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# OdroidXu4 Global system

ARMv7 Cortex-A15 testing with a Hardkernel ODROID-XU4 Odroid XU4 and exynosdrmfb on Ubuntu 20.04 via the Phoronix Test Suite.

**Automated Executive Summary**

*Gentoo Glibc SD defauly O2 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 Glibc SD lto-overlay neon-vfpv4) was 1.279x the speed of the slowest (Gentoo Glibc SD Clang 11.1 c7 vpfpv3-d16). Gentoo Glibc SD defauly O2 was 0.999x the speed of Gentoo Glibc SD lto-overlay neon-vfpv4, Armbian 20.04 Glibc EMMC Default 9.3 was 0.939x the speed of Gentoo Glibc SD defauly O2, Gentoo Glibc SD Clang 11.1 c7 vpfpv3-d16 was 0.834x the speed of Armbian 20.04 Glibc EMMC Default 9.3.*

## Test Systems:

### Gentoo Glibc SD defauly O2

## Gentoo Glibc SD lto-overlay neon-vfpv4

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

Environment Notes: FFLAGS="-march=armv7ve+simd -mfpu=neon-vfpv4 -mfloat-abi=hard -funsafe-math-optimizations -O3 -fgraphite-identity -floop-nest-optimize -fdevirtualize-at-ltrans -fipa-pta -fno-semantic-interposition -flto=8 -fuse-linker-plugin -Wl,-O1 -Wl,--as-needed" CXXFLAGS="-march=armv7ve+simd -mfpu=neon-vfpv4 -mfloat-abi=hard -funsafe-math-optimizations -O3 -fgraphite-identity -floop-nest-optimize -fdevirtualize-at-ltrans -fipa-pta -fno-semantic-interposition -flto=8 -fuse-linker-plugin -Wl,-O1 -Wl,--as-needed" FCFLAGS="-march=armv7ve+simd -mfpu=neon-vfpv4 -mfloat-abi=hard -funsafe-math-optimizations -O3 -fgraphite-identity -floop-nest-optimize -fdevirtualize-at-ltrans -fipa-pta -fno-semantic-interposition -flto=8 -fuse-linker-plugin -Wl,-O1 -Wl,--as-needed" CFLAGS="-march=armv7ve+simd -mfpu=neon-vfpv4 -mfloat-abi=hard -funsafe-math-optimizations -O3 -fgraphite-identity -floop-nest-optimize -fdevirtualize-at-ltrans -fipa-pta -fno-semantic-interposition -flto=8 -fuse-linker-plugin -Wl,-O1 -Wl,--as-needed"
Processor Notes: Scaling Governor: cpufreq-dt performance

## Gentoo Glibc SD Clang 11.1 c7 vpfpv3-d16

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: Clang 11.1.0 + GCC 10.2.0 + LLVM 11.1.0, File-System: ext4

Environment Notes: FFLAGS="-march=armv7ve+simd -mfpu=neon-vfpv4 -mfloat-abi=hard -funsafe-math-optimizations -O3 -fgraphite-identity -floop-nest-optimize -fdevirtualize-at-ltrans -fipa-pta -fno-semantic-interposition -flto=8 -fuse-linker-plugin -Wl,-O1 -Wl,--as-needed" CXXFLAGS="-march=armv7-a -mcpu=cortex-a7 -mfloat-abi=hard -mfpu=vfpv3-d16" CFLAGS="-march=armv7-a -mcpu=cortex-a7 -mfloat-abi=hard -mfpu=vfpv3-d16"
Compiler Notes: Optimized build; Default target: armv7a-unknown-linux-gnueabihf; Host CPU: (unknown)
Processor Notes: Scaling Governor: cpufreq-dt performance

## Armbian 20.04 Glibc EMMC Default 9.3

Processor: ARMv7 Cortex-A15 @ 1.20GHz (8 Cores), Motherboard: Hardkernel ODROID-XU4 Odroid XU4, Memory: 2048MB, Disk: 64GB SP64G + 16GB SDW16G, Graphics: exynosdrmfb

OS: Ubuntu 20.04, Kernel: 5.11.2-odroidxu4 (armv7l), Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=arm-linux-gnueabihf --disable-libitm --disable-libquadmath --disable-libquadmath-support --disable-sjlj-exceptions --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,d,fortran,objc,obj-c++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-multilib --enable-nls --enable-objc-gc=auto --enable-plugin --enable-shared --enable-threads=posix --host=arm-linux-gnueabihf --program-prefix=arm-linux-gnueabihf- --target=arm-linux-gnueabihf --with-arch=armv7-a --with-default-libstdcxx-abi=new --with-float=hard --with-fpu=vfpv3-d16 --with-gcc-major-version-only --with-mode=thumb --with-target-system-zlib=auto -v
Processor Notes: Scaling Governor: cpufreq-dt performance

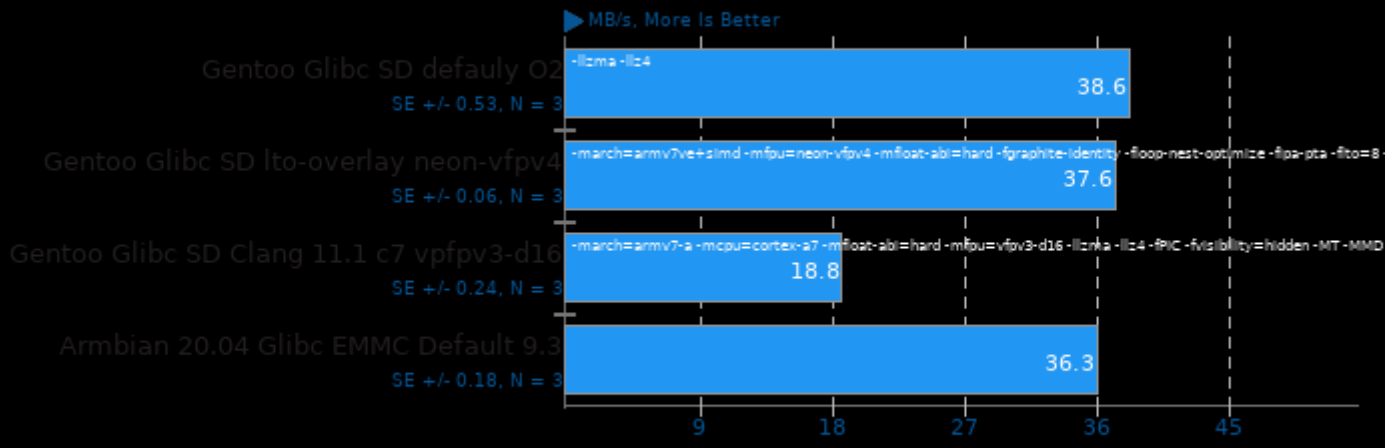
| | Gentoo Glibc SD defauly O2 | Gentoo Glibc SD lto-overlay neon-vfpv4 | Gentoo Glibc SD Clang 11.1 c7 vpfpv3-d16 | Armbian 20.04 Glibc EMMC Default 9.3 |
|---|---|---|---|---|
| **Zstd Compression - 8 - Compression Speed (MB/s)** | **38.6** | 37.6 | **18.8** | 35.3 |
| **Normalized** | 100% | 97.41% | 48.7% | 91.45% |
| **Standard Deviation** | 2.4% | 0.3% | 2.2% | 1.8% |
| **MariaDB - 1 (Queries/sec)** | **537** | | | **766** |

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|---|---|---|---|---|
| **Normalized** | 70.1% | | | 100% |
| **Standard Deviation** | 0.6% | | | 2.3% |
| **Primesieve - 1.P.N.G (sec)** | 487.024 | **486.631** | 515.948 | **537.777** |
| **Normalized** | 99.92% | 100% | 94.32% | 90.49% |
| **Standard Deviation** | 5.3% | 5.5% | 3.6% | 1.6% |
| **Parallel BZIP2 Compression - 2.F.C (sec)** | **51.491** | **54.953** | | 54.435 |
| **Normalized** | 100% | 93.7% | | 94.59% |
| **Standard Deviation** | 1.4% | 1.2% | | 3.3% |
| **Git - T.T.C.C.G.C (sec)** | 247.633 | 240.336 | **237.408** | **247.727** |
| **Normalized** | 95.87% | 98.78% | 100% | 95.83% |
| **Standard Deviation** | 1.8% | 2.7% | 3.1% | 0.7% |
| **Zstd Compression - 8 - D.S (MB/s)** | | **262.1** | **55.0** | |
| **Normalized** | | 100% | 20.98% | |
| **Standard Deviation** | | 154.6% | 89.8% | |

## Zstd Compression 1.4.9

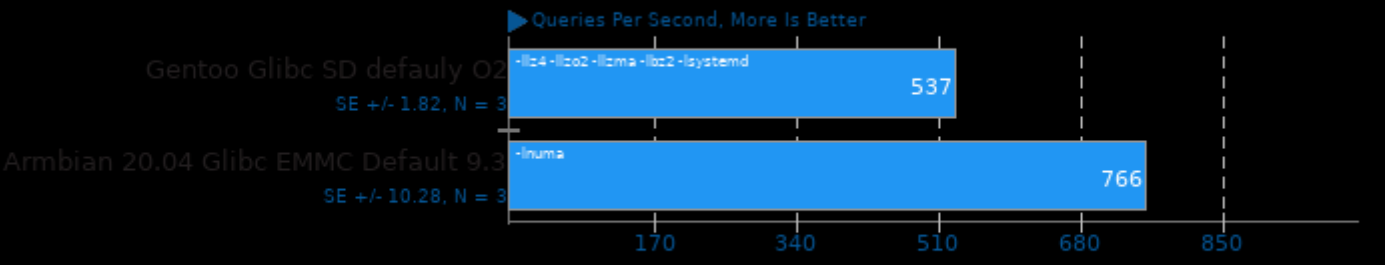
Compression Level: 8 - Compression Speed




1. (CC) gcc options: -O3 -pthread -lz

## MariaDB 10.5.2

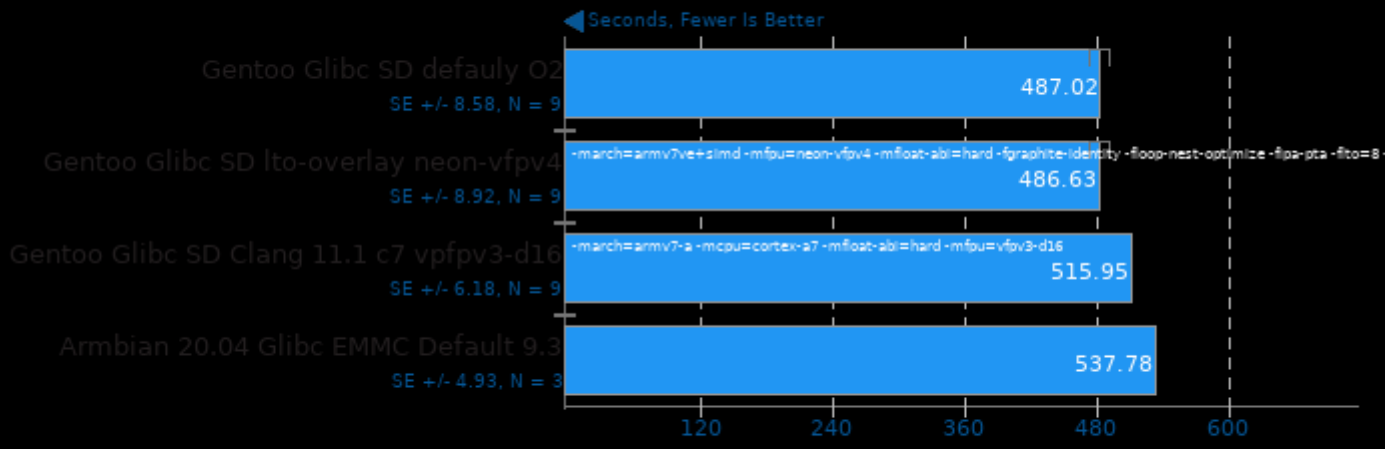
Clients: 1




1. (CXX) g++ options: -pie -fPIC -fstack-protector -O2 -lpthread -laio -lpcre2-8 -lcrypt -lz -lm -lssl -lcrypto -ldl

## Primesieve 7.4

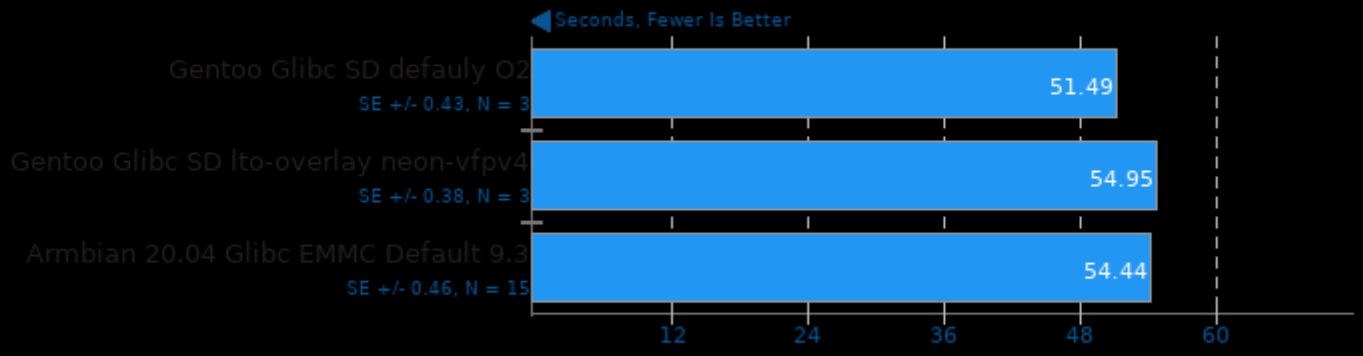
1e12 Prime Number Generation




1. (CXX) g++ options: -O3 -lpthread

## Parallel BZIP2 Compression 1.1.12

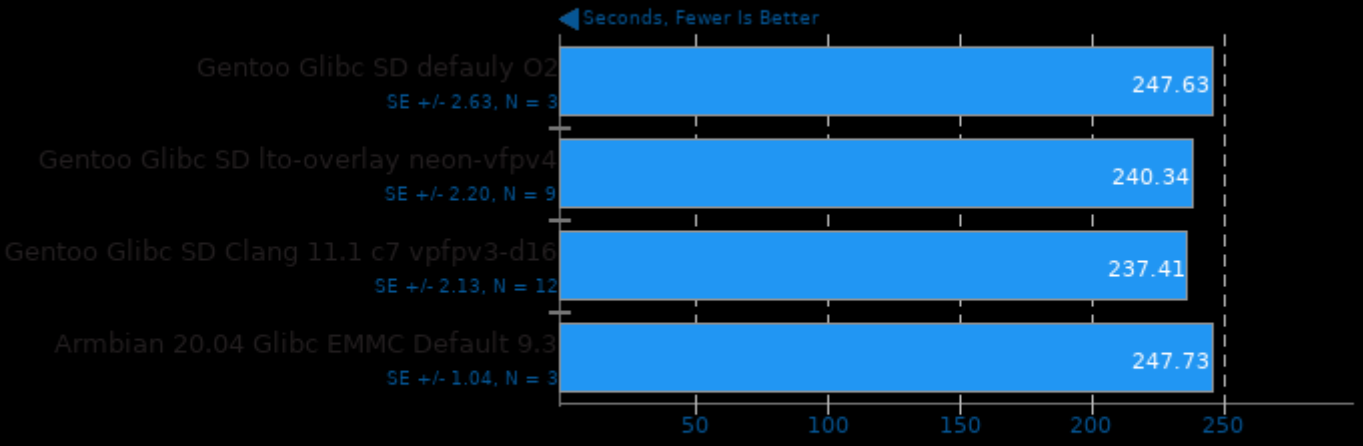
256MB File Compression




1. (CXX) g++ options: -O2 -pthread -lbz2 -lpthread

## Git

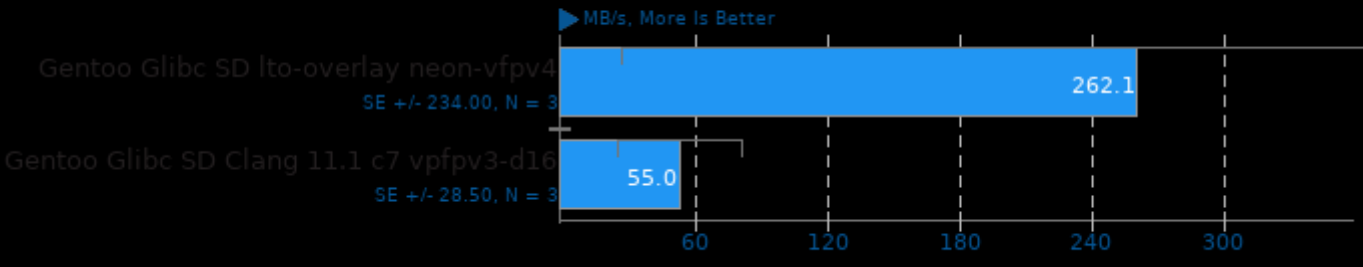
Time To Complete Common Git Commands



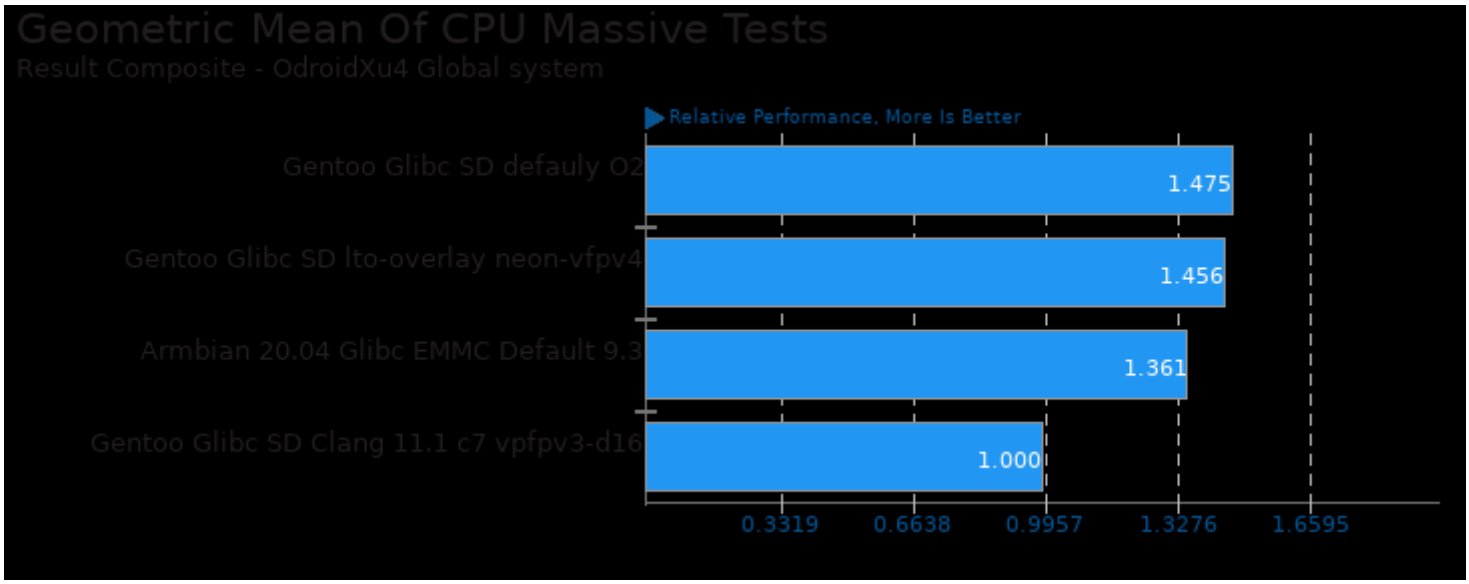

1. Gentoo Glibc SD defauly O2: git version 2.30.1
2. Gentoo Glibc SD lto-overlay neon-vfpv4: git version 2.31.1
3. Gentoo Glibc SD Clang 11.1 c7 vpfpv3-d16: git version 2.31.1
4. Armbian 20.04 Glibc EMMC Default 9.3: git version 2.25.1

## Zstd Compression 1.4.9

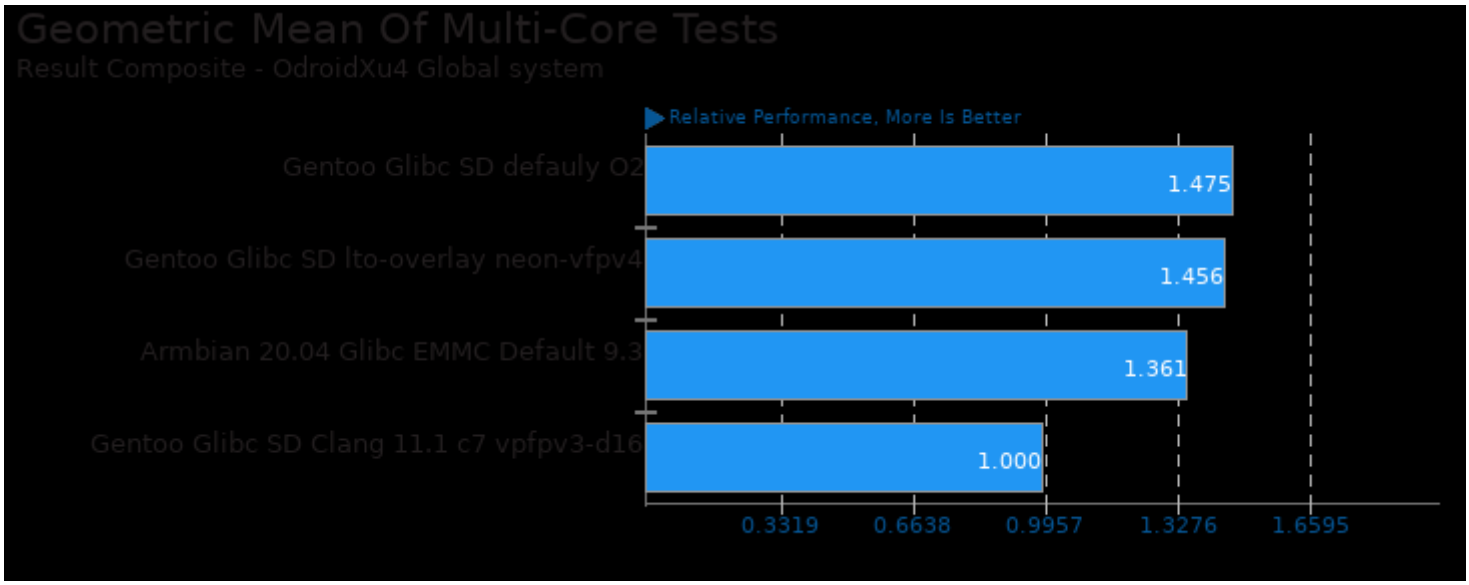
Compression Level: 8 - Decompression Speed



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

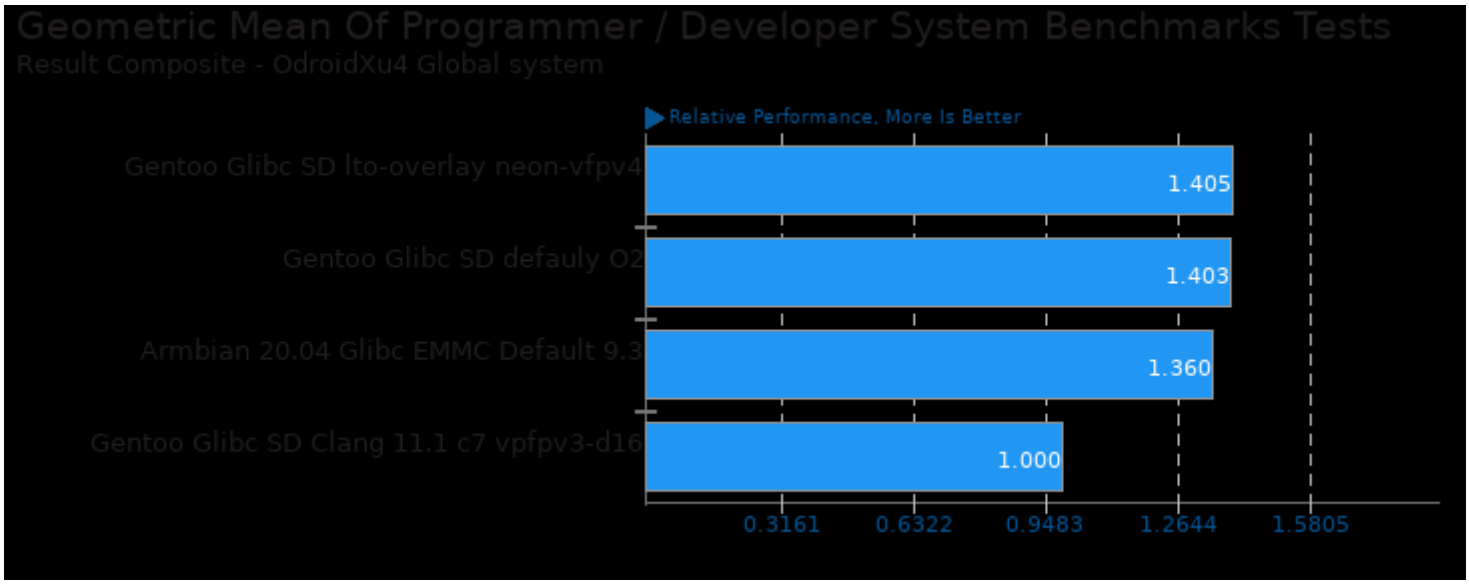



Geometric mean based upon tests: pts/mysqlslap, pts/compress-pbzip2, pts/compress-zstd and pts/primesieve




Geometric mean based upon tests: pts/primesieve, pts/mysqlslap, pts/compress-pbzip2 and pts/compress-zstd

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Geometric mean based upon tests: pts/git and pts/compress-zstd

*This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 05:10.*