



Linux 5.6 Intel Xeon Platinum 8280 x2

2 x Intel Xeon Platinum 8280 testing with a GIGABYTE MD61-SC2-00 v01000100 (T15 BIOS) and llvmpipe 377GB on Ubuntu 20.04 via the Phoronix Test Suite.

Automated Executive Summary

Linux 5.6-rc1 had the most wins, coming in first place for 65% of the tests.

Based on the geometric mean of all complete results, the fastest (Linux 5.6-rc1) was 1.007x the speed of the slowest (Linux 5.5).

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

Stress-NG (Test: System V Message Passing) at 1.282x

Hackbench (Count: 32 - Type: Process) at 1.102x

Facebook RocksDB (Test: Random Fill Sync) at 1.084x

Stress-NG (Test: Semaphores) at 1.046x

Flexible IO Tester (Type: Sequential Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory) at 1.041x

Flexible IO Tester (Type: Sequential Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory) at 1.041x

LAMMPS Molecular Dynamics Simulator (Model: Rhodopsin Protein) at 1.04x

Flexible IO Tester (Type: Random Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory) at 1.036x

Flexible IO Tester (Type: Random Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory) at 1.036x

PostgreSQL pgbench (Scaling: Buffer Test - Test: Normal Load - Mode: Read Only) at 1.036x.

Test Systems:

Linux 5.5

Processor: 2 x Intel Xeon Platinum 8280 @ 4.00GHz (56 Cores / 112 Threads), Motherboard: GIGABYTE MD61-SC2-00 v01000100 (T15 BIOS), Chipset: Intel Sky Lake-E DMI3 Registers, Memory: 378GB, Disk: 280GB INTEL SSDPED1D280GA, Graphics: Ilvmpipe 377GB, Monitor: VE228, Network: 2 x Intel X722 for 1GbE + 2 x QLogic FastLinQ QL41000 10/25/40/50GbE

OS: Ubuntu 20.04, Kernel: 5.5.0-050500-generic (x86_64), Desktop: GNOME Shell 3.34.3, Display Server: X Server 1.20.7, Display Driver: modesetting 1.20.7, OpenGL: 3.3 Mesa 19.2.4 (LLVM 9.0 256 bits), Compiler: GCC 9.2.1 20200123, File-System: ext4, Screen Resolution: 1920x1080

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++,gm2 --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,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

Disk Notes: NONE / errors=remount-ro,relatime,rw

Processor Notes: Scaling Governor: intel_pstate powersave - CPU Microcode: 0x500002c

Java Notes: OpenJDK Runtime Environment (build 11.0.6+10-post-Ubuntu-1ubuntu1)

Python Notes: + Python 3.7.6

Security Notes: itlb_multihit: KVM: Mitigation of Split huge pages + 11tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swaps barriers and __user pointer sanitization + spectre_v2: Mitigation of Enhanced IBRS IBPB: conditional RSB filling + tsx_async_abort: Mitigation of TSX disabled

Linux 5.6-rc1

Processor: 2 x Intel Xeon Platinum 8280 @ 4.00GHz (56 Cores / 112 Threads), Motherboard: GIGABYTE MD61-SC2-00 v01000100 (T15 BIOS), Chipset: Intel Sky Lake-E DMI3 Registers, Memory: 378GB, Disk: 280GB INTEL SSDPED1D280GA, Graphics: Ilvmpipe 377GB, Monitor: VE228, Network: 2 x Intel X722 for 1GbE + 2 x QLogic FastLinQ QL41000 10/25/40/50GbE

OS: Ubuntu 20.04, Kernel: 5.6.0-050600rc1-generic (x86_64) 20200209, Desktop: GNOME Shell 3.34.3, Display Server: X Server 1.20.7, Display Driver: modesetting 1.20.7, OpenGL: 3.3 Mesa 19.2.4 (LLVM 9.0 256 bits), Compiler: GCC 9.2.1 20200123, File-System: ext4, Screen Resolution: 1920x1080

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++,gm2 --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,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

Disk Notes: NONE / errors=remount-ro,relatime,rw

Processor Notes: Scaling Governor: intel_pstate powersave - CPU Microcode: 0x500002c

Java Notes: OpenJDK Runtime Environment (build 11.0.6+10-post-Ubuntu-1ubuntu1)

Python Notes: + Python 3.7.6

Security Notes: itlb_multihit: KVM: Mitigation of Split huge pages + 11tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swaps barriers and __user pointer sanitization + spectre_v2: Mitigation of Enhanced IBRS IBPB: conditional RSB filling + tsx_async_abort: Mitigation of TSX disabled

| | Linux 5.5 | Linux 5.6-rc1 |
|--|------------------|------------------|
| Facebook RocksDB - Seq Fill (Op/s) | 187219 | 192596 |
| Normalized | 97.21% | 100% |
| Standard Deviation | 0.2% | 0.3% |
| DeepSpeech - CPU (sec) | 140.87554 | 152.79637 |
| Normalized | 100% | 92.2% |
| Standard Deviation | 13.4% | 4.6% |
| MariaDB - 256 (Queries/sec) | 458 | 460 |
| Normalized | 99.57% | 100% |
| Standard Deviation | 0.5% | 0.1% |
| Renaissance - Savina Reactors.IO (ms) | 27801 | 28492 |
| Normalized | 100% | 97.58% |
| Standard Deviation | 7.6% | 8.1% |
| Renaissance - A.U.C.T (ms) | 24119 | 22592 |
| Normalized | 93.67% | 100% |
| Standard Deviation | 20.7% | 4.1% |
| Numpy Benchmark (Score) | 312.13 | 320.33 |
| Normalized | 97.44% | 100% |
| Standard Deviation | 1% | 0.5% |
| Renaissance - I.M.D.S (ms) | 17906 | 17829 |
| Normalized | 99.57% | 100% |
| Standard Deviation | 2.2% | 4.1% |
| PostgreSQL pgbench - Buffer Test - Normal Load - Read Write (TPS) | 24017 | 24806 |
| Normalized | 96.82% | 100% |
| Standard Deviation | 0.1% | 0.8% |
| PostgreSQL pgbench - Buffer Test - Normal Load - Read Only (TPS) | 594973 | 616404 |
| Normalized | 96.52% | 100% |
| Standard Deviation | 1.5% | 2.1% |
| High Performance Conjugate Gradient (GFLOP/s) | 29.0645 | 29.0295 |
| Normalized | 100% | 99.88% |
| Standard Deviation | 0.6% | 1.3% |
| dav1d - C.1.1.b (FPS) | 66.44 | 66.66 |
| Normalized | 99.67% | 100% |
| Standard Deviation | 0.5% | 0.2% |
| Blender - Barbershop - CPU-Only (sec) | 154.71 | 154.49 |
| Normalized | 99.86% | 100% |
| Standard Deviation | 0.5% | 0.1% |
| Facebook RocksDB - Read While Writing (Op/s) | 6728329 | 6502739 |
| Normalized | 100% | 96.65% |
| Standard Deviation | 11% | 2.9% |
| Stress-NG - Context Switching (Bogo Ops/s) | 22556365 | 22651798 |
| Normalized | 99.58% | 100% |
| Standard Deviation | 6.6% | 7.7% |
| Timed GDB GNU Debugger Compilation - Time To Compile (sec) | 131.434 | 130.709 |
| Normalized | 99.45% | 100% |
| Standard Deviation | 0.2% | 0.2% |
| Ethr - TCP - Latency - 1 (us) | 21.58 | 20.69 |
| Normalized | 95.88% | 100% |
| Standard Deviation | 11.1% | 13.5% |
| Timed Linux Kernel Compilation - Time To Compile | 24.282 | 24.233 |
| Normalized | 99.8% | 100% |
| Standard Deviation | 3.5% | 3.6% |

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|--|---------------------|---------------------|
| Blender - Classroom - CPU-Only (sec) | 100.07 | 100.10 |
| Normalized | 100% | 99.97% |
| Standard Deviation | 0.2% | 0.3% |
| Flexible IO Tester - Seq Read - Linux AIO - Yes - No - 4KB (IOPS) | 430267 | 448000 |
| Normalized | 96.04% | 100% |
| Standard Deviation | 3.8% | 0.9% |
| Flexible IO Tester - Seq Read - Linux AIO - Yes - No - 4KB (MB/s) | 1681 | 1750 |
| Normalized | 96.06% | 100% |
| Standard Deviation | 3.9% | 1.1% |
| Stress-NG - Forking (Bogo Ops/s) | 71729 | 71778 |
| Normalized | 99.93% | 100% |
| Standard Deviation | 1.5% | 4% |
| NAMD - ATPase Simulation - 327,506 Atoms (days/ns) | 0.36248 | 0.36170 |
| Normalized | 99.78% | 100% |
| Standard Deviation | 0.8% | 0.3% |
| DaCapo Benchmark - Tradebeans (msec) | 14214 | 13810 |
| Normalized | 97.16% | 100% |
| Standard Deviation | 2.6% | 4.4% |
| Ethr - HTTP - Bandwidth - 1 (Mbits/s) | 216547265842 | 217349843967 |
| Normalized | 99.63% | 100% |
| Standard Deviation | 103.5% | 103.5% |
| SQLite Speedtest - Timed Time - Size 1,000 (sec) | 68.361 | 66.503 |
| Normalized | 97.28% | 100% |
| Standard Deviation | 0.4% | 0.2% |
| RawTherapee - T.B.T (sec) | 63.540 | 62.367 |
| Normalized | 98.15% | 100% |
| Standard Deviation | 1.2% | 0.7% |
| NGINX Benchmark - S.W.P.S (Reqs/sec) | 32180 | 31889 |
| Normalized | 100% | 99.1% |
| Standard Deviation | 2.4% | 2.4% |
| Facebook RocksDB - Rand Fill Sync (Op/s) | 164332 | 151536 |
| Normalized | 100% | 92.21% |
| Standard Deviation | 0.3% | 0.2% |
| John The Ripper - MD5 (Real C/S) | 8147000 | 8117000 |
| Normalized | 100% | 99.63% |
| Standard Deviation | 0.1% | 0.4% |
| Build2 - Time To Compile (sec) | 58.523 | 57.918 |
| Normalized | 98.97% | 100% |
| Standard Deviation | 0.4% | 0.3% |
| glibc bench - cos (nanoseconds) | 48.2170 | 49.4269 |
| Normalized | 100% | 97.55% |
| Standard Deviation | 0.2% | 8.7% |
| Himeno Benchmark - P.P.S (MFLOPS) | 3500 | 3522 |
| Normalized | 99.38% | 100% |
| Standard Deviation | 0.2% | 0.3% |
| PostMark - D.T.P (TPS) | 5906 | 5952 |
| Normalized | 99.23% | 100% |
| Standard Deviation | 1.4% | |
| Timed PHP Compilation - Time To Compile (sec) | 41.032 | 40.824 |
| Normalized | 99.49% | 100% |
| Standard Deviation | 1% | 0.7% |
| Apache Benchmark - S.W.P.S (Reqs/sec) | 25749 | 24957 |
| Normalized | 100% | 96.92% |

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|--|--------------------|---------------|----------------|
| | Standard Deviation | 0.3% | 2.4% |
| Stress-NG - Socket Activity (Bogo Ops/s) | | 33138 | 32574 |
| | Normalized | 100% | 98.3% |
| | Standard Deviation | 2.8% | 2.9% |
| Hackbench - 32 - Process (sec) | | 39.997 | 36.308 |
| | Normalized | 90.78% | 100% |
| | Standard Deviation | 0.6% | 0.5% |
| Timed LLVM Compilation - Time To Compile (sec) | | 112.31 | 112.172 |
| | Normalized | 99.88% | 100% |
| Flexible IO Tester - Seq Read - Linux AIO - Yes - No - 2MB (IOPS) | | 943 | 934 |
| | Normalized | 100% | 99.05% |
| | Standard Deviation | 1.2% | 2.9% |
| Flexible IO Tester - Seq Read - Linux AIO - Yes - No - 2MB (MB/s) | | 1894 | 1875 |
| | Normalized | 100% | 99% |
| | Standard Deviation | 1.1% | 2.9% |
| iPerf - 5201 - 30 Seconds - TCP - 20 (Mbits/s) | | 32481 | 32456 |
| | Normalized | 100% | 99.92% |
| | Standard Deviation | 0.5% | 0.5% |
| iPerf - 5201 - 30 Seconds - UDP - 1000Mbit Objective - 20 (Mbits/s) | | 20000 | 19999 |
| | Normalized | 100% | 100% |
| | Standard Deviation | | 0% |
| iPerf - 5201 - 30 Seconds - UDP - 20 (Mbits/s) | | 21.0 | 21 |
| | Standard Deviation | 0.3% | |
| Flexible IO Tester - Rand Write - Linux AIO - Yes - No - 2MB (IOPS) | | 440 | 456 |
| | Normalized | 96.49% | 100% |
| | Standard Deviation | 0.5% | 1.1% |
| Flexible IO Tester - Rand Write - Linux AIO - Yes - No - 2MB (MB/s) | | 887 | 919 |
| | Normalized | 96.52% | 100% |
| | Standard Deviation | 0.5% | 1.1% |
| Flexible IO Tester - Seq Write - Linux AIO - Yes - No - 2MB (IOPS) | | 443 | 445 |
| | Normalized | 99.55% | 100% |
| | Standard Deviation | 2.2% | |
| Flexible IO Tester - Seq Write - Linux AIO - Yes - No - 2MB (MB/s) | | 894 | 896 |
| | Normalized | 99.78% | 100% |
| | Standard Deviation | 2.1% | 0.5% |
| Flexible IO Tester - Rand Read - Linux AIO - Yes - No - 2MB (IOPS) | | 497 | 513 |
| | Normalized | 96.88% | 100% |
| | Standard Deviation | 1.9% | |
| Flexible IO Tester - Rand Read - Linux AIO - Yes - No - 2MB (MB/s) | | 1002 | 1033 |
| | Normalized | 97% | 100% |
| | Standard Deviation | 1.9% | |
| Flexible IO Tester - Rand Write - Linux AIO - Yes - No - 4KB (IOPS) | | 207667 | 209667 |
| | Normalized | 99.05% | 100% |
| | Standard Deviation | 0.7% | 0.2% |

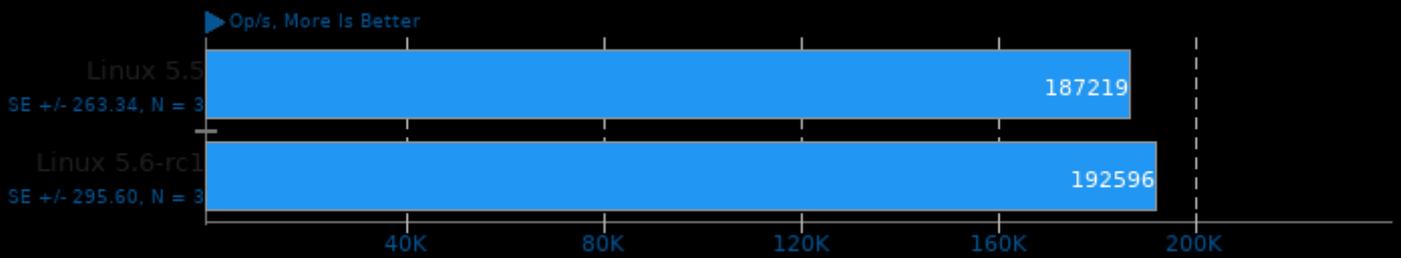
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| Flexible IO Tester - Rand Write - Linux AIO - Yes - No - 4KB (MB/s) | 812 | 818 |
| Normalized | 99.27% | 100% |
| Standard Deviation | 0.6% | 0.3% |
| Flexible IO Tester - Seq Write - Linux AIO - Yes - No - 4KB (IOPS) | 209667 | 213667 |
| Normalized | 98.13% | 100% |
| Standard Deviation | 0.5% | 1.5% |
| Flexible IO Tester - Seq Write - Linux AIO - Yes - No - 4KB (MB/s) | 820 | 833 |
| Normalized | 98.44% | 100% |
| Standard Deviation | 0.6% | 1.7% |
| Flexible IO Tester - Rand Read - Linux AIO - Yes - No - 4KB (IOPS) | 59600 | 61333 |
| Normalized | 97.17% | 100% |
| Standard Deviation | 0.5% | 3% |
| Flexible IO Tester - Rand Read - Linux AIO - Yes - No - 4KB (MB/s) | 234 | 241 |
| Normalized | 97.1% | 100% |
| Standard Deviation | 1.5% | 2.9% |
| Ethr - TCP - Connections/s - 1 (Connections/sec) | 6088 | 6133 |
| Normalized | 99.27% | 100% |
| Standard Deviation | 2.5% | 1.7% |
| John The Ripper - Blowfish (Real C/S) | 83957 | 85069 |
| Normalized | 98.69% | 100% |
| Standard Deviation | 0.7% | 0.8% |
| Stress-NG - Semaphores (Bogo Ops/s) | 2192970 | 2096059 |
| Normalized | 100% | 95.58% |
| Standard Deviation | 1.7% | 2.8% |
| Stress-NG - S.V.M.P (Bogo Ops/s) | 6270600 | 8035893 |
| Normalized | 78.03% | 100% |
| Standard Deviation | 0.4% | 0.4% |
| Timed Apache Compilation - Time To Compile (sec) | 25.010 | 24.774 |
| Normalized | 99.06% | 100% |
| Standard Deviation | 0.3% | 0.6% |
| PyBench - T.F.A.T.T (Milliseconds) | 1084 | 1085 |
| Normalized | 100% | 99.91% |
| Standard Deviation | 0.2% | 0.2% |
| Timed FFmpeg Compilation - Time To Compile (sec) | 22.602 | 22.571 |
| Normalized | 99.86% | 100% |
| Standard Deviation | 0.6% | 0.7% |
| BenchmarkMutex - M.L.U.s.m (ns) | 20.2 | 20.2 |
| Standard Deviation | 0% | 0.3% |
| NAS Parallel Benchmarks - BT.C (Mop/s) | 136685 | 136203 |
| Normalized | 100% | 99.65% |
| Standard Deviation | 0.4% | 0.3% |
| NAS Parallel Benchmarks - EP.D (Mop/s) | 6562 | 6602 |
| Normalized | 99.4% | 100% |
| Standard Deviation | 2.3% | 2.2% |
| BenchmarkMutex - S.R.A.A (ns) | 17.1 | 17.1 |
| Standard Deviation | 0.3% | 0% |
| dav1d - Summer Nature 4K (FPS) | 202.02 | 202.20 |
| Normalized | 99.91% | 100% |
| Standard Deviation | 0.3% | 1.6% |

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|---|------------------|------------------|
| NAS Parallel Benchmarks - LU.C (Mop/s) | 139285 | 139705 |
| Normalized | 99.7% | 100% |
| Standard Deviation | 0.1% | 0.3% |
| PHPBench - P.B.S (Score) | 650576 | 656394 |
| Normalized | 99.11% | 100% |
| Standard Deviation | 1% | 0.1% |
| SVT-AV1 - Enc Mode 8 - 1080p (FPS) | 55.589 | 56.422 |
| Normalized | 98.52% | 100% |
| Standard Deviation | 1.4% | 2.4% |
| Timed MPlayer Compilation - Time To Compile (sec) | 11.626 | 11.494 |
| Normalized | 98.86% | 100% |
| Standard Deviation | 1.3% | 0% |
| glibc bench - log2 (nanoseconds) | 7.75881 | 7.72838 |
| Normalized | 99.61% | 100% |
| Standard Deviation | 0.1% | 0.3% |
| glibc bench - pthread_once (nanoseconds) | 1.69329 | 1.69752 |
| Normalized | 100% | 99.75% |
| Standard Deviation | 0.3% | 0.3% |
| glibc bench - ffs (nanoseconds) | 1.68254 | 1.67914 |
| Normalized | 99.8% | 100% |
| Standard Deviation | 0.1% | 0.2% |
| NAS Parallel Benchmarks - FT.C (Mop/s) | 48097 | 47906 |
| Normalized | 100% | 99.6% |
| Standard Deviation | 0.4% | 0% |
| OSBench - Launch Programs (us/Event) | 42.626063 | 43.696463 |
| Normalized | 100% | 97.55% |
| Standard Deviation | 1.6% | 2.8% |
| DaCapo Benchmark - Jython (msec) | 4673 | 4833 |
| Normalized | 100% | 96.69% |
| Standard Deviation | 0.5% | 1.2% |
| NAS Parallel Benchmarks - SP.B (Mop/s) | 70967 | 70578 |
| Normalized | 100% | 99.45% |
| Standard Deviation | 0.1% | 0.4% |
| OSBench - Create Files (us/Event) | 14.120497 | 14.572009 |
| Normalized | 100% | 96.9% |
| Standard Deviation | 0.3% | 1.7% |
| OSBench - Memory Allocations (Ns/Event) | 88.479678 | 88.452021 |
| Normalized | 99.97% | 100% |
| Standard Deviation | 0.1% | 0.5% |
| OSBench - Create Processes (us/Event) | 32.726924 | 32.259623 |
| Normalized | 98.57% | 100% |
| Standard Deviation | 0.7% | 0.1% |
| OSBench - Create Threads (us/Event) | 18.156370 | 18.119812 |
| Normalized | 99.8% | 100% |
| Standard Deviation | 0.6% | 1.4% |
| rays1bench - Large Scene (mrays/s) | 254.15 | 254.77 |
| Normalized | 99.76% | 100% |
| Standard Deviation | 0.4% | 0.2% |
| NAS Parallel Benchmarks - MG.C (Mop/s) | 68588 | 68445 |
| Normalized | 100% | 99.79% |
| Standard Deviation | 2.1% | 2.4% |
| LAMMPS Molecular Dynamics Simulator - Rhodopsin Protein (ns/day) | 25.639 | 24.646 |
| Normalized | 100% | 96.13% |
| Standard Deviation | 1.2% | 1.5% |

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|-----------------------------------|------|------|
| ctx_clock - C.S.T (Clocks) | 135 | 135 |
| Standard Deviation | 0.9% | 0.9% |

Facebook RocksDB 6.3.6

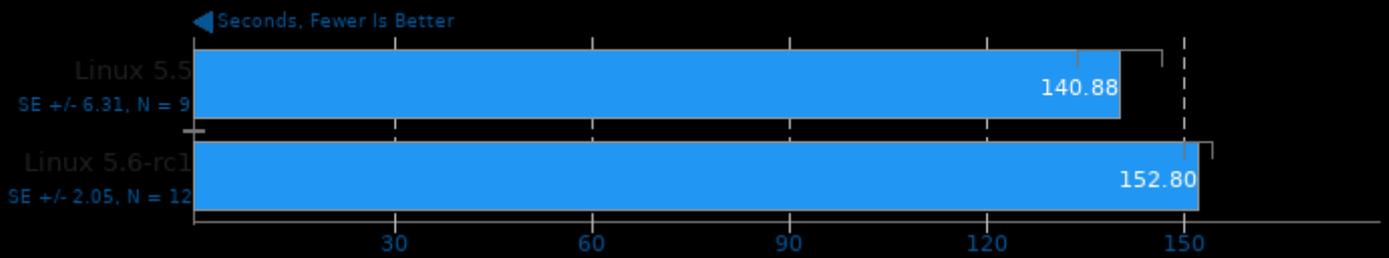
Test: Sequential Fill



1. (CXX) g++ options: -O3 -march=native -std=c++11 -fno-builtin-memcmp -fno-rtti -rdynamic -lpthread

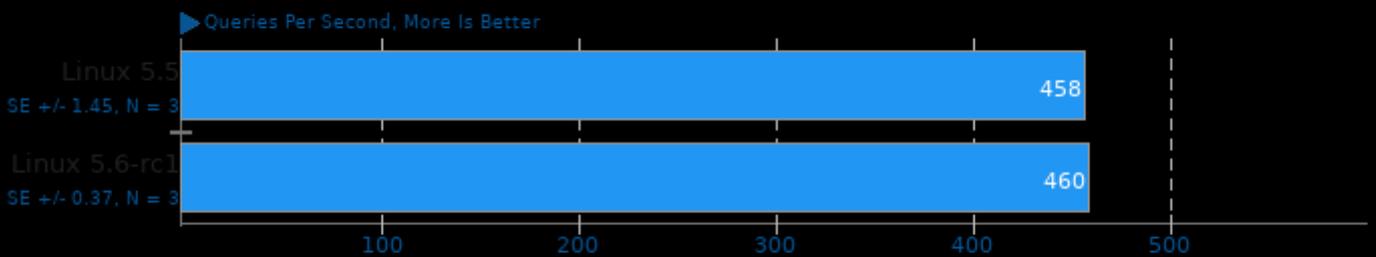
DeepSpeech 0.6

Acceleration: CPU



MariaDB 10.3.8

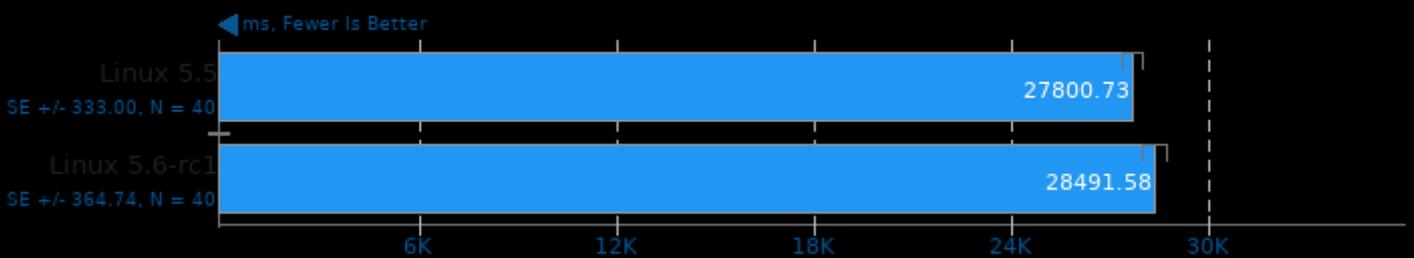
Clients: 256



1. (CXX) g++ options: -pie -fPIC -fstack-protector -fno-rtti -O2 -lpthread -llzma -lbz2 -laio -lnuma -lz -lm -lpcre -lcrypt -lssl -lcrypto -ldl

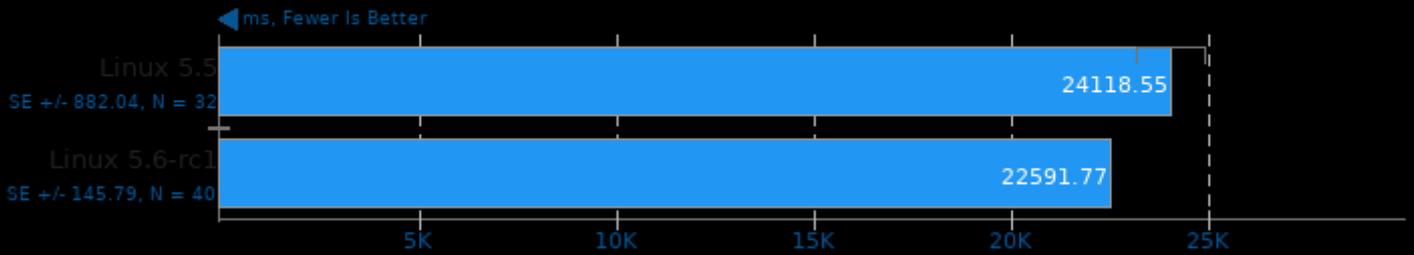
Renaissance 0.9.0

Test: Savina Reactors.IO

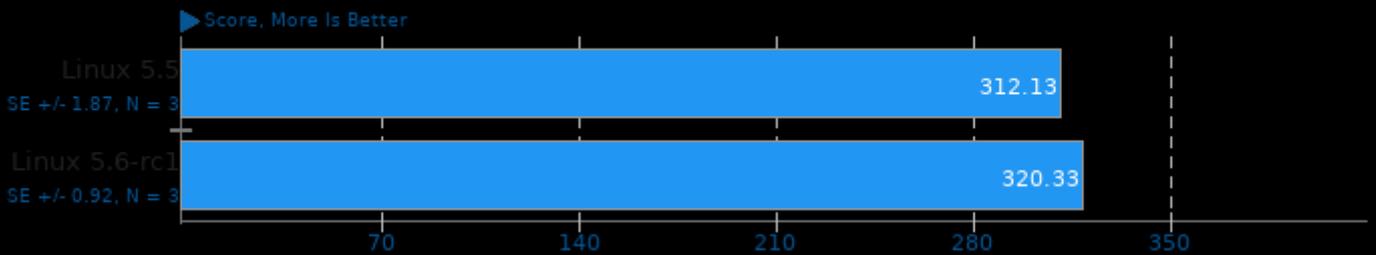


Renaissance 0.9.0

Test: Akka Unbalanced Cobwebbed Tree

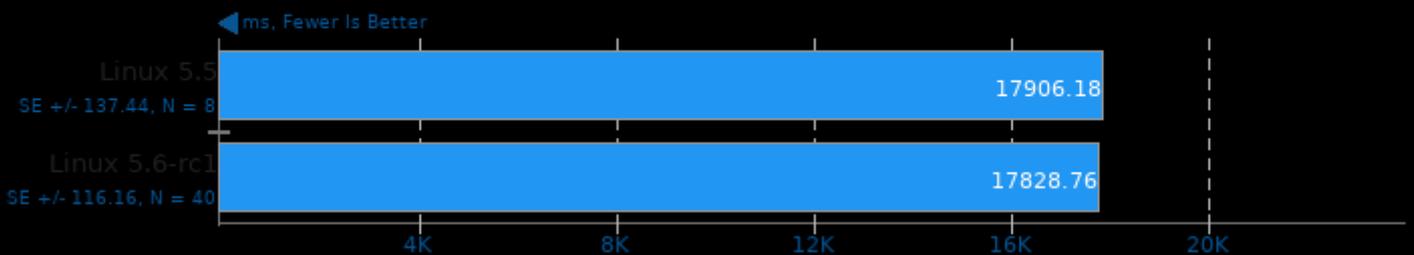


Numpy Benchmark



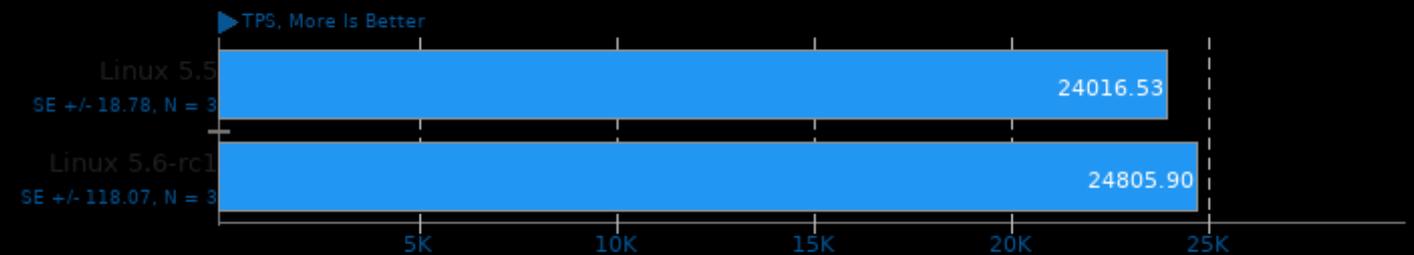
Renaissance 0.9.0

Test: In-Memory Database Shootout



PostgreSQL pgbench 12.0

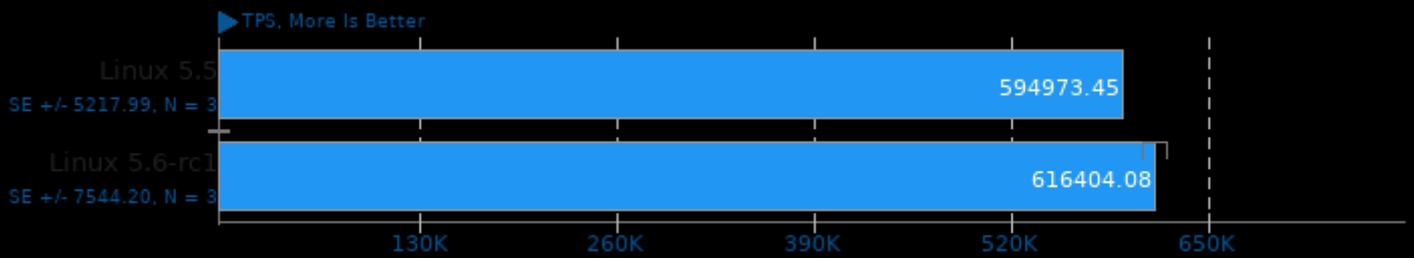
Scaling: Buffer Test - Test: Normal Load - Mode: Read Write



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -lcrypt -ldl -lm

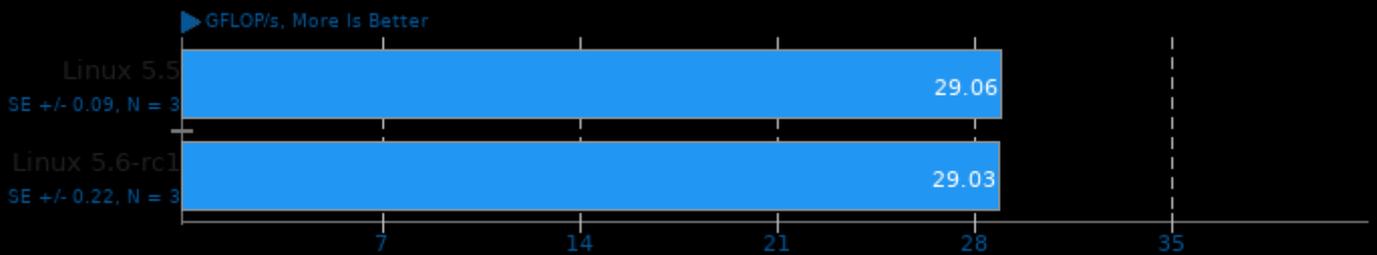
PostgreSQL pgbench 12.0

Scaling: Buffer Test - Test: Normal Load - Mode: Read Only



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -pthread -lrt -lcrypt -ldl -lm

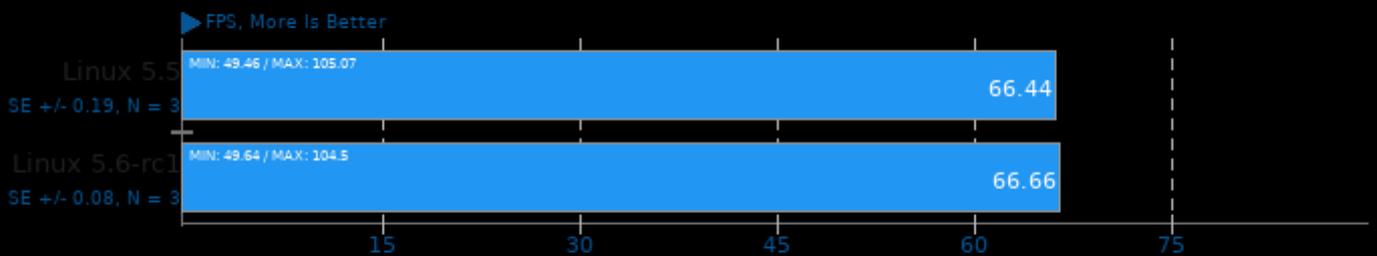
High Performance Conjugate Gradient 3.1



1. (CXX) g++ options: -O3 -ffast-math -ftree-vectorize -pthread -lmpi_cxx -lmpi

dav1d 0.5.0

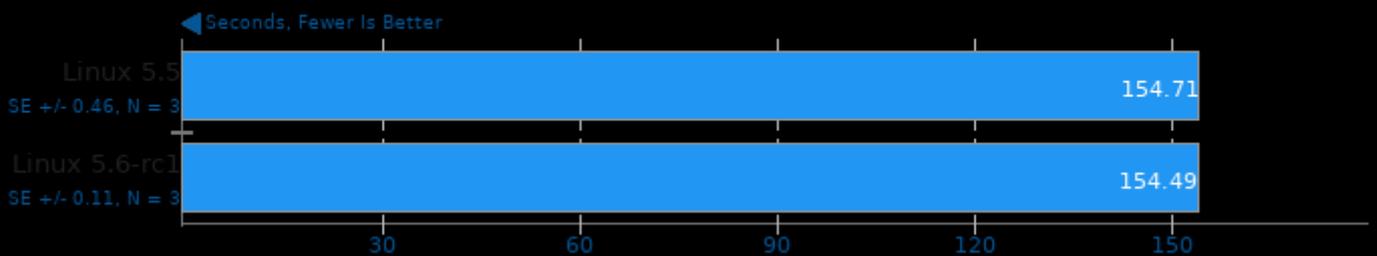
Video Input: Chimera 1080p 10-bit



1. (CC) gcc options: -pthread

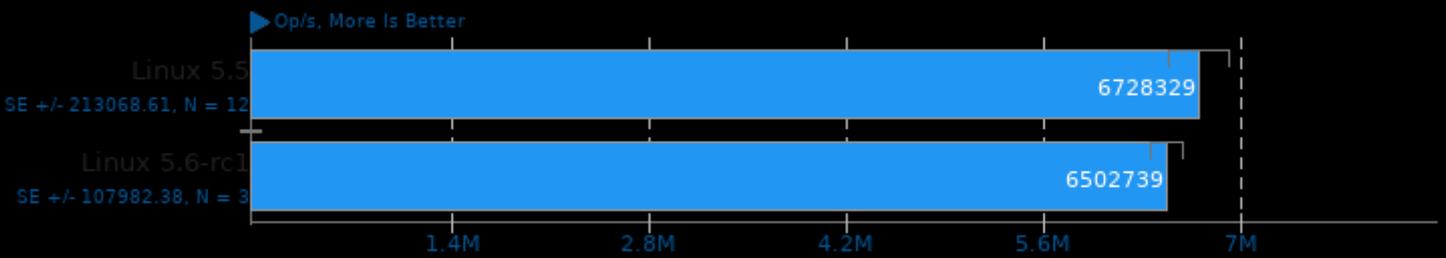
Blender 2.81

Blend File: Barbershop - Compute: CPU-Only



Facebook RocksDB 6.3.6

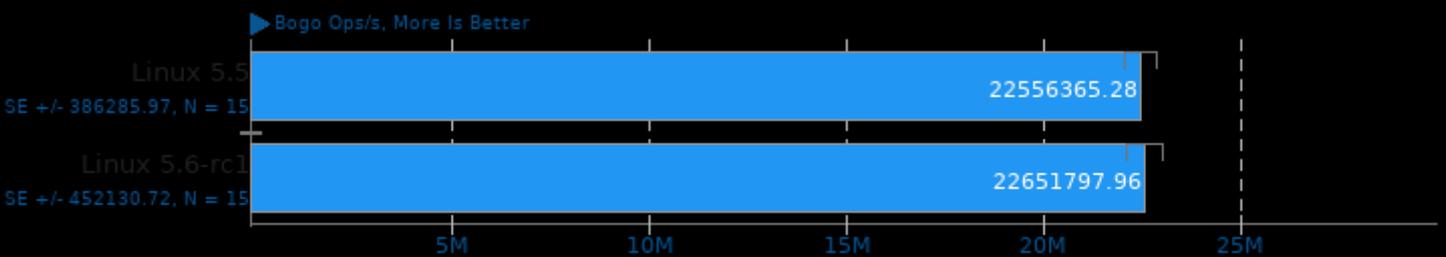
Test: Read While Writing



1. (CXX) g++ options: -O3 -march=native -std=c++11 -fno-builtin-memcmp -fno-rtti -rdynamic -pthread

Stress-NG 0.07.26

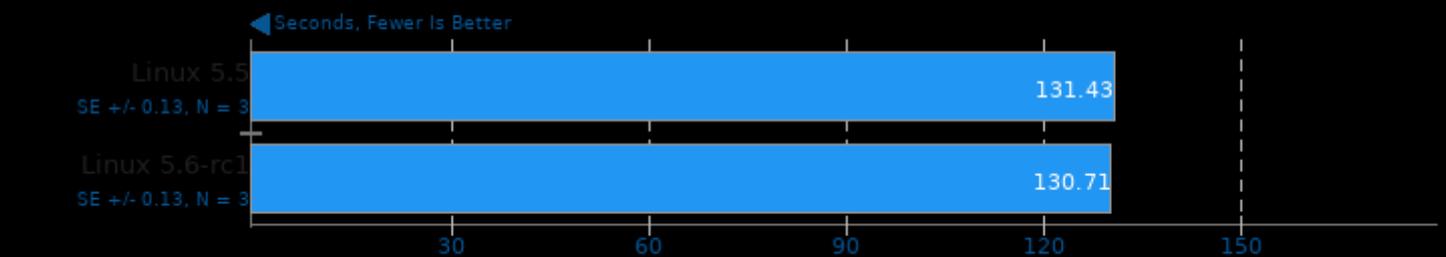
Test: Context Switching



1. (C) gcc options: -O2 -std=gnu99 -lm -lz -lcrypt -lrt -pthread -laio -lc

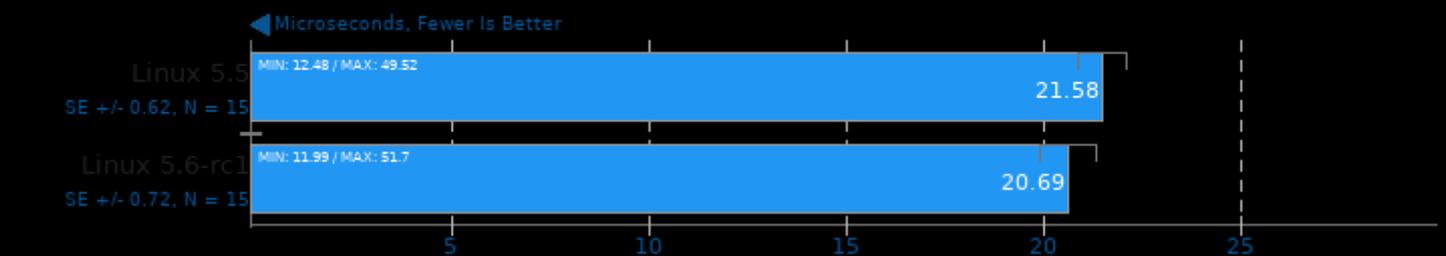
Timed GDB GNU Debugger Compilation 9.1

Time To Compile



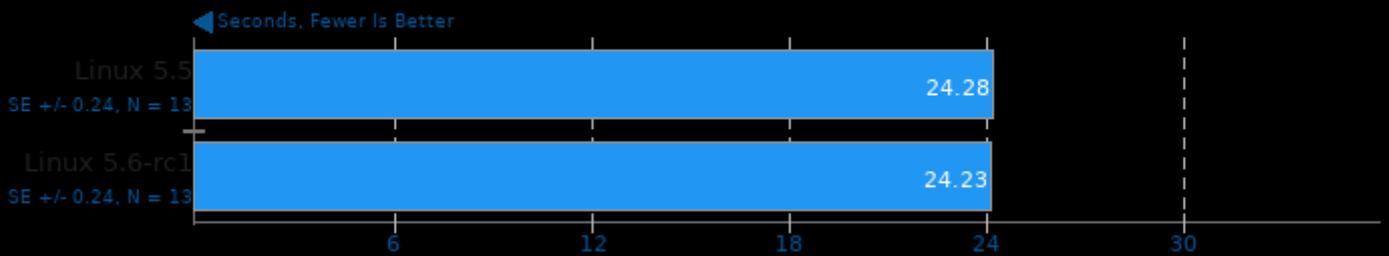
Ethr 2019-01-02

Server Address: localhost - Protocol: TCP - Test: Latency - Threads: 1



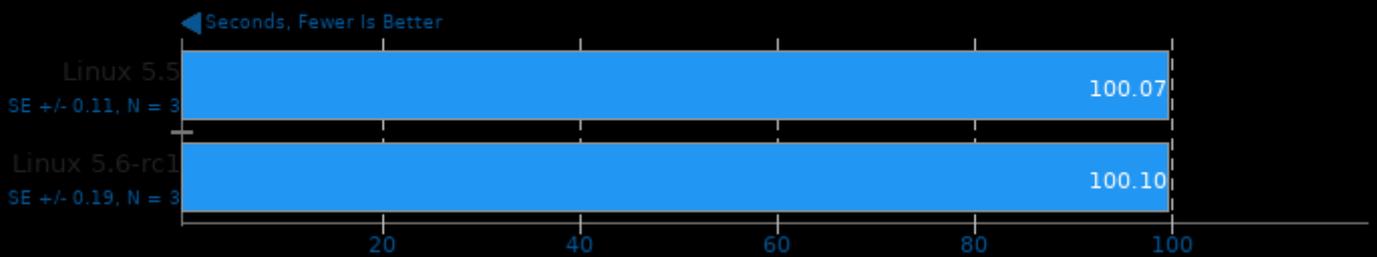
Timed Linux Kernel Compilation 5.4

Time To Compile



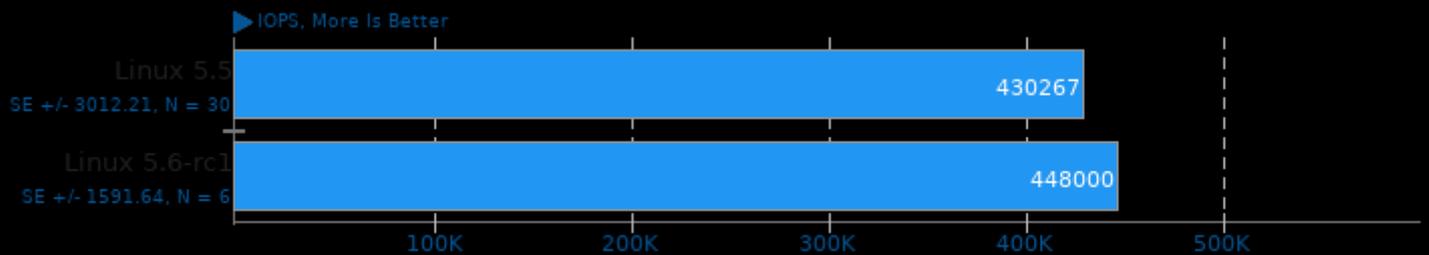
Blender 2.81

Blend File: Classroom - Compute: CPU-Only



Flexible IO Tester 3.16

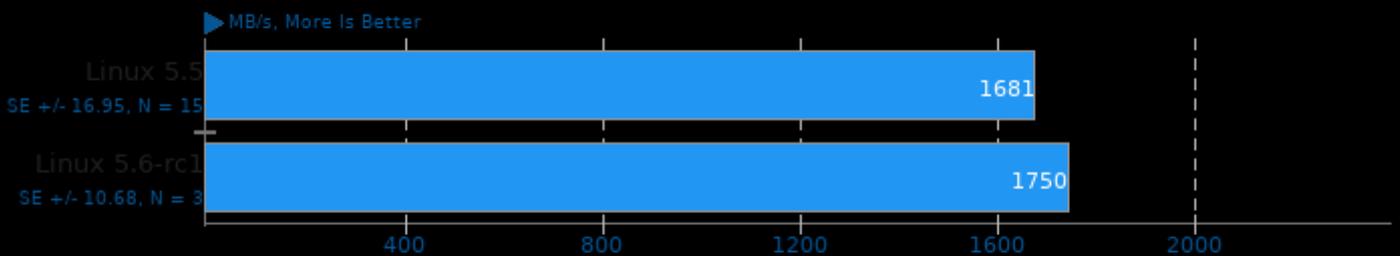
Type: Sequential Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory



1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs -lrt -laio -lz

Flexible IO Tester 3.16

Type: Sequential Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory

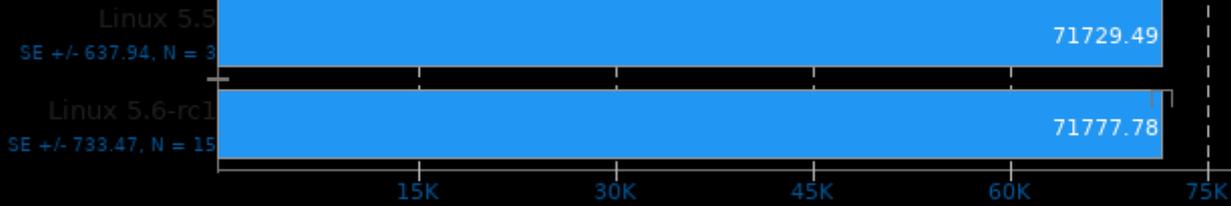


1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs -lrt -laio -lz

Stress-NG 0.07.26

Test: Forking

▶ Bogo Ops/s, More Is Better

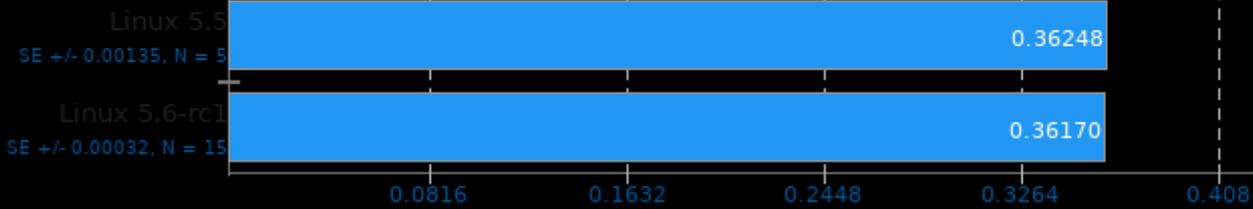


1. (CC) gcc options: -O2 -std=gnu99 -lm -lz -lcrypt -lrt -pthread -laio -lc

NAMD 2.13b1

ATPase Simulation - 327,506 Atoms

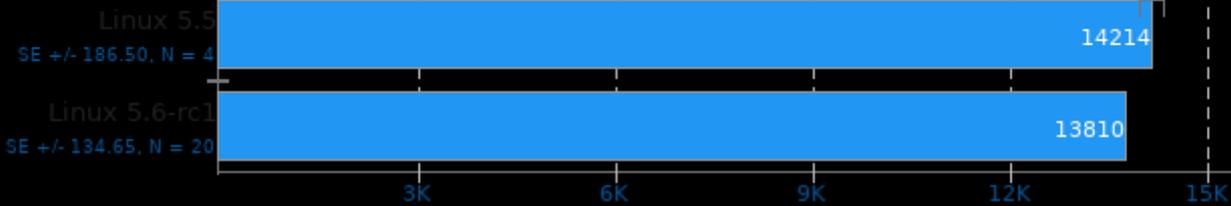
◀ days/ns, Fewer Is Better



DaCapo Benchmark 9.12-MR1

Java Test: Tradebeans

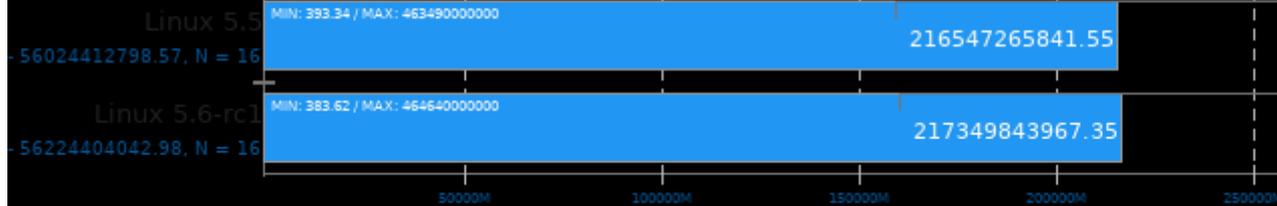
◀ msec, Fewer Is Better



Ethr 2019-01-02

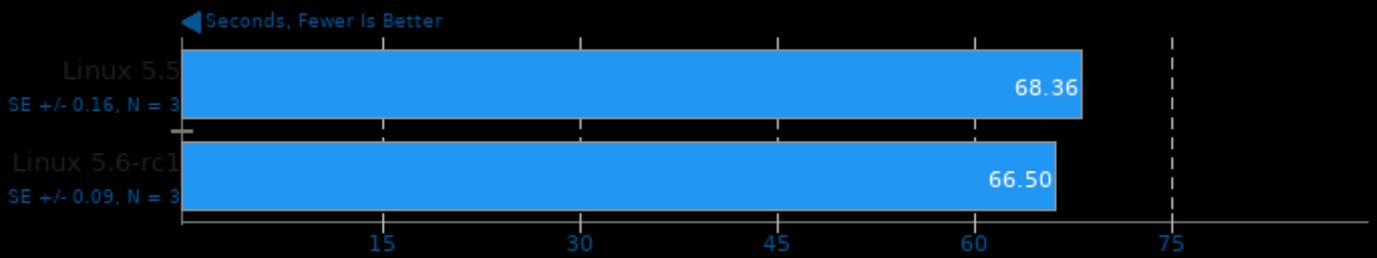
Server Address: localhost - Protocol: HTTP - Test: Bandwidth - Threads: 1

▶ Mbits/sec, More Is Better



SQLite Speedtest 3.30

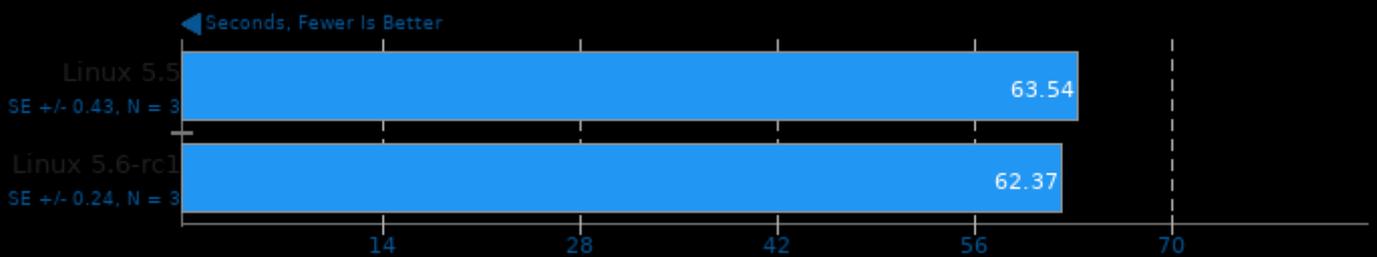
Timed Time - Size 1,000



1. (CC) gcc options: -O2 -ldl -lz -lpthread

RawTherapee

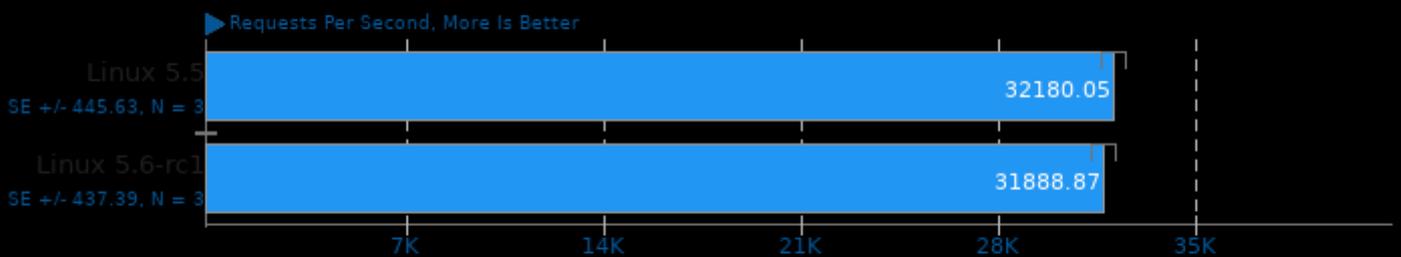
Total Benchmark Time



1. RawTherapee, version 5.7, command line.

NGINX Benchmark 1.9.9

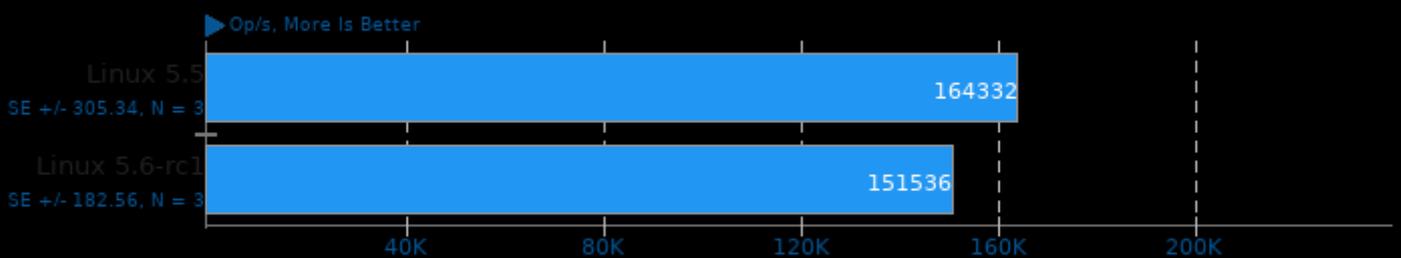
Static Web Page Serving



1. (CC) gcc options: -lpthread -lcrypt -lcrypto -lz -O3 -march=native

Facebook RocksDB 6.3.6

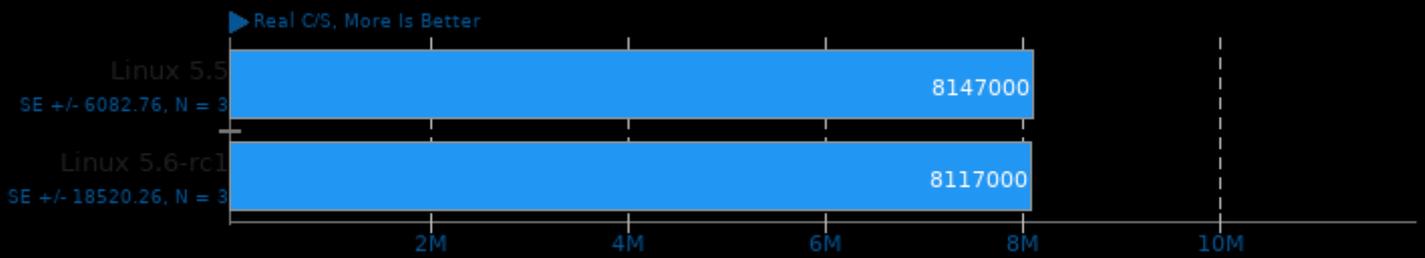
Test: Random Fill Sync



1. (CXX) g++ options: -O3 -march=native -std=c++11 -fno-builtin-memcmp -fno-rtti -rdynamic -lpthread

John The Ripper 1.9.0-jumbo-1

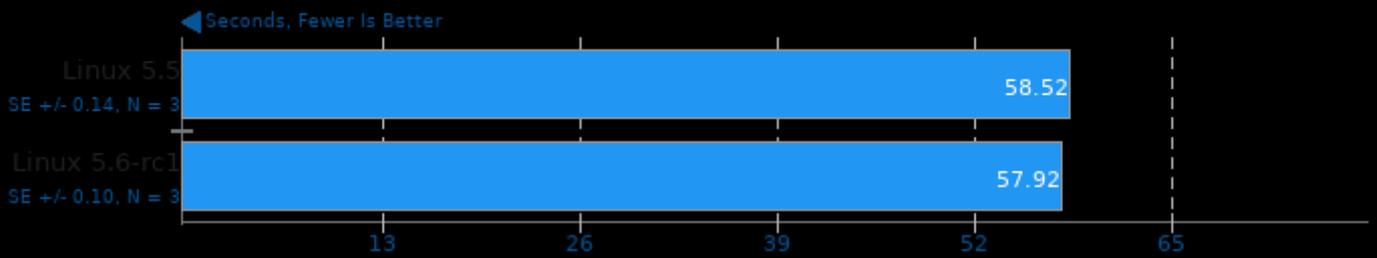
Test: MD5



1. (CC) gcc options: -m64 -lssl -lcrypto -fopenmp -lgmp -pthread -lm -lz -ldl -lcrypt -lbz2

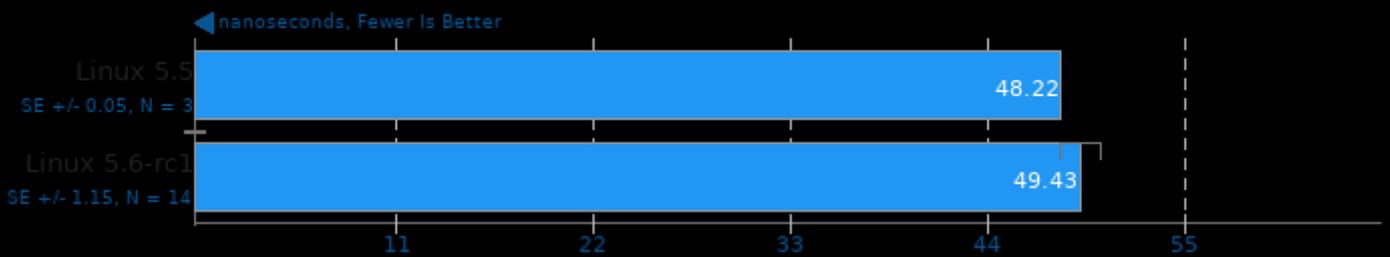
Build2 0.12

Time To Compile



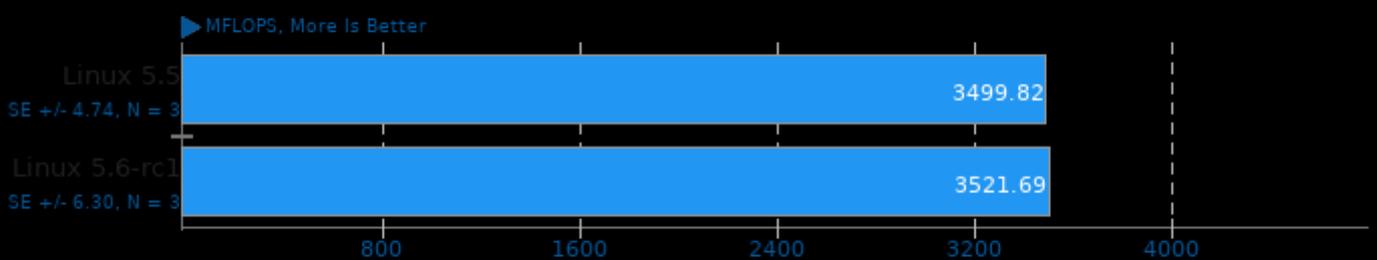
glibc bench 1.0

Benchmark: cos



Himeno Benchmark 3.0

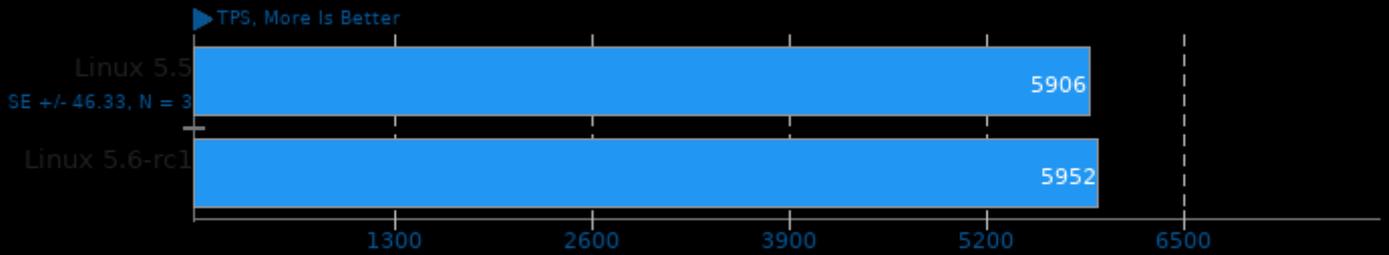
Poisson Pressure Solver



1. (CC) gcc options: -O3 -mavx2

PostMark 1.51

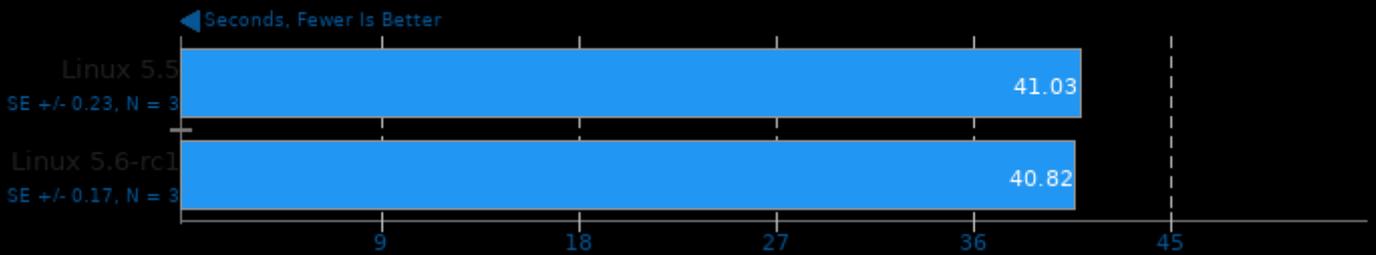
Disk Transaction Performance



1. (CC) gcc options: -O3

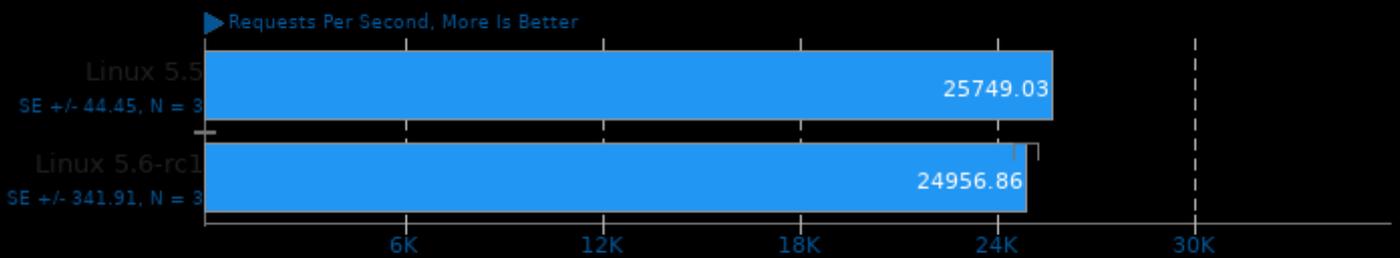
Timed PHP Compilation 7.4.2

Time To Compile



Apache Benchmark 2.4.29

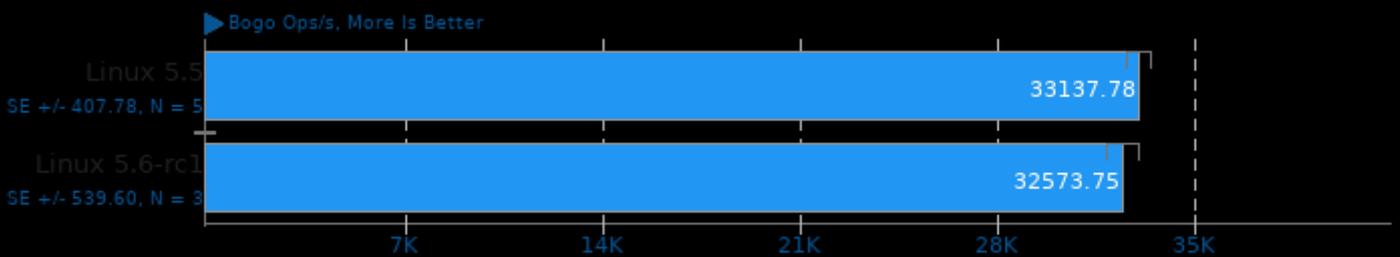
Static Web Page Serving



1. (CC) gcc options: -shared -fPIC -O2 -pthread

Stress-NG 0.07.26

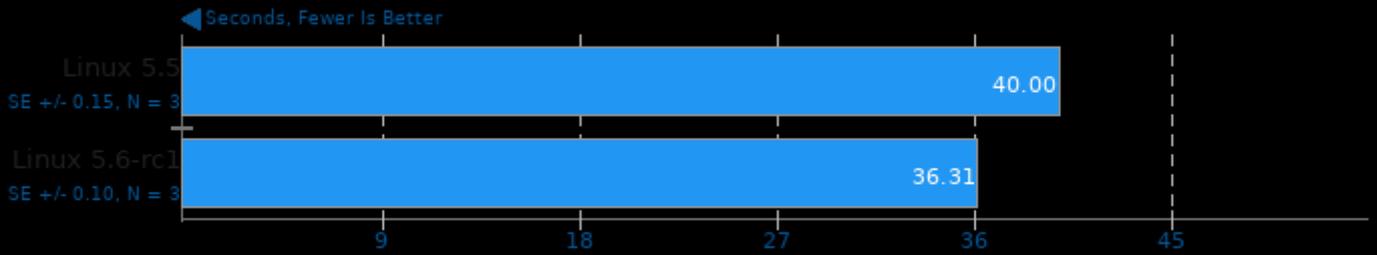
Test: Socket Activity



1. (CC) gcc options: -O2 -std=gnu99 -lm -lz -lcrypt -lrt -pthread -laio -lc

Hackbench

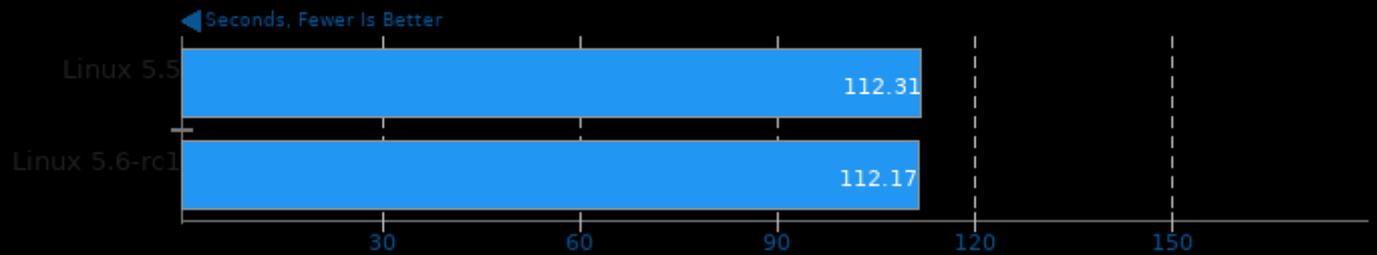
Count: 32 - Type: Process



1. (CC) gcc options: -pthread

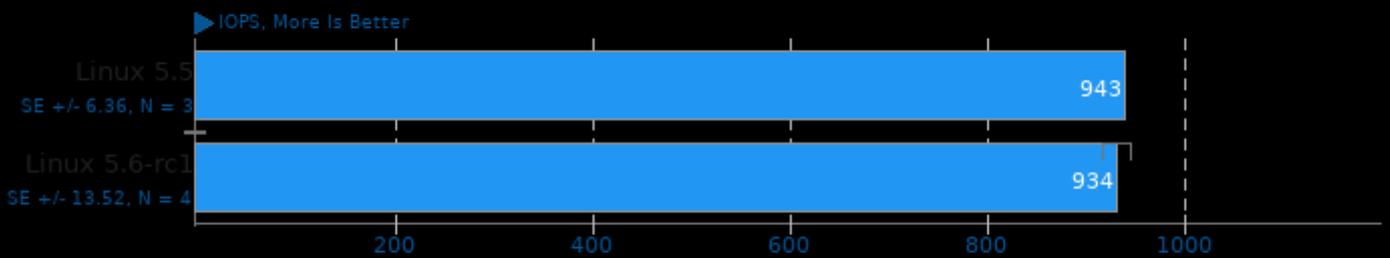
Timed LLVM Compilation 6.0.1

Time To Compile



Flexible IO Tester 3.16

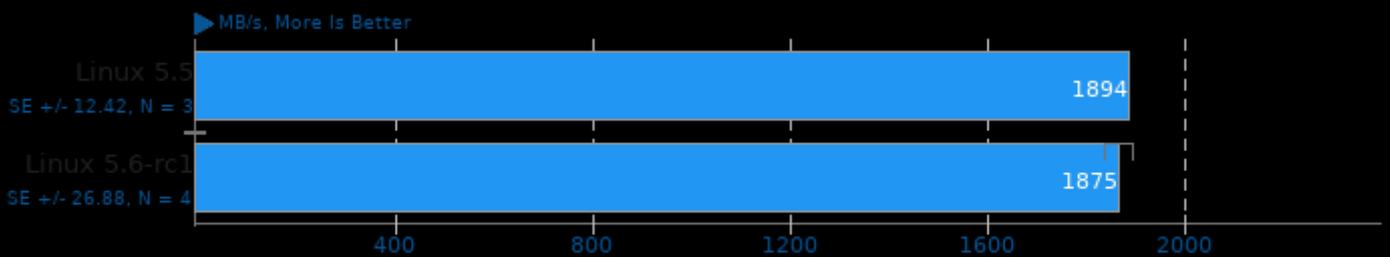
Type: Sequential Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory



1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs -lrt -laio -lt

Flexible IO Tester 3.16

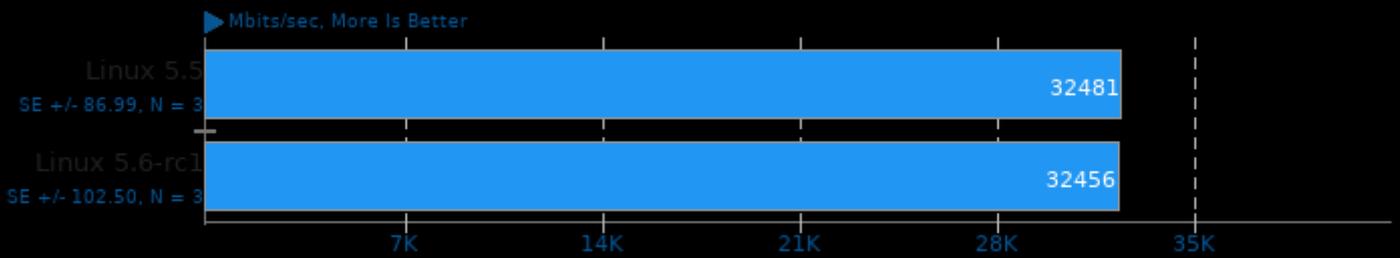
Type: Sequential Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory



1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs -lrt -laio -lt

iPerf 3.7

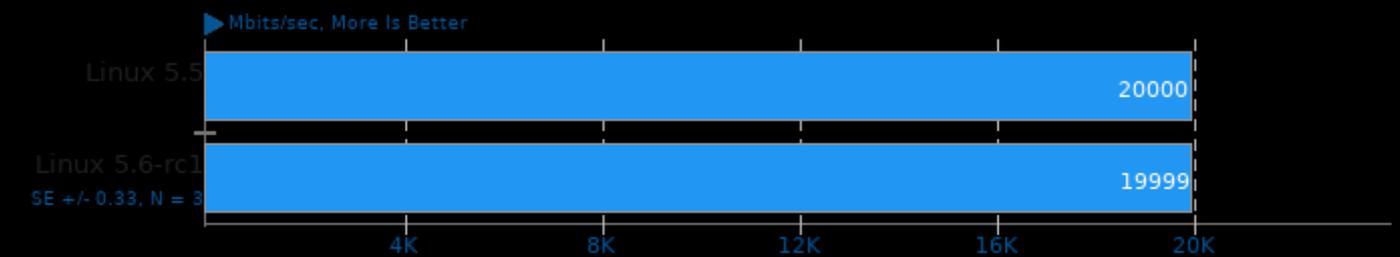
Server Address: localhost - Server Port: 5201 - Duration: 30 Seconds - Test: TCP - Parallel: 20



1. (CC) gcc options: -O3 -march=native -lssl -lcrypto -lm

iPerf 3.7

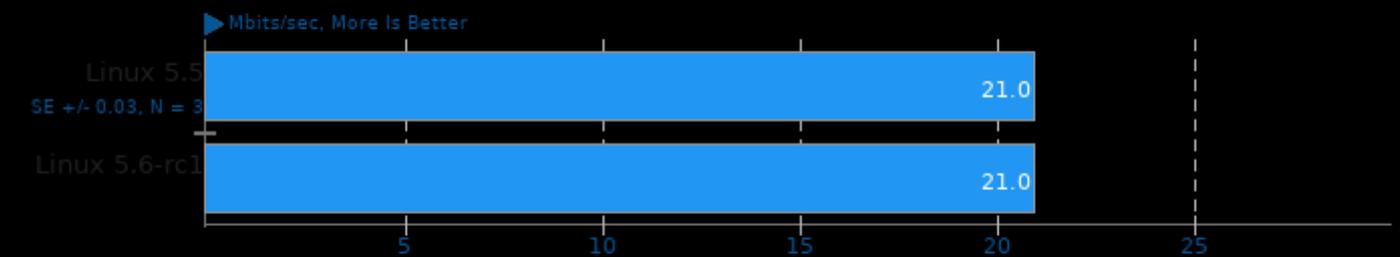
Server Address: localhost - Server Port: 5201 - Duration: 30 Seconds - Test: UDP - 1000Mbit Objective - Parallel: 20



1. (CC) gcc options: -O3 -march=native -lssl -lcrypto -lm

iPerf 3.7

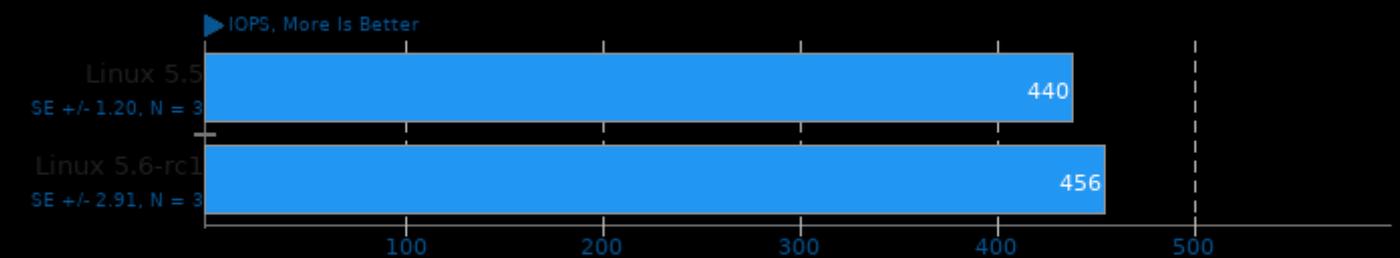
Server Address: localhost - Server Port: 5201 - Duration: 30 Seconds - Test: UDP - Parallel: 20



1. (CC) gcc options: -O3 -march=native -lssl -lcrypto -lm

Flexible IO Tester 3.16

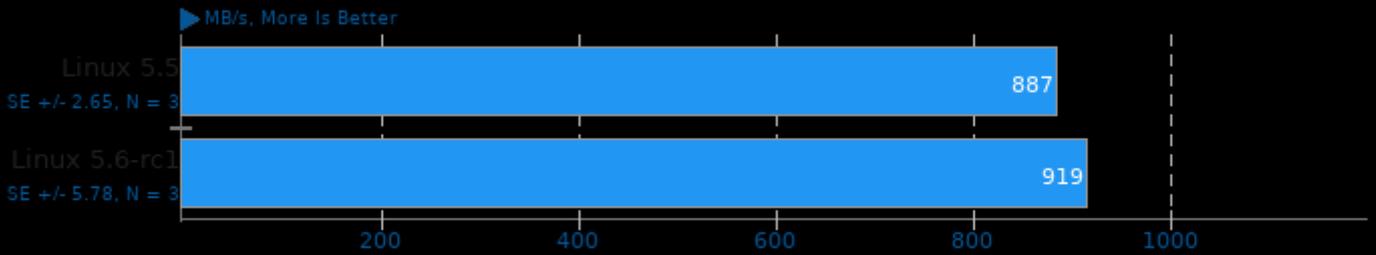
Type: Random Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory



1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -l -lcurl -lssl -lcrypto -lnuma -libverbs -lrt -laio -lz

Flexible IO Tester 3.16

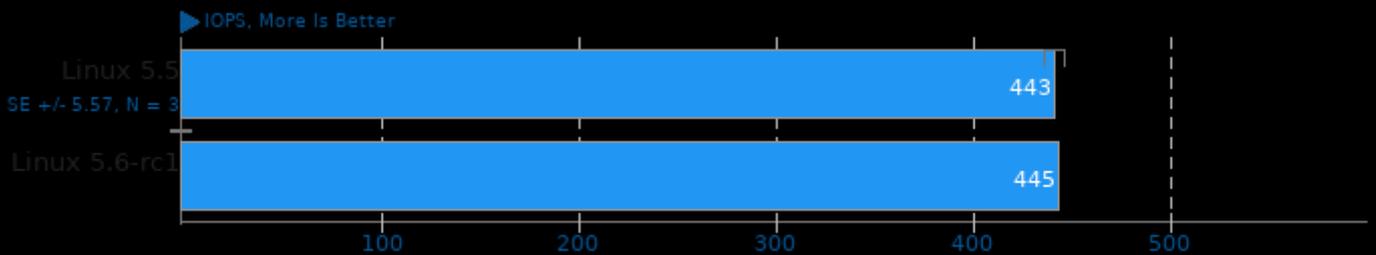
Type: Random Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory



1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs -lrt -laio -lz

Flexible IO Tester 3.16

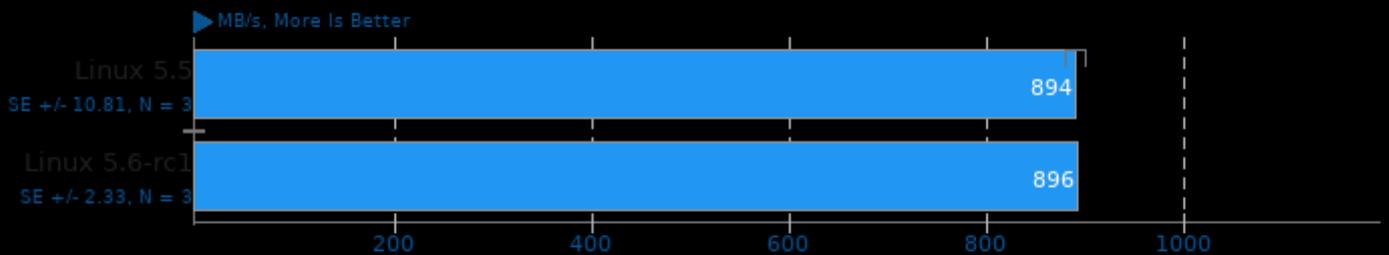
Type: Sequential Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory



1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs -lrt -laio -lz

Flexible IO Tester 3.16

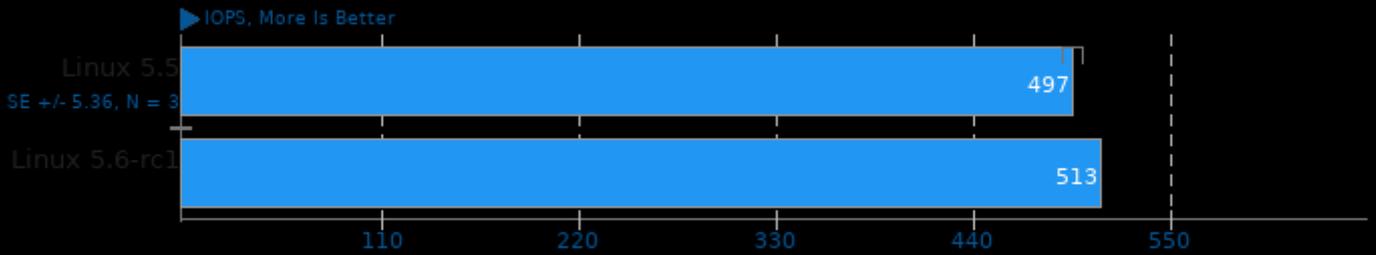
Type: Sequential Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory



1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs -lrt -laio -lz

Flexible IO Tester 3.16

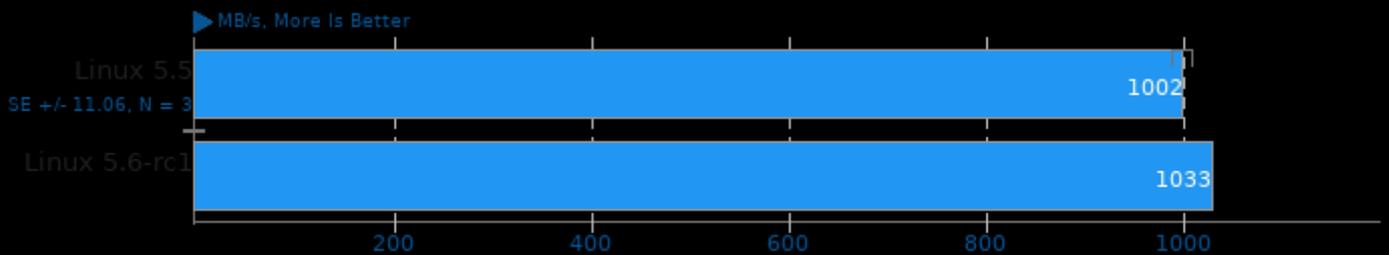
Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory



1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs -lrt -laio -lz

Flexible IO Tester 3.16

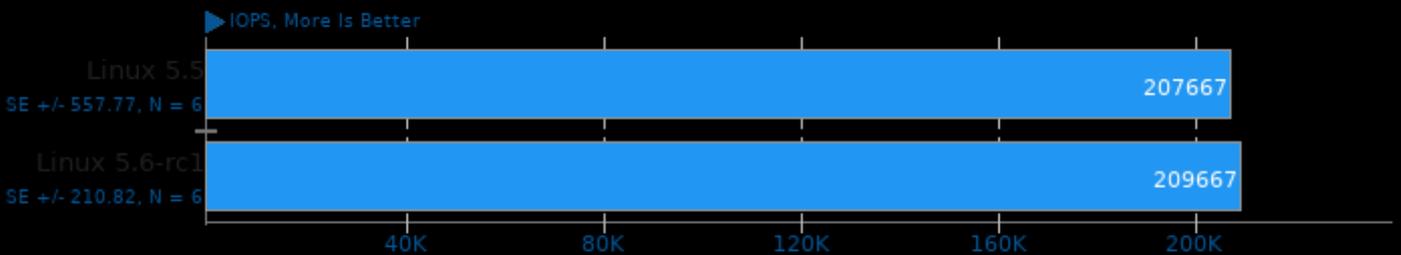
Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory



1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs -lrt -laio -lz

Flexible IO Tester 3.16

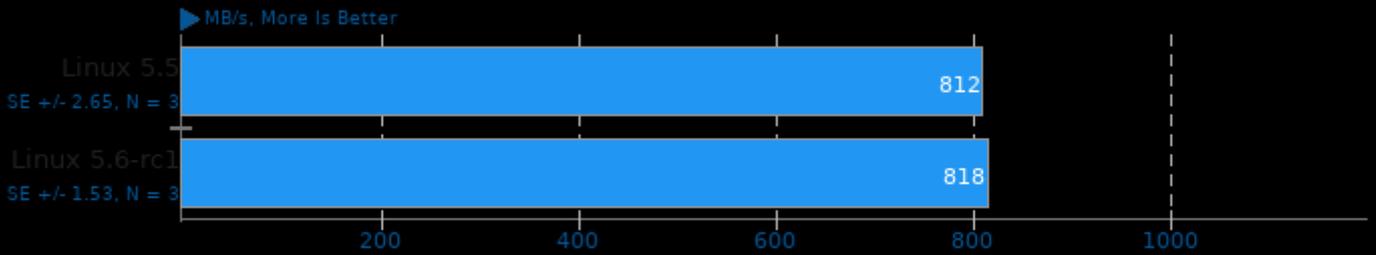
Type: Random Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory



1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs -lrt -laio -lz

Flexible IO Tester 3.16

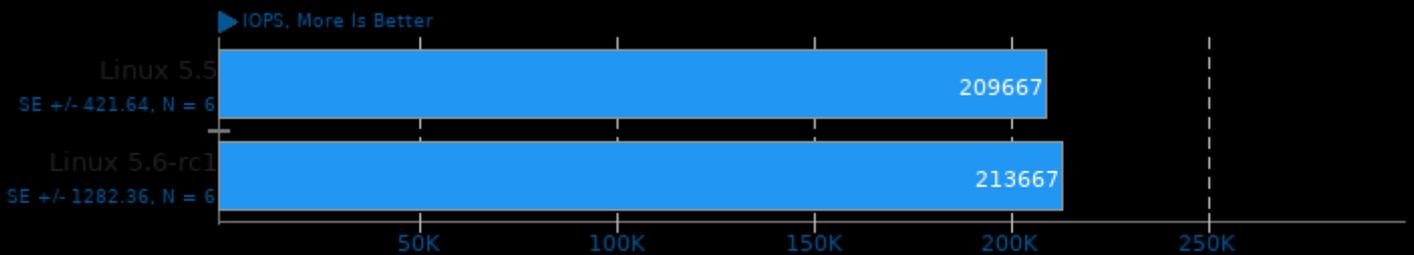
Type: Random Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory



1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs -lrt -laio -lz

Flexible IO Tester 3.16

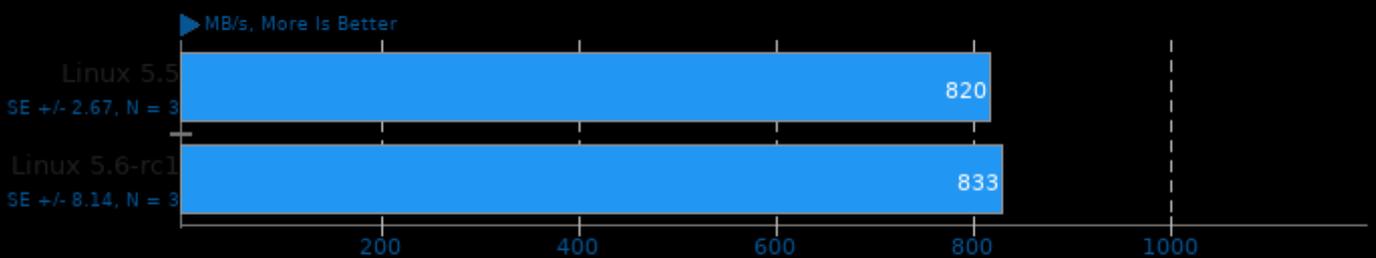
Type: Sequential Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory



1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs -lrt -laio -lz

Flexible IO Tester 3.16

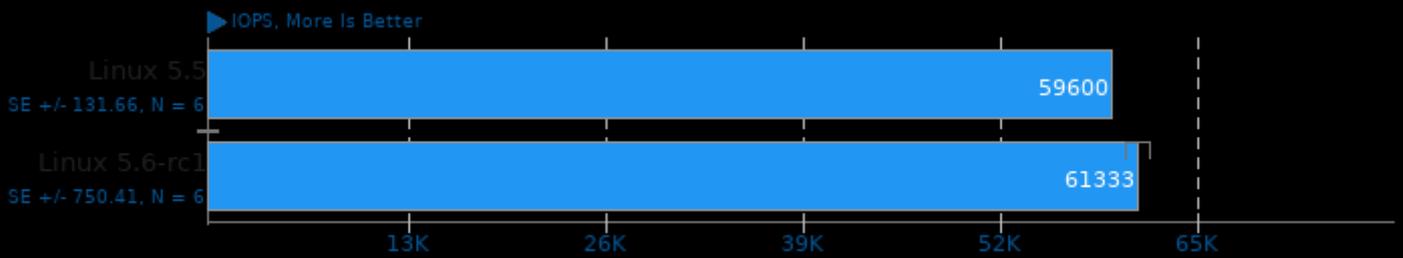
Type: Sequential Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory



1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs -lrt -laio -lz

Flexible IO Tester 3.16

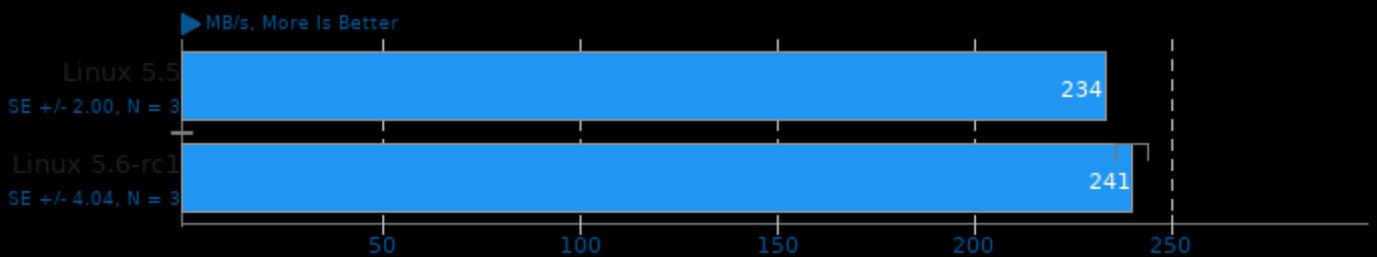
Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory



1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs -lrt -laio -lz

Flexible IO Tester 3.16

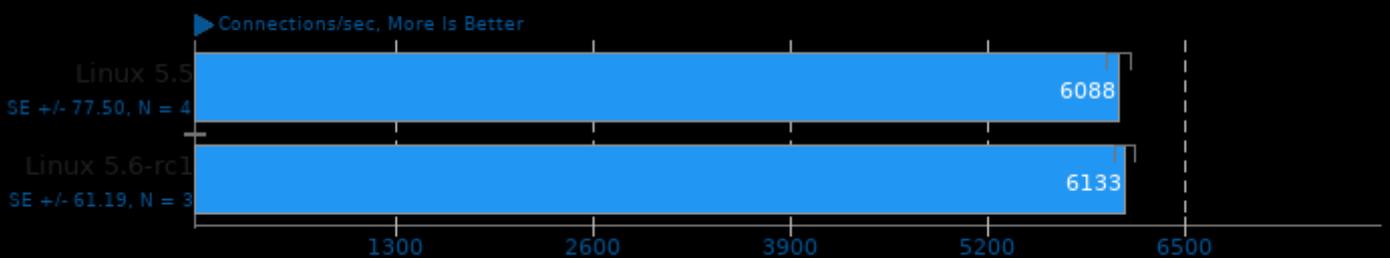
Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory



1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs -lrt -laio -lz

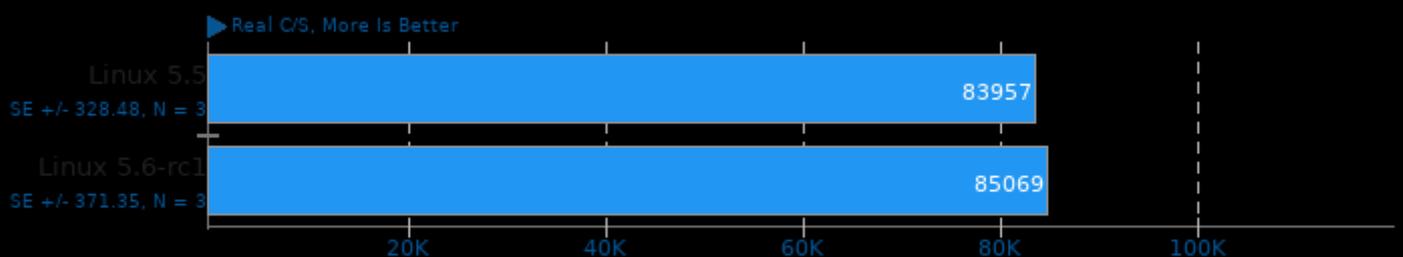
Ethr 2019-01-02

Server Address: localhost - Protocol: TCP - Test: Connections/s - Threads: 1



John The Ripper 1.9.0-jumbo-1

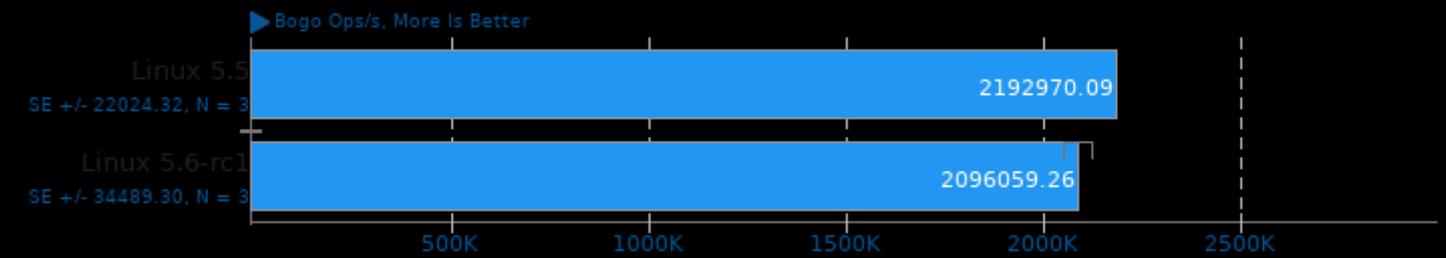
Test: Blowfish



1. (CC) gcc options: -m64 -lssl -lcrypto -fopenmp -lgmp -pthread -lm -lz -ldl -lcrypt -lbz2

Stress-NG 0.07.26

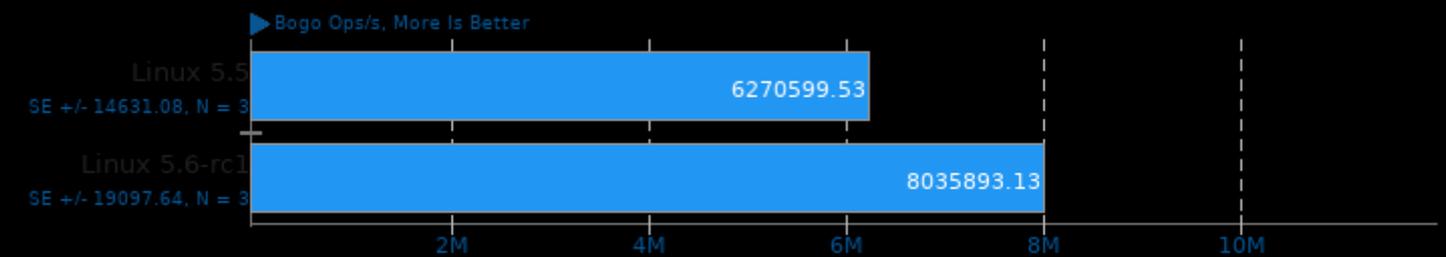
Test: Semaphores



1. (CC) gcc options: -O2 -std=gnu99 -lm -lz -lcrypt -lrt -lpthread -laio -lc

Stress-NG 0.07.26

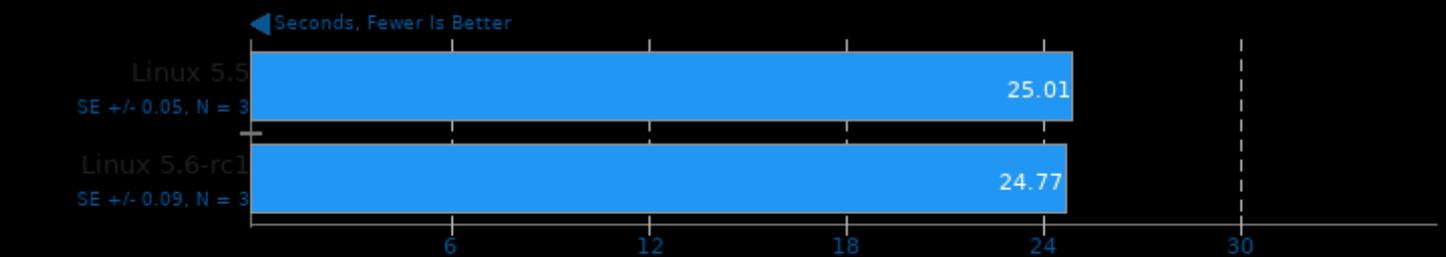
Test: System V Message Passing



1. (CC) gcc options: -O2 -std=gnu99 -lm -lz -lcrypt -lrt -lpthread -laio -lc

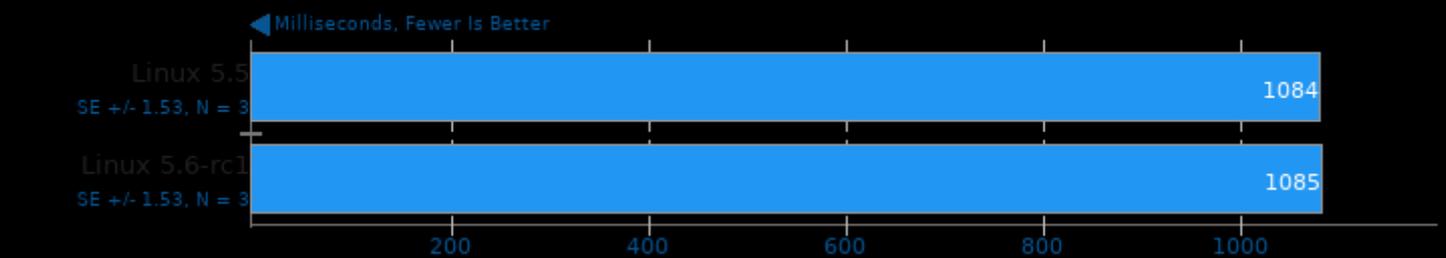
Timed Apache Compilation 2.4.41

Time To Compile



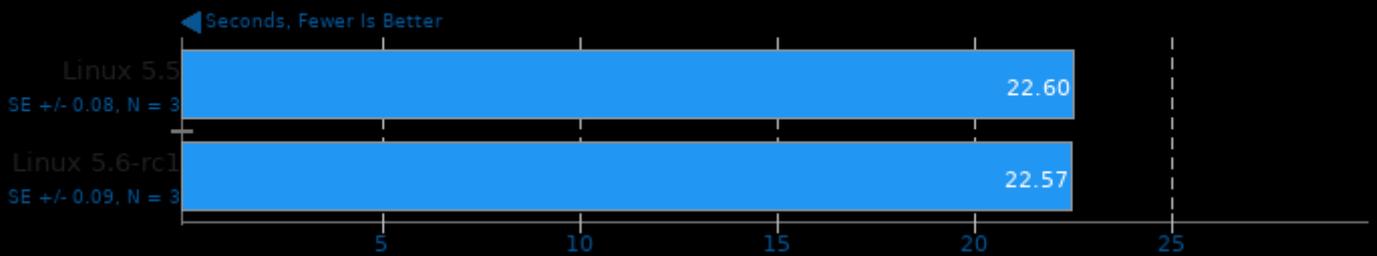
PyBench 2018-02-16

Total For Average Test Times



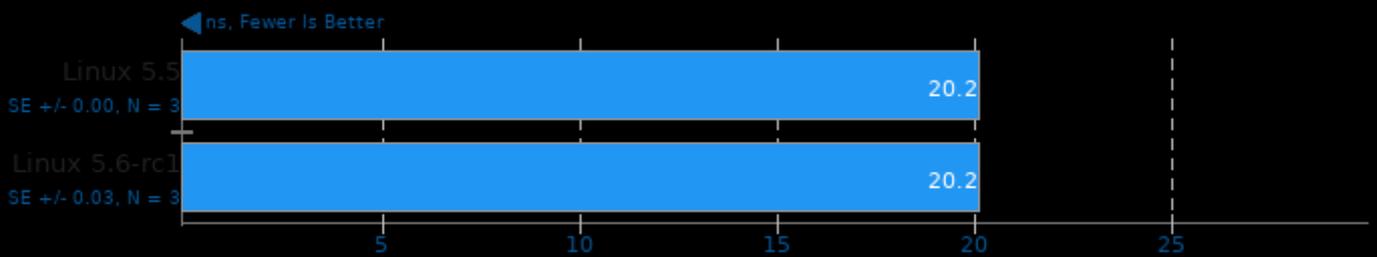
Timed FFmpeg Compilation 4.2.2

Time To Compile



BenchmarkMutex

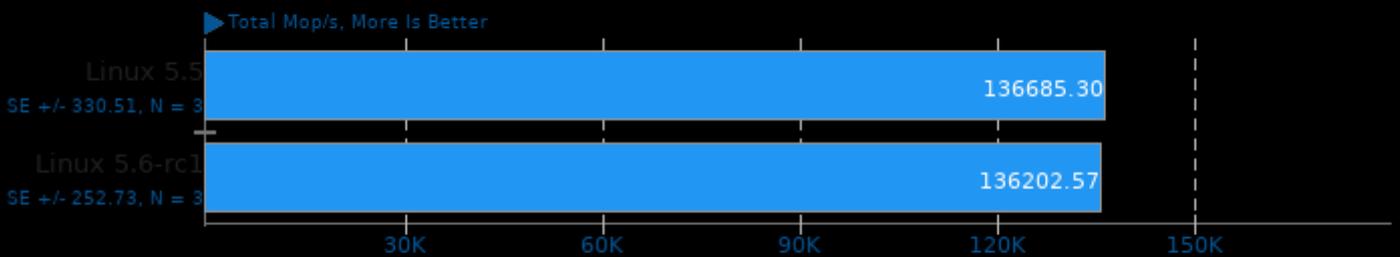
Benchmark: Mutex Lock Unlock std::mutex



1. (CXX) g++ options: -std=c++17 -benchmark -pthread

NAS Parallel Benchmarks 3.4

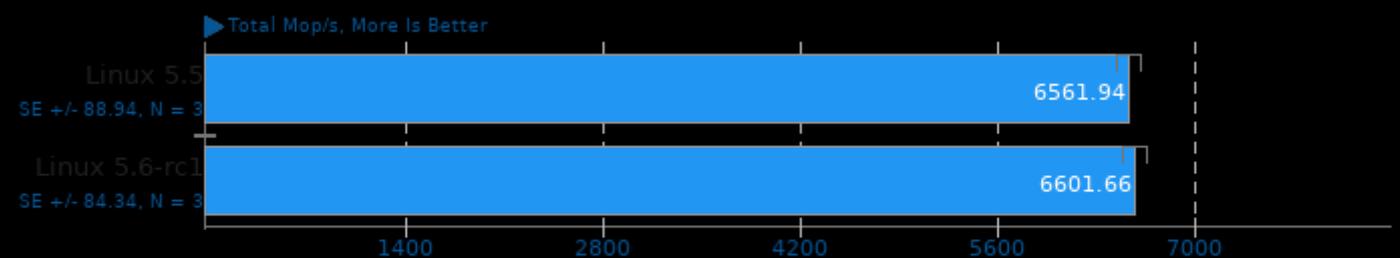
Test / Class: BT.C



1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 4.0.2

NAS Parallel Benchmarks 3.4

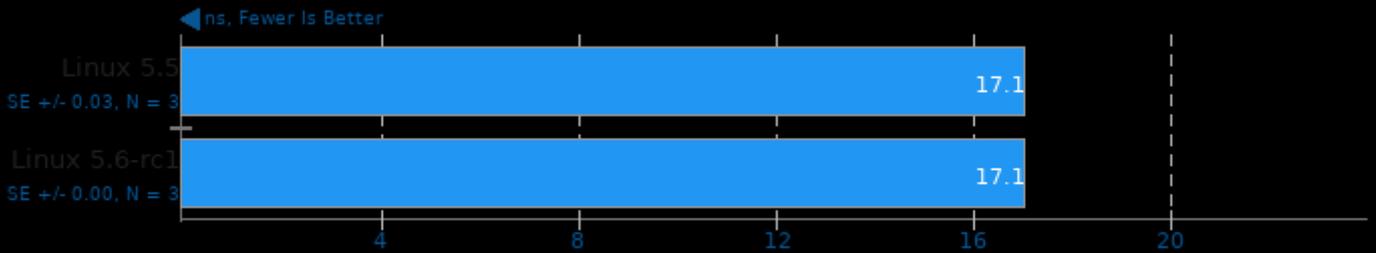
Test / Class: EP.D



1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 4.0.2

BenchmarkMutex

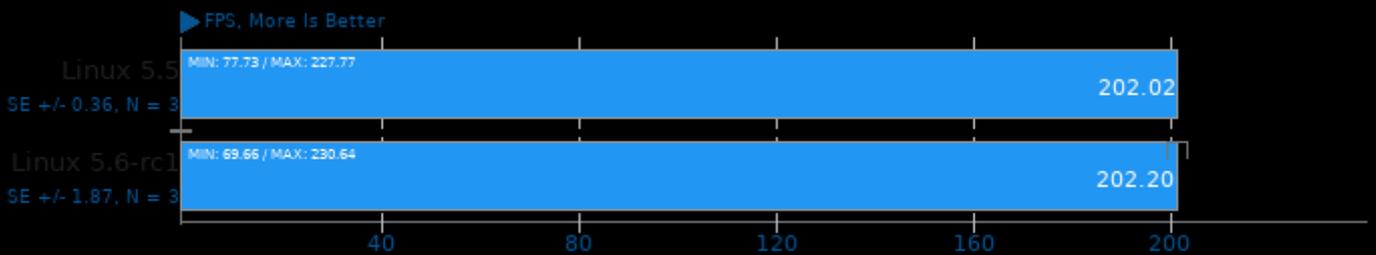
Benchmark: Semaphore Release And Acquire



1. (CXX) g++ options: -std=c++17 -benchmark -pthread

dav1d 0.5.0

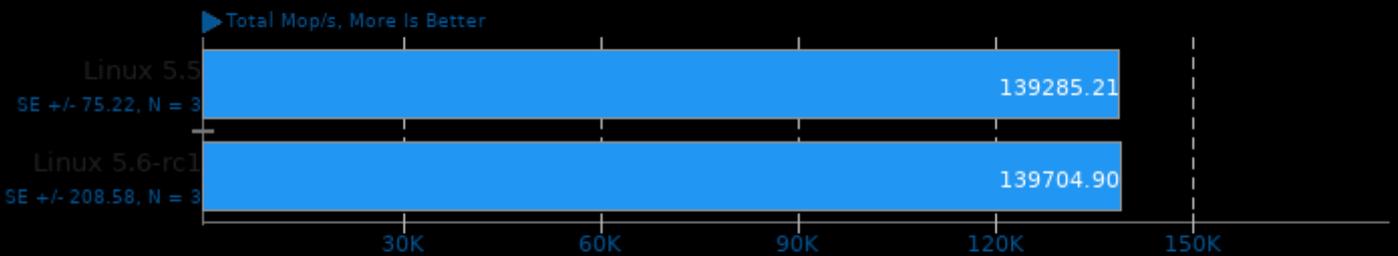
Video Input: Summer Nature 4K



1. (CC) gcc options: -pthread

NAS Parallel Benchmarks 3.4

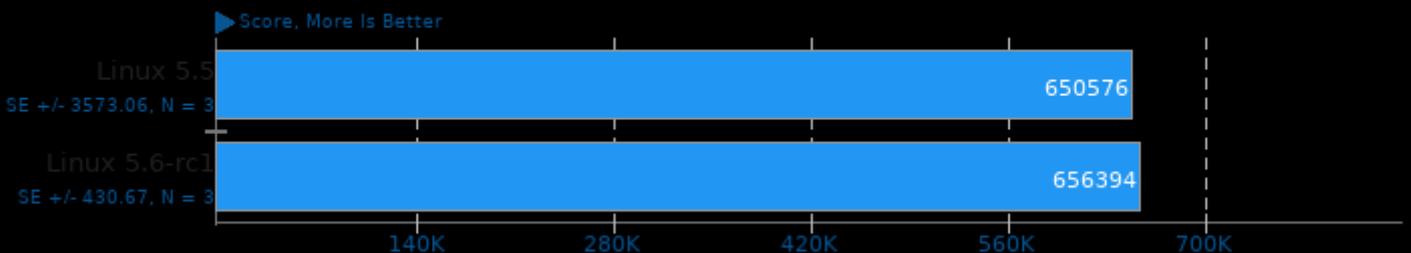
Test / Class: LU.C



1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 4.0.2

PHPBench 0.8.1

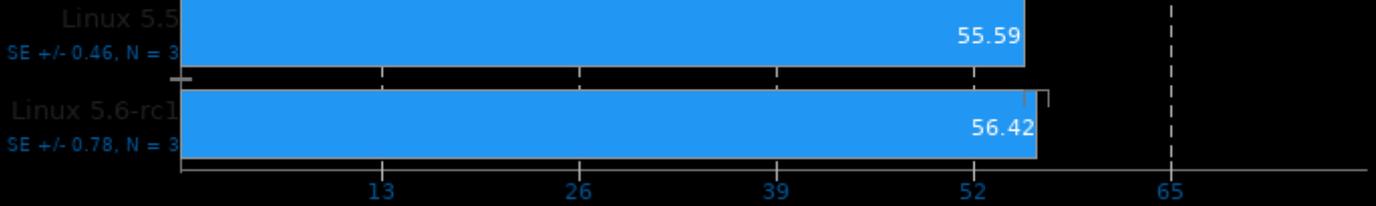
PHP Benchmark Suite



SVT-AV1 0.8

Encoder Mode: Enc Mode 8 - Input: 1080p

▶ Frames Per Second, More Is Better

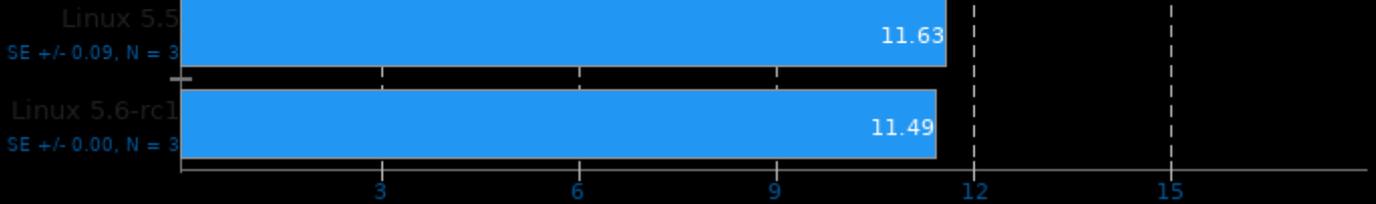


1. (CXX) g++ options: -fPIE -fPIC -pie

Timed MPlayer Compilation 1.4

Time To Compile

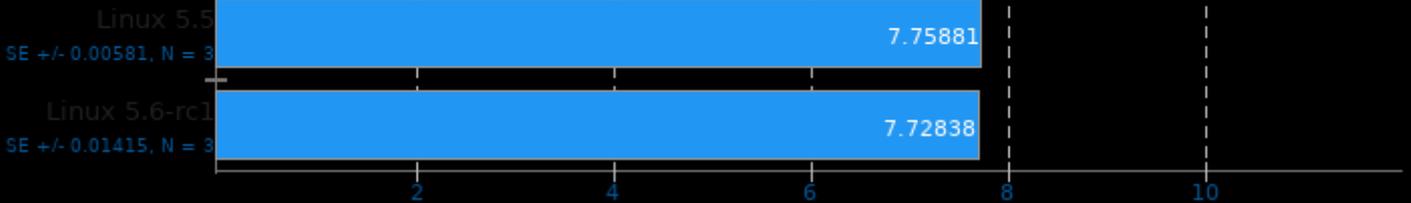
◀ Seconds, Fewer Is Better



glibc bench 1.0

Benchmark: log2

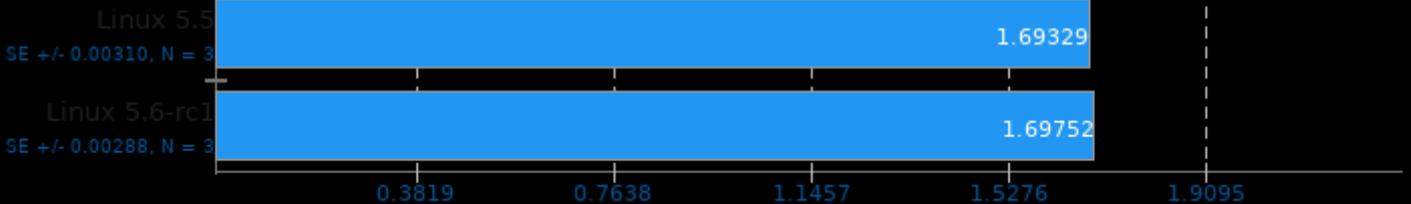
◀ nanoseconds, Fewer Is Better



glibc bench 1.0

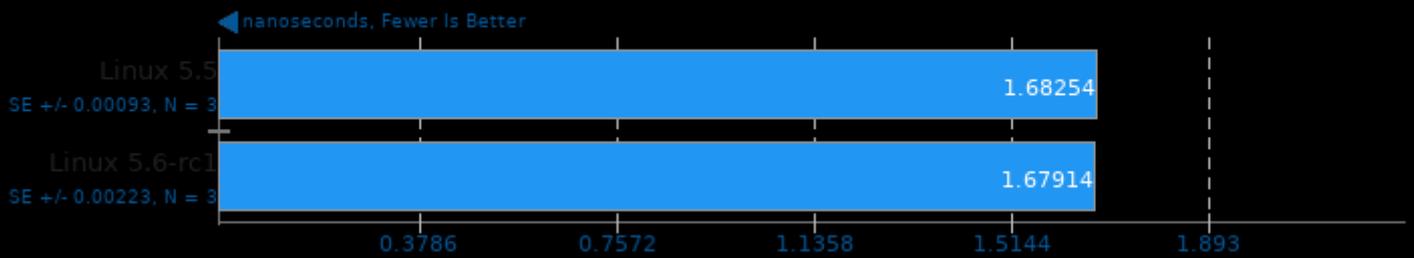
Benchmark: pthread_once

◀ nanoseconds, Fewer Is Better



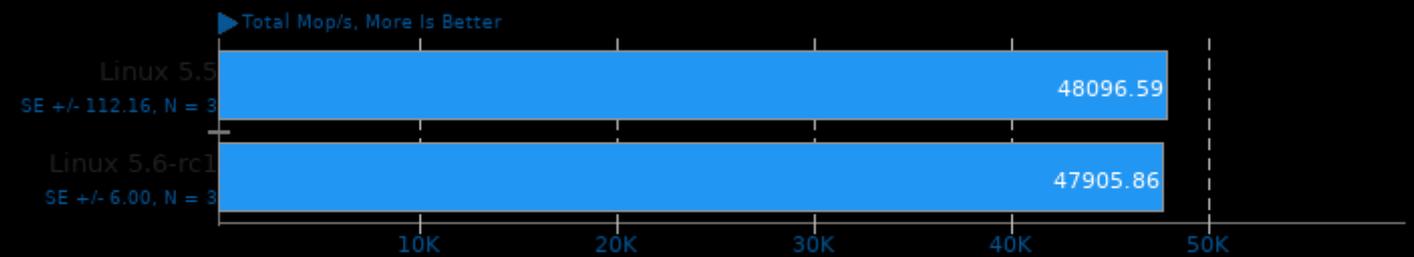
glibc bench 1.0

Benchmark: ffs



NAS Parallel Benchmarks 3.4

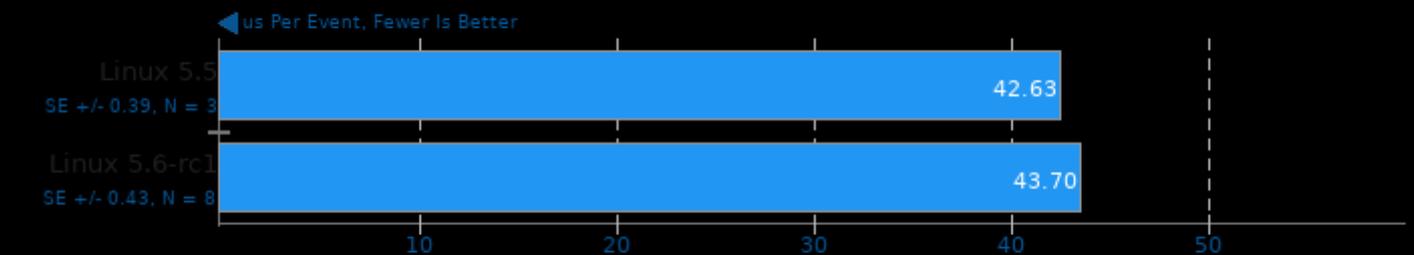
Test / Class: FT.C



1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpi fh -lmpi
2. Open MPI 4.0.2

OSBench

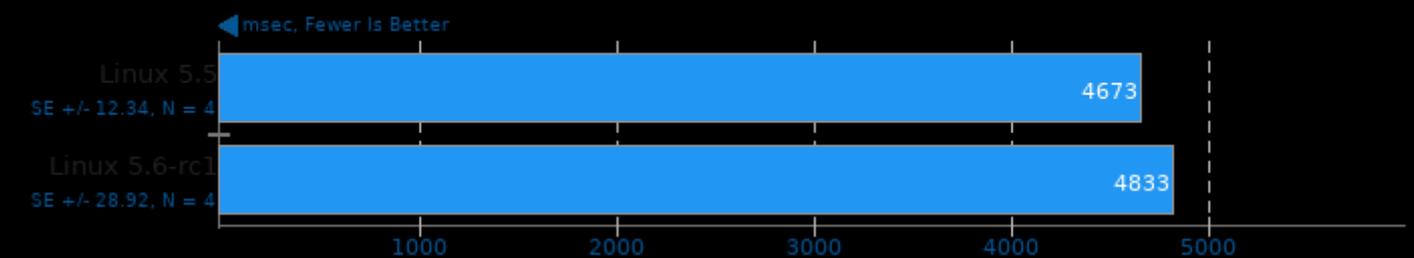
Test: Launch Programs



1. (C) gcc options: -lm

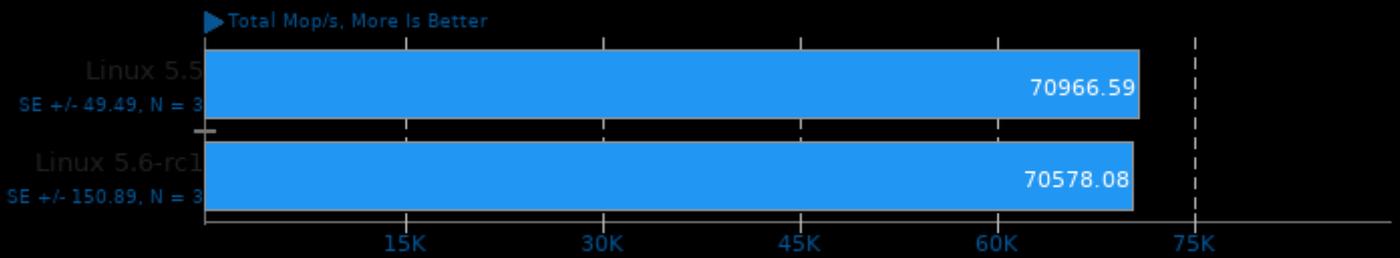
DaCapo Benchmark 9.12-MR1

Java Test: jython



NAS Parallel Benchmarks 3.4

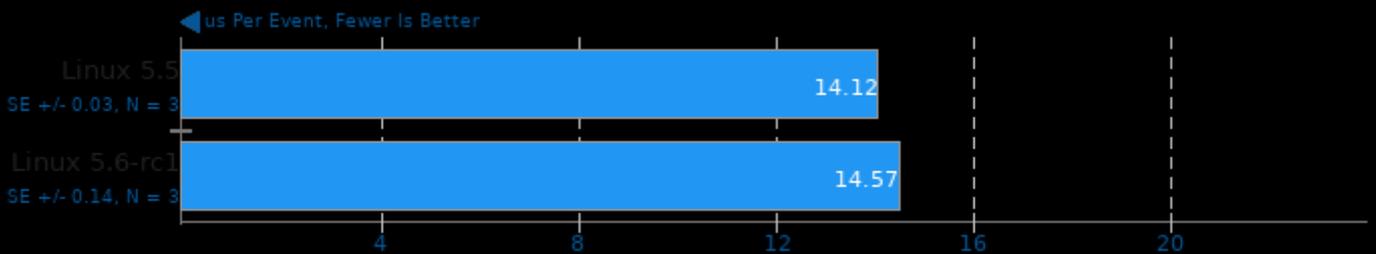
Test / Class: SP.B



1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 4.0.2

OSBench

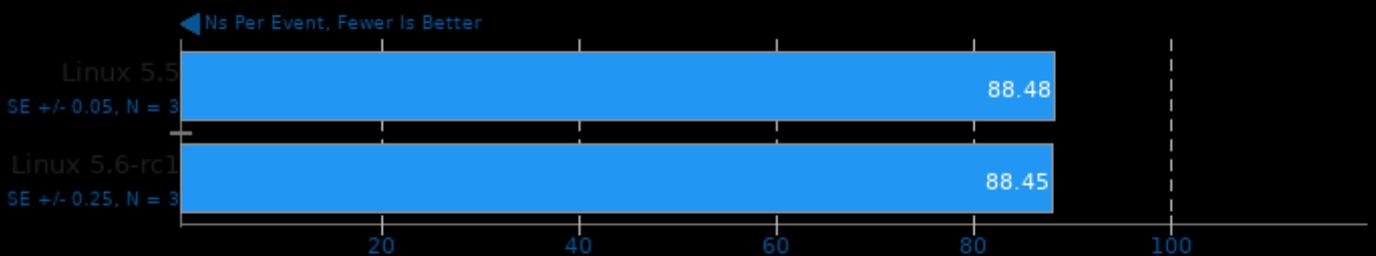
Test: Create Files



1. (CC) gcc options: -lm

OSBench

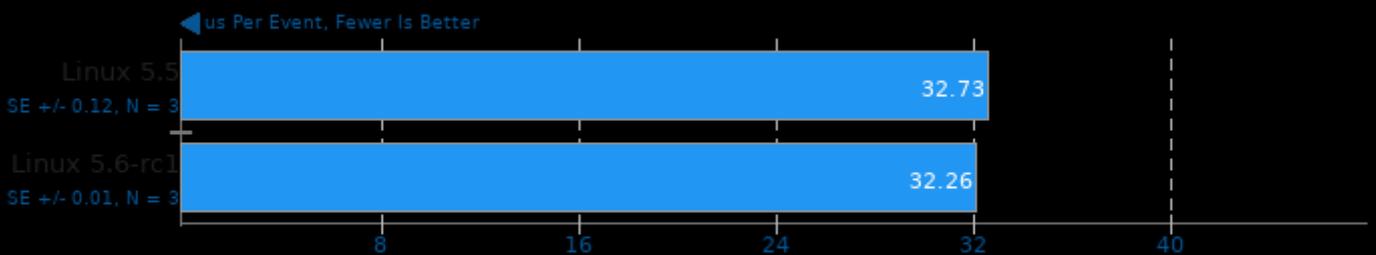
Test: Memory Allocations



1. (CC) gcc options: -lm

OSBench

Test: Create Processes

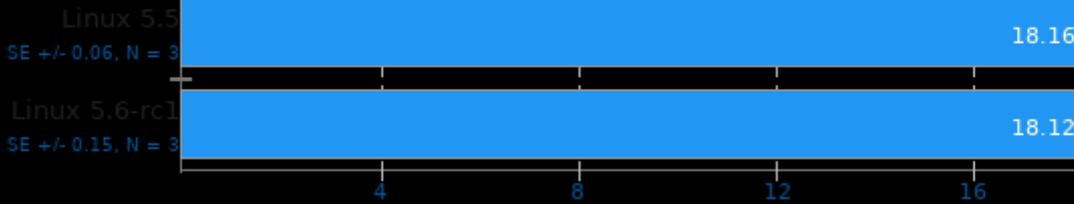


1. (CC) gcc options: -lm

OSBench

Test: Create Threads

µs Per Event, Fewer Is Better

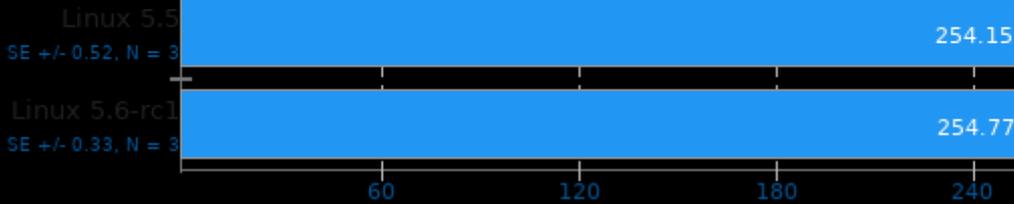


1. (GCC) gcc options: -lm

rays1bench 2020-01-09

Large Scene

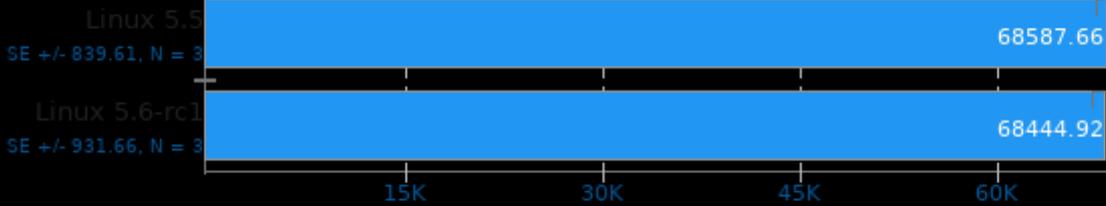
Mrays/s, More Is Better



NAS Parallel Benchmarks 3.4

Test / Class: MG.C

Total Mop/s, More Is Better

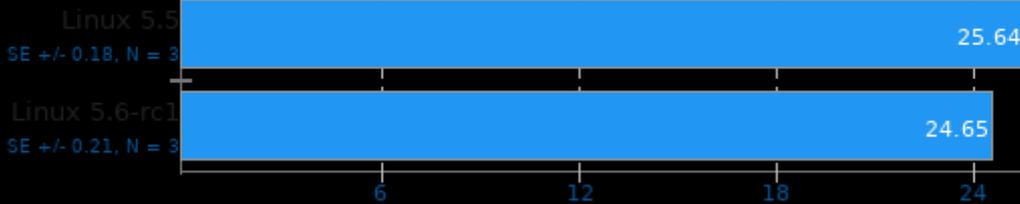


1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 4.0.2

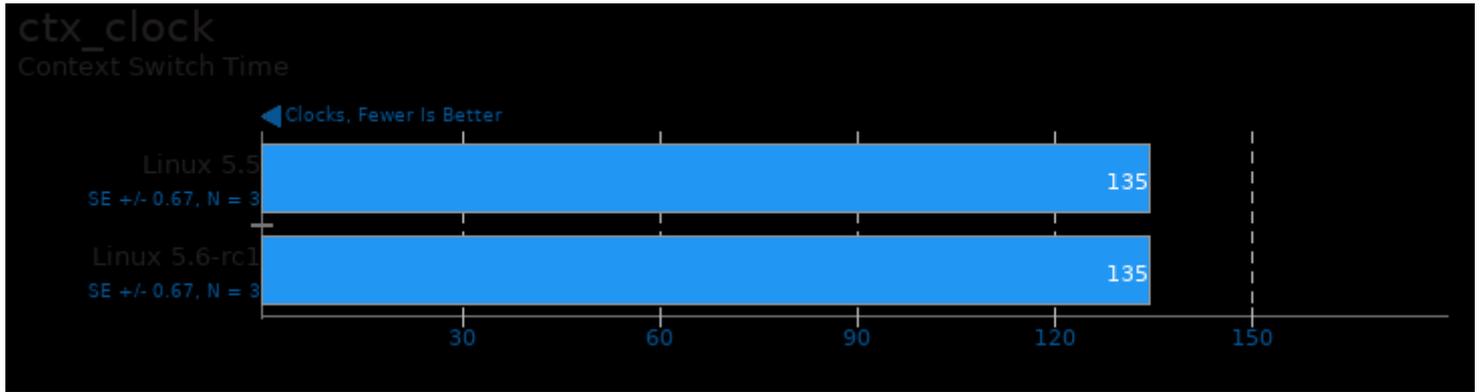
LAMMPS Molecular Dynamics Simulator 9Jan2020

Model: Rhodopsin Protein

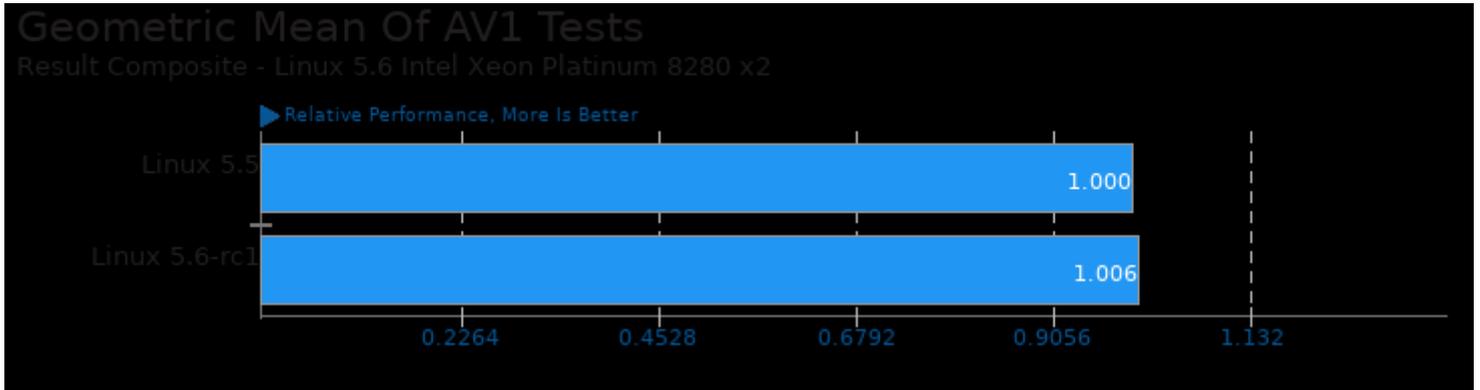
ns/day, More Is Better



1. (CXX) g++ options: -O3 -rdynamic -ljpeg -lpng -lz -lfftw3 -lm



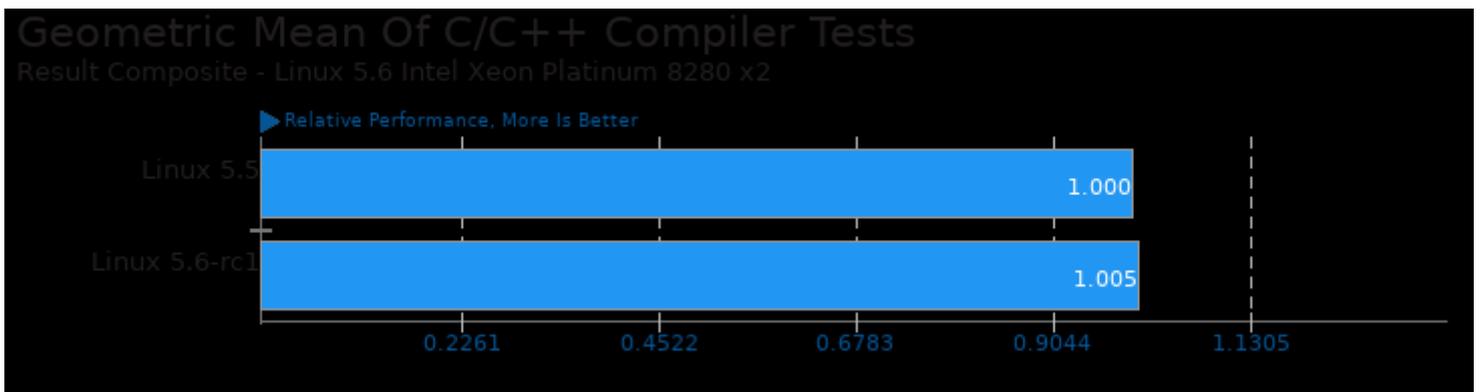
These geometric means are based upon test groupings / test suites for this result file.



Geometric mean based upon tests: pts/dav1d and pts/svt-av1



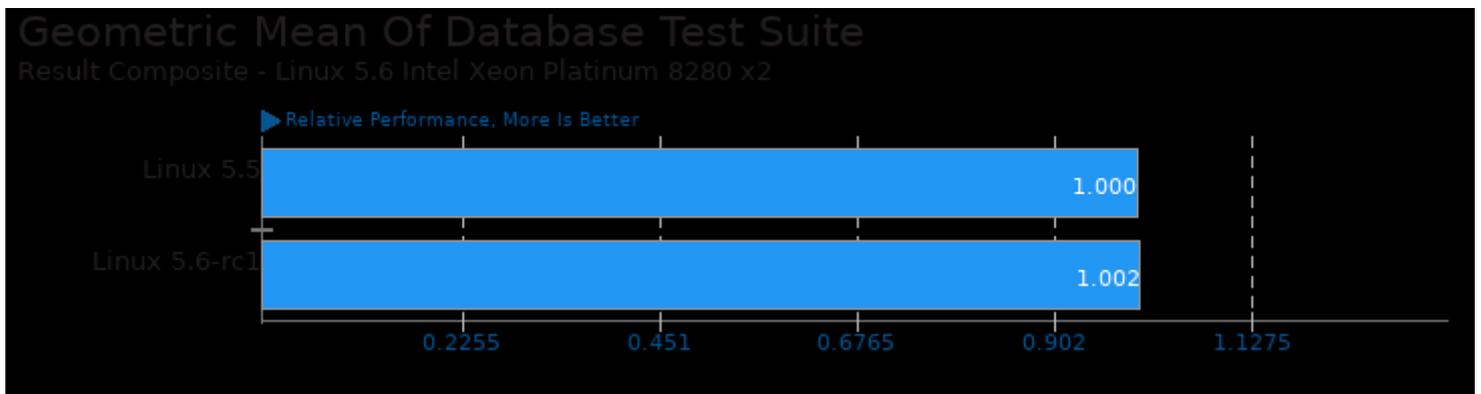
Geometric mean based upon tests: pts/build-apache, pts/build-php, pts/build-linux-kernel, pts/build-gdb, pts/build-llvm, pts/build-ffmpeg, pts/build-mplayer and pts/build2



Geometric mean based upon tests: pts/himeno, pts/build-php, pts/build-llvm, pts/pgbench, pts/apache, pts/sqlite-speedtest, pts/john-the-ripper, pts/dav1d, pts/nginx, pts/lampps, pts/svt-av1, pts/build-gdb, pts/build-ffmpeg, pts/build-apache and pts/build-mplayer



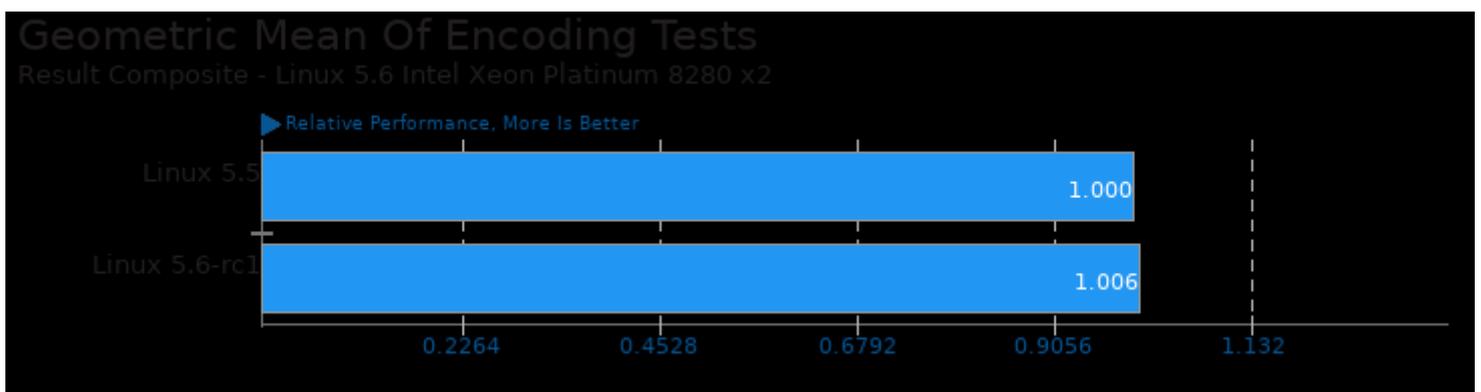
Geometric mean based upon tests: pts/rays1bench, pts/blender, pts/dav1d, pts/svt-av1, system/rawtherapee and pts/deepspeech



Geometric mean based upon tests: pts/sqlite-speedtest, pts/rocksdb, pts/pgbench and pts/mysqlslap



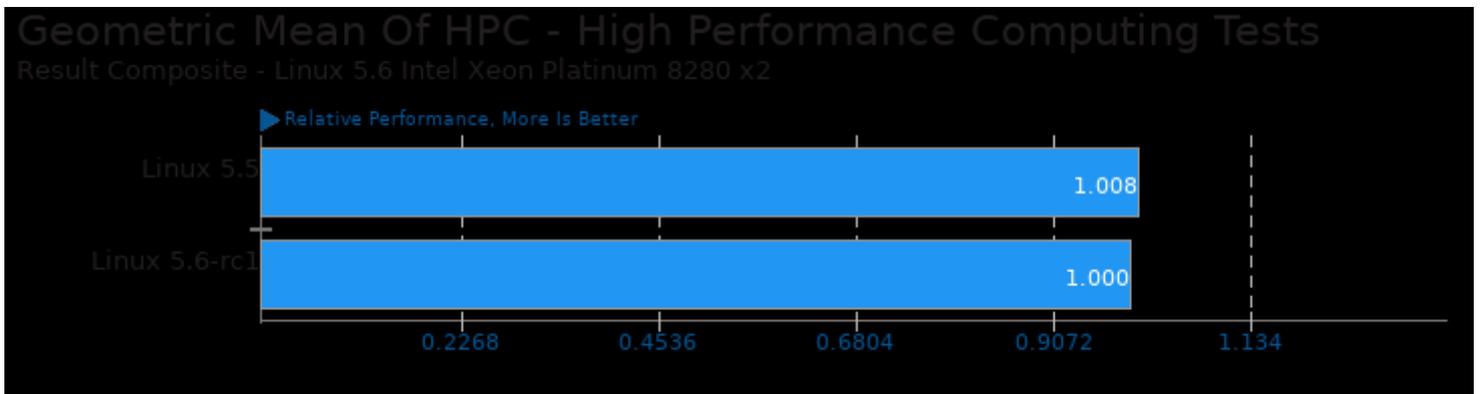
Geometric mean based upon tests: pts/postmark and pts/fio



Geometric mean based upon tests: pts/dav1d and pts/svt-av1



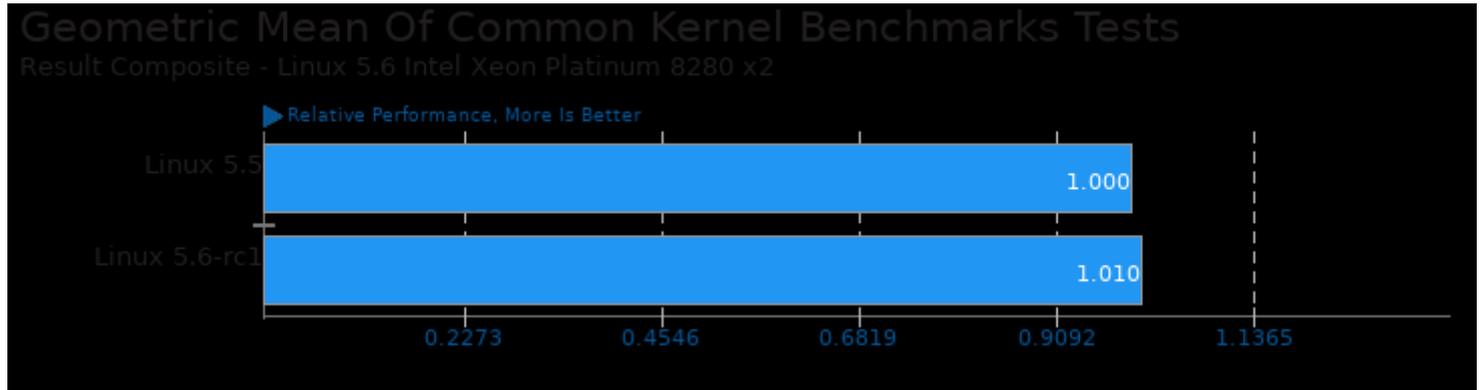
Geometric mean based upon tests: pts/hpcg and pts/lammps



Geometric mean based upon tests: pts/npb, pts/hpcg, pts/namd, pts/lammps, pts/himeno, pts/numpy and pts/deepspeech



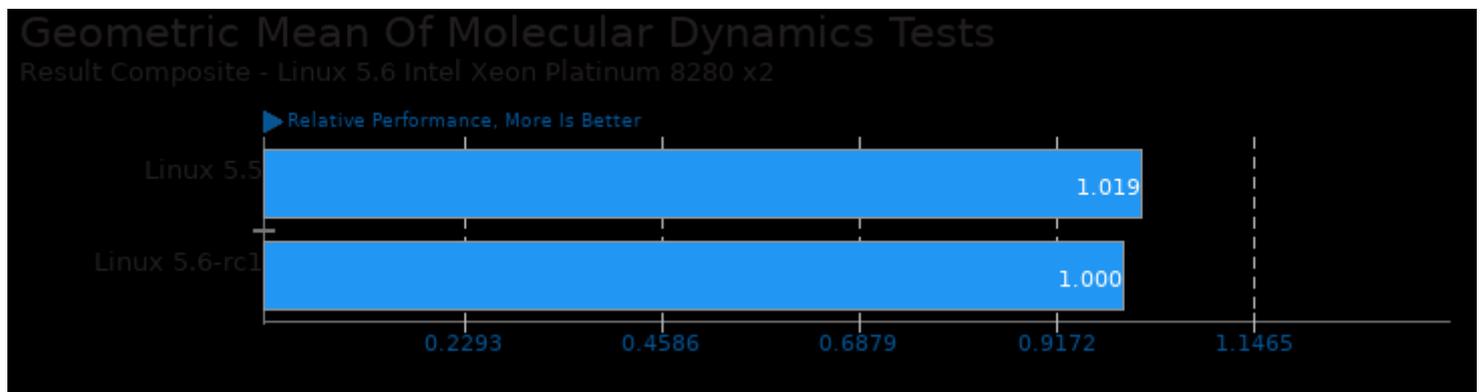
Geometric mean based upon tests: pts/dacapobench and pts/renaissance



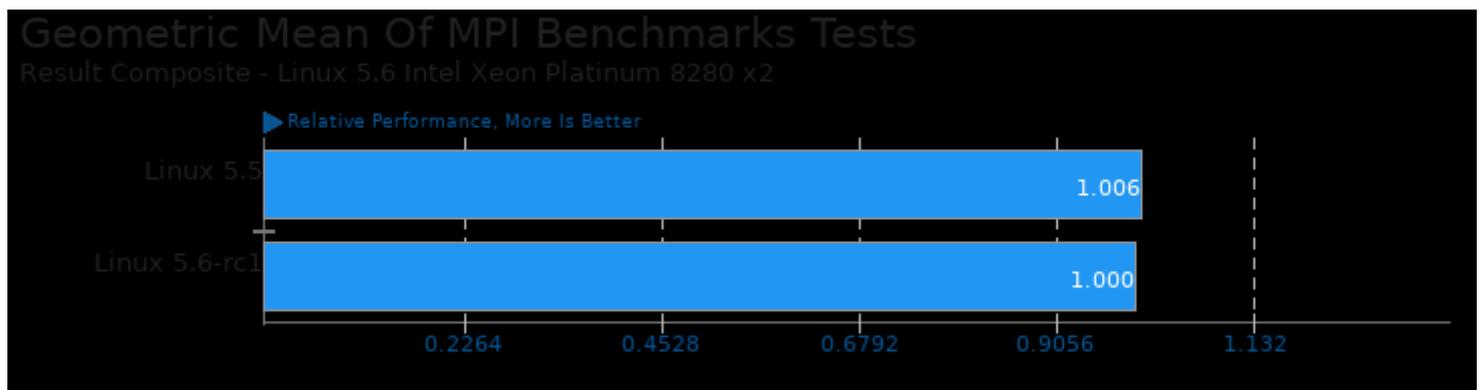
Geometric mean based upon tests: pts/apache, pts/postmark, pts/sqlite-speedtest, pts/pgbench, pts/ctx-clock, pts/hackbench, pts/mutex, pts/stress-ng, pts/osbench, pts/rocksdb, pts/ethr and pts/iperf



Geometric mean based upon tests: pts/numpy and pts/deepspeech



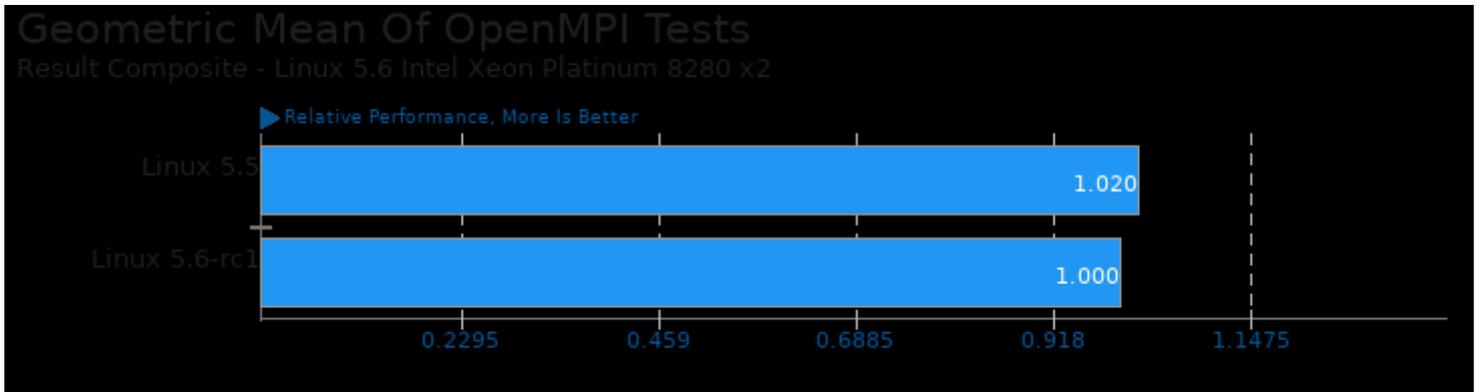
Geometric mean based upon tests: pts/namd and pts/lammps



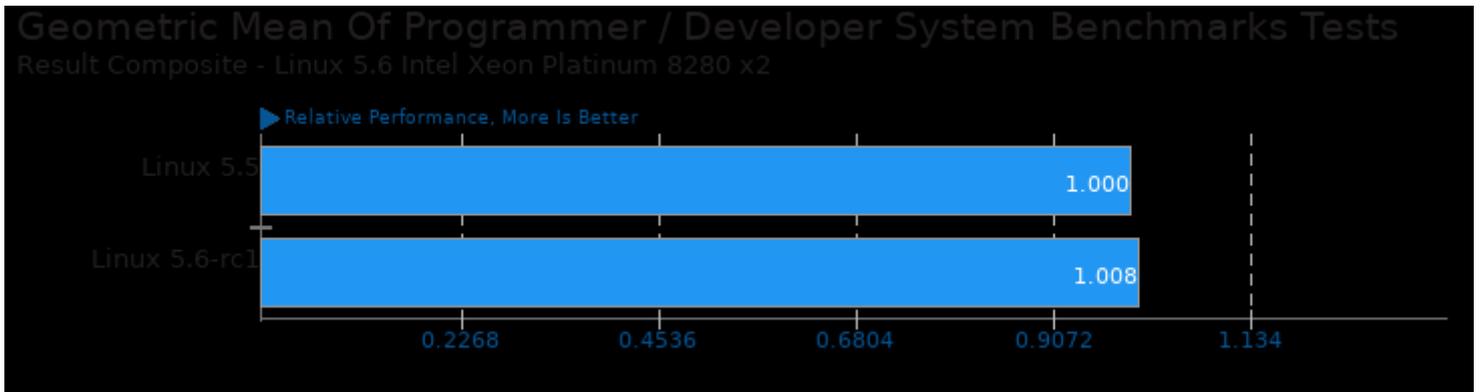
Geometric mean based upon tests: pts/lammps, pts/hpcg and pts/npb



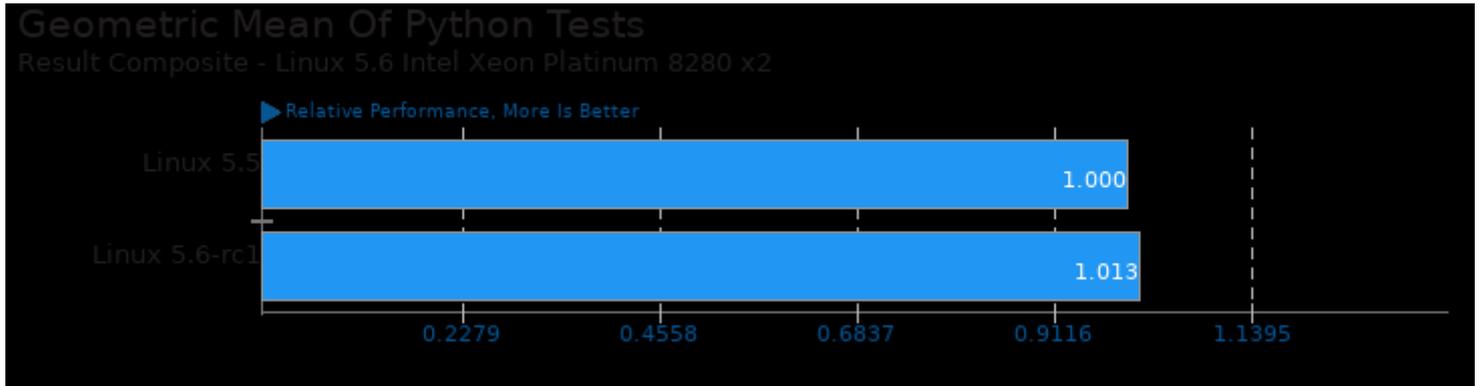
Geometric mean based upon tests: pts/ethr and pts/ipperf



Geometric mean based upon tests: pts/hpcg and pts/lammps



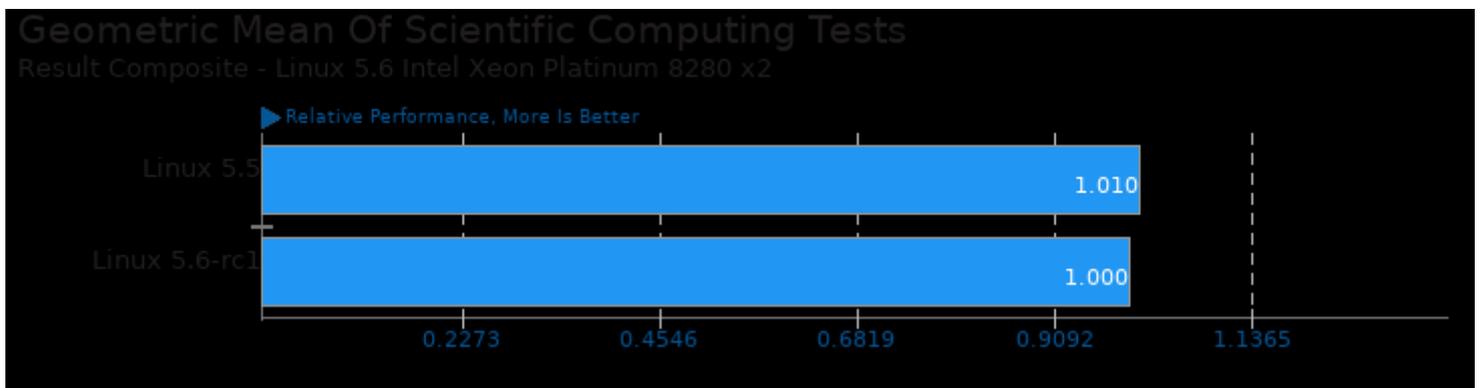
Geometric mean based upon tests: pts/sqlite-speedtest, pts/pybench, pts/build-apache, pts/build-php, pts/build-linux-kernel, pts/build-gdb, pts/build-llvm, pts/build-ffmpeg, pts/build-mplayer and pts/build2



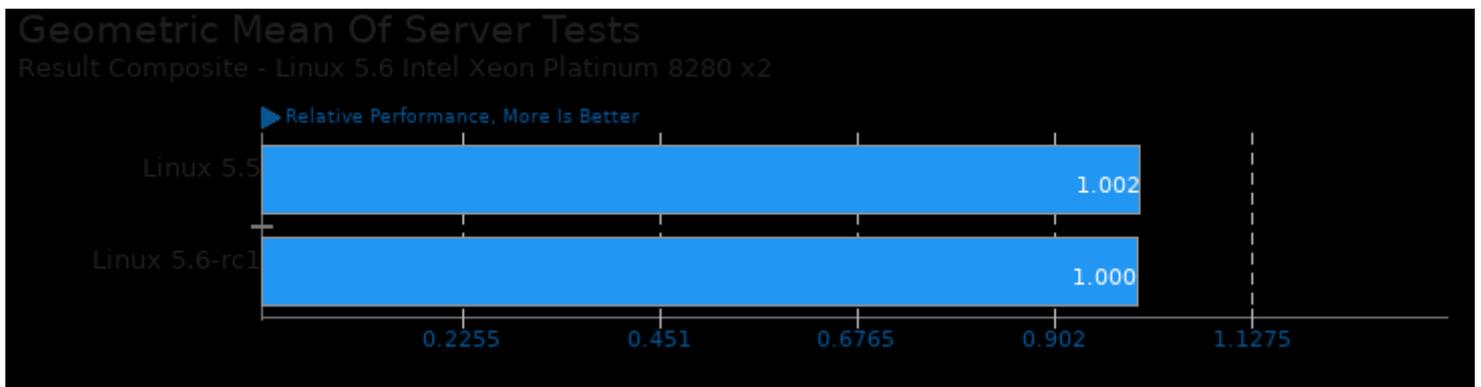
Geometric mean based upon tests: pts/pybench and pts/numpy



Geometric mean based upon tests: pts/rays1bench and pts/blender



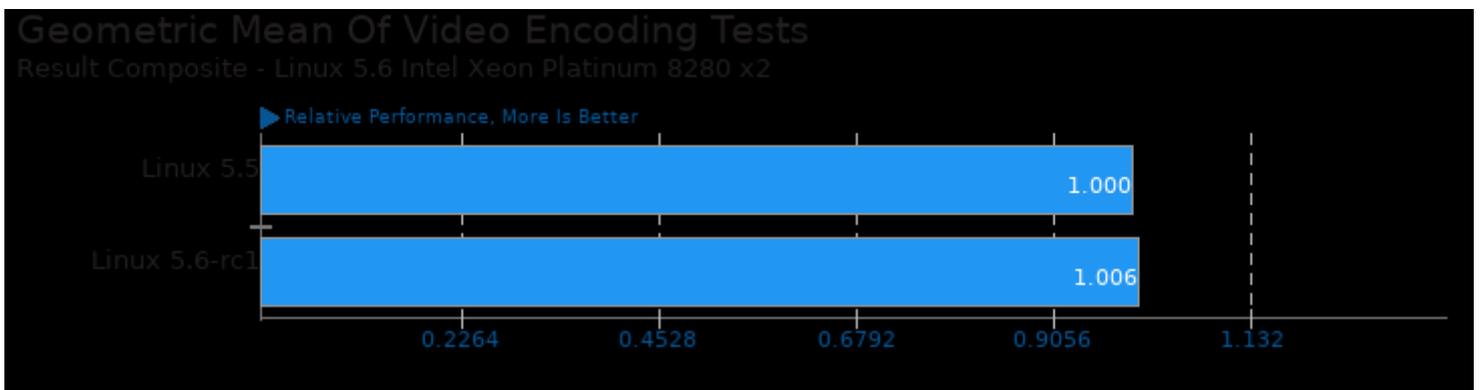
Geometric mean based upon tests: pts/namd, pts/lammps and pts/himeno



Geometric mean based upon tests: pts/apache, pts/nginx, pts/mysqlslap, pts/pgbench, pts/rocksdb, pts/phpbench and pts/sqlite-speedtest



Geometric mean based upon tests: pts/numpy, pts/deepspeech, pts/glibc-bench, pts/mutex, pts/pybench, pts/phpbench and pts/nginx



Geometric mean based upon tests: pts/dav1d and pts/svt-av1



Geometric mean based upon tests: pts/blender and pts/himeno

This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 08:50.