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EPYC 7763 Linux 5.15 Code Compilation

2 x AMD EPYC 7763 64-Core testing with a AMD DAYTONA_X (RYM1001D BIOS) and ASPEED on Ubuntu 21.04 via the Phoronix Test Suite.

Automated Executive Summary

Linux 5.14 had the most wins, coming in first place for 93% of the tests.

Based on the geometric mean of all complete results, the fastest (Linux 5.15-rc1) was 1.002x the speed of the slowest (Linux 5.14).

Test Systems:

Linux 5.14

Processor: 2 x AMD EPYC 7763 64-Core @ 2.45GHz (128 Cores / 256 Threads), Motherboard: AMD DAYTONA_X (RYM1001D BIOS), Chipset: AMD Starship/Matisse, Memory: 504GB, Disk: 3841GB Micron_9300_MTFDHAL3T8TDP, Graphics: ASPEED, Monitor: VE228, Network: 2 x Mellanox MT27710

EPYC 7763 Linux 5.15 Code Compilation

OS: Ubuntu 21.04, Kernel: 5.14.0-051400-generic (x86_64), Desktop: GNOME Shell 3.38.4, Display Server: X Server, Vulkan: 1.0.2, Compiler: GCC 10.3.0, 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-bootstrap --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-link-mutex --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-10-gDeRY6/gcc-10-10.3.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-10-gDeRY6/gcc-10-10.3.0/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-build-config=bootstrap-lto-lean --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: acpi-cpufreq schedutil (Boost: Enabled) - CPU Microcode: 0xa001119
Python Notes: Python 3.9.5
Security Notes: itlb_multihit: Not affected + 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 Full AMD retpoline IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

Linux 5.15-rc1

Processor: 2 x AMD EPYC 7763 64-Core @ 2.45GHz (128 Cores / 256 Threads), Motherboard: AMD DAYTONA_X (RYM1001D BIOS), Chipset: AMD Starship/Matisse, Memory: 504GB, Disk: 3841GB Micron_9300_MTFDHAL3T8TDP, Graphics: ASPEED, Monitor: VE228, Network: 2 x Mellanox MT27710

OS: Ubuntu 21.04, Kernel: 5.15.0-rc1-phx (x86_64) 20210913, Desktop: GNOME Shell 3.38.4, Display Server: X Server, Vulkan: 1.0.2, Compiler: GCC 10.3.0, File-System: ext4, Screen Resolution: 1920x1080

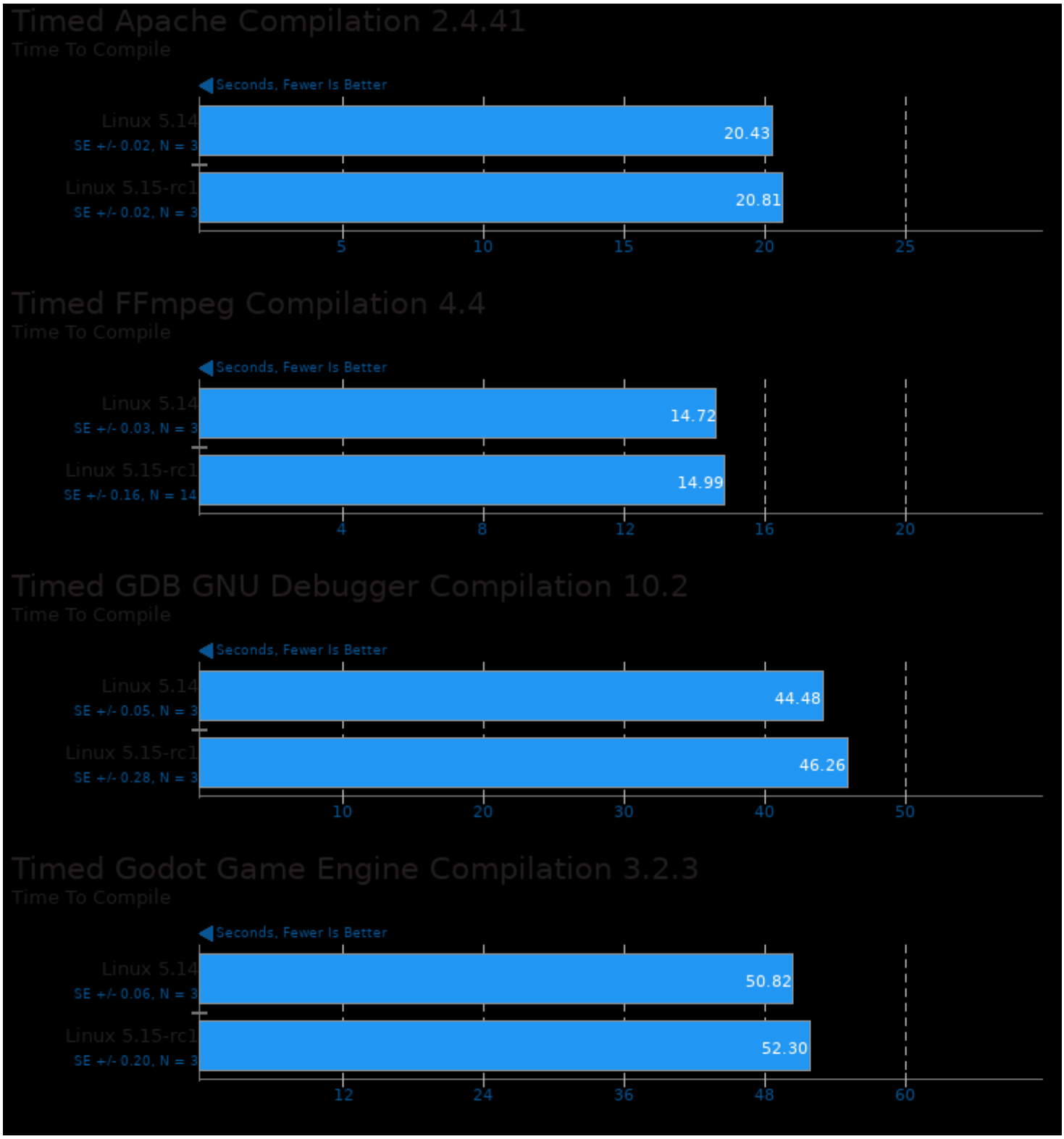
Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-link-mutex --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-10-gDeRY6/gcc-10-10.3.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-10-gDeRY6/gcc-10-10.3.0/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-build-config=bootstrap-lto-lean --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
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	Linux 5.14	Linux 5.15-rc1
Timed Apache Compilation - Time To Compile (sec)	**20.434**	**20.807**
Normalized	100%	98.21%
Standard Deviation	0.2%	0.2%
Timed FFmpeg Compilation - Time To Compile (sec)	**14.716**	**14.987**
Normalized	100%	98.19%
Standard Deviation	0.4%	4%
Timed GDB GNU Debugger Compilation - Time To Compile (sec)	**44.478**	**46.256**
Normalized	100%	96.16%
Standard Deviation	0.2%	1.1%
Timed Godot Game Engine Compilation - Time To Compile (sec)	**50.821**	**52.300**
Normalized	100%	97.17%
Standard Deviation	0.2%	0.6%
Timed ImageMagick Compilation - Time To Compile	**11.301**	**11.658**
Normalized	100%	96.94%

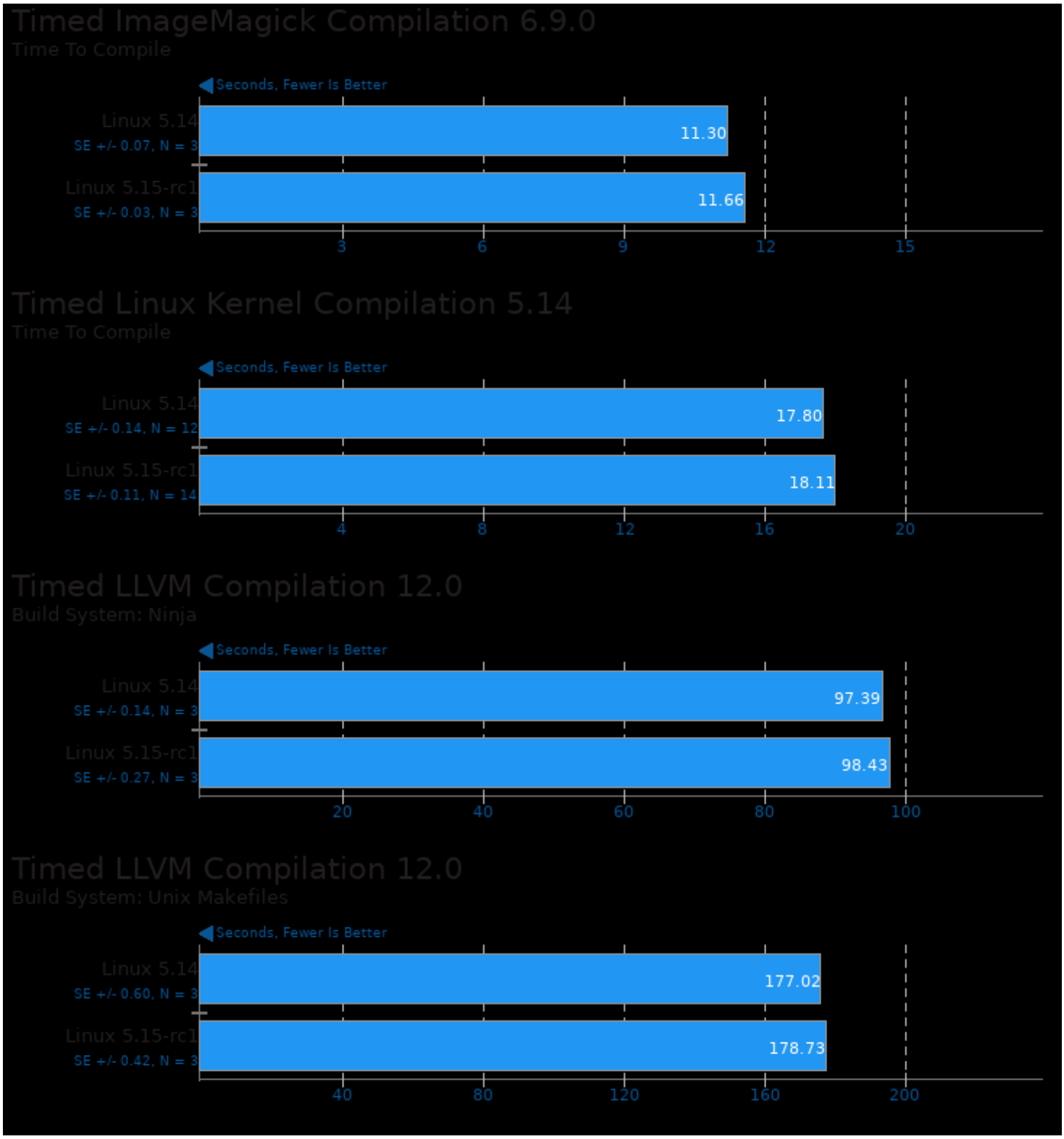
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Standard Deviation	1.1%	0.5%
Timed Linux Kernel Compilation - Time To Compile	**17.804**	**18.107**
Normalized	100%	98.33%
Standard Deviation	2.7%	2.2%
Timed LLVM Compilation - Ninja (sec)	**97.393**	**98.429**
Normalized	100%	98.95%
Standard Deviation	0.2%	0.5%
Timed LLVM Compilation - Unix Makefiles (sec)	**177.016**	**178.734**
Normalized	100%	99.04%
Standard Deviation	0.6%	0.4%
Timed Mesa Compilation - Time To Compile (sec)	**16.829**	**16.918**
Normalized	100%	99.47%
Standard Deviation	0.4%	0.2%
Timed MPlayer Compilation - Time To Compile (sec)	**8.278**	**8.371**
Normalized	100%	98.89%
Standard Deviation	1%	0%
Timed Node.js Compilation - Time To Compile (sec)	**72.247**	**72.715**
Normalized	100%	99.36%
Standard Deviation	0.4%	0.5%
Timed PHP Compilation - Time To Compile (sec)	**34.850**	**35.271**
Normalized	100%	98.81%
Standard Deviation	0.7%	0.2%
Build2 - Time To Compile (sec)	**55.147**	**55.492**
Normalized	100%	99.38%
Standard Deviation	0.5%	1.2%
Timed Erlang/OTP Compilation - Time To Compile	**160.019**	**120.951**
Normalized	75.59%	100%
Standard Deviation	0.2%	0.8%
Timed Wasmer Compilation - Time To Compile (sec)	**52.549**	**53.799**
Normalized	100%	97.68%
Standard Deviation	1.1%	1.7%
Timed GCC Compilation - Time To Compile (sec)	**690.283**	**700.330**
Normalized	100%	98.57%
Standard Deviation	0.2%	0.3%

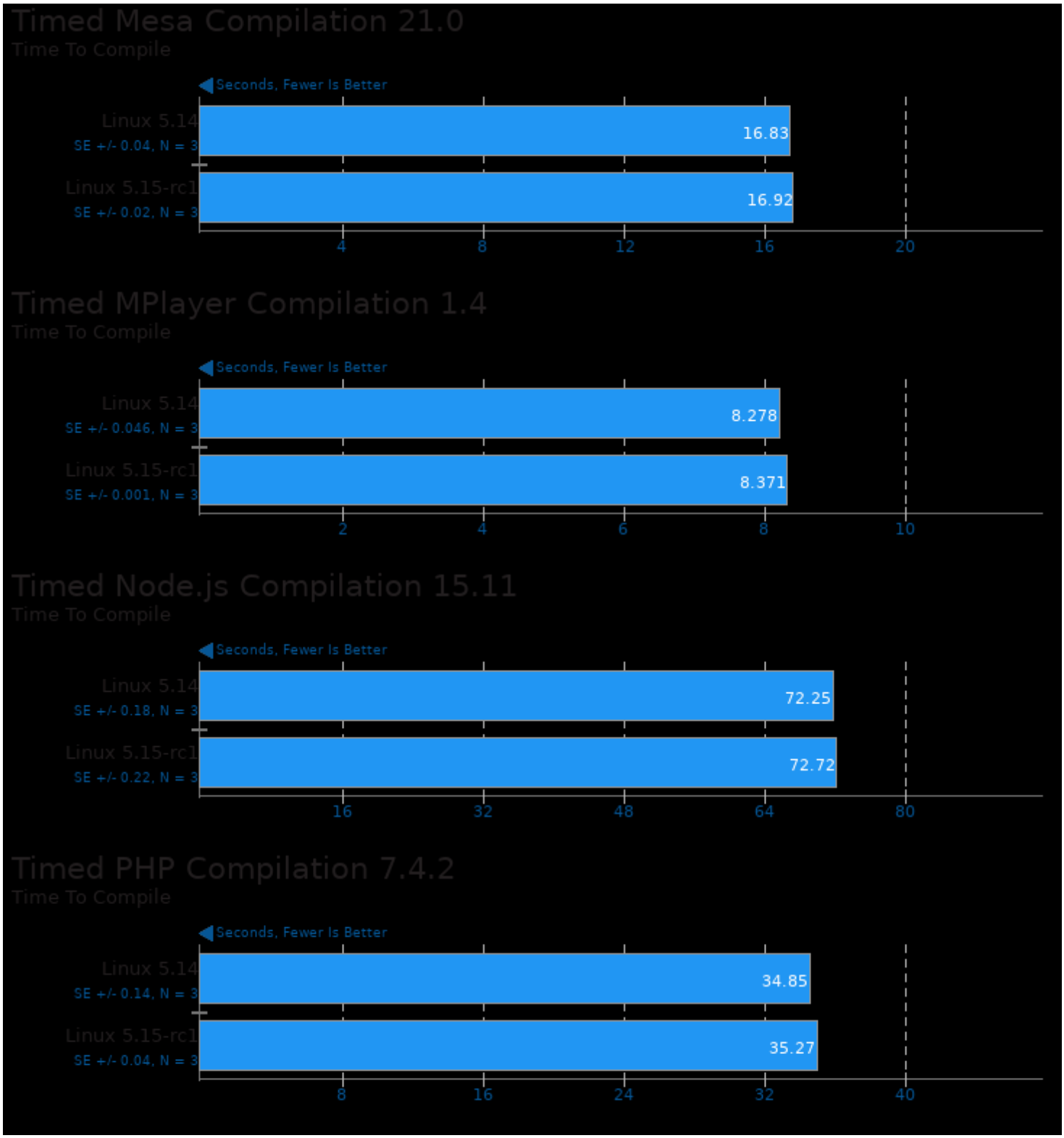
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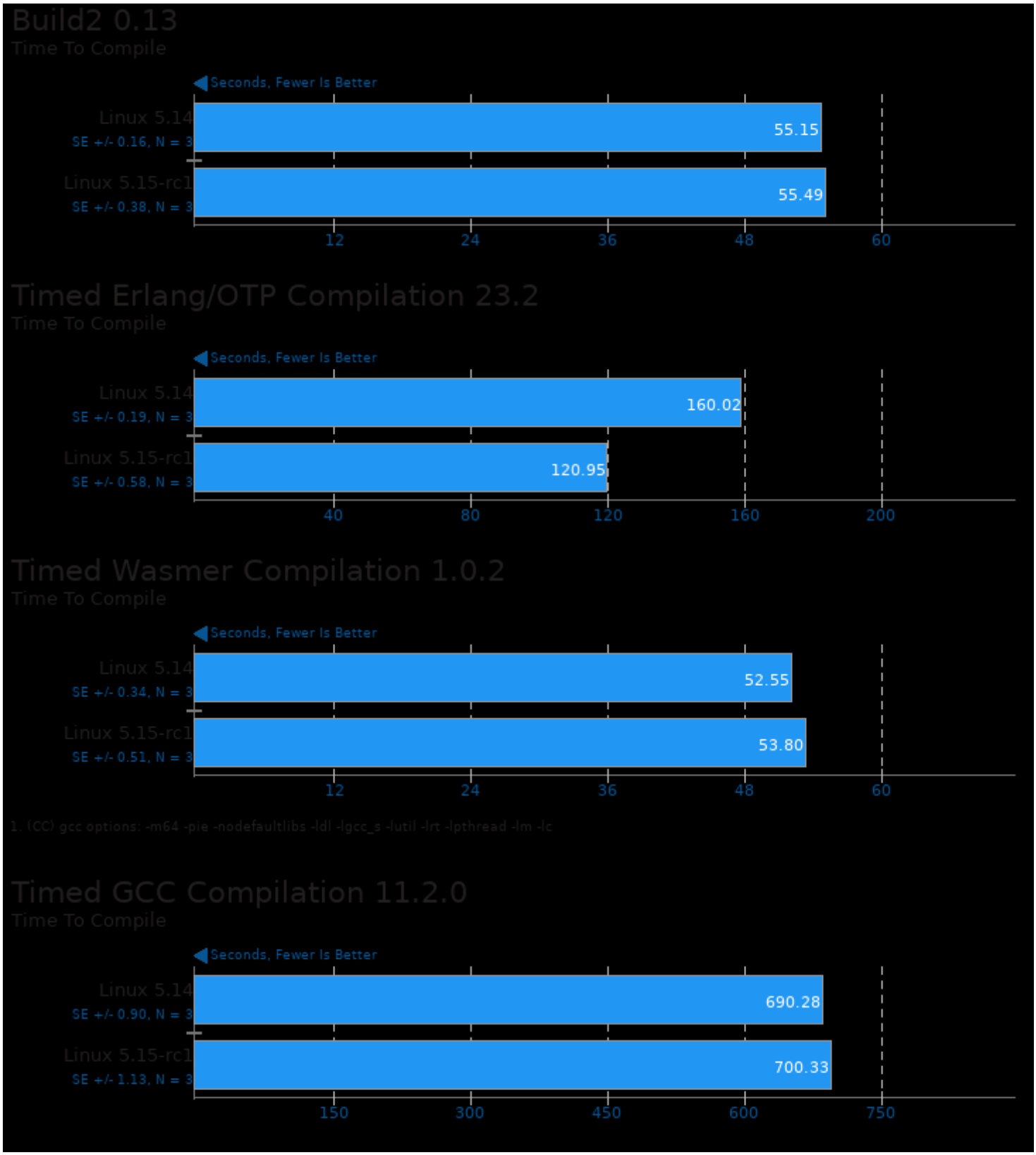
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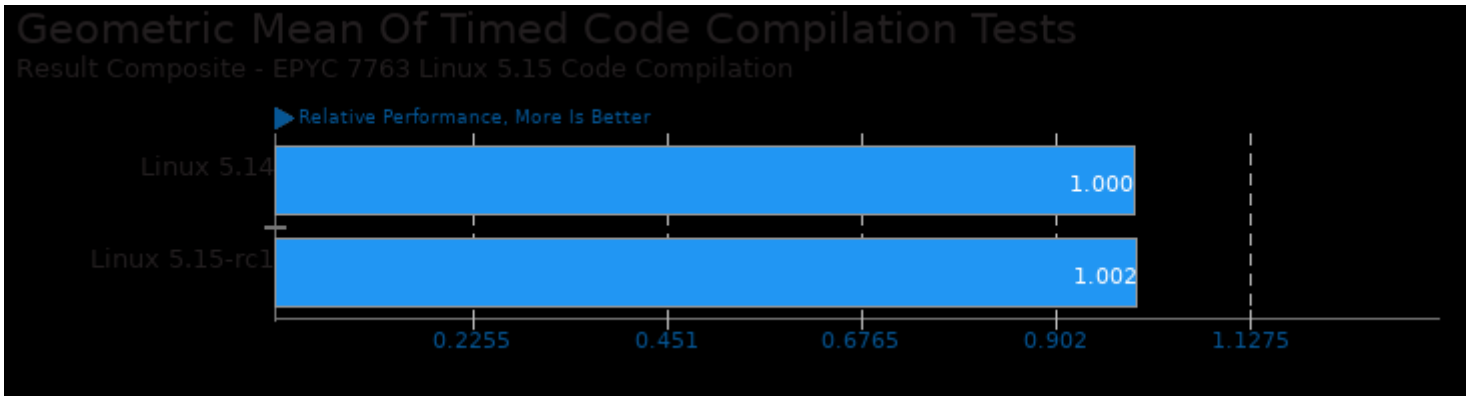


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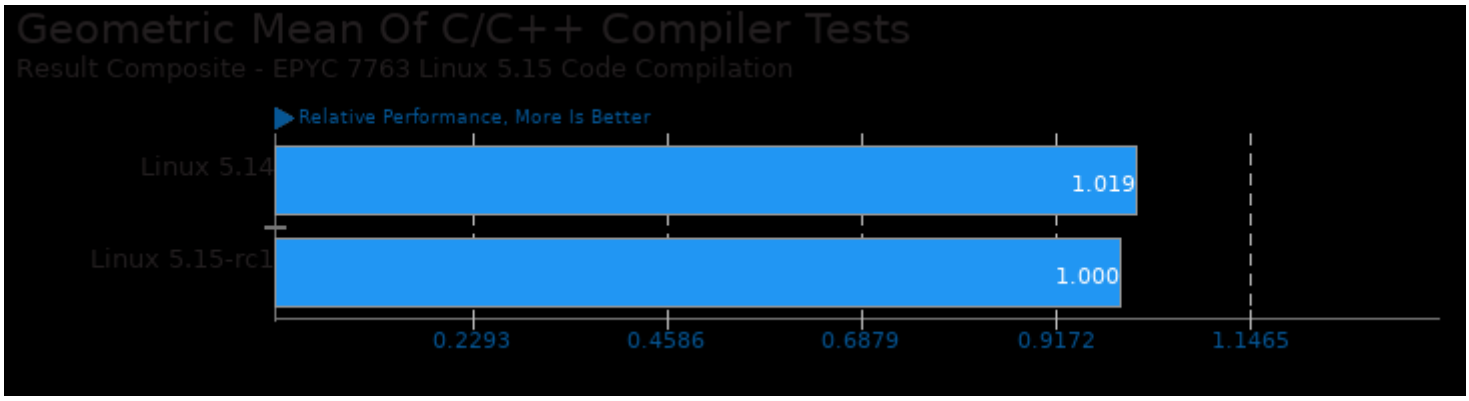


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These geometric means are based upon test groupings / test suites for this result file.



Geometric mean based upon tests: pts/build-apache, pts/build-php, pts/build-linux-kernel, pts/build-imagemagick, pts/build-gcc, pts/build-gdb, pts/build-llvm, pts/build-ffmpeg, pts/build-mplayer, pts/build2, pts/build-godot, pts/build-erlang, pts/build-wasmer, pts/build-nodejs and pts/build-mesa

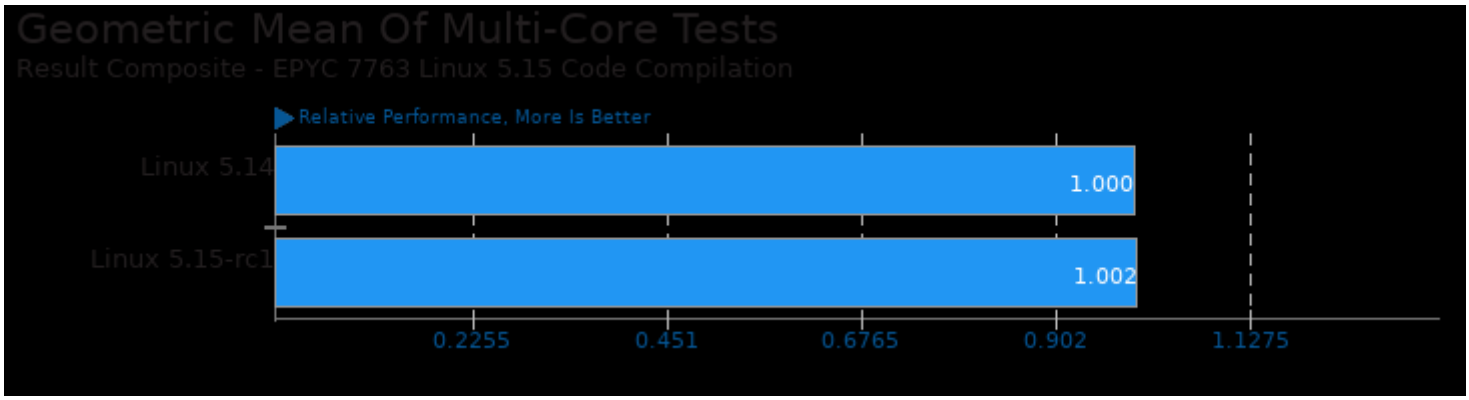


Geometric mean based upon tests: pts/build-php, pts/build-imagemagick, pts/build-llvm, pts/build-gdb, pts/build-ffmpeg, pts/build-apache and pts/build-mplayer

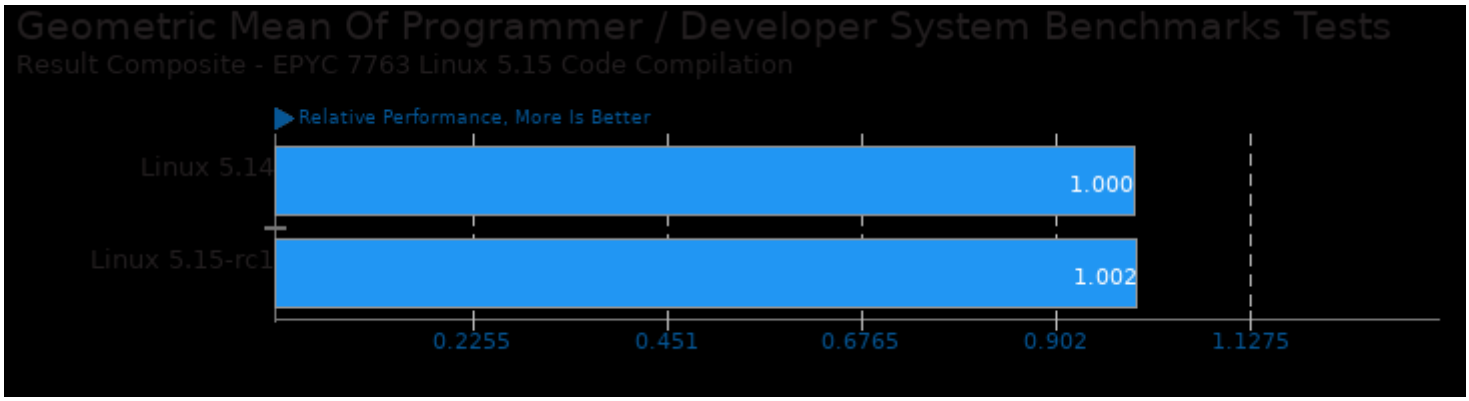


Geometric mean based upon tests: pts/build-apache, pts/build-gcc, pts/build-llvm, pts/build-linux-kernel and pts/build-php

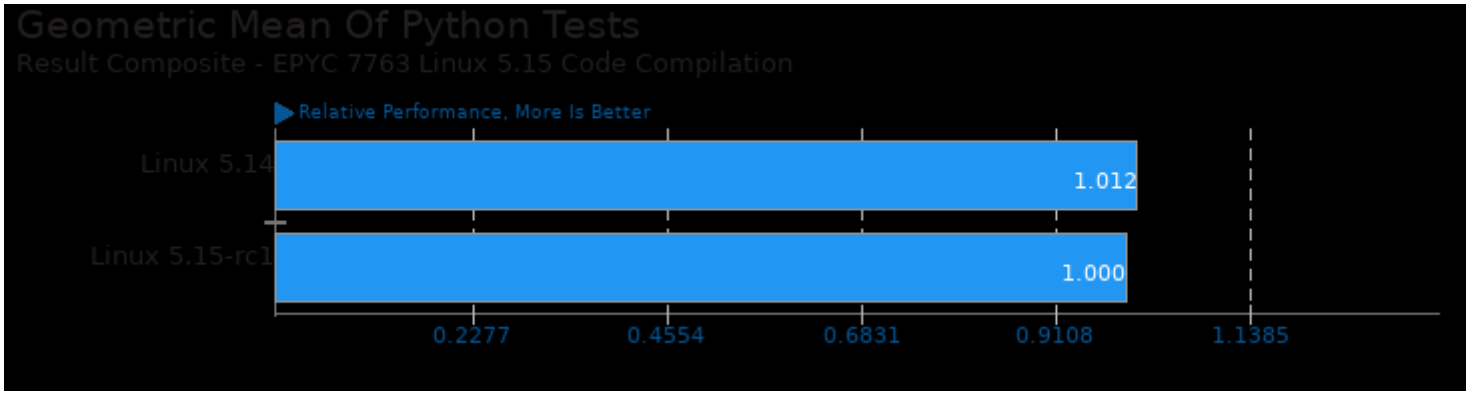
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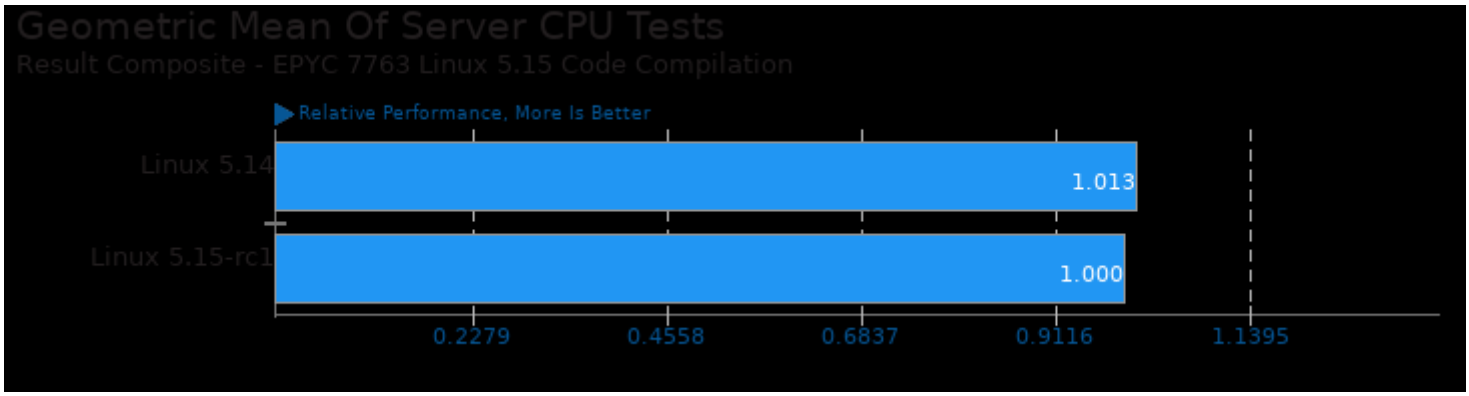


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Geometric mean based upon tests: pts/build-godot, pts/build-llvm, pts/build-mesa and pts/build-nodejs

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Geometric mean based upon tests: pts/build-gcc, pts/build-linux-kernel, pts/build-php and pts/build-llvm

This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 11:47.