

www.phoronix-test-suite.com

clearsuite2

Running pts/fs-mark-1.0.2, pts/ramspeed-1.4.2, pts/tinymembench-1.0.2, pts/x264-2.5.0, pts/openssl-1.11.0, pts/pgbench-1.8.7, pts/apache-1.7.2, pts/phpbench-1.1.5, pts/git-1.0.2 via the Phoronix Test Suite.

Automated Executive Summary

zorin had the most wins, coming in first place for 50% of the tests.

Based on the geometric mean of all complete results, the fastest (second) was 1.054x the speed of the slowest (zorin).

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

PHPBench (PHP Benchmark Suite) at 1.517x
Tinymembench (Standard Memset) at 1.33x
Tinymembench (Standard Memcpy) at 1.041x
RAMspeed SMP (Type: Average - Benchmark: Integer) at 1.031x
PostgreSQL pgbench (Scaling: Mostly RAM - Test: Normal Load - Mode: Read Write) at 1.029x
PostgreSQL pgbench (Scaling: Buffer Test - Test: Normal Load - Mode: Read Write) at 1.021x
Git (Time To Complete Common Git Commands) at 1.02x
RAMspeed SMP (Type: Average - Benchmark: Floating Point) at 1.019x
x264 (H.264 Video Encoding) at 1.006x
OpenSSL (RSA 4096-bit Performance) at 1.004x.

Test Systems:

second

Processor: Intel Celeron J4105 @ 2.50GHz (4 Cores), Motherboard: HARDKERNEL ODROID-H2 v1.0 (5.13 BIOS), Chipset: Intel Device 31f0, Memory: 16384MB, Disk: 500GB Western Digital WDS500G1B0C-00S6U0, Graphics: Intel UHD 600 3GB (750MHz), Audio: Realtek ALC662 rev1, Monitor: XB271HU, Network: 2 x Realtek RTL8111/8168/8411

OS: Clear Linux OS 30140, Kernel: 5.1.15-791.native (x86_64), Desktop: GNOME Shell 3.32.2, Display Server: X Server 1.20.5, Display Driver: modesetting 1.20.5, OpenGL: 4.5 Mesa 19.2.0-devel, OpenCL: OpenCL 1.2, Vulkan: 1.1.102, Compiler: GCC 9.1.1 20190701 gcc-9-branch@272838 + Clang 8.0.0 + LLVM 8.0.0, File-System: ext4, Screen Resolution: 2560x1440

Environment Notes:
CFFLAGS=-g-O3-feliminate-unused-debug-types-pipe-Wall-Wp-D_FORTIFY_SOURCE=2-fexceptions-fstack-protector--param=ssp-buffer-size=32-m64-fasynchronous-unwind-tables-Wp-D_REENTRANT-ftree-loop-distribute-patterns-Wl-z-Wl now-Wl-z-Wl relro-malign-data=abi-fno-semantic-interposition-ftree-vectorize-ftree-loop-vectorize-Wl-sort-common-Wl--enable-new-dtags
FFLAGS=-g-O3-feliminate-unused-debug-types-pipe-Wall-Wp-D_FORTIFY_SOURCE=2-fexceptions-fstack-protector--param=ssp-buffer-size=32-m64-fasynchronous-unwind-tables-Wp-D_REENTRANT-ftree-loop-distribute-patterns-Wl-z-Wl relro-malign-data=abi-fno-semantic-interposition-ftree-vectorize-ftree-loop-vectorize-Wl--enable-new-dtags
CXXFLAGS=-g-O3-feliminate-unused-debug-types-pipe-Wall-Wp-D_FORTIFY_SOURCE=2-fexceptions-fstack-protector--param=ssp-buffer-size=32-Wformat-Wformat-security-m64-fasynchronous-unwind-tables-Wp-D_REENTRANT-ftree-loop-distribute-patterns-Wl-z-Wl relro-fno-semantic-interposition-ffat-lto-objects-fno-signed-zeros-fno-trapping-math-fassociative-math-Wl-sort-common-Wl--enable-new-dtags-mtune=skylake-fvisibility-inlines-hidden-Wl--enable-new-dtags MESA_GLSL_CACHE_DISABLE=0
CFLAGS=-g-O3-feliminate-unused-debug-types-pipe-Wall-Wp-D_FORTIFY_SOURCE=2-fexceptions-fstack-protector--param=ssp-buffer-size=32-Wformat-Wformat-security-m64-fasynchronous-unwind-tables-Wp-D_REENTRANT-ftree-loop-distribute-patterns-Wl-z-Wl relro-fno-semantic-interposition-ffat-lto-objects-fno-signed-zeros-fno-trapping-math-fassociative-math-Wl-sort-common-Wl--enable-new-dtags-mtune=skylake THEANO_FLAGS=floatX=float32 openmp=true gcc.cxxflags="-ftree-vectorize-mavx"
Compiler Notes: --build=x86_64-generic-linux --disable-libmpx --disable-libunwind-exceptions --disable-multiarch --disable-vtable-verify --disable-werror --enable-__cxa_atexit --enable-bootstrap --enable-cet --enable-clocale=gnu --enable-default-pie --enable-gnu-indirect-function --enable-languages=c,c++,fortran,go --enable-ld=default --enable-libstdcxx-pch --enable-lto --enable-multilib --enable-plugin --enable-shared --enable-threads=posix --exec-prefix=/usr --includedir=/usr/include --target=x86_64-generic-linux --with-arch=westmere --with-gcc-major-version-only --with-glibc-version=2.19 --with-gnu-ld --with-isl --with-ppl=yes --with-tune=haswell
Disk Notes: MQ-DEADLINE / relatime,rw,stripe=256
Processor Notes: Scaling Governor: intel_pstate performance
Security Notes: l1tf: Not affected + mds: Not affected + meltdown: Mitigation of PTI + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of __user pointer sanitization + spectre_v2: Mitigation of Enhanced IBRS IBPB: conditional RSB filling

zorin

Processor: Intel Celeron J4105 @ 2.50GHz (4 Cores), Motherboard: HARDKERNEL ODROID-H2 v1.0, Chipset: Intel Device 31f0, Memory: 16384MB, Disk: 457GB, Graphics: Intel Device 3185, Audio: Realtek ALC662 rev1, Network: Realtek RTL8111/8168/8411

OS: Zorin 15, Kernel: 4.18.0-25-generic (x86_64), Desktop: GNOME Shell 3.30.2, File-System: ext4, Screen Resolution: 2560x1440

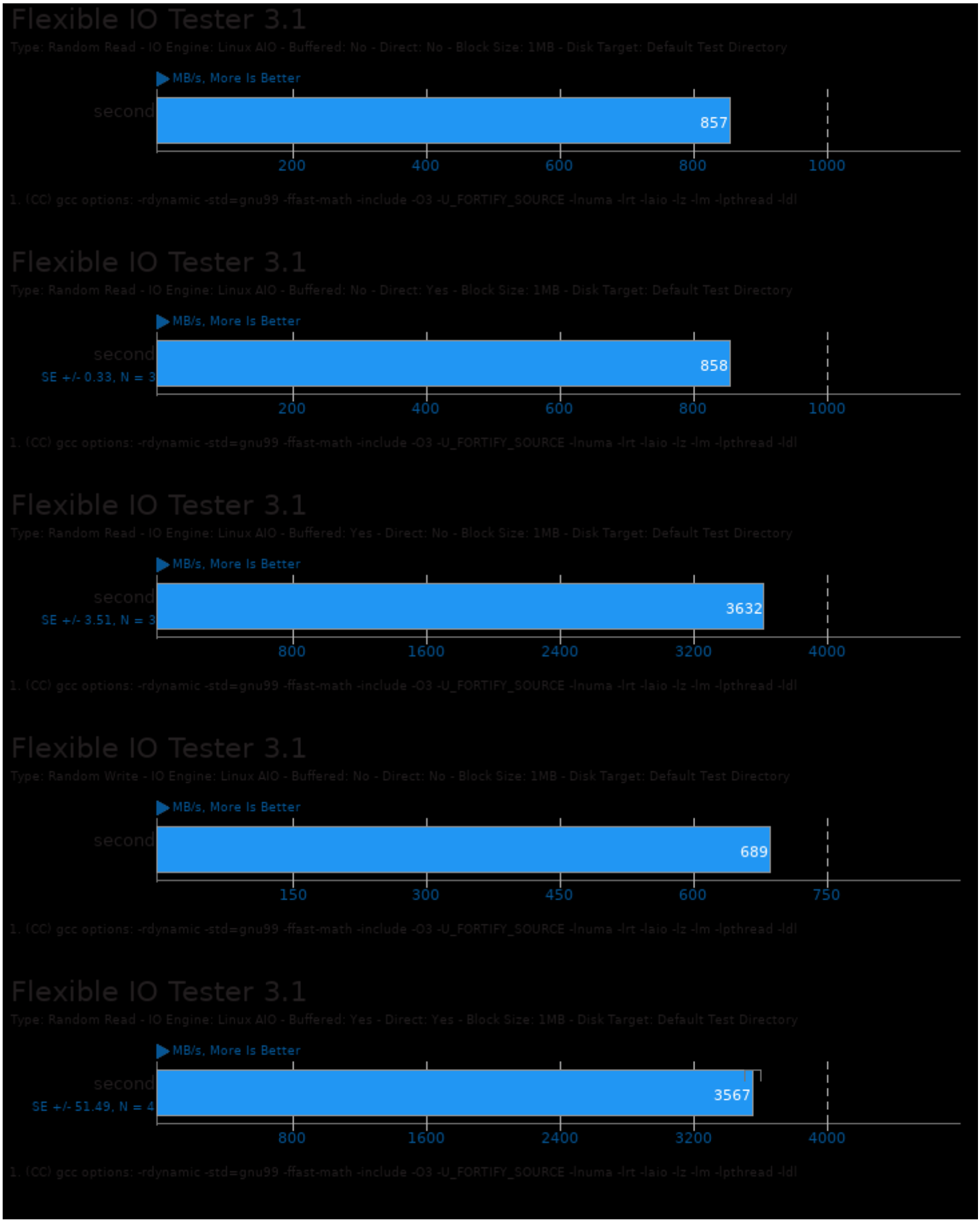
Processor Notes: Scaling Governor: intel_pstate powersave
Disk Mount Options Notes: errors=remount-ro,relatime,rw

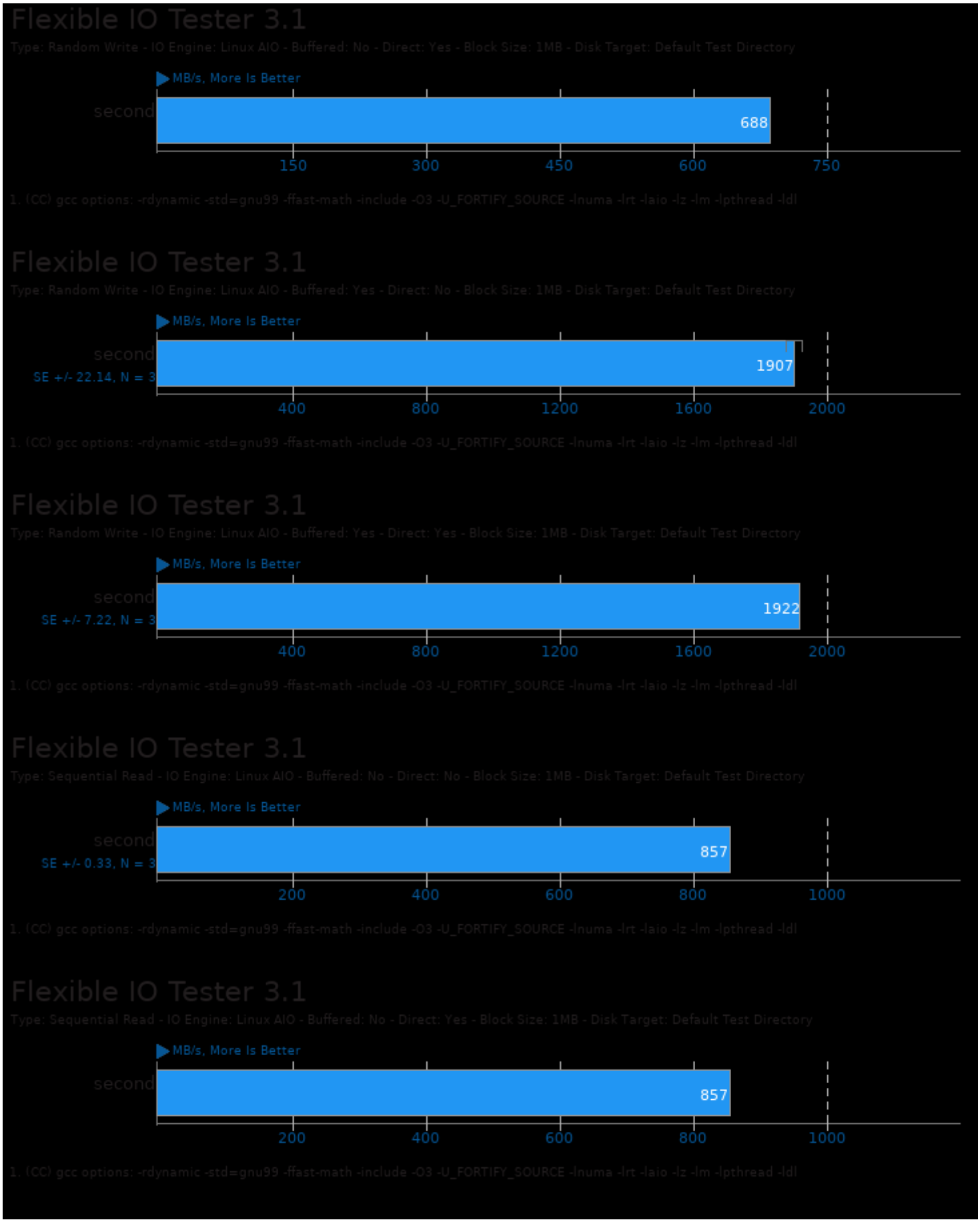
	second	zorin
Flexible IO Tester - Rand Read - Linux AIO - No - No - 1MB (MB/s)	857	

Flexible IO Tester - Rand Read - Linux AIO - No - Yes - 1MB (MB/s)	858	
Standard Deviation	0.1%	
Flexible IO Tester - Rand Read - Linux AIO - Yes - No - 1MB (MB/s)	3632	
Standard Deviation	0.2%	
Flexible IO Tester - Rand Write - Linux AIO - No - No - 1MB (MB/s)	689	
Flexible IO Tester - Rand Read - Linux AIO - Yes - Yes - 1MB (MB/s)	3567	
Standard Deviation	2.9%	
Flexible IO Tester - Rand Write - Linux AIO - No - Yes - 1MB (MB/s)	688	
Flexible IO Tester - Rand Write - Linux AIO - Yes - No - 1MB (MB/s)	1907	
Standard Deviation	2%	
Flexible IO Tester - Rand Write - Linux AIO - Yes - Yes - 1MB (MB/s)	1922	
Standard Deviation	0.7%	
Flexible IO Tester - Seq Read - Linux AIO - No - No - 1MB (MB/s)	857	
Standard Deviation	0.1%	
Flexible IO Tester - Seq Read - Linux AIO - No - Yes - 1MB (MB/s)	857	
Flexible IO Tester - Seq Read - Linux AIO - Yes - No - 1MB (MB/s)	3636	
Standard Deviation	0.2%	
Flexible IO Tester - Seq Write - Linux AIO - No - No - 1MB (MB/s)	689	
Flexible IO Tester - Seq Read - Linux AIO - Yes - Yes - 1MB (MB/s)	3593	
Standard Deviation	2.1%	
Flexible IO Tester - Seq Write - Linux AIO - No - Yes - 1MB (MB/s)	689	
Flexible IO Tester - Seq Write - Linux AIO - Yes - No - 1MB (MB/s)	1364	
Standard Deviation	3.8%	
Flexible IO Tester - Seq Write - Linux AIO - Yes - Yes - 1MB (MB/s)	1281	
Standard Deviation	0.6%	
FS-Mark - 4.F.3.S.D.1.S (Files/s)	183.21	192.48
Normalized	95.18%	100%
Standard Deviation	4.8%	16.5%
RAMspeed SMP - Average - Integer (MB/s)	10901	11240
Normalized	96.98%	100%
RAMspeed SMP - Average - Floating Point (MB/s)	10962	11166
Normalized	98.17%	100%
Tinymembench - Standard Memcpy (MB/s)	5219	5435
Normalized	96.02%	100%
Standard Deviation	0.1%	0%
Tinymembench - Standard Memset (MB/s)	7224	5432

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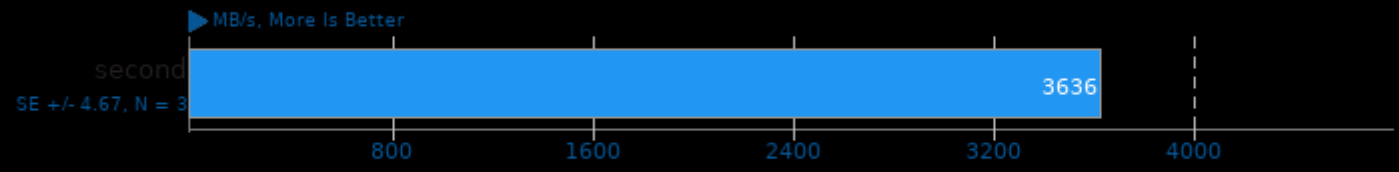
Normalized	100%	75.19%
Standard Deviation	0.2%	0.1%
x264 - H.2.V.E (FPS)	**12.35**	**12.28**
Normalized	100%	99.43%
Standard Deviation	0.1%	0%
OpenSSL - R.4.b.P (Signs/sec)	**246.30**	**247.20**
Normalized	99.64%	100%
Standard Deviation	0%	0.1%
PostgreSQL pgbench - On-Disk - Normal Load - Read Write (TPS)	**2530**	**2532**
Normalized	99.95%	100%
Standard Deviation	0.3%	0.4%
PostgreSQL pgbench - Mostly RAM - Normal Load - Read Write (TPS)	**2958**	**2875**
Normalized	100%	97.19%
Standard Deviation	1.7%	0.8%
PostgreSQL pgbench - Buffer Test - Normal Load - Read Write (TPS)	**3809**	**3730**
Normalized	100%	97.94%
Standard Deviation	0.4%	0.7%
Apache Benchmark - S.W.P.S (Reqs/sec)	9332	
Standard Deviation	0.1%	
PHPBench - P.B.S (Score)	**379915**	**250491**
Normalized	100%	65.93%
Standard Deviation	0.1%	0.4%
Git - T.T.C.C.G.C (sec)	**13.25**	**13.52**
Normalized	100%	98%
Standard Deviation	1.6%	1.5%


Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: No - Direct: No - Block Size: 1MB - Disk Target: Default Test Directory
MB/s, More Is Better
second
857
200
400
600
800
1000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lnuma -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 1MB - Disk Target: Default Test Directory
MB/s, More Is Better
second
SE +/- 0.33, N = 3
858
200
400
600
800
1000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lnuma -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 1MB - Disk Target: Default Test Directory
MB/s, More Is Better
second
SE +/- 3.51, N = 3
3632
800
1600
2400
3200
4000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lnuma -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Write - IO Engine: Linux AIO - Buffered: No - Direct: No - Block Size: 1MB - Disk Target: Default Test Directory
MB/s, More Is Better
second
689
150
300
450
600
750
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lnuma -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 1MB - Disk Target: Default Test Directory
MB/s, More Is Better
second
SE +/- 51.49, N = 4
3567
800
1600
2400
3200
4000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lnuma -lrt -laio -lz -lm -lpthread -ldl


Flexible IO Tester 3.1
Type: Random Write - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 1MB - Disk Target: Default Test Directory
MB/s, More Is Better
second
688
150
300
450
600
750
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lnuma -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 1MB - Disk Target: Default Test Directory
MB/s, More Is Better
second
SE +/- 22.14, N = 3
1907
400
800
1200
1600
2000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lnuma -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Write - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 1MB - Disk Target: Default Test Directory
MB/s, More Is Better
second
SE +/- 7.22, N = 3
1922
400
800
1200
1600
2000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lnuma -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Linux AIO - Buffered: No - Direct: No - Block Size: 1MB - Disk Target: Default Test Directory
MB/s, More Is Better
second
SE +/- 0.33, N = 3
857
200
400
600
800
1000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lnuma -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 1MB - Disk Target: Default Test Directory
MB/s, More Is Better
second
857
200
400
600
800
1000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lnuma -lrt -laio -lz -lm -lpthread -ldl

Flexible IO Tester 3.1

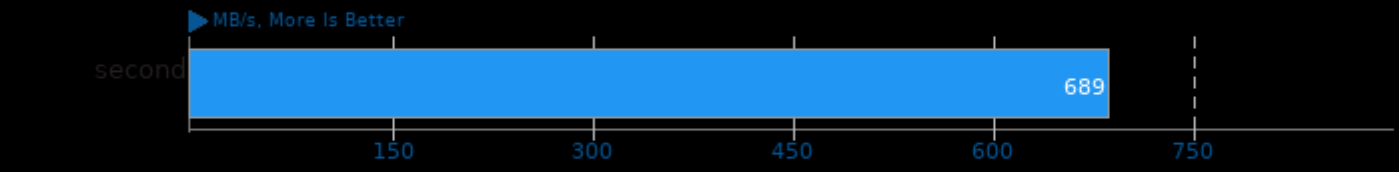
Type: Sequential Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 1MB - Disk Target: Default Test Directory



1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lnuma -lrt -laio -lz -lm -lpthread -ldl

Flexible IO Tester 3.1

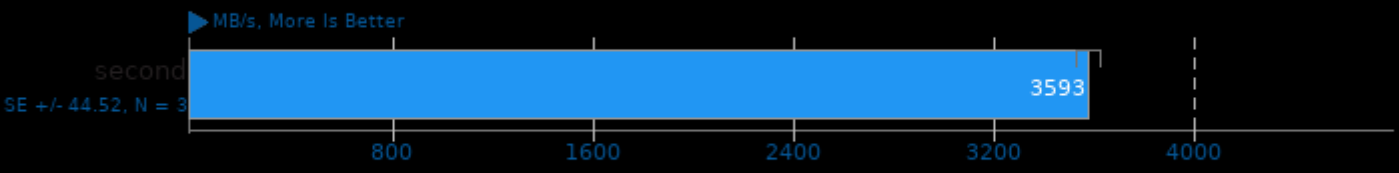
Type: Sequential Write - IO Engine: Linux AIO - Buffered: No - Direct: No - Block Size: 1MB - Disk Target: Default Test Directory



1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lnuma -lrt -laio -lz -lm -lpthread -ldl

Flexible IO Tester 3.1

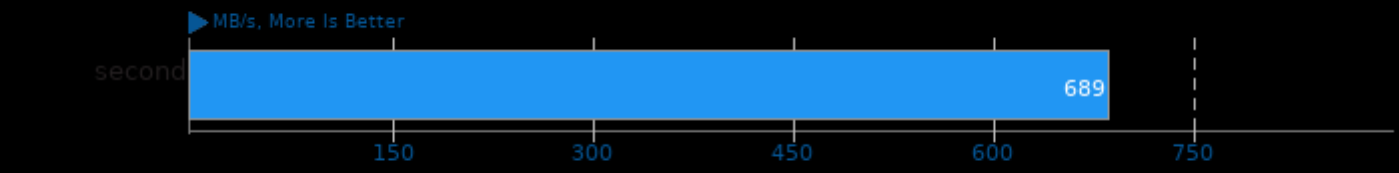
Type: Sequential Read - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 1MB - Disk Target: Default Test Directory



1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lnuma -lrt -laio -lz -lm -lpthread -ldl

Flexible IO Tester 3.1

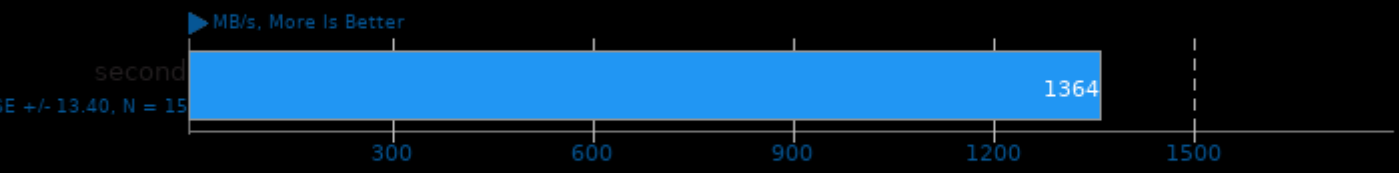
Type: Sequential Write - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 1MB - Disk Target: Default Test Directory



1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lnuma -lrt -laio -lz -lm -lpthread -ldl

Flexible IO Tester 3.1

Type: Sequential Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 1MB - Disk Target: Default Test Directory



1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lnuma -lrt -laio -lz -lm -lpthread -ldl

Flexible IO Tester 3.1

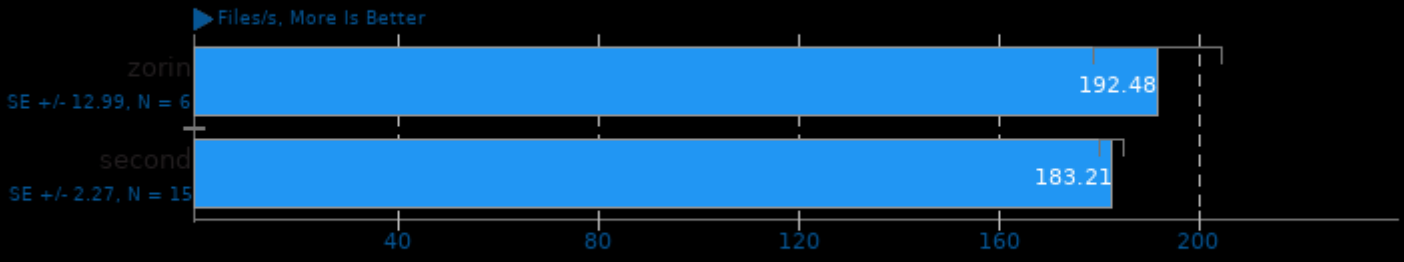
Type: Sequential Write - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 1MB - Disk Target: Default Test Directory



1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lnuma -lrt -laio -lz -lm -lpthread -ldl

FS-Mark 3.3

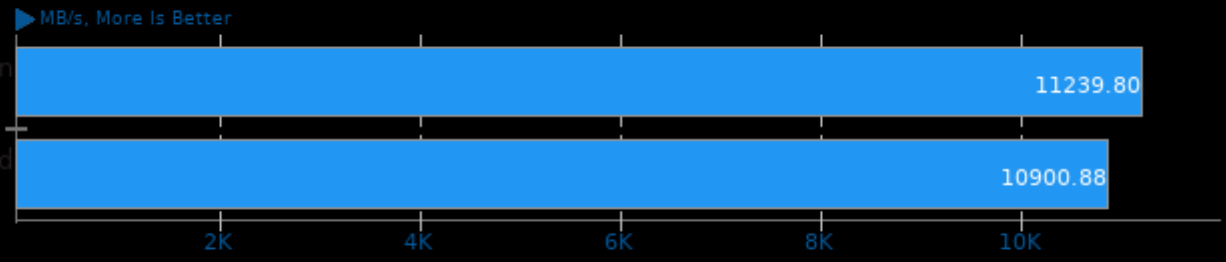
Test: 4000 Files, 32 Sub Dirs, 1MB Size



1. (CC) gcc options: -static

RAMspeed SMP 3.5.0

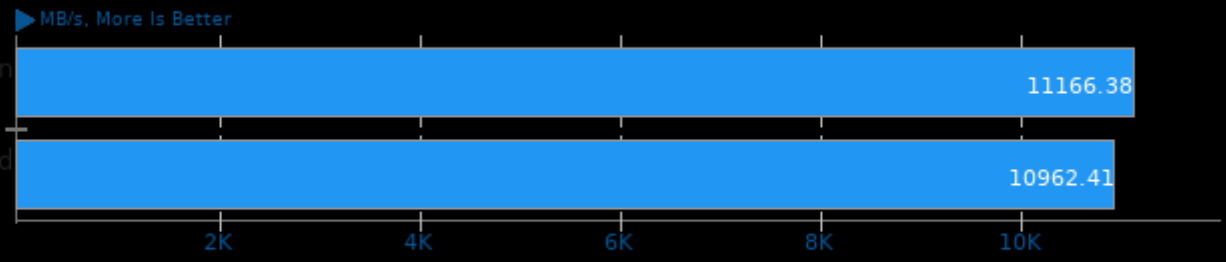
Type: Average - Benchmark: Integer



1. (CC) gcc options: -O3 -march=native -pipe -fexceptions -fstack-protector -m64 -ffat-lto-objects -fno-signed-zeros -fno-trapping-math -fassociative-mat

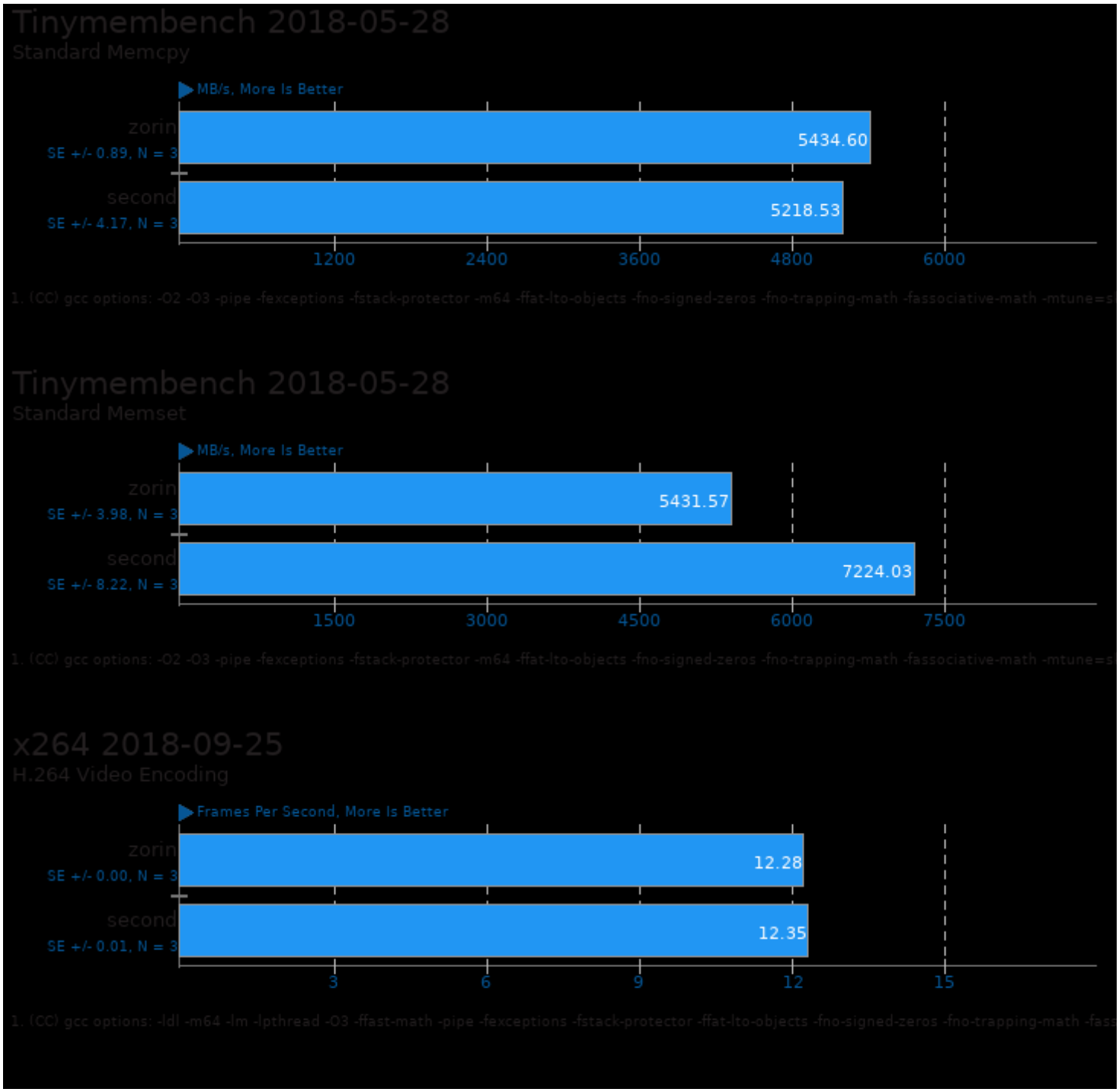
RAMspeed SMP 3.5.0

Type: Average - Benchmark: Floating Point

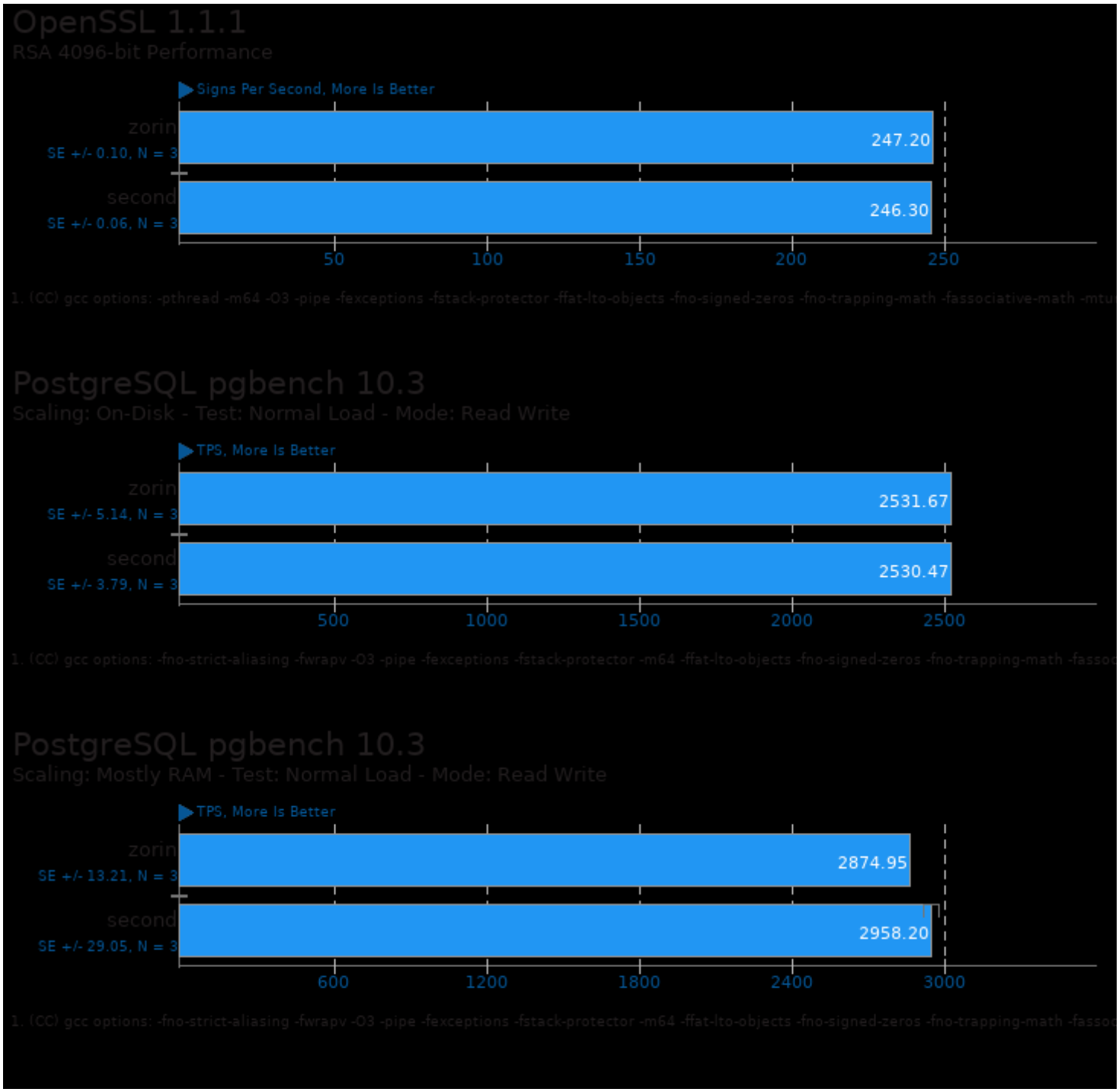


1. (CC) gcc options: -O3 -march=native -pipe -fexceptions -fstack-protector -m64 -ffat-lto-objects -fno-signed-zeros -fno-trapping-math -fassociative-mat

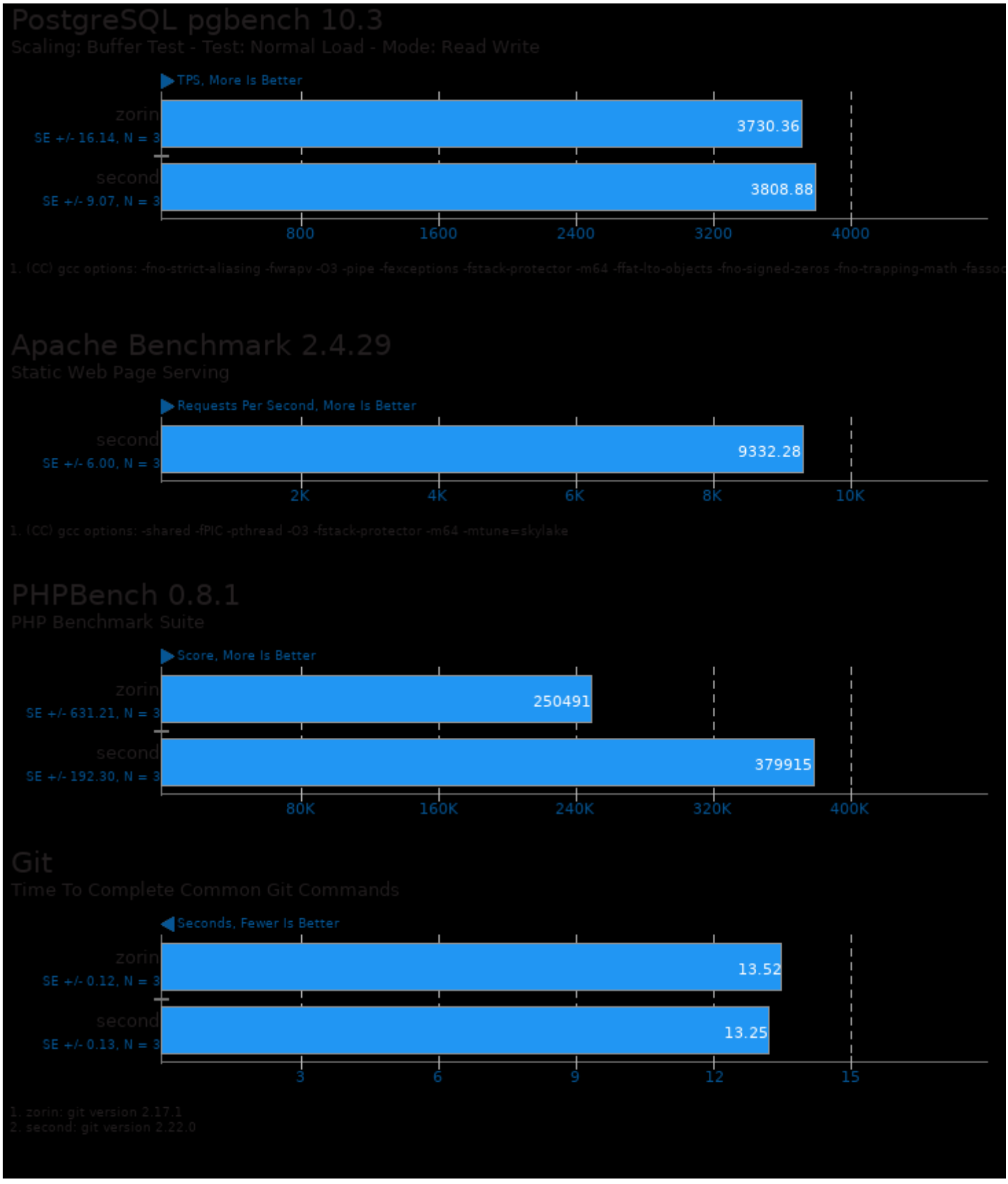
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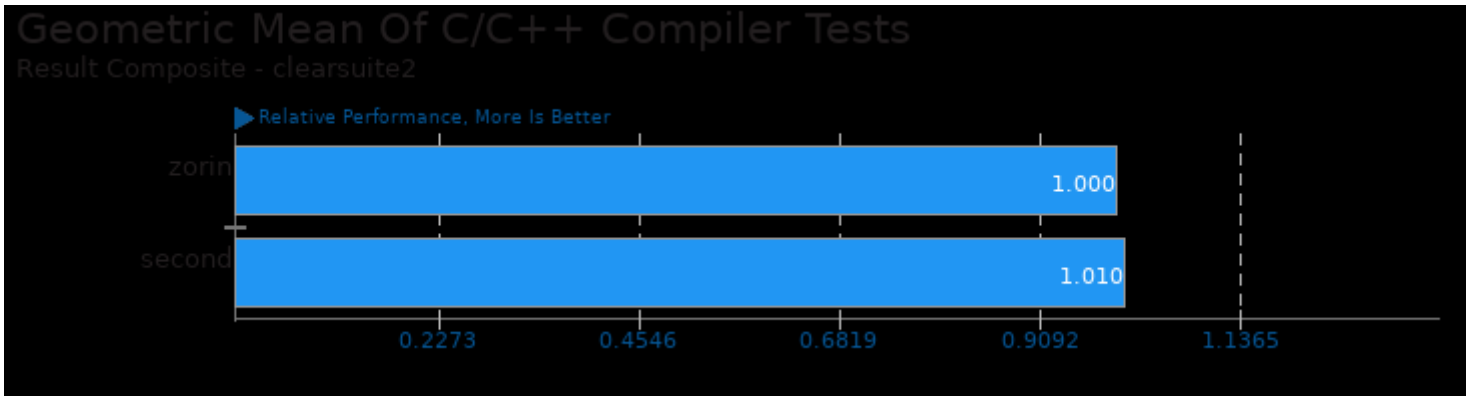


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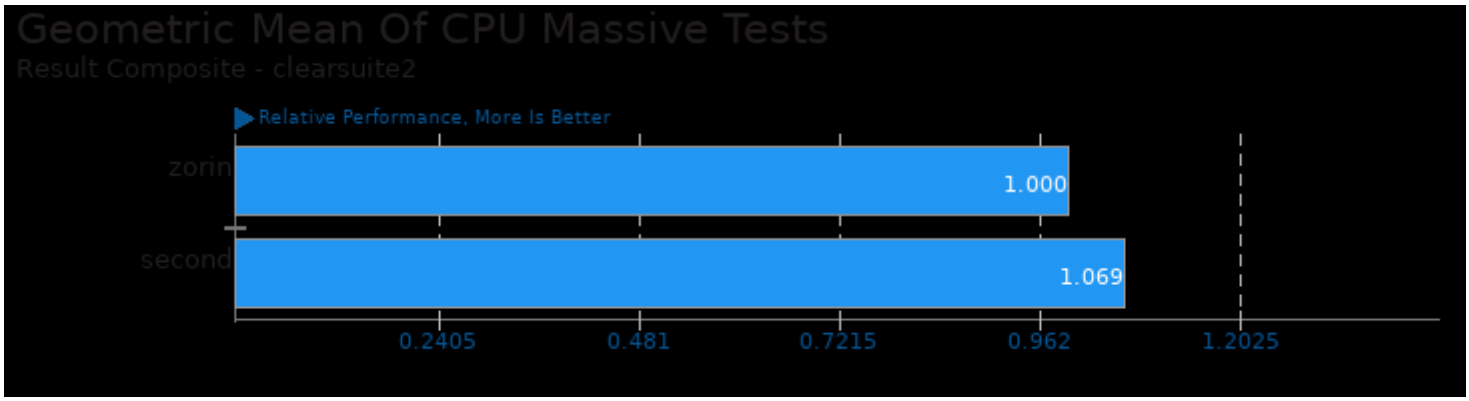


clearsuite2

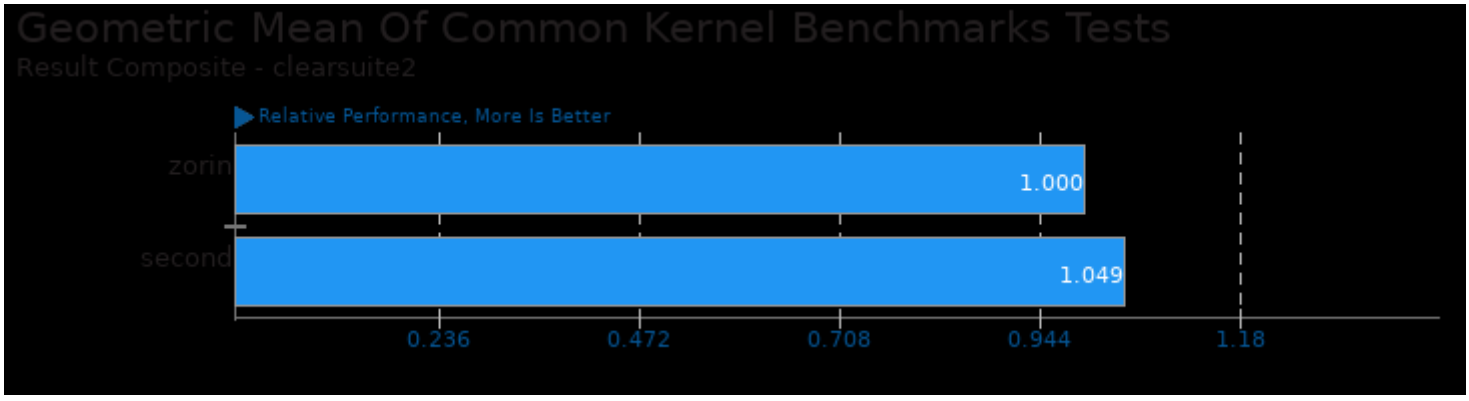
These geometric means are based upon test groupings / test suites for this result file.



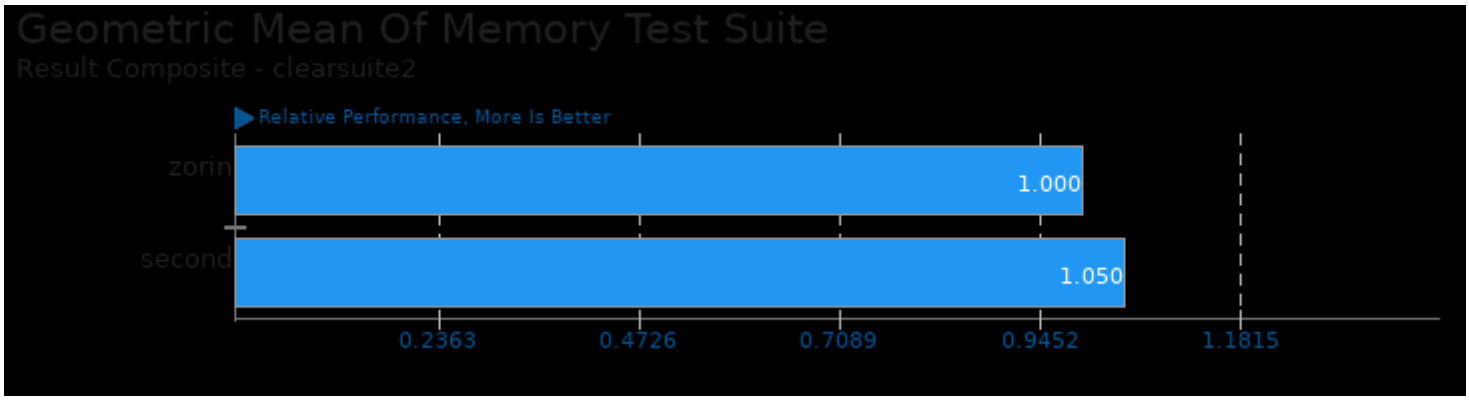
Geometric mean based upon tests: pts/pgbench, pts/apache, pts/x264 and pts/openssl



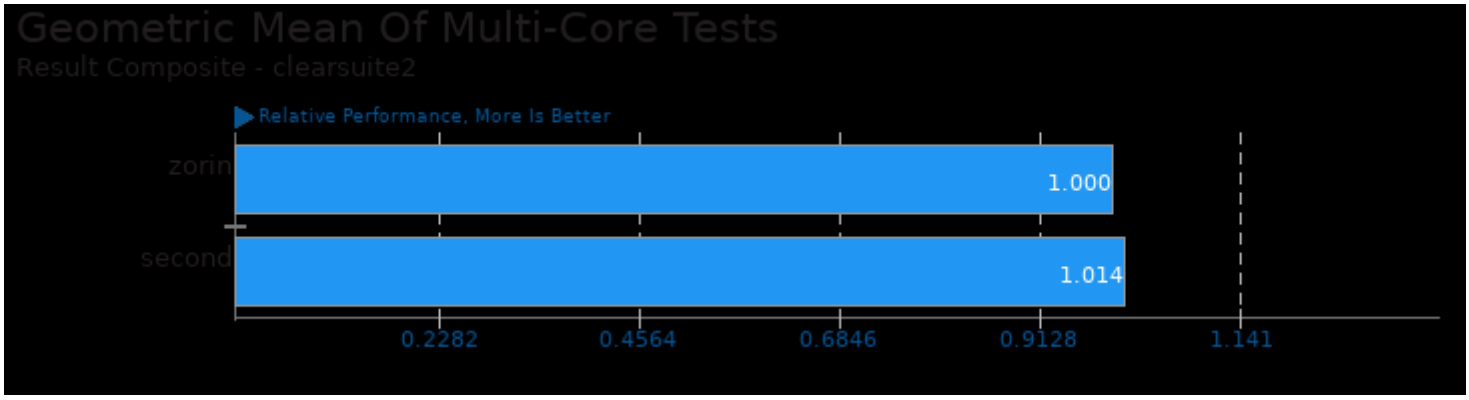
Geometric mean based upon tests: pts/apache, pts/x264, pts/openssl, pts/pgbench, pts/phpbench, pts/ramspeed and pts/tinymembench



Geometric mean based upon tests: pts/apache, pts/pgbench, pts/tinymembench and pts/openssl



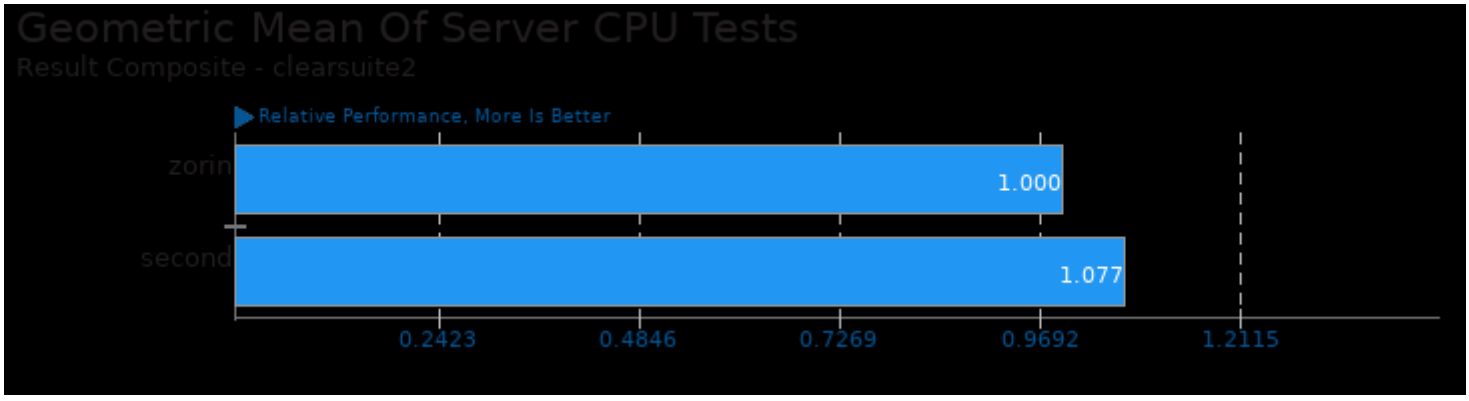
Geometric mean based upon tests: pts/ramspeed and pts/tinymembench



Geometric mean based upon tests: pts/x264 and pts/pgbench

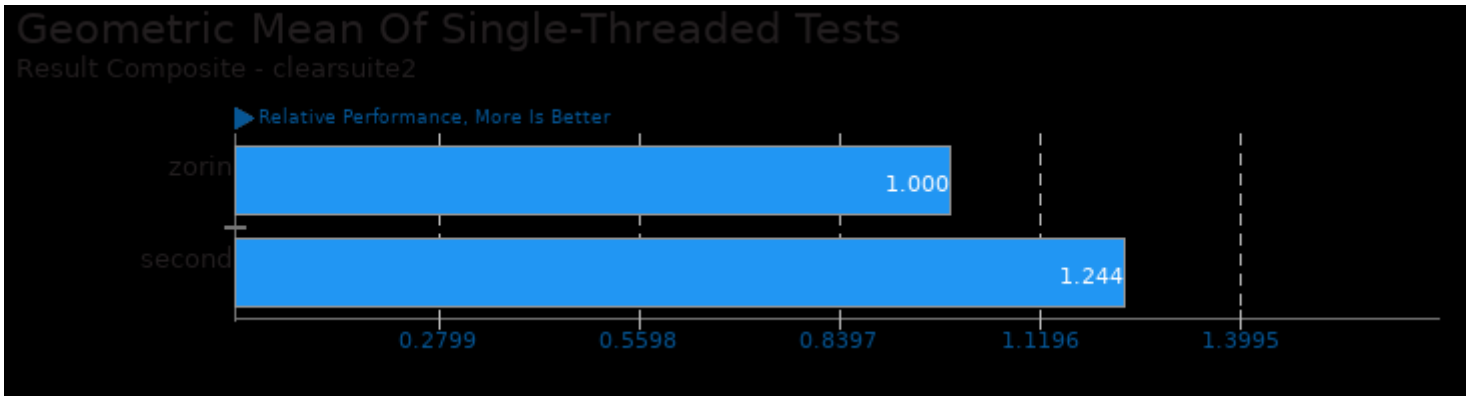


Geometric mean based upon tests: pts/apache, pts/pgbench, pts/phpbench and pts/openssl



Geometric mean based upon tests: pts/x264, pts/openssl, pts/phpbench and pts/ramspeed

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Geometric mean based upon tests: pts/phpbench and pts/git

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