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new eo july 10980XE

Intel Core i9-10980XE testing with a ASRock X299 Steel Legend (P1.30 BIOS) and NVIDIA NV132 11GB on Ubuntu 21.04 via the Phoronix Test Suite.

Automated Executive Summary

2 had the most wins, coming in first place for 42% of the tests.

Based on the geometric mean of all complete results, the fastest (4) was 1.034x the speed of the slowest (3). 1 was 0.998x the speed of 4, 2 was 0.975x the speed of 1, 3 was 0.994x the speed of 2.

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

NCNN (Target: CPU - Model: googlenet) at 1.131x
Apache Cassandra (Test: Mixed 1:3) at 1.121x
Facebook RocksDB (Test: Read Random Write Random) at 1.111x
Facebook RocksDB (Test: Read While Writing) at 1.087x
NCNN (Target: CPU - Model: mobilenet) at 1.086x
Apache Cassandra (Test: Writes) at 1.07x
NCNN (Target: CPU - Model: resnet18) at 1.06x
Facebook RocksDB (Test: Random Fill Sync) at 1.057x
NCNN (Target: CPU - Model: resnet50) at 1.05x

NCNN (Target: CPU - Model: squeezenet_ssd) at 1.048x.

Test Systems:

1

2

3

4

Processor: Intel Core i9-10980XE @ 4.80GHz (18 Cores / 36 Threads), Motherboard: ASRock X299 Steel Legend (P1.30 BIOS), Chipset: Intel Sky Lake-E DMI3 Registers, Memory: 32GB, Disk: Samsung SSD 970 PRO 512GB, Graphics: NVIDIA NV132 11GB, Audio: Realtek ALC1220, Monitor: ASUS VP28U, Network: Intel I219-V + Intel I211

OS: Ubuntu 21.04, Kernel: 5.11.0-22-generic (x86_64), Desktop: GNOME Shell 3.38.4, Display Server: X Server + Wayland, Display Driver: nouveau, OpenGL: 4.3 Mesa 21.0.1, Vulkan: 1.0.2, Compiler: GCC 10.3.0, File-System: ext4, Screen Resolution: 3840x2160

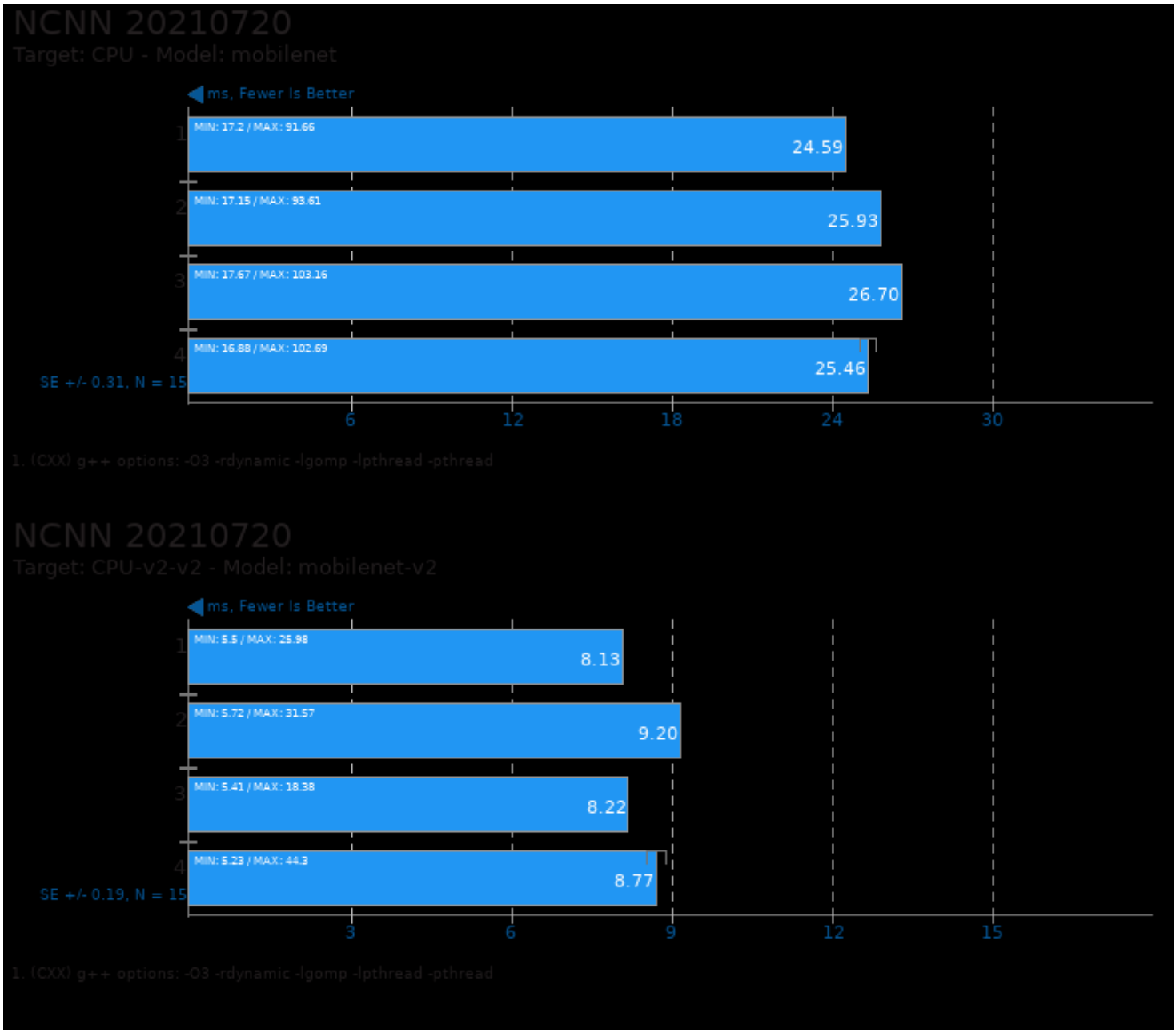
Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,m2 --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_cpufreq schedutil - CPU Microcode: 0x5003102
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

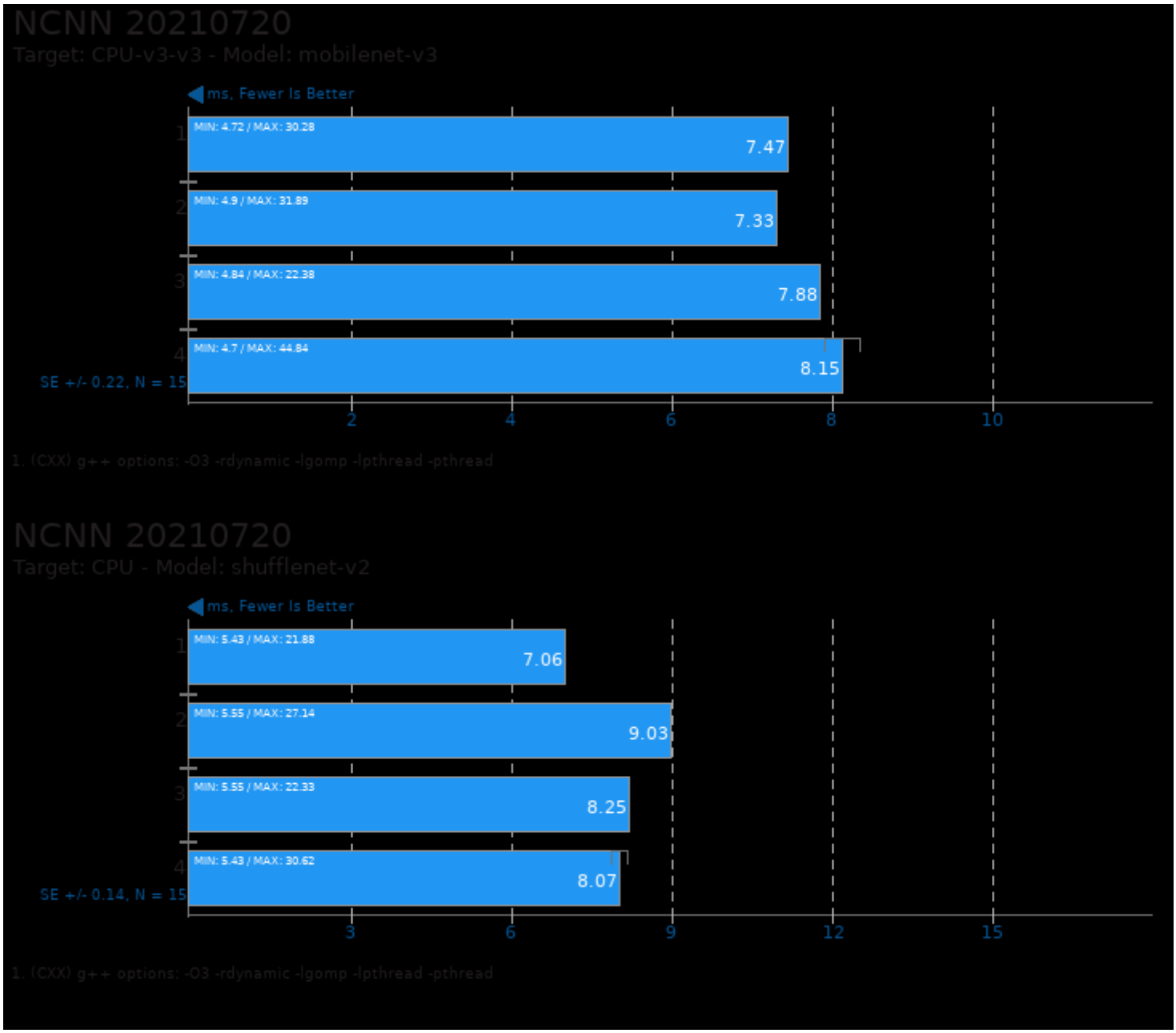
	1	2	3	4
NCNN - CPU - mobilenet (ms)	**24.59**	25.93	**26.7**	25.46
Normalized	100%	94.83%	92.1%	96.58%
Standard Deviation				4.7%
NCNN - CPU-v2-v2 - mobilenet-v2 (ms)	**8.13**	**9.2**	8.22	8.77
Normalized	100%	88.37%	98.91%	92.7%
Standard Deviation				8.4%
NCNN - CPU-v3-v3 - mobilenet-v3 (ms)	7.47	**7.33**	7.88	**8.15**
Normalized	98.13%	100%	93.02%	89.94%
Standard Deviation				10.6%
NCNN - CPU - shufflenet-v2 (ms)	**7.06**	**9.03**	8.25	8.07
Normalized	100%	78.18%	85.58%	87.48%

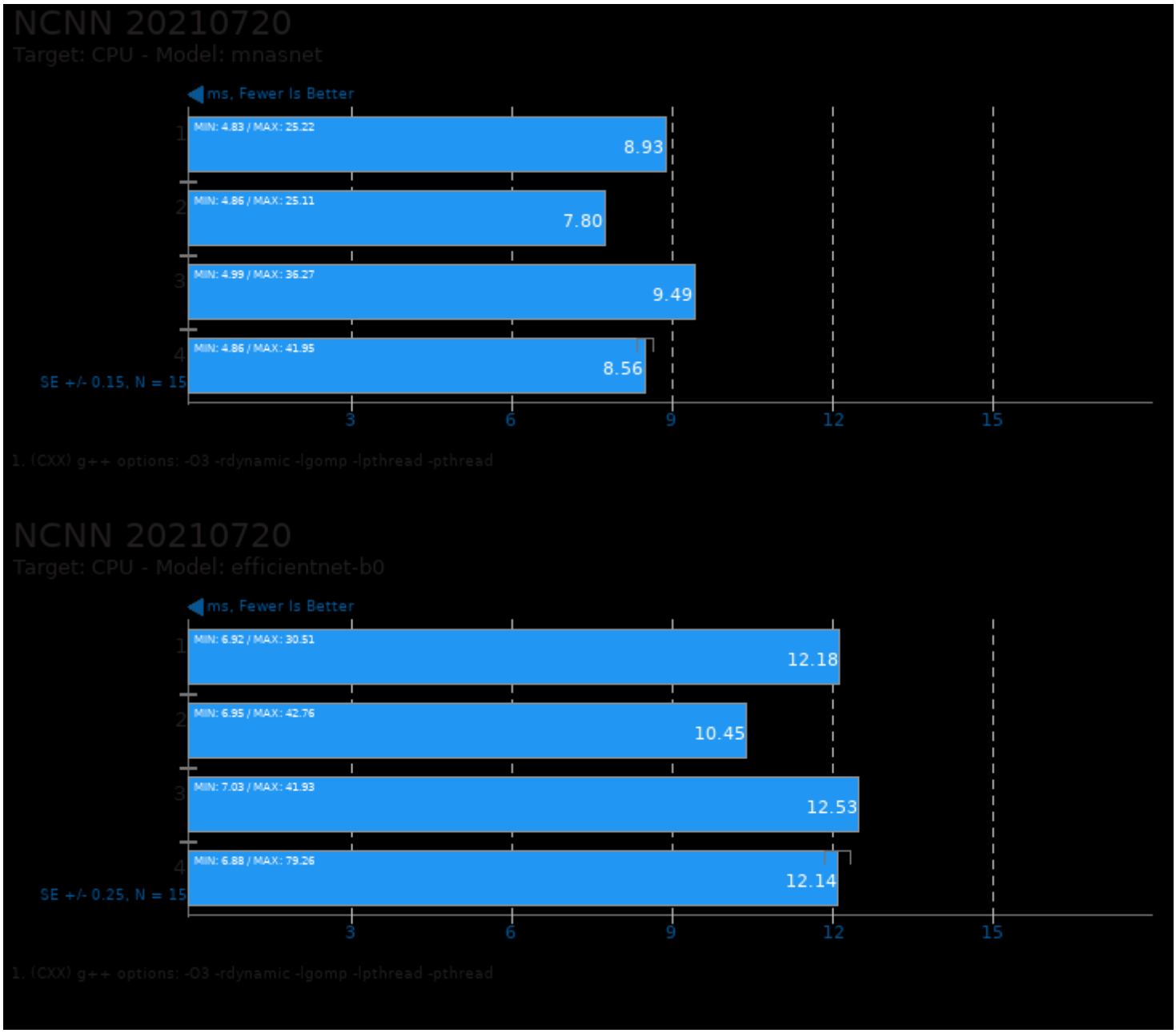
Standard Deviation				6.9%
NCNN - CPU - mnasnet (ms)	8.93	7.8	9.49	8.56
Normalized	87.35%	100%	82.19%	91.12%
Standard Deviation				6.8%
NCNN - CPU - efficientnet-b0 (ms)	12.18	10.45	12.53	12.14
Normalized	85.8%	100%	83.4%	86.08%
Standard Deviation				8%
NCNN - CPU - blazeface (ms)	3.16	3.49	3.04	3.55
Normalized	96.2%	87.11%	100%	85.63%
Standard Deviation				14.3%
NCNN - CPU - googlenet (ms)	19.26	20.92	21.78	19.67
Normalized	100%	92.07%	88.43%	97.92%
Standard Deviation				5.6%
NCNN - CPU - vgg16 (ms)	55.27	53.21	53.39	54.03
Normalized	96.27%	100%	99.66%	98.48%
Standard Deviation				2.4%
NCNN - CPU - resnet18 (ms)	18.46	17.69	18.76	17.78
Normalized	95.83%	100%	94.3%	99.49%
Standard Deviation				3.6%
NCNN - CPU - alexnet (ms)	14.66	14.38	14.58	14.75
Normalized	98.09%	100%	98.63%	97.49%
Standard Deviation				2.1%
NCNN - CPU - resnet50 (ms)	37.71	37.17	39.01	38.00
Normalized	98.57%	100%	95.28%	97.82%
Standard Deviation				3.7%
NCNN - CPU - yolov4-tiny (ms)	35.56	36.39	36.73	36.42
Normalized	100%	97.72%	96.81%	97.64%
Standard Deviation				1.7%
NCNN - CPU - squeezenet_ssd (ms)	23.46	22.39	22.94	22.66
Normalized	95.44%	100%	97.6%	98.81%
Standard Deviation				2.1%
NCNN - CPU - regnety_400m (ms)	21.9	21.67	19.11	21.31
Normalized	87.26%	88.19%	100%	89.68%
Standard Deviation				6.1%
Apache Cassandra - Reads (Op/s)	162849	171353	141864	145896
Normalized	95.04%	100%	82.79%	85.14%
Standard Deviation				9.4%
Apache Cassandra - Writes (Op/s)	168441	180240	172521	179410
Normalized	93.45%	100%	95.72%	99.54%
Standard Deviation				2.3%
Apache Cassandra - Mixed 1:1 (Op/s)	142606	142493	136661	138770
Normalized	100%	99.92%	95.83%	97.31%
Standard Deviation				0.2%
Apache Cassandra - Mixed 1:3 (Op/s)	138362	139112	147075	131179
Normalized	94.08%	94.59%	100%	89.19%
Standard Deviation				5%
Facebook RocksDB - Rand Fill (Op/s)	1205174	1186895	1186510	1207826
Normalized	99.78%	98.27%	98.24%	100%
Standard Deviation				1.2%
Facebook RocksDB - Rand Read	91708514	94060982	95940031	95520419
Normalized	95.59%	98.04%	100%	99.56%
Standard Deviation				0.5%
Facebook RocksDB - Update Rand (Op/s)	677027	677193	677422	677418
Normalized	99.94%	99.97%	100%	100%

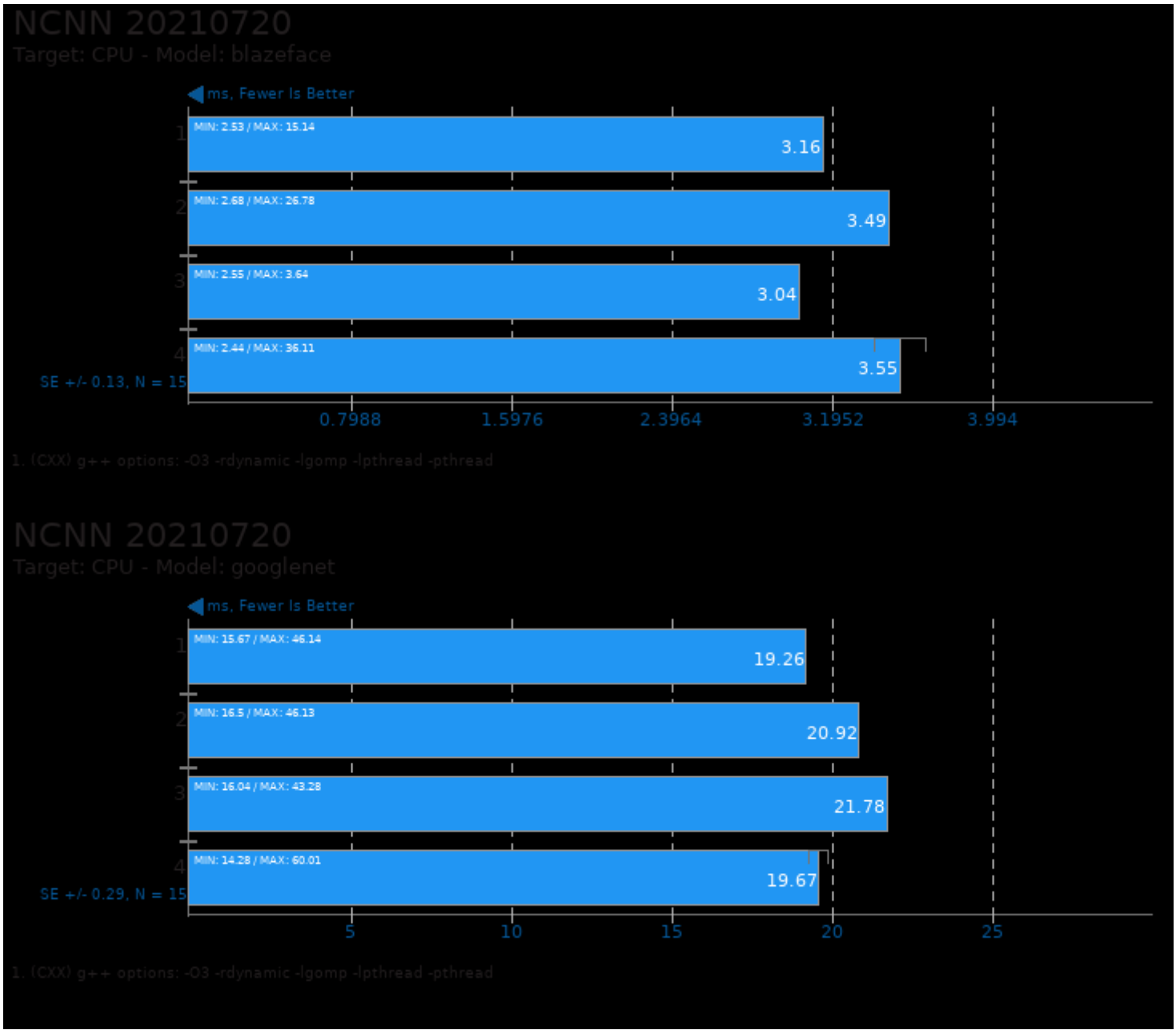
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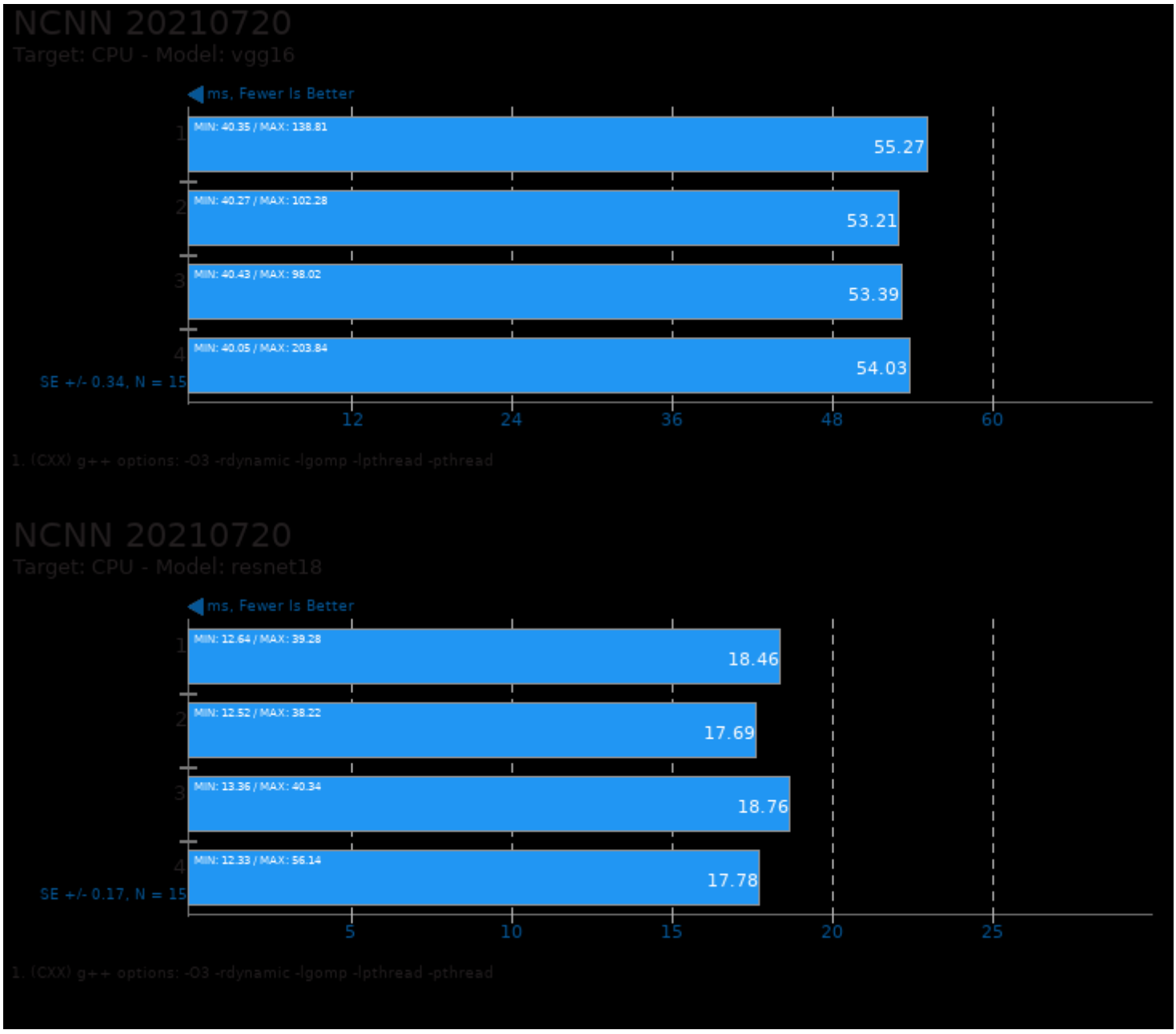
Standard Deviation				0.2%
Facebook RocksDB - Seq Fill (Op/s)	**1393523**	1372775	**1345846**	1353963
Normalized	100%	98.51%	96.58%	97.16%
Standard Deviation				2.8%
Facebook RocksDB - Rand Fill Sync (Op/s)	4468	**4437**	4640	**4691**
Normalized	95.25%	94.59%	98.91%	100%
Standard Deviation				2.2%
Facebook RocksDB - Read While Writing (Op/s)	3675525	**3946575**	**3629512**	3677178
Normalized	93.13%	100%	91.97%	93.17%
Standard Deviation				1.9%
Facebook RocksDB - R.R.W.R (Op/s)	**1923412**	**2136370**	2135716	2131052
Normalized	90.03%	100%	99.97%	99.75%
Standard Deviation				0.1%
Natron - Spaceship (FPS)	**3.5**	**3.4**	**3.5**	**3.4**
Normalized	100%	97.14%	100%	97.14%
Standard Deviation				0%
YafaRay - T.T.F.S.S (sec)	147.610	**336.272**	259.858	**101.388**
Normalized	68.69%	30.15%	39.02%	100%
Standard Deviation	44.6%			1.9%

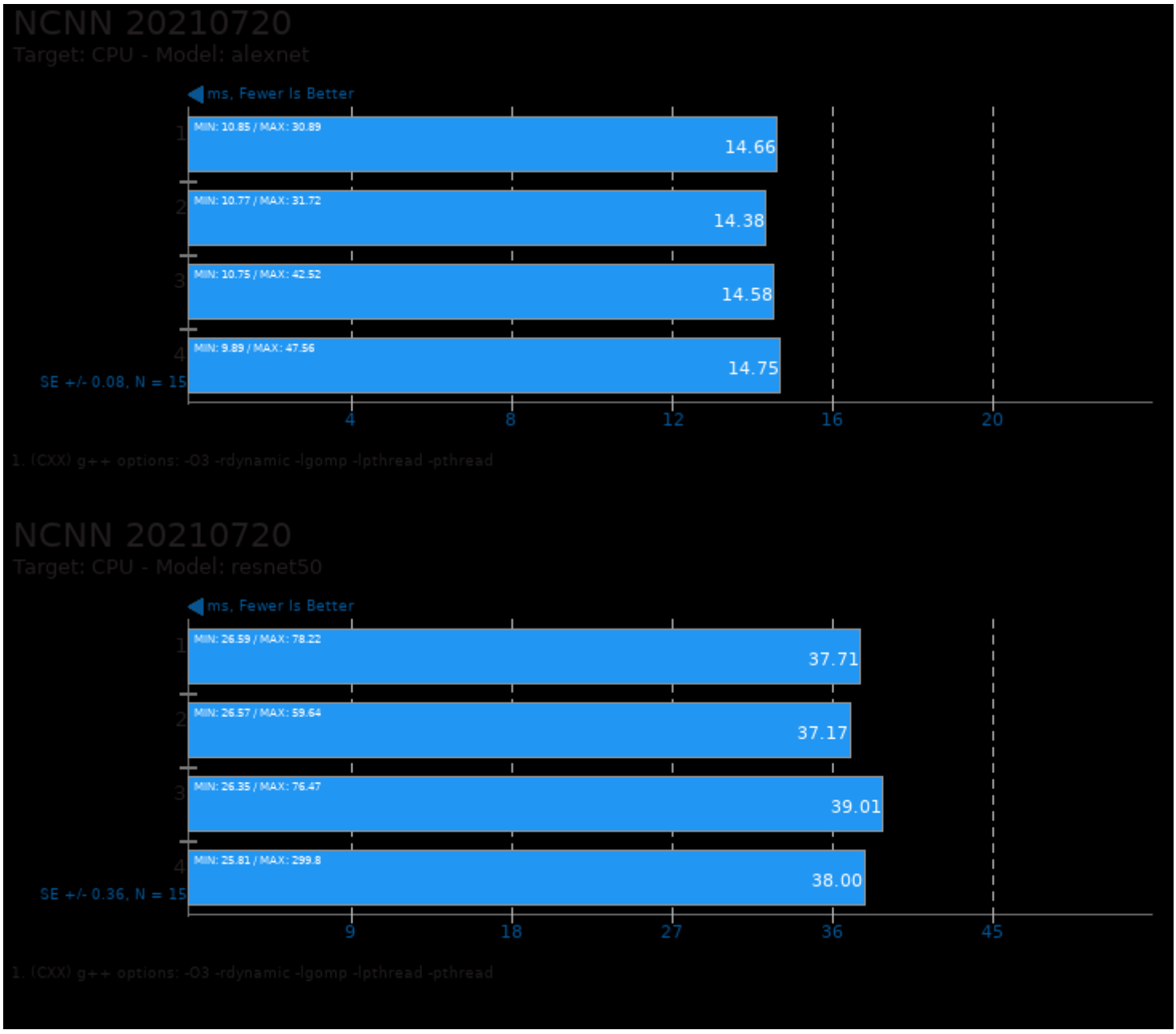

NCNN 20210720
Target: CPU - Model: mobilenet
ms, Fewer Is Better
1
MIN: 17.2 / MAX: 91.66
24.59
2
MIN: 17.15 / MAX: 93.61
25.93
3
MIN: 17.67 / MAX: 103.16
26.70
4
MIN: 16.88 / MAX: 102.69
25.46
SE +/- 0.31, N = 15
6
12
18
24
30
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread
NCNN 20210720
Target: CPU-v2-v2 - Model: mobilenet-v2
ms, Fewer Is Better
1
MIN: 5.5 / MAX: 25.98
8.13
2
MIN: 5.72 / MAX: 31.57
9.20
3
MIN: 5.41 / MAX: 18.38
8.22
4
MIN: 5.23 / MAX: 44.3
8.77
SE +/- 0.19, N = 15
3
6
9
12
15
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread

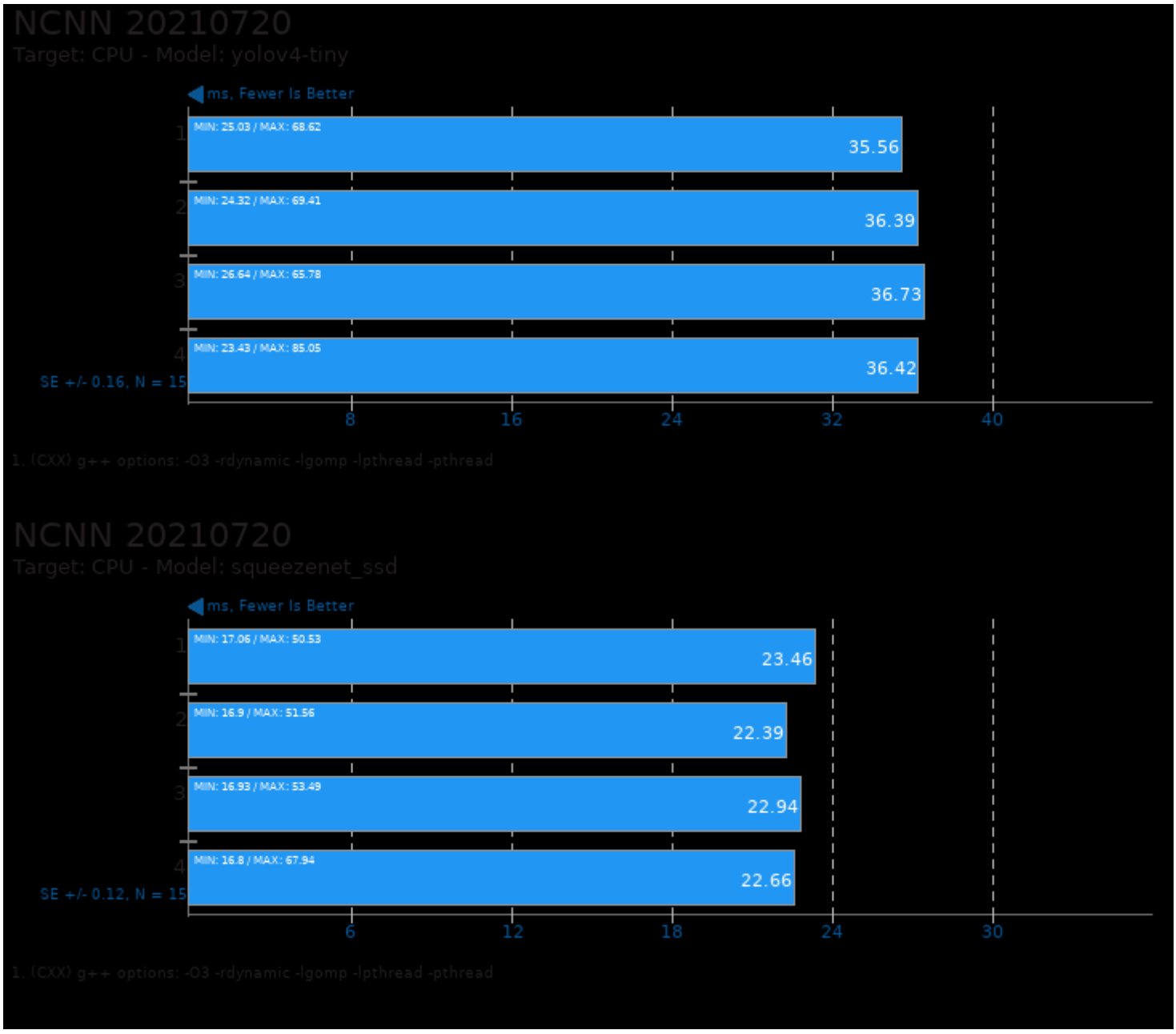

NCNN 20210720
Target: CPU-v3-v3 - Model: mobilenet-v3
ms, Fewer Is Better
1
MIN: 4.72 / MAX: 30.28
7.47
2
MIN: 4.9 / MAX: 31.89
7.33
3
MIN: 4.84 / MAX: 22.38
7.88
4
MIN: 4.7 / MAX: 44.84
8.15
SE +/- 0.22, N = 15
2
4
6
8
10
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread
NCNN 20210720
Target: CPU - Model: shufflenet-v2
ms, Fewer Is Better
1
MIN: 5.43 / MAX: 21.88
7.06
2
MIN: 5.55 / MAX: 27.14
9.03
3
MIN: 5.55 / MAX: 22.33
8.25
4
MIN: 5.43 / MAX: 30.62
8.07
SE +/- 0.14, N = 15
3
6
9
12
15
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread

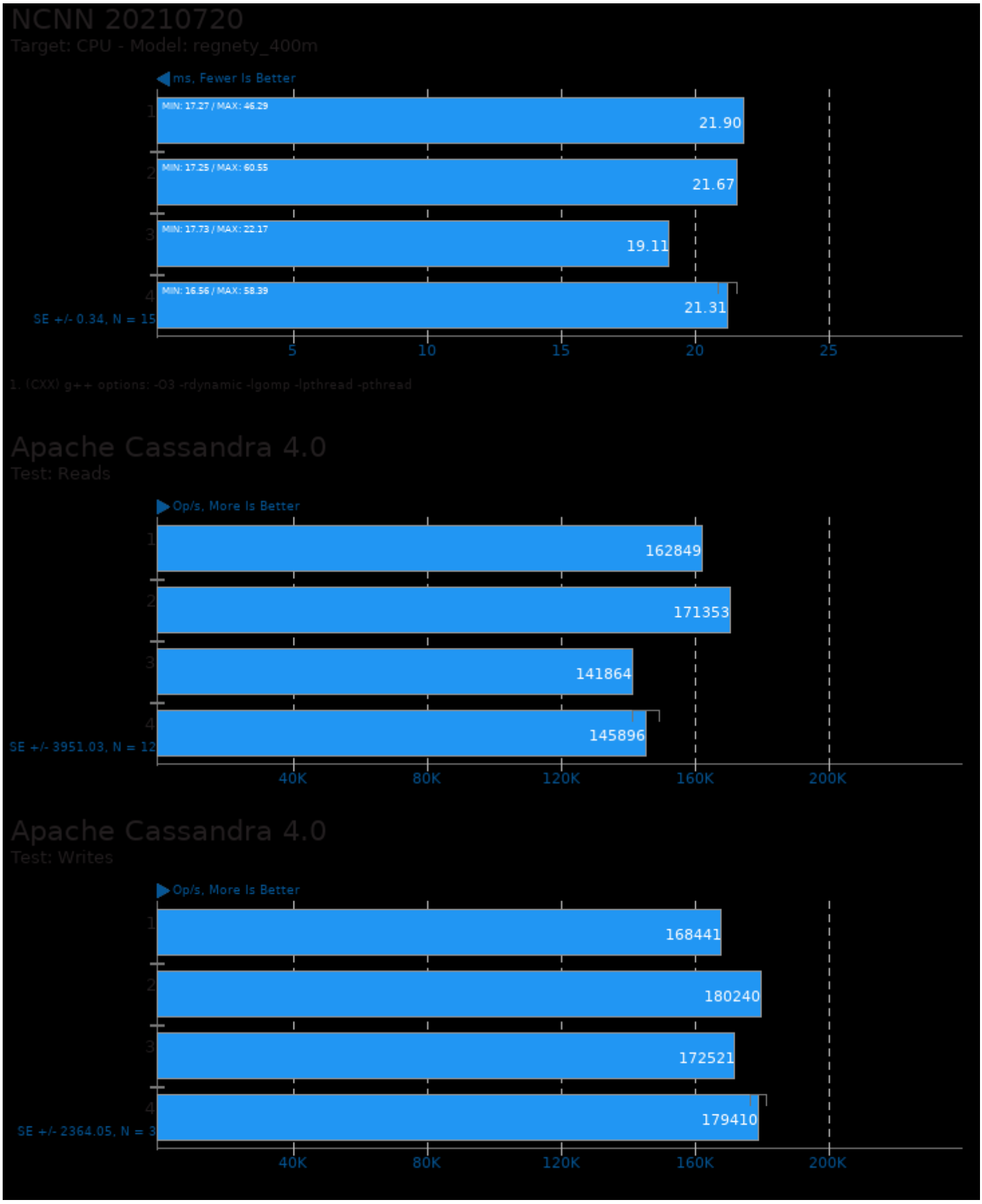

NCNN 20210720
Target: CPU - Model: mnasnet
ms, Fewer Is Better
1
MIN: 4.83 / MAX: 25.22
8.93
2
MIN: 4.86 / MAX: 25.11
7.80
3
MIN: 4.99 / MAX: 36.27
9.49
4
MIN: 4.86 / MAX: 41.95
8.56
SE +/- 0.15, N = 15
3
6
9
12
15
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread
NCNN 20210720
Target: CPU - Model: efficientnet-b0
ms, Fewer Is Better
1
MIN: 6.92 / MAX: 30.51
12.18
2
MIN: 6.95 / MAX: 42.76
10.45
3
MIN: 7.03 / MAX: 41.93
12.53
4
MIN: 6.88 / MAX: 79.26
12.14
SE +/- 0.25, N = 15
3
6
9
12
15
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread

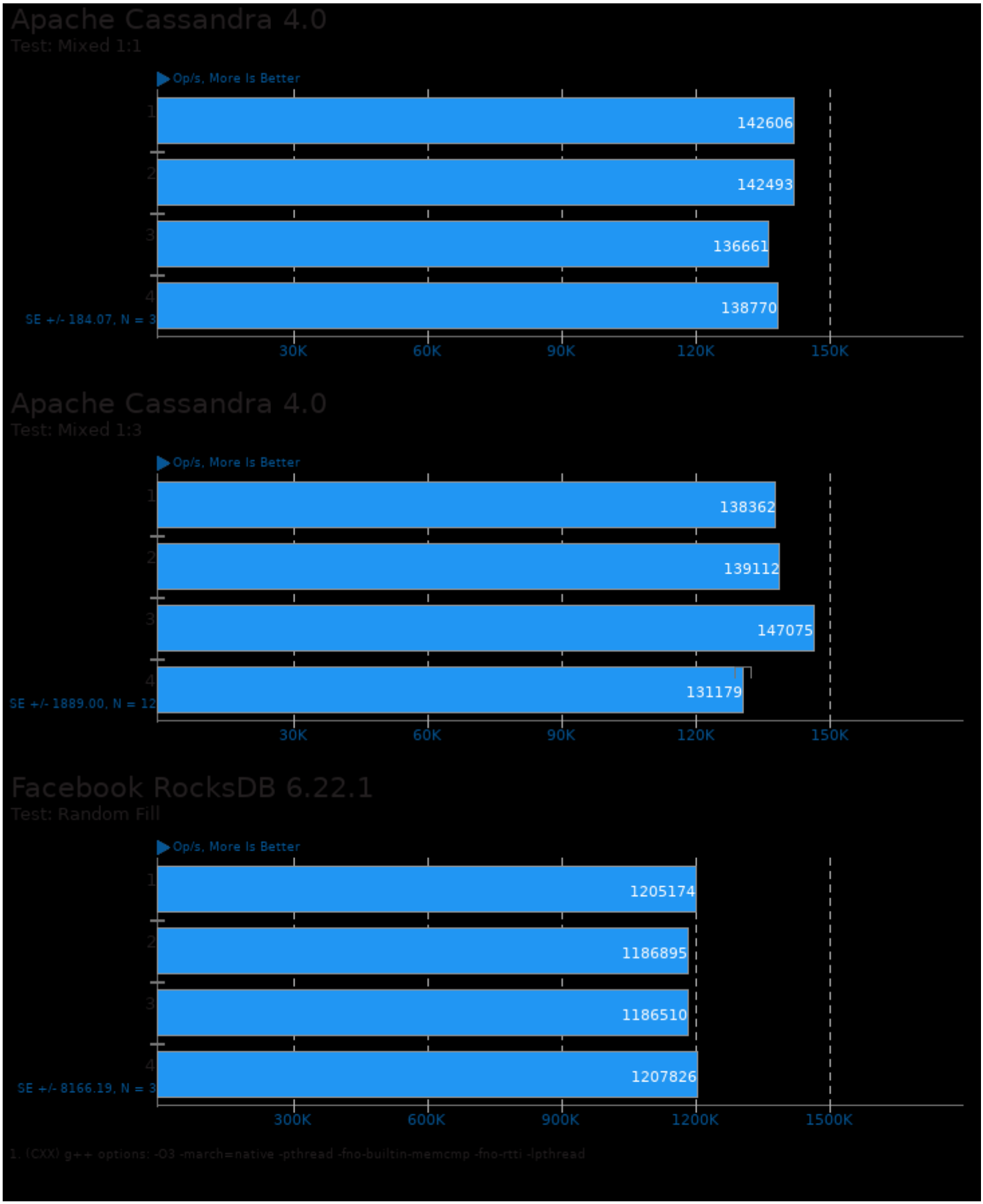

NCNN 20210720
Target: CPU - Model: blazeface
ms, Fewer Is Better
MIN: 2.53 / MAX: 15.14
3.16
MIN: 2.68 / MAX: 26.78
3.49
MIN: 2.55 / MAX: 3.64
3.04
MIN: 2.44 / MAX: 36.11
3.55
SE +/- 0.13, N = 15
0.7988
1.5976
2.3964
3.1952
3.994
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread
NCNN 20210720
Target: CPU - Model: googlenet
ms, Fewer Is Better
MIN: 15.67 / MAX: 46.14
19.26
MIN: 16.5 / MAX: 46.13
20.92
MIN: 16.04 / MAX: 43.28
21.78
MIN: 14.28 / MAX: 60.01
19.67
SE +/- 0.29, N = 15
5
10
15
20
25
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread

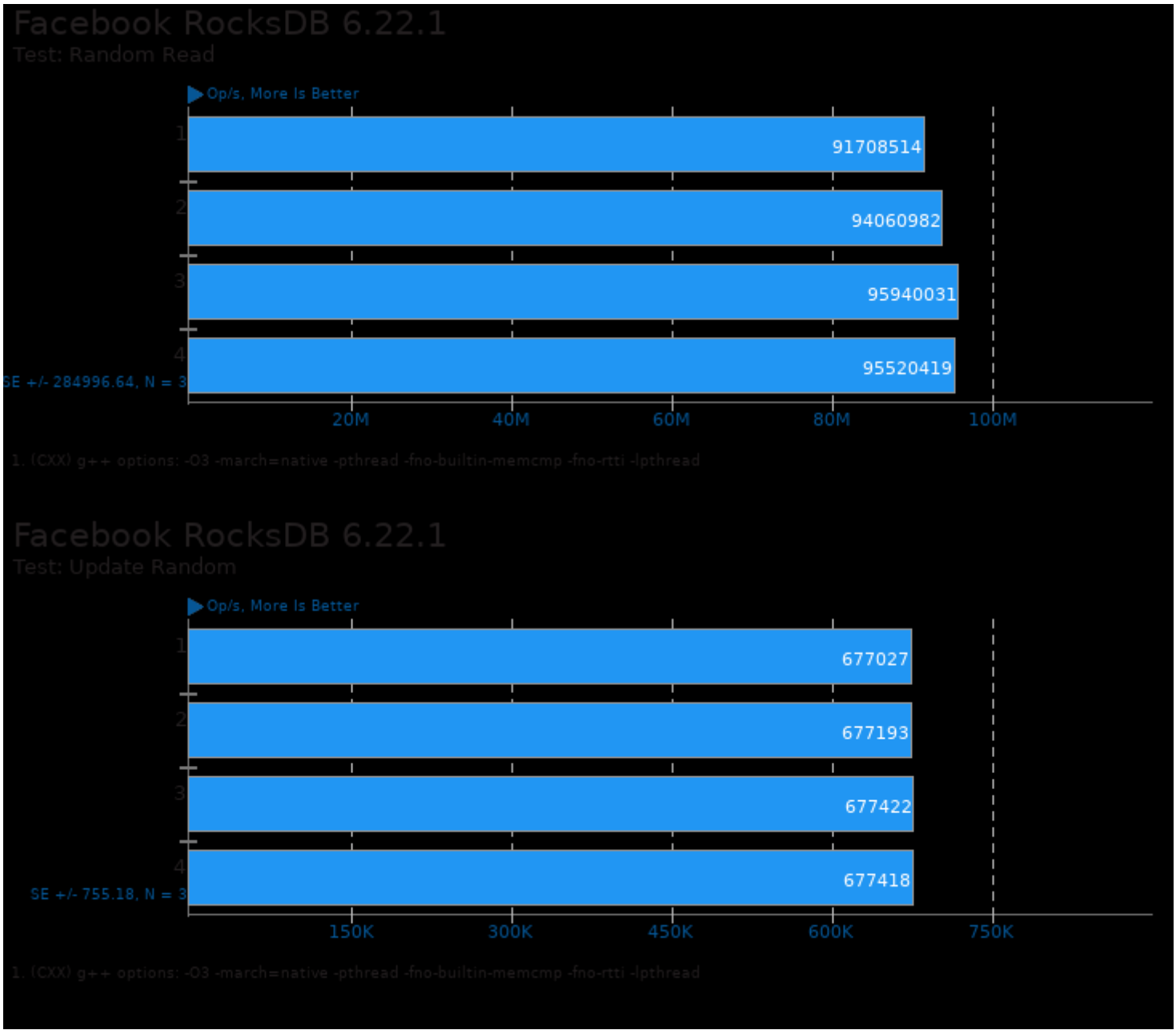

NCNN 20210720
Target: CPU - Model: vgg16
ms, Fewer Is Better
1
MIN: 40.35 / MAX: 138.81
55.27
2
MIN: 40.27 / MAX: 102.28
53.21
3
MIN: 40.43 / MAX: 98.02
53.39
4
MIN: 40.05 / MAX: 203.84
54.03
SE +/- 0.34, N = 15
12
24
36
48
60
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread
NCNN 20210720
Target: CPU - Model: resnet18
ms, Fewer Is Better
1
MIN: 12.64 / MAX: 39.28
18.46
2
MIN: 12.52 / MAX: 38.22
17.69
3
MIN: 13.36 / MAX: 40.34
18.76
4
MIN: 12.33 / MAX: 56.14
17.78
SE +/- 0.17, N = 15
5
10
15
20
25
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread

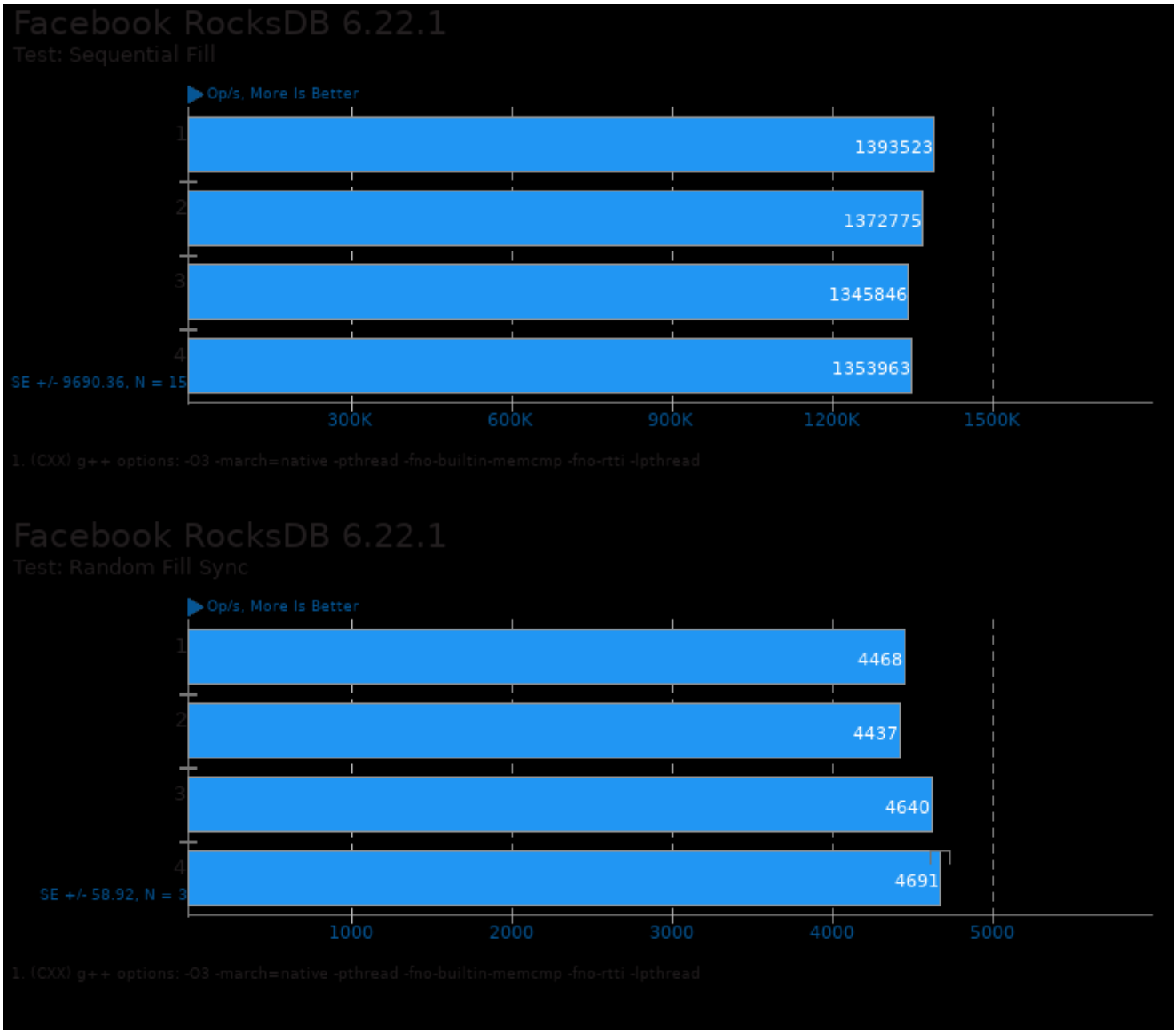

NCNN 20210720
Target: CPU - Model: alexnet
ms, Fewer Is Better
1
MIN: 10.85 / MAX: 30.89
14.66
2
MIN: 10.77 / MAX: 31.72
14.38
3
MIN: 10.75 / MAX: 42.52
14.58
4
MIN: 9.89 / MAX: 47.56
14.75
SE +/- 0.08, N = 15
4
8
12
16
20
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread
NCNN 20210720
Target: CPU - Model: resnet50
ms, Fewer Is Better
1
MIN: 26.59 / MAX: 78.22
37.71
2
MIN: 26.57 / MAX: 59.64
37.17
3
MIN: 26.35 / MAX: 76.47
39.01
4
MIN: 25.81 / MAX: 299.8
38.00
SE +/- 0.36, N = 15
9
18
27
36
45
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread


NCNN 20210720
Target: CPU - Model: yolov4-tiny
ms, Fewer Is Better
1
MIN: 25.03 / MAX: 68.62
35.56
2
MIN: 24.32 / MAX: 69.41
36.39
3
MIN: 26.64 / MAX: 65.78
36.73
4
MIN: 23.43 / MAX: 85.05
36.42
SE +/- 0.16, N = 15
8
16
24
32
40
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread
NCNN 20210720
Target: CPU - Model: squeezenet_ssd
ms, Fewer Is Better
1
MIN: 17.06 / MAX: 50.53
23.46
2
MIN: 16.9 / MAX: 51.56
22.39
3
MIN: 16.93 / MAX: 53.49
22.94
4
MIN: 16.8 / MAX: 67.94
22.66
SE +/- 0.12, N = 15
6
12
18
24
30
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread


NCNN 20210720
Target: CPU - Model: regnety_400m
ms, Fewer Is Better
MIN: 17.27 / MAX: 46.29
21.90
MIN: 17.25 / MAX: 60.55
21.67
MIN: 17.73 / MAX: 22.17
19.11
MIN: 16.56 / MAX: 58.39
21.31
SE +/- 0.34, N = 15
5
10
15
20
25
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread
Apache Cassandra 4.0
Test: Reads
Op/s, More Is Better
162849
171353
141864
145896
SE +/- 3951.03, N = 12
40K
80K
120K
160K
200K
Apache Cassandra 4.0
Test: Writes
Op/s, More Is Better
168441
180240
172521
179410
SE +/- 2364.05, N = 3
40K
80K
120K
160K
200K

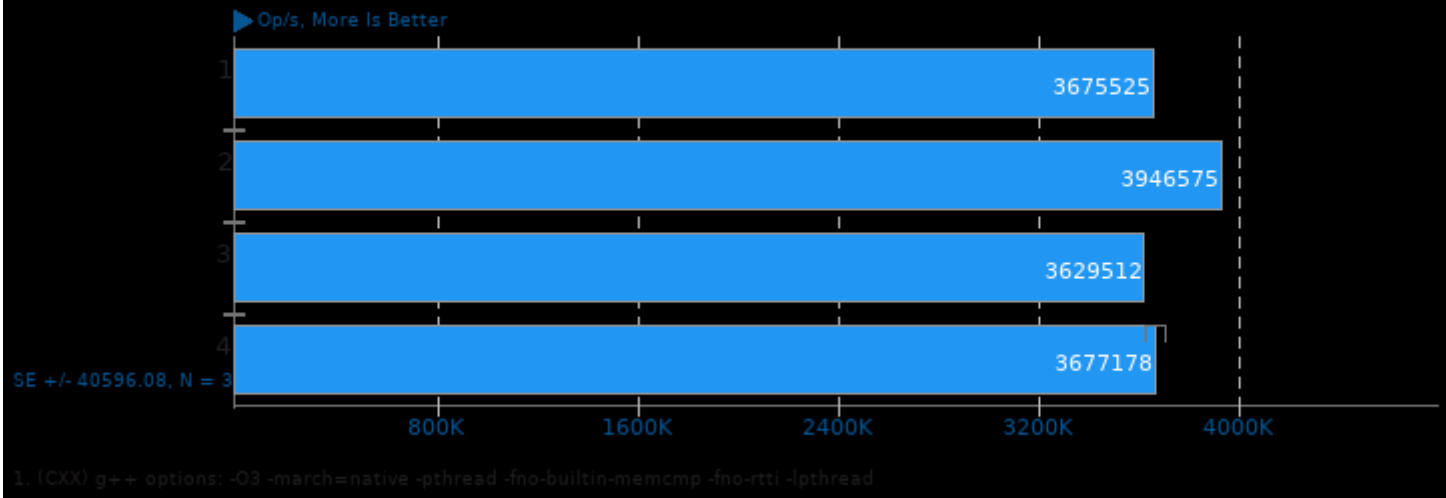

Apache Cassandra 4.0
Test: Mixed 1:1
Op/s, More Is Better
1
142606
2
142493
3
136661
4
138770
SE +/- 184.07, N = 3
30K
60K
90K
120K
150K
Apache Cassandra 4.0
Test: Mixed 1:3
Op/s, More Is Better
1
138362
2
139112
3
147075
4
131179
SE +/- 1889.00, N = 12
30K
60K
90K
120K
150K
Facebook RocksDB 6.22.1
Test: Random Fill
Op/s, More Is Better
1
1205174
2
1186895
3
1186510
4
1207826
SE +/- 8166.19, N = 3
300K
600K
900K
1200K
1500K
1. (CXX) g++ options: -O3 -march=native -pthread -fno-builtin-memcmp -fno-rtti -lpthread


Facebook RocksDB 6.22.1
Test: Random Read
Op/s, More Is Better
1
2
3
4
91708514
94060982
95940031
95520419
SE +/- 284996.64, N = 3
20M
40M
60M
80M
100M
1. (CXX) g++ options: -O3 -march=native -pthread -fno-builtin-memcmp -fno-rtti -lpthread
Facebook RocksDB 6.22.1
Test: Update Random
Op/s, More Is Better
1
2
3
4
677027
677193
677422
677418
SE +/- 755.18, N = 3
150K
300K
450K
600K
750K
1. (CXX) g++ options: -O3 -march=native -pthread -fno-builtin-memcmp -fno-rtti -lpthread


Facebook RocksDB 6.22.1
Test: Sequential Fill
Op/s, More Is Better
1
2
3
4
1393523
1372775
1345846
1353963
SE +/- 9690.36, N = 15
300K
600K
900K
1200K
1500K
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
3
4
4468
4437
4640
4691
SE +/- 58.92, N = 3
1000
2000
3000
4000
5000
1. (CXX) g++ options: -O3 -march=native -pthread -fno-builtin-memcmp -fno-rtti -lpthread

Facebook RocksDB 6.22.1

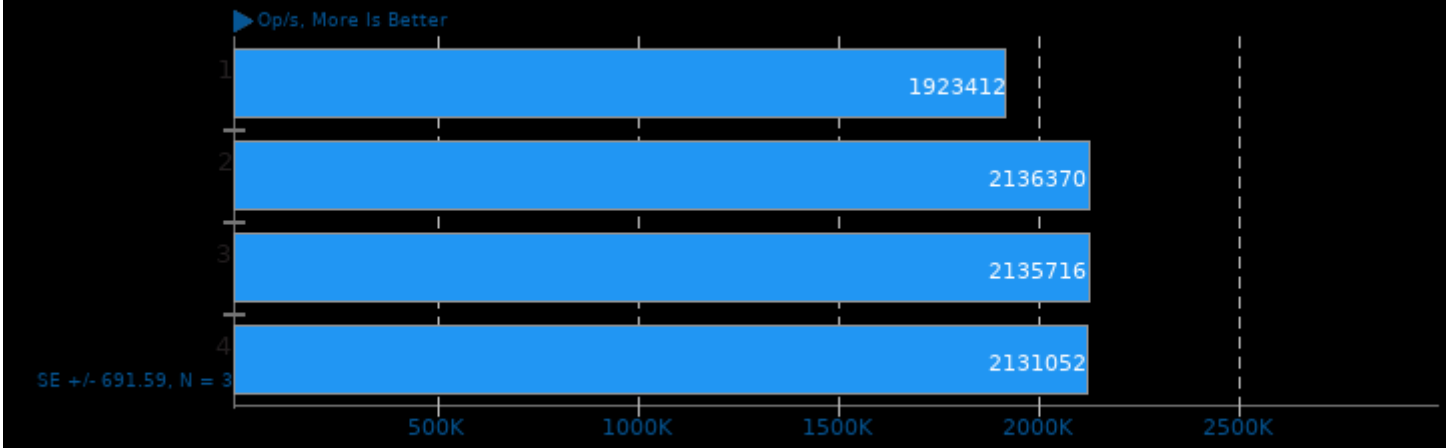
Test: Read While Writing



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

Facebook RocksDB 6.22.1

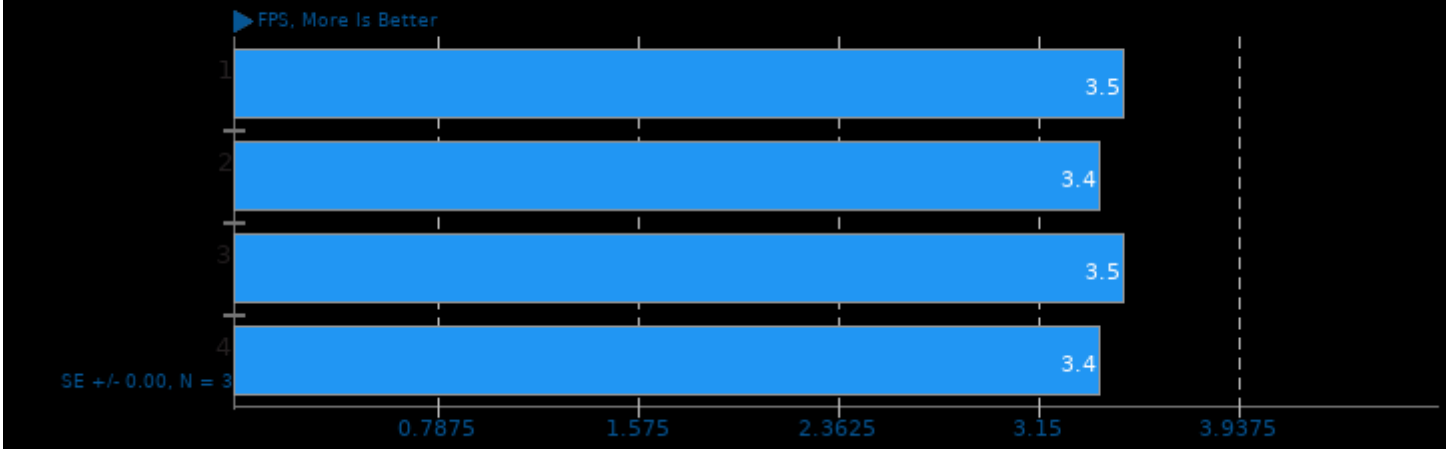
Test: Read Random Write Random

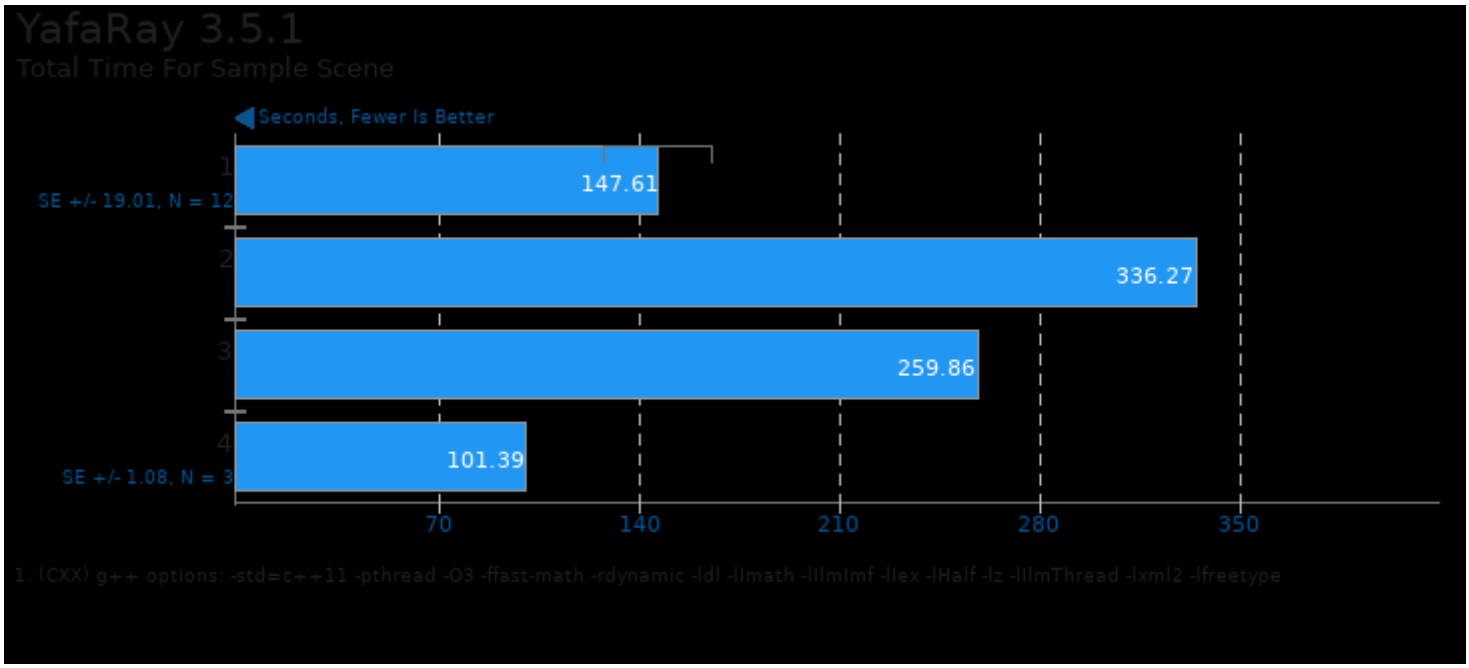


1. (CXX) g++ options: -O3 -march=native -pthread -fno-builtin-memcmp -fno-rtti -lpthread

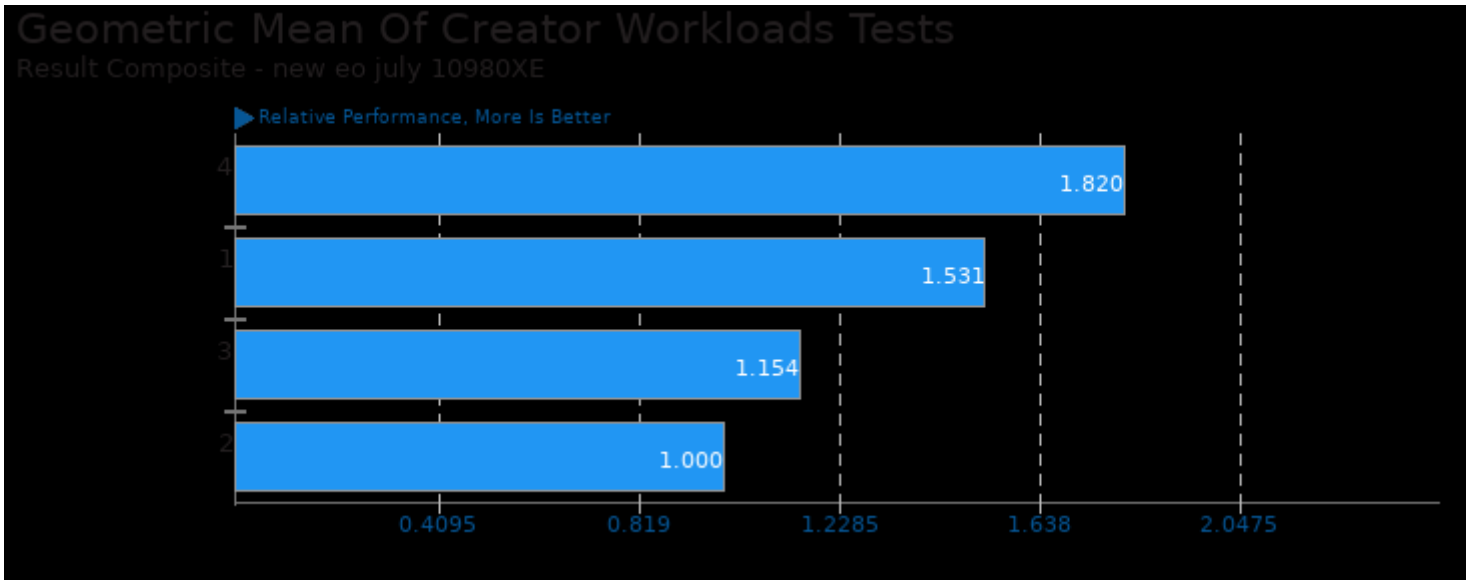
Natron 2.4

Input: Spaceship




YafaRay 3.5.1
Total Time For Sample Scene
Seconds, Fewer Is Better
1
SE +/- 19.01, N = 12
147.61
2
336.27
3
259.86
4
101.39
SE +/- 1.08, N = 3
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

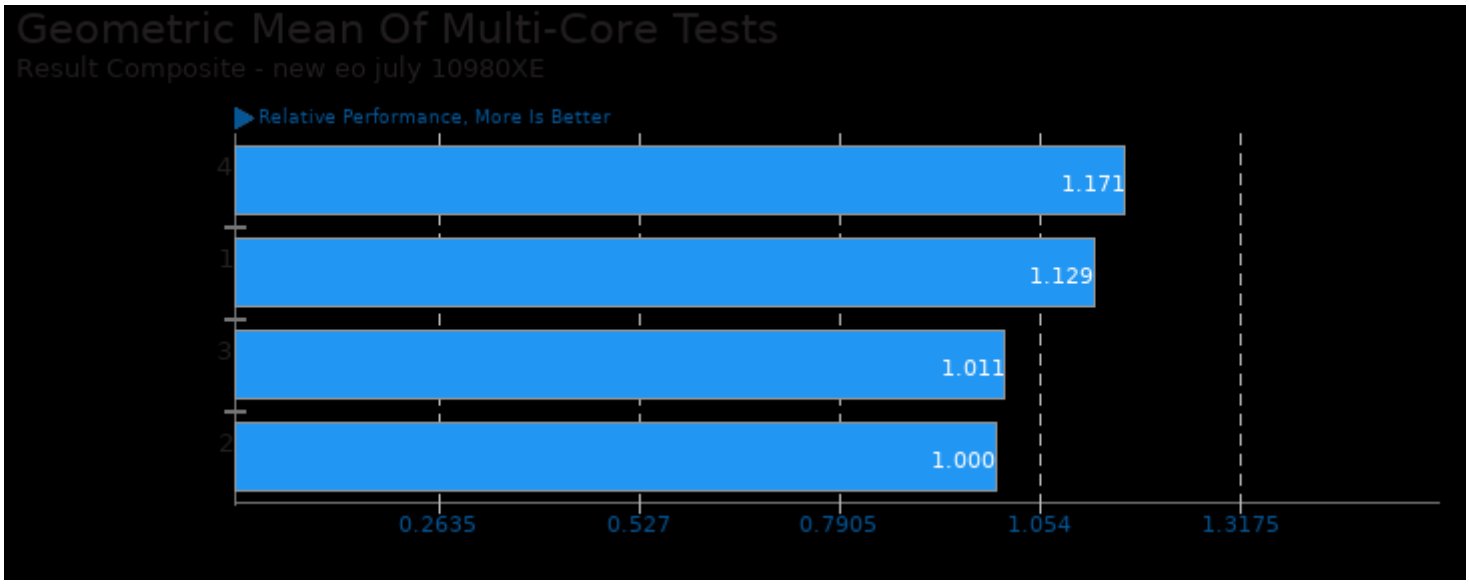
These geometric means are based upon test groupings / test suites for this result file.



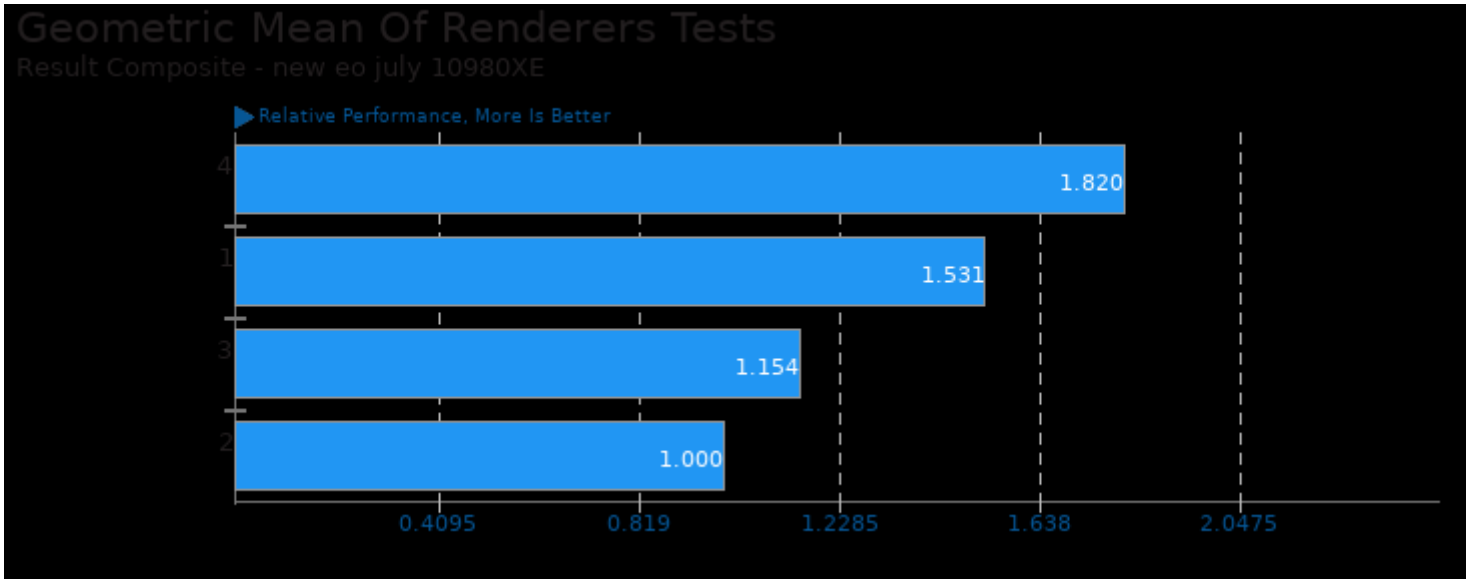
Geometric mean based upon tests: pts/yafaray and pts/natron



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

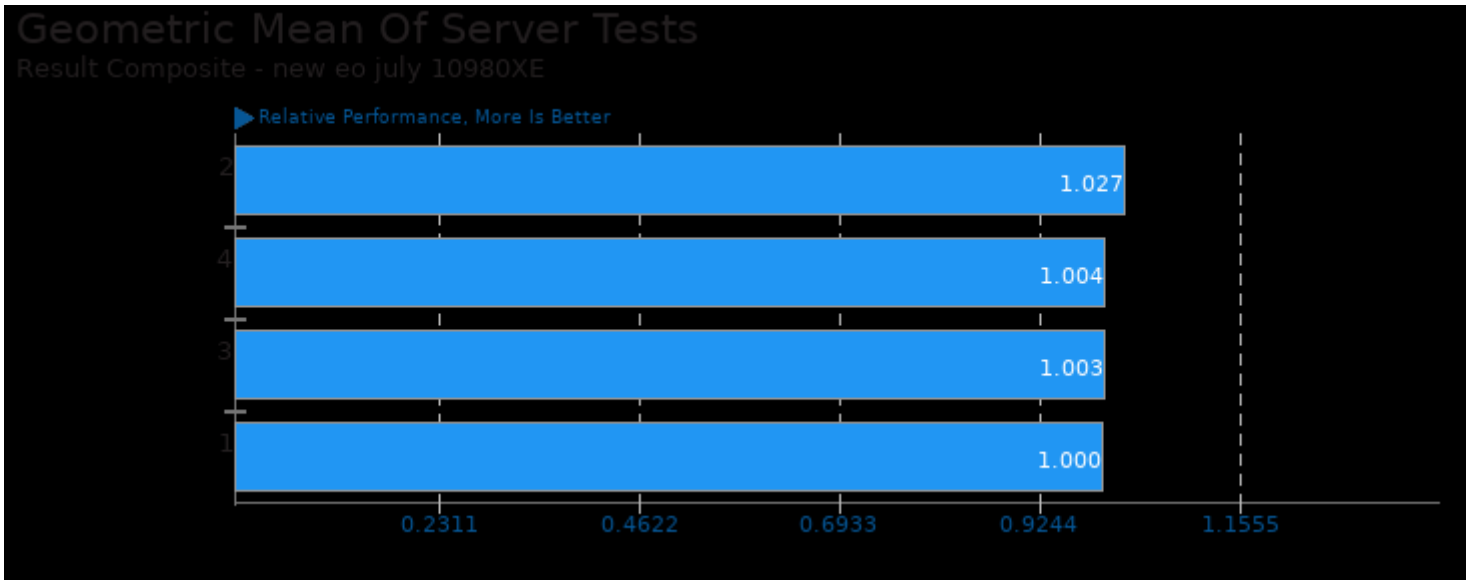


Geometric mean based upon tests: pts/yafaray, pts/natron and pts/cassandra



Geometric mean based upon tests: pts/yafaray and pts/natron

new eo july 10980XE



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

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 19:43.