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Kernel Compare

AMD EPYC 7702 64-Core testing with a ASRockRack EPYCD8 (P2.10 BIOS) and ASPEED on Ubuntu 20.04 via the Phoronix Test Suite.

Automated Executive Summary

Linux 5.0 had the most wins, coming in first place for 42% of the tests.

Based on the geometric mean of all complete results, the fastest (Linux 5.0) was 1.045x the speed of the slowest (Linux 5.9 Git). Linux 5.5 was 0.977x the speed of Linux 5.0, Linux 5.8 was 0.996x the speed of Linux 5.5, Linux 5.9 Git was 0.983x the speed of Linux 5.8.

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

Flexible IO Tester (Type: Random Read - Engine: IO_uring - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory) at 2.287x
Flexible IO Tester (Type: Random Read - Engine: IO_uring - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory) at 2.285x
Redis (Test: LPOP) at 1.722x
Stress-NG (Test: MMAP) at 1.721x
Apache Siege (Concurrent Users: 250) at 1.699x
Apache Siege (Concurrent Users: 200) at 1.575x

Flexible IO Tester (Type: Sequential Write - Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory) at 1.309x
Flexible IO Tester (Type: Sequential Write - Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory) at 1.305x
Flexible IO Tester (Type: Random Read - Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory) at 1.193x
Flexible IO Tester (Type: Random Read - Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory) at 1.191x.

Test Systems:

Linux 5.8

Processor: AMD EPYC 7702 64-Core @ 2.00GHz (64 Cores / 128 Threads), Motherboard: ASRockRack EPYCD8 (P2.10 BIOS), Chipset: AMD Starship/Matisse, Memory: 126GB, Disk: 3841GB Micron_9300_MTFDHAL3T8TDP + 32GB Flash Disk, Graphics: ASPEED, Audio: AMD Starship/Matisse, Monitor: VE228, Network: 2 x Intel I350

OS: Ubuntu 20.04, Kernel: 5.8.0-050800-generic (x86_64), Desktop: GNOME Shell 3.36.4, Display Server: X Server 1.20.8, Display Driver: modesetting 1.20.8, Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 1920x1080

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++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none,hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Disk Notes: NONE / errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand - CPU Microcode: 0x830101c
Java Notes: OpenJDK Runtime Environment (build 11.0.8+10-post-Ubuntu-0ubuntu120.04)
Python Notes: Python 3.8.2
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 5.9 Git

Processor: AMD EPYC 7702 64-Core @ 2.00GHz (64 Cores / 128 Threads), Motherboard: ASRockRack EPYCD8 (P2.10 BIOS), Chipset: AMD Starship/Matisse, Memory: 126GB, Disk: 3841GB Micron_9300_MTFDHAL3T8TDP + 32GB Flash Disk, Graphics: ASPEED, Audio: AMD Starship/Matisse, Network: 2 x Intel I350

OS: Ubuntu 20.04, Kernel: 5.9.0-050900rc2daily20200826-generic (x86_64) 20200825, Desktop: GNOME Shell 3.36.4, Display Server: X Server 1.20.8, Display Driver: modesetting 1.20.8, Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 1024x768

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++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none,hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Disk Notes: NONE / errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand - CPU Microcode: 0x830101c
Java Notes: OpenJDK Runtime Environment (build 11.0.8+10-post-Ubuntu-0ubuntu120.04)
Python Notes: Python 3.8.2
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 5.5

Processor: AMD EPYC 7702 64-Core @ 2.00GHz (64 Cores / 128 Threads), Motherboard: ASRockRack EPYCD8 (P2.10 BIOS), Chipset: AMD Starship/Matisse, Memory: 126GB, Disk: 3841GB Micron_9300_MTFDHAL3T8TDP + 32GB Flash Disk, Graphics: ASPEED, Audio: AMD Starship/Matisse, Network: 2 x Intel I350

OS: Ubuntu 20.04, Kernel: 5.5.0-050500-generic (x86_64), Desktop: GNOME Shell 3.36.4, Display Server: X Server 1.20.8, Display Driver: modesetting 1.20.8, Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 1024x768

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++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none,hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Disk Notes: NONE / errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand - CPU Microcode: 0x830101c
Java Notes: OpenJDK Runtime Environment (build 11.0.8+10-post-Ubuntu-0ubuntu120.04)
Python Notes: Python 3.8.2
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 + tsx_async_abort: Not affected

Linux 5.0

Processor: AMD EPYC 7702 64-Core @ 2.00GHz (64 Cores / 128 Threads), Motherboard: ASRockRack EPYCD8 (P2.10 BIOS), Chipset: AMD Starship/Matisse, Memory: 126GB, Disk: 3841GB Micron_9300_MTFDHAL3T8TDP + 32GB Flash Disk, Graphics: ASPEED, Audio: AMD Starship/Matisse, Monitor: VE228, Network: 2 x Intel I350

OS: Ubuntu 20.04, Kernel: 5.0.0-050000-generic (x86_64), Desktop: GNOME Shell 3.36.4, Display Server: X Server 1.20.8, Display Driver: modesetting 1.20.8, Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 1920x1080

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++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none,hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Disk Notes: NONE / errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand - CPU Microcode: 0x830101c
Java Notes: OpenJDK Runtime Environment (build 11.0.8+10-post-Ubuntu-0ubuntu120.04)
Python Notes: Python 3.8.2
Security Notes: l1tf: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional IBRS_FW STIBP: always-on RSB filling

	Linux 5.8	Linux 5.9 Git	Linux 5.5	Linux 5.0
SQLite - 1 (sec)	2.428	**2.511**	2.273	**2.243**
Normalized	92.38%	89.33%	98.68%	100%
Standard Deviation	2.1%	0.3%	1.6%	0.2%
SQLite - 8 (sec)	**5.591**	5.504	**5.388**	5.404
Normalized	96.37%	97.89%	100%	99.7%
Standard Deviation	1.8%	1.4%	0.2%	0.4%
Flexible IO Tester - Rand Read - IO_uring - Yes - No - 2MB (MB/s)	2786	**2816**	**2779**	
Normalized	98.93%	100%	98.69%	
Standard Deviation	0.2%	0.1%	0.3%	

Kernel Compare

Flexible IO Tester - Rand Read - IO_uring - Yes - No - 2MB (IOPS)	1390	**1405**	**1386**	
Normalized	98.93%	100%	98.65%	
Standard Deviation	0.2%	0.1%	0.3%	
Flexible IO Tester - Rand Read - IO_uring - Yes - No - 4KB (MB/s)	**985**	**431**	972	
Normalized	100%	43.76%	98.68%	
Standard Deviation	1.2%	0.4%		
Flexible IO Tester - Rand Read - IO_uring - Yes - No - 4KB (IOPS)	**252333**	**110333**	248667	
Normalized	100%	43.73%	98.55%	
Standard Deviation	1.3%	0.5%	0.2%	
Flexible IO Tester - Rand Read - Linux AIO - Yes - No - 2MB (MB/s)	405	**394**	433	**454**
Normalized	89.21%	86.78%	95.37%	100%
Standard Deviation			0.1%	
Flexible IO Tester - Rand Read - Linux AIO - Yes - No - 2MB (IOPS)	199	**193**	213	**223**
Normalized	89.24%	86.55%	95.52%	100%
Flexible IO Tester - Rand Read - Linux AIO - Yes - No - 4KB (MB/s)	**34.7**	**41.4**	40.5	41.1
Normalized	83.82%	100%	97.83%	99.28%
Standard Deviation	0.2%	0.7%	0.1%	0.1%
Flexible IO Tester - Rand Read - Linux AIO - Yes - No - 4KB (IOPS)	**8869**	**10567**	10400	10500
Normalized	83.93%	100%	98.42%	99.37%
Standard Deviation	0%	0.5%		
Flexible IO Tester - Rand Write - IO_uring - Yes - No - 2MB (MB/s)	**1244**	**1163**	1238	
Normalized	100%	93.49%	99.52%	
Standard Deviation	2.3%	2.8%	1.5%	
Flexible IO Tester - Rand Write - IO_uring - Yes - No - 2MB (IOPS)	**619**	**578**	616	
Normalized	100%	93.38%	99.52%	
Standard Deviation	2.3%	2.8%	1.5%	
Flexible IO Tester - Rand Write - IO_uring - Yes - No - 4KB (MB/s)	**706**	**681**	695	
Normalized	100%	96.46%	98.44%	
Standard Deviation	2.9%		1.8%	
Flexible IO Tester - Rand Write - IO_uring - Yes - No - 4KB (IOPS)	**180636**	**174333**	178000	
Normalized	100%	96.51%	98.54%	
Standard Deviation	2.8%	0.3%	2%	
Flexible IO Tester - Rand Write - Linux AIO - Yes - No - 2MB (MB/s)	1173	**1160**	1178	**1380**
Normalized	85%	84.06%	85.36%	100%
Standard Deviation	0.2%	1.5%	1%	0.2%
Flexible IO Tester - Rand Write - Linux AIO - Yes - No - 2MB (IOPS)	583	**577**	585	**686**
Normalized	84.99%	84.11%	85.28%	100%
Standard Deviation	0.2%	1.5%	1%	

Kernel Compare

Flexible IO Tester - Rand Write - Linux AIO - Yes - No - 4KB (MB/s)	809	**801**	814	**899**
Normalized	89.99%	89.1%	90.55%	100%
Standard Deviation	0.5%	0.9%	0.3%	0.8%
Flexible IO Tester - Rand Write - Linux AIO - Yes - No - 4KB (IOPS)	207000	**205000**	208333	**230333**
Normalized	89.87%	89%	90.45%	100%
Standard Deviation	0.5%	0.8%	0.3%	0.9%
Flexible IO Tester - Seq Read - IO_uring - Yes - No - 2MB (MB/s)	2794	**2822**	**2790**	
Normalized	99.01%	100%	98.87%	
Standard Deviation	0.2%	0.1%	0.3%	
Flexible IO Tester - Seq Read - IO_uring - Yes - No - 2MB (IOPS)	1393	**1407**	**1392**	
Normalized	99%	100%	98.93%	
Standard Deviation	0.2%	0.1%	0.3%	
Flexible IO Tester - Seq Read - IO_uring - Yes - No - 4KB (MB/s)	**902**	**867**	901	
Normalized	100%	96.12%	99.89%	
Standard Deviation	0.1%	0.3%	0.1%	
Flexible IO Tester - Seq Read - IO_uring - Yes - No - 4KB (IOPS)	**231000**	**221667**	230667	
Normalized	100%	95.96%	99.86%	
Standard Deviation		0.3%	0.3%	
Flexible IO Tester - Seq Read - Linux AIO - Yes - No - 2MB (MB/s)	954	**917**	944	**1005**
Normalized	94.93%	91.24%	93.93%	100%
Standard Deviation	0.1%		0.1%	0.2%
Flexible IO Tester - Seq Read - Linux AIO - Yes - No - 2MB (IOPS)	473	**455**	468	**499**
Normalized	94.79%	91.18%	93.79%	100%
Standard Deviation			0.1%	0.1%
Flexible IO Tester - Seq Read - Linux AIO - Yes - No - 4KB (MB/s)	839	**797**	828	**888**
Normalized	94.48%	89.75%	93.24%	100%
Standard Deviation	0.1%	1.8%	0.1%	0.2%
Flexible IO Tester - Seq Read - Linux AIO - Yes - No - 4KB (IOPS)	214667	**204000**	212000	**227333**
Normalized	94.43%	89.74%	93.26%	100%
Standard Deviation	0.3%	1.7%		0.3%
Flexible IO Tester - Seq Write - IO_uring - Yes - No - 2MB (MB/s)	**1199**	**1050**	1160	
Normalized	100%	87.57%	96.75%	
Standard Deviation	2.3%	3.7%	2.1%	
Flexible IO Tester - Seq Write - IO_uring - Yes - No - 2MB (IOPS)	**596**	**521**	577	
Normalized	100%	87.42%	96.81%	
Standard Deviation	2.3%	3.8%	2.1%	
Flexible IO Tester - Seq Write - IO_uring - Yes - No - 4KB (MB/s)	**768**	**705**	716	
Normalized	100%	91.8%	93.23%	
Standard Deviation	2.9%	1.1%	1.2%	

Kernel Compare

Flexible IO Tester - Seq Write - IO_uring - Yes - No - 4KB (IOPS)	**196700**	**180667**	183333	
Normalized	100%	91.85%	93.2%	
Standard Deviation	2.9%	1.2%	1.4%	
Flexible IO Tester - Seq Write - Linux AIO - Yes - No - 2MB (MB/s)	1141	**1058**	1133	**1381**
Normalized	82.62%	76.61%	82.04%	100%
Standard Deviation	2%	1.3%	0.9%	0.8%
Flexible IO Tester - Seq Write - Linux AIO - Yes - No - 2MB (IOPS)	567	**525**	563	**687**
Normalized	82.53%	76.42%	81.95%	100%
Standard Deviation	1.9%	1.2%	0.9%	0.7%
Flexible IO Tester - Seq Write - Linux AIO - Yes - No - 4KB (MB/s)	914	**875**	892	**1017**
Normalized	89.87%	86.04%	87.71%	100%
Standard Deviation	1.7%	1.1%	1.4%	1.1%
Flexible IO Tester - Seq Write - Linux AIO - Yes - No - 4KB (IOPS)	233667	**223667**	228333	**260333**
Normalized	89.76%	85.92%	87.71%	100%
Standard Deviation	1.7%	1%	1.4%	1.2%
FS-Mark - 1.F.1.S (Files/s)	662.9	**642.1**	737.7	**751.9**
Normalized	88.16%	85.4%	98.11%	100%
Standard Deviation	0.5%	1.4%	1.7%	2.3%
FS-Mark - 5.F.1.S.4.T (Files/s)	**1602**	1566	1540	**1517**
Normalized	100%	97.75%	96.15%	94.71%
Standard Deviation	0.2%	0.5%	0.3%	0.1%
FS-Mark - 4.F.3.S.D.1.S (Files/s)	679.3	**659.0**	753.0	**763.1**
Normalized	89.02%	86.36%	98.68%	100%
Standard Deviation	2.1%	1.3%	0.9%	0.5%
BlogBench - Read (Final Score)	**1504482**	**1562277**	1515929	1529555
Normalized	96.3%	100%	97.03%	97.91%
Standard Deviation	0.4%	1.9%	0.8%	0.9%
BlogBench - Write (Final Score)	45958	**44560**	46203	**46886**
Normalized	98.02%	95.04%	98.54%	100%
Standard Deviation	0.8%	5.2%	1%	0.8%
IOR - Write Test (MB/s)	1566	1537	**1617**	**1533**
Normalized	96.84%	95.1%	100%	94.85%
Standard Deviation	0.4%	3%	2.3%	2.5%
IOR - Read Test (MB/s)	1364	**1370**	1360	**1350**
Normalized	99.63%	100%	99.3%	98.57%
Standard Deviation	0.6%	0.4%	0.6%	0.4%
Compile Bench - Compile (MB/s)	1807	**1735**	1785	**1883**
Normalized	95.98%	92.14%	94.82%	100%
Standard Deviation	2.9%	2.6%	0.7%	1%
Compile Bench - Initial Create (MB/s)	530.07	**517.24**	543.39	**552.36**
Normalized	95.96%	93.64%	98.38%	100%
Standard Deviation	1.1%	0.5%	0.4%	0.6%
Compile Bench - Read Compiled Tree (MB/s)	2647	**2615**	2631	**2692**
Normalized	98.34%	97.14%	97.73%	100%
Standard Deviation	0.6%	0.5%	1%	0.6%
PostMark - D.T.P (TPS)	5906	**5725**	5859	**6000**
Normalized	98.43%	95.42%	97.65%	100%
Standard Deviation	1.4%	1.3%	1.4%	1.4%

Kernel Compare

WireGuard + Linux Networking Stack Stress Test (sec)	**339.049**	**345.965**		
Normalized	100%	98%		
Standard Deviation	0.5%	0.5%		
High Performance Conjugate Gradient (GFLOP/s)	17.2768	17.2607	**17.2931**	**17.2240**
Normalized	99.91%	99.81%	100%	99.6%
Standard Deviation	0.1%	0.2%	0%	0.1%
miniFE - Small (CG Mflops)	**19112**	19122	19121	**19151**
Normalized	99.8%	99.85%	99.84%	100%
Standard Deviation	0.2%	0.2%	0.1%	0.1%
NAMD - ATPase Simulation - 327,506 Atoms (days/ns)	0.46325	**0.46374**	**0.46249**	0.46325
Normalized	99.84%	99.73%	100%	99.84%
Standard Deviation	0.1%	0.2%	0%	0.1%
LAMMPS Molecular Dynamics Simulator - Rhodopsin Protein	**17.454**	18.066	18.015	**18.106**
Normalized	96.4%	99.78%	99.5%	100%
Standard Deviation	2.9%	1%	5%	1.3%
DaCapo Benchmark - H2 (msec)	6635	**6503**	6616	**6775**
Normalized	98.01%	100%	98.29%	95.99%
Standard Deviation	0.4%	1%	1.3%	1.3%
DaCapo Benchmark - Jython (msec)	5201	**5257**	**5132**	5139
Normalized	98.67%	97.62%	100%	99.86%
Standard Deviation	0.8%	1%	1.7%	1.1%
DaCapo Benchmark - Tradesoap	**4809**	4859	**4958**	4885
Normalized	100%	98.97%	96.99%	98.44%
Standard Deviation	0.4%	1%	1.4%	0.8%
DaCapo Benchmark - Tradebeans (msec)	**7308**	7329	7414	**7647**
Normalized	100%	99.71%	98.57%	95.57%
Standard Deviation	1.7%	2.3%	1%	0.7%
Renaissance - Scala Dotty (ms)	1805	**1807**	1806	**1802**
Normalized	99.81%	99.72%	99.76%	100%
Standard Deviation	0.7%	0.4%	0.8%	0.8%
Renaissance - Apache Spark ALS	**2492**	2484	2454	**2452**
Normalized	98.37%	98.69%	99.92%	100%
Standard Deviation	3%	1.6%	0.8%	1.9%
Renaissance - Apache Spark Bayes (ms)	305.823	**351.814**	**280.902**	310.619
Normalized	91.85%	79.84%	100%	90.43%
Standard Deviation	40.2%	43.2%	45.7%	41.2%
Renaissance - T.H.R (ms)	**4824**	**4716**	4752	4787
Normalized	97.76%	100%	99.25%	98.52%
Standard Deviation	2.3%	1.3%	2.1%	6.4%
Renaissance - I.M.D.S (ms)	7005	7067	**6976**	**7585**
Normalized	99.58%	98.71%	100%	91.97%
Standard Deviation	2.5%	1.8%	3%	2.8%
Renaissance - G.A.U.J.F (ms)	**2753**	2812	2788	**2859**
Normalized	100%	97.88%	98.74%	96.27%
Standard Deviation	2.1%	2.4%	1.3%	2.1%
Zstd Compression - 3 (MB/s)	**8249**	8251	**8422**	8322
Normalized	97.95%	97.96%	100%	98.81%
Standard Deviation	1.4%	1.2%	2%	1.2%

Kernel Compare

Zstd Compression - 19 (MB/s)	143.7	142.2	**141.4**	**147.9**
Normalized	97.16%	96.15%	95.61%	100%
Standard Deviation	0.7%	2.9%	0.2%	0.2%
dav1d - Chimera 1080p (FPS)	**691.61**	693.24	697.28	**700.55**
Normalized	98.72%	98.96%	99.53%	100%
Standard Deviation	0.4%	0.8%	0.2%	0.3%
dav1d - Summer Nature 4K (FPS)	327.59	327.21	**325.43**	**342.78**
Normalized	95.57%	95.46%	94.94%	100%
Standard Deviation	0.6%	0.5%	0.9%	0.8%
dav1d - S.N.1 (FPS)	**713.21**	713.43	717.74	**734.78**
Normalized	97.06%	97.09%	97.68%	100%
Standard Deviation	0.6%	0.6%	0.4%	0.4%
dav1d - C.1.1.b (FPS)	**137.70**	138.33	139.56	**141.37**
Normalized	97.4%	97.85%	98.72%	100%
Standard Deviation	0.8%	0.2%	0.3%	0.6%
OSPray - San Miguel - Path Tracer (FPS)	**4.89**	**4.90**	**4.89**	**4.89**
Normalized	99.8%	100%	99.8%	99.8%
Standard Deviation	0.3%	0.2%	0.3%	0.3%
OSPray - XFrog Forest - Path Tracer (FPS)	5.88	5.88	5.88	5.88
Standard Deviation	0%	0%	0%	0%
OSPray - NASA Streamlines - Path Tracer (FPS)	16.39	16.39	16.39	16.39
Standard Deviation	0%	0%	0%	0%
OSPray - M.R - Path Tracer (FPS)	333.33	333.33	333.33	333.33
Standard Deviation	0%	0%	0%	0%
SVT-AV1 - Enc Mode 4 - 1080p (FPS)	**7.959**	8.160	8.003	**8.210**
Normalized	96.94%	99.39%	97.48%	100%
Standard Deviation	0.3%	0.7%	0.5%	0.4%
SVT-AV1 - Enc Mode 8 - 1080p (FPS)	74.380	74.472	**73.807**	**75.679**
Normalized	98.28%	98.41%	97.53%	100%
Standard Deviation	0.6%	0.5%	0.2%	1%
Intel Open Image Denoise - Memorial (Images / Sec)	**27.71**	27.73	28.28	**28.42**
Normalized	97.5%	97.57%	99.51%	100%
Standard Deviation	0.4%	0.3%	0.2%	0.1%
OpenVKL - vklBenchmark (Items /	488.85	**488.89**	**466.72**	484.57
Normalized	99.99%	100%	95.47%	99.12%
Standard Deviation	0%	1%	2%	0.9%
Coremark - CoreMark Size 666 - I.P.S (Iterations/Sec)	1880653	**1891775**	**1876001**	1881081
Normalized	99.41%	100%	99.17%	99.43%
Standard Deviation	1.6%	2%	0.4%	1.8%
LuxCoreRender - DLSC (M	**6.69**	**6.83**	6.75	6.81
Normalized	97.95%	100%	98.83%	99.71%
Standard Deviation	0.5%	1.3%	0.6%	1.4%
LuxCoreRender - R.C.a.P (M samples/sec)	7.54	7.54	**7.65**	**7.52**
Normalized	98.56%	98.56%	100%	98.3%
Standard Deviation	0.3%	0.8%	0.3%	0.8%
Stockfish - Total Time (Nodes/s)	121853224	**119087773**	**121891363**	119724648
Normalized	99.97%	97.7%	100%	98.22%
Standard Deviation	2%	0.6%	1.8%	2%

Kernel Compare

asmFish - 1.H.M.2.D (Nodes/s)	122072797	123831457	123352370	123350971
Normalized	98.58%	100%	99.61%	99.61%
Standard Deviation	0.8%	1%	1.4%	0.8%
Swet - Average (Operations/sec)	602663909	594139592	611129661	598835250
Normalized	98.61%	97.22%	100%	97.99%
Standard Deviation	0.2%	2.1%	1%	1.2%
Timed Apache Compilation - Time To Compile (sec)	26.409	26.801	26.249	26.664
Normalized	99.39%	97.94%	100%	98.44%
Standard Deviation	0.2%	0.1%	0.1%	0%
Timed Linux Kernel Compilation - Time To Compile (sec)	29.073	29.319	29.239	28.877
Normalized	99.33%	98.49%	98.76%	100%
Standard Deviation	3%	2.9%	2.9%	2.9%
Timed LLVM Compilation - Time To Compile (sec)	235.744	236.862	235.635	234.225
Normalized	99.36%	98.89%	99.4%	100%
Standard Deviation	0.7%	0.4%	0.4%	1.2%
Build2 - Time To Compile (sec)	66.561	67.475	66.528	66.859
Normalized	99.95%	98.6%	100%	99.5%
Standard Deviation	1%	0.4%	1%	1.1%
C-Ray - Total Time - 4.1.R.P.P (sec)	12.893	12.875	12.940	12.854
Normalized	99.7%	99.84%	99.34%	100%
Standard Deviation	0.3%	0.1%	0.5%	0.1%
YafaRay - T.T.F.S.S (sec)	68.459	70.232	69.955	70.616
Normalized	100%	97.48%	97.86%	96.95%
Standard Deviation	0.4%	1.3%	2.2%	1.6%
Open Porous Media - Flow MPI Norne - 8 (sec)	227.922	227.348	222.254	223.392
Normalized	97.51%	97.76%	100%	99.49%
Standard Deviation	0.2%	0.2%	0.2%	0.1%
DeepSpeech - CPU (sec)	77.63225	79.62840	78.93779	78.73764
Normalized	100%	97.49%	98.35%	98.6%
Standard Deviation	0.6%	0.5%	0.8%	0.3%
Radiance Benchmark - SMP Parallel (sec)	218.309	217.805	211.989	217.416
Normalized	97.11%	97.33%	100%	97.5%
LevelDB - Hot Read (us/Op)	125.084	125.974	124.251	124.161
Normalized	99.26%	98.56%	99.93%	100%
Standard Deviation	0.1%	1.2%	0.2%	1.2%
LevelDB - Fill Sync (MB/s)	10.6	10.5	11.0	11
Normalized	96.36%	95.45%	100%	100%
Standard Deviation	2%	2.7%	2.8%	
LevelDB - Fill Sync (us/Op)	1301	1315	1258	1279
Normalized	96.76%	95.72%	100%	98.42%
Standard Deviation	1.8%	2.7%	2.8%	0.1%
LevelDB - Overwrite (MB/s)	15.7	15.9	15.5	15.5
Normalized	98.74%	100%	97.48%	97.48%
Standard Deviation	0.4%	0.4%	0.4%	1.3%
LevelDB - Overwrite (us/Op)	899.573	891.355	910.601	910.037
Normalized	99.09%	100%	97.89%	97.95%
Standard Deviation	0.3%	0.2%	0.2%	1.3%
LevelDB - Rand Fill (MB/s)	15.7	15.8	15.5	15.7
Normalized	99.37%	100%	98.1%	99.37%

Kernel Compare

Standard Deviation	1.5%	0.4%	0.4%	0%
LevelDB - Rand Fill (us/Op)	901.527	**893.801**	**909.257**	902.065
Normalized	99.14%	100%	98.3%	99.08%
Standard Deviation	1.4%	0.2%	0.2%	0%
LevelDB - Rand Read (us/Op)	**126.446**	126.219	**123.992**	125.981
Normalized	98.06%	98.24%	100%	98.42%
Standard Deviation	1.5%	1.2%	0.3%	1.1%
LevelDB - Seek Rand (us/Op)	188.461	**189.644**	189.139	**187.770**
Normalized	99.63%	99.01%	99.28%	100%
Standard Deviation	0.9%	0.5%	0.4%	0.4%
LevelDB - Rand Delete (us/Op)	876.304	**872.095**	880.264	**883.531**
Normalized	99.52%	100%	99.07%	98.71%
Standard Deviation	0.7%	0.4%	0.8%	0.5%
LevelDB - Seq Fill (MB/s)	16.2	**16.4**	**15.8**	15.9
Normalized	98.78%	100%	96.34%	96.95%
Standard Deviation	0.4%	0.4%	0.7%	1.9%
LevelDB - Seq Fill (us/Op)	875.136	**862.425**	**893.888**	891.064
Normalized	98.55%	100%	96.48%	96.79%
Standard Deviation	0.2%	0.4%	0.8%	1.9%
KeyDB (Ops/sec)	371800	**366547**	372111	**418255**
Normalized	88.89%	87.64%	88.97%	100%
Standard Deviation	3%	2.7%	1.6%	2.6%
TensorFlow Lite - SqueezeNet (us)	63138	62936	**63381**	**61895**
Normalized	98.03%	98.35%	97.65%	100%
Standard Deviation	0.3%	0.4%	0.6%	0.2%
TensorFlow Lite - Inception V4 (us)	931398	940401	**992332**	**884472**
Normalized	94.96%	94.05%	89.13%	100%
Standard Deviation	0.7%	1.3%	0.6%	1.3%
TensorFlow Lite - NASNet Mobile (us)	93764	**93460**	**94917**	94906
Normalized	99.68%	100%	98.46%	98.48%
Standard Deviation	0.1%	1.1%	1%	1.5%
TensorFlow Lite - Mobilenet Float (us)	41018	41038	**41103**	**40137**
Normalized	97.85%	97.8%	97.65%	100%
Standard Deviation	0.1%	1.9%	0.7%	3%
TensorFlow Lite - Mobilenet Quant	42908	42550	**43297**	**41671**
Normalized	97.12%	97.93%	96.24%	100%
Standard Deviation	0.6%	1.5%	0.4%	2.2%
TensorFlow Lite - I.R.V (us)	850246	841944	**884429**	**781158**
Normalized	91.87%	92.78%	88.32%	100%
Standard Deviation	0.3%	1.2%	0.5%	2.1%
MariaDB - 64 (Queries/sec)	**1049**	1053	1058	**1075**
Normalized	97.58%	97.95%	98.42%	100%
Standard Deviation	0.2%	0.1%	0.1%	0.2%
MariaDB - 512 (Queries/sec)	**368**	367	366	**363**
Normalized	100%	99.73%	99.46%	98.64%
Standard Deviation	0.1%	0.1%	0%	0.2%
ASTC Encoder - Thorough (sec)	**6.30**	**6.28**	**6.30**	6.29
Normalized	99.68%	100%	99.68%	99.84%
Standard Deviation	0.1%	0.1%	0.1%	0.1%
ASTC Encoder - Exhaustive (sec)	45.58	45.56	**45.67**	**45.55**
Normalized	99.93%	99.98%	99.74%	100%
Standard Deviation	0%	0%	0%	0%
SQLite Speedtest - Timed Time - Size 1,000 (sec)	79.524	80.641	**80.659**	**79.143**
Normalized	99.52%	98.14%	98.12%	100%

Kernel Compare

Standard Deviation	1.6%	0.5%	1.1%	0.9%
Hugin - P.P.A.S.T (sec)	**55.883**	56.026	**56.591**	56.305
Normalized	100%	99.74%	98.75%	99.25%
Standard Deviation	0.7%	1.4%	1.9%	1.1%
OCRMyPDF - P.6.P.P.D (sec)	19.301	**19.325**	**18.893**	19.293
Normalized	97.89%	97.76%	100%	97.93%
Standard Deviation	0.2%	1.1%	0.7%	0.8%
GNU Octave Benchmark (sec)	**8.579**	8.464	**8.439**	8.444
Normalized	98.37%	99.7%	100%	99.94%
Standard Deviation	1.2%	0.8%	1.1%	1%
RawTherapee - T.B.T (sec)	58.960	58.610	**63.142**	**58.532**
Normalized	99.27%	99.87%	92.7%	100%
Standard Deviation	0.6%	0.2%	0.5%	0.3%
Redis - LPOP (Reqs/sec)	**1913027**	**1110706**	1274271	1357587
Normalized	100%	58.06%	66.61%	70.97%
Standard Deviation	2.8%	0.3%	5.8%	1.2%
Redis - SADD (Reqs/sec)	1628748	**1410655**	1634265	**1677672**
Normalized	97.08%	84.08%	97.41%	100%
Standard Deviation	6%	1.5%	8.5%	5.8%
Redis - LPUSH (Reqs/sec)	1215615	**1093677**	1199286	**1240196**
Normalized	98.02%	88.19%	96.7%	100%
Standard Deviation	6.4%	2.3%	5.8%	5.4%
Redis - GET (Reqs/sec)	**2006836**	**1534042**	1938238	1888876
Normalized	100%	76.44%	96.58%	94.12%
Standard Deviation	9.1%	1.7%	1.4%	6.5%
Redis - SET (Reqs/sec)	1387741	**1267159**	1408723	**1479906**
Normalized	93.77%	85.62%	95.19%	100%
Standard Deviation	5.9%	1.8%	5.6%	6.6%
Stress-NG - MMAP (Bogo Ops/s)	**822.03**	1064	864.48	**1414**
Normalized	58.12%	75.24%	61.12%	100%
Standard Deviation	0.9%	0.1%	0.3%	0.2%
Stress-NG - NUMA (Bogo Ops/s)	1096	**1089**	**1186**	1177
Normalized	92.41%	91.88%	100%	99.24%
Standard Deviation	0.3%	0.8%	0.5%	0.7%
Stress-NG - MEMFD (Bogo Ops/s)	**1003**	**1140**	1011	1092
Normalized	87.98%	100%	88.69%	95.76%
Standard Deviation	0%	0.2%	0.2%	0%
Stress-NG - Atomic (Bogo Ops/s)	402703	**403930**	**402336**	402555
Normalized	99.7%	100%	99.61%	99.66%
Standard Deviation	1%	0.6%	1.4%	1.4%
Stress-NG - Crypto (Bogo Ops/s)	**11886**	11893	**11907**	11891
Normalized	99.82%	99.88%	100%	99.86%
Standard Deviation	0.2%	0.2%	0.1%	0.1%
Stress-NG - Malloc (Bogo Ops/s)	**1100061096**	1106952600	1107026982	**1126397109**
Normalized	97.66%	98.27%	98.28%	100%
Standard Deviation	2%	0.4%	2.8%	2.3%
Stress-NG - Forking (Bogo Ops/s)	50317	**44683**	**57553**	49708
Normalized	87.43%	77.64%	100%	86.37%
Standard Deviation	1.2%	4.1%	1.9%	7.5%
Stress-NG - SENDFILE (Bogo Ops/s)	703552	**698948**	712689	**733380**
Normalized	95.93%	95.31%	97.18%	100%
Standard Deviation	0.3%	0.5%	0.2%	0.2%
Stress-NG - CPU Cache (Bogo Ops/s)	44.97	**43.47**	**45.72**	45.01
Normalized	98.36%	95.08%	100%	98.45%
Standard Deviation	8.9%	2.7%	7.3%	10%

Kernel Compare

Stress-NG - CPU Stress (Bogo Ops/s)	18377	18386	**18394**	**18322**
Normalized	99.91%	99.96%	100%	99.61%
Standard Deviation	0.2%	0.3%	0.2%	0.4%
Stress-NG - Semaphores (Bogo	8794999	**8744386**	9289509	**9739411**
Normalized	90.3%	89.78%	95.38%	100%
Standard Deviation	0.6%	0.2%	0%	0%
Stress-NG - Matrix Math (Bogo Ops/s)	**180169**	**181094**	180550	180205
Normalized	99.49%	100%	99.7%	99.51%
Standard Deviation	0.1%	0.4%	0.8%	0.4%
Stress-NG - Vector Math (Bogo Ops/s)	396719	396723	**397056**	**396467**
Normalized	99.92%	99.92%	100%	99.85%
Standard Deviation	0.2%	0.1%	0.1%	0%
Stress-NG - Memory Copying (Bogo Ops/s)	**11083**	**11011**	11068	11049
Normalized	100%	99.35%	99.86%	99.7%
Standard Deviation	0.9%	0.6%	0.7%	0.6%
Stress-NG - Socket Activity (Bogo	**19056**	19042	18774	**18690**
Normalized	100%	99.93%	98.52%	98.08%
Standard Deviation	1.1%	0.2%	0.1%	0.7%
Stress-NG - Context Switching (Bogo Ops/s)	**18394299**	20868770	22202973	**23433345**
Normalized	78.5%	89.06%	94.75%	100%
Standard Deviation	5%	2.5%	7.5%	7.9%
Stress-NG - G.C.S.F (Bogo Ops/s)	**6235910**	6264065	**6322220**	6270101
Normalized	98.63%	99.08%	100%	99.18%
Standard Deviation	0.8%	1.1%	0.9%	1.8%
Stress-NG - G.Q.D.S (Bogo Ops/s)	**666.60**	**687.00**	677.53	677.29
Normalized	97.03%	100%	98.62%	98.59%
Standard Deviation	3%	0.7%	1.8%	1%
Stress-NG - S.V.M.P (Bogo Ops/s)	17878400	17363160	**17930847**	**17306069**
Normalized	99.71%	96.83%	100%	96.52%
Standard Deviation	0.3%	0.4%	0.4%	2.7%
ctx_clock - C.S.T (Clocks)	120	120	120	120
Facebook RocksDB - Rand Fill (Op/s)	306136	307334	**305498**	**316513**
Normalized	96.72%	97.1%	96.52%	100%
Standard Deviation	0.2%	0.2%	0.1%	0.2%
Facebook RocksDB - Rand Read	203156706	**201193999**	203287394	**204608876**
Normalized	99.29%	98.33%	99.35%	100%
Standard Deviation	0.5%	0.7%	1%	0.8%
Facebook RocksDB - Seq Fill (Op/s)	317026	316969	**315568**	**323151**
Normalized	98.1%	98.09%	97.65%	100%
Standard Deviation	0.1%	0.3%	0.1%	0.5%
Facebook RocksDB - Rand Fill Sync (Op/s)	**202279**	204123	215937	**220394**
Normalized	91.78%	92.62%	97.98%	100%
Standard Deviation	0.3%	0.1%	0.4%	0.2%
Facebook RocksDB - Read While Writing (Op/s)	7864753	**7873027**	7766847	**7719421**
Normalized	99.89%	100%	98.65%	98.05%
Standard Deviation	0.5%	0.9%	1.4%	1.1%
Memcached mcperf - Add - 1 (Operations/sec)	30190	**29813**	30454	**34418**
Normalized	87.72%	86.62%	88.48%	100%
Standard Deviation	2%	2.8%	1.1%	16.1%

Kernel Compare

Memcached mcperf - Get - 1 (Operations/sec)	48635	**48125**	49285	**55720**
Normalized	87.29%	86.37%	88.45%	100%
Standard Deviation	2.9%	1.7%	2.9%	5%
Memcached mcperf - Set - 1 (Operations/sec)	**29007**	29814	30011	**35808**
Normalized	81.01%	83.26%	83.81%	100%
Standard Deviation	1.8%	3%	0.4%	18.8%
Memcached mcperf - Get - 32 (Operations/sec)	**47986**	48689	49947	**56425**
Normalized	85.04%	86.29%	88.52%	100%
Standard Deviation	0.3%	0.7%	2%	0.8%
Memcached mcperf - Set - 32 (Operations/sec)	**29244**	29740	30018	**32976**
Normalized	88.68%	90.19%	91.03%	100%
Standard Deviation	1%	1.1%	1.1%	0.9%
Memcached mcperf - Delete - 1 (Operations/sec)	48113	49245	**47422**	**54316**
Normalized	88.58%	90.66%	87.31%	100%
Standard Deviation	2.8%	1.5%	0.4%	2.8%
PyBench - T.F.A.T.T (Milliseconds)	1175	**1171**	**1179**	1175
Normalized	99.66%	100%	99.32%	99.66%
Standard Deviation		0.2%	0.3%	
Apache Siege - 100 (Transactions/sec)	31024	**26330**	**31061**	29467
Normalized	99.88%	84.77%	100%	94.87%
Standard Deviation	1.3%	0.2%	0.9%	0.1%
Apache Siege - 200 (Transactions/sec)	35396	**22495**	**35423**	31658
Normalized	99.92%	63.5%	100%	89.37%
Standard Deviation	0.8%	1.2%	0.8%	0.6%
Apache Siege - 250 (Transactions/sec)	**36679**	**21584**	36136	31639
Normalized	100%	58.85%	98.52%	86.26%
Standard Deviation	0.9%	0.5%	0.5%	5.5%
AI Benchmark Alpha - D.I.S (Score)	1861	**1837**	1864	**1942**
Normalized	95.83%	94.59%	95.98%	100%
AI Benchmark Alpha - D.T.S (Score)	1065	**1061**	1064	**1091**
Normalized	97.62%	97.25%	97.53%	100%
AI Benchmark Alpha - Device AI Score (Score)	2926	**2898**	2928	**3033**
Normalized	96.47%	95.55%	96.54%	100%
Geekbench - CPU Multi Core (Score)	37430	38094	**36297**	**38564**
Normalized	97.06%	98.78%	94.12%	100%
Standard Deviation	1.2%	0.7%	1%	0.6%
Geekbench - CPU Multi Core - Gaussian Blur (Mpixels/sec)	**2.07**	2.04	**1.25**	2.02
Normalized	100%	98.55%	60.39%	97.58%
Standard Deviation	3.1%	1.3%	16.9%	0.6%
Geekbench - CPU Multi Core - Face Detection (images/sec)	417.3	414.5	**405.1**	**434.4**
Normalized	96.06%	95.42%	93.26%	100%
Standard Deviation	2%	1.2%	1.8%	1.6%
Geekbench - CPU Multi Core - Horizon Detection (Gpixels/sec)	**1.09**	**1.09**	**1.09**	**1.08**
Normalized	100%	100%	100%	99.08%
Standard Deviation	0%	0%	0%	0%

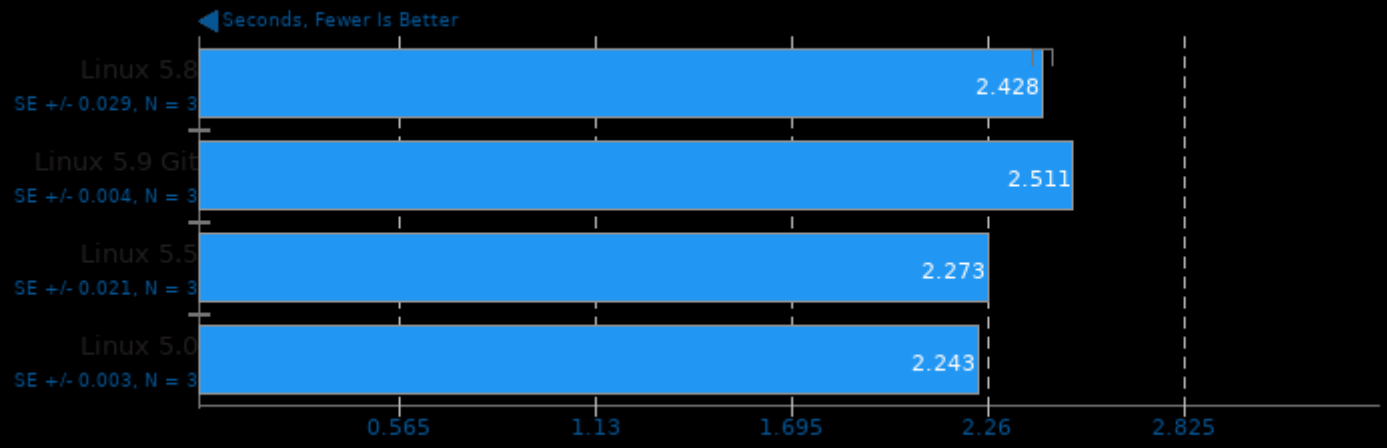
Kernel Compare

Geekbench - CPU Single Core (Score)	1053	1055	**1060**	**1049**
Normalized	99.34%	99.53%	100%	98.96%
Standard Deviation	0.3%	0.3%	0.1%	0.2%
Geekbench - CPU Single Core - Gaussian Blur (Mpixels/sec)	**65.8**	**65.7**	**65.7**	**65.8**
Normalized	100%	99.85%	99.85%	100%
Standard Deviation	0.5%	0.2%	0.2%	0.5%
Geekbench - CPU Single Core - Face Detection (images/sec)	**8.70**	**8.70**	8.68	**8.63**
Normalized	100%	100%	99.77%	99.2%
Standard Deviation	0.1%	0.1%	0.3%	0.9%
Geekbench - CPU Single Core - Horizon Detection (Gpixels/sec)	**24.6**	**24.6**	**24.4**	**24.4**
Normalized	100%	100%	99.19%	99.19%
Standard Deviation	0.2%	0.2%	0.6%	0.9%
PHPBench - P.B.S (Score)	**512335**	520244	519920	**522059**
Normalized	98.14%	99.65%	99.59%	100%
Standard Deviation	0.7%	1.3%	0.2%	0.5%
Tesseract OCR - T.T.O.7.I (sec)	**31.325**	31.447	**31.657**	31.396
Normalized	100%	99.61%	98.95%	99.77%
Standard Deviation	0.4%	0.1%	1.3%	0.8%
BRL-CAD - V.P.M (VGR Performance Metric)	630634	**634423**	634022	**629069**
Normalized	99.4%	100%	99.94%	99.16%
OSBench - Create Files (us/Event)	15.950118	**16.247952**	**14.898314**	14.981656
Normalized	93.41%	91.69%	100%	99.44%
Standard Deviation	0.2%	0.2%	0.2%	0.1%
OSBench - Create Threads (us/Event)	34.866333	**36.102931**	**33.200582**	33.966700
Normalized	95.22%	91.96%	100%	97.74%
Standard Deviation	1.9%	0.5%	1.3%	2.1%
OSBench - Launch Programs	71.966648	**80.455939**	**69.370270**	79.803467
Normalized	96.39%	86.22%	100%	86.93%
Standard Deviation	1.6%	0.7%	1.3%	1.4%
OSBench - Create Processes	60.312748	**65.509478**	**57.387749**	64.813296
Normalized	95.15%	87.6%	100%	88.54%
Standard Deviation	0.8%	0.7%	2.9%	1.5%
OSBench - Memory Allocations (Ns/Event)	95.192671	**95.604658**	95.578432	**94.360590**
Normalized	99.13%	98.7%	98.73%	100%
Standard Deviation	0.4%	0.3%	0.5%	0.1%

Kernel Compare

SQLite 3.30.1

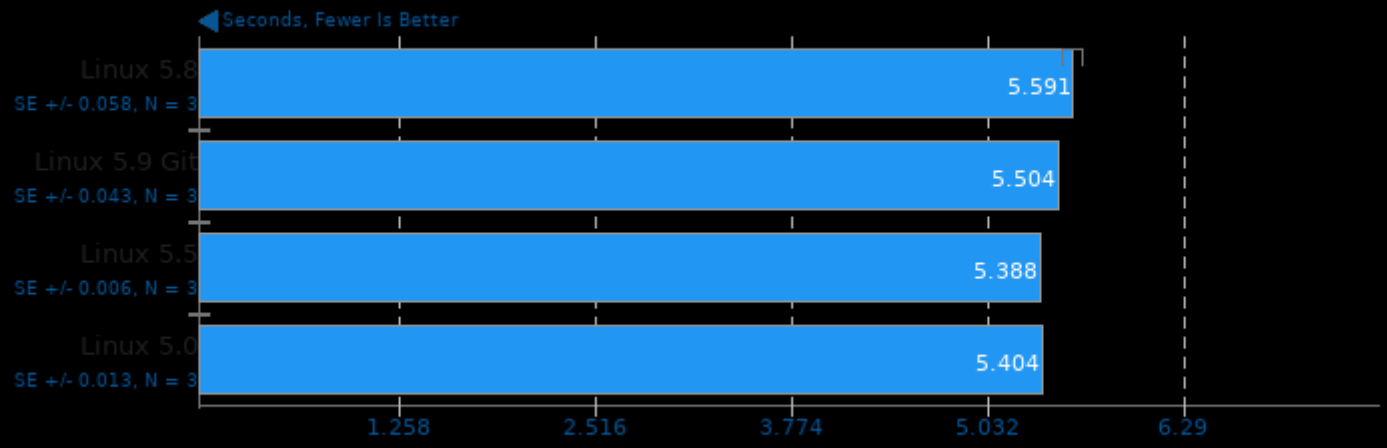
Threads / Copies: 1



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

SQLite 3.30.1

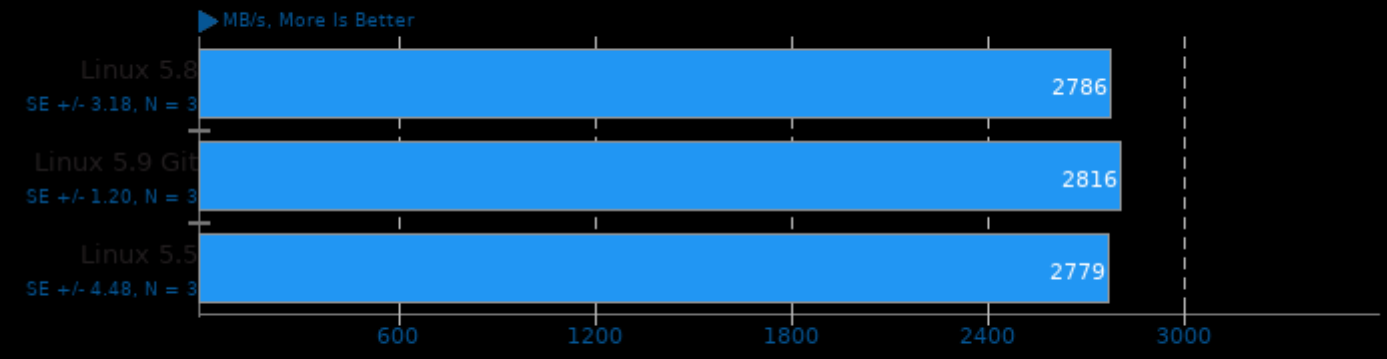
Threads / Copies: 8



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

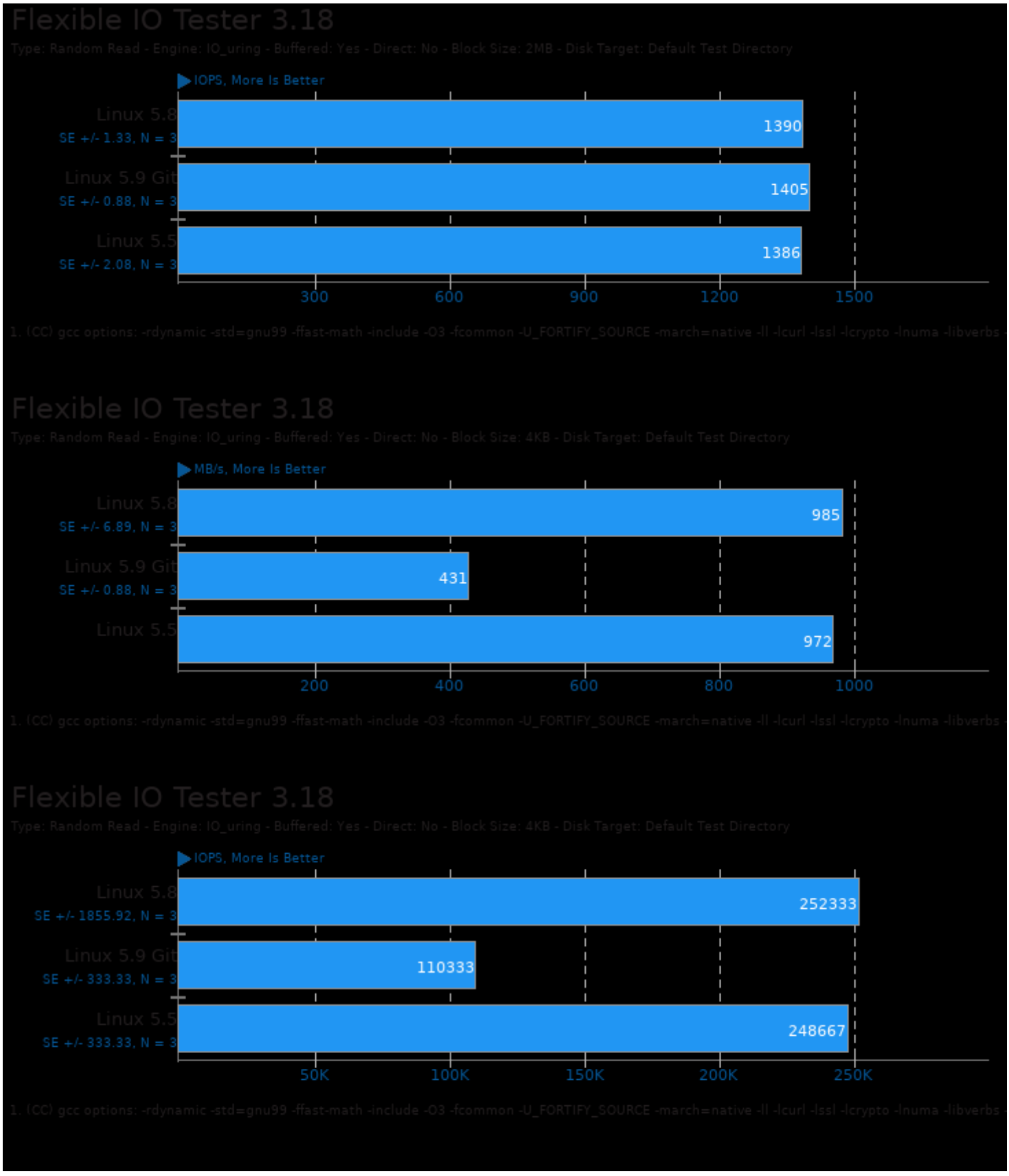
Flexible IO Tester 3.18

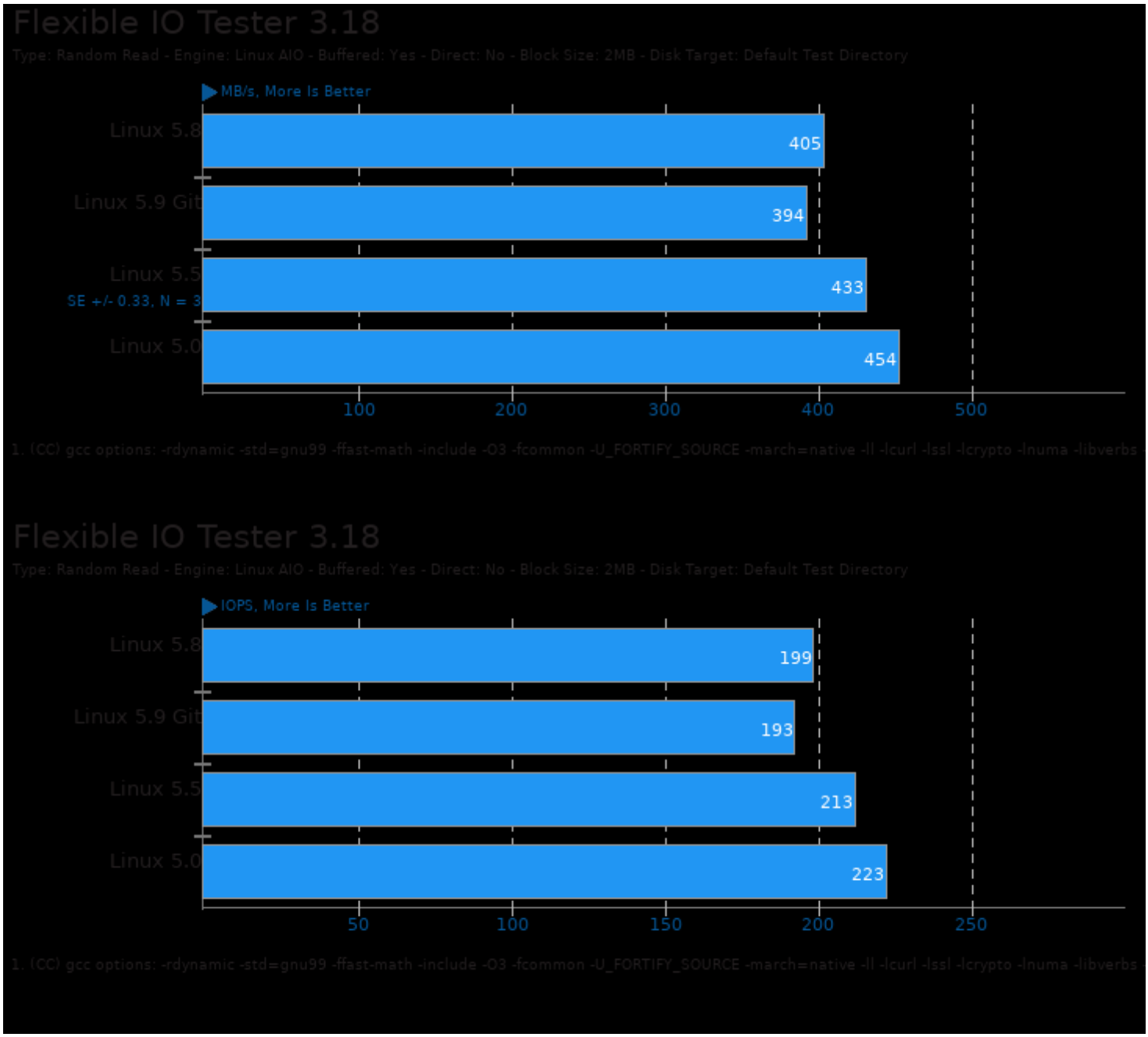
Type: Random Read - Engine: IO_uring - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory



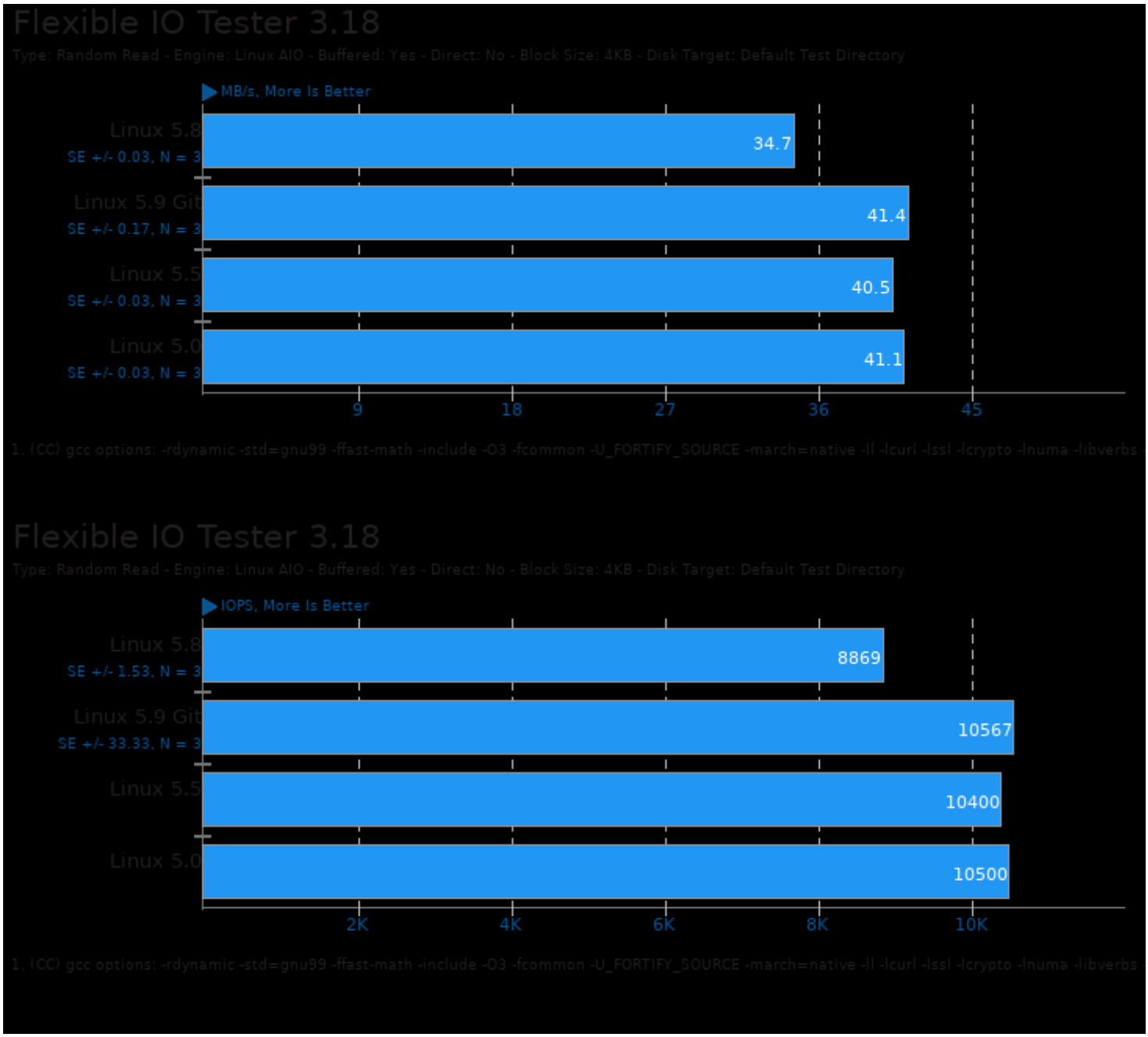
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs

Kernel Compare

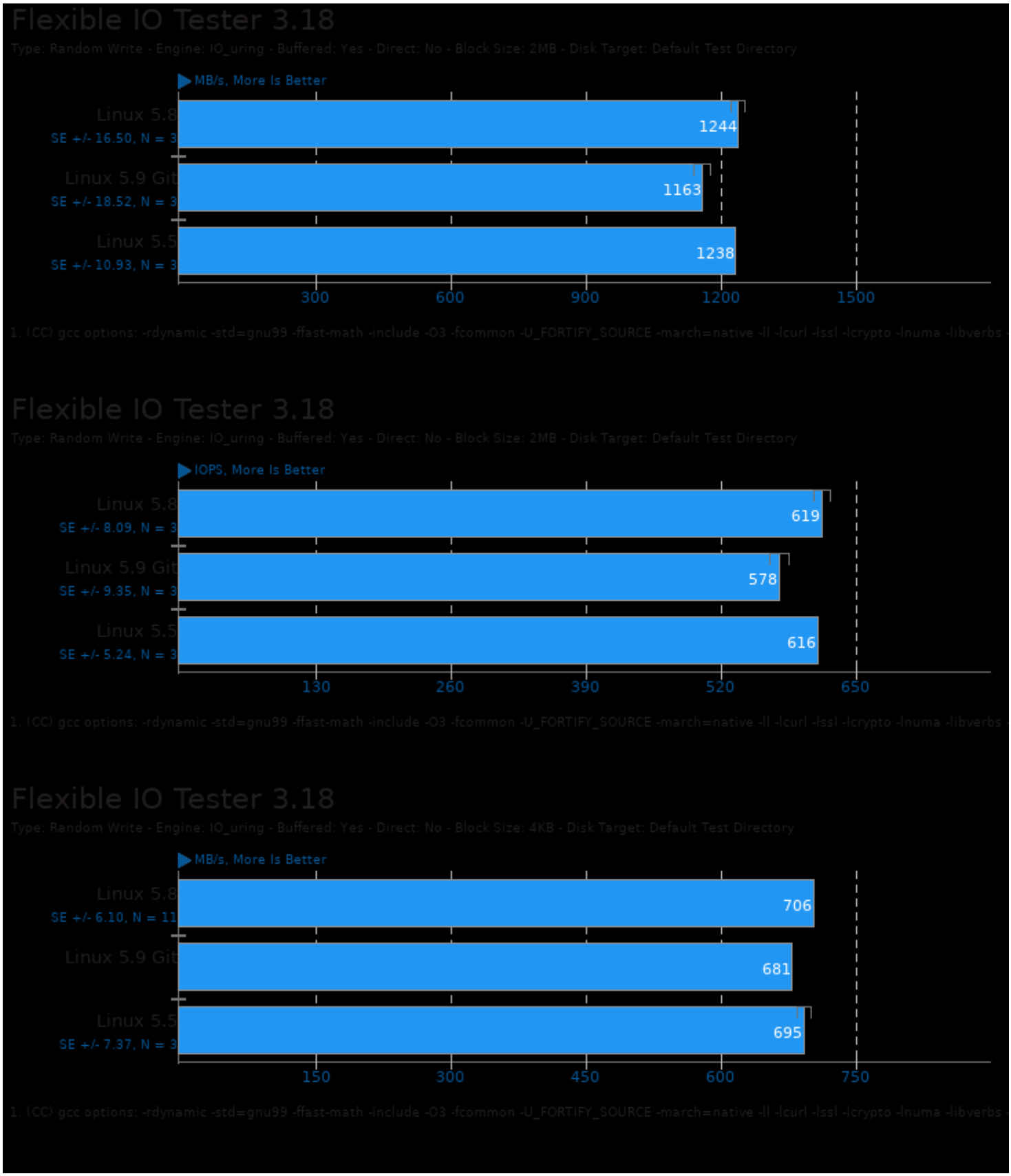


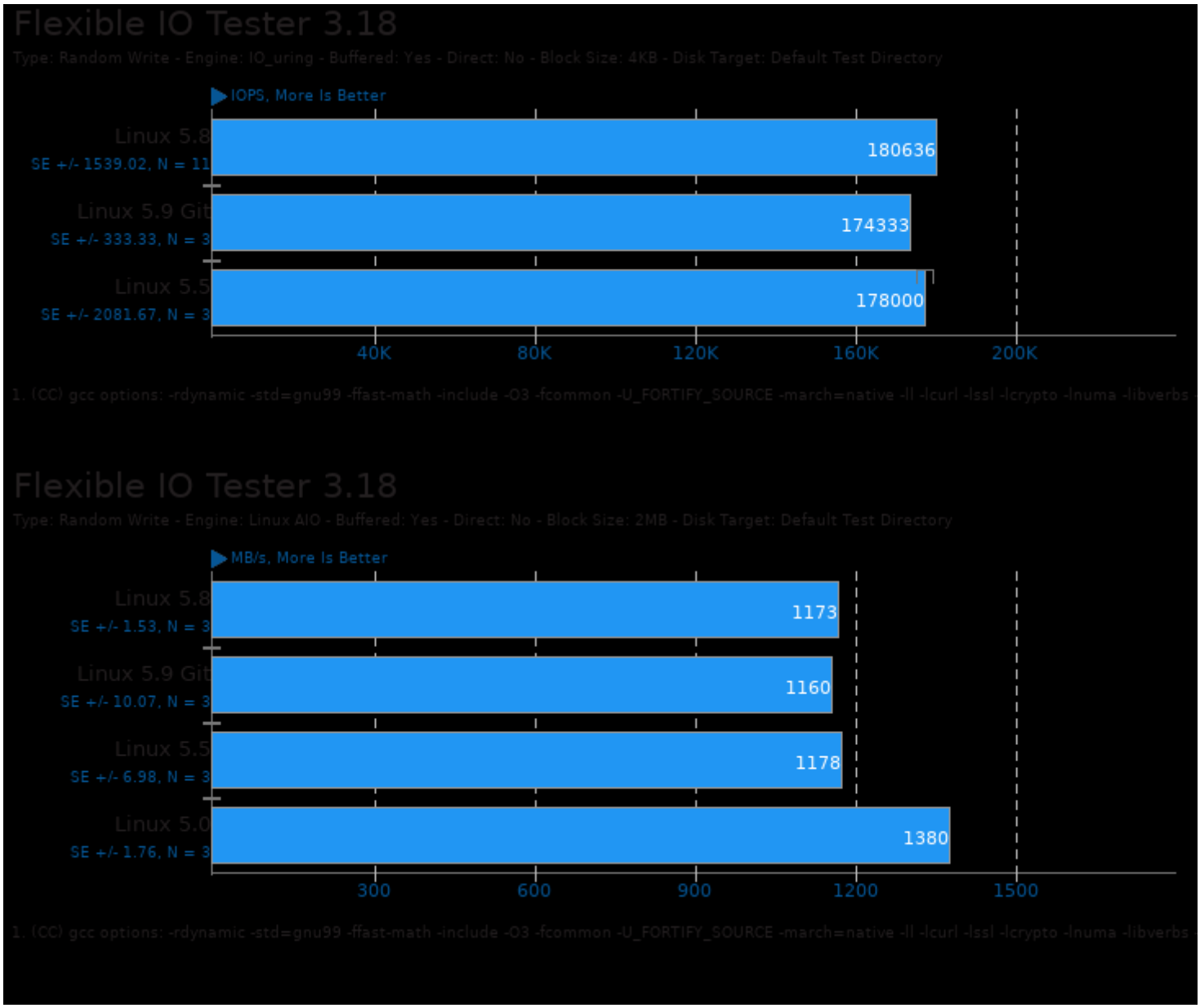

Flexible IO Tester 3.18
Type: Random Read - Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory
MB/s, More Is Better
Linux 5.8
405
Linux 5.9 Git
394
Linux 5.5
433
SE +/- 0.33, N = 3
Linux 5.0
454
100
200
300
400
500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs
Flexible IO Tester 3.18
Type: Random Read - Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory
IOPS, More Is Better
Linux 5.8
199
Linux 5.9 Git
193
Linux 5.5
213
Linux 5.0
223
50
100
150
200
250
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs

Kernel Compare

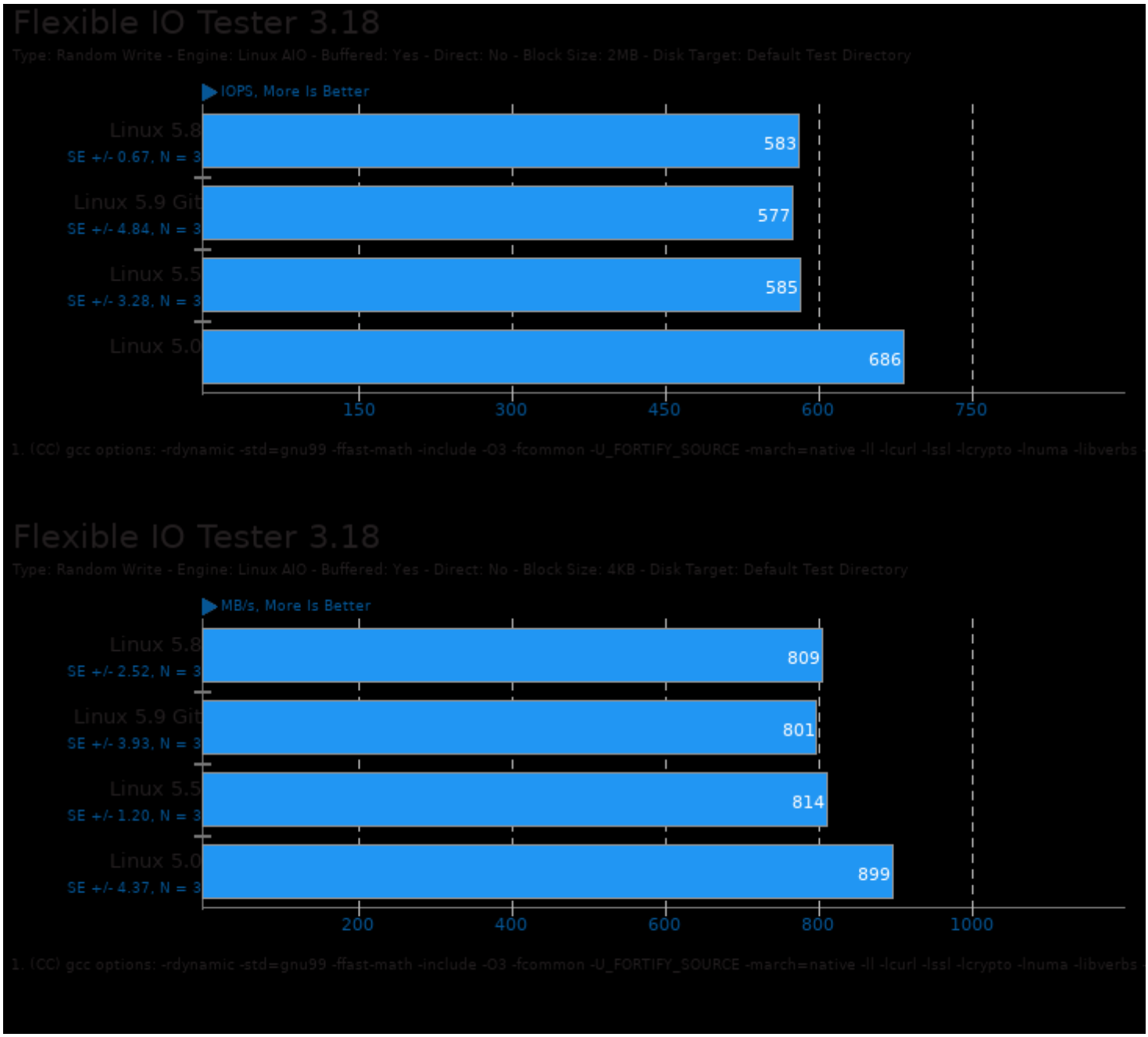


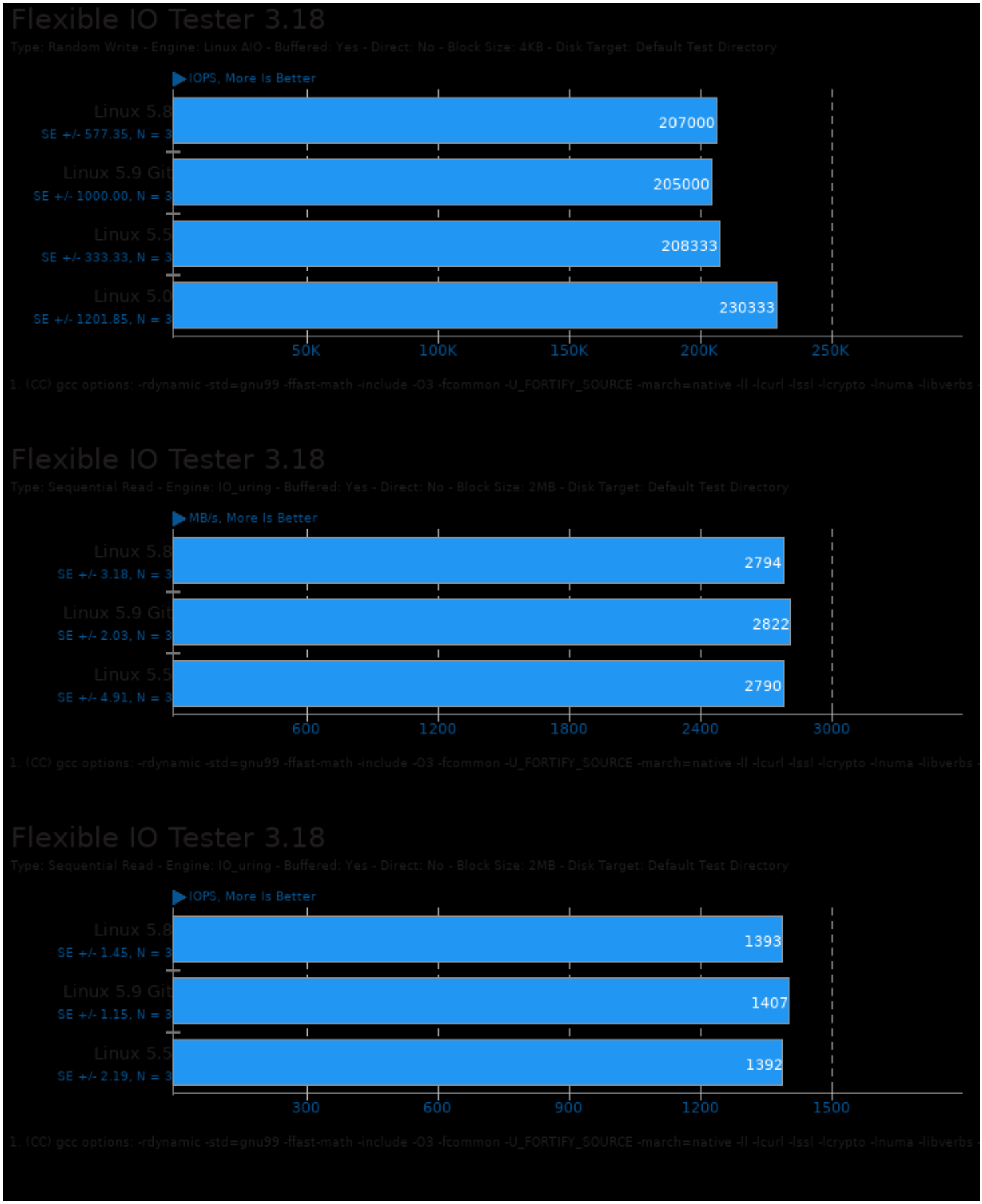
Kernel Compare

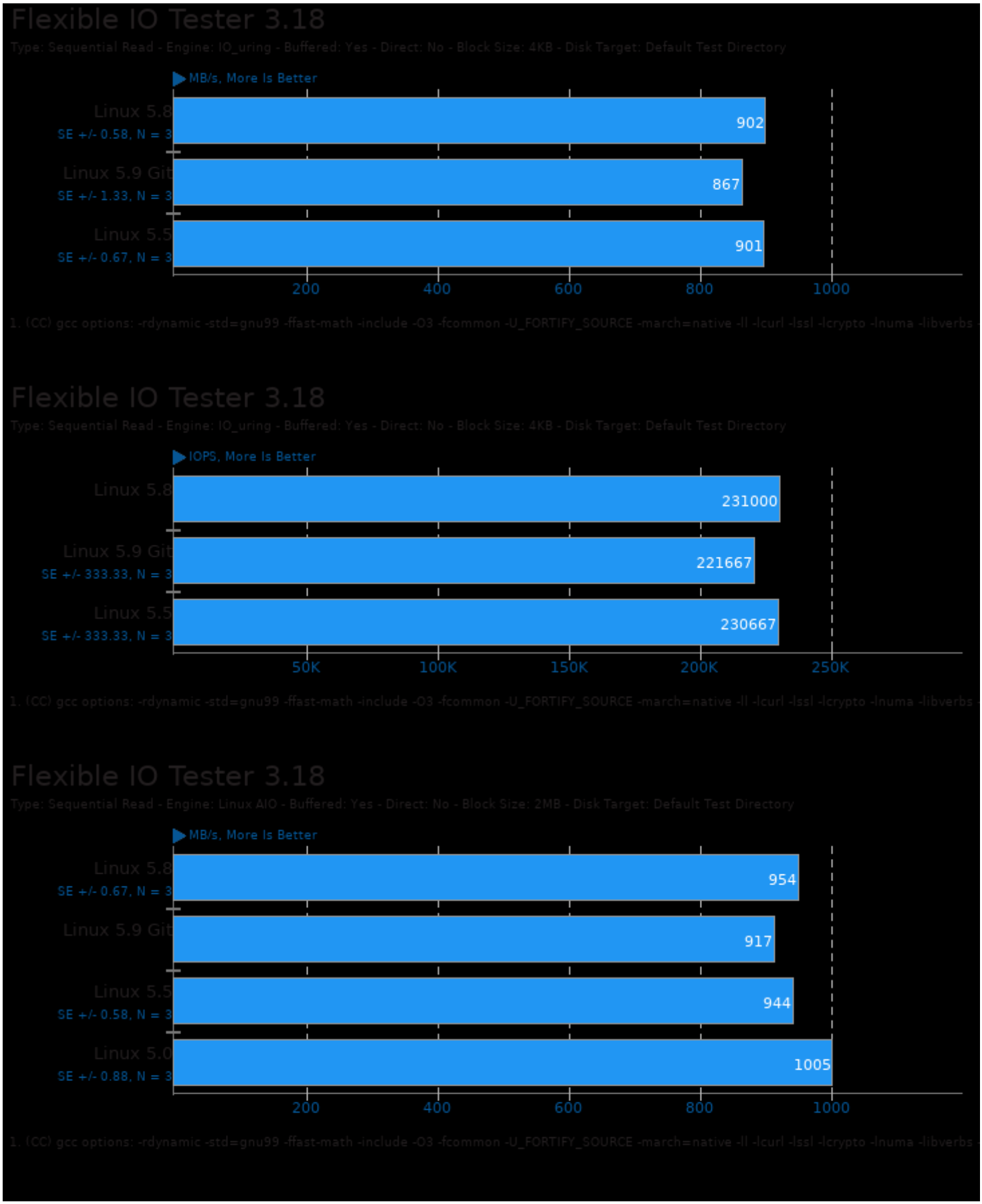



Flexible IO Tester 3.18
Type: Random Write - Engine: IO_uring - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
Linux 5.8
SE +/- 1539.02, N = 11
180636
Linux 5.9 Git
SE +/- 333.33, N = 3
174333
Linux 5.5
SE +/- 2081.67, N = 3
178000
40K
80K
120K
160K
200K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs
Flexible IO Tester 3.18
Type: Random Write - Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory
MB/s, More Is Better
Linux 5.8
SE +/- 1.53, N = 3
1173
Linux 5.9 Git
SE +/- 10.07, N = 3
1160
Linux 5.5
SE +/- 6.98, N = 3
1178
Linux 5.0
SE +/- 1.76, N = 3
1380
300
600
900
1200
1500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs

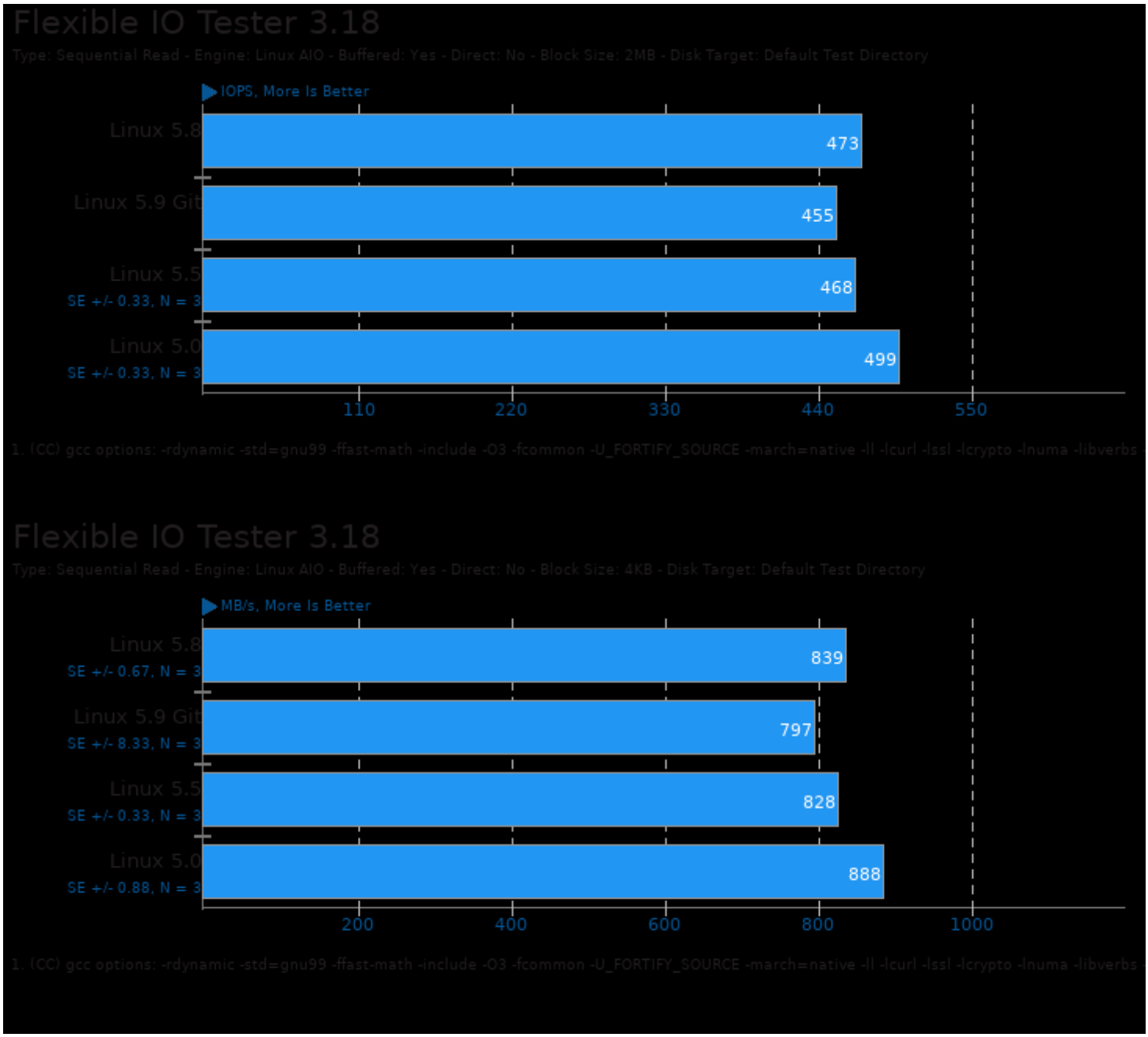
Kernel Compare

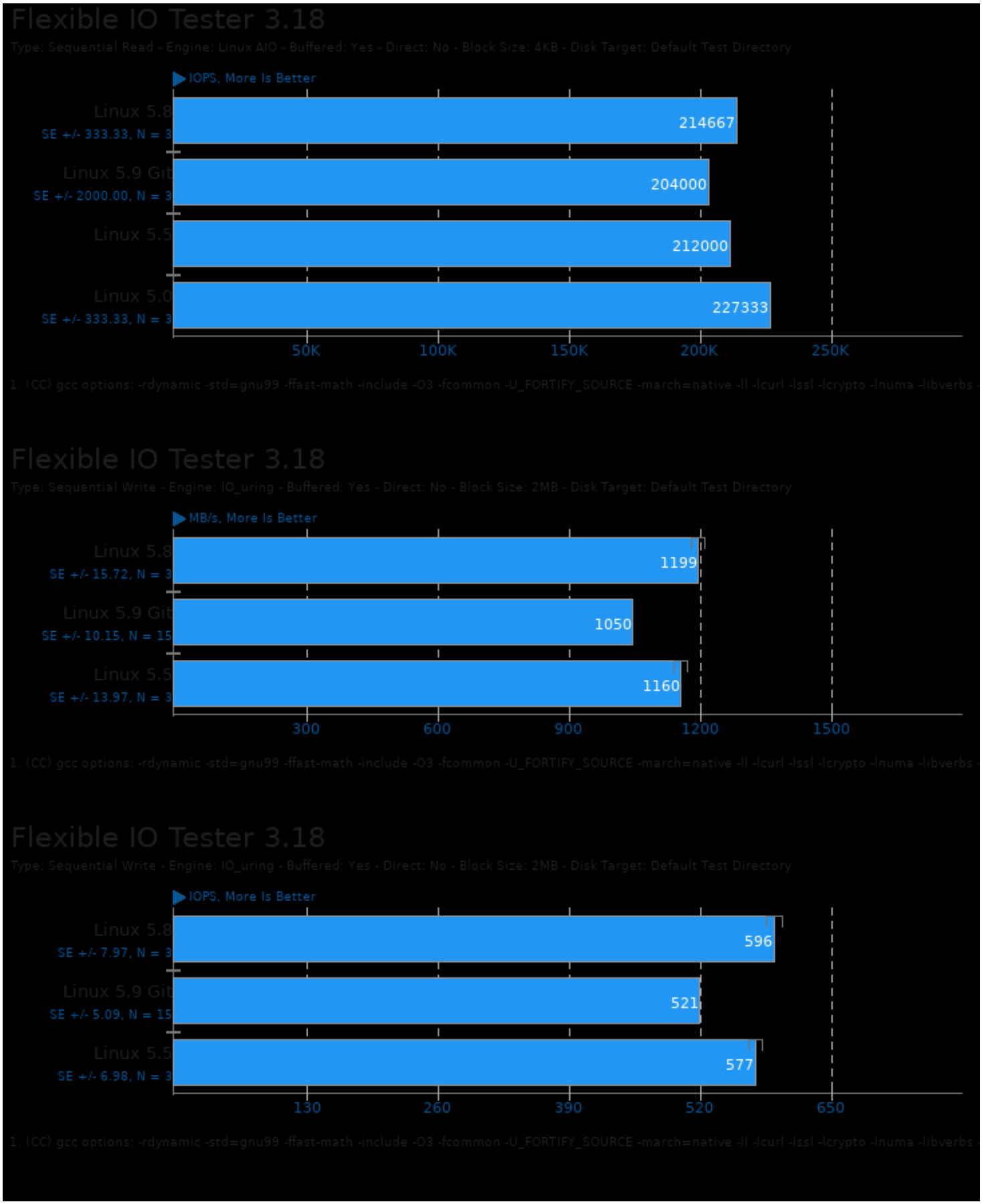


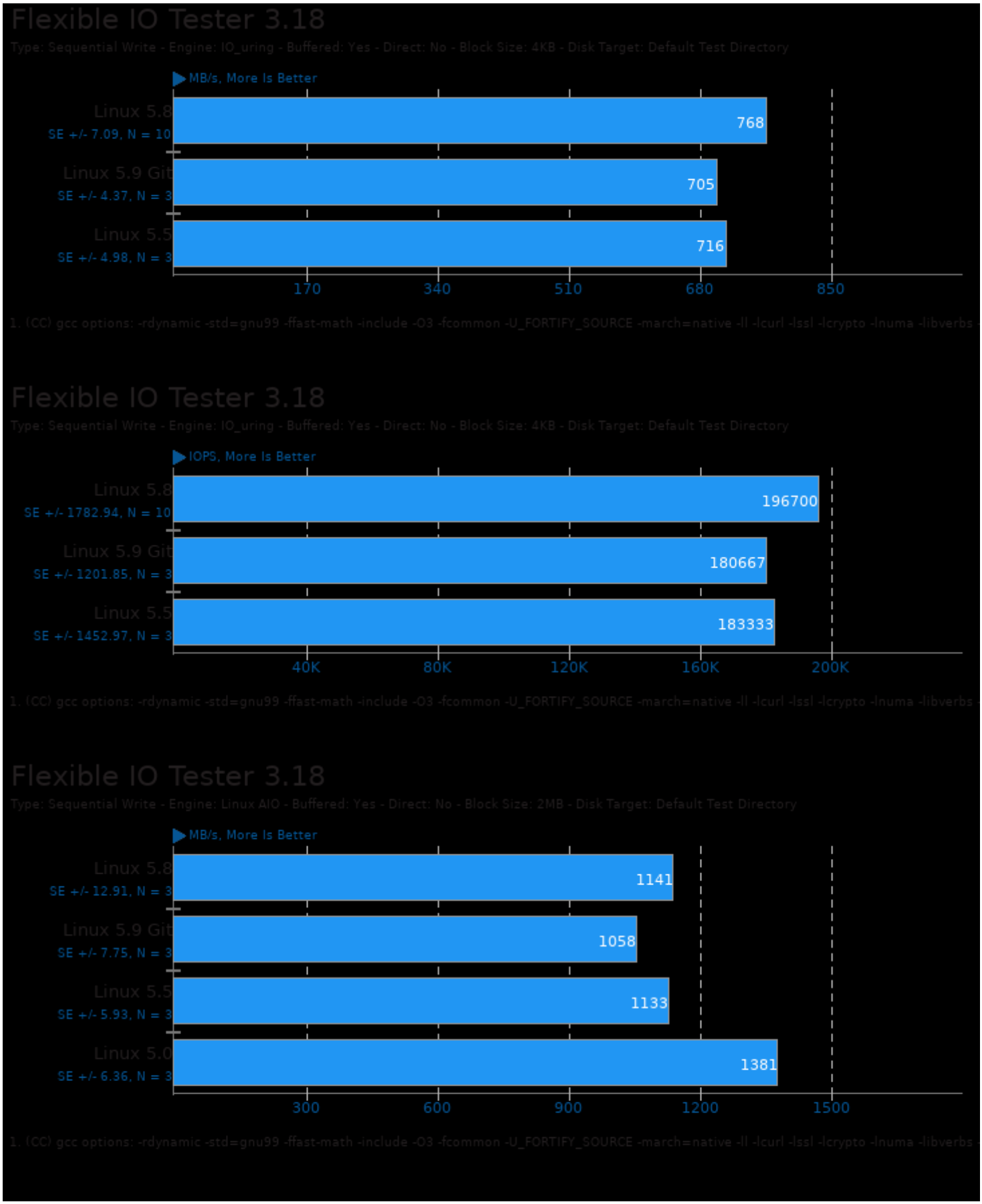

Flexible IO Tester 3.18
Type: Random Write - Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
Linux 5.8
SE +/- 577.35, N = 3
207000
Linux 5.9 Git
SE +/- 1000.00, N = 3
205000
Linux 5.5
SE +/- 333.33, N = 3
208333
Linux 5.0
SE +/- 1201.85, N = 3
230333
50K
100K
150K
200K
250K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs
Flexible IO Tester 3.18
Type: Sequential Read - Engine: IO_uring - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory
MB/s, More Is Better
Linux 5.8
SE +/- 3.18, N = 3
2794
Linux 5.9 Git
SE +/- 2.03, N = 3
2822
Linux 5.5
SE +/- 4.91, N = 3
2790
600
1200
1800
2400
3000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs
Flexible IO Tester 3.18
Type: Sequential Read - Engine: IO_uring - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory
IOPS, More Is Better
Linux 5.8
SE +/- 1.45, N = 3
1393
Linux 5.9 Git
SE +/- 1.15, N = 3
1407
Linux 5.5
SE +/- 2.19, N = 3
1392
300
600
900
1200
1500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs


Flexible IO Tester 3.18
Type: Sequential Read - Engine: IO_uring - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
Linux 5.8
SE +/- 0.58, N = 3
902
Linux 5.9 Git
SE +/- 1.33, N = 3
867
Linux 5.5
SE +/- 0.67, N = 3
901
200
400
600
800
1000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs
Flexible IO Tester 3.18
Type: Sequential Read - Engine: IO_uring - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
Linux 5.8
231000
Linux 5.9 Git
SE +/- 333.33, N = 3
221667
Linux 5.5
SE +/- 333.33, N = 3
230667
50K
100K
150K
200K
250K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs
Flexible IO Tester 3.18
Type: Sequential Read - Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory
MB/s, More Is Better
Linux 5.8
SE +/- 0.67, N = 3
954
Linux 5.9 Git
917
Linux 5.5
SE +/- 0.58, N = 3
944
Linux 5.0
SE +/- 0.88, N = 3
1005
200
400
600
800
1000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs

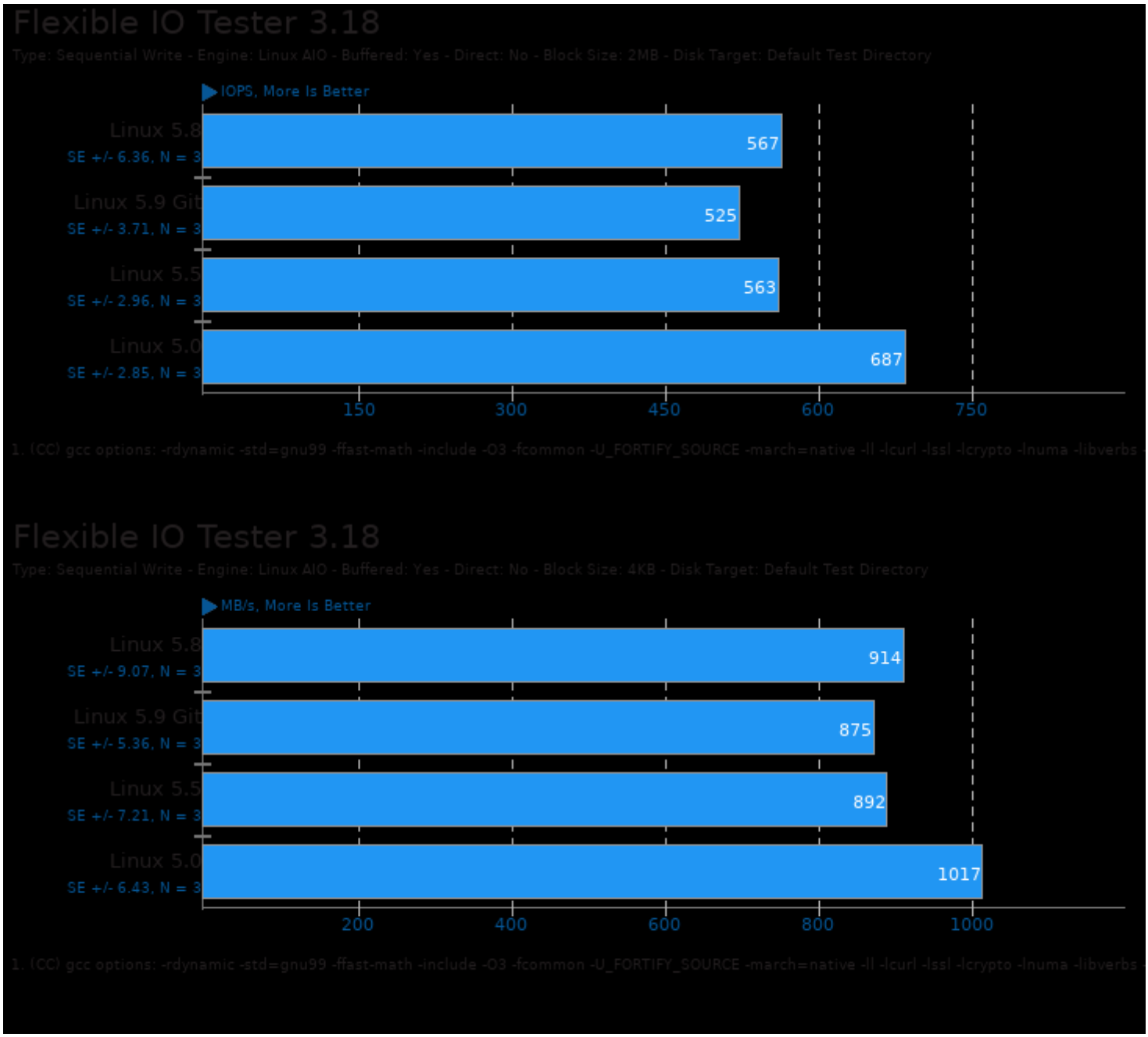
Kernel Compare



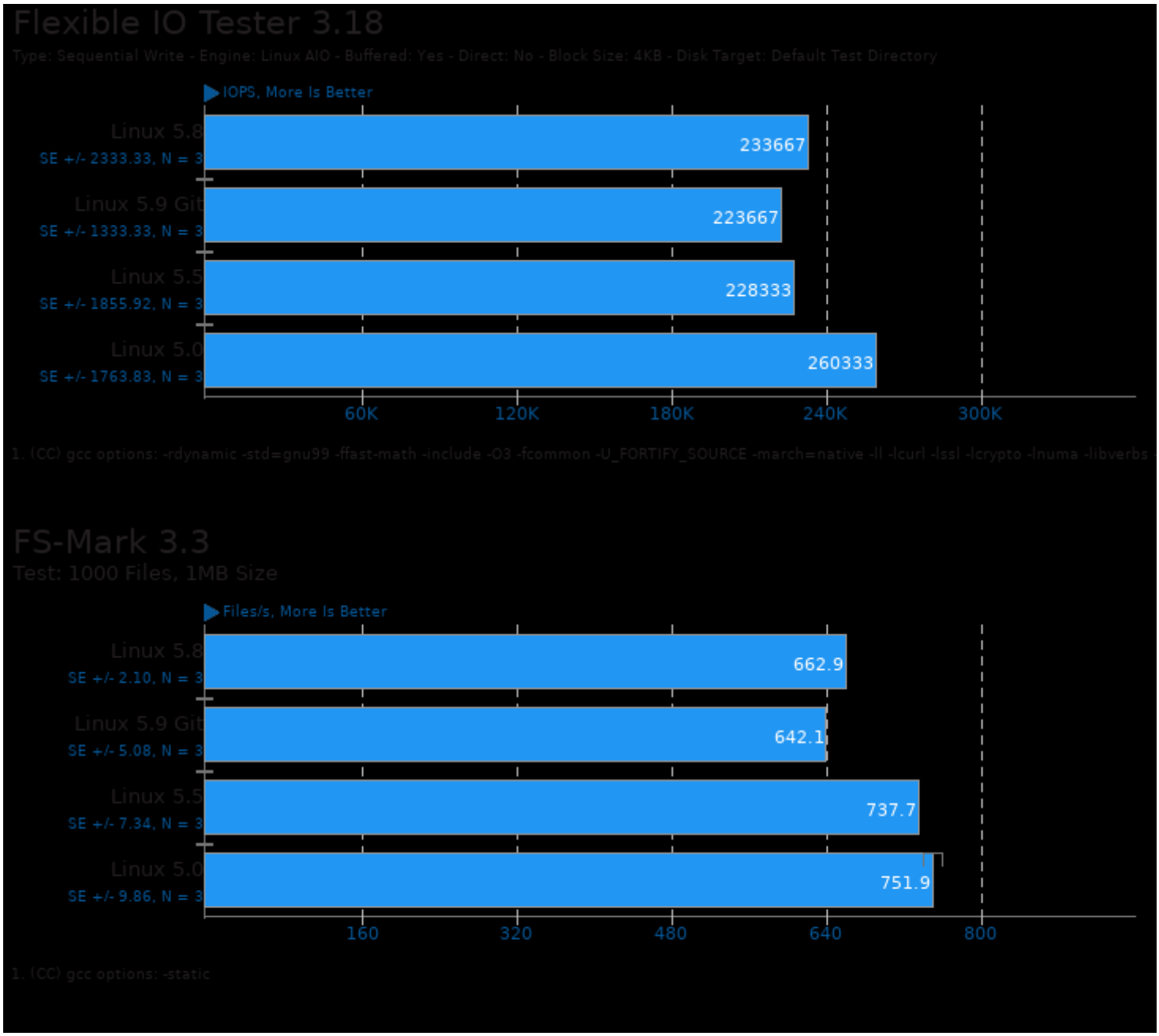

Flexible IO Tester 3.18
Type: Sequential Read - Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
Linux 5.8
SE +/- 333.33, N = 3
214667
Linux 5.9 Git
SE +/- 2000.00, N = 3
204000
Linux 5.5
212000
Linux 5.0
SE +/- 333.33, N = 3
227333
50K
100K
150K
200K
250K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs
Flexible IO Tester 3.18
Type: Sequential Write - Engine: IO_uring - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory
MB/s, More Is Better
Linux 5.8
SE +/- 15.72, N = 3
1199
Linux 5.9 Git
SE +/- 10.15, N = 15
1050
Linux 5.5
SE +/- 13.97, N = 3
1160
300
600
900
1200
1500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs
Flexible IO Tester 3.18
Type: Sequential Write - Engine: IO_uring - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory
IOPS, More Is Better
Linux 5.8
SE +/- 7.97, N = 3
596
Linux 5.9 Git
SE +/- 5.09, N = 15
521
Linux 5.5
SE +/- 6.98, N = 3
577
130
260
390
520
650
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs


Flexible IO Tester 3.18
Type: Sequential Write - Engine: IO_uring - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
Linux 5.8
SE +/- 7.09, N = 10
768
Linux 5.9 Git
SE +/- 4.37, N = 3
705
Linux 5.5
SE +/- 4.98, N = 3
716
170
340
510
680
850
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs
Flexible IO Tester 3.18
Type: Sequential Write - Engine: IO_uring - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
Linux 5.8
SE +/- 1782.94, N = 10
196700
Linux 5.9 Git
SE +/- 1201.85, N = 3
180667
Linux 5.5
SE +/- 1452.97, N = 3
183333
40K
80K
120K
160K
200K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs
Flexible IO Tester 3.18
Type: Sequential Write - Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory
MB/s, More Is Better
Linux 5.8
SE +/- 12.91, N = 3
1141
Linux 5.9 Git
SE +/- 7.75, N = 3
1058
Linux 5.5
SE +/- 5.93, N = 3
1133
Linux 5.0
SE +/- 6.36, N = 3
1381
300
600
900
1200
1500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs

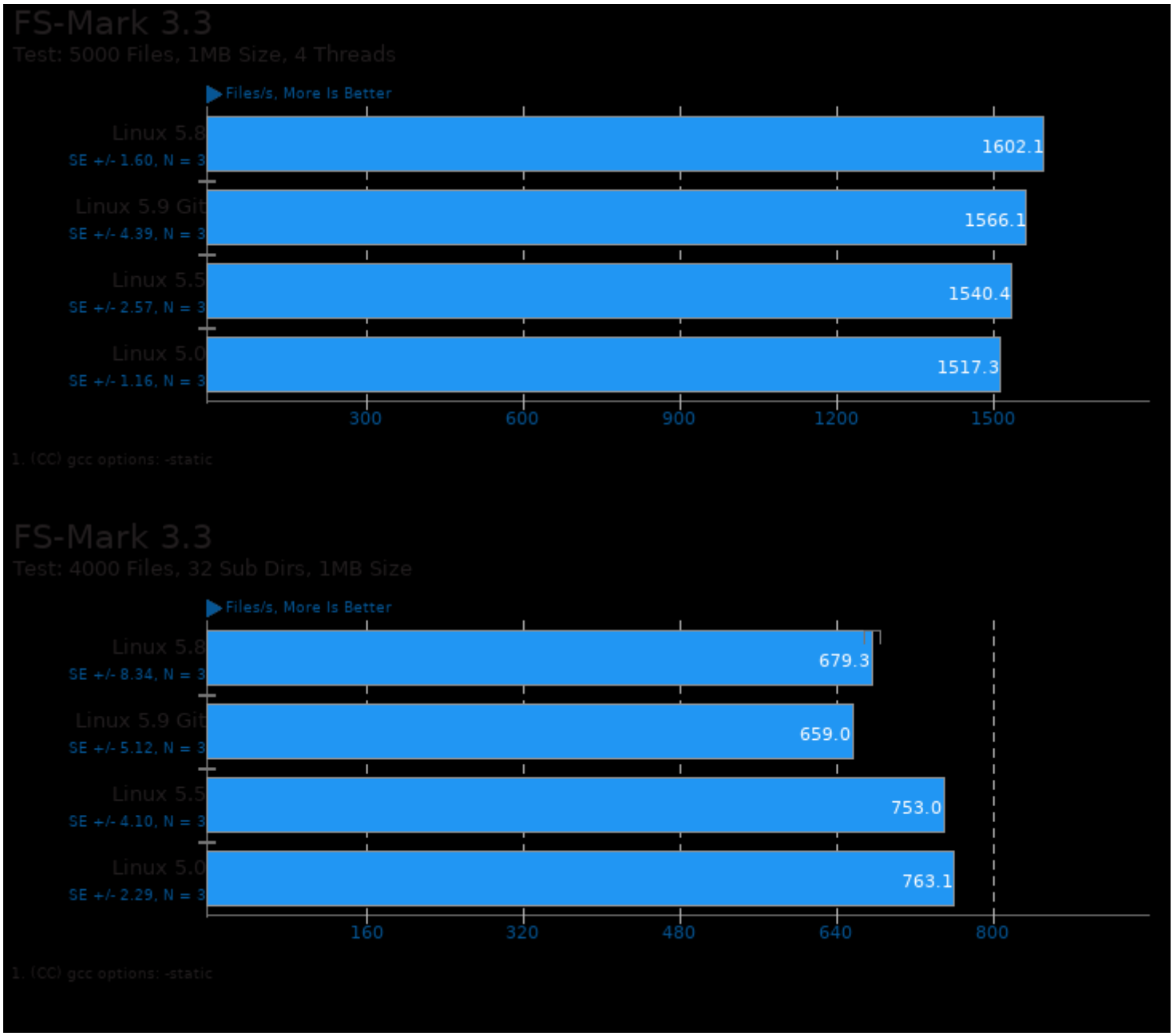
Kernel Compare



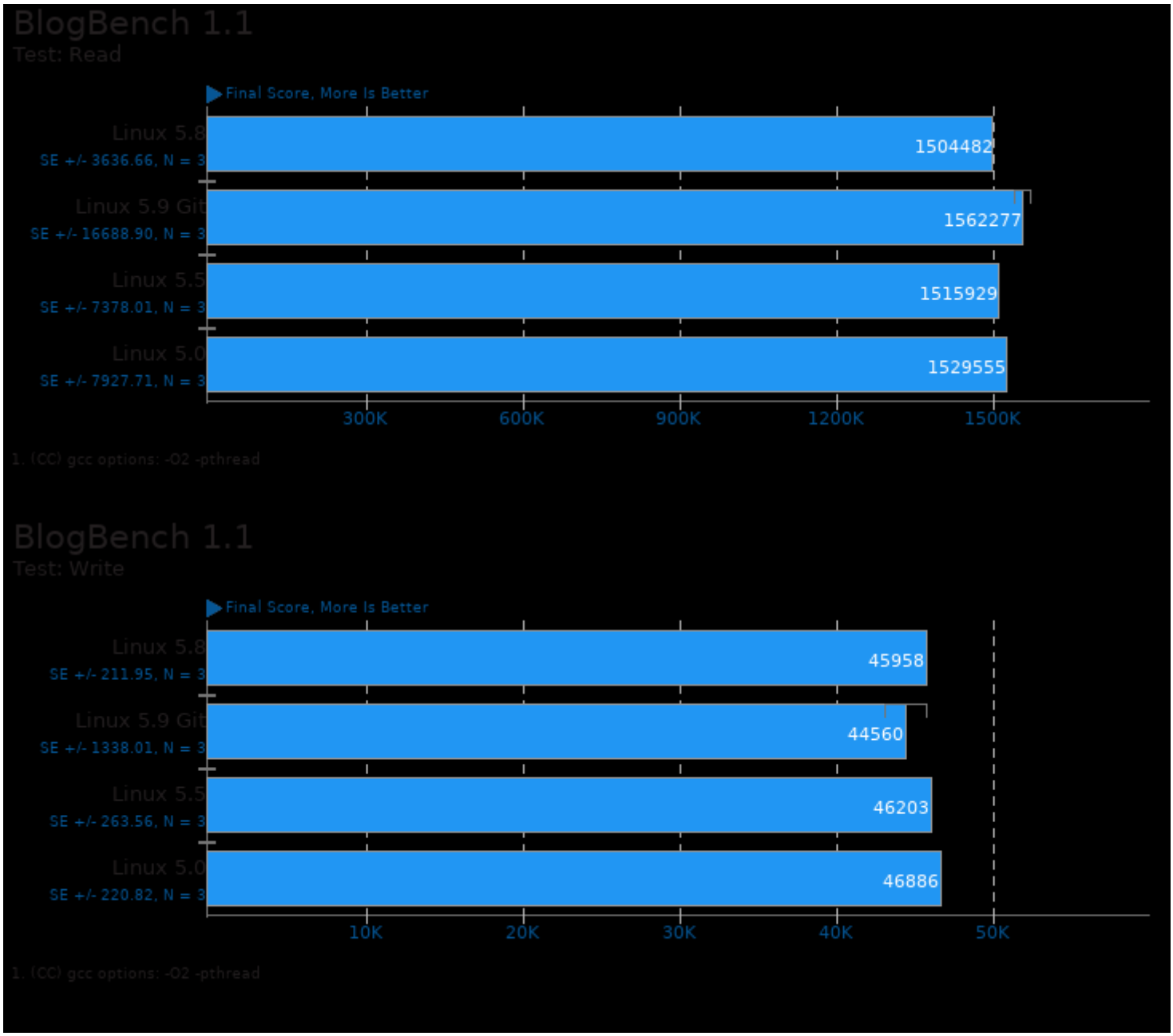
Kernel Compare

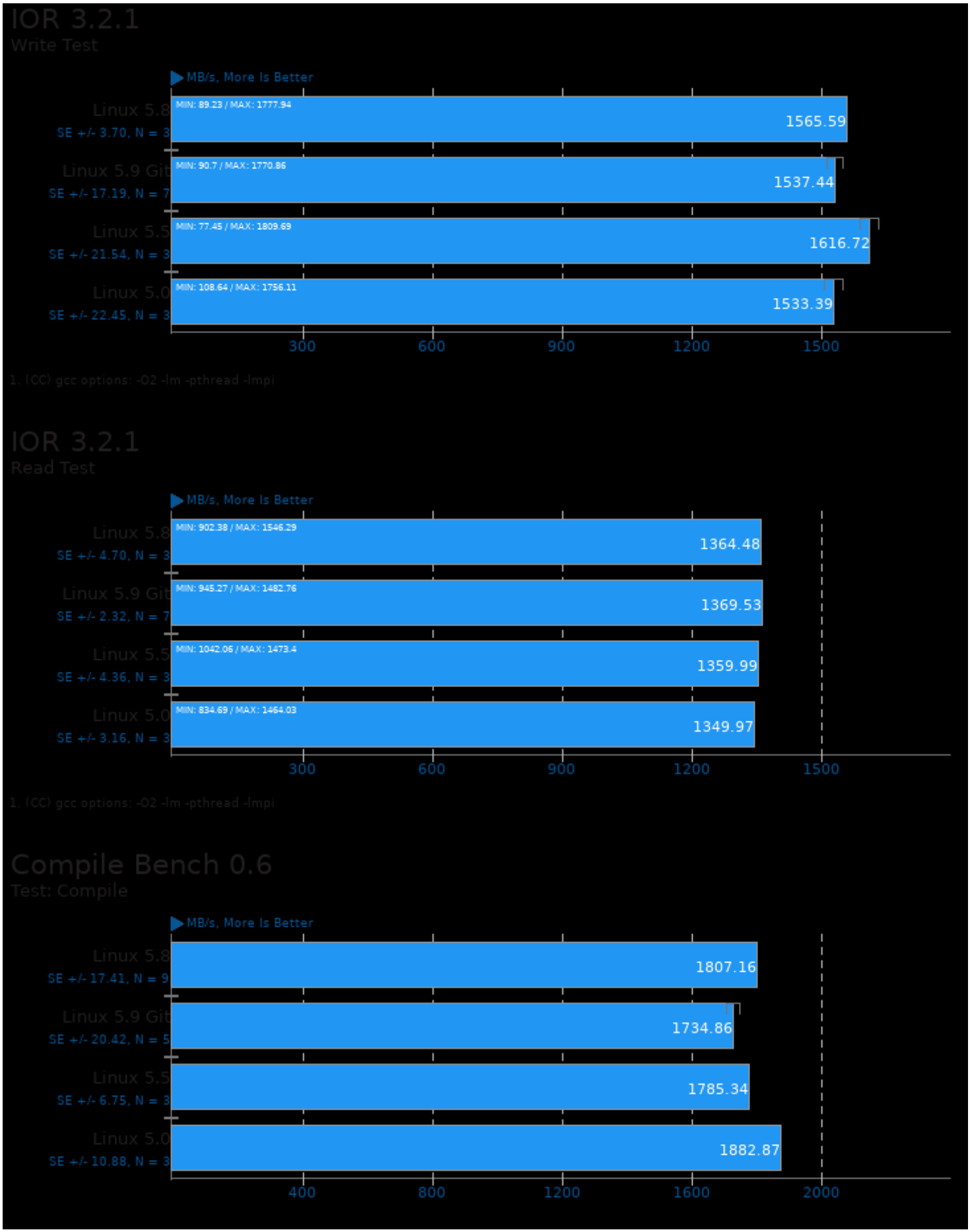


Kernel Compare

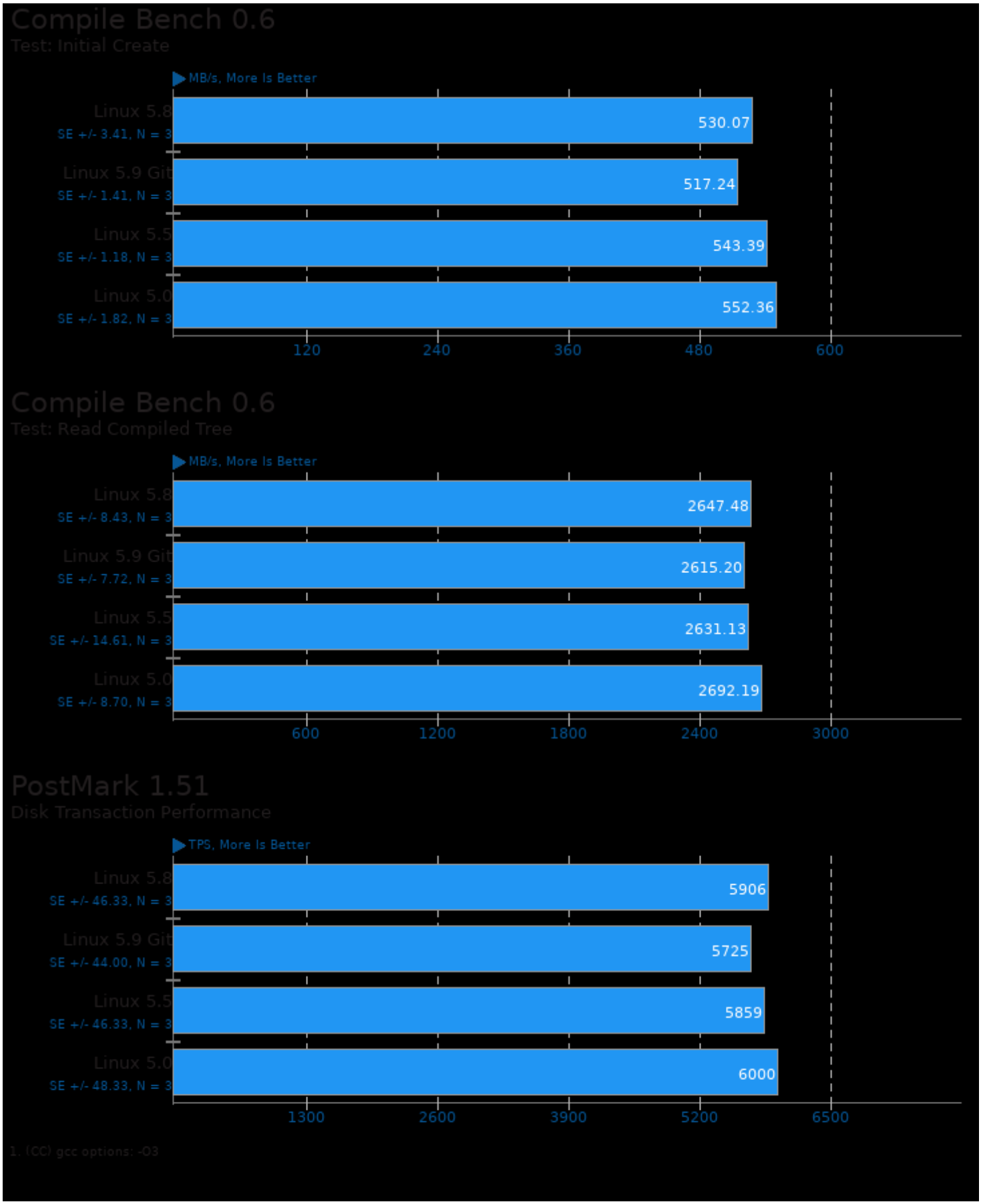


Kernel Compare

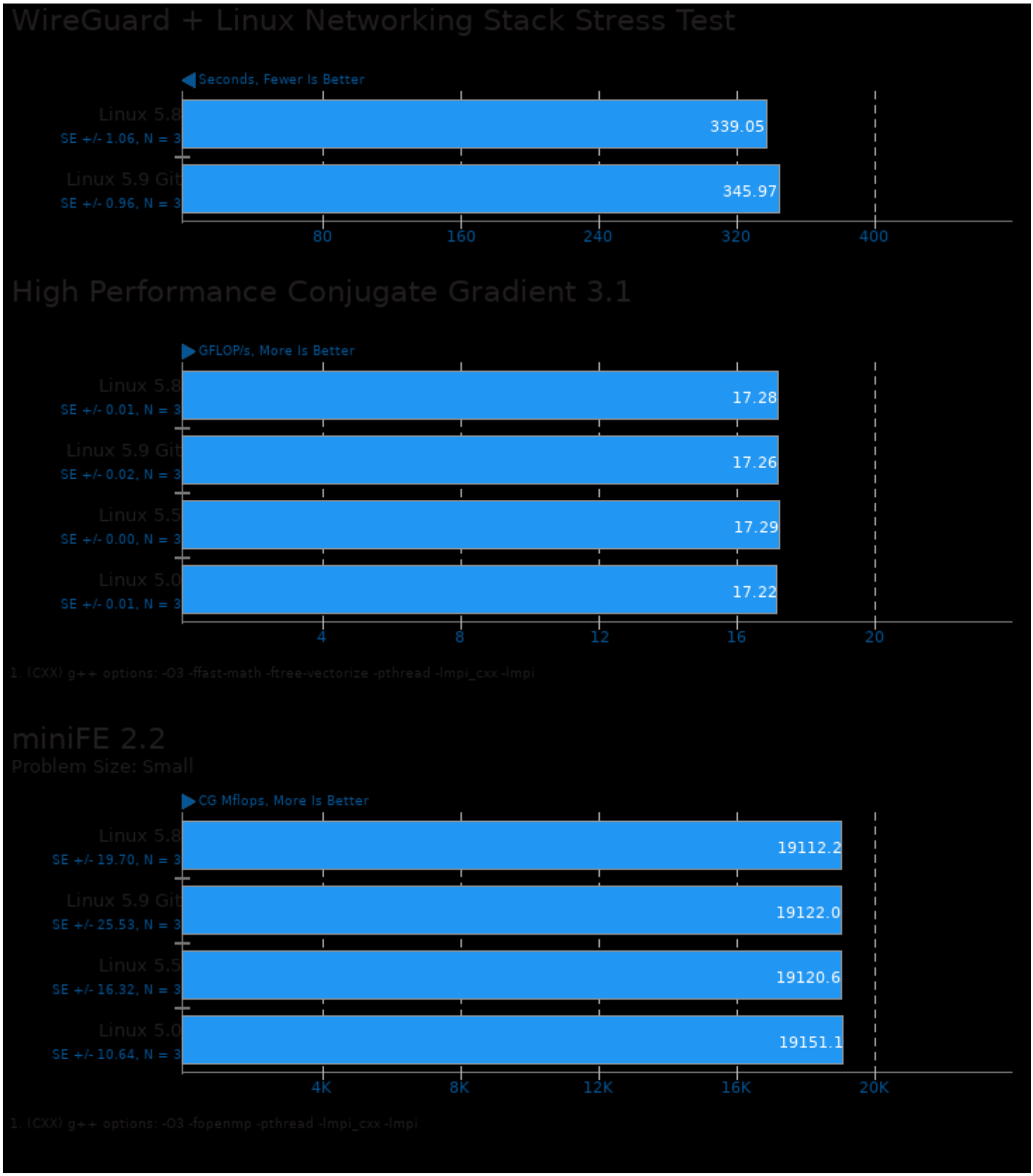


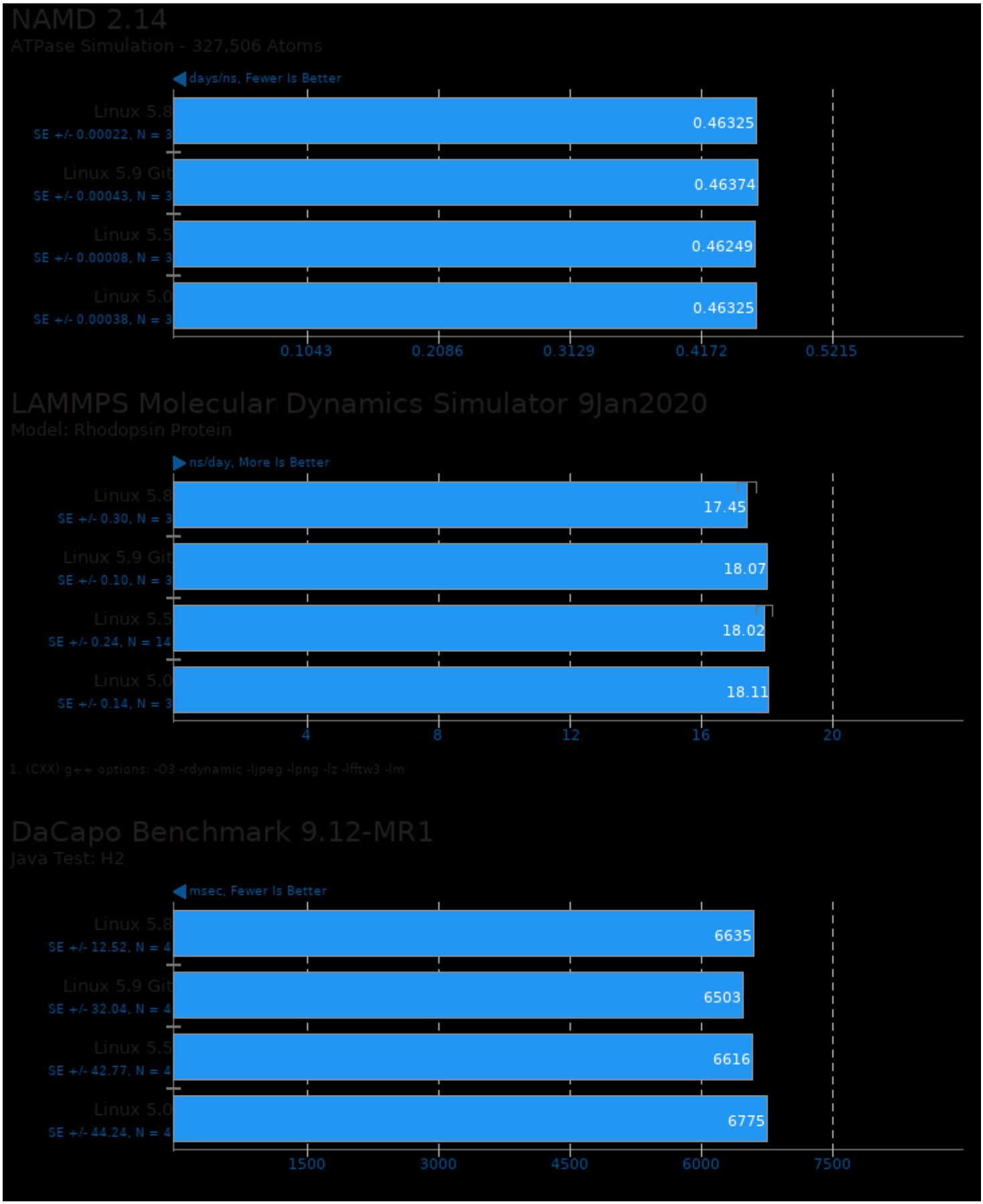

IOR 3.2.1
Write Test
MB/s, More Is Better
Linux 5.8
SE +/- 3.70, N = 3
MIN: 89.23 / MAX: 1777.94
1565.59
Linux 5.9 Git
SE +/- 17.19, N = 7
MIN: 90.7 / MAX: 1770.86
1537.44
Linux 5.5
SE +/- 21.54, N = 3
MIN: 77.45 / MAX: 1809.69
1616.72
Linux 5.0
SE +/- 22.45, N = 3
MIN: 108.64 / MAX: 1756.11
1533.39
300
600
900
1200
1500
1. (CC) gcc options: -O2 -lm -pthread -lmpi
IOR 3.2.1
Read Test
MB/s, More Is Better
Linux 5.8
SE +/- 4.70, N = 3
MIN: 902.38 / MAX: 1546.29
1364.48
Linux 5.9 Git
SE +/- 2.32, N = 7
MIN: 945.27 / MAX: 1482.76
1369.53
Linux 5.5
SE +/- 4.36, N = 3
MIN: 1042.06 / MAX: 1473.4
1359.99
Linux 5.0
SE +/- 3.16, N = 3
MIN: 834.69 / MAX: 1464.03
1349.97
300
600
900
1200
1500
1. (CC) gcc options: -O2 -lm -pthread -lmpi
Compile Bench 0.6
Test: Compile
MB/s, More Is Better
Linux 5.8
SE +/- 17.41, N = 9
1807.16
Linux 5.9 Git
SE +/- 20.42, N = 5
1734.86
Linux 5.5
SE +/- 6.75, N = 3
1785.34
Linux 5.0
SE +/- 10.88, N = 3
1882.87
400
800
1200
1600
2000

Kernel Compare

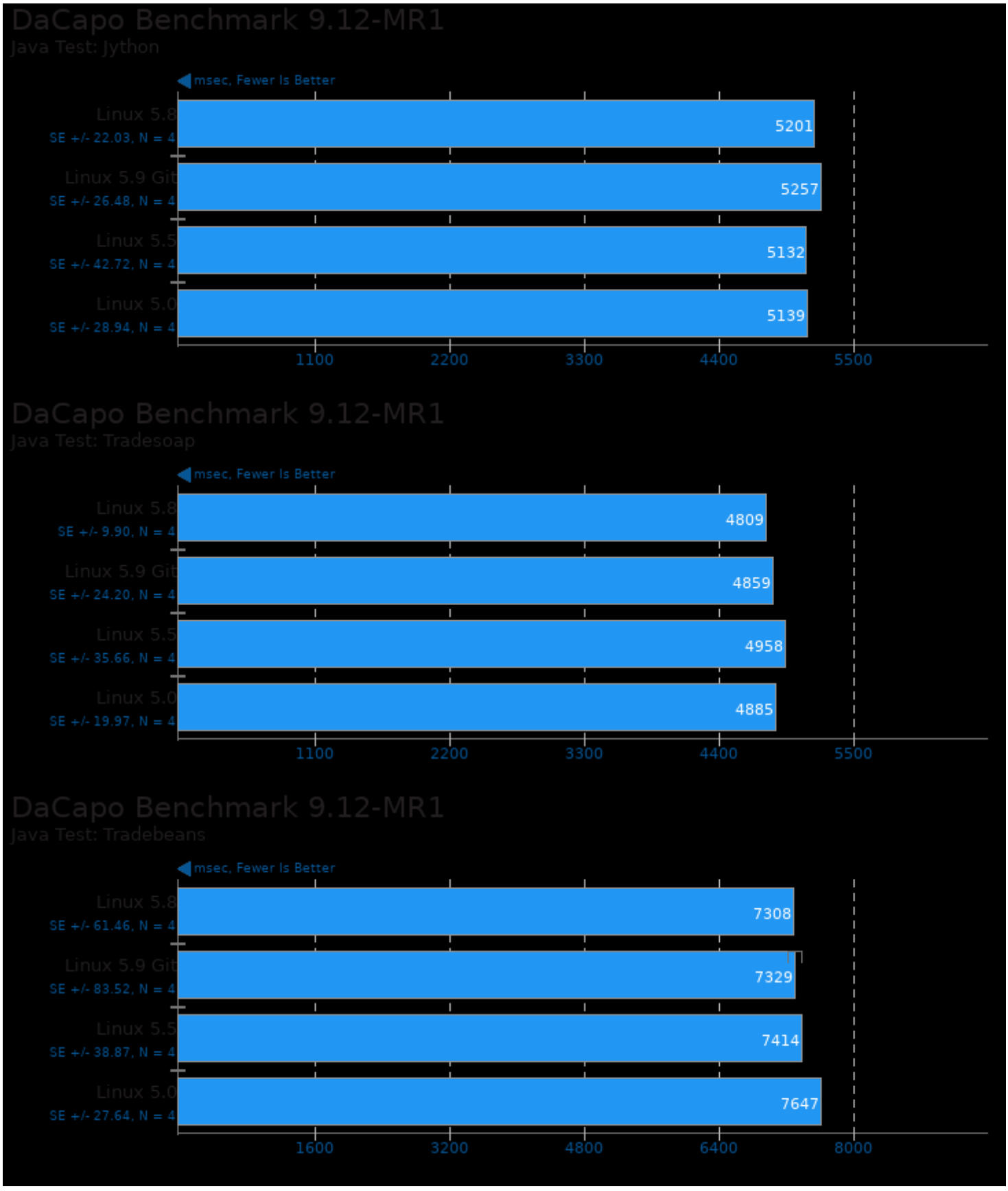


Kernel Compare

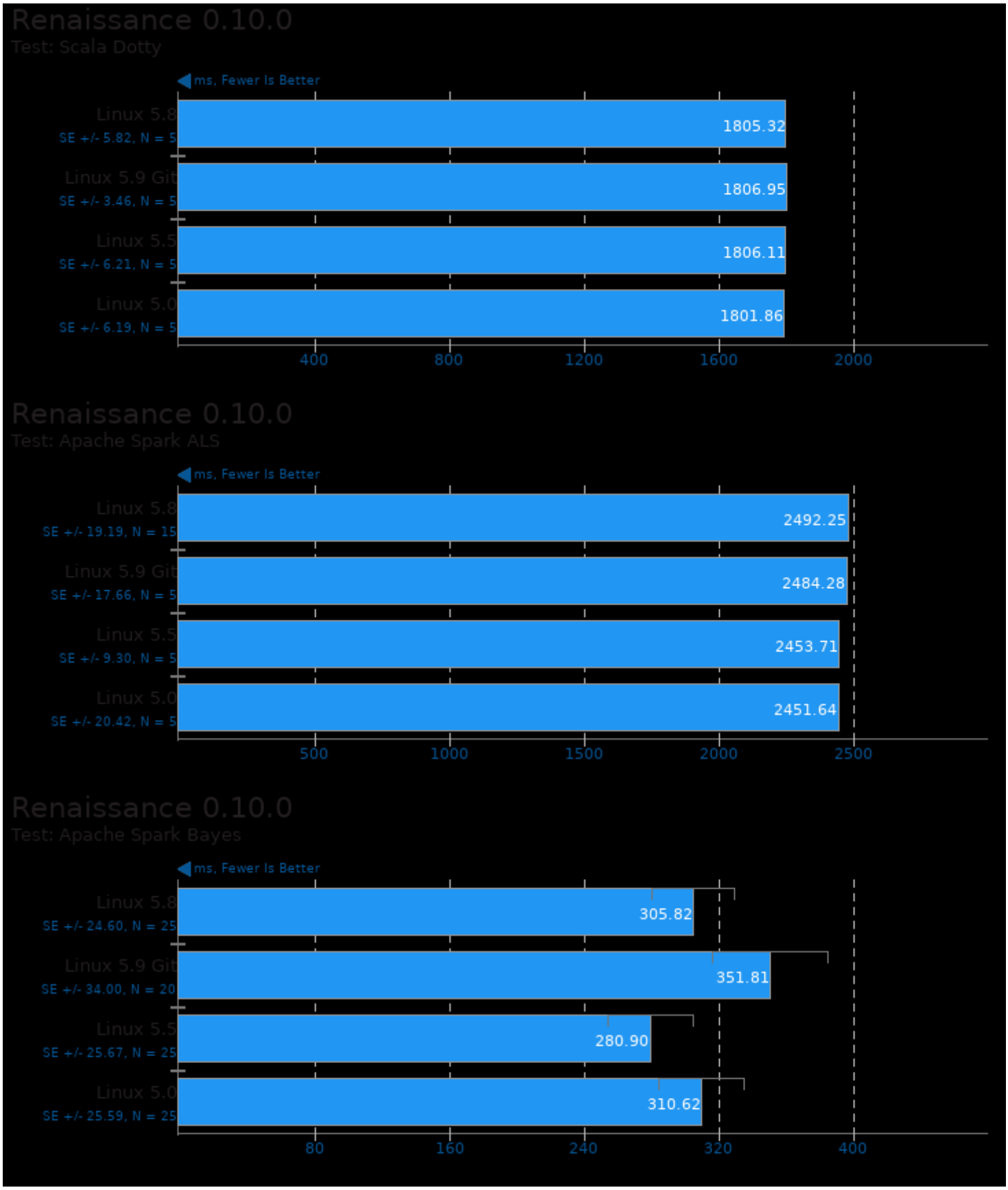



NAMD 2.14
ATPase Simulation - 327,506 Atoms
days/ns, Fewer Is Better
Linux 5.8
SE +/- 0.00022, N = 3
0.46325
Linux 5.9 Git
SE +/- 0.00043, N = 3
0.46374
Linux 5.5
SE +/- 0.00008, N = 3
0.46249
Linux 5.0
SE +/- 0.00038, N = 3
0.46325
0.1043
0.2086
0.3129
0.4172
0.5215
LAMMPS Molecular Dynamics Simulator 9Jan2020
Model: Rhodopsin Protein
ns/day, More Is Better
Linux 5.8
SE +/- 0.30, N = 3
17.45
Linux 5.9 Git
SE +/- 0.10, N = 3
18.07
Linux 5.5
SE +/- 0.24, N = 14
18.02
Linux 5.0
SE +/- 0.14, N = 3
18.11
4
8
12
16
20
1. (CXX) g++ options: -O3 -rdynamic -ljpeg -lpng -lz -lfftw3 -lm
DaCapo Benchmark 9.12-MR1
Java Test: H2
msec, Fewer Is Better
Linux 5.8
SE +/- 12.52, N = 4
6635
Linux 5.9 Git
SE +/- 32.04, N = 4
6503
Linux 5.5
SE +/- 42.77, N = 4
6616
Linux 5.0
SE +/- 44.24, N = 4
6775
1500
3000
4500
6000
7500

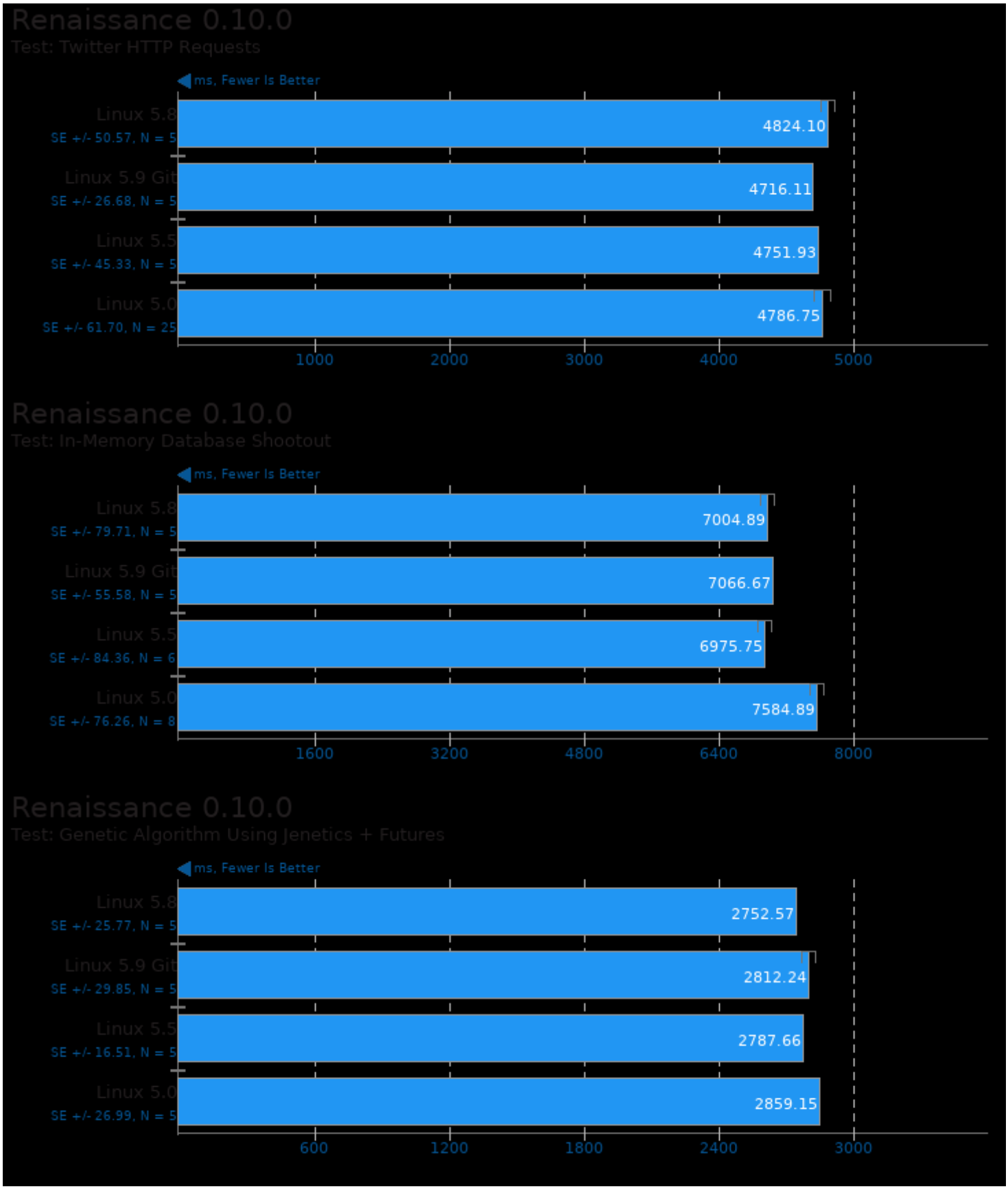
Kernel Compare



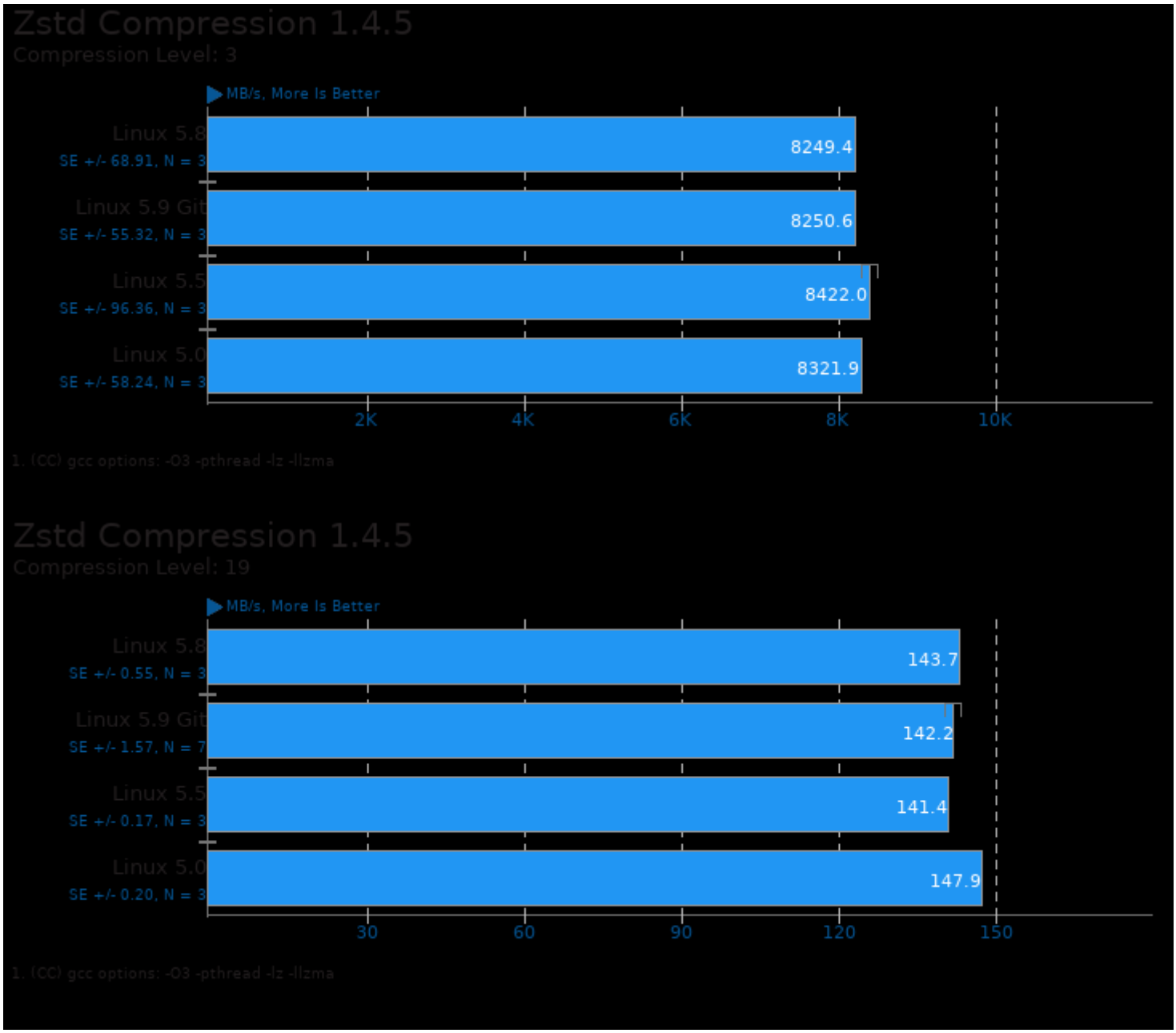
Kernel Compare



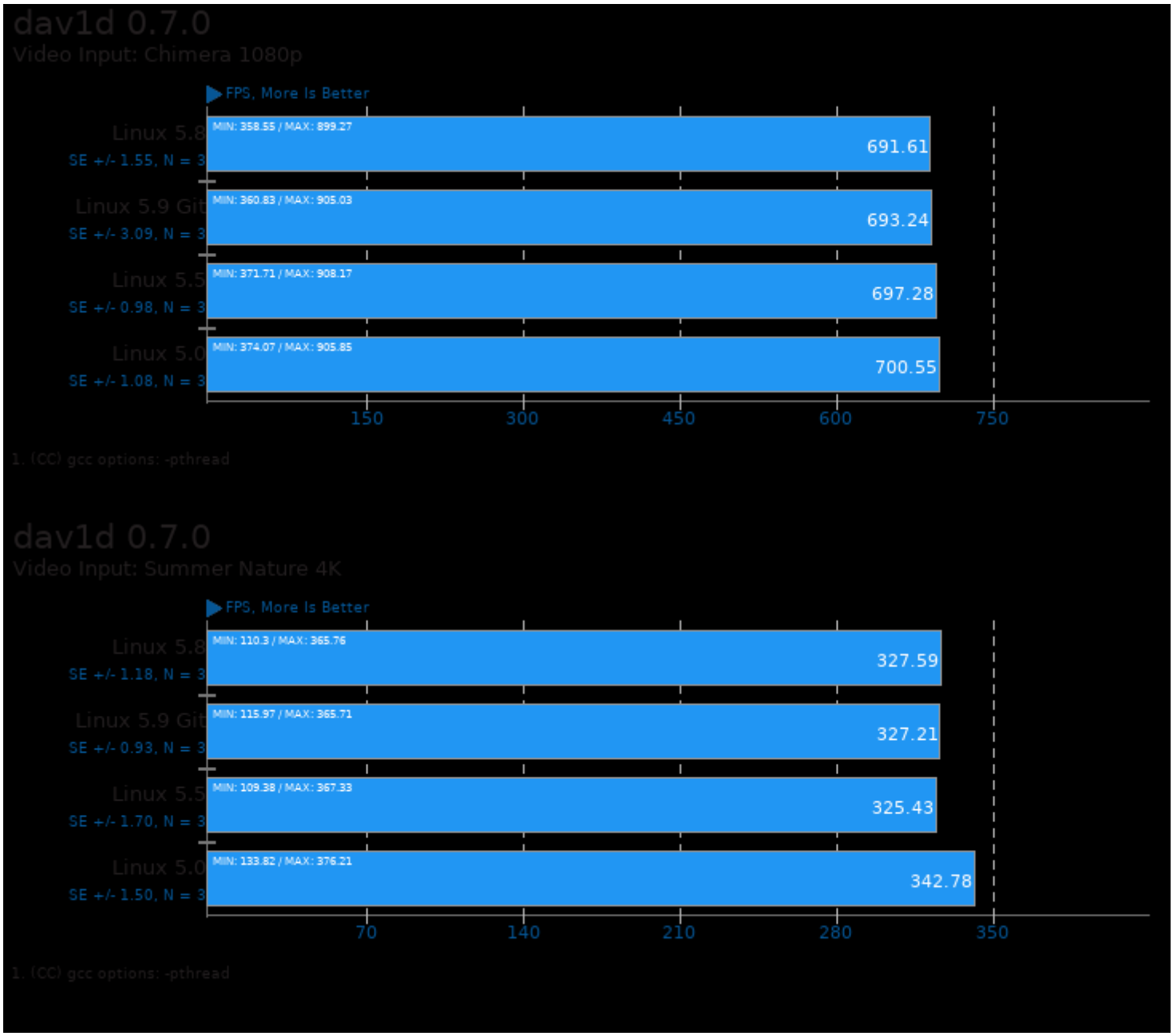
Kernel Compare



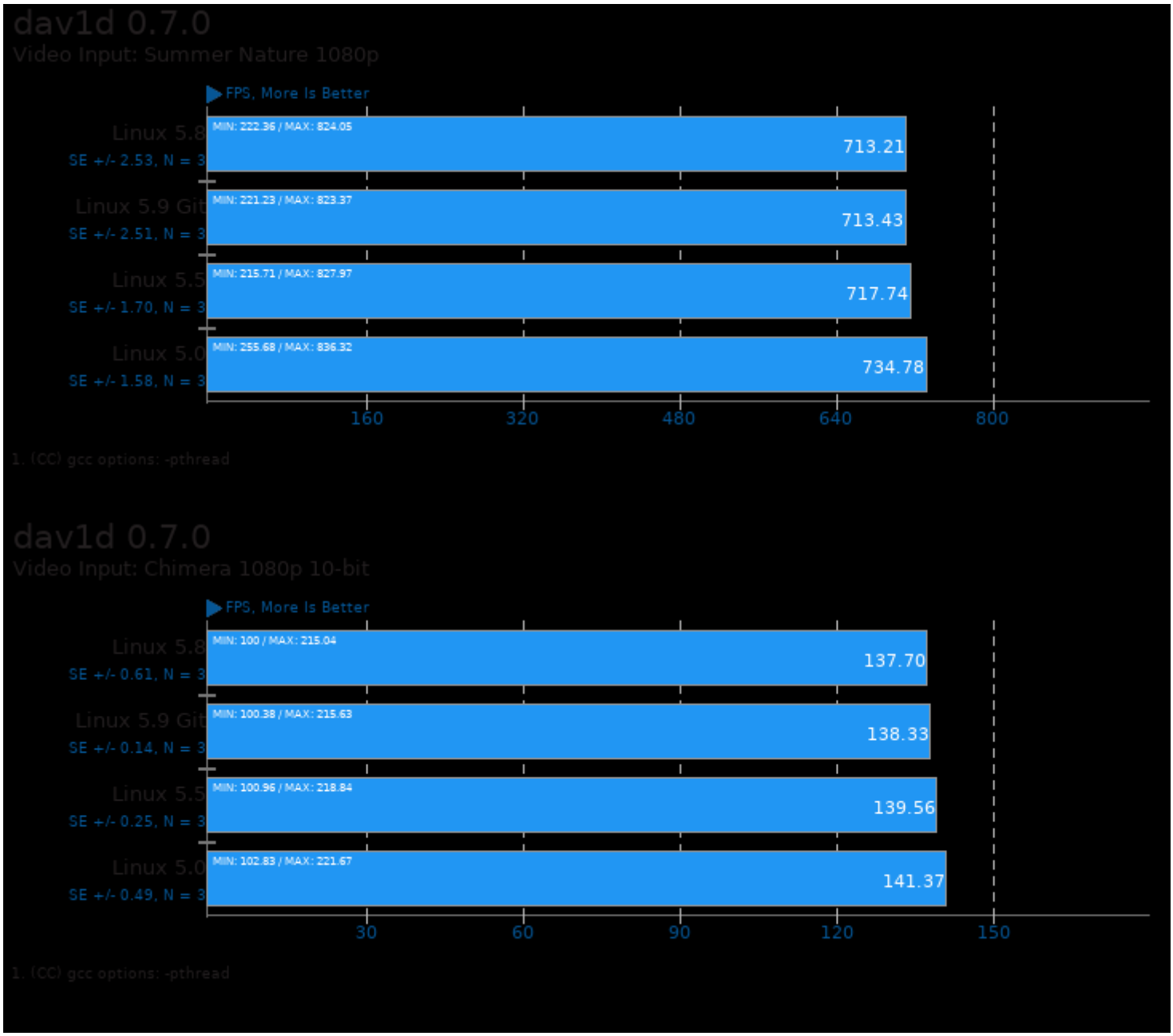
Kernel Compare



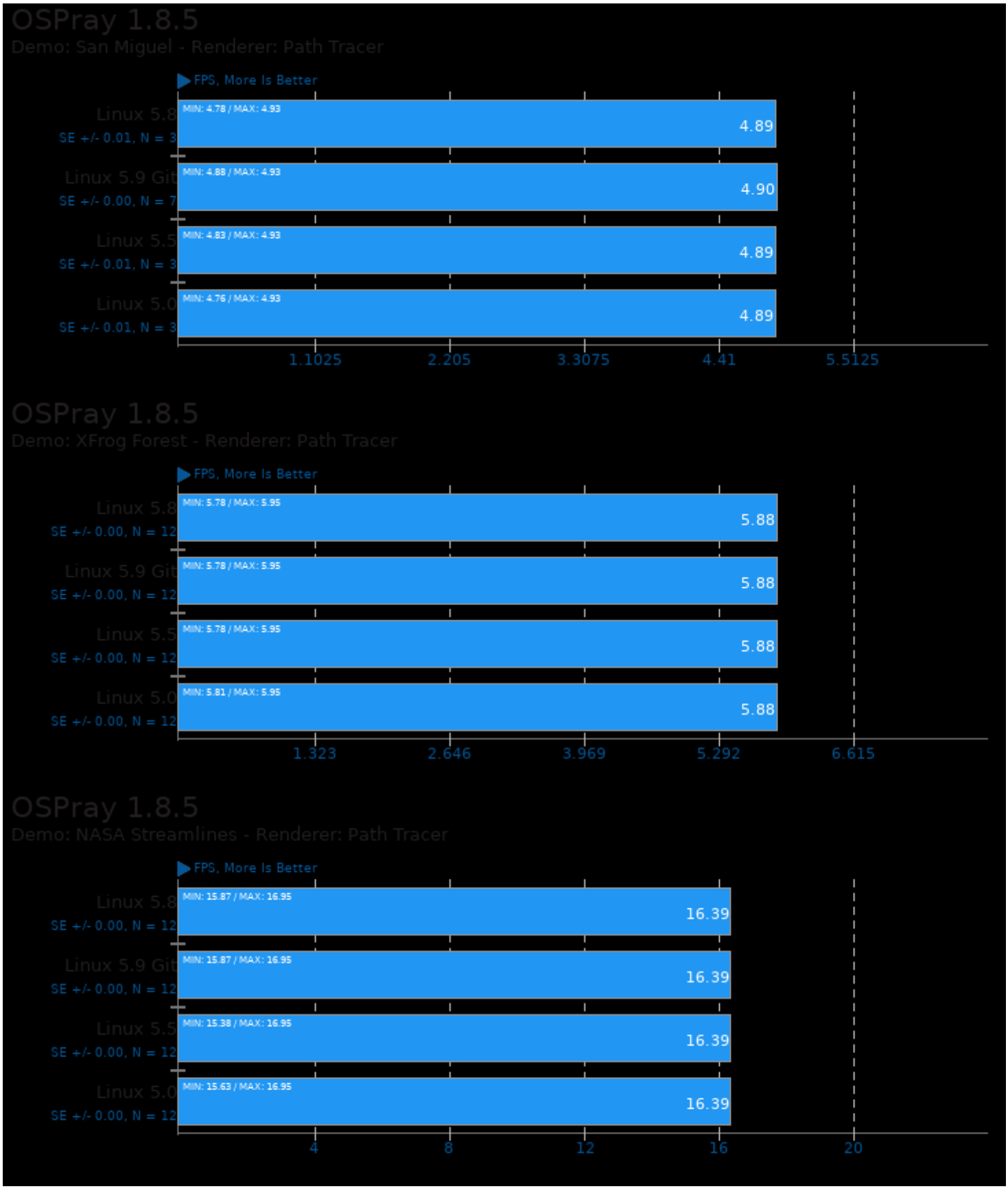
Kernel Compare



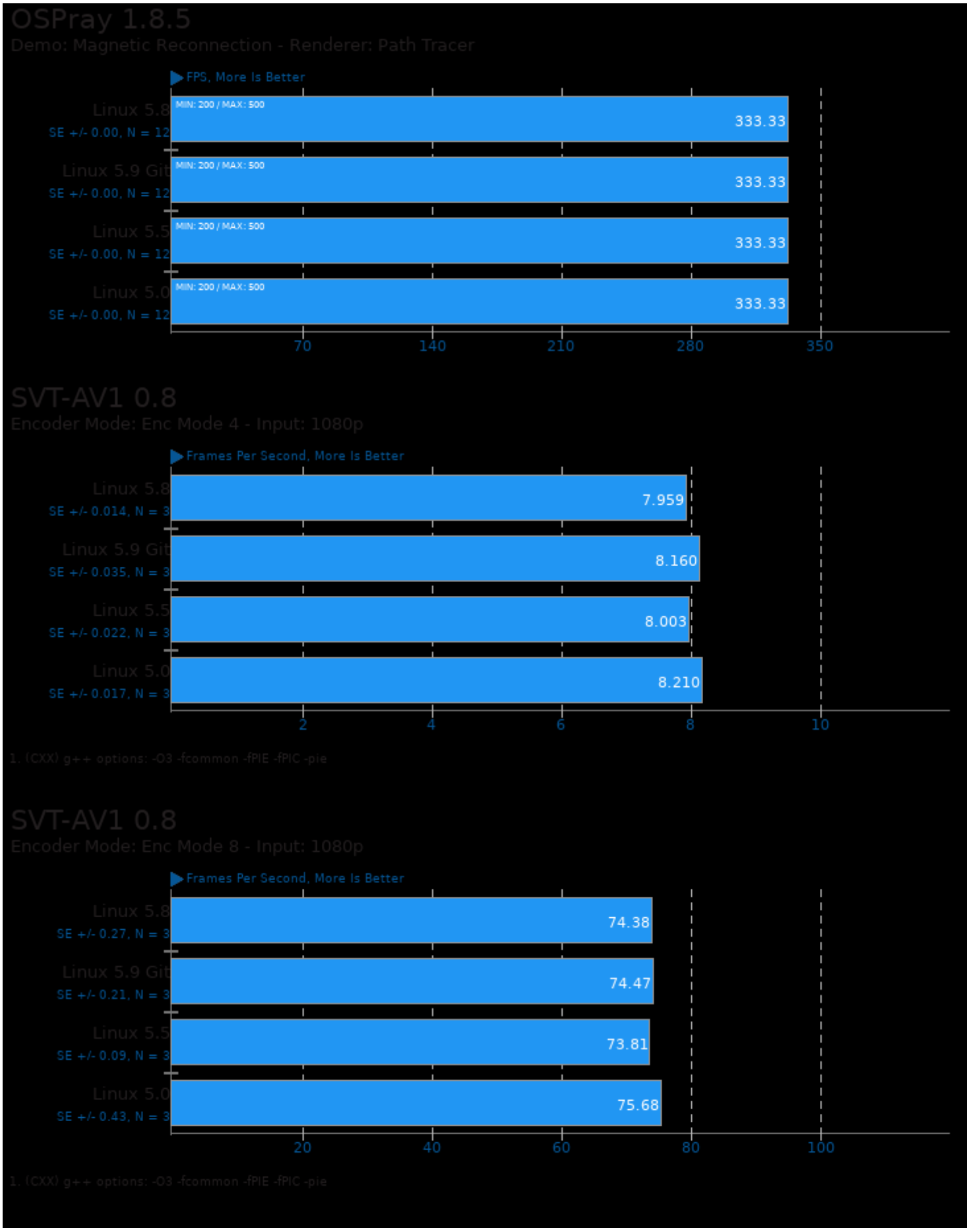
Kernel Compare



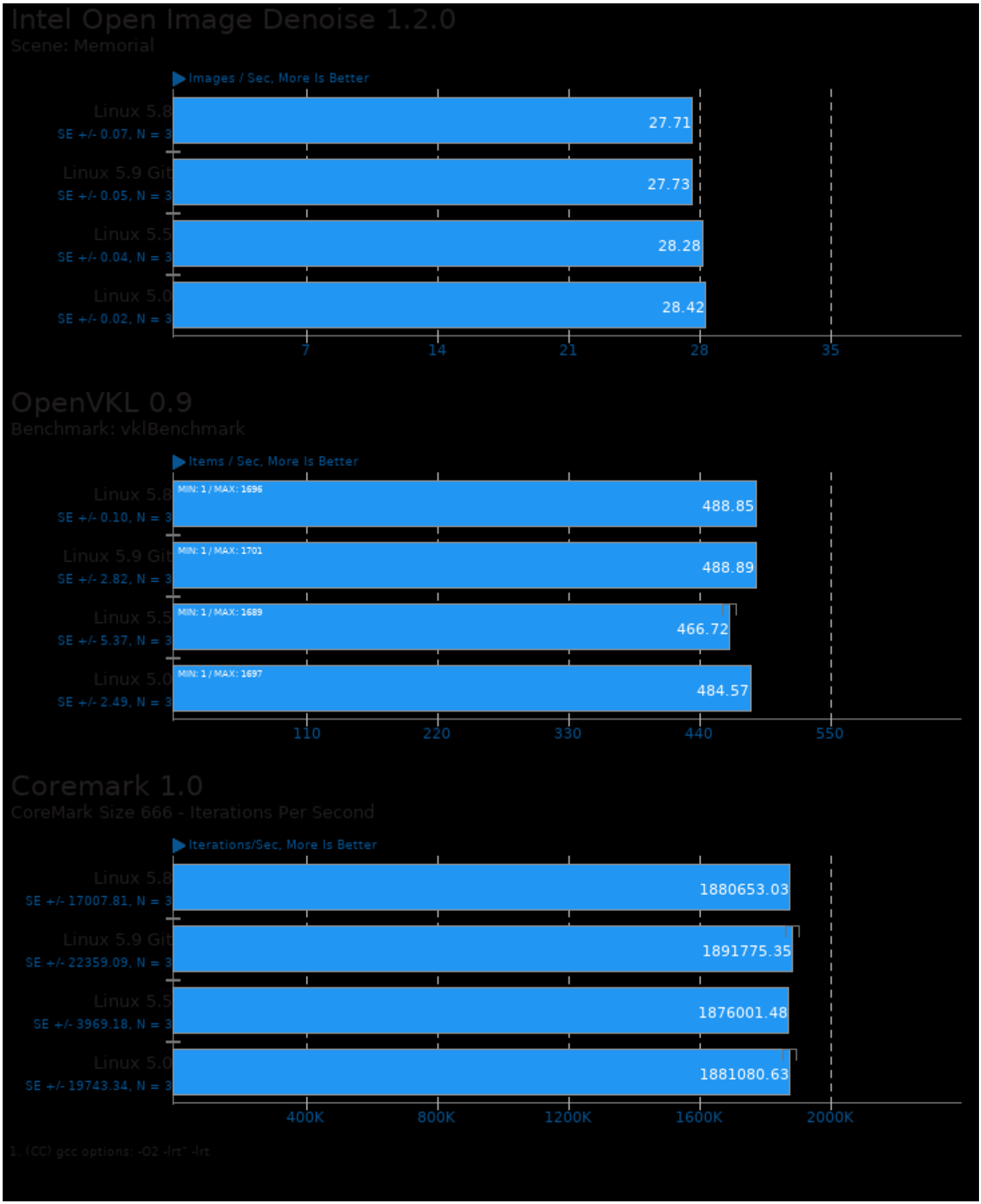
Kernel Compare



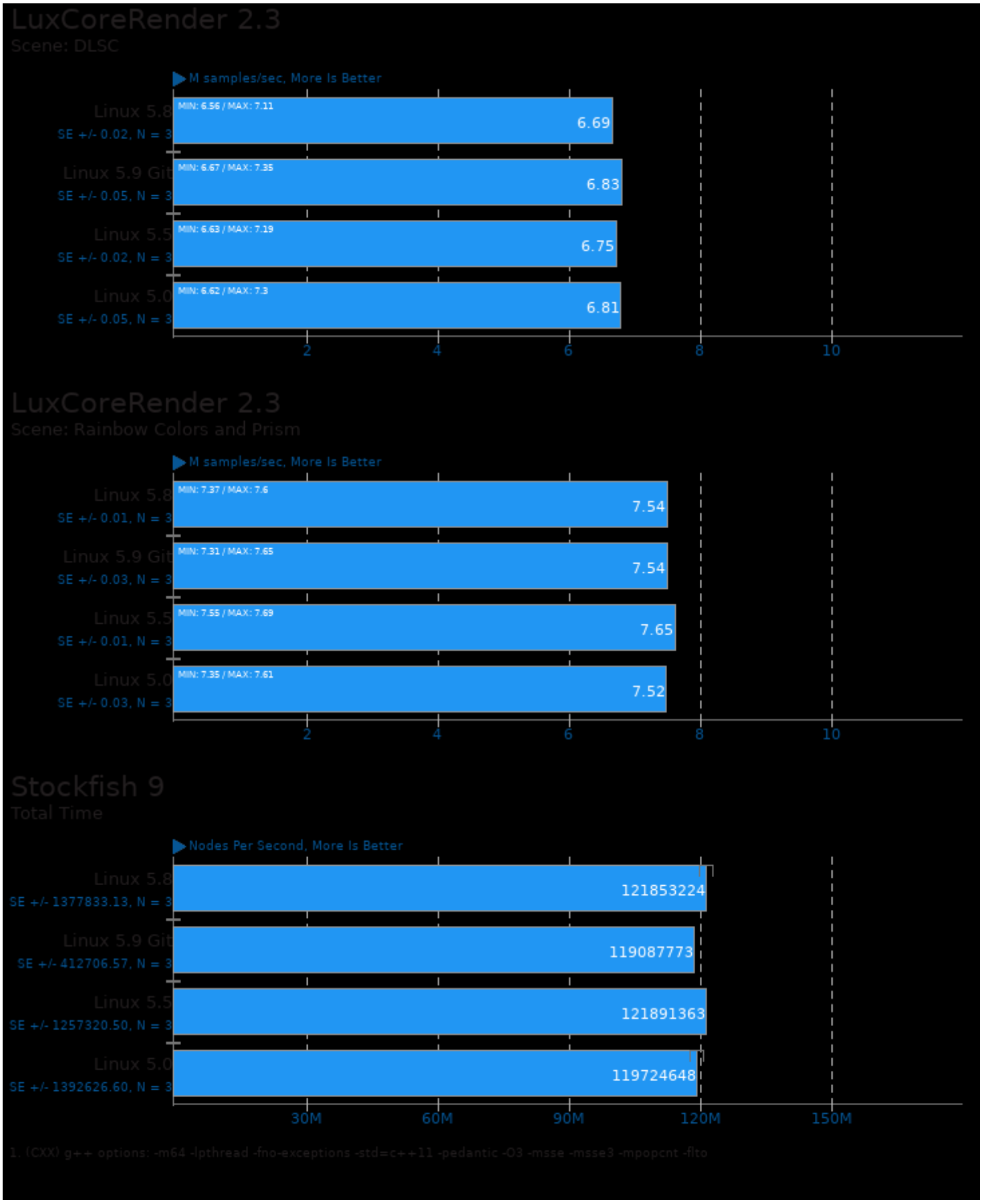
Kernel Compare



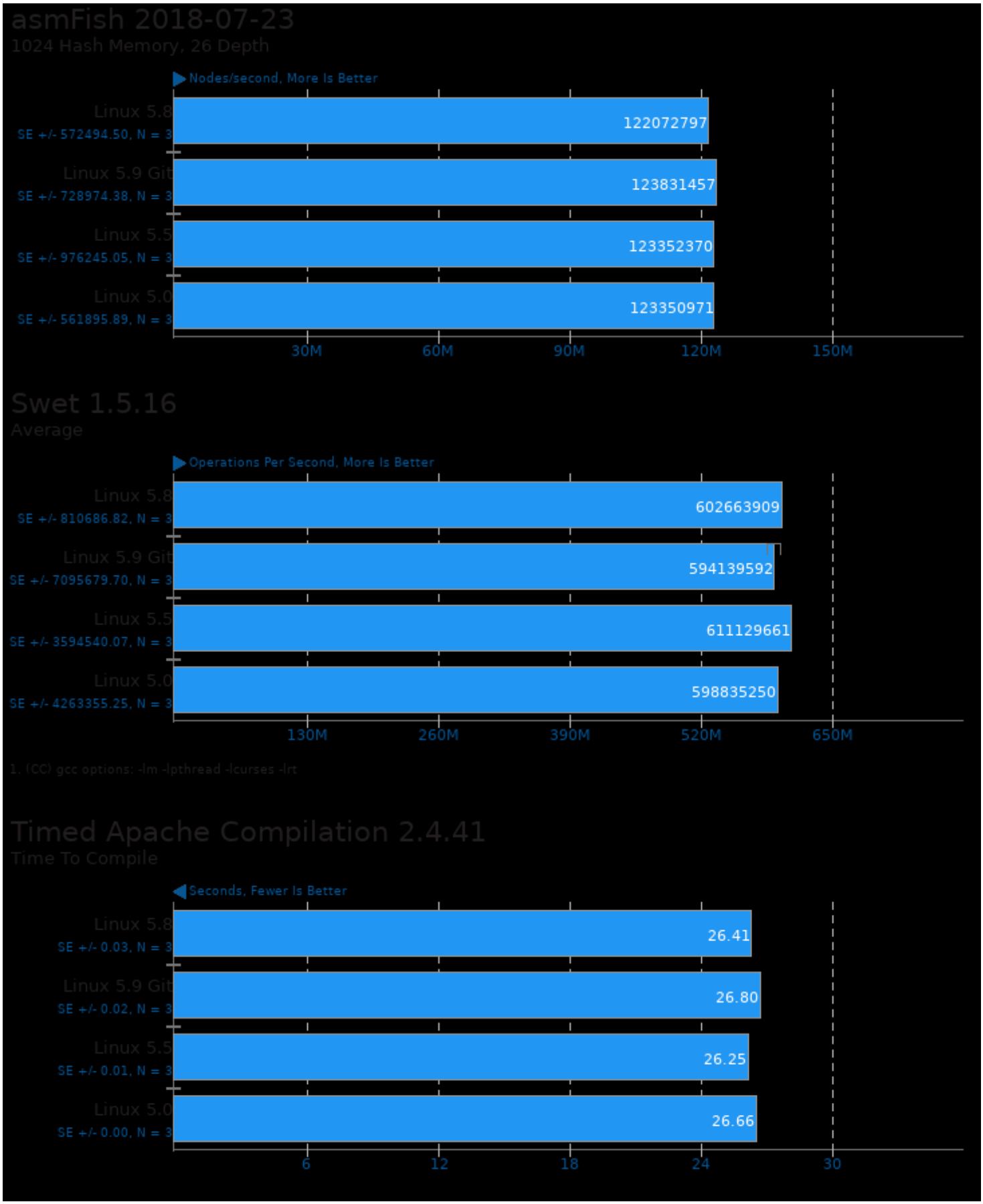
Kernel Compare



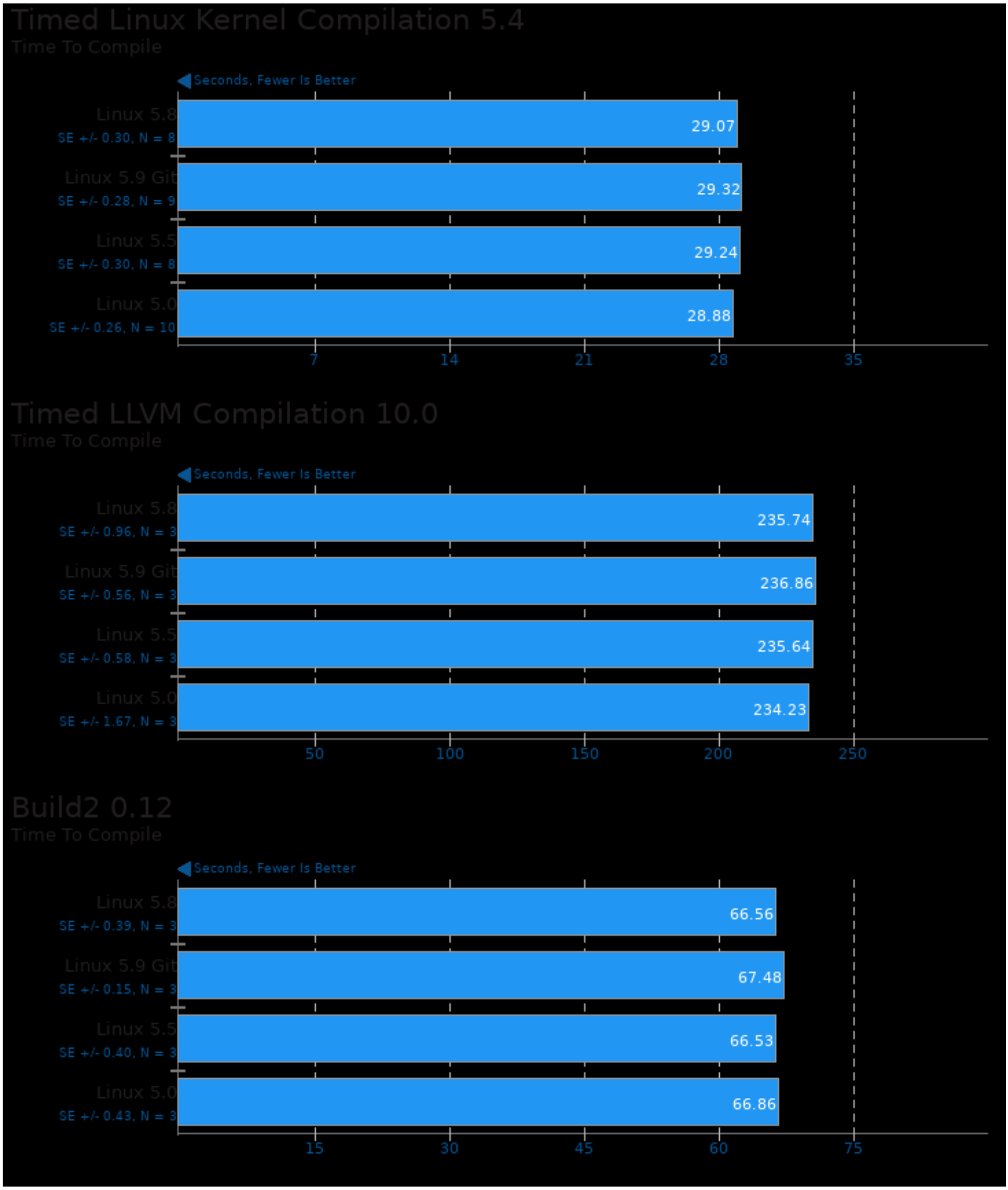
Kernel Compare



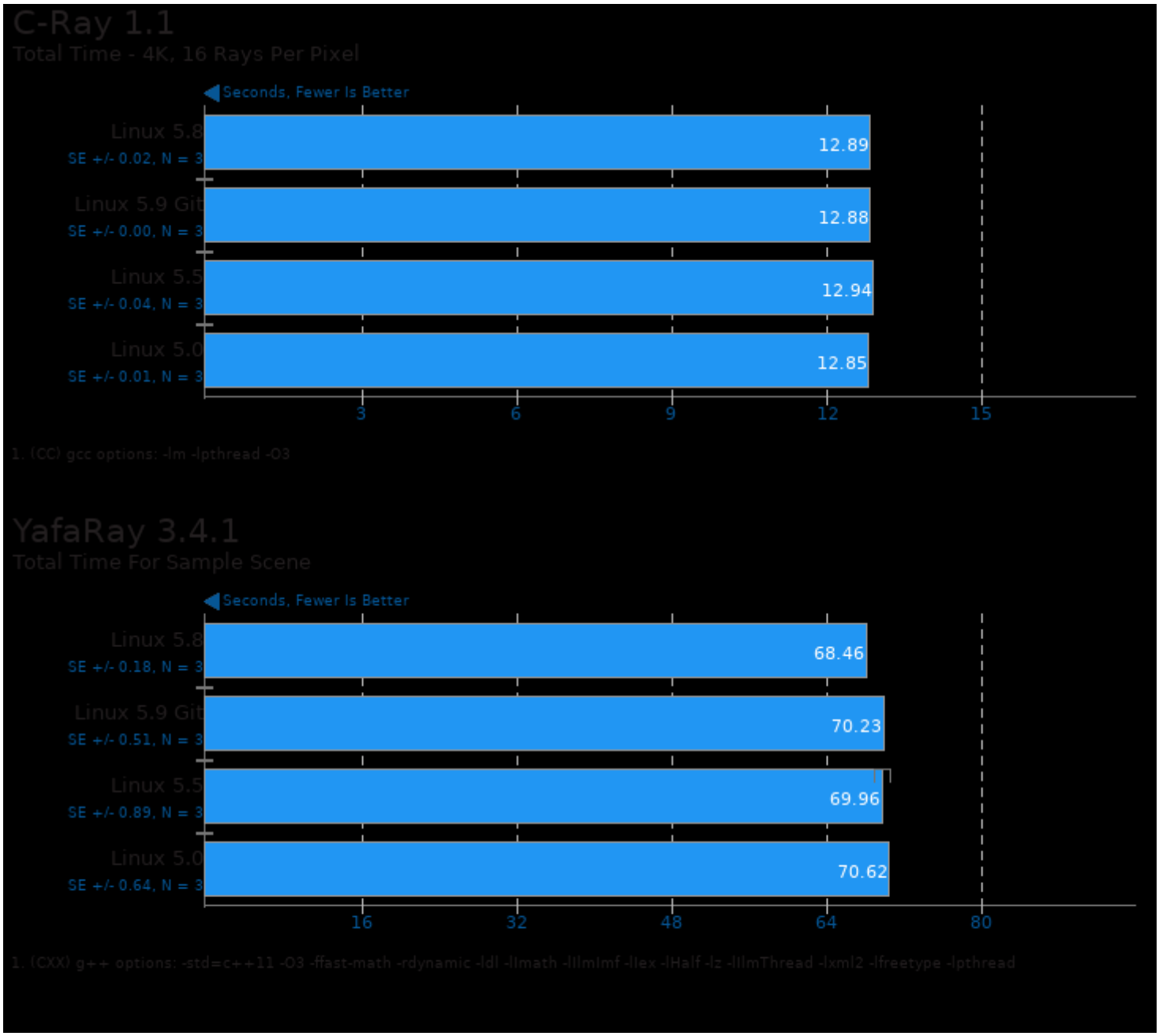
Kernel Compare



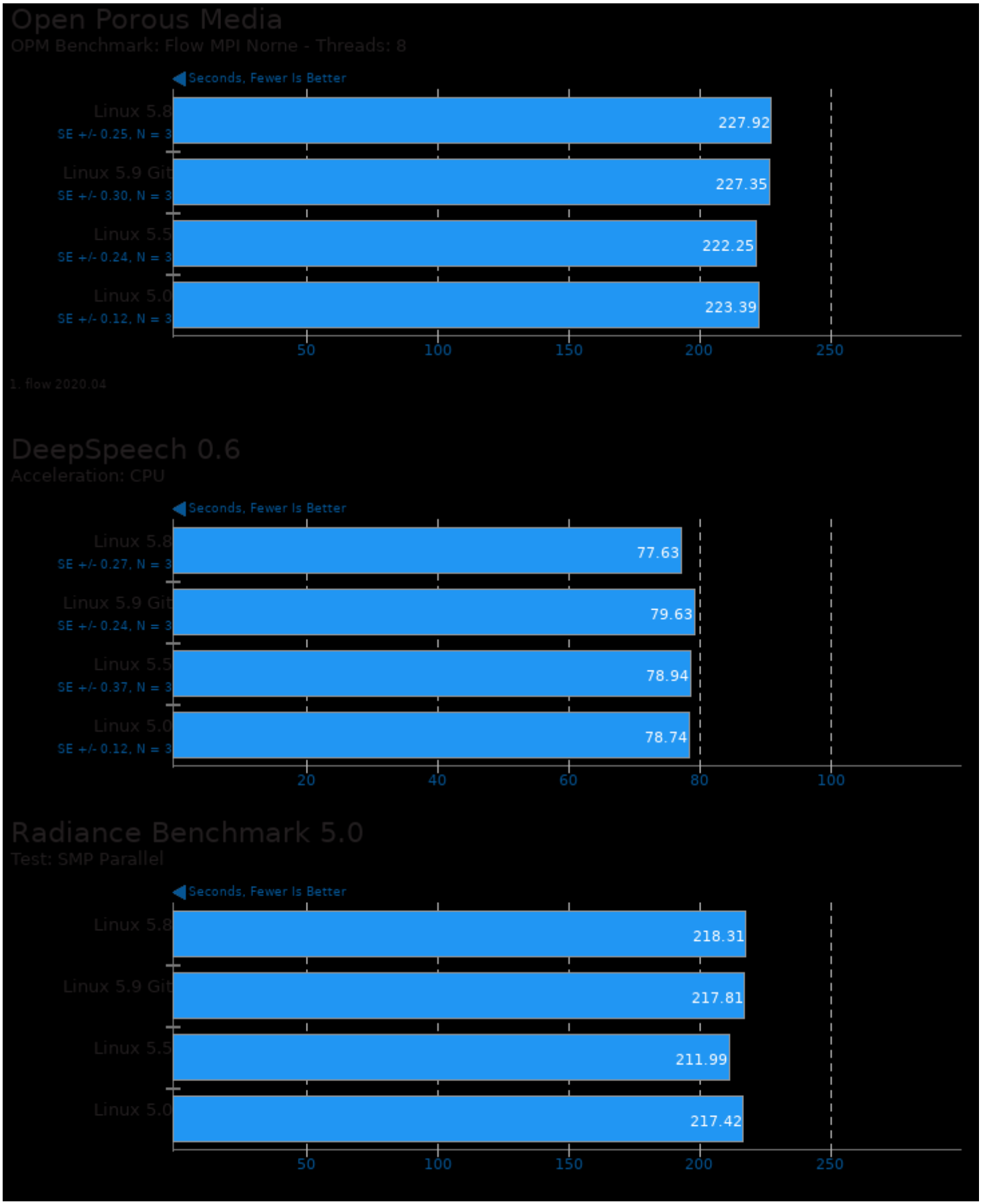
Kernel Compare



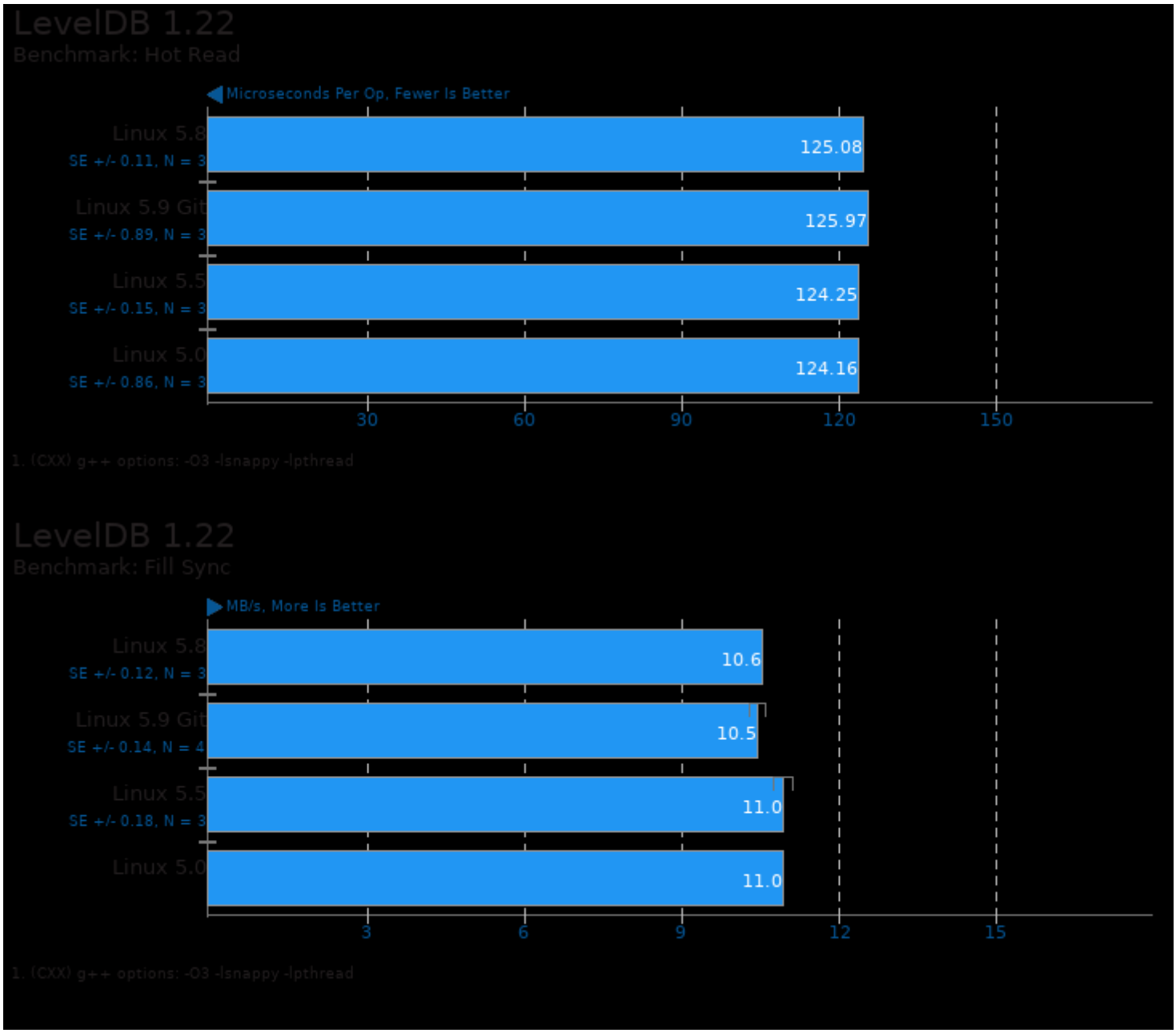
Kernel Compare



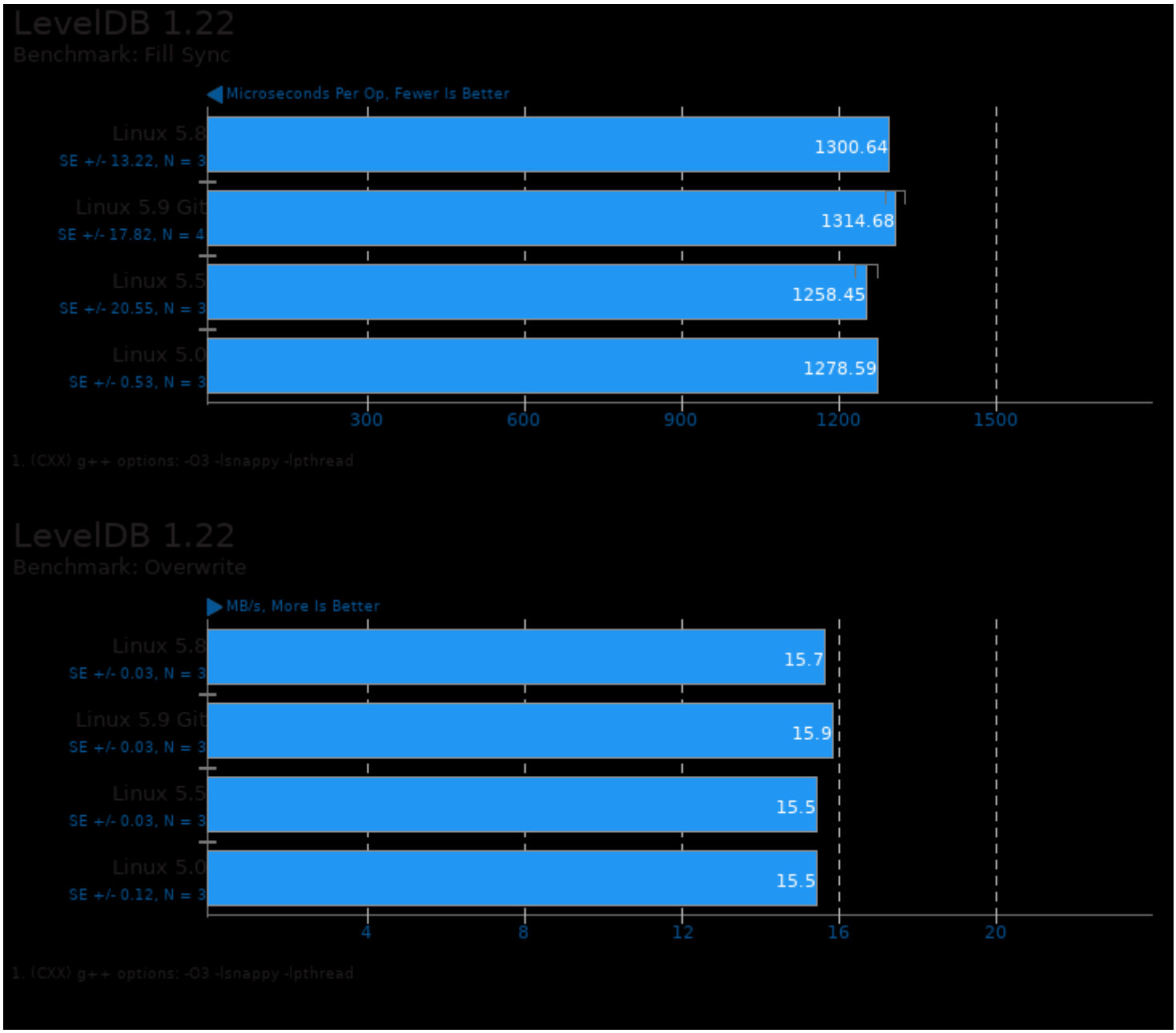
Kernel Compare



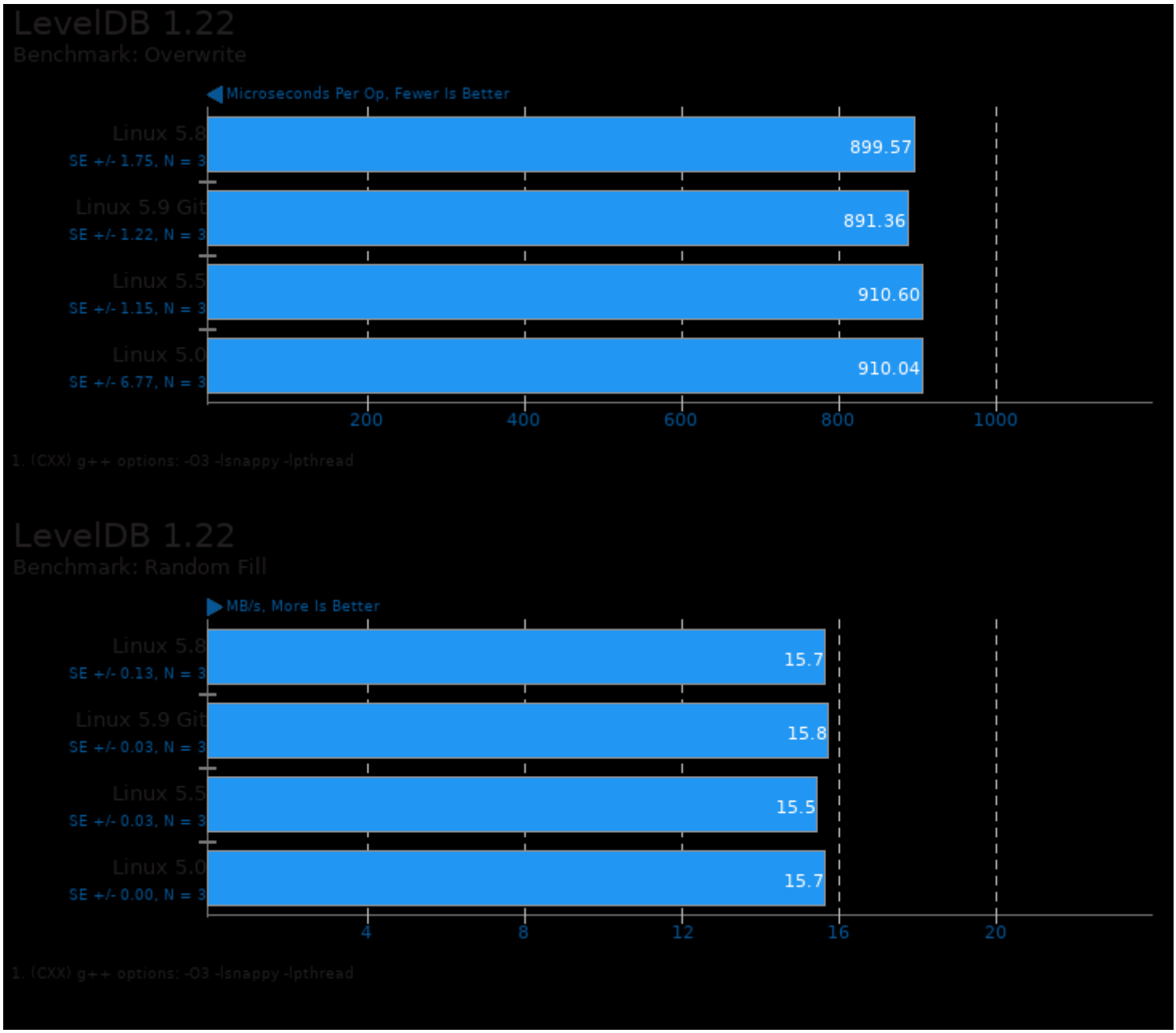
Kernel Compare



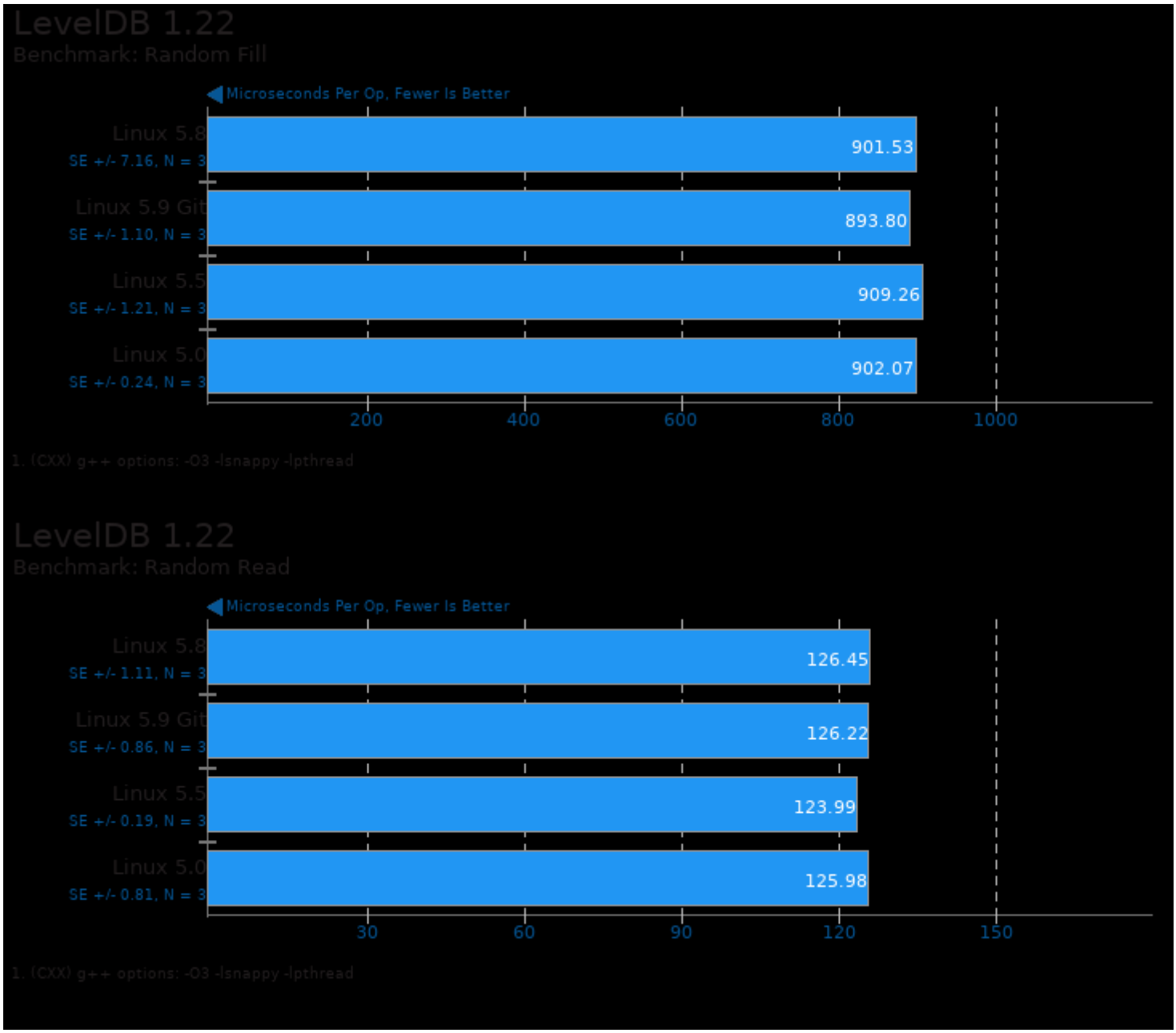
Kernel Compare



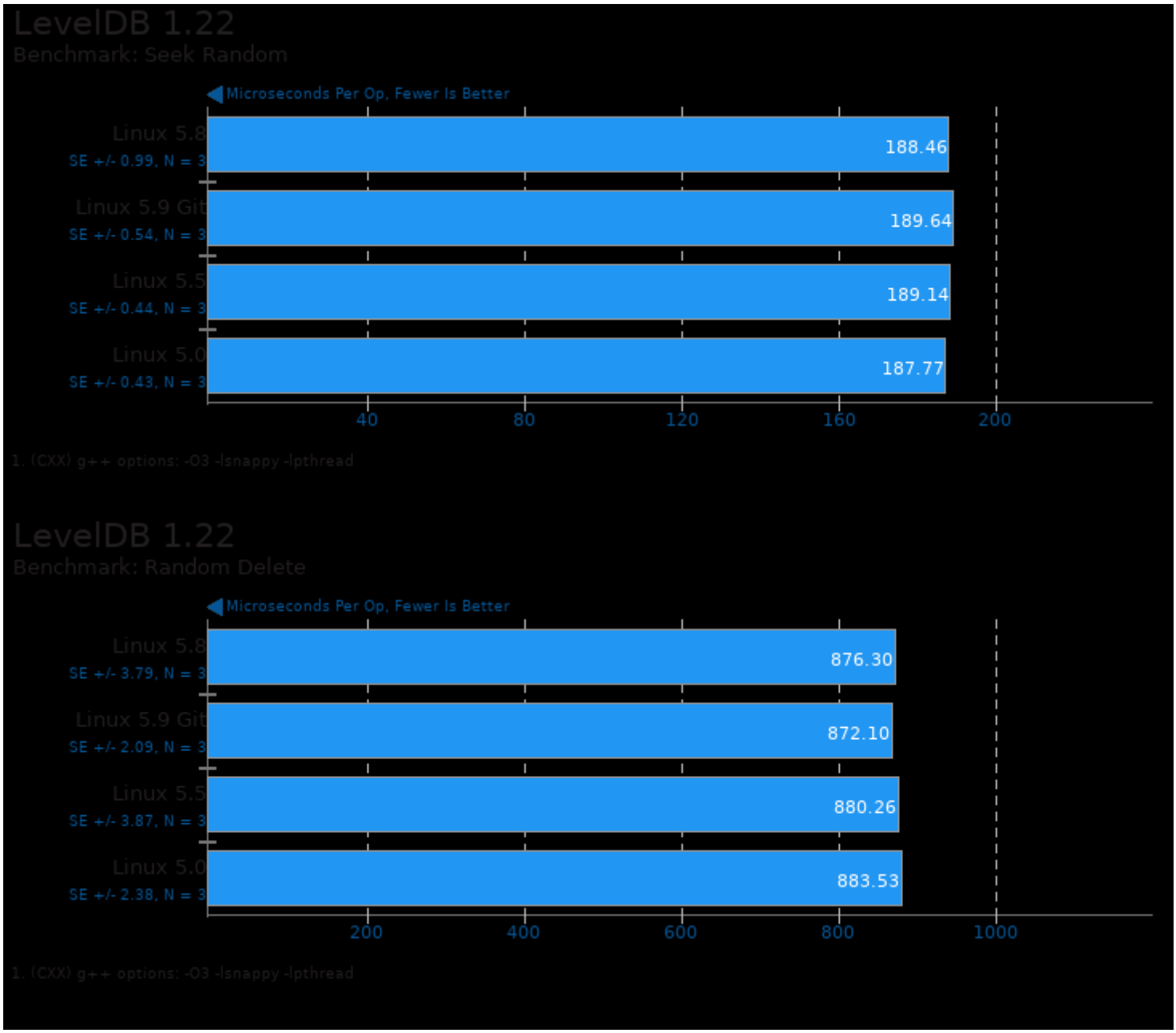
Kernel Compare



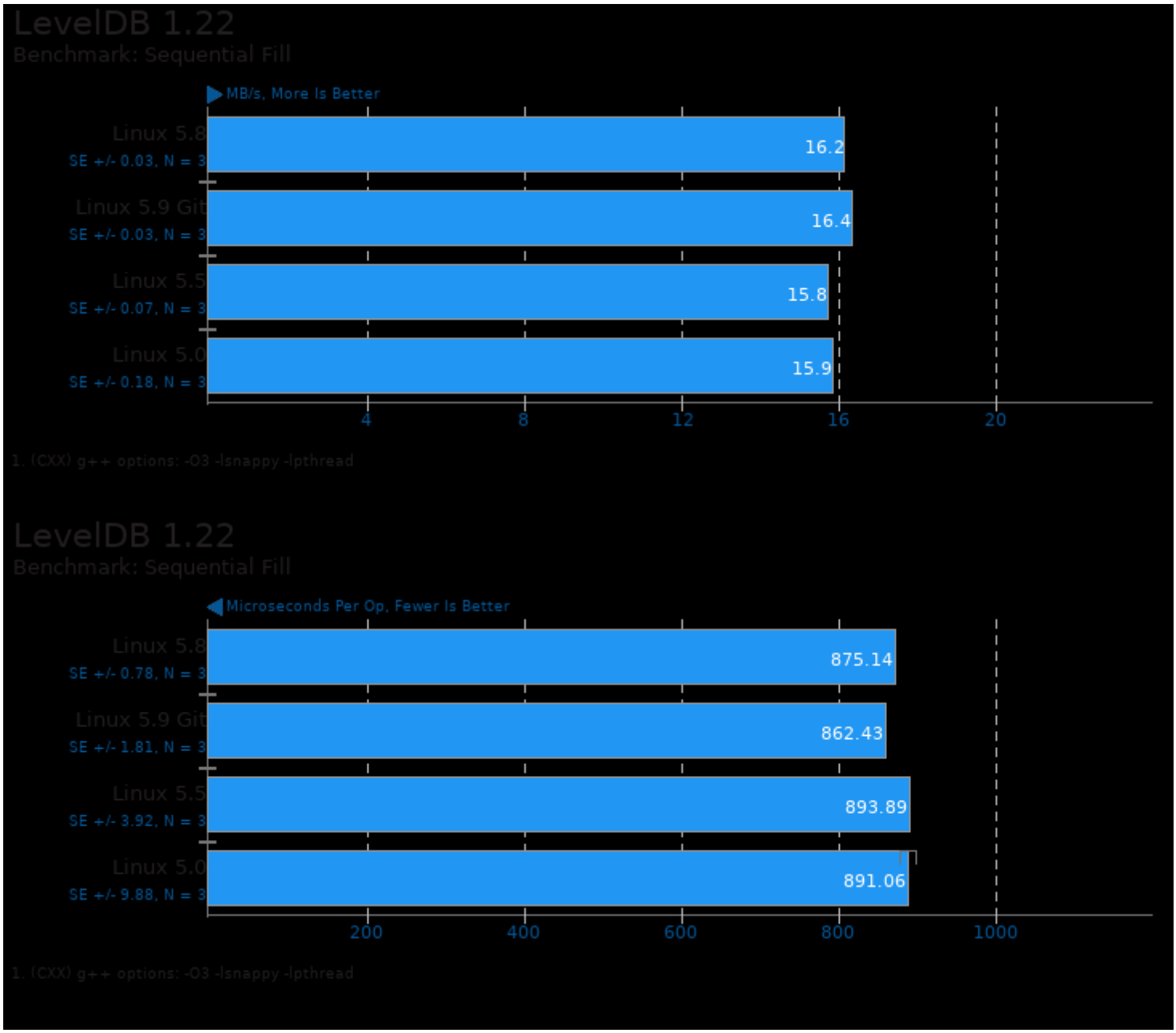
Kernel Compare



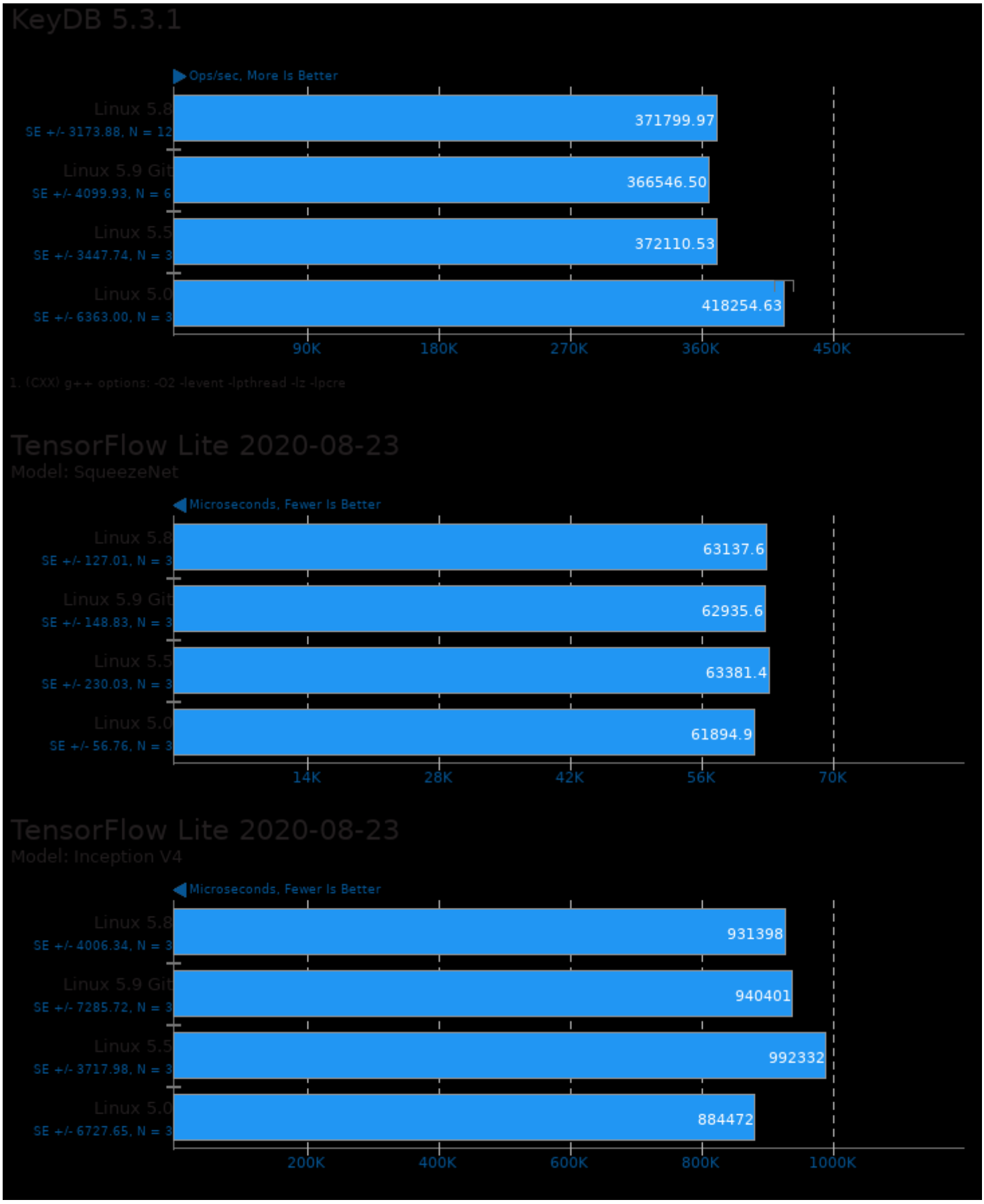
Kernel Compare



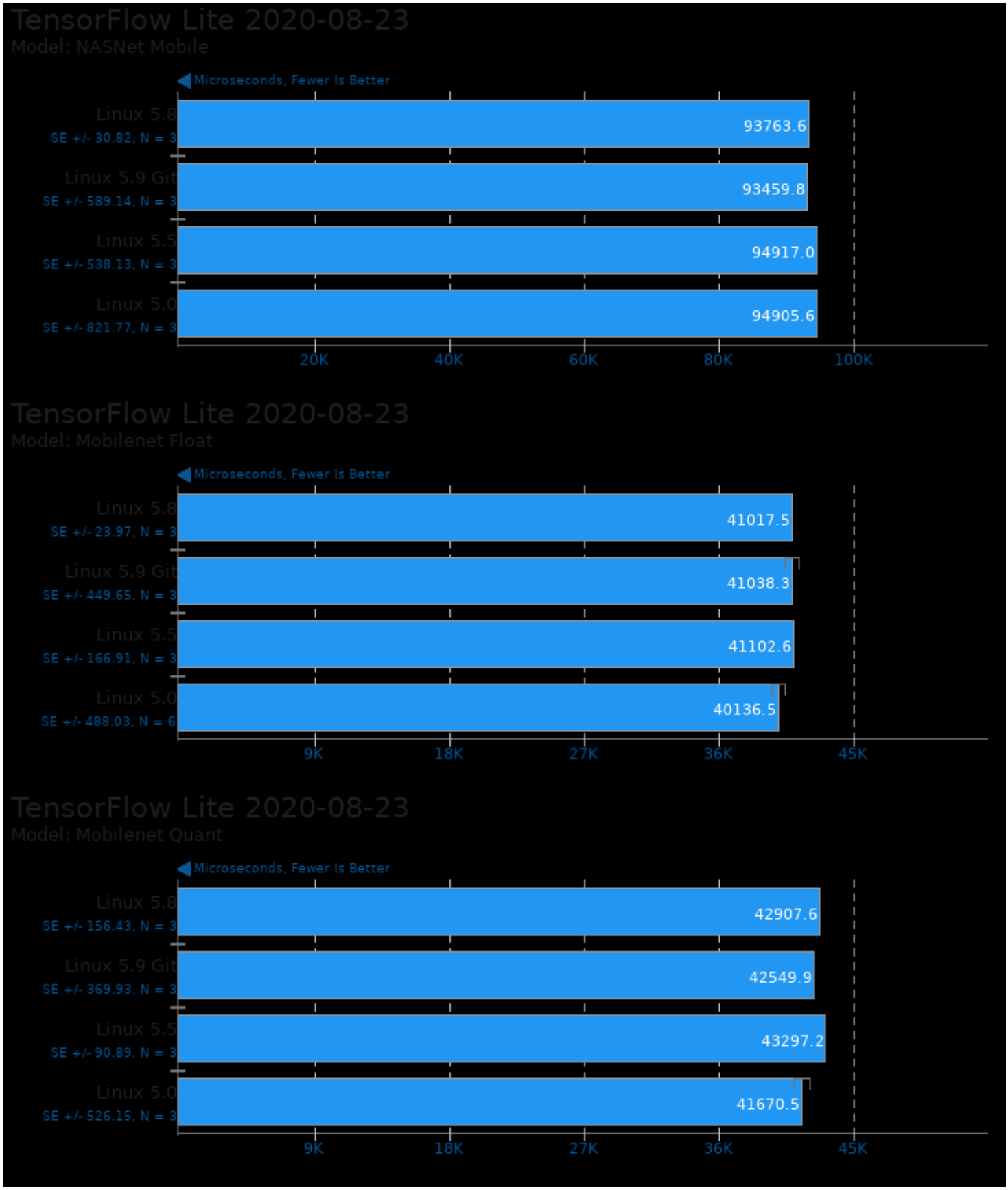
Kernel Compare



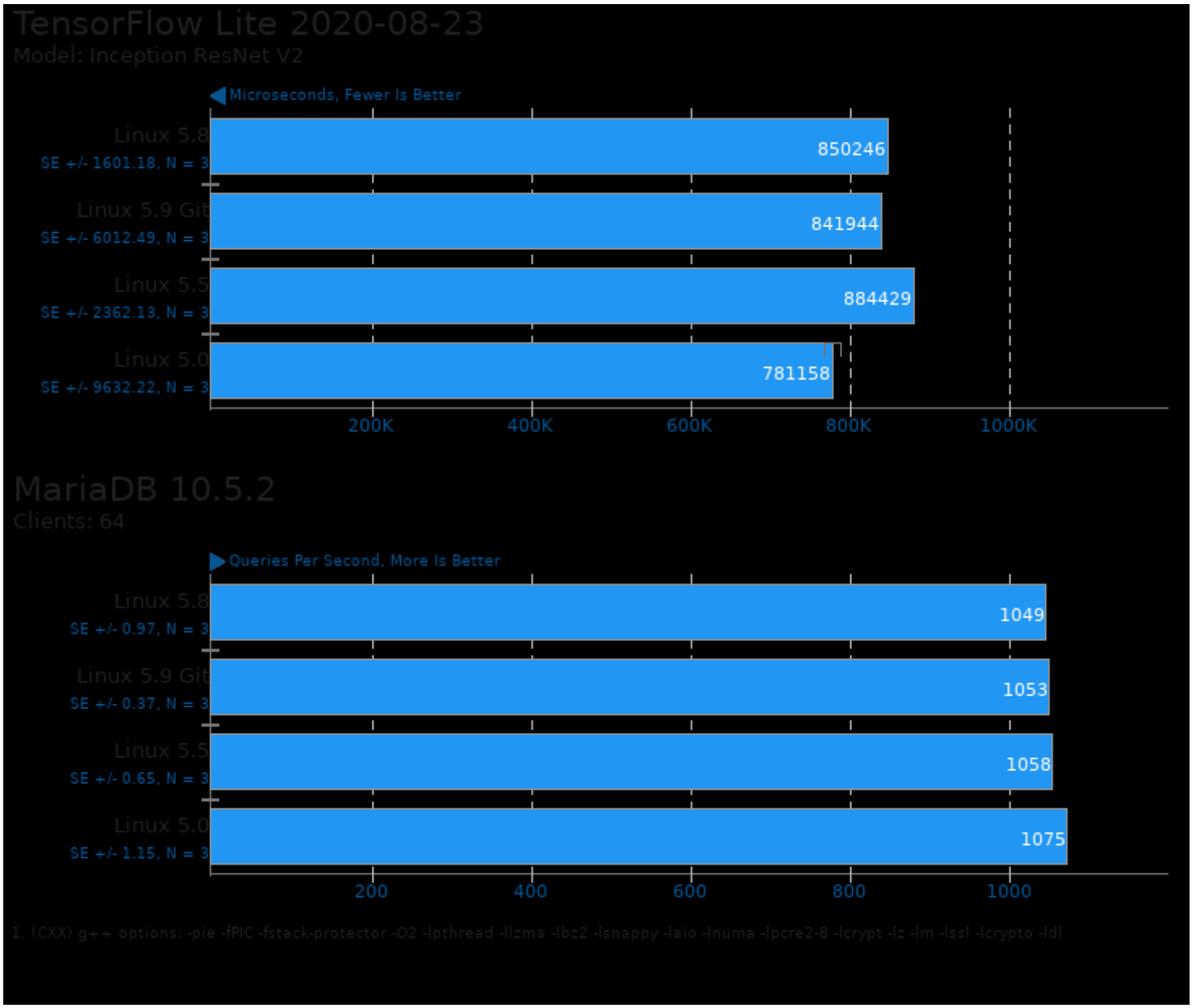
Kernel Compare



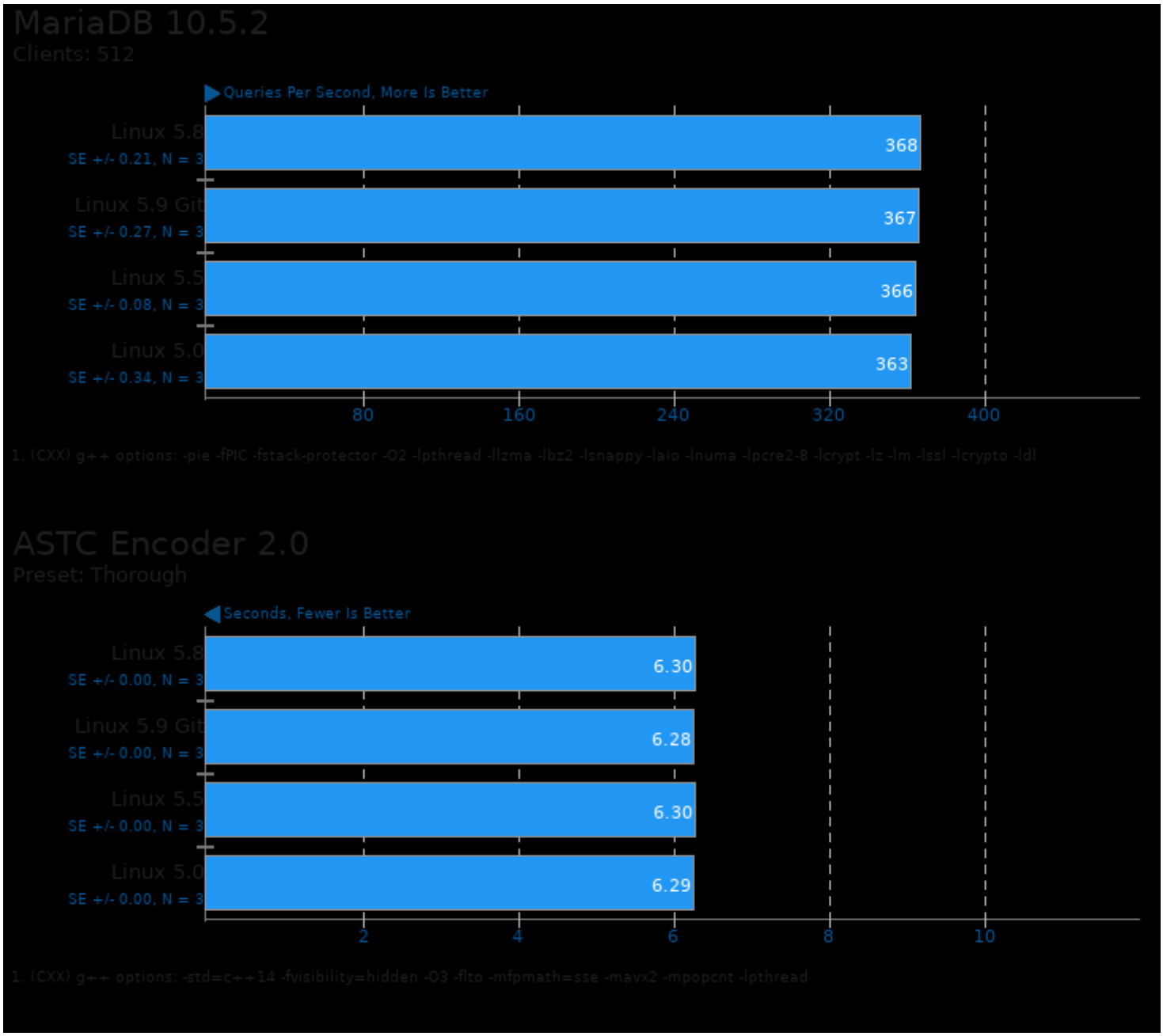
Kernel Compare



Kernel Compare



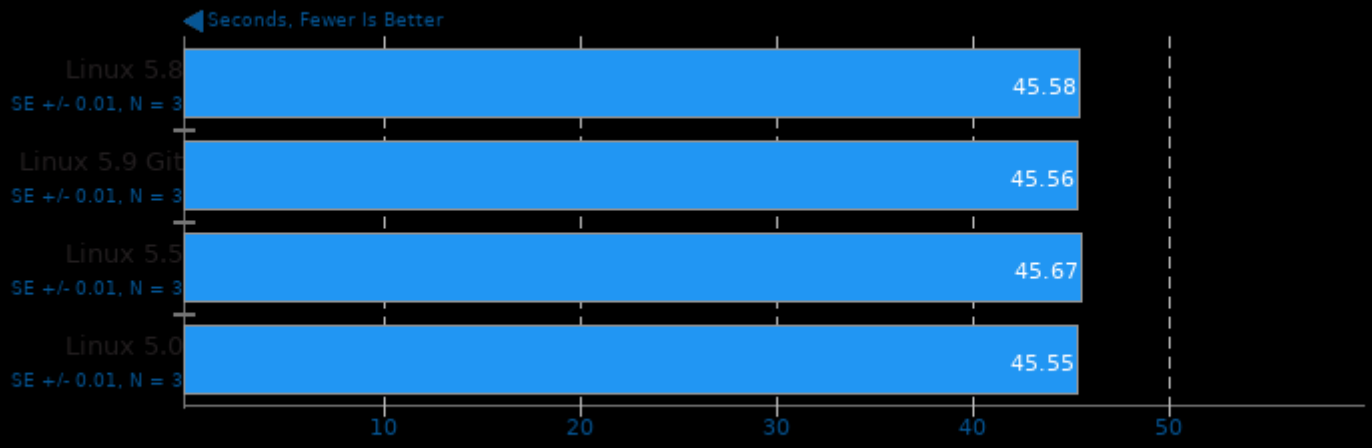
Kernel Compare



Kernel Compare

ASTC Encoder 2.0

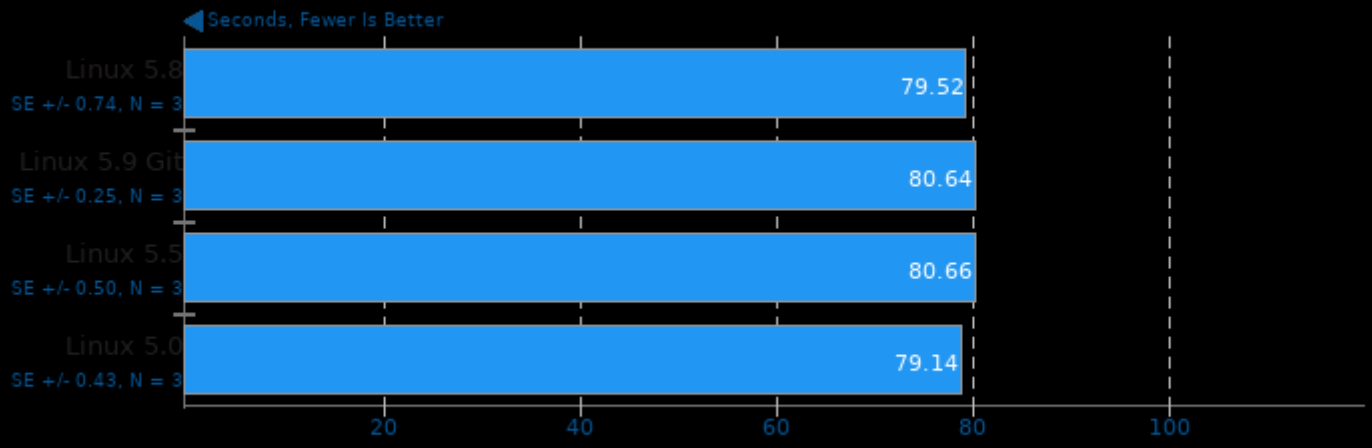
Preset: Exhaustive



1. (CXX) g++ options: -std=c++14 -fvisibility=hidden -O3 -flto -mfpmath=sse -mavx2 -mpopcnt -lpthread

SQLite Speedtest 3.30

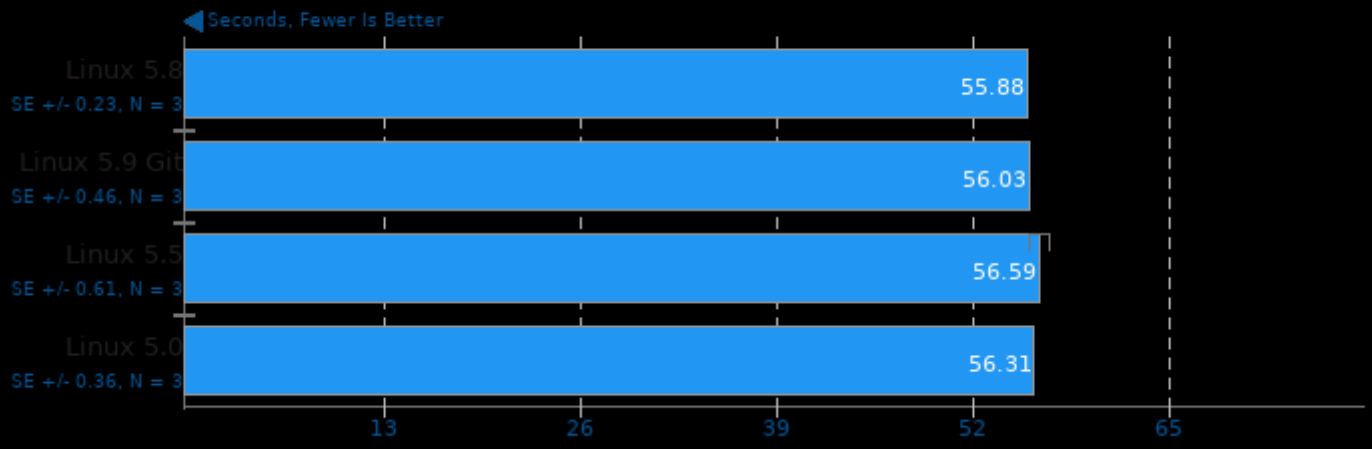
Timed Time - Size 1,000



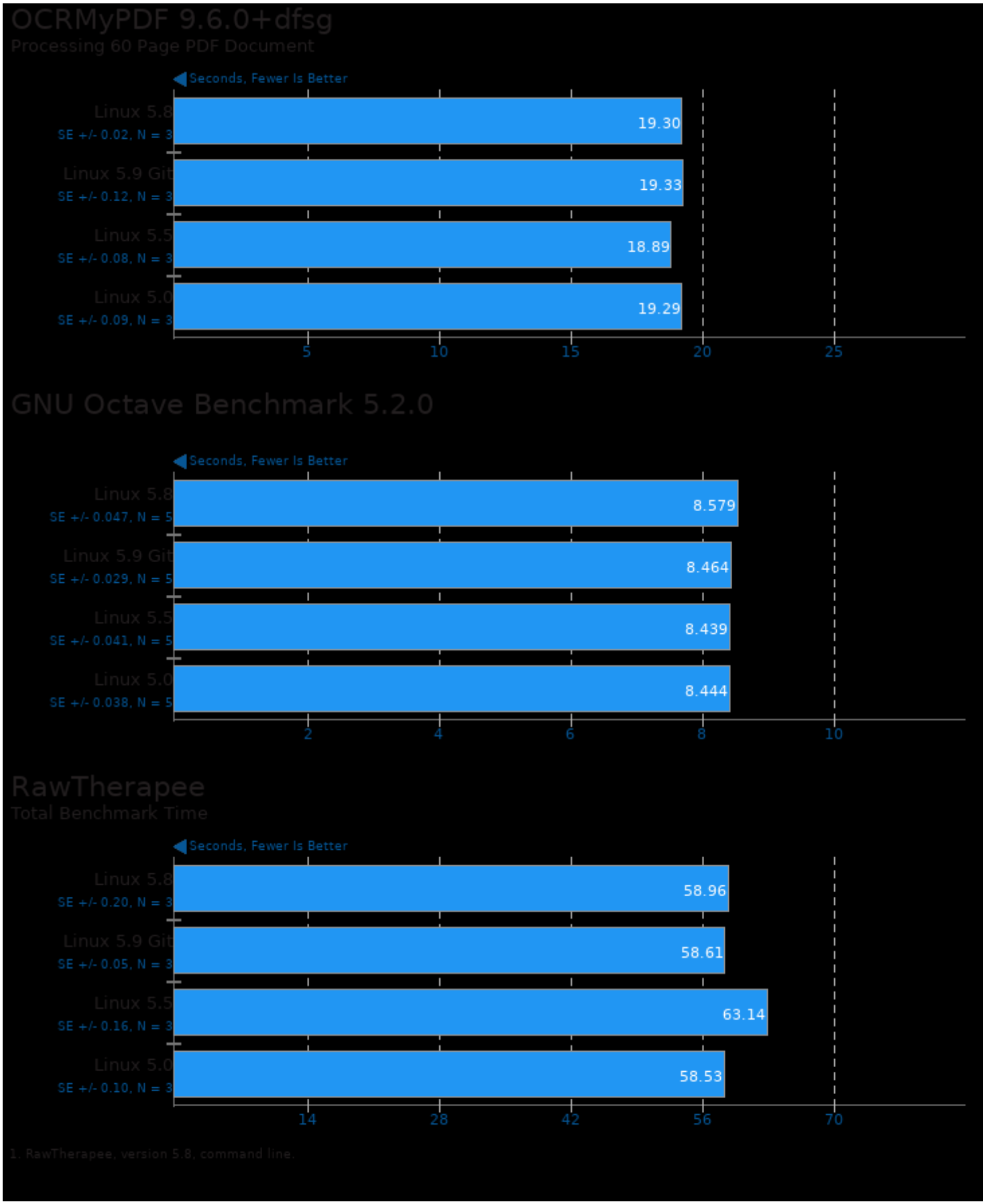
1. (CC) gcc options: -O2 -ldl -lz -lpthread

Hugin

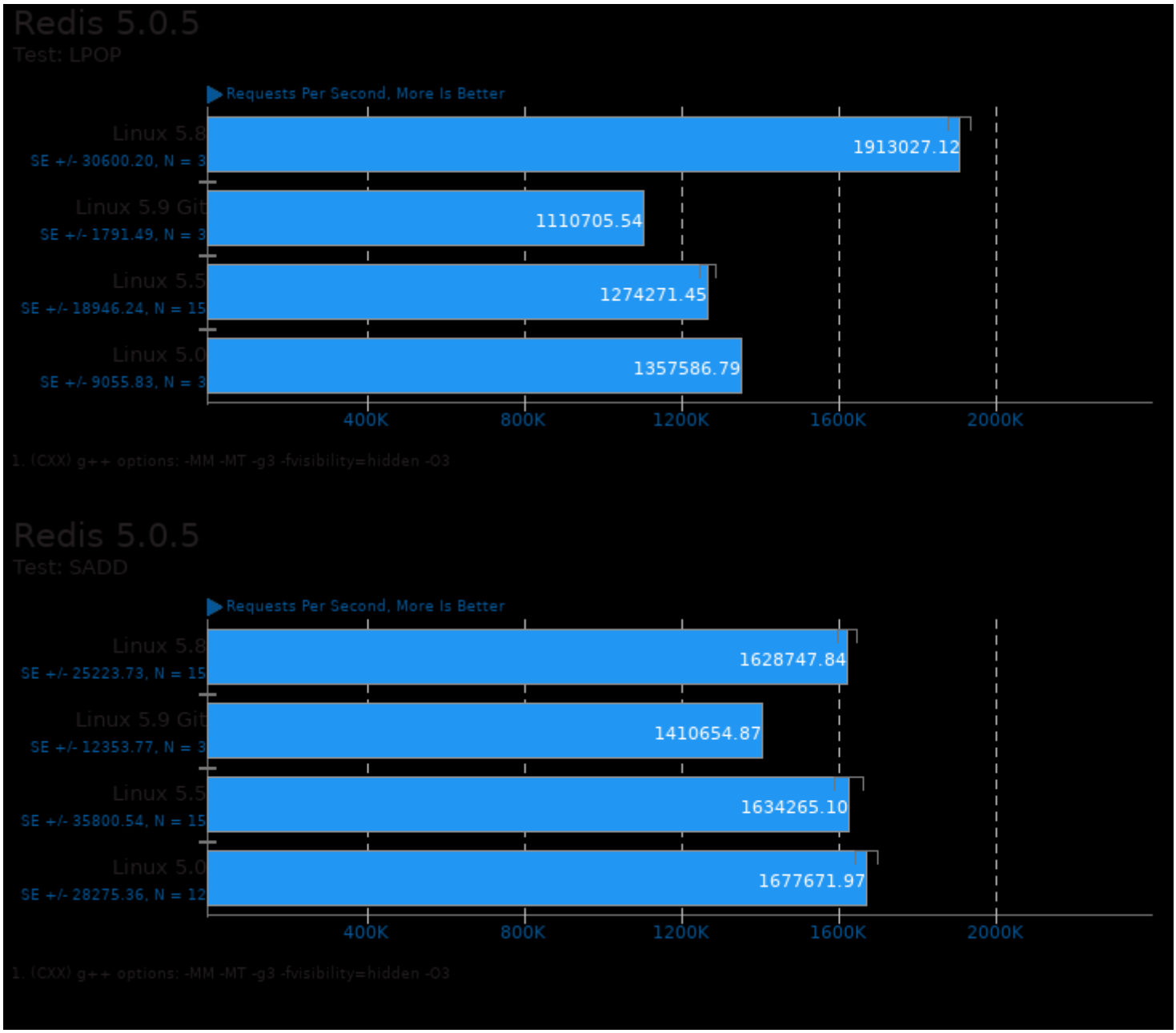
Panorama Photo Assistant + Stitching Time



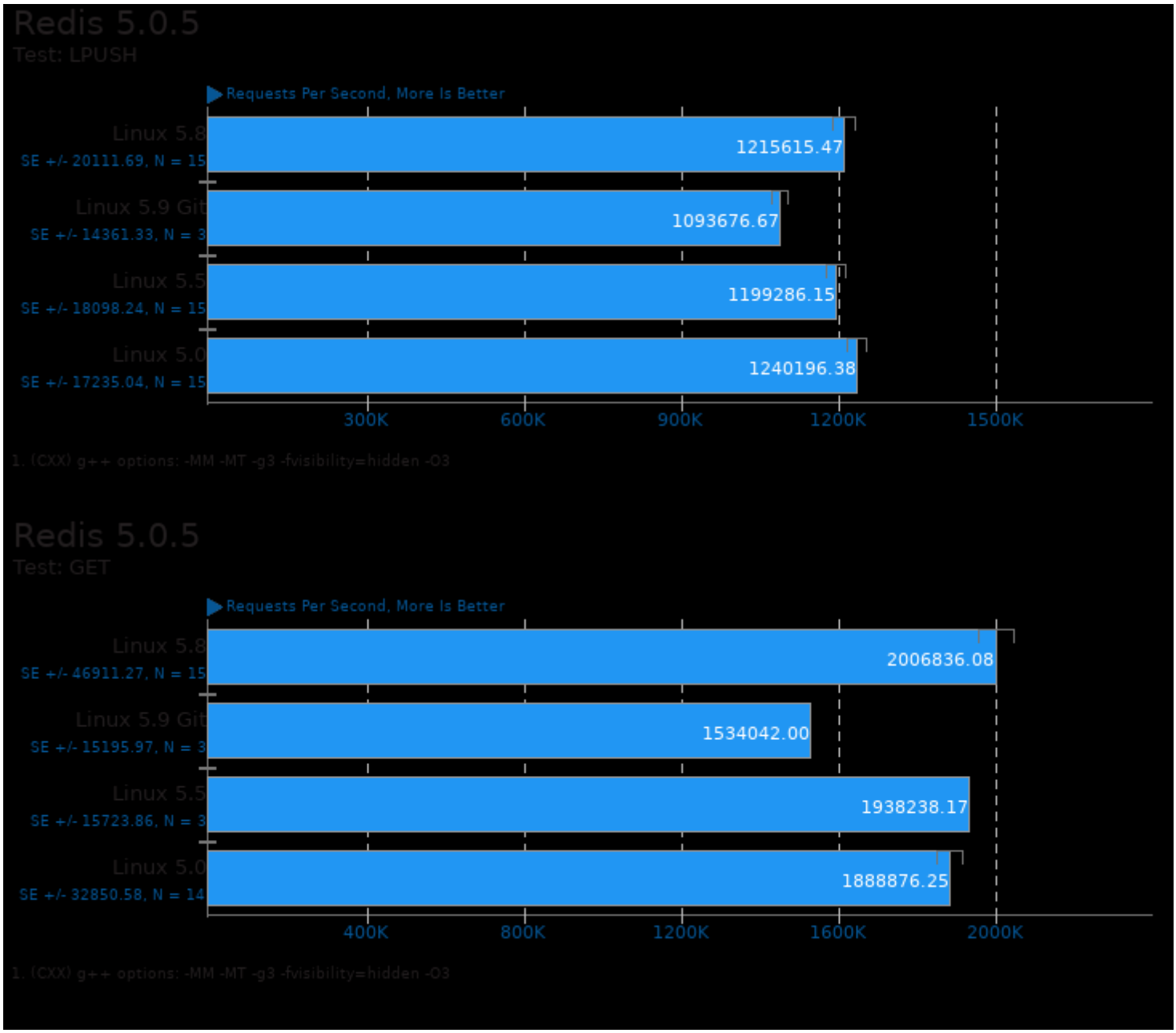
Kernel Compare



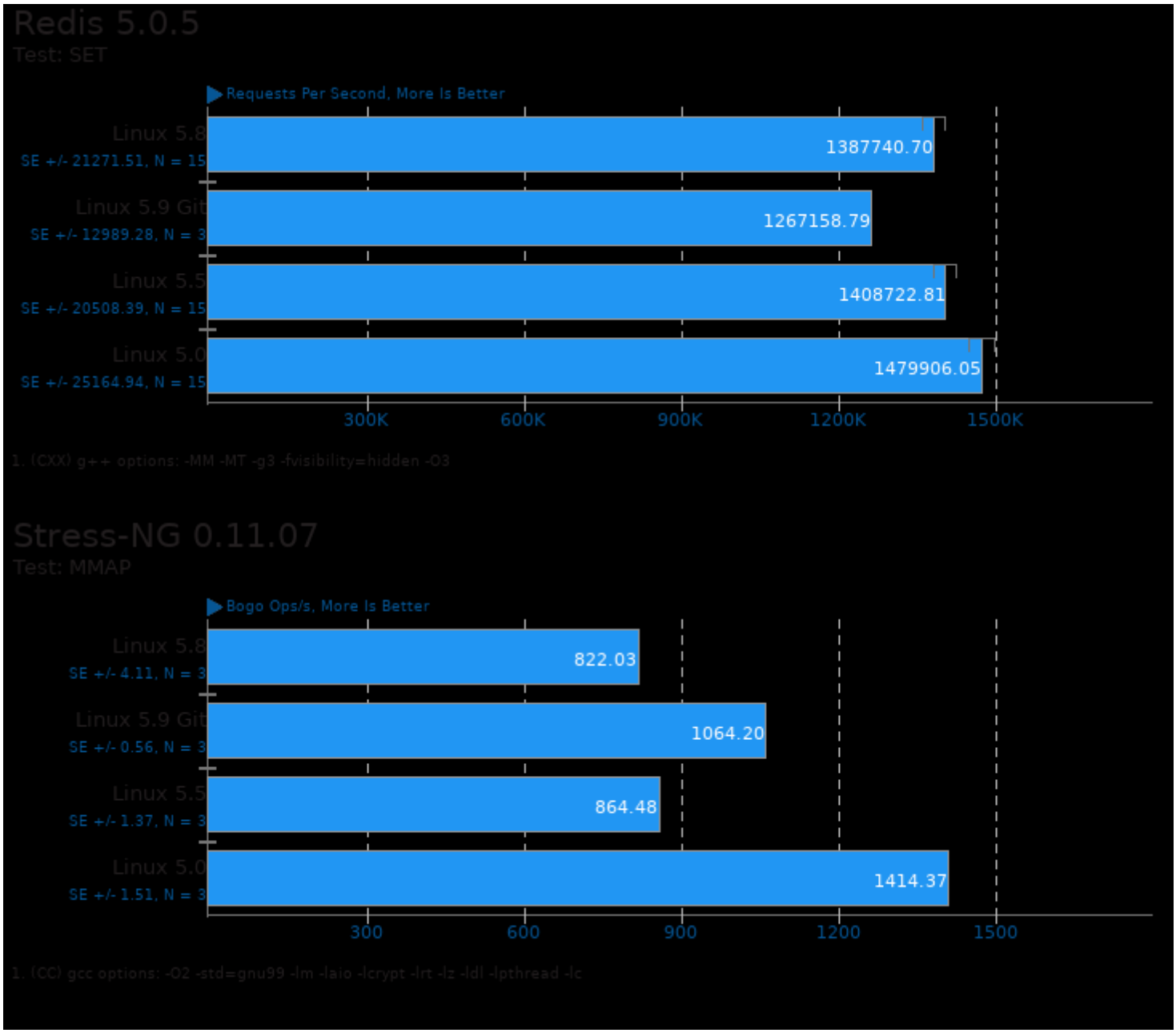
Kernel Compare



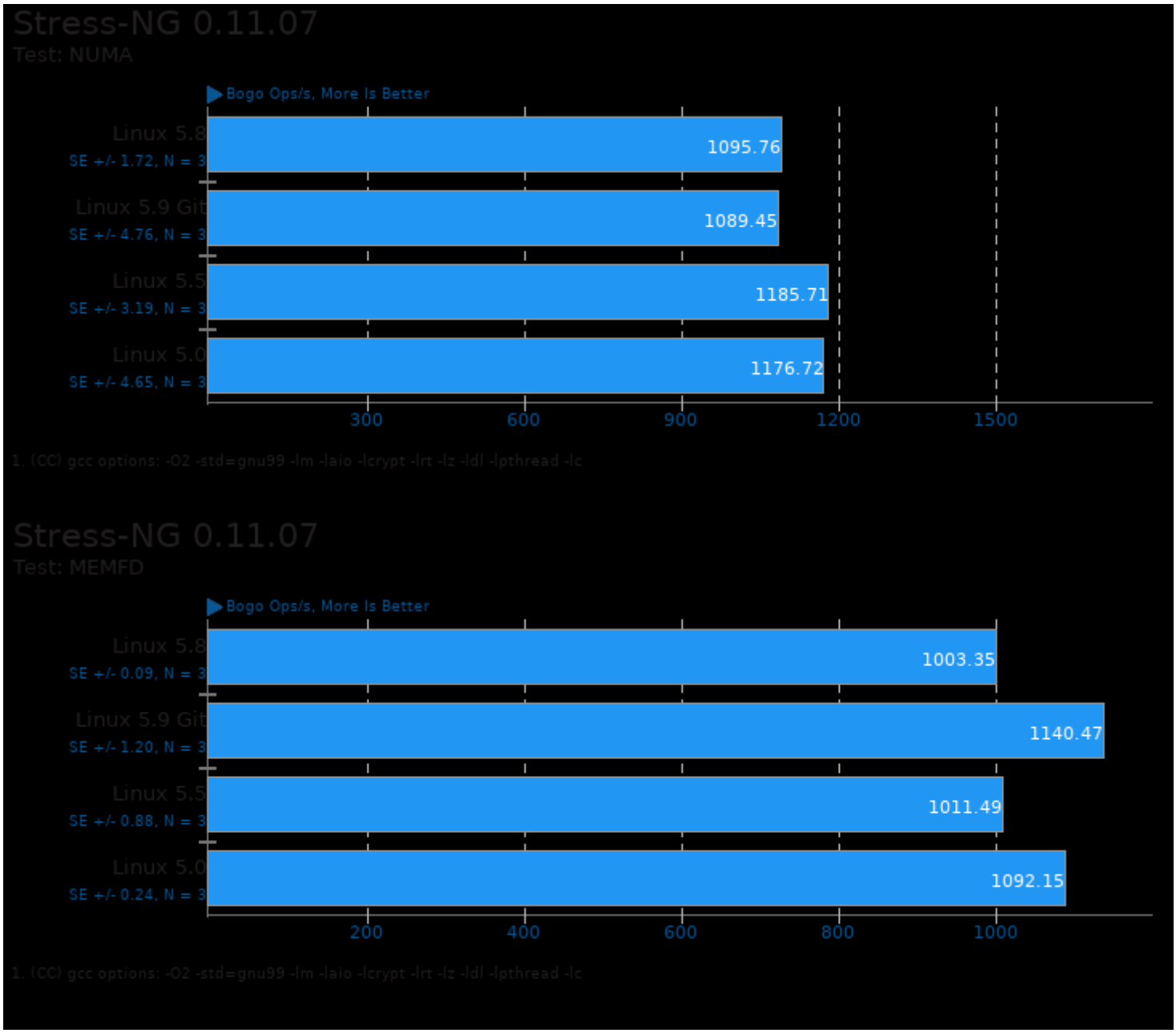
Kernel Compare



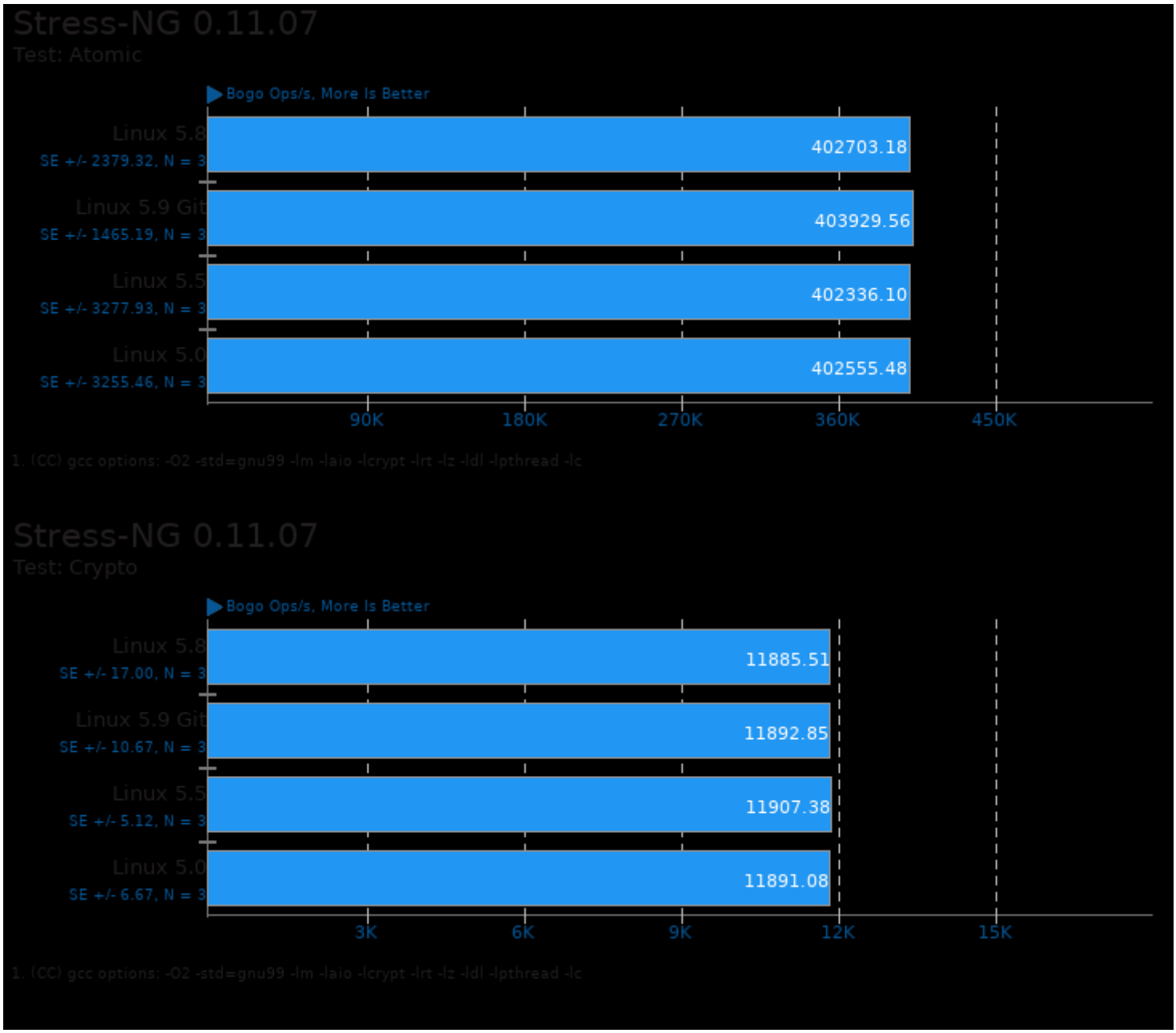
Kernel Compare



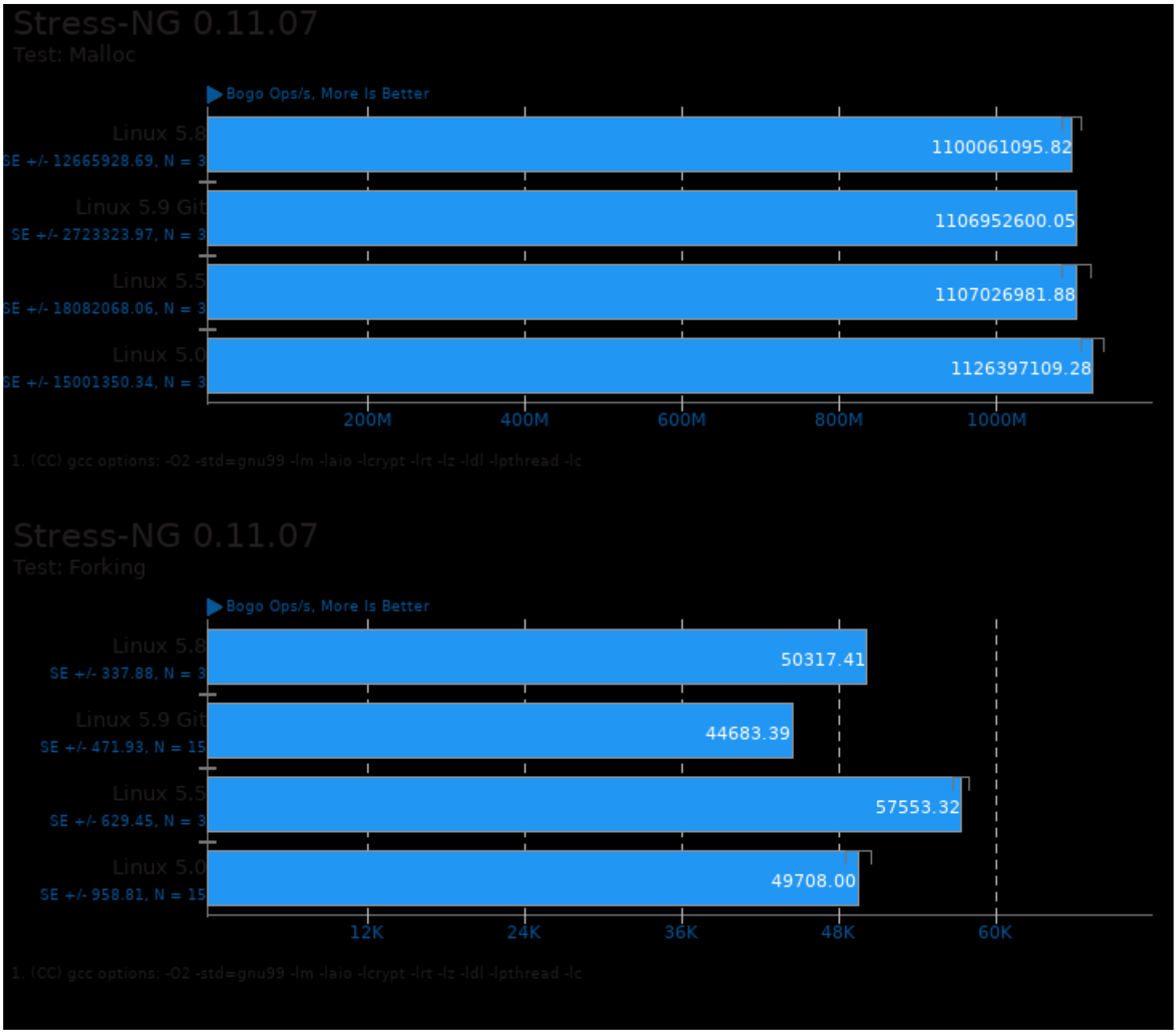
Kernel Compare



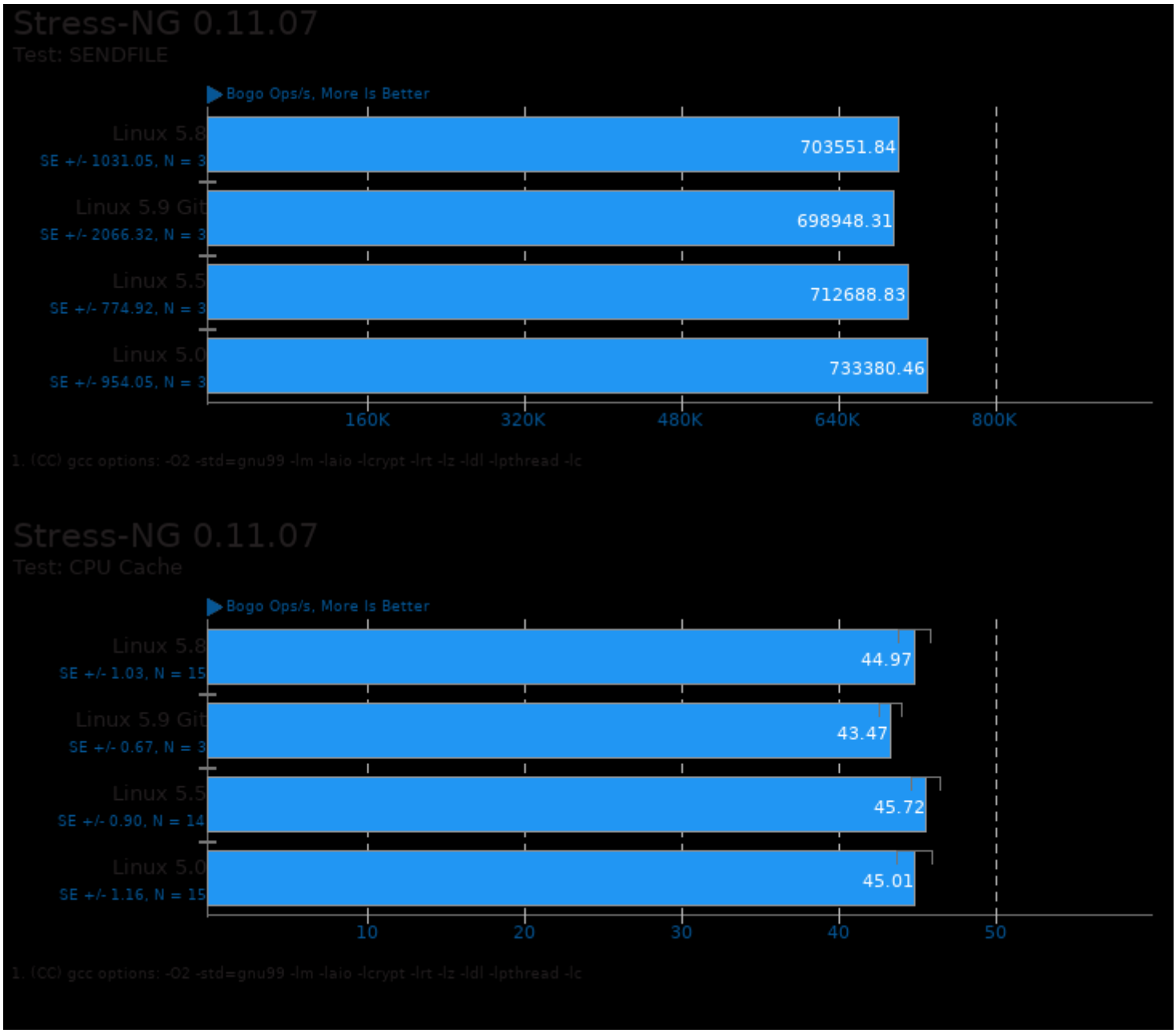
Kernel Compare



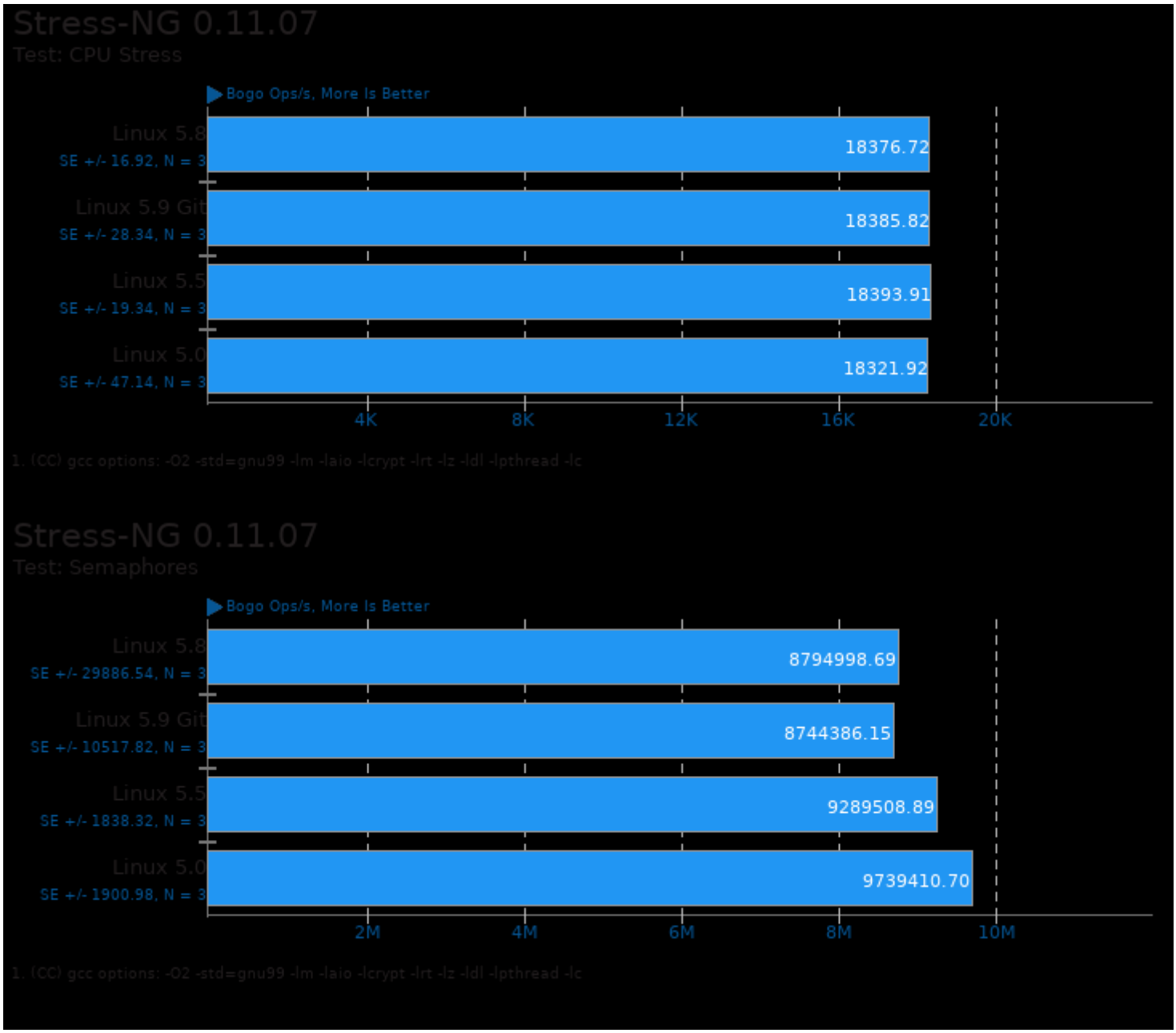
Kernel Compare



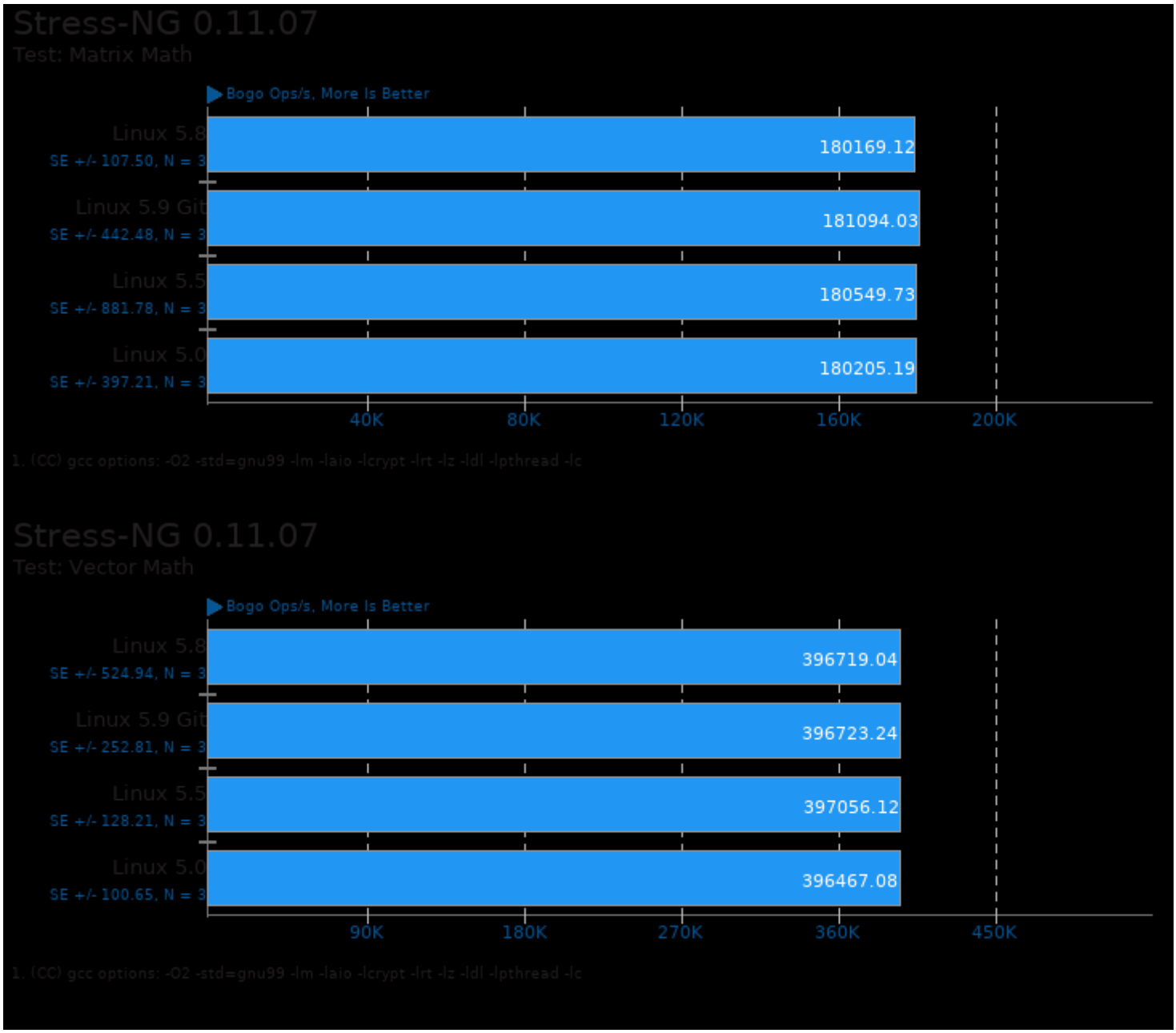
Kernel Compare



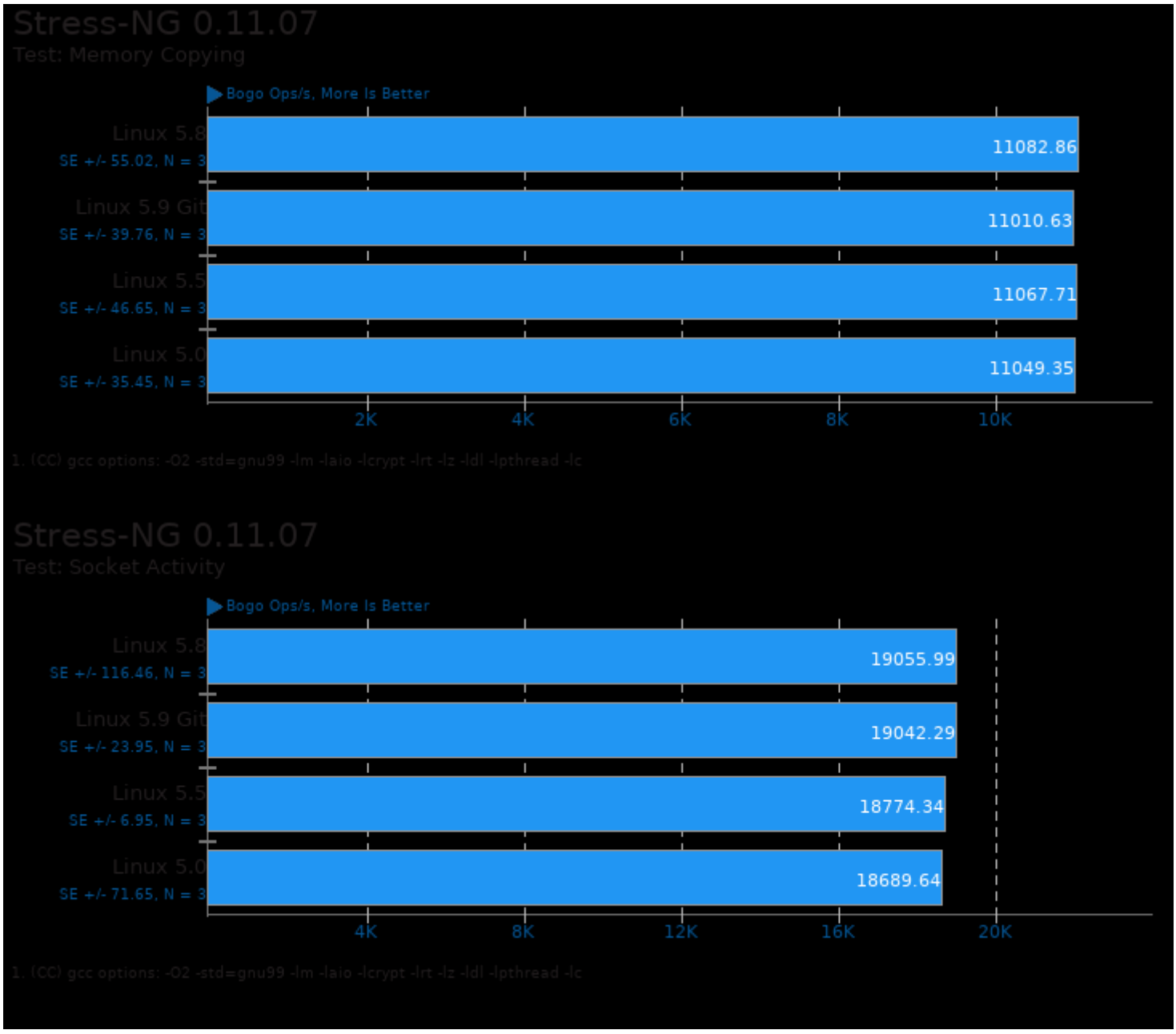
Kernel Compare



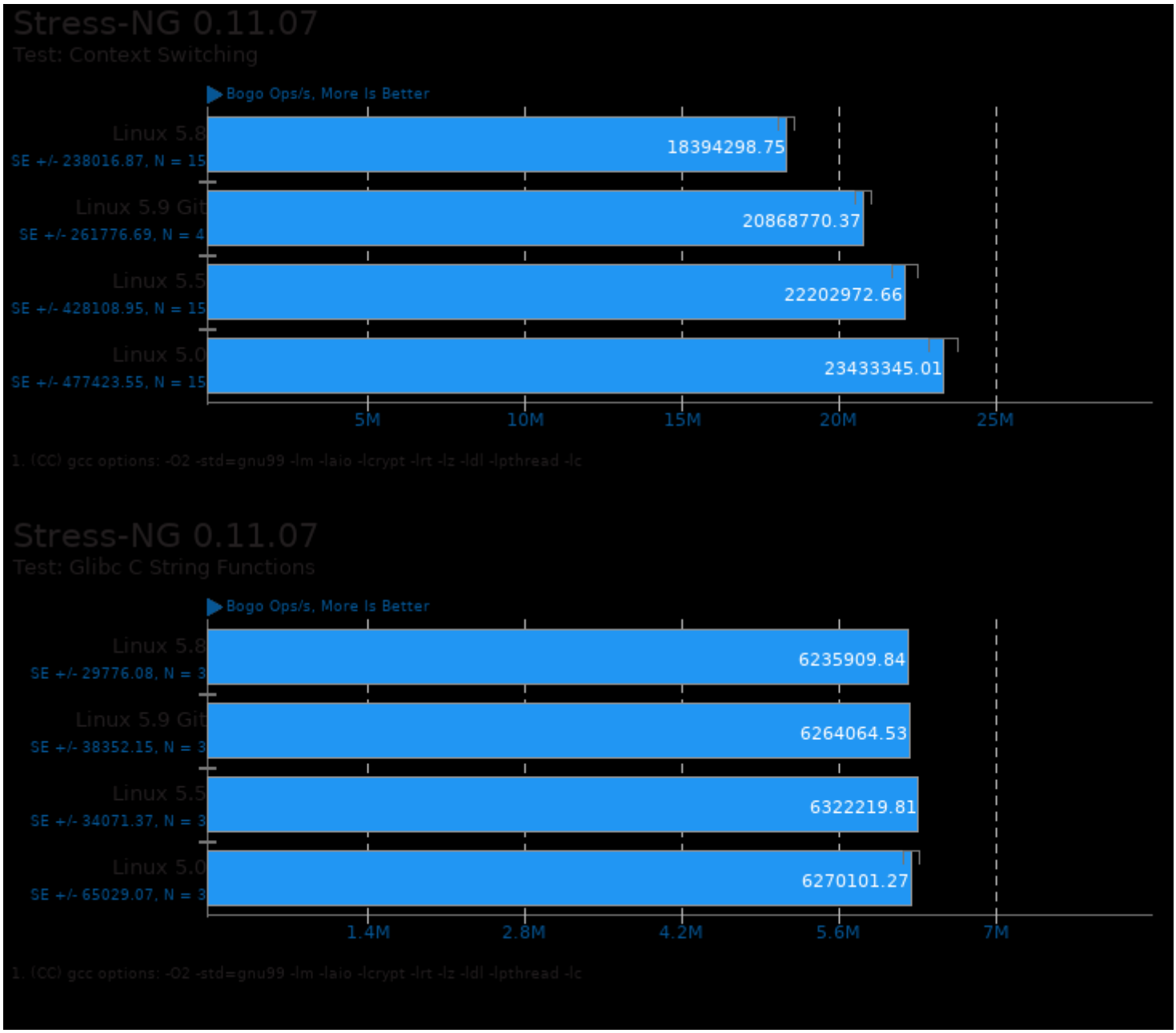
Kernel Compare



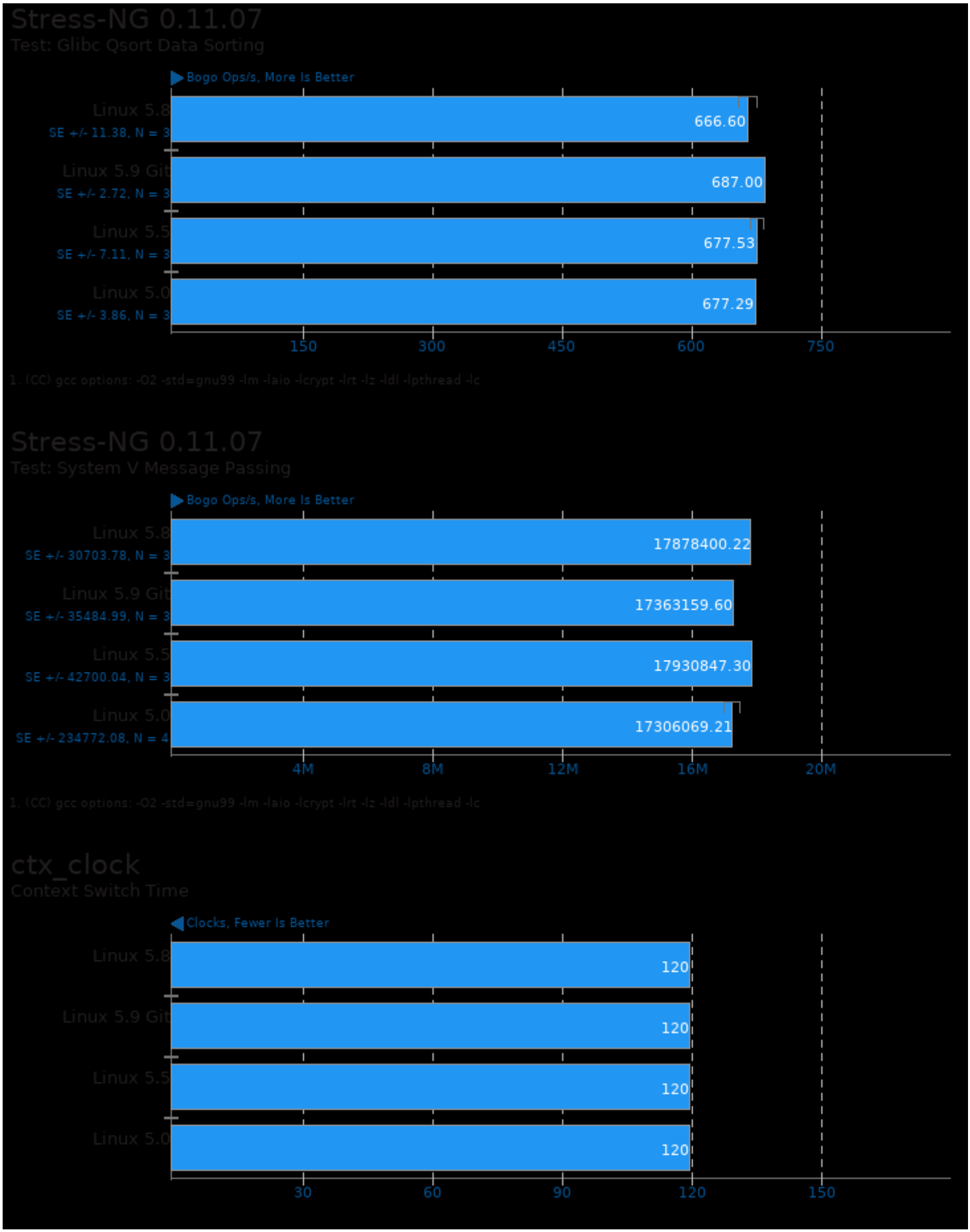
Kernel Compare



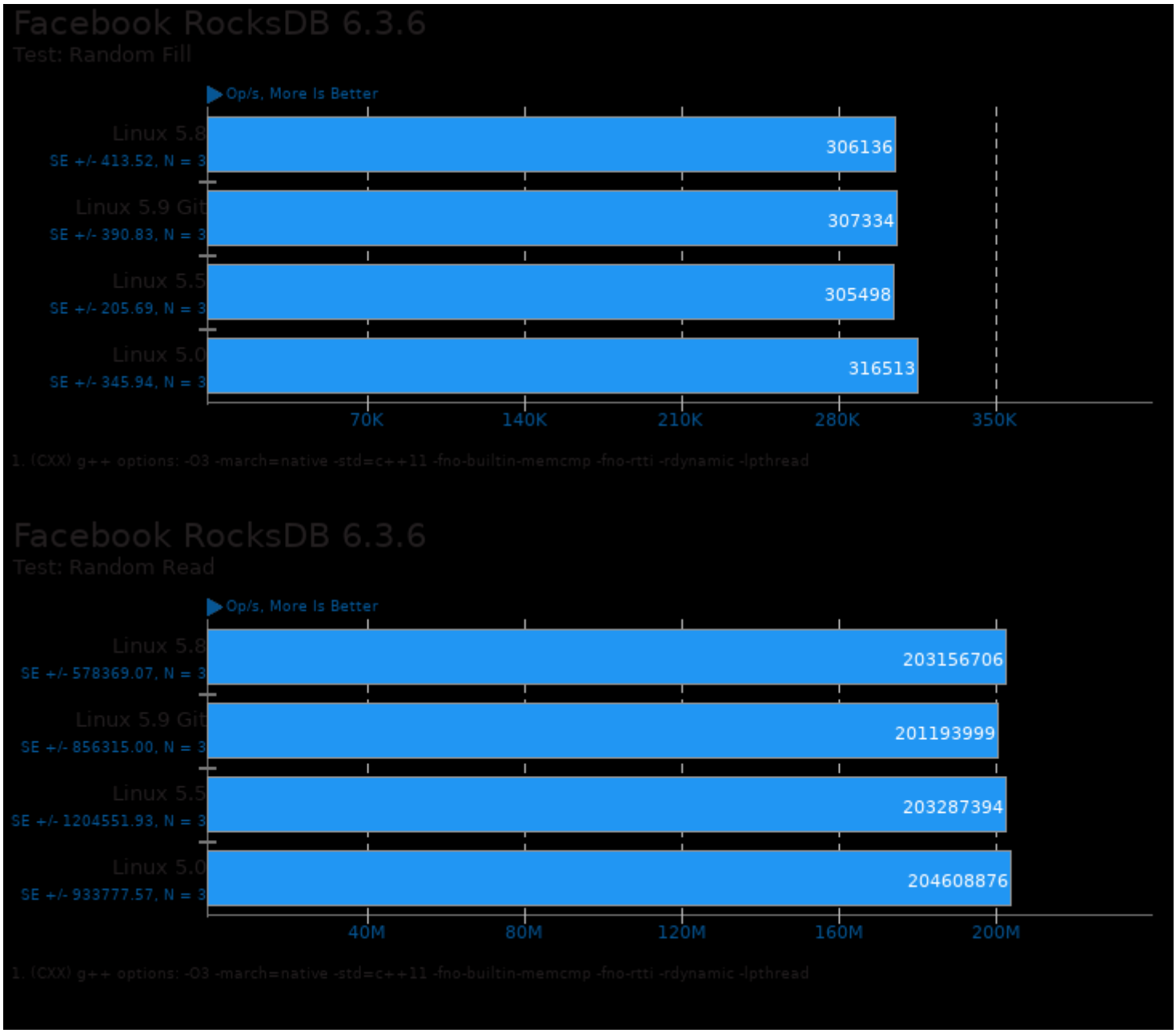
Kernel Compare



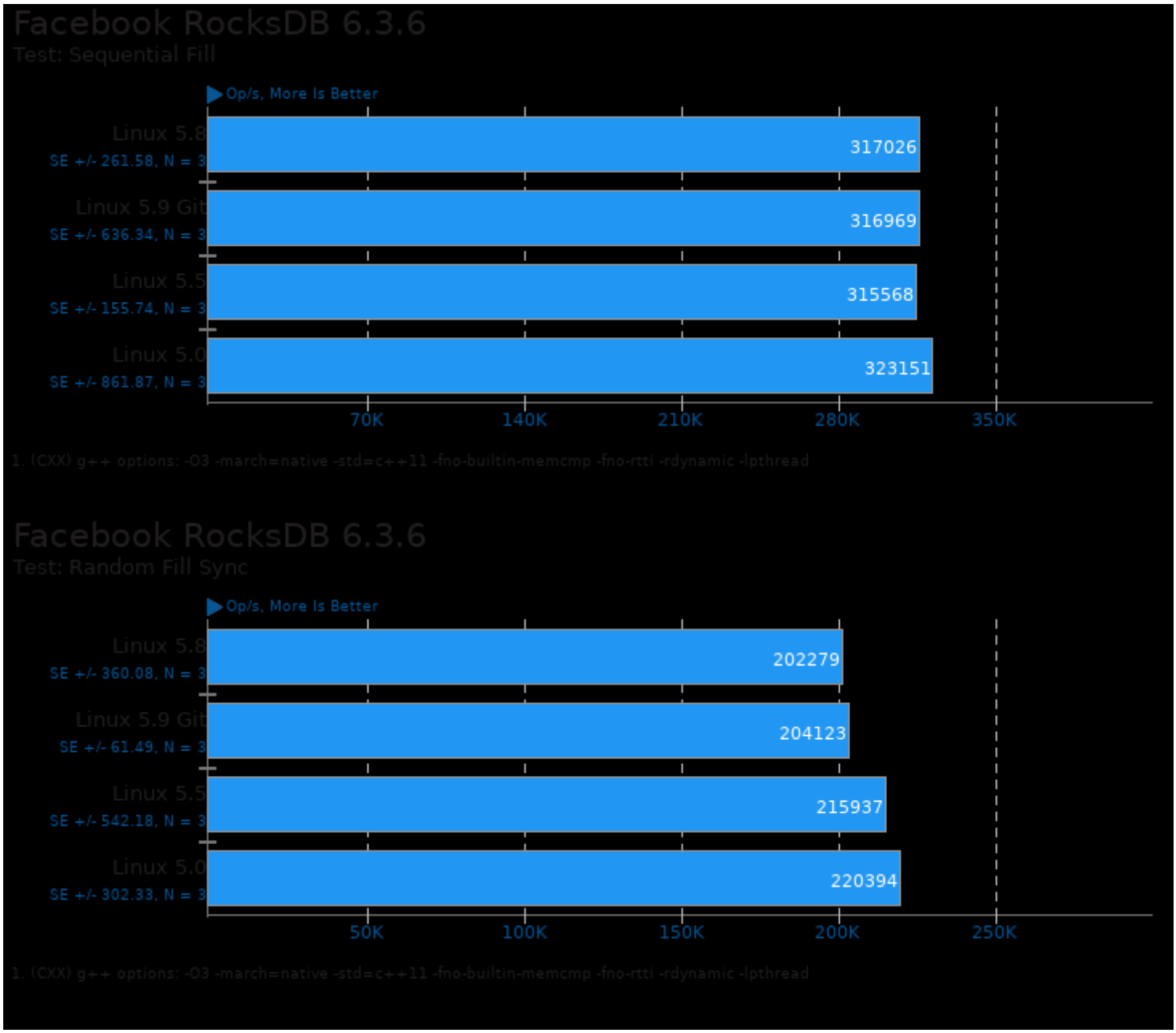
Kernel Compare



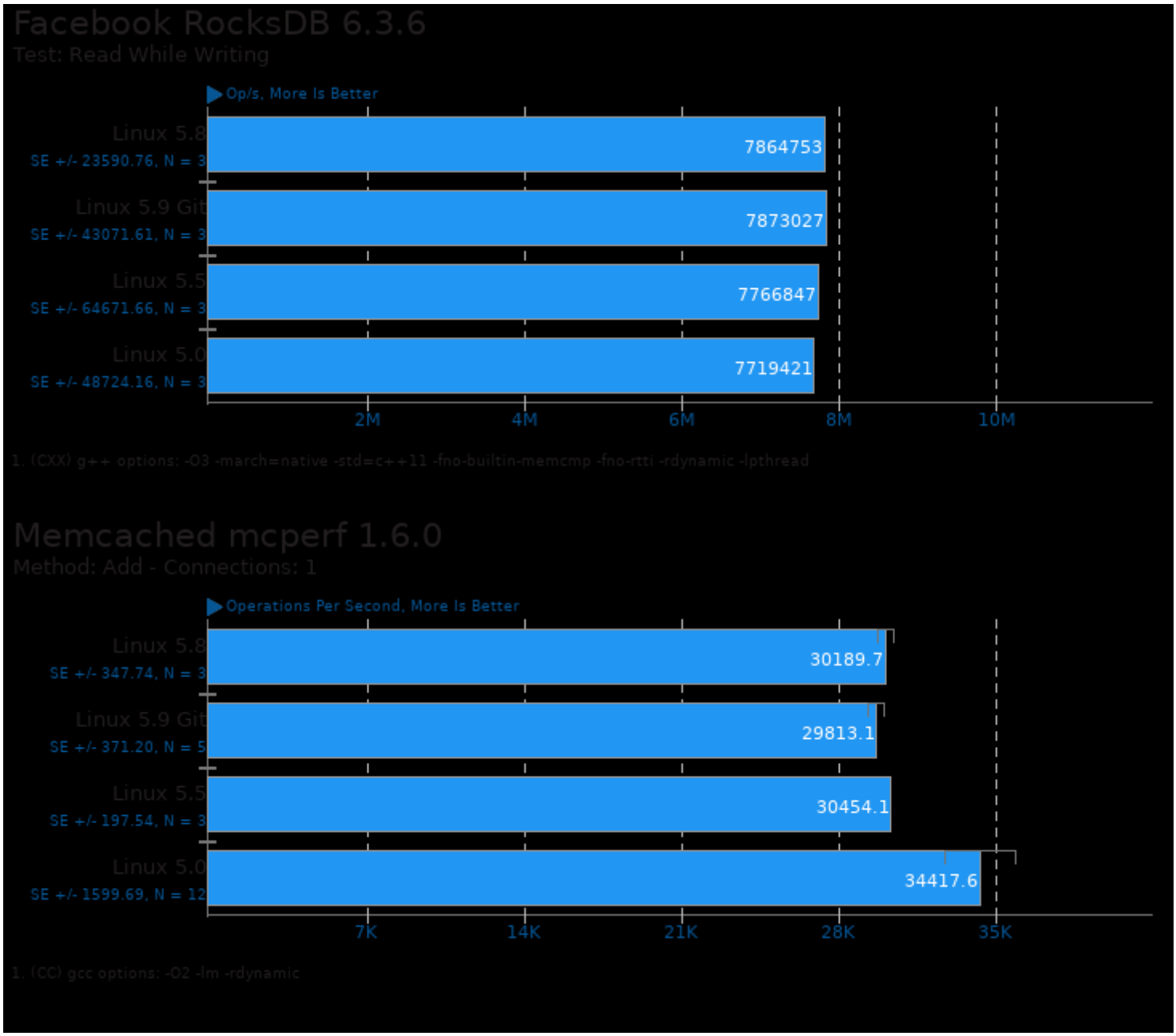
Kernel Compare



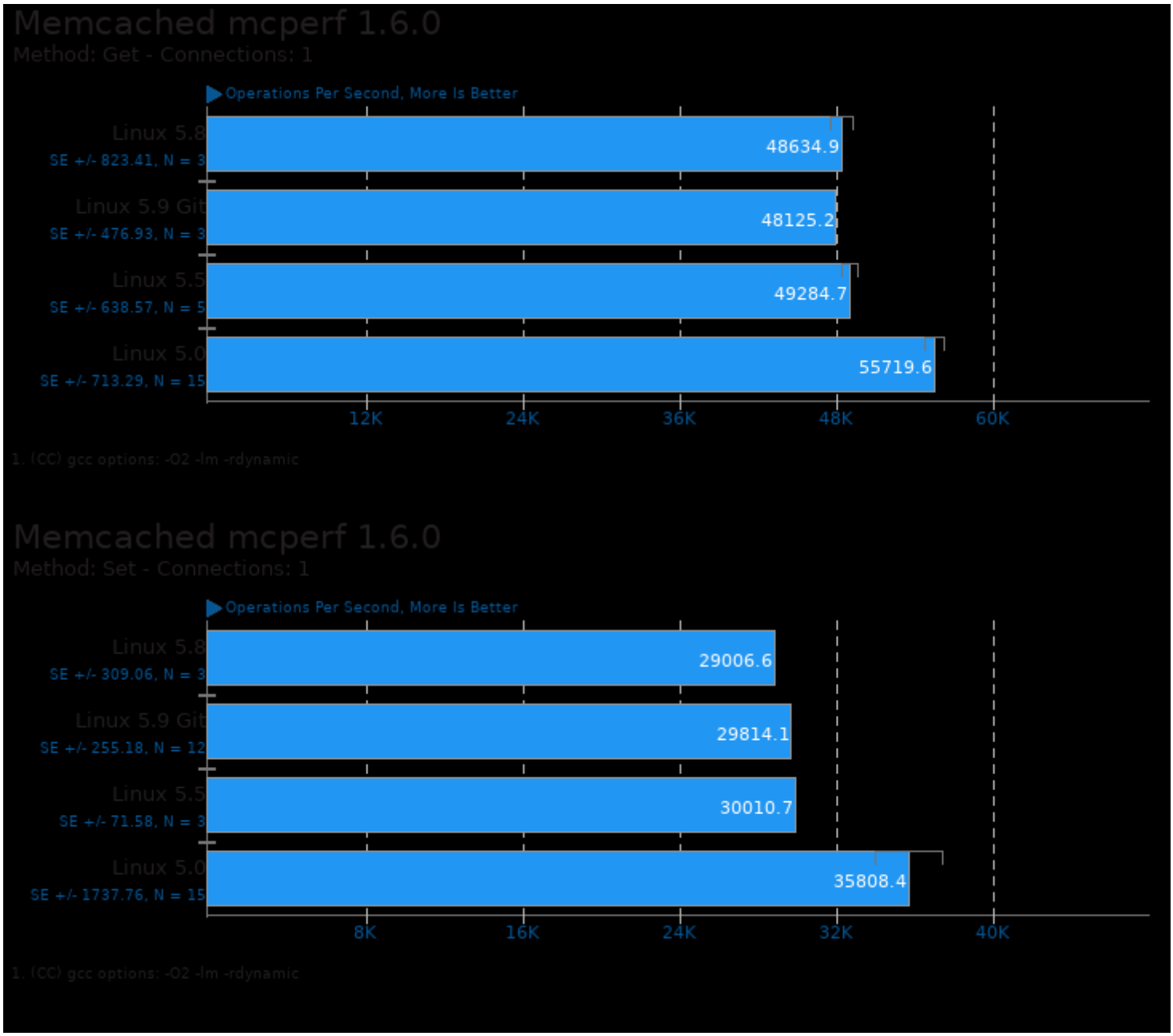
Kernel Compare



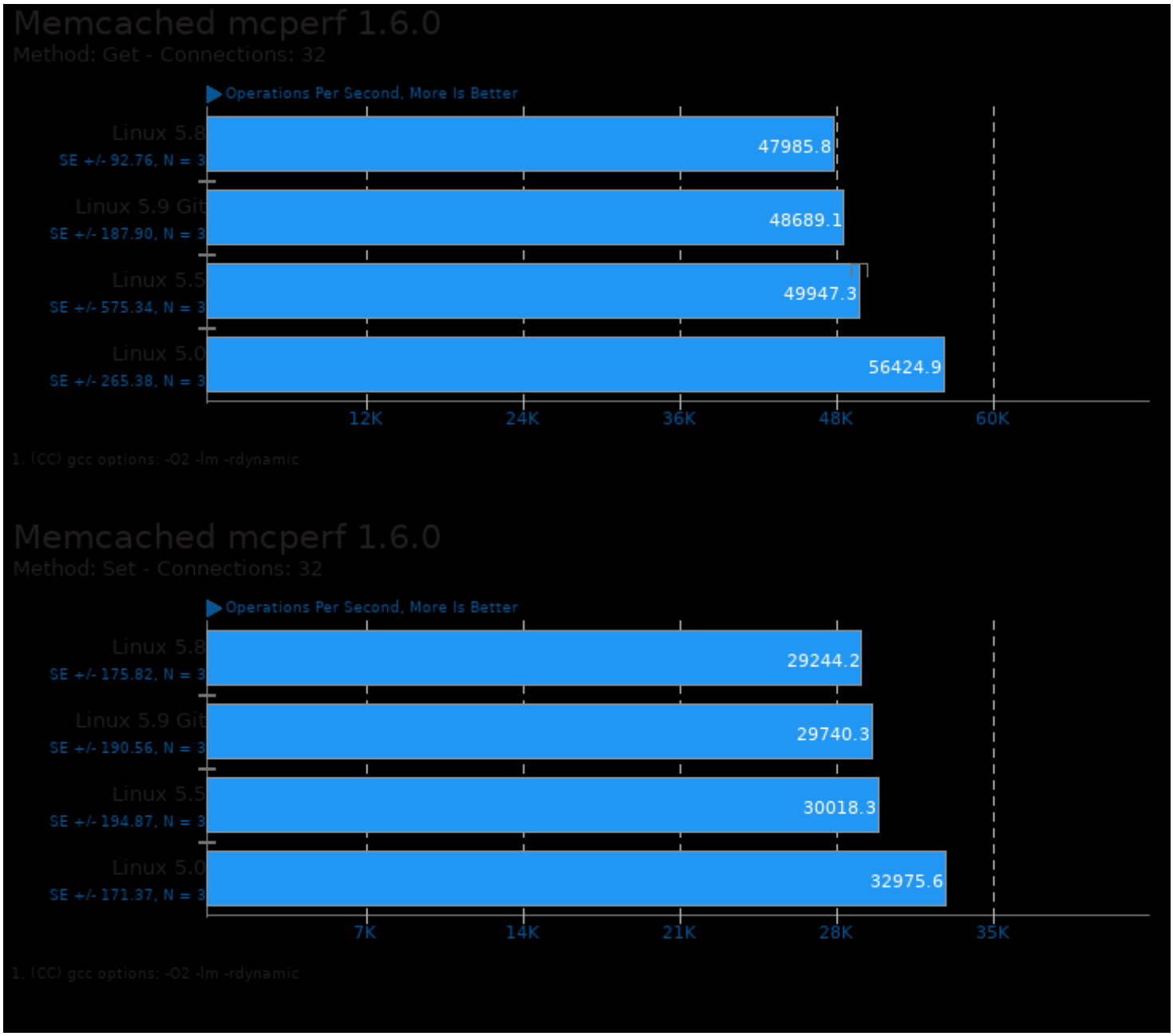
Kernel Compare



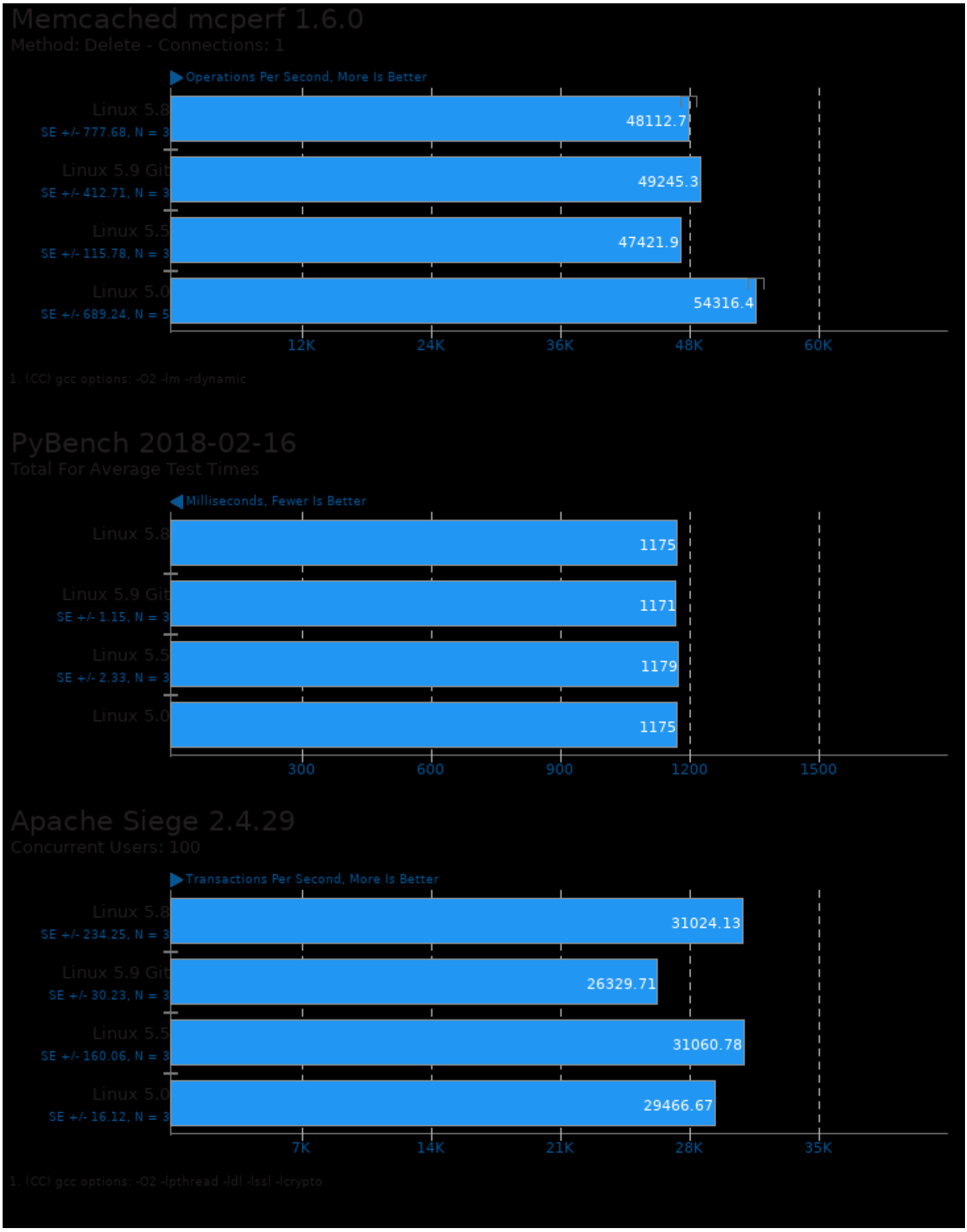
Kernel Compare

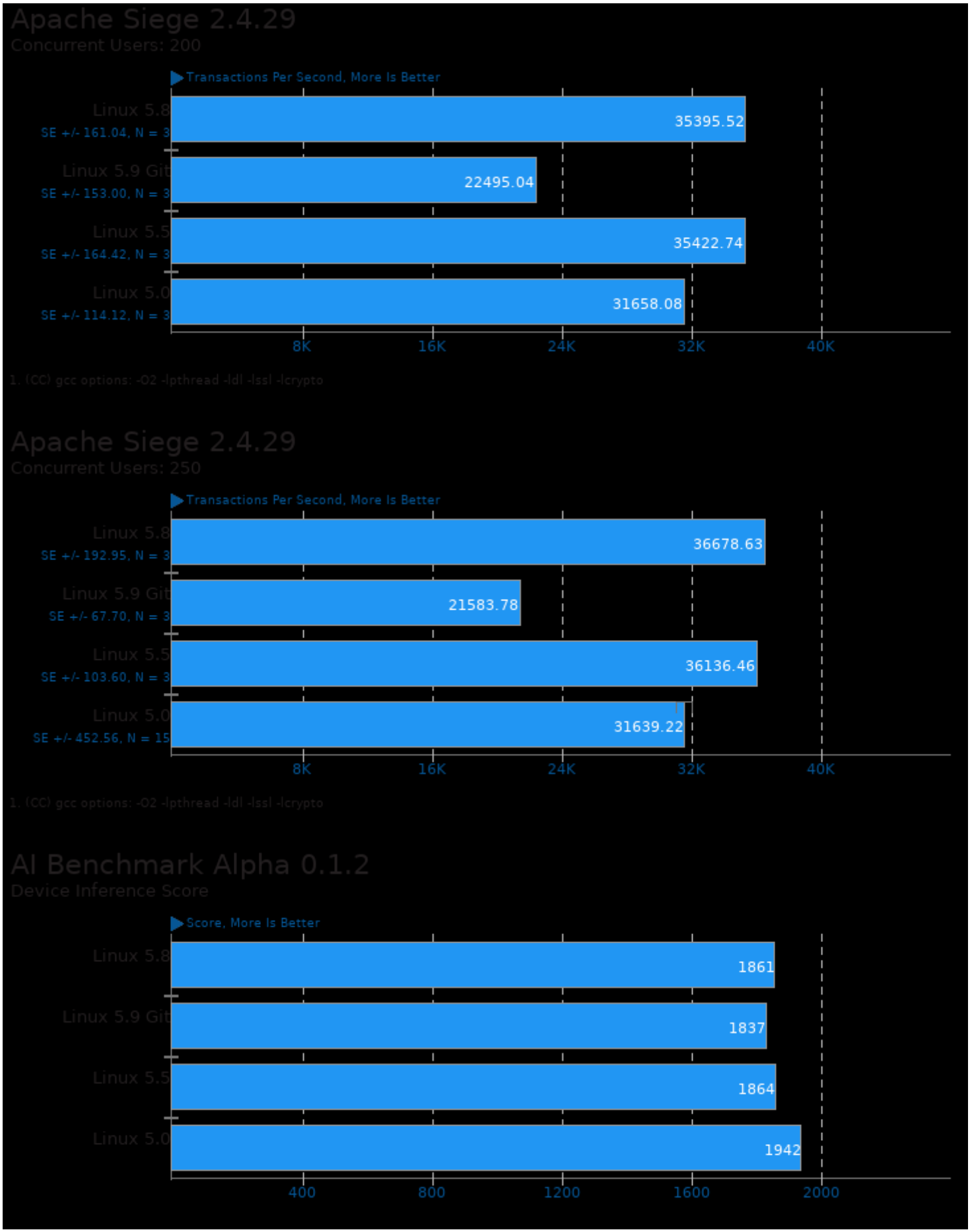


Kernel Compare

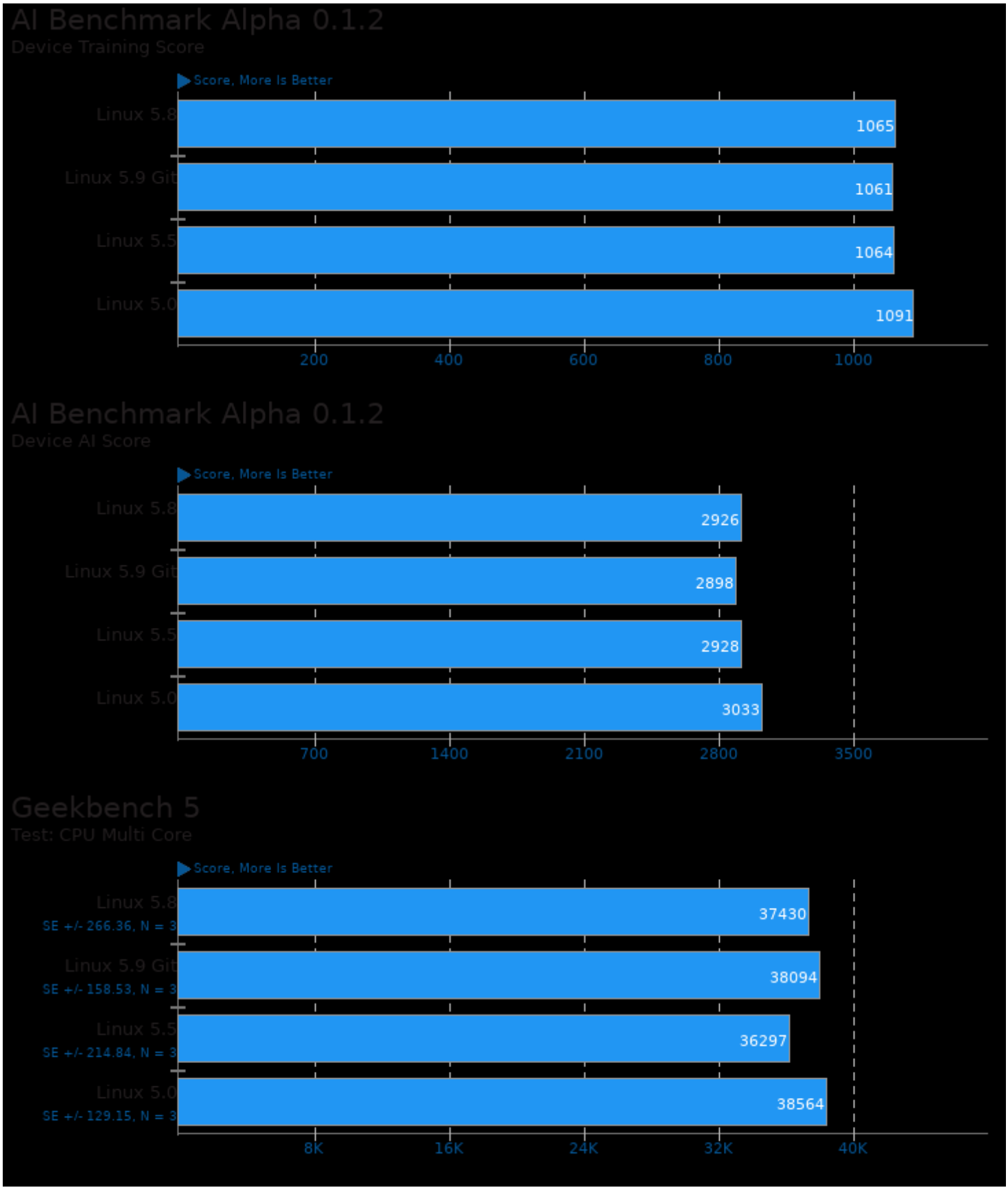


Kernel Compare

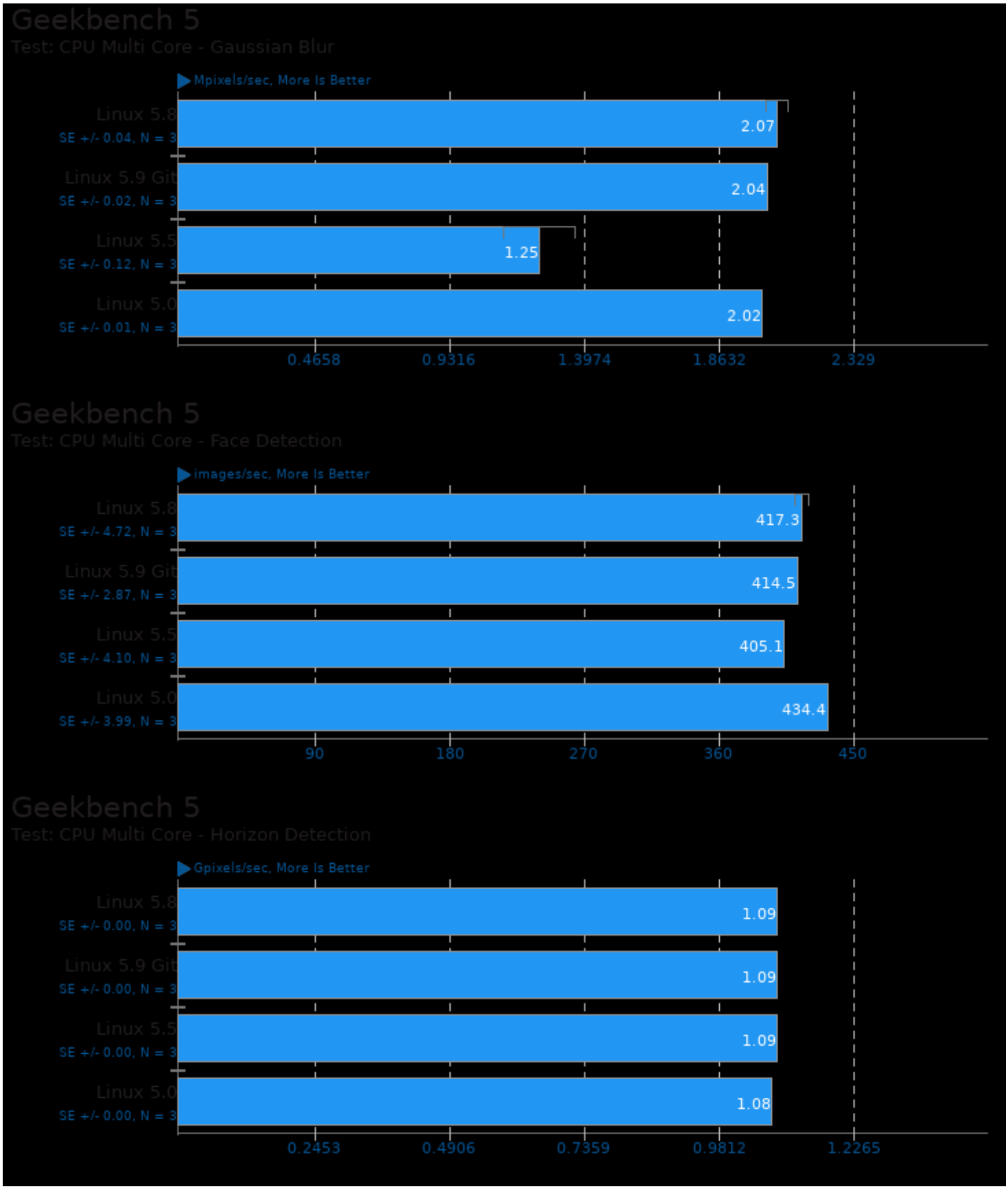



Apache Siege 2.4.29
Concurrent Users: 200
Transactions Per Second, More Is Better
Linux 5.8
SE +/- 161.04, N = 3
35395.52
Linux 5.9 Git
SE +/- 153.00, N = 3
22495.04
Linux 5.5
SE +/- 164.42, N = 3
35422.74
Linux 5.0
SE +/- 114.12, N = 3
31658.08
8K
16K
24K
32K
40K
1. (CC) gcc options: -O2 -lpthread -ldl -lssl -lcrypto
Apache Siege 2.4.29
Concurrent Users: 250
Transactions Per Second, More Is Better
Linux 5.8
SE +/- 192.95, N = 3
36678.63
Linux 5.9 Git
SE +/- 67.70, N = 3
21583.78
Linux 5.5
SE +/- 103.60, N = 3
36136.46
Linux 5.0
SE +/- 452.56, N = 15
31639.22
8K
16K
24K
32K
40K
1. (CC) gcc options: -O2 -lpthread -ldl -lssl -lcrypto
AI Benchmark Alpha 0.1.2
Device Inference Score
Score, More Is Better
Linux 5.8
1861
Linux 5.9 Git
1837
Linux 5.5
1864
Linux 5.0
1942
400
800
1200
1600
2000

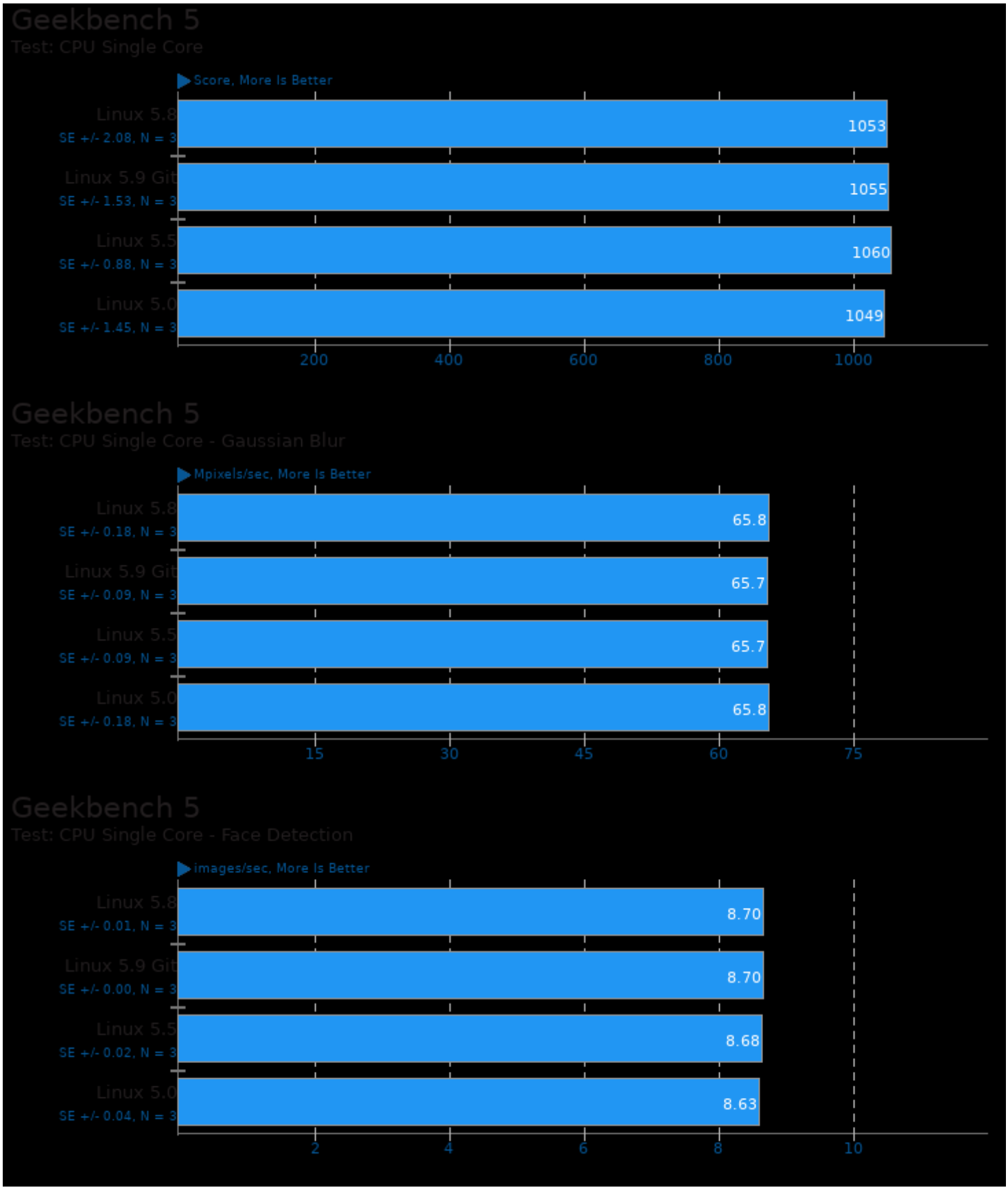
Kernel Compare



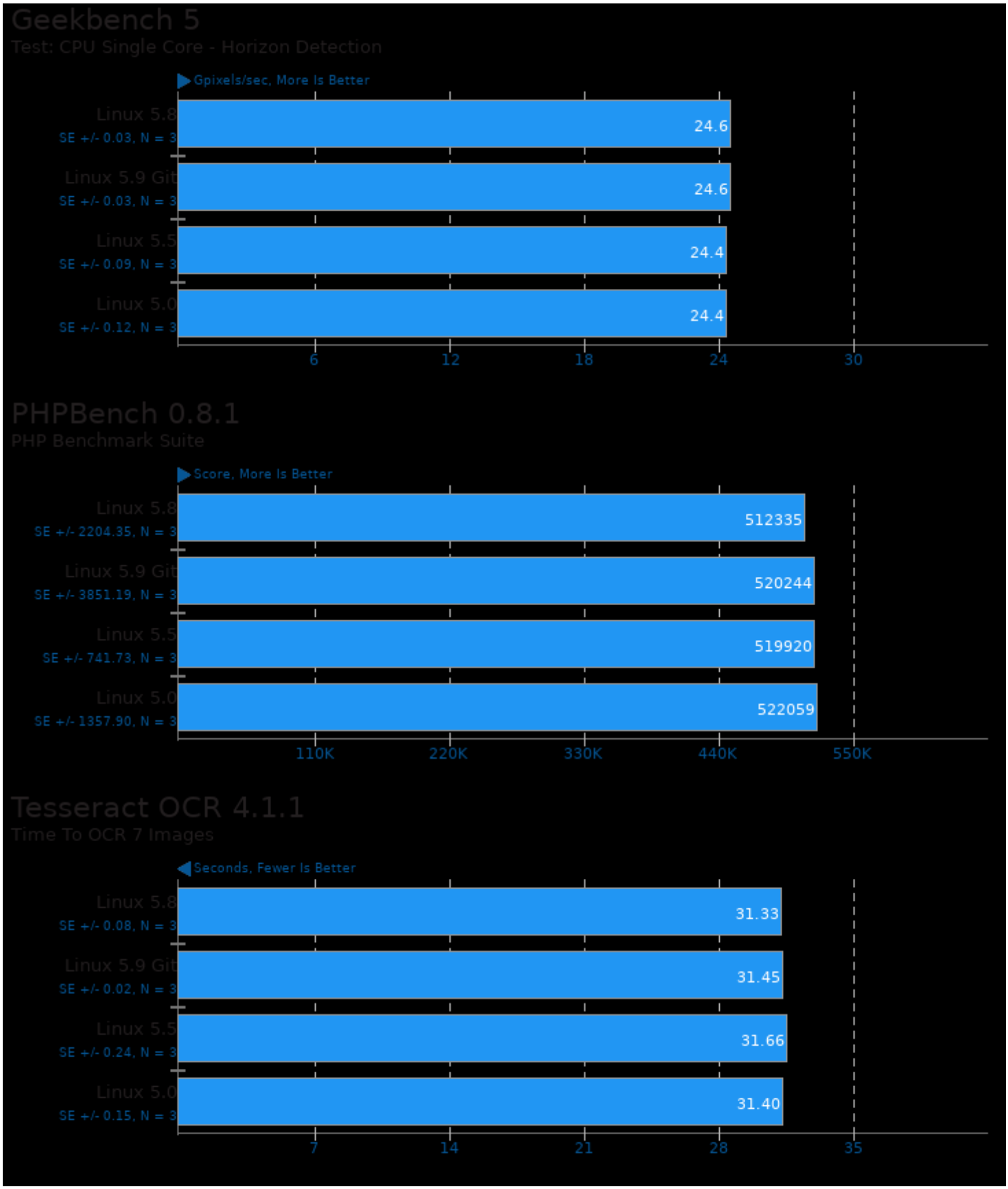
Kernel Compare



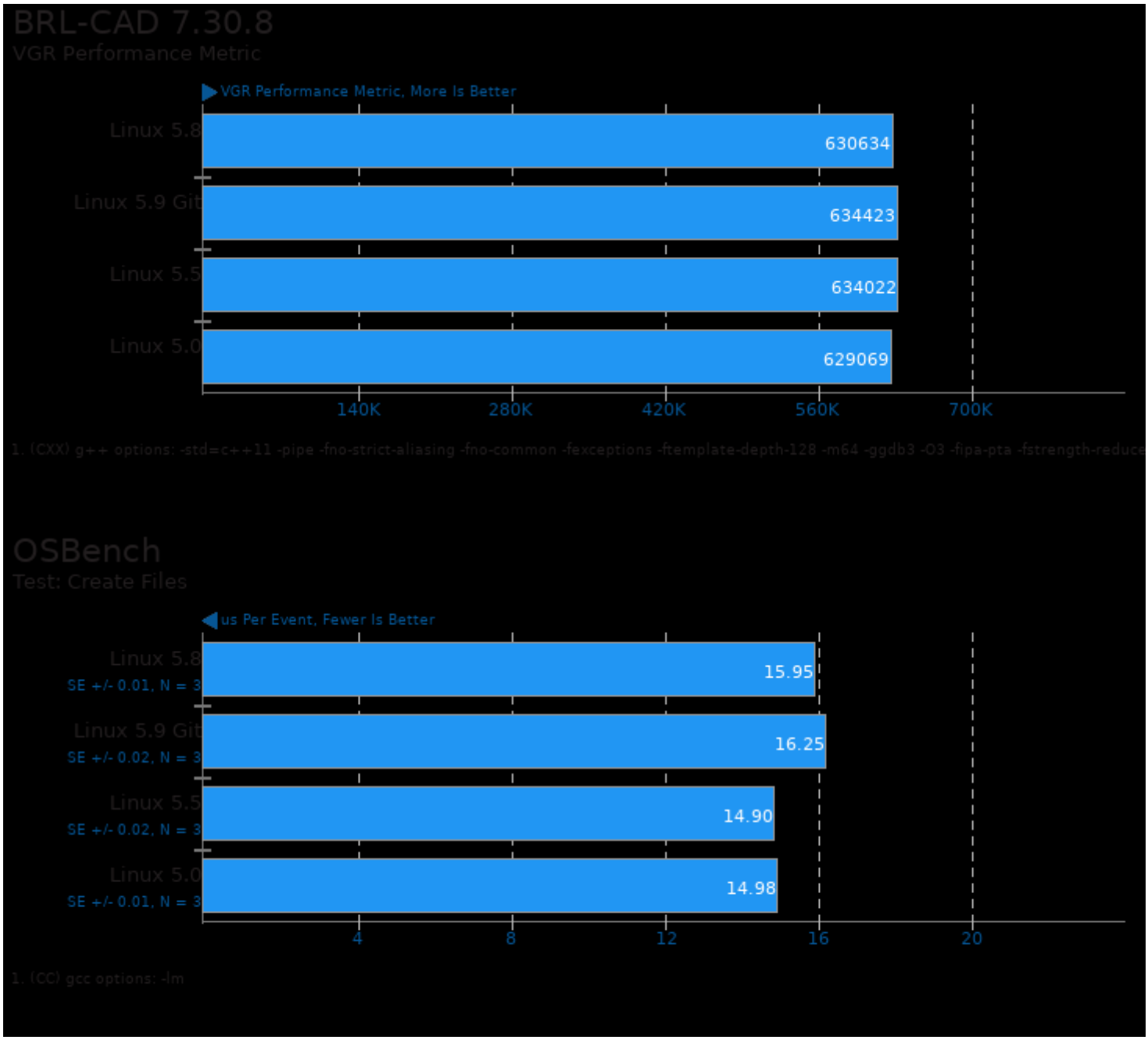
Kernel Compare



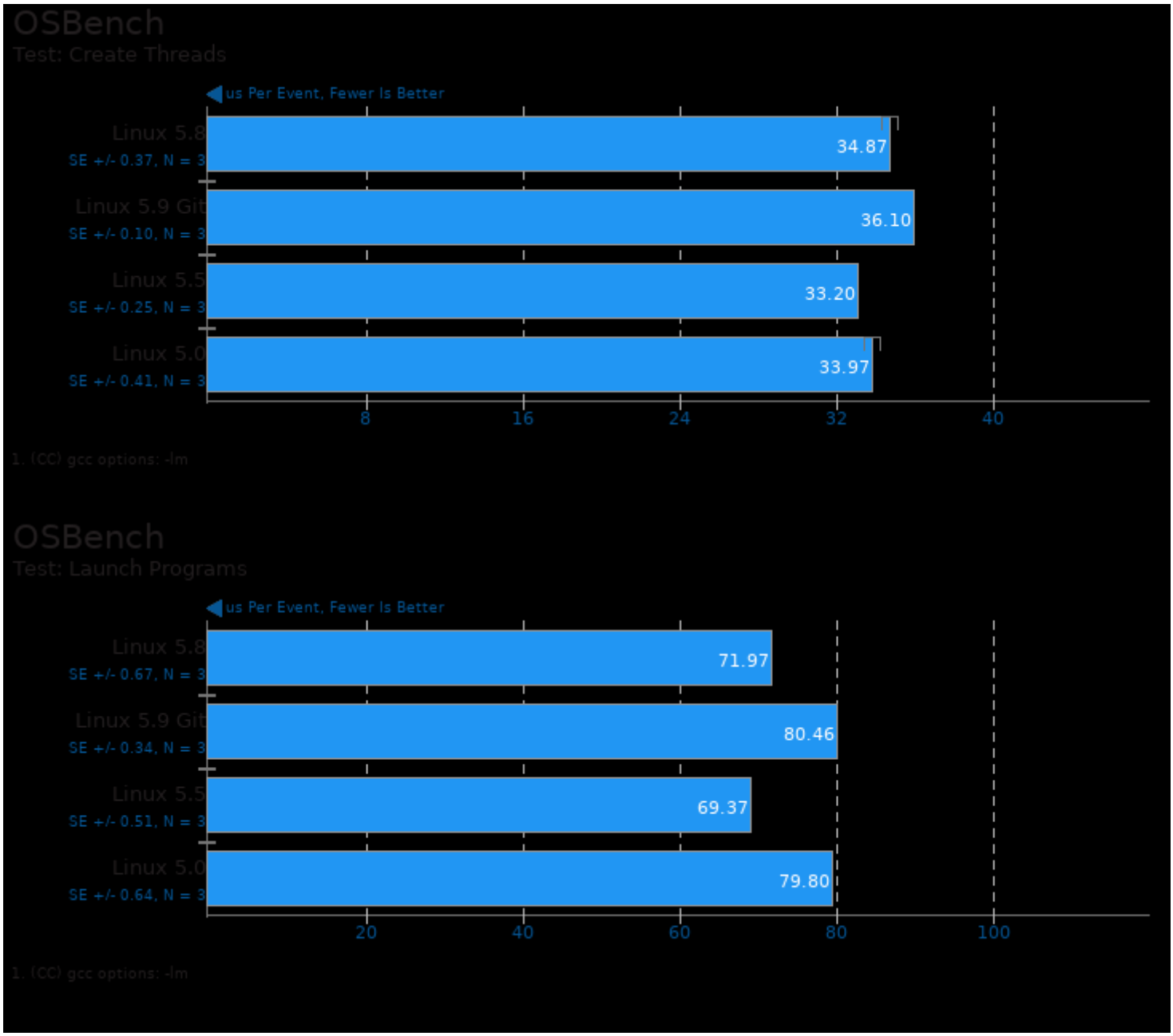
Kernel Compare



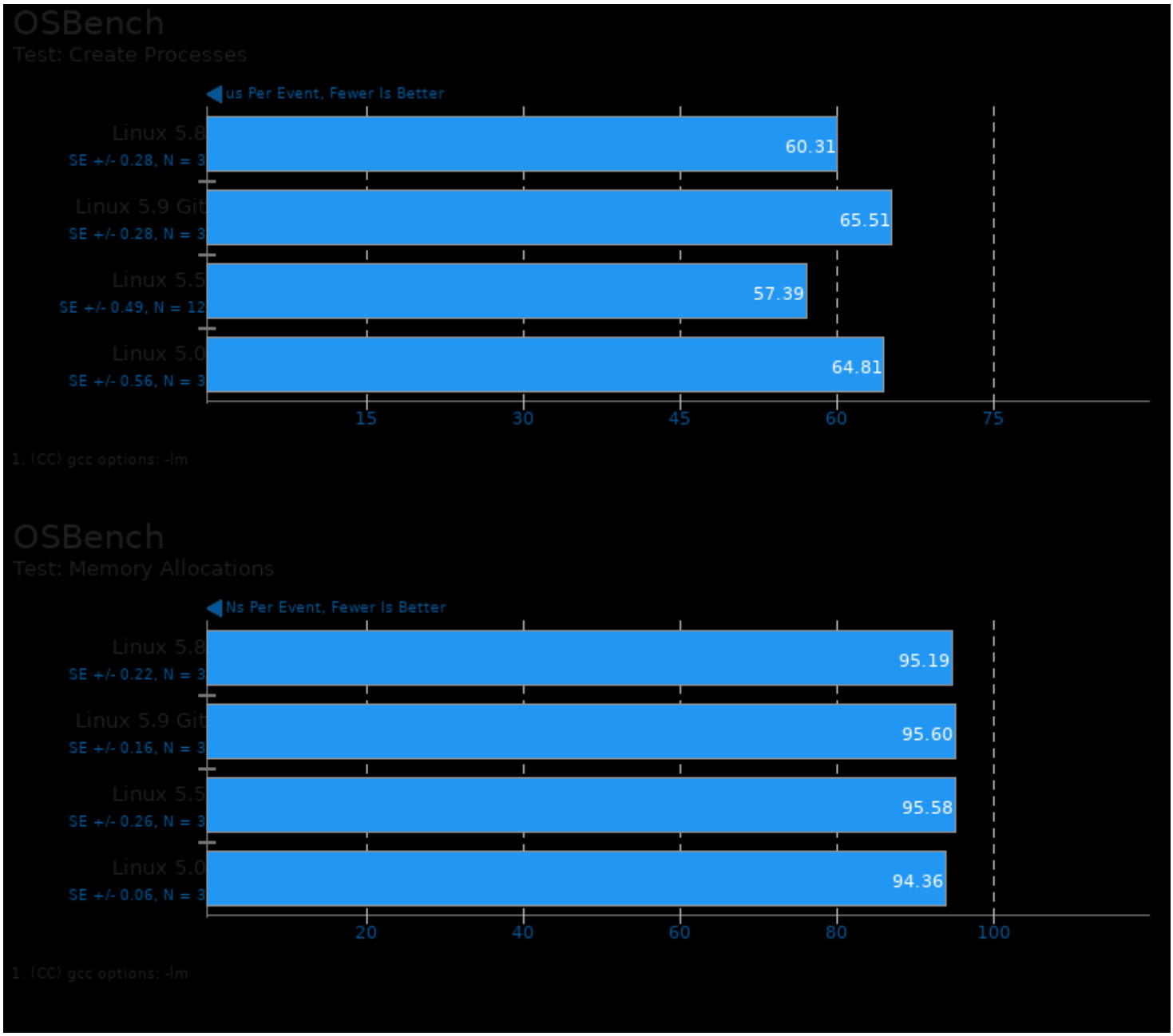
Kernel Compare



Kernel Compare

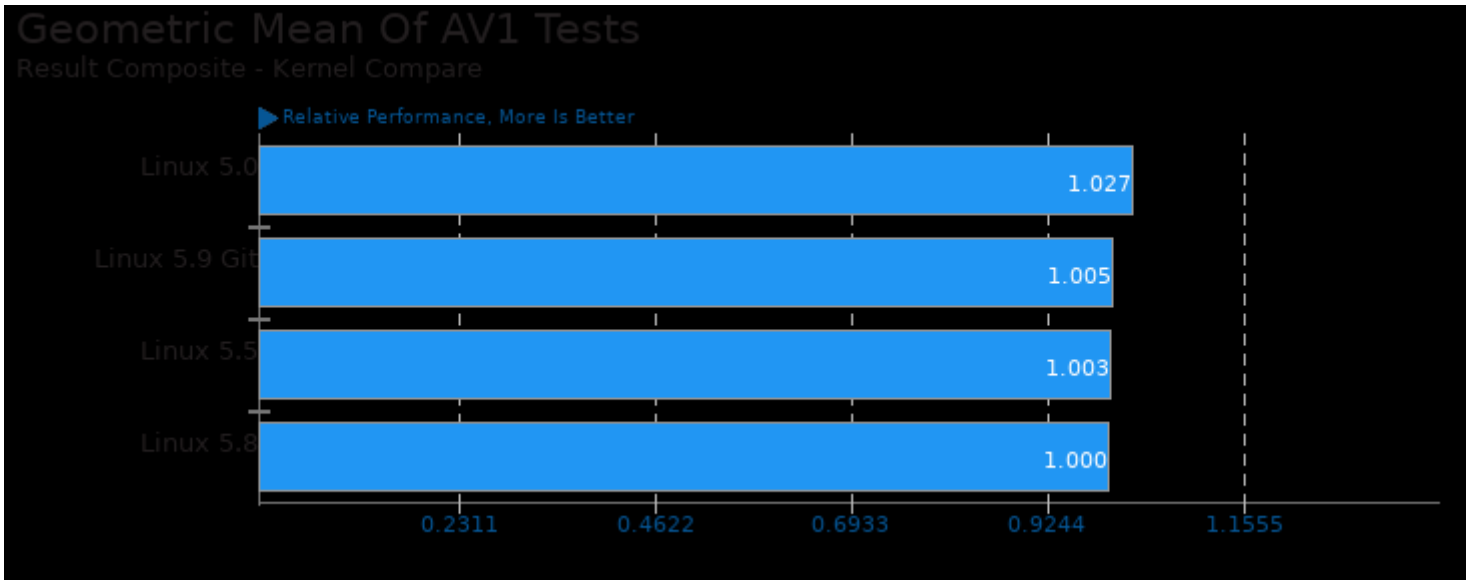


Kernel Compare

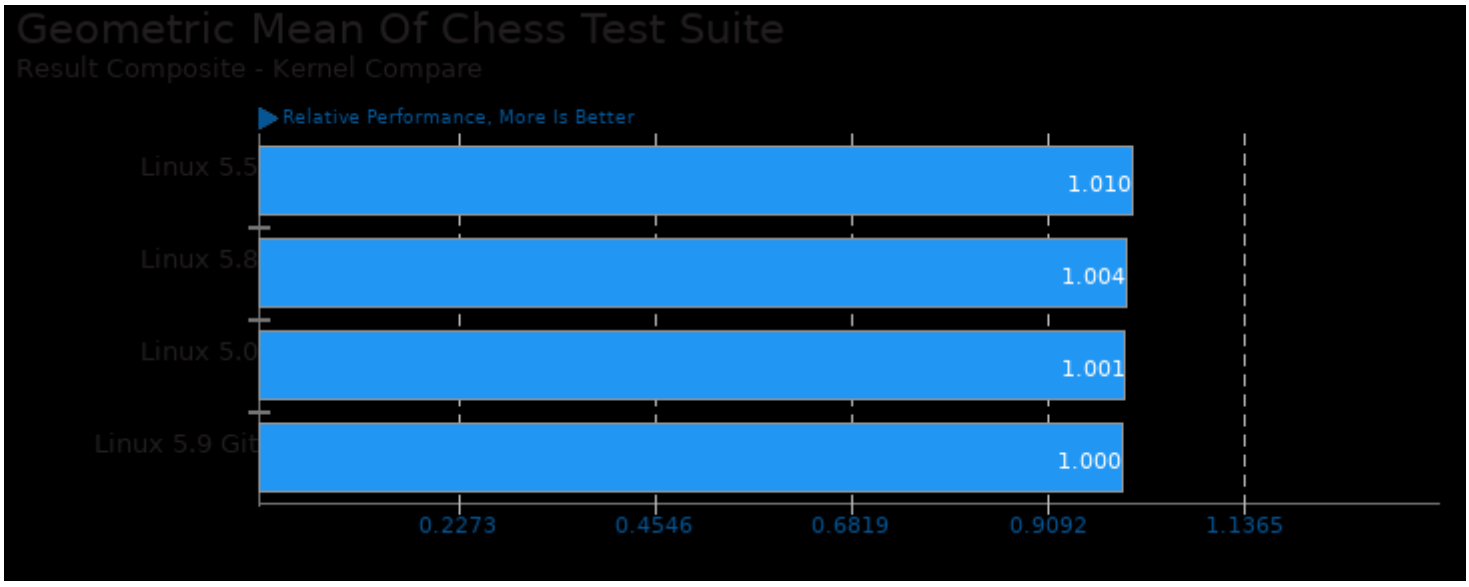


Kernel Compare

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

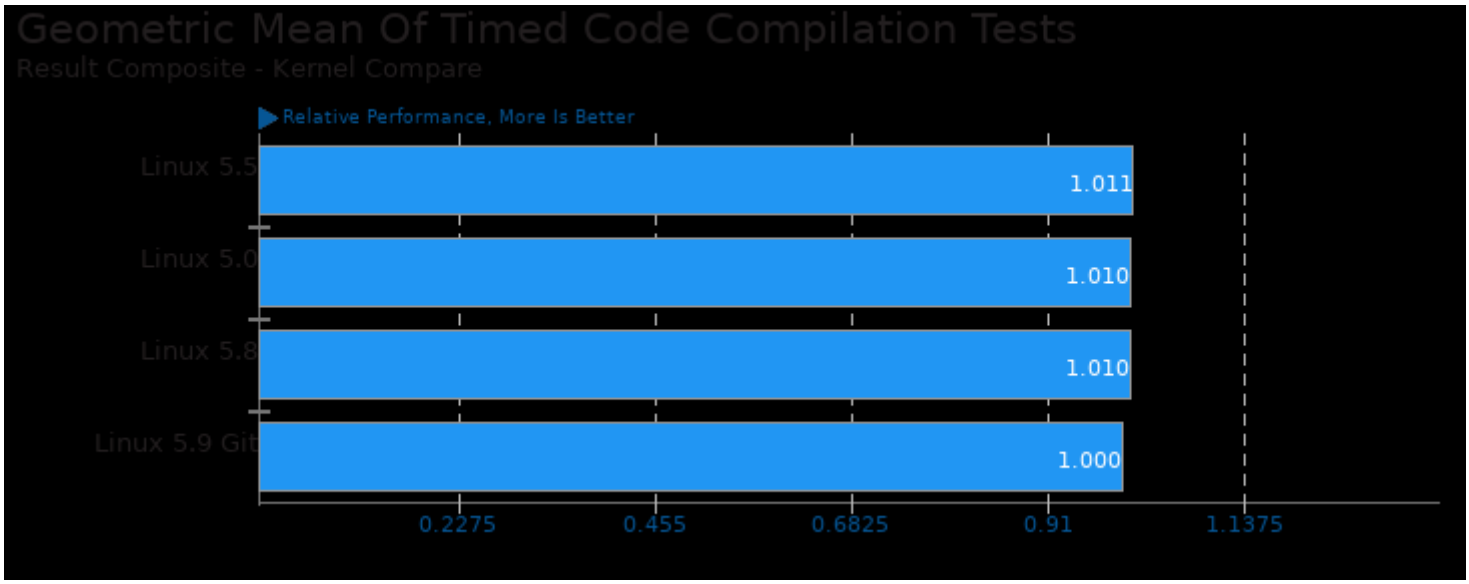


Geometric mean based upon tests: pts/dav1d and pts/svt-av1

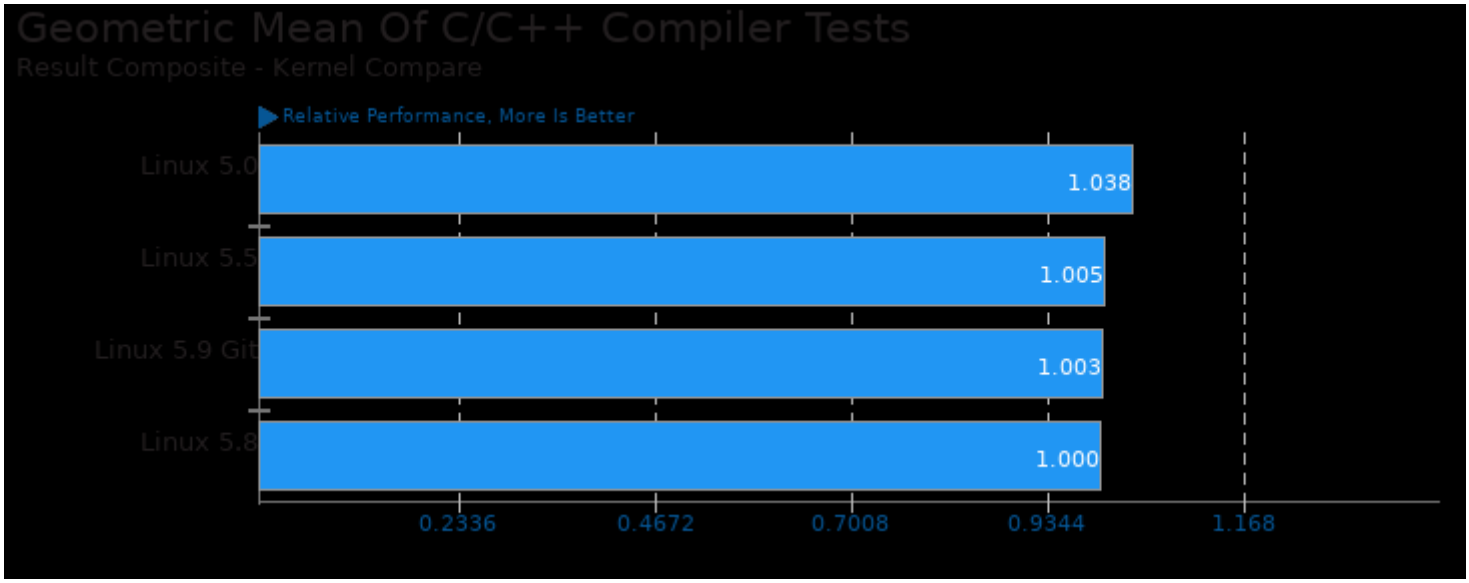


Geometric mean based upon tests: pts/stockfish and pts/asmfish

Kernel Compare

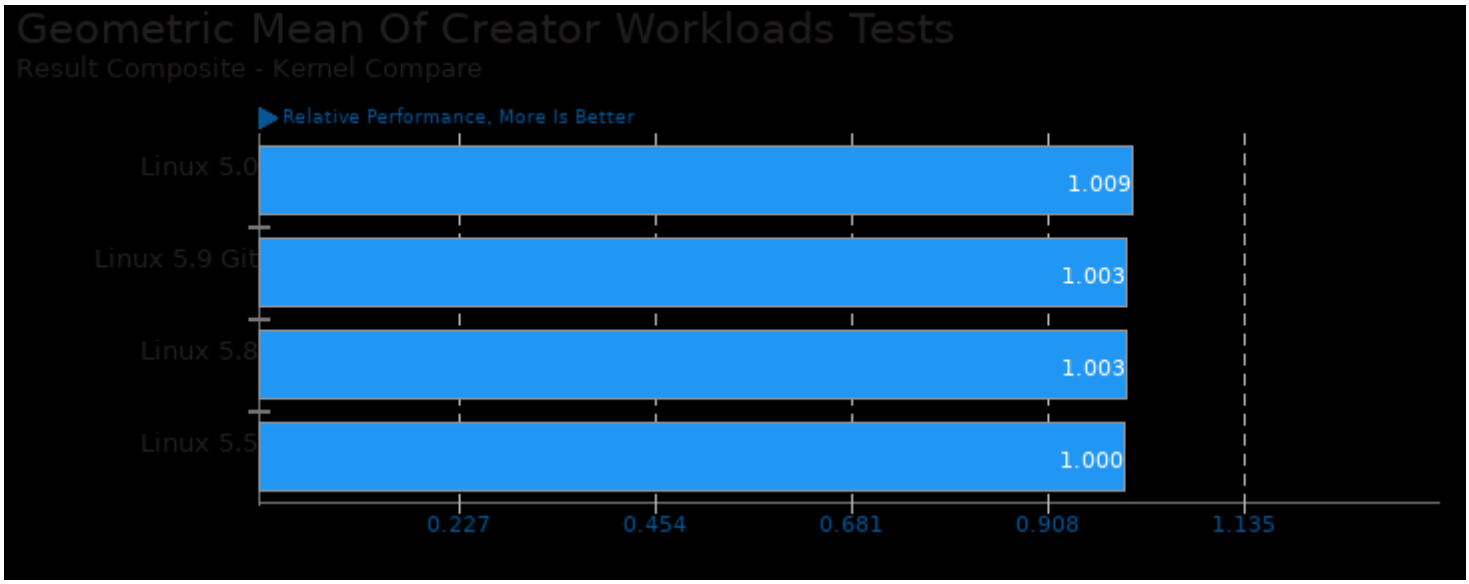


Geometric mean based upon tests: pts/build-apache, pts/build-linux-kernel, pts/build-llvm and pts/build2

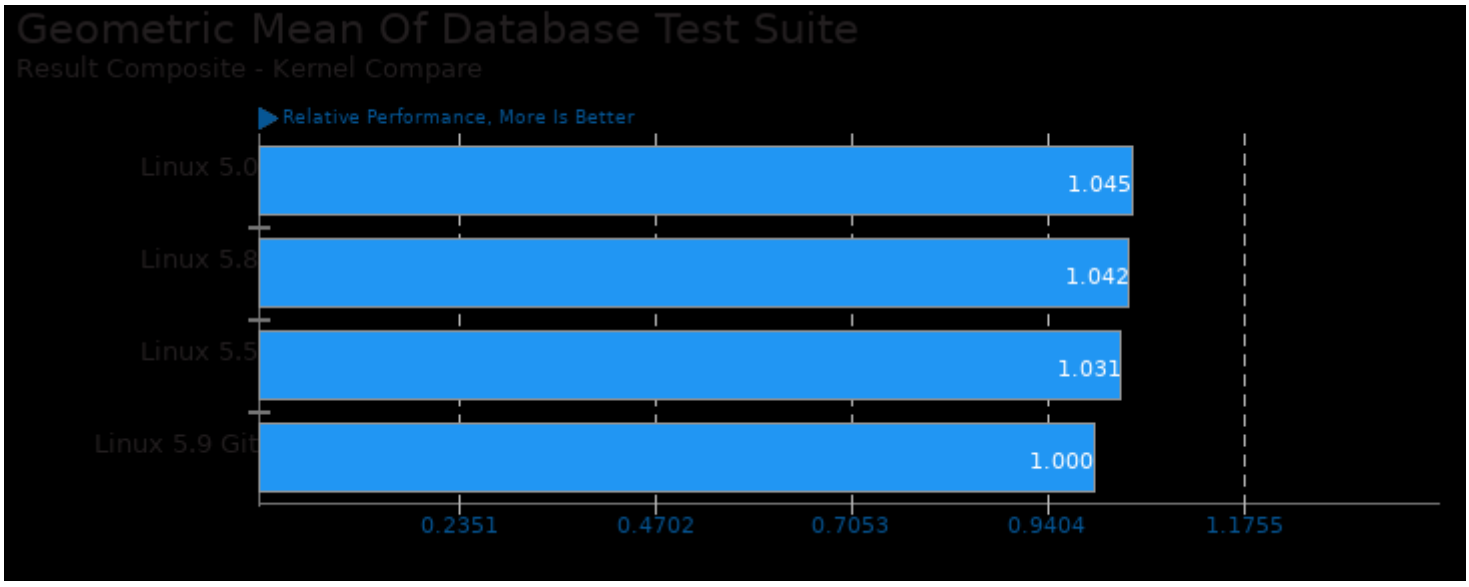


Geometric mean based upon tests: pts/stockfish, pts/build-llvm, pts/c-ray, pts/sqlite-speedtest, pts/dav1d, pts/compress-zstd, pts/lammps, pts/svt-av1, pts/build-apache, pts/keydb, pts/leveldb and pts/mcperf

Kernel Compare

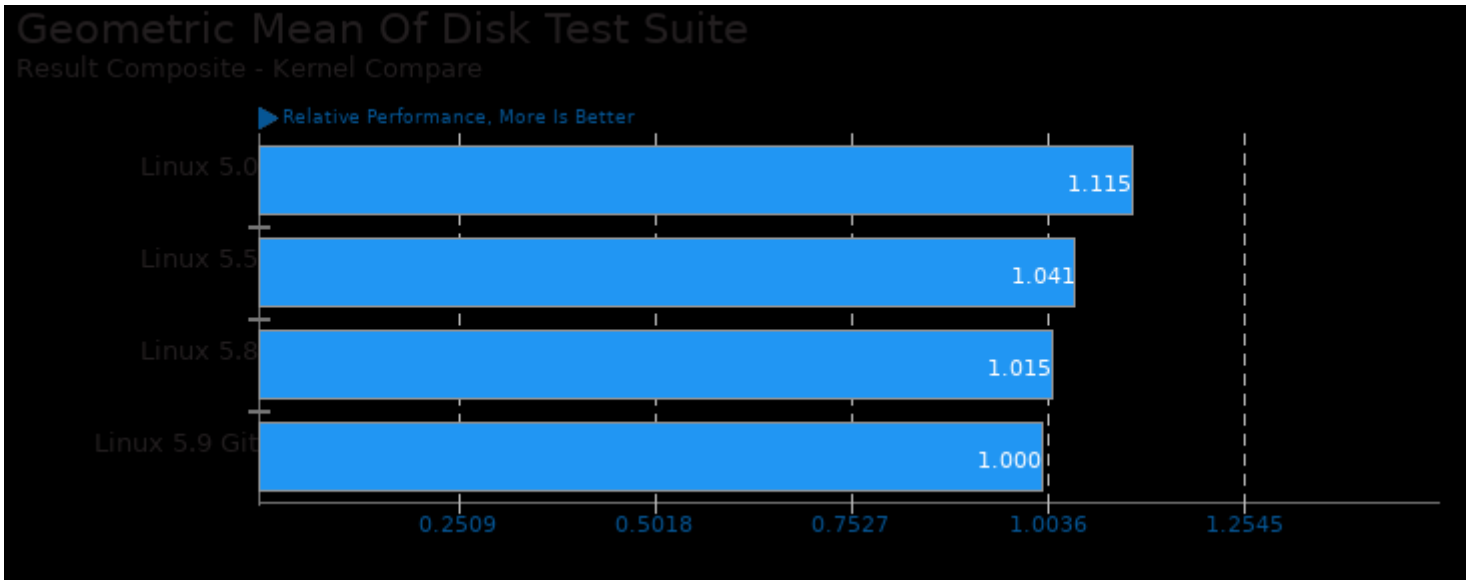


Geometric mean based upon tests: pts/ospray, pts/c-ray, pts/yafaray, pts/radiance, pts/luxcorerender, system/tesseract-ocr, system/ocrmypdf, pts/dav1d, pts/svt-av1, system/rawtherapee, system/hugin, pts/oidn, pts/openvkl, pts/astcenc, pts/deepspeech and pts/brl-cad

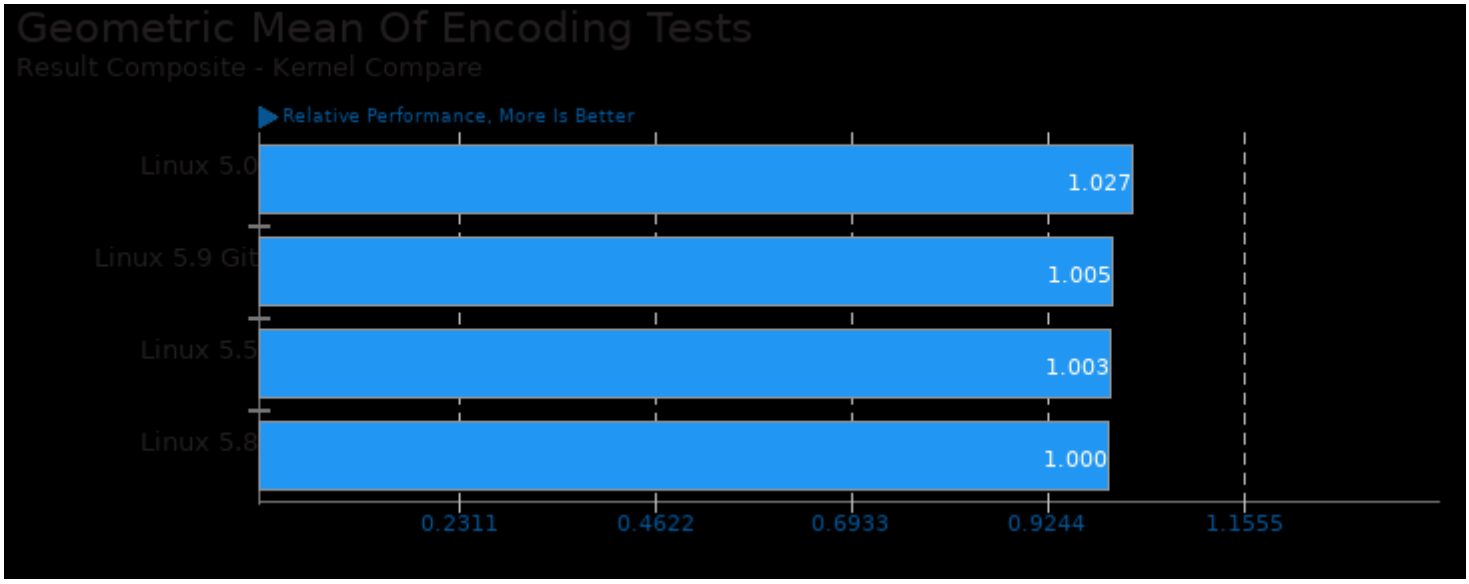


Geometric mean based upon tests: pts/sqlite, pts/sqlite-speedtest, pts/redis, pts/keydb, pts/leveldb, pts/rocksdb and pts/mysqlslap

Kernel Compare

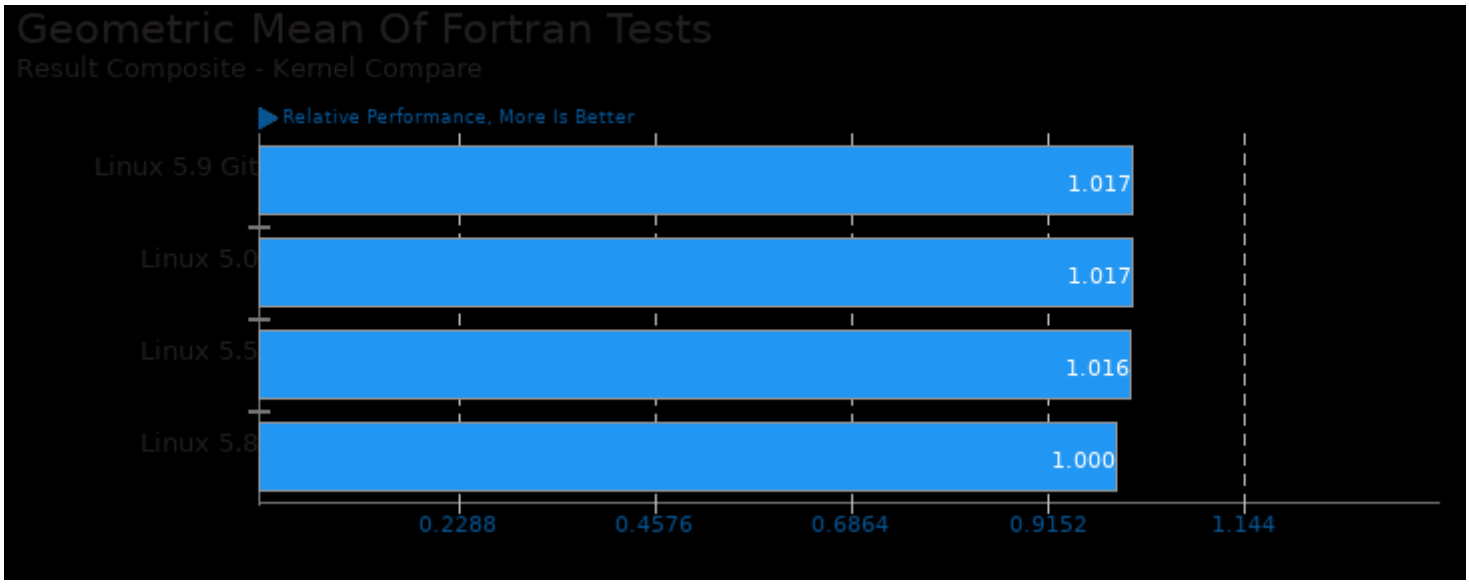


Geometric mean based upon tests: pts/sqlite, pts/fs-mark, pts/compilebench, pts/postmark and pts/fio

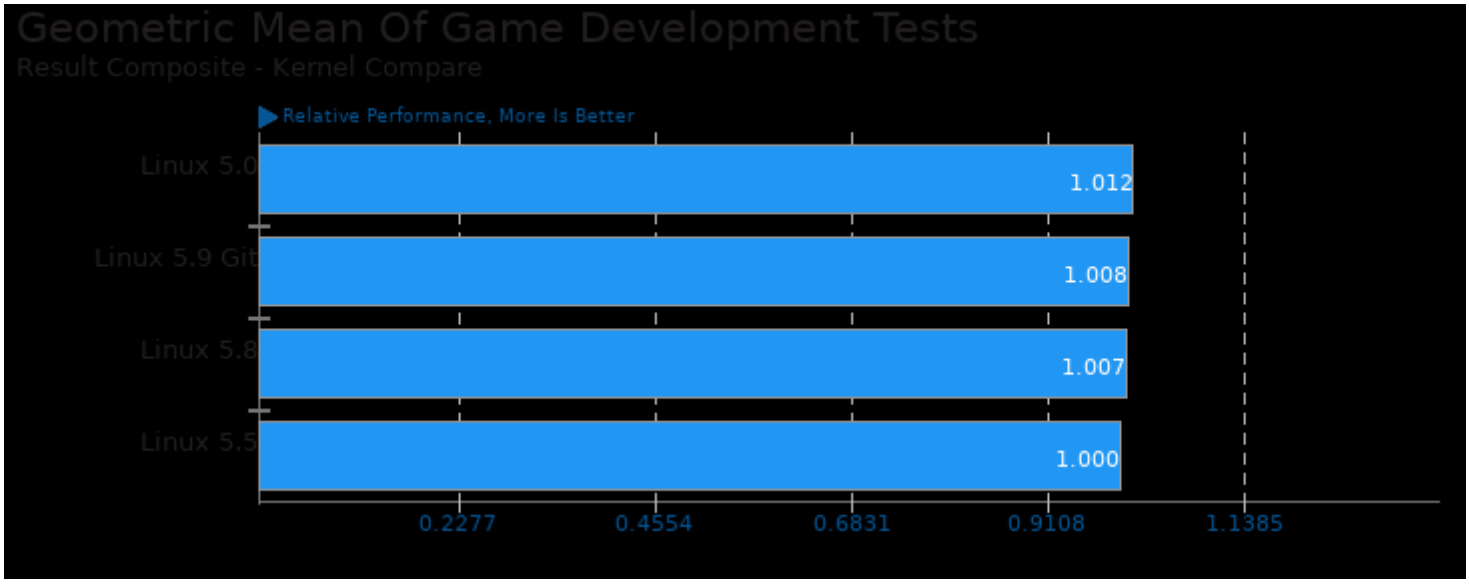


Geometric mean based upon tests: pts/dav1d and pts/svt-av1

Kernel Compare

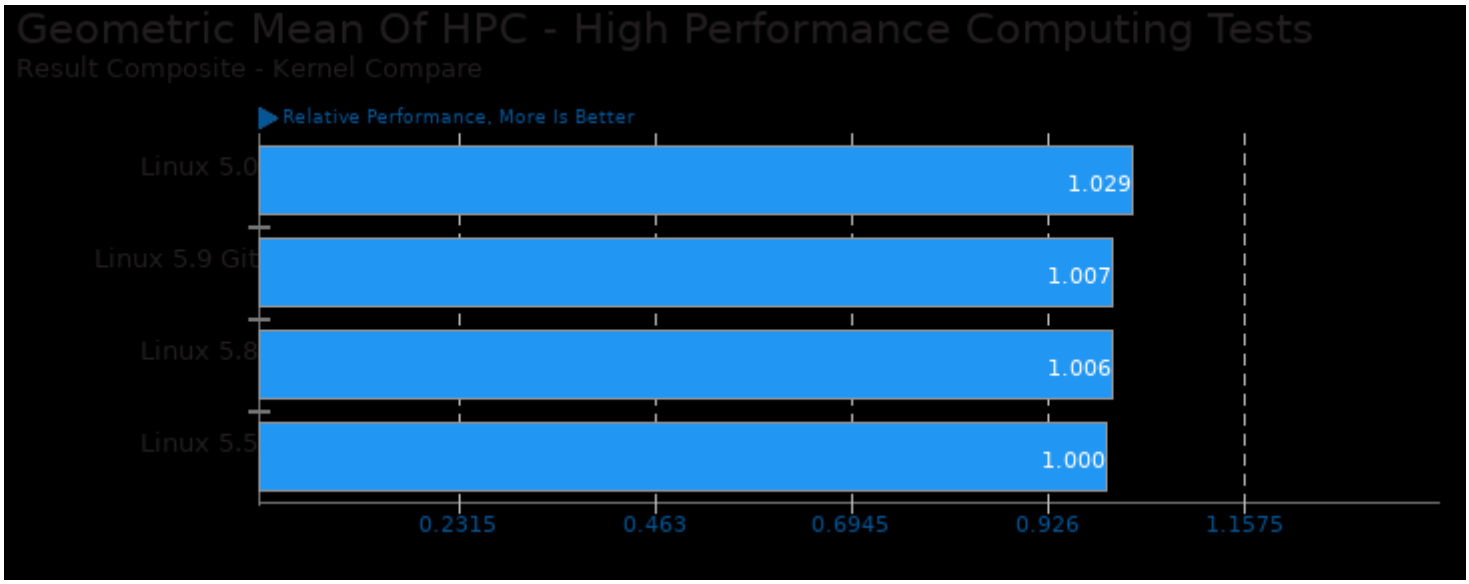


Geometric mean based upon tests: pts/hpcg and pts/lammps

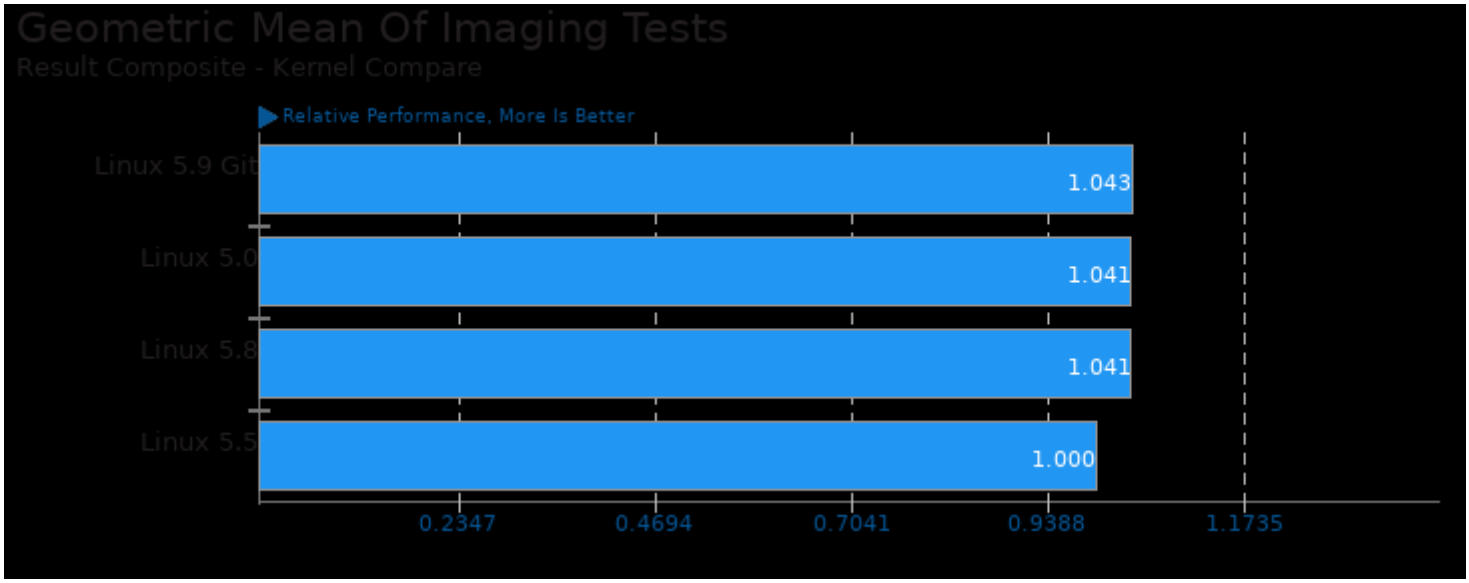


Geometric mean based upon tests: pts/astcenc, pts/oidn and pts/openvkl

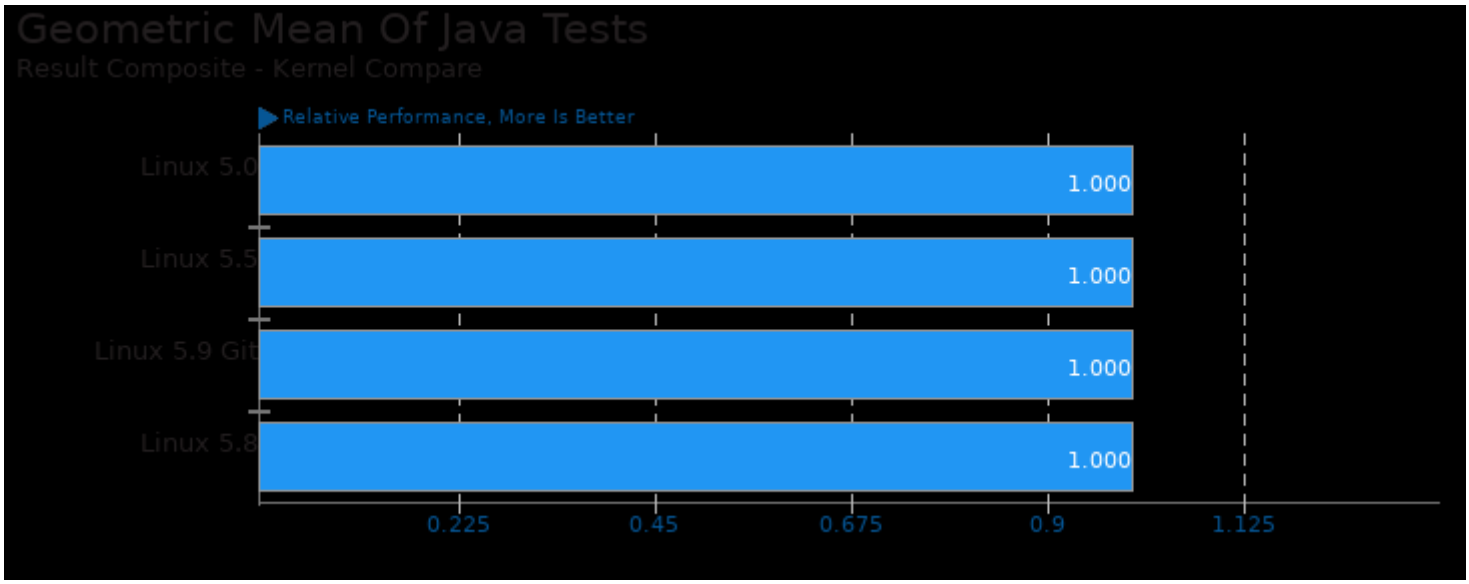
Kernel Compare



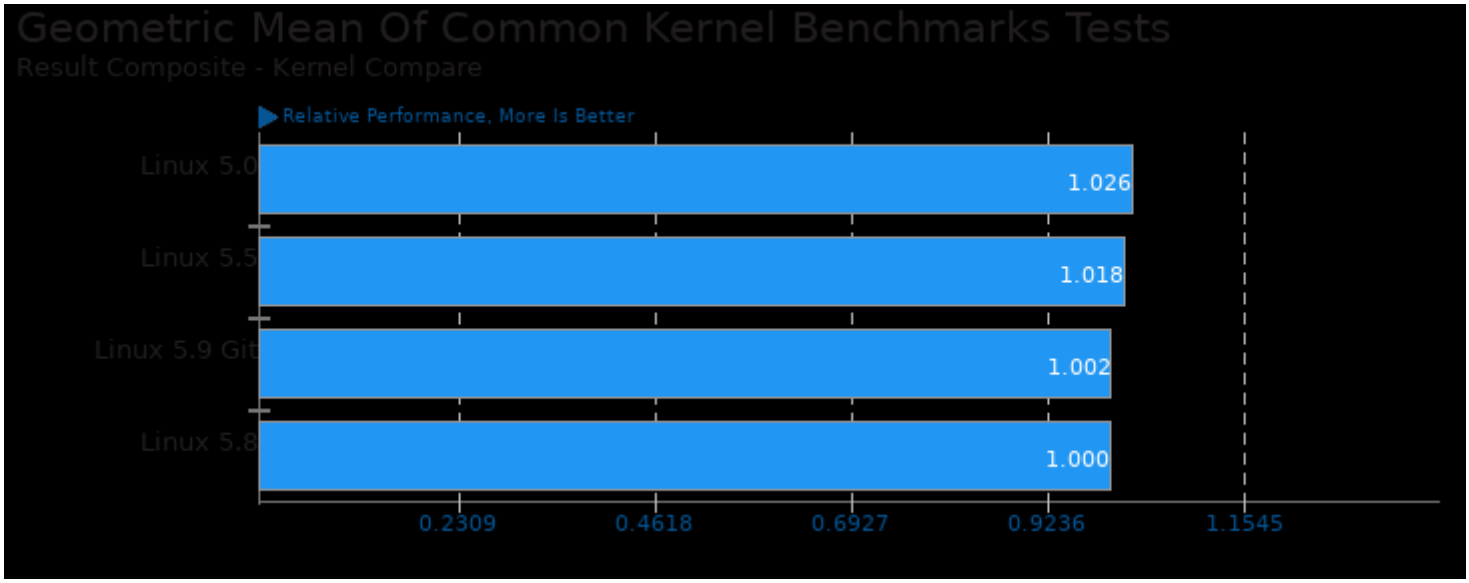
Geometric mean based upon tests: pts/hpcg, system/octave-benchmark, pts/namd, pts/lammps, pts/minife, pts/ai-benchmark, pts/deepspeech and pts/tensorflow-lite



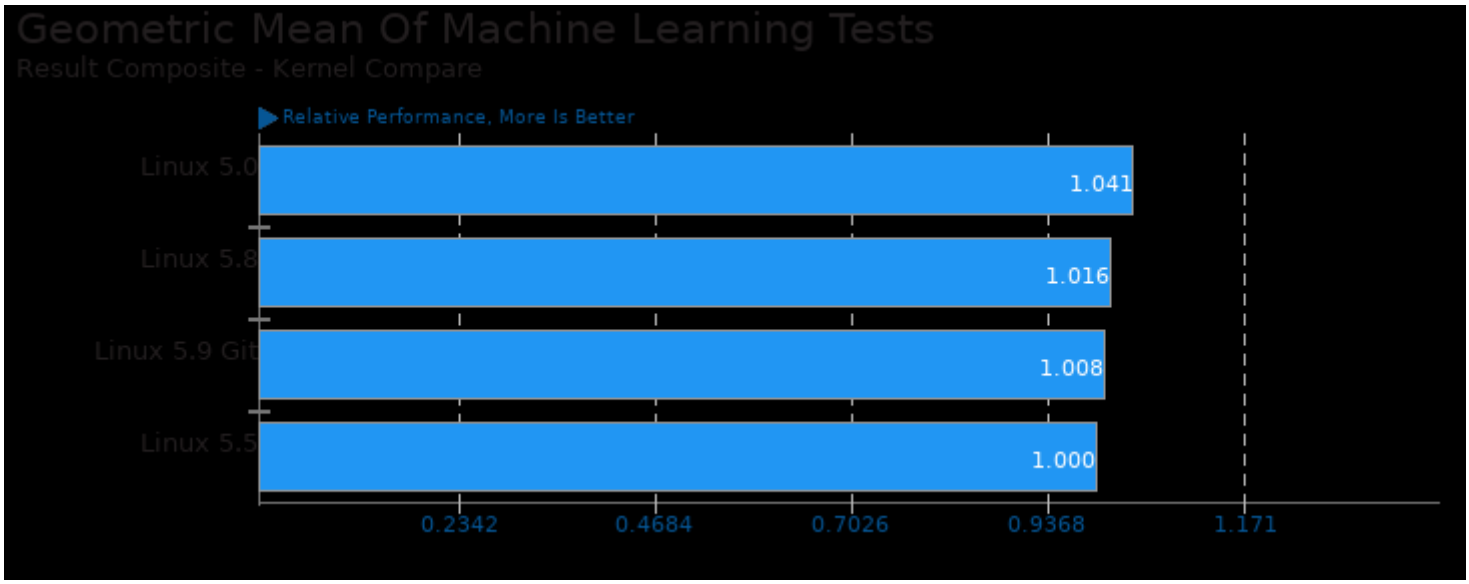
Geometric mean based upon tests: system/rawtherapee and system/hugin



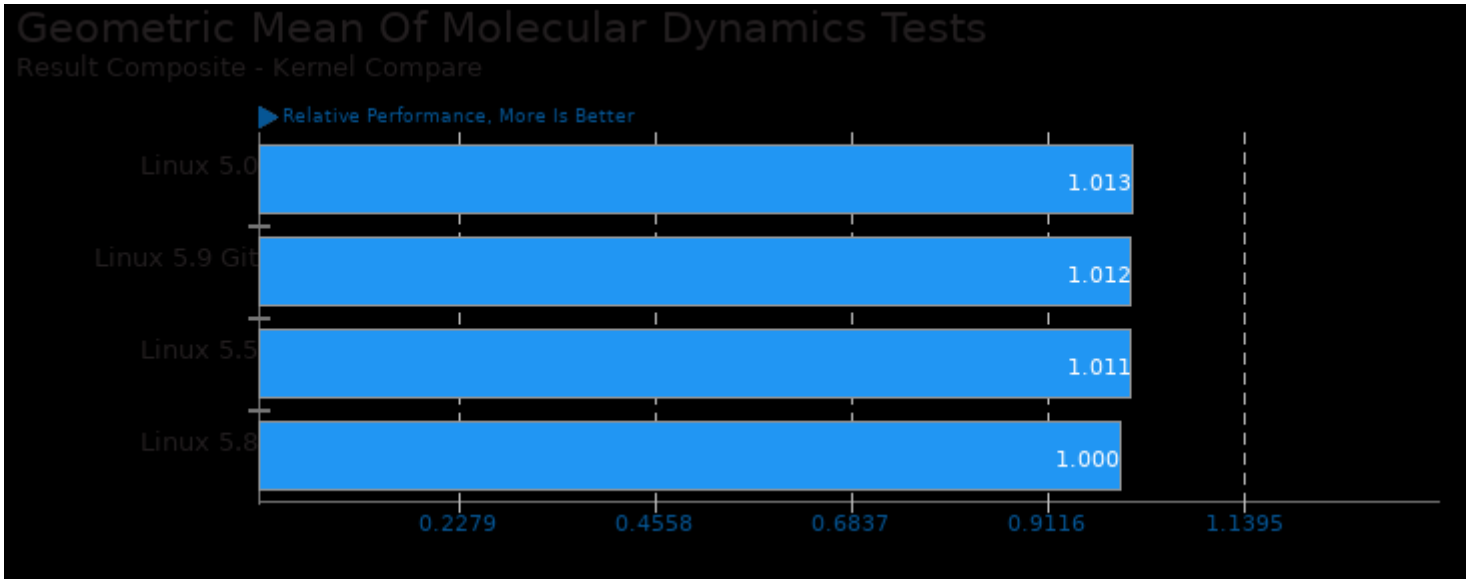
Geometric mean based upon tests: pts/dacapobench and pts/renaissance



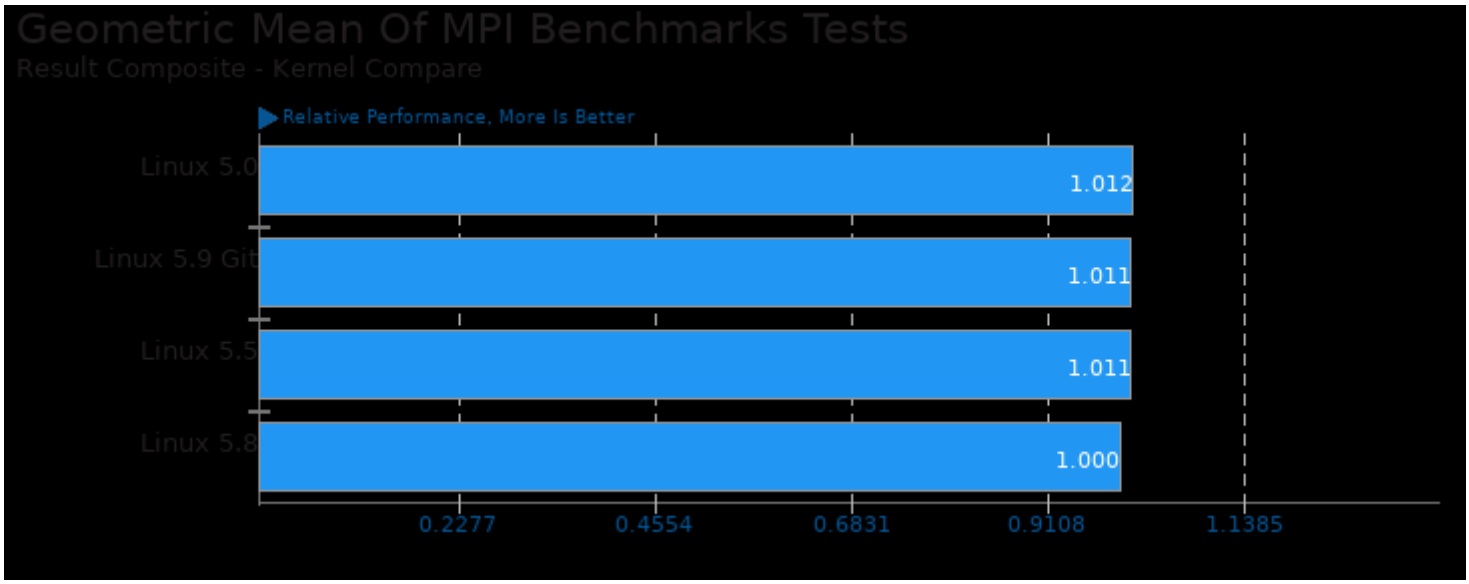
Geometric mean based upon tests: system/wireguard, pts/postmark, pts/sqlite-speedtest, pts/ctx-clock, pts/stress-ng, pts/osbench, pts/rocksdb and pts/leveldb



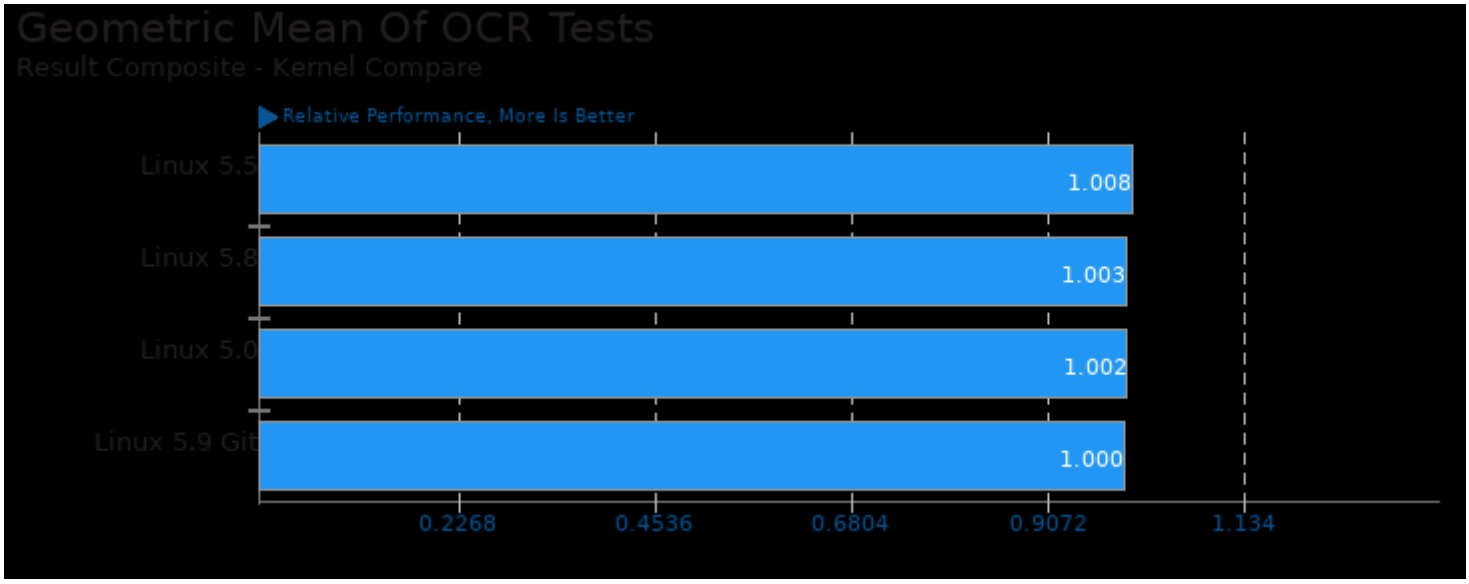
Geometric mean based upon tests: pts/ai-benchmark, pts/deepspeech and pts/tensorflow-lite



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

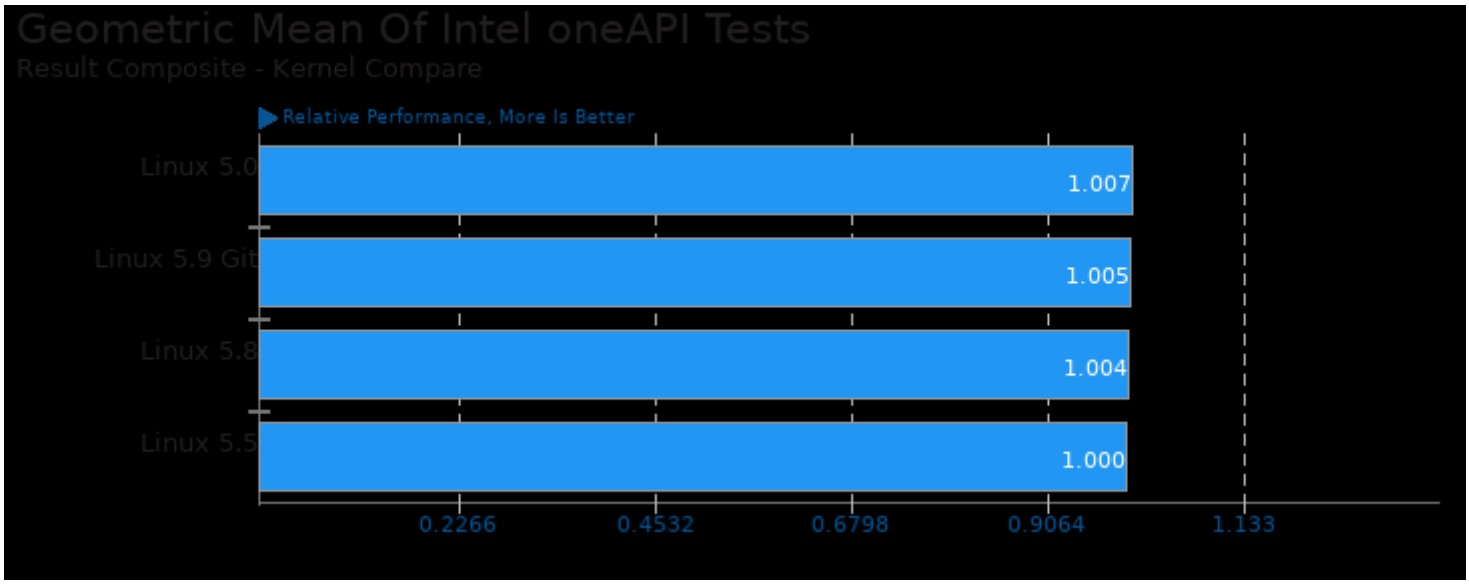


Geometric mean based upon tests: pts/lammps, pts/hpcg and pts/minife

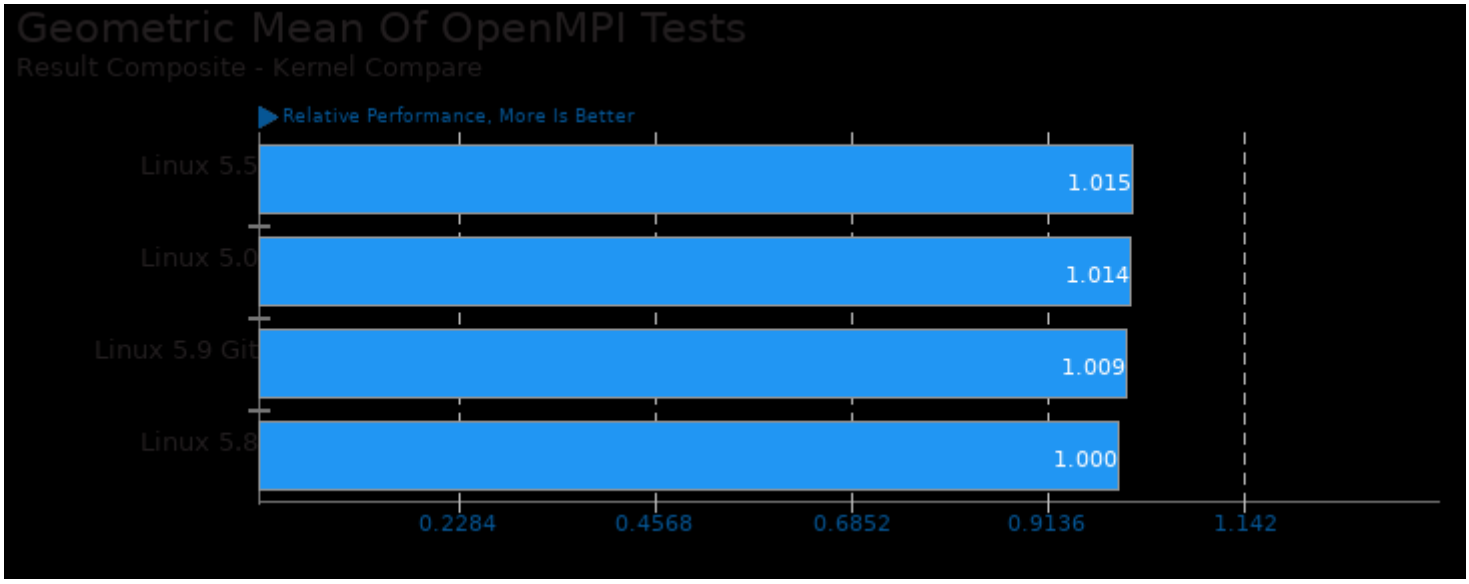


Geometric mean based upon tests: system/tesseract-ocr and system/ocrmypdf

Kernel Compare

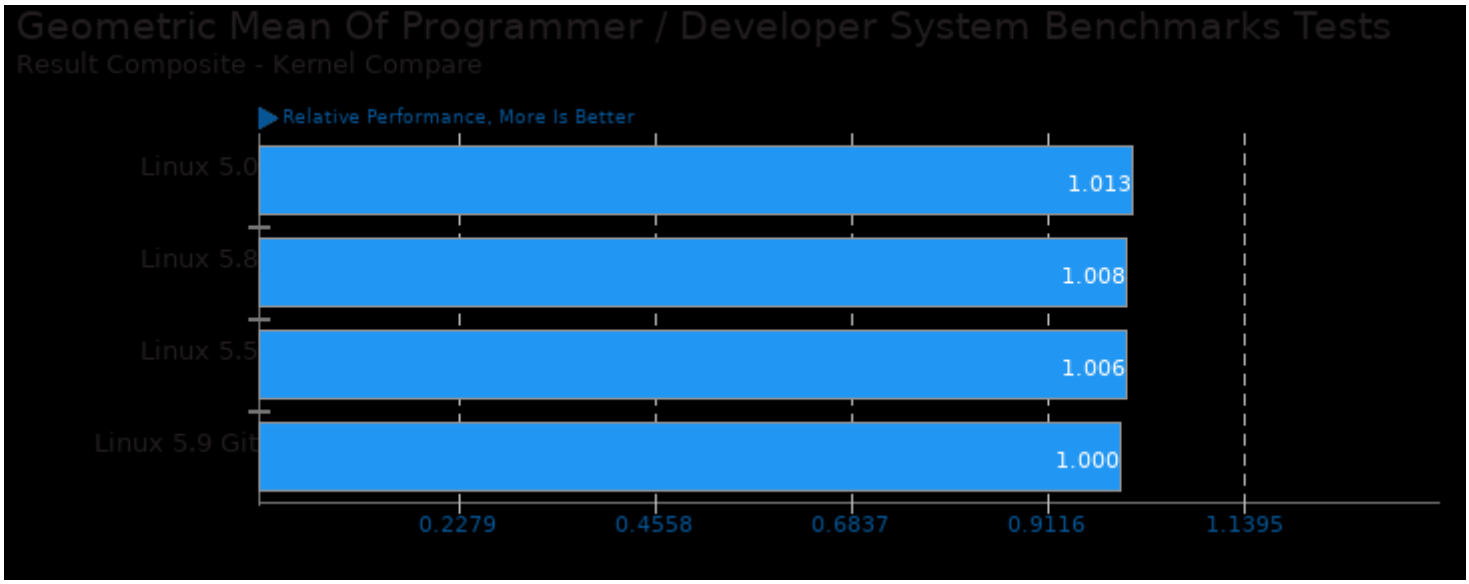


Geometric mean based upon tests: pts/oidn, pts/ospray and pts/openvkl

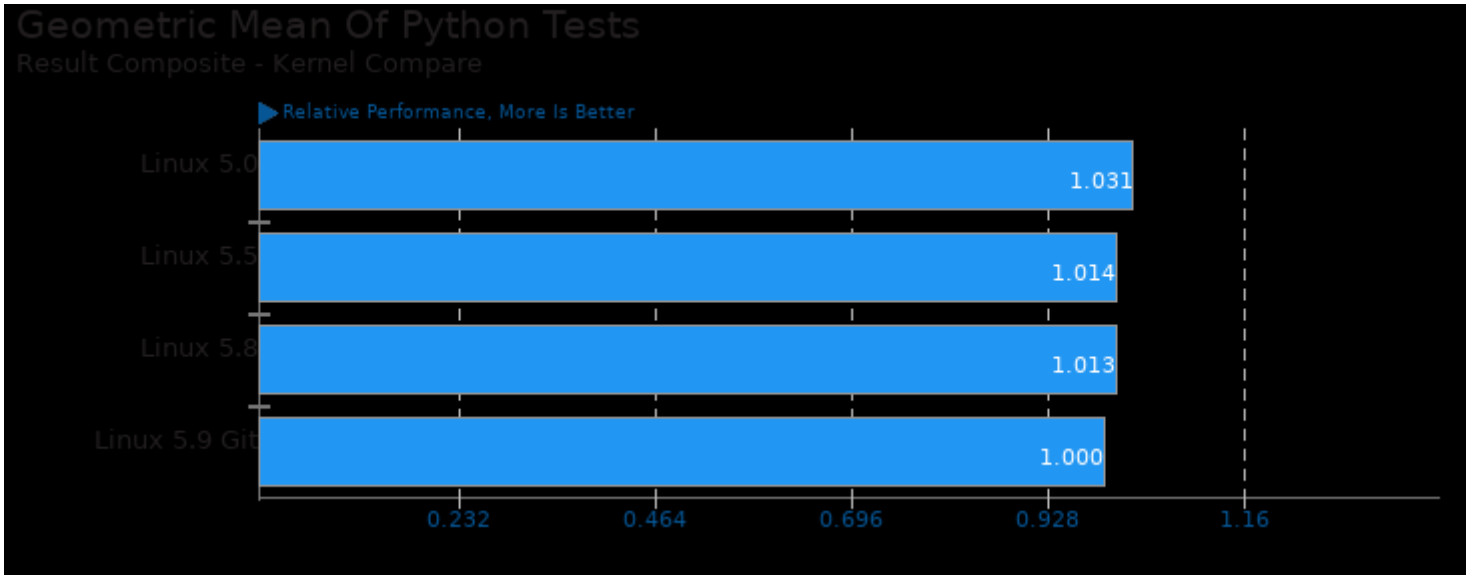


Geometric mean based upon tests: pts/hpcg, pts/minife, pts/lammps and system/opm

Kernel Compare

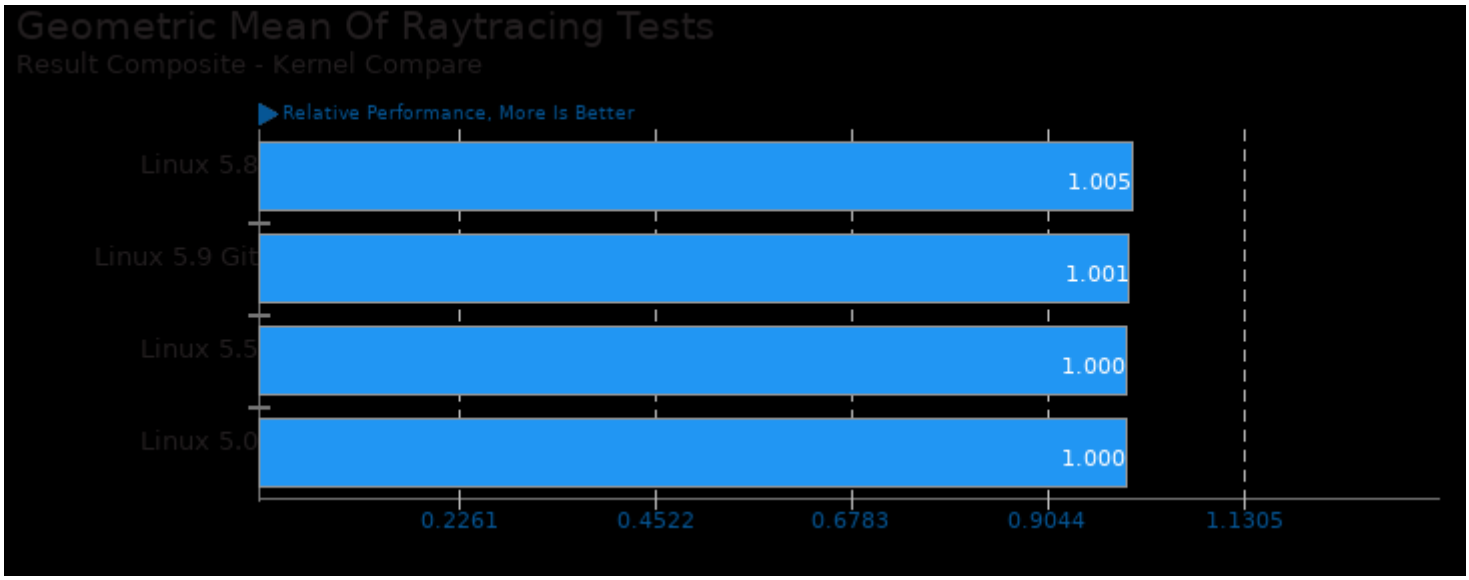


Geometric mean based upon tests: pts/sqlite-speedtest, pts/compress-zstd, pts/pybench, pts/build-apache, pts/build-linux-kernel, pts/build-llvm and pts/build2

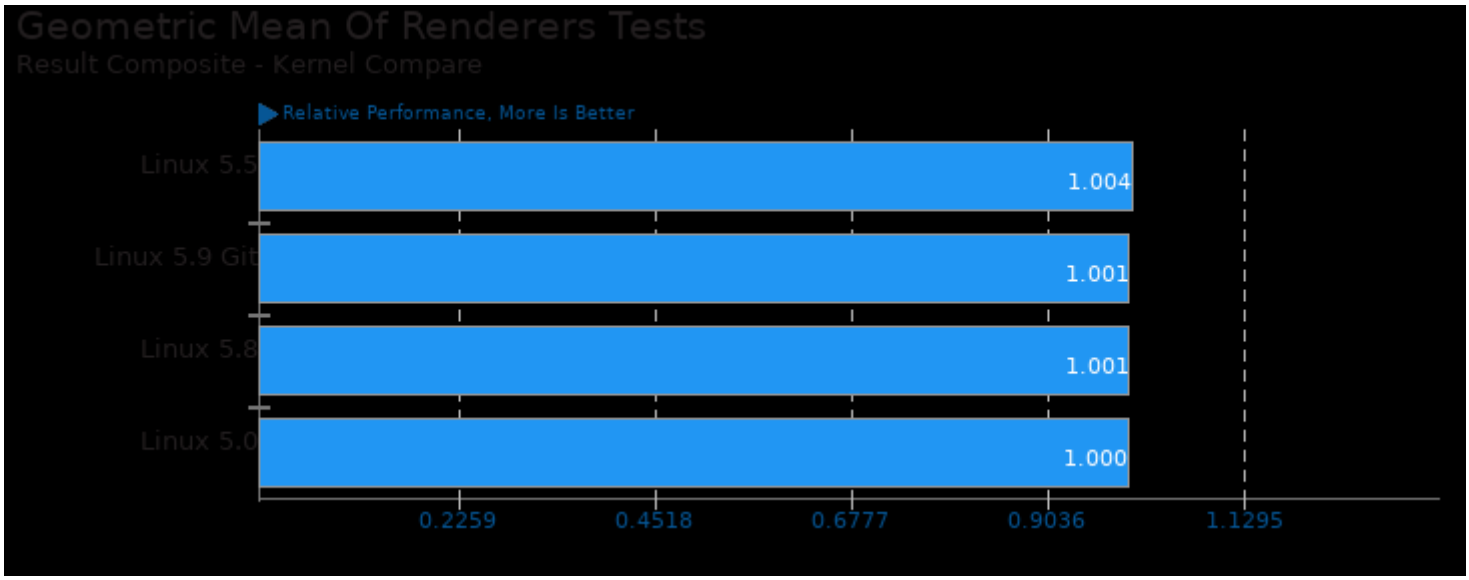


Geometric mean based upon tests: pts/compilebench, pts/build-llvm, pts/yafaray, system/ocrmypdf, pts/pybench and pts/ai-benchmark

Kernel Compare

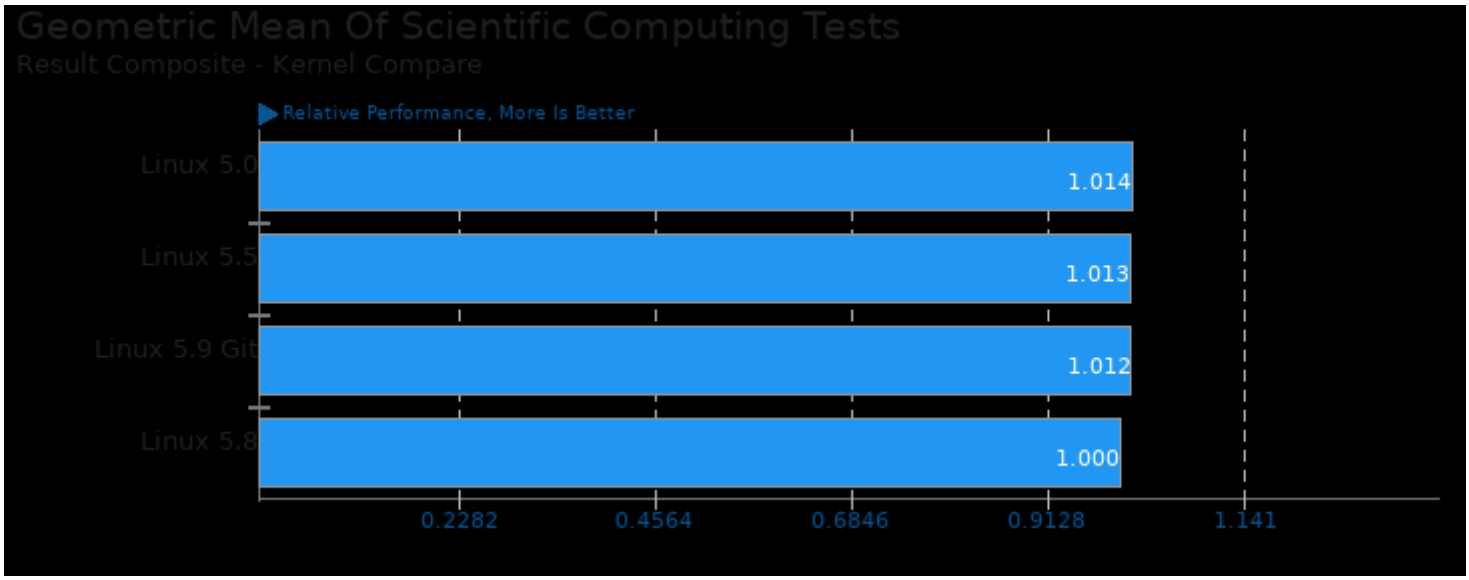


Geometric mean based upon tests: pts/ospray, pts/c-ray and pts/yafaray

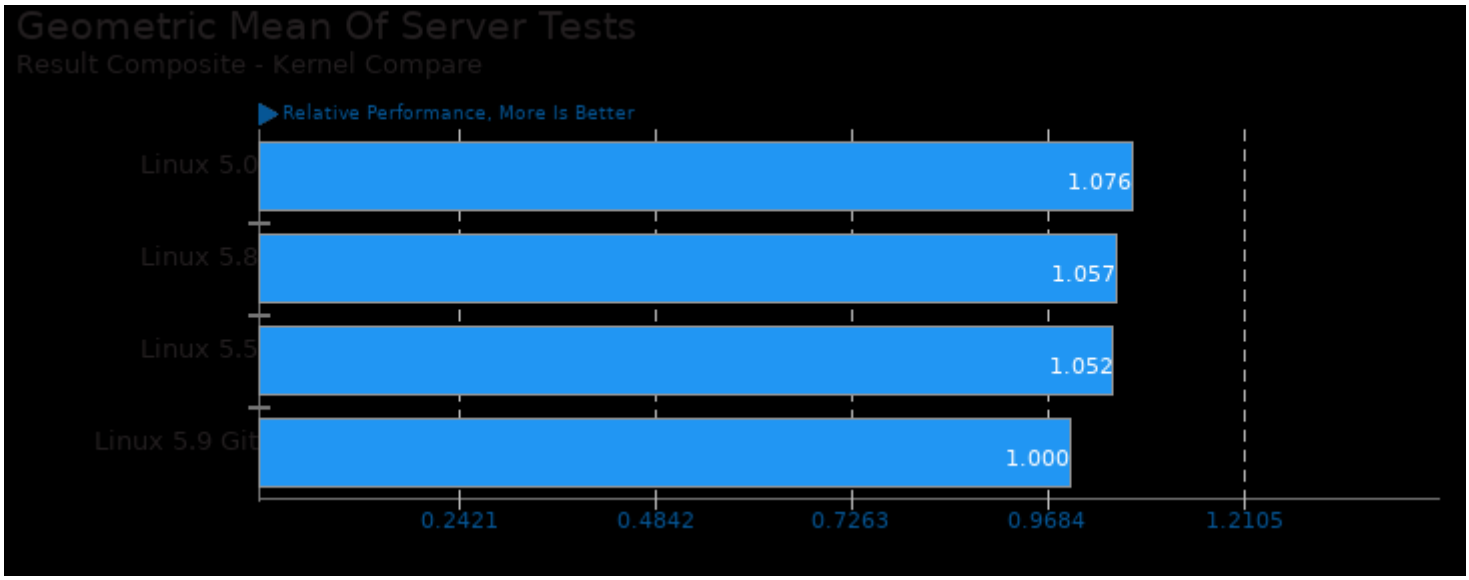


Geometric mean based upon tests: pts/ospray, pts/c-ray, pts/yafaray, pts/radiance and pts/luxcorerender

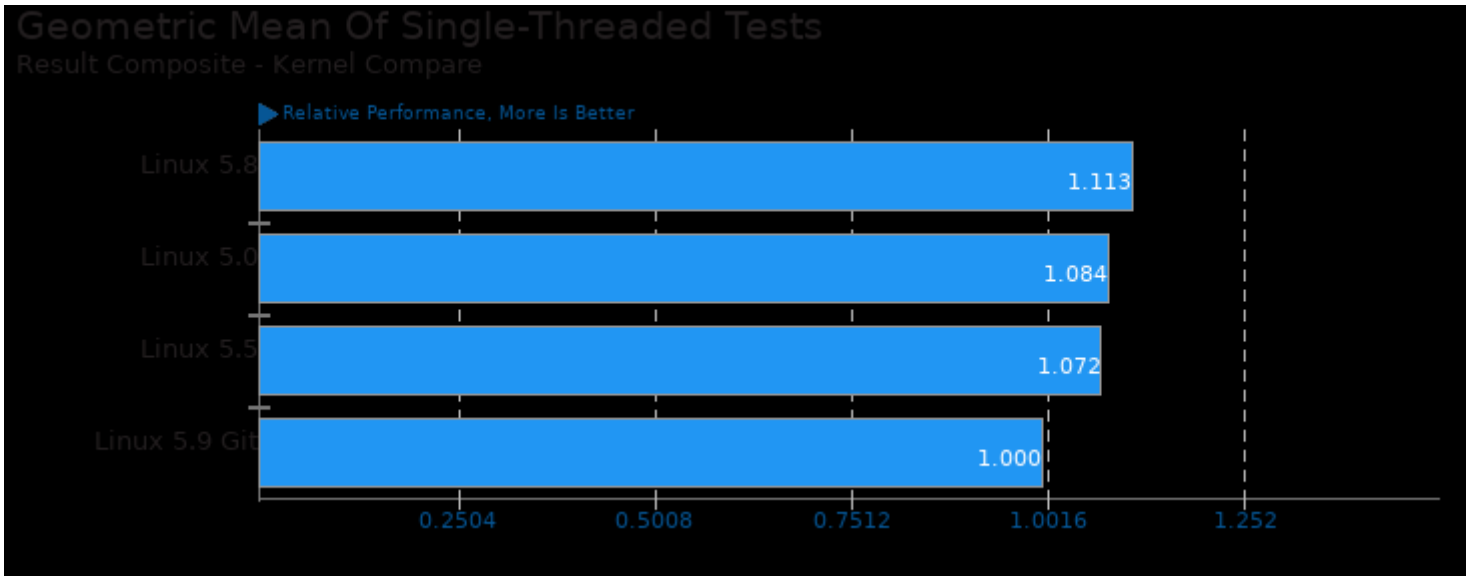
Kernel Compare



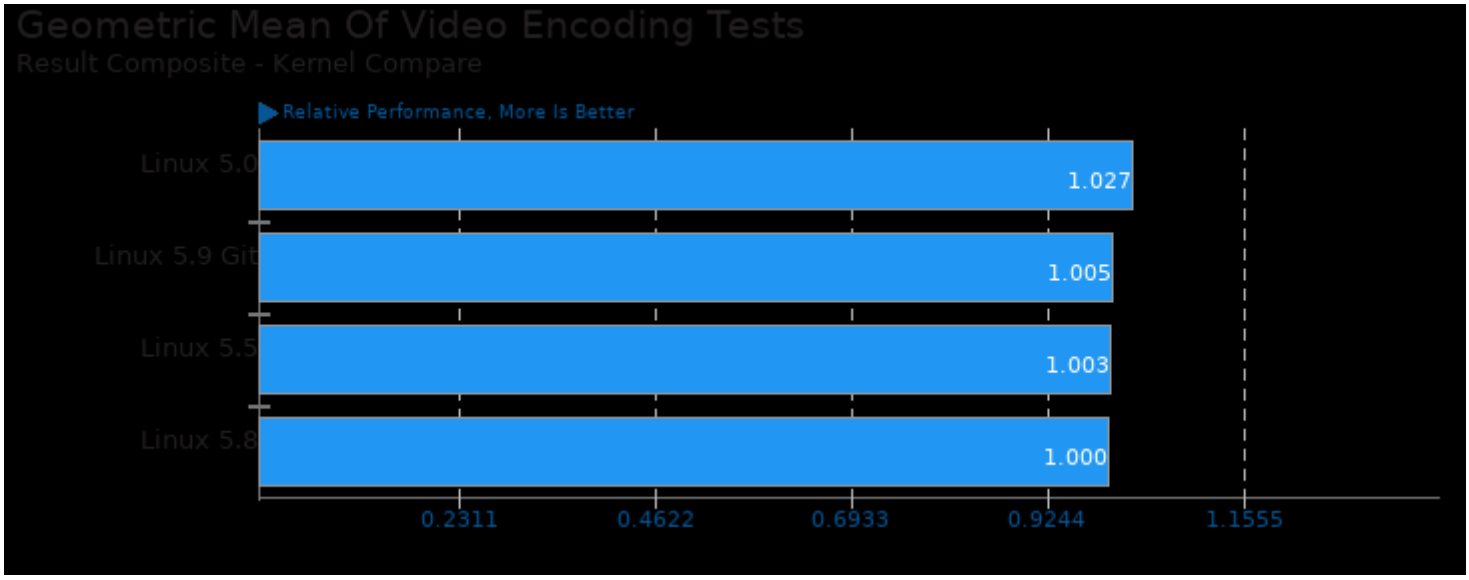
Geometric mean based upon tests: system/octave-benchmark, pts/namd, pts/lammps and pts/minife



Geometric mean based upon tests: pts/blogbench, pts/apache-siege, pts/mysqlslap, pts/mcperf, pts/redis, pts/keydb, pts/rocksdb, pts/phpbench, pts/sqlite, pts/sqlite-speedtest and pts/leveldb

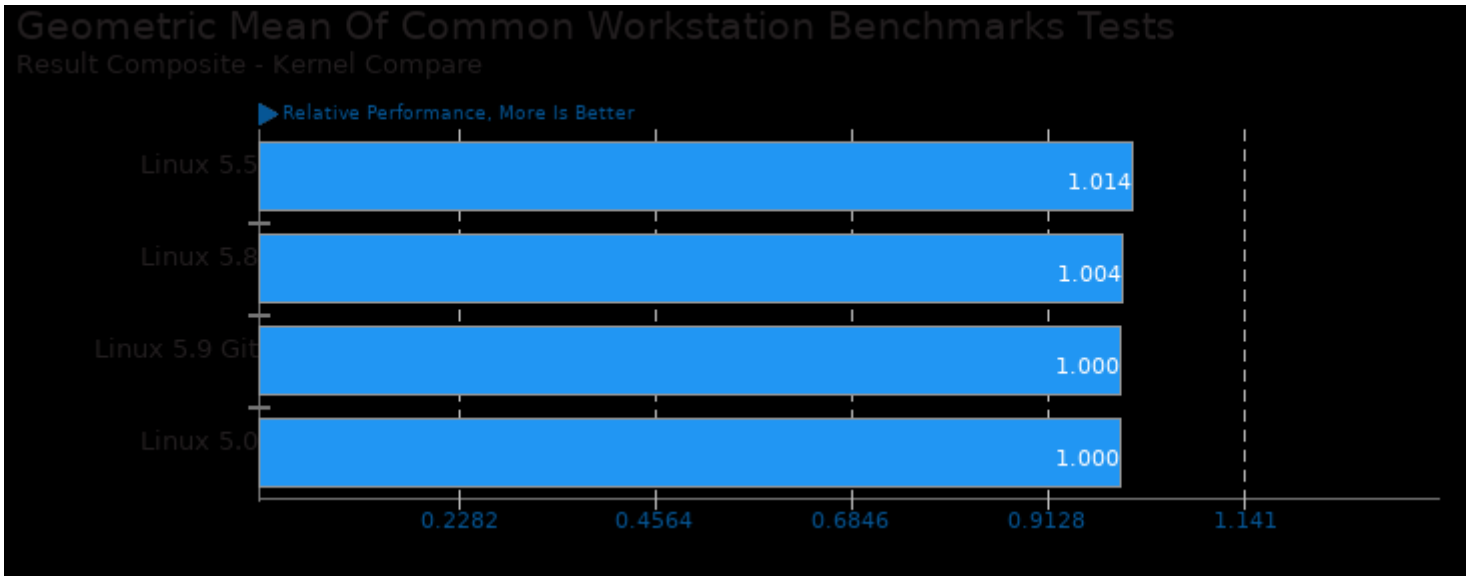


Geometric mean based upon tests: pts/swet, pts/deepspeech, pts/radiance, pts/redis, pts/pybench, pts/phpbench and system/tesseract-ocr



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

Kernel Compare



Geometric mean based upon tests: pts/brl-cad and pts/swet

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 19:16.