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Liquorix, Xanmod Linux Kernel Benchmarks

Liquorix and Xanmod kernel benchmarks for a future article.

Automated Executive Summary

Linux 5.4.8-xanmod5 had the most wins, coming in first place for 37% of the tests.

Based on the geometric mean of all complete results, the fastest (Linux 5.4.8-xanmod5) was 1.099x the speed of the slowest (Liquorix 5.4.0-8.2). Linux 5.4.7 low-latency was 0.972x the speed of Linux 5.4.8-xanmod5, Linux 5.4.7 was 0.976x the speed of Linux 5.4.7 low-latency, Liquorix 5.4.0-7.1 was 0.989x the speed of Linux 5.4.7, Liquorix 5.4.0-8.2 was 0.97x the speed of Liquorix 5.4.0-7.1.

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

SQLite (Threads / Copies: 8) at 2.994x
Flexible IO Tester (Type: Sequential Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory) at 1.985x
Flexible IO Tester (Type: Sequential Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory) at 1.984x
GEGL (Operation: Scale) at 1.66x
Flexible IO Tester (Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory) at 1.619x

Flexible IO Tester (Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory) at 1.613x
GIMP (Test: resize) at 1.506x
DeepSpeech (Acceleration: CPU) at 1.469x
Flexible IO Tester (Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory) at 1.464x
Flexible IO Tester (Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory) at 1.463x.

Test Systems:

Linux 5.4.7

Processor: AMD Ryzen 9 3900X 12-Core @ 3.80GHz (12 Cores / 24 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (WI-FI) (1001 BIOS), Chipset: AMD Starship/Matisse, Memory: 16384MB, Disk: 2000GB Force MP600 + 2000GB SABRENT, Graphics: AMD Radeon RX 56/64 8GB (1630/945MHz), Audio: AMD Vega 10 HDMI Audio, Monitor: Acer B286HK, Network: Realtek Device 8125 + Intel I211 + Intel Device 2723

OS: Ubuntu 19.10, Kernel: 5.4.6-050406-generic (x86_64), Desktop: GNOME Shell 3.34.1, Display Server: X Server 1.20.5, Display Driver: amdgpu 19.0.1, OpenGL: 4.6 Mesa 20.0.0-devel (git-d0d28c7 2020-01-03 eoan-oibaf-ppa) (LLVM 9.0.1), Compiler: GCC 9.2.1 20191008, 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-multiarch --enable-multilib --enable-nls --enable-offload-targets=nvptx-none,hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Disk Notes: NONE / errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand - CPU Microcode: 0x8701013
Python Notes: Python 2.7.17 + Python 3.7.5
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional STIBP: always-on RSB filling + tsx_async_abort: Not affected

Linux 5.4.7 low-latency

Processor: AMD Ryzen 9 3900X 12-Core @ 3.80GHz (12 Cores / 24 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (WI-FI) (1001 BIOS), Chipset: AMD Starship/Matisse, Memory: 16384MB, Disk: 2000GB Force MP600 + 2000GB SABRENT, Graphics: AMD Radeon RX 56/64 8GB (1630/945MHz), Audio: AMD Vega 10 HDMI Audio, Monitor: Acer B286HK, Network: Realtek Device 8125 + Intel I211 + Intel Device 2723

OS: Ubuntu 19.10, Kernel: 5.4.7-050407-lowlatency (x86_64), Desktop: GNOME Shell 3.34.1, Display Server: X Server 1.20.5, Display Driver: amdgpu 19.0.1, OpenGL: 4.6 Mesa 20.0.0-devel (git-d0d28c7 2020-01-03 eoan-oibaf-ppa) (LLVM 9.0.1), Compiler: GCC 9.2.1 20191008, 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-multiarch --enable-multilib --enable-nls --enable-offload-targets=nvptx-none,hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Disk Notes: NONE / errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand - CPU Microcode: 0x8701013
Python Notes: Python 2.7.17 + Python 3.7.5

Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional STIBP: always-on RSB filling + tsx_async_abort: Not affected

Linux 5.4.8-xanmod5

Processor: AMD Ryzen 9 3900X 12-Core @ 3.80GHz (12 Cores / 24 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (WI-FI) (1001 BIOS), Chipset: AMD Starship/Matisse, Memory: 16384MB, Disk: 2000GB Force MP600 + 2000GB SABRENT, Graphics: AMD Radeon RX 56/64 8GB (1630/945MHz), Audio: AMD Vega 10 HDMI Audio, Monitor: Acer B286HK, Network: Realtek Device 8125 + Intel I211 + Intel Device 2723

OS: Ubuntu 19.10, Kernel: 5.4.8-xanmod5 (x86_64), Desktop: GNOME Shell 3.34.1, Display Server: X Server 1.20.5, Display Driver: amdgpu 19.0.1, OpenGL: 4.6 Mesa 20.0.0-devel (git-d0d28c7 2020-01-03 eoan-oibaf-ppa) (LLVM 9.0.1), Compiler: GCC 9.2.1 20191008, 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-multiarch --enable-multilib --enable-nls --enable-offload-targets=nvptx-none,hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Disk Notes: NONE / errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand - CPU Microcode: 0x8701013
Python Notes: Python 2.7.17 + Python 3.7.5
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional STIBP: always-on RSB filling + tsx_async_abort: Not affected

Liquorix 5.4.0-7.1

Processor: AMD Ryzen 9 3900X 12-Core @ 3.80GHz (12 Cores / 24 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (WI-FI) (1001 BIOS), Chipset: AMD Starship/Matisse, Memory: 16384MB, Disk: 2000GB Force MP600 + 2000GB SABRENT, Graphics: AMD Radeon RX 56/64 8GB (1630/945MHz), Audio: AMD Vega 10 HDMI Audio, Monitor: Acer B286HK, Network: Realtek Device 8125 + Intel I211 + Intel Device 2723

OS: Ubuntu 19.10, Kernel: 5.4.0-7.1-liquorix-amd64 (x86_64), Desktop: GNOME Shell 3.34.1, Display Server: X Server 1.20.5, Display Driver: amdgpu 19.0.1, OpenGL: 4.6 Mesa 20.0.0-devel (git-d0d28c7 2020-01-03 eoan-oibaf-ppa) (LLVM 9.0.1), Compiler: GCC 9.2.1 20191008, 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-multiarch --enable-multilib --enable-nls --enable-offload-targets=nvptx-none,hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Disk Notes: BFQ / errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand - CPU Microcode: 0x8701013
Python Notes: Python 2.7.17 + Python 3.7.5
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional STIBP: always-on RSB filling + tsx_async_abort: Not affected

Liquorix 5.4.0-8.2

Processor: AMD Ryzen 9 3900X 12-Core @ 3.80GHz (12 Cores / 24 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (WI-FI) (1001 BIOS), Chipset: AMD Starship/Matisse, Memory: 16384MB, Disk: 2000GB Force MP600 + 2000GB SABRENT, Graphics: AMD Radeon RX 56/64 8GB (1630/945MHz), Audio: AMD Vega 10 HDMI Audio, Monitor: Acer B286HK, Network: Realtek Device 8125 + Intel I211 + Intel Device 2723

OS: Ubuntu 19.10, Kernel: 5.4.0-8.2-liquorix-amd64 (x86_64), Desktop: GNOME Shell 3.34.1, Display Server: X Server 1.20.5, Display Driver: amdgpu 19.0.1, OpenGL: 4.6 Mesa 20.0.0-devel (git-d0d28c7 2020-01-03 eoan-oibaf-ppa) (LLVM 9.0.1), Compiler: GCC 9.2.1 20191008, File-System: ext4, Screen Resolution: 3840x2160

Liquorix, Xanmod Linux Kernel Benchmarks

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-multiarch --enable-multilib --enable-nls --enable-offload-targets=nvptx-none,hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Disk Notes: BFQ / errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand - CPU Microcode: 0x8701013
Python Notes: Python 2.7.17 + Python 3.7.5
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional STIBP: always-on RSB filling + tsx_async_abort: Not affected

	Linux 5.4.7	Linux 5.4.7 low-latency	Linux 5.4.8-xanmod5	Liquorix 5.4.0-7.1	Liquorix 5.4.0-8.2
SQLite - 1 (sec)	15.151	15.356	14.935	15.048	14.948
Normalized	98.57%	97.26%	100%	99.25%	99.91%
Standard Deviation	0.9%	2.9%	2.9%	0.9%	1.6%
SQLite - 8 (sec)	46.678	46.405	46.687	137.399	138.930
Normalized	99.42%	100%	99.4%	33.77%	33.4%
Standard Deviation	0.6%	1.7%	1.1%	2.3%	1.2%
IOR - Write Test (MB/s)	763.25	748.57	760.15	759.03	777.36
Normalized	98.18%	96.3%	97.79%	97.64%	100%
Standard Deviation	0.9%	2.8%	1.2%	1.2%	1.5%
IOR - Read Test (MB/s)	1217	1251	1222	1230	1240
Normalized	97.24%	100%	97.66%	98.27%	99.08%
Standard Deviation	1%	1.1%	2%	0.9%	0.1%
Polyhedron Fortran Benchmarks - ac (sec)	5.82	5.83	5.74	5.88	5.95
Normalized	98.63%	98.46%	100%	97.62%	96.47%
Polyhedron Fortran Benchmarks - air (sec)	1.61	1.55	1.64	1.63	1.64
Normalized	96.27%	100%	94.51%	95.09%	94.51%
Polyhedron Fortran Benchmarks - mdbx (sec)	4.19	4.26	4.15	4.27	4.37
Normalized	99.05%	97.42%	100%	97.19%	94.97%
Polyhedron Fortran Benchmarks - doduc (sec)	6.49	6.31	6.64	6.65	6.52
Normalized	97.23%	100%	95.03%	94.89%	96.78%
Polyhedron Fortran Benchmarks - linpk (sec)	3.02	3.02	3.01	3.02	3.01
Normalized	99.67%	99.67%	100%	99.67%	100%
Polyhedron Fortran Benchmarks - aermod (sec)	5.56	5.37	5.37	5.57	5.66
Normalized	96.58%	100%	100%	96.41%	94.88%
Polyhedron Fortran Benchmarks - rnflow (sec)	14.79	14.99	15.2	15.18	14.86
Normalized	100%	98.67%	97.3%	97.43%	99.53%
Polyhedron Fortran Benchmarks - induct2 (sec)	20.95	21.56	21.21	21.13	21.16
Normalized	100%	97.17%	98.77%	99.15%	99.01%

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Polyhedron Fortran Benchmarks - protein (sec)	12.32	12.38	**12.03**	**12.65**	12.45
Normalized	97.65%	97.17%	100%	95.1%	96.63%
Polyhedron Fortran Benchmarks - capacita (sec)	15.08	**15.02**	15.9	**15.94**	15.54
Normalized	99.6%	100%	94.47%	94.23%	96.65%
Polyhedron Fortran Benchmarks - channel2 (sec)	42.07	42.11	41.85	**42.52**	**41.84**
Normalized	99.45%	99.36%	99.98%	98.4%	100%
Polyhedron Fortran Benchmarks - fatigue2 (sec)	48.51	48.81	**47.52**	**49.19**	48.91
Normalized	97.96%	97.36%	100%	96.61%	97.16%
Polyhedron Fortran Benchmarks - gas_dyn2 (sec)	41.87	42.15	**41.15**	42.34	**42.65**
Normalized	98.28%	97.63%	100%	97.19%	96.48%
Polyhedron Fortran Benchmarks - test_fpu2 (sec)	**25.57**	26.84	**26.89**	26.66	26.51
Normalized	100%	95.27%	95.09%	95.91%	96.45%
Polyhedron Fortran Benchmarks - mp_prop_design (sec)	52.75	53.83	**51.63**	53.59	**54.33**
Normalized	97.88%	95.91%	100%	96.34%	95.03%
libgav1 - Chimera 1080p (FPS)	**52.41**	62.28	**70.97**	63.99	63.37
Normalized	73.85%	87.76%	100%	90.16%	89.29%
Standard Deviation	0.1%	0.1%	0.5%	0%	0.2%
libgav1 - Summer Nature 4K	**24.79**	27.90	**30.22**	28.57	28.38
Normalized	82.03%	92.32%	100%	94.54%	93.91%
Standard Deviation	0.1%	0.1%	0.4%	0.2%	0.3%
libgav1 - S.N.1 (FPS)	**81.56**	93.45	**111.67**	97.98	97.91
Normalized	73.04%	83.68%	100%	87.74%	87.68%
Standard Deviation	0.1%	0.1%	0.7%	0.1%	0.1%
libgav1 - C.1.1.b (FPS)	**21.39**	23.44	**25.40**	24.08	23.98
Normalized	84.21%	92.28%	100%	94.8%	94.41%
Standard Deviation	0.2%	0.8%	0.6%	0.7%	0.4%
TSCP - A.C.P (Nodes/s)	1377147	**1388096**	**1329844**	1342853	1338356
Normalized	99.21%	100%	95.8%	96.74%	96.42%
Standard Deviation	1.4%	0.7%	1%	1.2%	1.4%
dav1d - Chimera 1080p (FPS)	**496.07**	537.55	**604.05**	582.61	569.71
Normalized	82.12%	88.99%	100%	96.45%	94.32%
Standard Deviation	0.5%	0.3%	0.2%	0.2%	0.3%
dav1d - Summer Nature 4K (FPS)	179.99	181.50	**185.13**	182.59	**179.82**
Normalized	97.22%	98.04%	100%	98.63%	97.13%
Standard Deviation	0.1%	0.4%	0.1%	0.3%	0.1%
dav1d - S.N.1 (FPS)	**498.81**	538.69	**601.81**	568.35	553.82
Normalized	82.88%	89.51%	100%	94.44%	92.03%
Standard Deviation	0.2%	0.5%	0.1%	0.3%	1.1%
dav1d - C.1.1.b (FPS)	**74.26**	81.63	**84.68**	80.49	80.43
Normalized	87.69%	96.4%	100%	95.05%	94.98%
Standard Deviation	0.2%	0.3%	0.2%	0.4%	0.2%
SVT-AV1 - Enc Mode 4 - 1080p (FPS)	**4.476**	4.452	4.445	**3.695**	3.701
Normalized	100%	99.46%	99.31%	82.55%	82.69%
Standard Deviation	0.3%	0.2%	0.4%	0.7%	0.2%

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SVT-AV1 - Enc Mode 8 - 1080p (FPS)	36.543	36.767	**37.069**	32.015	**31.825**
Normalized	98.58%	99.19%	100%	86.37%	85.85%
Standard Deviation	0.6%	0.4%	0.4%	0.6%	0.6%
SVT-VP9 - VMAF Optimized - Bosphorus 1080p (FPS)	206.69	208.06	**210.00**	**192.79**	194.90
Normalized	98.42%	99.08%	100%	91.8%	92.81%
Standard Deviation	1.6%	2.8%	2.5%	0.7%	1.5%
SVT-VP9 - P.S.O - Bosphorus 1080p (FPS)	214.95	217.45	**217.50**	**197.11**	202.91
Normalized	98.83%	99.98%	100%	90.63%	93.29%
Standard Deviation	0.1%	0.4%	0.2%	0.5%	1.5%
SVT-VP9 - V.Q.O - Bosphorus 1080p (FPS)	188.27	189.63	**191.08**	**173.66**	176.59
Normalized	98.53%	99.24%	100%	90.88%	92.42%
Standard Deviation	0.3%	0.2%	0.1%	0.6%	1.7%
ACES DGEMM - S.F.P.R (GFLOP/s)	**4.072335**	4.198781	4.249768	**4.400840**	4.258888
Normalized	92.54%	95.41%	96.57%	100%	96.77%
Standard Deviation	4%	1.7%	2.3%	1.6%	4.2%
Intel Open Image Denoise - Memorial (Images / Sec)	**10.47**	10.18	10.39	10.08	**9.94**
Normalized	100%	97.23%	99.24%	96.28%	94.94%
Standard Deviation	0.2%	0.4%	0.1%	0.2%	0.2%
Himeno Benchmark - P.P.S (MFLOPS)	**5105**	5004	5030	**4894**	4942
Normalized	100%	98.03%	98.55%	95.87%	96.82%
Standard Deviation	3%	0.5%	1.6%	2.8%	1.9%
Swet - Average (Operations/sec)	834392353	**867579014**	852874663	**825023639**	832902905
Normalized	96.17%	100%	98.31%	95.09%	96%
Standard Deviation	0.2%	0.2%	0.3%	1.2%	0.8%
Build2 - Time To Compile (sec)	70.114	70.468	**70.015**	70.739	**70.942**
Normalized	99.86%	99.36%	100%	98.98%	98.69%
Standard Deviation	0.6%	0.4%	0.6%	0.7%	0.4%
DeepSpeech - CPU (sec)	62.46440	61.22354	**60.81173**	**89.33798**	84.44659
Normalized	97.35%	99.33%	100%	68.07%	72.01%
Standard Deviation	1.1%	0.5%	0.5%	2.6%	2.6%
ASKAP - tConvolve MT - Gridding (Million Grid	947.817	943.996	943.439	**962.421**	**911.102**
Normalized	98.48%	98.09%	98.03%	100%	94.67%
Standard Deviation	0.3%	0.4%	0.4%	1.5%	2.8%
ASKAP - tConvolve MT - Degridding (Million Grid	**2098**	2063	2094	**1838**	1955
Normalized	100%	98.32%	99.8%	87.59%	93.16%
Standard Deviation	0.4%	0.9%	0.3%	2.5%	8.1%
ASKAP - tConvolve MPI - Gridding (Million Grid	964.210	**962.564**	965.57	**974.210**	971.245
Normalized	98.97%	98.8%	99.11%	100%	99.7%
Standard Deviation	0%	0%	0%	0.2%	0.1%
ASKAP - tConvolve MPI - Degridding (Million Grid	**2155**	2147	2150	**2058**	2101
Normalized	100%	99.62%	99.75%	95.5%	97.48%
Standard Deviation	0.1%	0%	0.1%	0.8%	0.4%

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ASKAP - tConvolve OpenMP - Gridding (Million Grid	**1845**	1828	1834	1309	**1034**
Normalized	100%	99.09%	99.43%	70.96%	56.06%
Standard Deviation	1.1%	1.6%	3.5%	27%	34.6%
ASKAP - tConvolve OpenMP - Degridding (Million Grid	**2406**	2377	2396	2400	**2281**
Normalized	100%	98.81%	99.58%	99.76%	94.79%
Standard Deviation	0.5%	0%	0.5%	11.3%	3.3%
GROMACS - Water Benchmark (Ns/Day)	1.160	**1.152**	1.158	1.158	**1.165**
Normalized	99.57%	98.88%	99.4%	99.4%	100%
Standard Deviation	0.6%	0.3%	0.6%	0.1%	0.3%
SQLite Speedtest - Timed Time - Size 1,000 (sec)	**57.343**	57.143	56.194	56.281	**55.945**
Normalized	97.56%	97.9%	99.56%	99.4%	100%
Standard Deviation	0.5%	1.6%	0.8%	1%	1.6%
Darktable - Boat - CPU-only (sec)	11.299	11.291	**11.271**	11.338	**11.831**
Normalized	99.75%	99.82%	100%	99.41%	95.27%
Standard Deviation	0.5%	0.1%	0.4%	0.2%	3%
Darktable - Masskrug - CPU-only (sec)	4.604	**4.582**	4.592	4.603	**4.608**
Normalized	99.52%	100%	99.78%	99.54%	99.44%
Standard Deviation	0.4%	1%	0.7%	0.1%	0.4%
Darktable - Server Rack - CPU-only (sec)	**0.195**	0.196	**0.195**	**0.195**	**0.198**
Normalized	100%	99.49%	100%	100%	98.48%
Standard Deviation	1.3%	1.5%	2.1%	0.8%	0.6%
Darktable - Server Room - CPU-only (sec)	3.615	3.623	**3.627**	**3.610**	3.612
Normalized	99.86%	99.64%	99.53%	100%	99.94%
Standard Deviation	0.1%	0.2%	0.3%	0.3%	0.4%
GIMP - resize (sec)	7.523	7.100	**6.749**	7.836	**10.164**
Normalized	89.71%	95.06%	100%	86.13%	66.4%
Standard Deviation	1.5%	1.9%	2.4%	2.1%	0.8%
GIMP - rotate (sec)	11.949	11.582	**11.014**	11.826	**14.597**
Normalized	92.18%	95.1%	100%	93.13%	75.45%
Standard Deviation	0.1%	0.2%	0.2%	0.2%	1%
GIMP - auto-levels (sec)	14.260	14.319	**13.574**	14.583	**17.115**
Normalized	95.19%	94.8%	100%	93.08%	79.31%
Standard Deviation	0.2%	4.5%	0.2%	1%	0.3%
GIMP - unsharp-mask (sec)	17.108	16.941	**16.491**	17.613	**20.271**
Normalized	96.39%	97.34%	100%	93.63%	81.35%
Standard Deviation	0.2%	0.2%	0.3%	0.2%	0.7%
LibreOffice - 2.D.T.P (sec)	**6.576**	6.622	6.591	6.646	**6.673**
Normalized	100%	99.31%	99.77%	98.95%	98.55%
Standard Deviation	3.5%	3.8%	2.8%	3.3%	2.4%
BenchmarkMutex - S.M.L.S (ns)	**18**	**18**	**19**	**18**	**19**
Normalized	100%	100%	94.74%	100%	94.74%
Standard Deviation	2.7%				
BenchmarkMutex - M.L.U.s (ns)	**42**	**42**	**43**	**43**	**42**
Normalized	100%	100%	97.67%	97.67%	100%
Standard Deviation					1.4%
BenchmarkMutex - M.L.U.s.m	**13**	**13**	**13**	**14**	**14**
Normalized	100%	100%	100%	92.86%	92.86%

Liquorix, Xanmod Linux Kernel Benchmarks

Standard Deviation		3.2%		6.1%	4.3%
BenchmarkMutex - M.L.U.s.m	**18**	**18**	**19**	**19**	**19**
Normalized	100%	100%	94.74%	94.74%	94.74%
Standard Deviation	2.7%				
BenchmarkMutex - S.R.A.A (ns)	11	11	11	11	11
BenchmarkMutex - M.L.U.s (ns)	**43**	**43**	44	**45**	44
Normalized	100%	100%	97.73%	95.56%	97.73%
Standard Deviation	1.4%				1.3%
BenchmarkMutex - M.L.U.p (ns)	**10**	**10**	**11**	**11**	**11**
Normalized	100%	100%	90.91%	90.91%	90.91%
BenchmarkMutex - M.L.U.t (ns)	**29**	30	**31**	**31**	**31**
Normalized	100%	96.67%	93.55%	93.55%	93.55%
Standard Deviation	2.8%				
Sysbench - Memory (Events/sec)	**9240668**	9168874	**9132396**	9200641	9142502
Normalized	100%	99.22%	98.83%	99.57%	98.94%
Standard Deviation	0%	0.1%	0%	0.1%	0.2%
Sysbench - CPU (Events/sec)	**25821**	25659	**25320**	25773	25744
Normalized	100%	99.37%	98.06%	99.81%	99.7%
Standard Deviation	0.2%	0.2%	0.1%	0.1%	0%
Optcarrot - O.B (FPS)	105.90	**109.34**	**103.43**	104.65	103.73
Normalized	96.85%	100%	94.59%	95.71%	94.87%
Standard Deviation	0.9%	1.7%	1.4%	0.7%	0.9%
Blender - BMW27 - CPU-Only (sec)	**114.71**	115.85	**117.37**	115.95	116.77
Normalized	100%	99.02%	97.73%	98.93%	98.24%
Standard Deviation	0.8%	0.4%	0.4%	0.3%	0.3%
Blender - Fishy Cat - CPU-Only (sec)	**167.72**	169.27	169.92	169.59	**170.28**
Normalized	100%	99.08%	98.71%	98.9%	98.5%
Standard Deviation	0.2%	0.1%	0.2%	0.2%	0.2%
Blender - Pabellon Barcelona - CPU-Only (sec)	**397.49**	400.01	**410.01**	401.28	403.22
Normalized	100%	99.37%	96.95%	99.06%	98.58%
Standard Deviation	0.4%	0.1%	0.4%	0.1%	0.3%
Selenium - ARES-6 - Google Chrome (ms)	19.35	19.11	**19.05**	**19.69**	19.65
Normalized	98.45%	99.69%	100%	96.75%	96.95%
Standard Deviation	0.9%	0.6%	1.6%	0.6%	0.5%
Selenium - Octane - Google Chrome (Geometric Mean)	**50775**	49915	50368	49167	**48805**
Normalized	100%	98.31%	99.2%	96.83%	96.12%
Standard Deviation	1%	2.4%	0.2%	0.7%	0.5%
Selenium - WebXPRT - Google Chrome (Score)	**259**	269	**271**	261	266
Normalized	95.57%	99.26%	100%	96.31%	98.15%
Standard Deviation			0.4%	1.8%	0.2%
Selenium - Basemark - Google Chrome (Overall Score)	1469	**1534**	1477	**790.91**	1250
Normalized	95.75%	100%	96.28%	51.54%	81.46%
Standard Deviation	5.2%	1%	6.9%		2.8%
Selenium - Jetstream - Google Chrome (Score)	232.23	**236.50**	233.06	**228.71**	229.08
Normalized	98.19%	100%	98.55%	96.71%	96.86%
Standard Deviation	0.4%	0.9%	1.4%	0.5%	0.5%

Liquorix, Xanmod Linux Kernel Benchmarks

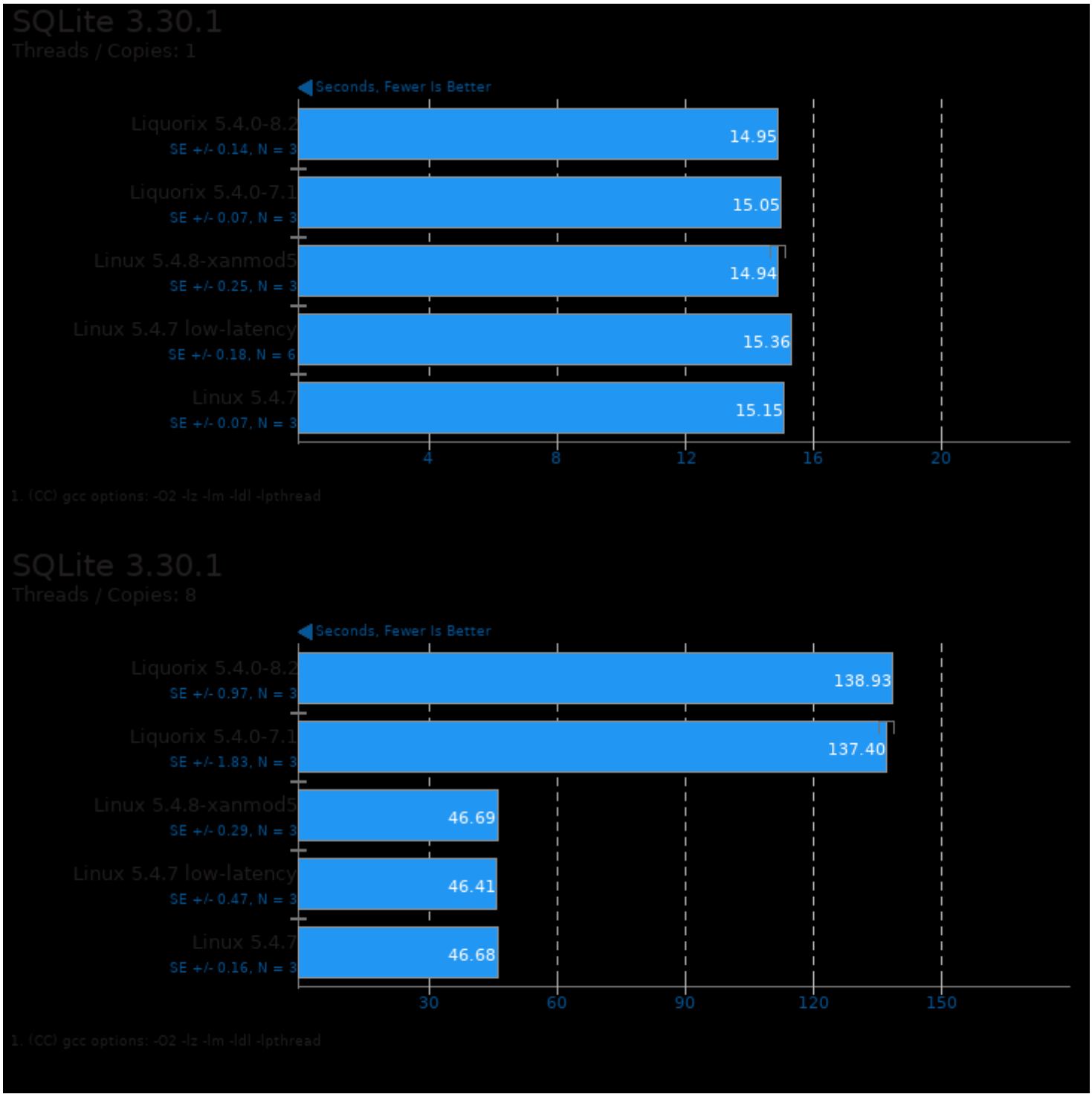
Selenium - StyleBench - Google Chrome (Runs / Minute)	36.4	37.1	37.66	36.7	37.4
Normalized	96.65%	98.51%	100%	97.45%	99.31%
Standard Deviation	0.6%	0.7%	1.9%	1.5%	0.6%
Selenium - Maze Solver - Google Chrome (sec)	4.1	4.0	3.7	3.7	3.8
Normalized	90.24%	92.5%	100%	100%	97.37%
Standard Deviation	1.4%	1.5%	0%	1.5%	0%
Selenium - Speedometer - Google Chrome (Runs/min)	131	134	132	131	136.8
Normalized	95.76%	97.95%	96.49%	95.76%	100%
Standard Deviation	1.5%	2.3%	1.5%	0.4%	0.5%
Selenium - PSPDFKit WASM - Google Chrome (Score)	1508	1486	1484	1833	1511
Normalized	98.41%	99.87%	100%	80.96%	98.21%
Standard Deviation	1.9%	1.3%	0.7%	17.3%	0.3%
BRL-CAD - V.P.M (VGR Performance Metric)	176619	179417	175808	155685	155427
Normalized	98.44%	100%	97.99%	86.77%	86.63%
Flexible IO Tester - Rand Read - Linux AIO - Yes - No - 2MB	1417	1377	1681	1471	1042
Normalized	84.3%	81.92%	100%	87.51%	61.99%
Standard Deviation	1.6%	2.8%	0.2%	1.5%	0.1%
Flexible IO Tester - Rand Read - Linux AIO - Yes - No - 2MB	705	685	837	732	517
Normalized	84.23%	81.84%	100%	87.46%	61.77%
Standard Deviation		2.8%		1.5%	0.1%
Flexible IO Tester - Rand Read - Linux AIO - Yes - No - 4KB	58.5	58.2	57.0	60.0	41.0
Normalized	97.5%	97%	95%	100%	68.33%
Standard Deviation	0.9%	2.2%	2.3%	0.3%	0.4%
Flexible IO Tester - Rand Read - Linux AIO - Yes - No - 4KB	14967	14600	14600	15367	10500
Normalized	97.4%	95.01%	95.01%	100%	68.33%
Standard Deviation	1%	4.1%	2.5%	0.4%	
Flexible IO Tester - Rand Write - Linux AIO - Yes - No - 2MB	1643	1693	1916	2056	2026
Normalized	79.91%	82.34%	93.19%	100%	98.54%
Standard Deviation	5%	0.7%	0.6%	4.6%	3%
Flexible IO Tester - Rand Write - Linux AIO - Yes - No - 2MB	818	843	955	1024	1009
Normalized	79.88%	82.32%	93.26%	100%	98.54%
Standard Deviation	5%	0.7%	0.6%	4.6%	3%
Flexible IO Tester - Rand Write - Linux AIO - Yes - No - 4KB	1195	1193	1223	1270	1260
Normalized	94.09%	93.94%	96.3%	100%	99.21%
Standard Deviation	1%	2.6%	2.9%	2.9%	0.3%
Flexible IO Tester - Rand Write - Linux AIO - Yes - No - 4KB	305667	305333	313250	324846	322667
Normalized	94.1%	93.99%	96.43%	100%	99.33%
Standard Deviation	0.9%	2.5%	2.9%	2.9%	0.4%

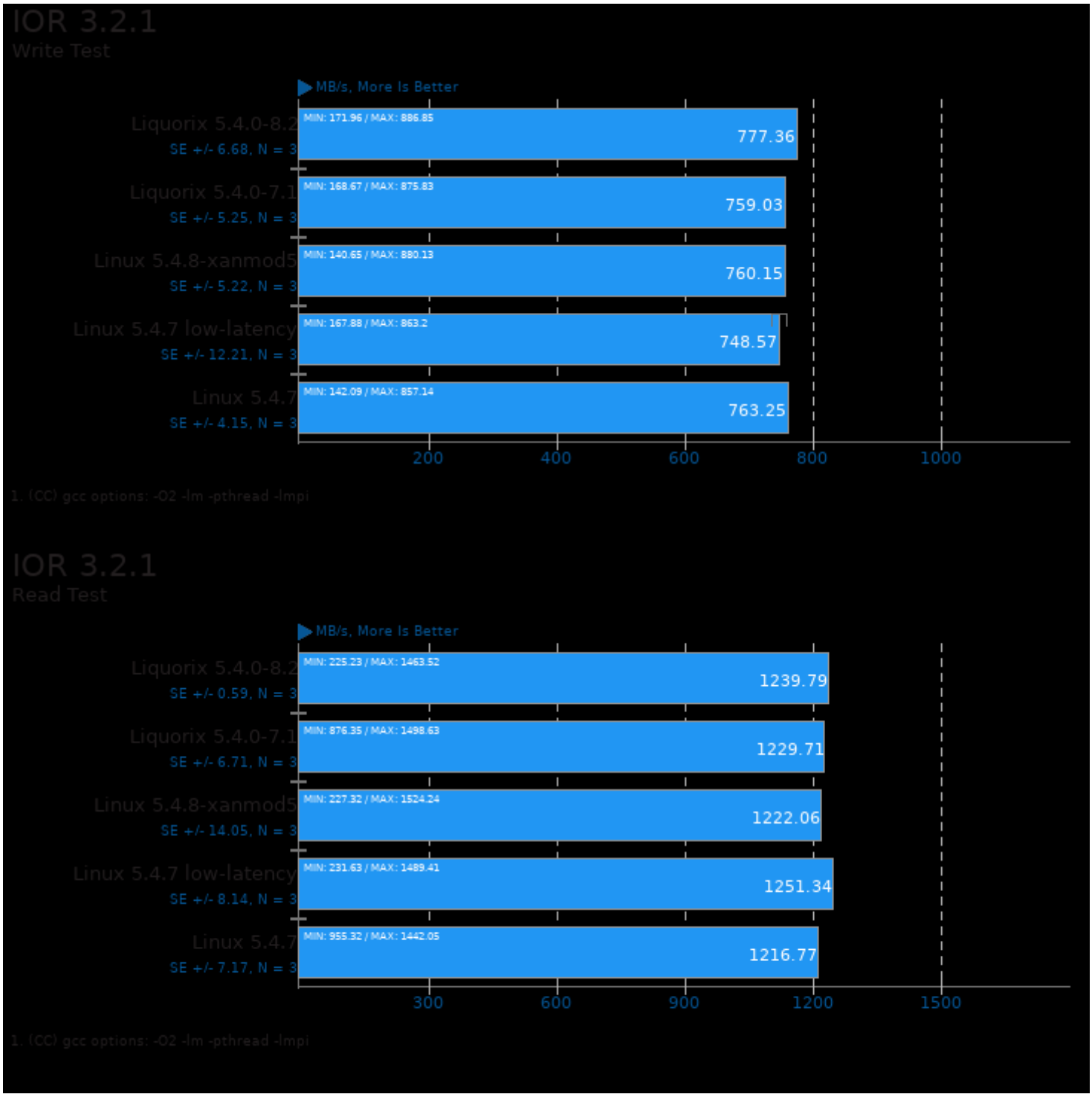
Liquorix, Xanmod Linux Kernel Benchmarks

Flexible IO Tester - Seq Read - Linux AIO - Yes - No - 2MB	1488	2028	2842	1578	1698
Normalized	52.36%	71.36%	100%	55.52%	59.75%
Standard Deviation		0.3%	7%	0.2%	0.1%
Flexible IO Tester - Seq Read - Linux AIO - Yes - No - 2MB	741	1010	1418	785	845
Normalized	52.26%	71.23%	100%	55.36%	59.59%
Standard Deviation	0.4%	0.3%	7%		
Flexible IO Tester - Seq Read - Linux AIO - Yes - No - 4KB	1168	1728	2318	1238	1433
Normalized	50.39%	74.55%	100%	53.41%	61.82%
Standard Deviation	0.5%	0.7%	1%	0.4%	0.1%
Flexible IO Tester - Seq Read - Linux AIO - Yes - No - 4KB	299000	442333	593333	317000	366667
Normalized	50.39%	74.55%	100%	53.43%	61.8%
Standard Deviation	0.6%	0.7%	0.9%	0.3%	0.2%
Flexible IO Tester - Seq Write - Linux AIO - Yes - No - 2MB	1680	1715	1948	2167	2078
Normalized	77.53%	79.14%	89.89%	100%	95.89%
Standard Deviation	1.5%	0.9%	1.8%	0.9%	1.1%
Flexible IO Tester - Seq Write - Linux AIO - Yes - No - 2MB	836	854	971	1080	1035
Normalized	77.41%	79.07%	89.91%	100%	95.83%
Standard Deviation	1.6%	0.9%	1.8%	0.9%	1.1%
Flexible IO Tester - Seq Write - Linux AIO - Yes - No - 4KB	1259	1286	1422	1572	1516
Normalized	80.09%	81.81%	90.46%	100%	96.44%
Standard Deviation	3.3%	3.1%	2.7%	3.1%	0.7%
Flexible IO Tester - Seq Write - Linux AIO - Yes - No - 4KB	322333	329133	364333	402533	388000
Normalized	80.08%	81.77%	90.51%	100%	96.39%
Standard Deviation	3.2%	3.1%	2.8%	3.1%	0.8%
Node.js Express HTTP Load Test (Reqs/sec)	11692	12240	12303	11825	11561
Normalized	95.03%	99.49%	100%	96.11%	93.97%
Standard Deviation	1.9%	0.9%	2.8%	0.3%	1%
VP9 libvpx Encoding - Speed 0 (FPS)	7.73	7.95	8.01	7.34	6.31
Normalized	96.5%	99.25%	100%	91.64%	78.78%
Standard Deviation	0%	0.2%	0.4%	2.9%	1.5%
VP9 libvpx Encoding - Speed 5 (FPS)	25.78	27.81	29.06	26.18	22.33
Normalized	88.71%	95.7%	100%	90.09%	76.84%
Standard Deviation	1.3%	0.3%	0.4%	2.9%	0.9%
GEGL - Crop (sec)	7.462	7.379	7.505	7.093	10.250
Normalized	95.05%	96.12%	94.51%	100%	69.2%
Standard Deviation	1.4%	0.9%	1.7%	1.5%	2.5%
GEGL - Scale (sec)	4.830	4.865	4.812	4.752	7.886
Normalized	98.39%	97.68%	98.75%	100%	60.26%
Standard Deviation	0.8%	3%	1.3%	1.1%	2.6%
GEGL - Cartoon (sec)	87.598	87.327	87.411	87.378	90.202
Normalized	99.69%	100%	99.9%	99.94%	96.81%
Standard Deviation	0.4%	0.2%	0.9%	0.3%	0.1%

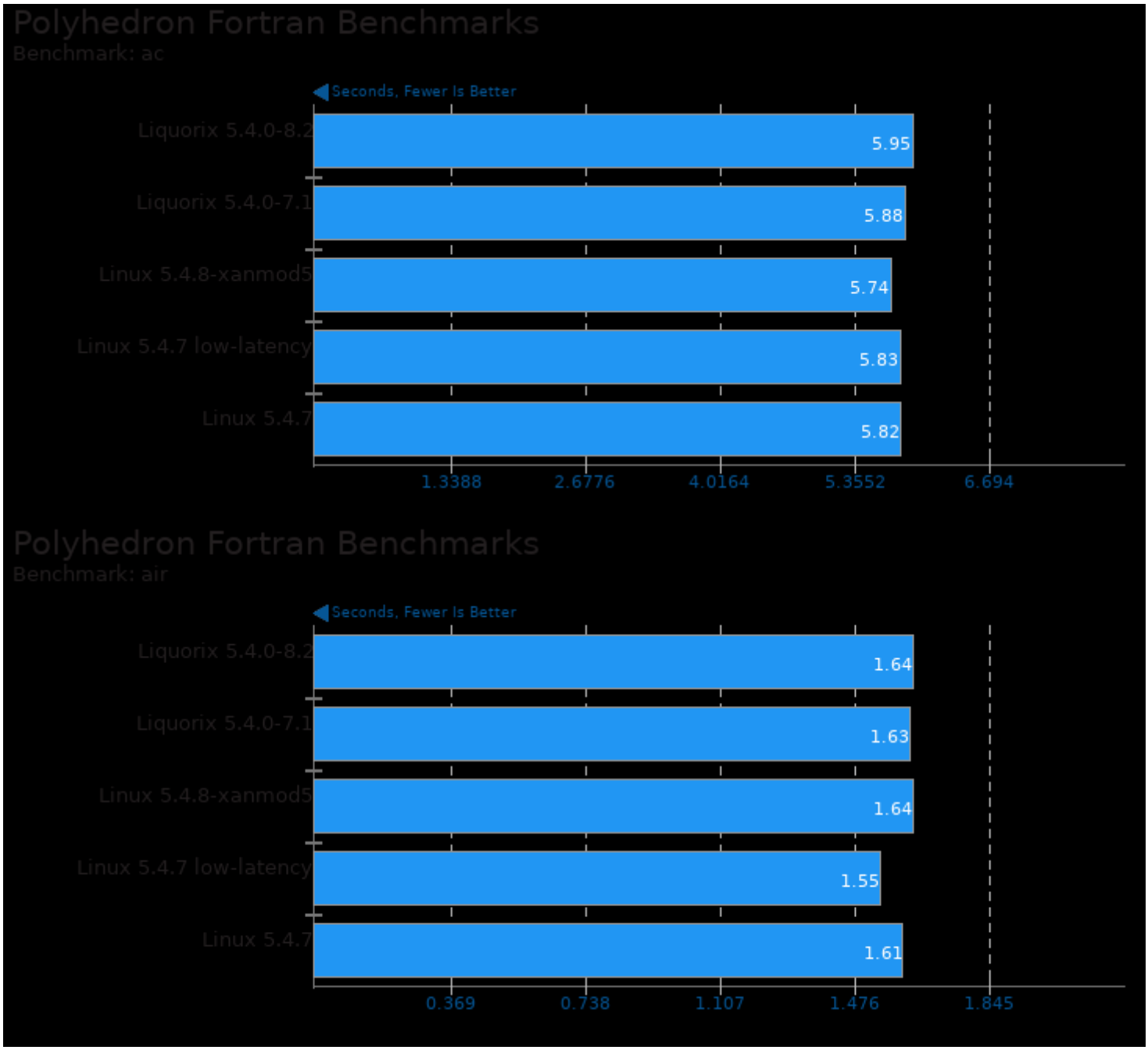
Liquorix, Xanmod Linux Kernel Benchmarks

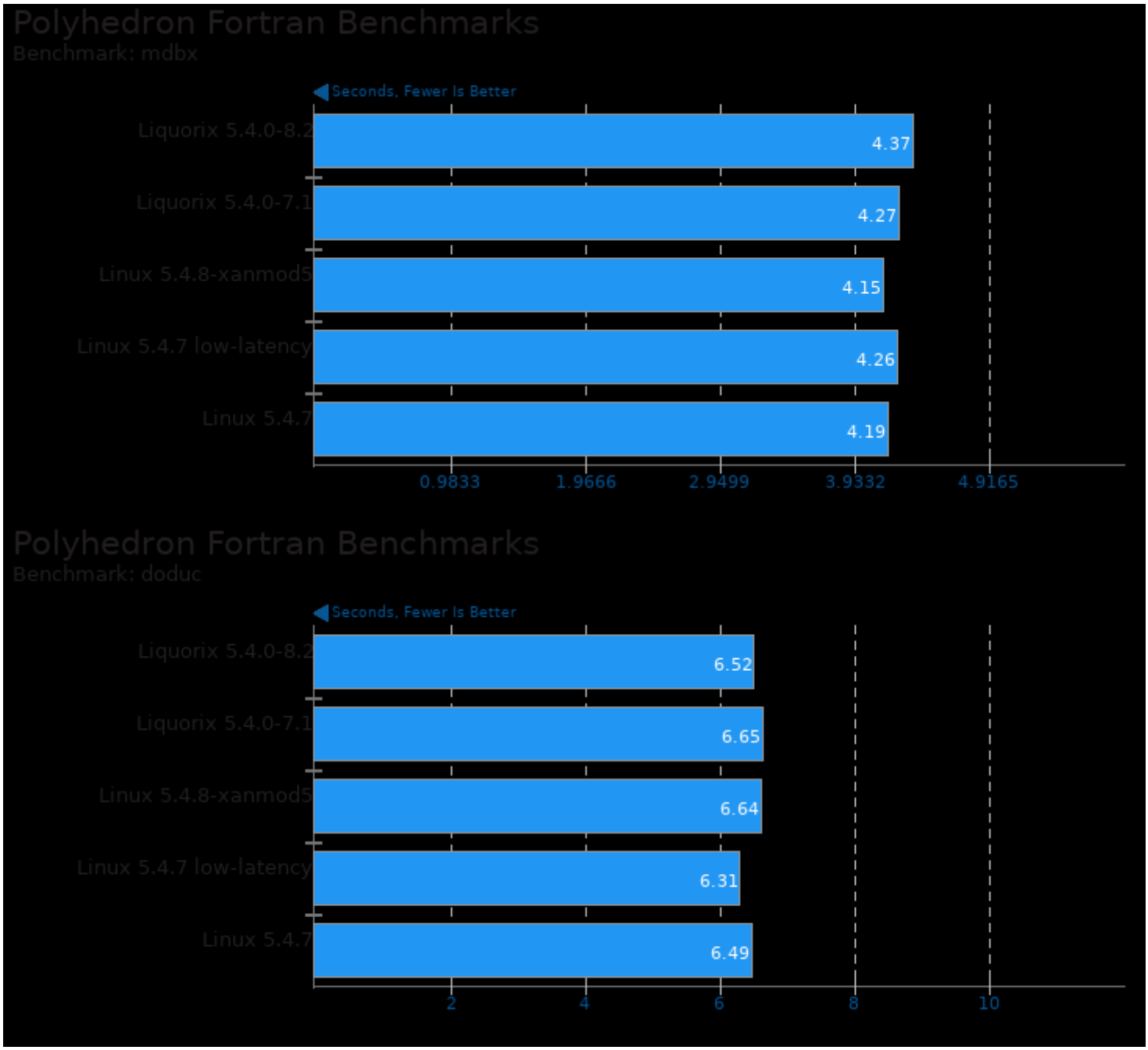
GEGL - Reflect (sec)	28.928	28.762	28.769	**28.537**	**31.608**
Normalized	98.65%	99.22%	99.19%	100%	90.28%
Standard Deviation	0.1%	0.4%	0.8%	0.4%	0.5%
GEGL - Antialias (sec)	36.191	36.029	36.100	**35.846**	**38.989**
Normalized	99.05%	99.49%	99.3%	100%	91.94%
Standard Deviation	0.4%	0.1%	1.2%	0.5%	0.8%
GEGL - Tile Glass (sec)	28.549	**28.063**	28.332	28.208	**31.195**
Normalized	98.3%	100%	99.05%	99.49%	89.96%
Standard Deviation	0.3%	0.5%	1.3%	0.3%	0.5%
GEGL - Wavelet Blur (sec)	59.665	59.349	59.721	**59.310**	**62.570**
Normalized	99.41%	99.93%	99.31%	100%	94.79%
Standard Deviation	1.2%	0.6%	0.1%	0.5%	0.7%
GEGL - Color Enhance (sec)	**53.952**	54.563	54.483	53.971	**57.070**
Normalized	100%	98.88%	99.03%	99.96%	94.54%
Standard Deviation	0.4%	0.9%	0.2%	0.4%	0.9%
GEGL - Rotate 90 Degrees (sec)	36.986	36.872	36.558	**36.525**	**39.444**
Normalized	98.75%	99.06%	99.91%	100%	92.6%
Standard Deviation	0.9%	1%	0.2%	0.8%	0.3%

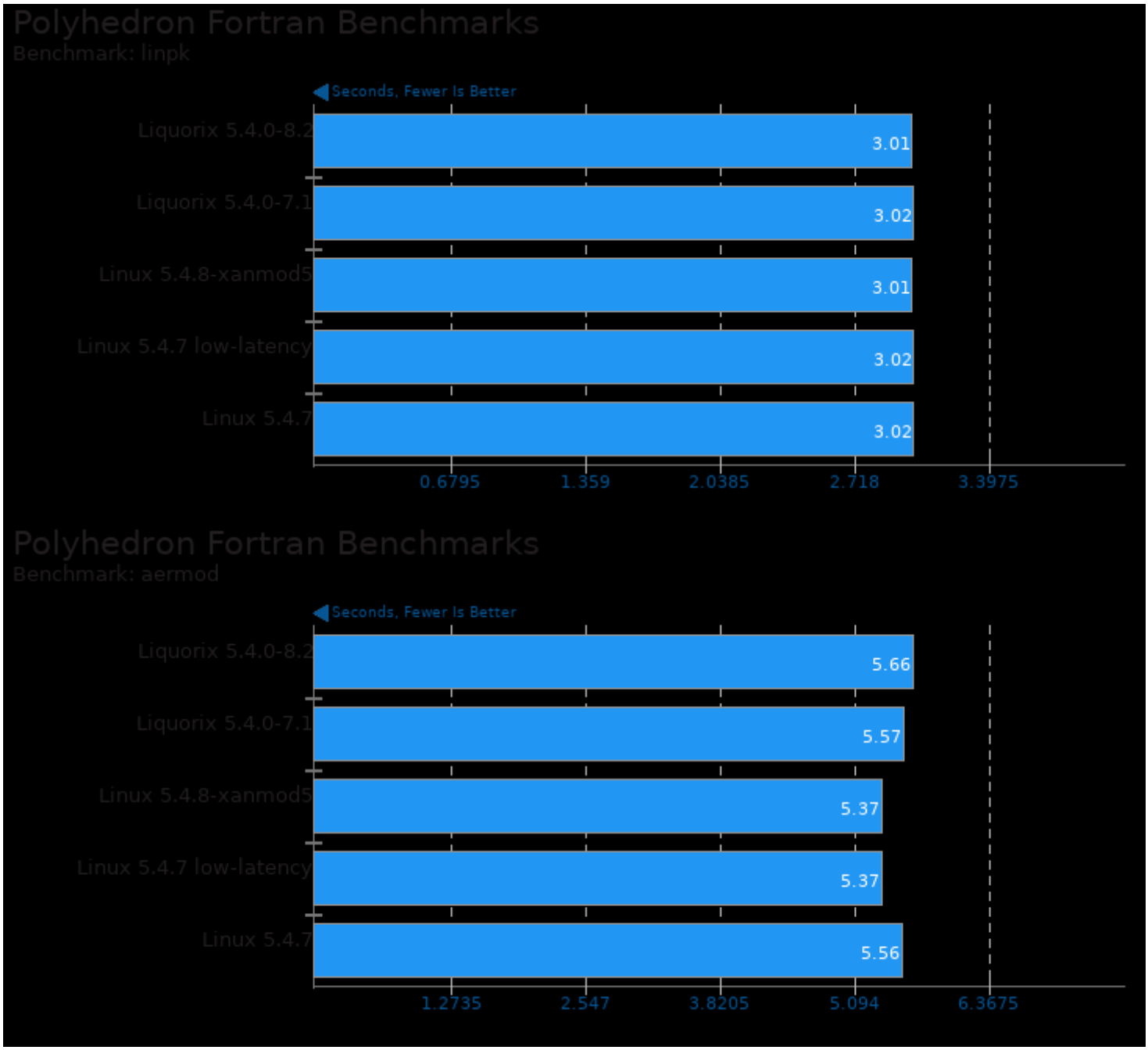

SQLite 3.30.1
Threads / Copies: 1
Seconds, Fewer Is Better
Liquorix 5.4.0-8.2
SE +/- 0.14, N = 3
14.95
Liquorix 5.4.0-7.1
SE +/- 0.07, N = 3
15.05
Linux 5.4.8-xanmod5
SE +/- 0.25, N = 3
14.94
Linux 5.4.7 low-latency
SE +/- 0.18, N = 6
15.36
Linux 5.4.7
SE +/- 0.07, N = 3
15.15
4
8
12
16
20
1. (CC) gcc options: -O2 -lz -lm -ldl -lpthread
SQLite 3.30.1
Threads / Copies: 8
Seconds, Fewer Is Better
Liquorix 5.4.0-8.2
SE +/- 0.97, N = 3
138.93
Liquorix 5.4.0-7.1
SE +/- 1.83, N = 3
137.40
Linux 5.4.8-xanmod5
SE +/- 0.29, N = 3
46.69
Linux 5.4.7 low-latency
SE +/- 0.47, N = 3
46.41
Linux 5.4.7
SE +/- 0.16, N = 3
46.68
30
60
90
120
150
1. (CC) gcc options: -O2 -lz -lm -ldl -lpthread

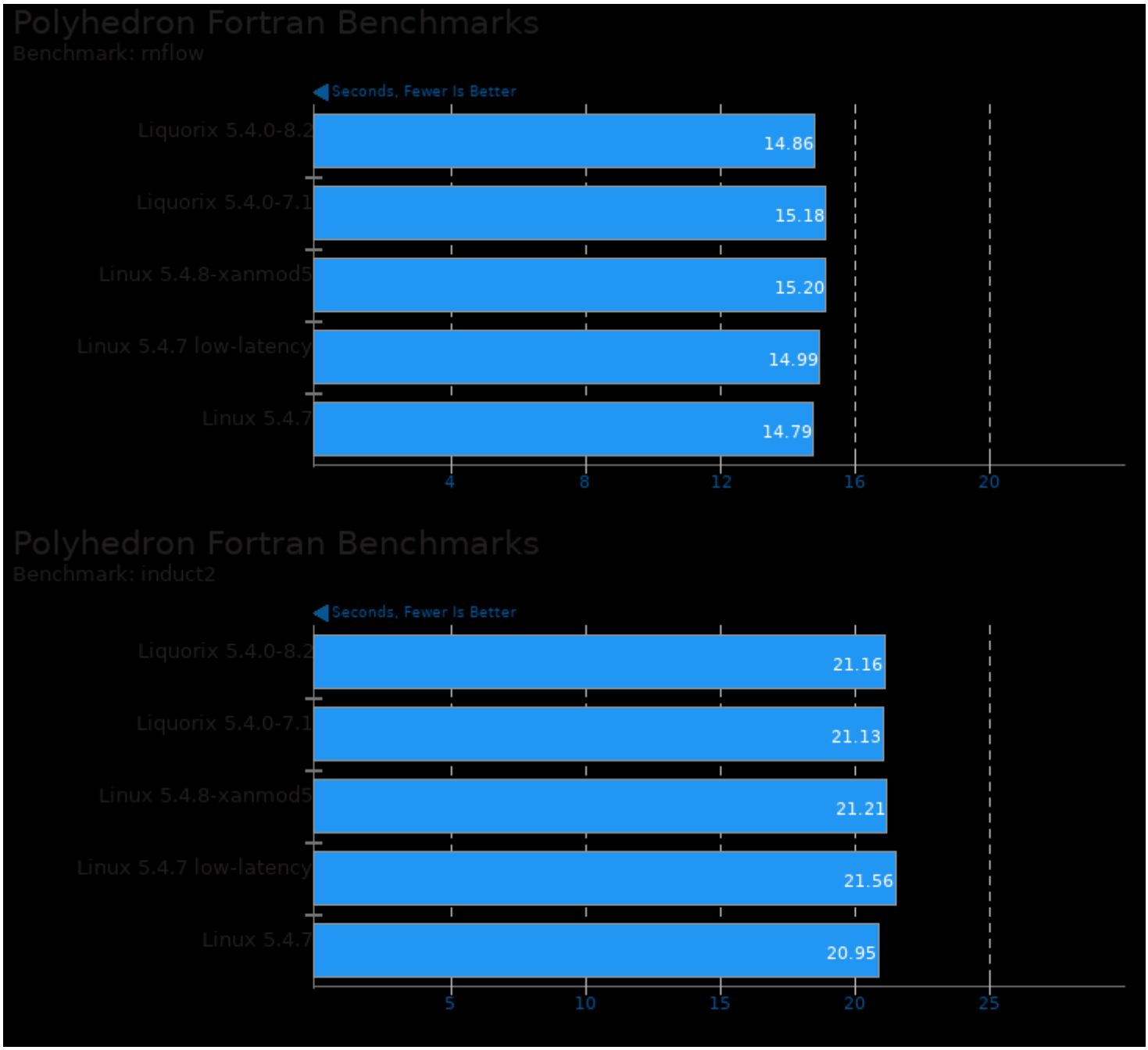

IOR 3.2.1
Write Test
MB/s, More Is Better
Liquorix 5.4.0-8.2
SE +/- 6.68, N = 3
MIN: 171.96 / MAX: 886.85
777.36
Liquorix 5.4.0-7.1
SE +/- 5.25, N = 3
MIN: 168.67 / MAX: 875.83
759.03
Linux 5.4.8-xanmod5
SE +/- 5.22, N = 3
MIN: 140.65 / MAX: 880.13
760.15
Linux 5.4.7 low-latency
SE +/- 12.21, N = 3
MIN: 167.88 / MAX: 863.2
748.57
Linux 5.4.7
SE +/- 4.15, N = 3
MIN: 142.09 / MAX: 857.14
763.25
200
400
600
800
1000
1. (CC) gcc options: -O2 -lm -pthread -lmpi

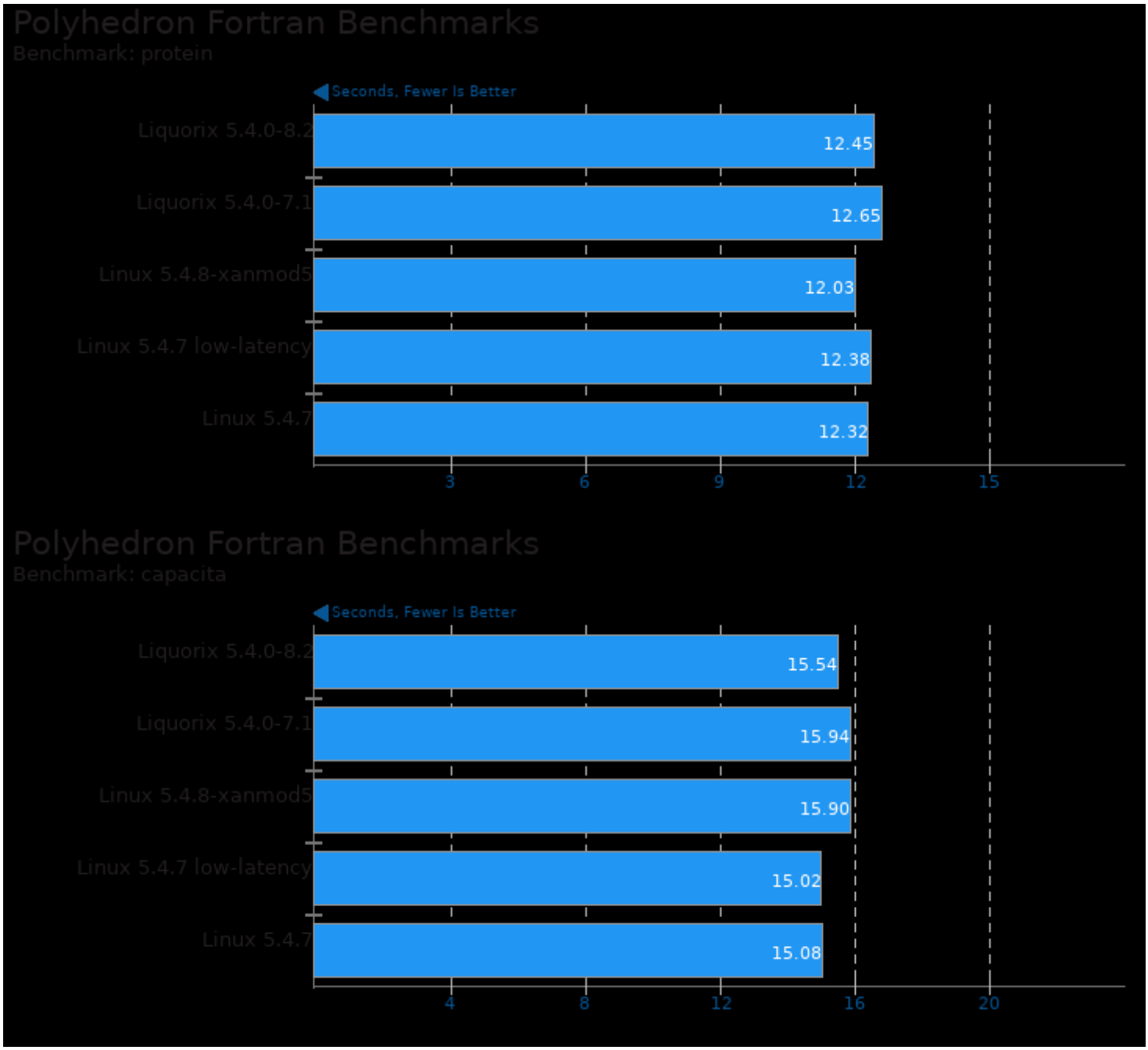
IOR 3.2.1
Read Test
MB/s, More Is Better
Liquorix 5.4.0-8.2
SE +/- 0.59, N = 3
MIN: 225.23 / MAX: 1463.52
1239.79
Liquorix 5.4.0-7.1
SE +/- 6.71, N = 3
MIN: 876.35 / MAX: 1498.63
1229.71
Linux 5.4.8-xanmod5
SE +/- 14.05, N = 3
MIN: 227.32 / MAX: 1524.24
1222.06
Linux 5.4.7 low-latency
SE +/- 8.14, N = 3
MIN: 231.63 / MAX: 1489.41
1251.34
Linux 5.4.7
SE +/- 7.17, N = 3
MIN: 955.32 / MAX: 1442.05
1216.77
300
600
900
1200
1500
1. (CC) gcc options: -O2 -lm -pthread -lmpi

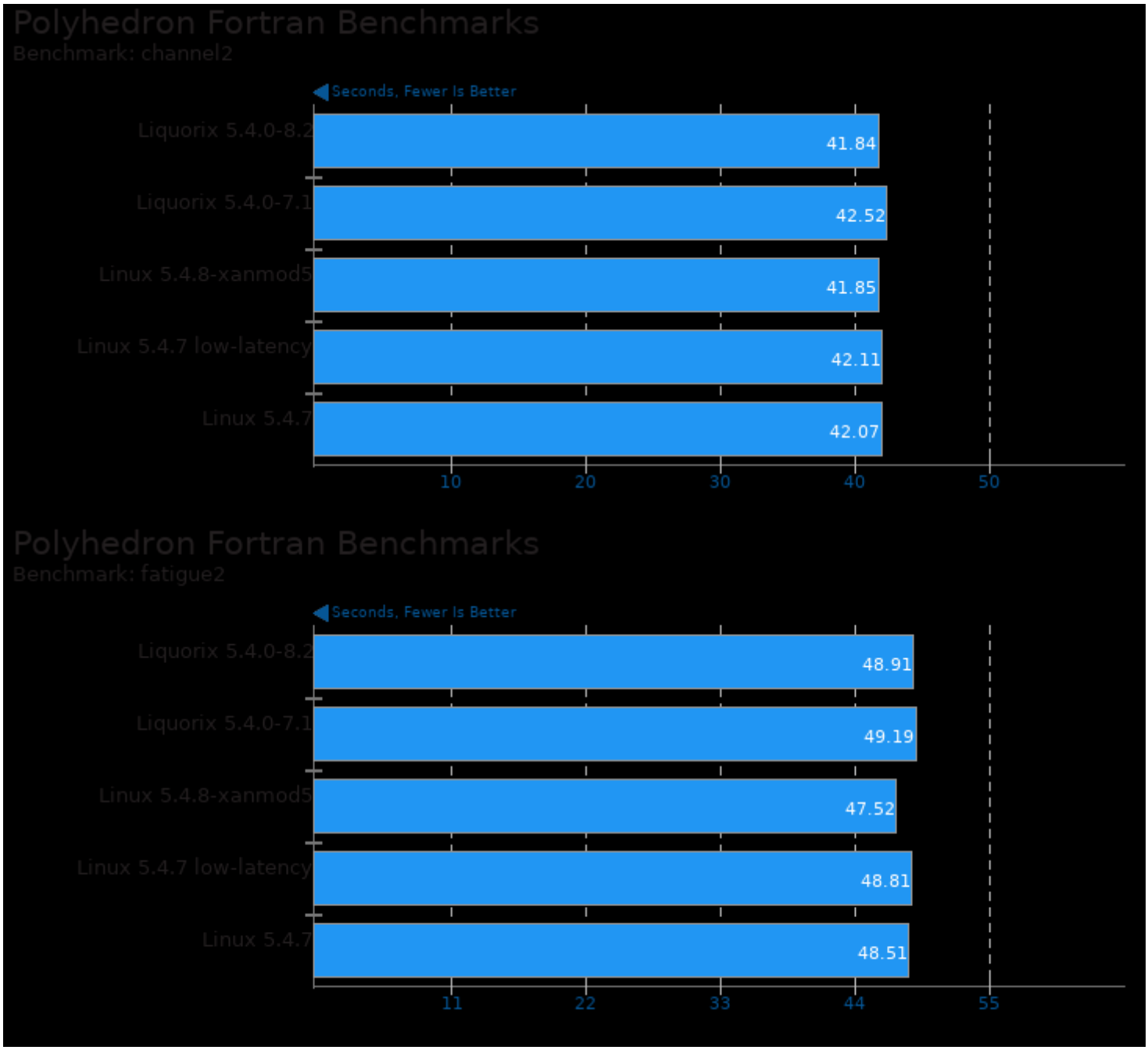

Polyhedron Fortran Benchmarks
Benchmark: ac
Seconds, Fewer Is Better
Liquorix 5.4.0-8.2
Liquorix 5.4.0-7.1
Linux 5.4.8-xanmod5
Linux 5.4.7 low-latency
Linux 5.4.7
5.95
5.88
5.74
5.83
5.82
1.3388
2.6776
4.0164
5.3552
6.694
Polyhedron Fortran Benchmarks
Benchmark: air
Seconds, Fewer Is Better
Liquorix 5.4.0-8.2
Liquorix 5.4.0-7.1
Linux 5.4.8-xanmod5
Linux 5.4.7 low-latency
Linux 5.4.7
1.64
1.63
1.64
1.55
1.61
0.369
0.738
1.107
1.476
1.845

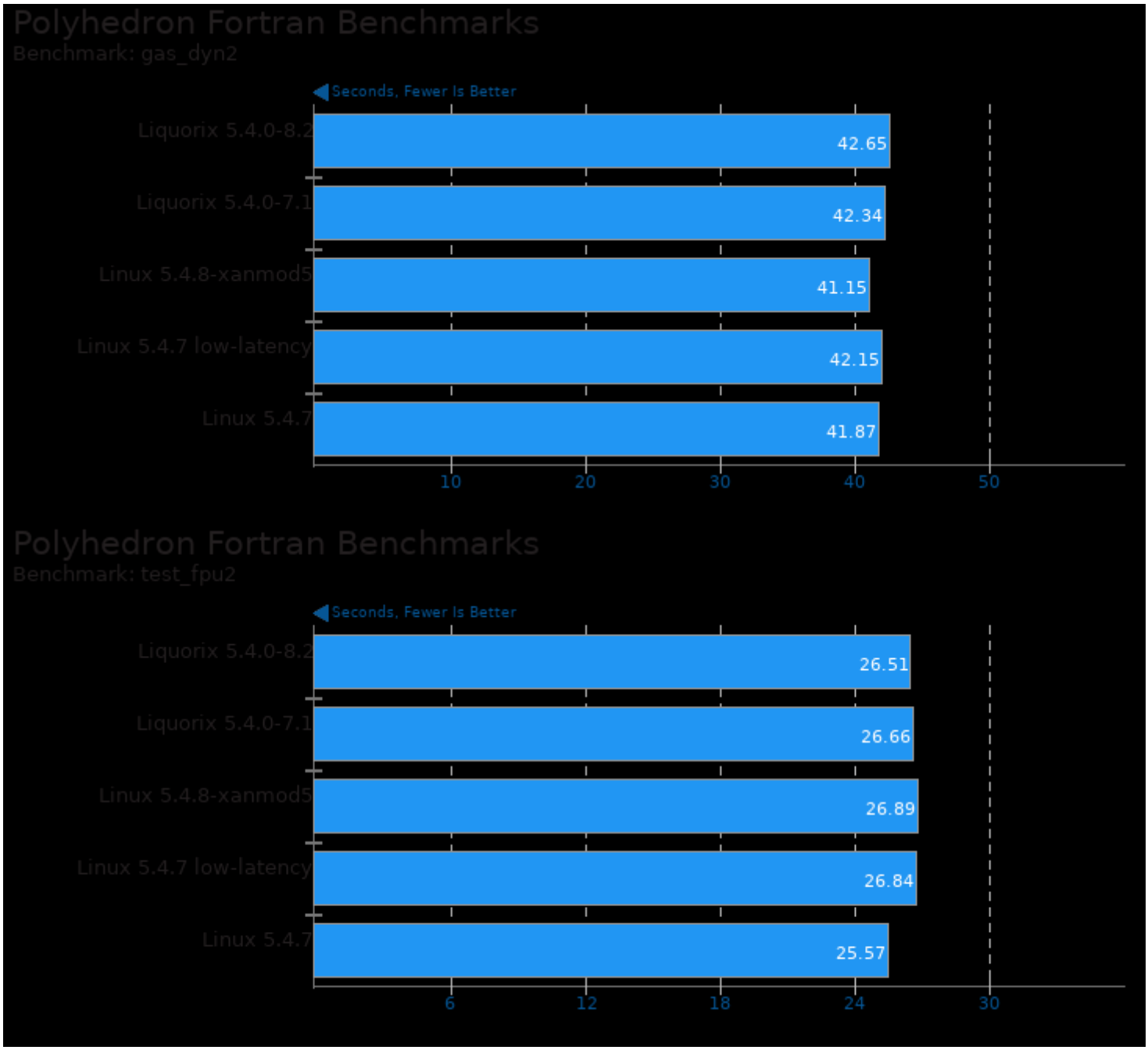

Polyhedron Fortran Benchmarks
Benchmark: mdbx
Seconds, Fewer Is Better
Liquorix 5.4.0-8.2
Liquorix 5.4.0-7.1
Linux 5.4.8-xanmod5
Linux 5.4.7 low-latency
Linux 5.4.7
4.37
4.27
4.15
4.26
4.19
0.9833
1.9666
2.9499
3.9332
4.9165
Polyhedron Fortran Benchmarks
Benchmark: doduc
Seconds, Fewer Is Better
Liquorix 5.4.0-8.2
Liquorix 5.4.0-7.1
Linux 5.4.8-xanmod5
Linux 5.4.7 low-latency
Linux 5.4.7
6.52
6.65
6.64
6.31
6.49
2
4
6
8
10


Polyhedron Fortran Benchmarks
Benchmark: linpk
Seconds, Fewer Is Better
Liquorix 5.4.0-8.2
Liquorix 5.4.0-7.1
Linux 5.4.8-xanmod5
Linux 5.4.7 low-latency
Linux 5.4.7
3.01
3.02
3.01
3.02
3.02
0.6795
1.359
2.0385
2.718
3.3975
Polyhedron Fortran Benchmarks
Benchmark: aermod
Seconds, Fewer Is Better
Liquorix 5.4.0-8.2
Liquorix 5.4.0-7.1
Linux 5.4.8-xanmod5
Linux 5.4.7 low-latency
Linux 5.4.7
5.66
5.57
5.37
5.37
5.56
1.2735
2.547
3.8205
5.094
6.3675

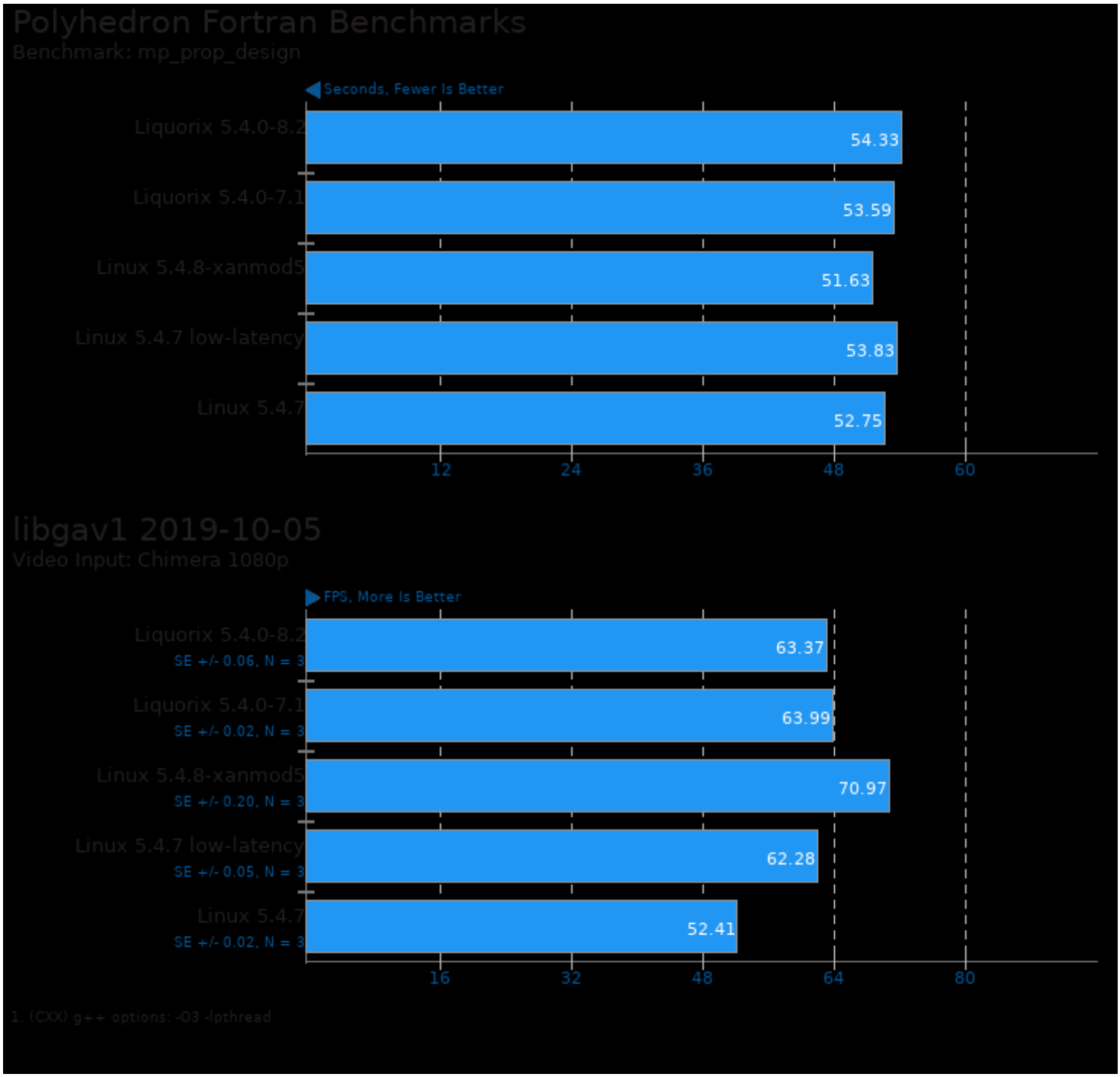

Polyhedron Fortran Benchmarks
Benchmark: rnflow
Seconds, Fewer Is Better
Liquorix 5.4.0-8.2
Liquorix 5.4.0-7.1
Linux 5.4.8-xanmod5
Linux 5.4.7 low-latency
Linux 5.4.7
14.86
15.18
15.20
14.99
14.79
4
8
12
16
20
Polyhedron Fortran Benchmarks
Benchmark: induct2
Seconds, Fewer Is Better
Liquorix 5.4.0-8.2
Liquorix 5.4.0-7.1
Linux 5.4.8-xanmod5
Linux 5.4.7 low-latency
Linux 5.4.7
21.16
21.13
21.21
21.56
20.95
5
10
15
20
25


Polyhedron Fortran Benchmarks
Benchmark: protein
Seconds, Fewer Is Better
Liquorix 5.4.0-8.2
Liquorix 5.4.0-7.1
Linux 5.4.8-xanmod5
Linux 5.4.7 low-latency
Linux 5.4.7
12.45
12.65
12.03
12.38
12.32
3
6
9
12
15
Polyhedron Fortran Benchmarks
Benchmark: capacita
Seconds, Fewer Is Better
Liquorix 5.4.0-8.2
Liquorix 5.4.0-7.1
Linux 5.4.8-xanmod5
Linux 5.4.7 low-latency
Linux 5.4.7
15.54
15.94
15.90
15.02
15.08
4
8
12
16
20

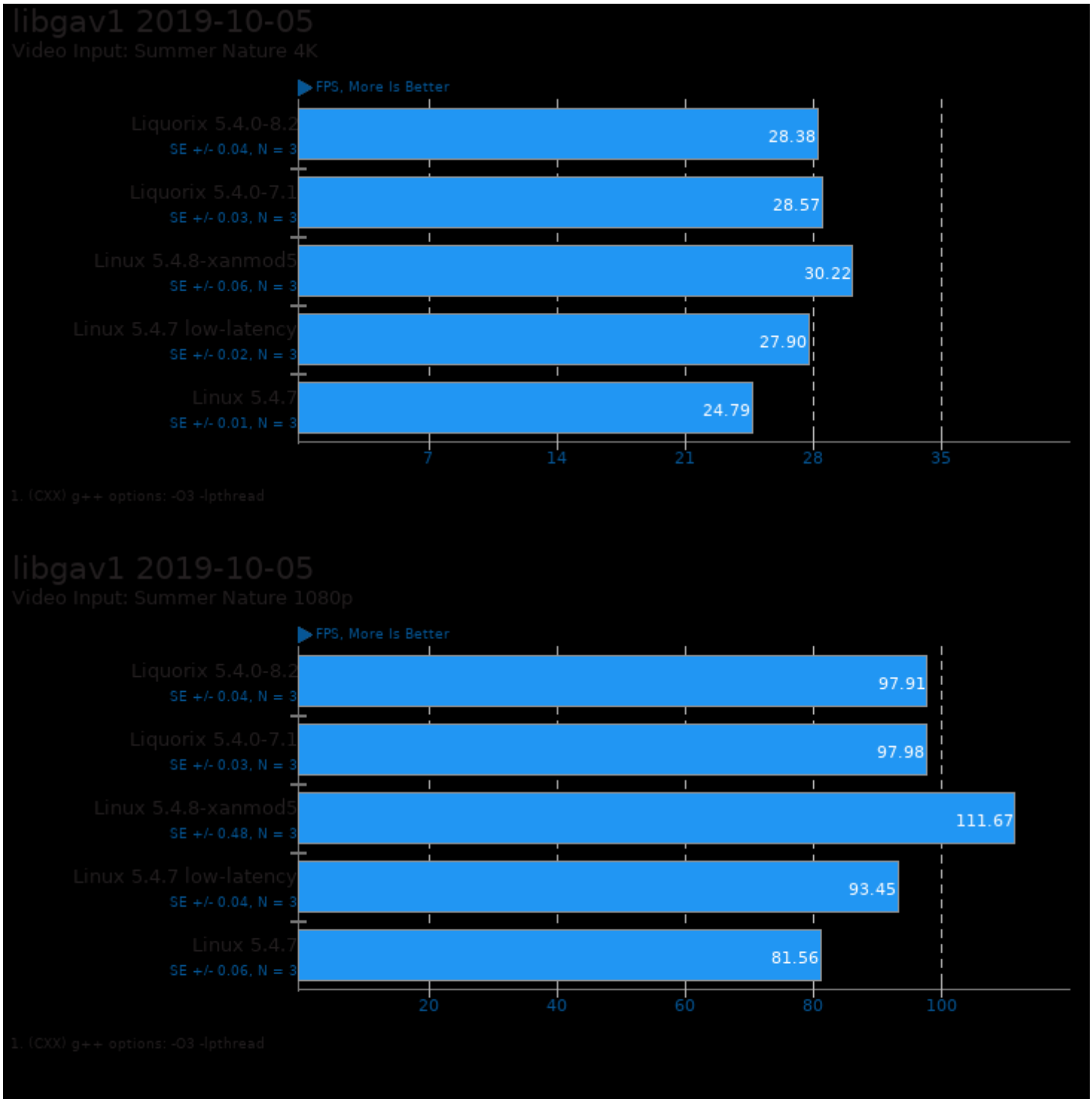

Polyhedron Fortran Benchmarks
Benchmark: channel2
Seconds, Fewer Is Better
Liquorix 5.4.0-8.2
Liquorix 5.4.0-7.1
Linux 5.4.8-xanmod5
Linux 5.4.7 low-latency
Linux 5.4.7
41.84
42.52
41.85
42.11
42.07
10
20
30
40
50
Polyhedron Fortran Benchmarks
Benchmark: fatigue2
Seconds, Fewer Is Better
Liquorix 5.4.0-8.2
Liquorix 5.4.0-7.1
Linux 5.4.8-xanmod5
Linux 5.4.7 low-latency
Linux 5.4.7
48.91
49.19
47.52
48.81
48.51
11
22
33
44
55


Polyhedron Fortran Benchmarks
Benchmark: gas_dyn2
Seconds, Fewer Is Better
Liquorix 5.4.0-8.2
Liquorix 5.4.0-7.1
Linux 5.4.8-xanmod5
Linux 5.4.7 low-latency
Linux 5.4.7
42.65
42.34
41.15
42.15
41.87
10
20
30
40
50
Polyhedron Fortran Benchmarks
Benchmark: test_fpu2
Seconds, Fewer Is Better
Liquorix 5.4.0-8.2
Liquorix 5.4.0-7.1
Linux 5.4.8-xanmod5
Linux 5.4.7 low-latency
Linux 5.4.7
26.51
26.66
26.89
26.84
25.57
6
12
18
24
30

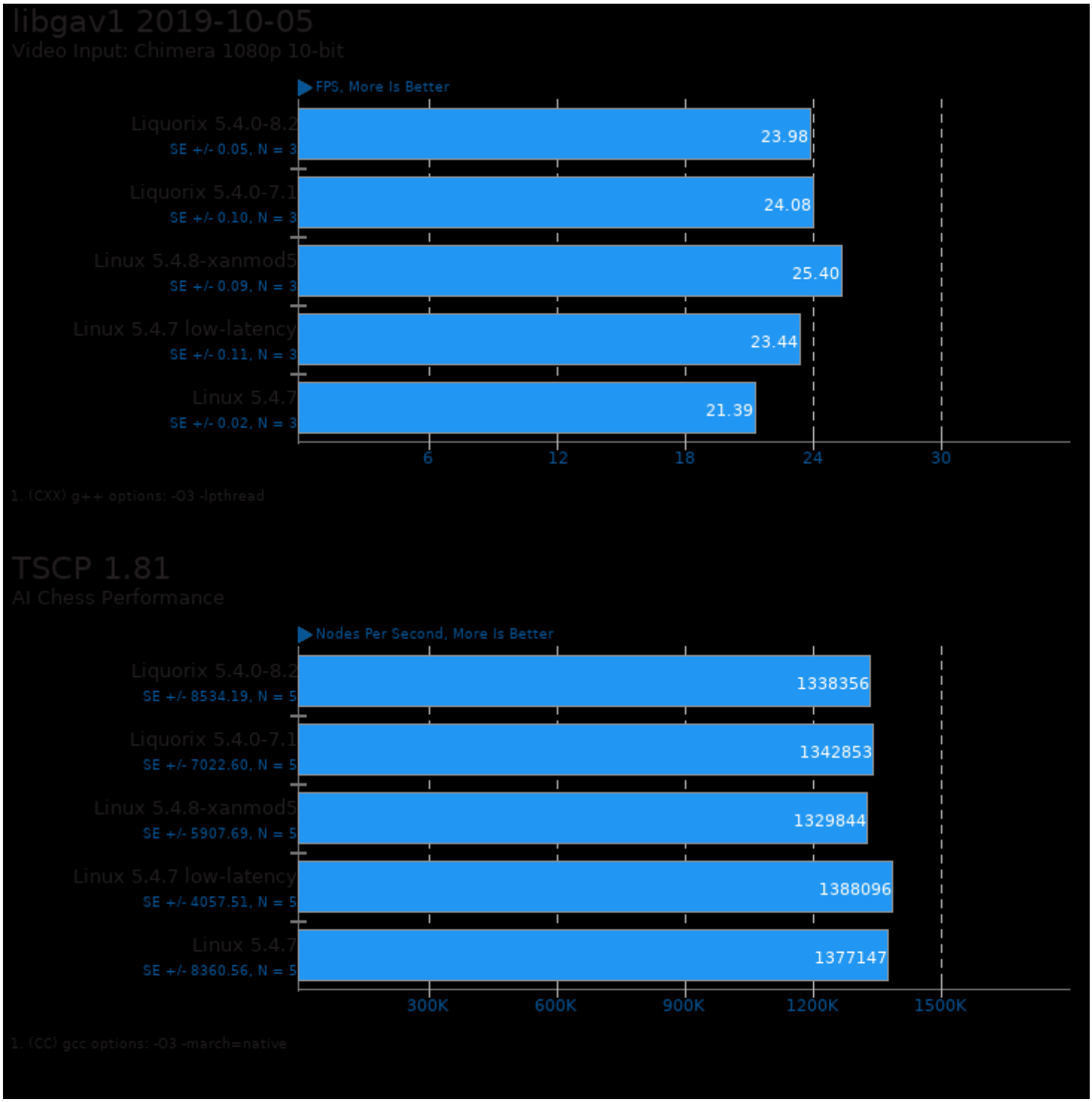
Liquorix, Xanmod Linux Kernel Benchmarks

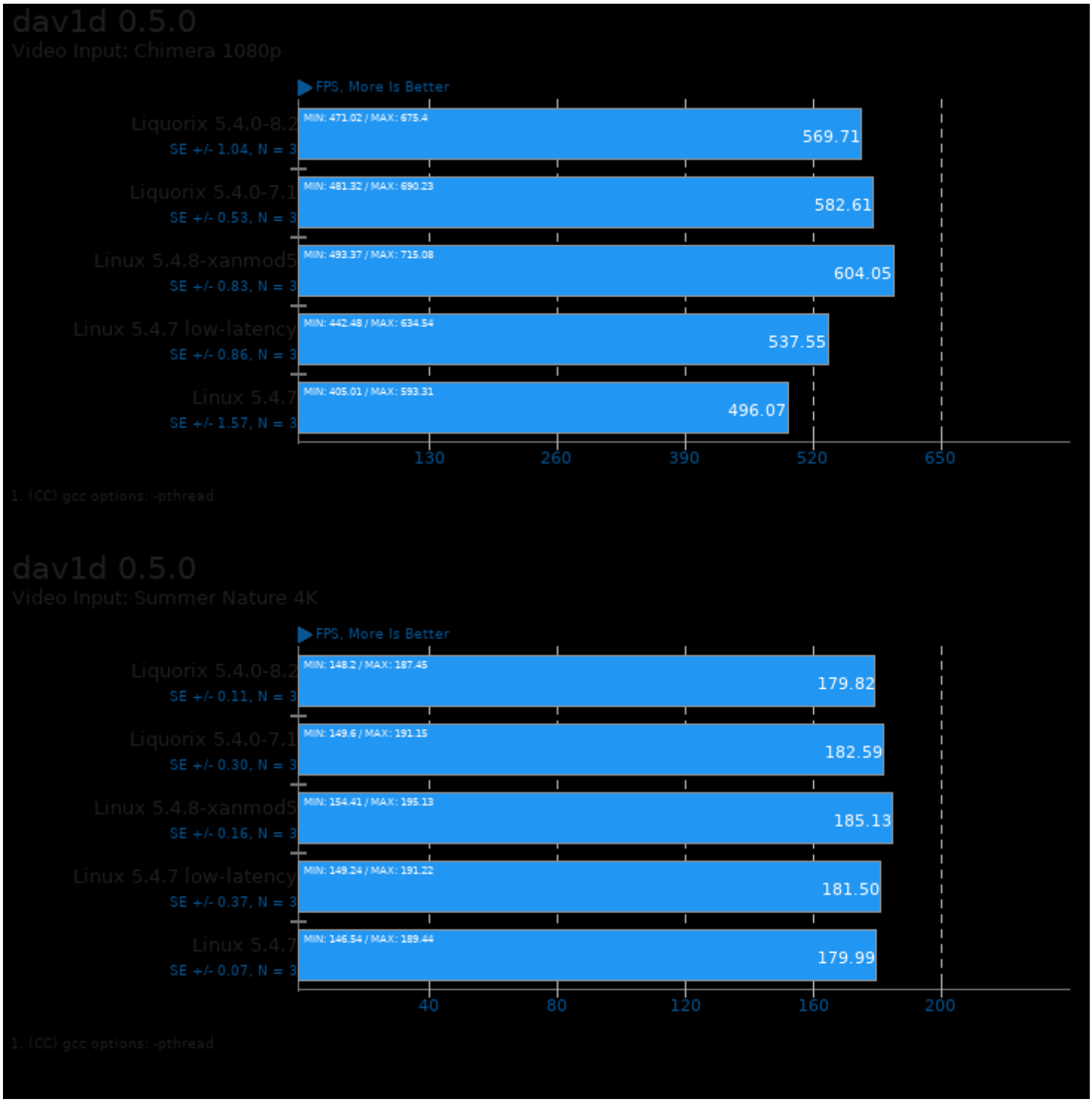


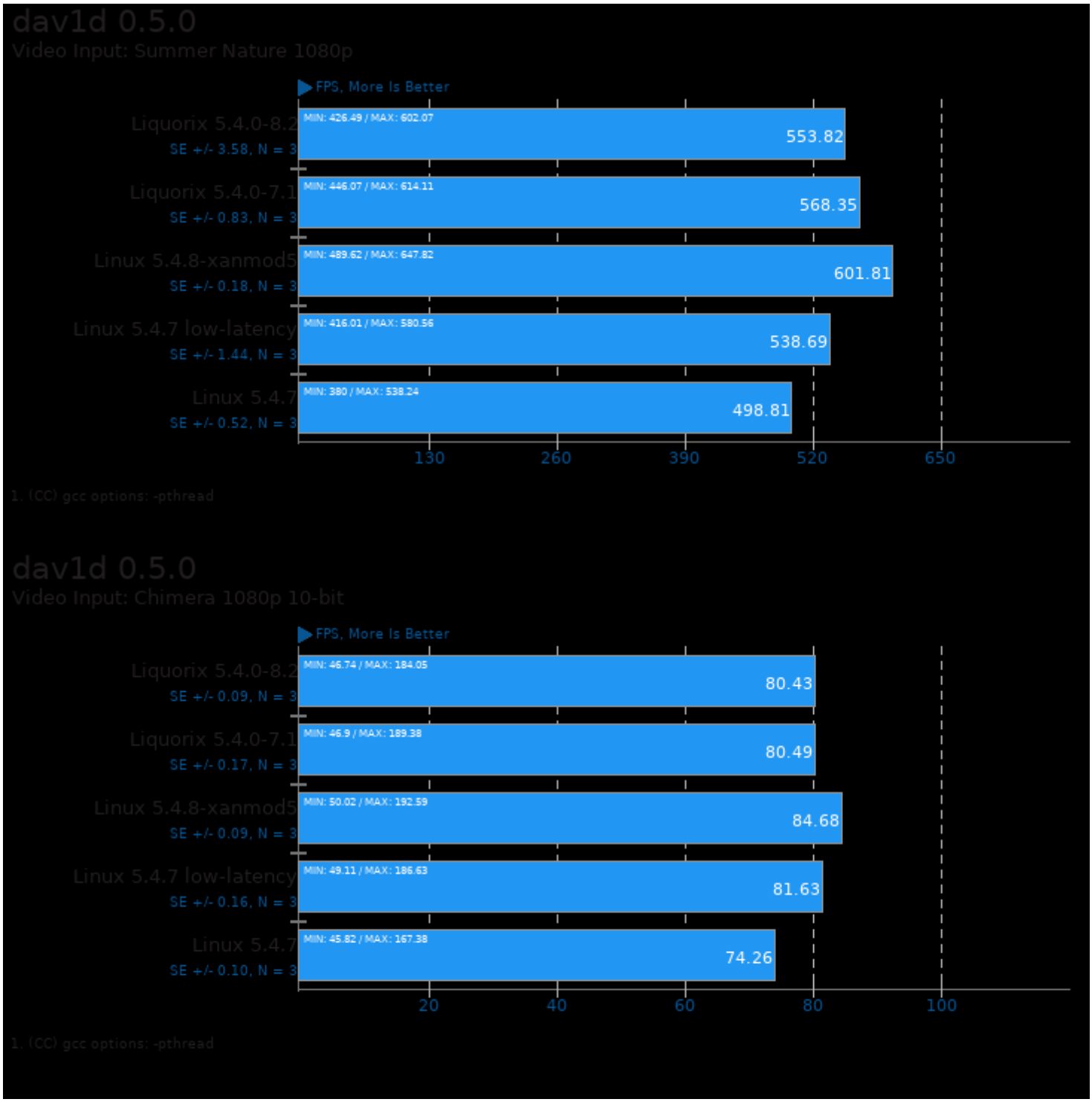
Liquorix, Xanmod Linux Kernel Benchmarks

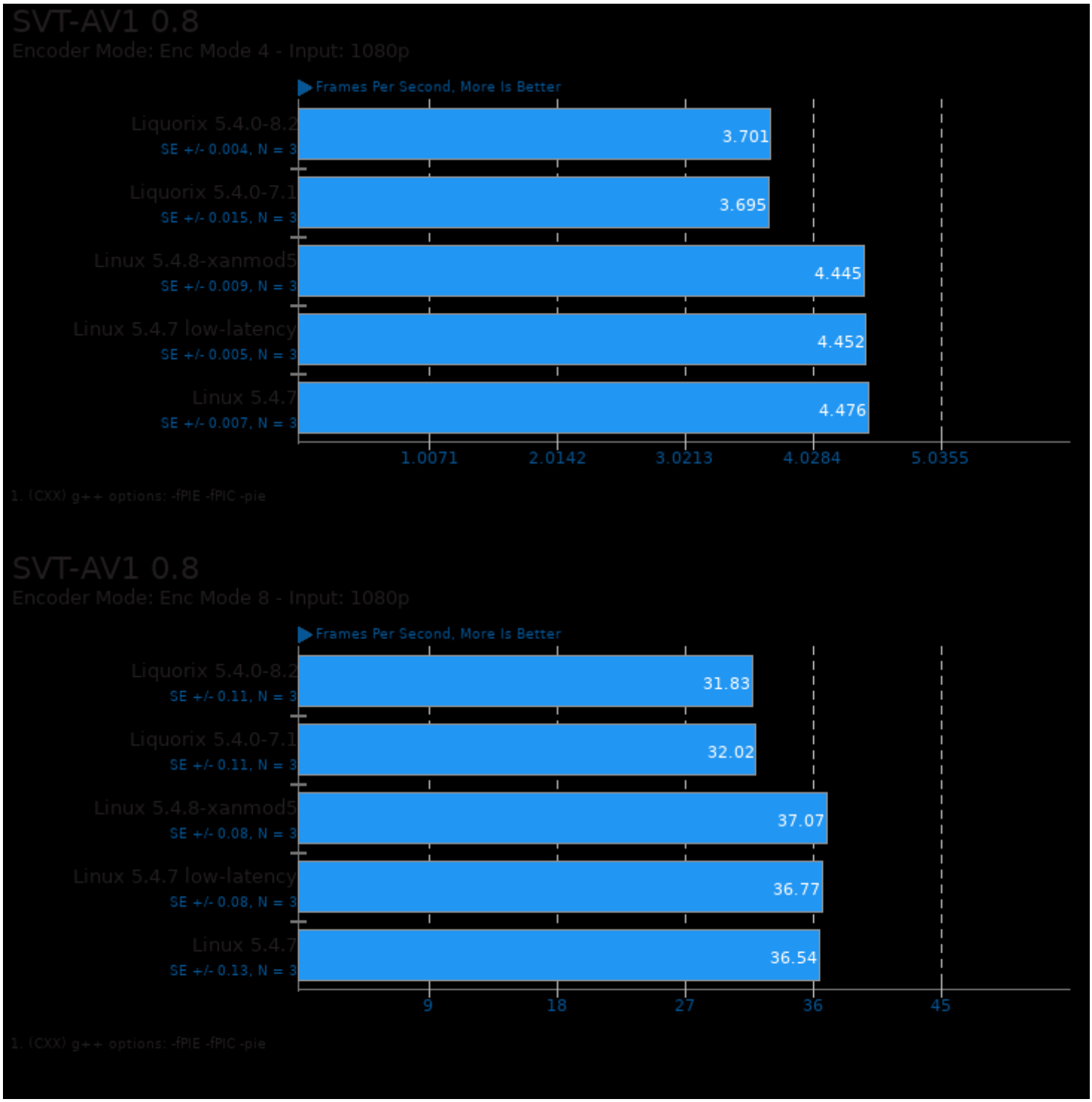


Liquorix, Xanmod Linux Kernel Benchmarks

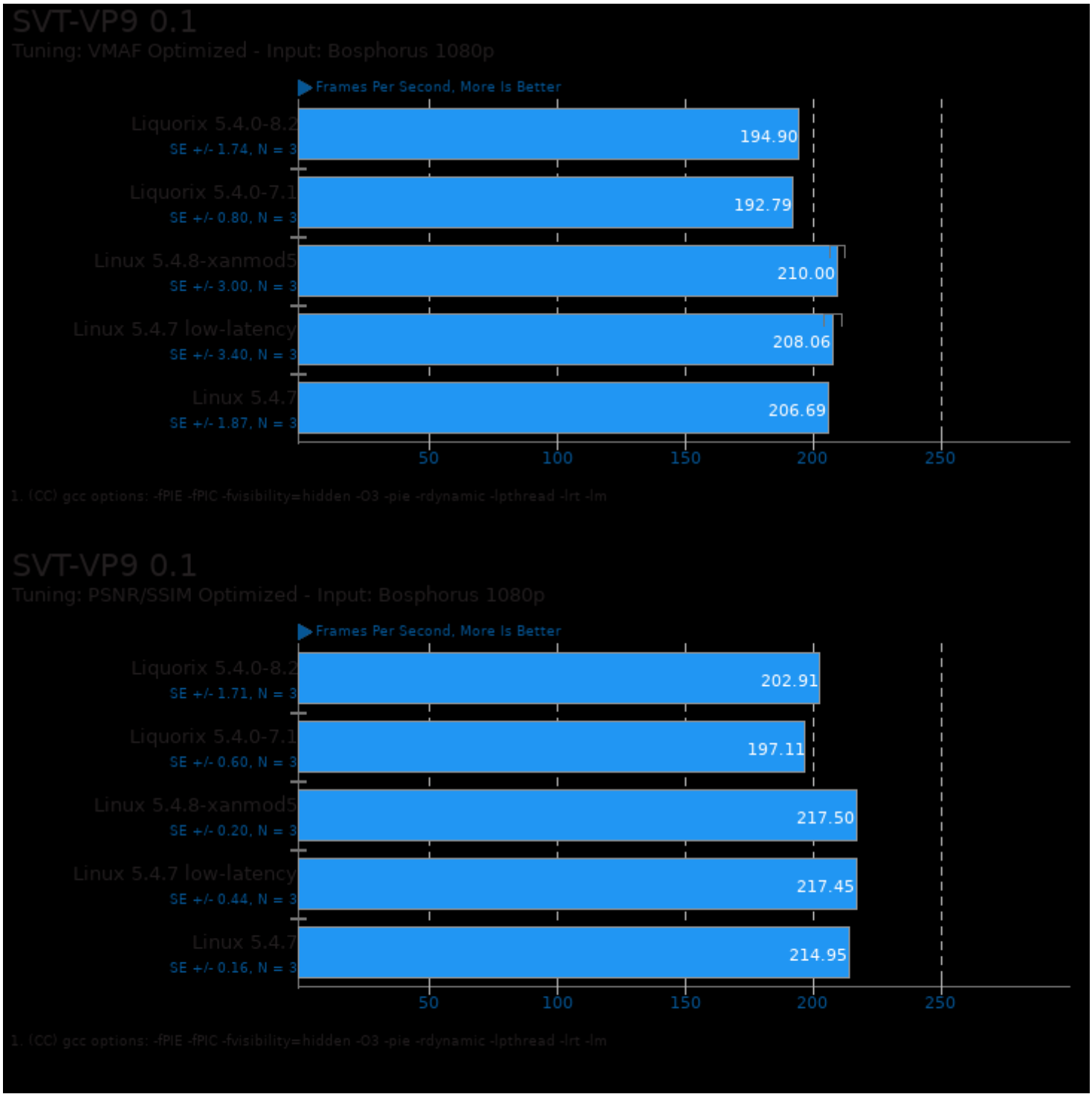



dav1d 0.5.0
Video Input: Chimera 1080p
FPS, More Is Better
Liquorix 5.4.0-8.2
SE +/- 1.04, N = 3
MIN: 471.02 / MAX: 675.4
569.71
Liquorix 5.4.0-7.1
SE +/- 0.53, N = 3
MIN: 481.32 / MAX: 690.23
582.61
Linux 5.4.8-xanmod5
SE +/- 0.83, N = 3
MIN: 493.37 / MAX: 715.08
604.05
Linux 5.4.7 low-latency
SE +/- 0.86, N = 3
MIN: 442.48 / MAX: 634.54
537.55
Linux 5.4.7
SE +/- 1.57, N = 3
MIN: 405.01 / MAX: 593.31
496.07
130
260
390
520
650
1. (CC) gcc options: -pthread
dav1d 0.5.0
Video Input: Summer Nature 4K
FPS, More Is Better
Liquorix 5.4.0-8.2
SE +/- 0.11, N = 3
MIN: 148.2 / MAX: 187.45
179.82
Liquorix 5.4.0-7.1
SE +/- 0.30, N = 3
MIN: 149.6 / MAX: 191.15
182.59
Linux 5.4.8-xanmod5
SE +/- 0.16, N = 3
MIN: 154.41 / MAX: 195.13
185.13
Linux 5.4.7 low-latency
SE +/- 0.37, N = 3
MIN: 149.24 / MAX: 191.22
181.50
Linux 5.4.7
SE +/- 0.07, N = 3
MIN: 146.54 / MAX: 189.44
179.99
40
80
120
160
200
1. (CC) gcc options: -pthread

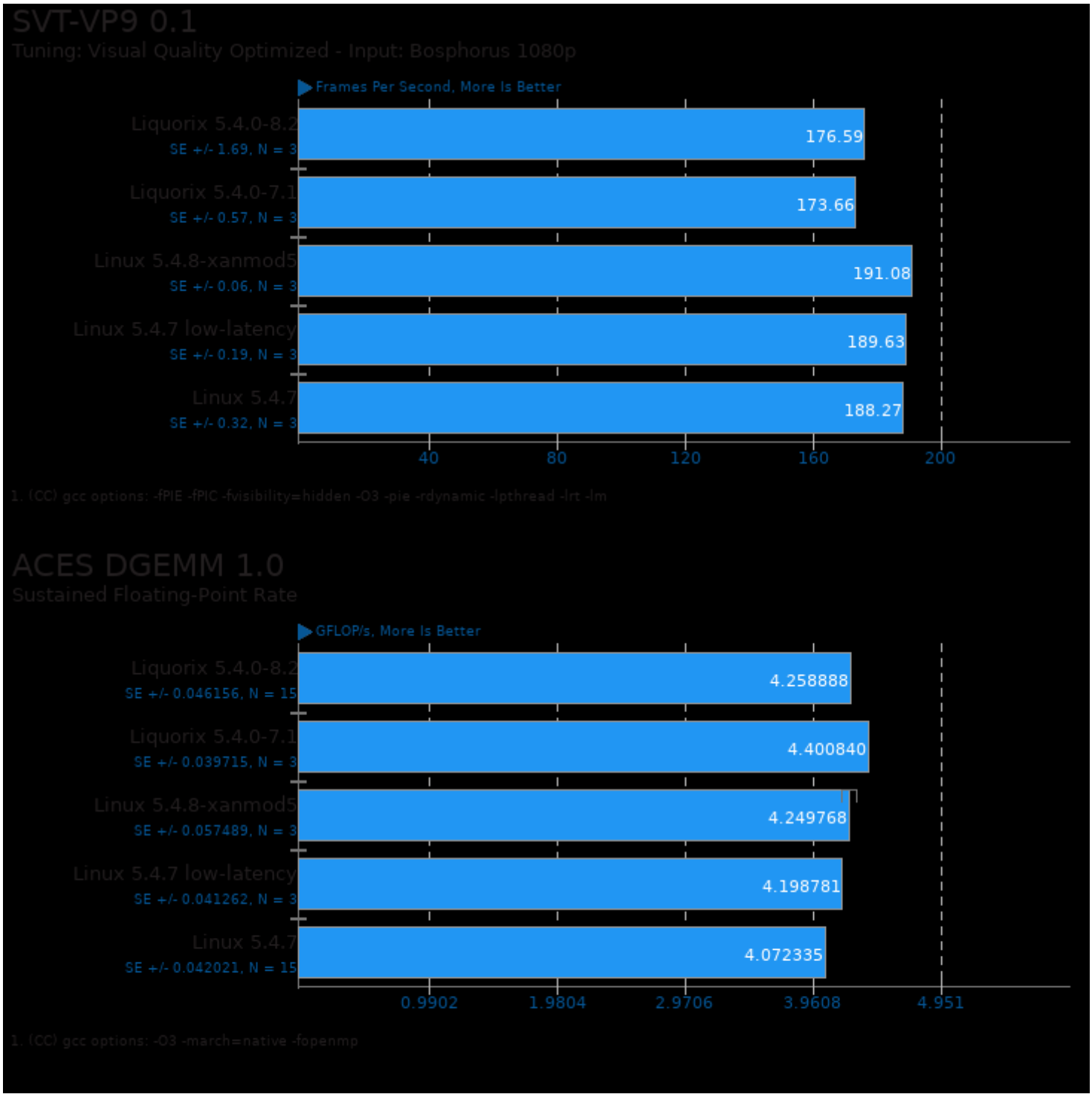

dav1d 0.5.0
Video Input: Summer Nature 1080p
FPS, More Is Better
Liquorix 5.4.0-8.2
SE +/- 3.58, N = 3
MIN: 426.49 / MAX: 602.07
553.82
Liquorix 5.4.0-7.1
SE +/- 0.83, N = 3
MIN: 446.07 / MAX: 614.11
568.35
Linux 5.4.8-xanmod5
SE +/- 0.18, N = 3
MIN: 489.62 / MAX: 647.82
601.81
Linux 5.4.7 low-latency
SE +/- 1.44, N = 3
MIN: 416.01 / MAX: 580.56
538.69
Linux 5.4.7
SE +/- 0.52, N = 3
MIN: 380 / MAX: 538.24
498.81
130
260
390
520
650
1. (CC) gcc options: -pthread
dav1d 0.5.0
Video Input: Chimera 1080p 10-bit
FPS, More Is Better
Liquorix 5.4.0-8.2
SE +/- 0.09, N = 3
MIN: 46.74 / MAX: 184.05
80.43
Liquorix 5.4.0-7.1
SE +/- 0.17, N = 3
MIN: 46.9 / MAX: 189.38
80.49
Linux 5.4.8-xanmod5
SE +/- 0.09, N = 3
MIN: 50.02 / MAX: 192.59
84.68
Linux 5.4.7 low-latency
SE +/- 0.16, N = 3
MIN: 49.11 / MAX: 186.63
81.63
Linux 5.4.7
SE +/- 0.10, N = 3
MIN: 45.82 / MAX: 167.38
74.26
20
40
60
80
100
1. (CC) gcc options: -pthread

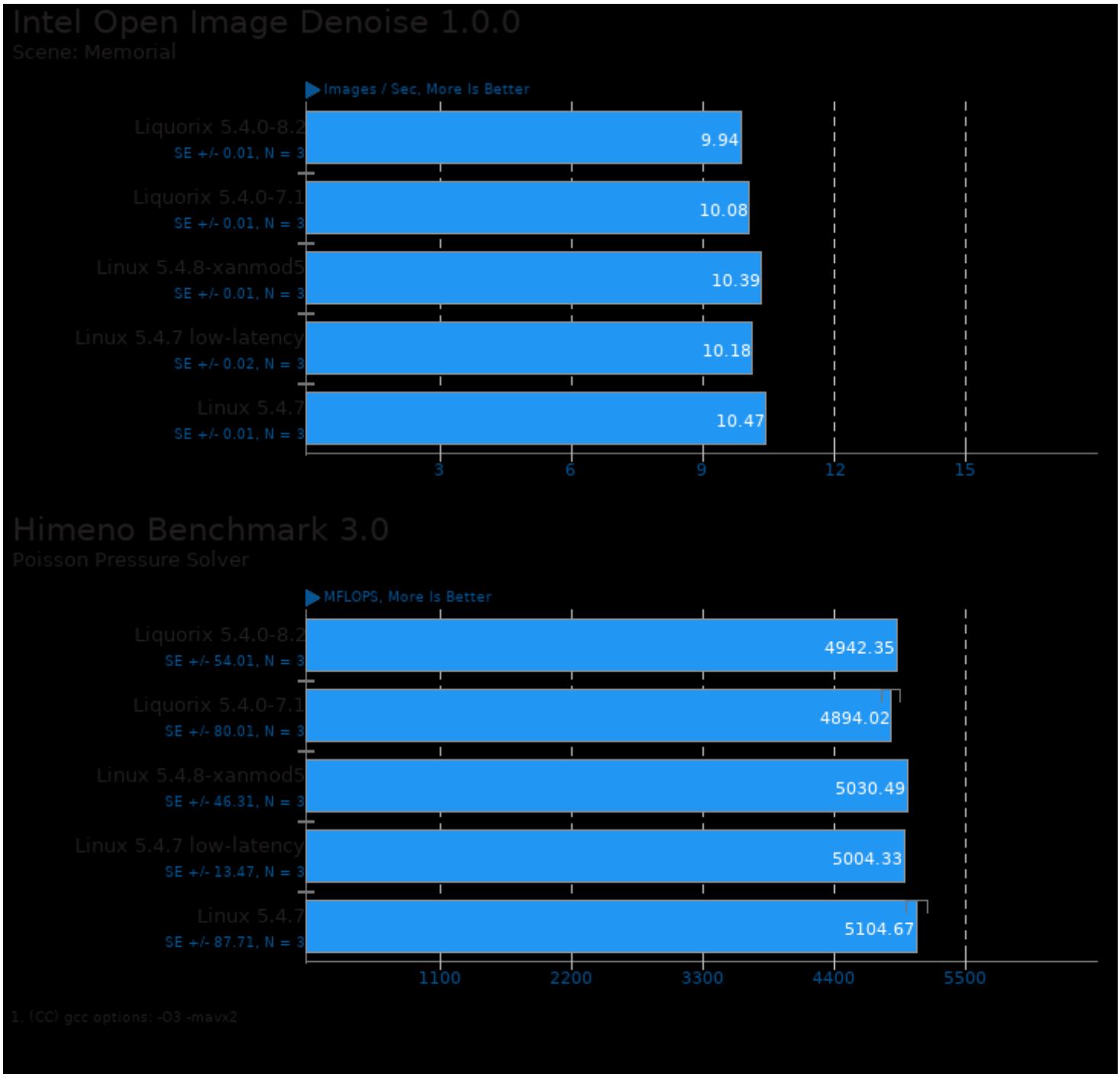

SVT-AV1 0.8
Encoder Mode: Enc Mode 4 - Input: 1080p
Frames Per Second, More Is Better
Liquorix 5.4.0-8.2
SE +/- 0.004, N = 3
3.701
Liquorix 5.4.0-7.1
SE +/- 0.015, N = 3
3.695
Linux 5.4.8-xanmod5
SE +/- 0.009, N = 3
4.445
Linux 5.4.7 low-latency
SE +/- 0.005, N = 3
4.452
Linux 5.4.7
SE +/- 0.007, N = 3
4.476
1.0071
2.0142
3.0213
4.0284
5.0355
1. (CXX) g++ options: -fPIE -fPIC -pie
SVT-AV1 0.8
Encoder Mode: Enc Mode 8 - Input: 1080p
Frames Per Second, More Is Better
Liquorix 5.4.0-8.2
SE +/- 0.11, N = 3
31.83
Liquorix 5.4.0-7.1
SE +/- 0.11, N = 3
32.02
Linux 5.4.8-xanmod5
SE +/- 0.08, N = 3
37.07
Linux 5.4.7 low-latency
SE +/- 0.08, N = 3
36.77
Linux 5.4.7
SE +/- 0.13, N = 3
36.54
9
18
27
36
45
1. (CXX) g++ options: -fPIE -fPIC -pie

Liquorix, Xanmod Linux Kernel Benchmarks

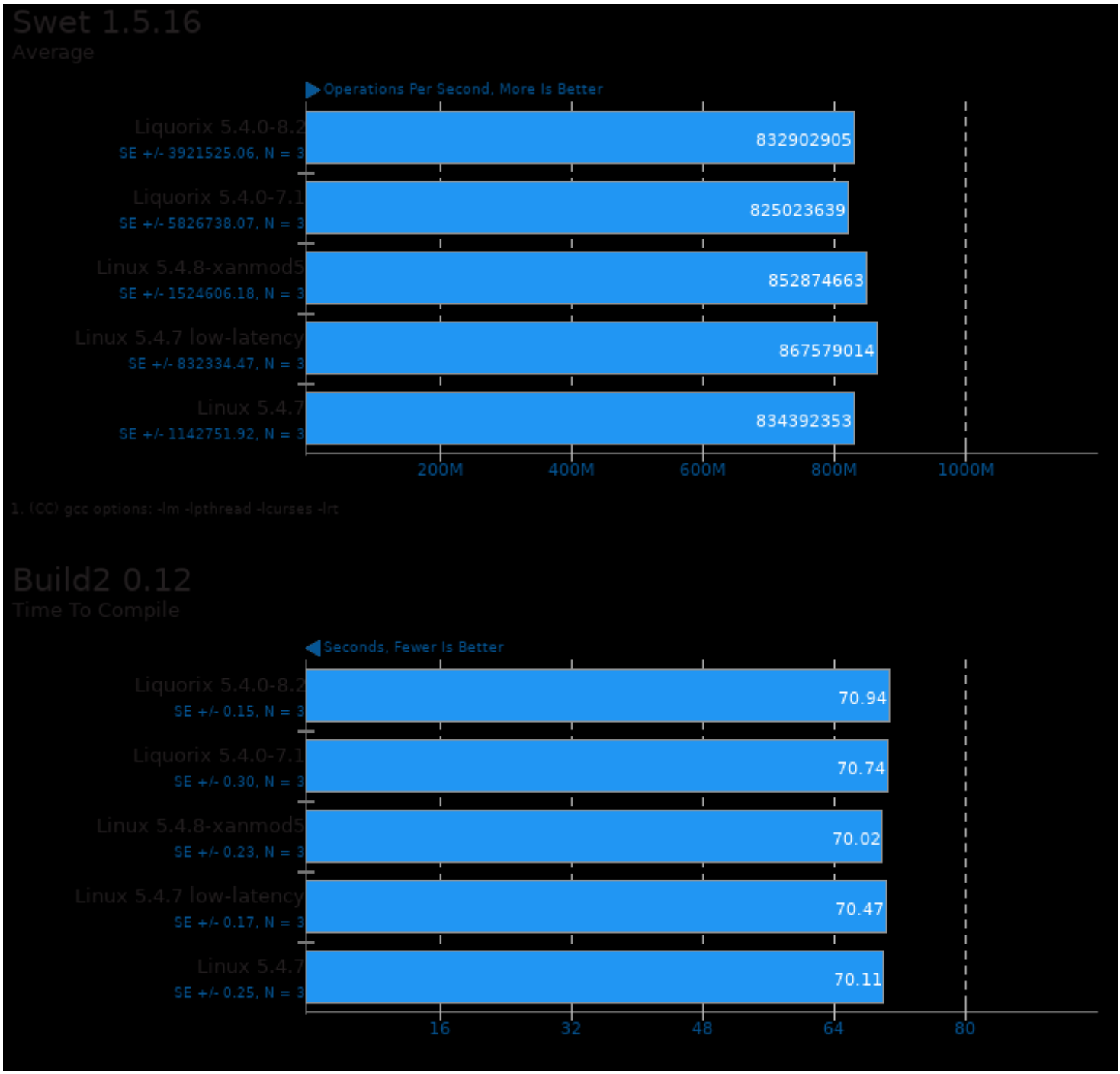


Liquorix, Xanmod Linux Kernel Benchmarks

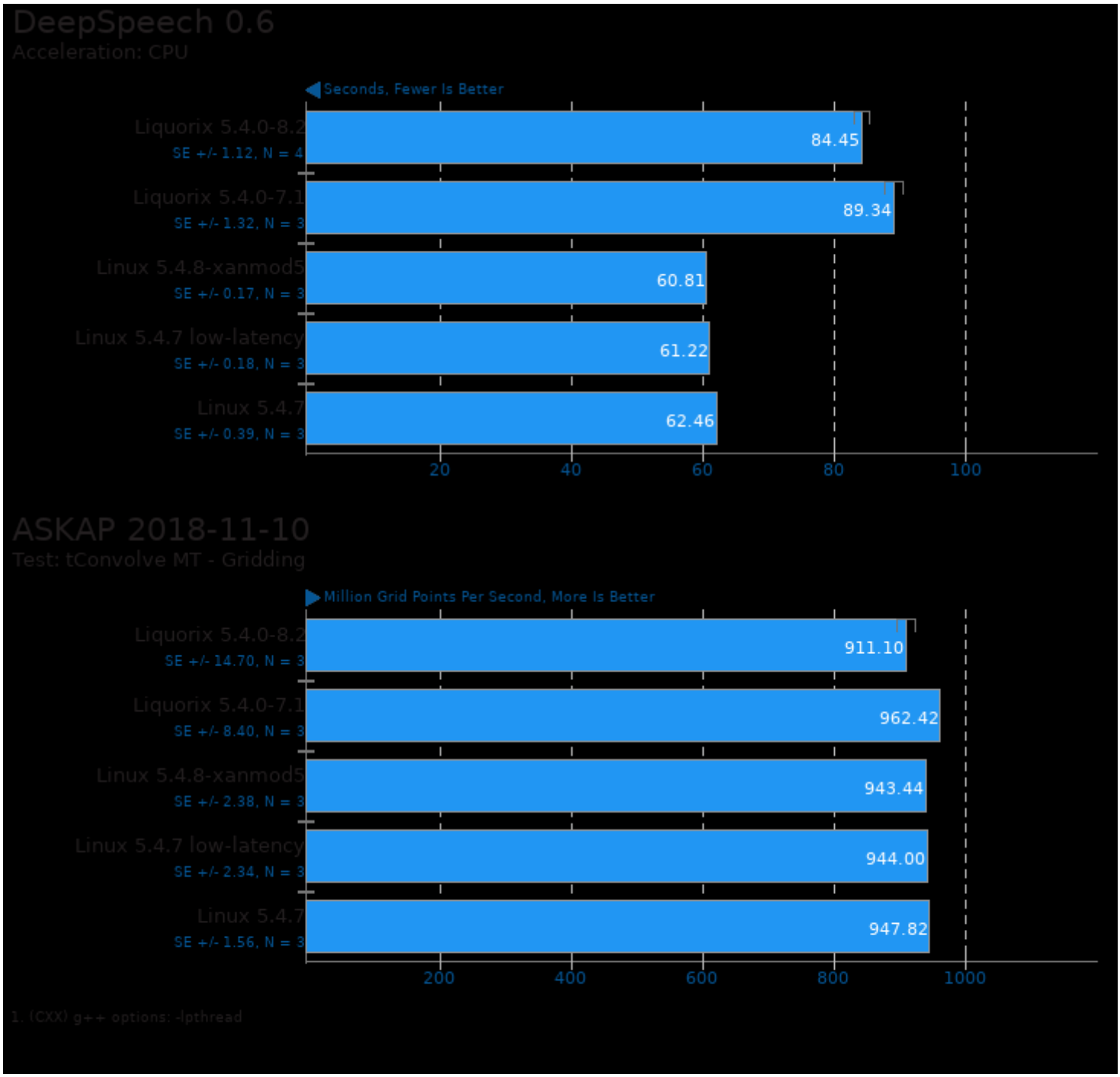


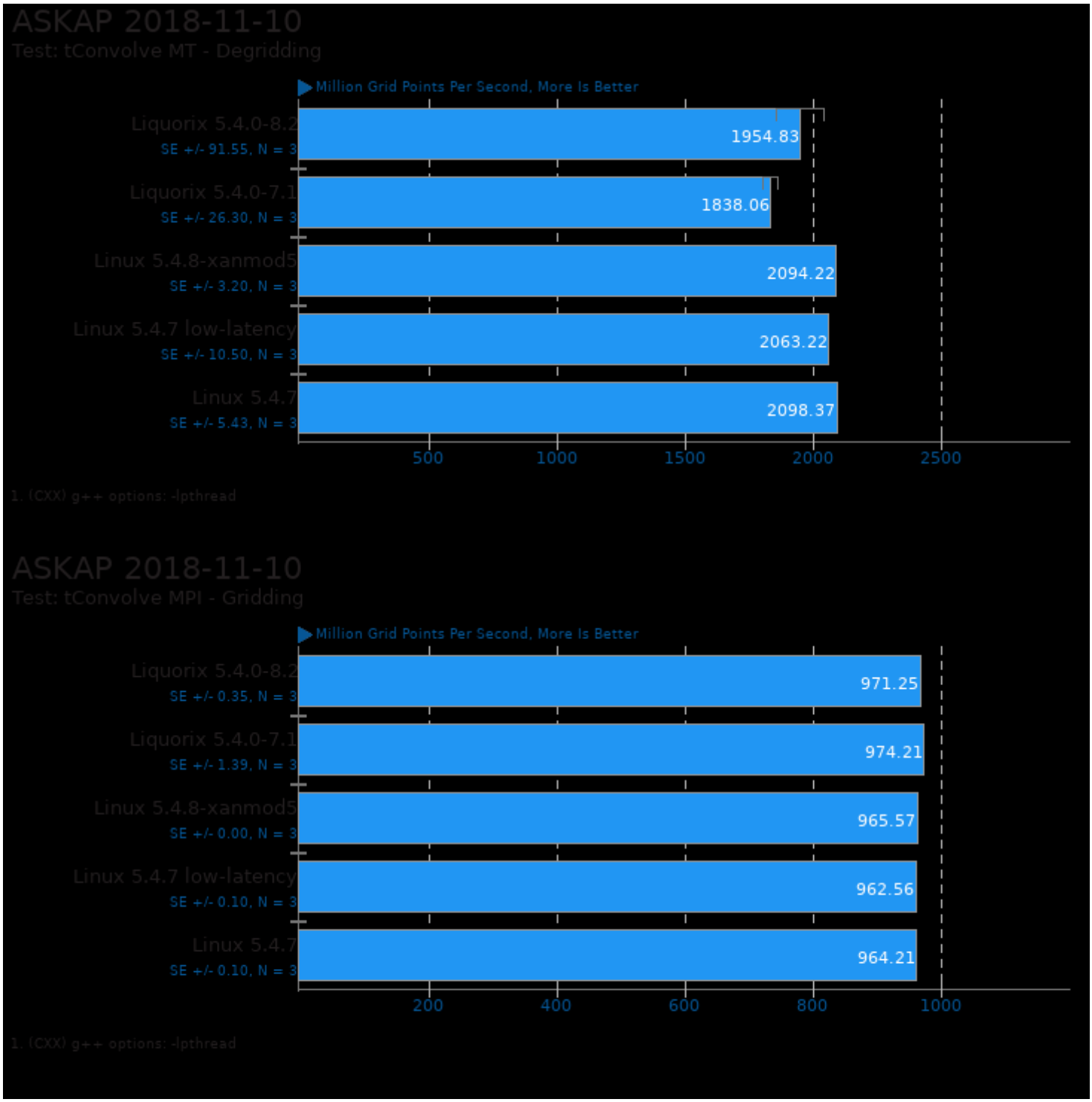

Intel Open Image Denoise 1.0.0
Scene: Memorial
Images / Sec, More Is Better
Liquorix 5.4.0-8.2
SE +/- 0.01, N = 3
9.94
Liquorix 5.4.0-7.1
SE +/- 0.01, N = 3
10.08
Linux 5.4.8-xanmod5
SE +/- 0.01, N = 3
10.39
Linux 5.4.7 low-latency
SE +/- 0.02, N = 3
10.18
Linux 5.4.7
SE +/- 0.01, N = 3
10.47
3
6
9
12
15
Himeno Benchmark 3.0
Poisson Pressure Solver
MFLOPS, More Is Better
Liquorix 5.4.0-8.2
SE +/- 54.01, N = 3
4942.35
Liquorix 5.4.0-7.1
SE +/- 80.01, N = 3
4894.02
Linux 5.4.8-xanmod5
SE +/- 46.31, N = 3
5030.49
Linux 5.4.7 low-latency
SE +/- 13.47, N = 3
5004.33
Linux 5.4.7
SE +/- 87.71, N = 3
5104.67
1100
2200
3300
4400
5500
1. (CC) gcc options: -O3 -mavx2

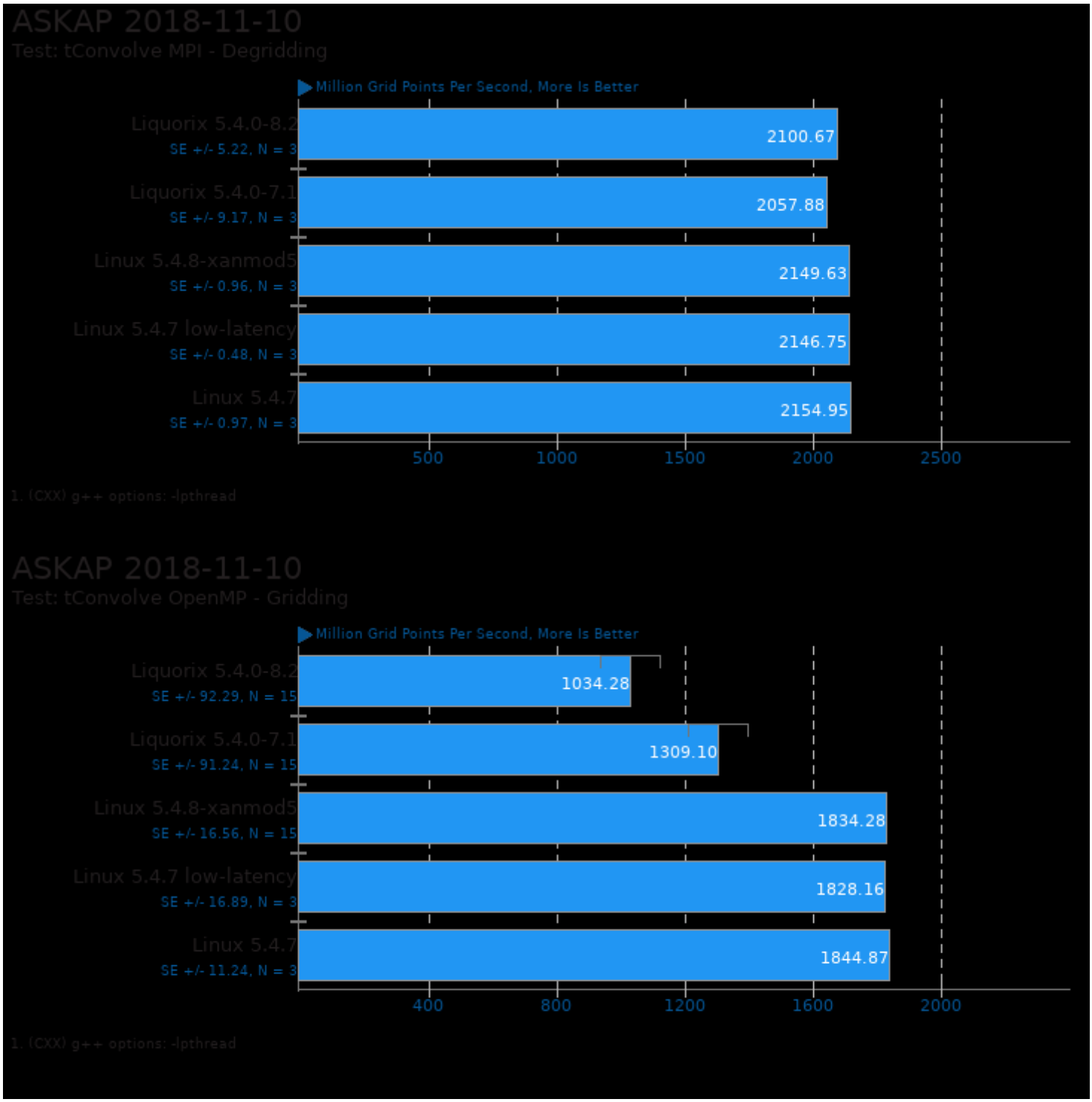
Liquorix, Xanmod Linux Kernel Benchmarks



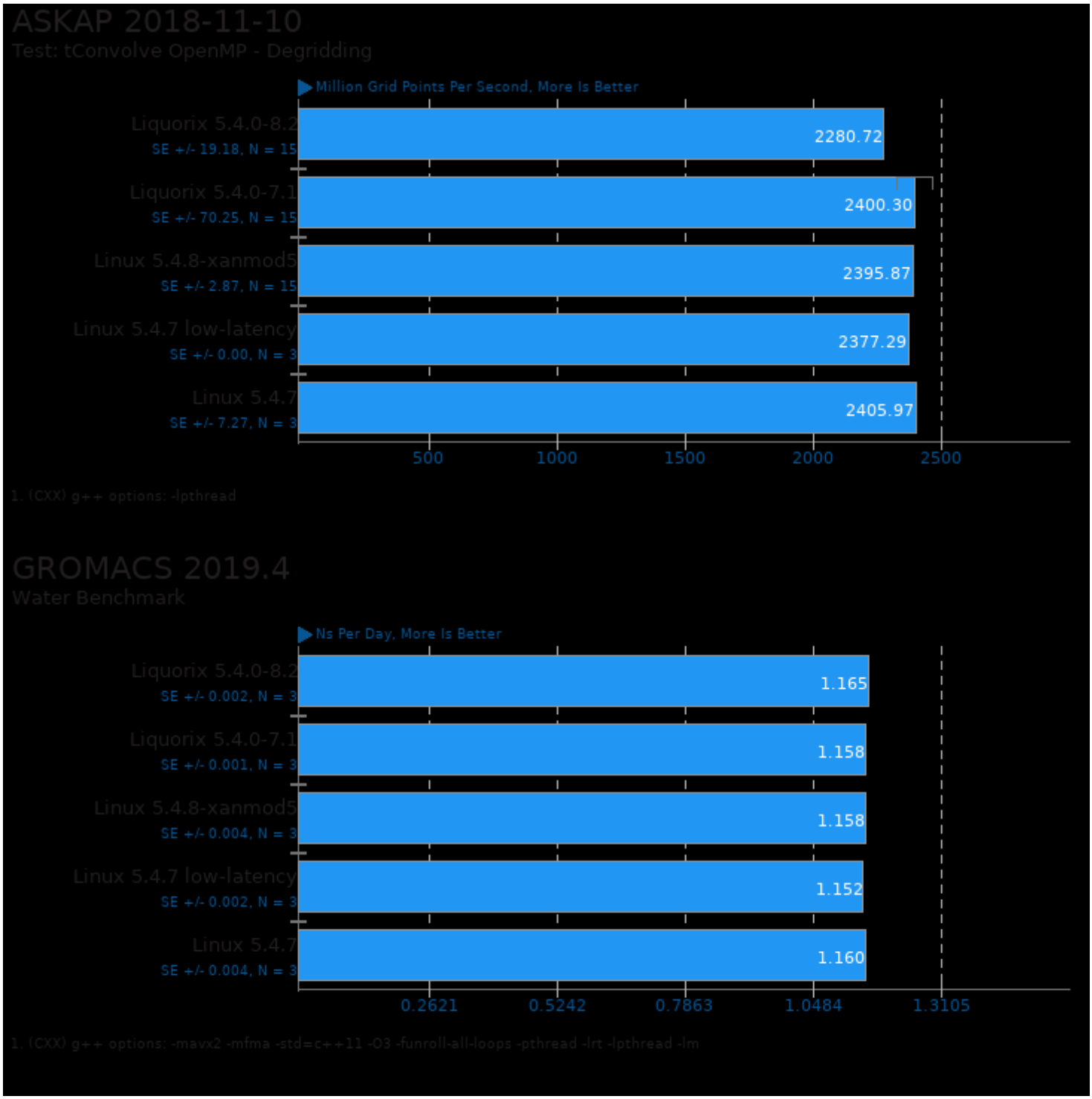
Liquorix, Xanmod Linux Kernel Benchmarks

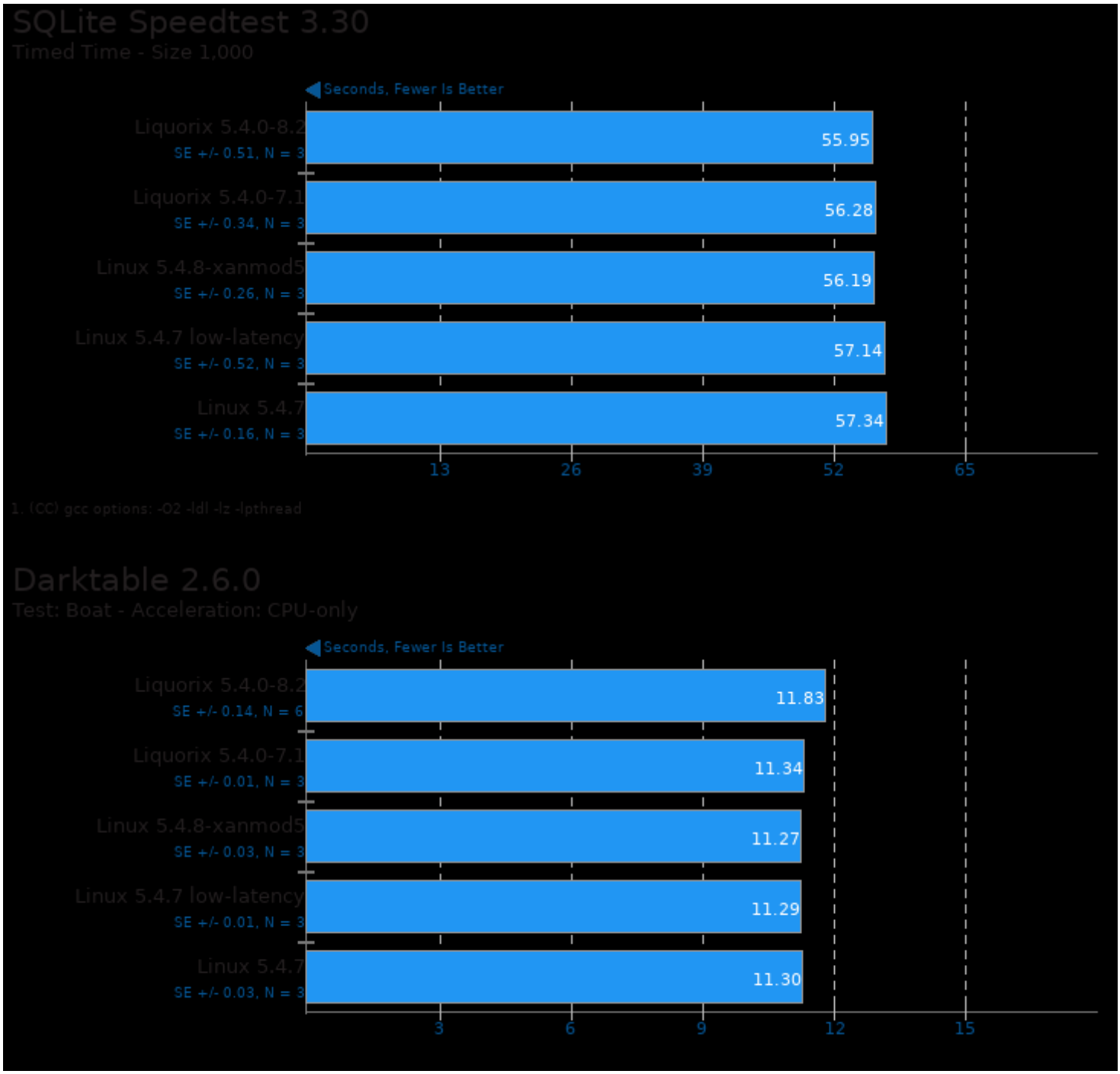


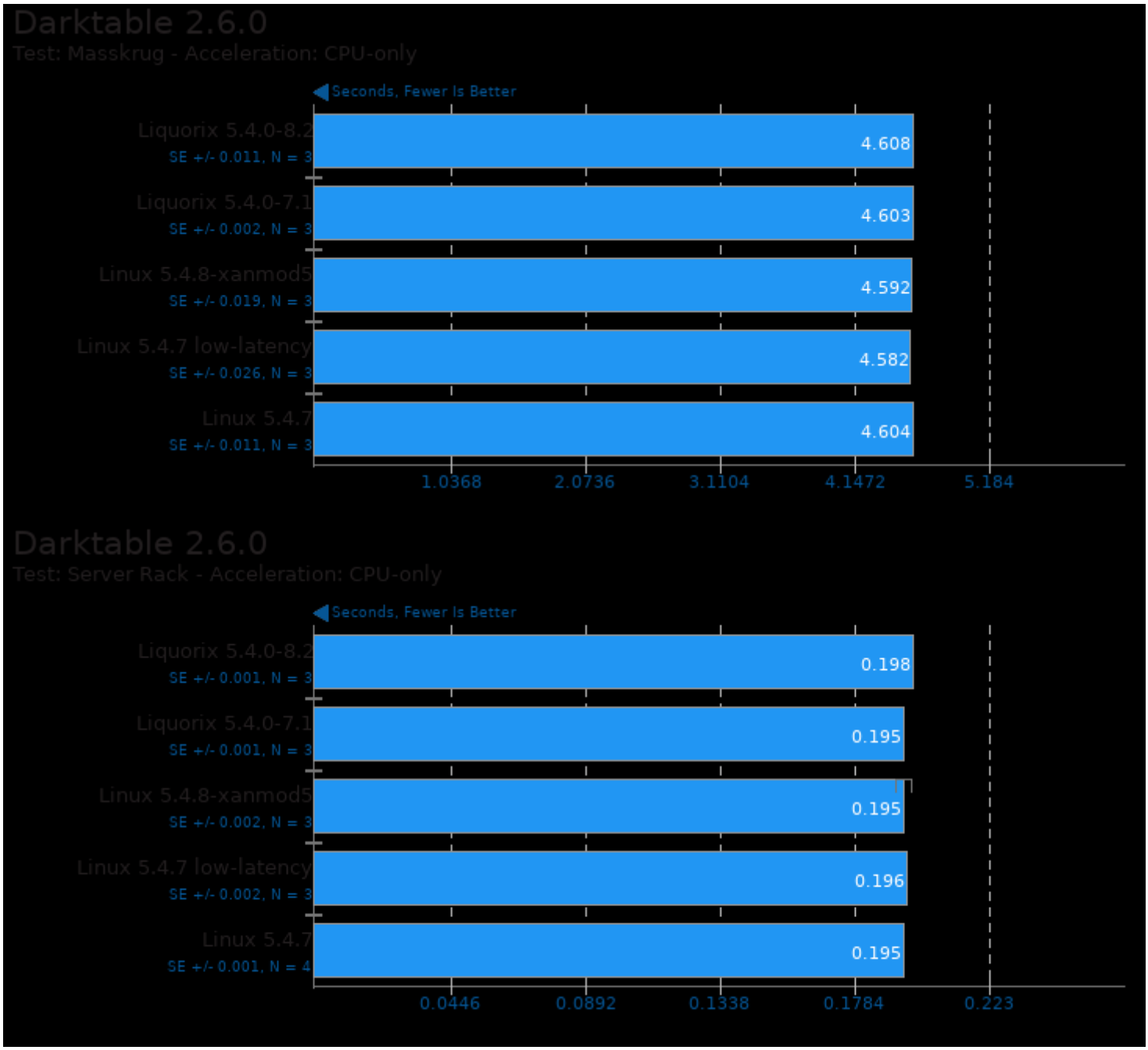

ASKAP 2018-11-10
Test: tConvolve MT - Degridding
Million Grid Points Per Second, More Is Better
Liquorix 5.4.0-8.2
SE +/- 91.55, N = 3
1954.83
Liquorix 5.4.0-7.1
SE +/- 26.30, N = 3
1838.06
Linux 5.4.8-xanmod5
SE +/- 3.20, N = 3
2094.22
Linux 5.4.7 low-latency
SE +/- 10.50, N = 3
2063.22
Linux 5.4.7
SE +/- 5.43, N = 3
2098.37
500
1000
1500
2000
2500
1. (CXX) g++ options: -lpthread
ASKAP 2018-11-10
Test: tConvolve MPI - Gridding
Million Grid Points Per Second, More Is Better
Liquorix 5.4.0-8.2
SE +/- 0.35, N = 3
971.25
Liquorix 5.4.0-7.1
SE +/- 1.39, N = 3
974.21
Linux 5.4.8-xanmod5
SE +/- 0.00, N = 3
965.57
Linux 5.4.7 low-latency
SE +/- 0.10, N = 3
962.56
Linux 5.4.7
SE +/- 0.10, N = 3
964.21
200
400
600
800
1000
1. (CXX) g++ options: -lpthread

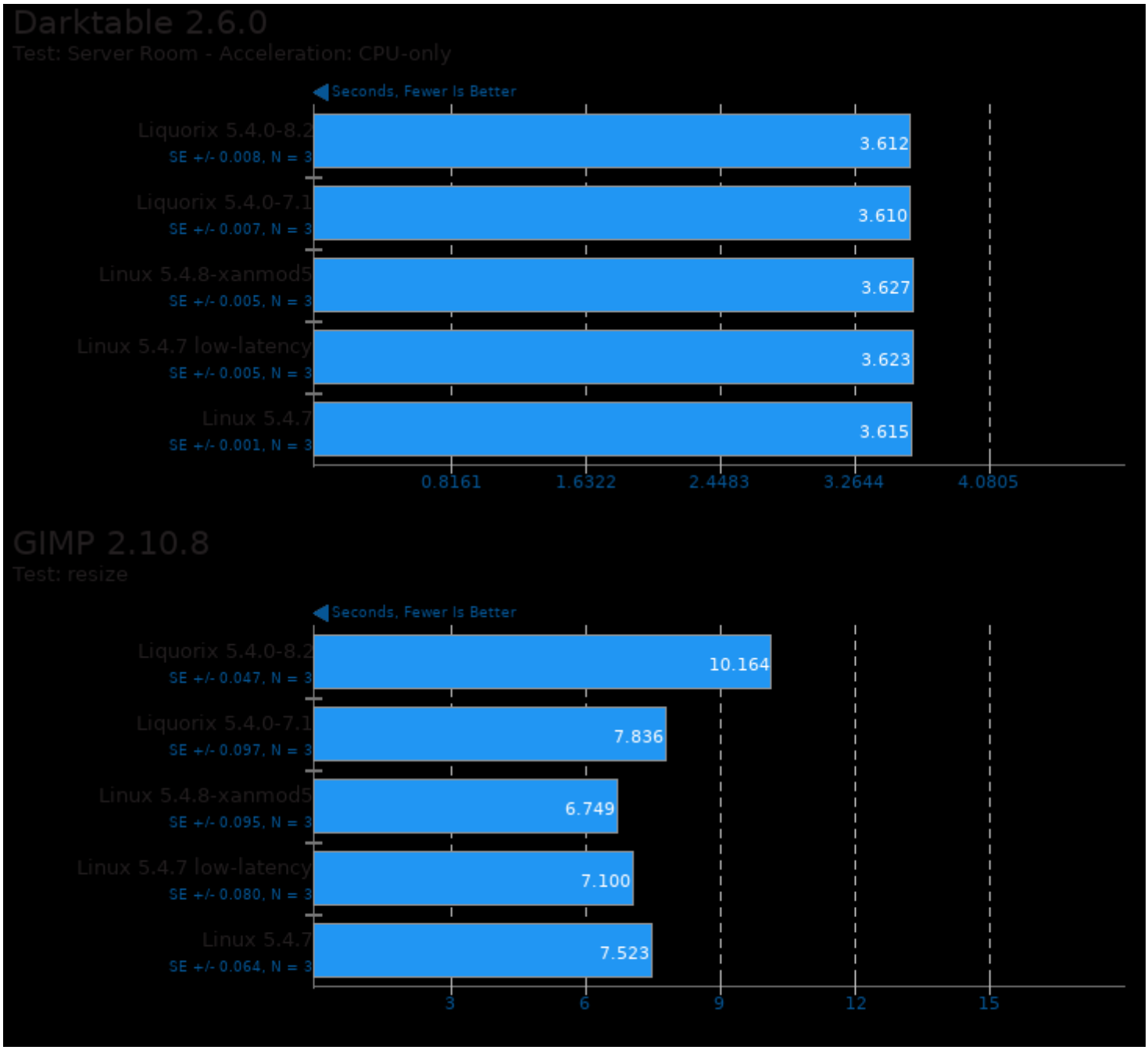

ASKAP 2018-11-10
Test: tConvolve MPI - Degridding
Million Grid Points Per Second, More Is Better
Liquorix 5.4.0-8.2
SE +/- 5.22, N = 3
2100.67
Liquorix 5.4.0-7.1
SE +/- 9.17, N = 3
2057.88
Linux 5.4.8-xanmod5
SE +/- 0.96, N = 3
2149.63
Linux 5.4.7 low-latency
SE +/- 0.48, N = 3
2146.75
Linux 5.4.7
SE +/- 0.97, N = 3
2154.95
500
1000
1500
2000
2500
1. (CXX) g++ options: -lpthread
ASKAP 2018-11-10
Test: tConvolve OpenMP - Gridding
Million Grid Points Per Second, More Is Better
Liquorix 5.4.0-8.2
SE +/- 92.29, N = 15
1034.28
Liquorix 5.4.0-7.1
SE +/- 91.24, N = 15
1309.10
Linux 5.4.8-xanmod5
SE +/- 16.56, N = 15
1834.28
Linux 5.4.7 low-latency
SE +/- 16.89, N = 3
1828.16
Linux 5.4.7
SE +/- 11.24, N = 3
1844.87
400
800
1200
1600
2000
1. (CXX) g++ options: -lpthread

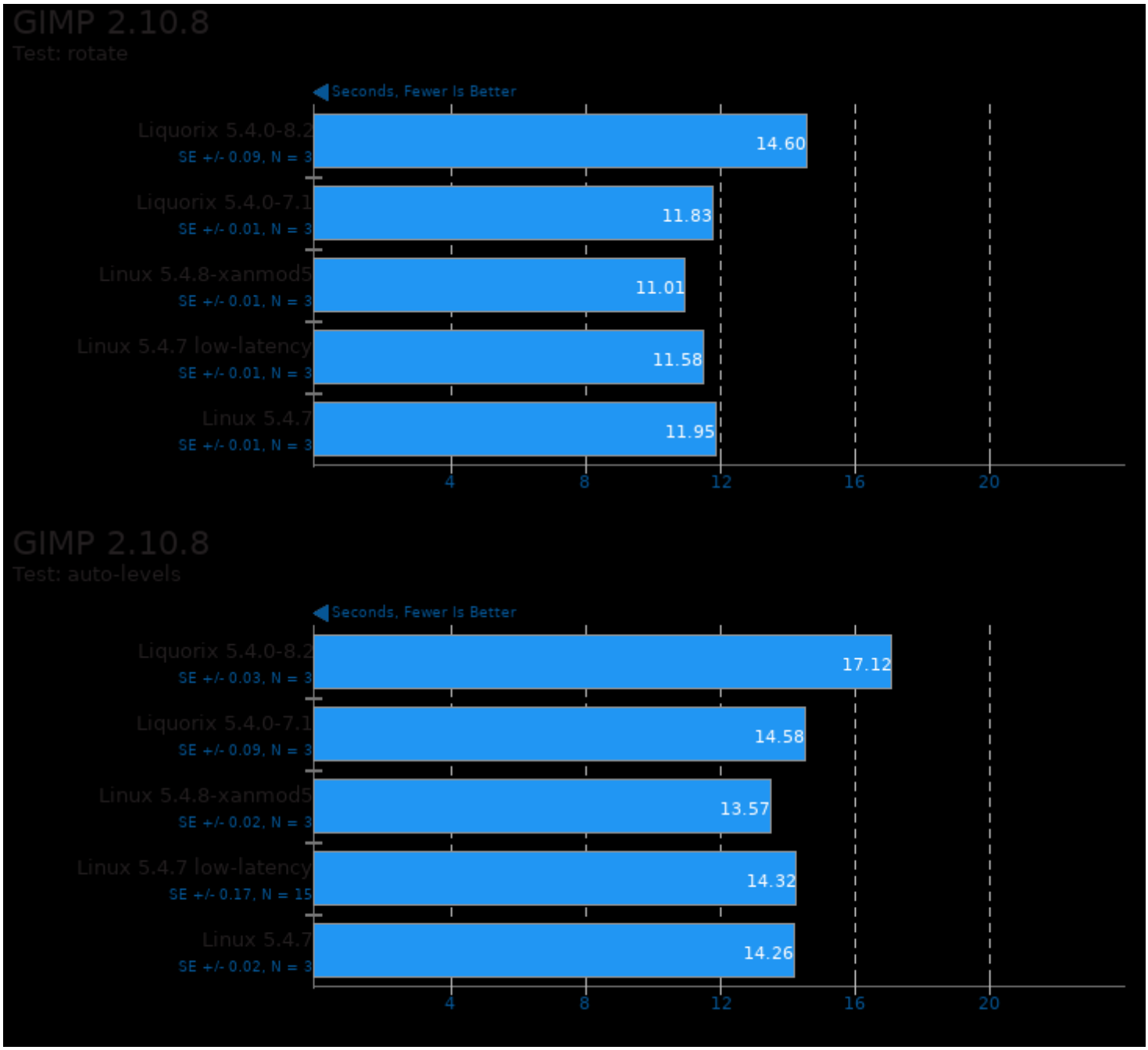
Liquorix, Xanmod Linux Kernel Benchmarks



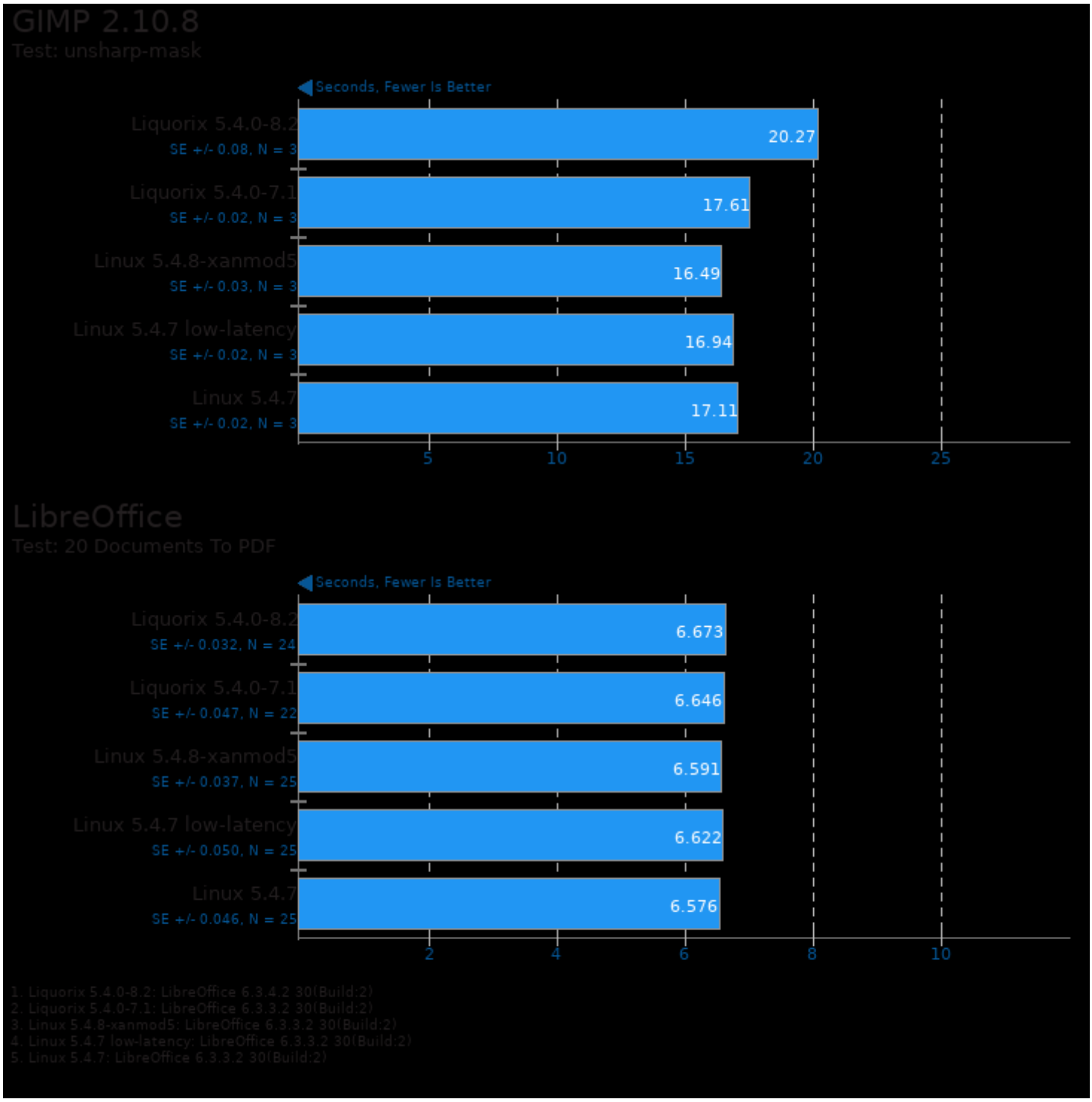

SQLite Speedtest 3.30
Timed Time - Size 1,000
Seconds, Fewer Is Better
Liquorix 5.4.0-8.2
SE +/- 0.51, N = 3
55.95
Liquorix 5.4.0-7.1
SE +/- 0.34, N = 3
56.28
Linux 5.4.8-xanmod5
SE +/- 0.26, N = 3
56.19
Linux 5.4.7 low-latency
SE +/- 0.52, N = 3
57.14
Linux 5.4.7
SE +/- 0.16, N = 3
57.34
13
26
39
52
65
1. (CC) gcc options: -O2 -ldl -lz -lpthread
Darktable 2.6.0
Test: Boat - Acceleration: CPU-only
Seconds, Fewer Is Better
Liquorix 5.4.0-8.2
SE +/- 0.14, N = 6
11.83
Liquorix 5.4.0-7.1
SE +/- 0.01, N = 3
11.34
Linux 5.4.8-xanmod5
SE +/- 0.03, N = 3
11.27
Linux 5.4.7 low-latency
SE +/- 0.01, N = 3
11.29
Linux 5.4.7
SE +/- 0.03, N = 3
11.30
3
6
9
12
15


Darktable 2.6.0
Test: Masskrug - Acceleration: CPU-only
Seconds, Fewer Is Better
Liquorix 5.4.0-8.2
SE +/- 0.011, N = 3
4.608
Liquorix 5.4.0-7.1
SE +/- 0.002, N = 3
4.603
Linux 5.4.8-xanmod5
SE +/- 0.019, N = 3
4.592
Linux 5.4.7 low-latency
SE +/- 0.026, N = 3
4.582
Linux 5.4.7
SE +/- 0.011, N = 3
4.604
1.0368
2.0736
3.1104
4.1472
5.184
Darktable 2.6.0
Test: Server Rack - Acceleration: CPU-only
Seconds, Fewer Is Better
Liquorix 5.4.0-8.2
SE +/- 0.001, N = 3
0.198
Liquorix 5.4.0-7.1
SE +/- 0.001, N = 3
0.195
Linux 5.4.8-xanmod5
SE +/- 0.002, N = 3
0.195
Linux 5.4.7 low-latency
SE +/- 0.002, N = 3
0.196
Linux 5.4.7
SE +/- 0.001, N = 4
0.195
0.0446
0.0892
0.1338
0.1784
0.223

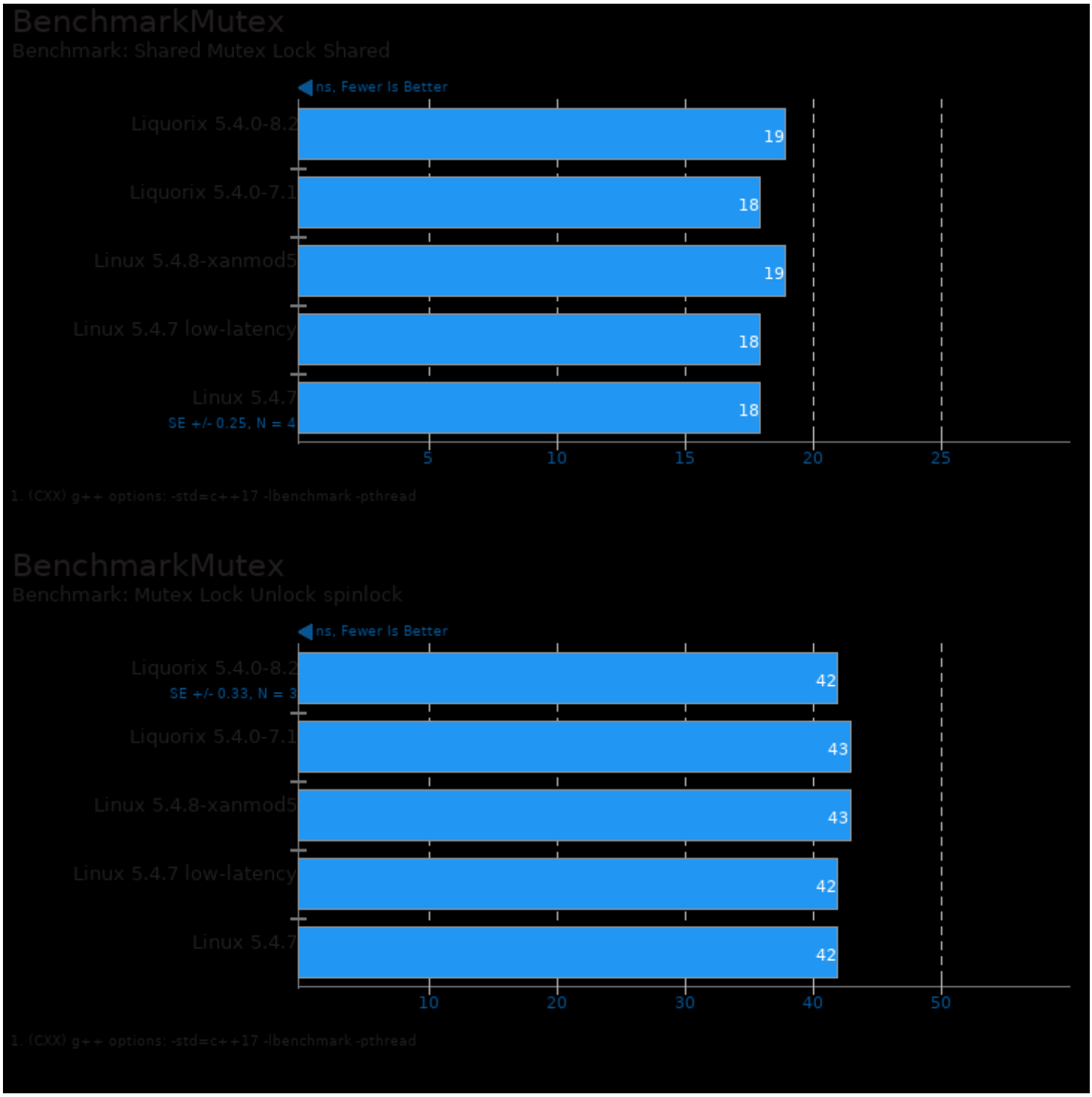

Darktable 2.6.0
Test: Server Room - Acceleration: CPU-only
Seconds, Fewer Is Better
Liquorix 5.4.0-8.2
SE +/- 0.008, N = 3
3.612
Liquorix 5.4.0-7.1
SE +/- 0.007, N = 3
3.610
Linux 5.4.8-xanmod5
SE +/- 0.005, N = 3
3.627
Linux 5.4.7 low-latency
SE +/- 0.005, N = 3
3.623
Linux 5.4.7
SE +/- 0.001, N = 3
3.615
0.8161
1.6322
2.4483
3.2644
4.0805
GIMP 2.10.8
Test: resize
Seconds, Fewer Is Better
Liquorix 5.4.0-8.2
SE +/- 0.047, N = 3
10.164
Liquorix 5.4.0-7.1
SE +/- 0.097, N = 3
7.836
Linux 5.4.8-xanmod5
SE +/- 0.095, N = 3
6.749
Linux 5.4.7 low-latency
SE +/- 0.080, N = 3
7.100
Linux 5.4.7
SE +/- 0.064, N = 3
7.523
3
6
9
12
15


GIMP 2.10.8
Test: rotate
Seconds, Fewer Is Better
Liquorix 5.4.0-8.2
SE +/- 0.09, N = 3
14.60
Liquorix 5.4.0-7.1
SE +/- 0.01, N = 3
11.83
Linux 5.4.8-xanmod5
SE +/- 0.01, N = 3
11.01
Linux 5.4.7 low-latency
SE +/- 0.01, N = 3
11.58
Linux 5.4.7
SE +/- 0.01, N = 3
11.95
4
8
12
16
20
GIMP 2.10.8
Test: auto-levels
Seconds, Fewer Is Better
Liquorix 5.4.0-8.2
SE +/- 0.03, N = 3
17.12
Liquorix 5.4.0-7.1
SE +/- 0.09, N = 3
14.58
Linux 5.4.8-xanmod5
SE +/- 0.02, N = 3
13.57
Linux 5.4.7 low-latency
SE +/- 0.17, N = 15
14.32
Linux 5.4.7
SE +/- 0.02, N = 3
14.26
4
8
12
16
20

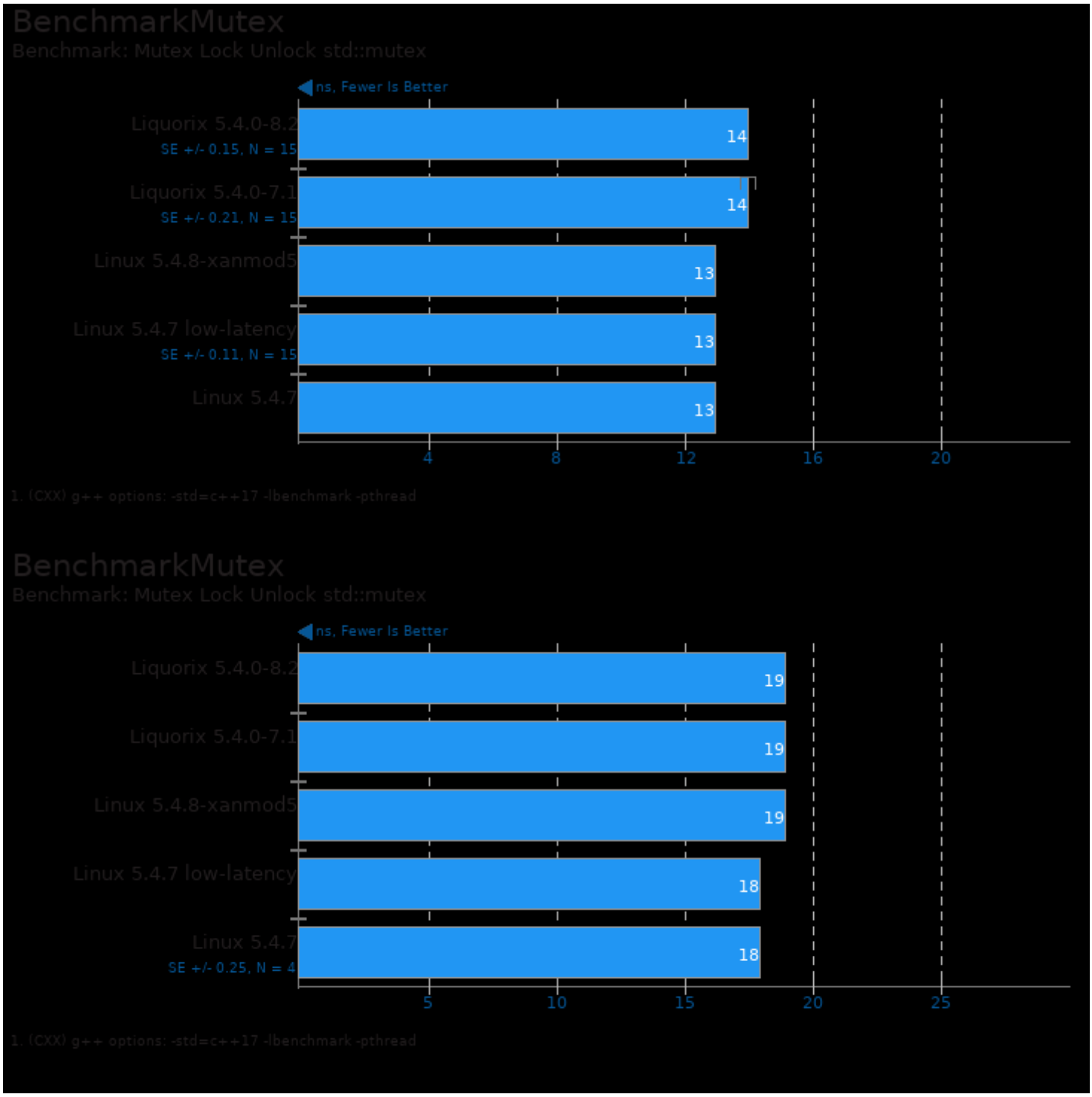
Liquorix, Xanmod Linux Kernel Benchmarks

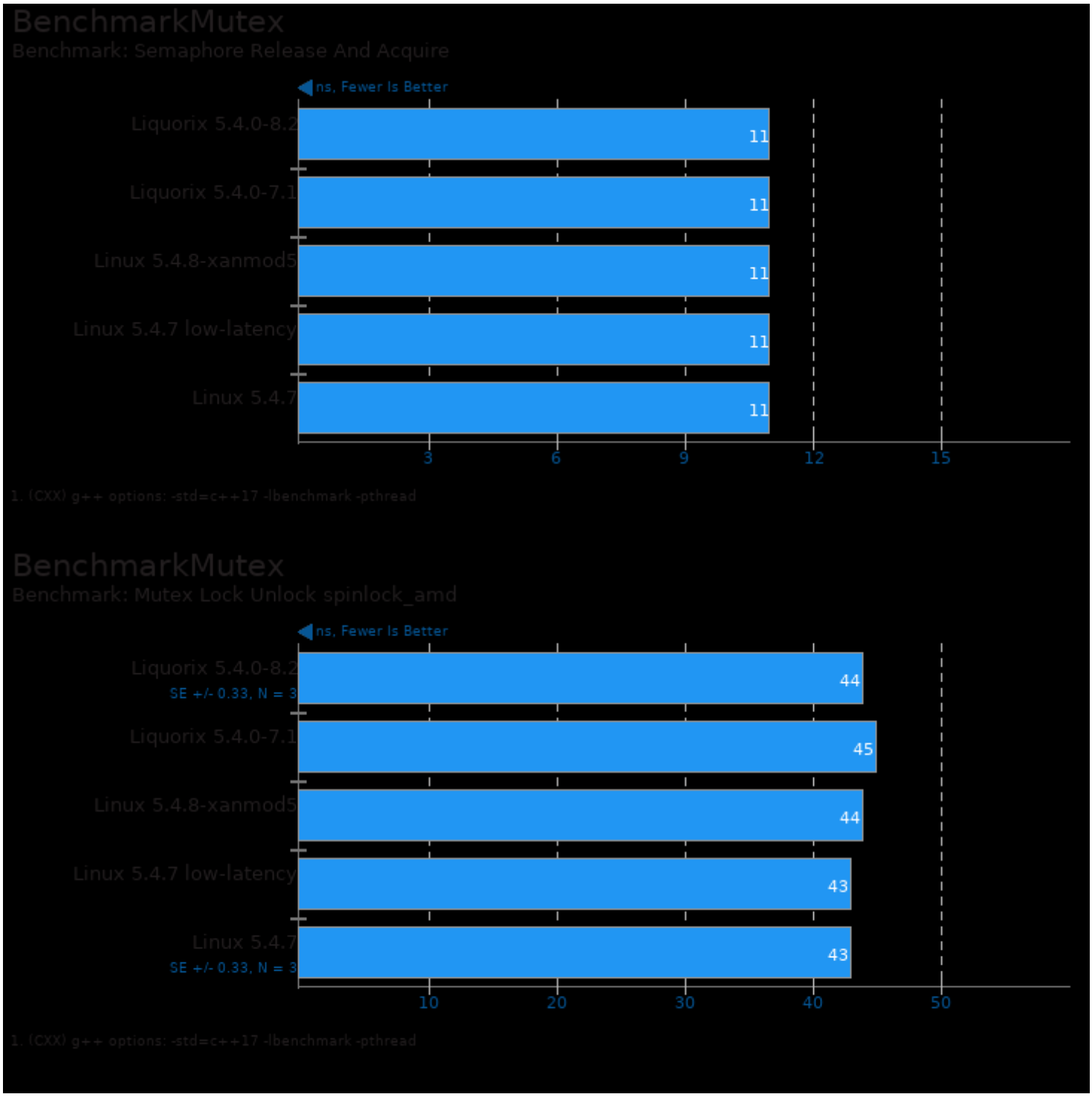


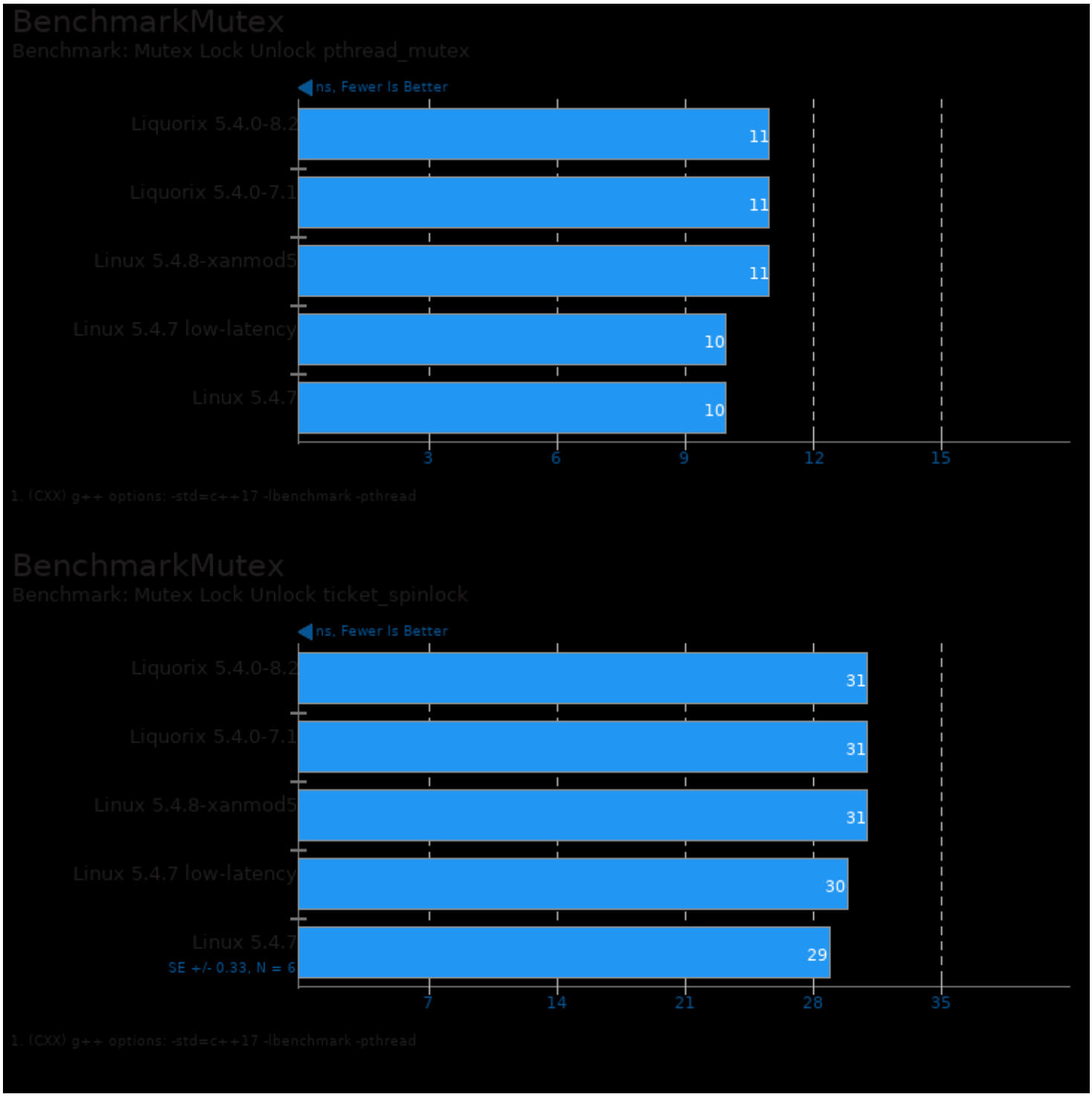
Liquorix, Xanmod Linux Kernel Benchmarks

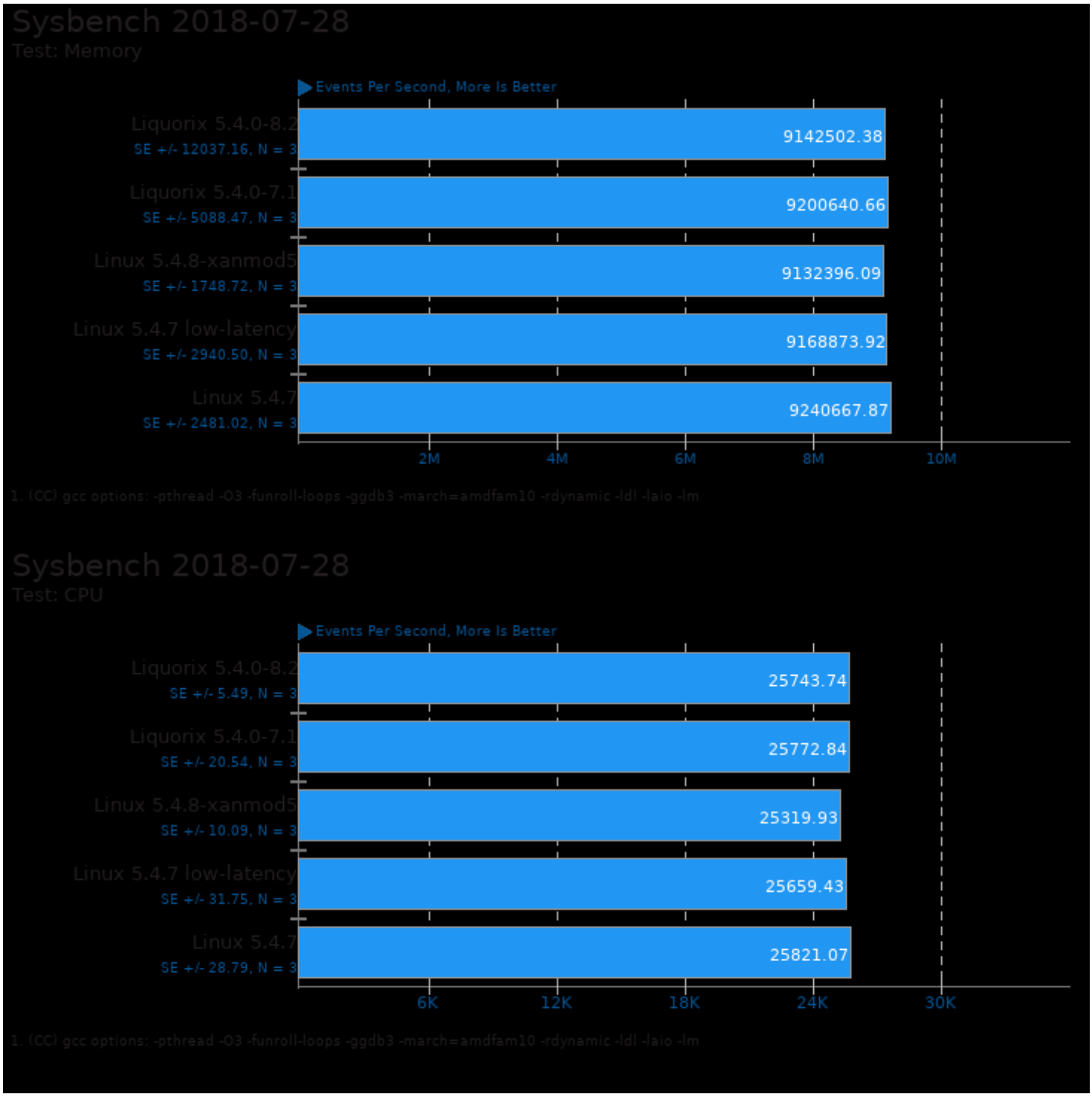


Liquorix, Xanmod Linux Kernel Benchmarks

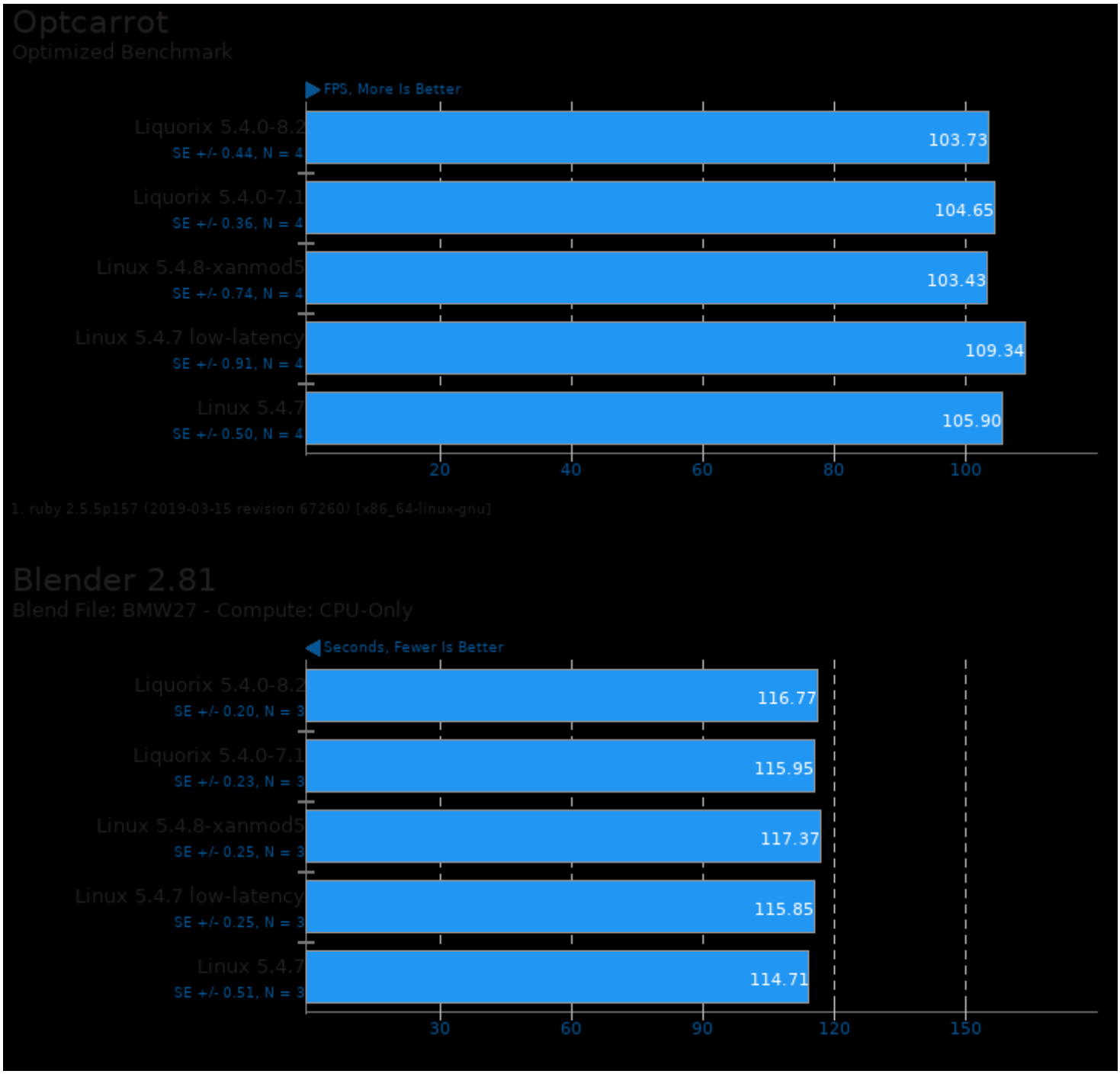


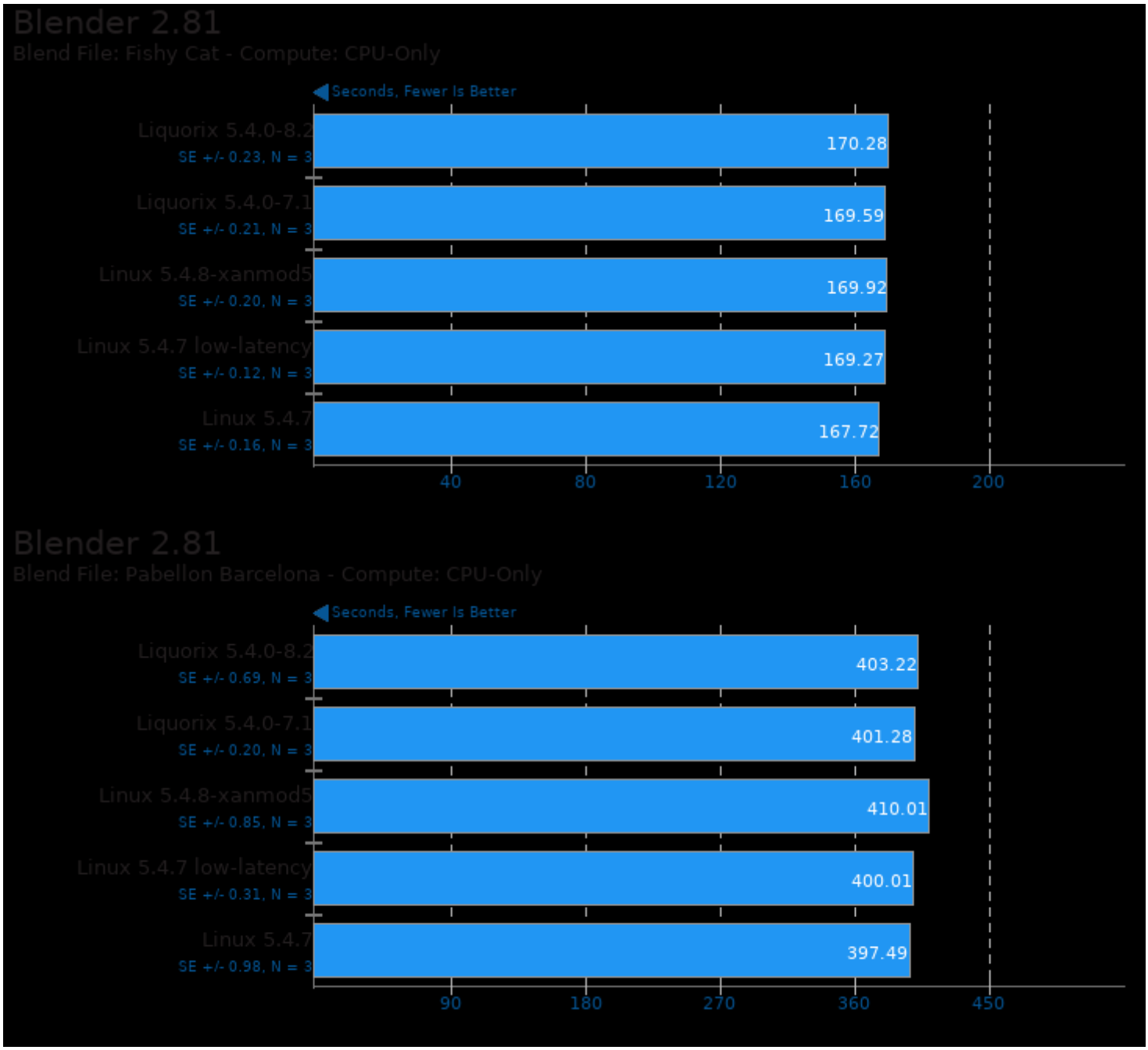

BenchmarkMutex
Benchmark: Semaphore Release And Acquire
ns, Fewer Is Better
Liquorix 5.4.0-8.2
Liquorix 5.4.0-7.1
Linux 5.4.8-xanmod5
Linux 5.4.7 low-latency
Linux 5.4.7
11
11
11
11
11
3
6
9
12
15
1. (CXX) g++ options: -std=c++17 -lbenchmark -pthread
BenchmarkMutex
Benchmark: Mutex Lock Unlock spinlock_amd
ns, Fewer Is Better
Liquorix 5.4.0-8.2
SE +/- 0.33, N = 3
Liquorix 5.4.0-7.1
Linux 5.4.8-xanmod5
Linux 5.4.7 low-latency
Linux 5.4.7
SE +/- 0.33, N = 3
44
45
44
43
43
10
20
30
40
50
1. (CXX) g++ options: -std=c++17 -lbenchmark -pthread


BenchmarkMutex
Benchmark: Mutex Lock Unlock pthread_mutex
ns, Fewer Is Better
Liquorix 5.4.0-8.2
Liquorix 5.4.0-7.1
Linux 5.4.8-xanmod5
Linux 5.4.7 low-latency
Linux 5.4.7
11
11
11
10
10
3
6
9
12
15
1. (CXX) g++ options: -std=c++17 -lbenchmark -pthread
BenchmarkMutex
Benchmark: Mutex Lock Unlock ticket_spinlock
ns, Fewer Is Better
Liquorix 5.4.0-8.2
Liquorix 5.4.0-7.1
Linux 5.4.8-xanmod5
Linux 5.4.7 low-latency
Linux 5.4.7
SE +/- 0.33, N = 6
31
31
31
30
29
7
14
21
28
35
1. (CXX) g++ options: -std=c++17 -lbenchmark -pthread

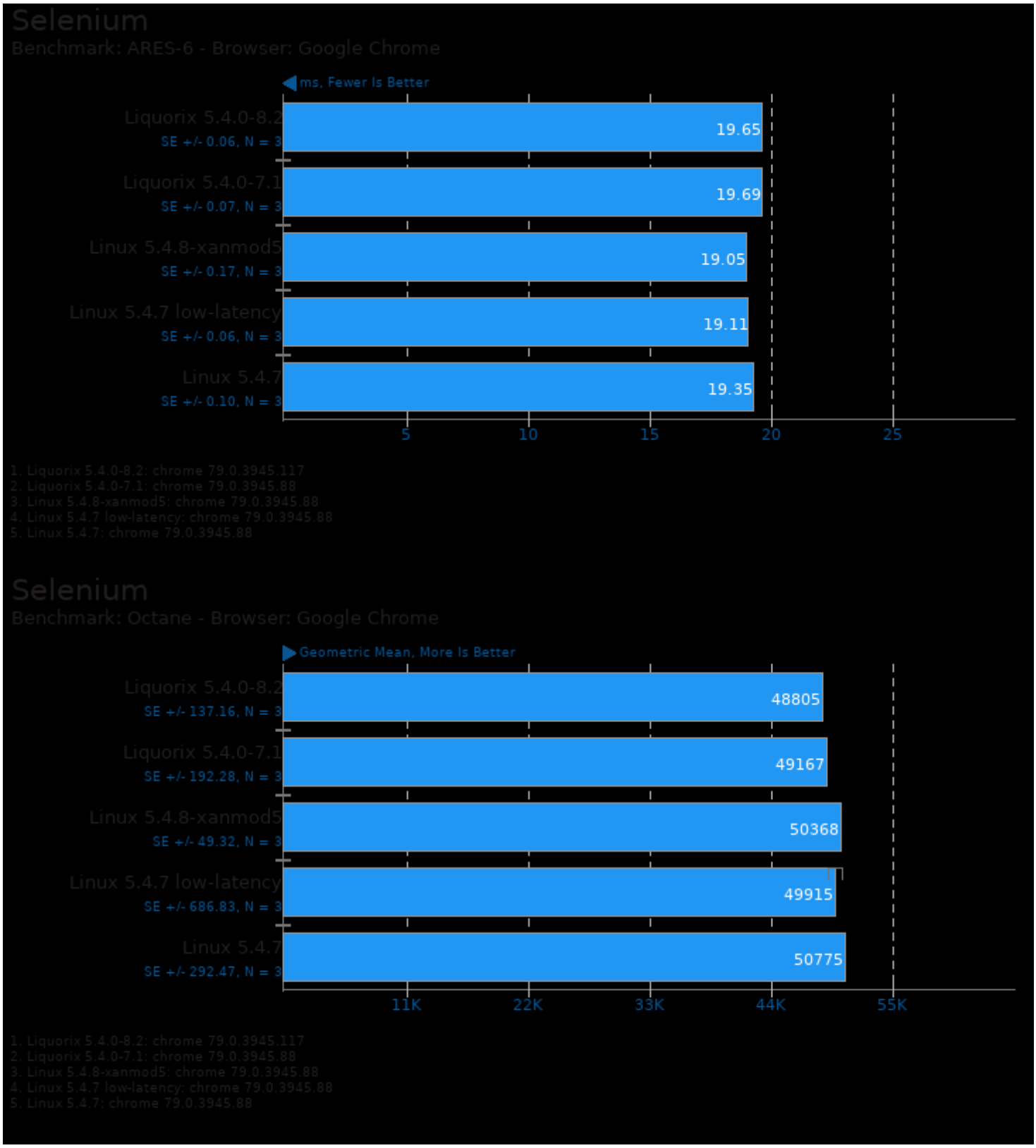

Sysbench 2018-07-28
Test: Memory
Events Per Second, More Is Better
Liquorix 5.4.0-8.2
SE +/- 12037.16, N = 3
9142502.38
Liquorix 5.4.0-7.1
SE +/- 5088.47, N = 3
9200640.66
Linux 5.4.8-xanmod5
SE +/- 1748.72, N = 3
9132396.09
Linux 5.4.7 low-latency
SE +/- 2940.50, N = 3
9168873.92
Linux 5.4.7
SE +/- 2481.02, N = 3
9240667.87
2M
4M
6M
8M
10M
1. (CC) gcc options: -pthread -O3 -funroll-loops -ggdb3 -march=amdfam10 -rdynamic -ldl -laio -lm
Sysbench 2018-07-28
Test: CPU
Events Per Second, More Is Better
Liquorix 5.4.0-8.2
SE +/- 5.49, N = 3
25743.74
Liquorix 5.4.0-7.1
SE +/- 20.54, N = 3
25772.84
Linux 5.4.8-xanmod5
SE +/- 10.09, N = 3
25319.93
Linux 5.4.7 low-latency
SE +/- 31.75, N = 3
25659.43
Linux 5.4.7
SE +/- 28.79, N = 3
25821.07
6K
12K
18K
24K
30K
1. (CC) gcc options: -pthread -O3 -funroll-loops -ggdb3 -march=amdfam10 -rdynamic -ldl -laio -lm

Liquorix, Xanmod Linux Kernel Benchmarks

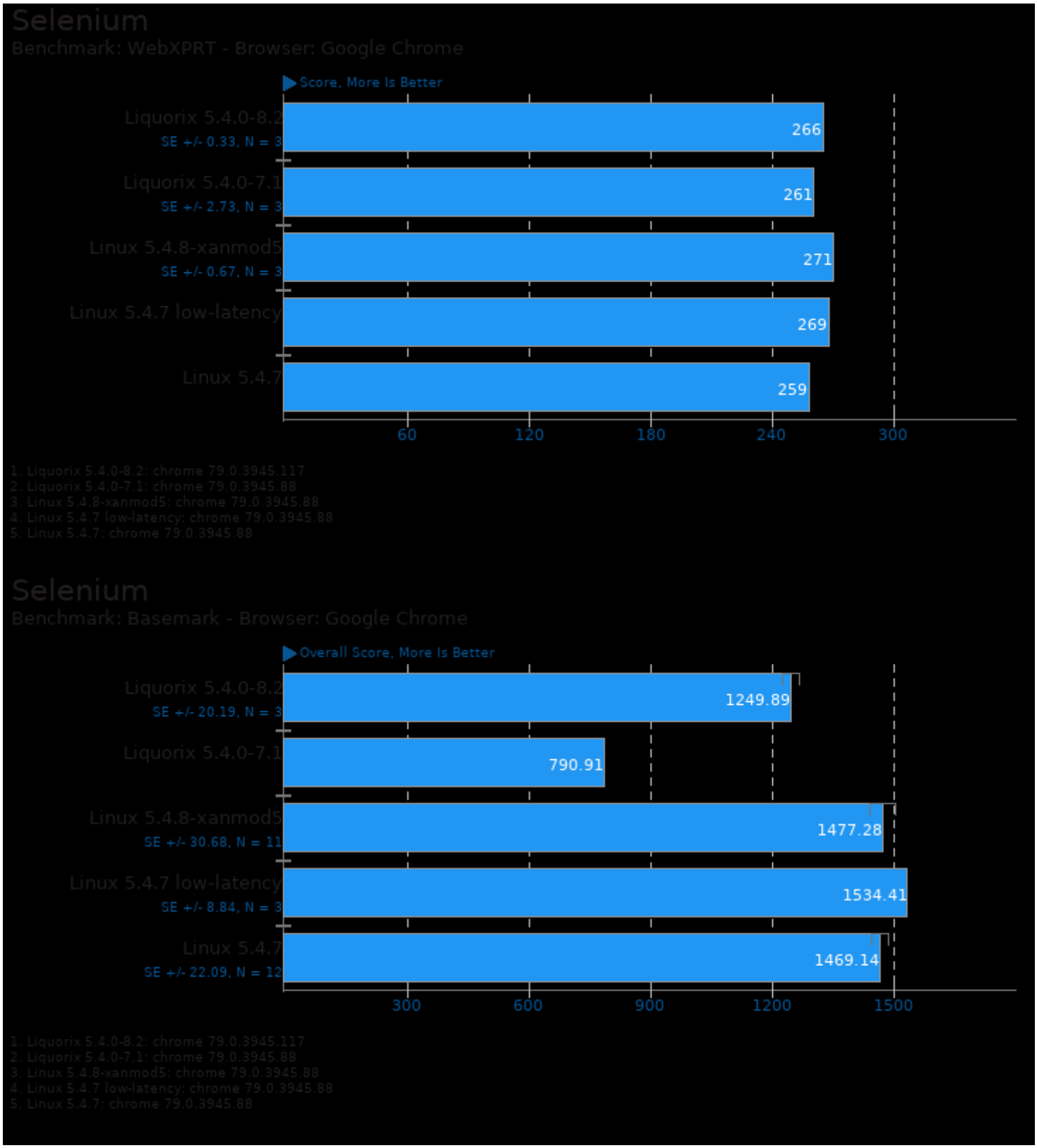



Blender 2.81
Blend File: Fishy Cat - Compute: CPU-Only
Seconds, Fewer Is Better
Liquorix 5.4.0-8.2
SE +/- 0.23, N = 3
170.28
Liquorix 5.4.0-7.1
SE +/- 0.21, N = 3
169.59
Linux 5.4.8-xanmod5
SE +/- 0.20, N = 3
169.92
Linux 5.4.7 low-latency
SE +/- 0.12, N = 3
169.27
Linux 5.4.7
SE +/- 0.16, N = 3
167.72
40
80
120
160
200
Blender 2.81
Blend File: Pabellon Barcelona - Compute: CPU-Only
Seconds, Fewer Is Better
Liquorix 5.4.0-8.2
SE +/- 0.69, N = 3
403.22
Liquorix 5.4.0-7.1
SE +/- 0.20, N = 3
401.28
Linux 5.4.8-xanmod5
SE +/- 0.85, N = 3
410.01
Linux 5.4.7 low-latency
SE +/- 0.31, N = 3
400.01
Linux 5.4.7
SE +/- 0.98, N = 3
397.49
90
180
270
360
450

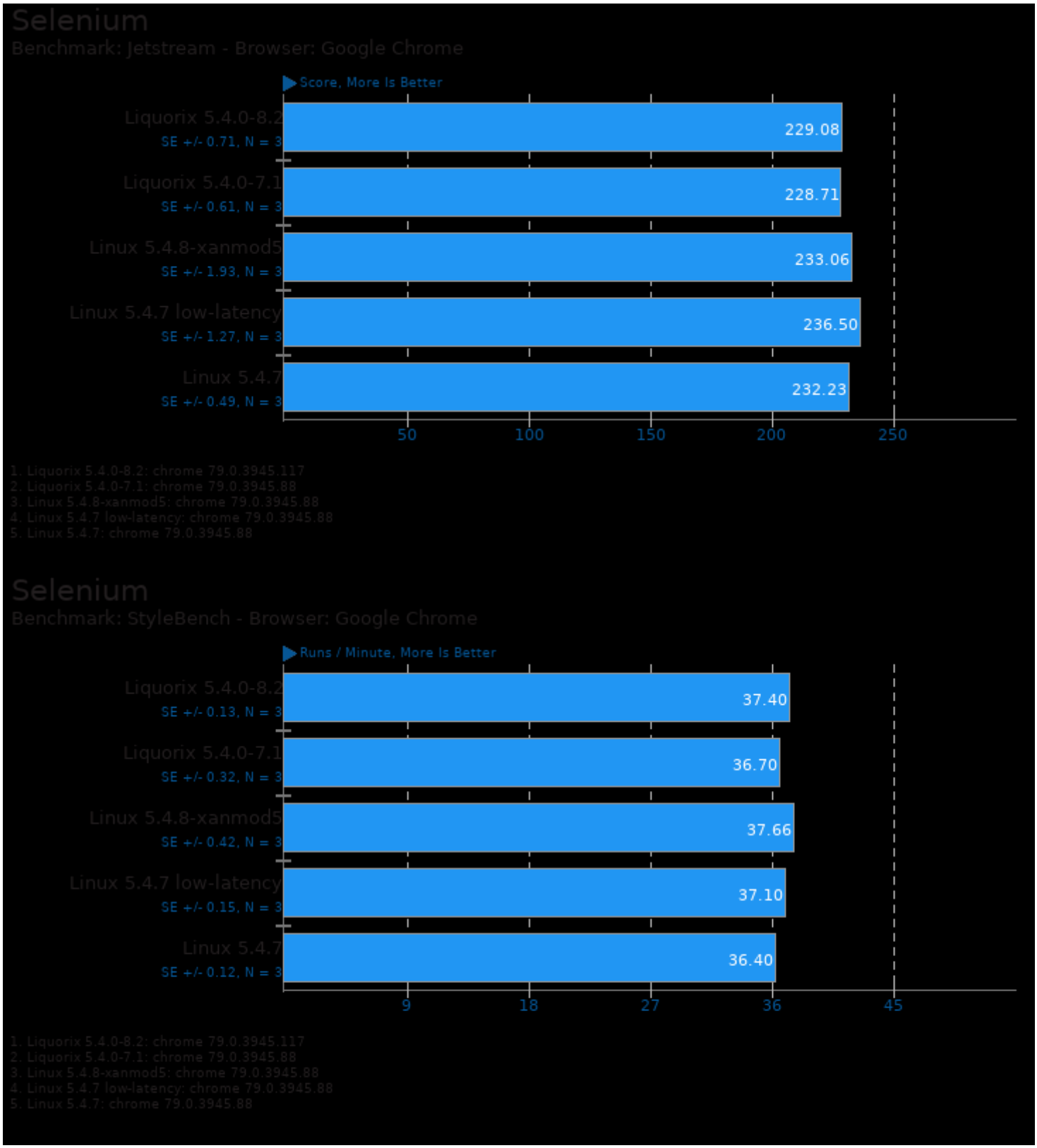
Liquorix, Xanmod Linux Kernel Benchmarks



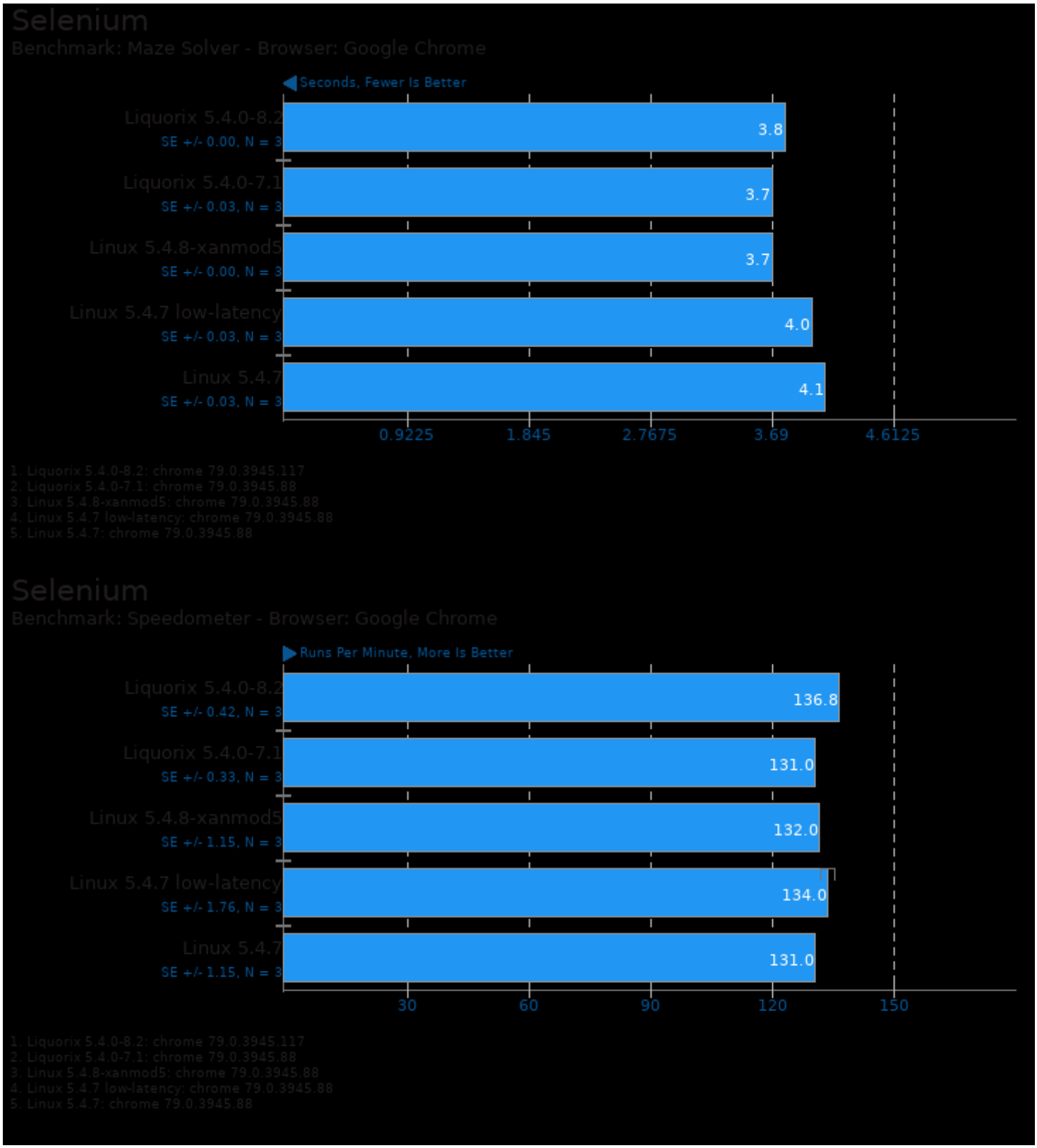
Liquorix, Xanmod Linux Kernel Benchmarks

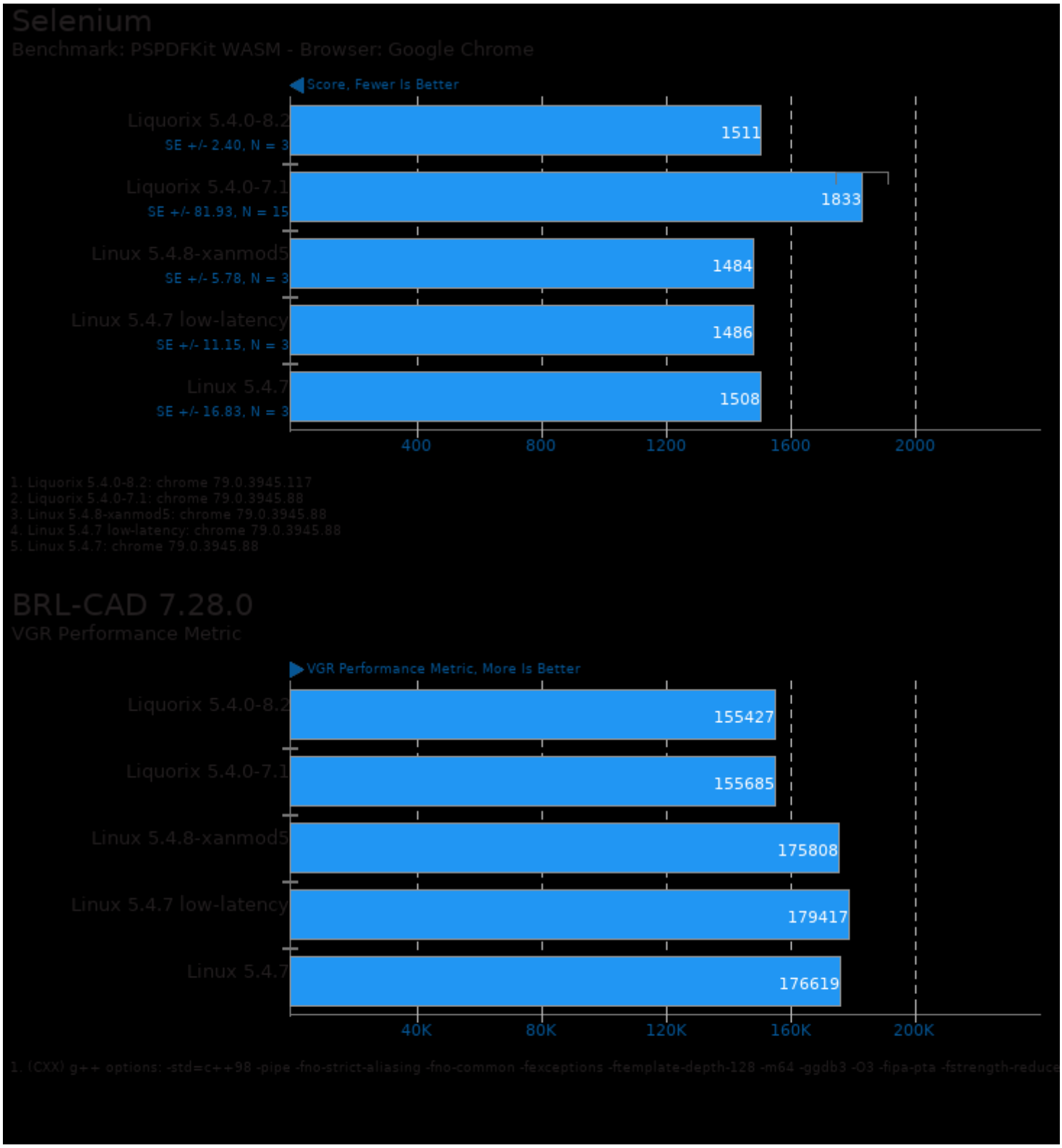


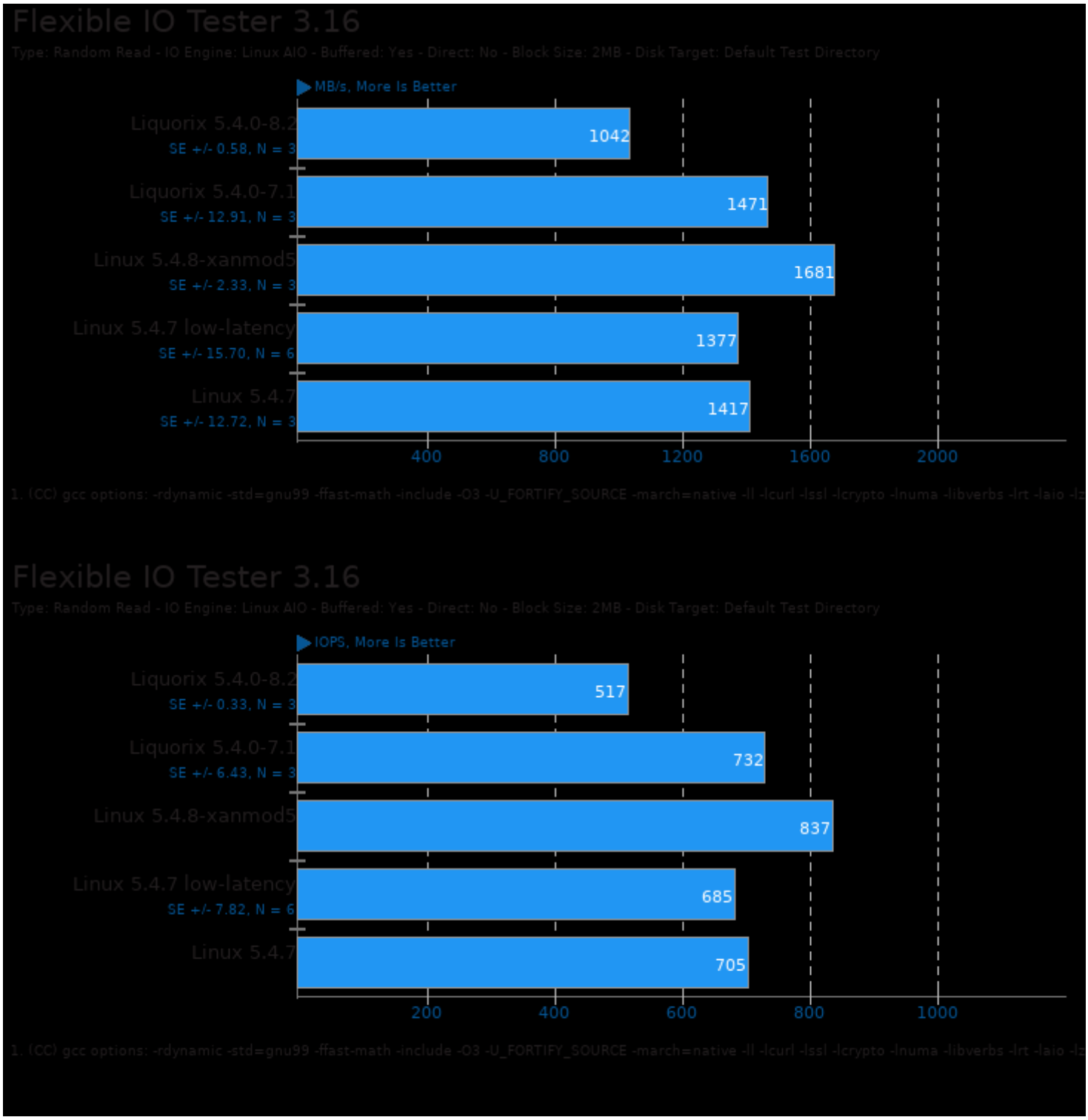
Liquorix, Xanmod Linux Kernel Benchmarks

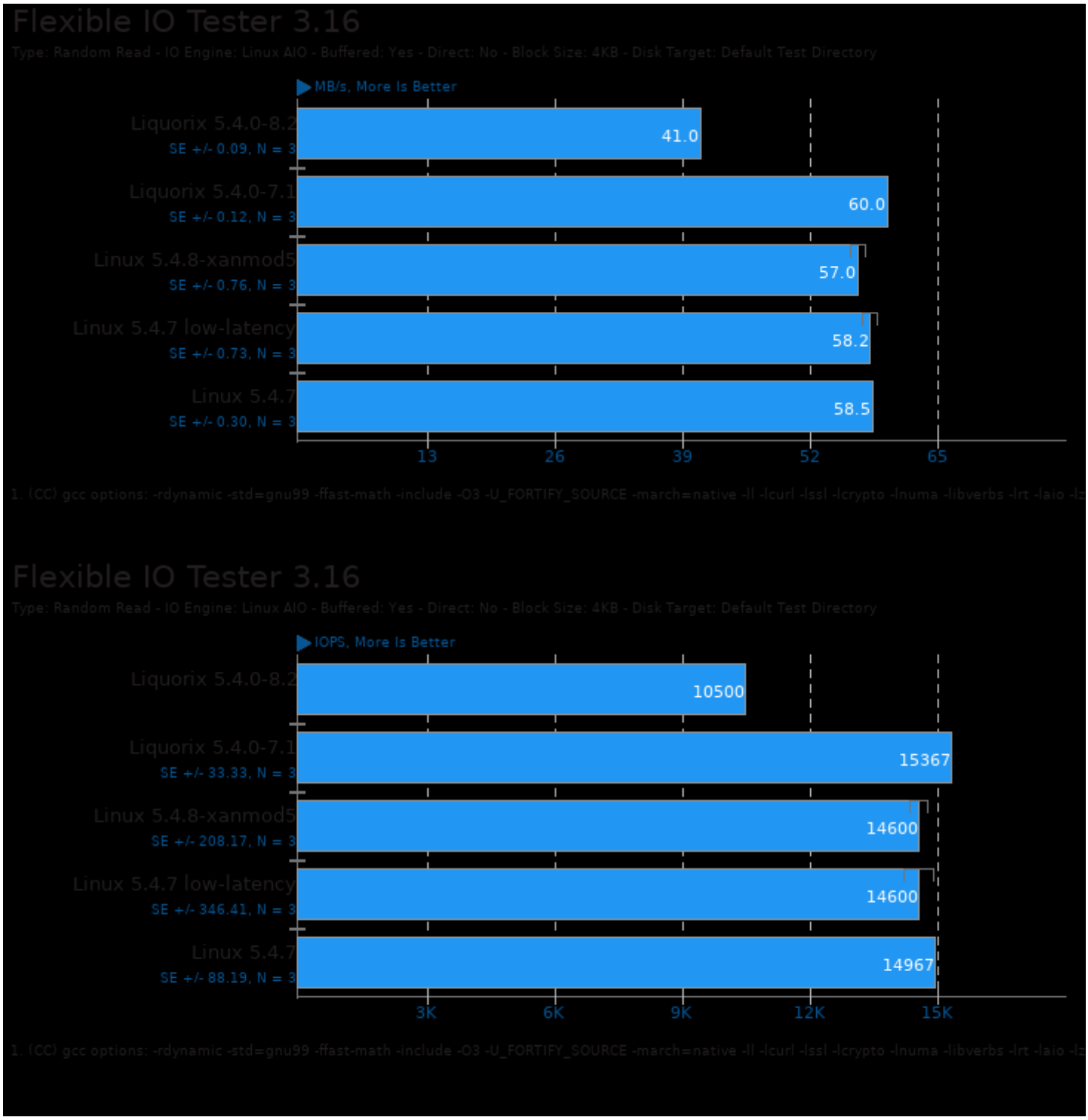


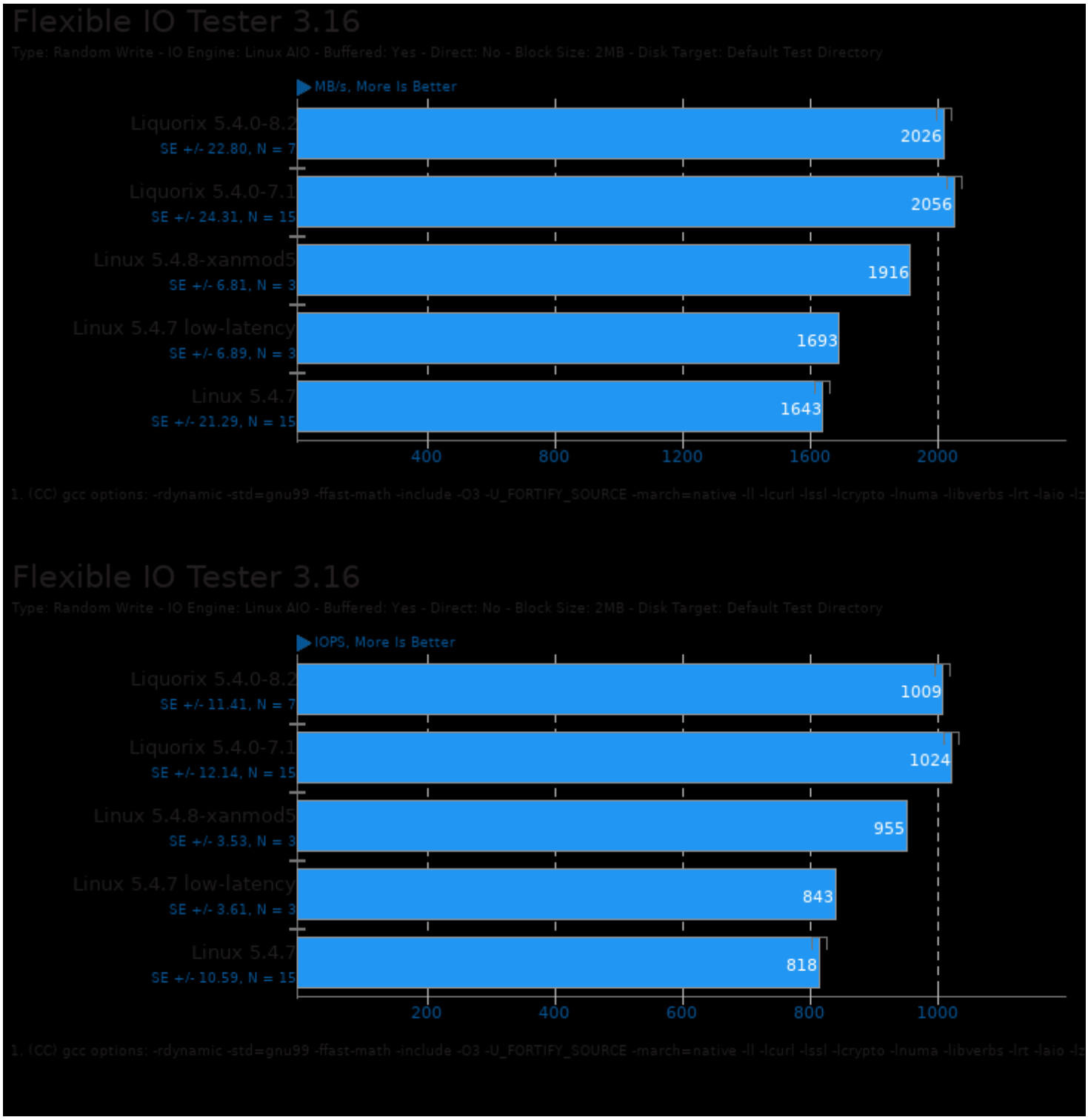
Liquorix, Xanmod Linux Kernel Benchmarks

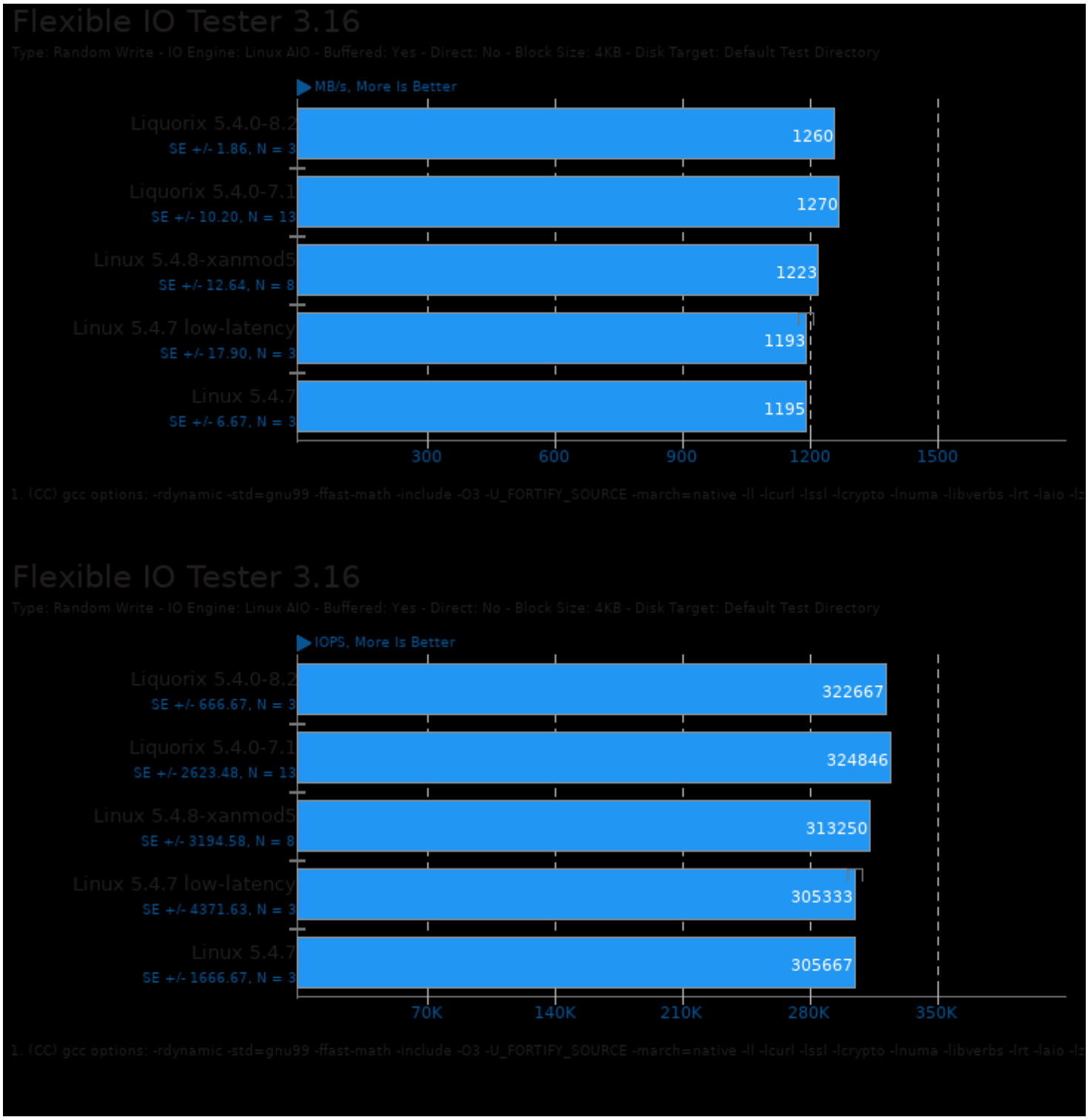


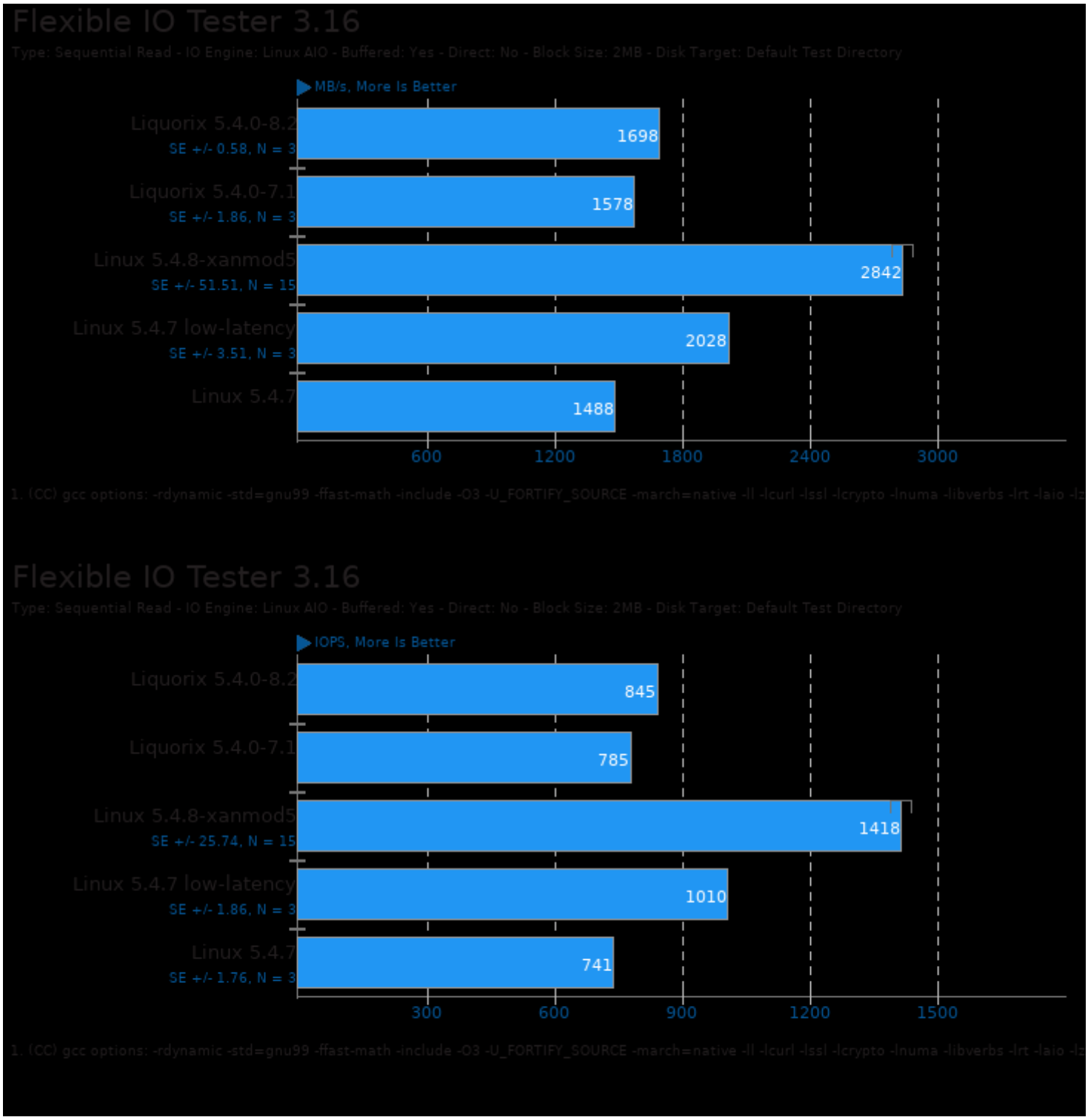

Selenium
Benchmark: PSPDFKit WASM - Browser: Google Chrome
Score, Fewer Is Better
Liquorix 5.4.0-8.2
SE +/- 2.40, N = 3
1511
Liquorix 5.4.0-7.1
SE +/- 81.93, N = 15
1833
Linux 5.4.8-xanmod5
SE +/- 5.78, N = 3
1484
Linux 5.4.7 low-latency
SE +/- 11.15, N = 3
1486
Linux 5.4.7
SE +/- 16.83, N = 3
1508
400
800
1200
1600
2000
1. Liquorix 5.4.0-8.2: chrome 79.0.3945.117
2. Liquorix 5.4.0-7.1: chrome 79.0.3945.88
3. Linux 5.4.8-xanmod5: chrome 79.0.3945.88
4. Linux 5.4.7 low-latency: chrome 79.0.3945.88
5. Linux 5.4.7: chrome 79.0.3945.88
BRL-CAD 7.28.0
VGR Performance Metric
VGR Performance Metric, More Is Better
Liquorix 5.4.0-8.2
155427
Liquorix 5.4.0-7.1
155685
Linux 5.4.8-xanmod5
175808
Linux 5.4.7 low-latency
179417
Linux 5.4.7
176619
40K
80K
120K
160K
200K
1. (CXX) g++ options: -std=c++98 -pipe -fno-strict-aliasing -fno-common -fexceptions -ftemplate-depth-128 -m64 -ggdb3 -O3 -fipa-pta -fstrength-reduce

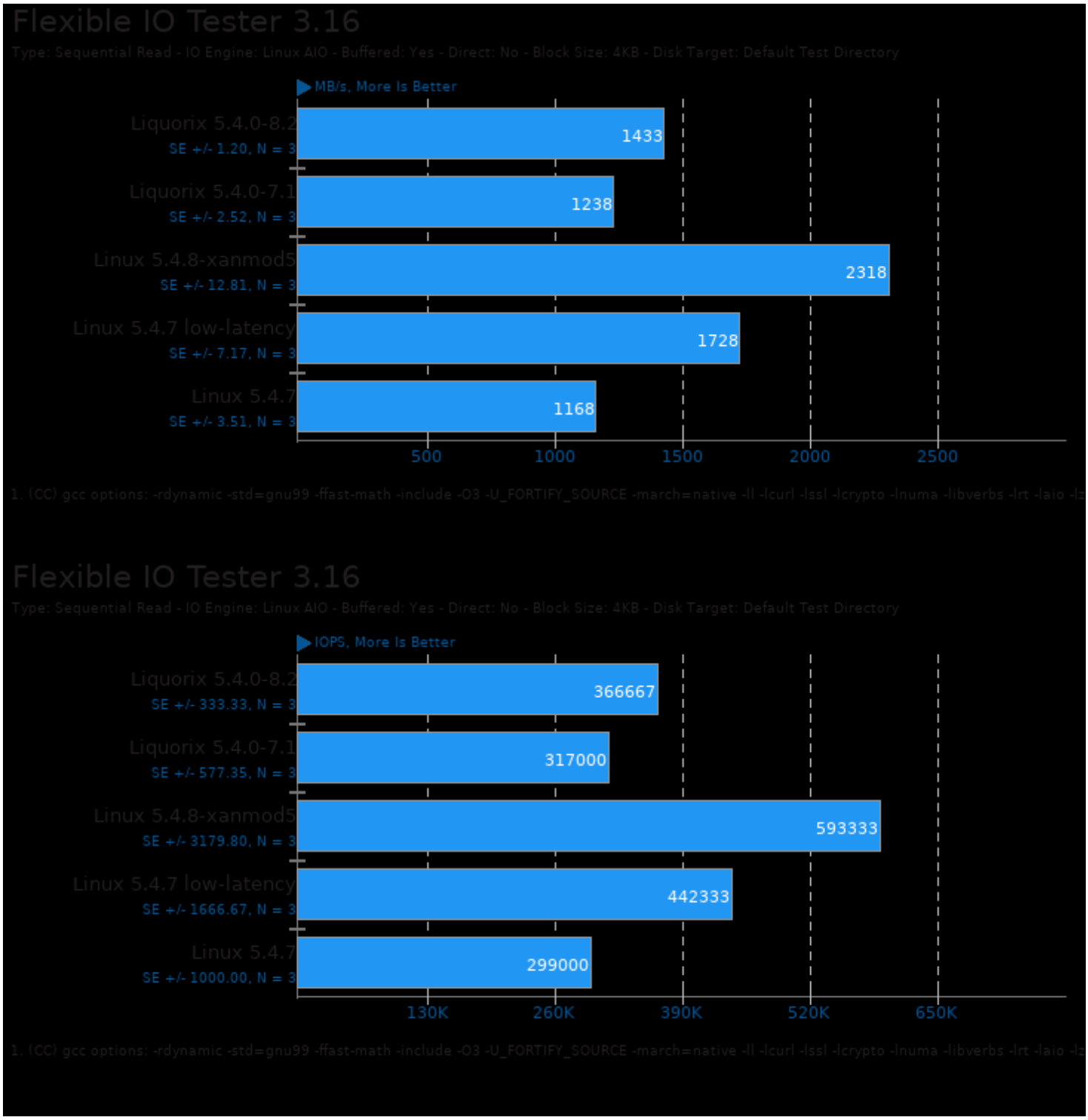

Flexible IO Tester 3.16
Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory
MB/s, More Is Better
Liquorix 5.4.0-8.2
SE +/- 0.58, N = 3
1042
Liquorix 5.4.0-7.1
SE +/- 12.91, N = 3
1471
Linux 5.4.8-xanmod5
SE +/- 2.33, N = 3
1681
Linux 5.4.7 low-latency
SE +/- 15.70, N = 6
1377
Linux 5.4.7
SE +/- 12.72, N = 3
1417
400
800
1200
1600
2000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs -lrt -laio -l
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
Liquorix 5.4.0-8.2
SE +/- 0.33, N = 3
517
Liquorix 5.4.0-7.1
SE +/- 6.43, N = 3
732
Linux 5.4.8-xanmod5
837
Linux 5.4.7 low-latency
SE +/- 7.82, N = 6
685
Linux 5.4.7
705
200
400
600
800
1000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs -lrt -laio -l

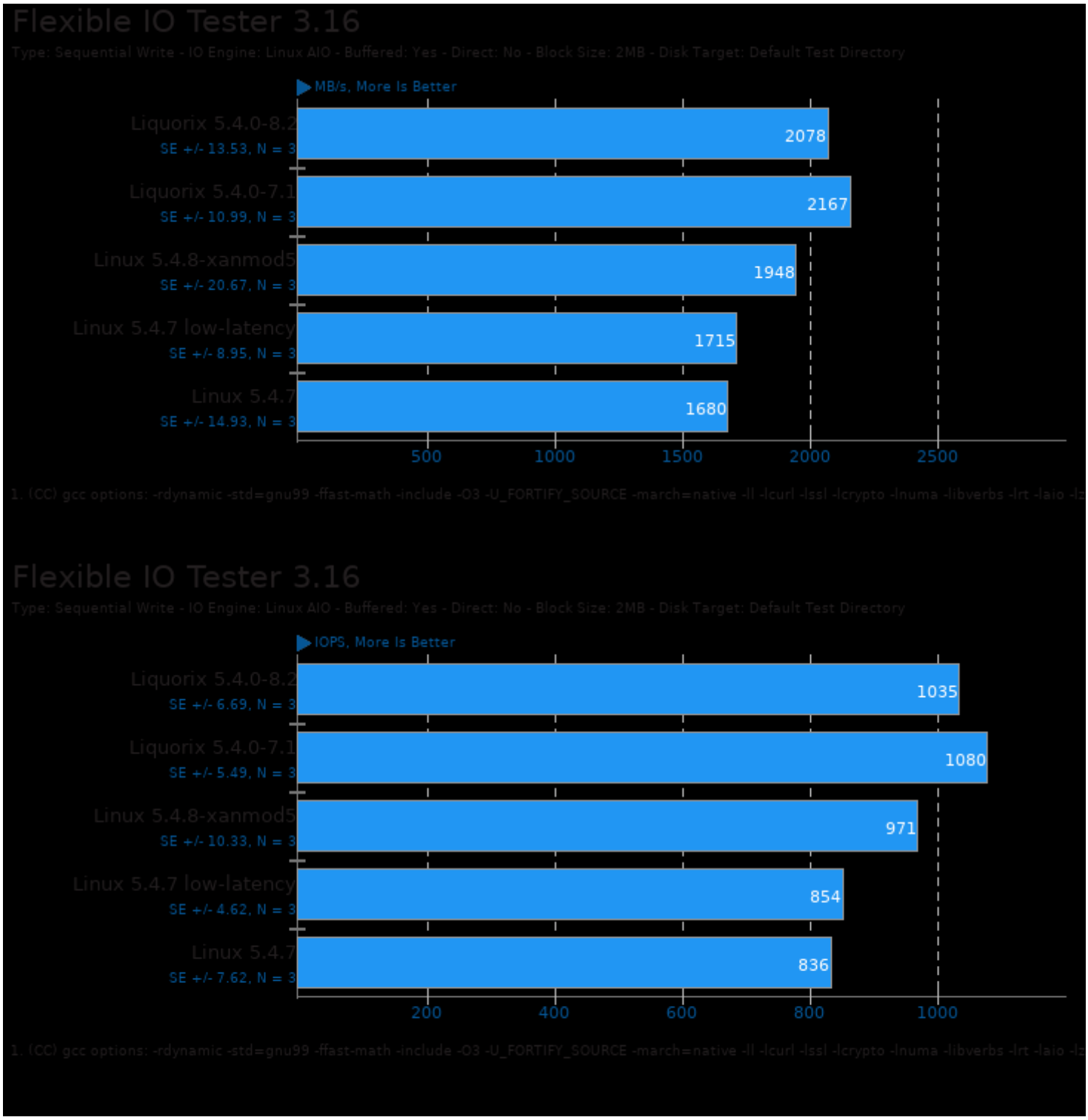

Flexible IO Tester 3.16
Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
Liquorix 5.4.0-8.2
SE +/- 0.09, N = 3
41.0
Liquorix 5.4.0-7.1
SE +/- 0.12, N = 3
60.0
Linux 5.4.8-xanmod5
SE +/- 0.76, N = 3
57.0
Linux 5.4.7 low-latency
SE +/- 0.73, N = 3
58.2
Linux 5.4.7
SE +/- 0.30, N = 3
58.5
13
26
39
52
65
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs -lrt -laio -l
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
Liquorix 5.4.0-8.2
10500
Liquorix 5.4.0-7.1
SE +/- 33.33, N = 3
15367
Linux 5.4.8-xanmod5
SE +/- 208.17, N = 3
14600
Linux 5.4.7 low-latency
SE +/- 346.41, N = 3
14600
Linux 5.4.7
SE +/- 88.19, N = 3
14967
3K
6K
9K
12K
15K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs -lrt -laio -l

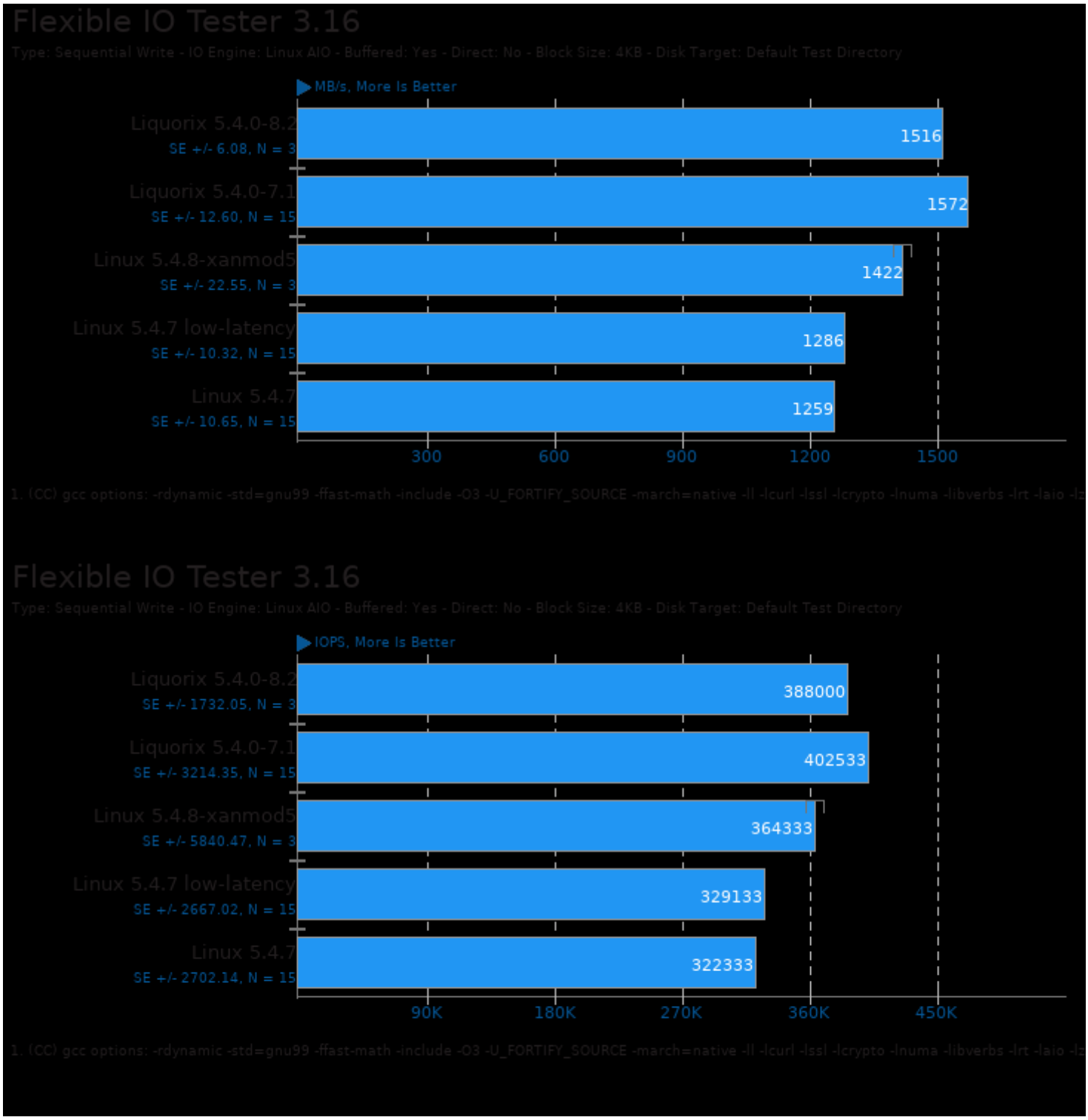

Flexible IO Tester 3.16
Type: Random Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory
MB/s, More Is Better
Liquorix 5.4.0-8.2
SE +/- 22.80, N = 7
2026
Liquorix 5.4.0-7.1
SE +/- 24.31, N = 15
2056
Linux 5.4.8-xanmod5
SE +/- 6.81, N = 3
1916
Linux 5.4.7 low-latency
SE +/- 6.89, N = 3
1693
Linux 5.4.7
SE +/- 21.29, N = 15
1643
400
800
1200
1600
2000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs -lrt -laio -l
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
Liquorix 5.4.0-8.2
SE +/- 11.41, N = 7
1009
Liquorix 5.4.0-7.1
SE +/- 12.14, N = 15
1024
Linux 5.4.8-xanmod5
SE +/- 3.53, N = 3
955
Linux 5.4.7 low-latency
SE +/- 3.61, N = 3
843
Linux 5.4.7
SE +/- 10.59, N = 15
818
200
400
600
800
1000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs -lrt -laio -l

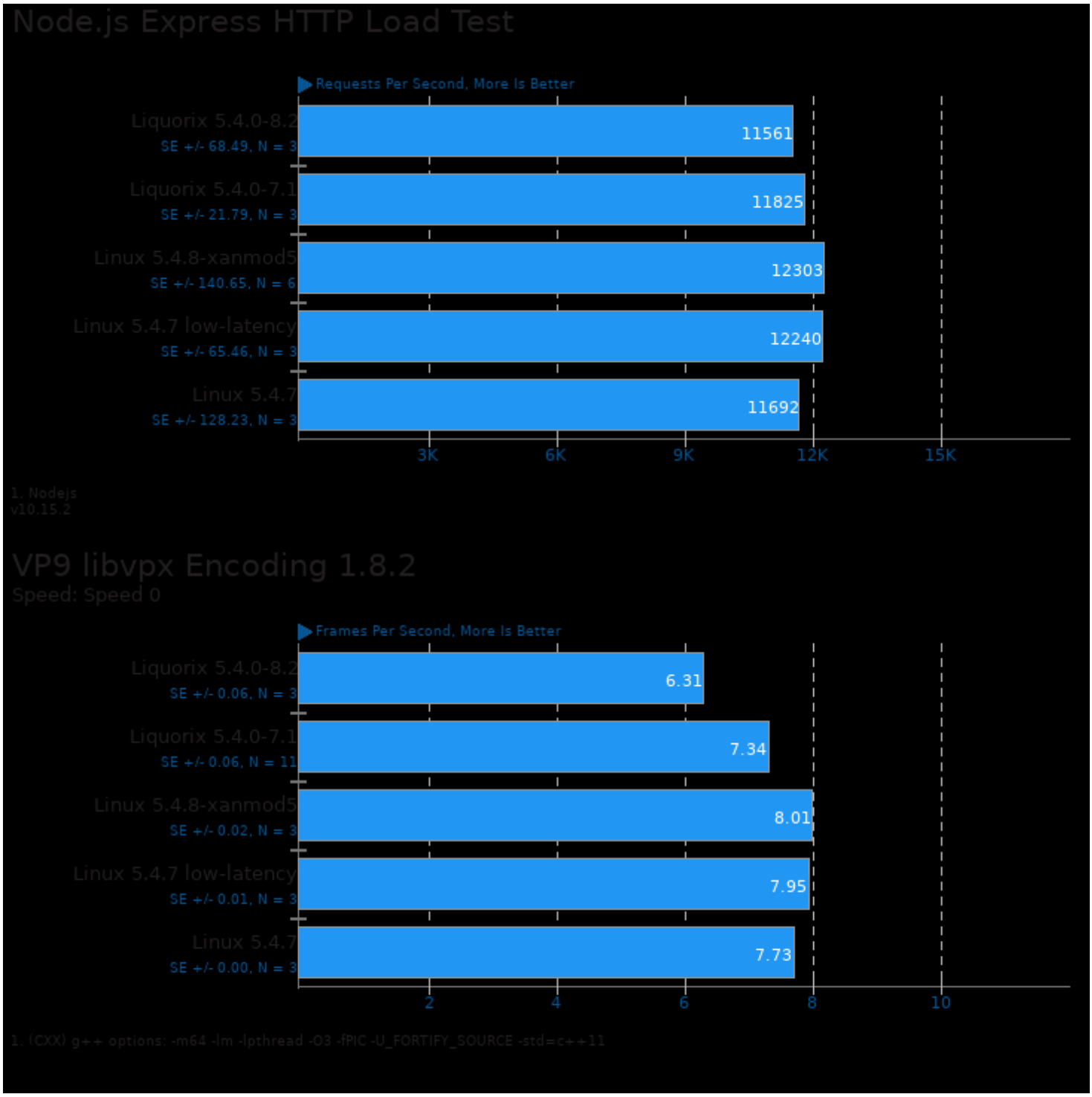

Flexible IO Tester 3.16
Type: Random Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
Liquorix 5.4.0-8.2
SE +/- 1.86, N = 3
1260
Liquorix 5.4.0-7.1
SE +/- 10.20, N = 13
1270
Linux 5.4.8-xanmod5
SE +/- 12.64, N = 8
1223
Linux 5.4.7 low-latency
SE +/- 17.90, N = 3
1193
Linux 5.4.7
SE +/- 6.67, N = 3
1195
300
600
900
1200
1500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs -lrt -laio -l
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
Liquorix 5.4.0-8.2
SE +/- 666.67, N = 3
322667
Liquorix 5.4.0-7.1
SE +/- 2623.48, N = 13
324846
Linux 5.4.8-xanmod5
SE +/- 3194.58, N = 8
313250
Linux 5.4.7 low-latency
SE +/- 4371.63, N = 3
305333
Linux 5.4.7
SE +/- 1666.67, N = 3
305667
70K
140K
210K
280K
350K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs -lrt -laio -l

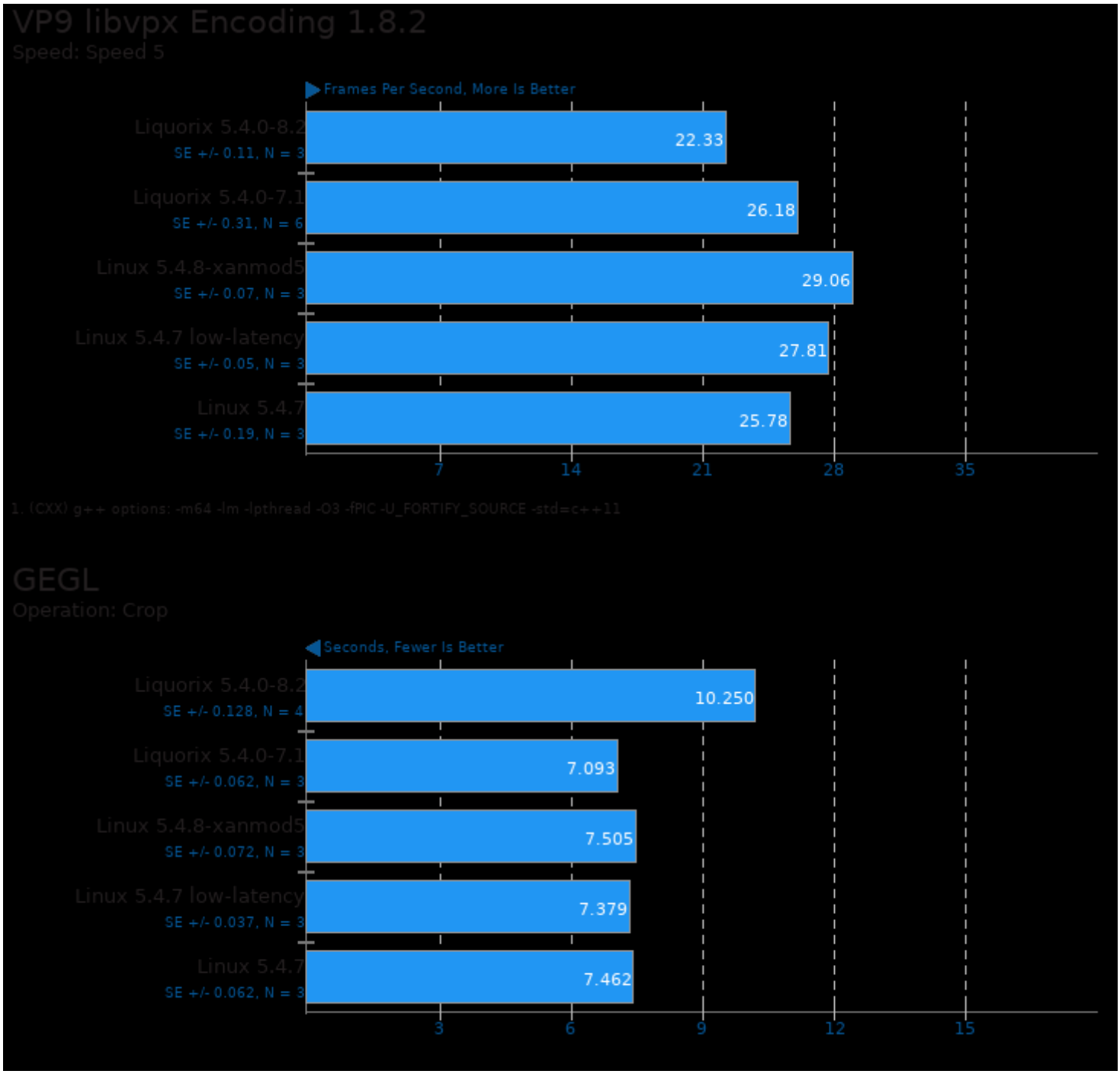

Flexible IO Tester 3.16
Type: Sequential Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 2MB - Disk Target: Default Test Directory
MB/s, More Is Better
Liquorix 5.4.0-8.2
SE +/- 0.58, N = 3
1698
Liquorix 5.4.0-7.1
SE +/- 1.86, N = 3
1578
Linux 5.4.8-xanmod5
SE +/- 51.51, N = 15
2842
Linux 5.4.7 low-latency
SE +/- 3.51, N = 3
2028
Linux 5.4.7
1488
600
1200
1800
2400
3000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs -lrt -laio -l
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
Liquorix 5.4.0-8.2
845
Liquorix 5.4.0-7.1
785
Linux 5.4.8-xanmod5
SE +/- 25.74, N = 15
1418
Linux 5.4.7 low-latency
SE +/- 1.86, N = 3
1010
Linux 5.4.7
SE +/- 1.76, N = 3
741
300
600
900
1200
1500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs -lrt -laio -l

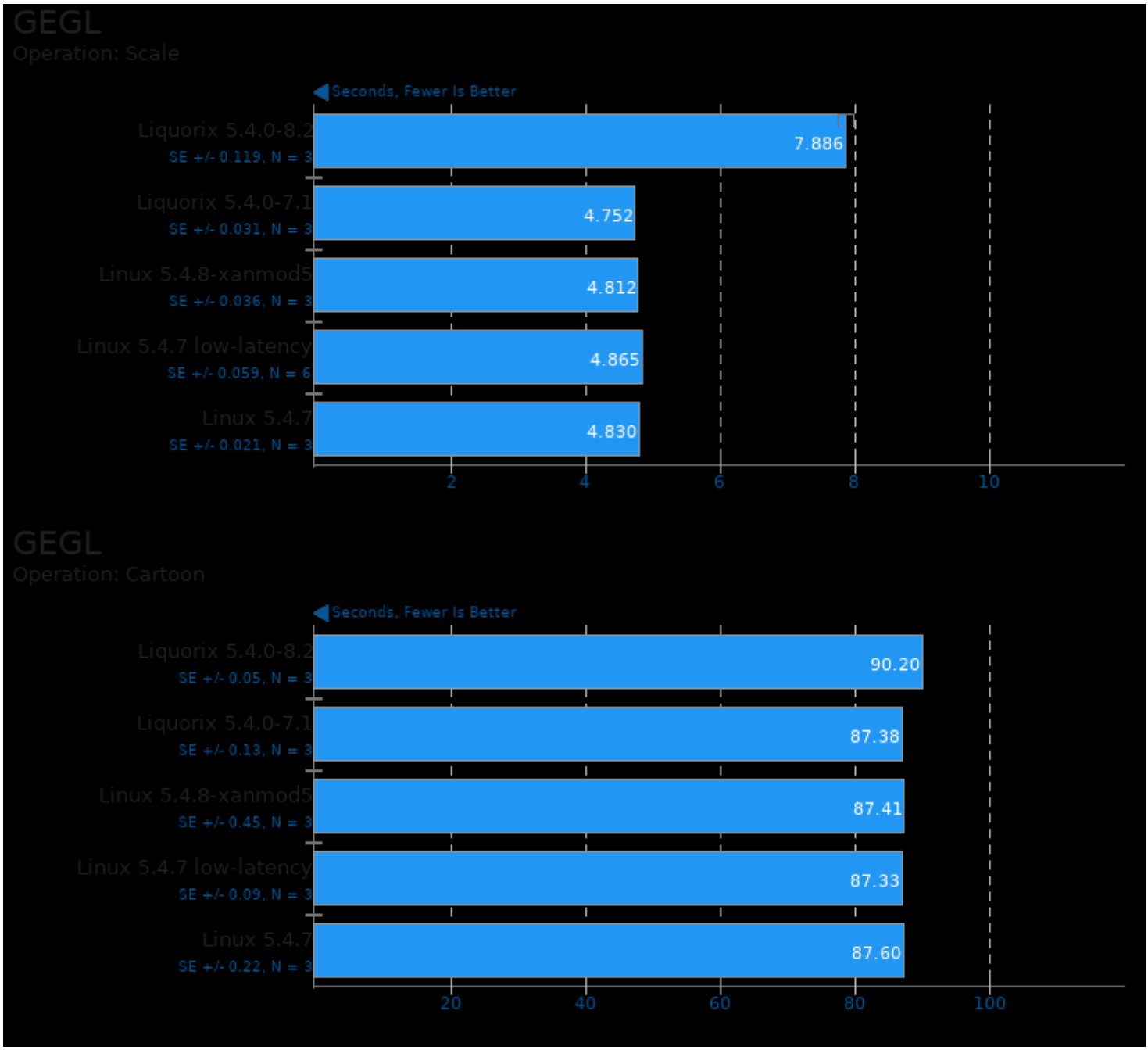

Flexible IO Tester 3.16
Type: Sequential Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
Liquorix 5.4.0-8.2
SE +/- 1.20, N = 3
1433
Liquorix 5.4.0-7.1
SE +/- 2.52, N = 3
1238
Linux 5.4.8-xanmod5
SE +/- 12.81, N = 3
2318
Linux 5.4.7 low-latency
SE +/- 7.17, N = 3
1728
Linux 5.4.7
SE +/- 3.51, N = 3
1168
500
1000
1500
2000
2500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs -lrt -laio -l
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
Liquorix 5.4.0-8.2
SE +/- 333.33, N = 3
366667
Liquorix 5.4.0-7.1
SE +/- 577.35, N = 3
317000
Linux 5.4.8-xanmod5
SE +/- 3179.80, N = 3
593333
Linux 5.4.7 low-latency
SE +/- 1666.67, N = 3
442333
Linux 5.4.7
SE +/- 1000.00, N = 3
299000
130K
260K
390K
520K
650K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs -lrt -laio -l


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
Liquorix 5.4.0-8.2
SE +/- 13.53, N = 3
2078
Liquorix 5.4.0-7.1
SE +/- 10.99, N = 3
2167
Linux 5.4.8-xanmod5
SE +/- 20.67, N = 3
1948
Linux 5.4.7 low-latency
SE +/- 8.95, N = 3
1715
Linux 5.4.7
SE +/- 14.93, N = 3
1680
500
1000
1500
2000
2500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs -lrt -laio -l
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
Liquorix 5.4.0-8.2
SE +/- 6.69, N = 3
1035
Liquorix 5.4.0-7.1
SE +/- 5.49, N = 3
1080
Linux 5.4.8-xanmod5
SE +/- 10.33, N = 3
971
Linux 5.4.7 low-latency
SE +/- 4.62, N = 3
854
Linux 5.4.7
SE +/- 7.62, N = 3
836
200
400
600
800
1000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs -lrt -laio -l

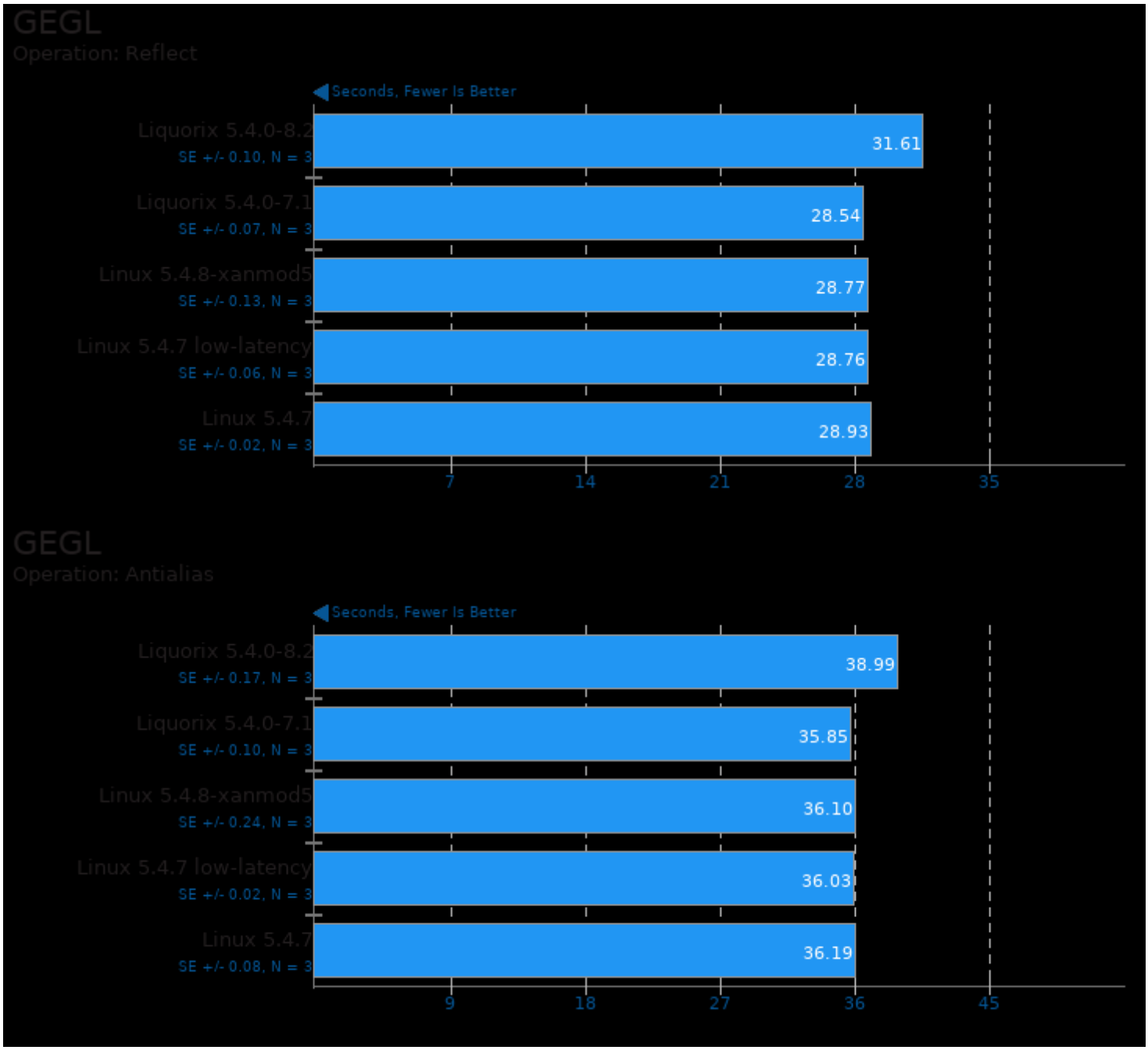

Flexible IO Tester 3.16
Type: Sequential Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
Liquorix 5.4.0-8.2
SE +/- 6.08, N = 3
1516
Liquorix 5.4.0-7.1
SE +/- 12.60, N = 15
1572
Linux 5.4.8-xanmod5
SE +/- 22.55, N = 3
1422
Linux 5.4.7 low-latency
SE +/- 10.32, N = 15
1286
Linux 5.4.7
SE +/- 10.65, N = 15
1259
300
600
900
1200
1500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs -lrt -laio -l
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
Liquorix 5.4.0-8.2
SE +/- 1732.05, N = 3
388000
Liquorix 5.4.0-7.1
SE +/- 3214.35, N = 15
402533
Linux 5.4.8-xanmod5
SE +/- 5840.47, N = 3
364333
Linux 5.4.7 low-latency
SE +/- 2667.02, N = 15
329133
Linux 5.4.7
SE +/- 2702.14, N = 15
322333
90K
180K
270K
360K
450K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -march=native -ll -lcurl -lssl -lcrypto -lnuma -libverbs -lrt -laio -l


Node.js Express HTTP Load Test
Requests Per Second, More Is Better
Liquorix 5.4.0-8.2
SE +/- 68.49, N = 3
11561
Liquorix 5.4.0-7.1
SE +/- 21.79, N = 3
11825
Linux 5.4.8-xanmod5
SE +/- 140.65, N = 6
12303
Linux 5.4.7 low-latency
SE +/- 65.46, N = 3
12240
Linux 5.4.7
SE +/- 128.23, N = 3
11692
3K
6K
9K
12K
15K
1. Nodejs
v10.15.2
VP9 libvpx Encoding 1.8.2
Speed: Speed 0
Frames Per Second, More Is Better
Liquorix 5.4.0-8.2
SE +/- 0.06, N = 3
6.31
Liquorix 5.4.0-7.1
SE +/- 0.06, N = 11
7.34
Linux 5.4.8-xanmod5
SE +/- 0.02, N = 3
8.01
Linux 5.4.7 low-latency
SE +/- 0.01, N = 3
7.95
Linux 5.4.7
SE +/- 0.00, N = 3
7.73
2
4
6
8
10
1. (CXX) g++ options: -m64 -lm -lpthread -O3 -fPIC -U_FORTIFY_SOURCE -std=c++11

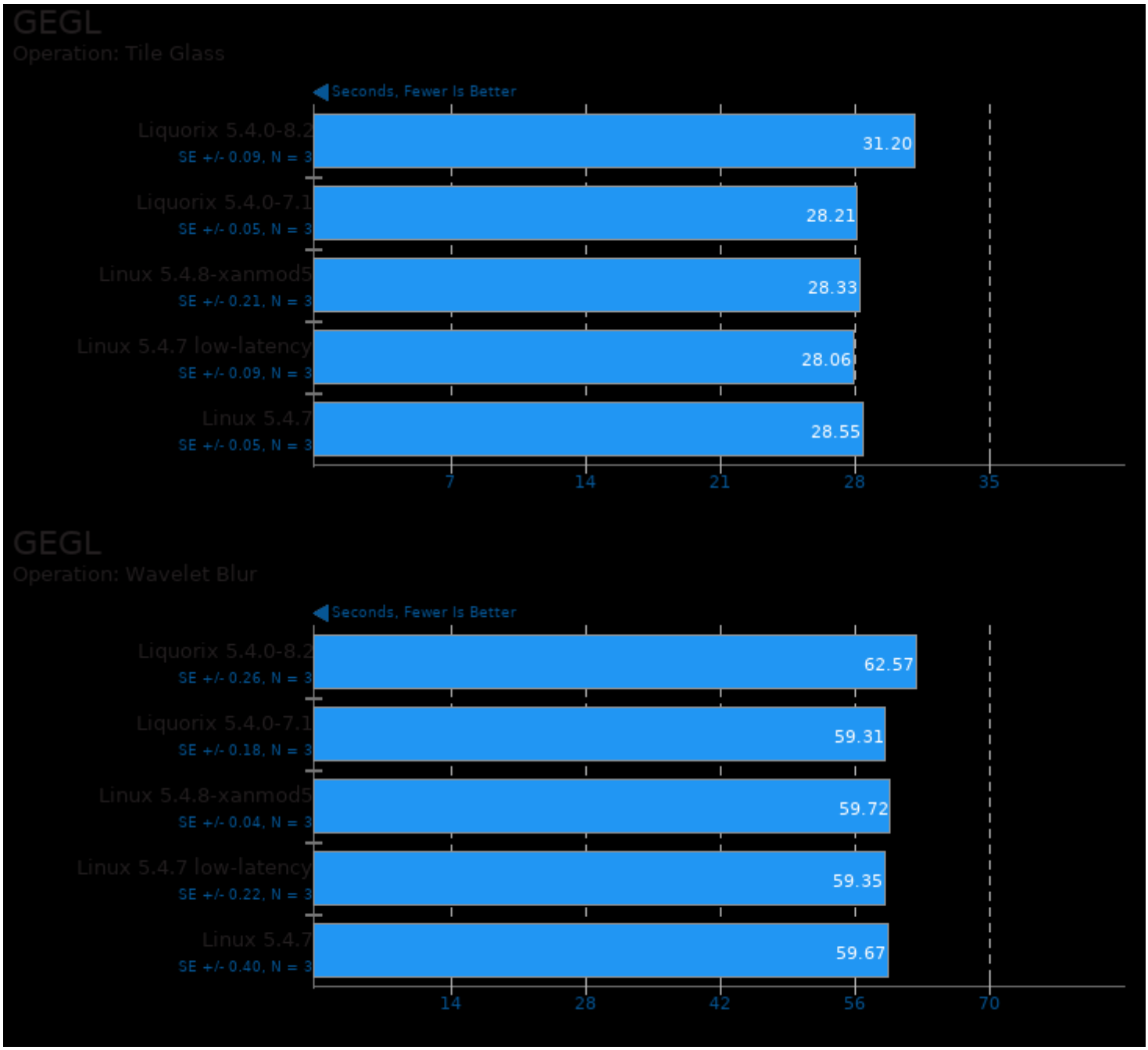

VP9 libvpx Encoding 1.8.2
Speed: Speed 5
Frames Per Second, More Is Better
Liquorix 5.4.0-8.2
SE +/- 0.11, N = 3
22.33
Liquorix 5.4.0-7.1
SE +/- 0.31, N = 6
26.18
Linux 5.4.8-xanmod5
SE +/- 0.07, N = 3
29.06
Linux 5.4.7 low-latency
SE +/- 0.05, N = 3
27.81
Linux 5.4.7
SE +/- 0.19, N = 3
25.78
7
14
21
28
35
1. (CXX) g++ options: -m64 -lm -lpthread -O3 -fPIC -U_FORTIFY_SOURCE -std=c++11
GEGL
Operation: Crop
Seconds, Fewer Is Better
Liquorix 5.4.0-8.2
SE +/- 0.128, N = 4
10.250
Liquorix 5.4.0-7.1
SE +/- 0.062, N = 3
7.093
Linux 5.4.8-xanmod5
SE +/- 0.072, N = 3
7.505
Linux 5.4.7 low-latency
SE +/- 0.037, N = 3
7.379
Linux 5.4.7
SE +/- 0.062, N = 3
7.462
3
6
9
12
15


GEGL
Operation: Scale
Seconds, Fewer Is Better
Liquorix 5.4.0-8.2
SE +/- 0.119, N = 3
7.886
Liquorix 5.4.0-7.1
SE +/- 0.031, N = 3
4.752
Linux 5.4.8-xanmod5
SE +/- 0.036, N = 3
4.812
Linux 5.4.7 low-latency
SE +/- 0.059, N = 6
4.865
Linux 5.4.7
SE +/- 0.021, N = 3
4.830
2
4
6
8
10
GEGL
Operation: Cartoon
Seconds, Fewer Is Better
Liquorix 5.4.0-8.2
SE +/- 0.05, N = 3
90.20
Liquorix 5.4.0-7.1
SE +/- 0.13, N = 3
87.38
Linux 5.4.8-xanmod5
SE +/- 0.45, N = 3
87.41
Linux 5.4.7 low-latency
SE +/- 0.09, N = 3
87.33
Linux 5.4.7
SE +/- 0.22, N = 3
87.60
20
40
60
80
100

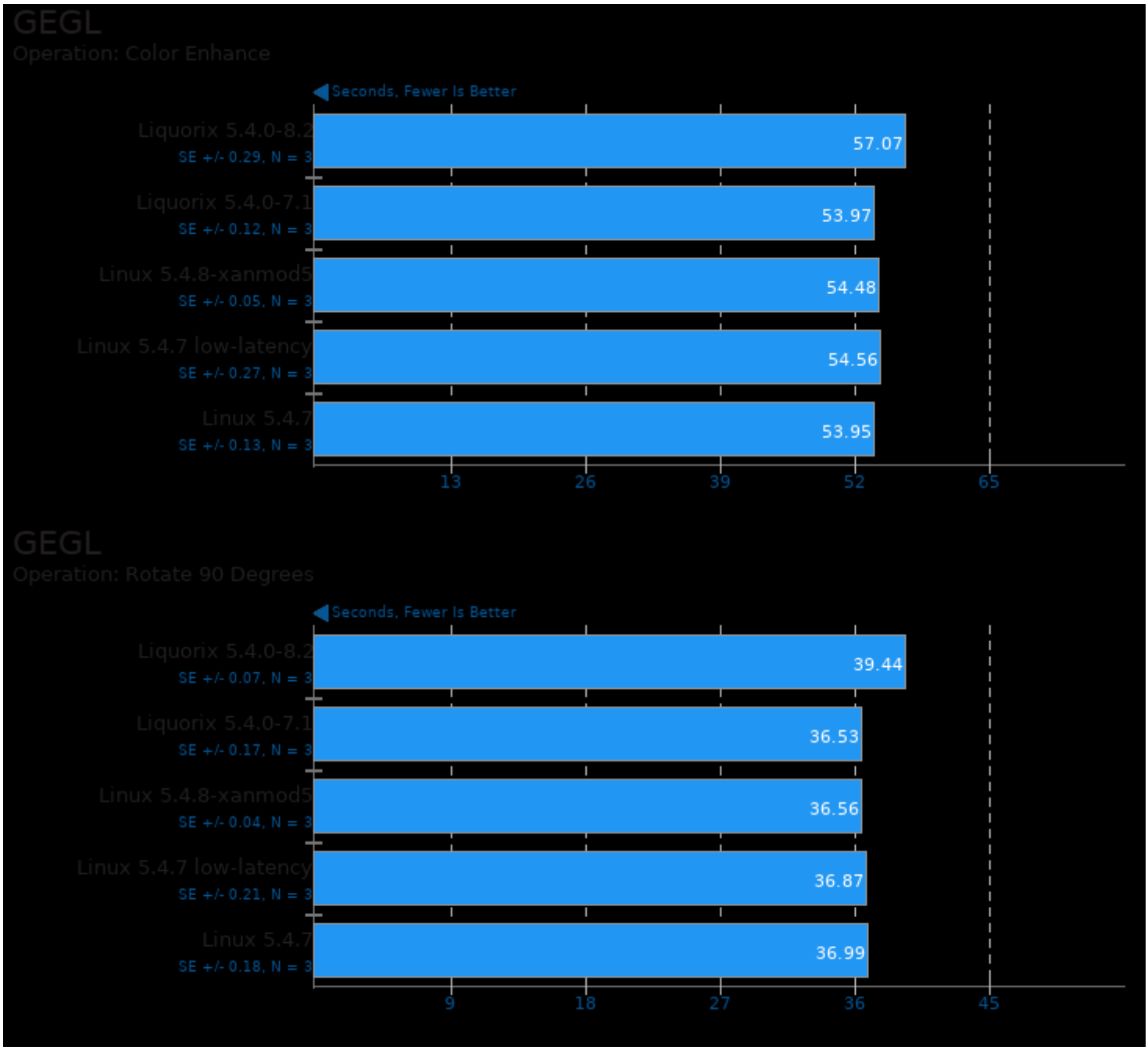
Liquorix, Xanmod Linux Kernel Benchmarks



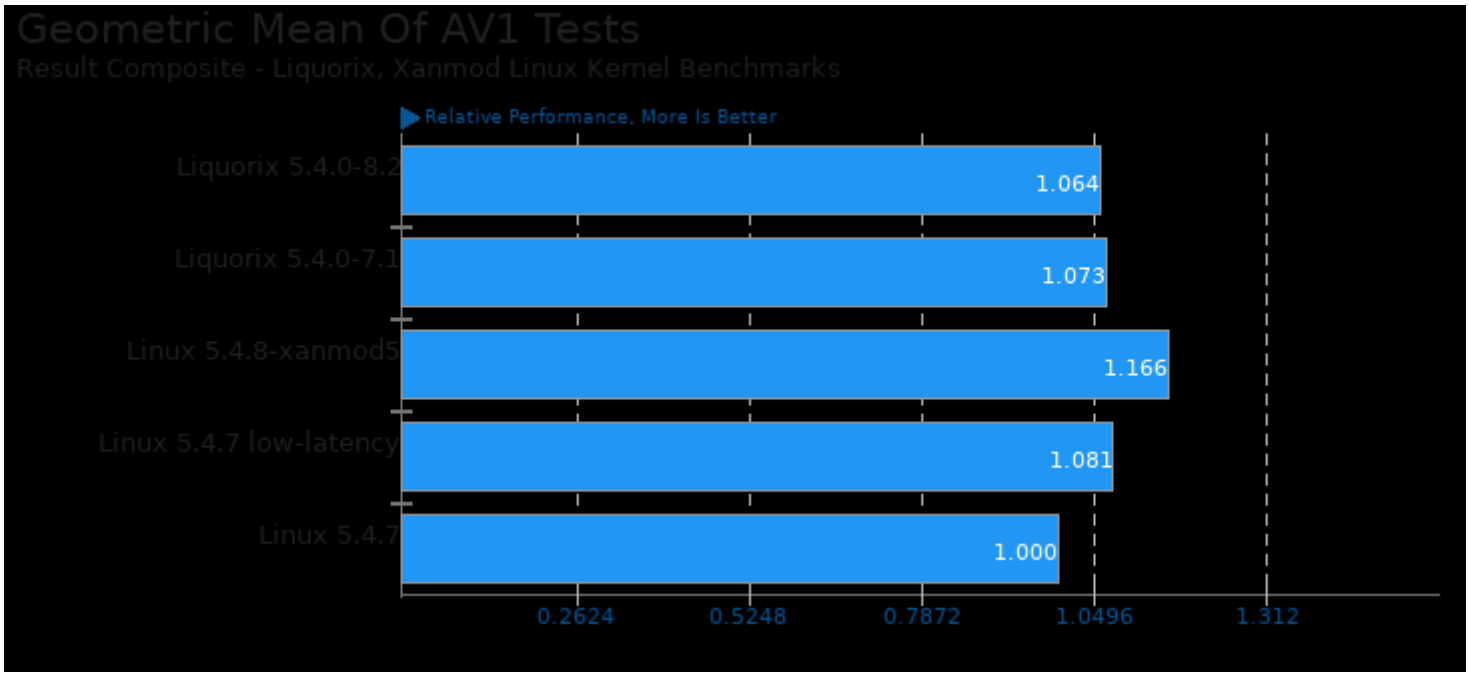
Liquorix, Xanmod Linux Kernel Benchmarks



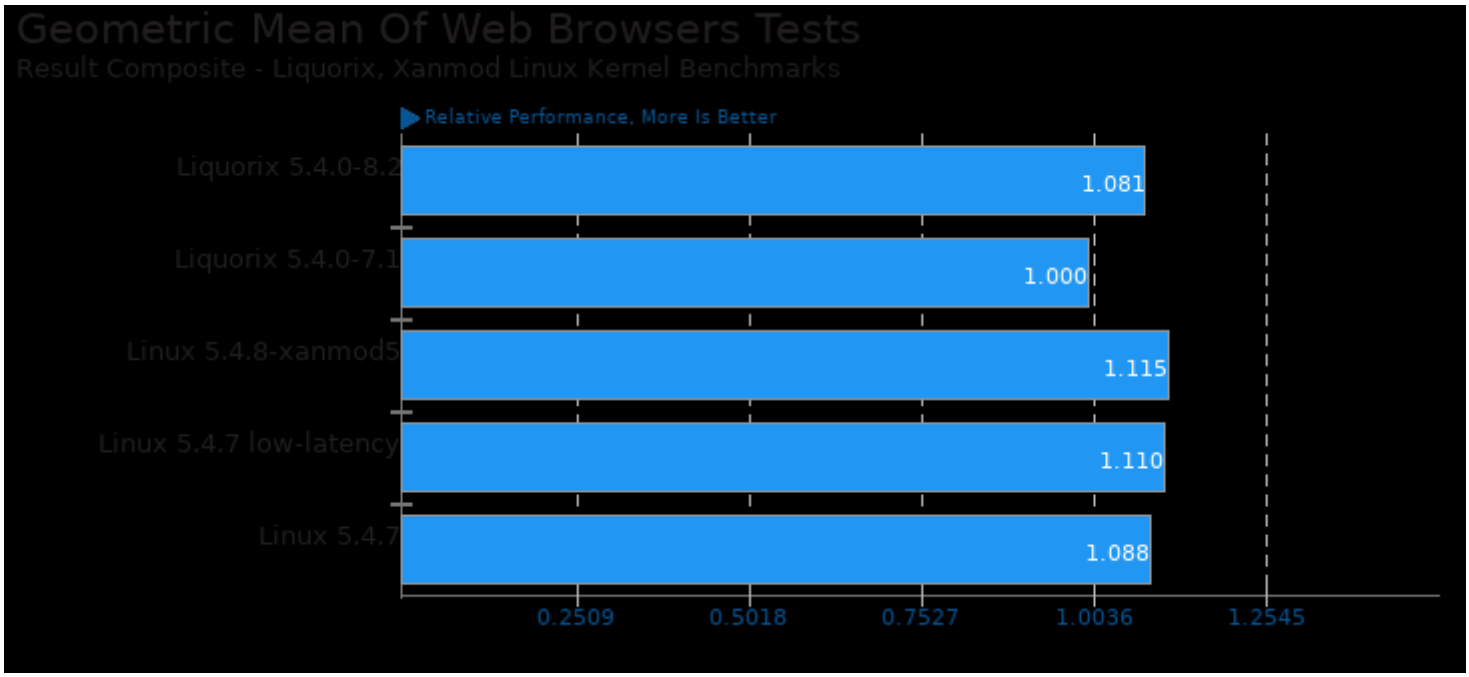
Liquorix, Xanmod Linux Kernel Benchmarks



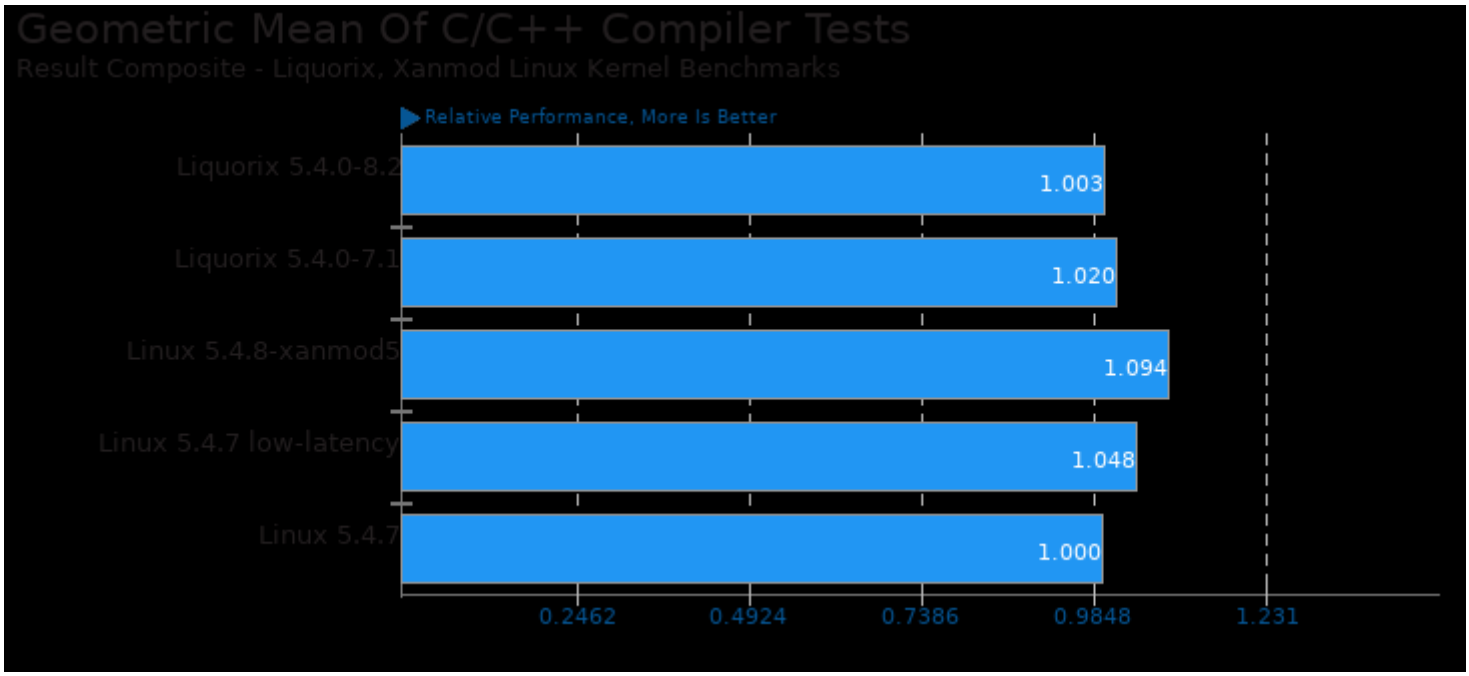
These geometric means are based upon test groupings / test suites for this result file.



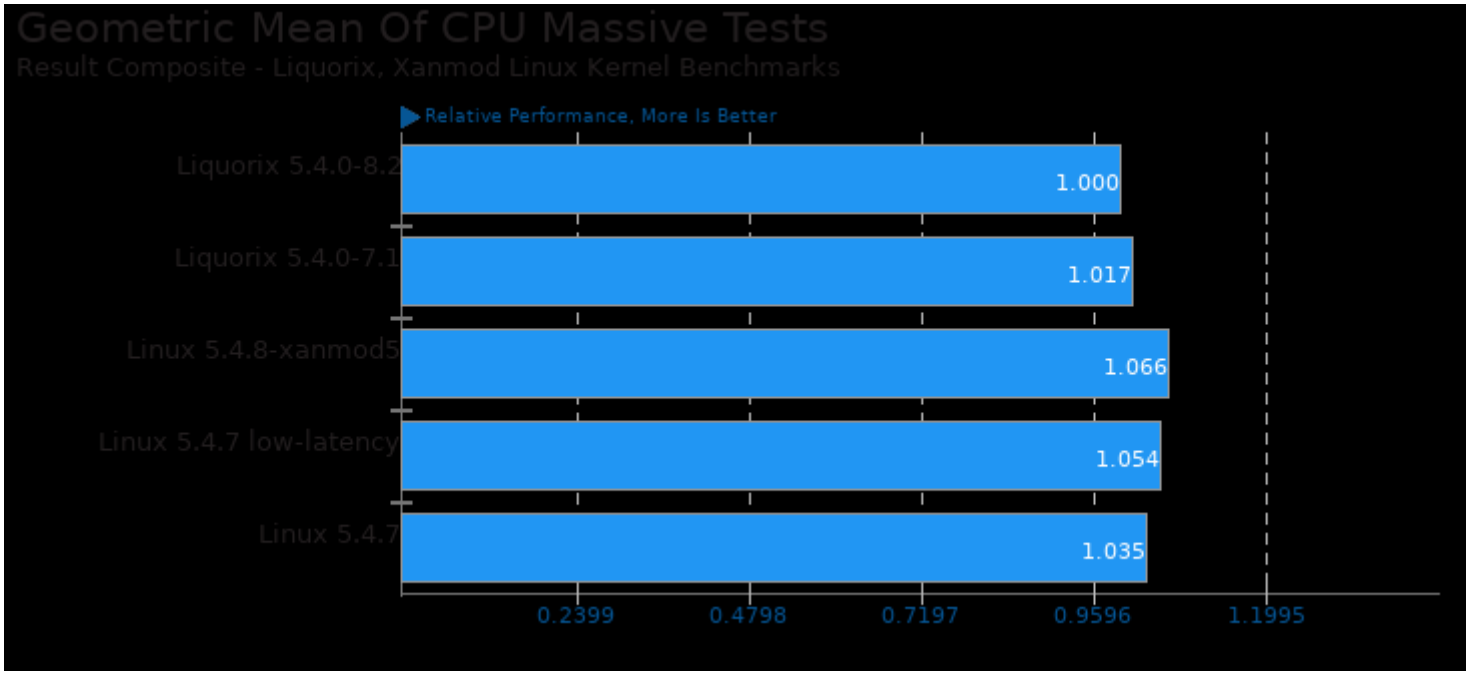
Geometric mean based upon tests: pts/dav1d, pts/svt-av1 and pts/libgav1



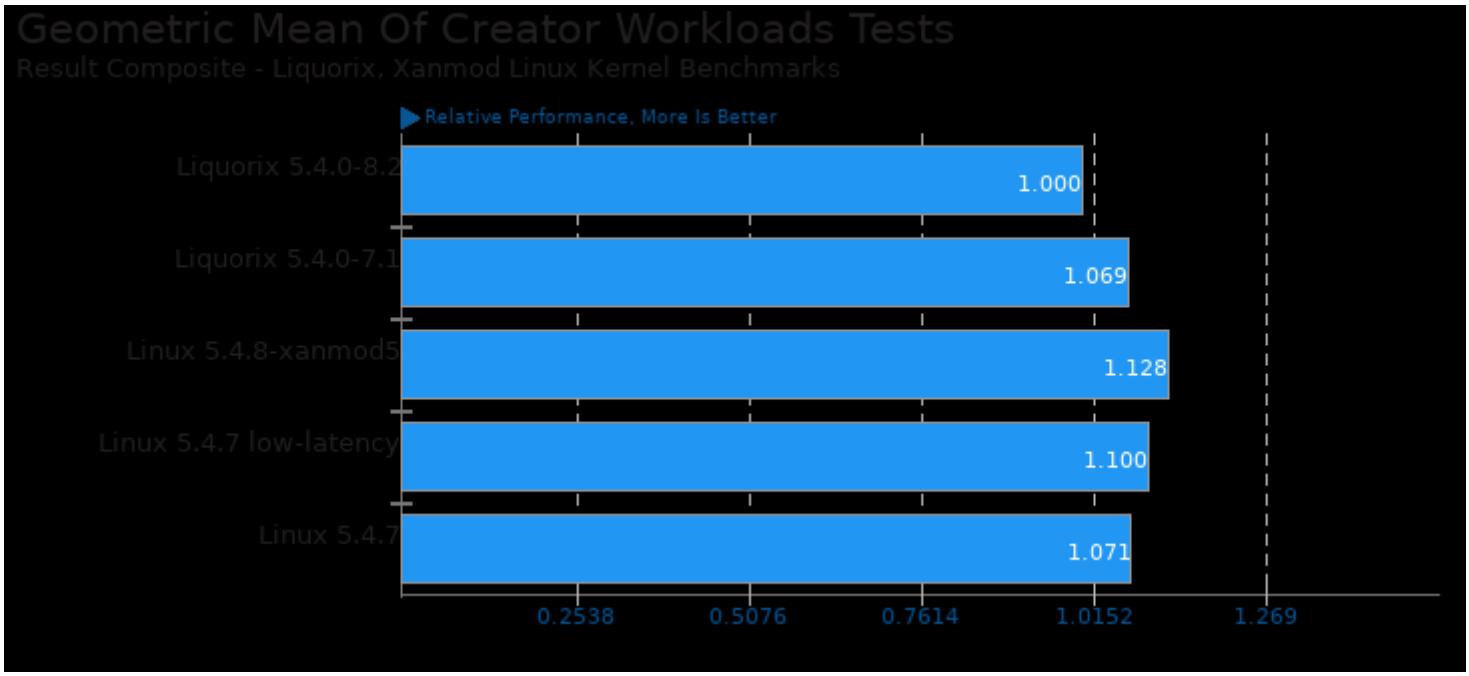
Geometric mean based upon tests: system/selenium



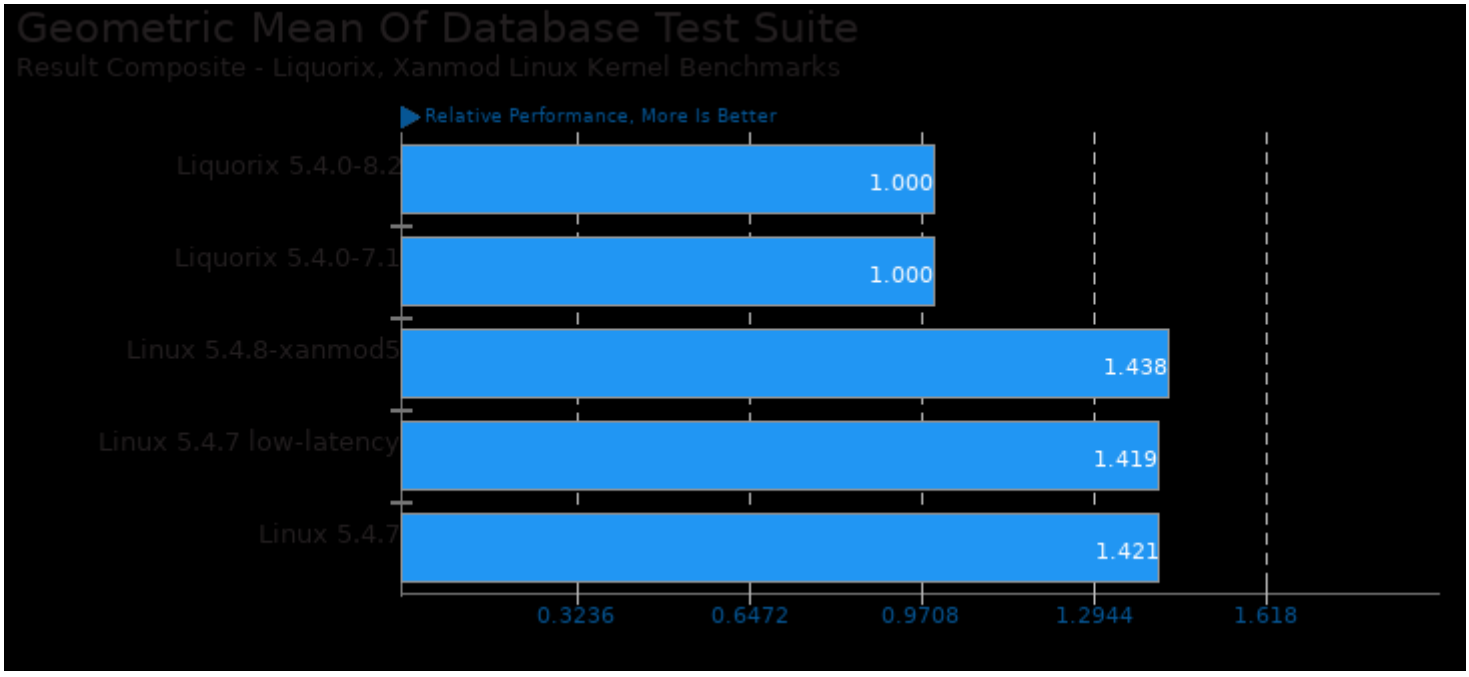
Geometric mean based upon tests: pts/tscp, pts/vpxenc, pts/himeno, pts/sqlite-speedtest, pts/libgav1, pts/dav1d, pts/svt-av1, pts/svt-vp9 and pts/gromacs



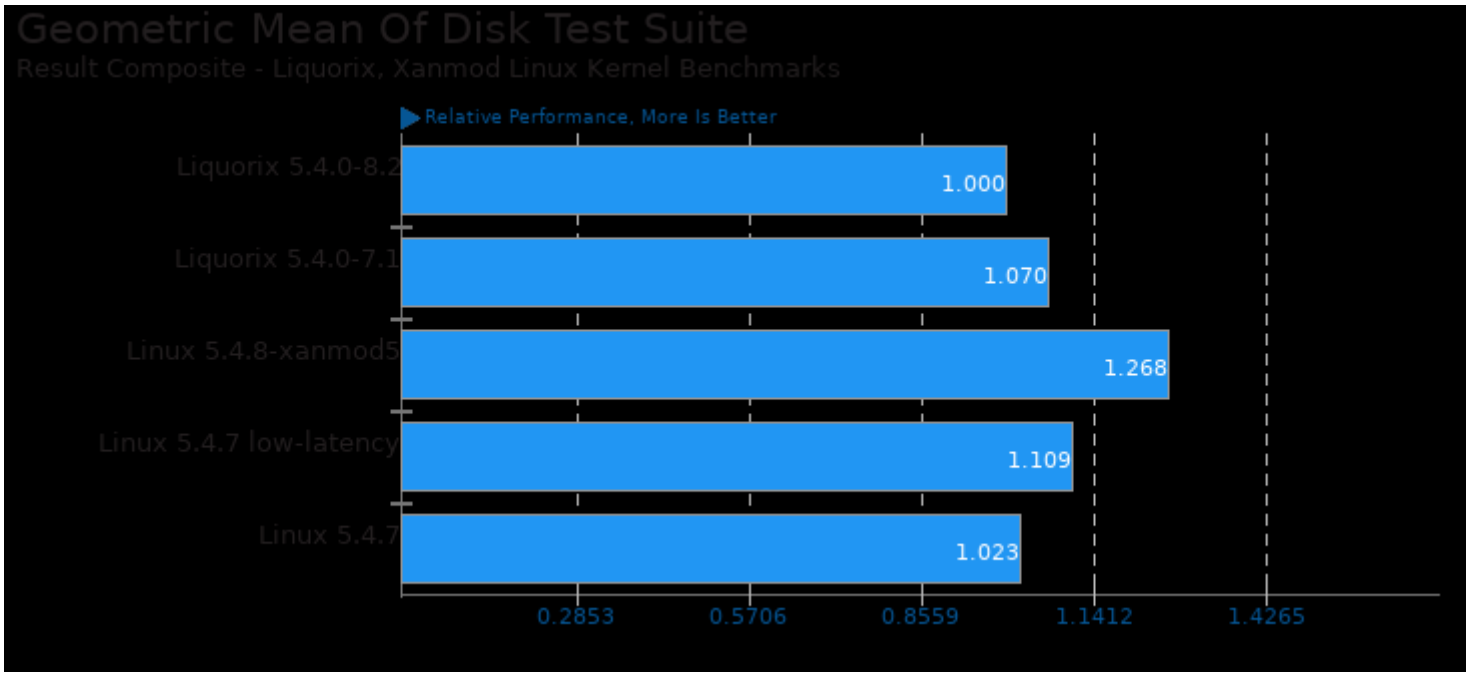
Geometric mean based upon tests: pts/brl-cad, pts/dav1d, pts/svt-av1, pts/svt-vp9, pts/vpxenc, pts/himeno, pts/node-express-loadtest, pts/swet, pts/sysbench, pts/blender and system/darktable



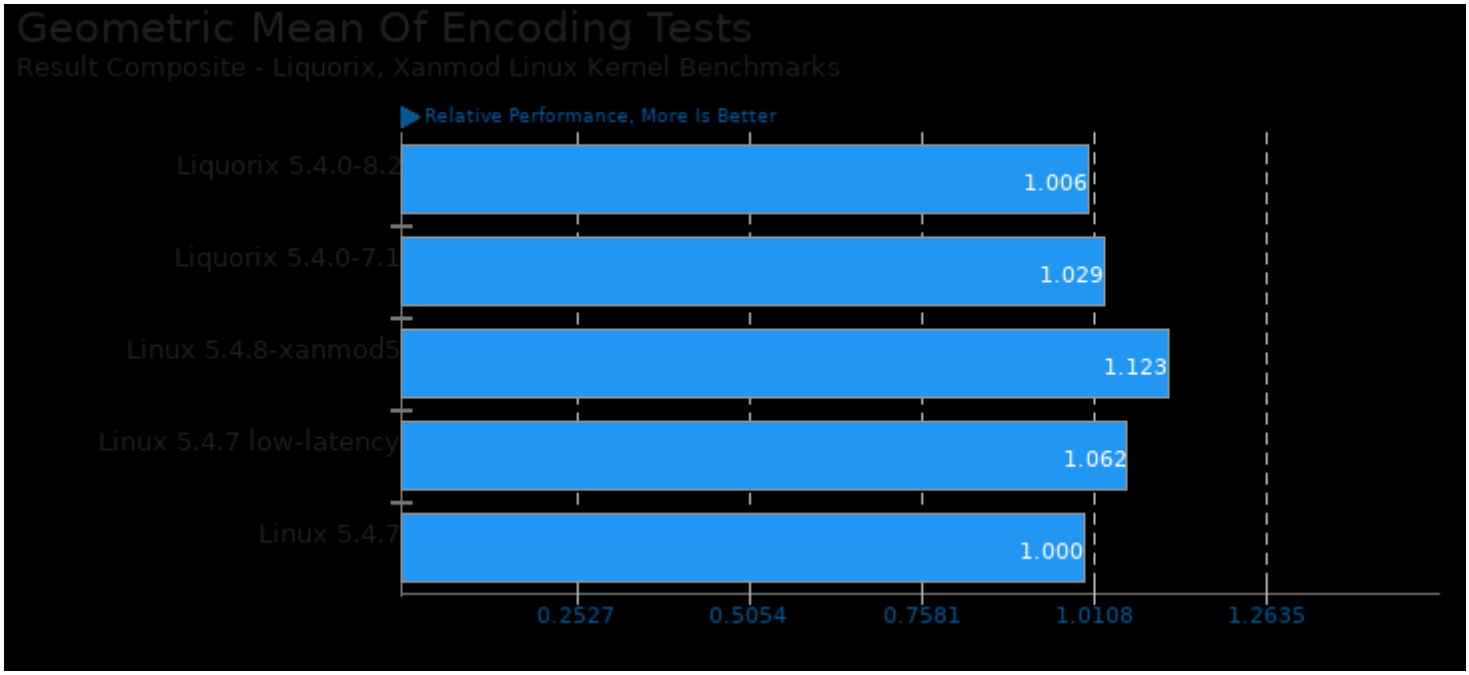
Geometric mean based upon tests: pts/blender, pts/svt-vp9, pts/vpxenc, pts/dav1d, pts/svt-av1, pts/libgav1, system/gimp, system/darktable, system/gegl, pts/oidn, pts/deepspeech and pts/brl-cad



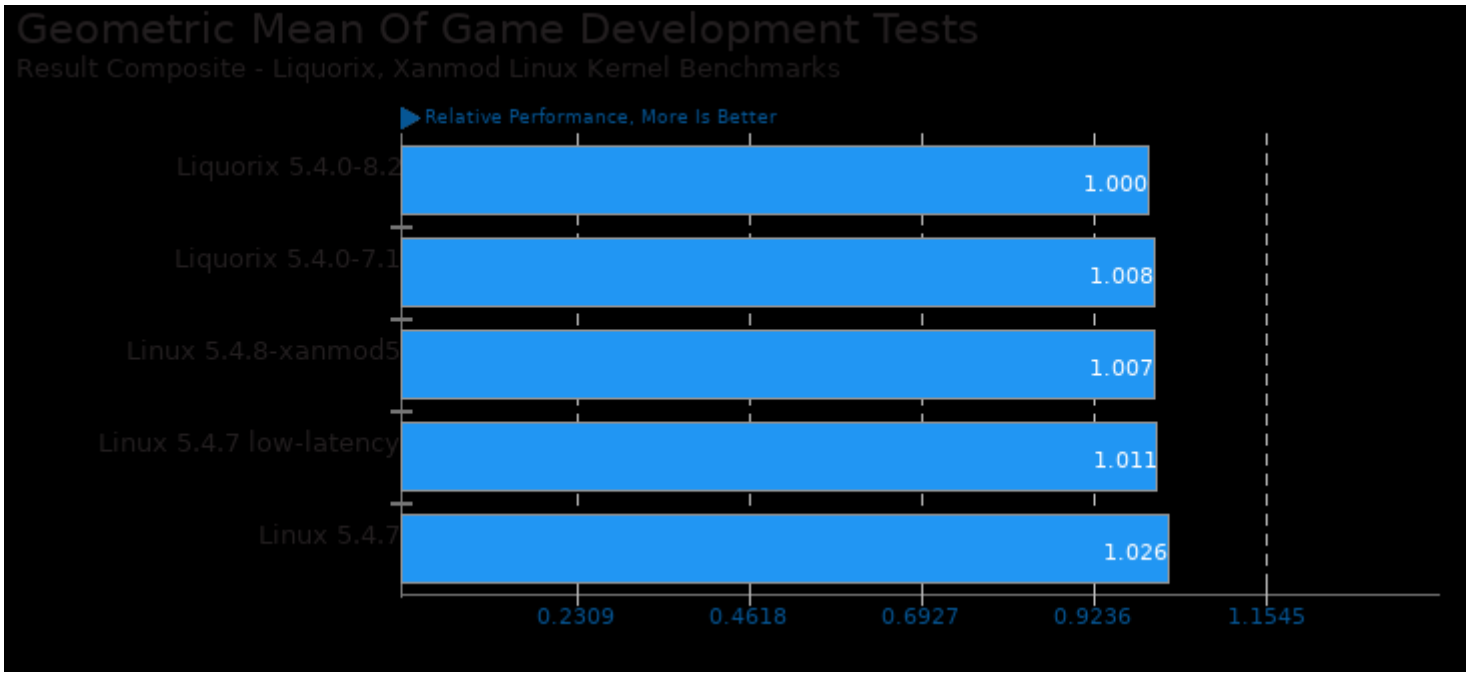
Geometric mean based upon tests: pts/sqlite and pts/sqlite-speedtest



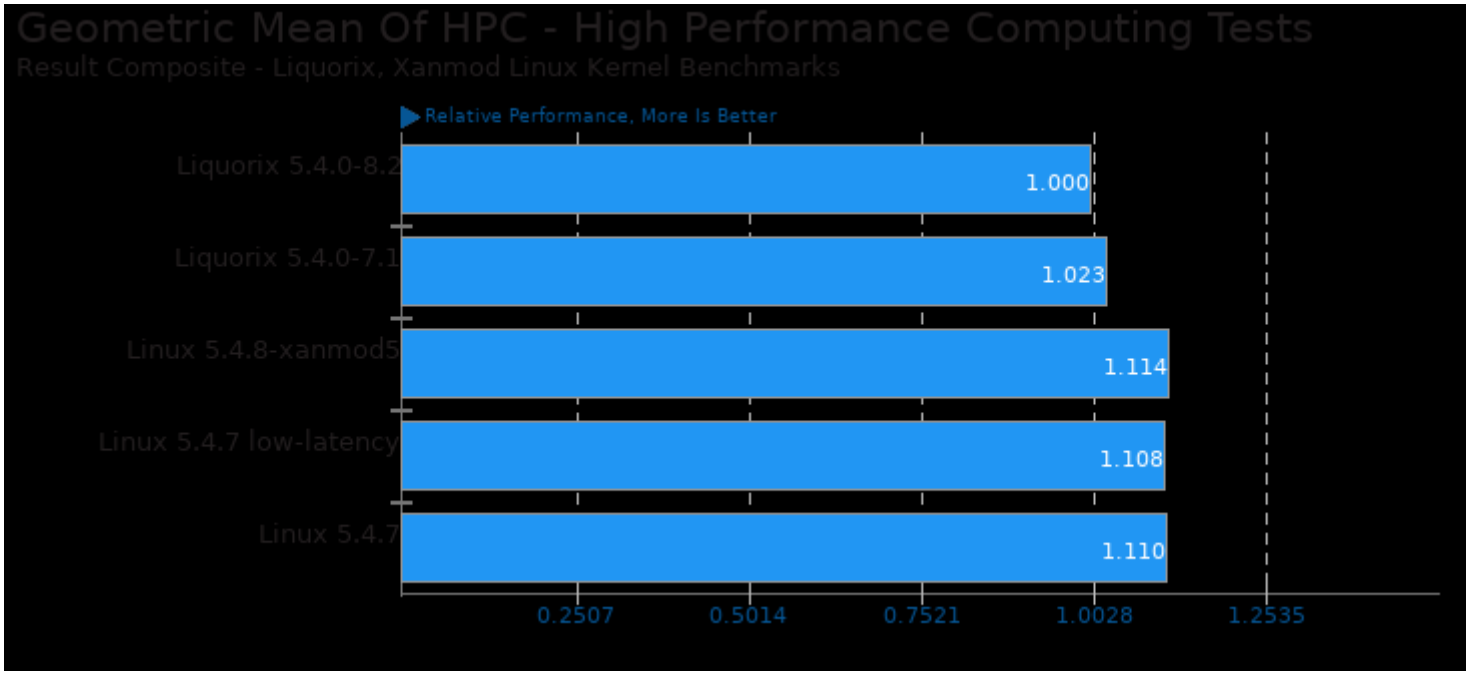
Geometric mean based upon tests: pts/sqlite and pts/fio



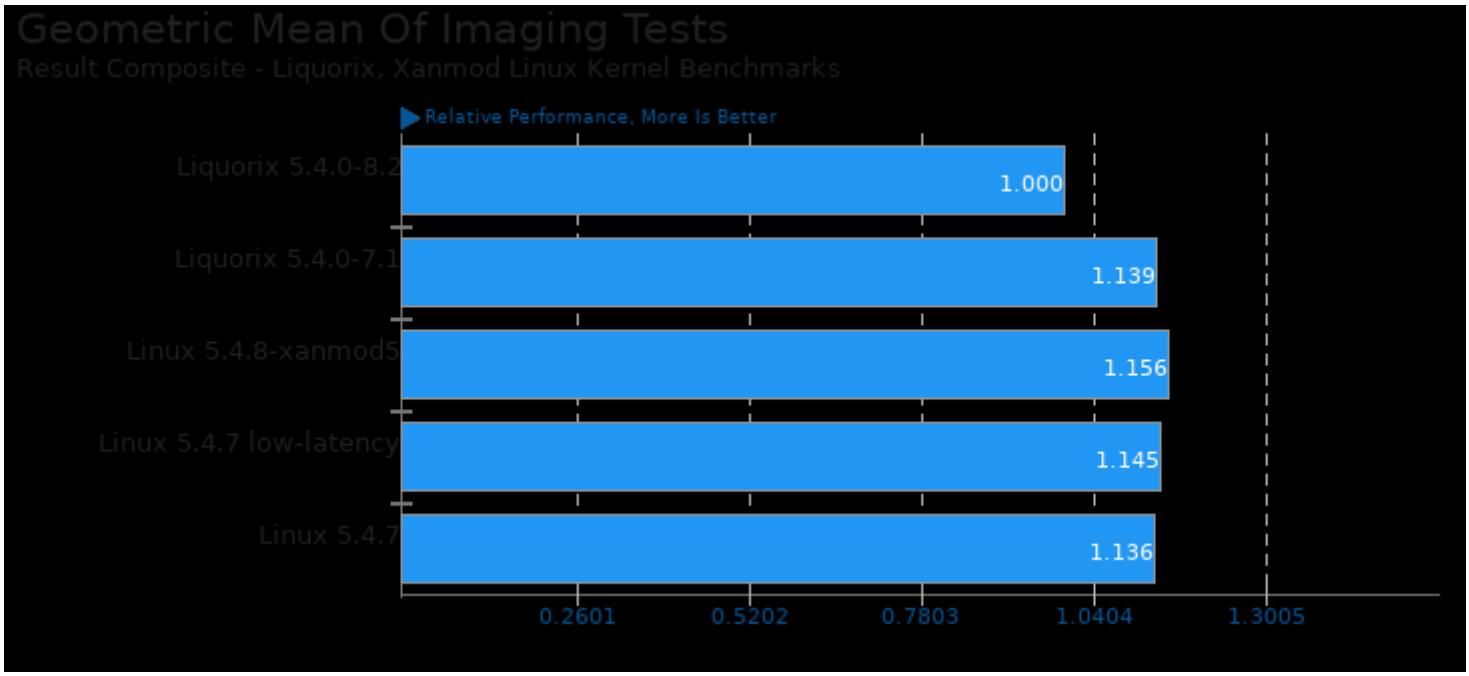
Geometric mean based upon tests: pts/svt-vp9, pts/vpxenc, pts/dav1d, pts/svt-av1 and pts/libgav1



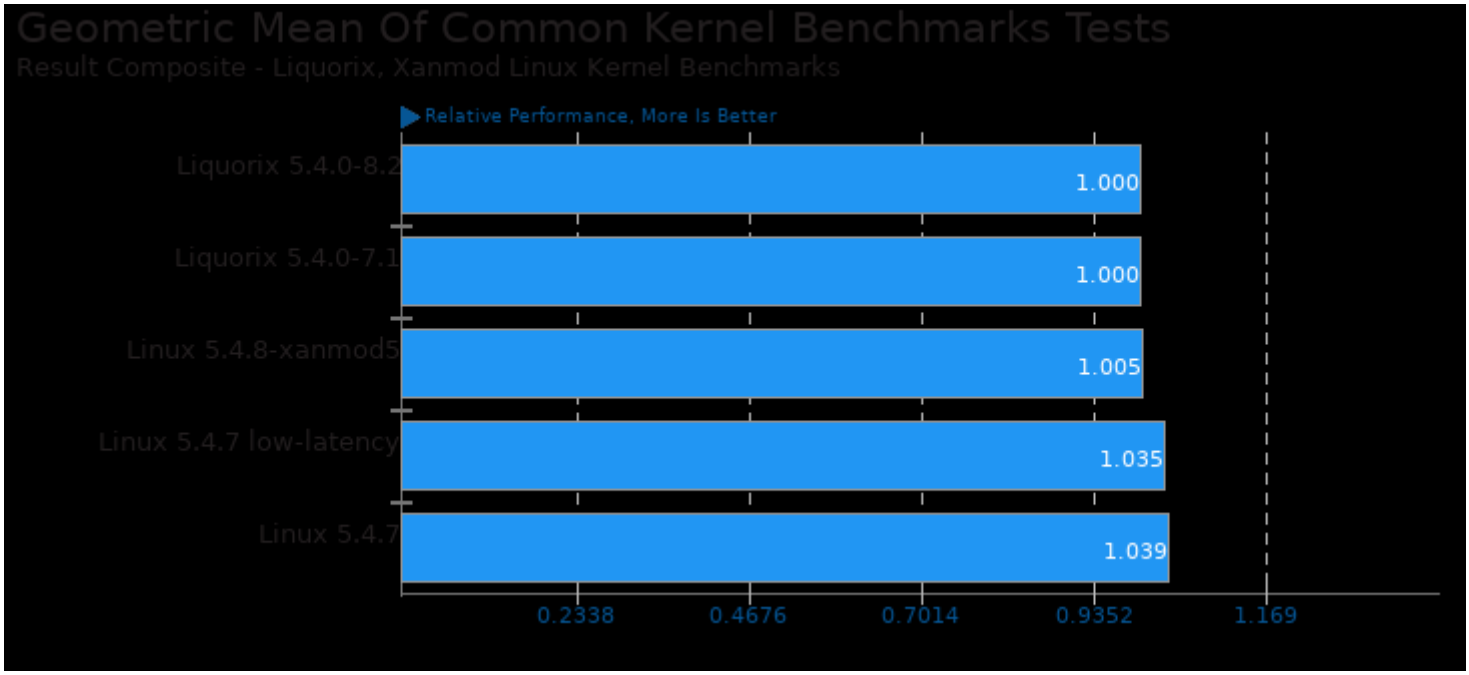
Geometric mean based upon tests: pts/blender and pts/oidn



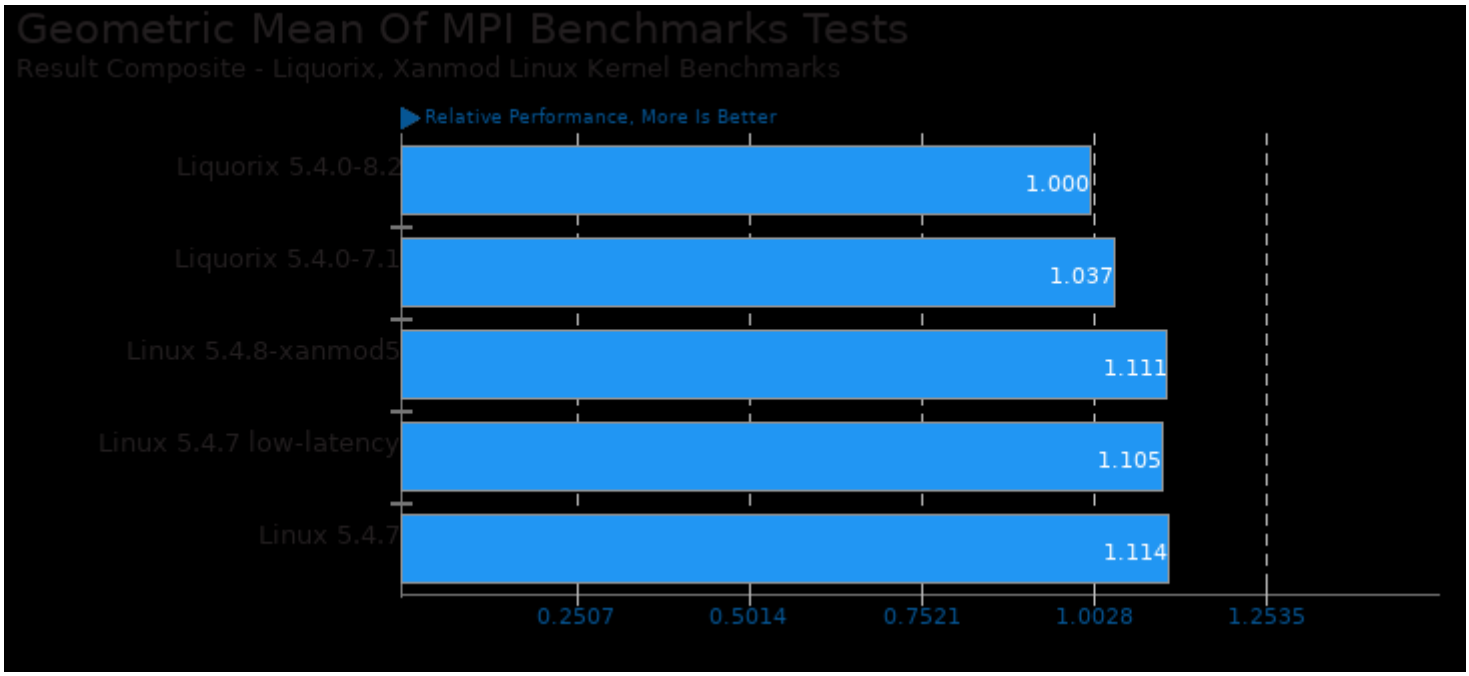
Geometric mean based upon tests: pts/askap, pts/mt-dgemm, pts/gromacs, pts/himeno and pts/deepspeech



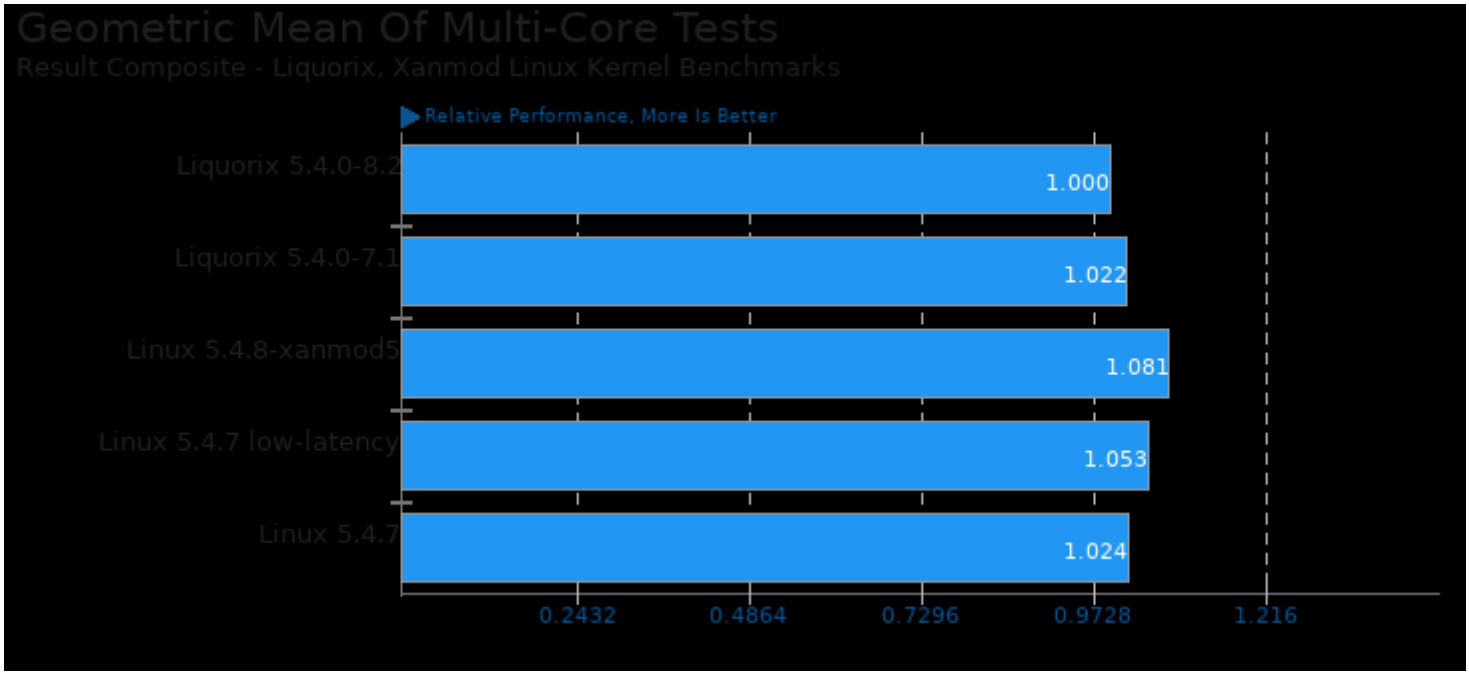
Geometric mean based upon tests: system/gimp, system/darktable and system/gegl



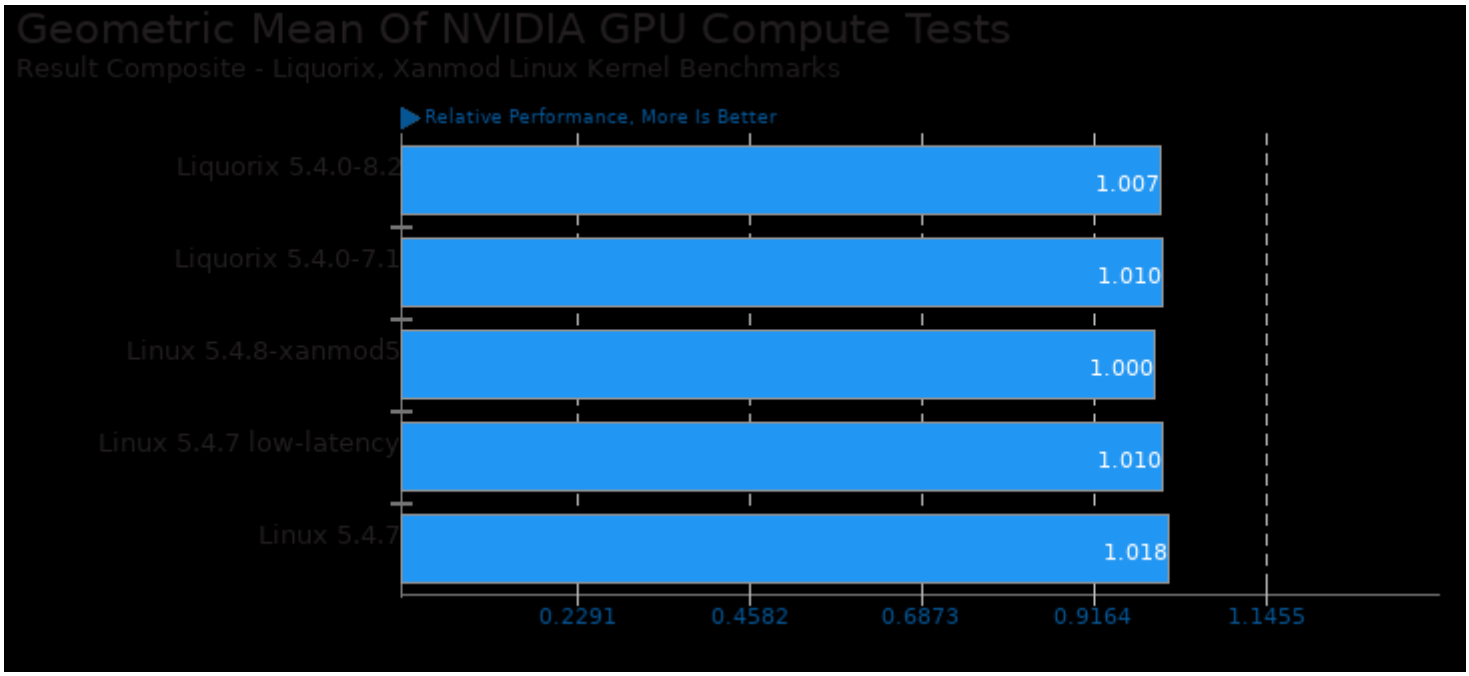
Geometric mean based upon tests: pts/sqlite-speedtest and pts/mutex



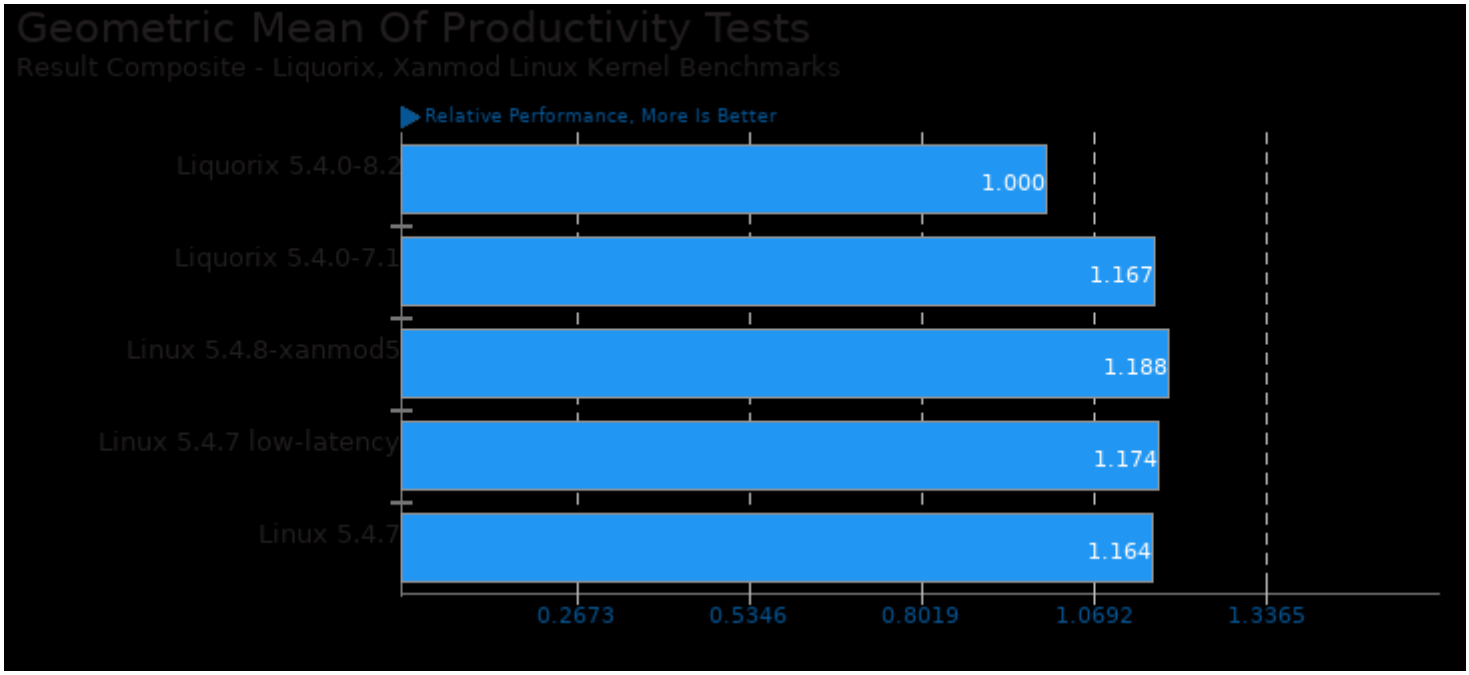
Geometric mean based upon tests: pts/askap and pts/gromacs



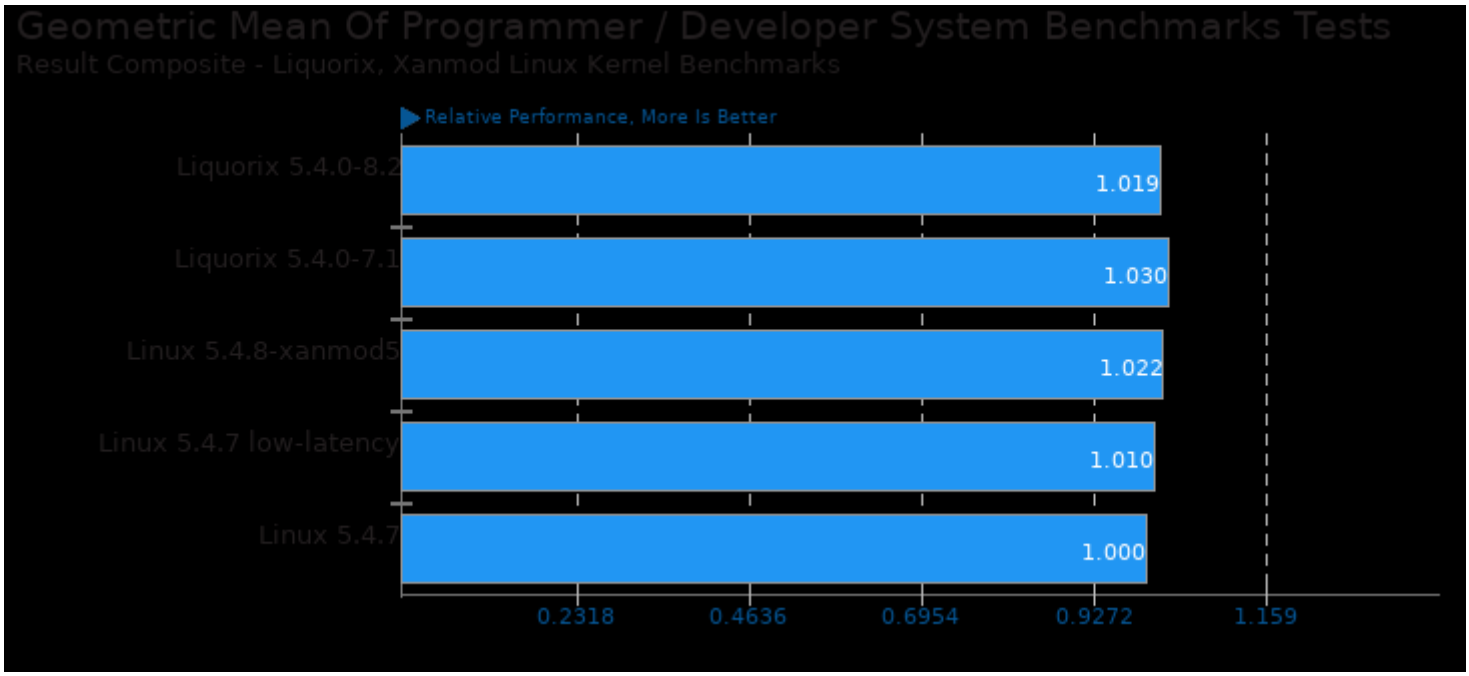
Geometric mean based upon tests: pts/blender, pts/sysbench, pts/askap, pts/svt-vp9, pts/vpxenc, pts/dav1d, pts/svt-av1, pts/libgav1, pts/swet, pts/mt-dgemm, pts/gromacs, pts/build2 and pts/oidn



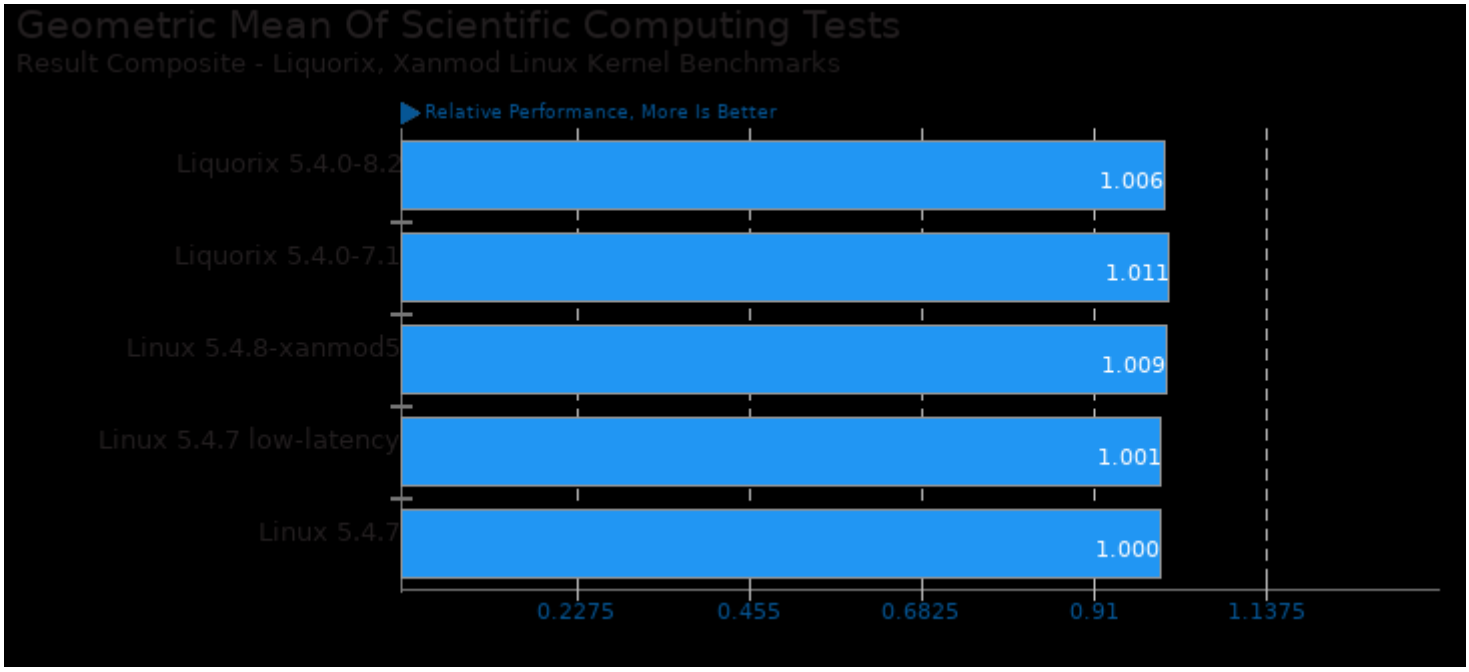
Geometric mean based upon tests: pts/gromacs and pts/blender



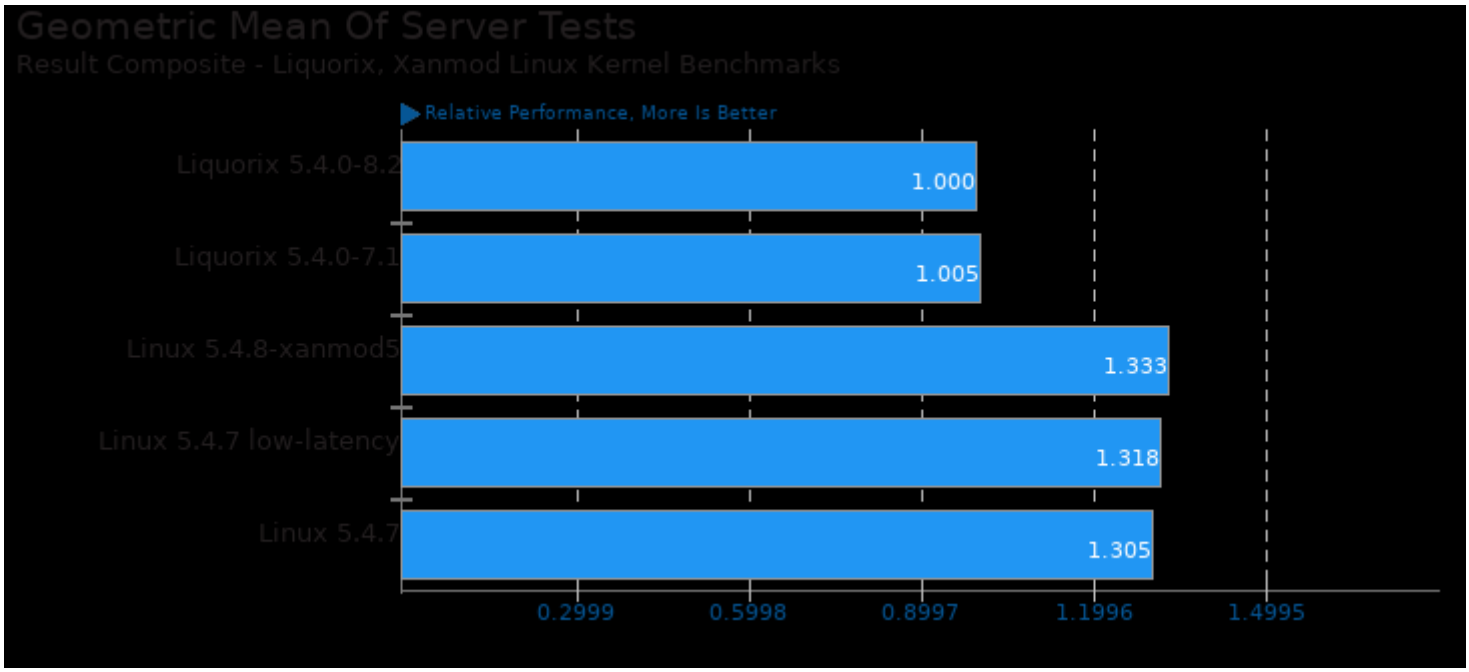
Geometric mean based upon tests: system/libreoffice, system/gimp and system/gegl



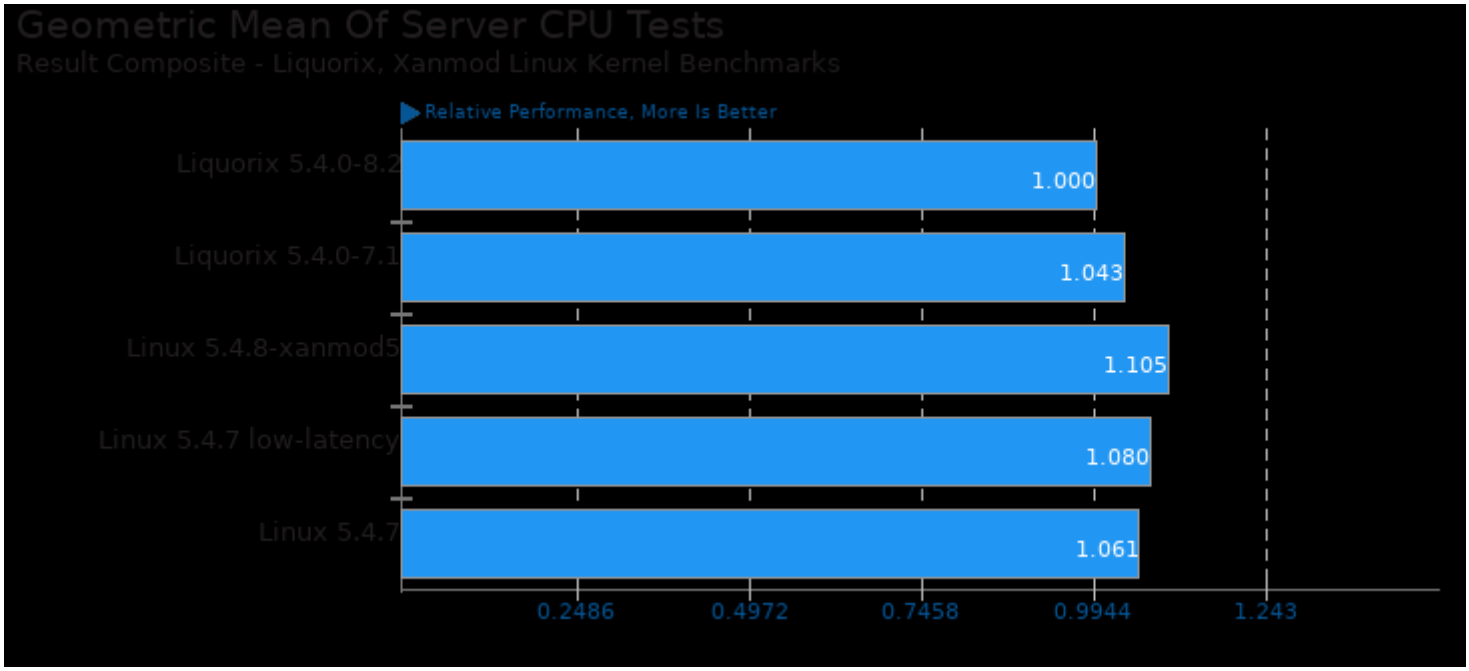
Geometric mean based upon tests: pts/sqlite-speedtest, pts/build2 and pts/mt-dgemm



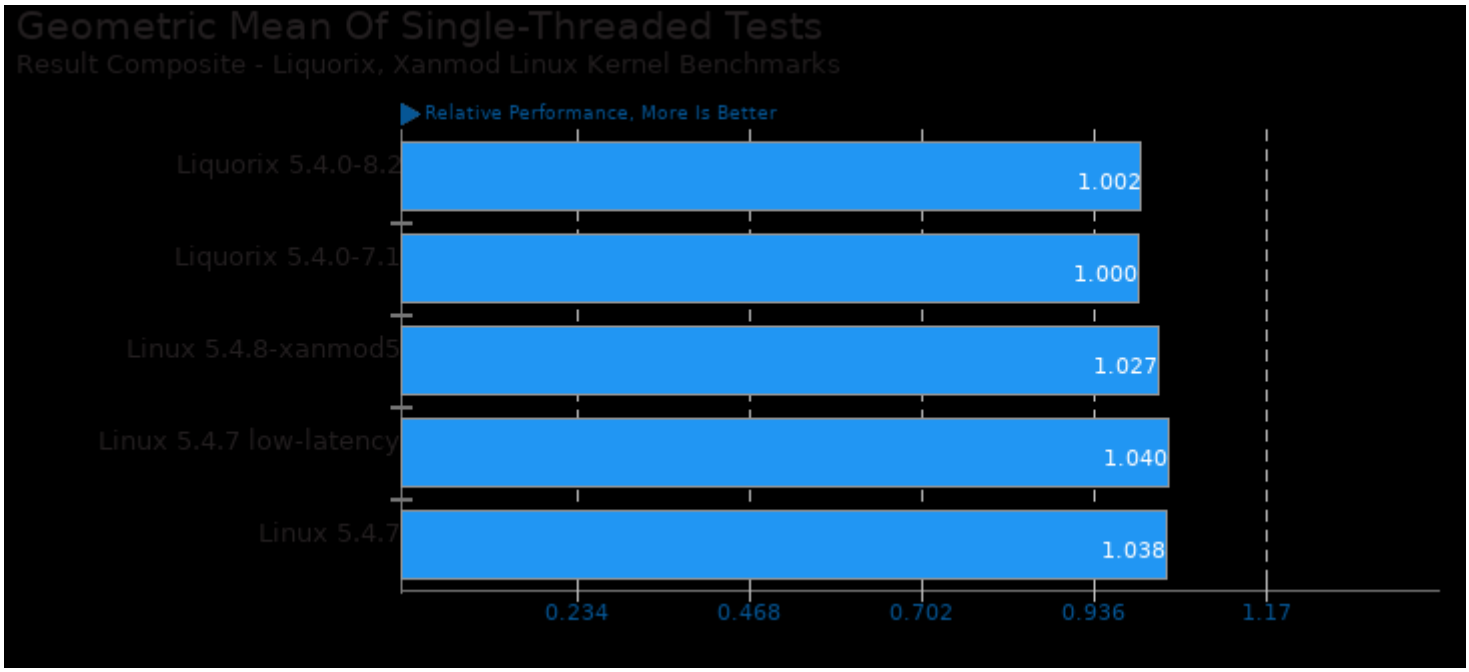
Geometric mean based upon tests: pts/mt-dgemm, pts/gromacs and pts/himeno



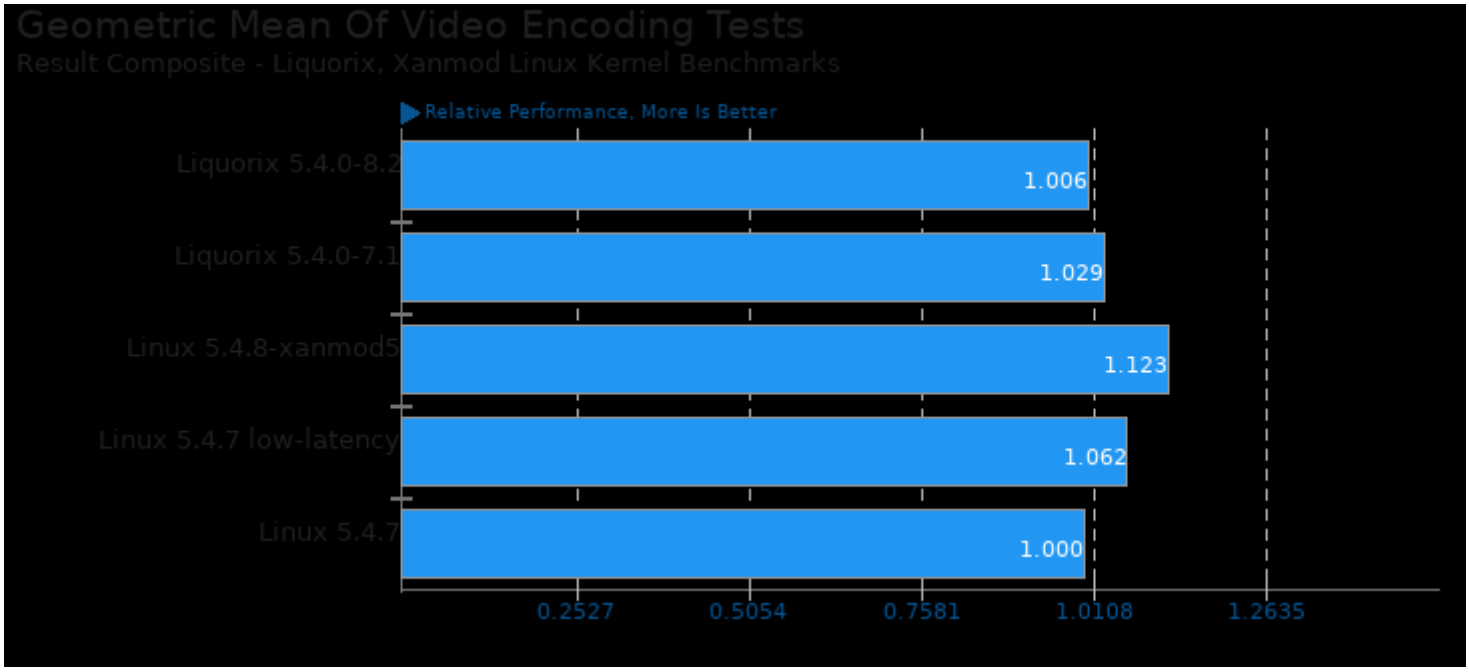
Geometric mean based upon tests: pts/node-express-loadtest, pts/sqlite and pts/sqlite-speedtest



Geometric mean based upon tests: pts/svt-av1, pts/svt-vp9, pts/dav1d, pts/himeno, system/gimp, pts/sysbench and pts/blender

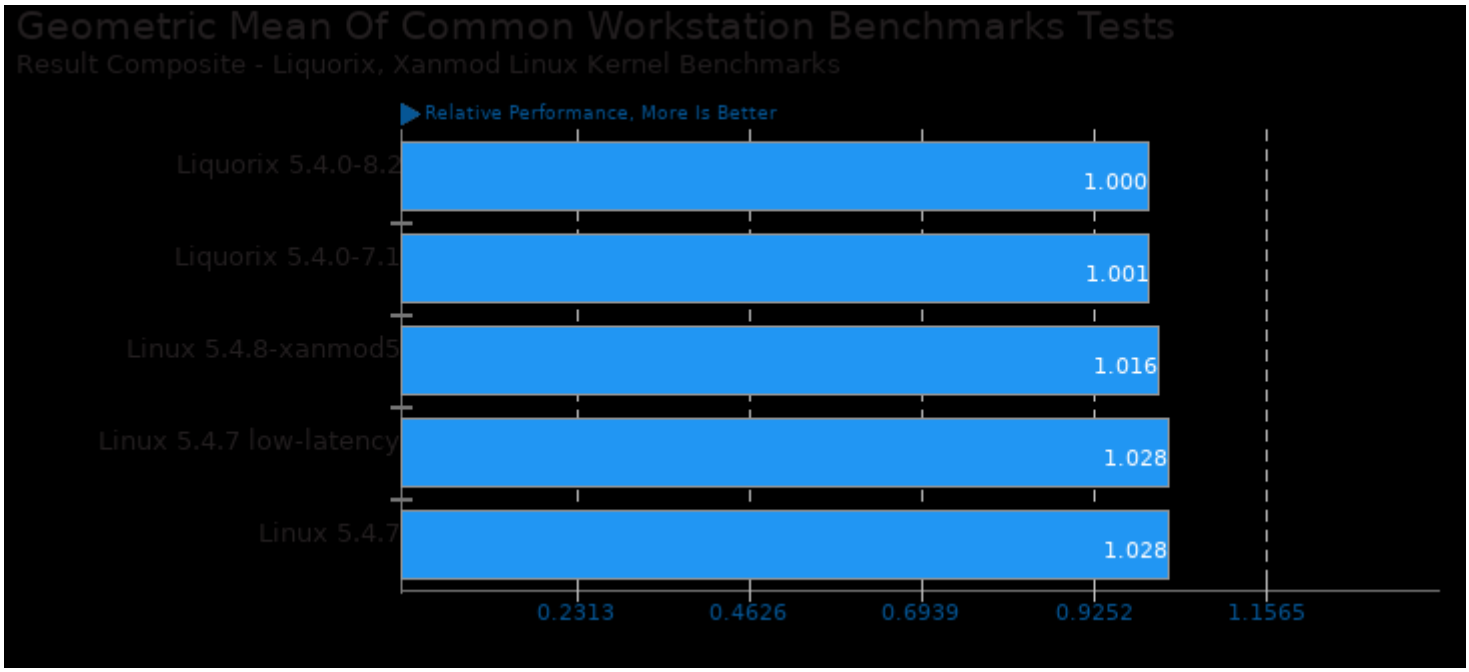


Geometric mean based upon tests: pts/polyhedron, pts/node-express-loadtest, pts/swet, pts/deepspeech, pts/mutex and pts/optcarrot



Geometric mean based upon tests: pts/svt-vp9, pts/vpxenc, pts/dav1d, pts/svt-av1 and pts/libgav1

Liquorix, Xanmod Linux Kernel Benchmarks



Geometric mean based upon tests: pts/blender, pts/himeno, pts/brl-cad, pts/swet and pts/sysbench

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 07:31.