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Gentoo Odroid-Xu4 Kernel benchmark

Gentoo Glibc SDCARD GCC 10.2 5.4.98

Automated Executive Summary

Gentoo Musl EMMC 5.4.35 clang O3 vfpv3-d16 had the most wins, coming in first place for 33% of the tests.

Based on the geometric mean of all complete results, the fastest (Gentoo Musl EMMC 5.4.28-clang) was 2.046x the speed of the slowest (Gentoo Glibc SDcard 5.4.24). Gentoo Musl EMMC 5.4.33-glibc was 0.817x the speed of Gentoo Musl EMMC 5.4.28-clang, Gentoo Glibc SDCARD GCC 10.2 5.4.98 was 0.975x the speed of Gentoo Musl EMMC 5.4.33-glibc, Gentoo Musl EMMC 5.4.35-arm-clang9 was 0.955x the speed of Gentoo Glibc SDCARD GCC 10.2 5.4.98, Gentoo Chroot SDCARD GLIBC Gcc 10.2 was 0.96x the speed of Gentoo Musl EMMC 5.4.35-arm-clang9, Gentoo Musl EMMC 5.4.35 Glibc flto sys was 0.898x the speed of Gentoo Chroot SDCARD GLIBC Gcc 10.2, Gentoo Musl EMMC 5.4.35 clang O3 vfpv3-d16 was 0.978x the speed of Gentoo Musl EMMC 5.4.35 Glibc flto sys, Gentoo Glibc SDcard 5.4.24 was 0.762x the speed of Gentoo Musl EMMC 5.4.35 clang O3 vfpv3-d16.

Test Systems:

Gentoo Musl EMMC 5.4.28-clang

Processor: ARMv7 Cortex-A15 @ 1.40GHz (8 Cores), Motherboard: Hardkernel ODROID-XU4 Odroid XU4, Memory: 2048MB, Disk: 16GB SDW16G + 64GB SP64G, Graphics: exynosdrmfb

OS: Gentoo/Linux, Kernel: 5.4.28-clang+ (armv7l), Display Server: X Server, Compiler: GCC 9.3.0 + Clang 10.0.0 + LLVM 10.0.0, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: usbhid.quirks=0x0eef:0x0005:0x0004
Processor Notes: Scaling Governor: cpufreq-dt performance

Gentoo Glibc SDcard 5.4.24

Processor: ARMv7 Cortex-A15 @ 1.40GHz (8 Cores), Motherboard: Hardkernel ODROID-XU4 Odroid XU4, Memory: 2048MB, Disk: 16GB SDW16G + 64GB SP64G, Graphics: exynosdrmfb, Monitor: DTV

OS: Gentoo 2.6, Kernel: 5.4.24-arm+ (armv7l), Display Server: X Server 1.20.7, Compiler: GCC 9.3.0 + Clang 9.0.1 + LLVM 9.0.1, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: usbhid.quirks=0x0eef:0x0005:0x0004
Processor Notes: Scaling Governor: cpufreq-dt ondemand

Gentoo Musl EMMC 5.4.33-glibc

Processor: ARMv7 Cortex-A15 @ 1.40GHz (8 Cores), Motherboard: Hardkernel ODROID-XU4 Odroid XU4, Memory: 2048MB, Disk: 16GB SDW16G + 64GB SP64G, Graphics: exynosdrmfb

OS: Gentoo/Linux, Kernel: 5.4.33-arm+ (armv7l), Display Server: X Server, Compiler: GCC 9.3.0 + Clang 10.0.0 + LLVM 10.0.0, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: usbhid.quirks=0x0eef:0x0005:0x0004
Processor Notes: Scaling Governor: cpufreq-dt performance

Gentoo Musl EMMC 5.4.35-arm-clang9

Processor: ARMv7 Cortex-A15 @ 1.40GHz (8 Cores), Motherboard: Hardkernel ODROID-XU4 Odroid XU4, Memory: 2048MB, Disk: 16GB SDW16G + 64GB SP64G, Graphics: exynosdrmfb

OS: Gentoo/Linux, Kernel: 5.4.35-armclang-+ (armv7l), Display Server: X Server 1.20.7, Display Driver: modesetting 1.20.7, Compiler: GCC 9.3.0 + Clang 10.0.0 + LLVM 10.0.0, File-System: ext4, Screen Resolution: 1920x1080

Environment Notes: CXXFLAGS="-fno-stack-protector -fomit-frame-pointer -fno-strict-aliasing -O3 -pipe -mcpu=cortex-a15 -funsafe-math-optimizations -mfpu=neon-vfpv4 -mfloat-abi=hard" LDFLAGS="-Wl,-O2 -Wl,--as-needed,-z,now -fuse-ld=lld" CFLAGS="-fno-stack-protector -fomit-frame-pointer -fno-strict-aliasing -O3 -pipe -mcpu=cortex-a15 -funsafe-math-optimizations -mfpu=neon-vfpv4 -mfloat-abi=hard"
Processor Notes: Scaling Governor: cpufreq-dt performance

Gentoo Musl EMMC 5.4.35 Glibc flto sys

Processor: ARMv7 Cortex-A15 @ 1.40GHz (8 Cores), Motherboard: Hardkernel ODROID-XU4 Odroid XU4, Memory: 2048MB, Disk: 16GB SDW16G + 64GB SP64G, Graphics: exynosdrmfb

OS: Gentoo/Linux, Kernel: 5.4.35-arm+ (armv7l), Display Server: X Server, Compiler: GCC 9.3.0 + Clang 10.0.0 + LLVM 10.0.0, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: usbhid.quirks=0x0eef:0x0005:0x0004
Processor Notes: Scaling Governor: cpufreq-dt performance

Gentoo Odroid-Xu4 Kernel benchmark

Gentoo Musl EMMC 5.4.35 clang O3 vfpv3-d16

Processor: ARMv7 Cortex-A15 @ 1.40GHz (8 Cores), Motherboard: Hardkernel ODROID-XU4 Odroid XU4, Memory: 2048MB, Disk: 16GB SDW16G + 64GB SP64G

OS: Gentoo/Linux, Kernel: 5.4.35-arm+ (armv7l), Display Server: X Server, Compiler: Clang 10.0.0 + GCC 10.1.0 + LLVM 10.0.0, File-System: ext4

Environment Notes: CXXFLAGS="-O3 -fuse-linker-plugin -funsafe-math-optimizations -pipe -march=armv7-a -mcpu=cortex-a15 -mfpu=vfpv3-d16 -mfloat-abi=hard" CFLAGS="-O3 -fuse-linker-plugin -funsafe-math-optimizations -pipe -march=armv7-a -mcpu=cortex-a15 -mfpu=vfpv3-d16 -mfloat-abi=hard"
Compiler Notes: Optimized build; Default target: armv7a-unknown-linux-musleabihf; Host CPU: (unknown)
Processor Notes: Scaling Governor: cpufreq-dt performance

Gentoo Chroot SDCARD GLIBC Gcc 10.2

Processor: ARMv7 Cortex-A15 @ 1.40GHz (8 Cores), Motherboard: Hardkernel ODROID-XU4 Odroid XU4, Memory: 2048MB, Disk: 16GB SDW16G + 64GB SP64G, Graphics: exynosdrmfb

OS: Gentoo/Linux, Kernel: 5.4.72-odroidxu4 (armv7l), Display Server: X Server, Compiler: GCC 10.2.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --bindir=/usr/armv7a-unknown-linux-gnueabihf/gcc-bin/10.2.0 --build=armv7a-unknown-linux-gnueabihf --datadir=/usr/share/gcc-data/armv7a-unknown-linux-gnueabihf/10.2.0 --disable-default-ssp --disable-esp --disable-fixed-point --disable-isl-version-check --disable-libada --disable-libssp --disable-multilib --disable-systemtap --disable-werror --enable-__cxa_atexit --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-languages=c,c++,fortran --enable-libgomp --enable-libstdcxx-time --enable-lto --enable-nls --enable-obsolete --enable-secureplt --enable-shared --enable-threads=posix --enable-vtable-verify --host=armv7a-unknown-linux-gnueabihf --includedir=/usr/lib/gcc/armv7a-unknown-linux-gnueabihf/10.2.0/include --mandir=/usr/share/gcc-data/armv7a-unknown-linux-gnueabihf/10.2.0/man --with-arch=armv7-a --with-float=hard --with-float=hard --with-fpu=vfpv3-d16 --with-isl --with-python-dir=/share/gcc-data/armv7a-unknown-linux-gnueabihf/10.2.0/python --with-zstd
Processor Notes: Scaling Governor: cpufreq-dt ondemand

Gentoo Glibc SDCARD GCC 10.2 5.4.98

Processor: ARMv7 Cortex-A15 @ 1.40GHz (8 Cores), Motherboard: Hardkernel ODROID-XU4 Odroid XU4, Memory: 2048MB, Disk: 16GB SDW16G + 64GB SP64G

OS: Gentoo 2.7, Kernel: 5.4.98+ (armv7l), Display Server: X Server, Compiler: GCC 10.2.0 + Clang 11.1.0 + LLVM 11.1.0, File-System: ext4

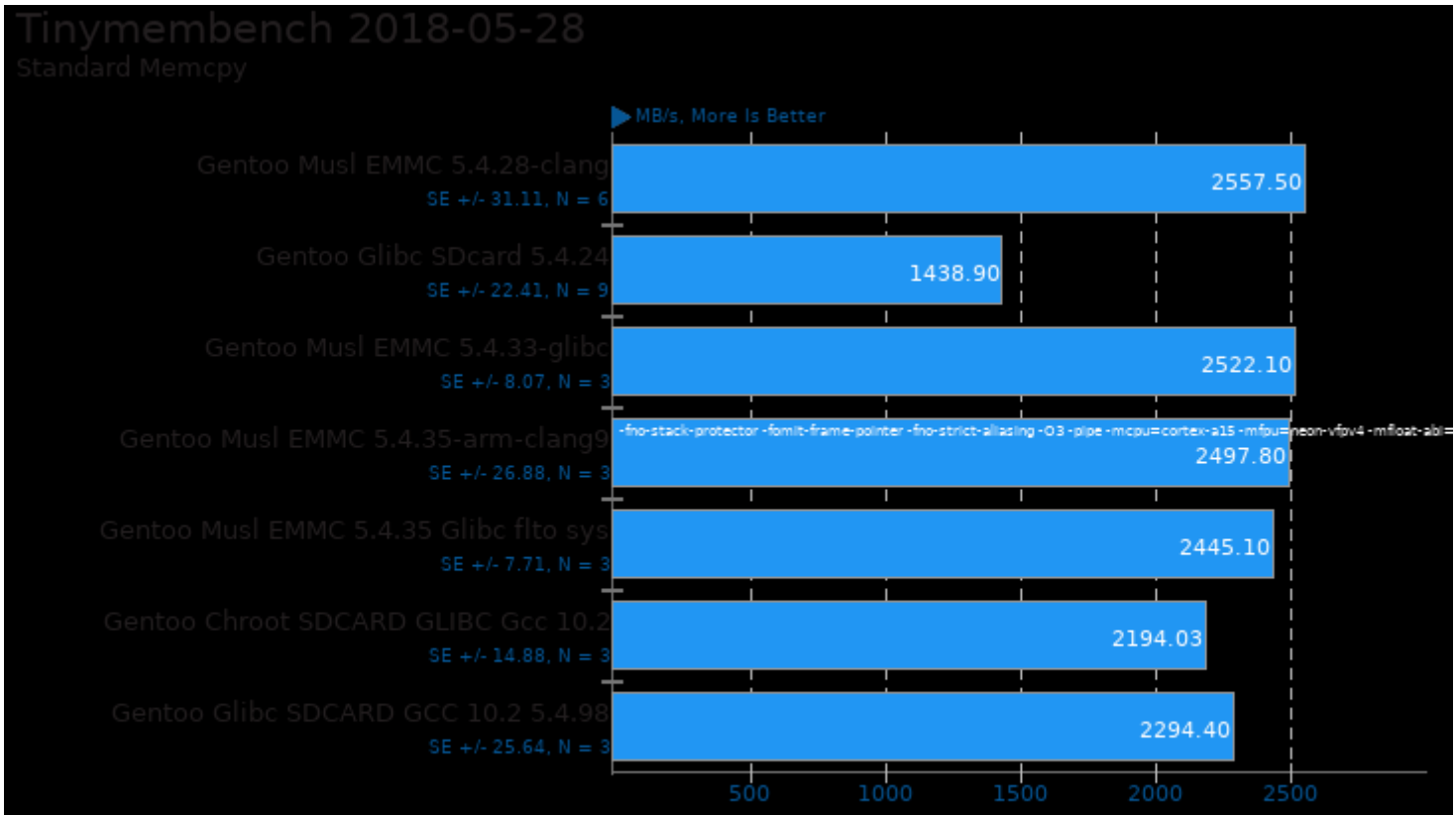
Processor Notes: Scaling Governor: cpufreq-dt performance

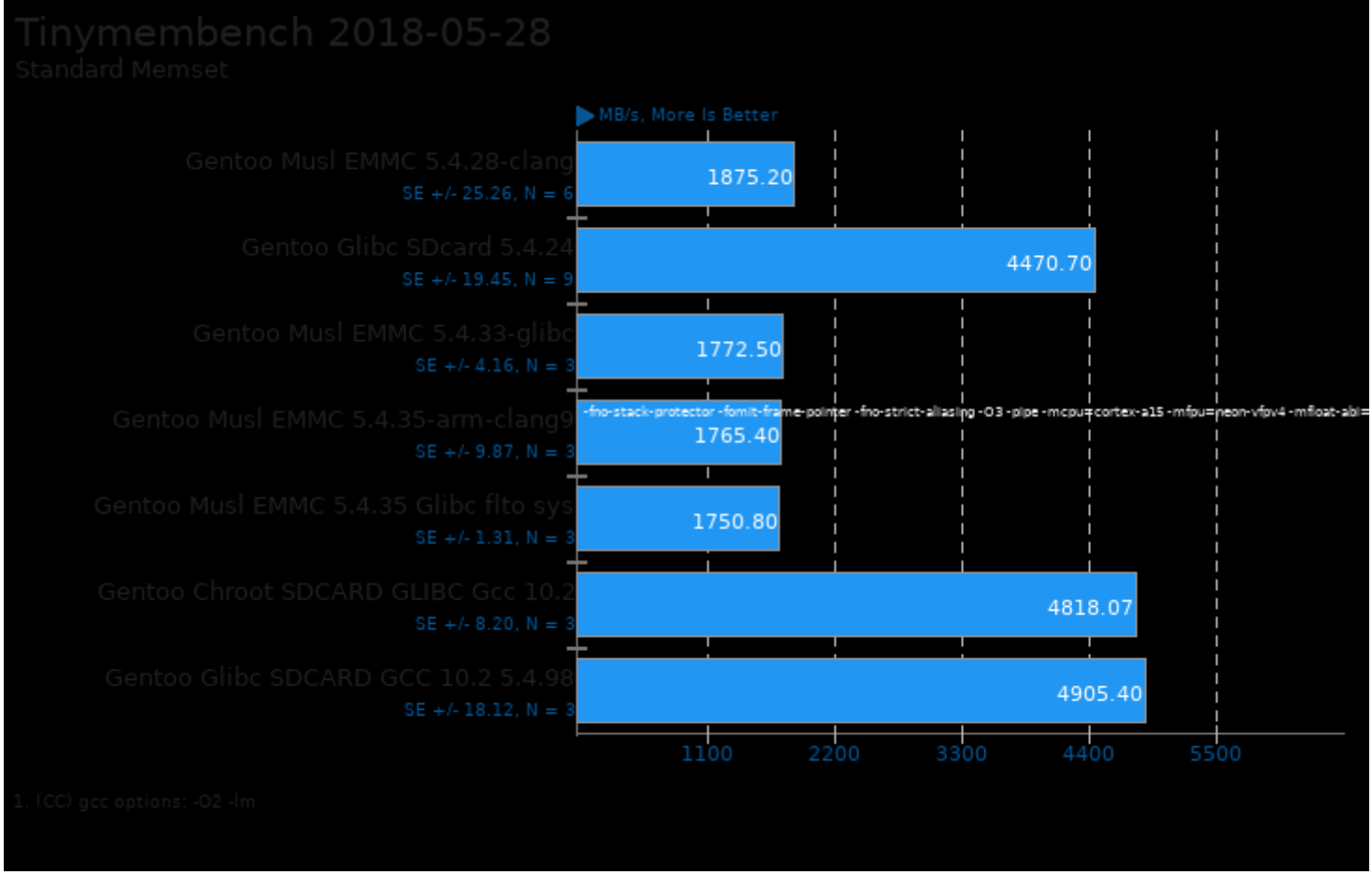
	Gentoo Musl EMMC 5.4.28-clang	Gentoo Glibc SDcard 5.4.24	Gentoo Musl EMMC 5.4.33-glibc	Gentoo Musl EMMC 5.4.35-arm-clang9	Gentoo Musl EMMC 5.4.35 Glibc flto sys	Gentoo Musl EMMC 5.4.35 clang O3 vfpv3-d16	Gentoo Chroot SDCARD GLIBC Gcc 10.2	Gentoo Glibc SDCARD GCC 10.2 5.4.98
Tinymembench - Standard Memcpy	**2558**	**1439**	2522	2498	2445		2194	2294
Normalized	100%	56.26%	98.62%	97.67%	95.61%		85.79%	89.71%
Standard Deviation	3%	4.7%	0.6%	1.9%	0.5%		1.2%	1.9%

Gentoo Odroid-Xu4 Kernel benchmark

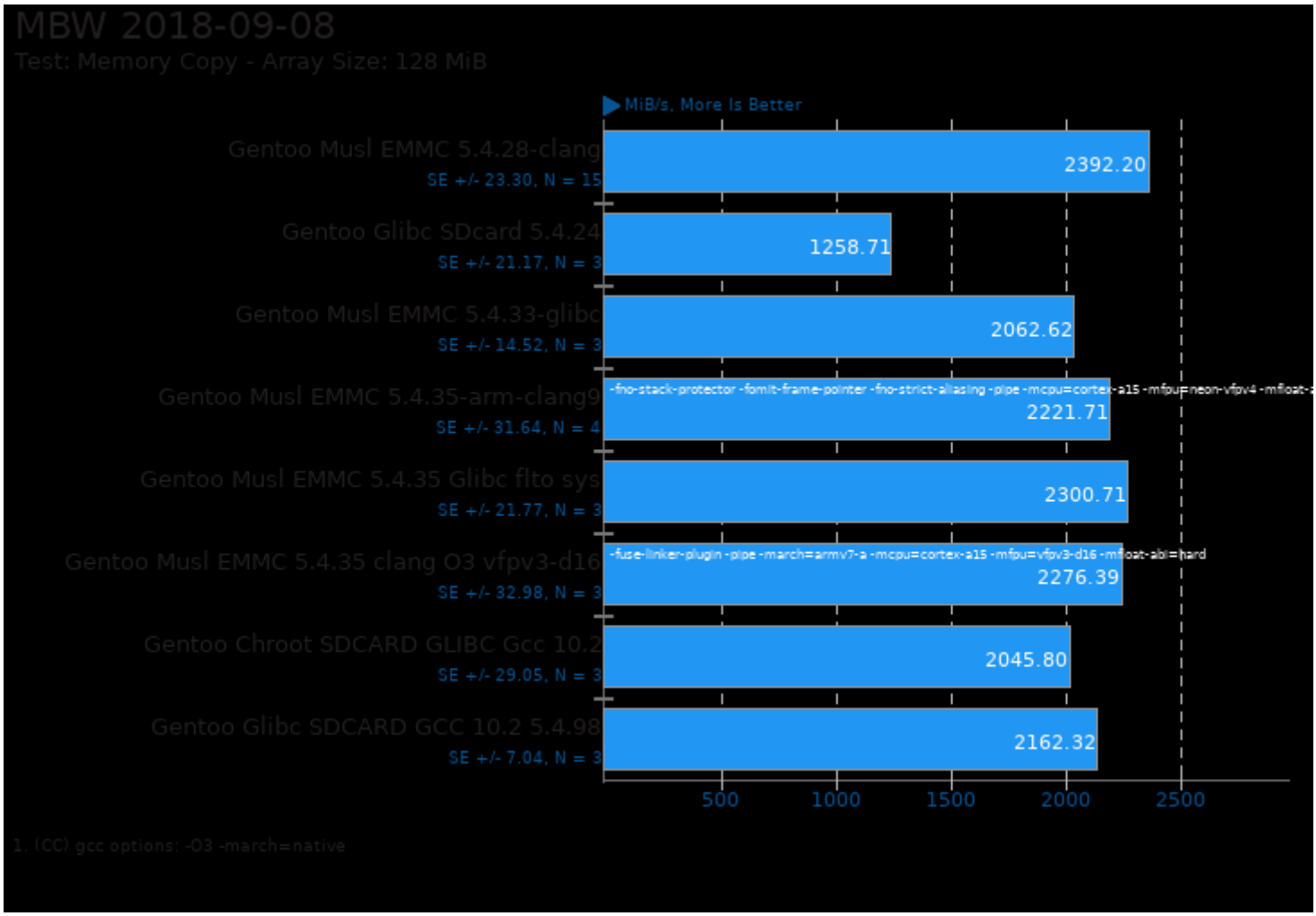
Tinymembench - Standard Memset	1875	4471	1773	1765	**1751**		4818	**4905**
Normalized	38.23%	91.14%	36.13%	35.99%	35.69%		98.22%	100%
Standard Deviation	3.3%	1.3%	0.4%	1%	0.1%		0.3%	0.6%
MBW - Memory Copy - 128 MiB (MiB/s)	**2392**	**1259**	2063	2222	2301	2276	2046	2162
Normalized	100%	52.62%	86.22%	92.87%	96.18%	95.16%	85.52%	90.39%
Standard Deviation	3.8%	2.9%	1.2%	2.8%	1.6%	2.5%	2.5%	0.6%
t-test1 - 1 (sec)	123.614	325.564	123.704	113.536	124.298	**112.778**	**361.40**	207.582
Normalized	91.23%	34.64%	91.17%	99.33%	90.73%	100%	31.21%	54.33%
Standard Deviation	0%	0.4%	0.2%	0.4%	0.2%	0.6%	0.2%	0.4%
IPC_benchmark - TCP Socket - 128 (Messages/sec)	353323	376605	375132	359091	374748	**384190**	192569	**191129**
Normalized	91.97%	98.03%	97.64%	93.47%	97.54%	100%	50.12%	49.75%
Standard Deviation	4.2%	1.9%	1.2%	2.9%	0.9%	1.1%	3%	1.4%
Hackbench - 8 - Thread (sec)	277.606	294.332	277.582	296.461	281.276	**277.237**	**395.42**	314.374
Normalized	99.87%	94.19%	99.88%	93.52%	98.56%	100%	70.11%	88.19%
Standard Deviation	0.4%	1.4%	0.7%	1.4%	1.7%	0.4%	5.5%	2.8%
SQLite Speedtest - Timed Time - Size 1,000 (sec)	576.045	610.080	775.504	**542.531**	582.373	**797.121**	653.40	642.936
Normalized	94.18%	88.93%	69.96%	100%	93.16%	68.06%	83.03%	84.38%
Standard Deviation	2.1%	0.6%	2.7%	0.2%	1.2%	4.5%	3%	3.4%
Apache Benchmark - S.W.P.S (Reqs/sec)	3394	**3235**	3412	**3551**	3529	3543	3431	3327
Normalized	95.57%	91.09%	96.08%	100%	99.38%	99.77%	96.62%	93.69%
Standard Deviation	1.1%	0.4%	1%	1%	0.1%	0.5%	0.4%	0.3%
OSBench - Create Files (us/Event)	214.351774	**5815**	601.462043	1551	4224	4110	**192.81**	237.231407
Normalized	89.95%	3.32%	32.06%	12.43%	4.56%	4.69%	100%	81.28%
Standard Deviation	6.7%	25.1%	22.4%	0.2%	37.9%	38.4%	5.9%	1.3%

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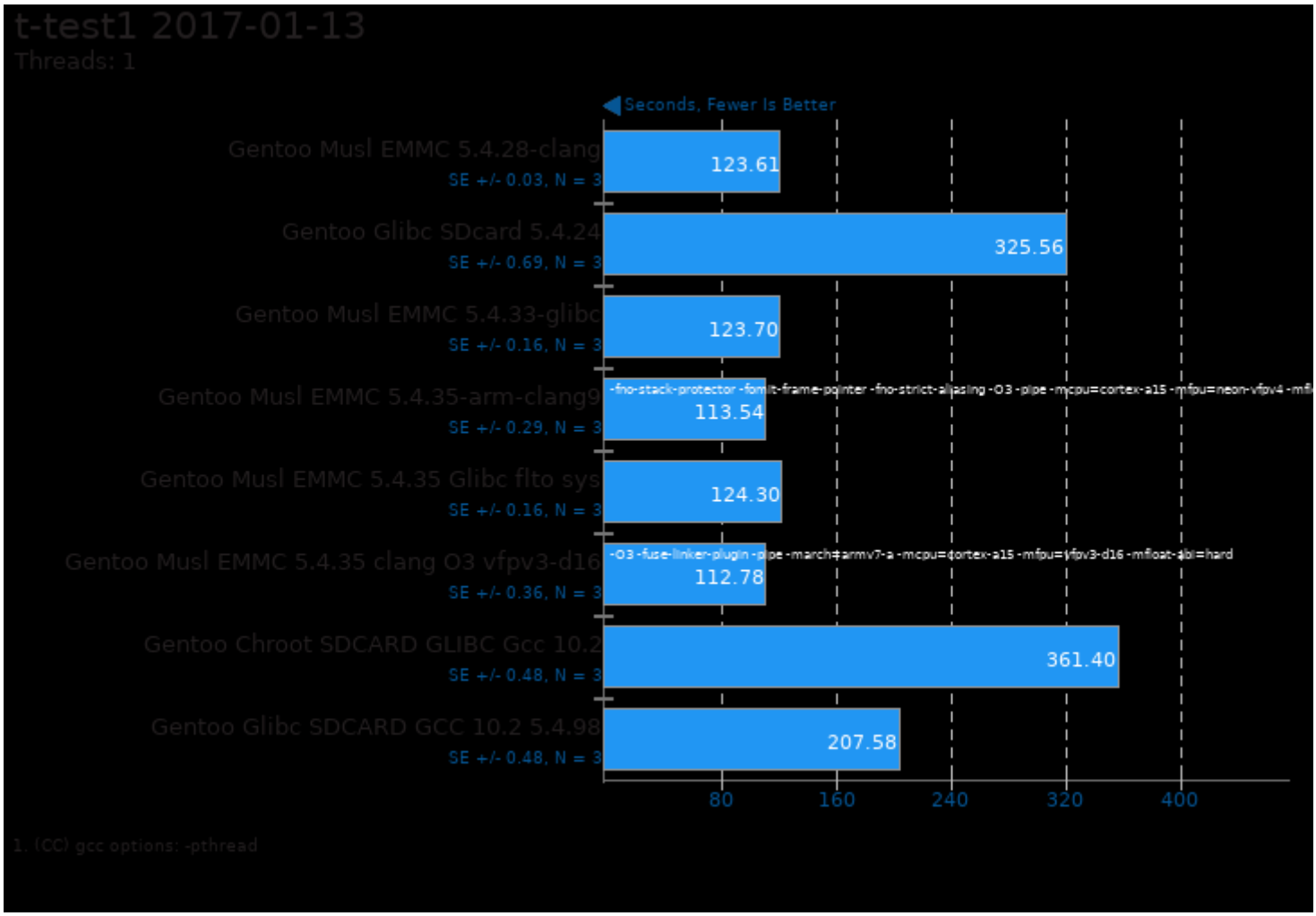




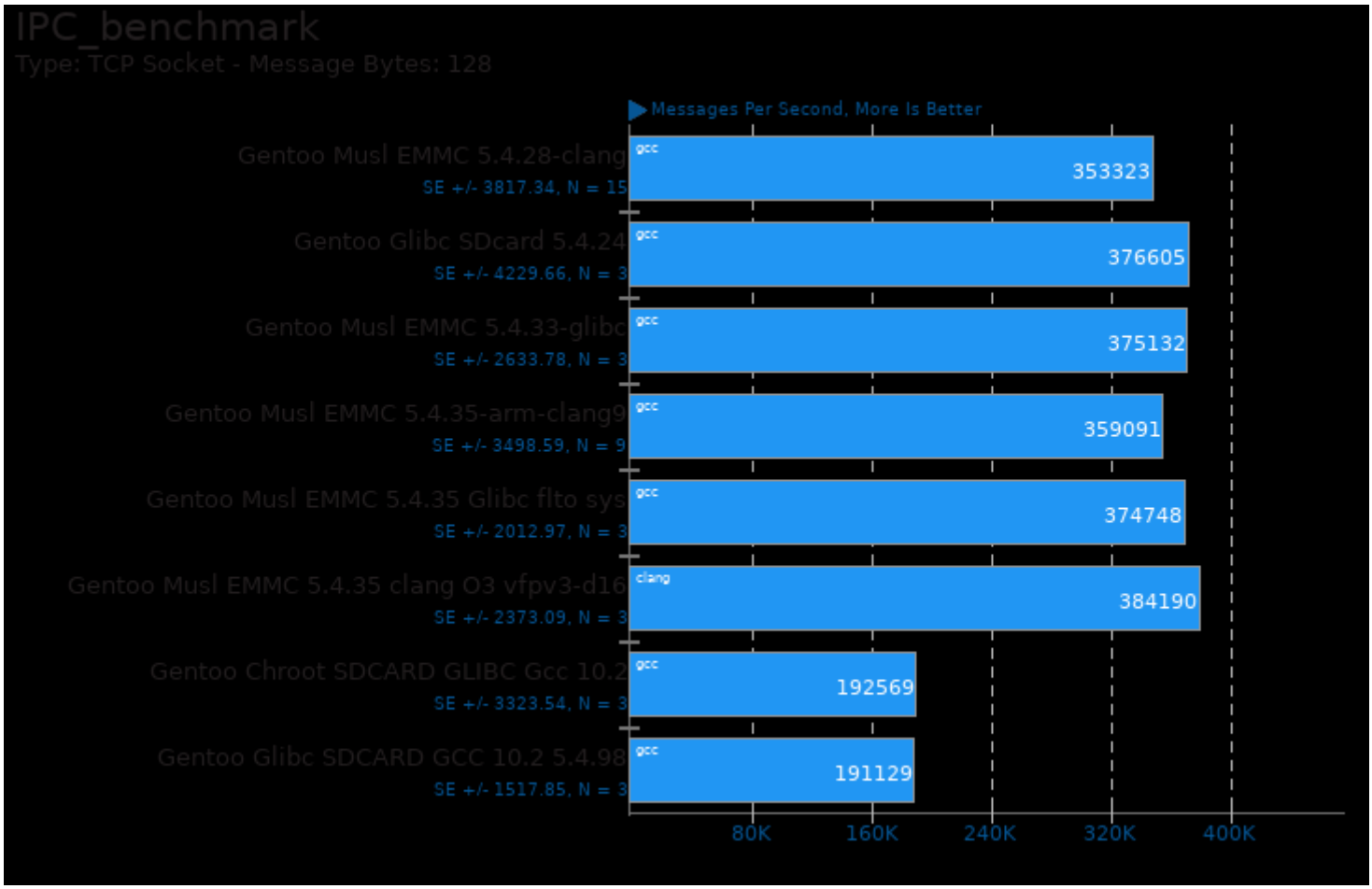
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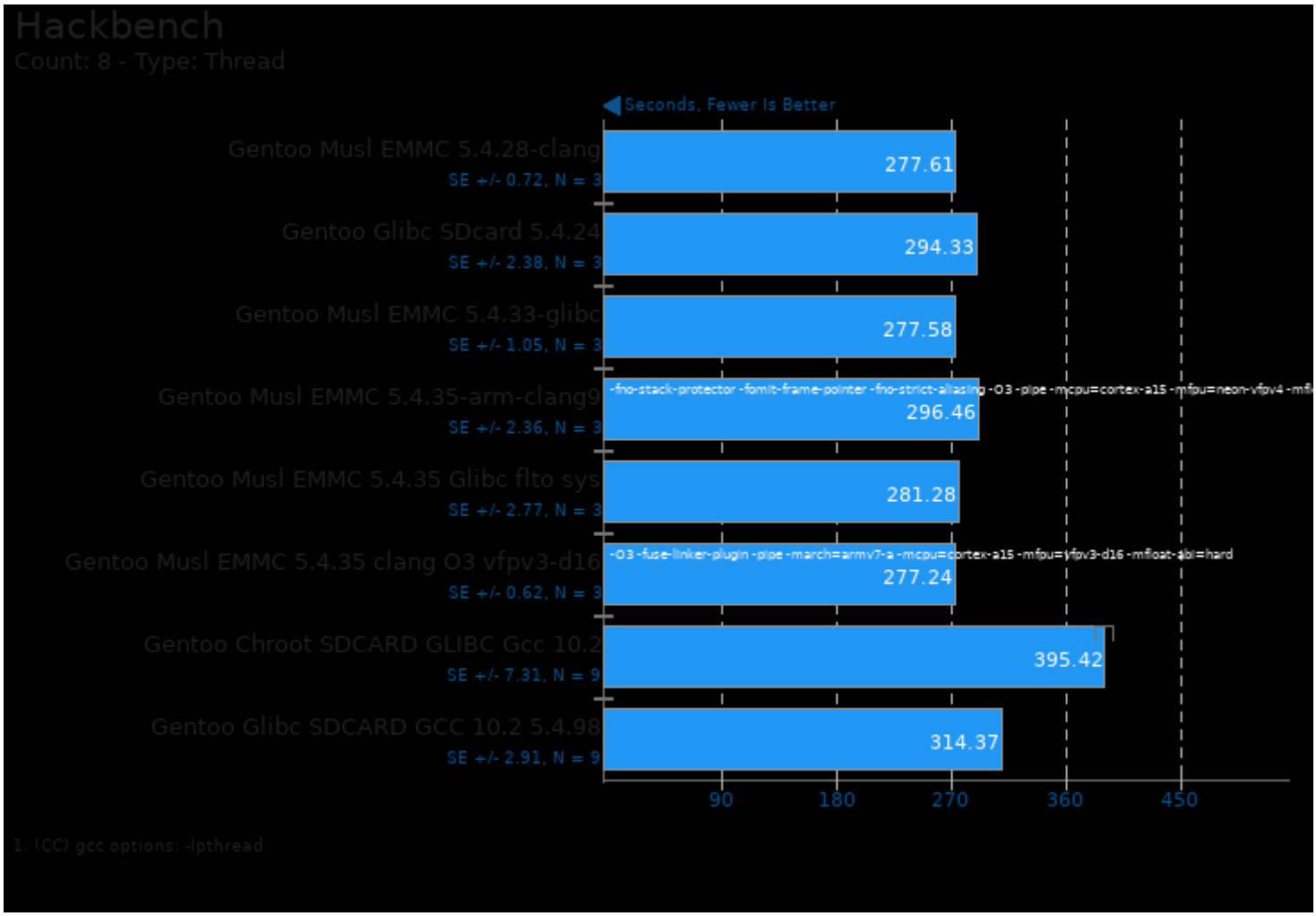
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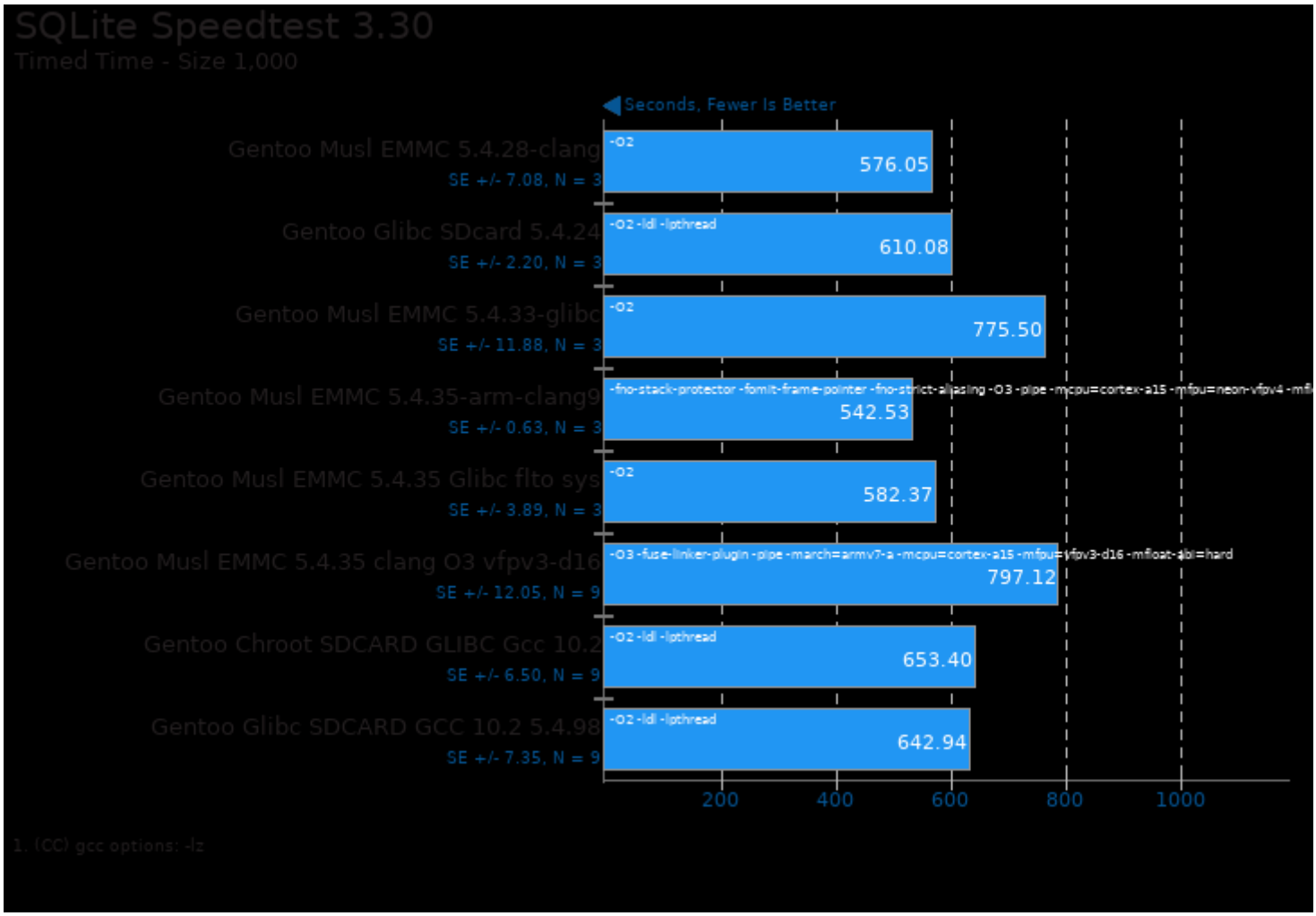
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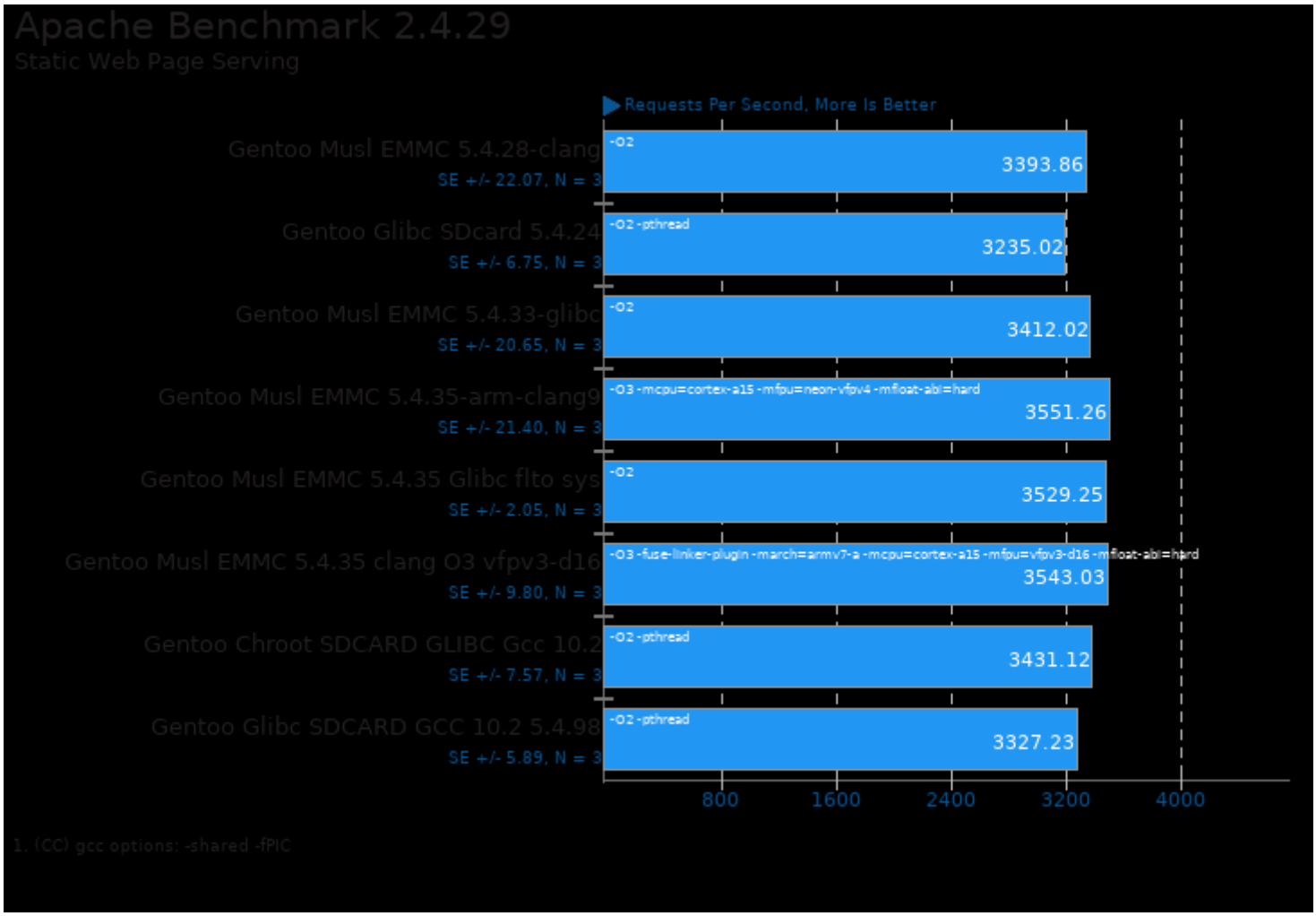
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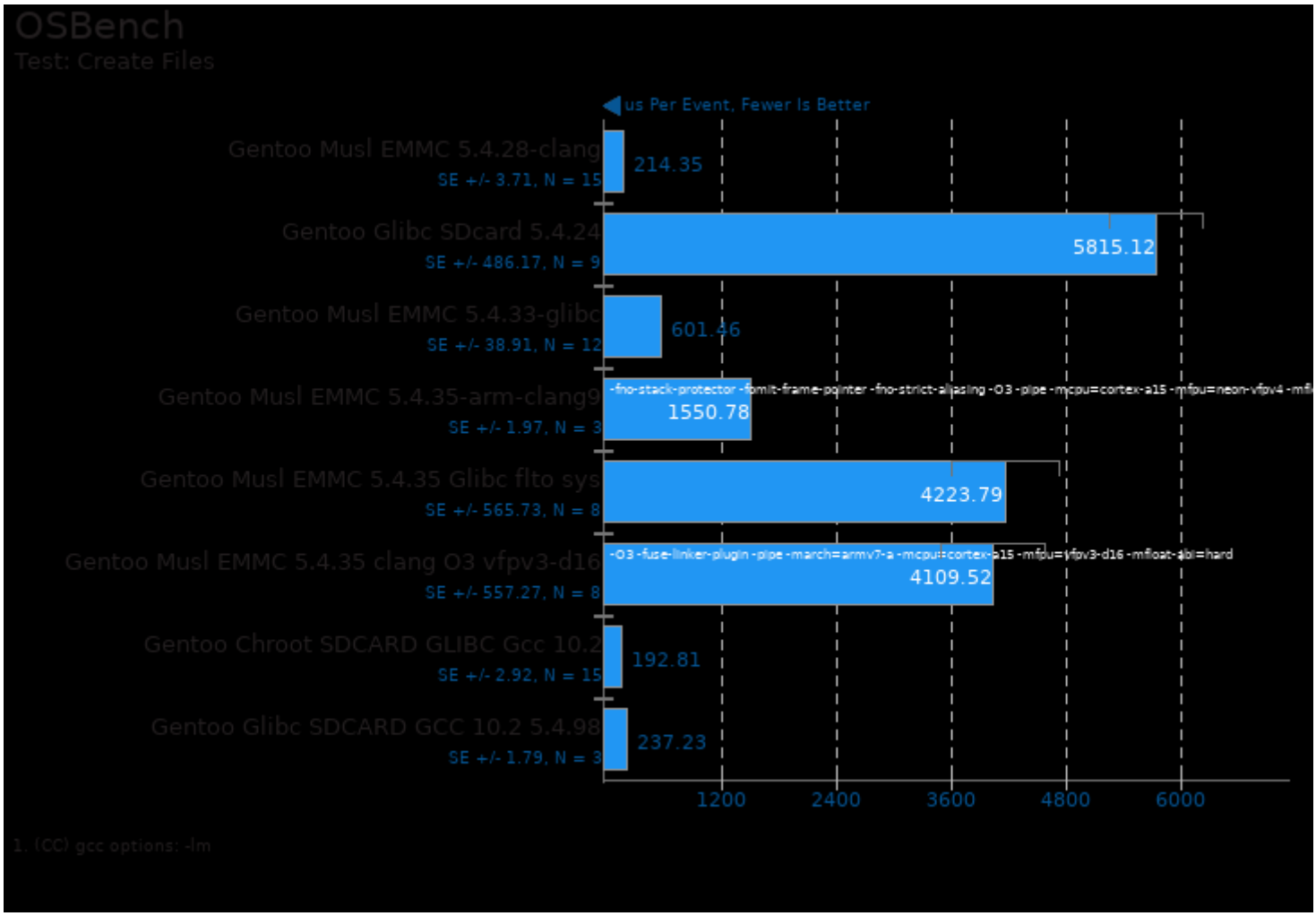
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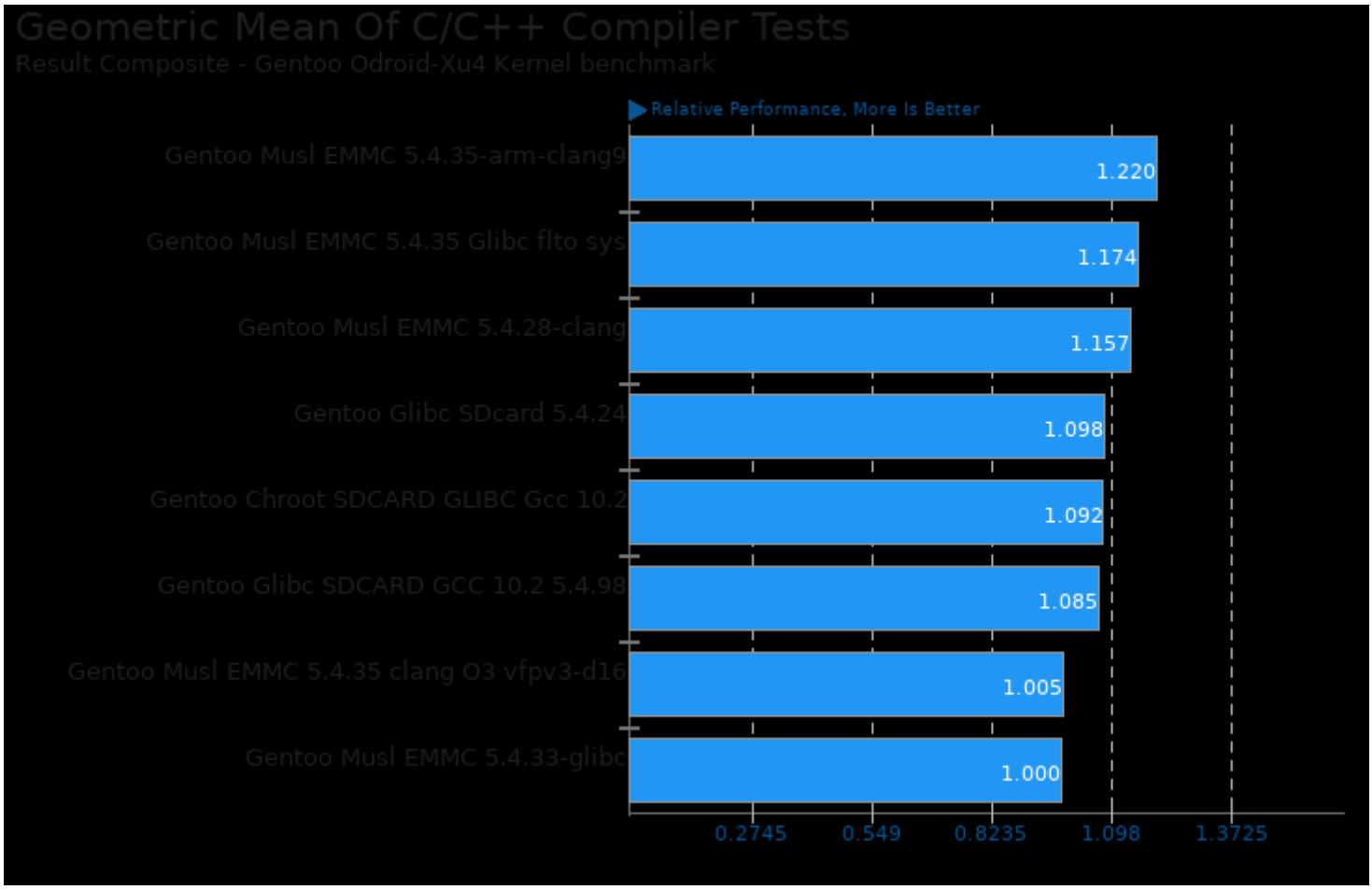


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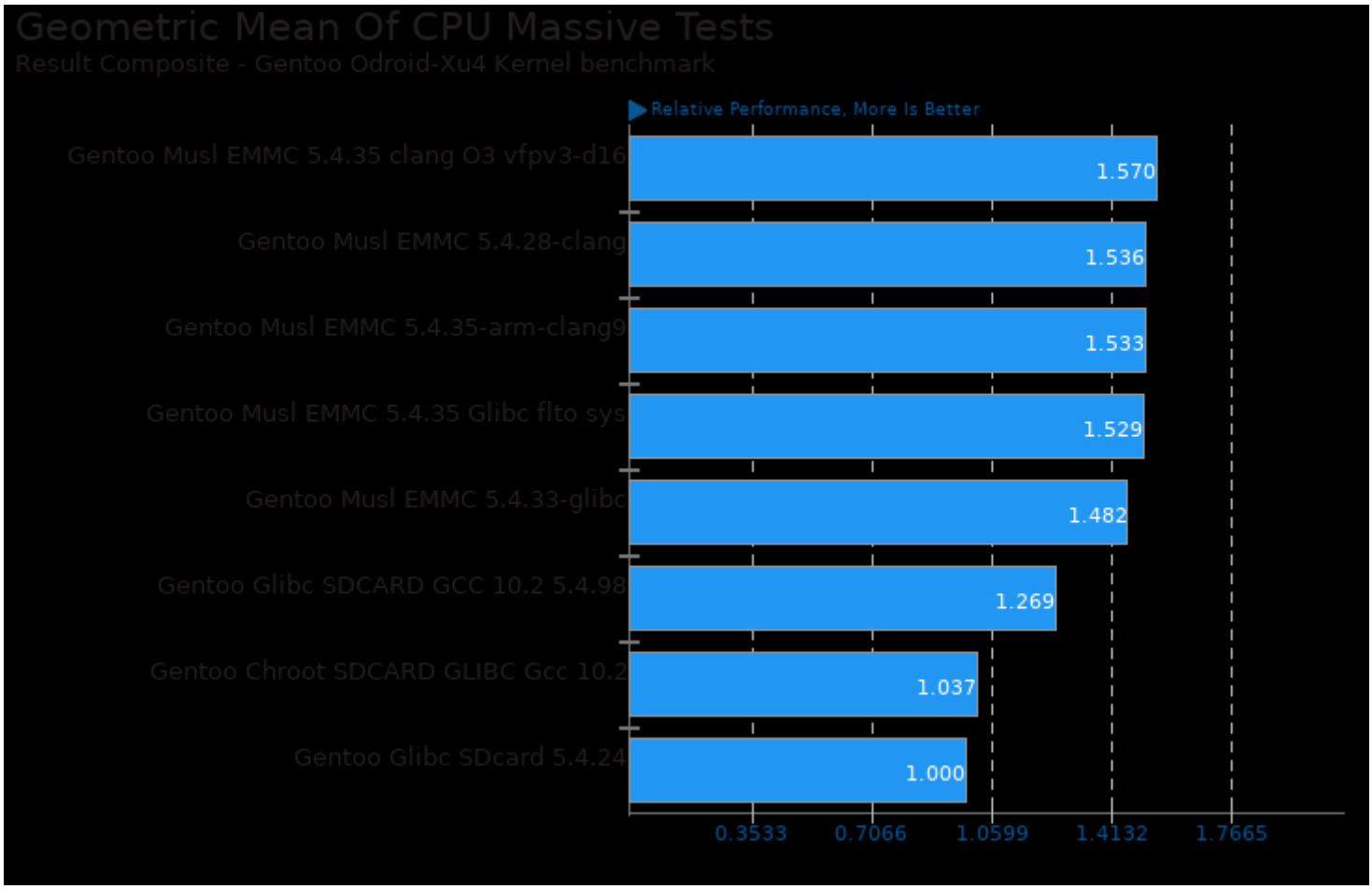
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These geometric means are based upon test groupings / test suites for this result file.



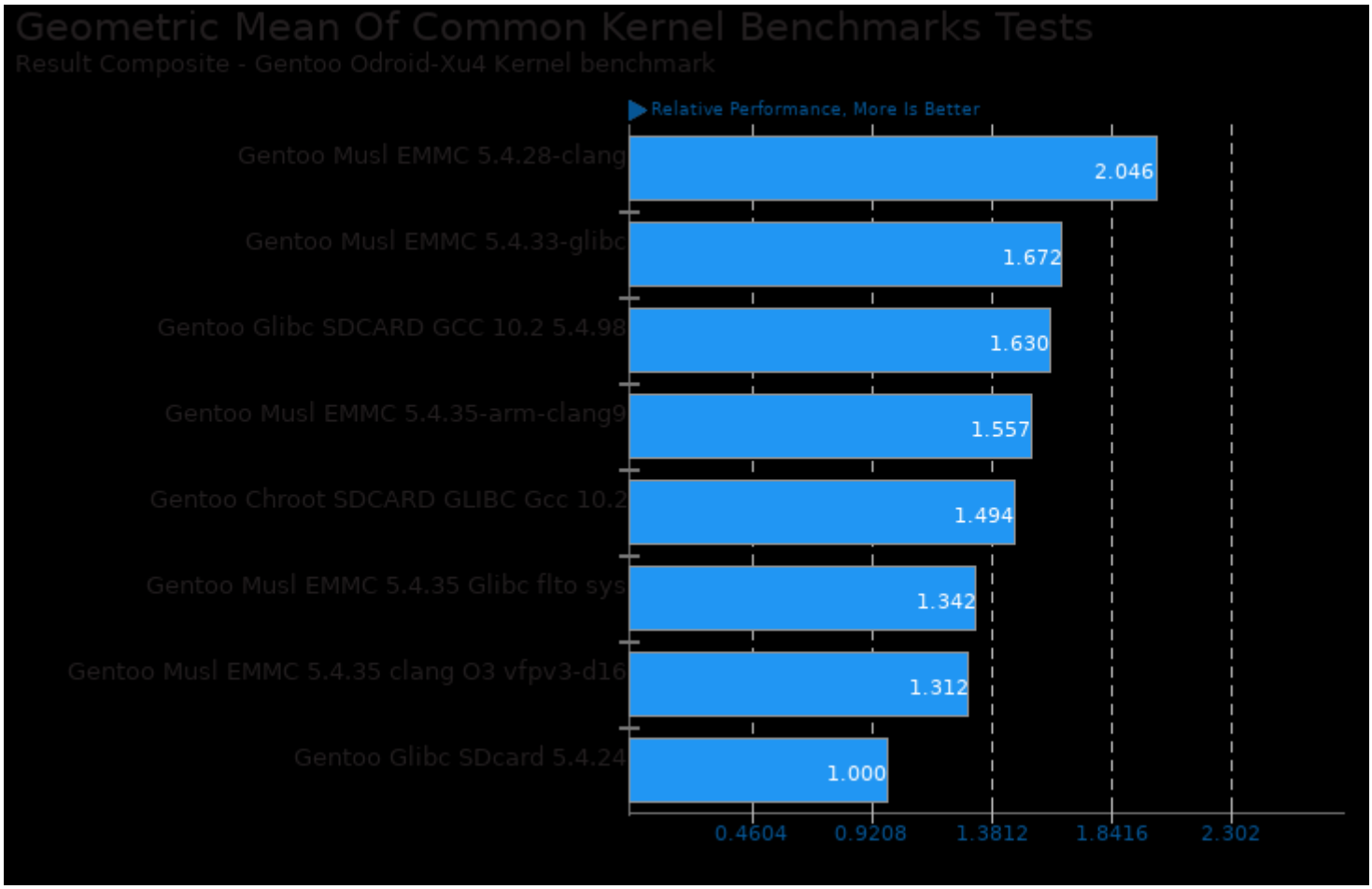
Geometric mean based upon tests: pts/apache and pts/sqlite-speedtest

Gentoo Odroid-Xu4 Kernel benchmark



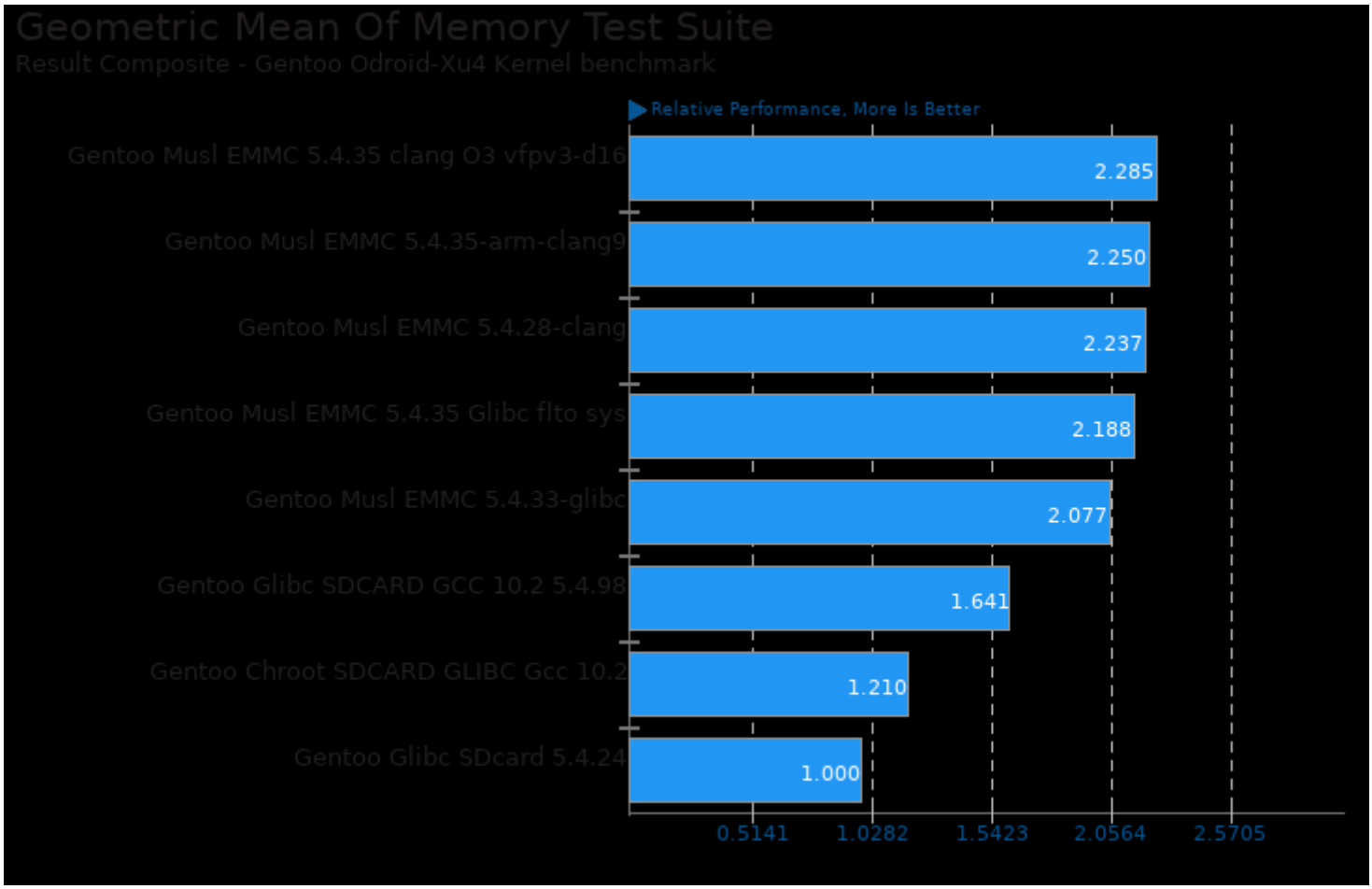
Geometric mean based upon tests: pts/apache, pts/hackbench, pts/mbw, pts/t-test1 and pts/tinymembench

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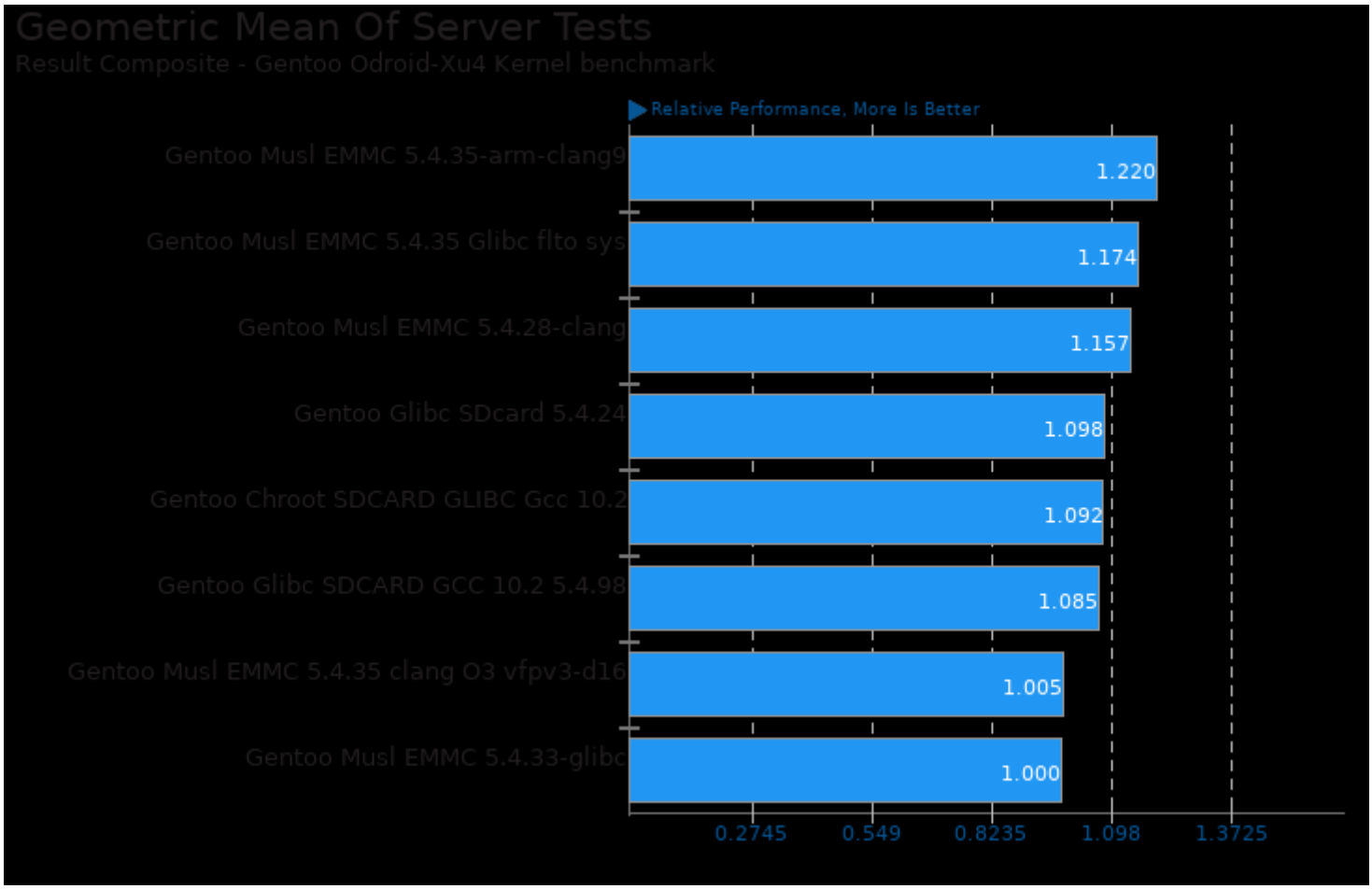
Geometric mean based upon tests: pts/apache, pts/sqlite-speedtest, pts/tinymembench, pts/mbw, pts/t-test1, pts/hackbench, pts/ipc-benchmark and pts/osbench

Gentoo Odroid-Xu4 Kernel benchmark



Geometric mean based upon tests: pts/t-test1, pts/tinymembench and pts/mbw

Gentoo Odroid-Xu4 Kernel benchmark



Geometric mean based upon tests: pts/apache and pts/sqlite-speedtest

This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 05:13.