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Core i9 10980XE XanMod

Intel Core i9-10980XE testing with a Gigabyte X299X DESIGNARE 10G (F1 BIOS) and AMD Radeon RX 56/64 8GB on Ubuntu 20.04 via the Phoronix Test Suite.

Automated Executive Summary

Ubuntu 5.4.0-9-generic had the most wins, coming in first place for 56% of the tests.

Based on the geometric mean of all complete results, the fastest (Xanmod 5.4.10) was 1.018x the speed of the slowest (Ubuntu 5.4.0-9-generic).

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

Flexible IO Tester (Type: Random Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory) at 1.772x
Flexible IO Tester (Type: Random Write - IO Engine: POSIX AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory) at 1.771x
Flexible IO Tester (Type: Random Write - IO Engine: POSIX AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory) at 1.768x
Flexible IO Tester (Type: Random Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory) at 1.766x
Flexible IO Tester (Type: Sequential Write - IO Engine: POSIX AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk

Target: Default Test Directory) at 1.765x
Flexible IO Tester (Type: Sequential Write - IO Engine: POSIX AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory) at 1.763x
Flexible IO Tester (Type: Sequential Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory) at 1.583x
Flexible IO Tester (Type: Sequential Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory) at 1.581x
Stress-NG (Test: Socket Activity) at 1.565x
Flexible IO Tester (Type: Sequential Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory) at 1.54x.

Test Systems:

Ubuntu 5.4.0-9-generic

Processor: Intel Core i9-10980XE @ 4.60GHz (18 Cores / 36 Threads), Motherboard: Gigabyte X299X DESIGNARE 10G (F1 BIOS), Chipset: Intel Sky Lake-E DMI3 Registers, Memory: 32768MB, Disk: Samsung SSD 970 PRO 512GB, Graphics: AMD Radeon RX 56/64 8GB (1590/800MHz), Audio: Realtek ALC1220, Monitor: DELL P2415Q, Network: 2 x Intel 10G X550T + Intel Wi-Fi 6 AX200

OS: Ubuntu 20.04, Kernel: 5.4.0-9-generic (x86_64), Desktop: GNOME Shell 3.34.3, Display Server: X Server 1.20.5, Display Driver: amdgpu 19.1.0, OpenGL: 4.5 Mesa 19.2.4 (LLVM 9.0.0), Compiler: GCC 9.2.1 20191130, File-System: ext4, Screen Resolution: 3840x2160

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-link-mutex --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none,hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-build-config=bootstrap-lto-lean --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Disk Notes: NONE / errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: intel_pstate powersave - CPU Microcode: 0x500002c
Java Notes: OpenJDK Runtime Environment (build 11.0.5+10-post-Ubuntu-2ubuntu1)
Python Notes: Python 2.7.17 + Python 3.7.6
Security Notes: itlb_multihit: KVM: Vulnerable + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Vulnerable + spectre_v1: Vulnerable: __user pointer sanitization and usercopy barriers only; no swapgs barriers + spectre_v2: Vulnerable IBPB: disabled STIBP: disabled + tsx_async_abort: Mitigation of TSX disabled

Xanmod 5.4.10

Processor: Intel Core i9-10980XE @ 4.60GHz (18 Cores / 36 Threads), Motherboard: Gigabyte X299X DESIGNARE 10G (F1 BIOS), Chipset: Intel Sky Lake-E DMI3 Registers, Memory: 32768MB, Disk: Samsung SSD 970 PRO 512GB, Graphics: AMD Radeon RX 56/64 8GB (1590/800MHz), Audio: Realtek ALC1220, Monitor: DELL P2415Q, Network: 2 x Intel 10G X550T + Intel Wi-Fi 6 AX200

OS: Ubuntu 20.04, Kernel: 5.4.10-xanmod6 (x86_64), Desktop: GNOME Shell 3.34.3, Display Server: X Server 1.20.5, Display Driver: amdgpu 19.1.0, OpenGL: 4.5 Mesa 19.2.4 (LLVM 9.0.0), Compiler: GCC 9.2.1 20191130, File-System: ext4, Screen Resolution: 3840x2160

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-link-mutex --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none,hsa --enable-plugin --enable-shared --enable-threads=posix

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--host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-build-config=bootstrap-lto-lean --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Disk Notes: NONE / errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: intel_pstate powersave - CPU Microcode: 0x500002c
Java Notes: OpenJDK Runtime Environment (build 11.0.5+10-post-Ubuntu-2ubuntu1)
Python Notes: Python 2.7.17 + Python 3.7.6
Security Notes: itlb_multihit: KVM: Mitigation of Split huge pages + 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 Enhanced IBRS IBPB: conditional RSB filling + tsx_async_abort: Mitigation of TSX disabled

	Ubuntu 5.4.0-9-generic	Xanmod 5.4.10
SQLite - 1 (sec)	**46.971**	**46.934**
Normalized	99.92%	100%
Standard Deviation	0.3%	0.1%
SQLite - 8 (sec)	**162.121**	**155.428**
Normalized	95.87%	100%
Standard Deviation	0.9%	0.4%
Flexible IO Tester - Rand Read - Linux AIO - Yes - No - 2MB (MB/s)	**890**	**957**
Normalized	93%	100%
Standard Deviation	1%	0.4%
Flexible IO Tester - Rand Read - Linux AIO - Yes - No - 2MB (IOPS)	**442**	**475**
Normalized	93.05%	100%
Standard Deviation	0.9%	0.4%
Flexible IO Tester - Rand Read - Linux AIO - Yes - No - 4KB (MB/s)	**59.0**	**58.6**
Normalized	100%	99.32%
Standard Deviation	0.1%	0.5%
Flexible IO Tester - Rand Read - Linux AIO - Yes - No - 4KB (IOPS)	**15100**	**14967**
Normalized	100%	99.12%
Standard Deviation		0.8%
Flexible IO Tester - Rand Read - POSIX AIO - Yes - No - 2MB (MB/s)	**895**	**953**
Normalized	93.91%	100%
Standard Deviation	0.5%	0.6%
Flexible IO Tester - Rand Read - POSIX AIO - Yes - No - 2MB (IOPS)	**444**	**473**
Normalized	93.87%	100%
Standard Deviation	0.6%	0.6%
Flexible IO Tester - Rand Read - POSIX AIO - Yes - No - 4KB (MB/s)	**61.3**	**61.2**
Normalized	100%	99.84%
Standard Deviation	0.1%	0.2%
Flexible IO Tester - Rand Read - POSIX AIO - Yes - No - 4KB (IOPS)	**15700**	**15667**
Normalized	100%	99.79%
Standard Deviation		0.4%
Flexible IO Tester - Rand Write - Linux AIO - Yes - No - 2MB (MB/s)	**1322**	**2335**
Normalized	56.62%	100%

Standard Deviation	1.9%	3.6%
Flexible IO Tester - Rand Write - Linux AIO - Yes - No - 2MB (IOPS)	**657**	**1164**
Normalized	56.44%	100%
Standard Deviation	1.9%	3.6%
Flexible IO Tester - Rand Write - Linux AIO - Yes - No - 4KB (MB/s)	**1046**	**1152**
Normalized	90.8%	100%
Standard Deviation	1.8%	2.4%
Flexible IO Tester - Rand Write - Linux AIO - Yes - No - 4KB (IOPS)	**267667**	**295000**
Normalized	90.73%	100%
Standard Deviation	1.7%	2.4%
Flexible IO Tester - Rand Write - POSIX AIO - Yes - No - 2MB (MB/s)	**1441**	**2547**
Normalized	56.58%	100%
Standard Deviation	1.9%	3.4%
Flexible IO Tester - Rand Write - POSIX AIO - Yes - No - 2MB (IOPS)	**717**	**1270**
Normalized	56.46%	100%
Standard Deviation	1.9%	3.4%
Flexible IO Tester - Rand Write - POSIX AIO - Yes - No - 4KB (MB/s)	**963**	**1094**
Normalized	88.03%	100%
Standard Deviation	0.3%	0.8%
Flexible IO Tester - Rand Write - POSIX AIO - Yes - No - 4KB (IOPS)	**246667**	**279667**
Normalized	88.2%	100%
Standard Deviation	0.5%	0.8%
Flexible IO Tester - Seq Read - Linux AIO - Yes - No - 2MB (MB/s)	**2096**	**2707**
Normalized	77.43%	100%
Standard Deviation	0.2%	1.5%
Flexible IO Tester - Seq Read - Linux AIO - Yes - No - 2MB (IOPS)	**1045**	**1349**
Normalized	77.46%	100%
Standard Deviation	0.3%	1.5%
Flexible IO Tester - Seq Read - Linux AIO - Yes - No - 4KB (MB/s)	**2631**	**2380**
Normalized	100%	90.46%
Standard Deviation	0.2%	0.2%
Flexible IO Tester - Seq Read - Linux AIO - Yes - No - 4KB (IOPS)	**673667**	**609333**
Normalized	100%	90.45%
Standard Deviation	0.2%	0.3%
Flexible IO Tester - Seq Read - POSIX AIO - Yes - No - 2MB (MB/s)	**2058**	**2581**
Normalized	79.74%	100%
Standard Deviation	0.4%	0.5%
Flexible IO Tester - Seq Read - POSIX AIO - Yes - No - 2MB (IOPS)	**1025**	**1286**
Normalized	79.7%	100%
Standard Deviation	0.4%	0.6%

Flexible IO Tester - Seq Read - POSIX AIO - Yes - No - 4KB (MB/s)	**2533**	**1767**
Normalized	100%	69.76%
Standard Deviation	0.6%	0.8%
Flexible IO Tester - Seq Read - POSIX AIO - Yes - No - 4KB (IOPS)	**648333**	**452000**
Normalized	100%	69.72%
Standard Deviation	0.5%	0.9%
Flexible IO Tester - Seq Write - Linux AIO - Yes - No - 2MB (MB/s)	**1409**	**2227**
Normalized	63.27%	100%
Standard Deviation	1.4%	1.8%
Flexible IO Tester - Seq Write - Linux AIO - Yes - No - 2MB (IOPS)	**701**	**1110**
Normalized	63.15%	100%
Standard Deviation	1.5%	1.8%
Flexible IO Tester - Seq Write - Linux AIO - Yes - No - 4KB (MB/s)	**1344**	**2070**
Normalized	64.93%	100%
Standard Deviation	0.6%	0.7%
Flexible IO Tester - Seq Write - Linux AIO - Yes - No - 4KB (IOPS)	**344000**	**529667**
Normalized	64.95%	100%
Standard Deviation	0.6%	0.7%
Flexible IO Tester - Seq Write - POSIX AIO - Yes - No - 2MB (MB/s)	**1453**	**2561**
Normalized	56.74%	100%
Standard Deviation	1.7%	2.1%
Flexible IO Tester - Seq Write - POSIX AIO - Yes - No - 2MB (IOPS)	**723**	**1276**
Normalized	56.66%	100%
Standard Deviation	1.7%	2.1%
Flexible IO Tester - Seq Write - POSIX AIO - Yes - No - 4KB (MB/s)	**1142**	**1639**
Normalized	69.68%	100%
Standard Deviation	0.4%	0.4%
Flexible IO Tester - Seq Write - POSIX AIO - Yes - No - 4KB (IOPS)	**292333**	**419667**
Normalized	69.66%	100%
Standard Deviation	0.5%	0.5%
FS-Mark - 1.F.1.S (Files/s)	**167.4**	**165.2**
Normalized	100%	98.69%
Standard Deviation	0.2%	0.3%
FS-Mark - 5.F.1.S.4.T (Files/s)	**458.1**	**449.6**
Normalized	100%	98.14%
Standard Deviation	2.9%	0.2%
FS-Mark - 4.F.3.S.D.1.S (Files/s)	**167.5**	**165.9**
Normalized	100%	99.04%
Standard Deviation	0.2%	0.4%
Compile Bench - Compile (MB/s)	**2675**	**2611**
Normalized	100%	97.62%
Standard Deviation	0.9%	0.5%
Compile Bench - Initial Create (MB/s)	**809.35**	**781.93**
Normalized	100%	96.61%

Standard Deviation	2.2%	1.5%
Compile Bench - Read Compiled Tree (MB/s)	**3231**	**3205**
Normalized	100%	99.2%
Standard Deviation	2.1%	1.8%
t-test1 - 1 (sec)	**37.059**	**32.563**
Normalized	87.87%	100%
Standard Deviation	7.1%	24.9%
t-test1 - 2 (sec)	**15.284**	**12.133**
Normalized	79.38%	100%
Standard Deviation	3.6%	15.6%
Sockperf - Throughput (Messages/sec)	**507782**	**500758**
Normalized	100%	98.62%
Standard Deviation	1.2%	1.9%
Sockperf - Latency Ping Pong (usec)	**3.521**	**3.587**
Normalized	100%	98.16%
Standard Deviation	6.2%	7.4%
Sockperf - Latency Under Load (usec)	**37.074**	**41.275**
Normalized	100%	89.82%
Standard Deviation	27.6%	18.3%
Ethr - TCP - Latency - 1 (us)	**15.24**	**20.30**
Normalized	100%	75.07%
Standard Deviation	2.9%	4.3%
Ethr - HTTP - Bandwidth - 1 (Mbits/s)	**581.850625**	**549.427292**
Normalized	100%	94.43%
Standard Deviation	0.8%	0.2%
Ethr - TCP - Connections/s - 1 (Connections/sec)	**7030**	**6987**
Normalized	100%	99.39%
Standard Deviation	0.5%	0.2%
iPerf - 5201 - 10 Seconds - UDP - 100Mbit Objective - 1 (Mbits/s)	100	100
iPerf - 5201 - 10 Seconds - UDP - 1000Mbit Objective - 1 (Mbits/s)	1000	1000
iPerf - 5201 - 10 Seconds - UDP - 100Mbit Objective - 10 (Mbits/s)	1000	1000
iPerf - 5201 - 10 Seconds - UDP - 100Mbit Objective - 20 (Mbits/s)	2000	2000
iPerf - 5201 - 10 Seconds - UDP - 100Mbit Objective - 32 (Mbits/s)	3200	3200
iPerf - 5201 - 10 Seconds - UDP - 1000Mbit Objective - 10 (Mbits/s)	**9999**	**10000**
Normalized	99.99%	100%
Standard Deviation		0%
iPerf - 5201 - 10 Seconds - UDP - 1000Mbit Objective - 20 (Mbits/s)	**19997**	**19999**
Normalized	99.99%	100%
Standard Deviation	0%	
iPerf - 5201 - 10 Seconds - UDP - 1000Mbit Objective - 32 (Mbits/s)	**29286**	**29487**
Normalized	99.32%	100%
Standard Deviation	0.8%	2.8%
iPerf - 5201 - 10 Seconds - TCP - 1 (Mbits/s)	**38422**	**38269**
Normalized	100%	99.6%
Standard Deviation	0.5%	1.4%

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iPerf - 5201 - 10 Seconds - UDP - 1 (Mbits/s)	1.05	1.05
Standard Deviation	0%	0%
iPerf - 5201 - 10 Seconds - TCP - 10 (Mbits/s)	**37985**	**37622**
Normalized	100%	99.04%
Standard Deviation	2.9%	2.1%
iPerf - 5201 - 10 Seconds - TCP - 20 (Mbits/s)	**36604**	**36647**
Normalized	99.88%	100%
Standard Deviation	2.2%	1.1%
iPerf - 5201 - 10 Seconds - TCP - 32 (Mbits/s)	**36134**	**36382**
Normalized	99.32%	100%
Standard Deviation	0.2%	1.2%
iPerf - 5201 - 10 Seconds - UDP - 10 (Mbits/s)	**10.5**	**10.6**
Normalized	99.06%	100%
Standard Deviation	0%	1.1%
iPerf - 5201 - 10 Seconds - UDP - 20 (Mbits/s)	21	21
iPerf - 5201 - 10 Seconds - UDP - 32 (Mbits/s)	33.6	33.6
Standard Deviation	0%	0%
Timed HMMer Search - P.D.S (sec)	**8.087**	**8.018**
Normalized	99.15%	100%
Standard Deviation	2.2%	2.2%
libgav1 - Chimera 1080p (FPS)	**28.49**	**28.48**
Normalized	100%	99.96%
Standard Deviation	0.1%	0.2%
libgav1 - Summer Nature 4K (FPS)	**13.98**	**13.96**
Normalized	100%	99.86%
Standard Deviation	0.2%	0.1%
libgav1 - S.N.1 (FPS)	**43.98**	**43.67**
Normalized	100%	99.3%
Standard Deviation	0.1%	0.3%
libgav1 - C.1.1.b (FPS)	**13.16**	**13.20**
Normalized	99.7%	100%
Standard Deviation	0.1%	0.2%
Java SciMark - Composite (Mflops)	**2235**	**2232**
Normalized	100%	99.86%
Standard Deviation	0.4%	0.2%
DaCapo Benchmark - H2 (msec)	**6587**	**6687**
Normalized	100%	98.5%
Standard Deviation	2.2%	0.9%
DaCapo Benchmark - Jython (msec)	**4231**	**4263**
Normalized	100%	99.25%
Standard Deviation	1.7%	0.7%
DaCapo Benchmark - Tradesoap (msec)	**4723**	**4867**
Normalized	100%	97.04%
Standard Deviation	1.9%	2%
DaCapo Benchmark - Tradebeans (msec)	**9528**	**9512**
Normalized	99.83%	100%
Standard Deviation	2.1%	1%
Renaissance - Apache Spark ALS (ms)	**6035**	**6077**
Normalized	100%	99.31%
Standard Deviation	1.1%	2.3%
Renaissance - Apache Spark Bayes (ms)	**3366**	**3401**
Normalized	100%	98.98%
Standard Deviation	1.4%	1.2%
Renaissance - Savina Reactors.IO (ms)	**22005**	**21096**
Normalized	95.87%	100%

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Standard Deviation	14.7%	13.3%
Renaissance - A.S.P (ms)	**20268**	**20410**
Normalized	100%	99.3%
Standard Deviation	2%	1.3%
Renaissance - I.M.D.S (ms)	**8917**	**9128**
Normalized	100%	97.69%
Standard Deviation	2.9%	2.4%
Renaissance - A.U.C.T (ms)	**12040**	**11907**
Normalized	98.9%	100%
Standard Deviation	4.8%	4.8%
Node.js Express HTTP Load Test (Reqs/sec)	**11123**	**10732**
Normalized	100%	96.48%
Standard Deviation	2.9%	3.4%
dav1d - Chimera 1080p (FPS)	**276.44**	**280.23**
Normalized	98.65%	100%
Standard Deviation	0.5%	0.7%
dav1d - Summer Nature 4K (FPS)	**170.29**	**173.89**
Normalized	97.93%	100%
Standard Deviation	0.5%	1%
dav1d - S.N.1 (FPS)	**298.12**	**305.13**
Normalized	97.7%	100%
Standard Deviation	0.7%	0.5%
dav1d - C.1.1.b (FPS)	48.86	48.86
Standard Deviation	0.6%	0.1%
AOM AV1 - Speed 0 Two-Pass (FPS)	0.17	0.17
Standard Deviation	0%	3%
AOM AV1 - Speed 2 Two-Pass (FPS)	0.36	0.36
Standard Deviation	0%	0%
AOM AV1 - Speed 4 Realtime (FPS)	**0.63**	**0.62**
Normalized	100%	98.41%
Standard Deviation	0.9%	0%
AOM AV1 - Speed 5 Two-Pass (FPS)	**1.07**	**1.06**
Normalized	100%	99.07%
Standard Deviation	0%	0.5%
AOM AV1 - Speed 6 Realtime (FPS)	**9.59**	**9.66**
Normalized	99.28%	100%
Standard Deviation	0.5%	0.6%
AOM AV1 - Speed 8 Realtime (FPS)	**21.25**	**21.05**
Normalized	100%	99.06%
Standard Deviation	0.6%	1%
rav1e - 1 (FPS)	**0.183**	**0.182**
Normalized	100%	99.45%
Standard Deviation	0.3%	0.3%
rav1e - 5 (FPS)	**0.691**	**0.686**
Normalized	100%	99.28%
Standard Deviation	0.2%	0.4%
rav1e - 6 (FPS)	**1.065**	**1.058**
Normalized	100%	99.34%
Standard Deviation	0.3%	0.2%
rav1e - 9 (FPS)	**1.332**	**1.320**
Normalized	100%	99.1%
Standard Deviation	0.3%	0.2%
SVT-AV1 - Enc Mode 0 - 1080p (FPS)	**0.129**	**0.128**
Normalized	100%	99.22%
Standard Deviation	0%	0.2%

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SVT-AV1 - Enc Mode 4 - 1080p (FPS)	**5.448**	**5.441**
Normalized	100%	99.87%
Standard Deviation	0.2%	0.1%
SVT-AV1 - Enc Mode 8 - 1080p (FPS)	**42.197**	**42.222**
Normalized	99.94%	100%
Standard Deviation	0.7%	0.9%
SVT-HEVC - 1.8.b.Y.T.H.V.E (FPS)	**90.59**	**90.78**
Normalized	99.79%	100%
Standard Deviation	0.4%	0.1%
SVT-VP9 - VMAF Optimized - Bosphorus 1080p (FPS)	**307.19**	**308.99**
Normalized	99.42%	100%
Standard Deviation	1.9%	2.6%
SVT-VP9 - P.S.O - Bosphorus 1080p (FPS)	**316.20**	**317.35**
Normalized	99.64%	100%
Standard Deviation	1.1%	0.3%
SVT-VP9 - V.Q.O - Bosphorus 1080p (FPS)	**255.40**	**255.61**
Normalized	99.92%	100%
Standard Deviation	0.8%	0.2%
VP9 libvpx Encoding - Speed 0 (FPS)	**5.89**	**5.78**
Normalized	100%	98.13%
Standard Deviation	0.3%	0.4%
VP9 libvpx Encoding - Speed 5 (FPS)	**18.65**	**17.59**
Normalized	100%	94.32%
Standard Deviation	2.5%	1.2%
x264 - H.2.V.E (FPS)	**130.38**	**132.81**
Normalized	98.17%	100%
Standard Deviation	1.8%	1.1%
x265 - H.2.1.V.E (FPS)	**41.26**	**42.03**
Normalized	98.17%	100%
Standard Deviation	0.9%	0.8%
ACES DGEMM - S.F.P.R (GFLOP/s)	**7.462423**	**6.871490**
Normalized	100%	92.08%
Standard Deviation	0.5%	2.7%
Timed GCC Compilation - Time To Compile (sec)	**900.600**	**901.559**
Normalized	100%	99.89%
Standard Deviation	0%	0%
Timed LLVM Compilation - Time To Compile (sec)	**210.242**	**211.499**
Normalized	100%	99.41%
Build2 - Time To Compile (sec)	**68.642**	**69.008**
Normalized	100%	99.47%
Standard Deviation	0.7%	0.1%
rays1bench - Large Scene (mrays/s)	**98.73**	**98.56**
Normalized	100%	99.83%
Standard Deviation	0.1%	0%
DeepSpeech - CPU (sec)	**121.93789**	**121.89946**
Normalized	99.97%	100%
Standard Deviation	0.9%	0.9%
Hackbench - 1 - Thread (sec)	**2.609**	**2.593**
Normalized	99.39%	100%
Standard Deviation	1.3%	0.4%
Hackbench - 2 - Thread (sec)	**4.000**	**3.913**
Normalized	97.83%	100%
Standard Deviation	1%	1.7%
Hackbench - 4 - Thread (sec)	**12.380**	**13.426**
Normalized	100%	92.21%

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Standard Deviation	5%	2%
Hackbench - 8 - Thread (sec)	**30.232**	**32.887**
Normalized	100%	91.93%
Standard Deviation	1.9%	4.1%
Hackbench - 1 - Process (sec)	**2.395**	**2.375**
Normalized	99.16%	100%
Standard Deviation	0.5%	1%
Hackbench - 16 - Thread (sec)	**50.313**	**40.911**
Normalized	81.31%	100%
Standard Deviation	11.2%	1.5%
Hackbench - 2 - Process (sec)	**3.553**	**3.511**
Normalized	98.82%	100%
Standard Deviation	0.1%	0.5%
Hackbench - 4 - Process (sec)	**11.438**	**12.183**
Normalized	100%	93.88%
Standard Deviation	6%	6.7%
Hackbench - 8 - Process (sec)	**27.912**	**28.952**
Normalized	100%	96.41%
Standard Deviation	5.1%	4.7%
Hackbench - 16 - Process (sec)	**42.066**	**38.270**
Normalized	90.98%	100%
Standard Deviation	1.9%	1.1%
Numpy Benchmark (sec)	**198.611**	**196.021**
Normalized	98.7%	100%
Standard Deviation	1.5%	1%
ASKAP - tConvolve OpenMP - Gridding (Million Grid Points/sec)	**3146**	**2414**
Normalized	100%	76.73%
Standard Deviation	10.8%	6.7%
ASKAP - tConvolve OpenMP - Degridding (Million Grid Points/sec)	**5221**	**3768**
Normalized	100%	72.17%
Standard Deviation	0.7%	0.7%
GROMACS - Water Benchmark (Ns/Day)	**1.592**	**1.593**
Normalized	99.94%	100%
Standard Deviation	0.1%	0.3%
SQLite Speedtest - Timed Time - Size 1,000 (sec)	**57.161**	**56.845**
Normalized	99.45%	100%
Standard Deviation	0.2%	0.9%
Darktable - Boat - CPU-only (sec)	**8.632**	**8.676**
Normalized	100%	99.49%
Standard Deviation	0.1%	0%
Darktable - Masskrug - CPU-only (sec)	**4.510**	**4.505**
Normalized	99.89%	100%
Standard Deviation	1%	0.4%
Darktable - Server Rack - CPU-only (sec)	**0.109**	**0.106**
Normalized	97.25%	100%
Standard Deviation	1.4%	2.8%
Darktable - Server Room - CPU-only (sec)	**2.618**	**2.616**
Normalized	99.92%	100%
Standard Deviation	0.4%	0.6%
GEGL - Crop (sec)	**8.920**	**8.966**
Normalized	100%	99.49%
Standard Deviation	0.3%	0.5%
GEGL - Scale (sec)	**6.829**	**6.754**

Normalized	98.9%	100%
Standard Deviation	0.3%	1.5%
GEGL - Cartoon (sec)	**89.598**	**90.005**
Normalized	100%	99.55%
Standard Deviation	0.1%	0.1%
GEGL - Reflect (sec)	**30.284**	**30.430**
Normalized	100%	99.52%
Standard Deviation	0.2%	0.4%
GEGL - Antialias (sec)	**38.433**	**38.513**
Normalized	100%	99.79%
Standard Deviation	0.2%	0.5%
GEGL - Tile Glass (sec)	**30.495**	**30.457**
Normalized	99.88%	100%
Standard Deviation	0.2%	0.2%
GEGL - Wavelet Blur (sec)	**62.080**	**62.403**
Normalized	100%	99.48%
Standard Deviation	0.3%	0.6%
GEGL - Color Enhance (sec)	**56.650**	**56.816**
Normalized	100%	99.71%
Standard Deviation	0.2%	0.1%
GEGL - Rotate 90 Degrees (sec)	**39.788**	**39.138**
Normalized	98.37%	100%
Standard Deviation	2.7%	0.3%
GIMP - resize (sec)	**10.130**	**10.373**
Normalized	100%	97.66%
Standard Deviation	1.1%	1.9%
GIMP - rotate (sec)	**14.193**	**14.251**
Normalized	100%	99.59%
Standard Deviation	1.3%	1.1%
GIMP - auto-levels (sec)	**15.437**	**15.834**
Normalized	100%	97.49%
Standard Deviation	0.7%	1.6%
GIMP - unsharp-mask (sec)	**18.743**	**18.868**
Normalized	100%	99.34%
Standard Deviation	2.6%	1.5%
Stress-NG - Forking (Bogo Ops/s)	**104187**	**93780**
Normalized	100%	90.01%
Standard Deviation	0.7%	0.2%
Stress-NG - CPU Stress (Bogo Ops/s)	**6894**	**6865**
Normalized	100%	99.57%
Standard Deviation	0.1%	0.1%
Stress-NG - Semaphores (Bogo Ops/s)	**3355761**	**3194935**
Normalized	100%	95.21%
Standard Deviation	1.9%	2.9%
Stress-NG - Socket Activity (Bogo Ops/s)	**12948**	**8271**
Normalized	100%	63.88%
Standard Deviation	0.8%	2.6%
Stress-NG - Context Switching (Bogo Ops/s)	**30070723**	**20033098**
Normalized	100%	66.62%
Standard Deviation	1.6%	1.5%
Stress-NG - S.V.M.P (Bogo Ops/s)	**8226987**	**10336693**
Normalized	79.59%	100%
Standard Deviation	0.1%	0.1%
ctx_clock - C.S.T (Clocks)	**121**	**120**
Normalized	99.17%	100%

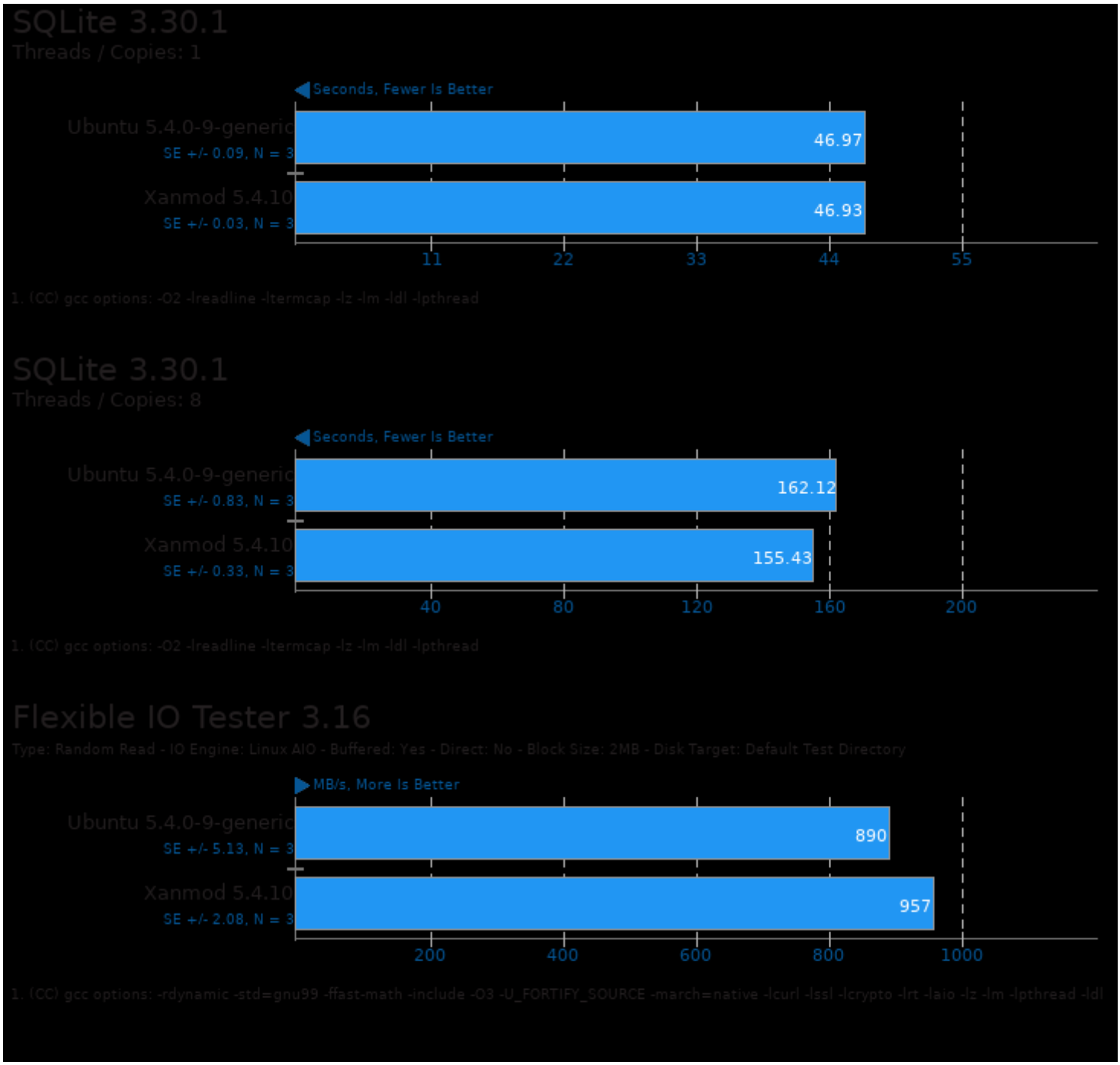
Standard Deviation		1%
Blender - BMW27 - CPU-Only (sec)	**92.75**	**93.16**
Normalized	100%	99.56%
Standard Deviation	0.4%	0.2%
Blender - Classroom - CPU-Only (sec)	**268.73**	**268.11**
Normalized	99.77%	100%
Standard Deviation	0.3%	0.2%
Blender - Fishy Cat - CPU-Only (sec)	**143.22**	**143.27**
Normalized	100%	99.97%
Standard Deviation	0%	0.1%
Blender - Barbershop - CPU-Only (sec)	**373.71**	**374.39**
Normalized	100%	99.82%
Standard Deviation	0.1%	0%
Blender - Pabellon Barcelona - CPU-Only (sec)	**331.96**	**332.11**
Normalized	100%	99.95%
Standard Deviation	0%	0%
PyBench - T.F.A.T.T (Milliseconds)	**895**	**892**
Normalized	99.66%	100%
Standard Deviation	0.5%	0.2%
NGINX Benchmark - S.W.P.S (Reqs/sec)	**55339**	**47846**
Normalized	100%	86.46%
Standard Deviation	0.7%	1.2%
Apache Benchmark - S.W.P.S (Reqs/sec)	**31850**	**30853**
Normalized	100%	96.87%
Standard Deviation	2.1%	2.6%
PHPBench - P.B.S (Score)	**775667**	**774756**
Normalized	100%	99.88%
Standard Deviation	0.3%	0.1%
Selenium - ARES-6 - Firefox (ms)	**54.38**	**58.94**
Normalized	100%	92.26%
Standard Deviation	0.8%	0.8%
Selenium - Kraken - Firefox (ms)	**853.5**	**921.2**
Normalized	100%	92.65%
Standard Deviation	0.4%	0.9%
Selenium - Octane - Firefox (Geometric Mean)	**36975**	**32860**
Normalized	100%	88.87%
Standard Deviation	0.9%	1%
Selenium - WebXPRT - Firefox (Score)	**215**	**206**
Normalized	100%	95.81%
Standard Deviation	0.5%	1.3%
Selenium - CanvasMark - Firefox (Score)	**11881**	**11713**
Normalized	100%	98.59%
Standard Deviation	6.4%	2.6%
Selenium - StyleBench - Firefox (Runs / Minute)	**62.5**	**60.7**
Normalized	100%	97.12%
Standard Deviation	0.3%	0.3%
Selenium - Jetstream 2 - Firefox (Score)	**81.810**	**76.390**
Normalized	100%	93.37%
Standard Deviation	2.1%	2.3%
Selenium - Speedometer - Firefox (Runs/min)	**81.1**	**76.6**
Normalized	100%	94.45%
Standard Deviation	0.1%	0.8%
Selenium - PSPDFKit WASM - Firefox (Score)	**1402**	**1580**
Normalized	100%	88.73%
Standard Deviation	1.3%	1.7%

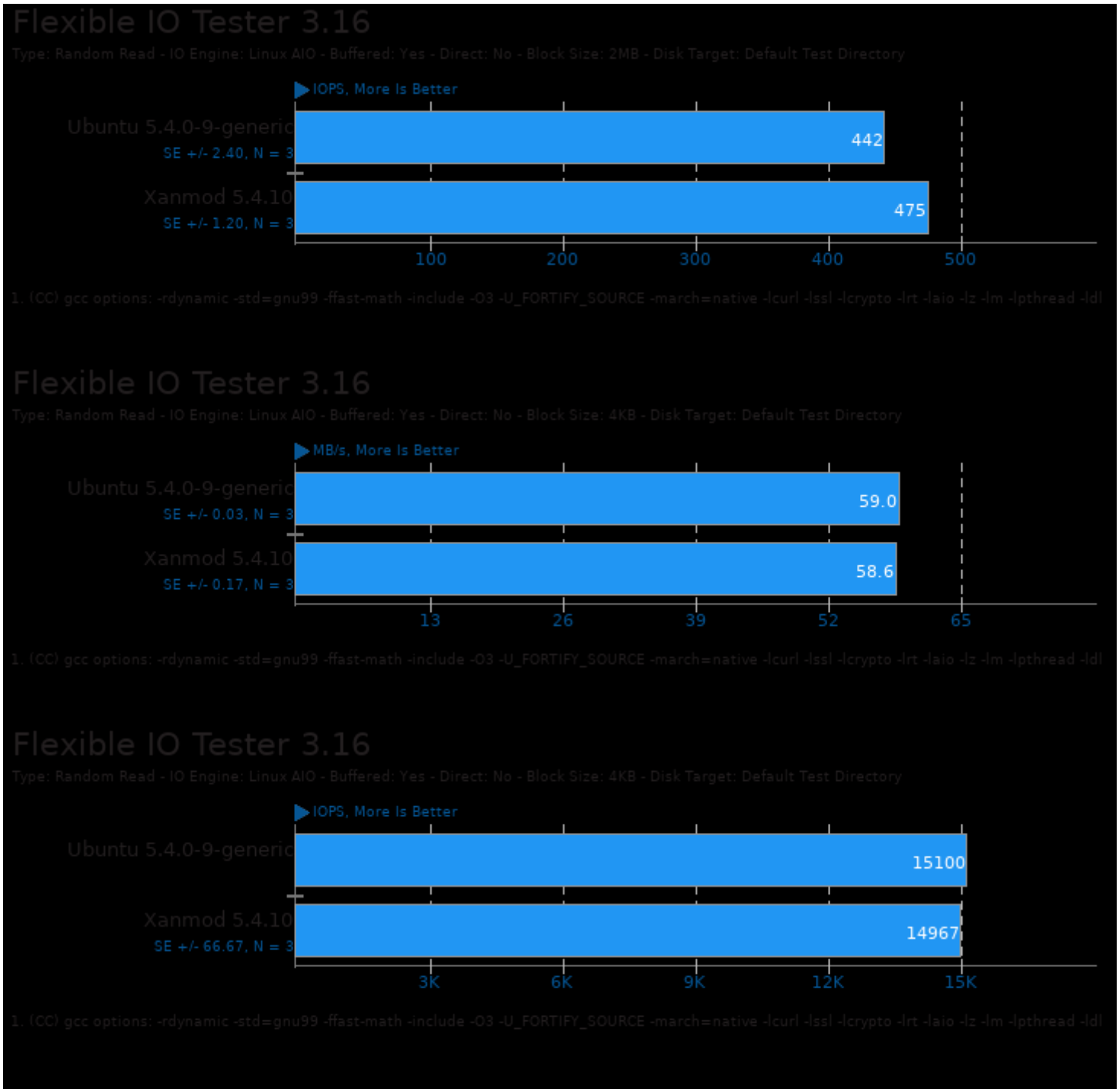
Core i9 10980XE XanMod

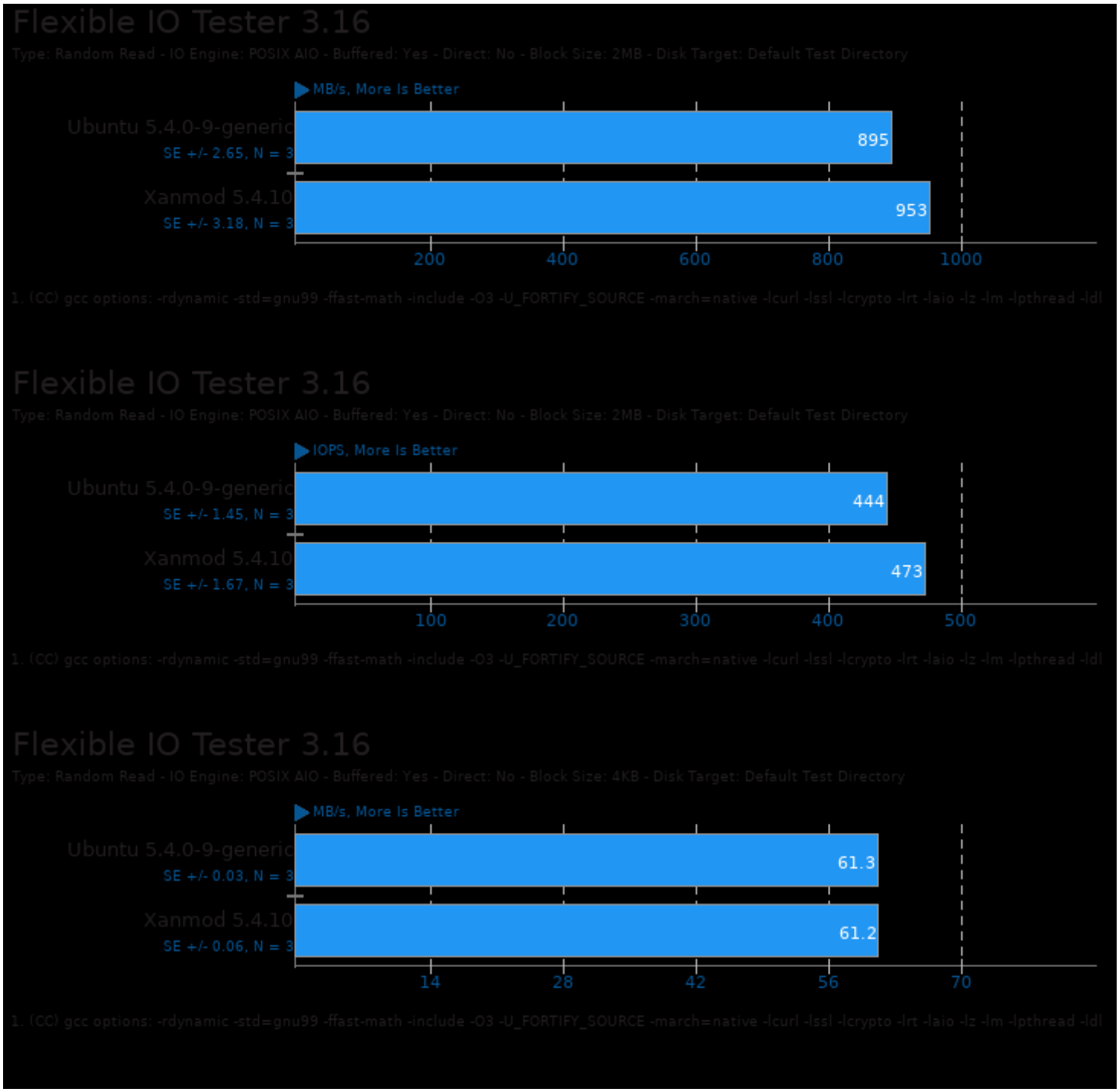
Selenium - W.i - Firefox (ms)	**29.3**	**32.1**
Normalized	100%	91.28%
Standard Deviation	4.5%	0.3%
Selenium - W.c - Firefox (ms)	**458.8**	**458.7**
Normalized	99.98%	100%
Standard Deviation	0.1%	0.2%
Mlpack Benchmark - scikit_svm (sec)	**15.95**	**15.80**
Normalized	99.06%	100%
Standard Deviation	0.1%	0.3%
Scikit-Learn (sec)	**8.809**	**8.804**
Normalized	99.94%	100%
Standard Deviation	0.4%	0.5%
Sunflow Rendering System - G.I.I.S (sec)	**0.841**	**0.839**
Normalized	99.76%	100%
Standard Deviation	1%	2.9%
Systemd Total Boot Time - Kernel (ms)	**4629**	**5439**
Normalized	100%	85.11%
OSBench - Create Files (us/Event)	**10.078925**	**10.177751**
Normalized	100%	99.03%
Standard Deviation	0.6%	0.5%
OSBench - Create Threads (us/Event)	**14.053186**	**16.196569**
Normalized	100%	86.77%
Standard Deviation	0.8%	0.8%
OSBench - Launch Programs (us/Event)	**37.147403**	**45.319398**
Normalized	100%	81.97%
Standard Deviation	3%	0.5%
OSBench - Create Processes (us/Event)	**32.508373**	**33.550262**
Normalized	100%	96.89%
Standard Deviation	2.7%	1.1%
OSBench - Memory Allocations (Ns/Event)	**77.122053**	**75.885058**
Normalized	98.4%	100%
Standard Deviation	1%	0.4%
High Performance Conjugate Gradient (GFLOP/s)	**7.87384**	**7.87100**
Normalized	100%	99.96%
Standard Deviation	0.1%	0.1%
LeelaChessZero - BLAS (Nodes/s)	**1613**	**1621**
Normalized	99.51%	100%
Standard Deviation	4.8%	4.7%
LeelaChessZero - Rand (Nodes/s)	**77339**	**67280**
Normalized	100%	86.99%
Standard Deviation	0.4%	0.4%
LAMMPS Molecular Dynamics Simulator - Rhodopsin Protein (ns/day)	**12.093**	**12.194**
Normalized	99.17%	100%
Standard Deviation	2.8%	1.3%
PyPerformance - go (Milliseconds)	203	203
PyPerformance - 2to3 (Milliseconds)	**302**	**306**
Normalized	100%	98.69%
Standard Deviation	0.7%	0.9%
PyPerformance - chaos (Milliseconds)	**89.9**	**89.7**
Normalized	99.78%	100%
Standard Deviation	0.3%	0.2%
PyPerformance - float (Milliseconds)	**90.9**	**91.1**
Normalized	100%	99.78%
Standard Deviation	0.3%	0.3%

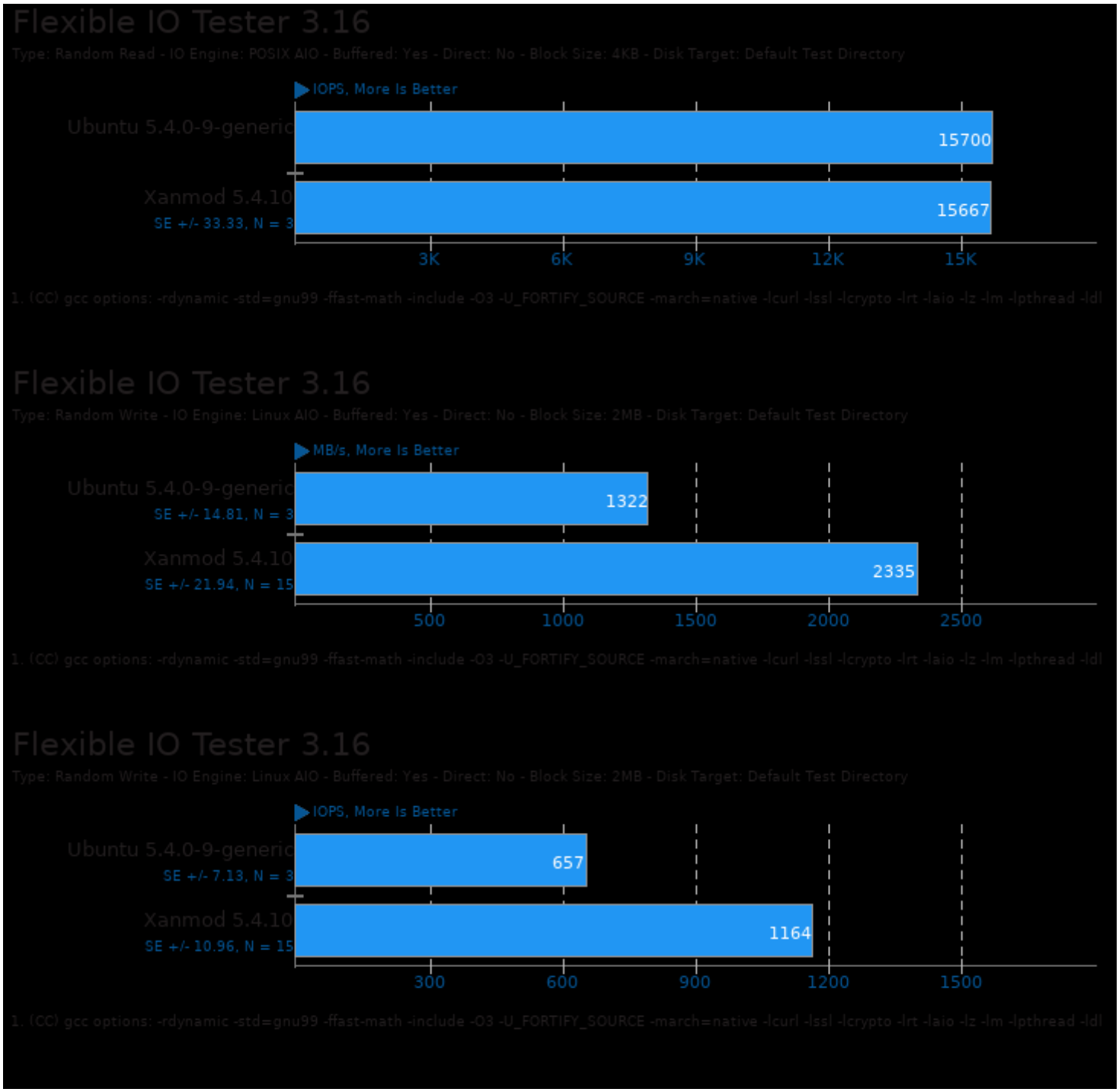
Core i9 10980XE XanMod

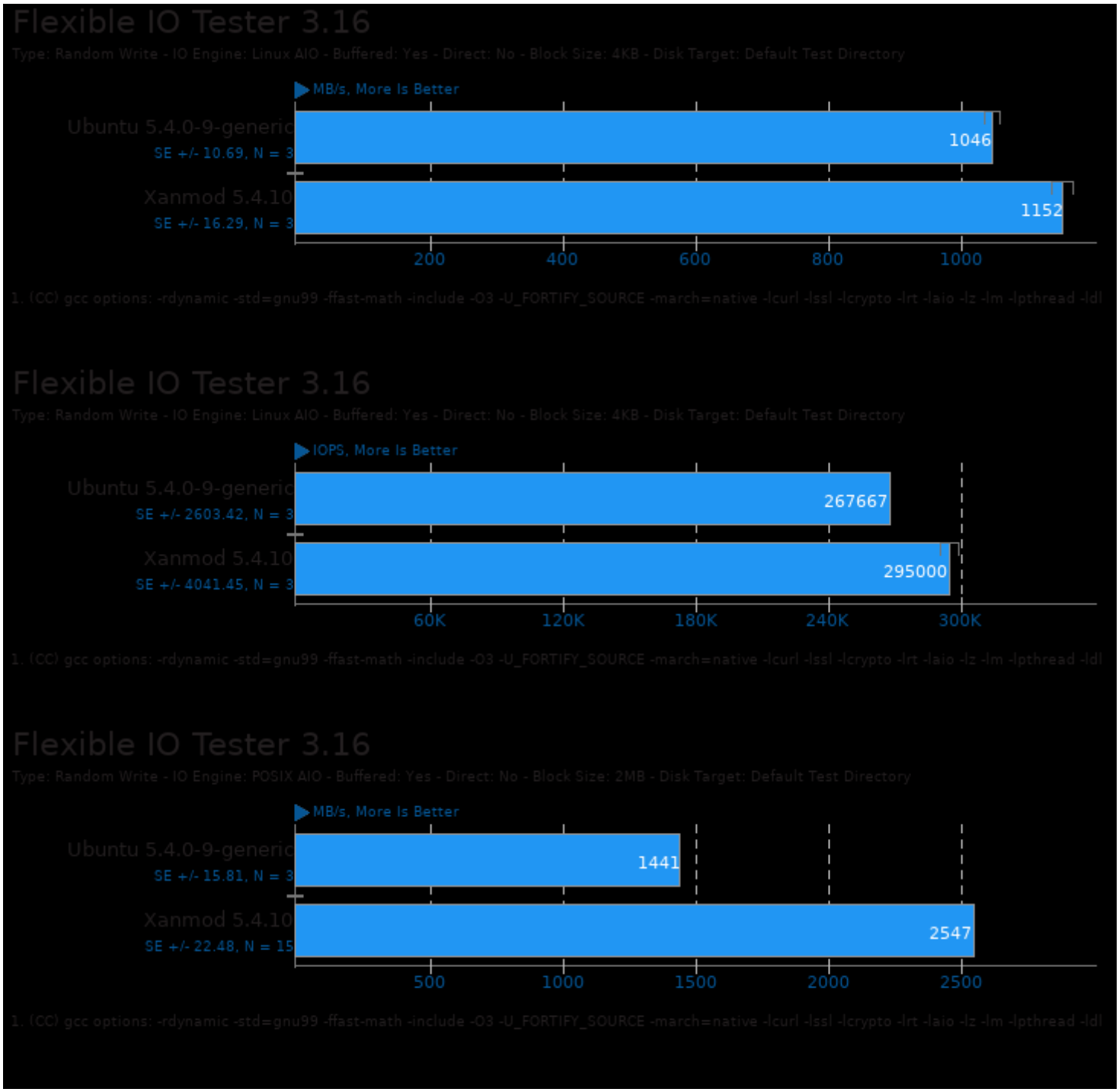
PyPerformance - nbody (Milliseconds)	**97.3**	**97.1**
Normalized	99.79%	100%
Standard Deviation	0.1%	0.1%
PyPerformance - pathlib (Milliseconds)	**15.7**	**15.6**
Normalized	99.36%	100%
Standard Deviation	0.4%	0.4%
PyPerformance - raytrace (Milliseconds)	**395**	**392**
Normalized	99.24%	100%
Standard Deviation	0.3%	
PyPerformance - json_loads (Milliseconds)	**20.8**	**20.7**
Normalized	99.52%	100%
Standard Deviation	0.3%	0.3%
PyPerformance - crypto_pyaes (Milliseconds)	**85.0**	**84.9**
Normalized	99.88%	100%
Standard Deviation	0.1%	0%
PyPerformance - regex_compile (Milliseconds)	146	146
PyPerformance - python_startup (Milliseconds)	**18.5**	**17.8**
Normalized	96.22%	100%
Standard Deviation	4.7%	3.9%
PyPerformance - django_template (Milliseconds)	**48.1**	**48.0**
Normalized	99.79%	100%
Standard Deviation	0.2%	0.1%
PyPerformance - pickle_pure_python (Milliseconds)	384	384
Standard Deviation	0.2%	0.2%

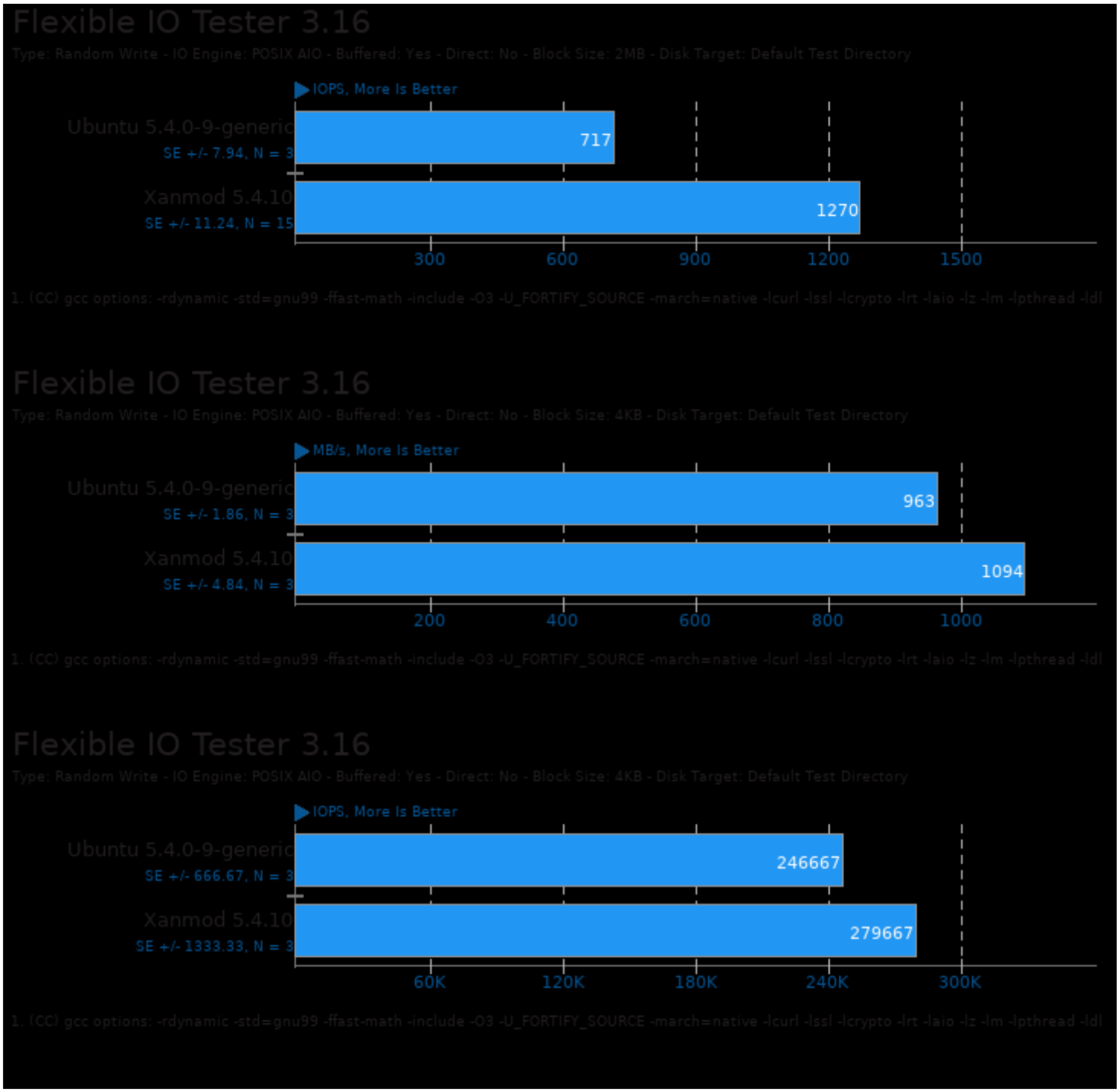

SQLite 3.30.1
Threads / Copies: 1
Seconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.09, N = 3
46.97
Xanmod 5.4.10
SE +/- 0.03, N = 3
46.93
11
22
33
44
55
1. (CC) gcc options: -O2 -lreadline -ltermcap -lz -lm -ldl -lpthread
SQLite 3.30.1
Threads / Copies: 8
Seconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.83, N = 3
162.12
Xanmod 5.4.10
SE +/- 0.33, N = 3
155.43
40
80
120
160
200
1. (CC) gcc options: -O2 -lreadline -ltermcap -lz -lm -ldl -lpthread
Flexible IO Tester 3.16
Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory
MB/s, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 5.13, N = 3
890
Xanmod 5.4.10
SE +/- 2.08, N = 3
957
200
400
600
800
1000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -lcurl -lssl -lcrypto -lrt -laio -lz -lm -lpthread -ldl

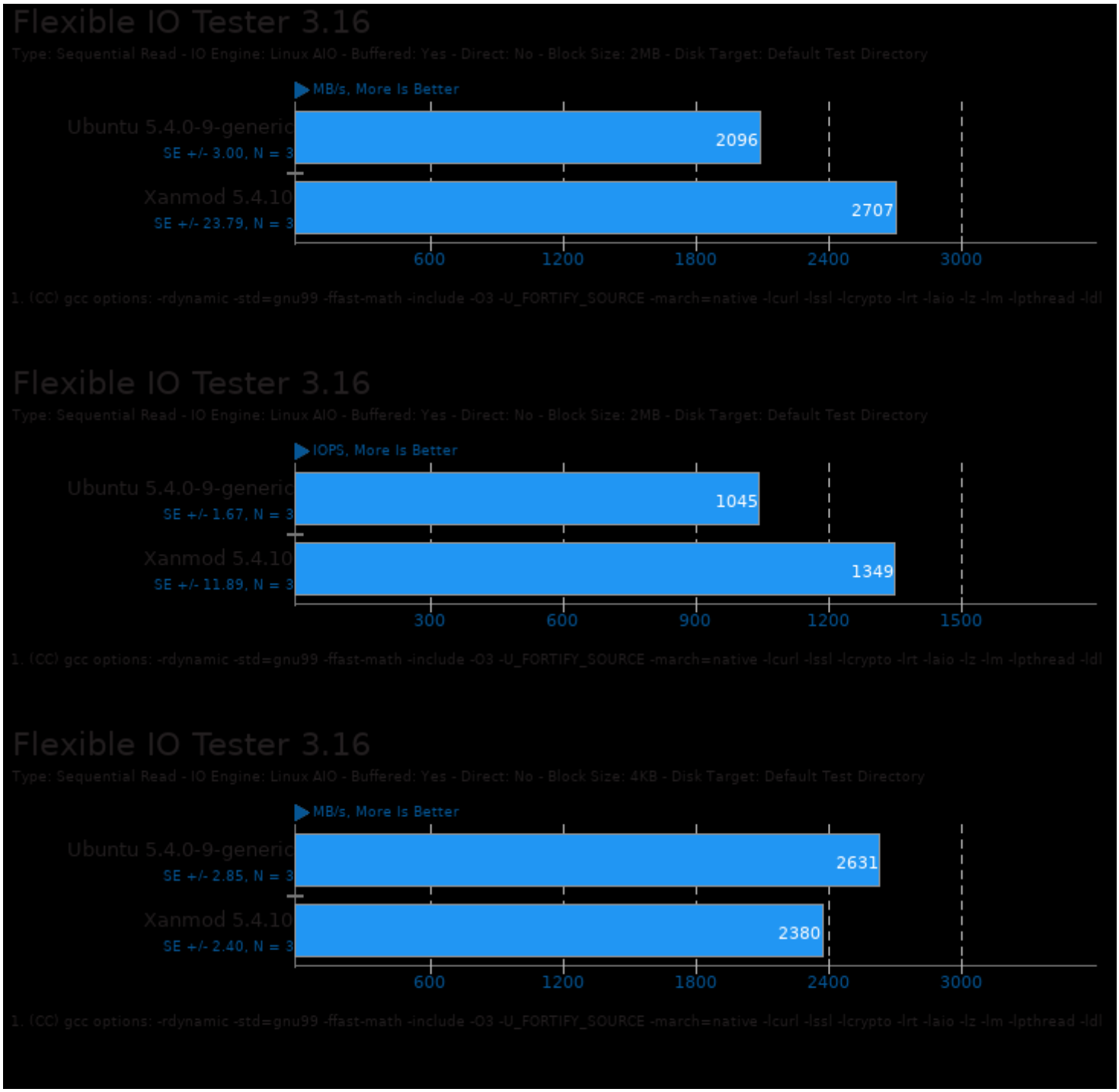

Flexible IO Tester 3.16
Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory
IOPS, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 2.40, N = 3
442
Xanmod 5.4.10
SE +/- 1.20, N = 3
475
100
200
300
400
500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -lcurl -lssl -lcrypto -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.16
Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.03, N = 3
59.0
Xanmod 5.4.10
SE +/- 0.17, N = 3
58.6
13
26
39
52
65
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -lcurl -lssl -lcrypto -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.16
Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
Ubuntu 5.4.0-9-generic
15100
Xanmod 5.4.10
SE +/- 66.67, N = 3
14967
3K
6K
9K
12K
15K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -lcurl -lssl -lcrypto -lrt -laio -lz -lm -lpthread -ldl

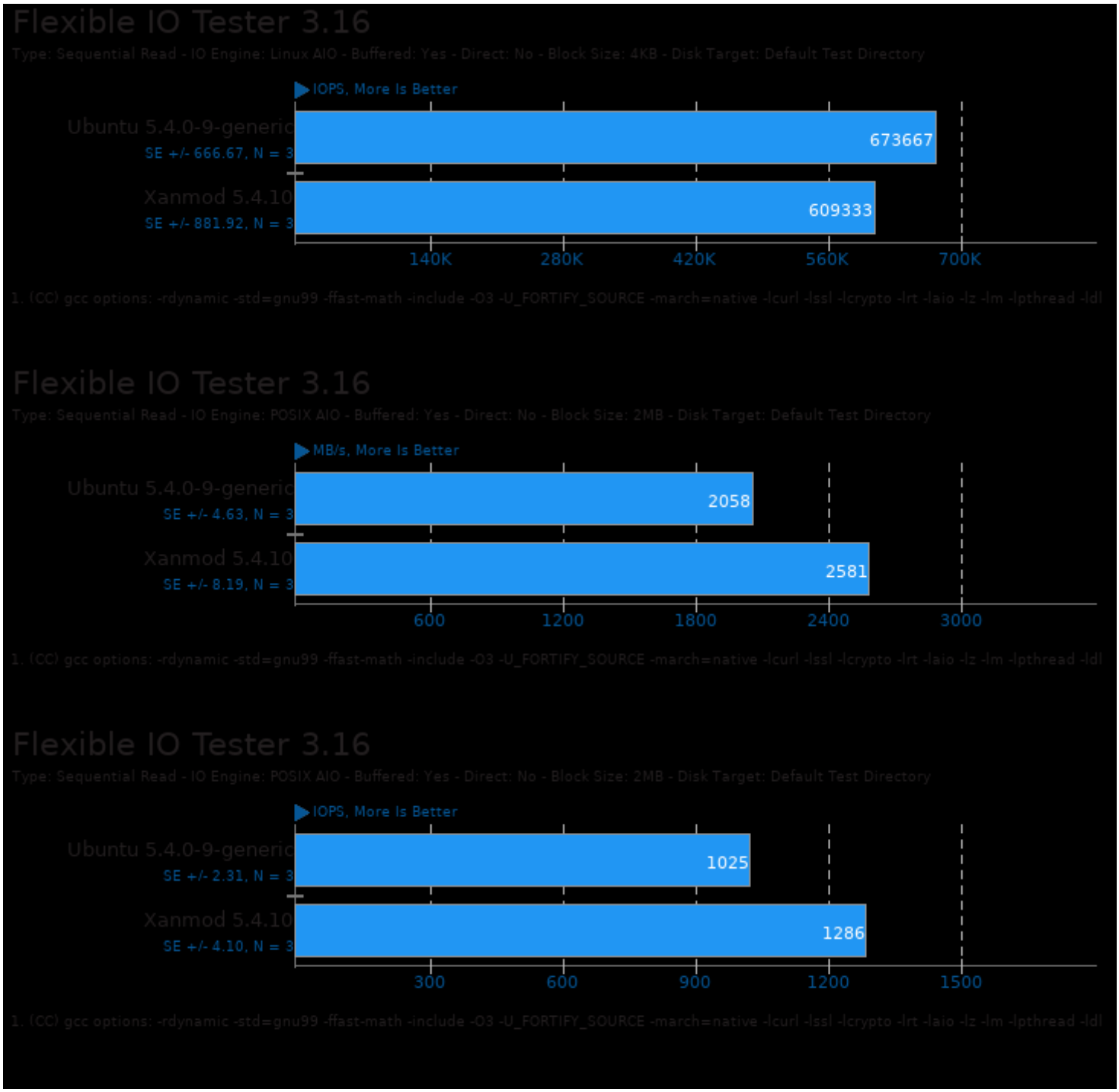

Flexible IO Tester 3.16
Type: Random Read - IO Engine: POSIX AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory
MB/s, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 2.65, N = 3
895
Xanmod 5.4.10
SE +/- 3.18, N = 3
953
200
400
600
800
1000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -lcurl -lssl -lcrypto -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.16
Type: Random Read - IO Engine: POSIX AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory
IOPS, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 1.45, N = 3
444
Xanmod 5.4.10
SE +/- 1.67, N = 3
473
100
200
300
400
500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -lcurl -lssl -lcrypto -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.16
Type: Random Read - IO Engine: POSIX AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.03, N = 3
61.3
Xanmod 5.4.10
SE +/- 0.06, N = 3
61.2
14
28
42
56
70
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -lcurl -lssl -lcrypto -lrt -laio -lz -lm -lpthread -ldl

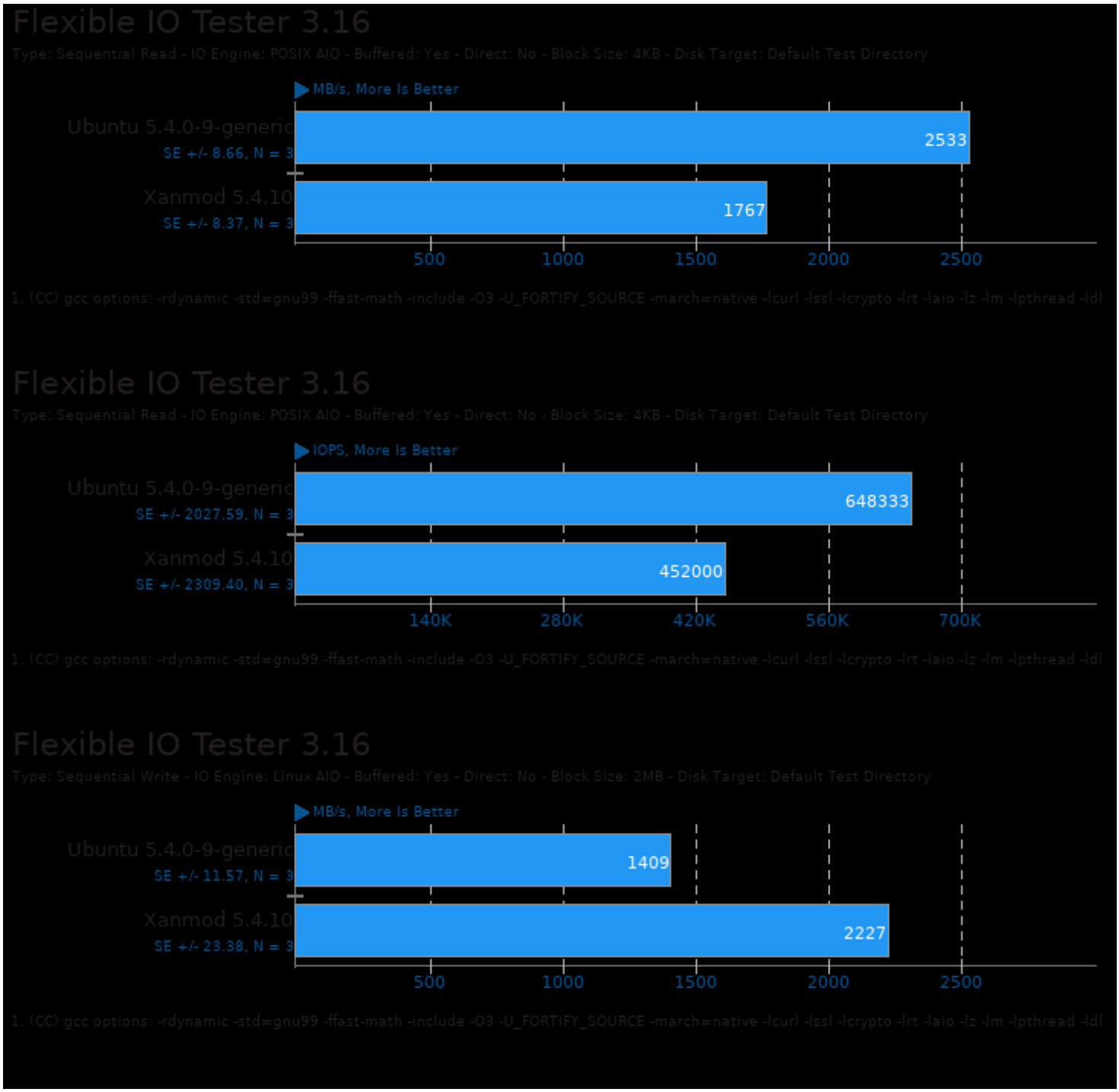

Flexible IO Tester 3.16
Type: Random Read - IO Engine: POSIX AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
Ubuntu 5.4.0-9-generic
15700
Xanmod 5.4.10
SE +/- 33.33, N = 3
15667
3K
6K
9K
12K
15K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -lcurl -lssl -lcrypto -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.16
Type: Random Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory
MB/s, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 14.81, N = 3
1322
Xanmod 5.4.10
SE +/- 21.94, N = 15
2335
500
1000
1500
2000
2500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -lcurl -lssl -lcrypto -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.16
Type: Random Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory
IOPS, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 7.13, N = 3
657
Xanmod 5.4.10
SE +/- 10.96, N = 15
1164
300
600
900
1200
1500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -lcurl -lssl -lcrypto -lrt -laio -lz -lm -lpthread -ldl

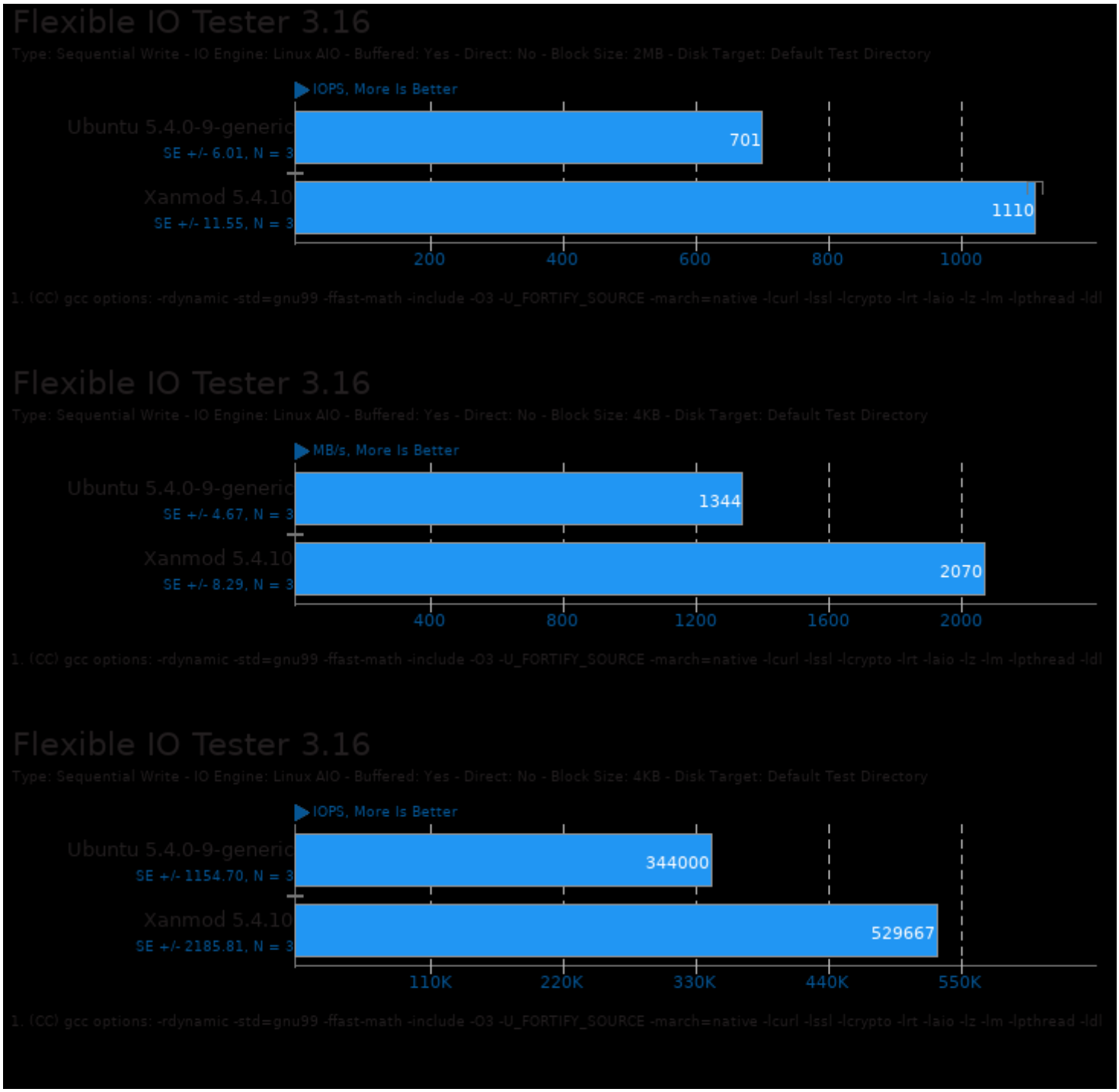

Flexible IO Tester 3.16
Type: Random Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 10.69, N = 3
1046
Xanmod 5.4.10
SE +/- 16.29, N = 3
1152
200
400
600
800
1000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -lcurl -lssl -lcrypto -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.16
Type: Random Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 2603.42, N = 3
267667
Xanmod 5.4.10
SE +/- 4041.45, N = 3
295000
60K
120K
180K
240K
300K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -lcurl -lssl -lcrypto -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.16
Type: Random Write - IO Engine: POSIX AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory
MB/s, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 15.81, N = 3
1441
Xanmod 5.4.10
SE +/- 22.48, N = 15
2547
500
1000
1500
2000
2500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -lcurl -lssl -lcrypto -lrt -laio -lz -lm -lpthread -ldl

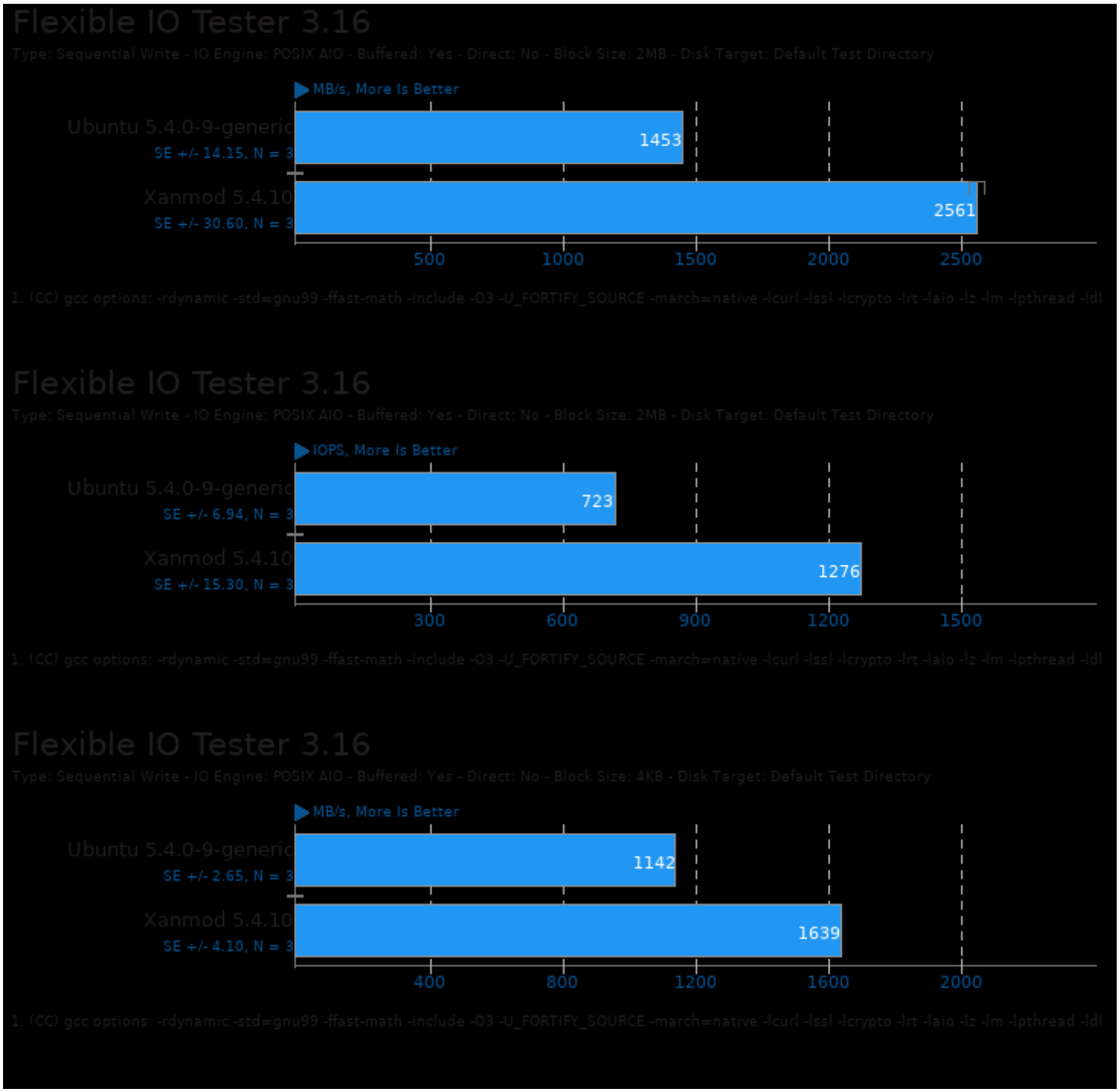

Flexible IO Tester 3.16
Type: Random Write - IO Engine: POSIX AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory
IOPS, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 7.94, N = 3
717
Xanmod 5.4.10
SE +/- 11.24, N = 15
1270
300
600
900
1200
1500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -lcurl -lssl -lcrypto -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.16
Type: Random Write - IO Engine: POSIX AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 1.86, N = 3
963
Xanmod 5.4.10
SE +/- 4.84, N = 3
1094
200
400
600
800
1000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -lcurl -lssl -lcrypto -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.16
Type: Random Write - IO Engine: POSIX AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 666.67, N = 3
246667
Xanmod 5.4.10
SE +/- 1333.33, N = 3
279667
60K
120K
180K
240K
300K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -lcurl -lssl -lcrypto -lrt -laio -lz -lm -lpthread -ldl


Flexible IO Tester 3.16
Type: Sequential Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory
MB/s, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 3.00, N = 3
2096
Xanmod 5.4.10
SE +/- 23.79, N = 3
2707
600
1200
1800
2400
3000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -lcurl -lssl -lcrypto -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.16
Type: Sequential Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory
IOPS, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 1.67, N = 3
1045
Xanmod 5.4.10
SE +/- 11.89, N = 3
1349
300
600
900
1200
1500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -lcurl -lssl -lcrypto -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.16
Type: Sequential Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 2.85, N = 3
2631
Xanmod 5.4.10
SE +/- 2.40, N = 3
2380
600
1200
1800
2400
3000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -lcurl -lssl -lcrypto -lrt -laio -lz -lm -lpthread -ldl


Flexible IO Tester 3.16
Type: Sequential Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 666.67, N = 3
673667
Xanmod 5.4.10
SE +/- 881.92, N = 3
609333
140K
280K
420K
560K
700K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -lcurl -lssl -lcrypto -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.16
Type: Sequential Read - IO Engine: POSIX AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory
MB/s, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 4.63, N = 3
2058
Xanmod 5.4.10
SE +/- 8.19, N = 3
2581
600
1200
1800
2400
3000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -lcurl -lssl -lcrypto -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.16
Type: Sequential Read - IO Engine: POSIX AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory
IOPS, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 2.31, N = 3
1025
Xanmod 5.4.10
SE +/- 4.10, N = 3
1286
300
600
900
1200
1500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -lcurl -lssl -lcrypto -lrt -laio -lz -lm -lpthread -ldl

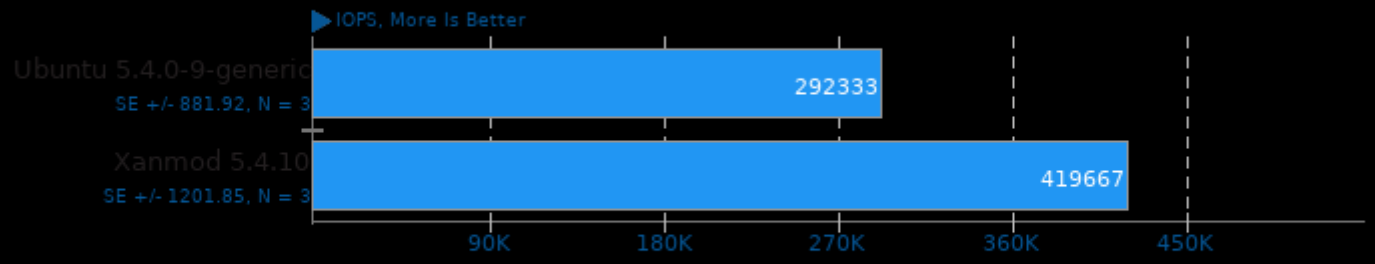

Flexible IO Tester 3.16
Type: Sequential Read - IO Engine: POSIX AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 8.66, N = 3
2533
Xanmod 5.4.10
SE +/- 8.37, N = 3
1767
500
1000
1500
2000
2500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -lcurl -lssl -lcrypto -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.16
Type: Sequential Read - IO Engine: POSIX AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 2027.59, N = 3
648333
Xanmod 5.4.10
SE +/- 2309.40, N = 3
452000
140K
280K
420K
560K
700K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -lcurl -lssl -lcrypto -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.16
Type: Sequential Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory
MB/s, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 11.57, N = 3
1409
Xanmod 5.4.10
SE +/- 23.38, N = 3
2227
500
1000
1500
2000
2500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -lcurl -lssl -lcrypto -lrt -laio -lz -lm -lpthread -ldl


Flexible IO Tester 3.16
Type: Sequential Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory
IOPS, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 6.01, N = 3
701
Xanmod 5.4.10
SE +/- 11.55, N = 3
1110
200
400
600
800
1000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -lcurl -lssl -lcrypto -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.16
Type: Sequential Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 4.67, N = 3
1344
Xanmod 5.4.10
SE +/- 8.29, N = 3
2070
400
800
1200
1600
2000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -lcurl -lssl -lcrypto -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.16
Type: Sequential Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 1154.70, N = 3
344000
Xanmod 5.4.10
SE +/- 2185.81, N = 3
529667
110K
220K
330K
440K
550K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -lcurl -lssl -lcrypto -lrt -laio -lz -lm -lpthread -ldl


Flexible IO Tester 3.16
Type: Sequential Write - IO Engine: POSIX AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory
MB/s, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 14.15, N = 3
1453
Xanmod 5.4.10
SE +/- 30.60, N = 3
2561
500
1000
1500
2000
2500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -lcurl -lssl -lcrypto -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.16
Type: Sequential Write - IO Engine: POSIX AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory
IOPS, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 6.94, N = 3
723
Xanmod 5.4.10
SE +/- 15.30, N = 3
1276
300
600
900
1200
1500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -lcurl -lssl -lcrypto -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.16
Type: Sequential Write - IO Engine: POSIX AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 2.65, N = 3
1142
Xanmod 5.4.10
SE +/- 4.10, N = 3
1639
400
800
1200
1600
2000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -lcurl -lssl -lcrypto -lrt -laio -lz -lm -lpthread -ldl

Flexible IO Tester 3.16

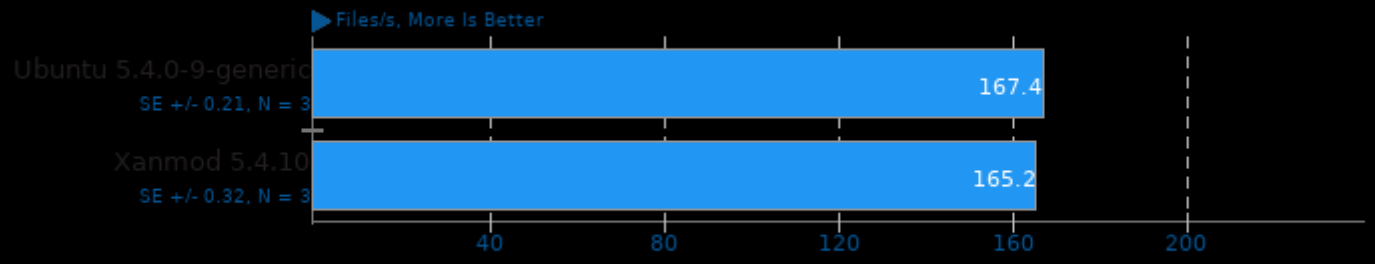
Type: Sequential Write - IO Engine: POSIX AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory



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

FS-Mark 3.3

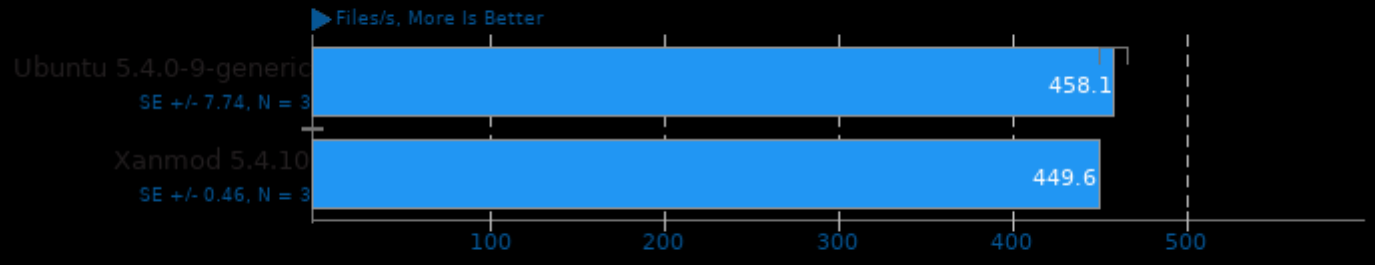
Test: 1000 Files, 1MB Size



1. (CC) gcc options: -static

FS-Mark 3.3

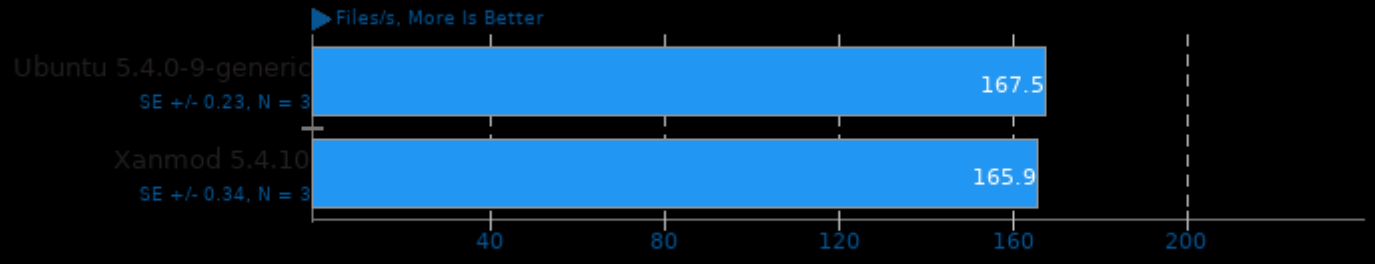
Test: 5000 Files, 1MB Size, 4 Threads



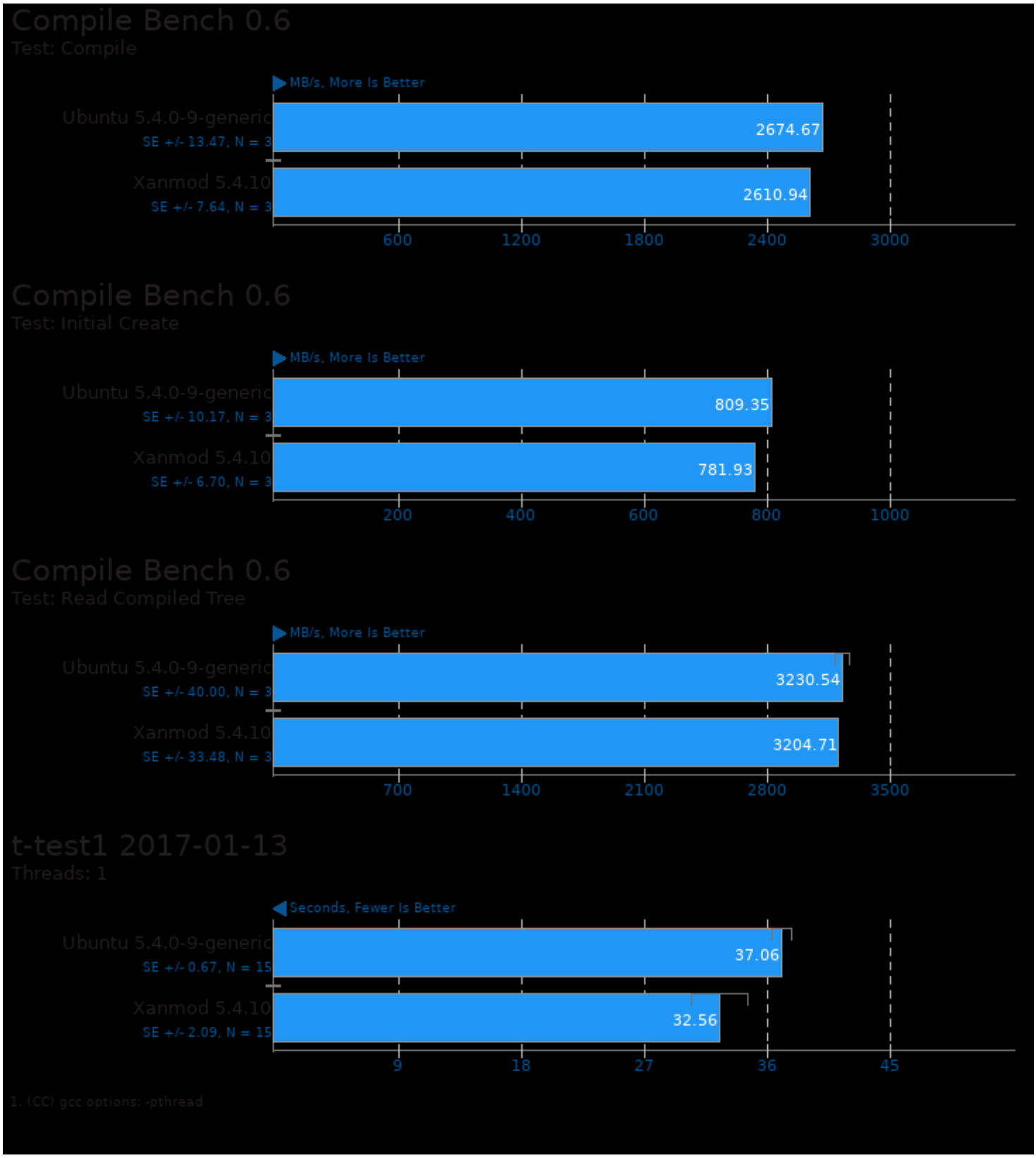
1. (CC) gcc options: -static

FS-Mark 3.3

Test: 4000 Files, 32 Sub Dirs, 1MB Size

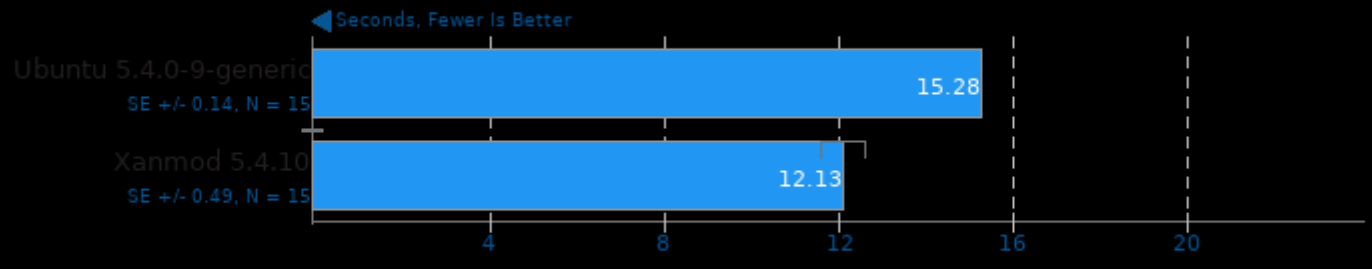


1. (CC) gcc options: -static


Compile Bench 0.6
Test: Compile
MB/s, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 13.47, N = 3
2674.67
Xanmod 5.4.10
SE +/- 7.64, N = 3
2610.94
600
1200
1800
2400
3000
Compile Bench 0.6
Test: Initial Create
MB/s, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 10.17, N = 3
809.35
Xanmod 5.4.10
SE +/- 6.70, N = 3
781.93
200
400
600
800
1000
Compile Bench 0.6
Test: Read Compiled Tree
MB/s, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 40.00, N = 3
3230.54
Xanmod 5.4.10
SE +/- 33.48, N = 3
3204.71
700
1400
2100
2800
3500
t-test1 2017-01-13
Threads: 1
Seconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.67, N = 15
37.06
Xanmod 5.4.10
SE +/- 2.09, N = 15
32.56
9
18
27
36
45
1. (CC) gcc options: -pthread

t-test1 2017-01-13

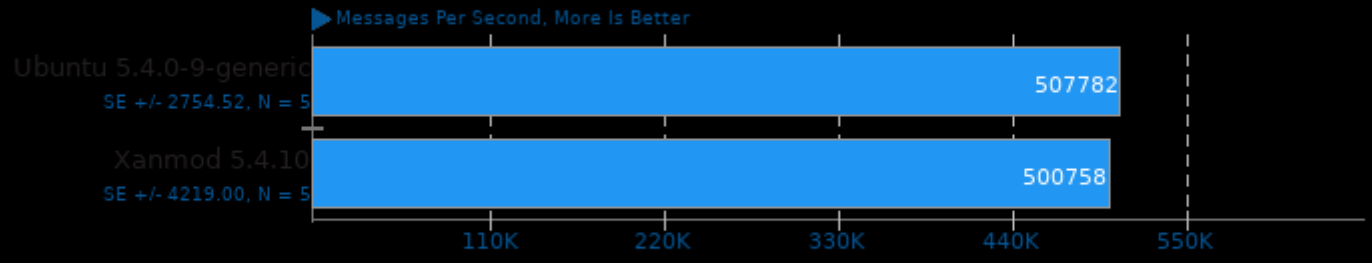
Threads: 2



1. (CC) gcc options: -pthread

Sockperf 3.4

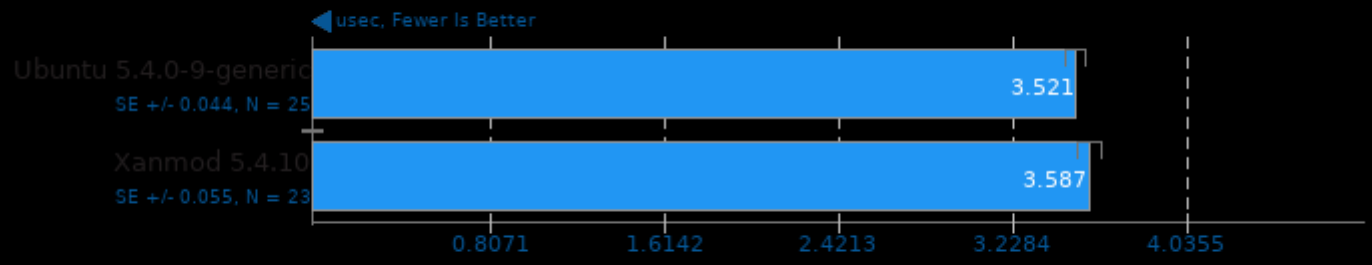
Test: Throughput



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

Sockperf 3.4

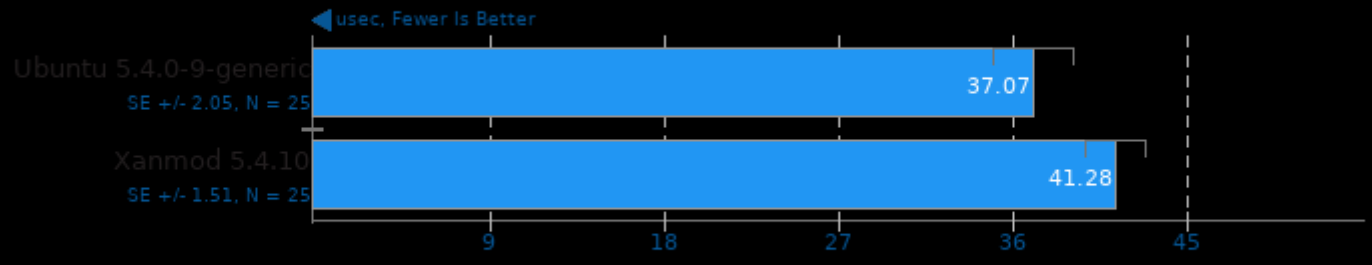
Test: Latency Ping Pong



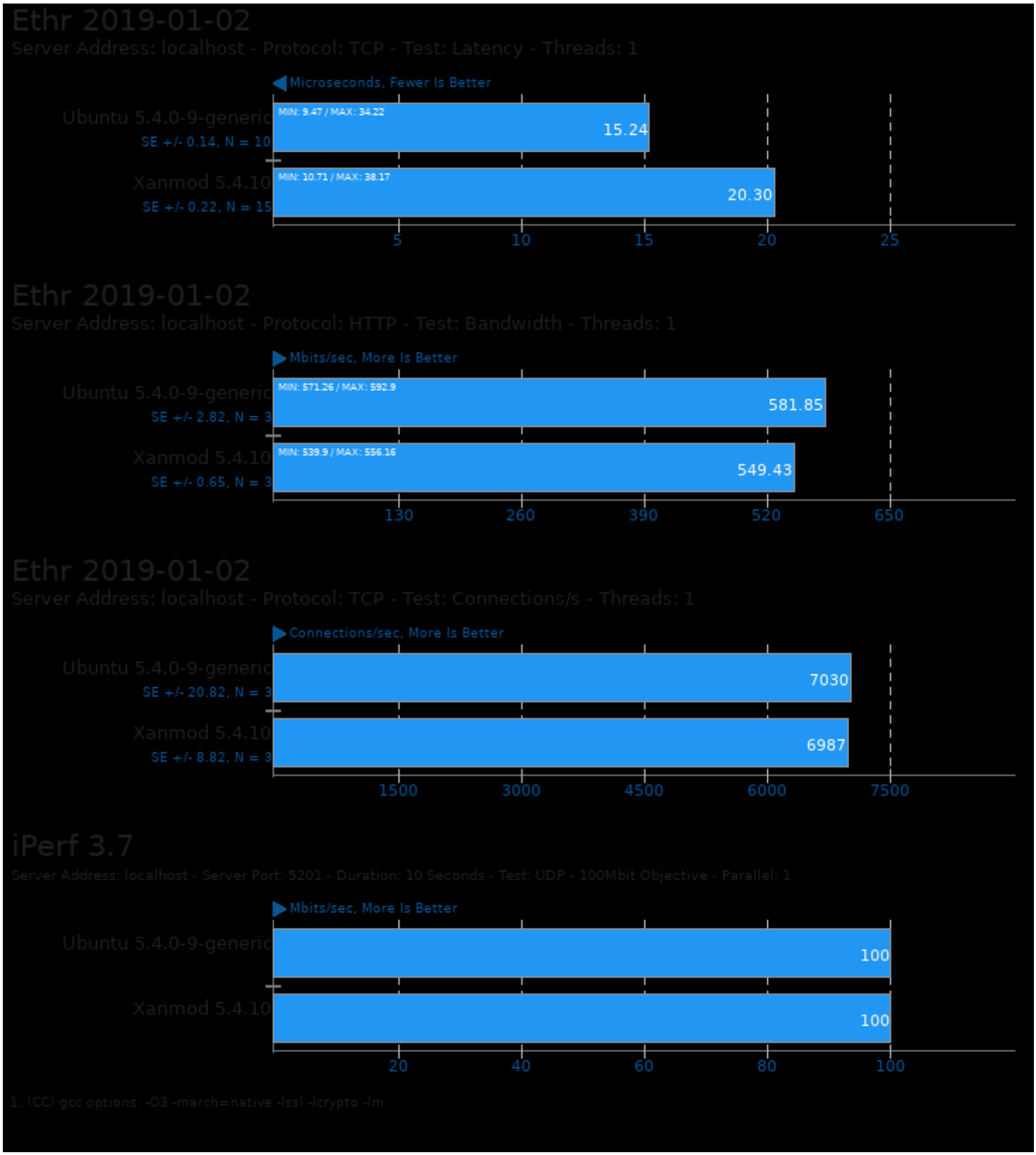
1. (CXX) g++ options: --param -O3 -rdynamic -ldl -lpthread

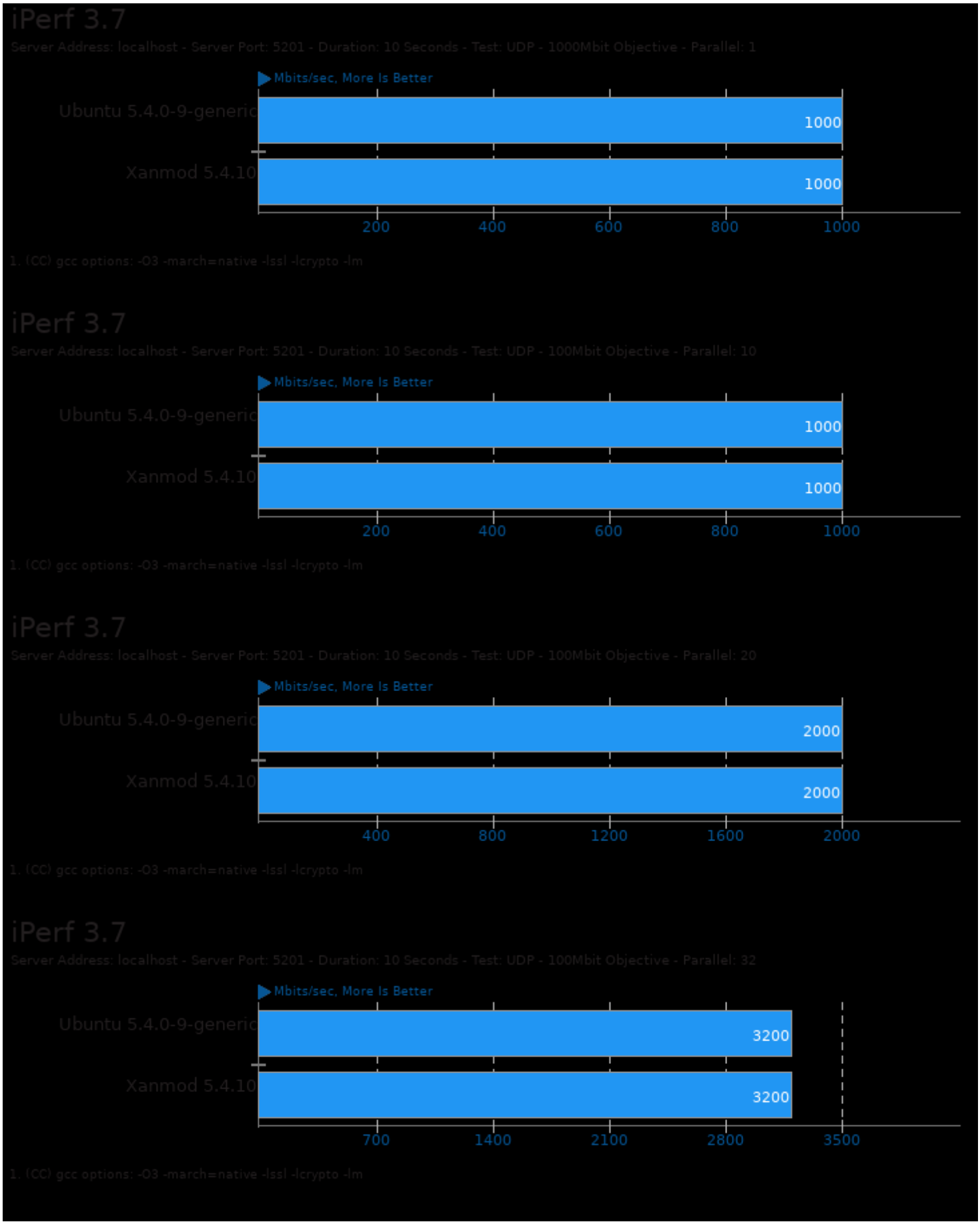
Sockperf 3.4

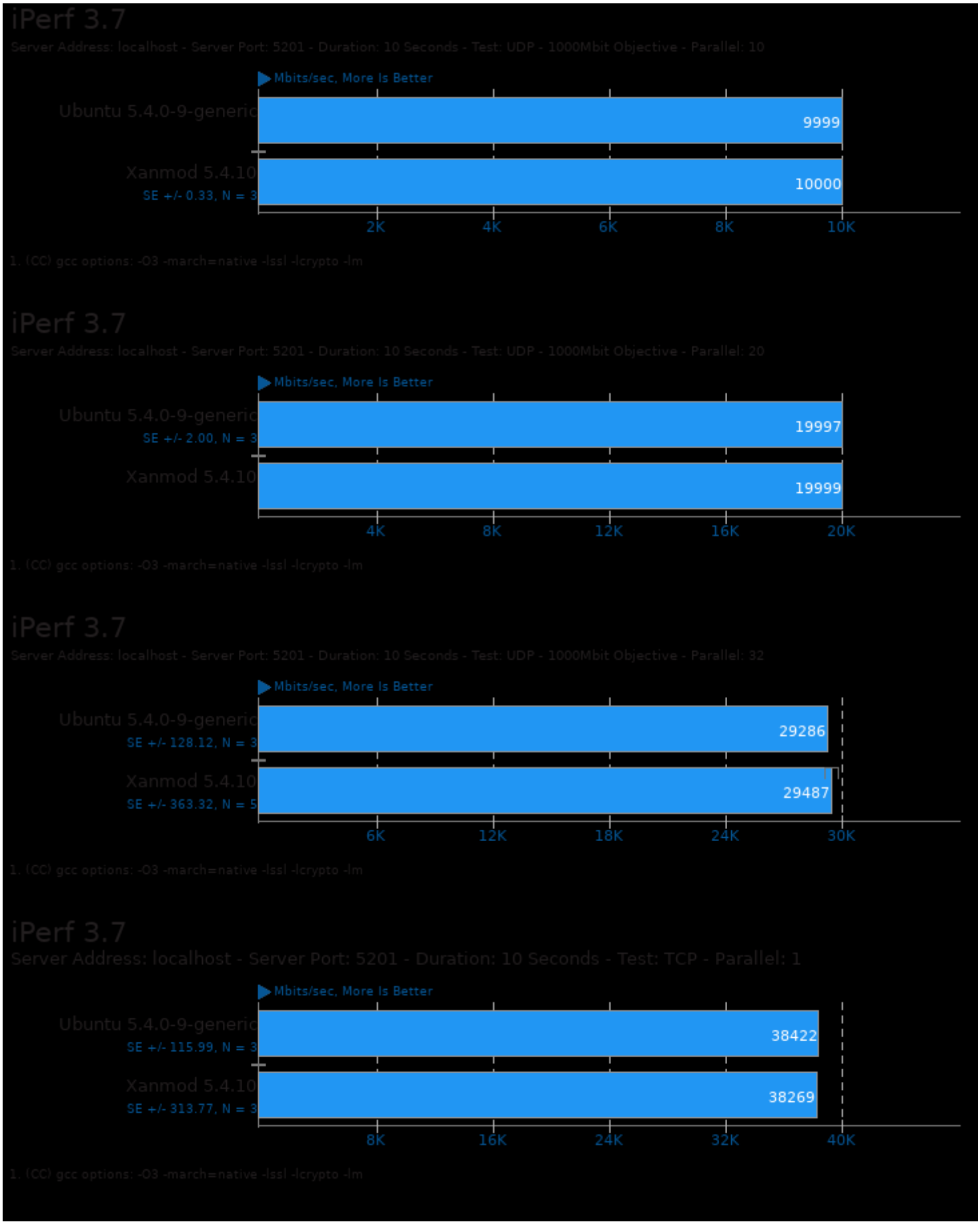
Test: Latency Under Load

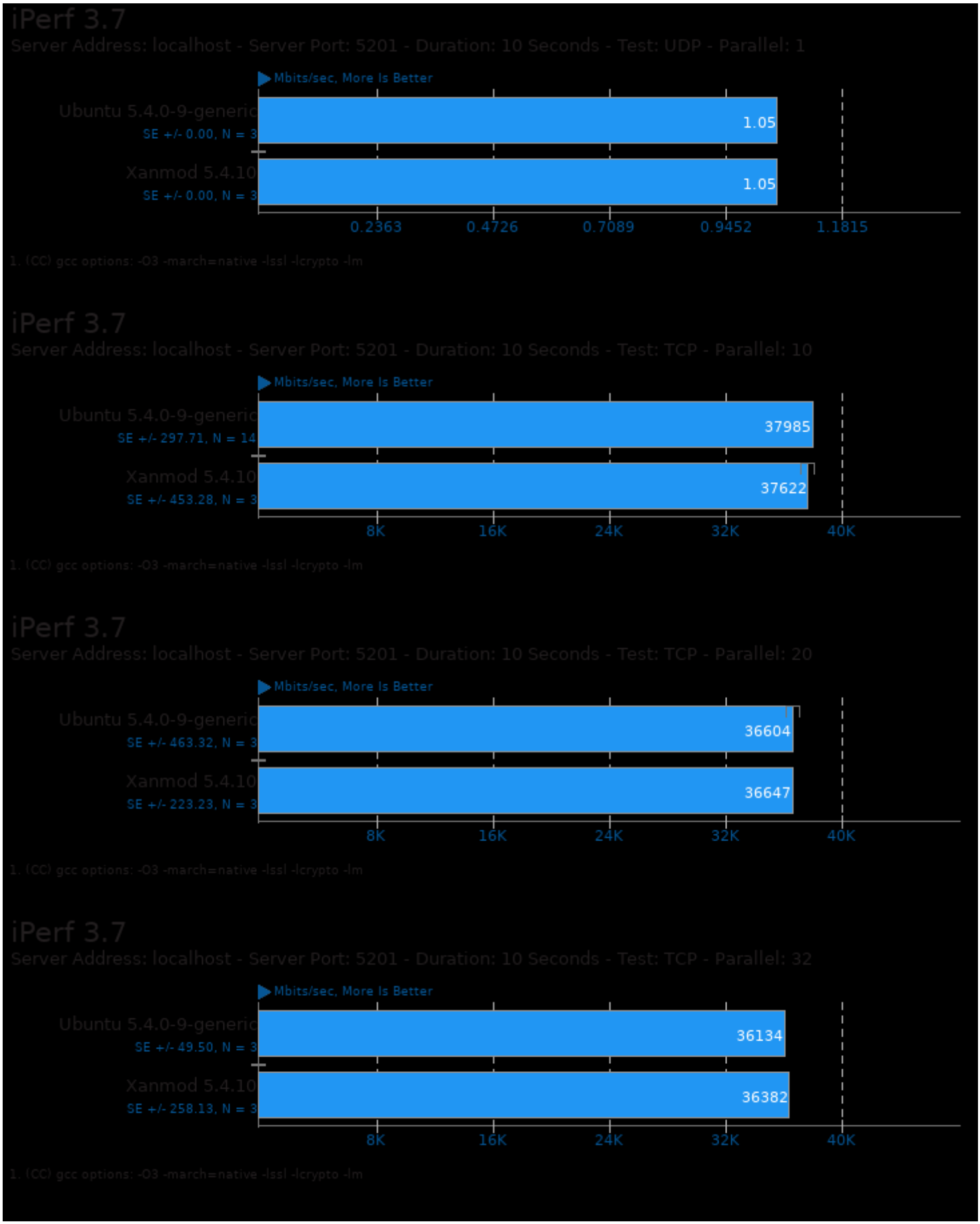


1. (CXX) g++ options: --param -O3 -rdynamic -ldl -lpthread


Ethr 2019-01-02
Server Address: localhost - Protocol: TCP - Test: Latency - Threads: 1
Microseconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.14, N = 10
MIN: 9.47 / MAX: 34.22
15.24
Xanmod 5.4.10
SE +/- 0.22, N = 15
MIN: 10.71 / MAX: 38.17
20.30
5
10
15
20
25
Ethr 2019-01-02
Server Address: localhost - Protocol: HTTP - Test: Bandwidth - Threads: 1
Mbits/sec, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 2.82, N = 3
MIN: 571.26 / MAX: 592.9
581.85
Xanmod 5.4.10
SE +/- 0.65, N = 3
MIN: 539.9 / MAX: 556.16
549.43
130
260
390
520
650
Ethr 2019-01-02
Server Address: localhost - Protocol: TCP - Test: Connections/s - Threads: 1
Connections/sec, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 20.82, N = 3
7030
Xanmod 5.4.10
SE +/- 8.82, N = 3
6987
1500
3000
4500
6000
7500
iPerf 3.7
Server Address: localhost - Server Port: 5201 - Duration: 10 Seconds - Test: UDP - 100Mbit Objective - Parallel: 1
Mbits/sec, More Is Better
Ubuntu 5.4.0-9-generic
100
Xanmod 5.4.10
100
20
40
60
80
100
1. (CC) gcc options: -O3 -march=native -lssl -lcrypto -lm

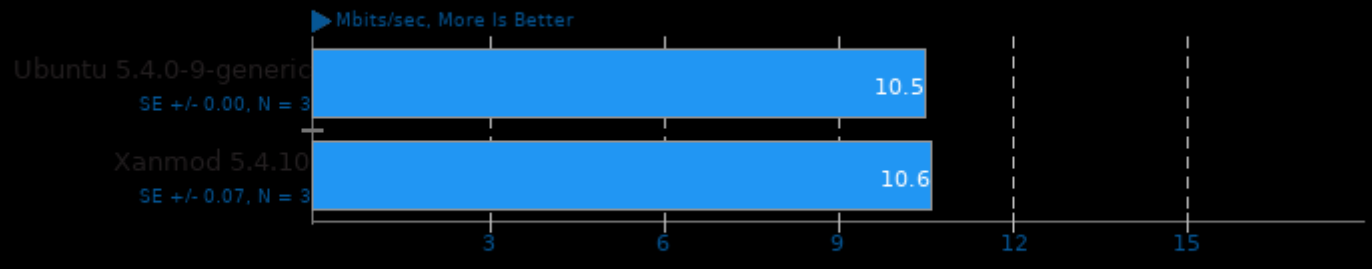

iPerf 3.7
Server Address: localhost - Server Port: 5201 - Duration: 10 Seconds - Test: UDP - 1000Mbit Objective - Parallel: 1
Mbits/sec, More Is Better
Ubuntu 5.4.0-9-generic
Xanmod 5.4.10
1000
1000
200
400
600
800
1000
1. (CC) gcc options: -O3 -march=native -lssl -lcrypto -lm
iPerf 3.7
Server Address: localhost - Server Port: 5201 - Duration: 10 Seconds - Test: UDP - 100Mbit Objective - Parallel: 10
Mbits/sec, More Is Better
Ubuntu 5.4.0-9-generic
Xanmod 5.4.10
1000
1000
200
400
600
800
1000
1. (CC) gcc options: -O3 -march=native -lssl -lcrypto -lm
iPerf 3.7
Server Address: localhost - Server Port: 5201 - Duration: 10 Seconds - Test: UDP - 100Mbit Objective - Parallel: 20
Mbits/sec, More Is Better
Ubuntu 5.4.0-9-generic
Xanmod 5.4.10
2000
2000
400
800
1200
1600
2000
1. (CC) gcc options: -O3 -march=native -lssl -lcrypto -lm
iPerf 3.7
Server Address: localhost - Server Port: 5201 - Duration: 10 Seconds - Test: UDP - 100Mbit Objective - Parallel: 32
Mbits/sec, More Is Better
Ubuntu 5.4.0-9-generic
Xanmod 5.4.10
3200
3200
700
1400
2100
2800
3500
1. (CC) gcc options: -O3 -march=native -lssl -lcrypto -lm


iPerf 3.7
Server Address: localhost - Server Port: 5201 - Duration: 10 Seconds - Test: UDP - 1000Mbit Objective - Parallel: 10
Mbits/sec, More Is Better
Ubuntu 5.4.0-9-generic
9999
Xanmod 5.4.10
SE +/- 0.33, N = 3
10000
2K
4K
6K
8K
10K
1. (CC) gcc options: -O3 -march=native -lssl -lcrypto -lm
iPerf 3.7
Server Address: localhost - Server Port: 5201 - Duration: 10 Seconds - Test: UDP - 1000Mbit Objective - Parallel: 20
Mbits/sec, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 2.00, N = 3
19997
Xanmod 5.4.10
19999
4K
8K
12K
16K
20K
1. (CC) gcc options: -O3 -march=native -lssl -lcrypto -lm
iPerf 3.7
Server Address: localhost - Server Port: 5201 - Duration: 10 Seconds - Test: UDP - 1000Mbit Objective - Parallel: 32
Mbits/sec, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 128.12, N = 3
29286
Xanmod 5.4.10
SE +/- 363.32, N = 5
29487
6K
12K
18K
24K
30K
1. (CC) gcc options: -O3 -march=native -lssl -lcrypto -lm
iPerf 3.7
Server Address: localhost - Server Port: 5201 - Duration: 10 Seconds - Test: TCP - Parallel: 1
Mbits/sec, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 115.99, N = 3
38422
Xanmod 5.4.10
SE +/- 313.77, N = 3
38269
8K
16K
24K
32K
40K
1. (CC) gcc options: -O3 -march=native -lssl -lcrypto -lm


iPerf 3.7
Server Address: localhost - Server Port: 5201 - Duration: 10 Seconds - Test: UDP - Parallel: 1
Mbits/sec, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.00, N = 3
1.05
Xanmod 5.4.10
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: 10 Seconds - Test: TCP - Parallel: 10
Mbits/sec, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 297.71, N = 14
37985
Xanmod 5.4.10
SE +/- 453.28, N = 3
37622
8K
16K
24K
32K
40K
1. (CC) gcc options: -O3 -march=native -lssl -lcrypto -lm
iPerf 3.7
Server Address: localhost - Server Port: 5201 - Duration: 10 Seconds - Test: TCP - Parallel: 20
Mbits/sec, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 463.32, N = 3
36604
Xanmod 5.4.10
SE +/- 223.23, N = 3
36647
8K
16K
24K
32K
40K
1. (CC) gcc options: -O3 -march=native -lssl -lcrypto -lm
iPerf 3.7
Server Address: localhost - Server Port: 5201 - Duration: 10 Seconds - Test: TCP - Parallel: 32
Mbits/sec, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 49.50, N = 3
36134
Xanmod 5.4.10
SE +/- 258.13, N = 3
36382
8K
16K
24K
32K
40K
1. (CC) gcc options: -O3 -march=native -lssl -lcrypto -lm

iPerf 3.7

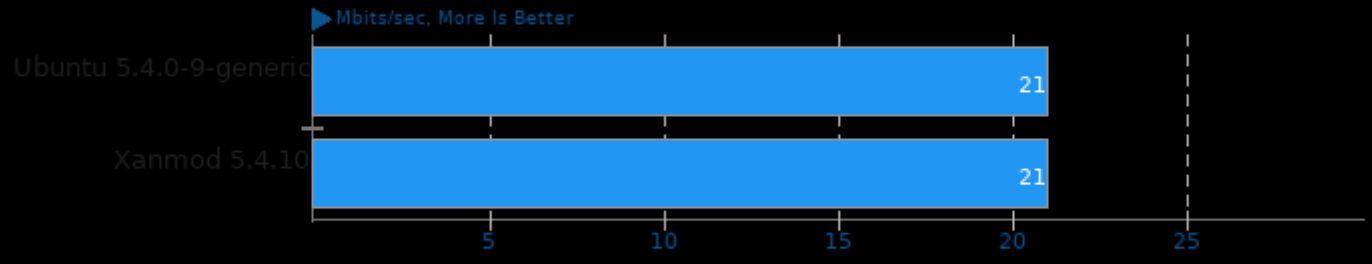
Server Address: localhost - Server Port: 5201 - Duration: 10 Seconds - Test: UDP - Parallel: 10



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

iPerf 3.7

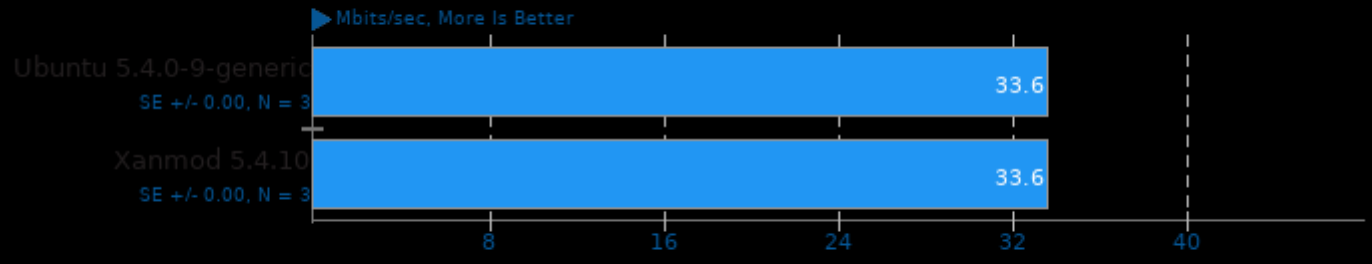
Server Address: localhost - Server Port: 5201 - Duration: 10 Seconds - Test: UDP - Parallel: 20



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

iPerf 3.7

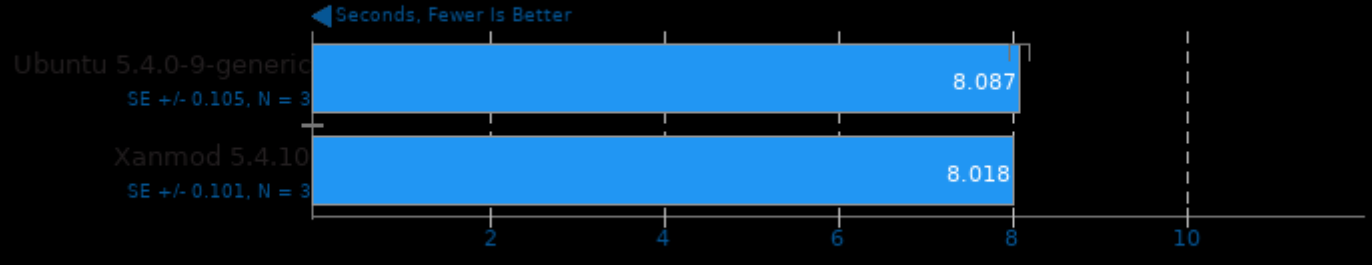
Server Address: localhost - Server Port: 5201 - Duration: 10 Seconds - Test: UDP - Parallel: 32



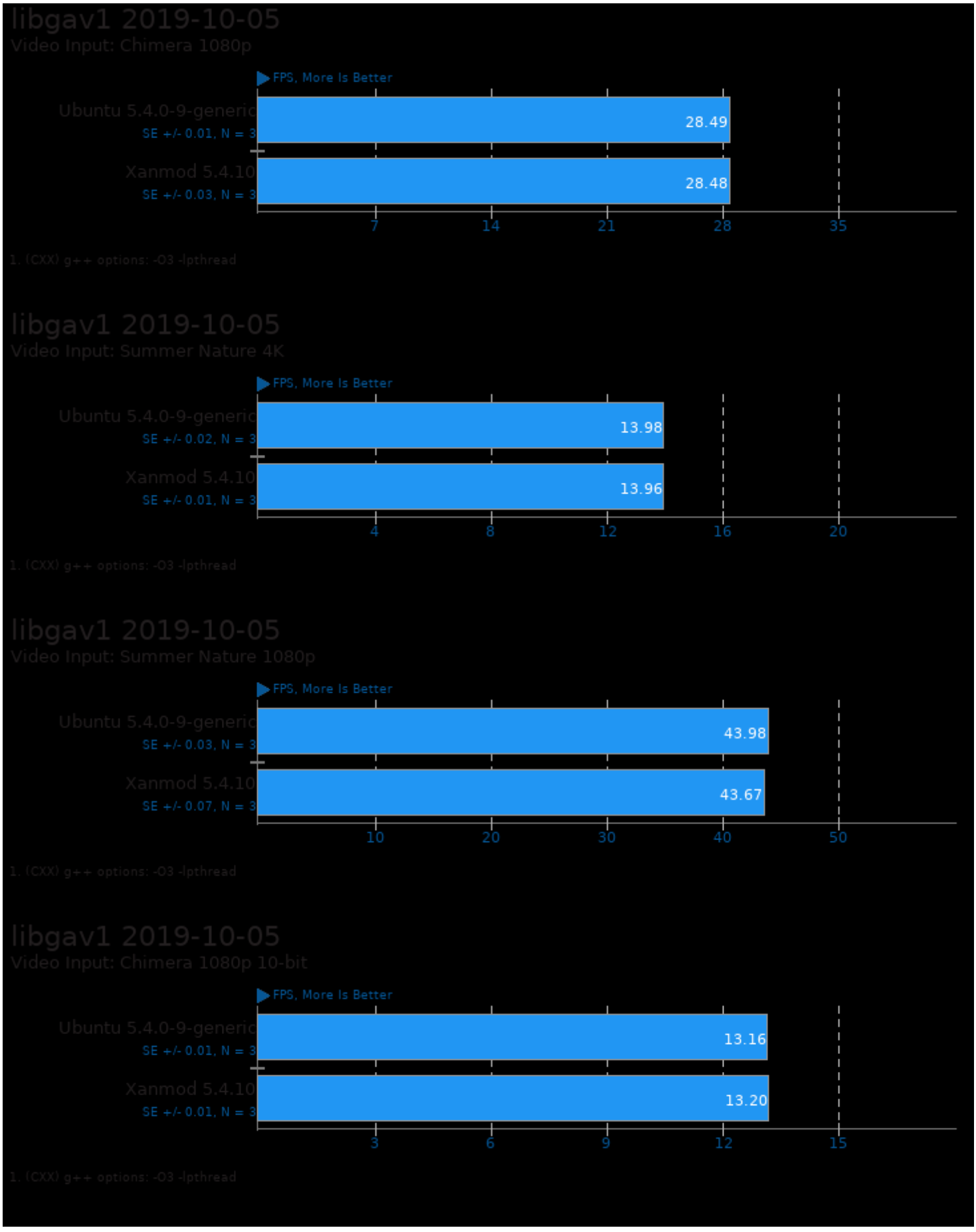
1. (CC) gcc options: -O3 -march=native -lssl -lcrypto -lm

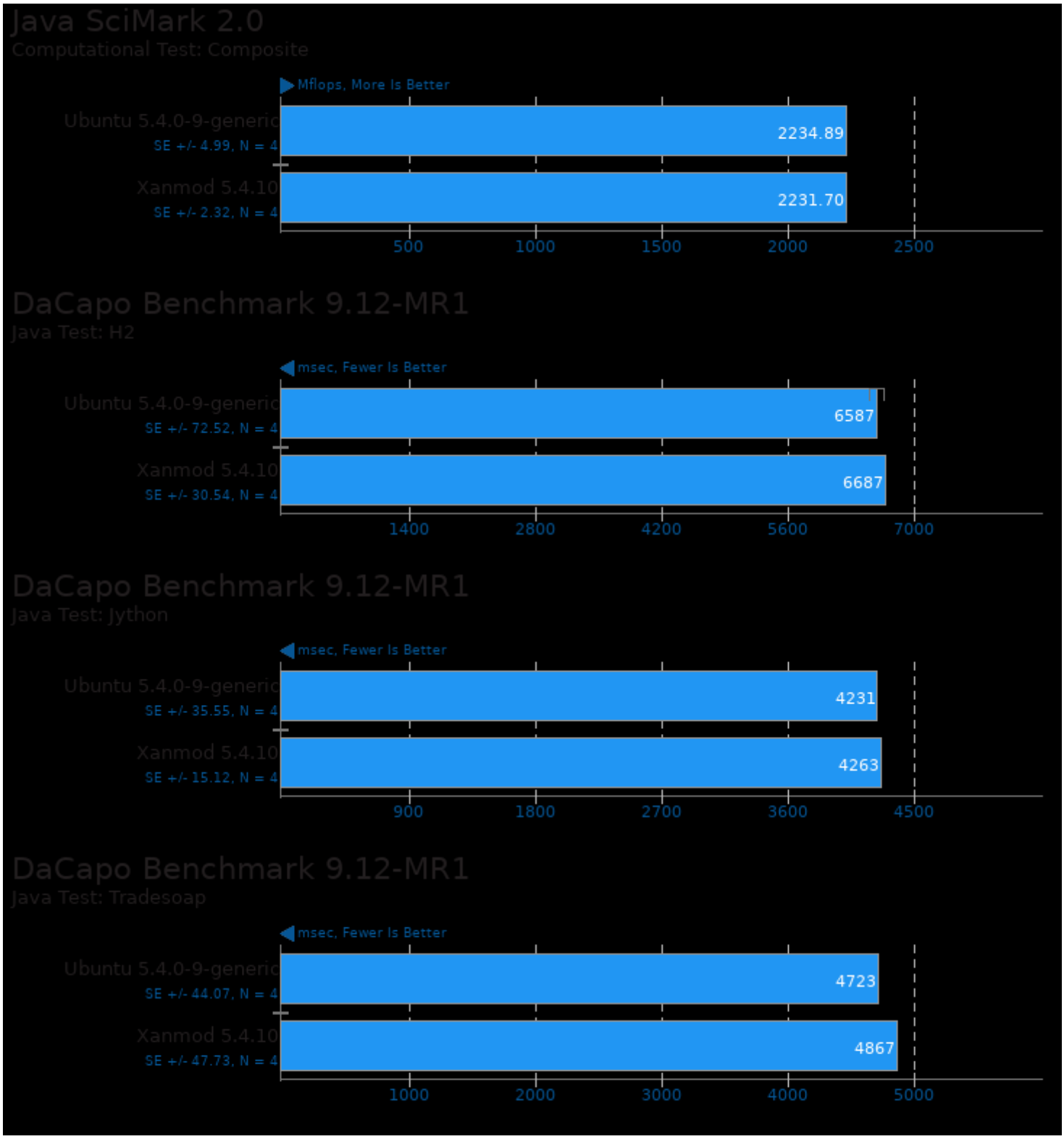
Timed HMMer Search 2.3.2

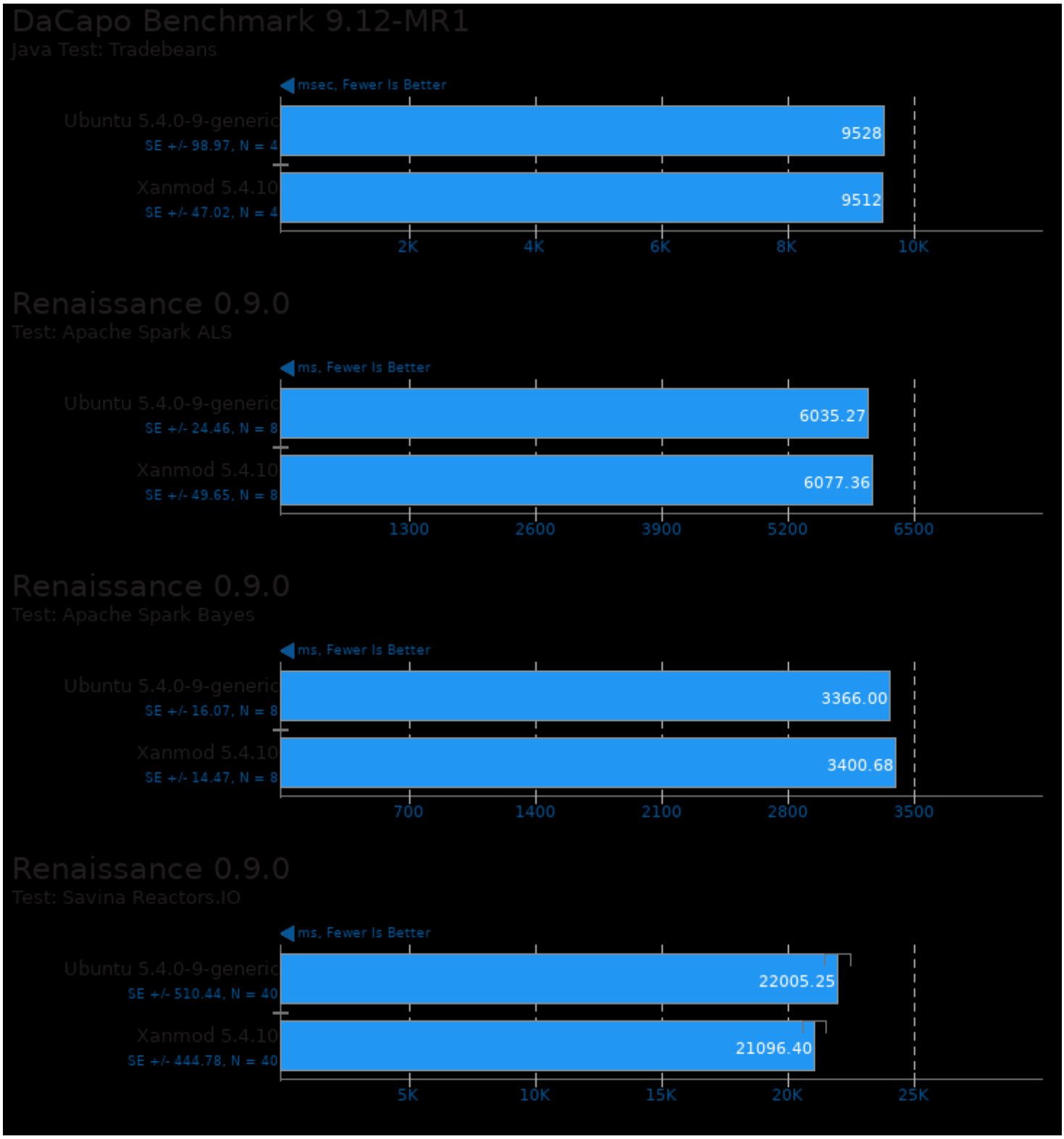
Pfam Database Search

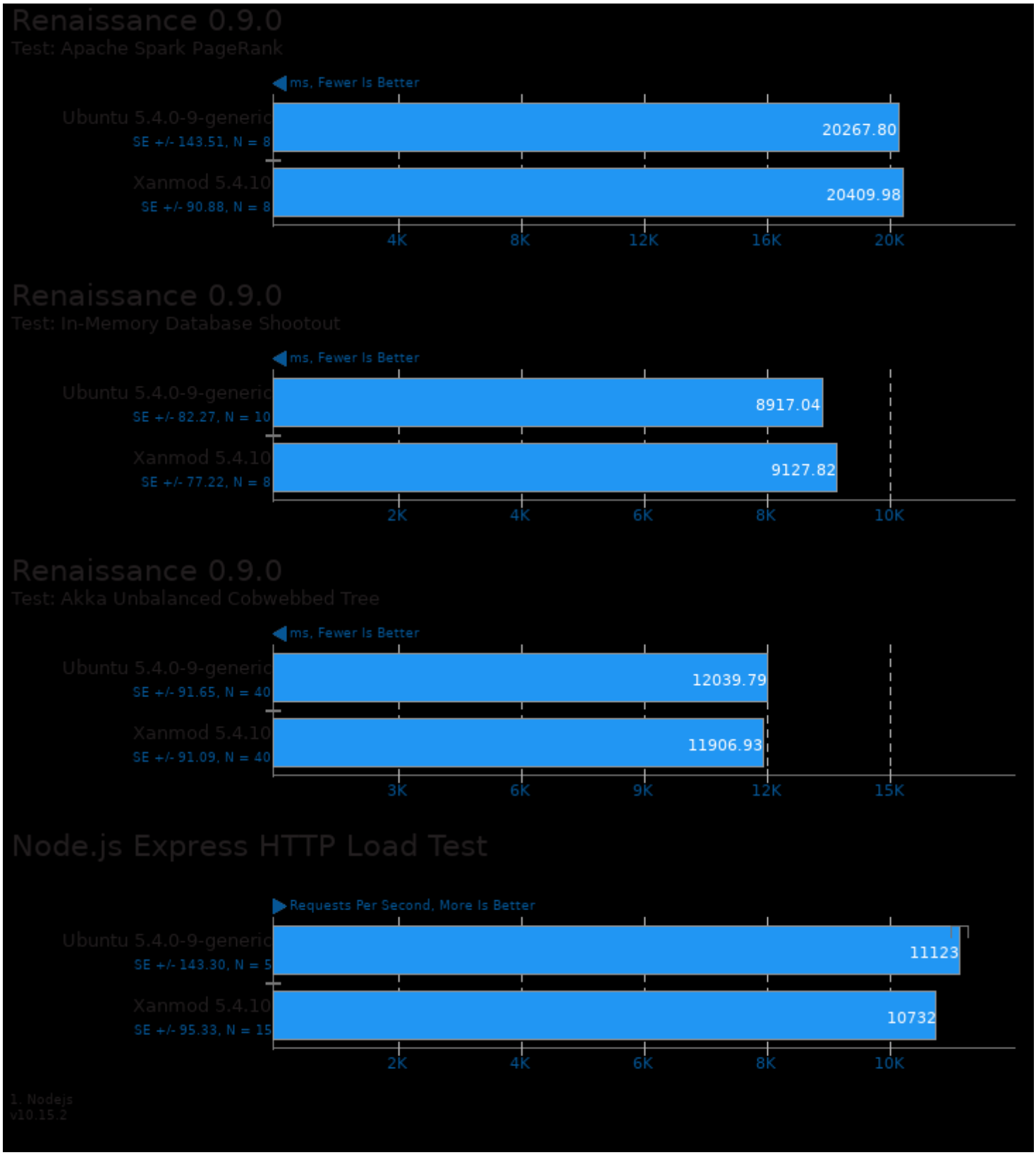


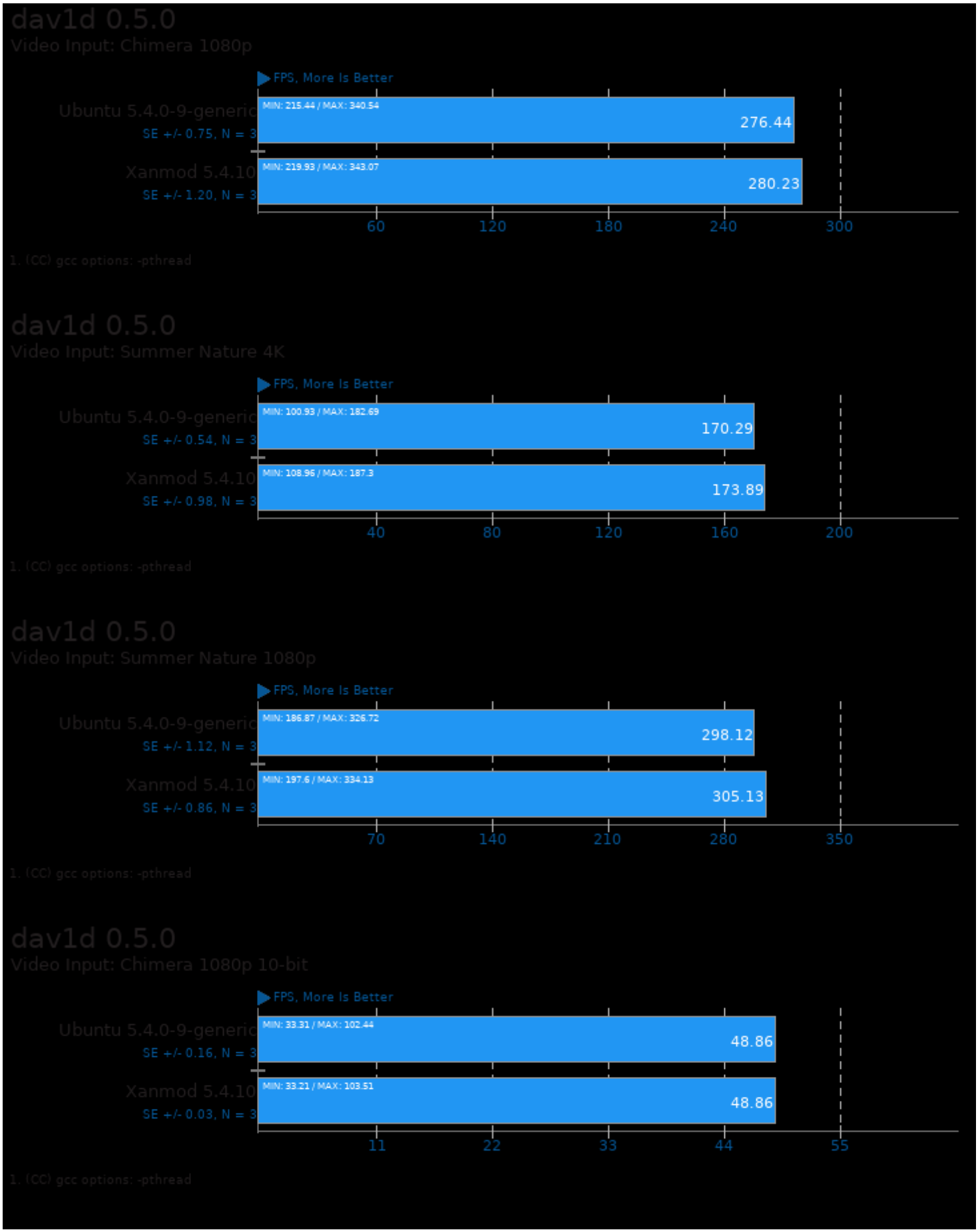
1. (CC) gcc options: -O2 -pthread -lhmmer -lsquid -lm

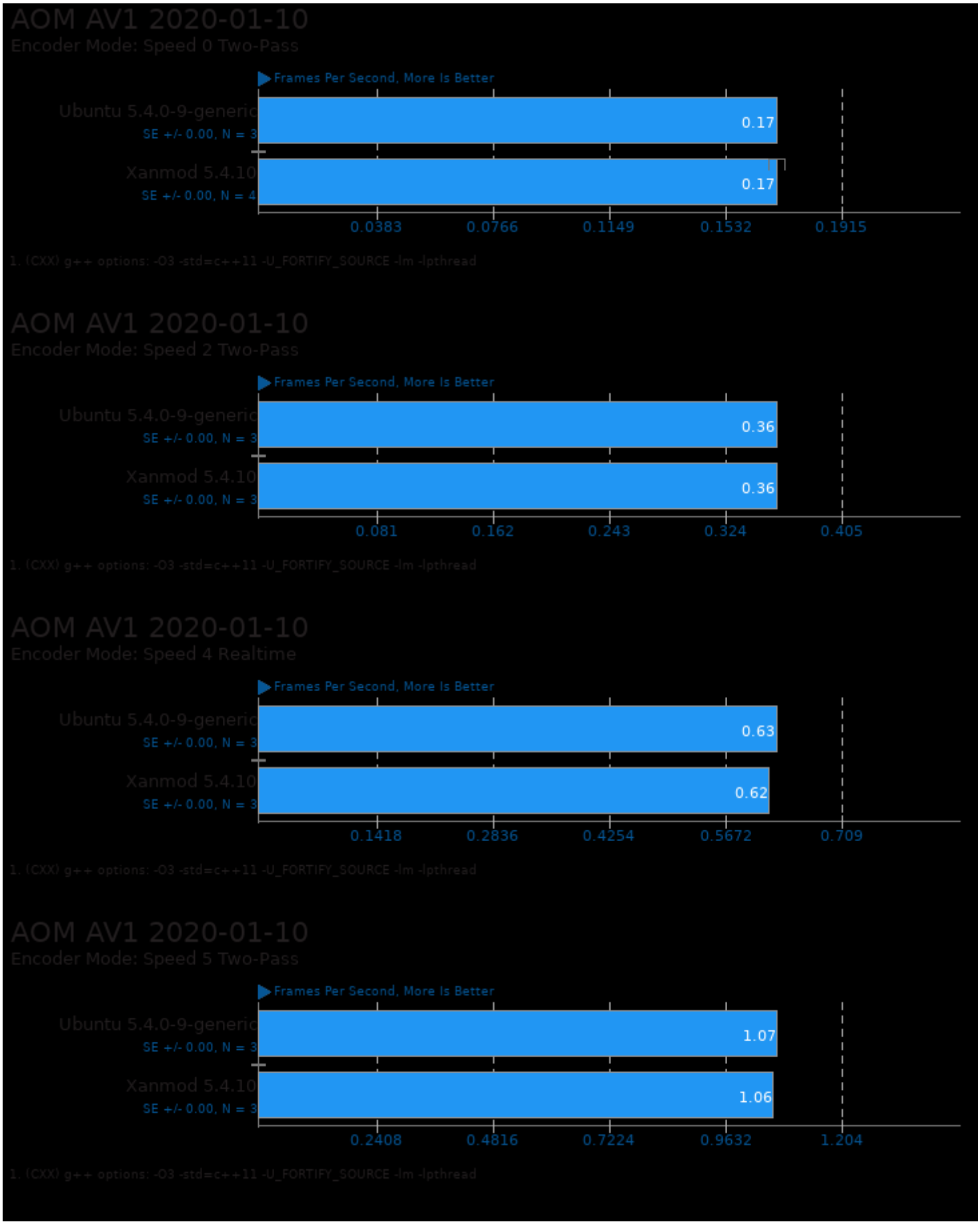

libgav1 2019-10-05
Video Input: Chimera 1080p
FPS, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.01, N = 3
28.49
Xanmod 5.4.10
SE +/- 0.03, N = 3
28.48
7
14
21
28
35
1. (CXX) g++ options: -O3 -lpthread
libgav1 2019-10-05
Video Input: Summer Nature 4K
FPS, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.02, N = 3
13.98
Xanmod 5.4.10
SE +/- 0.01, N = 3
13.96
4
8
12
16
20
1. (CXX) g++ options: -O3 -lpthread
libgav1 2019-10-05
Video Input: Summer Nature 1080p
FPS, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.03, N = 3
43.98
Xanmod 5.4.10
SE +/- 0.07, N = 3
43.67
10
20
30
40
50
1. (CXX) g++ options: -O3 -lpthread
libgav1 2019-10-05
Video Input: Chimera 1080p 10-bit
FPS, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.01, N = 3
13.16
Xanmod 5.4.10
SE +/- 0.01, N = 3
13.20
3
6
9
12
15
1. (CXX) g++ options: -O3 -lpthread

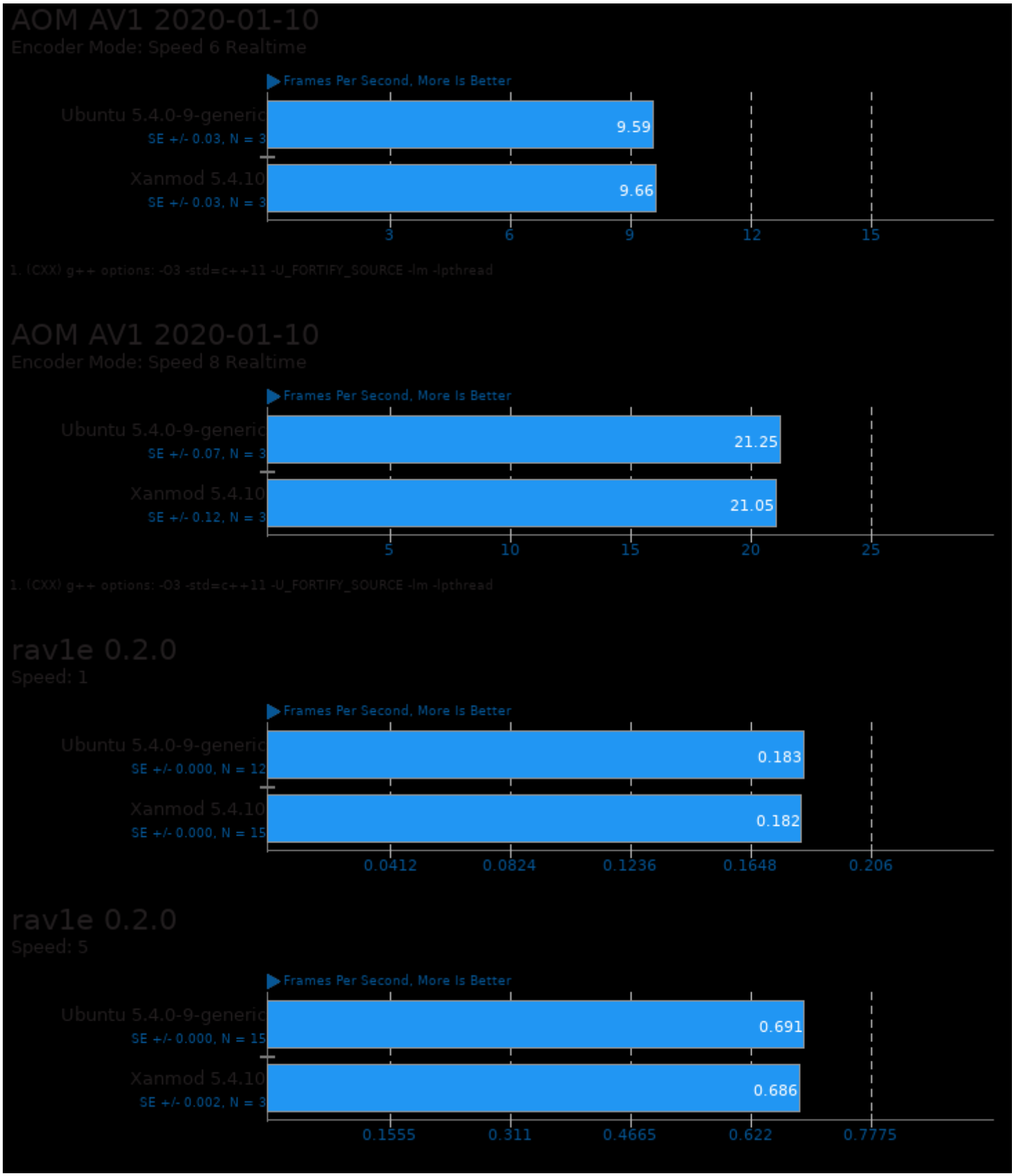

Java SciMark 2.0
Computational Test: Composite
Mflops, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 4.99, N = 4
2234.89
Xanmod 5.4.10
SE +/- 2.32, N = 4
2231.70
500
1000
1500
2000
2500
DaCapo Benchmark 9.12-MR1
Java Test: H2
msec, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 72.52, N = 4
6587
Xanmod 5.4.10
SE +/- 30.54, N = 4
6687
1400
2800
4200
5600
7000
DaCapo Benchmark 9.12-MR1
Java Test: Jython
msec, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 35.55, N = 4
4231
Xanmod 5.4.10
SE +/- 15.12, N = 4
4263
900
1800
2700
3600
4500
DaCapo Benchmark 9.12-MR1
Java Test: Tradesoap
msec, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 44.07, N = 4
4723
Xanmod 5.4.10
SE +/- 47.73, N = 4
4867
1000
2000
3000
4000
5000

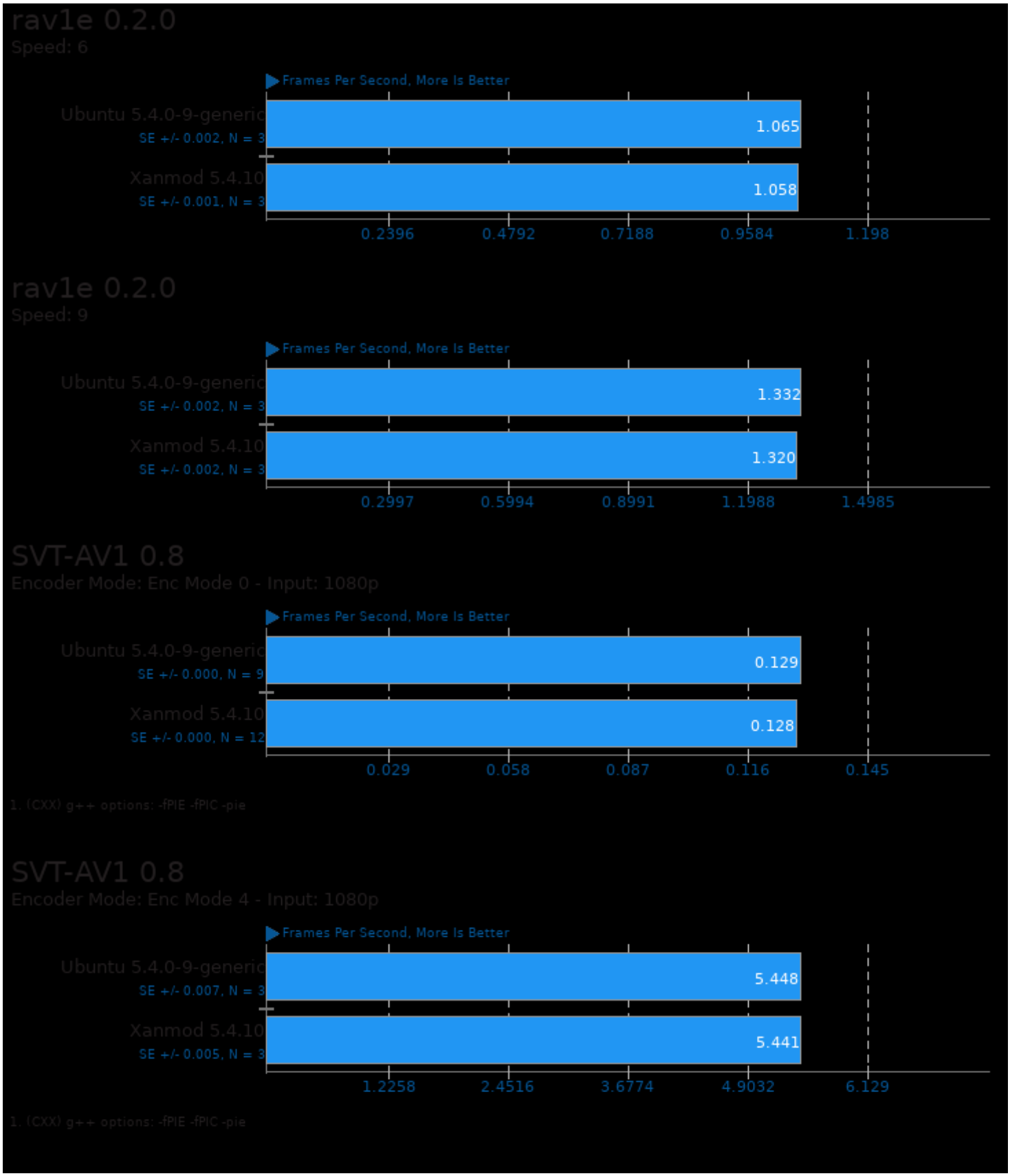

DaCapo Benchmark 9.12-MR1
Java Test: Tradebeans
msec, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 98.97, N = 4
9528
Xanmod 5.4.10
SE +/- 47.02, N = 4
9512
2K
4K
6K
8K
10K
Renaissance 0.9.0
Test: Apache Spark ALS
ms, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 24.46, N = 8
6035.27
Xanmod 5.4.10
SE +/- 49.65, N = 8
6077.36
1300
2600
3900
5200
6500
Renaissance 0.9.0
Test: Apache Spark Bayes
ms, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 16.07, N = 8
3366.00
Xanmod 5.4.10
SE +/- 14.47, N = 8
3400.68
700
1400
2100
2800
3500
Renaissance 0.9.0
Test: Savina Reactors.IO
ms, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 510.44, N = 40
22005.25
Xanmod 5.4.10
SE +/- 444.78, N = 40
21096.40
5K
10K
15K
20K
25K


Renaissance 0.9.0
Test: Apache Spark PageRank
ms, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 143.51, N = 8
20267.80
Xanmod 5.4.10
SE +/- 90.88, N = 8
20409.98
4K
8K
12K
16K
20K
Renaissance 0.9.0
Test: In-Memory Database Shootout
ms, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 82.27, N = 10
8917.04
Xanmod 5.4.10
SE +/- 77.22, N = 8
9127.82
2K
4K
6K
8K
10K
Renaissance 0.9.0
Test: Akka Unbalanced Cobwebbed Tree
ms, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 91.65, N = 40
12039.79
Xanmod 5.4.10
SE +/- 91.09, N = 40
11906.93
3K
6K
9K
12K
15K
Node.js Express HTTP Load Test
Requests Per Second, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 143.30, N = 5
11123
Xanmod 5.4.10
SE +/- 95.33, N = 15
10732
2K
4K
6K
8K
10K
1. Nodejs
v10.15.2


dav1d 0.5.0
Video Input: Chimera 1080p
FPS, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.75, N = 3
MIN: 215.44 / MAX: 340.54
276.44
Xanmod 5.4.10
SE +/- 1.20, N = 3
MIN: 219.93 / MAX: 343.07
280.23
60
120
180
240
300
1. (CC) gcc options: -pthread
dav1d 0.5.0
Video Input: Summer Nature 4K
FPS, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.54, N = 3
MIN: 100.93 / MAX: 182.69
170.29
Xanmod 5.4.10
SE +/- 0.98, N = 3
MIN: 108.96 / MAX: 187.3
173.89
40
80
120
160
200
1. (CC) gcc options: -pthread
dav1d 0.5.0
Video Input: Summer Nature 1080p
FPS, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 1.12, N = 3
MIN: 186.87 / MAX: 326.72
298.12
Xanmod 5.4.10
SE +/- 0.86, N = 3
MIN: 197.6 / MAX: 334.13
305.13
70
140
210
280
350
1. (CC) gcc options: -pthread
dav1d 0.5.0
Video Input: Chimera 1080p 10-bit
FPS, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.16, N = 3
MIN: 33.31 / MAX: 102.44
48.86
Xanmod 5.4.10
SE +/- 0.03, N = 3
MIN: 33.21 / MAX: 103.51
48.86
11
22
33
44
55
1. (CC) gcc options: -pthread

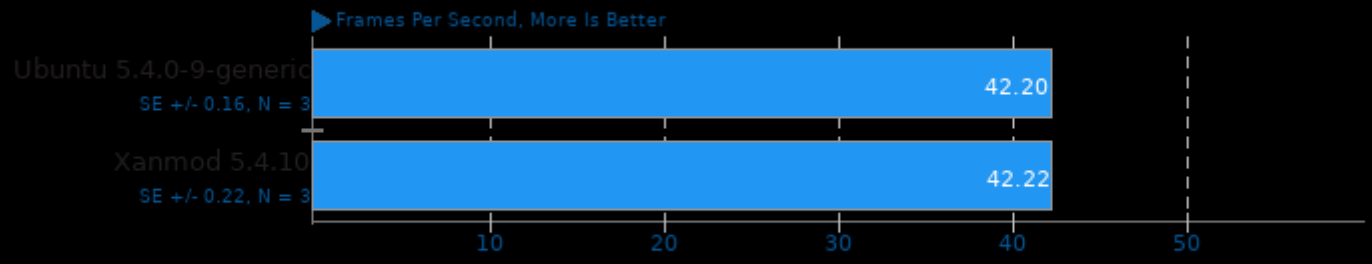

AOM AV1 2020-01-10
Encoder Mode: Speed 0 Two-Pass
Frames Per Second, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.00, N = 3
0.17
Xanmod 5.4.10
SE +/- 0.00, N = 4
0.17
0.0383
0.0766
0.1149
0.1532
0.1915
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 2020-01-10
Encoder Mode: Speed 2 Two-Pass
Frames Per Second, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.00, N = 3
0.36
Xanmod 5.4.10
SE +/- 0.00, N = 3
0.36
0.081
0.162
0.243
0.324
0.405
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 2020-01-10
Encoder Mode: Speed 4 Realtime
Frames Per Second, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.00, N = 3
0.63
Xanmod 5.4.10
SE +/- 0.00, N = 3
0.62
0.1418
0.2836
0.4254
0.5672
0.709
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 2020-01-10
Encoder Mode: Speed 5 Two-Pass
Frames Per Second, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.00, N = 3
1.07
Xanmod 5.4.10
SE +/- 0.00, N = 3
1.06
0.2408
0.4816
0.7224
0.9632
1.204
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread


AOM AV1 2020-01-10
Encoder Mode: Speed 6 Realtime
Frames Per Second, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.03, N = 3
9.59
Xanmod 5.4.10
SE +/- 0.03, N = 3
9.66
3
6
9
12
15
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 2020-01-10
Encoder Mode: Speed 8 Realtime
Frames Per Second, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.07, N = 3
21.25
Xanmod 5.4.10
SE +/- 0.12, N = 3
21.05
5
10
15
20
25
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
rav1e 0.2.0
Speed: 1
Frames Per Second, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.000, N = 12
0.183
Xanmod 5.4.10
SE +/- 0.000, N = 15
0.182
0.0412
0.0824
0.1236
0.1648
0.206
rav1e 0.2.0
Speed: 5
Frames Per Second, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.000, N = 15
0.691
Xanmod 5.4.10
SE +/- 0.002, N = 3
0.686
0.1555
0.311
0.4665
0.622
0.7775


rav1e 0.2.0
Speed: 6
Frames Per Second, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.002, N = 3
1.065
Xanmod 5.4.10
SE +/- 0.001, N = 3
1.058
0.2396
0.4792
0.7188
0.9584
1.198
rav1e 0.2.0
Speed: 9
Frames Per Second, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.002, N = 3
1.332
Xanmod 5.4.10
SE +/- 0.002, N = 3
1.320
0.2997
0.5994
0.8991
1.1988
1.4985
SVT-AV1 0.8
Encoder Mode: Enc Mode 0 - Input: 1080p
Frames Per Second, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.000, N = 9
0.129
Xanmod 5.4.10
SE +/- 0.000, N = 12
0.128
0.029
0.058
0.087
0.116
0.145
1. (CXX) g++ options: -fPIE -fPIC -pie
SVT-AV1 0.8
Encoder Mode: Enc Mode 4 - Input: 1080p
Frames Per Second, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.007, N = 3
5.448
Xanmod 5.4.10
SE +/- 0.005, N = 3
5.441
1.2258
2.4516
3.6774
4.9032
6.129
1. (CXX) g++ options: -fPIE -fPIC -pie

SVT-AV1 0.8

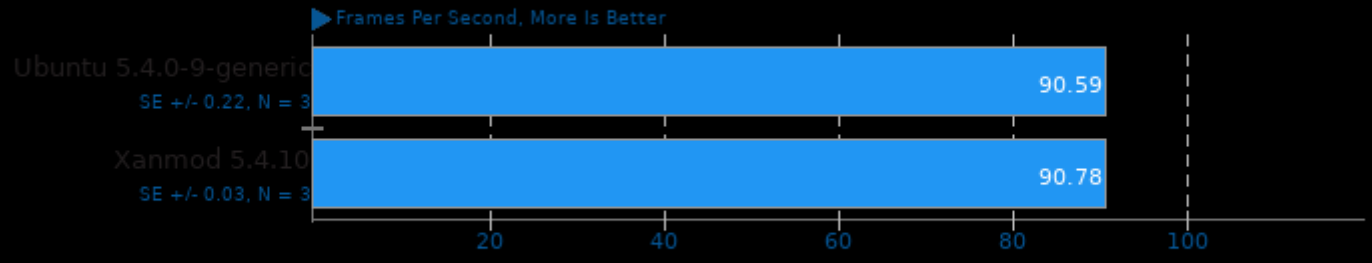
Encoder Mode: Enc Mode 8 - Input: 1080p



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

SVT-HEVC 1.4.1

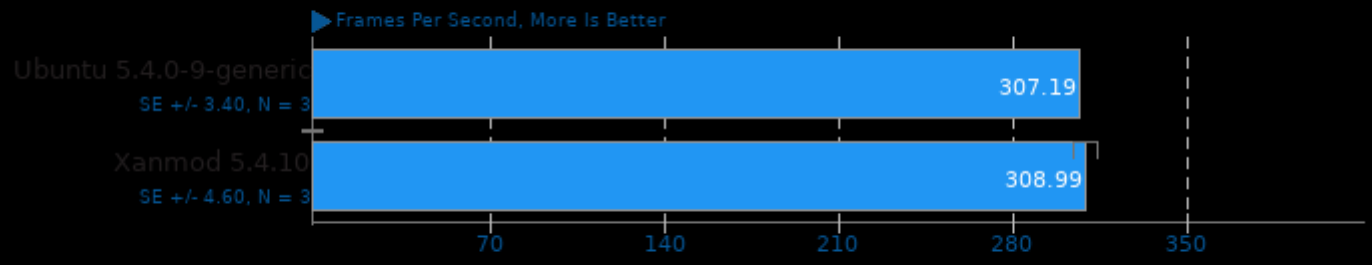
1080p 8-bit YUV To HEVC Video Encode



1. (CC) gcc options: -fPIE -fPIC -O3 -O2 -pie -rdynamic -lpthread -lrt

SVT-VP9 0.1

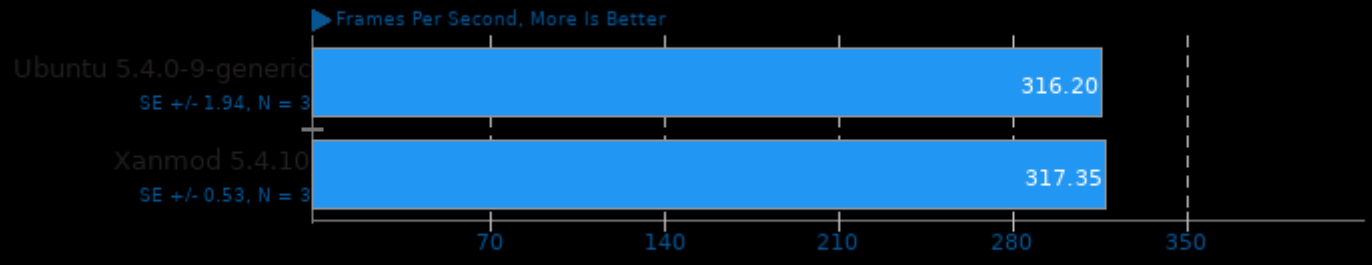
Tuning: VMAF Optimized - Input: Bosphorus 1080p



1. (CC) gcc options: -fPIE -fPIC -fvisibility=hidden -O3 -pie -rdynamic -lpthread -lrt -lm

SVT-VP9 0.1

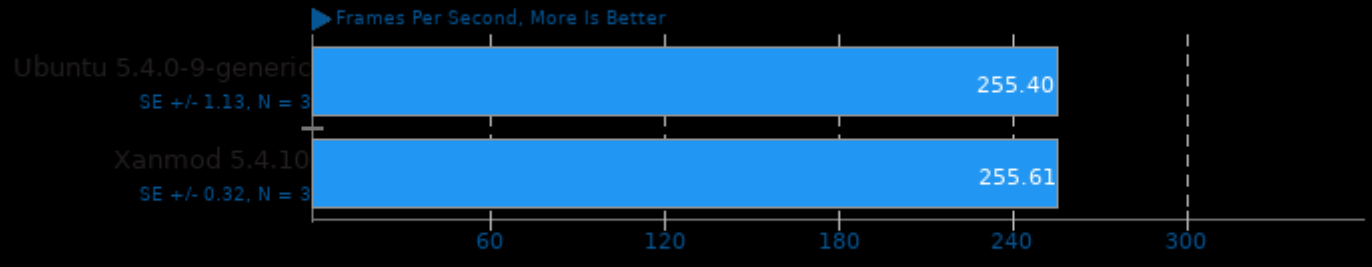
Tuning: PSNR/SSIM Optimized - Input: Bosphorus 1080p



1. (CC) gcc options: -fPIE -fPIC -fvisibility=hidden -O3 -pie -rdynamic -lpthread -lrt -lm

SVT-VP9 0.1

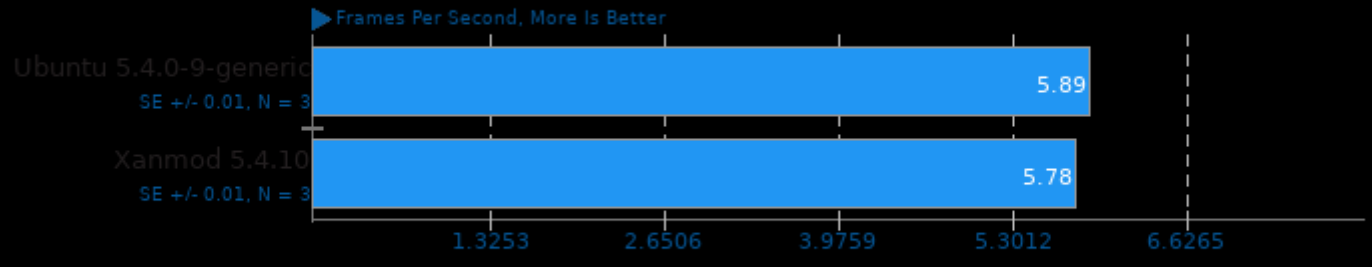
Tuning: Visual Quality Optimized - Input: Bosphorus 1080p



1. (CC) gcc options: -fPIE -fPIC -fvisibility=hidden -O3 -pie -rdynamic -lpthread -lrt -lm

VP9 libvpx Encoding 1.8.2

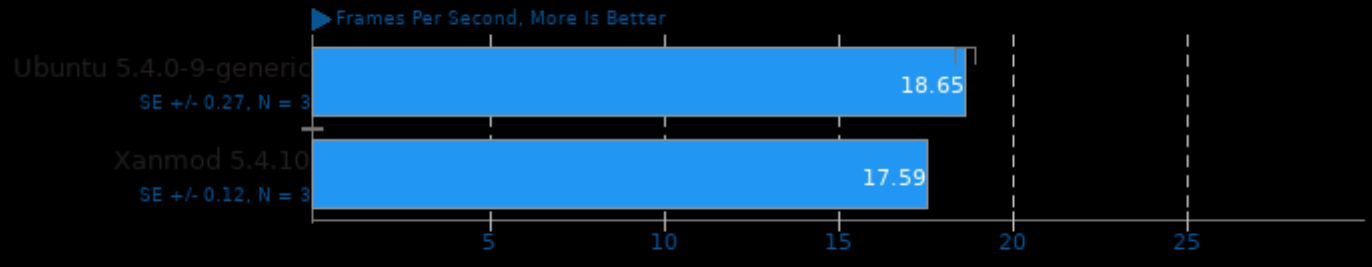
Speed: Speed 0



1. (CXX) g++ options: -m64 -lm -lpthread -O3 -fPIC -U_FORTIFY_SOURCE -std=c++11

VP9 libvpx Encoding 1.8.2

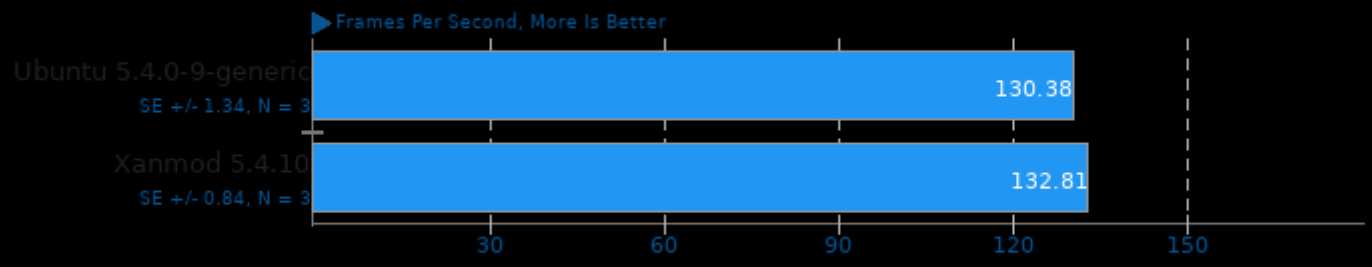
Speed: Speed 5



1. (CXX) g++ options: -m64 -lm -lpthread -O3 -fPIC -U_FORTIFY_SOURCE -std=c++11

x264 2018-09-25

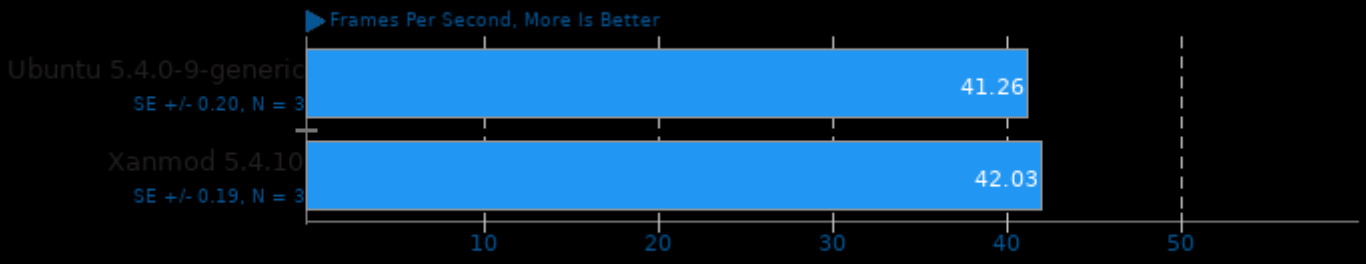
H.264 Video Encoding



1. (CC) gcc options: -ldl -m64 -lm -lpthread -O3 -ffast-math -std=gnu99 -fPIC -fomit-frame-pointer -fno-tree-vectorize

x265 3.1.2

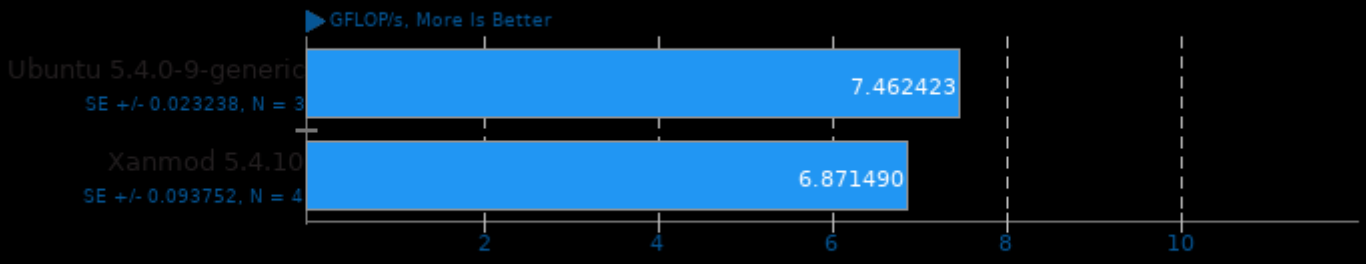
H.265 1080p Video Encoding



1. (CXX) g++ options: -O3 -rdynamic -lpthread -lrt -ldl -lnuma

ACES DGEMM 1.0

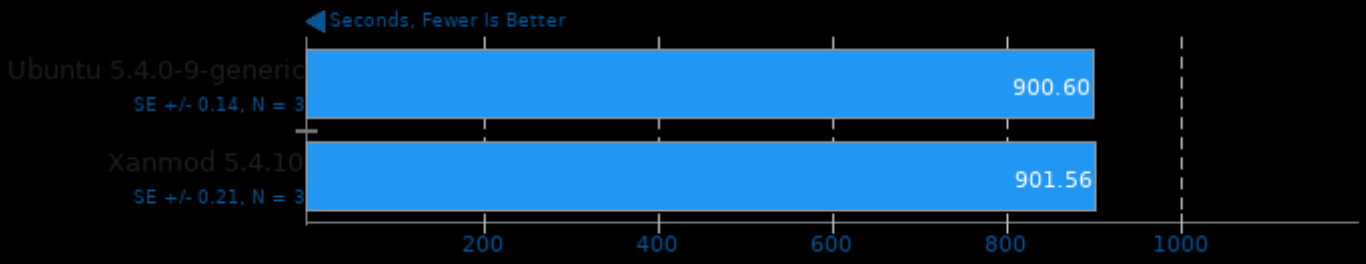
Sustained Floating-Point Rate



1. (CC) gcc options: -O3 -march=native -fopenmp

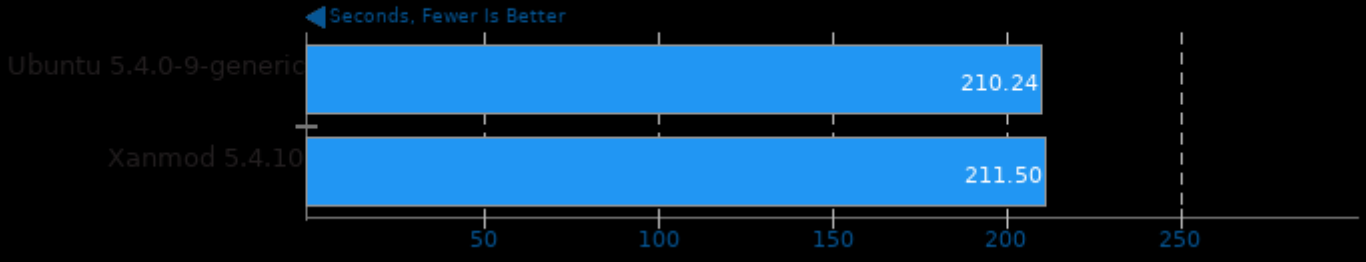
Timed GCC Compilation 8.2

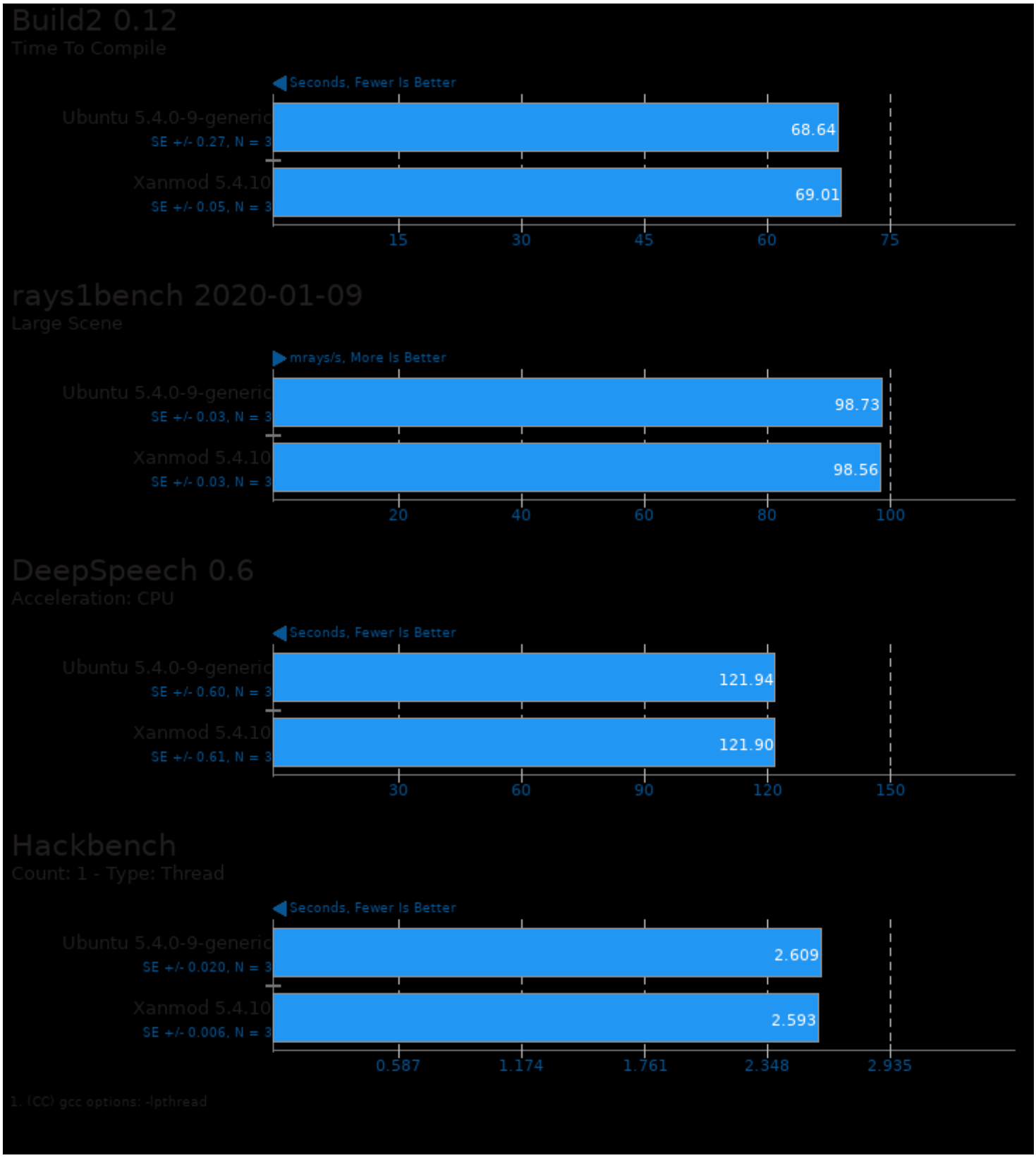
Time To Compile



Timed LLVM Compilation 6.0.1

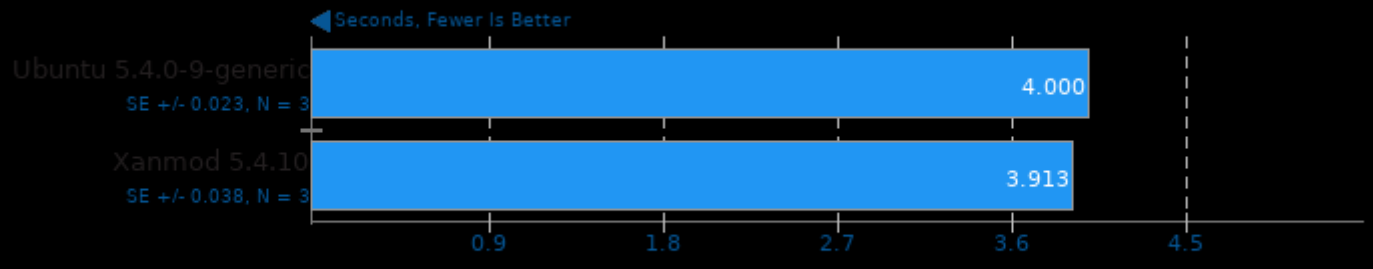
Time To Compile




Build2 0.12
Time To Compile
Seconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.27, N = 3
68.64
Xanmod 5.4.10
SE +/- 0.05, N = 3
69.01
15
30
45
60
75
rays1bench 2020-01-09
Large Scene
mrays/s, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.03, N = 3
98.73
Xanmod 5.4.10
SE +/- 0.03, N = 3
98.56
20
40
60
80
100
DeepSpeech 0.6
Acceleration: CPU
Seconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.60, N = 3
121.94
Xanmod 5.4.10
SE +/- 0.61, N = 3
121.90
30
60
90
120
150
Hackbench
Count: 1 - Type: Thread
Seconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.020, N = 3
2.609
Xanmod 5.4.10
SE +/- 0.006, N = 3
2.593
0.587
1.174
1.761
2.348
2.935
1. (CC) gcc options: -lpthread

Hackbench

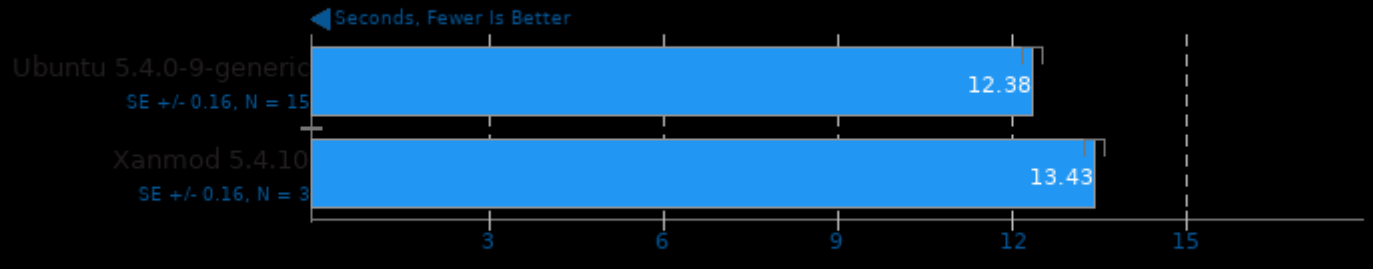
Count: 2 - Type: Thread



1. (CC) gcc options: -lpthread

Hackbench

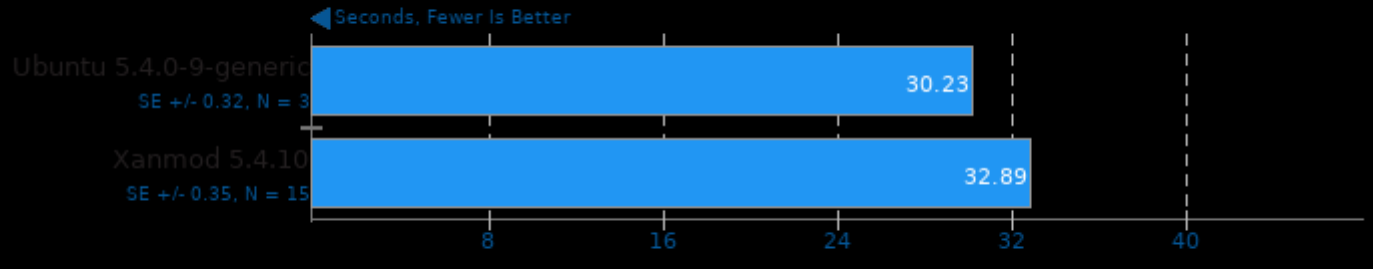
Count: 4 - Type: Thread



1. (CC) gcc options: -lpthread

Hackbench

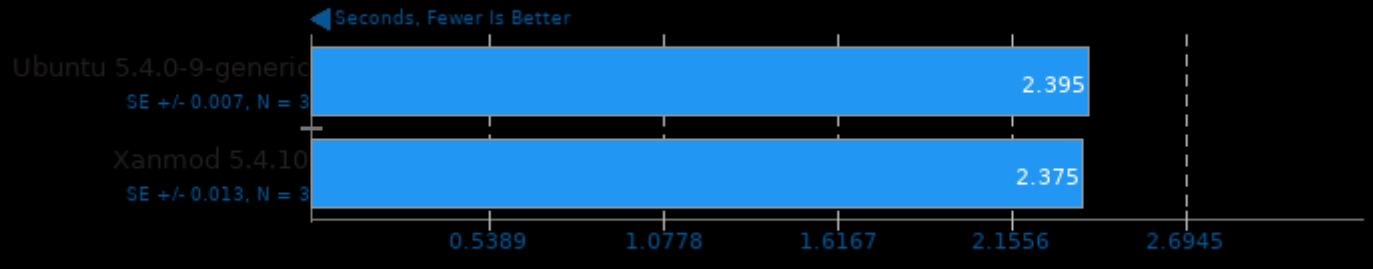
Count: 8 - Type: Thread



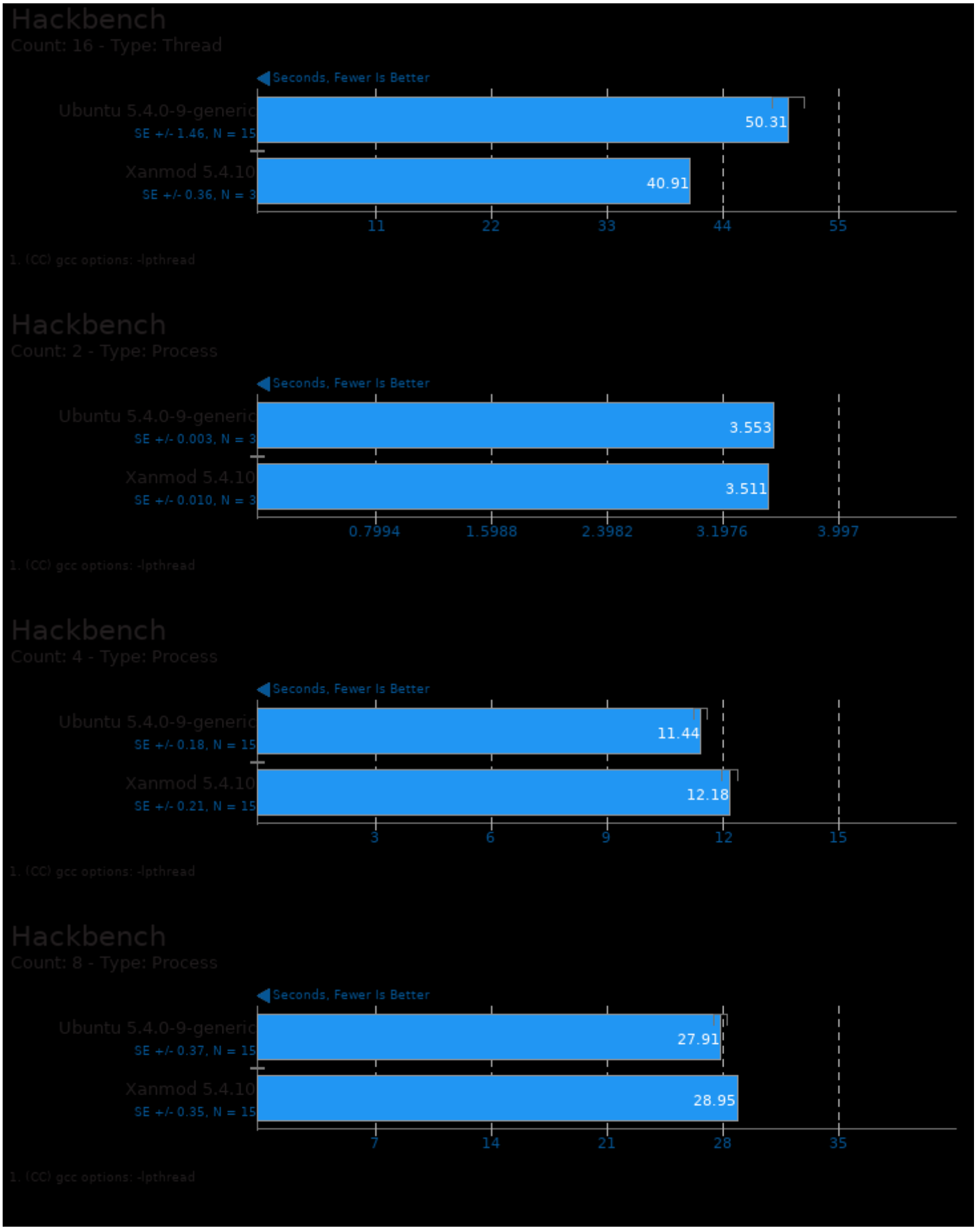
1. (CC) gcc options: -lpthread

Hackbench

Count: 1 - Type: Process

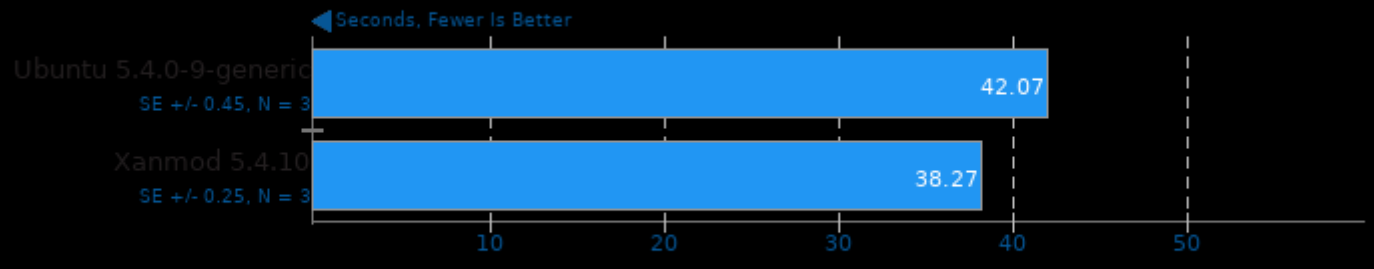


1. (CC) gcc options: -lpthread


Hackbench
Count: 16 - Type: Thread
Seconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 1.46, N = 15
50.31
Xanmod 5.4.10
SE +/- 0.36, N = 3
40.91
11
22
33
44
55
1. (CC) gcc options: -lpthread
Hackbench
Count: 2 - Type: Process
Seconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.003, N = 3
3.553
Xanmod 5.4.10
SE +/- 0.010, N = 3
3.511
0.7994
1.5988
2.3982
3.1976
3.997
1. (CC) gcc options: -lpthread
Hackbench
Count: 4 - Type: Process
Seconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.18, N = 15
11.44
Xanmod 5.4.10
SE +/- 0.21, N = 15
12.18
3
6
9
12
15
1. (CC) gcc options: -lpthread
Hackbench
Count: 8 - Type: Process
Seconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.37, N = 15
27.91
Xanmod 5.4.10
SE +/- 0.35, N = 15
28.95
7
14
21
28
35
1. (CC) gcc options: -lpthread

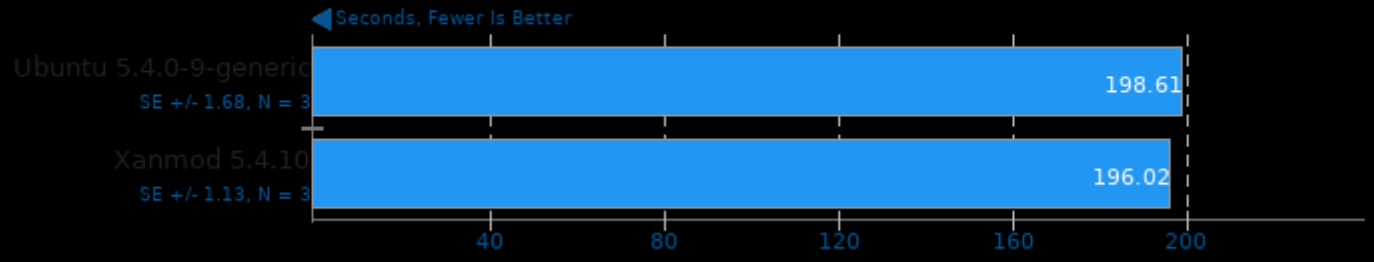
Hackbench

Count: 16 - Type: Process



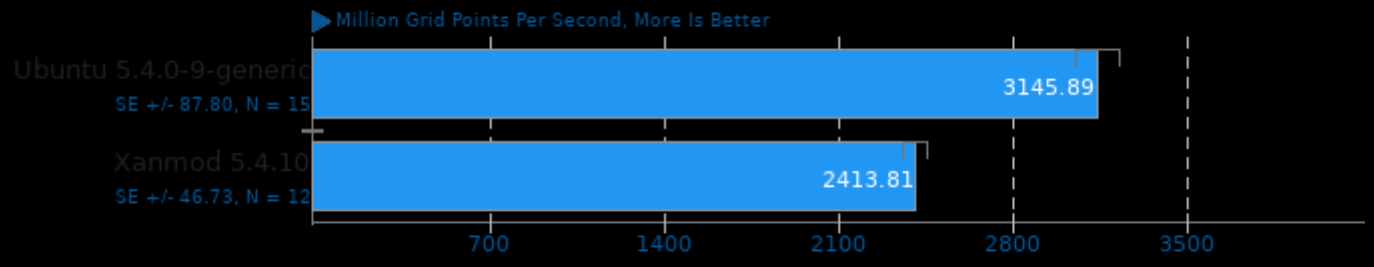
1. (CC) gcc options: -lpthread

Numpy Benchmark



ASKAP 2018-11-10

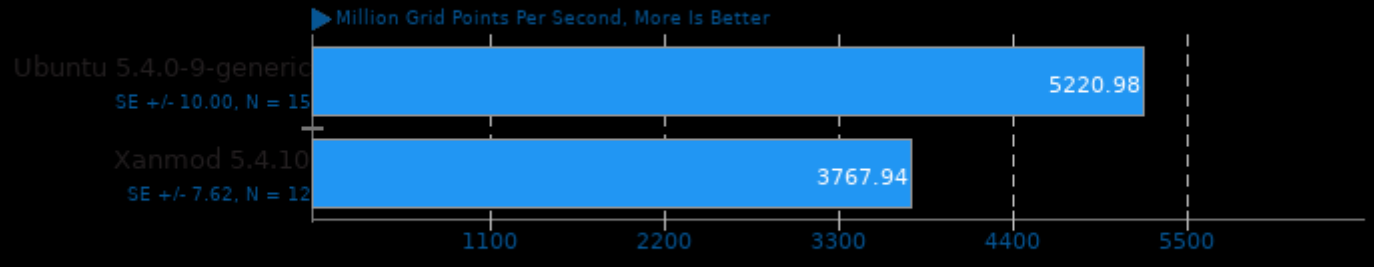
Test: tConvolve OpenMP - Gridding



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

ASKAP 2018-11-10

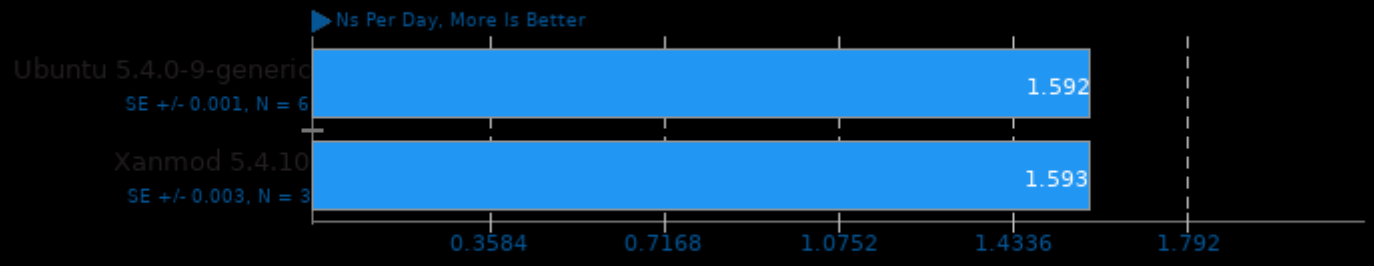
Test: tConvolve OpenMP - Degridding



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

GROMACS 2019.4

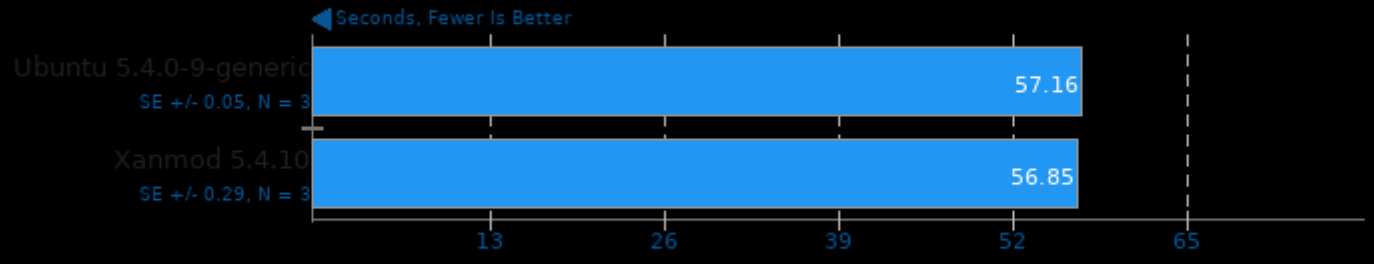
Water Benchmark



1. (CXX) g++ options: -mavx512f -mfma -pthread -std=c++11 -O3 -funroll-all-loops -lrt -lpthread -lm

SQLite Speedtest 3.30

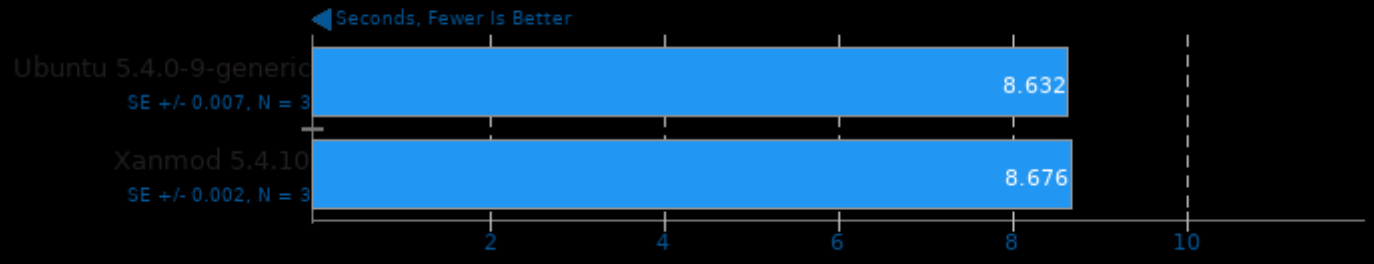
Timed Time - Size 1,000



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

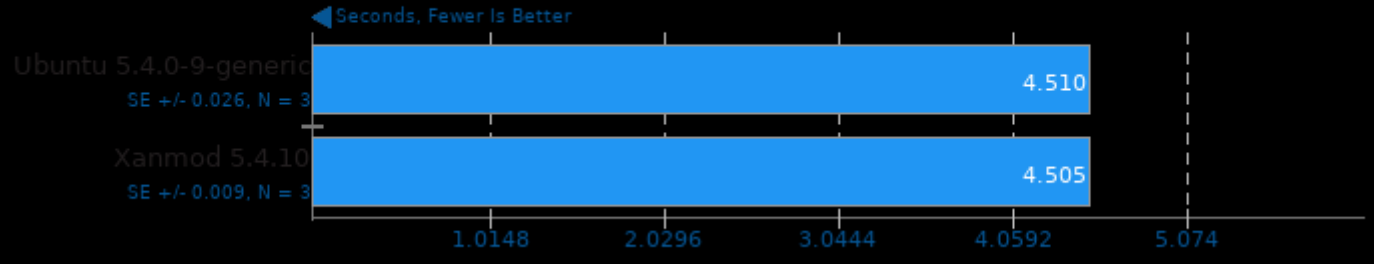
Darktable 2.6.3

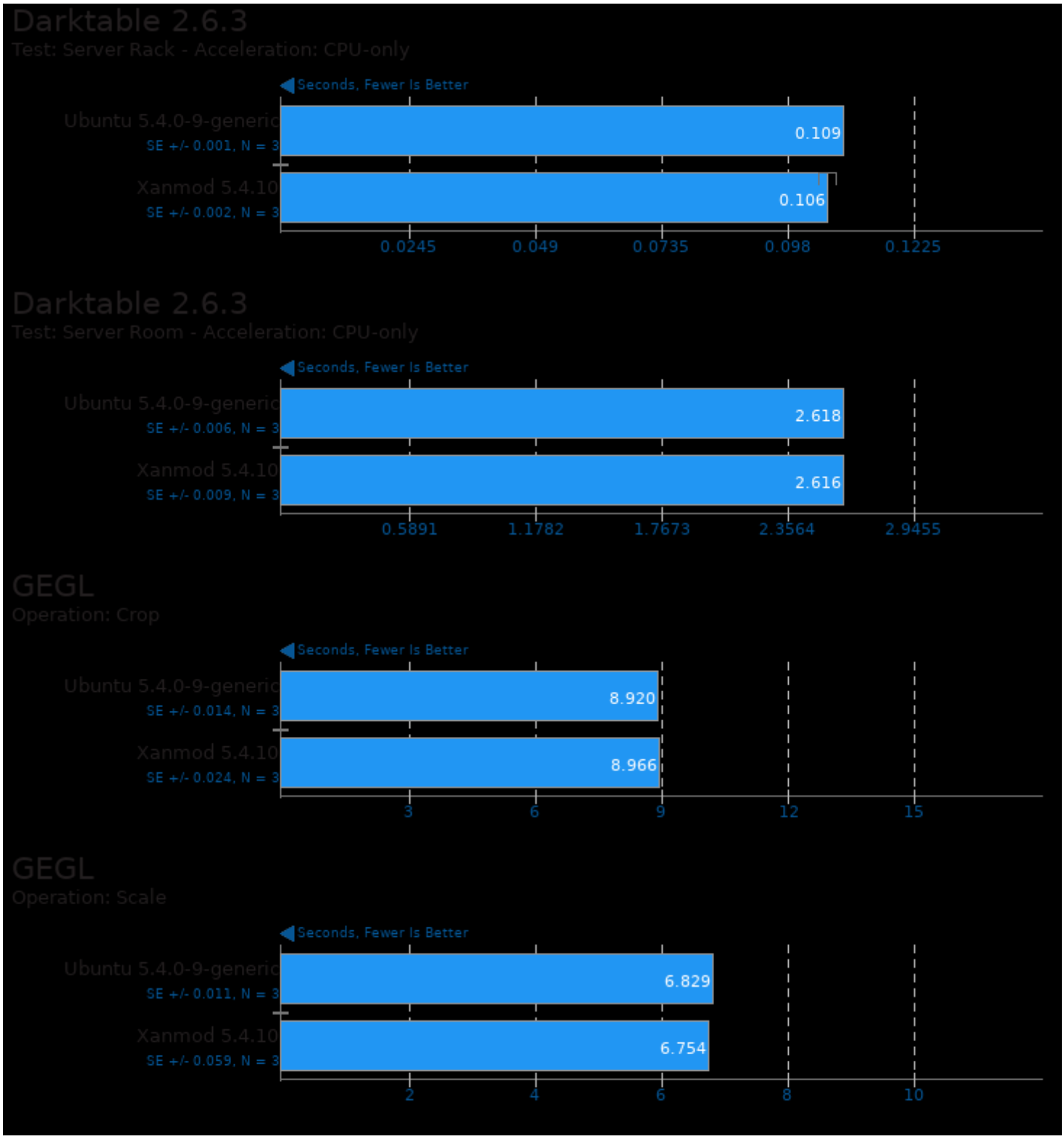
Test: Boat - Acceleration: CPU-only

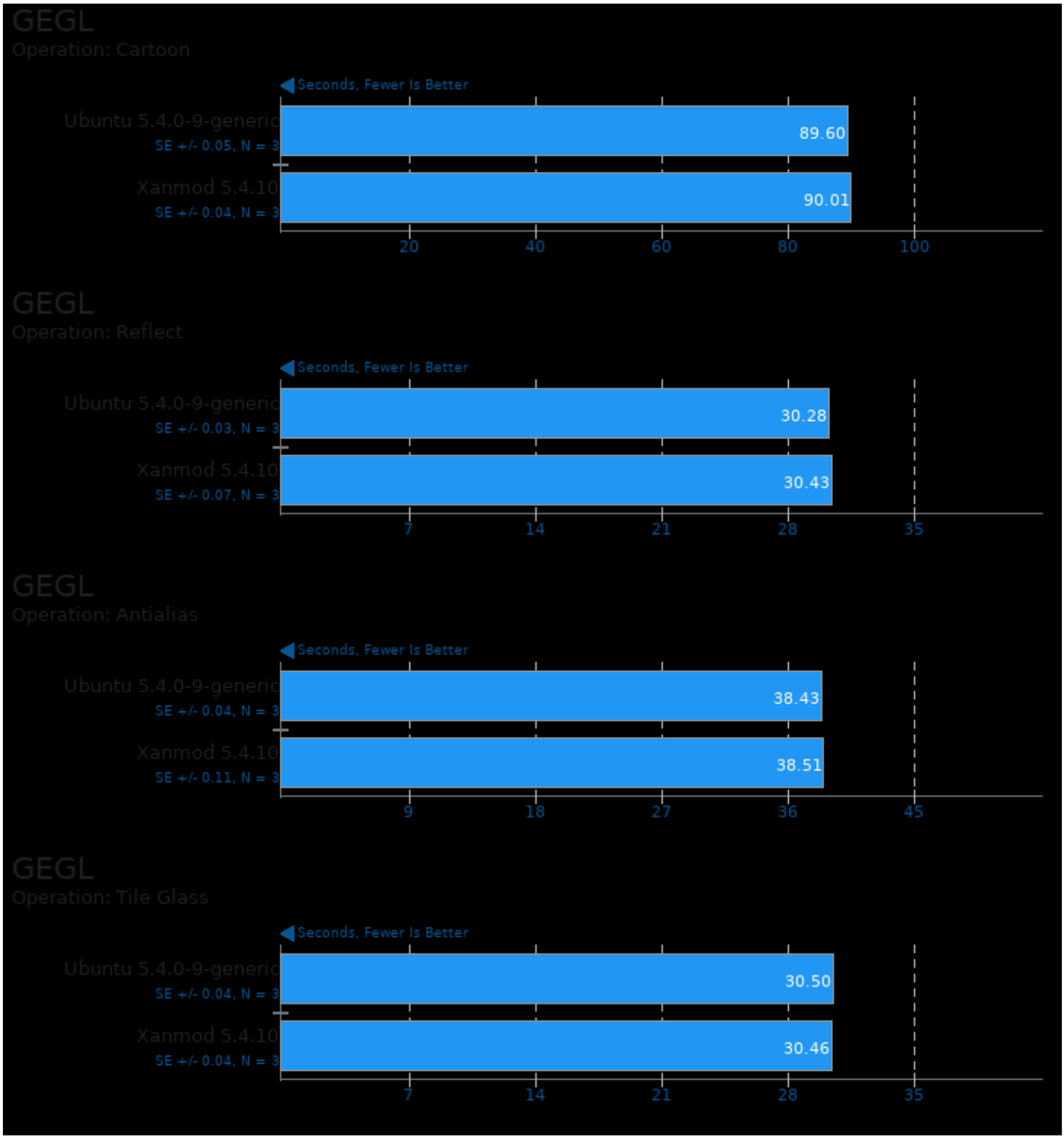


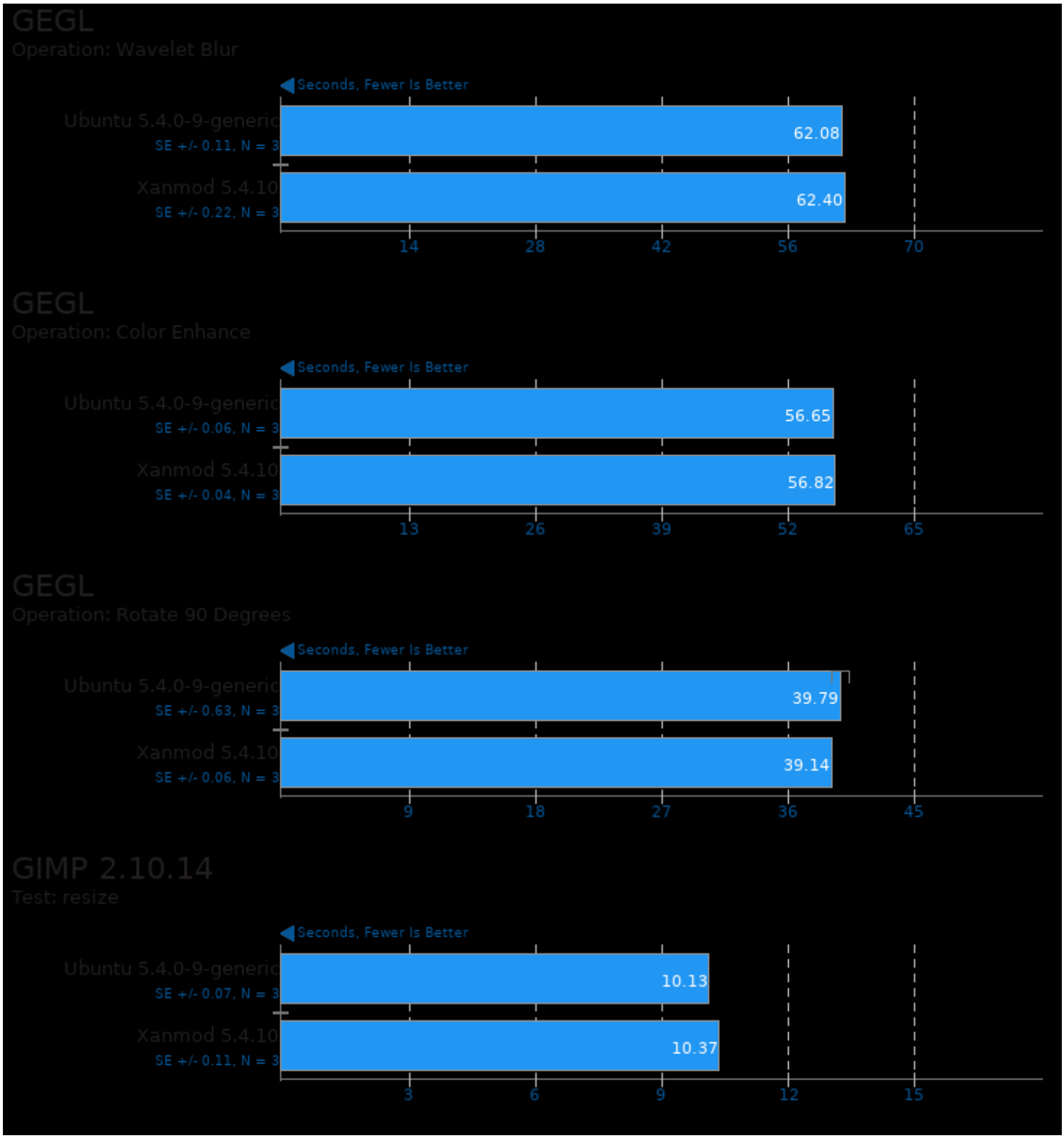
Darktable 2.6.3

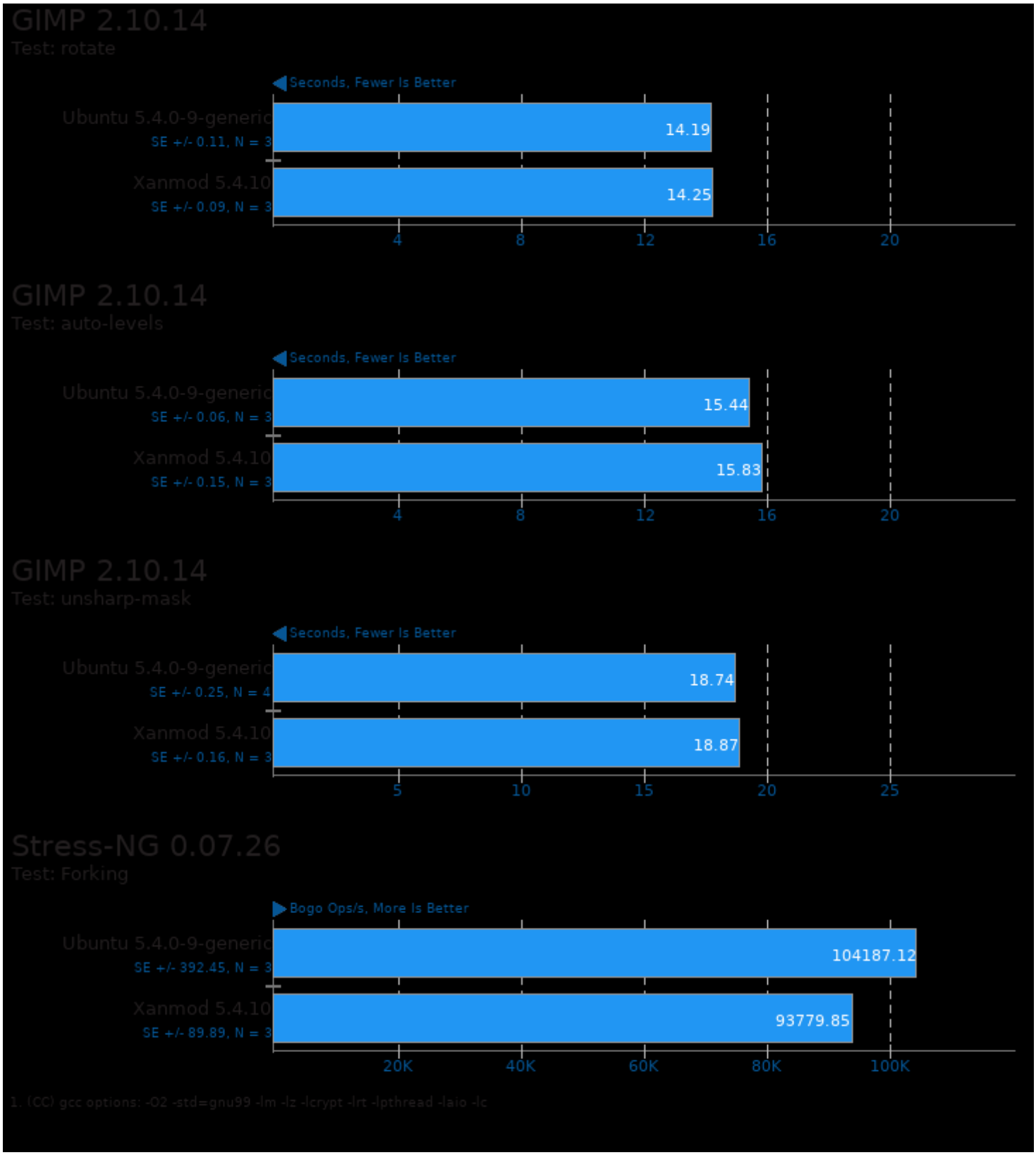
Test: Masskrug - Acceleration: CPU-only




Darktable 2.6.3
Test: Server Rack - Acceleration: CPU-only
Seconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.001, N = 3
0.109
Xanmod 5.4.10
SE +/- 0.002, N = 3
0.106
0.0245
0.049
0.0735
0.098
0.1225
Darktable 2.6.3
Test: Server Room - Acceleration: CPU-only
Seconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.006, N = 3
2.618
Xanmod 5.4.10
SE +/- 0.009, N = 3
2.616
0.5891
1.1782
1.7673
2.3564
2.9455
GEGL
Operation: Crop
Seconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.014, N = 3
8.920
Xanmod 5.4.10
SE +/- 0.024, N = 3
8.966
3
6
9
12
15
GEGL
Operation: Scale
Seconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.011, N = 3
6.829
Xanmod 5.4.10
SE +/- 0.059, N = 3
6.754
2
4
6
8
10

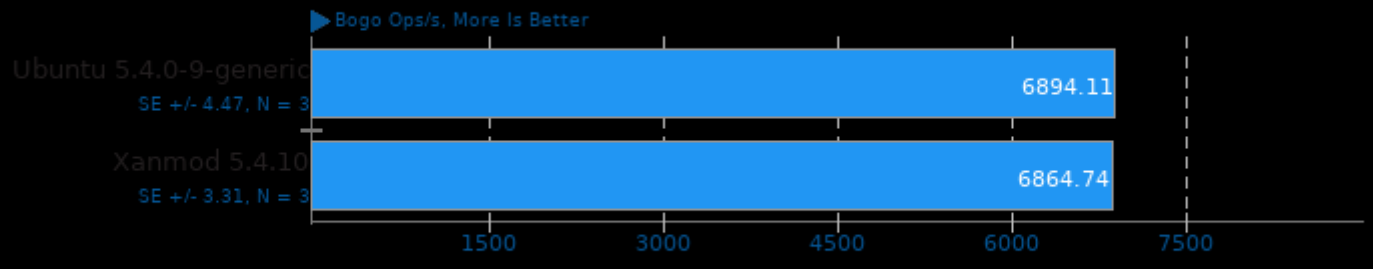

GEGL
Operation: Cartoon
Seconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.05, N = 3
89.60
Xanmod 5.4.10
SE +/- 0.04, N = 3
90.01
20
40
60
80
100
GEGL
Operation: Reflect
Seconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.03, N = 3
30.28
Xanmod 5.4.10
SE +/- 0.07, N = 3
30.43
7
14
21
28
35
GEGL
Operation: Antialias
Seconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.04, N = 3
38.43
Xanmod 5.4.10
SE +/- 0.11, N = 3
38.51
9
18
27
36
45
GEGL
Operation: Tile Glass
Seconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.04, N = 3
30.50
Xanmod 5.4.10
SE +/- 0.04, N = 3
30.46
7
14
21
28
35


GEGL
Operation: Wavelet Blur
Seconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.11, N = 3
62.08
Xanmod 5.4.10
SE +/- 0.22, N = 3
62.40
14
28
42
56
70
GEGL
Operation: Color Enhance
Seconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.06, N = 3
56.65
Xanmod 5.4.10
SE +/- 0.04, N = 3
56.82
13
26
39
52
65
GEGL
Operation: Rotate 90 Degrees
Seconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.63, N = 3
39.79
Xanmod 5.4.10
SE +/- 0.06, N = 3
39.14
9
18
27
36
45
GIMP 2.10.14
Test: resize
Seconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.07, N = 3
10.13
Xanmod 5.4.10
SE +/- 0.11, N = 3
10.37
3
6
9
12
15


GIMP 2.10.14
Test: rotate
Seconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.11, N = 3
14.19
Xanmod 5.4.10
SE +/- 0.09, N = 3
14.25
4
8
12
16
20
GIMP 2.10.14
Test: auto-levels
Seconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.06, N = 3
15.44
Xanmod 5.4.10
SE +/- 0.15, N = 3
15.83
4
8
12
16
20
GIMP 2.10.14
Test: unsharp-mask
Seconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.25, N = 4
18.74
Xanmod 5.4.10
SE +/- 0.16, N = 3
18.87
5
10
15
20
25
Stress-NG 0.07.26
Test: Forking
Bogo Ops/s, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 392.45, N = 3
104187.12
Xanmod 5.4.10
SE +/- 89.89, N = 3
93779.85
20K
40K
60K
80K
100K
1. (CC) gcc options: -O2 -std=gnu99 -lm -lz -lcrypt -lrt -lpthread -laio -lc

Stress-NG 0.07.26

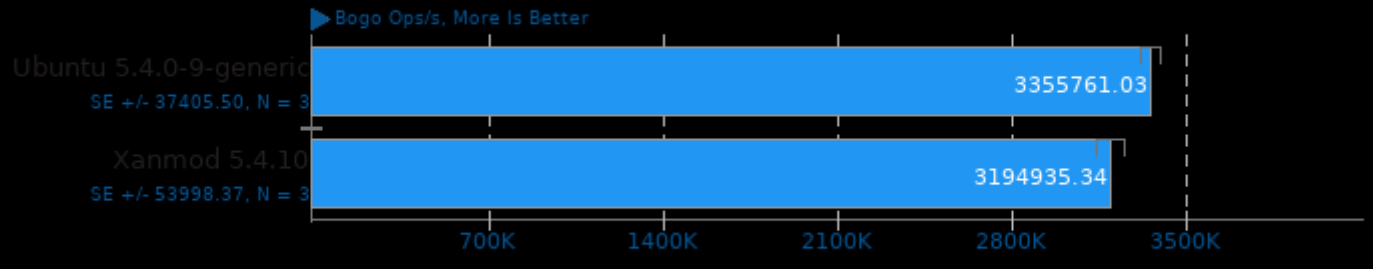
Test: CPU Stress



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

Stress-NG 0.07.26

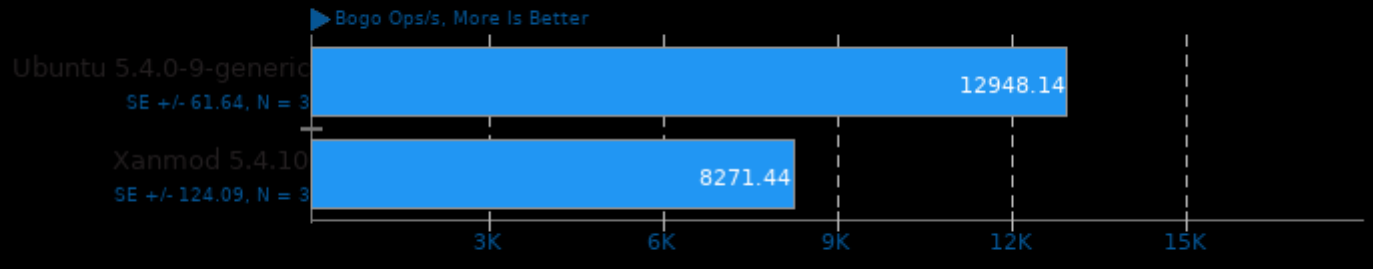
Test: Semaphores



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

Stress-NG 0.07.26

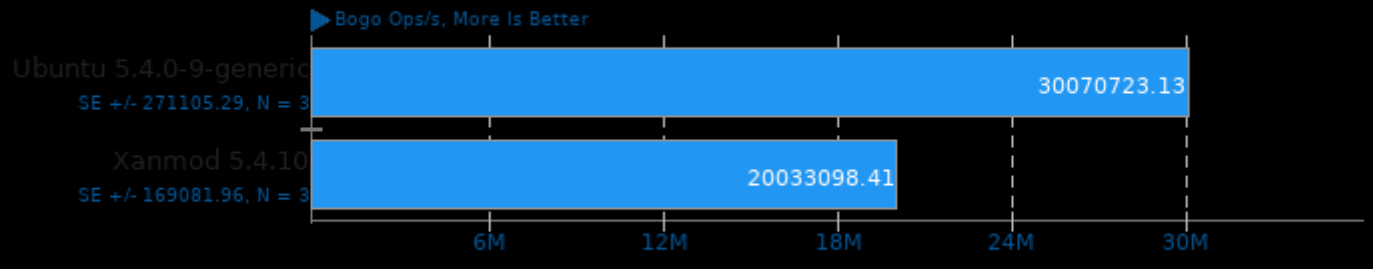
Test: Socket Activity



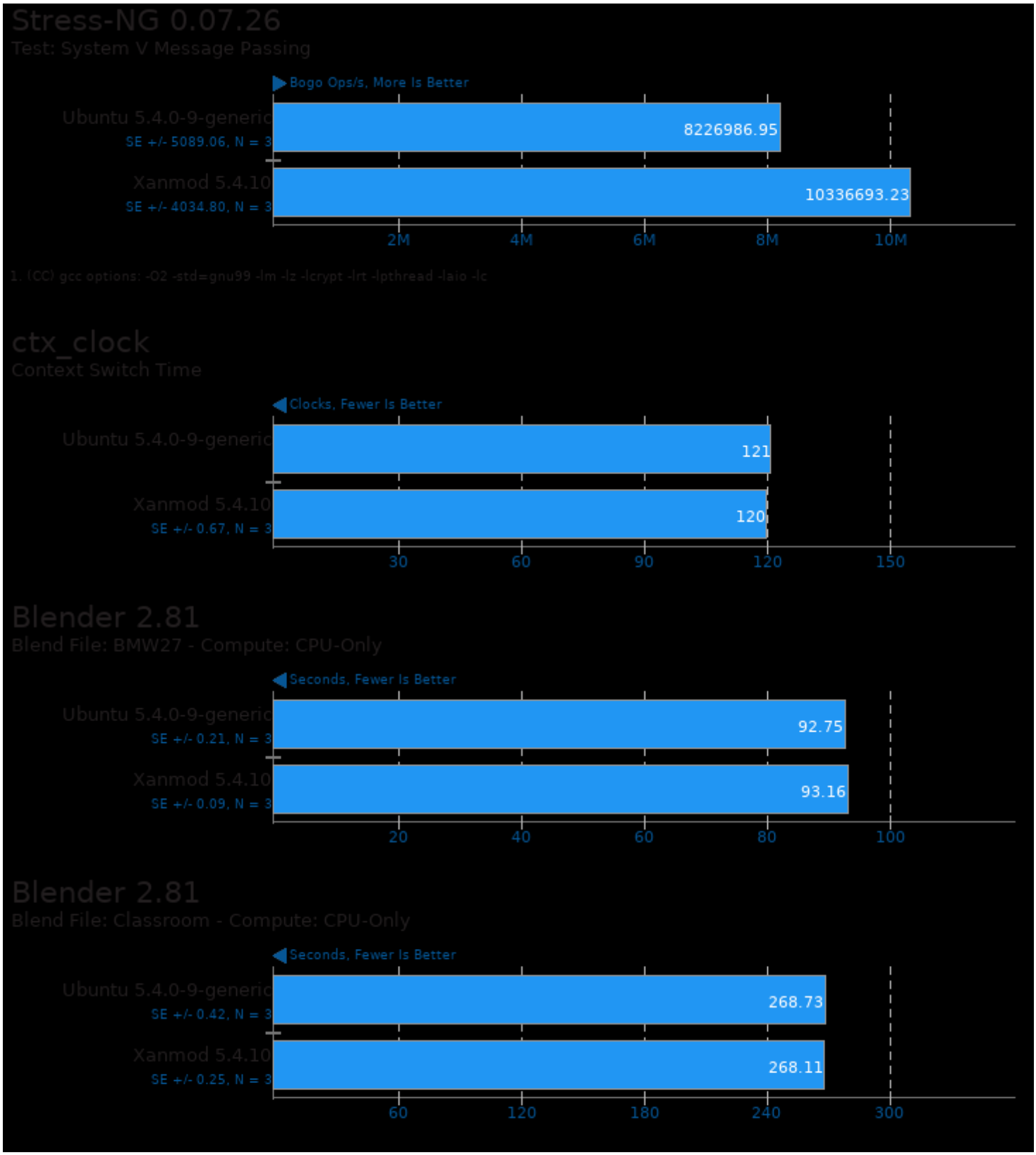
1. (CC) gcc options: -O2 -std=gnu99 -lm -lz -lcrypt -lrt -lpthread -laio -lc

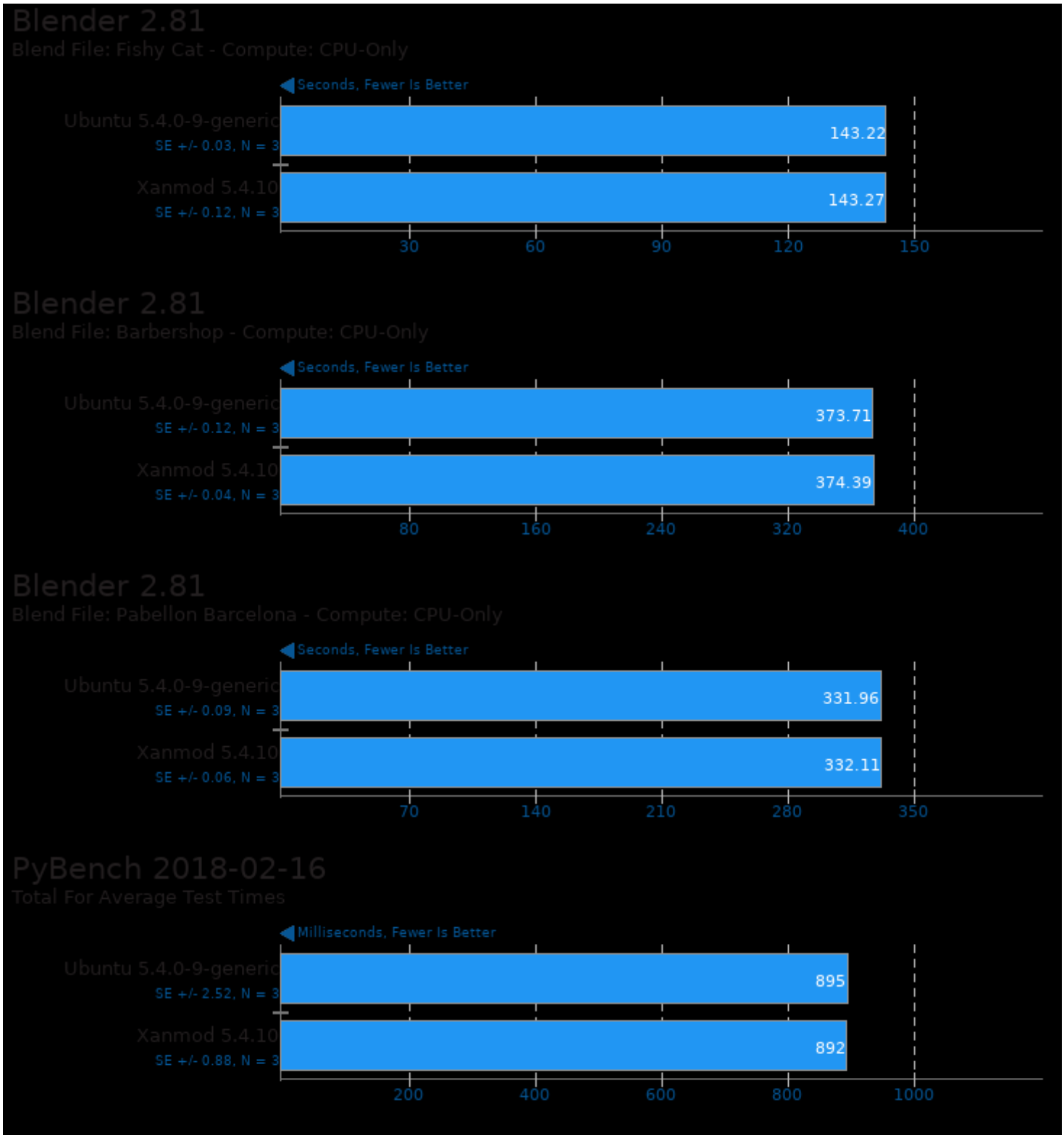
Stress-NG 0.07.26

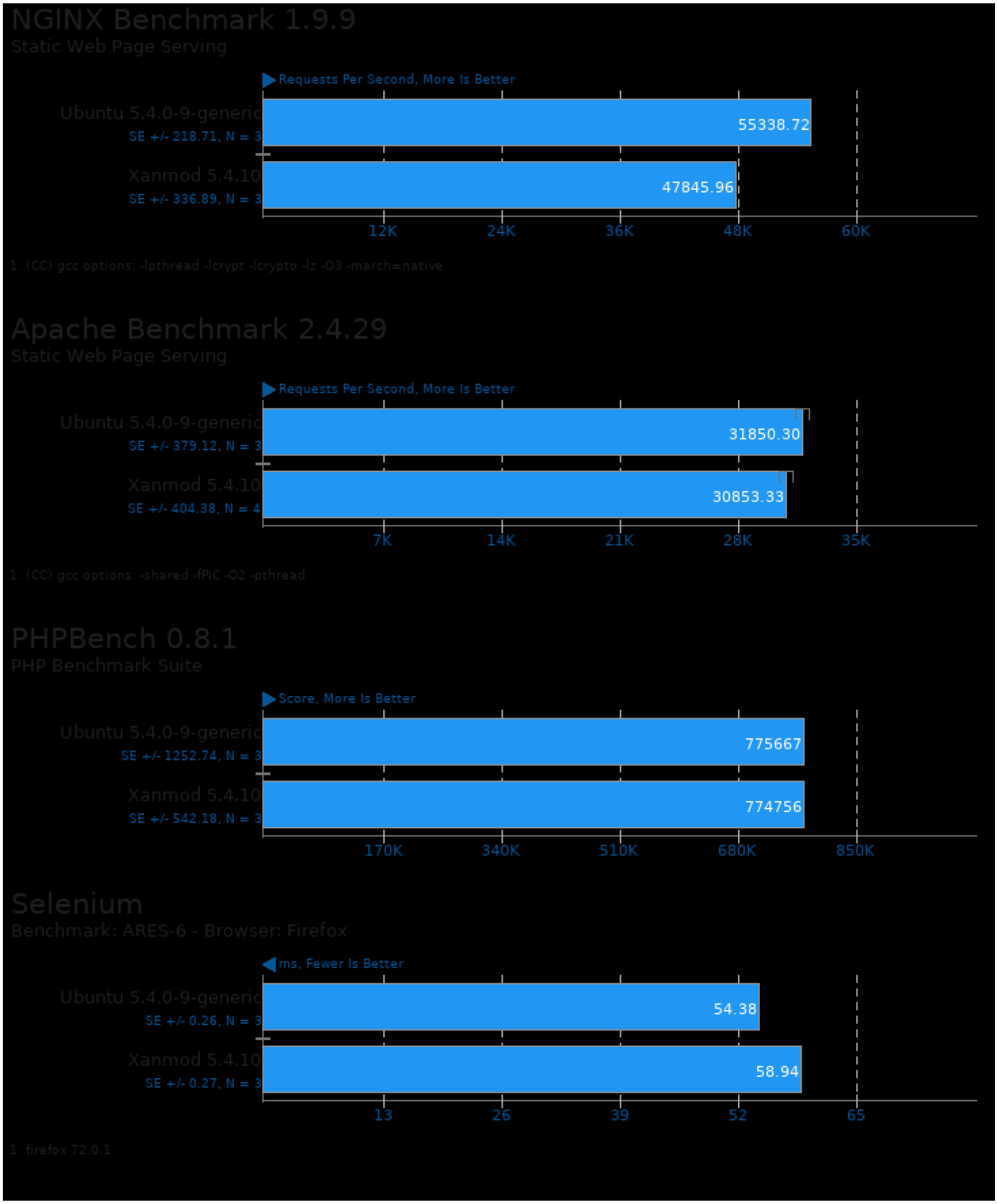
Test: Context Switching



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

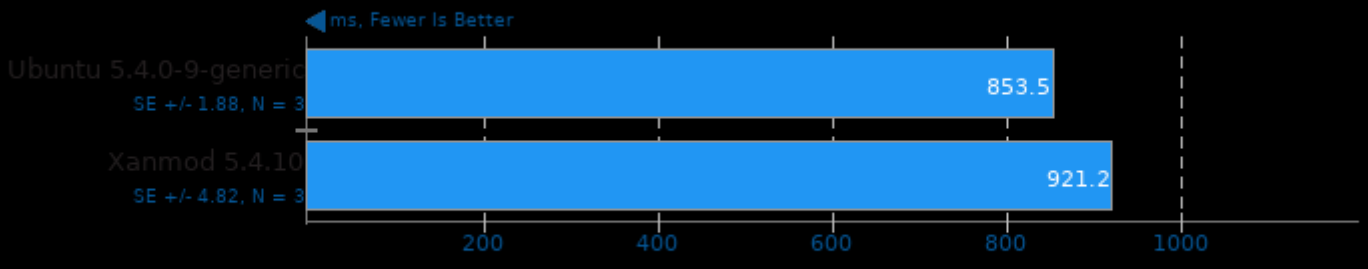

Stress-NG 0.07.26
Test: System V Message Passing
Bogo Ops/s, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 5089.06, N = 3
8226986.95
Xanmod 5.4.10
SE +/- 4034.80, N = 3
10336693.23
2M
4M
6M
8M
10M
1. (CC) gcc options: -O2 -std=gnu99 -lm -lz -lcrypt -lrt -lpthread -laio -lc
ctx_clock
Context Switch Time
Clocks, Fewer Is Better
Ubuntu 5.4.0-9-generic
121
Xanmod 5.4.10
SE +/- 0.67, N = 3
120
30
60
90
120
150
Blender 2.81
Blend File: BMW27 - Compute: CPU-Only
Seconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.21, N = 3
92.75
Xanmod 5.4.10
SE +/- 0.09, N = 3
93.16
20
40
60
80
100
Blender 2.81
Blend File: Classroom - Compute: CPU-Only
Seconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.42, N = 3
268.73
Xanmod 5.4.10
SE +/- 0.25, N = 3
268.11
60
120
180
240
300


Blender 2.81
Blend File: Fishy Cat - Compute: CPU-Only
Seconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.03, N = 3
143.22
Xanmod 5.4.10
SE +/- 0.12, N = 3
143.27
30
60
90
120
150
Blender 2.81
Blend File: Barbershop - Compute: CPU-Only
Seconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.12, N = 3
373.71
Xanmod 5.4.10
SE +/- 0.04, N = 3
374.39
80
160
240
320
400
Blender 2.81
Blend File: Pabellon Barcelona - Compute: CPU-Only
Seconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.09, N = 3
331.96
Xanmod 5.4.10
SE +/- 0.06, N = 3
332.11
70
140
210
280
350
PyBench 2018-02-16
Total For Average Test Times
Milliseconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 2.52, N = 3
895
Xanmod 5.4.10
SE +/- 0.88, N = 3
892
200
400
600
800
1000


NGINX Benchmark 1.9.9
Static Web Page Serving
Requests Per Second, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 218.71, N = 3
55338.72
Xanmod 5.4.10
SE +/- 336.89, N = 3
47845.96
12K
24K
36K
48K
60K
1. (CC) gcc options: -lpthread -lcrypt -lcrypto -lz -O3 -march=native
Apache Benchmark 2.4.29
Static Web Page Serving
Requests Per Second, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 379.12, N = 3
31850.30
Xanmod 5.4.10
SE +/- 404.38, N = 4
30853.33
7K
14K
21K
28K
35K
1. (CC) gcc options: -shared -fPIC -O2 -pthread
PHPBench 0.8.1
PHP Benchmark Suite
Score, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 1252.74, N = 3
775667
Xanmod 5.4.10
SE +/- 542.18, N = 3
774756
170K
340K
510K
680K
850K
Selenium
Benchmark: ARES-6 - Browser: Firefox
ms, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.26, N = 3
54.38
Xanmod 5.4.10
SE +/- 0.27, N = 3
58.94
13
26
39
52
65
1. firefox 72.0.1

Selenium

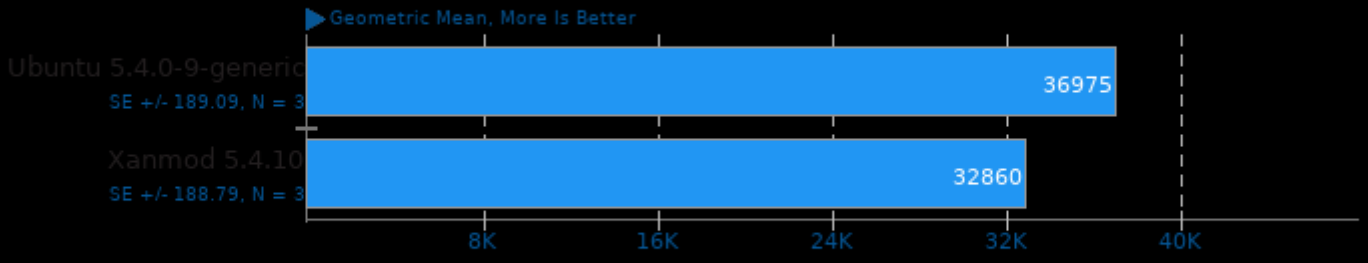
Benchmark: Kraken - Browser: Firefox



1. firefox 72.0.1

Selenium

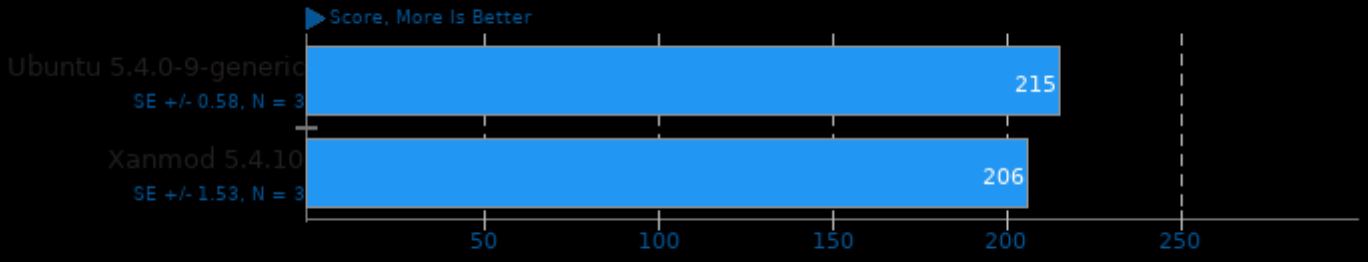
Benchmark: Octane - Browser: Firefox



1. firefox 72.0.1

Selenium

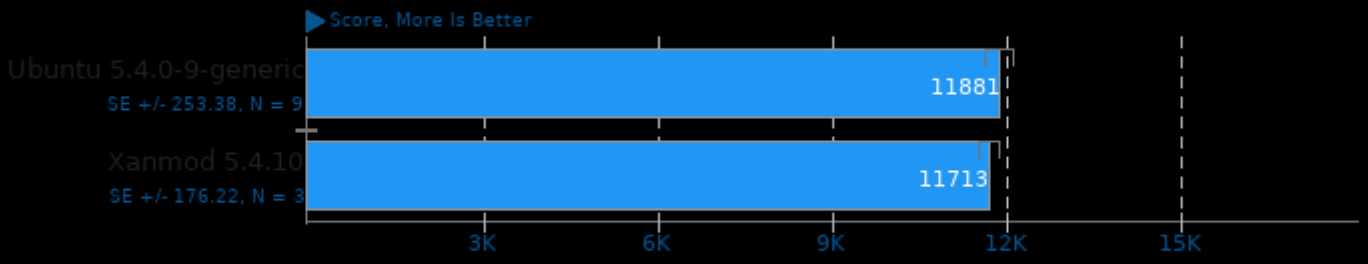
Benchmark: WebXPRT - Browser: Firefox



1. firefox 72.0.1

Selenium

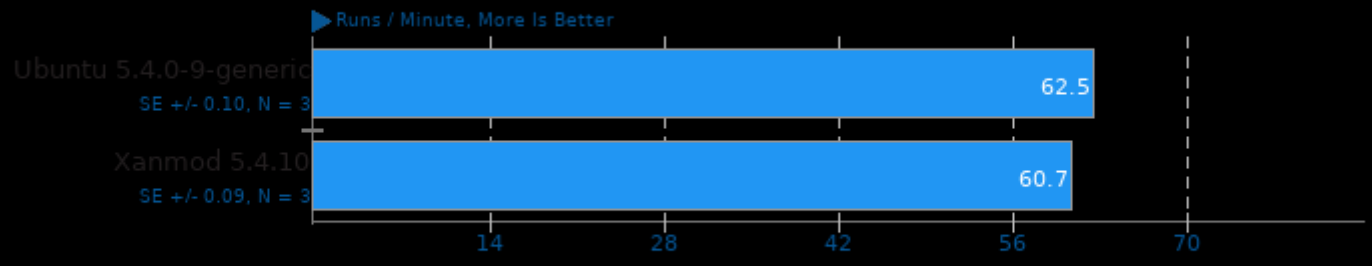
Benchmark: CanvasMark - Browser: Firefox



1. firefox 72.0.1

Selenium

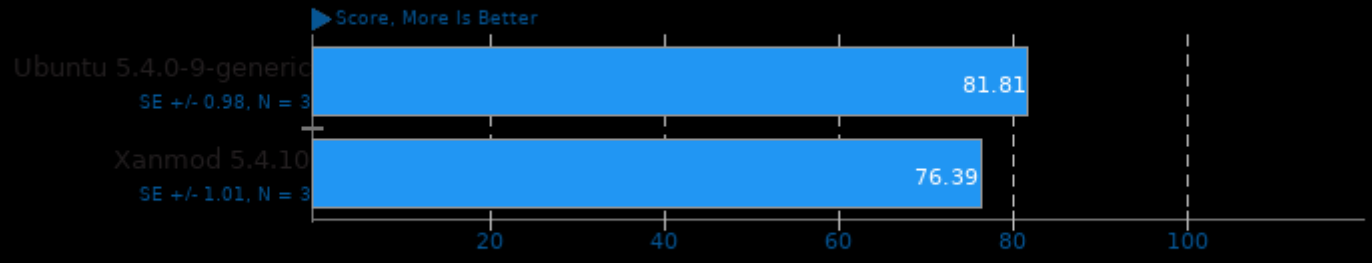
Benchmark: StyleBench - Browser: Firefox



1. firefox 72.0.1

Selenium

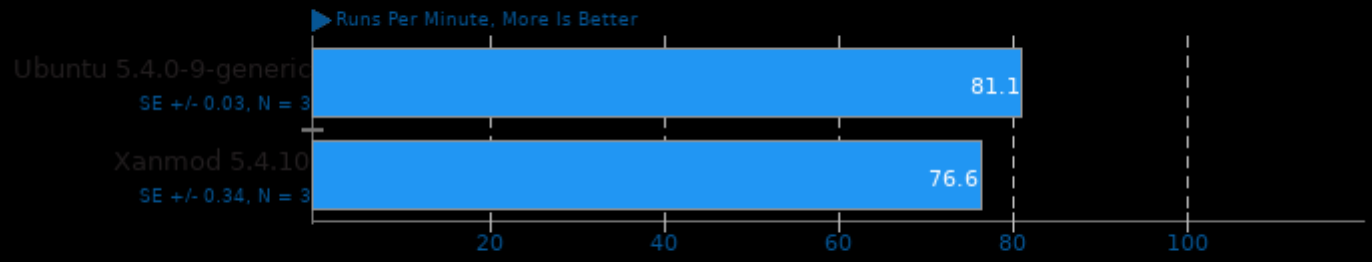
Benchmark: Jetstream 2 - Browser: Firefox



1. firefox 72.0.1

Selenium

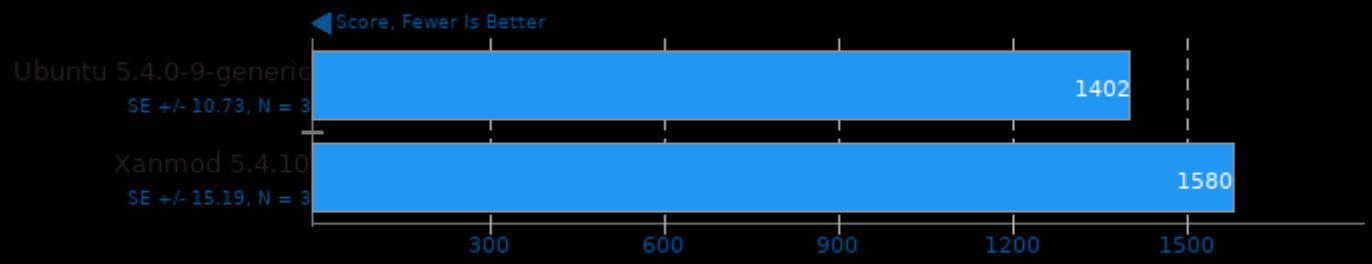
Benchmark: Speedometer - Browser: Firefox



1. firefox 72.0.1

Selenium

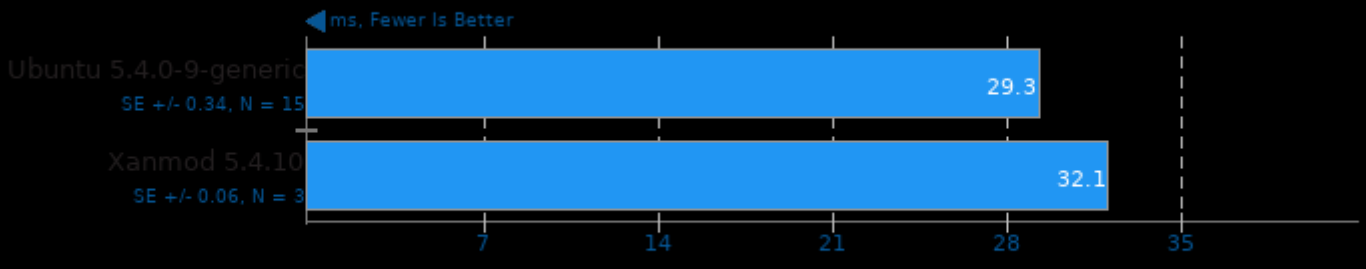
Benchmark: PSPDFKit WASM - Browser: Firefox



1. firefox 72.0.1

Selenium

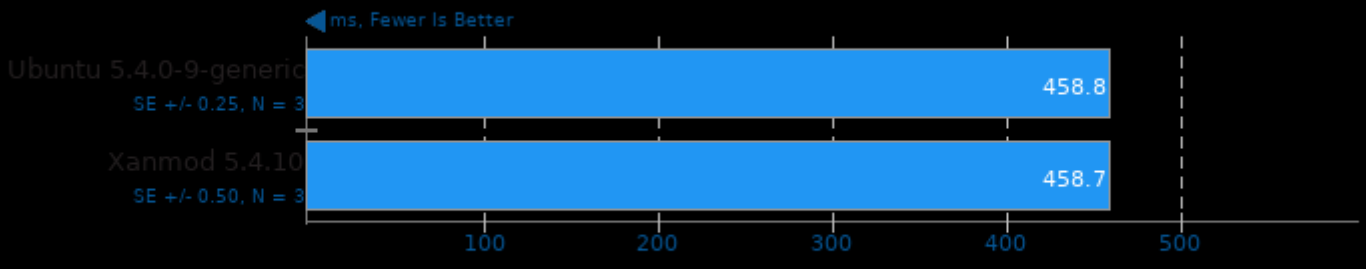
Benchmark: WASM imageConvolute - Browser: Firefox



1. firefox 72.0.1

Selenium

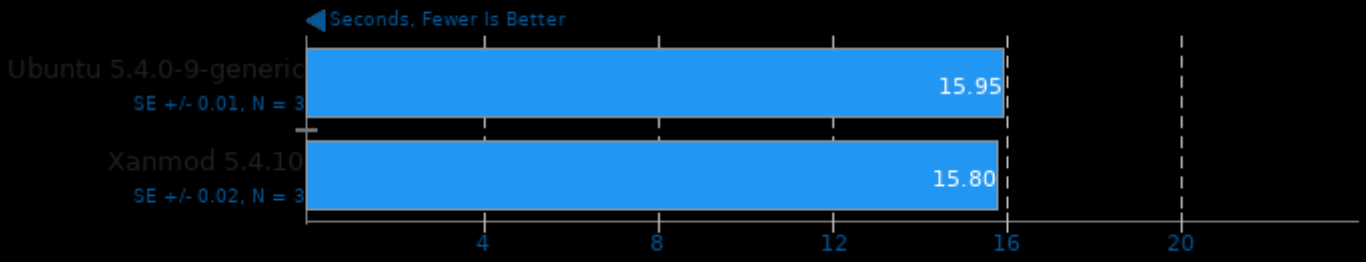
Benchmark: WASM collisionDetection - Browser: Firefox



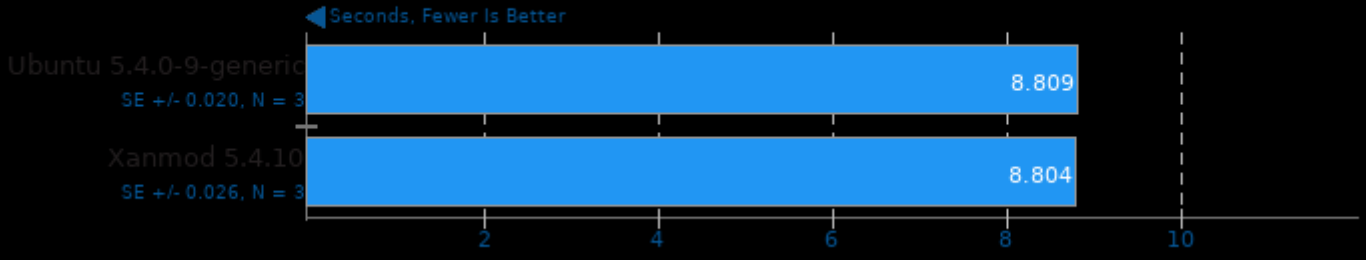
1. firefox 72.0.1

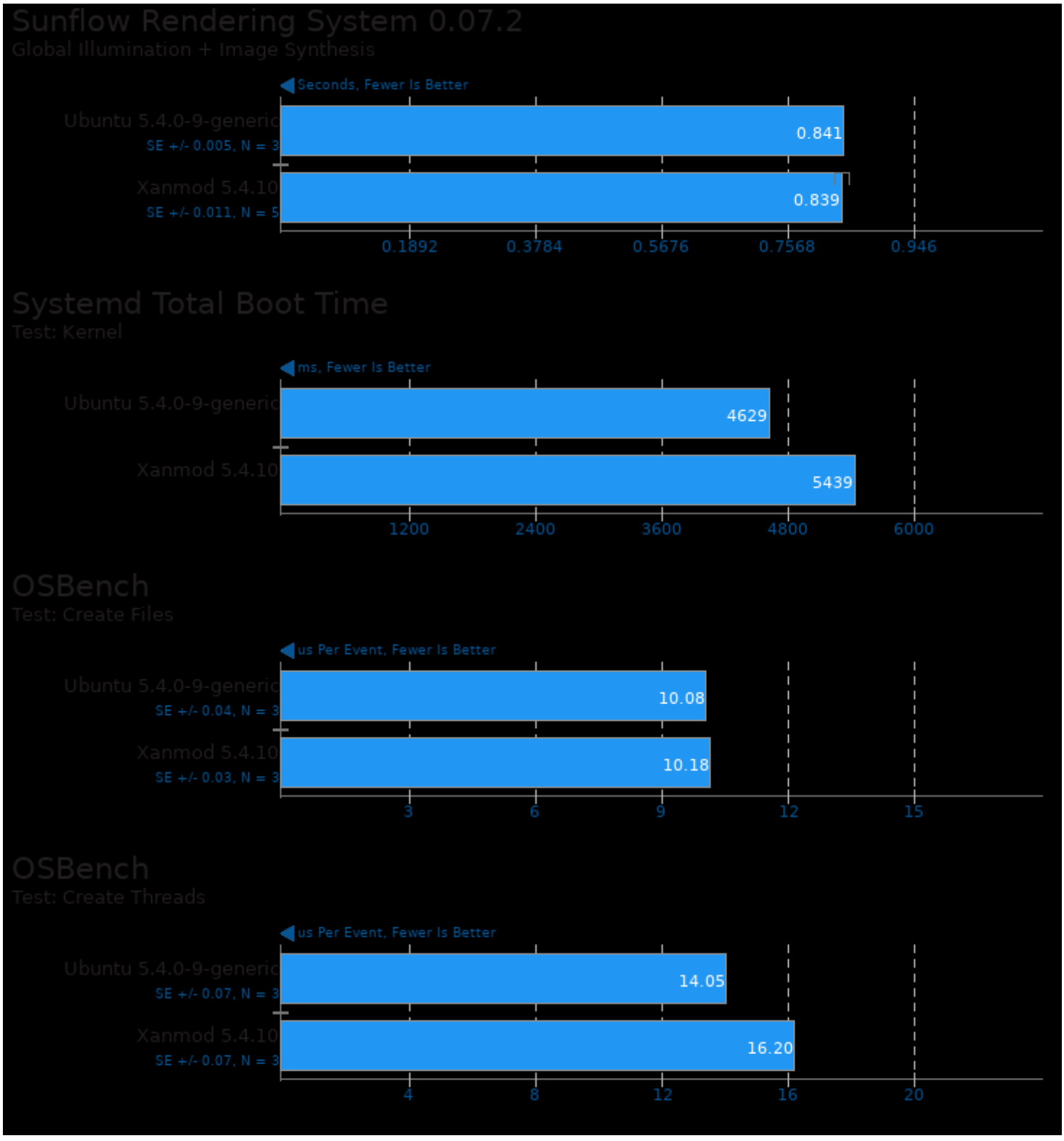
Mlpack Benchmark

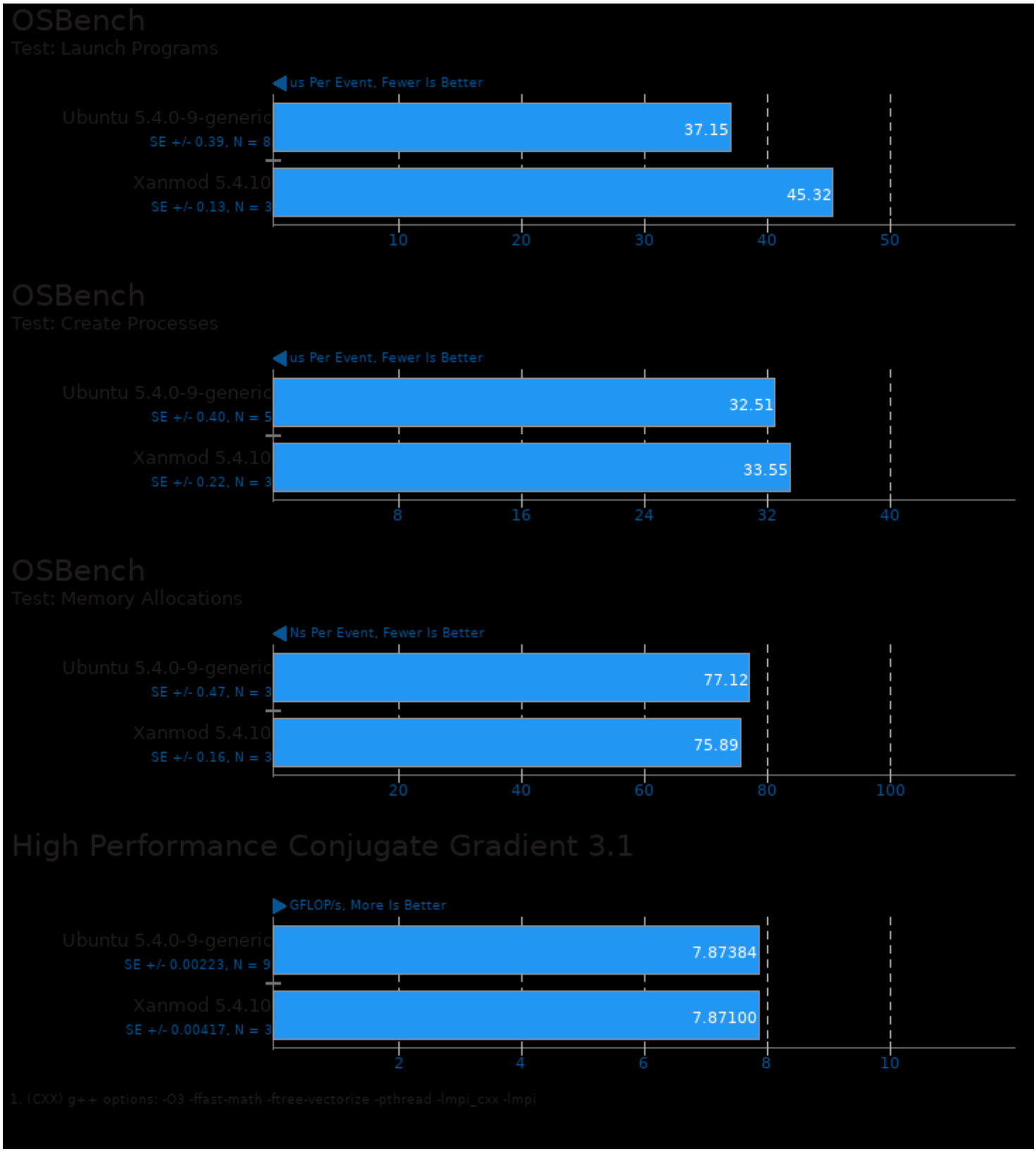
Benchmark: scikit_svm



Scikit-Learn 0.22.1

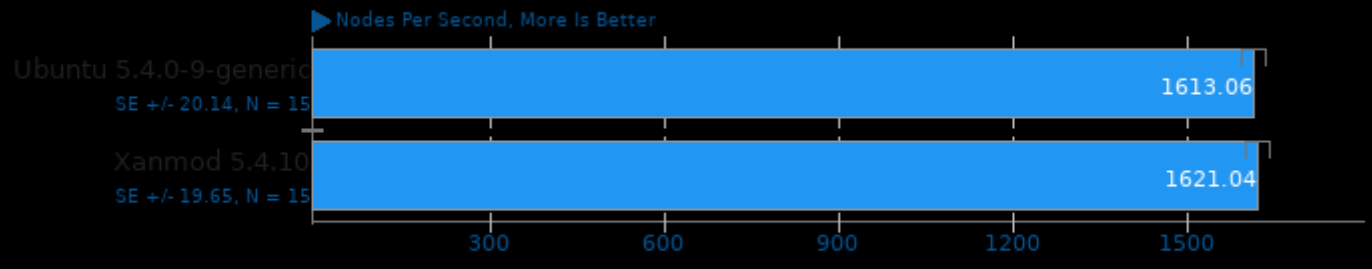



Sunflow Rendering System 0.07.2
Global Illumination + Image Synthesis
Seconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.005, N = 3
0.841
Xanmod 5.4.10
SE +/- 0.011, N = 5
0.839
0.1892
0.3784
0.5676
0.7568
0.946
Systemd Total Boot Time
Test: Kernel
ms, Fewer Is Better
Ubuntu 5.4.0-9-generic
4629
Xanmod 5.4.10
5439
1200
2400
3600
4800
6000
OSBench
Test: Create Files
us Per Event, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.04, N = 3
10.08
Xanmod 5.4.10
SE +/- 0.03, N = 3
10.18
3
6
9
12
15
OSBench
Test: Create Threads
us Per Event, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.07, N = 3
14.05
Xanmod 5.4.10
SE +/- 0.07, N = 3
16.20
4
8
12
16
20


OSBench
Test: Launch Programs
us Per Event, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.39, N = 8
37.15
Xanmod 5.4.10
SE +/- 0.13, N = 3
45.32
10
20
30
40
50
OSBench
Test: Create Processes
us Per Event, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.40, N = 5
32.51
Xanmod 5.4.10
SE +/- 0.22, N = 3
33.55
8
16
24
32
40
OSBench
Test: Memory Allocations
Ns Per Event, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.47, N = 3
77.12
Xanmod 5.4.10
SE +/- 0.16, N = 3
75.89
20
40
60
80
100
High Performance Conjugate Gradient 3.1
GFLOP/s, More Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.00223, N = 9
7.87384
Xanmod 5.4.10
SE +/- 0.00417, N = 3
7.87100
2
4
6
8
10
1. (CXX) g++ options: -O3 -ffast-math -ftree-vectorize -pthread -lmpi_cxx -lmpi

LeelaChessZero 0.23.2

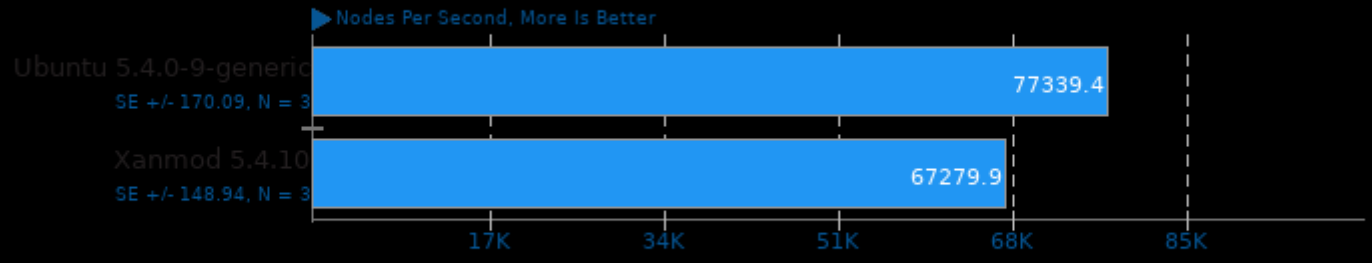
Backend: BLAS



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

LeelaChessZero 0.23.2

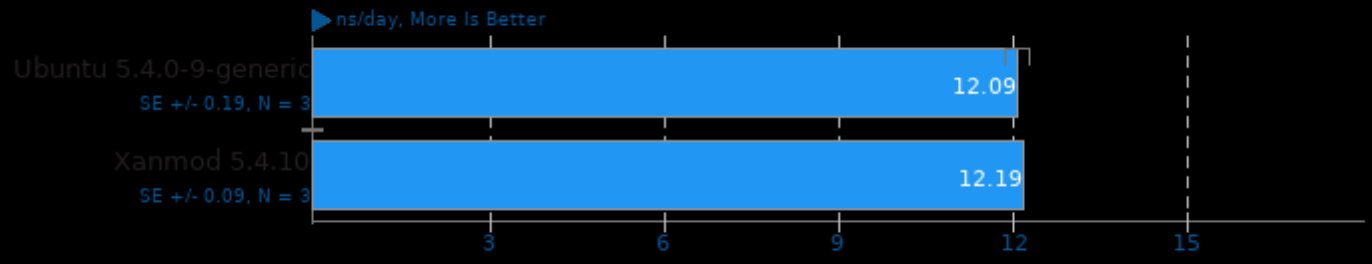
Backend: Random



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

LAMMPS Molecular Dynamics Simulator 9Jan2020

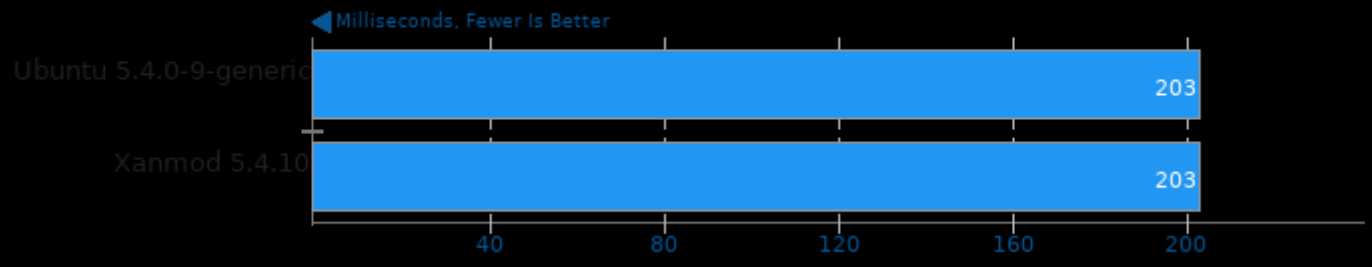
Model: Rhodopsin Protein

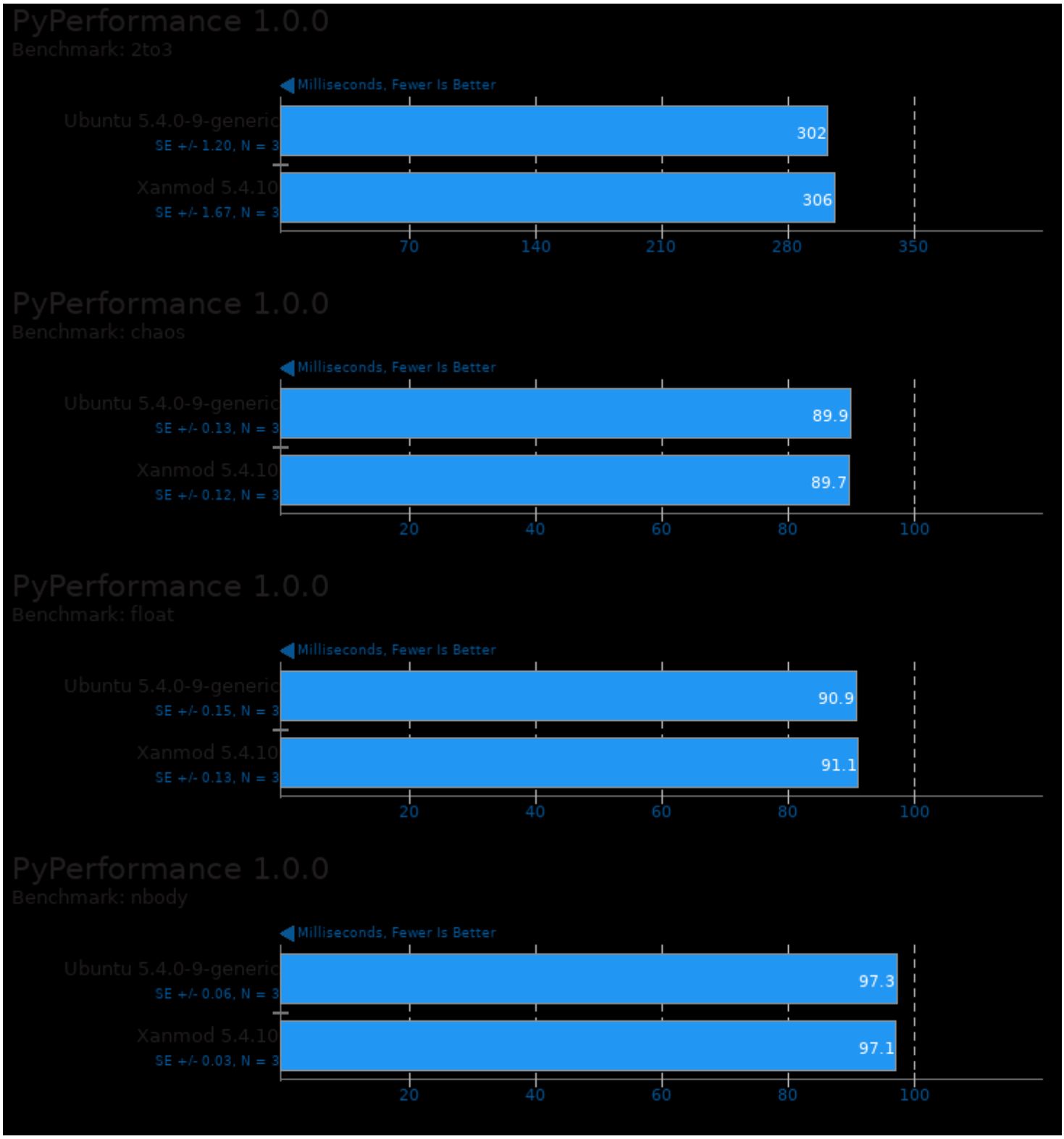


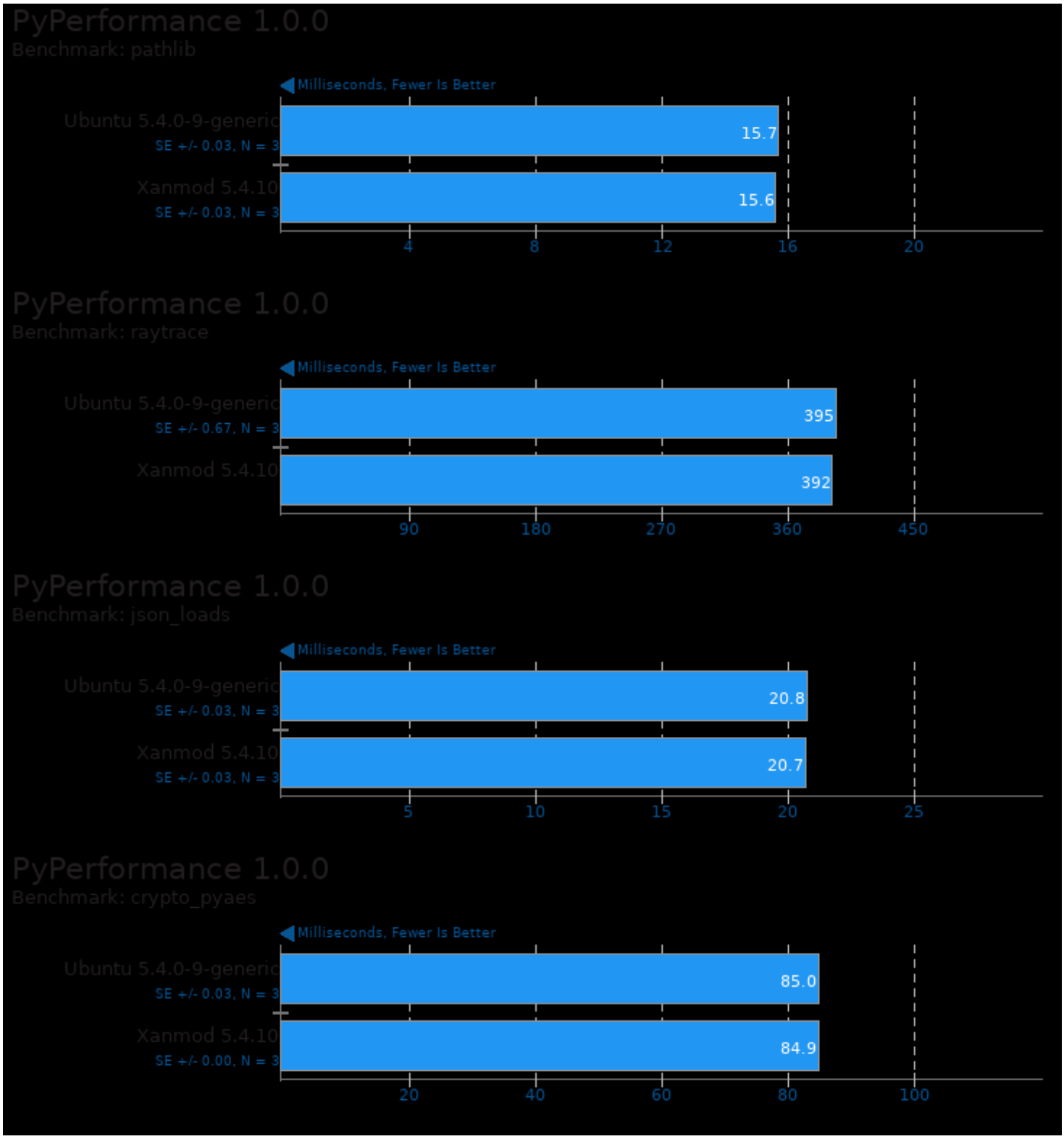
1. (CXX) g++ options: -O3 -rdynamic -ljpeg -lpng -lz -lfftw3 -lm

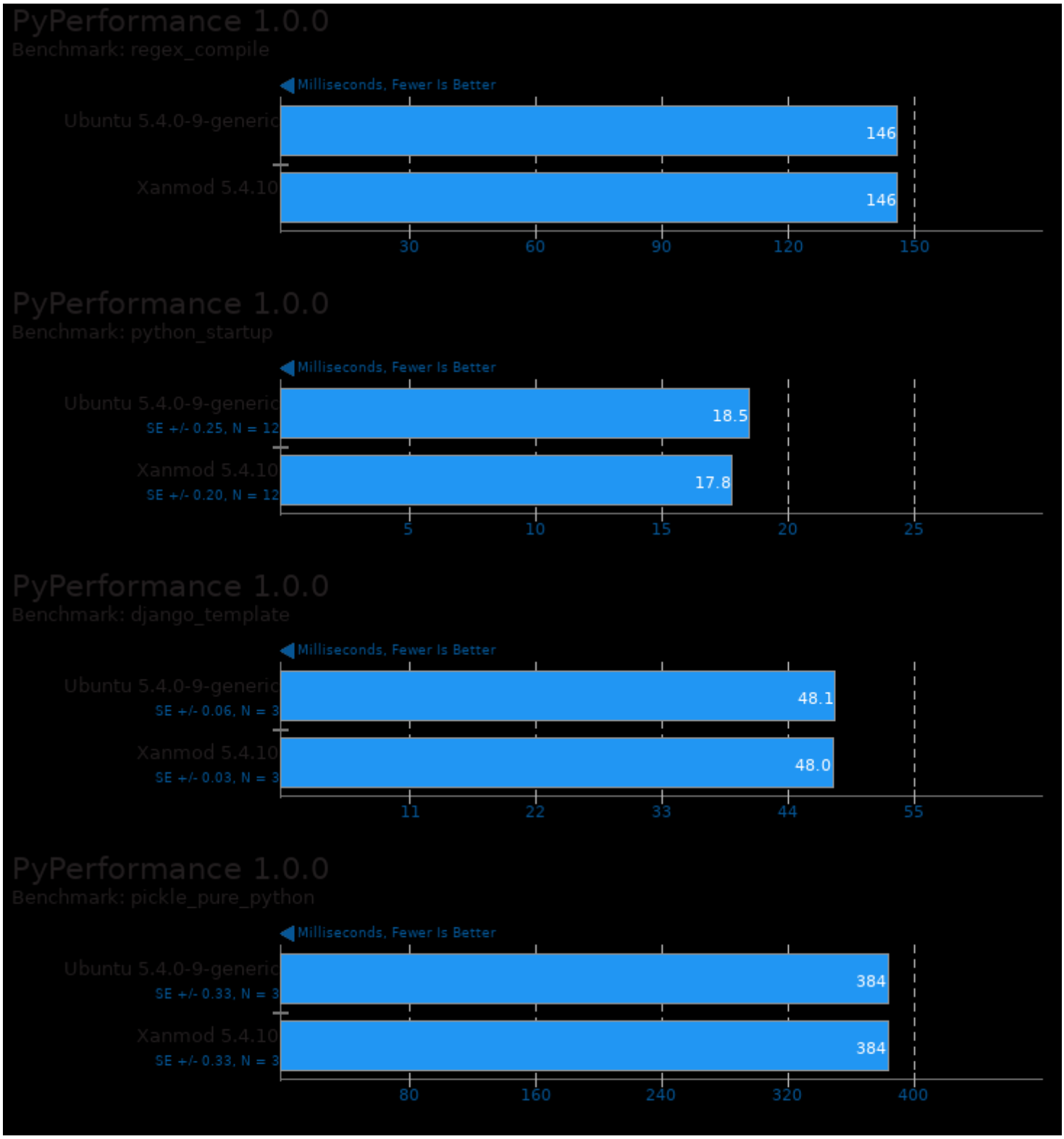
PyPerformance 1.0.0

Benchmark: go

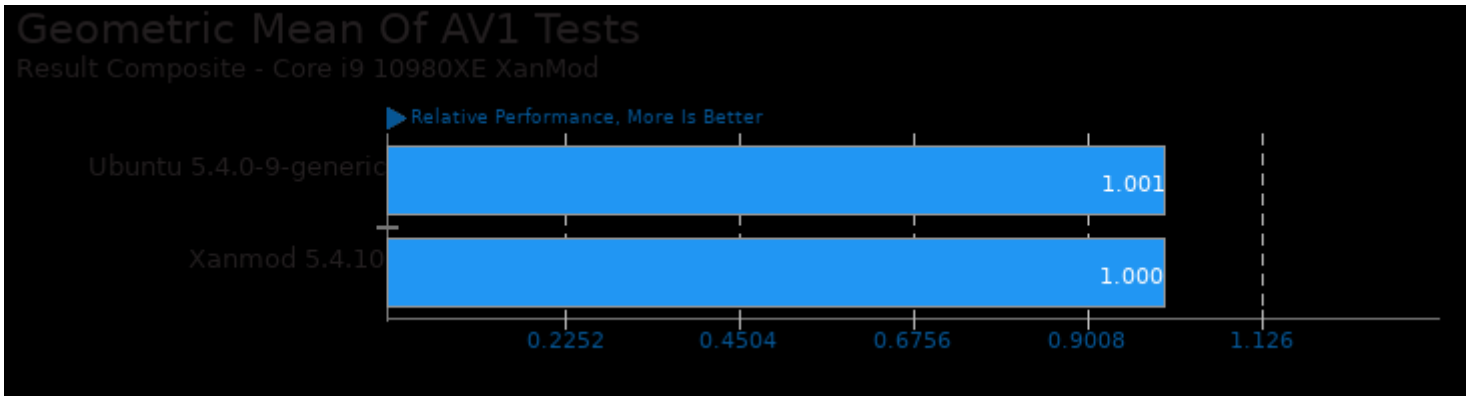



PyPerformance 1.0.0
Benchmark: 2to3
Milliseconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 1.20, N = 3
302
Xanmod 5.4.10
SE +/- 1.67, N = 3
306
70
140
210
280
350
PyPerformance 1.0.0
Benchmark: chaos
Milliseconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.13, N = 3
89.9
Xanmod 5.4.10
SE +/- 0.12, N = 3
89.7
20
40
60
80
100
PyPerformance 1.0.0
Benchmark: float
Milliseconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.15, N = 3
90.9
Xanmod 5.4.10
SE +/- 0.13, N = 3
91.1
20
40
60
80
100
PyPerformance 1.0.0
Benchmark: nbody
Milliseconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.06, N = 3
97.3
Xanmod 5.4.10
SE +/- 0.03, N = 3
97.1
20
40
60
80
100

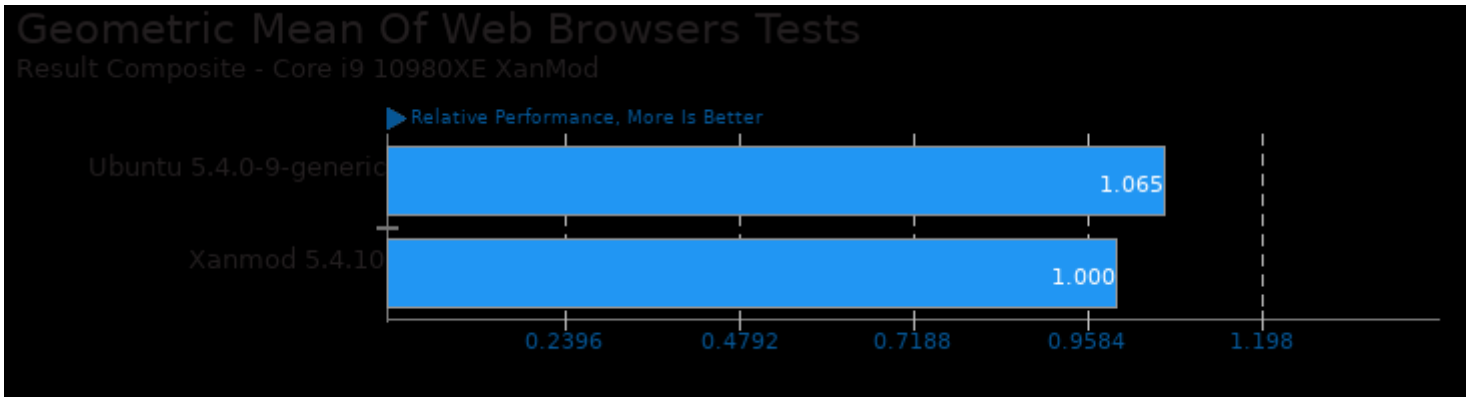

PyPerformance 1.0.0
Benchmark: pathlib
Milliseconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.03, N = 3
15.7
Xanmod 5.4.10
SE +/- 0.03, N = 3
15.6
4
8
12
16
20
PyPerformance 1.0.0
Benchmark: raytrace
Milliseconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.67, N = 3
395
Xanmod 5.4.10
392
90
180
270
360
450
PyPerformance 1.0.0
Benchmark: json_loads
Milliseconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.03, N = 3
20.8
Xanmod 5.4.10
SE +/- 0.03, N = 3
20.7
5
10
15
20
25
PyPerformance 1.0.0
Benchmark: crypto_pyaes
Milliseconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.03, N = 3
85.0
Xanmod 5.4.10
SE +/- 0.00, N = 3
84.9
20
40
60
80
100


PyPerformance 1.0.0
Benchmark: regex_compile
Milliseconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
146
Xanmod 5.4.10
146
30
60
90
120
150
PyPerformance 1.0.0
Benchmark: python_startup
Milliseconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.25, N = 12
18.5
Xanmod 5.4.10
SE +/- 0.20, N = 12
17.8
5
10
15
20
25
PyPerformance 1.0.0
Benchmark: django_template
Milliseconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.06, N = 3
48.1
Xanmod 5.4.10
SE +/- 0.03, N = 3
48.0
11
22
33
44
55
PyPerformance 1.0.0
Benchmark: pickle_pure_python
Milliseconds, Fewer Is Better
Ubuntu 5.4.0-9-generic
SE +/- 0.33, N = 3
384
Xanmod 5.4.10
SE +/- 0.33, N = 3
384
80
160
240
320
400

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



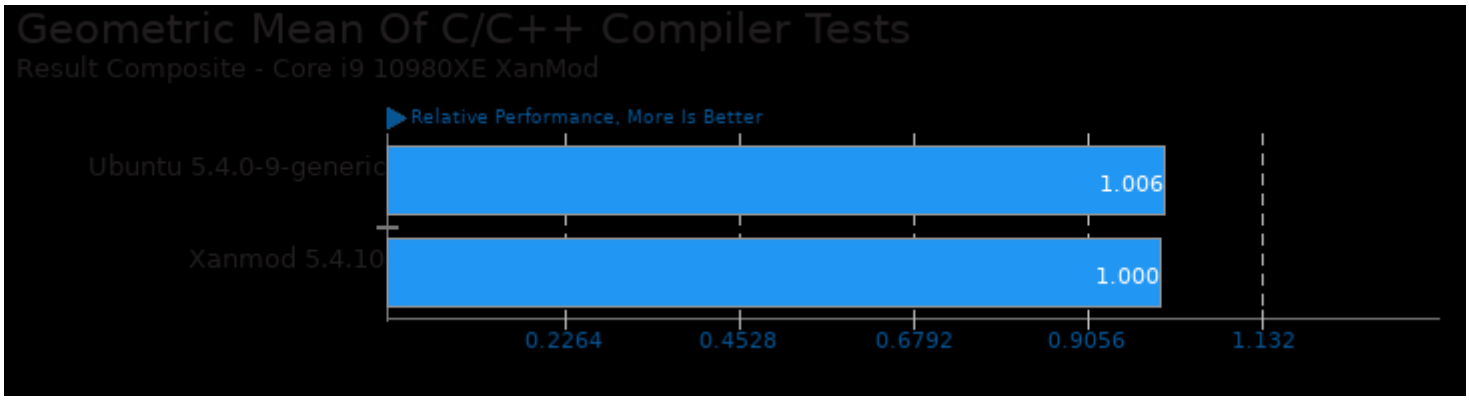
Geometric mean based upon tests: pts/dav1d, pts/aom-av1, pts/svt-av1, pts/libgav1 and pts/rav1e



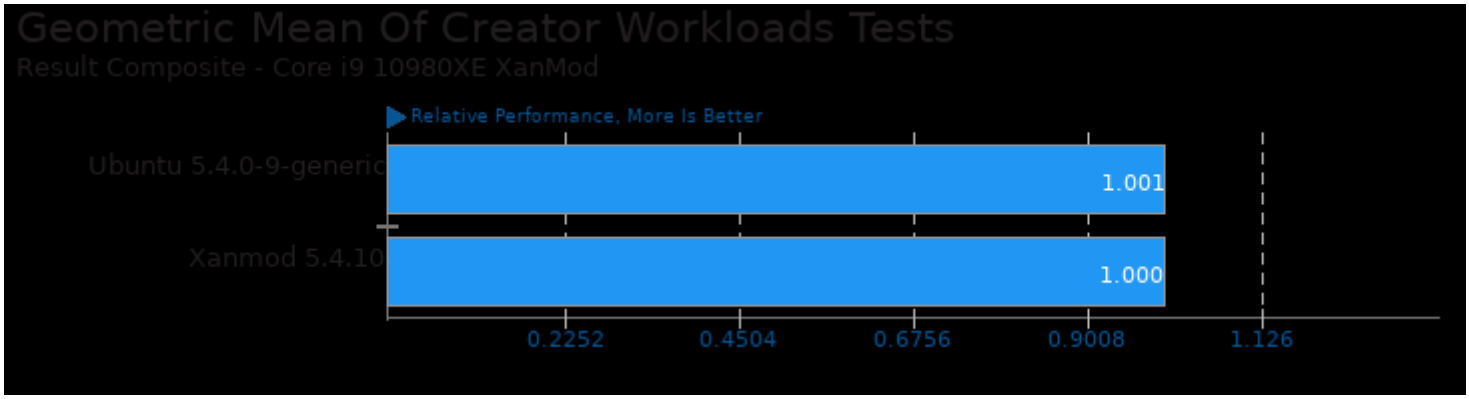
Geometric mean based upon tests: system/selenium



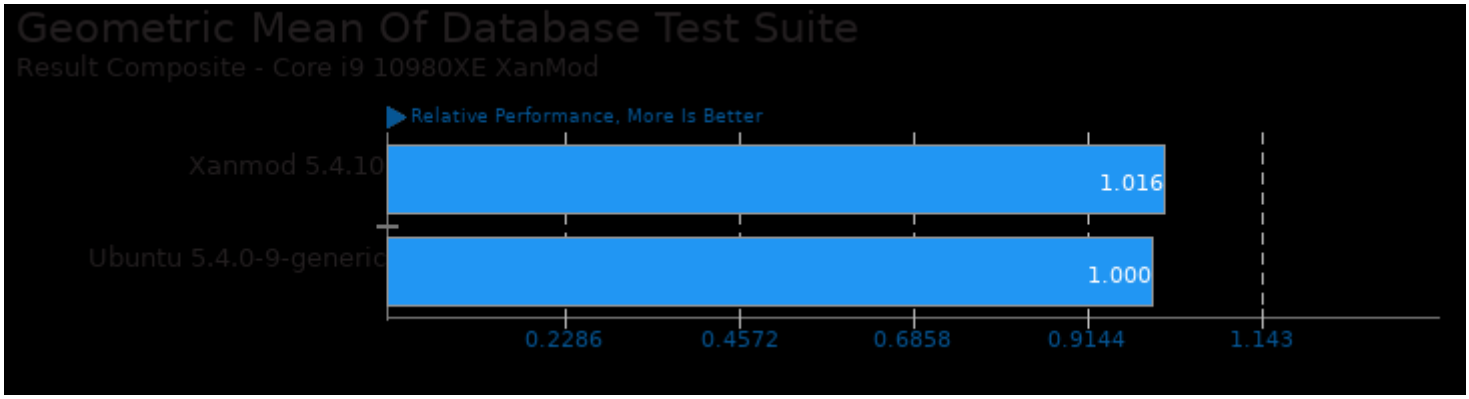
Geometric mean based upon tests: pts/build-gcc, pts/build-llvm and pts/build2



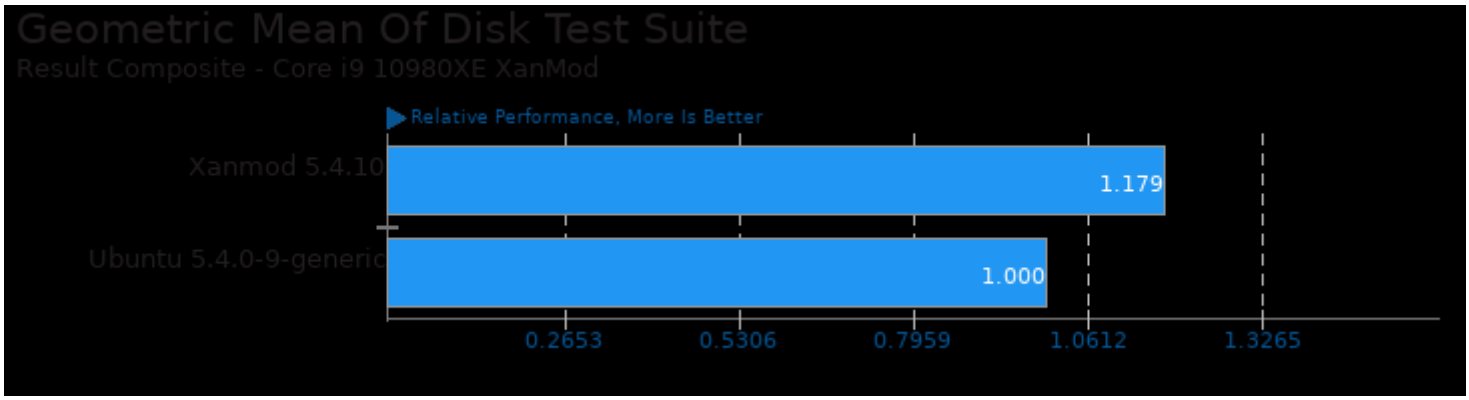
Geometric mean based upon tests: pts/vpxenc, pts/hmmer, pts/build-llvm, pts/apache, pts/sqlite-speedtest, pts/libgav1, pts/dav1d, pts/x264, pts/x265, pts/nginx, pts/lammps, pts/aom-av1, pts/svt-av1, pts/svt-vp9 and pts/gromacs



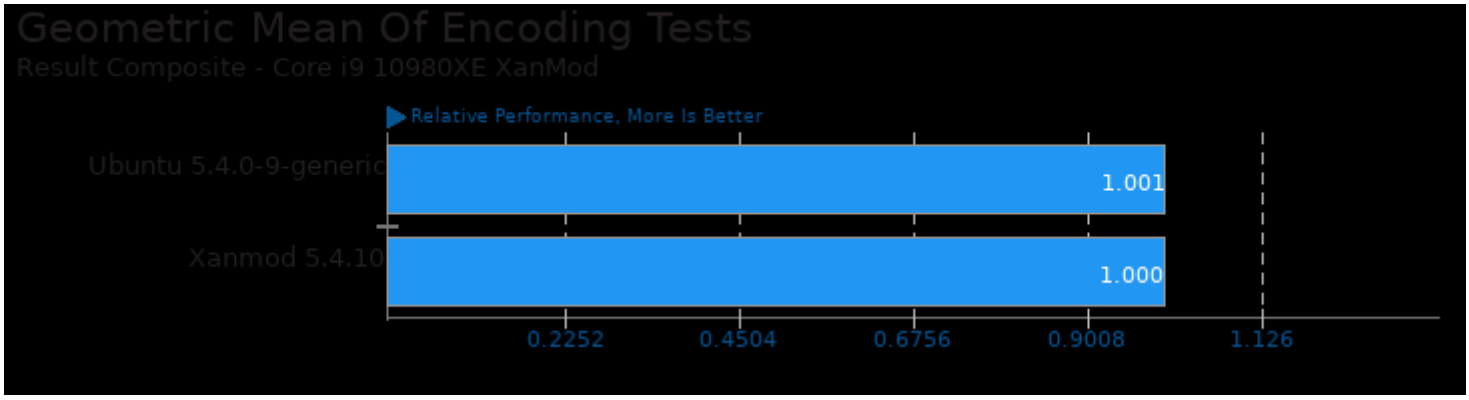
Geometric mean based upon tests: pts/rays1bench, pts/blender, pts/svt-vp9, pts/svt-hevc, pts/x264, pts/x265, pts/vpxenc, pts/dav1d, pts/aom-av1, pts/svt-av1, pts/libgav1, pts/rav1e, system/gimp, system/darktable, system/gegl and pts/deepspeech



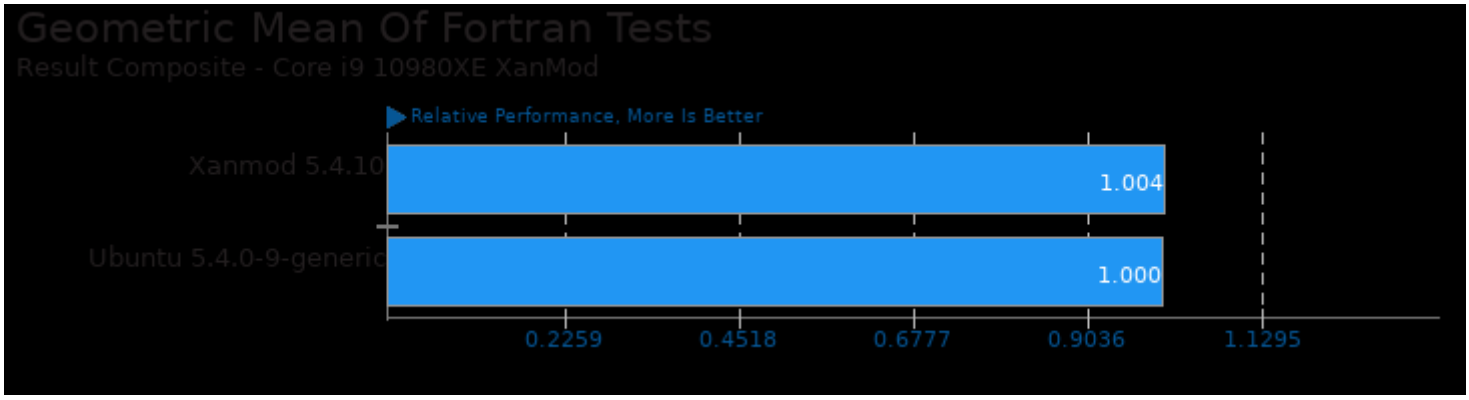
Geometric mean based upon tests: pts/sqlite and pts/sqlite-speedtest



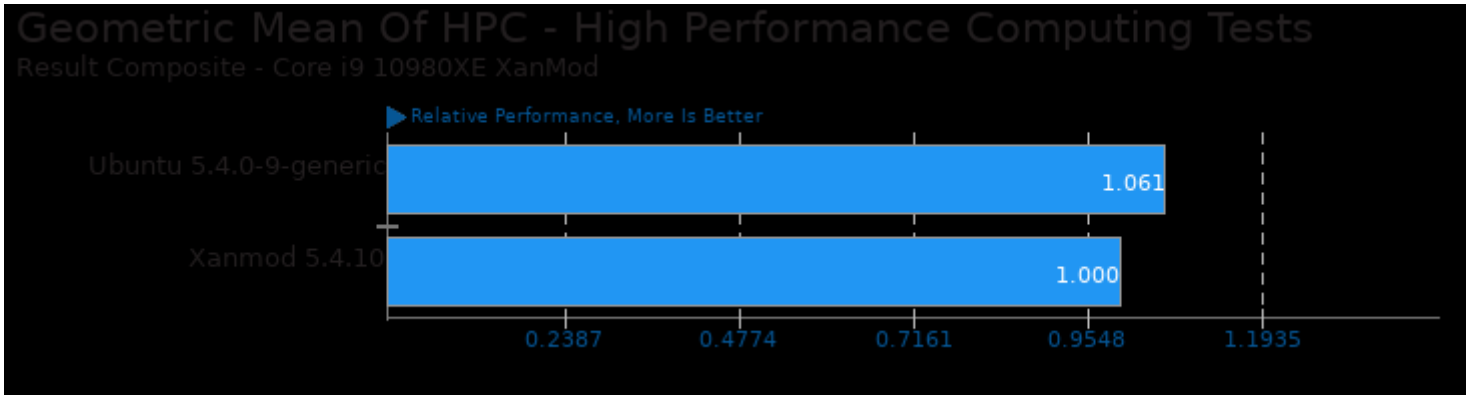
Geometric mean based upon tests: pts/sqlite, pts/fs-mark, pts/compilebench and pts/fio



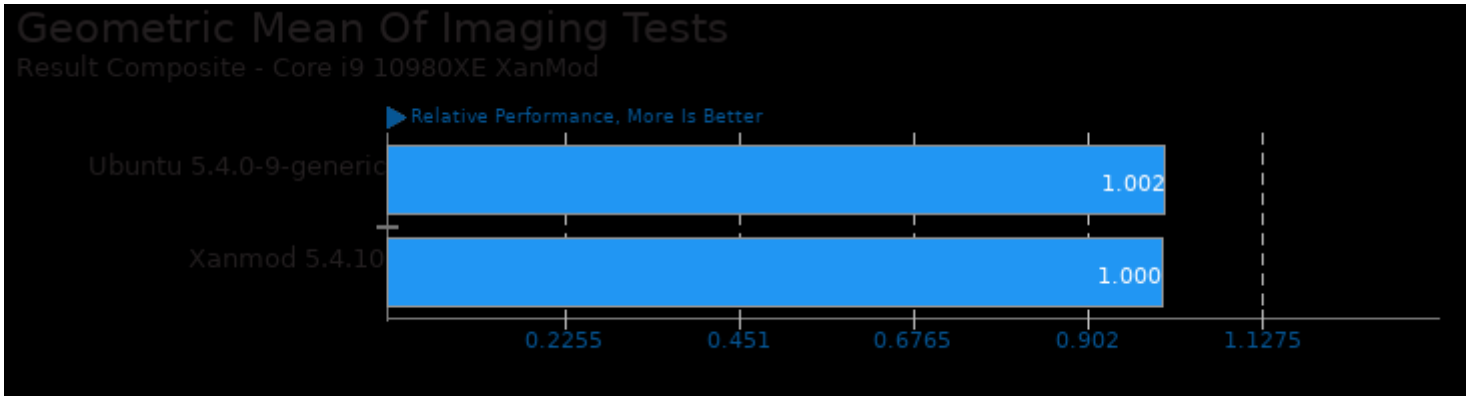
Geometric mean based upon tests: pts/svt-vp9, pts/svt-hevc, pts/x264, pts/x265, pts/vpxenc, pts/dav1d, pts/aom-av1, pts/svt-av1, pts/libgav1 and pts/rav1e



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



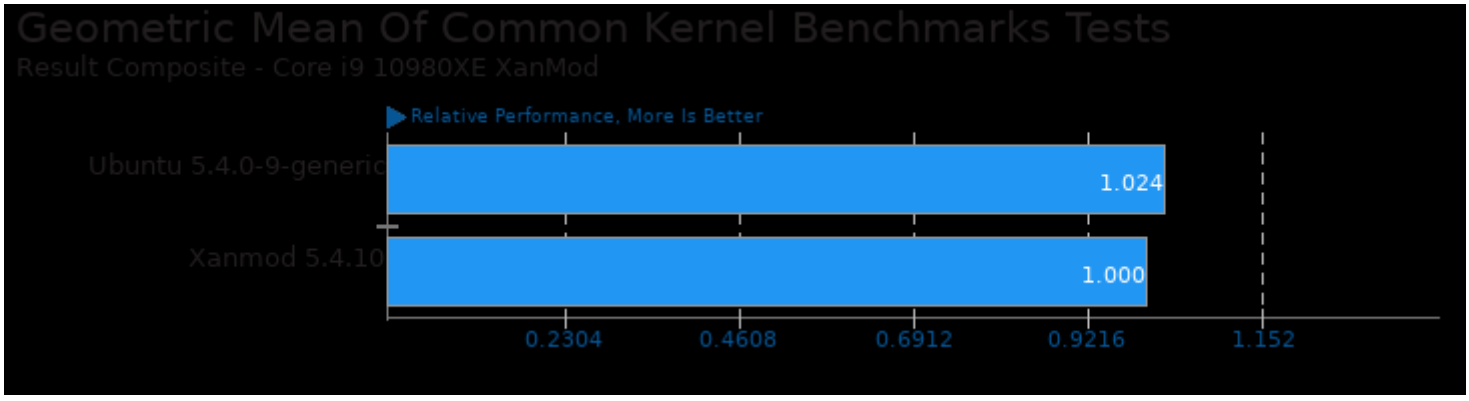
Geometric mean based upon tests: pts/hpcg, pts/askap, pts/mt-dgemm, pts/gromacs, pts/lammps, pts/hmmer, pts/numpy, pts/deepspeech, pts/scikit-learn, pts/mlpack and pts/lczero



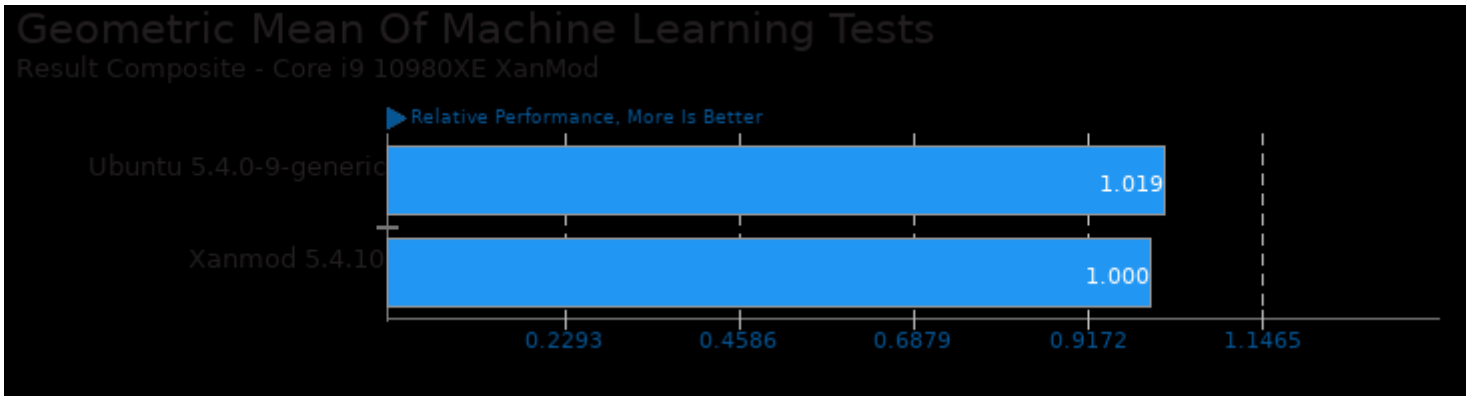
Geometric mean based upon tests: system/gimp, system/darktable and system/gegl



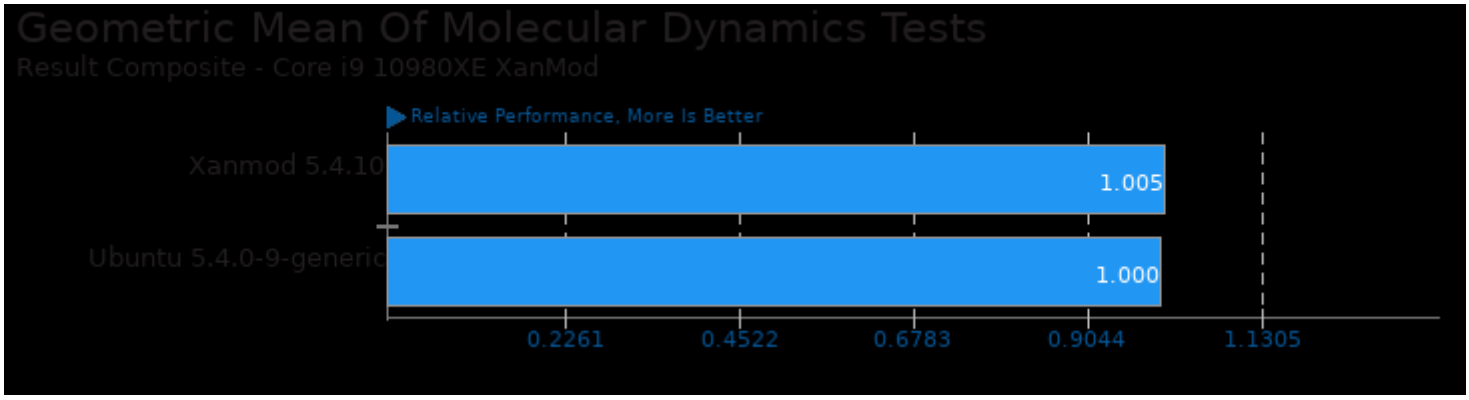
Geometric mean based upon tests: pts/sunflow, pts/java-scimark2, pts/dacapobench and pts/renaissance



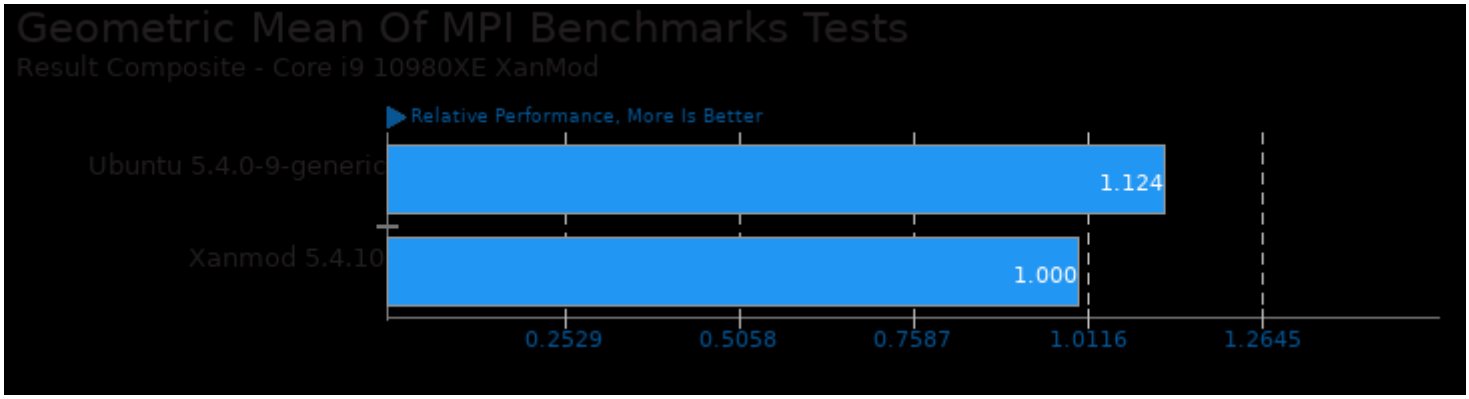
Geometric mean based upon tests: pts/apache, pts/sqlite-speedtest, pts/t-test1, pts/ctx-clock, pts/hackbench, pts/stress-ng, pts/osbench, pts/ethr and pts/iperf



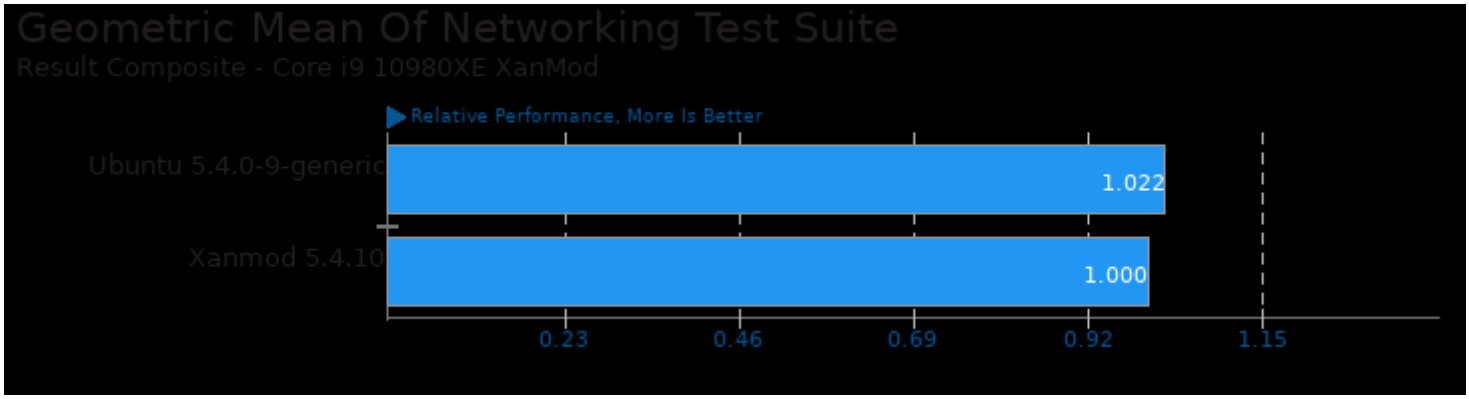
Geometric mean based upon tests: pts/numpy, pts/deepspeech, pts/scikit-learn, pts/mlpack and pts/lczero



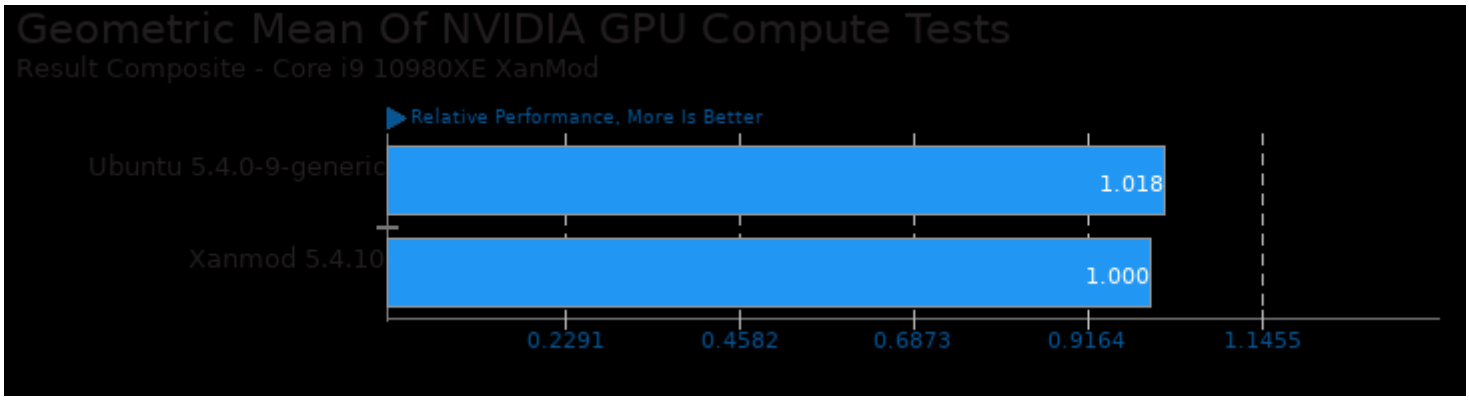
Geometric mean based upon tests: pts/gromacs and pts/lammps



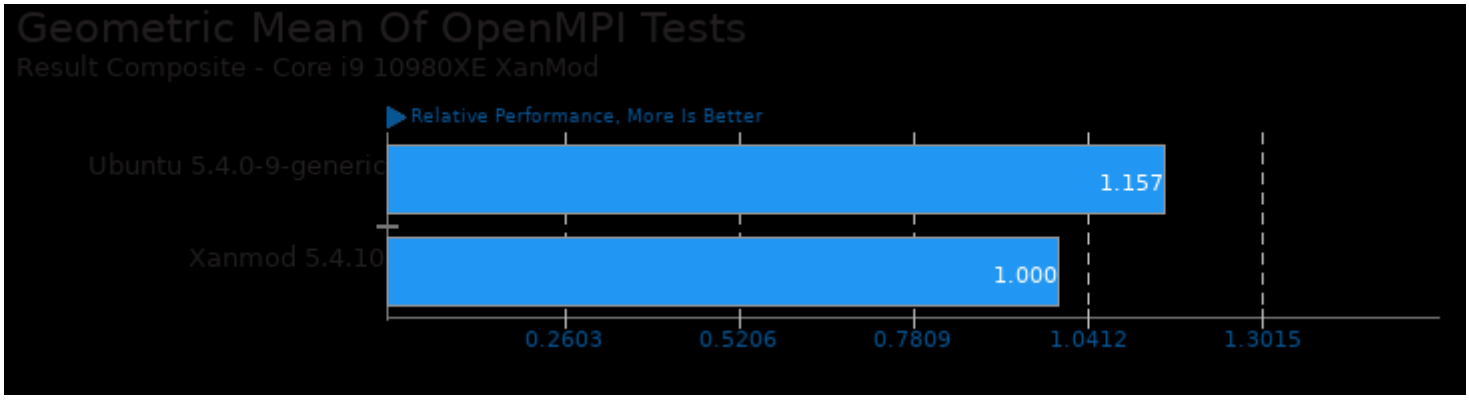
Geometric mean based upon tests: pts/askap, pts/lammps, pts/gromacs and pts/hpcg



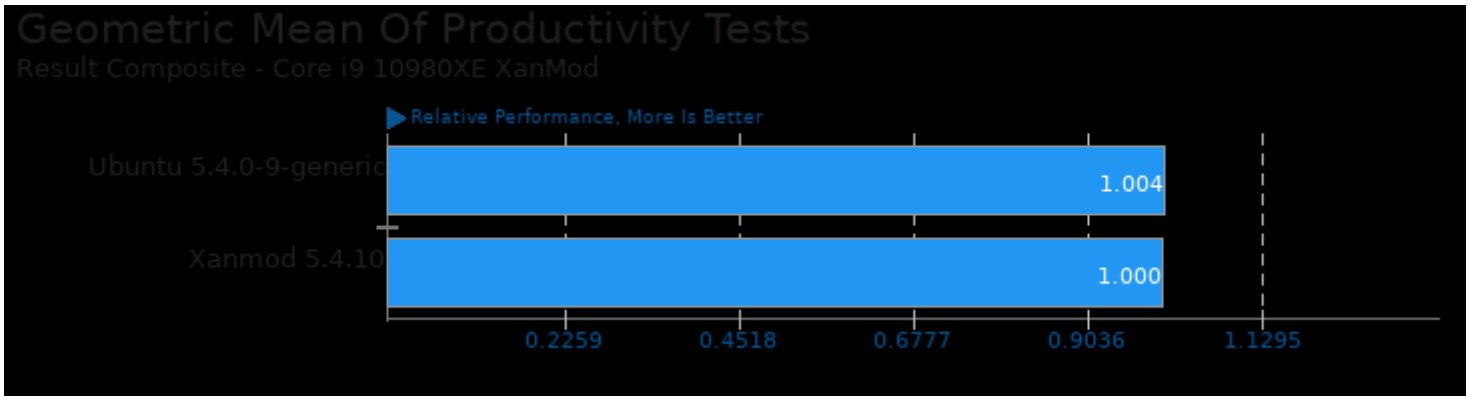
Geometric mean based upon tests: pts/sockperf, pts/ethr and pts/iperf



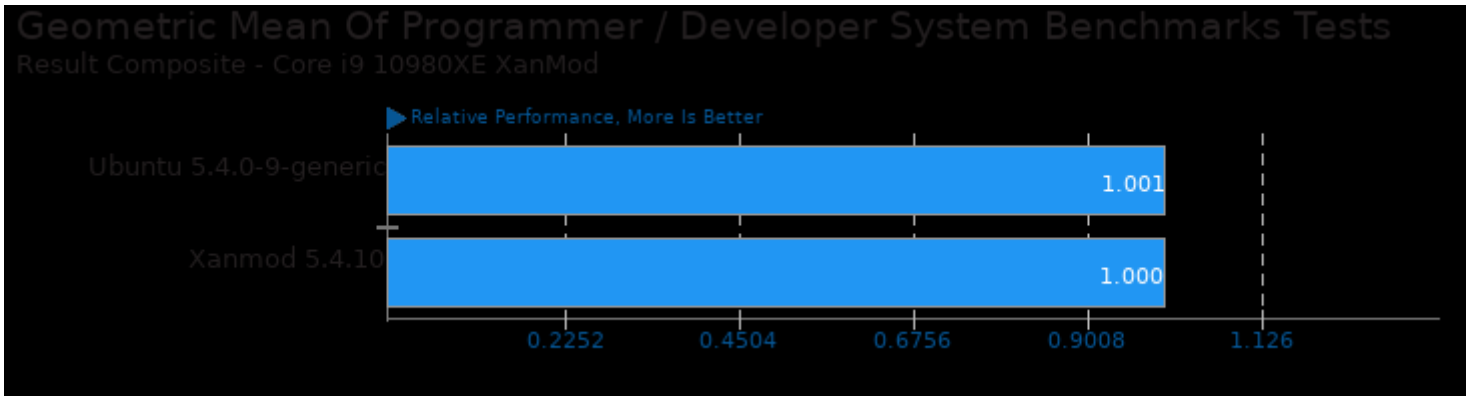
Geometric mean based upon tests: pts/gromacs, pts/lczero and pts/blender



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

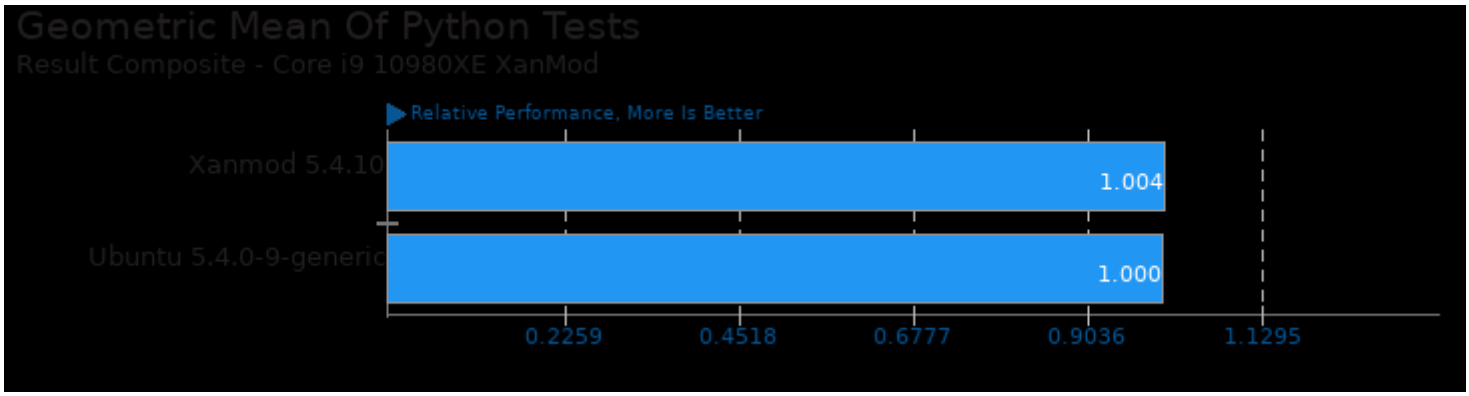


Geometric mean based upon tests: system/gimp and system/gegl



Geometric mean based upon tests: pts/sqlite-speedtest, pts/pyperformance, pts/pybench, pts/build-gcc, pts/build-llvm,

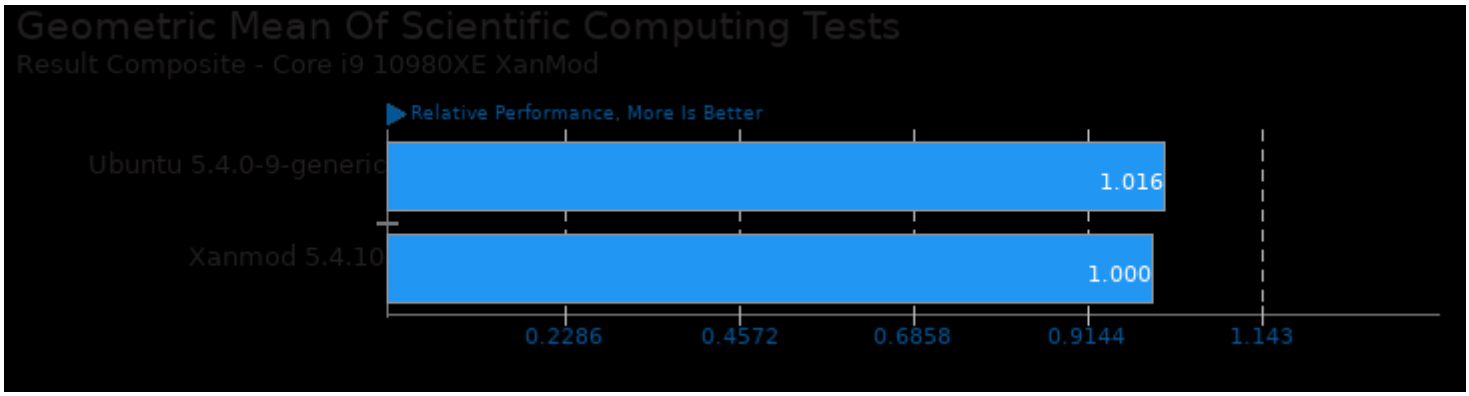
pts/build2 and pts/mt-dgemm



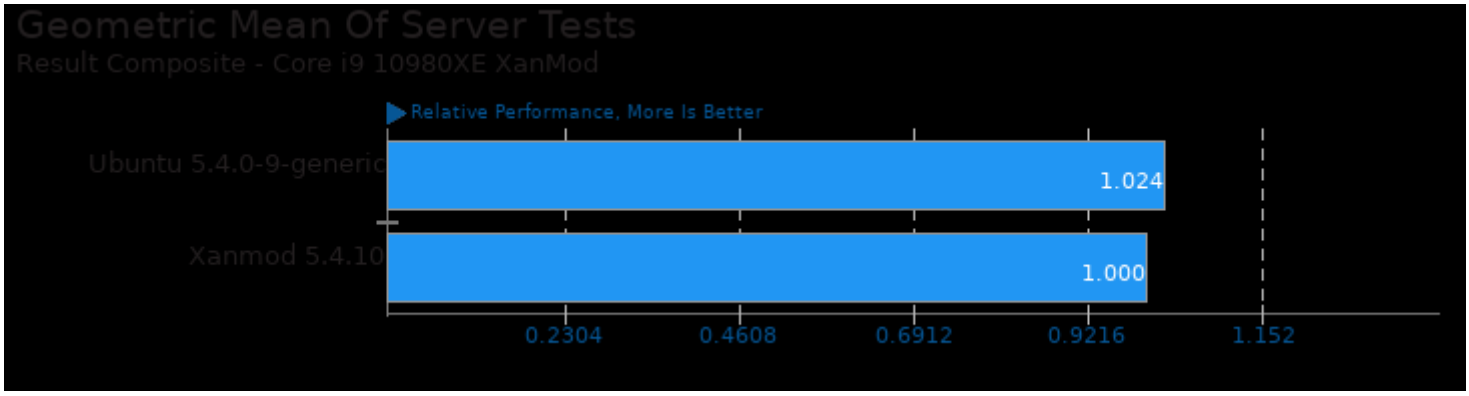
Geometric mean based upon tests: pts/pybench, pts/numpy, pts/mlpack, pts/scikit-learn and pts/pyperformance



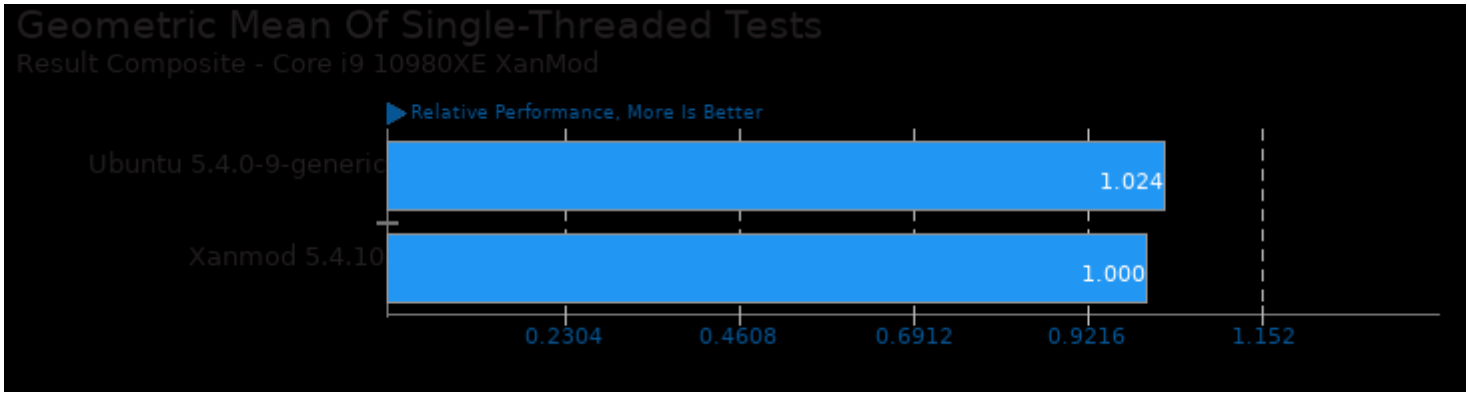
Geometric mean based upon tests: pts/rays1bench and pts/blender



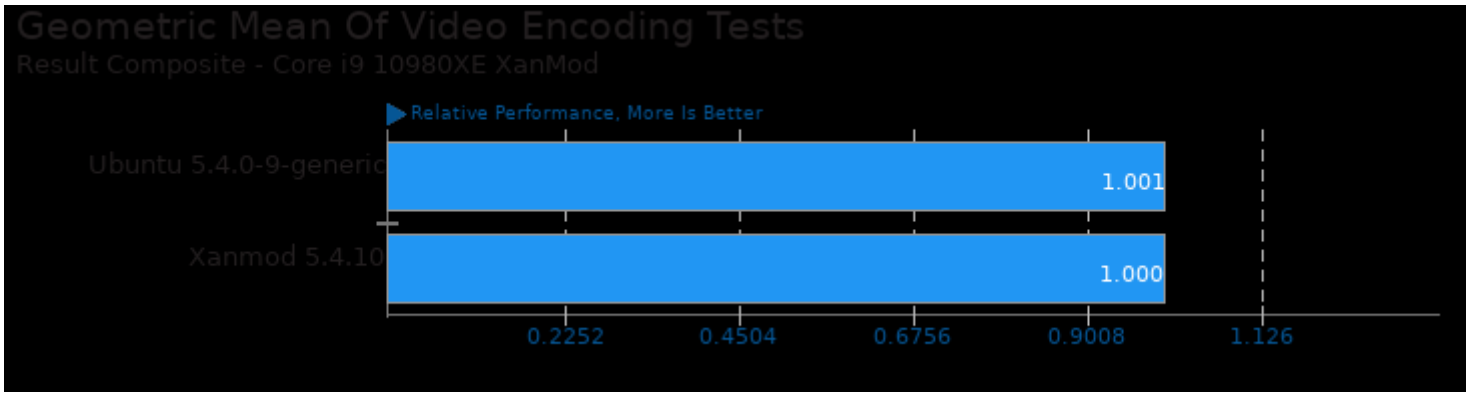
Geometric mean based upon tests: pts/mt-dgemm, pts/gromacs, pts/lammps and pts/hmmer



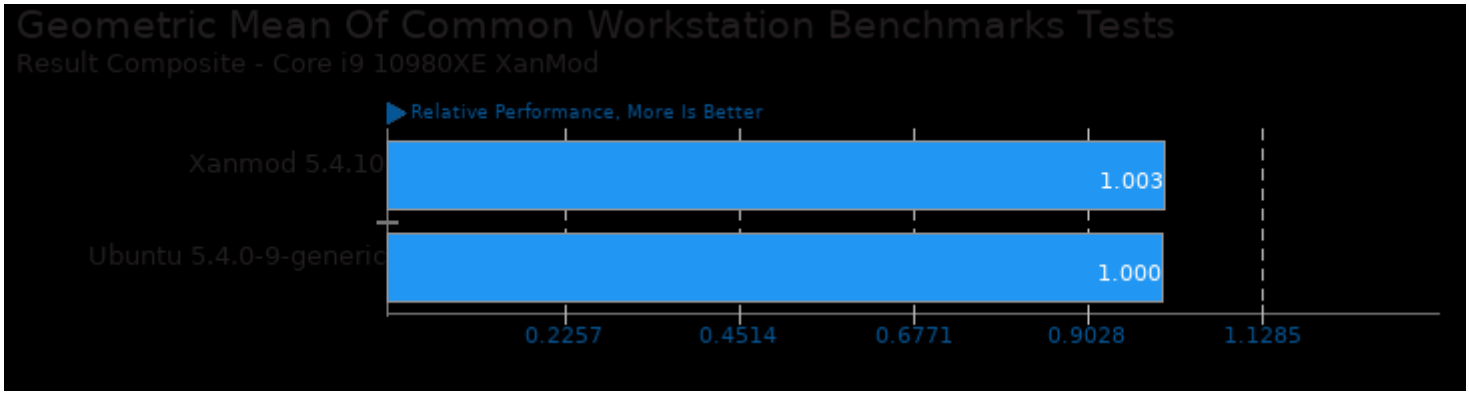
Geometric mean based upon tests: pts/apache, pts/nginx, pts/phpbench, pts/node-express-loadtest, pts/sqlite and pts/sqlite-speedtest



Geometric mean based upon tests: pts/java-scimark2, pts/node-express-loadtest, pts/numpy, pts/deepspeech, pts/pybench, pts/phpbench and pts/nginx



Geometric mean based upon tests: pts/svt-vp9, pts/svt-hevc, pts/x264, pts/x265, pts/vpxenc, pts/dav1d, pts/aom-av1, pts/svt-av1, pts/libgav1 and pts/rav1e



Geometric mean based upon tests: pts/blender and pts/x265

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 13:51.