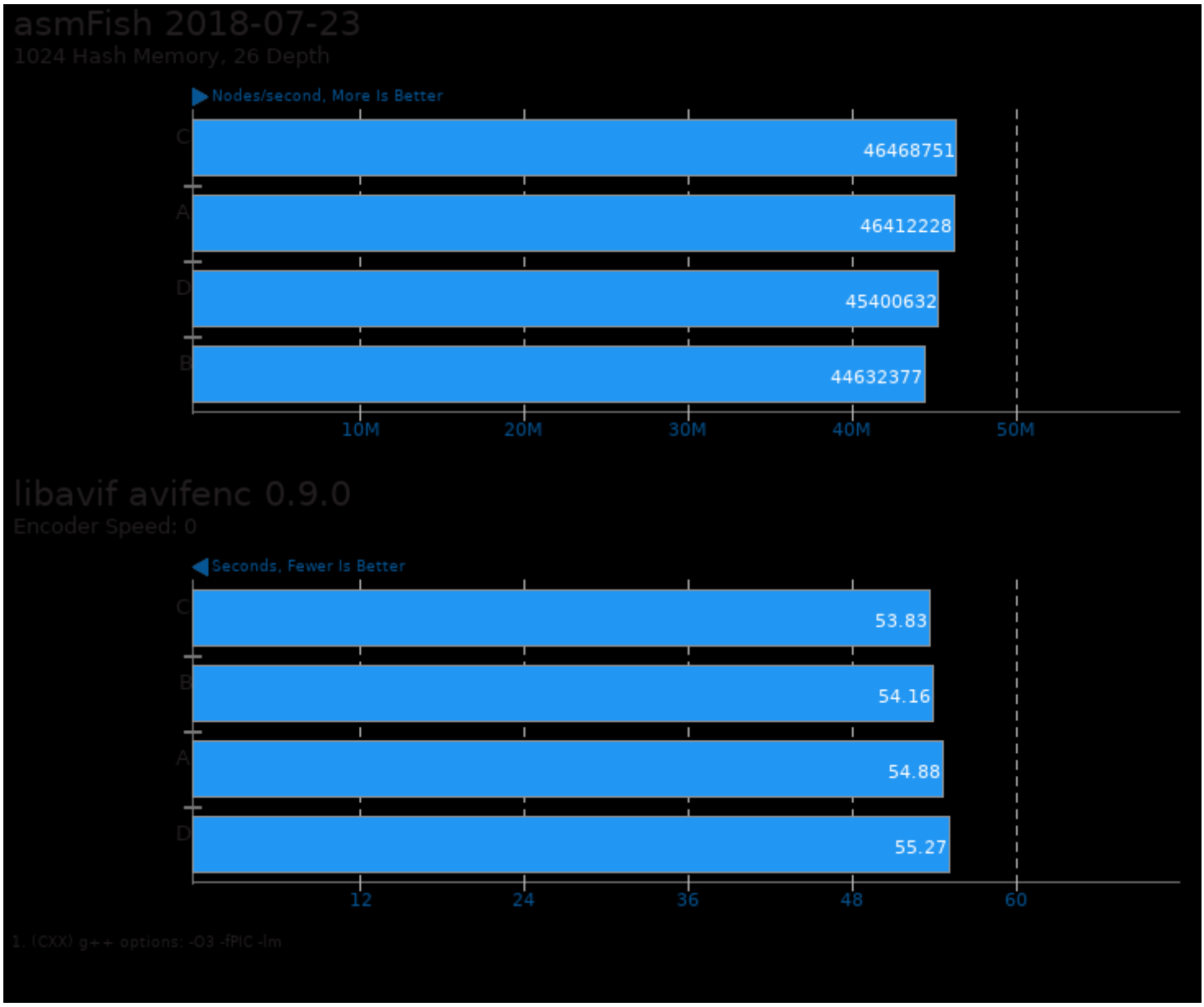
1. (CC) gcc options: -O2 -lrt" -lrt

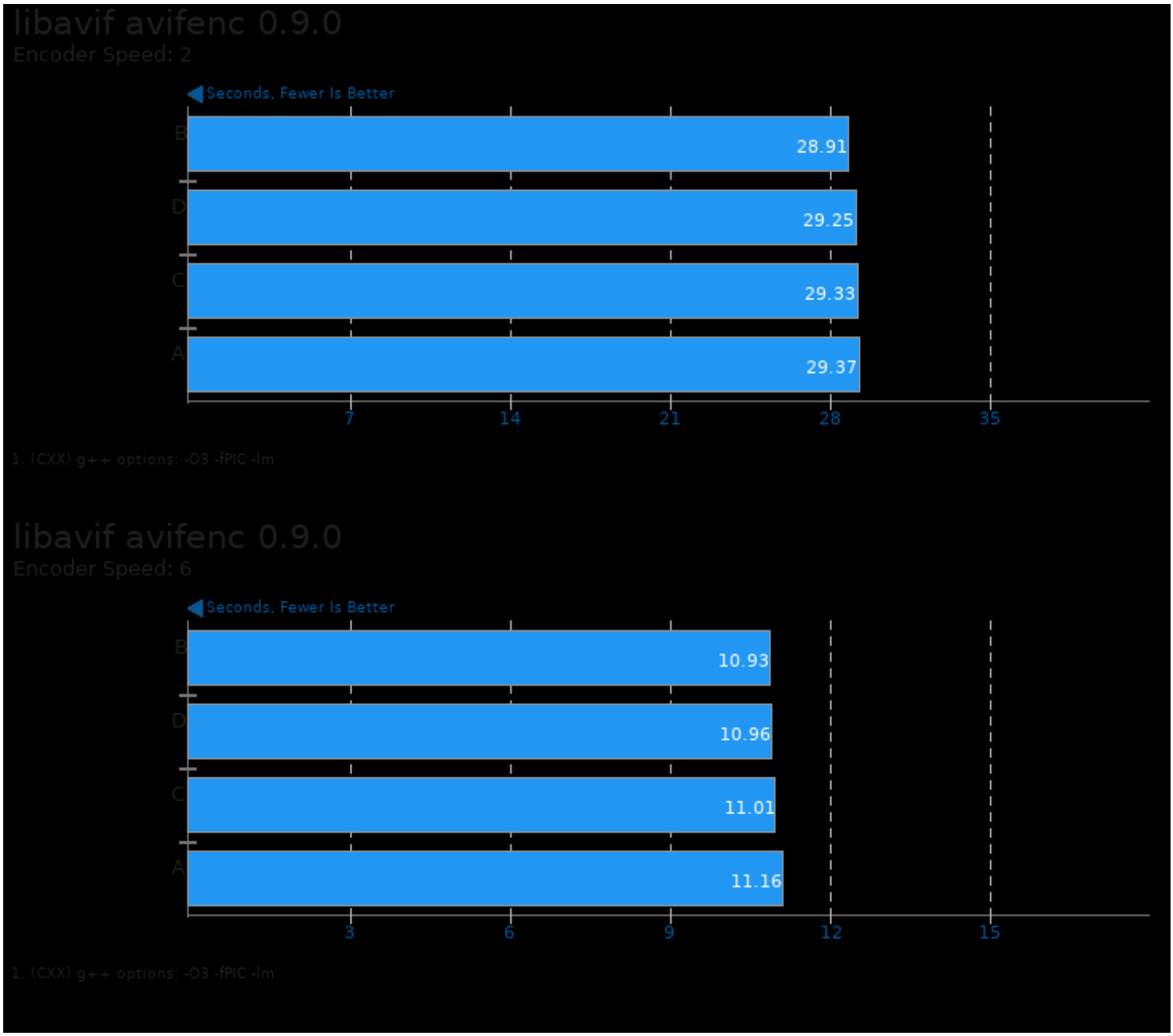
Stockfish 13

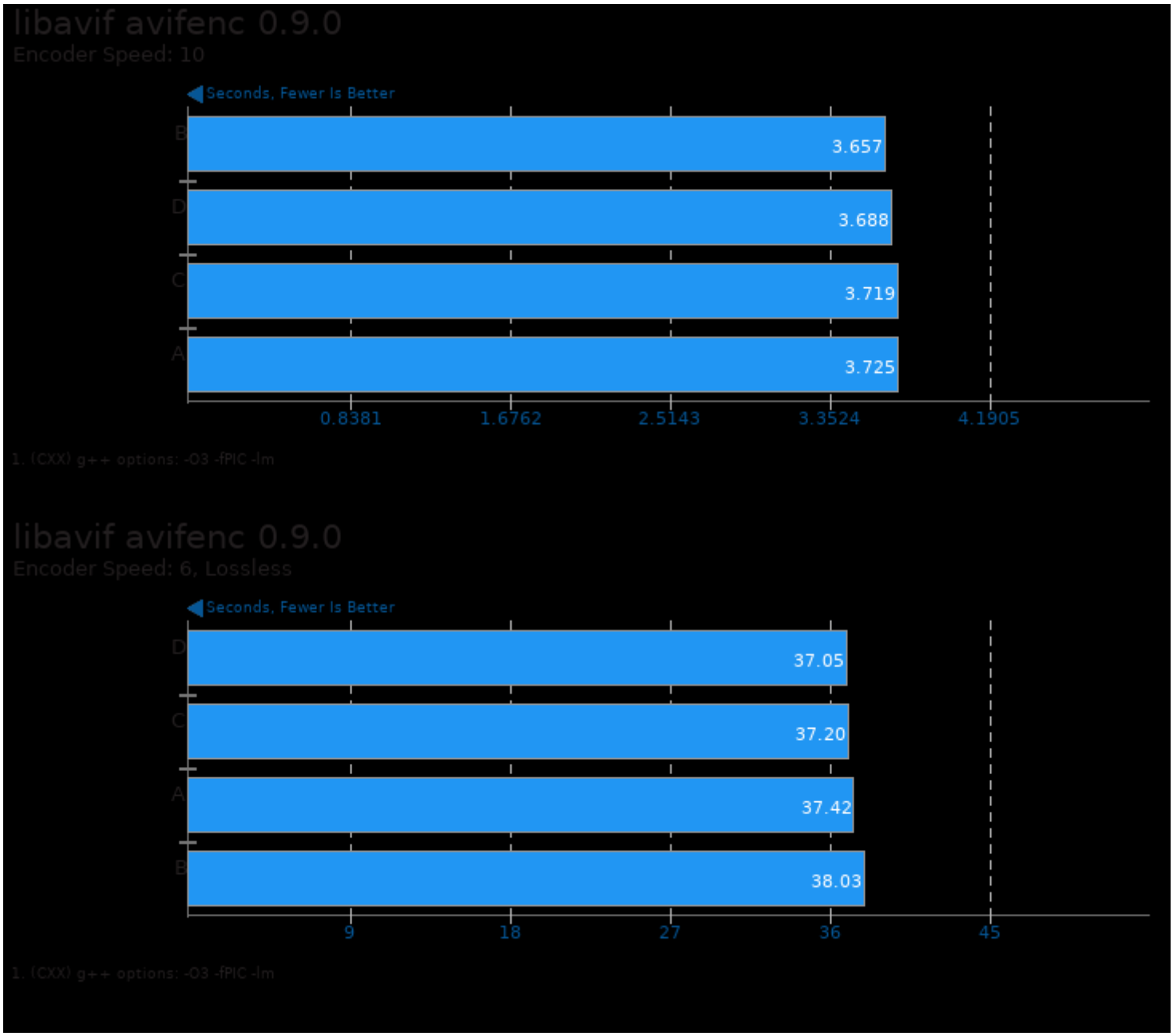
Total Time



1. (CXX) g++ options: -lgcov -m64 -lpthread -fno-exceptions -std=c++17 -fprofile-use -fno-peel-loops -fno-tracer -pedantic -O3 -msse -msse3 -mpopcnt -

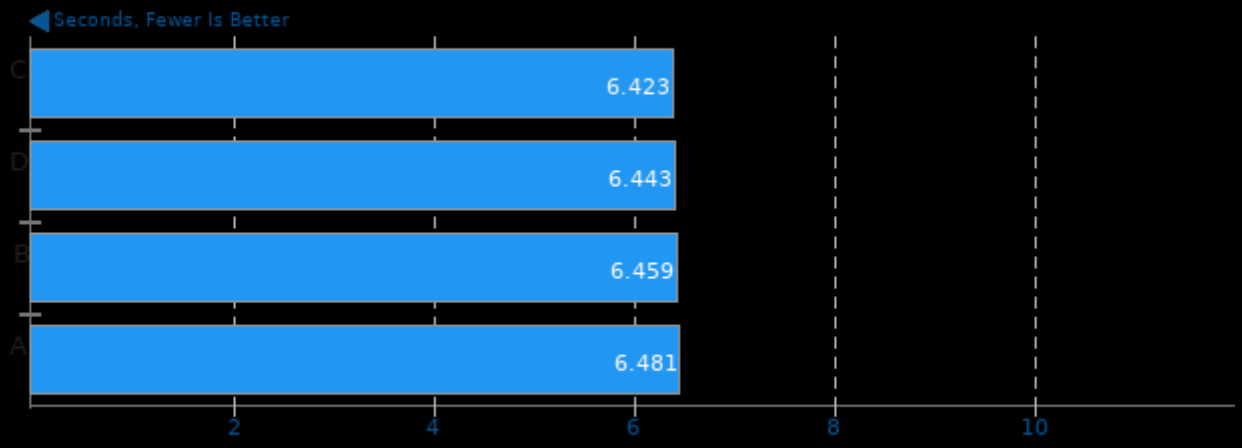

asmFish 2018-07-23
1024 Hash Memory, 26 Depth
Nodes/second, More Is Better
C
46468751
A
46412228
D
45400632
B
44632377
10M
20M
30M
40M
50M
libavif avifenc 0.9.0
Encoder Speed: 0
Seconds, Fewer Is Better
C
53.83
B
54.16
A
54.88
D
55.27
12
24
36
48
60
1. (CXX) g++ options: -O3 -fPIC -lm


libavif avifenc 0.9.0
Encoder Speed: 2
Seconds, Fewer Is Better
B
D
C
A
28.91
29.25
29.33
29.37
7
14
21
28
35
1. (CXX) g++ options: -O3 -fPIC -lm
libavif avifenc 0.9.0
Encoder Speed: 6
Seconds, Fewer Is Better
B
D
C
A
10.93
10.96
11.01
11.16
3
6
9
12
15
1. (CXX) g++ options: -O3 -fPIC -lm


libavif avifenc 0.9.0
Encoder Speed: 10
Seconds, Fewer Is Better
B
D
C
A
3.657
3.688
3.719
3.725
0.8381
1.6762
2.5143
3.3524
4.1905
1. (CXX) g++ options: -O3 -fPIC -lm
libavif avifenc 0.9.0
Encoder Speed: 6, Lossless
Seconds, Fewer Is Better
D
C
A
B
37.05
37.20
37.42
38.03
9
18
27
36
45
1. (CXX) g++ options: -O3 -fPIC -lm

libavif avifenc 0.9.0

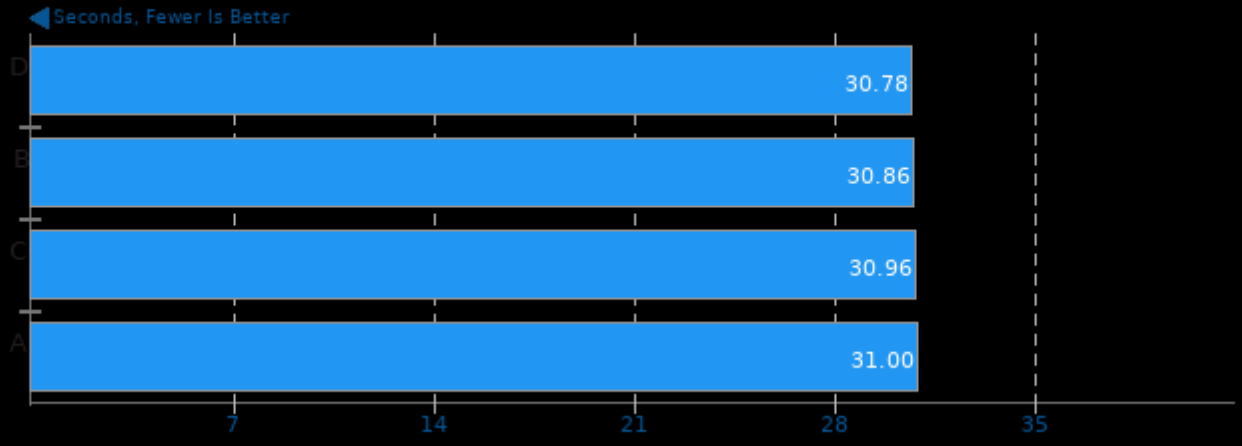
Encoder Speed: 10, Lossless



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

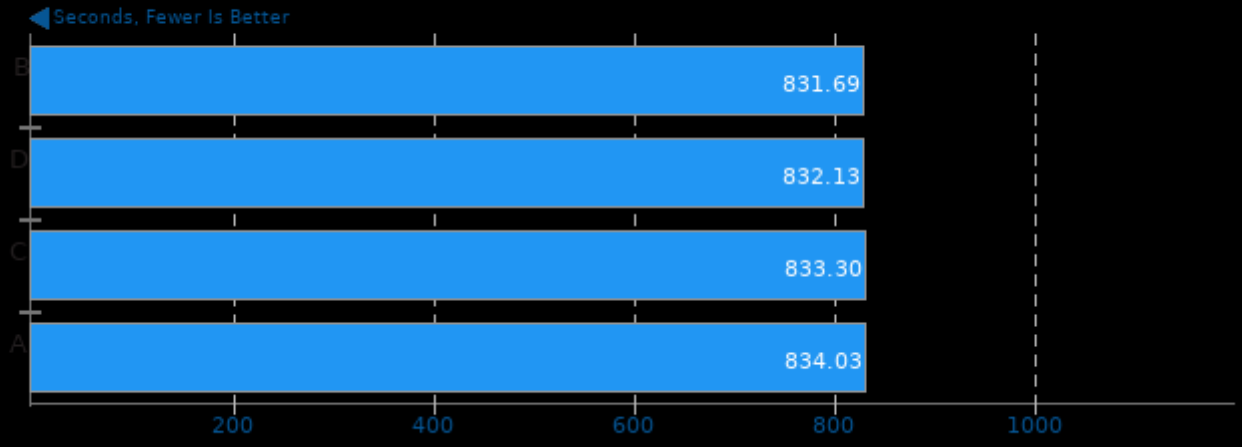
Timed FFmpeg Compilation 4.4

Time To Compile



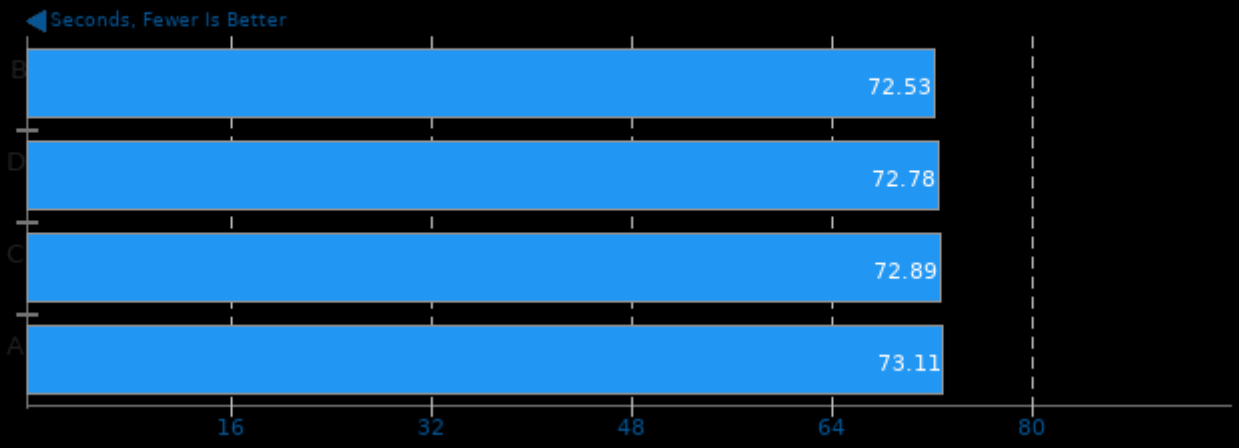
Timed GCC Compilation 11.2.0

Time To Compile



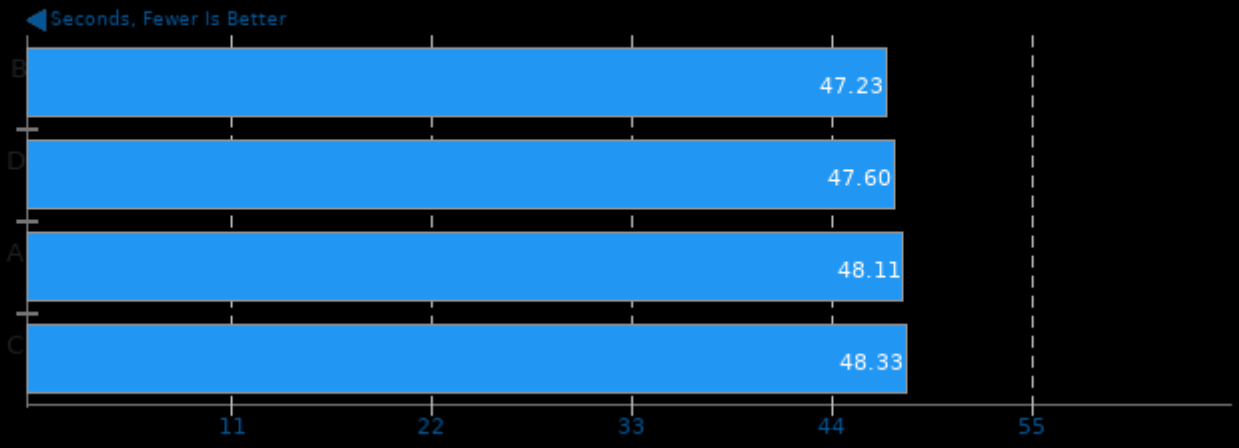
Timed Godot Game Engine Compilation 3.2.3

Time To Compile



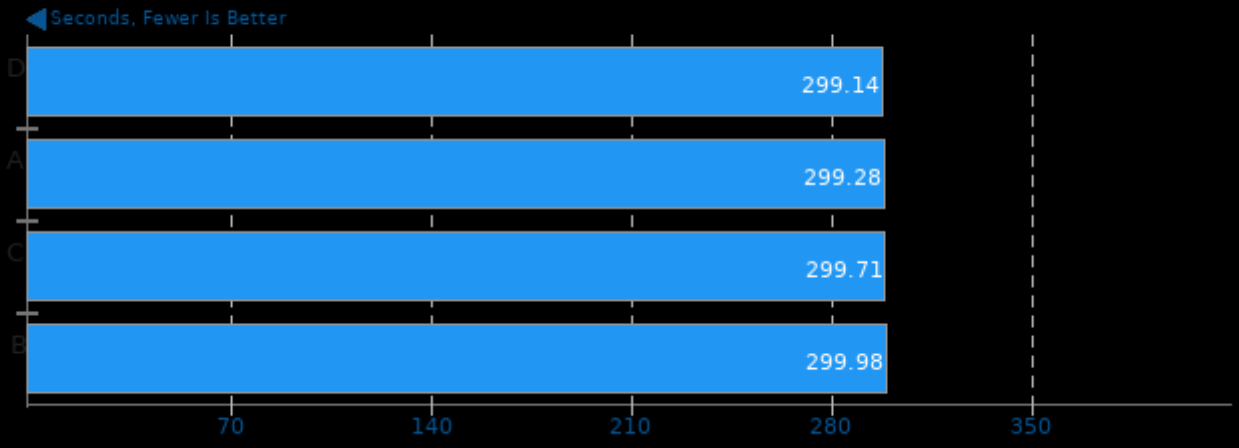
Timed Linux Kernel Compilation 5.14

Time To Compile



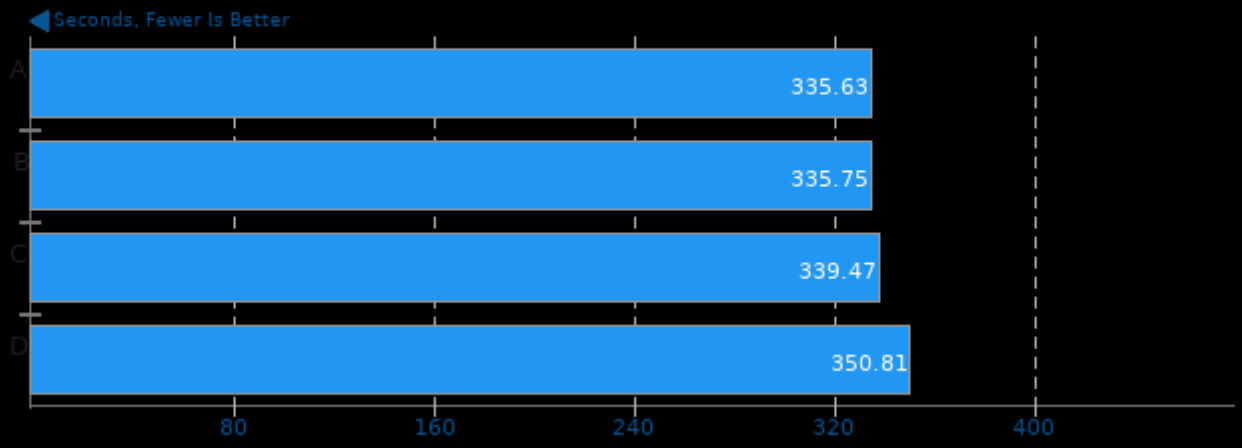
Timed LLVM Compilation 13.0

Build System: Ninja



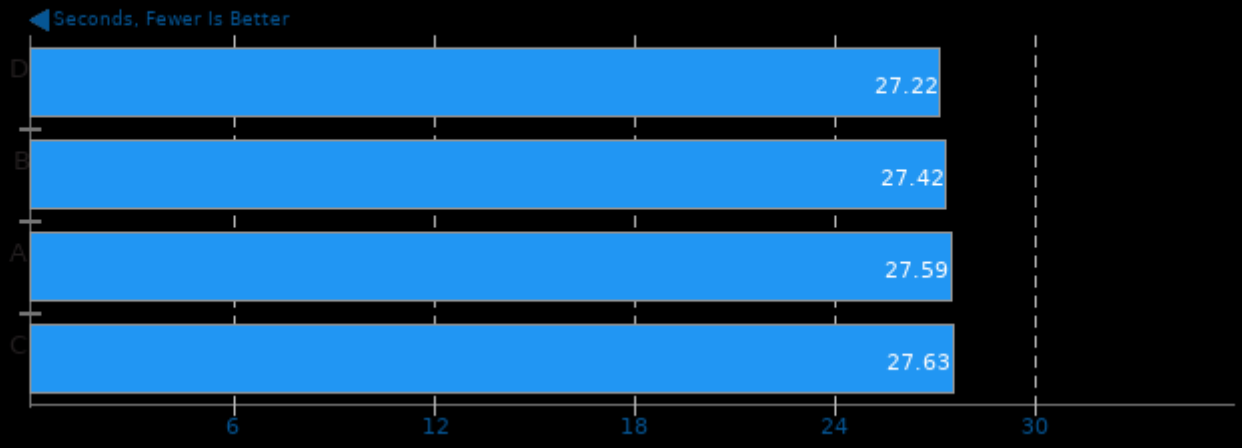
Timed LLVM Compilation 13.0

Build System: Unix Makefiles



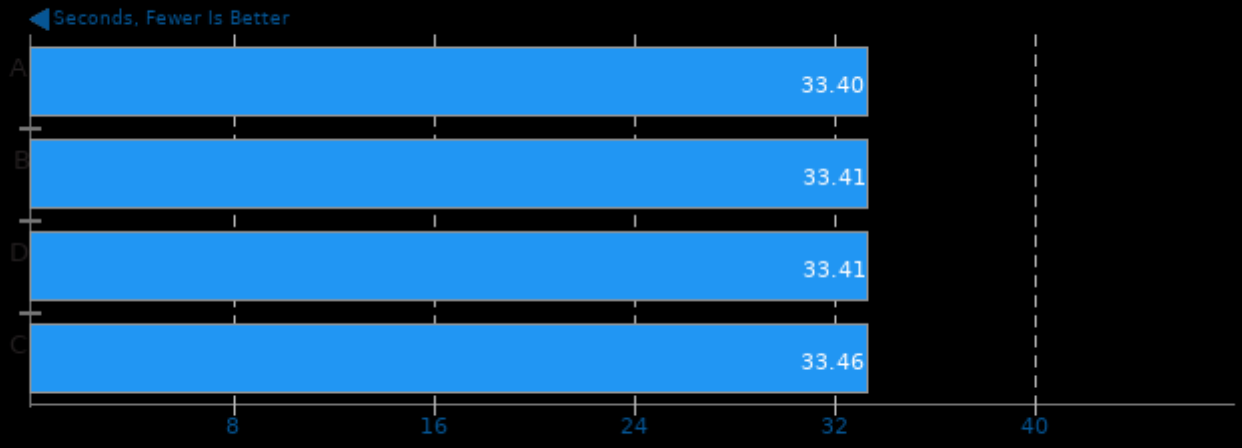
Timed Mesa Compilation 21.0

Time To Compile



C-Ray 1.1

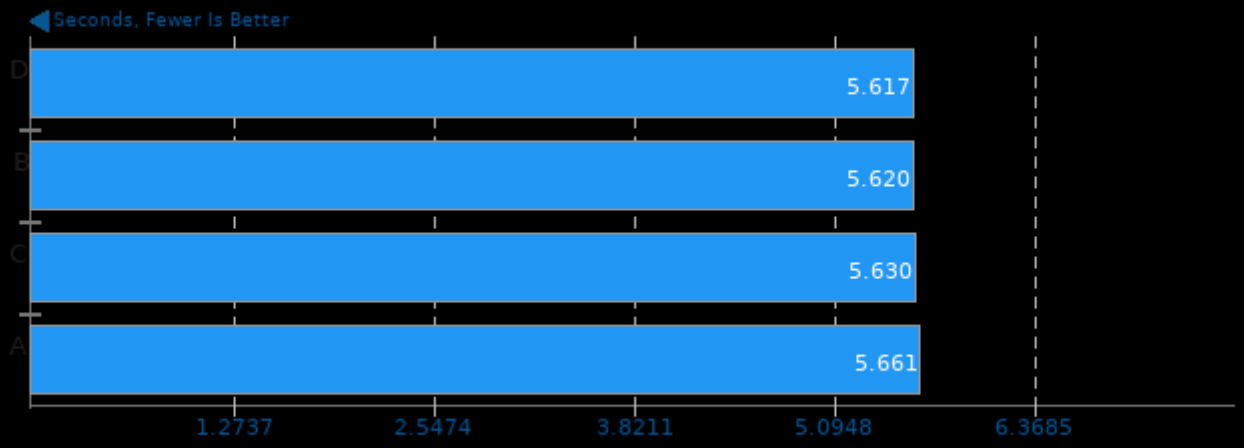
Total Time - 4K, 16 Rays Per Pixel



1. (CC) gcc options: -lm -lpthread -O3

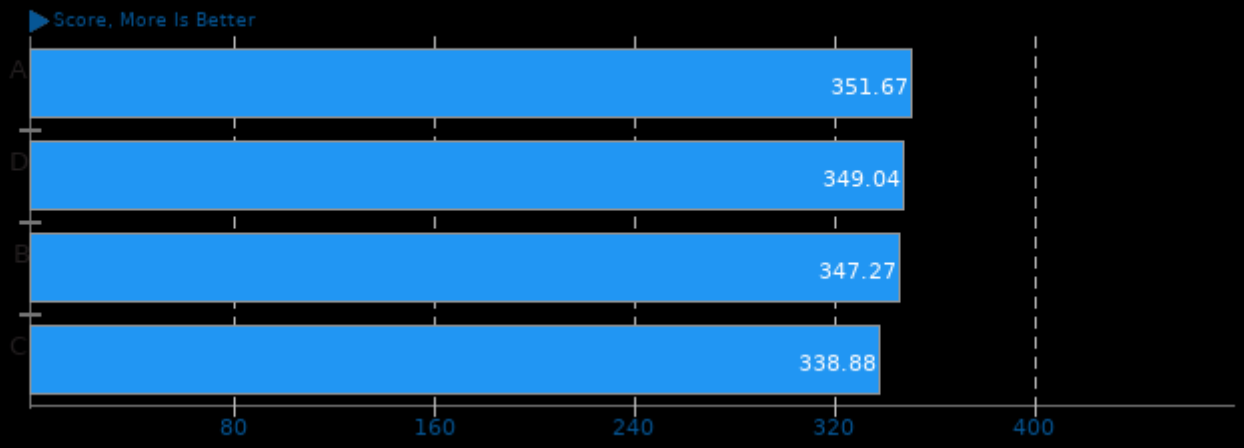
Smallpt 1.0

Global Illumination Renderer; 128 Samples



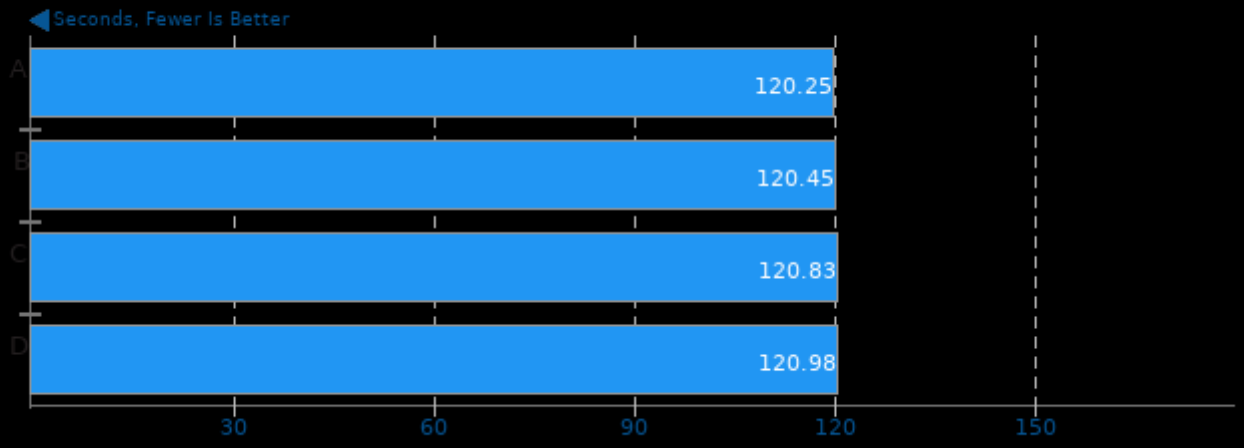
1. (CXX) g++ options: -fopenmp -O3

Numpy Benchmark



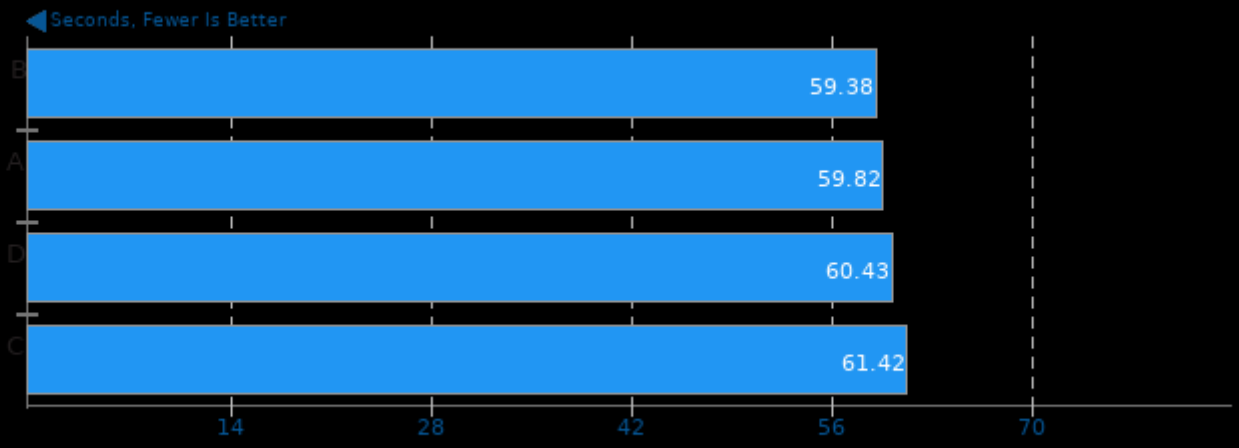
Timed Erlang/OTP Compilation 23.2

Time To Compile



Timed Wasmer Compilation 1.0.2

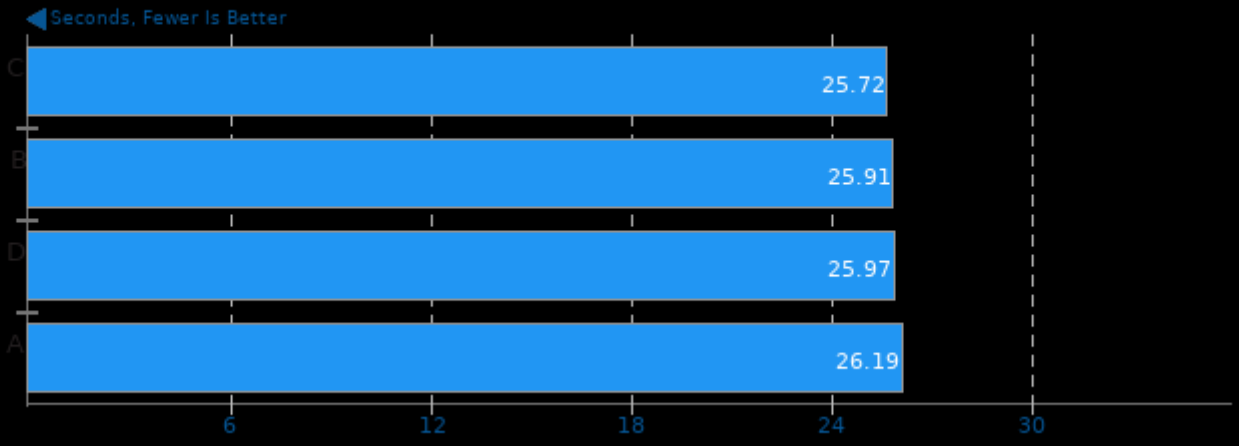
Time To Compile



1. (CC) gcc options: -m64 -pie -nodefaultlibs -ldl -lgcc_s -lutil -lrt -lpthread -lm -lc

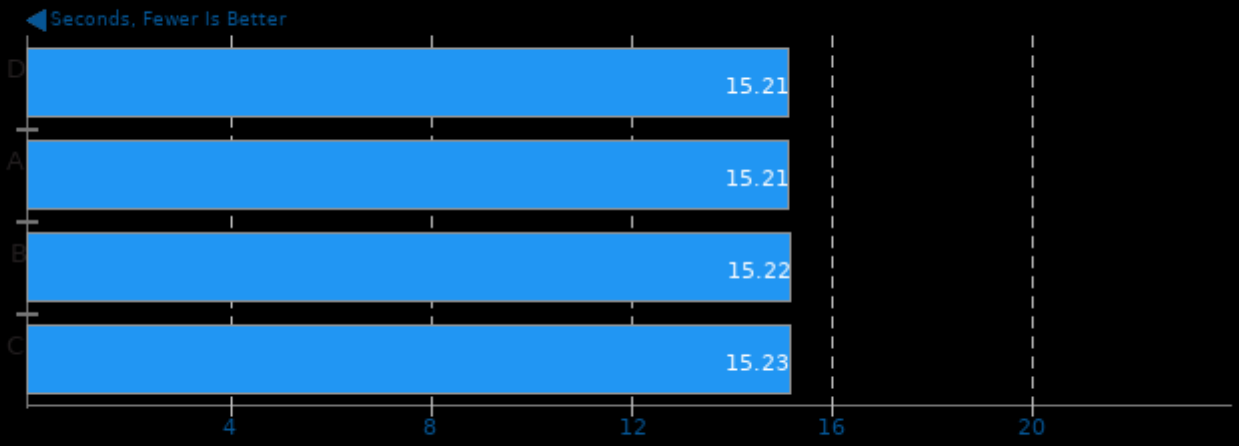
Cython Benchmark 0.29.21

Test: N-Queens

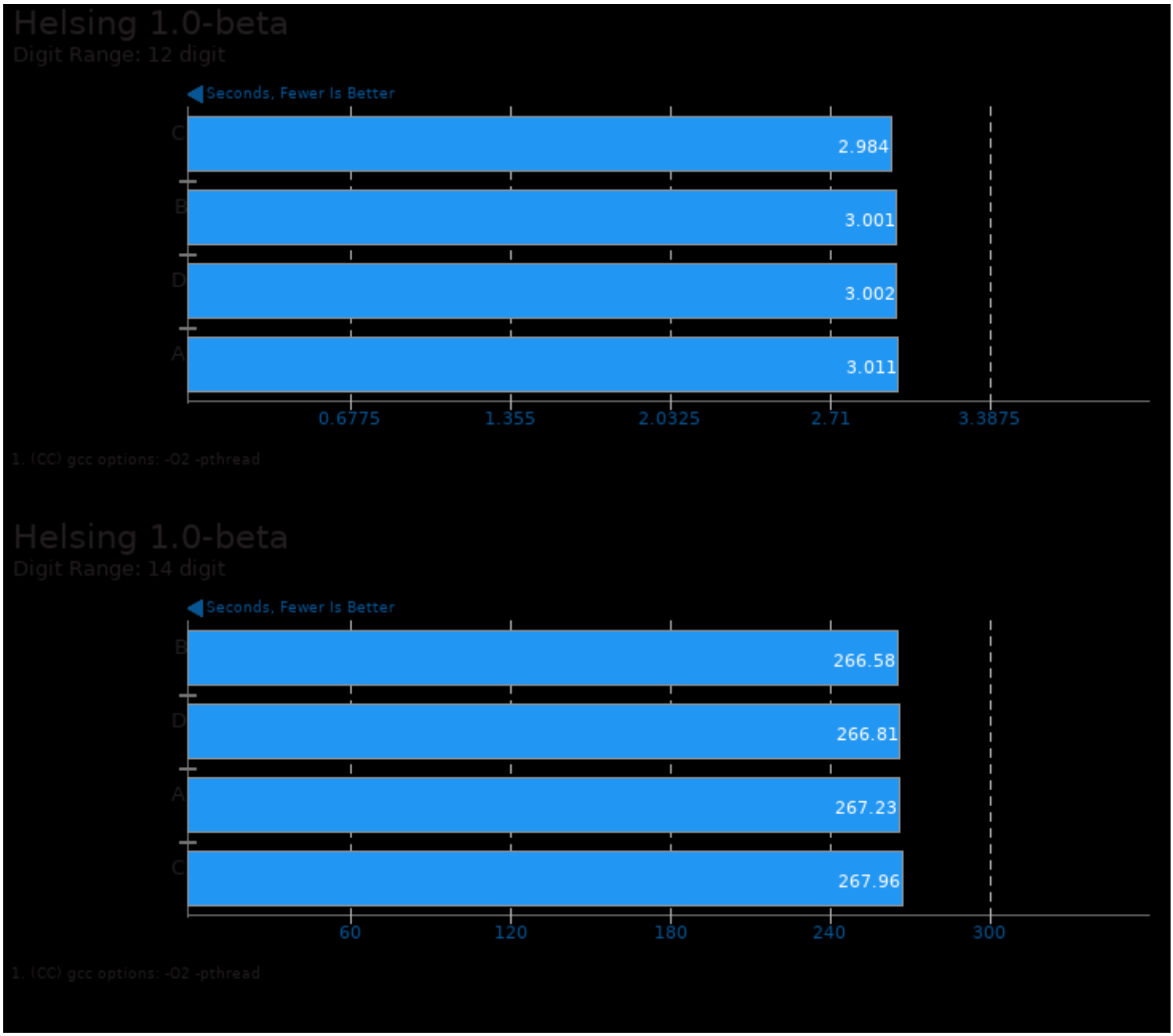


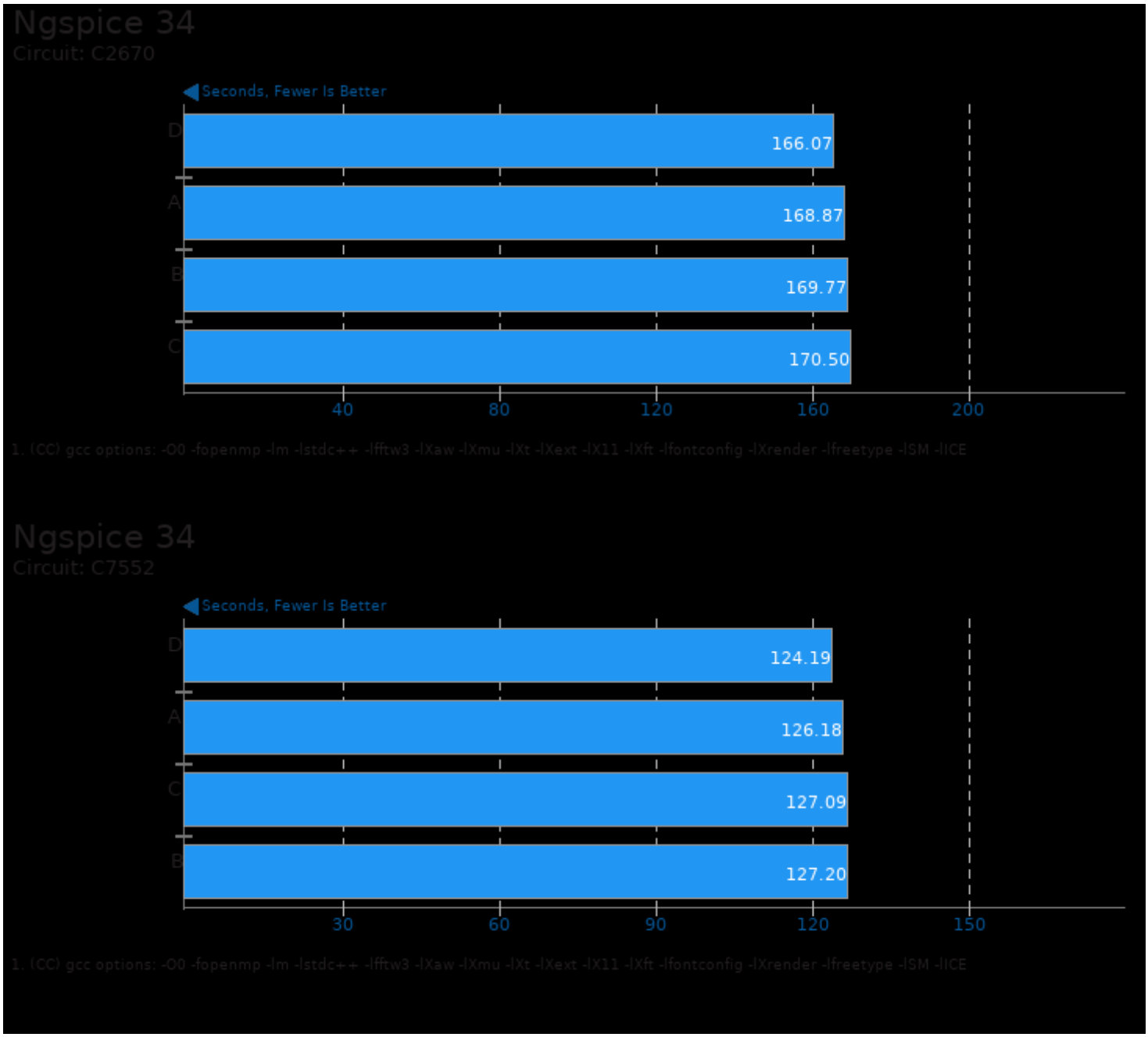
FLAC Audio Encoding 1.3.3

WAV To FLAC

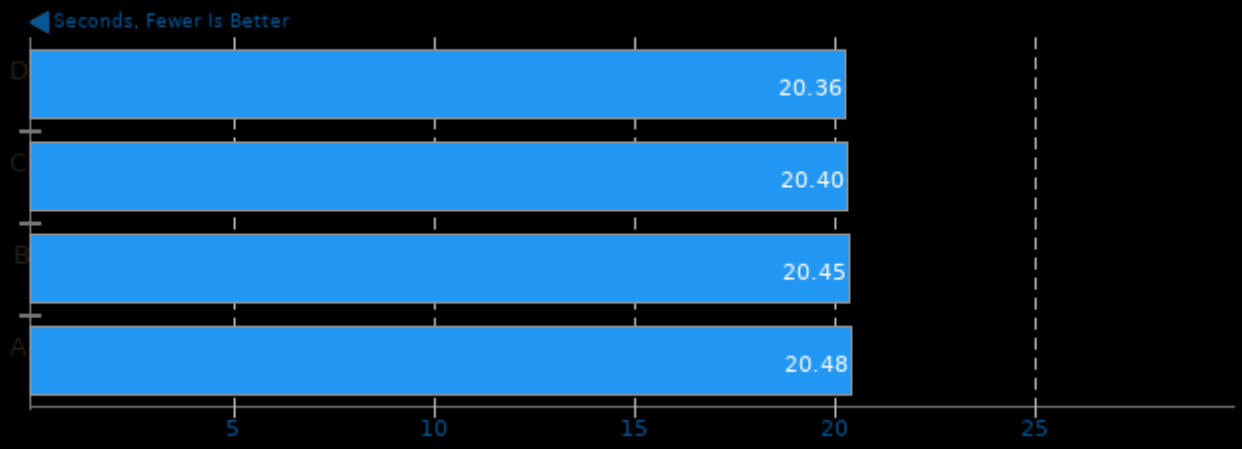


1. (CXX) g++ options: -fvisibility=hidden -logg -lm


Helsing 1.0-beta
Digit Range: 12 digit
Seconds, Fewer Is Better
C
2.984
B
3.001
D
3.002
A
3.011
0.6775
1.355
2.0325
2.71
3.3875
1. (CC) gcc options: -O2 -pthread
Helsing 1.0-beta
Digit Range: 14 digit
Seconds, Fewer Is Better
B
266.58
D
266.81
A
267.23
C
267.96
60
120
180
240
300
1. (CC) gcc options: -O2 -pthread

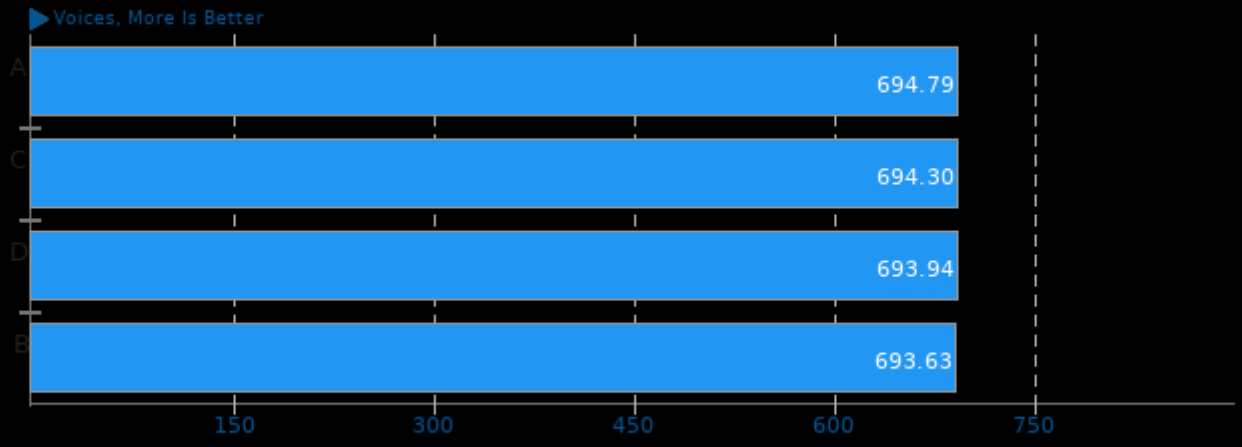

Ngspice 34
Circuit: C2670
Seconds, Fewer Is Better
D
A
B
C
166.07
168.87
169.77
170.50
40
80
120
160
200
1. (CC) gcc options: -O0 -fopenmp -lm -lstdc++ -lfftw3 -lXaw -lXmu -lXt -lXext -lX11 -lXft -lfontconfig -lXrender -lfreetype -lSM -lICE
Ngspice 34
Circuit: C7552
Seconds, Fewer Is Better
D
A
C
B
124.19
126.18
127.09
127.20
30
60
90
120
150
1. (CC) gcc options: -O0 -fopenmp -lm -lstdc++ -lfftw3 -lXaw -lXmu -lXt -lXext -lX11 -lXft -lfontconfig -lXrender -lfreetype -lSM -lICE

VOSK Speech Recognition Toolkit 0.3.21



Google SynthMark 20201109

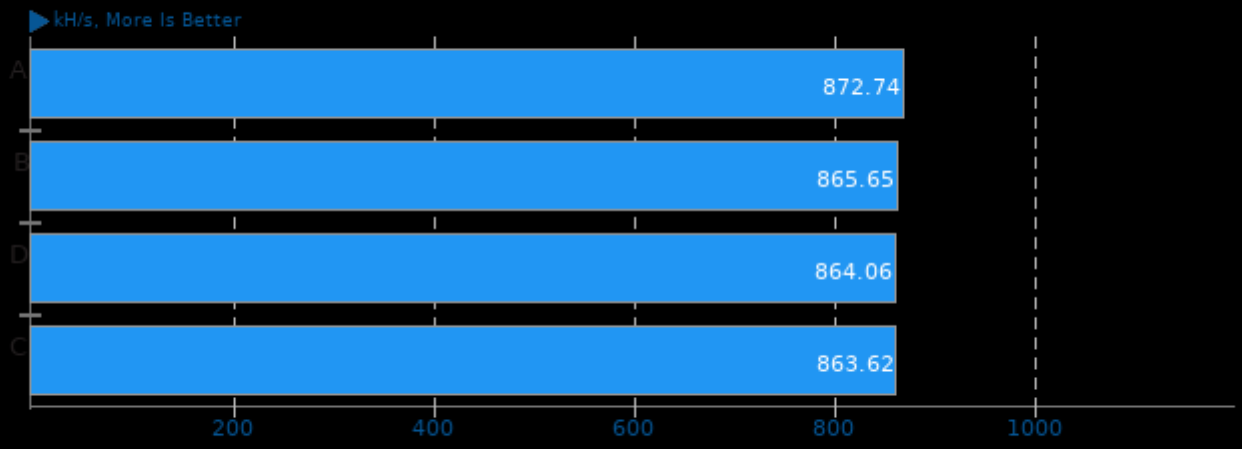
Test: VoiceMark_100



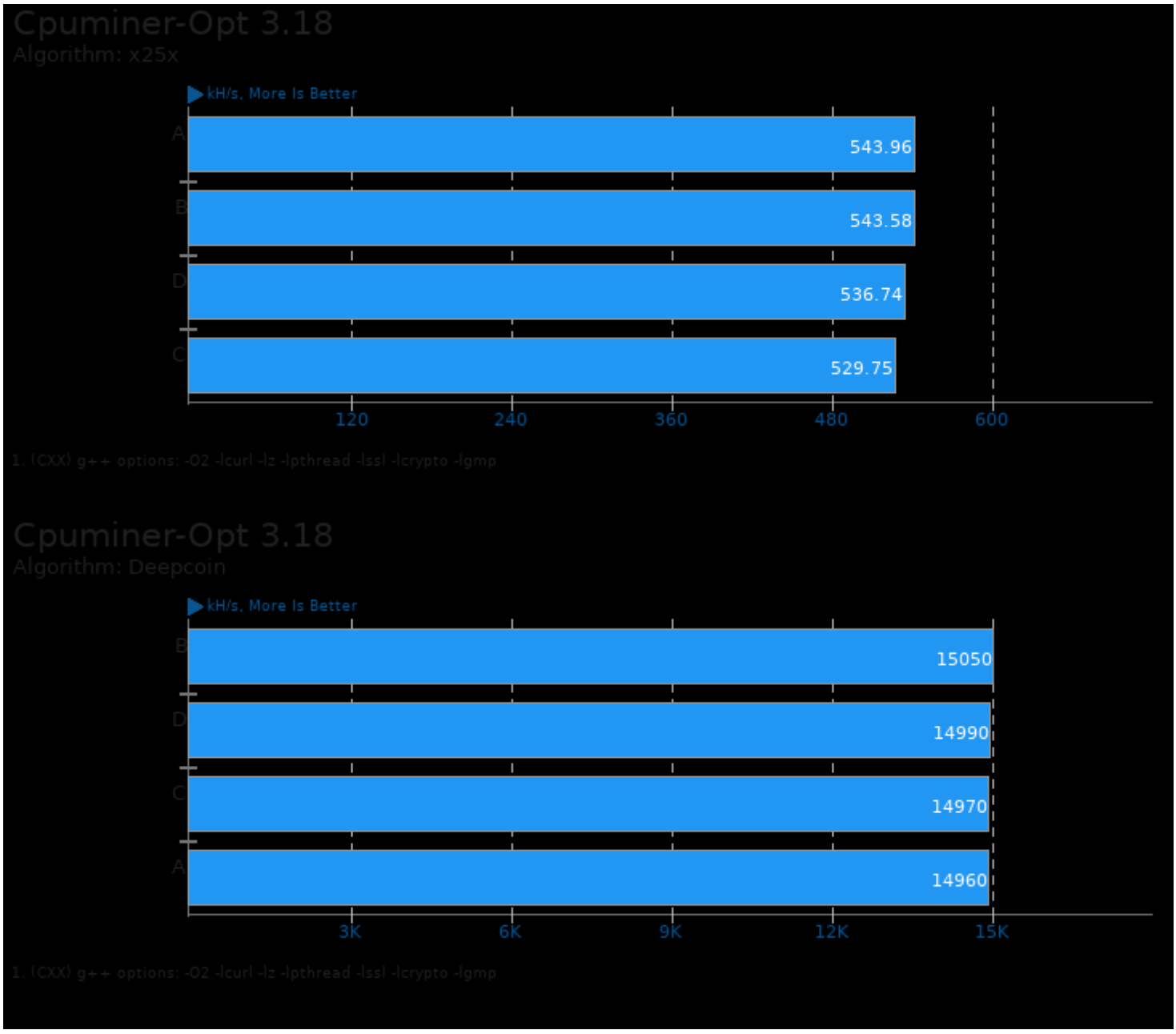
1. (CXX) g++ options: -lm -lpthread -std=c++11 -Ofast

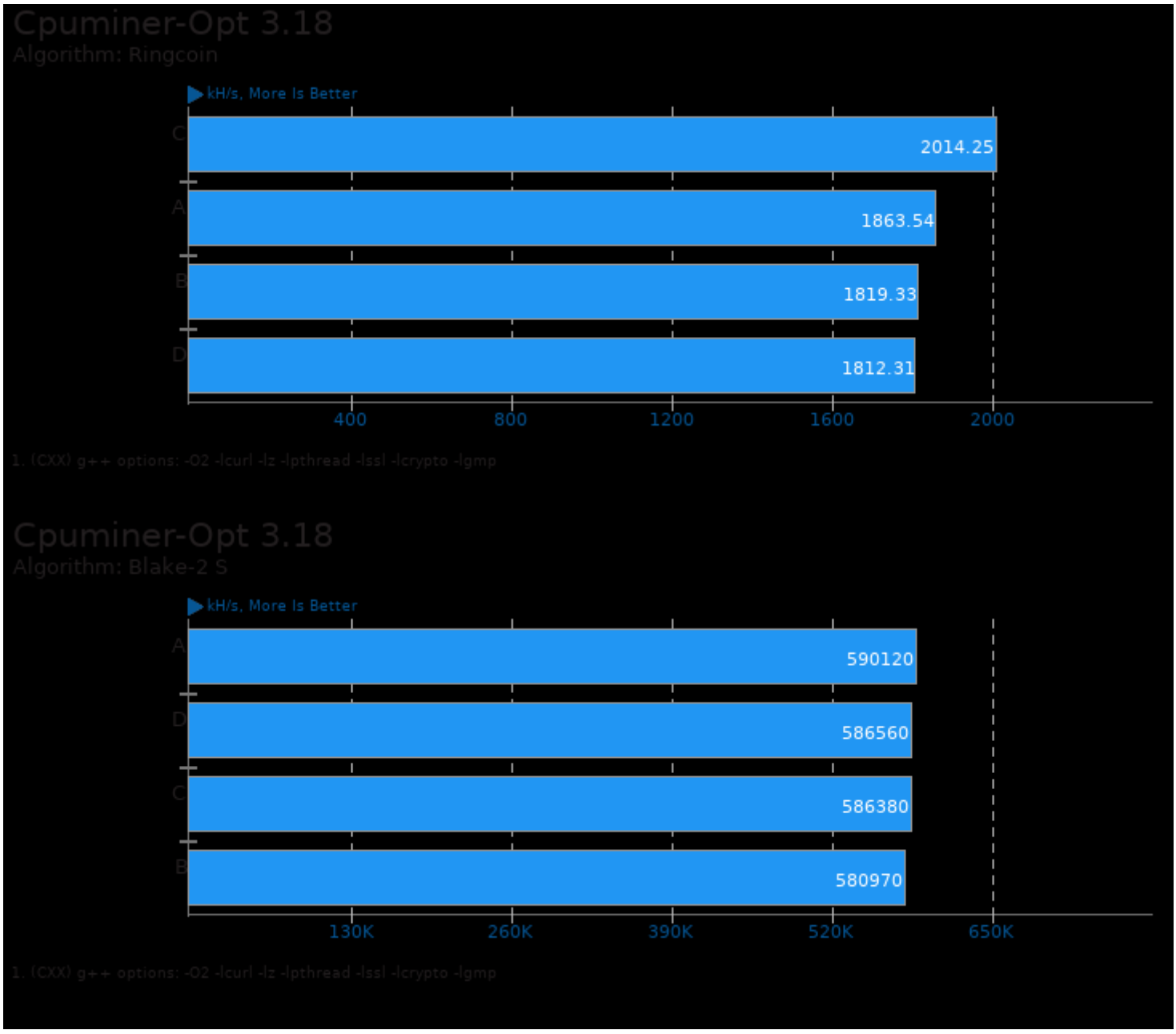
Cpuminer-Opt 3.18

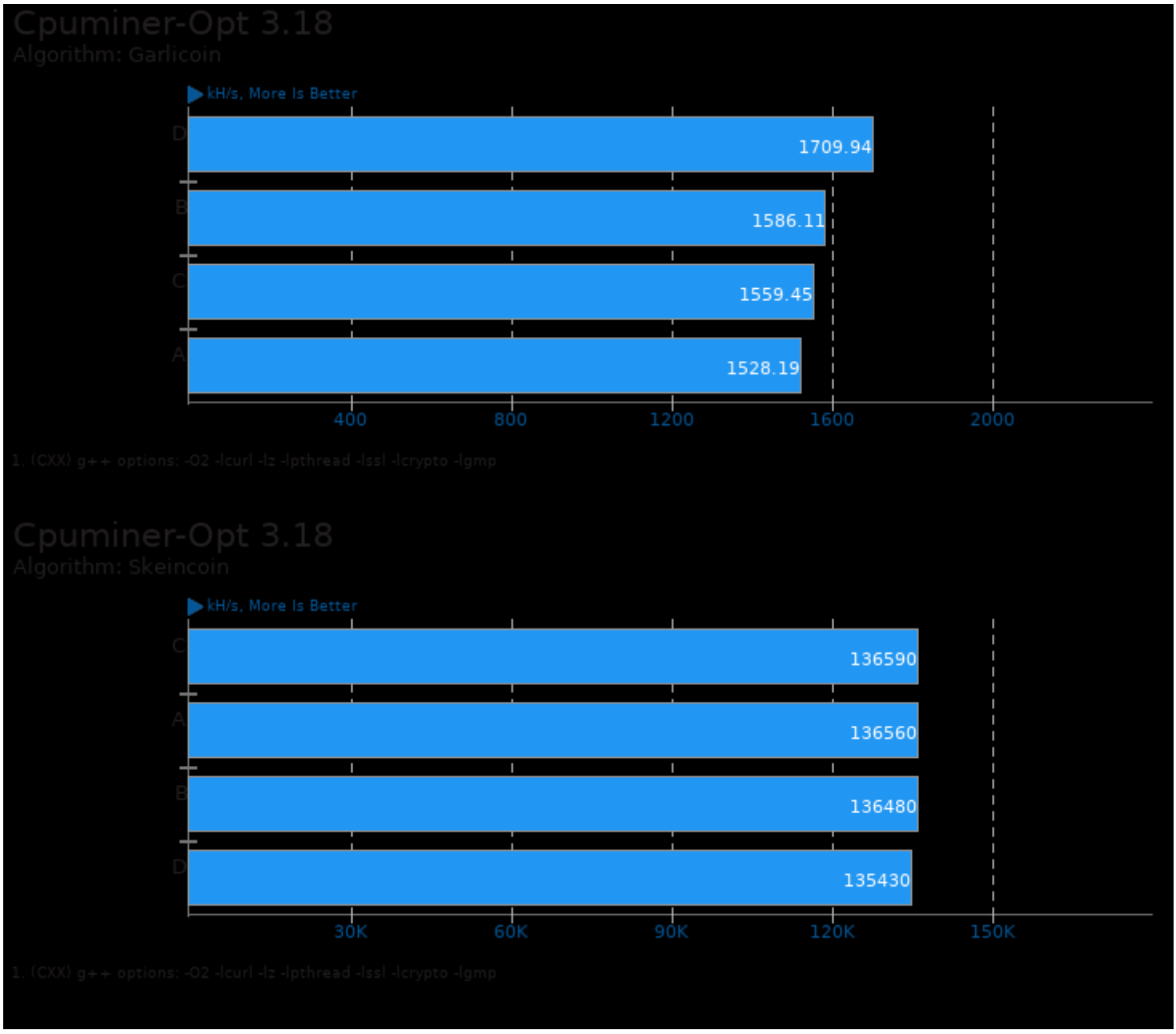
Algorithm: Magi

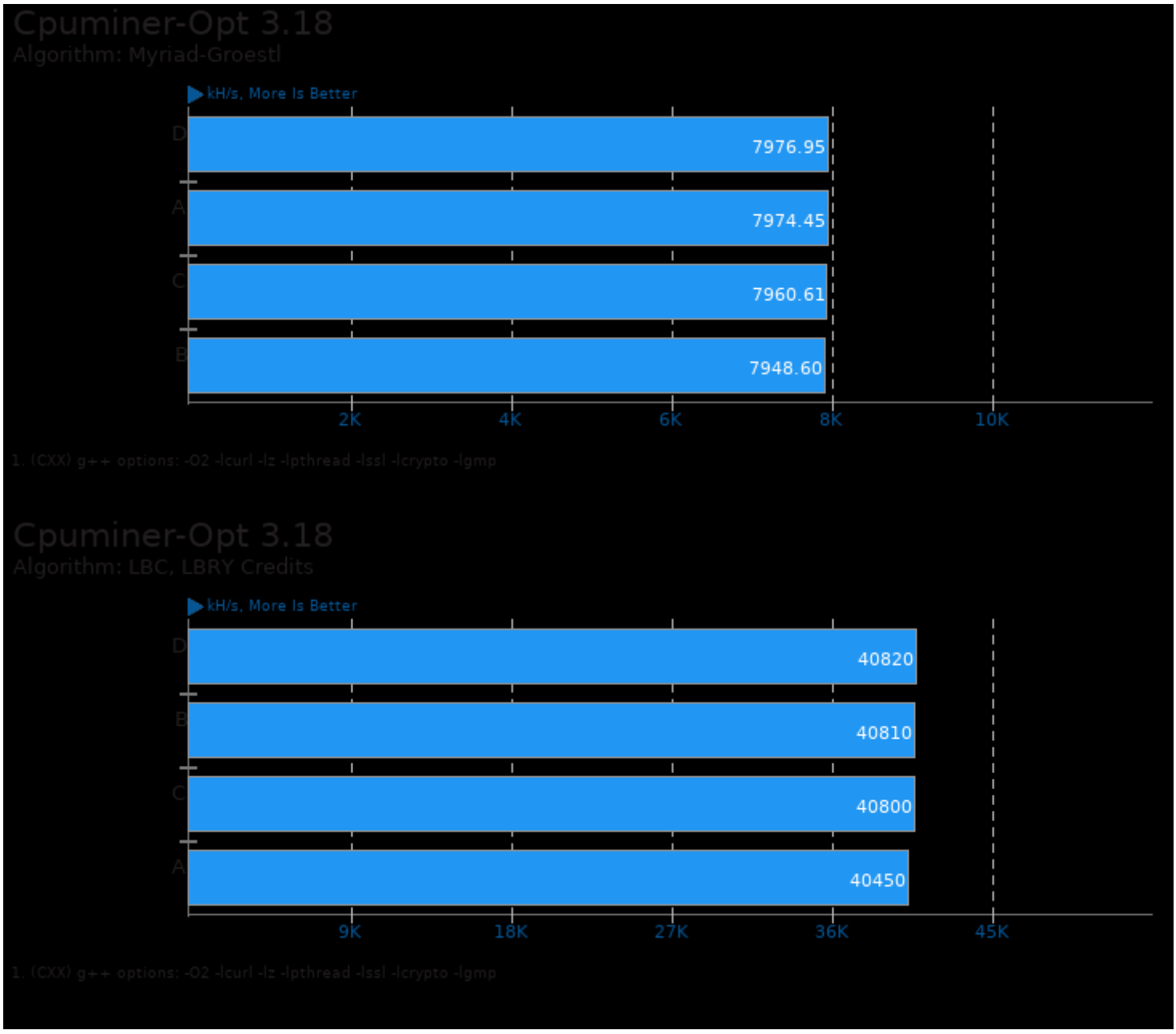


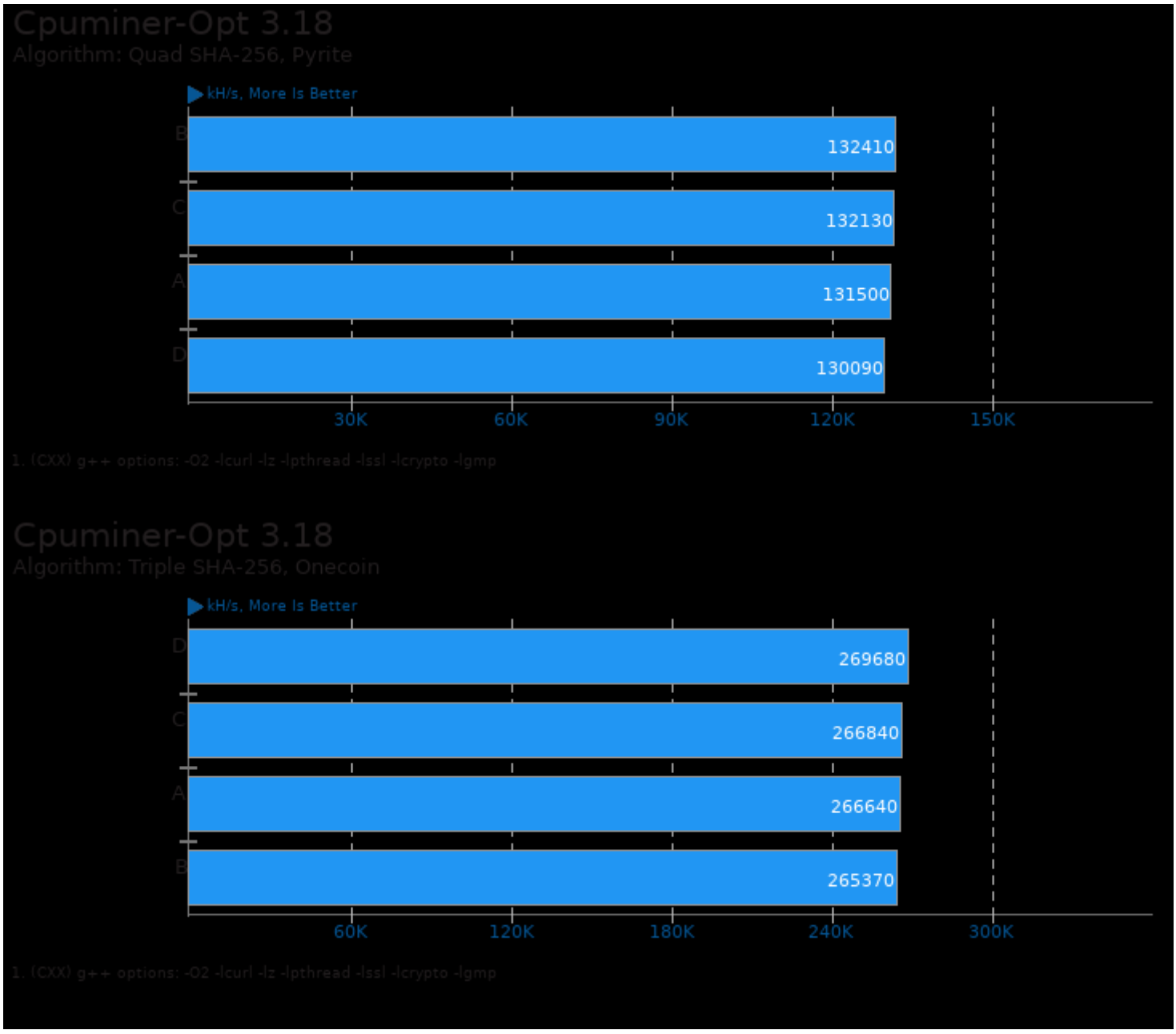
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp

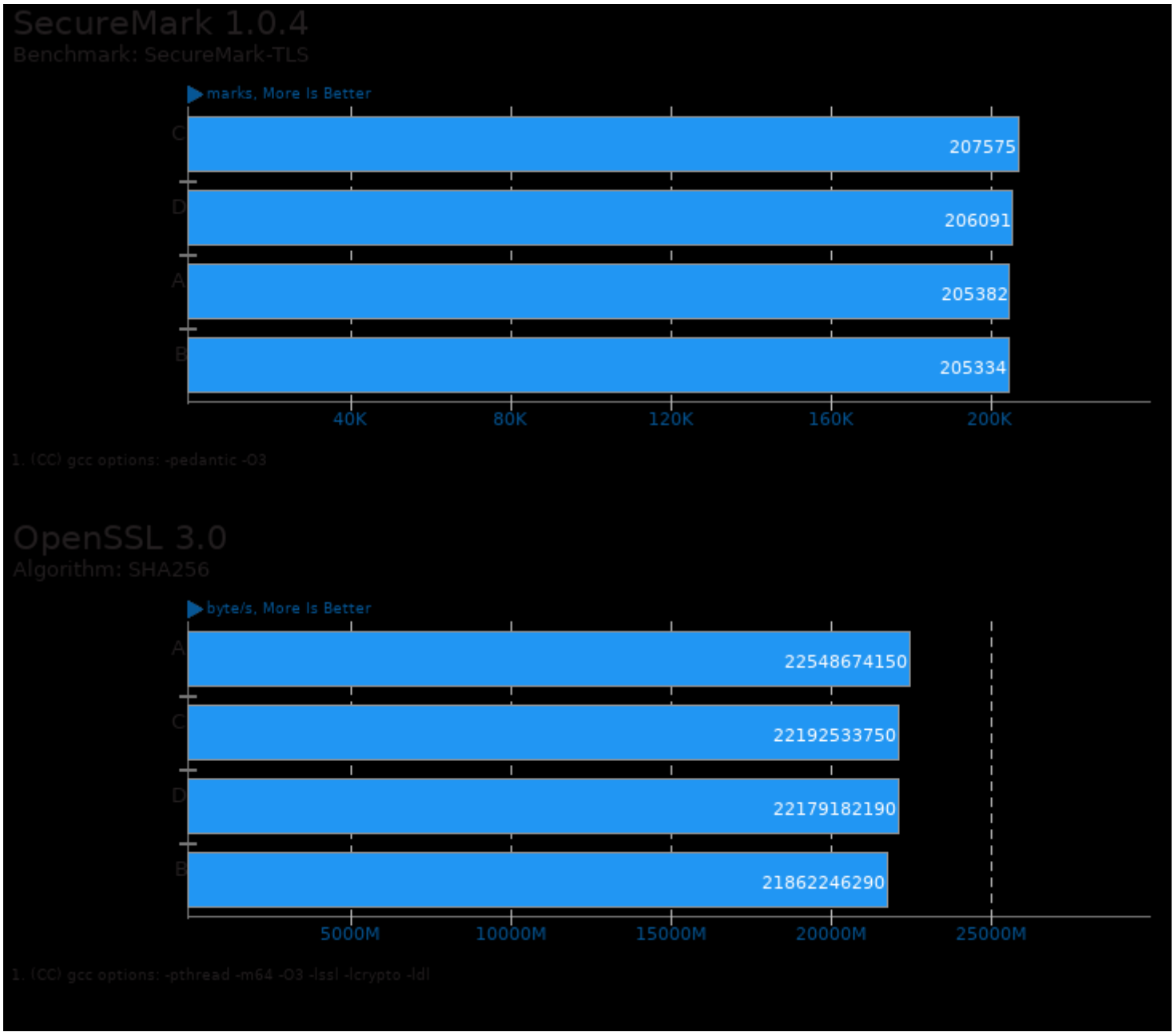

Cpuminer-Opt 3.18
Algorithm: x25x
kH/s, More Is Better
A
543.96
B
543.58
D
536.74
C
529.75
120
240
360
480
600
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp
Cpuminer-Opt 3.18
Algorithm: Deepcoin
kH/s, More Is Better
B
15050
D
14990
C
14970
A
14960
3K
6K
9K
12K
15K
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp

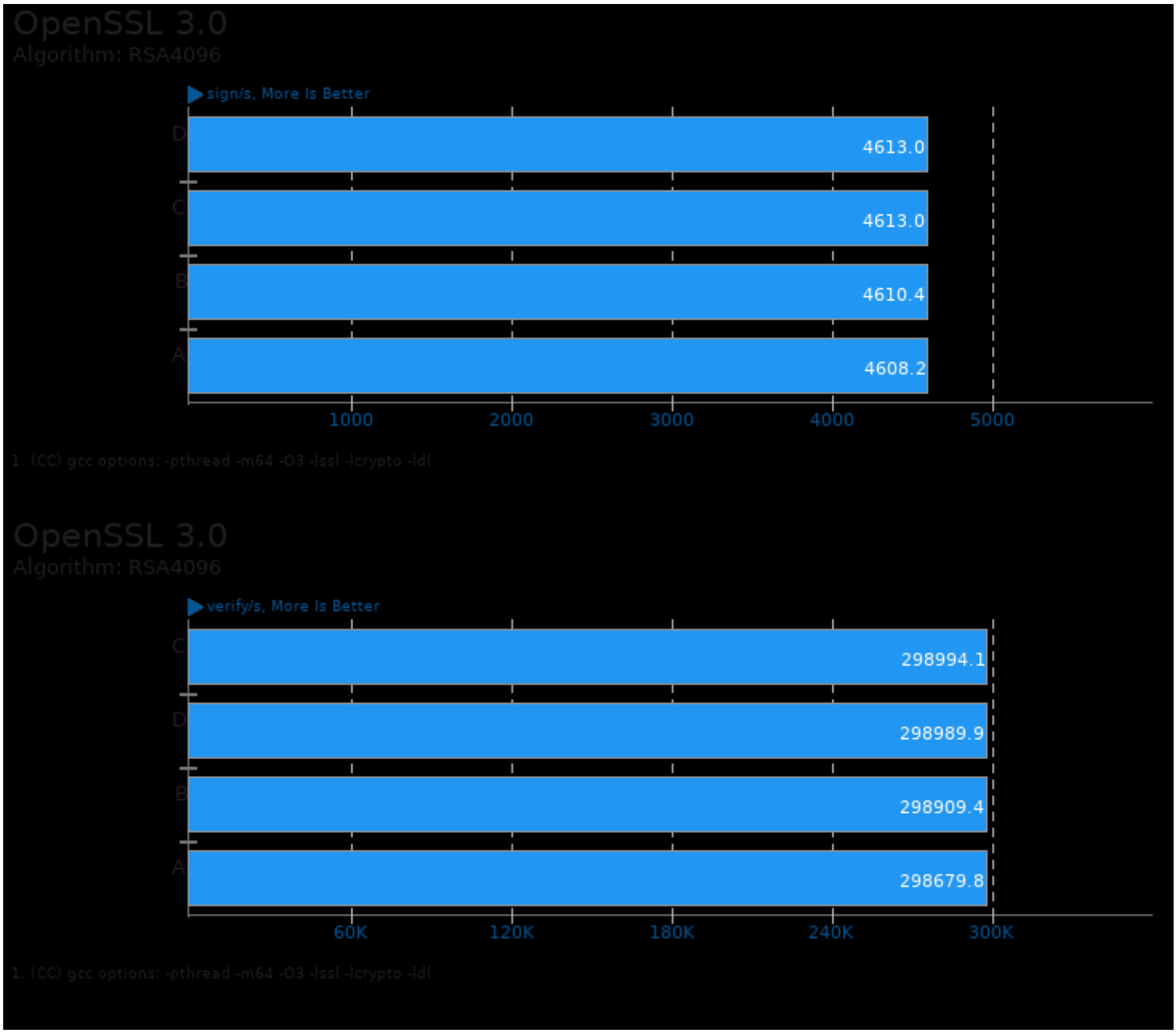

Cpuminer-Opt 3.18
Algorithm: Ringcoin
kH/s, More Is Better
C
2014.25
A
1863.54
B
1819.33
D
1812.31
400
800
1200
1600
2000
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp
Cpuminer-Opt 3.18
Algorithm: Blake-2 S
kH/s, More Is Better
A
590120
D
586560
C
586380
B
580970
130K
260K
390K
520K
650K
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp

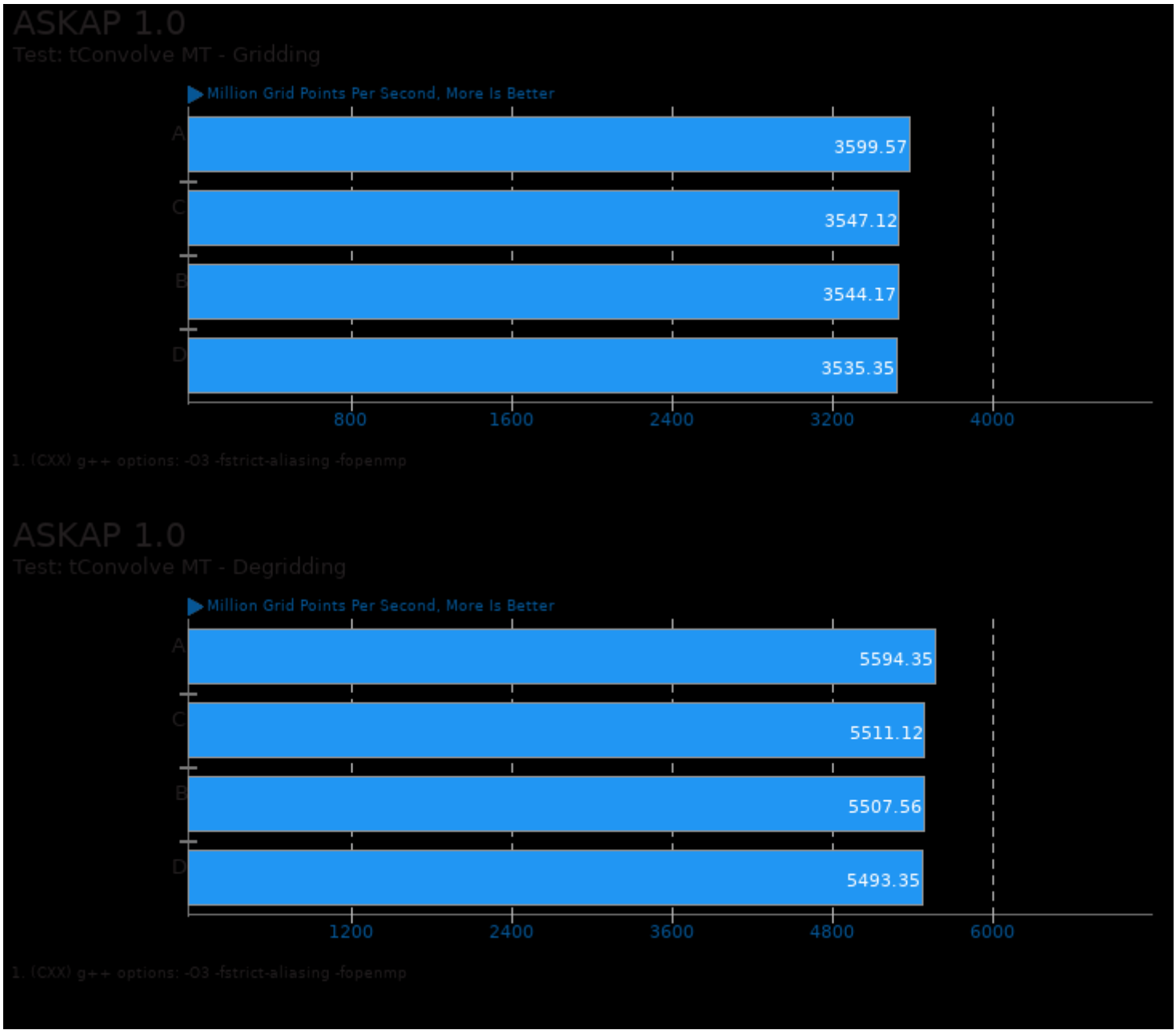

Cpuminer-Opt 3.18
Algorithm: Garlicoin
kH/s, More Is Better
D
1709.94
B
1586.11
C
1559.45
A
1528.19
400
800
1200
1600
2000
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp
Cpuminer-Opt 3.18
Algorithm: Skeincoin
kH/s, More Is Better
C
136590
A
136560
B
136480
D
135430
30K
60K
90K
120K
150K
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp

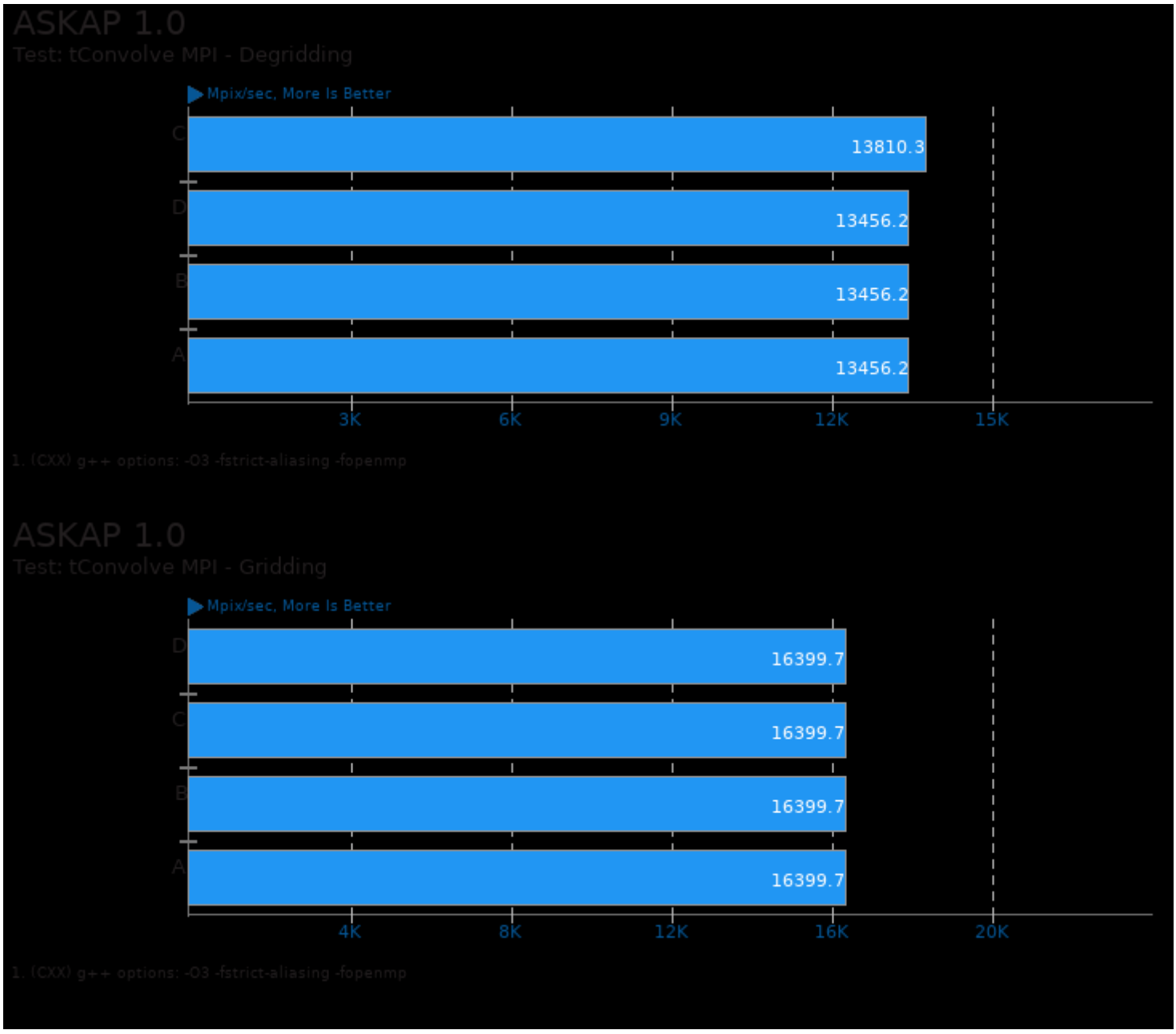

Cpuminer-Opt 3.18
Algorithm: Myriad-Groestl
kH/s, More Is Better
D
7976.95
A
7974.45
C
7960.61
B
7948.60
2K
4K
6K
8K
10K
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp
Cpuminer-Opt 3.18
Algorithm: LBC, LBRY Credits
kH/s, More Is Better
D
40820
B
40810
C
40800
A
40450
9K
18K
27K
36K
45K
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp

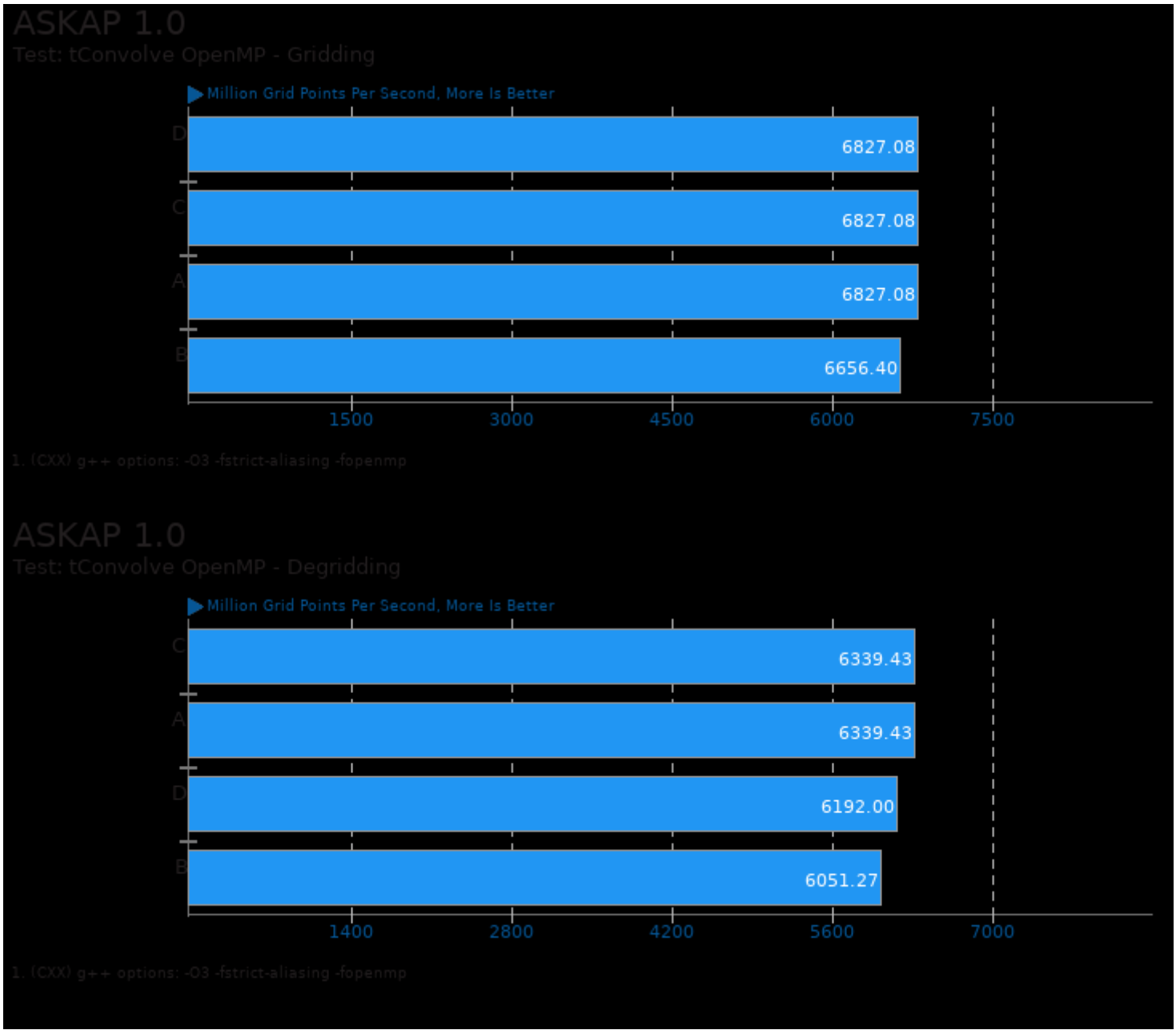

Cpuminer-Opt 3.18
Algorithm: Quad SHA-256, Pyrite
kH/s, More Is Better
B
132410
C
132130
A
131500
D
130090
30K
60K
90K
120K
150K
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp
Cpuminer-Opt 3.18
Algorithm: Triple SHA-256, Onecoin
kH/s, More Is Better
D
269680
C
266840
A
266640
B
265370
60K
120K
180K
240K
300K
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp

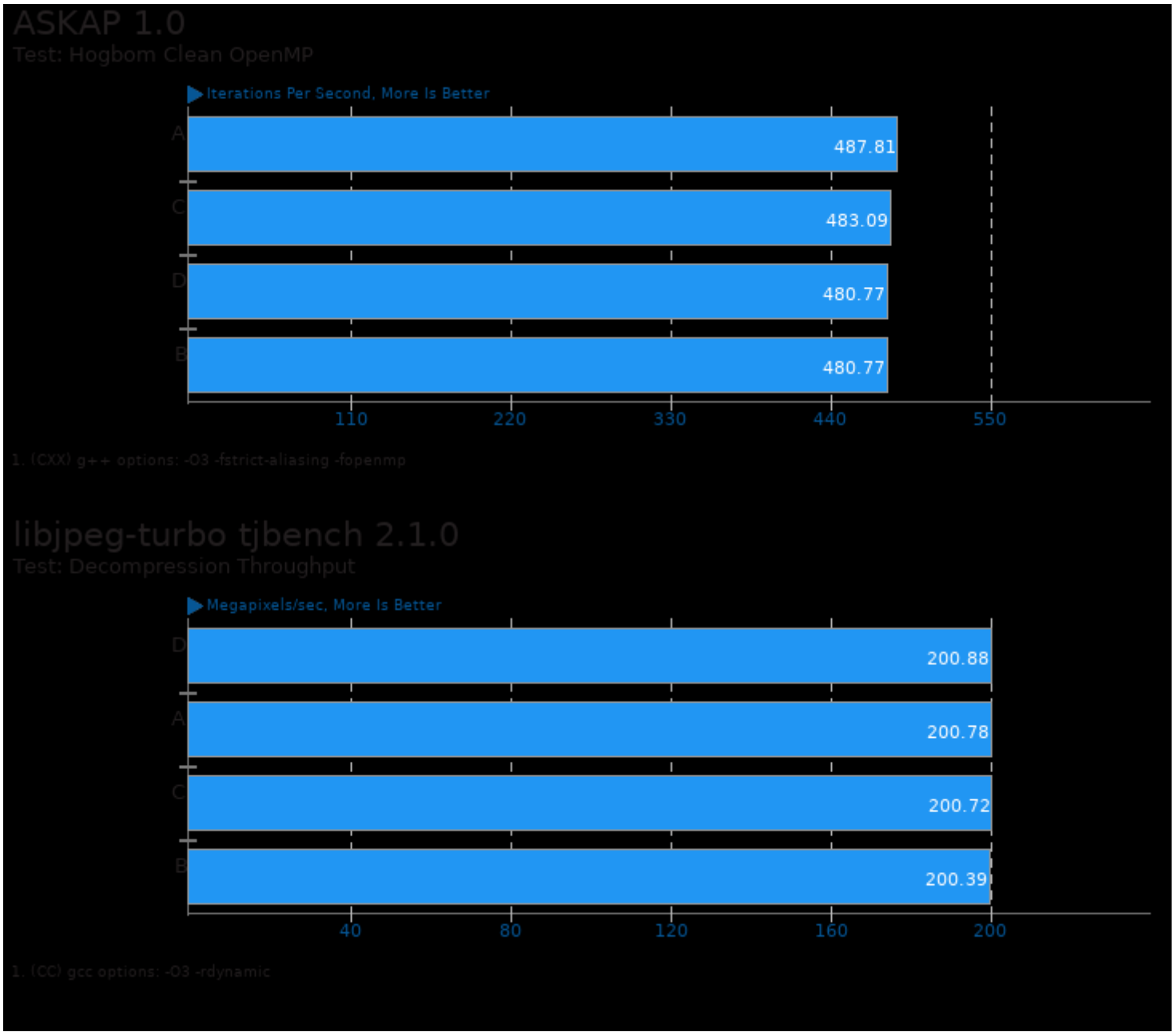

SecureMark 1.0.4
Benchmark: SecureMark-TLS
marks, More Is Better
C
207575
D
206091
A
205382
B
205334
40K
80K
120K
160K
200K
1. (CC) gcc options: -pedantic -O3
OpenSSL 3.0
Algorithm: SHA256
byte/s, More Is Better
A
22548674150
C
22192533750
D
22179182190
B
21862246290
5000M
10000M
15000M
20000M
25000M
1. (CC) gcc options: -pthread -m64 -O3 -lssl -lcrypto -ldl

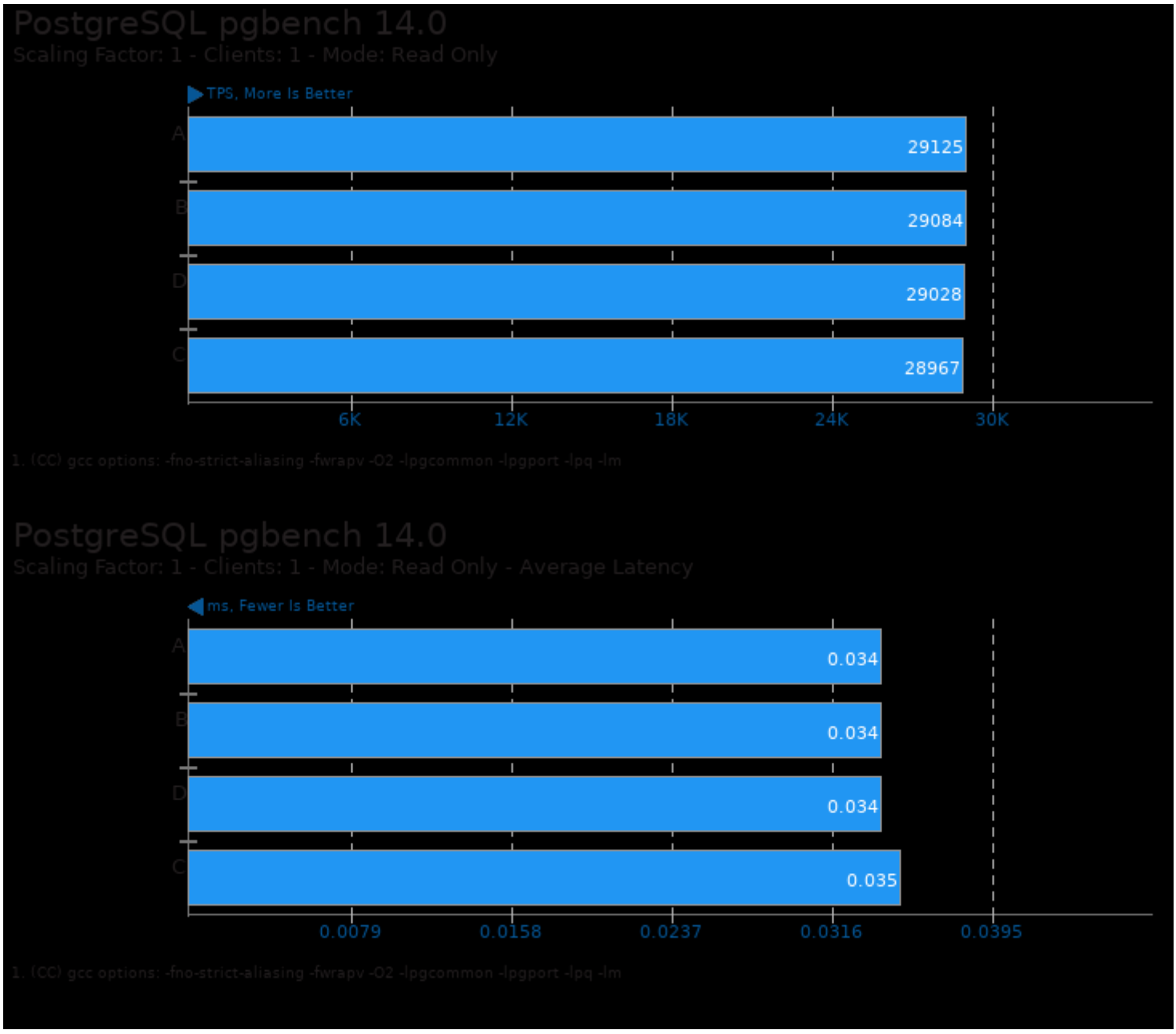

OpenSSL 3.0
Algorithm: RSA4096
sign/s, More Is Better
D
C
B
A
4613.0
4613.0
4610.4
4608.2
1000
2000
3000
4000
5000
1. (CC) gcc options: -pthread -m64 -O3 -lssl -lcrypto -ldl
OpenSSL 3.0
Algorithm: RSA4096
verify/s, More Is Better
C
D
B
A
298994.1
298989.9
298909.4
298679.8
60K
120K
180K
240K
300K
1. (CC) gcc options: -pthread -m64 -O3 -lssl -lcrypto -ldl

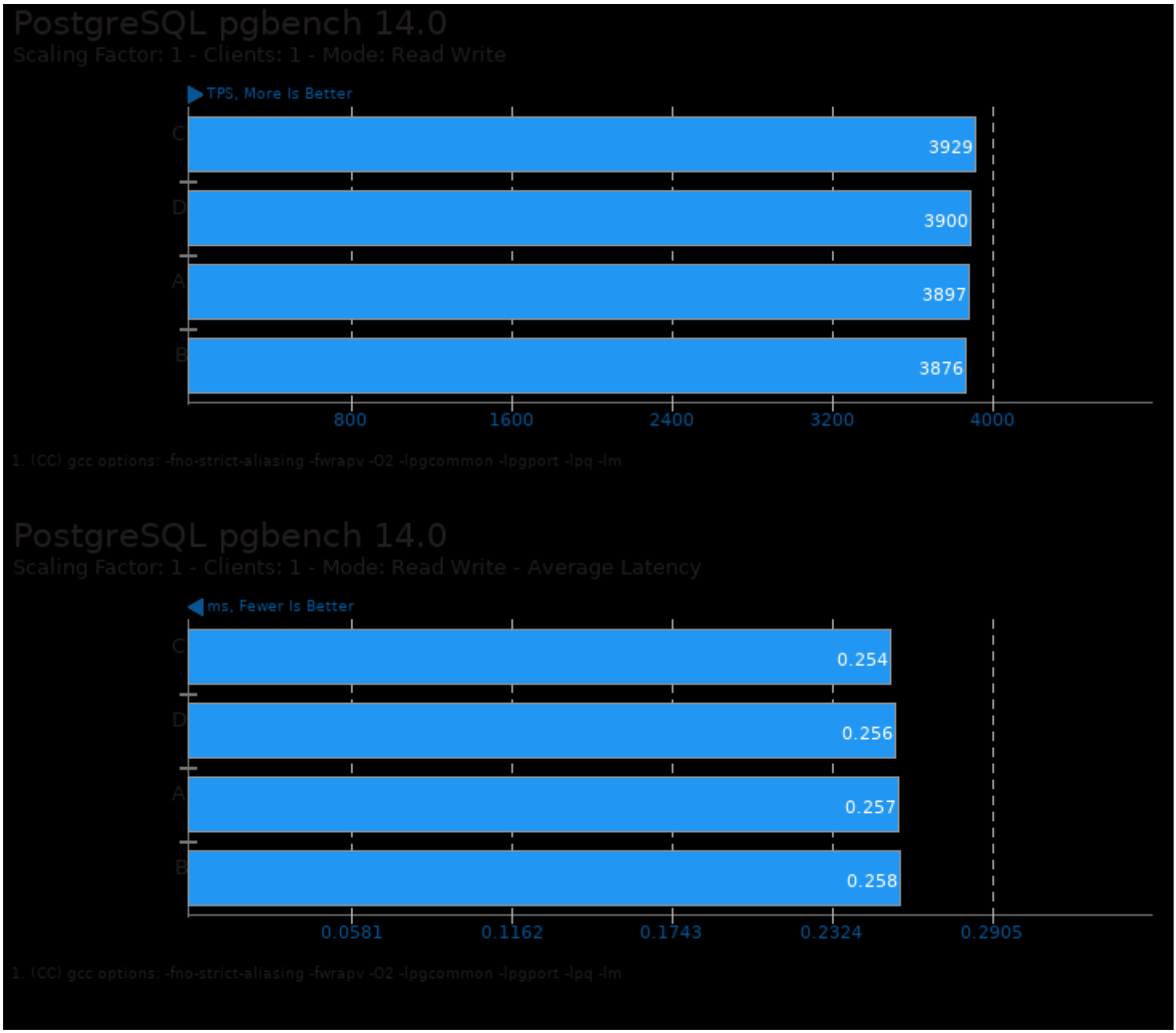

ASKAP 1.0
Test: tConvolve MT - Gridding
Million Grid Points Per Second, More Is Better
A
C
B
D
3599.57
3547.12
3544.17
3535.35
800
1600
2400
3200
4000
1. (CXX) g++ options: -O3 -fstrict-aliasing -fopenmp
ASKAP 1.0
Test: tConvolve MT - Degridding
Million Grid Points Per Second, More Is Better
A
C
B
D
5594.35
5511.12
5507.56
5493.35
1200
2400
3600
4800
6000
1. (CXX) g++ options: -O3 -fstrict-aliasing -fopenmp

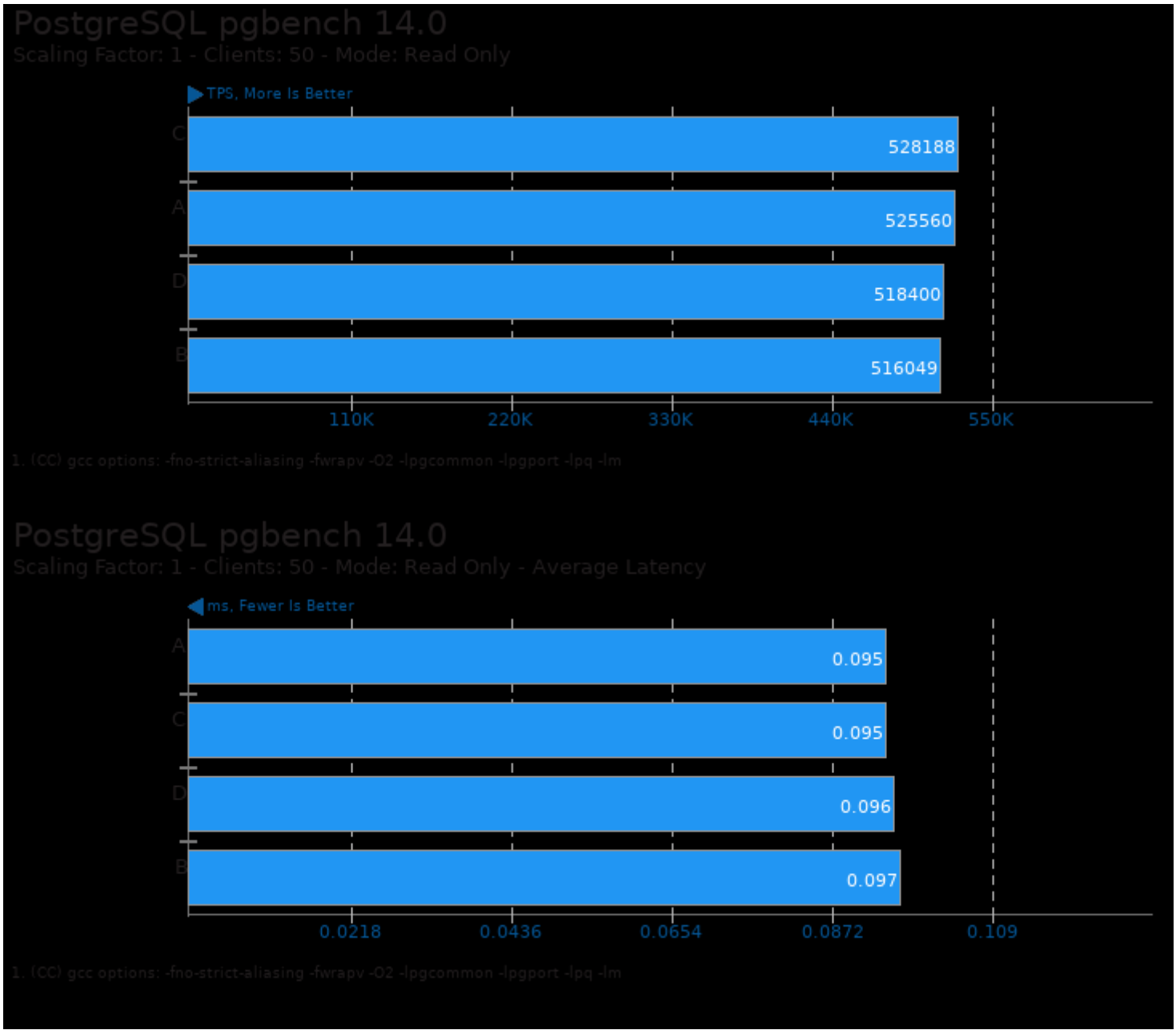

ASKAP 1.0
Test: tConvolve MPI - Degridding
Mpix/sec, More Is Better
C
13810.3
D
13456.2
B
13456.2
A
13456.2
3K
6K
9K
12K
15K
1. (CXX) g++ options: -O3 -fstrict-aliasing -fopenmp
ASKAP 1.0
Test: tConvolve MPI - Gridding
Mpix/sec, More Is Better
D
16399.7
C
16399.7
B
16399.7
A
16399.7
4K
8K
12K
16K
20K
1. (CXX) g++ options: -O3 -fstrict-aliasing -fopenmp

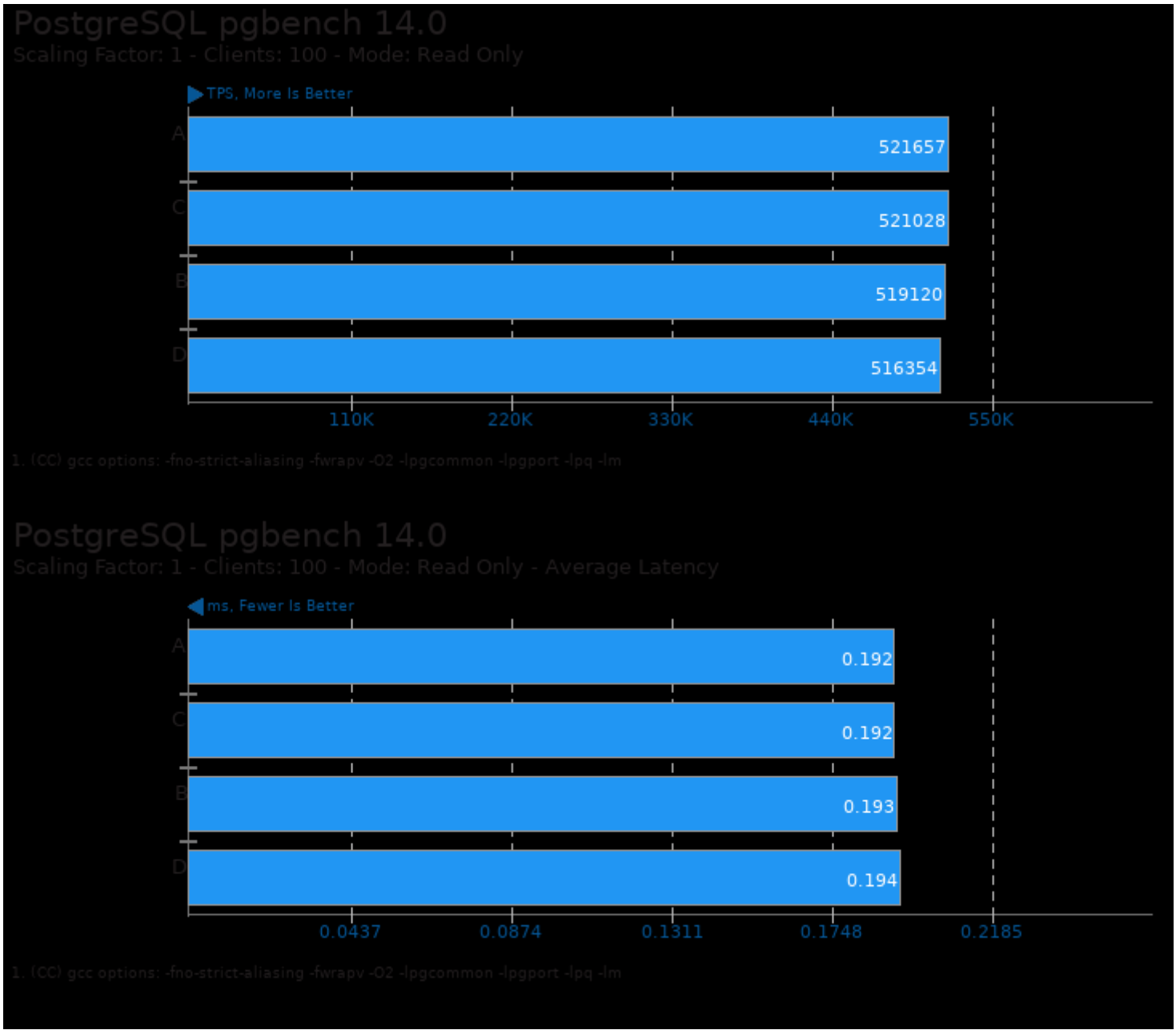

ASKAP 1.0
Test: tConvolve OpenMP - Gridding
Million Grid Points Per Second, More Is Better
D
6827.08
C
6827.08
A
6827.08
B
6656.40
1500
3000
4500
6000
7500
1. (CXX) g++ options: -O3 -fstrict-aliasing -fopenmp
ASKAP 1.0
Test: tConvolve OpenMP - Degridding
Million Grid Points Per Second, More Is Better
C
6339.43
A
6339.43
D
6192.00
B
6051.27
1400
2800
4200
5600
7000
1. (CXX) g++ options: -O3 -fstrict-aliasing -fopenmp

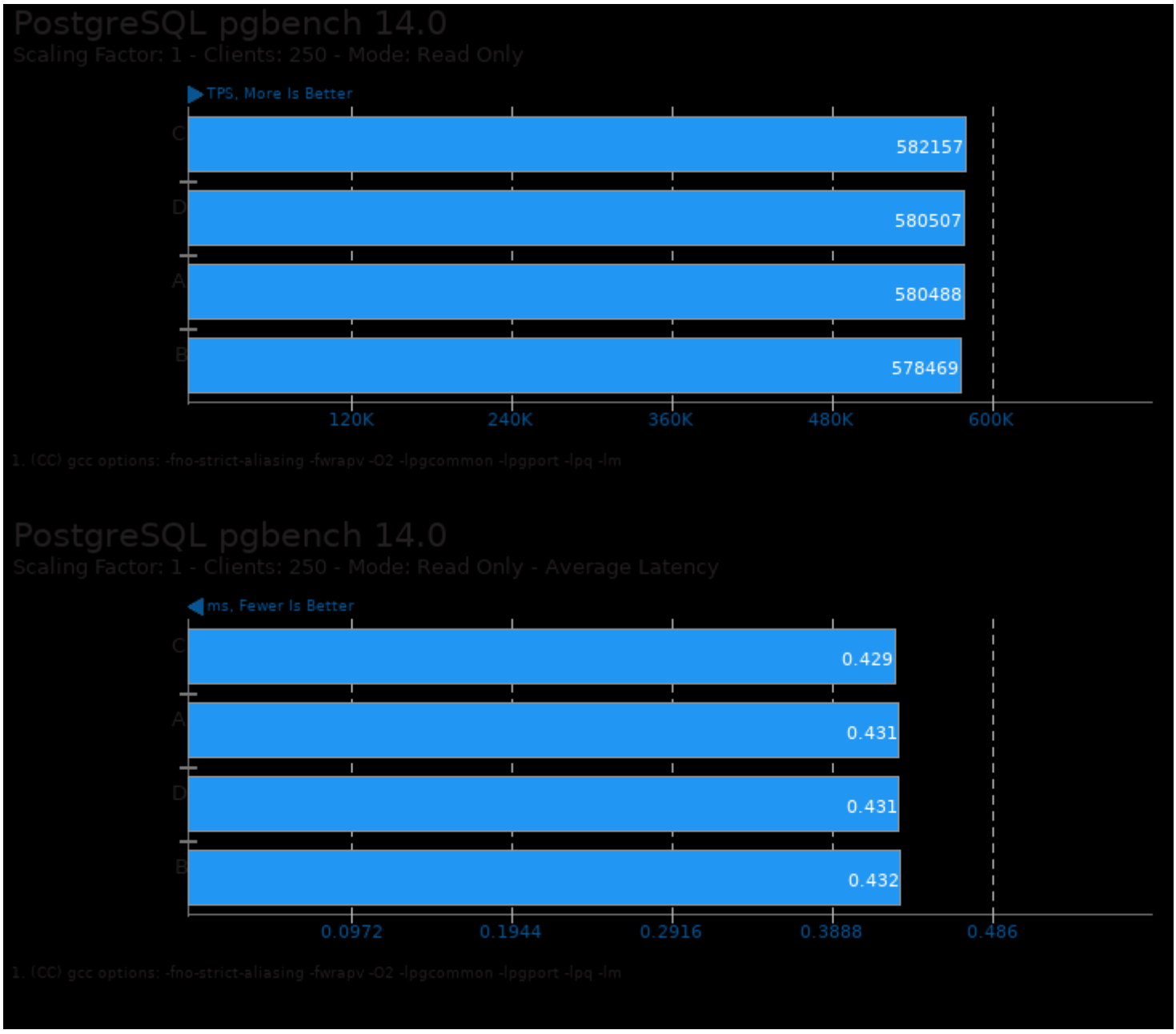

ASKAP 1.0
Test: Hogbom Clean OpenMP
Iterations Per Second, More Is Better
A
C
D
B
487.81
483.09
480.77
480.77
110
220
330
440
550
1. (CXX) g++ options: -O3 -fstrict-aliasing -fopenmp
libjpeg-turbo tjbench 2.1.0
Test: Decompression Throughput
Megapixels/sec, More Is Better
D
A
C
B
200.88
200.78
200.72
200.39
40
80
120
160
200
1. (CC) gcc options: -O3 -rdynamic

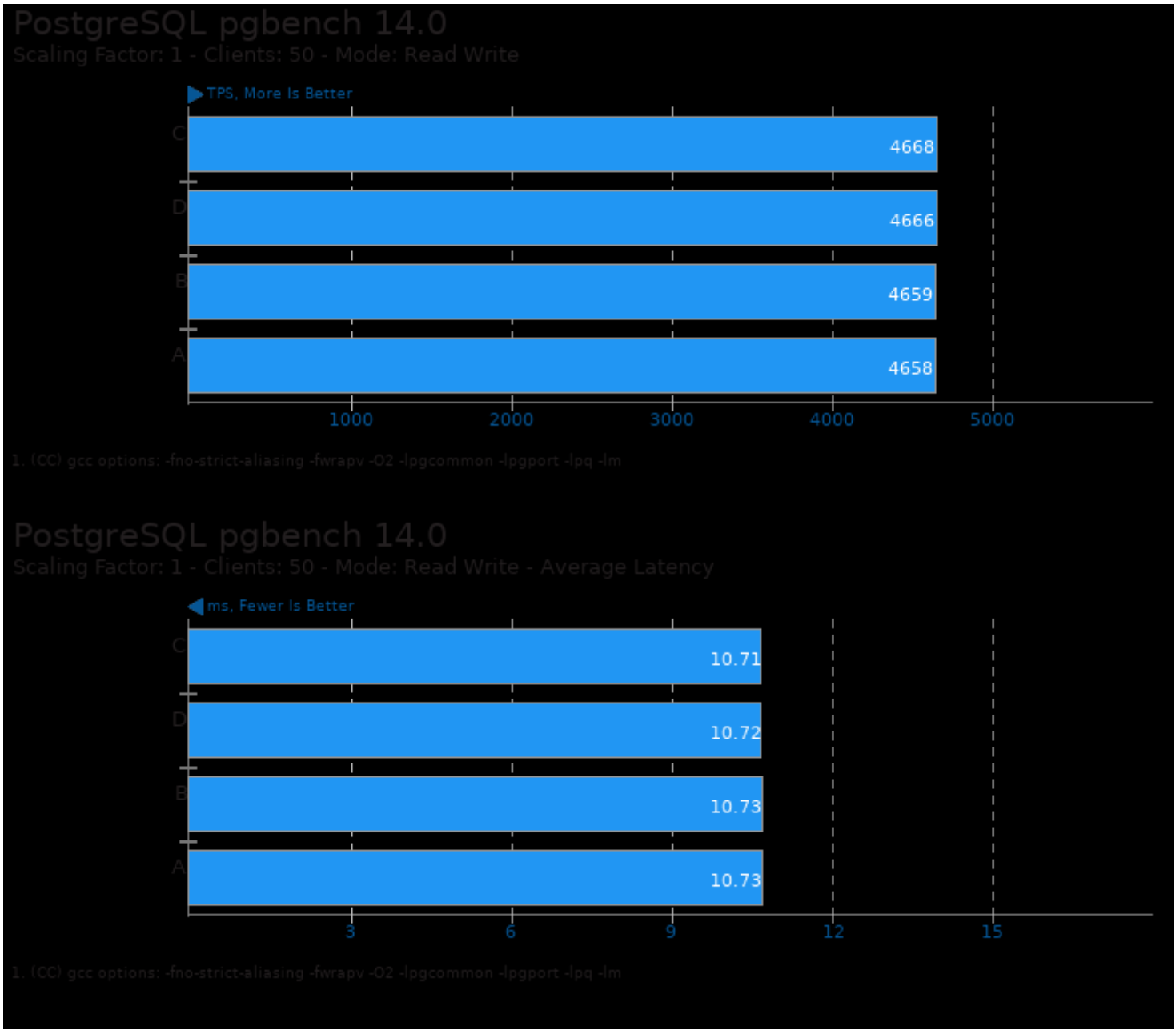

PostgreSQL pgbench 14.0
Scaling Factor: 1 - Clients: 1 - Mode: Read Only
TPS, More Is Better
A
B
D
C
29125
29084
29028
28967
6K
12K
18K
24K
30K
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lm
PostgreSQL pgbench 14.0
Scaling Factor: 1 - Clients: 1 - Mode: Read Only - Average Latency
ms, Fewer Is Better
A
B
D
C
0.034
0.034
0.034
0.035
0.0079
0.0158
0.0237
0.0316
0.0395
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lm

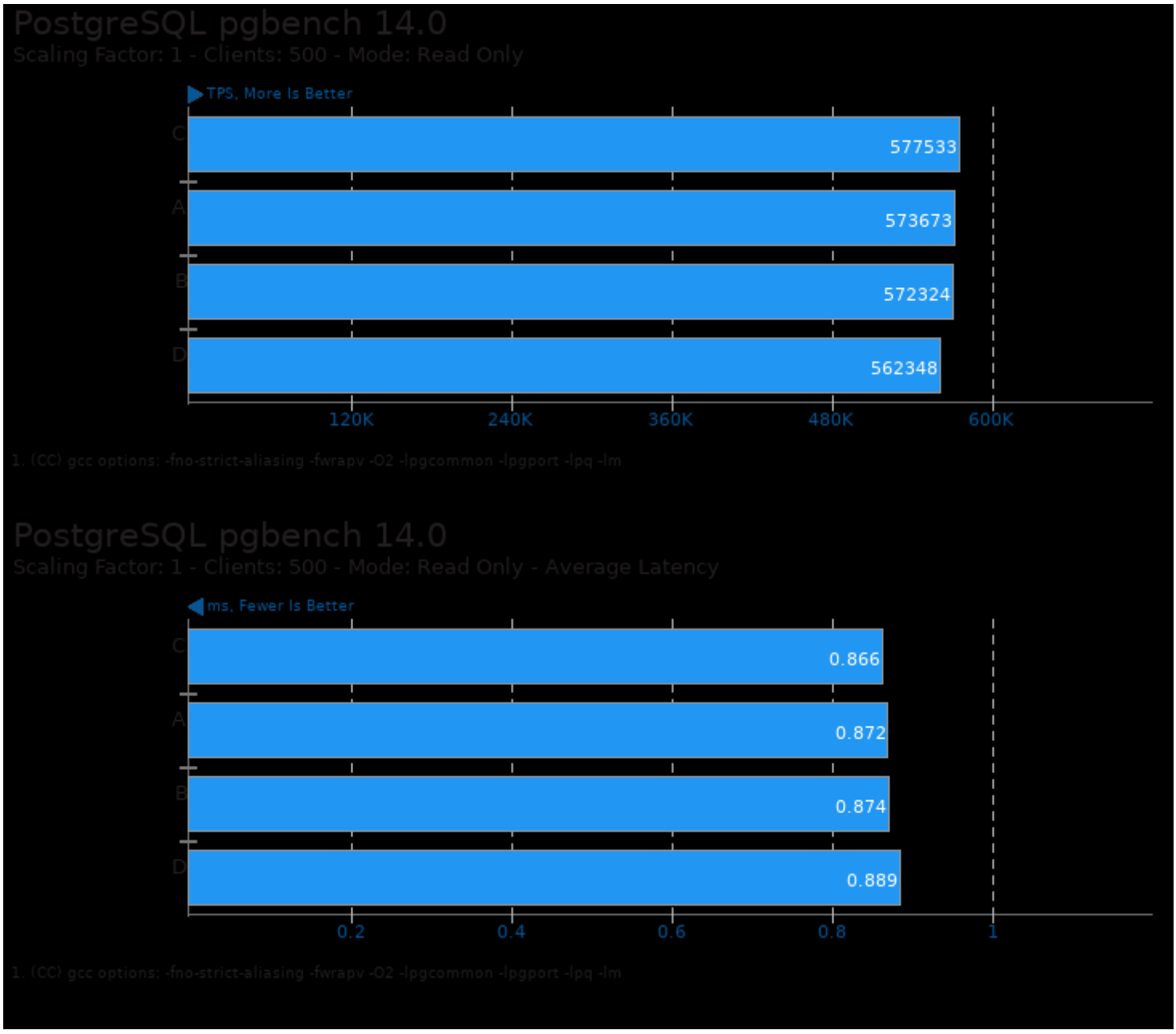

PostgreSQL pgbench 14.0
Scaling Factor: 1 - Clients: 1 - Mode: Read Write
TPS, More Is Better
C
D
A
B
3929
3900
3897
3876
800
1600
2400
3200
4000
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lm
PostgreSQL pgbench 14.0
Scaling Factor: 1 - Clients: 1 - Mode: Read Write - Average Latency
ms, Fewer Is Better
C
D
A
B
0.254
0.256
0.257
0.258
0.0581
0.1162
0.1743
0.2324
0.2905
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lm

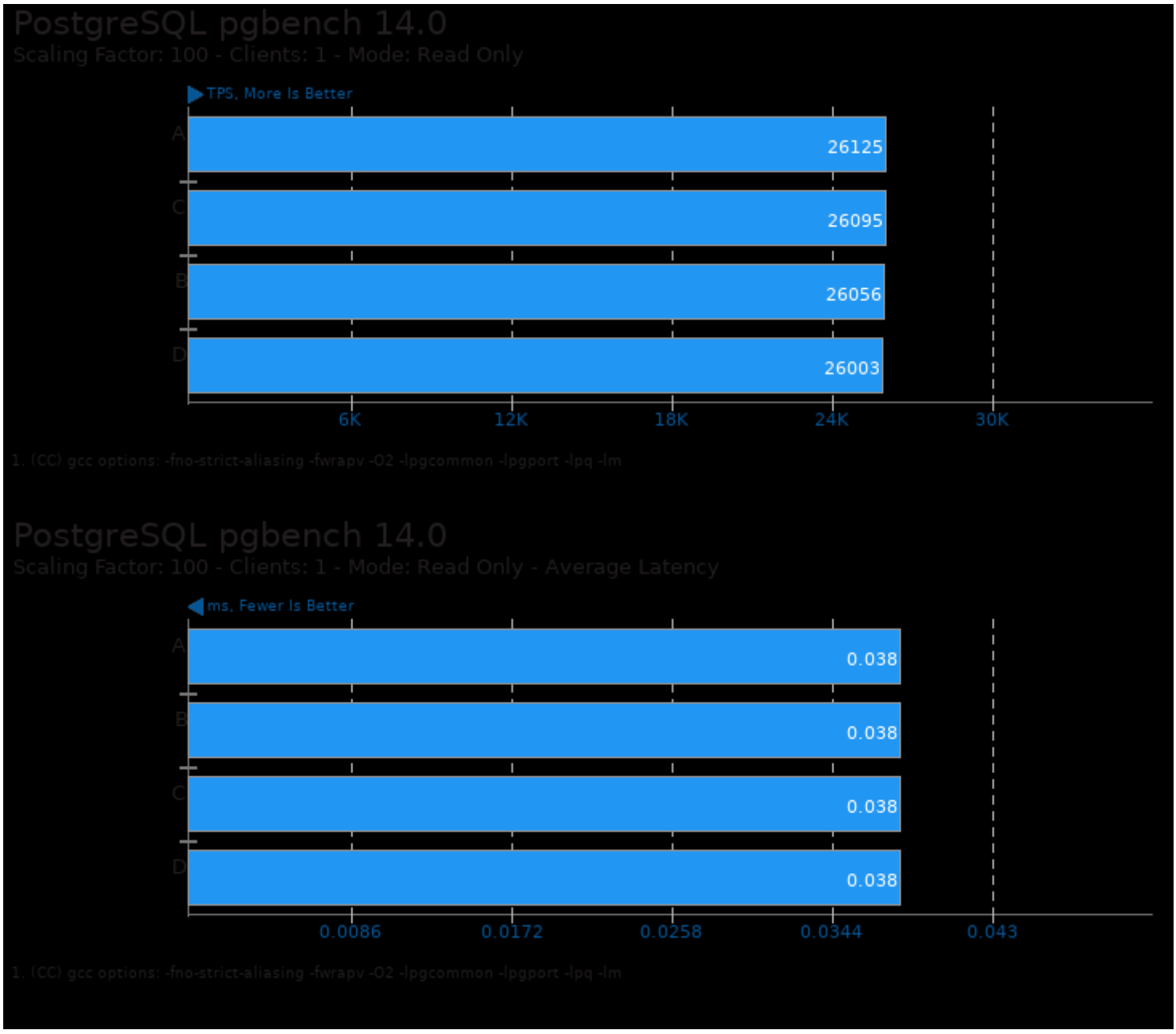

PostgreSQL pgbench 14.0
Scaling Factor: 1 - Clients: 50 - Mode: Read Only
TPS, More Is Better
C
528188
A
525560
D
518400
B
516049
110K
220K
330K
440K
550K
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lm
PostgreSQL pgbench 14.0
Scaling Factor: 1 - Clients: 50 - Mode: Read Only - Average Latency
ms, Fewer Is Better
A
0.095
C
0.095
D
0.096
B
0.097
0.0218
0.0436
0.0654
0.0872
0.109
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lm

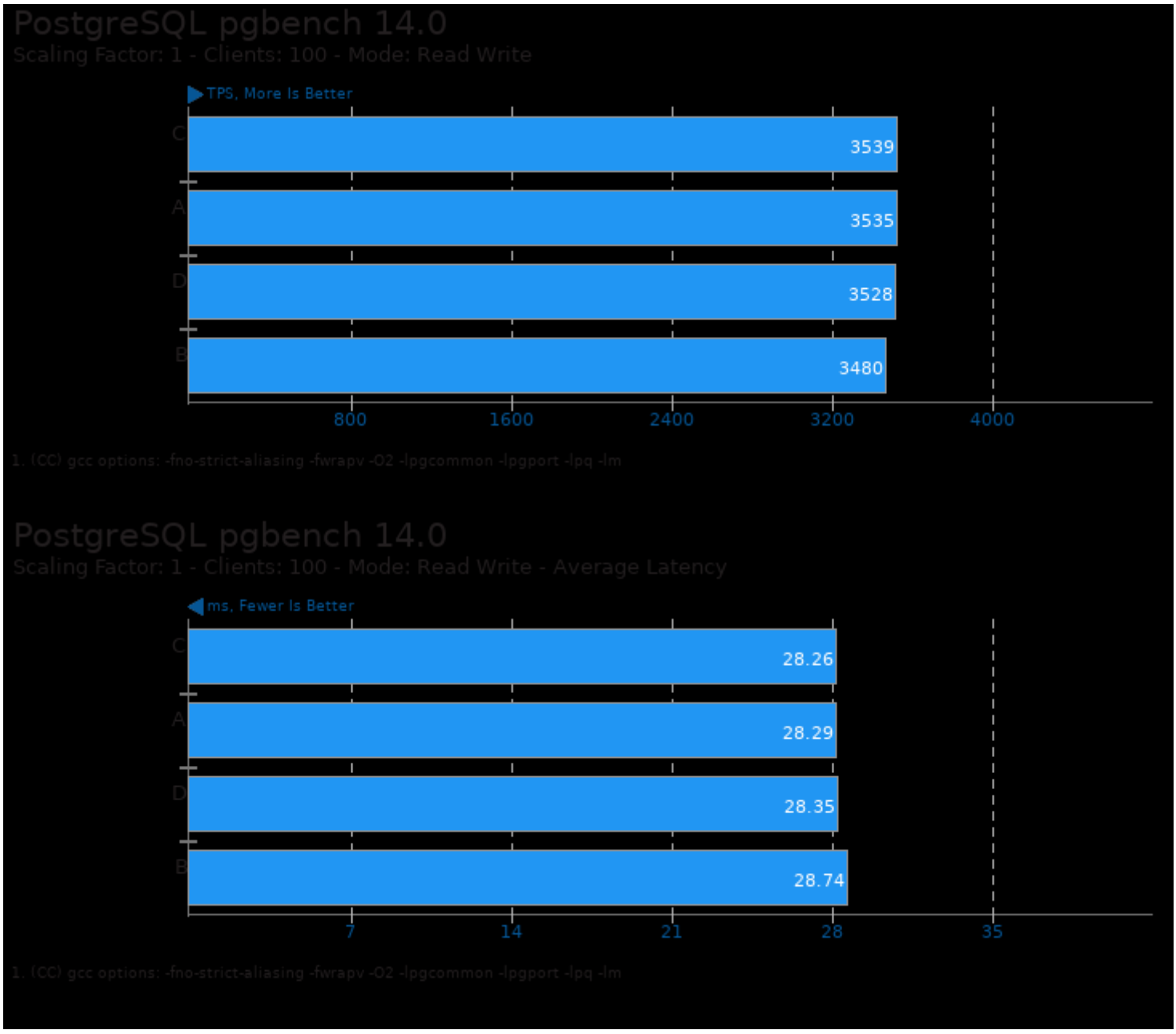

PostgreSQL pgbench 14.0
Scaling Factor: 1 - Clients: 100 - Mode: Read Only
TPS, More Is Better
A
C
B
D
521657
521028
519120
516354
110K
220K
330K
440K
550K
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lm
PostgreSQL pgbench 14.0
Scaling Factor: 1 - Clients: 100 - Mode: Read Only - Average Latency
ms, Fewer Is Better
A
C
B
D
0.192
0.192
0.193
0.194
0.0437
0.0874
0.1311
0.1748
0.2185
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lm

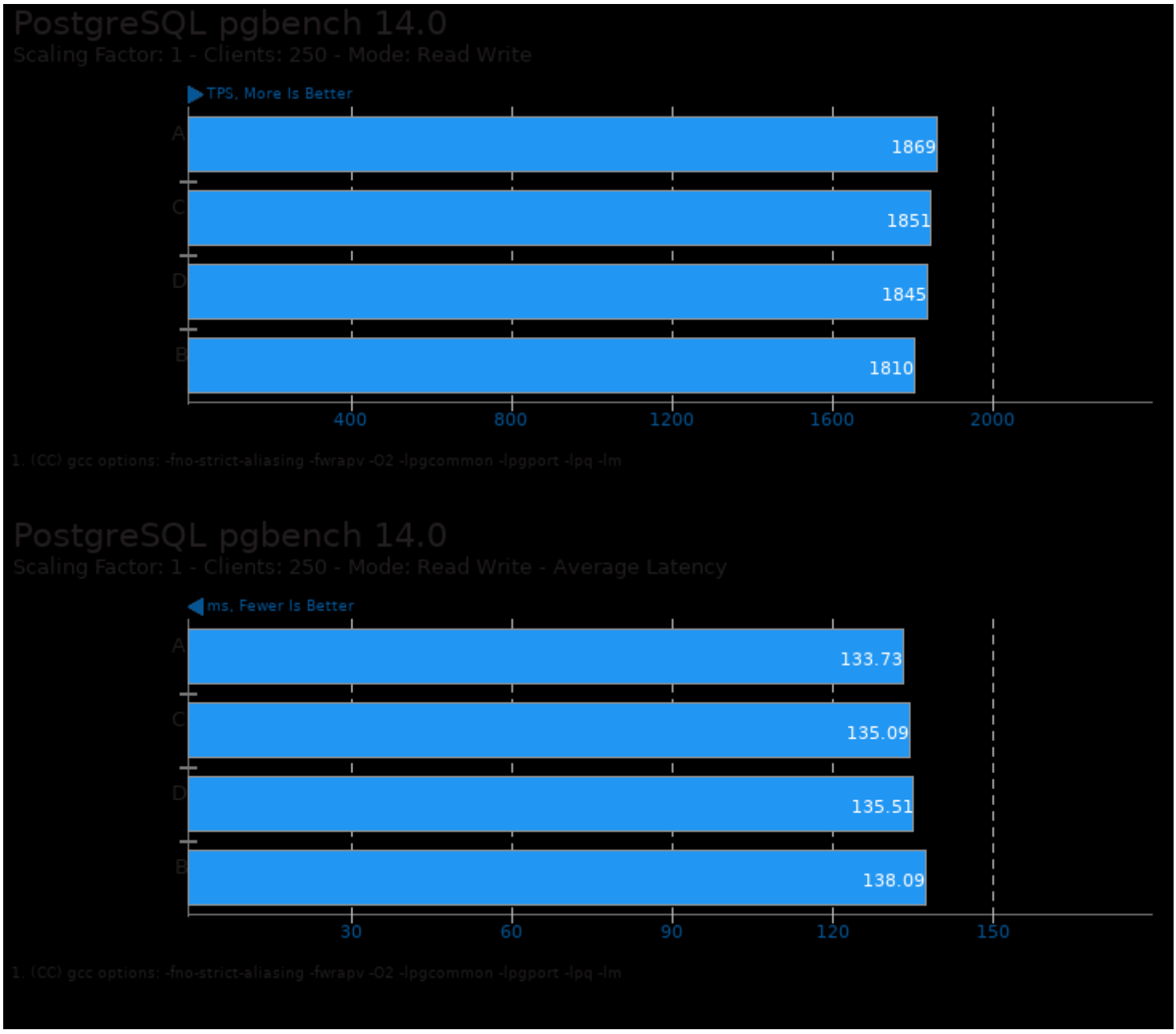

PostgreSQL pgbench 14.0
Scaling Factor: 1 - Clients: 250 - Mode: Read Only
TPS, More Is Better
C
582157
D
580507
A
580488
B
578469
120K
240K
360K
480K
600K
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lm
PostgreSQL pgbench 14.0
Scaling Factor: 1 - Clients: 250 - Mode: Read Only - Average Latency
ms, Fewer Is Better
C
0.429
A
0.431
D
0.431
B
0.432
0.0972
0.1944
0.2916
0.3888
0.486
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lm

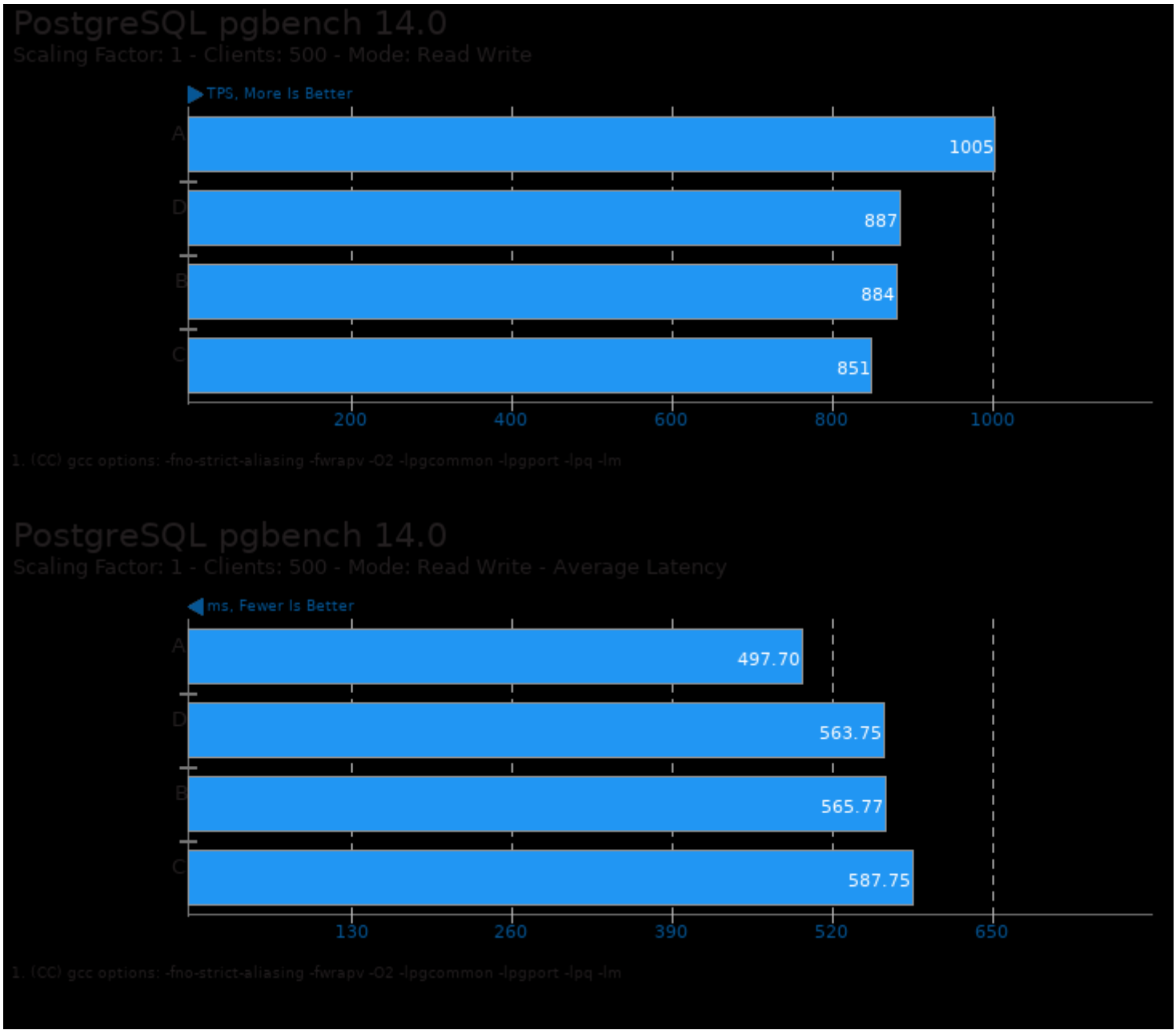

PostgreSQL pgbench 14.0
Scaling Factor: 1 - Clients: 50 - Mode: Read Write
TPS, More Is Better
C
D
B
A
4668
4666
4659
4658
1000
2000
3000
4000
5000
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lm
PostgreSQL pgbench 14.0
Scaling Factor: 1 - Clients: 50 - Mode: Read Write - Average Latency
ms, Fewer Is Better
C
D
B
A
10.71
10.72
10.73
10.73
3
6
9
12
15
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lm

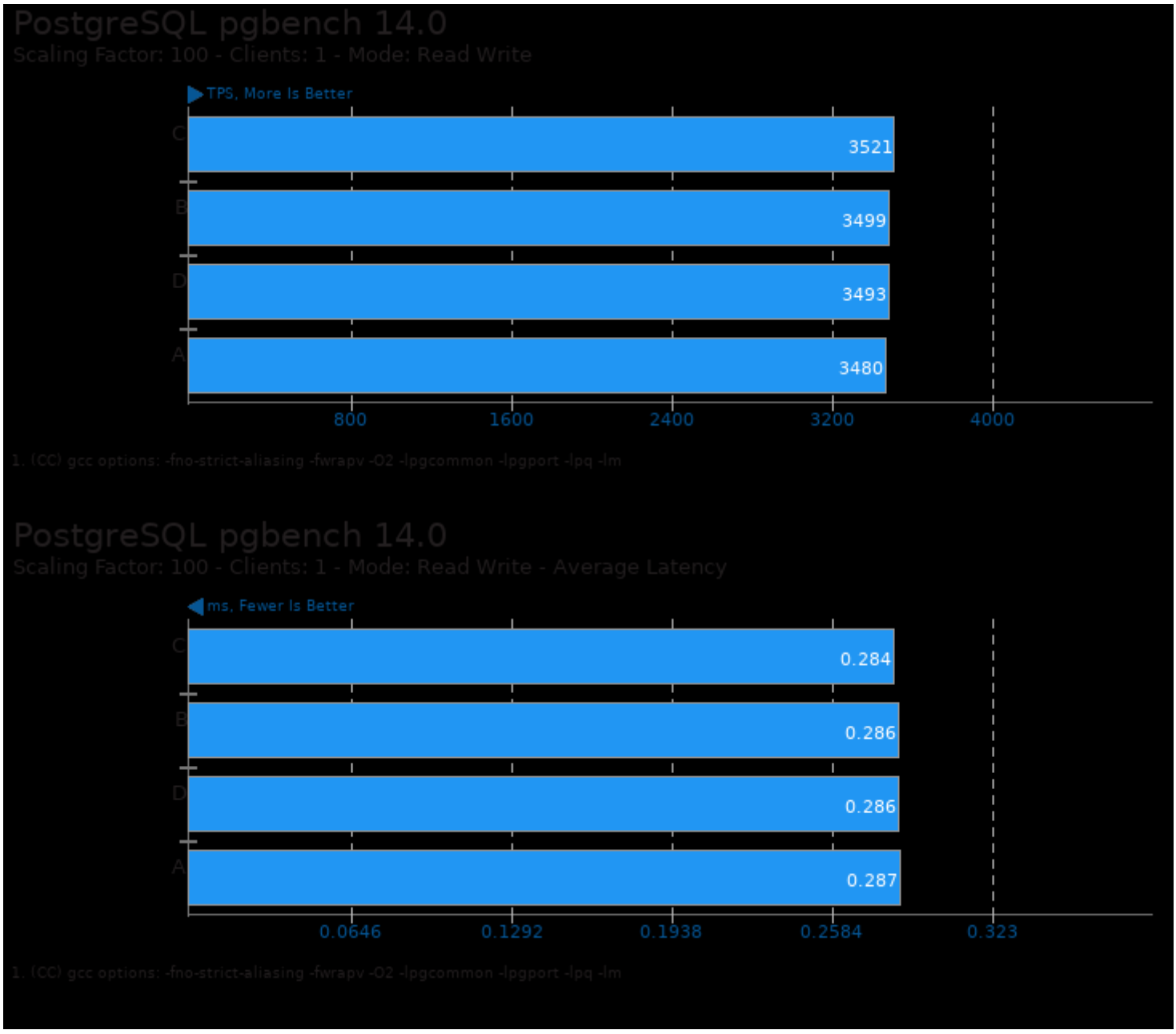

PostgreSQL pgbench 14.0
Scaling Factor: 1 - Clients: 500 - Mode: Read Only
TPS, More Is Better
C
577533
A
573673
B
572324
D
562348
120K
240K
360K
480K
600K
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lm
PostgreSQL pgbench 14.0
Scaling Factor: 1 - Clients: 500 - Mode: Read Only - Average Latency
ms, Fewer Is Better
C
0.866
A
0.872
B
0.874
D
0.889
0.2
0.4
0.6
0.8
1
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lm

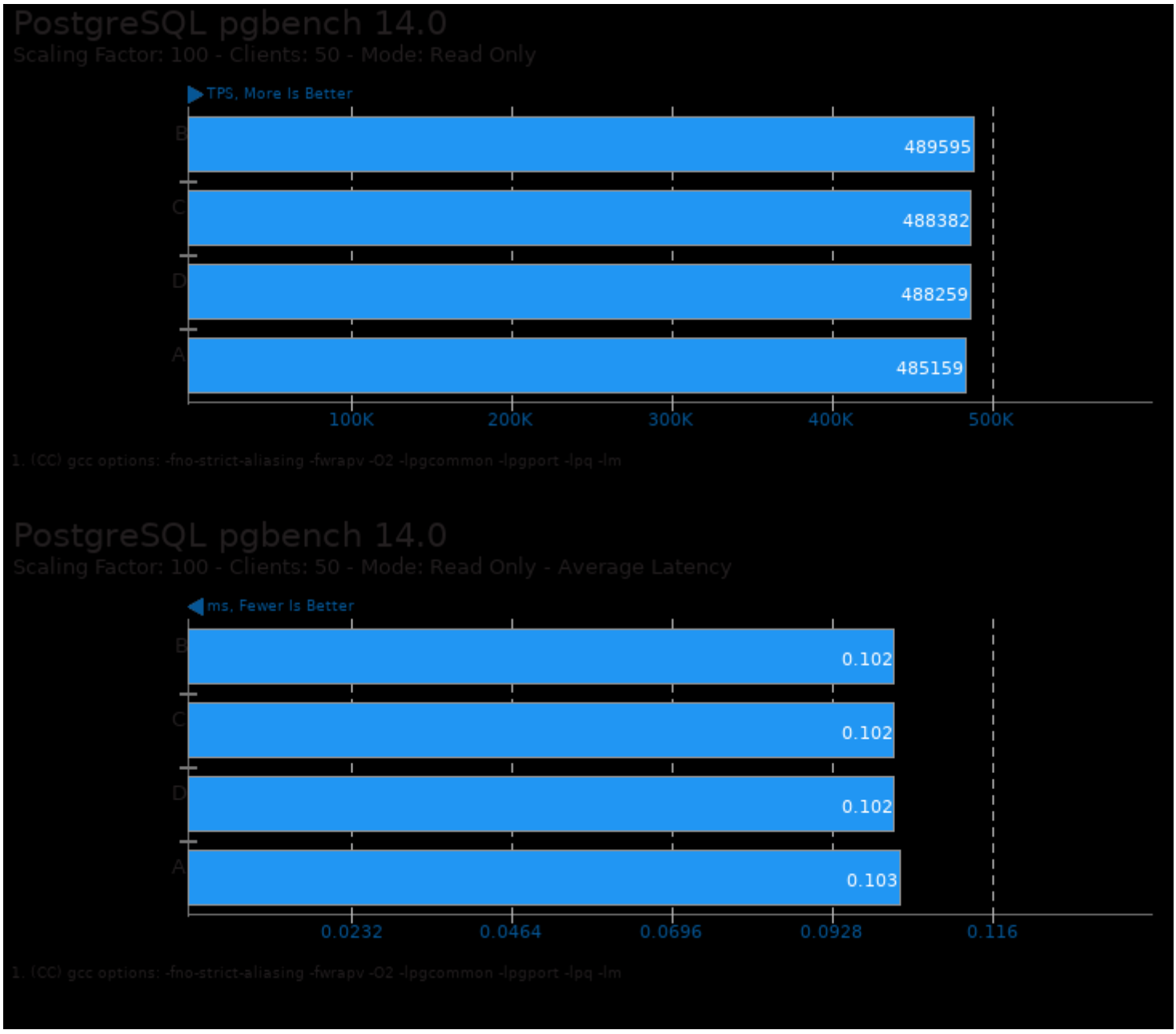

PostgreSQL pgbench 14.0
Scaling Factor: 100 - Clients: 1 - Mode: Read Only
TPS, More Is Better
A
C
B
D
26125
26095
26056
26003
6K
12K
18K
24K
30K
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lm
PostgreSQL pgbench 14.0
Scaling Factor: 100 - Clients: 1 - Mode: Read Only - Average Latency
ms, Fewer Is Better
A
B
C
D
0.038
0.038
0.038
0.038
0.0086
0.0172
0.0258
0.0344
0.043
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lm

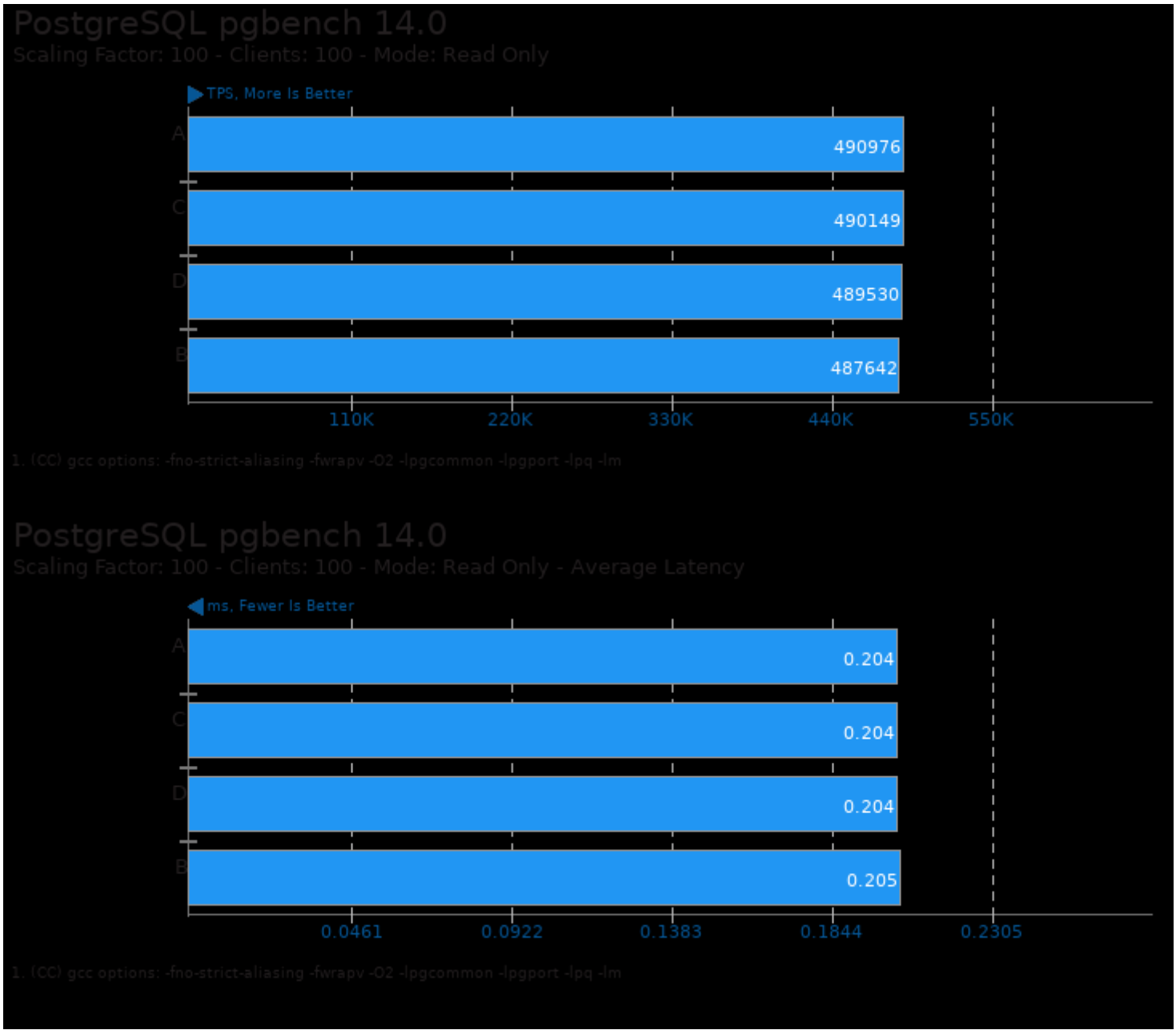

PostgreSQL pgbench 14.0
Scaling Factor: 1 - Clients: 100 - Mode: Read Write
TPS, More Is Better
C
3539
A
3535
D
3528
B
3480
800
1600
2400
3200
4000
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lm
PostgreSQL pgbench 14.0
Scaling Factor: 1 - Clients: 100 - Mode: Read Write - Average Latency
ms, Fewer Is Better
C
28.26
A
28.29
D
28.35
B
28.74
7
14
21
28
35
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lm

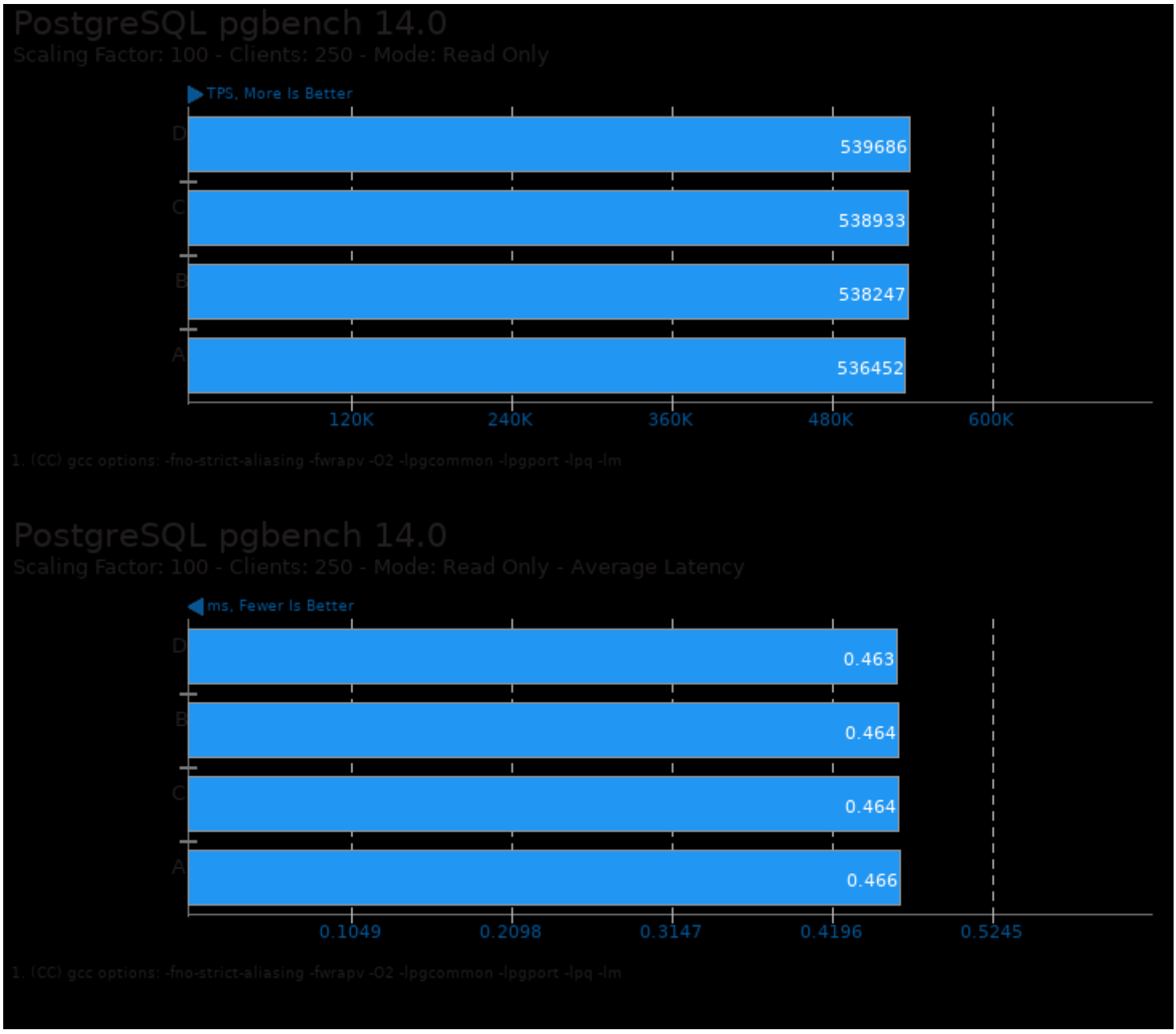

PostgreSQL pgbench 14.0
Scaling Factor: 1 - Clients: 250 - Mode: Read Write
TPS, More Is Better
A
C
D
B
1869
1851
1845
1810
400
800
1200
1600
2000
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lm
PostgreSQL pgbench 14.0
Scaling Factor: 1 - Clients: 250 - Mode: Read Write - Average Latency
ms, Fewer Is Better
A
C
D
B
133.73
135.09
135.51
138.09
30
60
90
120
150
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lm

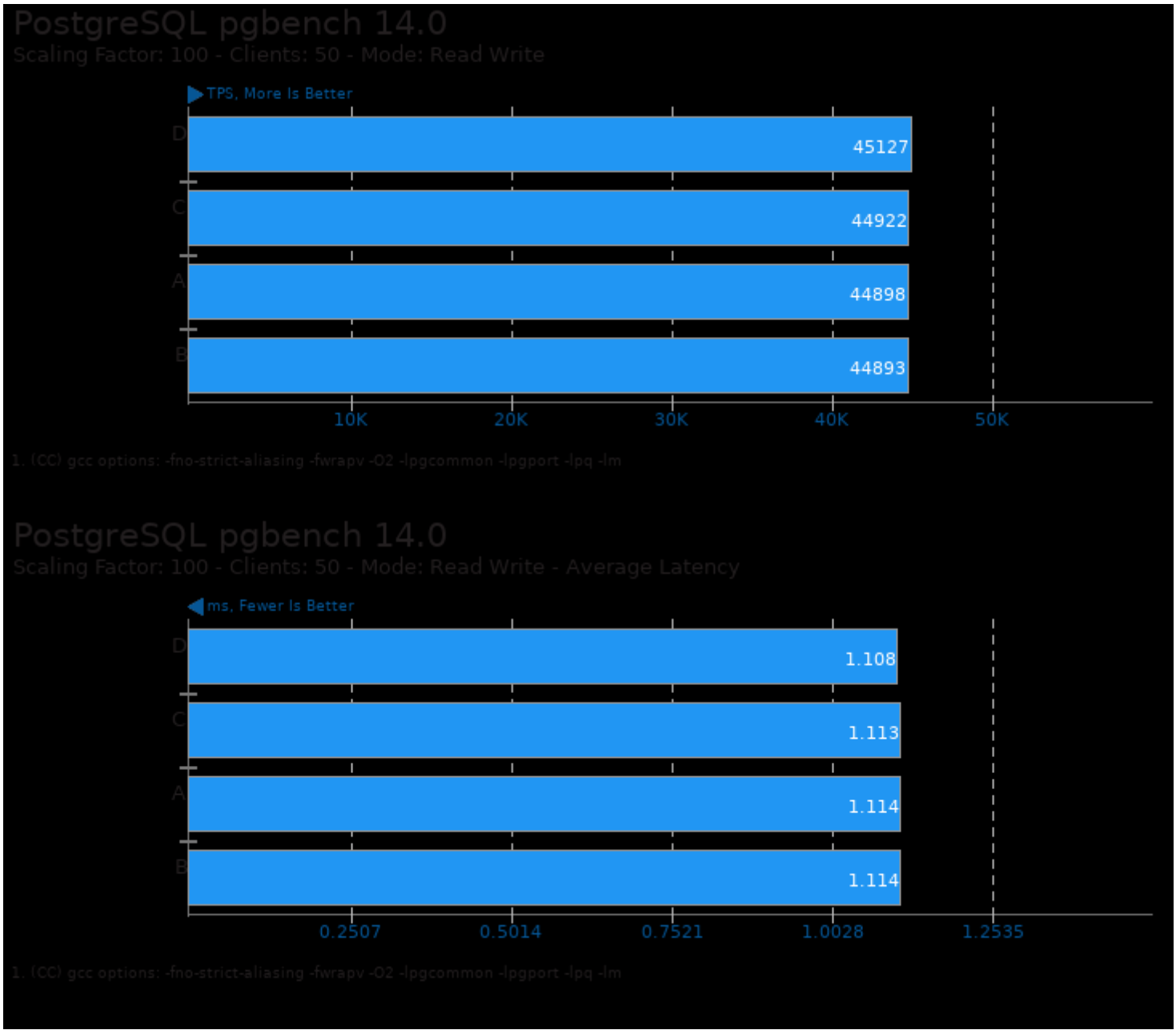

PostgreSQL pgbench 14.0
Scaling Factor: 1 - Clients: 500 - Mode: Read Write
TPS, More Is Better
A
1005
D
887
B
884
C
851
200
400
600
800
1000
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lm
PostgreSQL pgbench 14.0
Scaling Factor: 1 - Clients: 500 - Mode: Read Write - Average Latency
ms, Fewer Is Better
A
497.70
D
563.75
B
565.77
C
587.75
130
260
390
520
650
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lm

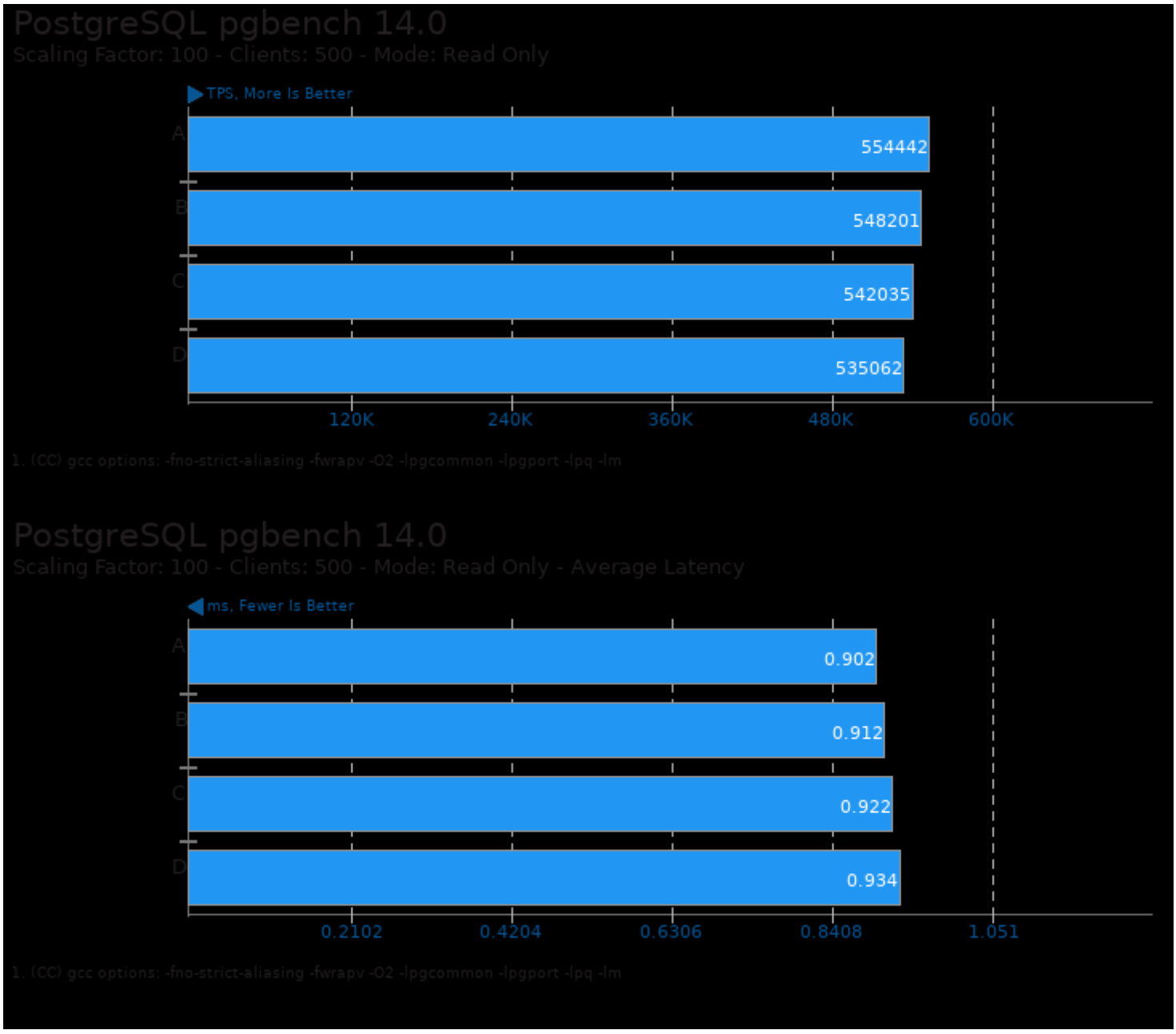

PostgreSQL pgbench 14.0
Scaling Factor: 100 - Clients: 1 - Mode: Read Write
TPS, More Is Better
C
3521
B
3499
D
3493
A
3480
800
1600
2400
3200
4000
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lm
PostgreSQL pgbench 14.0
Scaling Factor: 100 - Clients: 1 - Mode: Read Write - Average Latency
ms, Fewer Is Better
C
0.284
B
0.286
D
0.286
A
0.287
0.0646
0.1292
0.1938
0.2584
0.323
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lm

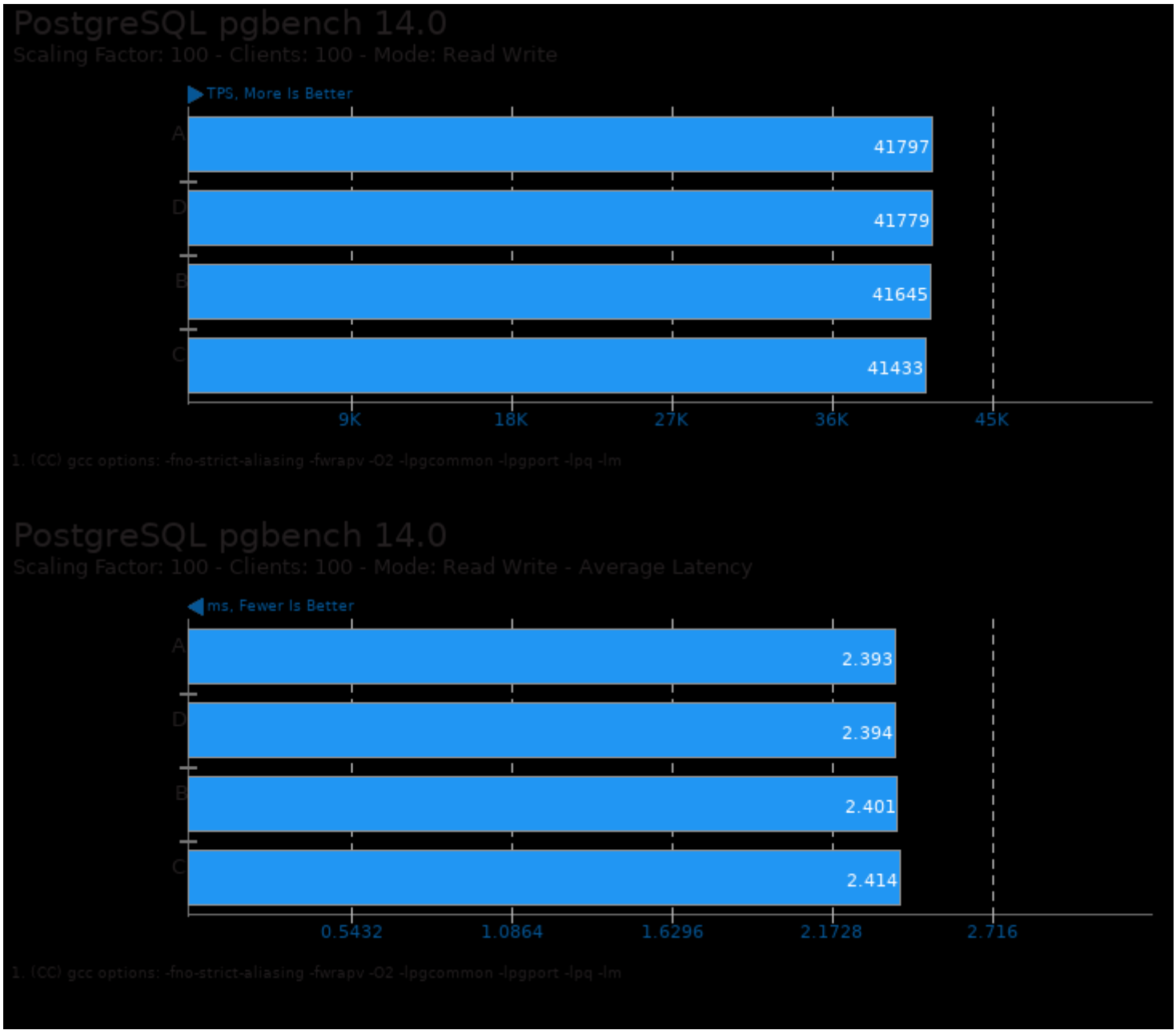

PostgreSQL pgbench 14.0
Scaling Factor: 100 - Clients: 50 - Mode: Read Only
TPS, More Is Better
B
C
D
A
489595
488382
488259
485159
100K
200K
300K
400K
500K
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lm
PostgreSQL pgbench 14.0
Scaling Factor: 100 - Clients: 50 - Mode: Read Only - Average Latency
ms, Fewer Is Better
B
C
D
A
0.102
0.102
0.102
0.103
0.0232
0.0464
0.0696
0.0928
0.116
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lm

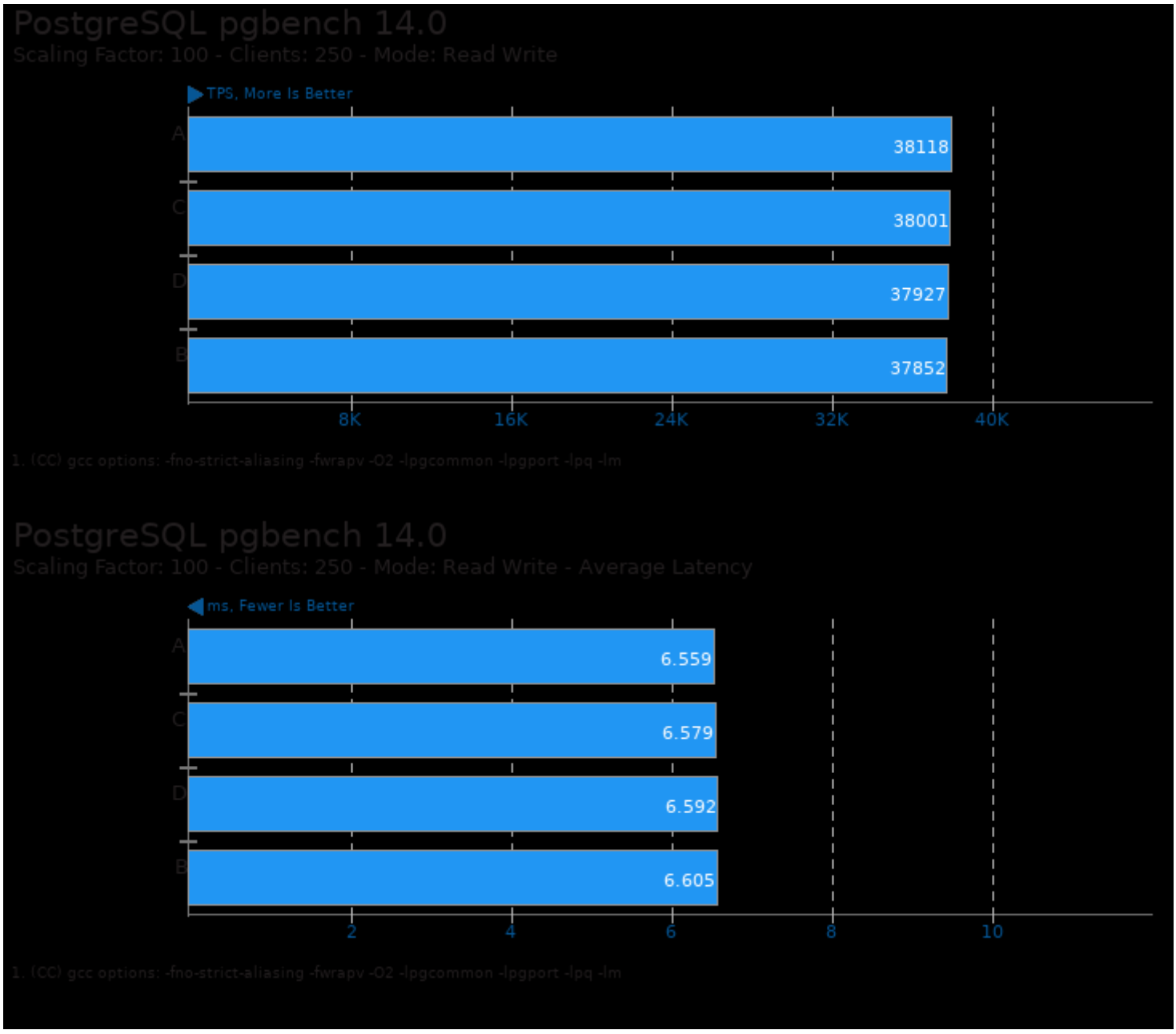

PostgreSQL pgbench 14.0
Scaling Factor: 100 - Clients: 100 - Mode: Read Only
TPS, More Is Better
A
C
D
B
490976
490149
489530
487642
110K
220K
330K
440K
550K
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lm
PostgreSQL pgbench 14.0
Scaling Factor: 100 - Clients: 100 - Mode: Read Only - Average Latency
ms, Fewer Is Better
A
C
D
B
0.204
0.204
0.204
0.205
0.0461
0.0922
0.1383
0.1844
0.2305
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lm

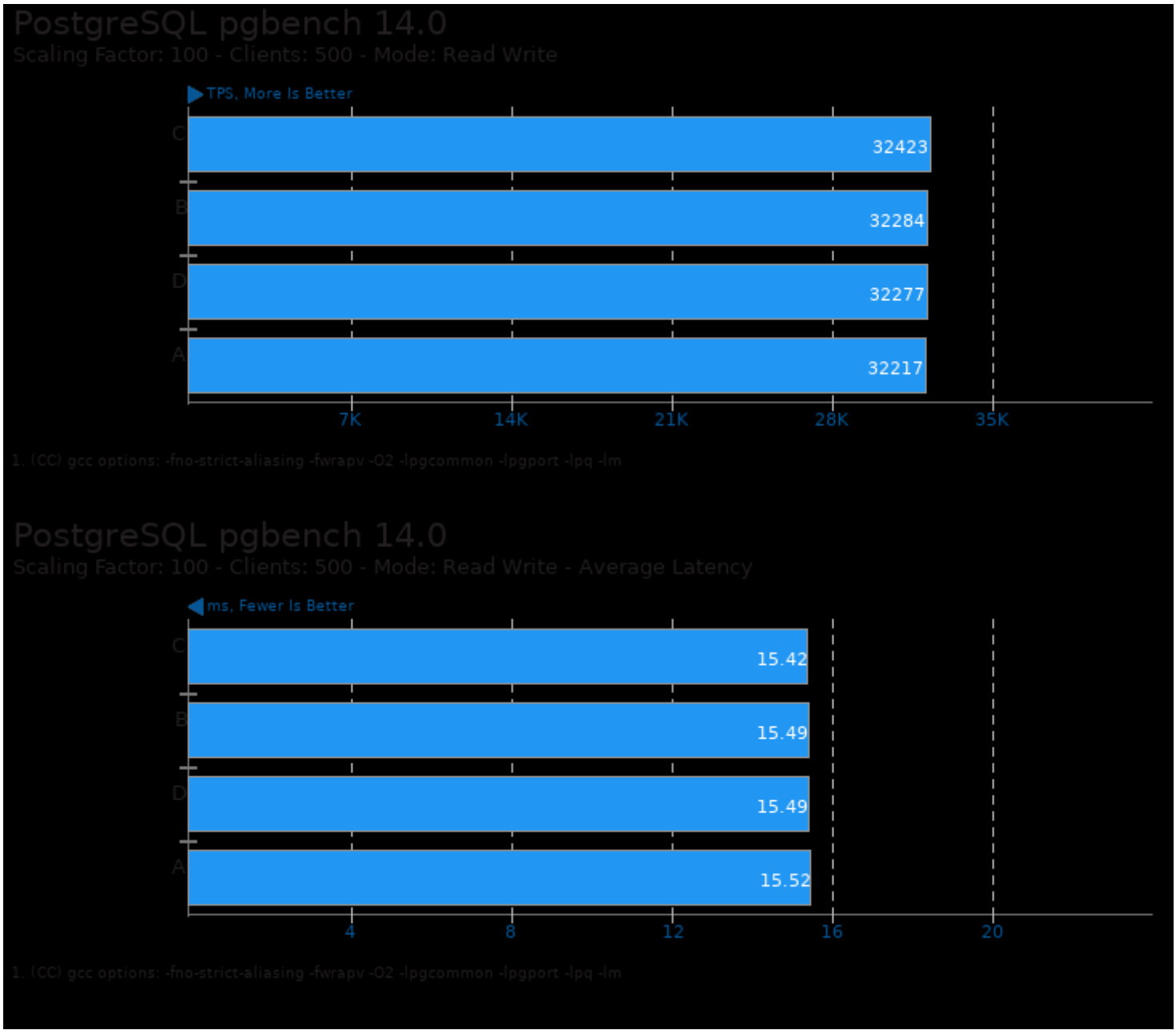

PostgreSQL pgbench 14.0
Scaling Factor: 100 - Clients: 250 - Mode: Read Only
TPS, More Is Better
D
C
B
A
539686
538933
538247
536452
120K
240K
360K
480K
600K
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lm
PostgreSQL pgbench 14.0
Scaling Factor: 100 - Clients: 250 - Mode: Read Only - Average Latency
ms, Fewer Is Better
D
B
C
A
0.463
0.464
0.464
0.466
0.1049
0.2098
0.3147
0.4196
0.5245
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lm

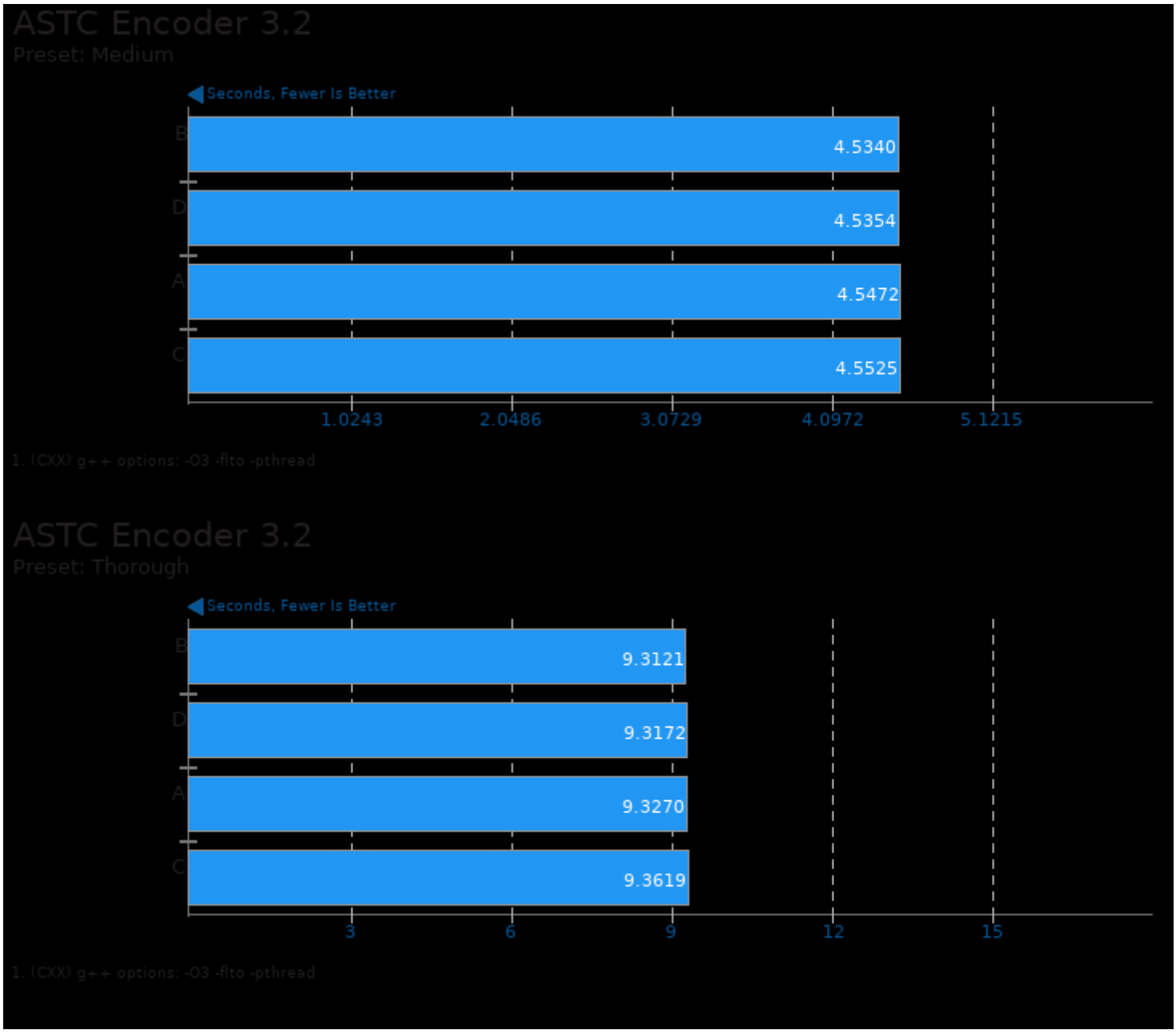

PostgreSQL pgbench 14.0
Scaling Factor: 100 - Clients: 50 - Mode: Read Write
TPS, More Is Better
D
C
A
B
45127
44922
44898
44893
10K
20K
30K
40K
50K
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lm
PostgreSQL pgbench 14.0
Scaling Factor: 100 - Clients: 50 - Mode: Read Write - Average Latency
ms, Fewer Is Better
D
C
A
B
1.108
1.113
1.114
1.114
0.2507
0.5014
0.7521
1.0028
1.2535
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lm

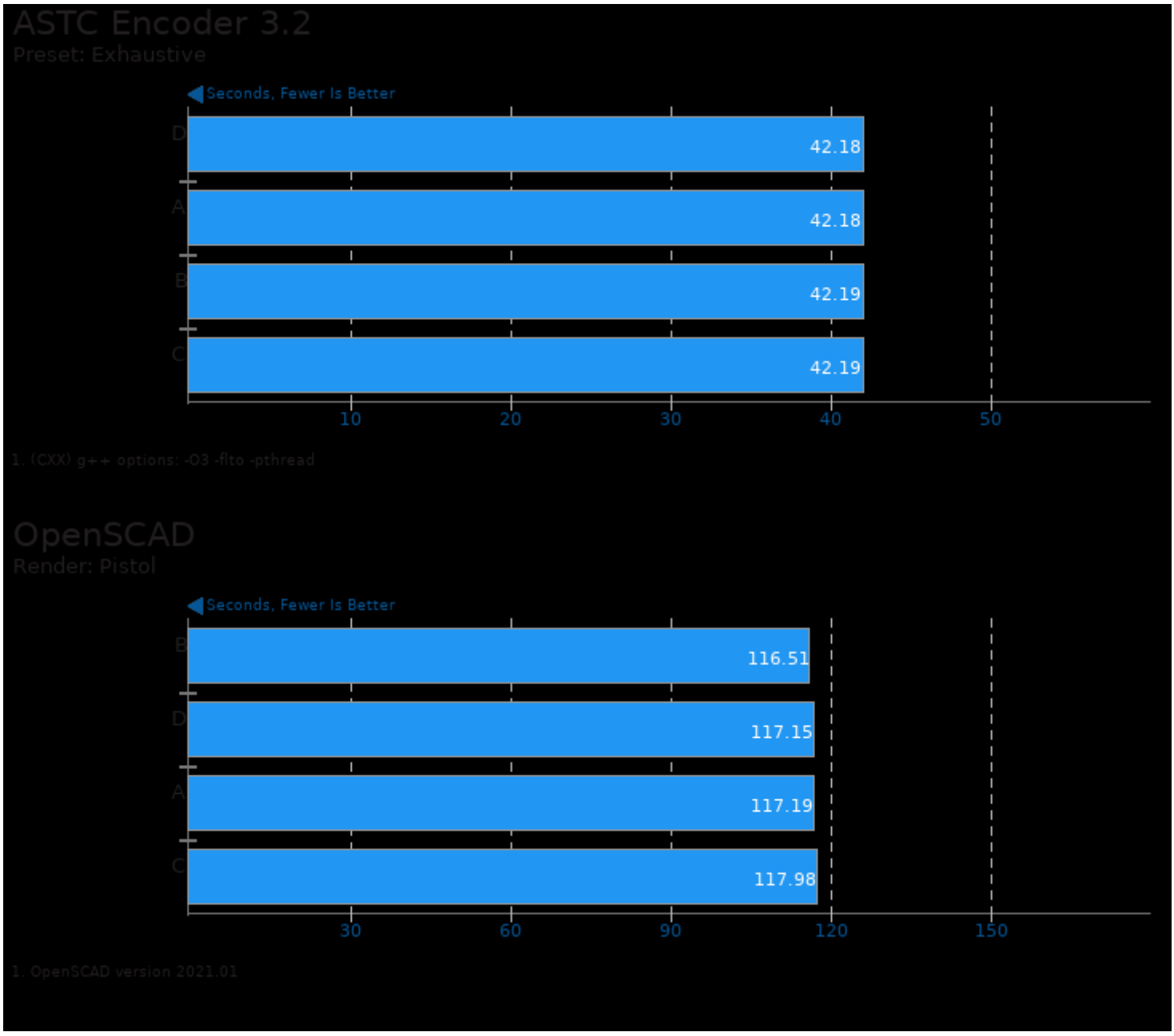

PostgreSQL pgbench 14.0
Scaling Factor: 100 - Clients: 500 - Mode: Read Only
TPS, More Is Better
A
554442
B
548201
C
542035
D
535062
120K
240K
360K
480K
600K
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lm
PostgreSQL pgbench 14.0
Scaling Factor: 100 - Clients: 500 - Mode: Read Only - Average Latency
ms, Fewer Is Better
A
0.902
B
0.912
C
0.922
D
0.934
0.2102
0.4204
0.6306
0.8408
1.051
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lm

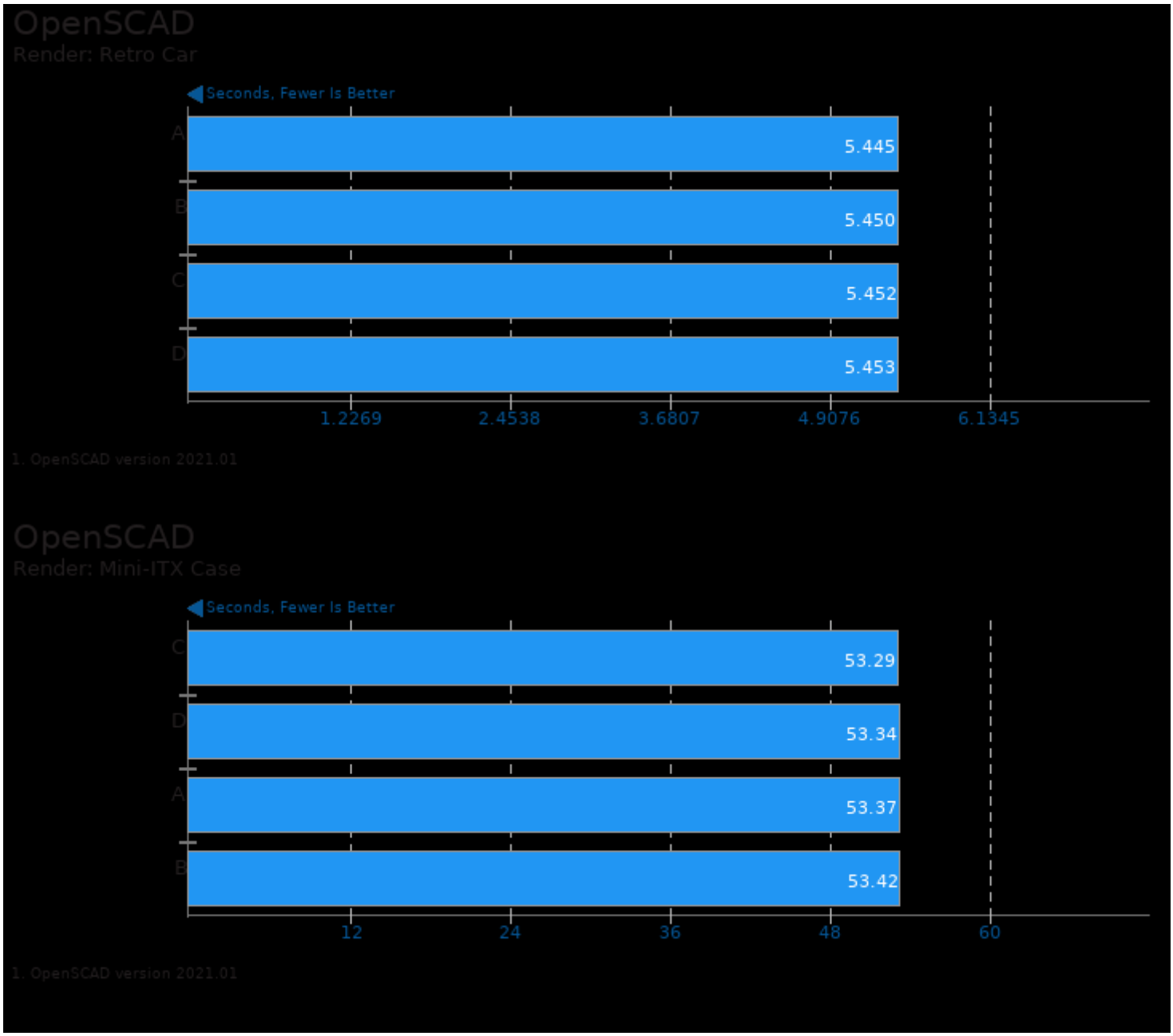

PostgreSQL pgbench 14.0
Scaling Factor: 100 - Clients: 100 - Mode: Read Write
TPS, More Is Better
A
D
B
C
41797
41779
41645
41433
9K
18K
27K
36K
45K
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lm
PostgreSQL pgbench 14.0
Scaling Factor: 100 - Clients: 100 - Mode: Read Write - Average Latency
ms, Fewer Is Better
A
D
B
C
2.393
2.394
2.401
2.414
0.5432
1.0864
1.6296
2.1728
2.716
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lm

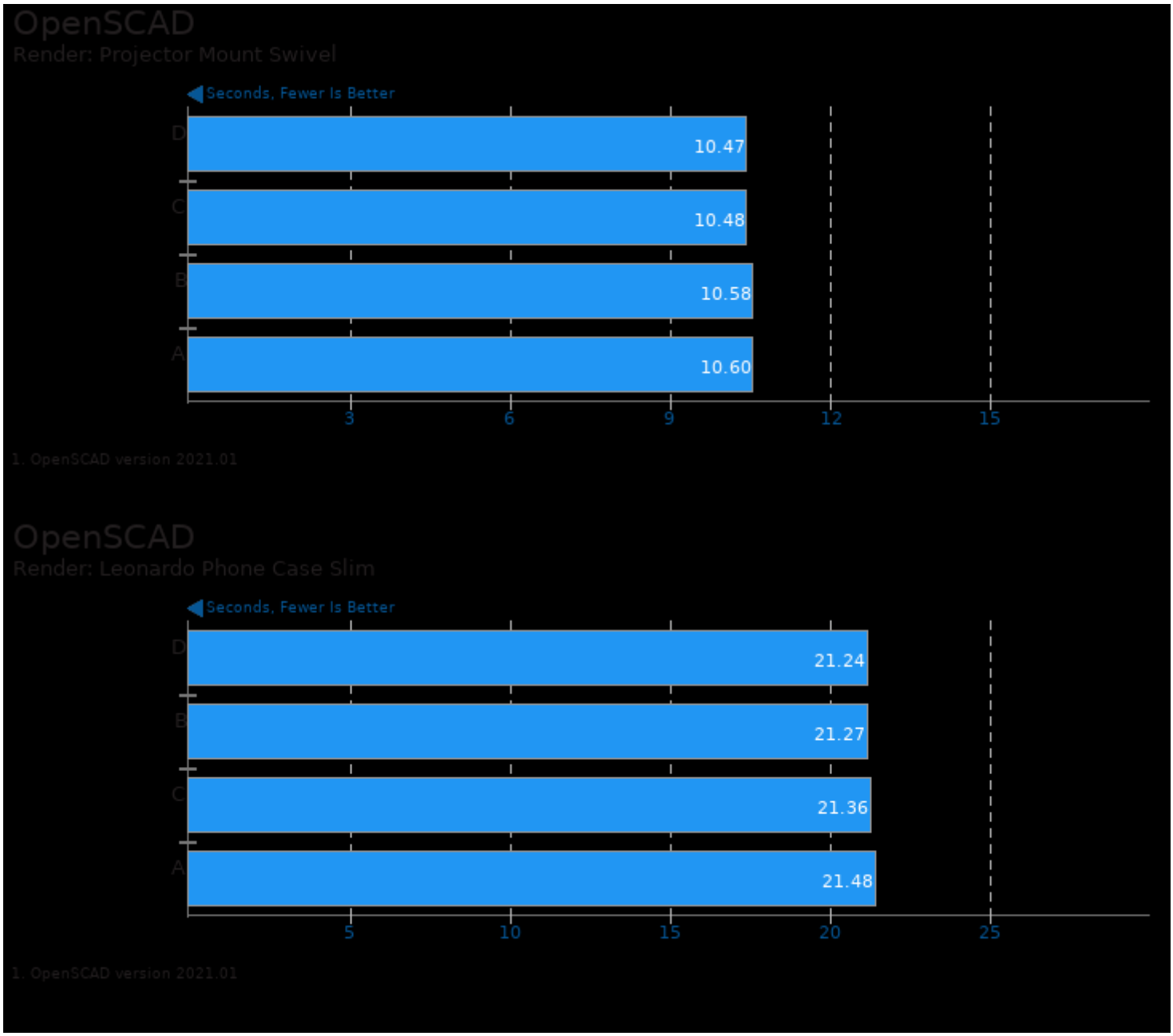

PostgreSQL pgbench 14.0
Scaling Factor: 100 - Clients: 250 - Mode: Read Write
TPS, More Is Better
A
C
D
B
38118
38001
37927
37852
8K
16K
24K
32K
40K
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lm
PostgreSQL pgbench 14.0
Scaling Factor: 100 - Clients: 250 - Mode: Read Write - Average Latency
ms, Fewer Is Better
A
C
D
B
6.559
6.579
6.592
6.605
2
4
6
8
10
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lm

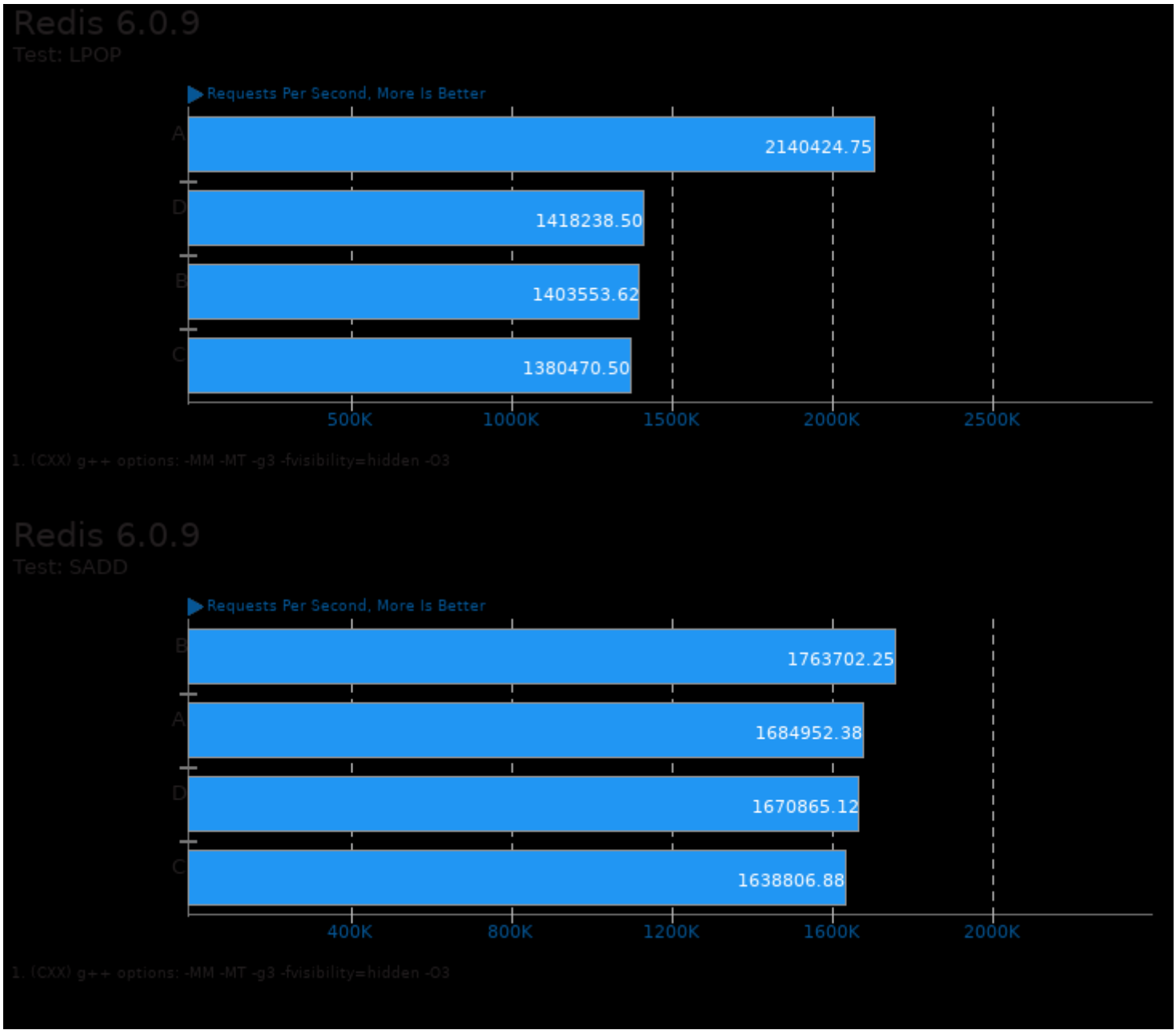

PostgreSQL pgbench 14.0
Scaling Factor: 100 - Clients: 500 - Mode: Read Write
TPS, More Is Better
C
32423
B
32284
D
32277
A
32217
7K
14K
21K
28K
35K
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lm
PostgreSQL pgbench 14.0
Scaling Factor: 100 - Clients: 500 - Mode: Read Write - Average Latency
ms, Fewer Is Better
C
15.42
B
15.49
D
15.49
A
15.52
4
8
12
16
20
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lm

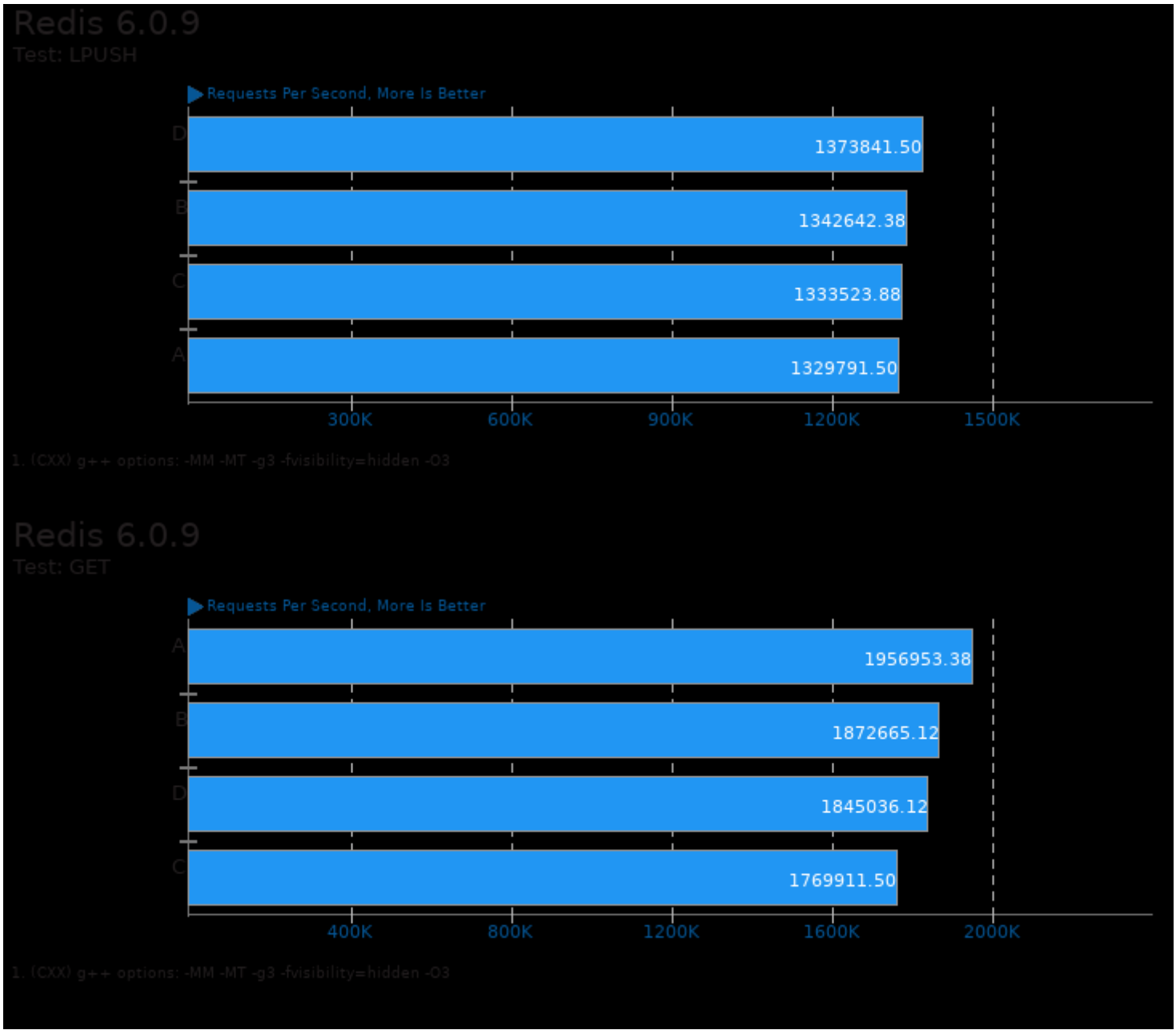

ASTC Encoder 3.2
Preset: Medium
Seconds, Fewer Is Better
B
D
A
C
4.5340
4.5354
4.5472
4.5525
1.0243
2.0486
3.0729
4.0972
5.1215
1. (CXX) g++ options: -O3 -flto -pthread
ASTC Encoder 3.2
Preset: Thorough
Seconds, Fewer Is Better
B
D
A
C
9.3121
9.3172
9.3270
9.3619
3
6
9
12
15
1. (CXX) g++ options: -O3 -flto -pthread

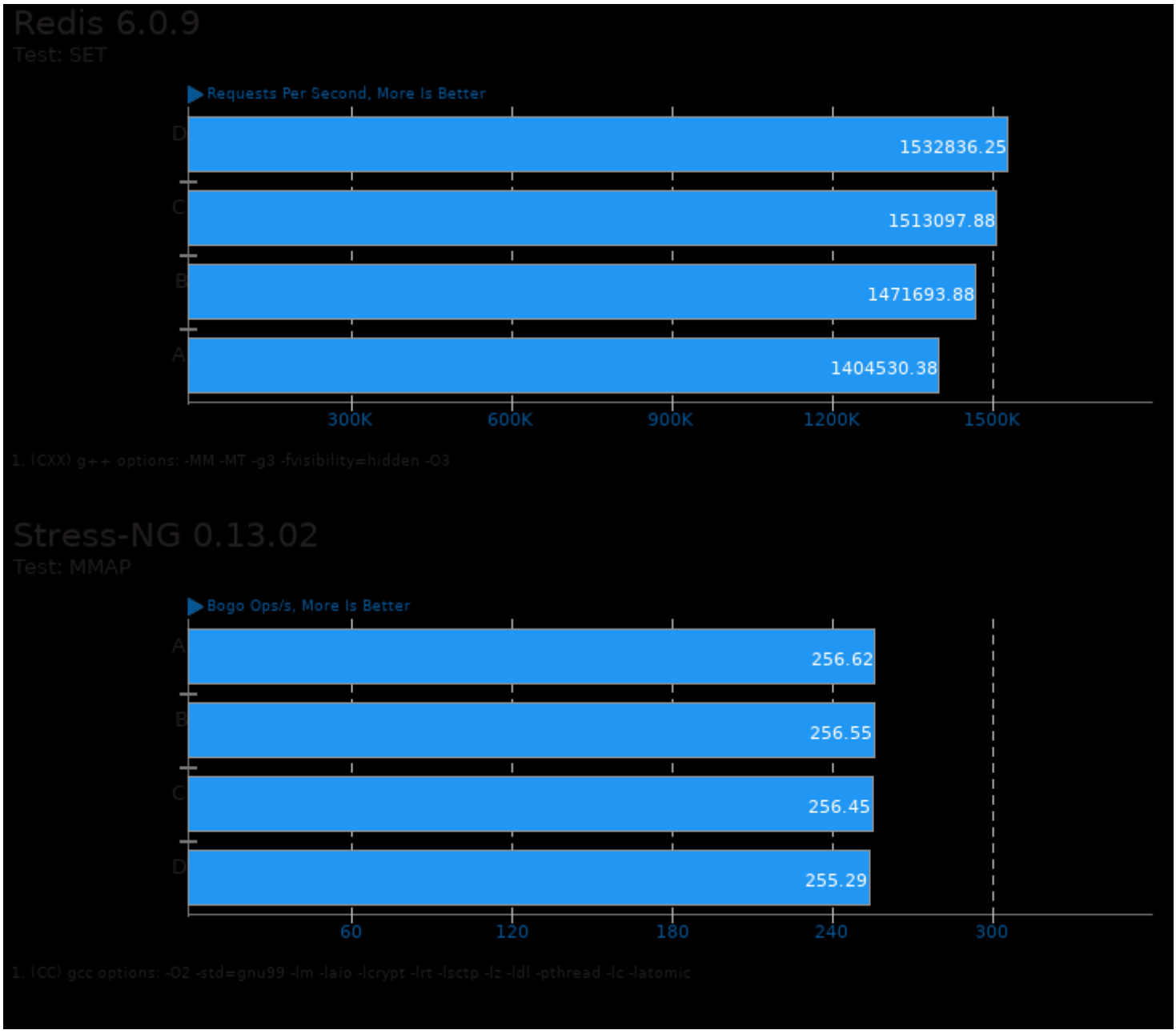

ASTC Encoder 3.2
Preset: Exhaustive
Seconds, Fewer Is Better
D
A
B
C
42.18
42.18
42.19
42.19
10
20
30
40
50
1. (CXX) g++ options: -O3 -flto -pthread
OpenSCAD
Render: Pistol
Seconds, Fewer Is Better
B
D
A
C
116.51
117.15
117.19
117.98
30
60
90
120
150
1. OpenSCAD version 2021.01

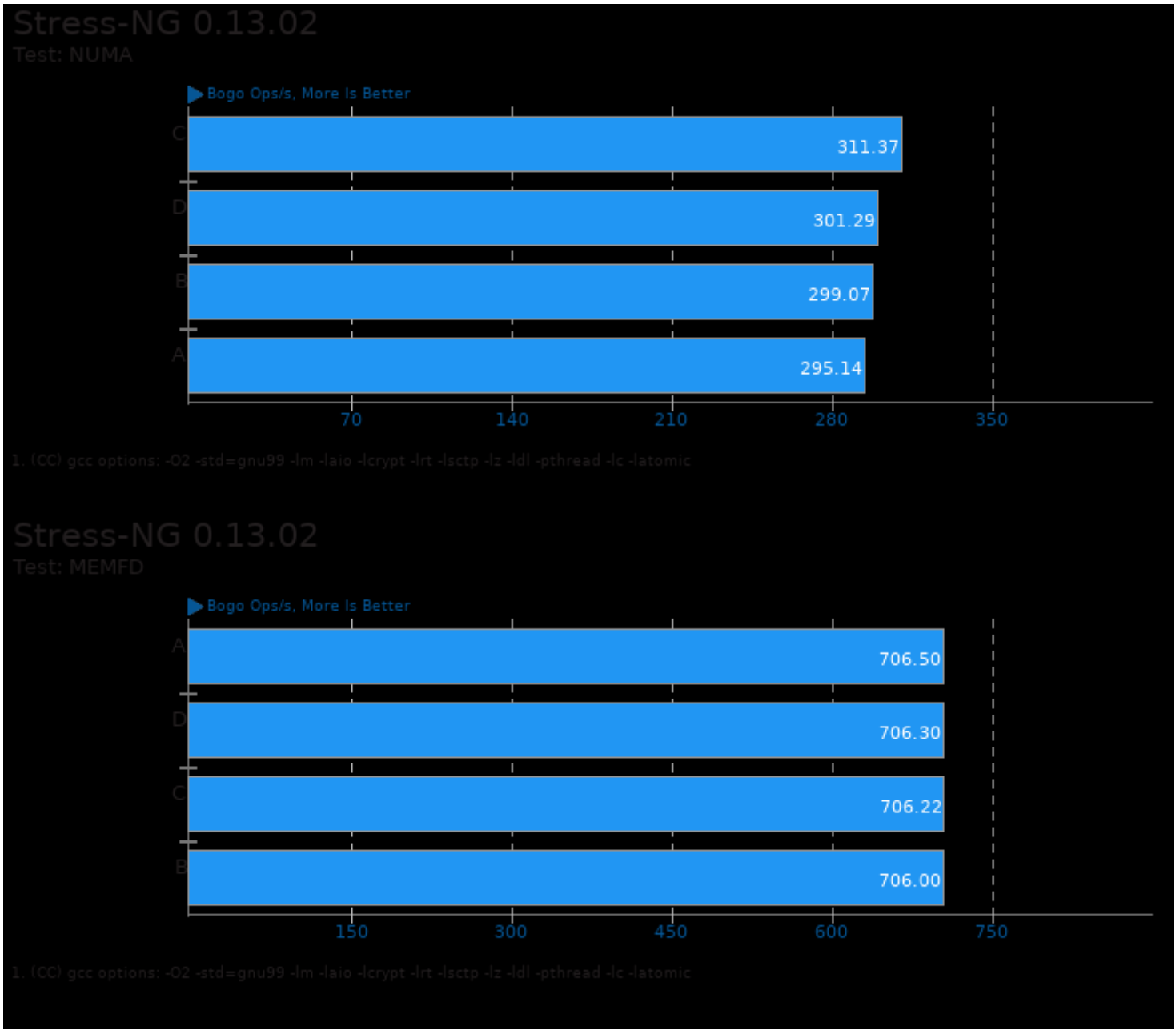

OpenSCAD
Render: Retro Car
Seconds, Fewer Is Better
A
B
C
D
5.445
5.450
5.452
5.453
1.2269
2.4538
3.6807
4.9076
6.1345
1. OpenSCAD version 2021.01
OpenSCAD
Render: Mini-ITX Case
Seconds, Fewer Is Better
C
D
A
B
53.29
53.34
53.37
53.42
12
24
36
48
60
1. OpenSCAD version 2021.01

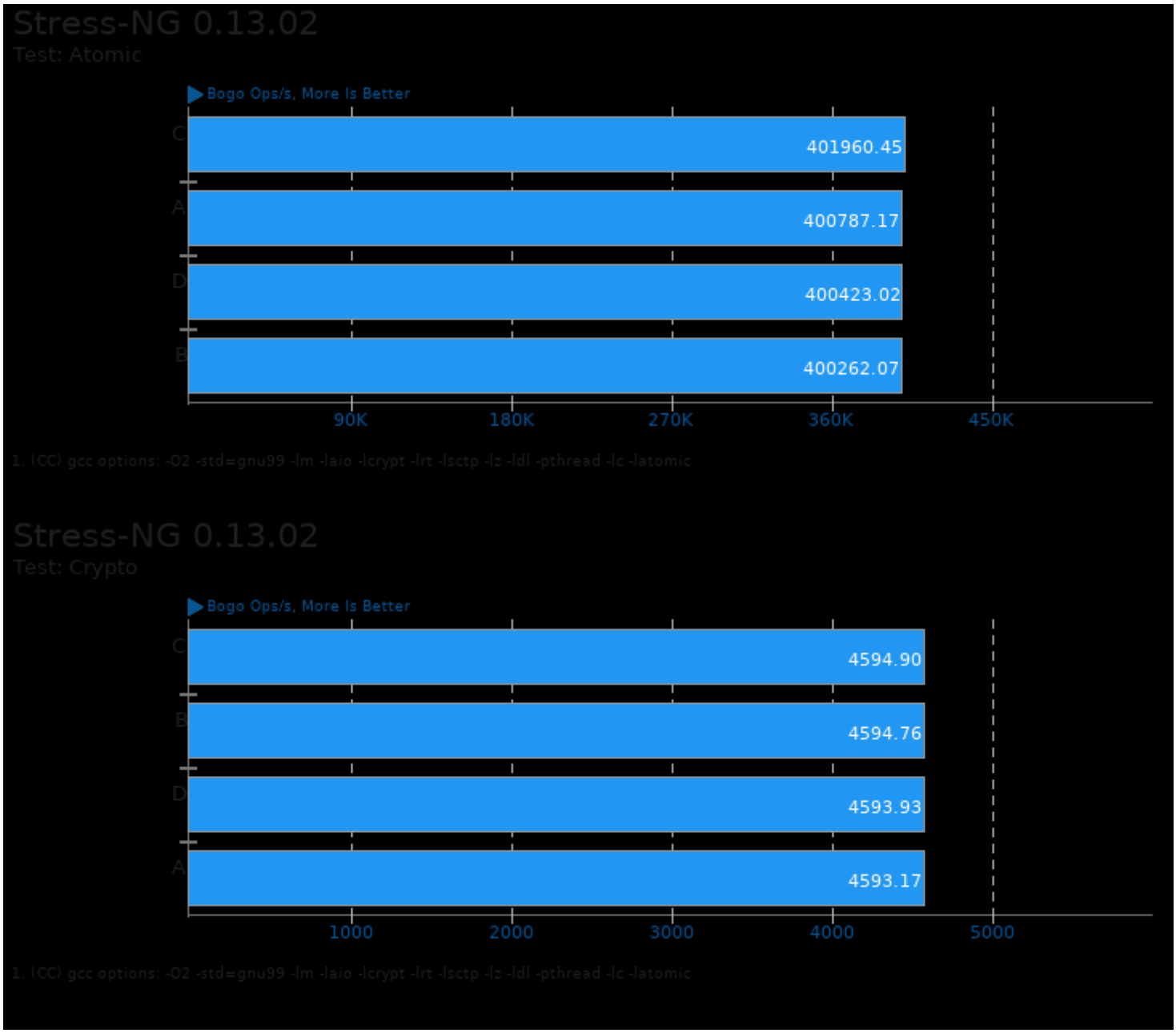

OpenSCAD
Render: Projector Mount Swivel
Seconds, Fewer Is Better
D
C
B
A
10.47
10.48
10.58
10.60
3
6
9
12
15
1. OpenSCAD version 2021.01
OpenSCAD
Render: Leonardo Phone Case Slim
Seconds, Fewer Is Better
D
B
C
A
21.24
21.27
21.36
21.48
5
10
15
20
25
1. OpenSCAD version 2021.01

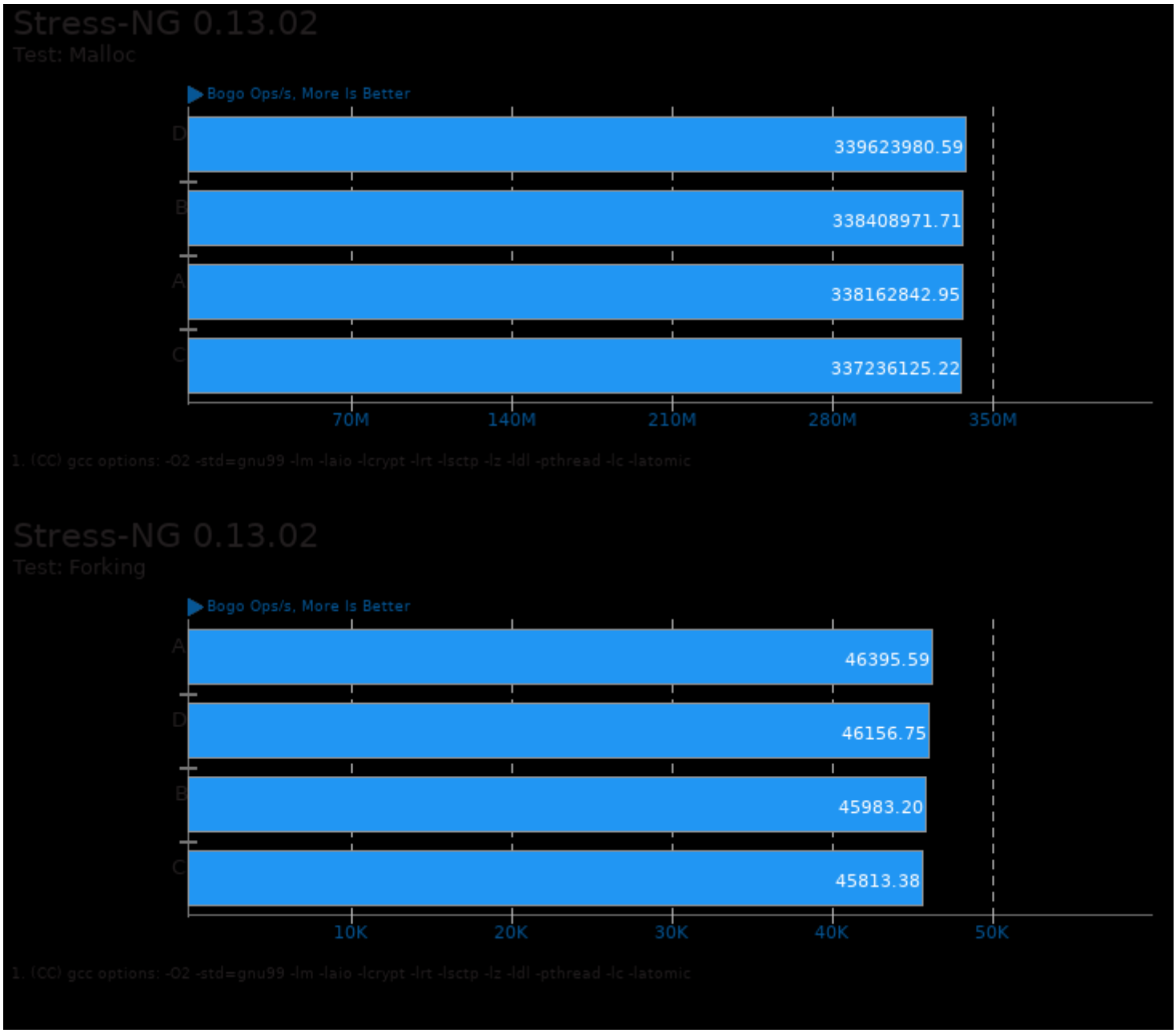

Redis 6.0.9
Test: LPOP
Requests Per Second, More Is Better
A
D
B
C
2140424.75
1418238.50
1403553.62
1380470.50
500K
1000K
1500K
2000K
2500K
1. (CXX) g++ options: -MM -MT -g3 -fvisibility=hidden -O3
Redis 6.0.9
Test: SADD
Requests Per Second, More Is Better
B
A
D
C
1763702.25
1684952.38
1670865.12
1638806.88
400K
800K
1200K
1600K
2000K
1. (CXX) g++ options: -MM -MT -g3 -fvisibility=hidden -O3

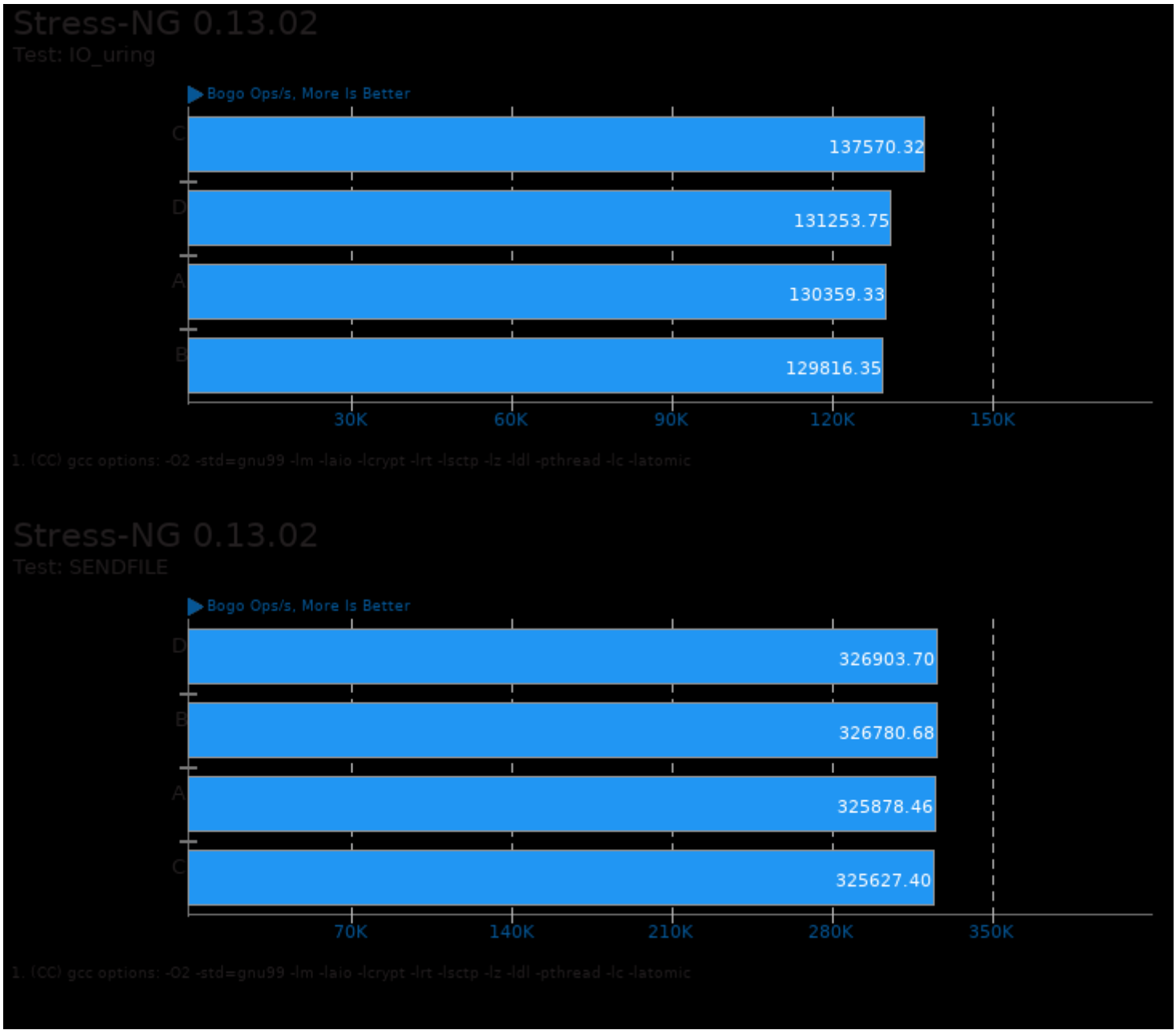

Redis 6.0.9
Test: LPUSH
Requests Per Second, More Is Better
D
B
C
A
1373841.50
1342642.38
1333523.88
1329791.50
300K
600K
900K
1200K
1500K
1. (CXX) g++ options: -MM -MT -g3 -fvisibility=hidden -O3
Redis 6.0.9
Test: GET
Requests Per Second, More Is Better
A
B
D
C
1956953.38
1872665.12
1845036.12
1769911.50
400K
800K
1200K
1600K
2000K
1. (CXX) g++ options: -MM -MT -g3 -fvisibility=hidden -O3

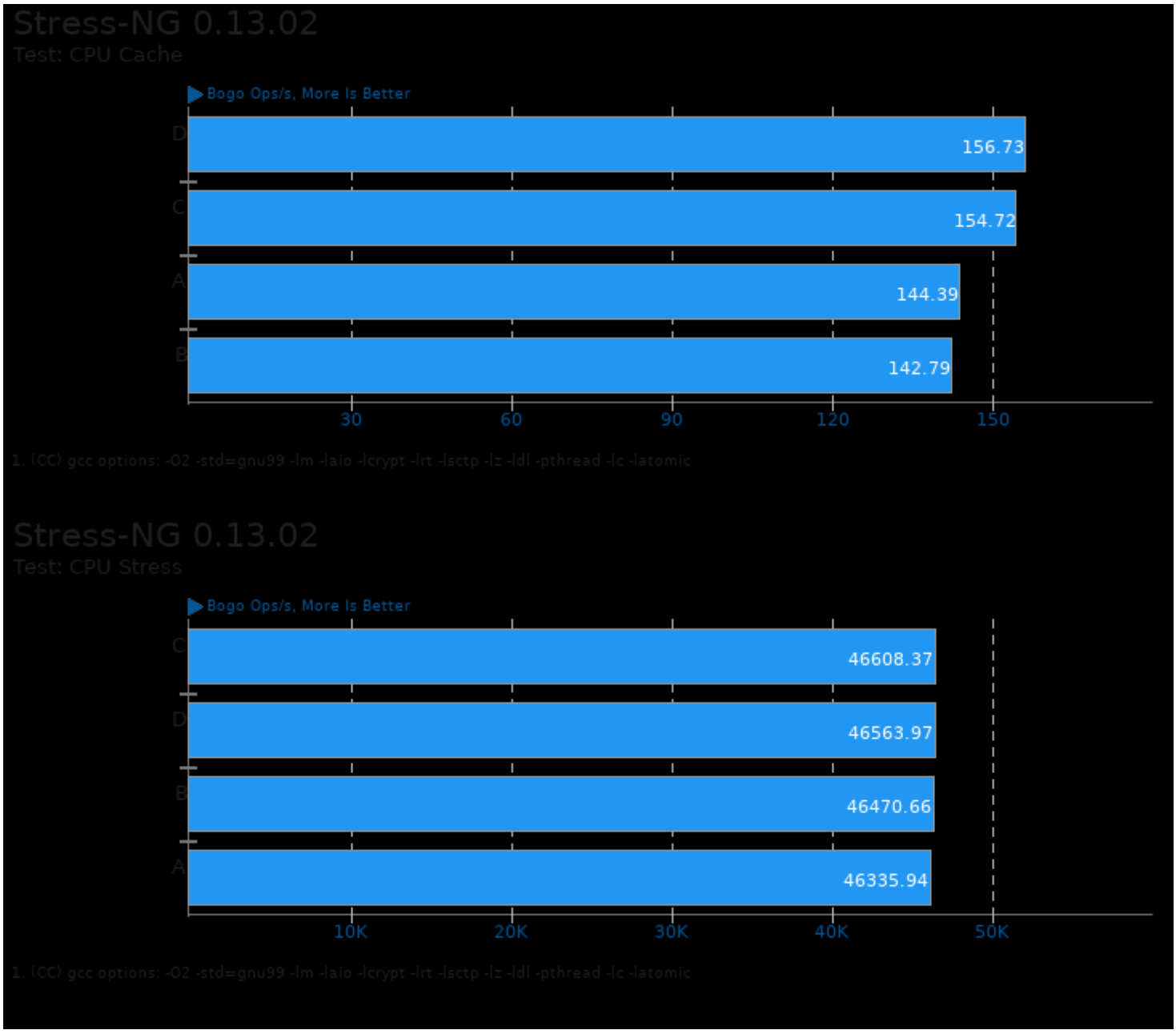

Redis 6.0.9
Test: SET
Requests Per Second, More Is Better
D
C
B
A
1532836.25
1513097.88
1471693.88
1404530.38
300K
600K
900K
1200K
1500K
1. (CXX) g++ options: -MM -MT -g3 -fvisibility=hidden -O3
Stress-NG 0.13.02
Test: MMAP
Bogo Ops/s, More Is Better
A
B
C
D
256.62
256.55
256.45
255.29
60
120
180
240
300
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

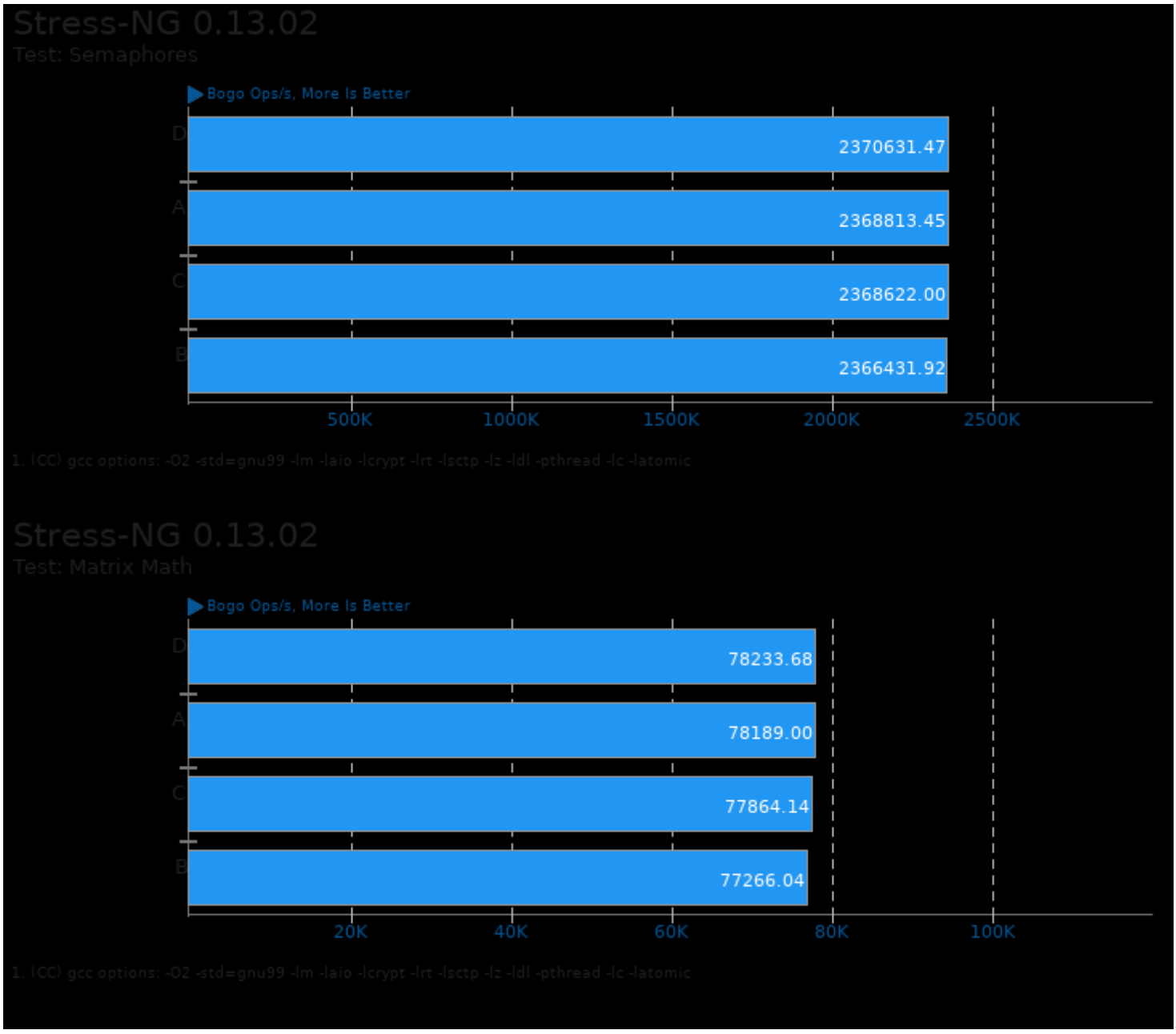

Stress-NG 0.13.02
Test: NUMA
Bogo Ops/s, More Is Better
C
311.37
D
301.29
B
299.07
A
295.14
70
140
210
280
350
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic
Stress-NG 0.13.02
Test: MEMFD
Bogo Ops/s, More Is Better
A
706.50
D
706.30
C
706.22
B
706.00
150
300
450
600
750
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

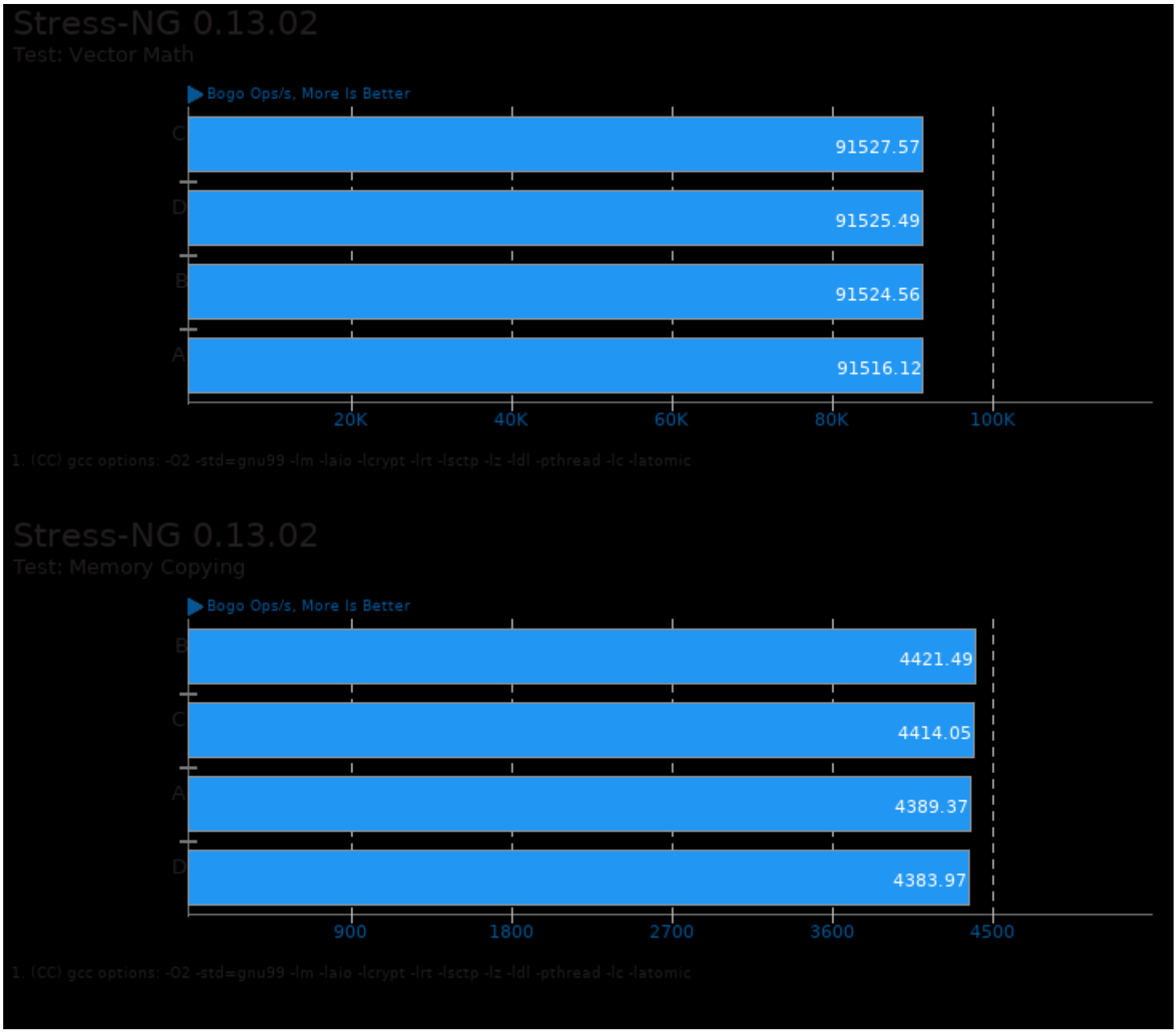

Stress-NG 0.13.02
Test: Atomic
Bogo Ops/s, More Is Better
C
401960.45
A
400787.17
D
400423.02
B
400262.07
90K
180K
270K
360K
450K
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic
Stress-NG 0.13.02
Test: Crypto
Bogo Ops/s, More Is Better
C
4594.90
B
4594.76
D
4593.93
A
4593.17
1000
2000
3000
4000
5000
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

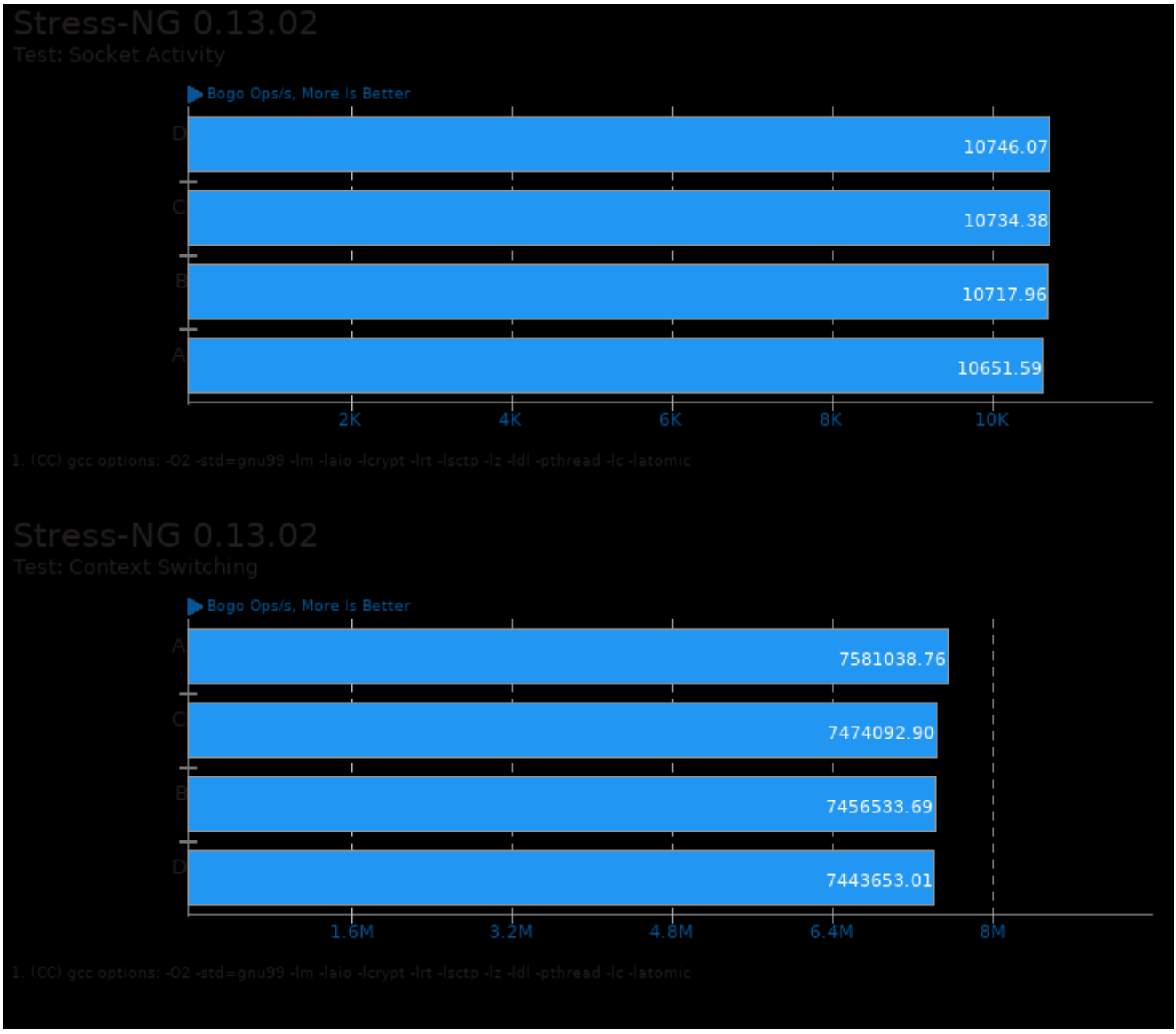

Stress-NG 0.13.02
Test: Malloc
Bogo Ops/s, More Is Better
D
B
A
C
339623980.59
338408971.71
338162842.95
337236125.22
70M
140M
210M
280M
350M
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic
Stress-NG 0.13.02
Test: Forking
Bogo Ops/s, More Is Better
A
D
B
C
46395.59
46156.75
45983.20
45813.38
10K
20K
30K
40K
50K
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

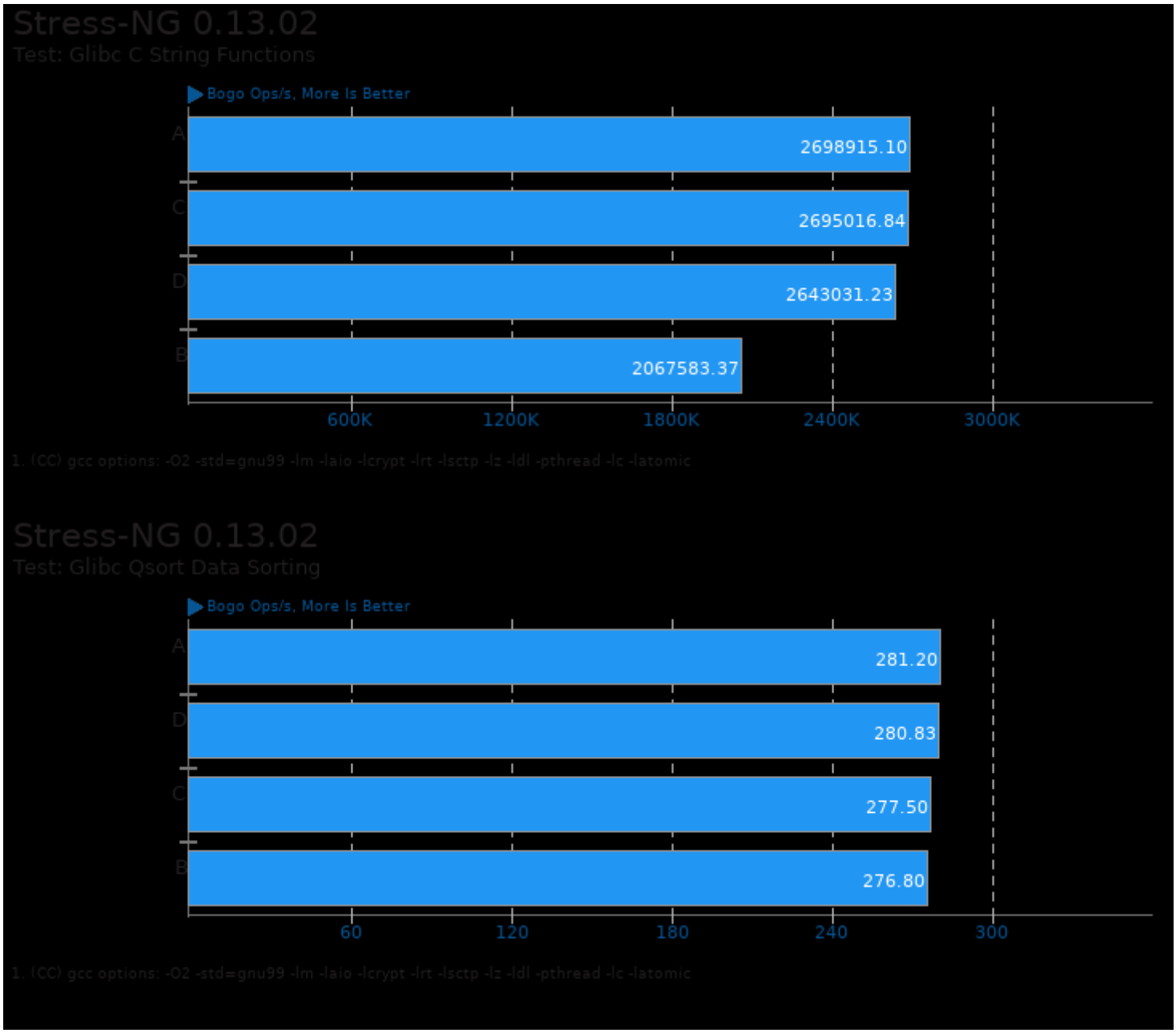

Stress-NG 0.13.02
Test: IO_uring
Bogo Ops/s, More Is Better
C
137570.32
D
131253.75
A
130359.33
B
129816.35
30K
60K
90K
120K
150K
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic
Stress-NG 0.13.02
Test: SENDFILE
Bogo Ops/s, More Is Better
D
326903.70
B
326780.68
A
325878.46
C
325627.40
70K
140K
210K
280K
350K
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

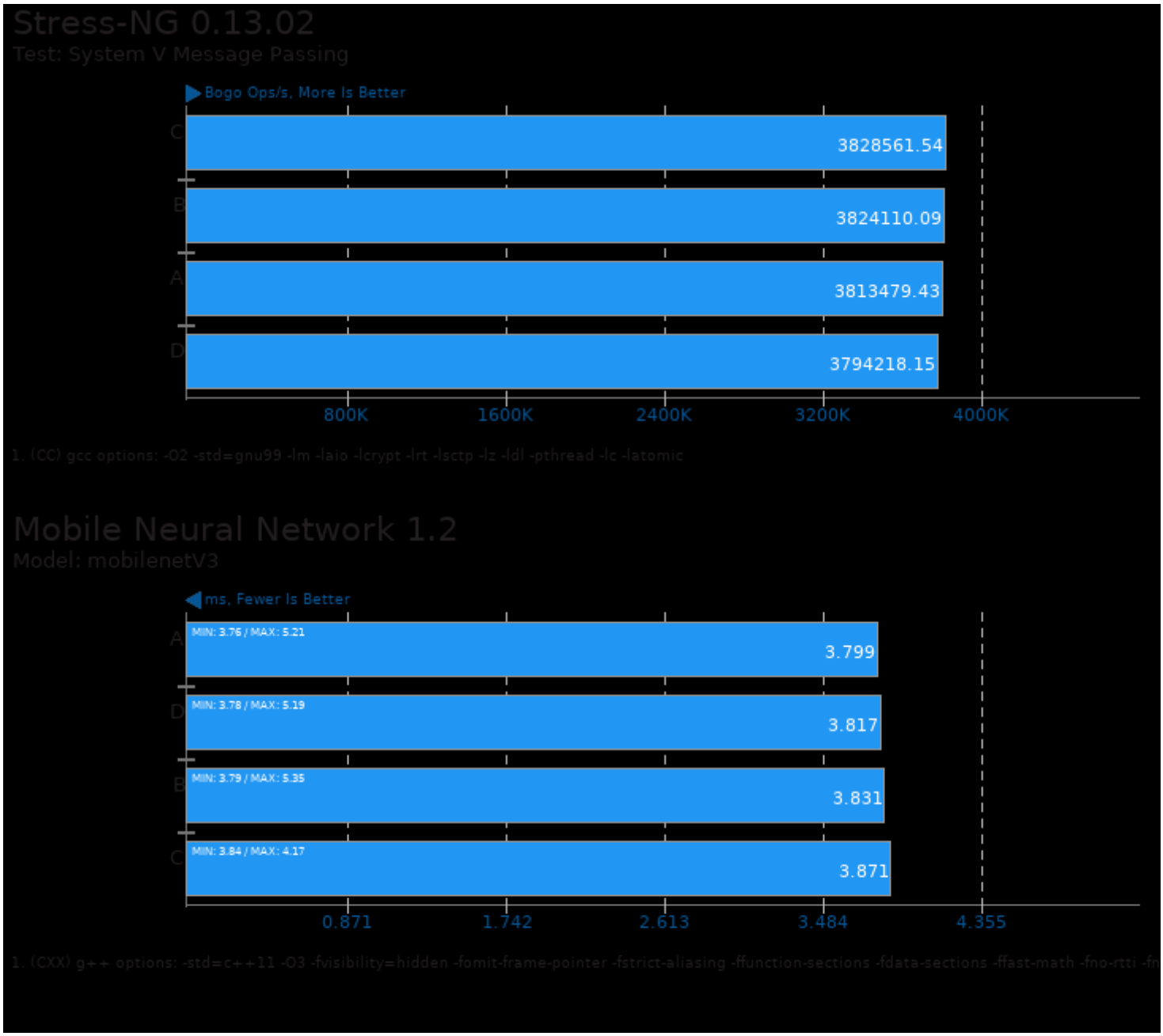

Stress-NG 0.13.02
Test: CPU Cache
Bogo Ops/s, More Is Better
D
C
A
B
156.73
154.72
144.39
142.79
30
60
90
120
150
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic
Stress-NG 0.13.02
Test: CPU Stress
Bogo Ops/s, More Is Better
C
D
B
A
46608.37
46563.97
46470.66
46335.94
10K
20K
30K
40K
50K
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

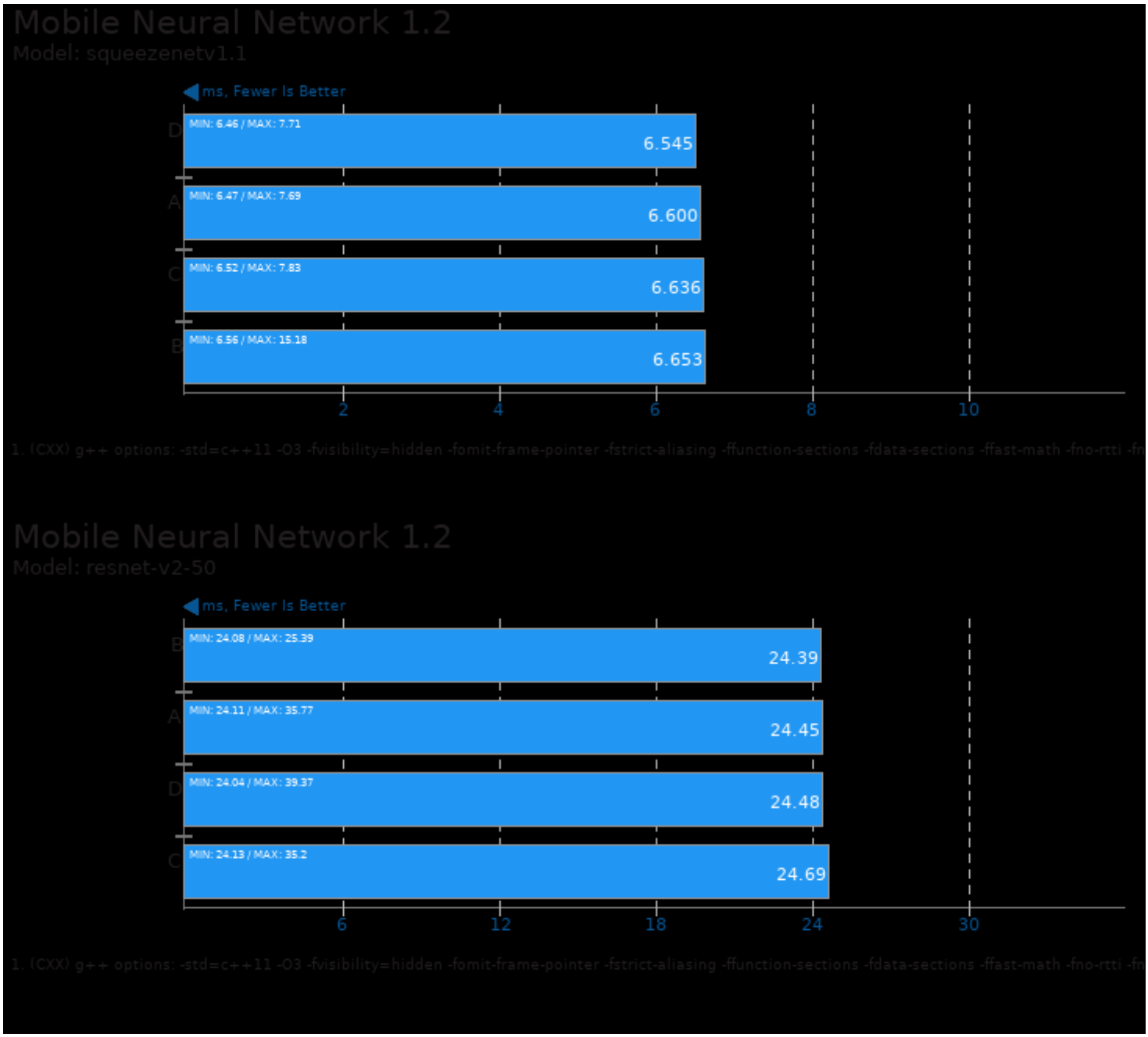

Stress-NG 0.13.02
Test: Semaphores
Bogo Ops/s, More Is Better
D
A
C
B
2370631.47
2368813.45
2368622.00
2366431.92
500K
1000K
1500K
2000K
2500K
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic
Stress-NG 0.13.02
Test: Matrix Math
Bogo Ops/s, More Is Better
D
A
C
B
78233.68
78189.00
77864.14
77266.04
20K
40K
60K
80K
100K
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

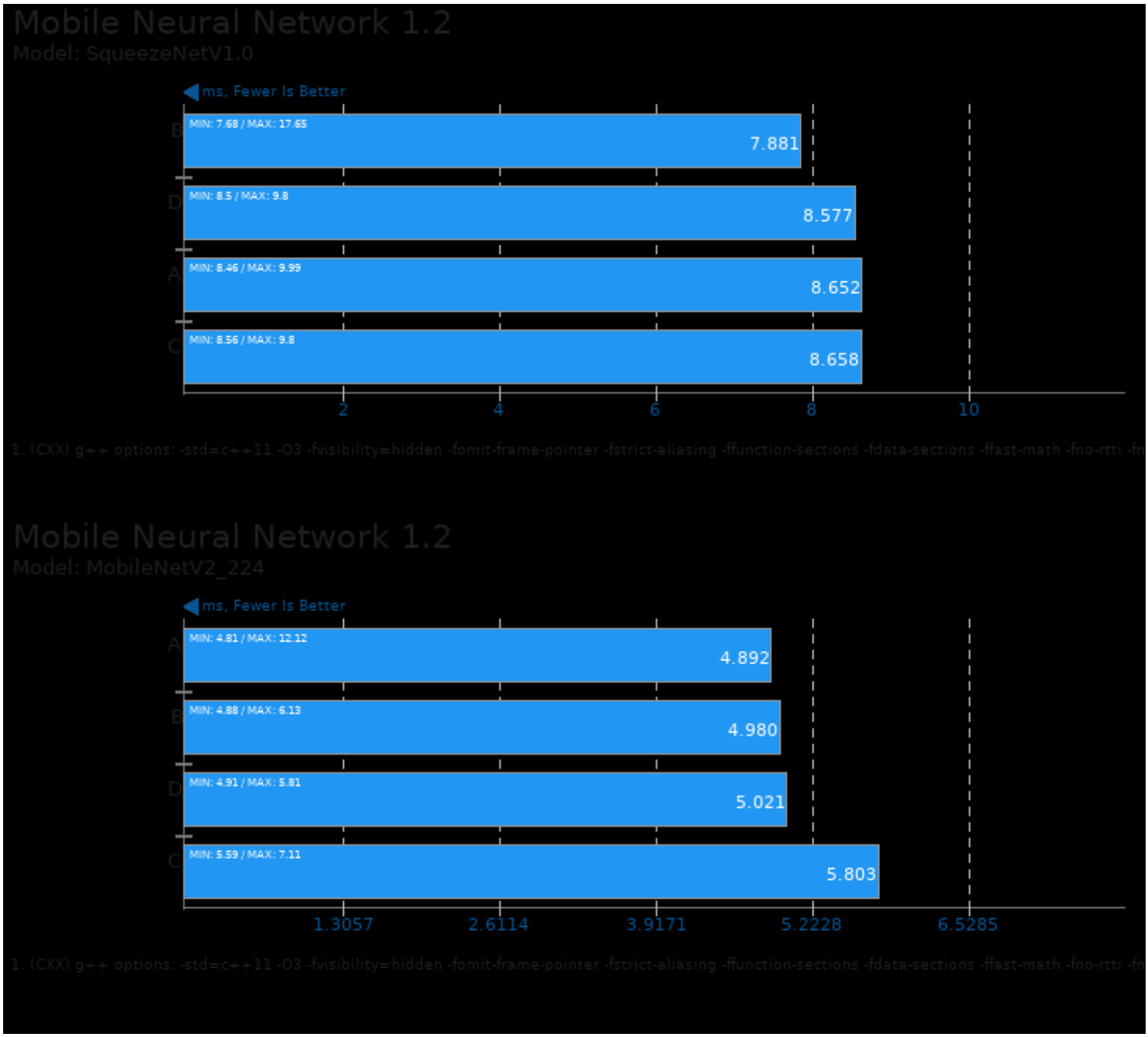

Stress-NG 0.13.02
Test: Vector Math
Bogo Ops/s, More Is Better
C
D
B
A
91527.57
91525.49
91524.56
91516.12
20K
40K
60K
80K
100K
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic
Stress-NG 0.13.02
Test: Memory Copying
Bogo Ops/s, More Is Better
B
C
A
D
4421.49
4414.05
4389.37
4383.97
900
1800
2700
3600
4500
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

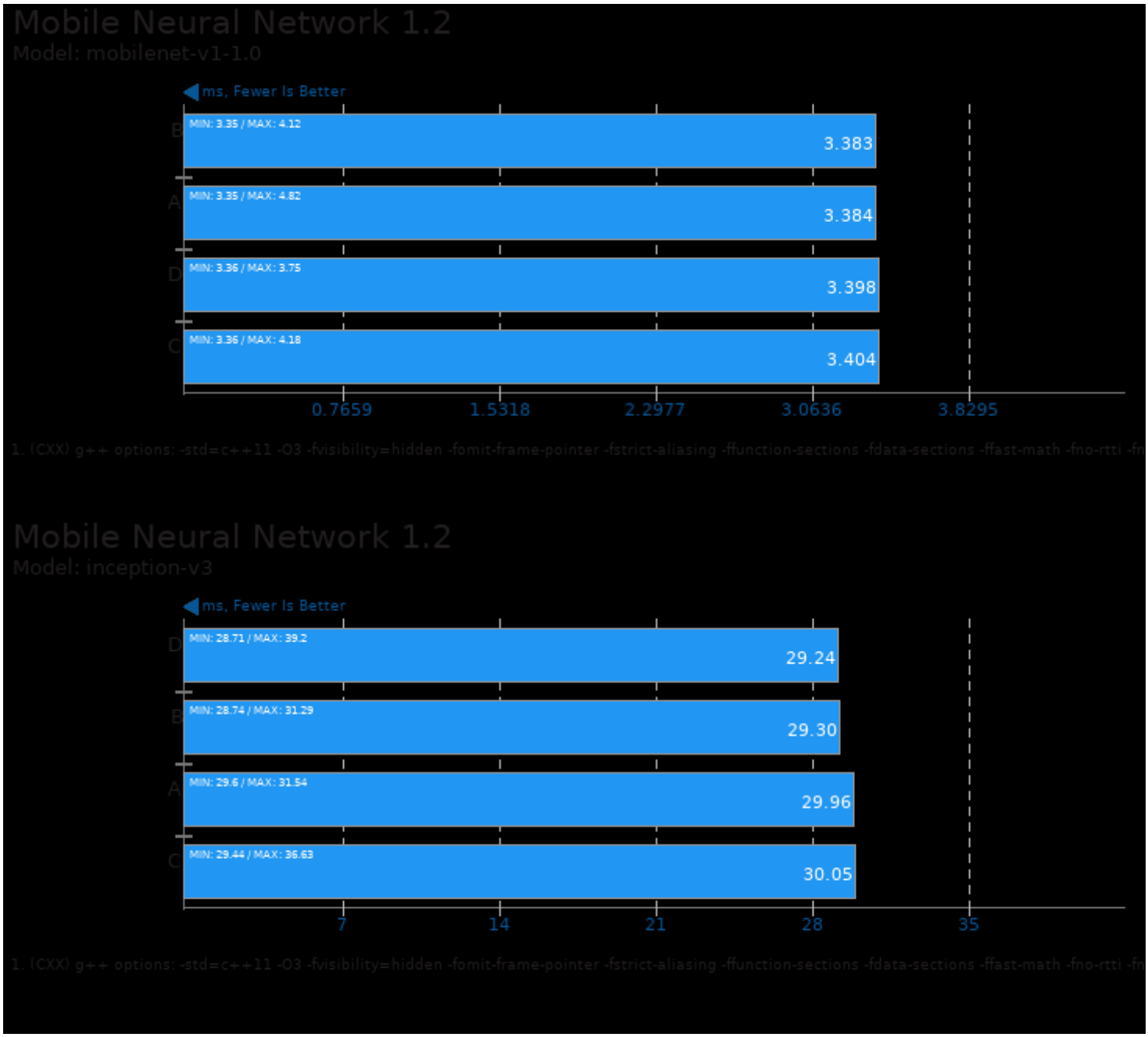

Stress-NG 0.13.02
Test: Socket Activity
Bogo Ops/s, More Is Better
D
C
B
A
10746.07
10734.38
10717.96
10651.59
2K
4K
6K
8K
10K
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic
Stress-NG 0.13.02
Test: Context Switching
Bogo Ops/s, More Is Better
A
C
B
D
7581038.76
7474092.90
7456533.69
7443653.01
1.6M
3.2M
4.8M
6.4M
8M
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

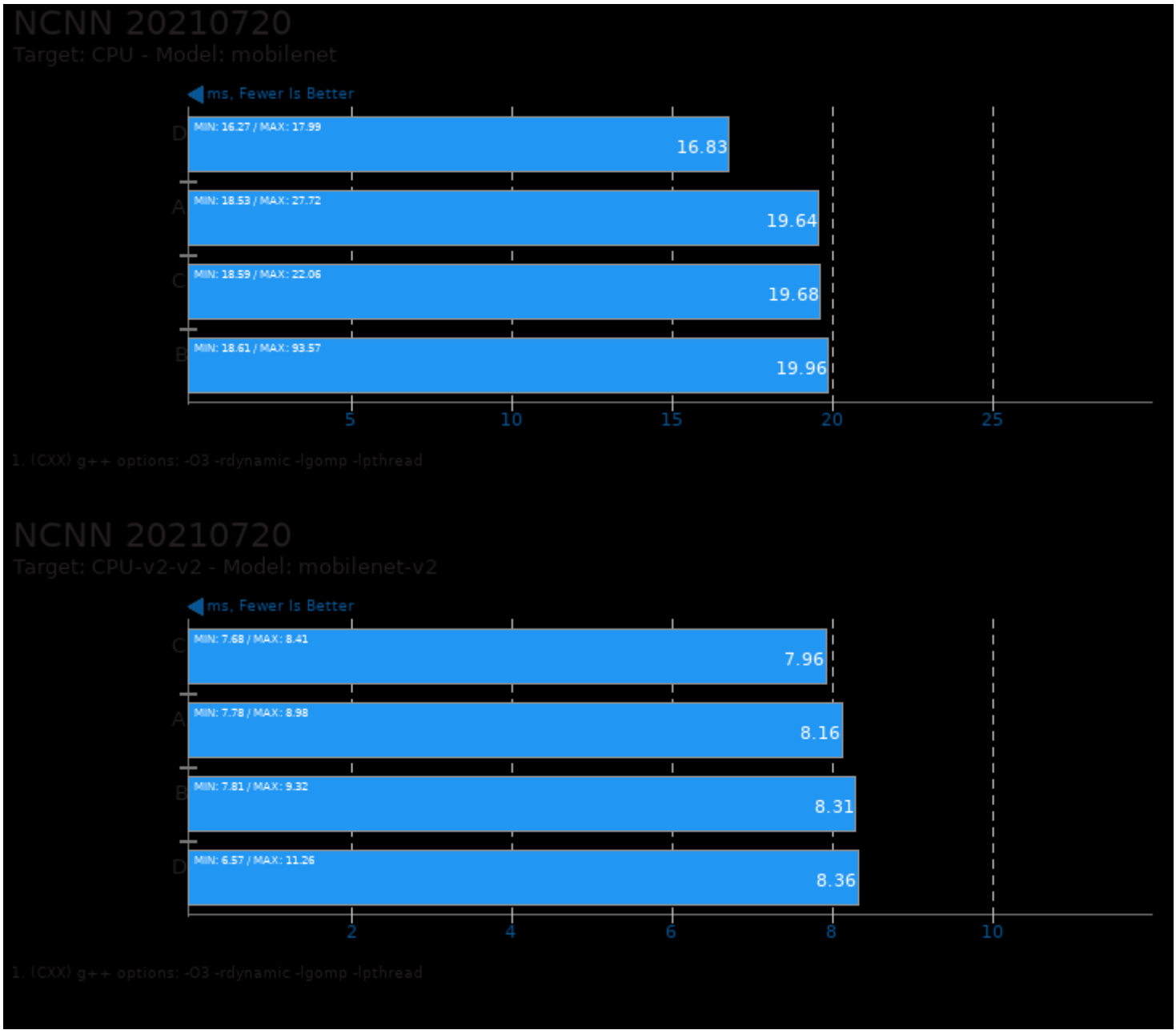

Stress-NG 0.13.02
Test: Glibc C String Functions
Bogo Ops/s, More Is Better
A
C
D
B
2698915.10
2695016.84
2643031.23
2067583.37
600K
1200K
1800K
2400K
3000K
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic
Stress-NG 0.13.02
Test: Glibc Qsort Data Sorting
Bogo Ops/s, More Is Better
A
D
C
B
281.20
280.83
277.50
276.80
60
120
180
240
300
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

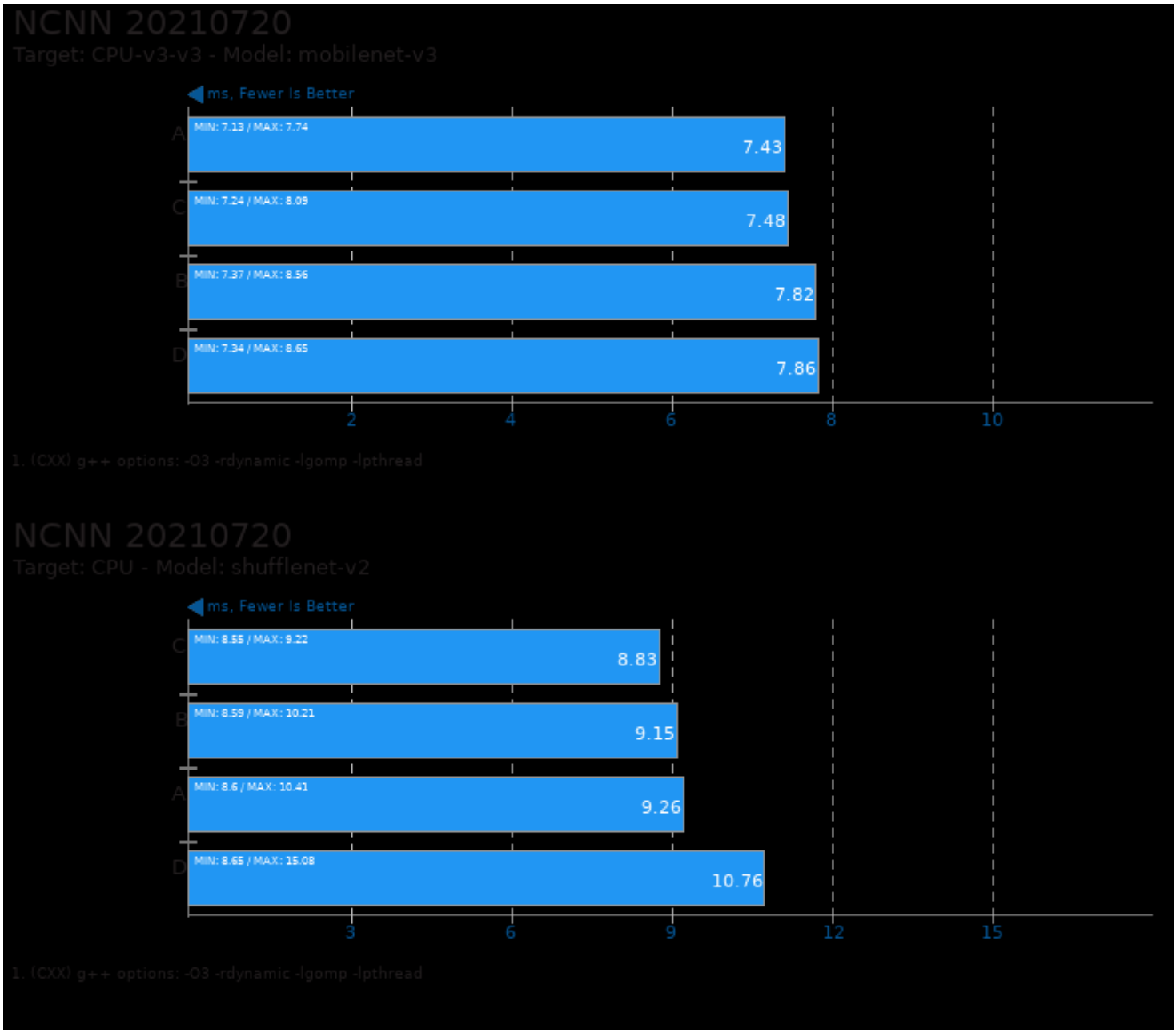

Stress-NG 0.13.02
Test: System V Message Passing
Bogo Ops/s, More Is Better
C
3828561.54
B
3824110.09
A
3813479.43
D
3794218.15
800K
1600K
2400K
3200K
4000K
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic
Mobile Neural Network 1.2
Model: mobilenetV3
ms, Fewer Is Better
A
MIN: 3.76 / MAX: 5.21
3.799
D
MIN: 3.78 / MAX: 5.19
3.817
B
MIN: 3.79 / MAX: 5.35
3.831
C
MIN: 3.84 / MAX: 4.17
3.871
0.871
1.742
2.613
3.484
4.355
1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fn

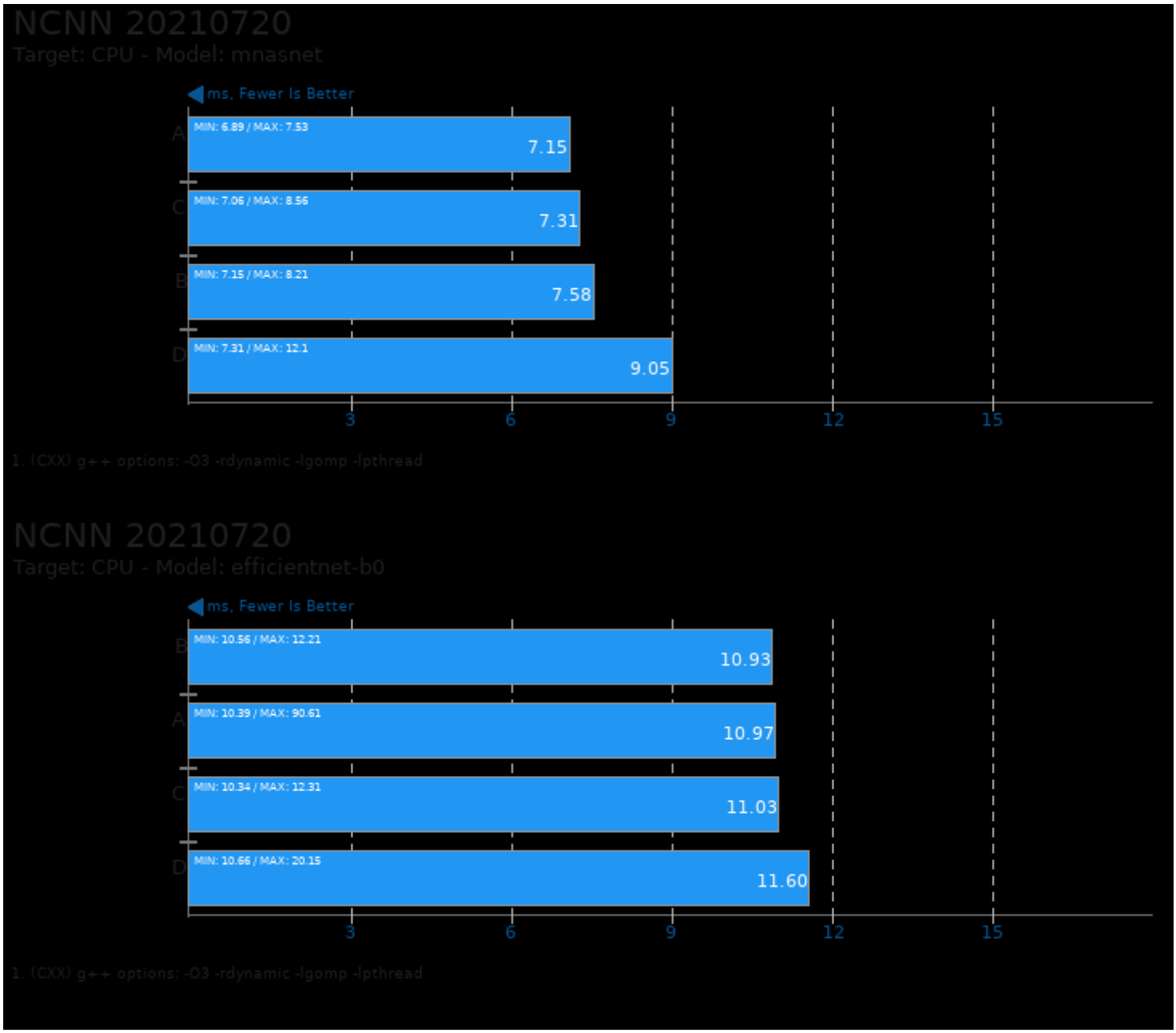

Mobile Neural Network 1.2
Model: squeezenetv1.1
ms, Fewer Is Better
D
MIN: 6.46 / MAX: 7.71
6.545
A
MIN: 6.47 / MAX: 7.69
6.600
C
MIN: 6.52 / MAX: 7.83
6.636
B
MIN: 6.56 / MAX: 15.18
6.653
2
4
6
8
10
1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fr
Mobile Neural Network 1.2
Model: resnet-v2-50
ms, Fewer Is Better
B
MIN: 24.08 / MAX: 25.39
24.39
A
MIN: 24.11 / MAX: 35.77
24.45
D
MIN: 24.04 / MAX: 39.37
24.48
C
MIN: 24.13 / MAX: 35.2
24.69
6
12
18
24
30
1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fr

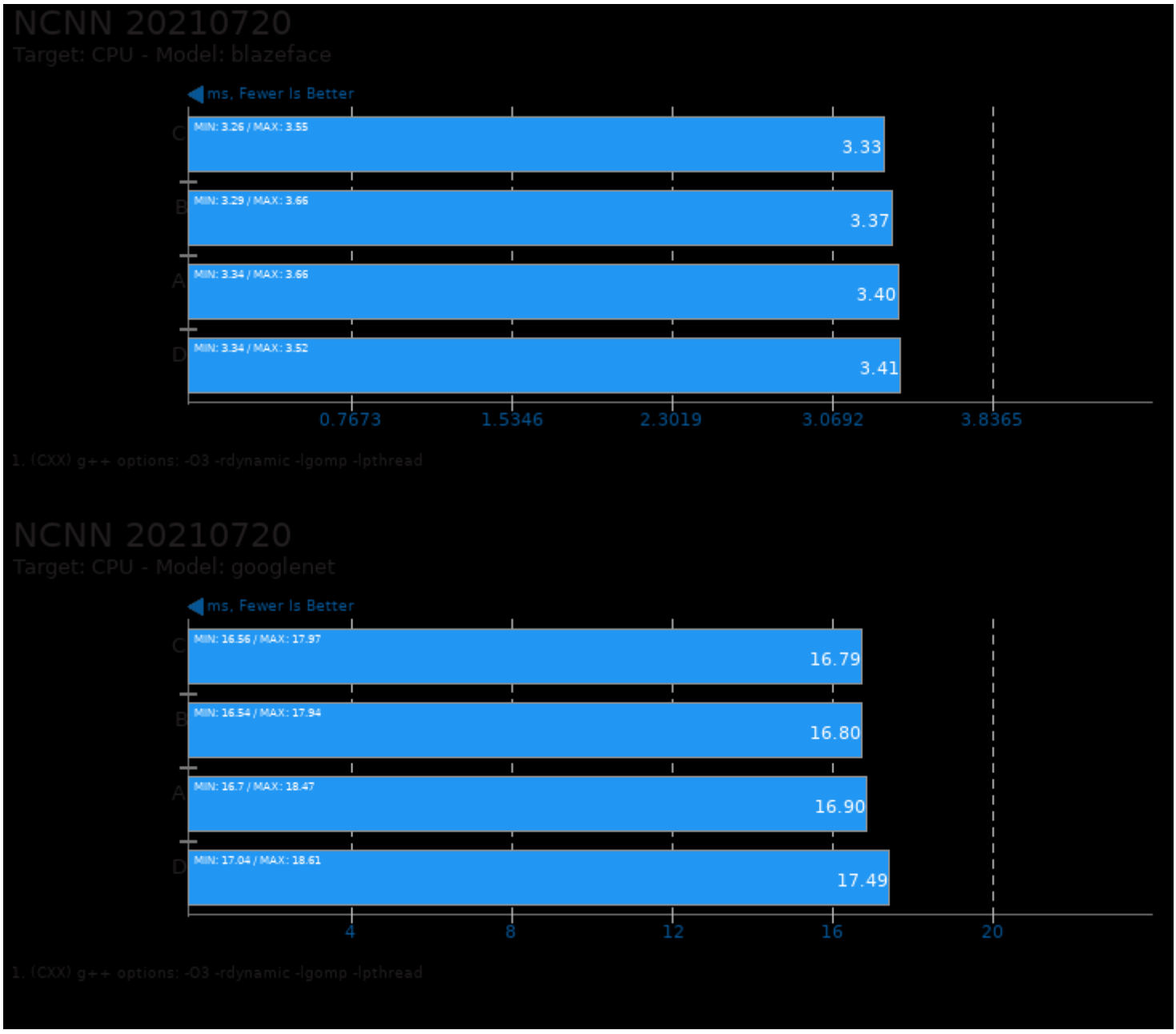

Mobile Neural Network 1.2
Model: SqueezeNetV1.0
ms, Fewer Is Better
B
MIN: 7.68 / MAX: 17.65
7.881
D
MIN: 8.5 / MAX: 9.8
8.577
A
MIN: 8.46 / MAX: 9.99
8.652
C
MIN: 8.56 / MAX: 9.8
8.658
2
4
6
8
10
1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fr
Mobile Neural Network 1.2
Model: MobileNetV2_224
ms, Fewer Is Better
A
MIN: 4.81 / MAX: 12.12
4.892
B
MIN: 4.88 / MAX: 6.13
4.980
D
MIN: 4.91 / MAX: 5.81
5.021
C
MIN: 5.59 / MAX: 7.11
5.803
1.3057
2.6114
3.9171
5.2228
6.5285
1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fr

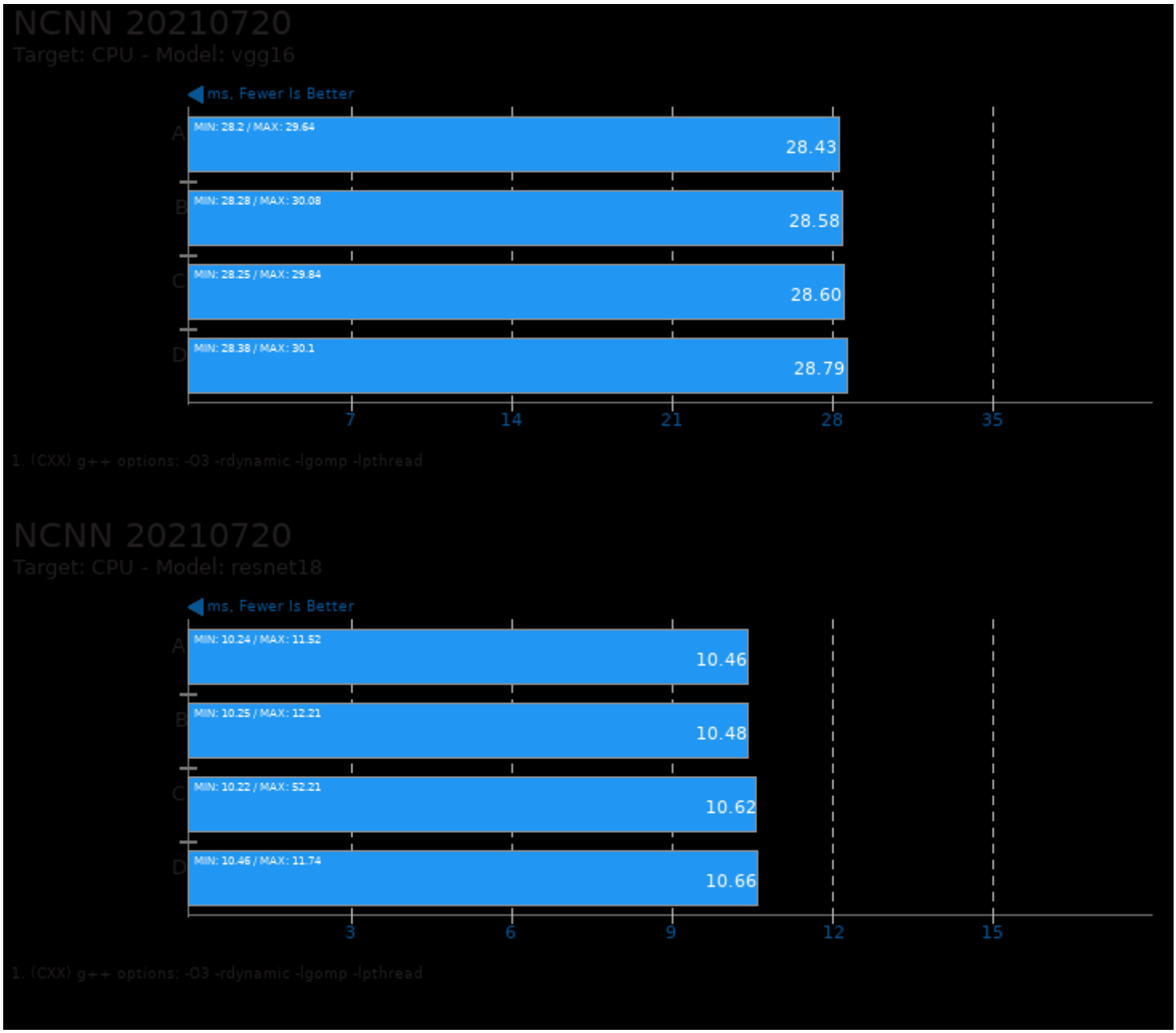

Mobile Neural Network 1.2
Model: mobilenet-v1-1.0
ms, Fewer Is Better
B
MIN: 3.35 / MAX: 4.12
3.383
A
MIN: 3.35 / MAX: 4.82
3.384
D
MIN: 3.36 / MAX: 3.75
3.398
C
MIN: 3.36 / MAX: 4.18
3.404
0.7659
1.5318
2.2977
3.0636
3.8295
1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fr
Mobile Neural Network 1.2
Model: inception-v3
ms, Fewer Is Better
D
MIN: 28.71 / MAX: 39.2
29.24
B
MIN: 28.74 / MAX: 31.29
29.30
A
MIN: 29.6 / MAX: 31.54
29.96
C
MIN: 29.44 / MAX: 36.63
30.05
7
14
21
28
35
1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fr

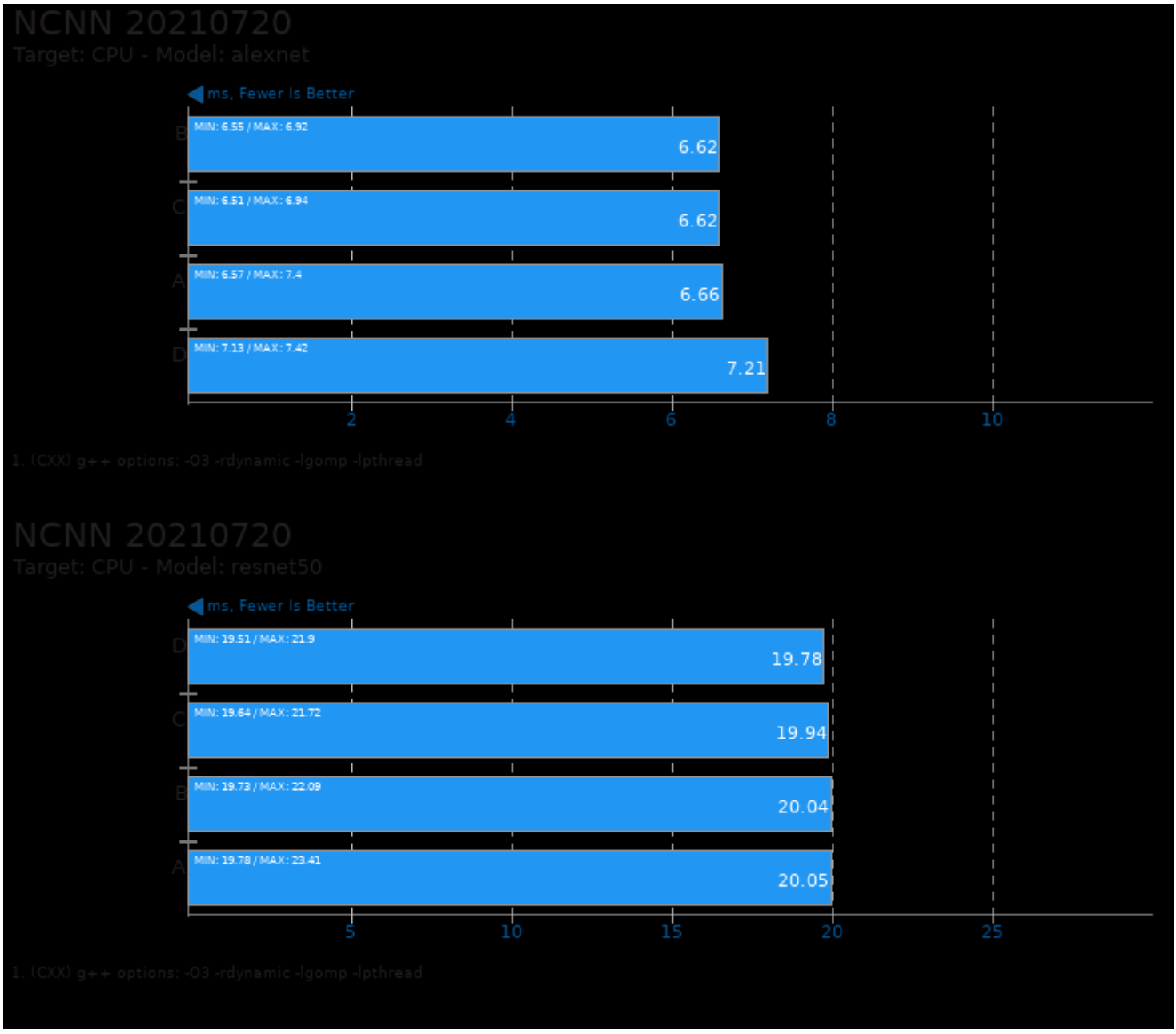

NCNN 20210720
Target: CPU - Model: mobilenet
ms, Fewer Is Better
D
MIN: 16.27 / MAX: 17.99
16.83
A
MIN: 18.53 / MAX: 27.72
19.64
C
MIN: 18.59 / MAX: 22.06
19.68
B
MIN: 18.61 / MAX: 93.57
19.96
5
10
15
20
25
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread
NCNN 20210720
Target: CPU-v2-v2 - Model: mobilenet-v2
ms, Fewer Is Better
C
MIN: 7.68 / MAX: 8.41
7.96
A
MIN: 7.78 / MAX: 8.98
8.16
B
MIN: 7.81 / MAX: 9.32
8.31
D
MIN: 6.57 / MAX: 11.26
8.36
2
4
6
8
10
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

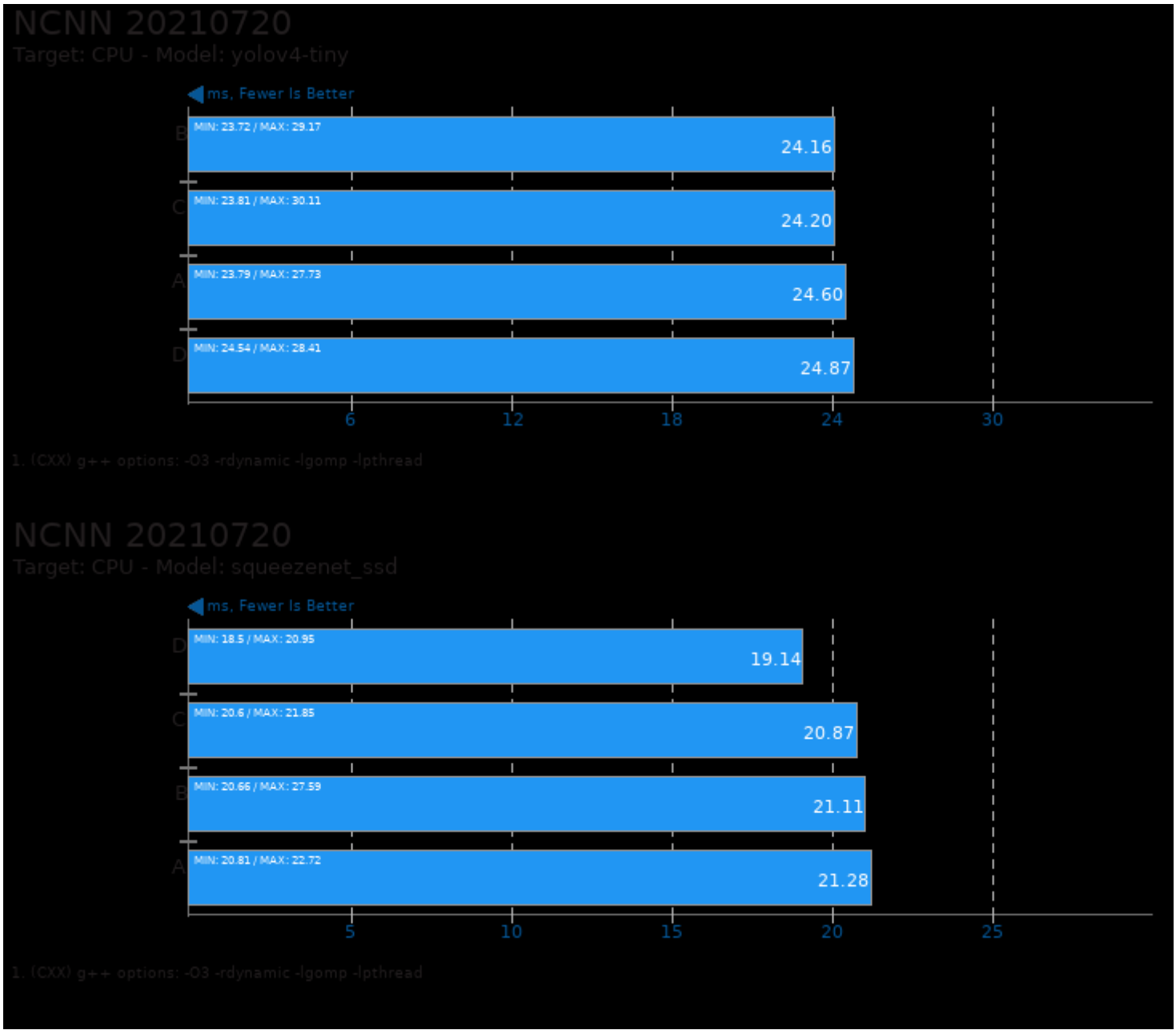

NCNN 20210720
Target: CPU-v3-v3 - Model: mobilenet-v3
ms, Fewer Is Better
A
MIN: 7.13 / MAX: 7.74
7.43
C
MIN: 7.24 / MAX: 8.09
7.48
B
MIN: 7.37 / MAX: 8.56
7.82
D
MIN: 7.34 / MAX: 8.65
7.86
2
4
6
8
10
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread
NCNN 20210720
Target: CPU - Model: shufflenet-v2
ms, Fewer Is Better
C
MIN: 8.55 / MAX: 9.22
8.83
B
MIN: 8.59 / MAX: 10.21
9.15
A
MIN: 8.6 / MAX: 10.41
9.26
D
MIN: 8.65 / MAX: 15.08
10.76
3
6
9
12
15
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

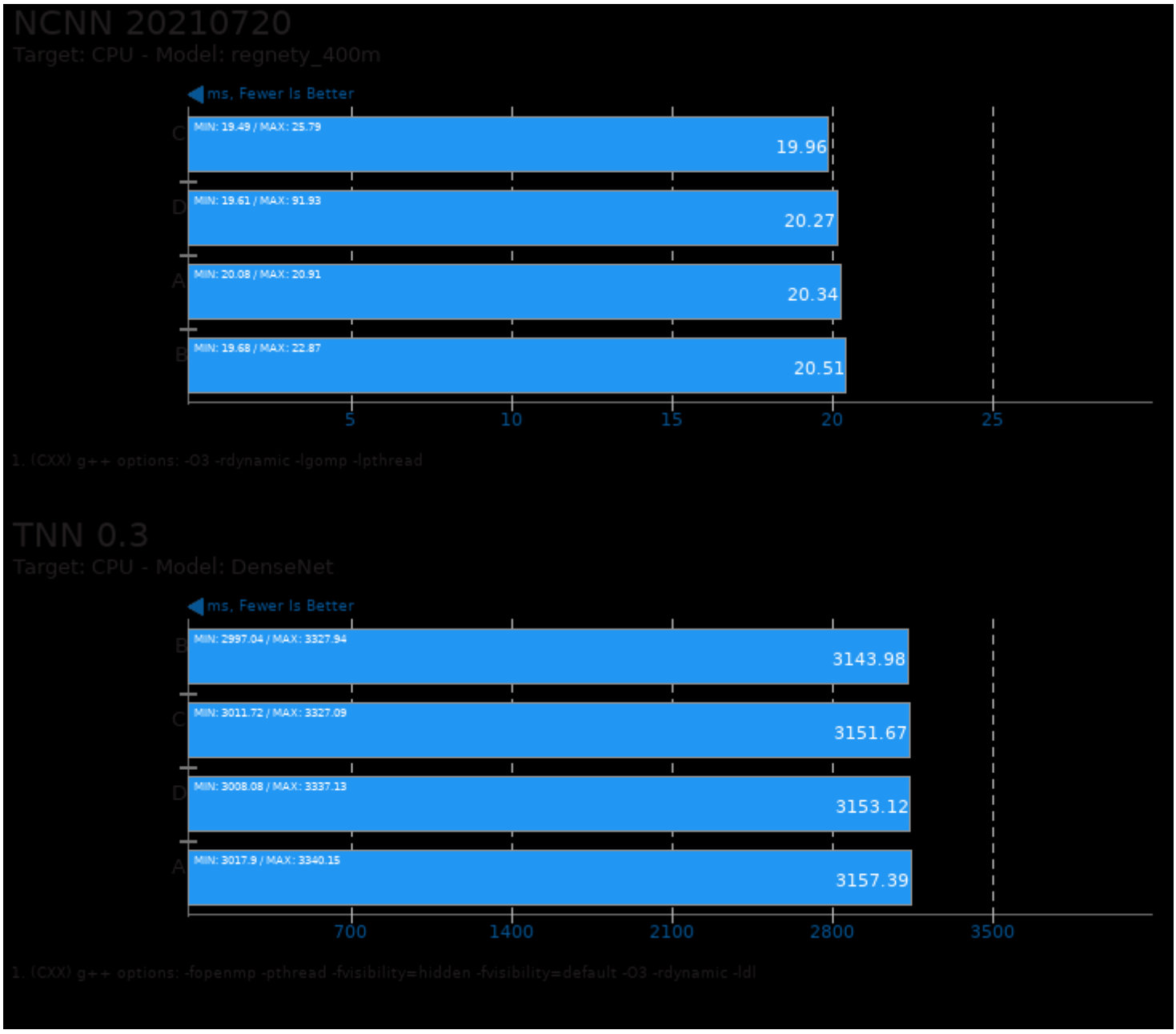

NCNN 20210720
Target: CPU - Model: mnasnet
ms, Fewer Is Better
A
MIN: 6.89 / MAX: 7.53
7.15
C
MIN: 7.06 / MAX: 8.56
7.31
B
MIN: 7.15 / MAX: 8.21
7.58
D
MIN: 7.31 / MAX: 12.1
9.05
3
6
9
12
15
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread
NCNN 20210720
Target: CPU - Model: efficientnet-b0
ms, Fewer Is Better
B
MIN: 10.56 / MAX: 12.21
10.93
A
MIN: 10.39 / MAX: 90.61
10.97
C
MIN: 10.34 / MAX: 12.31
11.03
D
MIN: 10.66 / MAX: 20.15
11.60
3
6
9
12
15
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

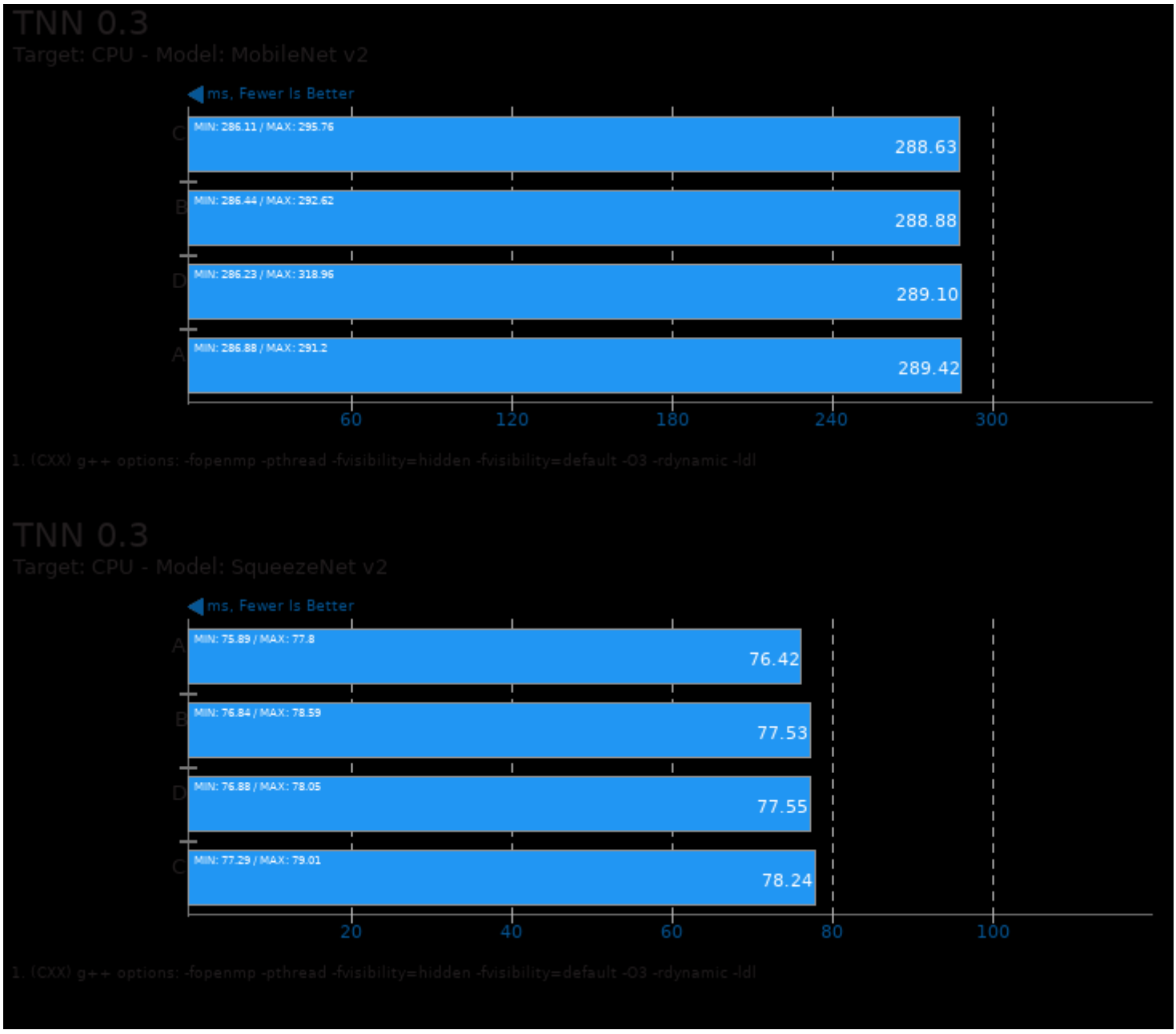

NCNN 20210720
Target: CPU - Model: blazeface
ms, Fewer Is Better
C
MIN: 3.26 / MAX: 3.55
3.33
B
MIN: 3.29 / MAX: 3.66
3.37
A
MIN: 3.34 / MAX: 3.66
3.40
D
MIN: 3.34 / MAX: 3.52
3.41
0.7673
1.5346
2.3019
3.0692
3.8365
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread
NCNN 20210720
Target: CPU - Model: googlenet
ms, Fewer Is Better
C
MIN: 16.56 / MAX: 17.97
16.79
B
MIN: 16.54 / MAX: 17.94
16.80
A
MIN: 16.7 / MAX: 18.47
16.90
D
MIN: 17.04 / MAX: 18.61
17.49
4
8
12
16
20
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

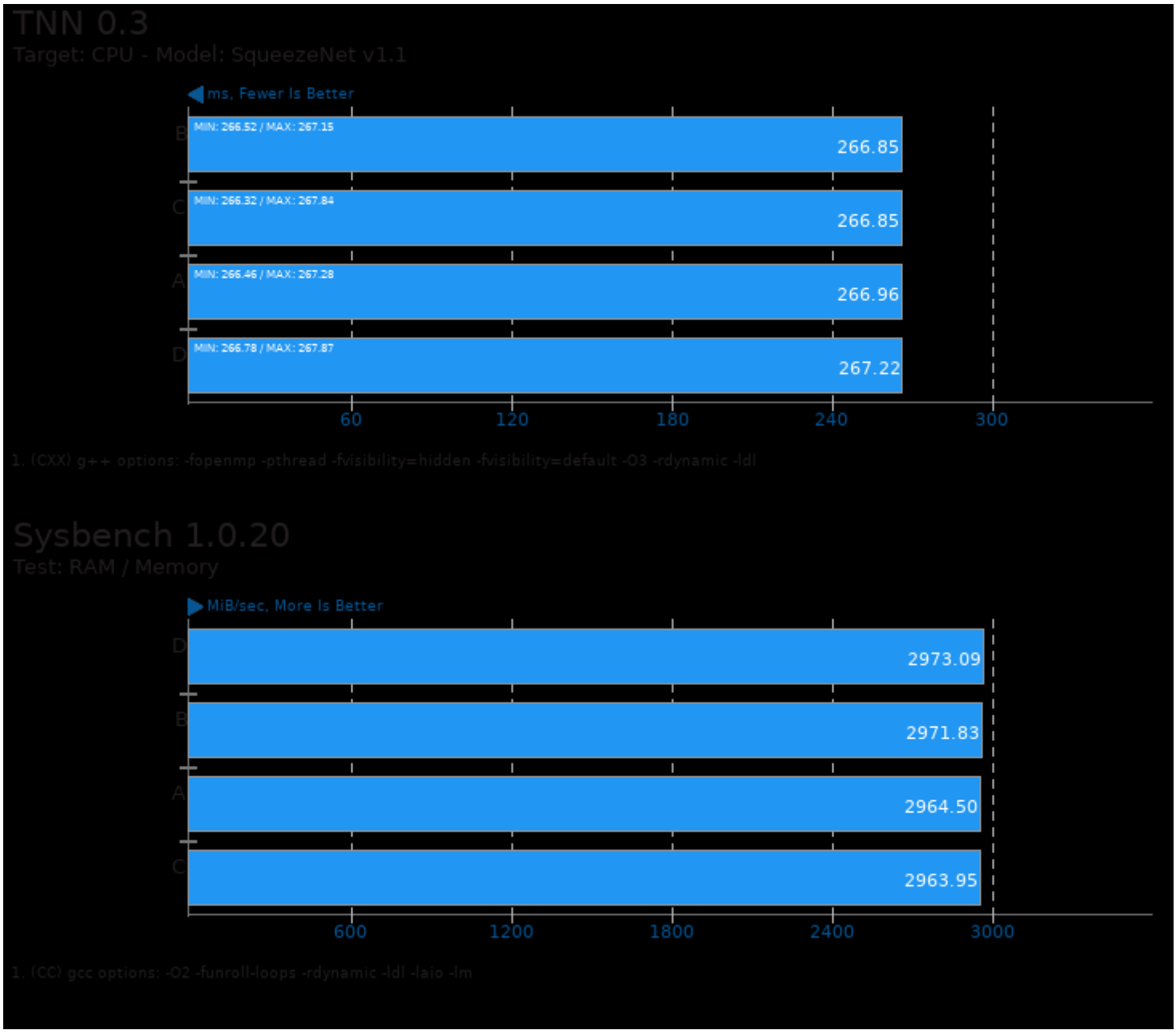

NCNN 20210720
Target: CPU - Model: vgg16
ms, Fewer Is Better
A
MIN: 28.2 / MAX: 29.64
28.43
B
MIN: 28.28 / MAX: 30.08
28.58
C
MIN: 28.25 / MAX: 29.84
28.60
D
MIN: 28.38 / MAX: 30.1
28.79
7
14
21
28
35
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread
NCNN 20210720
Target: CPU - Model: resnet18
ms, Fewer Is Better
A
MIN: 10.24 / MAX: 11.52
10.46
B
MIN: 10.25 / MAX: 12.21
10.48
C
MIN: 10.22 / MAX: 52.21
10.62
D
MIN: 10.46 / MAX: 11.74
10.66
3
6
9
12
15
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread


NCNN 20210720
Target: CPU - Model: alexnet
ms, Fewer Is Better
B
MIN: 6.55 / MAX: 6.92
6.62
C
MIN: 6.51 / MAX: 6.94
6.62
A
MIN: 6.57 / MAX: 7.4
6.66
D
MIN: 7.13 / MAX: 7.42
7.21
2
4
6
8
10
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread
NCNN 20210720
Target: CPU - Model: resnet50
ms, Fewer Is Better
D
MIN: 19.51 / MAX: 21.9
19.78
C
MIN: 19.64 / MAX: 21.72
19.94
B
MIN: 19.73 / MAX: 22.09
20.04
A
MIN: 19.78 / MAX: 23.41
20.05
5
10
15
20
25
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread


NCNN 20210720
Target: CPU - Model: yolov4-tiny
ms, Fewer Is Better
B
MIN: 23.72 / MAX: 29.17
24.16
C
MIN: 23.81 / MAX: 30.11
24.20
A
MIN: 23.79 / MAX: 27.73
24.60
D
MIN: 24.54 / MAX: 28.41
24.87
6
12
18
24
30
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread
NCNN 20210720
Target: CPU - Model: squeezenet_ssd
ms, Fewer Is Better
D
MIN: 18.5 / MAX: 20.95
19.14
C
MIN: 20.6 / MAX: 21.85
20.87
B
MIN: 20.66 / MAX: 27.59
21.11
A
MIN: 20.81 / MAX: 22.72
21.28
5
10
15
20
25
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

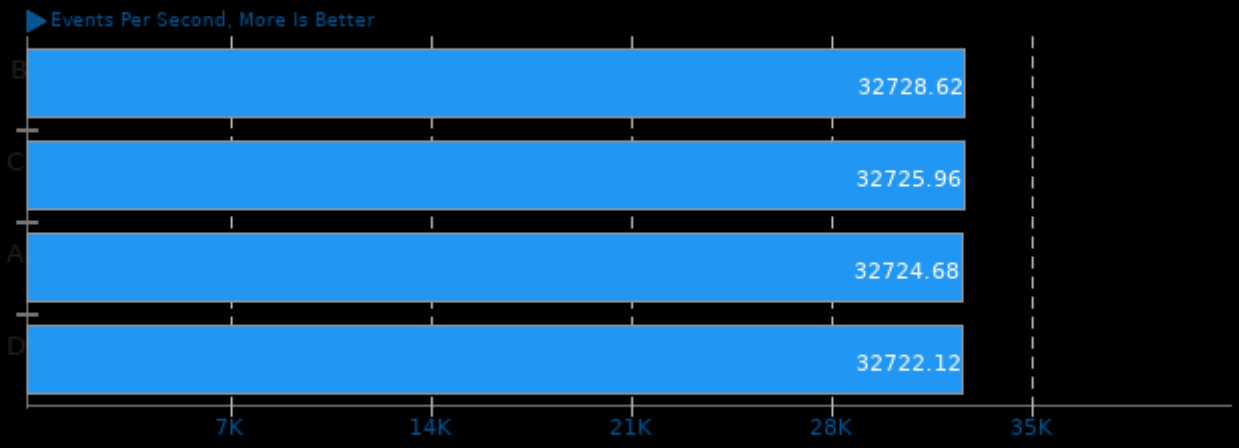

NCNN 20210720
Target: CPU - Model: regnety_400m
ms, Fewer Is Better
C
MIN: 19.49 / MAX: 25.79
19.96
D
MIN: 19.61 / MAX: 91.93
20.27
A
MIN: 20.08 / MAX: 20.91
20.34
B
MIN: 19.68 / MAX: 22.87
20.51
5
10
15
20
25
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread
TNN 0.3
Target: CPU - Model: DenseNet
ms, Fewer Is Better
B
MIN: 2997.04 / MAX: 3327.94
3143.98
C
MIN: 3011.72 / MAX: 3327.09
3151.67
D
MIN: 3008.08 / MAX: 3337.13
3153.12
A
MIN: 3017.9 / MAX: 3340.15
3157.39
700
1400
2100
2800
3500
1. (CXX) g++ options: -fopenmp -pthread -fvisibility=hidden -fvisibility=default -O3 -rdynamic -ldl


TNN 0.3
Target: CPU - Model: MobileNet v2
ms, Fewer Is Better
C
MIN: 286.11 / MAX: 295.76
288.63
B
MIN: 286.44 / MAX: 292.62
288.88
D
MIN: 286.23 / MAX: 318.96
289.10
A
MIN: 286.88 / MAX: 291.2
289.42
60
120
180
240
300
1. (CXX) g++ options: -fopenmp -pthread -fvisibility=hidden -fvisibility=default -O3 -rdynamic -ldl
TNN 0.3
Target: CPU - Model: SqueezeNet v2
ms, Fewer Is Better
A
MIN: 75.89 / MAX: 77.8
76.42
B
MIN: 76.84 / MAX: 78.59
77.53
D
MIN: 76.88 / MAX: 78.05
77.55
C
MIN: 77.29 / MAX: 79.01
78.24
20
40
60
80
100
1. (CXX) g++ options: -fopenmp -pthread -fvisibility=hidden -fvisibility=default -O3 -rdynamic -ldl


TNN 0.3
Target: CPU - Model: SqueezeNet v1.1
ms, Fewer Is Better
B
MIN: 266.52 / MAX: 267.15
266.85
C
MIN: 266.32 / MAX: 267.84
266.85
A
MIN: 266.46 / MAX: 267.28
266.96
D
MIN: 266.78 / MAX: 267.87
267.22
60
120
180
240
300
1. (CXX) g++ options: -fopenmp -pthread -fvisibility=hidden -fvisibility=default -O3 -rdynamic -ldl
Sysbench 1.0.20
Test: RAM / Memory
MiB/sec, More Is Better
D
2973.09
B
2971.83
A
2964.50
C
2963.95
600
1200
1800
2400
3000
1. (CC) gcc options: -O2 -funroll-loops -rdynamic -ldl -laio -lm

Sysbench 1.0.20

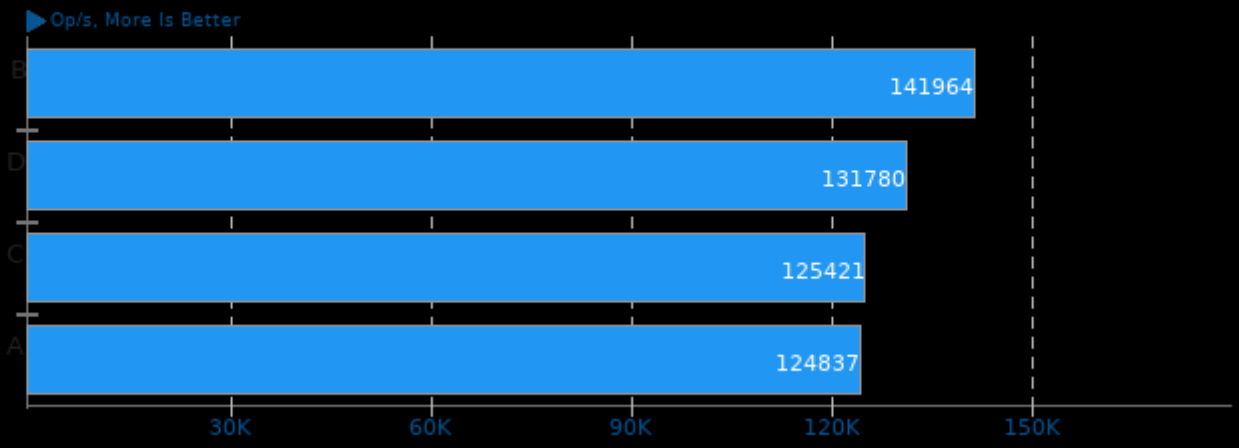
Test: CPU



1. (CC) gcc options: -O2 -funroll-loops -rdynamic -ldl -laio -lm

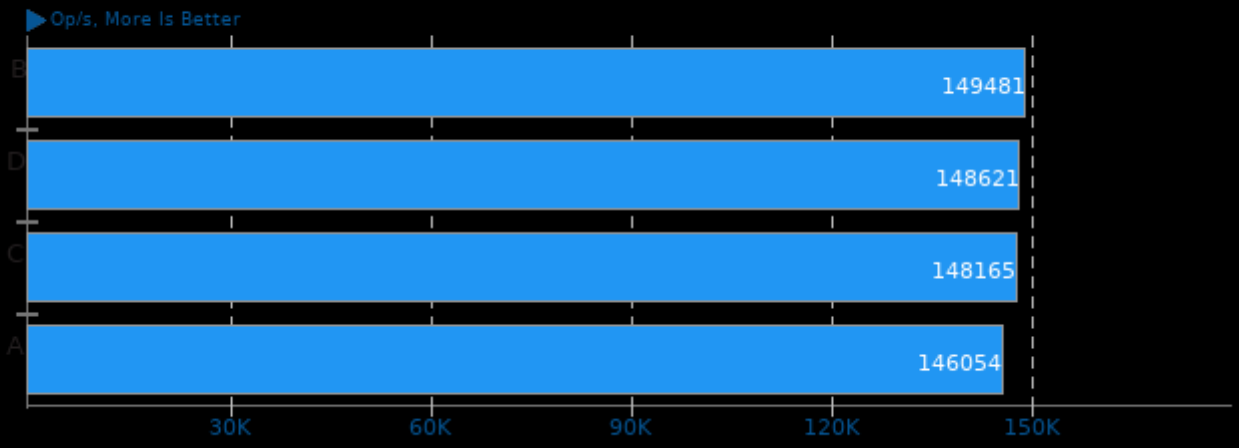
Apache Cassandra 4.0

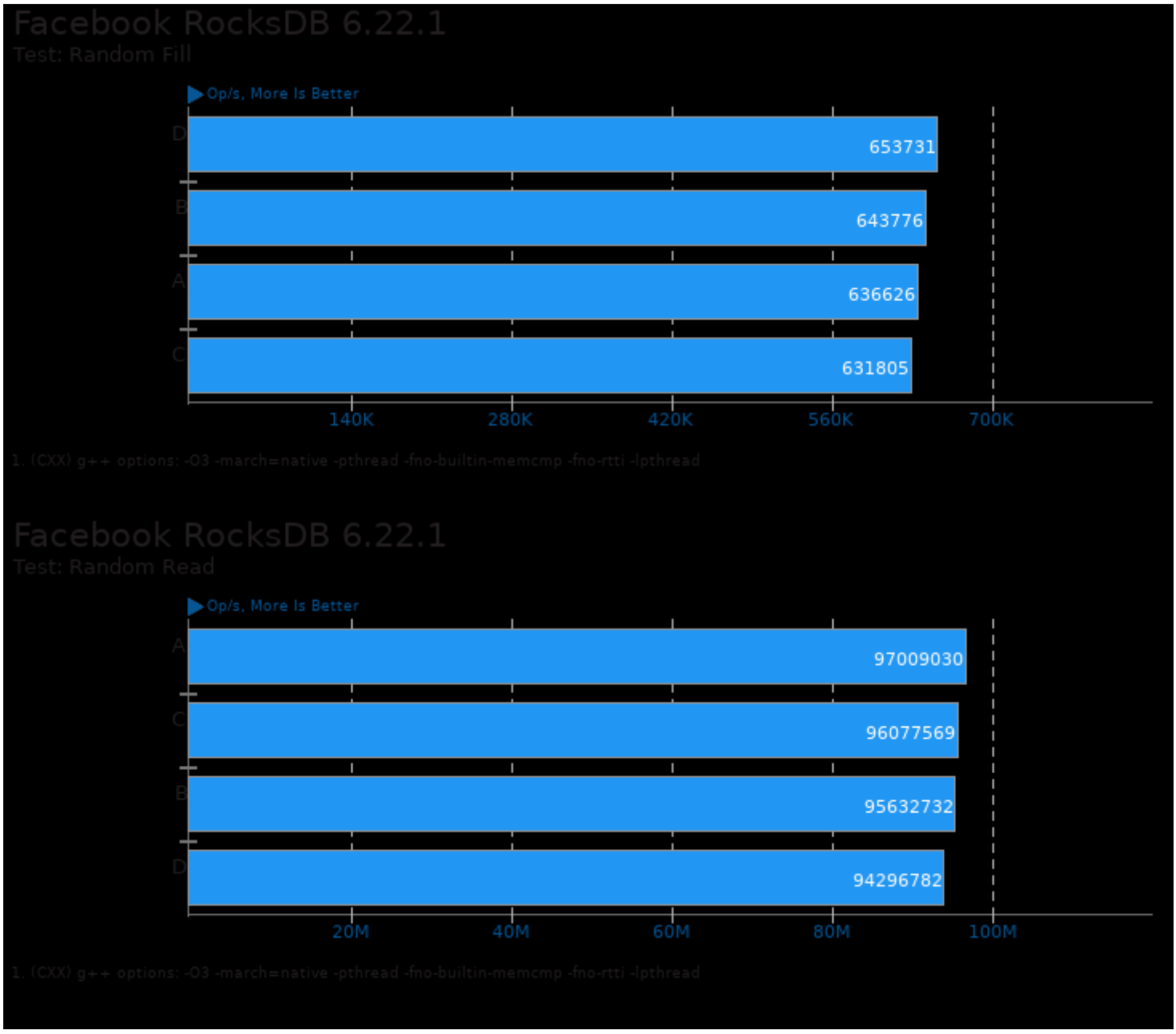
Test: Reads

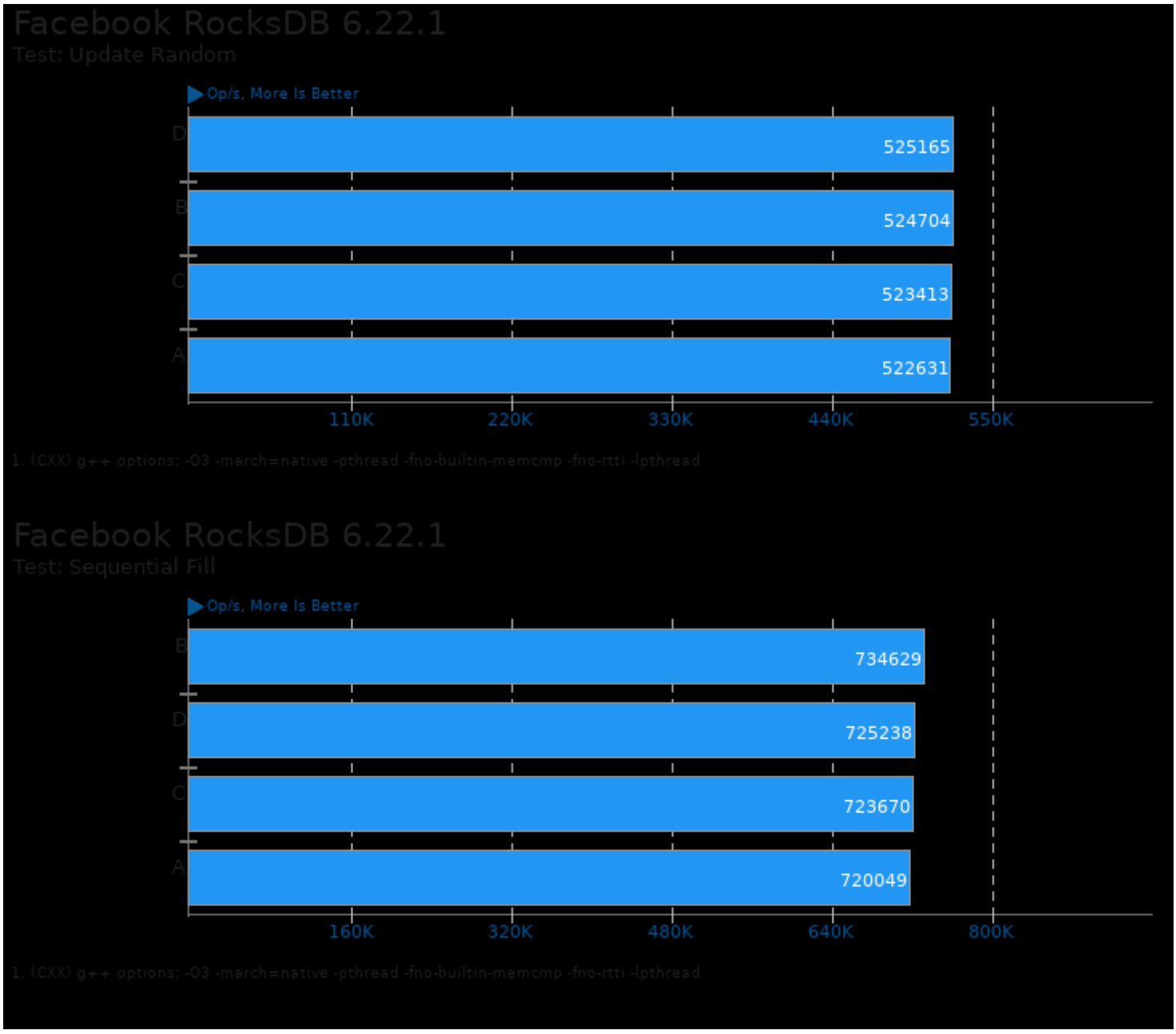


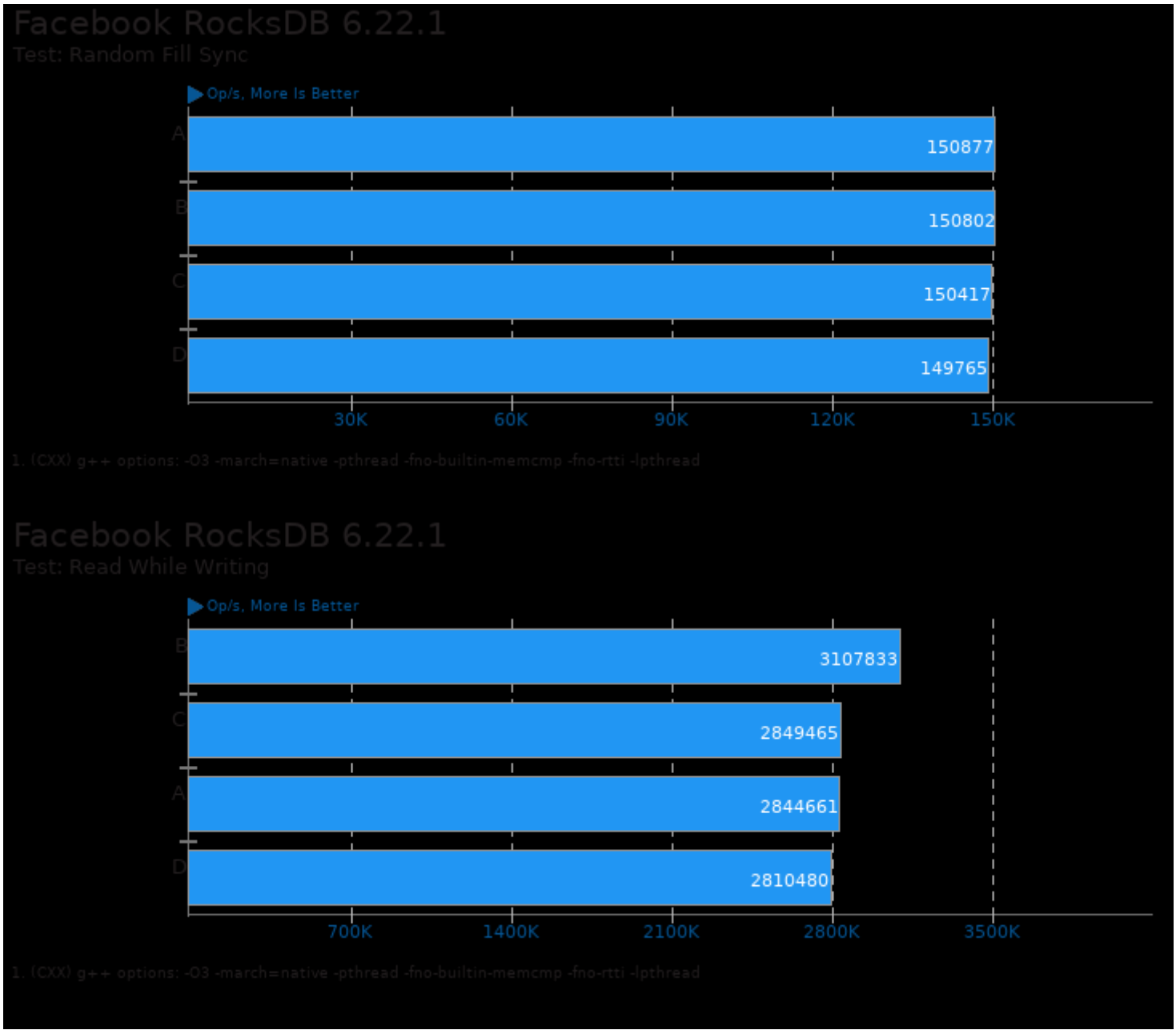
Apache Cassandra 4.0

Test: Writes



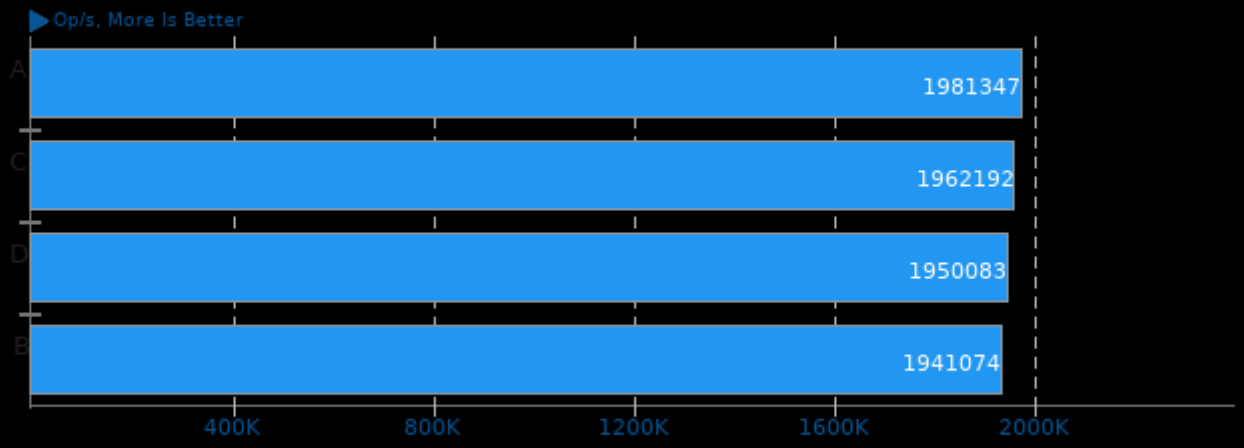

Facebook RocksDB 6.22.1
Test: Random Fill
Op/s, More Is Better
D
653731
B
643776
A
636626
C
631805
140K
280K
420K
560K
700K
1. (CXX) g++ options: -O3 -march=native -pthread -fno-builtin-memcmp -fno-rtti -lpthread
Facebook RocksDB 6.22.1
Test: Random Read
Op/s, More Is Better
A
97009030
C
96077569
B
95632732
D
94296782
20M
40M
60M
80M
100M
1. (CXX) g++ options: -O3 -march=native -pthread -fno-builtin-memcmp -fno-rtti -lpthread


Facebook RocksDB 6.22.1
Test: Update Random
Op/s, More Is Better
D
B
C
A
525165
524704
523413
522631
110K
220K
330K
440K
550K
1. (CXX) g++ options: -O3 -march=native -pthread -fno-builtin-memcmp -fno-rtti -lpthread
Facebook RocksDB 6.22.1
Test: Sequential Fill
Op/s, More Is Better
B
D
C
A
734629
725238
723670
720049
160K
320K
480K
640K
800K
1. (CXX) g++ options: -O3 -march=native -pthread -fno-builtin-memcmp -fno-rtti -lpthread


Facebook RocksDB 6.22.1
Test: Random Fill Sync
Op/s, More Is Better
A
B
C
D
150877
150802
150417
149765
30K
60K
90K
120K
150K
1. (CXX) g++ options: -O3 -march=native -pthread -fno-builtin-memcmp -fno-rtti -lpthread
Facebook RocksDB 6.22.1
Test: Read While Writing
Op/s, More Is Better
B
C
A
D
3107833
2849465
2844661
2810480
700K
1400K
2100K
2800K
3500K
1. (CXX) g++ options: -O3 -march=native -pthread -fno-builtin-memcmp -fno-rtti -lpthread

Facebook RocksDB 6.22.1

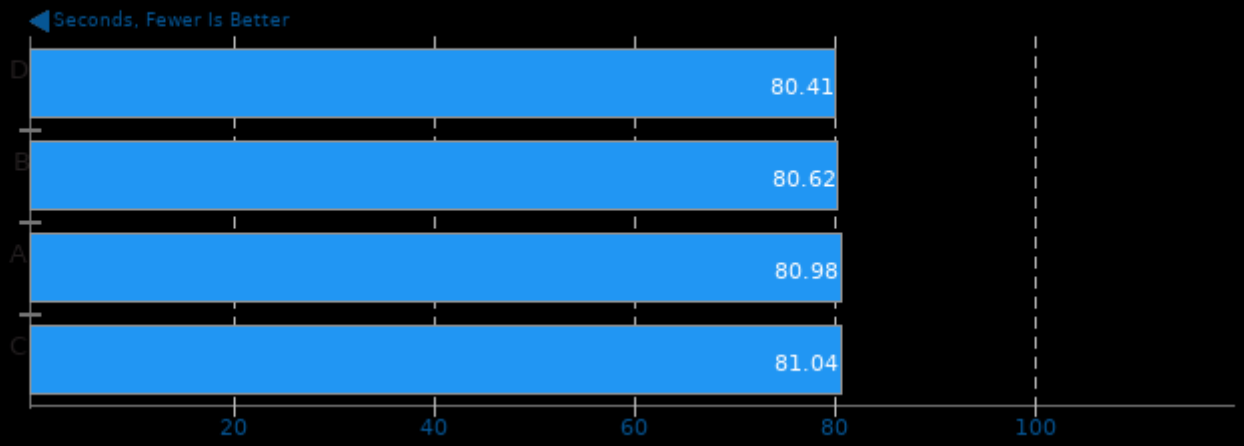
Test: Read Random Write Random



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

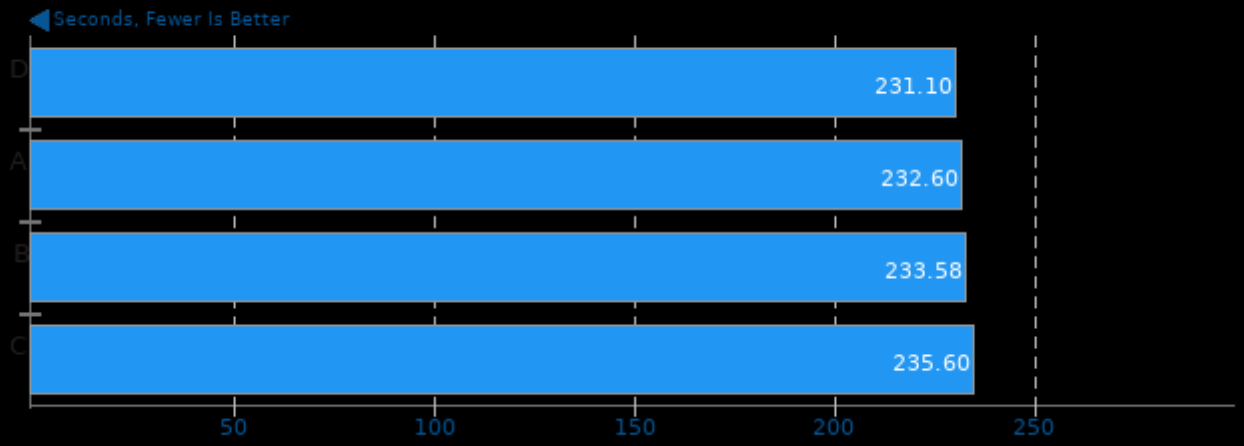
Blender 2.92

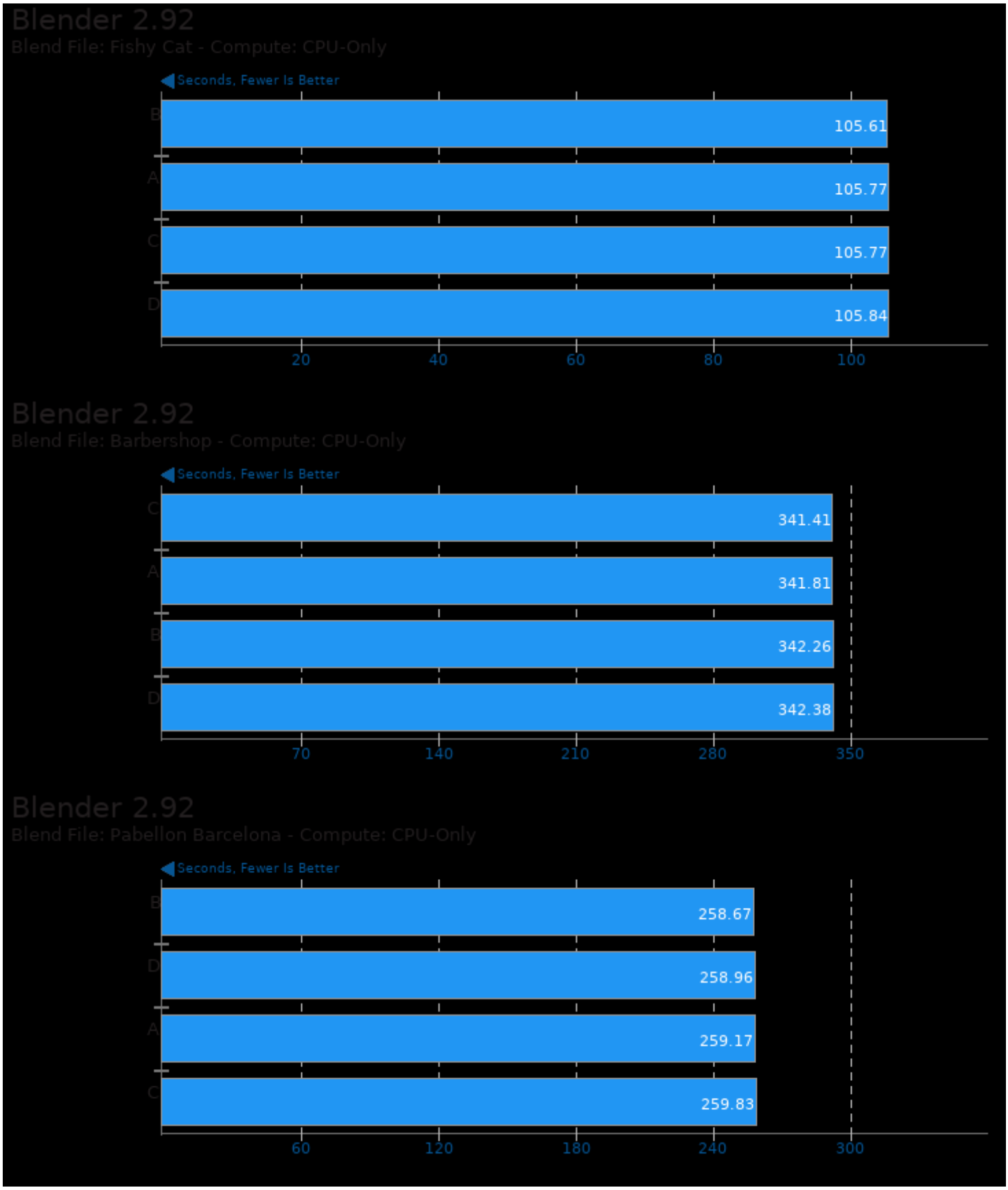
Blend File: BMW27 - Compute: CPU-Only

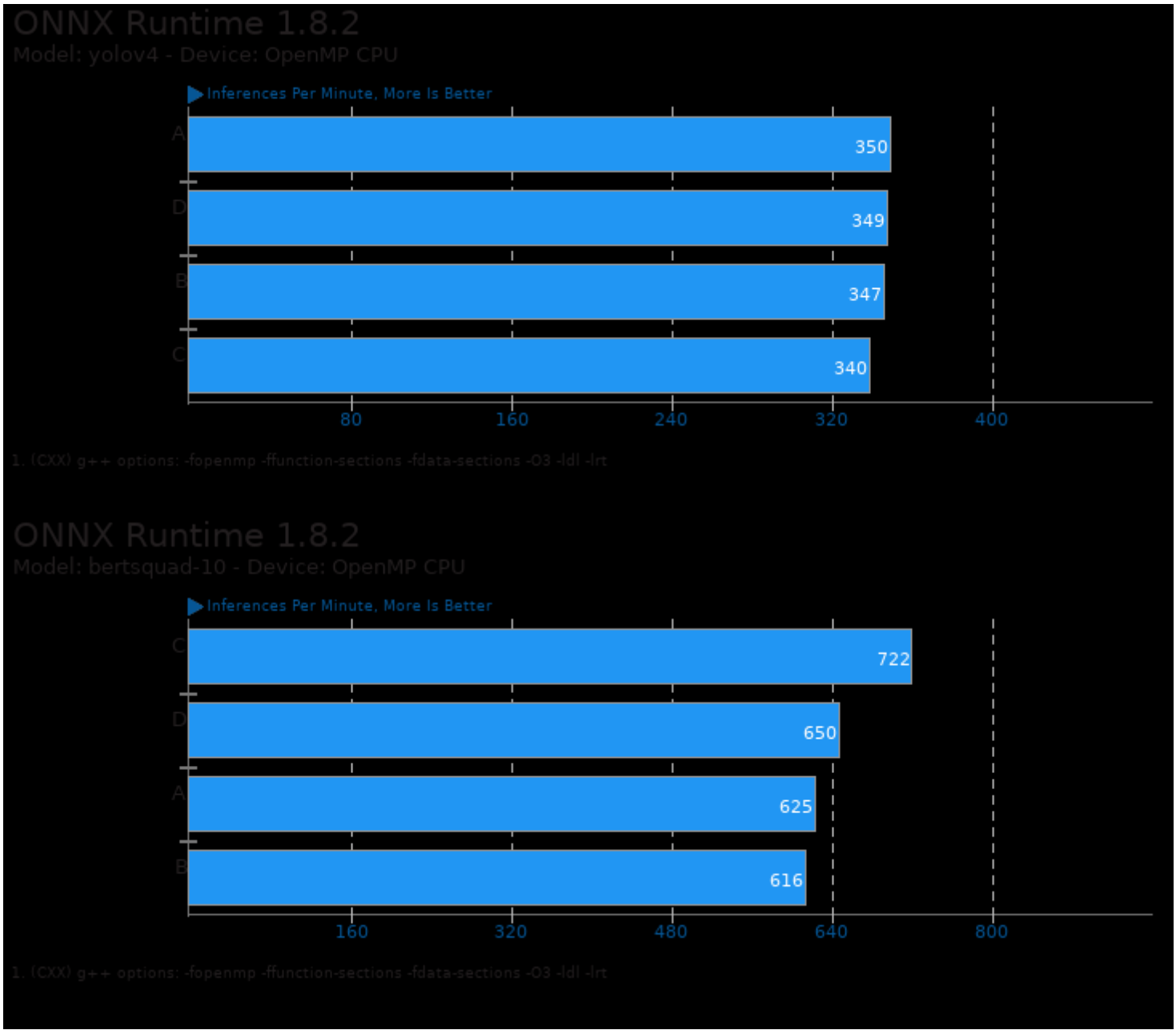


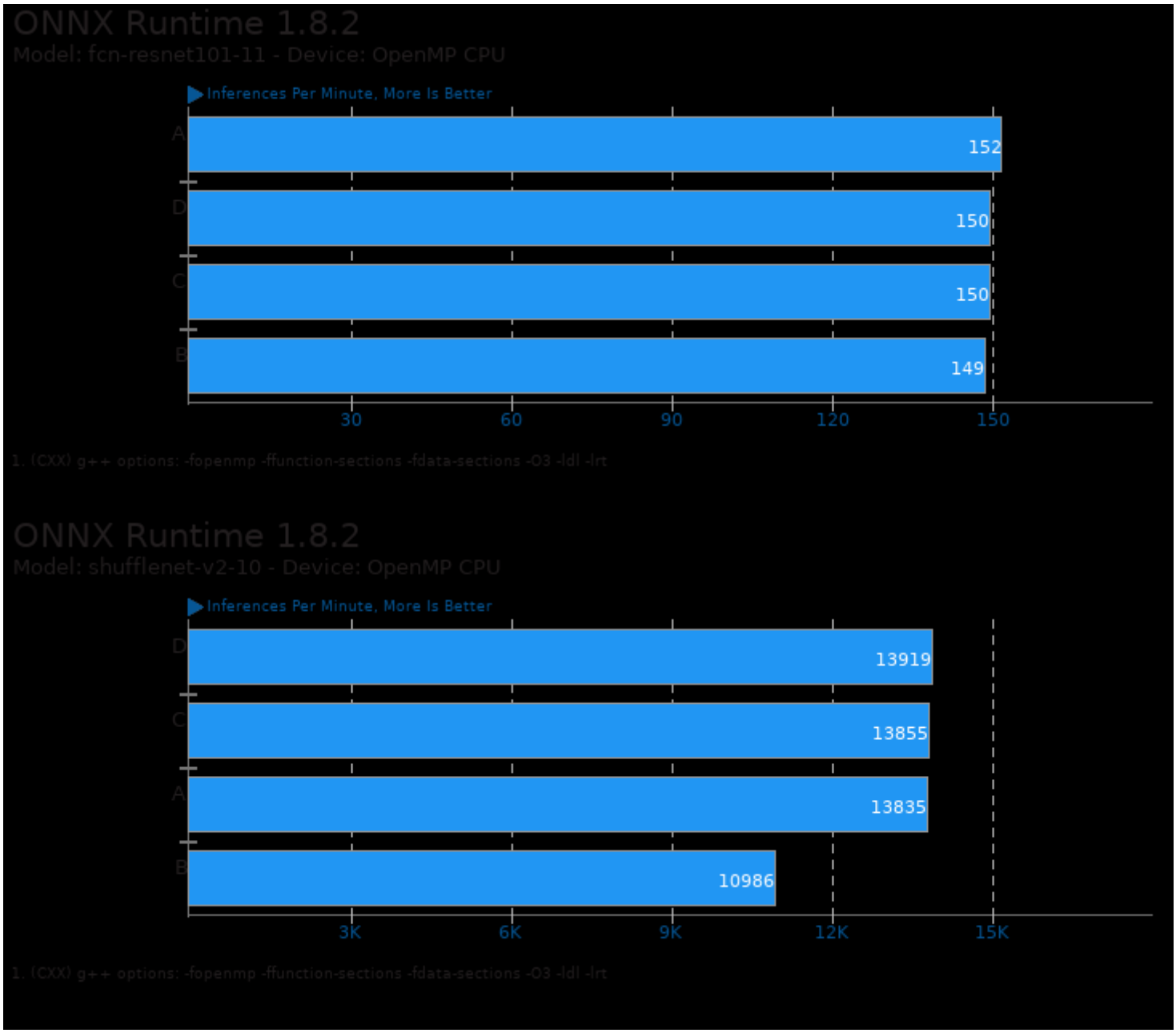
Blender 2.92

Blend File: Classroom - Compute: CPU-Only



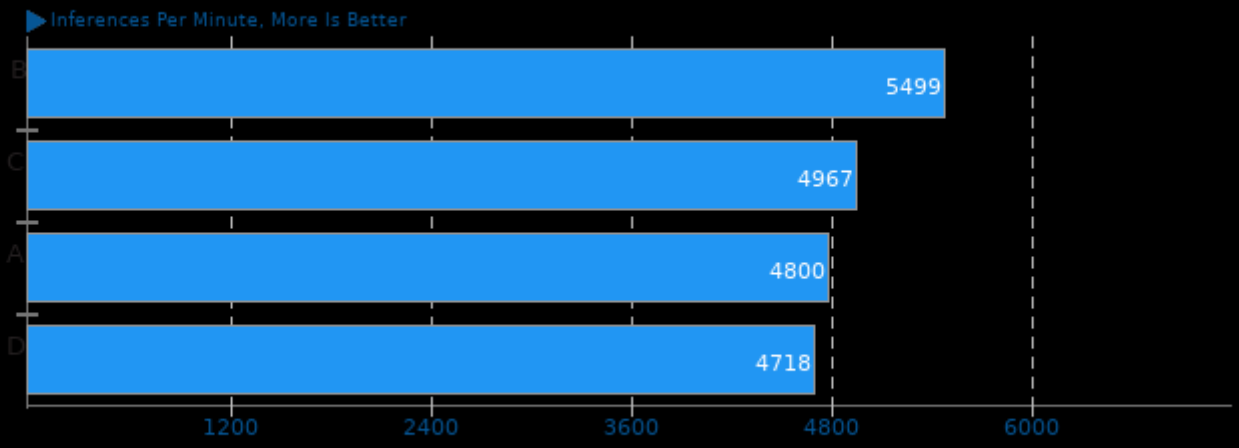

Blender 2.92
Blend File: Fishy Cat - Compute: CPU-Only
Seconds, Fewer Is Better
B
105.61
A
105.77
C
105.77
D
105.84
20
40
60
80
100
Blender 2.92
Blend File: Barbershop - Compute: CPU-Only
Seconds, Fewer Is Better
C
341.41
A
341.81
B
342.26
D
342.38
70
140
210
280
350
Blender 2.92
Blend File: Pabellon Barcelona - Compute: CPU-Only
Seconds, Fewer Is Better
B
258.67
D
258.96
A
259.17
C
259.83
60
120
180
240
300


ONNX Runtime 1.8.2
Model: yolov4 - Device: OpenMP CPU
Inferences Per Minute, More Is Better
A
D
B
C
350
349
347
340
80
160
240
320
400
1. (CXX) g++ options: -fopenmp -ffunction-sections -fdata-sections -O3 -ldl -lrt
ONNX Runtime 1.8.2
Model: bertsquad-10 - Device: OpenMP CPU
Inferences Per Minute, More Is Better
C
D
A
B
722
650
625
616
160
320
480
640
800
1. (CXX) g++ options: -fopenmp -ffunction-sections -fdata-sections -O3 -ldl -lrt


ONNX Runtime 1.8.2
Model: fcn-resnet101-11 - Device: OpenMP CPU
Inferences Per Minute, More Is Better
A
D
C
B
152
150
150
149
30
60
90
120
150
1. (CXX) g++ options: -fopenmp -ffunction-sections -fdata-sections -O3 -ldl -lrt
ONNX Runtime 1.8.2
Model: shufflenet-v2-10 - Device: OpenMP CPU
Inferences Per Minute, More Is Better
D
C
A
B
13919
13855
13835
10986
3K
6K
9K
12K
15K
1. (CXX) g++ options: -fopenmp -ffunction-sections -fdata-sections -O3 -ldl -lrt

ONNX Runtime 1.8.2

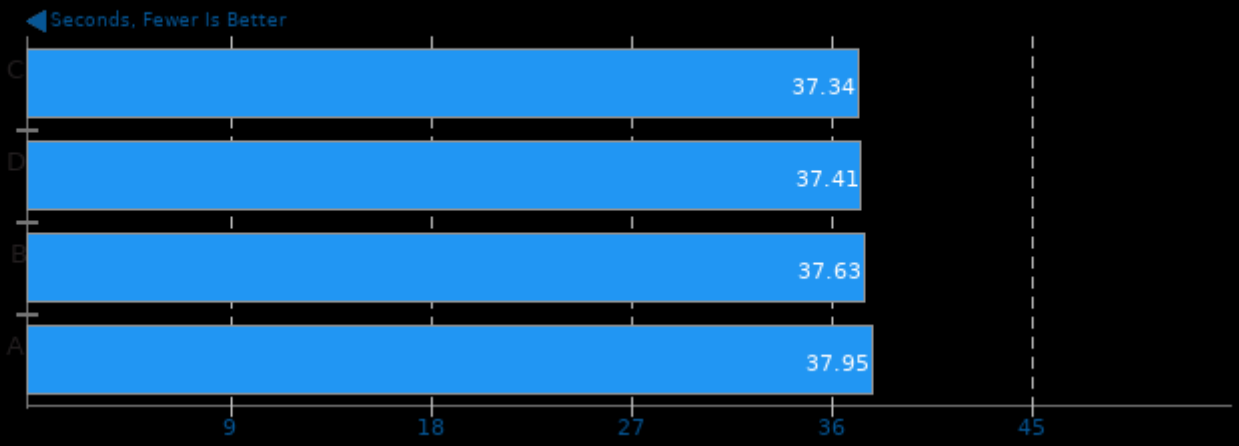
Model: super-resolution-10 - Device: OpenMP CPU



1. (CXX) g++ options: -fopenmp -ffunction-sections -fdata-sections -O3 -ldl -lrt

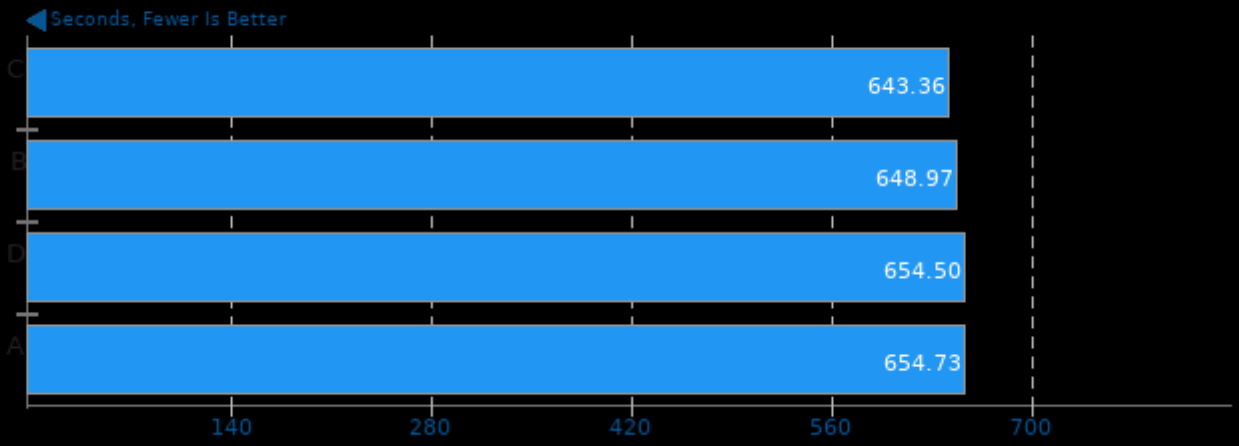
ECP-CANDLE 0.4

Benchmark: P1B2



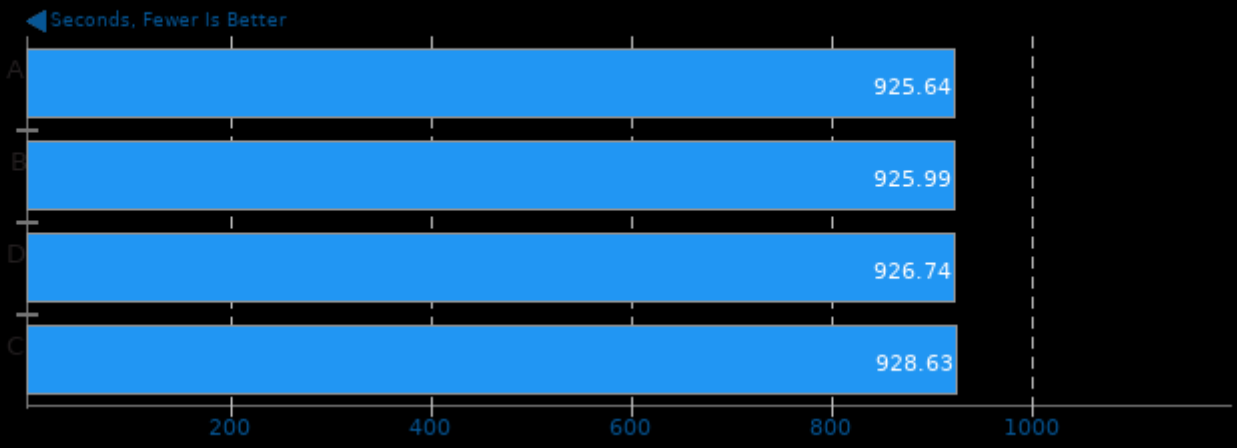
ECP-CANDLE 0.4

Benchmark: P3B1



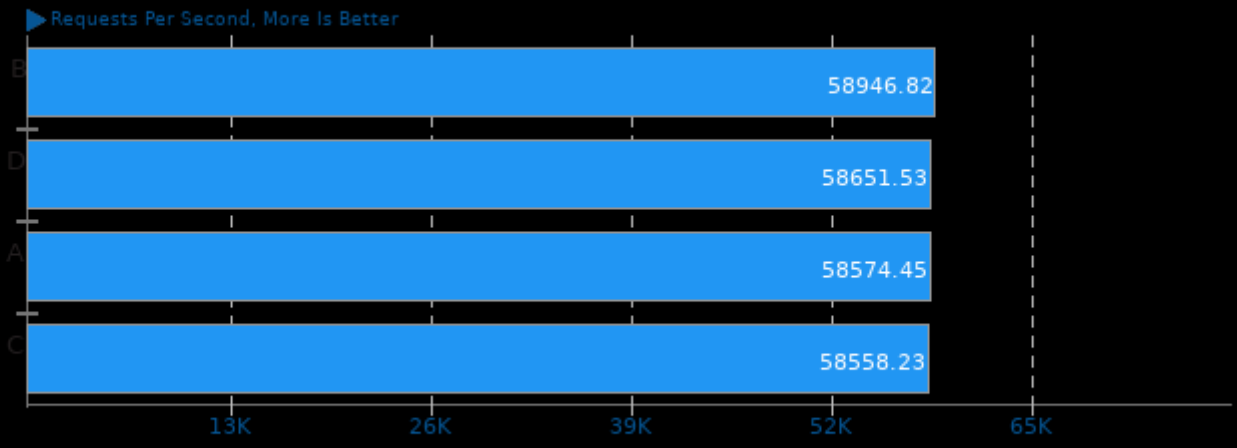
ECP-CANDLE 0.4

Benchmark: P3B2



nginx 1.21.1

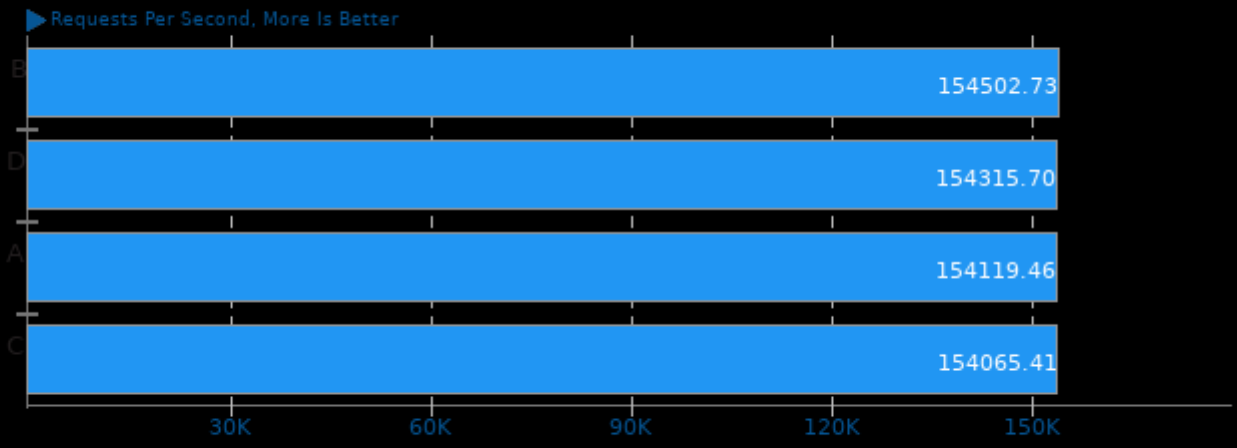
Concurrent Requests: 1



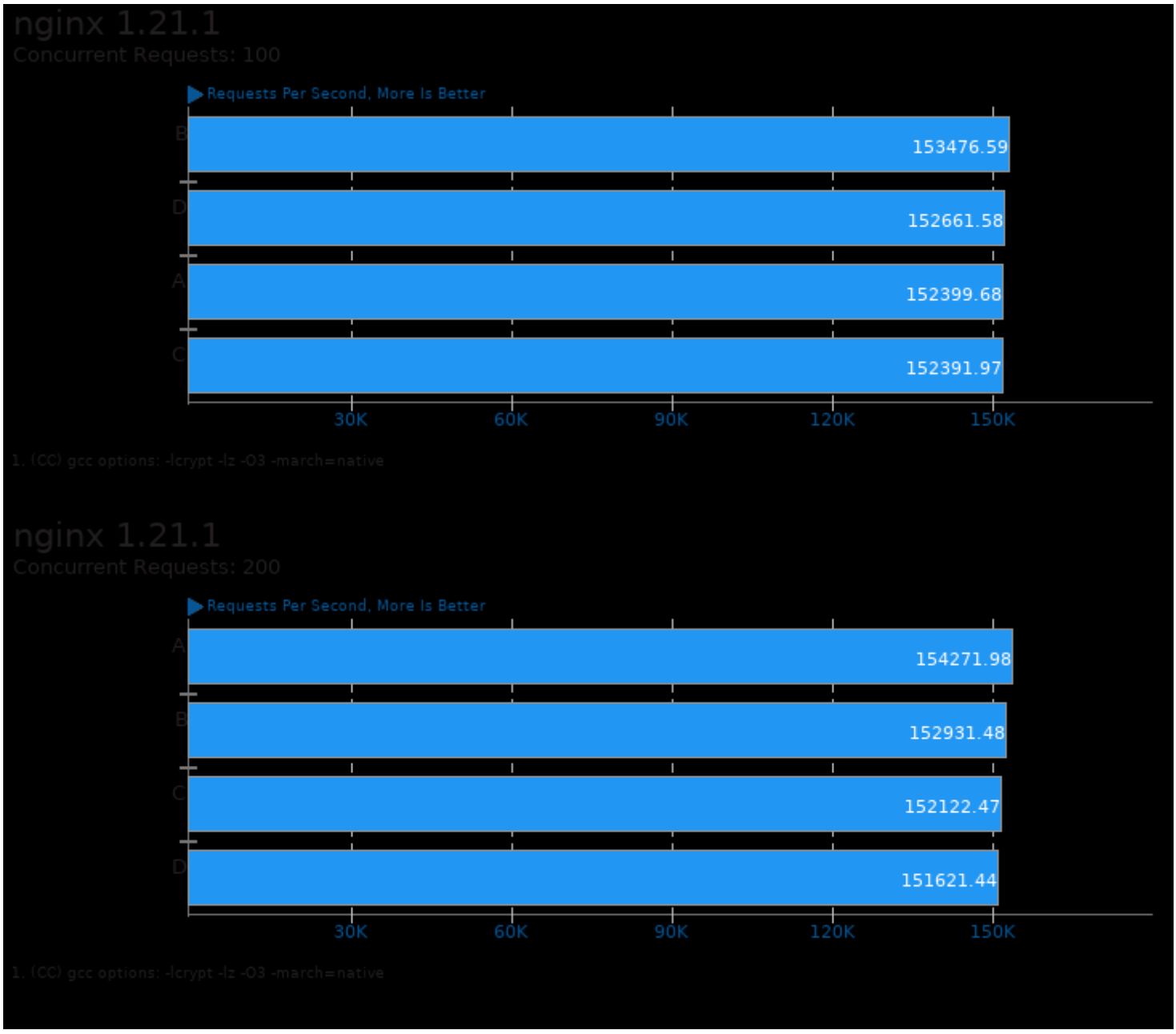
1. (CC) gcc options: -lcrypt -lz -O3 -march=native

nginx 1.21.1

Concurrent Requests: 20

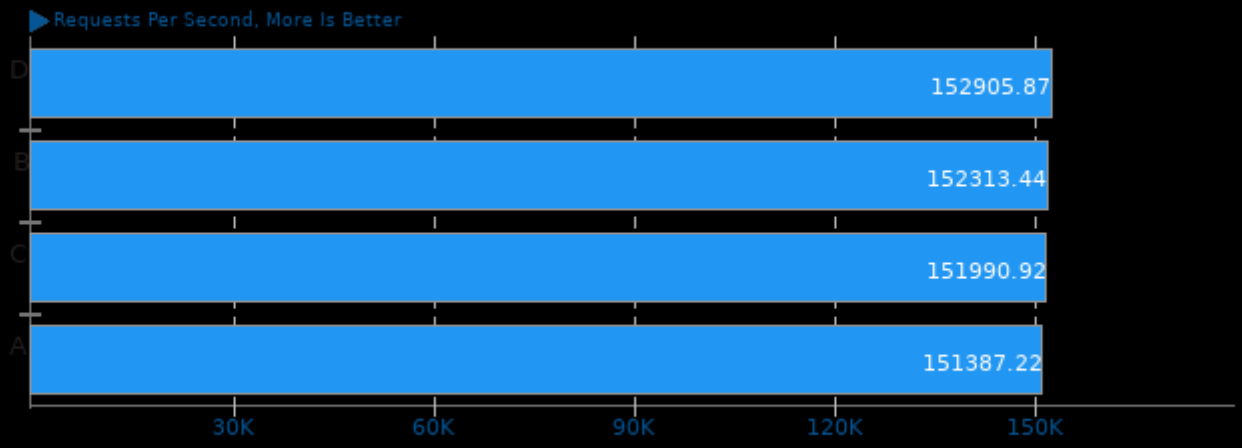


1. (CC) gcc options: -lcrypt -lz -O3 -march=native


nginx 1.21.1
Concurrent Requests: 100
Requests Per Second, More Is Better
B
153476.59
D
152661.58
A
152399.68
C
152391.97
30K
60K
90K
120K
150K
1. (CC) gcc options: -lcrypt -lz -O3 -march=native
nginx 1.21.1
Concurrent Requests: 200
Requests Per Second, More Is Better
A
154271.98
B
152931.48
C
152122.47
D
151621.44
30K
60K
90K
120K
150K
1. (CC) gcc options: -lcrypt -lz -O3 -march=native

nginx 1.21.1

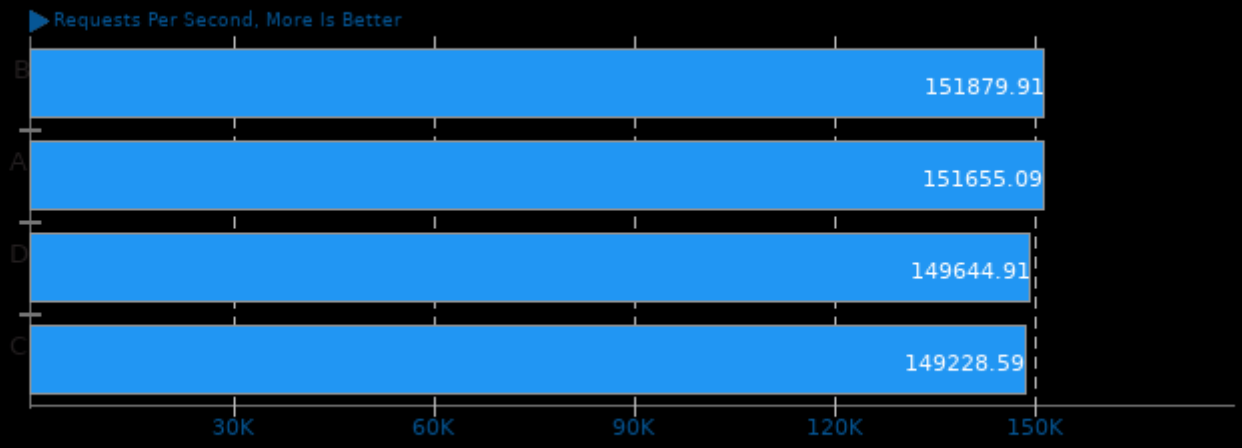
Concurrent Requests: 500



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

nginx 1.21.1

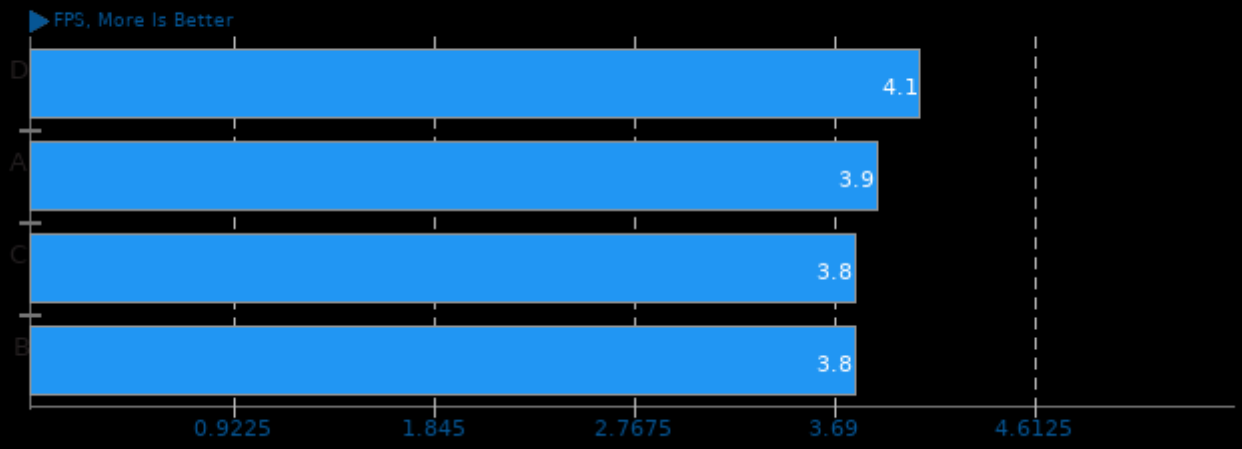
Concurrent Requests: 1000

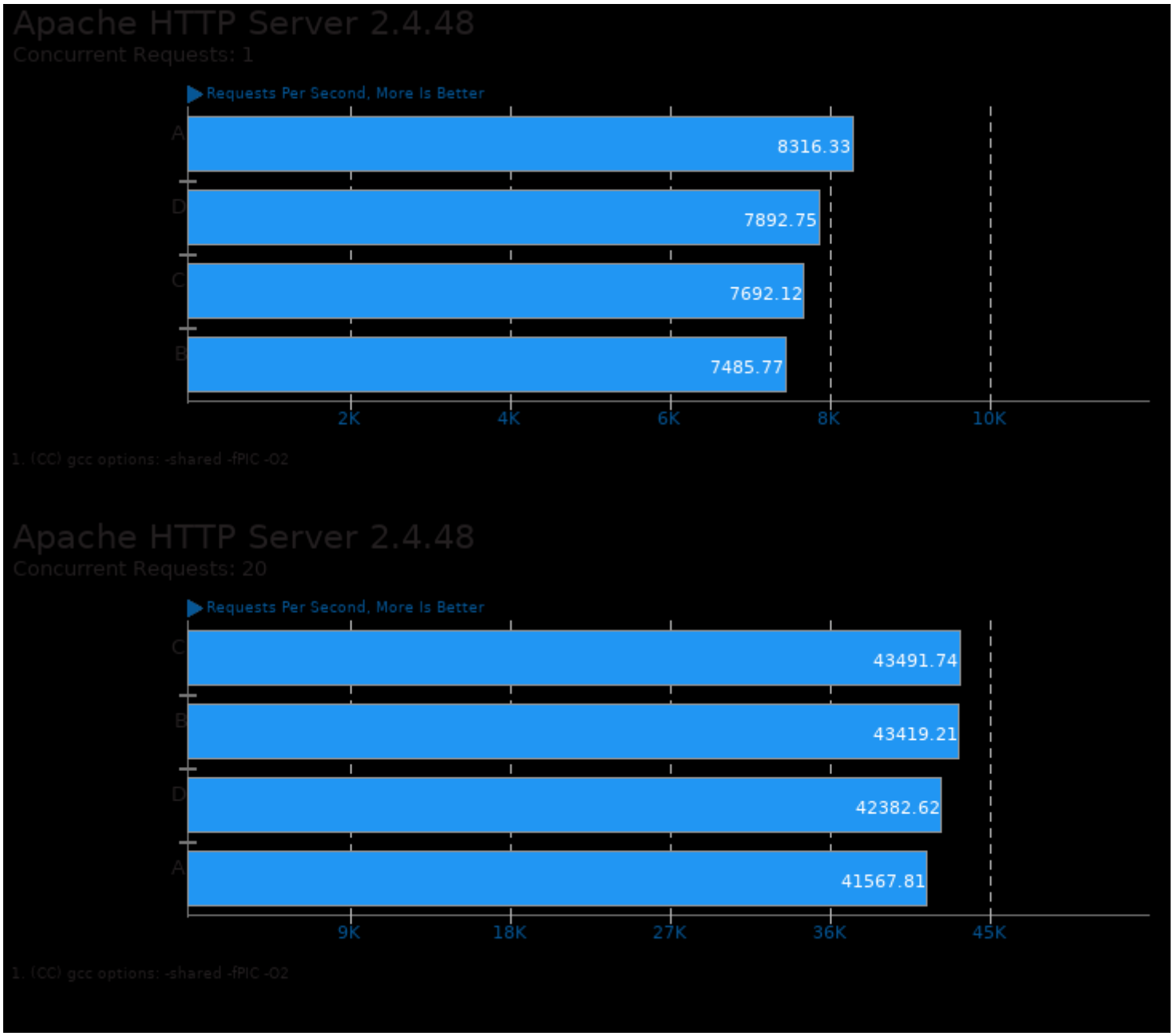


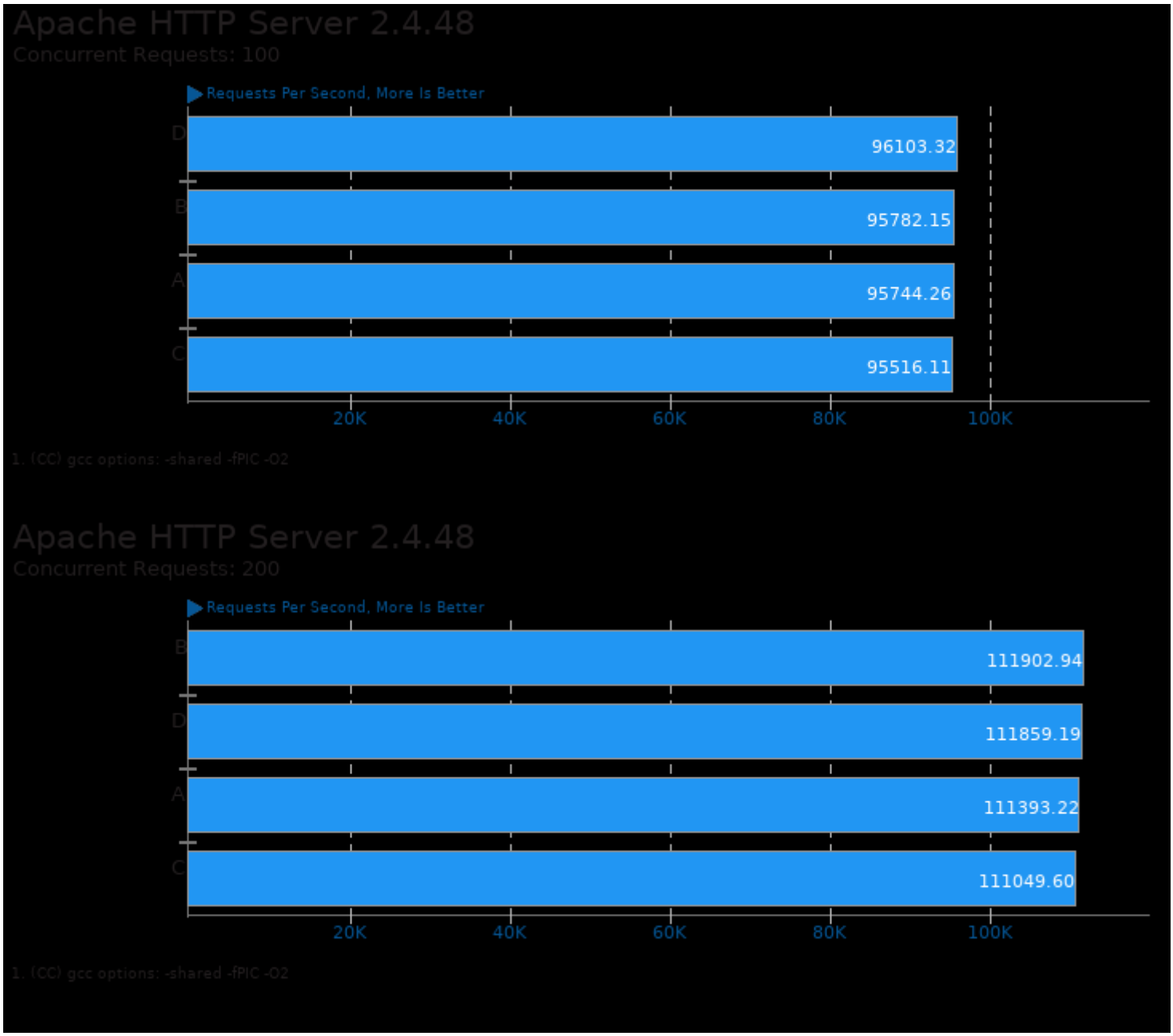
1. (CC) gcc options: -lcrypt -lz -O3 -march=native

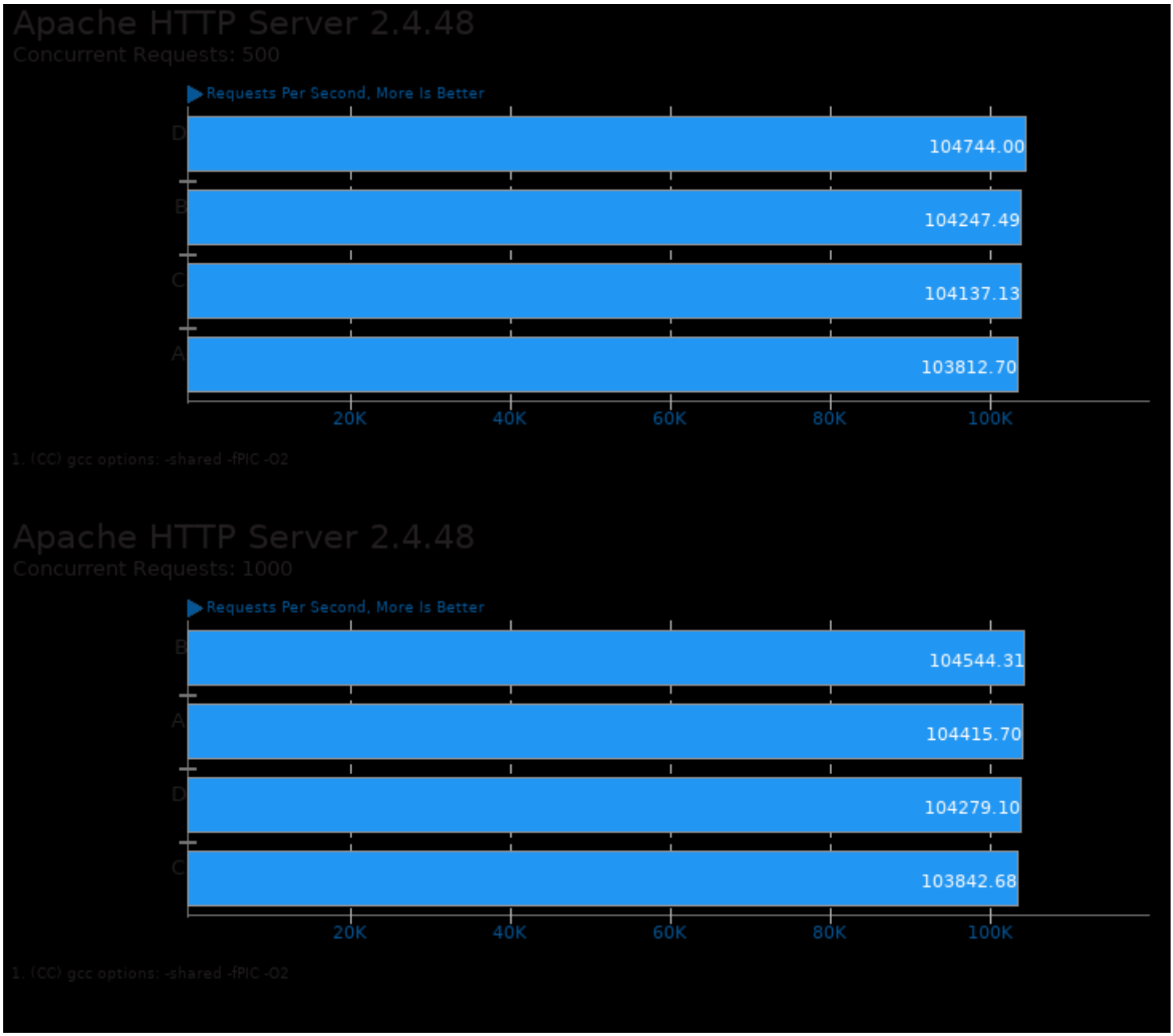
Natron 2.4

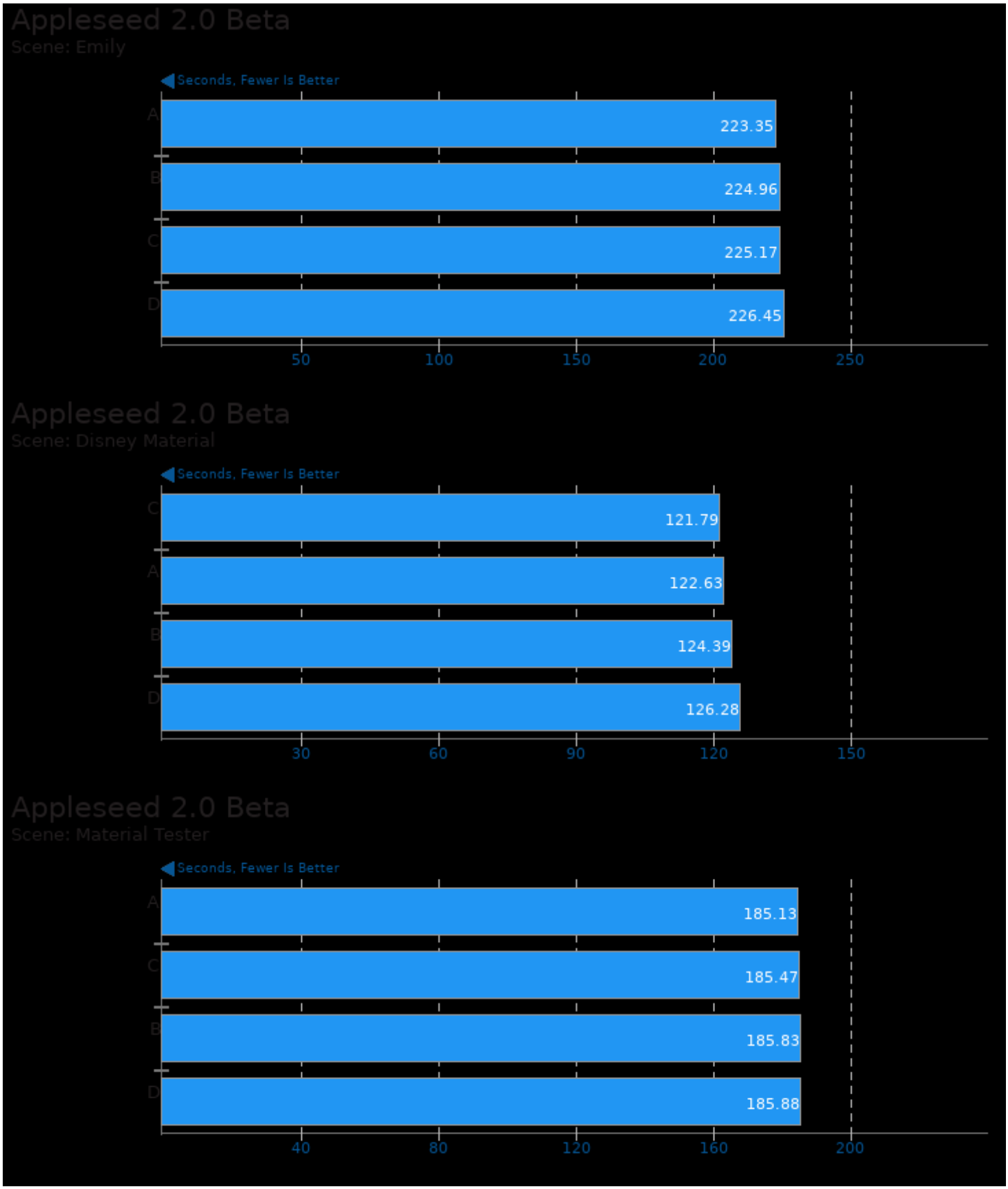
Input: Spaceship




Apache HTTP Server 2.4.48
Concurrent Requests: 1
Requests Per Second, More Is Better
A
D
C
B
8316.33
7892.75
7692.12
7485.77
2K
4K
6K
8K
10K
1. (CC) gcc options: -shared -fPIC -O2
Apache HTTP Server 2.4.48
Concurrent Requests: 20
Requests Per Second, More Is Better
C
B
D
A
43491.74
43419.21
42382.62
41567.81
9K
18K
27K
36K
45K
1. (CC) gcc options: -shared -fPIC -O2

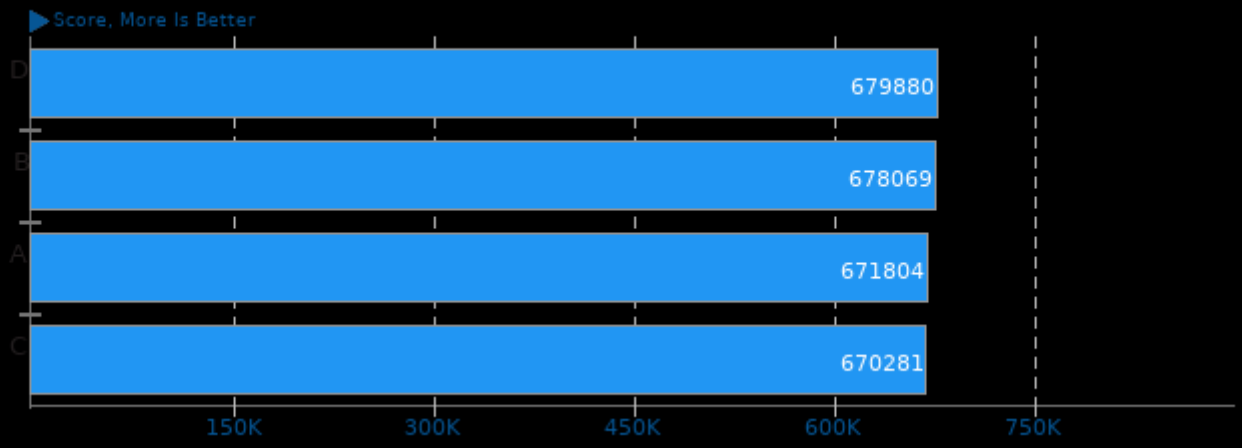

Apache HTTP Server 2.4.48
Concurrent Requests: 100
Requests Per Second, More Is Better
D
96103.32
B
95782.15
A
95744.26
C
95516.11
20K
40K
60K
80K
100K
1. (CC) gcc options: -shared -fPIC -O2
Apache HTTP Server 2.4.48
Concurrent Requests: 200
Requests Per Second, More Is Better
B
111902.94
D
111859.19
A
111393.22
C
111049.60
20K
40K
60K
80K
100K
1. (CC) gcc options: -shared -fPIC -O2


Apache HTTP Server 2.4.48
Concurrent Requests: 500
Requests Per Second, More Is Better
D
104744.00
B
104247.49
C
104137.13
A
103812.70
20K
40K
60K
80K
100K
1. (CC) gcc options: -shared -fPIC -O2
Apache HTTP Server 2.4.48
Concurrent Requests: 1000
Requests Per Second, More Is Better
B
104544.31
A
104415.70
D
104279.10
C
103842.68
20K
40K
60K
80K
100K
1. (CC) gcc options: -shared -fPIC -O2

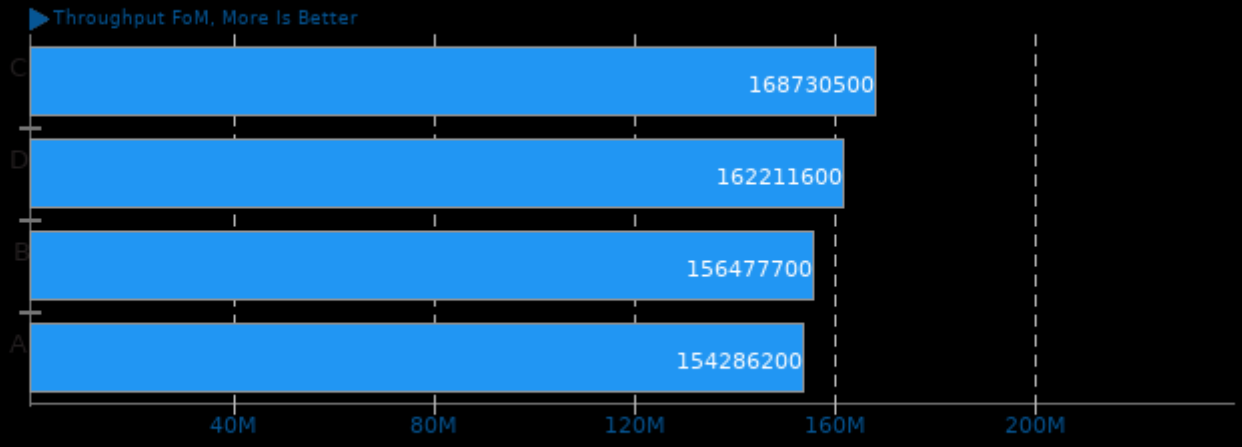

Appleseed 2.0 Beta
Scene: Emily
Seconds, Fewer Is Better
A
B
C
D
223.35
224.96
225.17
226.45
50
100
150
200
250
Appleseed 2.0 Beta
Scene: Disney Material
Seconds, Fewer Is Better
C
A
B
D
121.79
122.63
124.39
126.28
30
60
90
120
150
Appleseed 2.0 Beta
Scene: Material Tester
Seconds, Fewer Is Better
A
C
B
D
185.13
185.47
185.83
185.88
40
80
120
160
200

PHPBench 0.8.1

PHP Benchmark Suite



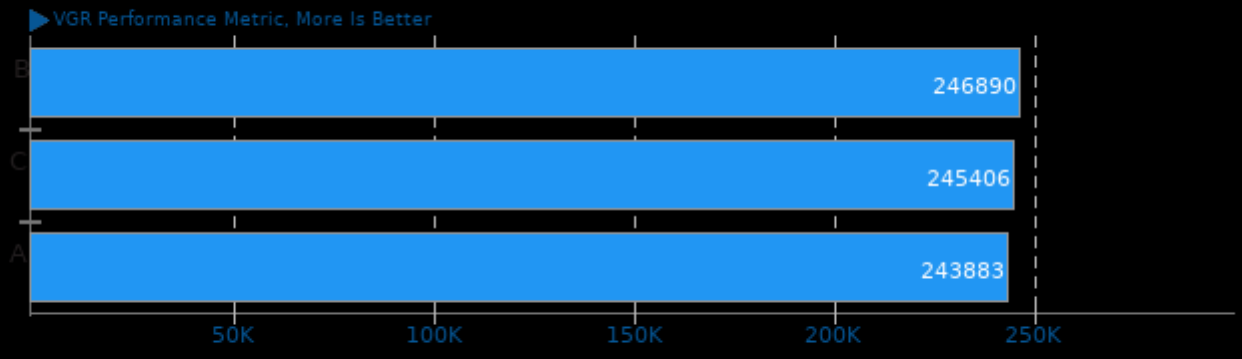
Kripke 1.2.4



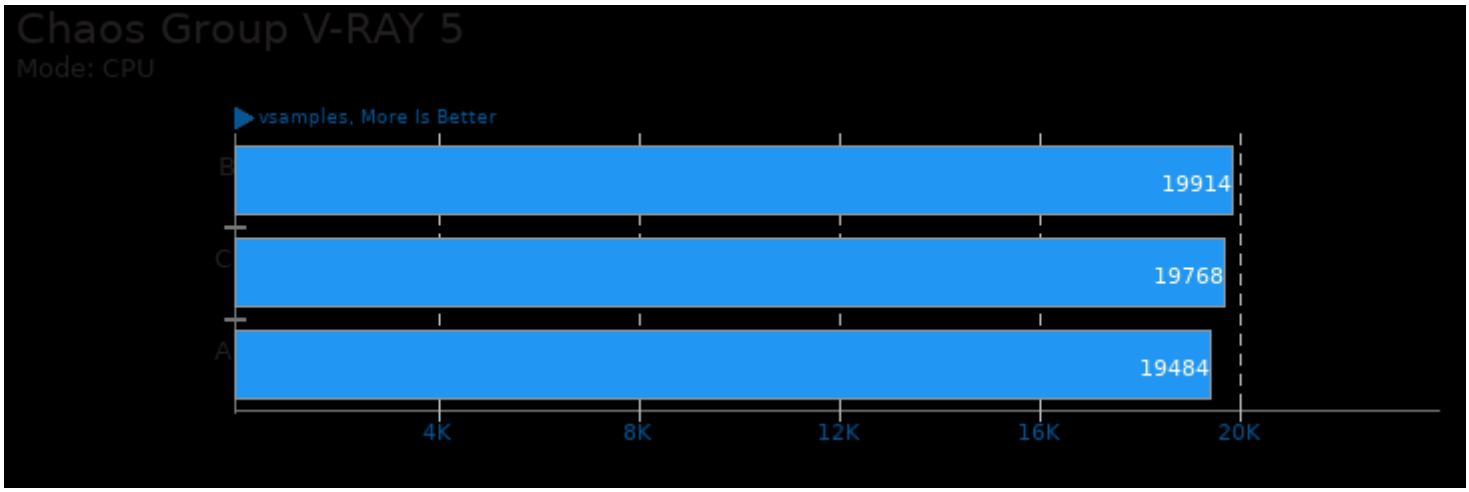
1. (CXX) g++ options: -O3 -fopenmp

BRL-CAD 7.32.2

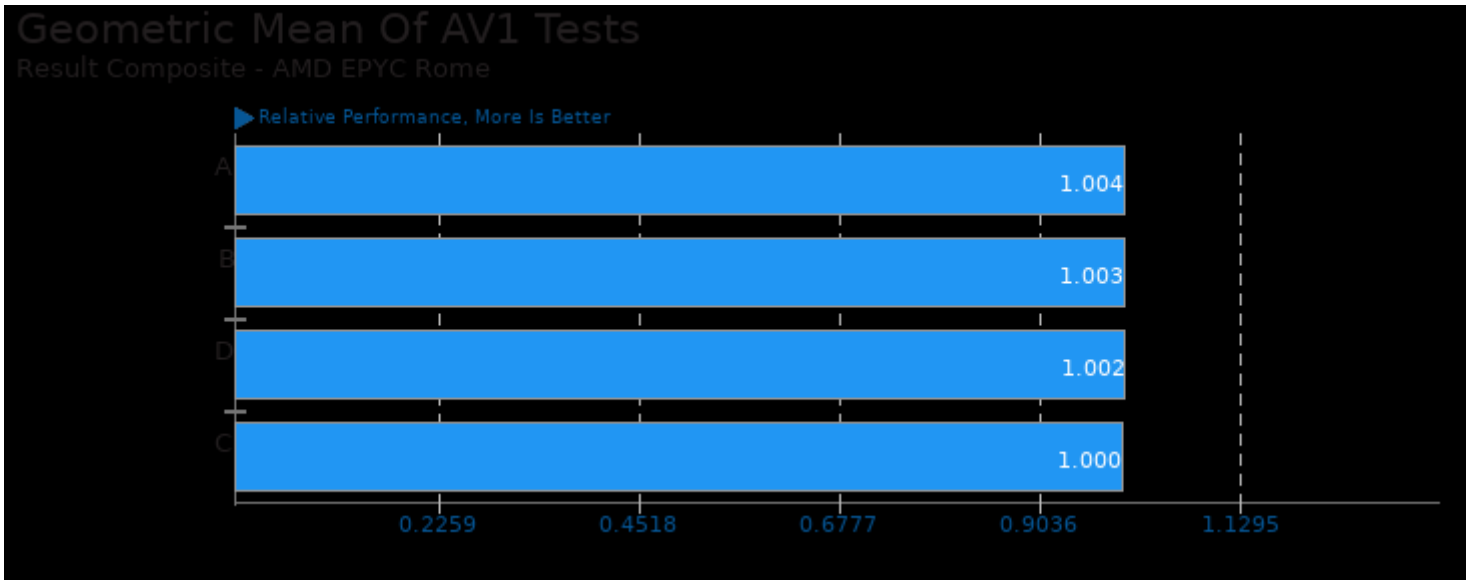
VGR Performance Metric



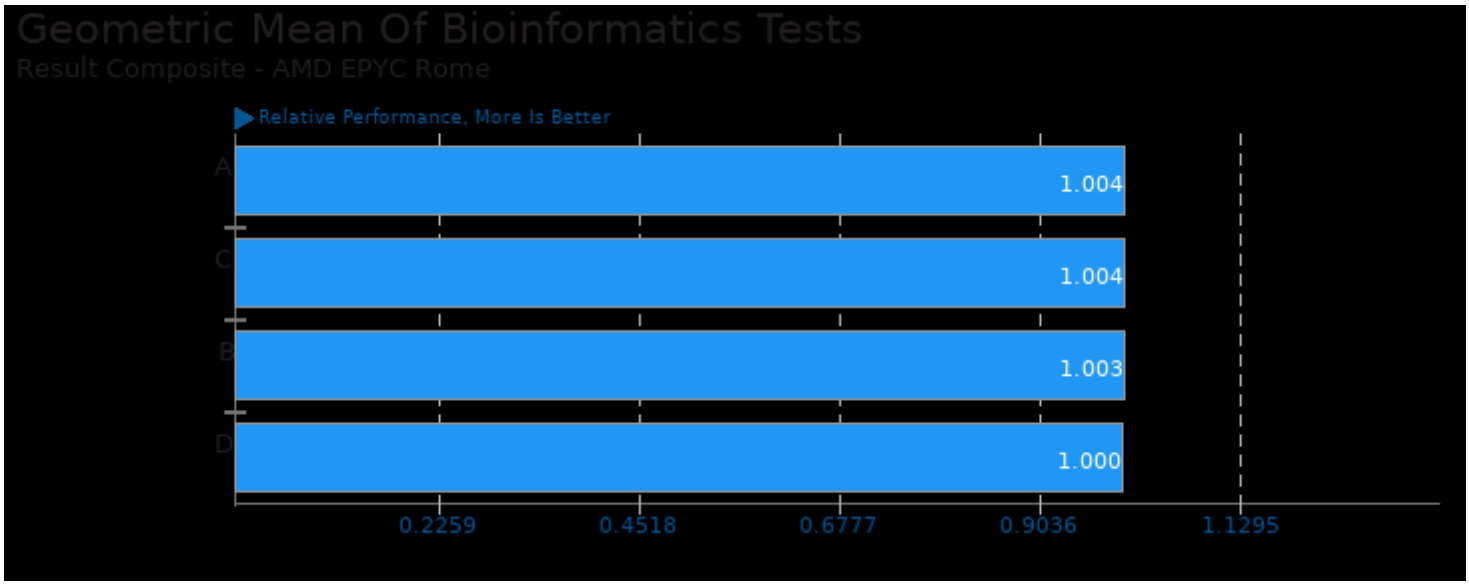
1. (CXX) g++ options: -std=c++11 -pipe -fvisibility=hidden -fno-strict-aliasing -fno-common -fexceptions -ftemplate-depth-128 -m64 -ggdb3 -O3 -fipa-pt


Chaos Group V-RAY 5
Mode: CPU
vsamples, More Is Better
B
C
A
19914
19768
19484
4K
8K
12K
16K
20K

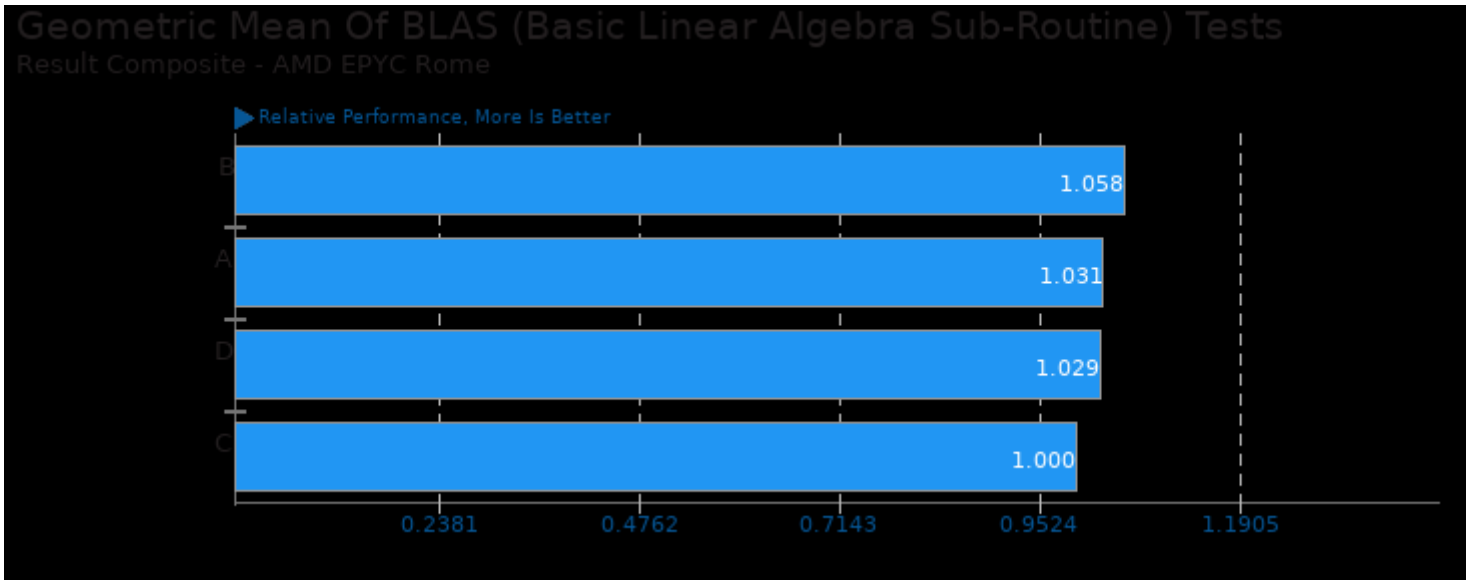
These geometric means are based upon test groupings / test suites for this result file.



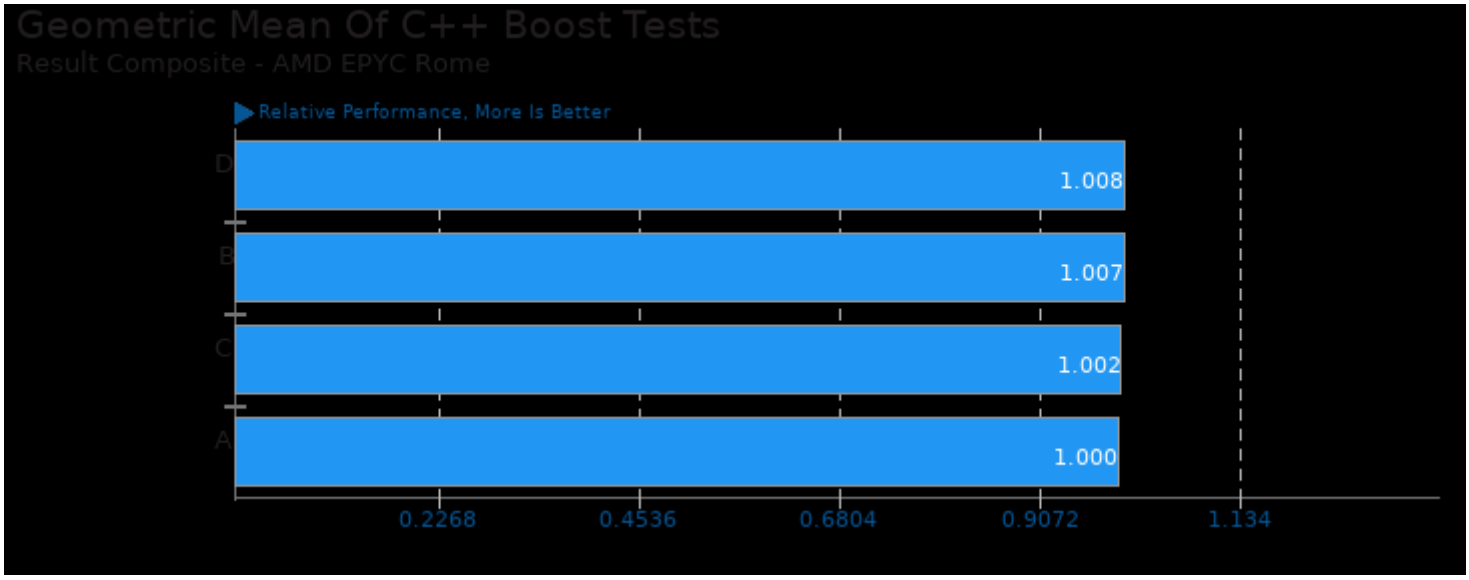
Geometric mean based upon tests: pts/dav1d, pts/aom-av1, pts/svt-av1 and pts/avifenc



Geometric mean based upon tests: pts/mrbayes and pts/hmmer



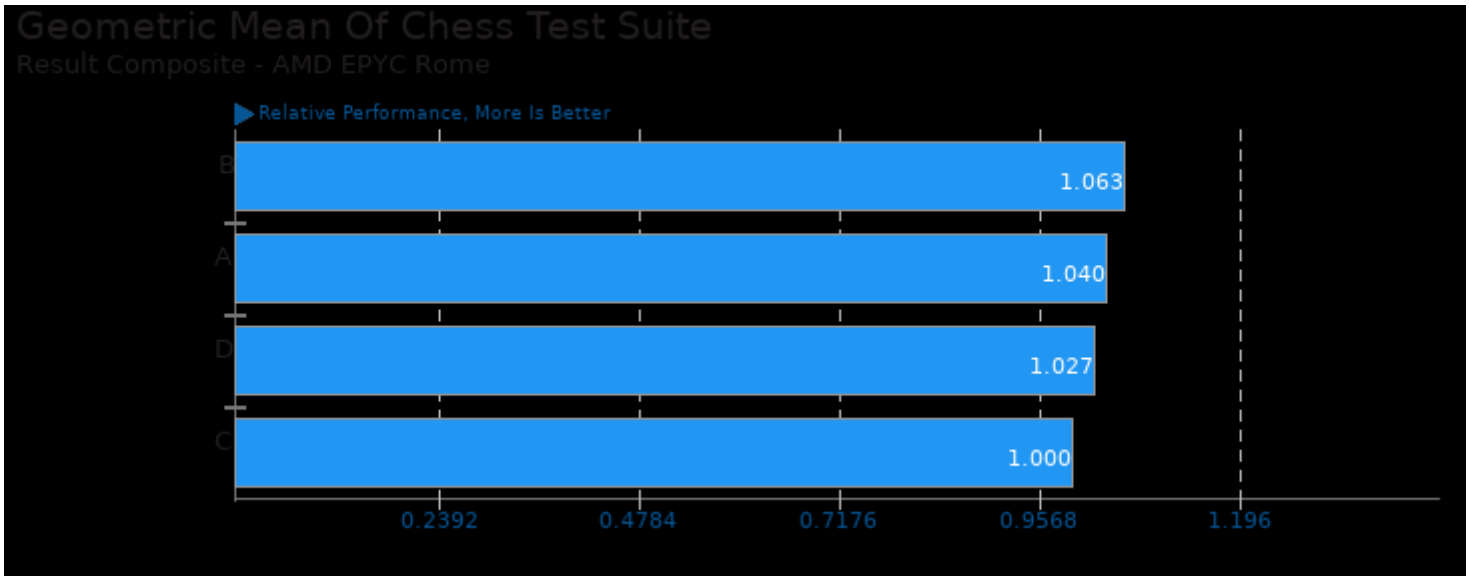
Geometric mean based upon tests: pts/lczero, pts/nwchem and pts/qe



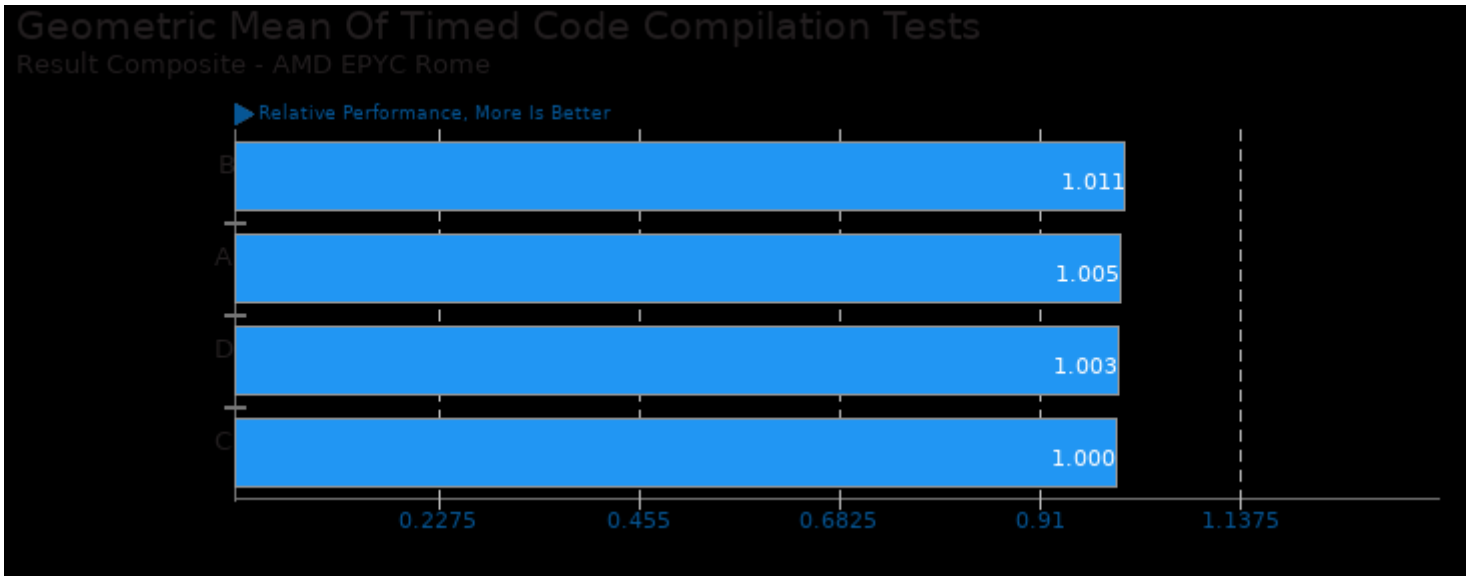
Geometric mean based upon tests: pts/quantlib, pts/openfoam and pts/chia-vdf



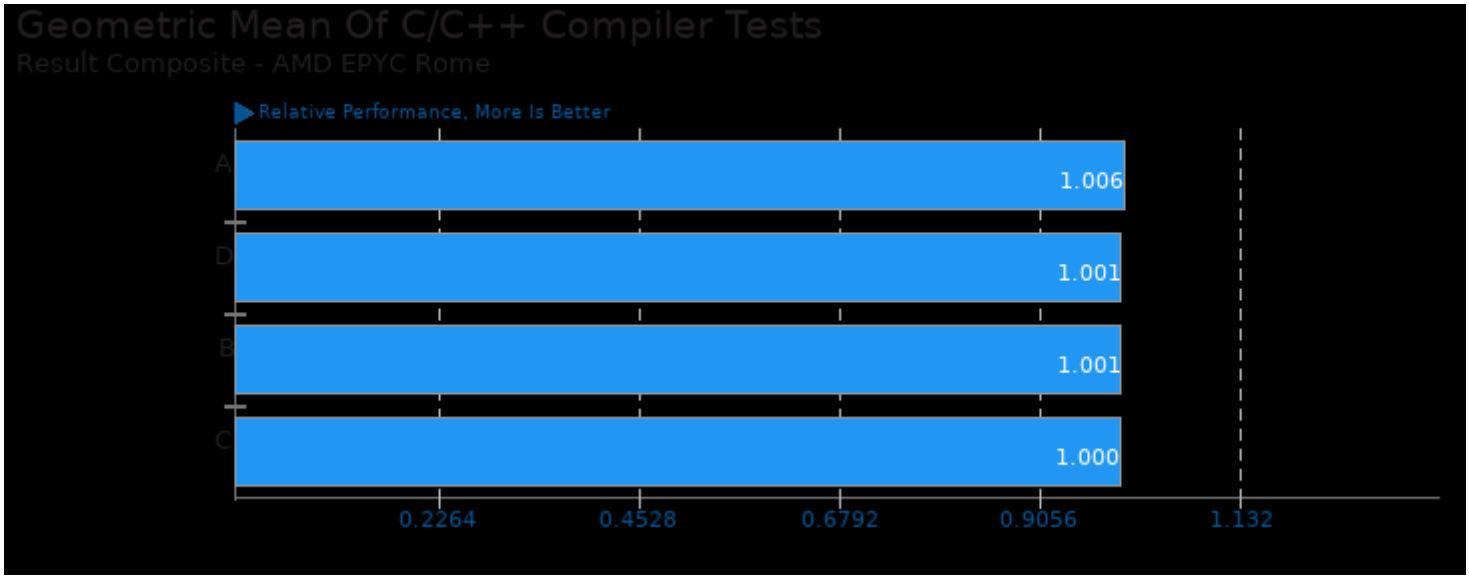
Geometric mean based upon tests: system/openscad and pts/brl-cad



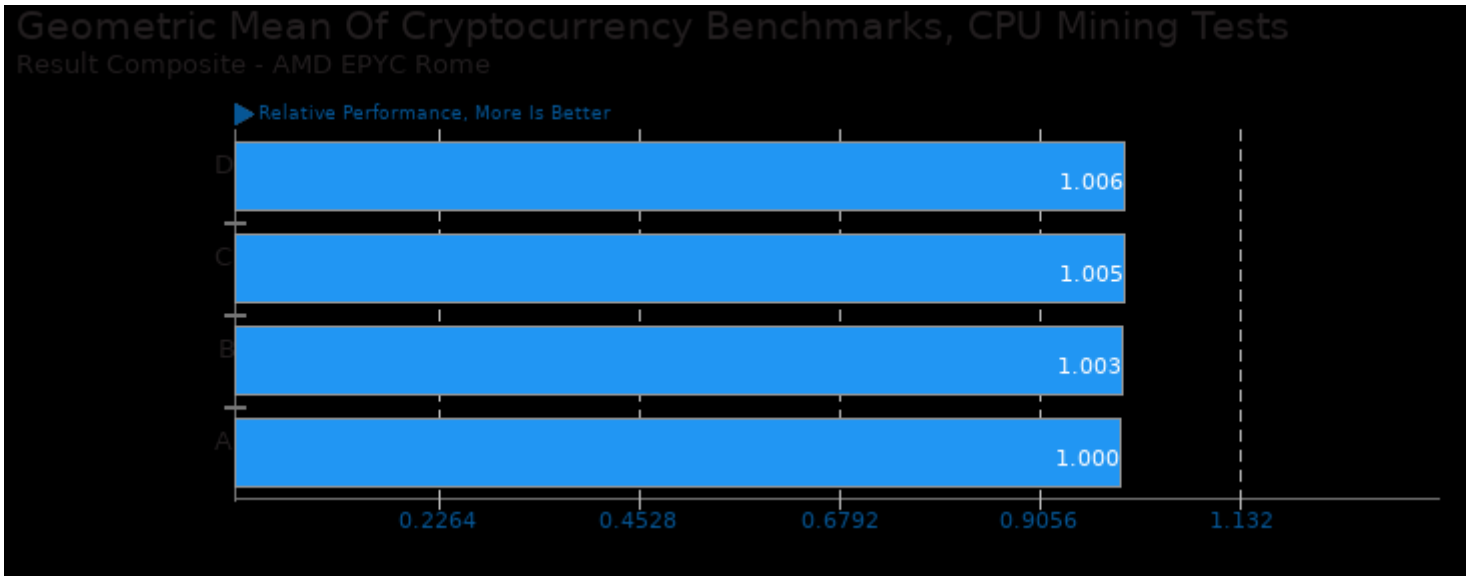
Geometric mean based upon tests: pts/lczero, pts/stockfish and pts/asmfish



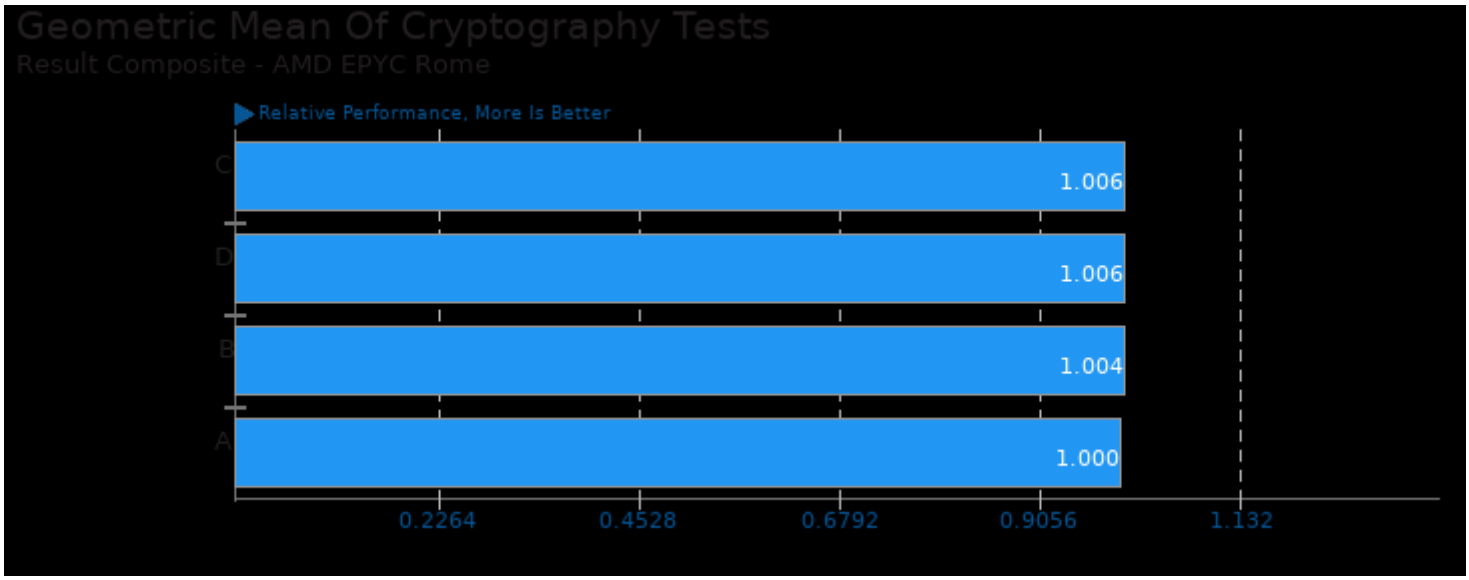
Geometric mean based upon tests: pts/build-linux-kernel, pts/build-gcc, pts/build-llvm, pts/build-ffmpeg, pts/build-godot, pts/build-erlang, pts/build-wasmer and pts/build-mesa



Geometric mean based upon tests: pts/vpxenc, pts/stockfish, pts/hmmer, pts/build-llvm, pts/c-ray, pts/encode-flac, pts/pgbench, pts/apache, pts/mrbayes, pts/dav1d, pts/openssl, pts/nginx, pts/aom-av1, pts/svt-av1, pts/svt-vp9 and pts/build-ffmpeg



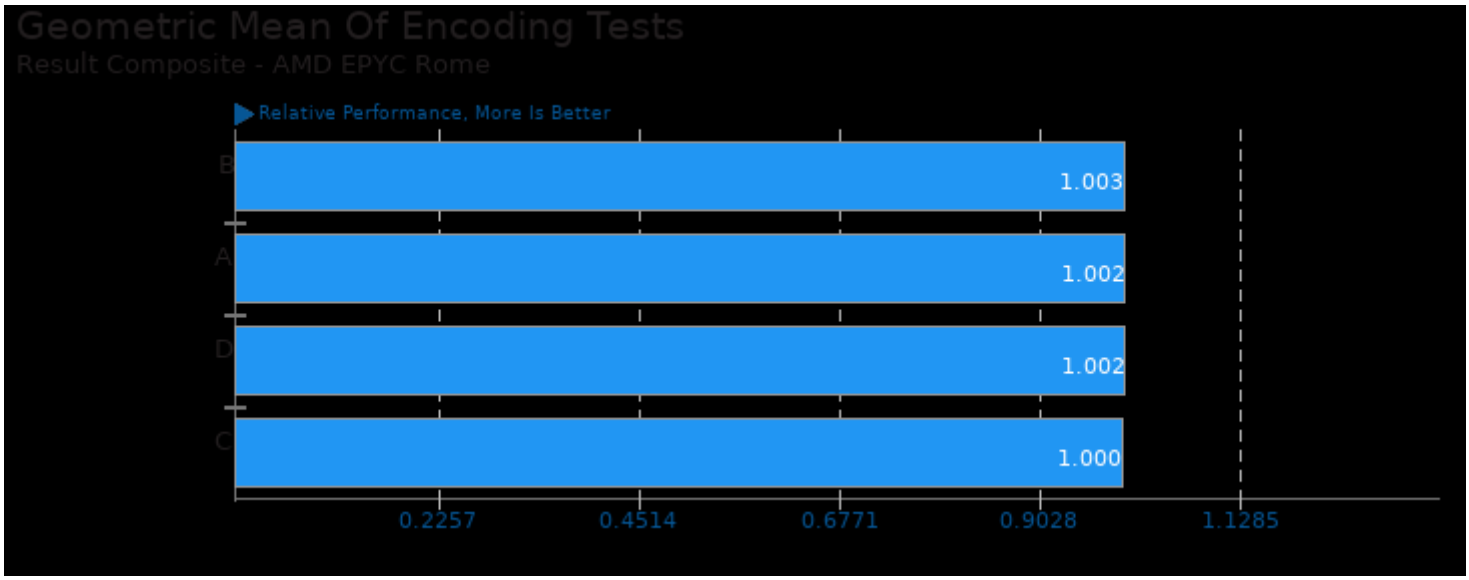
Geometric mean based upon tests: pts/cpuminer-opt, pts/xmrig and pts/chia-vdf



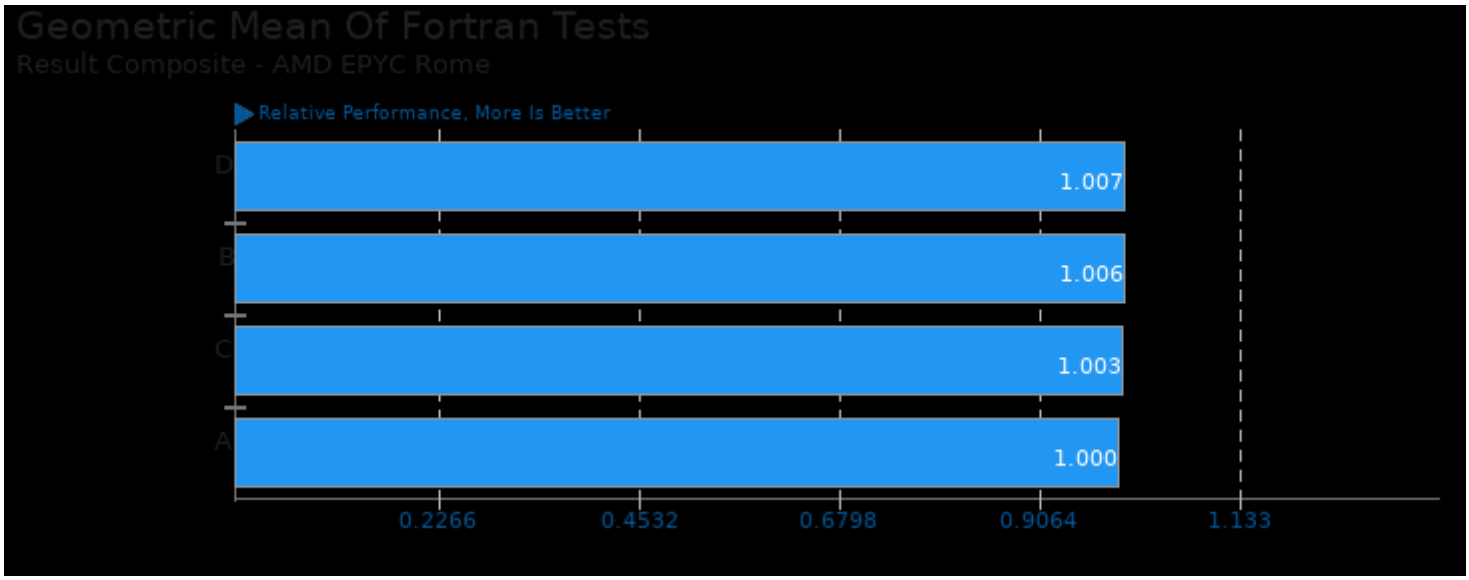
Geometric mean based upon tests: pts/openssl, pts/botan, pts/securemark, pts/cpuminer-opt, pts/xmrig and pts/chia-vdf



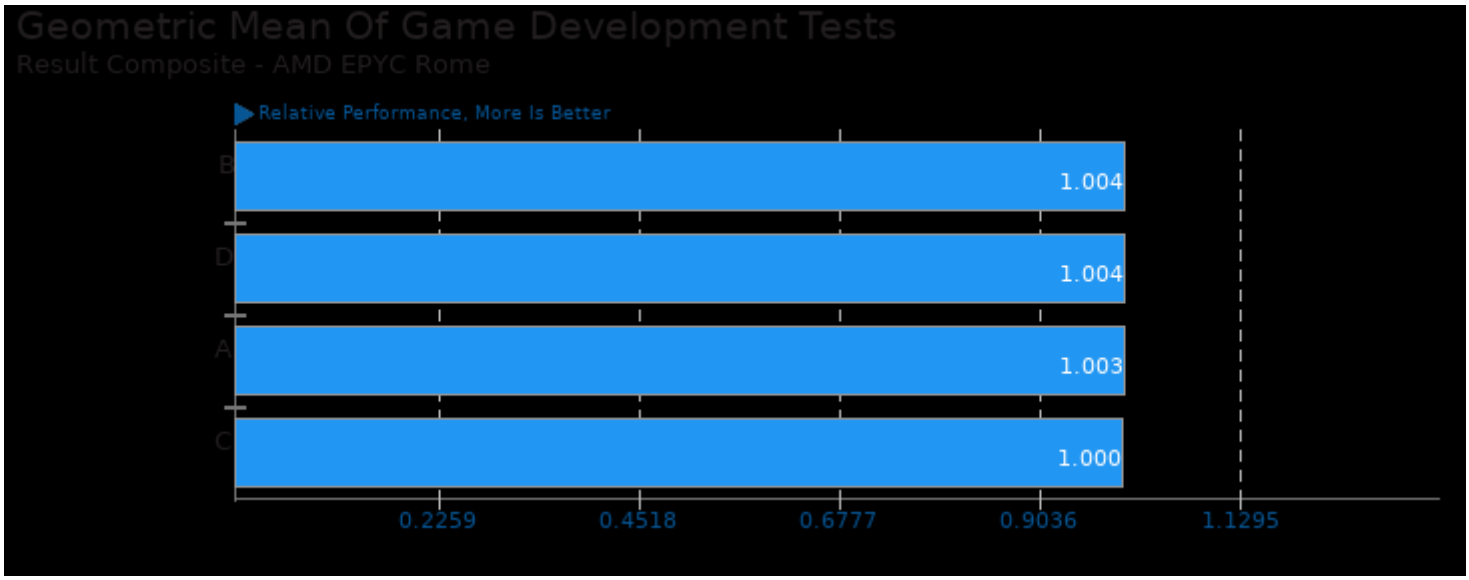
Geometric mean based upon tests: pts/redis, pts/rocksdb, pts/cassandra and pts/pgbench



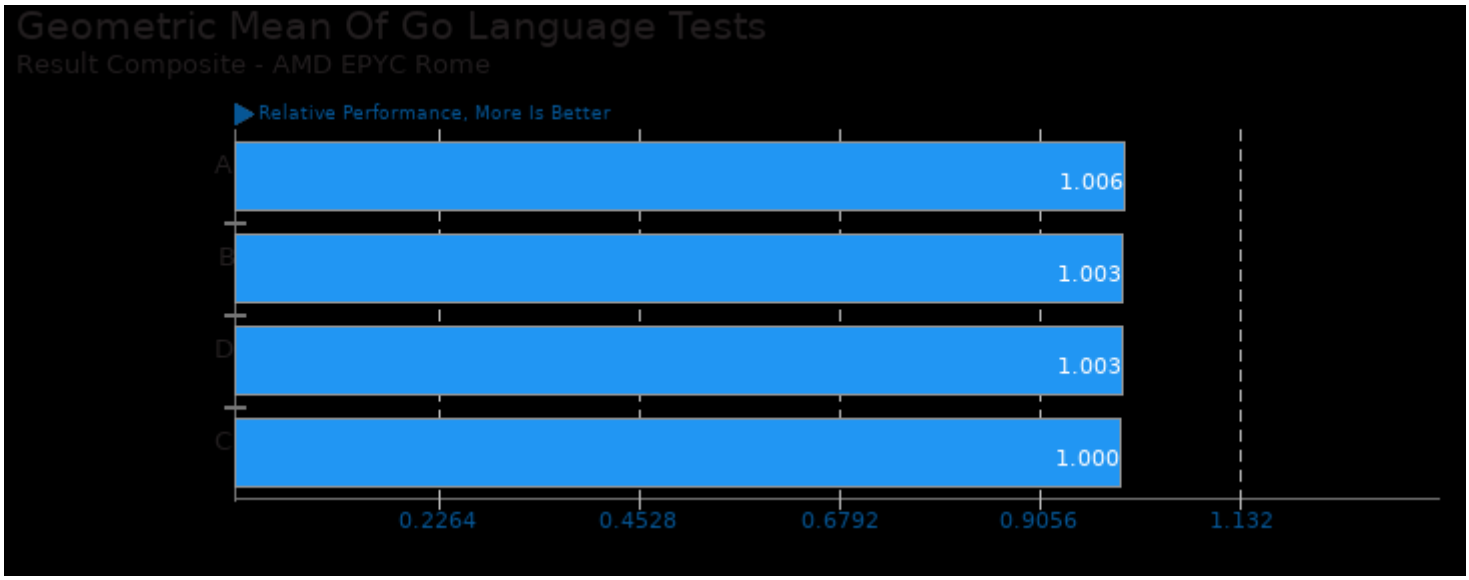
Geometric mean based upon tests: pts/encode-flac, pts/svt-vp9, pts/svt-hevc, pts/vpxenc, pts/dav1d, pts/aom-av1, pts/svt-av1 and pts/avifenc



Geometric mean based upon tests: pts/hpcg, pts/cloverleaf, pts/nwchem, pts/incompact3d and pts/qe



Geometric mean based upon tests: pts/astcenc, pts/build-godot, pts/blender, pts/oidn and pts/openvkl



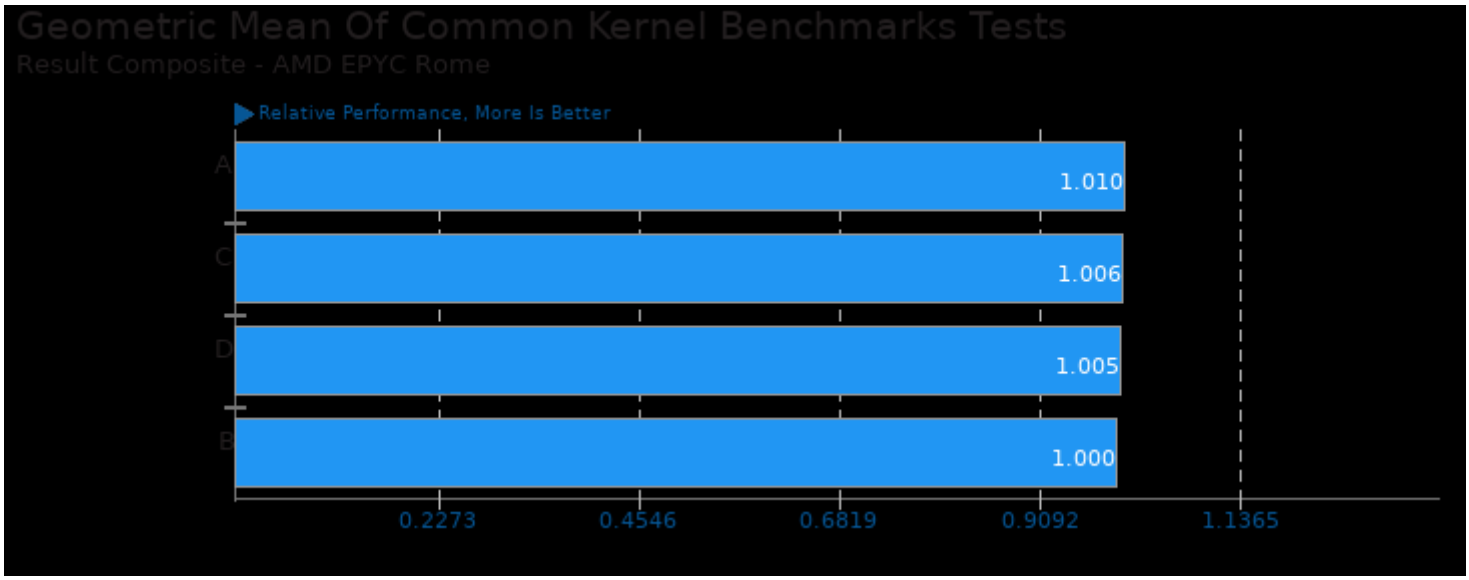
Geometric mean based upon tests: pts/nginx and pts/apache



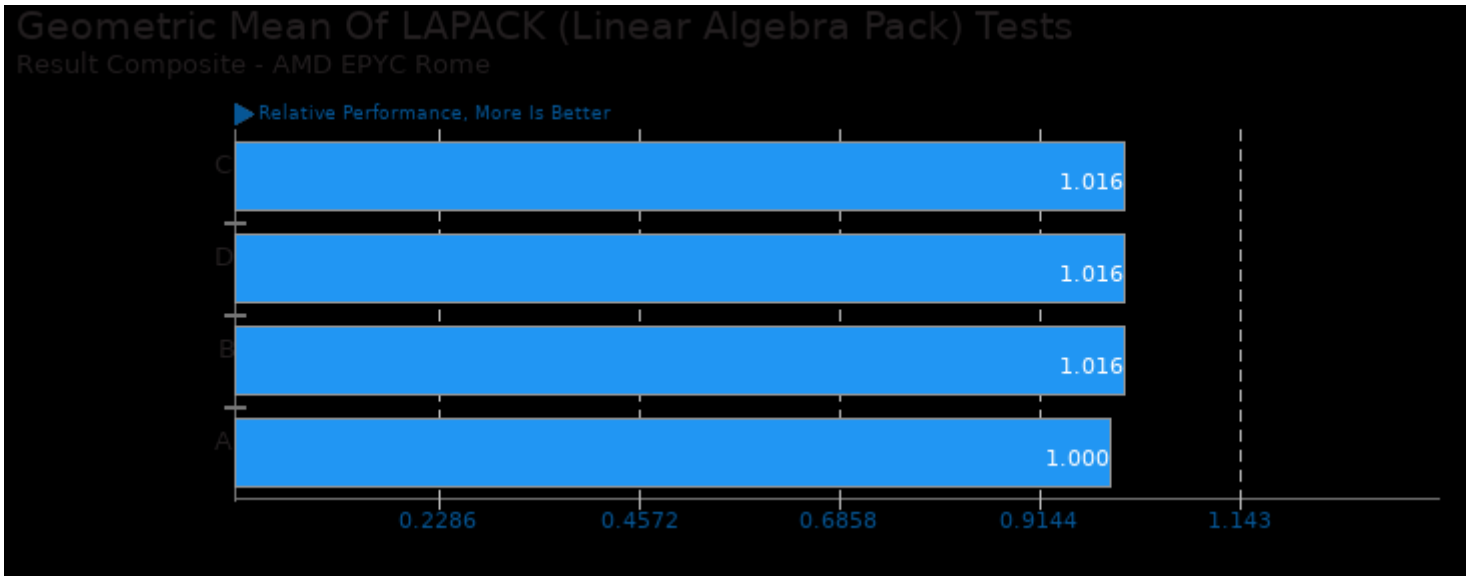
Geometric mean based upon tests: pts/jpegxl, pts/jpegxl-decode, pts/tjbench and pts/avifenc



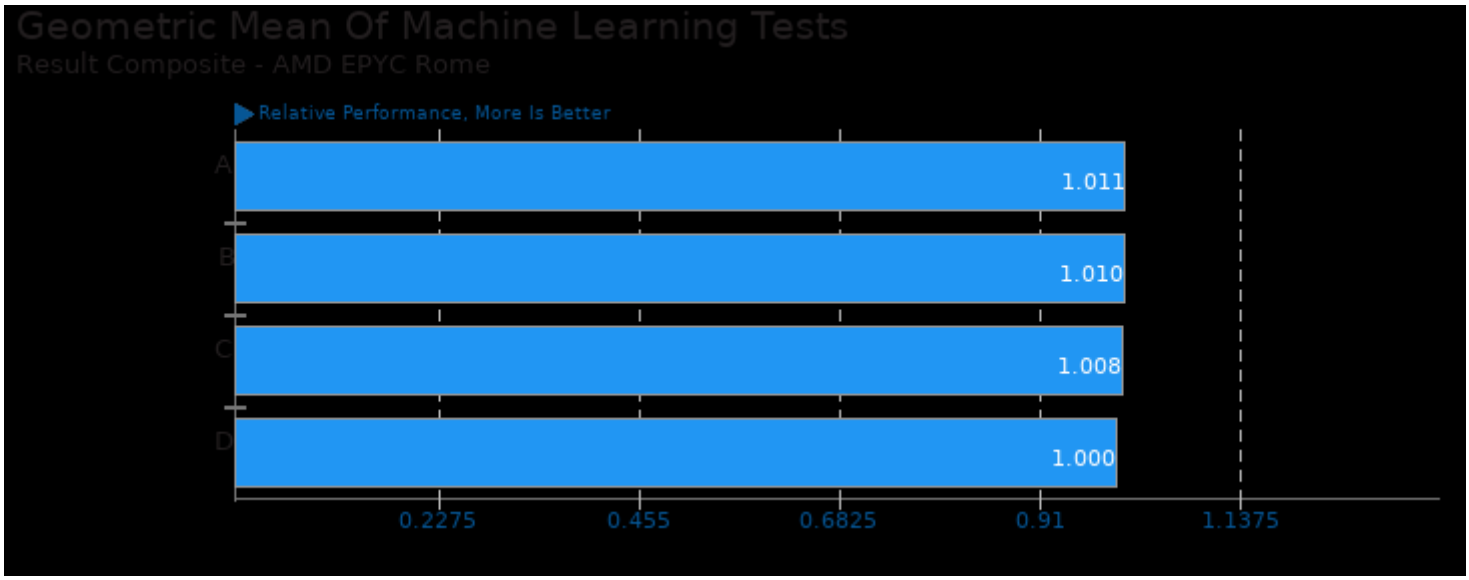
Geometric mean based upon tests: pts/renaissance and pts/cassandra



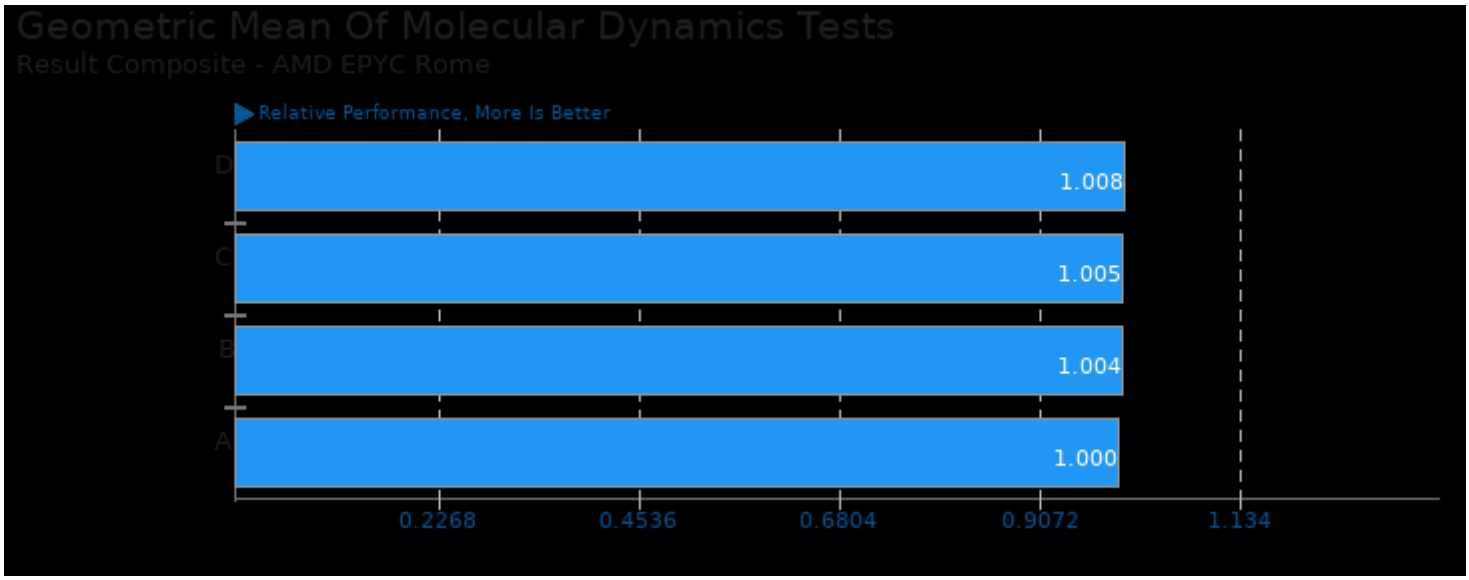
Geometric mean based upon tests: pts/apache, pts/pgbench, pts/openssl, pts/stress-ng and pts/rocksdb



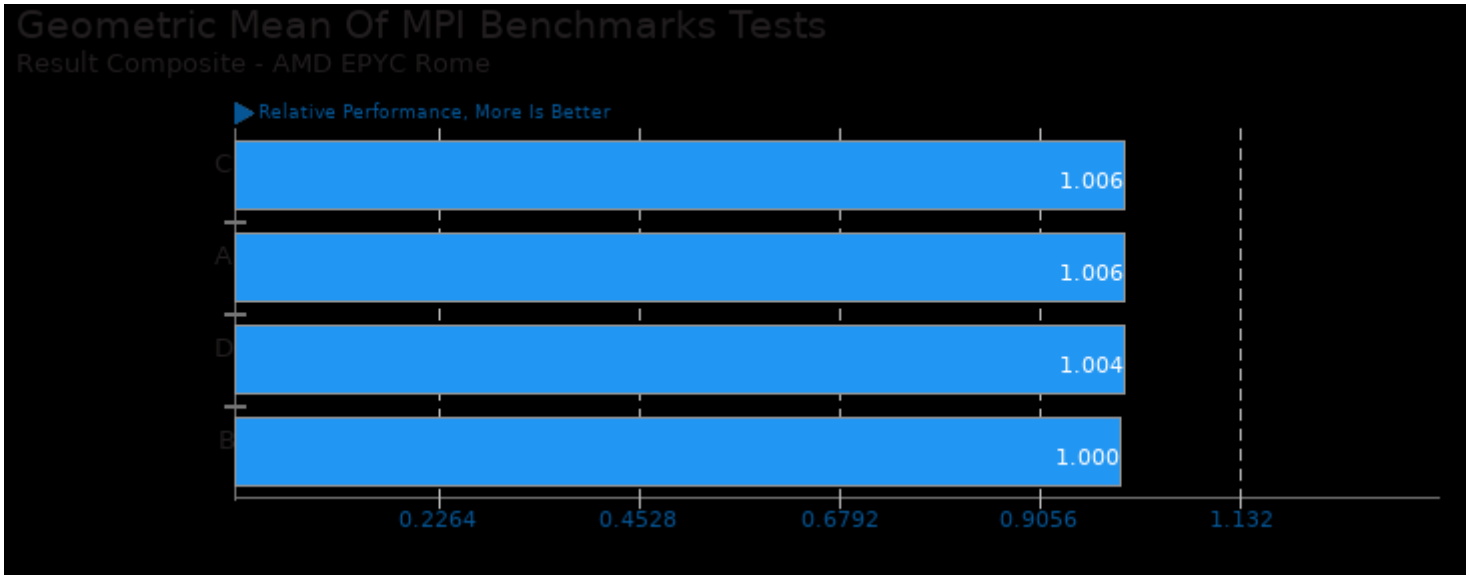
Geometric mean based upon tests: pts/nwchem and pts/qe



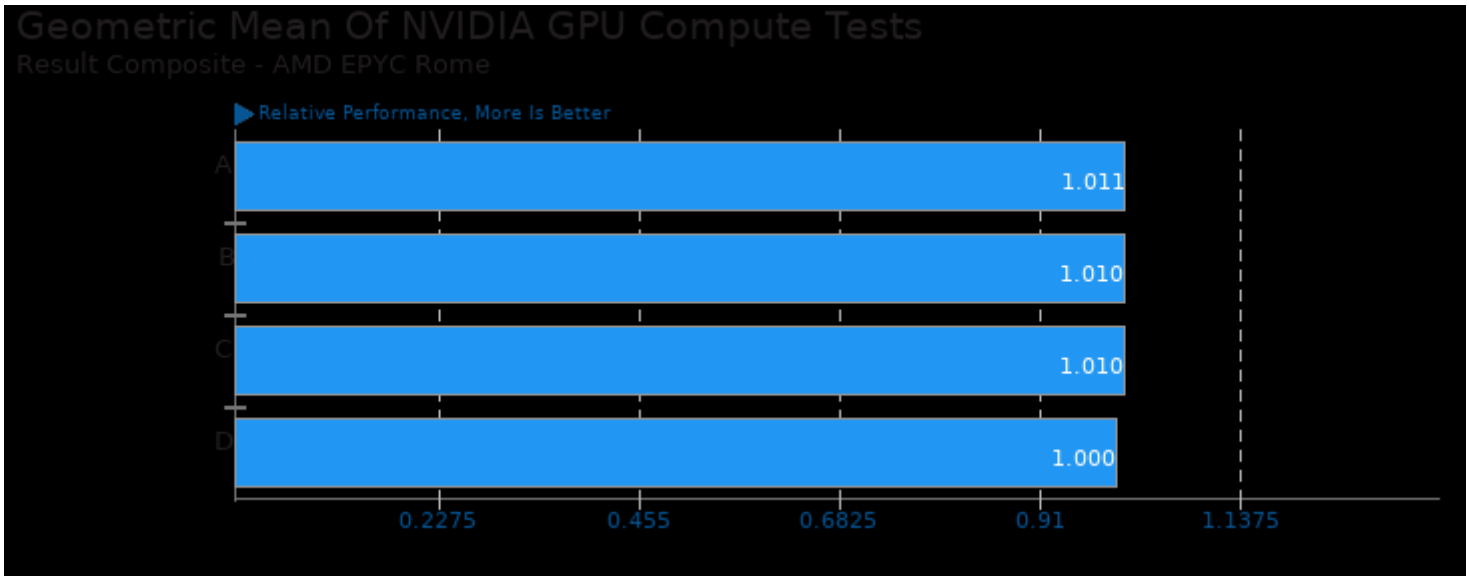
Geometric mean based upon tests: pts/mnn, pts/ncnn, pts/tnn, pts/numpy, pts/ecp-candle, pts/onnx and pts/lczero



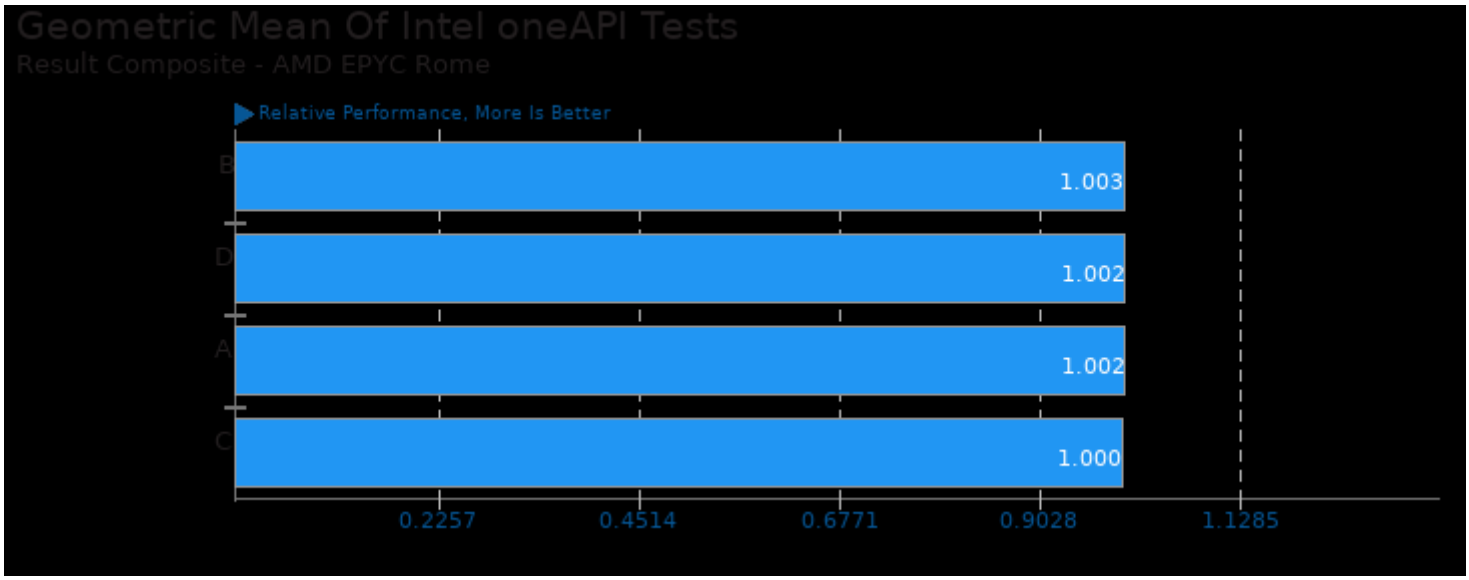
Geometric mean based upon tests: pts/namd, pts/nwchem, pts/cloverleaf, pts/lulesh, pts/pennant, pts/incompact3d and pts/openfoam



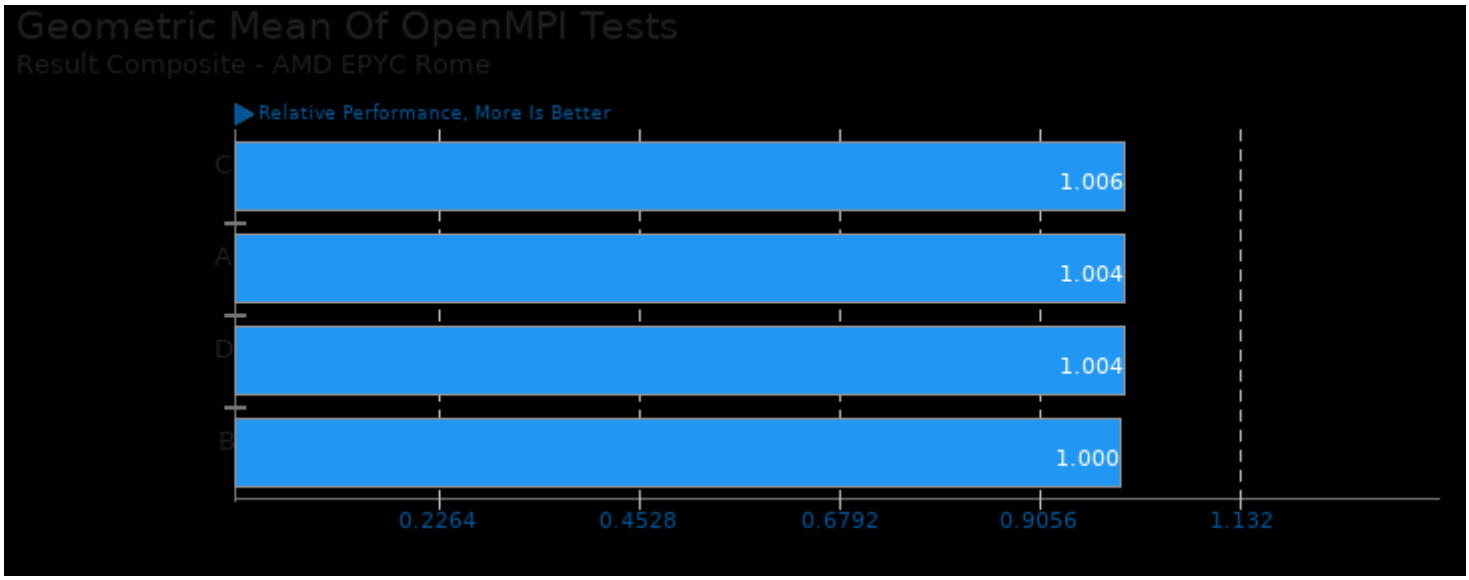
Geometric mean based upon tests: pts/askap, pts/incompact3d, pts/pennant, pts/hpcg and pts/mrbayes



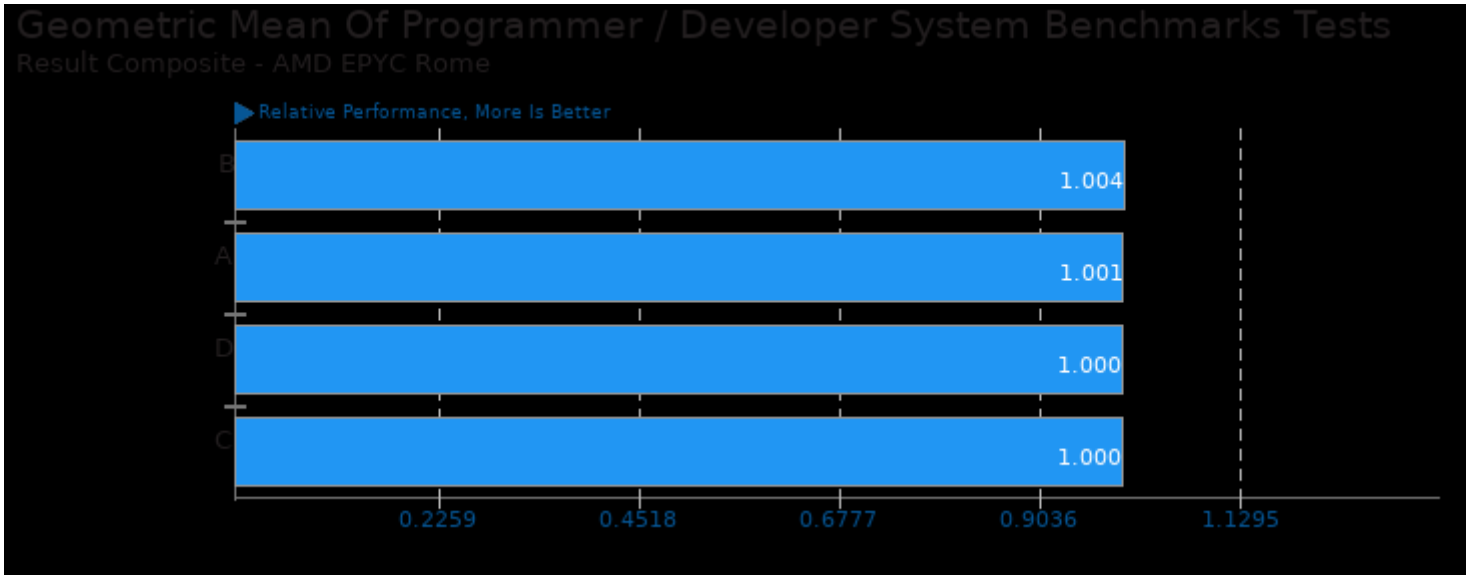
Geometric mean based upon tests: pts/luxcorerender, pts/lczero, pts/v-ray, pts/blender and pts/ncnn



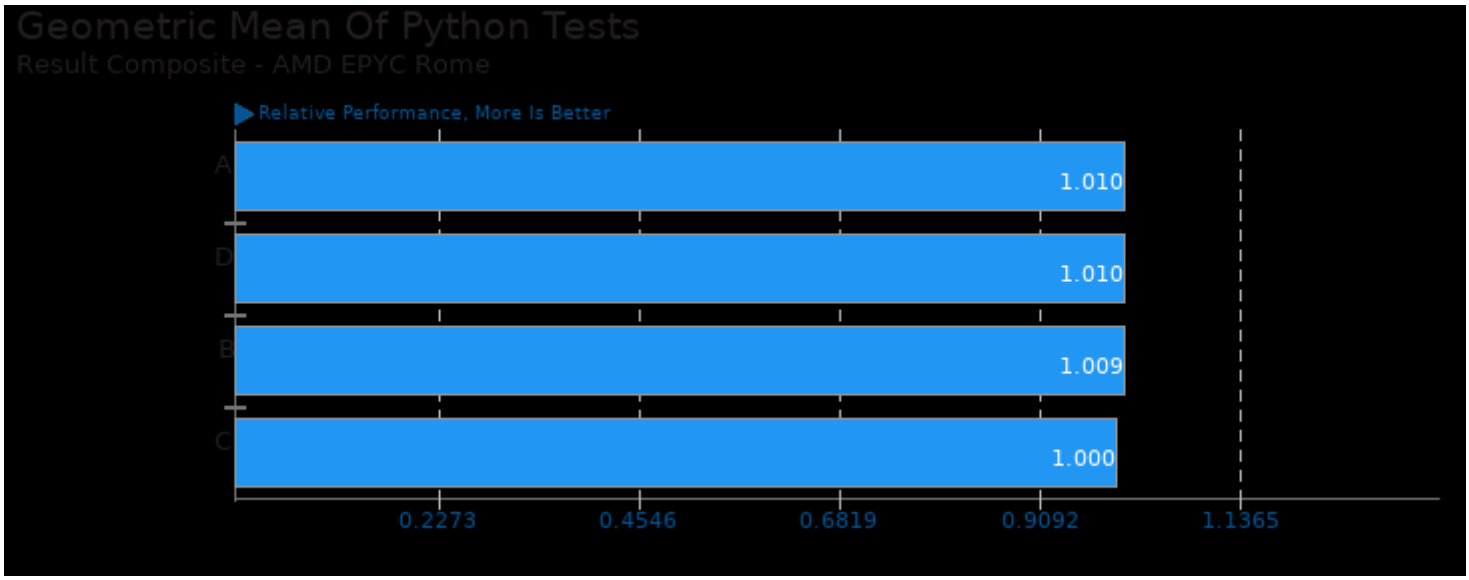
Geometric mean based upon tests: pts/embree, pts/oidn, pts/ospray and pts/openvkl



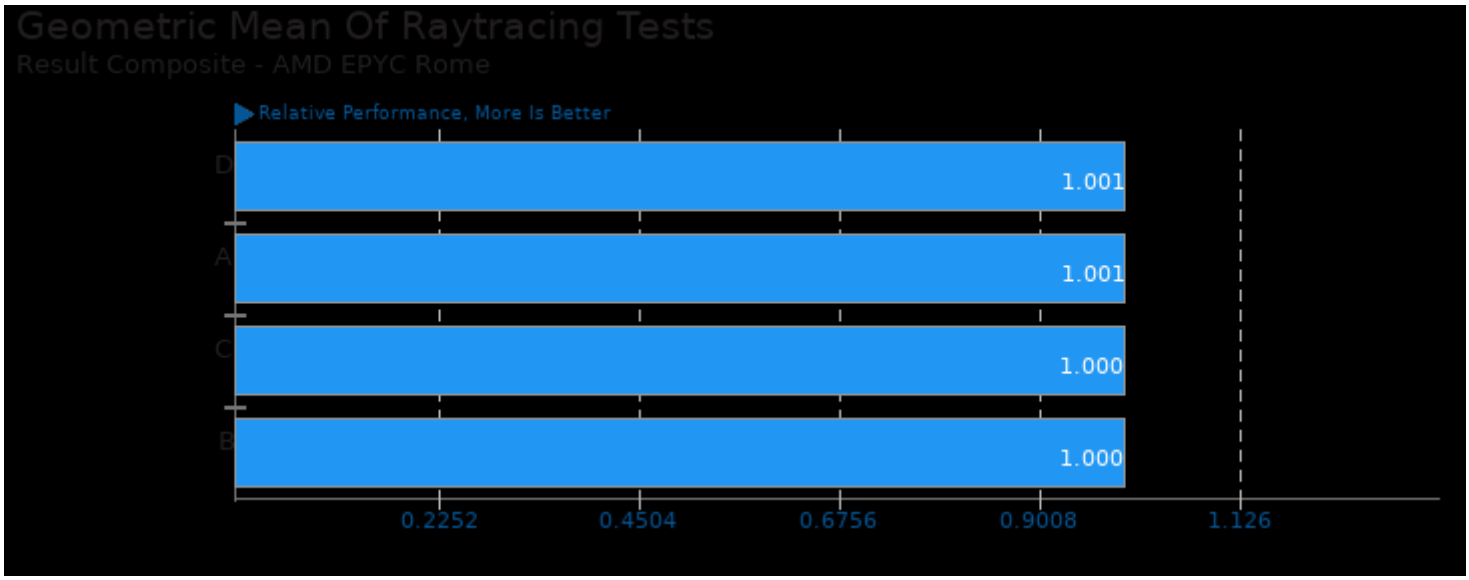
Geometric mean based upon tests: pts/hpcg, pts/cloverleaf, pts/pennant, pts/mrbayes, pts/nwchem, pts/hmmer, pts/incompact3d, pts/openfoam, pts/qe, pts/lulesh and pts/askap



Geometric mean based upon tests: pts/simdjson, pts/blosc, pts/build-linux-kernel, pts/build-gcc, pts/build-llvm, pts/build-ffmpeg, pts/build-godot, pts/build-erlang, pts/build-wasmer and pts/build-mesa



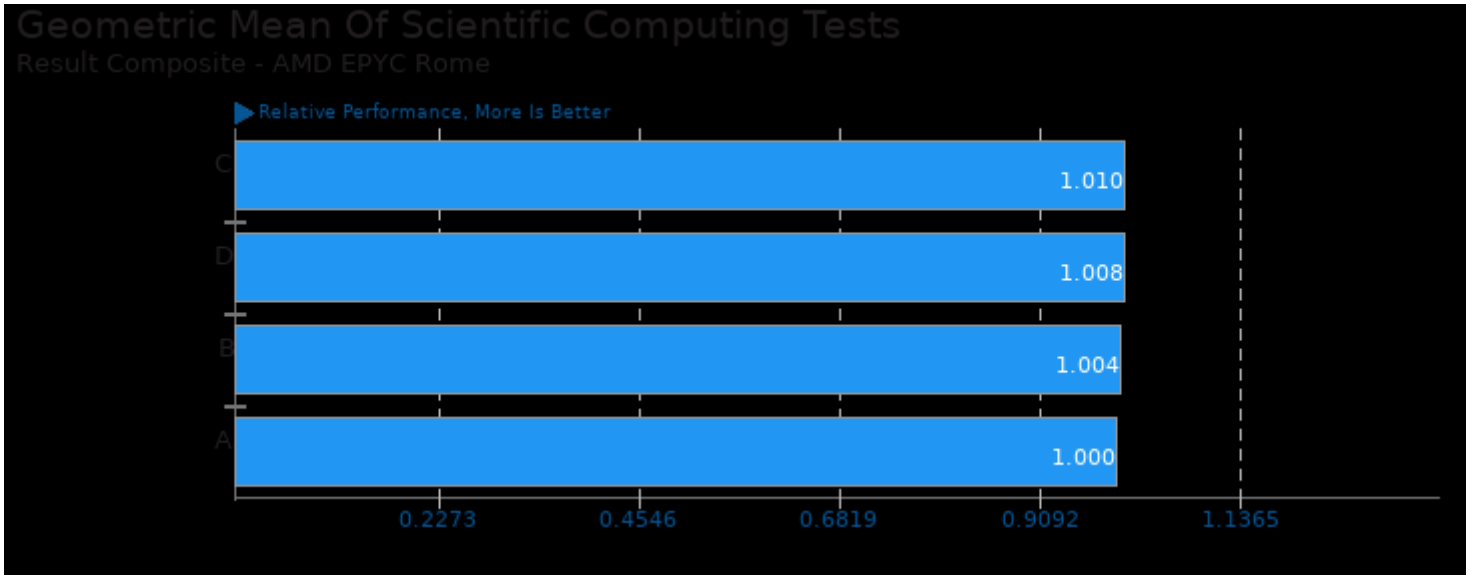
Geometric mean based upon tests: pts/cython-bench and pts/numpy



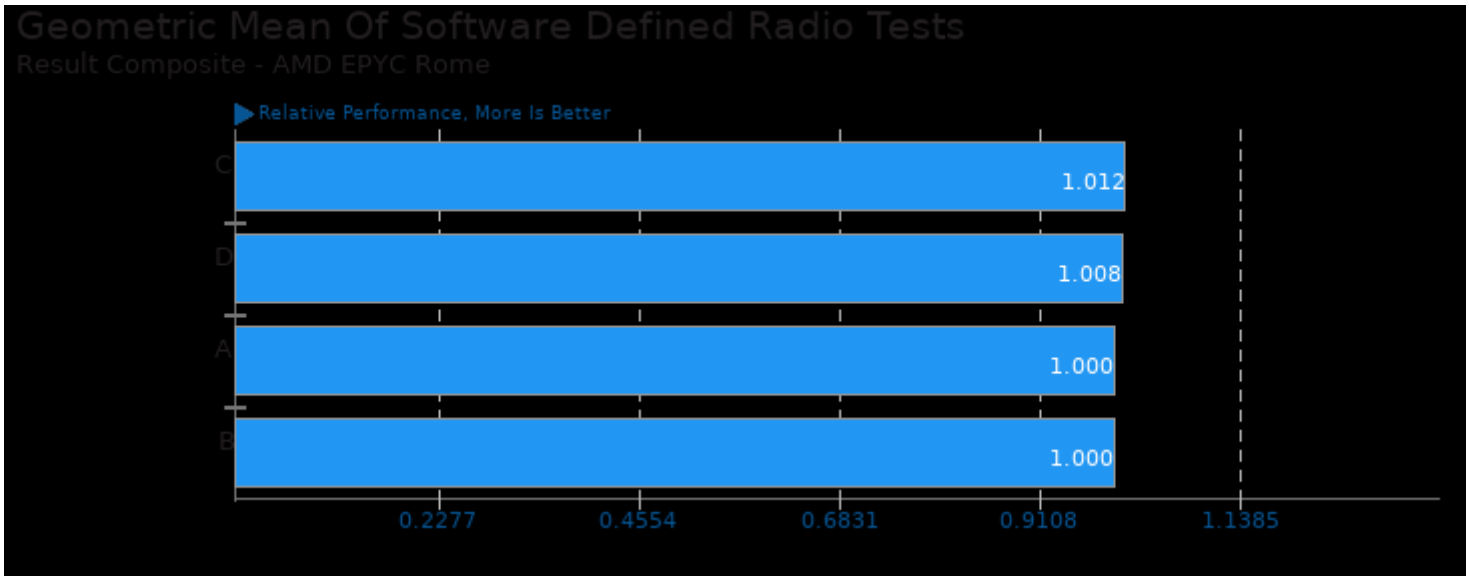
Geometric mean based upon tests: pts/ospray and pts/c-ray



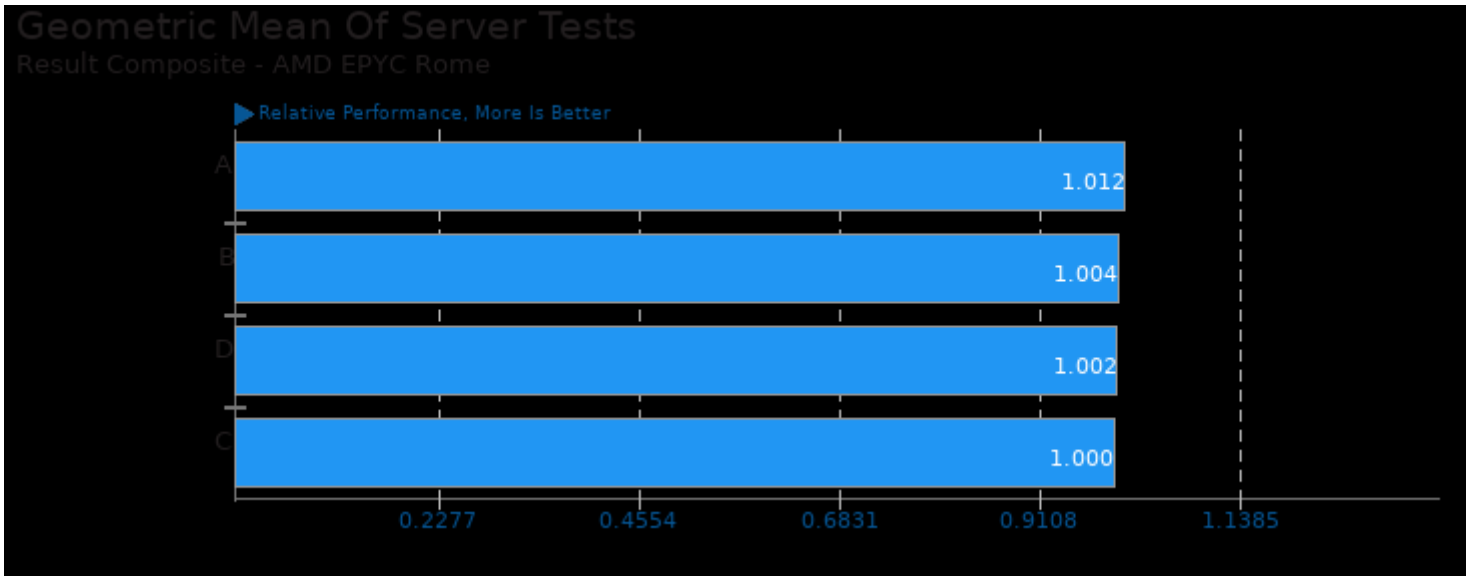
Geometric mean based upon tests: pts/ospray, pts/c-ray, pts/blender, pts/appleseed, pts/luxcorerender, pts/smallpt, pts/v-ray and pts/natron



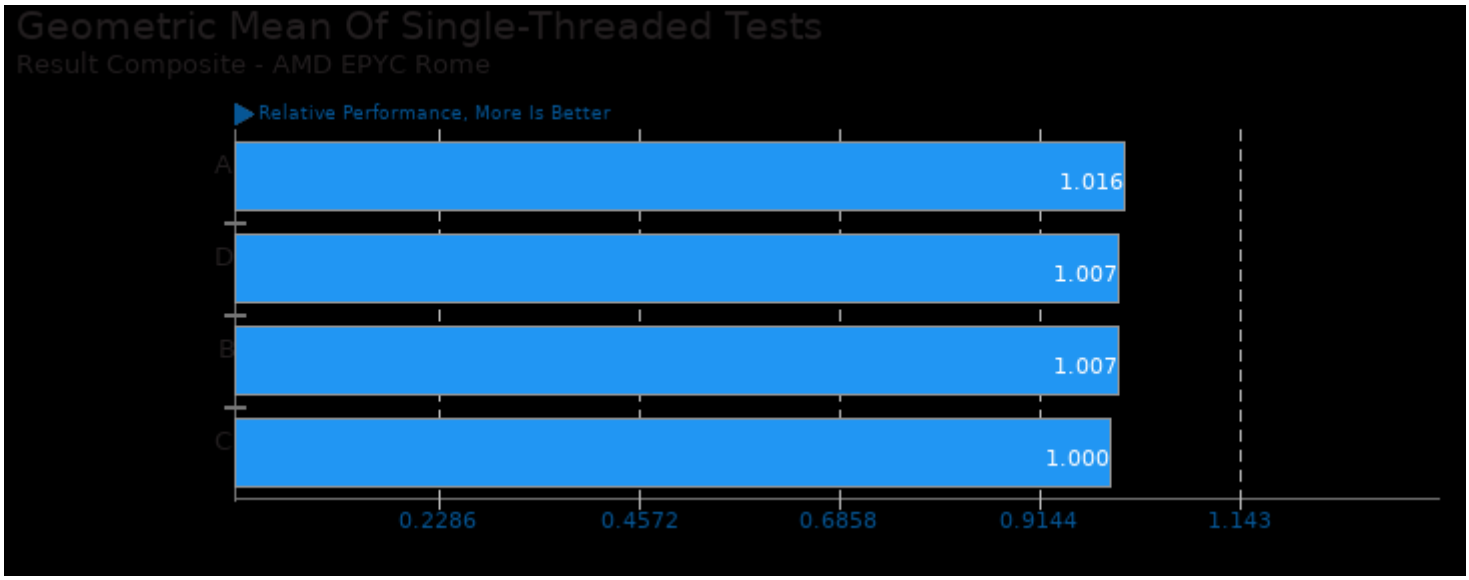
Geometric mean based upon tests: pts/namd, pts/nwchem, pts/cloverleaf, pts/lulesh, pts/pennant, pts/incompact3d, pts/openfoam, pts/mrbayes, pts/hmmer, pts/qe and pts/kripke



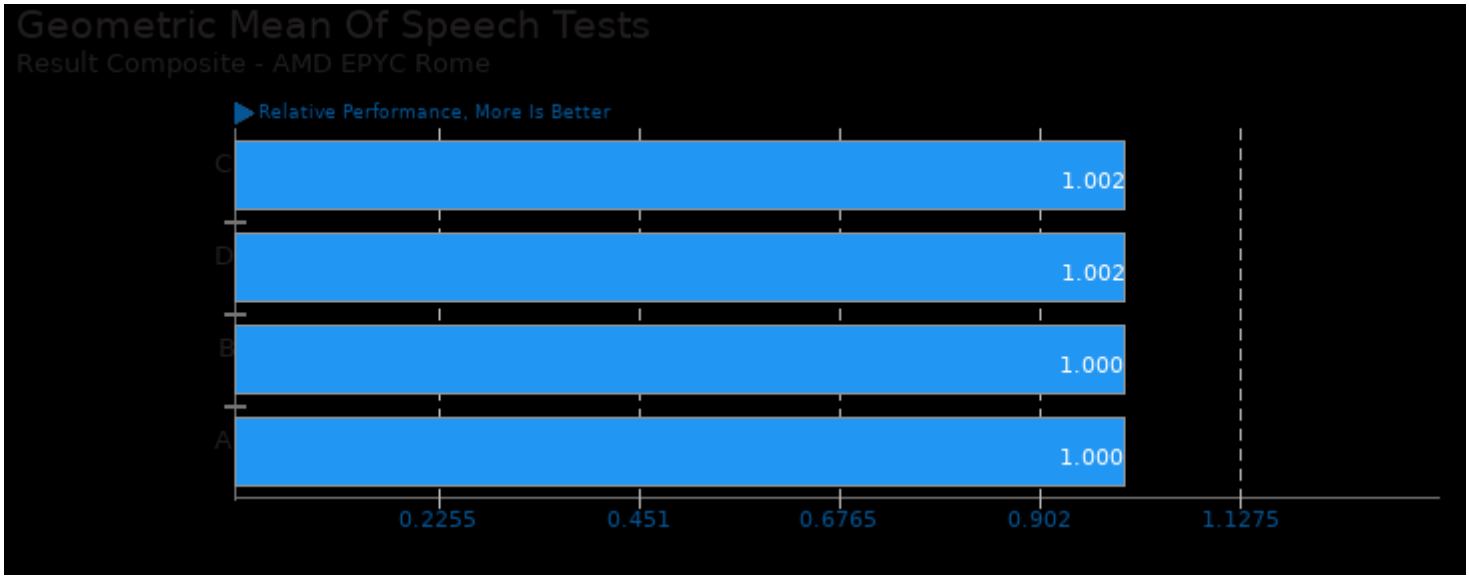
Geometric mean based upon tests: pts/luaradio and system/gnuradio



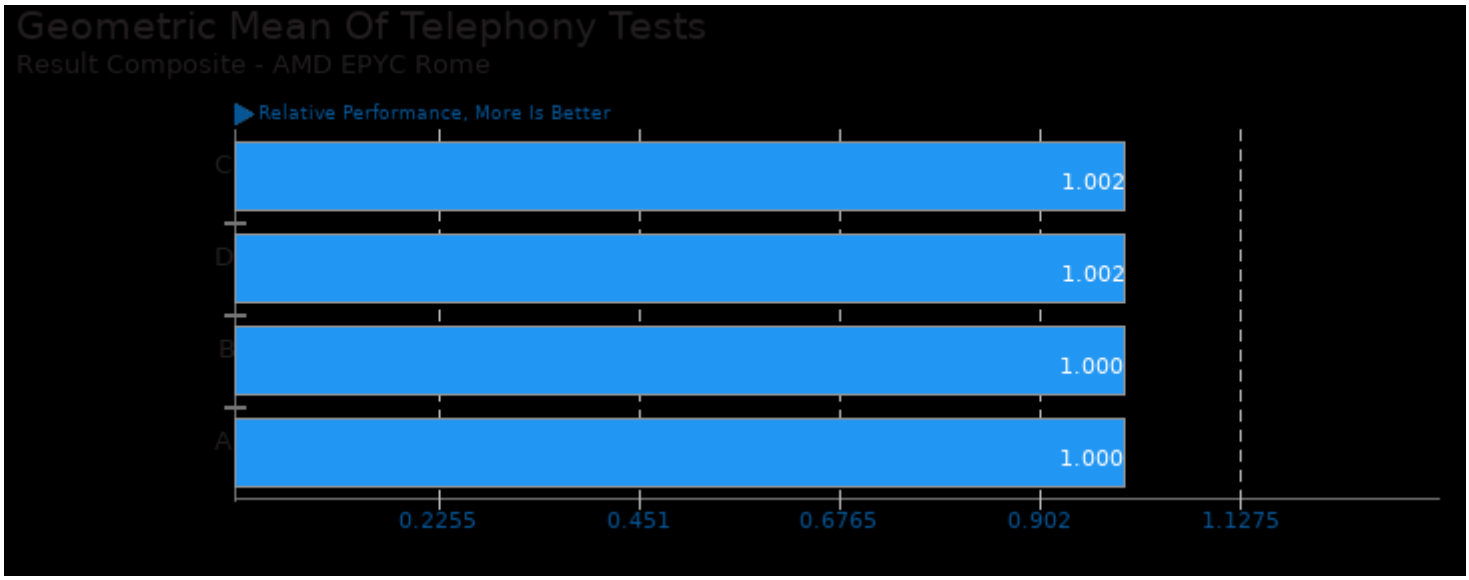
Geometric mean based upon tests: pts/apache, pts/nginx, pts/pgbench, pts/redis, pts/cassandra, pts/rocksdb, pts/phpbench, pts/openssl and pts/simdjson



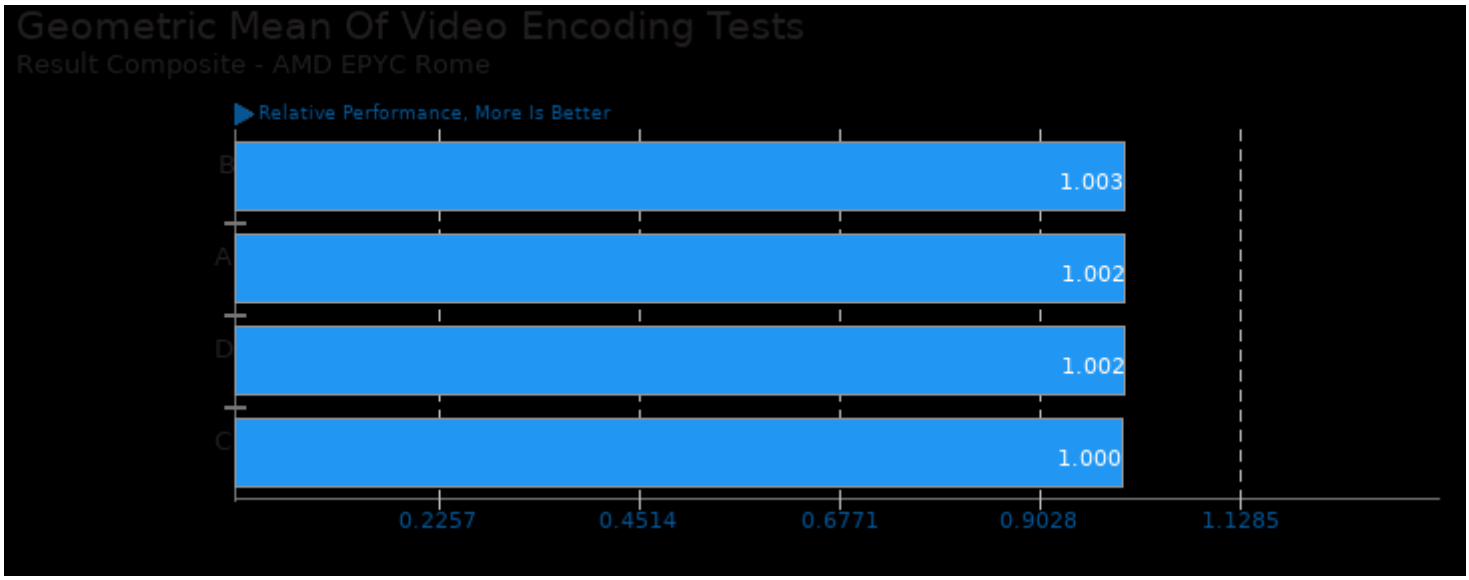
Geometric mean based upon tests: pts/gmpbench, pts/botan, pts/numpy, pts/encode-flac, pts/tjbench, pts/redis, pts/phpbench and pts/nginx



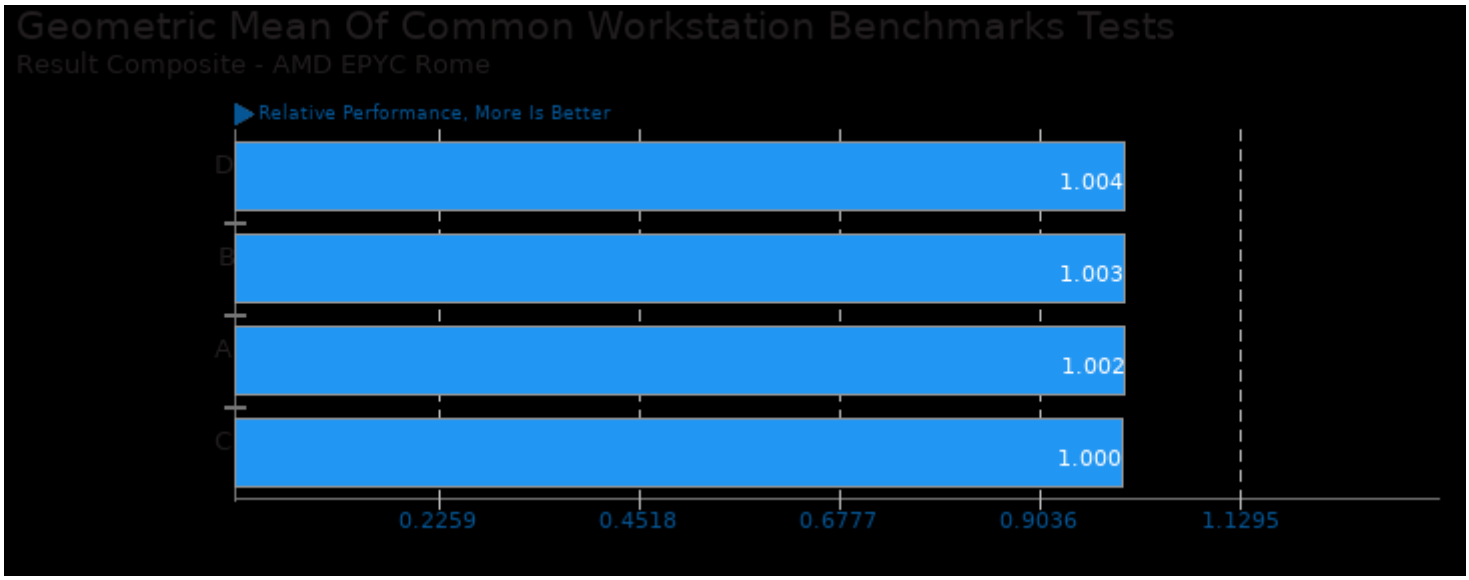
Geometric mean based upon tests: pts/vosk and pts/synthmark



Geometric mean based upon tests: pts/vosk and pts/synthmark



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



Geometric mean based upon tests: pts/blender, pts/brl-cad and pts/sysbench

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