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inaug Xeon Silver

Intel Xeon Silver 4216 testing with a TYAN S7100AG2NR (V4.02 BIOS) and ASPEED on Debian 10 via the Phoronix Test Suite.

Automated Executive Summary

3 had the most wins, coming in first place for 40% of the tests.

Based on the geometric mean of all complete results, the fastest (3) was 1.006x the speed of the slowest (1). 2 was 1x the speed of 3 and 1 was 0.994x the speed of 2.

Test Systems:

1

2

3

Processor: Intel Xeon Silver 4216 @ 3.20GHz (16 Cores / 32 Threads), Motherboard: TYAN S7100AG2NR (V4.02 BIOS), Chipset: Intel Sky Lake-E DMI3 Registers, Memory: 24GB, Disk: 240GB Corsair Force MP500, Graphics: ASPEED, Audio: Realtek ALC892, Network: 2 x Intel I350

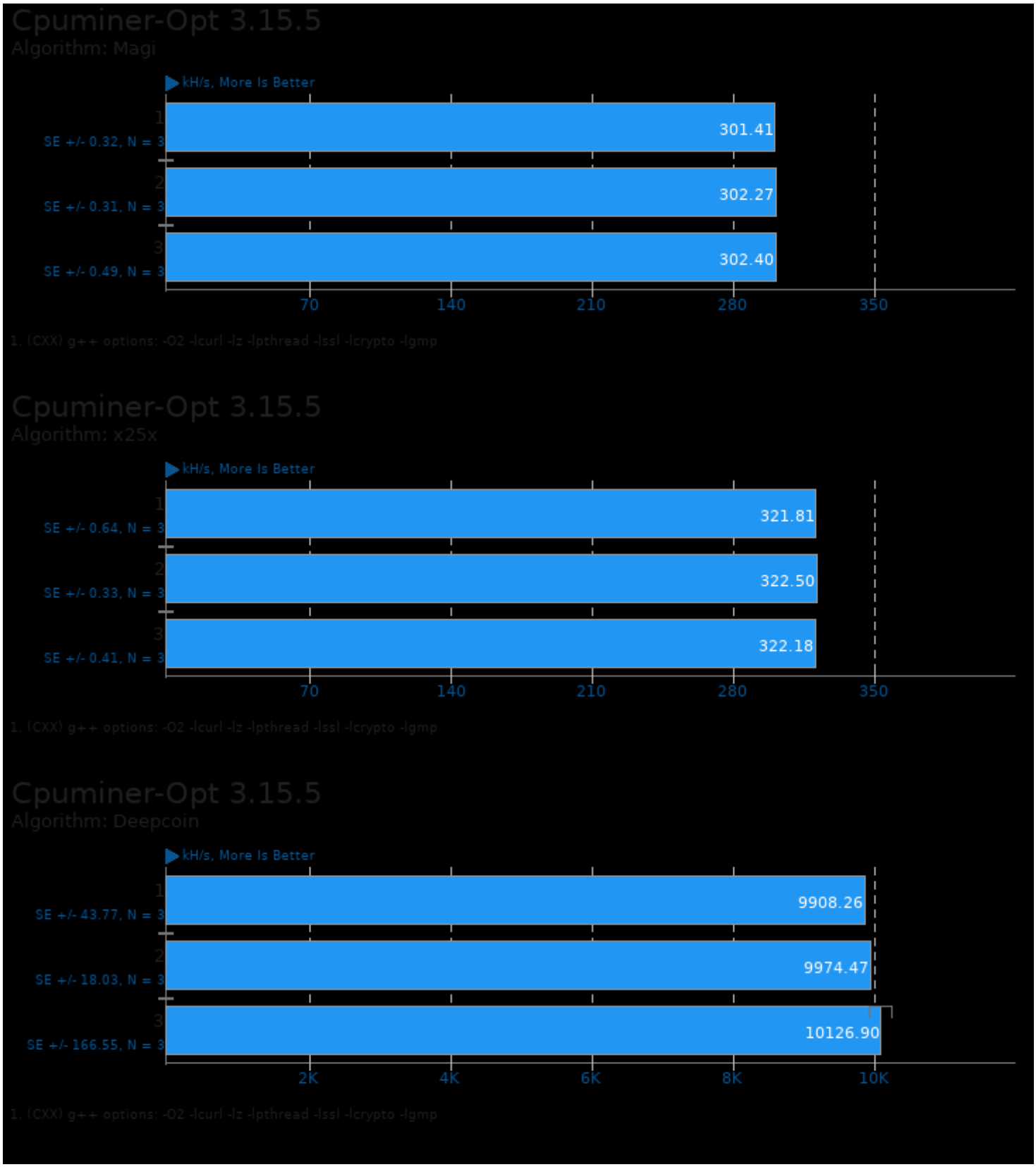
OS: Debian 10, Kernel: 4.19.0-9-amd64 (x86_64), Desktop: GNOME Shell 3.30.2, Display Server: X Server, Compiler: GCC 8.3.0, File-System: ext4, Screen Resolution: 1024x768

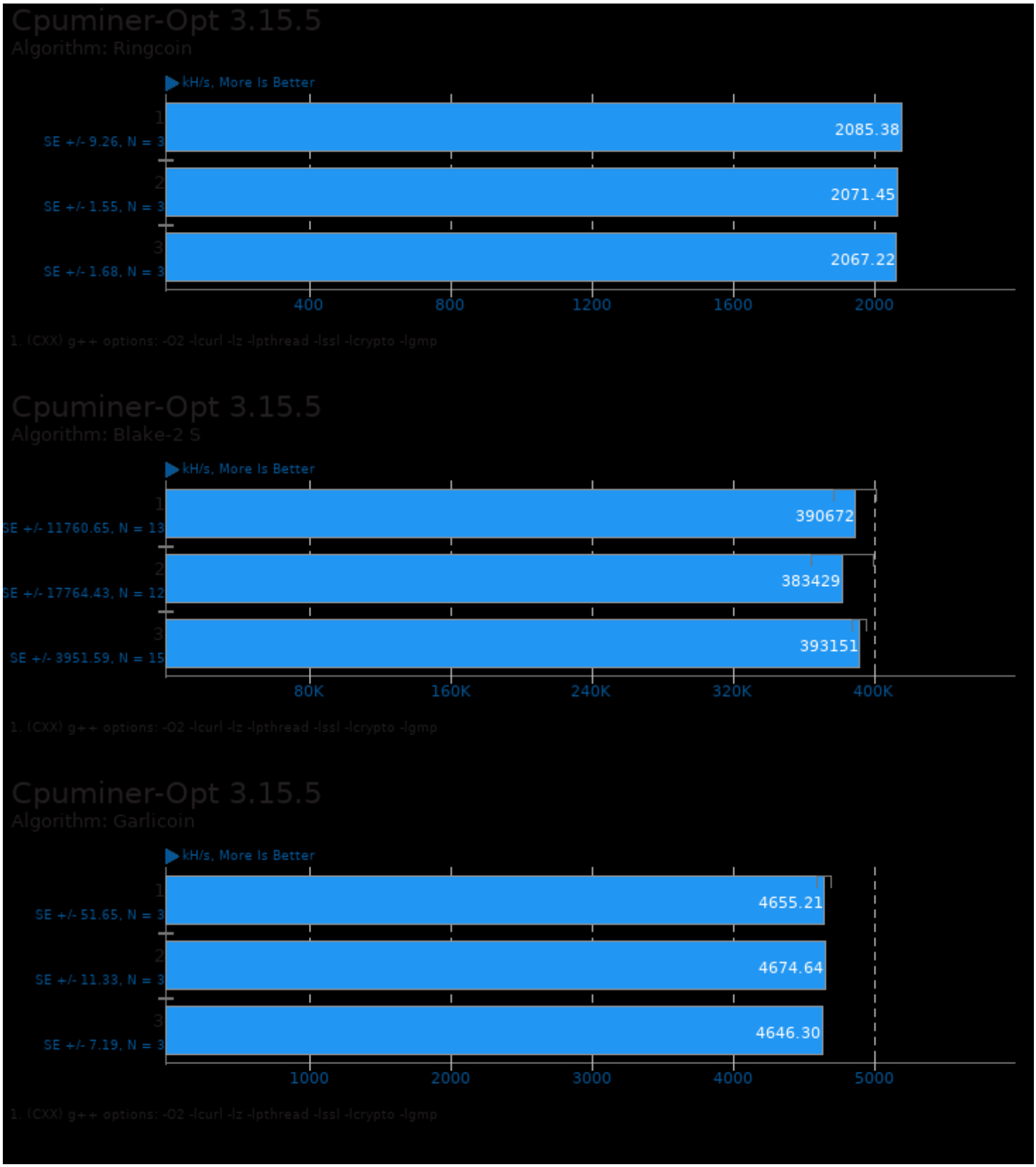
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: intel_pstate powersave - CPU Microcode: 0x500002c
Security Notes: itlb_multihit: KVM: Mitigation of Split huge pages + 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

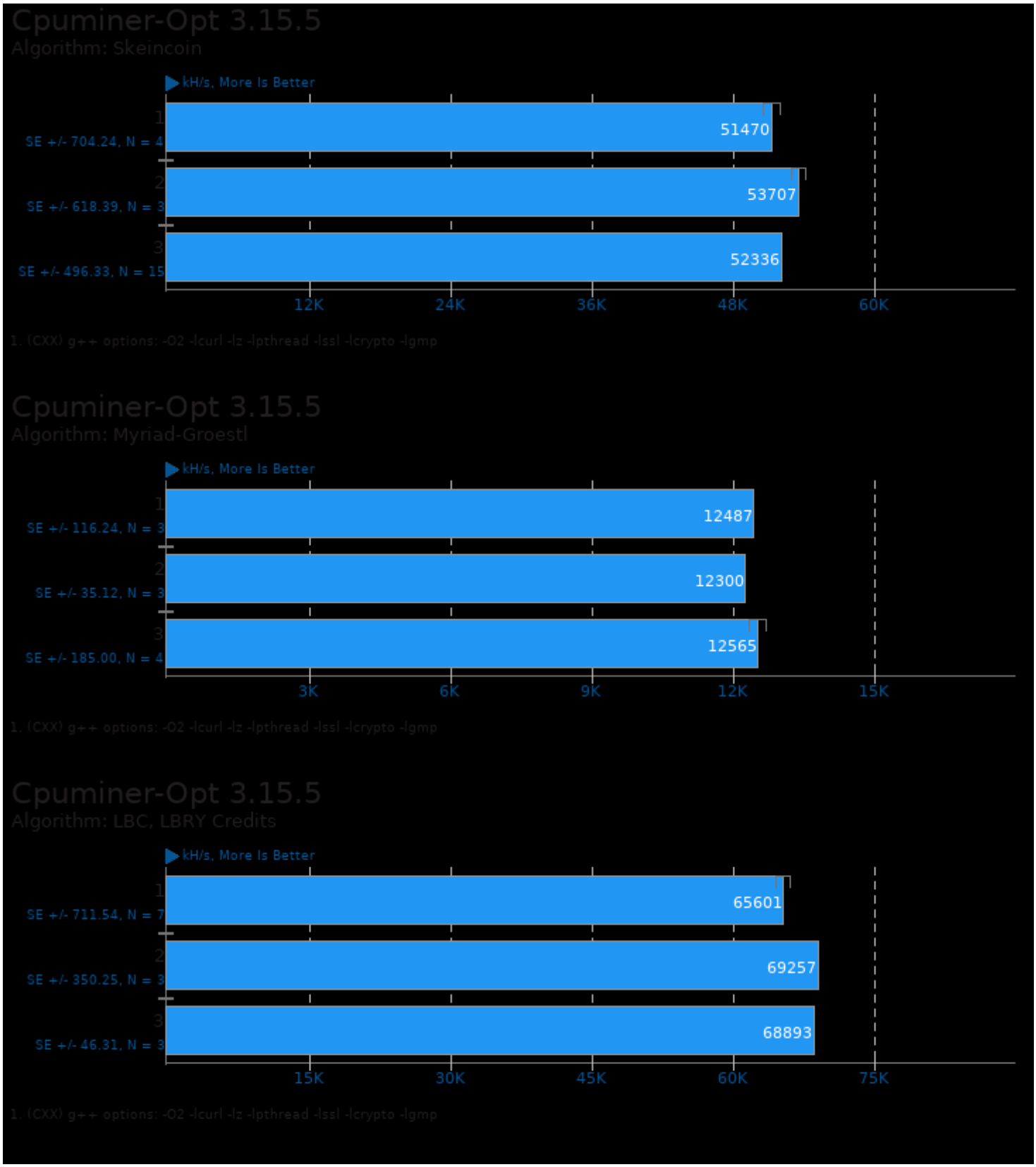
	1	2	3
Cpuminer-Opt - Magi (kH/s)	**301.41**	302.27	**302.40**
Normalized	99.67%	99.96%	100%
Standard Deviation	0.2%	0.2%	0.3%
Cpuminer-Opt - x25x (kH/s)	**321.81**	**322.50**	322.18
Normalized	99.79%	100%	99.9%
Standard Deviation	0.3%	0.2%	0.2%
Cpuminer-Opt - Deepcoin (kH/s)	**9908**	9974	**10127**
Normalized	97.84%	98.49%	100%
Standard Deviation	0.8%	0.3%	2.8%
Cpuminer-Opt - Ringcoin (kH/s)	**2085**	2071	**2067**
Normalized	100%	99.33%	99.13%
Standard Deviation	0.8%	0.1%	0.1%
Cpuminer-Opt - Blake-2 S (kH/s)	390672	**383429**	**393151**
Normalized	99.37%	97.53%	100%
Standard Deviation	10.9%	16%	3.9%
Cpuminer-Opt - Garlicoin (kH/s)	4655	**4675**	**4646**
Normalized	99.58%	100%	99.39%
Standard Deviation	1.9%	0.4%	0.3%
Cpuminer-Opt - Skeincoin (kH/s)	**51470**	**53707**	52336
Normalized	95.83%	100%	97.45%
Standard Deviation	2.7%	2%	3.7%
Cpuminer-Opt - Myriad-Groestl (kH/s)	12487	**12300**	**12565**
Normalized	99.38%	97.89%	100%
Standard Deviation	1.6%	0.5%	2.9%
Cpuminer-Opt - LBC, LBRY Credits (kH/s)	**65601**	**69257**	68893
Normalized	94.72%	100%	99.47%
Standard Deviation	2.9%	0.9%	0.1%
Cpuminer-Opt - Q.S.2.P (kH/s)	**67500**	**61917**	64128
Normalized	100%	91.73%	95%
Standard Deviation	2.5%	2.6%	9.6%
Cpuminer-Opt - T.S.2.O (kH/s)	**84553**	**92666**	87388
Normalized	91.24%	100%	94.3%
Standard Deviation	13.6%	2.9%	11%

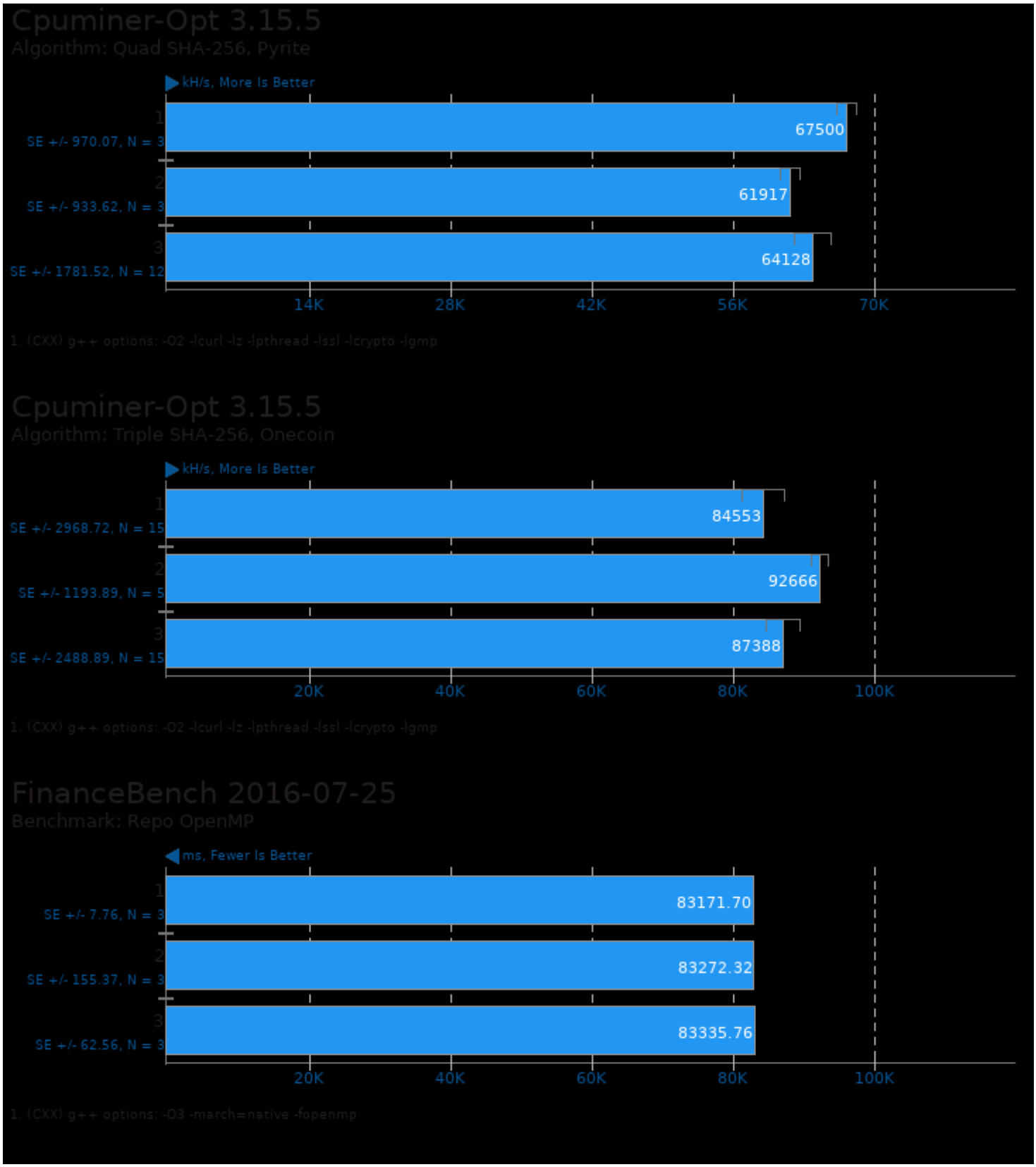
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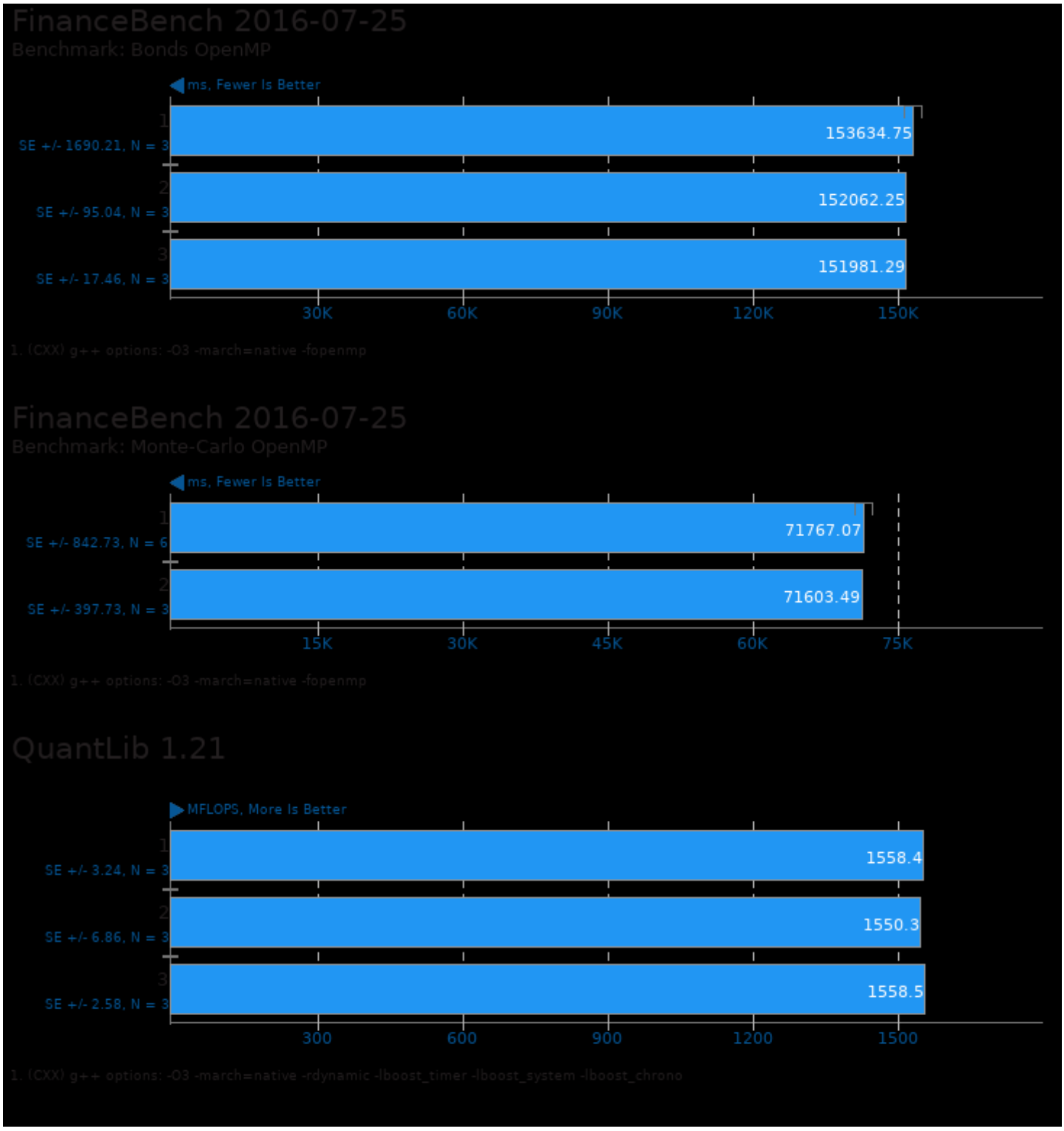
FinanceBench - Repo OpenMP (ms)	**83172**	83272	**83336**
Normalized	100%	99.88%	99.8%
Standard Deviation	0%	0.3%	0.1%
FinanceBench - Bonds OpenMP (ms)	**153635**	152062	**151981**
Normalized	98.92%	99.95%	100%
Standard Deviation	1.9%	0.1%	0%
FinanceBench - Monte-Carlo OpenMP (ms)	**71767**	**71603**	
Normalized	99.77%	100%	
Standard Deviation	2.9%	1%	
QuantLib (MFLOPS)	1558	**1550**	**1559**
Normalized	99.99%	99.47%	100%
Standard Deviation	0.4%	0.8%	0.3%


Cpuminer-Opt 3.15.5
Algorithm: Magi
kH/s, More Is Better
1
SE +/- 0.32, N = 3
301.41
2
SE +/- 0.31, N = 3
302.27
3
SE +/- 0.49, N = 3
302.40
70
140
210
280
350
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp
Cpuminer-Opt 3.15.5
Algorithm: x25x
kH/s, More Is Better
1
SE +/- 0.64, N = 3
321.81
2
SE +/- 0.33, N = 3
322.50
3
SE +/- 0.41, N = 3
322.18
70
140
210
280
350
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp
Cpuminer-Opt 3.15.5
Algorithm: Deepcoin
kH/s, More Is Better
1
SE +/- 43.77, N = 3
9908.26
2
SE +/- 18.03, N = 3
9974.47
3
SE +/- 166.55, N = 3
10126.90
2K
4K
6K
8K
10K
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp


Cpuminer-Opt 3.15.5
Algorithm: Ringcoin
kH/s, More Is Better
1
SE +/- 9.26, N = 3
2085.38
2
SE +/- 1.55, N = 3
2071.45
3
SE +/- 1.68, N = 3
2067.22
400
800
1200
1600
2000
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp
Cpuminer-Opt 3.15.5
Algorithm: Blake-2 S
kH/s, More Is Better
1
SE +/- 11760.65, N = 13
390672
2
SE +/- 17764.43, N = 12
383429
3
SE +/- 3951.59, N = 15
393151
80K
160K
240K
320K
400K
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp
Cpuminer-Opt 3.15.5
Algorithm: Garlicoin
kH/s, More Is Better
1
SE +/- 51.65, N = 3
4655.21
2
SE +/- 11.33, N = 3
4674.64
3
SE +/- 7.19, N = 3
4646.30
1000
2000
3000
4000
5000
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp


Cpuminer-Opt 3.15.5
Algorithm: Skeincoin
kH/s, More Is Better
1
SE +/- 704.24, N = 4
51470
2
SE +/- 618.39, N = 3
53707
3
SE +/- 496.33, N = 15
52336
12K
24K
36K
48K
60K
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp
Cpuminer-Opt 3.15.5
Algorithm: Myriad-Groestl
kH/s, More Is Better
1
SE +/- 116.24, N = 3
12487
2
SE +/- 35.12, N = 3
12300
3
SE +/- 185.00, N = 4
12565
3K
6K
9K
12K
15K
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp
Cpuminer-Opt 3.15.5
Algorithm: LBC, LBRY Credits
kH/s, More Is Better
1
SE +/- 711.54, N = 7
65601
2
SE +/- 350.25, N = 3
69257
3
SE +/- 46.31, N = 3
68893
15K
30K
45K
60K
75K
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp


Cpuminer-Opt 3.15.5
Algorithm: Quad SHA-256, Pyrite
kH/s, More Is Better
1
SE +/- 970.07, N = 3
67500
2
SE +/- 933.62, N = 3
61917
3
SE +/- 1781.52, N = 12
64128
14K
28K
42K
56K
70K
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp
Cpuminer-Opt 3.15.5
Algorithm: Triple SHA-256, Onecoin
kH/s, More Is Better
1
SE +/- 2968.72, N = 15
84553
2
SE +/- 1193.89, N = 5
92666
3
SE +/- 2488.89, N = 15
87388
20K
40K
60K
80K
100K
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp
FinanceBench 2016-07-25
Benchmark: Repo OpenMP
ms, Fewer Is Better
1
SE +/- 7.76, N = 3
83171.70
2
SE +/- 155.37, N = 3
83272.32
3
SE +/- 62.56, N = 3
83335.76
20K
40K
60K
80K
100K
1. (CXX) g++ options: -O3 -march=native -fopenmp


FinanceBench 2016-07-25
Benchmark: Bonds OpenMP
ms, Fewer Is Better
1
SE +/- 1690.21, N = 3
153634.75
2
SE +/- 95.04, N = 3
152062.25
3
SE +/- 17.46, N = 3
151981.29
30K
60K
90K
120K
150K
1. (CXX) g++ options: -O3 -march=native -fopenmp
FinanceBench 2016-07-25
Benchmark: Monte-Carlo OpenMP
ms, Fewer Is Better
1
SE +/- 842.73, N = 6
71767.07
2
SE +/- 397.73, N = 3
71603.49
15K
30K
45K
60K
75K
1. (CXX) g++ options: -O3 -march=native -fopenmp
QuantLib 1.21
MFLOPS, More Is Better
1
SE +/- 3.24, N = 3
1558.4
2
SE +/- 6.86, N = 3
1550.3
3
SE +/- 2.58, N = 3
1558.5
300
600
900
1200
1500
1. (CXX) g++ options: -O3 -march=native -rdynamic -lboost_timer -lboost_system -lboost_chrono

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



Geometric mean based upon tests: pts/financebench and pts/quantlib

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 04:15.