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Intel Xeon Gold 6226R testing with a Supermicro X11SPL-F v1.02 (3.1 BIOS) and ASPEED on Ubuntu 20.10 via the Phoronix Test Suite.

Automated Executive Summary

D had the most wins, coming in first place for 34% of the tests.

Based on the geometric mean of all complete results, the fastest (D) was 1.007x the speed of the slowest (C). A was 0.996x the speed of D, B was 0.999x the speed of A, C was 0.998x the speed of B.

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

oneDNN (Harness: Deconvolution Batch shapes_1d - Data Type: bf16bf16bf16 - Engine: CPU) at 2.721x
oneDNN (Harness: Recurrent Neural Network Inference - Data Type: f32 - Engine: CPU) at 1.918x
Stress-NG (Test: Context Switching) at 1.4x
oneDNN (Harness: Deconvolution Batch shapes_1d - Data Type: f32 - Engine: CPU) at 1.385x
AOM AV1 (Encoder Mode: Speed 6 Realtime - Input: Bosphorus 1080p) at 1.169x
perf-bench (Benchmark: Epoll Wait) at 1.152x
AOM AV1 (Encoder Mode: Speed 9 Realtime - Input: Bosphorus 1080p) at 1.132x
Renaissance (Test: Scala Dotty) at 1.13x
Stress-NG (Test: Futex) at 1.125x

AOM AV1 (Encoder Mode: Speed 8 Realtime - Input: Bosphorus 1080p) at 1.122x.

Test Systems:

A

B

C

D

Processor: Intel Xeon Gold 6226R @ 3.90GHz (16 Cores / 32 Threads), Motherboard: Supermicro X11SPL-F v1.02 (3.1 BIOS), Chipset: Intel Sky Lake-E DMI3 Registers, Memory: 192GB, Disk: 280GB INTEL SSDPED1D280GA, Graphics: ASPEED, Monitor: VE228, Network: 2 x Intel I210

OS: Ubuntu 20.10, Kernel: 5.11.0-rc4-max-boost-inv-patch (x86_64) 20210121, Desktop: GNOME Shell 3.38.1, Display Server: X Server 1.20.9, Compiler: GCC 10.3.0, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --enable-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-mutex --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-10-poYruo/gcc-10-10.3.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-10-poYruo/gcc-10-10.3.0/debian/tmp-gcn/usr,hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-build-config=bootstrap-lto-lean --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: intel_cpufreq schedutil - CPU Microcode: 0x5003102
Java Notes: OpenJDK Runtime Environment (build 11.0.11+9-Ubuntu-0ubuntu2.20.10)
Python Notes: Python 3.8.10
Security Notes: itlb_multihit: KVM: Mitigation of VMX disabled + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Enhanced IBRS IBPB: conditional RSB filling + srbds: Not affected + tsx_async_abort: Mitigation of TSX disabled

	A	B	C	D
Glibc Benchmarks - cos (ns)	**74.7116**	74.9779	74.9212	**75.3679**
Normalized	100%	99.64%	99.72%	99.13%
Glibc Benchmarks - exp (ns)	**17.1234**	17.1577	17.1616	**17.2477**
Normalized	100%	99.8%	99.78%	99.28%
Glibc Benchmarks - ffs (ns)	5.27522	**5.28646**	5.27749	**5.25955**
Normalized	99.7%	99.49%	99.66%	100%
Glibc Benchmarks - sin (ns)	65.5414	**65.6681**	65.5583	**65.1269**
Normalized	99.37%	99.18%	99.34%	100%
Glibc Benchmarks - log2 (ns)	22.2054	**22.2516**	22.202	**22.1654**
Normalized	99.82%	99.61%	99.84%	100%
Glibc Benchmarks - modf (ns)	**6.77061**	**6.89959**	6.80363	6.80843
Normalized	100%	98.13%	99.51%	99.44%

xeon gold sunday

Glibc Benchmarks - sinh (ns)	28.3848	28.2712	28.3612	28.2757
Normalized	99.6%	100%	99.68%	99.98%
Glibc Benchmarks - sqrt (ns)	6.79582	6.77717	6.77094	6.77666
Normalized	99.63%	99.91%	100%	99.92%
Glibc Benchmarks - tanh (ns)	40.2847	39.3463	39.5966	39.5146
Normalized	97.67%	100%	99.37%	99.57%
Glibc Benchmarks - asinh (ns)	31.6299	31.1765	31.1094	31.2237
Normalized	98.35%	99.78%	100%	99.63%
Glibc Benchmarks - atanh (ns)	36.2159	35.4555	35.5854	35.8092
Normalized	97.9%	100%	99.63%	99.01%
Glibc Benchmarks - ffsll (ns)	5.09231	5.03218	5.02977	5.00725
Normalized	98.33%	99.5%	99.55%	100%
Glibc Benchmarks - sincos (ns)	46.4287	48.125	48.4713	45.8902
Normalized	98.84%	95.36%	94.67%	100%
Glibc Benchmarks - pthread_once	5.29319	5.26195	5.26201	5.24905
Normalized	99.17%	99.75%	99.75%	100%
perf-bench - Epoll Wait (ops/sec)	32940	37525	37937	37961
Normalized	86.77%	98.85%	99.94%	100%
perf-bench - Futex Hash (ops/sec)	4286945	4275533	4279202	4284624
Normalized	100%	99.73%	99.82%	99.95%
perf-bench - Memcpy 1MB (GB/sec)	16.313786	16.131914	17.324454	16.685829
Normalized	94.17%	93.12%	100%	96.31%
perf-bench - Memset 1MB (GB/sec)	54.74849	53.059025	57.253928	58.133253
Normalized	94.18%	91.27%	98.49%	100%
perf-bench - Sched Pipe (ops/sec)	66578	64584	64802	65731
Normalized	100%	97.01%	97.33%	98.73%
perf-bench - Futex Lock-Pi (ops/sec)	254	254	255	259
Normalized	98.07%	98.07%	98.46%	100%
perf-bench - Syscall Basic (ops/sec)	15798883	15705712	15762401	15715420
Normalized	100%	99.41%	99.77%	99.47%
Etcpak - Multi-Threaded - ETC2	2941	2917	2921	2922
Normalized	100%	99.17%	99.32%	99.35%
Etcpak - Single-Threaded - ETC2 (Mpx/s)	191.464	188.5	188.564	191.731
Normalized	99.86%	98.31%	98.35%	100%
simdjson - Kostya (GB/s)	2.27	2.25	2.22	2.22
Normalized	100%	99.12%	97.8%	97.8%
simdjson - TopTweet (GB/s)	4.03	4.04	4.03	4.04
Normalized	99.75%	100%	99.75%	100%
simdjson - LargeRand (GB/s)	0.86	0.86	0.87	0.86
Normalized	98.85%	98.85%	100%	98.85%
simdjson - PartialTweets (GB/s)	3.39	3.39	3.4	3.4
Normalized	99.71%	99.71%	100%	100%
simdjson - DistinctUserID (GB/s)	3.99	3.99	3.97	3.98
Normalized	100%	100%	99.5%	99.75%
Chia Blockchain VDF - Square Plain C++ (IPS)	118800	117200	118800	118700
Normalized	100%	98.65%	100%	99.92%
Chia Blockchain VDF - S.A.O (IPS)	155700	162000	163200	162500
Normalized	95.4%	99.26%	100%	99.57%
Renaissance - Scala Dotty (ms)	1112	984.3	1107	987.2
Normalized	88.48%	100%	88.89%	99.71%
Renaissance - Rand Forest (ms)	1257	1307	1294	1270

xeon gold sunday

Normalized	100%	96.22%	97.15%	98.96%
Renaissance - ALS Movie Lens (ms)	32565	32724	32445	32249
Normalized	99.03%	98.55%	99.4%	100%
Renaissance - Apache Spark ALS	46525	47295	47049	46755
Normalized	100%	98.37%	98.89%	99.51%
Renaissance - Apache Spark Bayes (ms)	1051	1007	1050	1025
Normalized	95.86%	100%	95.94%	98.25%
Renaissance - Savina Reactors.IO	13462	13959	14494	13866
Normalized	100%	96.44%	92.88%	97.09%
Renaissance - A.S.P (ms)	4193	4209	4300	4285
Normalized	100%	99.6%	97.51%	97.85%
Renaissance - F.H.R (ms)	4750	4583	4736	4452
Normalized	93.73%	97.15%	94%	100%
Renaissance - I.M.D.S (ms)	7055	6911	7006	6859
Normalized	97.22%	99.25%	97.91%	100%
Renaissance - A.U.C.T (ms)	14036	14087	14244	13955
Normalized	99.42%	99.07%	97.97%	100%
Renaissance - G.A.U.J.F (ms)	6811	6985	6929	6899
Normalized	100%	97.52%	98.3%	98.73%
Nettle - aes256 (Mbyte/s)	6108	6099	6114	6126
Normalized	99.71%	99.57%	99.81%	100%
Nettle - chacha (Mbyte/s)	1197	1194	1190	1198
Normalized	99.91%	99.66%	99.3%	100%
Nettle - sha512 (Mbyte/s)	481.72	484.98	481.46	485.65
Normalized	99.19%	99.86%	99.14%	100%
Nettle - poly1305-aes (Mbyte/s)	3604	3625	3444	3331
Normalized	99.4%	100%	95%	91.88%
AOM AV1 - Speed 0 Two-Pass - Bosphorus 4K (FPS)	0.14	0.14	0.13	0.13
Normalized	100%	100%	92.86%	92.86%
AOM AV1 - Speed 4 Two-Pass - Bosphorus 4K (FPS)	3.34	3.35	3.34	3.32
Normalized	99.7%	100%	99.7%	99.1%
AOM AV1 - Speed 6 Realtime - Bosphorus 4K (FPS)	11.34	10.28	10.8	10.15
Normalized	100%	90.65%	95.24%	89.51%
AOM AV1 - Speed 6 Two-Pass - Bosphorus 4K (FPS)	5.42	5.4	5.43	5.4
Normalized	99.82%	99.45%	100%	99.45%
AOM AV1 - Speed 8 Realtime - Bosphorus 4K (FPS)	18.05	17.93	17.95	18.01
Normalized	100%	99.34%	99.45%	99.78%
AOM AV1 - Speed 9 Realtime - Bosphorus 4K (FPS)	28.56	28.66	28.52	28.75
Normalized	99.34%	99.69%	99.2%	100%
AOM AV1 - Speed 10 Realtime - Bosphorus 4K (FPS)	28.35	28.38	28.43	28.44
Normalized	99.68%	99.79%	99.96%	100%
AOM AV1 - Speed 0 Two-Pass - Bosphorus 1080p (FPS)	0.34	0.34	0.35	0.35
Normalized	97.14%	97.14%	100%	100%

xeon gold sunday

AOM AV1 - Speed 4 Two-Pass - Bosphorus 1080p (FPS)	**5.3**	5.25	5.26	**5.17**
Normalized	100%	99.06%	99.25%	97.55%
AOM AV1 - Speed 6 Realtime - Bosphorus 1080p (FPS)	15.81	**15.69**	16.2	**18.34**
Normalized	86.21%	85.55%	88.33%	100%
AOM AV1 - Speed 6 Two-Pass - Bosphorus 1080p (FPS)	11.41	**11.47**	11.38	**11.36**
Normalized	99.48%	100%	99.22%	99.04%
AOM AV1 - Speed 8 Realtime - Bosphorus 1080p (FPS)	46.57	44.72	**43.61**	**48.92**
Normalized	95.2%	91.41%	89.15%	100%
AOM AV1 - Speed 9 Realtime - Bosphorus 1080p (FPS)	56.66	**61.81**	**54.58**	58.1
Normalized	91.67%	100%	88.3%	94%
AOM AV1 - Speed 10 Realtime - Bosphorus 1080p (FPS)	64.95	**62.03**	**65.51**	64.46
Normalized	99.15%	94.69%	100%	98.4%
SVT-AV1 - Preset 4 - Bosphorus 4K (FPS)	2.05	2.05	**2.038**	**2.057**
Normalized	99.66%	99.66%	99.08%	100%
SVT-AV1 - Preset 8 - Bosphorus 4K (FPS)	30.972	30.635	**31.165**	**30.58**
Normalized	99.38%	98.3%	100%	98.12%
SVT-AV1 - Preset 10 - Bosphorus 4K (FPS)	66.94	**65.053**	67.158	**67.2**
Normalized	99.61%	96.81%	99.94%	100%
SVT-AV1 - Preset 12 - Bosphorus 4K (FPS)	**86.134**	84.492	**83.689**	84.482
Normalized	100%	98.09%	97.16%	98.08%
SVT-AV1 - Preset 4 - Bosphorus 1080p (FPS)	4.498	**4.482**	**4.596**	4.501
Normalized	97.87%	97.52%	100%	97.93%
SVT-AV1 - Preset 8 - Bosphorus 1080p (FPS)	**83.469**	82.823	**81.201**	81.464
Normalized	100%	99.23%	97.28%	97.6%
SVT-AV1 - Preset 10 - Bosphorus 1080p (FPS)	**150.159**	147.476	**144.177**	148.735
Normalized	100%	98.21%	96.02%	99.05%
SVT-AV1 - Preset 12 - Bosphorus 1080p (FPS)	176.095	**176.733**	174.954	**173.048**
Normalized	99.64%	100%	98.99%	97.91%
SVT-HEVC - 1 - Bosphorus 4K (FPS)	2.63	2.63	2.63	2.63
SVT-HEVC - 7 - Bosphorus 4K (FPS)	53.34	**53.15**	53.41	**53.58**
Normalized	99.55%	99.2%	99.68%	100%
SVT-HEVC - 10 - Bosphorus 4K (FPS)	**101.61**	**102.69**	102.51	**102.69**
Normalized	98.95%	100%	99.82%	100%
SVT-VP9 - VMAF Optimized - Bosphorus 4K (FPS)	85.59	**85**	85.79	**86.36**
Normalized	99.11%	98.43%	99.34%	100%
SVT-VP9 - P.S.O - Bosphorus 4K (FPS)	89.67	89.5	**89.35**	**90.02**

xeon gold sunday

Normalized	99.61%	99.42%	99.26%	100%
SVT-VP9 - V.Q.O - Bosphorus 4K	66.48	65.75	65.65	66.62
Normalized	99.79%	98.69%	98.54%	100%
x264 - Bosphorus 4K (FPS)	31.71	31.39	31.68	31.55
Normalized	100%	98.99%	99.91%	99.5%
x264 - Bosphorus 1080p (FPS)	105.62	105.41	107.4	103.04
Normalized	98.34%	98.15%	100%	95.94%
OSPRay - particle_volume/ao/real_time	5.09652	4.95079	5.14891	4.90723
Normalized	98.98%	96.15%	100%	95.31%
OSPRay - particle_volume/scivis/real_time (Items/sec)	5.05624	5.09572	4.93475	5.03878
Normalized	99.23%	100%	96.84%	98.88%
OSPRay - particle_volume/pathtracer/real_time (Items/sec)	85.2476	84.6537		85.1303
Normalized	100%	99.3%		99.86%
OSPRay - gravity_spheres_volume/dim_512/ao/real_time (Items/sec)	4.22476	4.3144		4.25724
Normalized	97.92%	100%		98.68%
OSPRay - gravity_spheres_volume/dim_512/scivis/real_time (Items/sec)	4.09826	4.18303		4.19684
Normalized	97.65%	99.67%		100%
OSPRay - gravity_spheres_volume/dim_512/pathtracer/real_time (Items/sec)	5.26585	5.24165		5.26908
Normalized	99.94%	99.48%		100%
7-Zip Compression - Compression Rating (MIPS)	109783	110223		108975
Normalized	99.6%	100%		98.87%
7-Zip Compression - D.R (MIPS)	86893	84612		86139
Normalized	100%	97.37%		99.13%
Stockfish - Total Time (Nodes/s)	34892064	37498341		38758154
Normalized	90.03%	96.75%		100%
libavif avifenc - 0 (sec)	147.032	147.171		148.699
Normalized	100%	99.91%		98.88%
libavif avifenc - 2 (sec)	71.968	71.726		72.122
Normalized	99.66%	100%		99.45%
libavif avifenc - 6 (sec)	8.918	8.645		8.845
Normalized	96.94%	100%		97.74%
libavif avifenc - 6, Lossless (sec)	12.729	12.834		12.726
Normalized	99.98%	99.16%		100%
libavif avifenc - 10, Lossless (sec)	7.186	7.251		7.172
Normalized	99.81%	98.91%		100%
Timed Gem5 Compilation - Time To Compile (sec)	338.344	339.754		339.209
Normalized	100%	99.58%		99.74%

xeon gold sunday

Timed Linux Kernel Compilation - defconfig (sec)	**65.705**	65.756	**65.865**
Normalized	100%	99.92%	99.76%
Timed Linux Kernel Compilation - allmodconfig (sec)	**775.814**	775.965	**776.561**
Normalized	100%	99.98%	99.9%
Timed MPlayer Compilation - Time To Compile (sec)	27.032	**27.136**	**26.989**
Normalized	99.84%	99.46%	100%
Parallel BZIP2 Compression - F.1.0.R.a.m.i.C (sec)	6.928	**6.836**	**7.162**
Normalized	98.67%	100%	95.45%
oneDNN - IP Shapes 1D - f32 - CPU (ms)	**2.29507**	**2.29954**	2.29593
Normalized	100%	99.81%	99.96%
oneDNN - IP Shapes 3D - f32 - CPU (ms)	**3.0952**	3.08617	**3.06766**
Normalized	99.11%	99.4%	100%
oneDNN - IP Shapes 1D - u8s8f32 - CPU (ms)	0.498823	**0.4975**	**0.499623**
Normalized	99.73%	100%	99.58%
oneDNN - IP Shapes 3D - u8s8f32 - CPU (ms)	1.24593	**1.25075**	**1.24158**
Normalized	99.65%	99.27%	100%
oneDNN - IP Shapes 1D - bf16bf16bf16 - CPU (ms)	5.5849	**5.58907**	**5.58271**
Normalized	99.96%	99.89%	100%
oneDNN - IP Shapes 3D - bf16bf16bf16 - CPU (ms)	2.5951	**2.5985**	**2.57547**
Normalized	99.24%	99.11%	100%
oneDNN - C.B.S.A - f32 - CPU (ms)	**4.27636**	**4.33581**	4.31526
Normalized	100%	98.63%	99.1%
oneDNN - D.B.s - f32 - CPU (ms)	**5.64541**	**7.82105**	5.71241
Normalized	100%	72.18%	98.83%
oneDNN - D.B.s - f32 - CPU (ms)	3.3354	**3.33286**	**3.33852**
Normalized	99.92%	100%	99.83%
oneDNN - C.B.S.A - u8s8f32 - CPU	4.19879	**4.20788**	**4.14962**
Normalized	98.83%	98.62%	100%
oneDNN - D.B.s - u8s8f32 - CPU (ms)	**0.54218**	0.541061	**0.539423**
Normalized	99.49%	99.7%	100%
oneDNN - D.B.s - u8s8f32 - CPU (ms)	0.857716	**0.843142**	**0.862283**
Normalized	98.3%	100%	97.78%
oneDNN - R.N.N.T - f32 - CPU (ms)	1614	**1611**	**1614**
Normalized	99.83%	100%	99.8%
oneDNN - R.N.N.I - f32 - CPU (ms)	**908.616**	**1743**	908.727
Normalized	100%	52.14%	99.99%
oneDNN - R.N.N.T - u8s8f32 - CPU	**1614**	**1608**	1613
Normalized	99.68%	100%	99.75%
oneDNN - C.B.S.A - bf16bf16bf16 - CPU (ms)	**9.41055**	**9.4**	9.40951
Normalized	99.89%	100%	99.9%

oneDNN - D.B.s - bf16bf16bf16 - CPU (ms)	13.7195	**37.3118**	**13.7123**
Normalized	99.95%	36.75%	100%
oneDNN - D.B.s - bf16bf16bf16 - CPU (ms)	**12.642**	**12.6881**	12.6783
Normalized	100%	99.64%	99.71%
oneDNN - R.N.N.I - u8s8f32 - CPU (ms)	**907.924**	911.401	**915.538**
Normalized	100%	99.62%	99.17%
oneDNN - M.M.B.S.T - f32 - CPU (ms)	0.96569	**0.971579**	**0.965417**
Normalized	99.97%	99.37%	100%
oneDNN - R.N.N.T - bf16bf16bf16 - CPU (ms)	**1621**	1611	**1608**
Normalized	99.21%	99.82%	100%
oneDNN - R.N.N.I - bf16bf16bf16 - CPU (ms)	906.687	**910.948**	**906.382**
Normalized	99.97%	99.5%	100%
oneDNN - M.M.B.S.T - u8s8f32 - CPU (ms)	**0.309251**	0.308236	**0.306607**
Normalized	99.15%	99.47%	100%
oneDNN - M.M.B.S.T - bf16bf16bf16 - CPU (ms)	**2.10714**	**2.10124**	2.10205
Normalized	99.72%	100%	99.96%
OSPray Studio - 1 - 1080p - 1 - Path Tracer (ms)	**1765**	**1764**	**1764**
Normalized	99.94%	100%	100%
OSPray Studio - 2 - 1080p - 1 - Path Tracer (ms)	**1813**	**1807**	1810
Normalized	99.67%	100%	99.83%
OSPray Studio - 3 - 1080p - 1 - Path Tracer (ms)	**2154**	**2158**	**2158**
Normalized	100%	99.81%	99.81%
OSPray Studio - 1 - 1080p - 16 - Path Tracer (ms)	28164	**28170**	**28119**
Normalized	99.84%	99.82%	100%
OSPray Studio - 1 - 1080p - 32 - Path Tracer (ms)	**71609**	**71515**	71554
Normalized	99.87%	100%	99.95%
OSPray Studio - 2 - 1080p - 16 - Path Tracer (ms)	**28943**	**28975**	28965
Normalized	100%	99.89%	99.92%
OSPray Studio - 2 - 1080p - 32 - Path Tracer (ms)	**73188**	73143	**73139**
Normalized	99.93%	99.99%	100%
OSPray Studio - 3 - 1080p - 16 - Path Tracer (ms)	**34458**	**34458**	**34554**
Normalized	100%	100%	99.72%
OSPray Studio - 3 - 1080p - 32 - Path Tracer (ms)	84266	**84292**	**84177**
Normalized	99.89%	99.86%	100%
Tachyon - Total Time (sec)	108.5623	**108.3467**	**109.9221**
Normalized	99.8%	100%	98.57%

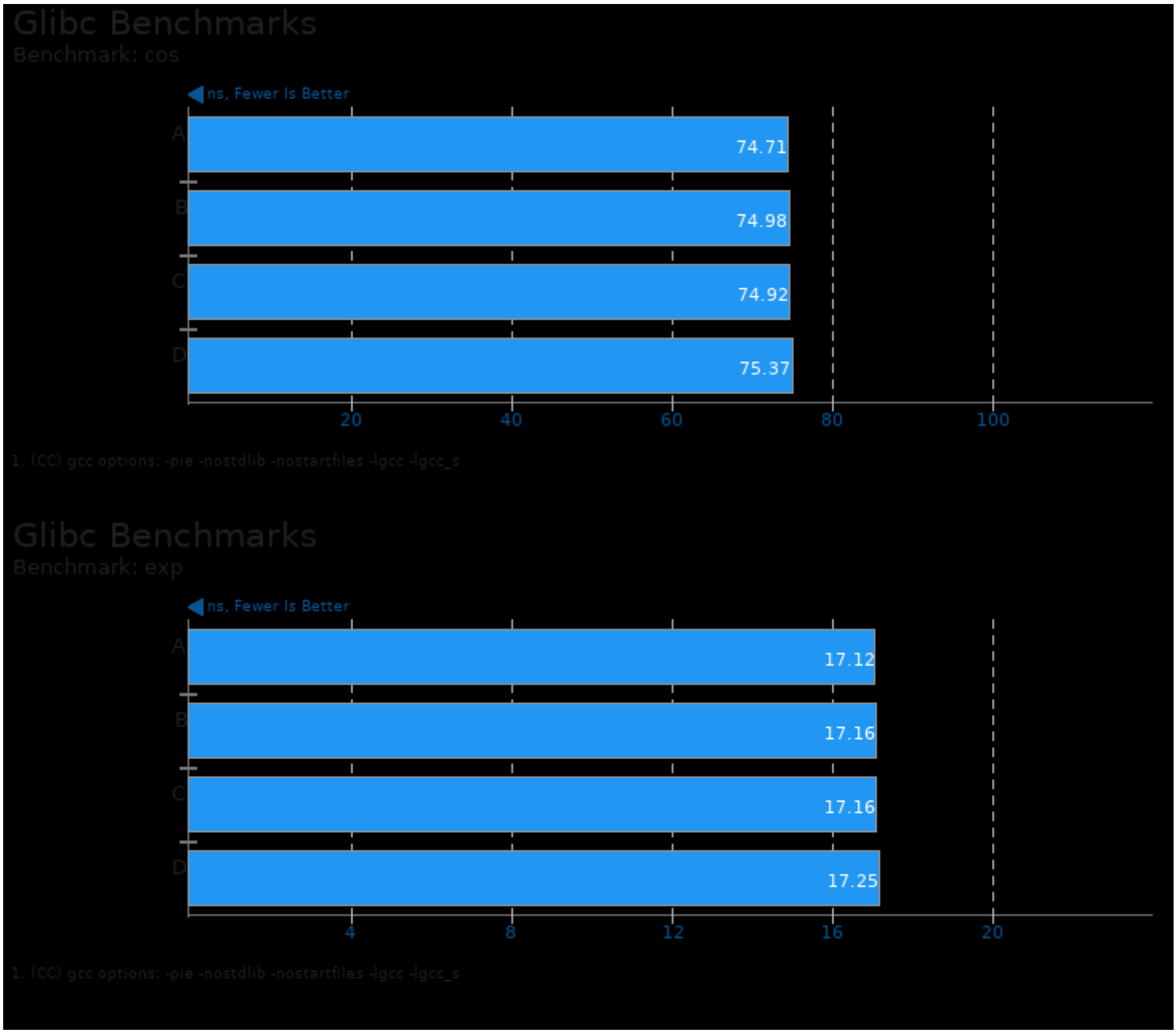
WebP2 Image Encode - Default (sec)	**3.18**	**3.23**	3.202
Normalized	100%	98.45%	99.31%
WebP2 Image Encode - Q.7.C.E.7	162.622	**163.357**	**159.05**
Normalized	97.8%	97.36%	100%
WebP2 Image Encode - Q.9.C.E.7	**344.295**	**341.493**	343.201
Normalized	99.19%	100%	99.5%
WebP2 Image Encode - Q.1.C.E.5	**4.615**	**4.61**	**4.61**
Normalized	99.89%	100%	100%
WebP2 Image Encode - Q.1.L.C (sec)	750.18	**748.427**	**750.674**
Normalized	99.77%	100%	99.7%
Graph500 - 26 (bfs median_TEPS)	**334362000**	**332860000**	333423000
Normalized	100%	99.55%	99.72%
Graph500 - 26 (bfs max_TEPS)	**337688000**	**335925000**	336656000
Normalized	100%	99.48%	99.69%
Graph500 - 26 (sssp median_TEPS)	**98000500**	96562300	**95831400**
Normalized	100%	98.53%	97.79%
Graph500 - 26 (sssp max_TEPS)	129189000	**129201000**	**128219000**
Normalized	99.99%	100%	99.24%
GROMACS - MPI CPU - water_GMX50_bare (Ns/Day)	**1.852**	**1.866**	1.859
Normalized	99.25%	100%	99.62%
TensorFlow Lite - SqueezeNet (us)	**2046**	2047	**2048**
Normalized	100%	99.95%	99.92%
TensorFlow Lite - Inception V4 (us)	31050	**32173**	**30792**
Normalized	99.17%	95.71%	100%
TensorFlow Lite - NASNet Mobile (us)	15098	**15132**	**15081**
Normalized	99.88%	99.66%	100%
TensorFlow Lite - Mobilenet Float (us)	**1513**	**1524**	1518
Normalized	100%	99.25%	99.66%
TensorFlow Lite - Mobilenet Quant	**2685**	**2708**	2692
Normalized	100%	99.14%	99.75%
TensorFlow Lite - I.R.V (us)	**32510**	31223	**29900**
Normalized	91.97%	95.76%	100%
Google Draco - Lion (ms)	6840	**6879**	**6835**
Normalized	99.93%	99.36%	100%
Google Draco - Church Facade (ms)	9606	**9604**	**9626**
Normalized	99.98%	100%	99.77%
Stress-NG - MMAP (Bogo Ops/s)	386.93	**387.37**	**385.02**
Normalized	99.89%	100%	99.39%
Stress-NG - NUMA (Bogo Ops/s)	**304.15**	303.6	**303.27**
Normalized	100%	99.82%	99.71%
Stress-NG - Futex (Bogo Ops/s)	**1268283**	**1426740**	1353835
Normalized	88.89%	100%	94.89%
Stress-NG - MEMFD (Bogo Ops/s)	**996.47**	997.77	**1003**
Normalized	99.34%	99.47%	100%
Stress-NG - Atomic (Bogo Ops/s)	**230497**	**218089**	221704
Normalized	100%	94.62%	96.19%
Stress-NG - Crypto (Bogo Ops/s)	18828	**18770**	**18828**
Normalized	100%	99.69%	100%
Stress-NG - Malloc (Bogo Ops/s)	**23719708**	23706403	**23681967**
Normalized	100%	99.94%	99.84%
Stress-NG - Forking (Bogo Ops/s)	53559	**53675**	**53448**
Normalized	99.78%	100%	99.58%

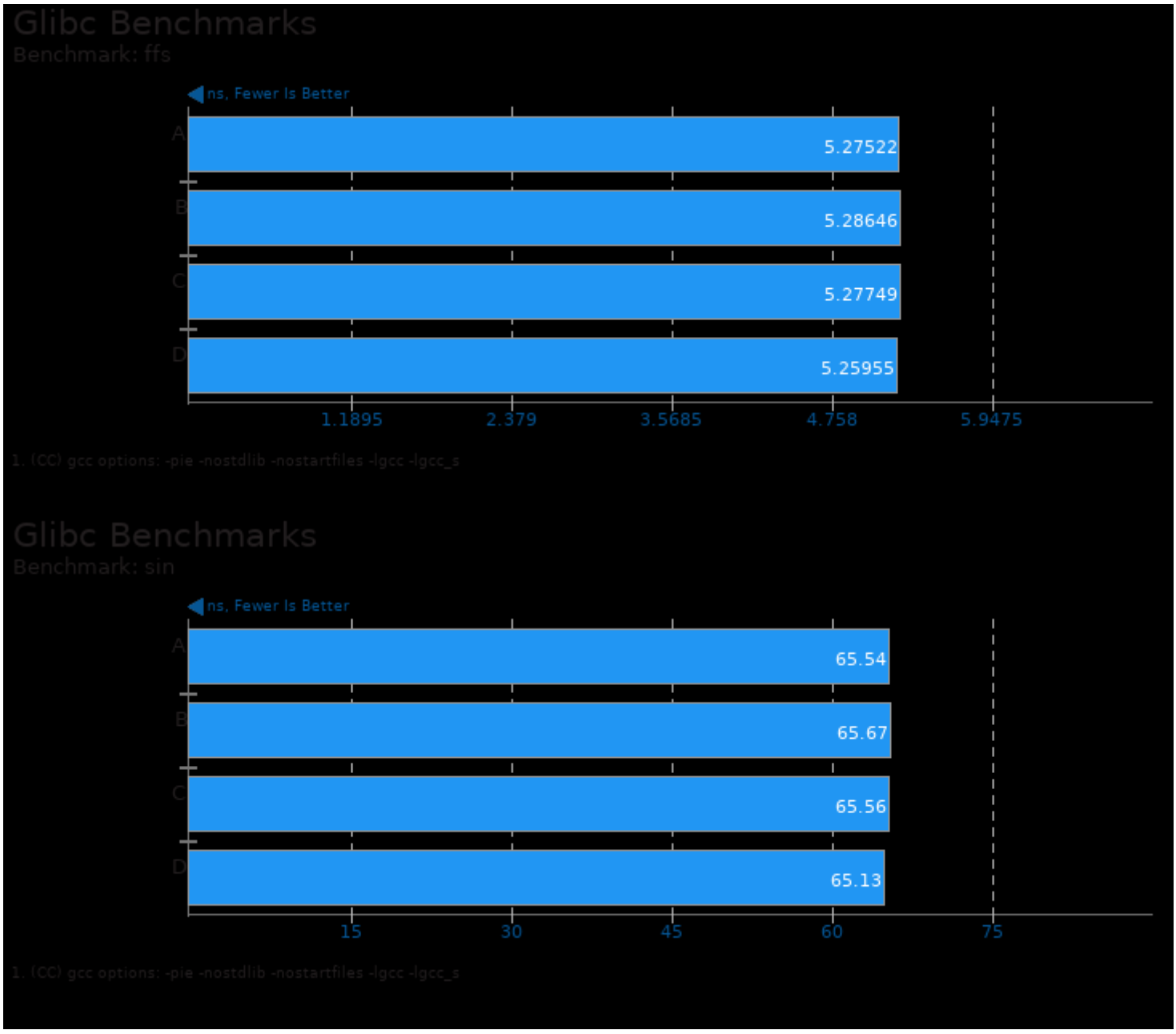
xeon gold sunday

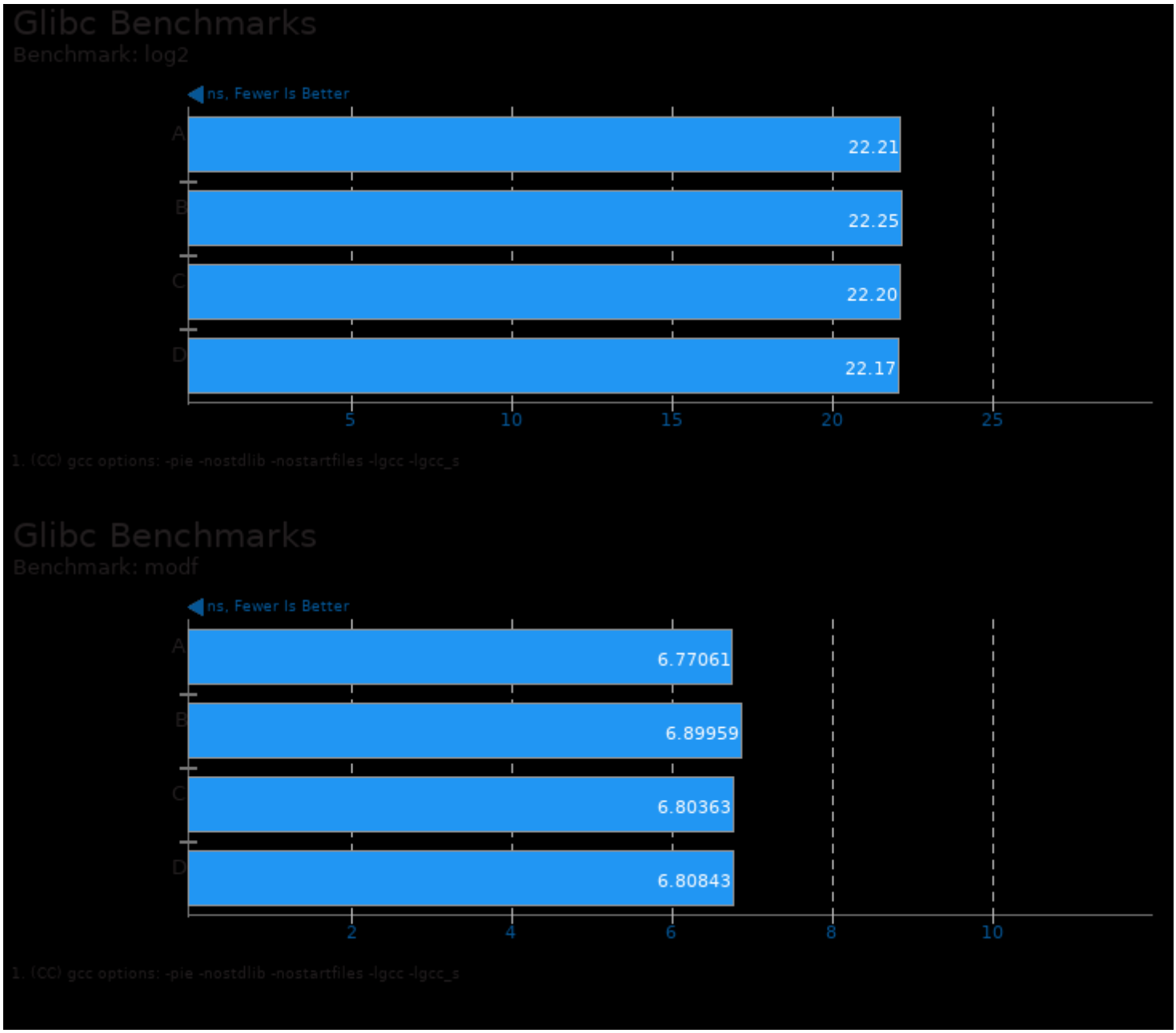
Stress-NG - IO_uring (Bogo Ops/s)	2029946	**2029595**	**2041307**
Normalized	99.44%	99.43%	100%
Stress-NG - SENDFILE (Bogo Ops/s)	**291327**	291265	**291151**
Normalized	100%	99.98%	99.94%
Stress-NG - CPU Cache (Bogo Ops/s)	**100.26**	**95.52**	99.32
Normalized	100%	95.27%	99.06%
Stress-NG - CPU Stress (Bogo Ops/s)	**33015**	**33095**	33057
Normalized	99.76%	100%	99.88%
Stress-NG - Semaphores (Bogo	**2396120**	2396549	**2396852**
Normalized	99.97%	99.99%	100%
Stress-NG - Matrix Math (Bogo Ops/s)	74771	**74563**	**74961**
Normalized	99.75%	99.47%	100%
Stress-NG - Vector Math (Bogo Ops/s)	**55453**	55714	**55809**
Normalized	99.36%	99.83%	100%
Stress-NG - x86_64 RdRand (Bogo Ops/s)	**252385**	**252372**	252383
Normalized	100%	99.99%	100%
Stress-NG - Memory Copying (Bogo Ops/s)	5550	**5776**	**5278**
Normalized	96.1%	100%	91.38%
Stress-NG - Socket Activity (Bogo	**10010**	**10443**	10147
Normalized	95.85%	100%	97.16%
Stress-NG - Context Switching (Bogo Ops/s)	8352209	**8099474**	**11341068**
Normalized	73.65%	71.42%	100%
Stress-NG - G.C.S.F (Bogo Ops/s)	927638	**929454**	**918757**
Normalized	99.8%	100%	98.85%
Stress-NG - G.Q.D.S (Bogo Ops/s)	**197.03**	**196.57**	196.9
Normalized	100%	99.77%	99.93%
Stress-NG - S.V.M.P (Bogo Ops/s)	3422497	**3397386**	**3444591**
Normalized	99.36%	98.63%	100%
Blender - BMW27 - CPU-Only (sec)	**107.5**	**107.67**	107.51
Normalized	100%	99.84%	99.99%
Blender - Classroom - CPU-Only (sec)	**306.67**	307.75	**308.43**
Normalized	100%	99.65%	99.43%
Blender - Fishy Cat - CPU-Only (sec)	**145.7**	**145.18**	145.24
Normalized	99.64%	100%	99.96%
Blender - Barbershop - CPU-Only	**1174**	**1170**	1172
Normalized	99.7%	100%	99.83%
Blender - Pabellon Barcelona - CPU-Only (sec)	**379.19**	**379.74**	379.42
Normalized	100%	99.86%	99.94%
Facebook RocksDB - Rand Read	70391323	**68987827**	**70804216**
Normalized	99.42%	97.43%	100%
Facebook RocksDB - Update Rand (Op/s)	633380	**633293**	**633869**
Normalized	99.92%	99.91%	100%
Facebook RocksDB - Read While Writing (Op/s)	3010198	**3015141**	**2995064**
Normalized	99.84%	100%	99.33%
Facebook RocksDB - R.R.W.R (Op/s)	**2157960**	**2143910**	2147824
Normalized	100%	99.35%	99.53%

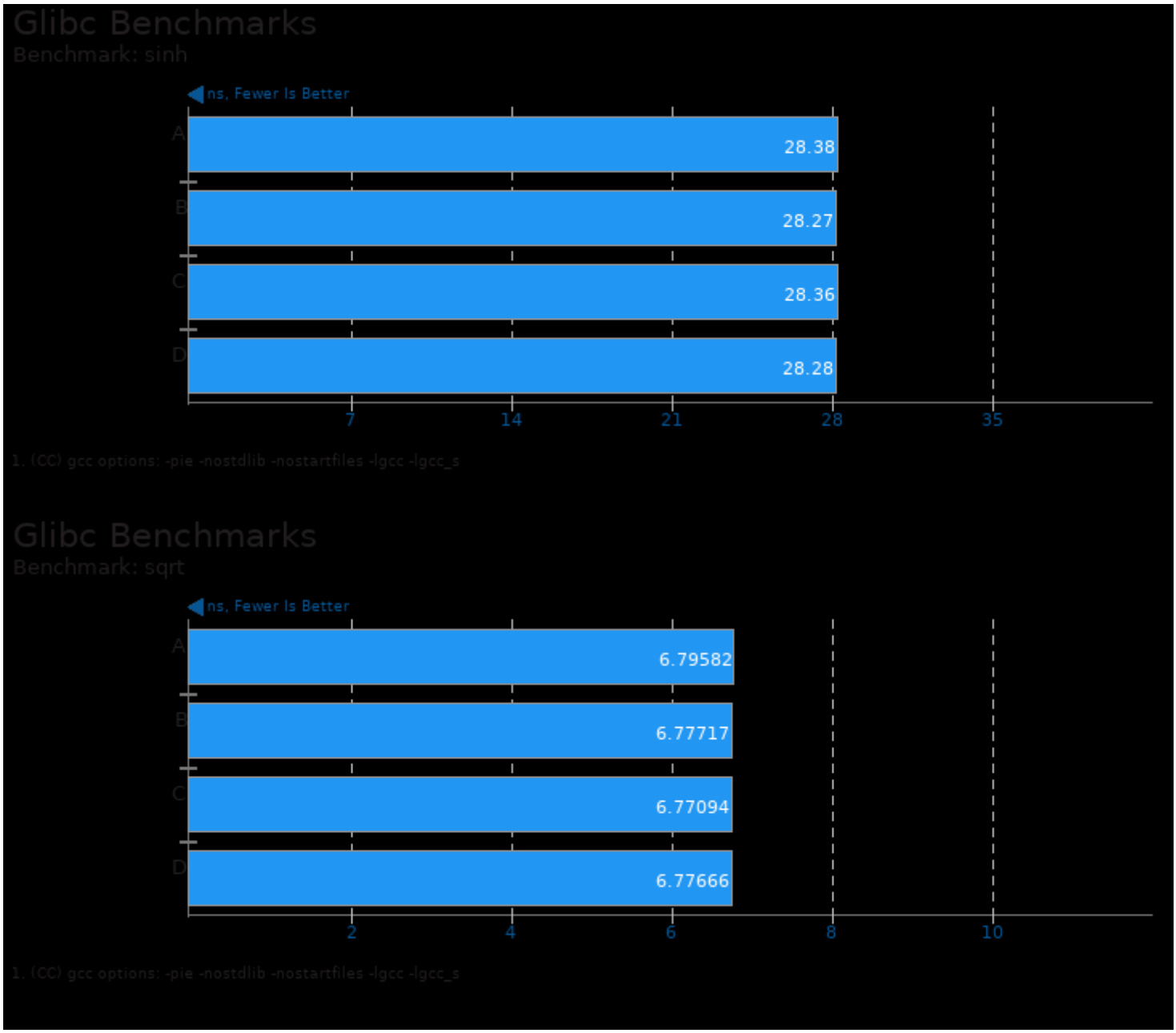
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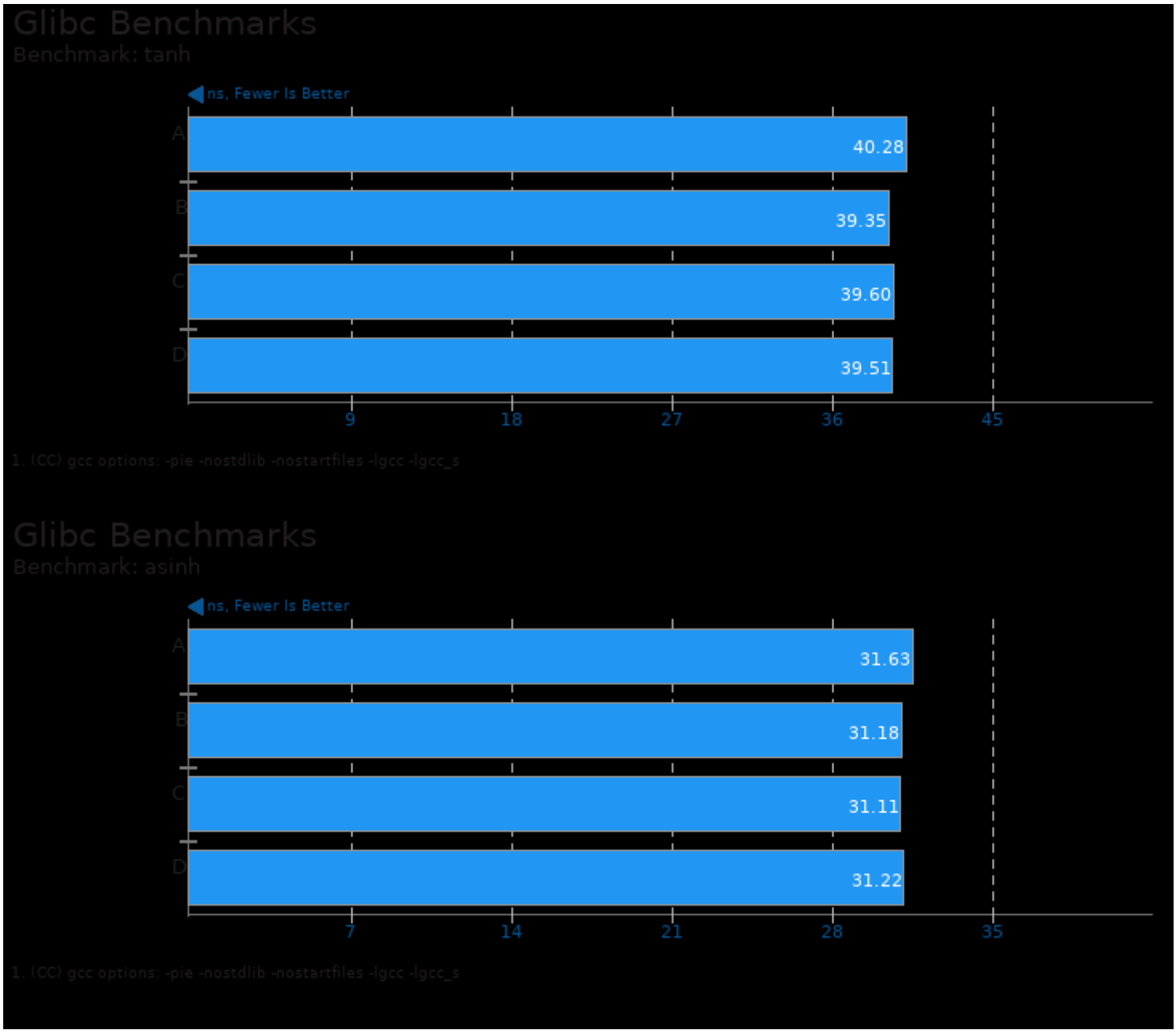
ClickHouse - 1.R.W.A.D.F.R.C.C (Queries/min, Geo Mean)	177.76	**172.52**	**178.95**
Normalized	99.34%	96.41%	100%
ClickHouse - 1.R.W.A.D.S.R (Queries/min, Geo Mean)	188.33	**180.53**	**190.36**
Normalized	98.93%	94.84%	100%
ClickHouse - 1.R.W.A.D.T.R (Queries/min, Geo Mean)	184.16	**185.00**	**179.81**
Normalized	99.55%	100%	97.19%
Chaos Group V-RAY - CPU (vsamples)	**14794**	**15016**	14961
Normalized	98.52%	100%	99.63%
InfluxDB - 4 - 10000 - 2,5000,1 - 10000 (val/sec)	**491687**	**484407**	486129
Normalized	100%	98.52%	98.87%
InfluxDB - 64 - 10000 - 2,5000,1 - 10000 (val/sec)	**800957**	**782763**	792170
Normalized	100%	97.73%	98.9%

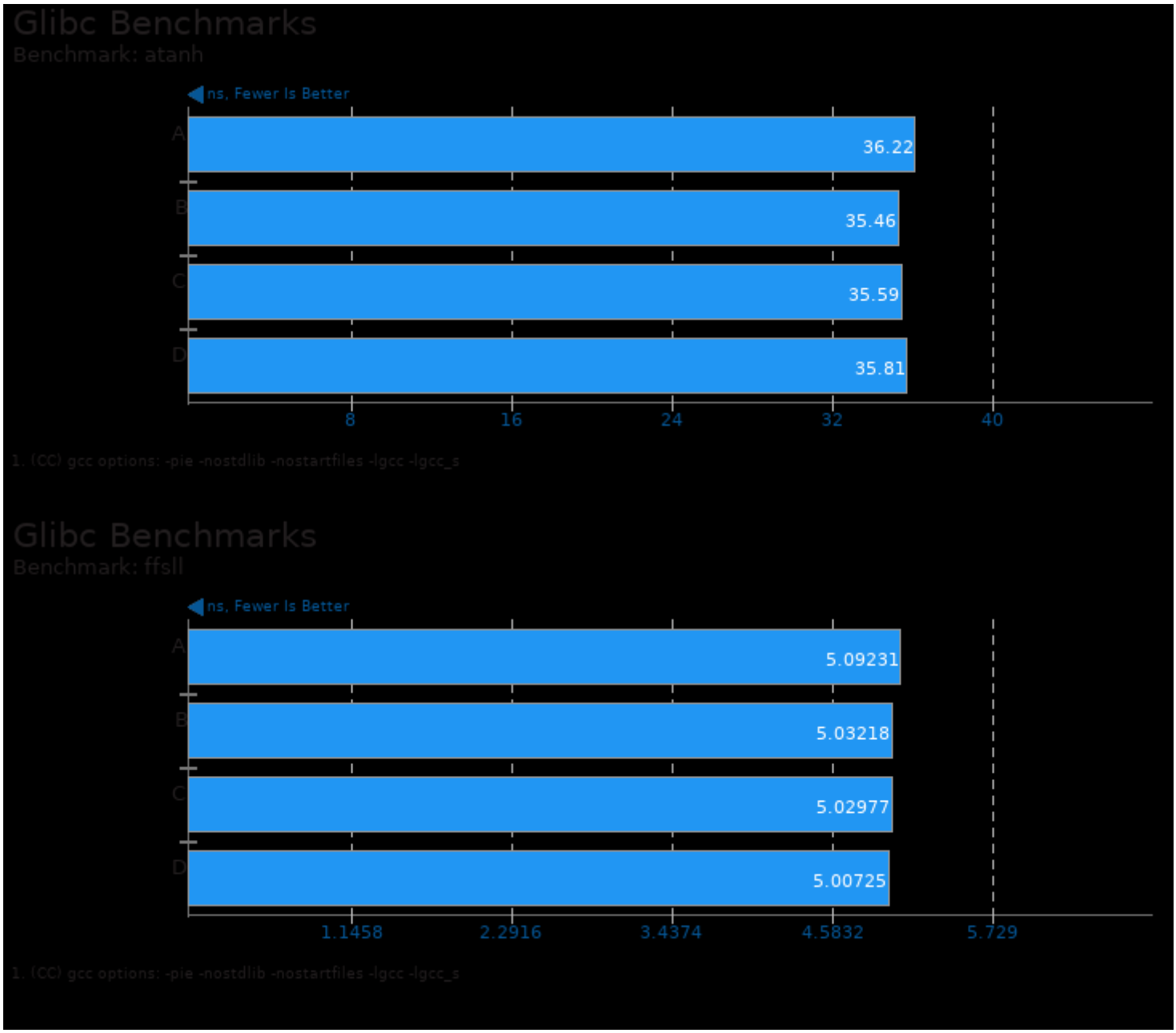

Glibc Benchmarks
Benchmark: cos
ns, Fewer Is Better
A
74.71
B
74.98
C
74.92
D
75.37
20
40
60
80
100
1. (CC) gcc options: -pie -nostdlib -nostartfiles -lgcc -lgcc_s
Glibc Benchmarks
Benchmark: exp
ns, Fewer Is Better
A
17.12
B
17.16
C
17.16
D
17.25
4
8
12
16
20
1. (CC) gcc options: -pie -nostdlib -nostartfiles -lgcc -lgcc_s

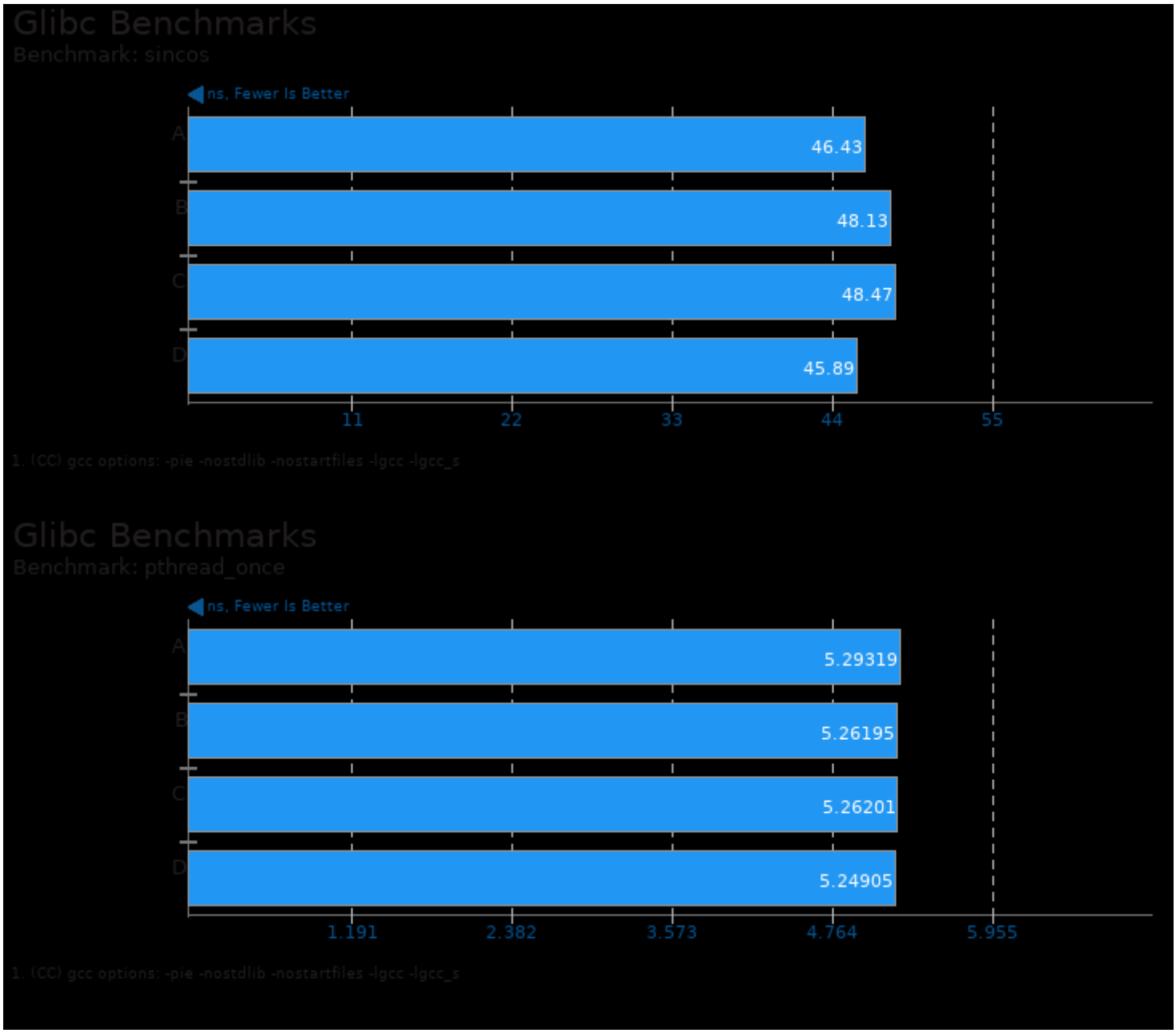

Glibc Benchmarks
Benchmark: ffs
ns, Fewer Is Better
A
B
C
D
5.27522
5.28646
5.27749
5.25955
1.1895
2.379
3.5685
4.758
5.9475
1. (CC) gcc options: -pie -nostdlib -nostartfiles -lgcc -lgcc_s
Glibc Benchmarks
Benchmark: sin
ns, Fewer Is Better
A
B
C
D
65.54
65.67
65.56
65.13
15
30
45
60
75
1. (CC) gcc options: -pie -nostdlib -nostartfiles -lgcc -lgcc_s

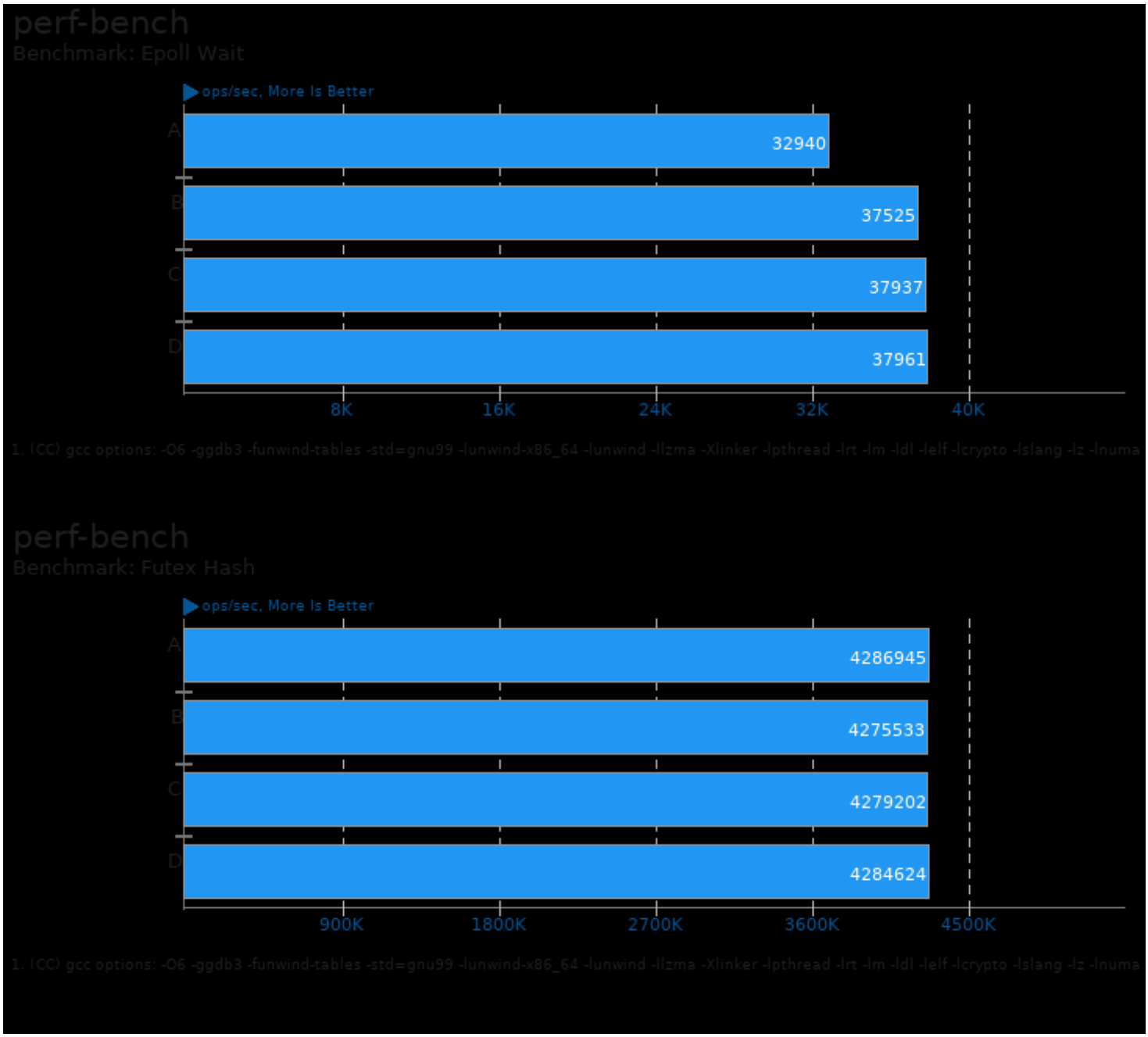

Glibc Benchmarks
Benchmark: log2
ns, Fewer Is Better
A
B
C
D
22.21
22.25
22.20
22.17
5
10
15
20
25
1. (CC) gcc options: -pie -nostdlib -nostartfiles -lgcc -lgcc_s
Glibc Benchmarks
Benchmark: modf
ns, Fewer Is Better
A
B
C
D
6.77061
6.89959
6.80363
6.80843
2
4
6
8
10
1. (CC) gcc options: -pie -nostdlib -nostartfiles -lgcc -lgcc_s

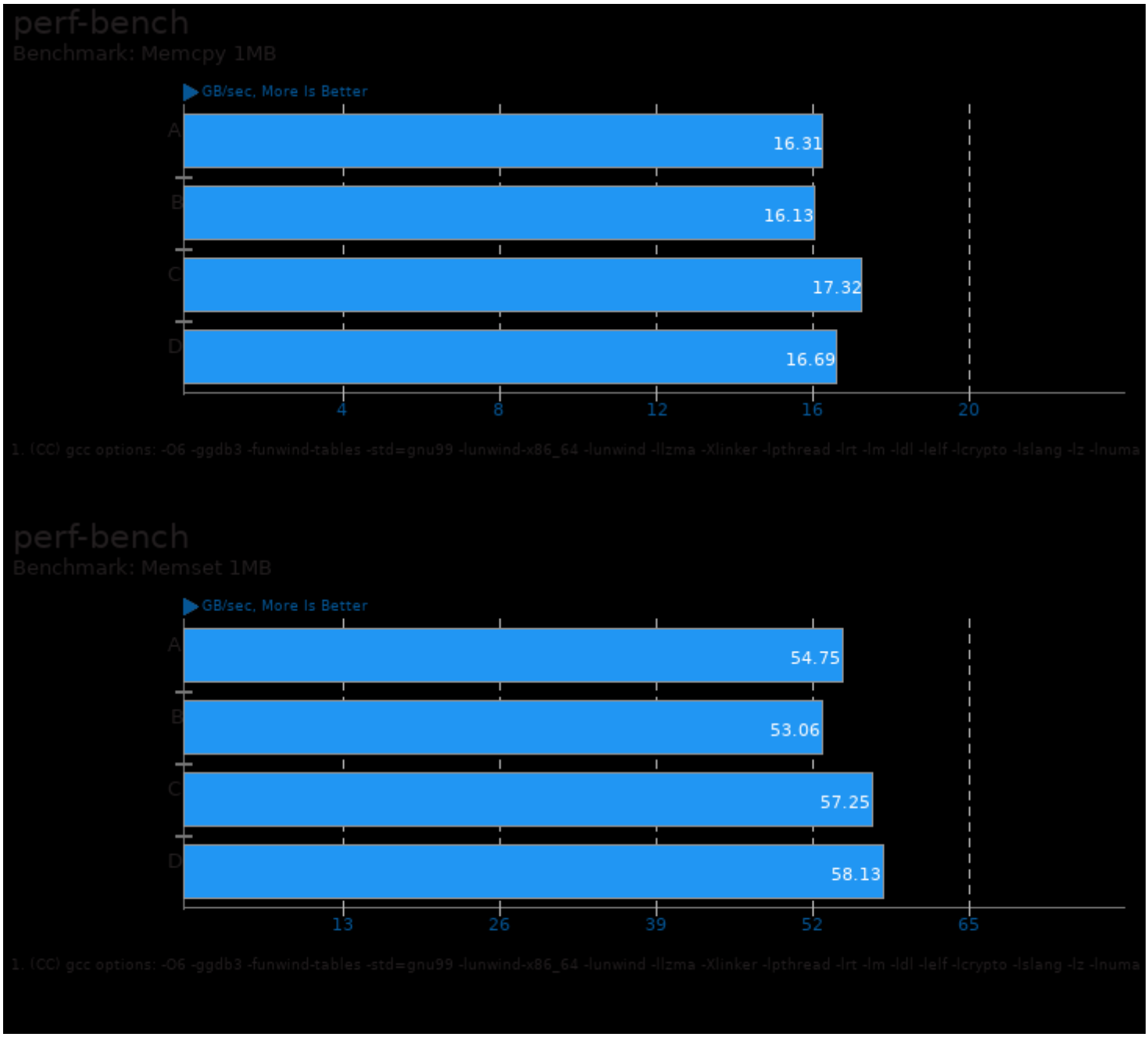

Glibc Benchmarks
Benchmark: sinh
ns, Fewer Is Better
A
B
C
D
28.38
28.27
28.36
28.28
7
14
21
28
35
1. (CC) gcc options: -pie -nostdlib -nostartfiles -lgcc -lgcc_s
Glibc Benchmarks
Benchmark: sqrt
ns, Fewer Is Better
A
B
C
D
6.79582
6.77717
6.77094
6.77666
2
4
6
8
10
1. (CC) gcc options: -pie -nostdlib -nostartfiles -lgcc -lgcc_s


Glibc Benchmarks
Benchmark: tanh
ns, Fewer Is Better
A
B
C
D
40.28
39.35
39.60
39.51
9
18
27
36
45
1. (CC) gcc options: -pie -nostdlib -nostartfiles -lgcc -lgcc_s
Glibc Benchmarks
Benchmark: asinh
ns, Fewer Is Better
A
B
C
D
31.63
31.18
31.11
31.22
7
14
21
28
35
1. (CC) gcc options: -pie -nostdlib -nostartfiles -lgcc -lgcc_s

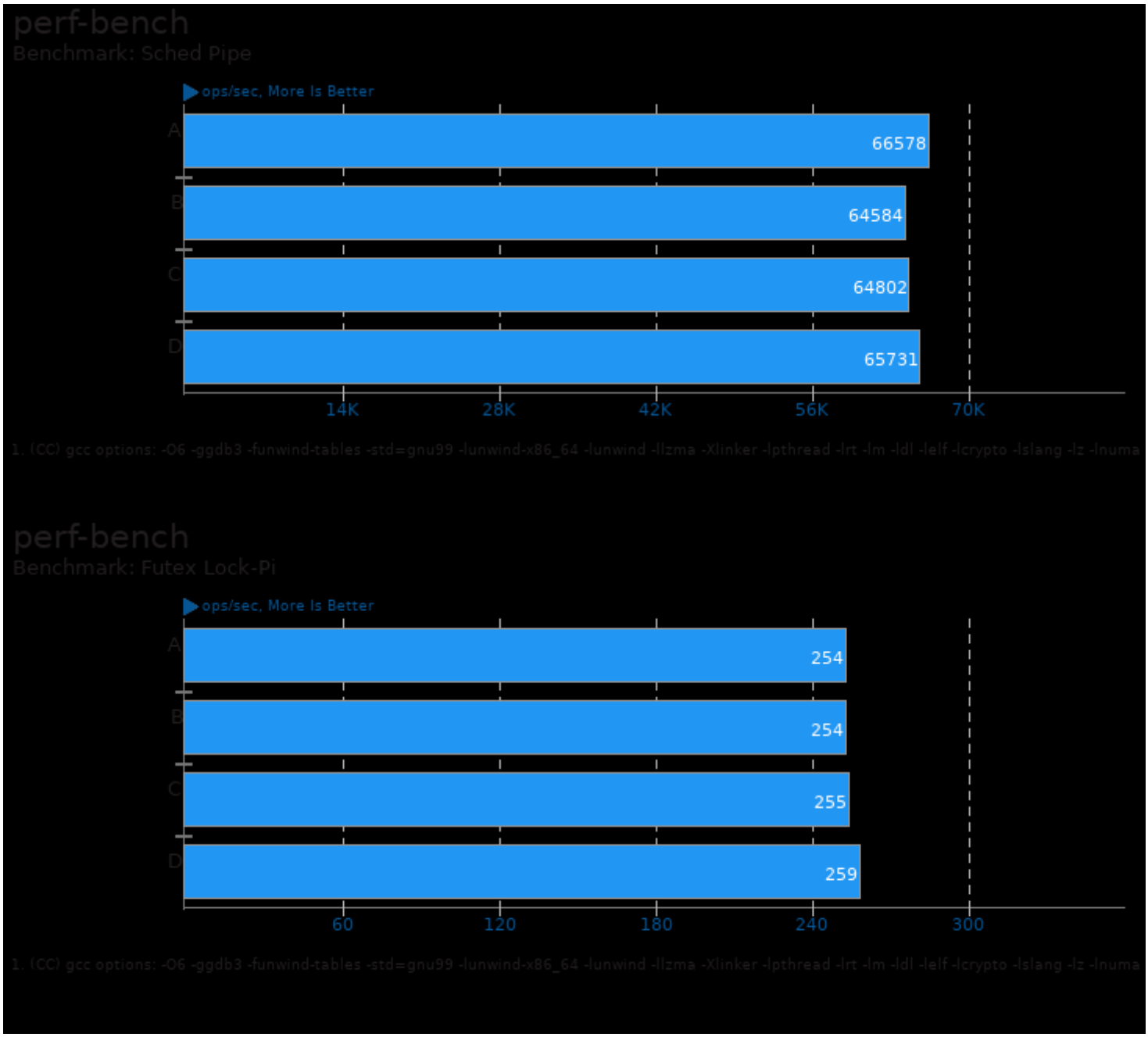

Glibc Benchmarks
Benchmark: atanh
ns, Fewer Is Better
A
B
C
D
36.22
35.46
35.59
35.81
8
16
24
32
40
1. (CC) gcc options: -pie -nostdlib -nostartfiles -lgcc -lgcc_s
Glibc Benchmarks
Benchmark: ffsll
ns, Fewer Is Better
A
B
C
D
5.09231
5.03218
5.02977
5.00725
1.1458
2.2916
3.4374
4.5832
5.729
1. (CC) gcc options: -pie -nostdlib -nostartfiles -lgcc -lgcc_s


Glibc Benchmarks
Benchmark: sincos
ns, Fewer Is Better
A
B
C
D
46.43
48.13
48.47
45.89
11
22
33
44
55
1. (CC) gcc options: -pie -nostdlib -nostartfiles -lgcc -lgcc_s
Glibc Benchmarks
Benchmark: pthread_once
ns, Fewer Is Better
A
B
C
D
5.29319
5.26195
5.26201
5.24905
1.191
2.382
3.573
4.764
5.955
1. (CC) gcc options: -pie -nostdlib -nostartfiles -lgcc -lgcc_s


perf-bench
Benchmark: Epoll Wait
ops/sec, More Is Better
A
B
C
D
32940
37525
37937
37961
8K
16K
24K
32K
40K
1. (CC) gcc options: -O6 -ggdb3 -funwind-tables -std=gnu99 -lunwind-x86_64 -lunwind -llzma -Xlinker -lpthread -lrt -lm -ldl -lelf -lcrypto -lslang -lz -lnuma
perf-bench
Benchmark: Futex Hash
ops/sec, More Is Better
A
B
C
D
4286945
4275533
4279202
4284624
900K
1800K
2700K
3600K
4500K
1. (CC) gcc options: -O6 -ggdb3 -funwind-tables -std=gnu99 -lunwind-x86_64 -lunwind -llzma -Xlinker -lpthread -lrt -lm -ldl -lelf -lcrypto -lslang -lz -lnuma

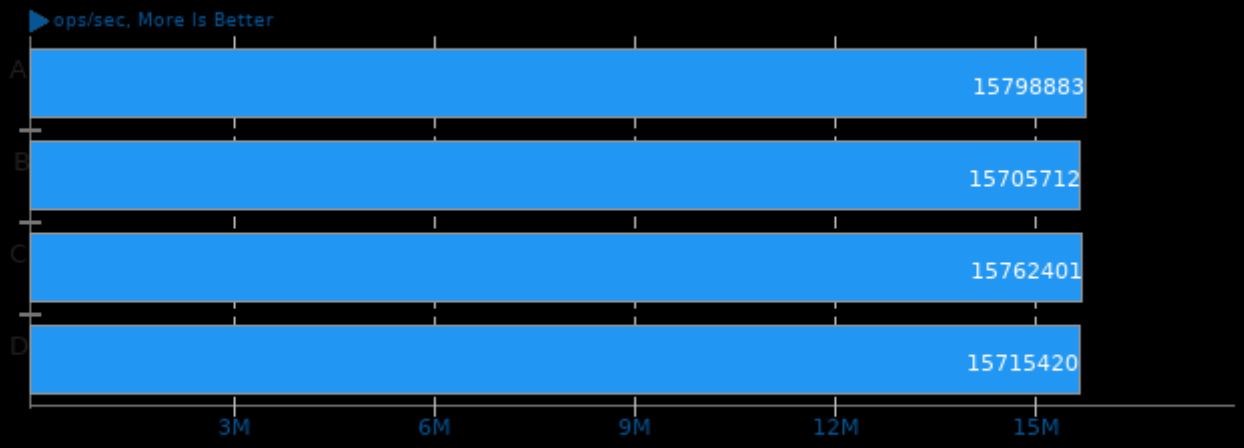

perf-bench
Benchmark: Memcpy 1MB
GB/sec, More Is Better
A
B
C
D
16.31
16.13
17.32
16.69
4
8
12
16
20
1. (CC) gcc options: -O6 -ggdb3 -funwind-tables -std=gnu99 -lunwind-x86_64 -lunwind -llzma -Xlinker -lpthread -lrt -lm -ldl -lelf -lcrypto -lslang -lz -lnuma
perf-bench
Benchmark: Memset 1MB
GB/sec, More Is Better
A
B
C
D
54.75
53.06
57.25
58.13
13
26
39
52
65
1. (CC) gcc options: -O6 -ggdb3 -funwind-tables -std=gnu99 -lunwind-x86_64 -lunwind -llzma -Xlinker -lpthread -lrt -lm -ldl -lelf -lcrypto -lslang -lz -lnuma

xeon gold sunday



perf-bench

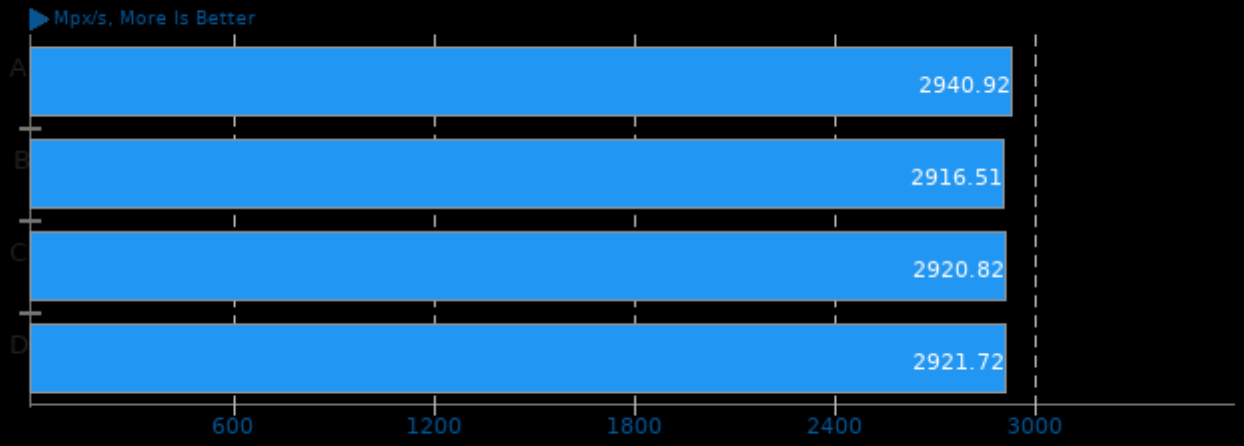
Benchmark: Syscall Basic



1. (CC) gcc options: -O6 -ggdb3 -funwind-tables -std=gnu99 -lunwind-x86_64 -lunwind -llzma -Xlinker -lpthread -lrt -lm -ldl -lelf -lcrypto -lslang -lz -lnuma

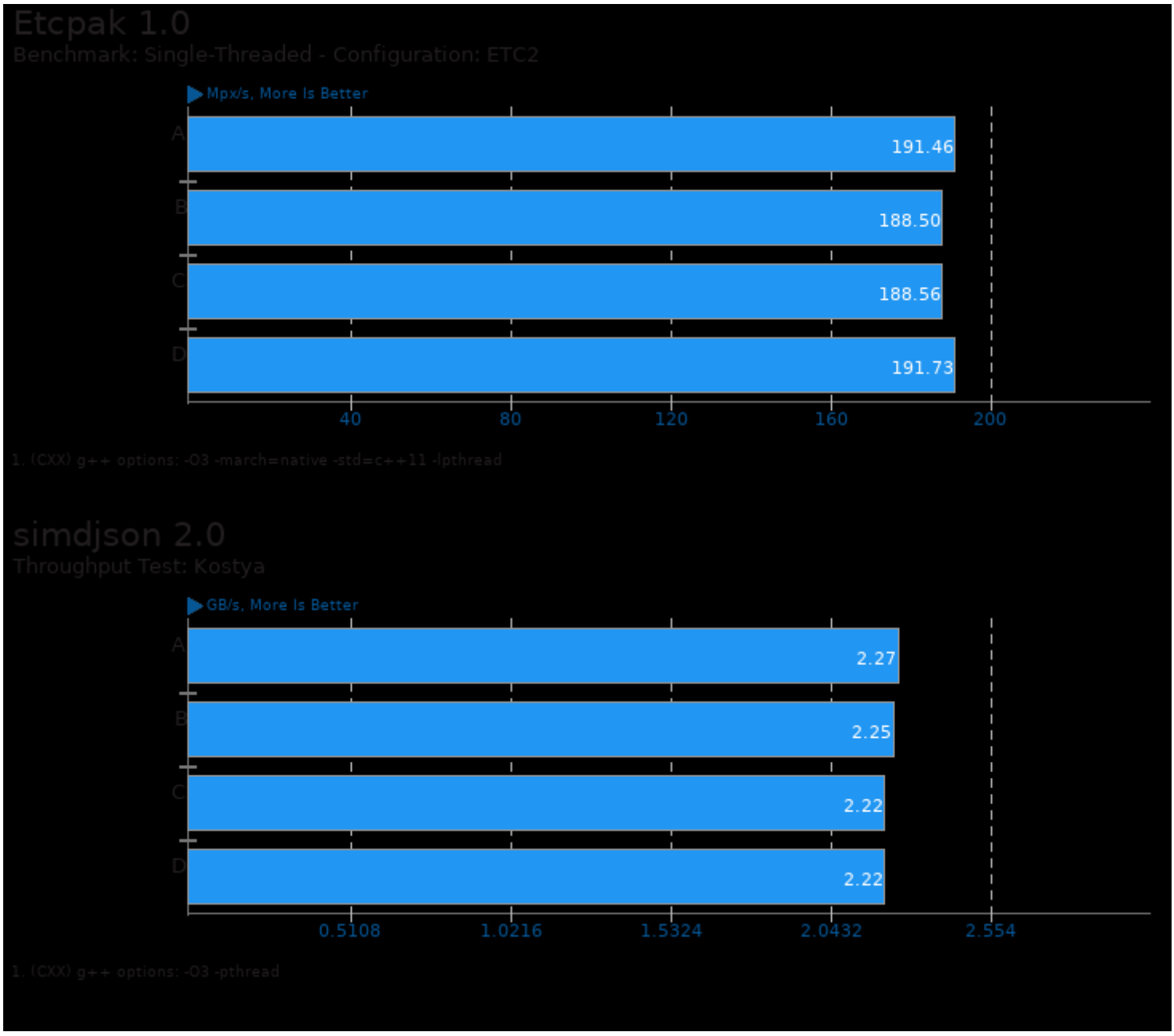
Etcpak 1.0

Benchmark: Multi-Threaded - Configuration: ETC2

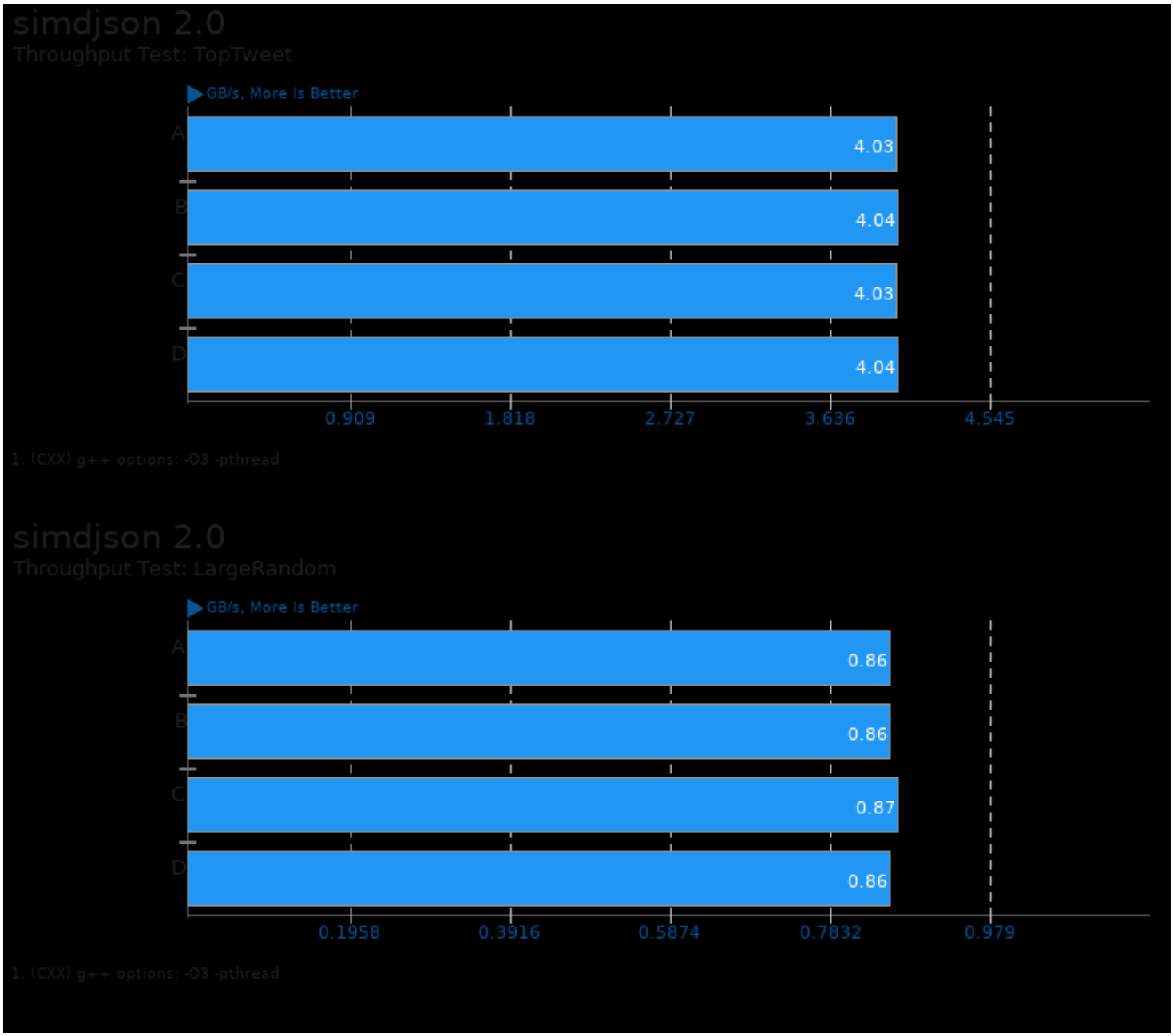


1. (CXX) g++ options: -O3 -march=native -std=c++11 -lpthread

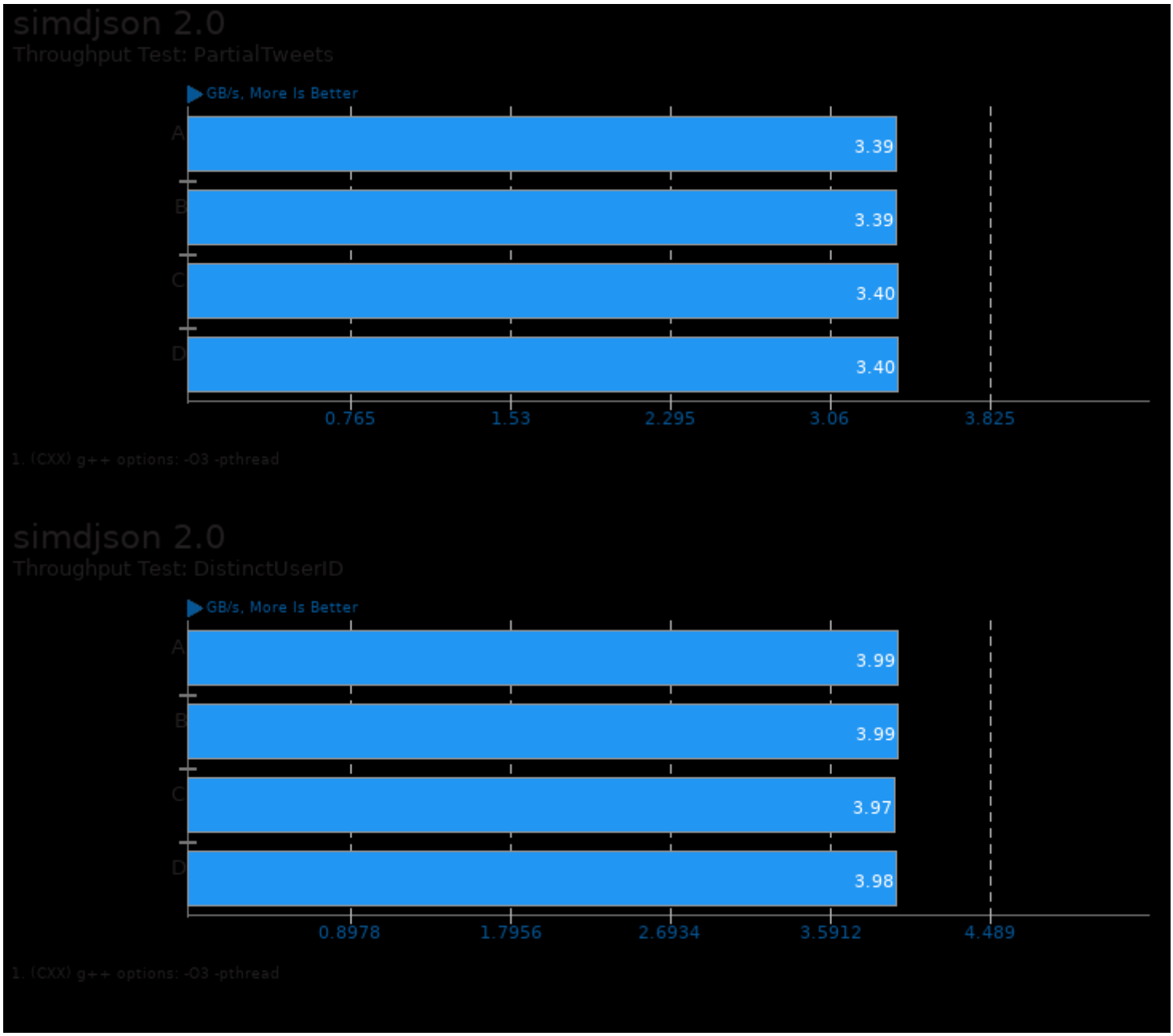
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xeon gold sunday

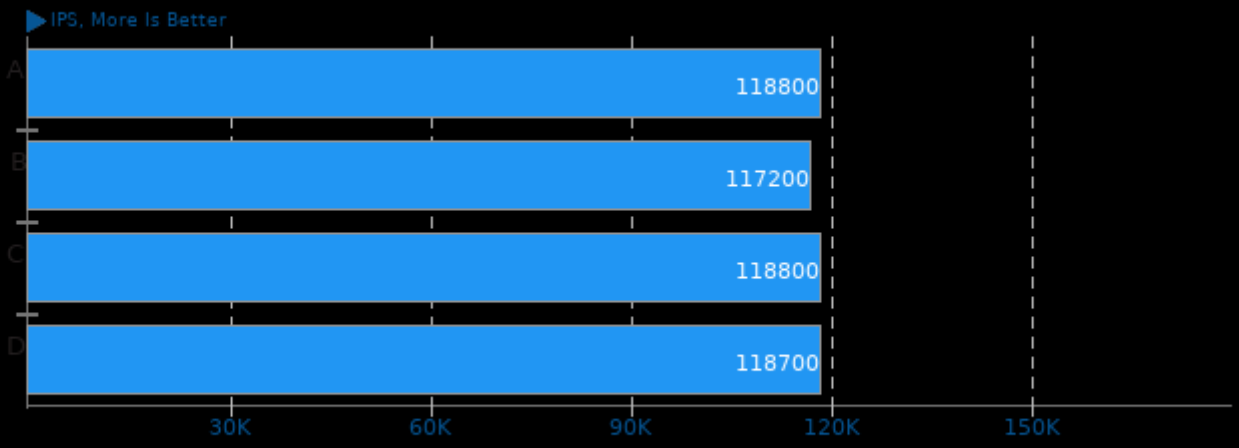


xeon gold sunday



Chia Blockchain VDF 1.0.7

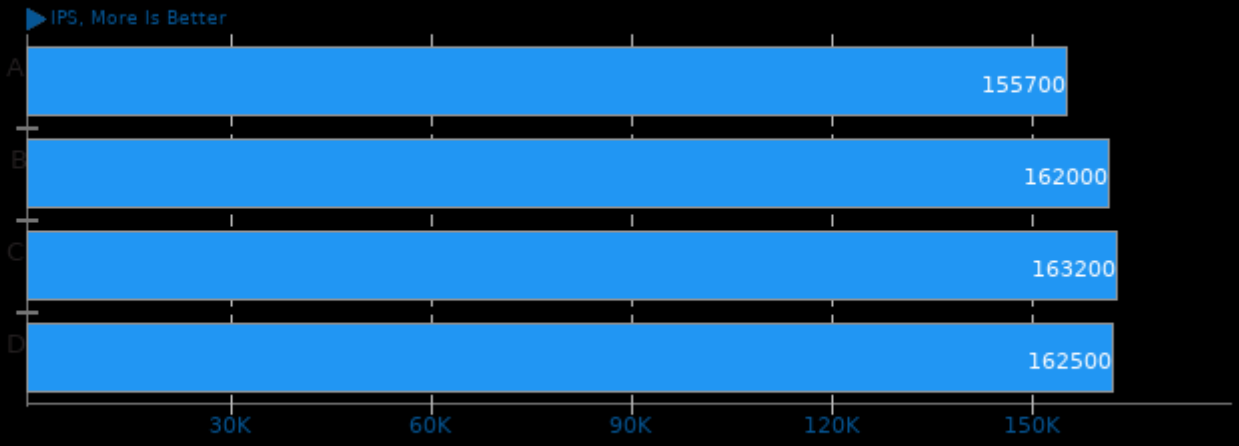
Test: Square Plain C++



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

Chia Blockchain VDF 1.0.7

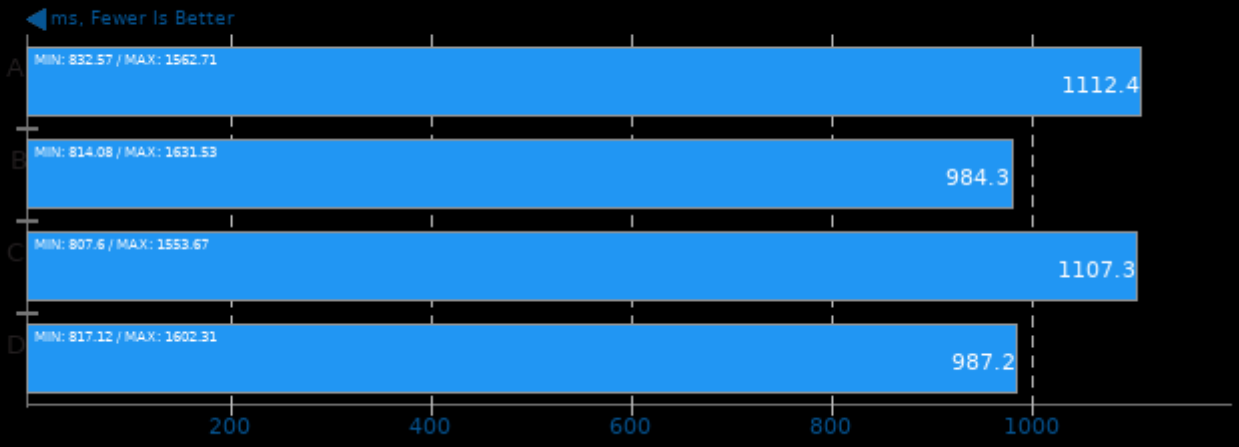
Test: Square Assembly Optimized



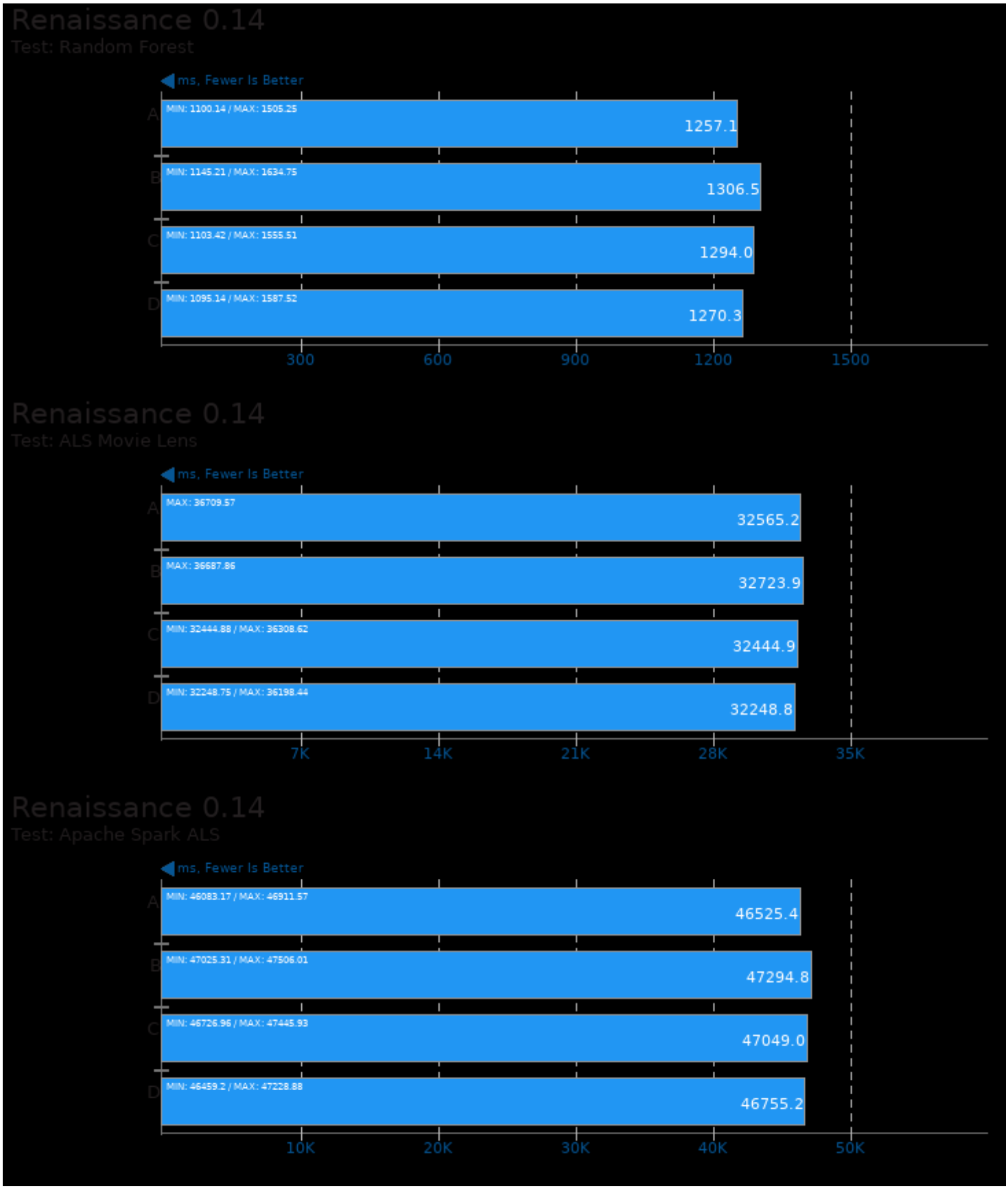
1. (CXX) g++ options: -flto -no-pie -lgmpxx -lgmp -lboost_system -pthread

Renaissance 0.14

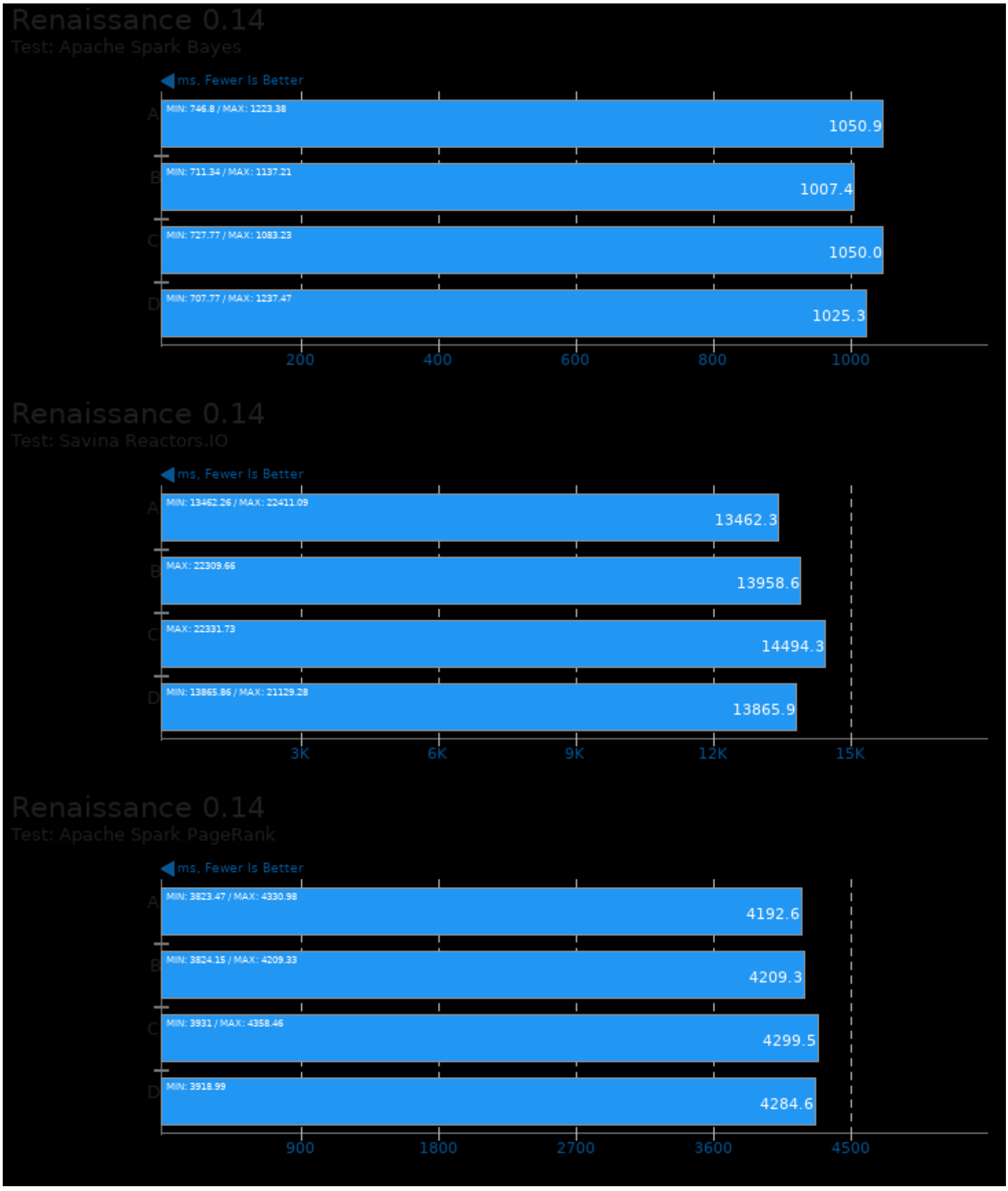
Test: Scala Dotty

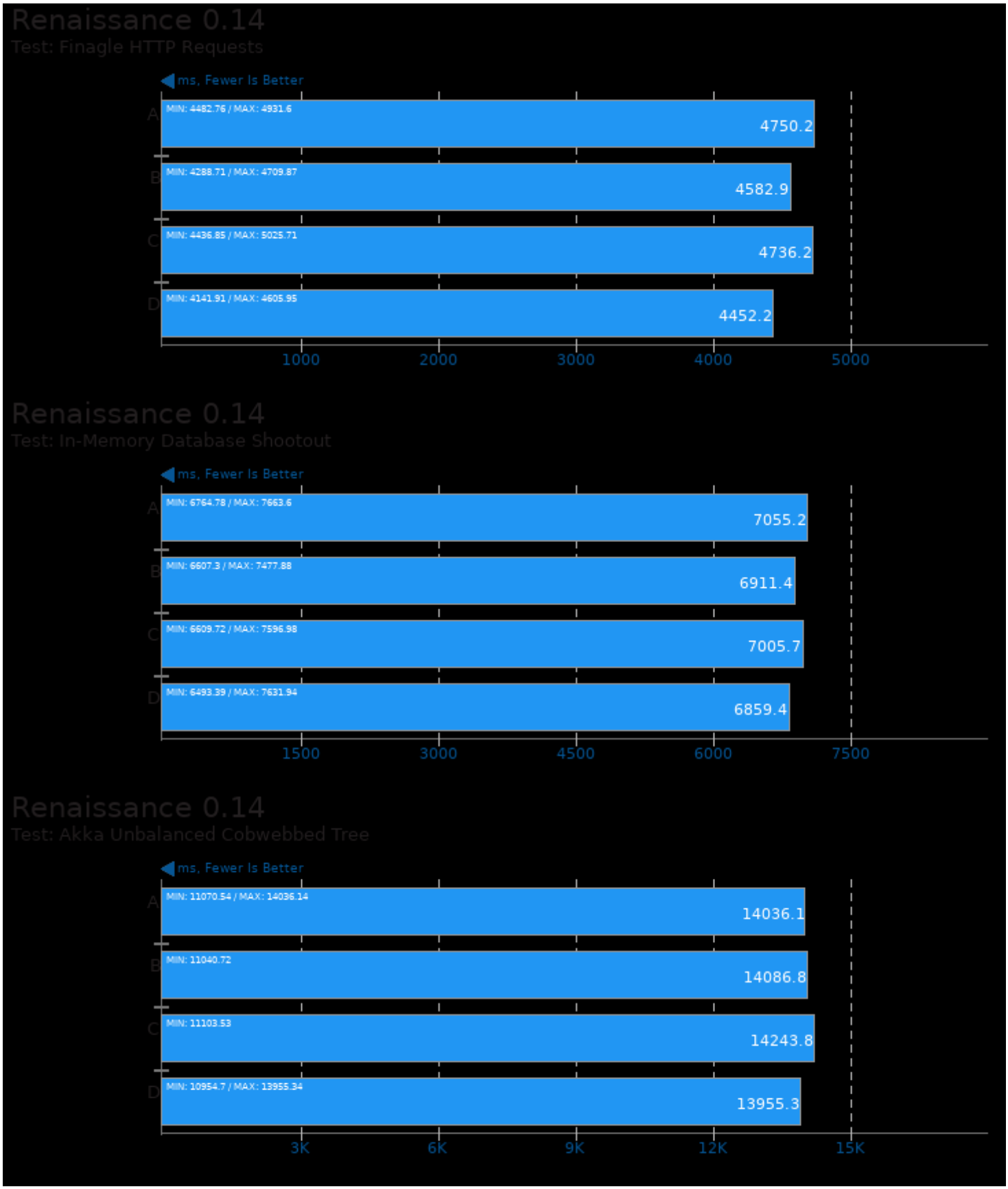


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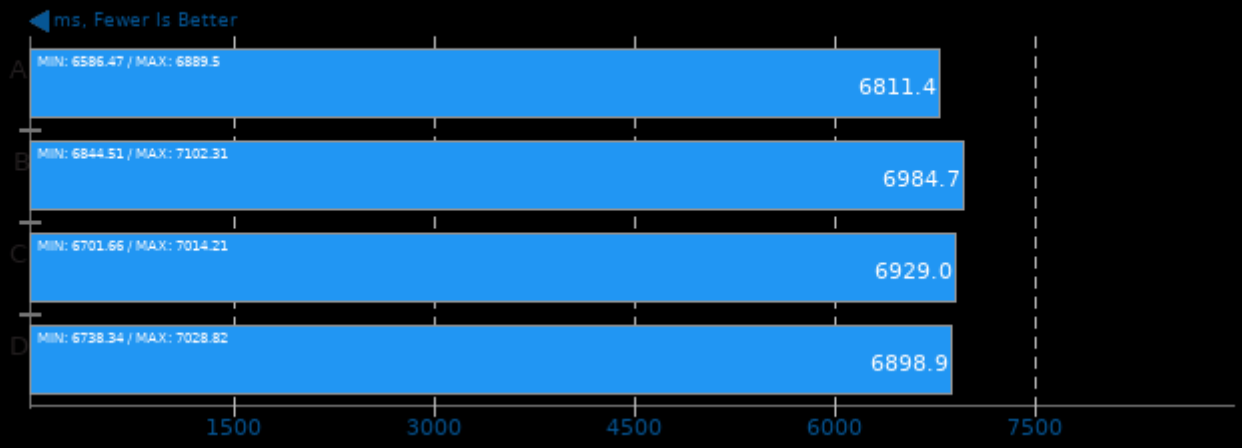
xeon gold sunday




Renaissance 0.14
Test: Finagle HTTP Requests
ms, Fewer Is Better
A
MIN: 4482.76 / MAX: 4931.6
4750.2
B
MIN: 4288.71 / MAX: 4709.87
4582.9
C
MIN: 4436.85 / MAX: 5025.71
4736.2
D
MIN: 4141.91 / MAX: 4605.95
4452.2
1000
2000
3000
4000
5000
Renaissance 0.14
Test: In-Memory Database Shootout
ms, Fewer Is Better
A
MIN: 6764.78 / MAX: 7663.6
7055.2
B
MIN: 6607.3 / MAX: 7477.88
6911.4
C
MIN: 6609.72 / MAX: 7596.98
7005.7
D
MIN: 6493.39 / MAX: 7631.94
6859.4
1500
3000
4500
6000
7500
Renaissance 0.14
Test: Akka Unbalanced Cobwebbed Tree
ms, Fewer Is Better
A
MIN: 11070.54 / MAX: 14036.14
14036.1
B
MIN: 11040.72
14086.8
C
MIN: 11103.53
14243.8
D
MIN: 10954.7 / MAX: 13955.34
13955.3
3K
6K
9K
12K
15K

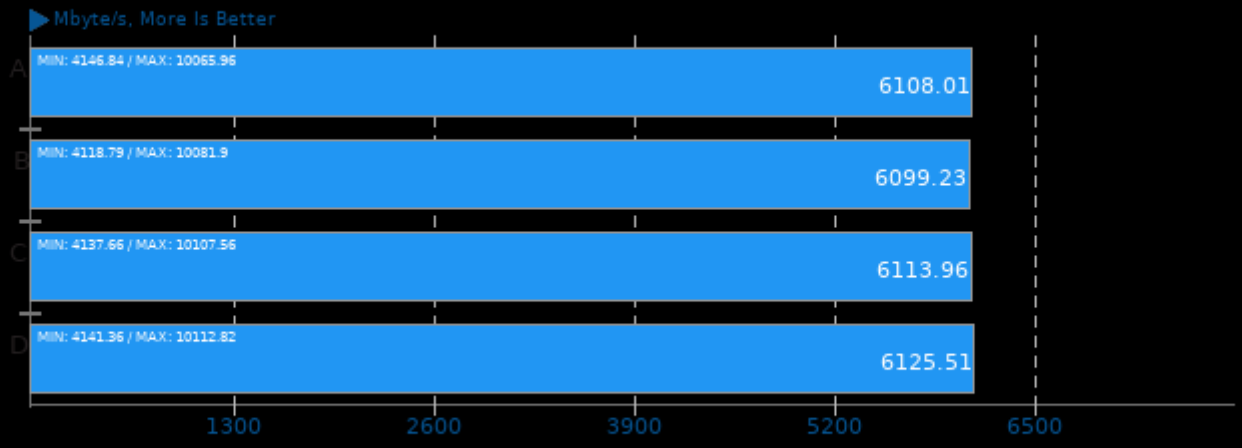
Renaissance 0.14

Test: Genetic Algorithm Using Jenetics + Futures



Nettle 3.8

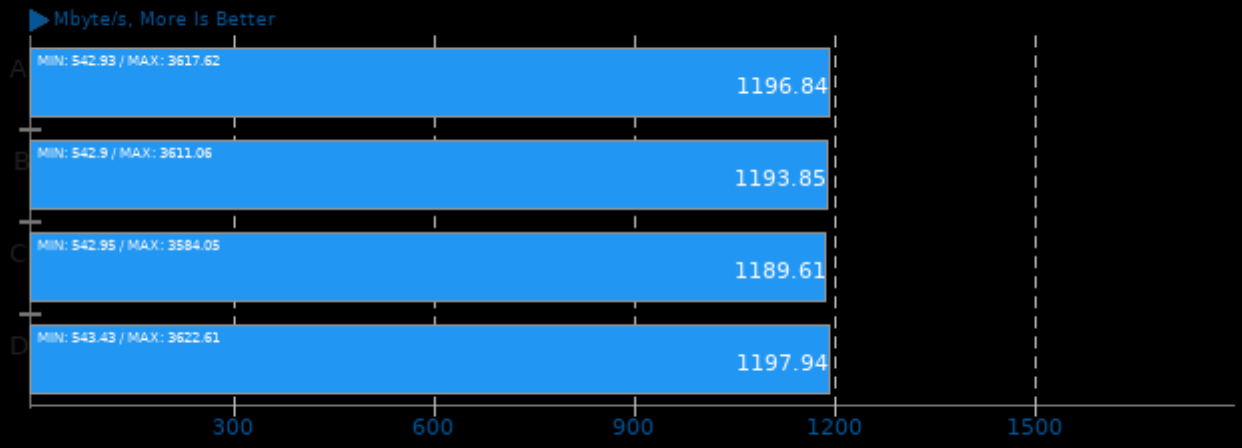
Test: aes256



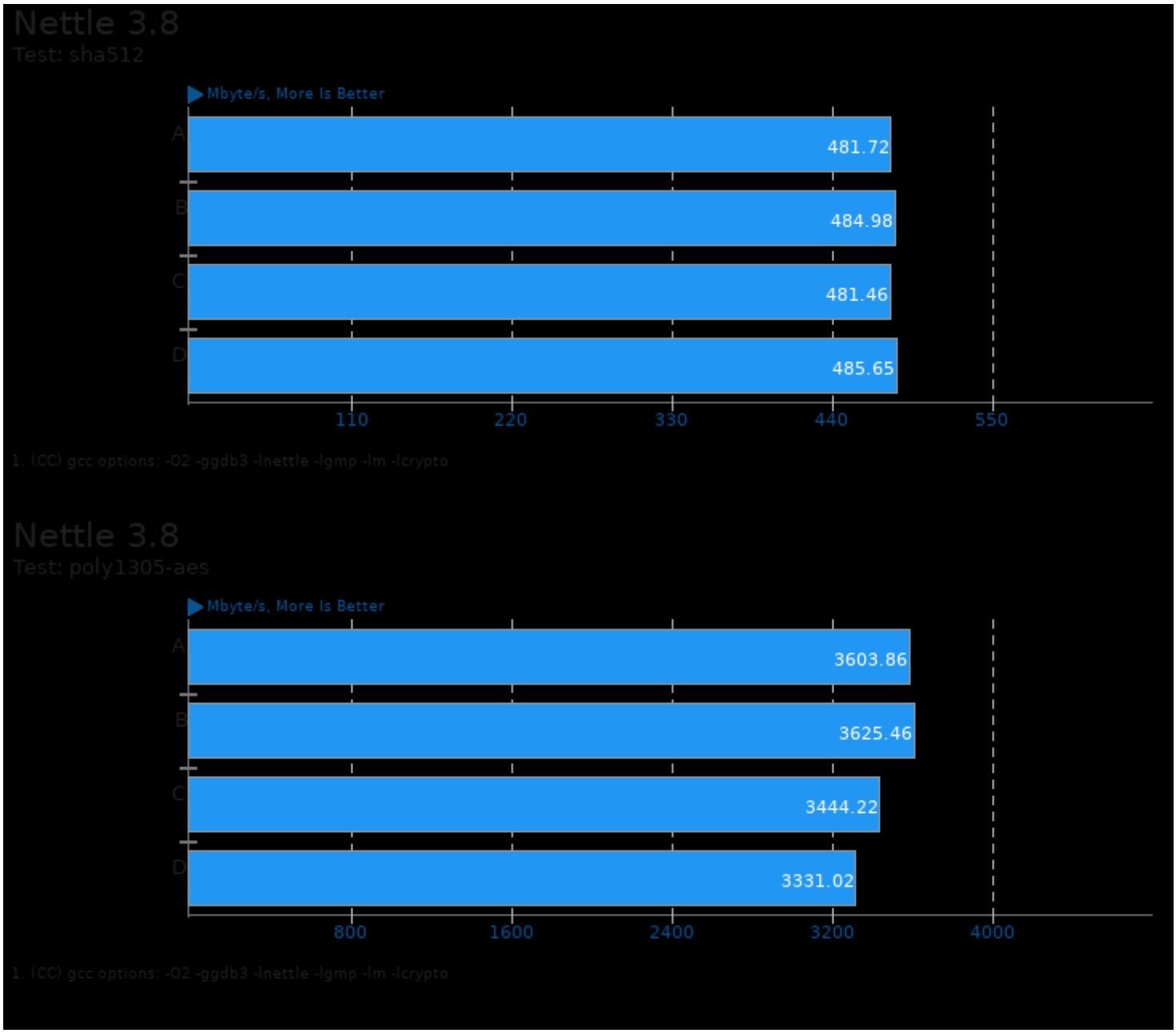
1. (CC) gcc options: -O2 -ggdb3 -lnettle -lgmp -lm -lcrypto

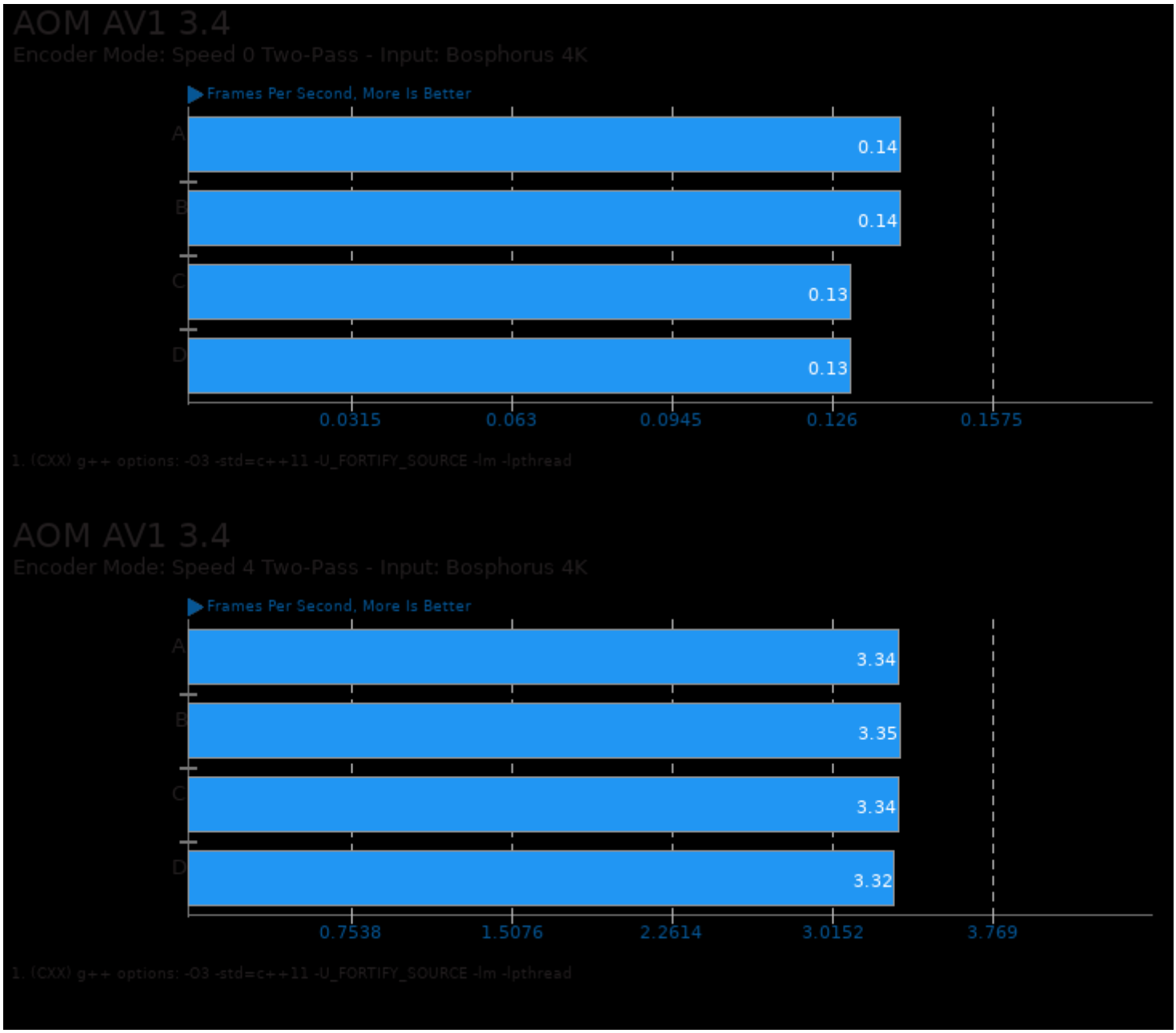
Nettle 3.8

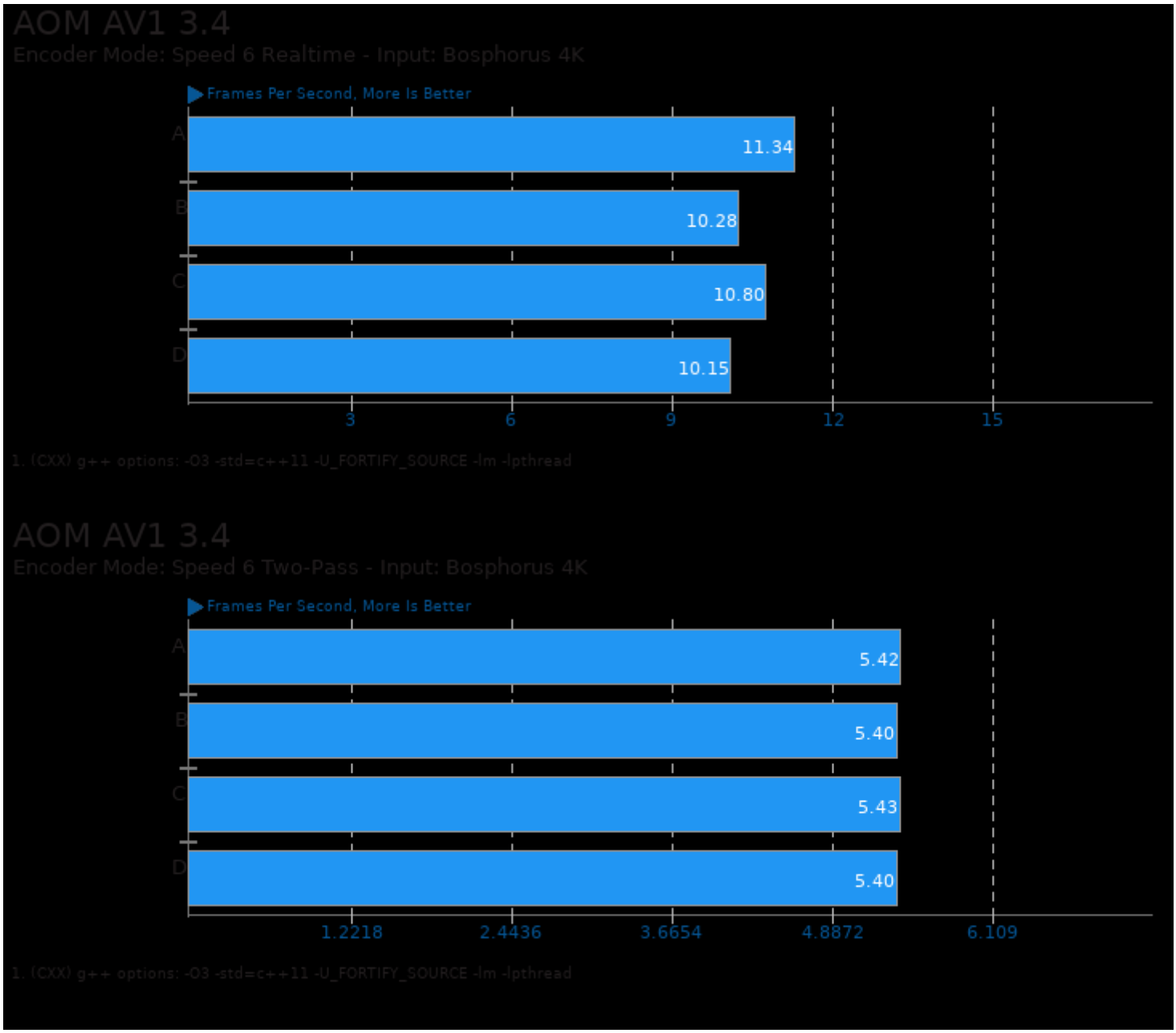
Test: chacha

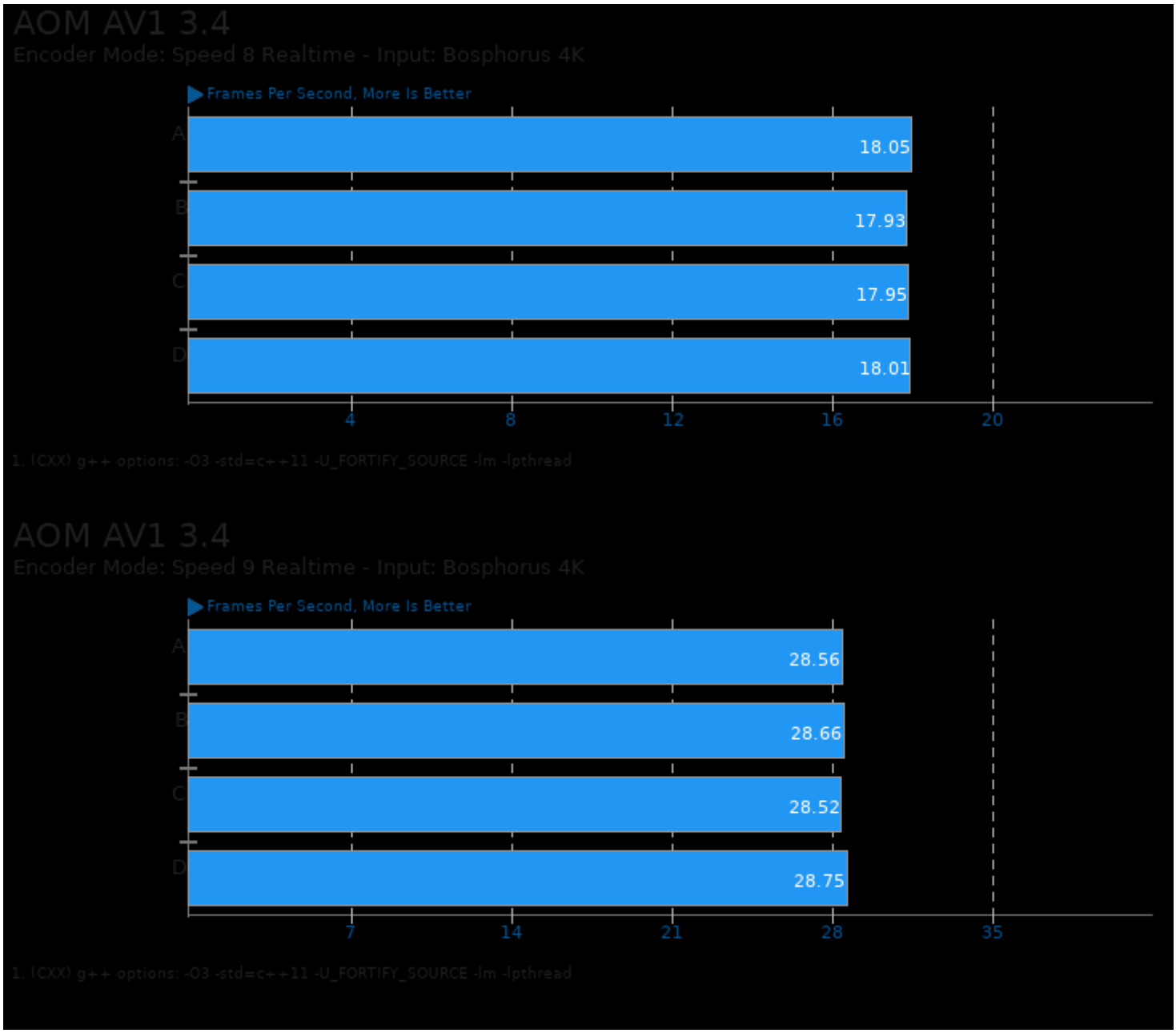


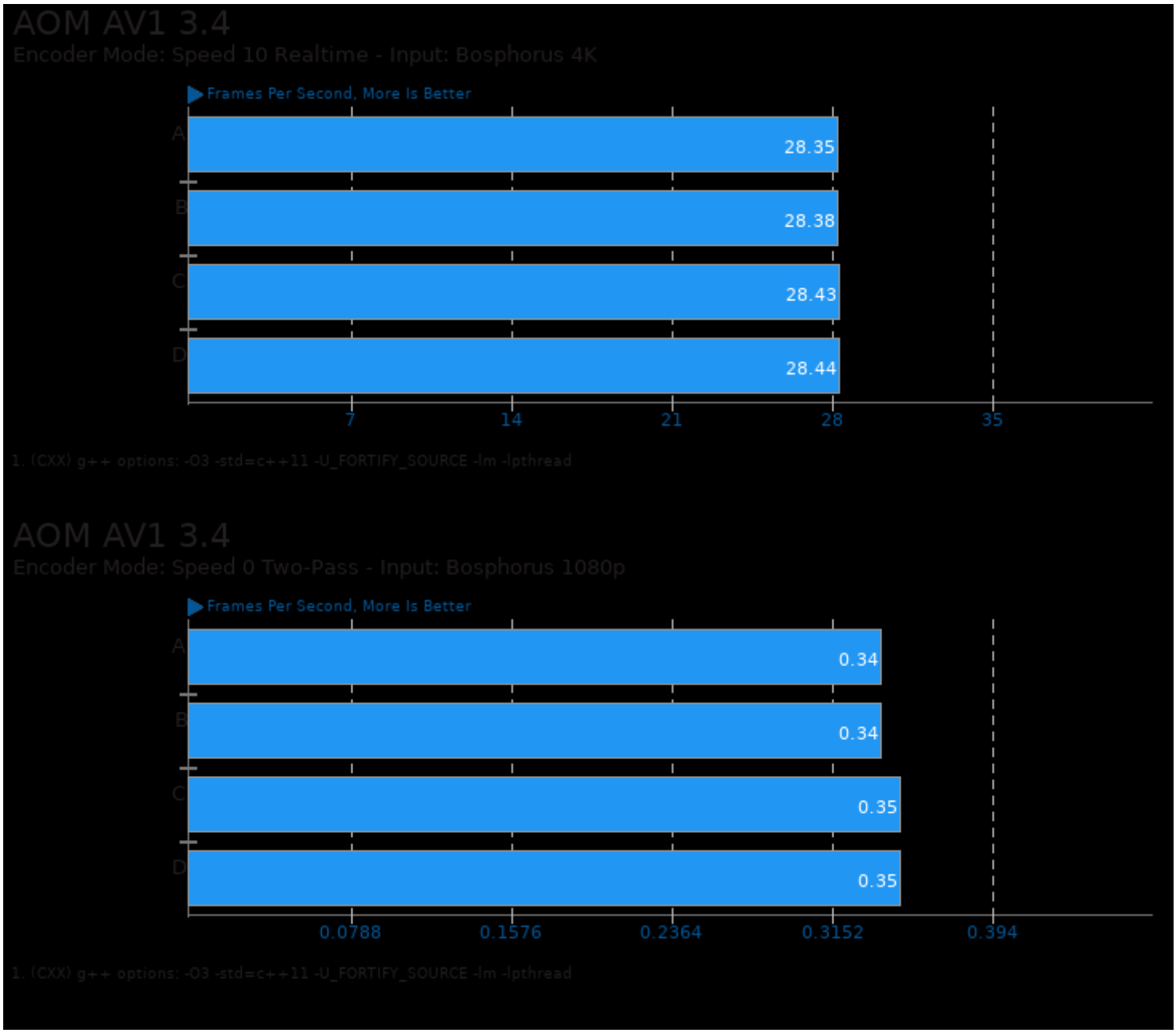
1. (CC) gcc options: -O2 -ggdb3 -lnettle -lgmp -lm -lcrypto

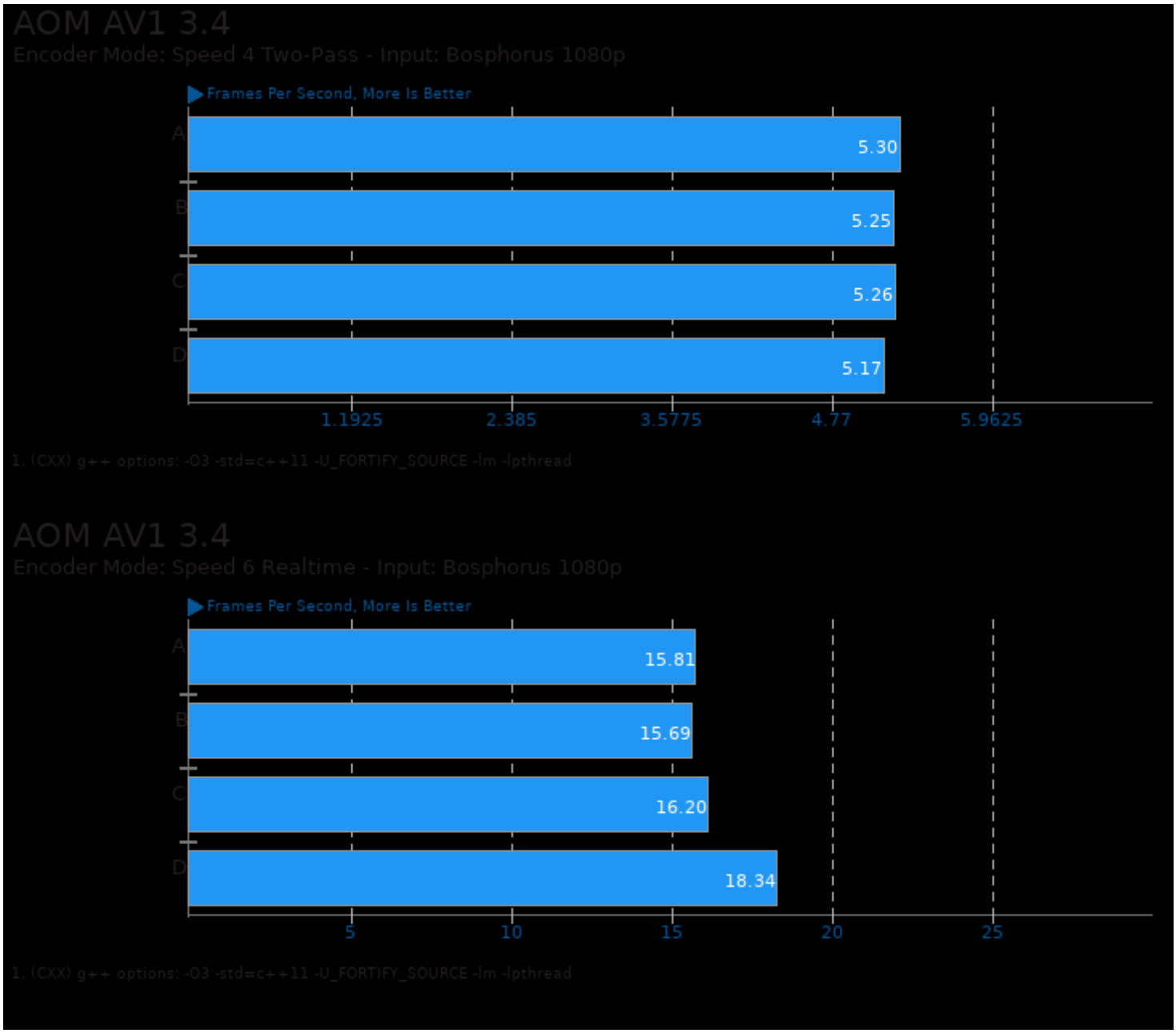

Nettle 3.8
Test: sha512
Mbyte/s, More Is Better
A
481.72
B
484.98
C
481.46
D
485.65
110
220
330
440
550
1. (CC) gcc options: -O2 -ggdb3 -lnettle -lgmp -lm -lcrypto
Nettle 3.8
Test: poly1305-aes
Mbyte/s, More Is Better
A
3603.86
B
3625.46
C
3444.22
D
3331.02
800
1600
2400
3200
4000
1. (CC) gcc options: -O2 -ggdb3 -lnettle -lgmp -lm -lcrypto

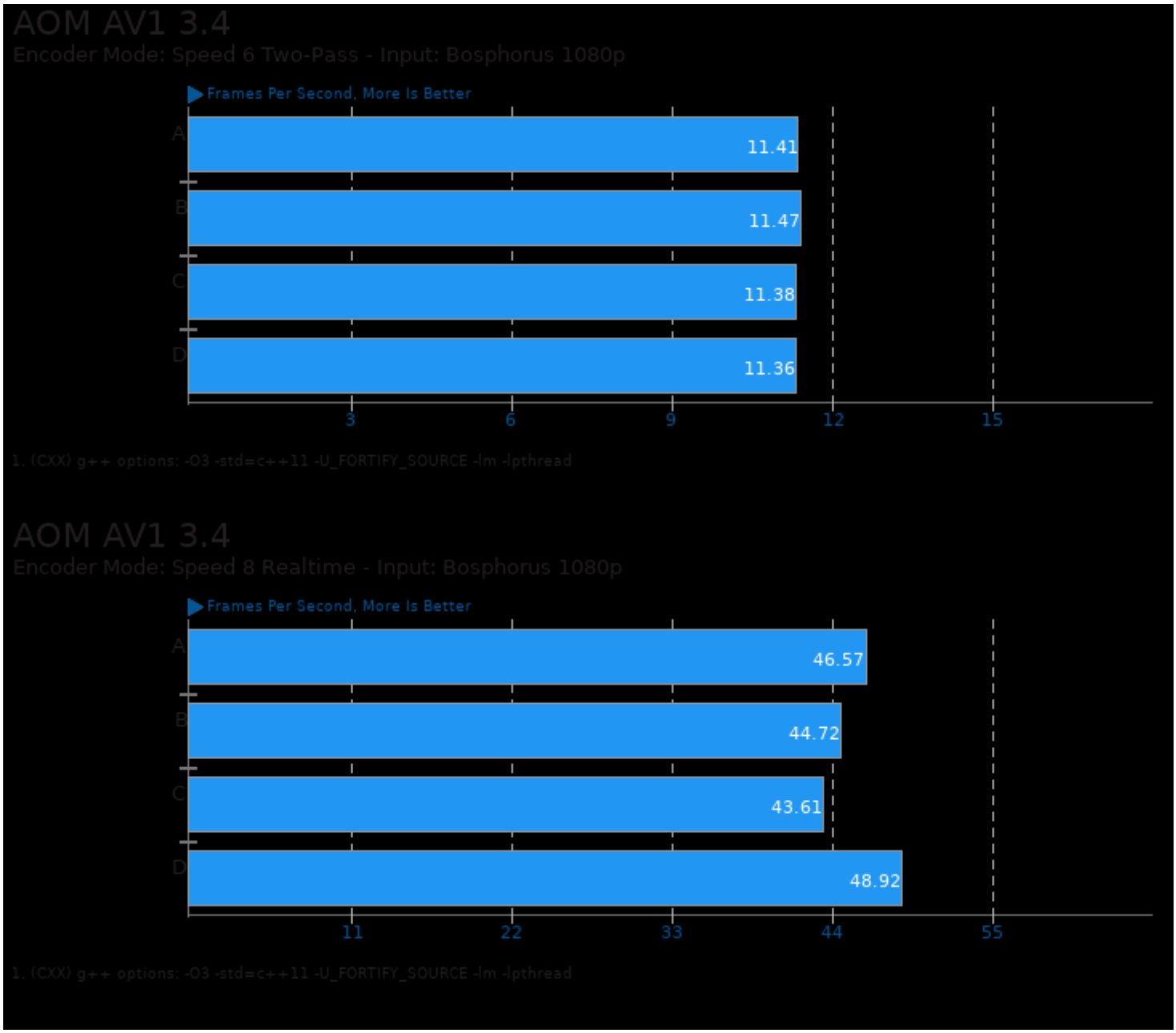

AOM AV1 3.4
Encoder Mode: Speed 0 Two-Pass - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
B
C
D
0.14
0.14
0.13
0.13
0.0315
0.063
0.0945
0.126
0.1575
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 3.4
Encoder Mode: Speed 4 Two-Pass - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
B
C
D
3.34
3.35
3.34
3.32
0.7538
1.5076
2.2614
3.0152
3.769
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread

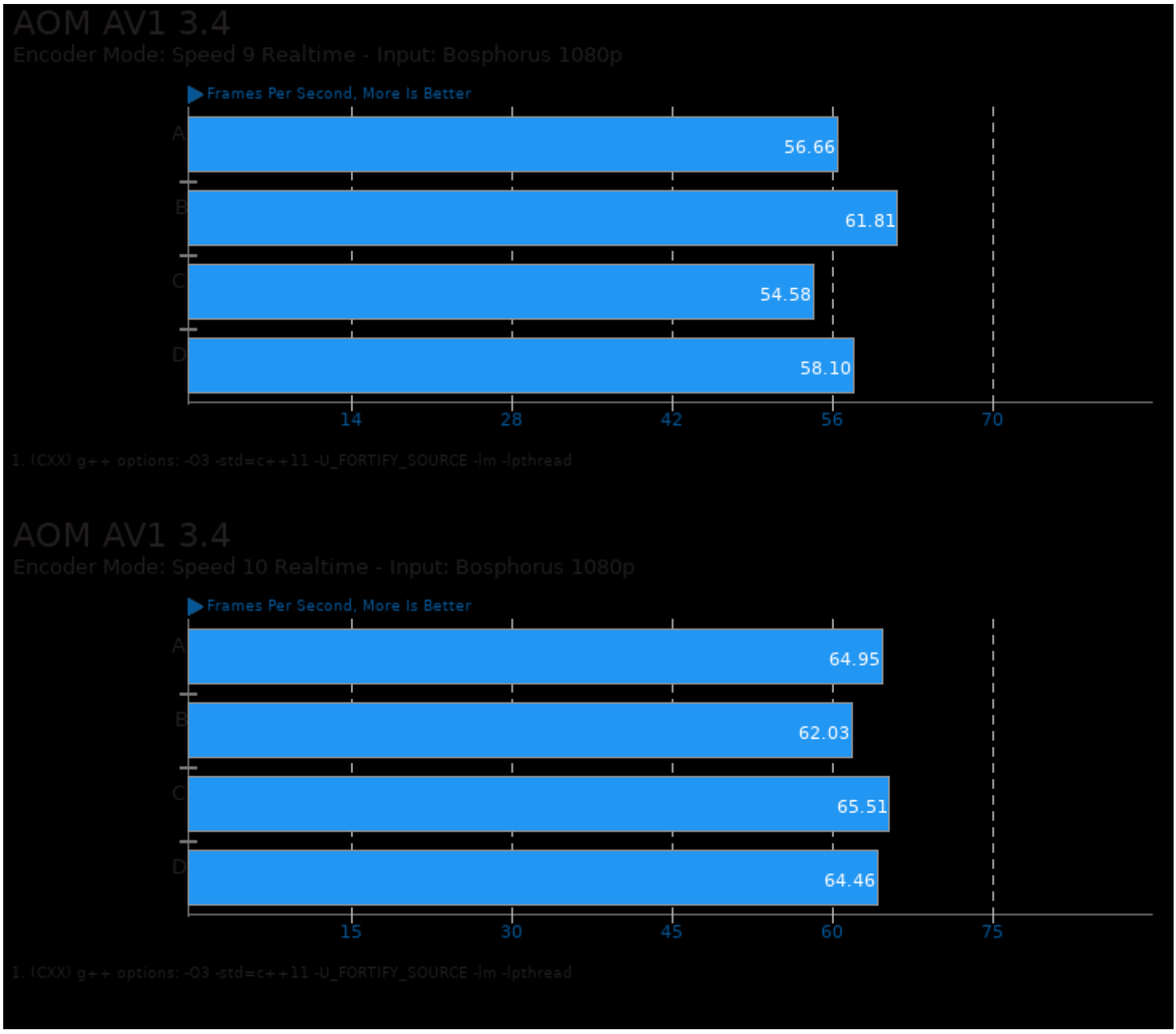

AOM AV1 3.4
Encoder Mode: Speed 6 Realtime - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
B
C
D
11.34
10.28
10.80
10.15
3
6
9
12
15
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 3.4
Encoder Mode: Speed 6 Two-Pass - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
B
C
D
5.42
5.40
5.43
5.40
1.2218
2.4436
3.6654
4.8872
6.109
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread

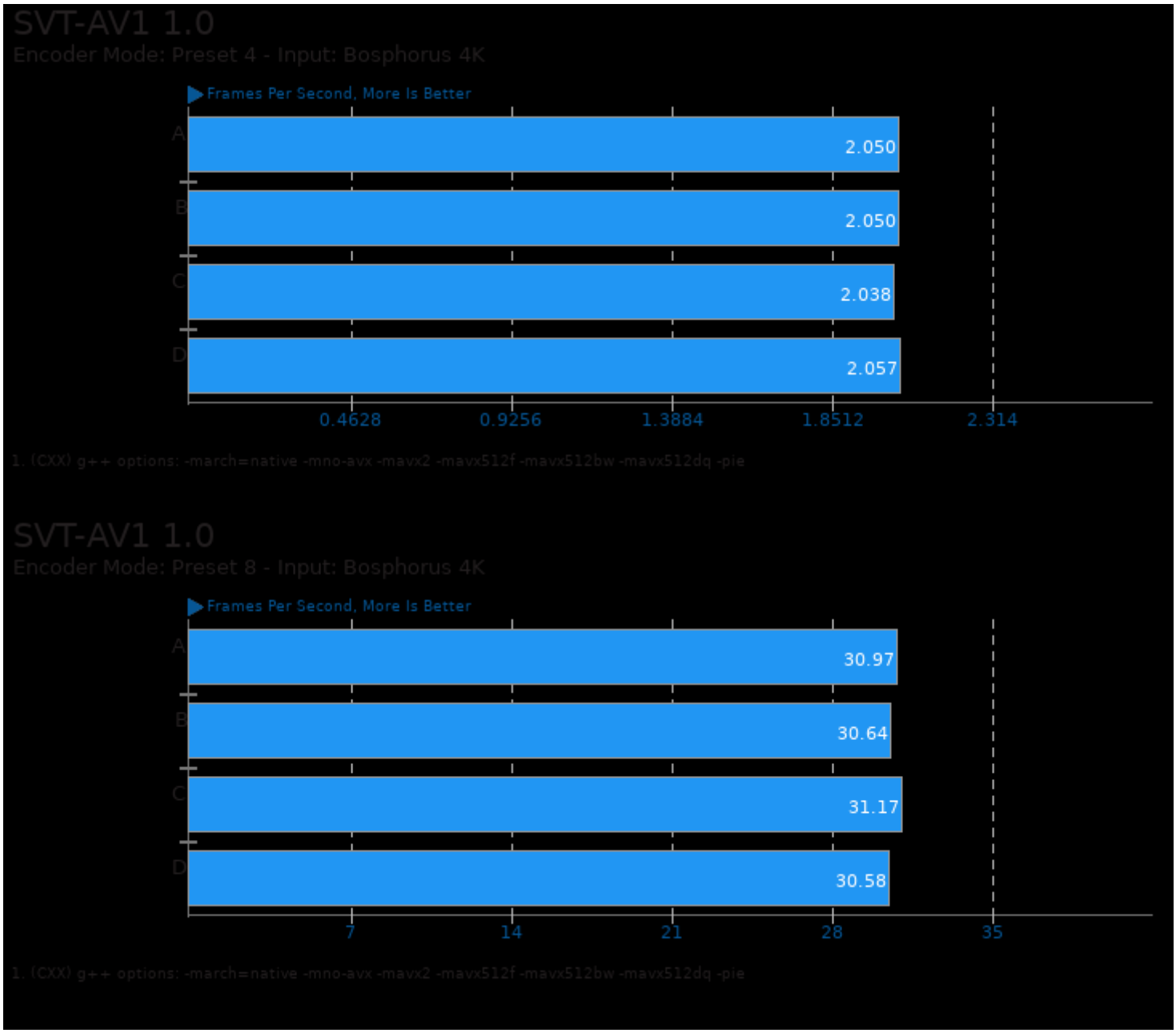

AOM AV1 3.4
Encoder Mode: Speed 8 Realtime - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
B
C
D
18.05
17.93
17.95
18.01
4
8
12
16
20
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 3.4
Encoder Mode: Speed 9 Realtime - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
B
C
D
28.56
28.66
28.52
28.75
7
14
21
28
35
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread

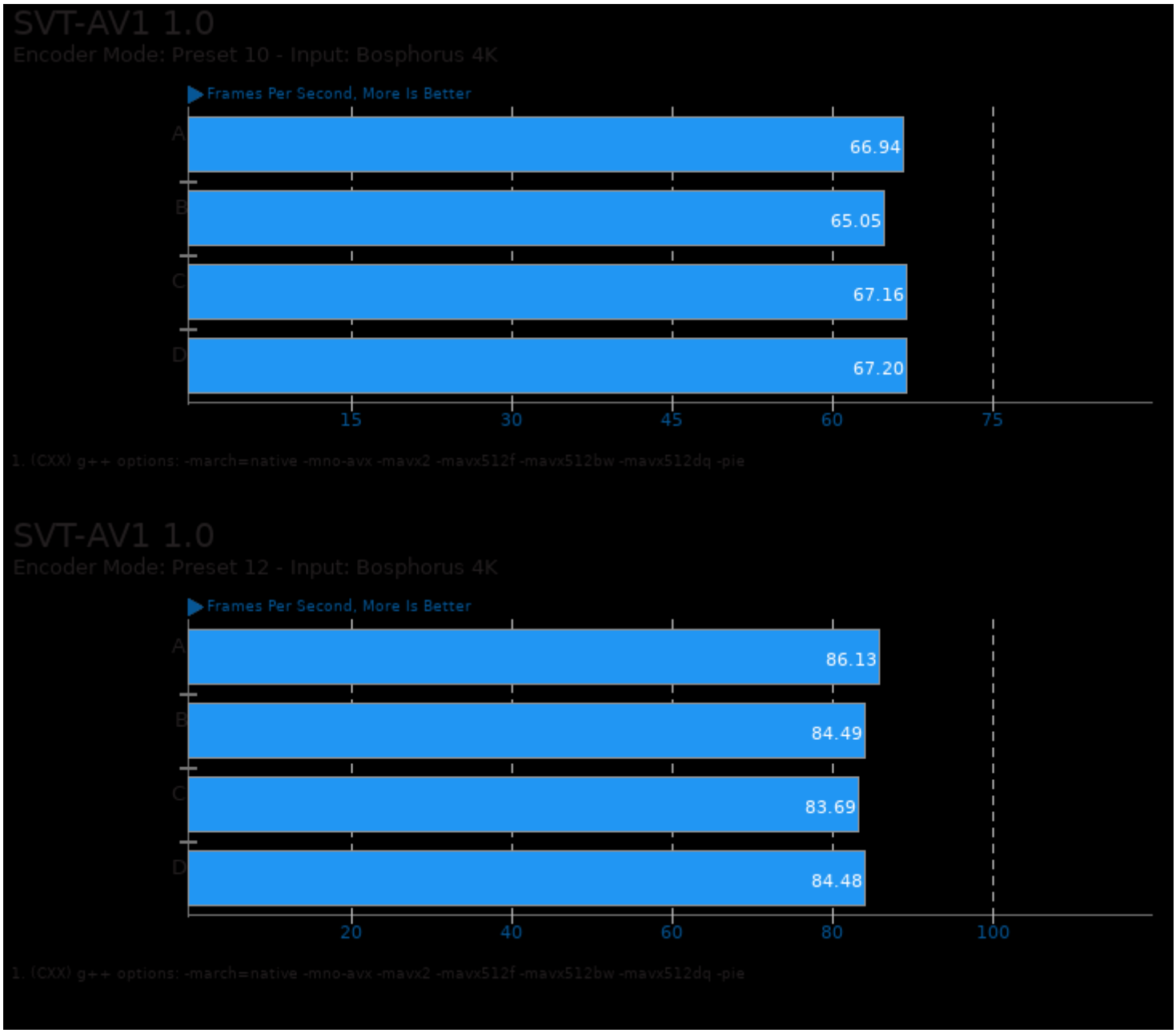

AOM AV1 3.4
Encoder Mode: Speed 10 Realtime - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
B
C
D
28.35
28.38
28.43
28.44
7
14
21
28
35
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 3.4
Encoder Mode: Speed 0 Two-Pass - Input: Bosphorus 1080p
Frames Per Second, More Is Better
A
B
C
D
0.34
0.34
0.35
0.35
0.0788
0.1576
0.2364
0.3152
0.394
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread

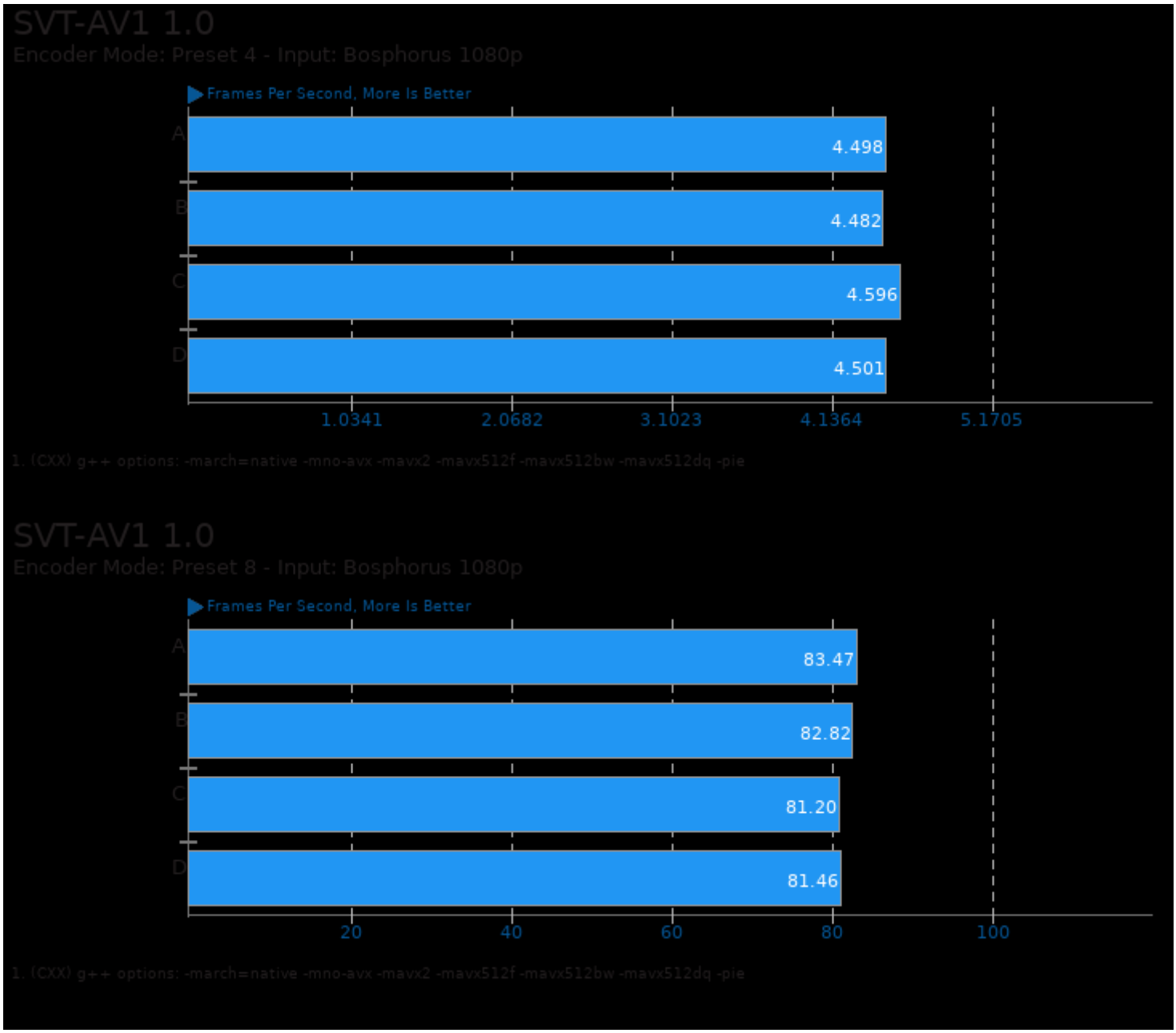

AOM AV1 3.4
Encoder Mode: Speed 4 Two-Pass - Input: Bosphorus 1080p
Frames Per Second, More Is Better
A
B
C
D
5.30
5.25
5.26
5.17
1.1925
2.385
3.5775
4.77
5.9625
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 3.4
Encoder Mode: Speed 6 Realtime - Input: Bosphorus 1080p
Frames Per Second, More Is Better
A
B
C
D
15.81
15.69
16.20
18.34
5
10
15
20
25
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread

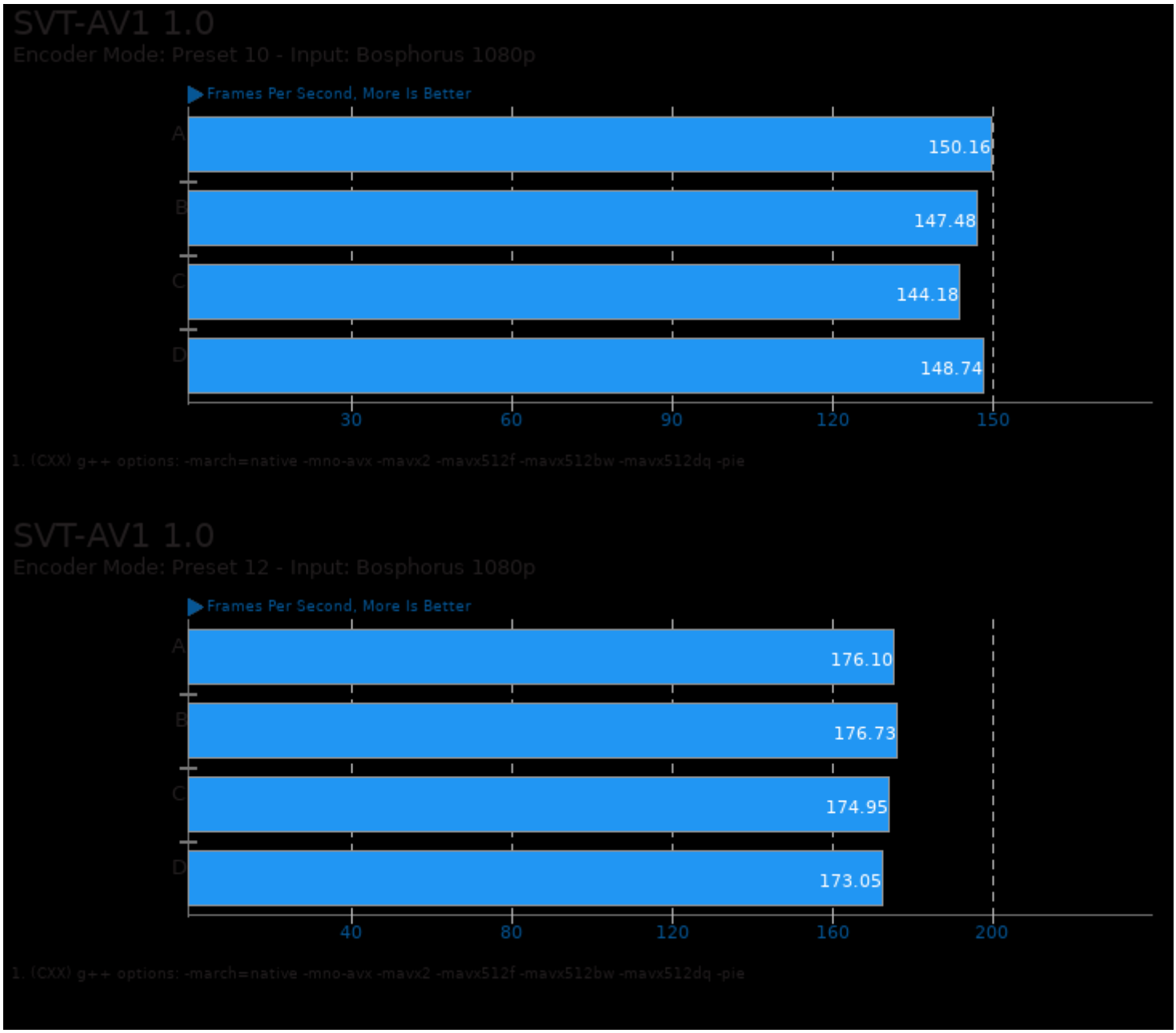

AOM AV1 3.4
Encoder Mode: Speed 6 Two-Pass - Input: Bosphorus 1080p
Frames Per Second, More Is Better
A
B
C
D
11.41
11.47
11.38
11.36
3
6
9
12
15
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 3.4
Encoder Mode: Speed 8 Realtime - Input: Bosphorus 1080p
Frames Per Second, More Is Better
A
B
C
D
46.57
44.72
43.61
48.92
11
22
33
44
55
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread

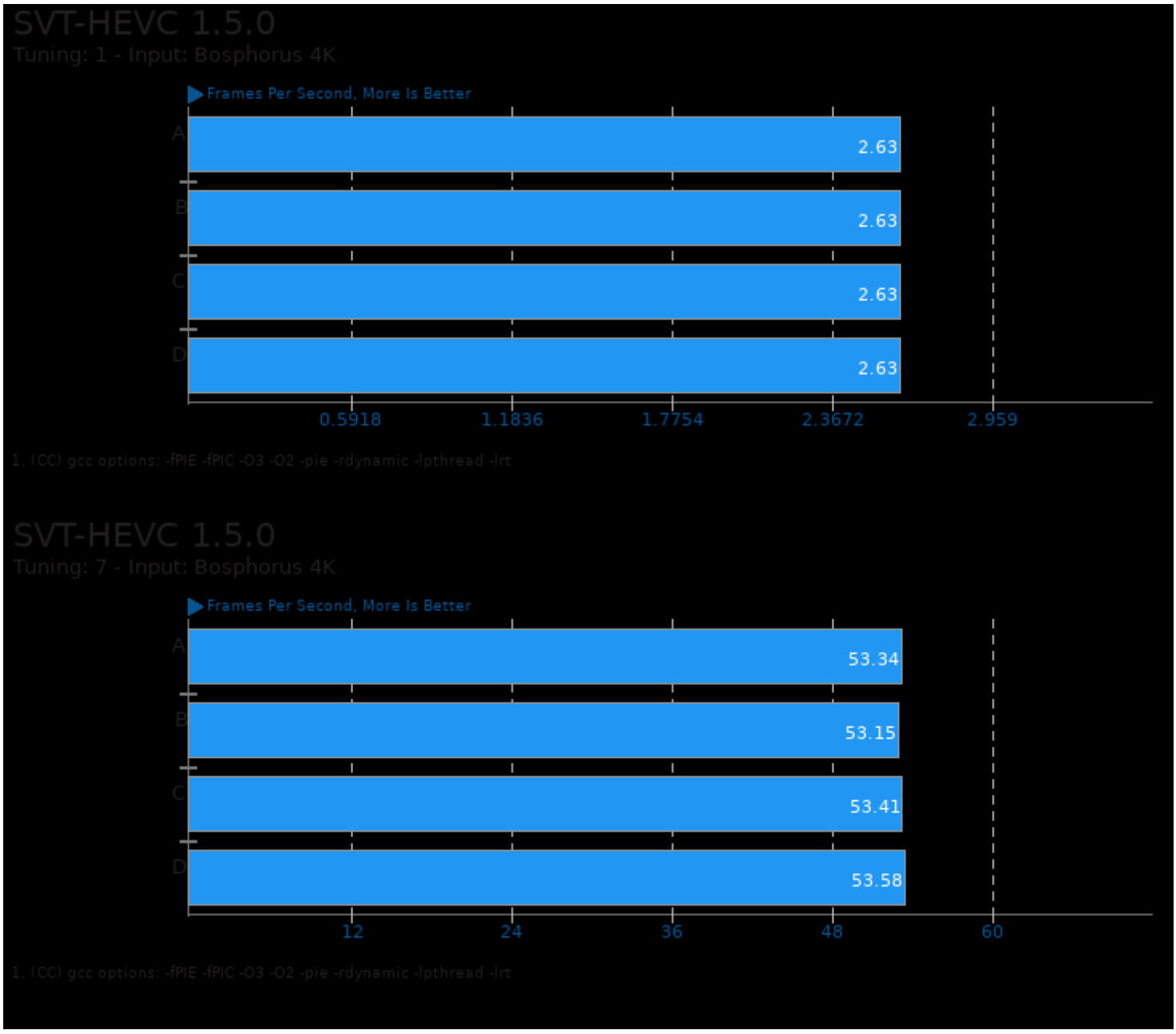

AOM AV1 3.4
Encoder Mode: Speed 9 Realtime - Input: Bosphorus 1080p
Frames Per Second, More Is Better
A
56.66
B
61.81
C
54.58
D
58.10
14
28
42
56
70
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 3.4
Encoder Mode: Speed 10 Realtime - Input: Bosphorus 1080p
Frames Per Second, More Is Better
A
64.95
B
62.03
C
65.51
D
64.46
15
30
45
60
75
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread


SVT-AV1 1.0
Encoder Mode: Preset 4 - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
B
C
D
2.050
2.050
2.038
2.057
0.4628
0.9256
1.3884
1.8512
2.314
1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie
SVT-AV1 1.0
Encoder Mode: Preset 8 - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
B
C
D
30.97
30.64
31.17
30.58
7
14
21
28
35
1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie

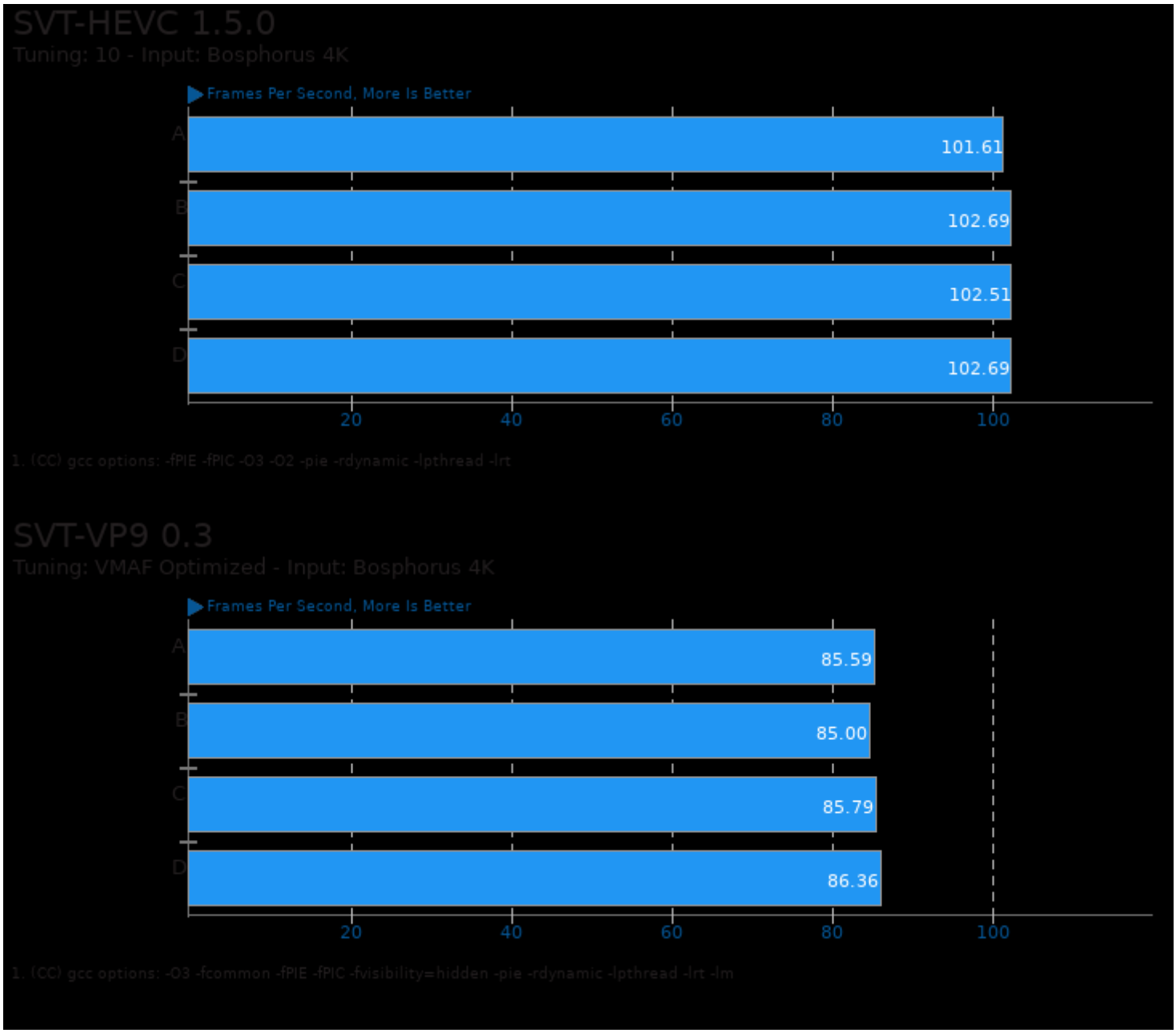

SVT-AV1 1.0
Encoder Mode: Preset 10 - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
66.94
B
65.05
C
67.16
D
67.20
15
30
45
60
75
1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie
SVT-AV1 1.0
Encoder Mode: Preset 12 - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
86.13
B
84.49
C
83.69
D
84.48
20
40
60
80
100
1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie

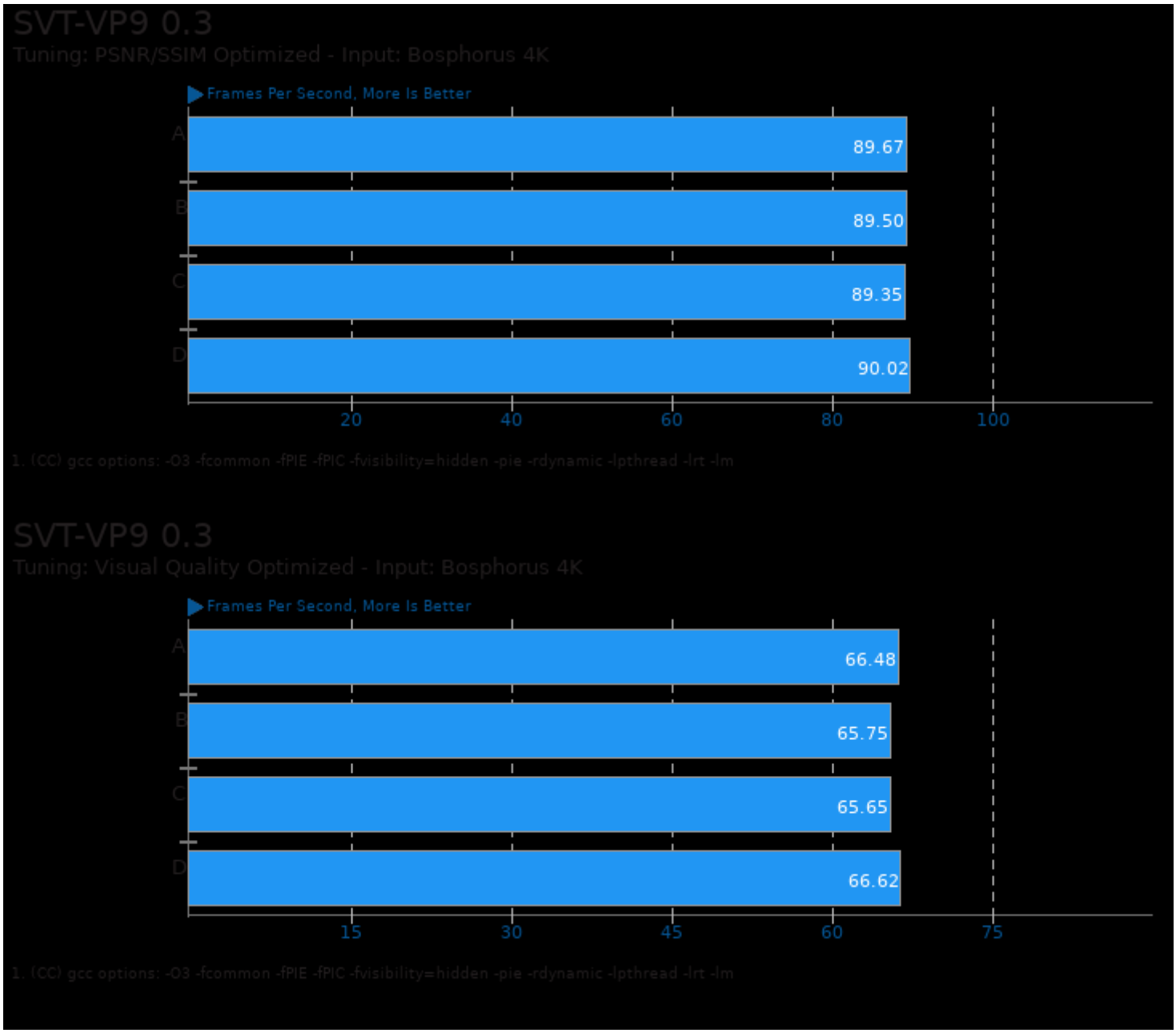

SVT-AV1 1.0
Encoder Mode: Preset 4 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
A
4.498
B
4.482
C
4.596
D
4.501
1.0341
2.0682
3.1023
4.1364
5.1705
1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie
SVT-AV1 1.0
Encoder Mode: Preset 8 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
A
83.47
B
82.82
C
81.20
D
81.46
20
40
60
80
100
1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie


SVT-AV1 1.0
Encoder Mode: Preset 10 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
A
150.16
B
147.48
C
144.18
D
148.74
30
60
90
120
150
1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie
SVT-AV1 1.0
Encoder Mode: Preset 12 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
A
176.10
B
176.73
C
174.95
D
173.05
40
80
120
160
200
1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie


SVT-HEVC 1.5.0
Tuning: 1 - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
B
C
D
2.63
2.63
2.63
2.63
0.5918
1.1836
1.7754
2.3672
2.959
1. (CC) gcc options: -fPIE -fPIC -O3 -O2 -pie -rdynamic -lpthread -lrt
SVT-HEVC 1.5.0
Tuning: 7 - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
B
C
D
53.34
53.15
53.41
53.58
12
24
36
48
60
1. (CC) gcc options: -fPIE -fPIC -O3 -O2 -pie -rdynamic -lpthread -lrt

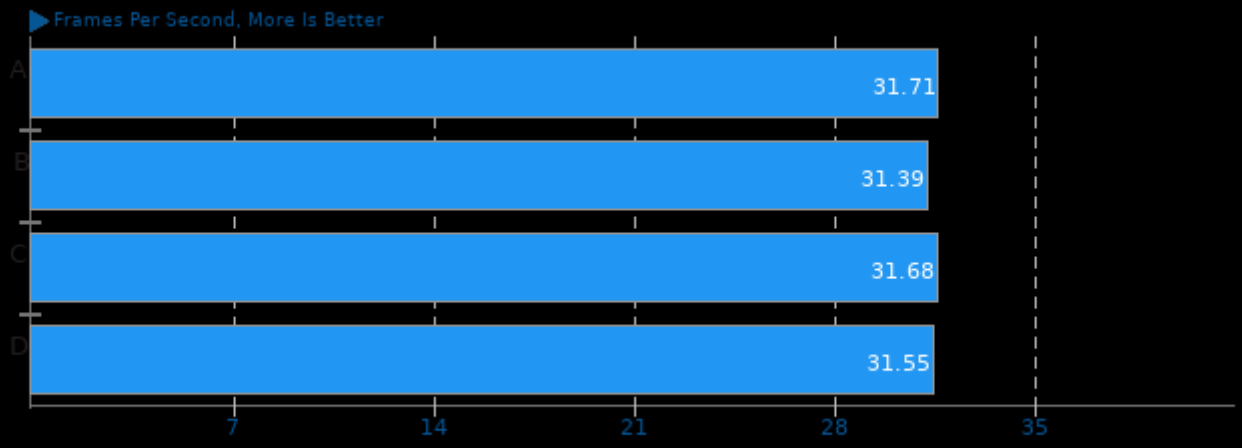
xeon gold sunday




SVT-VP9 0.3
Tuning: PSNR/SSIM Optimized - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
B
C
D
89.67
89.50
89.35
90.02
20
40
60
80
100
1. (CC) gcc options: -O3 -fcommon -fPIE -fPIC -fvisibility=hidden -pie -rdynamic -lpthread -lrt -lm
SVT-VP9 0.3
Tuning: Visual Quality Optimized - Input: Bosphorus 4K
Frames Per Second, More Is Better
A
B
C
D
66.48
65.75
65.65
66.62
15
30
45
60
75
1. (CC) gcc options: -O3 -fcommon -fPIE -fPIC -fvisibility=hidden -pie -rdynamic -lpthread -lrt -lm

x264 2022-02-22

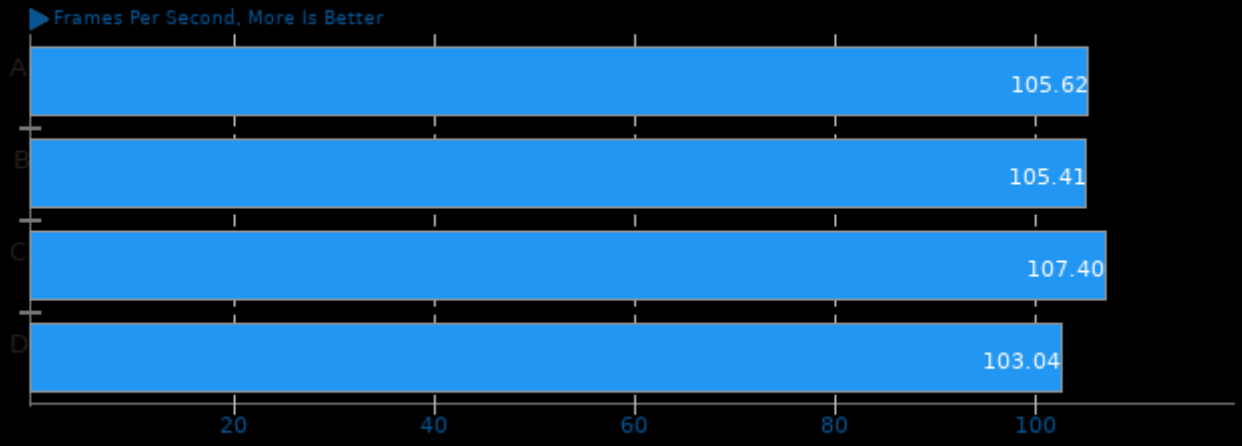
Video Input: Bosphorus 4K



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

x264 2022-02-22

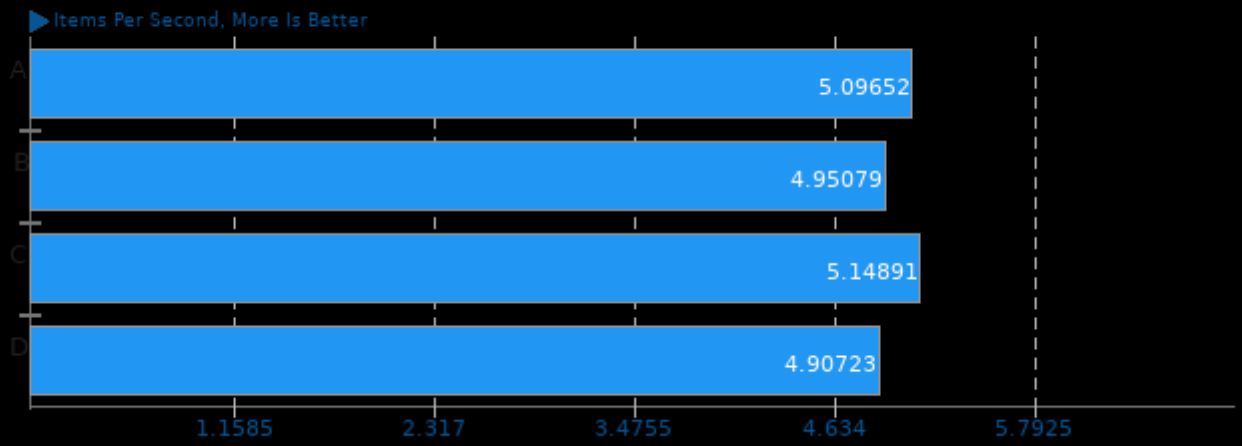
Video Input: Bosphorus 1080p



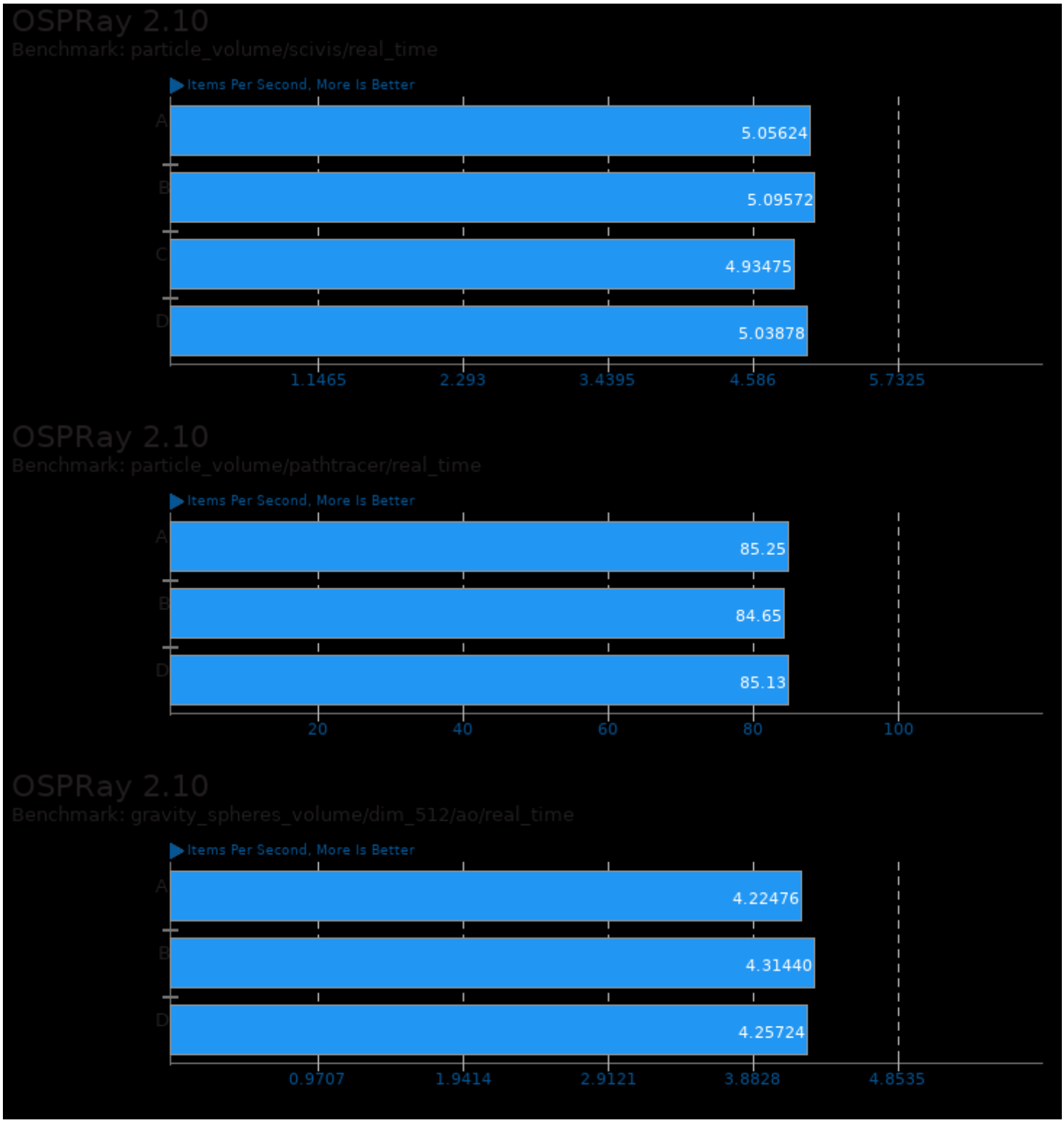
1. (CC) gcc options: -ldl -lavformat -lavcodec -lavutil -lswscale -m64 -lm -lpthread -O3 -flto

OSPRay 2.10

Benchmark: particle_volume/ao/real_time



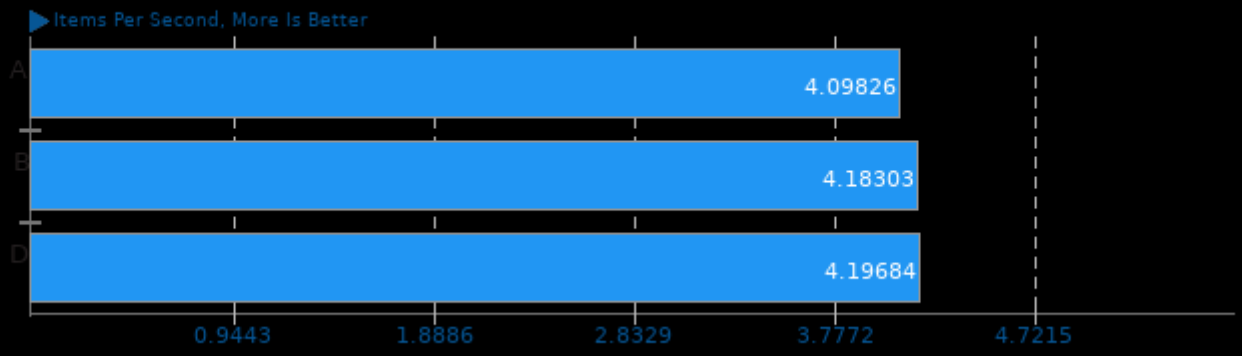
xeon gold sunday



xeon gold sunday

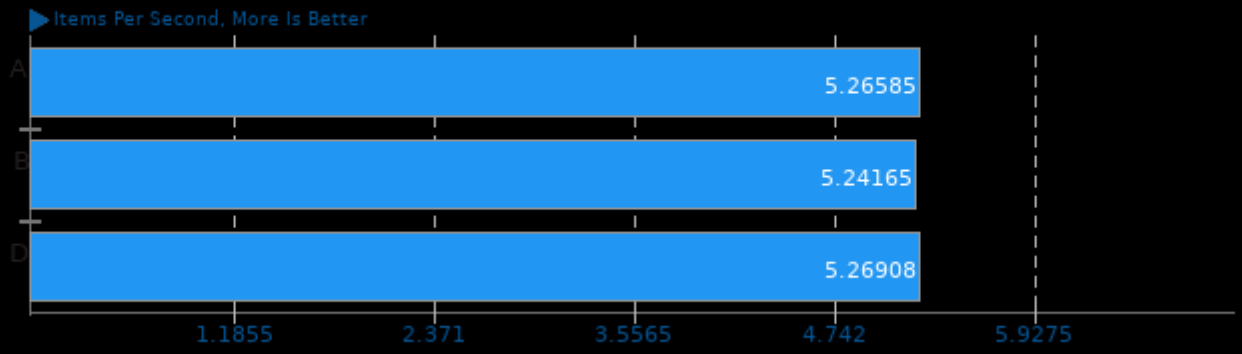
OSPRay 2.10

Benchmark: gravity_spheres_volume/dim_512/scivis/real_time



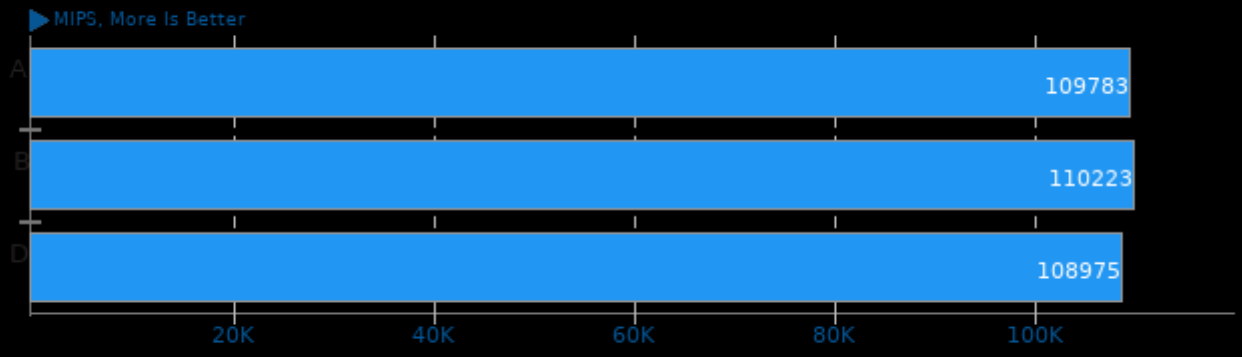
OSPRay 2.10

Benchmark: gravity_spheres_volume/dim_512/pathtracer/real_time



7-Zip Compression 22.00

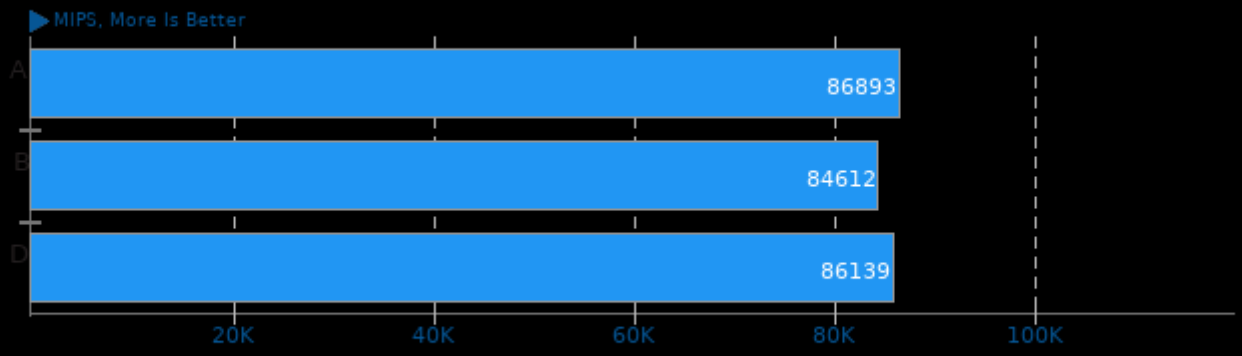
Test: Compression Rating



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

7-Zip Compression 22.00

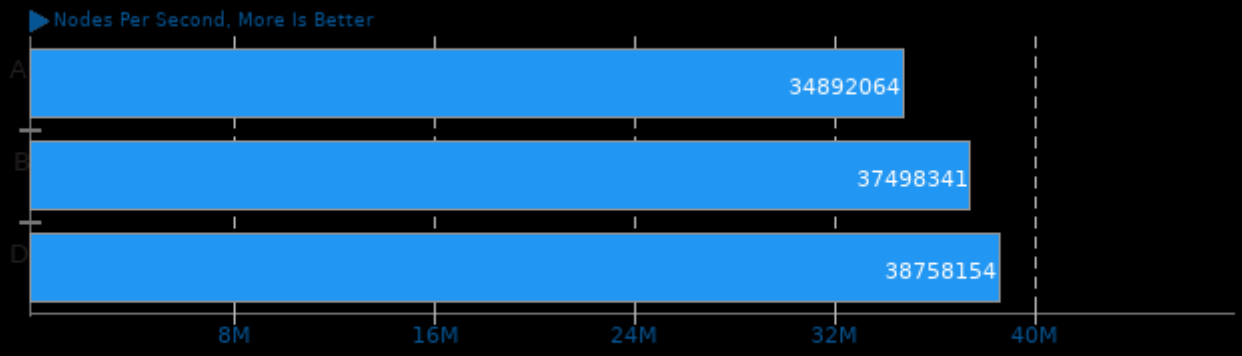
Test: Decompression Rating



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

Stockfish 15

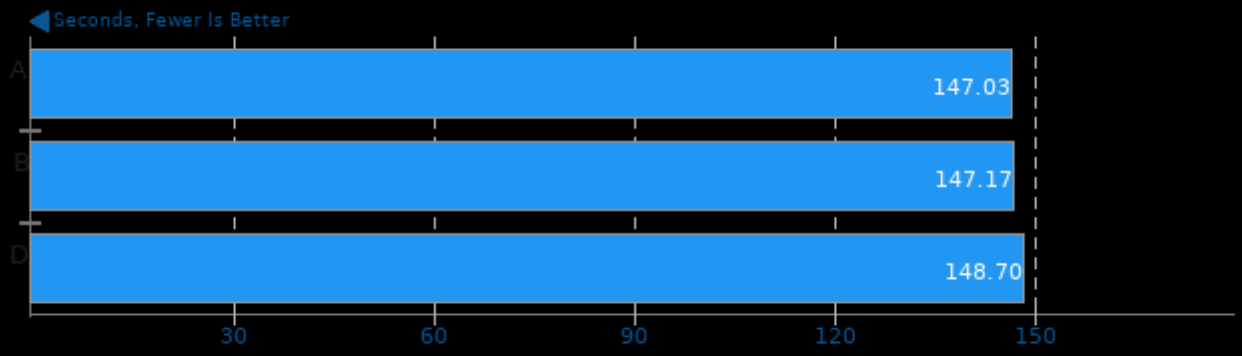
Total Time



1. (CXX) g++ options: -lgcov -m64 -lpthread -fno-exceptions -std=c++17 -fno-peel-loops -fno-tracer -pedantic -O3 -msse -msse3 -mpopcnt -mavx2 -mav

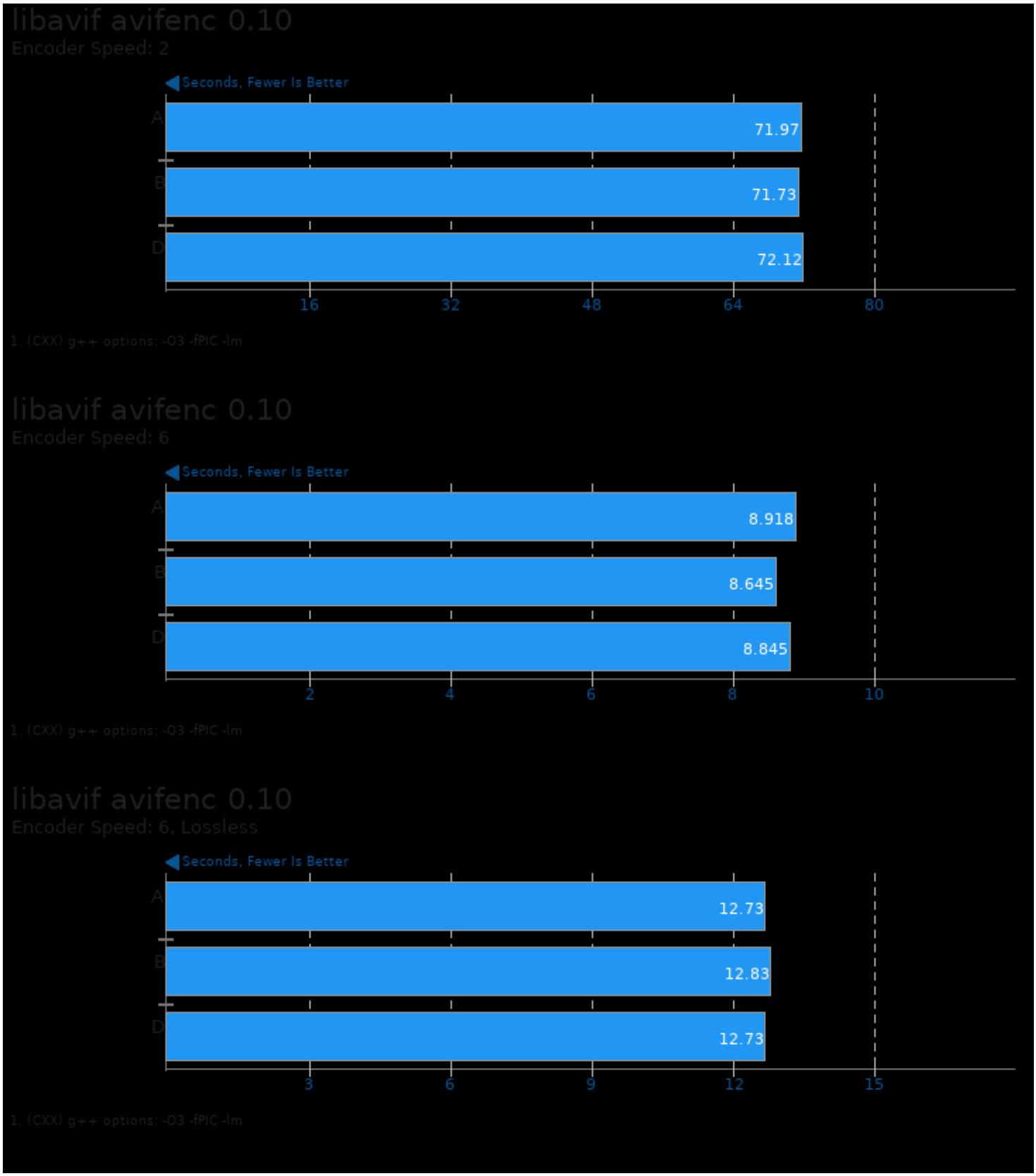
libavif avifenc 0.10

Encoder Speed: 0



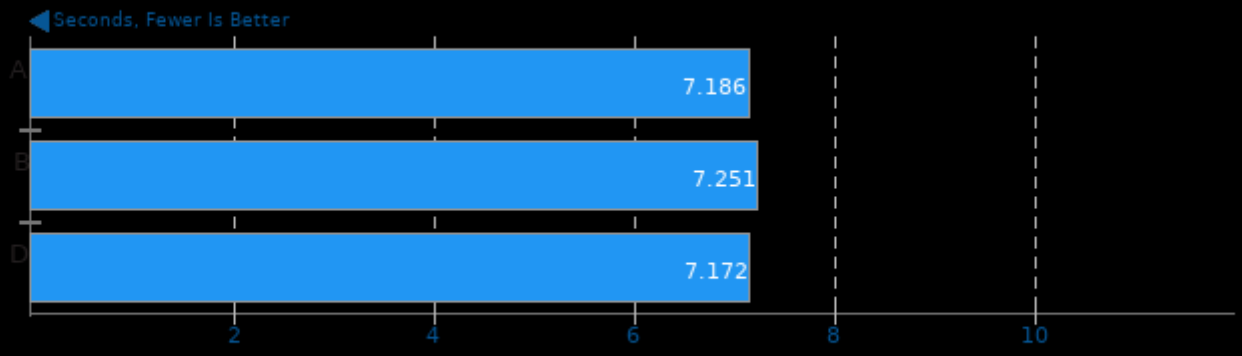
1. (CXX) g++ options: -O3 -fPIC -lm

xeon gold sunday



libavif avifenc 0.10

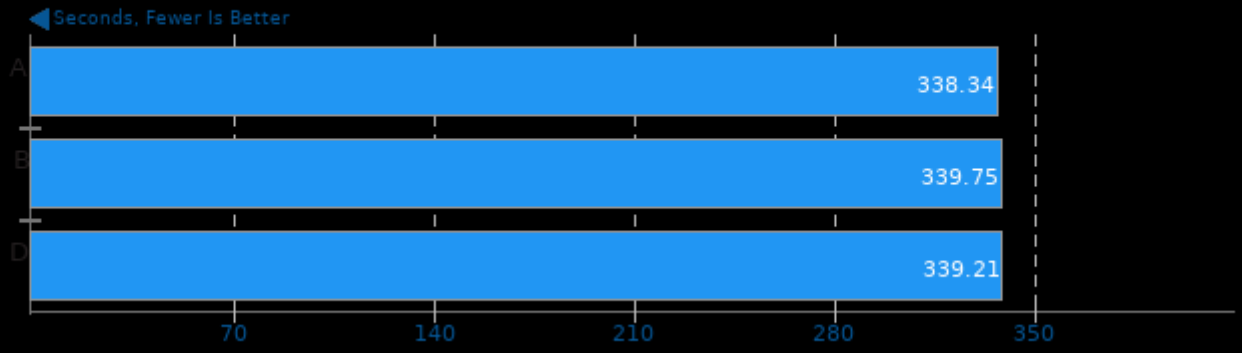
Encoder Speed: 10, Lossless



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

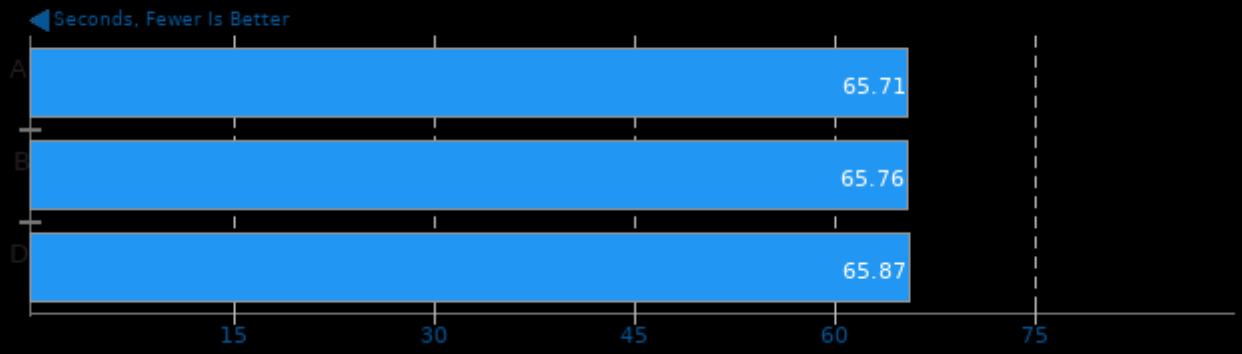
Timed Gem5 Compilation 21.2

Time To Compile



Timed Linux Kernel Compilation 5.18

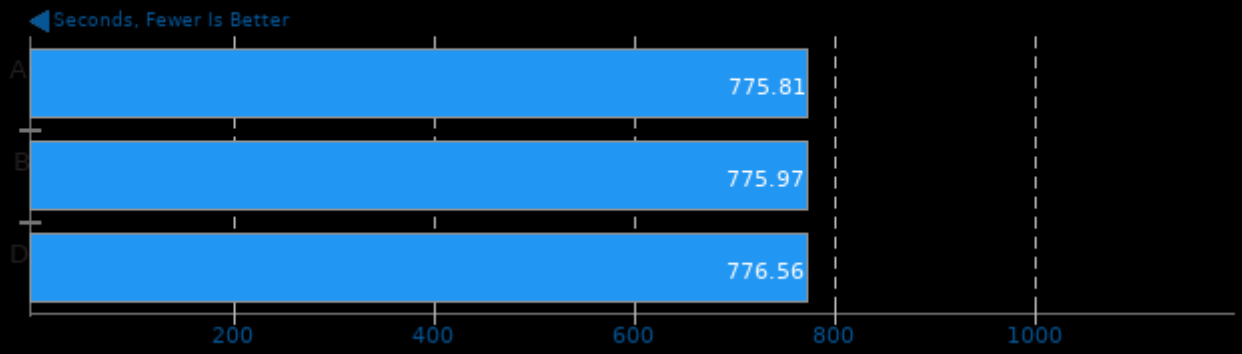
Build: defconfig



xeon gold sunday

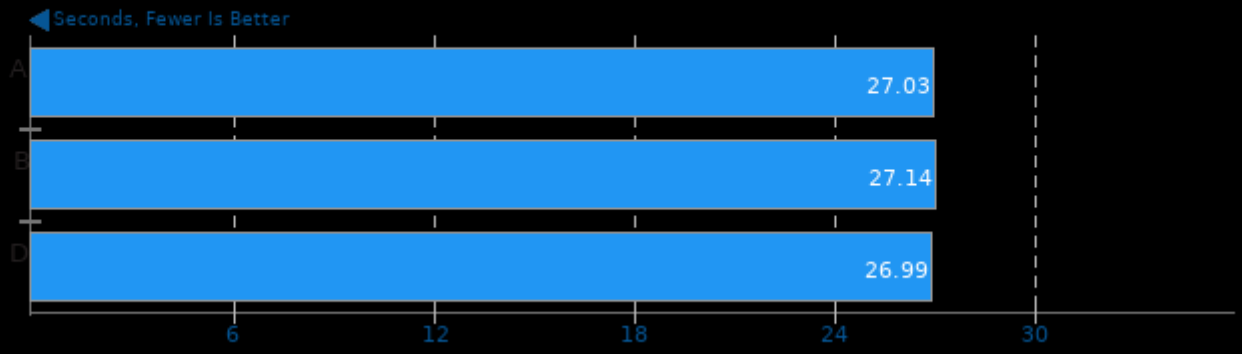
Timed Linux Kernel Compilation 5.18

Build: allmodconfig



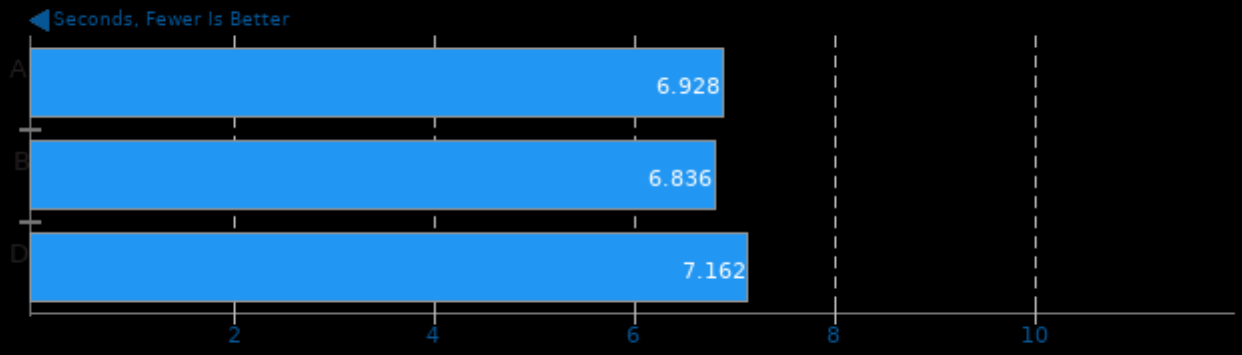
Timed MPlayer Compilation 1.5

Time To Compile



Parallel BZIP2 Compression 1.1.13

FreeBSD-13.0-RELEASE-amd64-memstick.img Compression

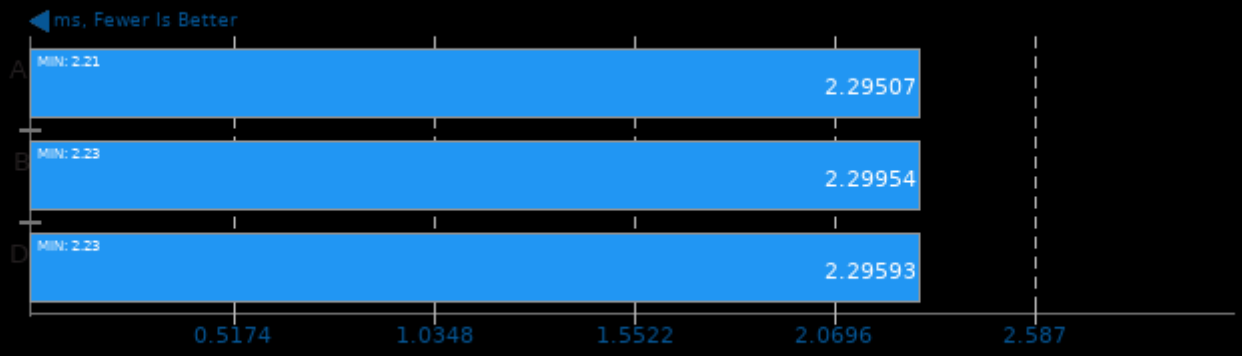


1. (CXX) g++ options: -O2 -pthread -lbz2 -lpthread

xeon gold sunday

oneDNN 2.6

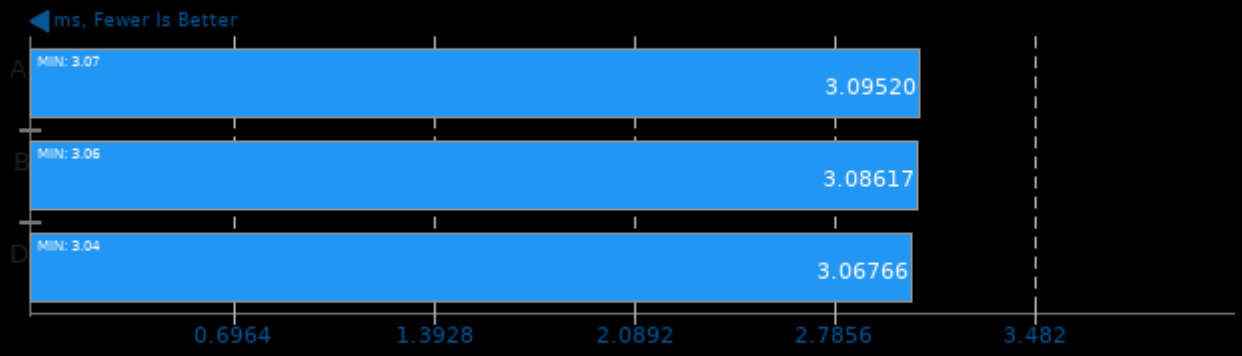
Harness: IP Shapes 1D - Data Type: f32 - Engine: CPU



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

oneDNN 2.6

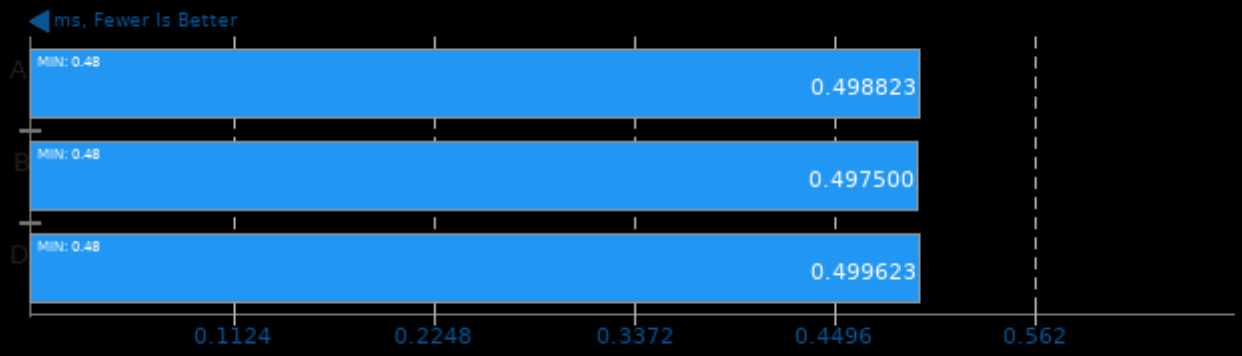
Harness: IP Shapes 3D - Data Type: f32 - Engine: CPU



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

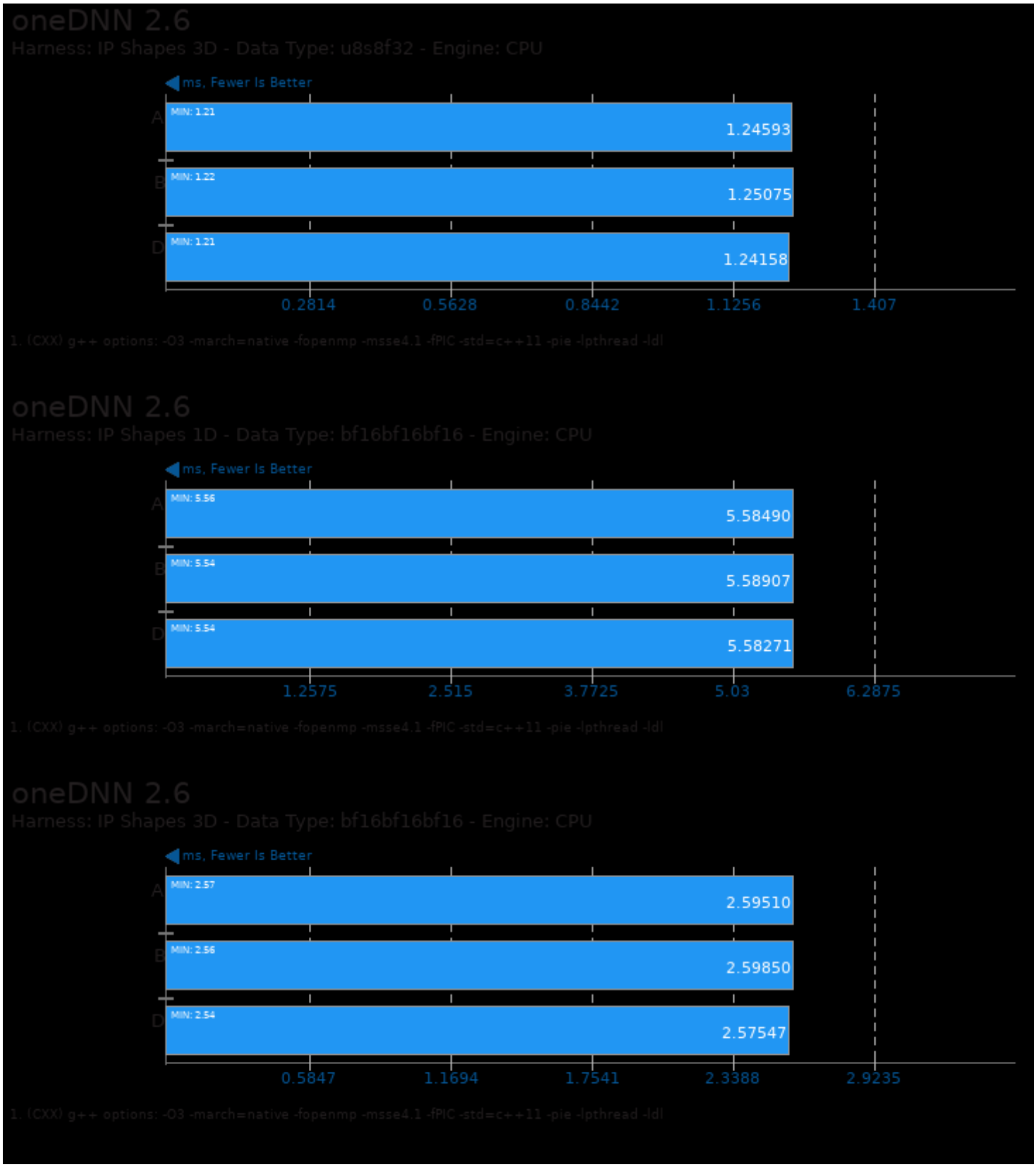
oneDNN 2.6

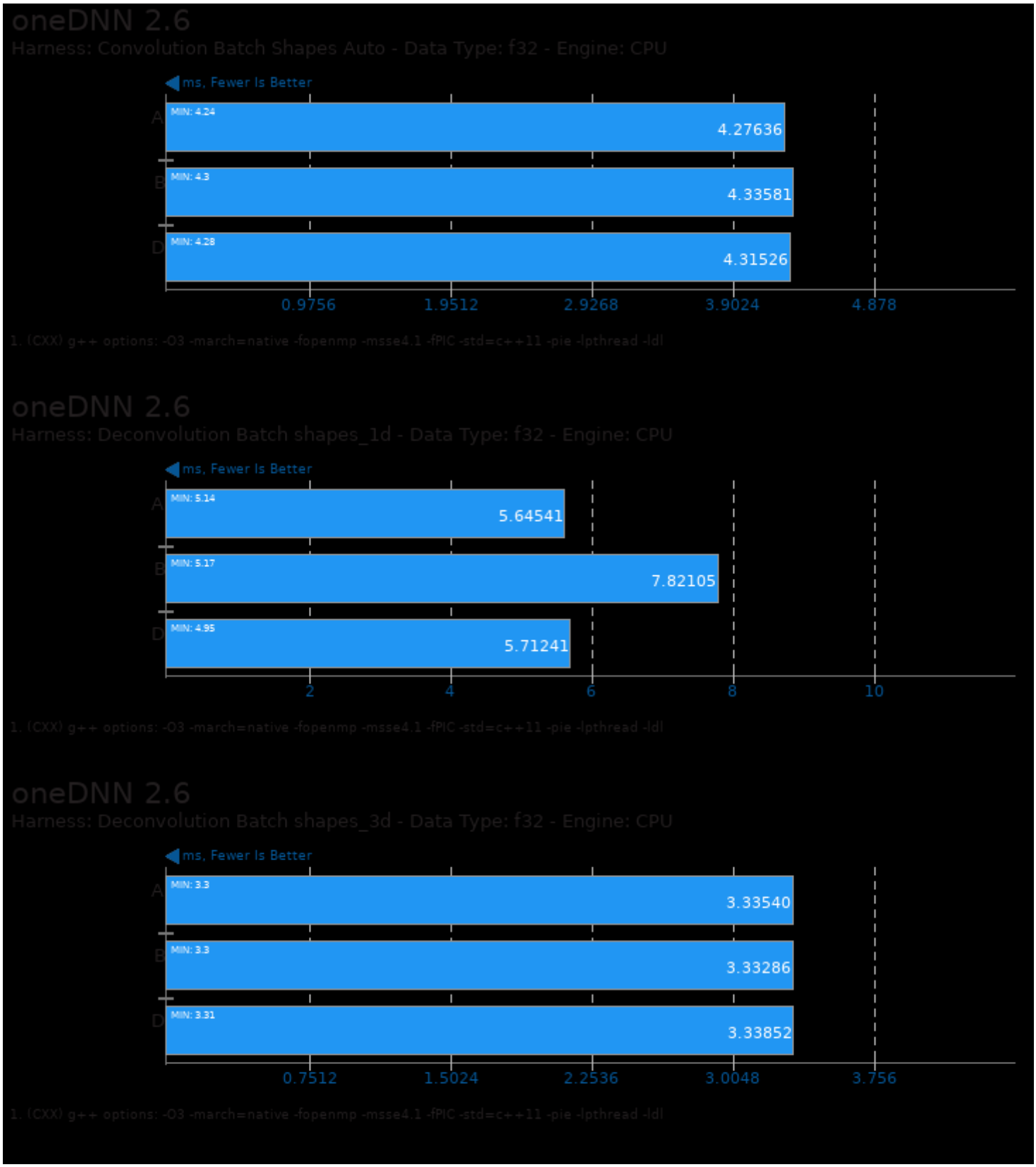
Harness: IP Shapes 1D - Data Type: u8s8f32 - Engine: CPU



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

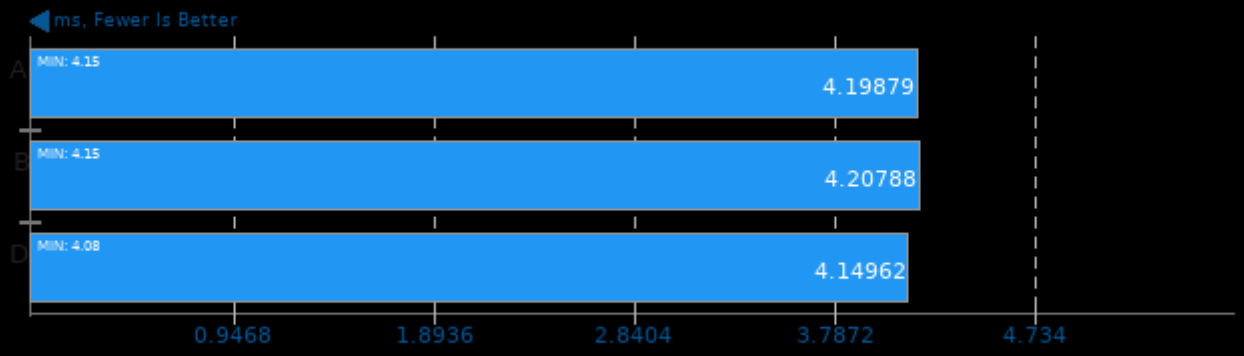
xeon gold sunday




oneDNN 2.6
Harness: Convolution Batch Shapes Auto - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
A
MIN: 4.24
4.27636
B
MIN: 4.3
4.33581
D
MIN: 4.28
4.31526
0.9756
1.9512
2.9268
3.9024
4.878
1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -std=c++11 -pie -lpthread -ldl
oneDNN 2.6
Harness: Deconvolution Batch shapes_1d - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
A
MIN: 5.14
5.64541
B
MIN: 5.17
7.82105
D
MIN: 4.95
5.71241
2
4
6
8
10
1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -std=c++11 -pie -lpthread -ldl
oneDNN 2.6
Harness: Deconvolution Batch shapes_3d - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
A
MIN: 3.3
3.33540
B
MIN: 3.3
3.33286
D
MIN: 3.31
3.33852
0.7512
1.5024
2.2536
3.0048
3.756
1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -std=c++11 -pie -lpthread -ldl

oneDNN 2.6

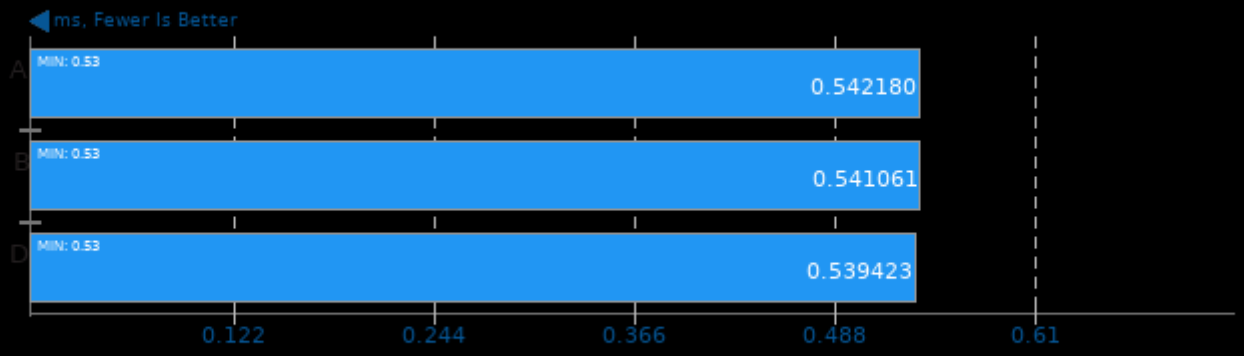
Harness: Convolution Batch Shapes Auto - Data Type: u8s8f32 - Engine: CPU



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

oneDNN 2.6

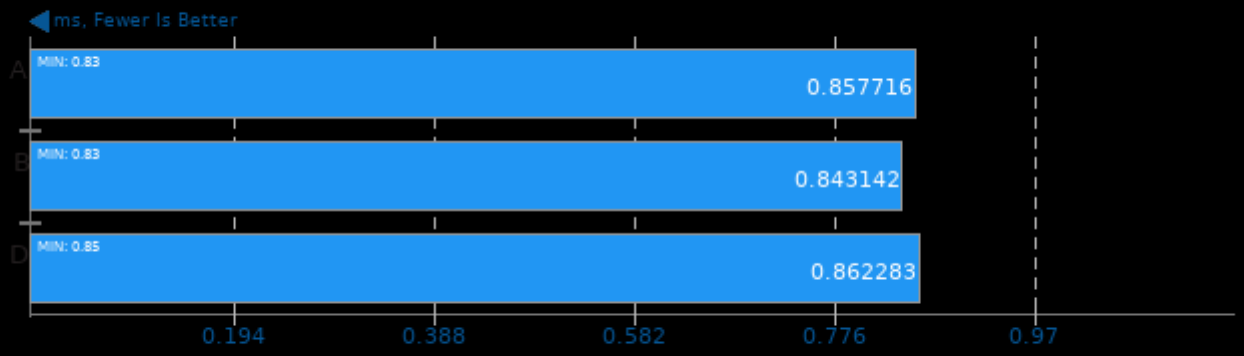
Harness: Deconvolution Batch shapes_1d - Data Type: u8s8f32 - Engine: CPU



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

oneDNN 2.6

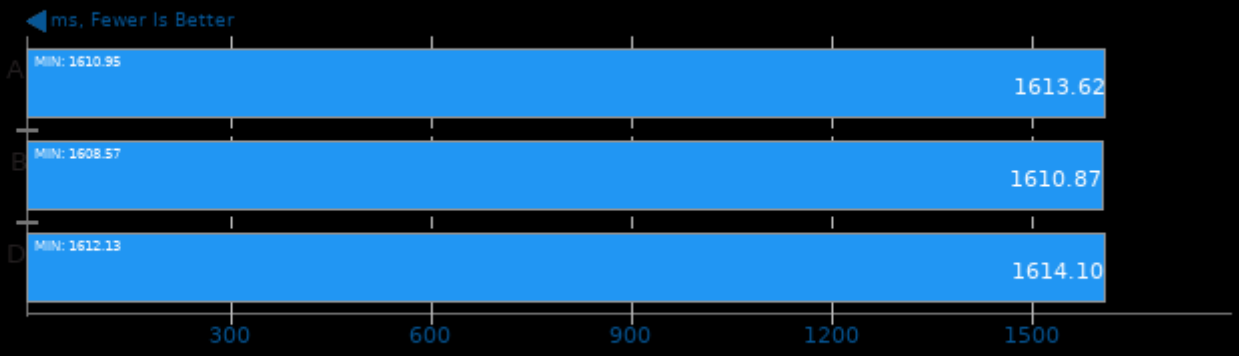
Harness: Deconvolution Batch shapes_3d - Data Type: u8s8f32 - Engine: CPU



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

oneDNN 2.6

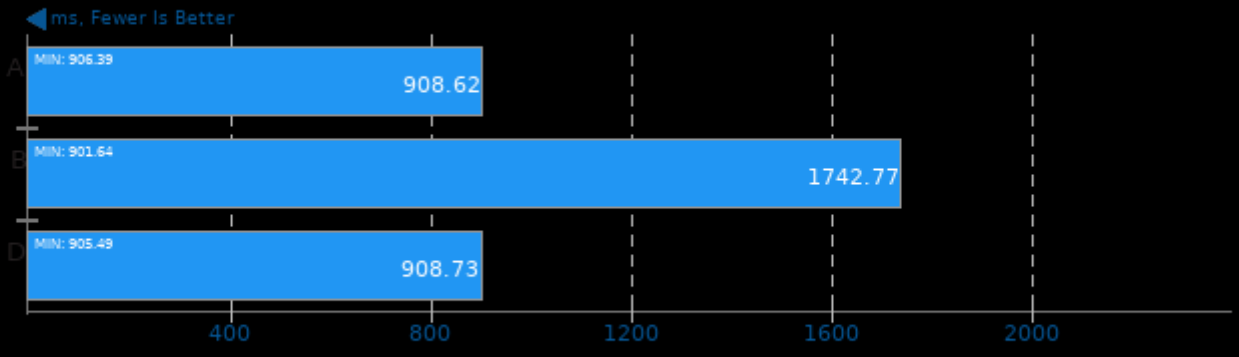
Harness: Recurrent Neural Network Training - Data Type: f32 - Engine: CPU



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

oneDNN 2.6

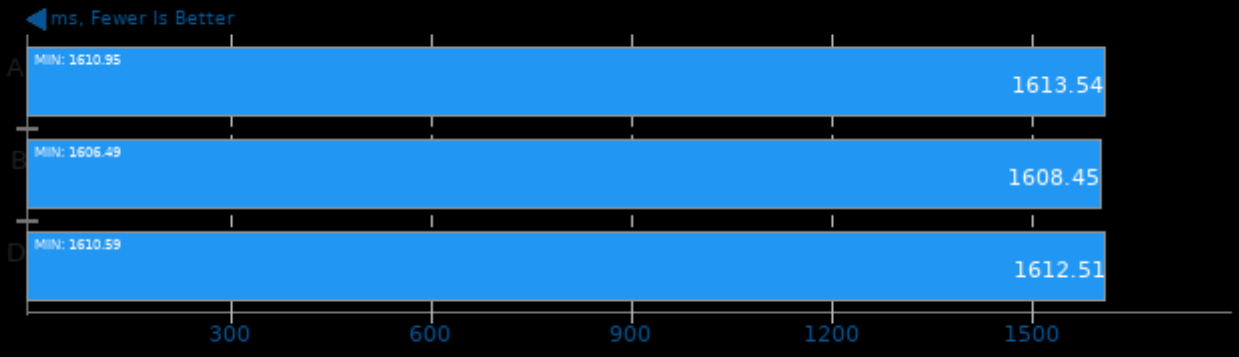
Harness: Recurrent Neural Network Inference - Data Type: f32 - Engine: CPU



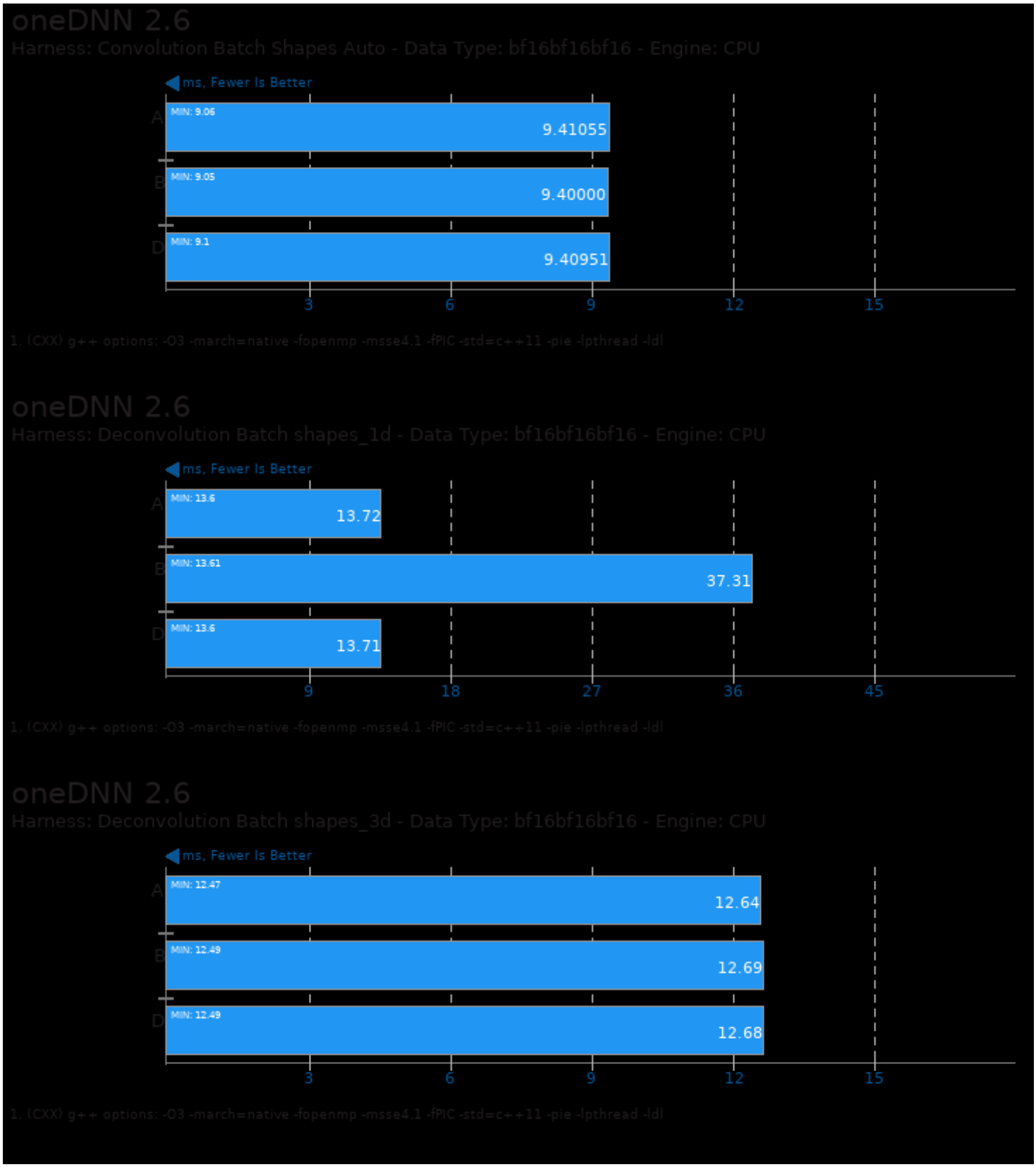
1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -std=c++11 -pie -lpthread -ldl

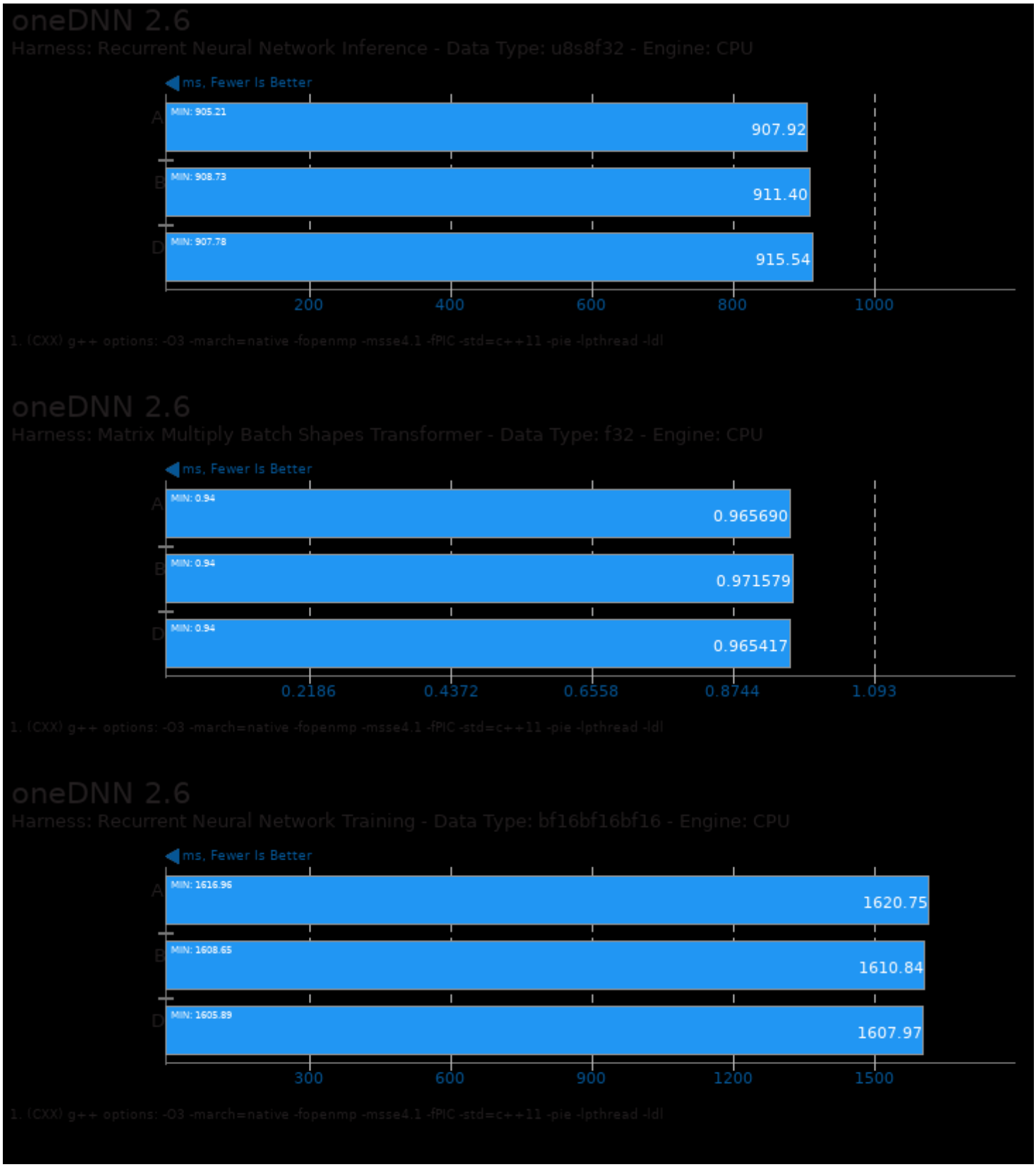
oneDNN 2.6

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



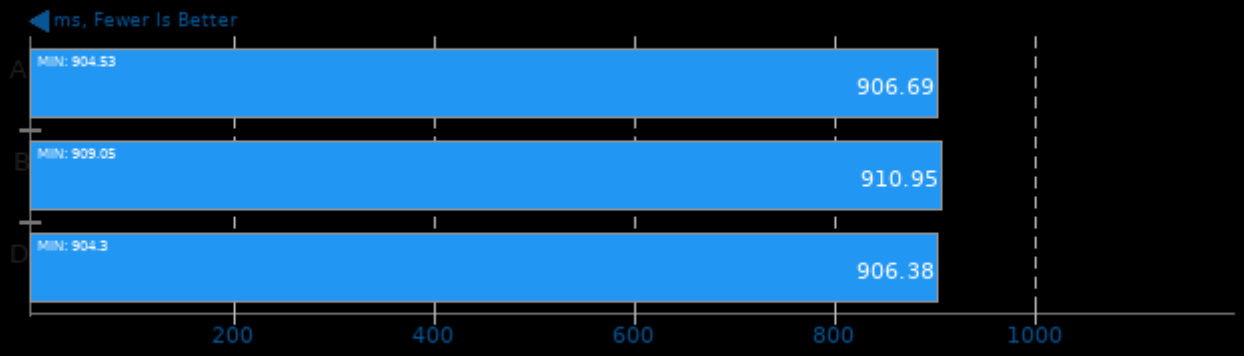
1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -std=c++11 -pie -lpthread -ldl


oneDNN 2.6
Harness: Convolution Batch Shapes Auto - Data Type: bf16bf16bf16 - Engine: CPU
ms, Fewer Is Better
A
MIN: 9.06
9.41055
B
MIN: 9.05
9.40000
D
MIN: 9.1
9.40951
3
6
9
12
15
1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -std=c++11 -pie -lpthread -ldl
oneDNN 2.6
Harness: Deconvolution Batch shapes_1d - Data Type: bf16bf16bf16 - Engine: CPU
ms, Fewer Is Better
A
MIN: 13.6
13.72
B
MIN: 13.61
37.31
D
MIN: 13.6
13.71
9
18
27
36
45
1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -std=c++11 -pie -lpthread -ldl
oneDNN 2.6
Harness: Deconvolution Batch shapes_3d - Data Type: bf16bf16bf16 - Engine: CPU
ms, Fewer Is Better
A
MIN: 12.47
12.64
B
MIN: 12.49
12.69
D
MIN: 12.49
12.68
3
6
9
12
15
1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -std=c++11 -pie -lpthread -ldl


oneDNN 2.6
Harness: Recurrent Neural Network Inference - Data Type: u8s8f32 - Engine: CPU
ms, Fewer Is Better
A
MIN: 905.21
907.92
B
MIN: 908.73
911.40
D
MIN: 907.78
915.54
200
400
600
800
1000
1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -std=c++11 -pie -lpthread -ldl
oneDNN 2.6
Harness: Matrix Multiply Batch Shapes Transformer - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
A
MIN: 0.94
0.965690
B
MIN: 0.94
0.971579
D
MIN: 0.94
0.965417
0.2186
0.4372
0.6558
0.8744
1.093
1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -std=c++11 -pie -lpthread -ldl
oneDNN 2.6
Harness: Recurrent Neural Network Training - Data Type: bf16bf16bf16 - Engine: CPU
ms, Fewer Is Better
A
MIN: 1616.96
1620.75
B
MIN: 1608.65
1610.84
D
MIN: 1605.89
1607.97
300
600
900
1200
1500
1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -std=c++11 -pie -lpthread -ldl

oneDNN 2.6

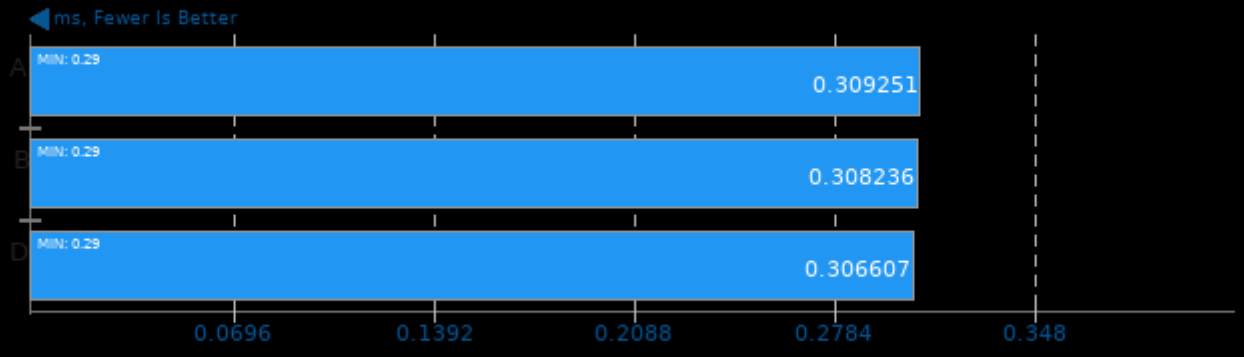
Harness: Recurrent Neural Network Inference - Data Type: bf16bf16bf16 - Engine: CPU



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

oneDNN 2.6

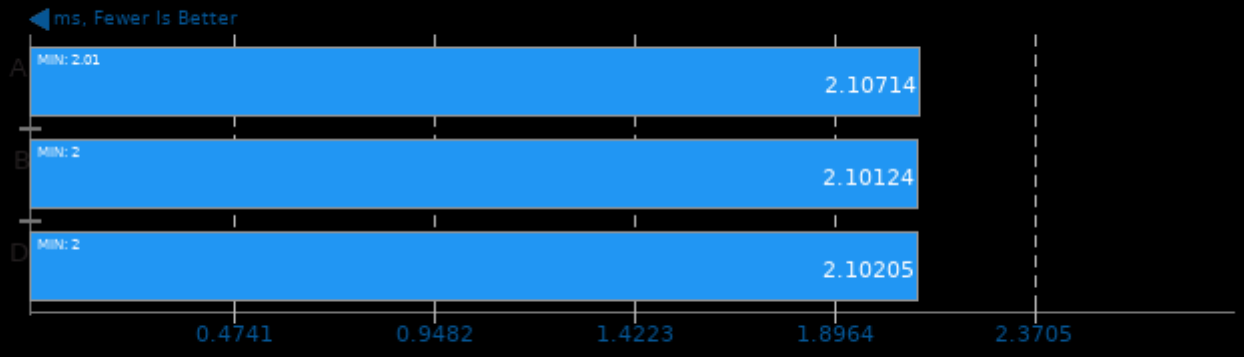
Harness: Matrix Multiply Batch Shapes Transformer - Data Type: u8s8f32 - Engine: CPU



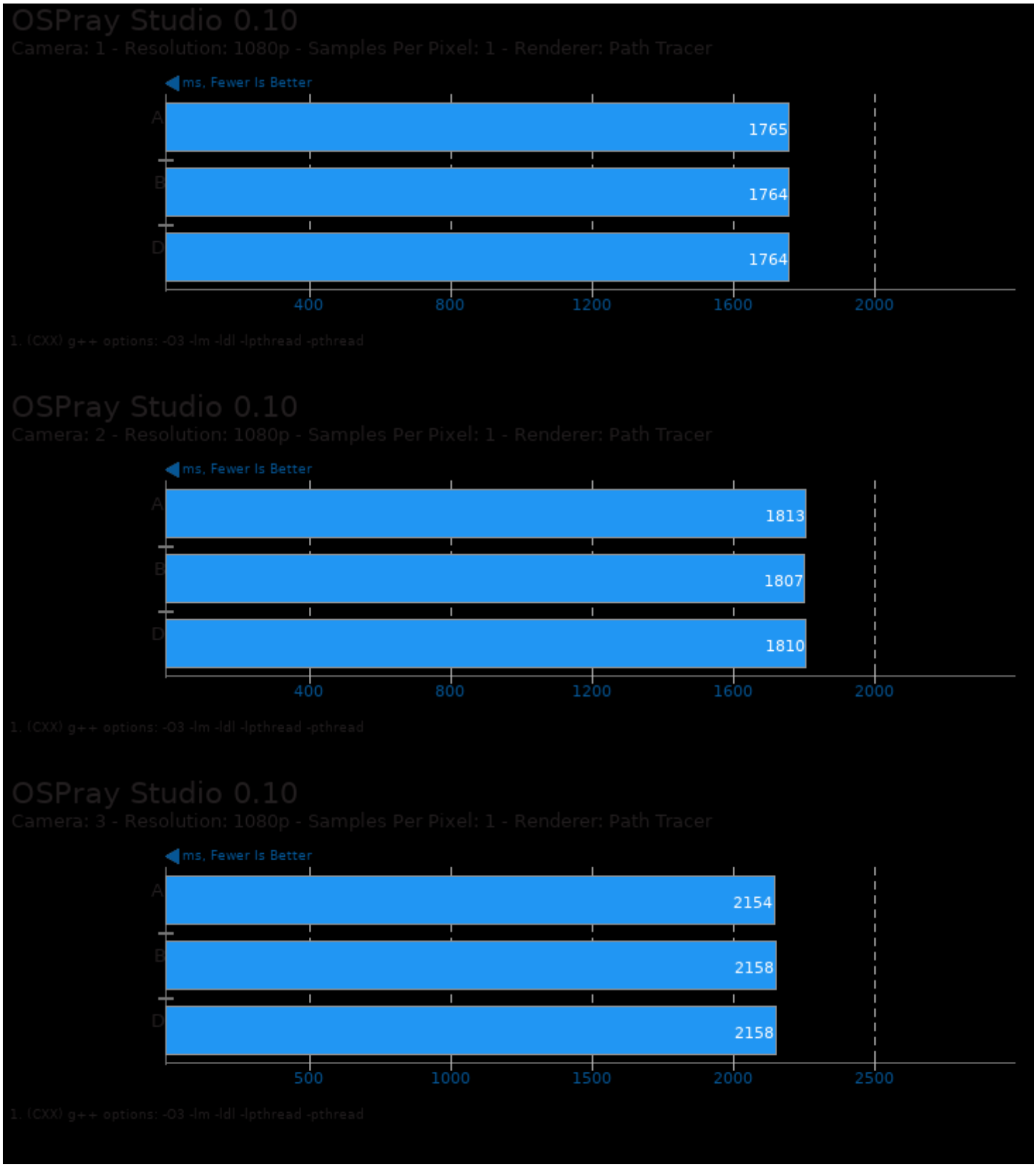
1. (CXX) g++ options: -O3 -march=native -fopenmp -msse4.1 -fPIC -std=c++11 -pie -lpthread -ldl

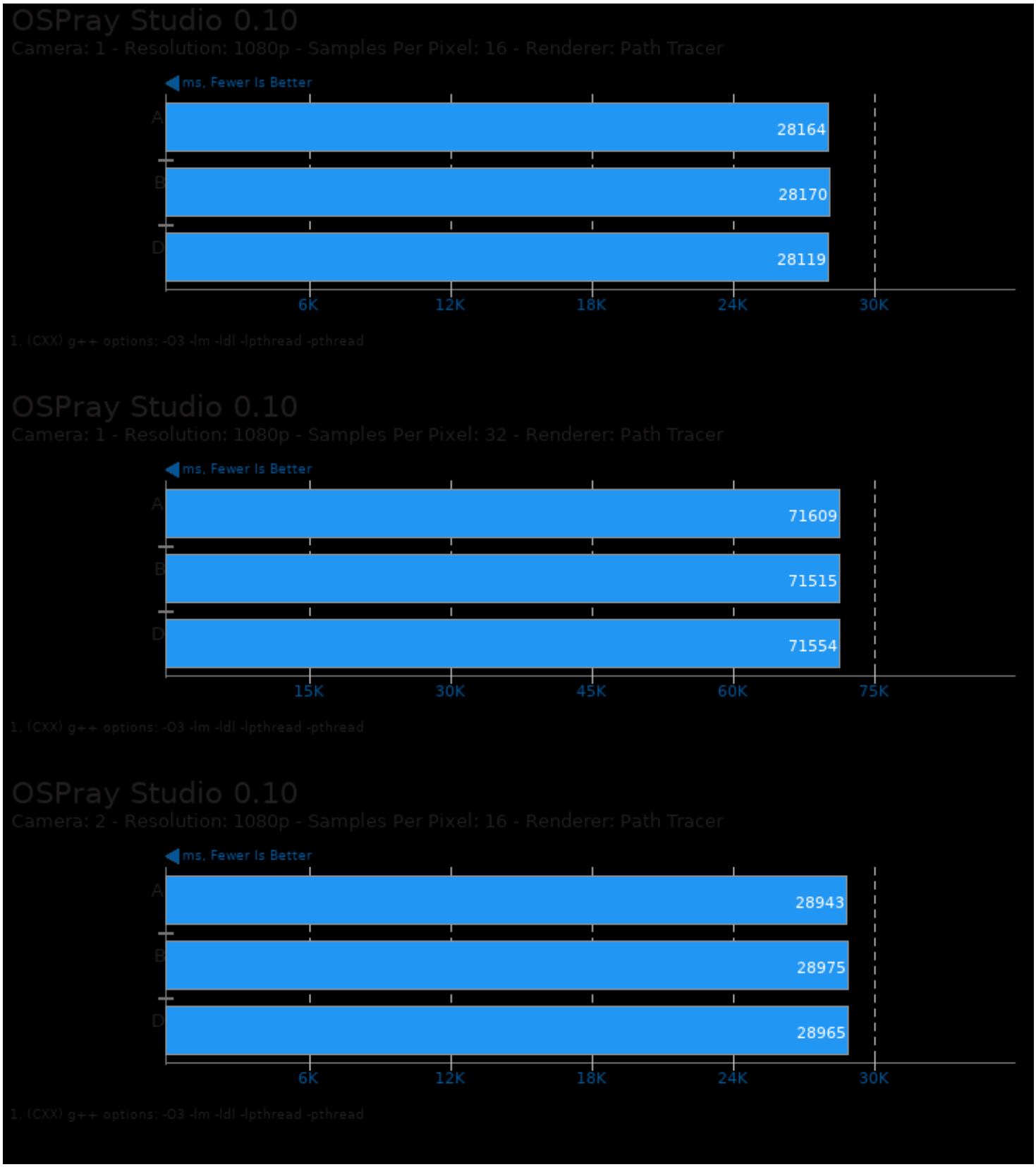
oneDNN 2.6

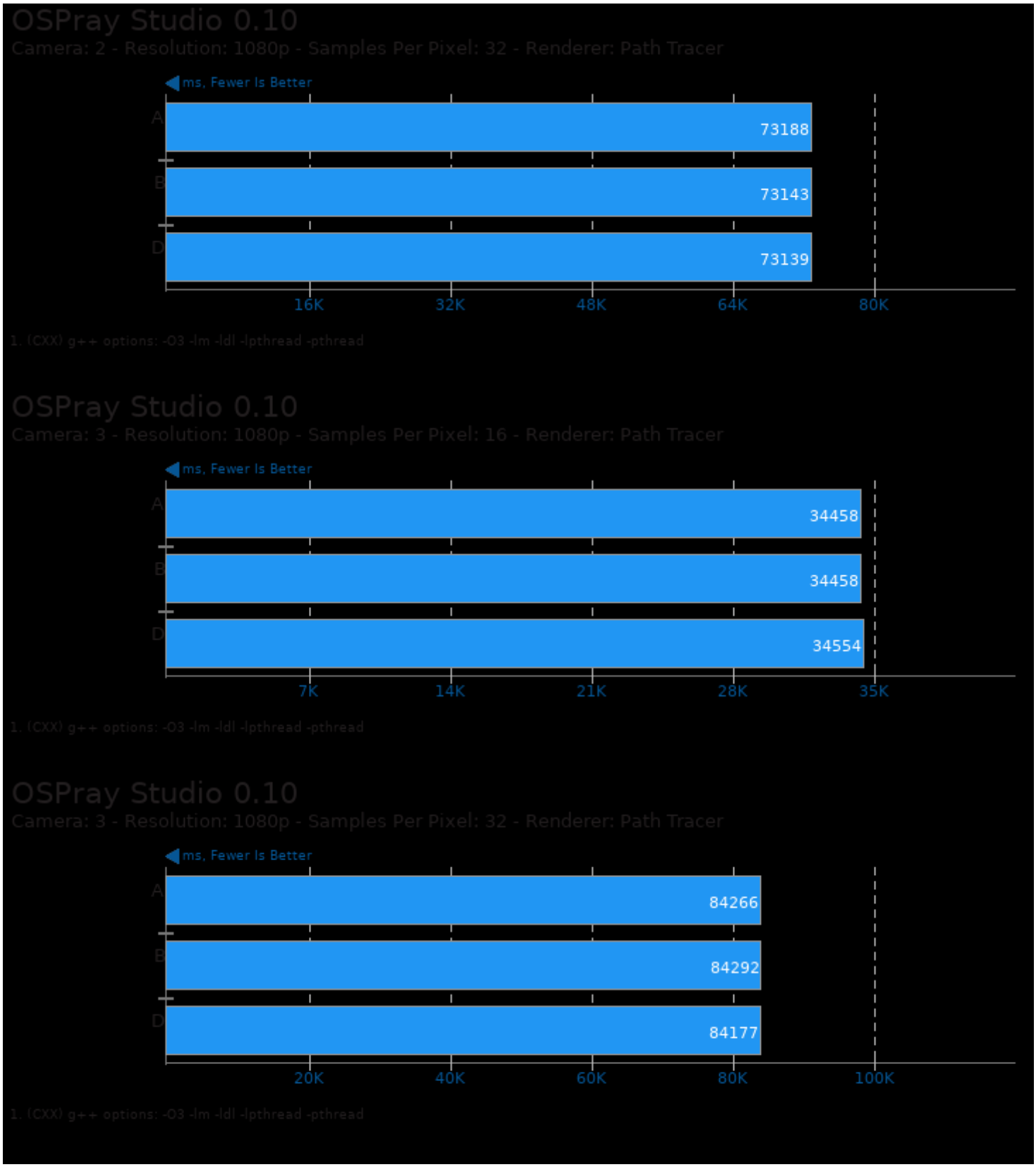
Harness: Matrix Multiply Batch Shapes Transformer - Data Type: bf16bf16bf16 - Engine: CPU



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

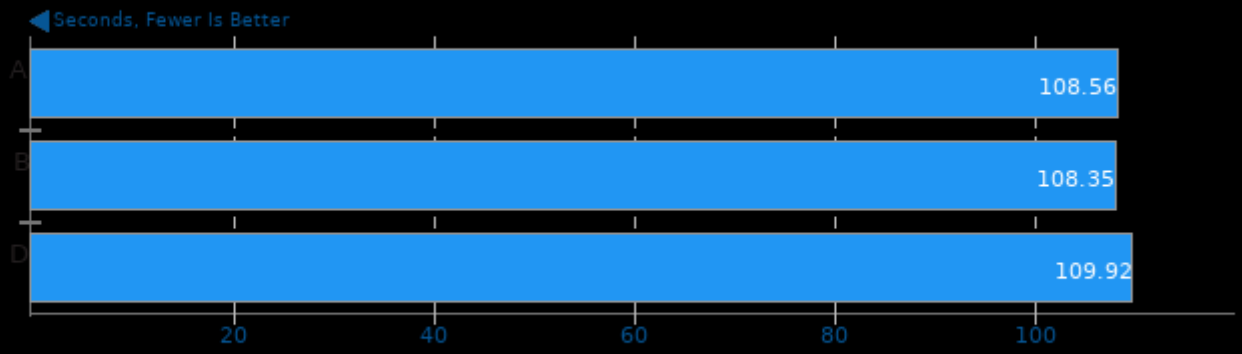

OSPray Studio 0.10
Camera: 1 - Resolution: 1080p - Samples Per Pixel: 1 - Renderer: Path Tracer
ms, Fewer Is Better
A
B
D
1765
1764
1764
400
800
1200
1600
2000
1. (CXX) g++ options: -O3 -lm -ldl -lpthread -pthread
OSPray Studio 0.10
Camera: 2 - Resolution: 1080p - Samples Per Pixel: 1 - Renderer: Path Tracer
ms, Fewer Is Better
A
B
D
1813
1807
1810
400
800
1200
1600
2000
1. (CXX) g++ options: -O3 -lm -ldl -lpthread -pthread
OSPray Studio 0.10
Camera: 3 - Resolution: 1080p - Samples Per Pixel: 1 - Renderer: Path Tracer
ms, Fewer Is Better
A
B
D
2154
2158
2158
500
1000
1500
2000
2500
1. (CXX) g++ options: -O3 -lm -ldl -lpthread -pthread


OSPray Studio 0.10
Camera: 1 - Resolution: 1080p - Samples Per Pixel: 16 - Renderer: Path Tracer
ms, Fewer Is Better
A
28164
B
28170
D
28119
6K
12K
18K
24K
30K
1. (CXX) g++ options: -O3 -lm -ldl -lpthread -pthread
OSPray Studio 0.10
Camera: 1 - Resolution: 1080p - Samples Per Pixel: 32 - Renderer: Path Tracer
ms, Fewer Is Better
A
71609
B
71515
D
71554
15K
30K
45K
60K
75K
1. (CXX) g++ options: -O3 -lm -ldl -lpthread -pthread
OSPray Studio 0.10
Camera: 2 - Resolution: 1080p - Samples Per Pixel: 16 - Renderer: Path Tracer
ms, Fewer Is Better
A
28943
B
28975
D
28965
6K
12K
18K
24K
30K
1. (CXX) g++ options: -O3 -lm -ldl -lpthread -pthread


OSPray Studio 0.10
Camera: 2 - Resolution: 1080p - Samples Per Pixel: 32 - Renderer: Path Tracer
ms, Fewer Is Better
A
B
D
73188
73143
73139
16K
32K
48K
64K
80K
1. (CXX) g++ options: -O3 -lm -ldl -lpthread -pthread
OSPray Studio 0.10
Camera: 3 - Resolution: 1080p - Samples Per Pixel: 16 - Renderer: Path Tracer
ms, Fewer Is Better
A
B
D
34458
34458
34554
7K
14K
21K
28K
35K
1. (CXX) g++ options: -O3 -lm -ldl -lpthread -pthread
OSPray Studio 0.10
Camera: 3 - Resolution: 1080p - Samples Per Pixel: 32 - Renderer: Path Tracer
ms, Fewer Is Better
A
B
D
84266
84292
84177
20K
40K
60K
80K
100K
1. (CXX) g++ options: -O3 -lm -ldl -lpthread -pthread

Tachyon 0.99.2

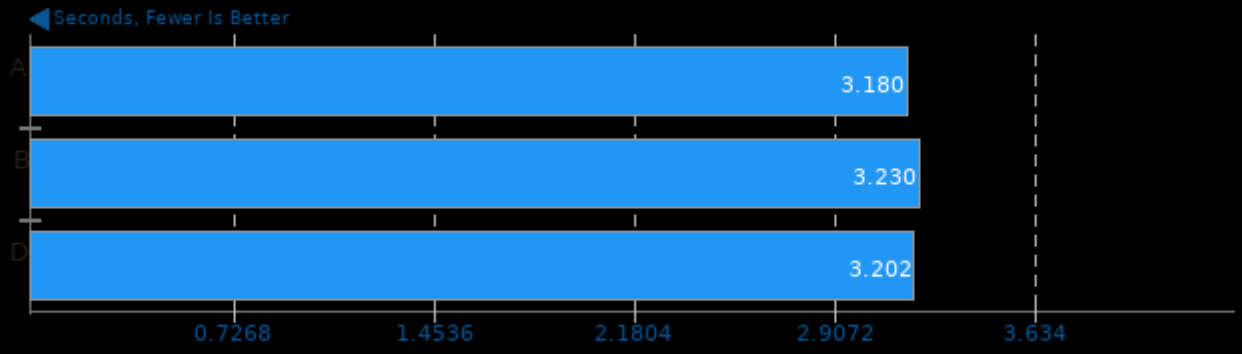
Total Time



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

WebP2 Image Encode 20220422

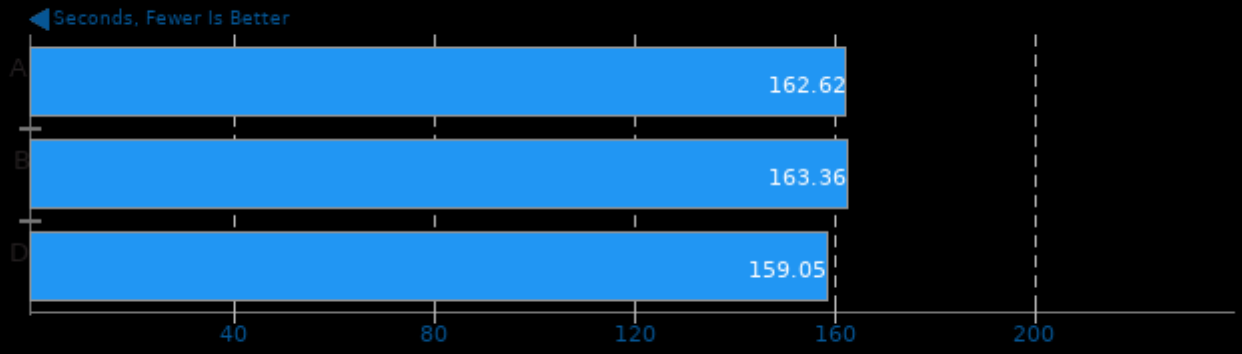
Encode Settings: Default



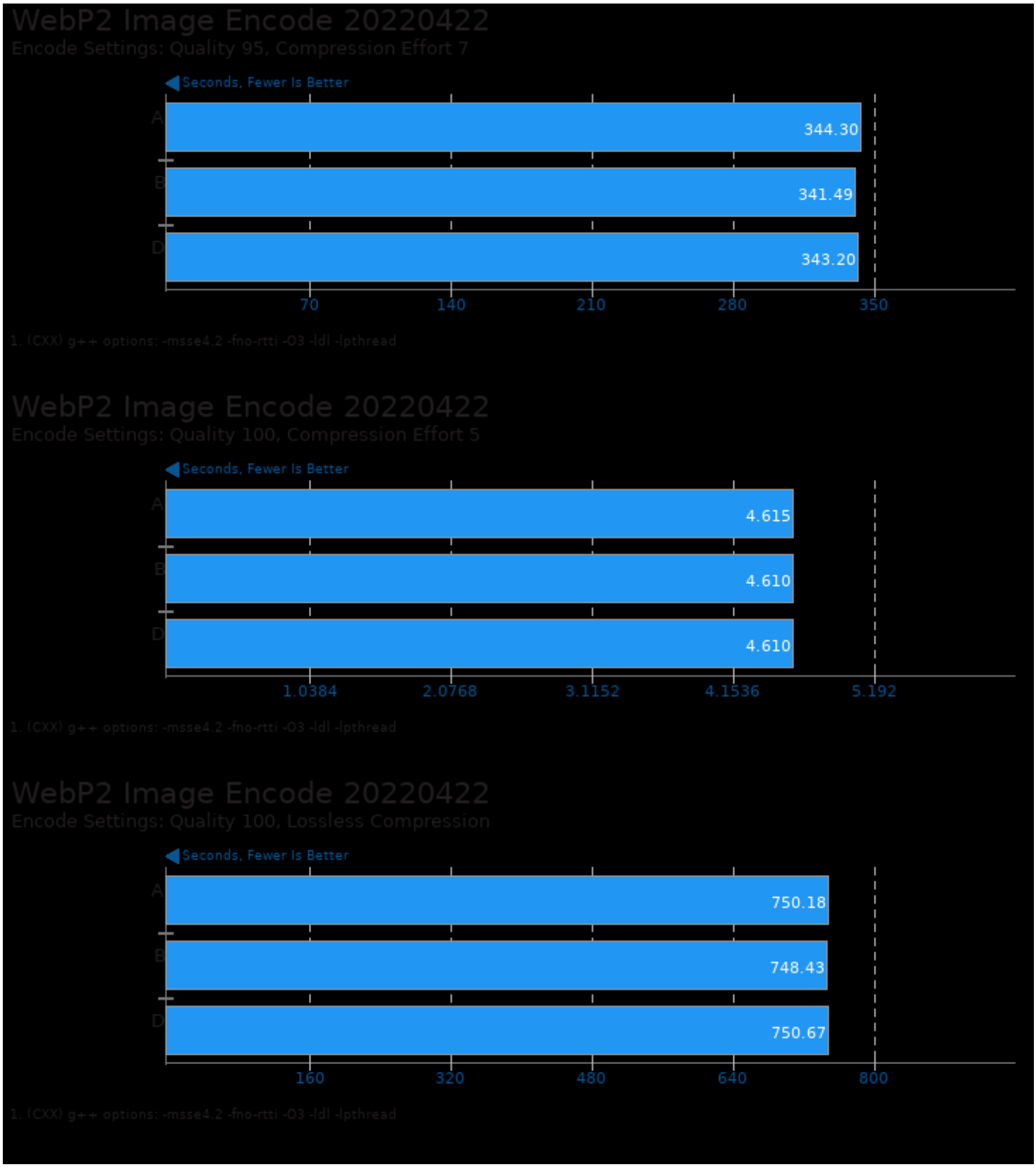
1. (CXX) g++ options: -msse4.2 -fno-rtti -O3 -ldl -lpthread

WebP2 Image Encode 20220422

Encode Settings: Quality 75, Compression Effort 7

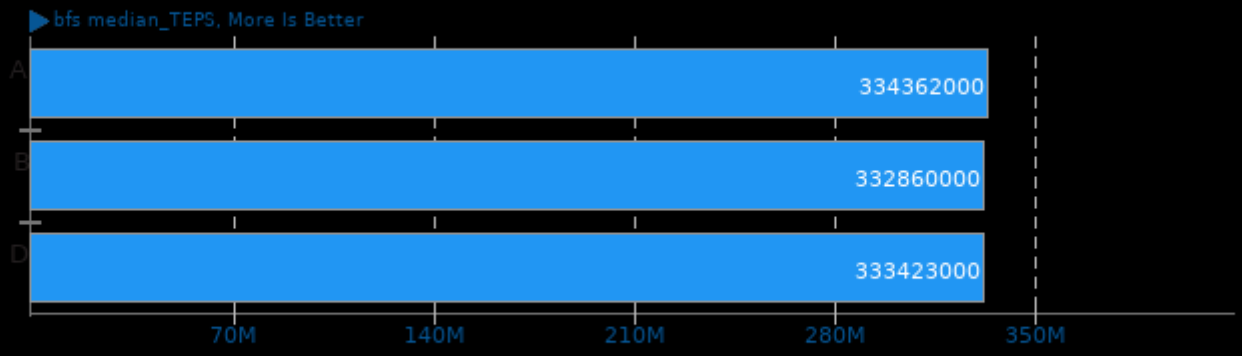


1. (CXX) g++ options: -msse4.2 -fno-rtti -O3 -ldl -lpthread


WebP2 Image Encode 20220422
Encode Settings: Quality 95, Compression Effort 7
Seconds, Fewer Is Better
A
B
D
344.30
341.49
343.20
70
140
210
280
350
1. (CXX) g++ options: -msse4.2 -fno-rtti -O3 -ldl -lpthread
WebP2 Image Encode 20220422
Encode Settings: Quality 100, Compression Effort 5
Seconds, Fewer Is Better
A
B
D
4.615
4.610
4.610
1.0384
2.0768
3.1152
4.1536
5.192
1. (CXX) g++ options: -msse4.2 -fno-rtti -O3 -ldl -lpthread
WebP2 Image Encode 20220422
Encode Settings: Quality 100, Lossless Compression
Seconds, Fewer Is Better
A
B
D
750.18
748.43
750.67
160
320
480
640
800
1. (CXX) g++ options: -msse4.2 -fno-rtti -O3 -ldl -lpthread

Graph500 3.0

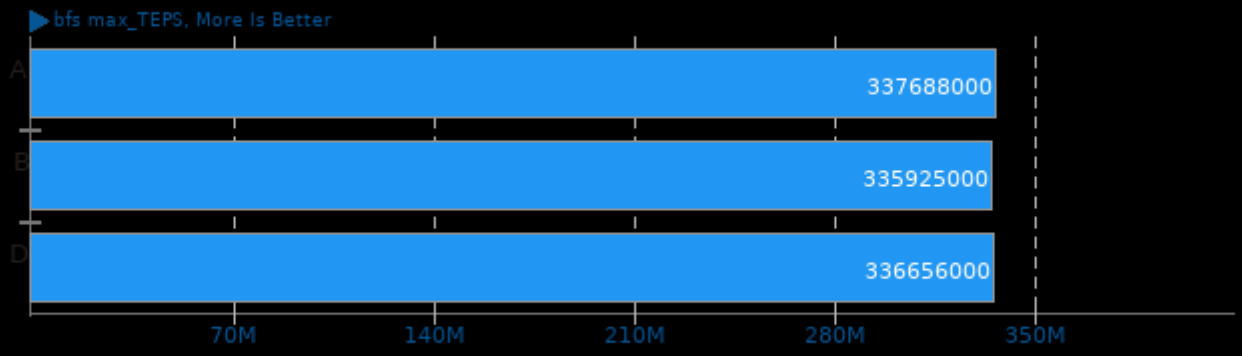
Scale: 26



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

Graph500 3.0

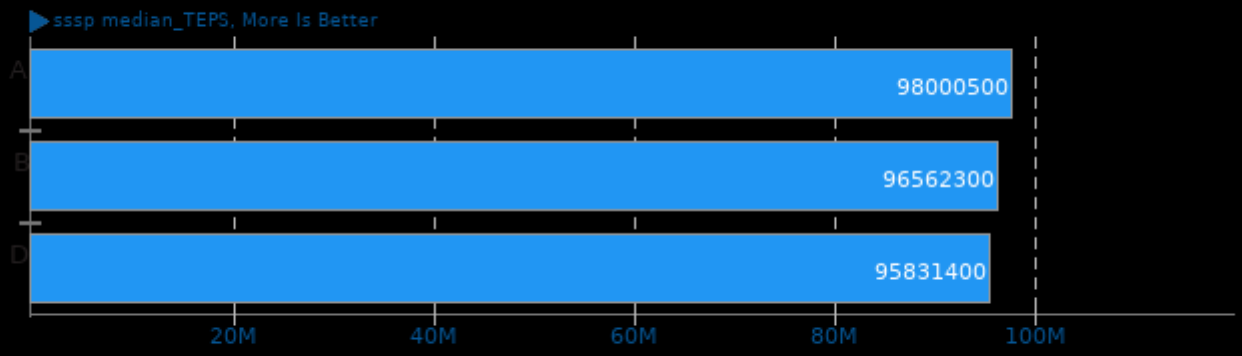
Scale: 26



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

Graph500 3.0

Scale: 26

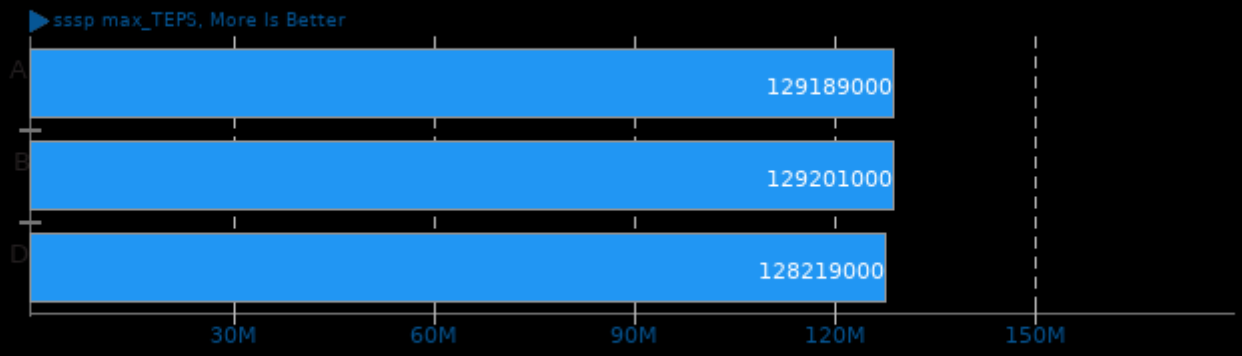


1. (CC) gcc options: -fcommon -O3 -lpthread -lm -pthread -lmpi

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Graph500 3.0

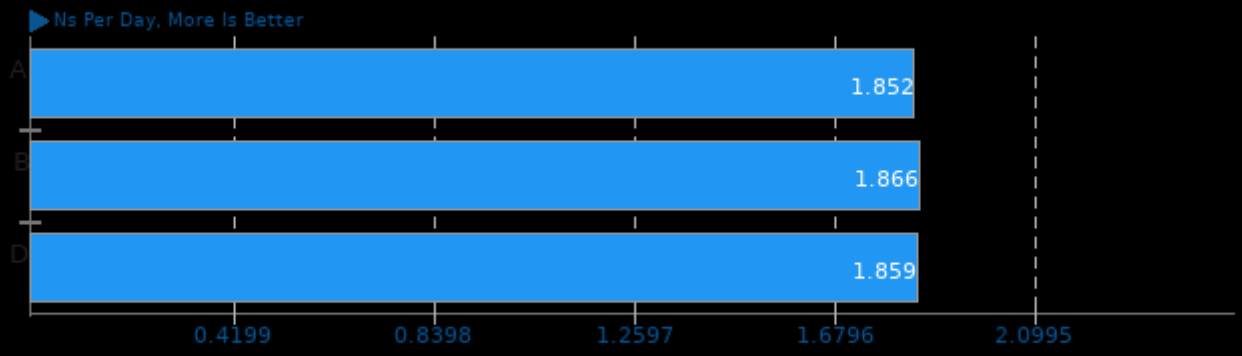
Scale: 26



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

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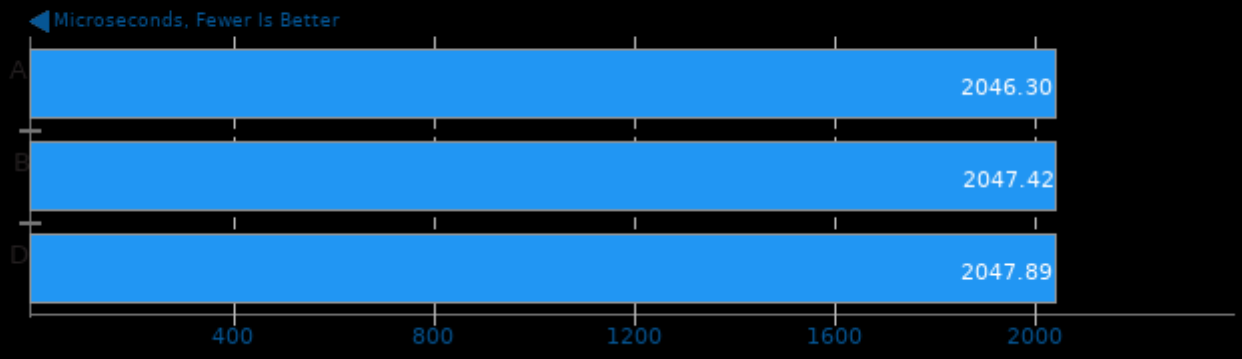
Implementation: MPI CPU - Input: water_GMX50_bare



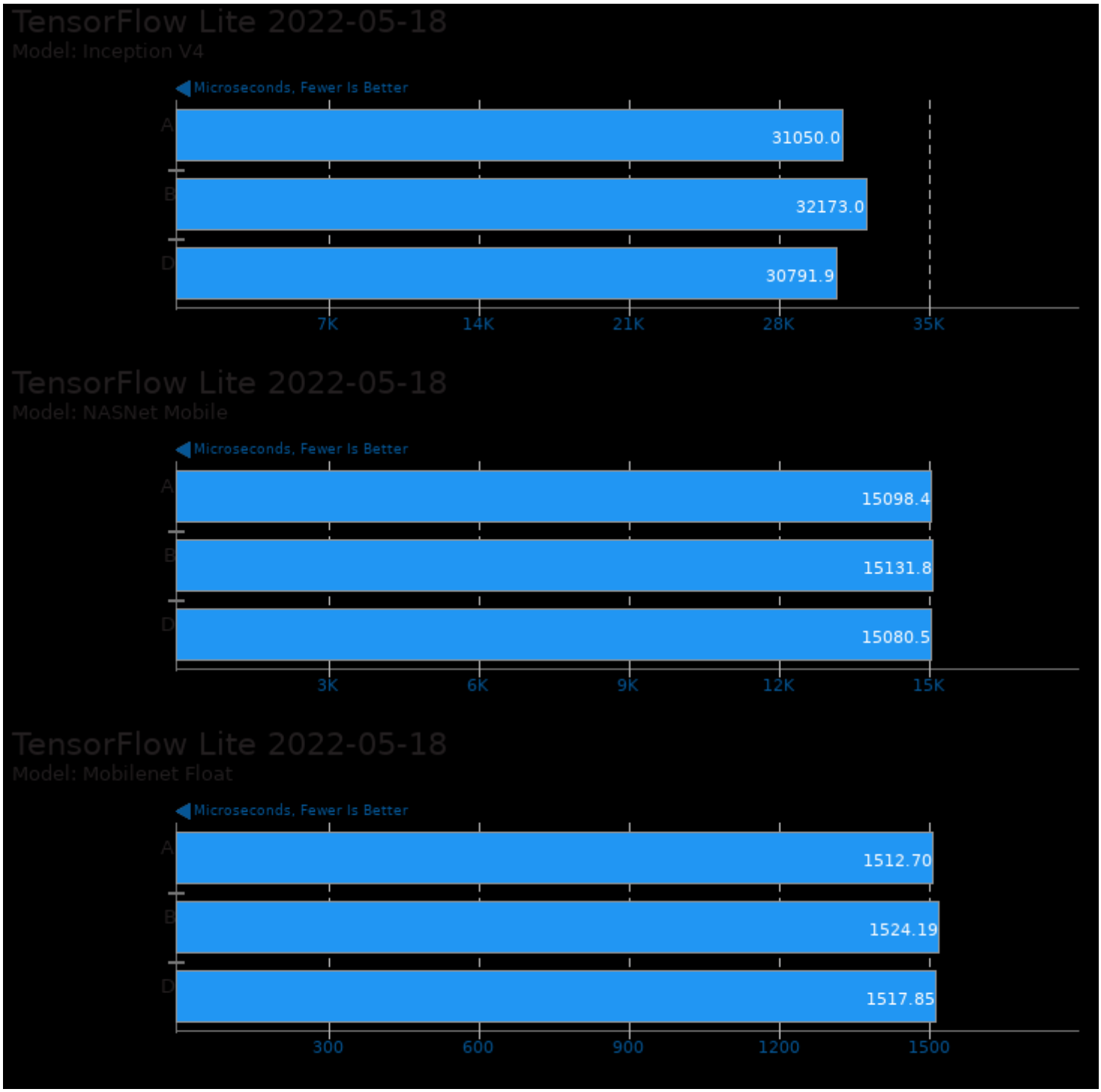
1. (CXX) g++ options: -O3 -pthread

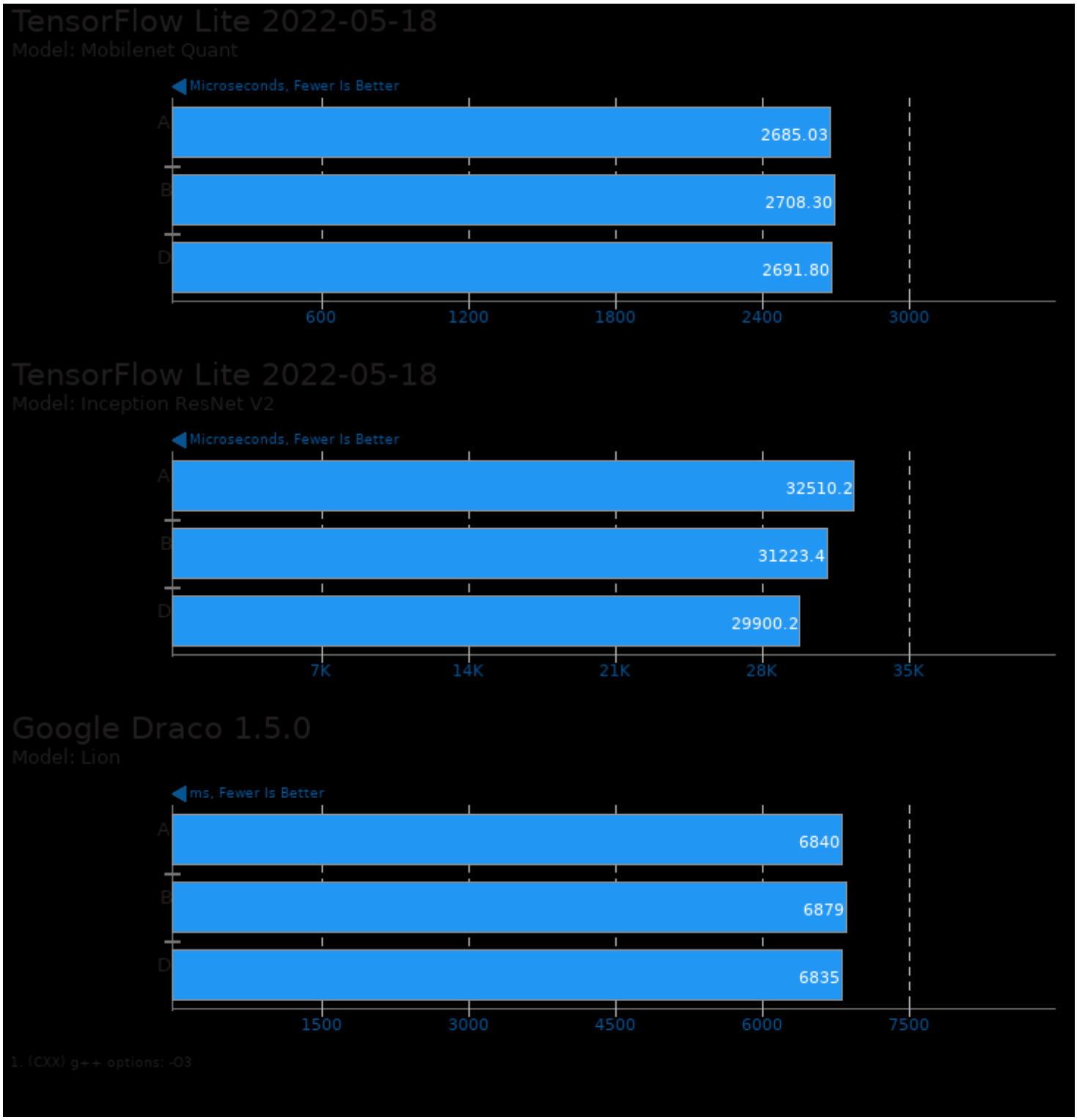
TensorFlow Lite 2022-05-18

Model: SqueezeNet



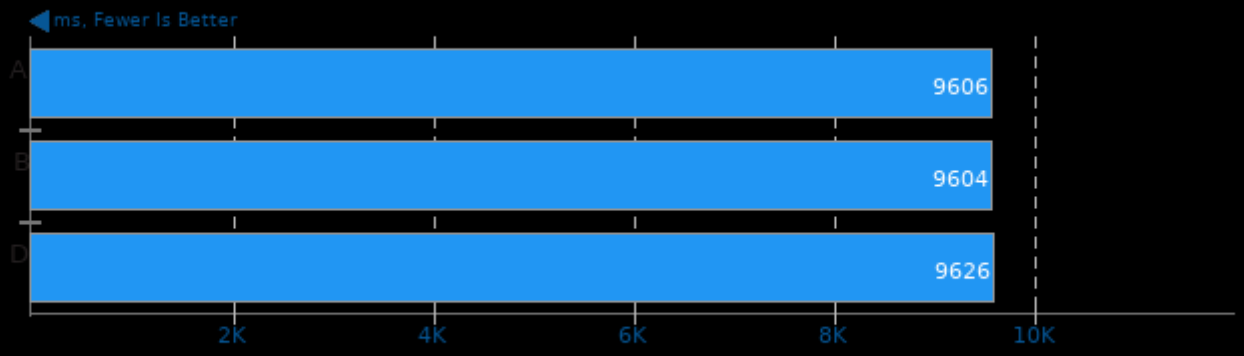
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TensorFlow Lite 2022-05-18
Model: Mobilenet Quant
Microseconds, Fewer Is Better
A
2685.03
B
2708.30
D
2691.80
600
1200
1800
2400
3000
TensorFlow Lite 2022-05-18
Model: Inception ResNet V2
Microseconds, Fewer Is Better
A
32510.2
B
31223.4
D
29900.2
7K
14K
21K
28K
35K
Google Draco 1.5.0
Model: Lion
ms, Fewer Is Better
A
6840
B
6879
D
6835
1500
3000
4500
6000
7500
1. (CXX) g++ options: -O3

Google Draco 1.5.0

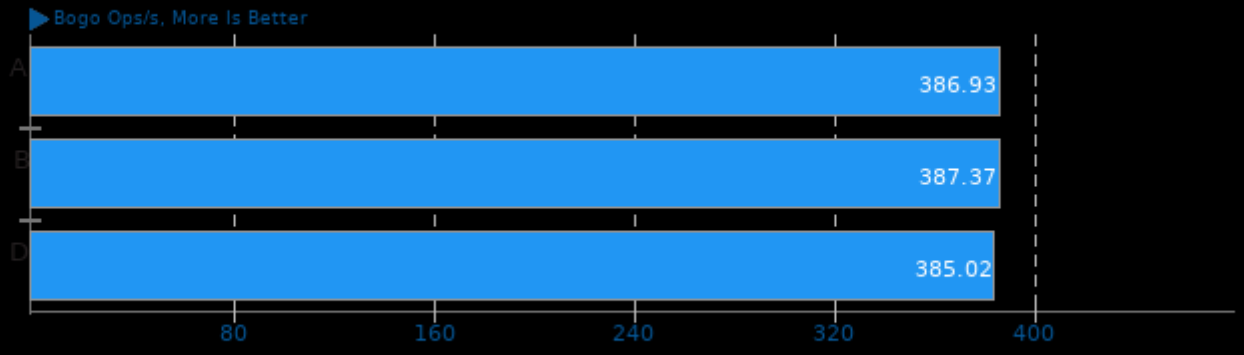
Model: Church Facade



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

Stress-NG 0.14

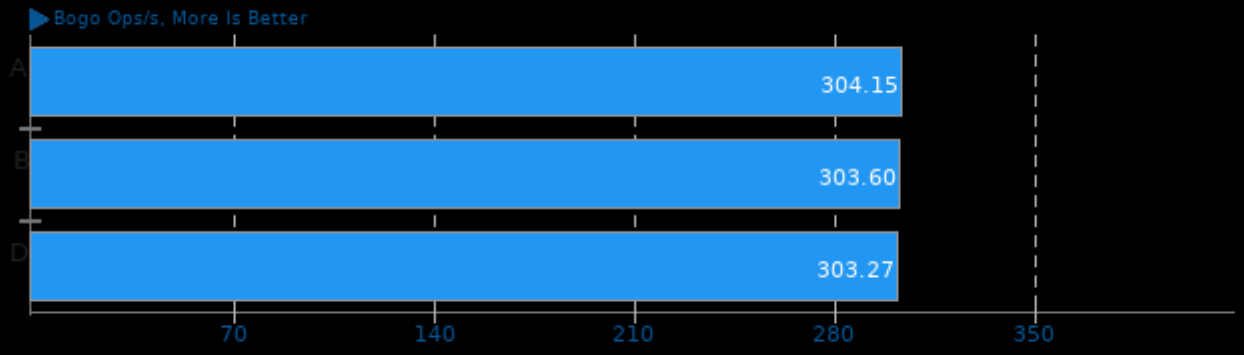
Test: MMAP



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

Stress-NG 0.14

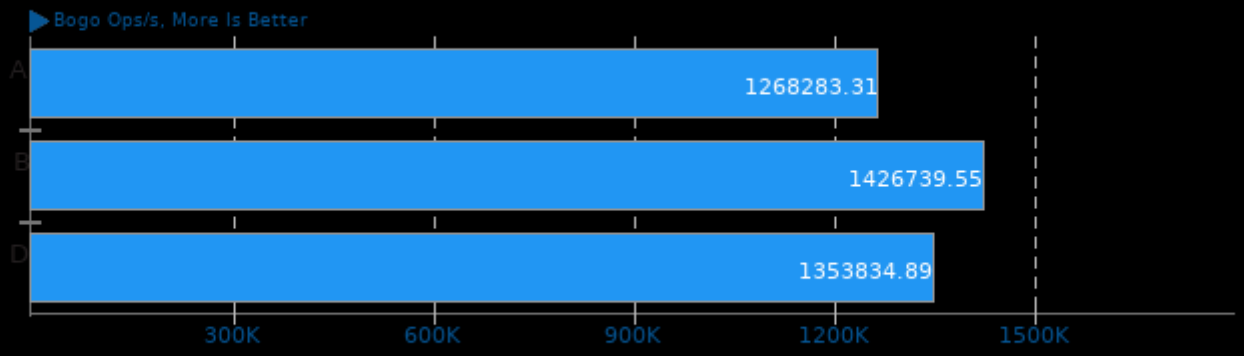
Test: NUMA



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

Stress-NG 0.14

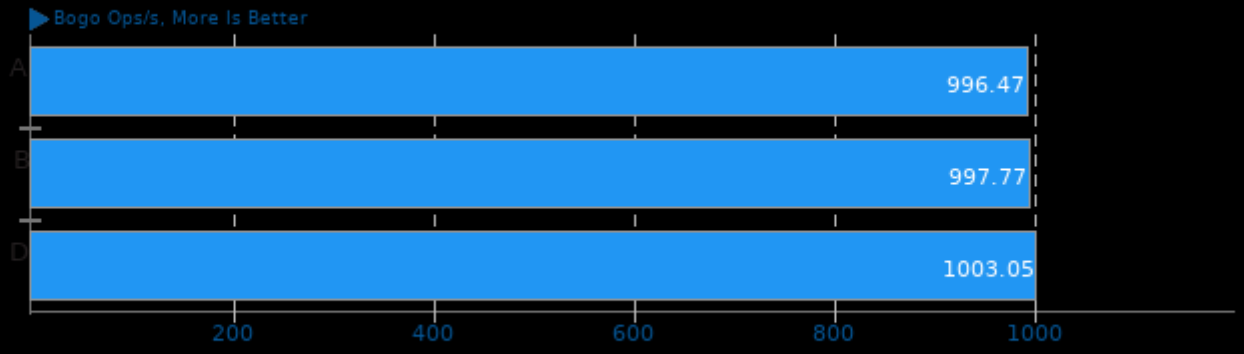
Test: Futex



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

Stress-NG 0.14

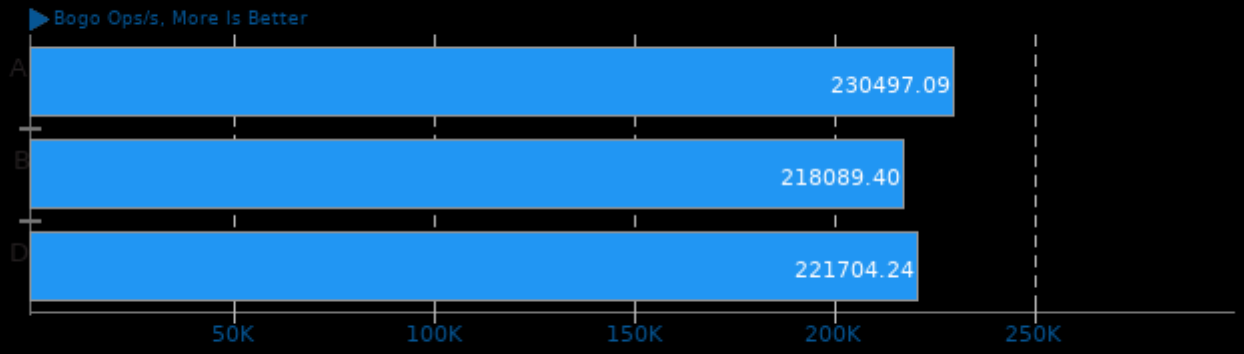
Test: MEMFD



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

Stress-NG 0.14

Test: Atomic

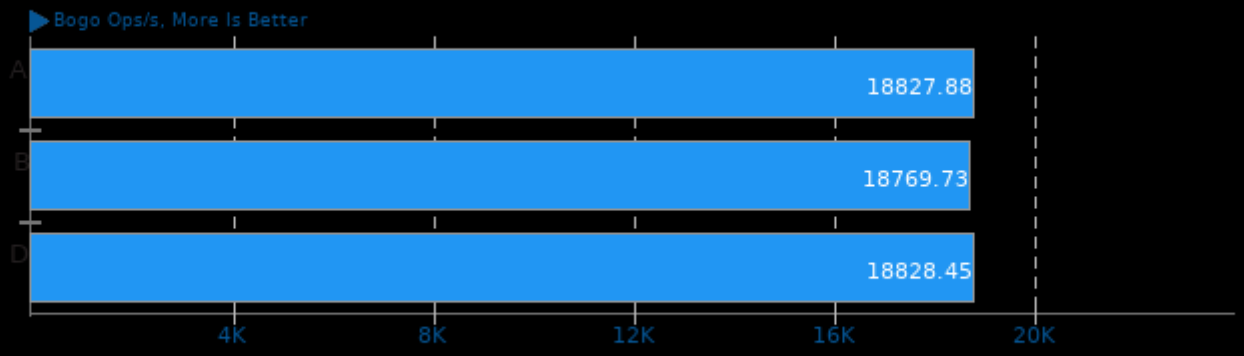


1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lapparmor -latomic -lbsd -lc -lcrypt -ldl -ljpeg -lrt -lsctp -lz -pthread

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Stress-NG 0.14

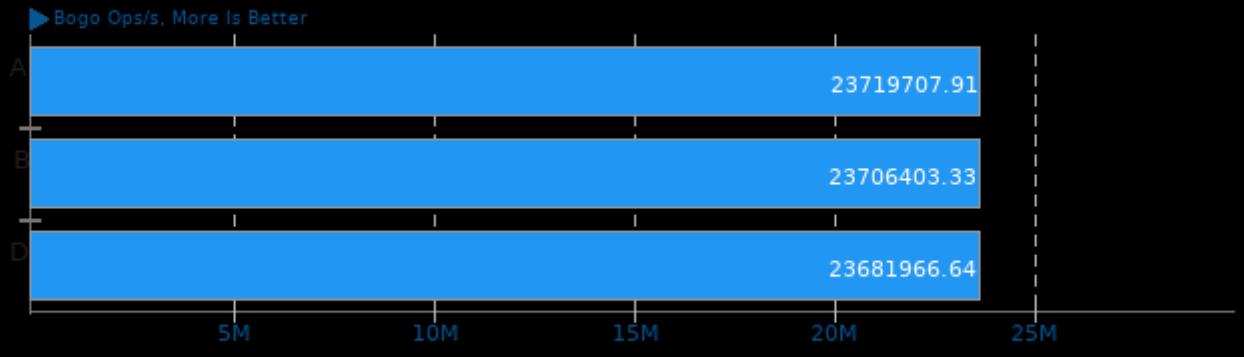
Test: Crypto



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

Stress-NG 0.14

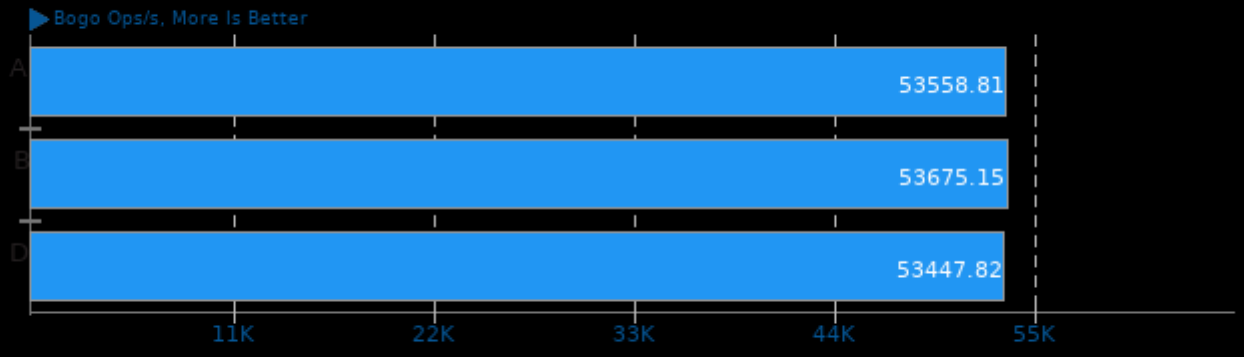
Test: Malloc



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

Stress-NG 0.14

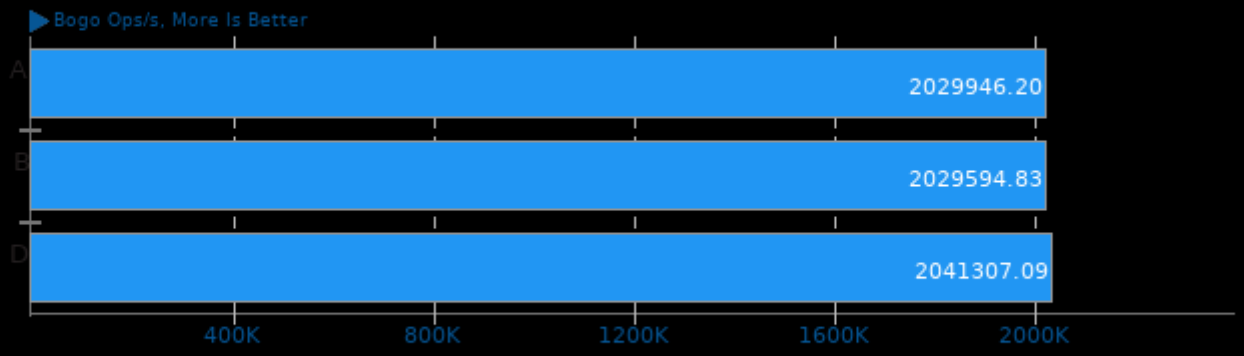
Test: Forking



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

Stress-NG 0.14

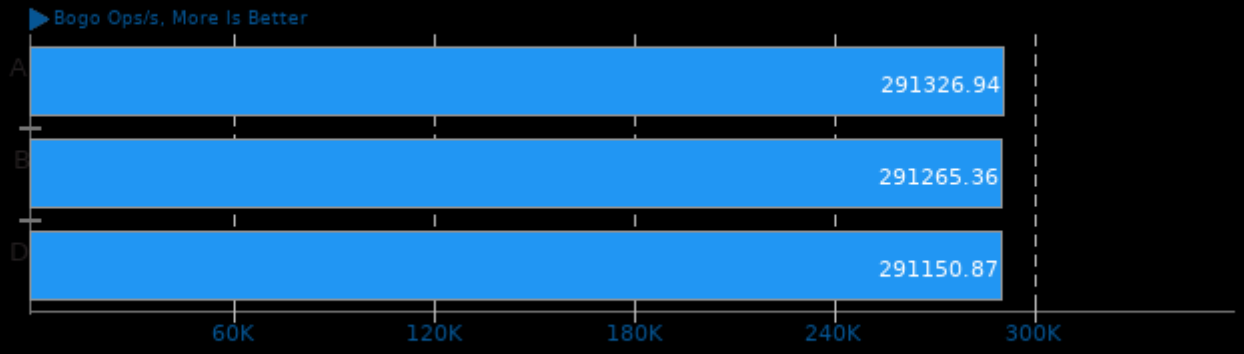
Test: IO_uring



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

Stress-NG 0.14

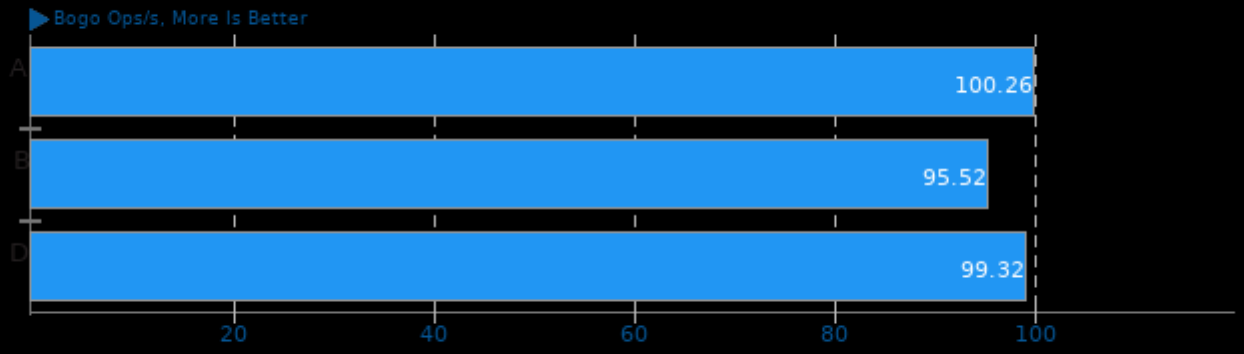
Test: SENDFILE



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

Stress-NG 0.14

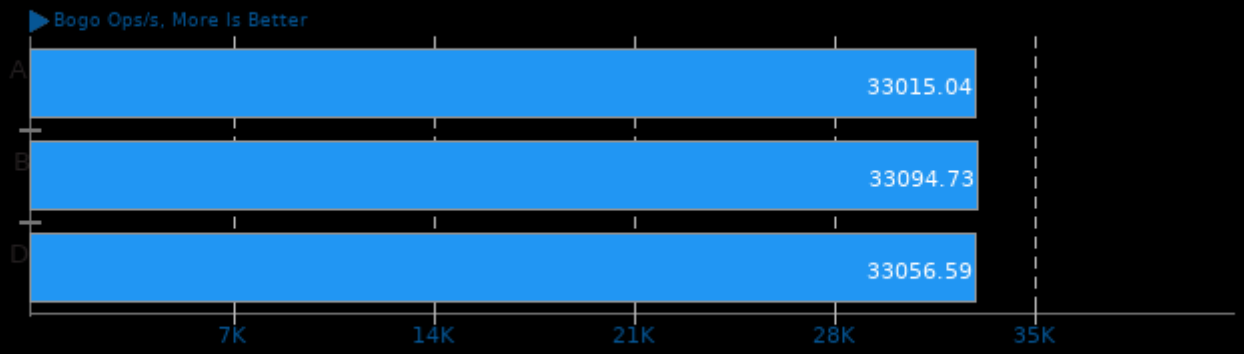
Test: CPU Cache



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

Stress-NG 0.14

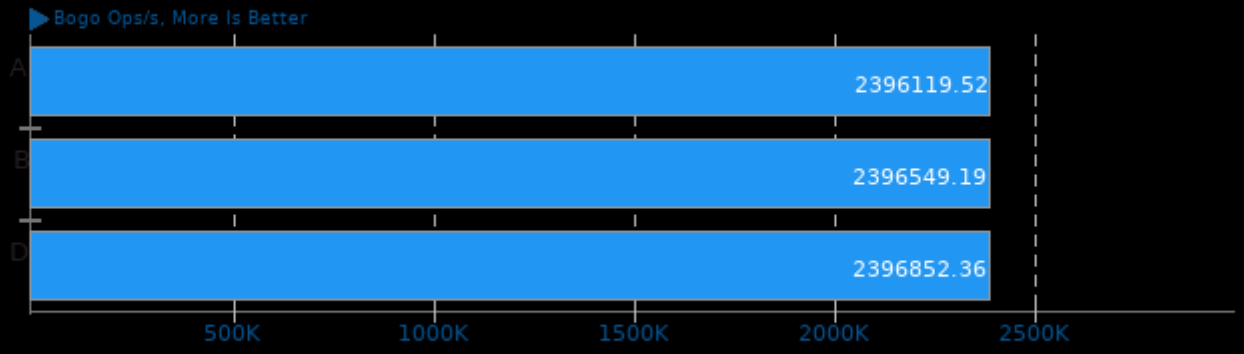
Test: CPU Stress



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

Stress-NG 0.14

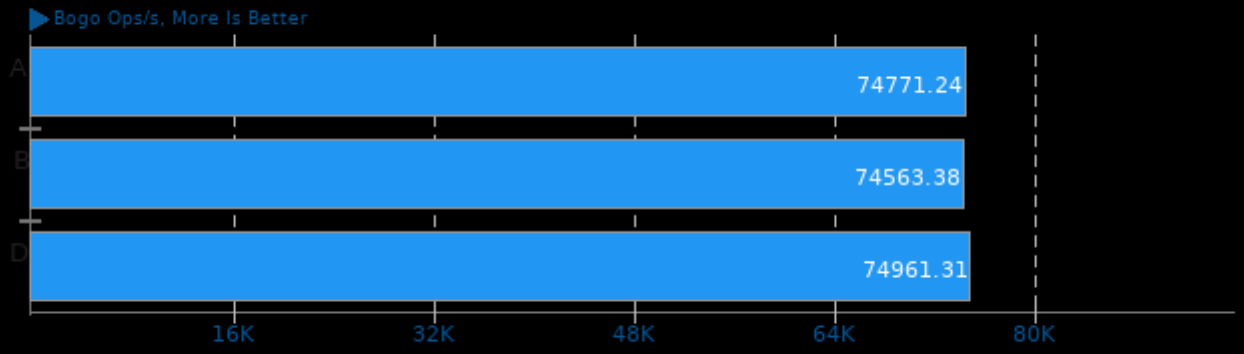
Test: Semaphores



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

Stress-NG 0.14

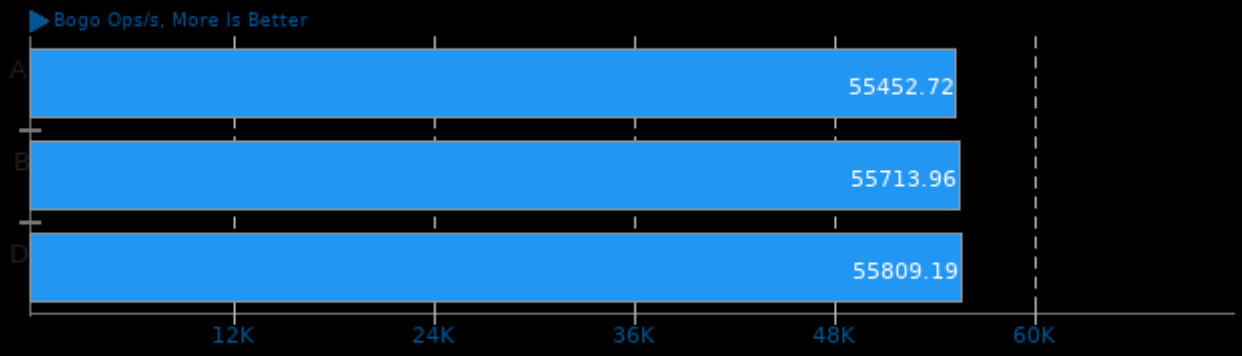
Test: Matrix Math



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

Stress-NG 0.14

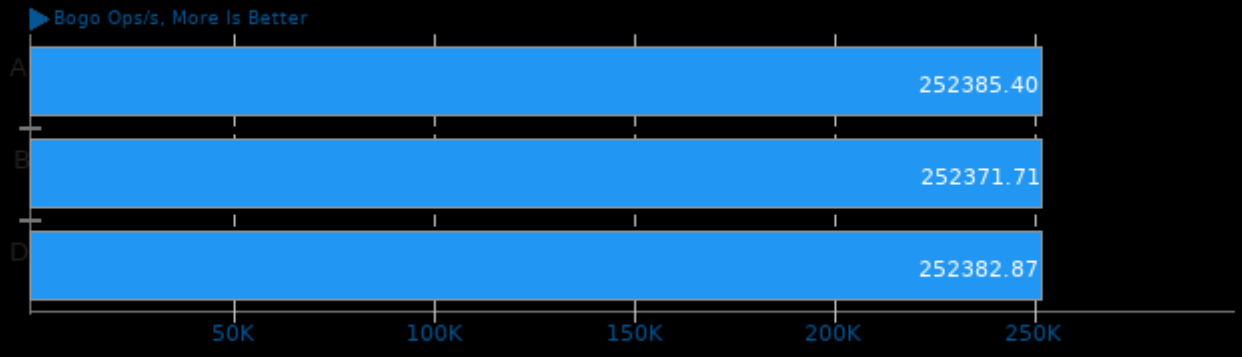
Test: Vector Math



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

Stress-NG 0.14

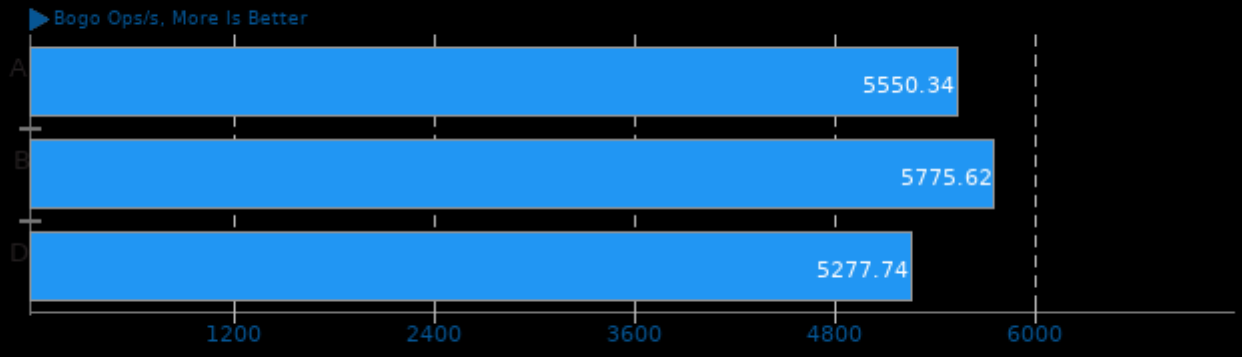
Test: x86_64 RdRand



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

Stress-NG 0.14

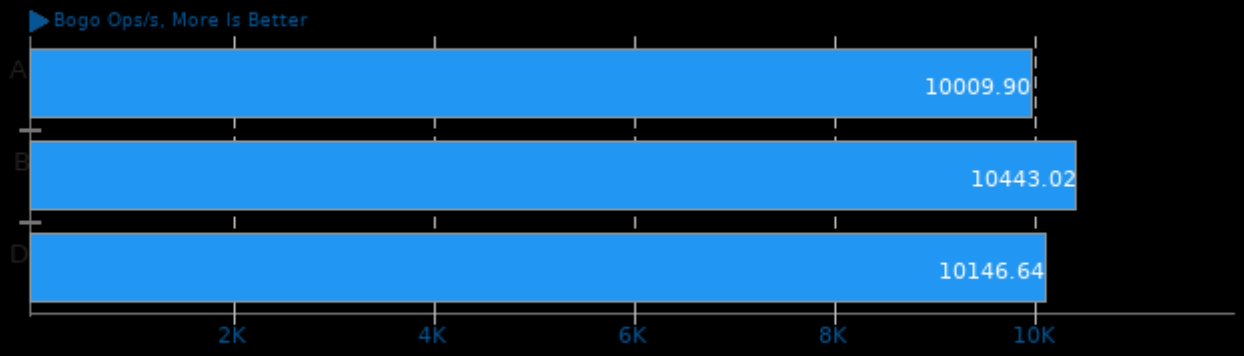
Test: Memory Copying



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

Stress-NG 0.14

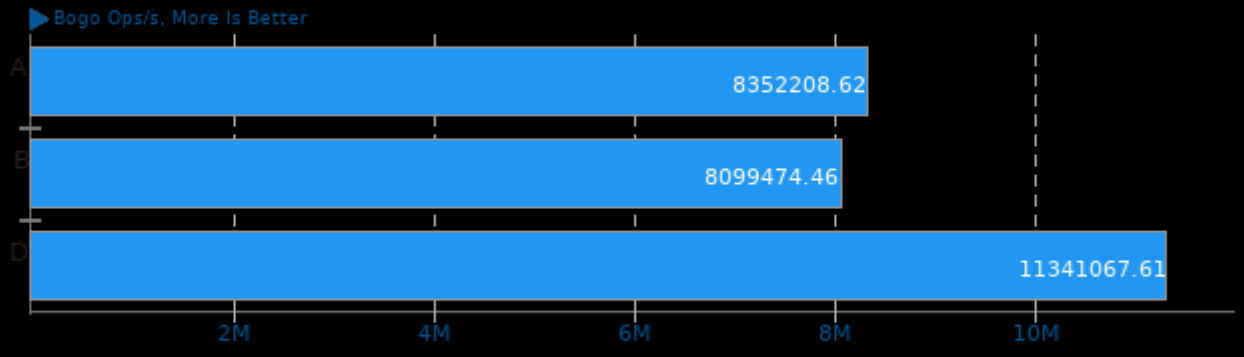
Test: Socket Activity



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

Stress-NG 0.14

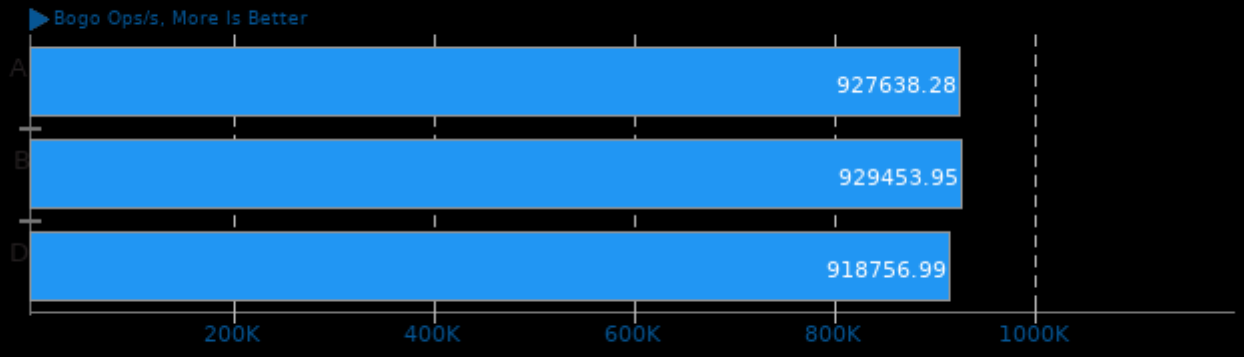
Test: Context Switching



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

Stress-NG 0.14

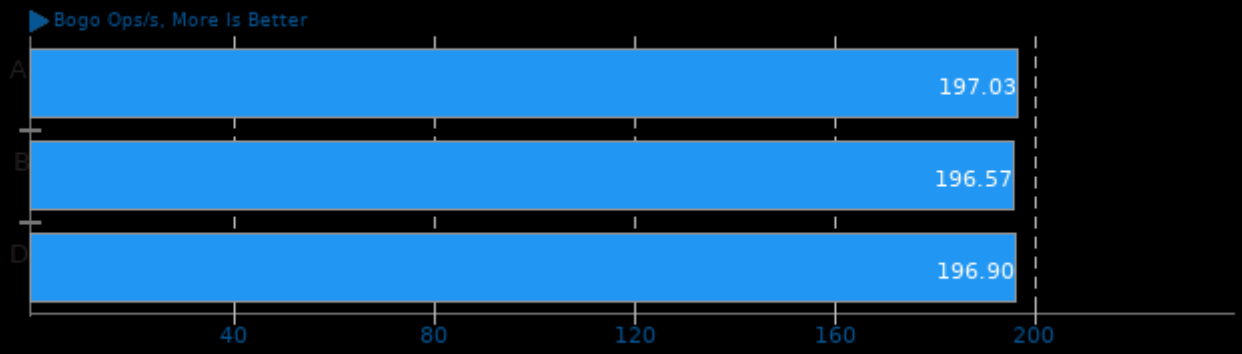
Test: Glibc C String Functions



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

Stress-NG 0.14

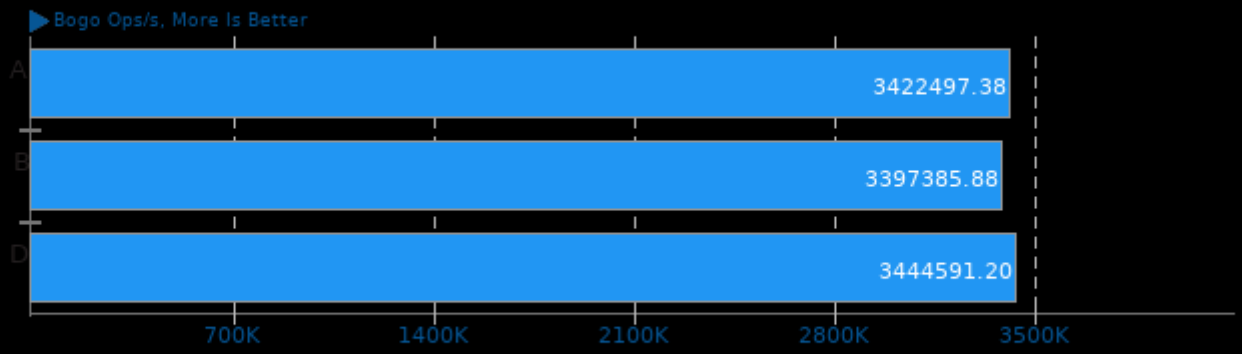
Test: Glibc Qsort Data Sorting



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

Stress-NG 0.14

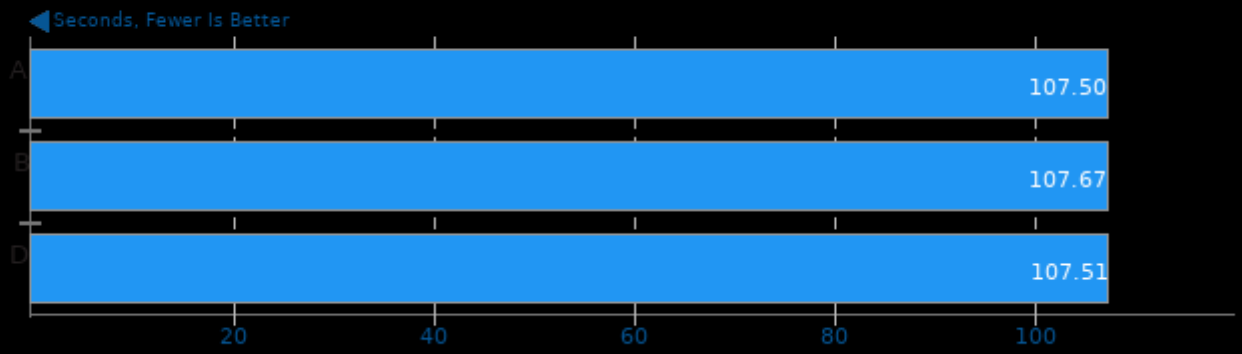
Test: System V Message Passing



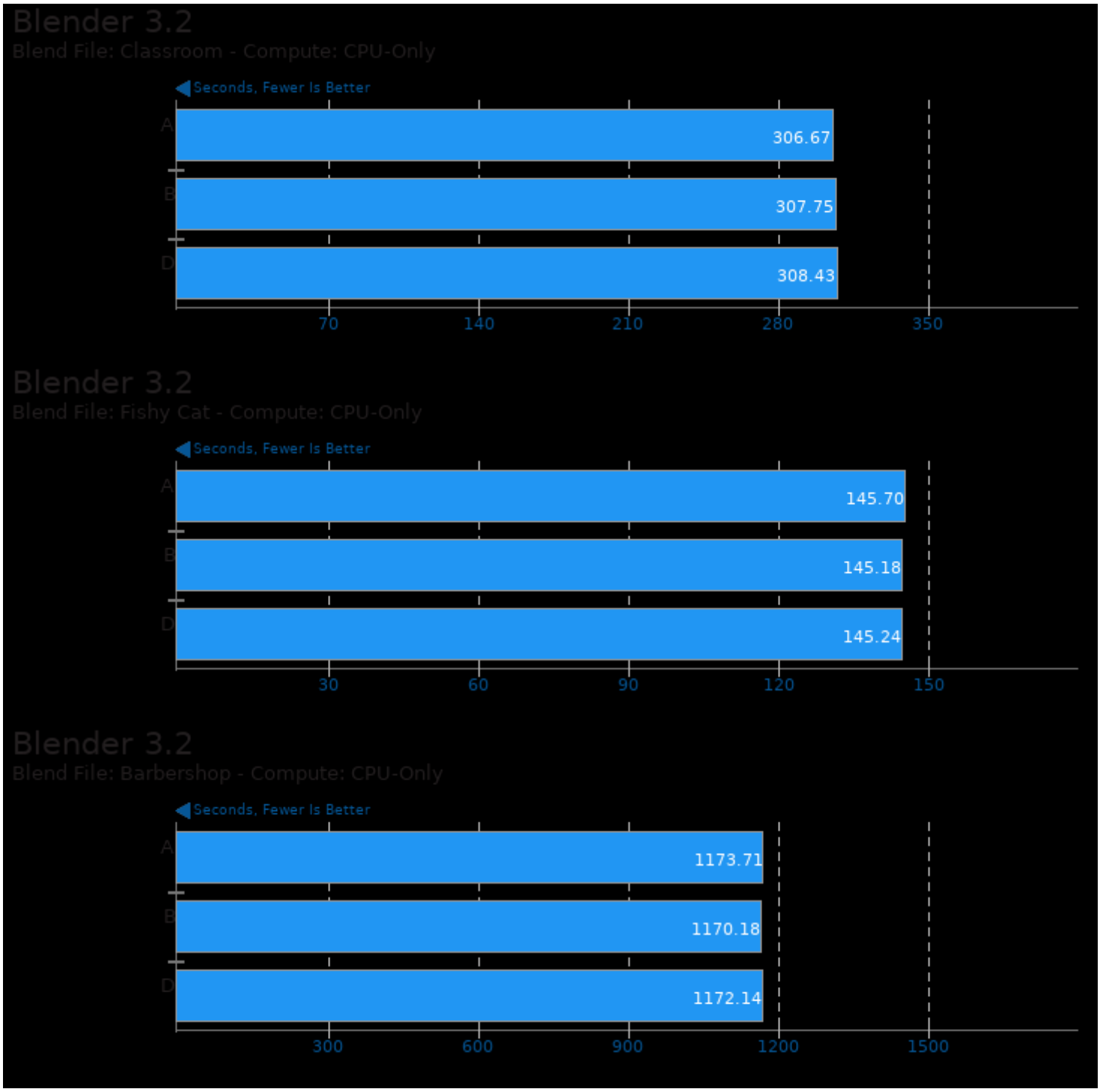
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lapparmor -latomic -lbsd -lc -lcrypt -ldl -ljpeg -lrt -lsctp -lz -pthread

Blender 3.2

Blend File: BMW27 - Compute: CPU-Only



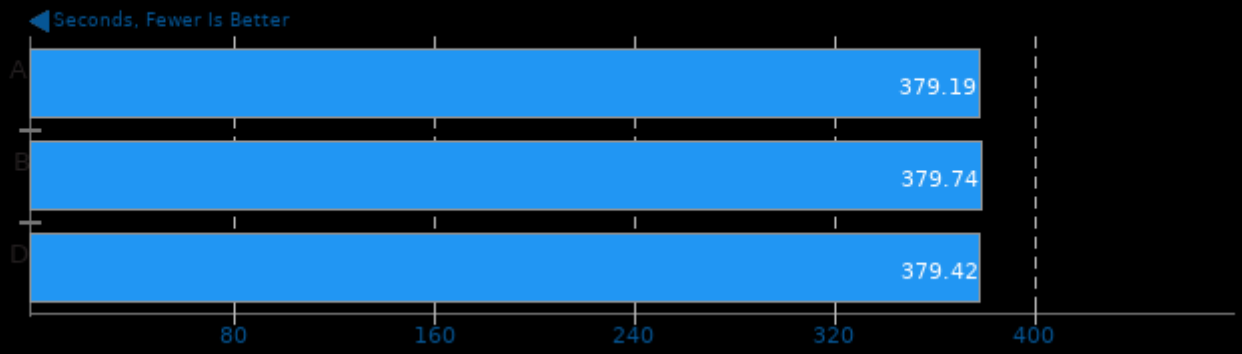
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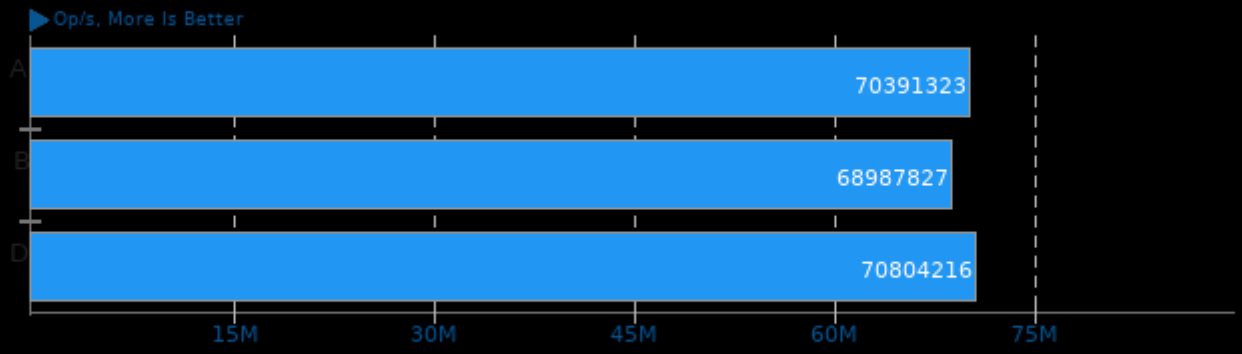
Blender 3.2

Blend File: Pabellon Barcelona - Compute: CPU-Only



Facebook RocksDB 7.0.1

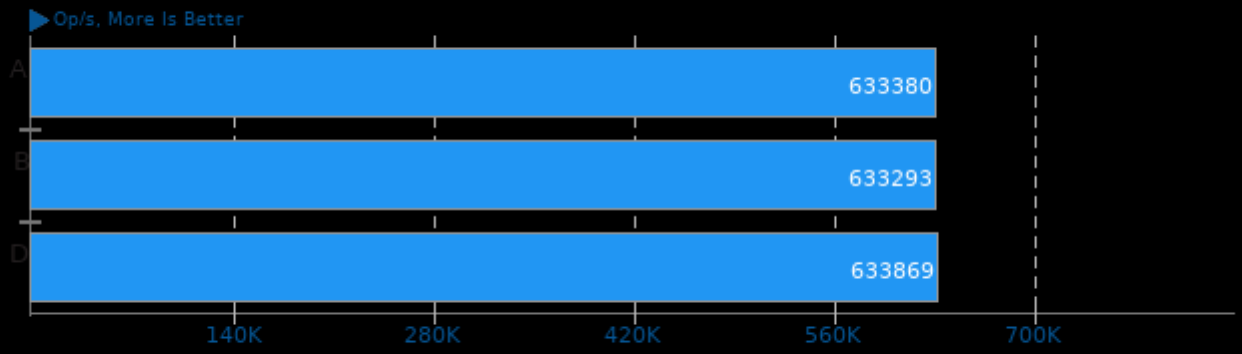
Test: Random Read



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

Facebook RocksDB 7.0.1

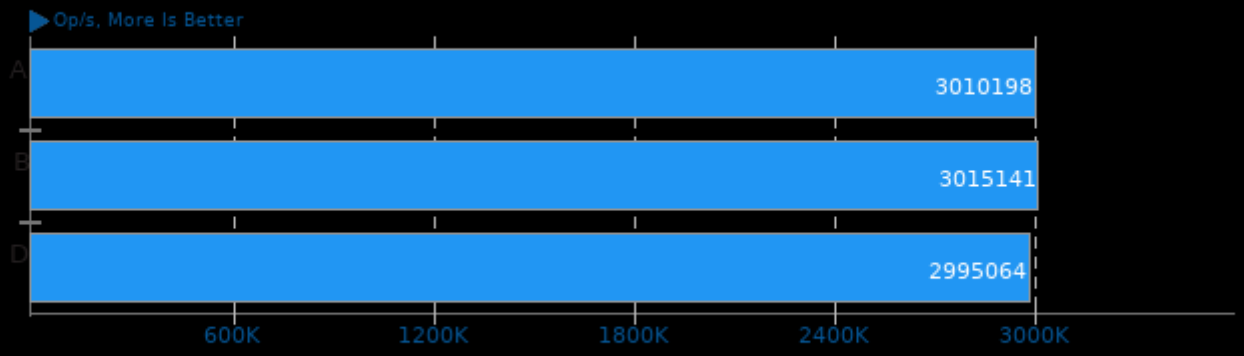
Test: Update Random



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

Facebook RocksDB 7.0.1

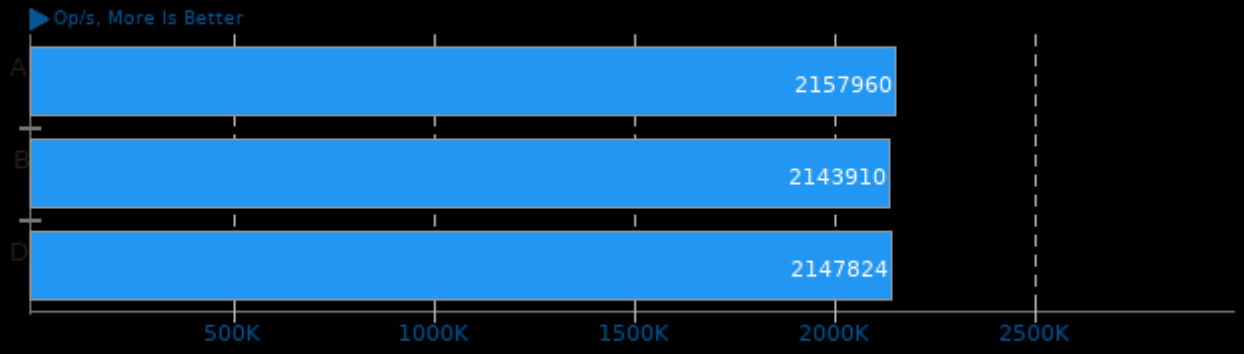
Test: Read While Writing



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

Facebook RocksDB 7.0.1

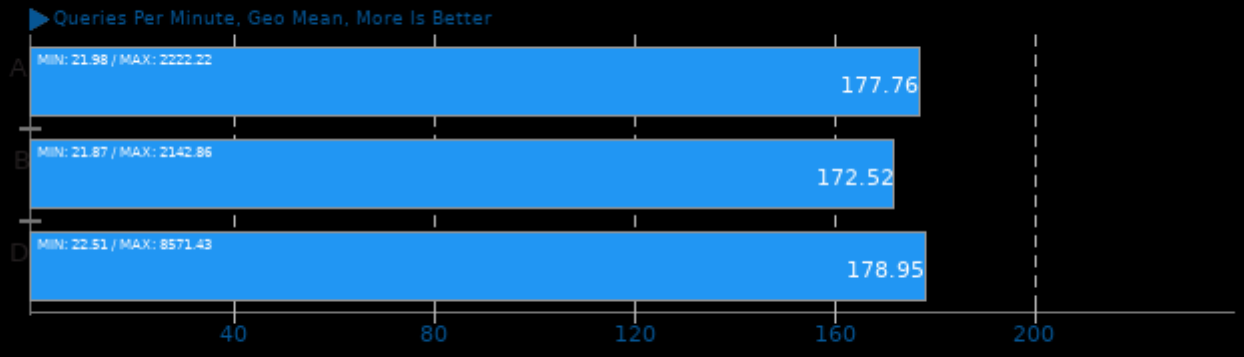
Test: Read Random Write Random



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

ClickHouse

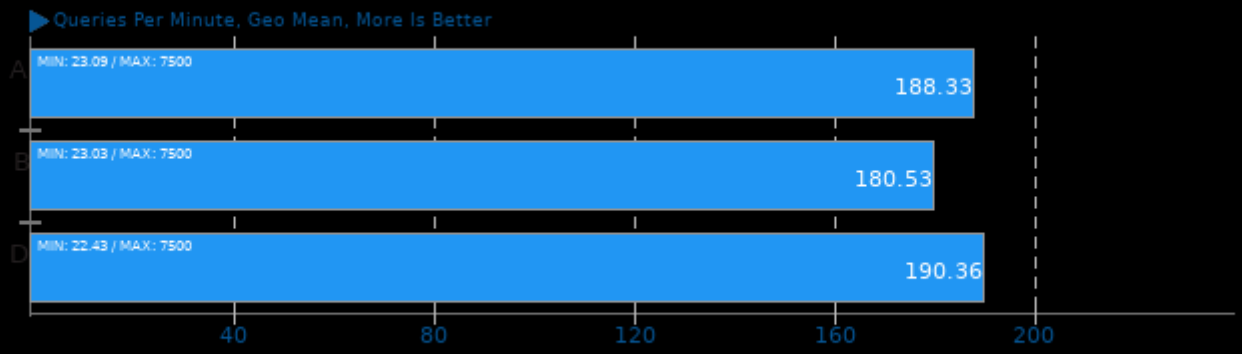
100M Rows Web Analytics Dataset, First Run / Cold Cache



1. ClickHouse server version 22.7.1.687 (official build).

ClickHouse

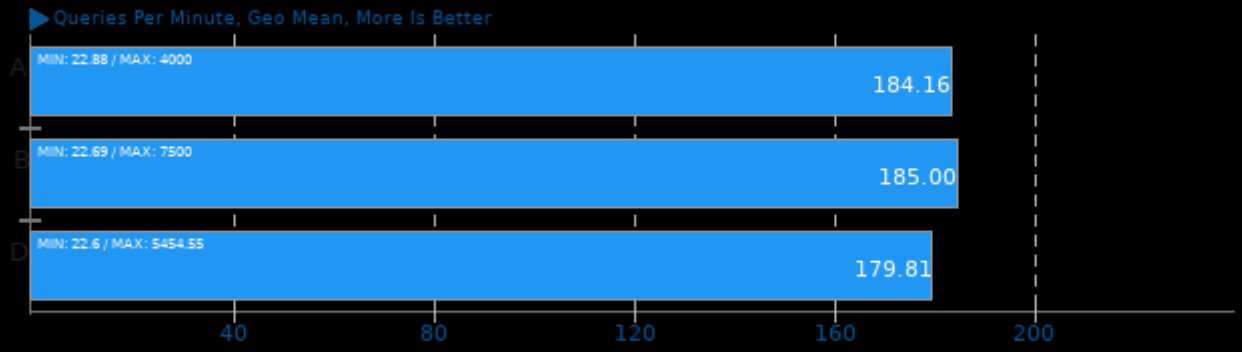
100M Rows Web Analytics Dataset, Second Run



1. ClickHouse server version 22.7.1.687 (official build).

ClickHouse

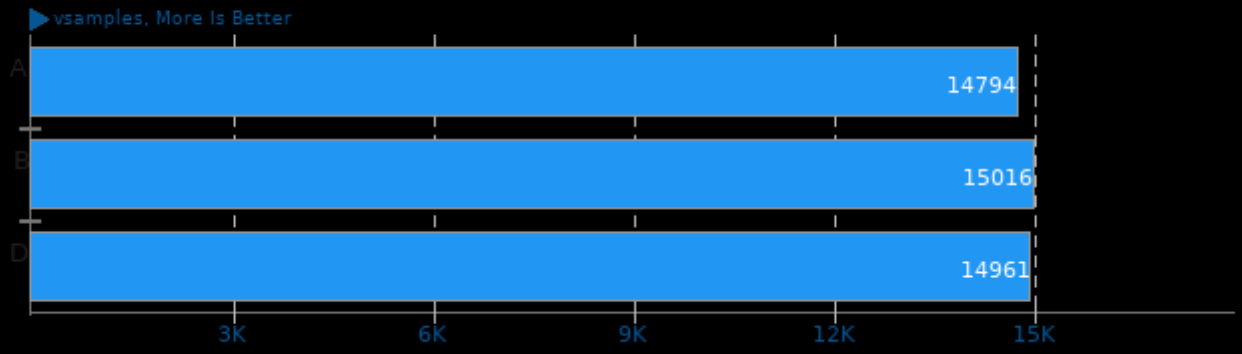
100M Rows Web Analytics Dataset, Third Run



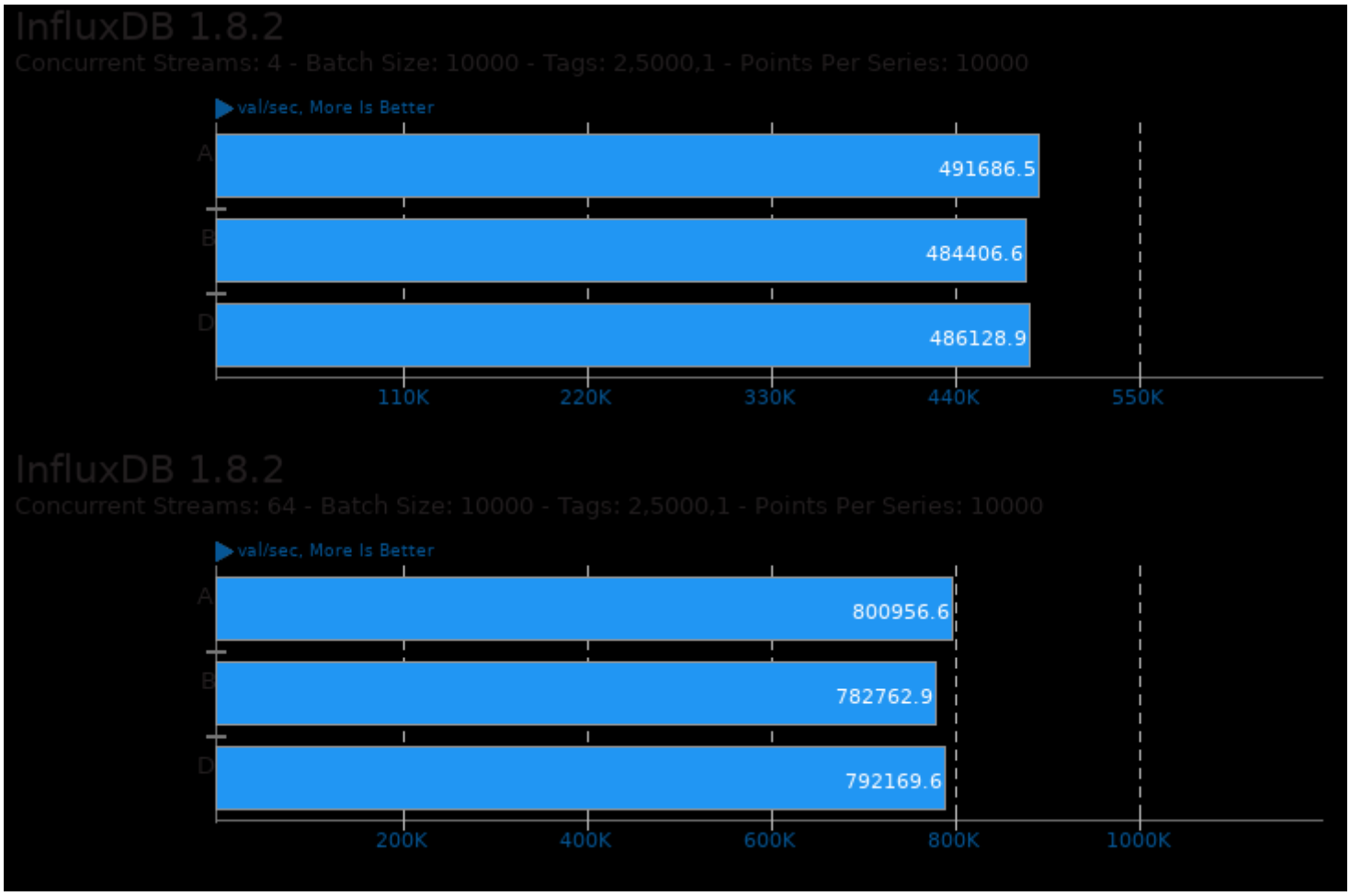
1. ClickHouse server version 22.7.1.687 (official build).

Chaos Group V-RAY 5.02

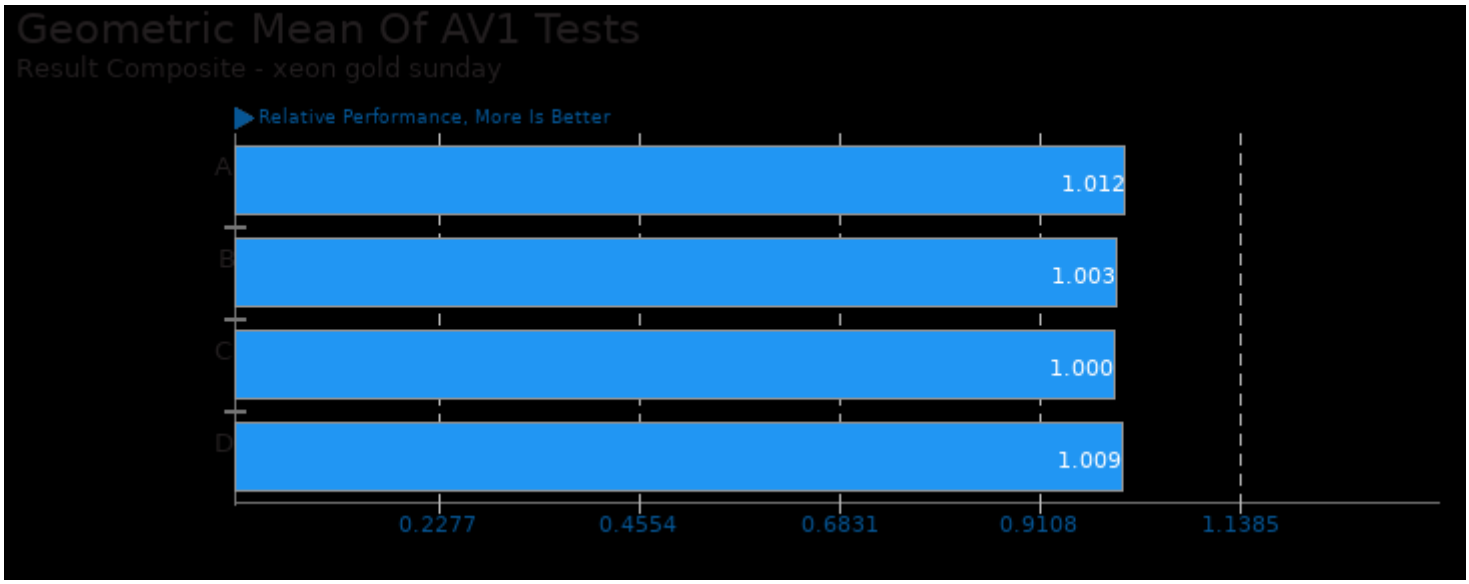
Mode: CPU



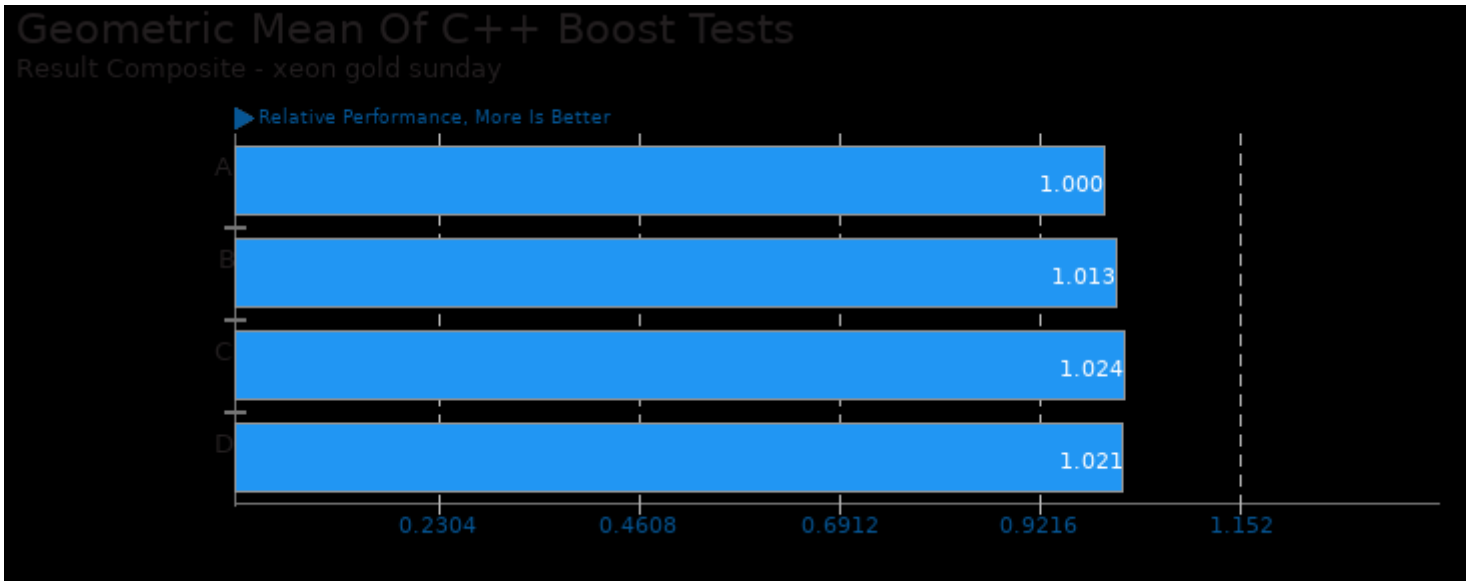
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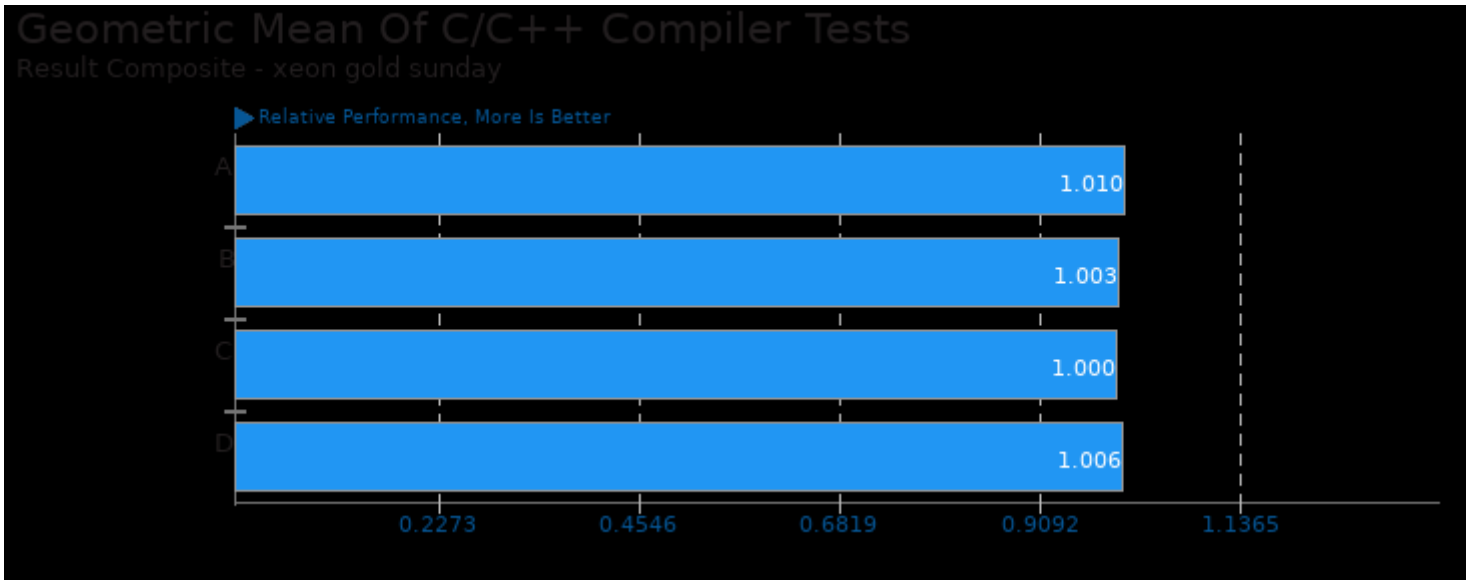
These geometric means are based upon test groupings / test suites for this result file.



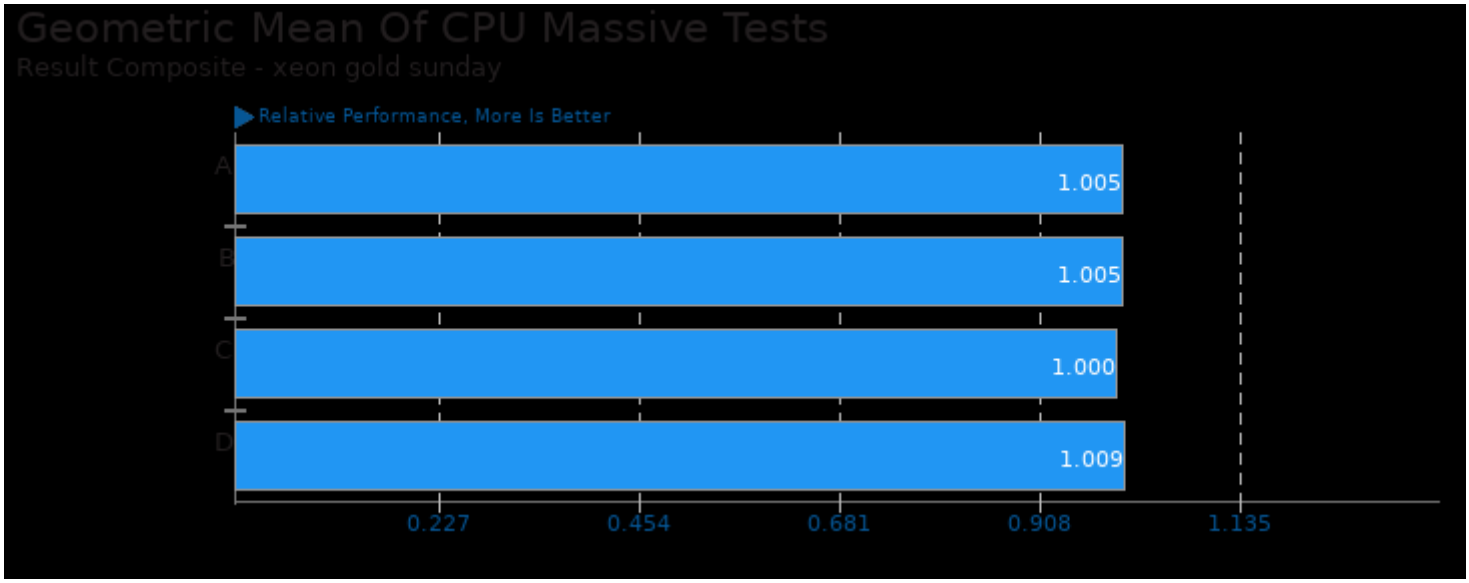
Geometric mean based upon tests: pts/aom-av1, pts/svt-av1 and pts/avifenc



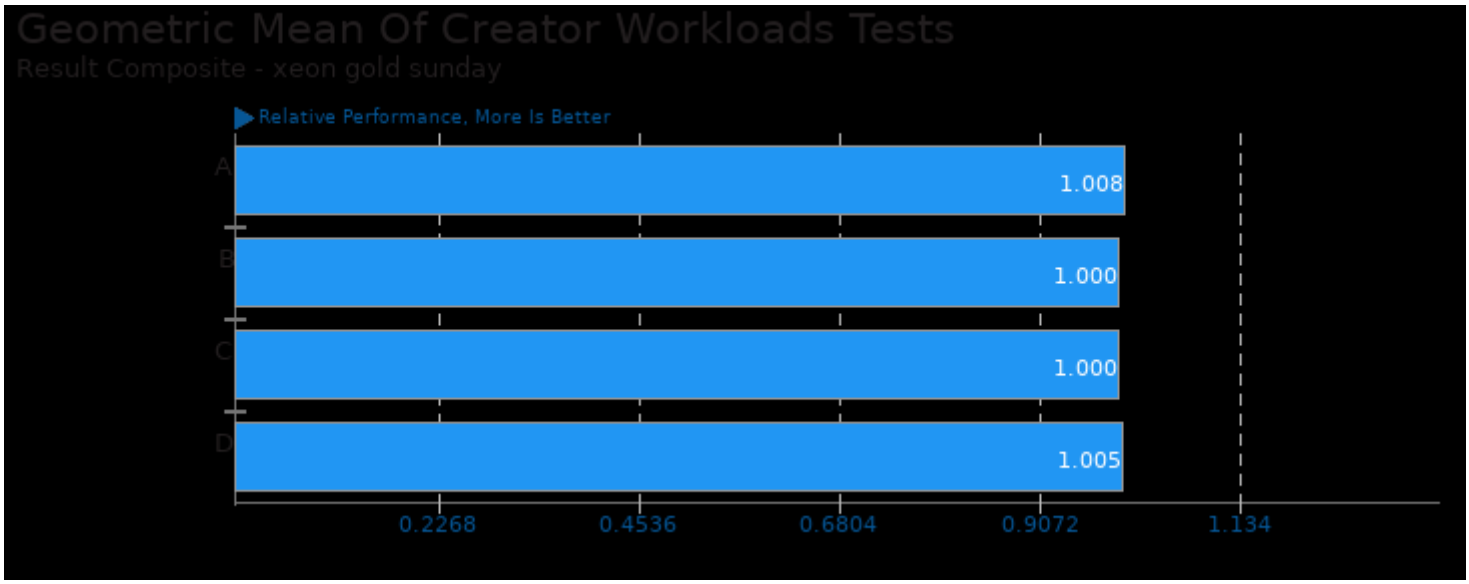
Geometric mean based upon tests: pts/chia-vdf and pts/build-gem5



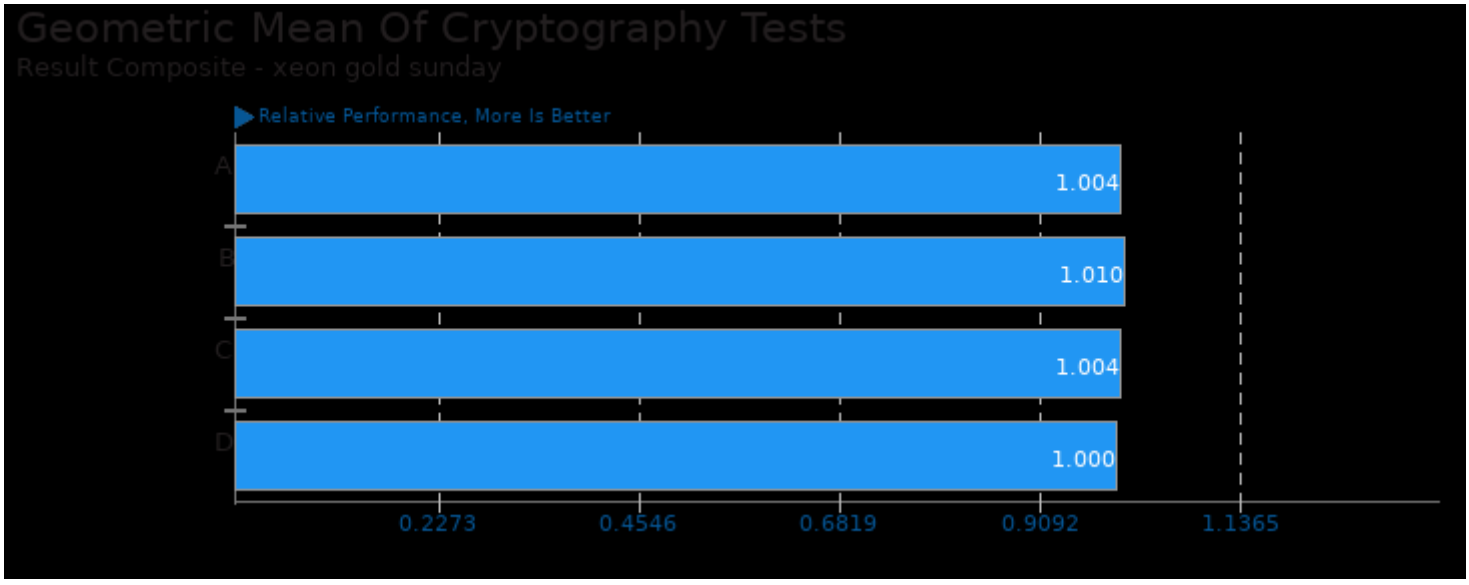
Geometric mean based upon tests: pts/stockfish, pts/compress-7zip, pts/x264, pts/aom-av1, pts/svt-av1, pts/svt-vp9, pts/gromacs, pts/build-mplayer, pts/tachyon and pts/nettle



Geometric mean based upon tests: pts/build-linux-kernel, pts/compress-7zip, pts/compress-pbzip2, pts/svt-av1, pts/svt-hevc, pts/svt-vp9, pts/x264, pts/glibc-bench, pts/onednn, pts/stockfish, pts/stress-ng, pts/tachyon, pts/v-ray, pts/blender and pts/renaissance

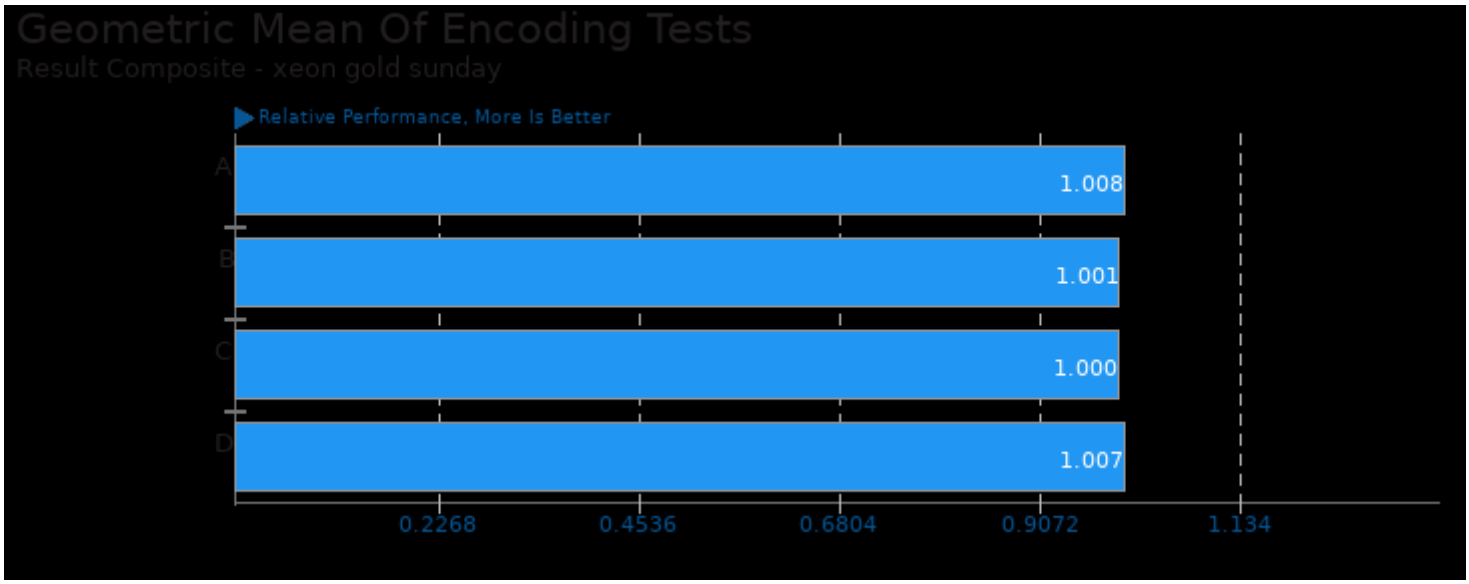


Geometric mean based upon tests: pts/ospray, pts/ospray-studio, pts/tachyon, pts/blender, pts/v-ray, pts/svt-vp9, pts/svt-hevc, pts/x264, pts/aom-av1, pts/svt-av1, pts/avifenc, pts/webp2, pts/onednn, pts/etcpak and pts/draco

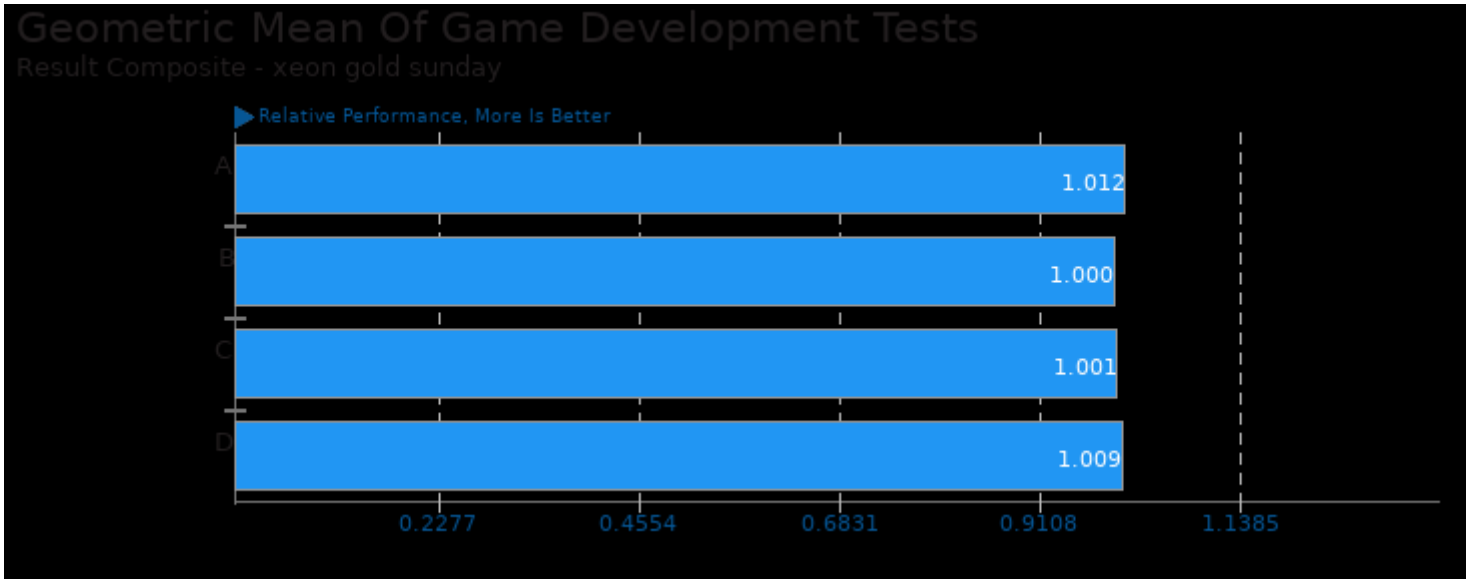


Geometric mean based upon tests: pts/nettle and pts/chia-vdf

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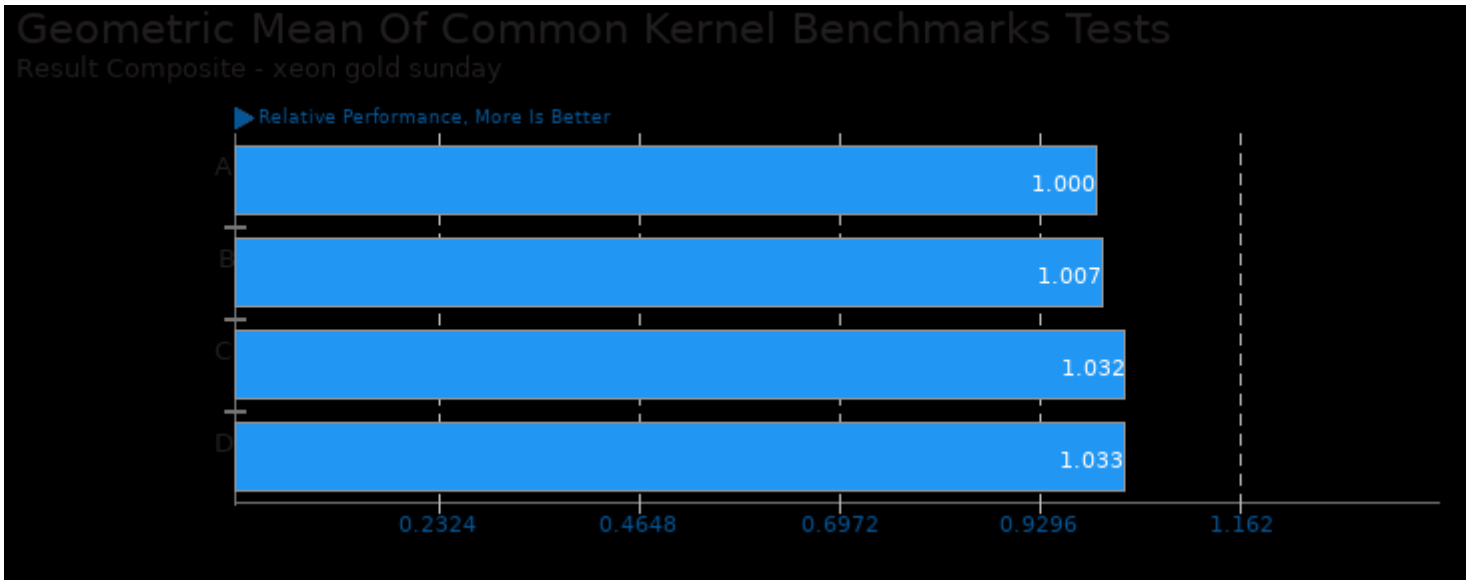


Geometric mean based upon tests: pts/svt-vp9, pts/svt-hevc, pts/x264, pts/aom-av1, pts/svt-av1 and pts/avifenc

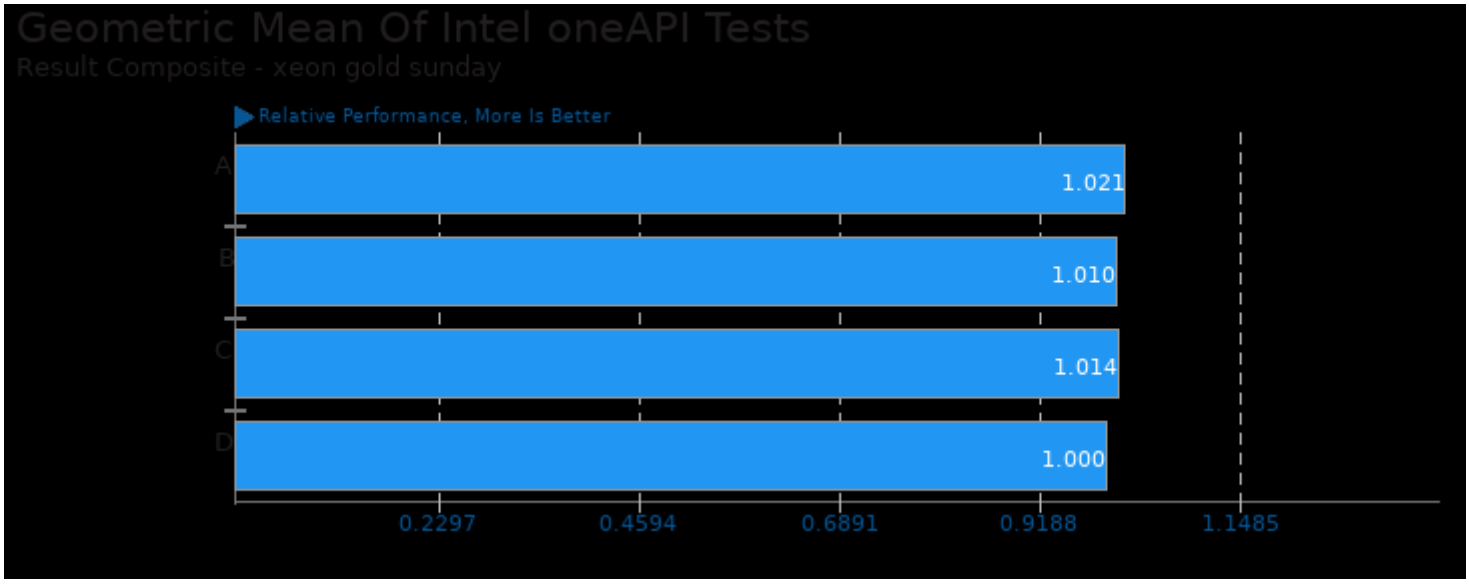


Geometric mean based upon tests: pts/etcpak, pts/draco and pts/blender

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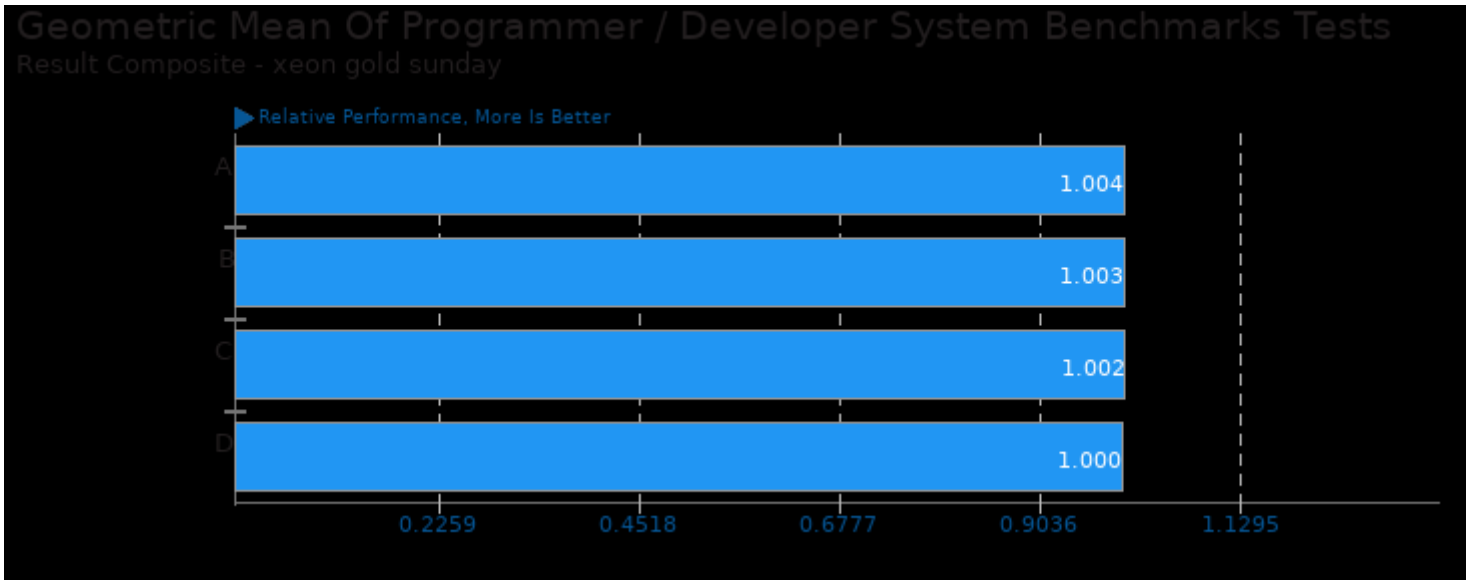


Geometric mean based upon tests: pts/perf-bench, pts/stress-ng and pts/rocksdb

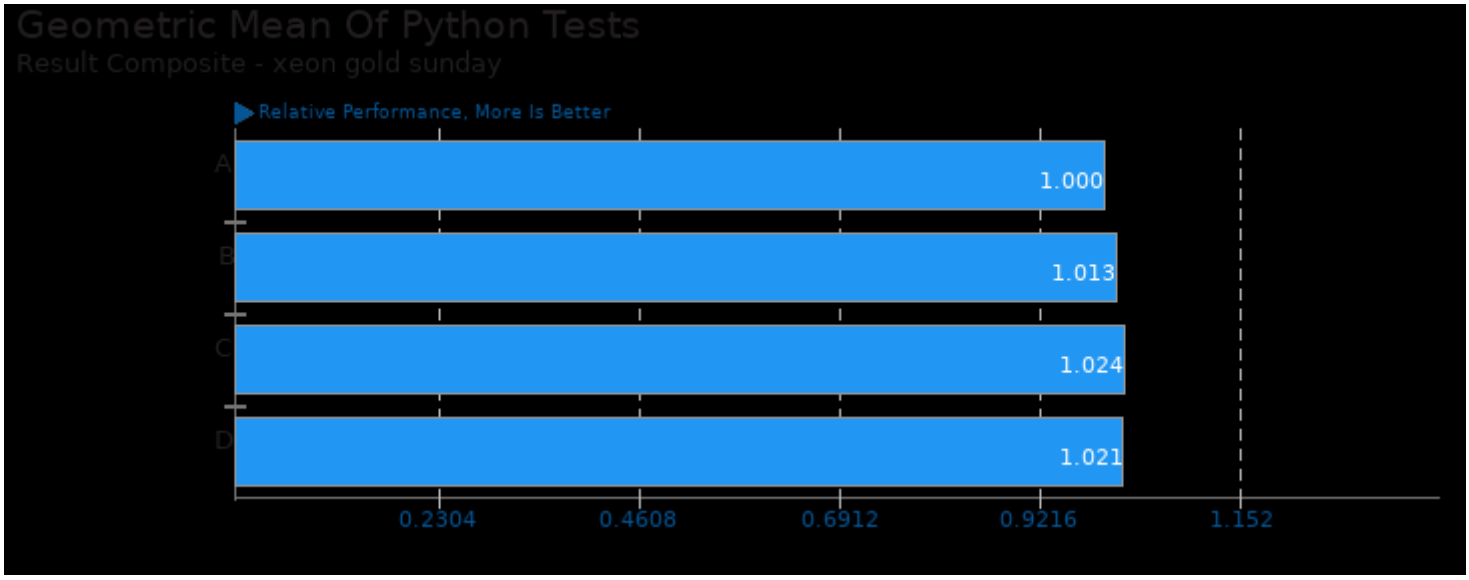


Geometric mean based upon tests: pts/onednn, pts/ospray and pts/ospray-studio

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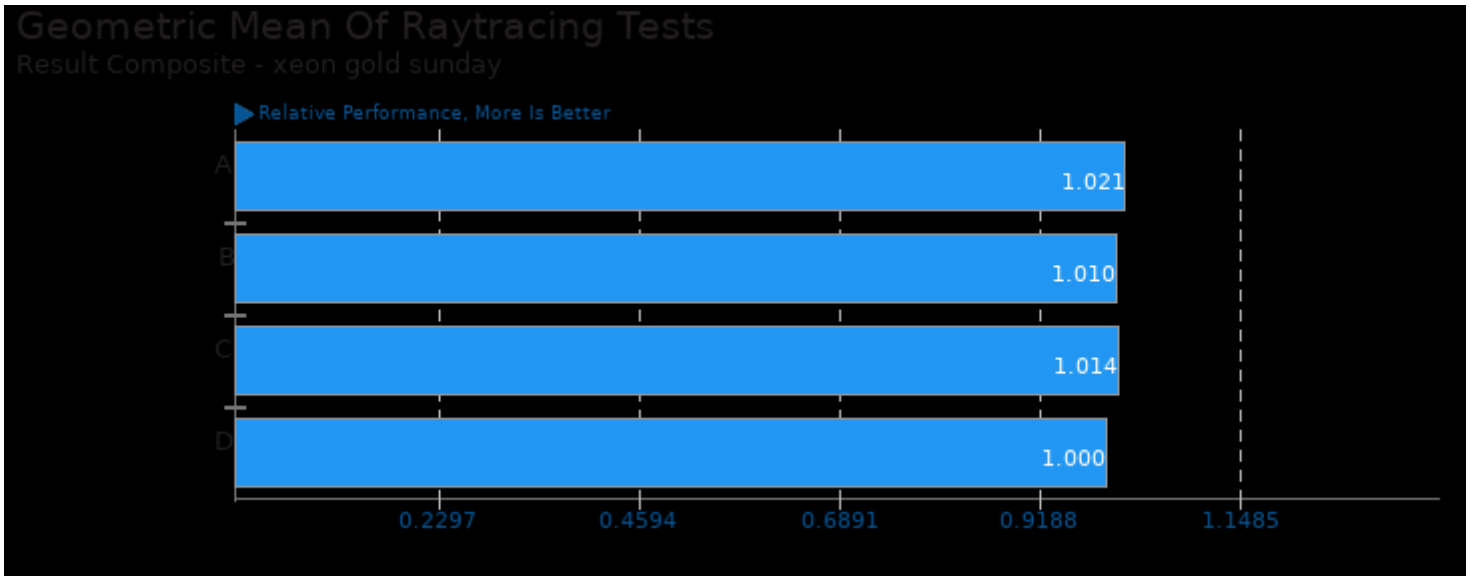


Geometric mean based upon tests: pts/simdjson, pts/build-linux-kernel, pts/build-mplayer and pts/build-gem5

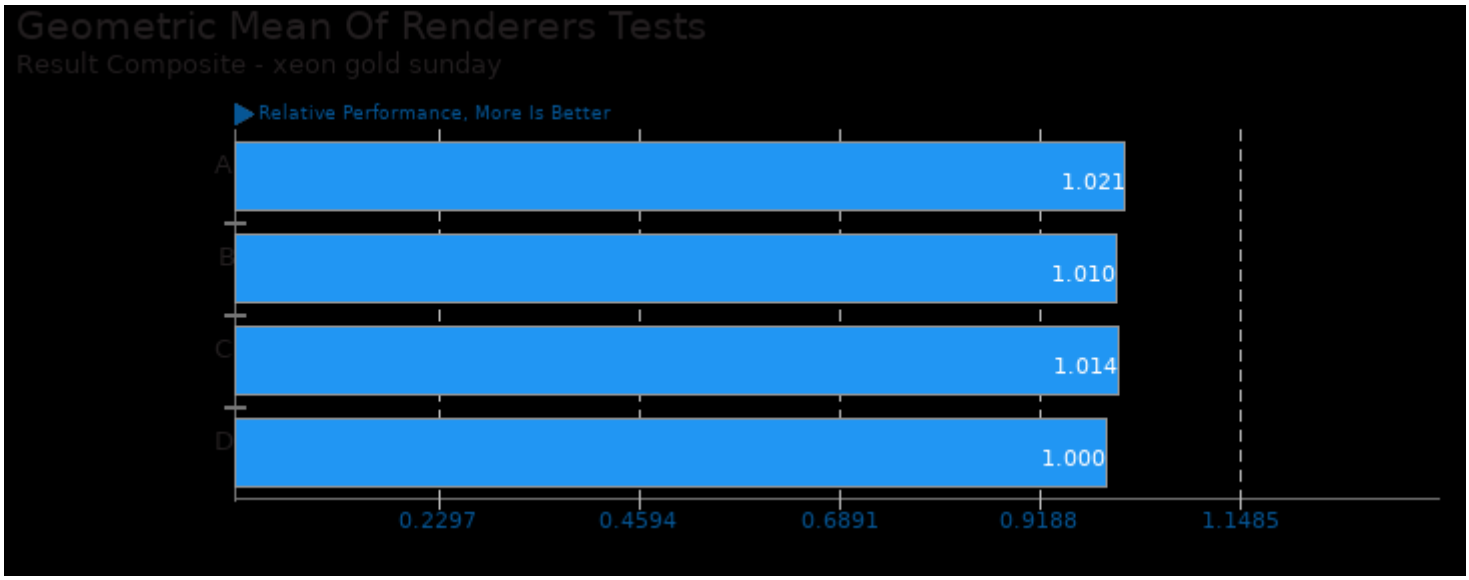


Geometric mean based upon tests: pts/chia-vdf and pts/build-gem5

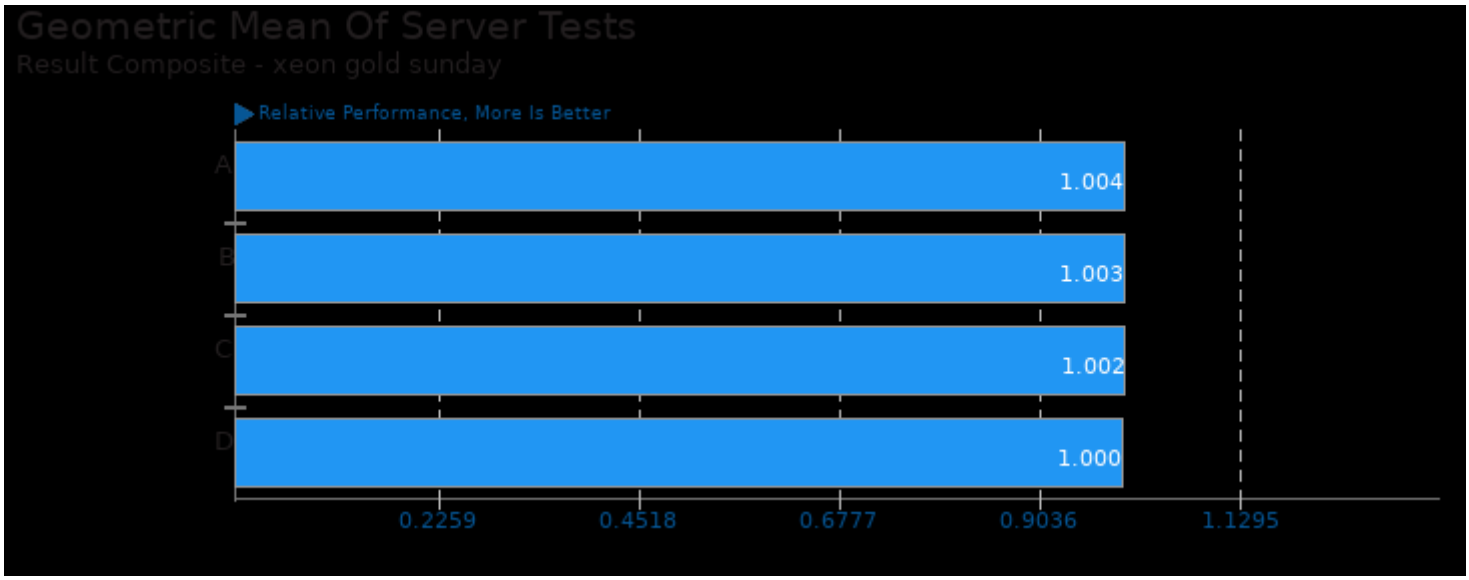
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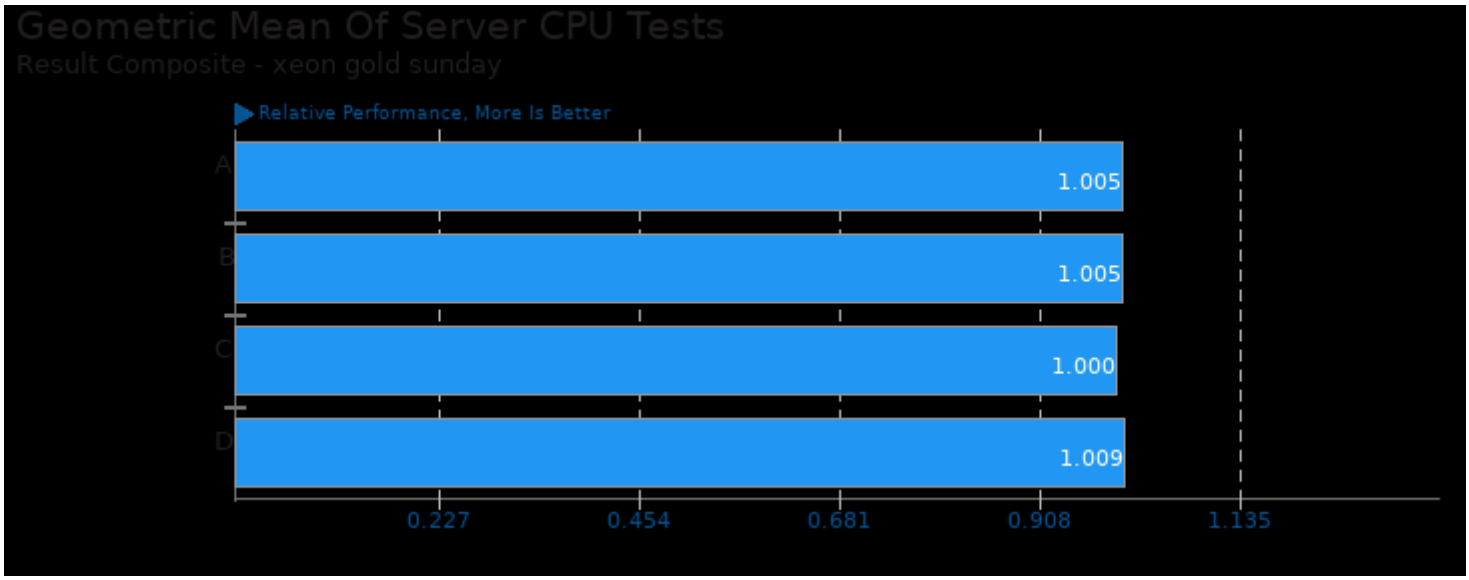
Geometric mean based upon tests: pts/ospray, pts/ospray-studio and pts/tachyon



Geometric mean based upon tests: pts/ospray, pts/ospray-studio, pts/tachyon, pts/blender and pts/v-ray

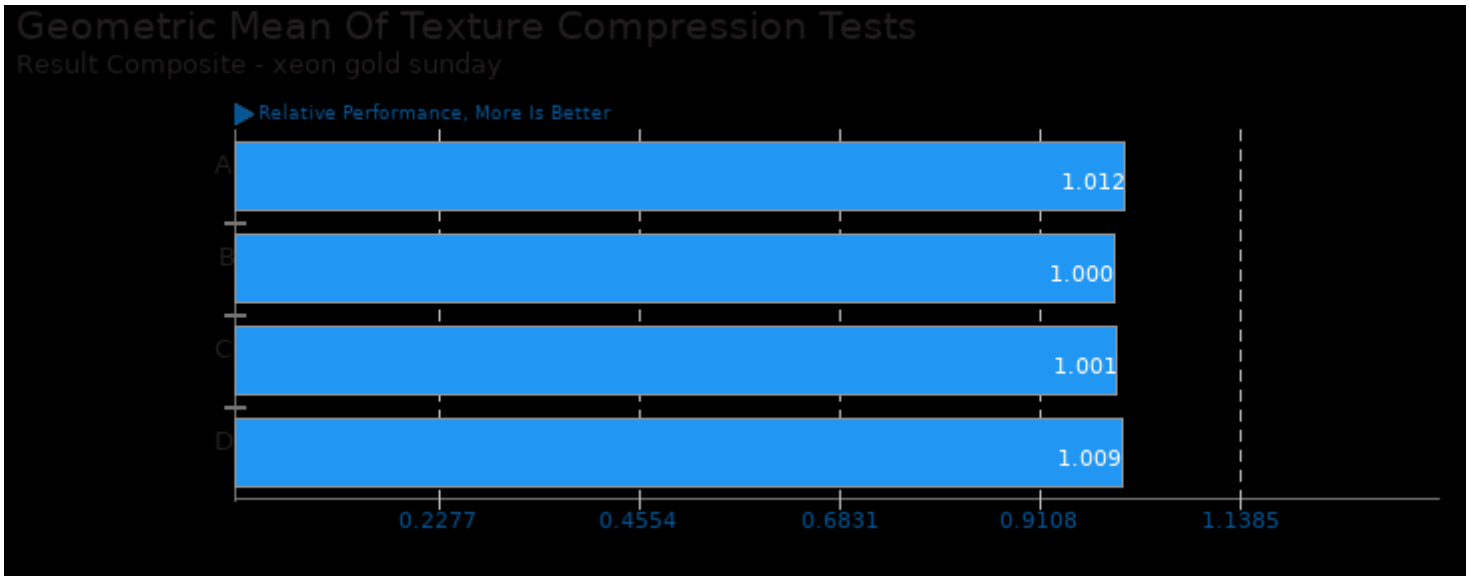


Geometric mean based upon tests: pts/rocksdb, pts/simdjson, pts/influxdb and pts/clickhouse

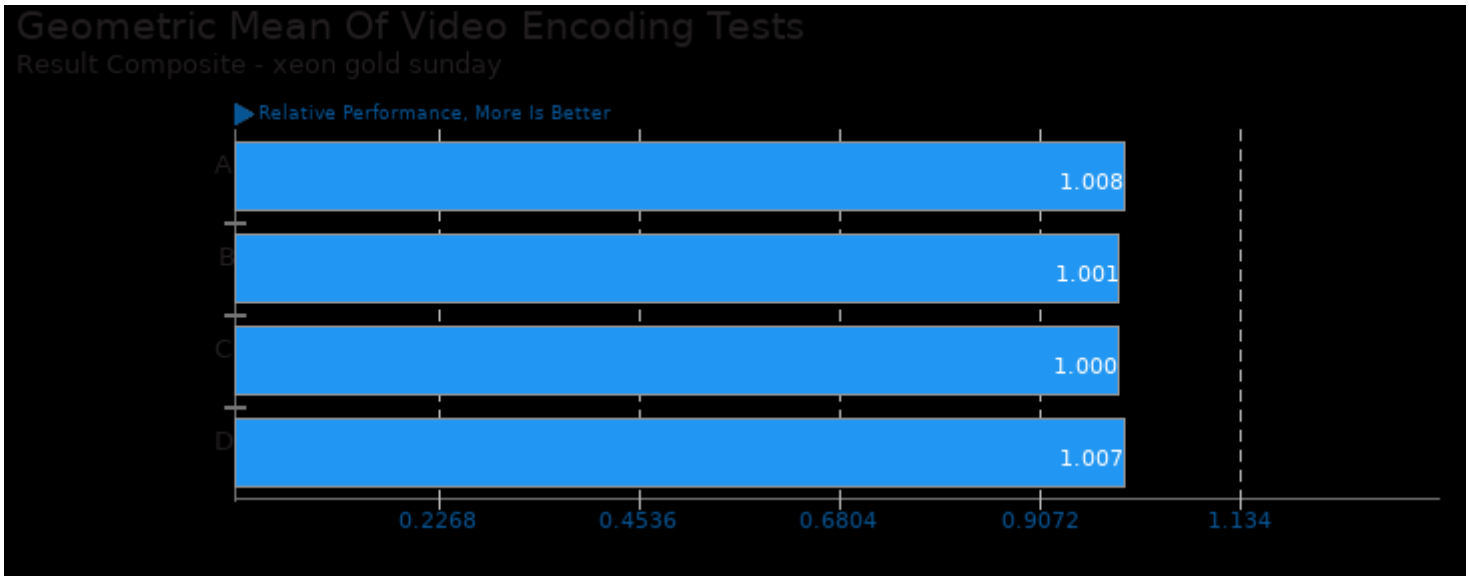


Geometric mean based upon tests: pts/renaissance, pts/onednn, pts/svt-av1, pts/svt-hevc, pts/svt-vp9, pts/x264, pts/compress-7zip, pts/stockfish, pts/build-linux-kernel, pts/glibc-bench, pts/stress-ng and pts/blender

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Geometric mean based upon tests: pts/etcpak and pts/draco



Geometric mean based upon tests: pts/svt-vp9, pts/svt-hevc, pts/x264, pts/aom-av1, pts/svt-av1 and pts/avifenc

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