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Ryzen 9 5900X LInux 5.11

AMD Ryzen 9 5900X 12-Core testing with a ASUS ROG CROSSHAIR VIII HERO (2702 BIOS) and Sapphire AMD Radeon RX 5600 OEM/5600 XT / 5700/5700 6GB on Ubuntu 20.10 via the Phoronix Test Suite.

Automated Executive Summary

Linux 5.10.2 had the most wins, coming in first place for 59% of the tests.

Based on the geometric mean of all complete results, the fastest (Linux 5.10.2) was 1.022x the speed of the slowest (Linux 5.11 Git).

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

Xonotic (Resolution: 3840 x 2160 - Effects Quality: Ultra) at 1.694x
IPC_benchmark (Type: Unnamed Unix Domain Socket - Message Bytes: 128) at 1.601x
Ethr (Server Address: localhost - Protocol: HTTP - Test: Bandwidth - Threads: 8) at 1.243x
Stress-NG (Test: System V Message Passing) at 1.215x
oneDNN (Harness: Matrix Multiply Batch Shapes Transformer - Data Type: f32 - Engine: CPU) at 1.183x
Tesseract (Resolution: 2560 x 1440) at 1.178x
Selenium (Benchmark: ARES-6 - Browser: Firefox) at 1.17x
Stress-NG (Test: NUMA) at 1.163x
Ethr (Server Address: localhost - Protocol: HTTP - Test: Bandwidth - Threads: 16) at 1.146x

Stress-NG (Test: SENDFILE) at 1.141x.

Test Systems:

Linux 5.10.2

Processor: AMD Ryzen 9 5900X 12-Core @ 3.70GHz (12 Cores / 24 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (2702 BIOS), Chipset: AMD Starship/Matisse, Memory: 16GB, Disk: 1000GB Sabrent Rocket 4.0 1TB, Graphics: Sapphire AMD Radeon RX 5600 OEM/5600 XT / 5700/5700 6GB (1780/875MHz), Audio: AMD Navi 10 HDMI Audio, Monitor: ASUS VP28U, Network: Realtek RTL8125 2.5GbE + Intel I211

OS: Ubuntu 20.10, Kernel: 5.10.2-051002-generic (x86_64), Desktop: GNOME Shell 3.38.1, Display Server: X Server 1.20.9, Display Driver: modesetting 1.20.9, OpenGL: 4.6 Mesa 20.2.1 (LLVM 11.0.0), Vulkan: 1.2.131, Compiler: GCC 10.2.0, File-System: ext4, Screen Resolution: 3840x2160

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --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-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-10-JvwpWM/gcc-10-10.2.0/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-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 / Block Size: 4096
Processor Notes: Scaling Governor: acpi-cpufreq schedutil (Boost: Enabled) - CPU Microcode: 0xa201009
Graphics Notes: GLAMOR
Python Notes: Python 3.8.6
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 5.11 Git

Processor: AMD Ryzen 9 5900X 12-Core @ 3.70GHz (12 Cores / 24 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (2702 BIOS), Chipset: AMD Starship/Matisse, Memory: 16GB, Disk: 1000GB Sabrent Rocket 4.0 1TB, Graphics: Sapphire AMD Radeon RX 5600 OEM/5600 XT / 5700/5700 6GB (1780/875MHz), Audio: AMD Navi 10 HDMI Audio, Monitor: ASUS VP28U, Network: Realtek RTL8125 2.5GbE + Intel I211

OS: Ubuntu 20.10, Kernel: 5.10.0-051000daily20201222-generic (x86_64), Desktop: GNOME Shell 3.38.1, Display Server: X Server 1.20.9, Display Driver: modesetting 1.20.9, OpenGL: 4.6 Mesa 20.2.1 (LLVM 11.0.0), Vulkan: 1.2.131, Compiler: GCC 10.2.0, File-System: ext4, Screen Resolution: 3840x2160

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --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-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-10-JvwpWM/gcc-10-10.2.0/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-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 / Block Size: 4096
Processor Notes: Scaling Governor: acpi-cpufreq schedutil (Boost: Enabled) - CPU Microcode: 0xa201009
Graphics Notes: GLAMOR
Python Notes: Python 3.8.6
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

Ryzen 9 5900X LInux 5.11

	Linux 5.10.2	Linux 5.11 Git
LevelDB - Hot Read (us/Op)	**9.875**	**11.675**
Normalized	100%	84.58%
Standard Deviation	0.3%	8.1%
LevelDB - Fill Sync (MB/s)	1.5	1.5
Standard Deviation	0%	0%
LevelDB - Fill Sync (us/Op)	**1781**	**1739**
Normalized	97.6%	100%
Standard Deviation	0.1%	0.4%
LevelDB - Overwrite (MB/s)	**31.9**	**33.1**
Normalized	96.37%	100%
Standard Deviation	0.7%	1%
LevelDB - Overwrite (us/Op)	**83.227**	**80.261**
Normalized	96.44%	100%
Standard Deviation	0.6%	0.9%
LevelDB - Rand Fill (MB/s)	**32.0**	**32.9**
Normalized	97.26%	100%
Standard Deviation	0.2%	0.3%
LevelDB - Rand Fill (us/Op)	**83.060**	**80.705**
Normalized	97.16%	100%
Standard Deviation	0.2%	0.3%
LevelDB - Rand Read (us/Op)	**9.996**	**12.008**
Normalized	100%	83.24%
Standard Deviation	1.1%	11%
LevelDB - Seek Rand (us/Op)	**14.095**	**16.433**
Normalized	100%	85.77%
Standard Deviation	0.3%	9%
LevelDB - Rand Delete (us/Op)	**77.705**	**75.994**
Normalized	97.8%	100%
Standard Deviation	0.4%	1.2%
LevelDB - Seq Fill (MB/s)	**32.7**	**33.3**
Normalized	98.2%	100%
Standard Deviation	0.4%	1.1%
LevelDB - Seq Fill (us/Op)	**81.226**	**79.677**
Normalized	98.09%	100%
Standard Deviation	0.4%	1.2%
Flexible IO Tester - Rand Read - IO_uring - No - Yes - 2MB (MB/s)	**4767**	**4770**
Normalized	99.94%	100%
Standard Deviation	0%	
Flexible IO Tester - Rand Read - IO_uring - No - Yes - 2MB (IOPS)	**2380**	**2381**
Normalized	99.96%	100%
Standard Deviation	0%	
Flexible IO Tester - Rand Read - IO_uring - No - Yes - 4KB (MB/s)	**1861**	**1847**
Normalized	100%	99.25%
Standard Deviation	0.2%	0.6%
Flexible IO Tester - Rand Read - IO_uring - No - Yes - 4KB (IOPS)	**476333**	**473000**
Normalized	100%	99.3%
Standard Deviation	0.2%	0.6%

Flexible IO Tester - Rand Read - Linux AIO - No - Yes - 2MB (MB/s)	**4768**	**4722**
Normalized	100%	99.04%
Standard Deviation	0%	1.1%
Flexible IO Tester - Rand Read - Linux AIO - No - Yes - 2MB (IOPS)	**2380**	**2357**
Normalized	100%	99.03%
Standard Deviation	0%	1.1%
Flexible IO Tester - Rand Read - Linux AIO - No - Yes - 4KB (MB/s)	**1729**	**1799**
Normalized	96.11%	100%
Standard Deviation	5.7%	0.3%
Flexible IO Tester - Rand Read - Linux AIO - No - Yes - 4KB (IOPS)	**442500**	**460333**
Normalized	96.13%	100%
Standard Deviation	5.7%	0.3%
Flexible IO Tester - Rand Write - IO_uring - No - Yes - 2MB (MB/s)	**4090**	**4084**
Normalized	100%	99.85%
Standard Deviation	0.1%	0.1%
Flexible IO Tester - Rand Write - IO_uring - No - Yes - 2MB (IOPS)	**2041**	**2039**
Normalized	100%	99.9%
Standard Deviation	0.1%	0.1%
Flexible IO Tester - Rand Write - IO_uring - No - Yes - 4KB (MB/s)	**2802**	**2877**
Normalized	97.39%	100%
Standard Deviation	2%	3.2%
Flexible IO Tester - Rand Write - IO_uring - No - Yes - 4KB (IOPS)	**717333**	**736467**
Normalized	97.4%	100%
Standard Deviation	2%	3.3%
Flexible IO Tester - Rand Write - Linux AIO - No - Yes - 2MB (MB/s)	**4086**	**4083**
Normalized	100%	99.93%
Standard Deviation	0%	0%
Flexible IO Tester - Rand Write - Linux AIO - No - Yes - 2MB (IOPS)	**2039**	**2038**
Normalized	100%	99.95%
Flexible IO Tester - Rand Write - Linux AIO - No - Yes - 4KB (MB/s)	**2164**	**2095**
Normalized	100%	96.81%
Standard Deviation	2.1%	1.4%
Flexible IO Tester - Rand Write - Linux AIO - No - Yes - 4KB (IOPS)	**554000**	**536000**
Normalized	100%	96.75%
Standard Deviation	2.1%	1.4%
Flexible IO Tester - Seq Read - IO_uring - No - Yes - 2MB (MB/s)	**3869**	**3911**
Normalized	98.93%	100%
Standard Deviation	23.7%	22.9%

Flexible IO Tester - Seq Read - IO_uring - No - Yes - 2MB (IOPS)	**1931**	**1952**
Normalized	98.92%	100%
Standard Deviation	23.8%	23%
Flexible IO Tester - Seq Read - IO_uring - No - Yes - 4KB (MB/s)	1281	1281
Standard Deviation	1.6%	3.9%
Flexible IO Tester - Seq Read - IO_uring - No - Yes - 4KB (IOPS)	**328000**	**328067**
Normalized	99.98%	100%
Standard Deviation	1.4%	3.9%
Flexible IO Tester - Seq Read - Linux AIO - No - Yes - 2MB (MB/s)	**3145**	**2629**
Normalized	100%	83.59%
Standard Deviation	40.5%	40.8%
Flexible IO Tester - Seq Read - Linux AIO - No - Yes - 2MB (IOPS)	**1569**	**1311**
Normalized	100%	83.56%
Standard Deviation	40.6%	40.9%
Flexible IO Tester - Seq Read - Linux AIO - No - Yes - 4KB (MB/s)	**2268**	**2228**
Normalized	100%	98.24%
Standard Deviation	2.4%	1.7%
Flexible IO Tester - Seq Read - Linux AIO - No - Yes - 4KB (IOPS)	**580667**	**570333**
Normalized	100%	98.22%
Standard Deviation	2.5%	1.8%
Flexible IO Tester - Seq Write - IO_uring - No - Yes - 2MB (MB/s)	**4084**	**4086**
Normalized	99.95%	100%
Flexible IO Tester - Seq Write - IO_uring - No - Yes - 2MB (IOPS)	**2038**	**2039**
Normalized	99.95%	100%
Standard Deviation	0.1%	
Flexible IO Tester - Seq Write - IO_uring - No - Yes - 4KB (MB/s)	**2790**	**2756**
Normalized	100%	98.78%
Standard Deviation	20.7%	2.1%
Flexible IO Tester - Seq Write - IO_uring - No - Yes - 4KB (IOPS)	**714167**	**705333**
Normalized	100%	98.76%
Standard Deviation	20.7%	2.1%
Flexible IO Tester - Seq Write - Linux AIO - No - Yes - 2MB (MB/s)	**4083**	**4086**
Normalized	99.93%	100%
Standard Deviation	0.1%	0%
Flexible IO Tester - Seq Write - Linux AIO - No - Yes - 2MB (IOPS)	**2038**	**2040**
Normalized	99.9%	100%
Flexible IO Tester - Seq Write - Linux AIO - No - Yes - 4KB (MB/s)	**2109**	**2111**
Normalized	99.91%	100%
Standard Deviation	2.5%	2.2%

Flexible IO Tester - Seq Write - Linux AIO - No - Yes - 4KB (IOPS)	**539778**	**540333**
Normalized	99.9%	100%
Standard Deviation	2.5%	2.3%
RealSR-NCNN - 4x - No (sec)	**11.750**	**11.770**
Normalized	100%	99.83%
Standard Deviation	0.3%	0.2%
RealSR-NCNN - 4x - Yes (sec)	**80.053**	**79.939**
Normalized	99.86%	100%
Standard Deviation	0.1%	0.2%
Waifu2x-NCNN Vulkan - 2x - 3 - Yes (sec)	**6.439**	**6.371**
Normalized	98.94%	100%
Standard Deviation	0.2%	0.3%
VkFFT (Benchmark Score)	**15204**	**14556**
Normalized	100%	95.74%
Standard Deviation	0.7%	0.6%
ET: Legacy - Renderer2 - 3840 x 2160 (FPS)	**278.4**	**182.0**
Normalized	100%	65.37%
Standard Deviation	0.8%	18.1%
Tesseract - 1920 x 1080 (FPS)	**488.2929**	**399.1018**
Normalized	100%	81.73%
Standard Deviation	5.1%	12.2%
Tesseract - 2560 x 1440 (FPS)	**396.6033**	**336.6106**
Normalized	100%	84.87%
Standard Deviation	2.1%	1%
Tesseract - 3840 x 2160 (FPS)	**300.6970**	**300.4144**
Normalized	100%	99.91%
Standard Deviation	1.6%	1.2%
Unigine Heaven - 1920 x 1080 - Fullscreen - OpenGL (FPS)	**134.537**	**125.773**
Normalized	100%	93.49%
Standard Deviation	0.2%	0.4%
Unigine Heaven - 2560 x 1440 - Fullscreen - OpenGL (FPS)	**77.8160**	**77.3036**
Normalized	100%	99.34%
Standard Deviation	1.1%	1%
Unigine Superposition - 1920 x 1080 - Fullscreen - Low - OpenGL (FPS)	**209.9**	**202.1**
Normalized	100%	96.28%
Standard Deviation	0.5%	1.7%
Unigine Superposition - 1920 x 1080 - Fullscreen - High - OpenGL (FPS)	**70.6**	**70.5**
Normalized	100%	99.86%
Standard Deviation	0.1%	0.1%
Unigine Superposition - 1920 x 1080 - Fullscreen - Ultra - OpenGL (FPS)	**28.1**	**28**
Normalized	100%	99.64%
Standard Deviation	0.2%	
Unigine Valley - 1920 x 1080 - Fullscreen - OpenGL (FPS)	**153.322**	**141.160**
Normalized	100%	92.07%
Standard Deviation	0.3%	1.2%

Unigine Valley - 2560 x 1440 - Fullscreen - OpenGL (FPS)	**92.6398**	**89.7431**
Normalized	100%	96.87%
Standard Deviation	0.1%	0.9%
Xonotic - 3840 x 2160 - Low (FPS)	**645.7559859**	**636.6408503**
Normalized	100%	98.59%
Standard Deviation	0.7%	1.3%
Xonotic - 3840 x 2160 - High (FPS)	**471.8253604**	**328.0886172**
Normalized	100%	69.54%
Standard Deviation	0.3%	26.6%
Xonotic - 3840 x 2160 - Ultra (FPS)	**411.4411252**	**242.9268844**
Normalized	100%	59.04%
Standard Deviation	0.6%	0.7%
Xonotic - 3840 x 2160 - Ultimate (FPS)	**329.7718612**	**239.8275114**
Normalized	100%	72.73%
Standard Deviation	0.2%	7.7%
yquake2 - OpenGL 3.x - 1920 x 1080 (FPS)	**980.4**	**982.9**
Normalized	99.75%	100%
Standard Deviation	0.3%	0%
yquake2 - OpenGL 3.x - 2560 x 1440 (FPS)	**976.8**	**975.4**
Normalized	100%	99.86%
Standard Deviation	0.3%	1.3%
yquake2 - OpenGL 3.x - 3840 x 2160 (FPS)	**980.8**	**980.4**
Normalized	100%	99.96%
Standard Deviation	0.3%	1.1%
yquake2 - Software CPU - 1920 x 1080 (FPS)	**179.1**	**152.9**
Normalized	100%	85.37%
Standard Deviation	0.8%	28%
yquake2 - Software CPU - 2560 x 1440 (FPS)	**105.3**	**106.3**
Normalized	99.06%	100%
Standard Deviation	1%	2.4%
yquake2 - Software CPU - 3840 x 2160 (FPS)	**49.3**	**49.5**
Normalized	99.6%	100%
Standard Deviation	0.8%	1.2%
GLmark2 - 1920 x 1080 (Score)	**7438**	**7341**
Normalized	100%	98.7%
GLmark2 - 2560 x 1440 (Score)	**4495**	**4390**
Normalized	100%	97.66%
GLmark2 - 3840 x 2160 (Score)	**2049**	**2045**
Normalized	100%	99.8%
VKMark - 1920 x 1080 (VKMark Score)	**7081**	**7008**
Normalized	100%	98.97%
Standard Deviation	0.1%	0.1%
VKMark - 2560 x 1440 (VKMark Score)	**4573**	**4508**
Normalized	100%	98.58%
Standard Deviation	0.1%	0.1%
VKMark - 3840 x 2160 (VKMark Score)	**2275**	**2259**
Normalized	100%	99.3%
Standard Deviation	0.1%	0.3%
Ethr - TCP - Latency - 1 (us)	**17.47**	**18.00**
Normalized	100%	97.06%
Standard Deviation	7.2%	4.3%
Ethr - TCP - Latency - 8 (us)	**17.61**	**17.31**
Normalized	98.3%	100%
Standard Deviation	4.1%	1.8%

Ethr - TCP - Latency - 16 (us)	**16.72**	**17.60**
Normalized	100%	95%
Standard Deviation	2.5%	3.4%
Ethr - TCP - Bandwidth - 8 (Mbits/s)	**147521**	**134820**
Normalized	100%	91.39%
Standard Deviation	1.6%	5.3%
Ethr - UDP - Bandwidth - 8 (Mbits/s)	**214200**	**214358**
Normalized	99.93%	100%
Standard Deviation	0.4%	0.6%
Ethr - HTTP - Bandwidth - 1 (Mbits/s)	**1118**	**1126**
Normalized	99.33%	100%
Standard Deviation	0.1%	0.2%
Ethr - HTTP - Bandwidth - 8 (Mbits/s)	**3970**	**3194**
Normalized	100%	80.47%
Standard Deviation	0.5%	0.3%
Ethr - TCP - Bandwidth - 16 (Mbits/s)	**166055**	**164565**
Normalized	100%	99.1%
Standard Deviation	2.3%	3.2%
Ethr - UDP - Bandwidth - 16 (Mbits/s)	**229572**	**227202**
Normalized	100%	98.97%
Standard Deviation	0.3%	0.2%
Ethr - HTTP - Bandwidth - 16 (Mbits/s)	**4907**	**5622**
Normalized	87.27%	100%
Standard Deviation	0.2%	0.1%
Ethr - TCP - Connections/s - 1 (Connections/sec)	**7805**	**7360**
Normalized	100%	94.3%
Standard Deviation	2.9%	1.6%
Ethr - TCP - Connections/s - 8 (Connections/sec)	**55999**	**57724**
Normalized	97.01%	100%
Standard Deviation	7.1%	7.8%
Ethr - TCP - Connections/s - 16 (Connections/sec)	**73000**	**102341**
Normalized	71.33%	100%
Standard Deviation	55.9%	38.8%
iPerf - 5201 - 30 Seconds - TCP - 1 (Mbits/s)	**92774**	**90018**
Normalized	100%	97.03%
Standard Deviation	2.3%	4.5%
iPerf - 5201 - 30 Seconds - TCP - 5 (Mbits/s)	**95418**	**93627**
Normalized	100%	98.12%
Standard Deviation	1.1%	0.4%
iPerf - 5201 - 30 Seconds - UDP - 1 (Mbits/s)	1.05	1.05
Standard Deviation	0%	0%
iPerf - 5201 - 30 Seconds - UDP - 5 (Mbits/s)	5.24	5.24
Standard Deviation	0%	0%
iPerf - 5201 - 30 Seconds - TCP - 10 (Mbits/s)	**102794**	**96016**
Normalized	100%	93.41%
Standard Deviation	4.2%	2.5%
iPerf - 5201 - 30 Seconds - UDP - 10 (Mbits/s)	10.5	10.5
Standard Deviation	0%	0%
perf-bench - Epoll Wait (ops/sec)	**65888**	**71563**
Normalized	92.07%	100%
Standard Deviation	1.2%	0.2%
perf-bench - Futex Hash (ops/sec)	**5439460**	**5436582**
Normalized	100%	99.95%
Standard Deviation	0.2%	0.1%
perf-bench - Memcpy 1MB (GB/sec)	**32.699619**	**22.904806**

Normalized	100%	70.05%
Standard Deviation	16.3%	1.5%
perf-bench - Memset 1MB (GB/sec)	**26.565906**	**26.573919**
Normalized	99.97%	100%
Standard Deviation	0%	0%
perf-bench - Sched Pipe (ops/sec)	**173668**	**171415**
Normalized	100%	98.7%
Standard Deviation	2%	1.2%
perf-bench - Futex Lock-Pi (ops/sec)	**679**	**677**
Normalized	100%	99.71%
Standard Deviation	0.6%	
perf-bench - Syscall Basic (ops/sec)	**22515427**	**22277947**
Normalized	100%	98.95%
Standard Deviation	0.8%	0%
OSBench - Create Files (us/Event)	**10.152552**	**10.090916**
Normalized	99.39%	100%
Standard Deviation	1%	0.7%
OSBench - Create Threads (us/Event)	**8.899371**	**8.718967**
Normalized	97.97%	100%
Standard Deviation	2.8%	2.1%
OSBench - Launch Programs (us/Event)	**29.933453**	**29.171308**
Normalized	97.45%	100%
Standard Deviation	1.9%	1.4%
OSBench - Create Processes (us/Event)	**23.734570**	**21.525860**
Normalized	90.69%	100%
Standard Deviation	21.2%	15.9%
OSBench - Memory Allocations (Ns/Event)	**52.893520**	**51.796675**
Normalized	97.93%	100%
Standard Deviation	2.2%	0.1%
IPC_benchmark - TCP Socket - 128 (Messages/sec)	**4257800**	**4185191**
Normalized	100%	98.29%
Standard Deviation	1%	0.8%
IPC_benchmark - TCP Socket - 2048 (Messages/sec)	**2599715**	**2493084**
Normalized	100%	95.9%
Standard Deviation	1.6%	1.1%
IPC_benchmark - TCP Socket - 4096 (Messages/sec)	**1853541**	**1844806**
Normalized	100%	99.53%
Standard Deviation	0.9%	1.9%
IPC_benchmark - Unnamed Pipe - 128 (Messages/sec)	**5289177**	**5339526**
Normalized	99.06%	100%
Standard Deviation	3.4%	4.2%
IPC_benchmark - Unnamed Pipe - 2048	**3619389**	**3836785**
Normalized	94.33%	100%
Standard Deviation	1.3%	3.3%
IPC_benchmark - Unnamed Pipe - 4096	**2436716**	**2500263**
Normalized	97.46%	100%
Standard Deviation	2.6%	1.7%
IPC_benchmark - FIFO Named Pipe - 128 (Messages/sec)	**5183345**	**5102224**
Normalized	100%	98.43%
Standard Deviation	2.4%	1.6%
IPC_benchmark - FIFO Named Pipe - 2048 (Messages/sec)	**3674060**	**3743683**
Normalized	98.14%	100%
Standard Deviation	2.5%	4.1%

IPC_benchmark - FIFO Named Pipe - 4096 (Messages/sec)	**2393645**	**2443971**
Normalized	97.94%	100%
Standard Deviation	3.9%	2.2%
IPC_benchmark - U.U.D.S - 128 (Messages/sec)	**2401665**	**1499786**
Normalized	100%	62.45%
Standard Deviation	1.7%	1%
IPC_benchmark - U.U.D.S - 2048 (Messages/sec)	**1197148**	**1225236**
Normalized	97.71%	100%
Standard Deviation	0.9%	0.4%
IPC_benchmark - U.U.D.S - 4096 (Messages/sec)	**1290434**	**1289524**
Normalized	100%	99.93%
Standard Deviation	0.4%	7.2%
High Performance Conjugate Gradient (GFLOP/s)	**4.96530**	**4.97109**
Normalized	99.88%	100%
Standard Deviation	0.1%	0.2%
HPC Challenge - G-HPL (GFLOPS)	**44.88613**	**45.08067**
Normalized	99.57%	100%
Standard Deviation	0.4%	0.7%
HPC Challenge - G-Ffte (GFLOPS)	**6.02335**	**6.03540**
Normalized	99.8%	100%
Standard Deviation	2%	1.9%
HPC Challenge - EP-DGEMM (GFLOPS)	**19.20310**	**19.39720**
Normalized	99%	100%
Standard Deviation	1.2%	0.9%
HPC Challenge - G-Ptrans (GB/s)	**2.96569**	**2.96599**
Normalized	99.99%	100%
Standard Deviation	0.1%	0.1%
HPC Challenge - EP-STREAM Triad (GB/s)	**2.17512**	**2.18509**
Normalized	99.54%	100%
Standard Deviation	0.1%	0%
HPC Challenge - G-Rand Access (GUP/s)	**0.04604**	**0.04635**
Normalized	99.33%	100%
Standard Deviation	1.1%	0.6%
HPC Challenge - R.R.L (usecs)	**0.43563**	**0.43915**
Normalized	100%	99.2%
Standard Deviation	0.8%	1%
HPC Challenge - R.R.B (GB/s)	**4.23009**	**4.12610**
Normalized	100%	97.54%
Standard Deviation	0.8%	3%
HPC Challenge - M.P.P.B (MB/s)	**32634**	**29671**
Normalized	100%	90.92%
Standard Deviation	0.6%	0.9%
CLOMP - Static OMP Speedup (Speedup)	**17.2**	**17.7**
Normalized	97.18%	100%
Standard Deviation	6.3%	1%
NAMD - ATPase Simulation - 327,506 Atoms (days/ns)	**1.29036**	**1.28612**
Normalized	99.67%	100%
Standard Deviation	0.3%	0.2%
Timed HMMer Search - P.D.S (sec)	**81.024**	**80.272**
Normalized	99.07%	100%
Standard Deviation	0.3%	0.4%

LAMMPS Molecular Dynamics Simulator - Rhodopsin Protein (ns/day)	**11.041**	**11.066**
Normalized	99.77%	100%
Standard Deviation	1.1%	0.3%
simdjson - LargeRand (GB/s)	0.59	0.59
Standard Deviation	2%	1%
simdjson - DistinctUserID (GB/s)	0.88	0.88
Standard Deviation	0.7%	1.3%
LZ4 Compression - 1 - Compression Speed (MB/s)	**12158**	**12152**
Normalized	100%	99.94%
Standard Deviation	0.6%	0.1%
LZ4 Compression - 1 - D.S (MB/s)	**13565**	**13578**
Normalized	99.9%	100%
Standard Deviation	0.6%	0.4%
LZ4 Compression - 3 - Compression Speed (MB/s)	**69.64**	**71.01**
Normalized	98.07%	100%
Standard Deviation	1.9%	2.4%
LZ4 Compression - 3 - D.S (MB/s)	**13150**	**13149**
Normalized	100%	99.99%
Standard Deviation	0.3%	0.8%
LZ4 Compression - 9 - Compression Speed (MB/s)	**67.06**	**68.34**
Normalized	98.13%	100%
Standard Deviation	0.6%	2.4%
LZ4 Compression - 9 - D.S (MB/s)	**13236**	**13221**
Normalized	100%	99.88%
Standard Deviation	0%	0.4%
Zstd Compression - 3 (MB/s)	**5952**	**5918**
Normalized	100%	99.43%
Standard Deviation	1.1%	0.4%
Zstd Compression - 19 (MB/s)	45.2	45.2
Standard Deviation	0.2%	0.1%
oneDNN - IP Shapes 1D - f32 - CPU (ms)	**3.61756**	**3.77483**
Normalized	100%	95.83%
Standard Deviation	0.9%	2.1%
oneDNN - IP Shapes 3D - f32 - CPU (ms)	**7.62049**	**8.08813**
Normalized	100%	94.22%
Standard Deviation	0.7%	0.3%
oneDNN - C.B.S.A - f32 - CPU (ms)	**15.7894**	**16.3629**
Normalized	100%	96.5%
Standard Deviation	0.2%	1%
oneDNN - D.B.s - f32 - CPU (ms)	**3.13966**	**3.13525**
Normalized	99.86%	100%
Standard Deviation	0.2%	0.6%
oneDNN - D.B.s - f32 - CPU (ms)	**4.78821**	**4.80215**
Normalized	100%	99.71%
Standard Deviation	0.5%	0.7%
oneDNN - R.N.N.T - f32 - CPU (ms)	**2958**	**2917**
Normalized	98.6%	100%
Standard Deviation	3.2%	2.2%
oneDNN - R.N.N.I - f32 - CPU (ms)	**1814**	**1811**
Normalized	99.86%	100%
Standard Deviation	2.1%	4.1%
oneDNN - M.M.B.S.T - f32 - CPU (ms)	**0.815800**	**0.965011**
Normalized	100%	84.54%
Standard Deviation	0.6%	0.6%

Embree - Pathtracer - Crown (FPS)	**19.7490**	**19.8462**
Normalized	99.51%	100%
Standard Deviation	0.4%	0.3%
Embree - Pathtracer ISPC - Crown (FPS)	**19.4793**	**19.5272**
Normalized	99.75%	100%
Standard Deviation	0.5%	0.4%
Embree - Pathtracer - Asian Dragon (FPS)	**20.7250**	**20.4938**
Normalized	100%	98.88%
Standard Deviation	0.7%	0.9%
Embree - Pathtracer ISPC - Asian Dragon (FPS)	**20.7338**	**20.8074**
Normalized	99.65%	100%
Standard Deviation	1.6%	1.3%
Intel Open Image Denoise - Memorial (Images / Sec)	**11.91**	**10.15**
Normalized	100%	85.22%
Standard Deviation	0%	11.8%
OpenVKL - vklBenchmark (Items / Sec)	**236.14**	**217.39**
Normalized	100%	92.06%
Standard Deviation	0.4%	0.8%
Himeno Benchmark - P.P.S (MFLOPS)	**5228**	**5211**
Normalized	100%	99.67%
Standard Deviation	5.6%	5.8%
Timed Linux Kernel Compilation - Time To Compile	**52.888**	**53.392**
Normalized	100%	99.06%
Standard Deviation	1.1%	1.2%
Timed LLVM Compilation - Time To Compile (sec)	**414.527**	**417.984**
Normalized	100%	99.17%
Standard Deviation	1.6%	1.7%
Build2 - Time To Compile (sec)	**91.033**	**90.606**
Normalized	99.53%	100%
Standard Deviation	1.8%	1%
Numpy Benchmark (Score)	**508.53**	**508.25**
Normalized	100%	99.94%
Standard Deviation	2.2%	1.2%
Timed Eigen Compilation - Time To Compile (sec)	**62.226**	**60.769**
Normalized	97.66%	100%
Standard Deviation	0.9%	0.1%
Ogg Audio Encoding - WAV To Ogg (sec)	**14.676**	**15.089**
Normalized	100%	97.26%
Standard Deviation	0.7%	0.9%
Opus Codec Encoding - WAV To Opus Encode (sec)	**6.106**	**6.134**
Normalized	100%	99.54%
Standard Deviation	2.5%	2.1%
eSpeak-NG Speech Engine - T.T.S.S (sec)	**21.773**	**21.822**
Normalized	100%	99.78%
Standard Deviation	1.2%	1.2%
Hackbench - 1 - Thread (sec)	**3.280**	**3.125**
Normalized	95.27%	100%
Standard Deviation	0.3%	0.5%
Hackbench - 2 - Thread (sec)	**4.739**	**4.673**
Normalized	98.61%	100%
Standard Deviation	0.3%	0.2%
Hackbench - 4 - Thread (sec)	**8.396**	**8.630**
Normalized	100%	97.29%
Standard Deviation	0.6%	0.2%
Hackbench - 8 - Thread (sec)	**15.793**	**16.457**

Normalized	100%	95.97%
Standard Deviation	0.1%	0.2%
Hackbench - 1 - Process (sec)	**3.173**	**3.020**
Normalized	95.18%	100%
Standard Deviation	0.8%	0.2%
Hackbench - 16 - Thread (sec)	**31.111**	**32.639**
Normalized	100%	95.32%
Standard Deviation	0.1%	0.2%
Hackbench - 2 - Process (sec)	**4.588**	**4.559**
Normalized	99.37%	100%
Standard Deviation	0.1%	0.2%
Hackbench - 4 - Process (sec)	**8.205**	**8.501**
Normalized	100%	96.52%
Standard Deviation	1%	0.3%
Hackbench - 8 - Process (sec)	**15.395**	**16.165**
Normalized	100%	95.24%
Standard Deviation	0.2%	0%
Hackbench - 16 - Process (sec)	**30.434**	**32.069**
Normalized	100%	94.9%
Standard Deviation	0.1%	0.1%
Hackbench - 32 - Process (sec)	**62.109**	**65.447**
Normalized	100%	94.9%
Standard Deviation	0.1%	0.4%
Node.js V8 Web Tooling Benchmark (runs/s)	**14.64**	**15.05**
Normalized	97.28%	100%
Standard Deviation	1%	0.7%
MPV - B.B.B.S.4 - Software Only (FPS)	**712.29**	**628.85**
Normalized	100%	88.29%
Standard Deviation	1.2%	0.6%
MPV - B.B.B.S.1 - Software Only (FPS)	**2077**	**1956**
Normalized	100%	94.16%
Standard Deviation	0.6%	1%
KeyDB (Ops/sec)	**771375**	**752819**
Normalized	100%	97.59%
Standard Deviation	0.6%	0.4%
GROMACS - Water Benchmark (Ns/Day)	**1.285**	**1.284**
Normalized	100%	99.92%
Standard Deviation	0%	0.1%
PostgreSQL pgbench - 1 - 1 - Read Only (TPS)	**36550**	**29331**
Normalized	100%	80.25%
Standard Deviation	2.3%	24.2%
PostgreSQL pgbench - 1 - 1 - Read Only - Average Latency (ms)	**0.028**	**0.036**
Normalized	100%	77.78%
Standard Deviation	2.1%	24%
PostgreSQL pgbench - 1 - 1 - Read Write (TPS)	**1610**	**1623**
Normalized	99.2%	100%
Standard Deviation	0.4%	0.2%
PostgreSQL pgbench - 1 - 1 - Read Write - Average Latency (ms)	**0.621**	**0.616**
Normalized	99.19%	100%
Standard Deviation	0.4%	0.2%
PostgreSQL pgbench - 1 - 50 - Read Only (TPS)	**524840**	**524215**
Normalized	100%	99.88%
Standard Deviation	1.3%	0.4%

PostgreSQL pgbench - 1 - 50 - Read Only - Average Latency (ms)	0.095	0.095
Standard Deviation	1.2%	0.6%
PostgreSQL pgbench - 1 - 50 - Read Write (TPS)	1813	1826
Normalized	99.29%	100%
Standard Deviation	0.1%	0.2%
PostgreSQL pgbench - 1 - 50 - Read Write - Average Latency (ms)	27.577	27.384
Normalized	99.3%	100%
Standard Deviation	0.1%	0.2%
PostgreSQL pgbench - 100 - 1 - Read Only (TPS)	31316	24534
Normalized	100%	78.34%
Standard Deviation	1.7%	25.9%
PostgreSQL pgbench - 100 - 1 - Read Only - Average Latency (ms)	0.032	0.043
Normalized	100%	74.42%
Standard Deviation	3.1%	23.9%
PostgreSQL pgbench - 100 - 1 - Read Write (TPS)	1537	1546
Normalized	99.42%	100%
Standard Deviation	1%	0.5%
PostgreSQL pgbench - 100 - 1 - Read Write - Average Latency (ms)	0.651	0.647
Normalized	99.39%	100%
Standard Deviation	0.9%	0.5%
PostgreSQL pgbench - 100 - 50 - Read Only (TPS)	390751	393333
Normalized	99.34%	100%
Standard Deviation	0.3%	0.2%
PostgreSQL pgbench - 100 - 50 - Read Only - Average Latency (ms)	0.128	0.127
Normalized	99.22%	100%
Standard Deviation	0%	0%
PostgreSQL pgbench - 100 - 50 - Read Write (TPS)	30095	32218
Normalized	93.41%	100%
Standard Deviation	0.2%	0.3%
PostgreSQL pgbench - 100 - 50 - Read Write - Average Latency (ms)	1.662	1.552
Normalized	93.38%	100%
Standard Deviation	0.2%	0.3%
SQLite Speedtest - Timed Time - Size 1,000 (sec)	42.889	43.125
Normalized	100%	99.45%
Standard Deviation	1%	0.1%
BenchmarkMutex - S.M.L.S (ns)	15.7	15.7
Standard Deviation	0.7%	0.4%
BenchmarkMutex - M.L.U.s (ns)	20.1	20.4
Normalized	100%	98.53%
Standard Deviation	0.8%	0.8%
BenchmarkMutex - M.L.U.s.m (ns)	14.8	14.8
Standard Deviation	0.4%	0%
BenchmarkMutex - M.L.U.s.m (ns)	11.1	11.3
Normalized	100%	98.23%
Standard Deviation	1.8%	0.5%
BenchmarkMutex - S.R.A.A (ns)	8.16	8.16
Standard Deviation	0.4%	0.6%
BenchmarkMutex - M.L.U.s (ns)	21.9	21.3

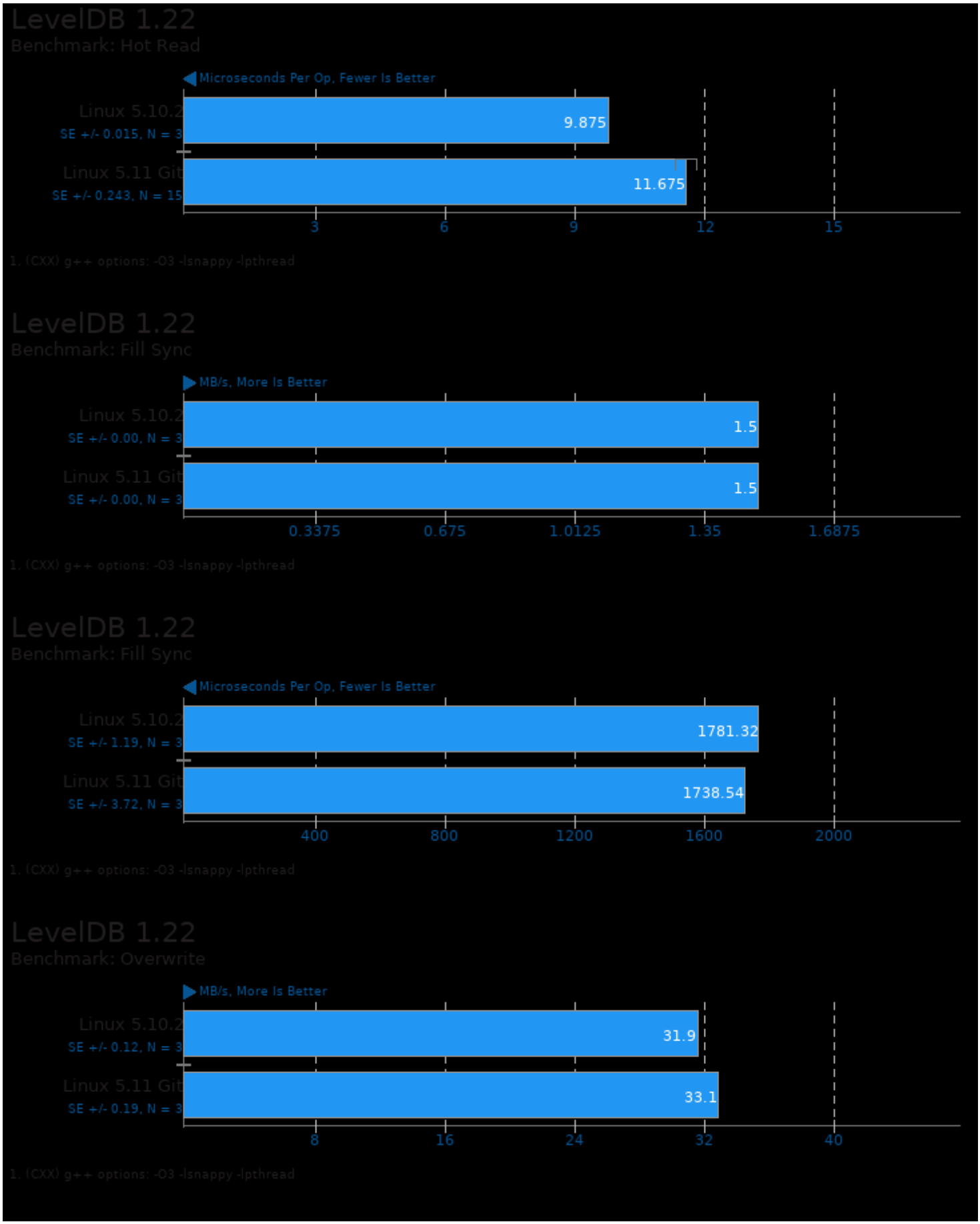
Normalized	97.26%	100%
Standard Deviation	0%	0.3%
BenchmarkMutex - M.L.U.p (ns)	**9.13**	**9.24**
Normalized	100%	98.81%
Standard Deviation	1.2%	0.3%
BenchmarkMutex - M.L.U.t (ns)	**8.67**	**8.73**
Normalized	100%	99.31%
Standard Deviation	1.6%	0.3%
Stress-NG - MMAP (Bogo Ops/s)	**374.66**	**373.89**
Normalized	100%	99.79%
Standard Deviation	0.6%	0.2%
Stress-NG - NUMA (Bogo Ops/s)	**372.59**	**433.31**
Normalized	85.99%	100%
Standard Deviation	0.7%	0.5%
Stress-NG - MEMFD (Bogo Ops/s)	**1106**	**1108**
Normalized	99.86%	100%
Standard Deviation	0.7%	0.3%
Stress-NG - Atomic (Bogo Ops/s)	**202668**	**202614**
Normalized	100%	99.97%
Standard Deviation	0.4%	0.2%
Stress-NG - Crypto (Bogo Ops/s)	**3863**	**3867**
Normalized	99.87%	100%
Standard Deviation	0.4%	0.4%
Stress-NG - Malloc (Bogo Ops/s)	**205233130**	**204569595**
Normalized	100%	99.68%
Standard Deviation	0.5%	0.2%
Stress-NG - Forking (Bogo Ops/s)	**81548**	**82829**
Normalized	98.45%	100%
Standard Deviation	0.3%	0.8%
Stress-NG - SENDFILE (Bogo Ops/s)	**289659**	**330426**
Normalized	87.66%	100%
Standard Deviation	0.2%	0.1%
Stress-NG - CPU Cache (Bogo Ops/s)	**35.88**	**36.72**
Normalized	97.71%	100%
Standard Deviation	3.8%	3.7%
Stress-NG - CPU Stress (Bogo Ops/s)	**10140**	**9828**
Normalized	100%	96.92%
Standard Deviation	0.6%	2.3%
Stress-NG - Semaphores (Bogo Ops/s)	**1813742**	**1825251**
Normalized	99.37%	100%
Standard Deviation	0.9%	0.4%
Stress-NG - Matrix Math (Bogo Ops/s)	**61027**	**60672**
Normalized	100%	99.42%
Standard Deviation	0.7%	0.5%
Stress-NG - Vector Math (Bogo Ops/s)	**135272**	**135362**
Normalized	99.93%	100%
Standard Deviation	0.1%	0.1%
Stress-NG - Memory Copying (Bogo Ops/s)	**1612**	**1616**
Normalized	99.76%	100%
Standard Deviation	0.2%	0.3%
Stress-NG - Socket Activity (Bogo Ops/s)	**9594**	**9331**
Normalized	100%	97.25%
Standard Deviation	1.9%	4.1%
Stress-NG - Context Switching (Bogo Ops/s)	**6869871**	**6705122**
Normalized	100%	97.6%

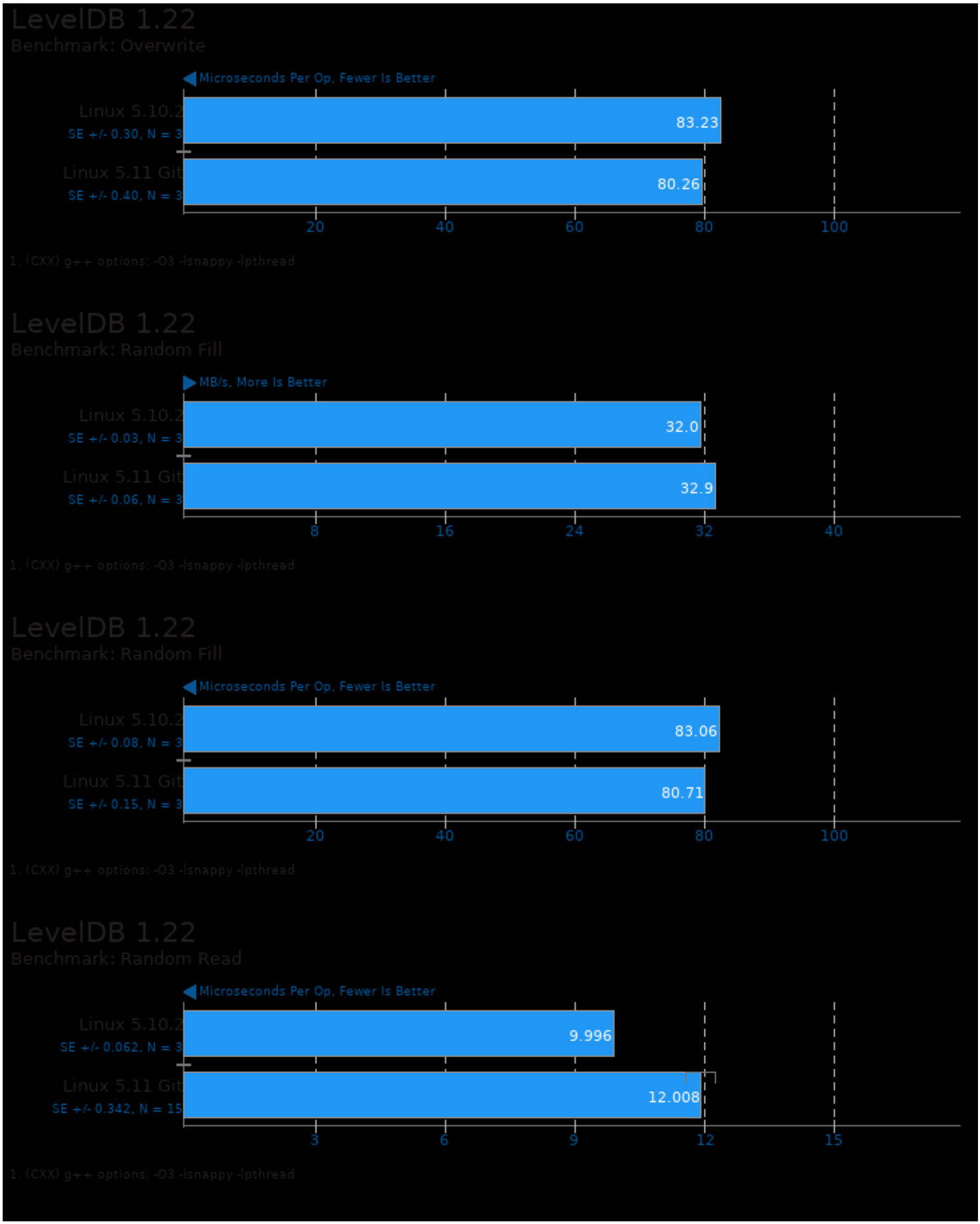
Standard Deviation	2.3%	1.3%
Stress-NG - G.C.S.F (Bogo Ops/s)	**2076625**	**2053352**
Normalized	100%	98.88%
Standard Deviation	1.1%	1.6%
Stress-NG - G.Q.D.S (Bogo Ops/s)	**203.95**	**204.00**
Normalized	99.98%	100%
Standard Deviation	0.6%	0.4%
Stress-NG - S.V.M.P (Bogo Ops/s)	**14501717**	**17617105**
Normalized	82.32%	100%
Standard Deviation	1%	1.9%
NCNN - CPU - mobilenet (ms)	**12.18**	**12.22**
Normalized	100%	99.67%
Standard Deviation	0.8%	1.1%
NCNN - CPU-v2-v2 - mobilenet-v2 (ms)	**4.20**	**4.25**
Normalized	100%	98.82%
Standard Deviation	1.1%	1.2%
NCNN - CPU-v3-v3 - mobilenet-v3 (ms)	**3.96**	**4.02**
Normalized	100%	98.51%
Standard Deviation	1%	1.1%
NCNN - CPU - shufflenet-v2 (ms)	**4.79**	**4.82**
Normalized	100%	99.38%
Standard Deviation	0.6%	0.5%
NCNN - CPU - mnasnet (ms)	**3.78**	**3.84**
Normalized	100%	98.44%
Standard Deviation	1%	1.6%
NCNN - CPU - efficientnet-b0 (ms)	**5.28**	**5.31**
Normalized	100%	99.44%
Standard Deviation	0.9%	1.3%
NCNN - CPU - blazeface (ms)	**1.78**	**1.80**
Normalized	100%	98.89%
Standard Deviation	1.5%	0.8%
NCNN - CPU - googlenet (ms)	**12.22**	**12.50**
Normalized	100%	97.76%
Standard Deviation	0.5%	4.1%
NCNN - CPU - vgg16 (ms)	**53.24**	**53.66**
Normalized	100%	99.22%
Standard Deviation	0.6%	0.5%
NCNN - CPU - resnet18 (ms)	**12.95**	**13.26**
Normalized	100%	97.66%
Standard Deviation	0.6%	2.5%
NCNN - CPU - alexnet (ms)	**10.53**	**10.44**
Normalized	99.15%	100%
Standard Deviation	1.4%	1.8%
NCNN - CPU - resnet50 (ms)	**23.62**	**24.15**
Normalized	100%	97.81%
Standard Deviation	0.7%	2.6%
NCNN - CPU - yolov4-tiny (ms)	**19.89**	**20.43**
Normalized	100%	97.36%
Standard Deviation	0.9%	4.1%
NCNN - CPU - squeezenet_ssd (ms)	**13.98**	**14.19**
Normalized	100%	98.52%
Standard Deviation	0.8%	1.1%
NCNN - CPU - regnety_400m (ms)	**16.68**	**17.12**
Normalized	100%	97.43%
Standard Deviation	3.8%	0.7%

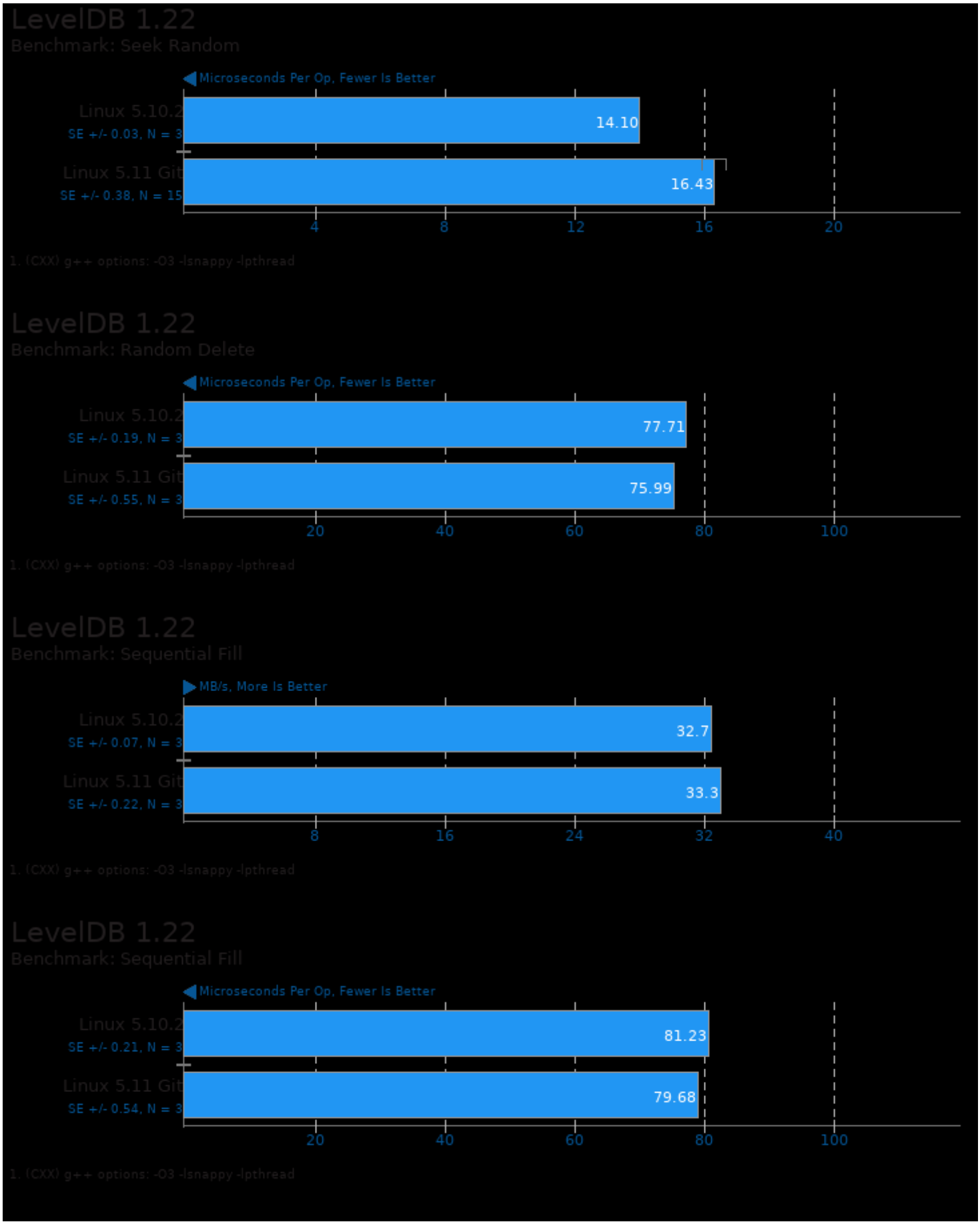
NCNN - Vulkan GPU - mobilenet (ms)	**12.3**	**12.20**
Normalized	99.19%	100%
Standard Deviation	0.5%	1%
NCNN - Vulkan GPU-v2-v2 - mobilenet-v2 (ms)	4.22	4.22
Standard Deviation	0.2%	0.7%
NCNN - Vulkan GPU-v3-v3 - mobilenet-v3 (ms)	**4.00**	**3.99**
Normalized	99.75%	100%
Standard Deviation	0.4%	0.4%
NCNN - Vulkan GPU - shufflenet-v2 (ms)	**4.83**	**4.81**
Normalized	99.59%	100%
Standard Deviation	0.5%	0.1%
NCNN - Vulkan GPU - mnasnet (ms)	**3.81**	**3.79**
Normalized	99.48%	100%
Standard Deviation	0.5%	0.3%
NCNN - Vulkan GPU - efficientnet-b0 (ms)	**5.29**	**5.28**
Normalized	99.81%	100%
Standard Deviation	0.4%	0.3%
NCNN - Vulkan GPU - blazeface (ms)	**1.83**	**1.84**
Normalized	100%	99.46%
Standard Deviation	2.6%	4.2%
NCNN - Vulkan GPU - googlenet (ms)	**12.24**	**12.15**
Normalized	99.26%	100%
Standard Deviation	1.1%	0%
NCNN - Vulkan GPU - vgg16 (ms)	**53.43**	**53.53**
Normalized	100%	99.81%
Standard Deviation	0.1%	0.1%
NCNN - Vulkan GPU - resnet18 (ms)	**13.05**	**13.04**
Normalized	99.92%	100%
Standard Deviation	0.2%	0.1%
NCNN - Vulkan GPU - alexnet (ms)	**10.45**	**10.34**
Normalized	98.95%	100%
Standard Deviation	1.8%	0.1%
NCNN - Vulkan GPU - resnet50 (ms)	**23.80**	**24.18**
Normalized	100%	98.43%
Standard Deviation	0.3%	2.4%
NCNN - Vulkan GPU - yolov4-tiny (ms)	**20.07**	**20.35**
Normalized	100%	98.62%
Standard Deviation	0.8%	3.9%
NCNN - Vulkan GPU - squeezenet_ssd (ms)	**14.20**	**14.16**
Normalized	99.72%	100%
Standard Deviation	0.6%	0.4%
NCNN - Vulkan GPU - regnety_400m (ms)	**17.33**	**17.13**
Normalized	98.85%	100%
Standard Deviation	1.2%	0.5%
Facebook RocksDB - Rand Fill (Op/s)	**1284512**	**1311891**
Normalized	97.91%	100%
Standard Deviation	2.2%	2%
Facebook RocksDB - Rand Read (Op/s)	**106394483**	**105250174**
Normalized	100%	98.92%
Standard Deviation	0.2%	0.1%
Facebook RocksDB - Seq Fill (Op/s)	**1408117**	**1441802**
Normalized	97.66%	100%
Standard Deviation	0.7%	2.5%
Facebook RocksDB - Rand Fill Sync (Op/s)	**12826**	**13061**
Normalized	98.2%	100%

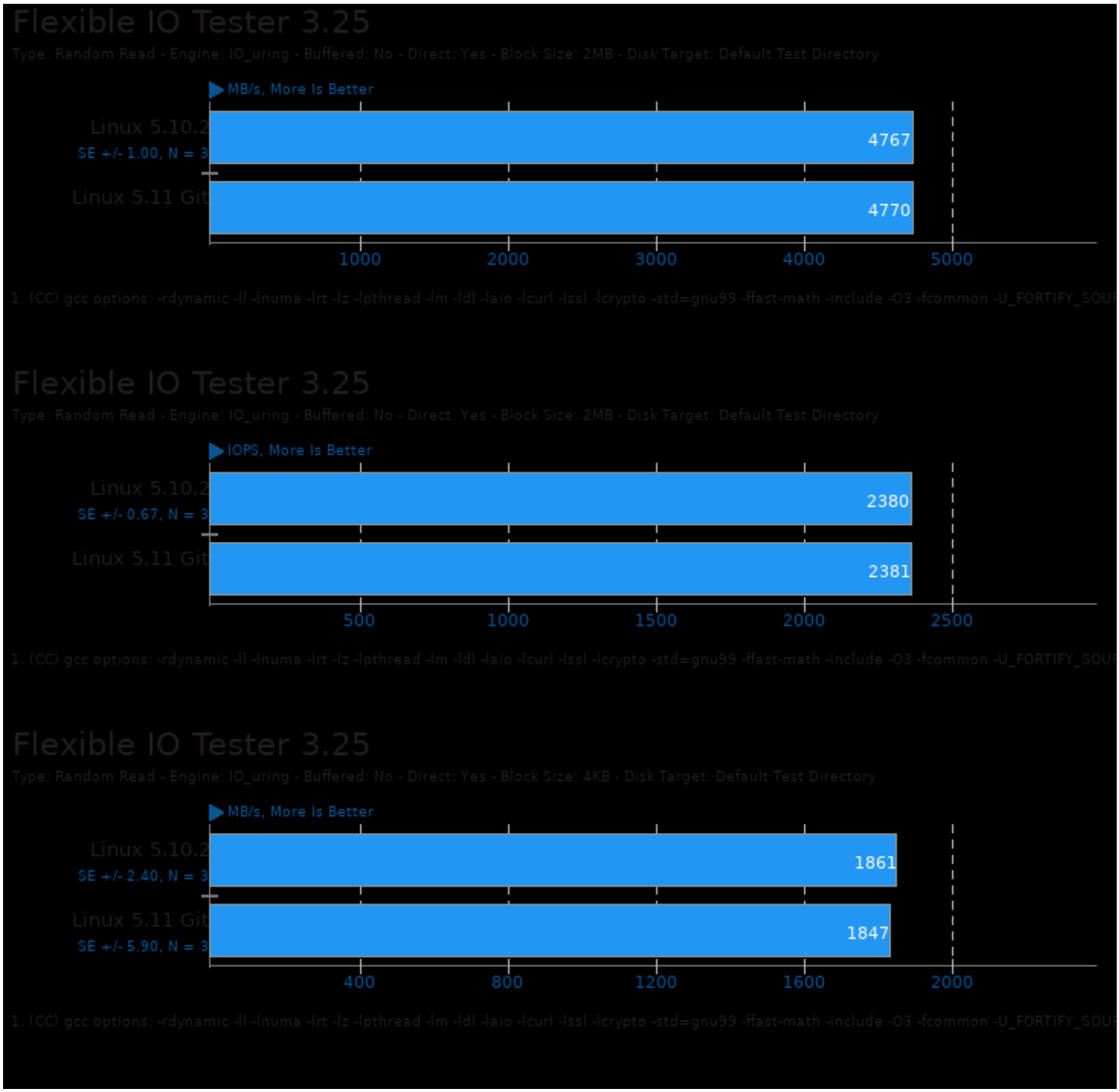
Standard Deviation	0.1%	0.1%
Facebook RocksDB - Read While Writing (Op/s)	**3582470**	**3503352**
Normalized	100%	97.79%
Standard Deviation	2.4%	0.5%
Selenium - ARES-6 - Firefox (ms)	**50.62**	**59.24**
Normalized	100%	85.45%
Standard Deviation	0.6%	2.1%
Selenium - Kraken - Firefox (ms)	**917.7**	**920.1**
Normalized	100%	99.74%
Standard Deviation	0.9%	1%
Selenium - Octane - Firefox (Geometric Mean)	**24398**	**23912**
Normalized	100%	98.01%
Standard Deviation	0.8%	1.1%
Selenium - Jetstream - Firefox (Score)	**179.95**	**162.75**
Normalized	100%	90.44%
Standard Deviation	0.6%	3%
Selenium - CanvasMark - Firefox (Score)	**16016**	**15653**
Normalized	100%	97.73%
Standard Deviation	0.5%	1.4%
Selenium - MotionMark - Firefox (Score)	**399.96**	**362.23**
Normalized	100%	90.57%
Standard Deviation	12.4%	18.8%
Selenium - StyleBench - Firefox (Runs / Minute)	**92.7**	**83.2**
Normalized	100%	89.75%
Standard Deviation	0.9%	0.5%
Selenium - Jetstream 2 - Firefox (Score)	**85.326**	**80.167**
Normalized	100%	93.95%
Standard Deviation	0.3%	1.2%
Selenium - Maze Solver - Firefox (sec)	4.3	4.3
Standard Deviation	0%	2.3%
Selenium - Speedometer - Firefox (Runs/min)	**121**	**113**
Normalized	100%	93.39%
Standard Deviation	2.4%	1.3%
Selenium - PSPDFKit WASM - Firefox (Score)	**3305**	**3556**
Normalized	100%	92.94%
Standard Deviation	0.3%	2.2%
Selenium - W.i - Firefox (ms)	**24.1**	**24.2**
Normalized	100%	99.59%
Standard Deviation	2.1%	2.5%
Selenium - W.c - Firefox (ms)	**296.4**	**296.2**
Normalized	99.93%	100%
Standard Deviation	2.3%	2.4%
WavPack Audio Encoding - WAV To WavPack (sec)	**11.175**	**11.022**
Normalized	98.63%	100%
Standard Deviation	1%	0.9%
Mlpack Benchmark - scikit_ica (sec)	**39.35**	**39.66**
Normalized	100%	99.22%
Standard Deviation	0.4%	0.7%
Mlpack Benchmark - scikit_qda (sec)	**59.44**	**59.28**
Normalized	99.73%	100%
Standard Deviation	0.5%	0.1%
Mlpack Benchmark - scikit_svm (sec)	**16.35**	**16.55**
Normalized	100%	98.79%
Standard Deviation	1.5%	0.4%
Mlpack Benchmark - scikit_linearridgeregression (sec)	**2.58**	**2.59**

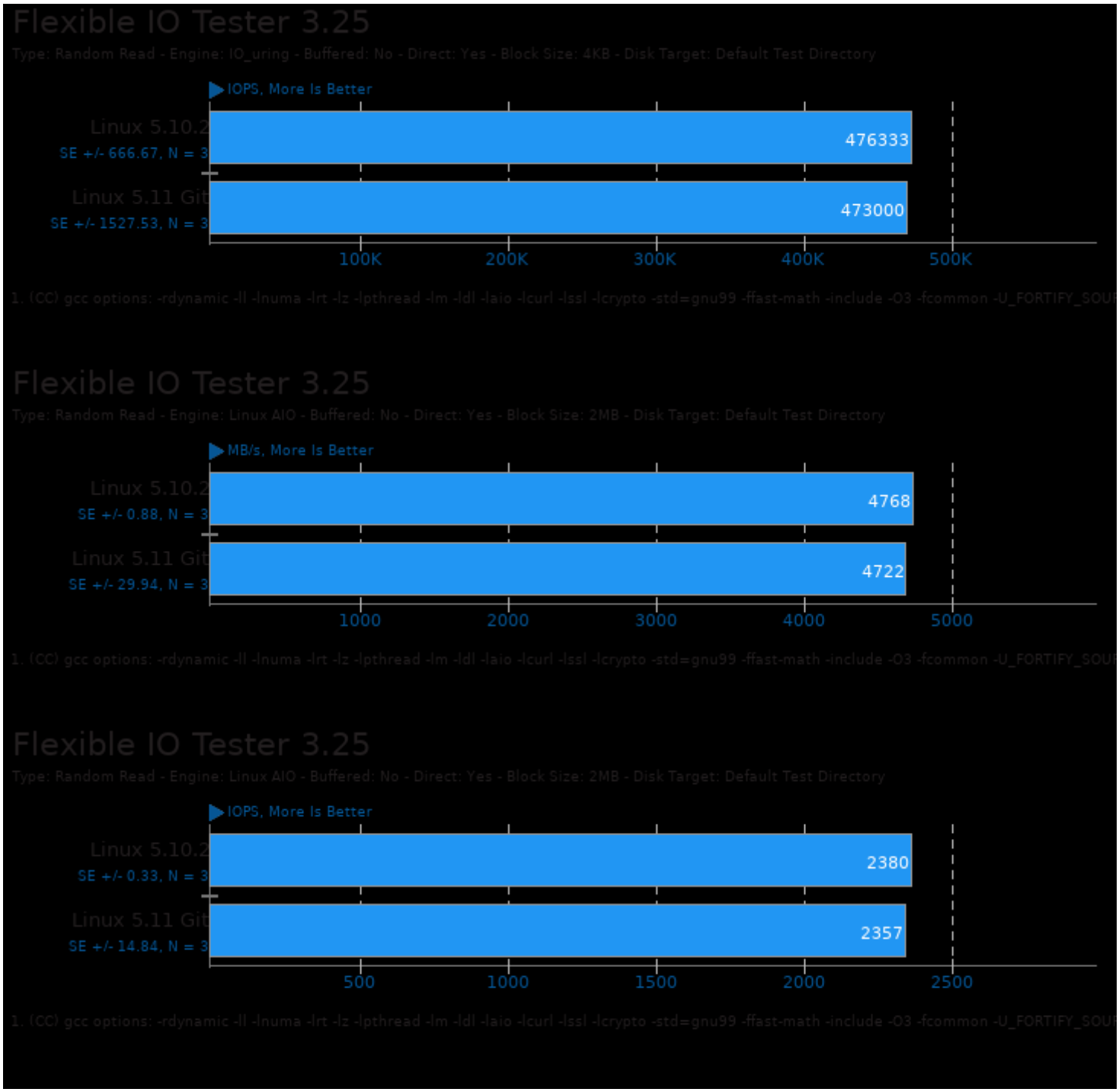
Normalized	100%	99.61%
Standard Deviation	0.3%	1.9%
InfluxDB - 4 - 10000 - 2,5000,1 - 10000 (val/sec)	**1074911**	**1033610**
Normalized	100%	96.16%
Standard Deviation	0.3%	0.1%
InfluxDB - 64 - 10000 - 2,5000,1 - 10000 (val/sec)	**1711158**	**1601473**
Normalized	100%	93.59%
Standard Deviation	0.4%	2.3%

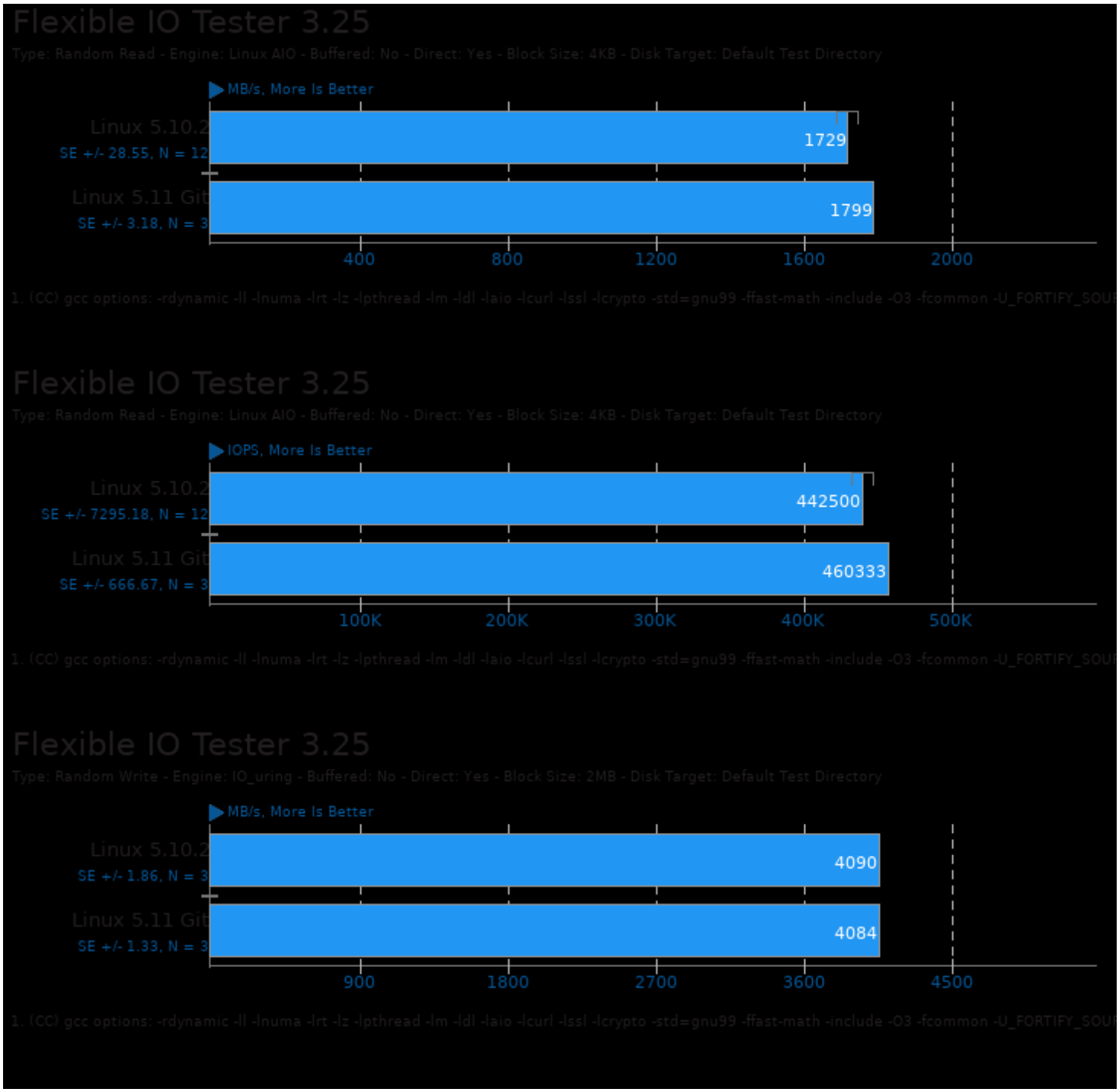

LevelDB 1.22
Benchmark: Hot Read
Microseconds Per Op, Fewer Is Better
Linux 5.10.2
SE +/- 0.015, N = 3
9.875
Linux 5.11 Git
SE +/- 0.243, N = 15
11.675
3
6
9
12
15
1. (CXX) g++ options: -O3 -lsnappy -lpthread
LevelDB 1.22
Benchmark: Fill Sync
MB/s, More Is Better
Linux 5.10.2
SE +/- 0.00, N = 3
1.5
Linux 5.11 Git
SE +/- 0.00, N = 3
1.5
0.3375
0.675
1.0125
1.35
1.6875
1. (CXX) g++ options: -O3 -lsnappy -lpthread
LevelDB 1.22
Benchmark: Fill Sync
Microseconds Per Op, Fewer Is Better
Linux 5.10.2
SE +/- 1.19, N = 3
1781.32
Linux 5.11 Git
SE +/- 3.72, N = 3
1738.54
400
800
1200
1600
2000
1. (CXX) g++ options: -O3 -lsnappy -lpthread
LevelDB 1.22
Benchmark: Overwrite
MB/s, More Is Better
Linux 5.10.2
SE +/- 0.12, N = 3
31.9
Linux 5.11 Git
SE +/- 0.19, N = 3
33.1
8
16
24
32
40
1. (CXX) g++ options: -O3 -lsnappy -lpthread

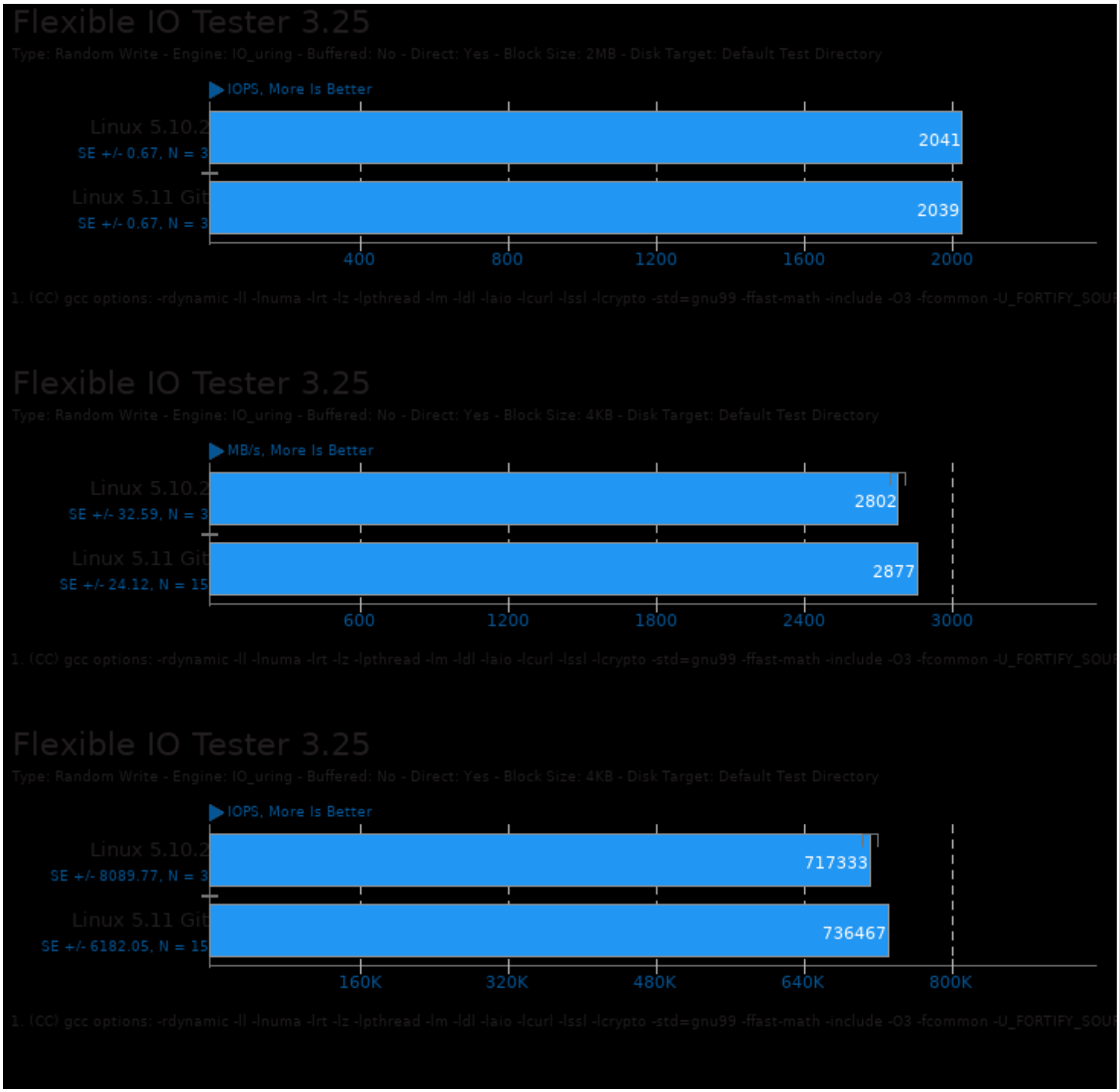

LevelDB 1.22
Benchmark: Overwrite
Microseconds Per Op, Fewer Is Better
Linux 5.10.2
SE +/- 0.30, N = 3
83.23
Linux 5.11 Git
SE +/- 0.40, N = 3
80.26
20
40
60
80
100
1. (CXX) g++ options: -O3 -lsnappy -lpthread
LevelDB 1.22
Benchmark: Random Fill
MB/s, More Is Better
Linux 5.10.2
SE +/- 0.03, N = 3
32.0
Linux 5.11 Git
SE +/- 0.06, N = 3
32.9
8
16
24
32
40
1. (CXX) g++ options: -O3 -lsnappy -lpthread
LevelDB 1.22
Benchmark: Random Fill
Microseconds Per Op, Fewer Is Better
Linux 5.10.2
SE +/- 0.08, N = 3
83.06
Linux 5.11 Git
SE +/- 0.15, N = 3
80.71
20
40
60
80
100
1. (CXX) g++ options: -O3 -lsnappy -lpthread
LevelDB 1.22
Benchmark: Random Read
Microseconds Per Op, Fewer Is Better
Linux 5.10.2
SE +/- 0.062, N = 3
9.996
Linux 5.11 Git
SE +/- 0.342, N = 15
12.008
3
6
9
12
15
1. (CXX) g++ options: -O3 -lsnappy -lpthread

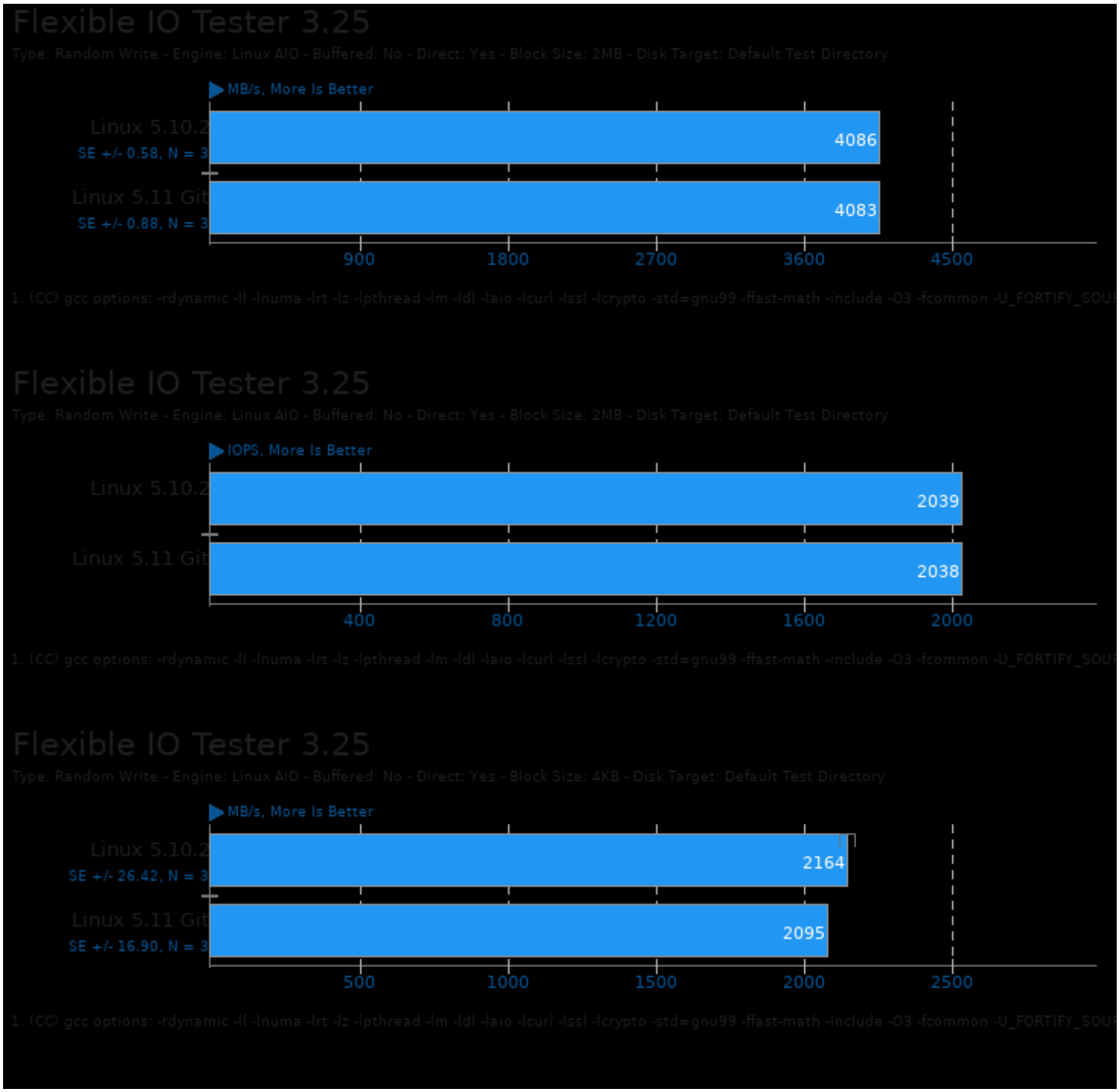

LevelDB 1.22
Benchmark: Seek Random
Microseconds Per Op, Fewer Is Better
Linux 5.10.2
SE +/- 0.03, N = 3
14.10
Linux 5.11 Git
SE +/- 0.38, N = 15
16.43
4
8
12
16
20
1. (CXX) g++ options: -O3 -lsnappy -lpthread
LevelDB 1.22
Benchmark: Random Delete
Microseconds Per Op, Fewer Is Better
Linux 5.10.2
SE +/- 0.19, N = 3
77.71
Linux 5.11 Git
SE +/- 0.55, N = 3
75.99
20
40
60
80
100
1. (CXX) g++ options: -O3 -lsnappy -lpthread
LevelDB 1.22
Benchmark: Sequential Fill
MB/s, More Is Better
Linux 5.10.2
SE +/- 0.07, N = 3
32.7
Linux 5.11 Git
SE +/- 0.22, N = 3
33.3
8
16
24
32
40
1. (CXX) g++ options: -O3 -lsnappy -lpthread
LevelDB 1.22
Benchmark: Sequential Fill
Microseconds Per Op, Fewer Is Better
Linux 5.10.2
SE +/- 0.21, N = 3
81.23
Linux 5.11 Git
SE +/- 0.54, N = 3
79.68
20
40
60
80
100
1. (CXX) g++ options: -O3 -lsnappy -lpthread

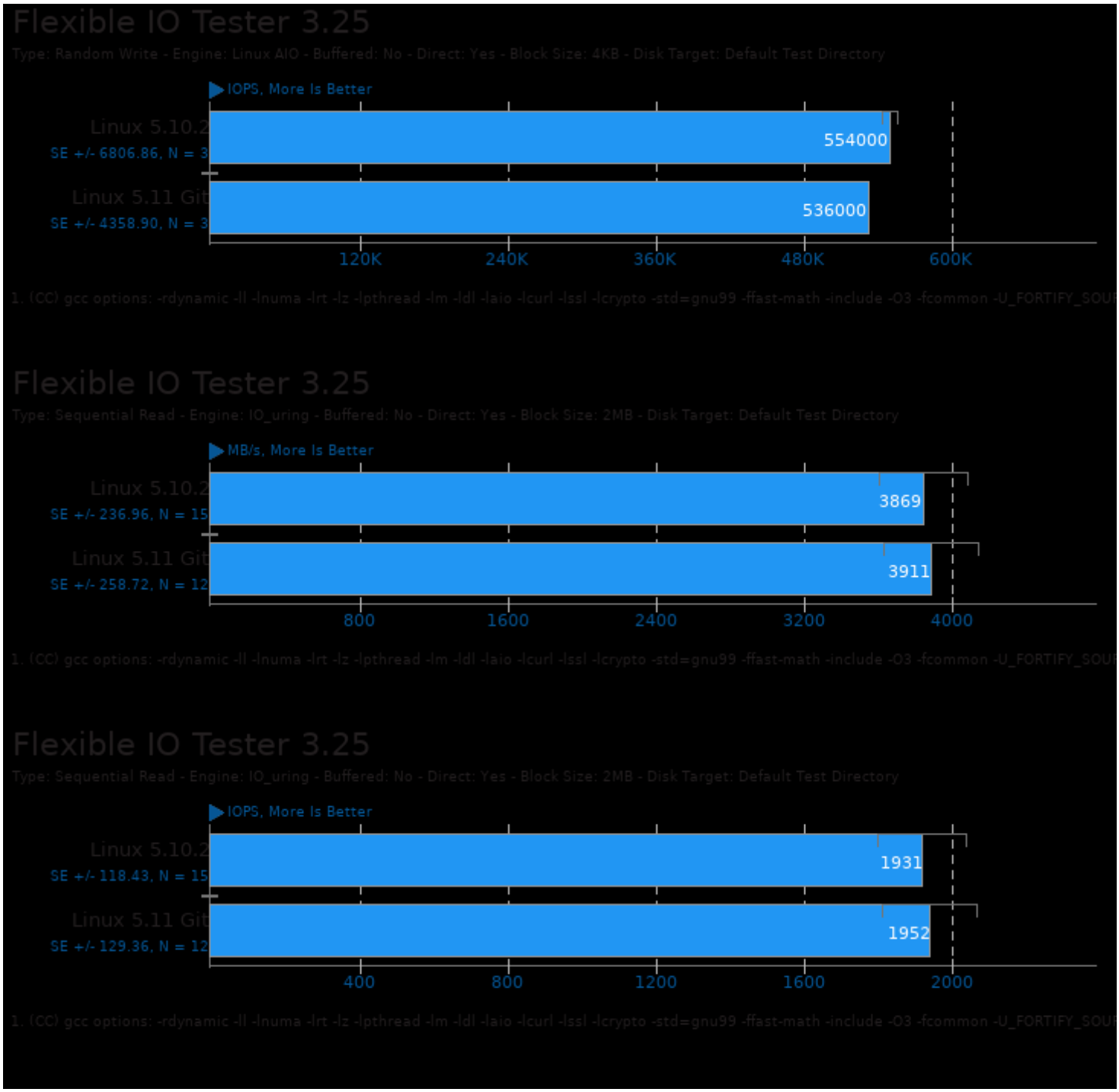

Flexible IO Tester 3.25
Type: Random Read - Engine: IO_uring - Buffered: No - Direct: Yes - Block Size: 2MB - Disk Target: Default Test Directory
MB/s, More Is Better
Linux 5.10.2
SE +/- 1.00, N = 3
Linux 5.11 Git
4767
4770
1000
2000
3000
4000
5000
1. (CC) gcc options: -rdynamic -ll -lnuma -lrt -lz -lpthread -lm -ldl -laio -lcurl -lssl -lcrypto -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOU
Flexible IO Tester 3.25
Type: Random Read - Engine: IO_uring - Buffered: No - Direct: Yes - Block Size: 2MB - Disk Target: Default Test Directory
IOPS, More Is Better
Linux 5.10.2
SE +/- 0.67, N = 3
Linux 5.11 Git
2380
2381
500
1000
1500
2000
2500
1. (CC) gcc options: -rdynamic -ll -lnuma -lrt -lz -lpthread -lm -ldl -laio -lcurl -lssl -lcrypto -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOU
Flexible IO Tester 3.25
Type: Random Read - Engine: IO_uring - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
Linux 5.10.2
SE +/- 2.40, N = 3
Linux 5.11 Git
SE +/- 5.90, N = 3
1861
1847
400
800
1200
1600
2000
1. (CC) gcc options: -rdynamic -ll -lnuma -lrt -lz -lpthread -lm -ldl -laio -lcurl -lssl -lcrypto -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOU

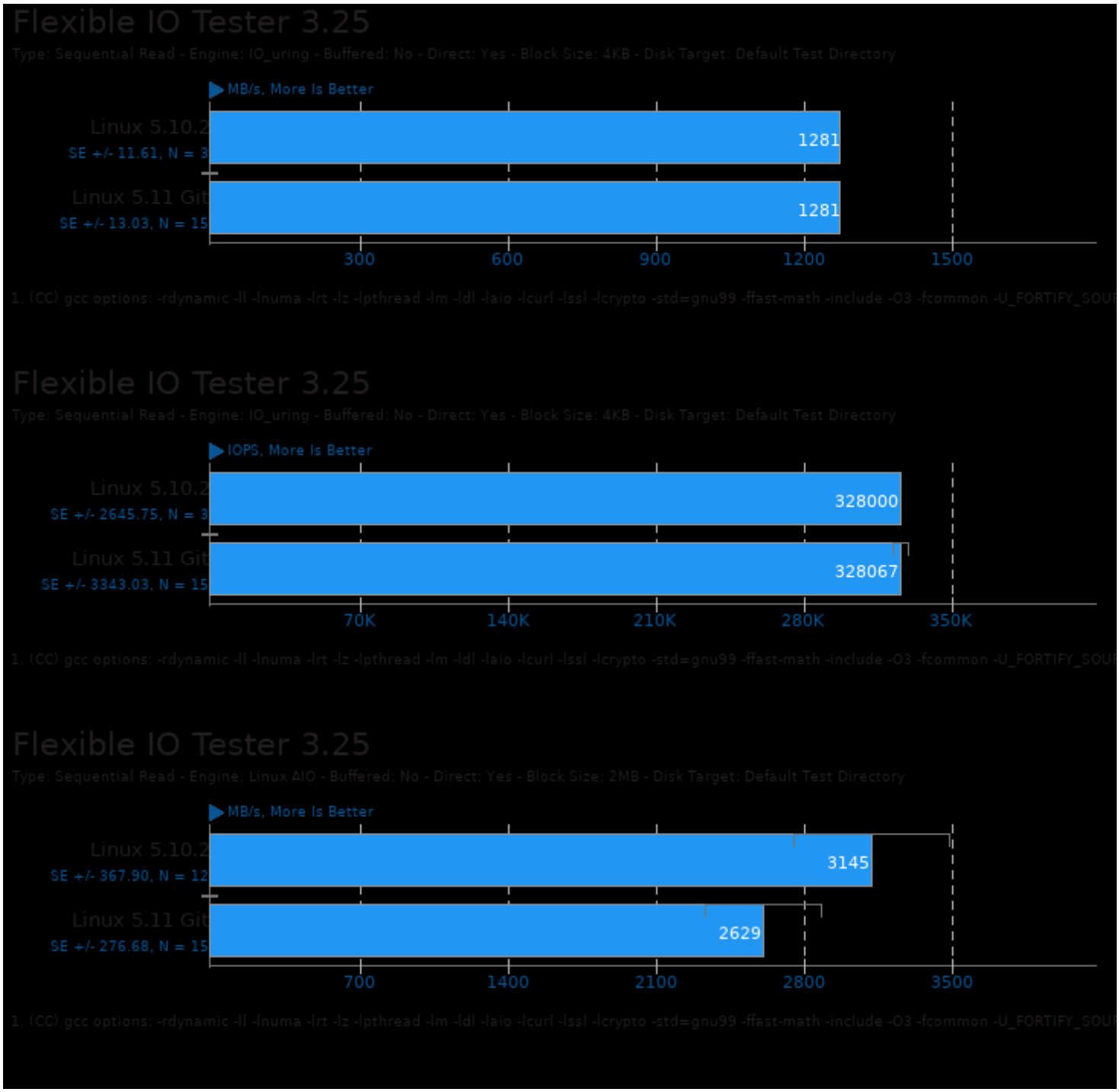

Flexible IO Tester 3.25
Type: Random Read - Engine: IO_uring - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
Linux 5.10.2
SE +/- 666.67, N = 3
476333
Linux 5.11 Git
SE +/- 1527.53, N = 3
473000
100K
200K
300K
400K
500K
1. (CC) gcc options: -rdynamic -ll -lnuma -lrt -lz -lpthread -lm -ldl -laio -lcurl -lssl -lcrypto -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOU
Flexible IO Tester 3.25
Type: Random Read - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 2MB - Disk Target: Default Test Directory
MB/s, More Is Better
Linux 5.10.2
SE +/- 0.88, N = 3
4768
Linux 5.11 Git
SE +/- 29.94, N = 3
4722
1000
2000
3000
4000
5000
1. (CC) gcc options: -rdynamic -ll -lnuma -lrt -lz -lpthread -lm -ldl -laio -lcurl -lssl -lcrypto -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOU
Flexible IO Tester 3.25
Type: Random Read - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 2MB - Disk Target: Default Test Directory
IOPS, More Is Better
Linux 5.10.2
SE +/- 0.33, N = 3
2380
Linux 5.11 Git
SE +/- 14.84, N = 3
2357
500
1000
1500
2000
2500
1. (CC) gcc options: -rdynamic -ll -lnuma -lrt -lz -lpthread -lm -ldl -laio -lcurl -lssl -lcrypto -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOU

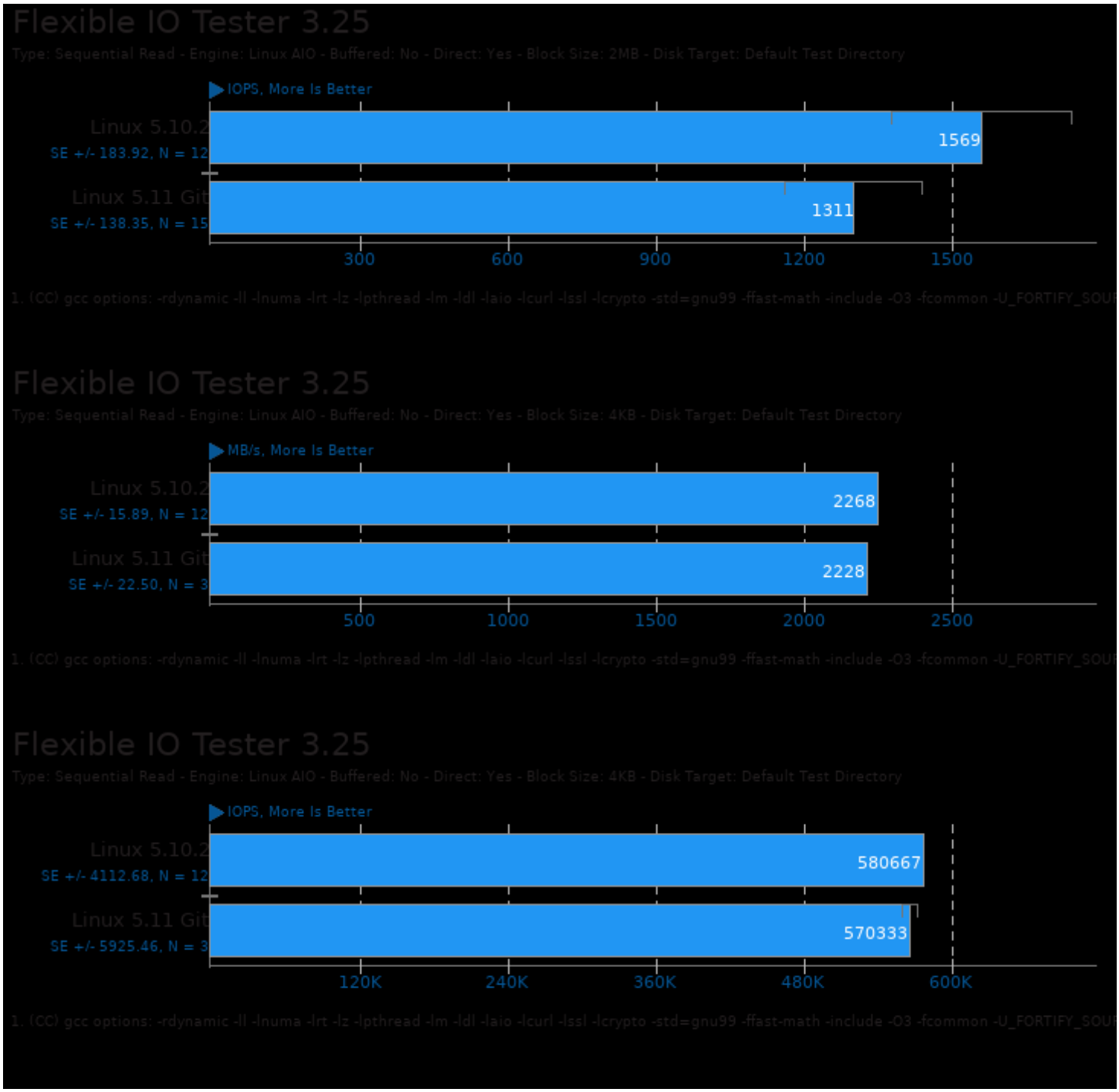

Flexible IO Tester 3.25
Type: Random Read - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
Linux 5.10.2
SE +/- 28.55, N = 12
1729
Linux 5.11 Git
SE +/- 3.18, N = 3
1799
400
800
1200
1600
2000
1. (CC) gcc options: -rdynamic -ll -lnuma -lrt -lz -lpthread -lm -ldl -laio -lcurl -lssl -lcrypto -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOU
Flexible IO Tester 3.25
Type: Random Read - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
Linux 5.10.2
SE +/- 7295.18, N = 12
442500
Linux 5.11 Git
SE +/- 666.67, N = 3
460333
100K
200K
300K
400K
500K
1. (CC) gcc options: -rdynamic -ll -lnuma -lrt -lz -lpthread -lm -ldl -laio -lcurl -lssl -lcrypto -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOU
Flexible IO Tester 3.25
Type: Random Write - Engine: IO_uring - Buffered: No - Direct: Yes - Block Size: 2MB - Disk Target: Default Test Directory
MB/s, More Is Better
Linux 5.10.2
SE +/- 1.86, N = 3
4090
Linux 5.11 Git
SE +/- 1.33, N = 3
4084
900
1800
2700
3600
4500
1. (CC) gcc options: -rdynamic -ll -lnuma -lrt -lz -lpthread -lm -ldl -laio -lcurl -lssl -lcrypto -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOU

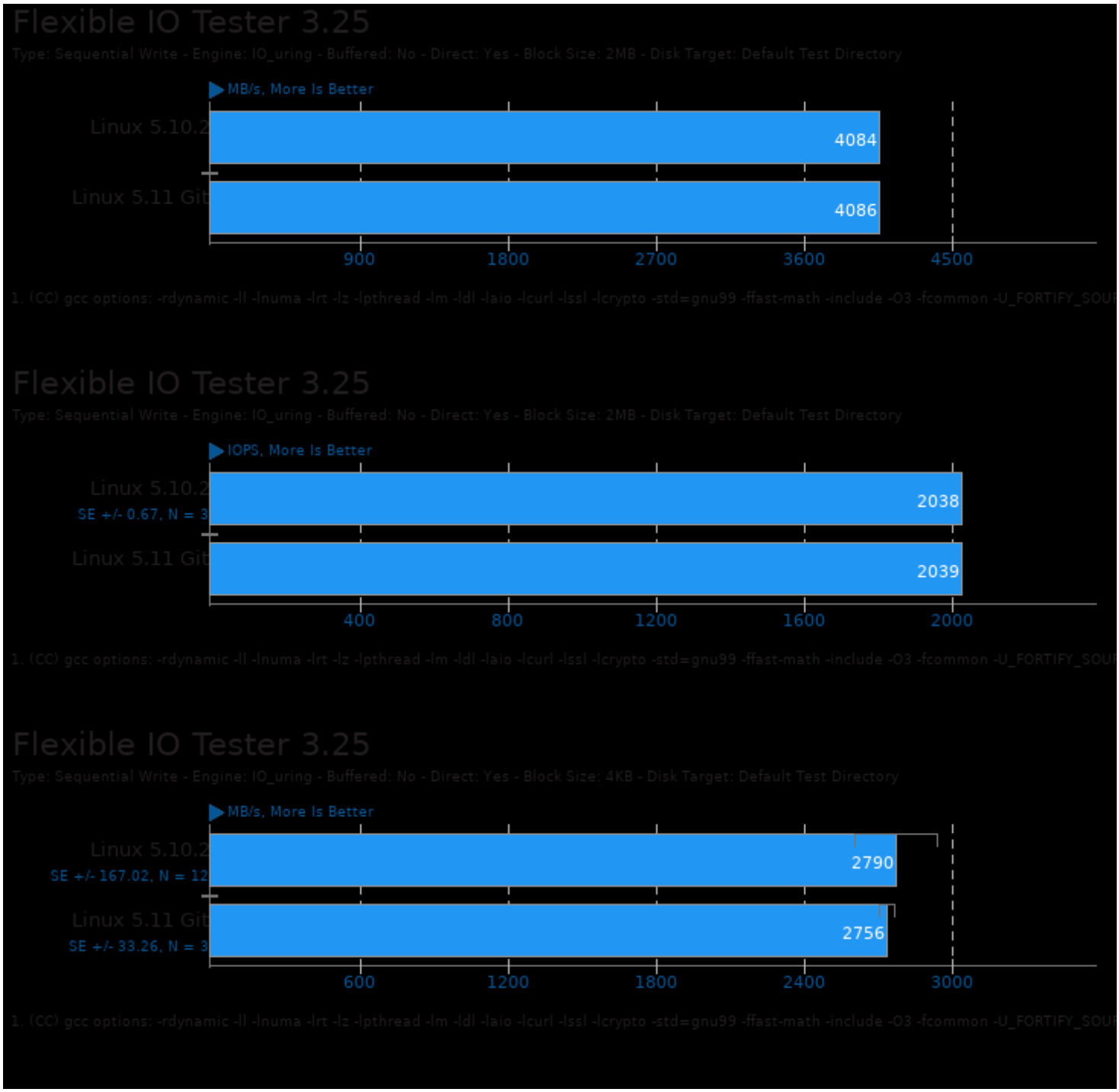

Flexible IO Tester 3.25
Type: Random Write - Engine: IO_uring - Buffered: No - Direct: Yes - Block Size: 2MB - Disk Target: Default Test Directory
IOPS, More Is Better
Linux 5.10.2
SE +/- 0.67, N = 3
2041
Linux 5.11 Git
SE +/- 0.67, N = 3
2039
400
800
1200
1600
2000
1. (CC) gcc options: -rdynamic -ll -lnuma -lrt -lz -lpthread -lm -ldl -laio -lcurl -lssl -lcrypto -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOU
Flexible IO Tester 3.25
Type: Random Write - Engine: IO_uring - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
Linux 5.10.2
SE +/- 32.59, N = 3
2802
Linux 5.11 Git
SE +/- 24.12, N = 15
2877
600
1200
1800
2400
3000
1. (CC) gcc options: -rdynamic -ll -lnuma -lrt -lz -lpthread -lm -ldl -laio -lcurl -lssl -lcrypto -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOU
Flexible IO Tester 3.25
Type: Random Write - Engine: IO_uring - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
Linux 5.10.2
SE +/- 8089.77, N = 3
717333
Linux 5.11 Git
SE +/- 6182.05, N = 15
736467
160K
320K
480K
640K
800K
1. (CC) gcc options: -rdynamic -ll -lnuma -lrt -lz -lpthread -lm -ldl -laio -lcurl -lssl -lcrypto -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOU

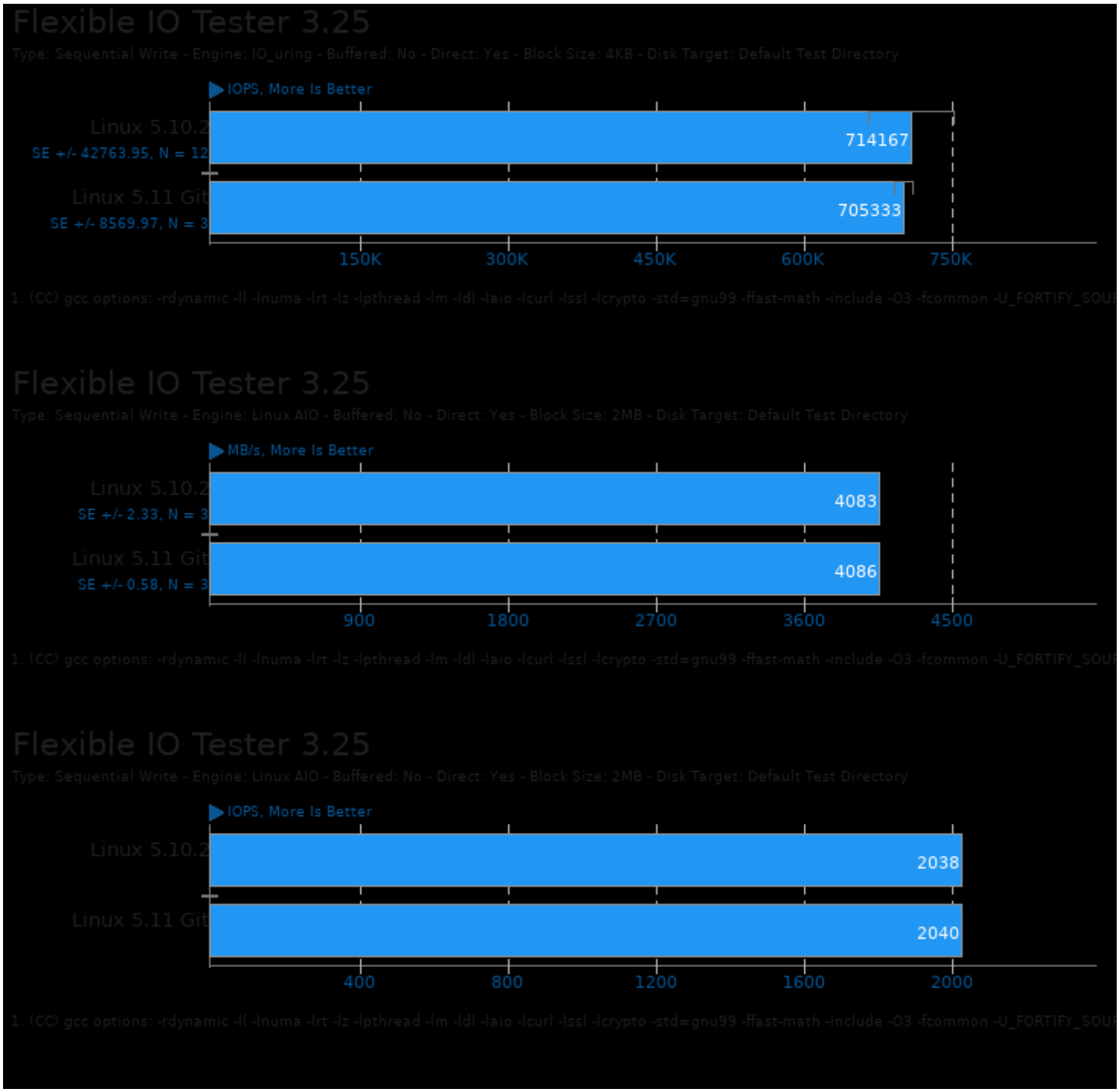

Flexible IO Tester 3.25
Type: Random Write - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 2MB - Disk Target: Default Test Directory
MB/s, More Is Better
Linux 5.10.2
SE +/- 0.58, N = 3
4086
Linux 5.11 Git
SE +/- 0.88, N = 3
4083
900
1800
2700
3600
4500
1. (CC) gcc options: -rdynamic -ll -lnuma -lrt -lz -lpthread -lm -ldl -laio -lcurl -lssl -lcrypto -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOU
Flexible IO Tester 3.25
Type: Random Write - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 2MB - Disk Target: Default Test Directory
IOPS, More Is Better
Linux 5.10.2
2039
Linux 5.11 Git
2038
400
800
1200
1600
2000
1. (CC) gcc options: -rdynamic -ll -lnuma -lrt -lz -lpthread -lm -ldl -laio -lcurl -lssl -lcrypto -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOU
Flexible IO Tester 3.25
Type: Random Write - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
Linux 5.10.2
SE +/- 26.42, N = 3
2164
Linux 5.11 Git
SE +/- 16.90, N = 3
2095
500
1000
1500
2000
2500
1. (CC) gcc options: -rdynamic -ll -lnuma -lrt -lz -lpthread -lm -ldl -laio -lcurl -lssl -lcrypto -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOU

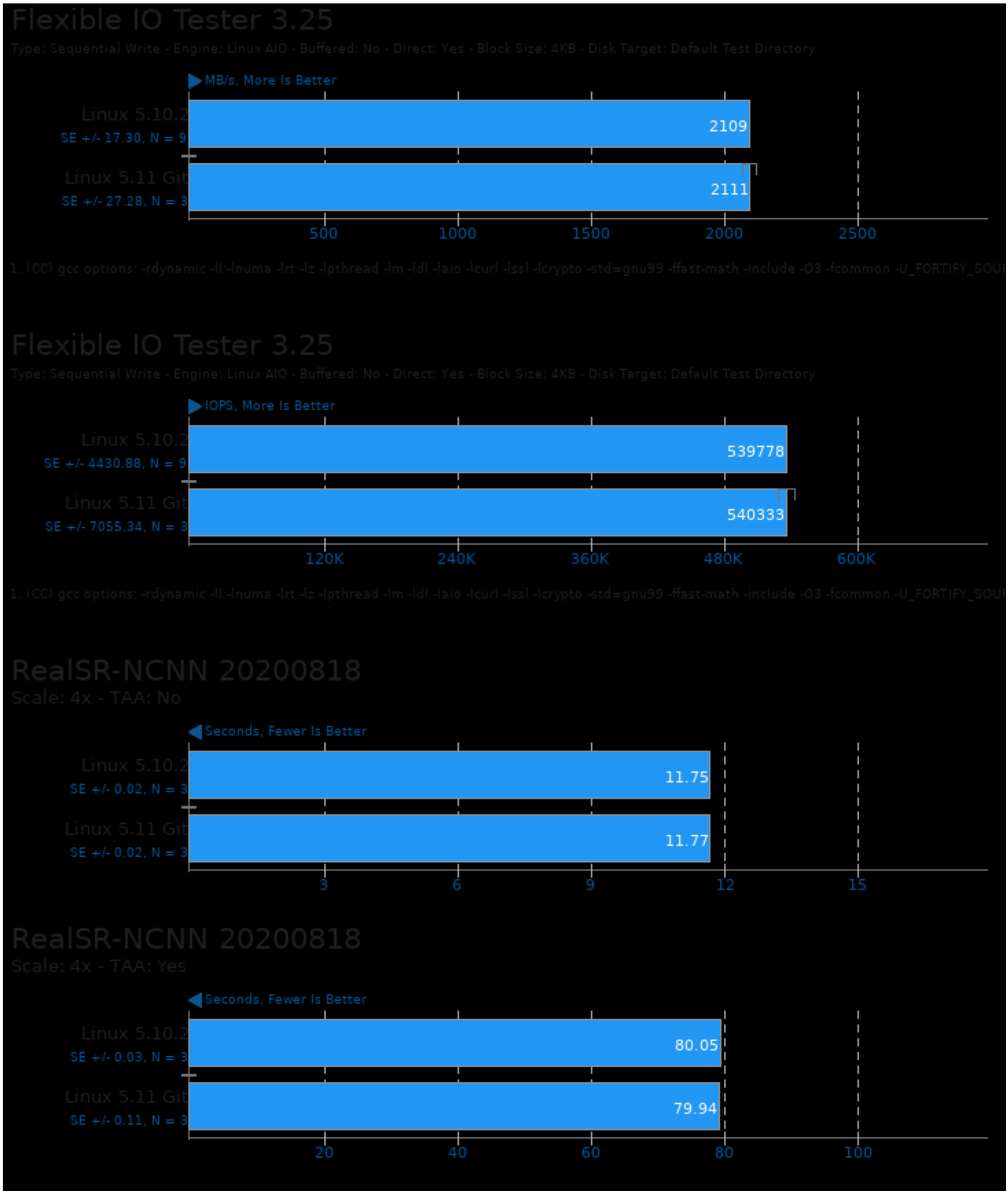

Flexible IO Tester 3.25
Type: Random Write - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
Linux 5.10.2
SE +/- 6806.86, N = 3
554000
Linux 5.11 Git
SE +/- 4358.90, N = 3
536000
120K
240K
360K
480K
600K
1. (CC) gcc options: -rdynamic -ll -lnuma -lrt -lz -lpthread -lm -ldl -laio -lcurl -lssl -lcrypto -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOU
Flexible IO Tester 3.25
Type: Sequential Read - Engine: IO_uring - Buffered: No - Direct: Yes - Block Size: 2MB - Disk Target: Default Test Directory
MB/s, More Is Better
Linux 5.10.2
SE +/- 236.96, N = 15
3869
Linux 5.11 Git
SE +/- 258.72, N = 12
3911
800
1600
2400
3200
4000
1. (CC) gcc options: -rdynamic -ll -lnuma -lrt -lz -lpthread -lm -ldl -laio -lcurl -lssl -lcrypto -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOU
Flexible IO Tester 3.25
Type: Sequential Read - Engine: IO_uring - Buffered: No - Direct: Yes - Block Size: 2MB - Disk Target: Default Test Directory
IOPS, More Is Better
Linux 5.10.2
SE +/- 118.43, N = 15
1931
Linux 5.11 Git
SE +/- 129.36, N = 12
1952
400
800
1200
1600
2000
1. (CC) gcc options: -rdynamic -ll -lnuma -lrt -lz -lpthread -lm -ldl -laio -lcurl -lssl -lcrypto -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOU

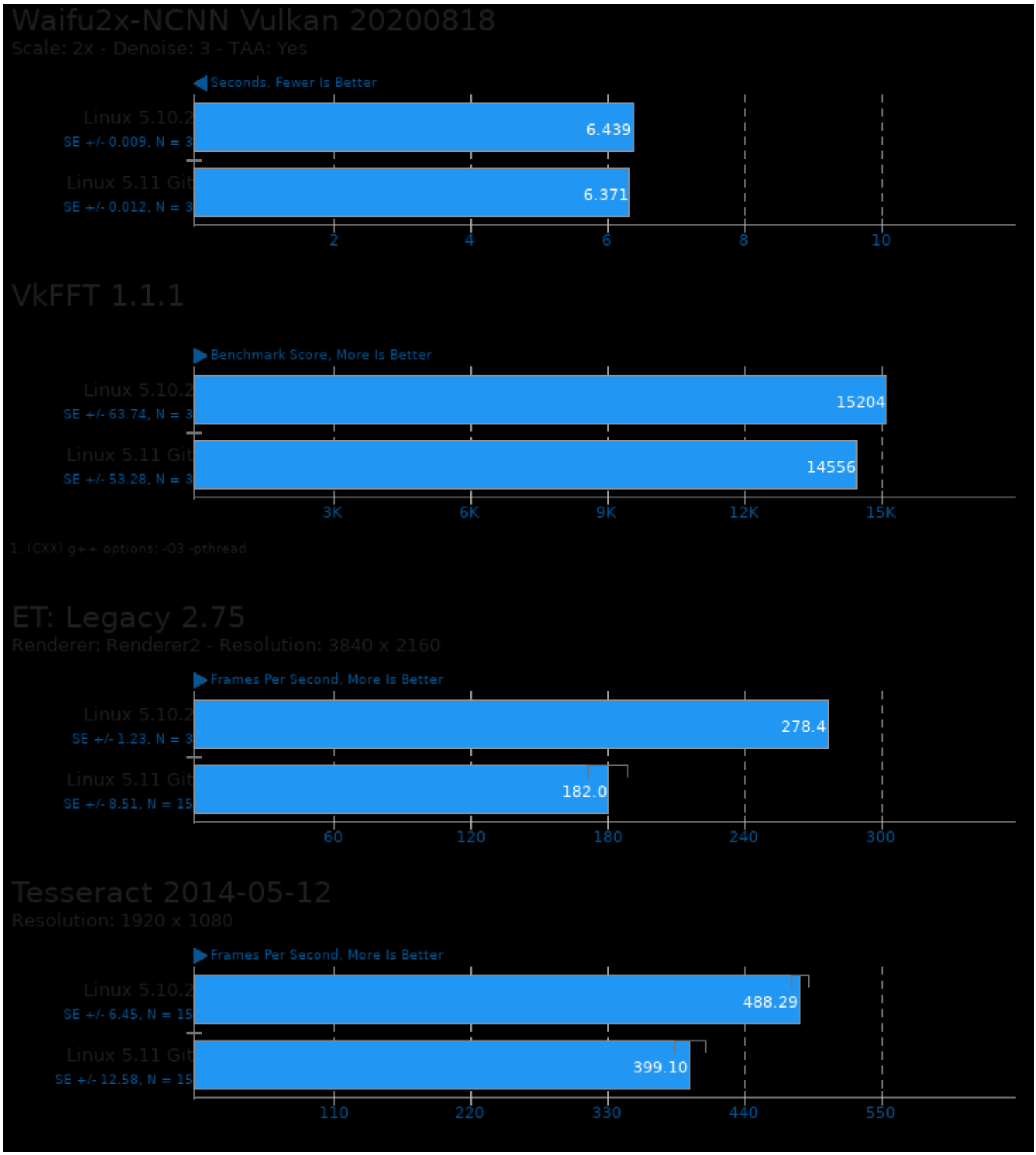

Flexible IO Tester 3.25
Type: Sequential Read - Engine: IO_uring - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
Linux 5.10.2
SE +/- 11.61, N = 3
1281
Linux 5.11 Git
SE +/- 13.03, N = 15
1281
300
600
900
1200
1500
1. (CC) gcc options: -rdynamic -ll -lnuma -lrt -lz -lpthread -lm -ldl -laio -lcurl -lssl -lcrypto -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOU
Flexible IO Tester 3.25
Type: Sequential Read - Engine: IO_uring - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
Linux 5.10.2
SE +/- 2645.75, N = 3
328000
Linux 5.11 Git
SE +/- 3343.03, N = 15
328067
70K
140K
210K
280K
350K
1. (CC) gcc options: -rdynamic -ll -lnuma -lrt -lz -lpthread -lm -ldl -laio -lcurl -lssl -lcrypto -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOU
Flexible IO Tester 3.25
Type: Sequential Read - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 2MB - Disk Target: Default Test Directory
MB/s, More Is Better
Linux 5.10.2
SE +/- 367.90, N = 12
3145
Linux 5.11 Git
SE +/- 276.68, N = 15
2629
700
1400
2100
2800
3500
1. (CC) gcc options: -rdynamic -ll -lnuma -lrt -lz -lpthread -lm -ldl -laio -lcurl -lssl -lcrypto -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOU

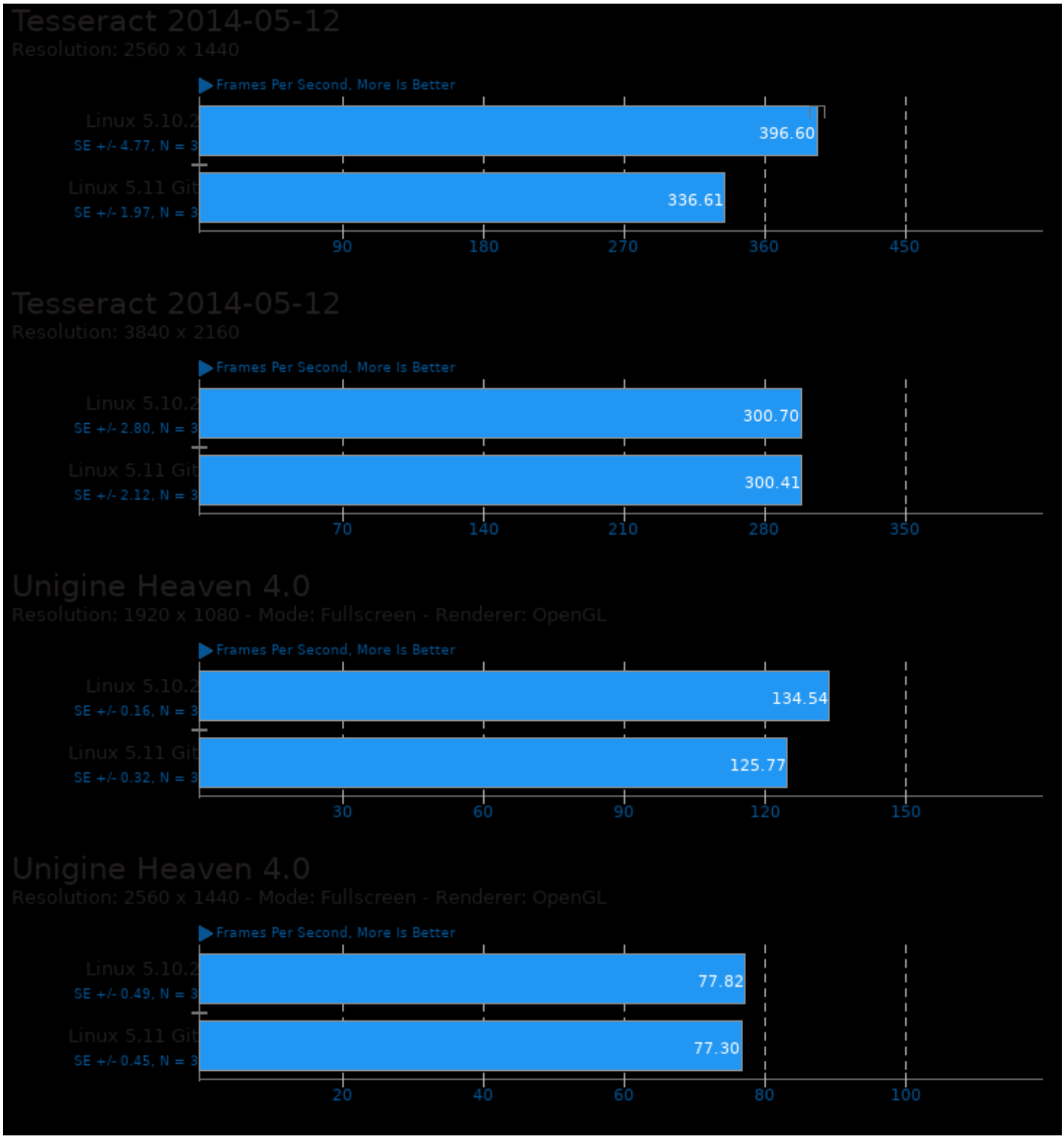

Flexible IO Tester 3.25
Type: Sequential Read - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 2MB - Disk Target: Default Test Directory
IOPS, More Is Better
Linux 5.10.2
SE +/- 183.92, N = 12
1569
Linux 5.11 Git
SE +/- 138.35, N = 15
1311
300
600
900
1200
1500
1. (CC) gcc options: -rdynamic -ll -lnuma -lrt -lz -lpthread -lm -ldl -laio -lcurl -lssl -lcrypto -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOU
Flexible IO Tester 3.25
Type: Sequential Read - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
Linux 5.10.2
SE +/- 15.89, N = 12
2268
Linux 5.11 Git
SE +/- 22.50, N = 3
2228
500
1000
1500
2000
2500
1. (CC) gcc options: -rdynamic -ll -lnuma -lrt -lz -lpthread -lm -ldl -laio -lcurl -lssl -lcrypto -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOU
Flexible IO Tester 3.25
Type: Sequential Read - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
Linux 5.10.2
SE +/- 4112.68, N = 12
580667
Linux 5.11 Git
SE +/- 5925.46, N = 3
570333
120K
240K
360K
480K
600K
1. (CC) gcc options: -rdynamic -ll -lnuma -lrt -lz -lpthread -lm -ldl -laio -lcurl -lssl -lcrypto -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOU

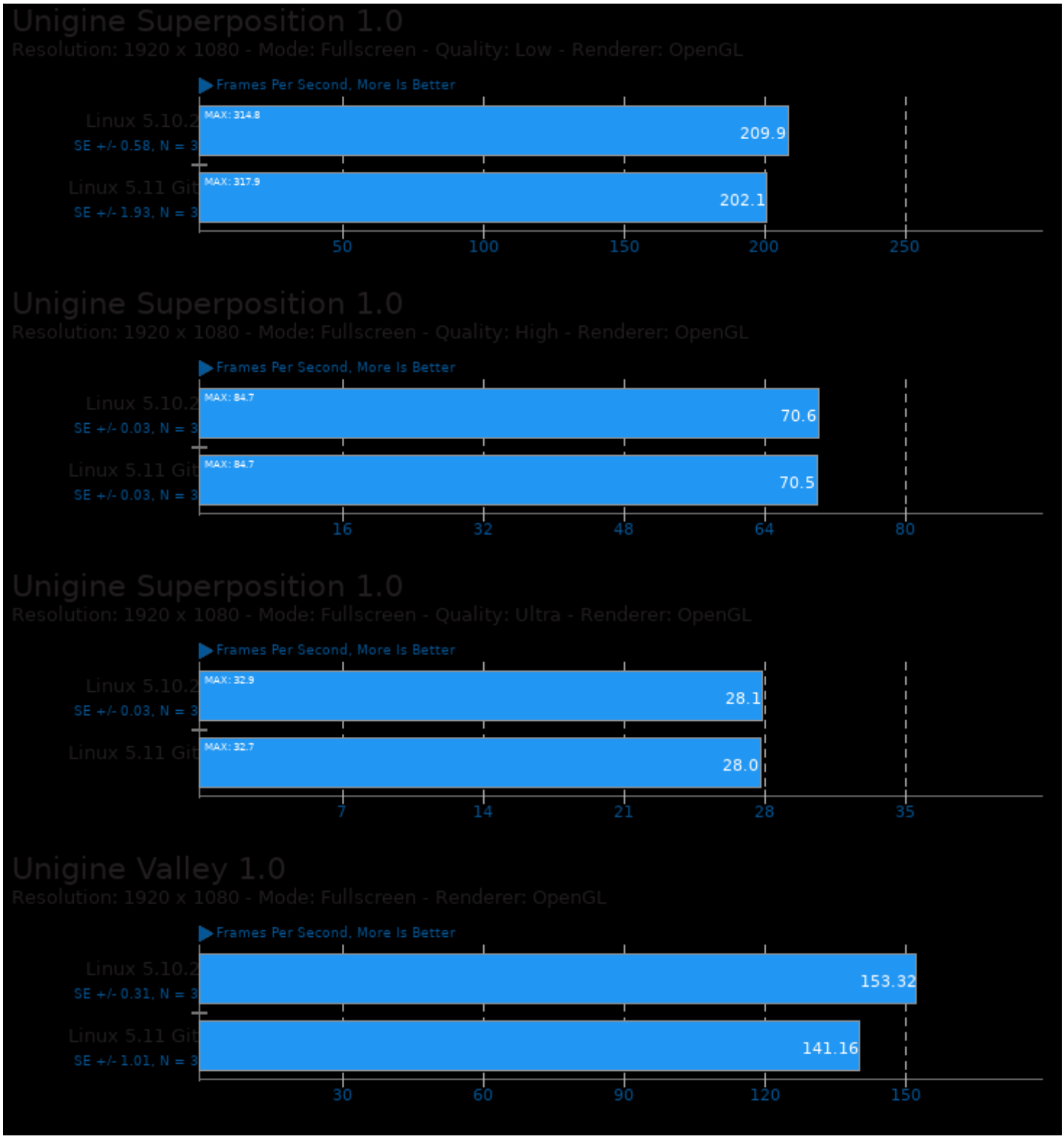

Flexible IO Tester 3.25
Type: Sequential Write - Engine: IO_uring - Buffered: No - Direct: Yes - Block Size: 2MB - Disk Target: Default Test Directory
MB/s, More Is Better
Linux 5.10.2
4084
Linux 5.11 Git
4086
900
1800
2700
3600
4500
1. (CC) gcc options: -rdynamic -ll -lnuma -lrt -lz -lpthread -lm -ldl -laio -lcurl -lssl -lcrypto -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOU
Flexible IO Tester 3.25
Type: Sequential Write - Engine: IO_uring - Buffered: No - Direct: Yes - Block Size: 2MB - Disk Target: Default Test Directory
IOPS, More Is Better
Linux 5.10.2
SE +/- 0.67, N = 3
2038
Linux 5.11 Git
2039
400
800
1200
1600
2000
1. (CC) gcc options: -rdynamic -ll -lnuma -lrt -lz -lpthread -lm -ldl -laio -lcurl -lssl -lcrypto -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOU
Flexible IO Tester 3.25
Type: Sequential Write - Engine: IO_uring - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
Linux 5.10.2
SE +/- 167.02, N = 12
2790
Linux 5.11 Git
SE +/- 33.26, N = 3
2756
600
1200
1800
2400
3000
1. (CC) gcc options: -rdynamic -ll -lnuma -lrt -lz -lpthread -lm -ldl -laio -lcurl -lssl -lcrypto -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOU

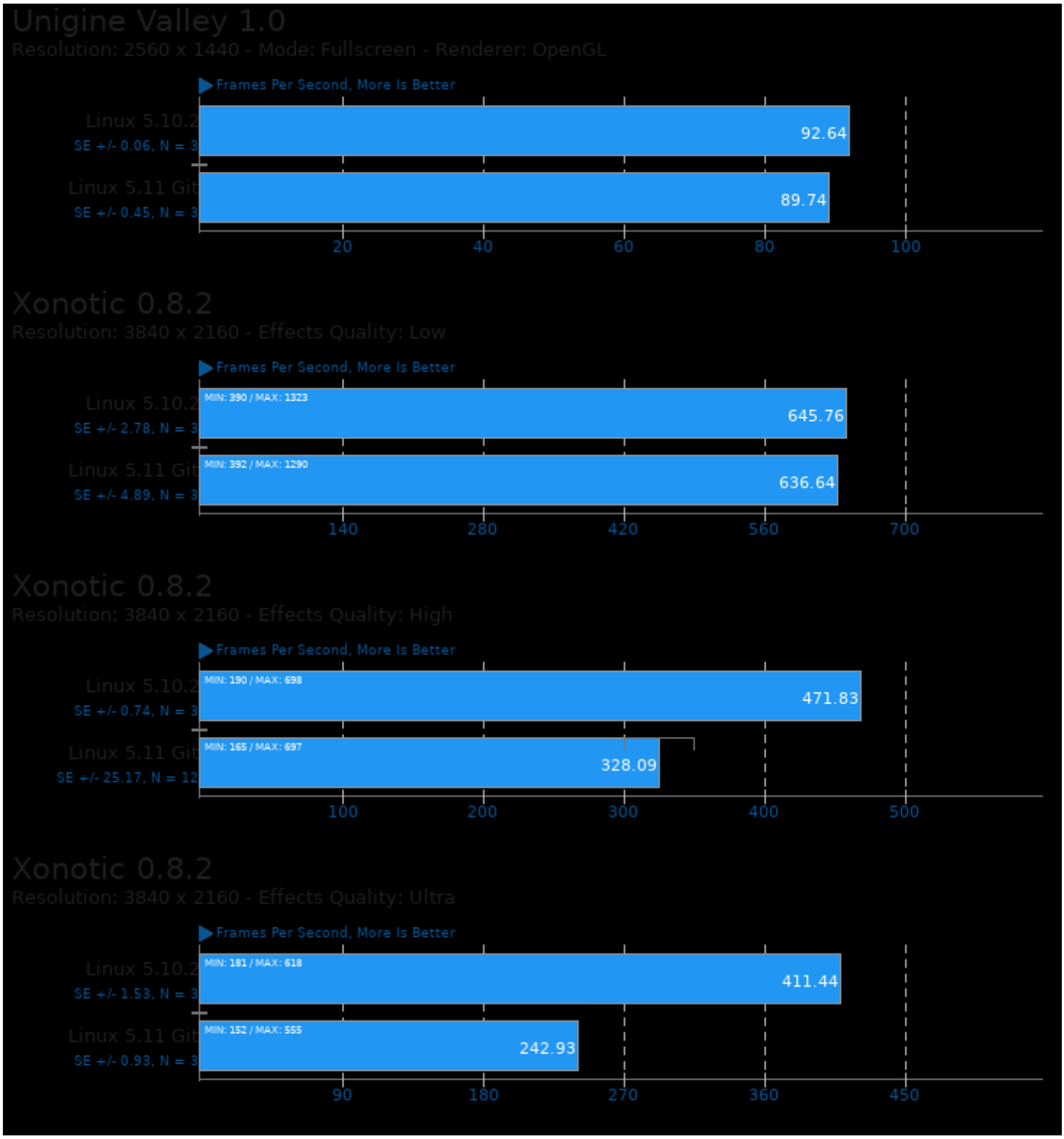

Flexible IO Tester 3.25
Type: Sequential Write - Engine: IO_uring - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
Linux 5.10.2
SE +/- 42763.95, N = 12
714167
Linux 5.11 Git
SE +/- 8569.97, N = 3
705333
150K
300K
450K
600K
750K
1. (CC) gcc options: -rdynamic -ll -lnuma -lrt -lz -lpthread -lm -ldl -laio -lcurl -lssl -lcrypto -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOU
Flexible IO Tester 3.25
Type: Sequential Write - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 2MB - Disk Target: Default Test Directory
MB/s, More Is Better
Linux 5.10.2
SE +/- 2.33, N = 3
4083
Linux 5.11 Git
SE +/- 0.58, N = 3
4086
900
1800
2700
3600
4500
1. (CC) gcc options: -rdynamic -ll -lnuma -lrt -lz -lpthread -lm -ldl -laio -lcurl -lssl -lcrypto -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOU
Flexible IO Tester 3.25
Type: Sequential Write - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 2MB - Disk Target: Default Test Directory
IOPS, More Is Better
Linux 5.10.2
2038
Linux 5.11 Git
2040
400
800
1200
1600
2000
1. (CC) gcc options: -rdynamic -ll -lnuma -lrt -lz -lpthread -lm -ldl -laio -lcurl -lssl -lcrypto -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOU

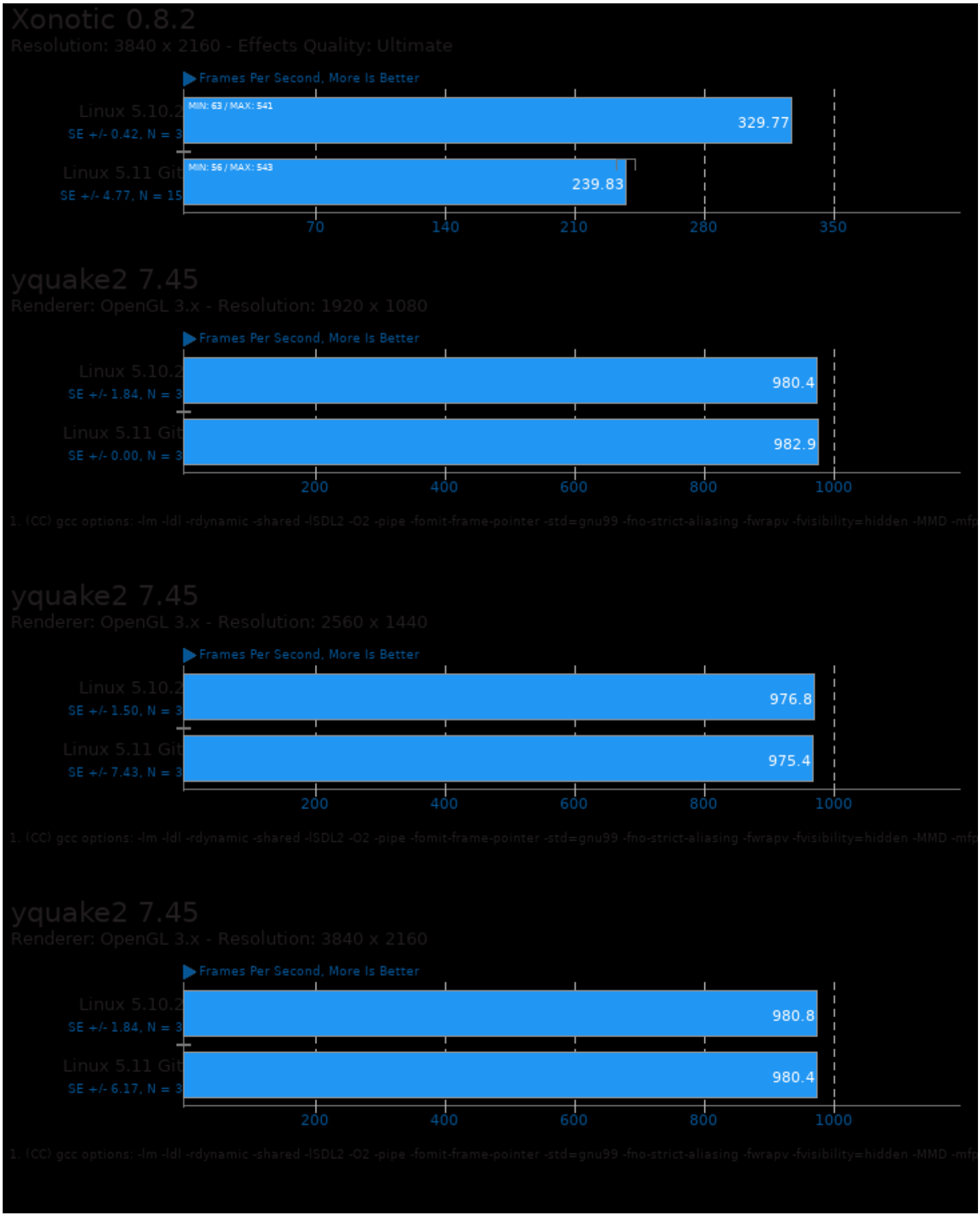

Flexible IO Tester 3.25
Type: Sequential Write - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
Linux 5.10.2
SE +/- 17.30, N = 9
2109
Linux 5.11 Git
SE +/- 27.28, N = 3
2111
500
1000
1500
2000
2500
1. (CC) gcc options: -rdynamic -ll -lnuma -lrt -lz -lpthread -lm -ldl -laio -lcurl -lssl -lcrypto -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOU
Flexible IO Tester 3.25
Type: Sequential Write - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
Linux 5.10.2
SE +/- 4430.88, N = 9
539778
Linux 5.11 Git
SE +/- 7055.34, N = 3
540333
120K
240K
360K
480K
600K
1. (CC) gcc options: -rdynamic -ll -lnuma -lrt -lz -lpthread -lm -ldl -laio -lcurl -lssl -lcrypto -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOU
RealSR-NCNN 20200818
Scale: 4x - TAA: No
Seconds, Fewer Is Better
Linux 5.10.2
SE +/- 0.02, N = 3
11.75
Linux 5.11 Git
SE +/- 0.02, N = 3
11.77
3
6
9
12
15
RealSR-NCNN 20200818
Scale: 4x - TAA: Yes
Seconds, Fewer Is Better
Linux 5.10.2
SE +/- 0.03, N = 3
80.05
Linux 5.11 Git
SE +/- 0.11, N = 3
79.94
20
40
60
80
100

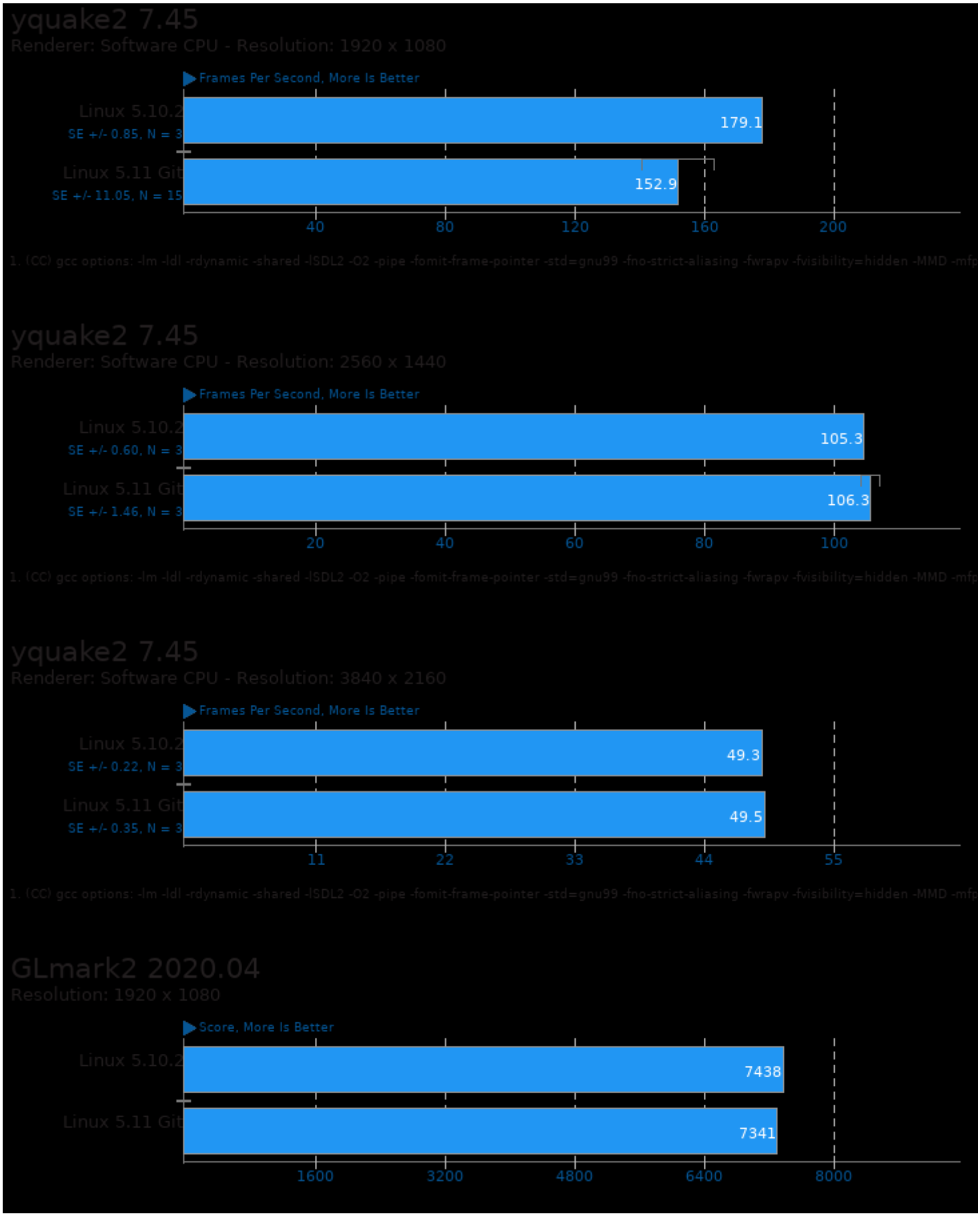

Waifu2x-NCNN Vulkan 20200818
Scale: 2x - Denoise: 3 - TAA: Yes
Seconds, Fewer Is Better
Linux 5.10.2
SE +/- 0.009, N = 3
6.439
Linux 5.11 Git
SE +/- 0.012, N = 3
6.371
2
4
6
8
10
VkFFT 1.1.1
Benchmark Score, More Is Better
Linux 5.10.2
SE +/- 63.74, N = 3
15204
Linux 5.11 Git
SE +/- 53.28, N = 3
14556
3K
6K
9K
12K
15K
1. (CXX) g++ options: -O3 -pthread
ET: Legacy 2.75
Renderer: Renderer2 - Resolution: 3840 x 2160
Frames Per Second, More Is Better
Linux 5.10.2
SE +/- 1.23, N = 3
278.4
Linux 5.11 Git
SE +/- 8.51, N = 15
182.0
60
120
180
240
300
Tesseract 2014-05-12
Resolution: 1920 x 1080
Frames Per Second, More Is Better
Linux 5.10.2
SE +/- 6.45, N = 15
488.29
Linux 5.11 Git
SE +/- 12.58, N = 15
399.10
110
220
330
440
550

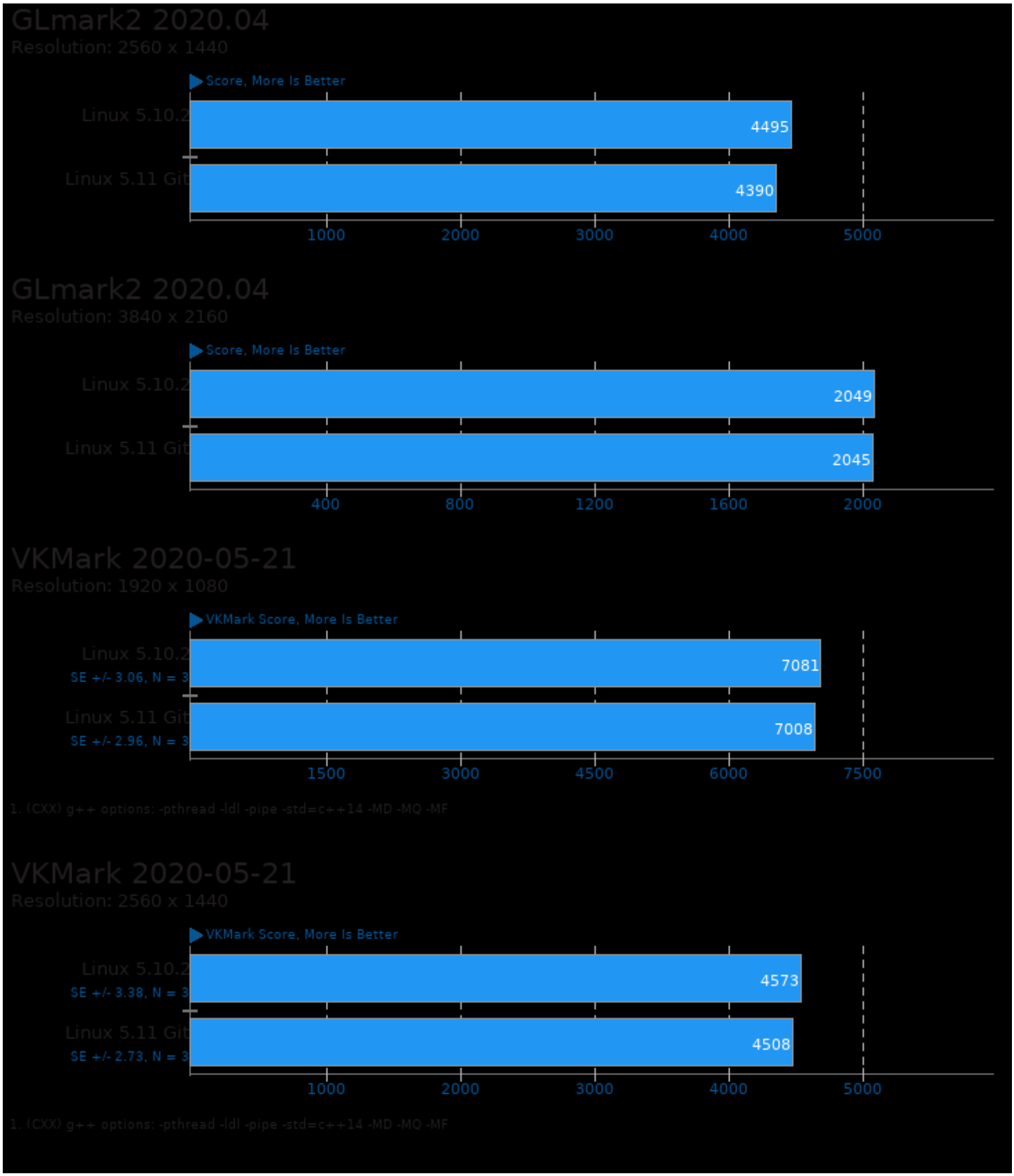

Tesseract 2014-05-12
Resolution: 2560 x 1440
Frames Per Second, More Is Better
Linux 5.10.2
SE +/- 4.77, N = 3
396.60
Linux 5.11 Git
SE +/- 1.97, N = 3
336.61
90
180
270
360
450
Tesseract 2014-05-12
Resolution: 3840 x 2160
Frames Per Second, More Is Better
Linux 5.10.2
SE +/- 2.80, N = 3
300.70
Linux 5.11 Git
SE +/- 2.12, N = 3
300.41
70
140
210
280
350
Unigine Heaven 4.0
Resolution: 1920 x 1080 - Mode: Fullscreen - Renderer: OpenGL
Frames Per Second, More Is Better
Linux 5.10.2
SE +/- 0.16, N = 3
134.54
Linux 5.11 Git
SE +/- 0.32, N = 3
125.77
30
60
90
120
150
Unigine Heaven 4.0
Resolution: 2560 x 1440 - Mode: Fullscreen - Renderer: OpenGL
Frames Per Second, More Is Better
Linux 5.10.2
SE +/- 0.49, N = 3
77.82
Linux 5.11 Git
SE +/- 0.45, N = 3
77.30
20
40
60
80
100

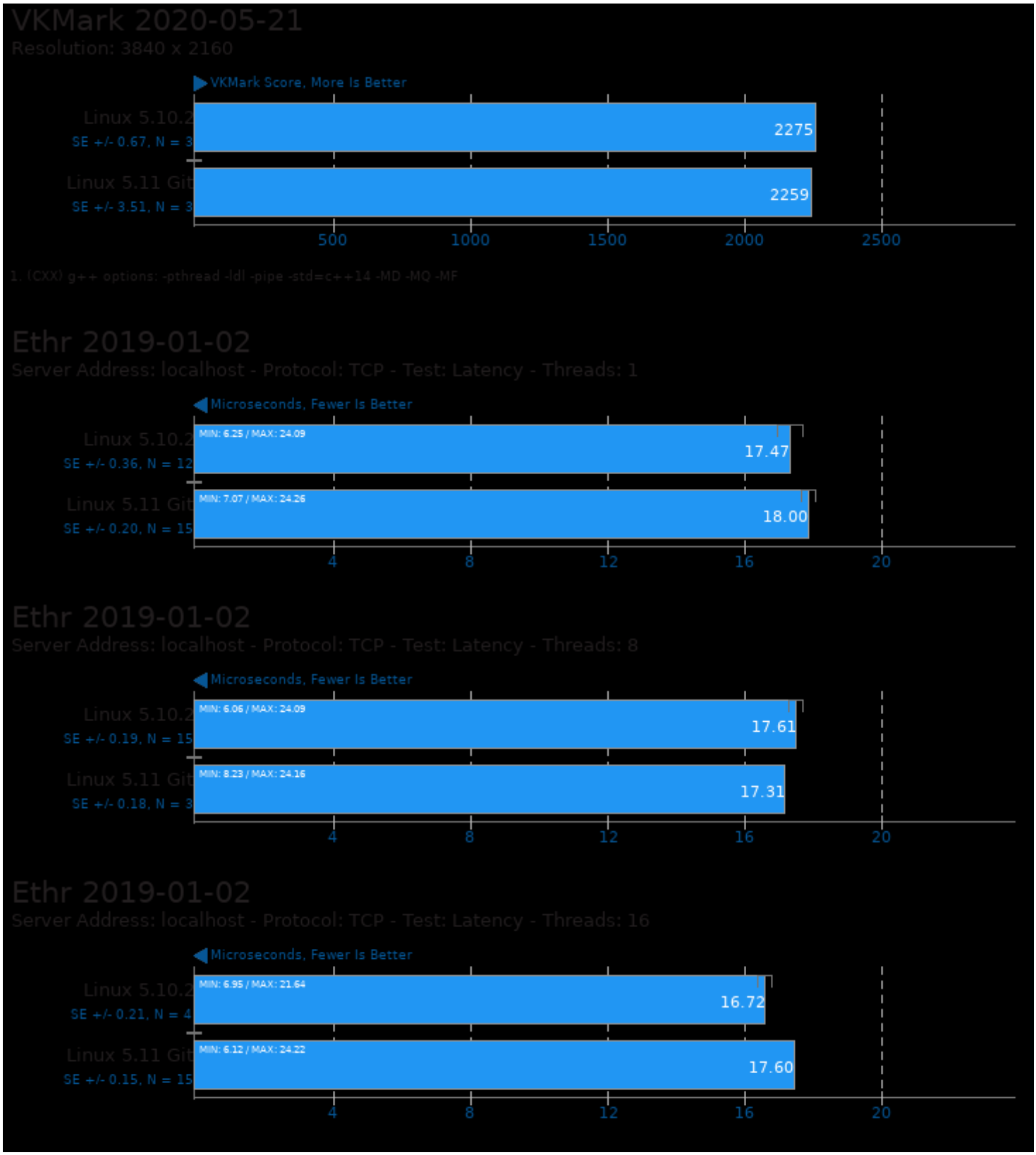

Unigine Superposition 1.0
Resolution: 1920 x 1080 - Mode: Fullscreen - Quality: Low - Renderer: OpenGL
Frames Per Second, More Is Better
Linux 5.10.2
SE +/- 0.58, N = 3
MAX: 314.8
209.9
Linux 5.11 Git
SE +/- 1.93, N = 3
MAX: 317.9
202.1
50
100
150
200
250
Unigine Superposition 1.0
Resolution: 1920 x 1080 - Mode: Fullscreen - Quality: High - Renderer: OpenGL
Frames Per Second, More Is Better
Linux 5.10.2
SE +/- 0.03, N = 3
MAX: 84.7
70.6
Linux 5.11 Git
SE +/- 0.03, N = 3
MAX: 84.7
70.5
16
32
48
64
80
Unigine Superposition 1.0
Resolution: 1920 x 1080 - Mode: Fullscreen - Quality: Ultra - Renderer: OpenGL
Frames Per Second, More Is Better
Linux 5.10.2
SE +/- 0.03, N = 3
MAX: 32.9
28.1
Linux 5.11 Git
MAX: 32.7
28.0
7
14
21
28
35
Unigine Valley 1.0
Resolution: 1920 x 1080 - Mode: Fullscreen - Renderer: OpenGL
Frames Per Second, More Is Better
Linux 5.10.2
SE +/- 0.31, N = 3
153.32
Linux 5.11 Git
SE +/- 1.01, N = 3
141.16
30
60
90
120
150

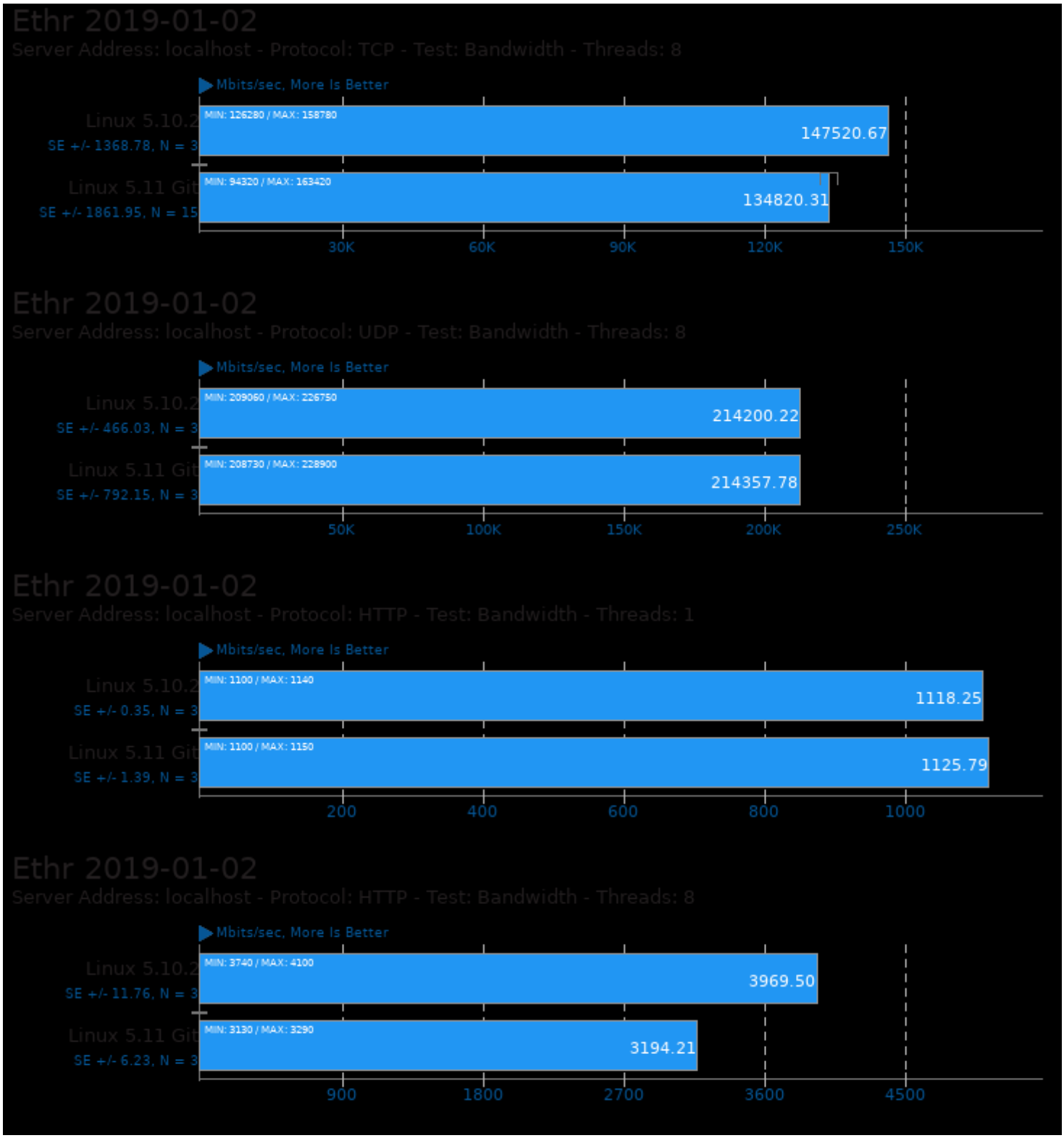

Unigine Valley 1.0
Resolution: 2560 x 1440 - Mode: Fullscreen - Renderer: OpenGL
Frames Per Second, More Is Better
Linux 5.10.2
SE +/- 0.06, N = 3
92.64
Linux 5.11 Git
SE +/- 0.45, N = 3
89.74
20
40
60
80
100
Xonotic 0.8.2
Resolution: 3840 x 2160 - Effects Quality: Low
Frames Per Second, More Is Better
Linux 5.10.2
SE +/- 2.78, N = 3
MIN: 390 / MAX: 1323
645.76
Linux 5.11 Git
SE +/- 4.89, N = 3
MIN: 392 / MAX: 1290
636.64
140
280
420
560
700
Xonotic 0.8.2
Resolution: 3840 x 2160 - Effects Quality: High
Frames Per Second, More Is Better
Linux 5.10.2
SE +/- 0.74, N = 3
MIN: 190 / MAX: 698
471.83
Linux 5.11 Git
SE +/- 25.17, N = 12
MIN: 165 / MAX: 697
328.09
100
200
300
400
500
Xonotic 0.8.2
Resolution: 3840 x 2160 - Effects Quality: Ultra
Frames Per Second, More Is Better
Linux 5.10.2
SE +/- 1.53, N = 3
MIN: 181 / MAX: 618
411.44
Linux 5.11 Git
SE +/- 0.93, N = 3
MIN: 152 / MAX: 555
242.93
90
180
270
360
450

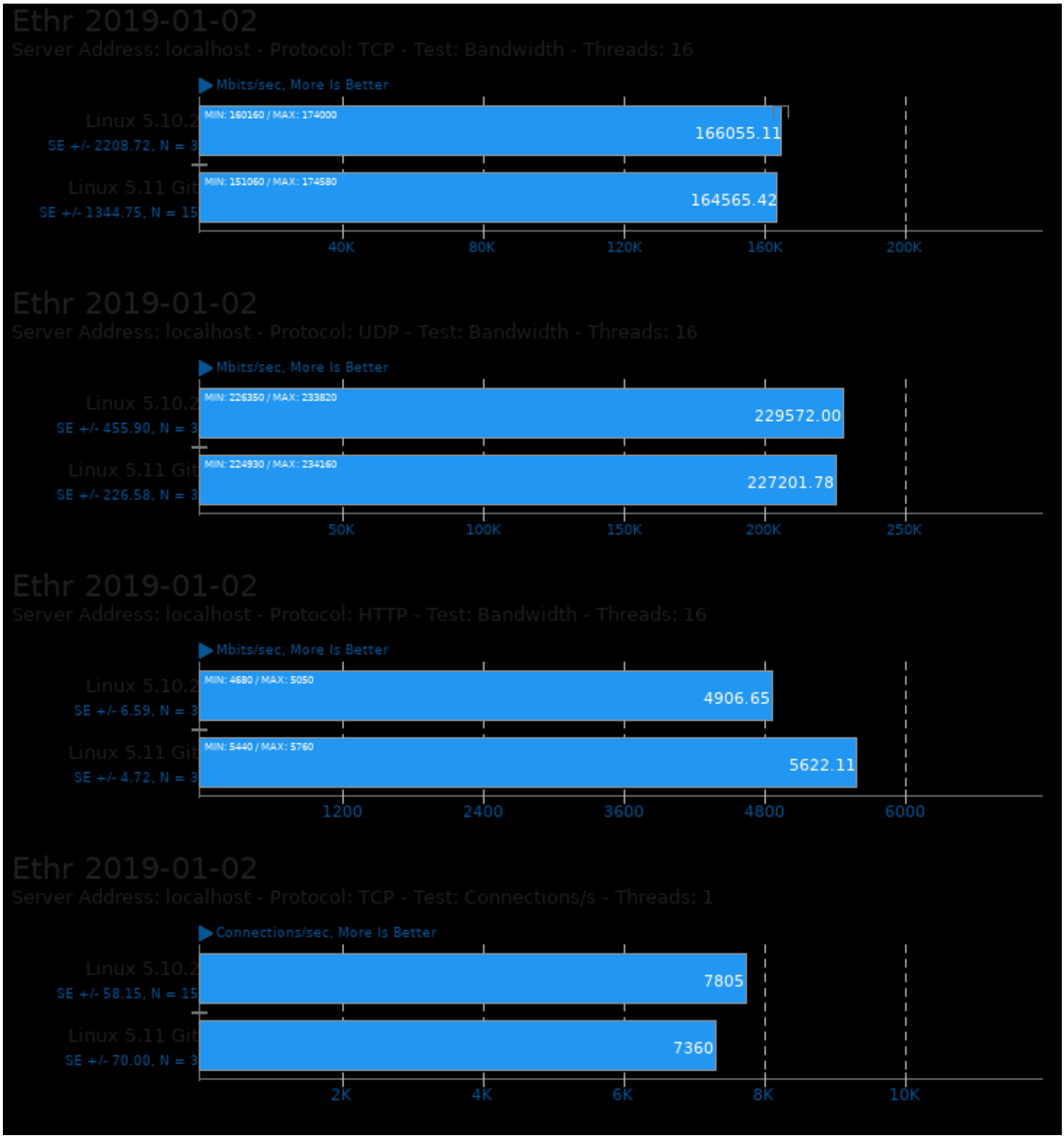

Xonotic 0.8.2
Resolution: 3840 x 2160 - Effects Quality: Ultimate
Frames Per Second, More Is Better
Linux 5.10.2
SE +/- 0.42, N = 3
MIN: 63 / MAX: 541
329.77
Linux 5.11 Git
SE +/- 4.77, N = 15
MIN: 56 / MAX: 543
239.83
70
140
210
280
350
yquake2 7.45
Renderer: OpenGL 3.x - Resolution: 1920 x 1080
Frames Per Second, More Is Better
Linux 5.10.2
SE +/- 1.84, N = 3
980.4
Linux 5.11 Git
SE +/- 0.00, N = 3
982.9
200
400
600
800
1000
1. (CC) gcc options: -lm -ldl -rdynamic -shared -lSDL2 -O2 -pipe -fomit-frame-pointer -std=gnu99 -fno-strict-aliasing -fwrapv -fvisibility=hidden -MMD -mf
yquake2 7.45
Renderer: OpenGL 3.x - Resolution: 2560 x 1440
Frames Per Second, More Is Better
Linux 5.10.2
SE +/- 1.50, N = 3
976.8
Linux 5.11 Git
SE +/- 7.43, N = 3
975.4
200
400
600
800
1000
1. (CC) gcc options: -lm -ldl -rdynamic -shared -lSDL2 -O2 -pipe -fomit-frame-pointer -std=gnu99 -fno-strict-aliasing -fwrapv -fvisibility=hidden -MMD -mf
yquake2 7.45
Renderer: OpenGL 3.x - Resolution: 3840 x 2160
Frames Per Second, More Is Better
Linux 5.10.2
SE +/- 1.84, N = 3
980.8
Linux 5.11 Git
SE +/- 6.17, N = 3
980.4
200
400
600
800
1000
1. (CC) gcc options: -lm -ldl -rdynamic -shared -lSDL2 -O2 -pipe -fomit-frame-pointer -std=gnu99 -fno-strict-aliasing -fwrapv -fvisibility=hidden -MMD -mf

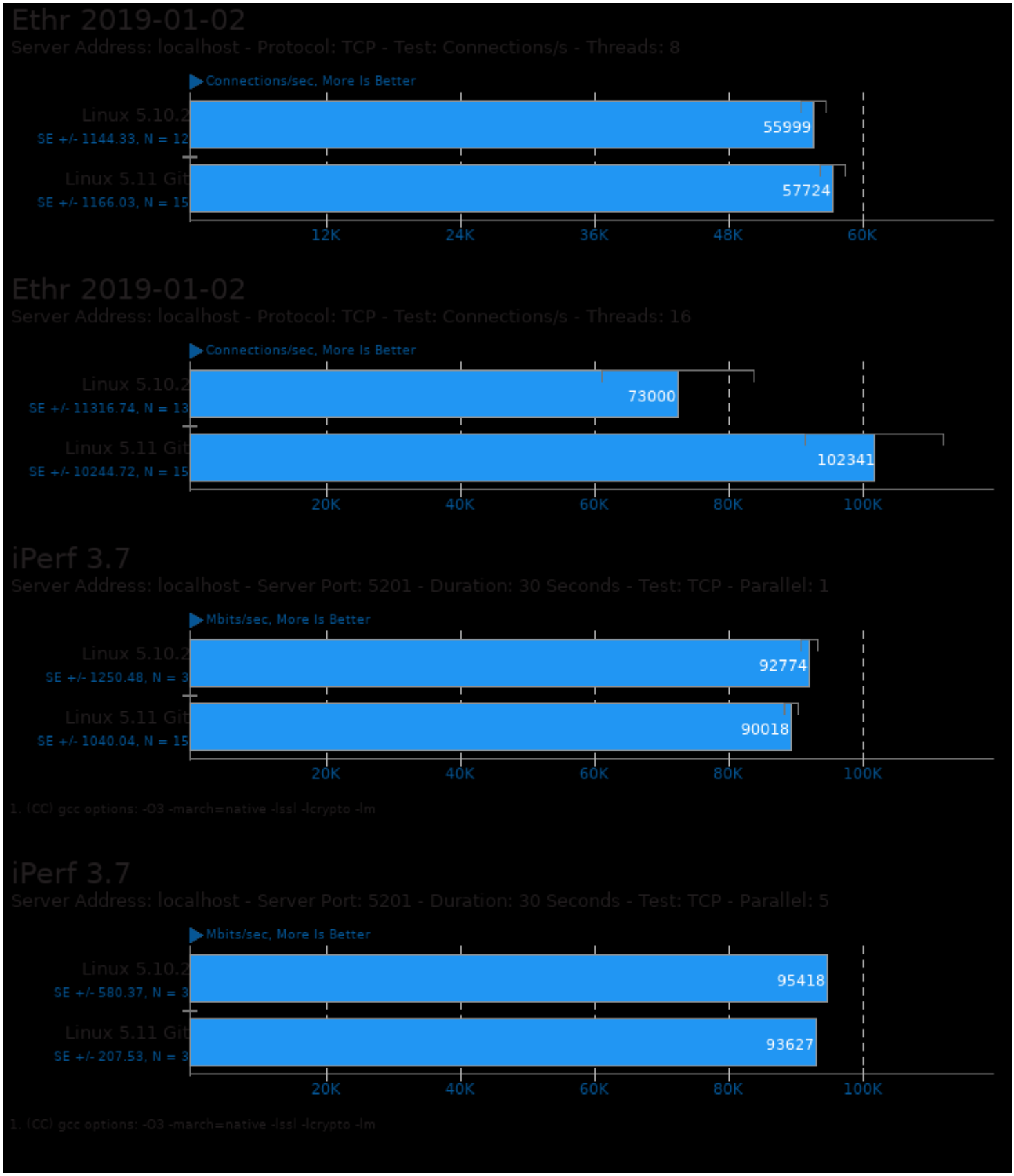

yquake2 7.45
Renderer: Software CPU - Resolution: 1920 x 1080
Frames Per Second, More Is Better
Linux 5.10.2
SE +/- 0.85, N = 3
179.1
Linux 5.11 Git
SE +/- 11.05, N = 15
152.9
40
80
120
160
200
1. (CC) gcc options: -lm -ldl -rdynamic -shared -lSDL2 -O2 -pipe -fomit-frame-pointer -std=gnu99 -fno-strict-aliasing -fwrapv -fvisibility=hidden -MMD -mf
yquake2 7.45
Renderer: Software CPU - Resolution: 2560 x 1440
Frames Per Second, More Is Better
Linux 5.10.2
SE +/- 0.60, N = 3
105.3
Linux 5.11 Git
SE +/- 1.46, N = 3
106.3
20
40
60
80
100
1. (CC) gcc options: -lm -ldl -rdynamic -shared -lSDL2 -O2 -pipe -fomit-frame-pointer -std=gnu99 -fno-strict-aliasing -fwrapv -fvisibility=hidden -MMD -mf
yquake2 7.45
Renderer: Software CPU - Resolution: 3840 x 2160
Frames Per Second, More Is Better
Linux 5.10.2
SE +/- 0.22, N = 3
49.3
Linux 5.11 Git
SE +/- 0.35, N = 3
49.5
11
22
33
44
55
1. (CC) gcc options: -lm -ldl -rdynamic -shared -lSDL2 -O2 -pipe -fomit-frame-pointer -std=gnu99 -fno-strict-aliasing -fwrapv -fvisibility=hidden -MMD -mf
GLmark2 2020.04
Resolution: 1920 x 1080
Score, More Is Better
Linux 5.10.2
7438
Linux 5.11 Git
7341
1600
3200
4800
6400
8000

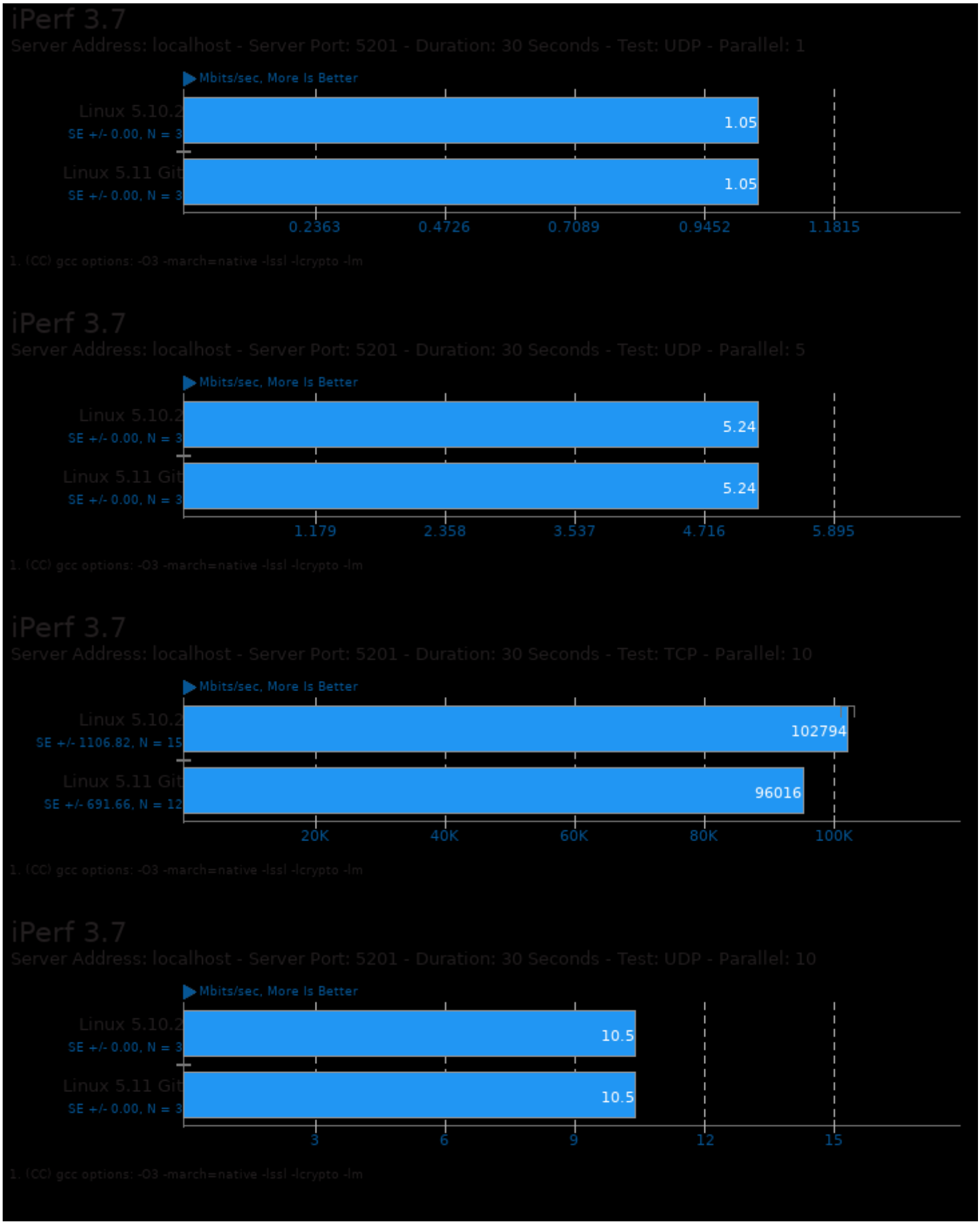

GLmark2 2020.04
Resolution: 2560 x 1440
Score, More Is Better
Linux 5.10.2
4495
Linux 5.11 Git
4390
1000
2000
3000
4000
5000
GLmark2 2020.04
Resolution: 3840 x 2160
Score, More Is Better
Linux 5.10.2
2049
Linux 5.11 Git
2045
400
800
1200
1600
2000
VKMark 2020-05-21
Resolution: 1920 x 1080
VKMark Score, More Is Better
Linux 5.10.2
SE +/- 3.06, N = 3
7081
Linux 5.11 Git
SE +/- 2.96, N = 3
7008
1500
3000
4500
6000
7500
1. (CXX) g++ options: -pthread -ldl -pipe -std=c++14 -MD -MQ -MF
VKMark 2020-05-21
Resolution: 2560 x 1440
VKMark Score, More Is Better
Linux 5.10.2
SE +/- 3.38, N = 3
4573
Linux 5.11 Git
SE +/- 2.73, N = 3
4508
1000
2000
3000
4000
5000
1. (CXX) g++ options: -pthread -ldl -pipe -std=c++14 -MD -MQ -MF

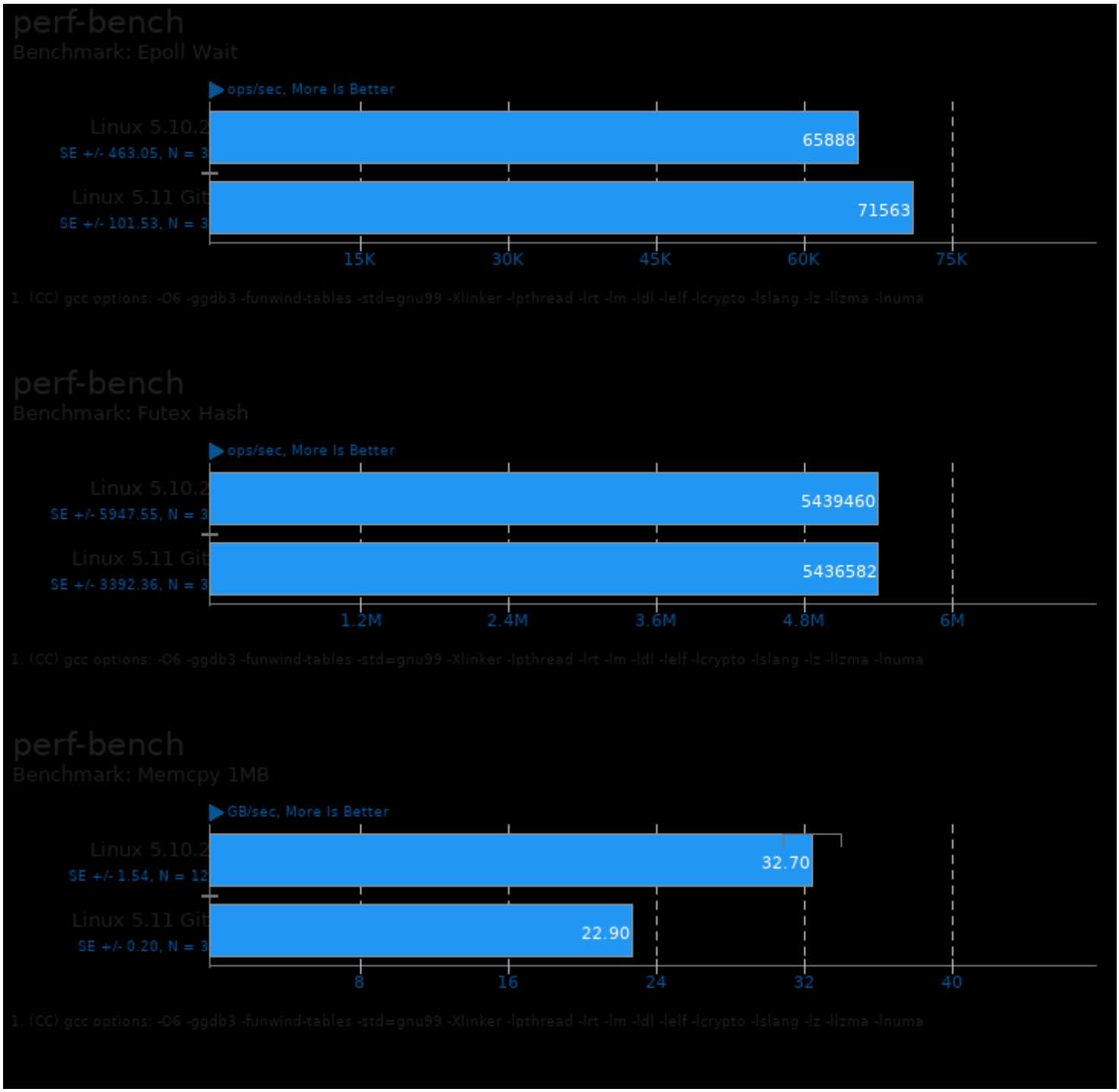

VKMark 2020-05-21
Resolution: 3840 x 2160
VKMark Score, More Is Better
Linux 5.10.2
SE +/- 0.67, N = 3
2275
Linux 5.11 Git
SE +/- 3.51, N = 3
2259
500
1000
1500
2000
2500
1. (CXX) g++ options: -pthread -ldl -pipe -std=c++14 -MD -MQ -MF
Ethr 2019-01-02
Server Address: localhost - Protocol: TCP - Test: Latency - Threads: 1
Microseconds, Fewer Is Better
Linux 5.10.2
SE +/- 0.36, N = 12
MIN: 6.25 / MAX: 24.09
17.47
Linux 5.11 Git
SE +/- 0.20, N = 15
MIN: 7.07 / MAX: 24.26
18.00
4
8
12
16
20
Ethr 2019-01-02
Server Address: localhost - Protocol: TCP - Test: Latency - Threads: 8
Microseconds, Fewer Is Better
Linux 5.10.2
SE +/- 0.19, N = 15
MIN: 6.06 / MAX: 24.09
17.61
Linux 5.11 Git
SE +/- 0.18, N = 3
MIN: 8.23 / MAX: 24.16
17.31
4
8
12
16
20
Ethr 2019-01-02
Server Address: localhost - Protocol: TCP - Test: Latency - Threads: 16
Microseconds, Fewer Is Better
Linux 5.10.2
SE +/- 0.21, N = 4
MIN: 6.95 / MAX: 21.64
16.72
Linux 5.11 Git
SE +/- 0.15, N = 15
MIN: 6.12 / MAX: 24.22
17.60
4
8
12
16
20

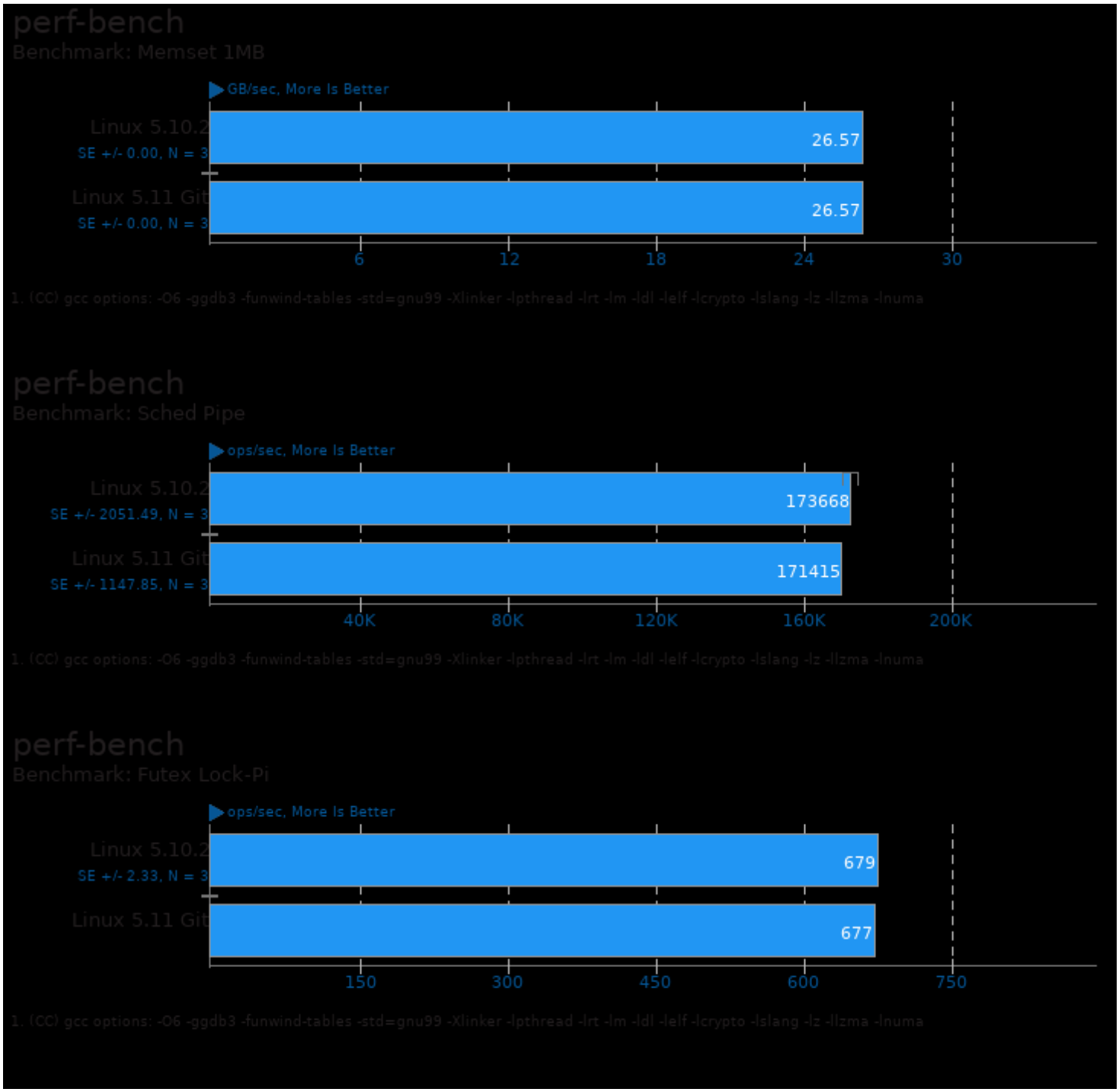

Ethr 2019-01-02
Server Address: localhost - Protocol: TCP - Test: Bandwidth - Threads: 8
Mbits/sec, More Is Better
Linux 5.10.2
SE +/- 1368.78, N = 3
MIN: 126280 / MAX: 158780
147520.67
Linux 5.11 Git
SE +/- 1861.95, N = 15
MIN: 94320 / MAX: 163420
134820.31
30K
60K
90K
120K
150K
Ethr 2019-01-02
Server Address: localhost - Protocol: UDP - Test: Bandwidth - Threads: 8
Mbits/sec, More Is Better
Linux 5.10.2
SE +/- 466.03, N = 3
MIN: 209060 / MAX: 226750
214200.22
Linux 5.11 Git
SE +/- 792.15, N = 3
MIN: 208730 / MAX: 228900
214357.78
50K
100K
150K
200K
250K
Ethr 2019-01-02
Server Address: localhost - Protocol: HTTP - Test: Bandwidth - Threads: 1
Mbits/sec, More Is Better
Linux 5.10.2
SE +/- 0.35, N = 3
MIN: 1100 / MAX: 1140
1118.25
Linux 5.11 Git
SE +/- 1.39, N = 3
MIN: 1100 / MAX: 1150
1125.79
200
400
600
800
1000
Ethr 2019-01-02
Server Address: localhost - Protocol: HTTP - Test: Bandwidth - Threads: 8
Mbits/sec, More Is Better
Linux 5.10.2
SE +/- 11.76, N = 3
MIN: 3740 / MAX: 4100
3969.50
Linux 5.11 Git
SE +/- 6.23, N = 3
MIN: 3130 / MAX: 3290
3194.21
900
1800
2700
3600
4500


Ethr 2019-01-02
Server Address: localhost - Protocol: TCP - Test: Bandwidth - Threads: 16
Mbits/sec, More Is Better
Linux 5.10.2
SE +/- 2208.72, N = 3
MIN: 160160 / MAX: 174000
166055.11
Linux 5.11 Git
SE +/- 1344.75, N = 15
MIN: 151060 / MAX: 174580
164565.42
40K
80K
120K
160K
200K
Ethr 2019-01-02
Server Address: localhost - Protocol: UDP - Test: Bandwidth - Threads: 16
Mbits/sec, More Is Better
Linux 5.10.2
SE +/- 455.90, N = 3
MIN: 226350 / MAX: 233820
229572.00
Linux 5.11 Git
SE +/- 226.58, N = 3
MIN: 224930 / MAX: 234160
227201.78
50K
100K
150K
200K
250K
Ethr 2019-01-02
Server Address: localhost - Protocol: HTTP - Test: Bandwidth - Threads: 16
Mbits/sec, More Is Better
Linux 5.10.2
SE +/- 6.59, N = 3
MIN: 4680 / MAX: 5050
4906.65
Linux 5.11 Git
SE +/- 4.72, N = 3
MIN: 5440 / MAX: 5760
5622.11
1200
2400
3600
4800
6000
Ethr 2019-01-02
Server Address: localhost - Protocol: TCP - Test: Connections/s - Threads: 1
Connections/sec, More Is Better
Linux 5.10.2
SE +/- 58.15, N = 15
7805
Linux 5.11 Git
SE +/- 70.00, N = 3
7360
2K
4K
6K
8K
10K


Ethr 2019-01-02
Server Address: localhost - Protocol: TCP - Test: Connections/s - Threads: 8
Connections/sec, More Is Better
Linux 5.10.2
SE +/- 1144.33, N = 12
55999
Linux 5.11 Git
SE +/- 1166.03, N = 15
57724
12K
24K
36K
48K
60K
Ethr 2019-01-02
Server Address: localhost - Protocol: TCP - Test: Connections/s - Threads: 16
Connections/sec, More Is Better
Linux 5.10.2
SE +/- 11316.74, N = 13
73000
Linux 5.11 Git
SE +/- 10244.72, N = 15
102341
20K
40K
60K
80K
100K
iPerf 3.7
Server Address: localhost - Server Port: 5201 - Duration: 30 Seconds - Test: TCP - Parallel: 1
Mbits/sec, More Is Better
Linux 5.10.2
SE +/- 1250.48, N = 3
92774
Linux 5.11 Git
SE +/- 1040.04, N = 15
90018
20K
40K
60K
80K
100K
1. (CC) gcc options: -O3 -march=native -lssl -lcrypto -lm
iPerf 3.7
Server Address: localhost - Server Port: 5201 - Duration: 30 Seconds - Test: TCP - Parallel: 5
Mbits/sec, More Is Better
Linux 5.10.2
SE +/- 580.37, N = 3
95418
Linux 5.11 Git
SE +/- 207.53, N = 3
93627
20K
40K
60K
80K
100K
1. (CC) gcc options: -O3 -march=native -lssl -lcrypto -lm

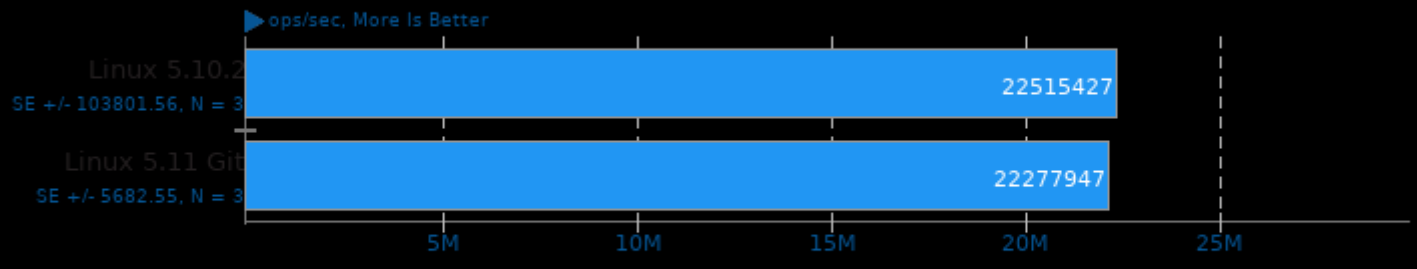

iPerf 3.7
Server Address: localhost - Server Port: 5201 - Duration: 30 Seconds - Test: UDP - Parallel: 1
Mbits/sec, More Is Better
Linux 5.10.2
SE +/- 0.00, N = 3
1.05
Linux 5.11 Git
SE +/- 0.00, N = 3
1.05
0.2363
0.4726
0.7089
0.9452
1.1815
1. (CC) gcc options: -O3 -march=native -lssl -lcrypto -lm
iPerf 3.7
Server Address: localhost - Server Port: 5201 - Duration: 30 Seconds - Test: UDP - Parallel: 5
Mbits/sec, More Is Better
Linux 5.10.2
SE +/- 0.00, N = 3
5.24
Linux 5.11 Git
SE +/- 0.00, N = 3
5.24
1.179
2.358
3.537
4.716
5.895
1. (CC) gcc options: -O3 -march=native -lssl -lcrypto -lm
iPerf 3.7
Server Address: localhost - Server Port: 5201 - Duration: 30 Seconds - Test: TCP - Parallel: 10
Mbits/sec, More Is Better
Linux 5.10.2
SE +/- 1106.82, N = 15
102794
Linux 5.11 Git
SE +/- 691.66, N = 12
96016
20K
40K
60K
80K
100K
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: 10
Mbits/sec, More Is Better
Linux 5.10.2
SE +/- 0.00, N = 3
10.5
Linux 5.11 Git
SE +/- 0.00, N = 3
10.5
3
6
9
12
15
1. (CC) gcc options: -O3 -march=native -lssl -lcrypto -lm


perf-bench
Benchmark: Epoll Wait
ops/sec, More Is Better
Linux 5.10.2
SE +/- 463.05, N = 3
65888
Linux 5.11 Git
SE +/- 101.53, N = 3
71563
15K
30K
45K
60K
75K
1. (CC) gcc options: -O6 -ggdb3 -funwind-tables -std=gnu99 -Xlinker -lpthread -lrt -lm -ldl -lelf -lcrypto -lslang -lz -llzma -lnuma
perf-bench
Benchmark: Futex Hash
ops/sec, More Is Better
Linux 5.10.2
SE +/- 5947.55, N = 3
5439460
Linux 5.11 Git
SE +/- 3392.36, N = 3
5436582
1.2M
2.4M
3.6M
4.8M
6M
1. (CC) gcc options: -O6 -ggdb3 -funwind-tables -std=gnu99 -Xlinker -lpthread -lrt -lm -ldl -lelf -lcrypto -lslang -lz -llzma -lnuma
perf-bench
Benchmark: Memcpy 1MB
GB/sec, More Is Better
Linux 5.10.2
SE +/- 1.54, N = 12
32.70
Linux 5.11 Git
SE +/- 0.20, N = 3
22.90
8
16
24
32
40
1. (CC) gcc options: -O6 -ggdb3 -funwind-tables -std=gnu99 -Xlinker -lpthread -lrt -lm -ldl -lelf -lcrypto -lslang -lz -llzma -lnuma


perf-bench
Benchmark: Memset 1MB
GB/sec, More Is Better
Linux 5.10.2
SE +/- 0.00, N = 3
26.57
Linux 5.11 Git
SE +/- 0.00, N = 3
26.57
6
12
18
24
30
1. (CC) gcc options: -O6 -ggdb3 -funwind-tables -std=gnu99 -Xlinker -lpthread -lrt -lm -ldl -lelf -lcrypto -lslang -lz -llzma -lnuma
perf-bench
Benchmark: Sched Pipe
ops/sec, More Is Better
Linux 5.10.2
SE +/- 2051.49, N = 3
173668
Linux 5.11 Git
SE +/- 1147.85, N = 3
171415
40K
80K
120K
160K
200K
1. (CC) gcc options: -O6 -ggdb3 -funwind-tables -std=gnu99 -Xlinker -lpthread -lrt -lm -ldl -lelf -lcrypto -lslang -lz -llzma -lnuma
perf-bench
Benchmark: Futex Lock-Pi
ops/sec, More Is Better
Linux 5.10.2
SE +/- 2.33, N = 3
679
Linux 5.11 Git
677
150
300
450
600
750
1. (CC) gcc options: -O6 -ggdb3 -funwind-tables -std=gnu99 -Xlinker -lpthread -lrt -lm -ldl -lelf -lcrypto -lslang -lz -llzma -lnuma

perf-bench

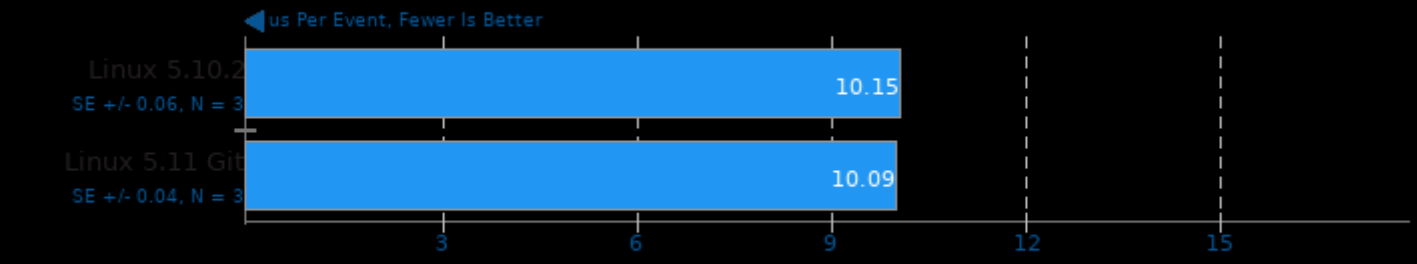
Benchmark: Syscall Basic



1. (CC) gcc options: -O6 -ggdb3 -funwind-tables -std=gnu99 -Xlinker -lpthread -lrt -lm -ldl -lelf -lcrypto -lslang -lz -llzma -lnuma

OSBench

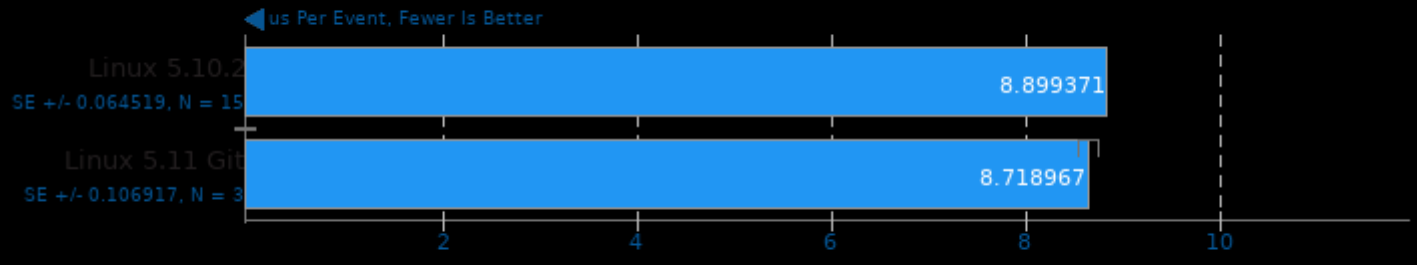
Test: Create Files



1. (CC) gcc options: -lm

OSBench

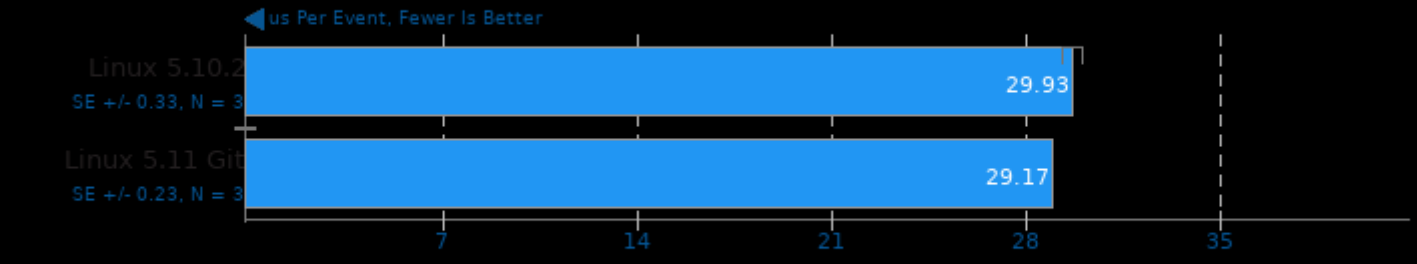
Test: Create Threads



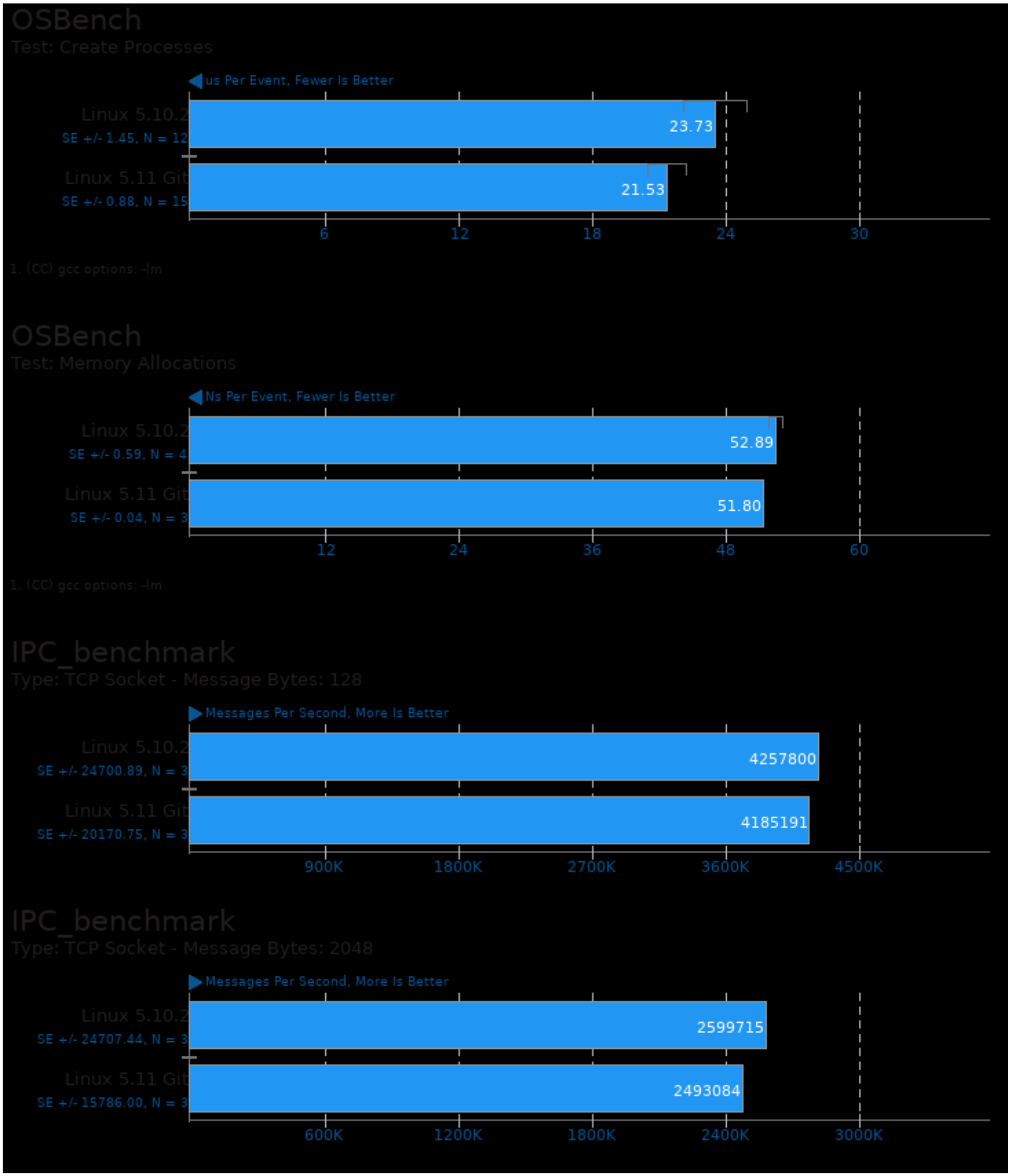
1. (CC) gcc options: -lm

OSBench

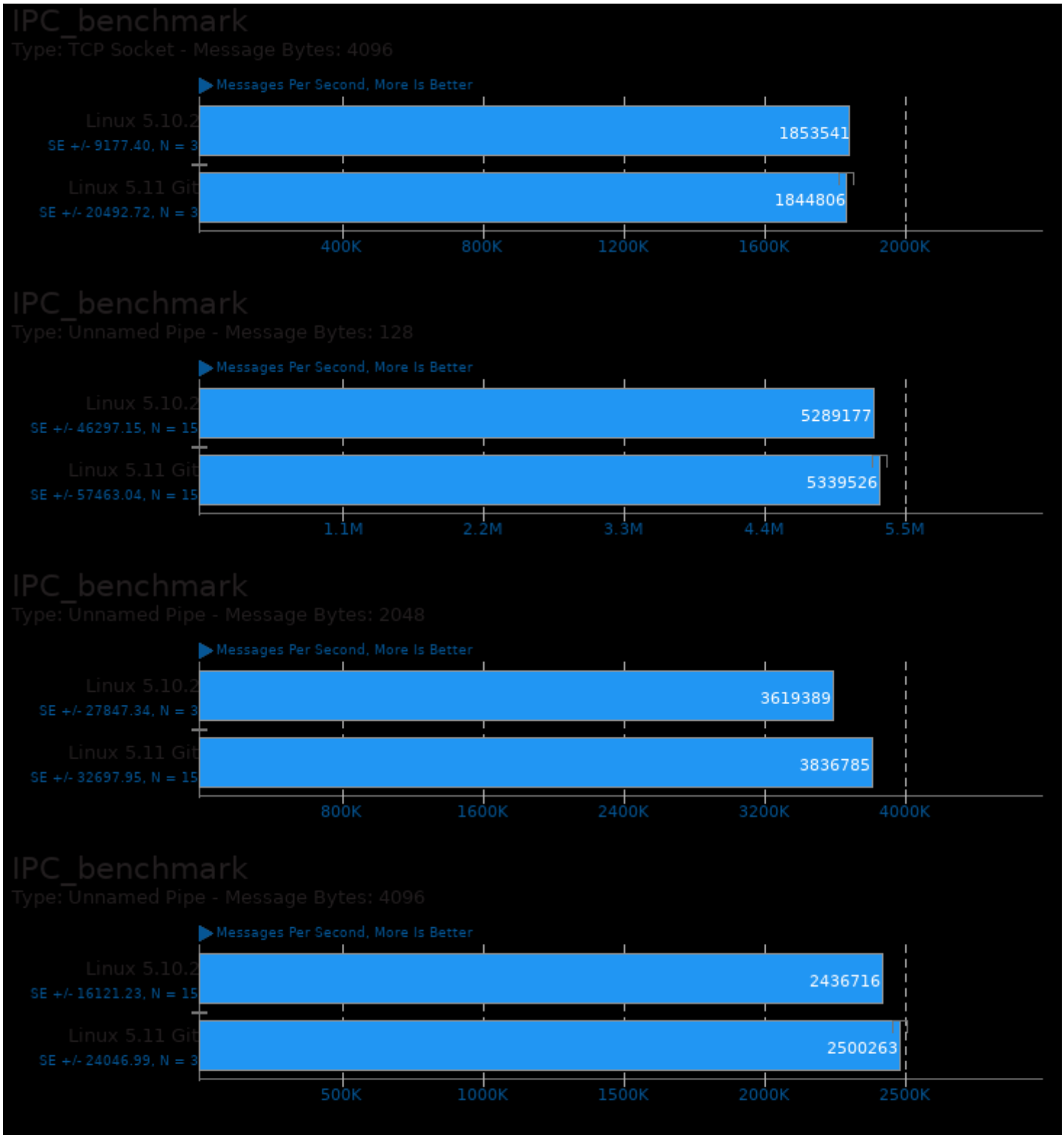
Test: Launch Programs

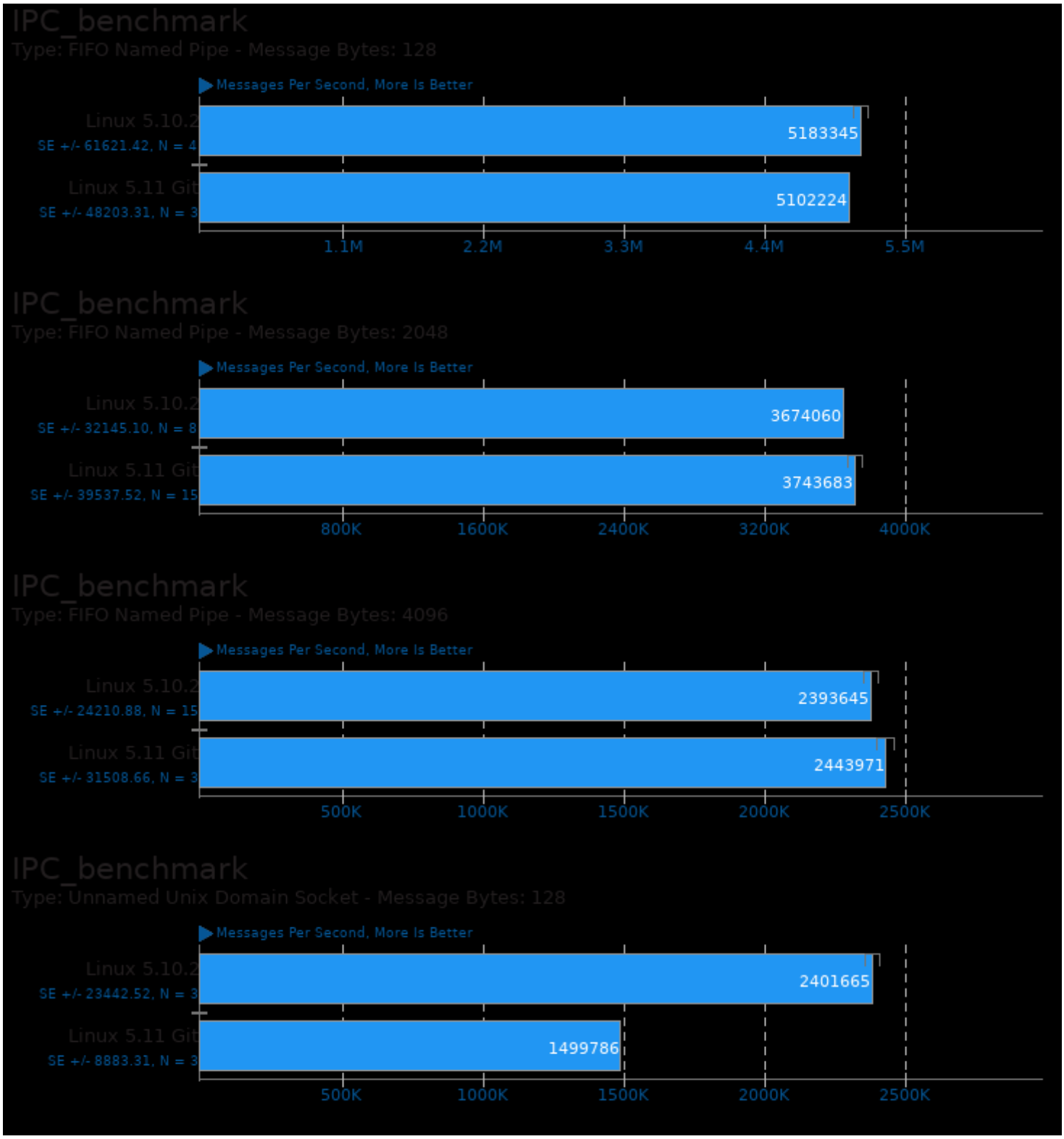


1. (CC) gcc options: -lm


OSBench
Test: Create Processes
us Per Event, Fewer Is Better
Linux 5.10.2
SE +/- 1.45, N = 12
23.73
Linux 5.11 Git
SE +/- 0.88, N = 15
21.53
6
12
18
24
30
1. (CC) gcc options: -lm
OSBench
Test: Memory Allocations
Ns Per Event, Fewer Is Better
Linux 5.10.2
SE +/- 0.59, N = 4
52.89
Linux 5.11 Git
SE +/- 0.04, N = 3
51.80
12
24
36
48
60
1. (CC) gcc options: -lm
IPC_benchmark
Type: TCP Socket - Message Bytes: 128
Messages Per Second, More Is Better
Linux 5.10.2
SE +/- 24700.89, N = 3
4257800
Linux 5.11 Git
SE +/- 20170.75, N = 3
4185191
900K
1800K
2700K
3600K
4500K
IPC_benchmark
Type: TCP Socket - Message Bytes: 2048
Messages Per Second, More Is Better
Linux 5.10.2
SE +/- 24707.44, N = 3
2599715
Linux 5.11 Git
SE +/- 15786.00, N = 3
2493084
600K
1200K
1800K
2400K
3000K

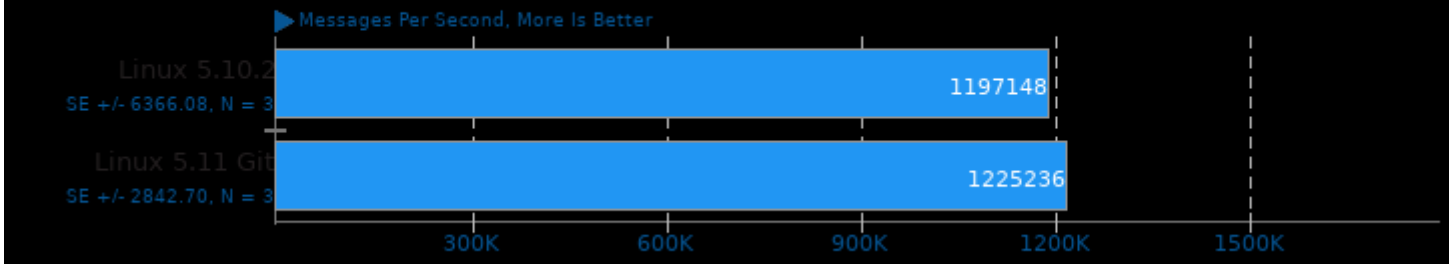
Ryzen 9 5900X LInux 5.11




IPC_benchmark
Type: FIFO Named Pipe - Message Bytes: 128
Messages Per Second, More Is Better
Linux 5.10.2
SE +/- 61621.42, N = 4
5183345
Linux 5.11 Git
SE +/- 48203.31, N = 3
5102224
1.1M
2.2M
3.3M
4.4M
5.5M
IPC_benchmark
Type: FIFO Named Pipe - Message Bytes: 2048
Messages Per Second, More Is Better
Linux 5.10.2
SE +/- 32145.10, N = 8
3674060
Linux 5.11 Git
SE +/- 39537.52, N = 15
3743683
800K
1600K
2400K
3200K
4000K
IPC_benchmark
Type: FIFO Named Pipe - Message Bytes: 4096
Messages Per Second, More Is Better
Linux 5.10.2
SE +/- 24210.88, N = 15
2393645
Linux 5.11 Git
SE +/- 31508.66, N = 3
2443971
500K
1000K
1500K
2000K
2500K
IPC_benchmark
Type: Unnamed Unix Domain Socket - Message Bytes: 128
Messages Per Second, More Is Better
Linux 5.10.2
SE +/- 23442.52, N = 3
2401665
Linux 5.11 Git
SE +/- 8883.31, N = 3
1499786
500K
1000K
1500K
2000K
2500K

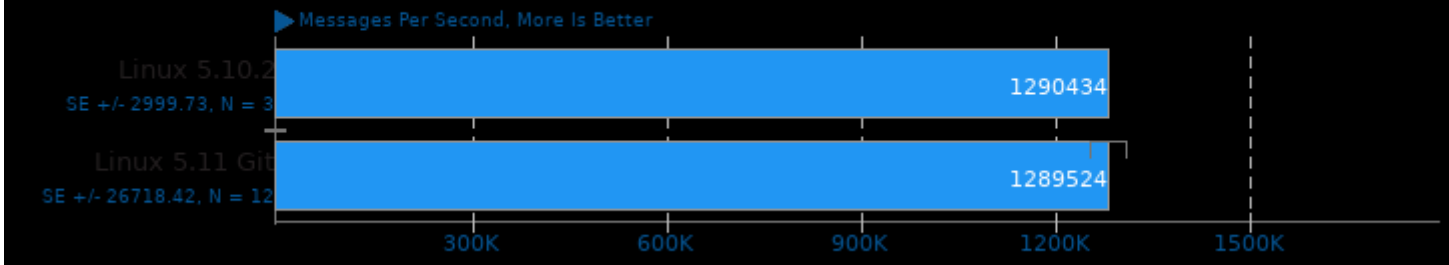
IPC_benchmark

Type: Unnamed Unix Domain Socket - Message Bytes: 2048

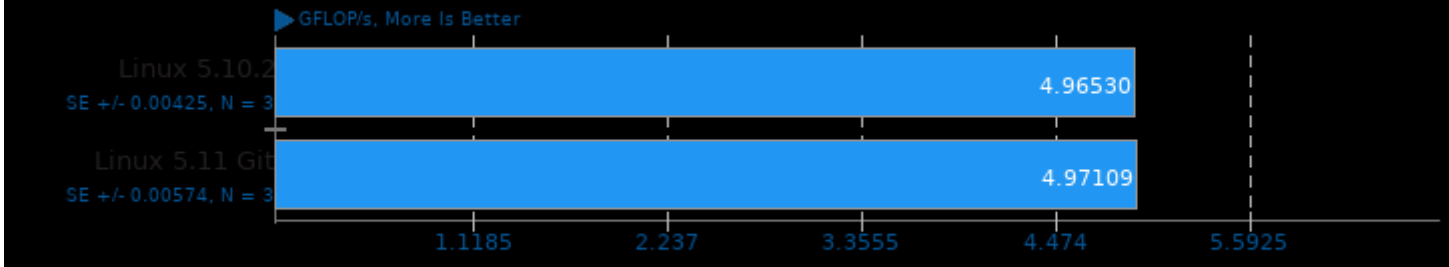


IPC_benchmark

Type: Unnamed Unix Domain Socket - Message Bytes: 4096



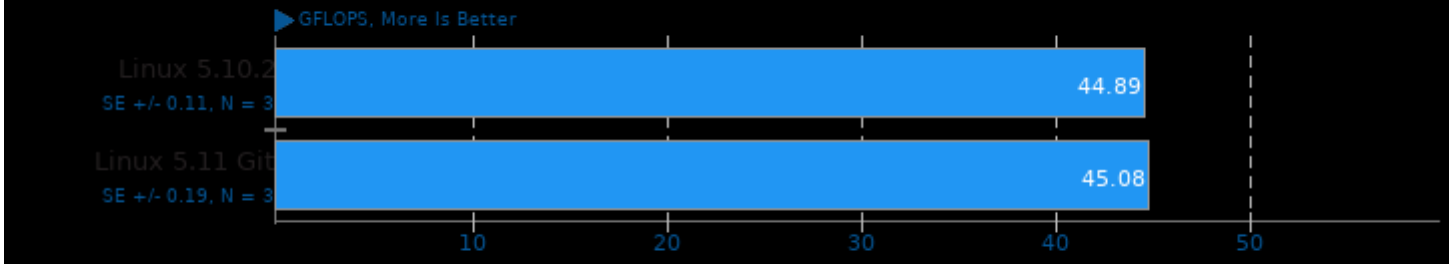
High Performance Conjugate Gradient 3.1



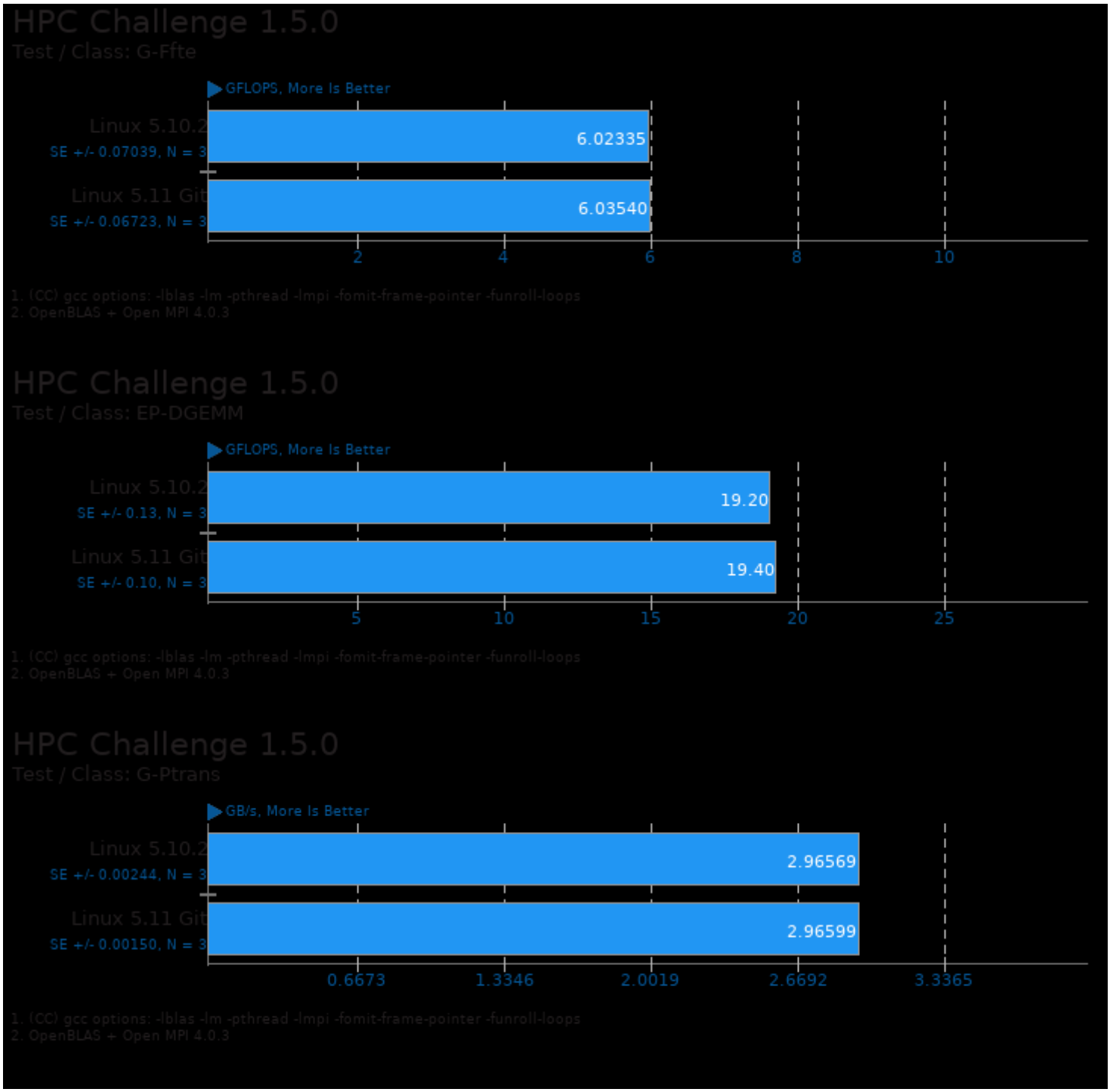
1. (CXX) g++ options: -O3 -ffast-math -ftree-vectorize -pthread -lmpi_cxx -lmpi

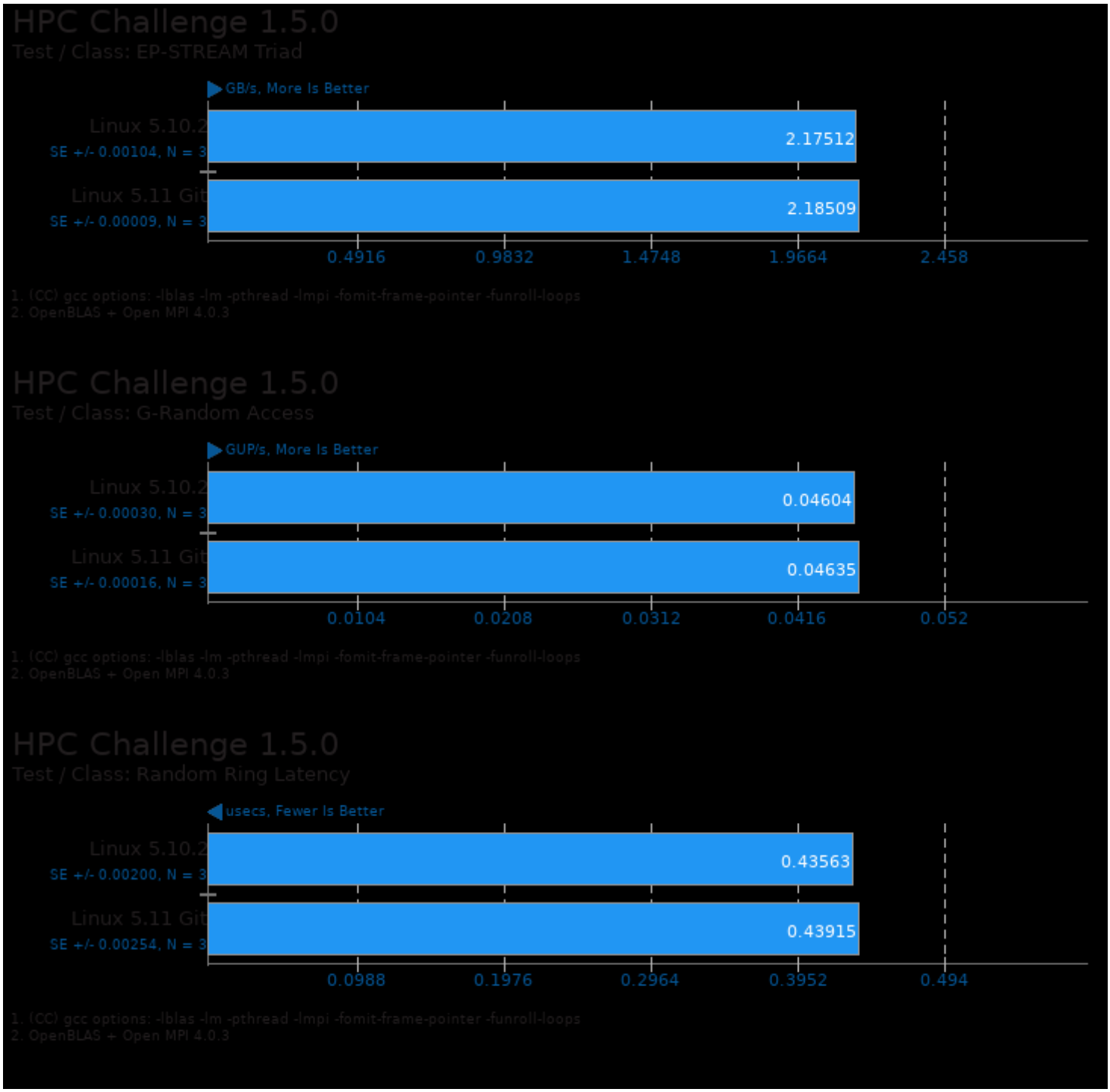
HPC Challenge 1.5.0

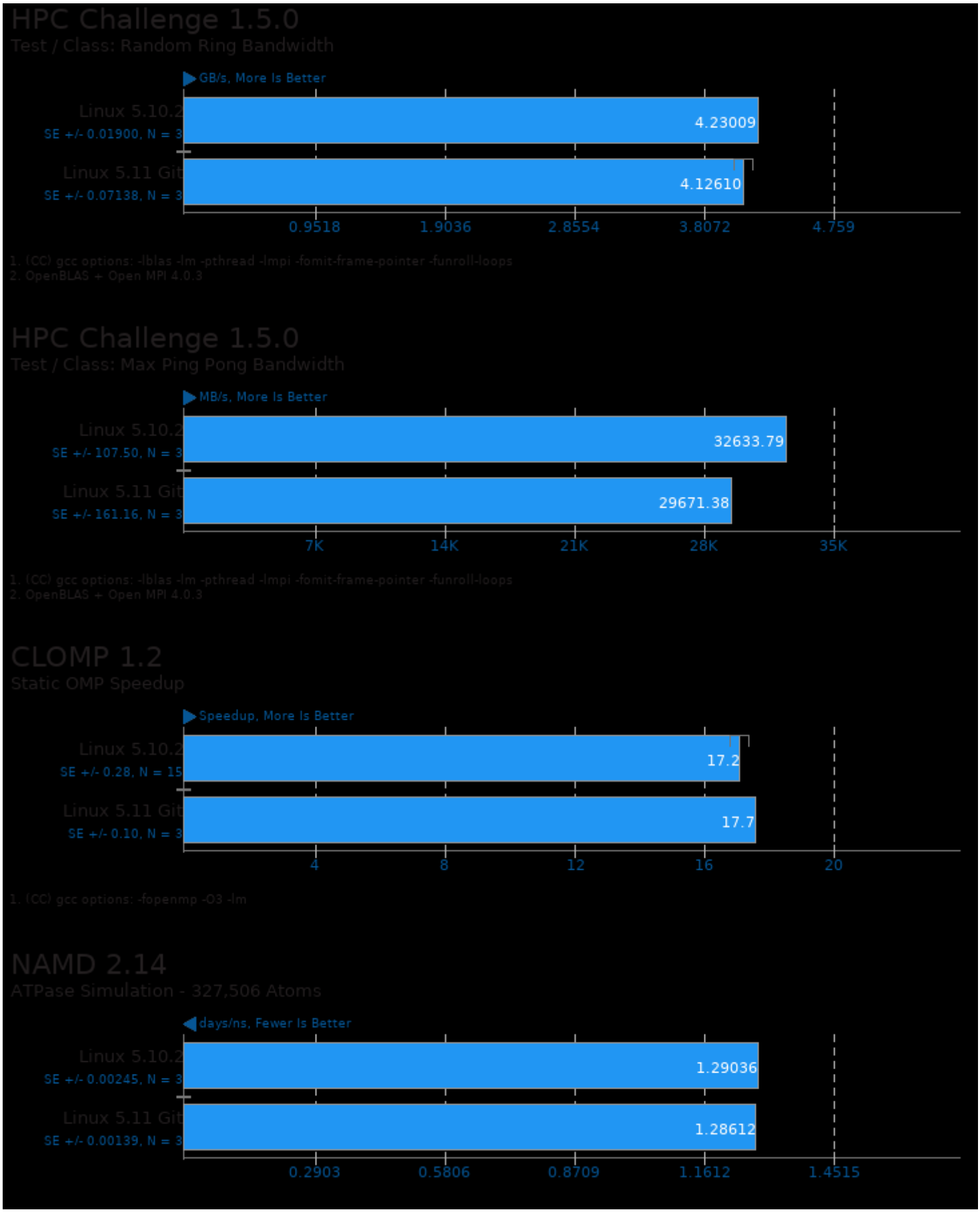
Test / Class: G-HPL



1. (CC) gcc options: -lblas -lm -pthread -lmpi -fomit-frame-pointer -funroll-loops
2. OpenBLAS + Open MPI 4.0.3

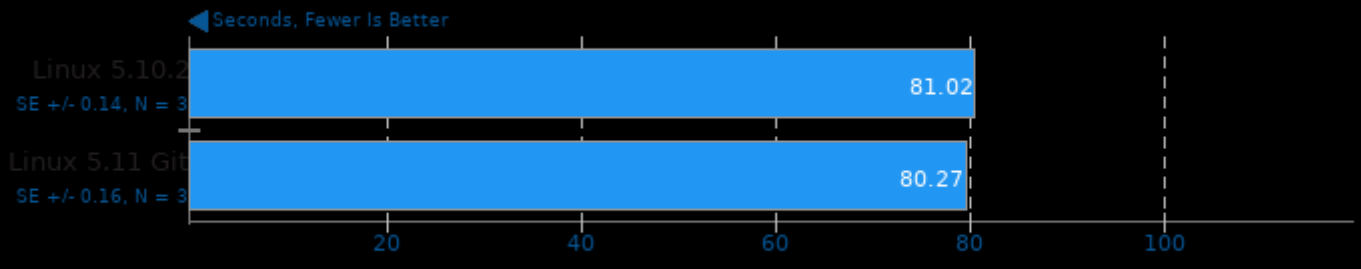

HPC Challenge 1.5.0
Test / Class: G-Ffte
GFLOPS, More Is Better
Linux 5.10.2
SE +/- 0.07039, N = 3
6.02335
Linux 5.11 Git
SE +/- 0.06723, N = 3
6.03540
2
4
6
8
10
1. (CC) gcc options: -lblas -lm -pthread -lmpi -fomit-frame-pointer -funroll-loops
2. OpenBLAS + Open MPI 4.0.3
HPC Challenge 1.5.0
Test / Class: EP-DGEMM
GFLOPS, More Is Better
Linux 5.10.2
SE +/- 0.13, N = 3
19.20
Linux 5.11 Git
SE +/- 0.10, N = 3
19.40
5
10
15
20
25
1. (CC) gcc options: -lblas -lm -pthread -lmpi -fomit-frame-pointer -funroll-loops
2. OpenBLAS + Open MPI 4.0.3
HPC Challenge 1.5.0
Test / Class: G-Ptrans
GB/s, More Is Better
Linux 5.10.2
SE +/- 0.00244, N = 3
2.96569
Linux 5.11 Git
SE +/- 0.00150, N = 3
2.96599
0.6673
1.3346
2.0019
2.6692
3.3365
1. (CC) gcc options: -lblas -lm -pthread -lmpi -fomit-frame-pointer -funroll-loops
2. OpenBLAS + Open MPI 4.0.3


HPC Challenge 1.5.0
Test / Class: EP-STREAM Triad
GB/s, More Is Better
Linux 5.10.2
SE +/- 0.00104, N = 3
2.17512
Linux 5.11 Git
SE +/- 0.00009, N = 3
2.18509
0.4916
0.9832
1.4748
1.9664
2.458
1. (CC) gcc options: -lblas -lm -pthread -lmpi -fomit-frame-pointer -funroll-loops
2. OpenBLAS + Open MPI 4.0.3
HPC Challenge 1.5.0
Test / Class: G-Random Access
GUP/s, More Is Better
Linux 5.10.2
SE +/- 0.00030, N = 3
0.04604
Linux 5.11 Git
SE +/- 0.00016, N = 3
0.04635
0.0104
0.0208
0.0312
0.0416
0.052
1. (CC) gcc options: -lblas -lm -pthread -lmpi -fomit-frame-pointer -funroll-loops
2. OpenBLAS + Open MPI 4.0.3
HPC Challenge 1.5.0
Test / Class: Random Ring Latency
usecs, Fewer Is Better
Linux 5.10.2
SE +/- 0.00200, N = 3
0.43563
Linux 5.11 Git
SE +/- 0.00254, N = 3
0.43915
0.0988
0.1976
0.2964
0.3952
0.494
1. (CC) gcc options: -lblas -lm -pthread -lmpi -fomit-frame-pointer -funroll-loops
2. OpenBLAS + Open MPI 4.0.3


HPC Challenge 1.5.0
Test / Class: Random Ring Bandwidth
GB/s, More Is Better
Linux 5.10.2
SE +/- 0.01900, N = 3
4.23009
Linux 5.11 Git
SE +/- 0.07138, N = 3
4.12610
0.9518
1.9036
2.8554
3.8072
4.759
1. (CC) gcc options: -lblas -lm -pthread -lmpi -fomit-frame-pointer -funroll-loops
2. OpenBLAS + Open MPI 4.0.3
HPC Challenge 1.5.0
Test / Class: Max Ping Pong Bandwidth
MB/s, More Is Better
Linux 5.10.2
SE +/- 107.50, N = 3
32633.79
Linux 5.11 Git
SE +/- 161.16, N = 3
29671.38
7K
14K
21K
28K
35K
1. (CC) gcc options: -lblas -lm -pthread -lmpi -fomit-frame-pointer -funroll-loops
2. OpenBLAS + Open MPI 4.0.3
CLOMP 1.2
Static OMP Speedup
Speedup, More Is Better
Linux 5.10.2
SE +/- 0.28, N = 15
17.2
Linux 5.11 Git
SE +/- 0.10, N = 3
17.7
4
8
12
16
20
1. (CC) gcc options: -fopenmp -O3 -lm
NAMD 2.14
ATPase Simulation - 327,506 Atoms
days/ns, Fewer Is Better
Linux 5.10.2
SE +/- 0.00245, N = 3
1.29036
Linux 5.11 Git
SE +/- 0.00139, N = 3
1.28612
0.2903
0.5806
0.8709
1.1612
1.4515

Timed HMMer Search 3.3.1

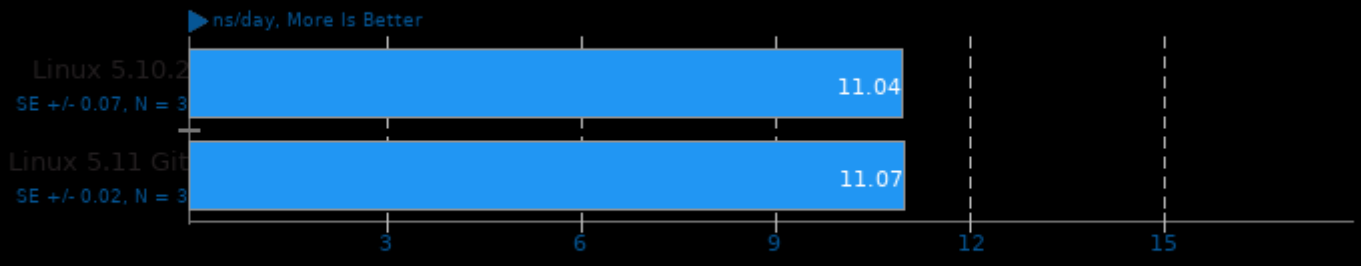
Pfam Database Search



1. (CC) gcc options: -O3 -pthread -lhmmer -leasel -lm

LAMMPS Molecular Dynamics Simulator 29Oct2020

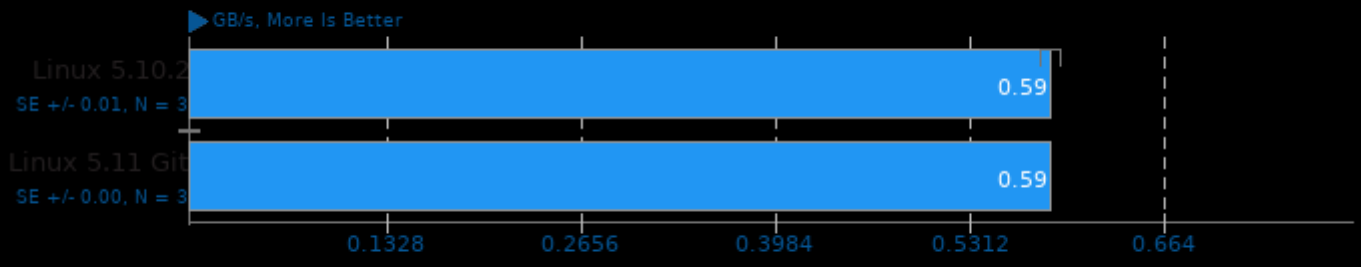
Model: Rhodopsin Protein



1. (CXX) g++ options: -O3 -pthread -lm

simdjson 0.7.1

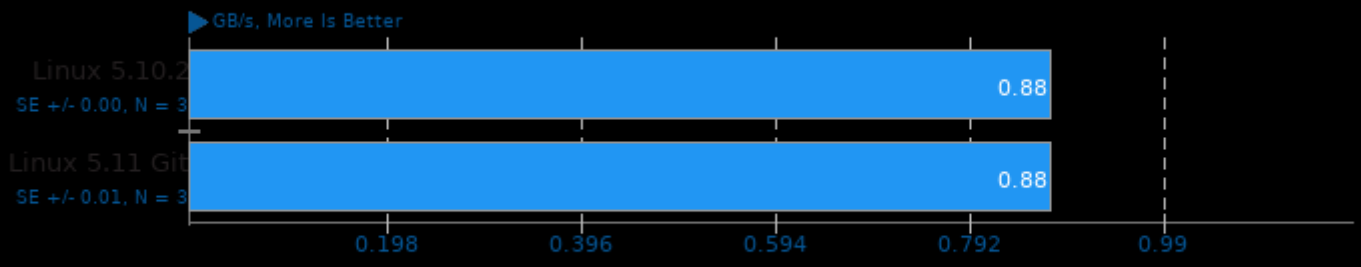
Throughput Test: LargeRandom



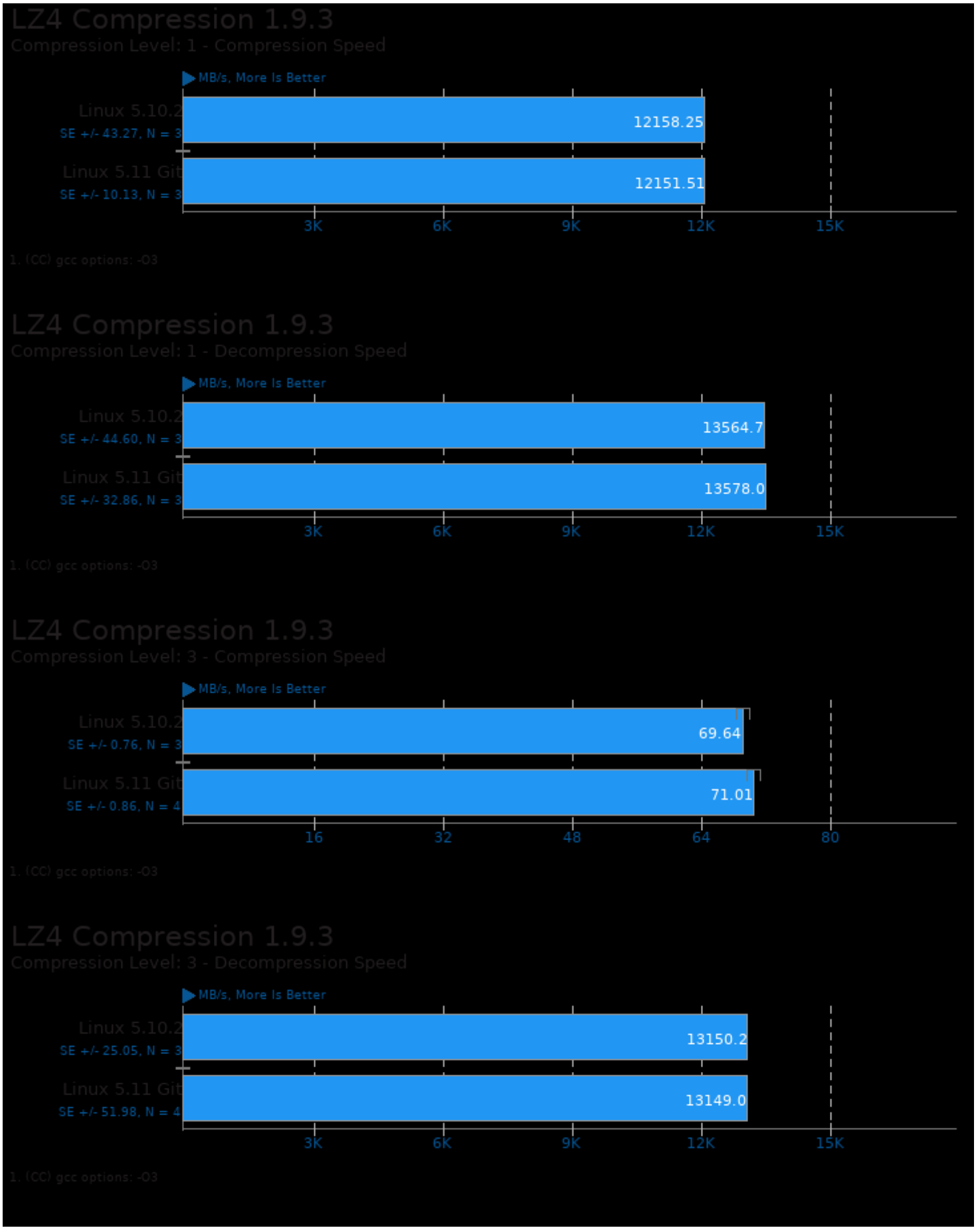
1. (CXX) g++ options: -O3 -pthread

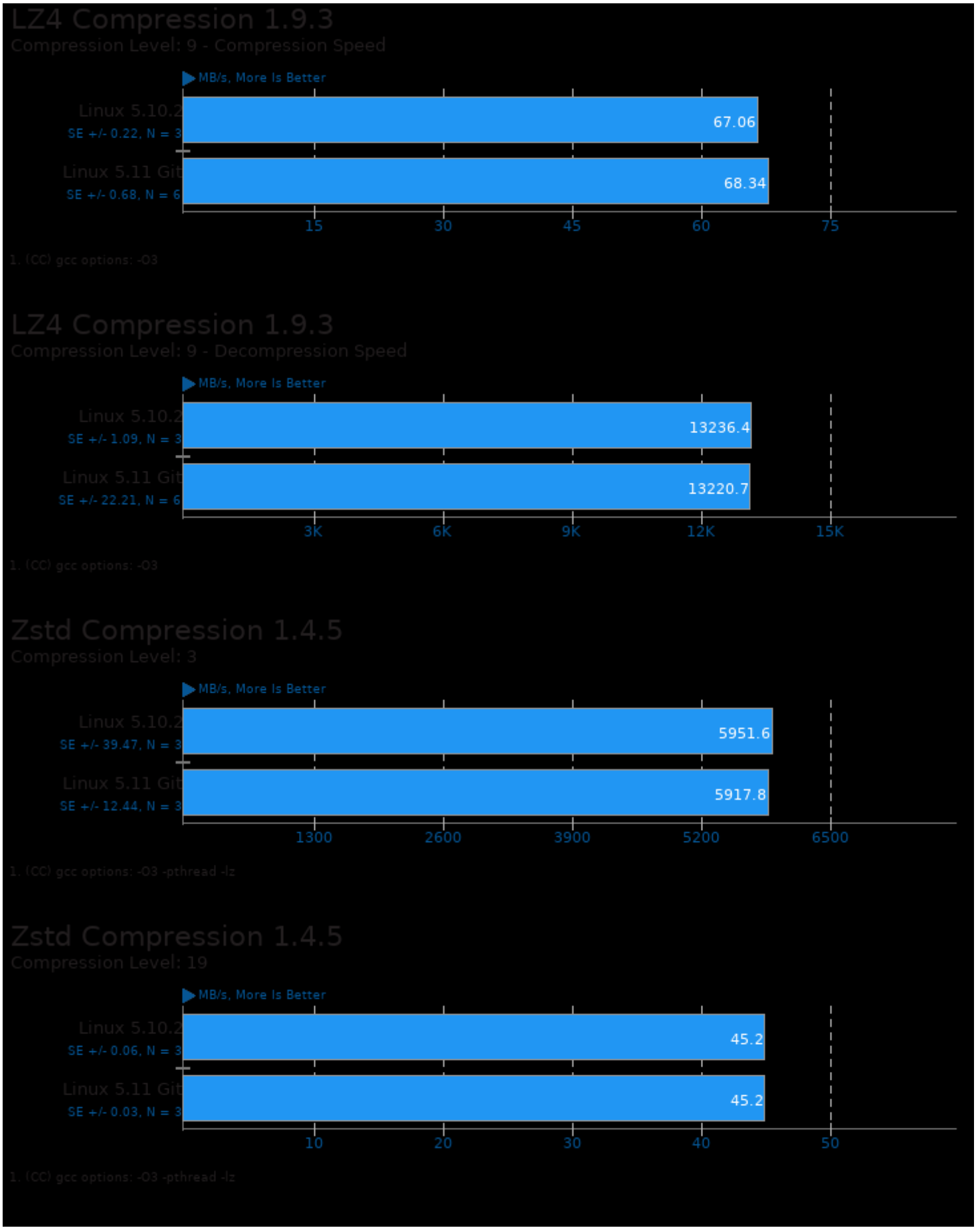
simdjson 0.7.1

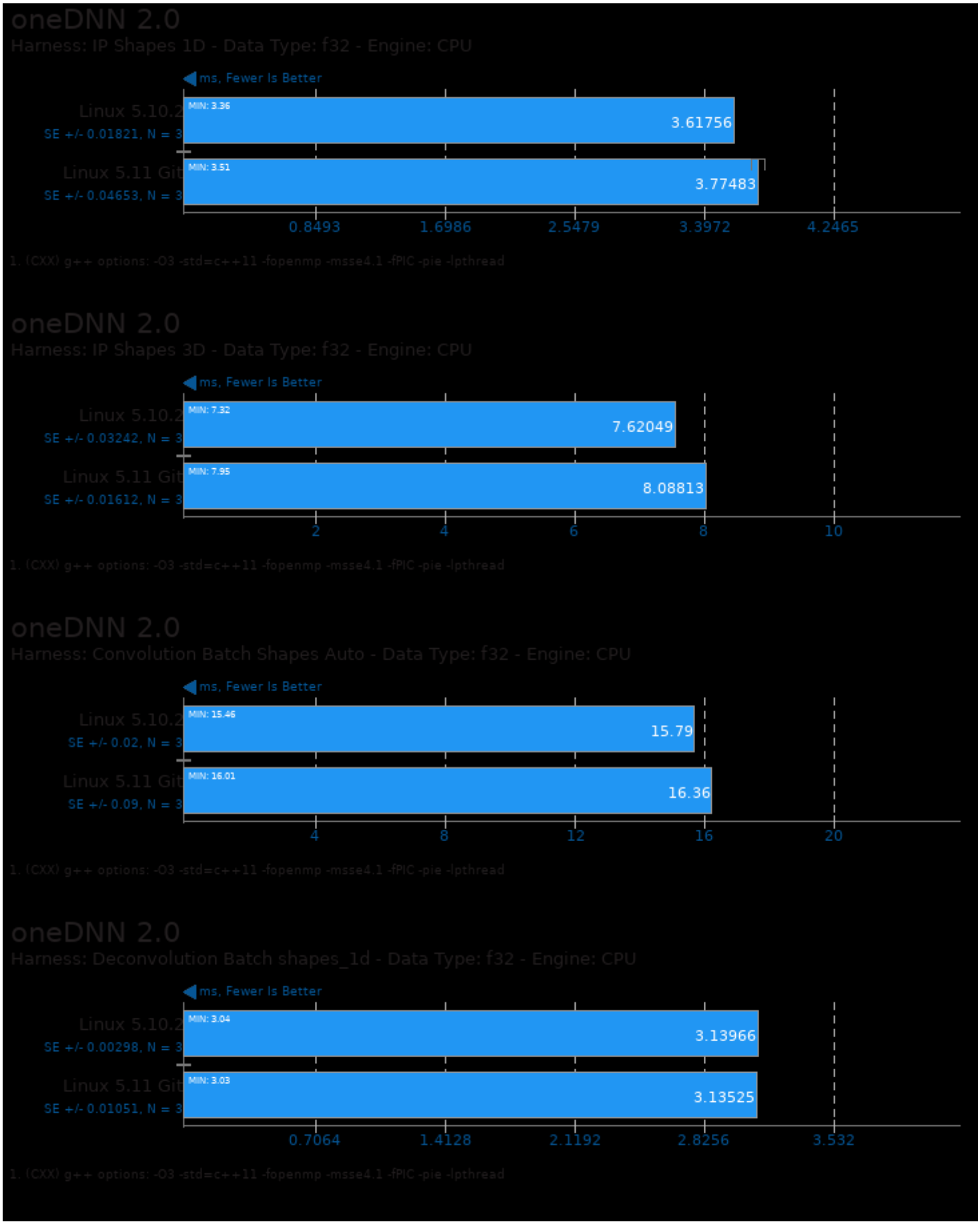
Throughput Test: DistinctUserID

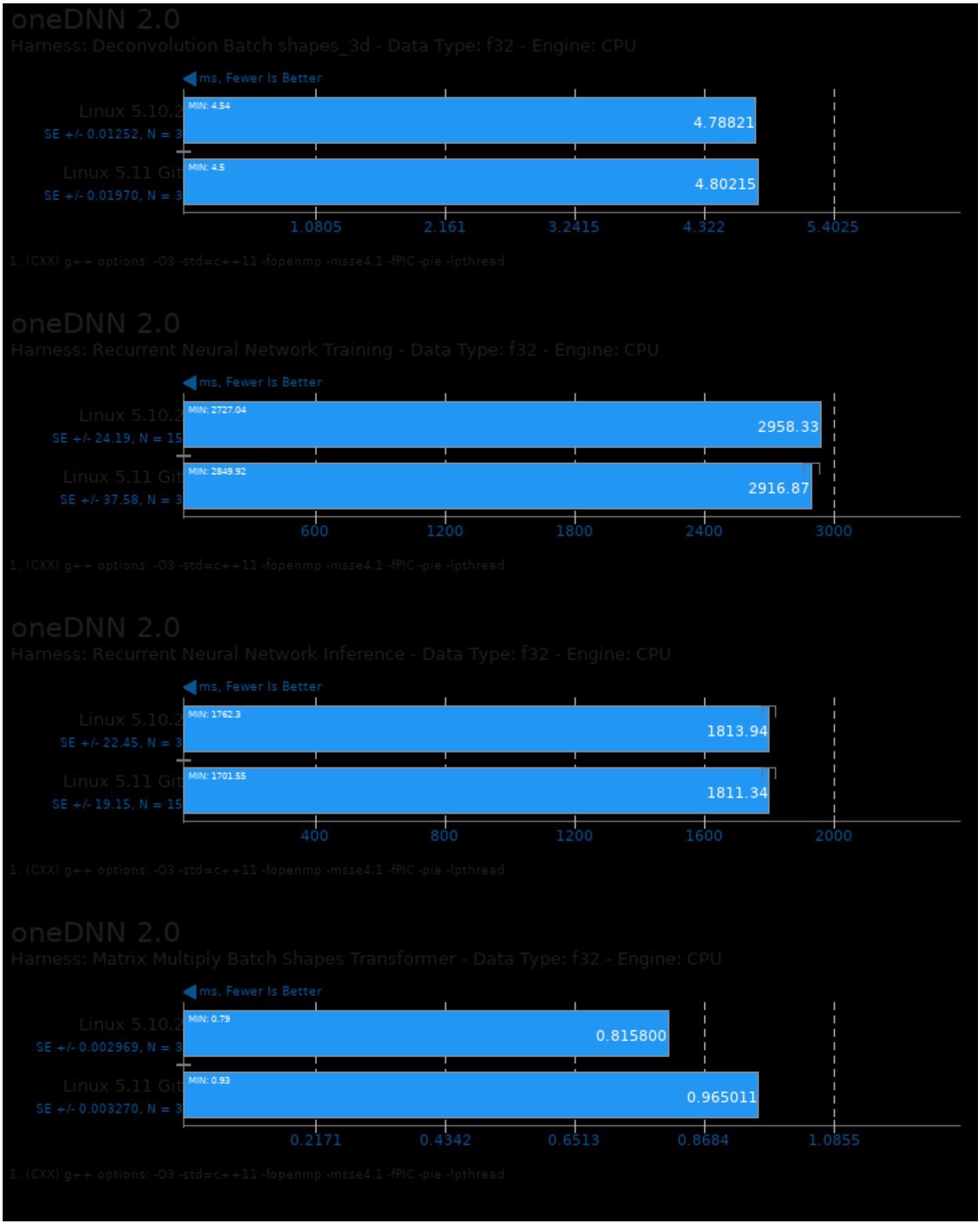


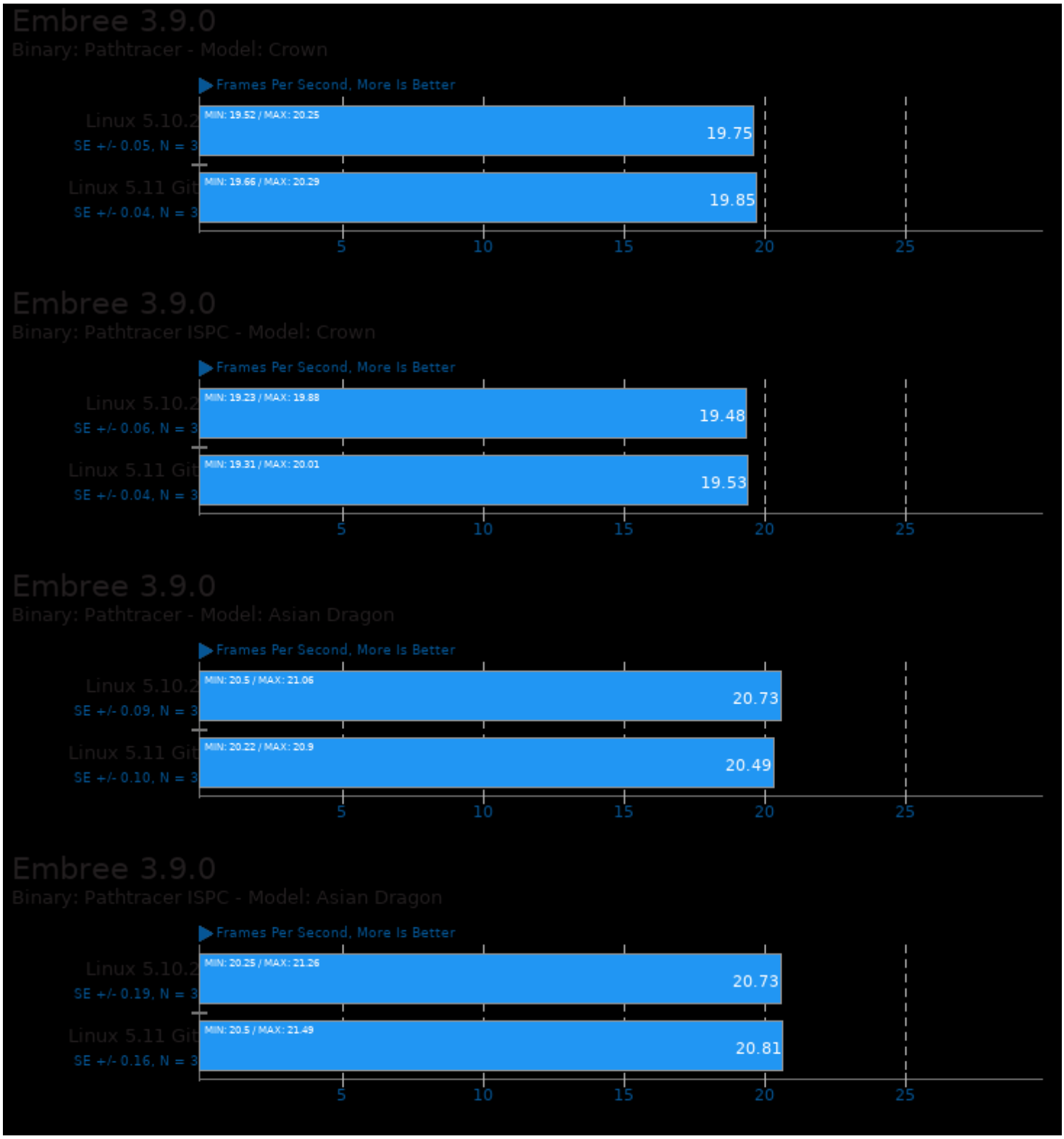
1. (CXX) g++ options: -O3 -pthread

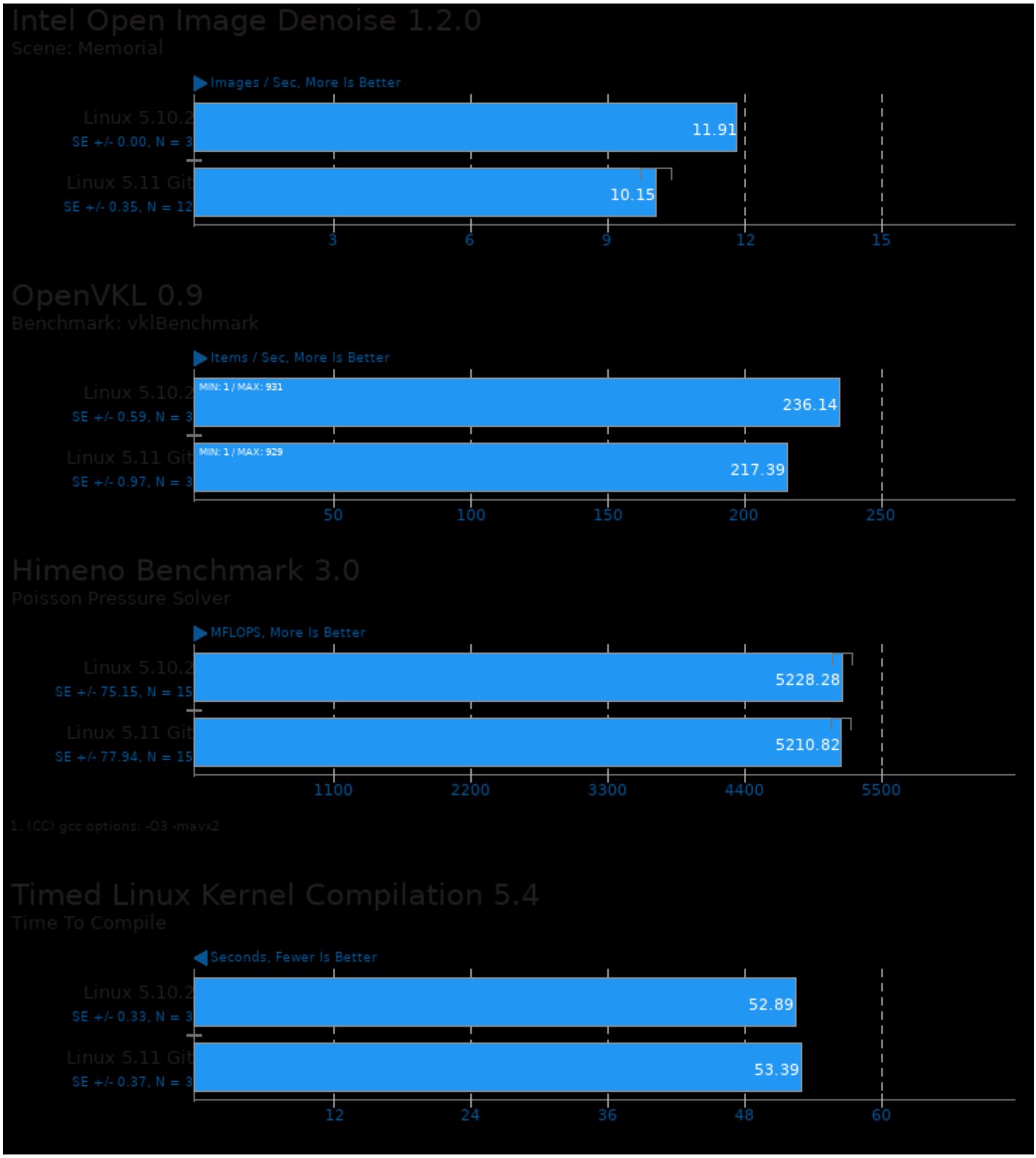

LZ4 Compression 1.9.3
Compression Level: 1 - Compression Speed
MB/s, More Is Better
Linux 5.10.2
SE +/- 43.27, N = 3
12158.25
Linux 5.11 Git
SE +/- 10.13, N = 3
12151.51
3K
6K
9K
12K
15K
1. (CC) gcc options: -O3
LZ4 Compression 1.9.3
Compression Level: 1 - Decompression Speed
MB/s, More Is Better
Linux 5.10.2
SE +/- 44.60, N = 3
13564.7
Linux 5.11 Git
SE +/- 32.86, N = 3
13578.0
3K
6K
9K
12K
15K
1. (CC) gcc options: -O3
LZ4 Compression 1.9.3
Compression Level: 3 - Compression Speed
MB/s, More Is Better
Linux 5.10.2
SE +/- 0.76, N = 3
69.64
Linux 5.11 Git
SE +/- 0.86, N = 4
71.01
16
32
48
64
80
1. (CC) gcc options: -O3
LZ4 Compression 1.9.3
Compression Level: 3 - Decompression Speed
MB/s, More Is Better
Linux 5.10.2
SE +/- 25.05, N = 3
13150.2
Linux 5.11 Git
SE +/- 51.98, N = 4
13149.0
3K
6K
9K
12K
15K
1. (CC) gcc options: -O3

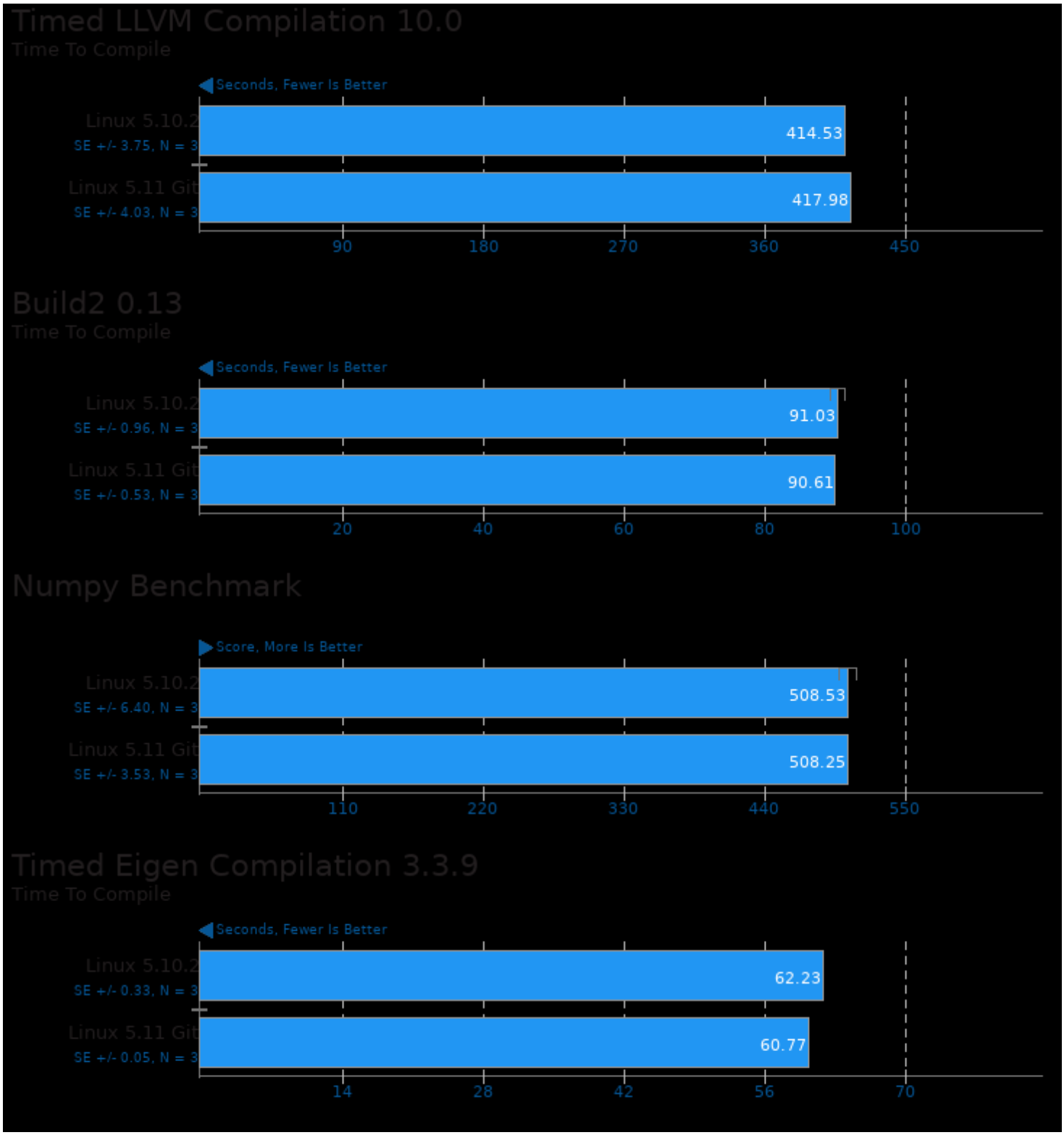

LZ4 Compression 1.9.3
Compression Level: 9 - Compression Speed
MB/s, More Is Better
Linux 5.10.2
SE +/- 0.22, N = 3
67.06
Linux 5.11 Git
SE +/- 0.68, N = 6
68.34
15
30
45
60
75
1. (CC) gcc options: -O3
LZ4 Compression 1.9.3
Compression Level: 9 - Decompression Speed
MB/s, More Is Better
Linux 5.10.2
SE +/- 1.09, N = 3
13236.4
Linux 5.11 Git
SE +/- 22.21, N = 6
13220.7
3K
6K
9K
12K
15K
1. (CC) gcc options: -O3
Zstd Compression 1.4.5
Compression Level: 3
MB/s, More Is Better
Linux 5.10.2
SE +/- 39.47, N = 3
5951.6
Linux 5.11 Git
SE +/- 12.44, N = 3
5917.8
1300
2600
3900
5200
6500
1. (CC) gcc options: -O3 -pthread -lz
Zstd Compression 1.4.5
Compression Level: 19
MB/s, More Is Better
Linux 5.10.2
SE +/- 0.06, N = 3
45.2
Linux 5.11 Git
SE +/- 0.03, N = 3
45.2
10
20
30
40
50
1. (CC) gcc options: -O3 -pthread -lz


oneDNN 2.0
Harness: IP Shapes 1D - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
Linux 5.10.2
SE +/- 0.01821, N = 3
MIN: 3.36
3.61756
Linux 5.11 Git
SE +/- 0.04653, N = 3
MIN: 3.51
3.77483
0.8493
1.6986
2.5479
3.3972
4.2465
1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread
oneDNN 2.0
Harness: IP Shapes 3D - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
Linux 5.10.2
SE +/- 0.03242, N = 3
MIN: 7.32
7.62049
Linux 5.11 Git
SE +/- 0.01612, N = 3
MIN: 7.95
8.08813
2
4
6
8
10
1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread
oneDNN 2.0
Harness: Convolution Batch Shapes Auto - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
Linux 5.10.2
SE +/- 0.02, N = 3
MIN: 15.46
15.79
Linux 5.11 Git
SE +/- 0.09, N = 3
MIN: 16.01
16.36
4
8
12
16
20
1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread
oneDNN 2.0
Harness: Deconvolution Batch shapes_1d - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
Linux 5.10.2
SE +/- 0.00298, N = 3
MIN: 3.04
3.13966
Linux 5.11 Git
SE +/- 0.01051, N = 3
MIN: 3.03
3.13525
0.7064
1.4128
2.1192
2.8256
3.532
1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread


oneDNN 2.0
Harness: Deconvolution Batch shapes_3d - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
Linux 5.10.2
SE +/- 0.01252, N = 3
MIN: 4.54
4.78821
Linux 5.11 Git
SE +/- 0.01970, N = 3
MIN: 4.5
4.80215
1.0805
2.161
3.2415
4.322
5.4025
1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread
oneDNN 2.0
Harness: Recurrent Neural Network Training - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
Linux 5.10.2
SE +/- 24.19, N = 15
MIN: 2727.04
2958.33
Linux 5.11 Git
SE +/- 37.58, N = 3
MIN: 2849.92
2916.87
600
1200
1800
2400
3000
1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread
oneDNN 2.0
Harness: Recurrent Neural Network Inference - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
Linux 5.10.2
SE +/- 22.45, N = 3
MIN: 1762.3
1813.94
Linux 5.11 Git
SE +/- 19.15, N = 15
MIN: 1701.55
1811.34
400
800
1200
1600
2000
1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread
oneDNN 2.0
Harness: Matrix Multiply Batch Shapes Transformer - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
Linux 5.10.2
SE +/- 0.002969, N = 3
MIN: 0.79
0.815800
Linux 5.11 Git
SE +/- 0.003270, N = 3
MIN: 0.93
0.965011
0.2171
0.4342
0.6513
0.8684
1.0855
1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread

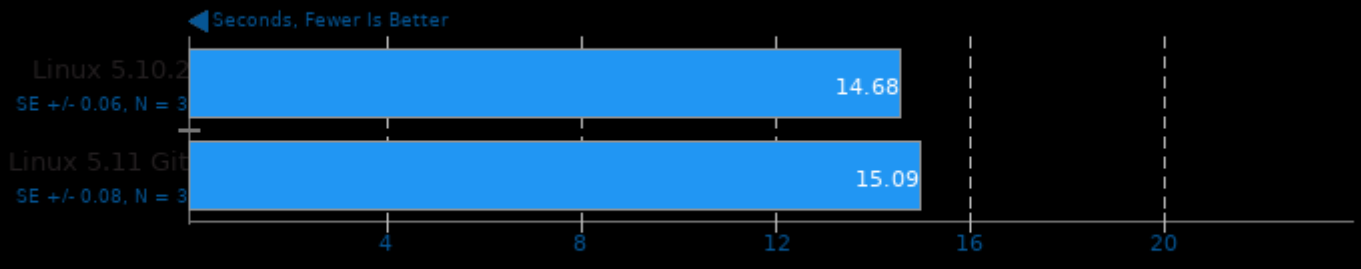

Embree 3.9.0
Binary: Pathtracer - Model: Crown
Frames Per Second, More Is Better
Linux 5.10.2
SE +/- 0.05, N = 3
MIN: 19.52 / MAX: 20.25
19.75
Linux 5.11 Git
SE +/- 0.04, N = 3
MIN: 19.66 / MAX: 20.29
19.85
5
10
15
20
25
Embree 3.9.0
Binary: Pathtracer ISPC - Model: Crown
Frames Per Second, More Is Better
Linux 5.10.2
SE +/- 0.06, N = 3
MIN: 19.23 / MAX: 19.88
19.48
Linux 5.11 Git
SE +/- 0.04, N = 3
MIN: 19.31 / MAX: 20.01
19.53
5
10
15
20
25
Embree 3.9.0
Binary: Pathtracer - Model: Asian Dragon
Frames Per Second, More Is Better
Linux 5.10.2
SE +/- 0.09, N = 3
MIN: 20.5 / MAX: 21.06
20.73
Linux 5.11 Git
SE +/- 0.10, N = 3
MIN: 20.22 / MAX: 20.9
20.49
5
10
15
20
25
Embree 3.9.0
Binary: Pathtracer ISPC - Model: Asian Dragon
Frames Per Second, More Is Better
Linux 5.10.2
SE +/- 0.19, N = 3
MIN: 20.25 / MAX: 21.26
20.73
Linux 5.11 Git
SE +/- 0.16, N = 3
MIN: 20.5 / MAX: 21.49
20.81
5
10
15
20
25


Intel Open Image Denoise 1.2.0
Scene: Memorial
Images / Sec, More Is Better
Linux 5.10.2
SE +/- 0.00, N = 3
11.91
Linux 5.11 Git
SE +/- 0.35, N = 12
10.15
3
6
9
12
15
OpenVKL 0.9
Benchmark: vklBenchmark
Items / Sec, More Is Better
Linux 5.10.2
SE +/- 0.59, N = 3
MIN: 1 / MAX: 931
236.14
Linux 5.11 Git
SE +/- 0.97, N = 3
MIN: 1 / MAX: 929
217.39
50
100
150
200
250
Himeno Benchmark 3.0
Poisson Pressure Solver
MFLOPS, More Is Better
Linux 5.10.2
SE +/- 75.15, N = 15
5228.28
Linux 5.11 Git
SE +/- 77.94, N = 15
5210.82
1100
2200
3300
4400
5500
1. (CC) gcc options: -O3 -mavx2
Timed Linux Kernel Compilation 5.4
Time To Compile
Seconds, Fewer Is Better
Linux 5.10.2
SE +/- 0.33, N = 3
52.89
Linux 5.11 Git
SE +/- 0.37, N = 3
53.39
12
24
36
48
60


Timed LLVM Compilation 10.0
Time To Compile
Seconds, Fewer Is Better
Linux 5.10.2
SE +/- 3.75, N = 3
414.53
Linux 5.11 Git
SE +/- 4.03, N = 3
417.98
90
180
270
360
450
Build2 0.13
Time To Compile
Seconds, Fewer Is Better
Linux 5.10.2
SE +/- 0.96, N = 3
91.03
Linux 5.11 Git
SE +/- 0.53, N = 3
90.61
20
40
60
80
100
Numpy Benchmark
Score, More Is Better
Linux 5.10.2
SE +/- 6.40, N = 3
508.53
Linux 5.11 Git
SE +/- 3.53, N = 3
508.25
110
220
330
440
550
Timed Eigen Compilation 3.3.9
Time To Compile
Seconds, Fewer Is Better
Linux 5.10.2
SE +/- 0.33, N = 3
62.23
Linux 5.11 Git
SE +/- 0.05, N = 3
60.77
14
28
42
56
70

Ogg Audio Encoding 1.3.4

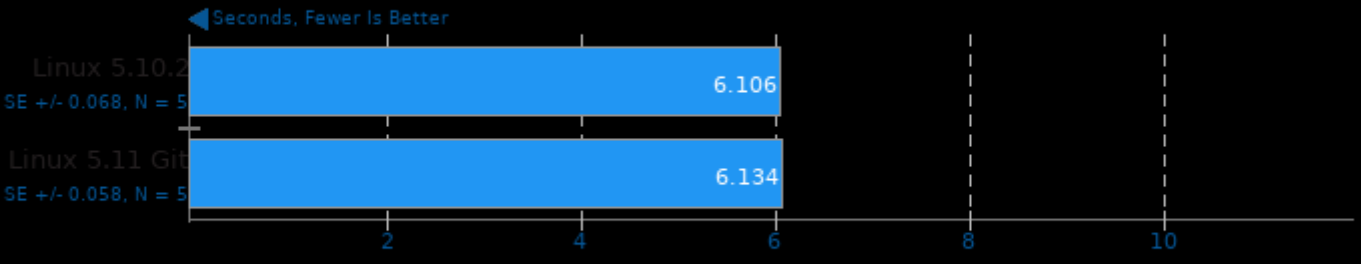
WAV To Ogg



1. (CC) gcc options: -O2 -ffast-math -fsigned-char

Opus Codec Encoding 1.3.1

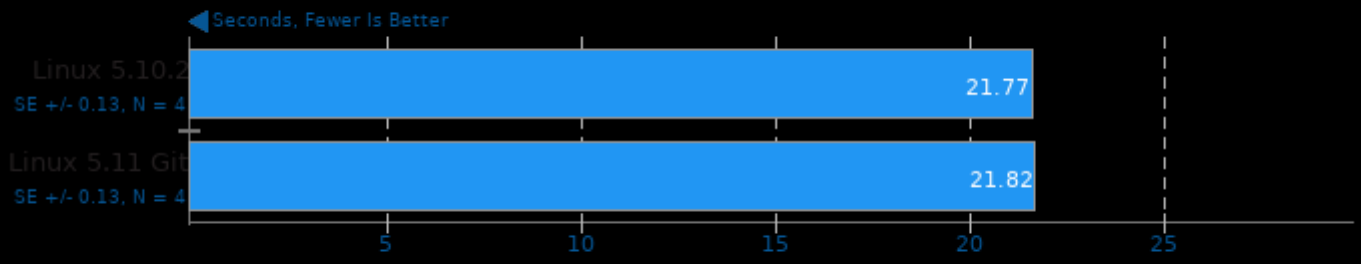
WAV To Opus Encode



1. (CXX) g++ options: -fvisibility=hidden -logg -lm

eSpeak-NG Speech Engine 20200907

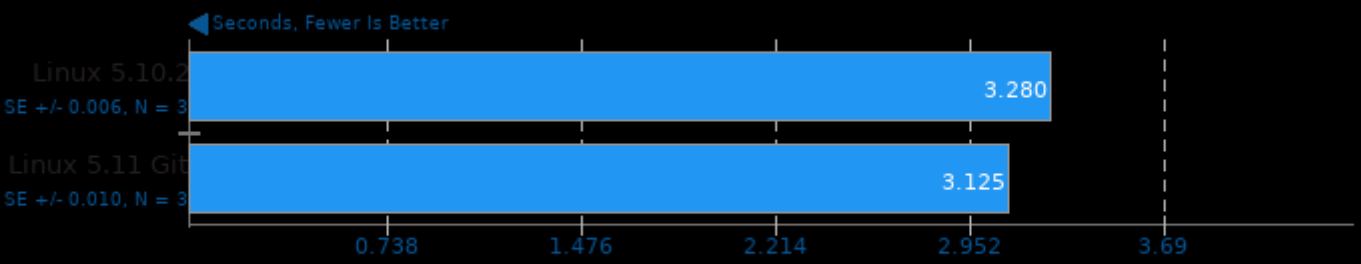
Text-To-Speech Synthesis



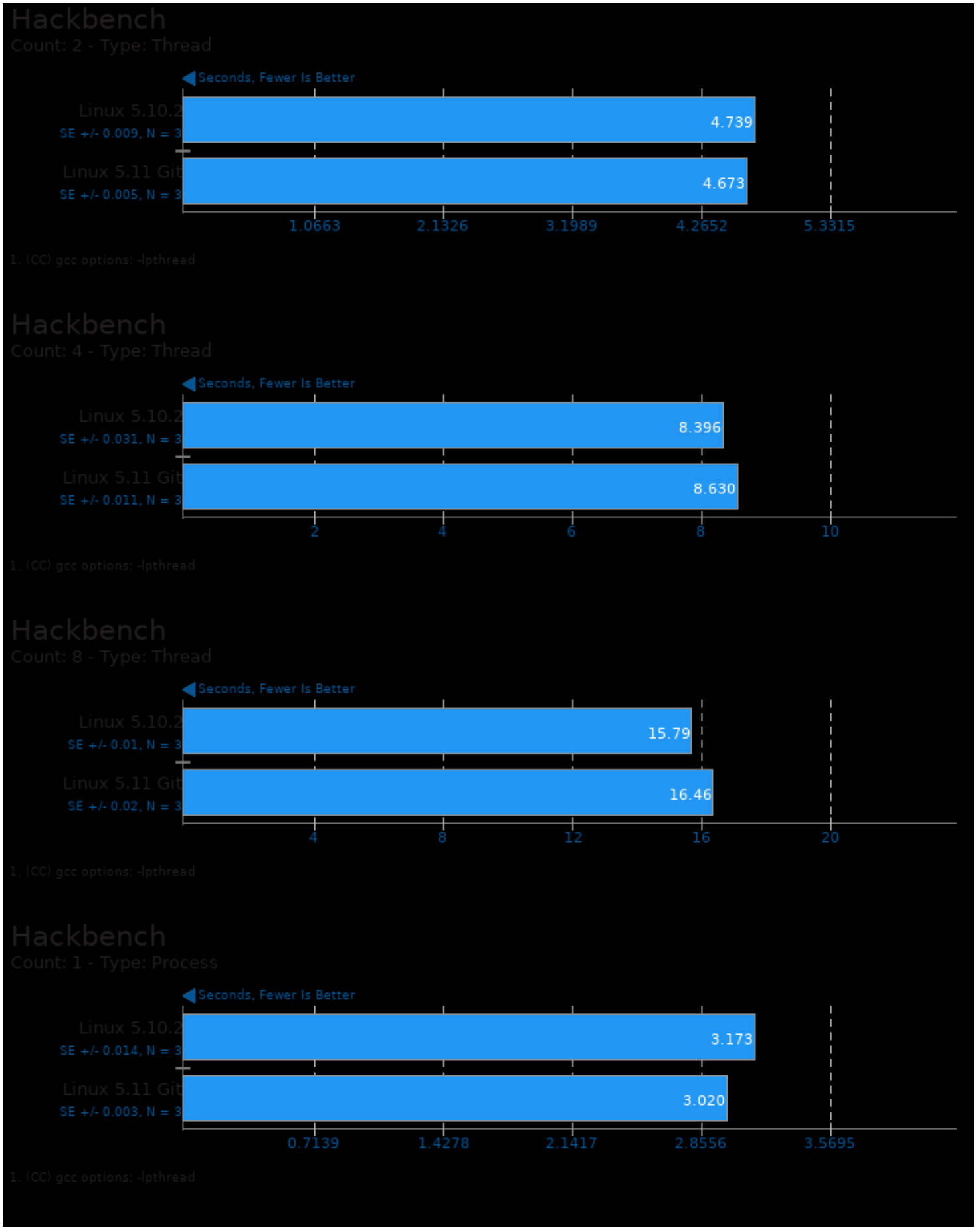
1. (CC) gcc options: -O2 -std=c99

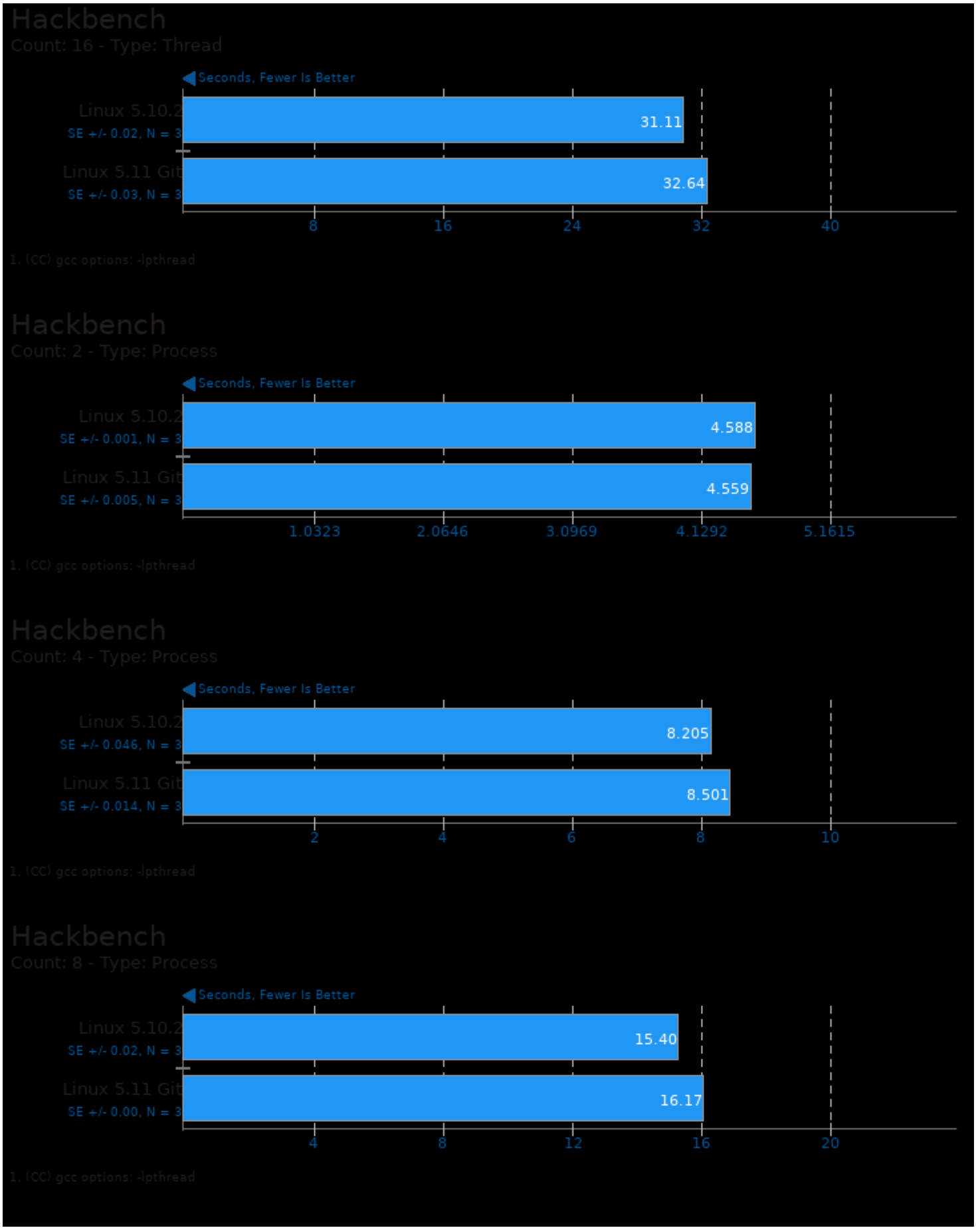
Hackbench

Count: 1 - Type: Thread



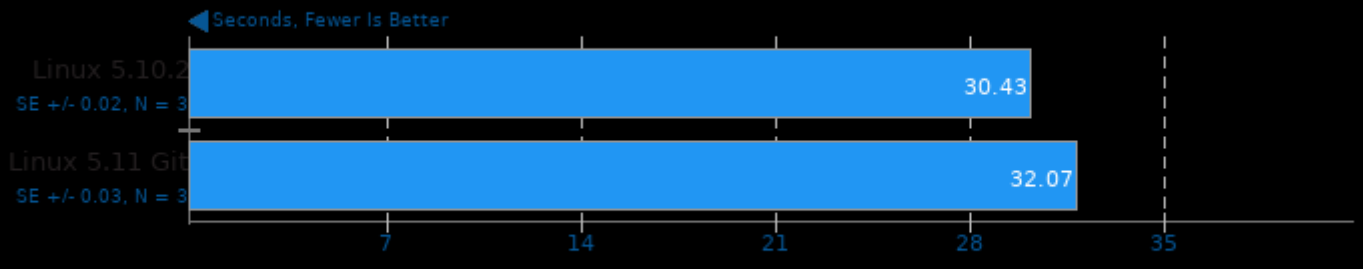
1. (CC) gcc options: -lpthread


Hackbench
Count: 2 - Type: Thread
Seconds, Fewer Is Better
Linux 5.10.2
SE +/- 0.009, N = 3
4.739
Linux 5.11 Git
SE +/- 0.005, N = 3
4.673
1.0663
2.1326
3.1989
4.2652
5.3315
1. (CC) gcc options: -lpthread
Hackbench
Count: 4 - Type: Thread
Seconds, Fewer Is Better
Linux 5.10.2
SE +/- 0.031, N = 3
8.396
Linux 5.11 Git
SE +/- 0.011, N = 3
8.630
2
4
6
8
10
1. (CC) gcc options: -lpthread
Hackbench
Count: 8 - Type: Thread
Seconds, Fewer Is Better
Linux 5.10.2
SE +/- 0.01, N = 3
15.79
Linux 5.11 Git
SE +/- 0.02, N = 3
16.46
4
8
12
16
20
1. (CC) gcc options: -lpthread
Hackbench
Count: 1 - Type: Process
Seconds, Fewer Is Better
Linux 5.10.2
SE +/- 0.014, N = 3
3.173
Linux 5.11 Git
SE +/- 0.003, N = 3
3.020
0.7139
1.4278
2.1417
2.8556
3.5695
1. (CC) gcc options: -lpthread


Hackbench
Count: 16 - Type: Thread
Seconds, Fewer Is Better
Linux 5.10.2
SE +/- 0.02, N = 3
31.11
Linux 5.11 Git
SE +/- 0.03, N = 3
32.64
8
16
24
32
40
1. (CC) gcc options: -lpthread
Hackbench
Count: 2 - Type: Process
Seconds, Fewer Is Better
Linux 5.10.2
SE +/- 0.001, N = 3
4.588
Linux 5.11 Git
SE +/- 0.005, N = 3
4.559
1.0323
2.0646
3.0969
4.1292
5.1615
1. (CC) gcc options: -lpthread
Hackbench
Count: 4 - Type: Process
Seconds, Fewer Is Better
Linux 5.10.2
SE +/- 0.046, N = 3
8.205
Linux 5.11 Git
SE +/- 0.014, N = 3
8.501
2
4
6
8
10
1. (CC) gcc options: -lpthread
Hackbench
Count: 8 - Type: Process
Seconds, Fewer Is Better
Linux 5.10.2
SE +/- 0.02, N = 3
15.40
Linux 5.11 Git
SE +/- 0.00, N = 3
16.17
4
8
12
16
20
1. (CC) gcc options: -lpthread

Hackbench

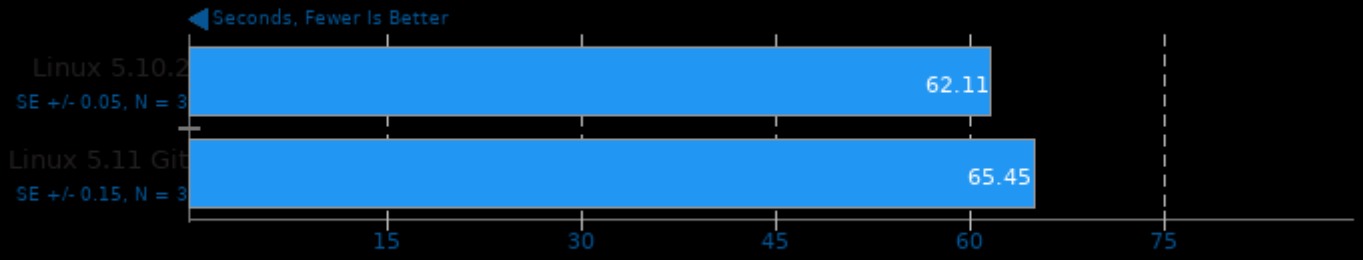
Count: 16 - Type: Process



1. (CC) gcc options: -lpthread

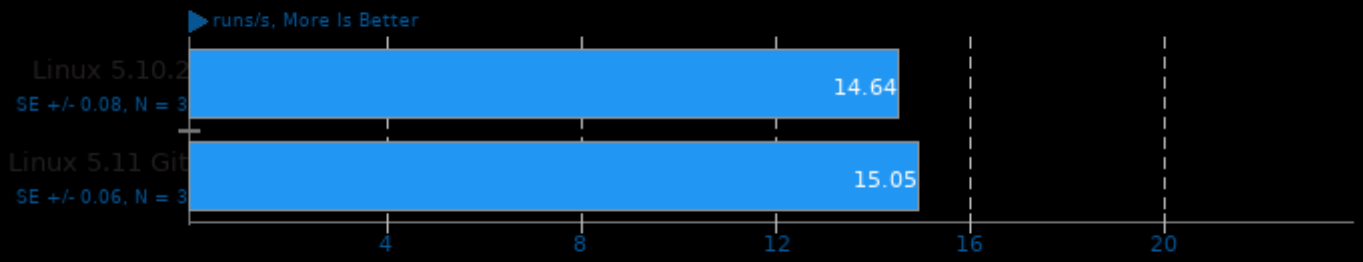
Hackbench

Count: 32 - Type: Process



1. (CC) gcc options: -lpthread

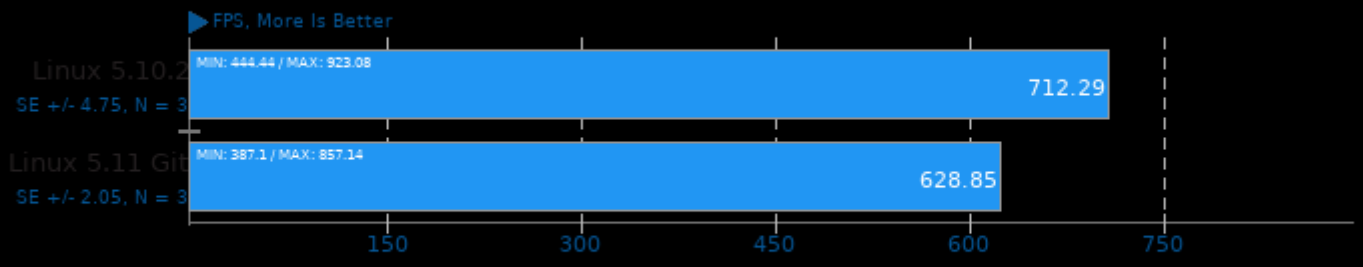
Node.js V8 Web Tooling Benchmark



1. Nodejs v12.18.2

MPV

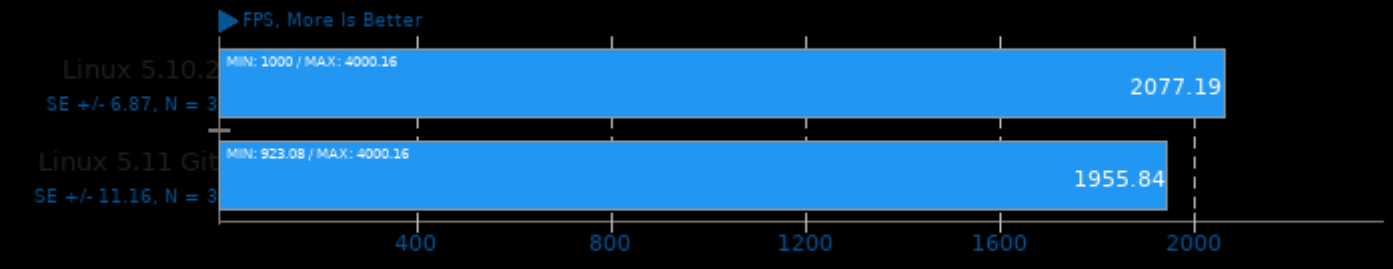
Video Input: Big Buck Bunny Sunflower 4K - Decode: Software Only



1. mpv 0.32.0

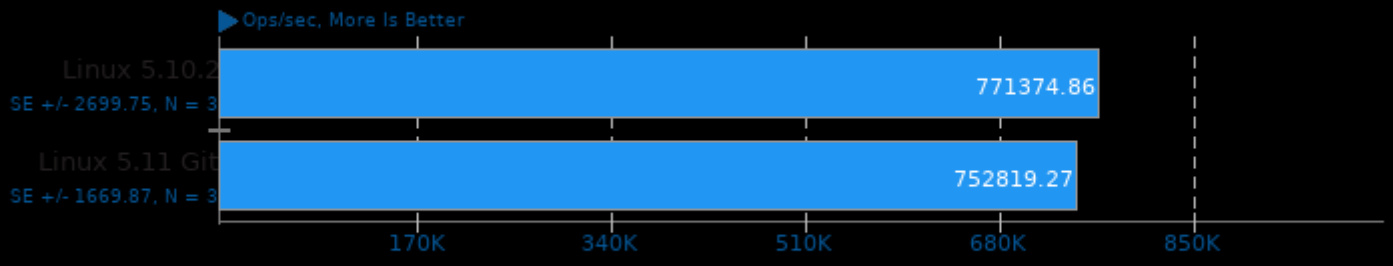
MPV

Video Input: Big Buck Bunny Sunflower 1080p - Decode: Software Only



1. mpv 0.32.0

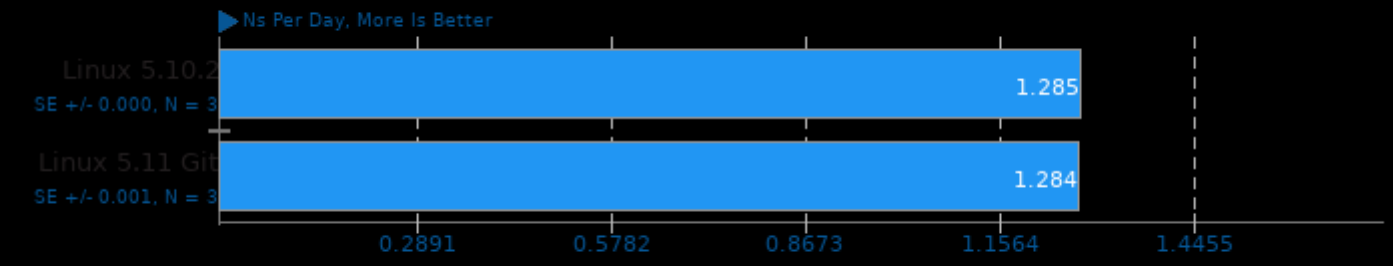
KeyDB 6.0.16



1. (CXX) g++ options: -O2 -levent_openssl -levent -lcrypto -lssl -lpthread -lz -lpcre

GROMACS 2020.3

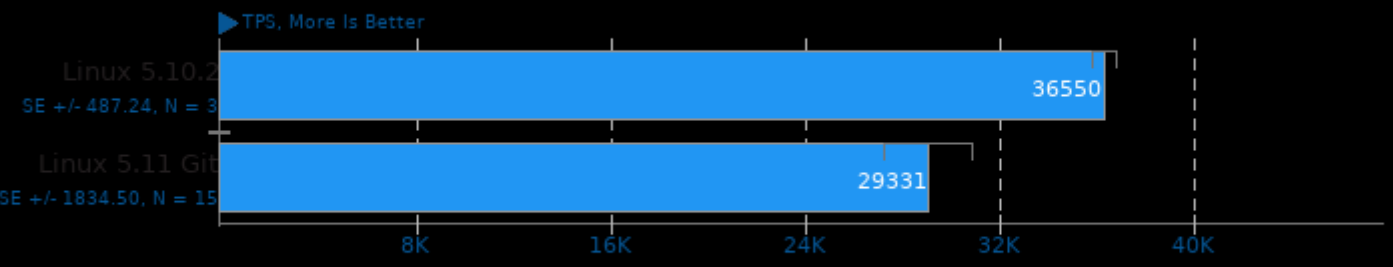
Water Benchmark



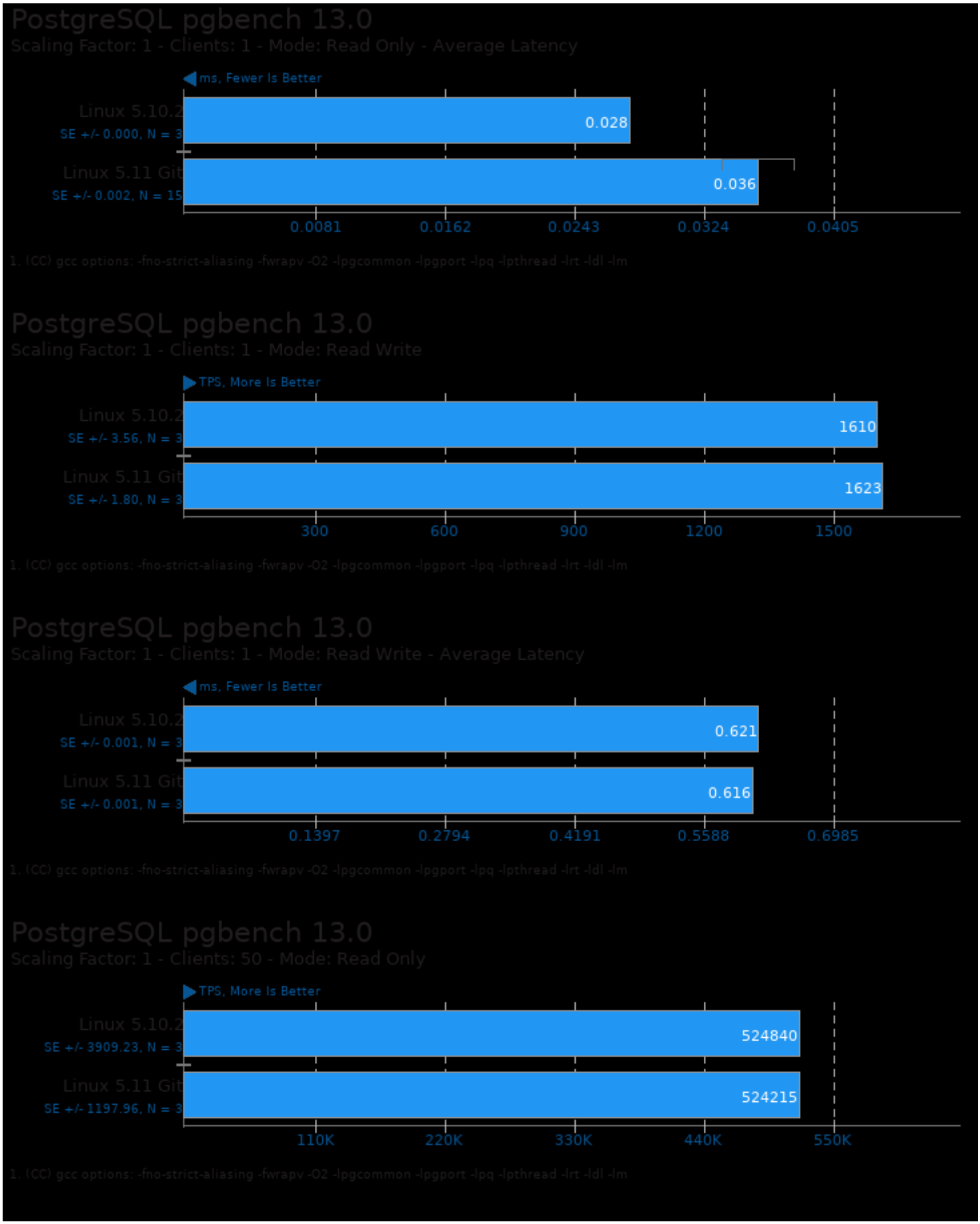
1. (CXX) g++ options: -O3 -pthread -lrt -lpthread -lm

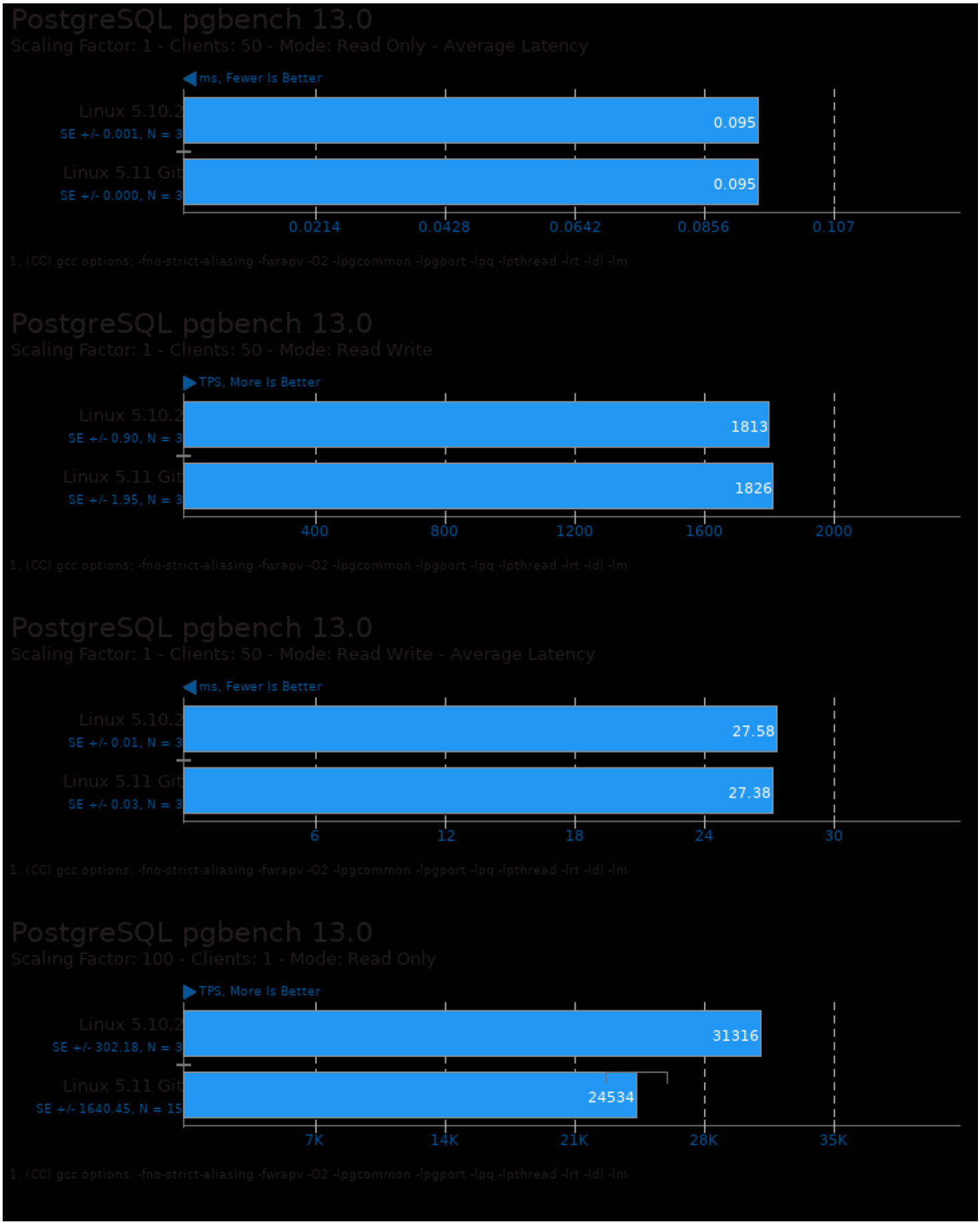
PostgreSQL pgbench 13.0

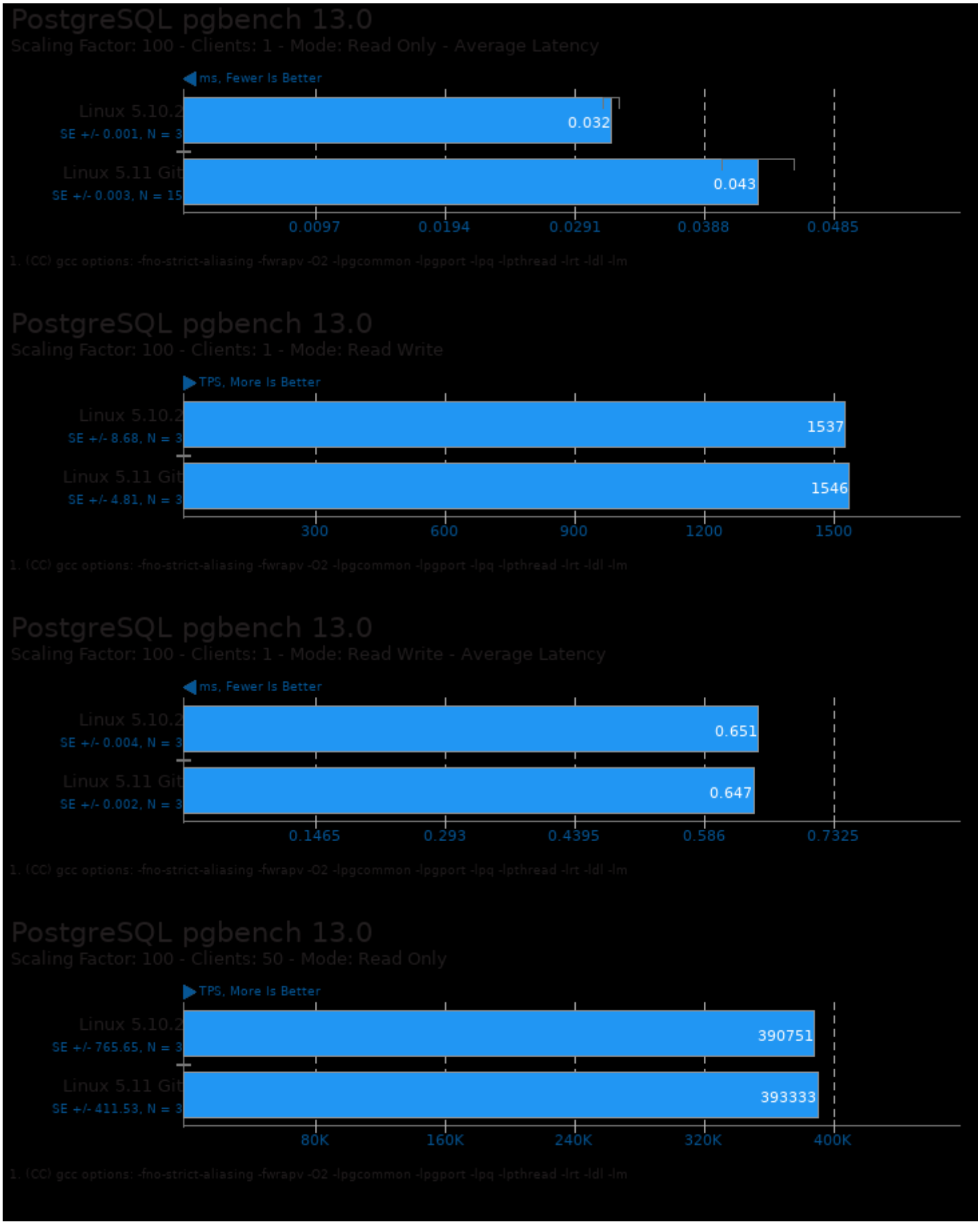
Scaling Factor: 1 - Clients: 1 - Mode: Read Only



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

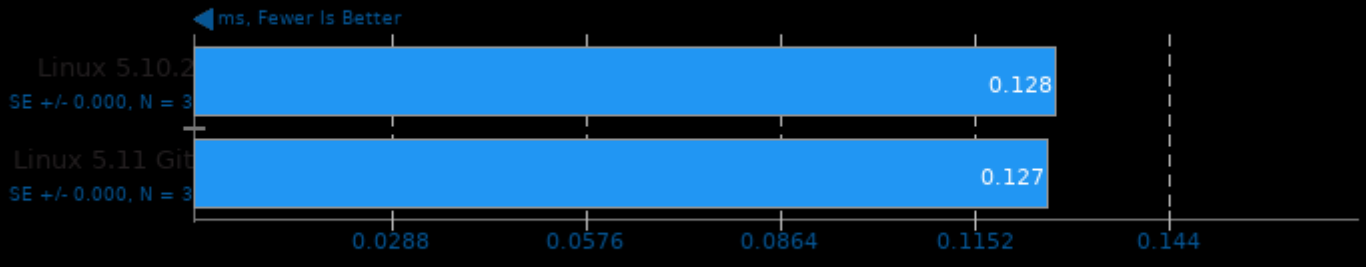

PostgreSQL pgbench 13.0
Scaling Factor: 1 - Clients: 1 - Mode: Read Only - Average Latency
ms, Fewer Is Better
Linux 5.10.2
SE +/- 0.000, N = 3
0.028
Linux 5.11 Git
SE +/- 0.002, N = 15
0.036
0.0081
0.0162
0.0243
0.0324
0.0405
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm
PostgreSQL pgbench 13.0
Scaling Factor: 1 - Clients: 1 - Mode: Read Write
TPS, More Is Better
Linux 5.10.2
SE +/- 3.56, N = 3
1610
Linux 5.11 Git
SE +/- 1.80, N = 3
1623
300
600
900
1200
1500
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm
PostgreSQL pgbench 13.0
Scaling Factor: 1 - Clients: 1 - Mode: Read Write - Average Latency
ms, Fewer Is Better
Linux 5.10.2
SE +/- 0.001, N = 3
0.621
Linux 5.11 Git
SE +/- 0.001, N = 3
0.616
0.1397
0.2794
0.4191
0.5588
0.6985
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm
PostgreSQL pgbench 13.0
Scaling Factor: 1 - Clients: 50 - Mode: Read Only
TPS, More Is Better
Linux 5.10.2
SE +/- 3909.23, N = 3
524840
Linux 5.11 Git
SE +/- 1197.96, N = 3
524215
110K
220K
330K
440K
550K
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm


PostgreSQL pgbench 13.0
Scaling Factor: 1 - Clients: 50 - Mode: Read Only - Average Latency
ms, Fewer Is Better
Linux 5.10.2
SE +/- 0.001, N = 3
0.095
Linux 5.11 Git
SE +/- 0.000, N = 3
0.095
0.0214
0.0428
0.0642
0.0856
0.107
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm
PostgreSQL pgbench 13.0
Scaling Factor: 1 - Clients: 50 - Mode: Read Write
TPS, More Is Better
Linux 5.10.2
SE +/- 0.90, N = 3
1813
Linux 5.11 Git
SE +/- 1.95, N = 3
1826
400
800
1200
1600
2000
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm
PostgreSQL pgbench 13.0
Scaling Factor: 1 - Clients: 50 - Mode: Read Write - Average Latency
ms, Fewer Is Better
Linux 5.10.2
SE +/- 0.01, N = 3
27.58
Linux 5.11 Git
SE +/- 0.03, N = 3
27.38
6
12
18
24
30
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm
PostgreSQL pgbench 13.0
Scaling Factor: 100 - Clients: 1 - Mode: Read Only
TPS, More Is Better
Linux 5.10.2
SE +/- 302.18, N = 3
31316
Linux 5.11 Git
SE +/- 1640.45, N = 15
24534
7K
14K
21K
28K
35K
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm


PostgreSQL pgbench 13.0
Scaling Factor: 100 - Clients: 1 - Mode: Read Only - Average Latency
ms, Fewer Is Better
Linux 5.10.2
SE +/- 0.001, N = 3
0.032
Linux 5.11 Git
SE +/- 0.003, N = 15
0.043
0.0097
0.0194
0.0291
0.0388
0.0485
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm
PostgreSQL pgbench 13.0
Scaling Factor: 100 - Clients: 1 - Mode: Read Write
TPS, More Is Better
Linux 5.10.2
SE +/- 8.68, N = 3
1537
Linux 5.11 Git
SE +/- 4.81, N = 3
1546
300
600
900
1200
1500
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm
PostgreSQL pgbench 13.0
Scaling Factor: 100 - Clients: 1 - Mode: Read Write - Average Latency
ms, Fewer Is Better
Linux 5.10.2
SE +/- 0.004, N = 3
0.651
Linux 5.11 Git
SE +/- 0.002, N = 3
0.647
0.1465
0.293
0.4395
0.586
0.7325
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm
PostgreSQL pgbench 13.0
Scaling Factor: 100 - Clients: 50 - Mode: Read Only
TPS, More Is Better
Linux 5.10.2
SE +/- 765.65, N = 3
390751
Linux 5.11 Git
SE +/- 411.53, N = 3
393333
80K
160K
240K
320K
400K
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

PostgreSQL pgbench 13.0

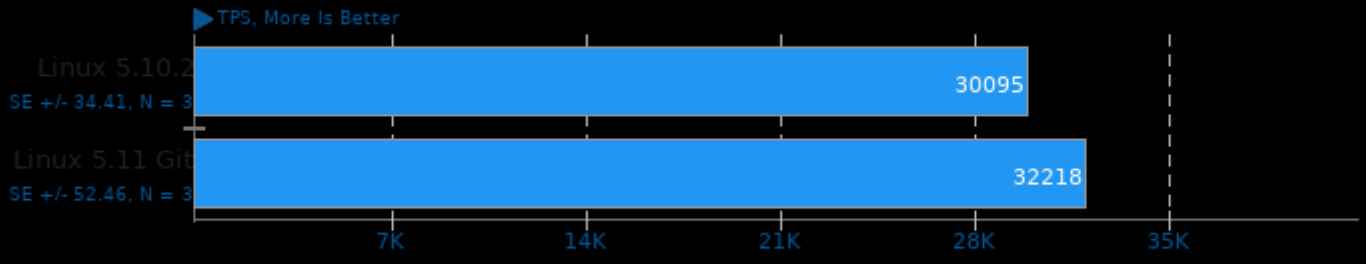
Scaling Factor: 100 - Clients: 50 - Mode: Read Only - Average Latency



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

PostgreSQL pgbench 13.0

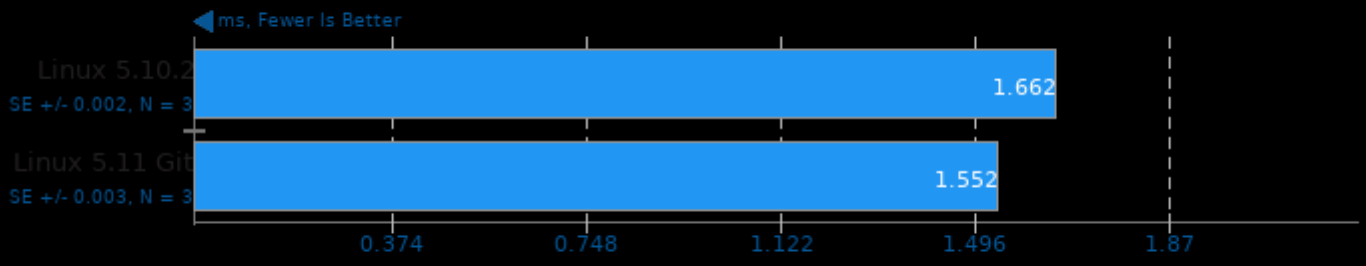
Scaling Factor: 100 - Clients: 50 - Mode: Read Write



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

PostgreSQL pgbench 13.0

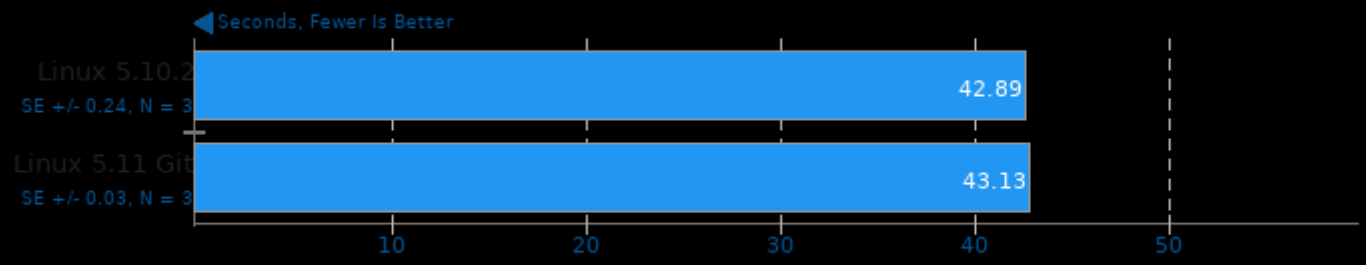
Scaling Factor: 100 - Clients: 50 - Mode: Read Write - Average Latency



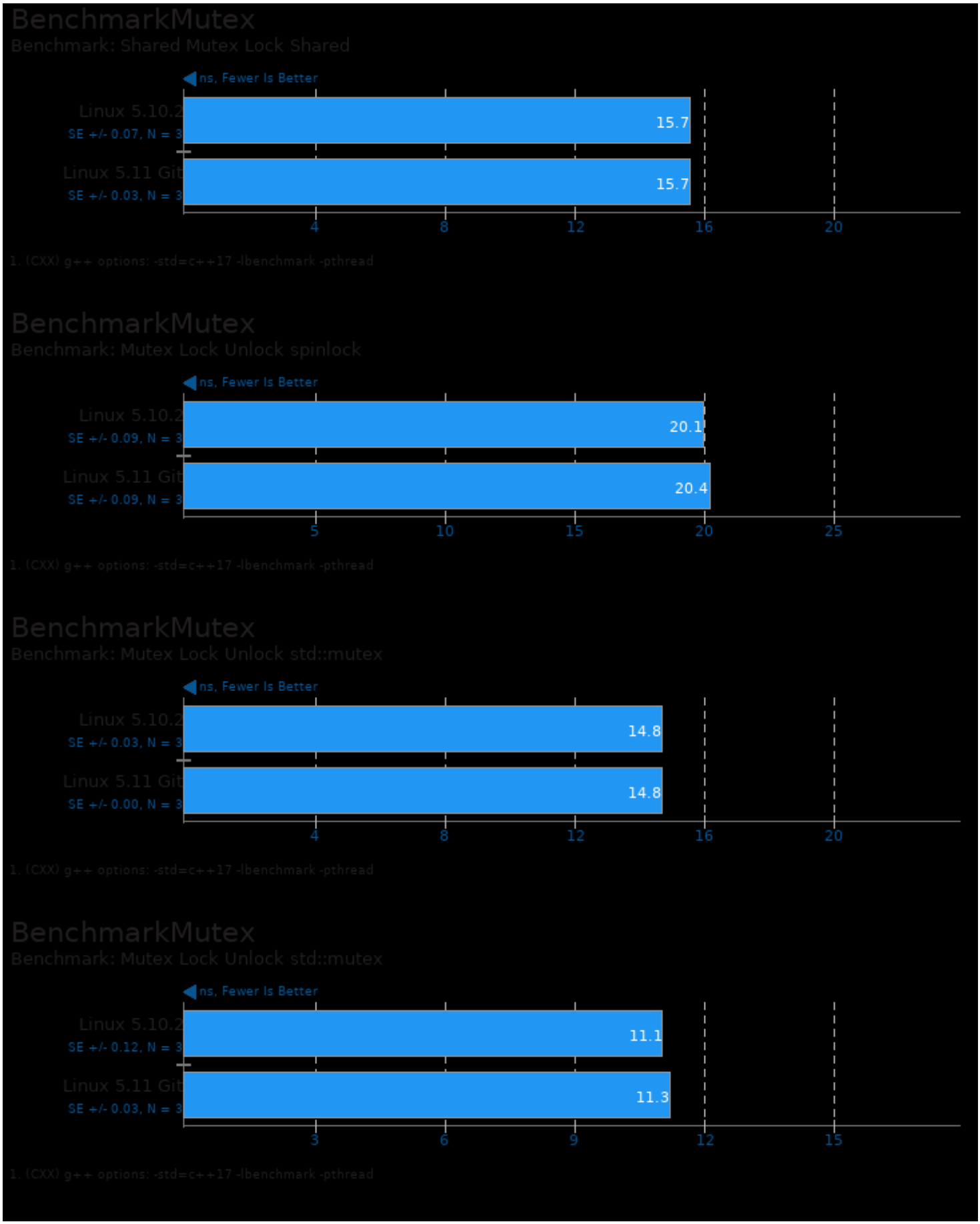
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

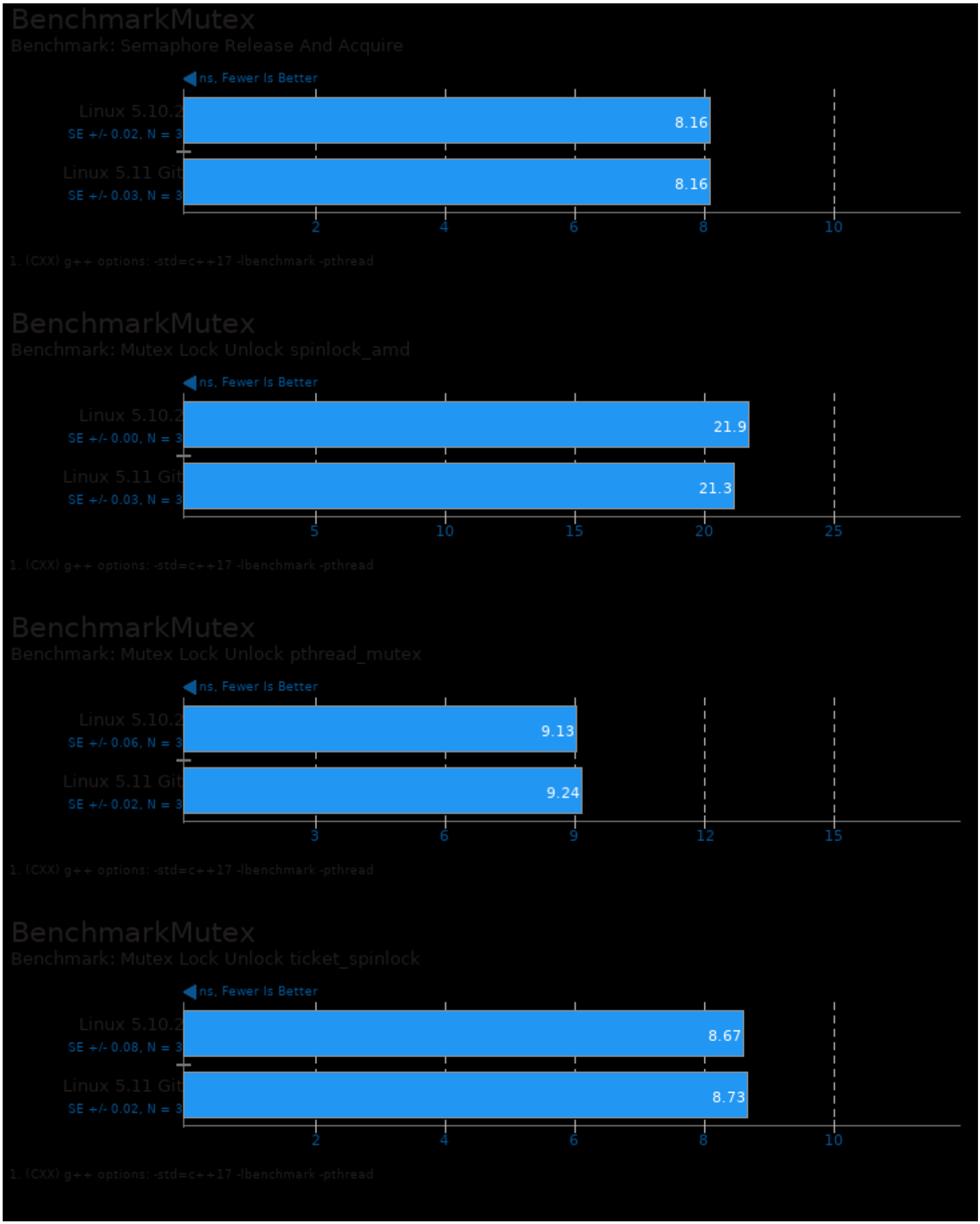
SQLite Speedtest 3.30

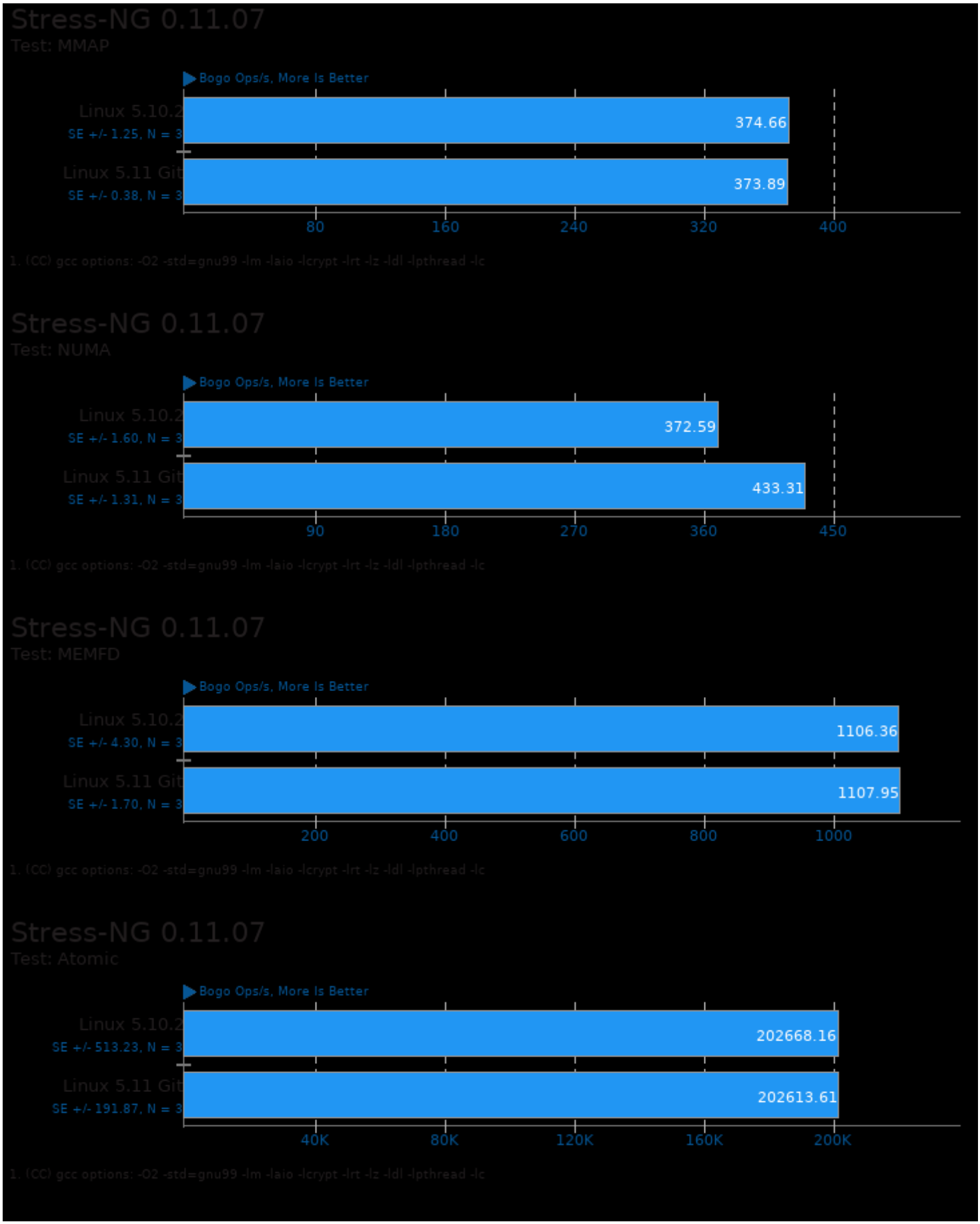
Timed Time - Size 1,000

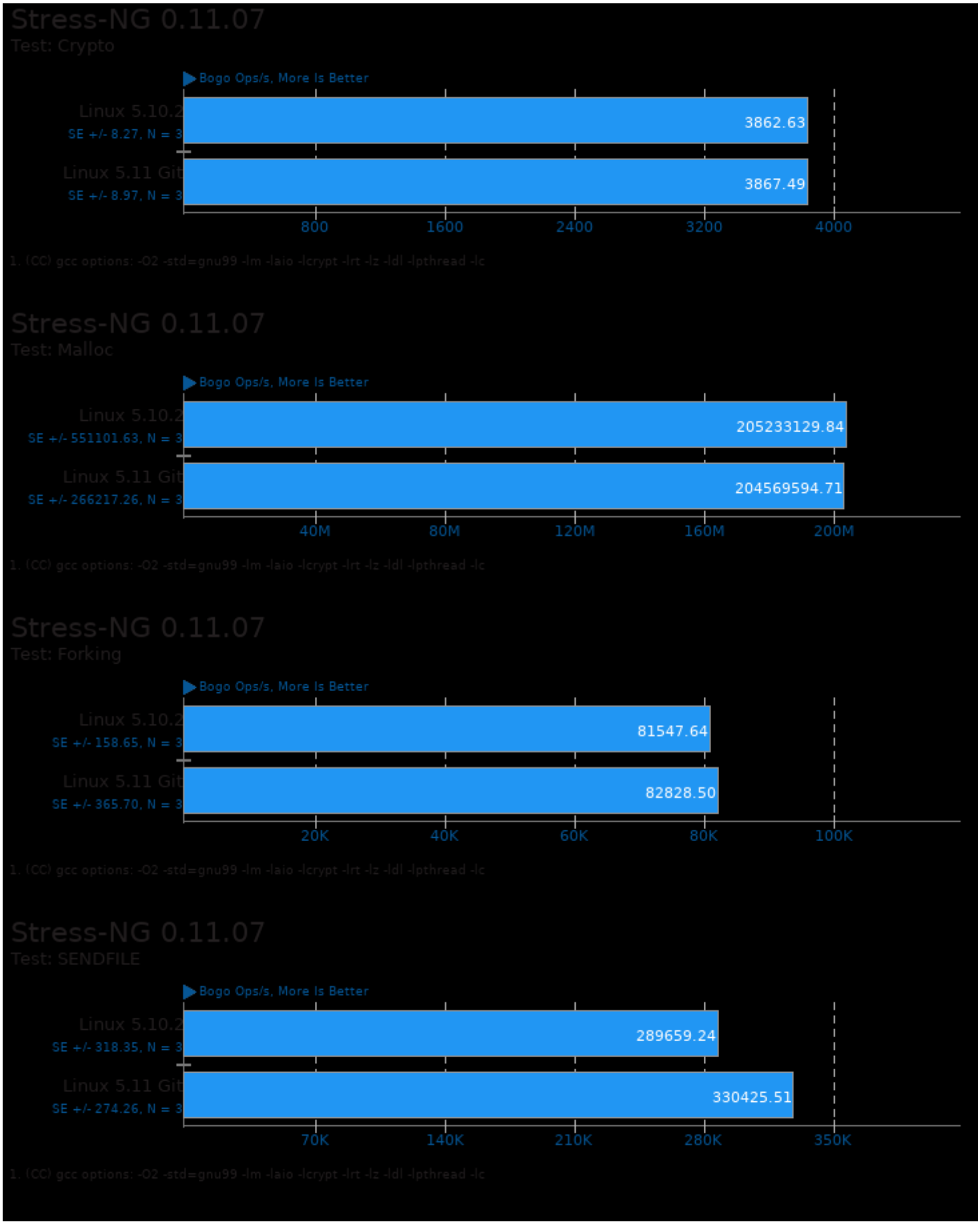


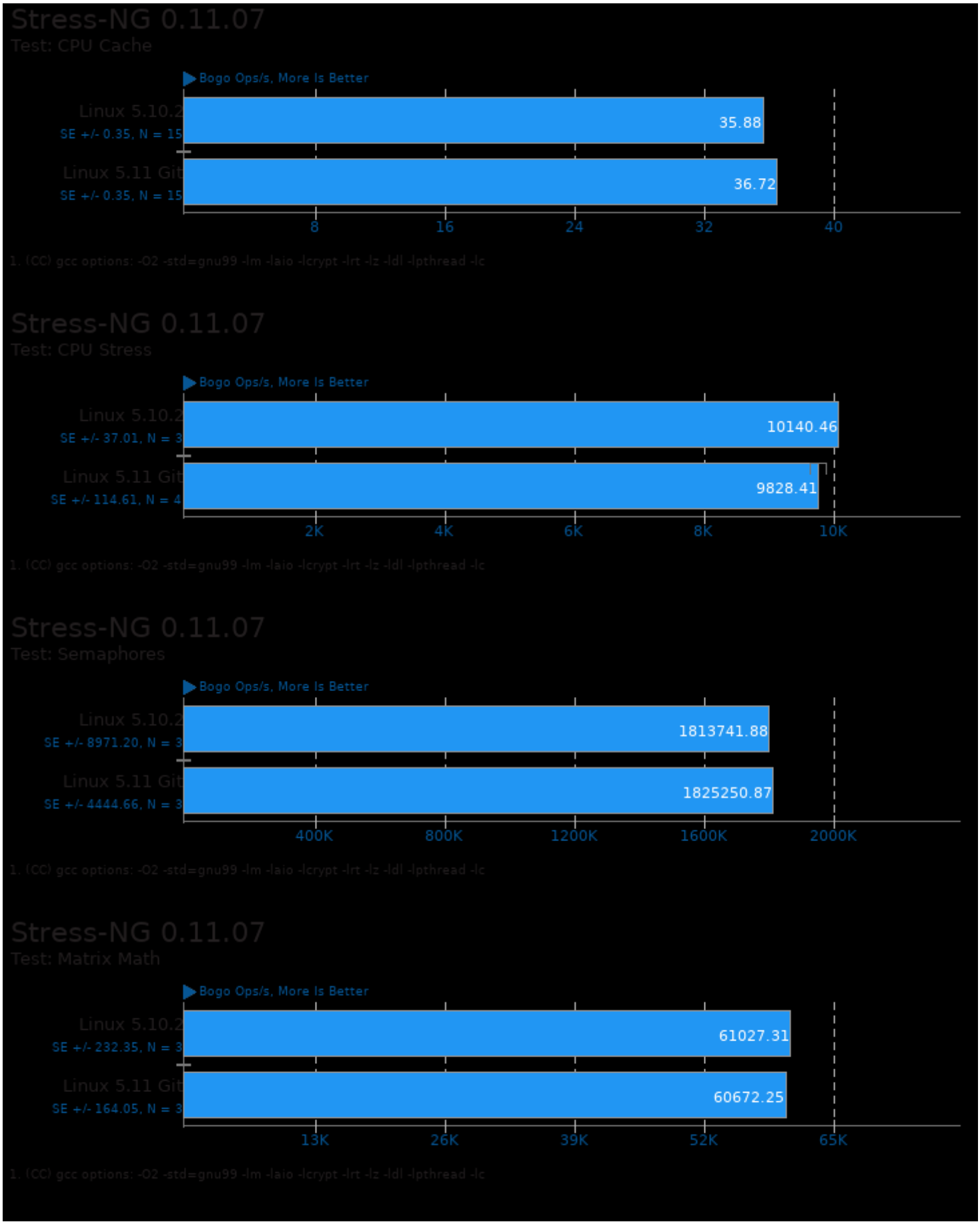
1. (CC) gcc options: -O2 -ldl -lz -lpthread

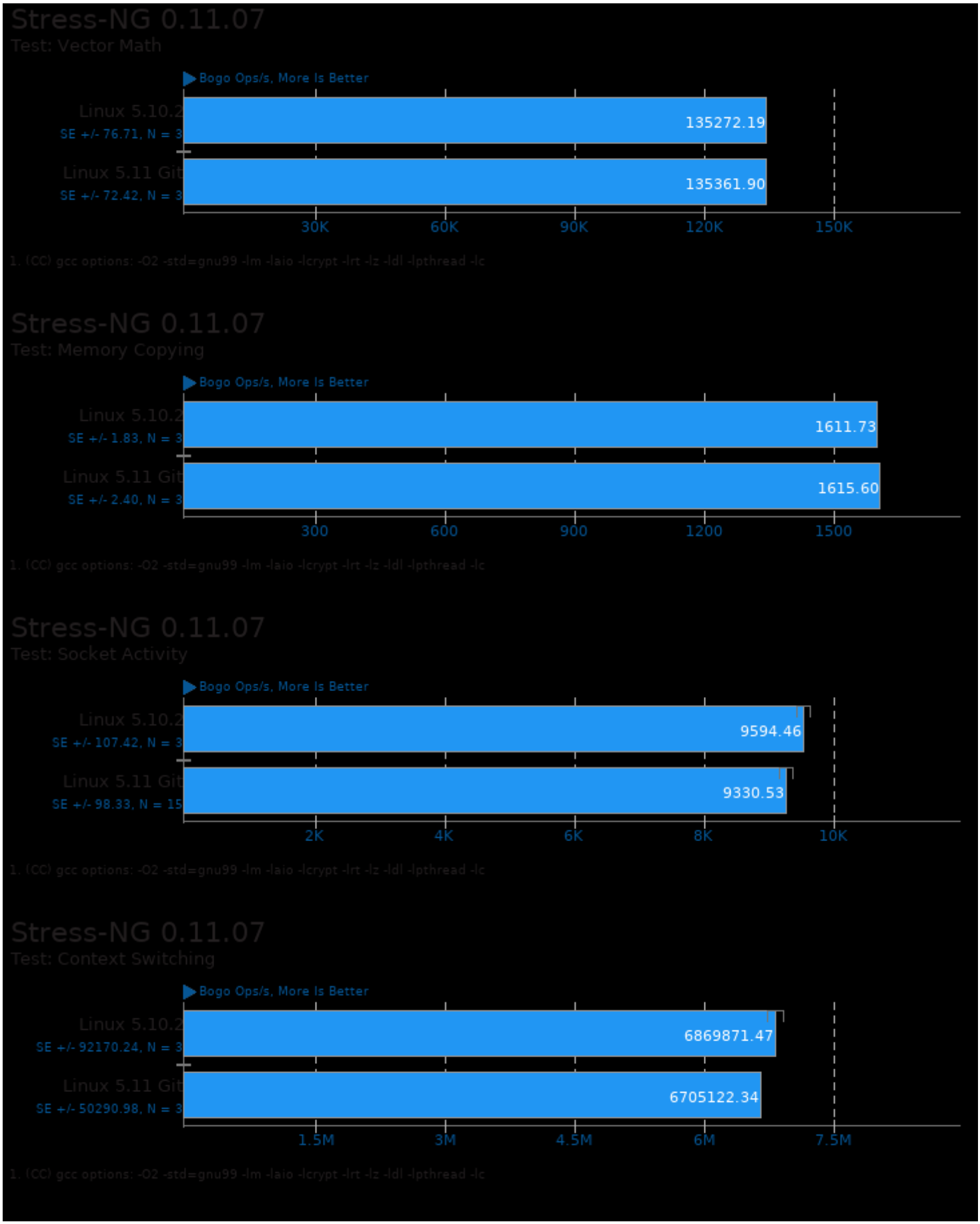

BenchmarkMutex
Benchmark: Shared Mutex Lock Shared
ns, Fewer Is Better
Linux 5.10.2
SE +/- 0.07, N = 3
15.7
Linux 5.11 Git
SE +/- 0.03, N = 3
15.7
4
8
12
16
20
1. (CXX) g++ options: -std=c++17 -lbenchmark -pthread
BenchmarkMutex
Benchmark: Mutex Lock Unlock spinlock
ns, Fewer Is Better
Linux 5.10.2
SE +/- 0.09, N = 3
20.1
Linux 5.11 Git
SE +/- 0.09, N = 3
20.4
5
10
15
20
25
1. (CXX) g++ options: -std=c++17 -lbenchmark -pthread
BenchmarkMutex
Benchmark: Mutex Lock Unlock std::mutex
ns, Fewer Is Better
Linux 5.10.2
SE +/- 0.03, N = 3
14.8
Linux 5.11 Git
SE +/- 0.00, N = 3
14.8
4
8
12
16
20
1. (CXX) g++ options: -std=c++17 -lbenchmark -pthread
BenchmarkMutex
Benchmark: Mutex Lock Unlock std::mutex
ns, Fewer Is Better
Linux 5.10.2
SE +/- 0.12, N = 3
11.1
Linux 5.11 Git
SE +/- 0.03, N = 3
11.3
3
6
9
12
15
1. (CXX) g++ options: -std=c++17 -lbenchmark -pthread


BenchmarkMutex
Benchmark: Semaphore Release And Acquire
ns, Fewer Is Better
Linux 5.10.2
SE +/- 0.02, N = 3
8.16
Linux 5.11 Git
SE +/- 0.03, N = 3
8.16
2
4
6
8
10
1. (CXX) g++ options: -std=c++17 -lbenchmark -pthread
BenchmarkMutex
Benchmark: Mutex Lock Unlock spinlock_amd
ns, Fewer Is Better
Linux 5.10.2
SE +/- 0.00, N = 3
21.9
Linux 5.11 Git
SE +/- 0.03, N = 3
21.3
5
10
15
20
25
1. (CXX) g++ options: -std=c++17 -lbenchmark -pthread
BenchmarkMutex
Benchmark: Mutex Lock Unlock pthread_mutex
ns, Fewer Is Better
Linux 5.10.2
SE +/- 0.06, N = 3
9.13
Linux 5.11 Git
SE +/- 0.02, N = 3
9.24
3
6
9
12
15
1. (CXX) g++ options: -std=c++17 -lbenchmark -pthread
BenchmarkMutex
Benchmark: Mutex Lock Unlock ticket_spinlock
ns, Fewer Is Better
Linux 5.10.2
SE +/- 0.08, N = 3
8.67
Linux 5.11 Git
SE +/- 0.02, N = 3
8.73
2
4
6
8
10
1. (CXX) g++ options: -std=c++17 -lbenchmark -pthread


Stress-NG 0.11.07
Test: MMAP
Bogo Ops/s, More Is Better
Linux 5.10.2
SE +/- 1.25, N = 3
374.66
Linux 5.11 Git
SE +/- 0.38, N = 3
373.89
80
160
240
320
400
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lz -ldl -lpthread -lc
Stress-NG 0.11.07
Test: NUMA
Bogo Ops/s, More Is Better
Linux 5.10.2
SE +/- 1.60, N = 3
372.59
Linux 5.11 Git
SE +/- 1.31, N = 3
433.31
90
180
270
360
450
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lz -ldl -lpthread -lc
Stress-NG 0.11.07
Test: MEMFD
Bogo Ops/s, More Is Better
Linux 5.10.2
SE +/- 4.30, N = 3
1106.36
Linux 5.11 Git
SE +/- 1.70, N = 3
1107.95
200
400
600
800
1000
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lz -ldl -lpthread -lc
Stress-NG 0.11.07
Test: Atomic
Bogo Ops/s, More Is Better
Linux 5.10.2
SE +/- 513.23, N = 3
202668.16
Linux 5.11 Git
SE +/- 191.87, N = 3
202613.61
40K
80K
120K
160K
200K
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lz -ldl -lpthread -lc

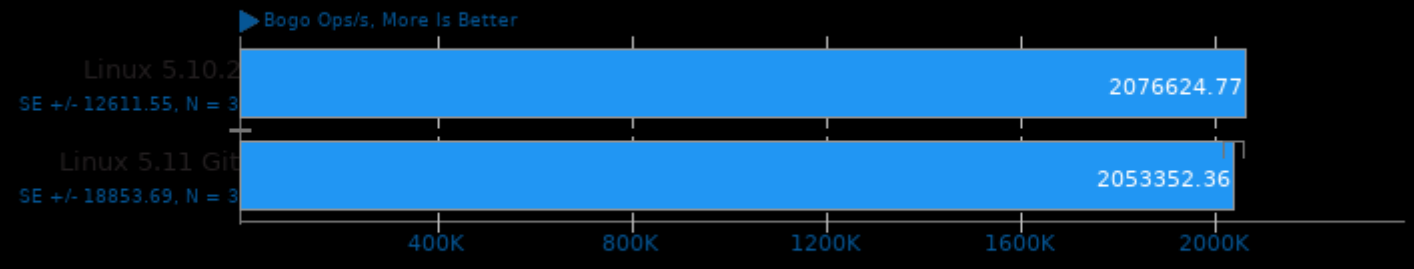

Stress-NG 0.11.07
Test: Crypto
Bogo Ops/s, More Is Better
Linux 5.10.2
SE +/- 8.27, N = 3
3862.63
Linux 5.11 Git
SE +/- 8.97, N = 3
3867.49
800
1600
2400
3200
4000
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lz -ldl -lpthread -lc
Stress-NG 0.11.07
Test: Malloc
Bogo Ops/s, More Is Better
Linux 5.10.2
SE +/- 551101.63, N = 3
205233129.84
Linux 5.11 Git
SE +/- 266217.26, N = 3
204569594.71
40M
80M
120M
160M
200M
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lz -ldl -lpthread -lc
Stress-NG 0.11.07
Test: Forking
Bogo Ops/s, More Is Better
Linux 5.10.2
SE +/- 158.65, N = 3
81547.64
Linux 5.11 Git
SE +/- 365.70, N = 3
82828.50
20K
40K
60K
80K
100K
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lz -ldl -lpthread -lc
Stress-NG 0.11.07
Test: SENDFILE
Bogo Ops/s, More Is Better
Linux 5.10.2
SE +/- 318.35, N = 3
289659.24
Linux 5.11 Git
SE +/- 274.26, N = 3
330425.51
70K
140K
210K
280K
350K
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lz -ldl -lpthread -lc


Stress-NG 0.11.07
Test: CPU Cache
Bogo Ops/s, More Is Better
Linux 5.10.2
SE +/- 0.35, N = 15
35.88
Linux 5.11 Git
SE +/- 0.35, N = 15
36.72
8
16
24
32
40
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lz -ldl -lpthread -lc
Stress-NG 0.11.07
Test: CPU Stress
Bogo Ops/s, More Is Better
Linux 5.10.2
SE +/- 37.01, N = 3
10140.46
Linux 5.11 Git
SE +/- 114.61, N = 4
9828.41
2K
4K
6K
8K
10K
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lz -ldl -lpthread -lc
Stress-NG 0.11.07
Test: Semaphores
Bogo Ops/s, More Is Better
Linux 5.10.2
SE +/- 8971.20, N = 3
1813741.88
Linux 5.11 Git
SE +/- 4444.66, N = 3
1825250.87
400K
800K
1200K
1600K
2000K
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lz -ldl -lpthread -lc
Stress-NG 0.11.07
Test: Matrix Math
Bogo Ops/s, More Is Better
Linux 5.10.2
SE +/- 232.35, N = 3
61027.31
Linux 5.11 Git
SE +/- 164.05, N = 3
60672.25
13K
26K
39K
52K
65K
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lz -ldl -lpthread -lc


Stress-NG 0.11.07
Test: Vector Math
Bogo Ops/s, More Is Better
Linux 5.10.2
SE +/- 76.71, N = 3
135272.19
Linux 5.11 Git
SE +/- 72.42, N = 3
135361.90
30K
60K
90K
120K
150K
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lz -ldl -lpthread -lc
Stress-NG 0.11.07
Test: Memory Copying
Bogo Ops/s, More Is Better
Linux 5.10.2
SE +/- 1.83, N = 3
1611.73
Linux 5.11 Git
SE +/- 2.40, N = 3
1615.60
300
600
900
1200
1500
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lz -ldl -lpthread -lc
Stress-NG 0.11.07
Test: Socket Activity
Bogo Ops/s, More Is Better
Linux 5.10.2
SE +/- 107.42, N = 3
9594.46
Linux 5.11 Git
SE +/- 98.33, N = 15
9330.53
2K
4K
6K
8K
10K
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lz -ldl -lpthread -lc
Stress-NG 0.11.07
Test: Context Switching
Bogo Ops/s, More Is Better
Linux 5.10.2
SE +/- 92170.24, N = 3
6869871.47
Linux 5.11 Git
SE +/- 50290.98, N = 3
6705122.34
1.5M
3M
4.5M
6M
7.5M
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lz -ldl -lpthread -lc

Stress-NG 0.11.07

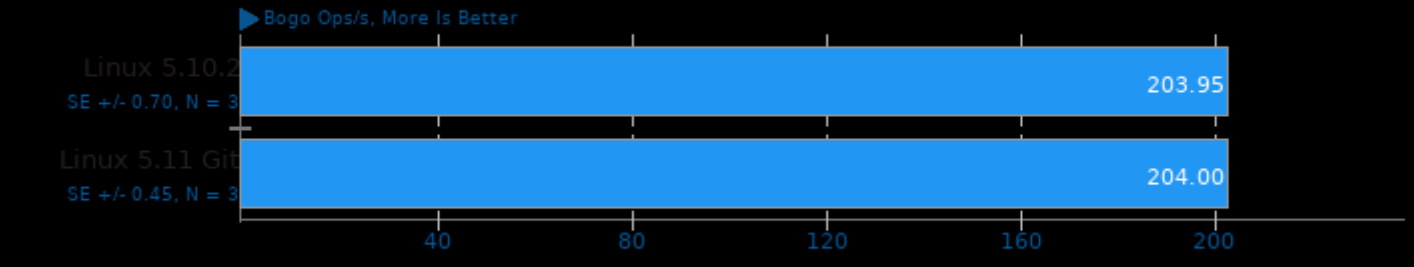
Test: Glibc C String Functions



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

Stress-NG 0.11.07

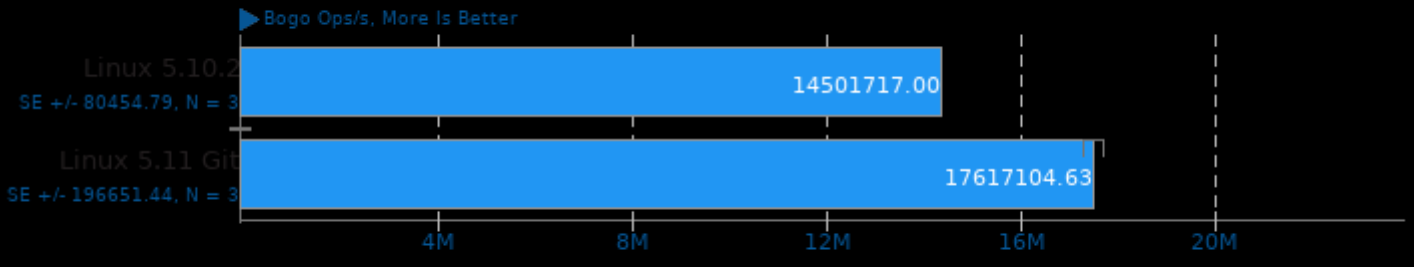
Test: Glibc Qsort Data Sorting



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

Stress-NG 0.11.07

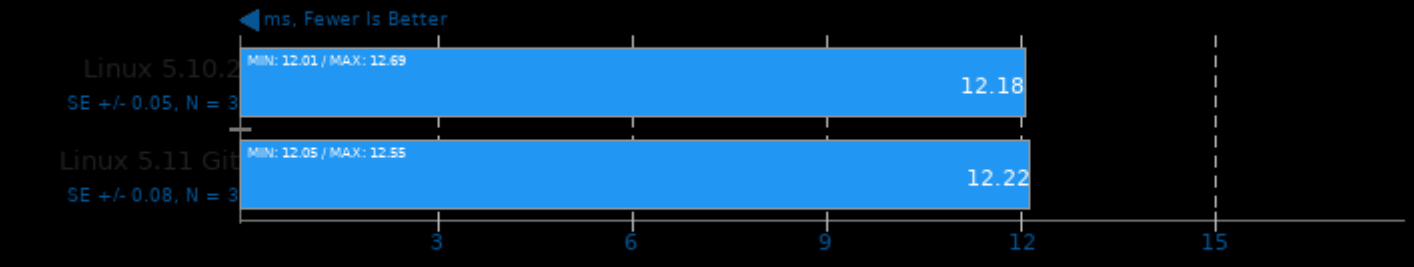
Test: System V Message Passing



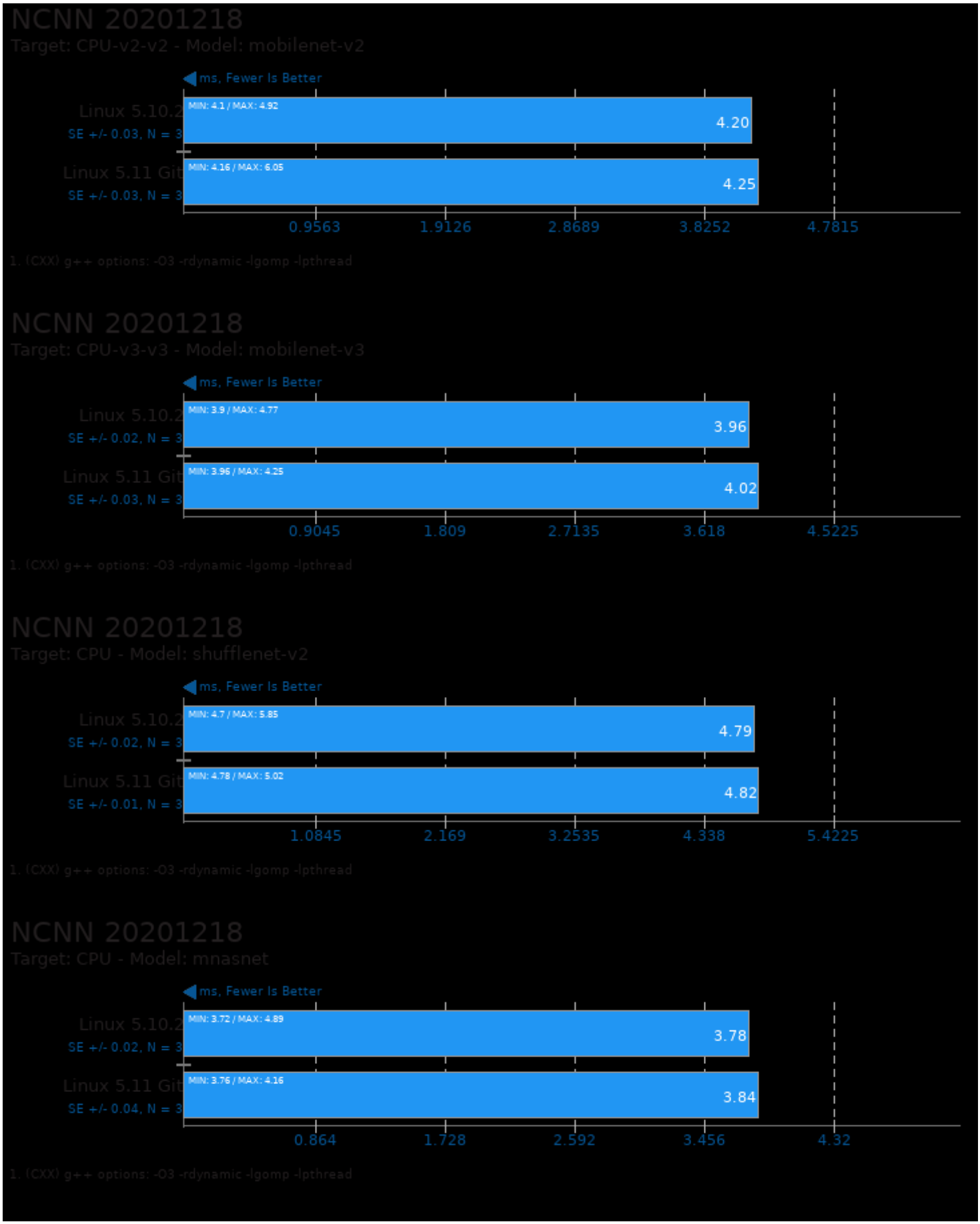
1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lz -ldl -lpthread -lc

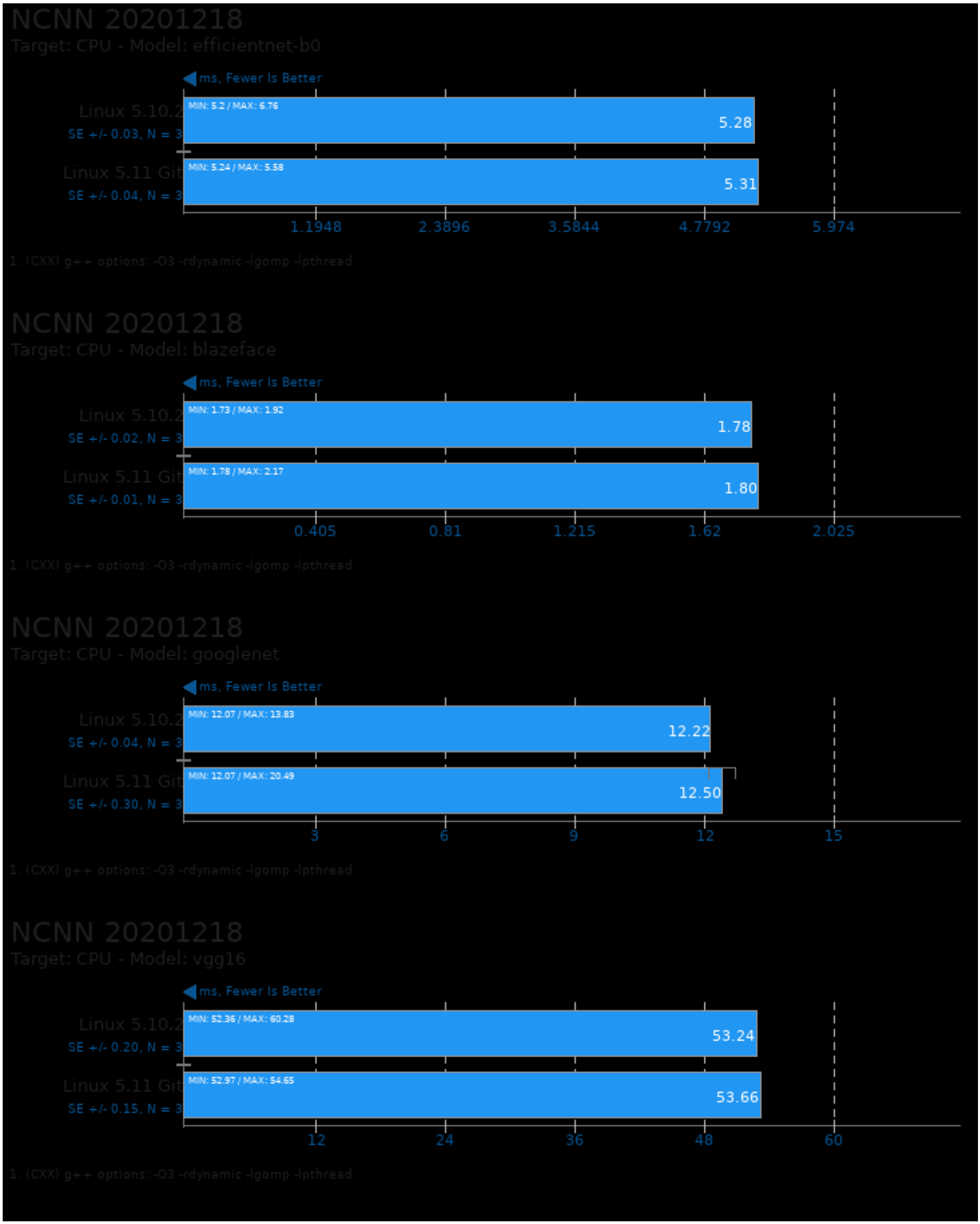
NCNN 20201218

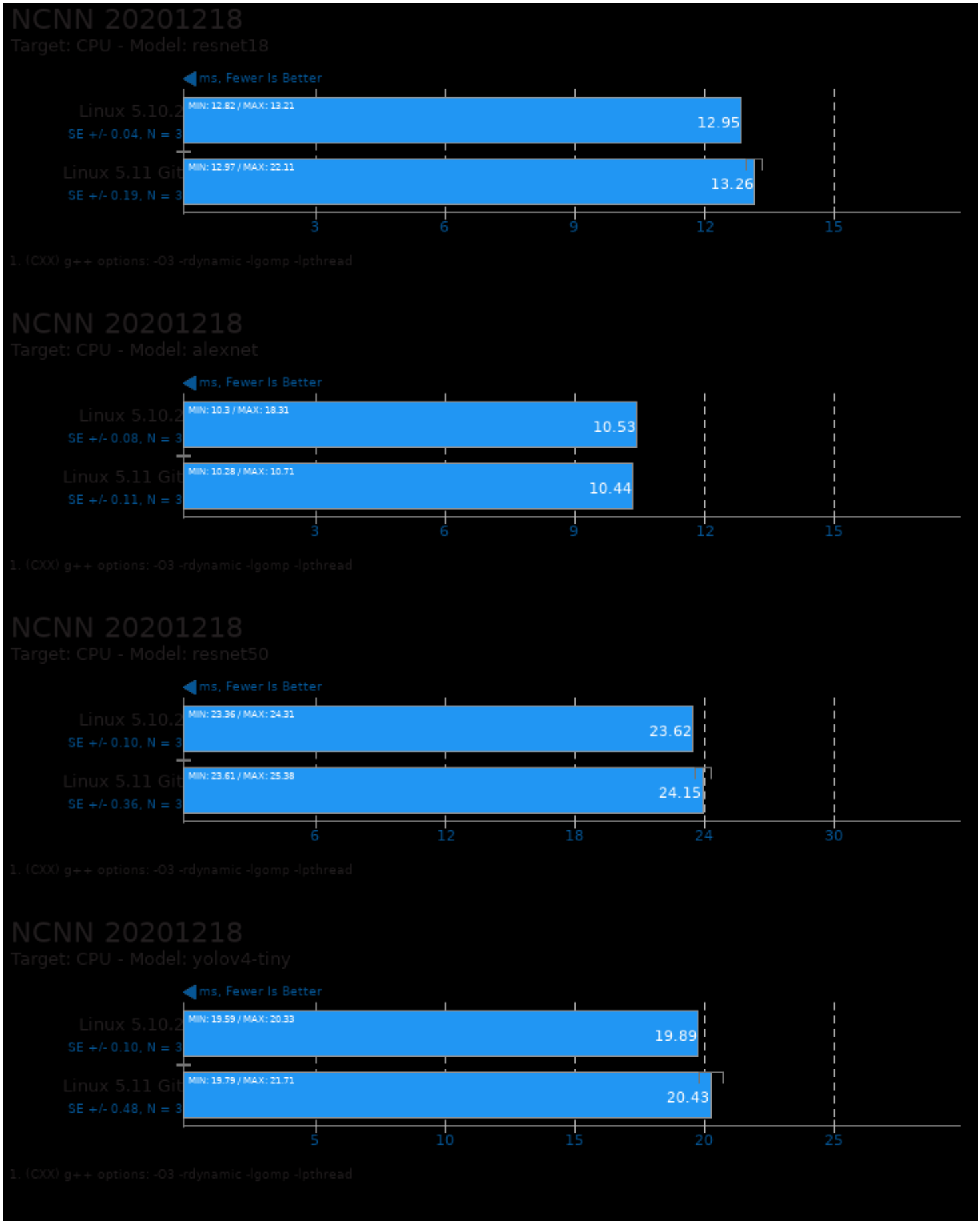
Target: CPU - Model: mobilenet

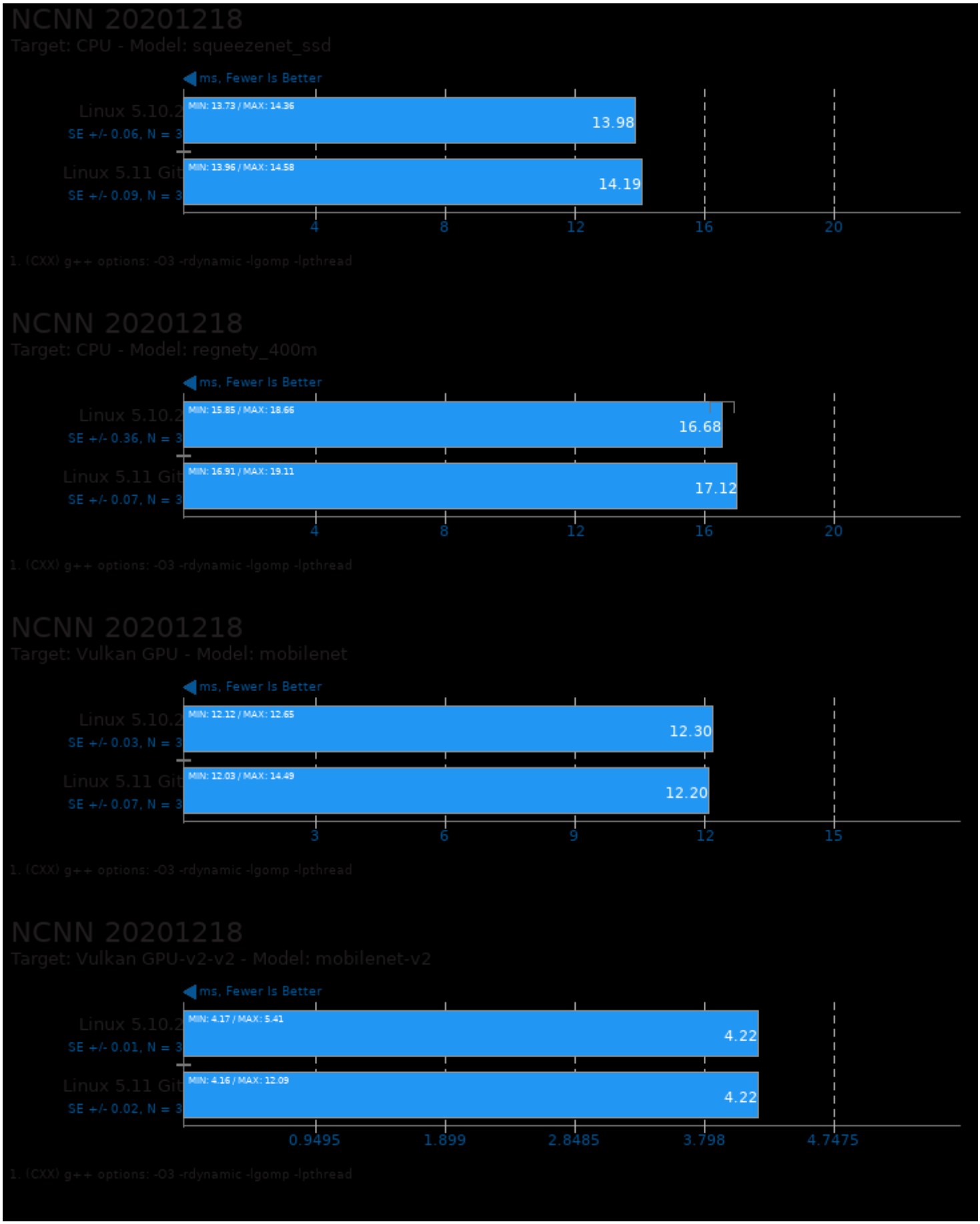


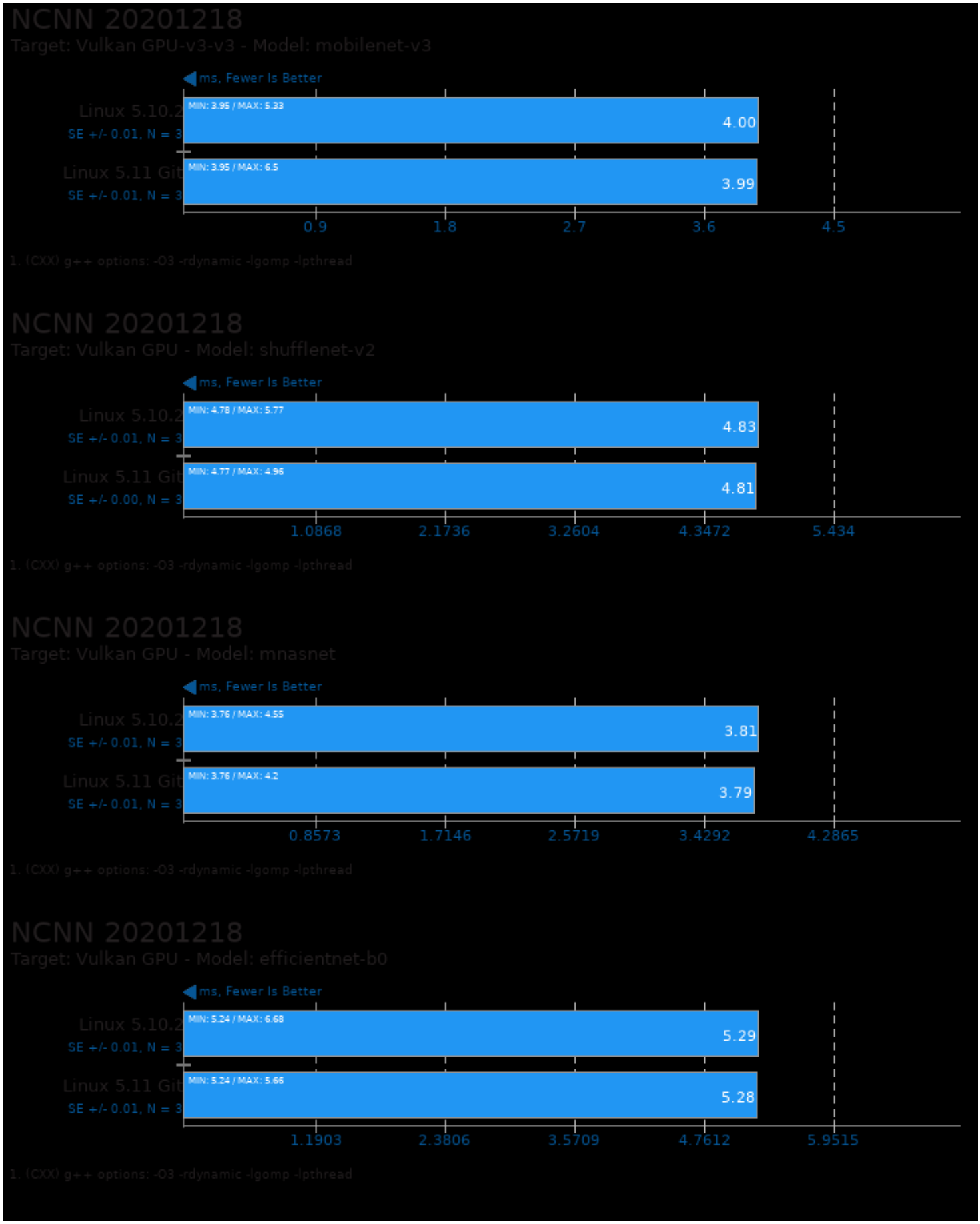
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

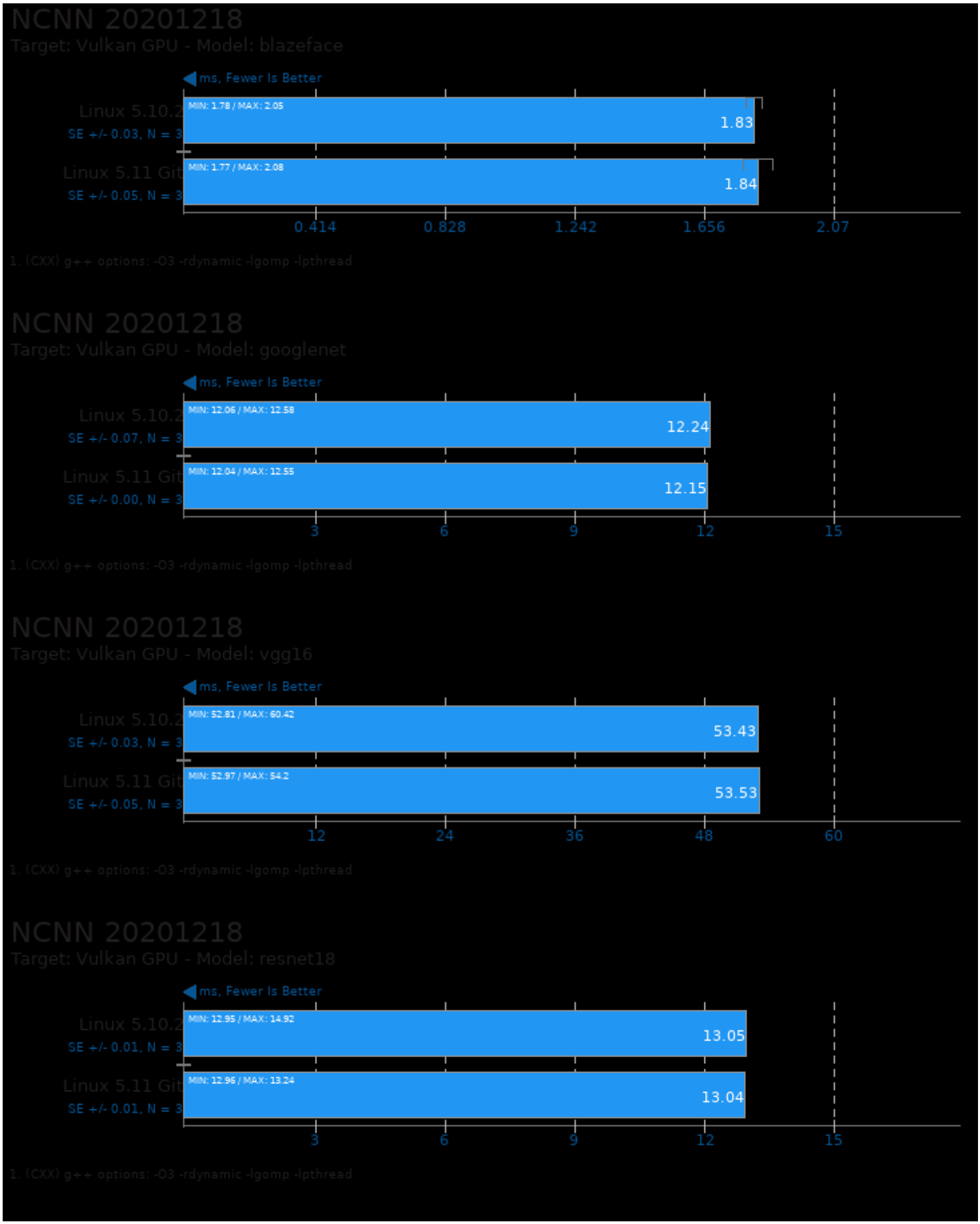

NCNN 20201218
Target: CPU-v2-v2 - Model: mobilenet-v2
ms, Fewer Is Better
Linux 5.10.2
SE +/- 0.03, N = 3
MIN: 4.1 / MAX: 4.92
4.20
Linux 5.11 Git
SE +/- 0.03, N = 3
MIN: 4.16 / MAX: 6.05
4.25
0.9563
1.9126
2.8689
3.8252
4.7815
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread
NCNN 20201218
Target: CPU-v3-v3 - Model: mobilenet-v3
ms, Fewer Is Better
Linux 5.10.2
SE +/- 0.02, N = 3
MIN: 3.9 / MAX: 4.77
3.96
Linux 5.11 Git
SE +/- 0.03, N = 3
MIN: 3.96 / MAX: 4.25
4.02
0.9045
1.809
2.7135
3.618
4.5225
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread
NCNN 20201218
Target: CPU - Model: shufflenet-v2
ms, Fewer Is Better
Linux 5.10.2
SE +/- 0.02, N = 3
MIN: 4.7 / MAX: 5.85
4.79
Linux 5.11 Git
SE +/- 0.01, N = 3
MIN: 4.78 / MAX: 5.02
4.82
1.0845
2.169
3.2535
4.338
5.4225
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread
NCNN 20201218
Target: CPU - Model: mnasnet
ms, Fewer Is Better
Linux 5.10.2
SE +/- 0.02, N = 3
MIN: 3.72 / MAX: 4.89
3.78
Linux 5.11 Git
SE +/- 0.04, N = 3
MIN: 3.76 / MAX: 4.16
3.84
0.864
1.728
2.592
3.456
4.32
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

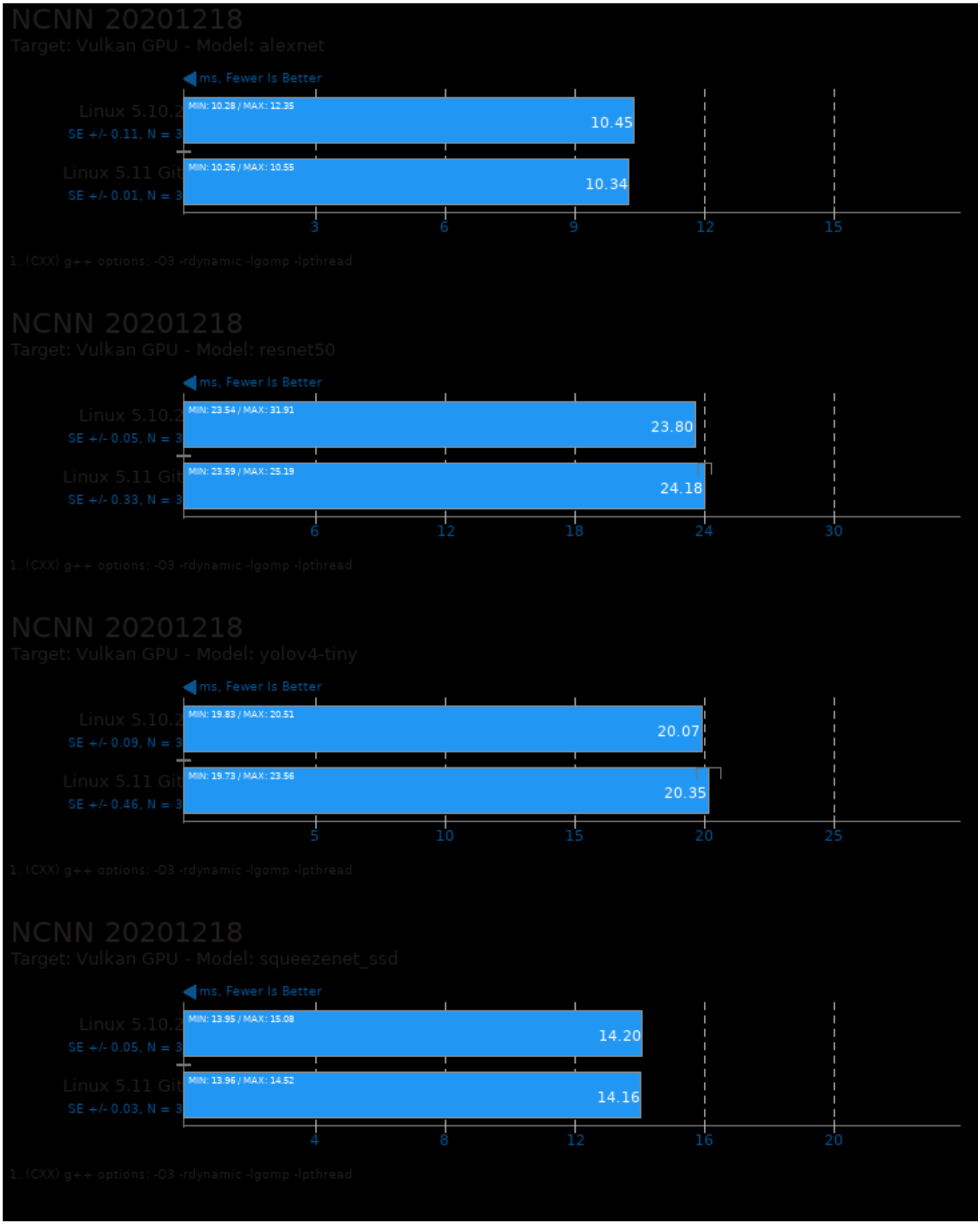

NCNN 20201218
Target: CPU - Model: efficientnet-b0
ms, Fewer Is Better
Linux 5.10.2
SE +/- 0.03, N = 3
MIN: 5.2 / MAX: 6.76
5.28
Linux 5.11 Git
SE +/- 0.04, N = 3
MIN: 5.24 / MAX: 5.58
5.31
1.1948
2.3896
3.5844
4.7792
5.974
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread
NCNN 20201218
Target: CPU - Model: blazeface
ms, Fewer Is Better
Linux 5.10.2
SE +/- 0.02, N = 3
MIN: 1.73 / MAX: 1.92
1.78
Linux 5.11 Git
SE +/- 0.01, N = 3
MIN: 1.78 / MAX: 2.17
1.80
0.405
0.81
1.215
1.62
2.025
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread
NCNN 20201218
Target: CPU - Model: googlenet
ms, Fewer Is Better
Linux 5.10.2
SE +/- 0.04, N = 3
MIN: 12.07 / MAX: 13.83
12.22
Linux 5.11 Git
SE +/- 0.30, N = 3
MIN: 12.07 / MAX: 20.49
12.50
3
6
9
12
15
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread
NCNN 20201218
Target: CPU - Model: vgg16
ms, Fewer Is Better
Linux 5.10.2
SE +/- 0.20, N = 3
MIN: 52.36 / MAX: 60.28
53.24
Linux 5.11 Git
SE +/- 0.15, N = 3
MIN: 52.97 / MAX: 54.65
53.66
12
24
36
48
60
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread


NCNN 20201218
Target: CPU - Model: resnet18
ms, Fewer Is Better
Linux 5.10.2
SE +/- 0.04, N = 3
MIN: 12.82 / MAX: 13.21
12.95
Linux 5.11 Git
SE +/- 0.19, N = 3
MIN: 12.97 / MAX: 22.11
13.26
3
6
9
12
15
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread
NCNN 20201218
Target: CPU - Model: alexnet
ms, Fewer Is Better
Linux 5.10.2
SE +/- 0.08, N = 3
MIN: 10.3 / MAX: 18.31
10.53
Linux 5.11 Git
SE +/- 0.11, N = 3
MIN: 10.28 / MAX: 10.71
10.44
3
6
9
12
15
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread
NCNN 20201218
Target: CPU - Model: resnet50
ms, Fewer Is Better
Linux 5.10.2
SE +/- 0.10, N = 3
MIN: 23.36 / MAX: 24.31
23.62
Linux 5.11 Git
SE +/- 0.36, N = 3
MIN: 23.61 / MAX: 25.38
24.15
6
12
18
24
30
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread
NCNN 20201218
Target: CPU - Model: yolov4-tiny
ms, Fewer Is Better
Linux 5.10.2
SE +/- 0.10, N = 3
MIN: 19.59 / MAX: 20.33
19.89
Linux 5.11 Git
SE +/- 0.48, N = 3
MIN: 19.79 / MAX: 21.71
20.43
5
10
15
20
25
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread


NCNN 20201218
Target: CPU - Model: squeezenet_ssd
ms, Fewer Is Better
Linux 5.10.2
SE +/- 0.06, N = 3
MIN: 13.73 / MAX: 14.36
13.98
Linux 5.11 Git
SE +/- 0.09, N = 3
MIN: 13.96 / MAX: 14.58
14.19
4
8
12
16
20
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread
NCNN 20201218
Target: CPU - Model: regnety_400m
ms, Fewer Is Better
Linux 5.10.2
SE +/- 0.36, N = 3
MIN: 15.85 / MAX: 18.66
16.68
Linux 5.11 Git
SE +/- 0.07, N = 3
MIN: 16.91 / MAX: 19.11
17.12
4
8
12
16
20
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread
NCNN 20201218
Target: Vulkan GPU - Model: mobilenet
ms, Fewer Is Better
Linux 5.10.2
SE +/- 0.03, N = 3
MIN: 12.12 / MAX: 12.65
12.30
Linux 5.11 Git
SE +/- 0.07, N = 3
MIN: 12.03 / MAX: 14.49
12.20
3
6
9
12
15
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread
NCNN 20201218
Target: Vulkan GPU-v2-v2 - Model: mobilenet-v2
ms, Fewer Is Better
Linux 5.10.2
SE +/- 0.01, N = 3
MIN: 4.17 / MAX: 5.41
4.22
Linux 5.11 Git
SE +/- 0.02, N = 3
MIN: 4.16 / MAX: 12.09
4.22
0.9495
1.899
2.8485
3.798
4.7475
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

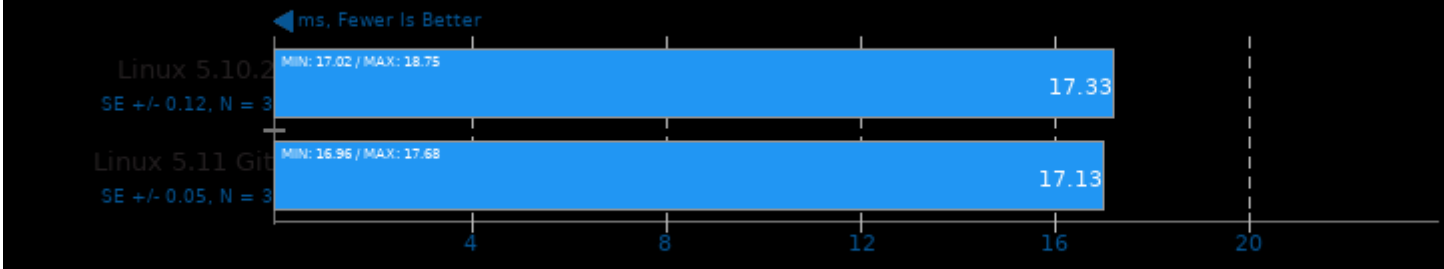

NCNN 20201218
Target: Vulkan GPU-v3-v3 - Model: mobilenet-v3
ms, Fewer Is Better
Linux 5.10.2
SE +/- 0.01, N = 3
MIN: 3.95 / MAX: 5.33
4.00
Linux 5.11 Git
SE +/- 0.01, N = 3
MIN: 3.95 / MAX: 6.5
3.99
0.9
1.8
2.7
3.6
4.5
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread
NCNN 20201218
Target: Vulkan GPU - Model: shufflenet-v2
ms, Fewer Is Better
Linux 5.10.2
SE +/- 0.01, N = 3
MIN: 4.78 / MAX: 5.77
4.83
Linux 5.11 Git
SE +/- 0.00, N = 3
MIN: 4.77 / MAX: 4.96
4.81
1.0868
2.1736
3.2604
4.3472
5.434
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread
NCNN 20201218
Target: Vulkan GPU - Model: mnasnet
ms, Fewer Is Better
Linux 5.10.2
SE +/- 0.01, N = 3
MIN: 3.76 / MAX: 4.55
3.81
Linux 5.11 Git
SE +/- 0.01, N = 3
MIN: 3.76 / MAX: 4.2
3.79
0.8573
1.7146
2.5719
3.4292
4.2865
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread
NCNN 20201218
Target: Vulkan GPU - Model: efficientnet-b0
ms, Fewer Is Better
Linux 5.10.2
SE +/- 0.01, N = 3
MIN: 5.24 / MAX: 6.68
5.29
Linux 5.11 Git
SE +/- 0.01, N = 3
MIN: 5.24 / MAX: 5.66
5.28
1.1903
2.3806
3.5709
4.7612
5.9515
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread


NCNN 20201218
Target: Vulkan GPU - Model: blazeface
ms, Fewer Is Better
Linux 5.10.2
SE +/- 0.03, N = 3
MIN: 1.78 / MAX: 2.05
1.83
Linux 5.11 Git
SE +/- 0.05, N = 3
MIN: 1.77 / MAX: 2.08
1.84
0.414
0.828
1.242
1.656
2.07
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread
NCNN 20201218
Target: Vulkan GPU - Model: googlenet
ms, Fewer Is Better
Linux 5.10.2
SE +/- 0.07, N = 3
MIN: 12.06 / MAX: 12.58
12.24
Linux 5.11 Git
SE +/- 0.00, N = 3
MIN: 12.04 / MAX: 12.55
12.15
3
6
9
12
15
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread
NCNN 20201218
Target: Vulkan GPU - Model: vgg16
ms, Fewer Is Better
Linux 5.10.2
SE +/- 0.03, N = 3
MIN: 52.81 / MAX: 60.42
53.43
Linux 5.11 Git
SE +/- 0.05, N = 3
MIN: 52.97 / MAX: 54.2
53.53
12
24
36
48
60
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread
NCNN 20201218
Target: Vulkan GPU - Model: resnet18
ms, Fewer Is Better
Linux 5.10.2
SE +/- 0.01, N = 3
MIN: 12.95 / MAX: 14.92
13.05
Linux 5.11 Git
SE +/- 0.01, N = 3
MIN: 12.96 / MAX: 13.24
13.04
3
6
9
12
15
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread


NCNN 20201218
Target: Vulkan GPU - Model: alexnet
ms, Fewer Is Better
Linux 5.10.2
SE +/- 0.11, N = 3
MIN: 10.28 / MAX: 12.35
10.45
Linux 5.11 Git
SE +/- 0.01, N = 3
MIN: 10.26 / MAX: 10.55
10.34
3
6
9
12
15
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread
NCNN 20201218
Target: Vulkan GPU - Model: resnet50
ms, Fewer Is Better
Linux 5.10.2
SE +/- 0.05, N = 3
MIN: 23.54 / MAX: 31.91
23.80
Linux 5.11 Git
SE +/- 0.33, N = 3
MIN: 23.59 / MAX: 25.19
24.18
6
12
18
24
30
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread
NCNN 20201218
Target: Vulkan GPU - Model: yolov4-tiny
ms, Fewer Is Better
Linux 5.10.2
SE +/- 0.09, N = 3
MIN: 19.83 / MAX: 20.51
20.07
Linux 5.11 Git
SE +/- 0.46, N = 3
MIN: 19.73 / MAX: 23.56
20.35
5
10
15
20
25
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread
NCNN 20201218
Target: Vulkan GPU - Model: squeezenet_ssd
ms, Fewer Is Better
Linux 5.10.2
SE +/- 0.05, N = 3
MIN: 13.95 / MAX: 15.08
14.20
Linux 5.11 Git
SE +/- 0.03, N = 3
MIN: 13.96 / MAX: 14.52
14.16
4
8
12
16
20
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

NCNN 20201218

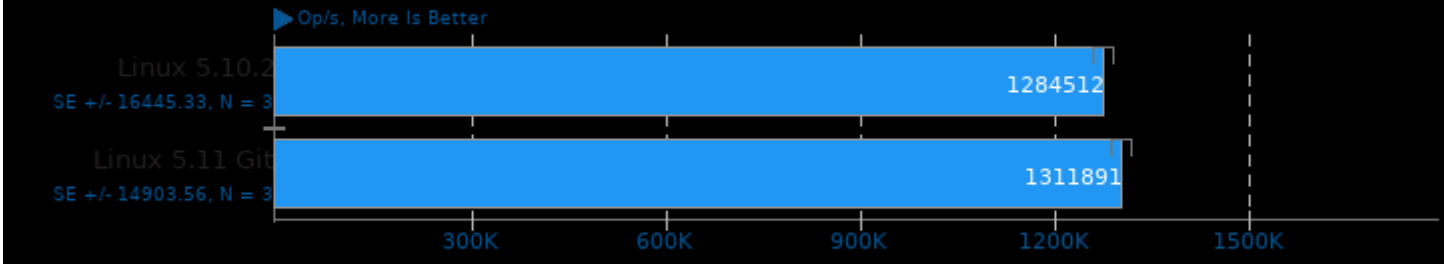
Target: Vulkan GPU - Model: regnety_400m



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

Facebook RocksDB 6.3.6

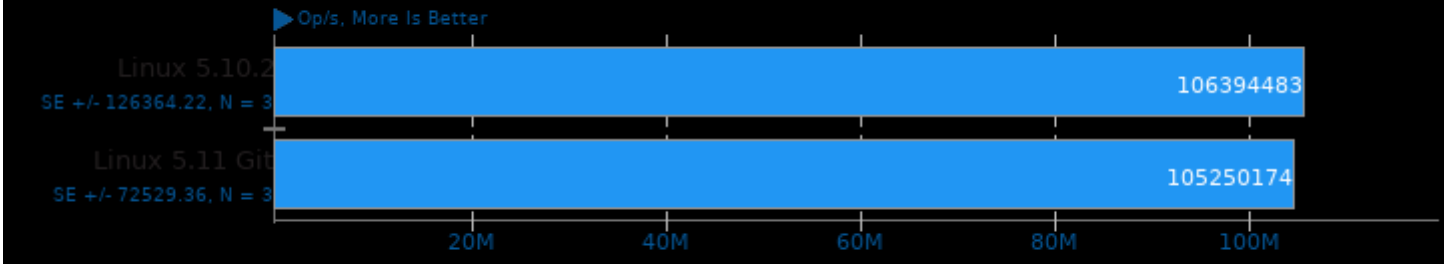
Test: Random Fill



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

Facebook RocksDB 6.3.6

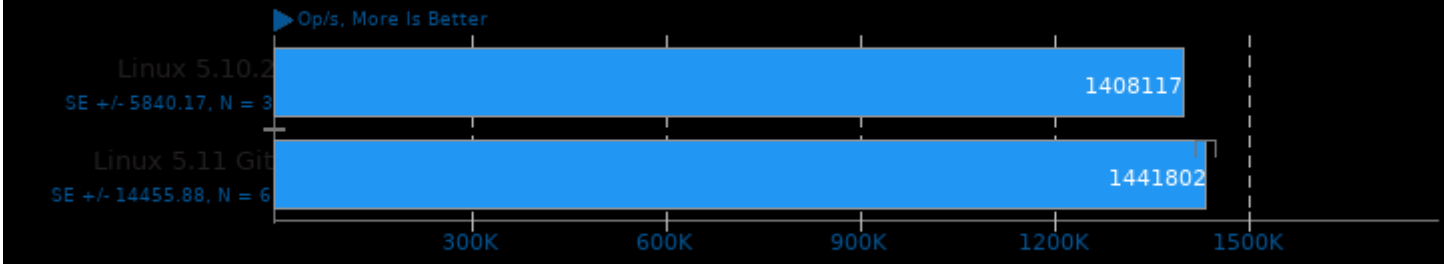
Test: Random Read



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

Facebook RocksDB 6.3.6

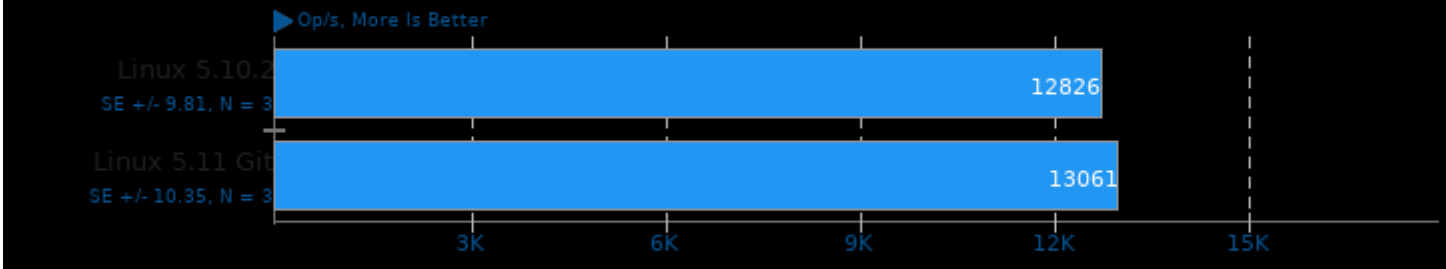
Test: Sequential Fill



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

Facebook RocksDB 6.3.6

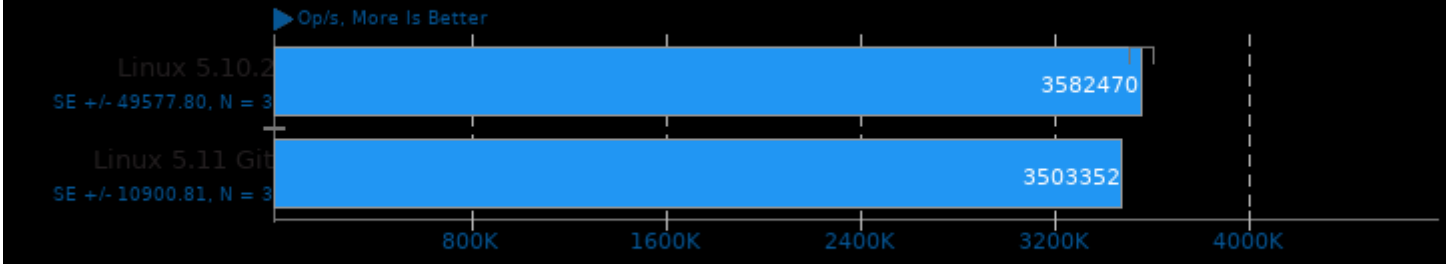
Test: Random Fill Sync



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

Facebook RocksDB 6.3.6

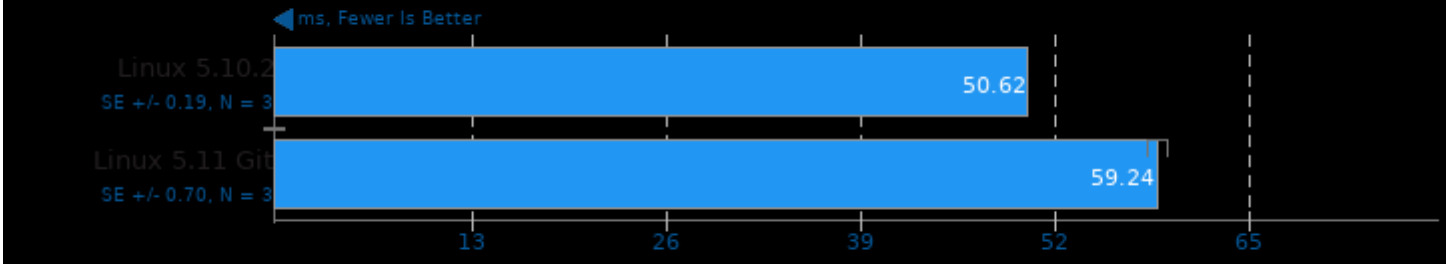
Test: Read While Writing



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

Selenium

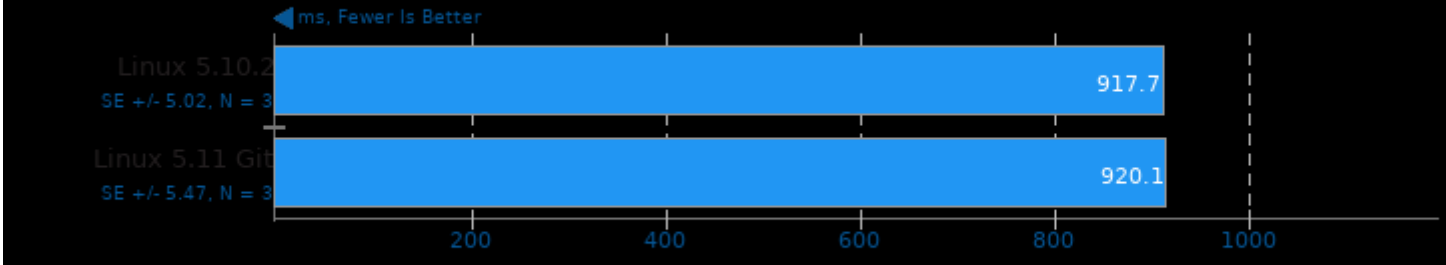
Benchmark: ARES-6 - Browser: Firefox



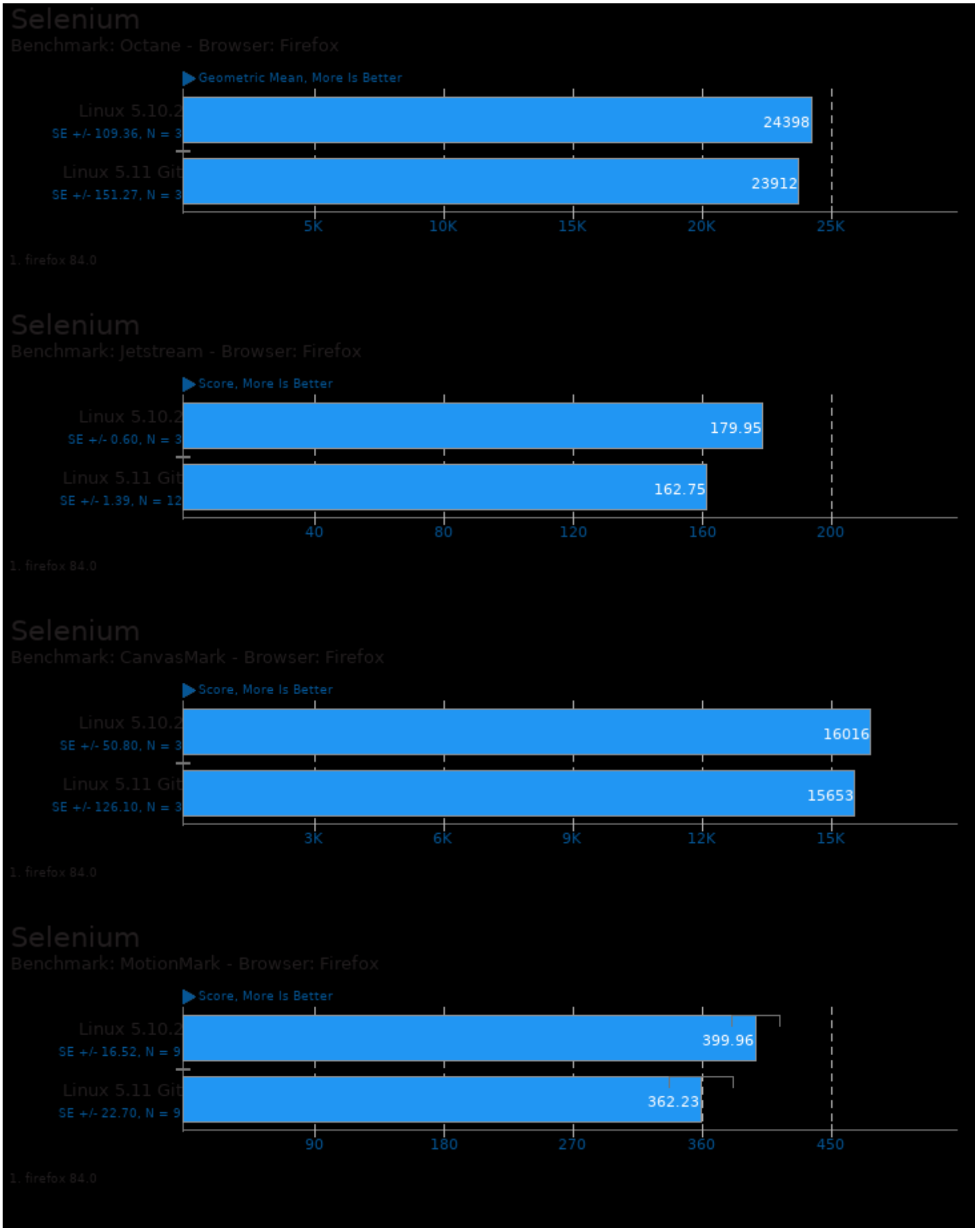
1. firefox 84.0

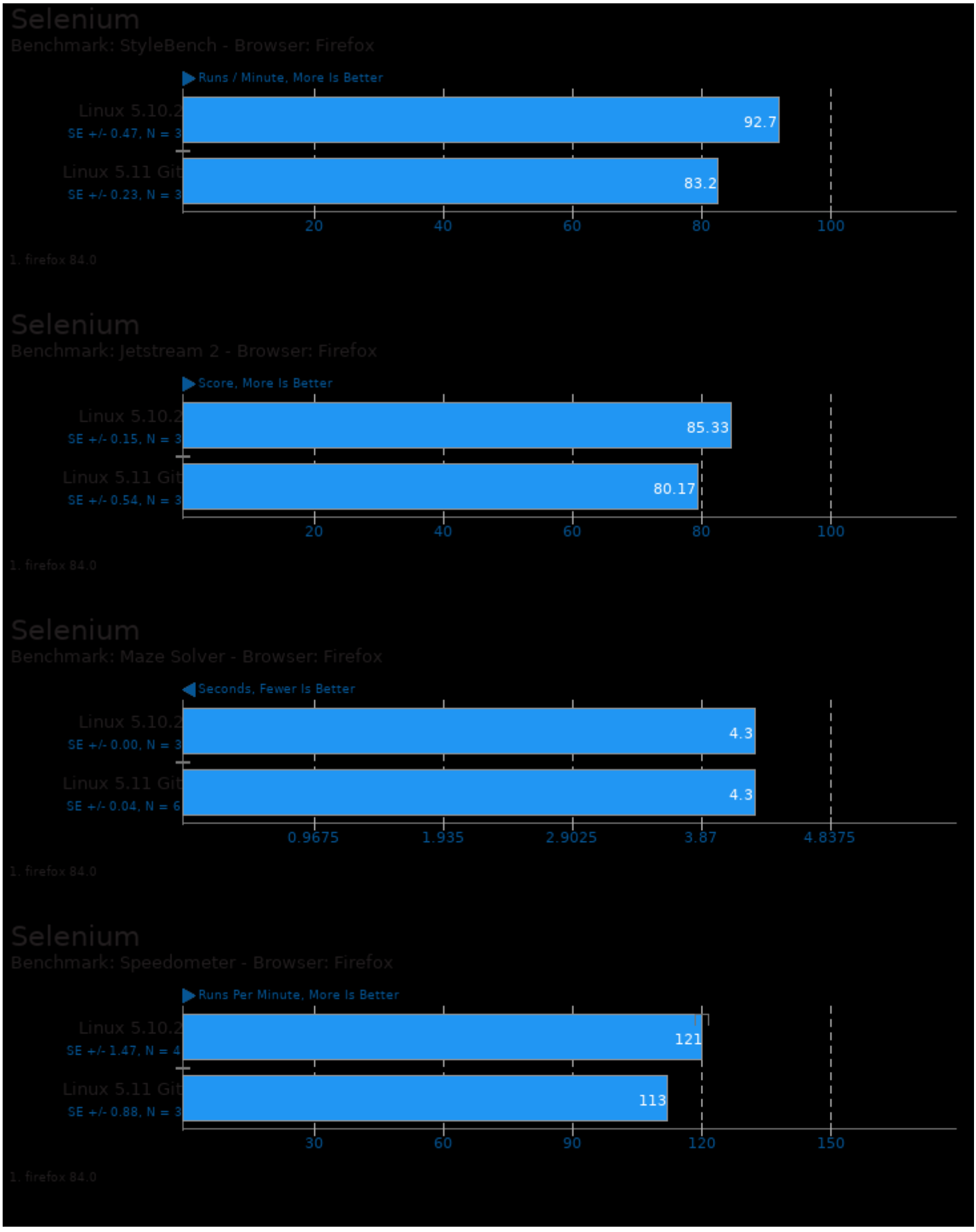
Selenium

Benchmark: Kraken - Browser: Firefox



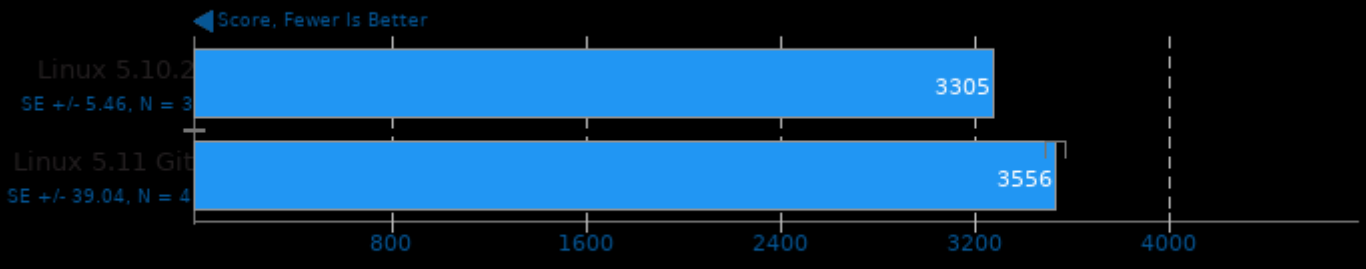
1. firefox 84.0


Selenium
Benchmark: Octane - Browser: Firefox
Geometric Mean, More Is Better
Linux 5.10.2
SE +/- 109.36, N = 3
24398
Linux 5.11 Git
SE +/- 151.27, N = 3
23912
5K
10K
15K
20K
25K
1. firefox 84.0
Selenium
Benchmark: Jetstream - Browser: Firefox
Score, More Is Better
Linux 5.10.2
SE +/- 0.60, N = 3
179.95
Linux 5.11 Git
SE +/- 1.39, N = 12
162.75
40
80
120
160
200
1. firefox 84.0
Selenium
Benchmark: CanvasMark - Browser: Firefox
Score, More Is Better
Linux 5.10.2
SE +/- 50.80, N = 3
16016
Linux 5.11 Git
SE +/- 126.10, N = 3
15653
3K
6K
9K
12K
15K
1. firefox 84.0
Selenium
Benchmark: MotionMark - Browser: Firefox
Score, More Is Better
Linux 5.10.2
SE +/- 16.52, N = 9
399.96
Linux 5.11 Git
SE +/- 22.70, N = 9
362.23
90
180
270
360
450
1. firefox 84.0


Selenium
Benchmark: StyleBench - Browser: Firefox
Runs / Minute, More Is Better
Linux 5.10.2
SE +/- 0.47, N = 3
92.7
Linux 5.11 Git
SE +/- 0.23, N = 3
83.2
20
40
60
80
100
1. firefox 84.0
Selenium
Benchmark: Jetstream 2 - Browser: Firefox
Score, More Is Better
Linux 5.10.2
SE +/- 0.15, N = 3
85.33
Linux 5.11 Git
SE +/- 0.54, N = 3
80.17
20
40
60
80
100
1. firefox 84.0
Selenium
Benchmark: Maze Solver - Browser: Firefox
Seconds, Fewer Is Better
Linux 5.10.2
SE +/- 0.00, N = 3
4.3
Linux 5.11 Git
SE +/- 0.04, N = 6
4.3
0.9675
1.935
2.9025
3.87
4.8375
1. firefox 84.0
Selenium
Benchmark: Speedometer - Browser: Firefox
Runs Per Minute, More Is Better
Linux 5.10.2
SE +/- 1.47, N = 4
121
Linux 5.11 Git
SE +/- 0.88, N = 3
113
30
60
90
120
150
1. firefox 84.0

Selenium

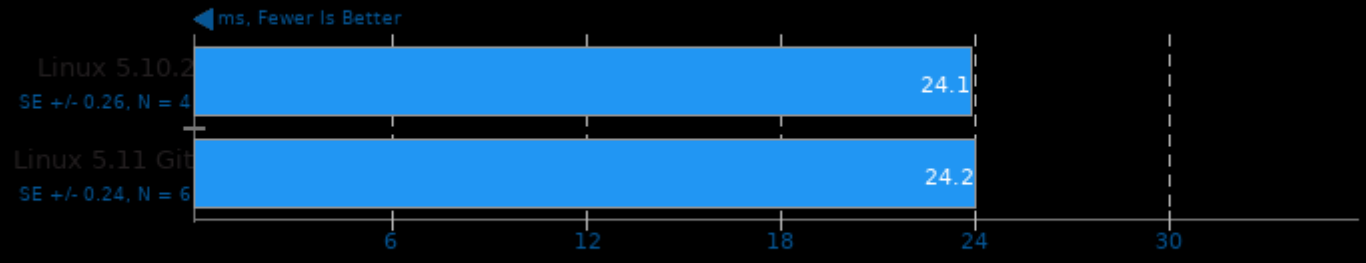
Benchmark: PSPDFKit WASM - Browser: Firefox



1. firefox 84.0

Selenium

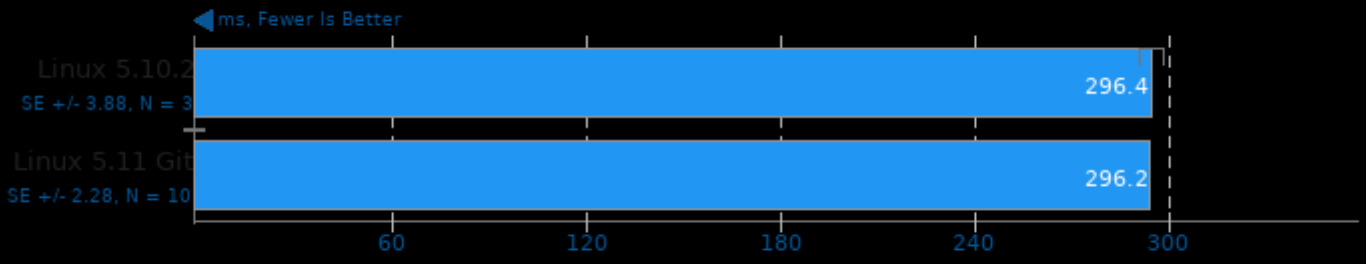
Benchmark: WASM imageConvolute - Browser: Firefox



1. firefox 84.0

Selenium

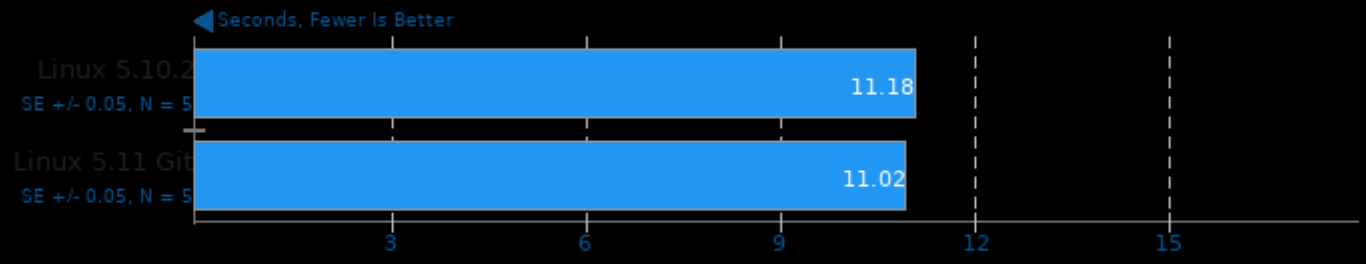
Benchmark: WASM collisionDetection - Browser: Firefox



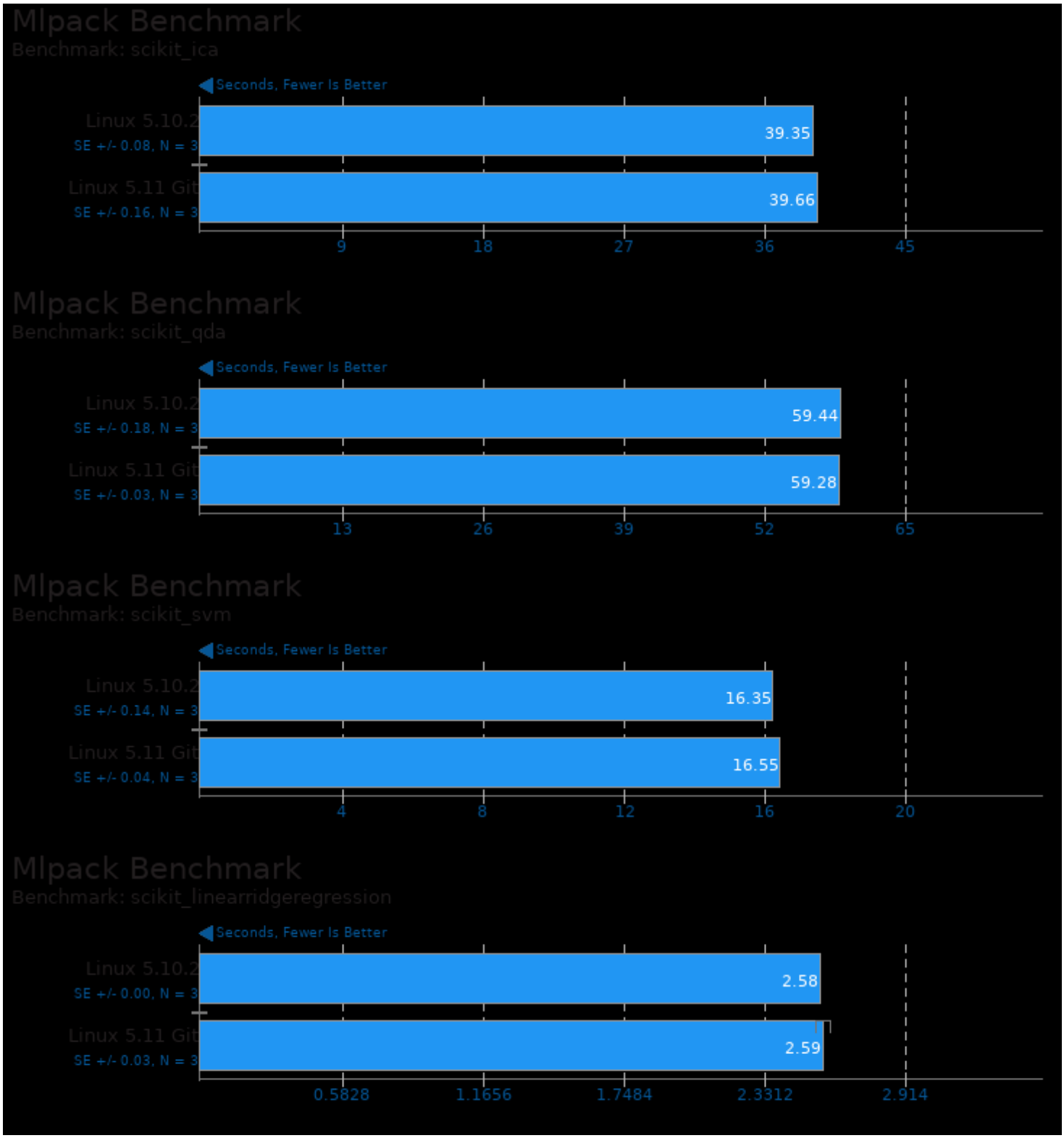
1. firefox 84.0

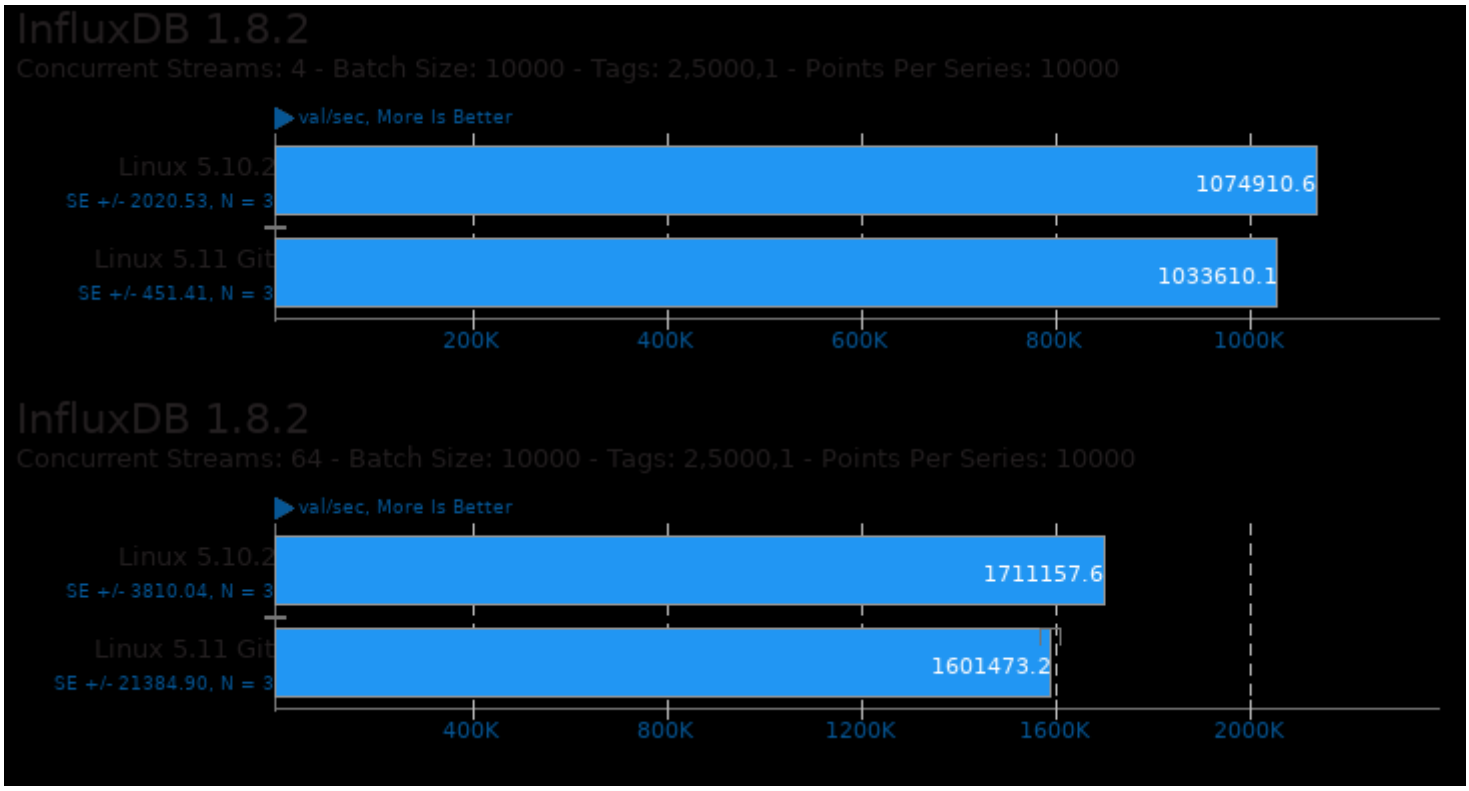
WavPack Audio Encoding 5.3

WAV To WavPack

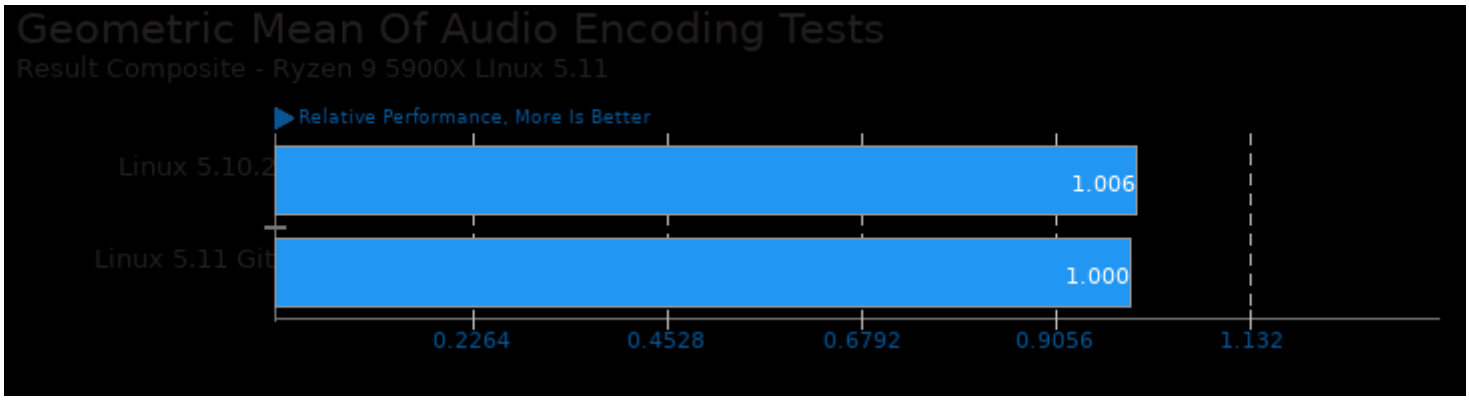


1. (CXX) g++ options: -rdynamic

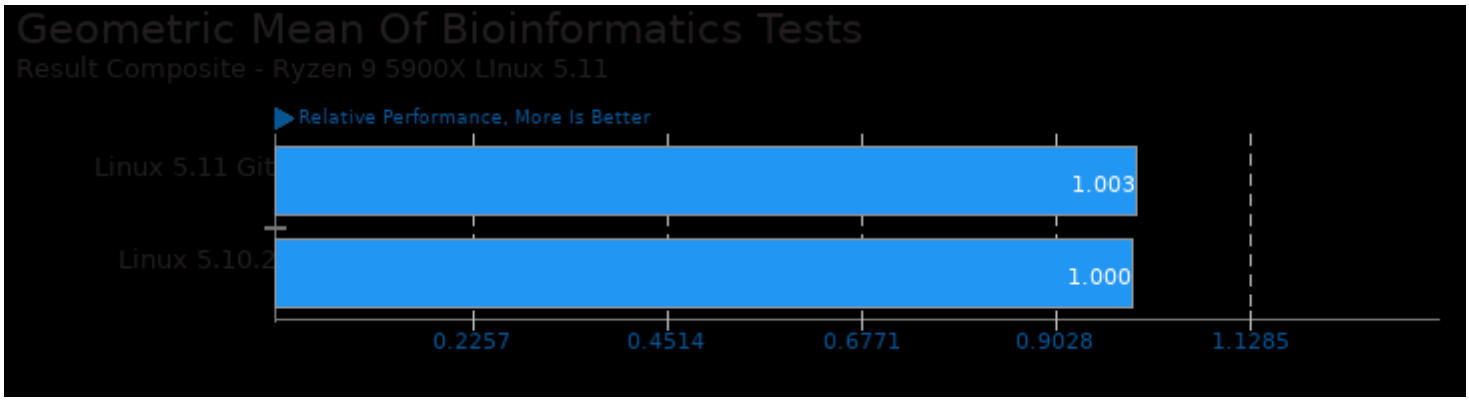

Mlpack Benchmark
Benchmark: scikit_ica
Seconds, Fewer Is Better
Linux 5.10.2
SE +/- 0.08, N = 3
39.35
Linux 5.11 Git
SE +/- 0.16, N = 3
39.66
9
18
27
36
45
Mlpack Benchmark
Benchmark: scikit_qda
Seconds, Fewer Is Better
Linux 5.10.2
SE +/- 0.18, N = 3
59.44
Linux 5.11 Git
SE +/- 0.03, N = 3
59.28
13
26
39
52
65
Mlpack Benchmark
Benchmark: scikit_svm
Seconds, Fewer Is Better
Linux 5.10.2
SE +/- 0.14, N = 3
16.35
Linux 5.11 Git
SE +/- 0.04, N = 3
16.55
4
8
12
16
20
Mlpack Benchmark
Benchmark: scikit_linearridgeregression
Seconds, Fewer Is Better
Linux 5.10.2
SE +/- 0.00, N = 3
2.58
Linux 5.11 Git
SE +/- 0.03, N = 3
2.59
0.5828
1.1656
1.7484
2.3312
2.914


InfluxDB 1.8.2
Concurrent Streams: 4 - Batch Size: 10000 - Tags: 2,5000,1 - Points Per Series: 10000
val/sec, More Is Better
Linux 5.10.2
SE +/- 2020.53, N = 3
1074910.6
Linux 5.11 Git
SE +/- 451.41, N = 3
1033610.1
200K
400K
600K
800K
1000K
InfluxDB 1.8.2
Concurrent Streams: 64 - Batch Size: 10000 - Tags: 2,5000,1 - Points Per Series: 10000
val/sec, More Is Better
Linux 5.10.2
SE +/- 3810.04, N = 3
1711157.6
Linux 5.11 Git
SE +/- 21384.90, N = 3
1601473.2
400K
800K
1200K
1600K
2000K

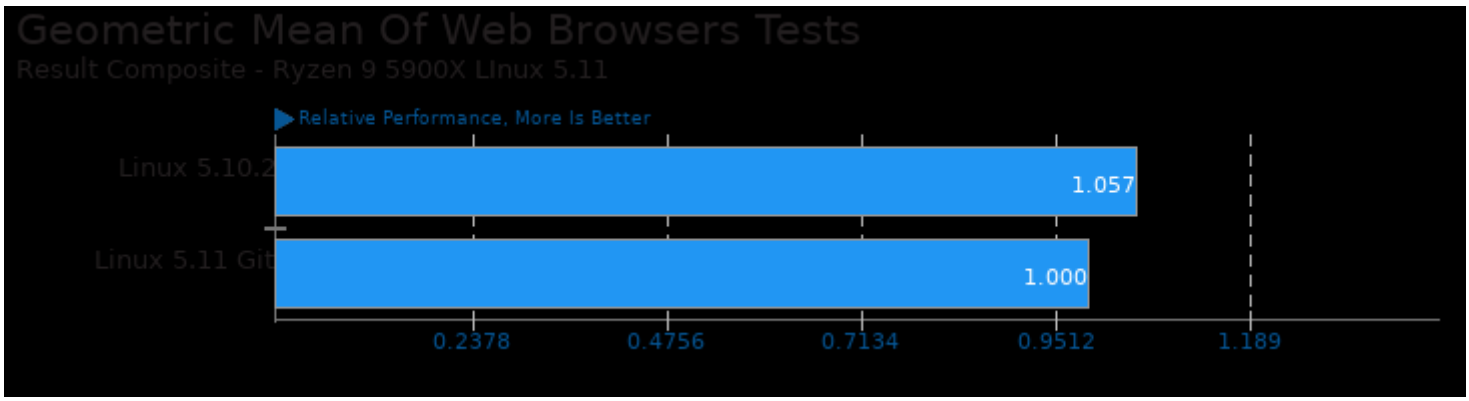
These geometric means are based upon test groupings / test suites for this result file.



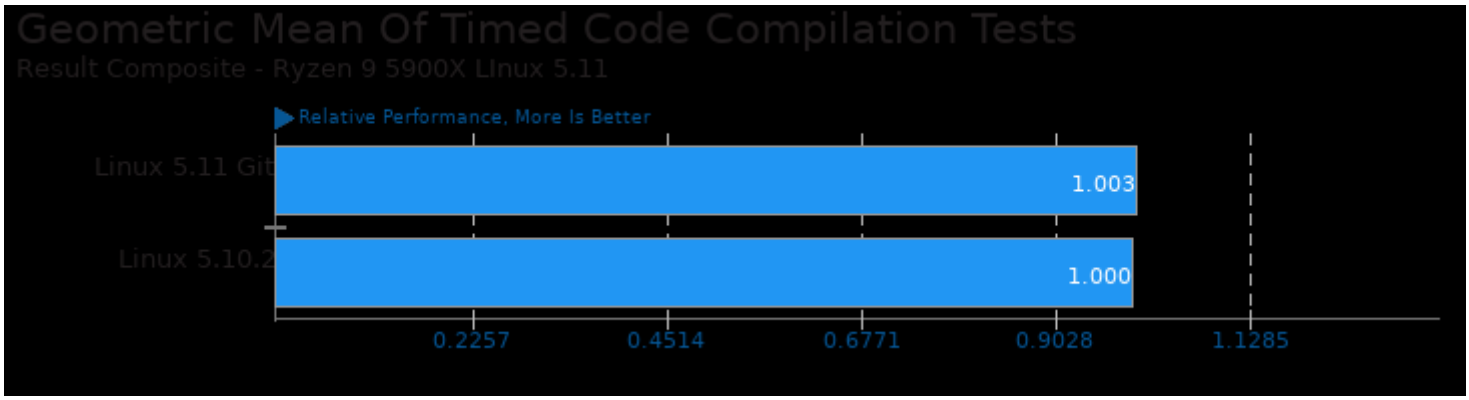
Geometric mean based upon tests: pts/encode-ogg, pts/encode-wavpack and pts/encode-opus



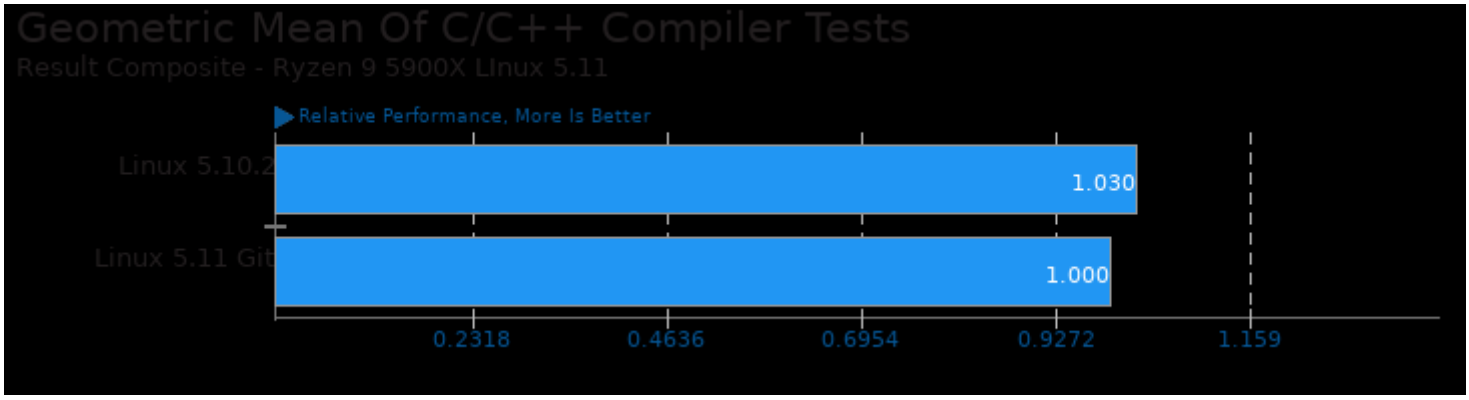
Geometric mean based upon tests: pts/himeno and pts/hmmer



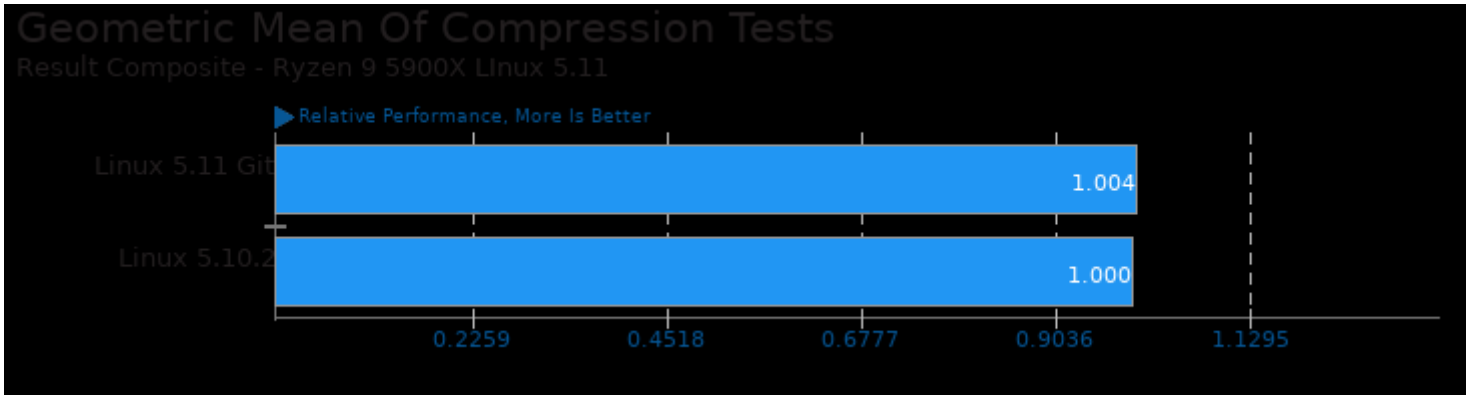
Geometric mean based upon tests: system/selenium



Geometric mean based upon tests: pts/build-eigen, pts/build-linux-kernel, pts/build-llvm and pts/build2



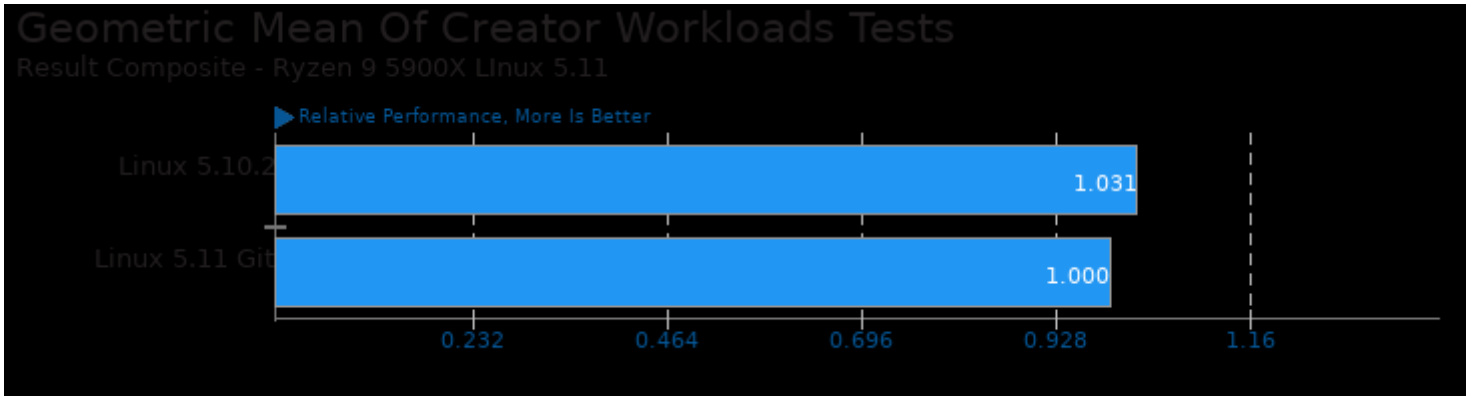
Geometric mean based upon tests: pts/himeno, pts/hmmer, pts/build-llvm, pts/pgbench, pts/sqlite-speedtest, pts/clomp, pts/compress-zstd, pts/lammps, pts/gromacs, pts/keydb and pts/leveldb



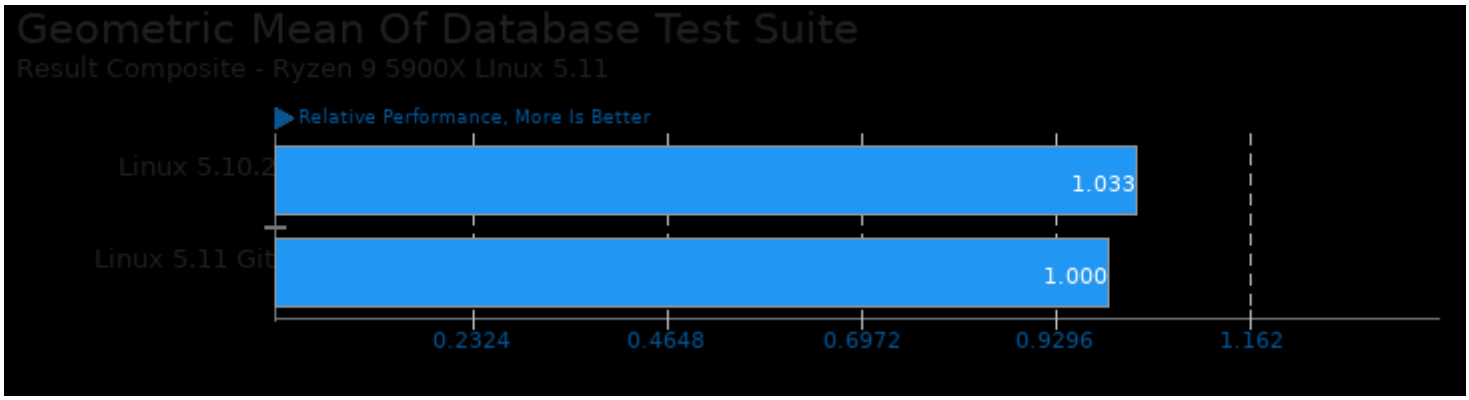
Geometric mean based upon tests: pts/compress-zstd and pts/compress-lz4



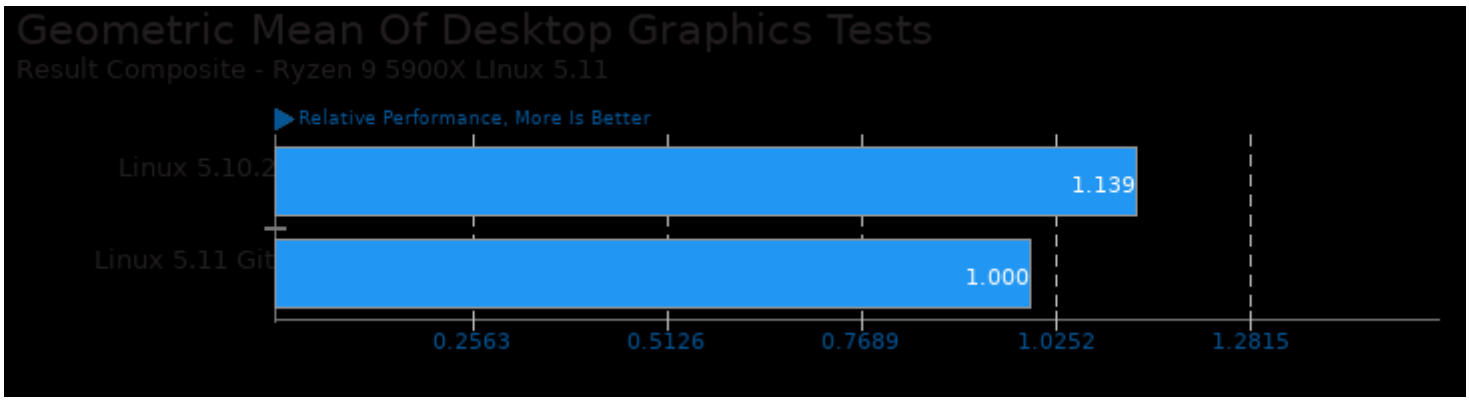
Geometric mean based upon tests: pts/build-llvm, pts/build-linux-kernel, pts/compress-zstd, pts/hackbench, pts/himeno, pts/hmmer, pts/hpcc, pts/hpcg, pts/lammps, pts/onednn, pts/namd, pts/numpy, pts/pgbench, pts/stress-ng and pts/clomp



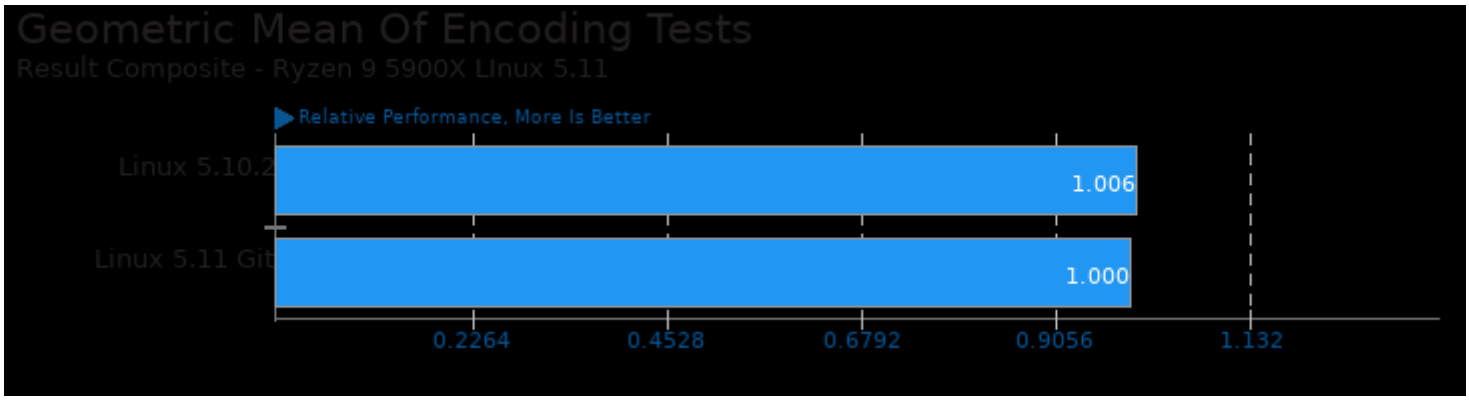
Geometric mean based upon tests: pts/encode-ogg, pts/encode-wavpack, pts/encode-opus, pts/embree, pts/onednn, pts/oidn, pts/openvkl and pts/espeak



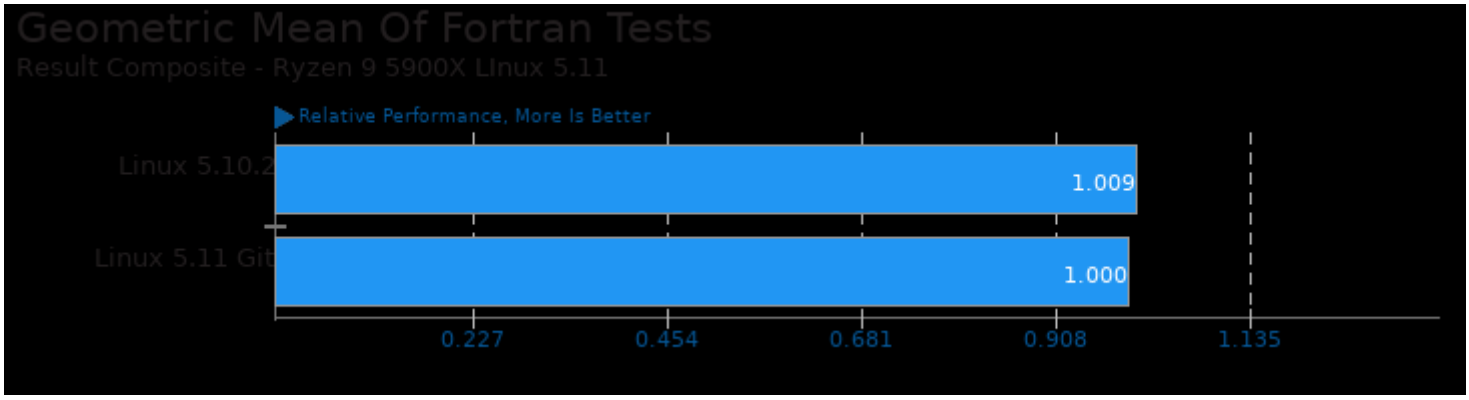
Geometric mean based upon tests: pts/sqlite-speedtest, pts/keydb, pts/leveldb, pts/rocksdb, pts/pgbench and pts/influxdb



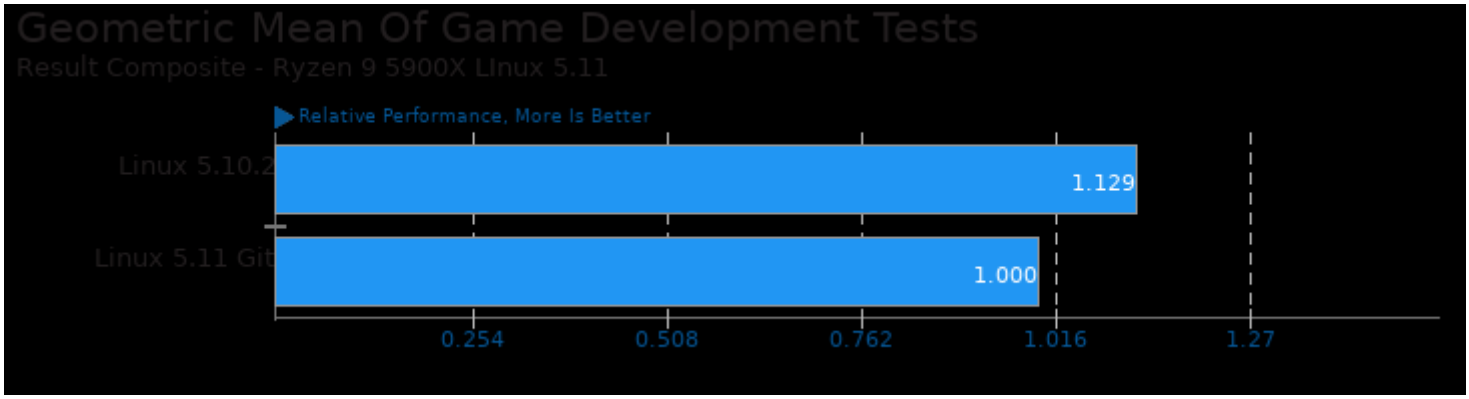
Geometric mean based upon tests: pts/xonotic, pts/tesseract, pts/unigine-valley, pts/unigine-heaven and pts/glmark2



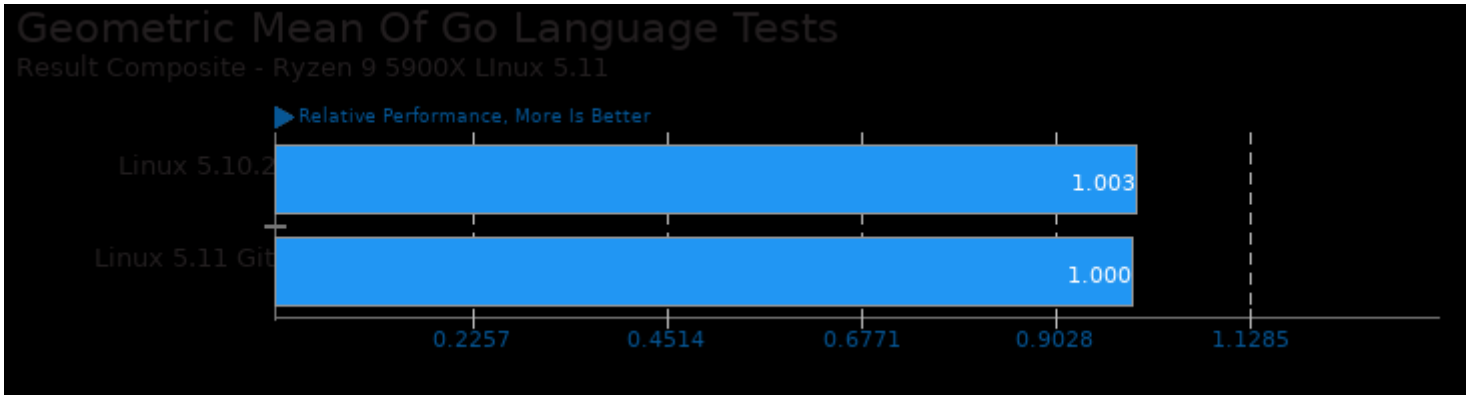
Geometric mean based upon tests: pts/encode-ogg, pts/encode-wavpack and pts/encode-opus



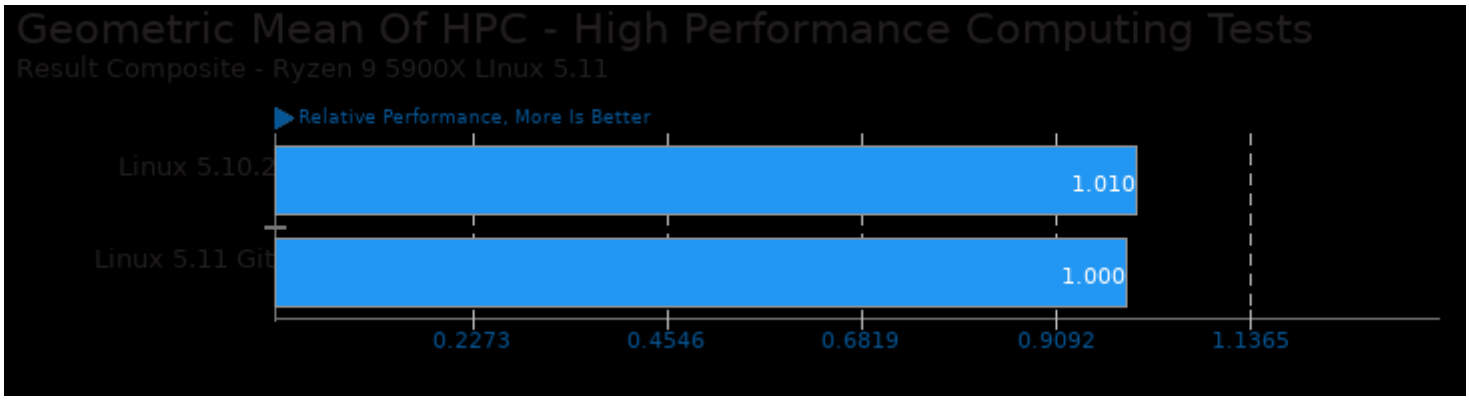
Geometric mean based upon tests: pts/hpcg, pts/hpcc and pts/lammps



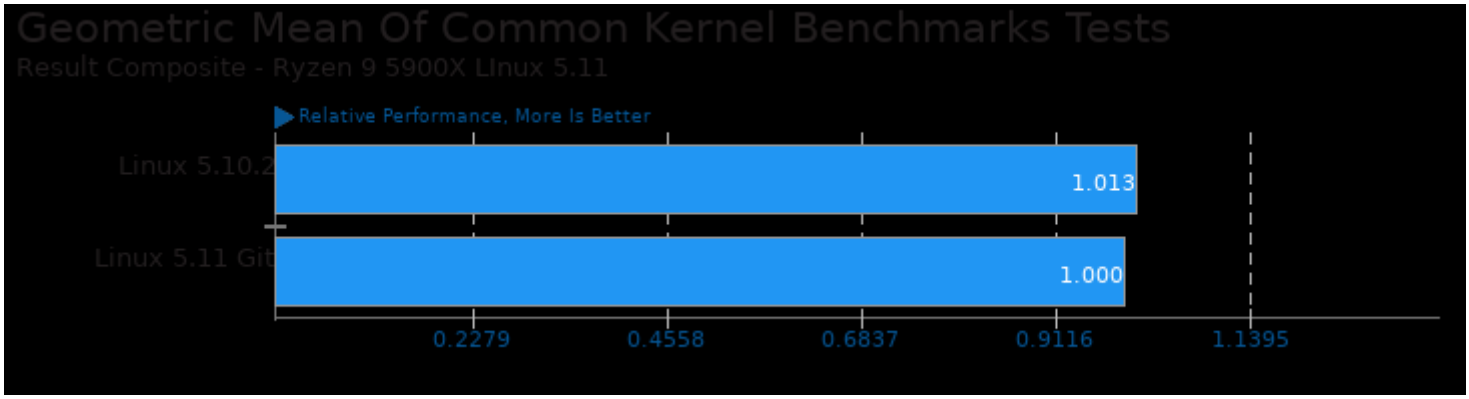
Geometric mean based upon tests: pts/oidn and pts/openvkl



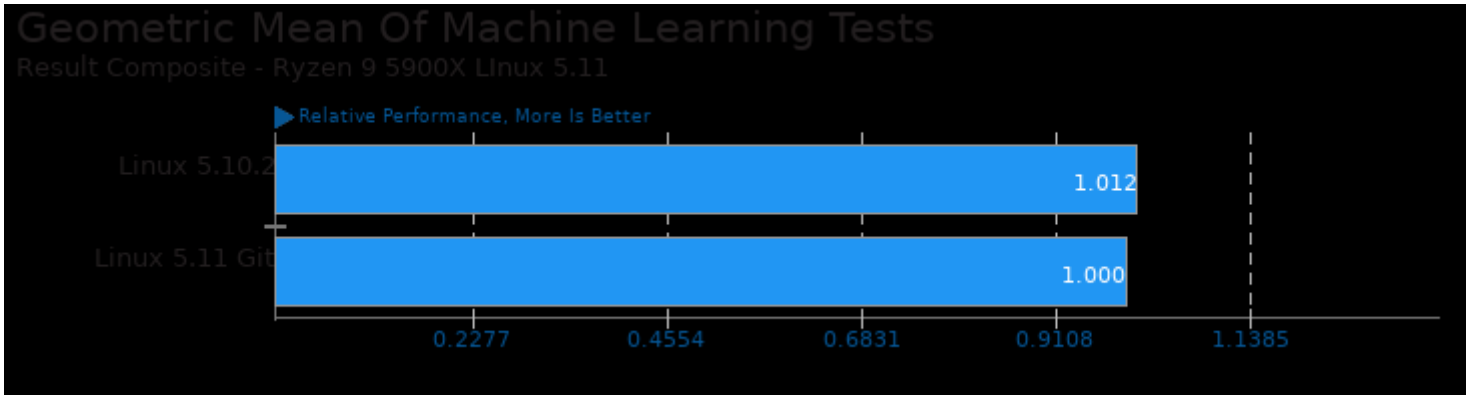
Geometric mean based upon tests: pts/ethr and pts/influxdb



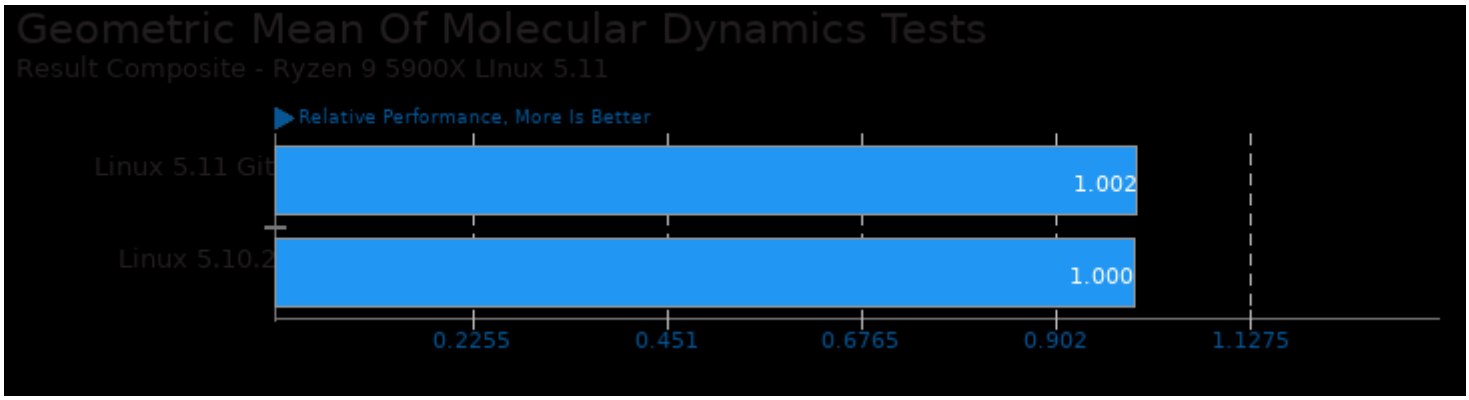
Geometric mean based upon tests: pts/hpcc, pts/hpcg, pts/namd, pts/gromacs, pts/lammps, pts/himeno, pts/hmmer, pts/ncnn, pts/numpy, pts/mlpack and pts/onednn



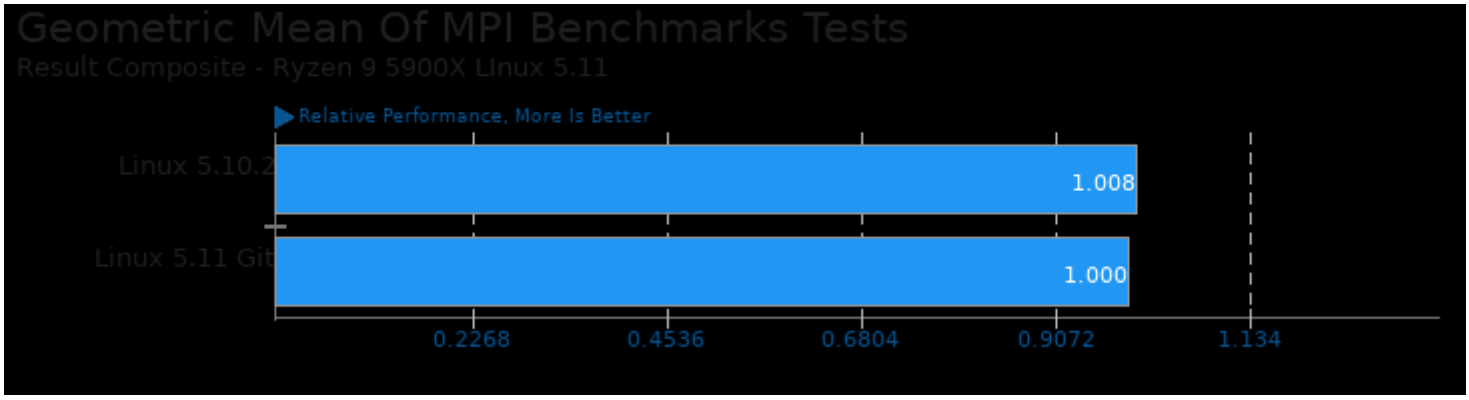
Geometric mean based upon tests: pts/sqlite-speedtest, pts/pgbench, pts/perf-bench, pts/hackbench, pts/mutex, pts/ipc-benchmark, pts/stress-ng, pts/osbench, pts/rocksdb, pts/leveldb, pts/ethr and pts/iperf



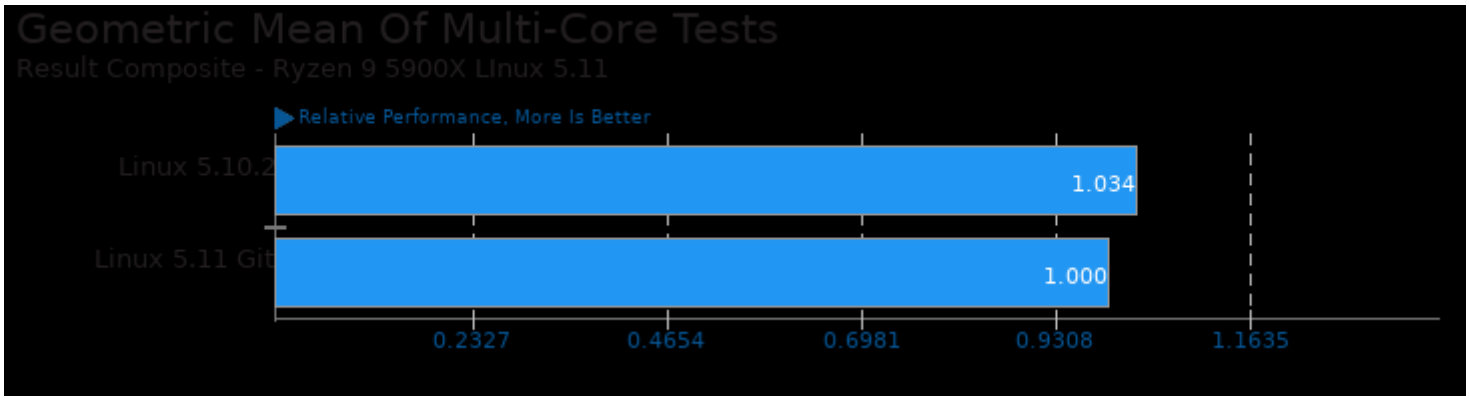
Geometric mean based upon tests: pts/ncnn, pts/numpy, pts/mlpack and pts/onednn



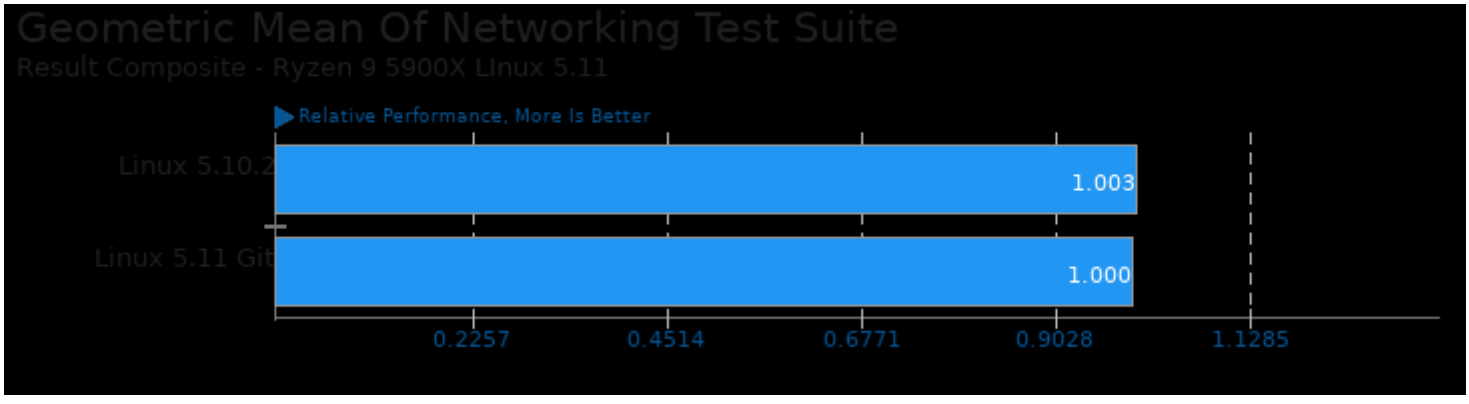
Geometric mean based upon tests: pts/namd, pts/gromacs and pts/lammps



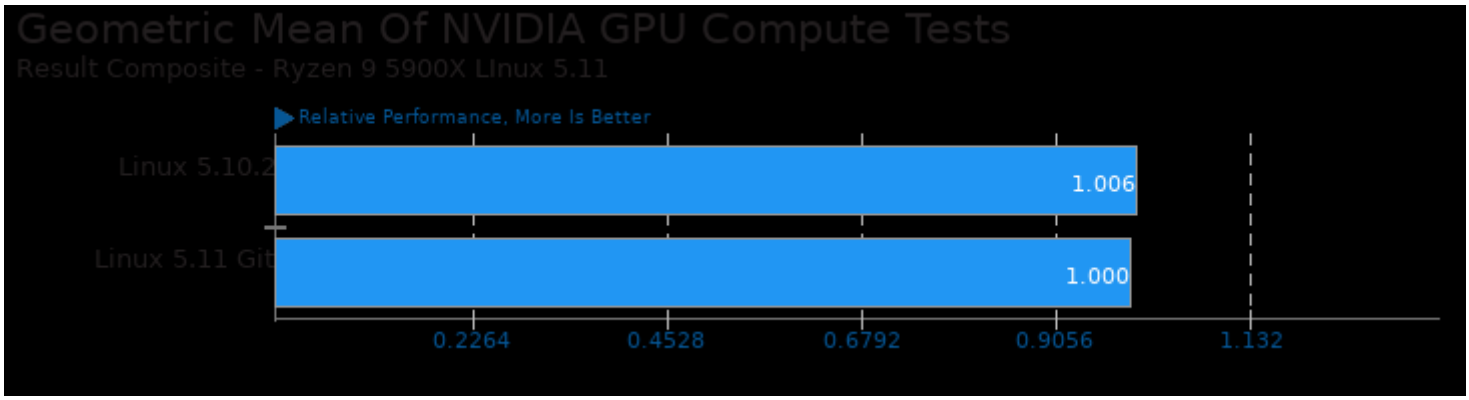
Geometric mean based upon tests: pts/lammps, pts/hpcc, pts/gromacs and pts/hpcg



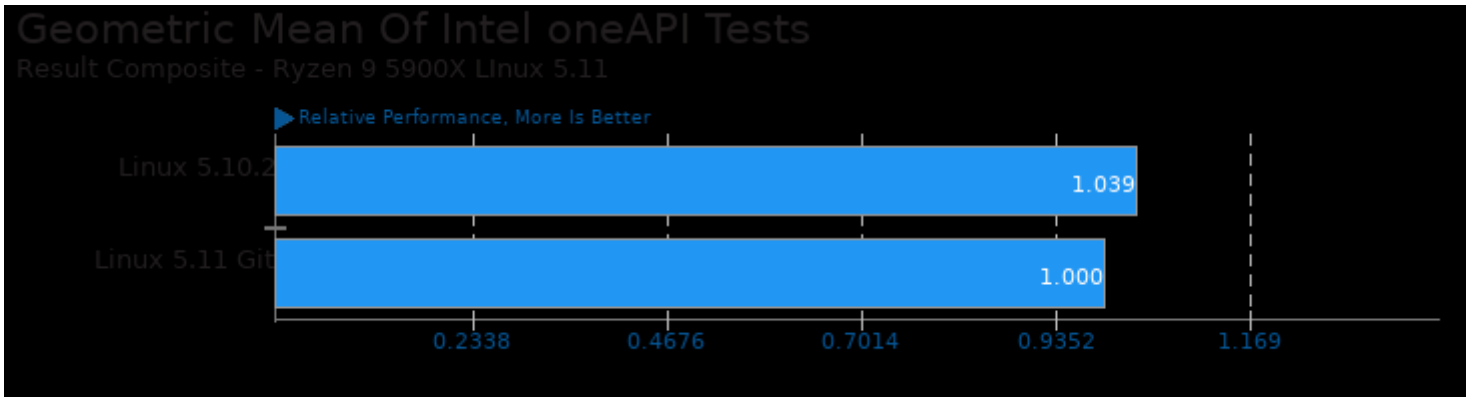
Geometric mean based upon tests: pts/namd, pts/onednn, pts/lammps, pts/gromacs, pts/compress-zstd, pts/build-eigen, pts/build-linux-kernel, pts/build-llvm, pts/build2, pts/embree, pts/oidn, pts/openvkl, pts/hpcg and pts/pgbench



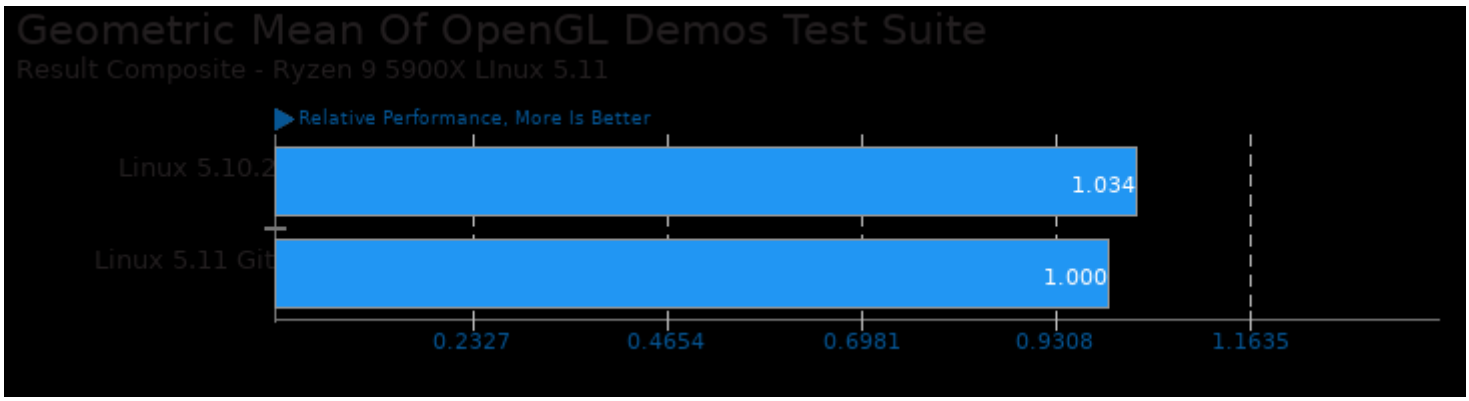
Geometric mean based upon tests: pts/ethr and pts/iperf



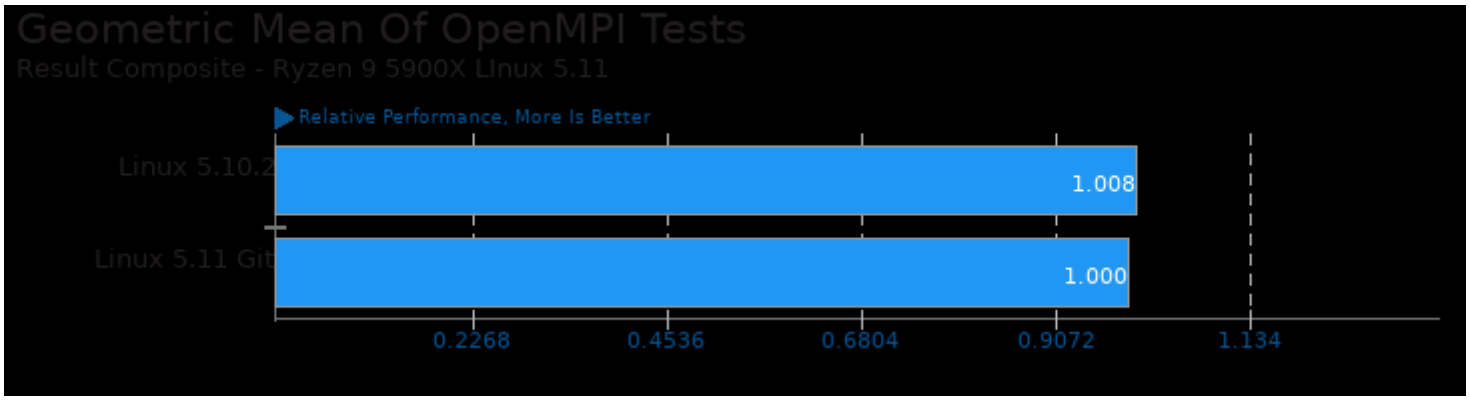
Geometric mean based upon tests: pts/gromacs, pts/vkfft, pts/ncnn, pts/realsr-ncnn and pts/waifu2x-ncnn



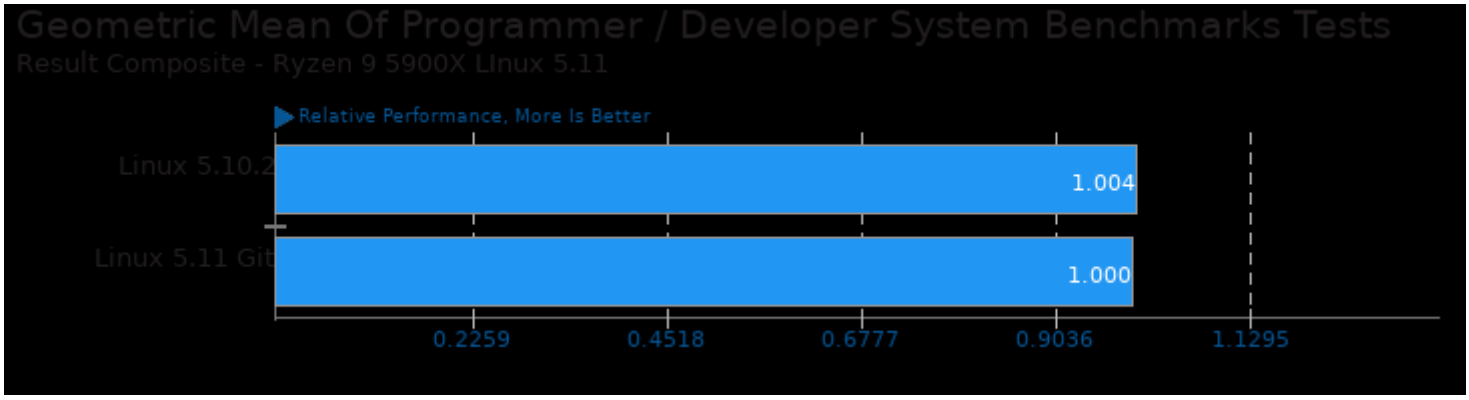
Geometric mean based upon tests: pts/embree, pts/onednn, pts/oidn and pts/openvkl



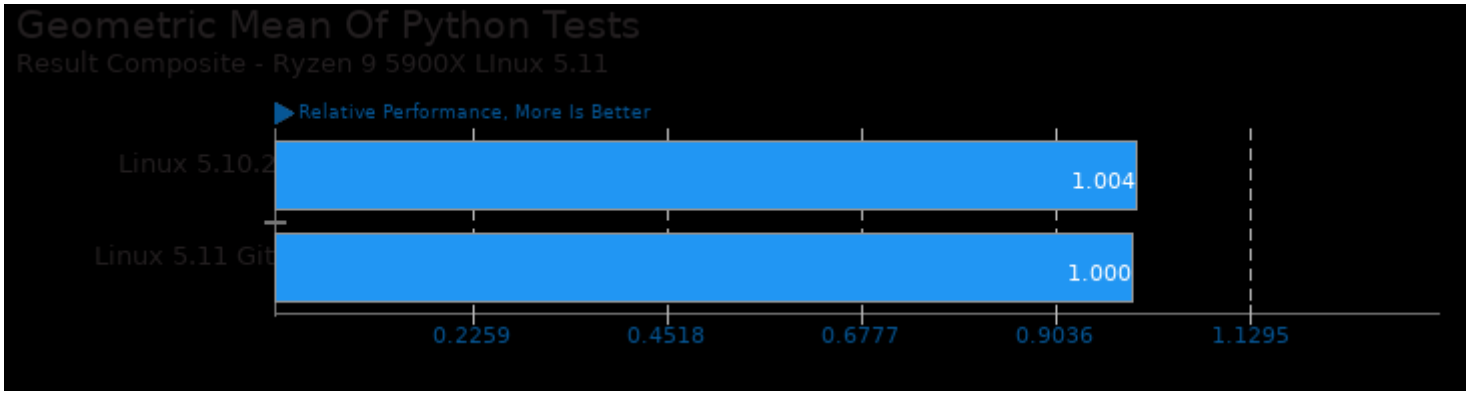
Geometric mean based upon tests: pts/unigine-valley, pts/unigine-heaven and pts/unigine-super



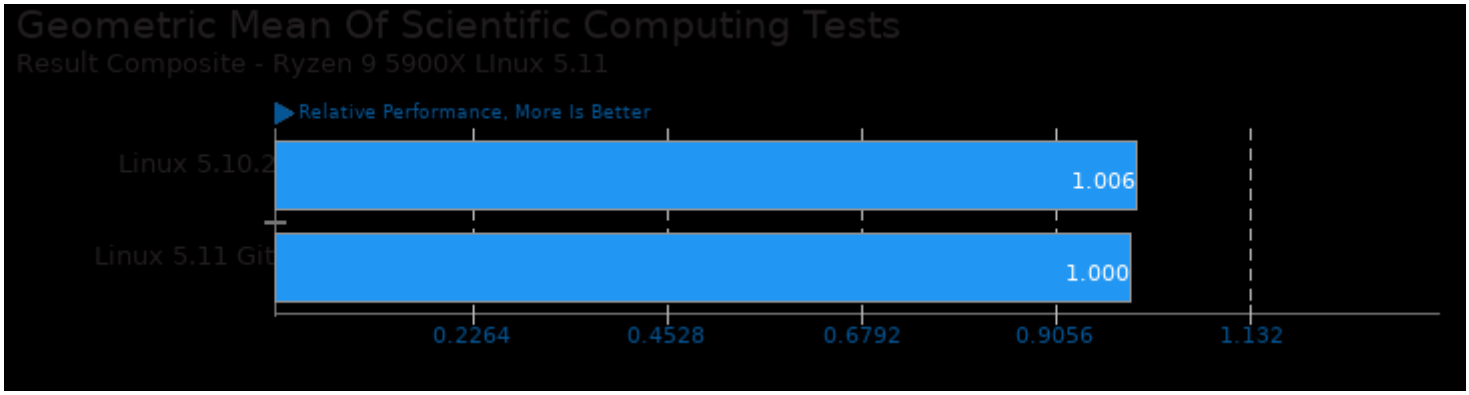
Geometric mean based upon tests: pts/hpcg, pts/hpcc, pts/lammps and pts/gromacs



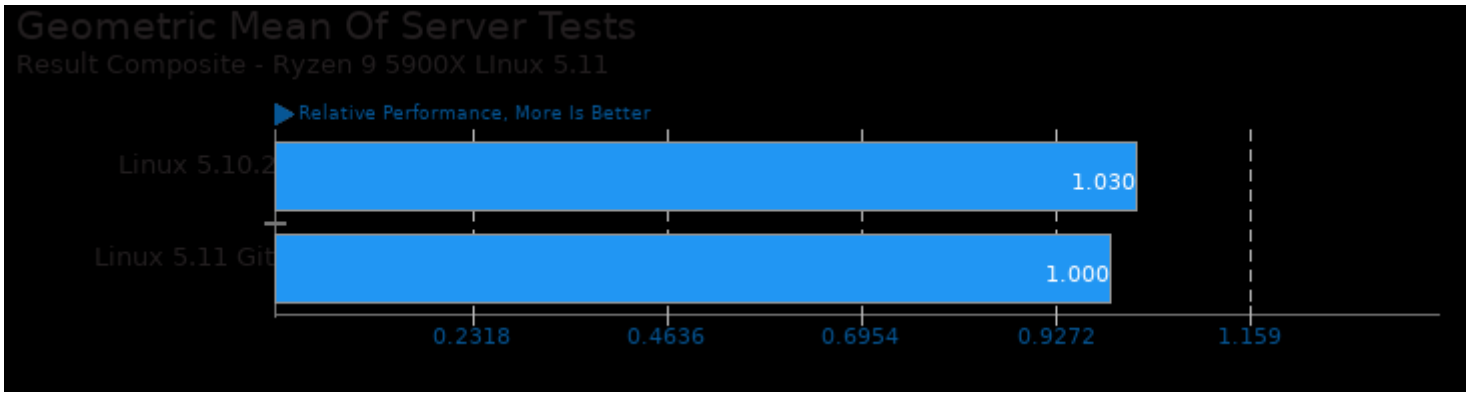
Geometric mean based upon tests: pts/simdjson, pts/sqlite-speedtest, pts/node-web-tooling, pts/compress-zstd, pts/build-eigen, pts/build-linux-kernel, pts/build-llvm, pts/build2 and pts/hpcc



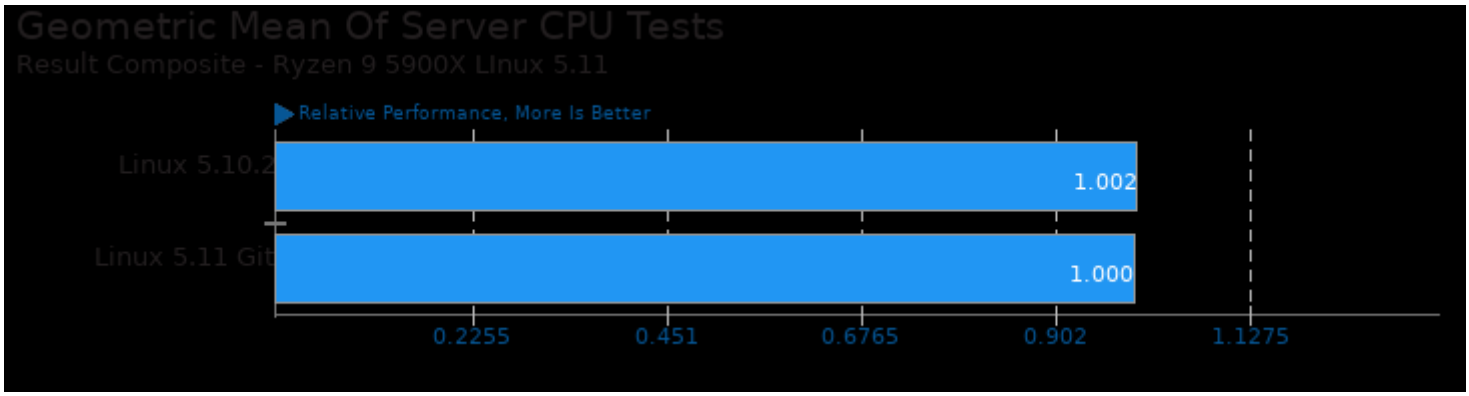
Geometric mean based upon tests: pts/numpy and pts/mlpack



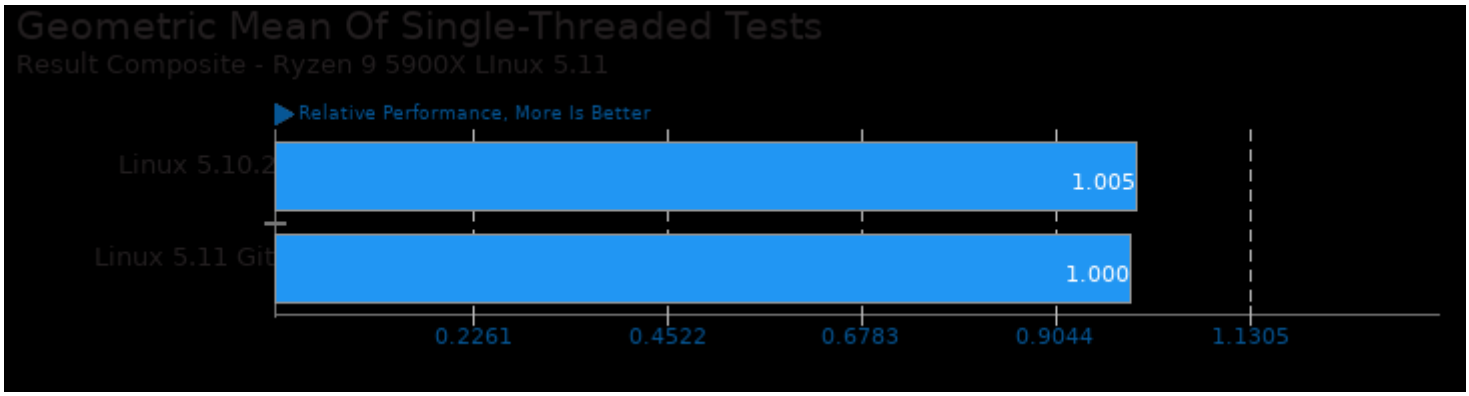
Geometric mean based upon tests: pts/hpcc, pts/namd, pts/gromacs, pts/lammps, pts/himeno and pts/hmmer



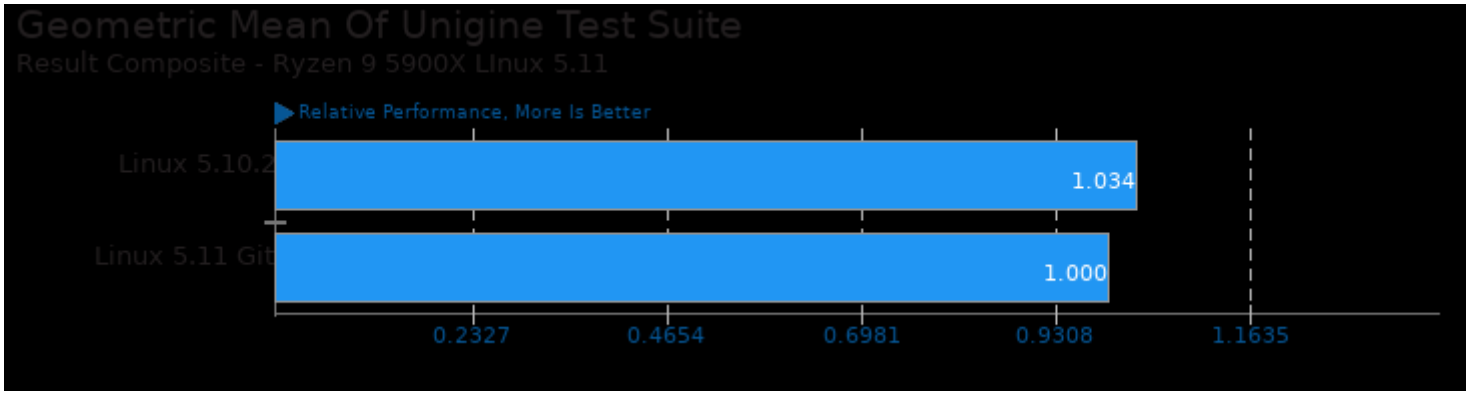
Geometric mean based upon tests: pts/pgbench, pts/keydb, pts/rocksdb, pts/simdjson, pts/node-web-tooling, pts/sqlite-speedtest, pts/leveldb and pts/influxdb



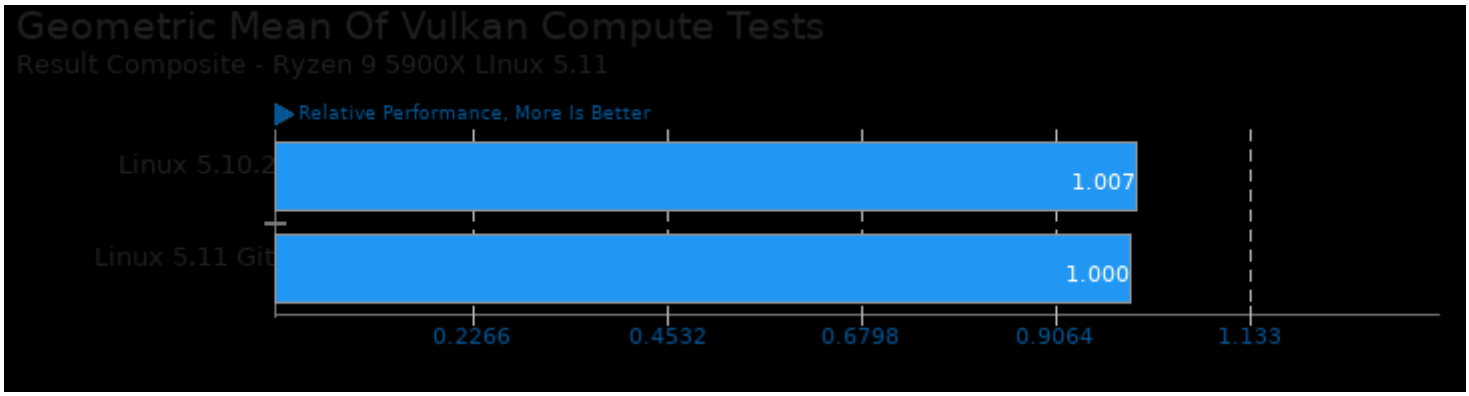
Geometric mean based upon tests: pts/namd, pts/onednn, pts/himeno, pts/build-linux-kernel, pts/build-llvm, pts/compress-zstd, pts/hackbench, pts/stress-ng and pts/numpy



Geometric mean based upon tests: pts/numpy, pts/encode-ogg, pts/espeak and pts/mutex



Geometric mean based upon tests: pts/unigine-valley, pts/unigine-heaven and pts/unigine-super



Geometric mean based upon tests: pts/vkfft, pts/ncnn, pts/realsr-ncnn and pts/waifu2x-ncnn

This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 04:12.