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10700T Friday

Intel Core i7-10700T testing with a Logic Supply RXM-181 (Z01-0002A026 BIOS) and Intel UHD 630 3GB on Ubuntu 20.10 via the Phoronix Test Suite.

Automated Executive Summary

1 had the most wins, coming in first place for 53% of the tests.

Based on the geometric mean of all complete results, the fastest (1) was 1.023x the speed of the slowest (2). 4 was 0.981x the speed of 1, 3 was 0.999x the speed of 4, 2 was 0.998x the speed of 3.

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

Redis (Test: LPOP) at 1.664x
Redis (Test: GET) at 1.075x
NAS Parallel Benchmarks (Test / Class: EP.D) at 1.046x
NAS Parallel Benchmarks (Test / Class: CG.C) at 1.046x
Redis (Test: SET) at 1.043x
lzbench (Test: Crush 0 - Process: Compression) at 1.032x
NAS Parallel Benchmarks (Test / Class: FT.C) at 1.028x
lzbench (Test: Zstd 8 - Process: Compression) at 1.026x
NAS Parallel Benchmarks (Test / Class: LU.C) at 1.023x

NAS Parallel Benchmarks (Test / Class: IS.D) at 1.019x.

Test Systems:

1

2

3

4

Processor: Intel Core i7-10700T @ 4.50GHz (8 Cores / 16 Threads), Motherboard: Logic Supply RXM-181 (Z01-0002A026 BIOS), Chipset: Intel Comet Lake PCH, Memory: 32GB, Disk: 256GB TS256GMTS800, Graphics: Intel UHD 630 3GB (1200MHz), Audio: Realtek ALC233, Monitor: DELL P2415Q, Network: Intel I219-LM + Intel I210

OS: Ubuntu 20.10, Kernel: 5.8.0-38-generic (x86_64), Desktop: GNOME Shell 3.38.1, Display Server: X Server 1.20.9, Display Driver: modesetting 1.20.9, OpenGL: 4.6 Mesa 20.2.1, Vulkan: 1.2.145, Compiler: GCC 10.2.0, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-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-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-10-JvwpWM/gcc-10-10.2.0/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-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: 0xe0 - Thermald 2.3
Python Notes: Python 3.8.6
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: Not affected

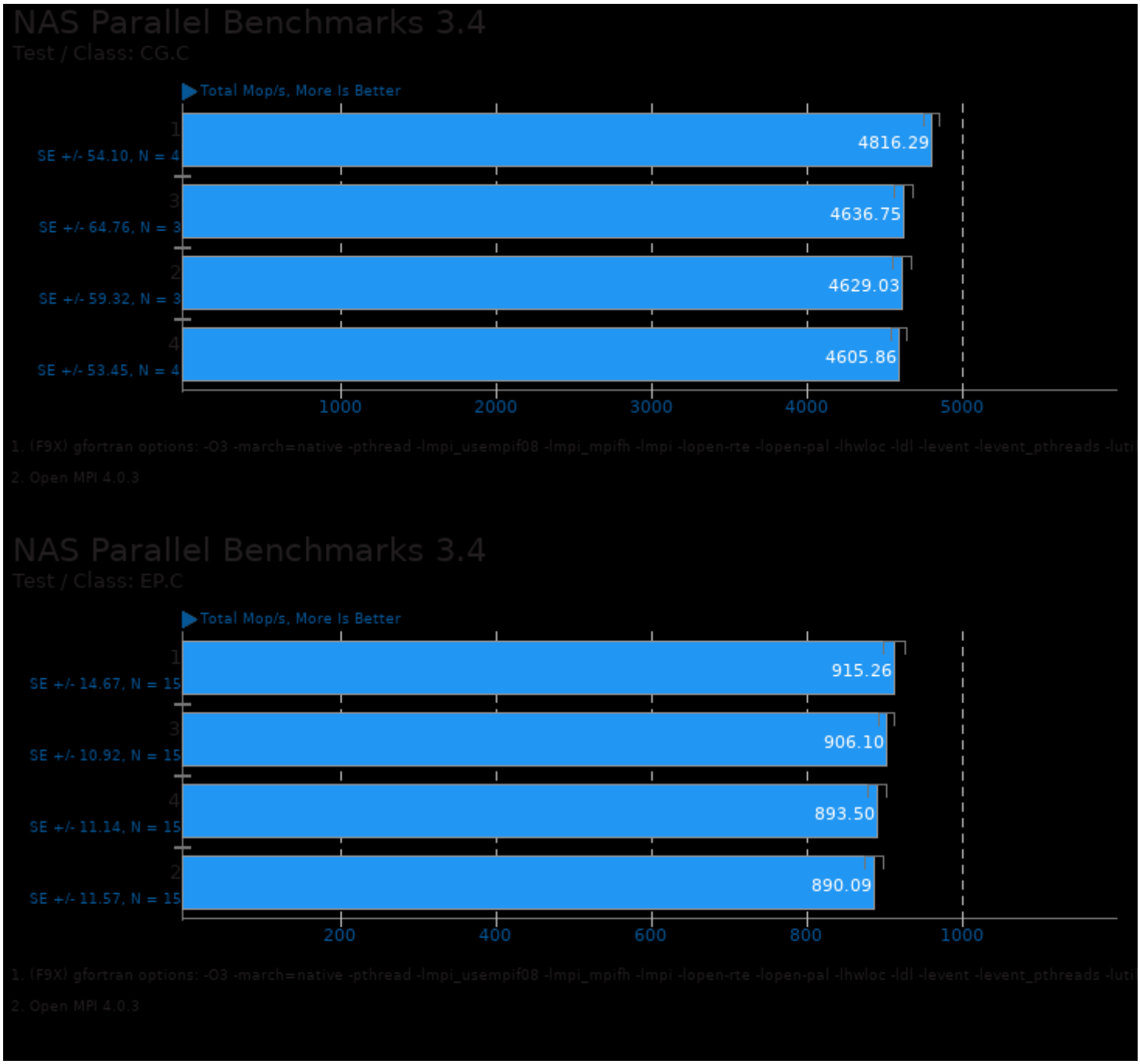
	1	2	3	4
NAS Parallel Benchmarks - CG.C (Mop/s)	**4816**	4629	4637	**4606**
Normalized	100%	96.11%	96.27%	95.63%
Standard Deviation	2.2%	2.2%	2.4%	2.3%
NAS Parallel Benchmarks - EP.C (Mop/s)	**915.26**	**890.09**	906.10	893.50
Normalized	100%	97.25%	99%	97.62%
Standard Deviation	6.2%	5%	4.7%	4.8%
NAS Parallel Benchmarks - EP.D (Mop/s)	**822.00**	**785.97**	813.23	813.42
Normalized	100%	95.62%	98.93%	98.96%
Standard Deviation	0.8%	2.2%	0.7%	0.2%

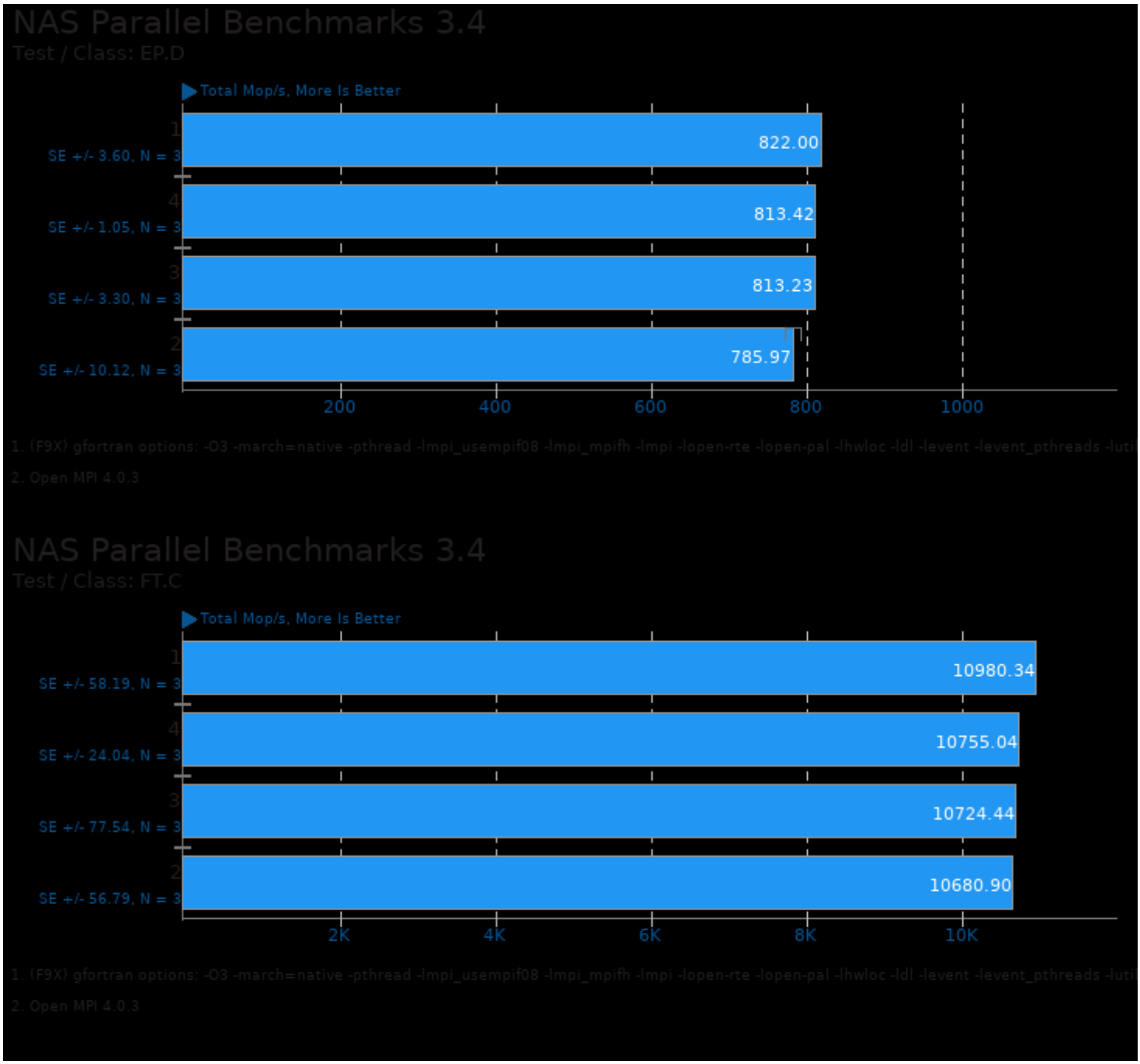
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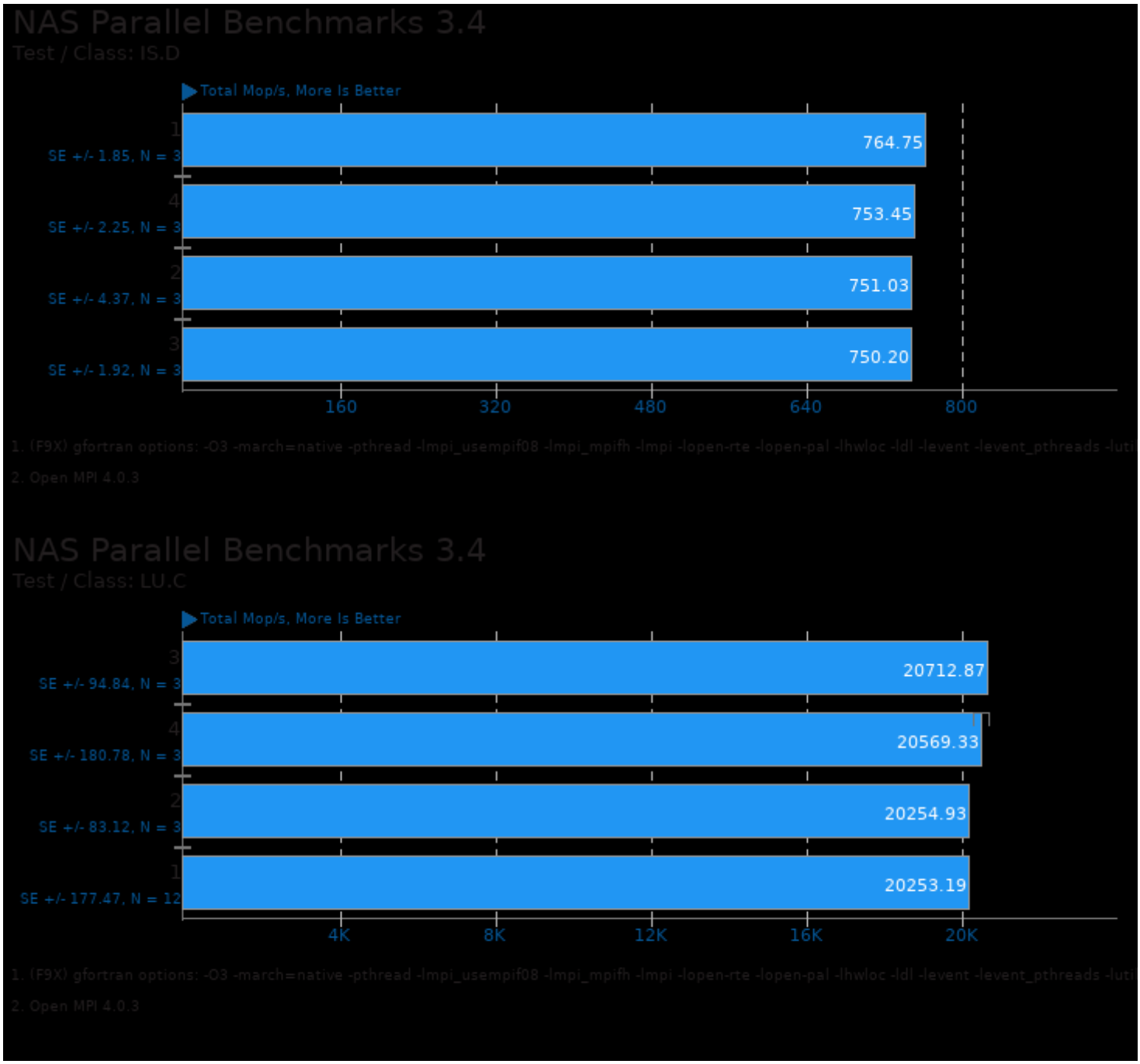
NAS Parallel Benchmarks - FT.C (Mop/s)	10980	10681	10724	10755
Normalized	100%	97.27%	97.67%	97.95%
Standard Deviation	0.9%	0.9%	1.3%	0.4%
NAS Parallel Benchmarks - IS.D	764.75	751.03	750.20	753.45
Normalized	100%	98.21%	98.1%	98.52%
Standard Deviation	0.4%	1%	0.4%	0.5%
NAS Parallel Benchmarks - LU.C (Mop/s)	20253	20255	20713	20569
Normalized	97.78%	97.79%	100%	99.31%
Standard Deviation	3%	0.7%	0.8%	1.5%
NAS Parallel Benchmarks - MG.C (Mop/s)	9404	9412	9483	9429
Normalized	99.16%	99.26%	100%	99.43%
Standard Deviation	0.4%	0.3%	1.1%	0.5%
lzbench - XZ 0 - Compression (MB/s)	37	37	37	37
lzbench - XZ 0 - Decompression	102	102	102	102
lzbench - Zstd 1 - Compression (MB/s)	457	457	454	458
Normalized	99.78%	99.78%	99.13%	100%
Standard Deviation			0.8%	0.2%
lzbench - Zstd 1 - Decompression	1566	1566	1563	1565
Normalized	100%	100%	99.81%	99.94%
Standard Deviation	0.2%	0.1%	0.1%	0.1%
lzbench - Zstd 8 - Compression (MB/s)	79	78	79	80
Normalized	98.75%	97.5%	98.75%	100%
Standard Deviation		0.7%	1.3%	0.7%
lzbench - Zstd 8 - Decompression	1683	1674	1678	1682
Normalized	100%	99.47%	99.7%	99.94%
Standard Deviation	0.2%	0.6%	0.5%	0.6%
lzbench - Crush 0 - Compression	95	98	96	96
Normalized	96.94%	100%	97.96%	97.96%
Standard Deviation		1.2%	1.8%	
lzbench - Crush 0 - Decompression (MB/s)	456	456	456	456
lzbench - Brotli 0 - Compression	419	421	420	418
Normalized	99.52%	100%	99.76%	99.29%
Standard Deviation		0.3%	0.4%	0.3%
lzbench - Brotli 0 - Decompression (MB/s)	576	576	576	576
Standard Deviation		0.2%		0.4%
lzbench - Brotli 2 - Compression	168	168	168	168
Standard Deviation				0.6%
lzbench - Brotli 2 - Decompression (MB/s)	669	670	671	669
Normalized	99.7%	99.85%	100%	99.7%
Standard Deviation	0.2%	0.3%	0.2%	
lzbench - Libdeflate 1 - Compression (MB/s)	216	217	218	217
Normalized	99.08%	99.54%	100%	99.54%
Standard Deviation	0.8%	0.5%	0.3%	
Cython Benchmark - N-Queens (sec)	26.960	26.918	26.610	26.646
Normalized	98.7%	98.86%	100%	99.86%
Standard Deviation	2.7%	1.6%	0.3%	0.3%

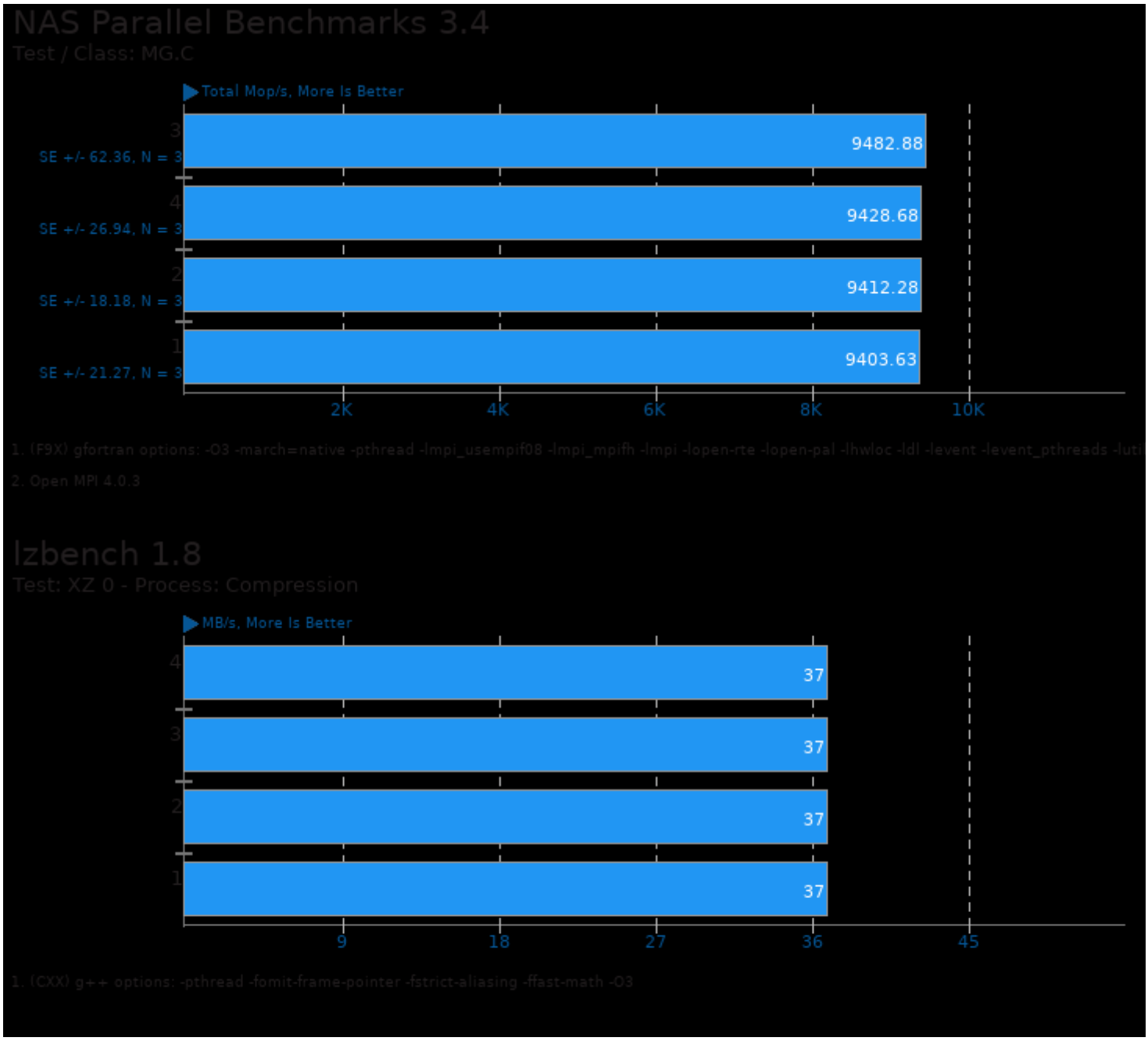
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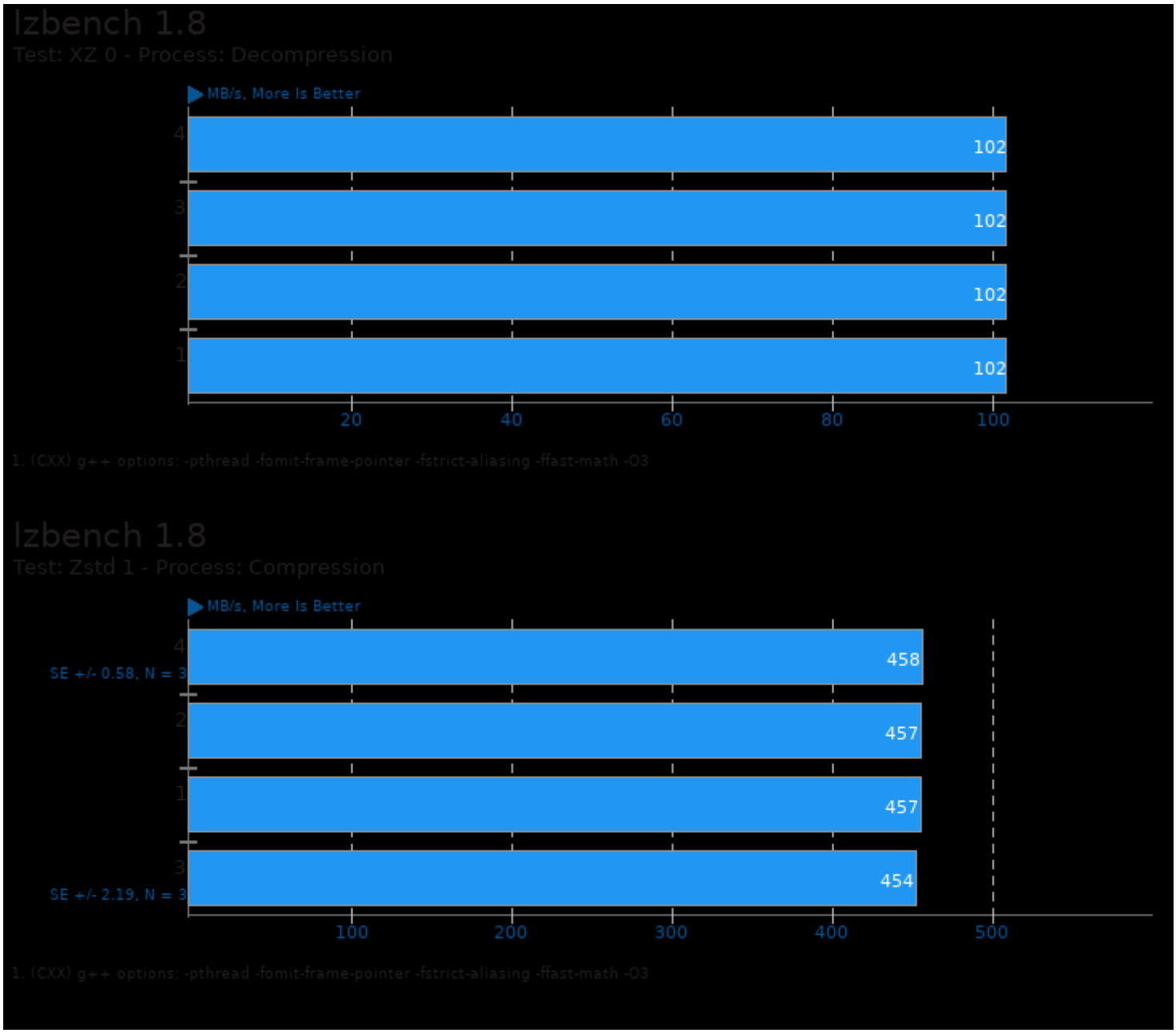
Gcrypt Library (sec)	**240.484**	240.000	240.396	**239.888**
Normalized	99.75%	99.95%	99.79%	100%
Standard Deviation	0.3%	0.2%	0.4%	0.3%
FinanceBench - Repo OpenMP (ms)	56311	**56523**	56380	**56125**
Normalized	99.67%	99.3%	99.55%	100%
Standard Deviation	2.3%	2%	2%	2.4%
FinanceBench - Bonds OpenMP (ms)	**80455**	**81623**	80803	80975
Normalized	100%	98.57%	99.57%	99.36%
Standard Deviation	1%	3.1%	0.3%	0.3%
Redis - LPOP (Reqs/sec)	**2702506**	1658522	**1623836**	1659280
Normalized	100%	61.37%	60.09%	61.4%
Standard Deviation	0.1%	0.4%	0.9%	0.8%
Redis - SADD (Reqs/sec)	**2167901**	2153033	**2130545**	2144146
Normalized	100%	99.31%	98.28%	98.9%
Standard Deviation	0.7%	1%	2.2%	1.2%
Redis - LPUSH (Reqs/sec)	1640798	1635402	**1631175**	**1644398**
Normalized	99.78%	99.45%	99.2%	100%
Standard Deviation	0.3%	1.1%	0.4%	0.3%
Redis - GET (Reqs/sec)	**2565361**	2415589	**2386051**	2435956
Normalized	100%	94.16%	93.01%	94.96%
Standard Deviation	2.4%	2.3%	2.3%	0.6%
Redis - SET (Reqs/sec)	**1837221**	1898200	**1916971**	1896698
Normalized	95.84%	99.02%	100%	98.94%
Standard Deviation	2.1%	1.1%	0.4%	1.3%
GnuPG - 2.7.S.F.E (sec)	**73.613**	73.283	**72.915**	72.959
Normalized	99.05%	99.5%	100%	99.94%
Standard Deviation	0.5%	0.4%	0.1%	0.1%

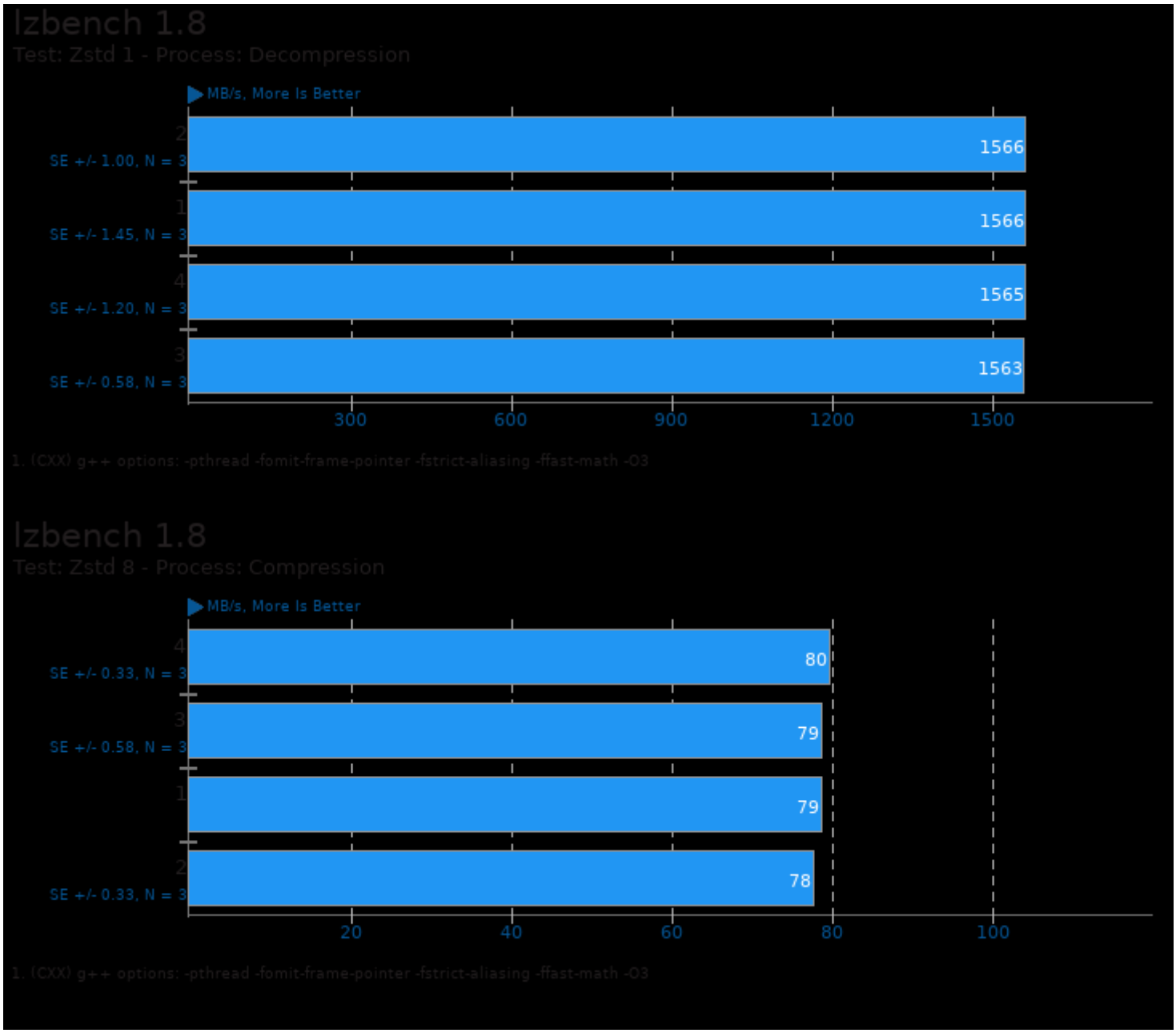

NAS Parallel Benchmarks 3.4
Test / Class: CG.C
Total Mop/s, More Is Better
1
SE +/- 54.10, N = 4
4816.29
3
SE +/- 64.76, N = 3
4636.75
2
SE +/- 59.32, N = 3
4629.03
4
SE +/- 53.45, N = 4
4605.86
1000
2000
3000
4000
5000
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -ldl -levent -levent_pthreads -luti
2. Open MPI 4.0.3
NAS Parallel Benchmarks 3.4
Test / Class: EP.C
Total Mop/s, More Is Better
1
SE +/- 14.67, N = 15
915.26
3
SE +/- 10.92, N = 15
906.10
4
SE +/- 11.14, N = 15
893.50
2
SE +/- 11.57, N = 15
890.09
200
400
600
800
1000
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -ldl -levent -levent_pthreads -luti
2. Open MPI 4.0.3

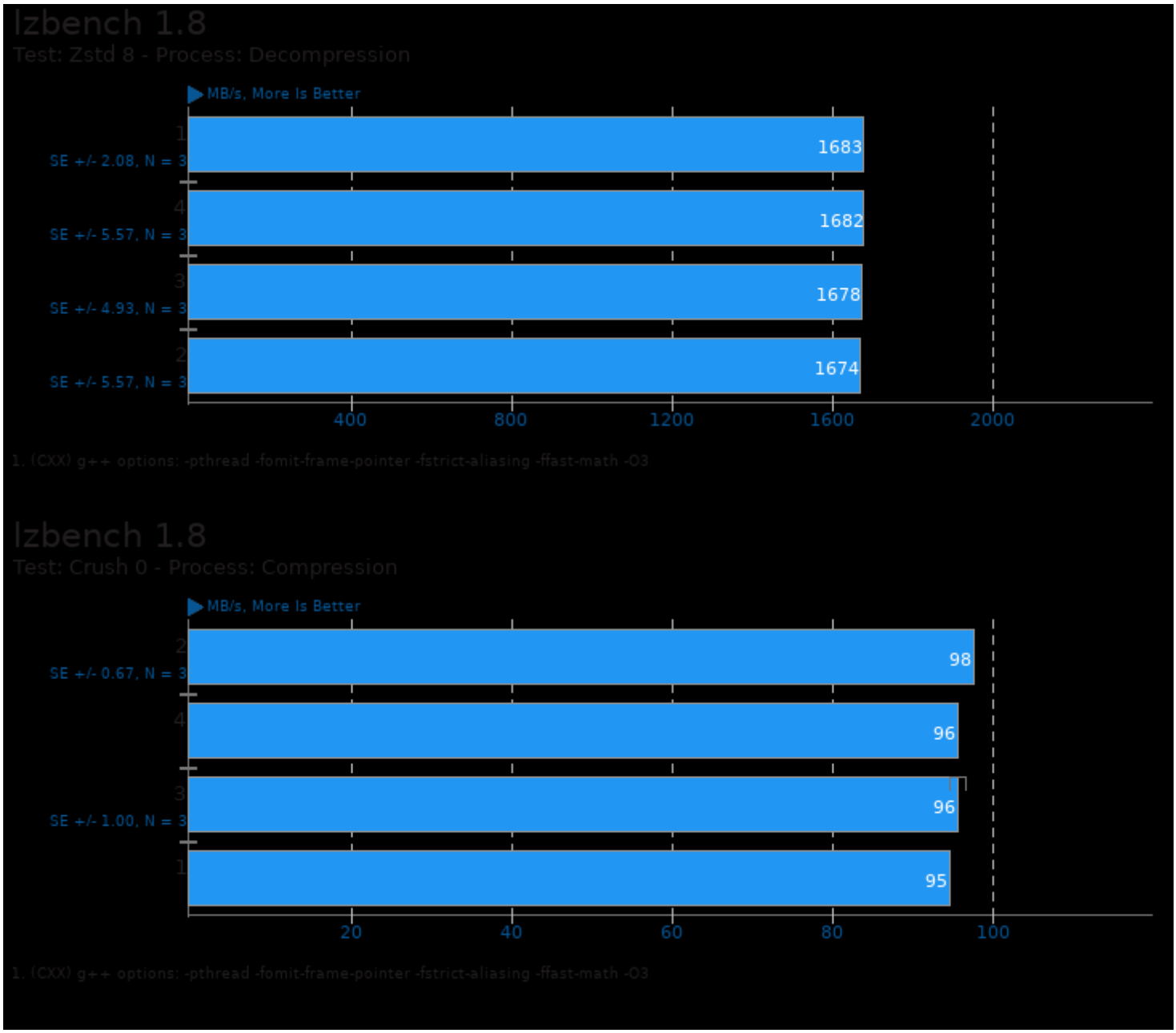

NAS Parallel Benchmarks 3.4
Test / Class: EP.D
Total Mop/s, More Is Better
1
SE +/- 3.60, N = 3
822.00
4
SE +/- 1.05, N = 3
813.42
3
SE +/- 3.30, N = 3
813.23
2
SE +/- 10.12, N = 3
785.97
200
400
600
800
1000
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -ldl -levent -levent_pthreads -luti
2. Open MPI 4.0.3
NAS Parallel Benchmarks 3.4
Test / Class: FT.C
Total Mop/s, More Is Better
1
SE +/- 58.19, N = 3
10980.34
4
SE +/- 24.04, N = 3
10755.04
3
SE +/- 77.54, N = 3
10724.44
2
SE +/- 56.79, N = 3
10680.90
2K
4K
6K
8K
10K
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -ldl -levent -levent_pthreads -luti
2. Open MPI 4.0.3

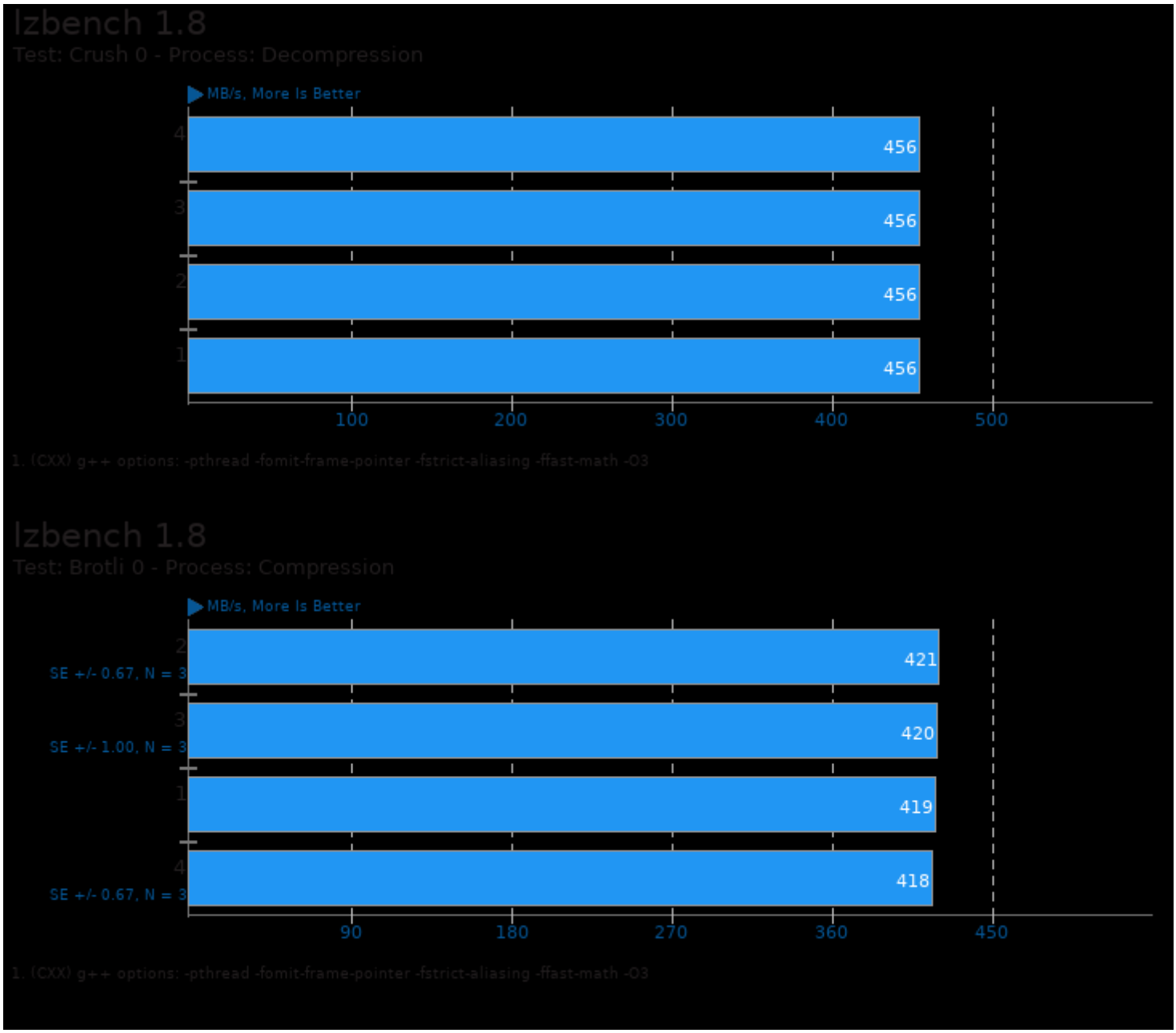

NAS Parallel Benchmarks 3.4
Test / Class: IS.D
Total Mop/s, More Is Better
1
SE +/- 1.85, N = 3
764.75
4
SE +/- 2.25, N = 3
753.45
2
SE +/- 4.37, N = 3
751.03
3
SE +/- 1.92, N = 3
750.20
160
320
480
640
800
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -ldl -levent -levent_pthreads -luti
2. Open MPI 4.0.3
NAS Parallel Benchmarks 3.4
Test / Class: LU.C
Total Mop/s, More Is Better
3
SE +/- 94.84, N = 3
20712.87
4
SE +/- 180.78, N = 3
20569.33
2
SE +/- 83.12, N = 3
20254.93
1
SE +/- 177.47, N = 12
20253.19
4K
8K
12K
16K
20K
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -ldl -levent -levent_pthreads -luti
2. Open MPI 4.0.3

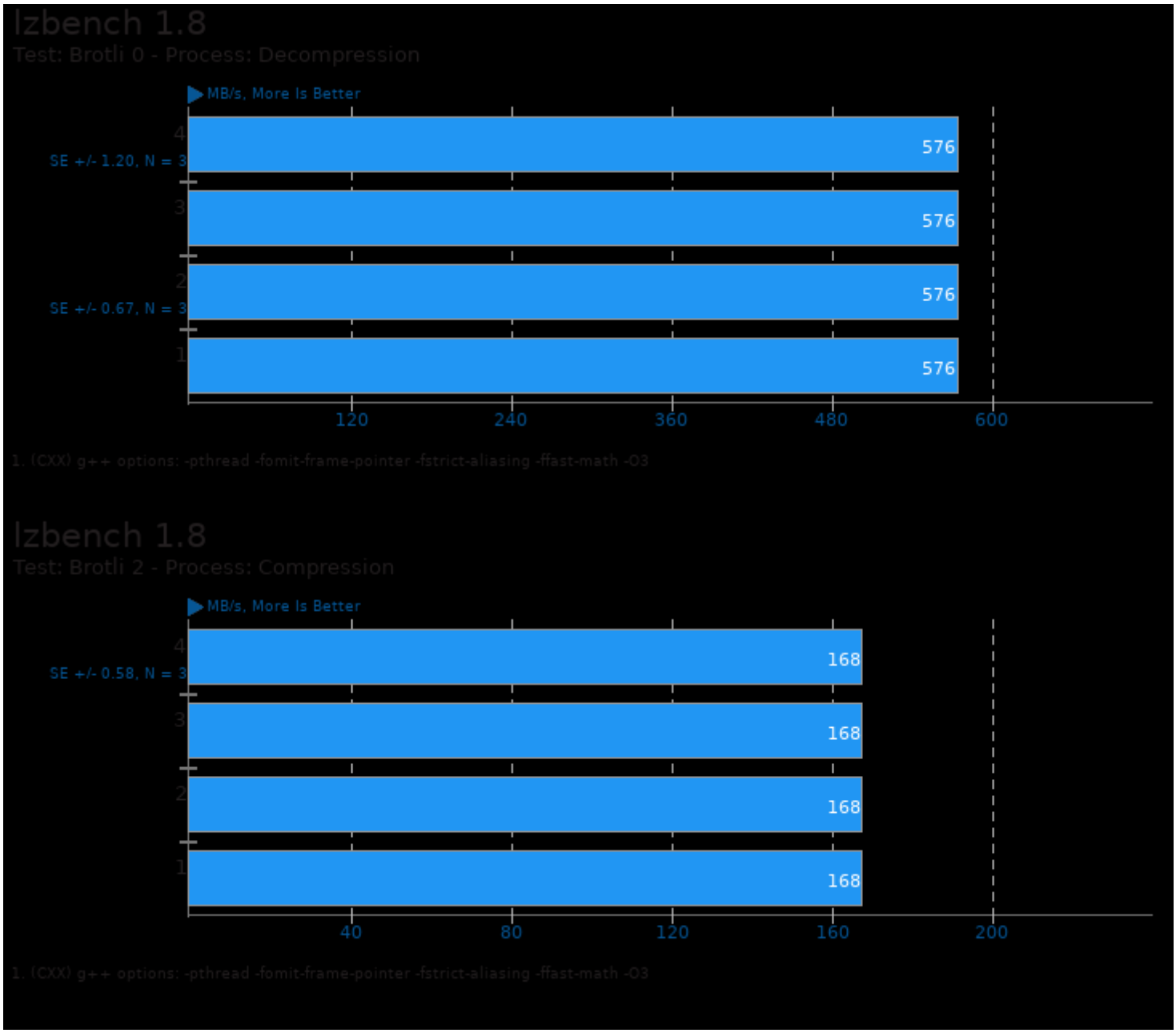

NAS Parallel Benchmarks 3.4
Test / Class: MG.C
Total Mop/s, More Is Better
3
SE +/- 62.36, N = 3
9482.88
4
SE +/- 26.94, N = 3
9428.68
2
SE +/- 18.18, N = 3
9412.28
1
SE +/- 21.27, N = 3
9403.63
2K
4K
6K
8K
10K
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -ldl -levent -levent_pthreads -luti
2. Open MPI 4.0.3
lzbench 1.8
Test: XZ 0 - Process: Compression
MB/s, More Is Better
4
37
3
37
2
37
1
37
9
18
27
36
45
1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3


lzbench 1.8
Test: XZ 0 - Process: Decompression
MB/s, More Is Better
4
3
2
1
102
102
102
102
20
40
60
80
100
1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3
lzbench 1.8
Test: Zstd 1 - Process: Compression
MB/s, More Is Better
SE +/- 0.58, N = 3
SE +/- 2.19, N = 3
458
457
457
454
100
200
300
400
500
1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3


lzbench 1.8
Test: Zstd 1 - Process: Decompression
MB/s, More Is Better
2
SE +/- 1.00, N = 3
1566
1
SE +/- 1.45, N = 3
1566
4
SE +/- 1.20, N = 3
1565
3
SE +/- 0.58, N = 3
1563
300
600
900
1200
1500
1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3
lzbench 1.8
Test: Zstd 8 - Process: Compression
MB/s, More Is Better
4
SE +/- 0.33, N = 3
80
3
SE +/- 0.58, N = 3
79
1
79
2
SE +/- 0.33, N = 3
78
20
40
60
80
100
1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

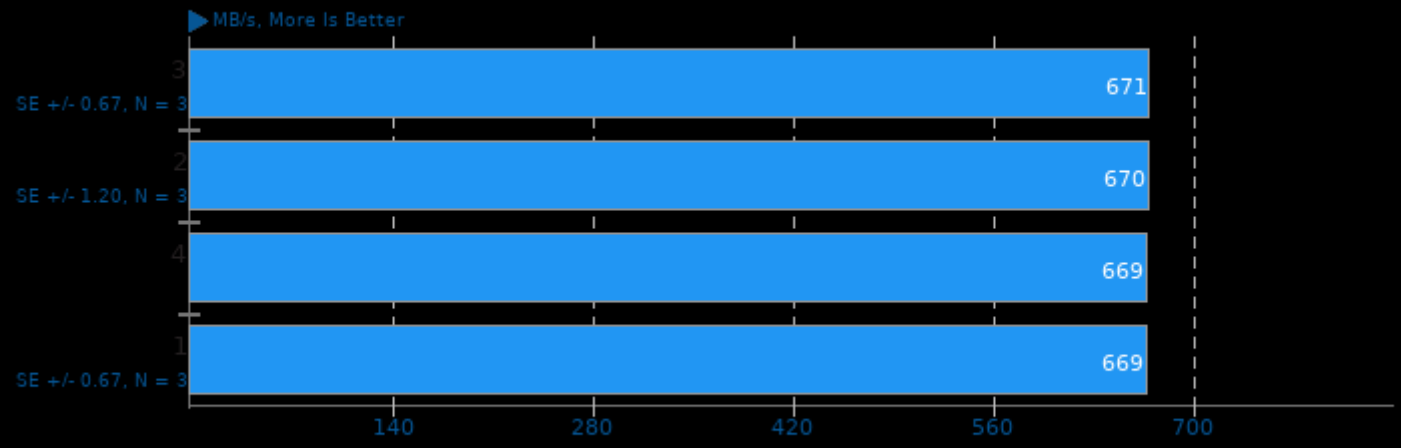

lzbench 1.8
Test: Zstd 8 - Process: Decompression
MB/s, More Is Better
1
SE +/- 2.08, N = 3
1683
4
SE +/- 5.57, N = 3
1682
3
SE +/- 4.93, N = 3
1678
2
SE +/- 5.57, N = 3
1674
400
800
1200
1600
2000
1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3
lzbench 1.8
Test: Crush 0 - Process: Compression
MB/s, More Is Better
2
SE +/- 0.67, N = 3
98
4
96
3
SE +/- 1.00, N = 3
96
1
95
20
40
60
80
100
1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3


lzbench 1.8
Test: Crush 0 - Process: Decompression
MB/s, More Is Better
4
456
3
456
2
456
1
456
100
200
300
400
500
1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3
lzbench 1.8
Test: Brotli 0 - Process: Compression
MB/s, More Is Better
2
SE +/- 0.67, N = 3
421
3
SE +/- 1.00, N = 3
420
1
419
4
SE +/- 0.67, N = 3
418
90
180
270
360
450
1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3


lzbench 1.8
Test: Brotli 0 - Process: Decompression
MB/s, More Is Better
SE +/- 1.20, N = 3
SE +/- 0.67, N = 3
576
576
576
576
120
240
360
480
600
1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3
lzbench 1.8
Test: Brotli 2 - Process: Compression
MB/s, More Is Better
SE +/- 0.58, N = 3
168
168
168
168
40
80
120
160
200
1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

lzbench 1.8

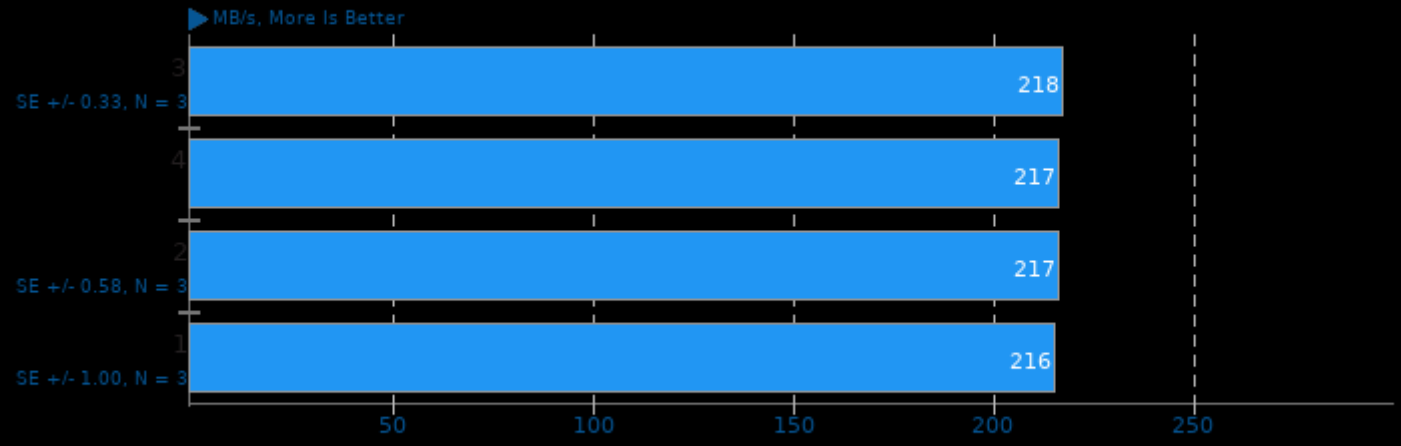
Test: Brotli 2 - Process: Decompression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

lzbench 1.8

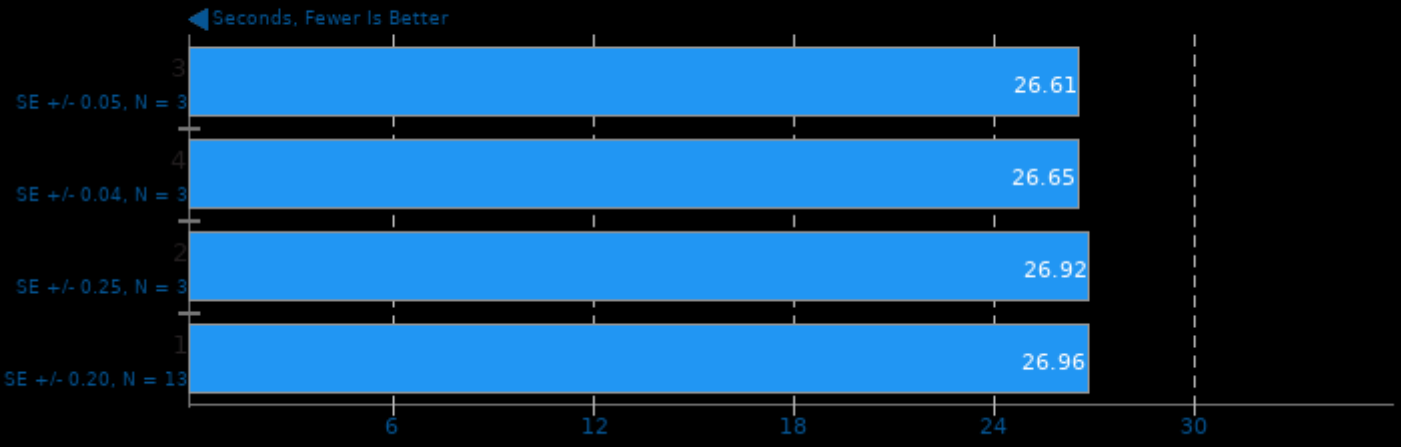
Test: Libdeflate 1 - Process: Compression

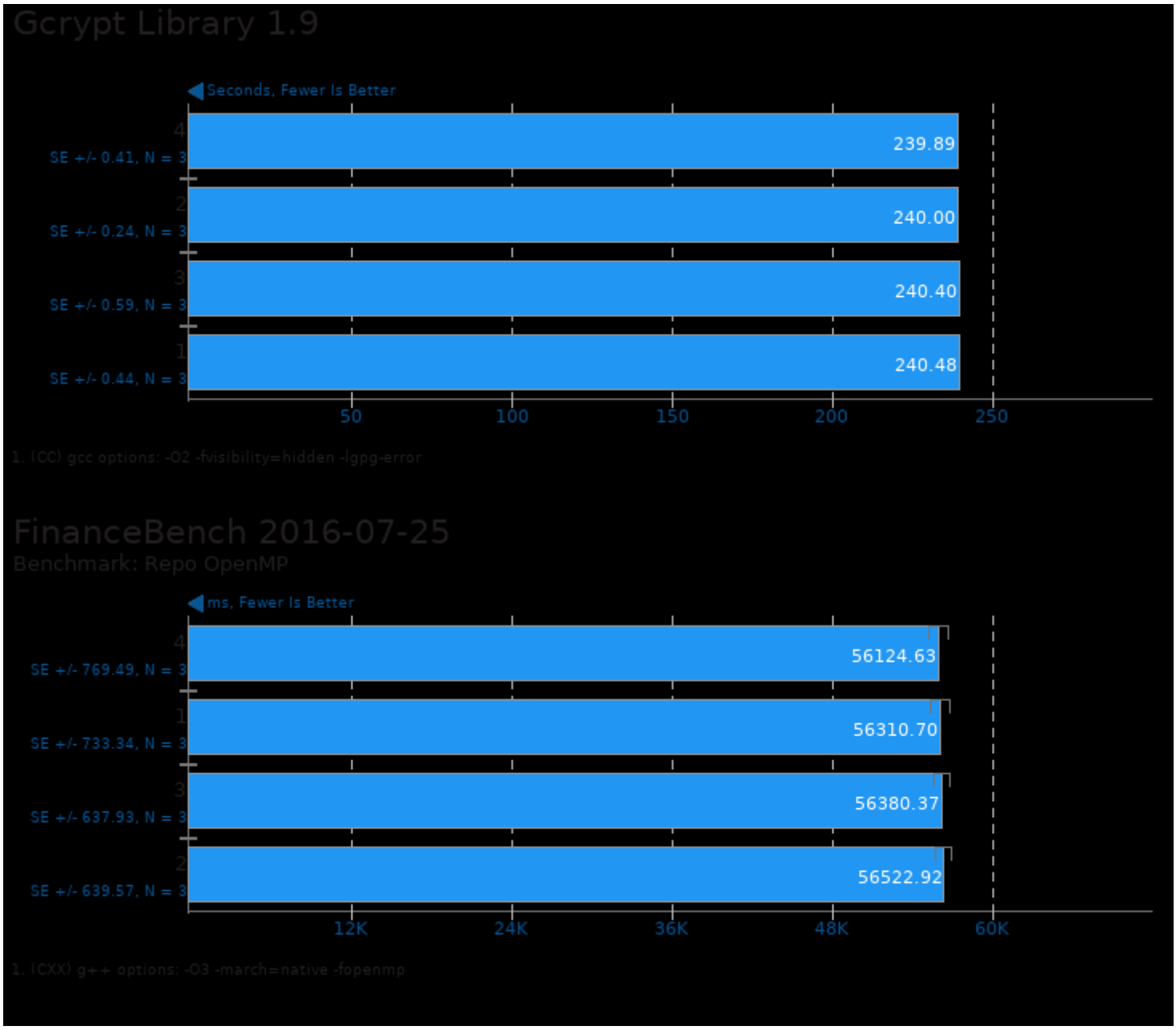


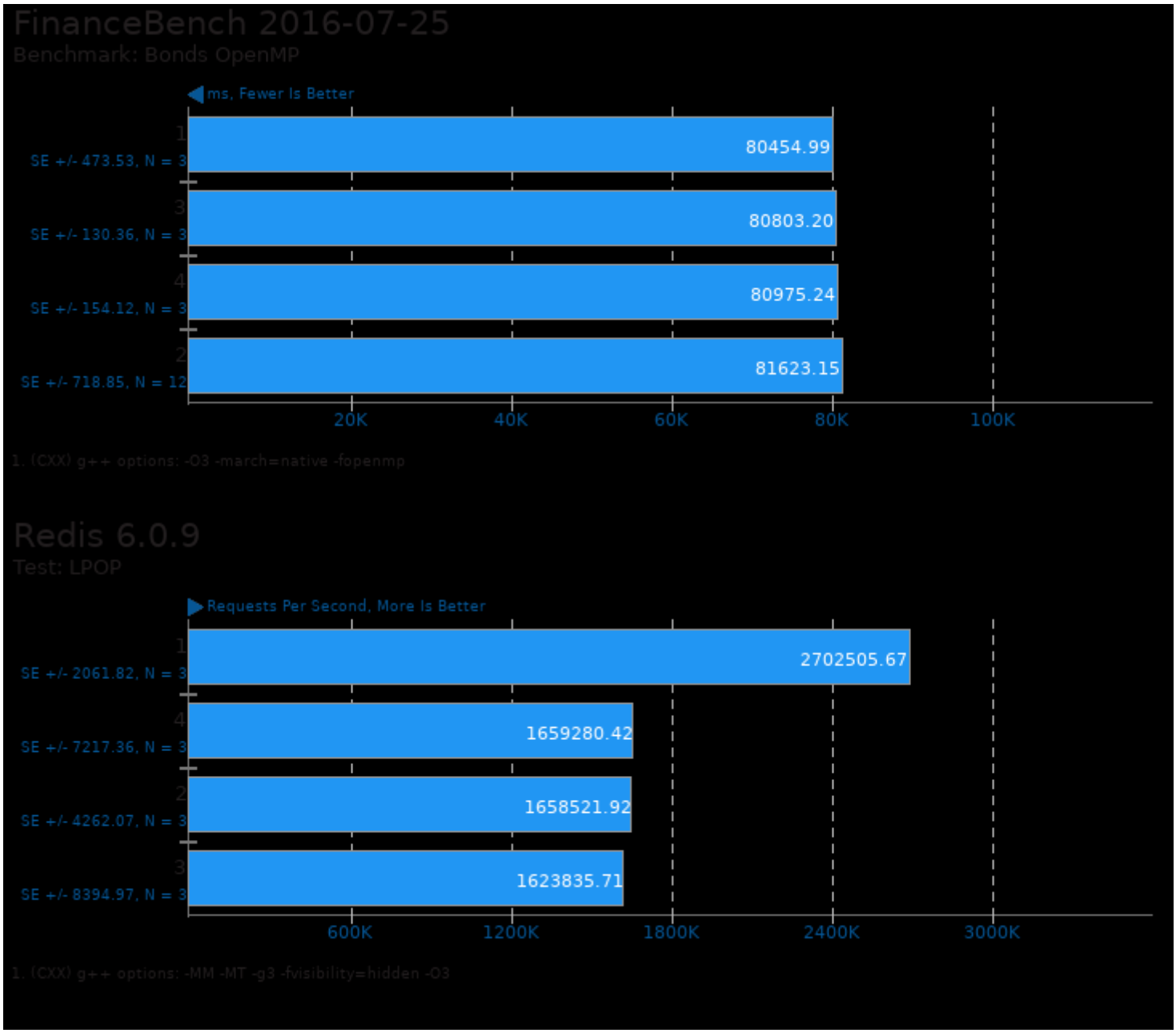
1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

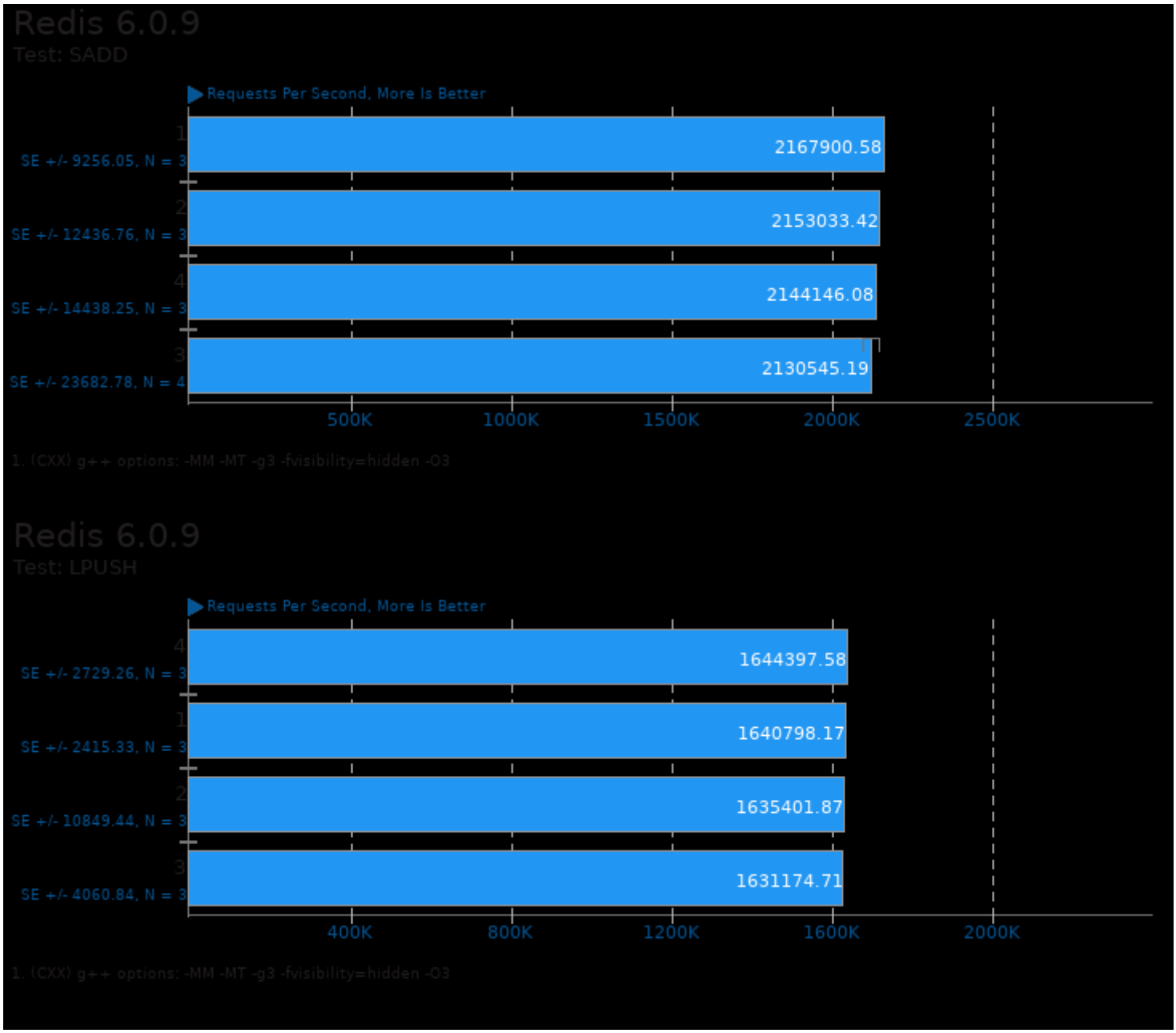
Cython Benchmark 0.29.21

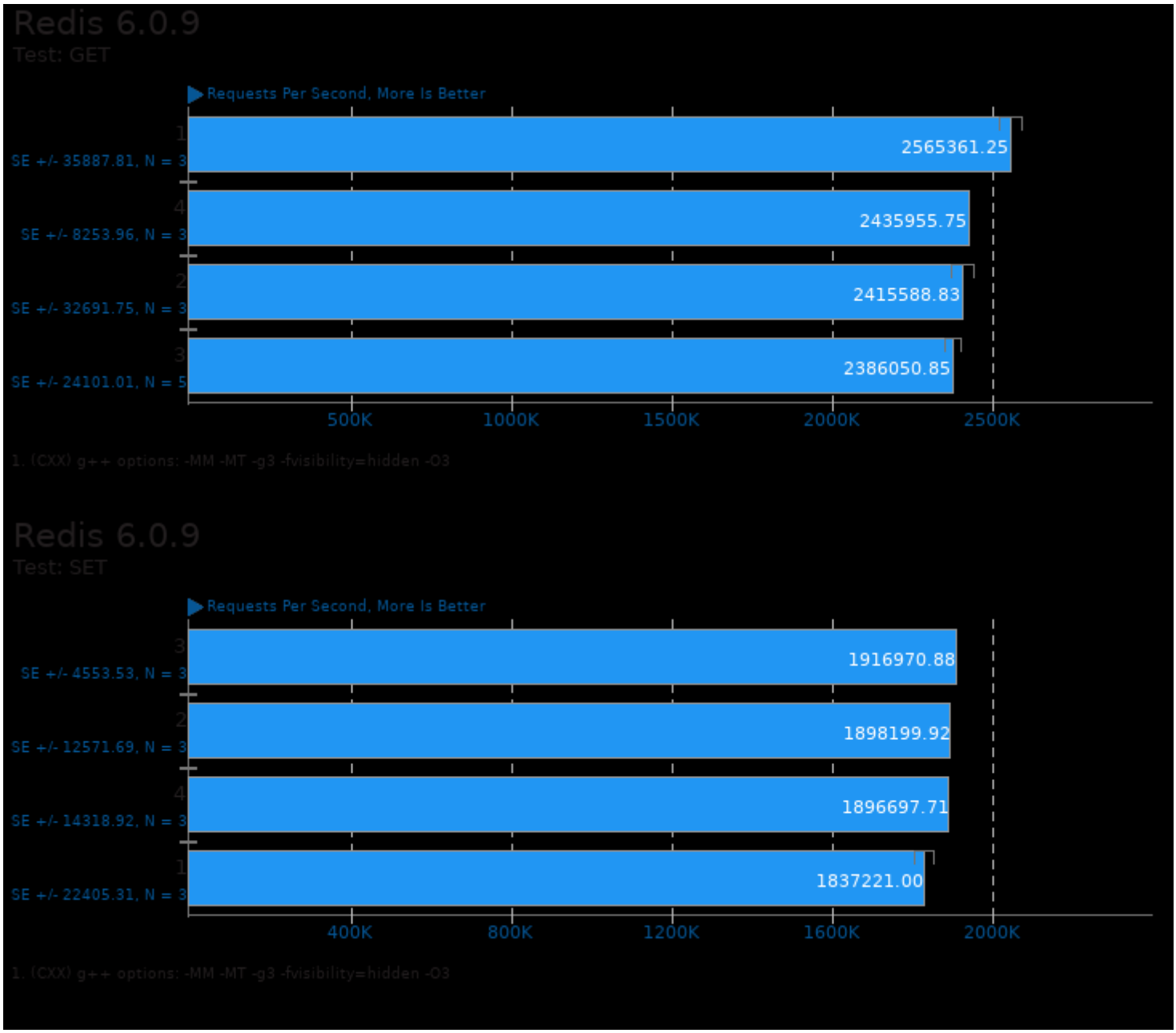
Test: N-Queens



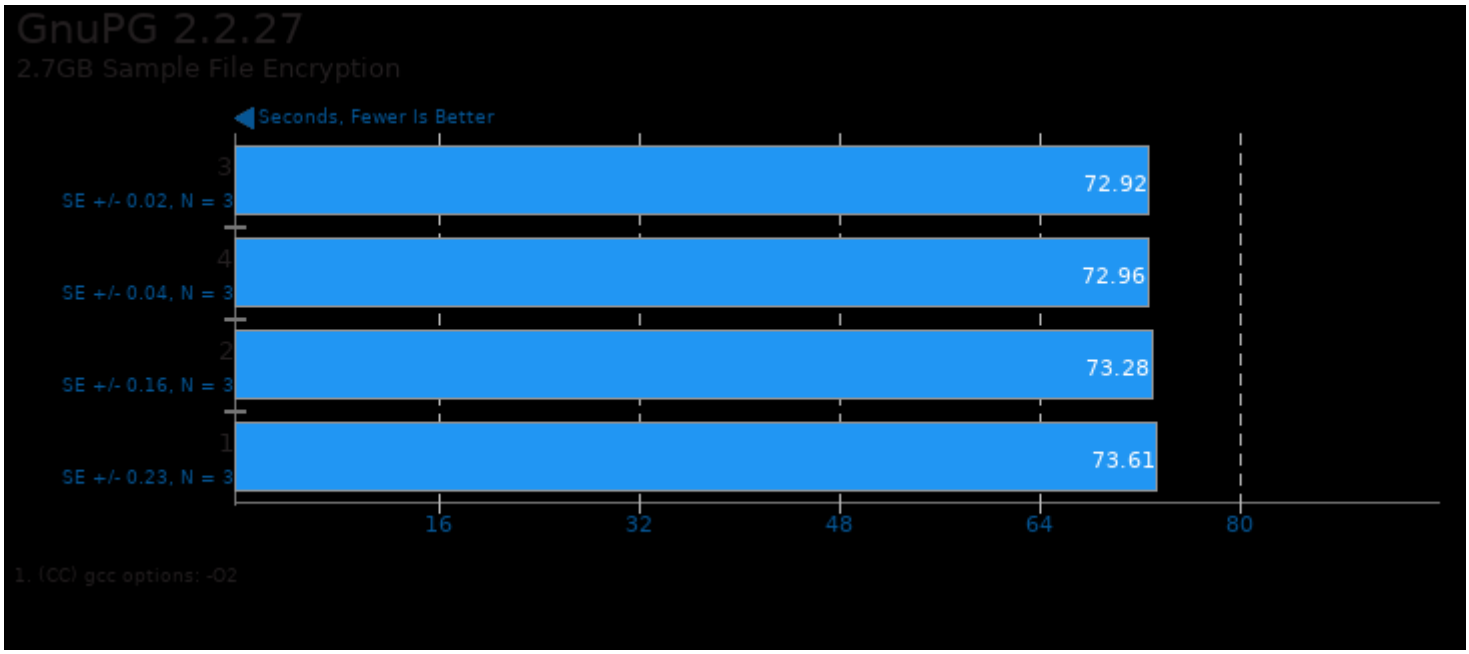

Gcrypt Library 1.9
Seconds, Fewer Is Better
4
SE +/- 0.41, N = 3
239.89
2
SE +/- 0.24, N = 3
240.00
3
SE +/- 0.59, N = 3
240.40
1
SE +/- 0.44, N = 3
240.48
50
100
150
200
250
1. (CC) gcc options: -O2 -fvisibility=hidden -lgpg-error
FinanceBench 2016-07-25
Benchmark: Repo OpenMP
ms, Fewer Is Better
4
SE +/- 769.49, N = 3
56124.63
1
SE +/- 733.34, N = 3
56310.70
3
SE +/- 637.93, N = 3
56380.37
2
SE +/- 639.57, N = 3
56522.92
12K
24K
36K
48K
60K
1. (CXX) g++ options: -O3 -march=native -fopenmp


FinanceBench 2016-07-25
Benchmark: Bonds OpenMP
ms, Fewer Is Better
1
SE +/- 473.53, N = 3
80454.99
3
SE +/- 130.36, N = 3
80803.20
4
SE +/- 154.12, N = 3
80975.24
2
SE +/- 718.85, N = 12
81623.15
20K
40K
60K
80K
100K
1. (CXX) g++ options: -O3 -march=native -fopenmp
Redis 6.0.9
Test: LPOP
Requests Per Second, More Is Better
1
SE +/- 2061.82, N = 3
2702505.67
4
SE +/- 7217.36, N = 3
1659280.42
2
SE +/- 4262.07, N = 3
1658521.92
3
SE +/- 8394.97, N = 3
1623835.71
600K
1200K
1800K
2400K
3000K
1. (CXX) g++ options: -MM -MT -g3 -fvisibility=hidden -O3

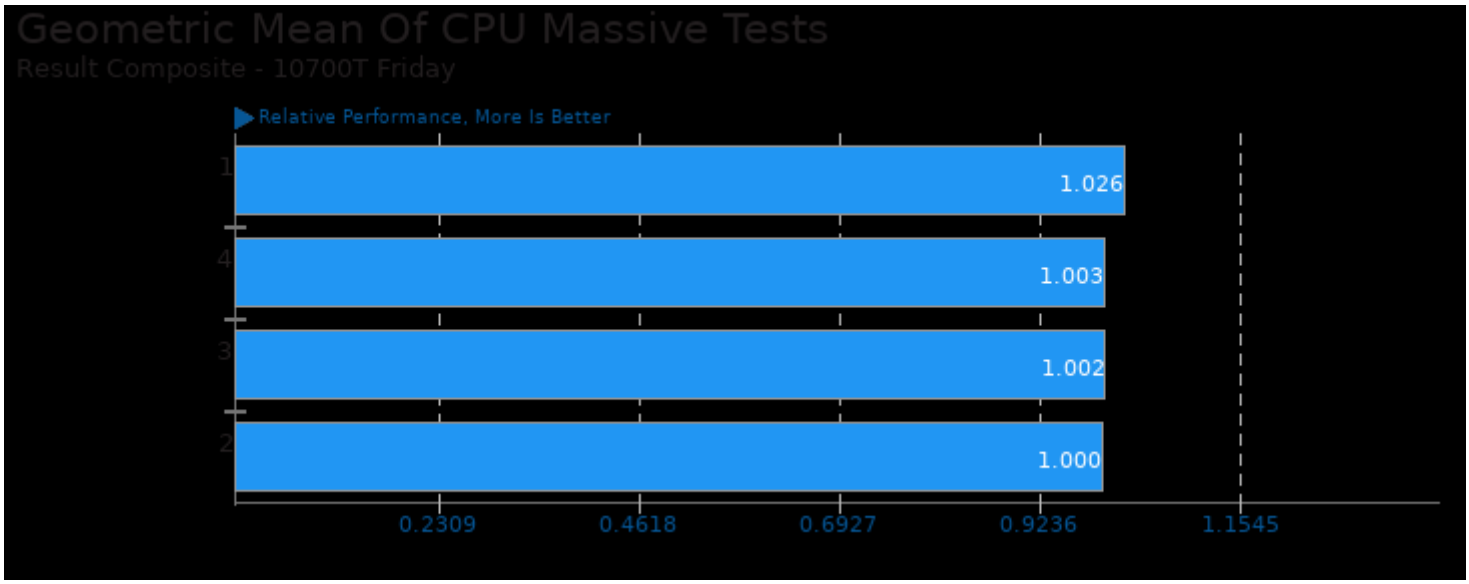

Redis 6.0.9
Test: SADD
Requests Per Second, More Is Better
1
SE +/- 9256.05, N = 3
2167900.58
2
SE +/- 12436.76, N = 3
2153033.42
4
SE +/- 14438.25, N = 3
2144146.08
3
SE +/- 23682.78, N = 4
2130545.19
500K
1000K
1500K
2000K
2500K
1. (CXX) g++ options: -MM -MT -g3 -fvisibility=hidden -O3
Redis 6.0.9
Test: LPUSH
Requests Per Second, More Is Better
4
SE +/- 2729.26, N = 3
1644397.58
1
SE +/- 2415.33, N = 3
1640798.17
2
SE +/- 10849.44, N = 3
1635401.87
3
SE +/- 4060.84, N = 3
1631174.71
400K
800K
1200K
1600K
2000K
1. (CXX) g++ options: -MM -MT -g3 -fvisibility=hidden -O3


Redis 6.0.9
Test: GET
Requests Per Second, More Is Better
1
SE +/- 35887.81, N = 3
2565361.25
4
SE +/- 8253.96, N = 3
2435955.75
2
SE +/- 32691.75, N = 3
2415588.83
3
SE +/- 24101.01, N = 5
2386050.85
500K
1000K
1500K
2000K
2500K
1. (CXX) g++ options: -MM -MT -g3 -fvisibility=hidden -O3
Redis 6.0.9
Test: SET
Requests Per Second, More Is Better
3
SE +/- 4553.53, N = 3
1916970.88
2
SE +/- 12571.69, N = 3
1898199.92
4
SE +/- 14318.92, N = 3
1896697.71
1
SE +/- 22405.31, N = 3
1837221.00
400K
800K
1200K
1600K
2000K
1. (CXX) g++ options: -MM -MT -g3 -fvisibility=hidden -O3

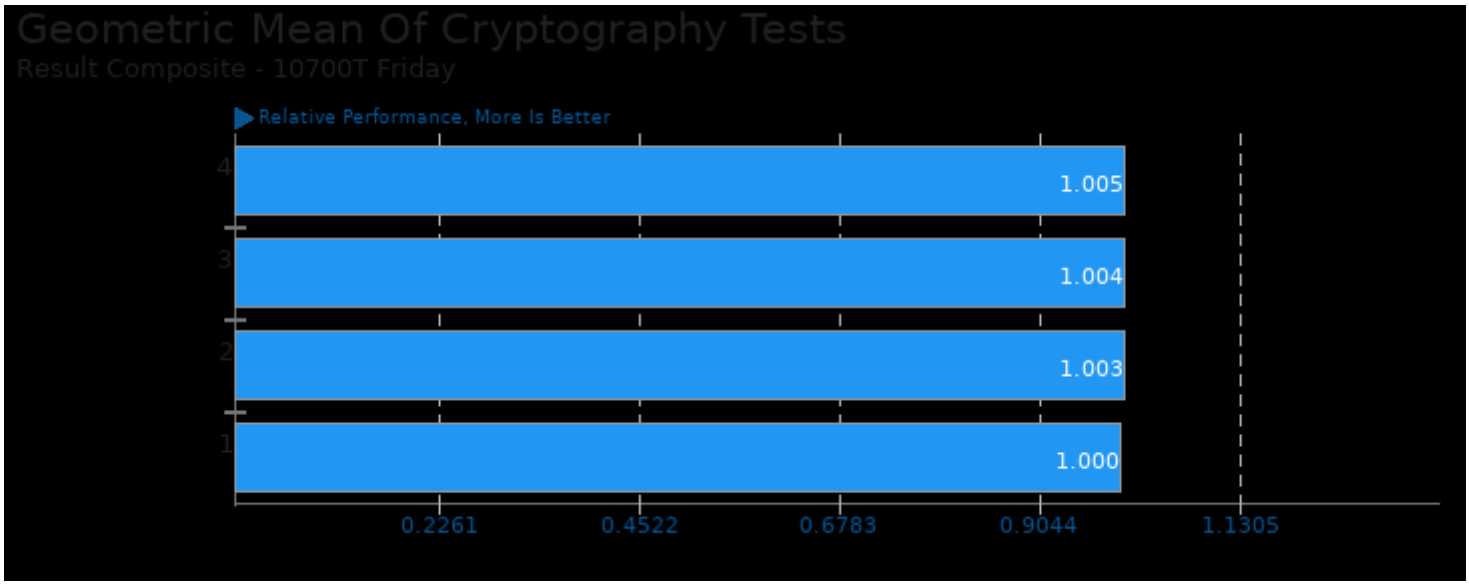
10700T Friday



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

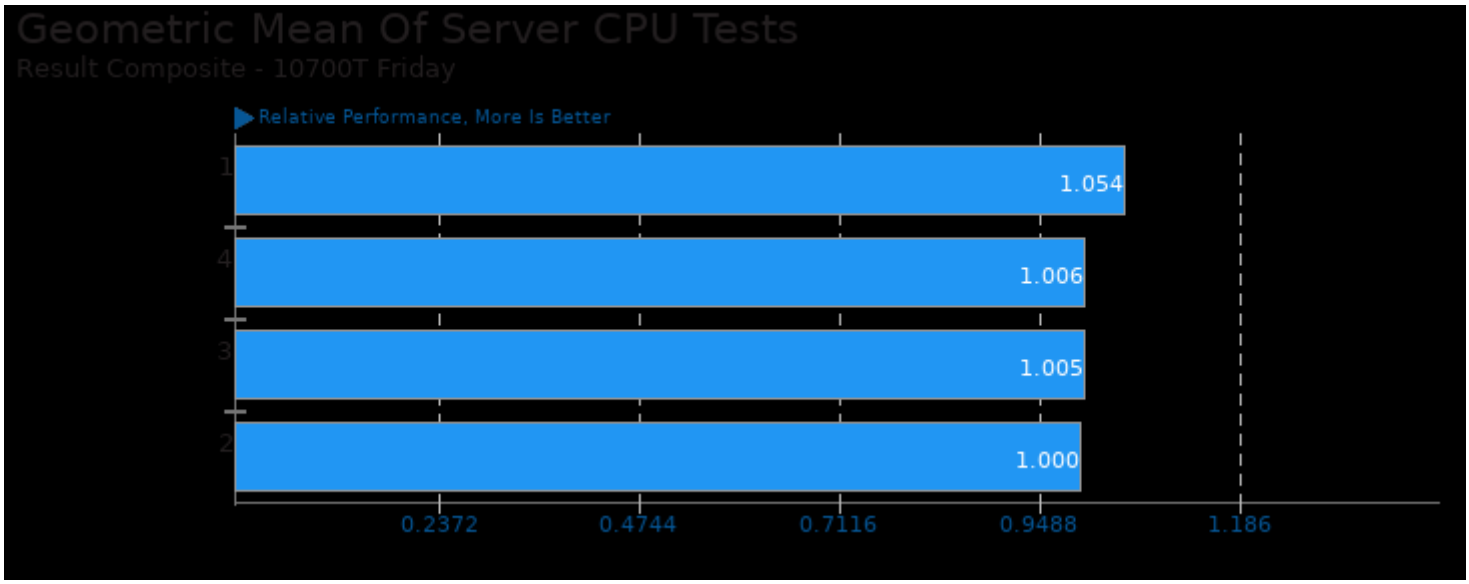


Geometric mean based upon tests: pts/cython-bench, pts/lzbench, pts/npb and pts/redis

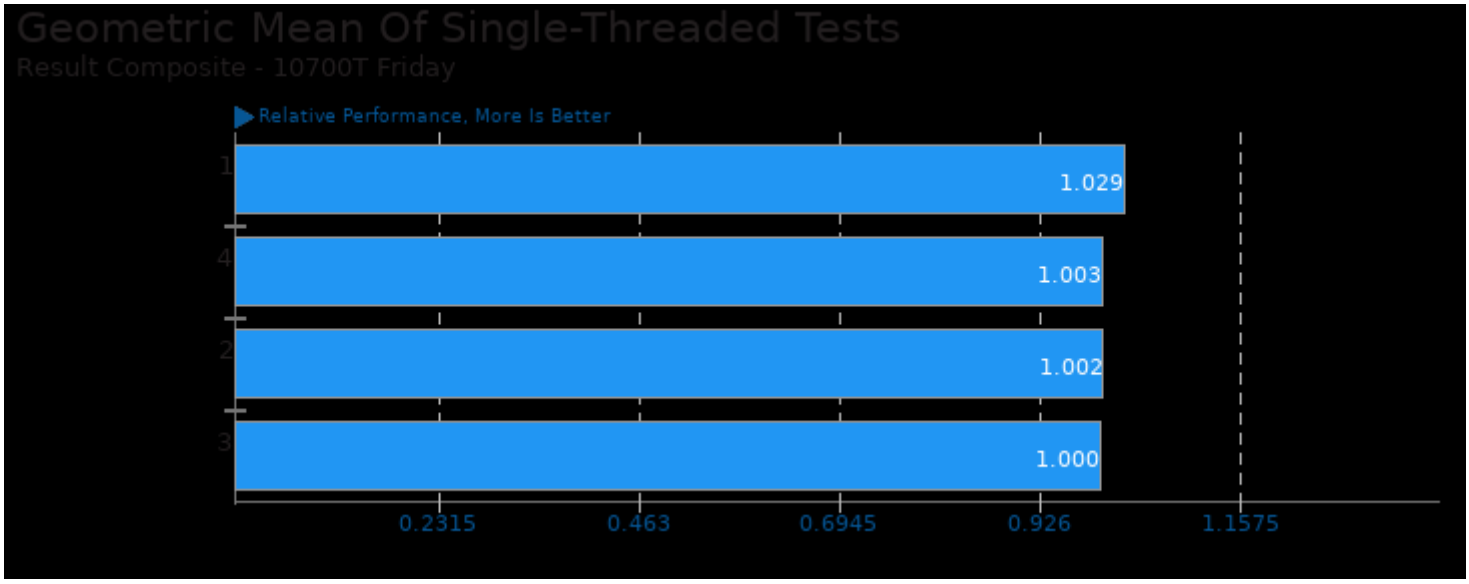


Geometric mean based upon tests: pts/gnupg and pts/gcrypt

10700T Friday



Geometric mean based upon tests: pts/npb, pts/redis and pts/cython-bench



Geometric mean based upon tests: pts/lzbench, pts/gnupg and pts/redis

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 04:45.