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cortex

ARMv8 Cortex-A72 testing with a BCM2835 Raspberry Pi 400 Rev 1.0 and V3D 4.2 4GB on Debian 10 via the Phoronix Test Suite.

Automated Executive Summary

2 had the most wins, coming in first place for 55% of the tests.

Based on the geometric mean of all complete results, the fastest (3) was 1.014x the speed of the slowest (1). 2 was 0.998x the speed of 3, 4 was 0.99x the speed of 2, 1 was 0.999x the speed of 4.

Test Systems:

1

2

3

4

Processor: ARMv8 Cortex-A72 @ 1.80GHz (4 Cores), Motherboard: BCM2835 Raspberry Pi 400 Rev 1.0, Memory: 4096MB, Disk: 32GB GB1QT, Graphics: V3D 4.2 4GB, Monitor: DELL P2210H

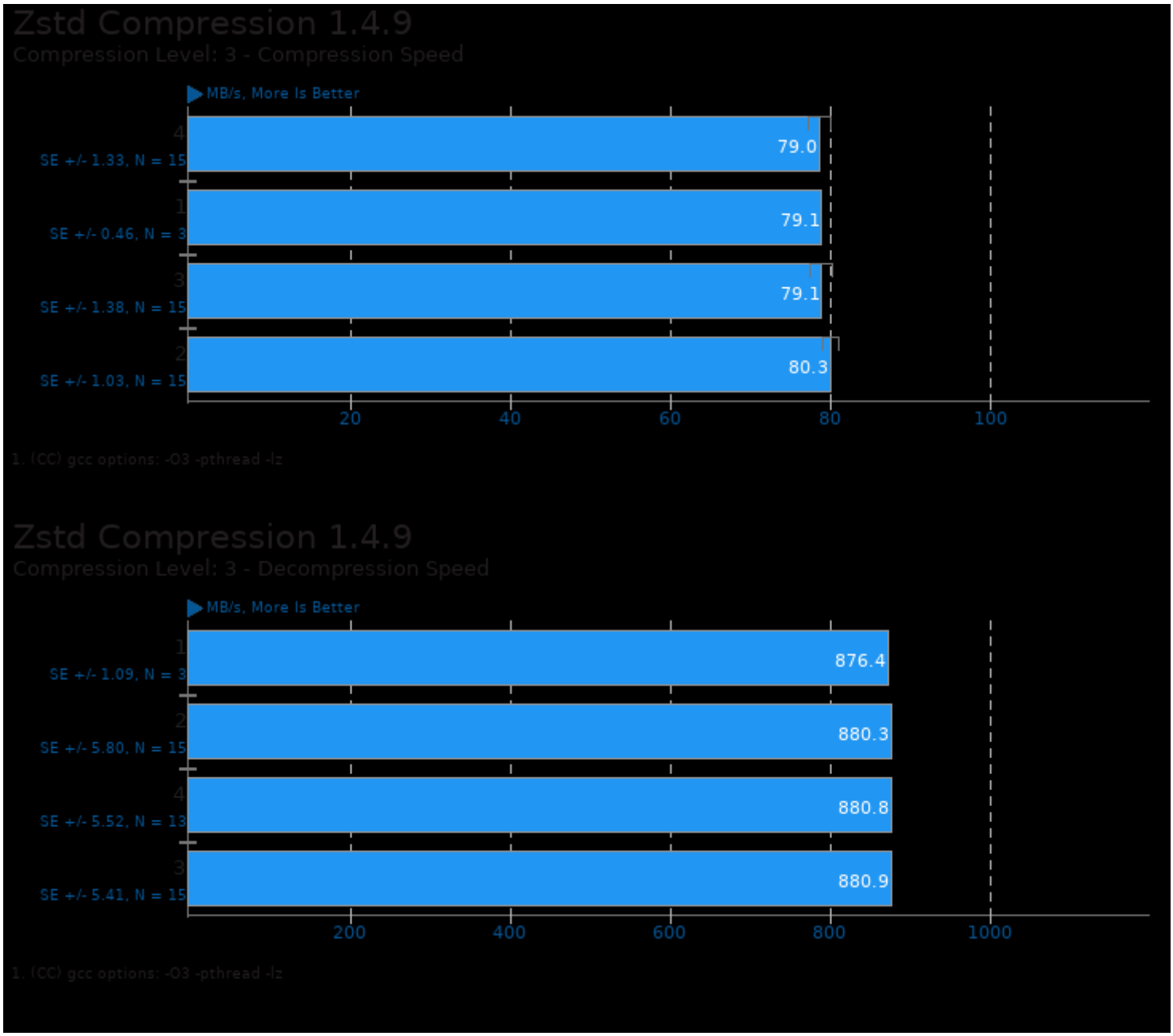
OS: Debian 10, Kernel: 5.4.51-v8+ (aarch64), Desktop: LXDE 0.10.0, Display Server: X Server 1.20.4, Display Driver: v3d, OpenGL: 2.1 Mesa 19.3.2, Compiler: GCC 8.3.0, File-System: ext4, Screen Resolution: 1920x1080

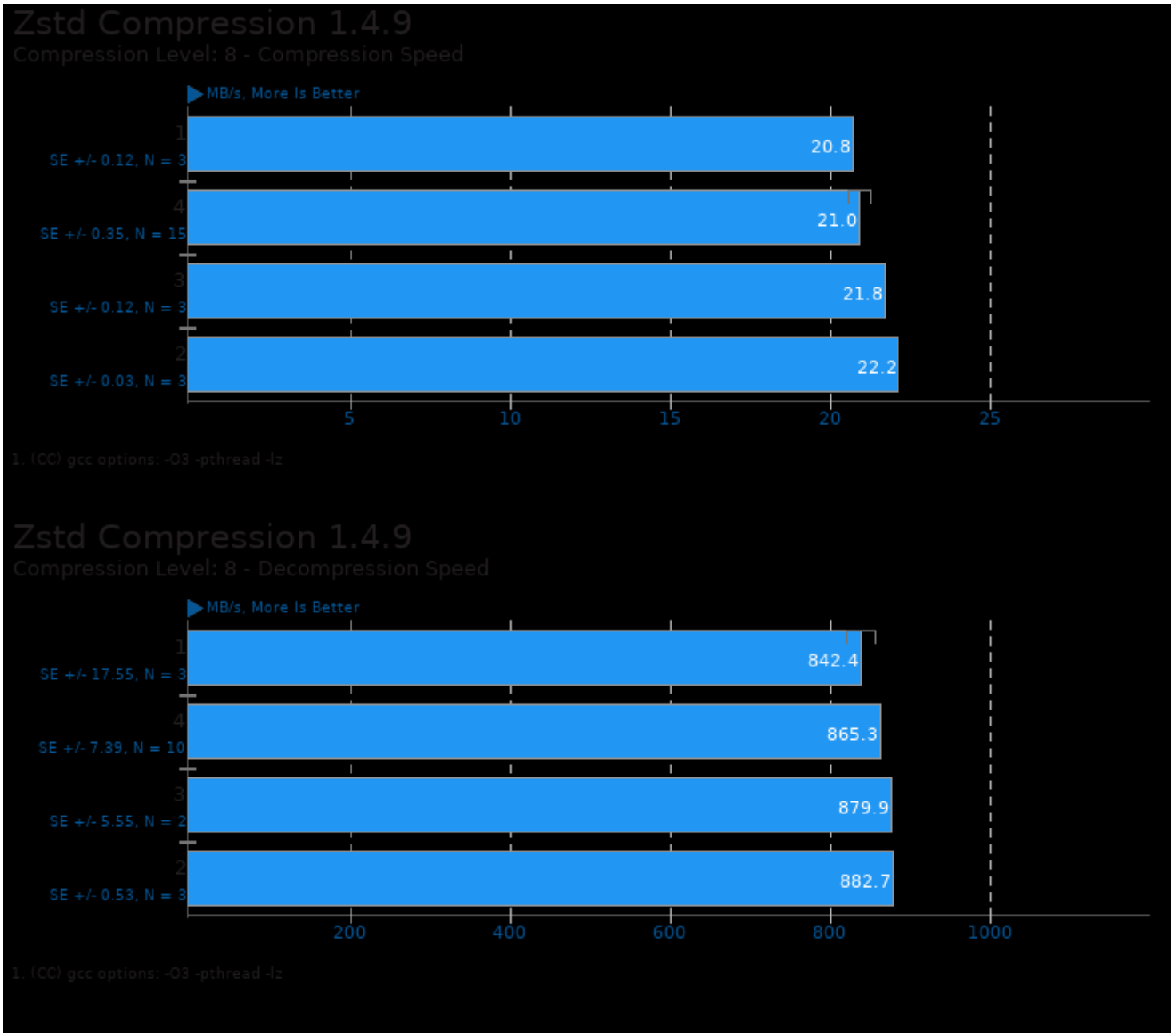
Kernel Notes: snd_bcm2835.enable_compat_alsa=0 snd_bcm2835.enable_hdmi=1 snd_bcm2835.enable_headphones=1
Compiler Notes: --build=aarch64-linux-gnu --disable-libphobos --disable-libquadmath --disable-libquadmath-support --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-fix-cortex-a53-843419 --enable-gnu-unique-object --enable-languages=c,ada,c++,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-plugin --enable-shared --enable-threads=posix --host=aarch64-linux-gnu --program-prefix=aarch64-linux-gnu- --target=aarch64-linux-gnu --with-default-libstdcxx-abi=new --with-gcc-major-version-only -v
Processor Notes: Scaling Governor: cpufreq-dt ondemand
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Vulnerable + spectre_v1: Mitigation of __user pointer sanitization + spectre_v2: Vulnerable + srbds: Not affected + tsx_async_abort: Not affected

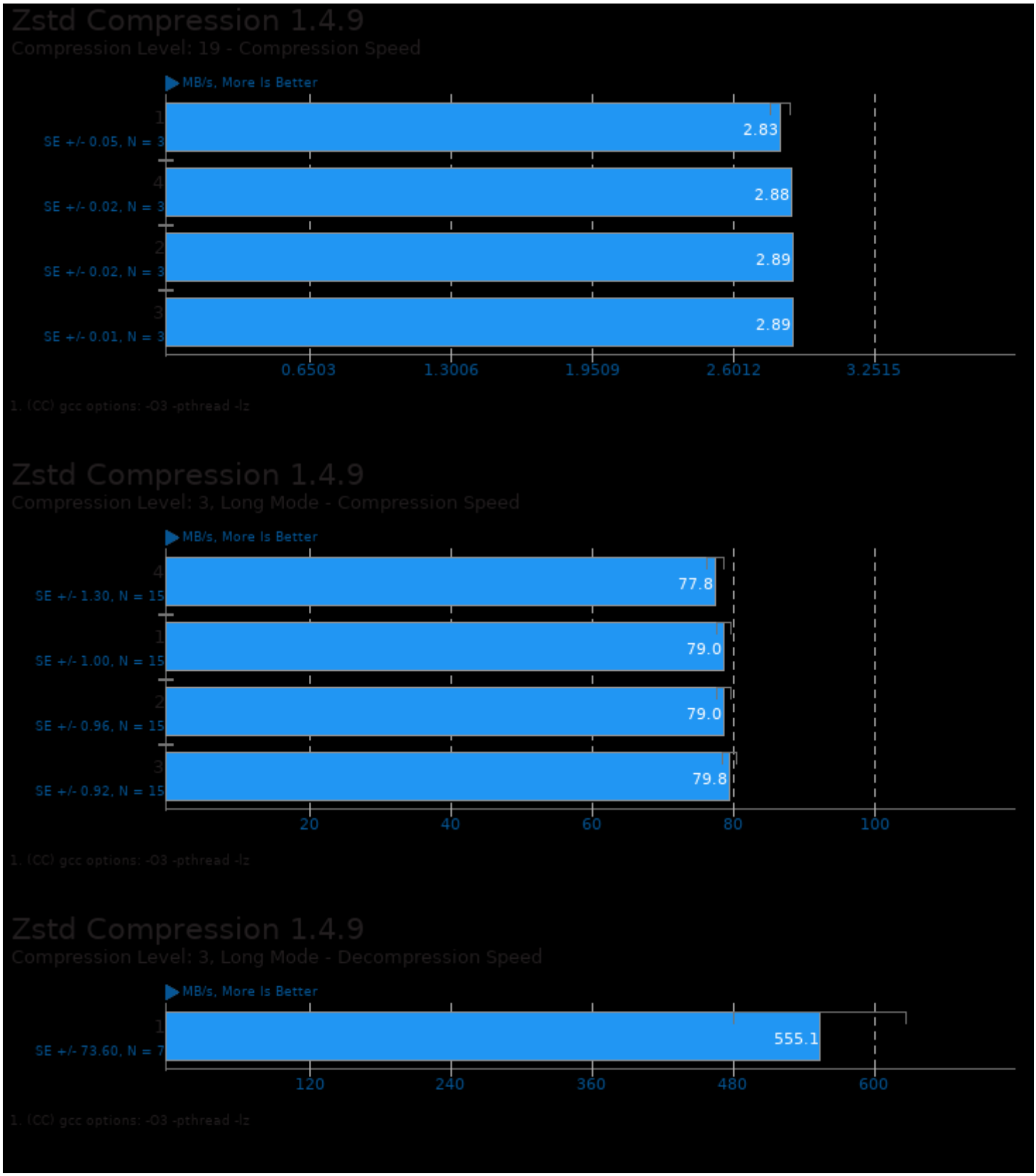
	1	2	3	4
Zstd Compression - 3 - Compression Speed (MB/s)	79.1	**80.3**	79.1	**79.0**
Normalized	98.51%	100%	98.51%	98.38%
Standard Deviation	1%	5%	6.7%	6.5%
Zstd Compression - 3 - D.S (MB/s)	**876.4**	880.3	**880.9**	880.8
Normalized	99.49%	99.93%	100%	99.99%
Standard Deviation	0.2%	2.6%	2.4%	2.3%
Zstd Compression - 8 - Compression Speed (MB/s)	**20.8**	**22.2**	21.8	21.0
Normalized	93.69%	100%	98.2%	94.59%
Standard Deviation	1%	0.3%	1%	6.4%
Zstd Compression - 8 - D.S (MB/s)	**842.4**	**882.7**	879.9	865.3
Normalized	95.43%	100%	99.68%	98.03%
Standard Deviation	3.6%	0.1%	0.9%	2.7%
Zstd Compression - 19 - Compression Speed (MB/s)	**2.83**	**2.89**	**2.89**	2.88
Normalized	97.92%	100%	100%	99.65%
Standard Deviation	2.9%	1.2%	0.4%	1.1%
Zstd Compression - 3, Long Mode - Compression Speed (MB/s)	79.0	79.0	**79.8**	**78.2**
Normalized	97.17%	97.17%	98.15%	96.19%
Standard Deviation	4.9%	4.7%	4.5%	5.9%
Zstd Compression - 3, Long Mode - D.S (MB/s)	555.1			
Standard Deviation	35.1%			
Zstd Compression - 8, Long Mode - Compression Speed (MB/s)	**23.1**	**22.0**	22.9	22.2
Normalized	100%	95.24%	99.13%	96.1%
Standard Deviation	0.4%	6.2%	0.7%	5.8%

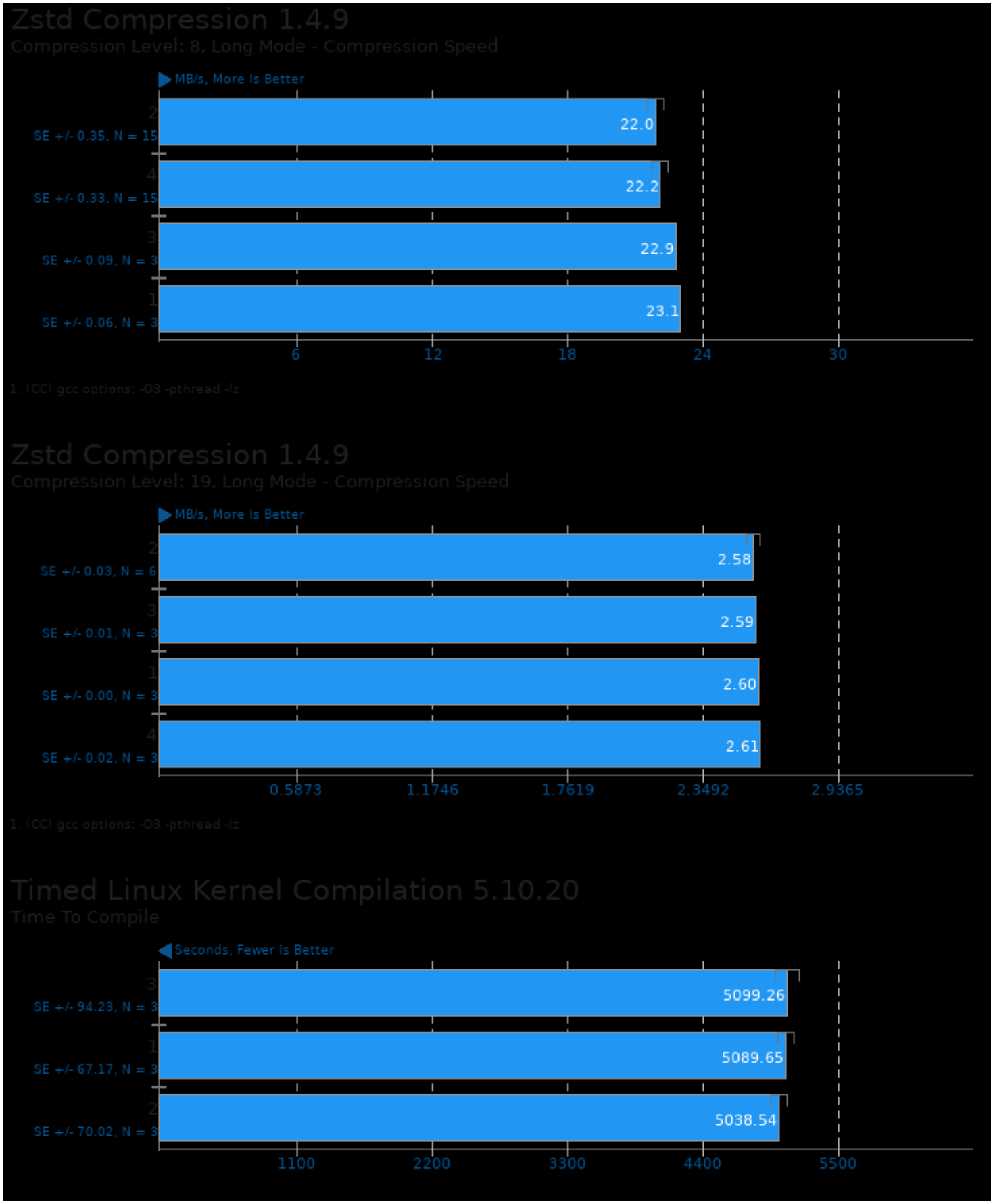
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Zstd Compression - 19, Long Mode - Compression Speed (MB/s)	2.60	**2.58**	2.59	**2.61**
Normalized	99.62%	98.85%	99.23%	100%
Standard Deviation	0.2%	2.9%	0.4%	1.2%
Timed Linux Kernel Compilation - Time To Compile (sec)	5090	**5039**	**5099**	
Normalized	99%	100%	98.81%	
Standard Deviation	2.3%	2.4%	3.2%	


Zstd Compression 1.4.9
Compression Level: 3 - Compression Speed
MB/s, More Is Better
4
SE +/- 1.33, N = 15
79.0
1
SE +/- 0.46, N = 3
79.1
3
SE +/- 1.38, N = 15
79.1
2
SE +/- 1.03, N = 15
80.3
20
40
60
80
100
1. (CC) gcc options: -O3 -pthread -lz
Zstd Compression 1.4.9
Compression Level: 3 - Decompression Speed
MB/s, More Is Better
1
SE +/- 1.09, N = 3
876.4
2
SE +/- 5.80, N = 15
880.3
4
SE +/- 5.52, N = 13
880.8
3
SE +/- 5.41, N = 15
880.9
200
400
600
800
1000
1. (CC) gcc options: -O3 -pthread -lz

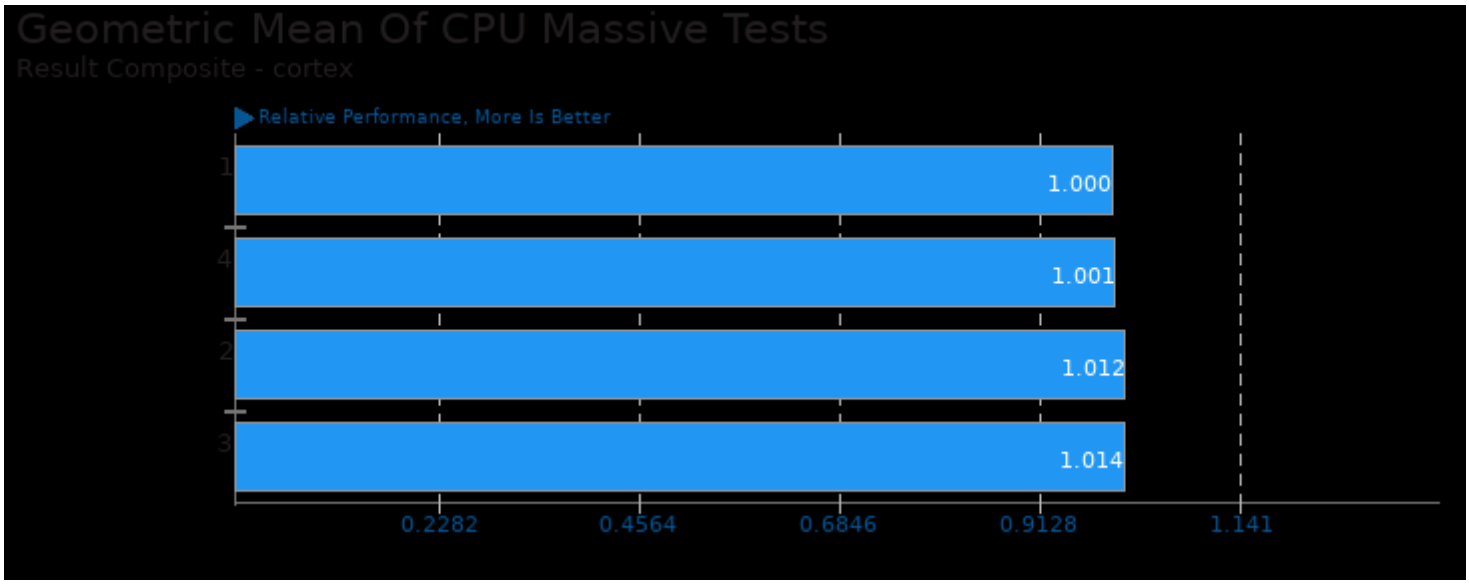

Zstd Compression 1.4.9
Compression Level: 8 - Compression Speed
MB/s, More Is Better
1
SE +/- 0.12, N = 3
20.8
4
SE +/- 0.35, N = 15
21.0
3
SE +/- 0.12, N = 3
21.8
2
SE +/- 0.03, N = 3
22.2
5
10
15
20
25
1. (CC) gcc options: -O3 -pthread -lz
Zstd Compression 1.4.9
Compression Level: 8 - Decompression Speed
MB/s, More Is Better
1
SE +/- 17.55, N = 3
842.4
4
SE +/- 7.39, N = 10
865.3
3
SE +/- 5.55, N = 2
879.9
2
SE +/- 0.53, N = 3
882.7
200
400
600
800
1000
1. (CC) gcc options: -O3 -pthread -lz


Zstd Compression 1.4.9
Compression Level: 19 - Compression Speed
MB/s, More Is Better
1
SE +/- 0.05, N = 3
2.83
4
SE +/- 0.02, N = 3
2.88
2
SE +/- 0.02, N = 3
2.89
3
SE +/- 0.01, N = 3
2.89
0.6503
1.3006
1.9509
2.6012
3.2515
1. (CC) gcc options: -O3 -pthread -lz
Zstd Compression 1.4.9
Compression Level: 3, Long Mode - Compression Speed
MB/s, More Is Better
4
SE +/- 1.30, N = 15
77.8
1
SE +/- 1.00, N = 15
79.0
2
SE +/- 0.96, N = 15
79.0
3
SE +/- 0.92, N = 15
79.8
20
40
60
80
100
1. (CC) gcc options: -O3 -pthread -lz
Zstd Compression 1.4.9
Compression Level: 3, Long Mode - Decompression Speed
MB/s, More Is Better
1
SE +/- 73.60, N = 7
555.1
120
240
360
480
600
1. (CC) gcc options: -O3 -pthread -lz

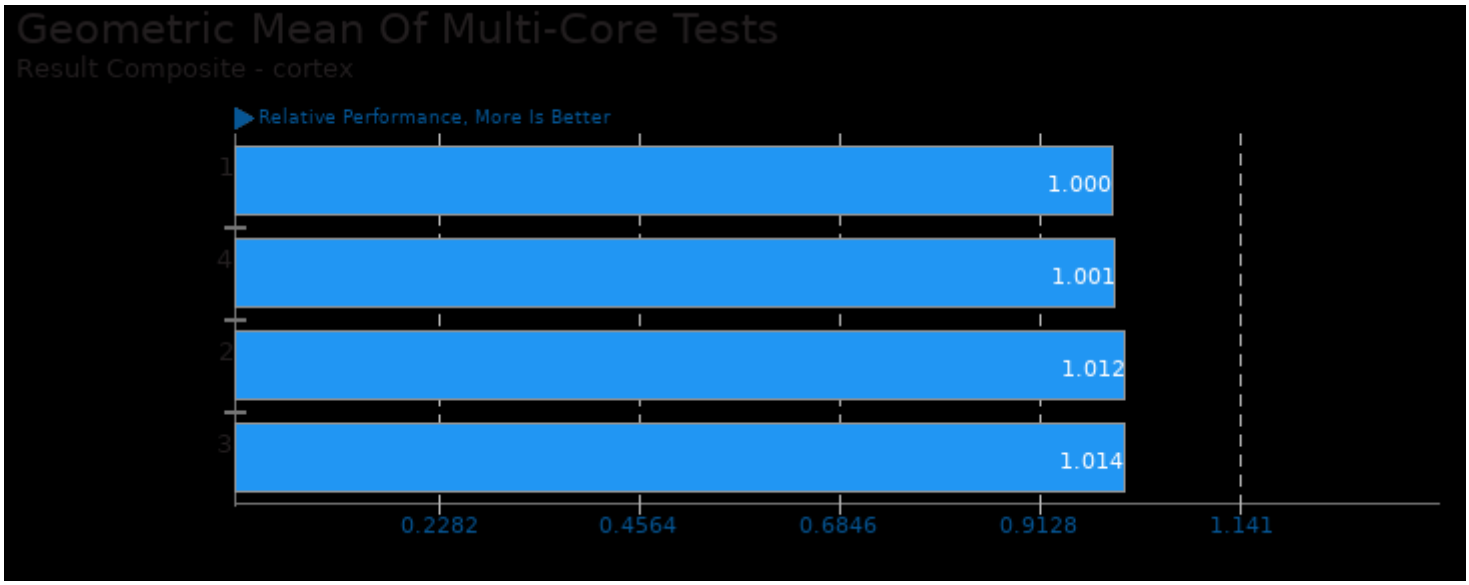

Zstd Compression 1.4.9
Compression Level: 8, Long Mode - Compression Speed
MB/s, More Is Better
2
SE +/- 0.35, N = 15
22.0
4
SE +/- 0.33, N = 15
22.2
3
SE +/- 0.09, N = 3
22.9
1
SE +/- 0.06, N = 3
23.1
6
12
18
24
30
1. (CC) gcc options: -O3 -pthread -lz
Zstd Compression 1.4.9
Compression Level: 19, Long Mode - Compression Speed
MB/s, More Is Better
2
SE +/- 0.03, N = 6
2.58
3
SE +/- 0.01, N = 3
2.59
1
SE +/- 0.00, N = 3
2.60
4
SE +/- 0.02, N = 3
2.61
0.5873
1.1746
1.7619
2.3492
2.9365
1. (CC) gcc options: -O3 -pthread -lz
Timed Linux Kernel Compilation 5.10.20
Time To Compile
Seconds, Fewer Is Better
3
SE +/- 94.23, N = 3
5099.26
1
SE +/- 67.17, N = 3
5089.65
2
SE +/- 70.02, N = 3
5038.54
1100
2200
3300
4400
5500

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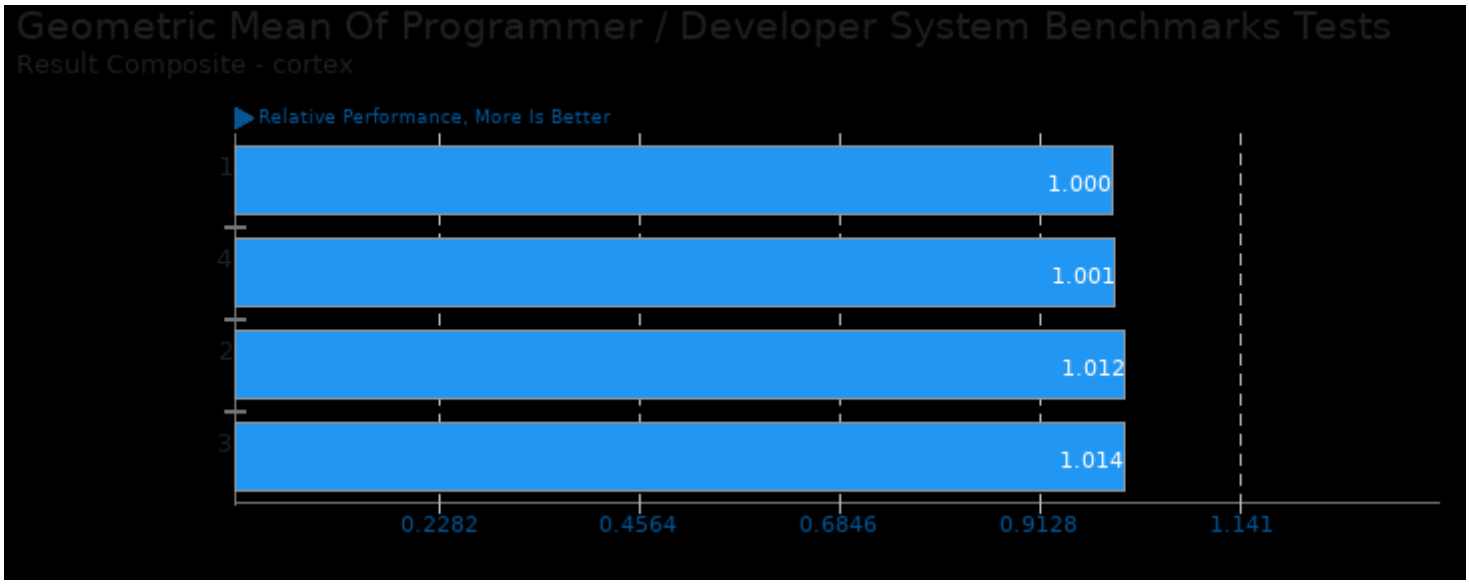
These geometric means are based upon test groupings / test suites for this result file.



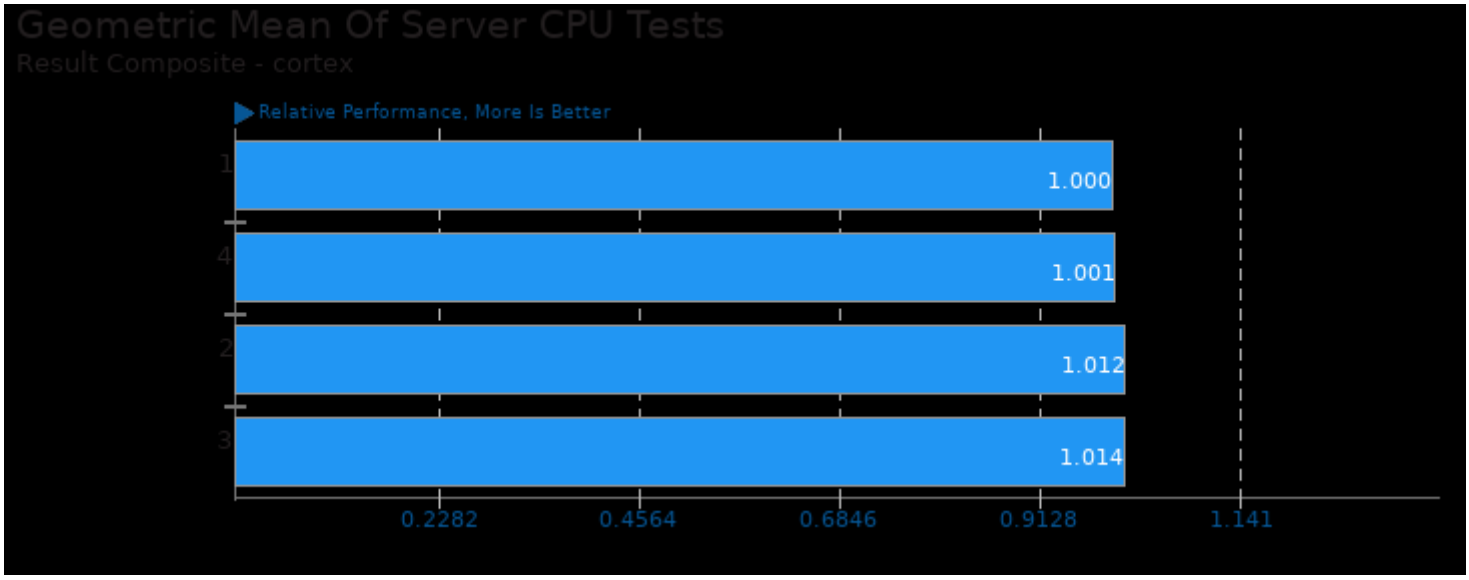
Geometric mean based upon tests: pts/build-linux-kernel and pts/compress-zstd



Geometric mean based upon tests: pts/compress-zstd and pts/build-linux-kernel



Geometric mean based upon tests: pts/compress-zstd and pts/build-linux-kernel



Geometric mean based upon tests: pts/build-linux-kernel and pts/compress-zstd

This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 07:52.