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Xeon Platinum 8280 2P September

2 x Intel Xeon Platinum 8280 testing with a GIGABYTE MD61-SC2-00 v01000100 (T15 BIOS) and llvmpipe on Ubuntu 21.04 via the Phoronix Test Suite.

Automated Executive Summary

1 had the most wins, coming in first place for 38% of the tests.

Based on the geometric mean of all complete results, the fastest (2) was 1.015x the speed of the slowest (4). 3 was 0.999x the speed of 2, 5 was 0.996x the speed of 3, 1 was 0.999x the speed of 5, 4 was 0.99x the speed of 1.

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

YafaRay (Total Time For Sample Scene) at 3.138x
NCNN (Target: CPU - Model: yolov4-tiny) at 1.587x
NCNN (Target: CPU - Model: mobilenet) at 1.585x
Tachyon (Total Time) at 1.414x
Zstd Compression (Compression Level: 3 - Compression Speed) at 1.336x
NCNN (Target: CPU - Model: shufflenet-v2) at 1.297x
Zstd Compression (Compression Level: 8 - Compression Speed) at 1.294x
Zstd Compression (Compression Level: 19, Long Mode - Compression Speed) at 1.223x
Apache HTTP Server (Concurrent Requests: 200) at 1.211x

Renaissance (Test: Savina Reactors.IO) at 1.206x.

Test Systems:

1

2

3

4

5

Processor: 2 x Intel Xeon Platinum 8280 @ 4.00GHz (56 Cores / 112 Threads), Motherboard: GIGABYTE MD61-SC2-00 v01000100 (T15 BIOS), Chipset: Intel Sky Lake-E DMI3 Registers, Memory: 378GB, Disk: 280GB INTEL SSDPED1D280GA, Graphics: llvmpipe, Monitor: VE228, Network: 2 x Intel X722 for 1GbE + 2 x QLogic FastLinQ QL41000 10/25/40/50GbE

OS: Ubuntu 21.04, Kernel: 5.11.0-16-generic (x86_64), Desktop: GNOME Shell 3.38.4, Display Server: X Server + Wayland, OpenGL: 4.5 Mesa 21.0.1 (LLVM 11.0.1 256 bits), 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-gDeRY6/gcc-10-10.3.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-10-gDeRY6/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_pstate powersave - CPU Microcode: 0x5003003
Java Notes: OpenJDK Runtime Environment (build 11.0.11+9-Ubuntu-0ubuntu2)
Python Notes: Python 3.9.5
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

	1	2	3	4	5
ECP-CANDLE - P3B2 (sec)	**1656**	1702		**1761**	
Normalized	100%	97.29%		94.04%	
BRL-CAD - V.P.M (VGR Performance Metric)		354639		**371894**	
Normalized		95.36%		100%	

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OpenVKL - vklBenchmark ISPC (Items / Sec)	177	175	**178**	**172**	
Normalized	99.44%	98.31%	100%	96.63%	
ECP-CANDLE - P3B1 (sec)	**1033**	**1012**		1021	
Normalized	97.99%	100%		99.14%	
OpenVKL - v.S (Items / Sec)	**72**	**76**	**76**	**72**	
Normalized	94.74%	100%	100%	94.74%	
Timed GCC Compilation - Time To Compile (sec)	969.967	**969.855**	**978.371**	977.179	
Normalized	99.99%	100%	99.13%	99.25%	
Facebook RocksDB - Seq Fill (Op/s)	**181168**	180906		**180063**	
Normalized	100%	99.86%		99.39%	
JPEG XL libjxl - PNG - 8 (MP/s)	**0.62**	0.61	0.61	**0.62**	**0.6**
Normalized	100%	98.39%	98.39%	100%	96.77%
Renaissance - A.U.C.T (ms)	**20468**	20740	20541	20570	**20820**
Normalized	100%	98.68%	99.64%	99.5%	98.31%
LeelaChessZero - Eigen	**3085**	3472	3294	3350	**3549**
Normalized	86.93%	97.83%	92.81%	94.39%	100%
LeelaChessZero - BLAS	**3274**	3483	3386	3494	**3755**
Normalized	87.19%	92.76%	90.17%	93.05%	100%
Apache Cassandra - Mixed 1:1 (Op/s)	**257618**	**255008**			
Normalized	100%	98.99%			
Quantum ESPRESSO - AUSURF112 (sec)	333.36	333.83	**332.83**	334.58	**341.4**
Normalized	99.84%	99.7%	100%	99.48%	97.49%
Renaissance - G.A.U.J.F (ms)	**6763**	6761	**6363**	6701	6591
Normalized	94.09%	94.11%	100%	94.96%	96.54%
Renaissance - ALS Movie Lens (ms)	15140	15090	**15194**	15135	**15006**
Normalized	99.12%	99.44%	98.76%	99.14%	100%
TNN - CPU - DenseNet (ms)	3946	**4029**	3969	**3904**	
Normalized	98.92%	96.89%	98.35%	100%	
Apache Cassandra - Reads	**330593**	**291269**	310827		
Normalized	100%	88.11%	94.02%		
Apache Cassandra - Mixed 1:3 (Op/s)	**274178**	**228873**			
Normalized	100%	83.48%			
srsRAN - 5.P.T.2.P.S.2.Q (UE Mb/s)	84.1	82.1	**84.8**	**78.8**	82.9
Normalized	99.17%	96.82%	100%	92.92%	97.76%
srsRAN - 5.P.T.2.P.S.2.Q (eNb Mb/s)	120.5	118.6	**121.4**	**114.3**	118.3
Normalized	99.26%	97.69%	100%	94.15%	97.45%
Renaissance - I.M.D.S (ms)	12353	**11897**	12224	12704	**12930**
Normalized	96.31%	100%	97.33%	93.65%	92.02%
Renaissance - Savina Reactors.IO (ms)	**13154**	15083	13975	**15864**	14414
Normalized	100%	87.22%	94.13%	82.92%	91.26%
C-Blosc - blosclz (MB/s)	9887	9918	9926	**9812**	**9938**
Normalized	99.48%	99.8%	99.87%	98.73%	100%

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NCNN - CPU - regnety_400m	69.25	73.85	69.87	71.35	
Normalized	100%	93.77%	99.11%	97.06%	
NCNN - CPU - squeezenet_ssd (ms)	37.76	42.67	39.52	38.99	
Normalized	100%	88.49%	95.55%	96.85%	
NCNN - CPU - yolov4-tiny (ms)	51.9	38.78	61.56	52.87	
Normalized	74.72%	100%	63%	73.35%	
NCNN - CPU - resnet50 (ms)	42.25	41.74	41.75	41.9	
Normalized	98.79%	100%	99.98%	99.62%	
NCNN - CPU - alexnet (ms)	15.7	13.82	15.33	16.46	
Normalized	88.03%	100%	90.15%	83.96%	
NCNN - CPU - resnet18 (ms)	22.04	21.74	20.01	21.94	
Normalized	90.79%	92.04%	100%	91.2%	
NCNN - CPU - vgg16 (ms)	48.17	57.07	52.25	50.12	
Normalized	100%	84.41%	92.19%	96.11%	
NCNN - CPU - googlenet (ms)	37.14	37.18	35.7	35.67	
Normalized	96.04%	95.94%	99.92%	100%	
NCNN - CPU - blazeface (ms)	11.25	11.12	10.69	11.64	
Normalized	95.02%	96.13%	100%	91.84%	
NCNN - CPU - efficientnet-b0	24.19	25.5	25.3	25.05	
Normalized	100%	94.86%	95.61%	96.57%	
NCNN - CPU - mnasnet (ms)	18.89	22.74	19.11	20.38	
Normalized	100%	83.07%	98.85%	92.69%	
NCNN - CPU - shufflenet-v2 (ms)	21.06	26.14	20.15	20.23	
Normalized	95.68%	77.08%	100%	99.6%	
NCNN - CPU-v3-v3 - mobilenet-v3 (ms)	20.2	21.12	20.95	20.41	
Normalized	100%	95.64%	96.42%	98.97%	
NCNN - CPU-v2-v2 - mobilenet-v2 (ms)	20.05	22.1	21.28	20.43	
Normalized	100%	90.72%	94.22%	98.14%	
NCNN - CPU - mobilenet (ms)	65.63	43.08	68.28	54.62	
Normalized	65.64%	100%	63.09%	78.87%	
OpenSSL - SHA256 (byte/s)	15286754540	15241314900	15233730600	15263723050	
Normalized	100%	99.7%	99.65%	99.85%	
Renaissance - A.S.P (ms)	4991	4798	4879	5158	4767
Normalized	95.51%	99.36%	97.71%	92.42%	100%
YafaRay - T.T.F.S.S (sec)	136.316	97.137	99.03	304.771	
Normalized	71.26%	100%	98.09%	31.87%	
JPEG XL libjxl - PNG - 7 (MP/s)	7.28	7.21	7.21	7.29	7.21
Normalized	99.86%	98.9%	98.9%	100%	98.9%
Apache Cassandra - Writes	211550	250526	251493		
Normalized	84.12%	99.62%	100%		
SVT-AV1 - Preset 4 - Bosphorus 4K (FPS)	1.323	1.325	1.343	1.328	
Normalized	98.51%	98.66%	100%	98.88%	
ONNX Runtime - bertsquad-10 - OpenMP CPU (Inferences/min)	446	467		492	
Normalized	90.65%	94.92%		100%	
ONNX Runtime - yolov4 - OpenMP CPU (Inferences/min)	300	300		298	
Normalized	100%	100%		99.33%	

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ONNX Runtime - fcn-resnet101-11 - OpenMP CPU	235	229		250
Normalized	94%	91.6%		100%
ONNX Runtime - shufflenet-v2-10 - OpenMP CPU (Inferences/min)	7153	7153		7101
Normalized	100%	100%		99.27%
ONNX Runtime - super-resolution-10 - OpenMP CPU (Inferences/min)	6678	5986		6134
Normalized	100%	89.64%		91.85%
PostgreSQL pgbench - 100 - 1 - Read Only - Average Latency	0.053	0.056	0.054	0.055
Normalized	100%	94.64%	98.15%	96.36%
PostgreSQL pgbench - 100 - 1 - Read Only (TPS)	18862	17922	18676	18260
Normalized	100%	95.02%	99.01%	96.81%
PostgreSQL pgbench - 100 - 250 - Read Write - Average Latency	4.717	4.717	4.742	4.723
Normalized	100%	100%	99.47%	99.87%
PostgreSQL pgbench - 100 - 250 - Read Write (TPS)	53023	53030	52745	52968
Normalized	99.99%	100%	99.46%	99.88%
PostgreSQL pgbench - 100 - 250 - Read Only - Average Latency	0.398	0.387	0.385	0.392
Normalized	96.73%	99.48%	100%	98.21%
PostgreSQL pgbench - 100 - 250 - Read Only (TPS)	629258	645578	649011	638016
Normalized	96.96%	99.47%	100%	98.31%
PostgreSQL pgbench - 100 - 100 - Read Write - Average Latency	1.735	1.762	1.766	1.747
Normalized	100%	98.47%	98.24%	99.31%
PostgreSQL pgbench - 100 - 100 - Read Write (TPS)	57665	56781	56648	57246
Normalized	100%	98.47%	98.24%	99.27%
PostgreSQL pgbench - 100 - 50 - Read Write - Average Latency	0.94	0.938	0.94	0.945
Normalized	99.79%	100%	99.79%	99.26%
PostgreSQL pgbench - 100 - 50 - Read Write (TPS)	53188	53289	53168	52934
Normalized	99.81%	100%	99.77%	99.33%
PostgreSQL pgbench - 100 - 100 - Read Only - Average Latency	0.124	0.125	0.125	0.125
Normalized	100%	99.2%	99.2%	99.2%
PostgreSQL pgbench - 100 - 100 - Read Only (TPS)	809900	799951	798485	800706
Normalized	100%	98.77%	98.59%	98.86%
PostgreSQL pgbench - 100 - 1 - Read Write - Average Latency	0.384	0.4	0.39	0.4
Normalized	100%	96%	98.46%	96%

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PostgreSQL pgbench - 100 - 1 - Read Write (TPS)	2606	2499	2565	2499
Normalized	100%	95.89%	98.43%	95.89%
PostgreSQL pgbench - 100 - 50 - Read Only - Average Latency	0.08	0.079	0.08	0.081
Normalized	98.75%	100%	98.75%	97.53%
PostgreSQL pgbench - 100 - 50 - Read Only (TPS)	628681	631134	628980	618207
Normalized	99.61%	100%	99.66%	97.95%
Mobile Neural Network - inception-v3 (ms)	28.735	28.747	28.765	29.176
Normalized	100%	99.96%	99.9%	98.49%
Mobile Neural Network - mobilenet-v1-1.0 (ms)	3.071	3.149	3.076	3.056
Normalized	99.51%	97.05%	99.35%	100%
Mobile Neural Network - MobileNetV2_224 (ms)	3.939	4.313	4.397	4.002
Normalized	100%	91.33%	89.58%	98.43%
Mobile Neural Network - SqueezeNetV1.0 (ms)	7.168	7.159	7.547	7.865
Normalized	99.87%	100%	94.86%	91.02%
Mobile Neural Network - resnet-v2-50 (ms)	26.332	25.782	25.682	28.837
Normalized	97.53%	99.61%	100%	89.06%
Mobile Neural Network - squeezenetv1.1 (ms)	5.079	5.121	5.841	5.253
Normalized	100%	99.18%	86.95%	96.69%
Mobile Neural Network - mobilenetV3 (ms)	2.8	2.919	3.036	2.919
Normalized	100%	95.92%	92.23%	95.92%
KeyDB (Ops/sec)	463151	471878	437480	451404
Normalized	98.15%	100%	92.71%	95.66%
PostgreSQL pgbench - 1 - 250 - Read Write - Average Latency	345.054	353.212	349.13	320.859
Normalized	92.99%	90.84%	91.9%	100%
PostgreSQL pgbench - 1 - 250 - Read Write (TPS)	725	708	716	780
Normalized	92.95%	90.77%	91.79%	100%
PostgreSQL pgbench - 1 - 100 - Read Write - Average Latency	81.463	78.123	79.9	80.584
Normalized	95.9%	100%	97.78%	96.95%
PostgreSQL pgbench - 1 - 100 - Read Write (TPS)	1228	1280	1252	1241
Normalized	95.94%	100%	97.81%	96.95%
PostgreSQL pgbench - 1 - 50 - Read Write - Average Latency	25.884	25.439	26.043	25.566
Normalized	98.28%	100%	97.68%	99.5%
PostgreSQL pgbench - 1 - 50 - Read Write (TPS)	1932	1966	1920	1956
Normalized	98.27%	100%	97.66%	99.49%

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PostgreSQL pgbench - 1 - 1 - Read Write - Average Latency	0.338	0.343	0.336	0.341	
Normalized	99.41%	97.96%	100%	98.53%	
PostgreSQL pgbench - 1 - 1 - Read Write (TPS)	2955	2911	2973	2930	
Normalized	99.39%	97.91%	100%	98.55%	
PostgreSQL pgbench - 1 - 250 - Read Only - Average Latency	0.335	0.337	0.336	0.332	
Normalized	99.1%	98.52%	98.81%	100%	
PostgreSQL pgbench - 1 - 250 - Read Only (TPS)	747024	742962	745025	753158	
Normalized	99.19%	98.65%	98.92%	100%	
PostgreSQL pgbench - 1 - 1 - Read Only - Average Latency	0.046	0.047	0.047	0.048	
Normalized	100%	97.87%	97.87%	95.83%	
PostgreSQL pgbench - 1 - 1 - Read Only (TPS)	21570	21089	21183	20629	
Normalized	100%	97.77%	98.21%	95.64%	
PostgreSQL pgbench - 1 - 50 - Read Only - Average Latency	0.066	0.067	0.066	0.067	
Normalized	100%	98.51%	100%	98.51%	
PostgreSQL pgbench - 1 - 50 - Read Only (TPS)	756824	751731	754029	741889	
Normalized	100%	99.33%	99.63%	98.03%	
PostgreSQL pgbench - 1 - 100 - Read Only - Average Latency	0.105	0.104	0.105	0.105	
Normalized	99.05%	100%	99.05%	99.05%	
PostgreSQL pgbench - 1 - 100 - Read Only (TPS)	951719	958556	955922	950667	
Normalized	99.29%	100%	99.73%	99.18%	
Renaissance - Apache Spark ALS (ms)	2697	2582	2664	2690	2685
Normalized	95.72%	100%	96.91%	95.98%	96.17%
Natron - Spaceship (FPS)	1.1	1		1	
Normalized	100%	90.91%		90.91%	
Apache HTTP Server - 1000 (Reqs/sec)	119879	119449		116585	
Normalized	100%	99.64%		97.25%	
nginx - 500 (Reqs/sec)	154549	157612		157618	
Normalized	98.05%	100%		100%	
nginx - 1000 (Reqs/sec)	158541	158308		158214	
Normalized	100%	99.85%		99.79%	
nginx - 200 (Reqs/sec)	154281	152051		150732	
Normalized	100%	98.55%		97.7%	
Apache HTTP Server - 500 (Reqs/sec)	121286	118327		120011	
Normalized	100%	97.56%		98.95%	
Apache HTTP Server - 200 (Reqs/sec)	132720	132501		109613	
Normalized	100%	99.84%		82.59%	
nginx - 100 (Reqs/sec)	146447	147405		148481	
Normalized	98.63%	99.28%		100%	

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Apache HTTP Server - 100 (Reqs/sec)	**87703**	**97040**		96389	
Normalized	90.38%	100%		99.33%	
nginx - 20 (Reqs/sec)	148779	**151079**		**145099**	
Normalized	98.48%	100%		96.04%	
Timed GDB GNU Debugger Compilation - Time To Compile (sec)	**76.415**	76.779	76.546	**77.238**	
Normalized	100%	99.53%	99.83%	98.93%	
srsRAN - 4.P.1.P.M.2.Q (UE Mb/s)	125.8	127	**129.6**	**119.2**	129.1
Normalized	97.07%	97.99%	100%	91.98%	99.61%
srsRAN - 4.P.1.P.M.2.Q (eNb Mb/s)	304.3	305.5	**312.6**	**296.8**	311.7
Normalized	97.34%	97.73%	100%	94.95%	99.71%
simdjson - Kostya (GB/s)	**2.43**	2.45	**2.51**	2.45	2.46
Normalized	96.81%	97.61%	100%	97.61%	98.01%
JPEG XL Decoding libjxl - 1	**38.9**	37.43	36.91	**36.88**	38.86
Normalized	100%	96.22%	94.88%	94.81%	99.9%
Renaissance - Scala Dotty (ms)	981.8	964.5	966.0	**1005**	**947.2**
Normalized	96.48%	98.21%	98.05%	94.21%	100%
simdjson - PartialTweets (GB/s)	**3.66**	**3.66**	**3.66**	**3.67**	**3.66**
Normalized	99.73%	99.73%	99.73%	100%	99.73%
simdjson - DistinctUserID (GB/s)	**4.2**	**4.23**	4.21	4.21	4.21
Normalized	99.29%	100%	99.53%	99.53%	99.53%
srsRAN - 4.P.1.P.M.6.Q (UE Mb/s)	114.8	117.3	115.5	**108.3**	**117.5**
Normalized	97.7%	99.83%	98.3%	92.17%	100%
srsRAN - 4.P.1.P.M.6.Q (eNb Mb/s)	271.8	277.2	272.6	**264.6**	**277.4**
Normalized	97.98%	99.93%	98.27%	95.39%	100%
PJSIP - INVITE (Responses/sec)	2913	3068	**3079**	**2815**	
Normalized	94.61%	99.64%	100%	91.43%	
PJSIP - OPTIONS, Stateful (Responses/sec)	**5542**	5455	5378	**5347**	
Normalized	100%	98.43%	97.04%	96.48%	
Renaissance - Rand Forest (ms)	**1256**	1205	1200	1236	**1148**
Normalized	91.44%	95.25%	95.72%	92.9%	100%
PJSIP - OPTIONS, Stateless (Responses/sec)	**31067**	**33953**	31975	32542	
Normalized	91.5%	100%	94.17%	95.84%	
Facebook RocksDB - Update Rand (Op/s)	169135	**169639**		**168239**	
Normalized	99.7%	100%		99.17%	
Facebook RocksDB - Rand Fill Sync (Op/s)	**146696**	146248		**145823**	
Normalized	100%	99.69%		99.4%	
Facebook RocksDB - Rand Fill (Op/s)	**181624**	181180		**180881**	
Normalized	100%	99.76%		99.59%	
Facebook RocksDB - R.R.W.R (Op/s)	**2377783**	2299668		**2285983**	
Normalized	100%	96.71%		96.14%	

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Facebook RocksDB - Read While Writing (Op/s)	6539455	6635603		6805057	
Normalized	96.1%	97.51%		100%	
Facebook RocksDB - Rand Read (Op/s)	239114381	234607962		241638865	
Normalized	98.96%	97.09%		100%	
Renaissance - F.H.R (ms)	4236	4203	4355	4296	4512
Normalized	99.2%	100%	96.49%	97.82%	93.14%
OpenSSL - RSA4096 (verify/s)	900380	897260	899494	900115	
Normalized	100%	99.65%	99.9%	99.97%	
OpenSSL - RSA4096 (sign/s)	13605	13603	13618	13608	
Normalized	99.9%	99.88%	100%	99.93%	
simdjson - LargeRand (GB/s)	0.86	0.85	0.86	0.86	0.86
Normalized	100%	98.84%	100%	100%	100%
SVT-AV1 - Preset 8 - Bosphorus 4K (FPS)	12.313	12.377	12.264	12.2	
Normalized	99.48%	100%	99.09%	98.57%	
JPEG XL Decoding libjxl - All (MP/s)	120.9	116.74	115.28	117.08	119.13
Normalized	100%	96.56%	95.35%	96.84%	98.54%
Zstd Compression - 19, Long Mode - D.S (MB/s)	2232	2240	2189	2182	2253
Normalized	99.05%	99.44%	97.15%	96.83%	100%
Zstd Compression - 19, Long Mode - Compression Speed	39.3	38.7	41.3	34.5	42.2
Normalized	93.13%	91.71%	97.87%	81.75%	100%
ECP-CANDLE - P1B2 (sec)	45.85	46.353		45.906	
Normalized	100%	98.91%		99.88%	
Zstd Compression - 19 - D.S (MB/s)	2150	2194	2162	2156	2173
Normalized	98%	100%	98.57%	98.27%	99.07%
Zstd Compression - 19 - Compression Speed (MB/s)	70.5	74.4	69.2	70.1	72.7
Normalized	94.76%	100%	93.01%	94.22%	97.72%
srsRAN - OFDM_Test (Samples / Second)	106600000	110500000	103800000	97500000	108100000
Normalized	96.47%	100%	93.94%	88.24%	97.83%
srsRAN - 4.P.1.P.S.2.Q (UE Mb/s)	198.8	204.8	205.9	195.5	203.4
Normalized	96.55%	99.47%	100%	94.95%	98.79%
srsRAN - 4.P.1.P.S.2.Q (eNb	303	310.2	311.4	297.9	308
Normalized	97.3%	99.61%	100%	95.66%	98.91%
srsRAN - 5.P.T.5.P.S.6.Q (UE Mb/s)	62.6	62.8	64	62.1	61.9
Normalized	97.81%	98.13%	100%	97.03%	96.72%
srsRAN - 5.P.T.5.P.S.6.Q (eNb Mb/s)	101.4	101.6	103.6	101	100.1
Normalized	97.88%	98.07%	100%	97.49%	96.62%
srsRAN - 4.P.1.P.S.6.Q (UE Mb/s)	167.8	165	170.1	155	165.5
Normalized	98.65%	97%	100%	91.12%	97.3%
srsRAN - 4.P.1.P.S.6.Q (eNb	280.4	274.7	282.9	269.3	275.3
Normalized	99.12%	97.1%	100%	95.19%	97.31%

Xeon Platinum 8280 2P September

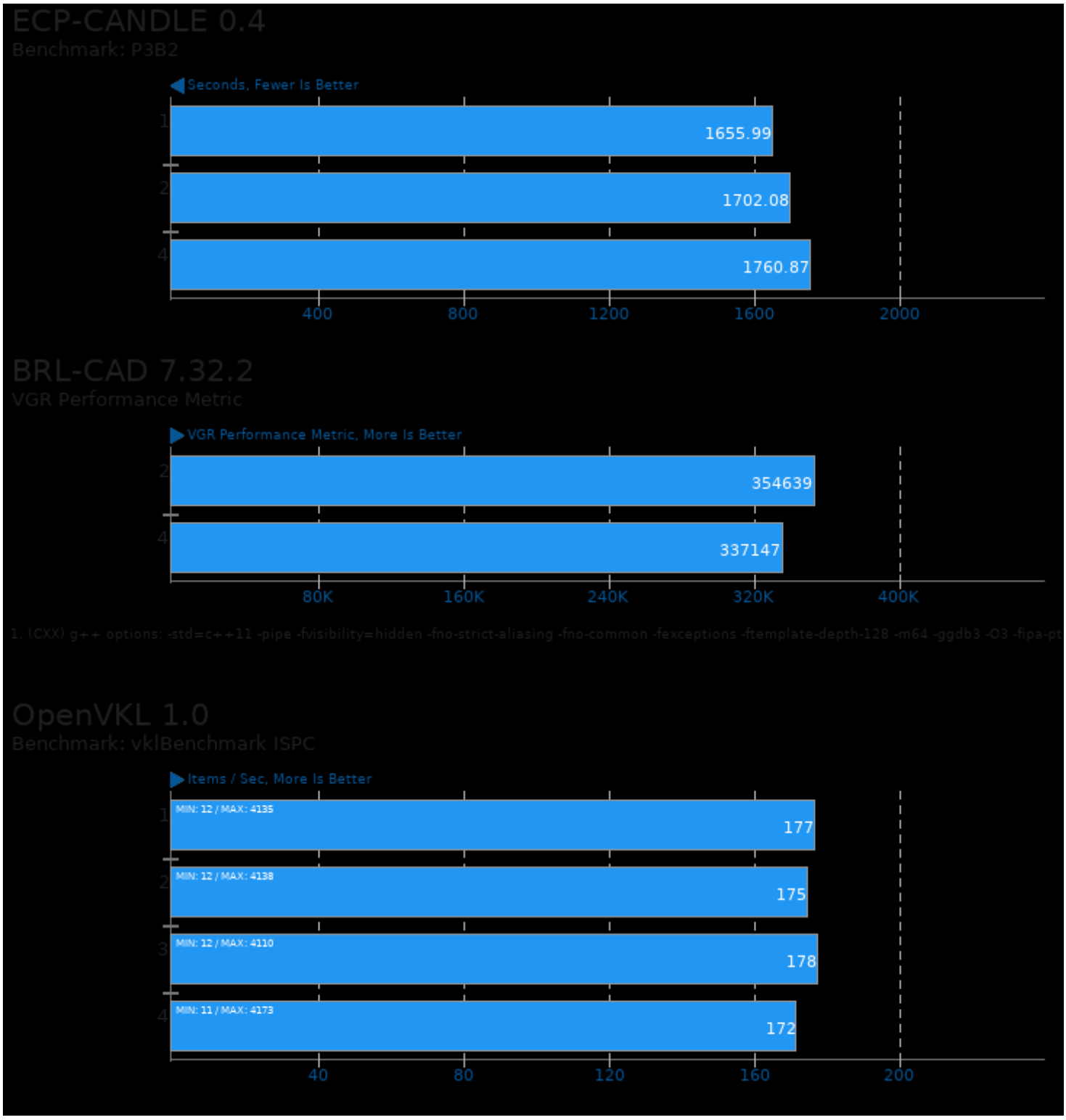
Renaissance - Apache Spark Bayes (ms)	**918.6**	**838.1**	873.4	854.5	856.7
Normalized	91.24%	100%	95.96%	98.08%	97.83%
GROMACS - MPI CPU - water_GMX50_bare (Ns/Day)	**5.719**	5.702	**5.685**	5.712	
Normalized	100%	99.7%	99.41%	99.88%	
Zstd Compression - 3, Long Mode - D.S (MB/s)	**2853**	2845	2842	2837	**2734**
Normalized	100%	99.72%	99.62%	99.44%	95.82%
Zstd Compression - 3, Long Mode - Compression Speed	**326.3**	**316**	322.9	324.9	325.1
Normalized	100%	96.84%	98.96%	99.57%	99.63%
Zstd Compression - 8 - D.S	**2678**	2660	2634	2610	**2588**
Normalized	100%	99.3%	98.35%	97.46%	96.63%
Zstd Compression - 8 - Compression Speed (MB/s)	1397	1552	**1671**	1566	**1291**
Normalized	83.6%	92.88%	100%	93.74%	77.27%
Zstd Compression - 8, Long Mode - D.S (MB/s)	**2834**	2773	**2727**	2736	2804
Normalized	100%	97.83%	96.21%	96.54%	98.92%
Zstd Compression - 8, Long Mode - Compression Speed	**361.7**	359.9	361.3	353.4	**339.6**
Normalized	100%	99.5%	99.89%	97.71%	93.89%
Zstd Compression - 3 - Compression Speed (MB/s)	2927	**2882**	2917	**3850**	2933
Normalized	76.04%	74.86%	75.78%	100%	76.18%
Intel Open Image Denoise - RTLightmap.hdr.4096x4096 (Images / Sec)	**0.91**	0.90	0.88	**0.86**	
Normalized	100%	98.9%	96.7%	94.51%	
dav1d - C.1.1.b (FPS)	327.01	**328.67**	**325.04**	325.79	328.21
Normalized	99.49%	100%	98.9%	99.12%	99.86%
Timed Linux Kernel Compilation - Time To Compile (sec)	31.99	**31.841**	32.124	**32.155**	
Normalized	99.53%	100%	99.12%	99.02%	
SVT-AV1 - Preset 4 - Bosphorus 1080p (FPS)	5.746	**5.825**	5.703	**5.603**	
Normalized	98.64%	100%	97.91%	96.19%	
Google SynthMark - VoiceMark_100 (Voices)	540.702	**541.692**	540.994	**540.009**	
Normalized	99.82%	100%	99.87%	99.69%	
NAS Parallel Benchmarks - SP.C (Mop/s)	50199	**50414**	**50066**	50204	50299
Normalized	99.57%	100%	99.31%	99.58%	99.77%
TNN - CPU - MobileNet v2 (ms)	**400.1**	401.621	**411.429**	409.334	
Normalized	100%	99.62%	97.25%	97.74%	
Embree - Pathtracer - Asian Dragon Obj (FPS)	50.8453	**50.9305**	50.8942	**50.7521**	
Normalized	99.83%	100%	99.93%	99.65%	

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Embree - Pathtracer ISPC - Asian Dragon Obj (FPS)	**52.2197**	52.6509	**52.6813**	52.6336	
Normalized	99.12%	99.94%	100%	99.91%	
dav1d - Chimera 1080p (FPS)	422.96	**425.61**	423.33	424.13	**421.84**
Normalized	99.38%	100%	99.46%	99.65%	99.11%
JPEG XL libjxl - PNG - 5 (MP/s)	**52.81**	52.7	52.69	**52.23**	52.38
Normalized	100%	99.79%	99.77%	98.9%	99.19%
JPEG XL libjxl - JPEG - 5 (MP/s)	**56.14**	55.5	**53.53**	54.58	54.53
Normalized	100%	98.86%	95.35%	97.22%	97.13%
Tachyon - Total Time (sec)	20.6915	**28.6803**	26.0952	**20.2841**	
Normalized	98.03%	70.72%	77.73%	100%	
TNN - CPU - SqueezeNet v1.1 (ms)	342.626	341.918	**334.691**	**350.432**	
Normalized	97.68%	97.89%	100%	95.51%	
NAS Parallel Benchmarks - IS.D (Mop/s)	**1772**	1673	1679	1705	**1651**
Normalized	100%	94.42%	94.74%	96.18%	93.15%
NAS Parallel Benchmarks - EP.D (Mop/s)	**6302**	6202	**6138**	6198	6300
Normalized	100%	98.41%	97.39%	98.34%	99.96%
NAS Parallel Benchmarks - BT.C (Mop/s)	**135993**	134802	135225	134581	**134288**
Normalized	100%	99.12%	99.44%	98.96%	98.75%
Timed FFmpeg Compilation - Time To Compile (sec)	**21.213**	**21.303**	21.245	21.297	
Normalized	100%	99.58%	99.85%	99.61%	
ASTC Encoder - Exhaustive	**14.9031**	14.9156	**14.9261**	14.9183	
Normalized	100%	99.92%	99.85%	99.9%	
JPEG XL libjxl - JPEG - 7 (MP/s)	**55.94**	55.84	55.21	55.11	**54.13**
Normalized	100%	99.82%	98.7%	98.52%	96.76%
NAS Parallel Benchmarks - LU.C (Mop/s)	**109023**	108218	108274	108674	**108125**
Normalized	100%	99.26%	99.31%	99.68%	99.18%
Intel Open Image Denoise - RT.ldr_alb_nrm.3840x2160 (Images / Sec)	**1.86**	**1.86**	1.85	**1.84**	
Normalized	100%	100%	99.46%	98.92%	
Intel Open Image Denoise - RT.hdr_alb_nrm.3840x2160 (Images / Sec)	**1.85**	**1.87**	**1.85**	1.86	
Normalized	98.93%	100%	98.93%	99.47%	
dav1d - Summer Nature 4K (FPS)	244.21	**246.4**	**243.34**	243.61	246.36
Normalized	99.11%	100%	98.76%	98.87%	99.98%
Embree - Pathtracer ISPC - Crown (FPS)	47.4299	**47.4991**	**46.9819**	47.4089	
Normalized	99.85%	100%	98.91%	99.81%	
JPEG XL libjxl - JPEG - 8 (MP/s)	22.09	**22.48**	**21.51**	22.24	21.82
Normalized	98.27%	100%	95.69%	98.93%	97.06%
Embree - Pathtracer - Crown	49.3294	49.3665	**49.4115**	**49.2759**	
Normalized	99.83%	99.91%	100%	99.73%	

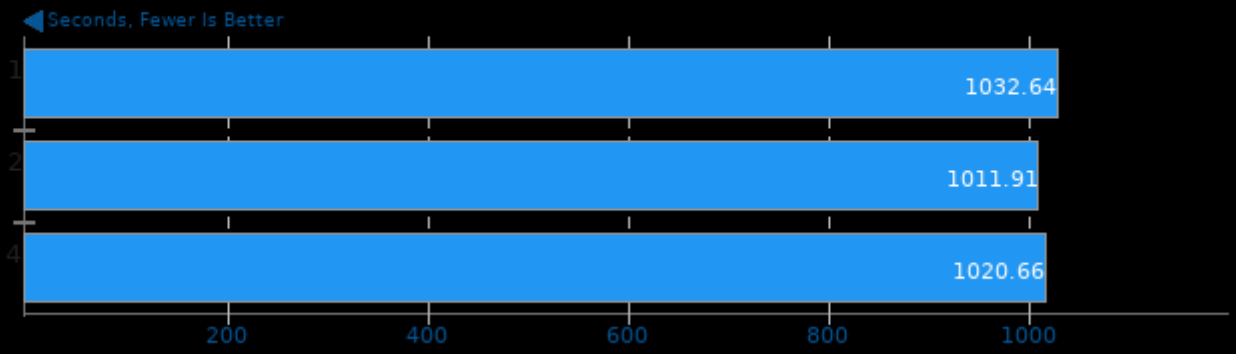
Xeon Platinum 8280 2P September

Embree - Pathtracer - Asian Dragon (FPS)	56.3862	56.397	**56.2959**	**56.4996**	
Normalized	99.8%	99.82%	99.64%	100%	
Embree - Pathtracer ISPC - Asian Dragon (FPS)	**58.481**	59.1229	**60.5754**	58.7763	
Normalized	96.54%	97.6%	100%	97.03%	
SVT-AV1 - Preset 8 - Bosphorus 1080p (FPS)	63.868	**63.542**	64.56	**64.665**	
Normalized	98.77%	98.26%	99.84%	100%	
NAS Parallel Benchmarks - FT.C (Mop/s)	56010	**56465**	**53819**	54915	54252
Normalized	99.19%	100%	95.32%	97.26%	96.08%
dav1d - S.N.1 (FPS)	**455.43**	458.59	**462.04**	458.19	455.85
Normalized	98.57%	99.25%	100%	99.17%	98.66%
ASTC Encoder - Thorough (sec)	**7.2474**	7.2779	7.2545	**7.3178**	
Normalized	100%	99.58%	99.9%	99.04%	
NAS Parallel Benchmarks - SP.B (Mop/s)	70268	69960	**70372**	70161	**69954**
Normalized	99.85%	99.41%	100%	99.7%	99.41%
TNN - CPU - SqueezeNet v2 (ms)	**86.341**	85.937	**81.72**	84.433	
Normalized	94.65%	95.09%	100%	96.79%	
NAS Parallel Benchmarks - CG.C (Mop/s)	**32268**	31973	32205	**31720**	32167
Normalized	100%	99.09%	99.8%	98.3%	99.69%
ASTC Encoder - Medium (sec)	5.1963	**5.3107**	**5.1143**	5.2445	
Normalized	98.42%	96.3%	100%	97.52%	
NAS Parallel Benchmarks - MG.C (Mop/s)	69109	69260	**69953**	69338	**68904**
Normalized	98.79%	99.01%	100%	99.12%	98.5%
NAS Parallel Benchmarks - EP.C (Mop/s)	**5692**	5794	**5927**	5766	5821
Normalized	96.03%	97.75%	100%	97.28%	98.21%


ECP-CANDLE 0.4
Benchmark: P3B2
Seconds, Fewer Is Better
1
1655.99
2
1702.08
4
1760.87
400
800
1200
1600
2000
BRL-CAD 7.32.2
VGR Performance Metric
VGR Performance Metric, More Is Better
2
354639
4
337147
80K
160K
240K
320K
400K
1. (CXX) g++ options: -std=c++11 -pipe -fvisibility=hidden -fno-strict-aliasing -fno-common -fexceptions -ftemplate-depth-128 -m64 -ggdb3 -O3 -fipa-pt
OpenVKL 1.0
Benchmark: vklBenchmark ISPC
Items / Sec, More Is Better
1
MIN: 12 / MAX: 4135
177
2
MIN: 12 / MAX: 4138
175
3
MIN: 12 / MAX: 4110
178
4
MIN: 11 / MAX: 4173
172
40
80
120
160
200

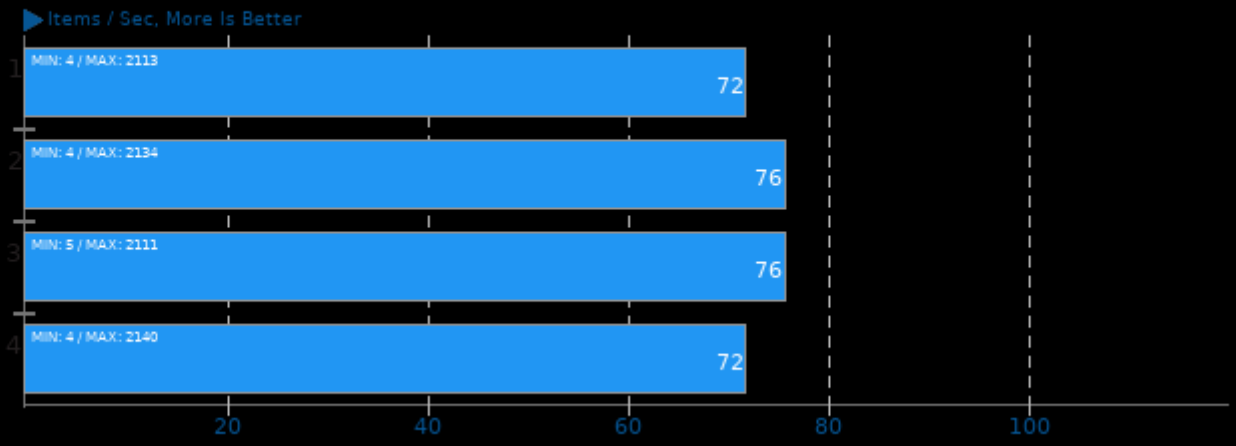
ECP-CANDLE 0.4

Benchmark: P3B1



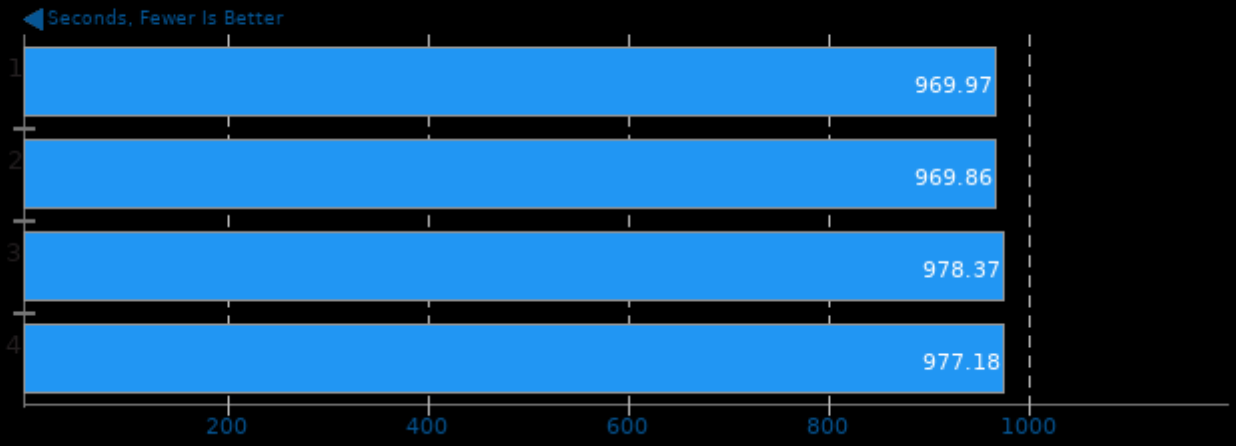
OpenVKL 1.0

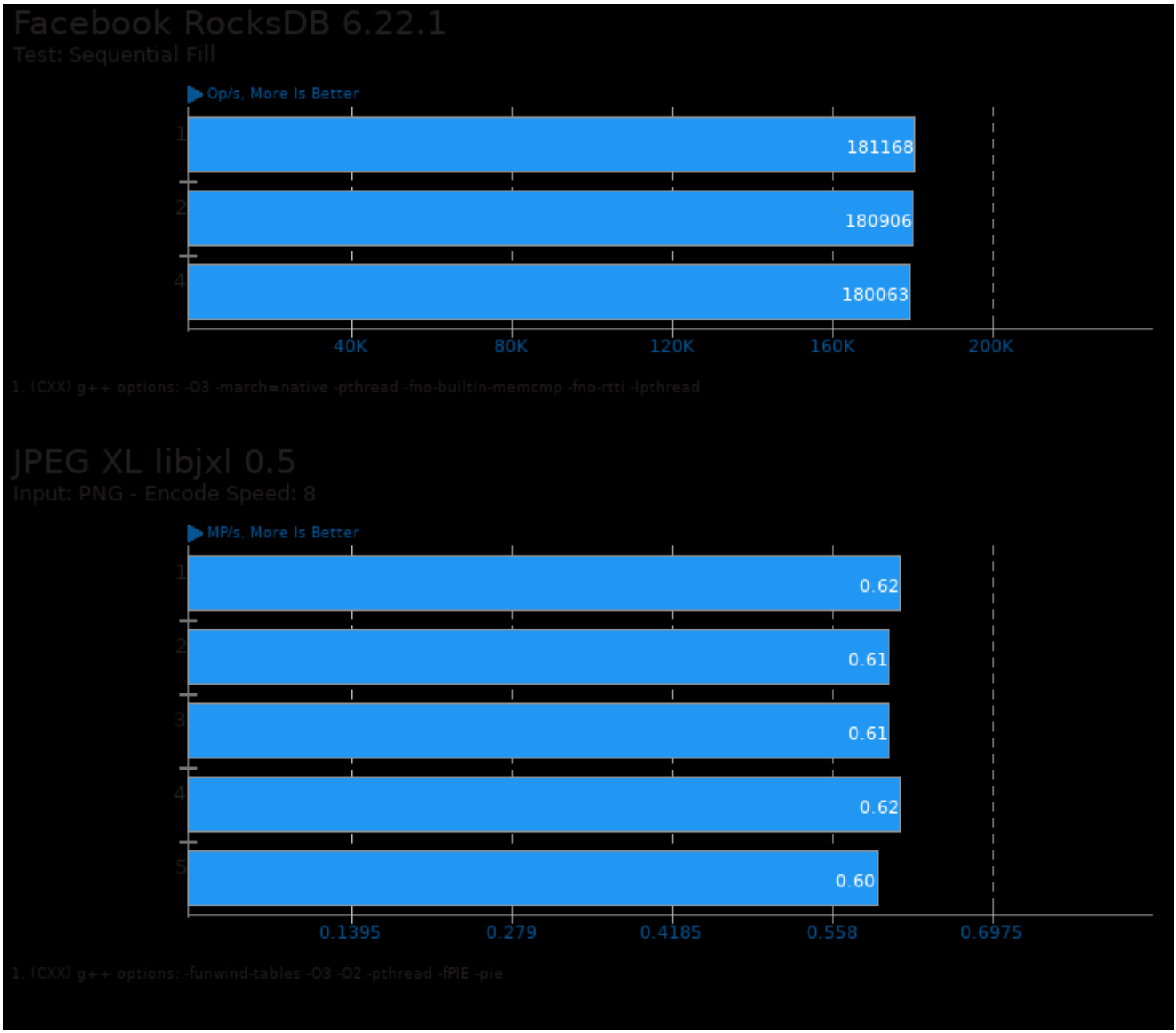
Benchmark: vklBenchmark Scalar

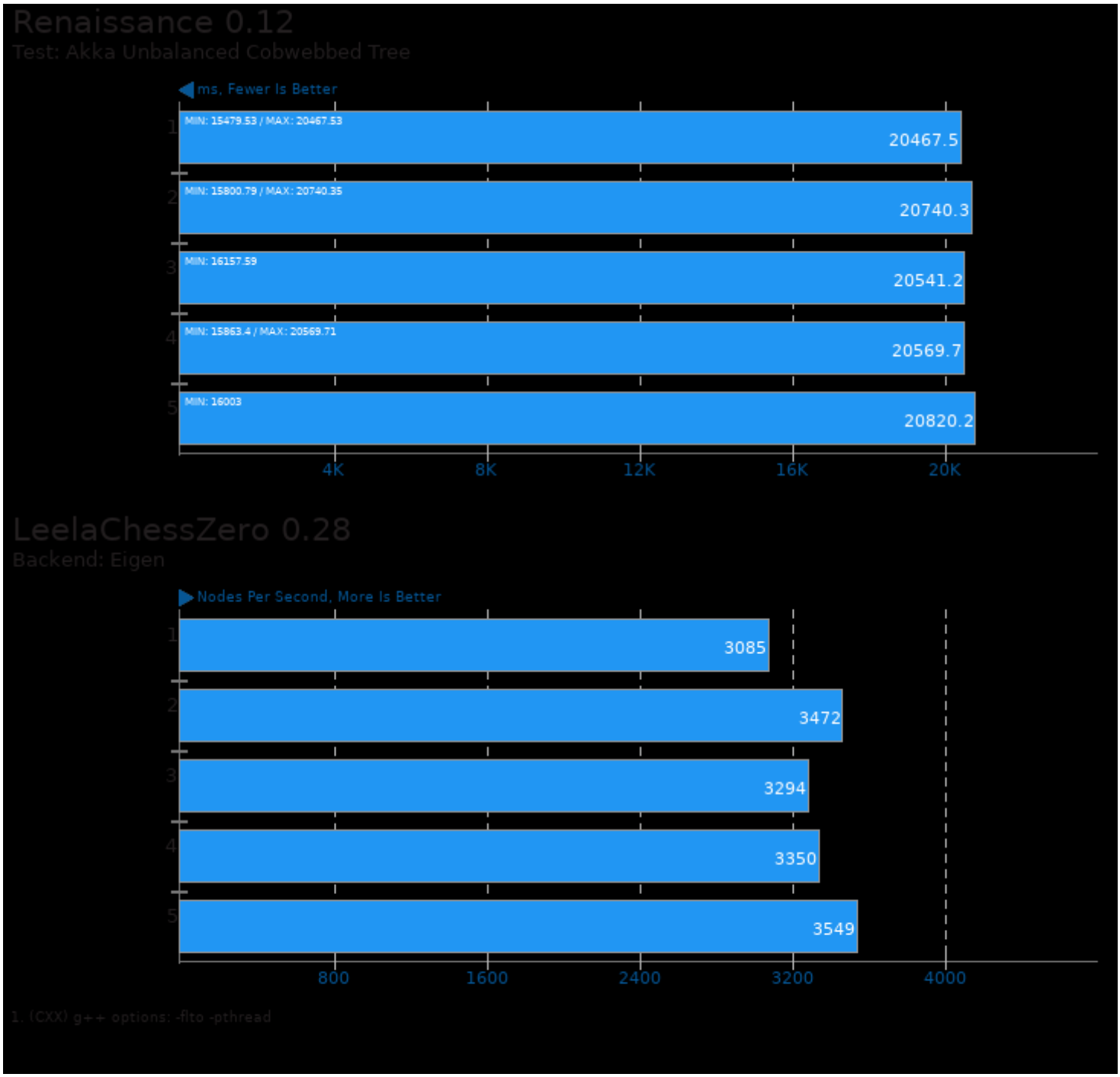


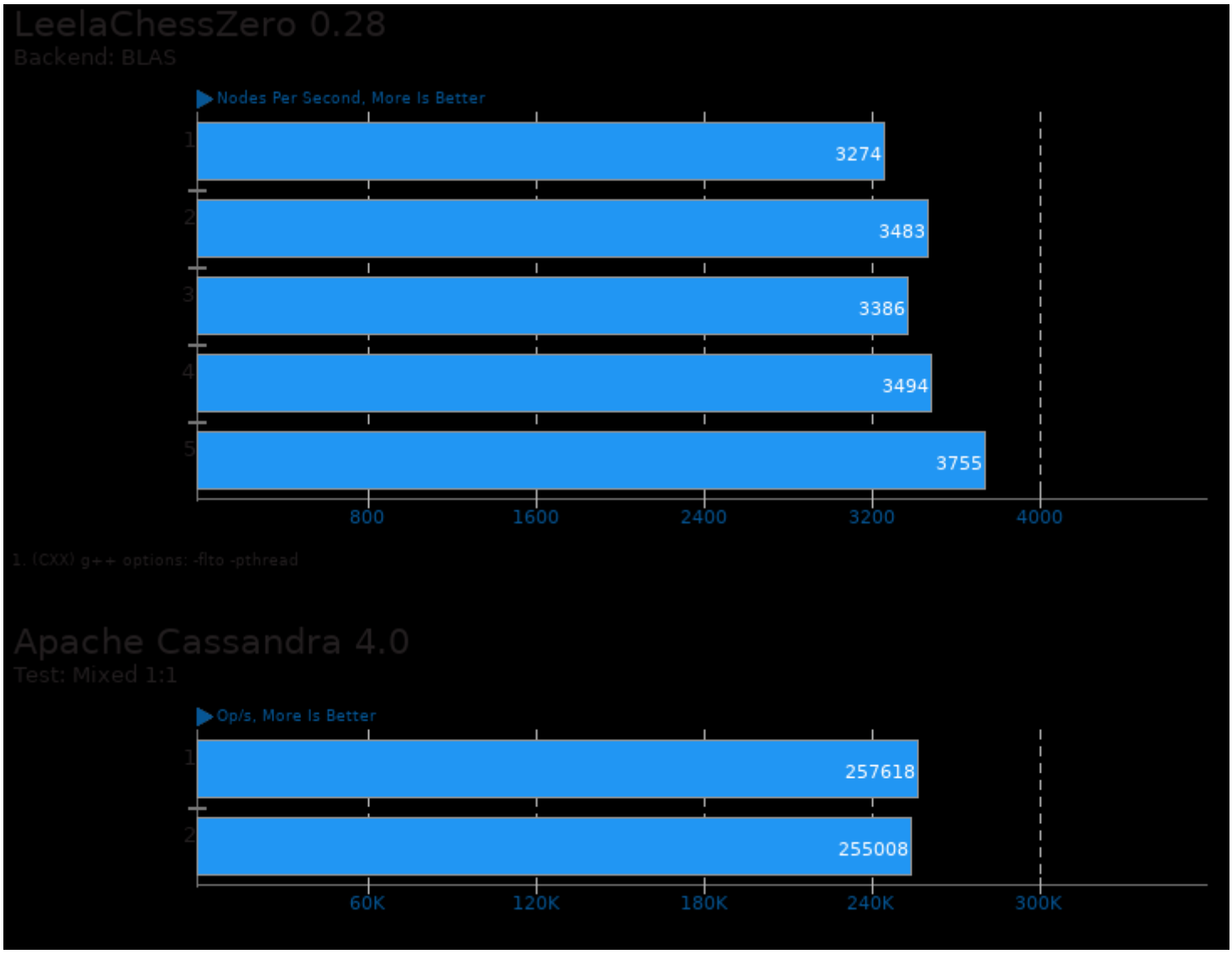
Timed GCC Compilation 11.2.0

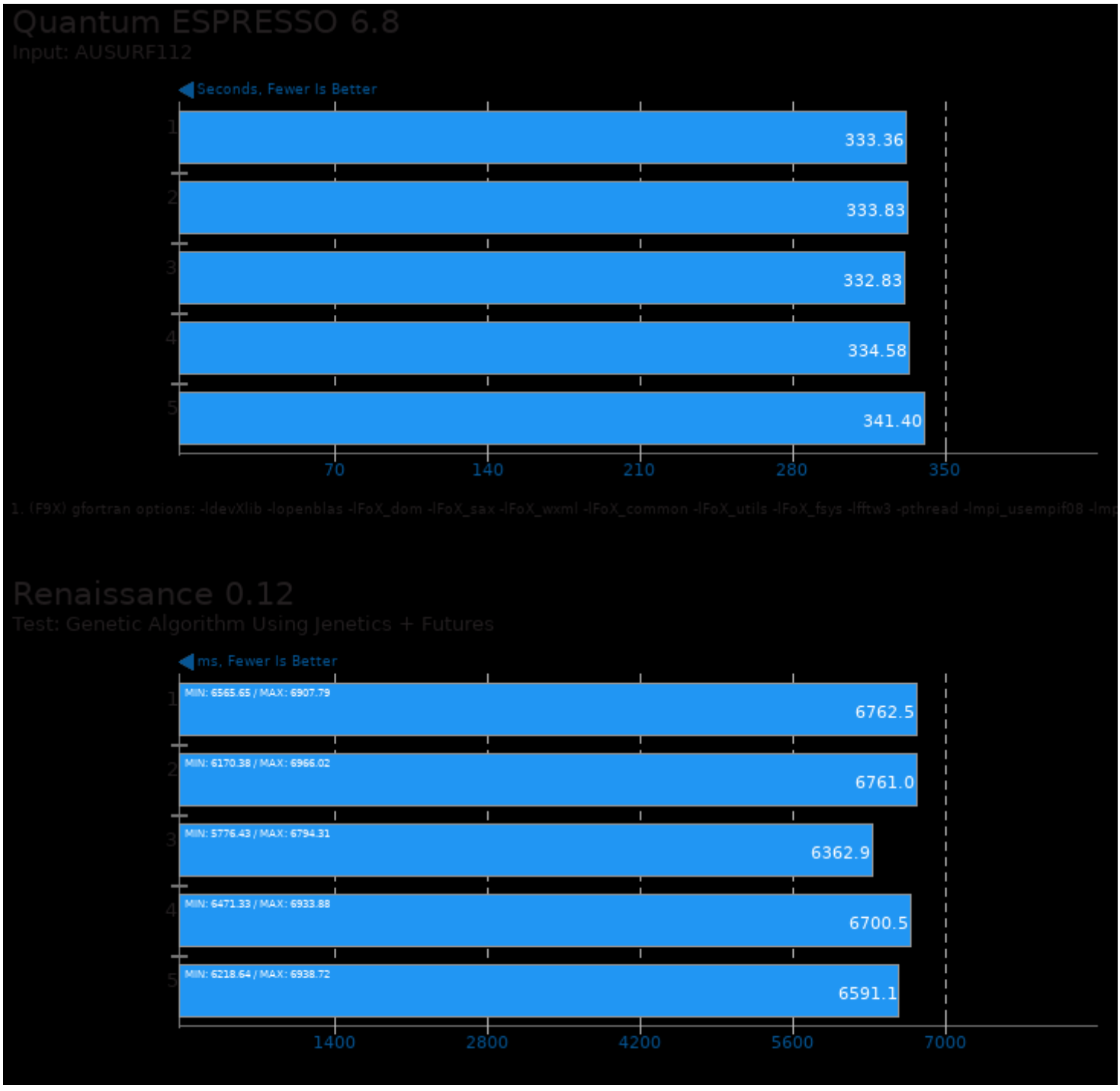
Time To Compile




Facebook RocksDB 6.22.1
Test: Sequential Fill
Op/s, More Is Better
1
2
4
181168
180906
180063
40K
80K
120K
160K
200K
1. (CXX) g++ options: -O3 -march=native -pthread -fno-builtin-memcmp -fno-rtti -lpthread
JPEG XL libjxl 0.5
Input: PNG - Encode Speed: 8
MP/s, More Is Better
1
2
3
4
5
0.62
0.61
0.61
0.62
0.60
0.1395
0.279
0.4185
0.558
0.6975
1. (CXX) g++ options: -funwind-tables -O3 -O2 -pthread -fPIE -pie

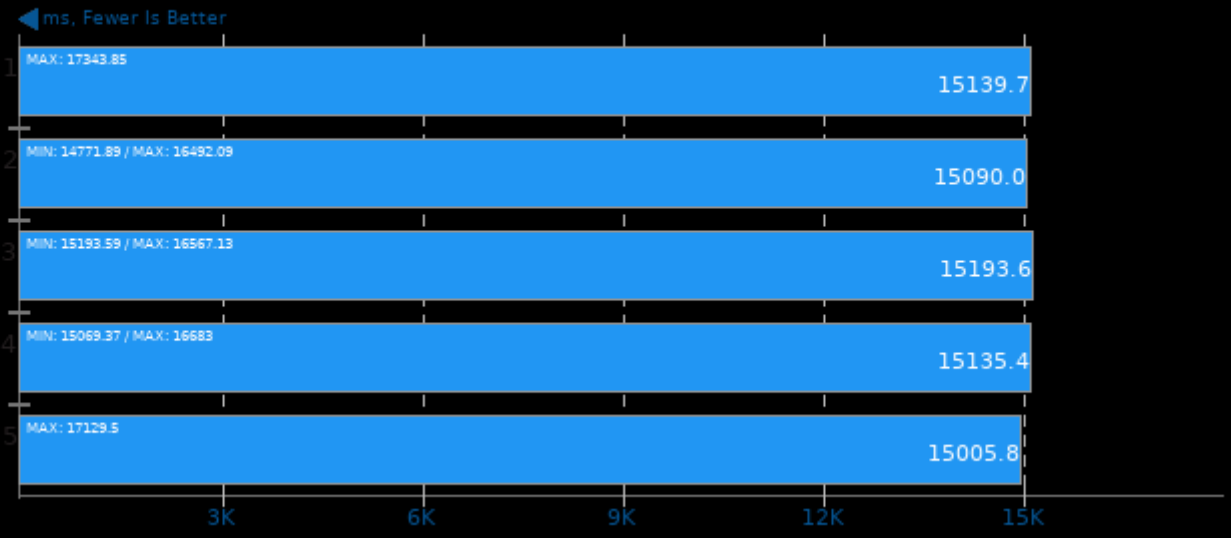

Renaissance 0.12
Test: Akka Unbalanced Cobwebbed Tree
ms, Fewer Is Better
MIN: 15479.53 / MAX: 20467.53
20467.5
MIN: 15800.79 / MAX: 20740.35
20740.3
MIN: 16157.59
20541.2
MIN: 15863.4 / MAX: 20569.71
20569.7
MIN: 16003
20820.2
4K
8K
12K
16K
20K
LeelaChessZero 0.28
Backend: Eigen
Nodes Per Second, More Is Better
3085
3472
3294
3350
3549
800
1600
2400
3200
4000
1. (CXX) g++ options: -flto -pthread


LeelaChessZero 0.28
Backend: BLAS
Nodes Per Second, More Is Better
1
3274
2
3483
3
3386
4
3494
5
3755
800
1600
2400
3200
4000
1. (CXX) g++ options: -flto -pthread
Apache Cassandra 4.0
Test: Mixed 1:1
Op/s, More Is Better
1
257618
2
255008
60K
120K
180K
240K
300K


Quantum ESPRESSO 6.8
Input: AUSURF112
Seconds, Fewer Is Better
1
333.36
2
333.83
3
332.83
4
334.58
5
341.40
70
140
210
280
350
1. (F9X) gfortran options: -ldevXlib -lopenblas -lFoX_dom -lFoX_sax -lFoX_wxml -lFoX_common -lFoX_utils -lFoX_fsys -lfftw3 -pthread -lmpi_usempif08 -lmp
Renaissance 0.12
Test: Genetic Algorithm Using Jenetics + Futures
ms, Fewer Is Better
1
MIN: 6565.65 / MAX: 6907.79
6762.5
2
MIN: 6170.38 / MAX: 6966.02
6761.0
3
MIN: 5776.43 / MAX: 6794.31
6362.9
4
MIN: 6471.33 / MAX: 6933.88
6700.5
5
MIN: 6218.64 / MAX: 6938.72
6591.1
1400
2800
4200
5600
7000

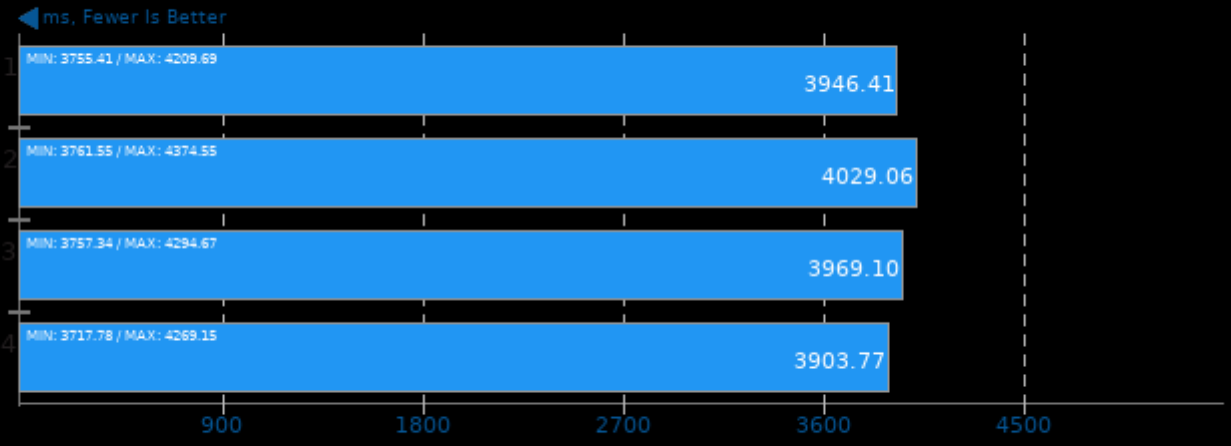
Renaissance 0.12

Test: ALS Movie Lens



TNN 0.3

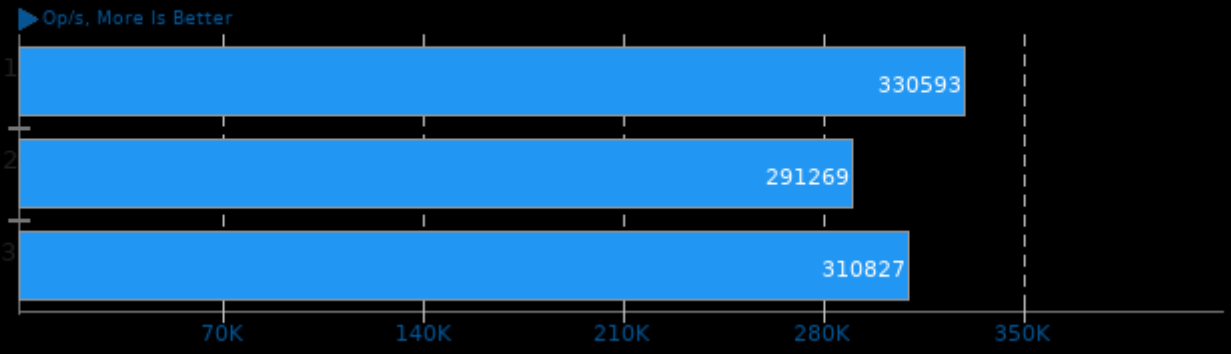
Target: CPU - Model: DenseNet

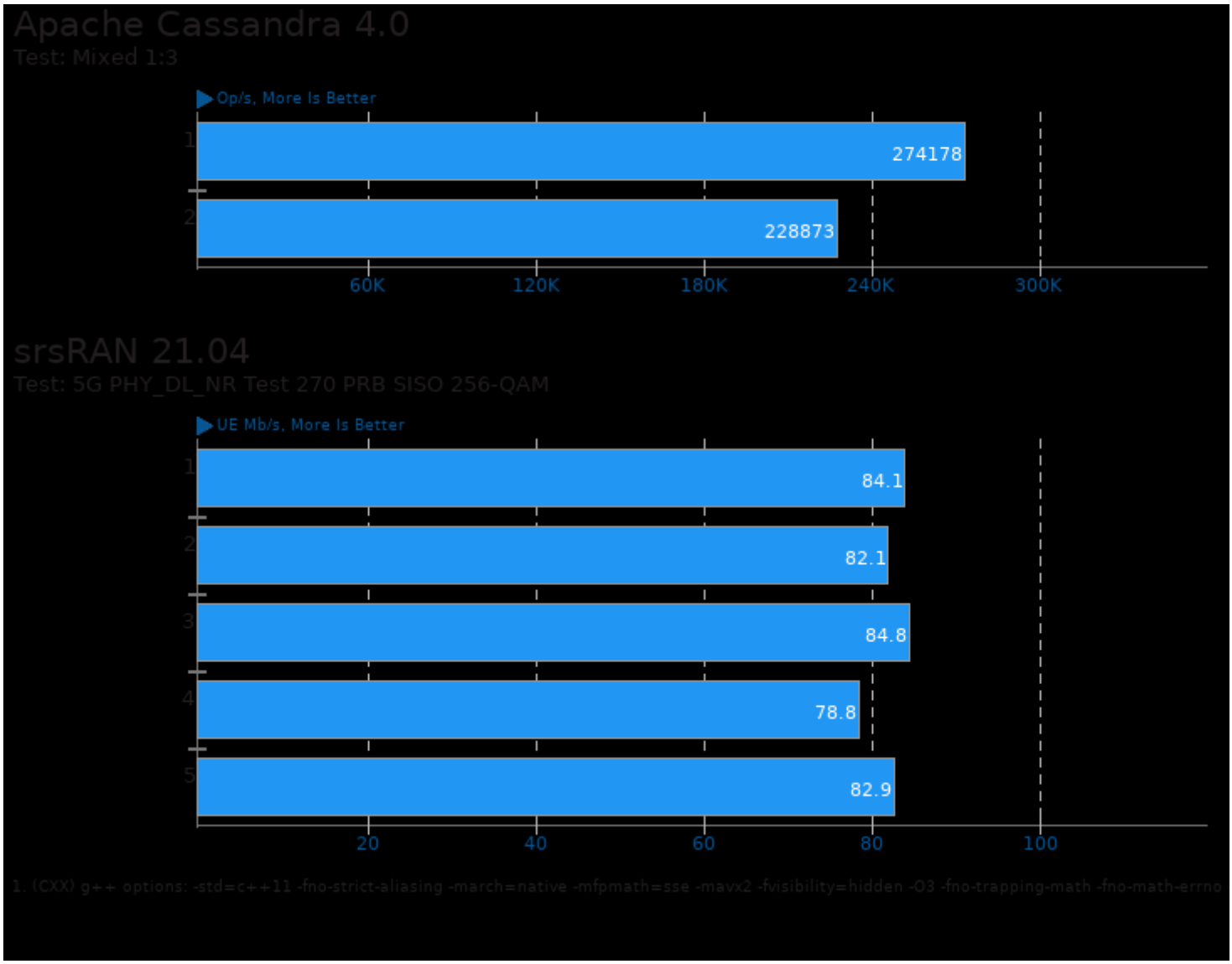


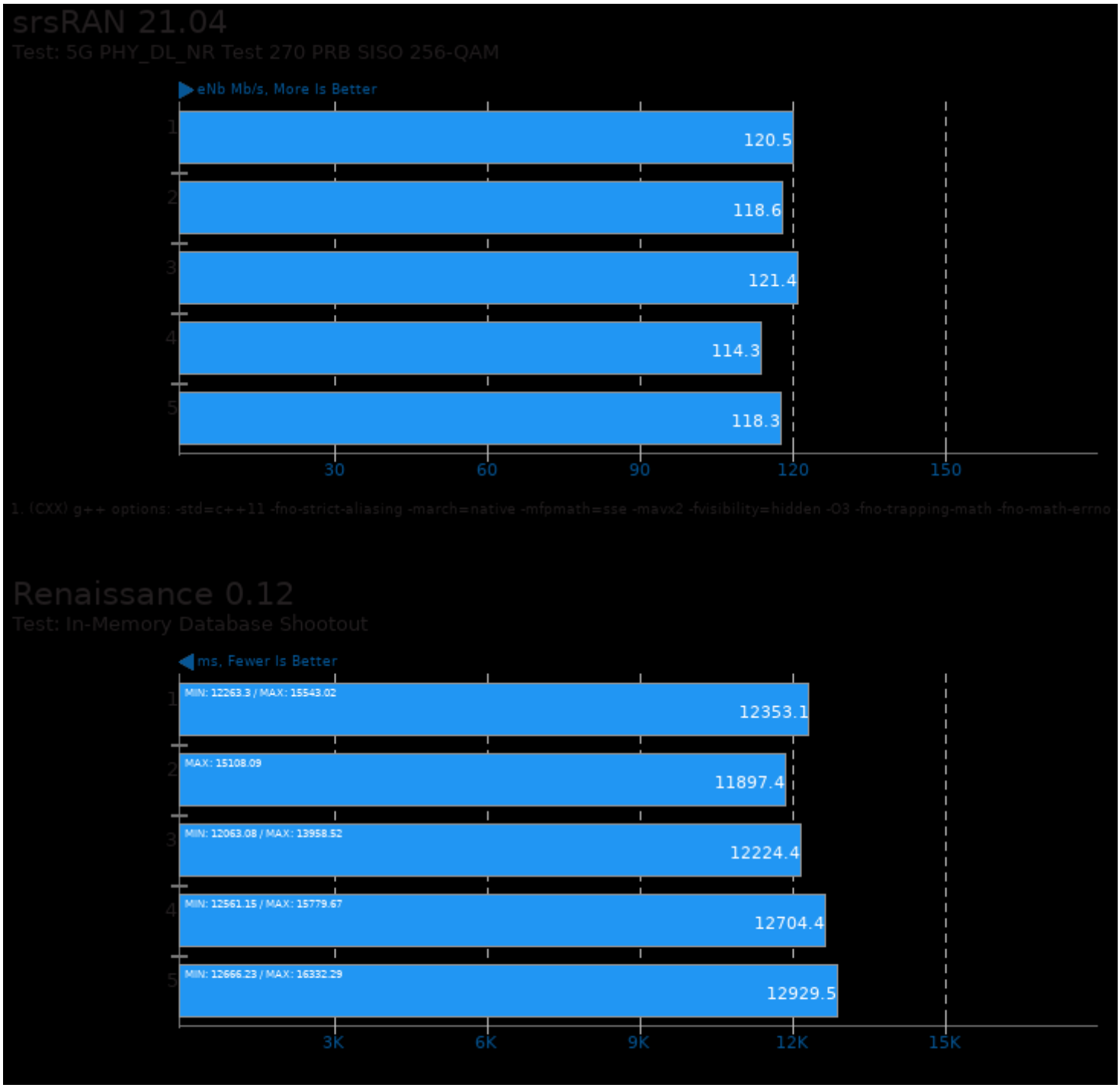
1. (CXX) g++ options: -fopenmp -pthread -fvisibility=hidden -fvisibility=default -O3 -rdynamic -ldl

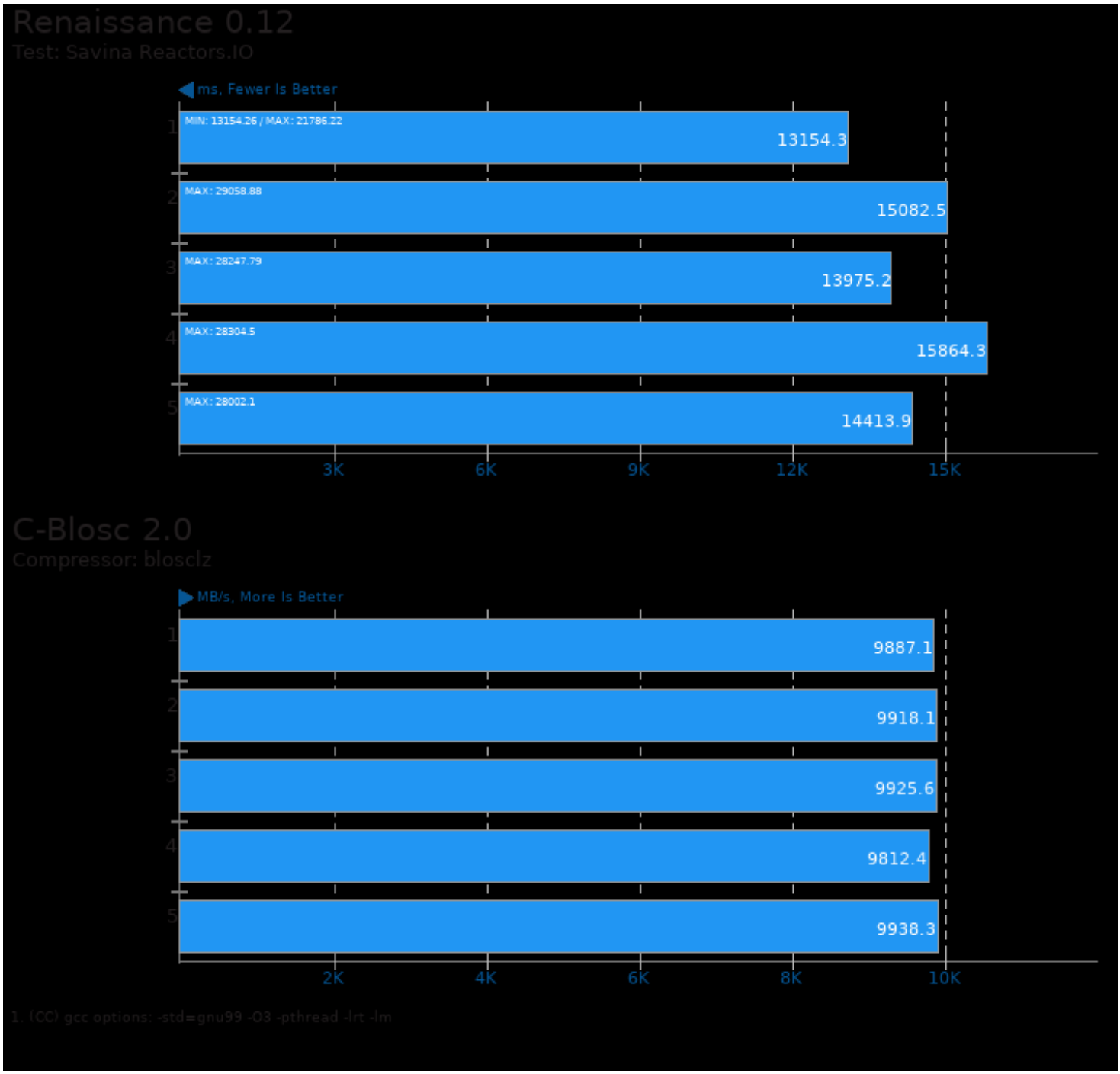
Apache Cassandra 4.0

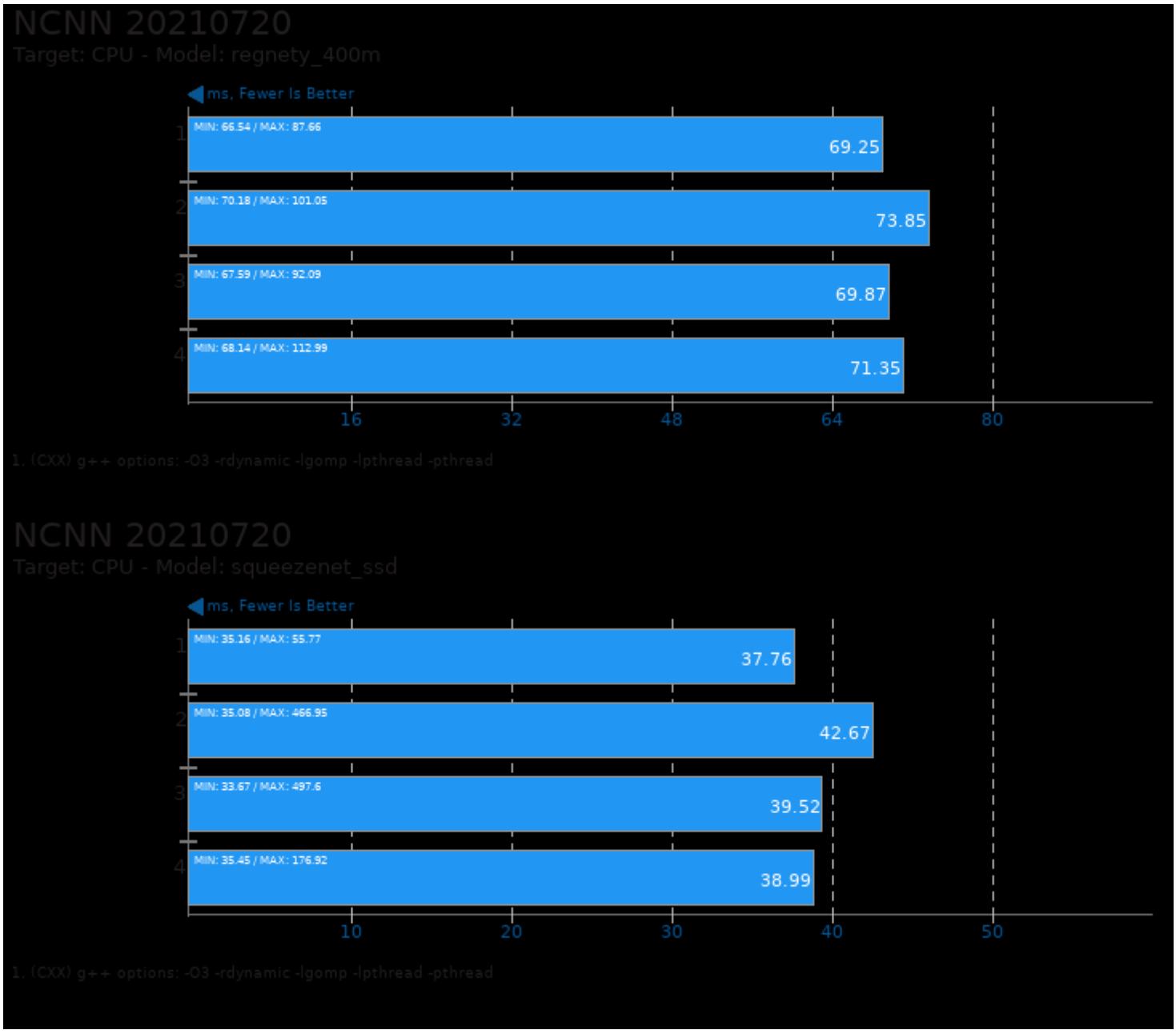
Test: Reads

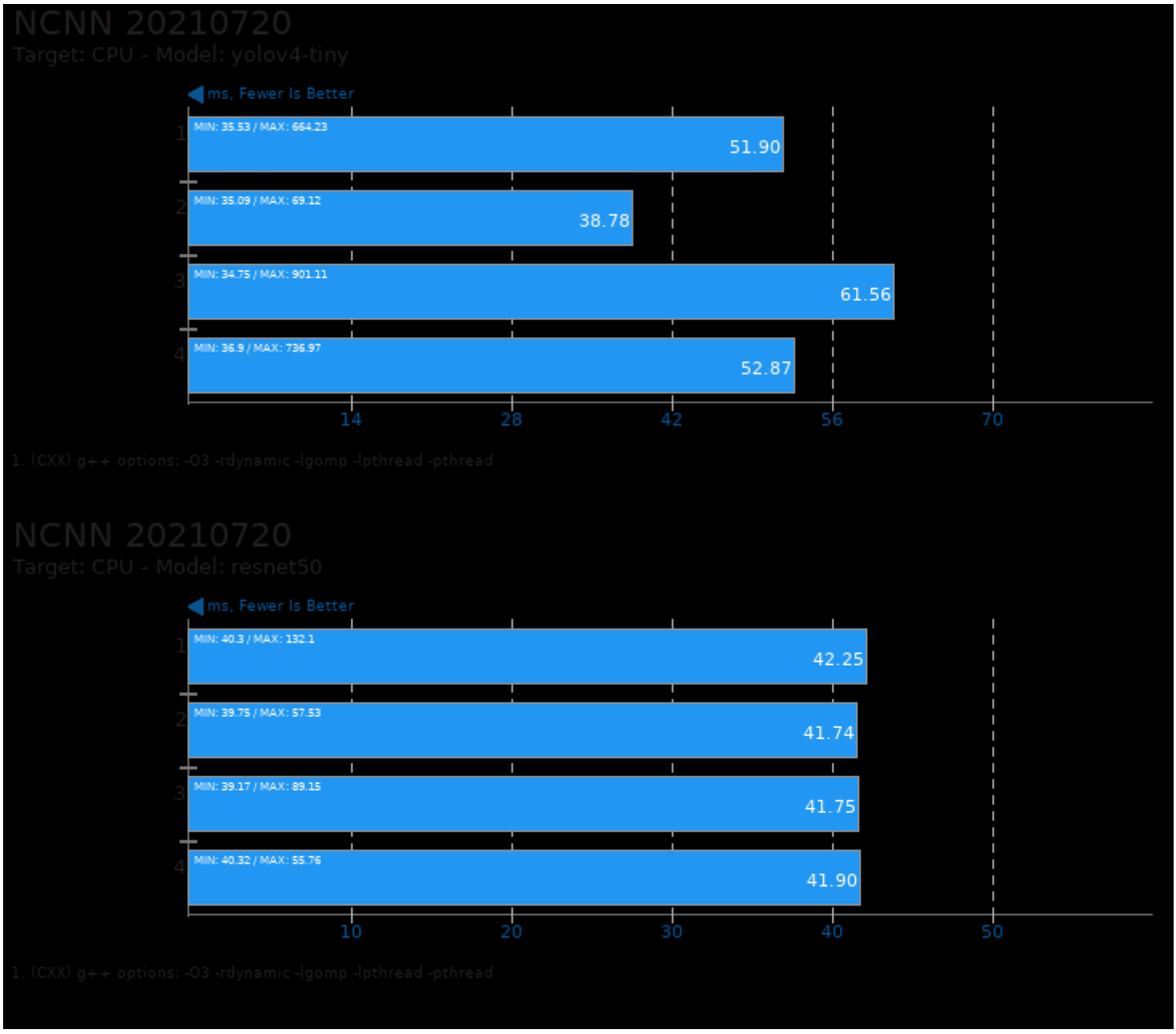


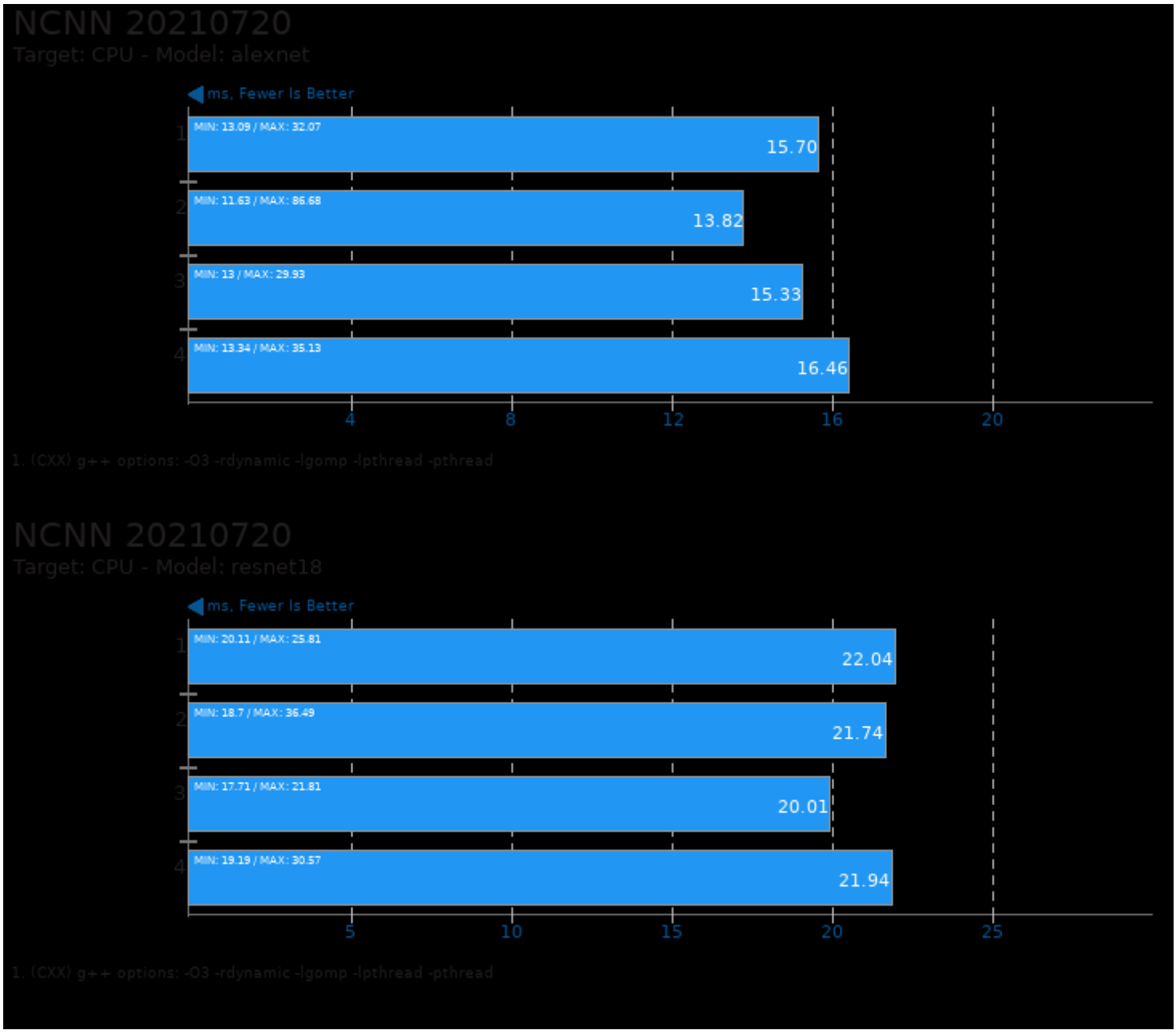

Apache Cassandra 4.0
Test: Mixed 1:3
Op/s, More Is Better
1
274178
2
228873
60K
120K
180K
240K
300K
srsRAN 21.04
Test: 5G PHY_DL_NR Test 270 PRB SISO 256-QAM
UE Mb/s, More Is Better
1
84.1
2
82.1
3
84.8
4
78.8
5
82.9
20
40
60
80
100
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

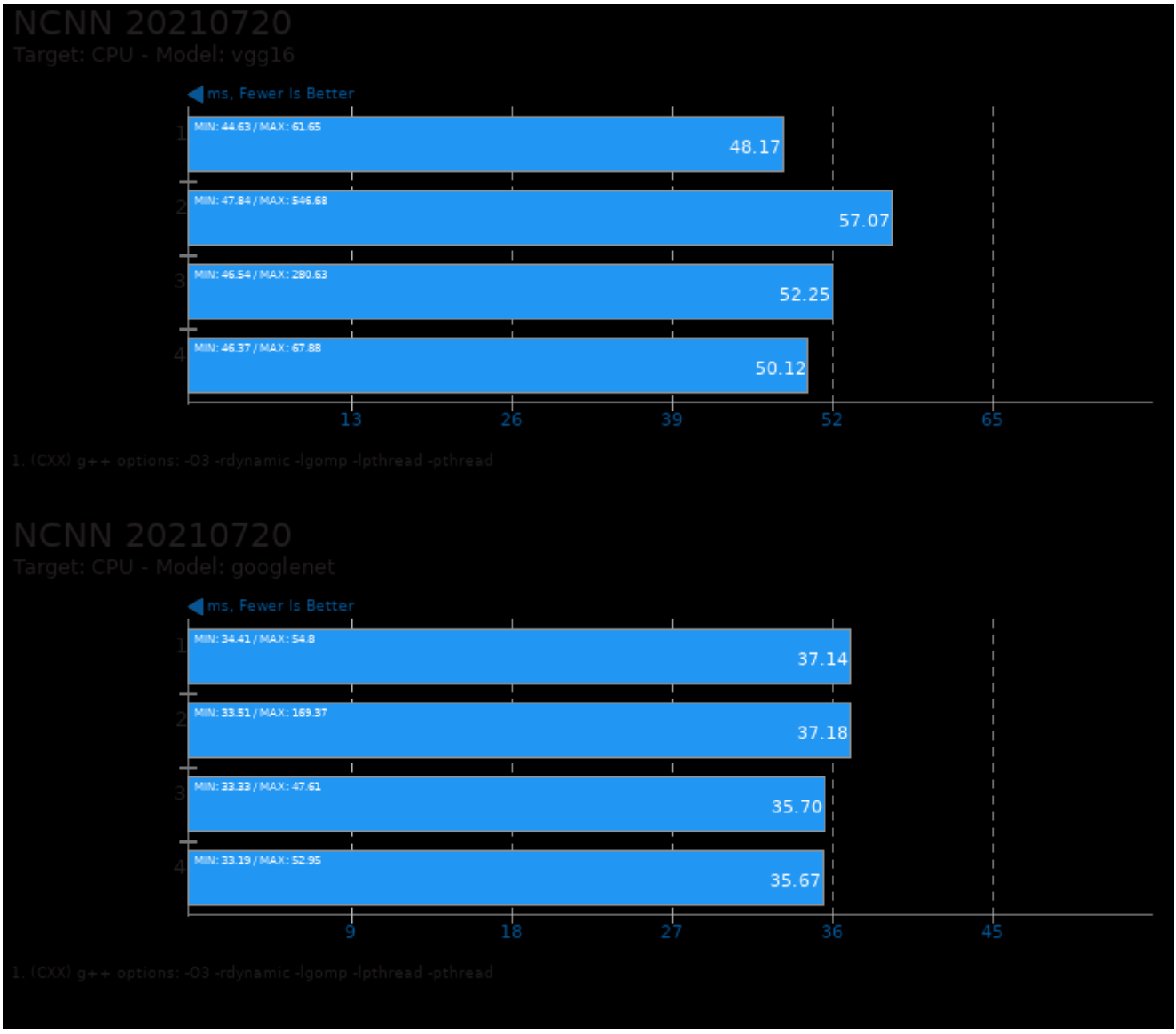

srsRAN 21.04
Test: 5G PHY_DL_NR Test 270 PRB SISO 256-QAM
eNb Mb/s, More Is Better
1
120.5
2
118.6
3
121.4
4
114.3
5
118.3
30
60
90
120
150
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno
Renaissance 0.12
Test: In-Memory Database Shootout
ms, Fewer Is Better
1
MIN: 12263.3 / MAX: 15543.02
12353.1
2
MAX: 15108.09
11897.4
3
MIN: 12063.08 / MAX: 13958.52
12224.4
4
MIN: 12561.15 / MAX: 15779.67
12704.4
5
MIN: 12666.23 / MAX: 16332.29
12929.5
3K
6K
9K
12K
15K

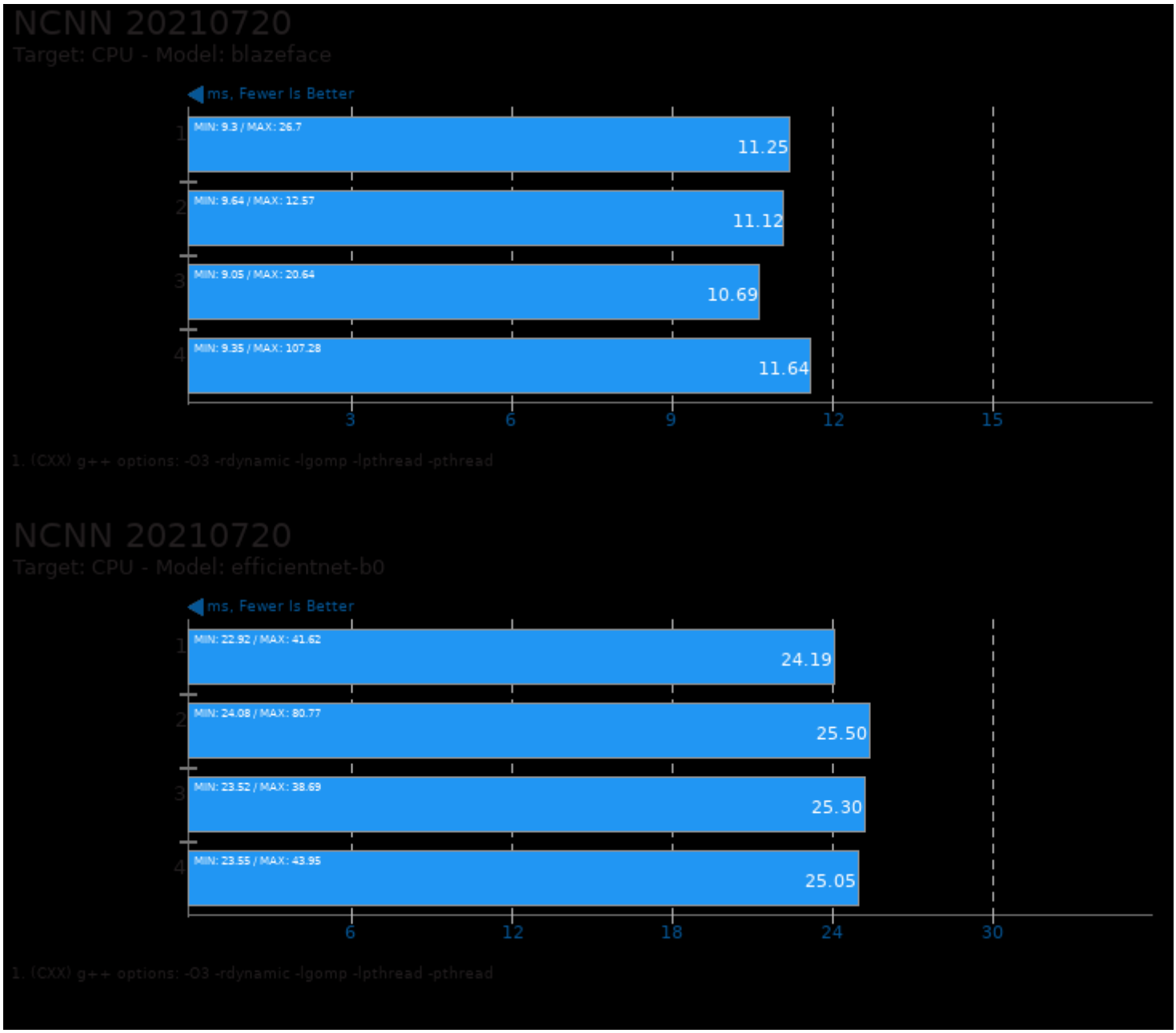

Renaissance 0.12
Test: Savina Reactors.IO
ms, Fewer Is Better
MIN: 13154.26 / MAX: 21786.22
13154.3
MAX: 29058.88
15082.5
MAX: 28247.79
13975.2
MAX: 28304.5
15864.3
MAX: 28002.1
14413.9
3K
6K
9K
12K
15K
C-Blosc 2.0
Compressor: blosclz
MB/s, More Is Better
9887.1
9918.1
9925.6
9812.4
9938.3
2K
4K
6K
8K
10K
1. (CC) gcc options: -std=gnu99 -O3 -pthread -lrt -lm

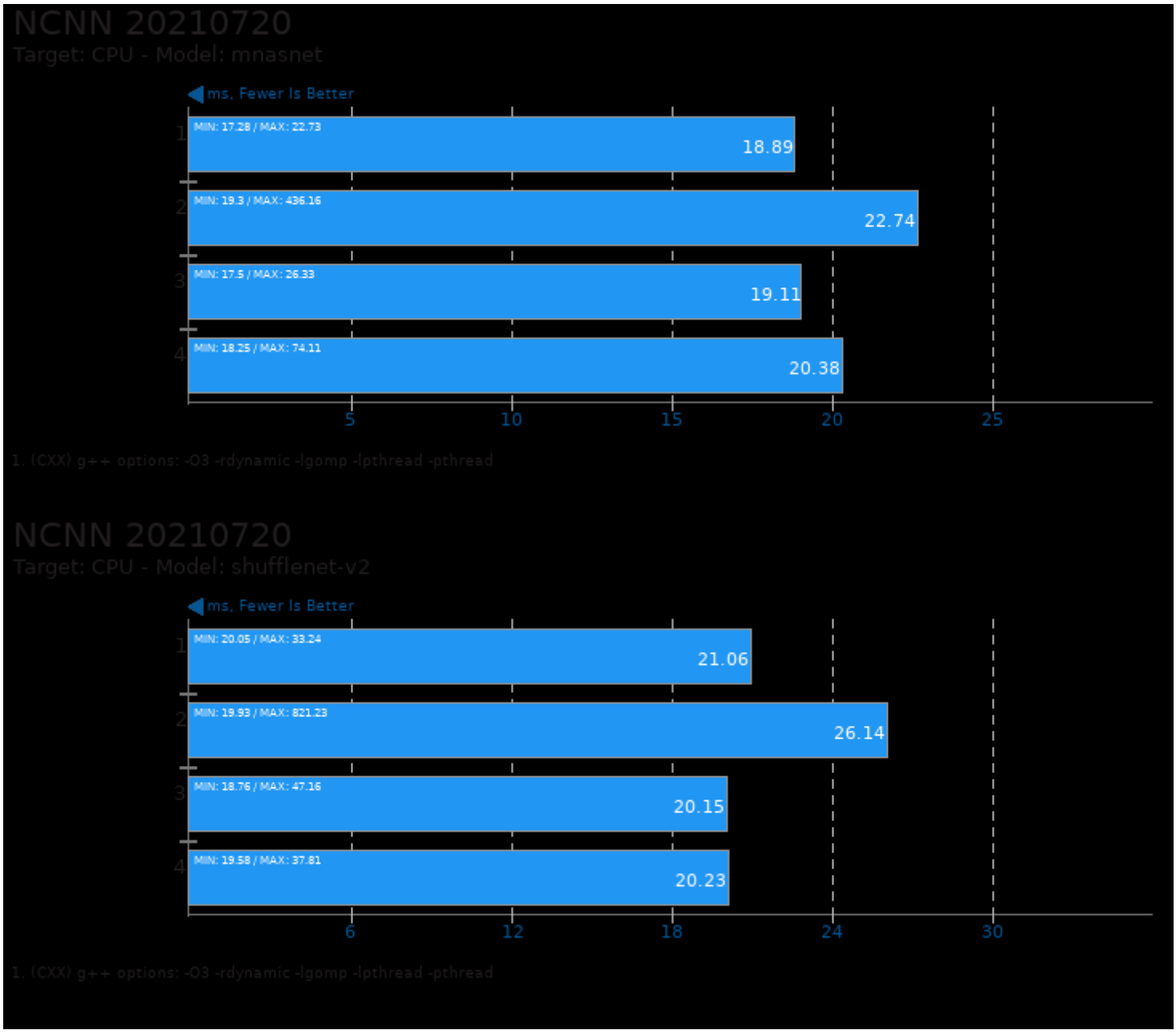

NCNN 20210720
Target: CPU - Model: regnety_400m
ms, Fewer Is Better
1
MIN: 66.54 / MAX: 87.66
69.25
2
MIN: 70.18 / MAX: 101.05
73.85
3
MIN: 67.59 / MAX: 92.09
69.87
4
MIN: 68.14 / MAX: 112.99
71.35
16
32
48
64
80
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread
NCNN 20210720
Target: CPU - Model: squeezenet_ssd
ms, Fewer Is Better
1
MIN: 35.16 / MAX: 55.77
37.76
2
MIN: 35.08 / MAX: 466.95
42.67
3
MIN: 33.67 / MAX: 497.6
39.52
4
MIN: 35.45 / MAX: 176.92
38.99
10
20
30
40
50
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread

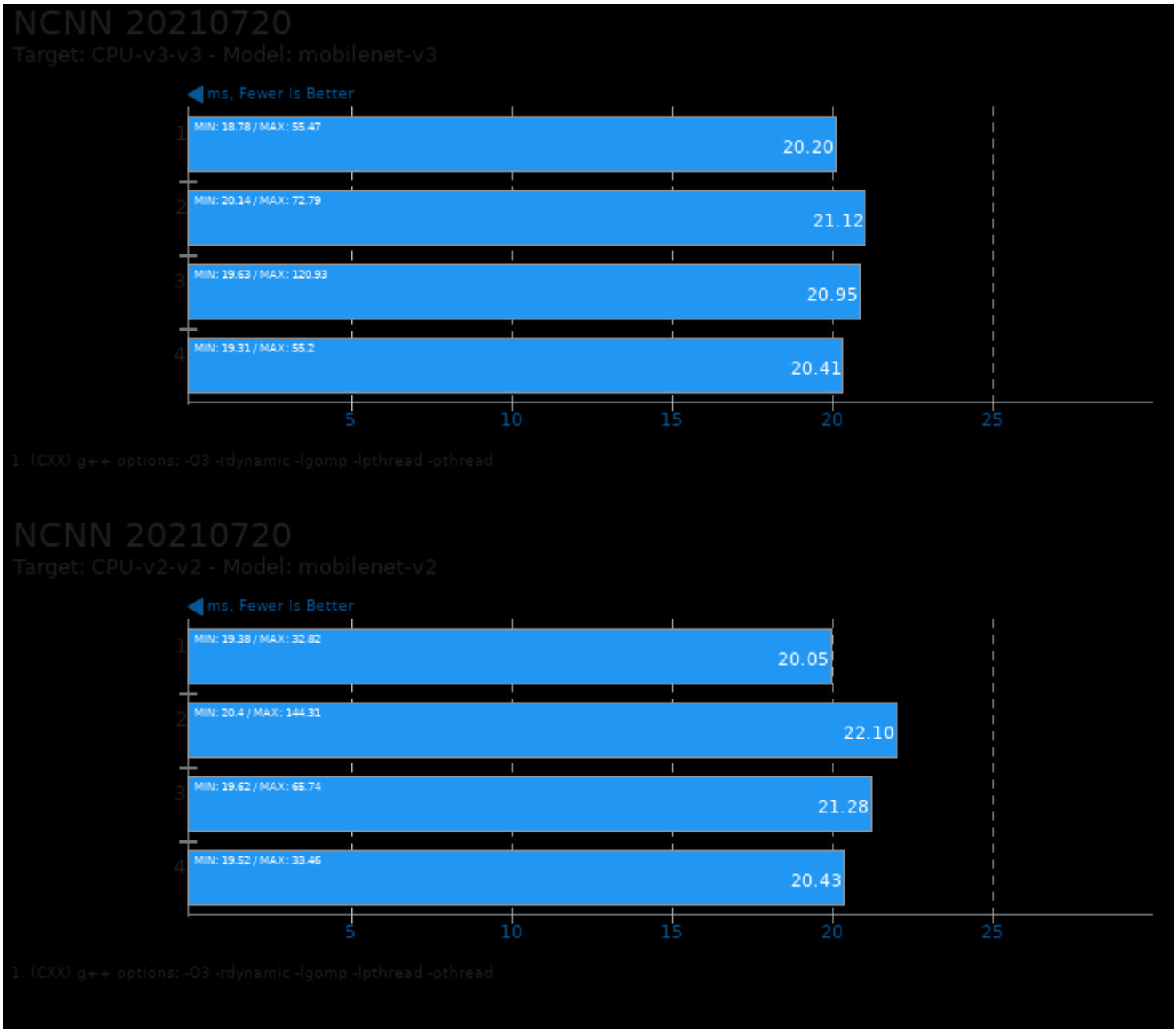

NCNN 20210720
Target: CPU - Model: yolov4-tiny
ms, Fewer Is Better
1
MIN: 35.53 / MAX: 664.23
51.90
2
MIN: 35.09 / MAX: 69.12
38.78
3
MIN: 34.75 / MAX: 901.11
61.56
4
MIN: 36.9 / MAX: 736.97
52.87
14
28
42
56
70
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread
NCNN 20210720
Target: CPU - Model: resnet50
ms, Fewer Is Better
1
MIN: 40.3 / MAX: 132.1
42.25
2
MIN: 39.75 / MAX: 57.53
41.74
3
MIN: 39.17 / MAX: 89.15
41.75
4
MIN: 40.32 / MAX: 55.76
41.90
10
20
30
40
50
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread

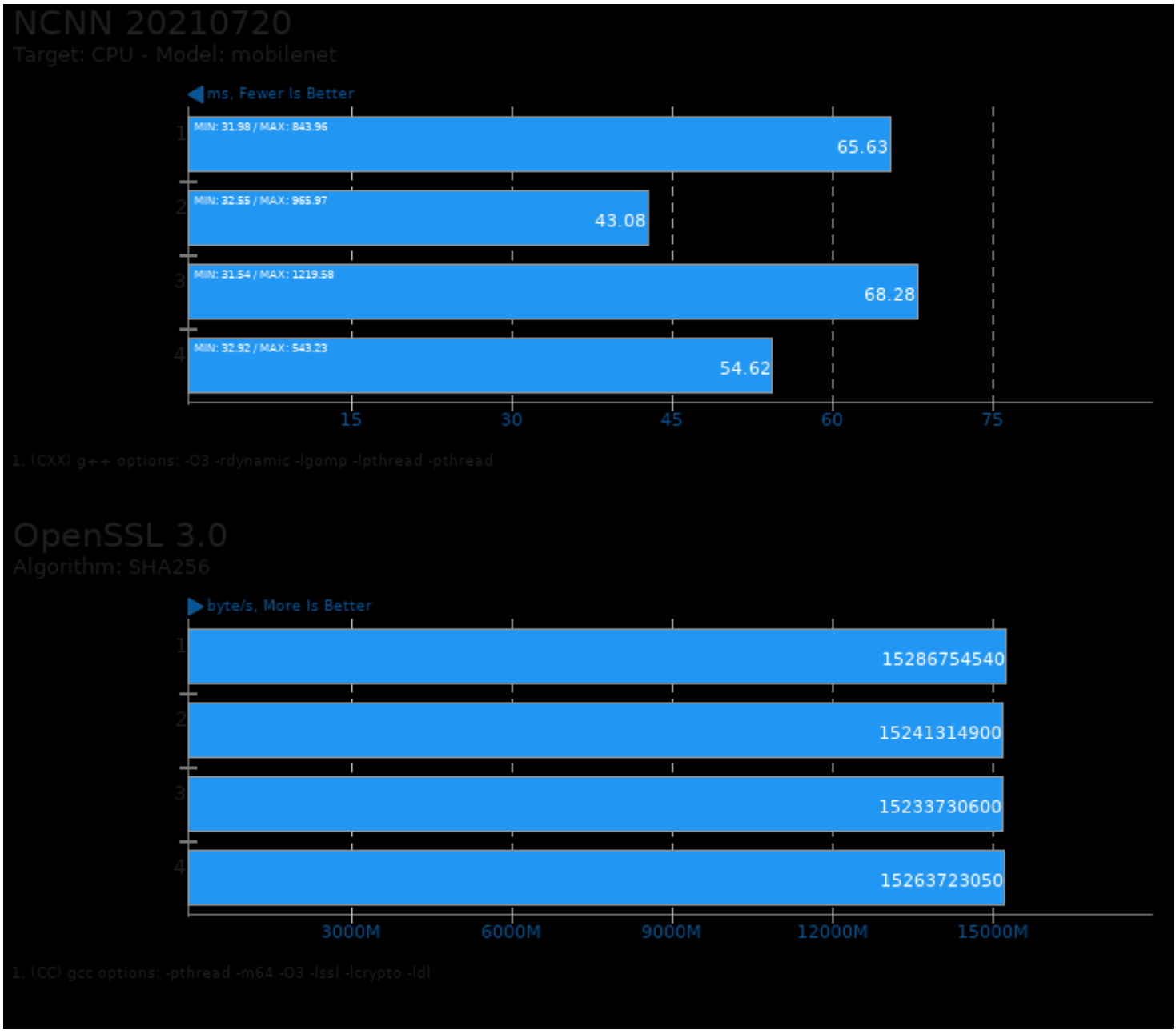

NCNN 20210720
Target: CPU - Model: alexnet
ms, Fewer Is Better
1
MIN: 13.09 / MAX: 32.07
15.70
2
MIN: 11.63 / MAX: 86.68
13.82
3
MIN: 13 / MAX: 29.93
15.33
4
MIN: 13.34 / MAX: 35.13
16.46
4
8
12
16
20
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread
NCNN 20210720
Target: CPU - Model: resnet18
ms, Fewer Is Better
1
MIN: 20.11 / MAX: 25.81
22.04
2
MIN: 18.7 / MAX: 36.49
21.74
3
MIN: 17.71 / MAX: 21.81
20.01
4
MIN: 19.19 / MAX: 30.57
21.94
5
10
15
20
25
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread

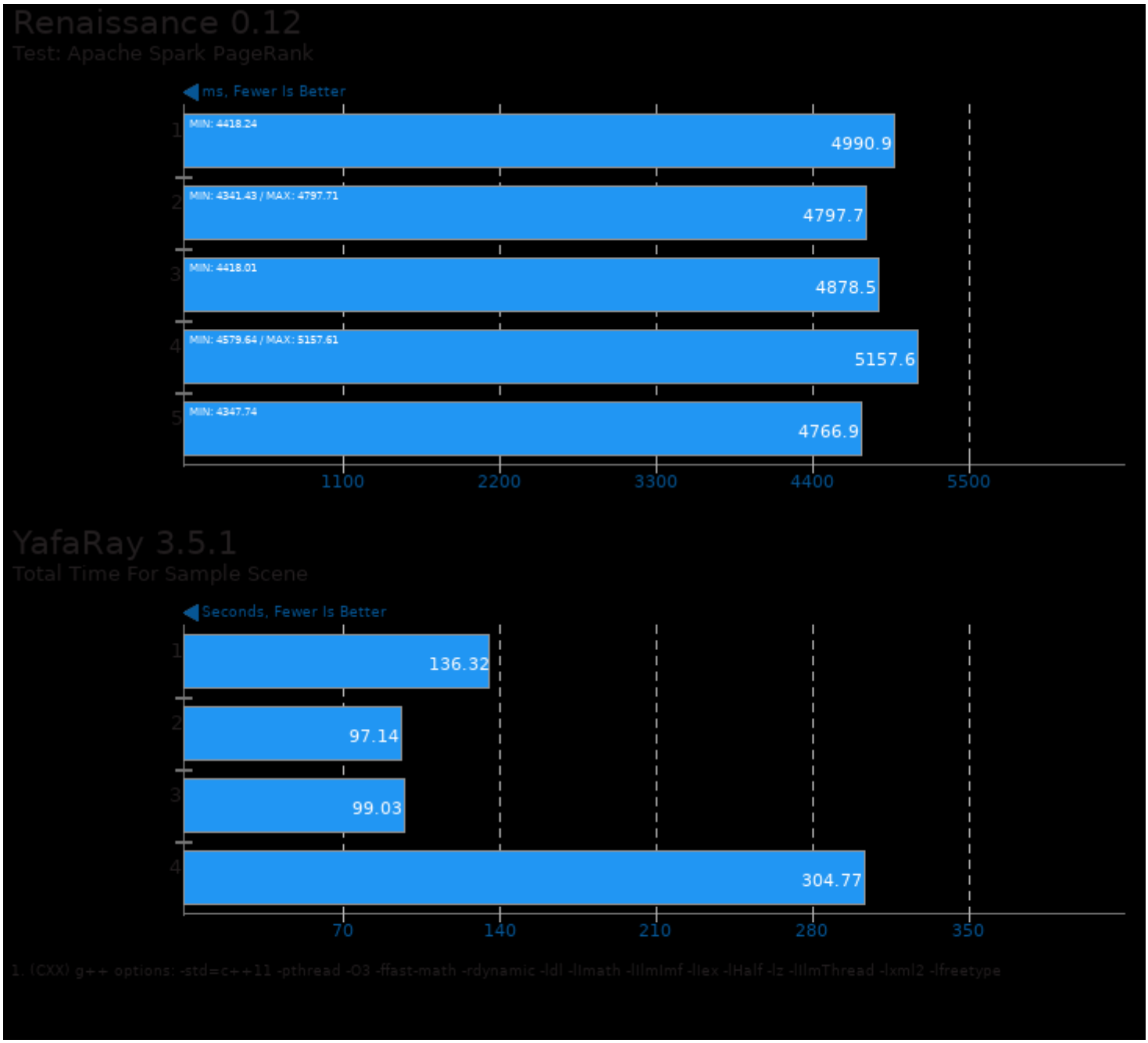

NCNN 20210720
Target: CPU - Model: vgg16
ms, Fewer Is Better
1
MIN: 44.63 / MAX: 61.65
48.17
2
MIN: 47.84 / MAX: 546.68
57.07
3
MIN: 46.54 / MAX: 280.63
52.25
4
MIN: 46.37 / MAX: 67.88
50.12
13
26
39
52
65
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread
NCNN 20210720
Target: CPU - Model: googlenet
ms, Fewer Is Better
1
MIN: 34.41 / MAX: 54.8
37.14
2
MIN: 33.51 / MAX: 169.37
37.18
3
MIN: 33.33 / MAX: 47.61
35.70
4
MIN: 33.19 / MAX: 52.95
35.67
9
18
27
36
45
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread


NCNN 20210720
Target: CPU - Model: blazeface
ms, Fewer Is Better
1
MIN: 9.3 / MAX: 26.7
11.25
2
MIN: 9.64 / MAX: 12.57
11.12
3
MIN: 9.05 / MAX: 20.64
10.69
4
MIN: 9.35 / MAX: 107.28
11.64
3
6
9
12
15
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread
NCNN 20210720
Target: CPU - Model: efficientnet-b0
ms, Fewer Is Better
1
MIN: 22.92 / MAX: 41.62
24.19
2
MIN: 24.08 / MAX: 80.77
25.50
3
MIN: 23.52 / MAX: 38.69
25.30
4
MIN: 23.55 / MAX: 43.95
25.05
6
12
18
24
30
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread


NCNN 20210720
Target: CPU - Model: mnasnet
ms, Fewer Is Better
1
MIN: 17.28 / MAX: 22.73
18.89
2
MIN: 19.3 / MAX: 436.16
22.74
3
MIN: 17.5 / MAX: 26.33
19.11
4
MIN: 18.25 / MAX: 74.11
20.38
5
10
15
20
25
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread
NCNN 20210720
Target: CPU - Model: shufflenet-v2
ms, Fewer Is Better
1
MIN: 20.05 / MAX: 33.24
21.06
2
MIN: 19.93 / MAX: 821.23
26.14
3
MIN: 18.76 / MAX: 47.16
20.15
4
MIN: 19.58 / MAX: 37.81
20.23
6
12
18
24
30
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread

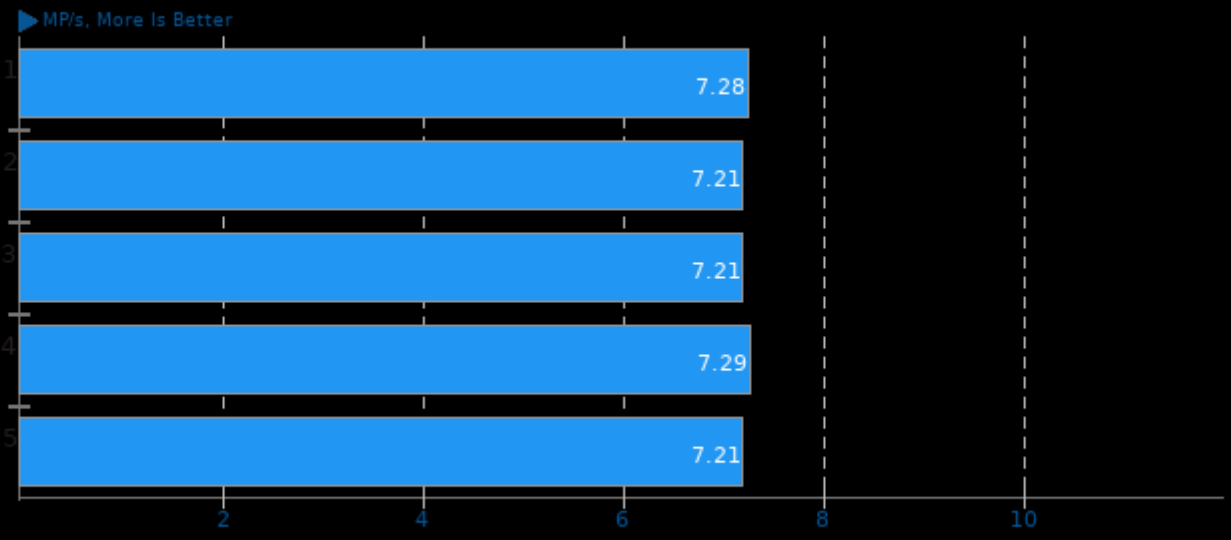

NCNN 20210720
Target: CPU-v3-v3 - Model: mobilenet-v3
ms, Fewer Is Better
1
MIN: 18.78 / MAX: 55.47
20.20
2
MIN: 20.14 / MAX: 72.79
21.12
3
MIN: 19.63 / MAX: 120.93
20.95
4
MIN: 19.31 / MAX: 55.2
20.41
5
10
15
20
25
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread
NCNN 20210720
Target: CPU-v2-v2 - Model: mobilenet-v2
ms, Fewer Is Better
1
MIN: 19.38 / MAX: 32.82
20.05
2
MIN: 20.4 / MAX: 144.31
22.10
3
MIN: 19.62 / MAX: 65.74
21.28
4
MIN: 19.52 / MAX: 33.46
20.43
5
10
15
20
25
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread


NCNN 20210720
Target: CPU - Model: mobilenet
ms, Fewer Is Better
1
MIN: 31.98 / MAX: 843.96
65.63
2
MIN: 32.55 / MAX: 965.97
43.08
3
MIN: 31.54 / MAX: 1219.58
68.28
4
MIN: 32.92 / MAX: 543.23
54.62
15
30
45
60
75
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread
OpenSSL 3.0
Algorithm: SHA256
byte/s, More Is Better
1
15286754540
2
15241314900
3
15233730600
4
15263723050
3000M
6000M
9000M
12000M
15000M
1. (CC) gcc options: -pthread -m64 -O3 -lssl -lcrypto -ldl


Renaissance 0.12
Test: Apache Spark PageRank
ms, Fewer Is Better
1
MIN: 4418.24
4990.9
2
MIN: 4341.43 / MAX: 4797.71
4797.7
3
MIN: 4418.01
4878.5
4
MIN: 4579.64 / MAX: 5157.61
5157.6
5
MIN: 4347.74
4766.9
1100
2200
3300
4400
5500
YafaRay 3.5.1
Total Time For Sample Scene
Seconds, Fewer Is Better
1
136.32
2
97.14
3
99.03
4
304.77
70
140
210
280
350
1. (CXX) g++ options: -std=c++11 -pthread -O3 -ffast-math -rdynamic -ldl -lImath -lIlmImf -lIex -lHalf -lz -lIlmThread -lxml2 -lfreetype

JPEG XL libjxl 0.5

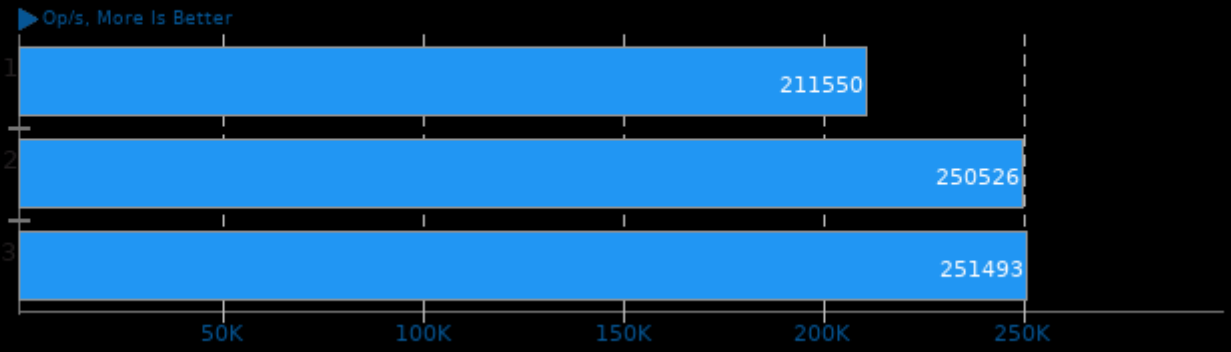
Input: PNG - Encode Speed: 7



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

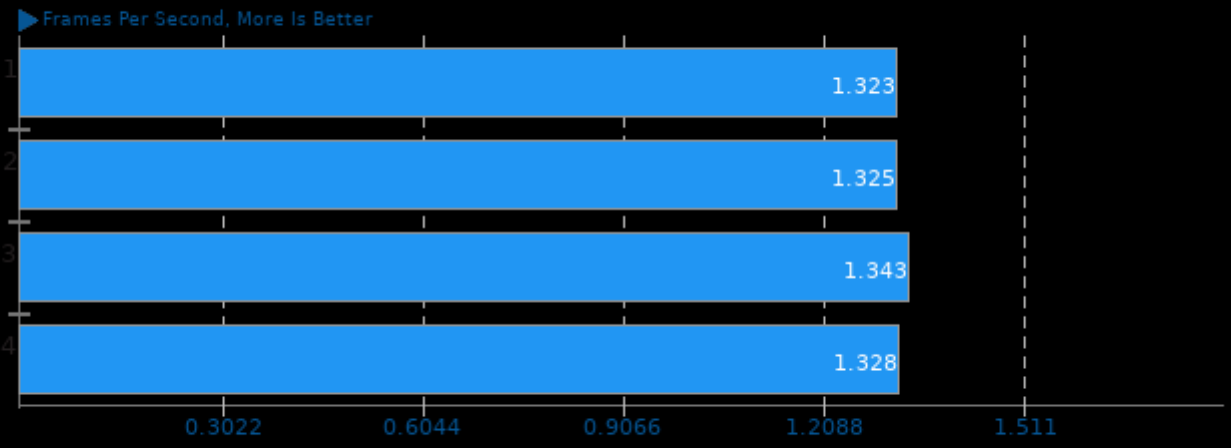
Apache Cassandra 4.0

Test: Writes



SVT-AV1 0.8.7

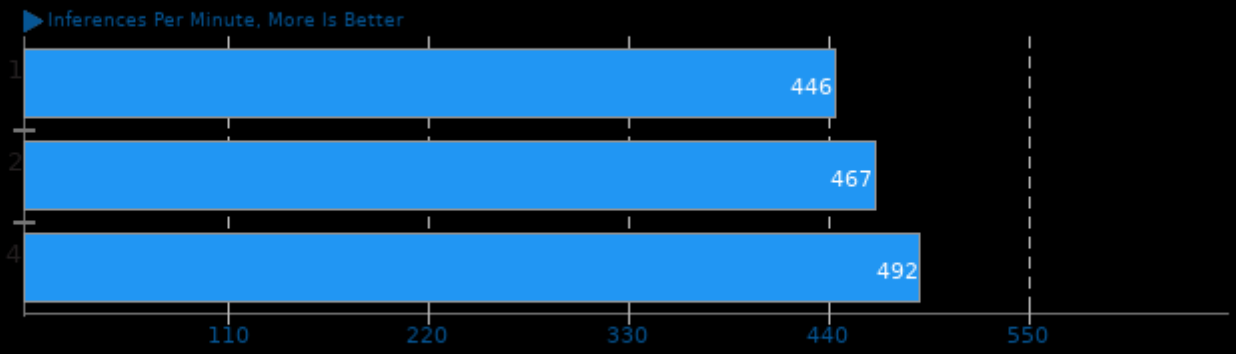
Encoder Mode: Preset 4 - Input: Bosphorus 4K



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

ONNX Runtime 1.8.2

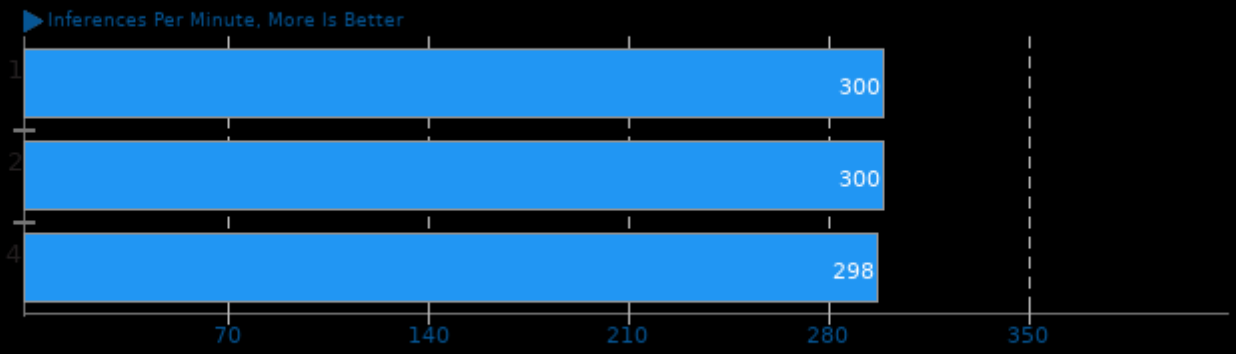
Model: bertsquad-10 - Device: OpenMP CPU



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

ONNX Runtime 1.8.2

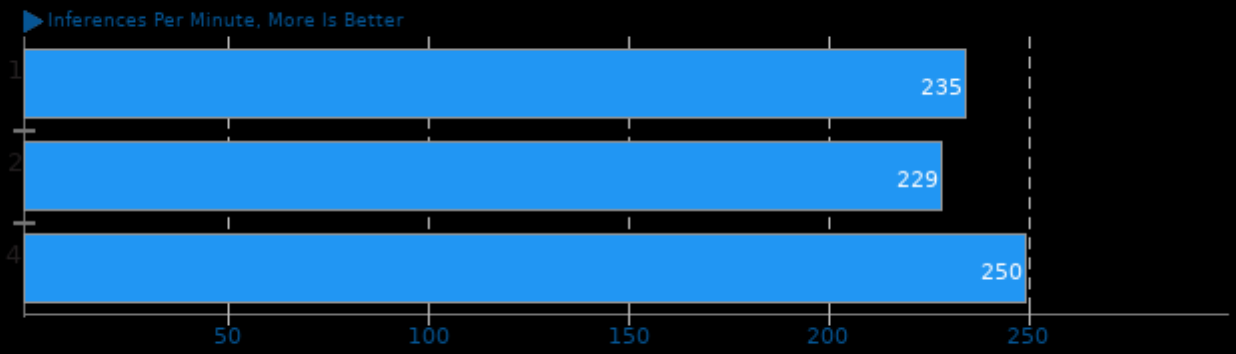
Model: yolov4 - Device: OpenMP CPU



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

ONNX Runtime 1.8.2

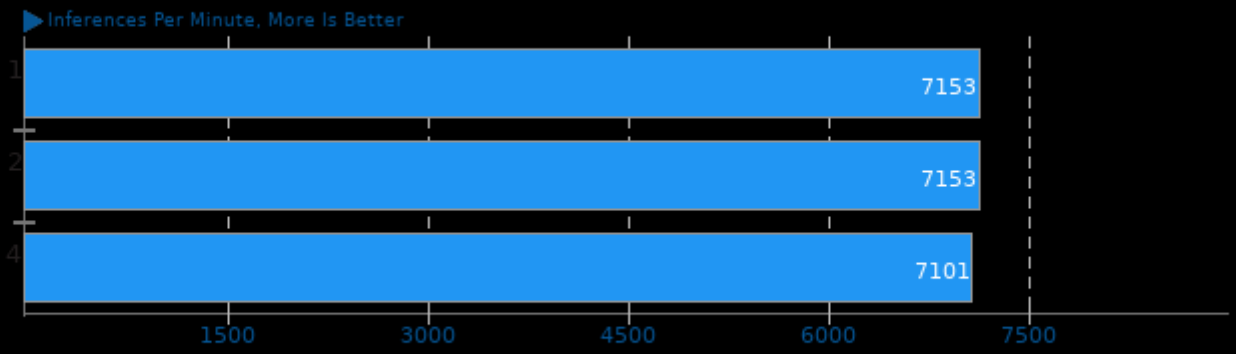
Model: fcn-resnet101-11 - Device: OpenMP CPU



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

ONNX Runtime 1.8.2

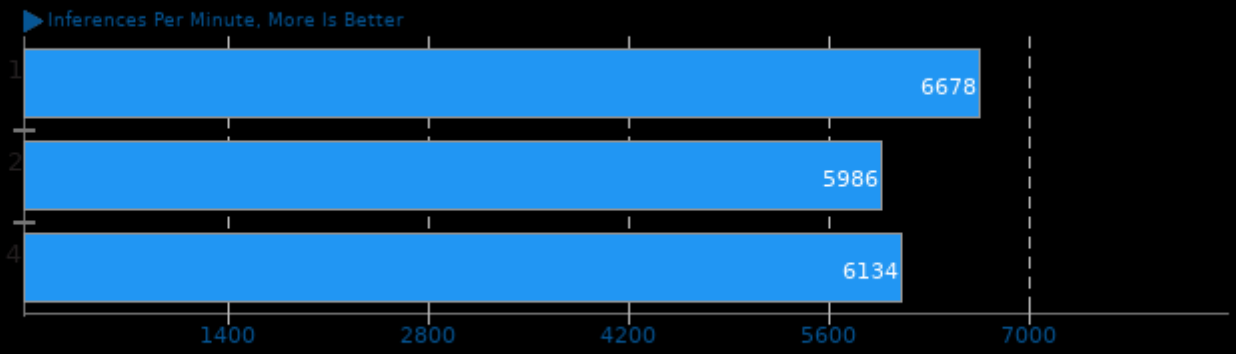
Model: shufflenet-v2-10 - Device: OpenMP CPU



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

ONNX Runtime 1.8.2

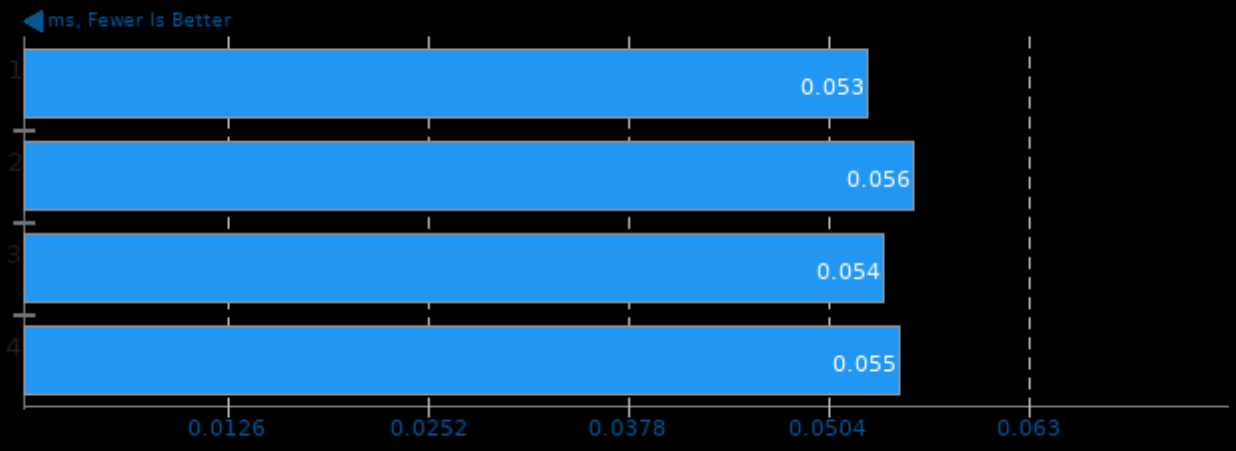
Model: super-resolution-10 - Device: OpenMP CPU



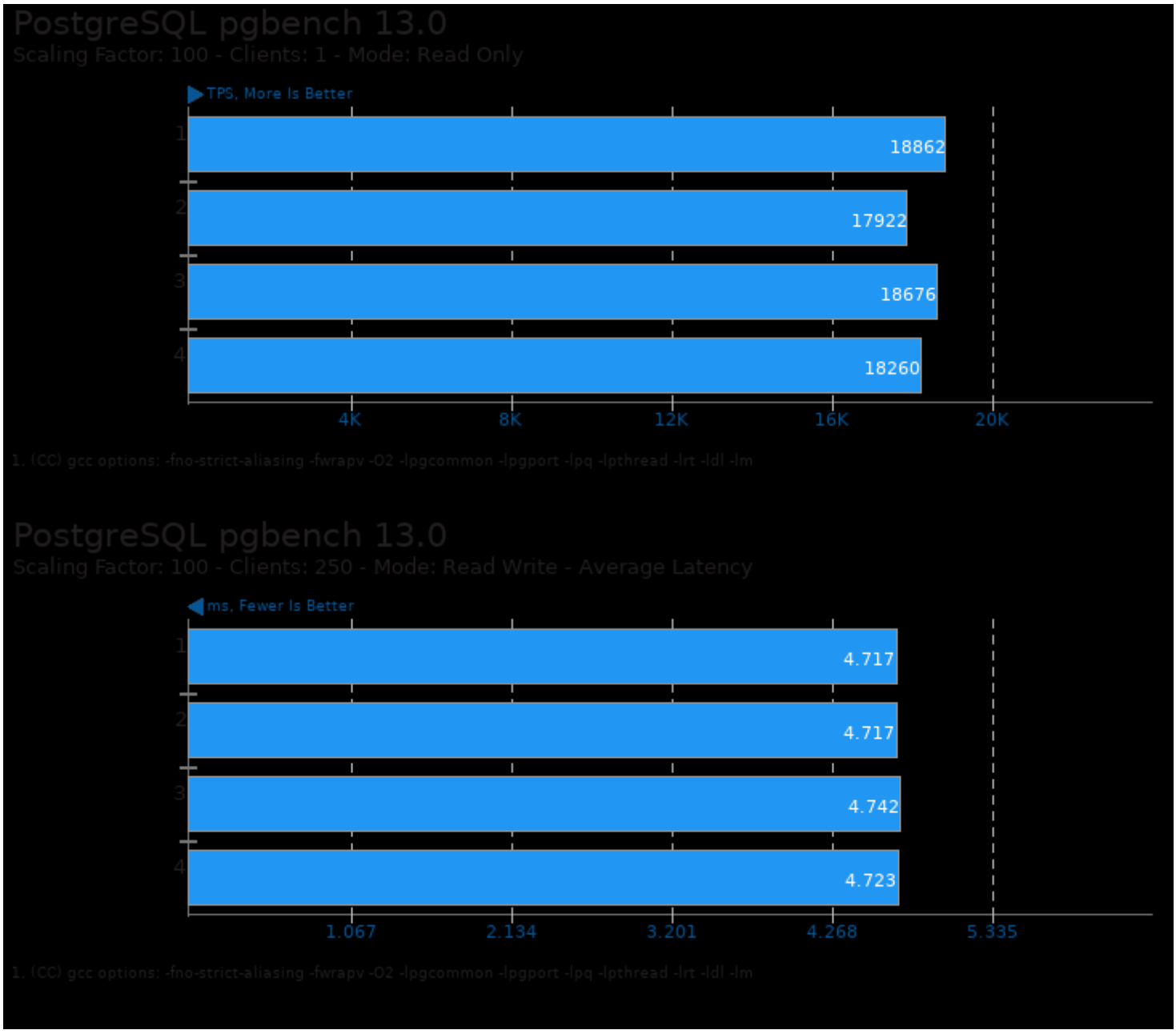
1. (CXX) g++ options: -fopenmp -ffunction-sections -fdata-sections -O3 -ldl -lrt

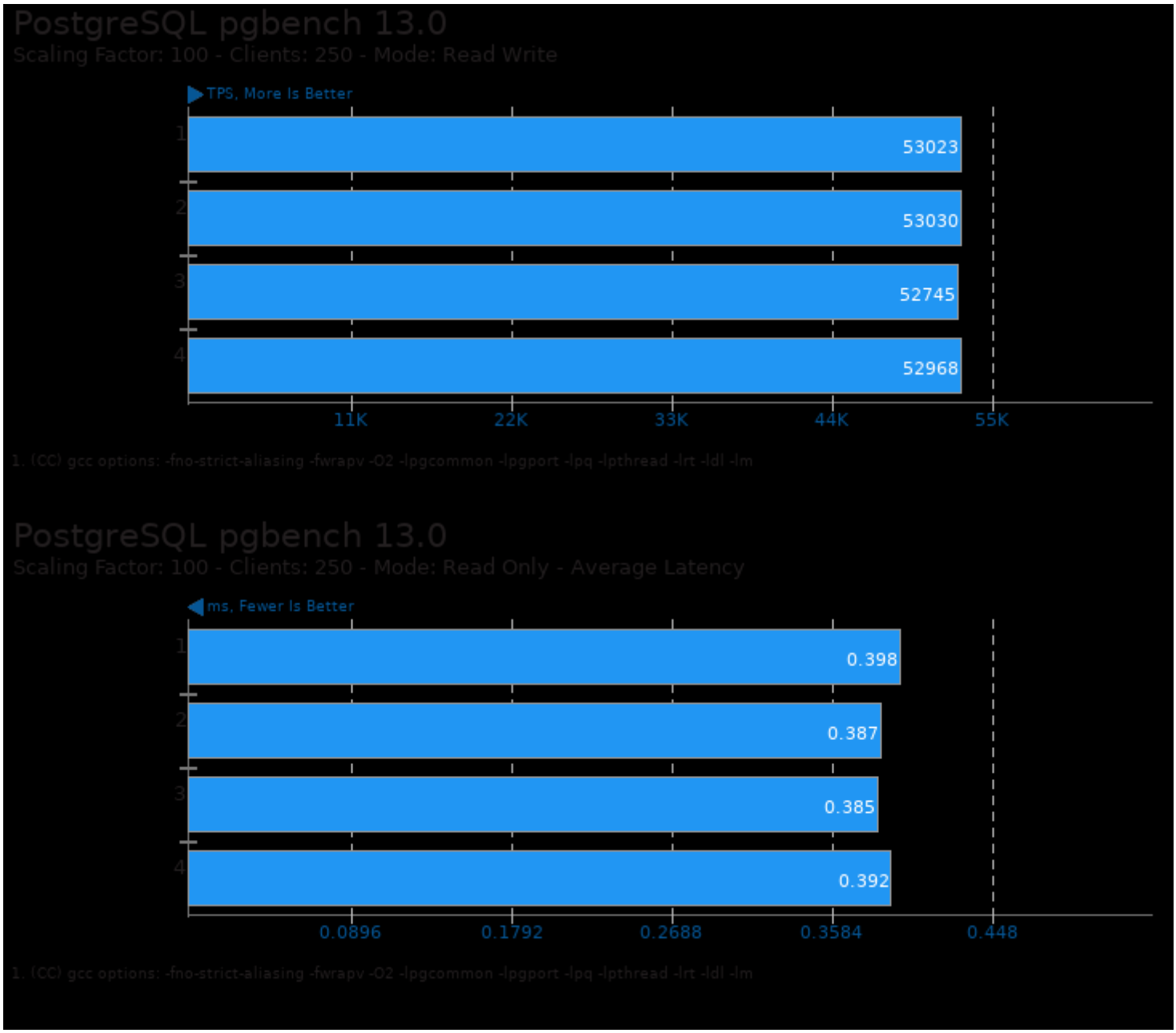
PostgreSQL pgbench 13.0

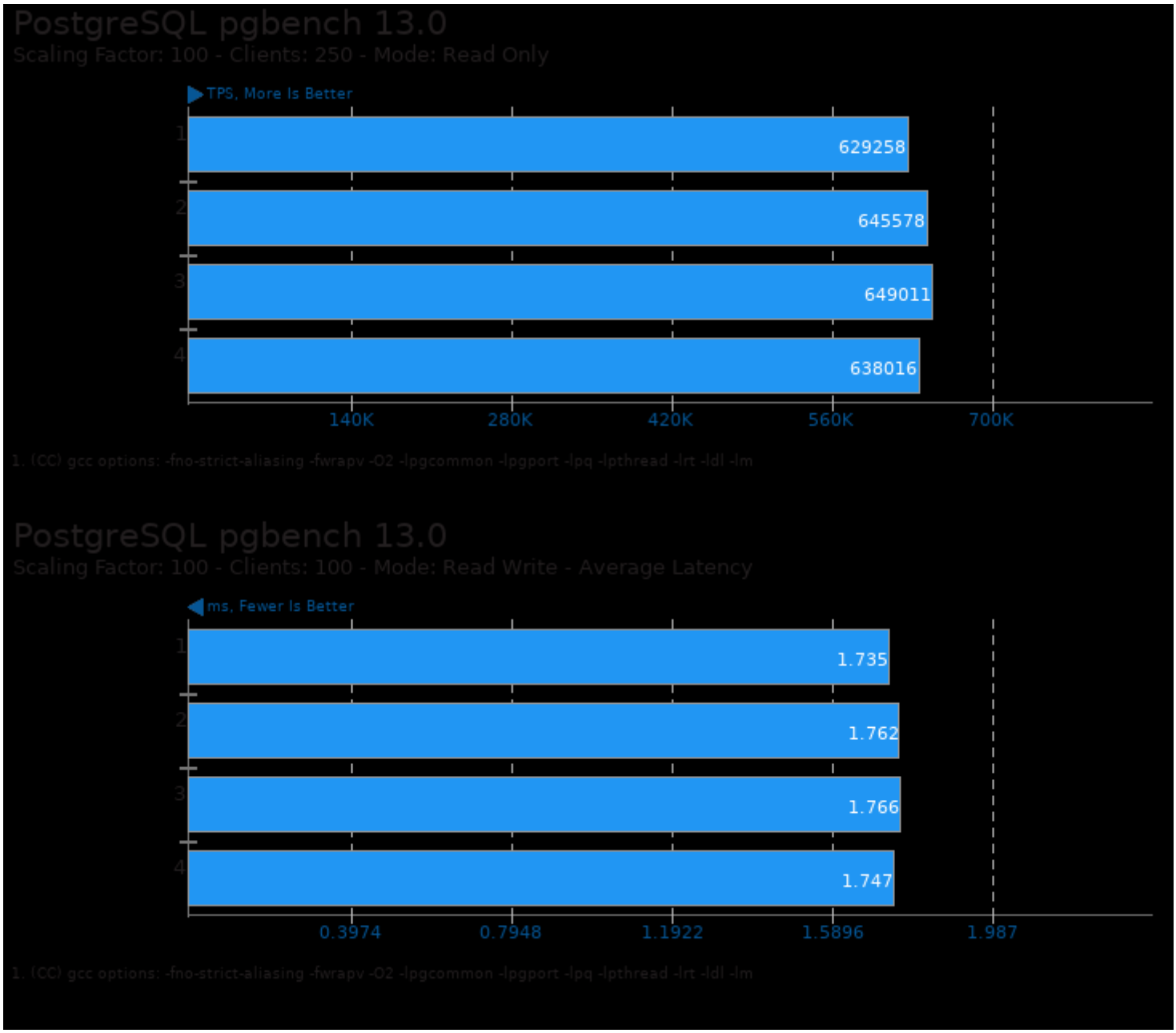
Scaling Factor: 100 - Clients: 1 - Mode: Read Only - Average Latency

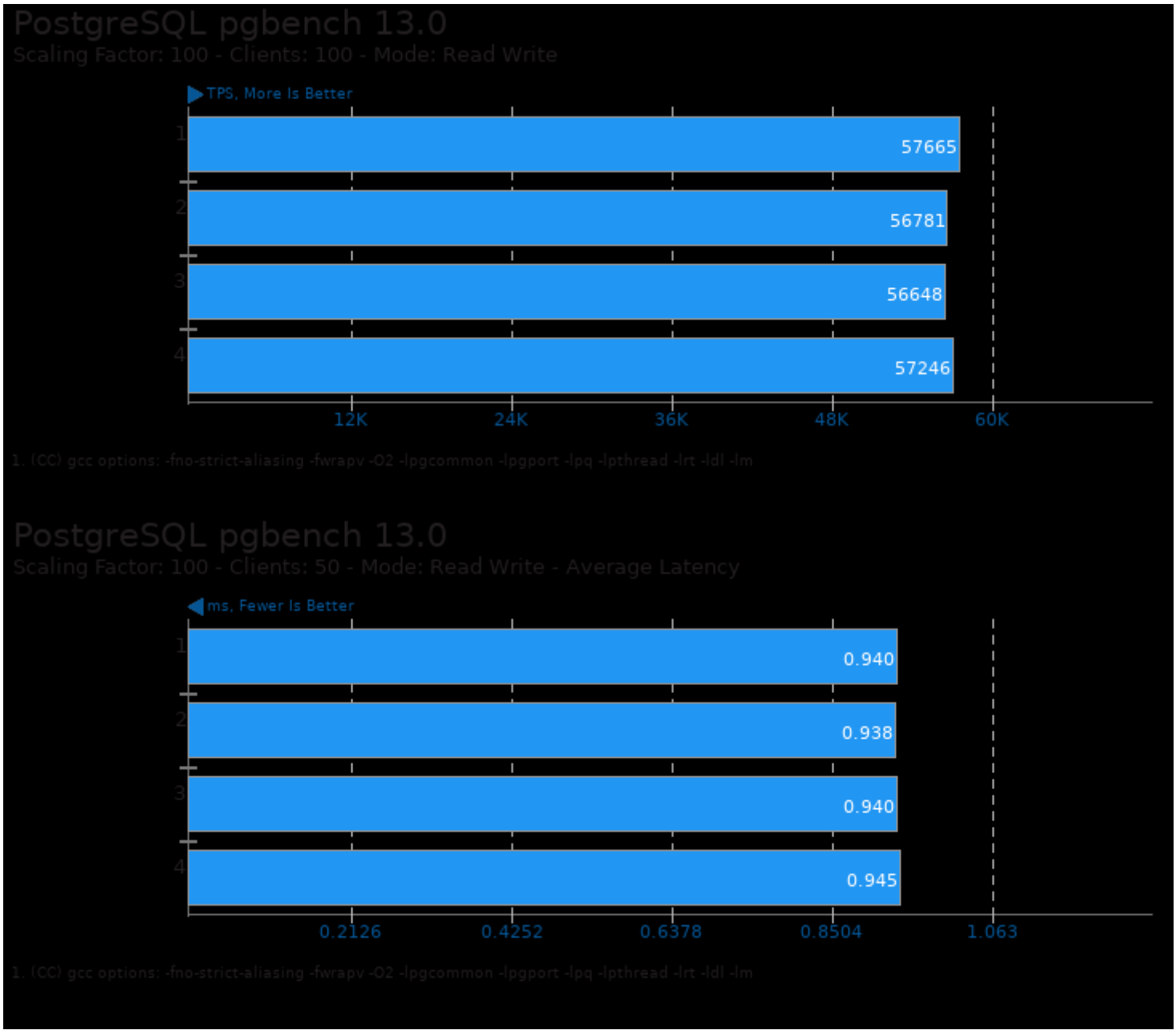


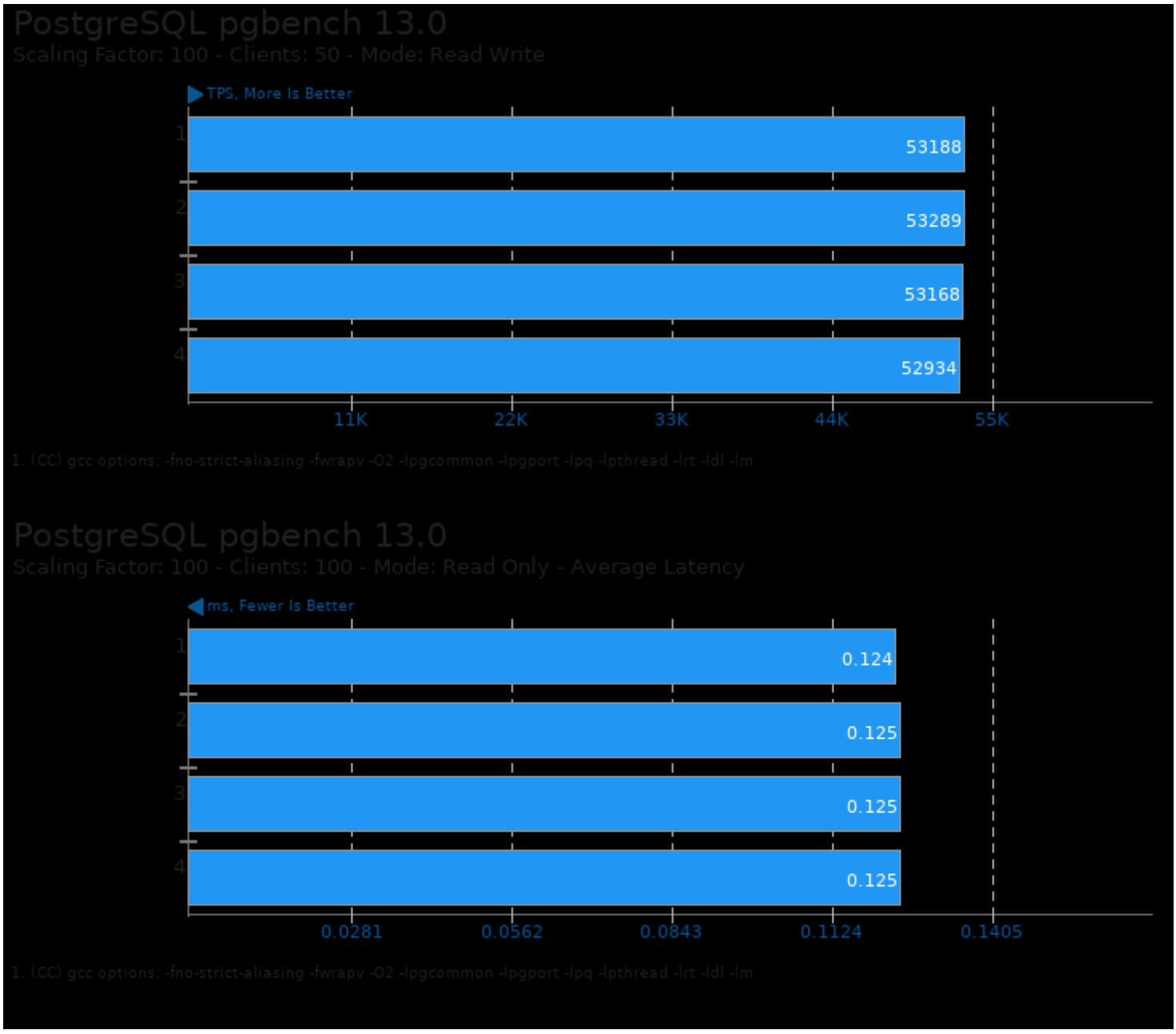
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

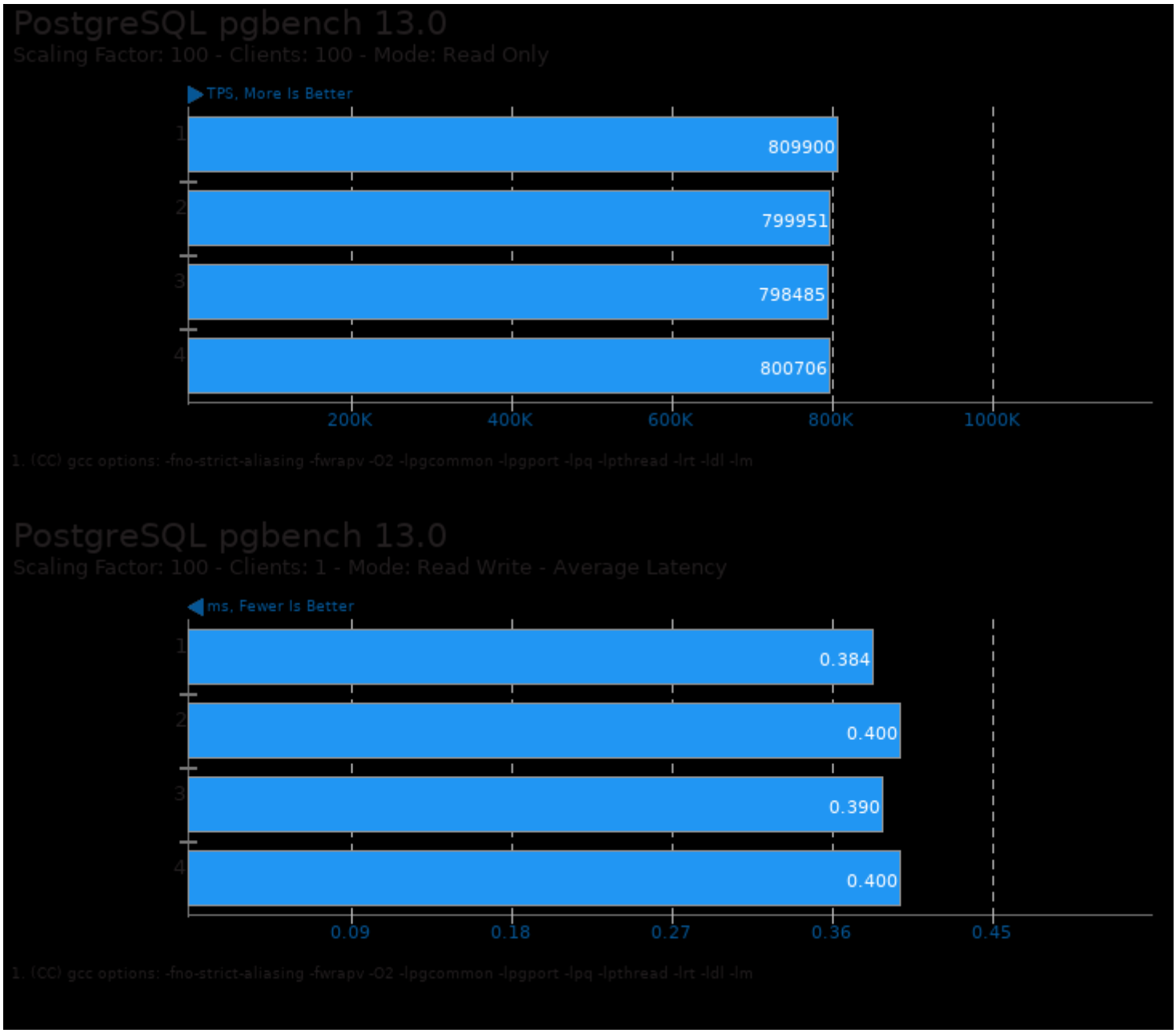

PostgreSQL pgbench 13.0
Scaling Factor: 100 - Clients: 1 - Mode: Read Only
TPS, More Is Better
1
18862
2
17922
3
18676
4
18260
4K
8K
12K
16K
20K
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm
PostgreSQL pgbench 13.0
Scaling Factor: 100 - Clients: 250 - Mode: Read Write - Average Latency
ms, Fewer Is Better
1
4.717
2
4.717
3
4.742
4
4.723
1.067
2.134
3.201
4.268
5.335
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

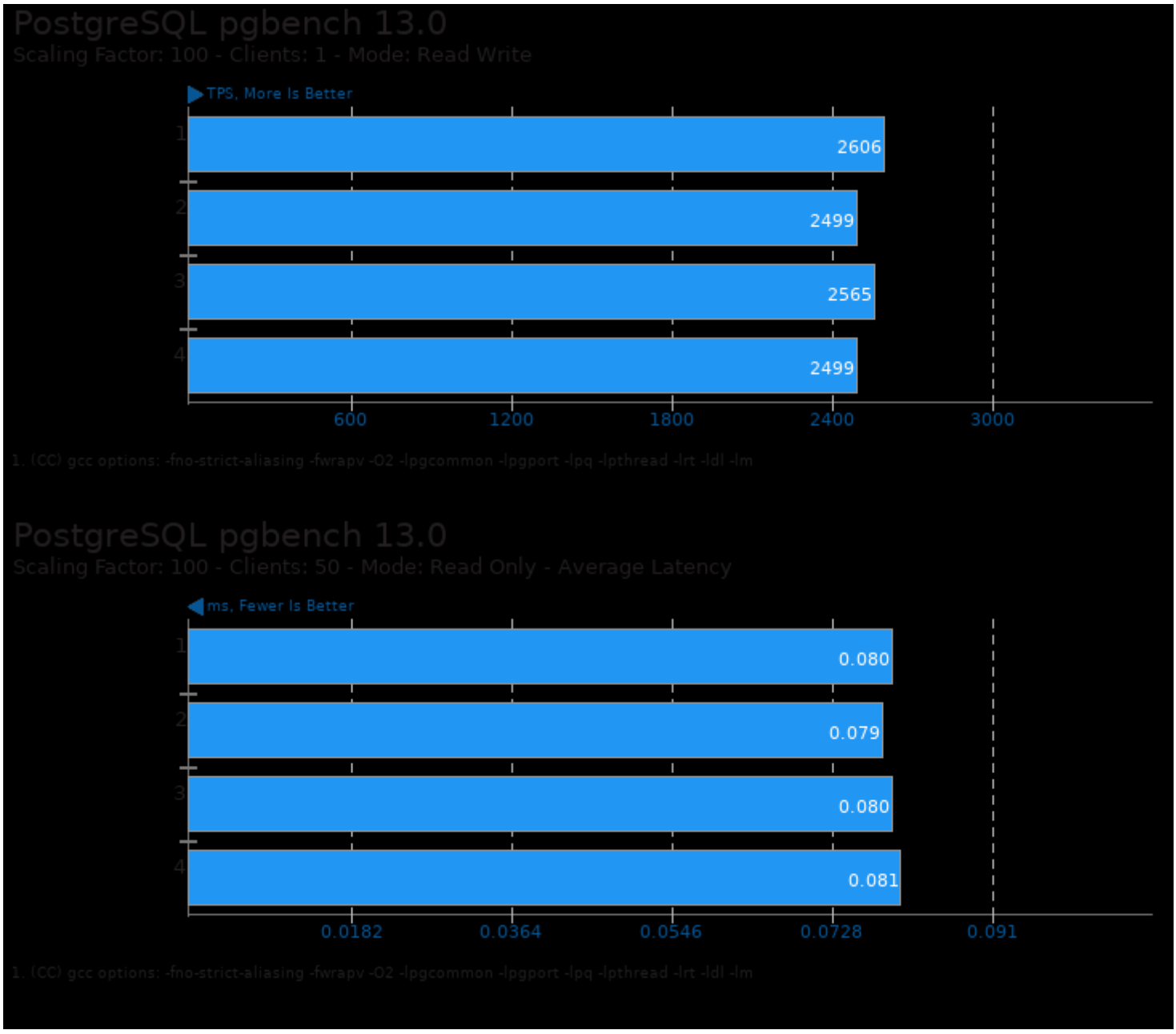

PostgreSQL pgbench 13.0
Scaling Factor: 100 - Clients: 250 - Mode: Read Write
TPS, More Is Better
1
2
3
4
53023
53030
52745
52968
11K
22K
33K
44K
55K
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm
PostgreSQL pgbench 13.0
Scaling Factor: 100 - Clients: 250 - Mode: Read Only - Average Latency
ms, Fewer Is Better
1
2
3
4
0.398
0.387
0.385
0.392
0.0896
0.1792
0.2688
0.3584
0.448
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

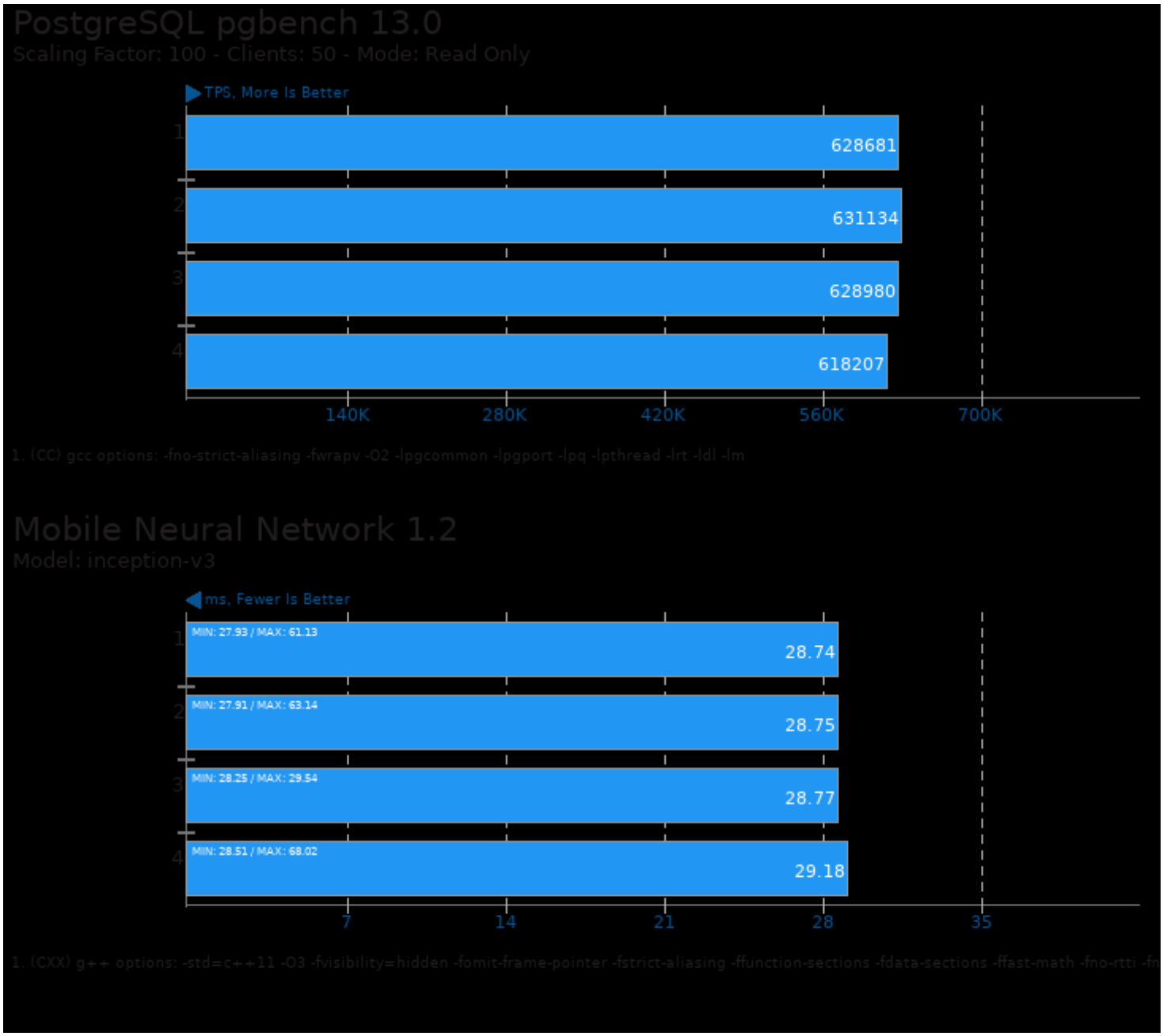

PostgreSQL pgbench 13.0
Scaling Factor: 100 - Clients: 250 - Mode: Read Only
TPS, More Is Better
1
629258
2
645578
3
649011
4
638016
140K
280K
420K
560K
700K
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm
PostgreSQL pgbench 13.0
Scaling Factor: 100 - Clients: 100 - Mode: Read Write - Average Latency
ms, Fewer Is Better
1
1.735
2
1.762
3
1.766
4
1.747
0.3974
0.7948
1.1922
1.5896
1.987
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

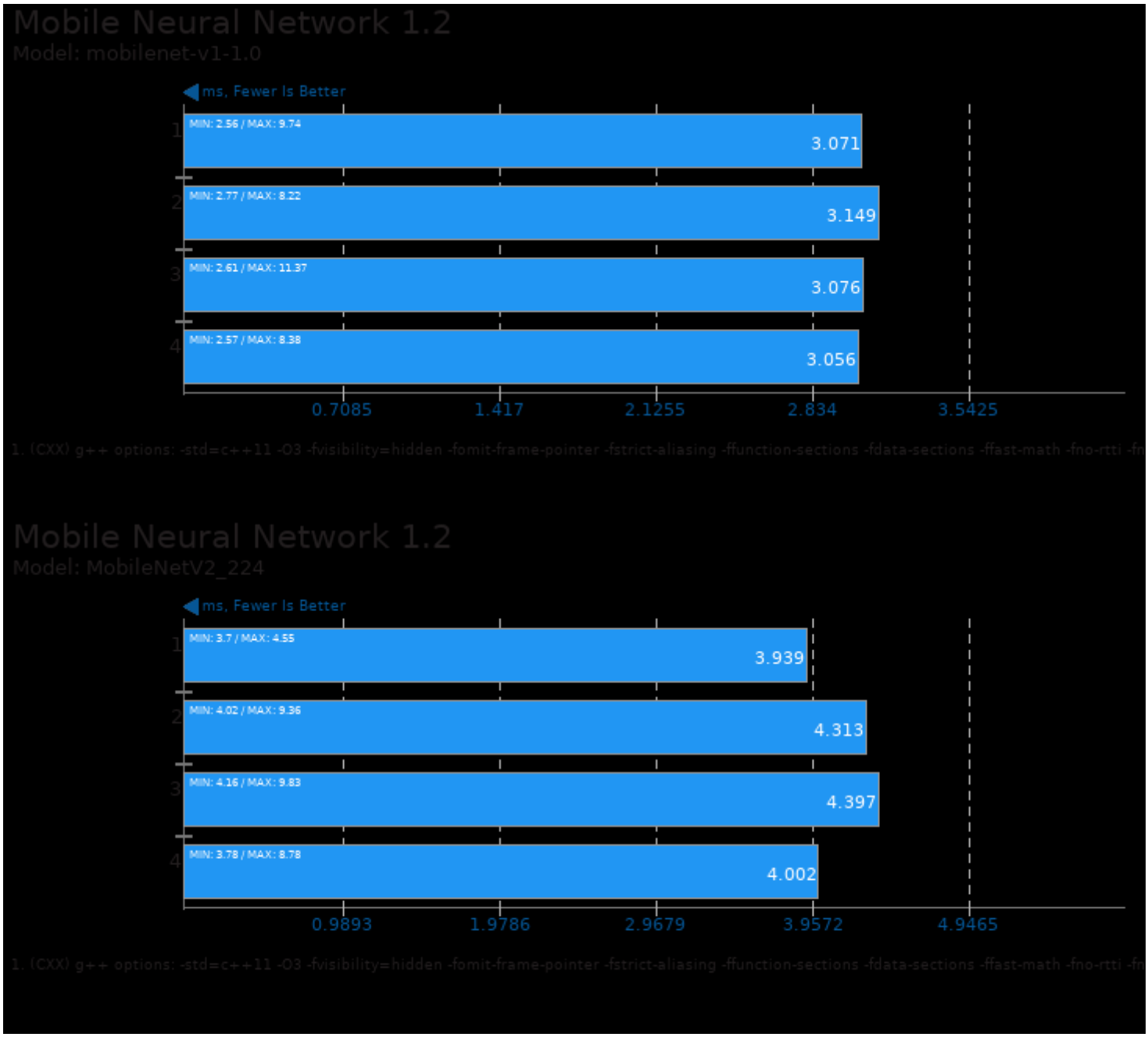

PostgreSQL pgbench 13.0
Scaling Factor: 100 - Clients: 100 - Mode: Read Write
TPS, More Is Better
1
2
3
4
57665
56781
56648
57246
12K
24K
36K
48K
60K
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm
PostgreSQL pgbench 13.0
Scaling Factor: 100 - Clients: 50 - Mode: Read Write - Average Latency
ms, Fewer Is Better
1
2
3
4
0.940
0.938
0.940
0.945
0.2126
0.4252
0.6378
0.8504
1.063
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

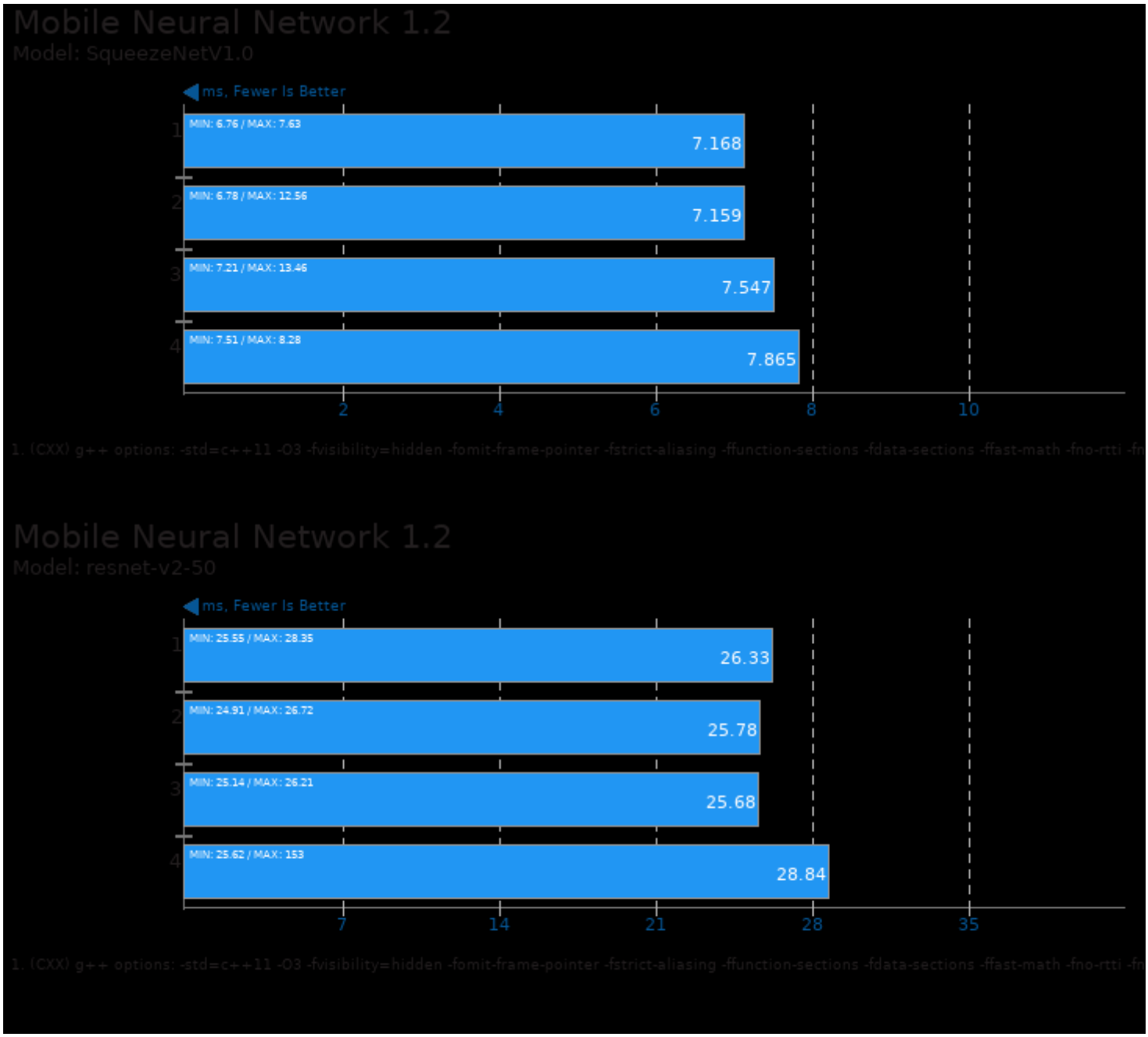

PostgreSQL pgbench 13.0
Scaling Factor: 100 - Clients: 50 - Mode: Read Write
TPS, More Is Better
1
2
3
4
53188
53289
53168
52934
11K
22K
33K
44K
55K
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm
PostgreSQL pgbench 13.0
Scaling Factor: 100 - Clients: 100 - Mode: Read Only - Average Latency
ms, Fewer Is Better
1
2
3
4
0.124
0.125
0.125
0.125
0.0281
0.0562
0.0843
0.1124
0.1405
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

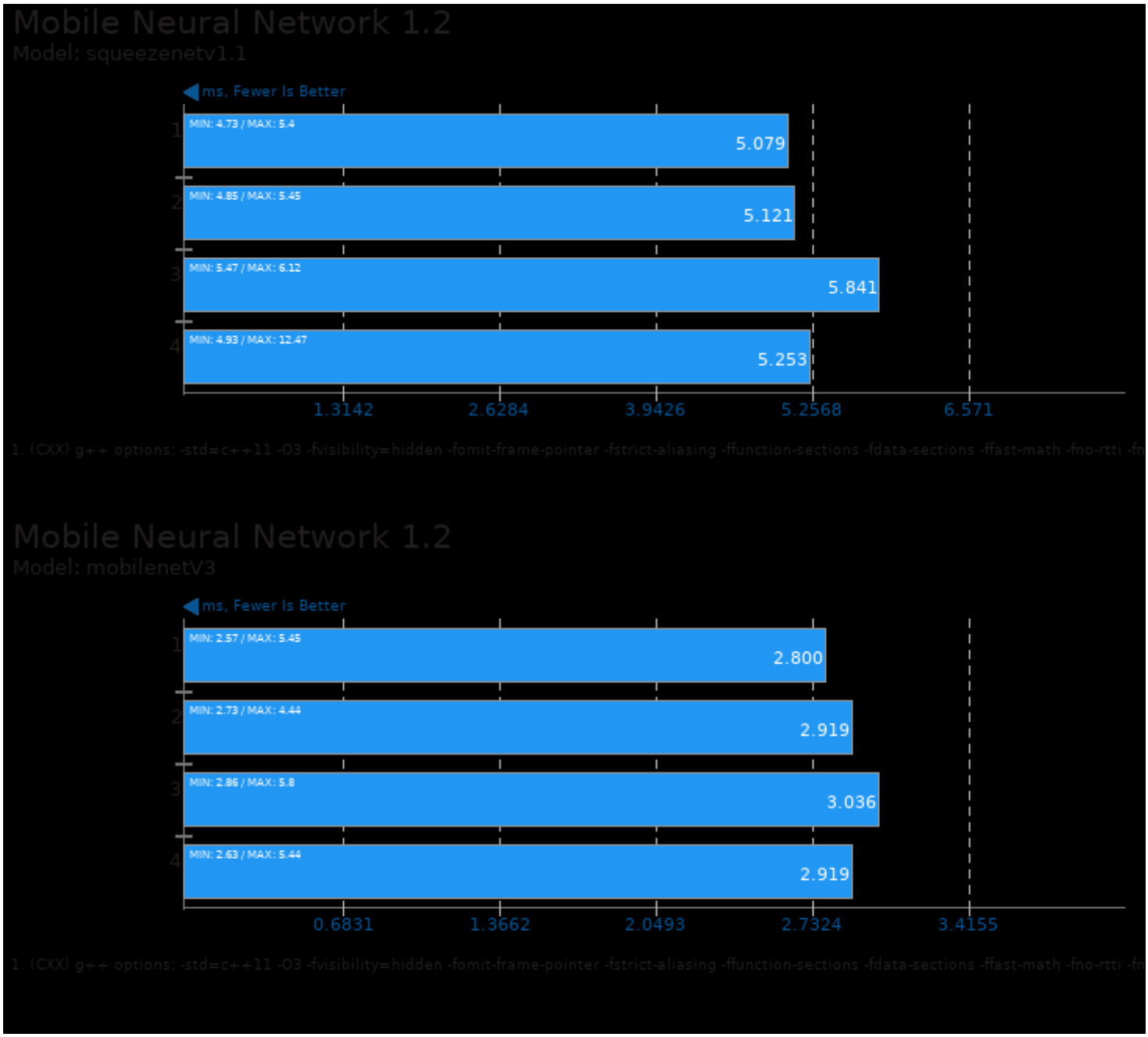

PostgreSQL pgbench 13.0
Scaling Factor: 100 - Clients: 100 - Mode: Read Only
TPS, More Is Better
1
809900
2
799951
3
798485
4
800706
200K
400K
600K
800K
1000K
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm
PostgreSQL pgbench 13.0
Scaling Factor: 100 - Clients: 1 - Mode: Read Write - Average Latency
ms, Fewer Is Better
1
0.384
2
0.400
3
0.390
4
0.400
0.09
0.18
0.27
0.36
0.45
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

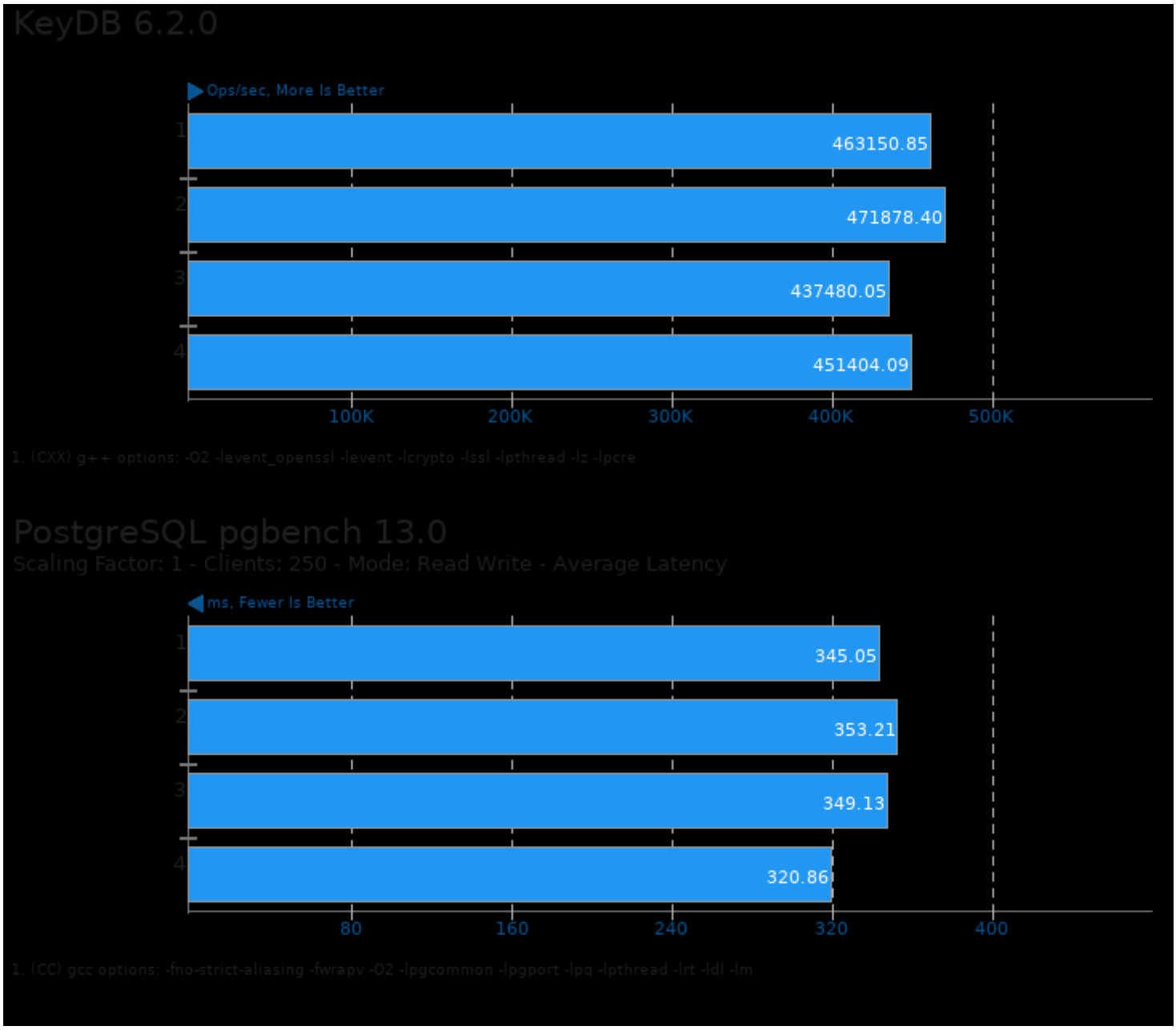

PostgreSQL pgbench 13.0
Scaling Factor: 100 - Clients: 1 - Mode: Read Write
TPS, More Is Better
1
2606
2
2499
3
2565
4
2499
600
1200
1800
2400
3000
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm
PostgreSQL pgbench 13.0
Scaling Factor: 100 - Clients: 50 - Mode: Read Only - Average Latency
ms, Fewer Is Better
1
0.080
2
0.079
3
0.080
4
0.081
0.0182
0.0364
0.0546
0.0728
0.091
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

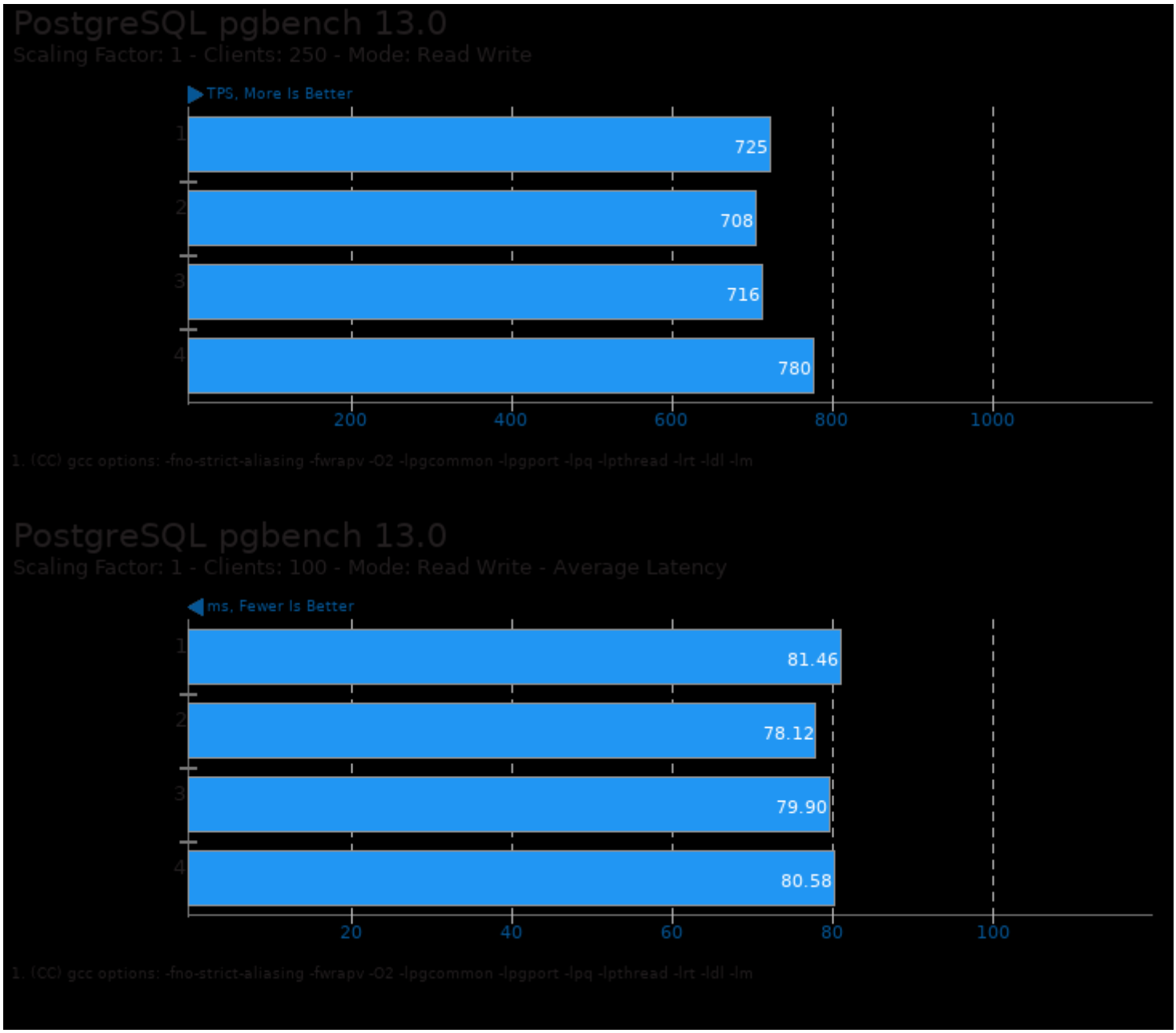

PostgreSQL pgbench 13.0
Scaling Factor: 100 - Clients: 50 - Mode: Read Only
TPS, More Is Better
1
628681
2
631134
3
628980
4
618207
140K
280K
420K
560K
700K
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm
Mobile Neural Network 1.2
Model: inception-v3
ms, Fewer Is Better
1
MIN: 27.93 / MAX: 61.13
28.74
2
MIN: 27.91 / MAX: 63.14
28.75
3
MIN: 28.25 / MAX: 29.54
28.77
4
MIN: 28.51 / MAX: 68.02
29.18
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 -fn

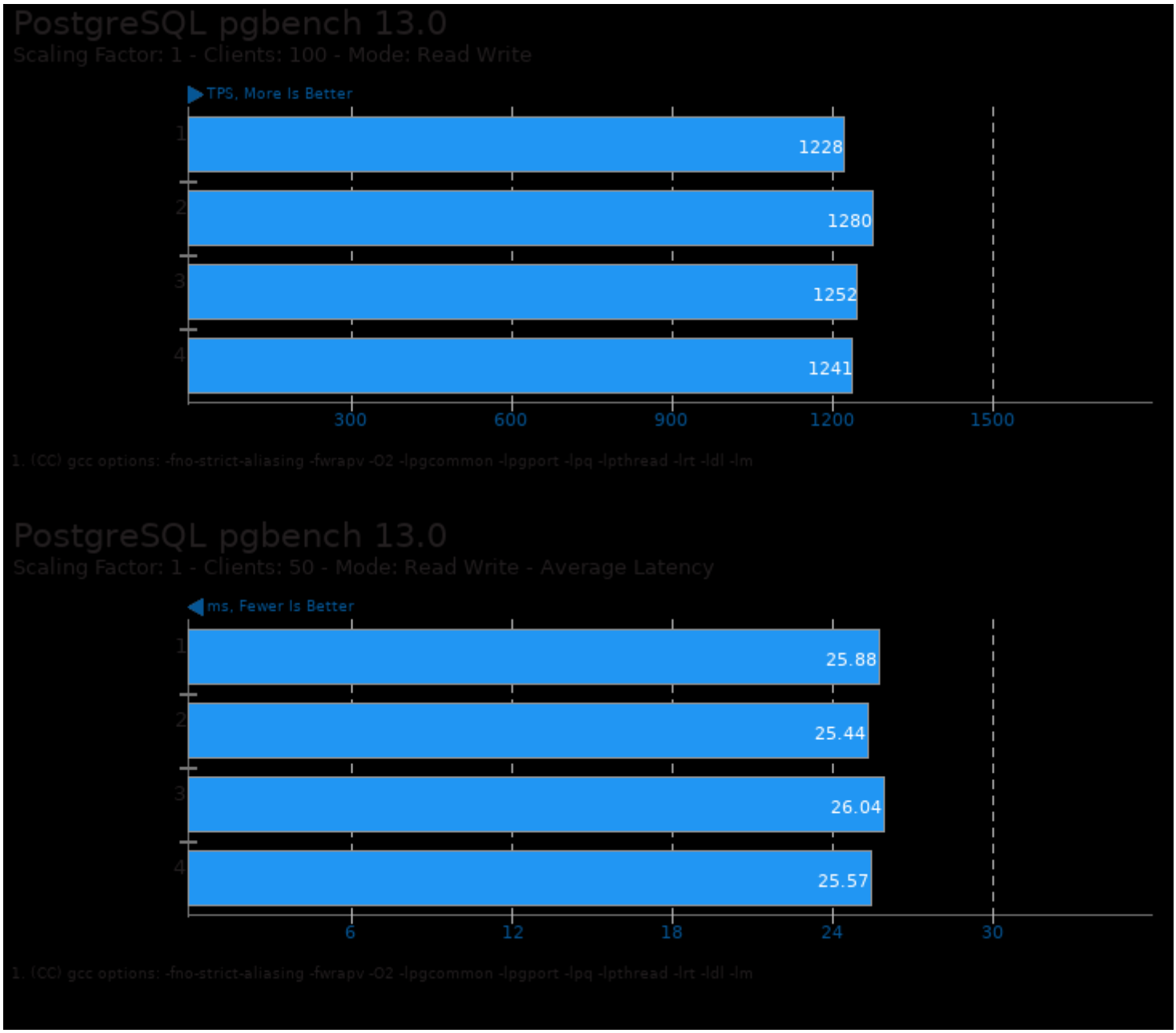

Mobile Neural Network 1.2
Model: mobilenet-v1-1.0
ms, Fewer Is Better
1
MIN: 2.56 / MAX: 9.74
3.071
2
MIN: 2.77 / MAX: 8.22
3.149
3
MIN: 2.61 / MAX: 11.37
3.076
4
MIN: 2.57 / MAX: 8.38
3.056
0.7085
1.417
2.1255
2.834
3.5425
1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fr
Mobile Neural Network 1.2
Model: MobileNetV2_224
ms, Fewer Is Better
1
MIN: 3.7 / MAX: 4.55
3.939
2
MIN: 4.02 / MAX: 9.36
4.313
3
MIN: 4.16 / MAX: 9.83
4.397
4
MIN: 3.78 / MAX: 8.78
4.002
0.9893
1.9786
2.9679
3.9572
4.9465
1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fr

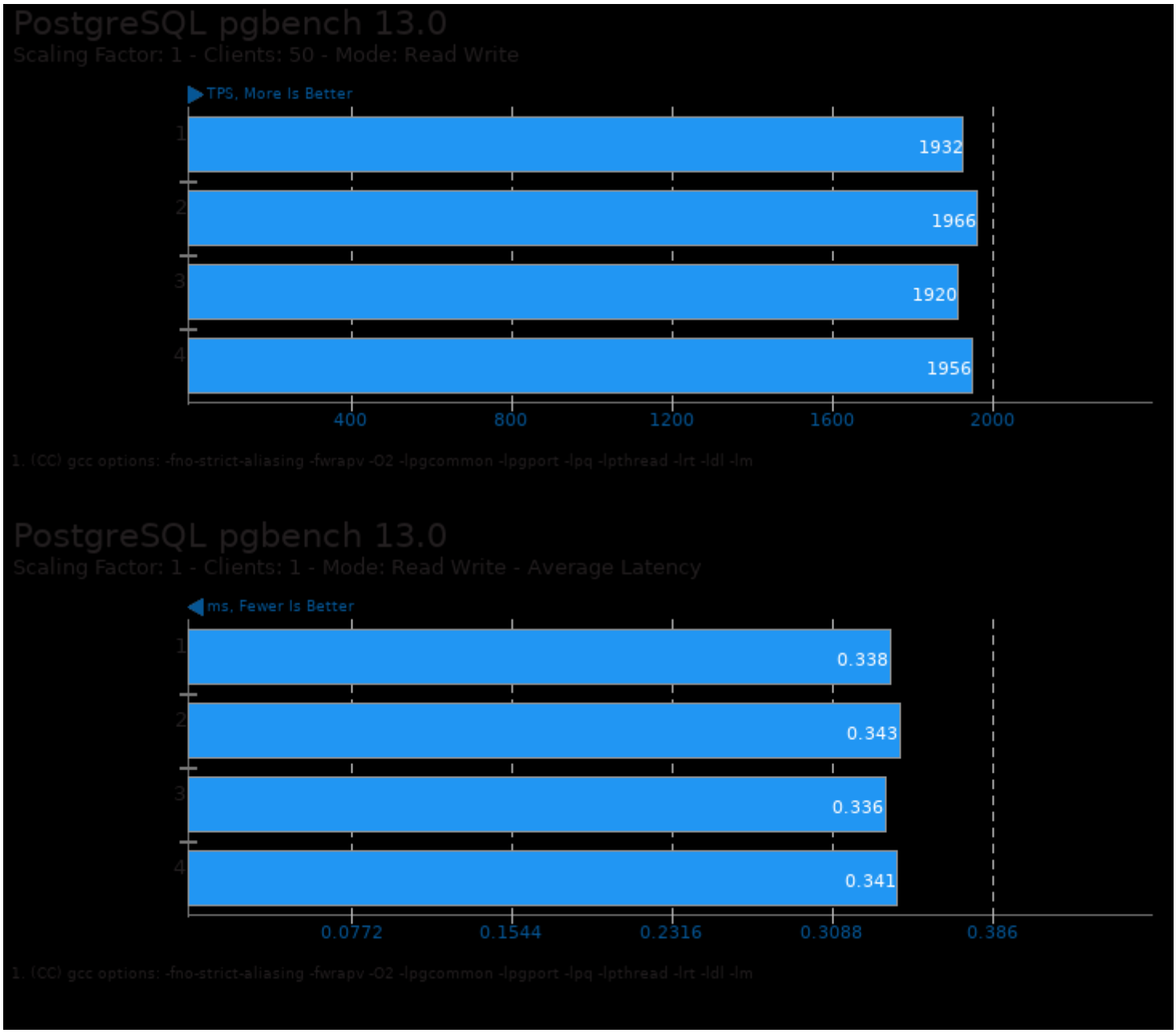

Mobile Neural Network 1.2
Model: SqueezeNetV1.0
ms, Fewer Is Better
1
MIN: 6.76 / MAX: 7.63
7.168
2
MIN: 6.78 / MAX: 12.56
7.159
3
MIN: 7.21 / MAX: 13.46
7.547
4
MIN: 7.51 / MAX: 8.28
7.865
2
4
6
8
10
1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fr
Mobile Neural Network 1.2
Model: resnet-v2-50
ms, Fewer Is Better
1
MIN: 25.55 / MAX: 28.35
26.33
2
MIN: 24.91 / MAX: 26.72
25.78
3
MIN: 25.14 / MAX: 26.21
25.68
4
MIN: 25.62 / MAX: 153
28.84
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

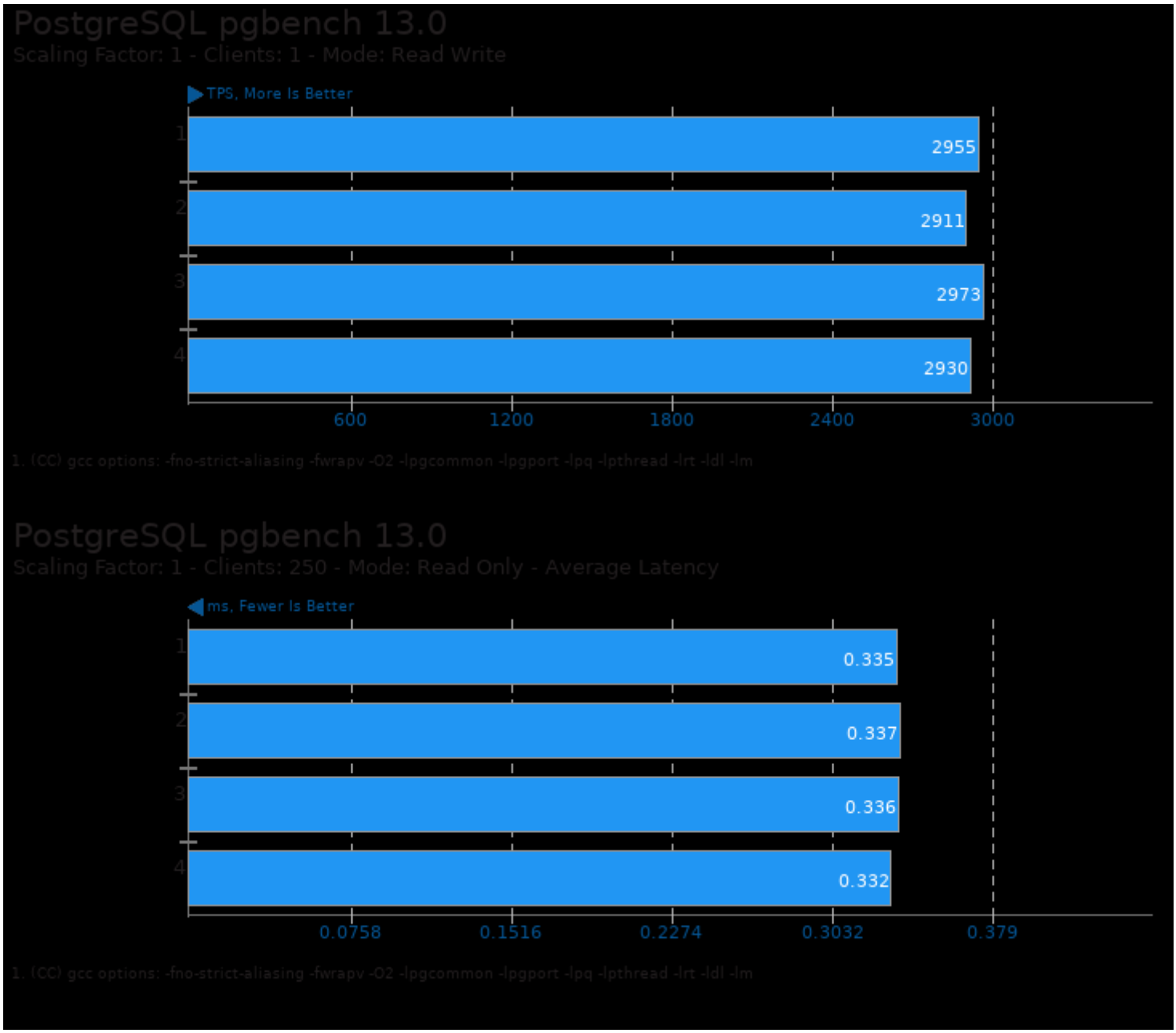

Mobile Neural Network 1.2
Model: squeezenetv1.1
ms, Fewer Is Better
1
MIN: 4.73 / MAX: 5.4
5.079
2
MIN: 4.85 / MAX: 5.45
5.121
3
MIN: 5.47 / MAX: 6.12
5.841
4
MIN: 4.93 / MAX: 12.47
5.253
1.3142
2.6284
3.9426
5.2568
6.571
1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fr
Mobile Neural Network 1.2
Model: mobilenetV3
ms, Fewer Is Better
1
MIN: 2.57 / MAX: 5.45
2.800
2
MIN: 2.73 / MAX: 4.44
2.919
3
MIN: 2.86 / MAX: 5.8
3.036
4
MIN: 2.63 / MAX: 5.44
2.919
0.6831
1.3662
2.0493
2.7324
3.4155
1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fr

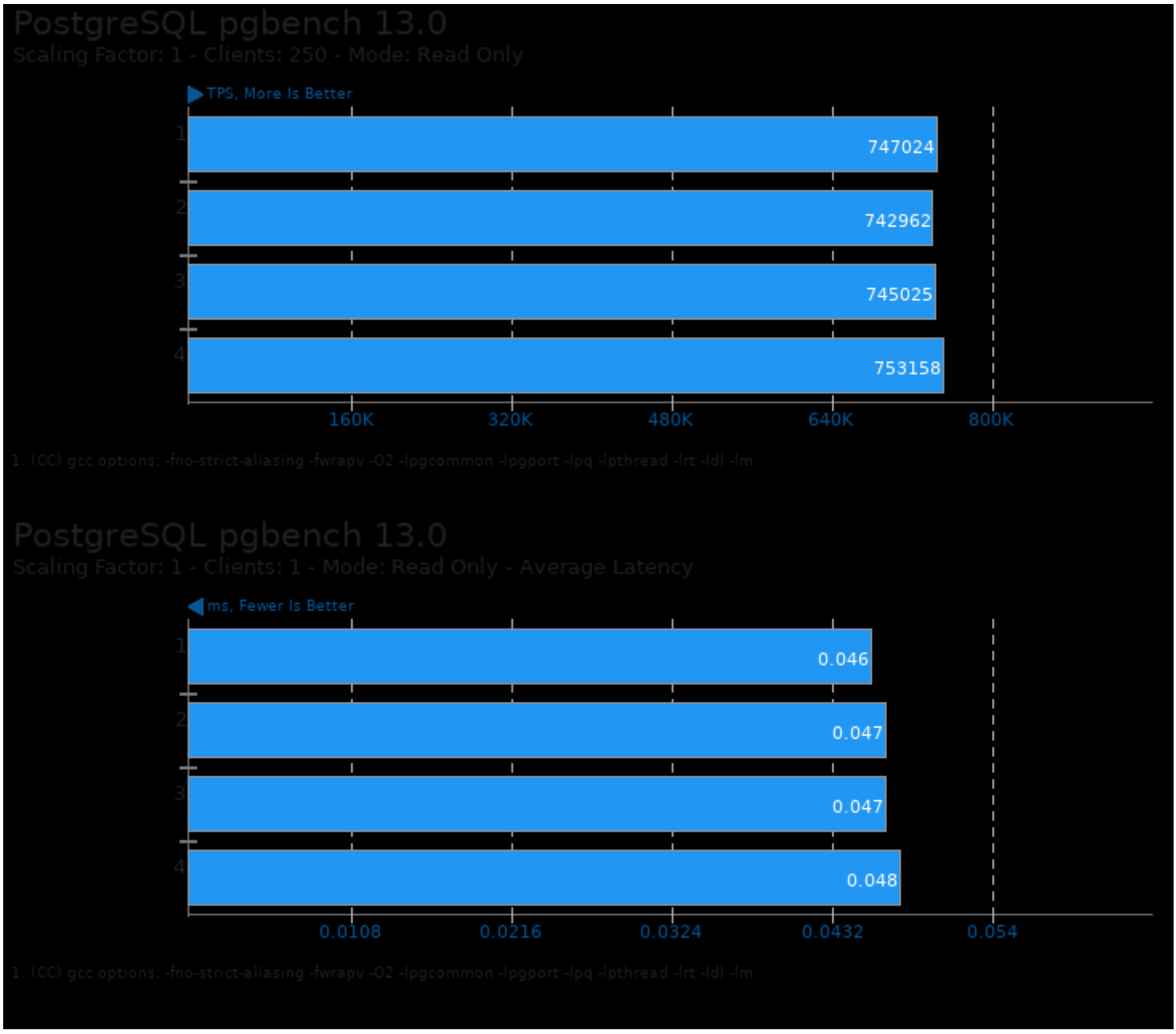

KeyDB 6.2.0
Ops/sec, More Is Better
1
463150.85
2
471878.40
3
437480.05
4
451404.09
100K
200K
300K
400K
500K
1. (CXX) g++ options: -O2 -levent_openssl -levent -lcrypto -lssl -lpthread -lz -lpcre
PostgreSQL pgbench 13.0
Scaling Factor: 1 - Clients: 250 - Mode: Read Write - Average Latency
ms, Fewer Is Better
1
345.05
2
353.21
3
349.13
4
320.86
80
160
240
320
400
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

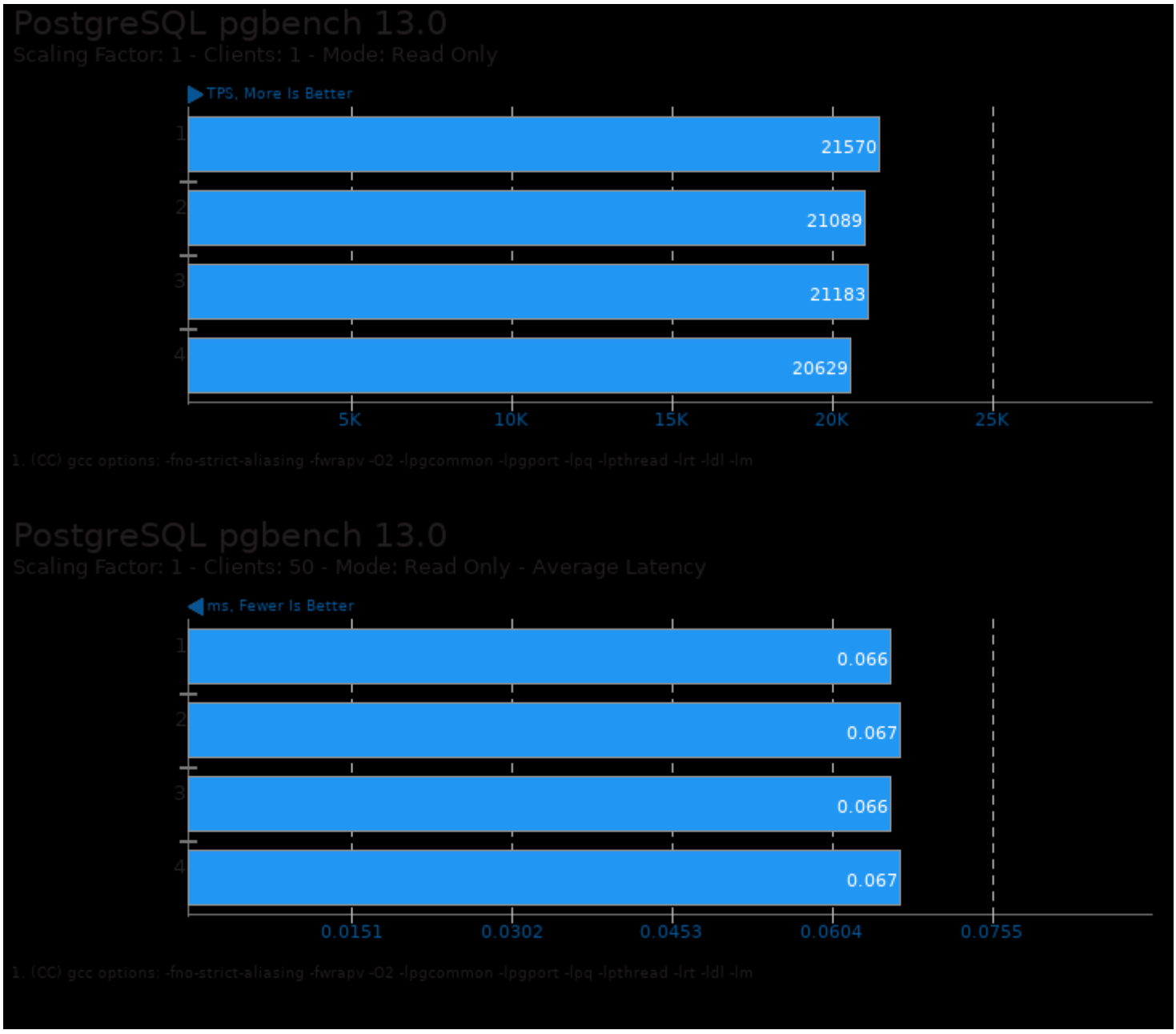

PostgreSQL pgbench 13.0
Scaling Factor: 1 - Clients: 250 - Mode: Read Write
TPS, More Is Better
1
725
2
708
3
716
4
780
200
400
600
800
1000
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm
PostgreSQL pgbench 13.0
Scaling Factor: 1 - Clients: 100 - Mode: Read Write - Average Latency
ms, Fewer Is Better
1
81.46
2
78.12
3
79.90
4
80.58
20
40
60
80
100
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

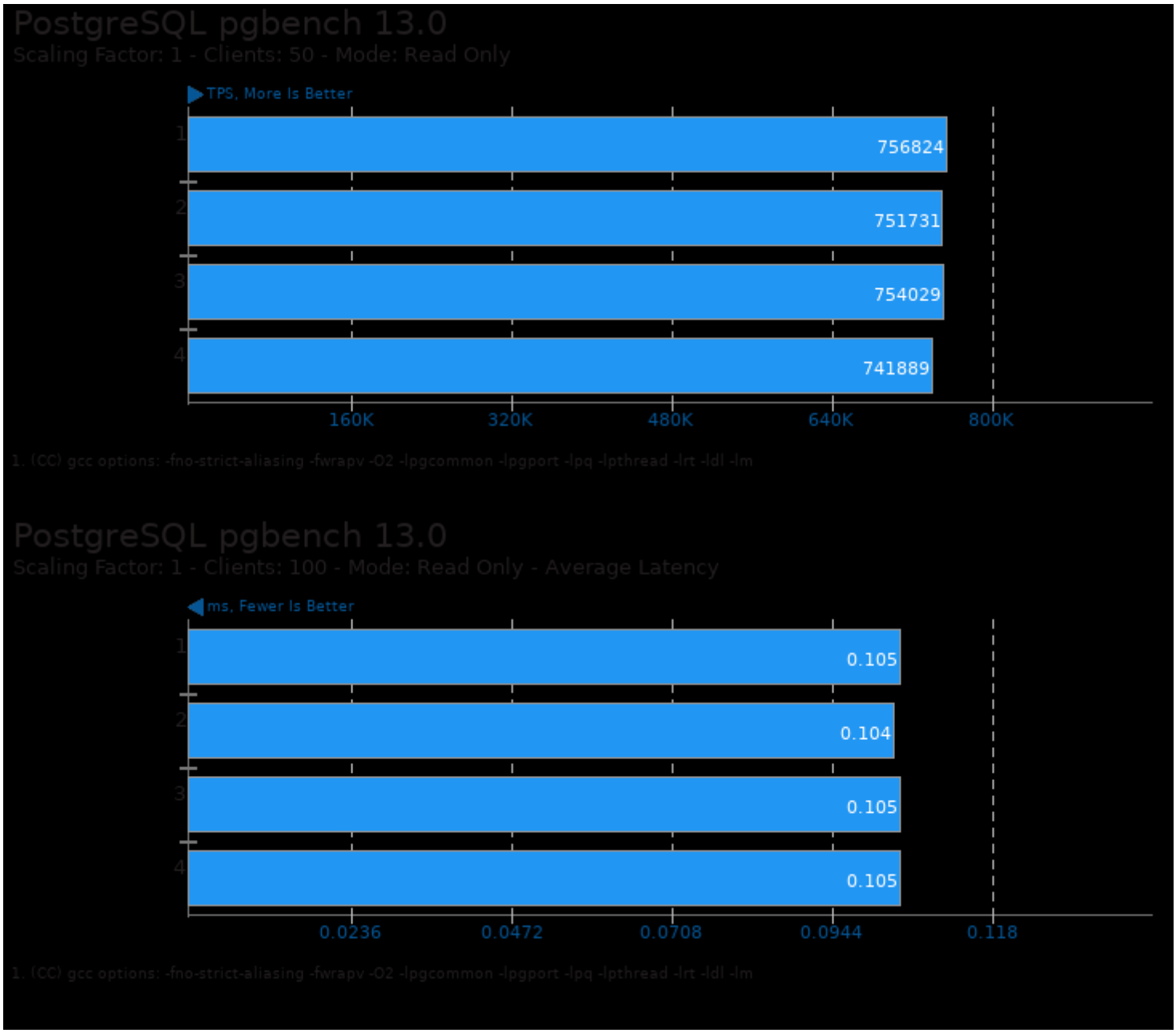

PostgreSQL pgbench 13.0
Scaling Factor: 1 - Clients: 100 - Mode: Read Write
TPS, More Is Better
1
1228
2
1280
3
1252
4
1241
300
600
900
1200
1500
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm
PostgreSQL pgbench 13.0
Scaling Factor: 1 - Clients: 50 - Mode: Read Write - Average Latency
ms, Fewer Is Better
1
25.88
2
25.44
3
26.04
4
25.57
6
12
18
24
30
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm


PostgreSQL pgbench 13.0
Scaling Factor: 1 - Clients: 50 - Mode: Read Write
TPS, More Is Better
1
1932
2
1966
3
1920
4
1956
400
800
1200
1600
2000
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm
PostgreSQL pgbench 13.0
Scaling Factor: 1 - Clients: 1 - Mode: Read Write - Average Latency
ms, Fewer Is Better
1
0.338
2
0.343
3
0.336
4
0.341
0.0772
0.1544
0.2316
0.3088
0.386
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm


PostgreSQL pgbench 13.0
Scaling Factor: 1 - Clients: 1 - Mode: Read Write
TPS, More Is Better
1
2955
2
2911
3
2973
4
2930
600
1200
1800
2400
3000
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm
PostgreSQL pgbench 13.0
Scaling Factor: 1 - Clients: 250 - Mode: Read Only - Average Latency
ms, Fewer Is Better
1
0.335
2
0.337
3
0.336
4
0.332
0.0758
0.1516
0.2274
0.3032
0.379
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

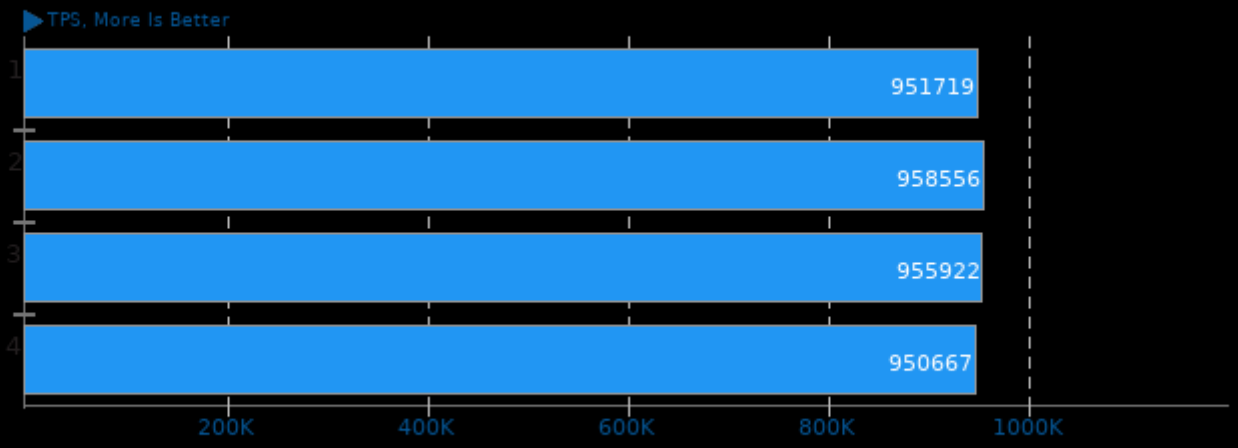

PostgreSQL pgbench 13.0
Scaling Factor: 1 - Clients: 250 - Mode: Read Only
TPS, More Is Better
1
747024
2
742962
3
745025
4
753158
160K
320K
480K
640K
800K
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm
PostgreSQL pgbench 13.0
Scaling Factor: 1 - Clients: 1 - Mode: Read Only - Average Latency
ms, Fewer Is Better
1
0.046
2
0.047
3
0.047
4
0.048
0.0108
0.0216
0.0324
0.0432
0.054
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm


PostgreSQL pgbench 13.0
Scaling Factor: 1 - Clients: 1 - Mode: Read Only
TPS, More Is Better
1
21570
2
21089
3
21183
4
20629
5K
10K
15K
20K
25K
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm
PostgreSQL pgbench 13.0
Scaling Factor: 1 - Clients: 50 - Mode: Read Only - Average Latency
ms, Fewer Is Better
1
0.066
2
0.067
3
0.066
4
0.067
0.0151
0.0302
0.0453
0.0604
0.0755
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm


PostgreSQL pgbench 13.0
Scaling Factor: 1 - Clients: 50 - Mode: Read Only
TPS, More Is Better
1
2
3
4
756824
751731
754029
741889
160K
320K
480K
640K
800K
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm
PostgreSQL pgbench 13.0
Scaling Factor: 1 - Clients: 100 - Mode: Read Only - Average Latency
ms, Fewer Is Better
1
2
3
4
0.105
0.104
0.105
0.105
0.0236
0.0472
0.0708
0.0944
0.118
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

PostgreSQL pgbench 13.0

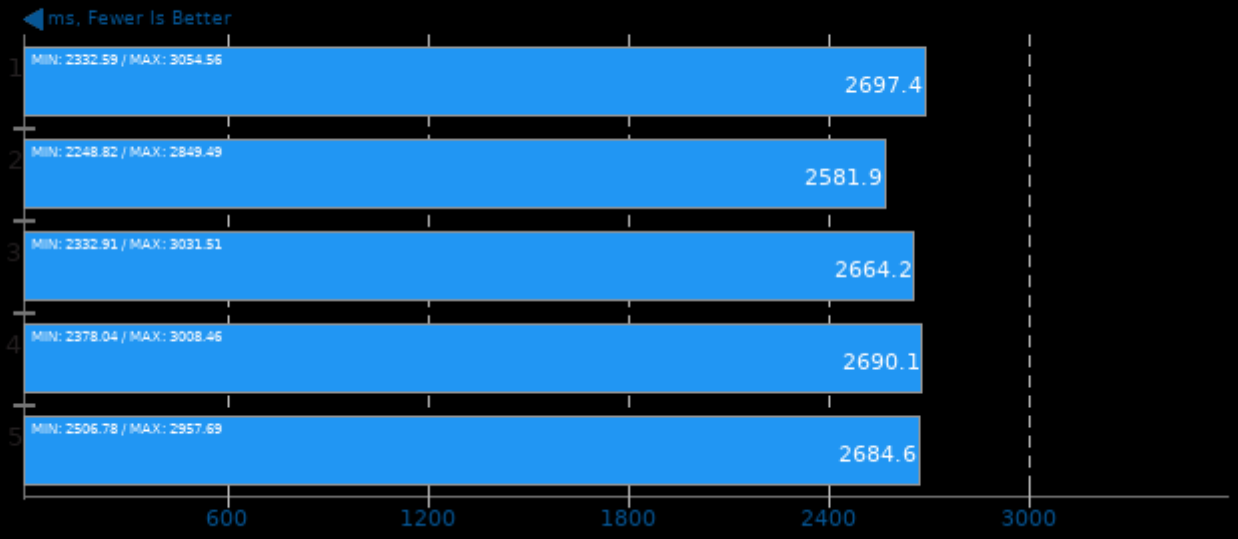
Scaling Factor: 1 - Clients: 100 - Mode: Read Only



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

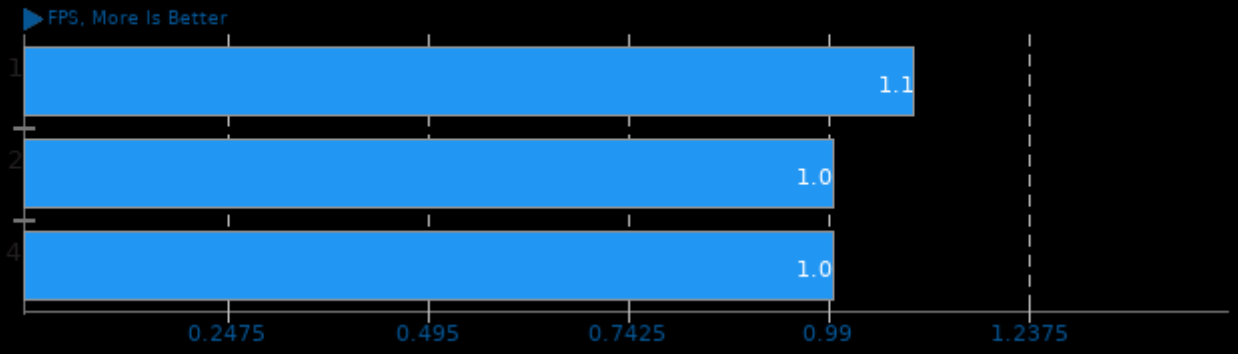
Renaissance 0.12

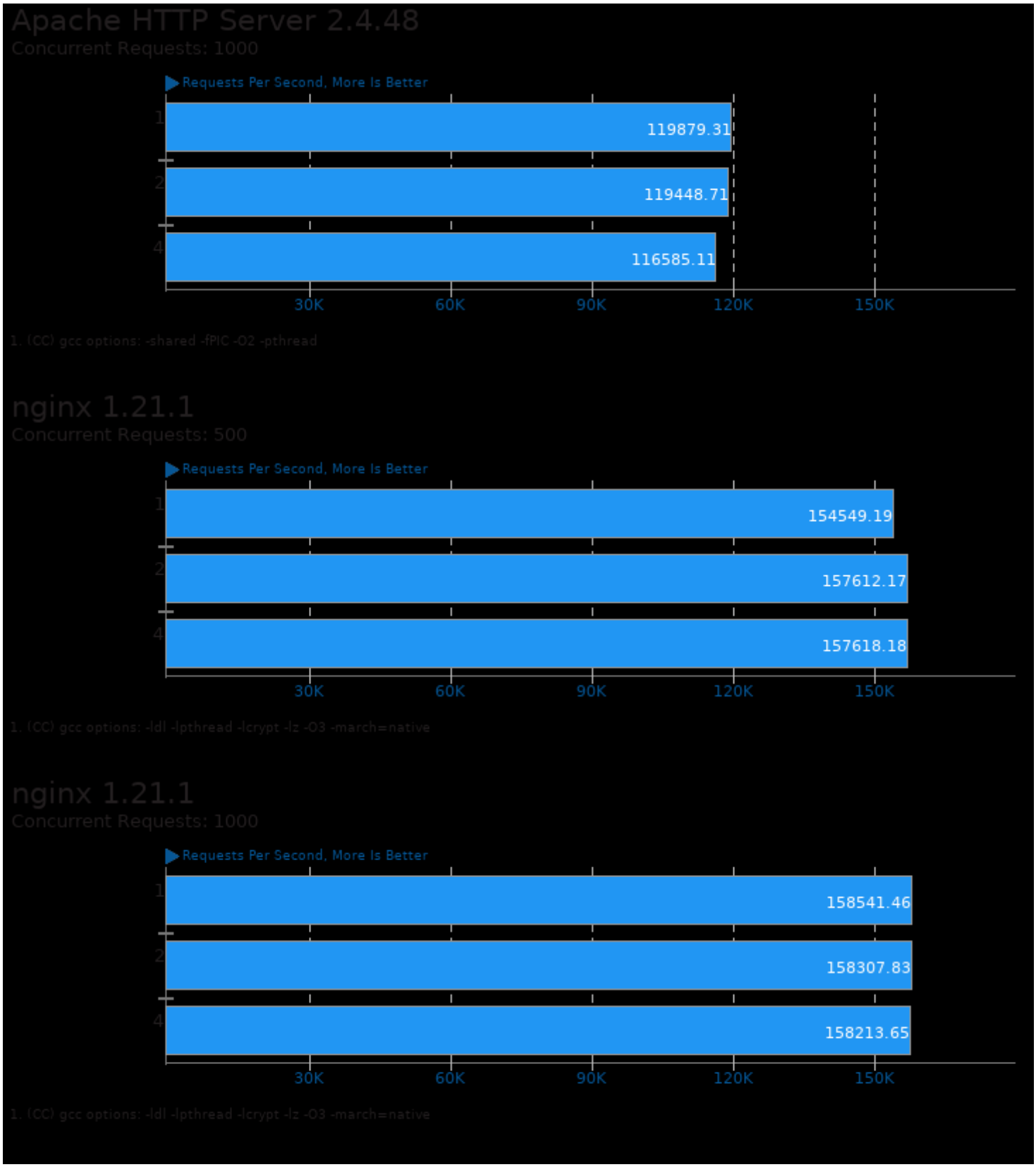
Test: Apache Spark ALS



Natron 2.4

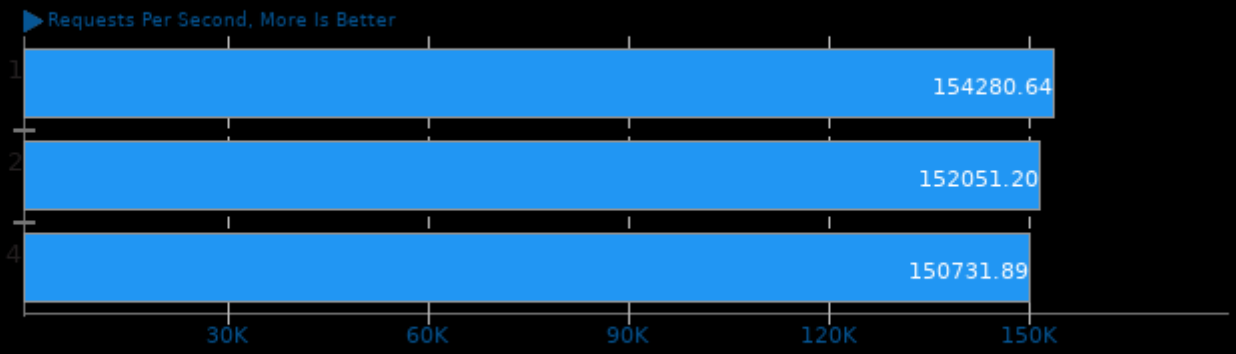
Input: Spaceship




Apache HTTP Server 2.4.48
Concurrent Requests: 1000
Requests Per Second, More Is Better
1
119879.31
2
119448.71
4
116585.11
30K
60K
90K
120K
150K
1. (CC) gcc options: -shared -fPIC -O2 -pthread
nginx 1.21.1
Concurrent Requests: 500
Requests Per Second, More Is Better
1
154549.19
2
157612.17
4
157618.18
30K
60K
90K
120K
150K
1. (CC) gcc options: -ldl -lpthread -lcrypt -lz -O3 -march=native
nginx 1.21.1
Concurrent Requests: 1000
Requests Per Second, More Is Better
1
158541.46
2
158307.83
4
158213.65
30K
60K
90K
120K
150K
1. (CC) gcc options: -ldl -lpthread -lcrypt -lz -O3 -march=native

nginx 1.21.1

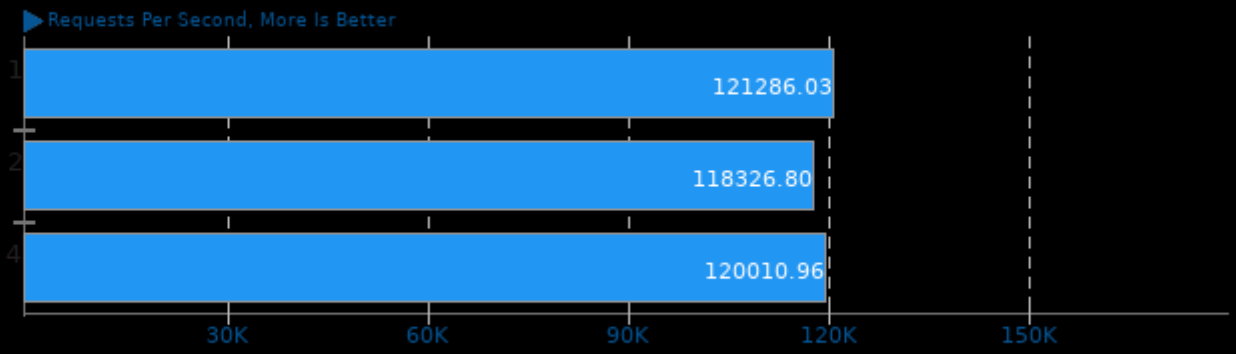
Concurrent Requests: 200



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

Apache HTTP Server 2.4.48

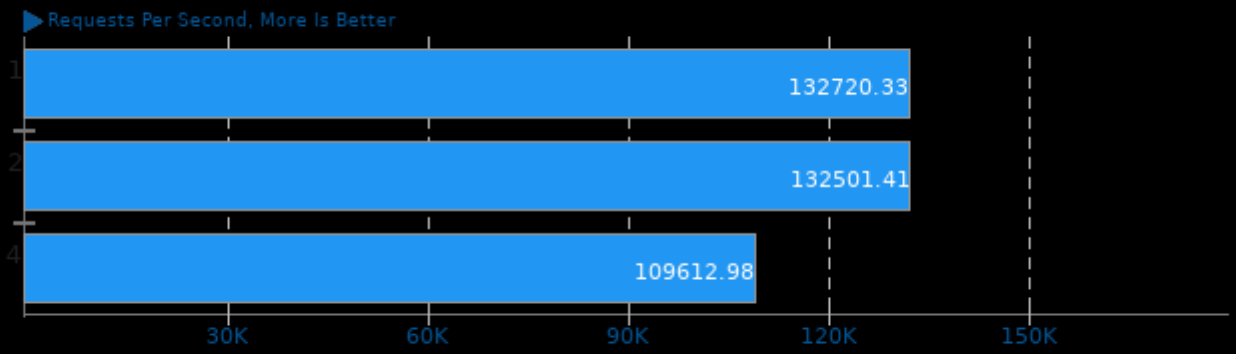
Concurrent Requests: 500



1. (CC) gcc options: -shared -fPIC -O2 -pthread

Apache HTTP Server 2.4.48

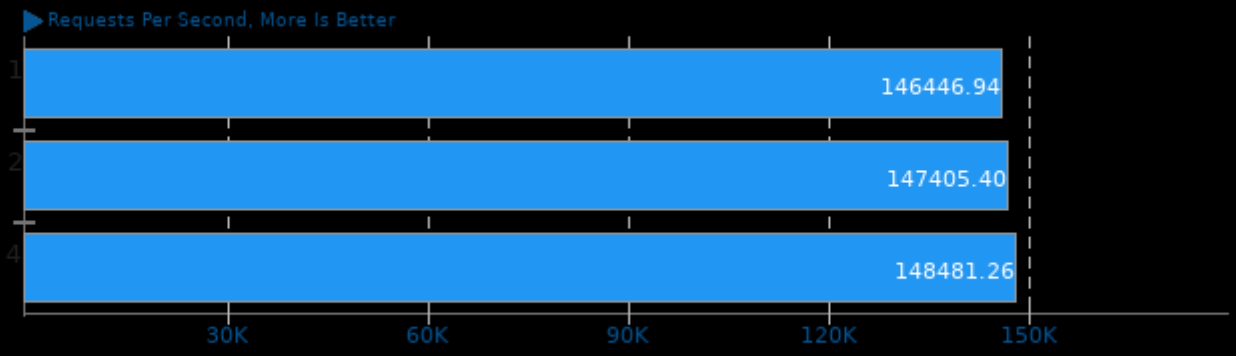
Concurrent Requests: 200



1. (CC) gcc options: -shared -fPIC -O2 -pthread

nginx 1.21.1

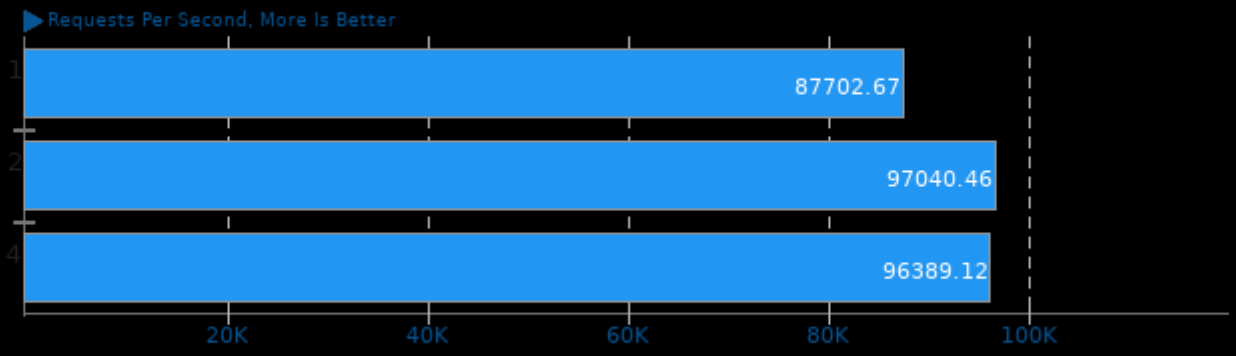
Concurrent Requests: 100



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

Apache HTTP Server 2.4.48

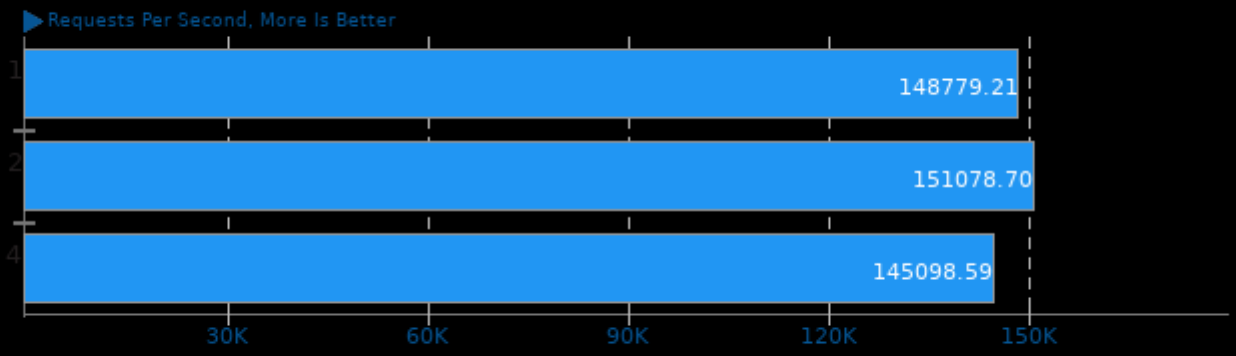
Concurrent Requests: 100



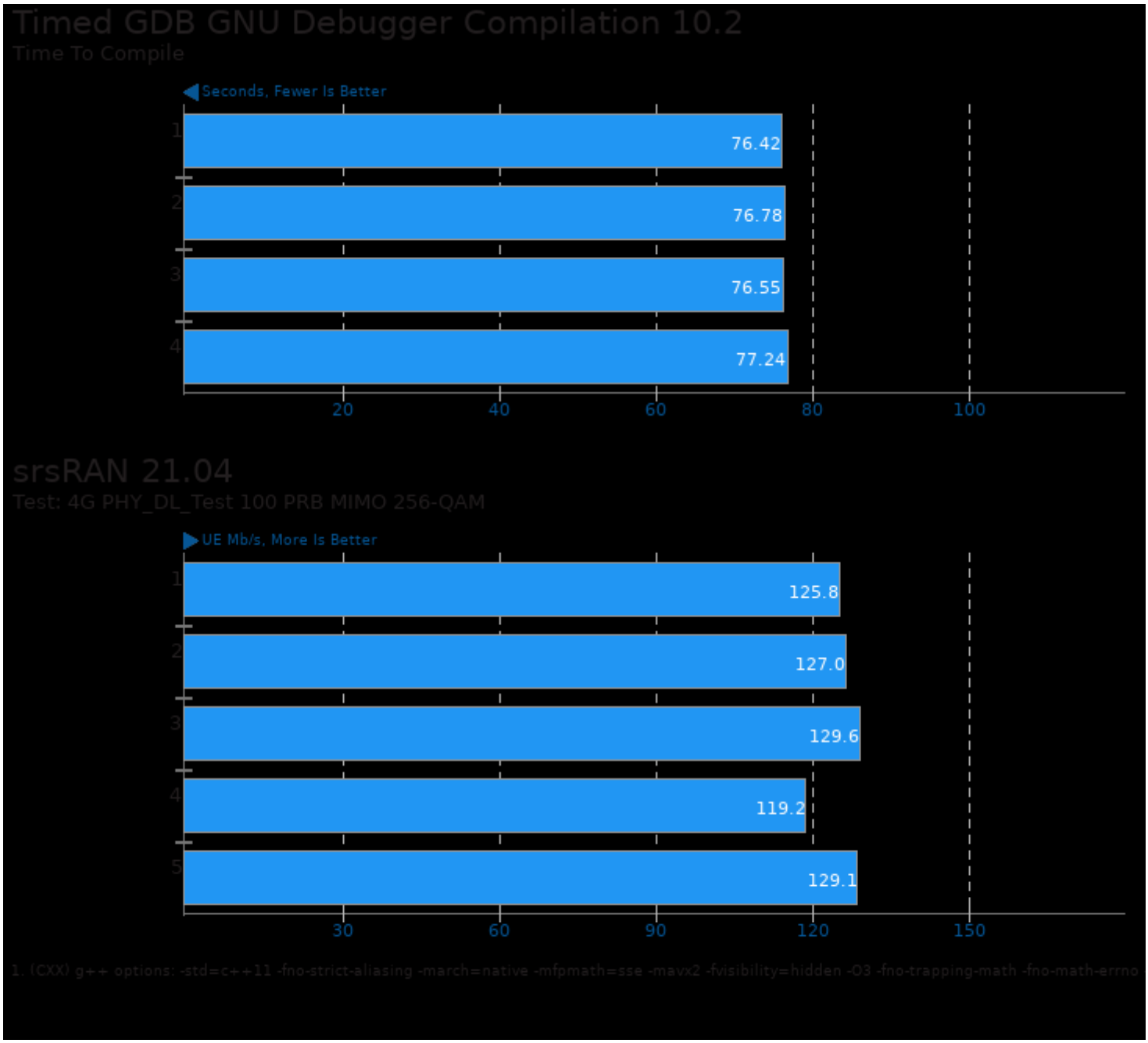
1. (CC) gcc options: -shared -fPIC -O2 -pthread

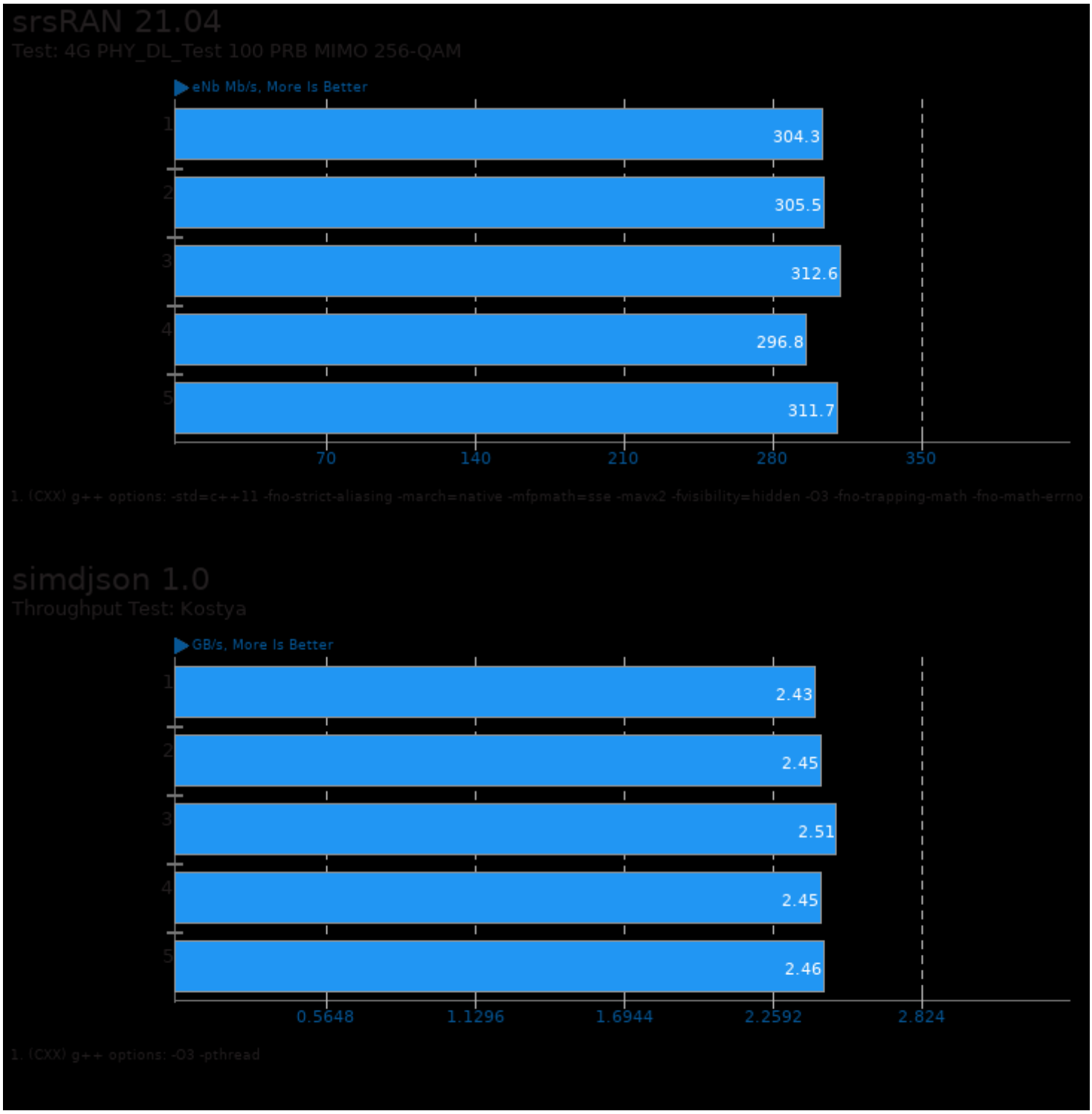
nginx 1.21.1

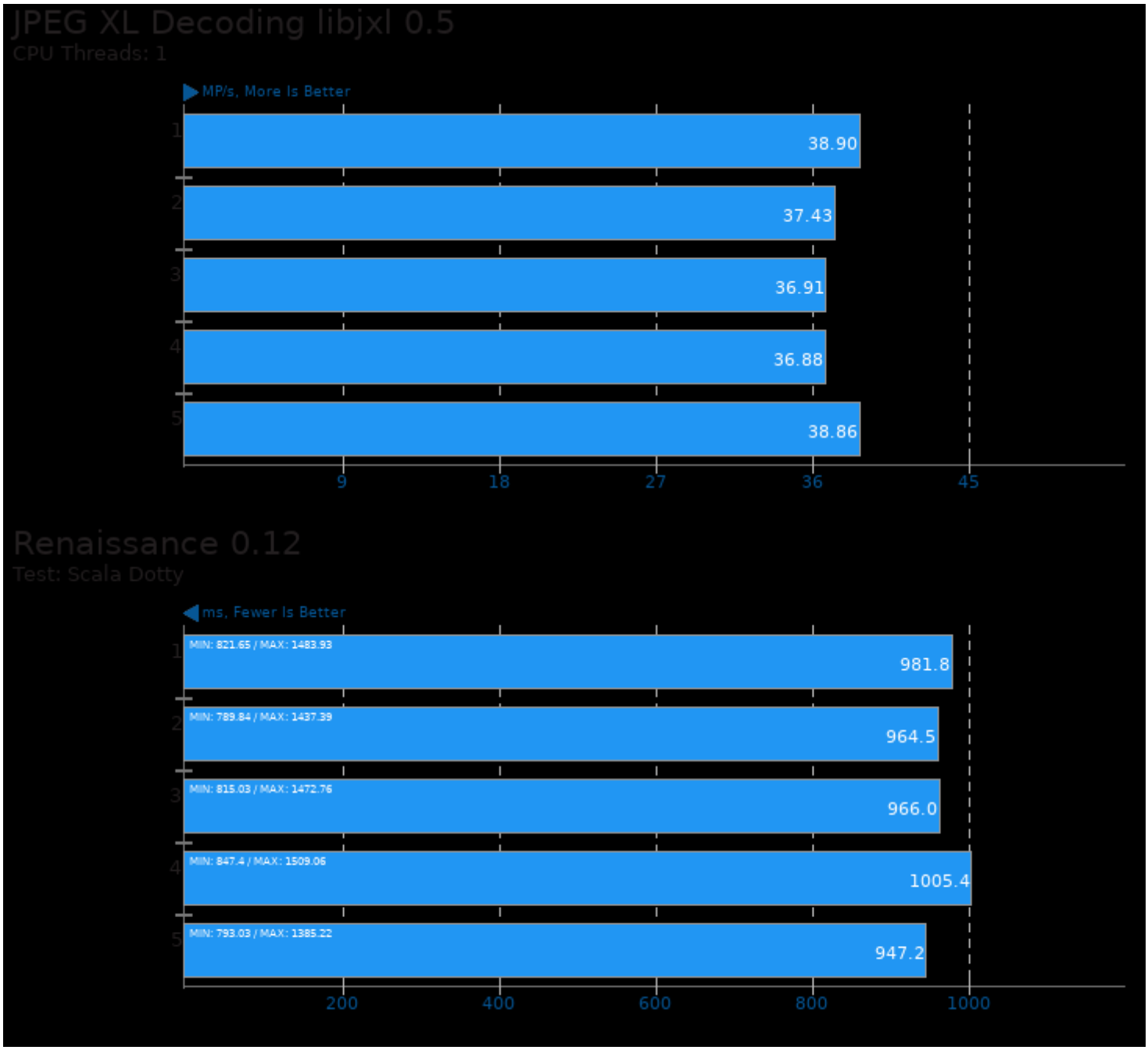
Concurrent Requests: 20

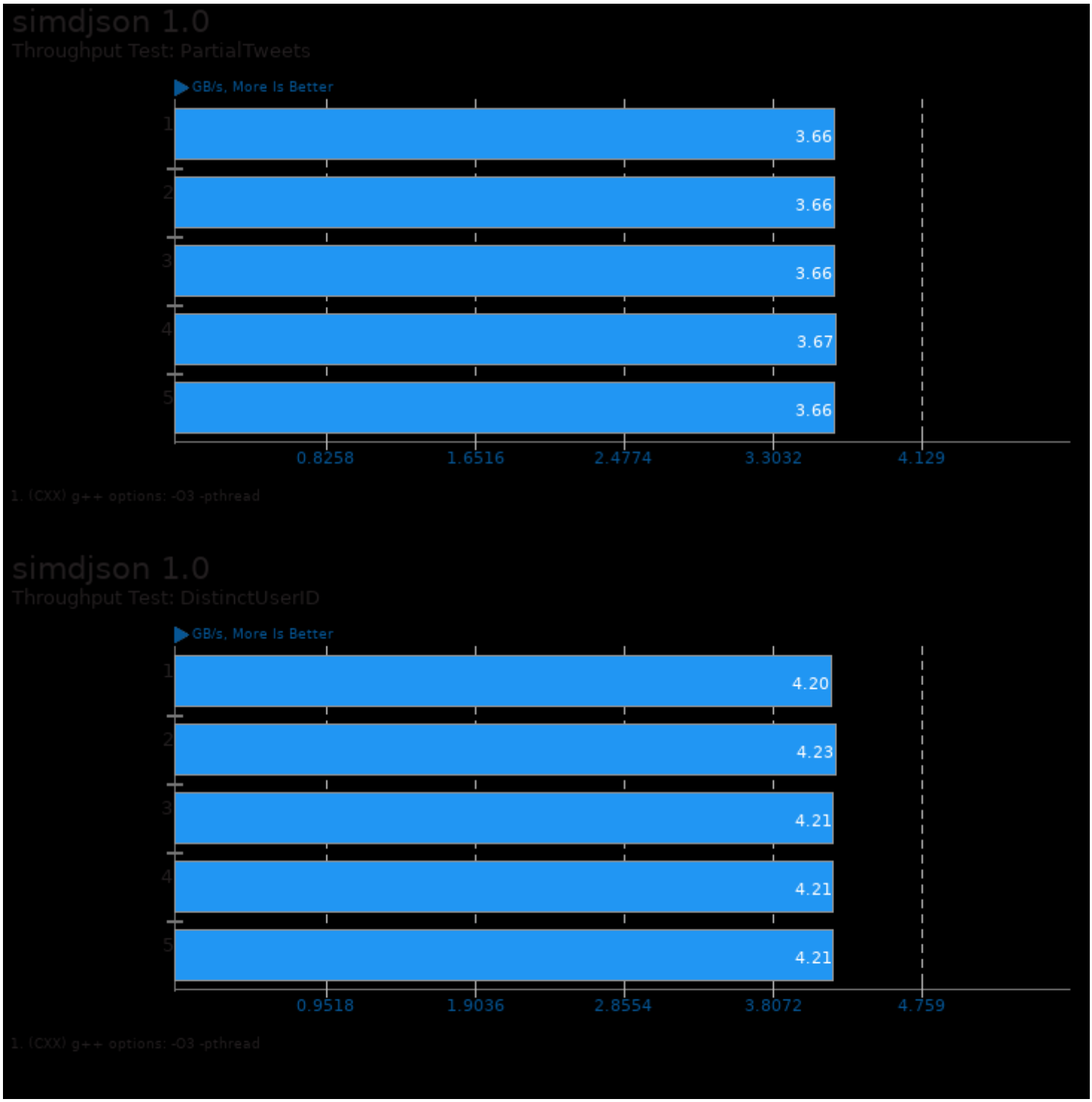


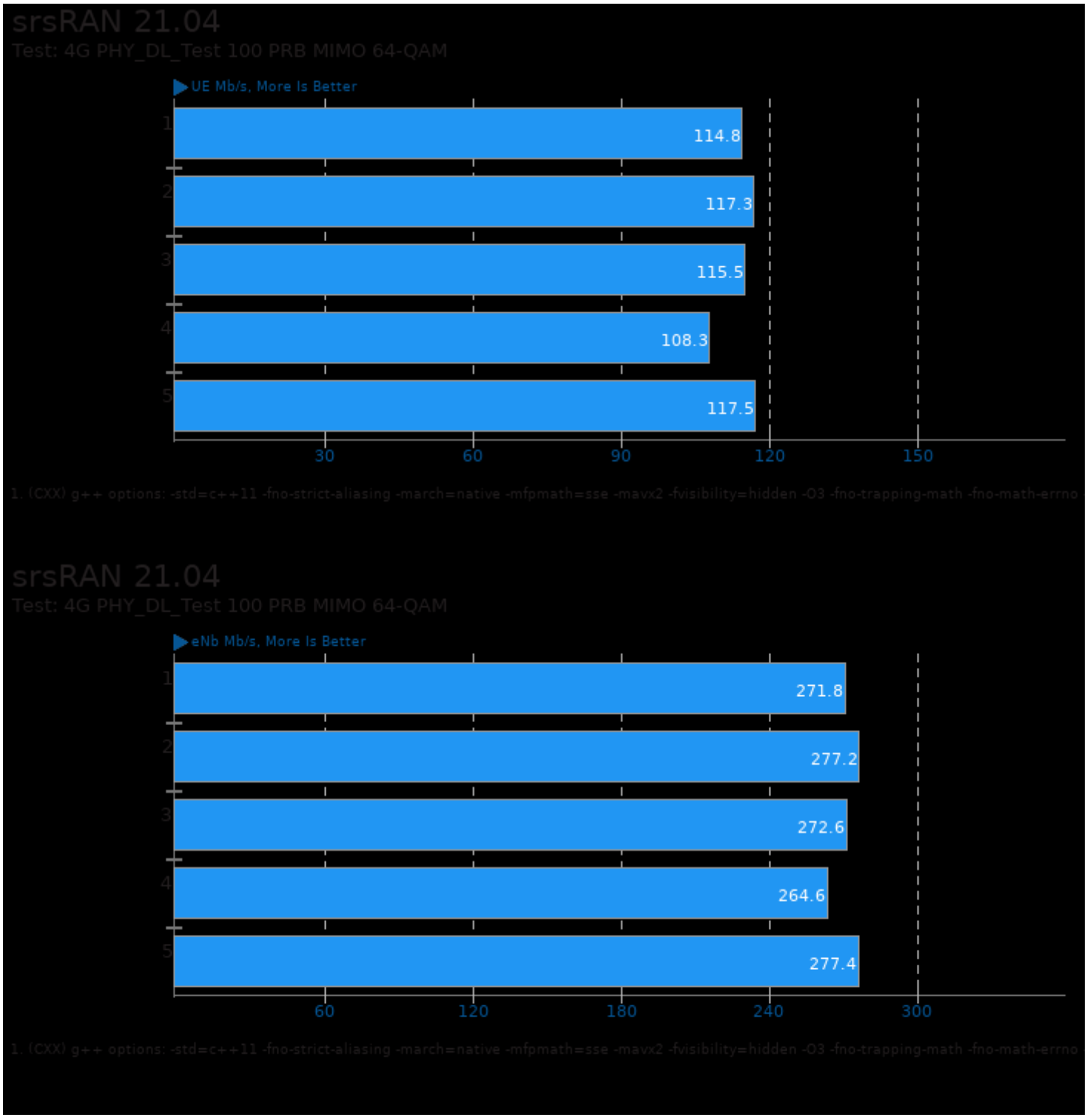
1. (CC) gcc options: -ldl -lpthread -lcrypt -lz -O3 -march=native

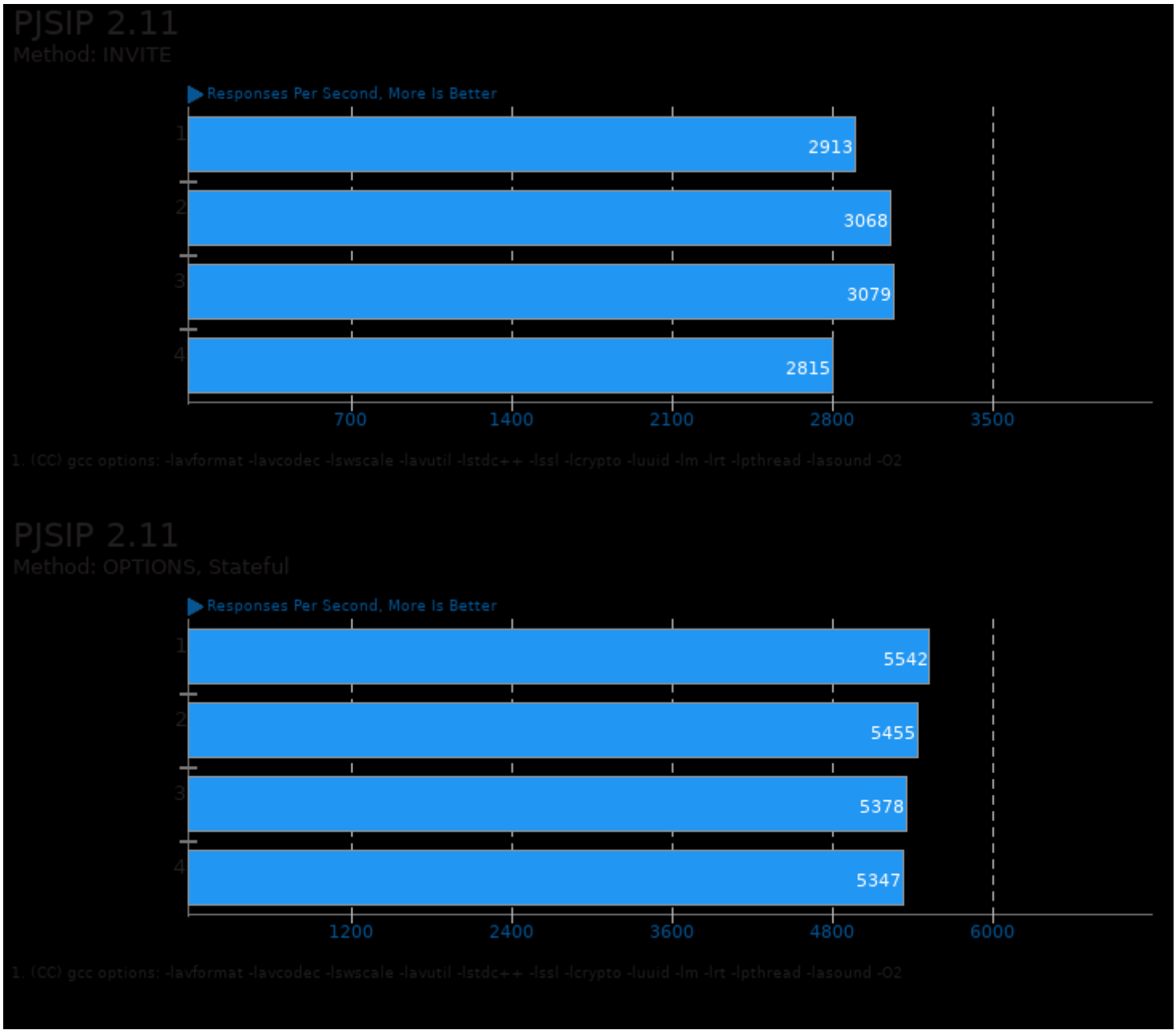

Timed GDB GNU Debugger Compilation 10.2
Time To Compile
Seconds, Fewer Is Better
1
76.42
2
76.78
3
76.55
4
77.24
20
40
60
80
100
srsRAN 21.04
Test: 4G PHY_DL_Test 100 PRB MIMO 256-QAM
UE Mb/s, More Is Better
1
125.8
2
127.0
3
129.6
4
119.2
5
129.1
30
60
90
120
150
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno


srsRAN 21.04
Test: 4G PHY_DL_Test 100 PRB MIMO 256-QAM
eNb Mb/s, More Is Better
1
304.3
2
305.5
3
312.6
4
296.8
5
311.7
70
140
210
280
350
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno
simdjson 1.0
Throughput Test: Kostya
GB/s, More Is Better
1
2.43
2
2.45
3
2.51
4
2.45
5
2.46
0.5648
1.1296
1.6944
2.2592
2.824
1. (CXX) g++ options: -O3 -pthread


JPEG XL Decoding libjxl 0.5
CPU Threads: 1
MP/s, More Is Better
1
38.90
2
37.43
3
36.91
4
36.88
5
38.86
9
18
27
36
45
Renaissance 0.12
Test: Scala Dotty
ms, Fewer Is Better
1
MIN: 821.65 / MAX: 1483.93
981.8
2
MIN: 789.84 / MAX: 1437.39
964.5
3
MIN: 815.03 / MAX: 1472.76
966.0
4
MIN: 847.4 / MAX: 1509.06
1005.4
5
MIN: 793.03 / MAX: 1385.22
947.2
200
400
600
800
1000

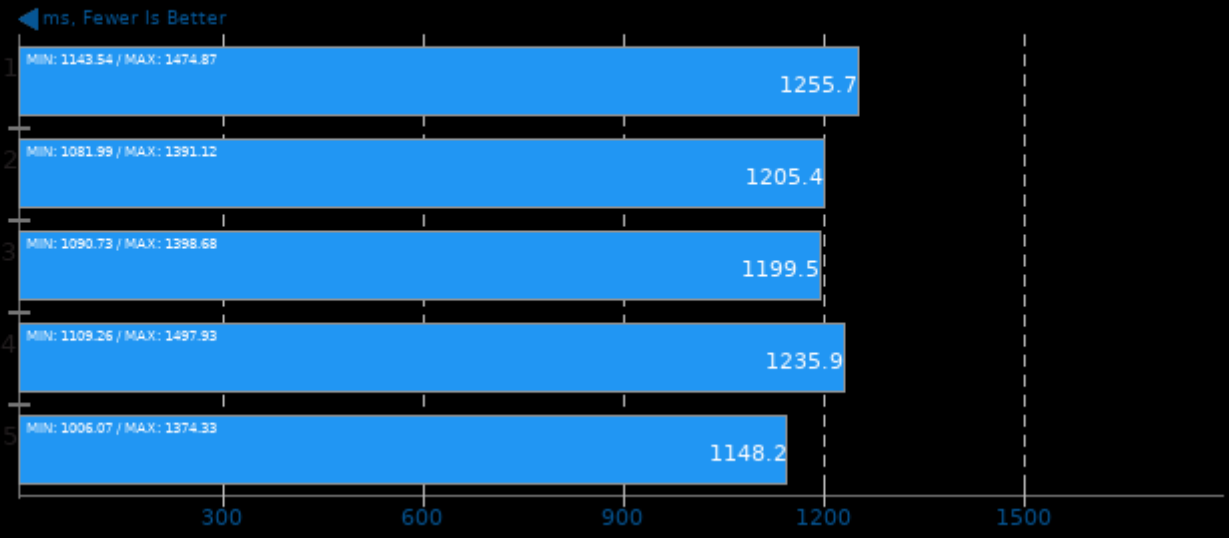

simdjson 1.0
Throughput Test: PartialTweets
GB/s, More Is Better
1
2
3
4
5
3.66
3.66
3.66
3.67
3.66
0.8258
1.6516
2.4774
3.3032
4.129
1. (CXX) g++ options: -O3 -pthread
simdjson 1.0
Throughput Test: DistinctUserID
GB/s, More Is Better
1
2
3
4
5
4.20
4.23
4.21
4.21
4.21
0.9518
1.9036
2.8554
3.8072
4.759
1. (CXX) g++ options: -O3 -pthread


srsRAN 21.04
Test: 4G PHY_DL_Test 100 PRB MIMO 64-QAM
UE Mb/s, More Is Better
1
2
3
4
5
114.8
117.3
115.5
108.3
117.5
30
60
90
120
150
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno
srsRAN 21.04
Test: 4G PHY_DL_Test 100 PRB MIMO 64-QAM
eNb Mb/s, More Is Better
1
2
3
4
5
271.8
277.2
272.6
264.6
277.4
60
120
180
240
300
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno


PJSIP 2.11
Method: INVITE
Responses Per Second, More Is Better
1
2913
2
3068
3
3079
4
2815
700
1400
2100
2800
3500
1. (CC) gcc options: -lavformat -lavcodec -lswscale -lavutil -lstdc++ -lssl -lcrypto -luuid -lm -lrt -lpthread -lasound -O2
PJSIP 2.11
Method: OPTIONS, Stateful
Responses Per Second, More Is Better
1
5542
2
5455
3
5378
4
5347
1200
2400
3600
4800
6000
1. (CC) gcc options: -lavformat -lavcodec -lswscale -lavutil -lstdc++ -lssl -lcrypto -luuid -lm -lrt -lpthread -lasound -O2

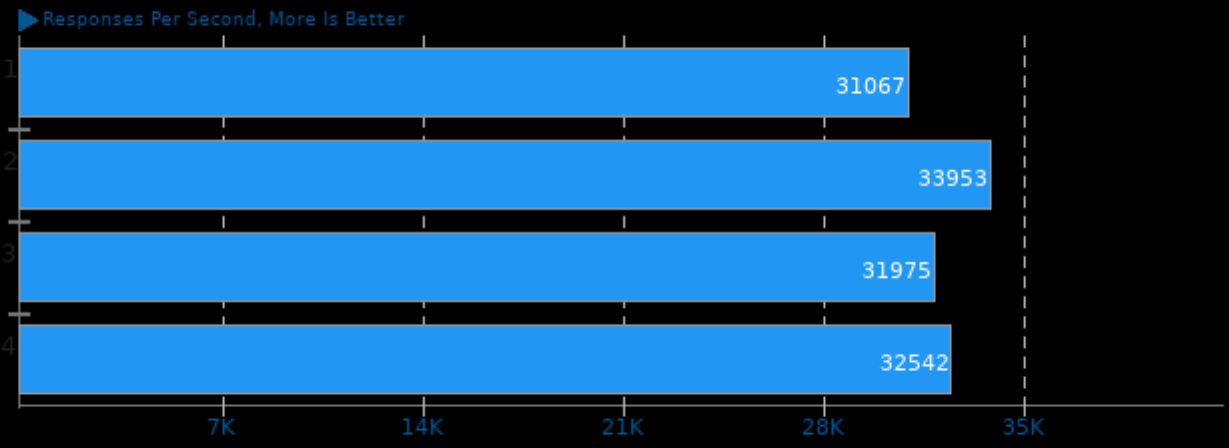
Renaissance 0.12

Test: Random Forest



PJSIP 2.11

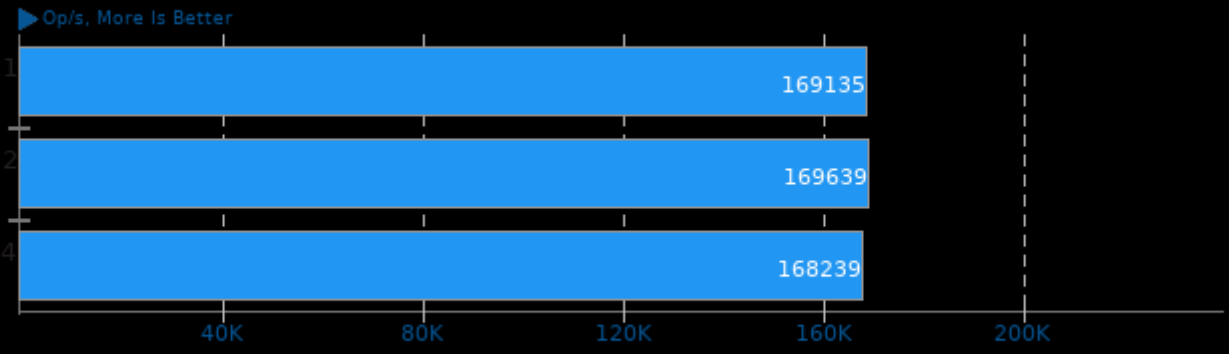
Method: OPTIONS, Stateless



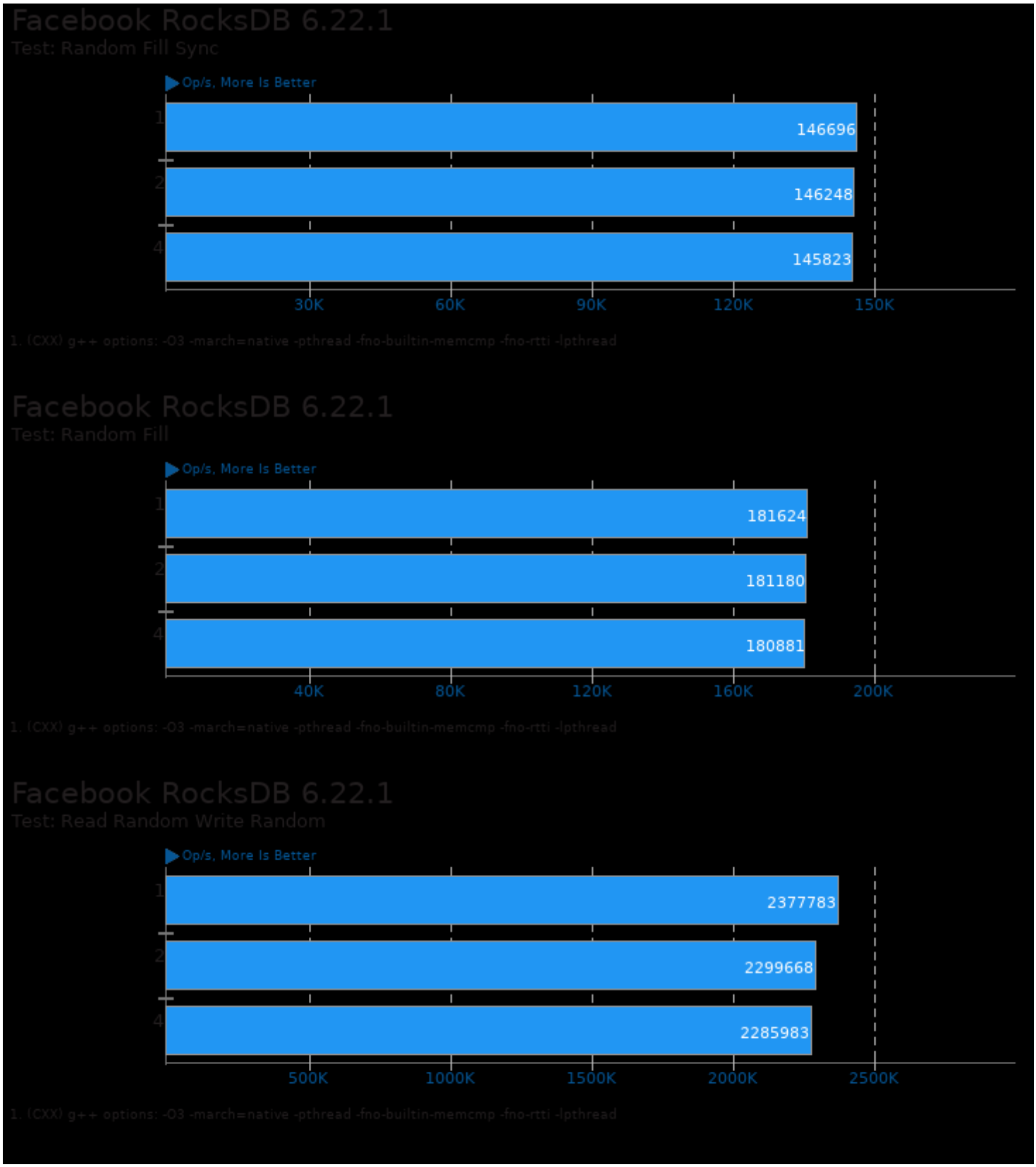
1. (CC) gcc options: -lavformat -lavcodec -lswscale -lavutil -lstdc++ -lssl -lcrypto -luuid -lm -lrt -lpthread -lasound -O2

Facebook RocksDB 6.22.1

Test: Update Random

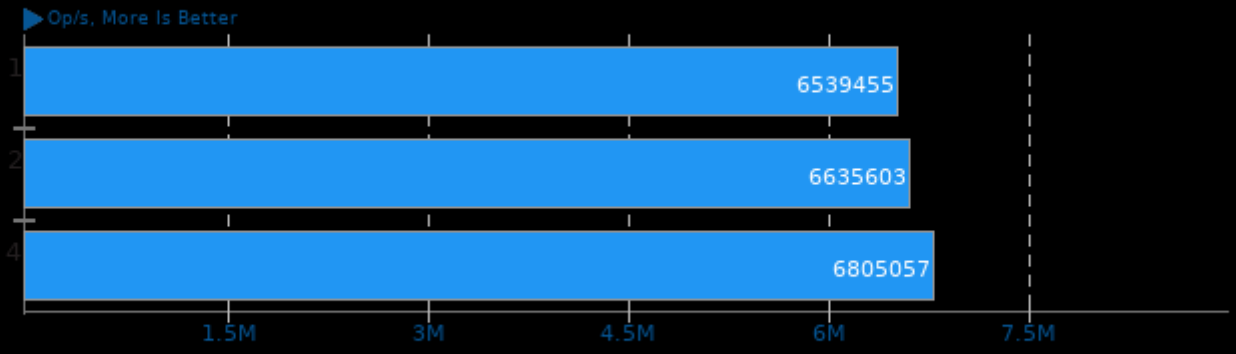


1. (CXX) g++ options: -O3 -march=native -pthread -fno-builtin-memcmp -fno-rtti -lpthread


Facebook RocksDB 6.22.1
Test: Random Fill Sync
Op/s, More Is Better
1
2
4
146696
146248
145823
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: Random Fill
Op/s, More Is Better
1
2
4
181624
181180
180881
40K
80K
120K
160K
200K
1. (CXX) g++ options: -O3 -march=native -pthread -fno-builtin-memcmp -fno-rtti -lpthread
Facebook RocksDB 6.22.1
Test: Read Random Write Random
Op/s, More Is Better
1
2
4
2377783
2299668
2285983
500K
1000K
1500K
2000K
2500K
1. (CXX) g++ options: -O3 -march=native -pthread -fno-builtin-memcmp -fno-rtti -lpthread

Facebook RocksDB 6.22.1

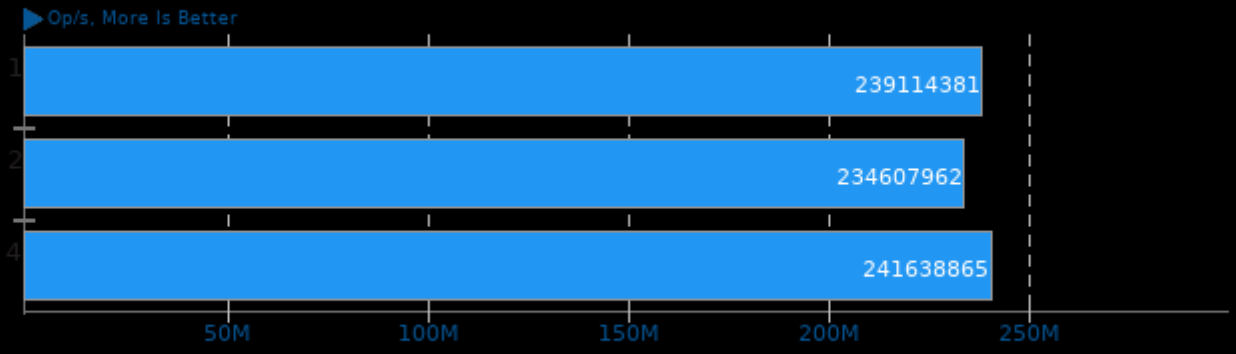
Test: Read While Writing



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

Facebook RocksDB 6.22.1

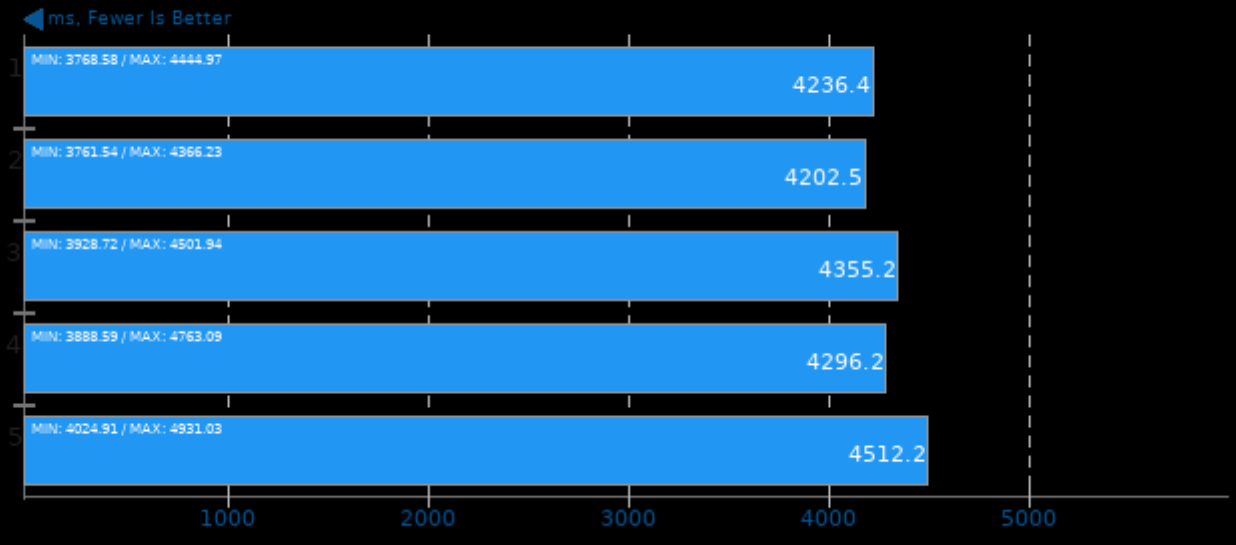
Test: Random Read

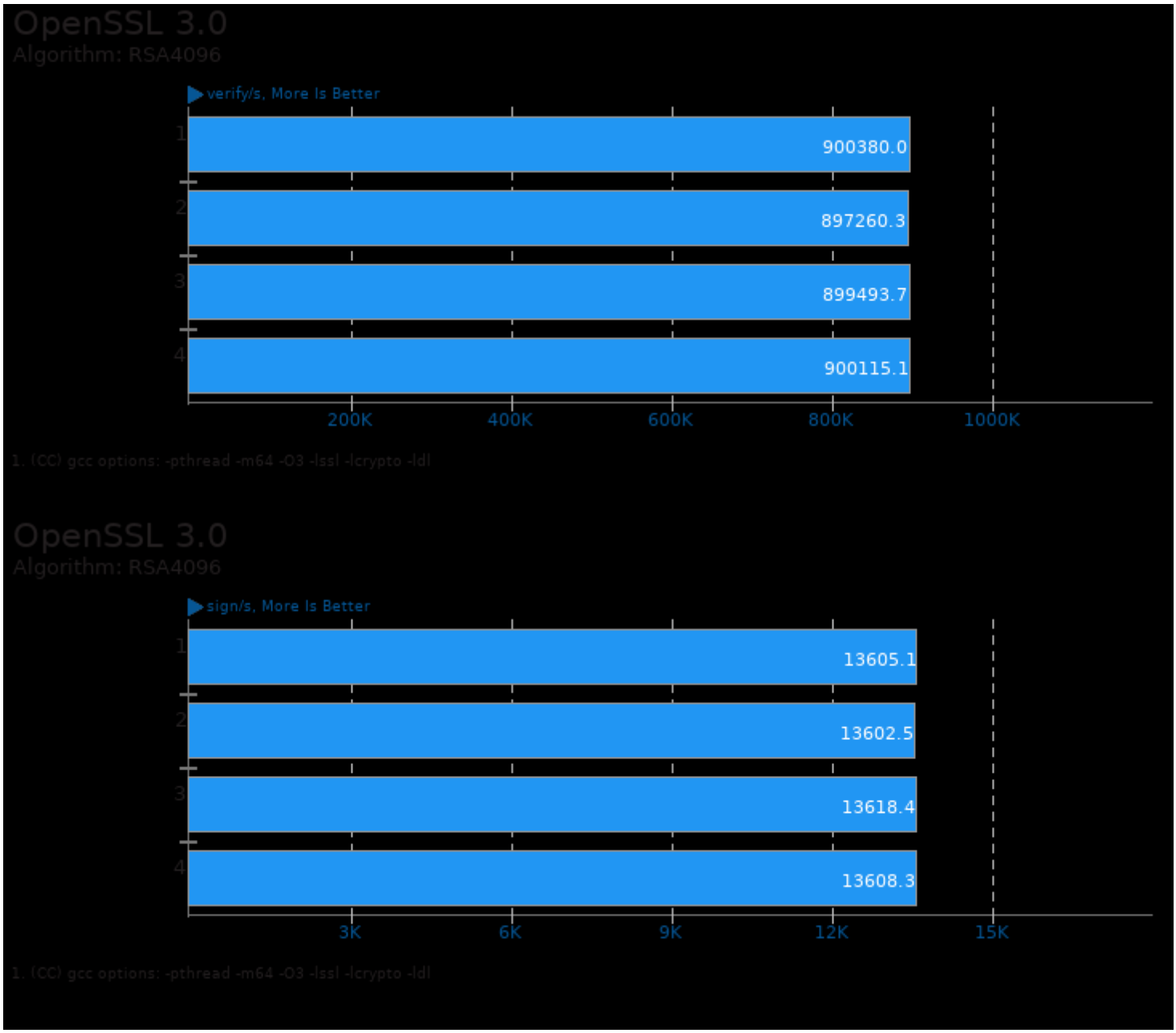


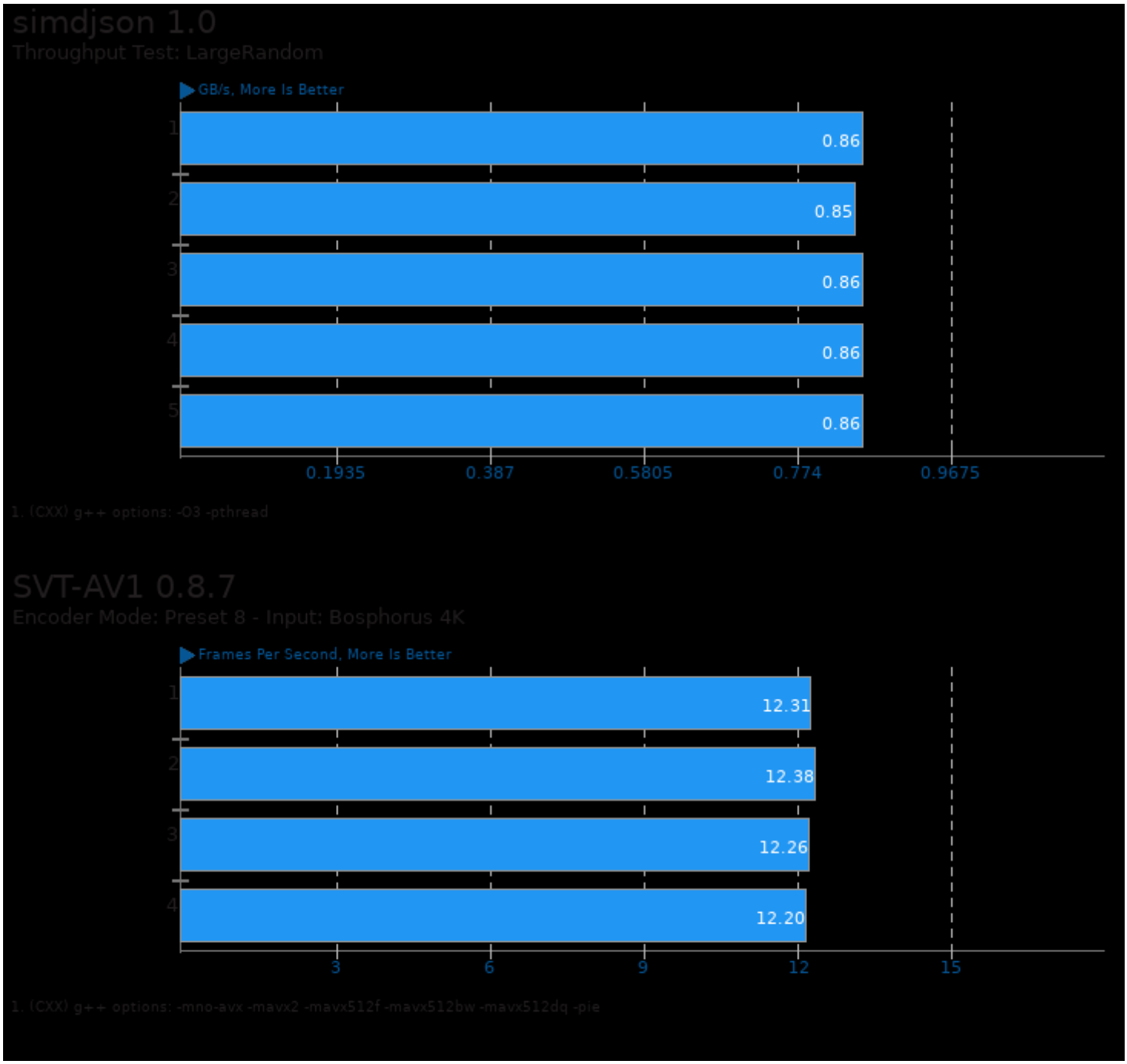
1. (CXX) g++ options: -O3 -march=native -pthread -fno-builtin-memcmp -fno-rtti -lpthread

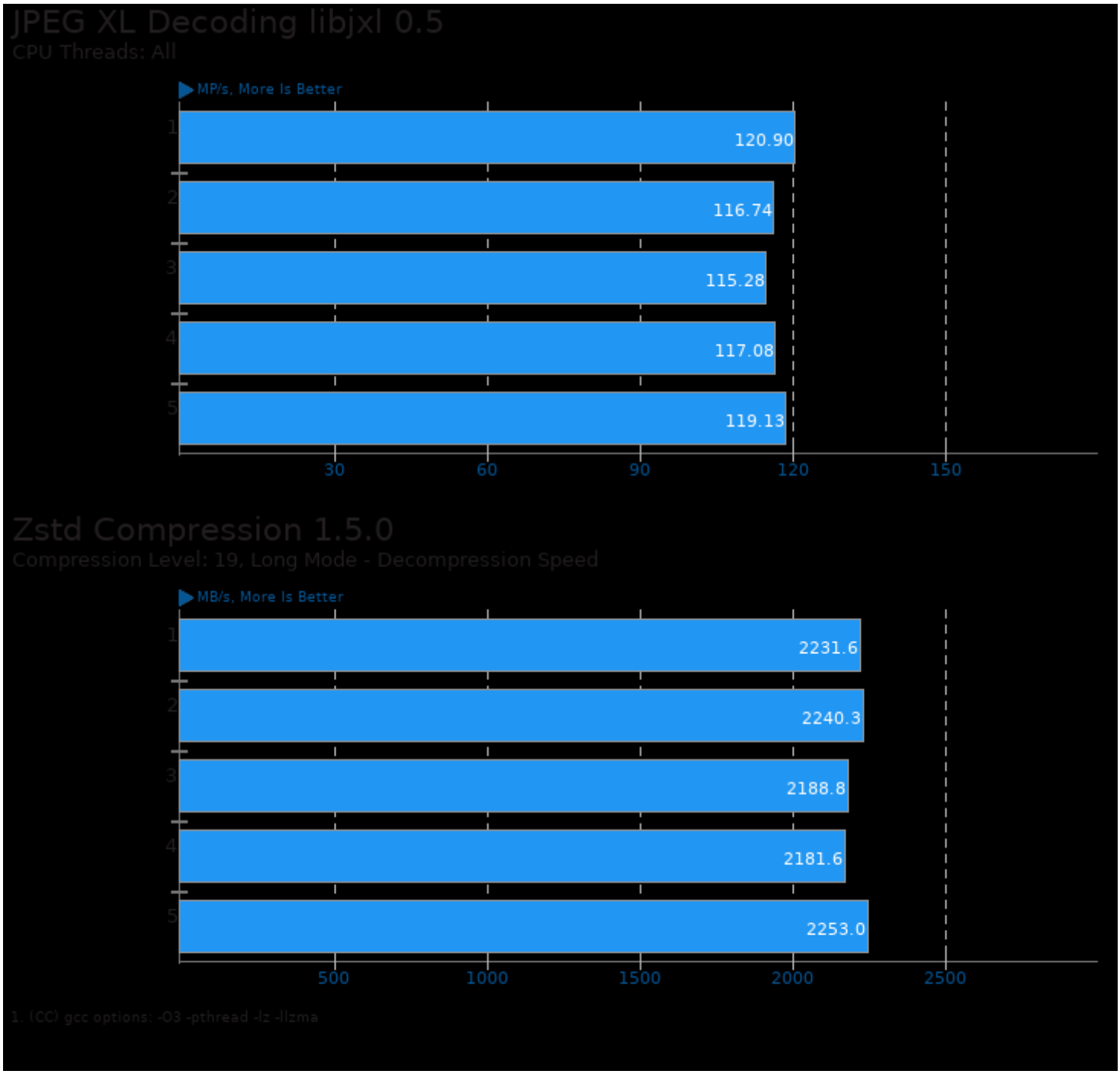
Renaissance 0.12

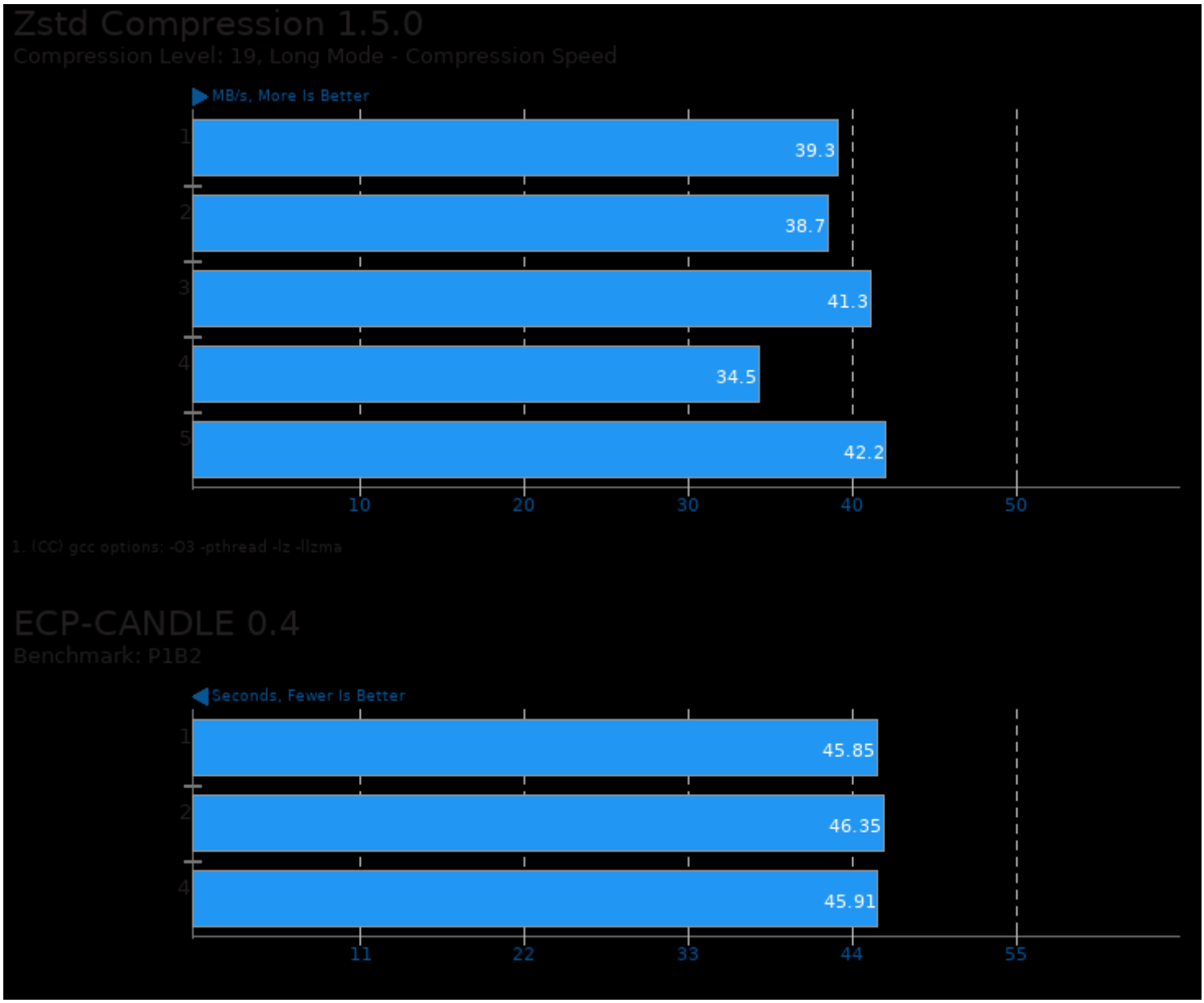
Test: Finagle HTTP Requests

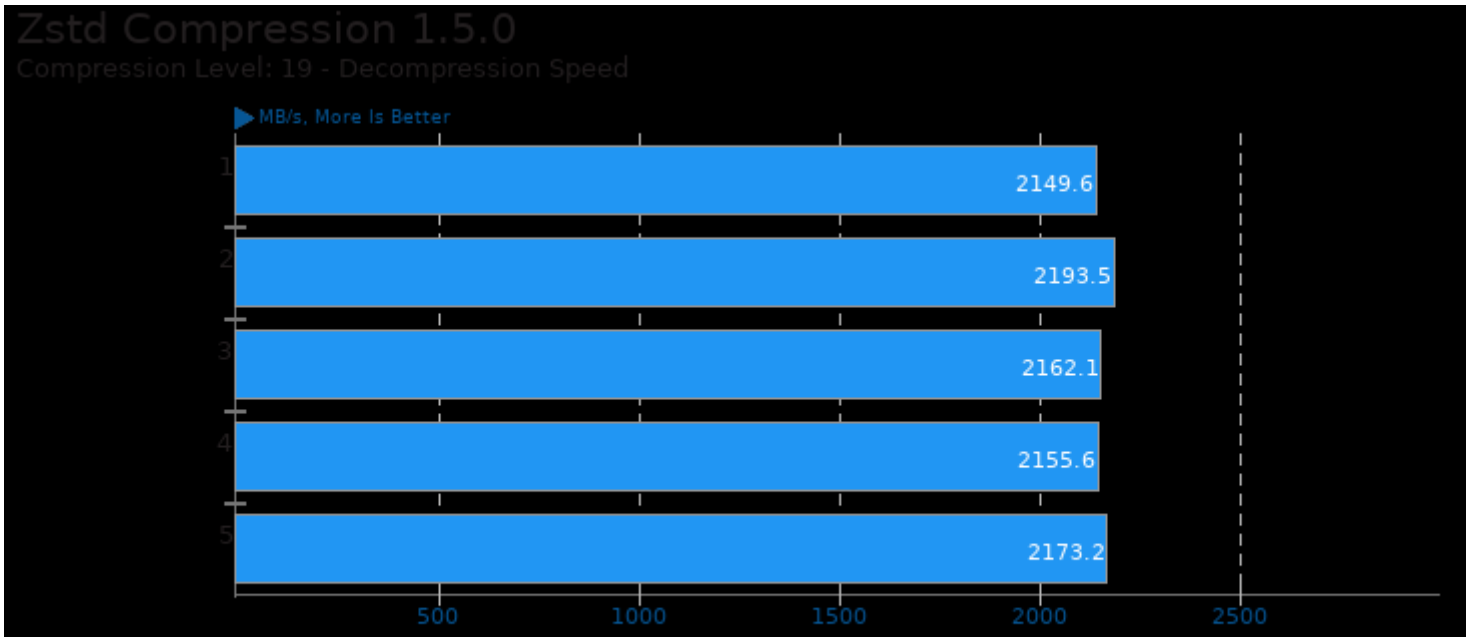


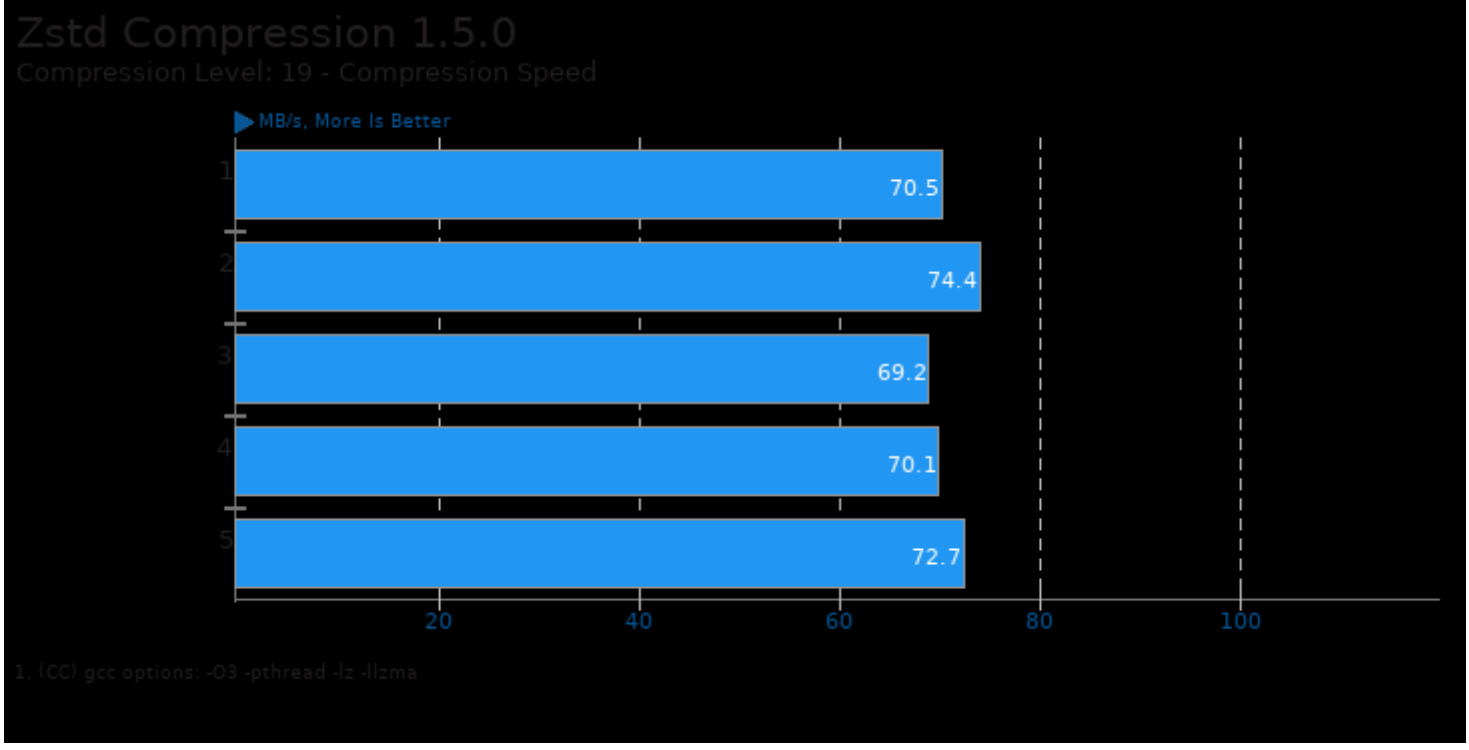

OpenSSL 3.0
Algorithm: RSA4096
verify/s, More Is Better
1
2
3
4
900380.0
897260.3
899493.7
900115.1
200K
400K
600K
800K
1000K
1. (CC) gcc options: -pthread -m64 -O3 -lssl -lcrypto -ldl
OpenSSL 3.0
Algorithm: RSA4096
sign/s, More Is Better
1
2
3
4
13605.1
13602.5
13618.4
13608.3
3K
6K
9K
12K
15K
1. (CC) gcc options: -pthread -m64 -O3 -lssl -lcrypto -ldl

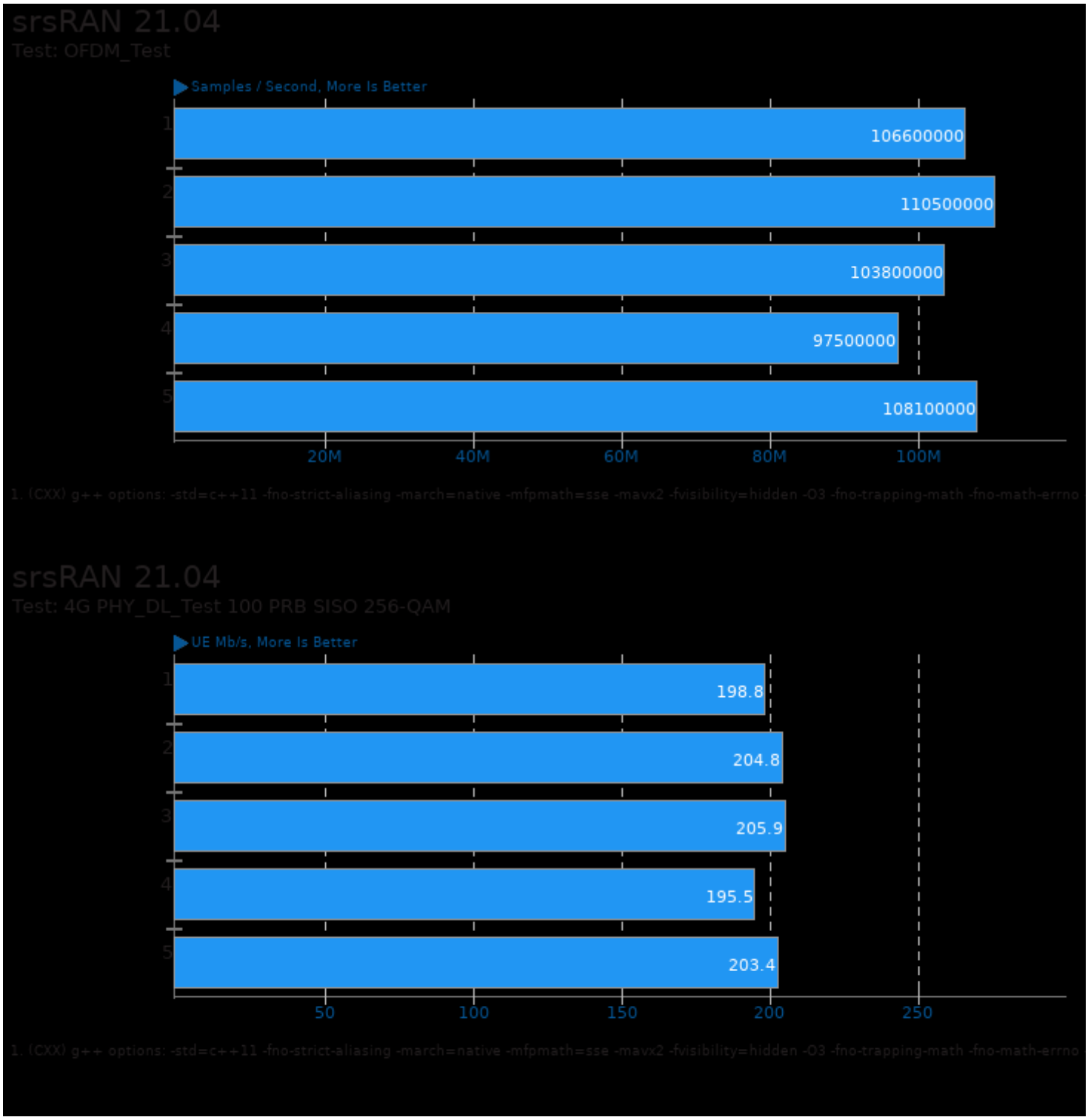

simdjson 1.0
Throughput Test: LargeRandom
GB/s, More Is Better
1
2
3
4
5
0.86
0.85
0.86
0.86
0.86
0.1935
0.387
0.5805
0.774
0.9675
1. (CXX) g++ options: -O3 -pthread
SVT-AV1 0.8.7
Encoder Mode: Preset 8 - Input: Bosphorus 4K
Frames Per Second, More Is Better
1
2
3
4
12.31
12.38
12.26
12.20
3
6
9
12
15
1. (CXX) g++ options: -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie

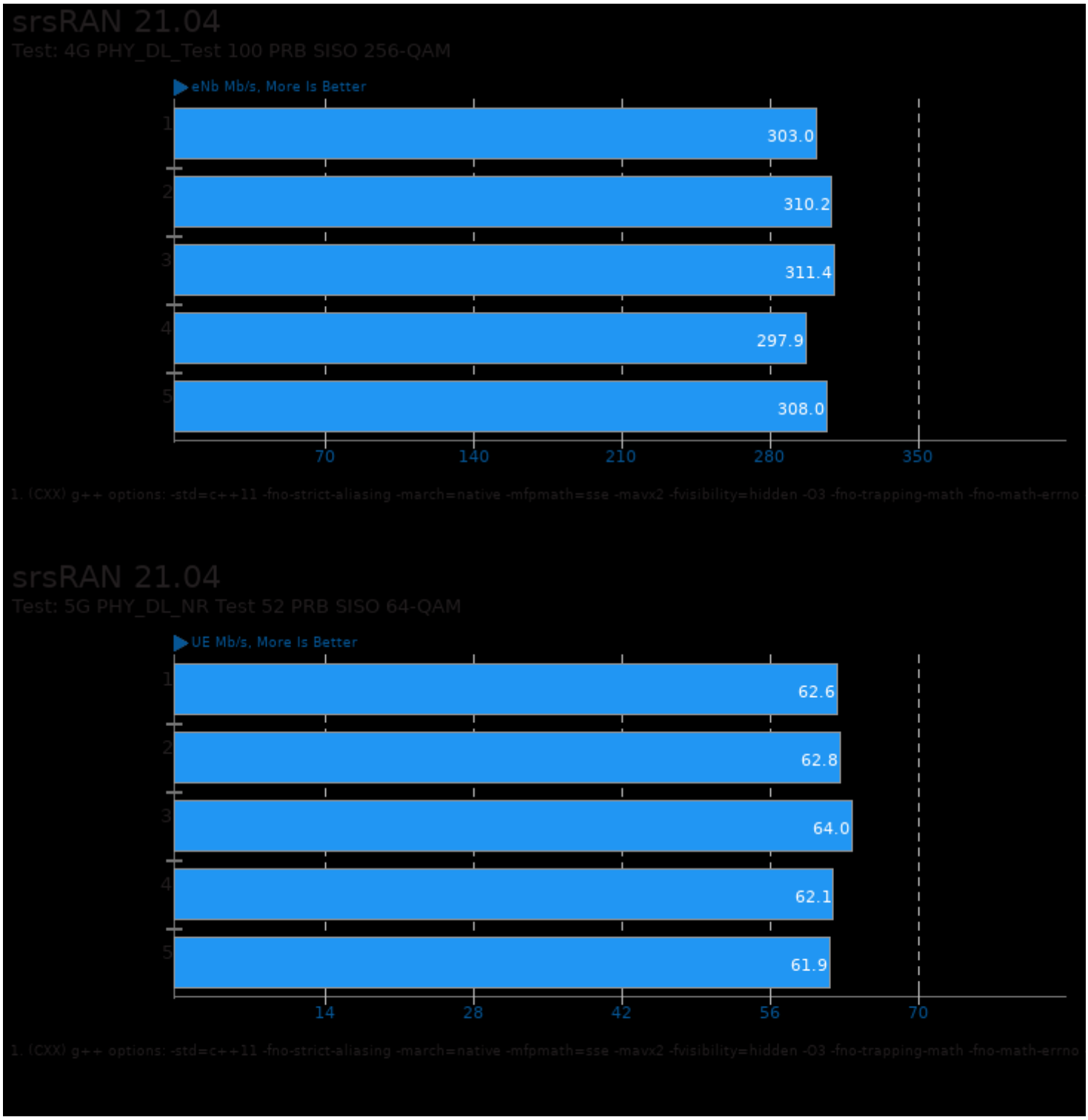

JPEG XL Decoding libjxl 0.5
CPU Threads: All
MP/s, More Is Better
1
120.90
2
116.74
3
115.28
4
117.08
5
119.13
30
60
90
120
150
Zstd Compression 1.5.0
Compression Level: 19, Long Mode - Decompression Speed
MB/s, More Is Better
1
2231.6
2
2240.3
3
2188.8
4
2181.6
5
2253.0
500
1000
1500
2000
2500
1. (CC) gcc options: -O3 -pthread -lz -llzma

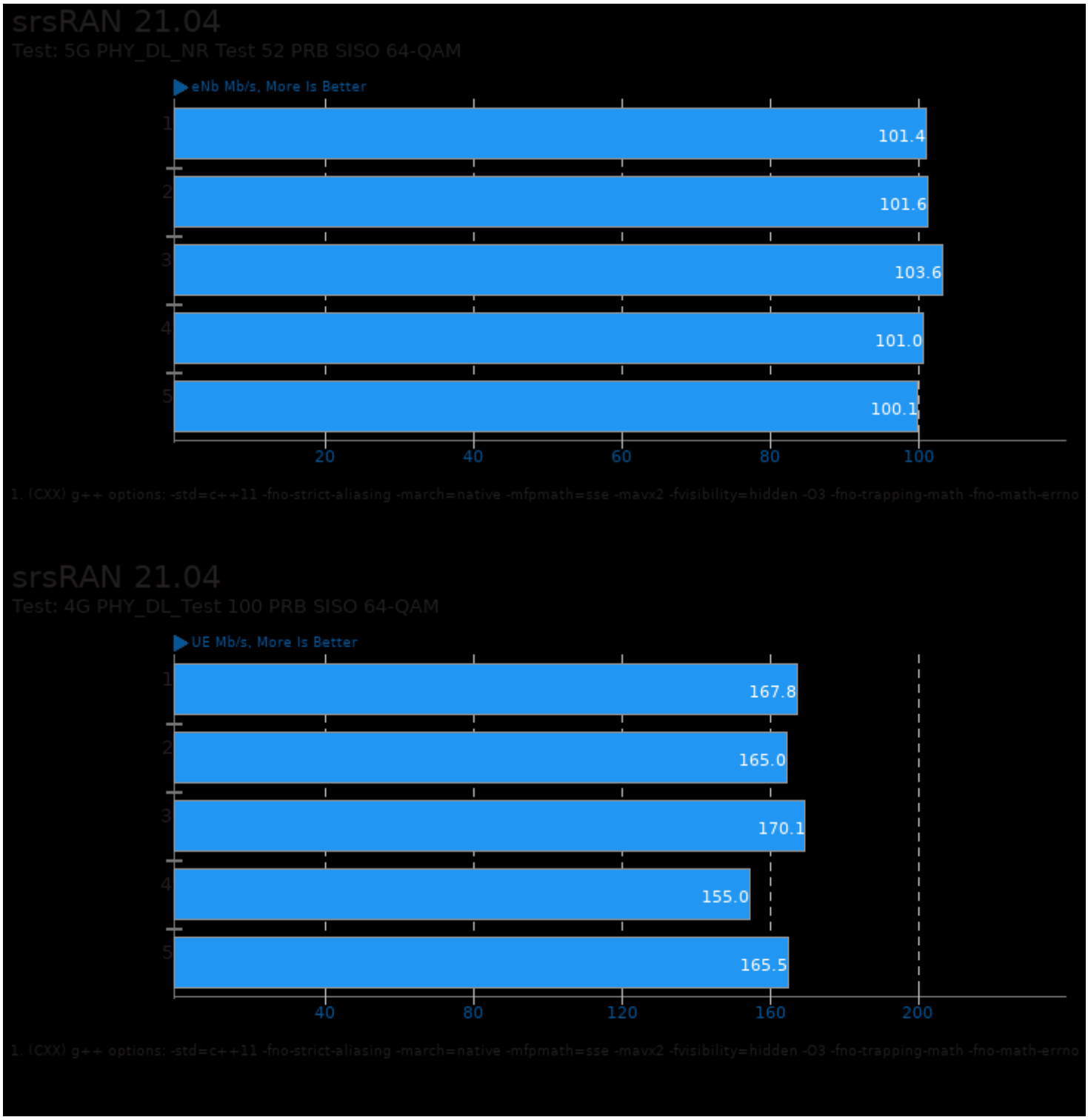

Zstd Compression 1.5.0
Compression Level: 19, Long Mode - Compression Speed
MB/s, More Is Better
1
2
3
4
5
39.3
38.7
41.3
34.5
42.2
10
20
30
40
50
1. (CC) gcc options: -O3 -pthread -lz -llzma
ECP-CANDLE 0.4
Benchmark: P1B2
Seconds, Fewer Is Better
1
2
4
45.85
46.35
45.91
11
22
33
44
55

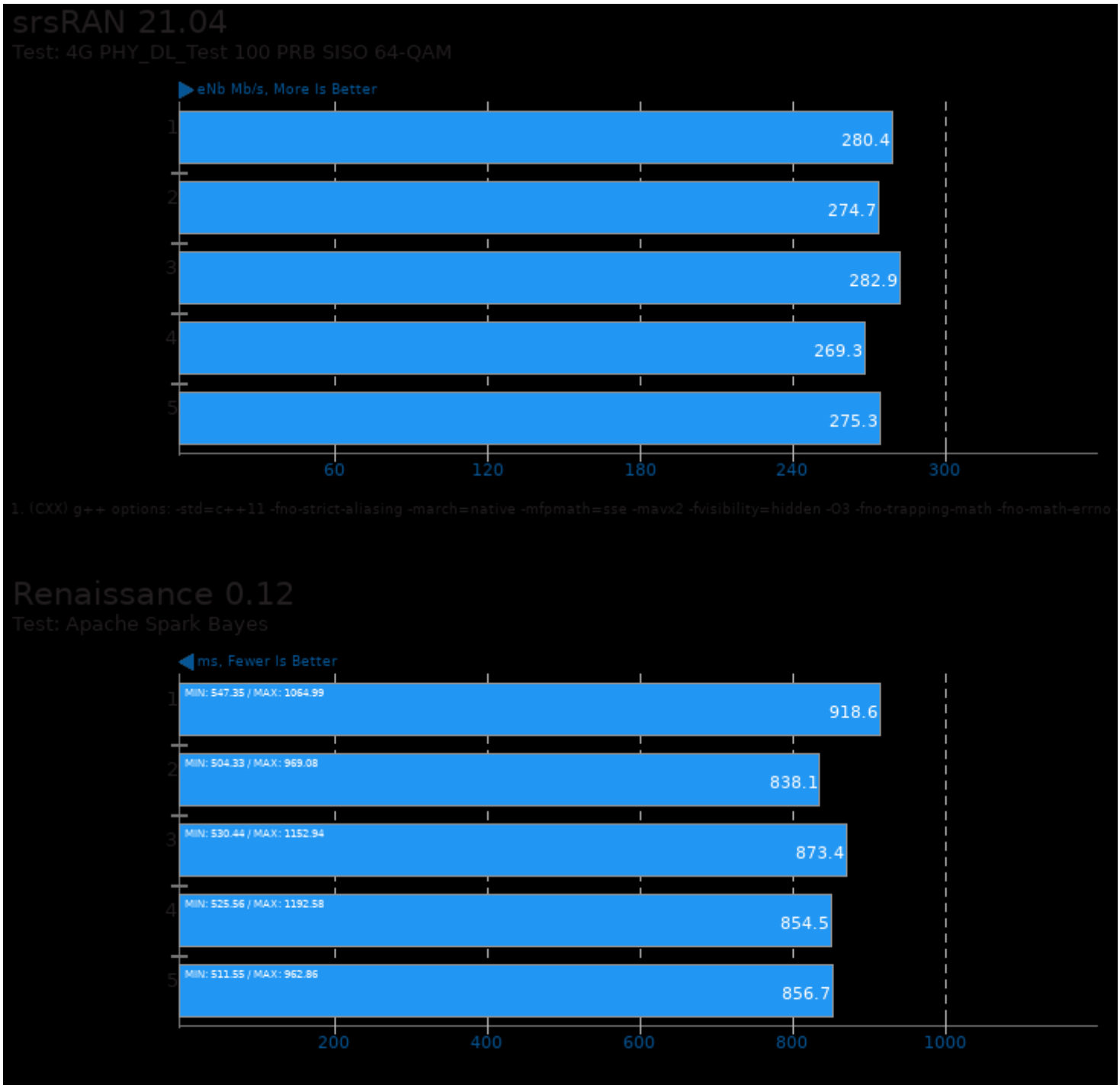

Zstd Compression 1.5.0
Compression Level: 19 - Decompression Speed
MB/s, More Is Better
1
2149.6
2
2193.5
3
2162.1
4
2155.6
5
2173.2
500
1000
1500
2000
2500
1. (CC) gcc options: -O3 -pthread -lz -llzma

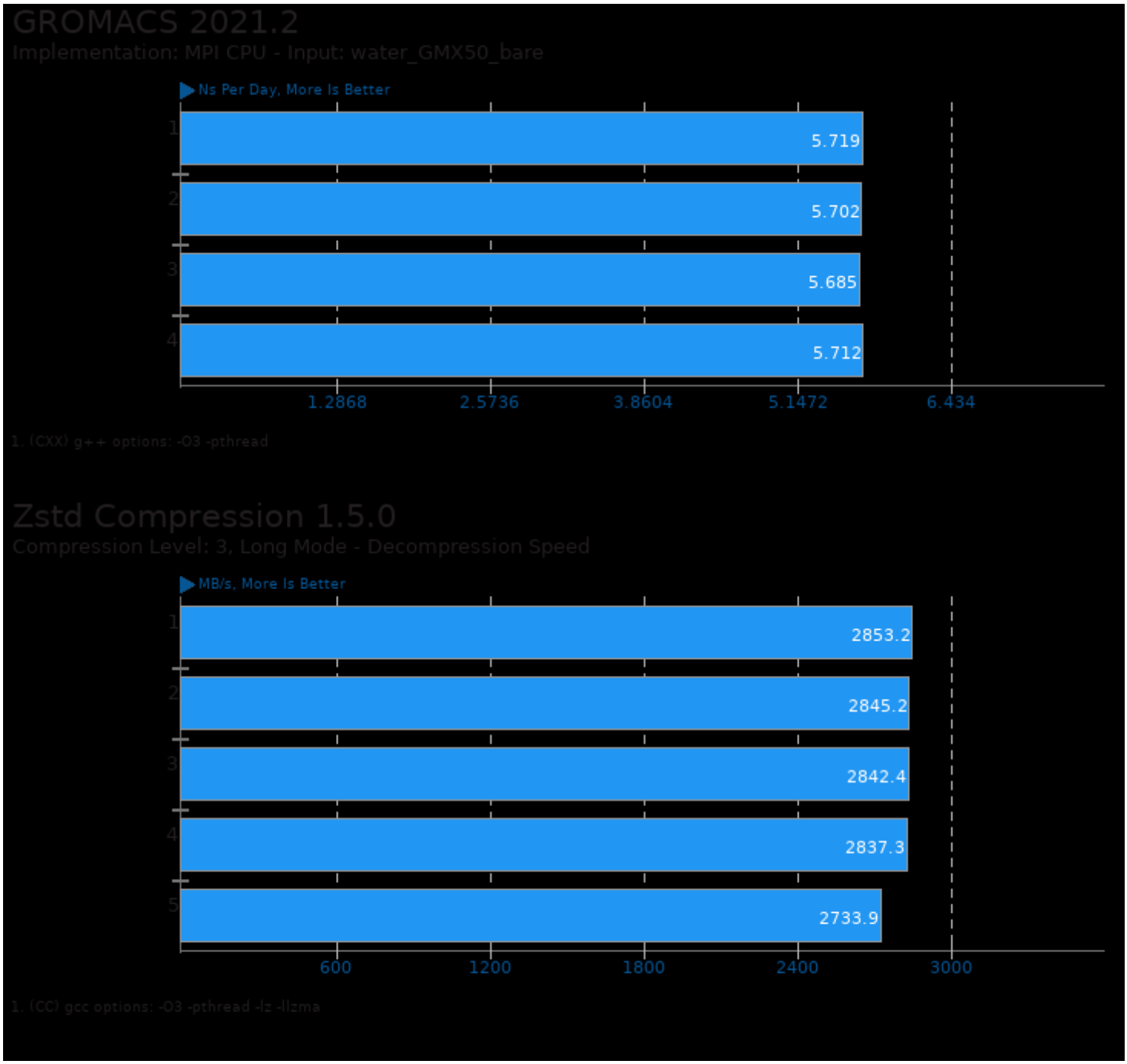

Zstd Compression 1.5.0
Compression Level: 19 - Compression Speed
MB/s, More Is Better
1
70.5
2
74.4
3
69.2
4
70.1
5
72.7
20
40
60
80
100
1. (CC) gcc options: -O3 -pthread -lz -llzma


srsRAN 21.04
Test: OFDM_Test
Samples / Second, More Is Better
1
106600000
2
110500000
3
103800000
4
97500000
5
108100000
20M
40M
60M
80M
100M
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno
srsRAN 21.04
Test: 4G PHY_DL_Test 100 PRB SISO 256-QAM
UE Mb/s, More Is Better
1
198.8
2
204.8
3
205.9
4
195.5
5
203.4
50
100
150
200
250
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

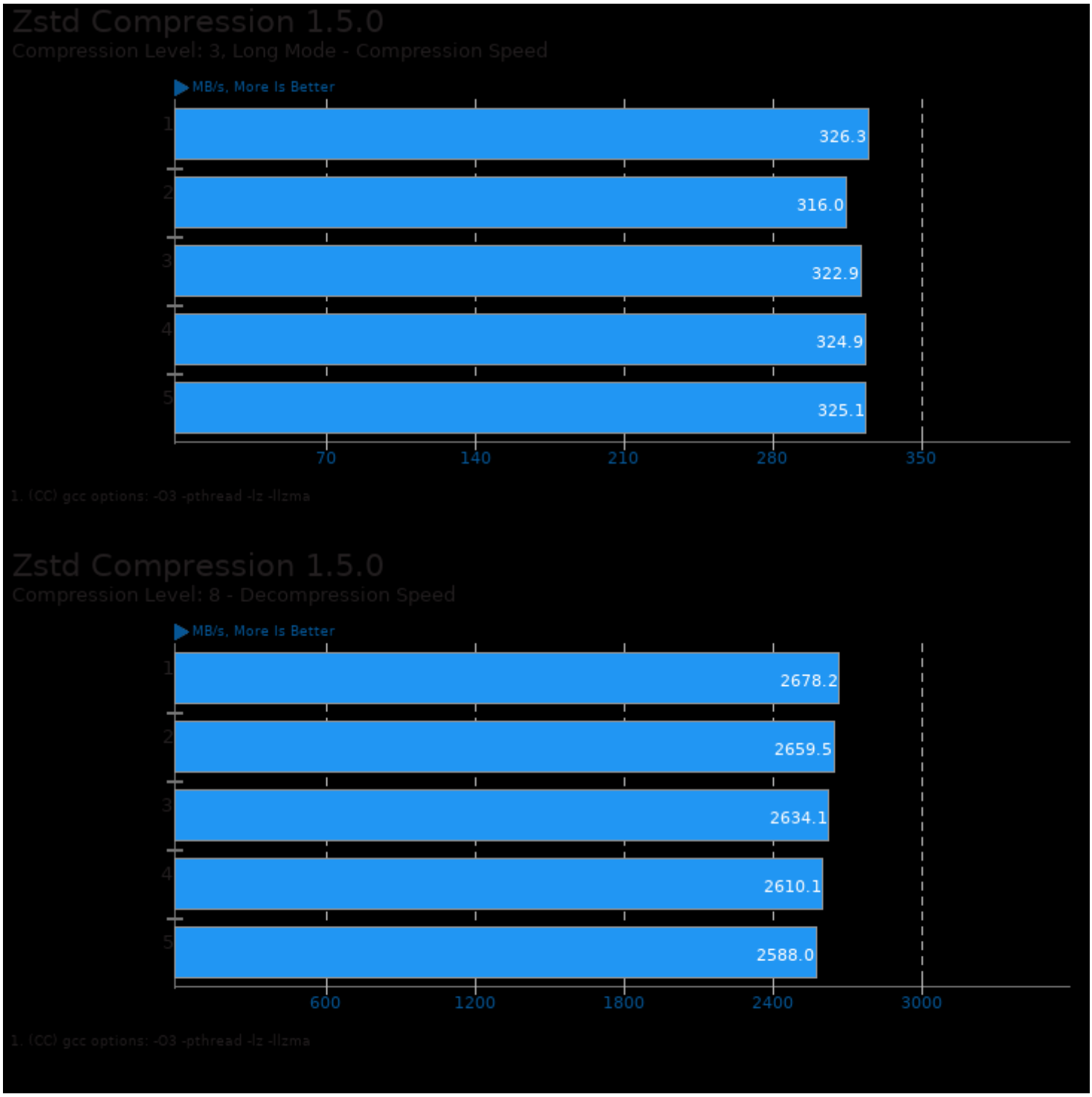

srsRAN 21.04
Test: 4G PHY_DL_Test 100 PRB SISO 256-QAM
eNb Mb/s, More Is Better
1
303.0
2
310.2
3
311.4
4
297.9
5
308.0
70
140
210
280
350
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno
srsRAN 21.04
Test: 5G PHY_DL_NR Test 52 PRB SISO 64-QAM
UE Mb/s, More Is Better
1
62.6
2
62.8
3
64.0
4
62.1
5
61.9
14
28
42
56
70
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

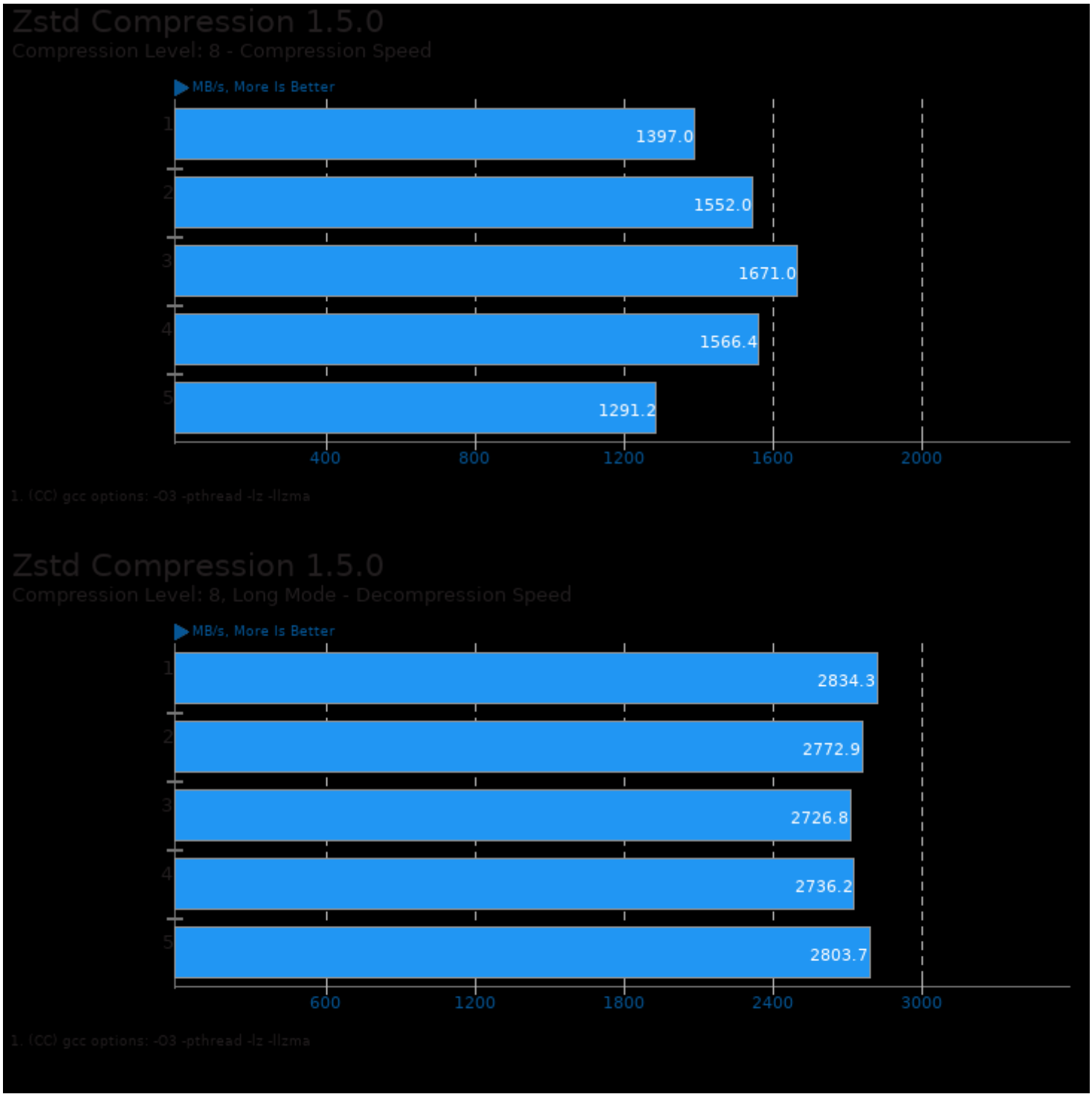

srsRAN 21.04
Test: 5G PHY_DL_NR Test 52 PRB SISO 64-QAM
eNb Mb/s, More Is Better
1
2
3
4
5
101.4
101.6
103.6
101.0
100.1
20
40
60
80
100
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno
srsRAN 21.04
Test: 4G PHY_DL_Test 100 PRB SISO 64-QAM
UE Mb/s, More Is Better
1
2
3
4
5
167.8
165.0
170.1
155.0
165.5
40
80
120
160
200
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

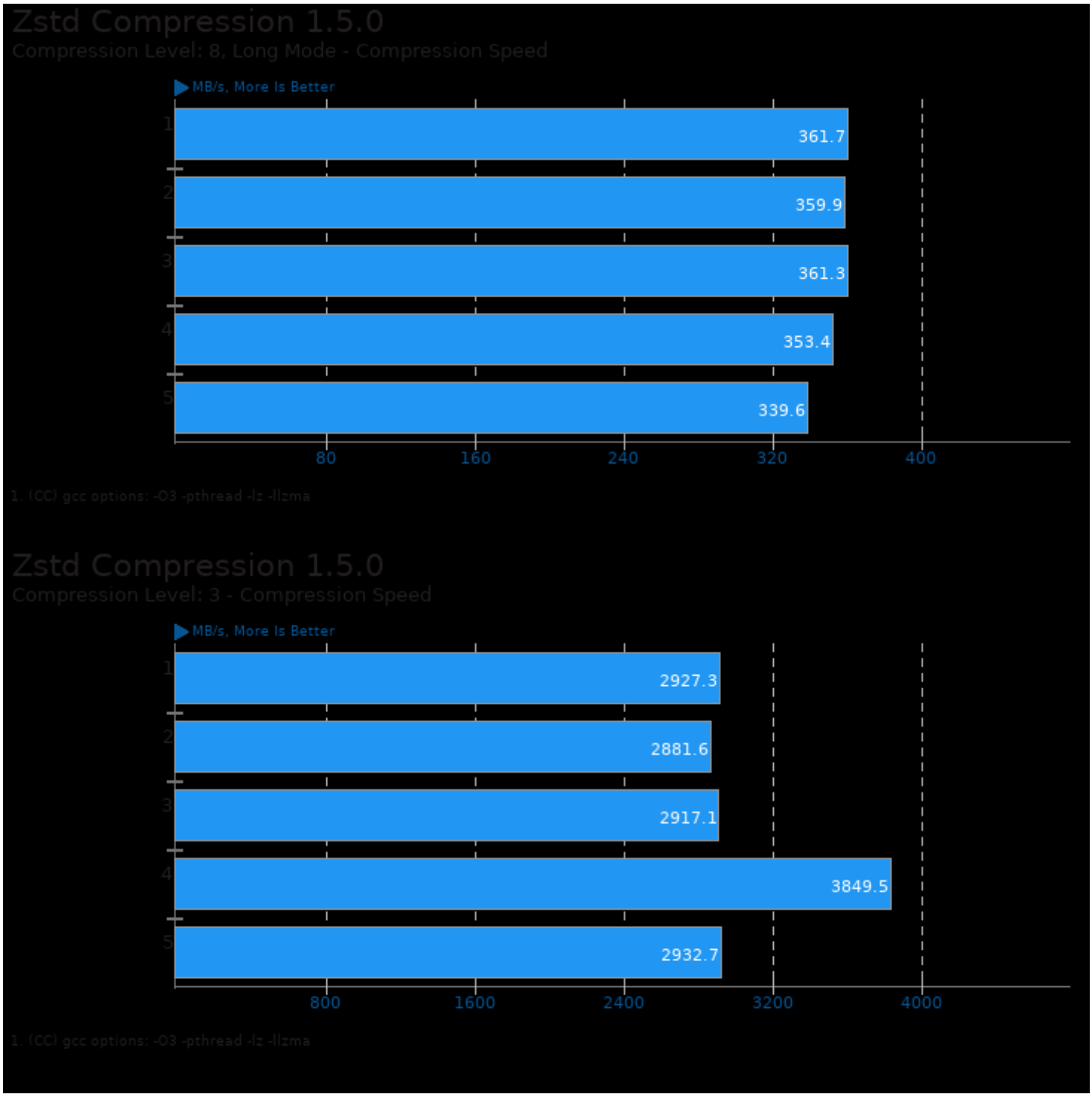

srsRAN 21.04
Test: 4G PHY_DL_Test 100 PRB SISO 64-QAM
eNb Mb/s, More Is Better
1
280.4
2
274.7
3
282.9
4
269.3
5
275.3
60
120
180
240
300
1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno
Renaissance 0.12
Test: Apache Spark Bayes
ms, Fewer Is Better
1
MIN: 547.35 / MAX: 1064.99
918.6
2
MIN: 504.33 / MAX: 969.08
838.1
3
MIN: 530.44 / MAX: 1152.94
873.4
4
MIN: 525.56 / MAX: 1192.58
854.5
5
MIN: 511.55 / MAX: 962.86
856.7
200
400
600
800
1000

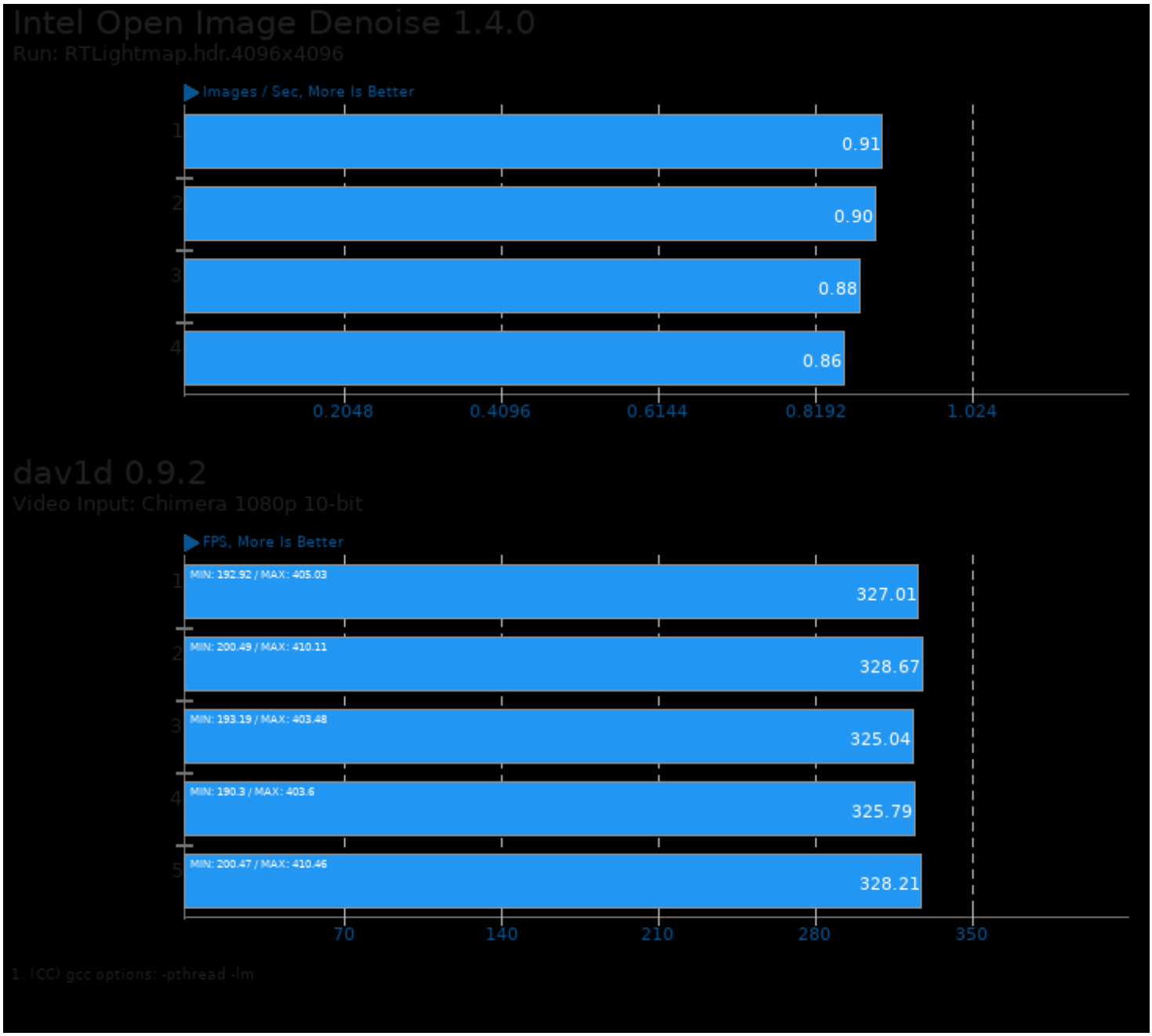

GROMACS 2021.2
Implementation: MPI CPU - Input: water_GMX50_bare
Ns Per Day, More Is Better
1
2
3
4
5.719
5.702
5.685
5.712
1.2868
2.5736
3.8604
5.1472
6.434
1. (CXX) g++ options: -O3 -pthread

Zstd Compression 1.5.0
Compression Level: 3, Long Mode - Decompression Speed
MB/s, More Is Better
1
2
3
4
5
2853.2
2845.2
2842.4
2837.3
2733.9
600
1200
1800
2400
3000
1. (CC) gcc options: -O3 -pthread -lz -llzma


Zstd Compression 1.5.0
Compression Level: 3, Long Mode - Compression Speed
MB/s, More Is Better
1
326.3
2
316.0
3
322.9
4
324.9
5
325.1
70
140
210
280
350
1. (CC) gcc options: -O3 -pthread -lz -llzma
Zstd Compression 1.5.0
Compression Level: 8 - Decompression Speed
MB/s, More Is Better
1
2678.2
2
2659.5
3
2634.1
4
2610.1
5
2588.0
600
1200
1800
2400
3000
1. (CC) gcc options: -O3 -pthread -lz -llzma

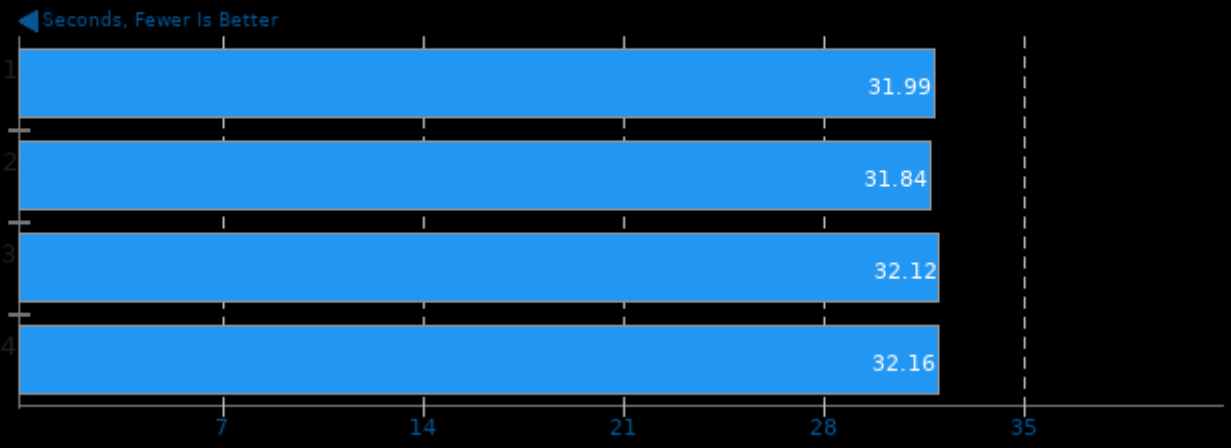

Zstd Compression 1.5.0
Compression Level: 8 - Compression Speed
MB/s, More Is Better
1
2
3
4
5
1397.0
1552.0
1671.0
1566.4
1291.2
400
800
1200
1600
2000
1. (CC) gcc options: -O3 -pthread -lz -llzma
Zstd Compression 1.5.0
Compression Level: 8, Long Mode - Decompression Speed
MB/s, More Is Better
1
2
3
4
5
2834.3
2772.9
2726.8
2736.2
2803.7
600
1200
1800
2400
3000
1. (CC) gcc options: -O3 -pthread -lz -llzma


Zstd Compression 1.5.0
Compression Level: 8, Long Mode - Compression Speed
MB/s, More Is Better
1
2
3
4
5
361.7
359.9
361.3
353.4
339.6
80
160
240
320
400
1. (CC) gcc options: -O3 -pthread -lz -llzma
Zstd Compression 1.5.0
Compression Level: 3 - Compression Speed
MB/s, More Is Better
1
2
3
4
5
2927.3
2881.6
2917.1
3849.5
2932.7
800
1600
2400
3200
4000
1. (CC) gcc options: -O3 -pthread -lz -llzma


Intel Open Image Denoise 1.4.0
Run: RTLightmap.hdr.4096x4096
Images / Sec, More Is Better
1
0.91
2
0.90
3
0.88
4
0.86
0.2048
0.4096
0.6144
0.8192
1.024
dav1d 0.9.2
Video Input: Chimera 1080p 10-bit
FPS, More Is Better
1
MIN: 192.92 / MAX: 405.03
327.01
2
MIN: 200.49 / MAX: 410.11
328.67
3
MIN: 193.19 / MAX: 403.48
325.04
4
MIN: 190.3 / MAX: 403.6
325.79
5
MIN: 200.47 / MAX: 410.46
328.21
70
140
210
280
350
1. (CC) gcc options: -pthread -lm

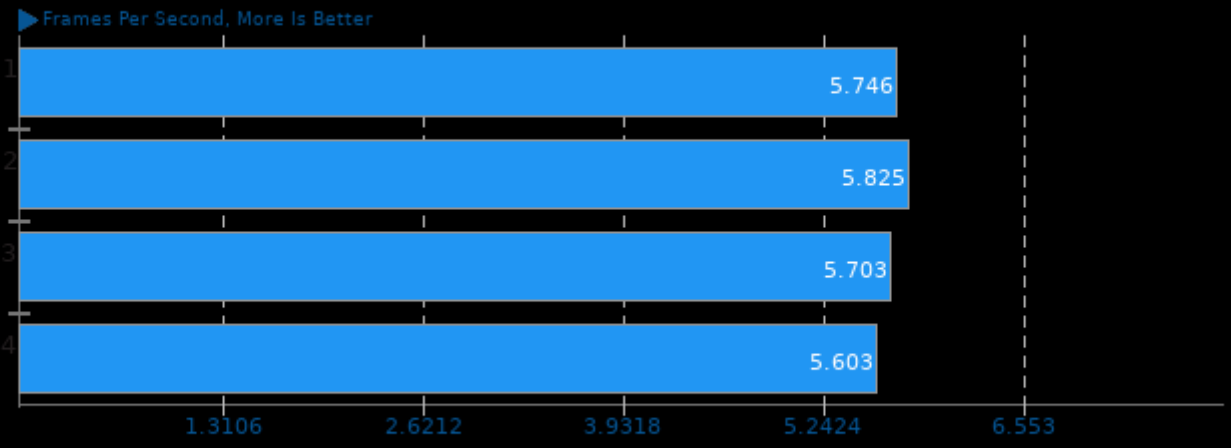
Timed Linux Kernel Compilation 5.14

Time To Compile



SVT-AV1 0.8.7

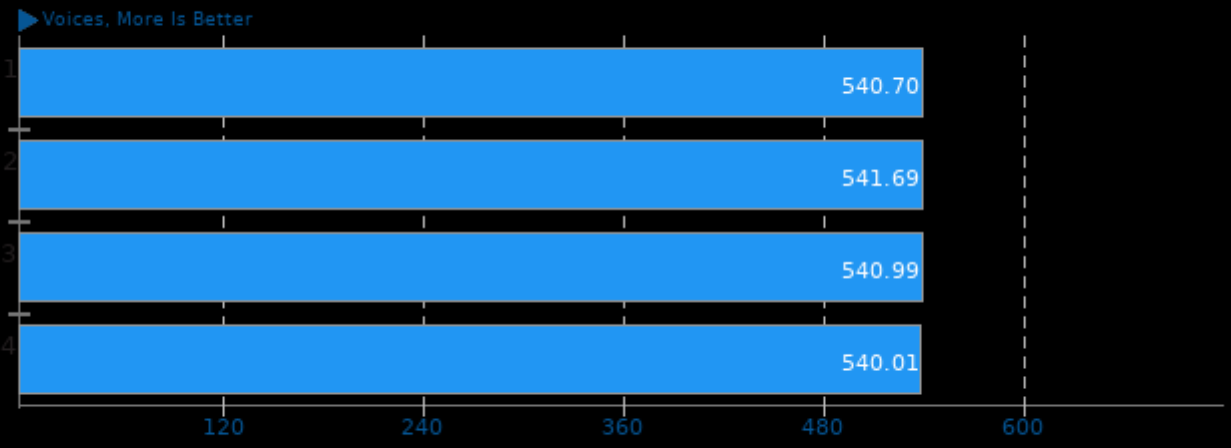
Encoder Mode: Preset 4 - Input: Bosphorus 1080p



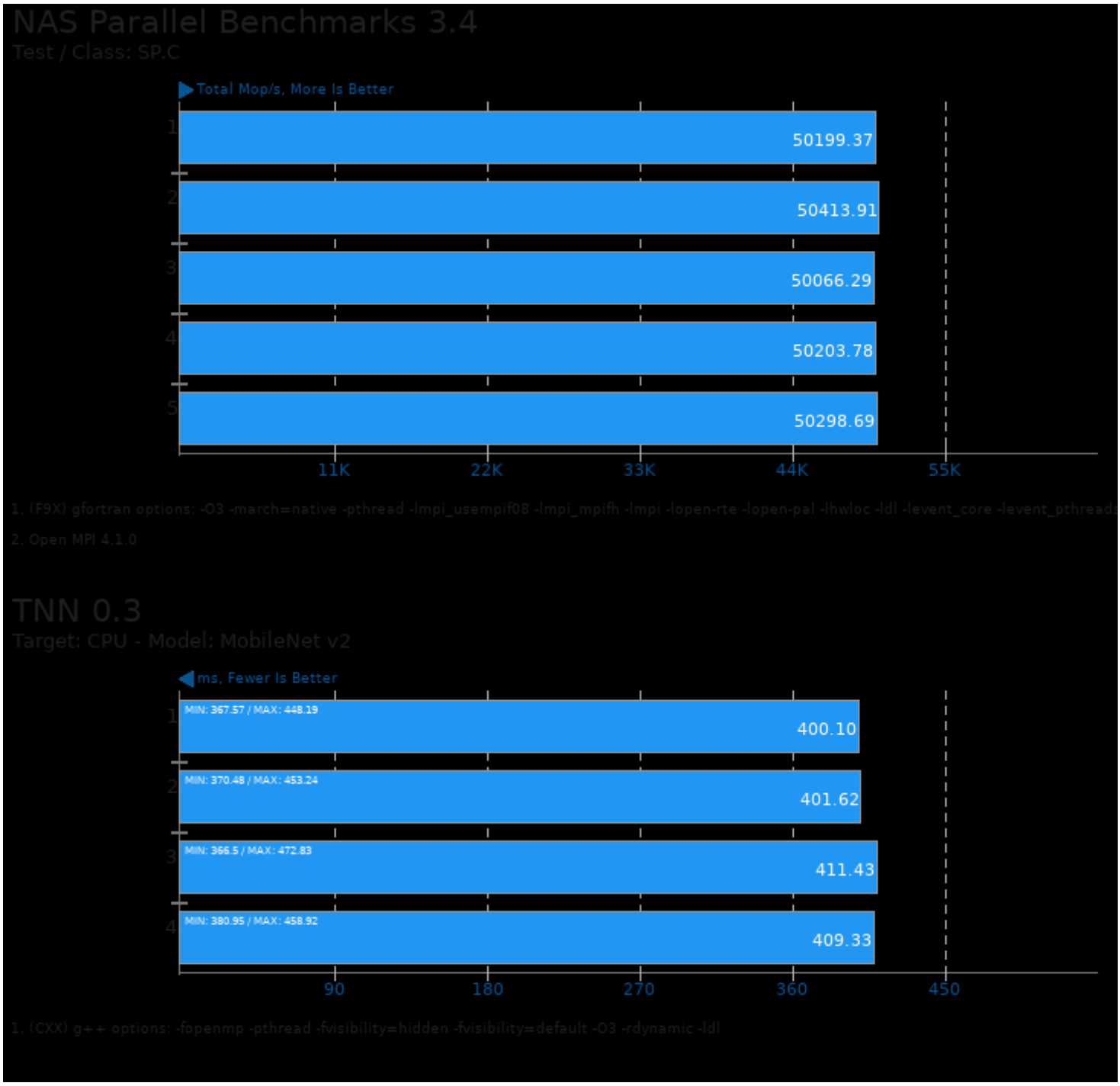
1. (CXX) g++ options: -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie

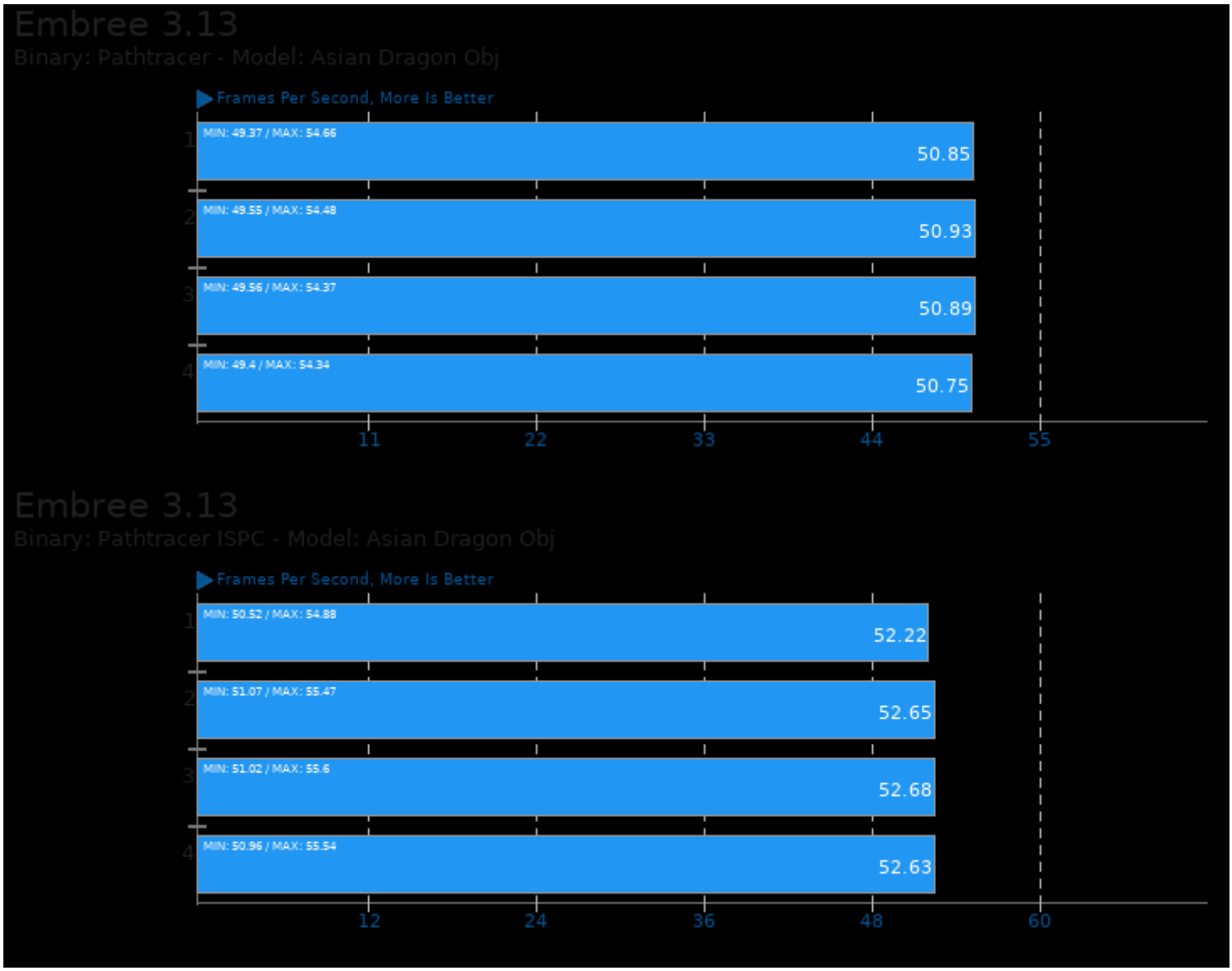
Google SynthMark 20201109

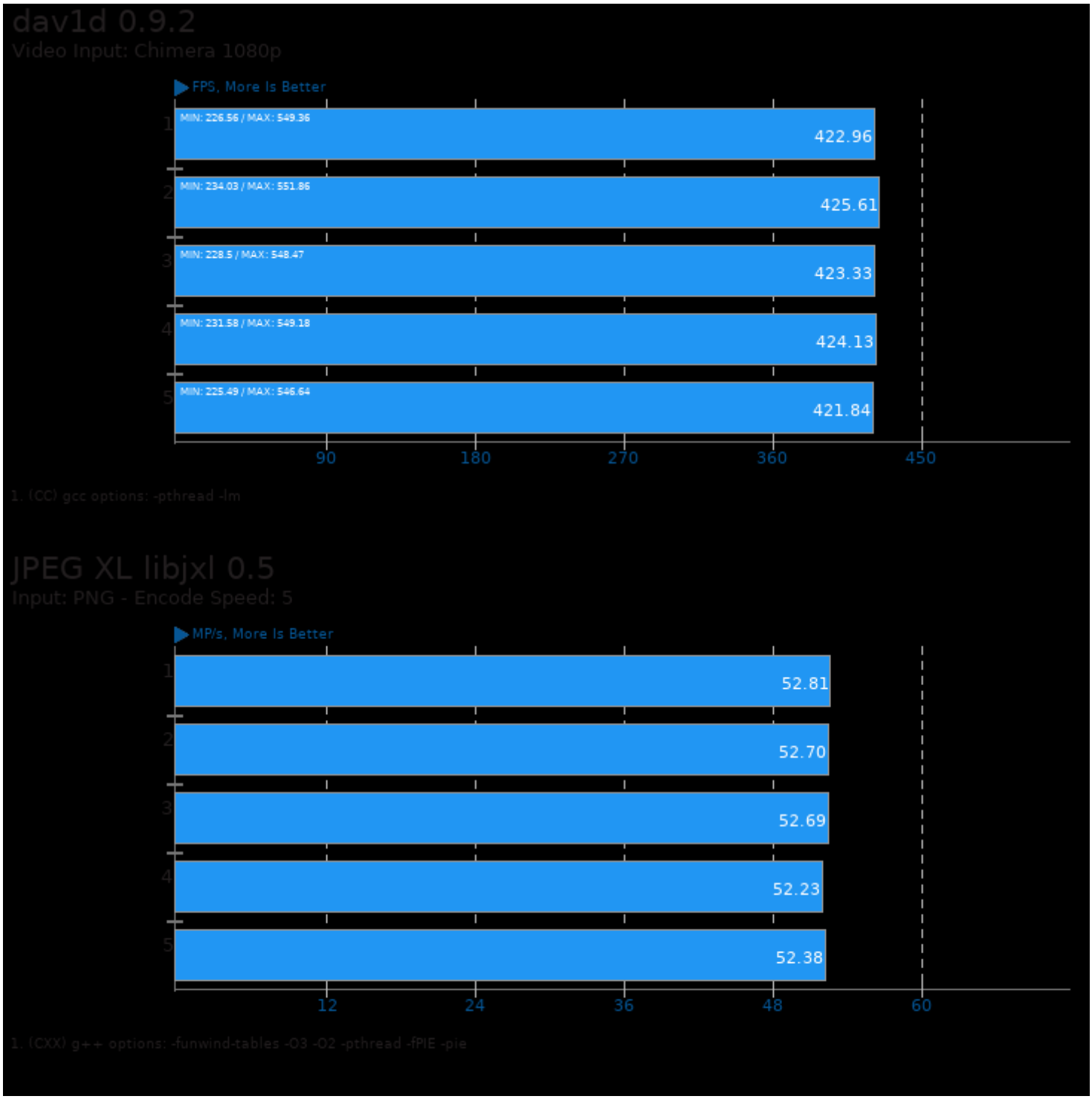
Test: VoiceMark_100

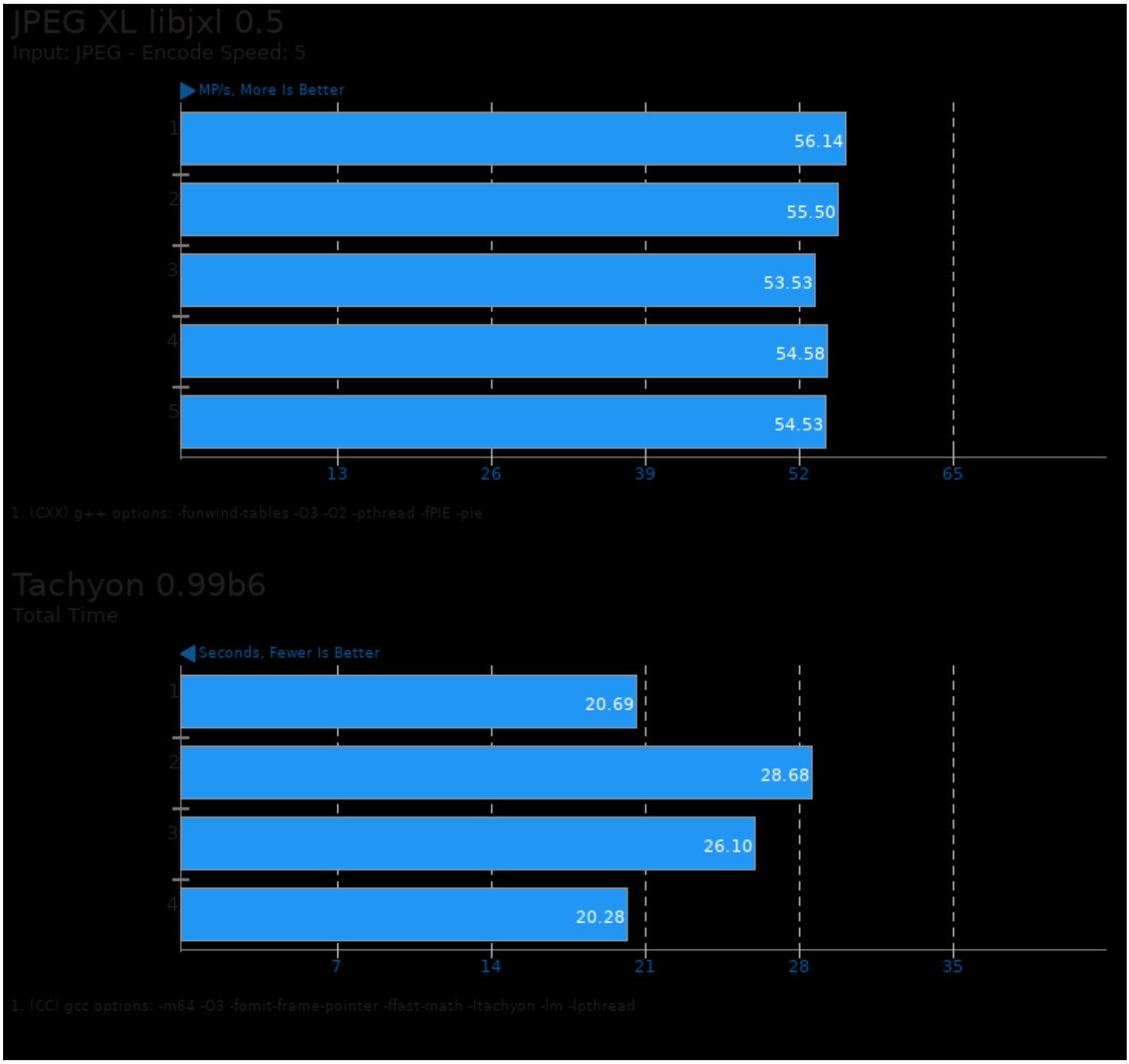


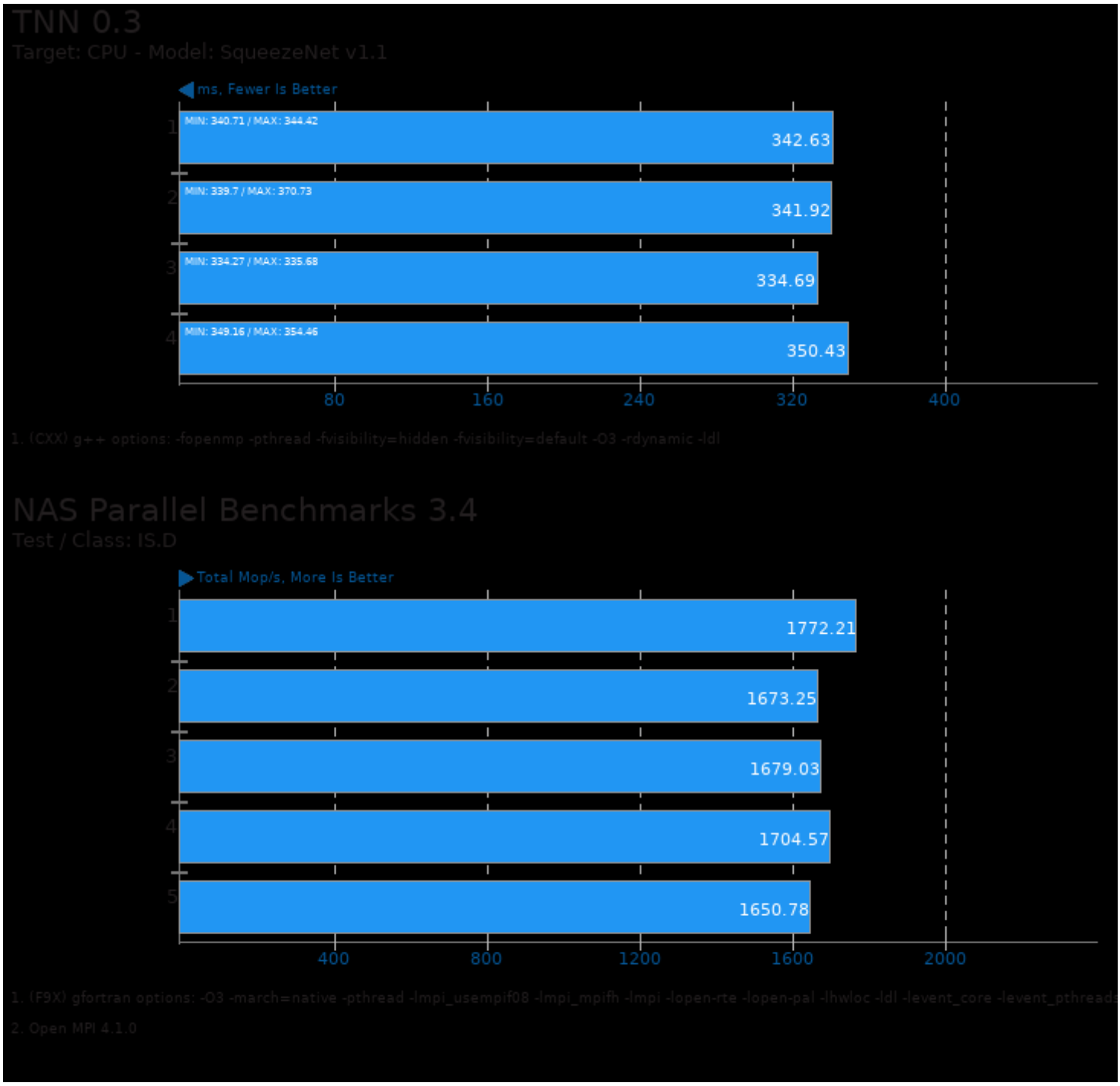
1. (CXX) g++ options: -lm -lpthread -std=c++11 -Ofast

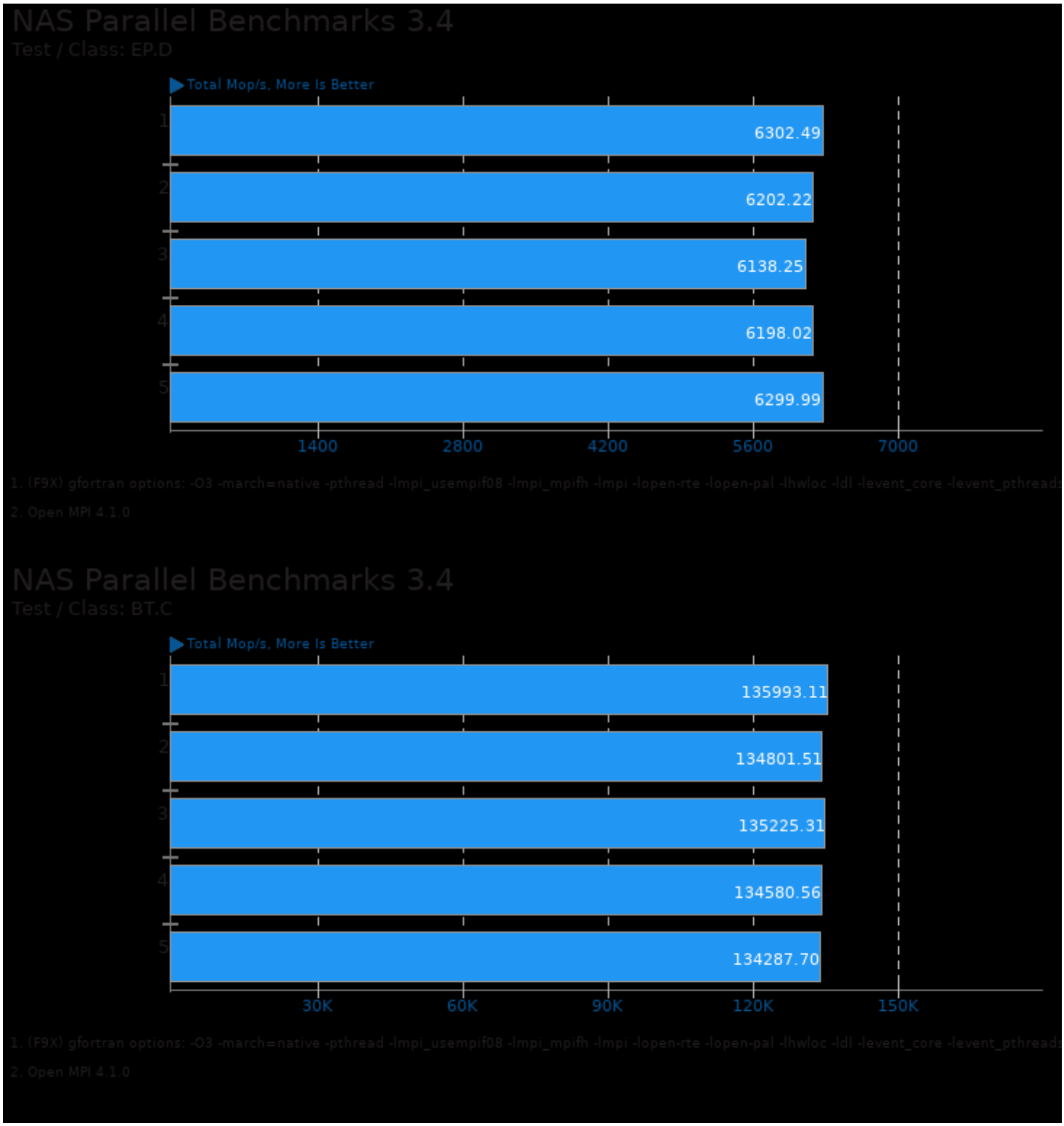

NAS Parallel Benchmarks 3.4
Test / Class: SP.C
Total Mop/s, More Is Better
1
50199.37
2
50413.91
3
50066.29
4
50203.78
5
50298.69
11K
22K
33K
44K
55K
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -ldl -levent_core -levent_pthreads
2. Open MPI 4.1.0
TNN 0.3
Target: CPU - Model: MobileNet v2
ms, Fewer Is Better
1
MIN: 367.57 / MAX: 448.19
400.10
2
MIN: 370.48 / MAX: 453.24
401.62
3
MIN: 366.5 / MAX: 472.83
411.43
4
MIN: 380.95 / MAX: 458.92
409.33
90
180
270
360
450
1. (CXX) g++ options: -fopenmp -pthread -fvisibility=hidden -fvisibility=default -O3 -rdynamic -ldl

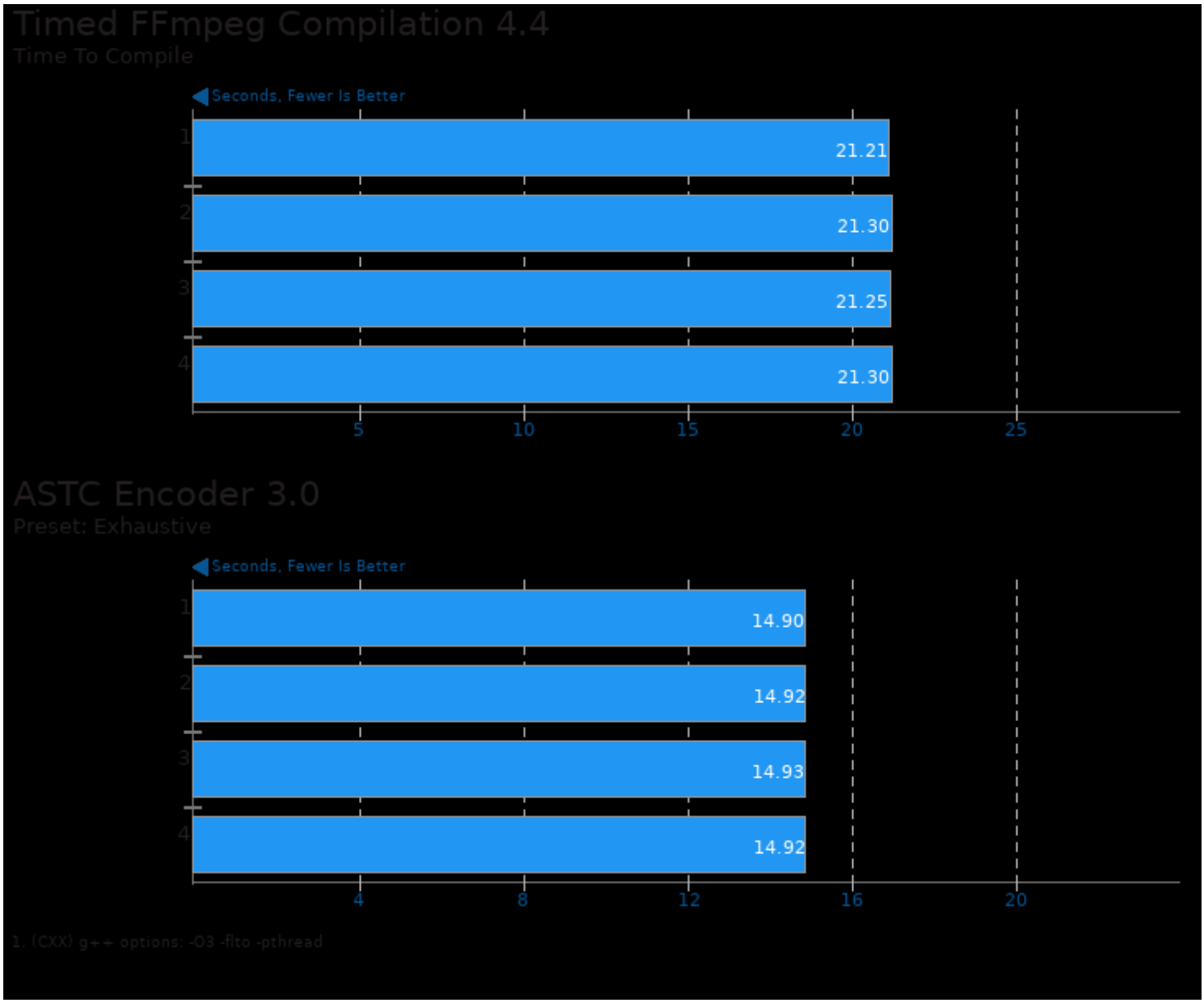

Embree 3.13
Binary: Pathtracer - Model: Asian Dragon Obj
Frames Per Second, More Is Better
1
MIN: 49.37 / MAX: 54.66
50.85
2
MIN: 49.55 / MAX: 54.48
50.93
3
MIN: 49.56 / MAX: 54.37
50.89
4
MIN: 49.4 / MAX: 54.34
50.75
11
22
33
44
55
Embree 3.13
Binary: Pathtracer ISPC - Model: Asian Dragon Obj
Frames Per Second, More Is Better
1
MIN: 50.52 / MAX: 54.88
52.22
2
MIN: 51.07 / MAX: 55.47
52.65
3
MIN: 51.02 / MAX: 55.6
52.68
4
MIN: 50.96 / MAX: 55.54
52.63
12
24
36
48
60


dav1d 0.9.2
Video Input: Chimera 1080p
FPS, More Is Better
1
MIN: 226.56 / MAX: 549.36
422.96
2
MIN: 234.03 / MAX: 551.86
425.61
3
MIN: 228.5 / MAX: 548.47
423.33
4
MIN: 231.58 / MAX: 549.18
424.13
5
MIN: 225.49 / MAX: 546.64
421.84
90
180
270
360
450
1. (CC) gcc options: -pthread -lm
JPEG XL libjxl 0.5
Input: PNG - Encode Speed: 5
MP/s, More Is Better
1
52.81
2
52.70
3
52.69
4
52.23
5
52.38
12
24
36
48
60
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
1
2
3
4
5
56.14
55.50
53.53
54.58
54.53
13
26
39
52
65
1. (CXX) g++ options: -funwind-tables -O3 -O2 -pthread -fPIE -pie
Tachyon 0.99b6
Total Time
Seconds, Fewer Is Better
1
2
3
4
20.69
28.68
26.10
20.28
7
14
21
28
35
1. (CC) gcc options: -m64 -O3 -fomit-frame-pointer -ffast-math -ltachyon -lm -lpthread

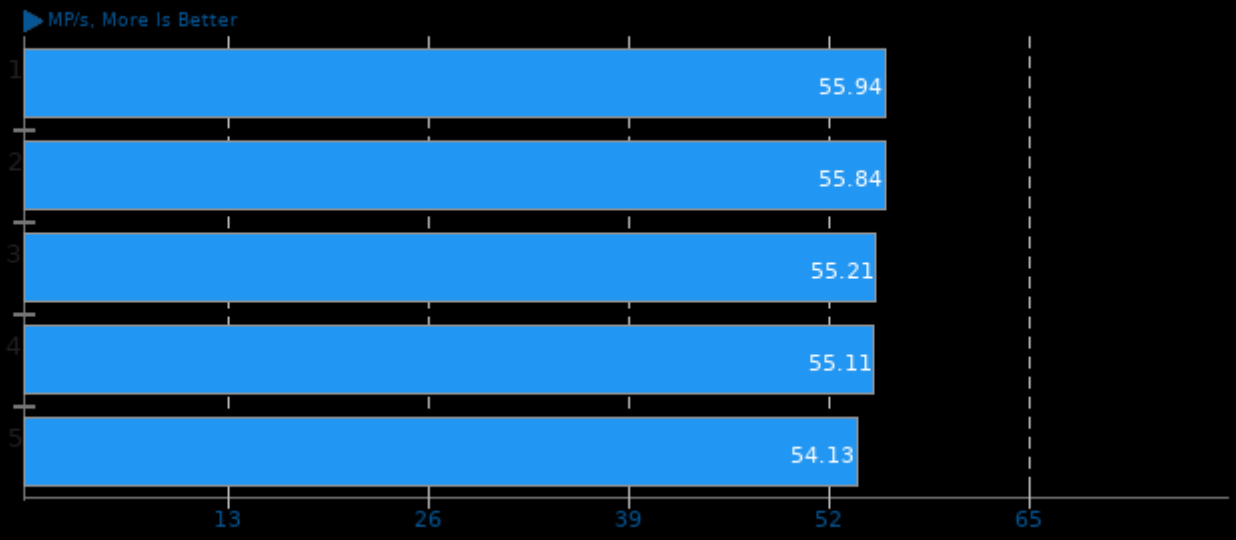

TNN 0.3
Target: CPU - Model: SqueezeNet v1.1
ms, Fewer Is Better
1
MIN: 340.71 / MAX: 344.42
342.63
2
MIN: 339.7 / MAX: 370.73
341.92
3
MIN: 334.27 / MAX: 335.68
334.69
4
MIN: 349.16 / MAX: 354.46
350.43
80
160
240
320
400
1. (CXX) g++ options: -fopenmp -pthread -fvisibility=hidden -fvisibility=default -O3 -rdynamic -ldl
NAS Parallel Benchmarks 3.4
Test / Class: IS.D
Total Mop/s, More Is Better
1
1772.21
2
1673.25
3
1679.03
4
1704.57
5
1650.78
400
800
1200
1600
2000
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -ldl -levent_core -levent_pthread
2. Open MPI 4.1.0


NAS Parallel Benchmarks 3.4
Test / Class: EP.D
Total Mop/s, More Is Better
1
2
3
4
5
6302.49
6202.22
6138.25
6198.02
6299.99
1400
2800
4200
5600
7000
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -ldl -levent_core -levent_pthreads
2. Open MPI 4.1.0
NAS Parallel Benchmarks 3.4
Test / Class: BT.C
Total Mop/s, More Is Better
1
2
3
4
5
135993.11
134801.51
135225.31
134580.56
134287.70
30K
60K
90K
120K
150K
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -ldl -levent_core -levent_pthreads
2. Open MPI 4.1.0


Timed FFmpeg Compilation 4.4
Time To Compile
Seconds, Fewer Is Better
1
2
3
4
21.21
21.30
21.25
21.30
5
10
15
20
25
ASTC Encoder 3.0
Preset: Exhaustive
Seconds, Fewer Is Better
1
2
3
4
14.90
14.92
14.93
14.92
4
8
12
16
20
1. (CXX) g++ options: -O3 -flto -pthread

JPEG XL libjxl 0.5

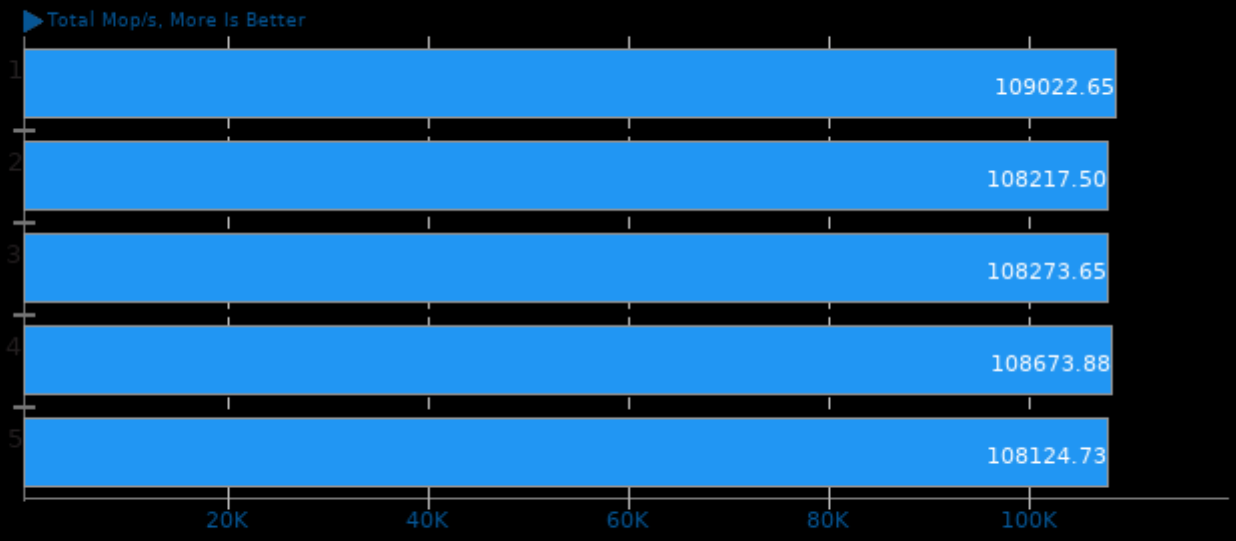
Input: JPEG - Encode Speed: 7



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

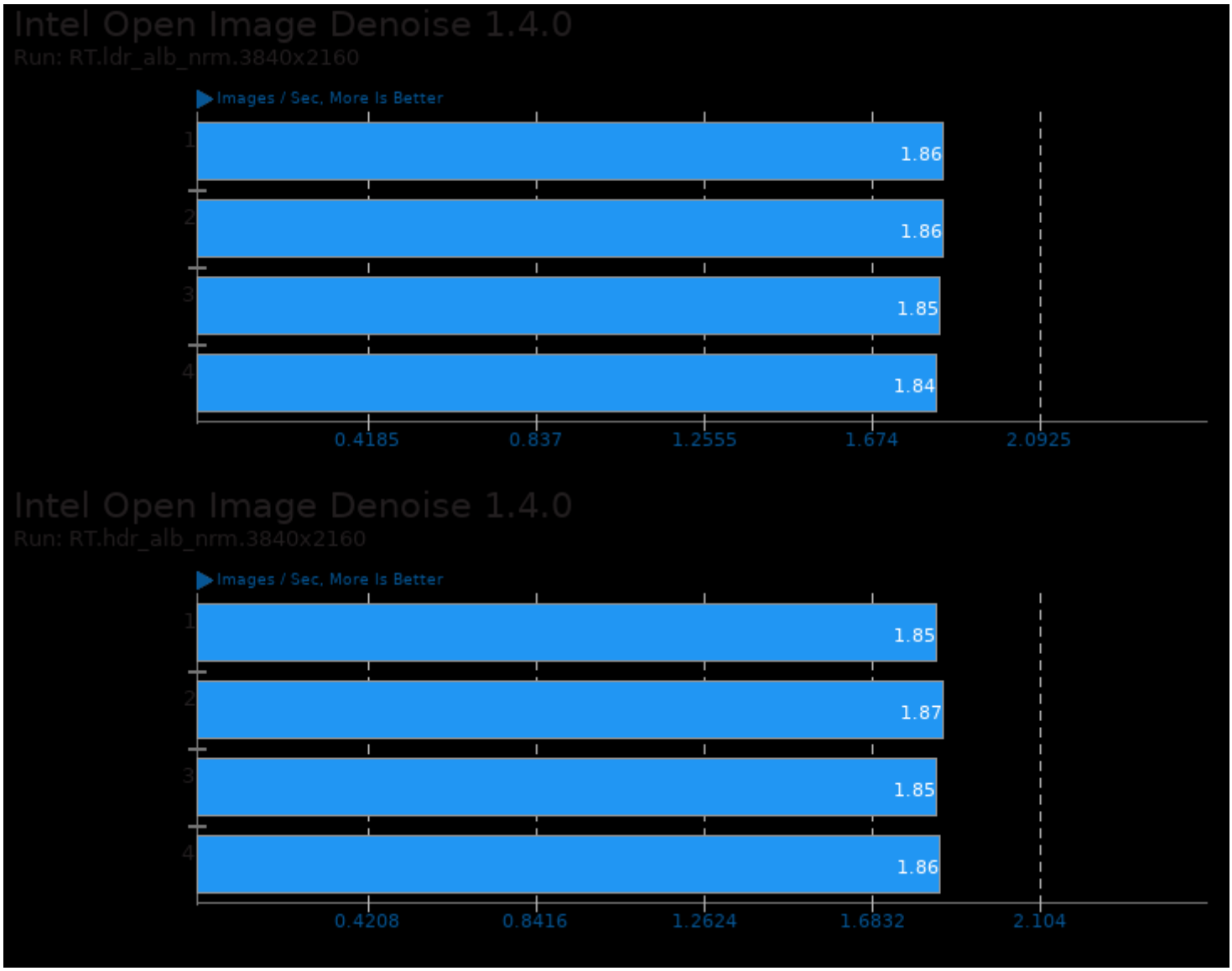
NAS Parallel Benchmarks 3.4

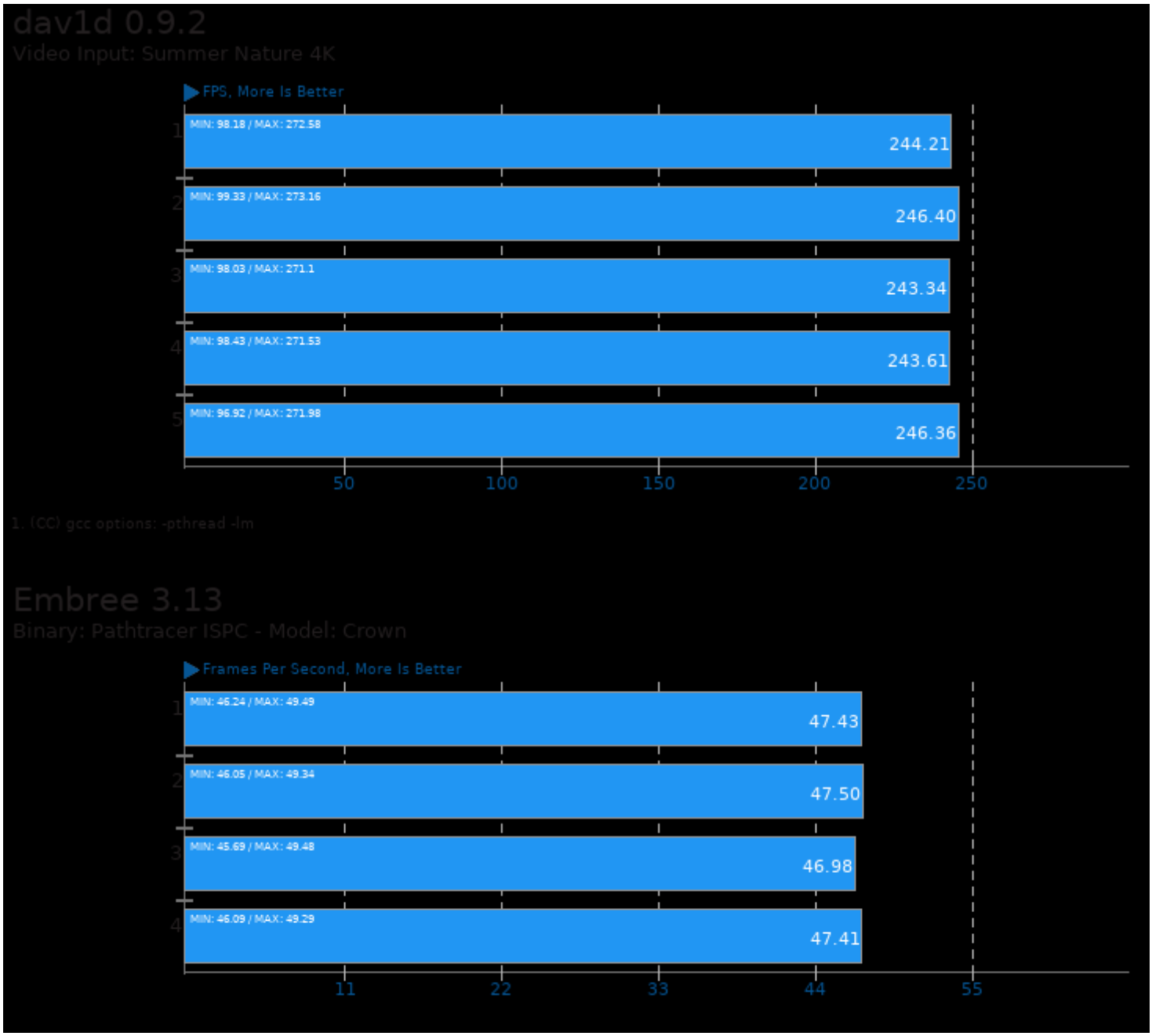
Test / Class: LU.C

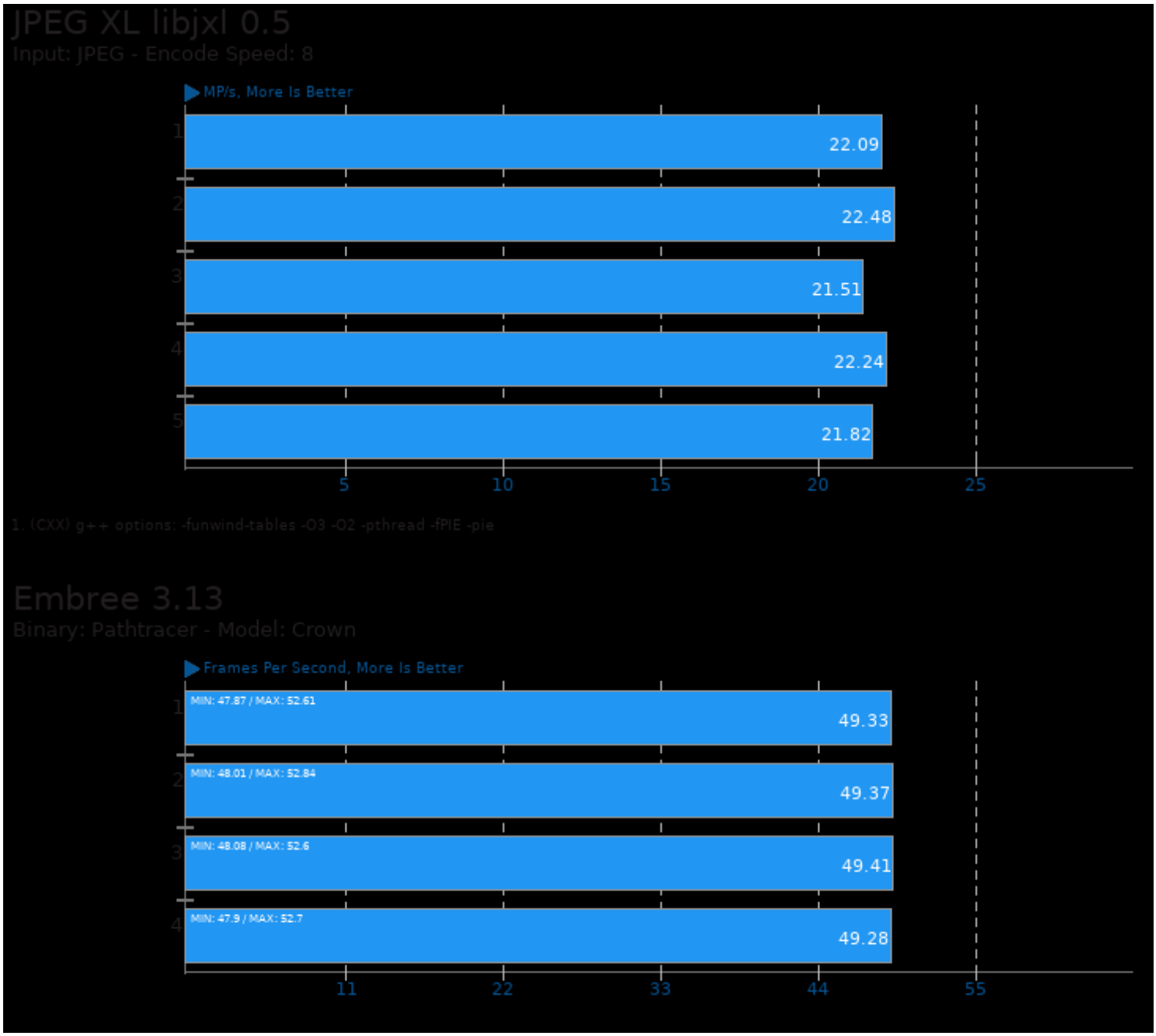


1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -ldl -levent_core -levent_pthread

2. Open MPI 4.1.0

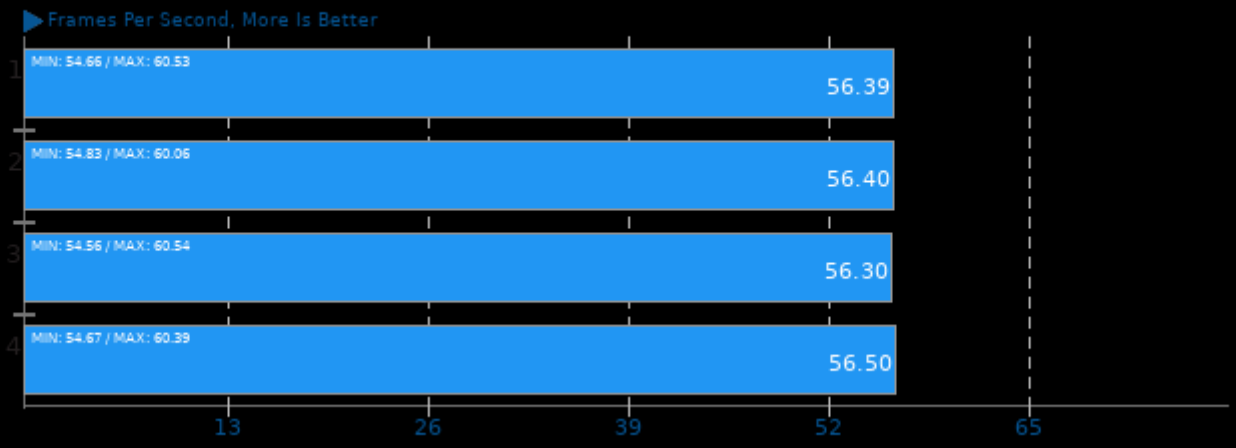

Intel Open Image Denoise 1.4.0
Run: RT.ldr_alb_nrm.3840x2160
Images / Sec, More Is Better
1
2
3
4
1.86
1.86
1.85
1.84
0.4185
0.837
1.2555
1.674
2.0925
Intel Open Image Denoise 1.4.0
Run: RT.hdr_alb_nrm.3840x2160
Images / Sec, More Is Better
1
2
3
4
1.85
1.87
1.85
1.86
0.4208
0.8416
1.2624
1.6832
2.104


dav1d 0.9.2
Video Input: Summer Nature 4K
FPS, More Is Better
1
MIN: 98.18 / MAX: 272.58
244.21
2
MIN: 99.33 / MAX: 273.16
246.40
3
MIN: 98.03 / MAX: 271.1
243.34
4
MIN: 98.43 / MAX: 271.53
243.61
5
MIN: 96.92 / MAX: 271.98
246.36
50
100
150
200
250
1. (CC) gcc options: -pthread -lm
Embree 3.13
Binary: Pathtracer ISPC - Model: Crown
Frames Per Second, More Is Better
1
MIN: 46.24 / MAX: 49.49
47.43
2
MIN: 46.05 / MAX: 49.34
47.50
3
MIN: 45.69 / MAX: 49.48
46.98
4
MIN: 46.09 / MAX: 49.29
47.41
11
22
33
44
55


JPEG XL libjxl 0.5
Input: JPEG - Encode Speed: 8
MP/s, More Is Better
1
22.09
2
22.48
3
21.51
4
22.24
5
21.82
5
10
15
20
25
1. (CXX) g++ options: -funwind-tables -O3 -O2 -pthread -fPIE -pie
Embree 3.13
Binary: Pathtracer - Model: Crown
Frames Per Second, More Is Better
1
MIN: 47.87 / MAX: 52.61
49.33
2
MIN: 48.01 / MAX: 52.84
49.37
3
MIN: 48.08 / MAX: 52.6
49.41
4
MIN: 47.9 / MAX: 52.7
49.28
11
22
33
44
55

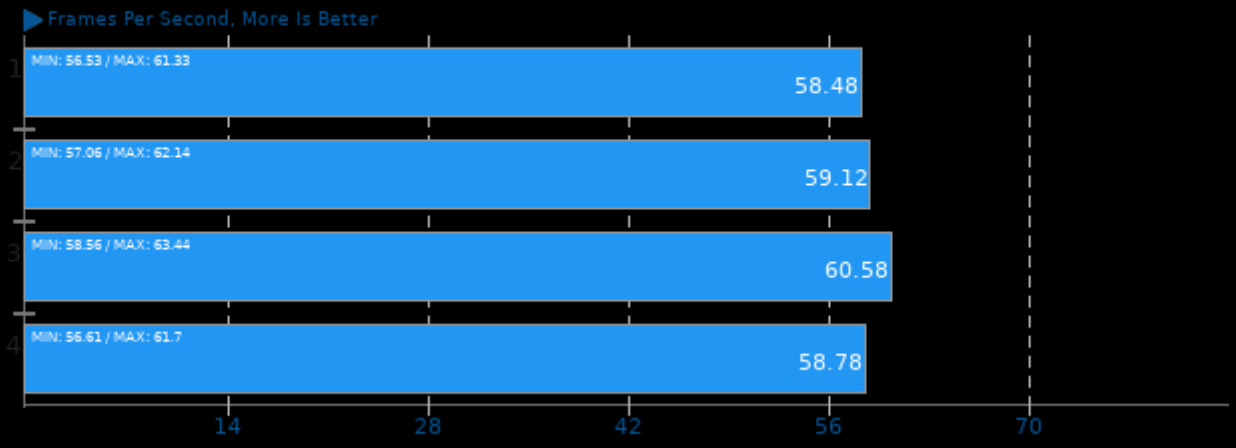
Embree 3.13

Binary: Pathtracer - Model: Asian Dragon



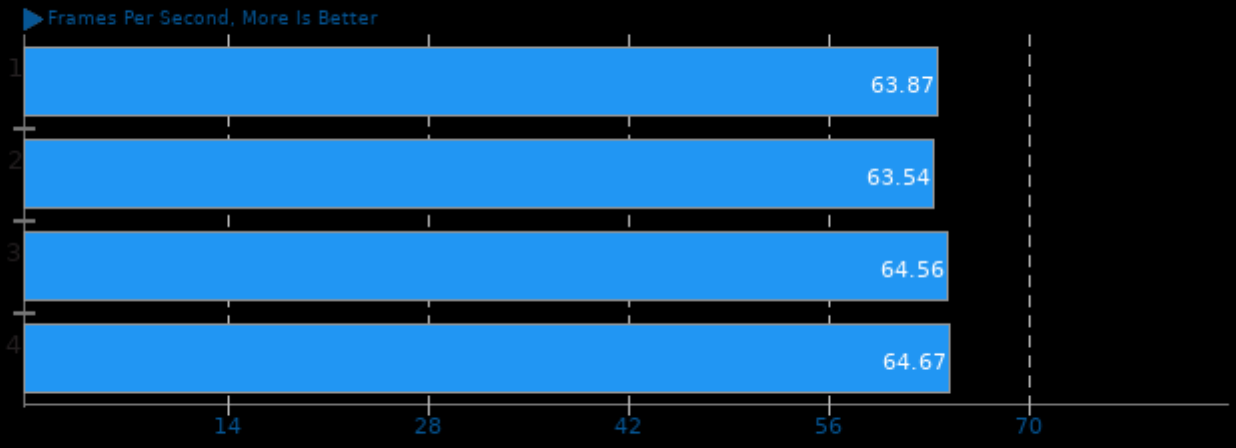
Embree 3.13

Binary: Pathtracer ISPC - Model: Asian Dragon

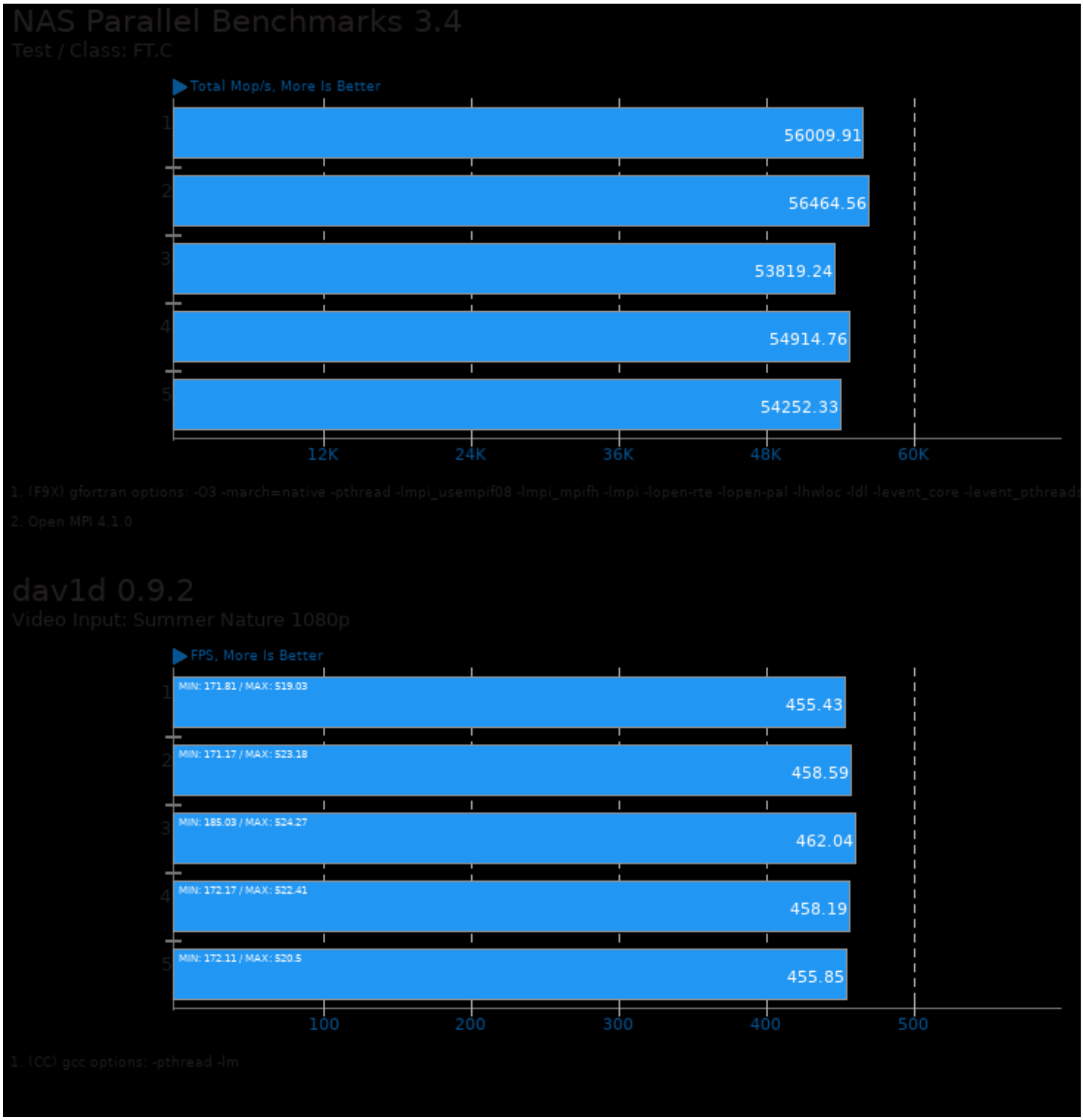


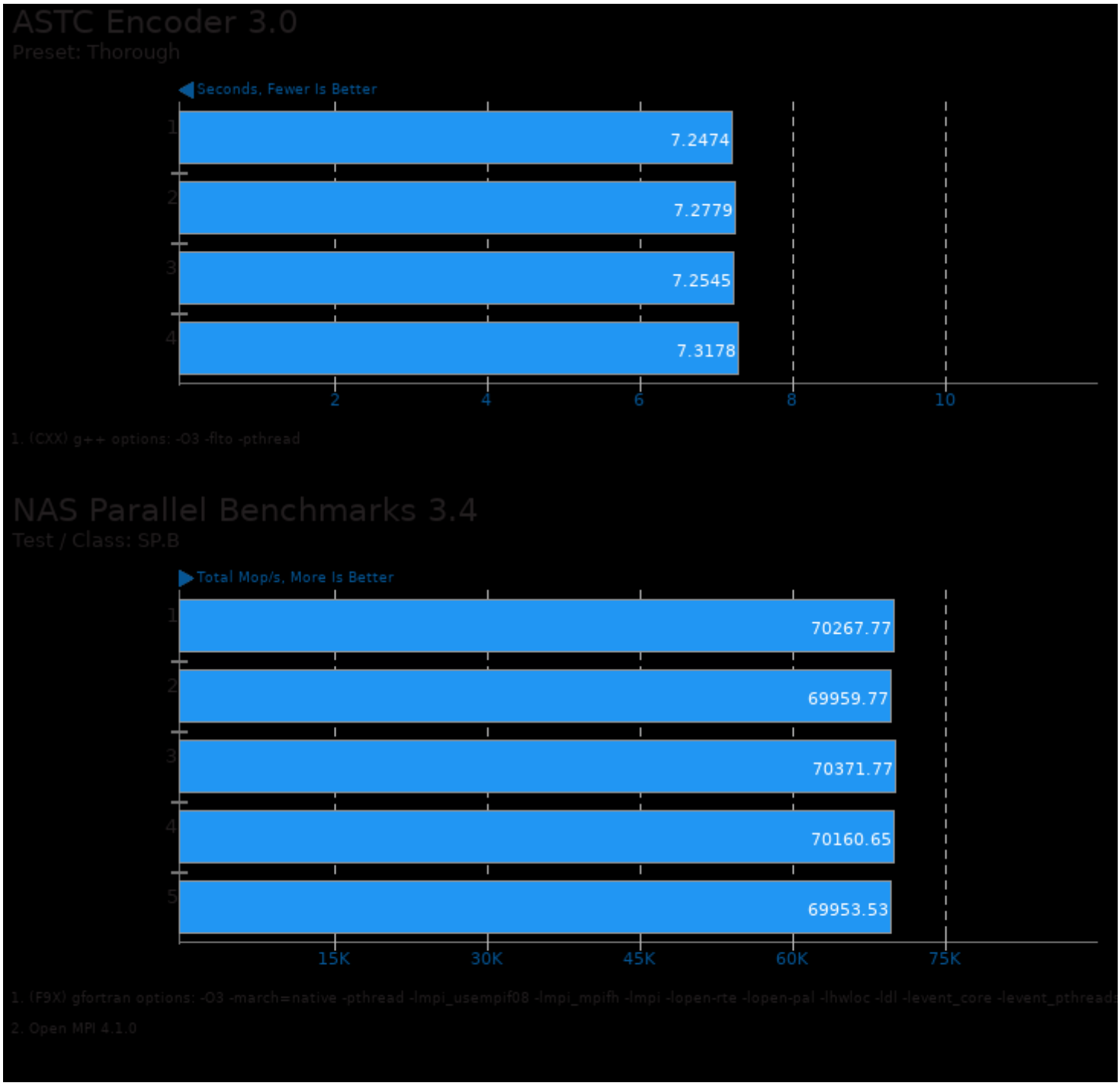
SVT-AV1 0.8.7

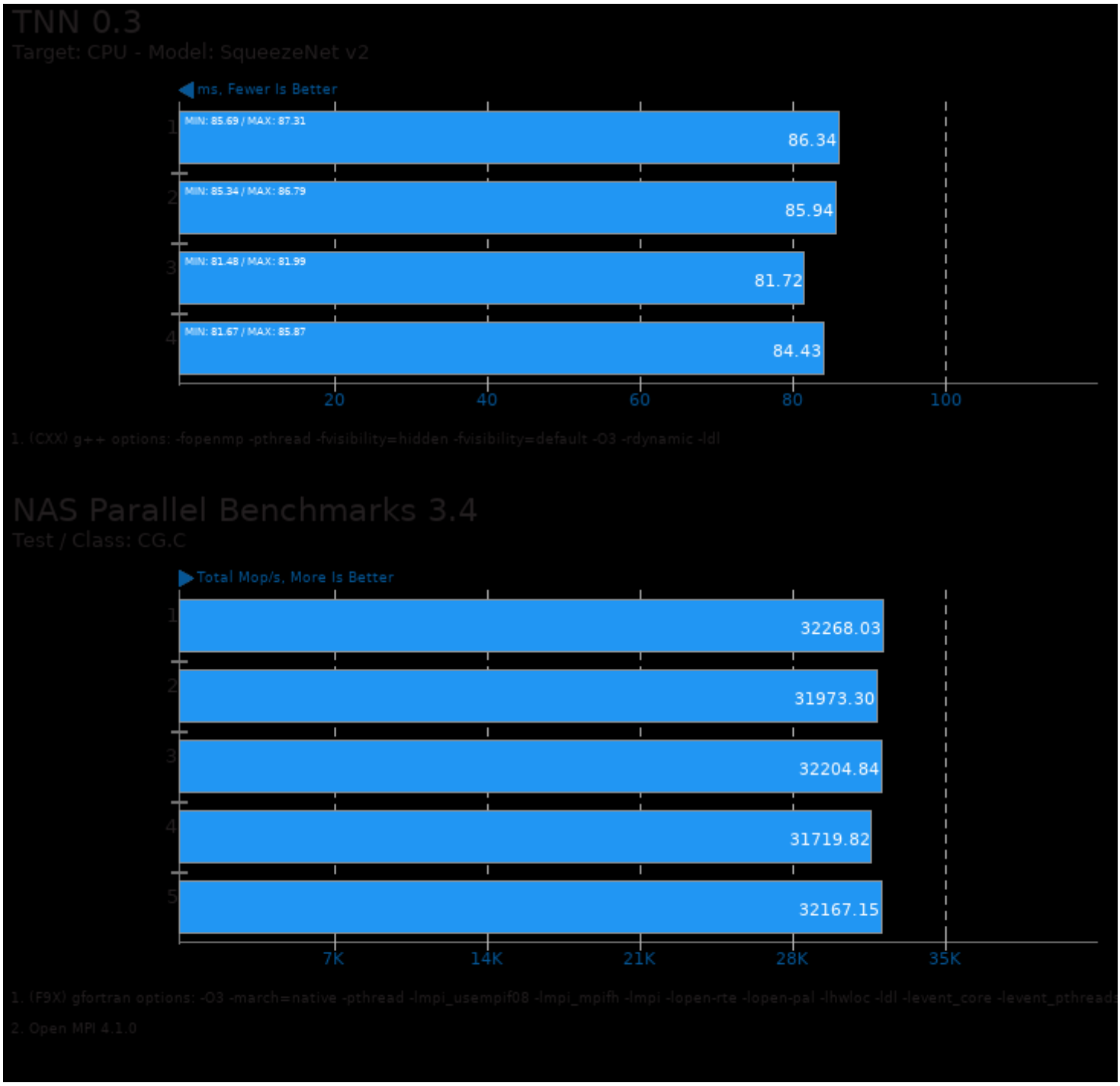
Encoder Mode: Preset 8 - Input: Bosphorus 1080p

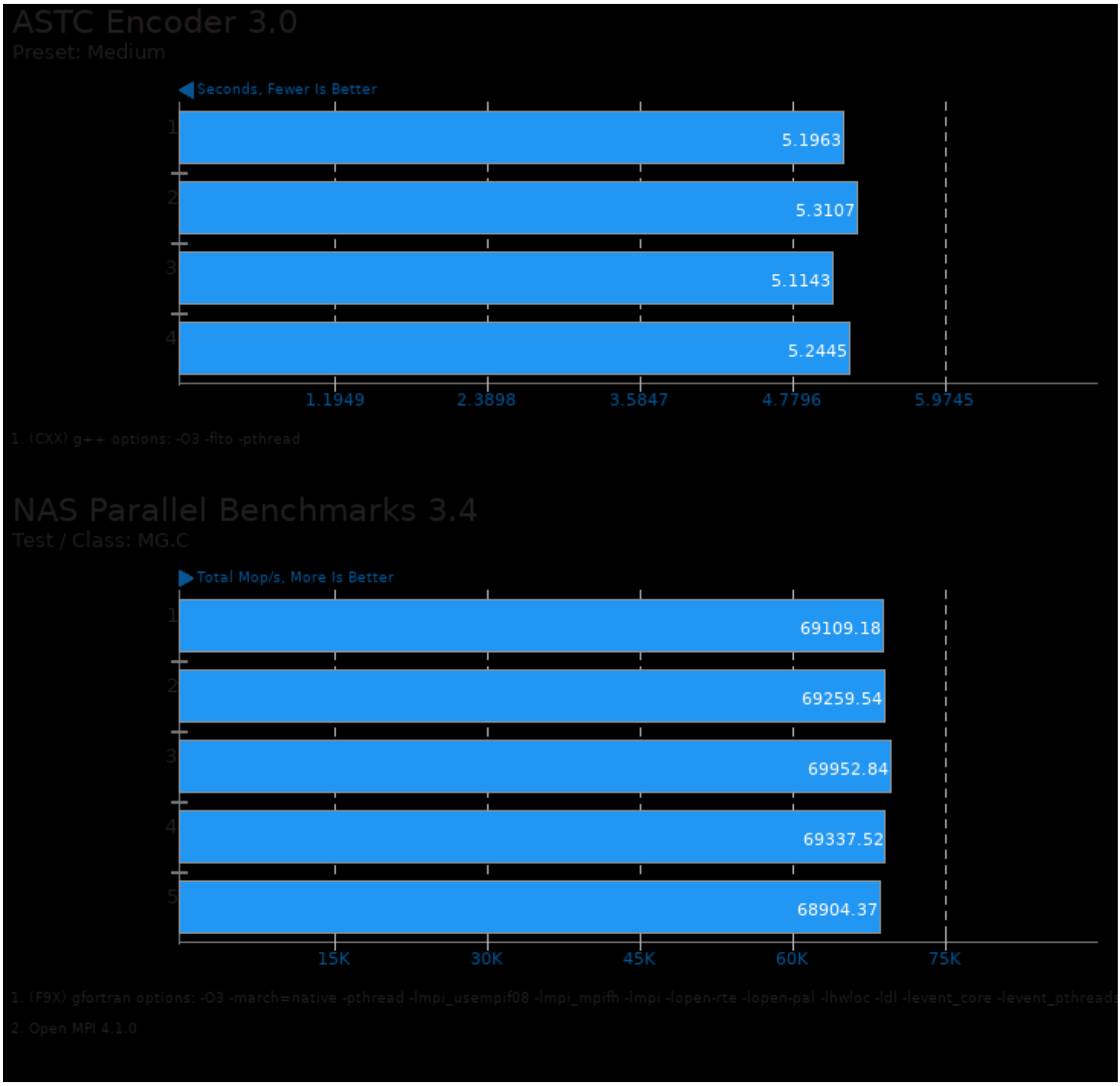


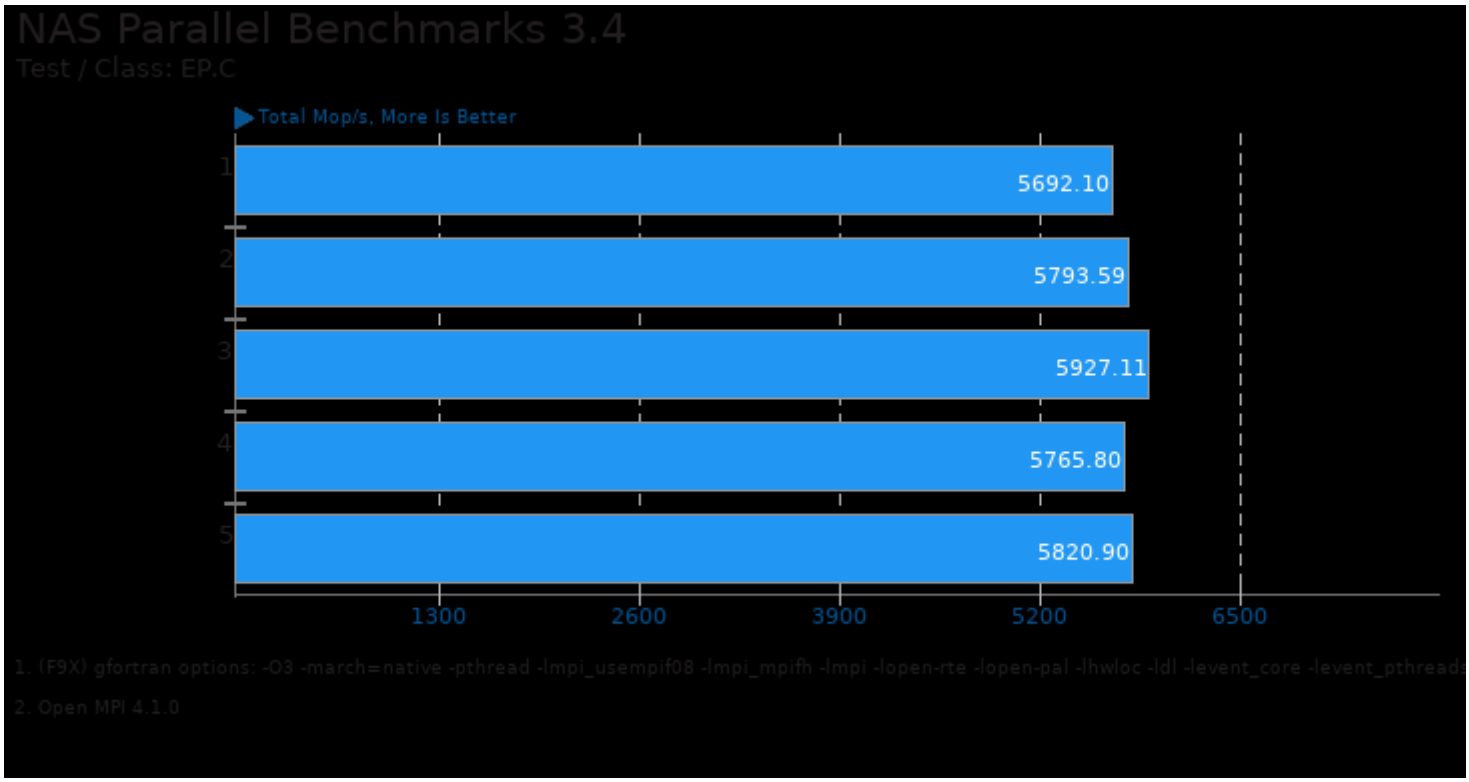
1. (CXX) g++ options: -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie


NAS Parallel Benchmarks 3.4
Test / Class: FT.C
Total Mop/s, More Is Better
1
56009.91
2
56464.56
3
53819.24
4
54914.76
5
54252.33
12K
24K
36K
48K
60K
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -ldl -levent_core -levent_pthreads
2. Open MPI 4.1.0
dav1d 0.9.2
Video Input: Summer Nature 1080p
FPS, More Is Better
1
MIN: 171.81 / MAX: 519.03
455.43
2
MIN: 171.17 / MAX: 523.18
458.59
3
MIN: 185.03 / MAX: 524.27
462.04
4
MIN: 172.17 / MAX: 522.41
458.19
5
MIN: 172.11 / MAX: 520.5
455.85
100
200
300
400
500
1. (CC) gcc options: -pthread -lm

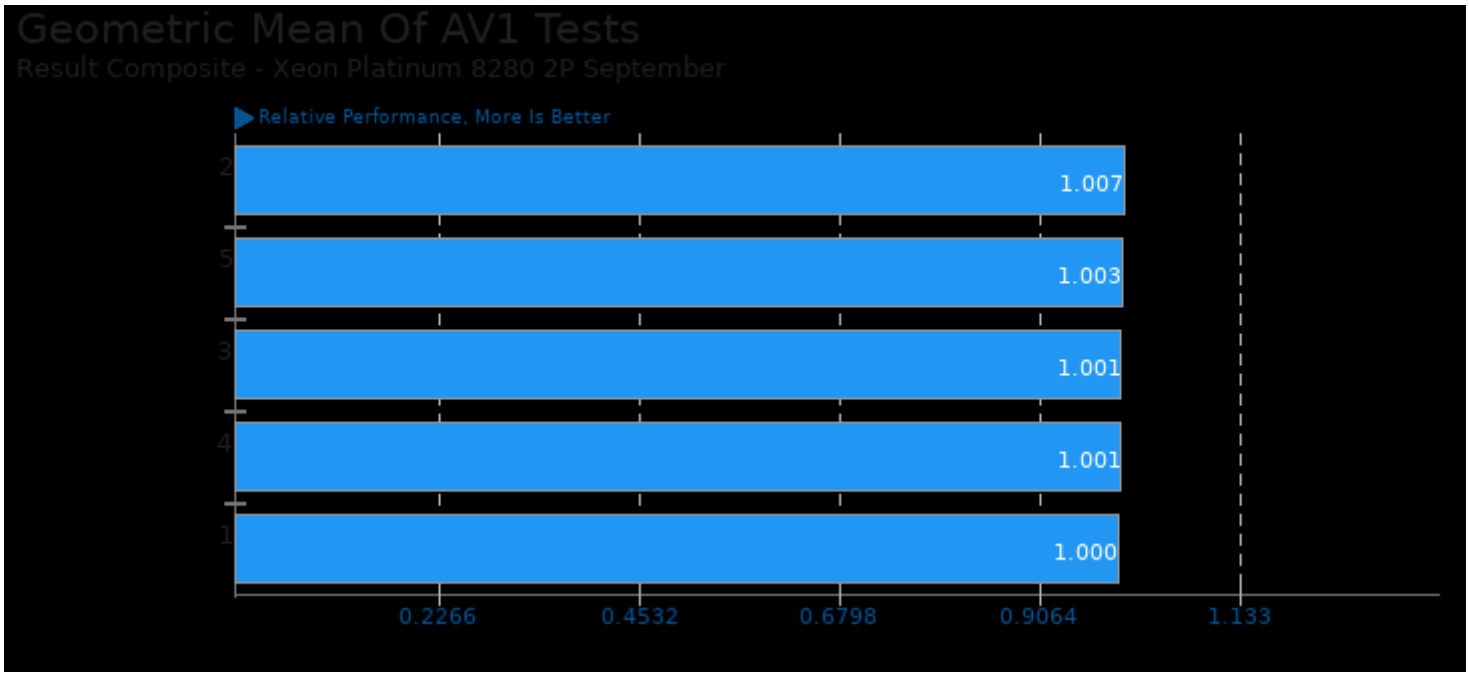

ASTC Encoder 3.0
Preset: Thorough
Seconds, Fewer Is Better
1
7.2474
2
7.2779
3
7.2545
4
7.3178
2
4
6
8
10
1. (CXX) g++ options: -O3 -flto -pthread
NAS Parallel Benchmarks 3.4
Test / Class: SP.B
Total Mop/s, More Is Better
1
70267.77
2
69959.77
3
70371.77
4
70160.65
5
69953.53
15K
30K
45K
60K
75K
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -ldl -levent_core -levent_pthread
2. Open MPI 4.1.0


TNN 0.3
Target: CPU - Model: SqueezeNet v2
ms, Fewer Is Better
1
MIN: 85.69 / MAX: 87.31
86.34
2
MIN: 85.34 / MAX: 86.79
85.94
3
MIN: 81.48 / MAX: 81.99
81.72
4
MIN: 81.67 / MAX: 85.87
84.43
20
40
60
80
100
1. (CXX) g++ options: -fopenmp -pthread -fvisibility=hidden -fvisibility=default -O3 -rdynamic -ldl
NAS Parallel Benchmarks 3.4
Test / Class: CG.C
Total Mop/s, More Is Better
1
32268.03
2
31973.30
3
32204.84
4
31719.82
5
32167.15
7K
14K
21K
28K
35K
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -ldl -levent_core -levent_pthread
2. Open MPI 4.1.0

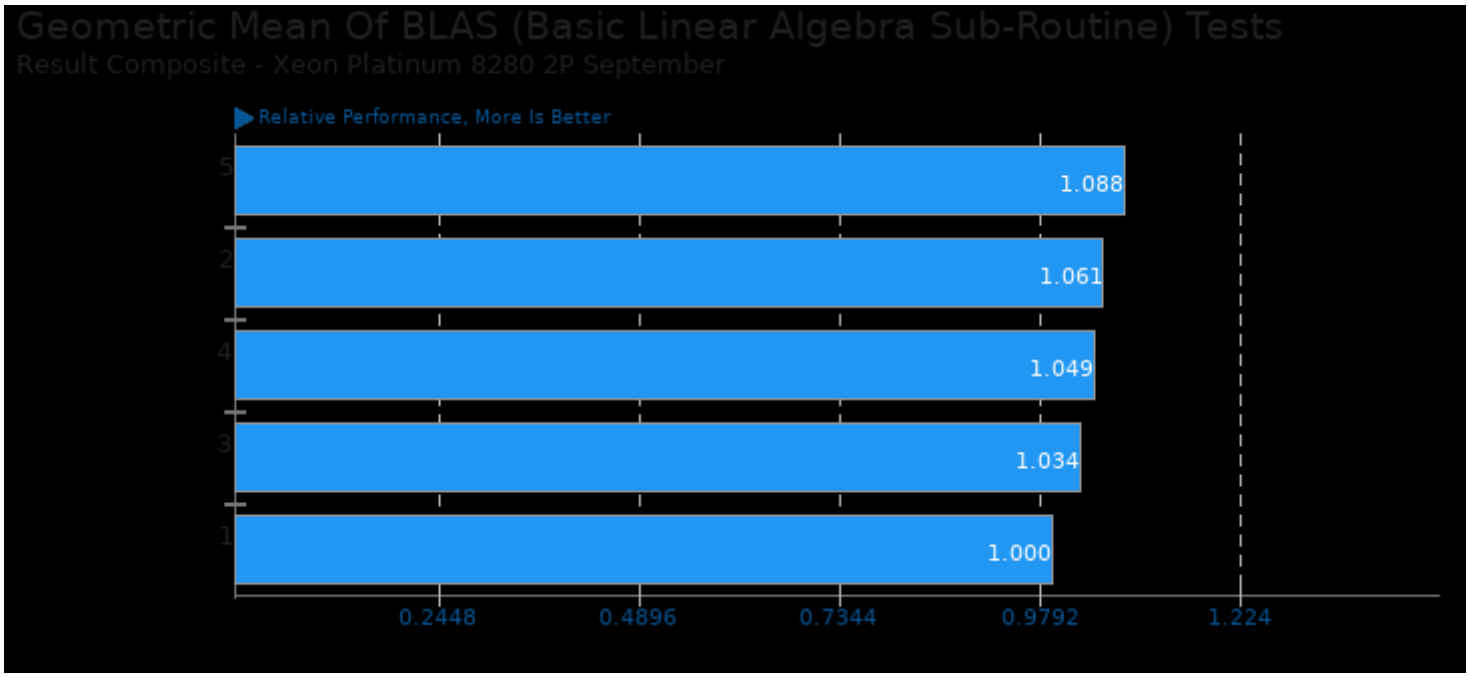

ASTC Encoder 3.0
Preset: Medium
Seconds, Fewer Is Better
1
5.1963
2
5.3107
3
5.1143
4
5.2445
1.1949
2.3898
3.5847
4.7796
5.9745
1. (CXX) g++ options: -O3 -flto -pthread
NAS Parallel Benchmarks 3.4
Test / Class: MG.C
Total Mop/s, More Is Better
1
69109.18
2
69259.54
3
69952.84
4
69337.52
5
68904.37
15K
30K
45K
60K
75K
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -ldl -levent_core -levent_pthread
2. Open MPI 4.1.0


NAS Parallel Benchmarks 3.4
Test / Class: EP.C
Total Mop/s, More Is Better
1
5692.10
2
5793.59
3
5927.11
4
5765.80
5
5820.90
1300
2600
3900
5200
6500
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -ldl -levent_core -levent_pthreads
2. Open MPI 4.1.0

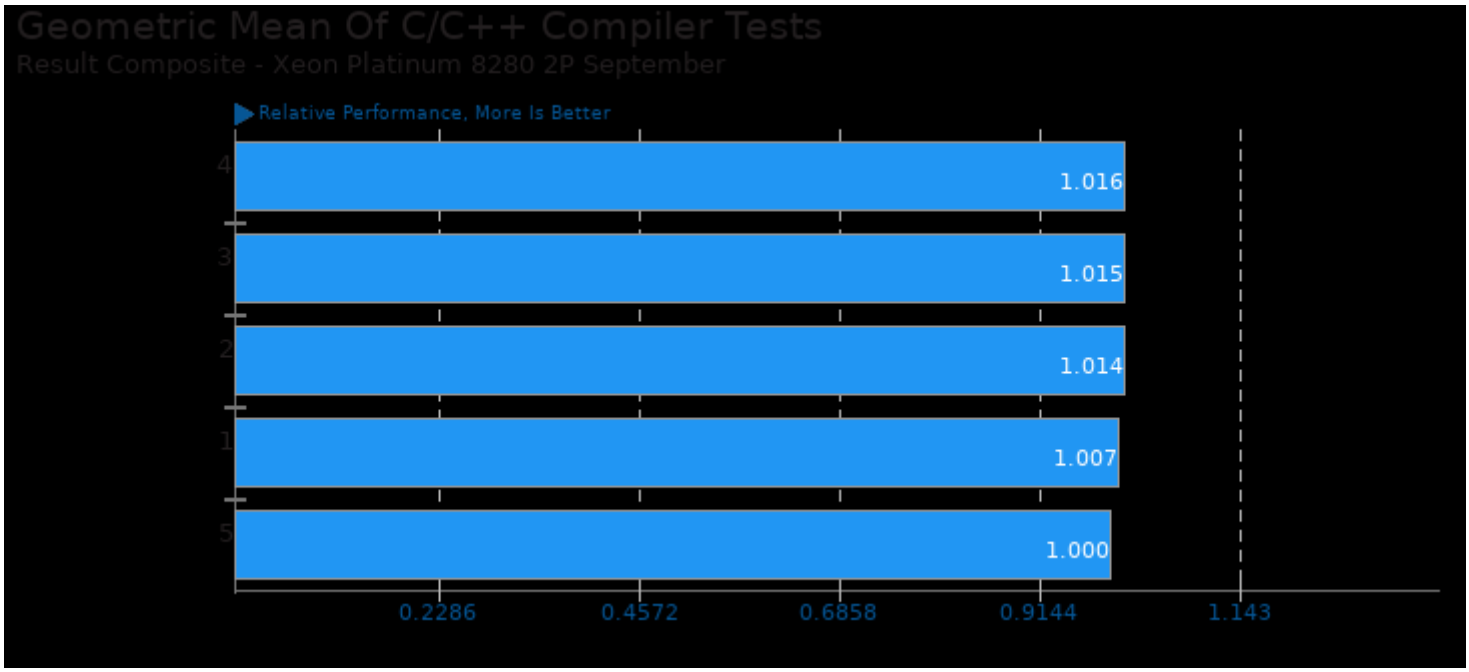
These geometric means are based upon test groupings / test suites for this result file.



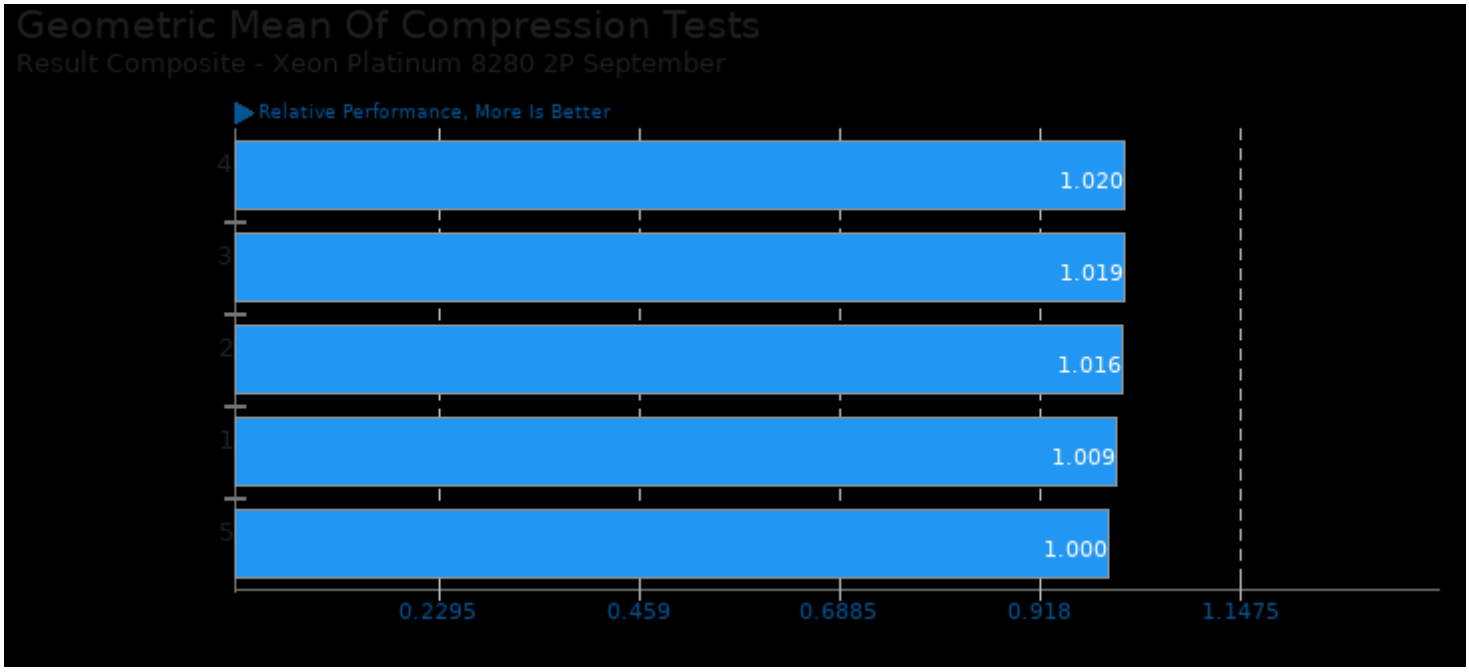
Geometric mean based upon tests: pts/dav1d and pts/svt-av1



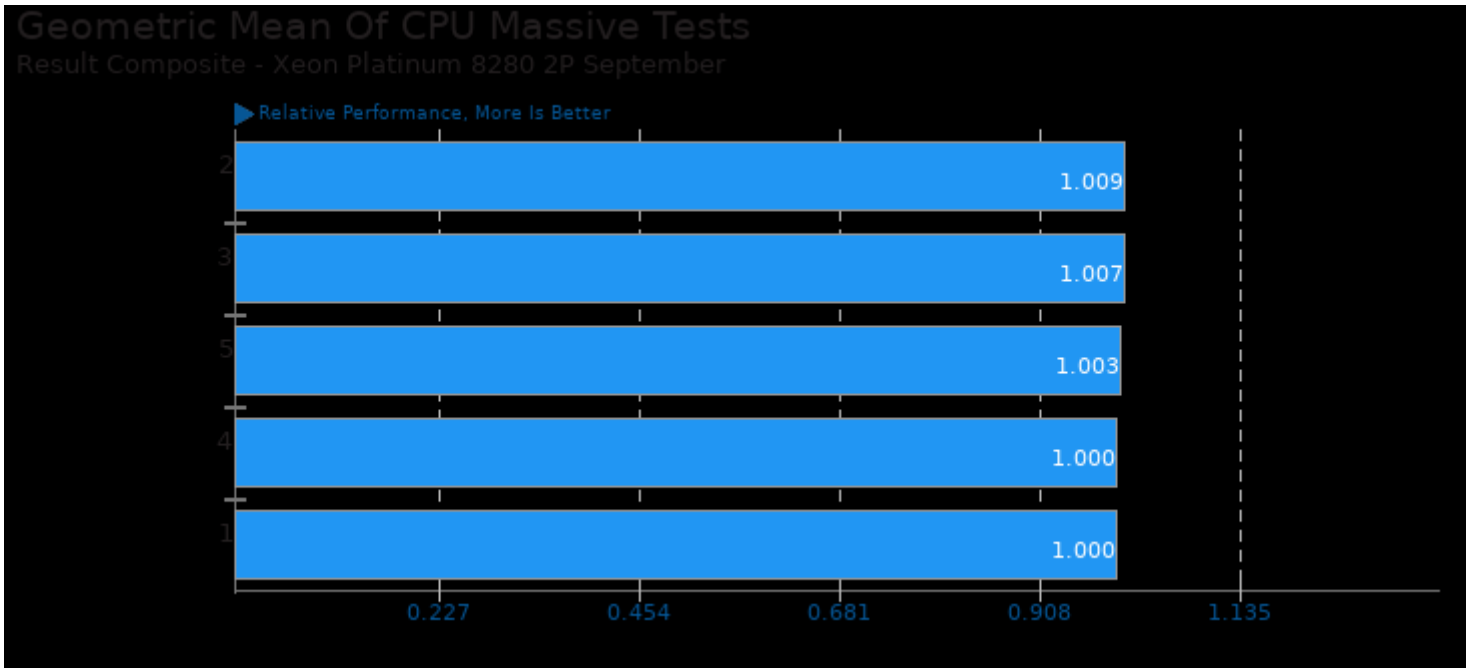
Geometric mean based upon tests: pts/lczero and pts/qe



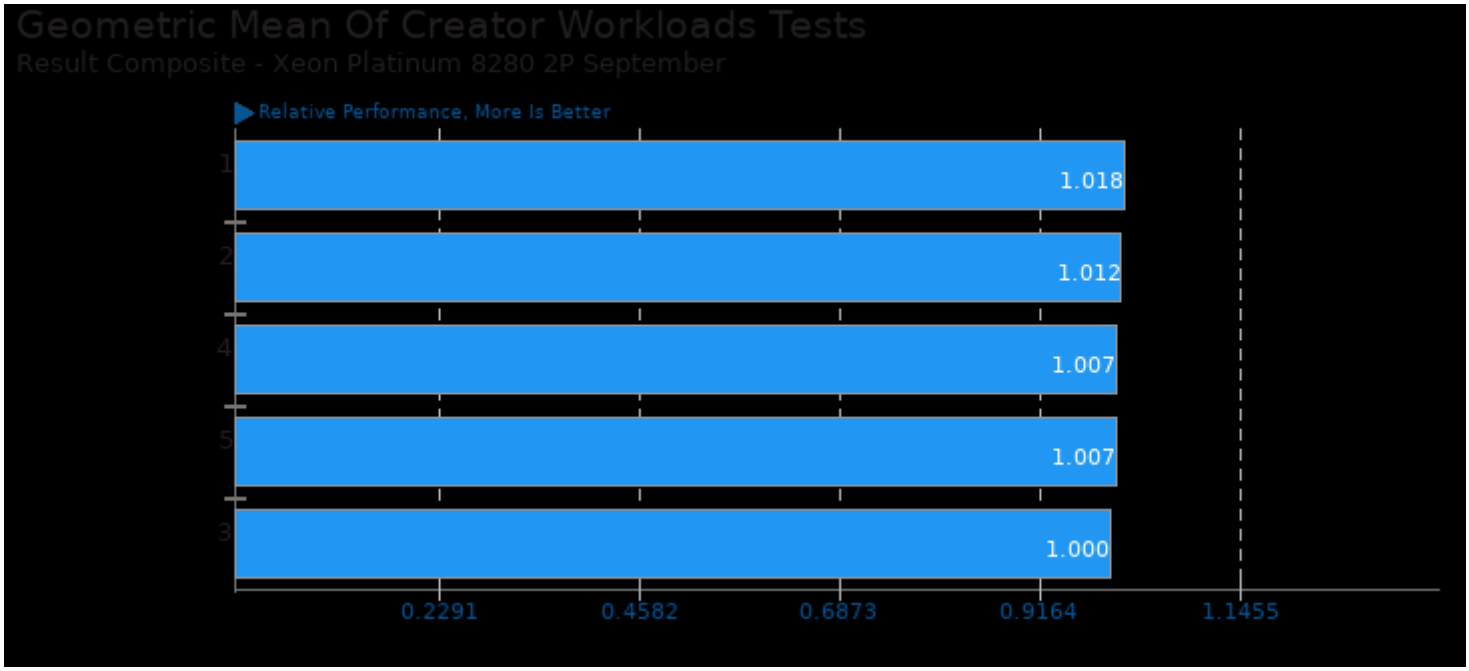
Geometric mean based upon tests: pts/pgbench, pts/apache, pts/dav1d, pts/compress-zstd, pts/openssl, pts/nginx, pts/svt-av1, pts/gromacs, pts/build-gdb, pts/build-ffmpeg, pts/tachyon and pts/keydb



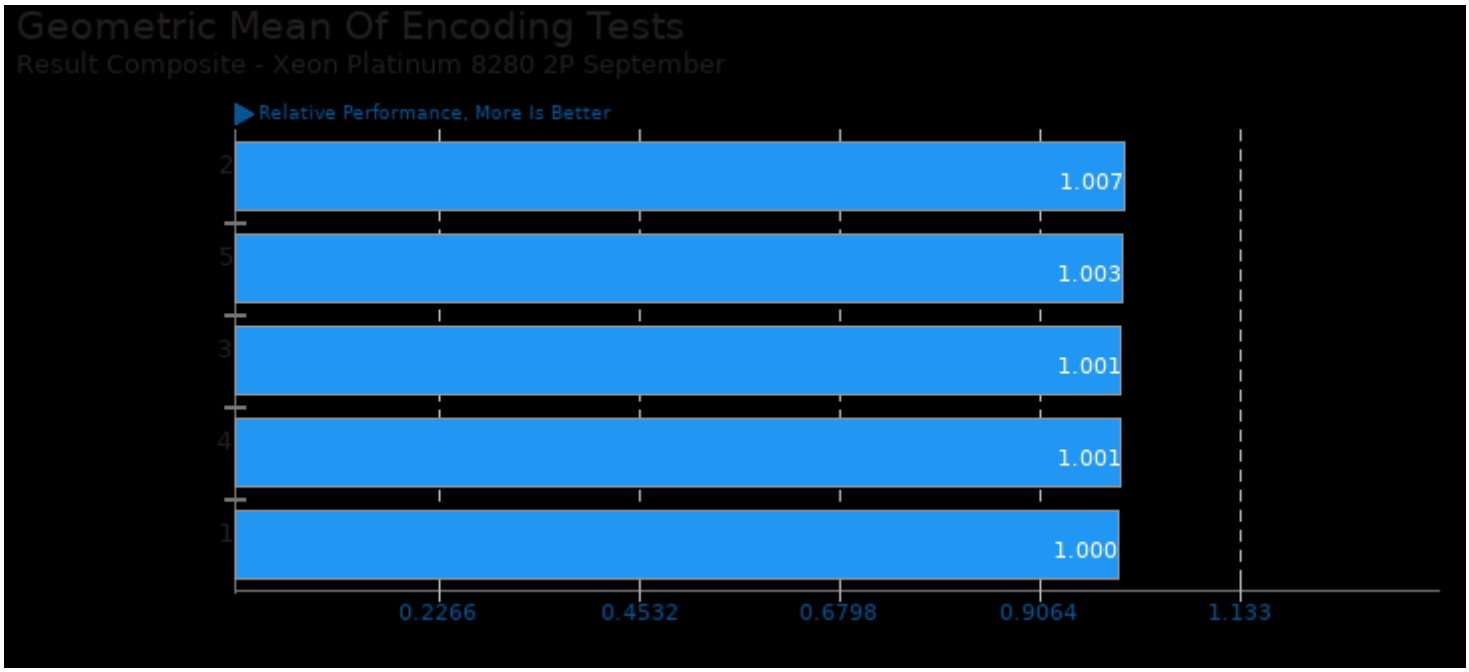
Geometric mean based upon tests: pts/compress-zstd and pts/blosc



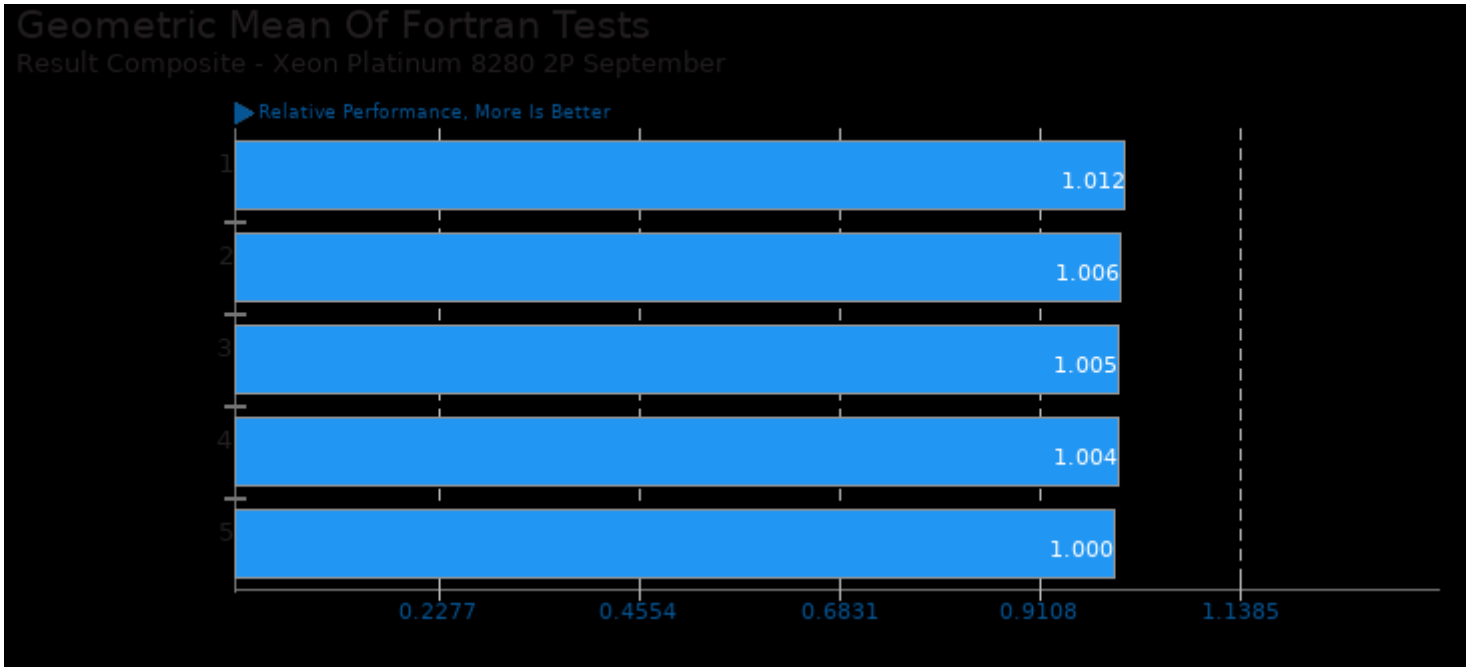
Geometric mean based upon tests: pts/apache, pts/brl-cad, pts/build-gcc, pts/build-linux-kernel, pts/compress-zstd, pts/dav1d, pts/svt-av1, pts/openssl, pts/lczero, pts/nginx, pts/npb, pts/pgbench, pts/tachyon and pts/renaissance



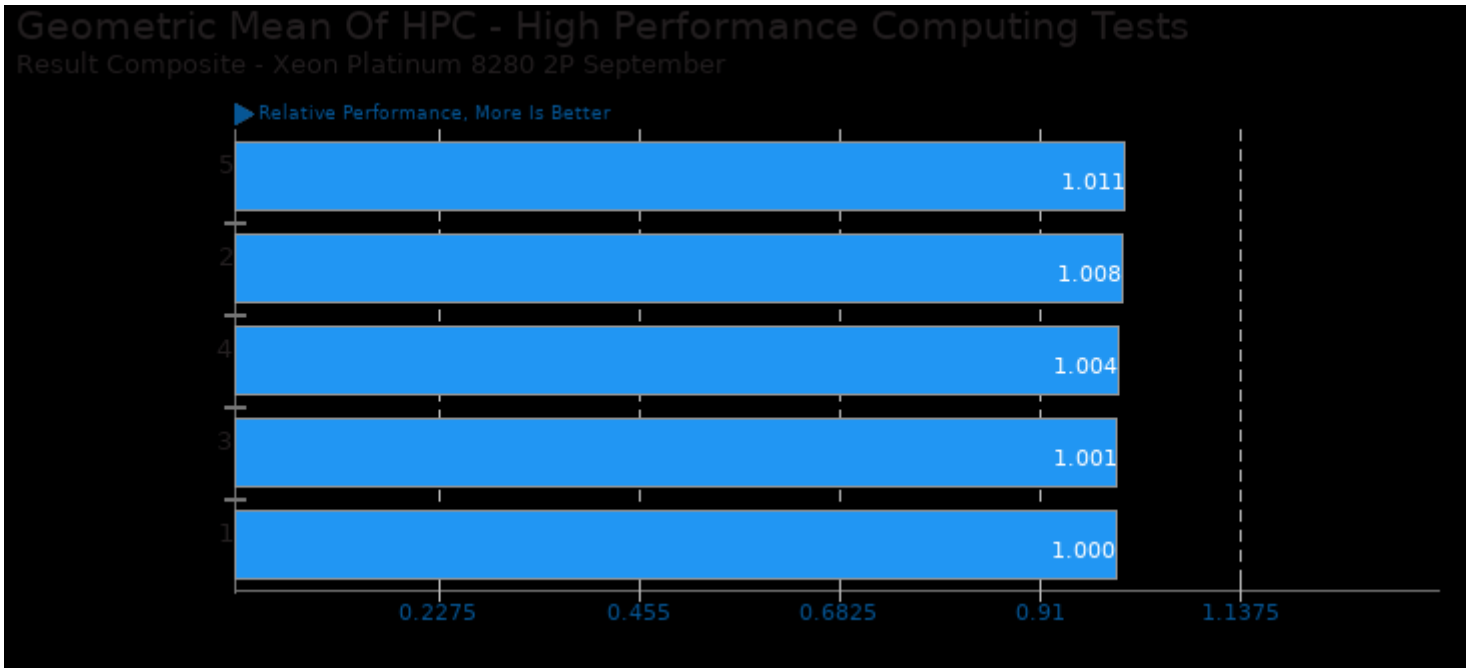
Geometric mean based upon tests: pts/tachyon, pts/yafaray, pts/natron, pts/dav1d, pts/svt-av1, pts/jpegxl, pts/jpegxl-decode, pts/embree, pts/oidn, pts/openvkl, pts/astcenc, pts/synthmark and pts/brl-cad



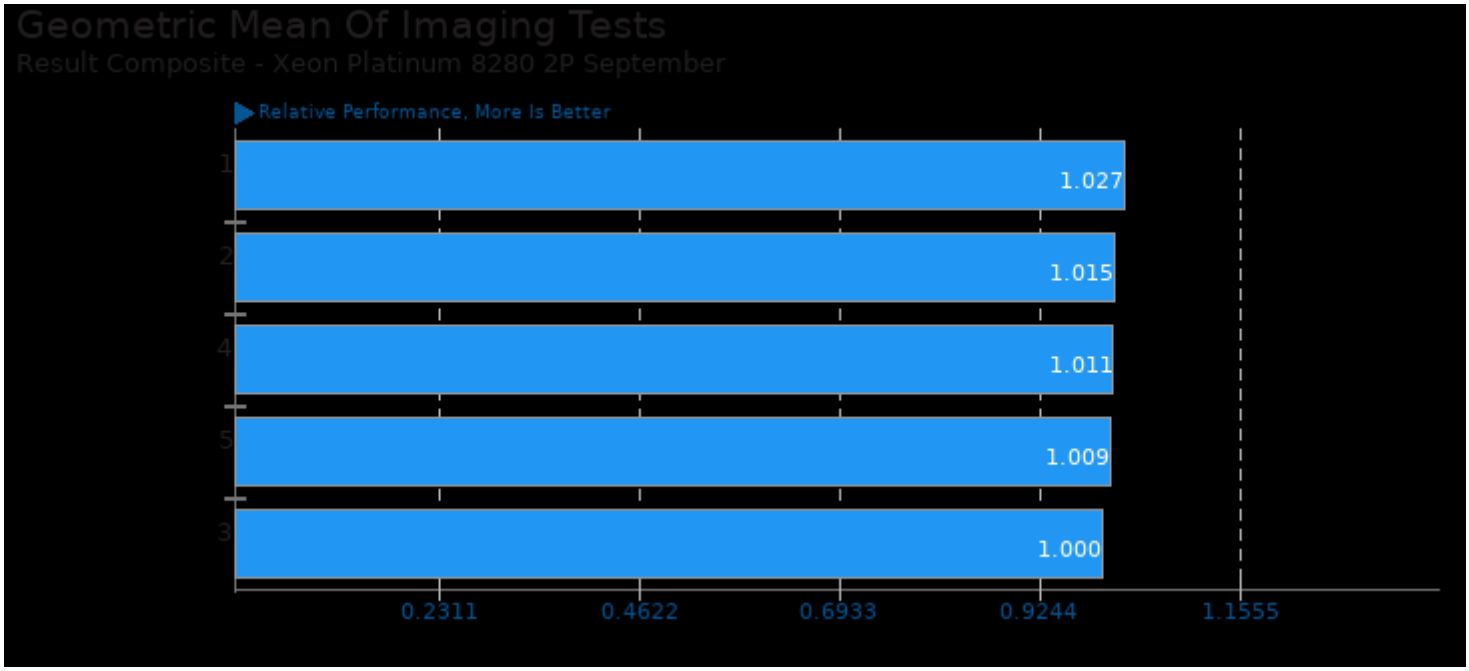
Geometric mean based upon tests: pts/dav1d and pts/svt-av1



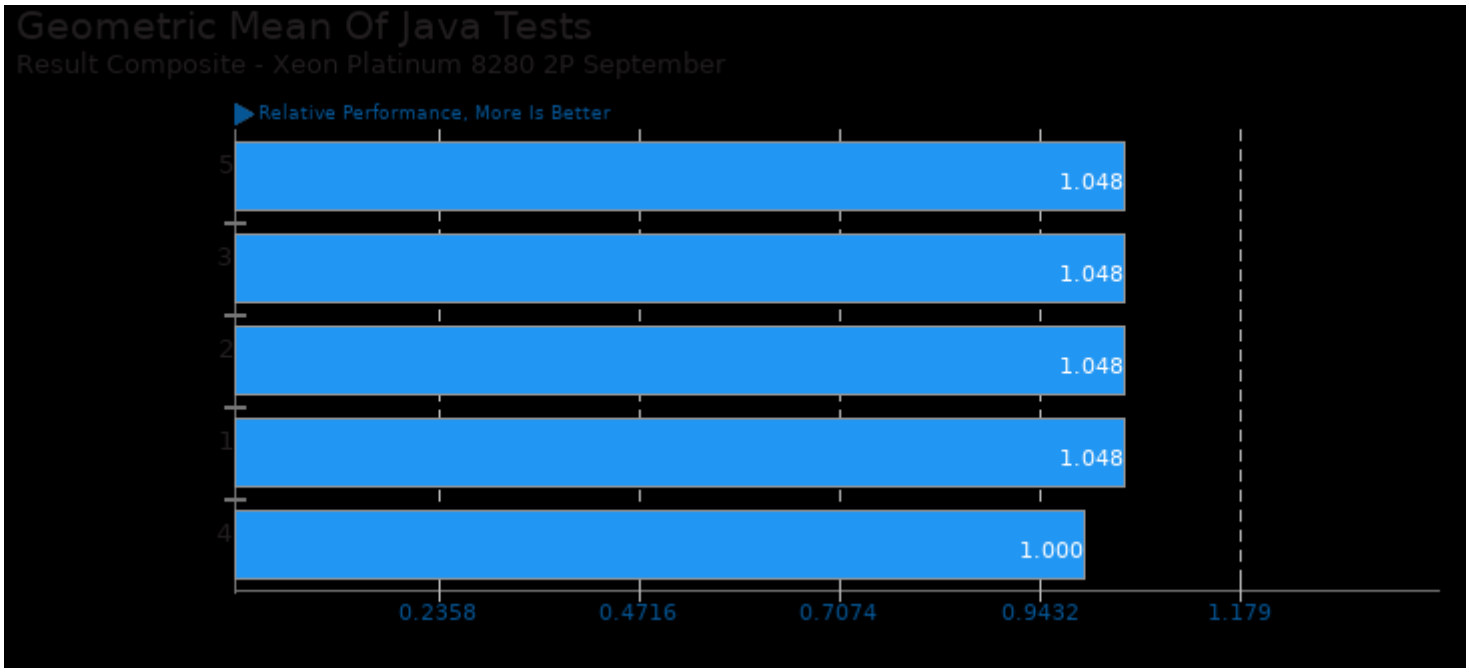
Geometric mean based upon tests: pts/qe and pts/npb



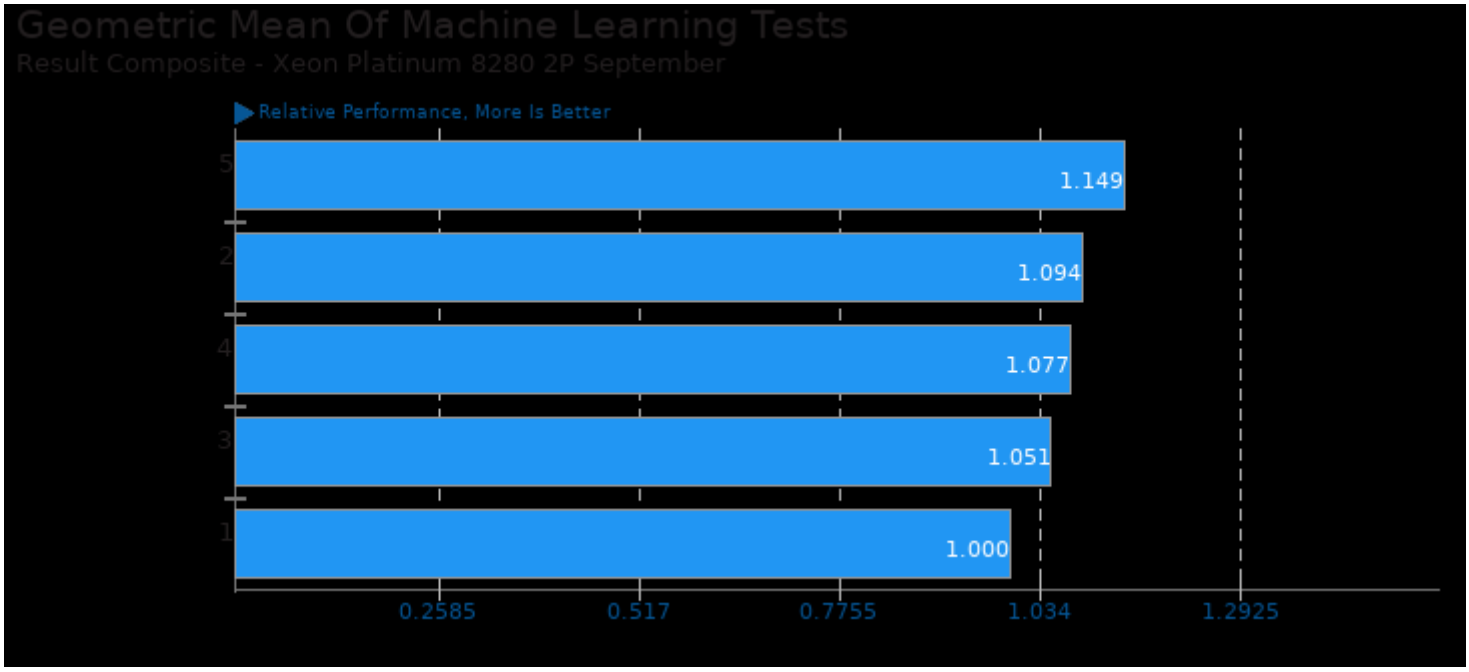
Geometric mean based upon tests: pts/npb, pts/qe, pts/gromacs, pts/mnn, pts/ncnn, pts/tnn, pts/ecp-candle, pts/onnx and pts/lczero



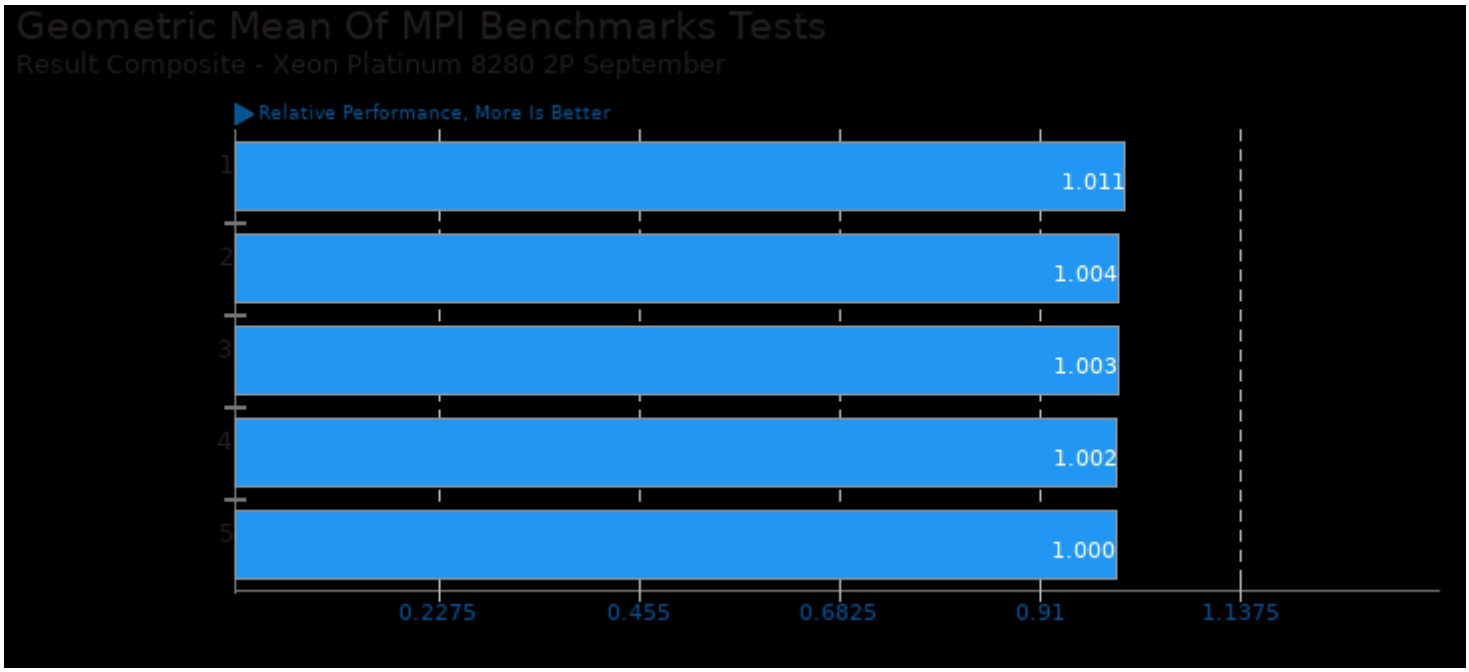
Geometric mean based upon tests: pts/jpegxl and pts/jpegxl-decode



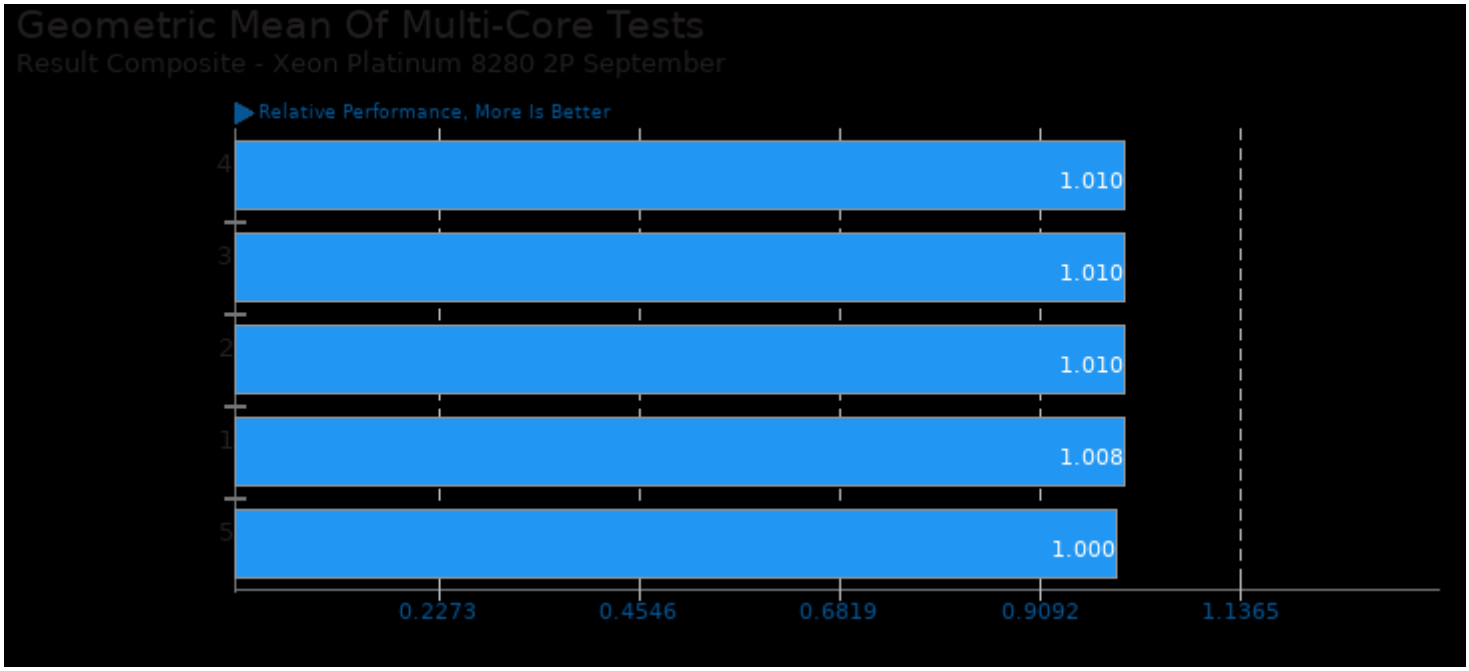
Geometric mean based upon tests: pts/renaissance and pts/cassandra



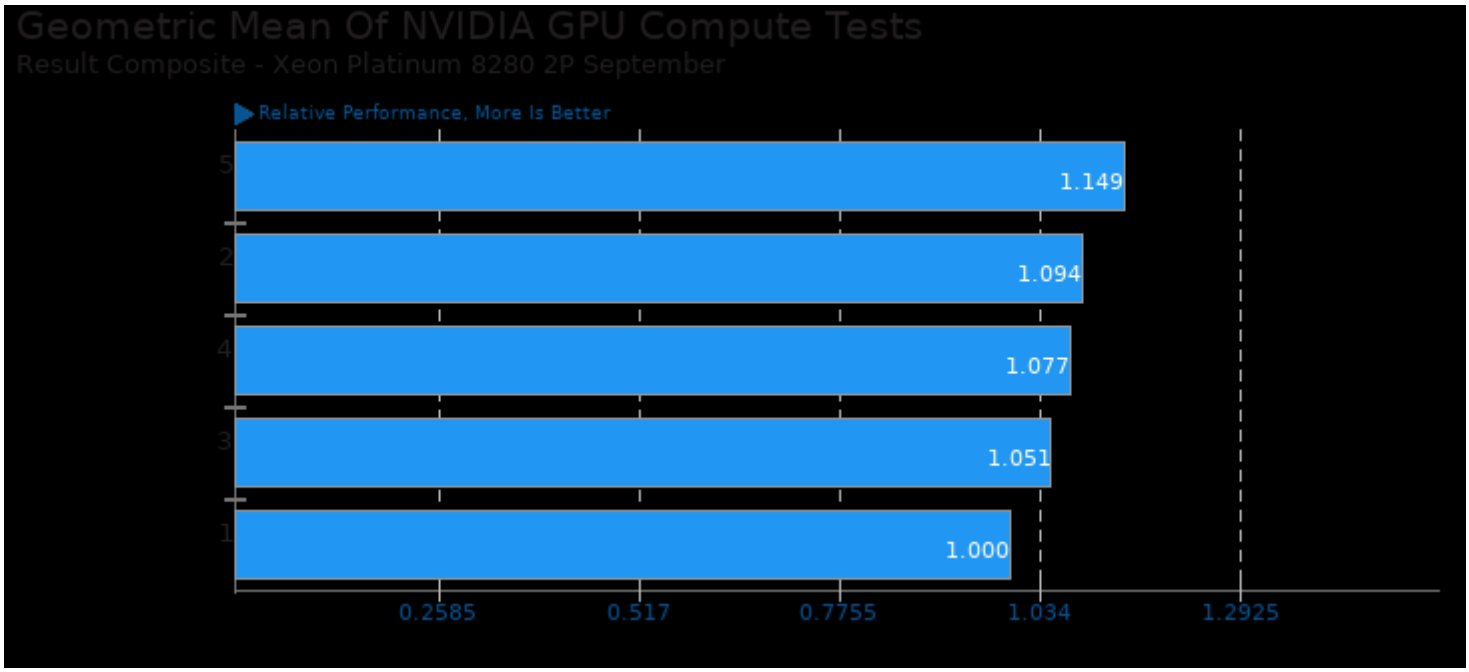
Geometric mean based upon tests: pts/mnn, pts/ncnn, pts/tnn, pts/ecp-candle, pts/onnx and pts/lczero



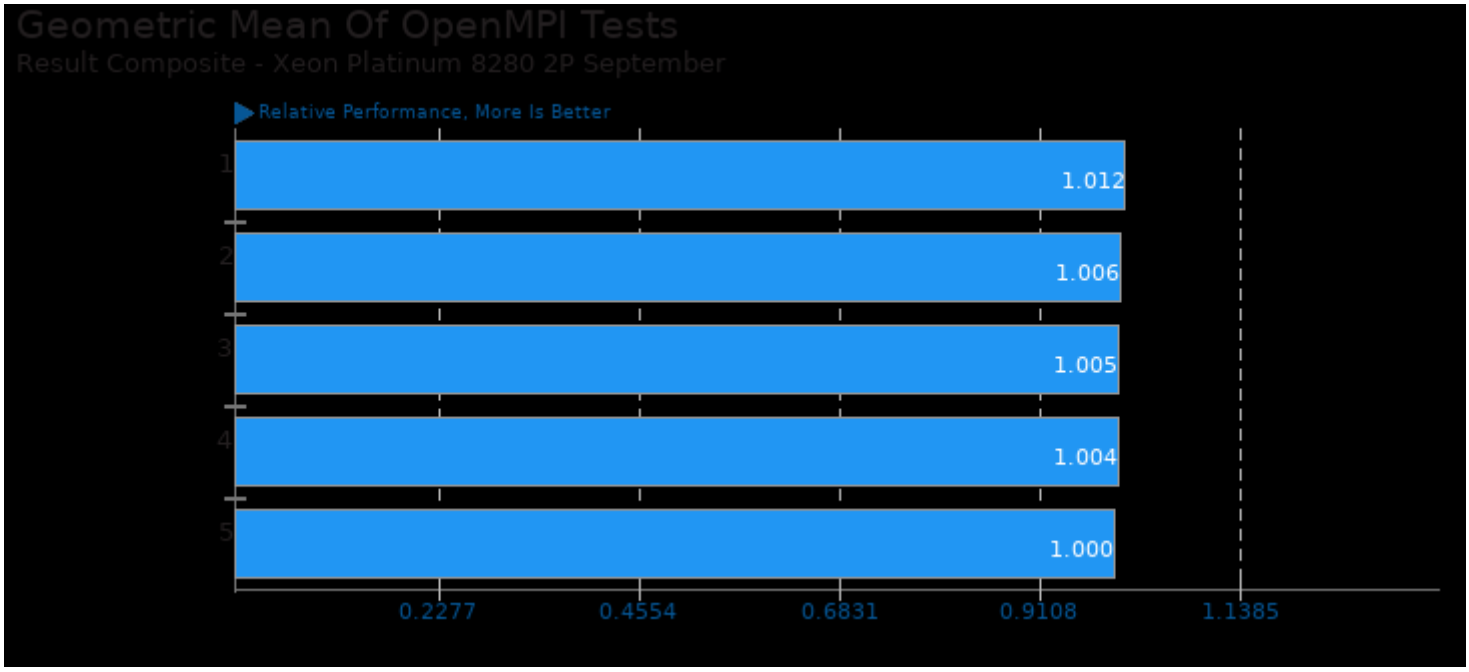
Geometric mean based upon tests: pts/gromacs and pts/npb



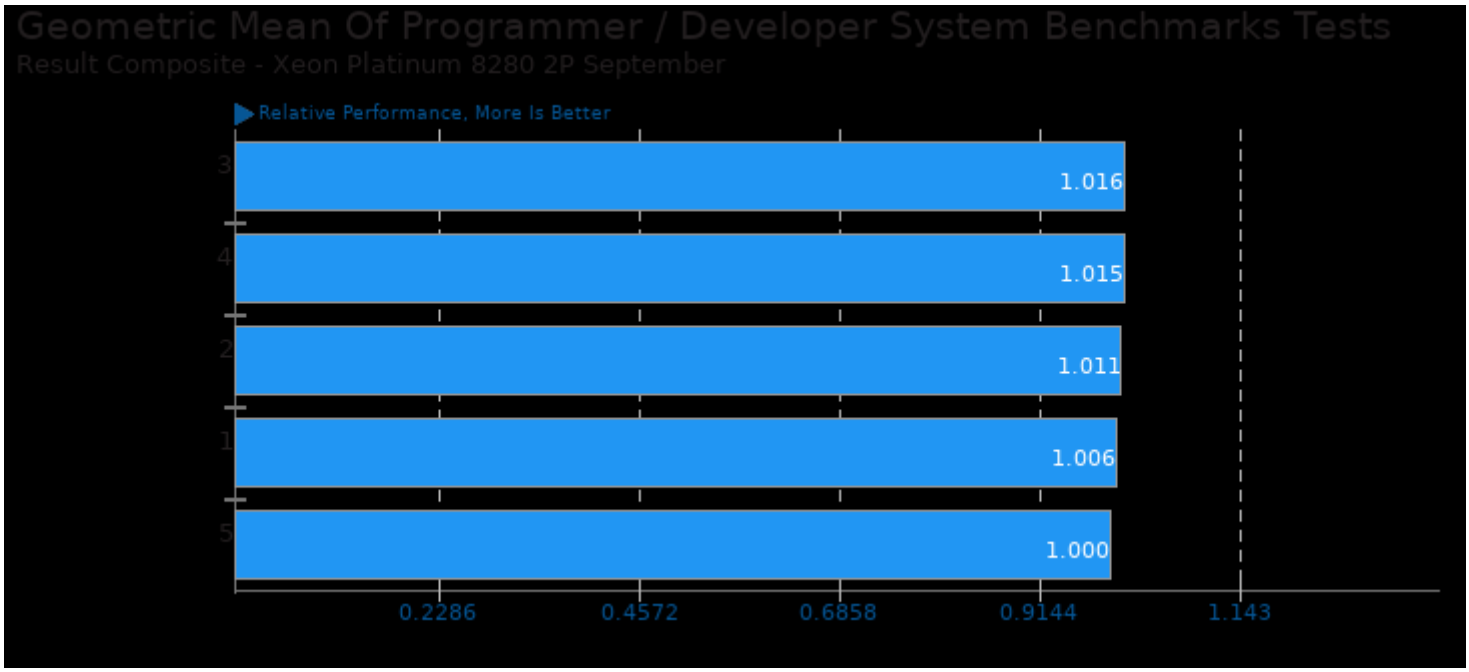
Geometric mean based upon tests: pts/tachyon, pts/yafaray, pts/dav1d, pts/svt-av1, pts/npb, pts/gromacs, pts/compress-zstd, pts/build-linux-kernel, pts/build-gcc, pts/build-gdb, pts/build-ffmpeg, pts/natron, pts/embree, pts/oidn, pts/openvkl, pts/cassandra and pts/pgbench



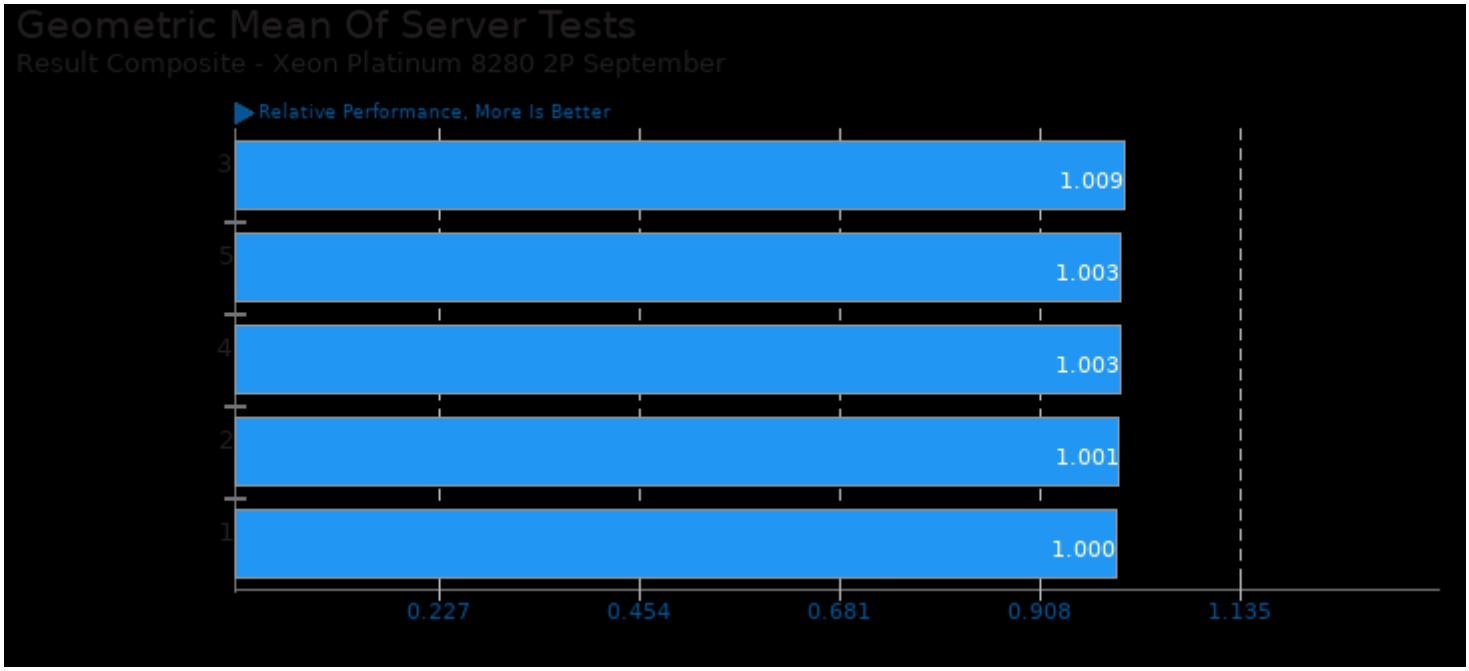
Geometric mean based upon tests: pts/gromacs, pts/lczero and pts/ncnn



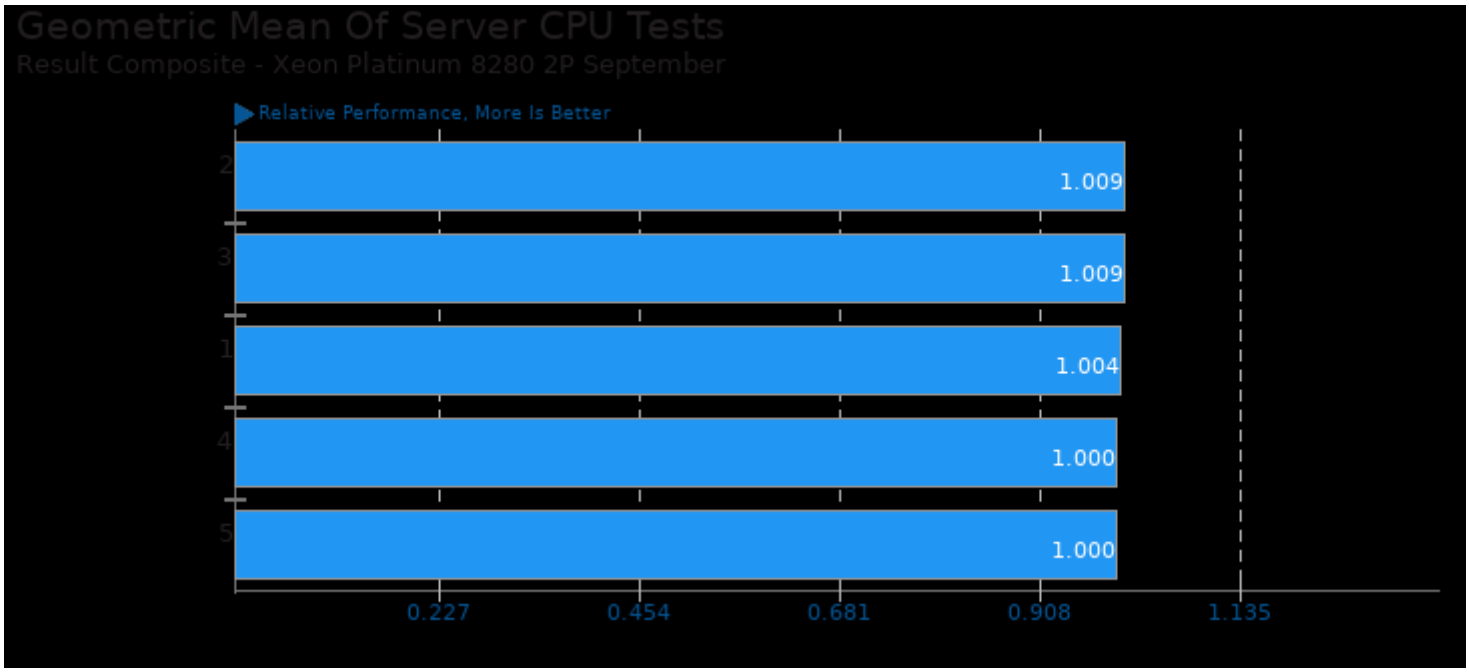
Geometric mean based upon tests: pts/qe, pts/gromacs and pts/npb



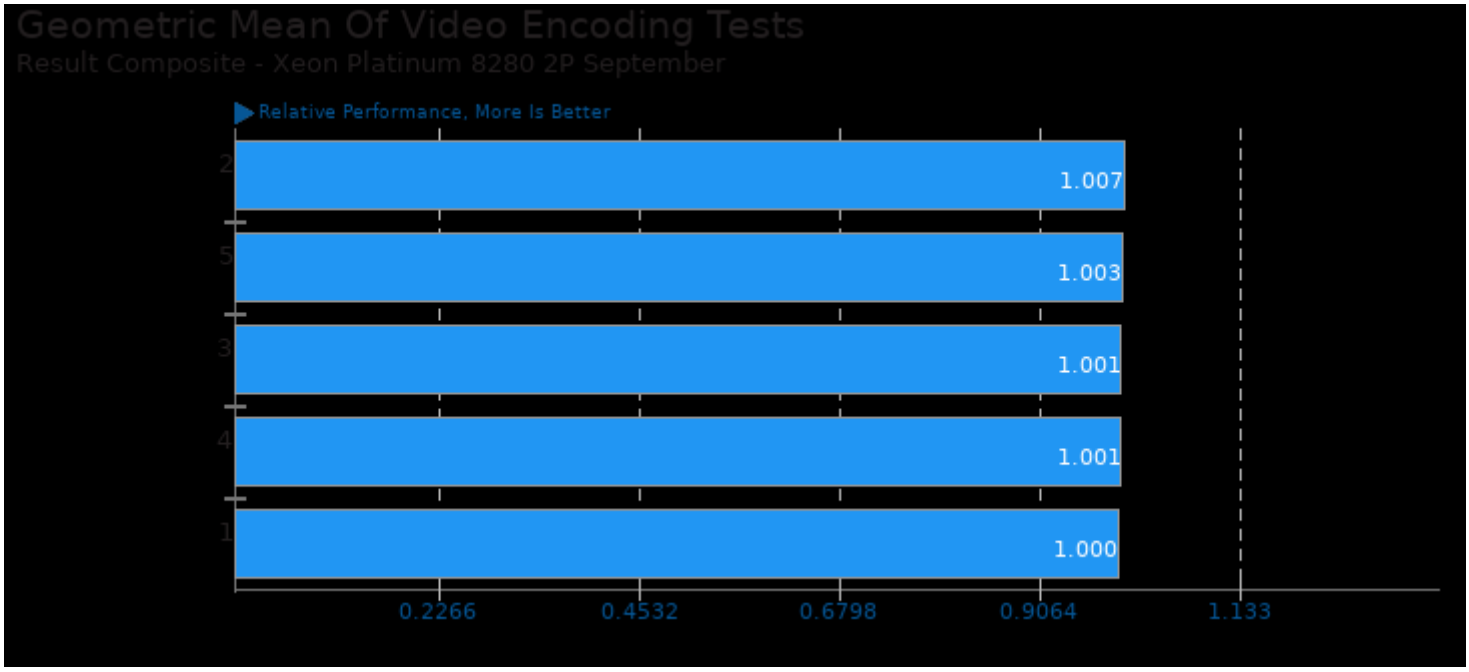
Geometric mean based upon tests: pts/simdjson, pts/blosc, pts/compress-zstd, pts/build-linux-kernel, pts/build-gcc, pts/build-gdb and pts/build-ffmpeg



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



Geometric mean based upon tests: pts/npb, pts/renaissance, pts/svt-av1, pts/dav1d, pts/build-gcc, pts/build-linux-kernel, pts/compress-zstd and pts/openssl



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

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 21:43.