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windows-10-rocket-lake

Intel Core i9-11900K testing with a ASUS ROG MAXIMUS XIII HERO (0707 BIOS) and AMD Radeon VII 16GB on Clear Linux OS 34900 via the Phoronix Test Suite.

Automated Executive Summary

Clear Linux 34900 had the most wins, coming in first place for 66% of the tests.

Based on the geometric mean of all complete results, the fastest (Clear Linux 34900) was 1.204x the speed of the slowest (Windows 11 22000.100). Ubuntu 21.10 Daily was 0.959x the speed of Clear Linux 34900, Windows 10 21H1 was 0.906x the speed of Ubuntu 21.10 Daily, Windows 11 22000.100 was 0.957x the speed of Windows 10 21H1.

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

Sudokut (Total Time) at 4.055x
GraphicsMagick (Operation: HWB Color Space) at 3.937x
GraphicsMagick (Operation: Rotate) at 3.033x
DaCapo Benchmark (Java Test: Tradesoap) at 2.65x
GraphicsMagick (Operation: Sharpen) at 2.515x
GraphicsMagick (Operation: Resizing) at 2.165x
John The Ripper (Test: MD5) at 2.1x
GraphicsMagick (Operation: Noise-Gaussian) at 2.064x

Renaissance (Test: Finagle HTTP Requests) at 1.992x
GraphicsMagick (Operation: Swirl) at 1.61x.

Test Systems:

Windows 10 21H1

Processor: Intel Core i9-11900K @ 3.50GHz (8 Cores / 16 Threads), Motherboard: ASUS ROG MAXIMUS XIII HERO (0707 BIOS), Memory: 2 x 16384 MB 3200MHz Corsair CMK32GX4M2Z3600C18, Disk: 1863GB Force MP600, Graphics: AMD Radeon VII 4GB, Audio: AMD HD Audio Device + USB Audio 2.0 + HD Audio Device, Monitor: ASUS MG8U, Network: Bluetooth Device (Personal Area)

OS: Microsoft Windows 10 Pro Build 19043, Kernel: 10.0 (x86_64), Display Driver: 27.20.1034.6, OpenCL: OpenCL 2.1 AMD-APP (3075.13), Compiler: GCC 8.3.0, File-System: NTFS, Screen Resolution: 3840x2160

Java Notes: OpenJDK Runtime Environment 18.9 (build 11.0.6+10-LTS)
Python Notes: Python 3.7.1
Security Notes: __user pointer sanitization: Disabled + IBPB: Always + IBRS: Enabled + STIBP: Enabled

Windows 11 22000.100

Processor: Intel Core i9-11900K @ 3.50GHz (8 Cores / 16 Threads), Motherboard: ASUS ROG MAXIMUS XIII HERO (0707 BIOS), Memory: 2 x 16384 MB 3200MHz Corsair CMK32GX4M2Z3600C18, Disk: 1863GB Force MP600, Graphics: AMD Radeon VII 4GB, Audio: AMD HD Audio Device + USB Audio 2.0 + HD Audio Device, Monitor: ASUS MG8U, Network: Intel Wi-Fi 6E AX210 160MHz + Intel I225-V + Bluetooth Device (Personal Area)

OS: Microsoft Windows 11 Pro Build 22000, Kernel: 10.0 (x86_64), Display Driver: 30.0.13001.2011, OpenCL: OpenCL 2.1 AMD-APP (3302.6), Compiler: GCC 8.3.0, File-System: NTFS, Screen Resolution: 3840x2160

Java Notes: OpenJDK Runtime Environment 18.9 (build 11.0.6+10-LTS)
Python Notes: Python 3.7.1
Security Notes: __user pointer sanitization: Disabled + IBPB: Always + IBRS: Enabled + STIBP: Enabled

Ubuntu 21.10 Daily

Processor: Intel Core i9-11900K @ 5.10GHz (8 Cores / 16 Threads), Motherboard: ASUS ROG MAXIMUS XIII HERO (0707 BIOS), Chipset: Intel Tiger Lake-H, Memory: 32GB, Disk: 2000GB Corsair Force MP600, Graphics: AMD Radeon VII 16GB (1801/1000MHz), Audio: Intel Tiger Lake-H HD Audio, Monitor: ASUS MG28U, Network: 2 x Intel I225-V + Intel Wi-Fi 6 AX210/AX211/AX411

OS: Ubuntu 21.10, Kernel: 5.11.0-20-generic (x86_64), Desktop: GNOME Shell 40.2, Display Server: X Server + Wayland, OpenGL: 4.6 Mesa 21.1.4 (LLVM 12.0.1), Vulkan: 1.2.168, Compiler: GCC 10.3.0, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
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++,m2 --enable-libphobos-checking=release --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=/build/gcc-10-IAajkb/gcc-10-10.3.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-10-IAajkb/gcc-10-10.3.0/debian/tmp-gcn/usr,hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-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
Processor Notes: Scaling Governor: intel_pstate powersave - CPU Microcode: 0x40 - Thermald 2.4.6
Java Notes: OpenJDK Runtime Environment (build 11.0.12-ea+7-Ubuntu-0ubuntu1)
Python Notes: Python 3.9.6
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Enhanced IBRS IBPB: conditional RSB filling + srbds: Not affected + tsx_async_abort: Not affected

Clear Linux 34900

Processor: Intel Core i9-11900K @ 5.10GHz (8 Cores / 16 Threads), Motherboard: ASUS ROG MAXIMUS XIII HERO (0707 BIOS), Chipset: Intel Device 43ef, Memory: 32GB, Disk: 2000GB Corsair Force MP600, Graphics: AMD Radeon VII 16GB (1801/1000MHz), Audio: Intel Device 43c8, Monitor: ASUS MG28U, Network: 2 x Intel + Intel Device 2725

OS: Clear Linux OS 34900, Kernel: 5.13.6-1062.native (x86_64), Desktop: GNOME Shell 40.3, Display Server: X Server 1.20.11, OpenGL: 4.6 Mesa 21.1.4 (LLVM 11.1.0), Vulkan: 1.2.168, Compiler: GCC 11.2.1 20210728 releases/gcc-11.2.0-8-gd3c268943c + Clang 11.1.0 + LLVM 11.1.0, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: always
Environment Notes: FFLAGS="-g -O3 -feliminate-unused-debug-types -pipe -Wall -Wp,-D_FORTIFY_SOURCE=2 -fexceptions -fstack-protector --param=ssp-buffer-size=32 -m64 -fasynchronous-unwind-tables -Wp,-D_REENTRANT -ftree-loop-distribute-patterns -Wl,-z -Wl,now -Wl,-z -Wl,relro -malign-data=abi -fno-semantic-interposition -ftree-vectorize -ftree-loop-vectorize -Wl,--enable-new-dtags -Wa,-mbranches-within-32B-boundaries" CXXFLAGS="-g -O3 -feliminate-unused-debug-types -pipe -Wall -Wp,-D_FORTIFY_SOURCE=2 -fexceptions -fstack-protector --param=ssp-buffer-size=32 -Wformat -Wformat-security -m64 -fasynchronous-unwind-tables -Wp,-D_REENTRANT -ftree-loop-distribute-patterns -Wl,-z -Wl,now -Wl,-z -Wl,relro -fno-semantic-interposition -ffat-lto-objects -fno-trapping-math -Wl,-sort-common -Wl,--enable-new-dtags -mtune=skylake -Wa,-mbranches-within-32B-boundaries -fvisibility-inlines-hidden -Wl,--enable-new-dtags" MESA_GLSL_CACHE_DISABLE=0 FCFLAGS="-g -O3 -feliminate-unused-debug-types -pipe -Wall -Wp,-D_FORTIFY_SOURCE=2 -fexceptions -fstack-protector --param=ssp-buffer-size=32 -m64 -fasynchronous-unwind-tables -Wp,-D_REENTRANT -ftree-loop-distribute-patterns -Wl,-z -Wl,now -Wl,-z -Wl,relro -malign-data=abi -fno-semantic-interposition -ftree-vectorize -ftree-loop-vectorize -Wl,-sort-common -Wl,--enable-new-dtags" CFLAGS="-g -O3 -feliminate-unused-debug-types -pipe -Wall -Wp,-D_FORTIFY_SOURCE=2 -fexceptions -fstack-protector --param=ssp-buffer-size=32 -Wformat -Wformat-security -m64 -fasynchronous-unwind-tables -Wp,-D_REENTRANT -ftree-loop-distribute-patterns -Wl,-z -Wl,now -Wl,-z -Wl,relro -fno-semantic-interposition -ffat-lto-objects -fno-trapping-math -Wl,-sort-common -Wl,--enable-new-dtags -mtune=skylake -Wa,-mbranches-within-32B-boundaries" THEANO_FLAGS="floatX=float32,openmp=true,gcc.cxxflags="-ftree-vectorize -mavx""
Compiler Notes: --build=x86_64-generic-linux --disable-libmpx --disable-libunwind-exceptions --disable-multiarch --disable-vtable-verify --disable-werror --enable-__cxa_atexit --enable-bootstrap --enable-cet --enable-clocale=gnu --enable-default-pie --enable-gnu-indirect-function --enable-languages=c,c++,fortran,go --enable-ld=default --enable-libstdcxx-pch --enable-lto --enable-multilib --enable-plugin --enable-shared --enable-threads=posix --exec-prefix=/usr --includedir=/usr/include --target=x86_64-generic-linux --with-arch=westmere --with-gcc-major-version-only --with-glibc-version=2.19 --with-gnu-ld --with-isl --with-ppl=yes --with-tune=skylake-avx512
Processor Notes: Scaling Governor: intel_pstate performance - CPU Microcode: 0x40
Graphics Notes: GLAMOR
Java Notes: OpenJDK Runtime Environment (build 1.8.0-u252-ga-b00)
Python Notes: Python 3.9.6
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Enhanced IBRS IBPB: conditional RSB filling + srbds: Not affected + tsx_async_abort: Not affected

	Windows 10 21H1	Windows 11 22000.100	Ubuntu 21.10 Daily	Clear Linux 34900
RealSR-NCNN - 4x - Yes (sec)	46.843	**46.870**	40.128	**38.988**
Normalized	83.23%	83.18%	97.16%	100%
Standard Deviation	0.8%	0.7%	0.3%	0.2%
Waifu2x-NCNN Vulkan - 2x - 3 - Yes (sec)	**5.422**	5.486	**5.835**	5.776
Normalized	100%	98.83%	92.92%	93.87%
Standard Deviation	0.2%	2.5%	0.5%	0.4%
GravityMark - 1920 x 1080 - Vulkan (FPS)	**124.1**	125.4	**127.9**	
Normalized	97.03%	98.05%	100%	
Standard Deviation	0%	0.1%	0.2%	

GravityMark - 3840 x 2160 - Vulkan (FPS)	80.9	81.1	81.0	
Normalized	99.75%	100%	99.88%	
Standard Deviation	0.3%	0.5%	0.2%	
Unigine Heaven - 1920 x 1080 - Fullscreen - OpenGL (FPS)	173.031	166.776	182.017	185.038
Normalized	93.51%	90.13%	98.37%	100%
Standard Deviation	0%	0.2%	0.1%	0.2%
Unigine Heaven - 3840 x 2160 - Fullscreen - OpenGL (FPS)	48.7524	48.3005	43.2428	43.6609
Normalized	100%	99.07%	88.7%	89.56%
Standard Deviation	0.1%	0.2%	0%	0%
Unigine Valley - 1920 x 1080 - Fullscreen - OpenGL (FPS)	130.884	130.747	195.133	199.426
Normalized	65.63%	65.56%	97.85%	100%
Standard Deviation	0%	0.3%	0.1%	0.1%
Unigine Valley - 3840 x 2160 - Fullscreen - OpenGL (FPS)	47.9570	48.1008	48.5204	48.9962
Normalized	97.88%	98.17%	99.03%	100%
Standard Deviation	0%	0.1%	0.1%	0%
ParaView - Many Spheres - 1920 x 1080 (Frames / Sec)	43.53	43.37	44.05	44.22
Normalized	98.44%	98.08%	99.62%	100%
Standard Deviation	0.2%	0%	0%	0%
ParaView - Many Spheres - 1920 x 1080 (MiPolys / Sec)	4364	4348	4416	4433
Normalized	98.45%	98.07%	99.61%	100%
Standard Deviation	0.2%	0%	0%	0%
ParaView - Many Spheres - 3840 x 2160 (Frames / Sec)	43.06	42.76	42.84	42.97
Normalized	100%	99.3%	99.49%	99.79%
Standard Deviation	0.1%	0.1%	0%	0%
ParaView - Many Spheres - 3840 x 2160 (MiPolys / Sec)	4317	4288	4295	4308
Normalized	100%	99.32%	99.49%	99.79%
Standard Deviation	0.1%	0.1%	0%	0%
ParaView - Wavelet Contour - 1920 x 1080 (Frames / Sec)	328.56	316.77	352.99	349.62
Normalized	93.08%	89.74%	100%	99.05%
Standard Deviation	2.6%	1.1%	0.2%	0.7%
ParaView - Wavelet Contour - 1920 x 1080 (MiPolys / Sec)	3424	3301	3679	3643
Normalized	93.08%	89.74%	100%	99.04%
Standard Deviation	2.6%	1.1%	0.2%	0.7%
ParaView - Wavelet Contour - 3840 x 2160 (Frames / Sec)	303.31	296.41	266.90	266.42
Normalized	100%	97.73%	88%	87.84%
Standard Deviation	0.1%	0.2%	0.1%	0.7%
ParaView - Wavelet Contour - 3840 x 2160 (MiPolys / Sec)	3161	3089	2781	2776
Normalized	100%	97.72%	87.99%	87.84%
Standard Deviation	0.1%	0.2%	0.1%	0.7%
LeelaChessZero - Rand (Nodes/s)	184460	176539	278210	

Normalized	66.3%	63.46%	100%	
Standard Deviation	0%	1.6%	0.4%	
WebP Image Encode - Q.1.L (Encode Time - sec)	13.291	13.627	**13.891**	**11.706**
Normalized	88.07%	85.9%	84.27%	100%
Standard Deviation	0.4%	0.4%	0%	0.2%
WebP Image Encode - Q.1.H.C (Encode Time - sec)	5.414	**5.567**	5.455	**5.043**
Normalized	93.15%	90.59%	92.45%	100%
Standard Deviation	0.2%	0.3%	0.3%	0.1%
WebP Image Encode - Q.1.L.H.C (Encode Time - sec)	28.707	**30.345**	28.478	**25.174**
Normalized	87.69%	82.96%	88.4%	100%
Standard Deviation	0.5%	0.4%	0.3%	0.3%
DaCapo Benchmark - H2 (msec)	**2183**	2481	**2576**	2375
Normalized	100%	87.99%	84.74%	91.92%
Standard Deviation	9.1%	1.1%	7.3%	3.7%
DaCapo Benchmark - Jython (msec)	3361	**3523**	3050	**2683**
Normalized	79.83%	76.16%	87.97%	100%
Standard Deviation	5.4%	1.4%	2.3%	1.6%
DaCapo Benchmark - Tradesoap	6127	**7364**	3385	**2779**
Normalized	45.36%	37.74%	82.1%	100%
Standard Deviation	2.5%	2.9%	1.2%	1.2%
DaCapo Benchmark - Tradebeans (msec)	2243	**2620**	2153	**1818**
Normalized	81.05%	69.39%	84.44%	100%
Standard Deviation	4.7%	3.7%	2.8%	2%
Renaissance - Scala Dotty (ms)	1074	**1172**	658.8	**542.4**
Normalized	50.52%	46.28%	82.33%	100%
Standard Deviation	0.8%	1.2%	5.4%	6.1%
Renaissance - F.H.R (ms)	1975	**2900**	1665	**1455**
Normalized	73.69%	50.19%	87.41%	100%
Standard Deviation	0.3%	0.7%	1.1%	0.7%
Renaissance - G.A.U.J.F (ms)	1367	**1600**	1123	**1113**
Normalized	81.41%	69.55%	99.08%	100%
Standard Deviation	3.7%	8.1%	1.7%	1%
LZ4 Compression - 1 - Compression Speed (MB/s)	10814	**10690**	10842	**10919**
Normalized	99.03%	97.9%	99.29%	100%
Standard Deviation	0%	0.1%	0%	0.1%
LZ4 Compression - 1 - D.S (MB/s)	11504	11475	**11446**	**11562**
Normalized	99.49%	99.25%	98.99%	100%
Standard Deviation	0.1%	0.2%	0%	0.1%
LZ4 Compression - 3 - Compression Speed (MB/s)	**75.15**	**72.94**	73.93	74.98
Normalized	100%	97.06%	98.38%	99.77%
Standard Deviation	0.1%	0%	0%	0.5%
LZ4 Compression - 3 - D.S (MB/s)	11296	**11194**	11298	**11427**
Normalized	98.86%	97.97%	98.88%	100%
Standard Deviation	0.1%	0.1%	0.1%	0.1%
LZ4 Compression - 9 - Compression Speed (MB/s)	72.83	**71.49**	72.30	**72.94**
Normalized	99.85%	98.01%	99.12%	100%
Standard Deviation	1.7%	0.1%	0.2%	0.7%

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LZ4 Compression - 9 - D.S (MB/s)	11315	**11206**	11313	**11425**
Normalized	99.04%	98.08%	99.02%	100%
Standard Deviation	0.1%	0.1%	0%	0.1%
Zstd Compression - 3 - Compression Speed (MB/s)	2638	**2472**	2769	**2802**
Normalized	94.14%	88.21%	98.8%	100%
Standard Deviation	0.8%	0.8%	0.9%	1%
Zstd Compression - 3 - D.S (MB/s)	4402	**4304**	5091	**5201**
Normalized	84.63%	82.75%	97.88%	100%
Standard Deviation	0.3%	0.3%	0.2%	0.1%
Zstd Compression - 8 - Compression Speed (MB/s)	192.9	**188.7**	**195.3**	194.0
Normalized	98.77%	96.62%	100%	99.33%
Standard Deviation	0.1%	0.2%	1.3%	1.1%
Zstd Compression - 8 - D.S (MB/s)	4554	**4462**	5283	**5438**
Normalized	83.74%	82.06%	97.14%	100%
Standard Deviation	0.7%	0.1%	0.2%	0.1%
Zstd Compression - 19 - Compression Speed (MB/s)	35.2	**34.6**	34.8	**36.3**
Normalized	96.97%	95.32%	95.87%	100%
Standard Deviation	0.9%	0.4%	1.8%	1.1%
Zstd Compression - 19 - D.S (MB/s)	4017	**3928**	4609	**4781**
Normalized	84.02%	82.16%	96.4%	100%
Standard Deviation	0.4%	0.1%	0.6%	0.3%
Zstd Compression - 3, Long Mode - Compression Speed (MB/s)	**1777**	1546	**1344**	1680
Normalized	100%	87.02%	75.62%	94.56%
Standard Deviation	0%	0.9%	8.9%	0.3%
Zstd Compression - 3, Long Mode - D.S (MB/s)	4708	**4603**	5440	**5570**
Normalized	84.52%	82.64%	97.67%	100%
Standard Deviation	0.4%	0.1%	0.2%	0.2%
Zstd Compression - 8, Long Mode - Compression Speed (MB/s)	293.9	**265.2**	**323.5**	309.9
Normalized	90.85%	81.98%	100%	95.8%
Standard Deviation	1.6%	2.4%	2.3%	1.2%
Zstd Compression - 8, Long Mode - D.S (MB/s)	4859	**4754**	5638	**5788**
Normalized	83.94%	82.14%	97.4%	100%
Standard Deviation	0.2%	0.1%	0.4%	0.2%
Zstd Compression - 19, Long Mode - Compression Speed (MB/s)	33.1	33.0	**32.8**	**33.8**
Normalized	97.93%	97.63%	97.04%	100%
Standard Deviation	0.6%	0.2%	0.5%	0.9%
Zstd Compression - 19, Long Mode - D.S (MB/s)	4076	**3996**	4651	**4813**
Normalized	84.68%	83.02%	96.63%	100%
Standard Deviation	0.2%	0.1%	0.3%	0.2%
Crafty - Elapsed Time (Nodes/s)	11489075	**10905560**	11430020	**11709222**
Normalized	98.12%	93.14%	97.62%	100%
Standard Deviation	0%	0.1%	0.4%	0.1%
TSCP - A.C.P (Nodes/s)	1895509	**1859619**	1932564	**1975555**
Normalized	95.95%	94.13%	97.82%	100%
Standard Deviation	1.1%	1%	0.2%	0.4%

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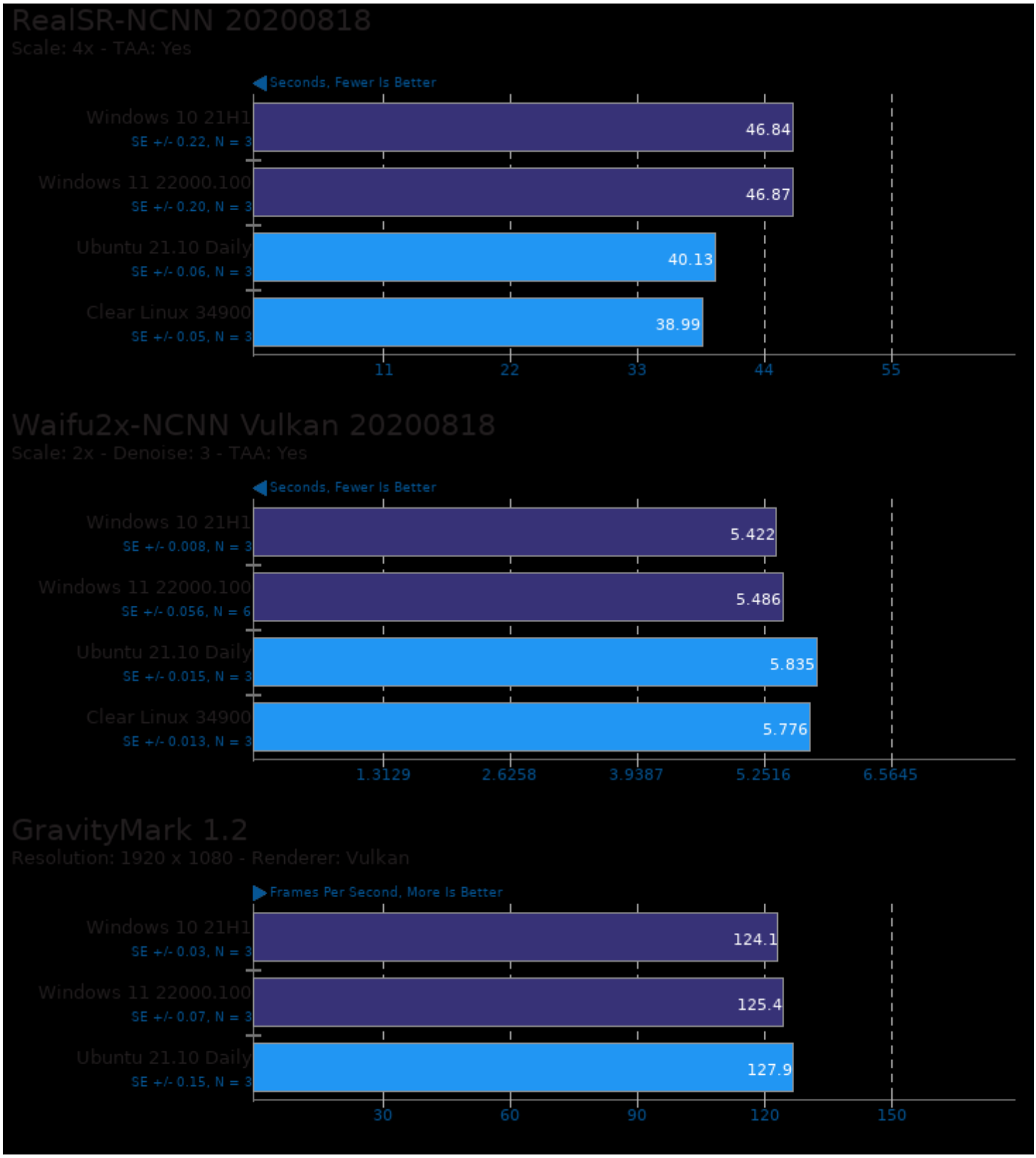
John The Ripper - Blowfish (Real C/S)	**20938**	**20171**	20668	
Normalized	100%	96.34%	98.71%	
Standard Deviation	0.5%	0.6%	0%	
John The Ripper - MD5 (Real C/S)	1084000	**986382**	**2071000**	
Normalized	52.34%	47.63%	100%	
Standard Deviation		0.3%	0.9%	
LuxCoreRender - DLSC - CPU (M samples/sec)	2.02	**1.89**	2.11	**2.13**
Normalized	94.84%	88.73%	99.06%	100%
Standard Deviation	0.3%	0.3%	0.8%	0.7%
LuxCoreRender - Danish Mood - CPU (M samples/sec)	**1.74**	1.58	**1.53**	**1.53**
Normalized	100%	90.8%	87.93%	87.93%
Standard Deviation	2.4%	1.1%	2.3%	2.5%
LuxCoreRender - Orange Juice - CPU (M samples/sec)	3.31	**3.06**	3.44	**3.47**
Normalized	95.39%	88.18%	99.14%	100%
Standard Deviation	0.3%	0.7%	0%	0.4%
LuxCoreRender - LuxCore Benchmark - CPU (M samples/sec)	**1.88**	1.73	**1.70**	1.73
Normalized	100%	92.02%	90.43%	92.02%
Standard Deviation	0.5%	0.3%	1%	0.6%
LuxCoreRender - R.C.a.P - CPU (M samples/sec)	7.32	**6.84**	8.51	**8.72**
Normalized	83.94%	78.44%	97.59%	100%
Standard Deviation	2%	0.8%	0.2%	0.6%
GraphicsMagick - Swirl	477	**441**	606	**710**
Normalized	67.18%	62.11%	85.35%	100%
Standard Deviation	0.6%	0.5%	0.1%	0.4%
GraphicsMagick - Rotate	542	**491**	1103	**1489**
Normalized	36.4%	32.98%	74.08%	100%
Standard Deviation	0.3%	0.5%	0.4%	0.9%
GraphicsMagick - Sharpen (Iterations/min)	67	**66**	164	**166**
Normalized	40.36%	39.76%	98.8%	100%
Standard Deviation			0.4%	0.3%
GraphicsMagick - Enhanced (Iterations/min)	211	203	**221**	**186**
Normalized	95.48%	91.86%	100%	84.16%
Standard Deviation	0.3%	0.3%	0.3%	0%
GraphicsMagick - Resizing (Iterations/min)	627	**569**	1100	**1232**
Normalized	50.89%	46.19%	89.29%	100%
Standard Deviation	0.2%		0.1%	0.3%
GraphicsMagick - Noise-Gaussian (Iterations/min)	165	**157**	311	**324**
Normalized	50.93%	48.46%	95.99%	100%
Standard Deviation		0.4%	0.2%	0.2%
GraphicsMagick - HWB Color Space (Iterations/min)	588	**522**	1279	**2055**
Normalized	28.61%	25.4%	62.24%	100%
Standard Deviation			0.1%	0.2%
dav1d - Chimera 1080p (FPS)	680.05	**638.07**	788.11	**810.46**
Normalized	83.91%	78.73%	97.24%	100%

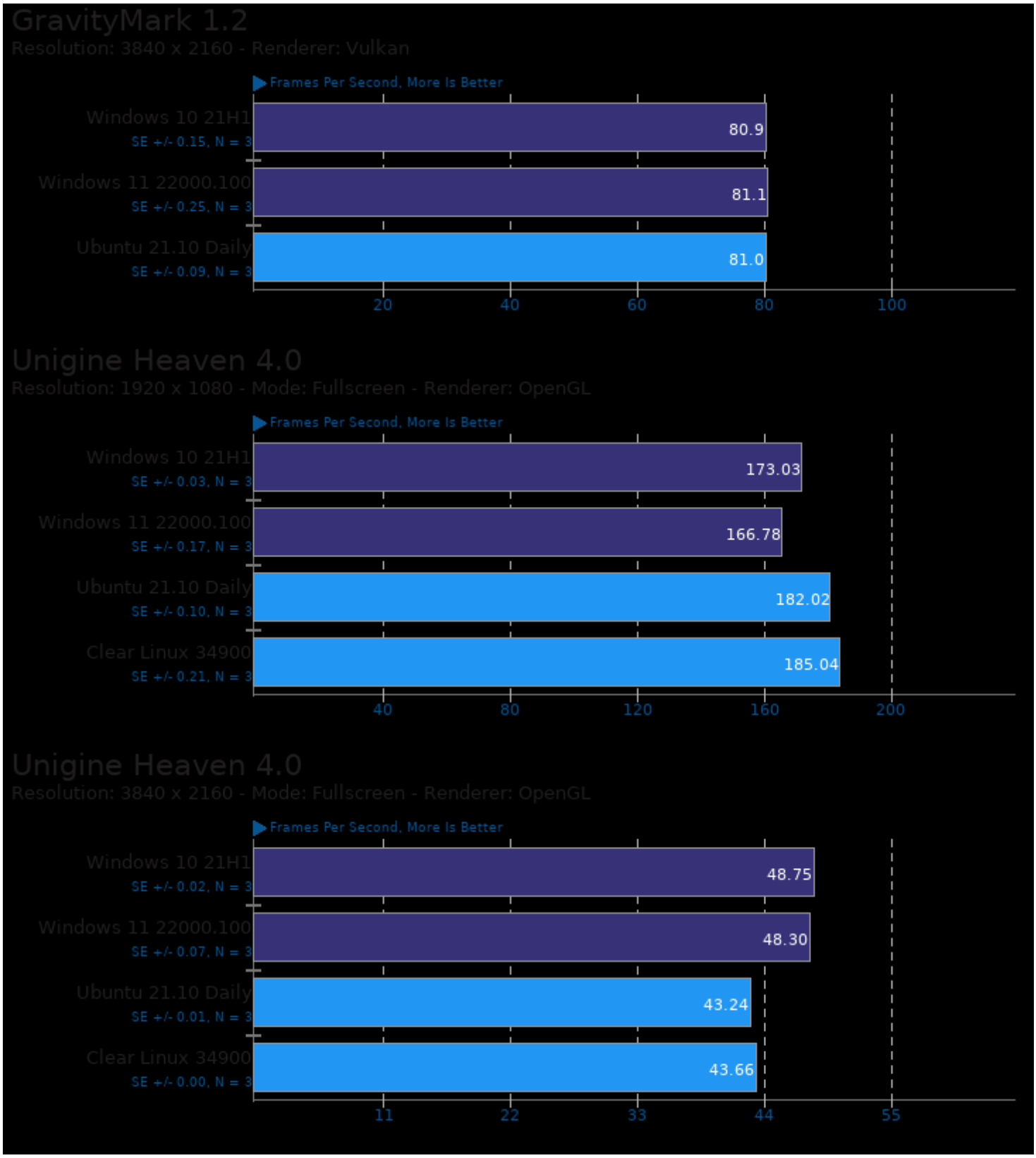
Standard Deviation	0.2%	0.4%	0.2%	0.2%
dav1d - Summer Nature 4K (FPS)	198.63	**188.31**	195.98	**201.49**
Normalized	98.58%	93.46%	97.27%	100%
Standard Deviation	0.3%	0.1%	0.1%	0.2%
dav1d - S.N.1 (FPS)	**761.06**	**728.52**	730.46	743.98
Normalized	100%	95.72%	95.98%	97.76%
Standard Deviation	0.2%	0.3%	0.4%	0.3%
dav1d - C.1.1.b (FPS)	418.15	**385.49**	507.86	**518.78**
Normalized	80.6%	74.31%	97.9%	100%
Standard Deviation	0.1%	0.5%	0.1%	0.2%
Embree - Pathtracer - Crown (FPS)	11.6569	**11.6282**	**12.7798**	12.7066
Normalized	91.21%	90.99%	100%	99.43%
Standard Deviation	0.2%	0.1%	0.7%	0.6%
Embree - Pathtracer ISPC - Crown (FPS)	14.0843	**14.0675**	**14.6896**	14.5978
Normalized	95.88%	95.77%	100%	99.38%
Standard Deviation	0.2%	0.2%	0.1%	0.2%
Embree - Pathtracer - Asian Dragon (FPS)	**13.1560**	13.2303	14.0754	**14.1976**
Normalized	92.66%	93.19%	99.14%	100%
Standard Deviation	0.1%	0.1%	1%	0.4%
Embree - Pathtracer - Asian Dragon Obj (FPS)	**11.8429**	11.8945	13.0273	**13.0766**
Normalized	90.57%	90.96%	99.62%	100%
Standard Deviation	0.2%	0.1%	0.1%	0.2%
Embree - Pathtracer ISPC - Asian Dragon (FPS)	**16.0160**	16.1581	16.4274	**16.7218**
Normalized	95.78%	96.63%	98.24%	100%
Standard Deviation	0.1%	0.1%	0.1%	0.9%
Embree - Pathtracer ISPC - Asian Dragon Obj (FPS)	**13.6943**	13.7730	14.4258	**14.4677**
Normalized	94.65%	95.2%	99.71%	100%
Standard Deviation	0.1%	0%	0.7%	0.2%
SVT-AV1 - Preset 4 - Bosphorus 4K (FPS)	1.739	**1.455**	1.738	**1.866**
Normalized	93.19%	77.97%	93.14%	100%
Standard Deviation	0%	0%	0.3%	0.2%
SVT-AV1 - Preset 8 - Bosphorus 4K (FPS)	18.75	**15.128**	19.070	**20.850**
Normalized	89.93%	72.56%	91.46%	100%
Standard Deviation	0%	1.5%	0.2%	0.4%
SVT-AV1 - Preset 4 - Bosphorus 1080p (FPS)	5.855	**4.848**	5.863	**6.173**
Normalized	94.85%	78.54%	94.98%	100%
Standard Deviation	2.1%	0%	0.3%	0.2%
SVT-AV1 - Preset 8 - Bosphorus 1080p (FPS)	74.994	**66.662**	73.127	**77.600**
Normalized	96.64%	85.9%	94.24%	100%
Standard Deviation	0%	0%	0.6%	0.3%
x264 - H.2.V.E (FPS)	117.37	**110.15**	116.97	**118.68**
Normalized	98.9%	92.81%	98.56%	100%
Standard Deviation	0.3%	0.1%	0.3%	2.4%

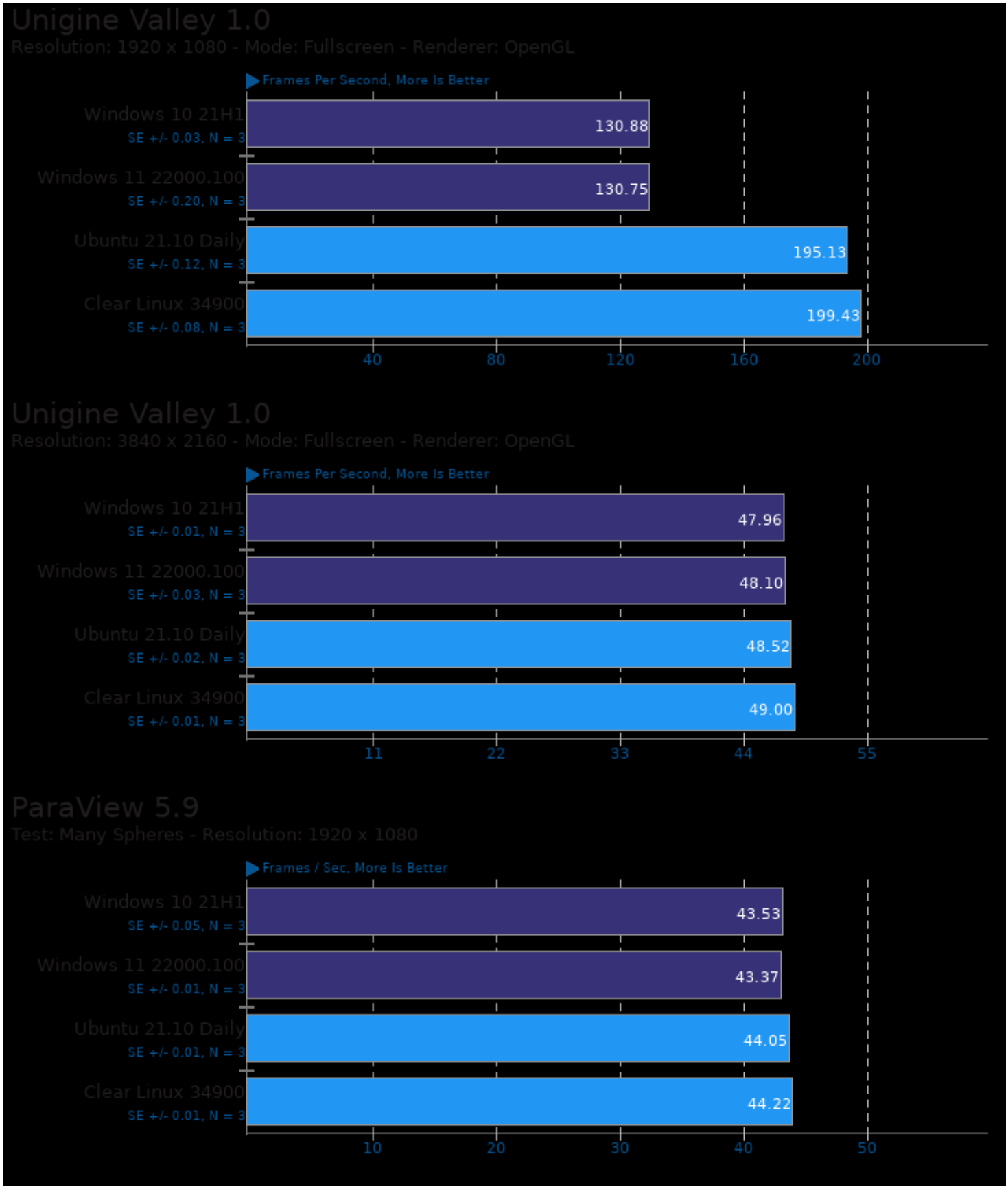
Intel Open Image Denoise - RT.hdr_alb_nrm.3840x2160 (Images / Sec)	**0.43**	**0.43**	**0.44**	**0.44**
Normalized	97.73%	97.73%	100%	100%
Standard Deviation	0%	0%	0.1%	0%
Intel Open Image Denoise - RT.ldr_alb_nrm.3840x2160 (Images / Sec)	**0.43**	**0.43**	**0.44**	**0.44**
Normalized	97.73%	97.73%	100%	100%
Standard Deviation	0%	0%	0%	0%
Intel Open Image Denoise - RTLightmap.hdr.4096x4096 (Images / Sec)	**0.20**	**0.20**	**0.21**	**0.21**
Normalized	95.24%	95.24%	100%	100%
Standard Deviation	0%	0%	0%	0%
7-Zip Compression - C.S.T (MIPS)	59324	**57648**	59716	**61942**
Normalized	95.77%	93.07%	96.41%	100%
Standard Deviation	0.2%	0.7%	0.9%	1.4%
Stockfish - Total Time (Nodes/s)	**26352036**	26692439	28334183	**29113132**
Normalized	90.52%	91.69%	97.32%	100%
Standard Deviation	0.5%	1.7%	1.1%	0.3%
asmFish - 1.H.M.2.D (Nodes/s)	**30005000**	31692577	**32486726**	32486071
Normalized	92.36%	97.56%	100%	100%
Standard Deviation	0.5%	2.4%	0.6%	1.3%
libavif avifenc - 0 (sec)	64.411	**67.038**	58.240	**54.900**
Normalized	85.23%	81.89%	94.27%	100%
Standard Deviation	0.7%	0.5%	0.2%	0.4%
libavif avifenc - 2 (sec)	33.030	**34.470**	29.848	**27.753**
Normalized	84.02%	80.51%	92.98%	100%
Standard Deviation	0.6%	0.2%	0.6%	0.4%
libavif avifenc - 6 (sec)	11.580	**11.798**	10.441	**9.294**
Normalized	80.26%	78.78%	89.01%	100%
Standard Deviation	1%	1.1%	0.6%	0.4%
libavif avifenc - 10 (sec)	2.939	**3.008**	**2.708**	
Normalized	92.14%	90.03%	100%	
Standard Deviation	0.6%	0.6%	0.8%	
libavif avifenc - 6, Lossless (sec)	54.002	**56.854**	51.488	**48.482**
Normalized	89.78%	85.27%	94.16%	100%
Standard Deviation	0.2%	0.4%	0.5%	0.5%
libavif avifenc - 10, Lossless (sec)	5.183	**5.342**	4.771	**3.819**
Normalized	73.68%	71.49%	80.05%	100%
Standard Deviation	0.5%	1%	0.6%	0.2%
Primesieve - 1.P.N.G (sec)	17.988	**18.164**	**17.904**	17.919
Normalized	99.53%	98.57%	100%	99.92%
Standard Deviation	0.7%	0.6%	0.7%	0.4%
YafaRay - T.T.F.S.S (sec)	**134.172**	133.359	**122.327**	
Normalized	91.17%	91.73%	100%	
Standard Deviation	0.1%	0.4%	0.1%	
FLAC Audio Encoding - WAV To FLAC (sec)	6.430	**6.561**	6.419	**5.956**
Normalized	92.63%	90.78%	92.79%	100%
Standard Deviation	0.4%	0.3%	0.1%	0%

LAME MP3 Encoding - WAV To MP3 (sec)	6.961	7.086	5.908	6.002
Normalized	84.87%	83.38%	100%	98.43%
Standard Deviation	1%	0.5%	0.2%	0.2%
Opus Codec Encoding - WAV To Opus Encode (sec)	7.217	7.310	6.466	6.118
Normalized	84.77%	83.69%	94.62%	100%
Standard Deviation	0.4%	2.2%	0.4%	0.4%
m-queens - Time To Solve (sec)	67.502	67.849	67.109	68.130
Normalized	99.42%	98.91%	100%	98.5%
Standard Deviation	0%	0.3%	0%	0.1%
N-Queens - Elapsed Time (sec)	12.963	13.008	12.875	13.896
Normalized	99.32%	98.98%	100%	92.65%
Standard Deviation	0.2%	0.1%	0.4%	0.1%
Sudokut - Total Time (sec)	24.905	29.195	7.200	7.456
Normalized	28.91%	24.66%	100%	96.57%
Standard Deviation	0.4%	0.3%	0.2%	0.6%
libjpeg-turbo tjbench - D.T (Megapixels/sec)	276.219000	275.130408	264.223415	261.657332
Normalized	100%	99.61%	95.66%	94.73%
Standard Deviation	0.6%	0.8%	0.5%	0.6%
IndigoBench - CPU - Bedroom (M samples/s)	2.007	2.003	2.089	2.378
Normalized	84.4%	84.23%	87.85%	100%
Standard Deviation	0.1%	0.1%	0.3%	0.1%
IndigoBench - CPU - Supercar (M samples/s)	4.765	4.742	4.827	5.024
Normalized	94.84%	94.39%	96.08%	100%
Standard Deviation	0.1%	0.2%	0.3%	0.5%
Blender - BMW27 - CPU-Only (sec)	157.10	157.81	132.89	131.89
Normalized	83.95%	83.58%	99.25%	100%
Standard Deviation	0.1%	0.1%	0.2%	0.3%
Blender - Classroom - CPU-Only (sec)	465.88	467.52	397.64	394.38
Normalized	84.65%	84.36%	99.18%	100%
Standard Deviation	0.2%	0%	0.4%	0.2%
Blender - Fishy Cat - CPU-Only (sec)	213.27	214.27	181.63	179.58
Normalized	84.2%	83.81%	98.87%	100%
Standard Deviation	0%	0.1%	0.1%	0.3%
Blender - Barbershop - CPU-Only	642.42	647.27	548.61	540.13
Normalized	84.08%	83.45%	98.45%	100%
Standard Deviation	0.1%	0.1%	0.2%	0.4%
Blender - Pabellon Barcelona - CPU-Only (sec)	499.21	501.26	445.78	431.77
Normalized	86.49%	86.14%	96.86%	100%
Standard Deviation	0%	0.2%	0%	0.3%
Appleseed - Emily (sec)	335.897	355.869	328.657144	313.259905
Normalized	93.26%	88.03%	95.32%	100%
Appleseed - Disney Material (sec)	188.38	192.706	183.142977	179.311392
Normalized	95.19%	93.05%	97.91%	100%
Appleseed - Material Tester (sec)	182.713	190.986	175.389879	169.824217
Normalized	92.95%	88.92%	96.83%	100%

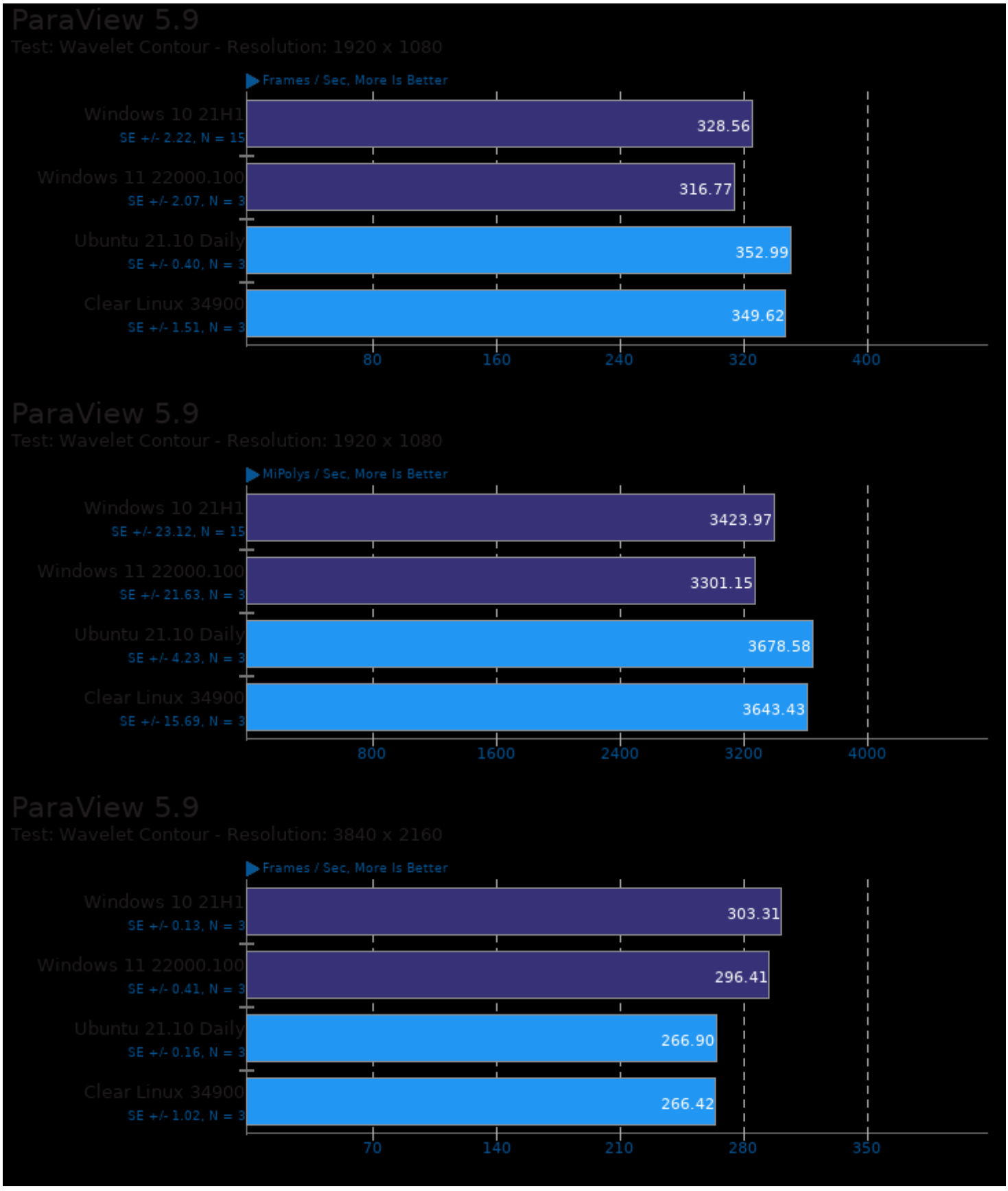
WavPack Audio Encoding - WAV To WavPack (sec)	11.428	11.680	**11.794**	**11.024**
Normalized	96.46%	94.38%	93.47%	100%
Standard Deviation	0.1%	0.2%	0.1%	0.2%
Chaos Group V-RAY - CPU (vsamples)	11369	**11145**	12483	**12799**
Normalized	88.83%	87.08%	97.53%	100%
Standard Deviation	0.5%	0.2%	0.3%	0.2%

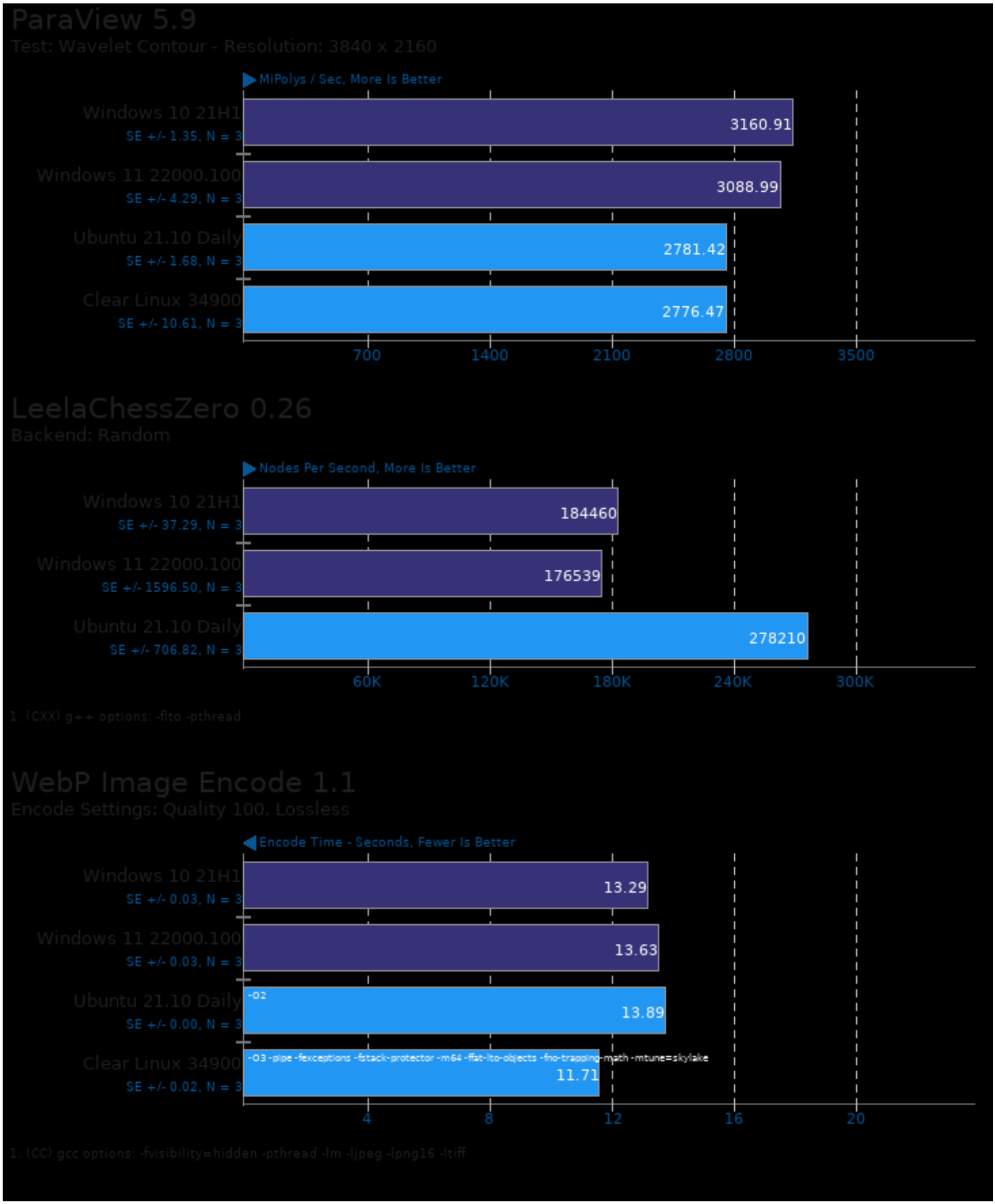

RealSR-NCNN 20200818
Scale: 4x - TAA: Yes
Seconds, Fewer Is Better
Windows 10 21H1
SE +/- 0.22, N = 3
46.84
Windows 11 22000.100
SE +/- 0.20, N = 3
46.87
Ubuntu 21.10 Daily
SE +/- 0.06, N = 3
40.13
Clear Linux 34900
SE +/- 0.05, N = 3
38.99
11
22
33
44
55
Waifu2x-NCNN Vulkan 20200818
Scale: 2x - Denoise: 3 - TAA: Yes
Seconds, Fewer Is Better
Windows 10 21H1
SE +/- 0.008, N = 3
5.422
Windows 11 22000.100
SE +/- 0.056, N = 6
5.486
Ubuntu 21.10 Daily
SE +/- 0.015, N = 3
5.835
Clear Linux 34900
SE +/- 0.013, N = 3
5.776
1.3129
2.6258
3.9387
5.2516
6.5645
GravityMark 1.2
Resolution: 1920 x 1080 - Renderer: Vulkan
Frames Per Second, More Is Better
Windows 10 21H1
SE +/- 0.03, N = 3
124.1
Windows 11 22000.100
SE +/- 0.07, N = 3
125.4
Ubuntu 21.10 Daily
SE +/- 0.15, N = 3
127.9
30
60
90
120
150

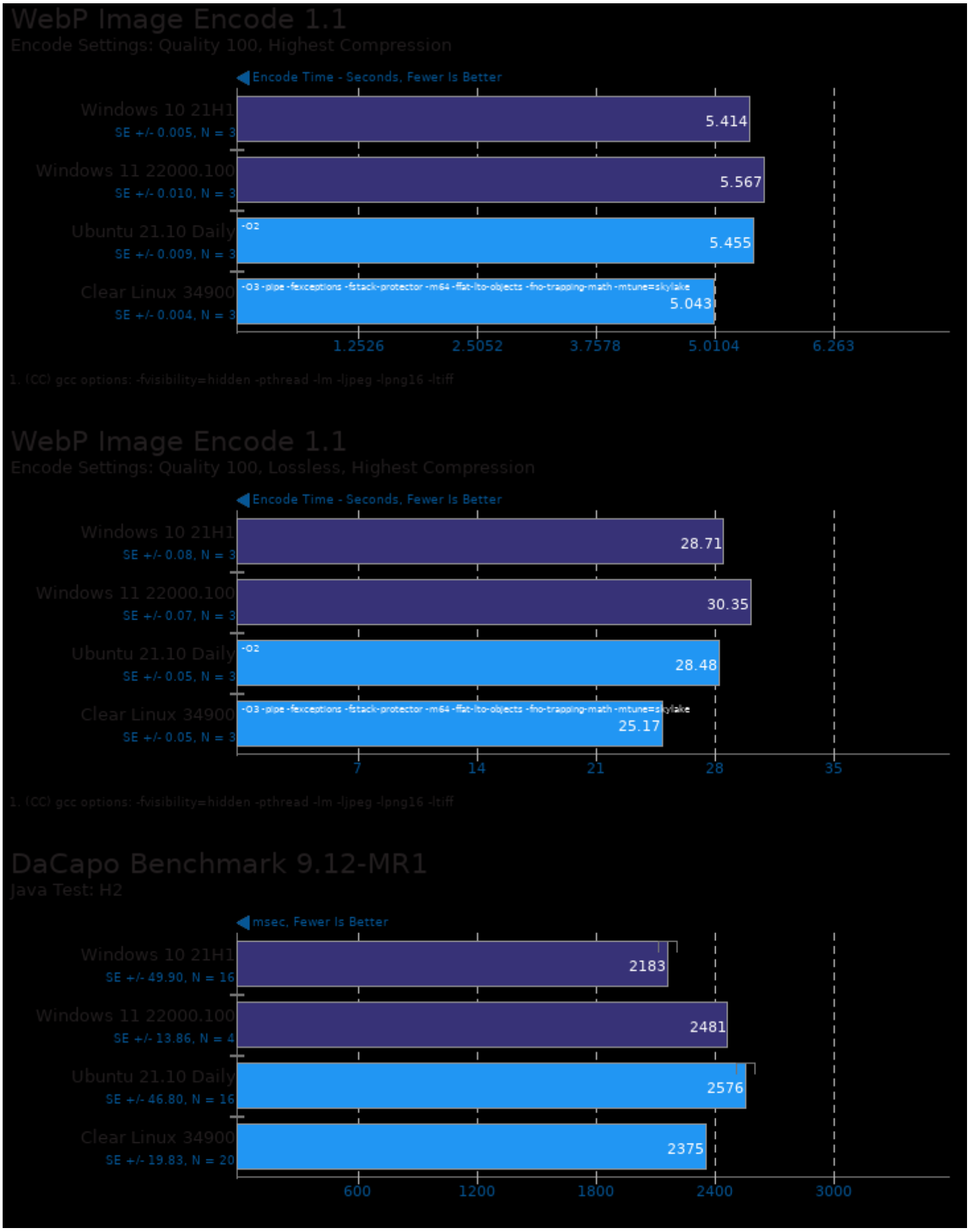

GravityMark 1.2
Resolution: 3840 x 2160 - Renderer: Vulkan
Frames Per Second, More Is Better
Windows 10 21H1
SE +/- 0.15, N = 3
80.9
Windows 11 22000.100
SE +/- 0.25, N = 3
81.1
Ubuntu 21.10 Daily
SE +/- 0.09, N = 3
81.0
20
40
60
80
100
Unigine Heaven 4.0
Resolution: 1920 x 1080 - Mode: Fullscreen - Renderer: OpenGL
Frames Per Second, More Is Better
Windows 10 21H1
SE +/- 0.03, N = 3
173.03
Windows 11 22000.100
SE +/- 0.17, N = 3
166.78
Ubuntu 21.10 Daily
SE +/- 0.10, N = 3
182.02
Clear Linux 34900
SE +/- 0.21, N = 3
185.04
40
80
120
160
200
Unigine Heaven 4.0
Resolution: 3840 x 2160 - Mode: Fullscreen - Renderer: OpenGL
Frames Per Second, More Is Better
Windows 10 21H1
SE +/- 0.02, N = 3
48.75
Windows 11 22000.100
SE +/- 0.07, N = 3
48.30
Ubuntu 21.10 Daily
SE +/- 0.01, N = 3
43.24
Clear Linux 34900
SE +/- 0.00, N = 3
43.66
11
22
33
44
55

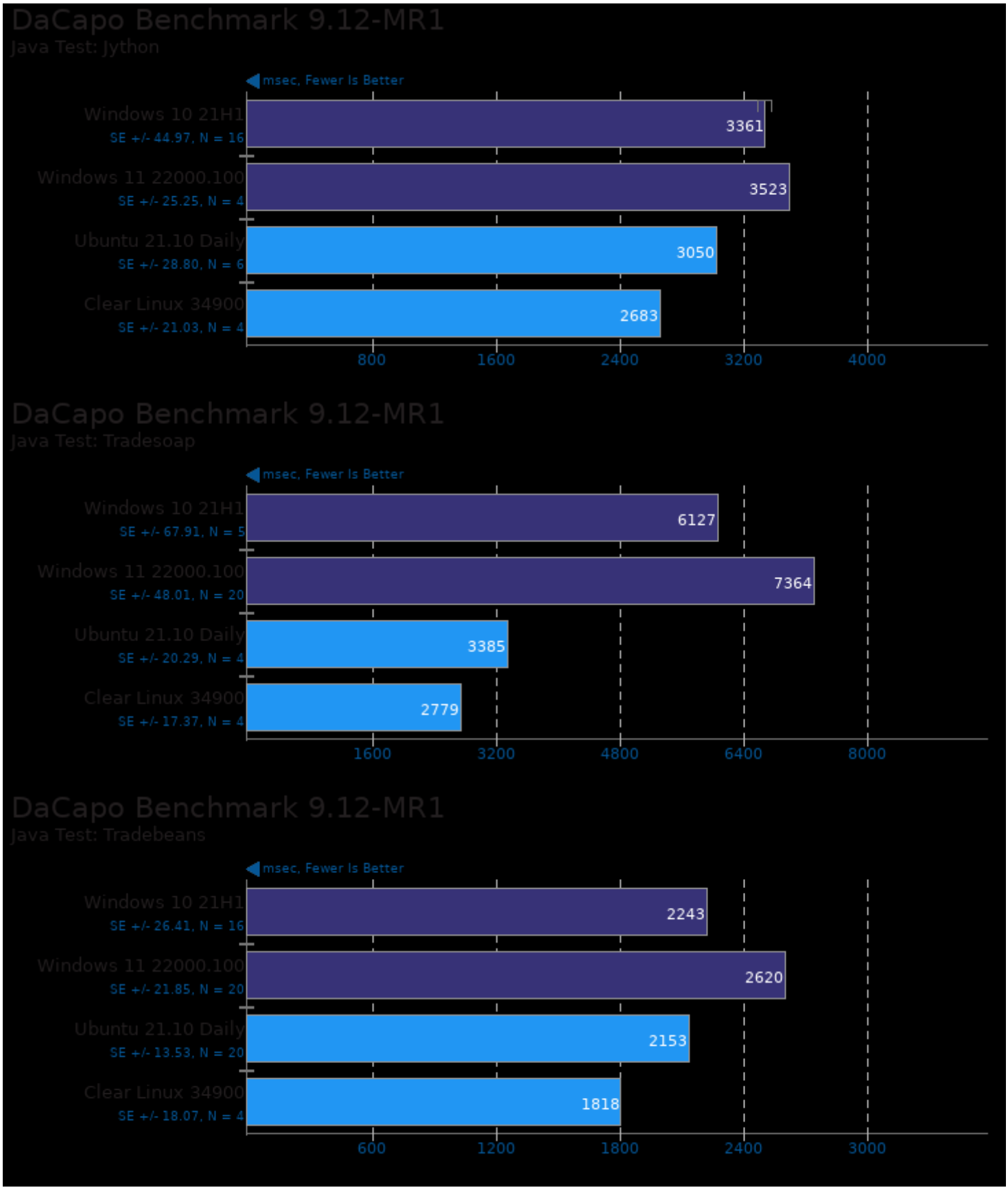

Unigine Valley 1.0
Resolution: 1920 x 1080 - Mode: Fullscreen - Renderer: OpenGL
Frames Per Second, More Is Better
Windows 10 21H1
SE +/- 0.03, N = 3
130.88
Windows 11 22000.100
SE +/- 0.20, N = 3
130.75
Ubuntu 21.10 Daily
SE +/- 0.12, N = 3
195.13
Clear Linux 34900
SE +/- 0.08, N = 3
199.43
40
80
120
160
200
Unigine Valley 1.0
Resolution: 3840 x 2160 - Mode: Fullscreen - Renderer: OpenGL
Frames Per Second, More Is Better
Windows 10 21H1
SE +/- 0.01, N = 3
47.96
Windows 11 22000.100
SE +/- 0.03, N = 3
48.10
Ubuntu 21.10 Daily
SE +/- 0.02, N = 3
48.52
Clear Linux 34900
SE +/- 0.01, N = 3
49.00
11
22
33
44
55
ParaView 5.9
Test: Many Spheres - Resolution: 1920 x 1080
Frames / Sec, More Is Better
Windows 10 21H1
SE +/- 0.05, N = 3
43.53
Windows 11 22000.100
SE +/- 0.01, N = 3
43.37
Ubuntu 21.10 Daily
SE +/- 0.01, N = 3
44.05
Clear Linux 34900
SE +/- 0.01, N = 3
44.22
10
20
30
40
50

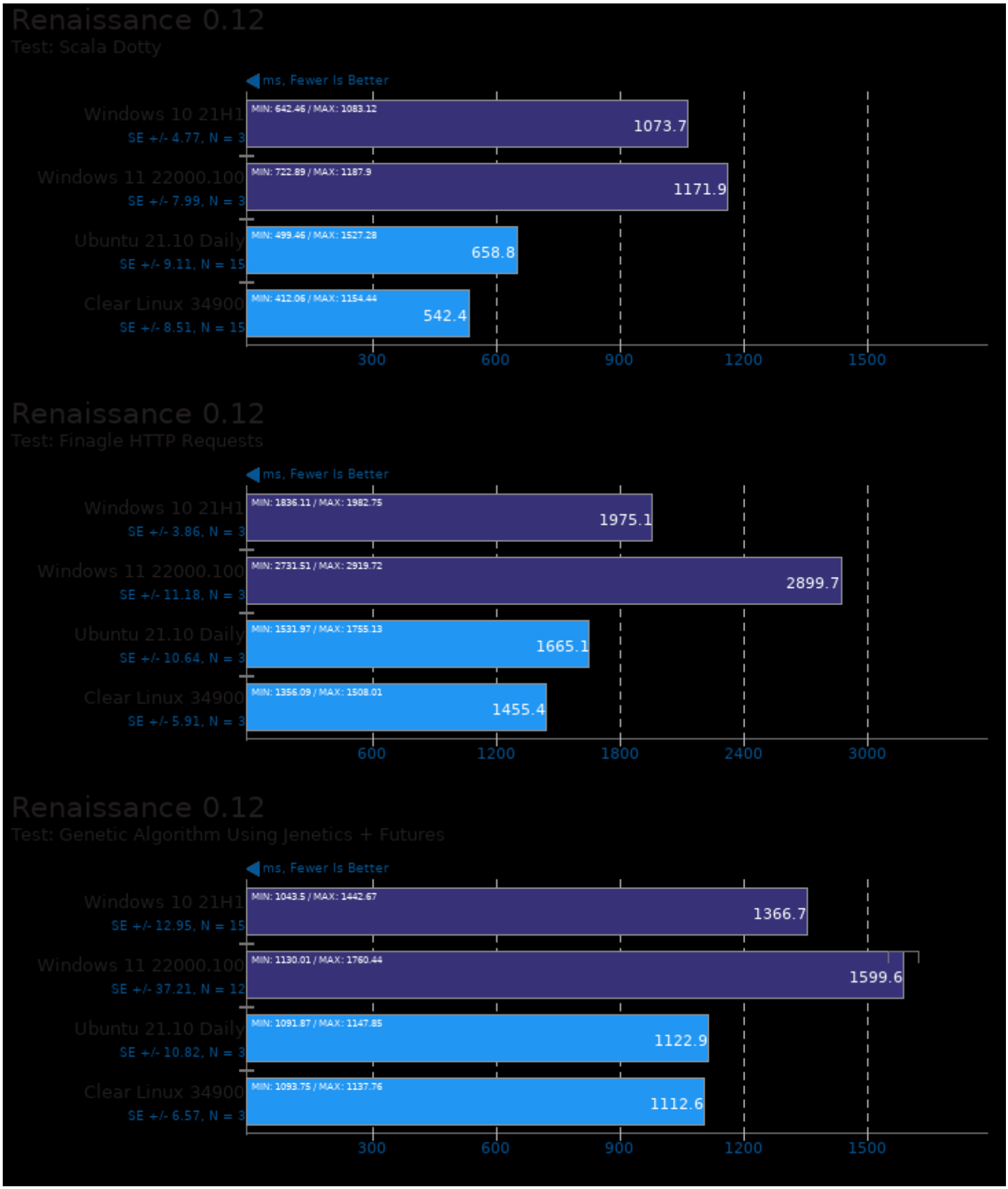

ParaView 5.9
Test: Many Spheres - Resolution: 1920 x 1080
MiPolys / Sec, More Is Better
Windows 10 21H1
SE +/- 5.02, N = 3
4364.40
Windows 11 22000.100
SE +/- 1.17, N = 3
4347.86
Ubuntu 21.10 Daily
SE +/- 0.51, N = 3
4416.06
Clear Linux 34900
SE +/- 0.38, N = 3
4433.24
1000
2000
3000
4000
5000
ParaView 5.9
Test: Many Spheres - Resolution: 3840 x 2160
Frames / Sec, More Is Better
Windows 10 21H1
SE +/- 0.02, N = 3
43.06
Windows 11 22000.100
SE +/- 0.03, N = 3
42.76
Ubuntu 21.10 Daily
SE +/- 0.01, N = 3
42.84
Clear Linux 34900
SE +/- 0.00, N = 3
42.97
10
20
30
40
50
ParaView 5.9
Test: Many Spheres - Resolution: 3840 x 2160
MiPolys / Sec, More Is Better
Windows 10 21H1
SE +/- 2.50, N = 3
4316.78
Windows 11 22000.100
SE +/- 2.55, N = 3
4287.51
Ubuntu 21.10 Daily
SE +/- 0.54, N = 3
4294.68
Clear Linux 34900
SE +/- 0.27, N = 3
4307.93
900
1800
2700
3600
4500

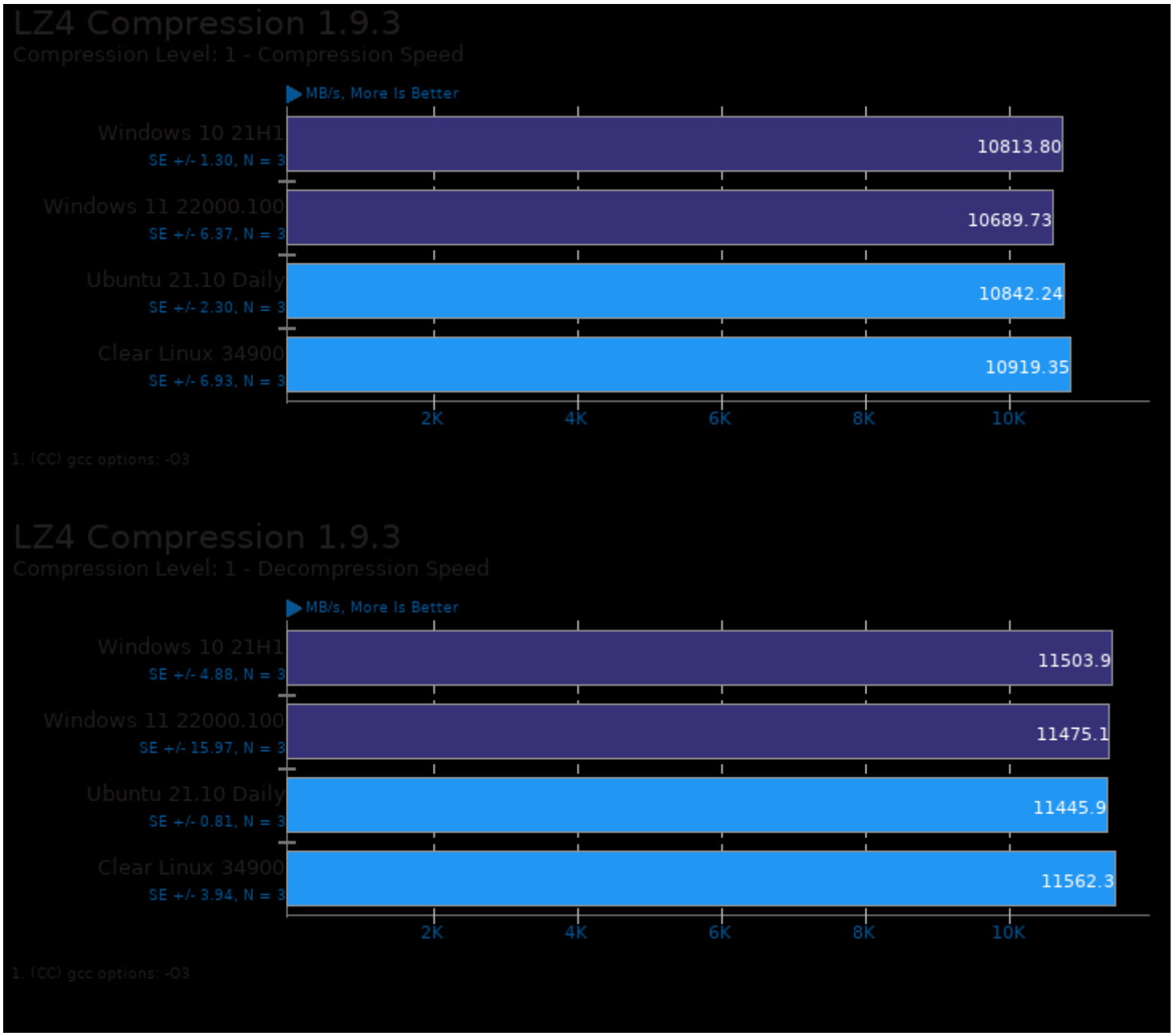

ParaView 5.9
Test: Wavelet Contour - Resolution: 1920 x 1080
Frames / Sec, More Is Better
Windows 10 21H1
SE +/- 2.22, N = 15
328.56
Windows 11 22000.100
SE +/- 2.07, N = 3
316.77
Ubuntu 21.10 Daily
SE +/- 0.40, N = 3
352.99
Clear Linux 34900
SE +/- 1.51, N = 3
349.62
80
160
240
320
400
ParaView 5.9
Test: Wavelet Contour - Resolution: 1920 x 1080
MiPolys / Sec, More Is Better
Windows 10 21H1
SE +/- 23.12, N = 15
3423.97
Windows 11 22000.100
SE +/- 21.63, N = 3
3301.15
Ubuntu 21.10 Daily
SE +/- 4.23, N = 3
3678.58
Clear Linux 34900
SE +/- 15.69, N = 3
3643.43
800
1600
2400
3200
4000
ParaView 5.9
Test: Wavelet Contour - Resolution: 3840 x 2160
Frames / Sec, More Is Better
Windows 10 21H1
SE +/- 0.13, N = 3
303.31
Windows 11 22000.100
SE +/- 0.41, N = 3
296.41
Ubuntu 21.10 Daily
SE +/- 0.16, N = 3
266.90
Clear Linux 34900
SE +/- 1.02, N = 3
266.42
70
140
210
280
350

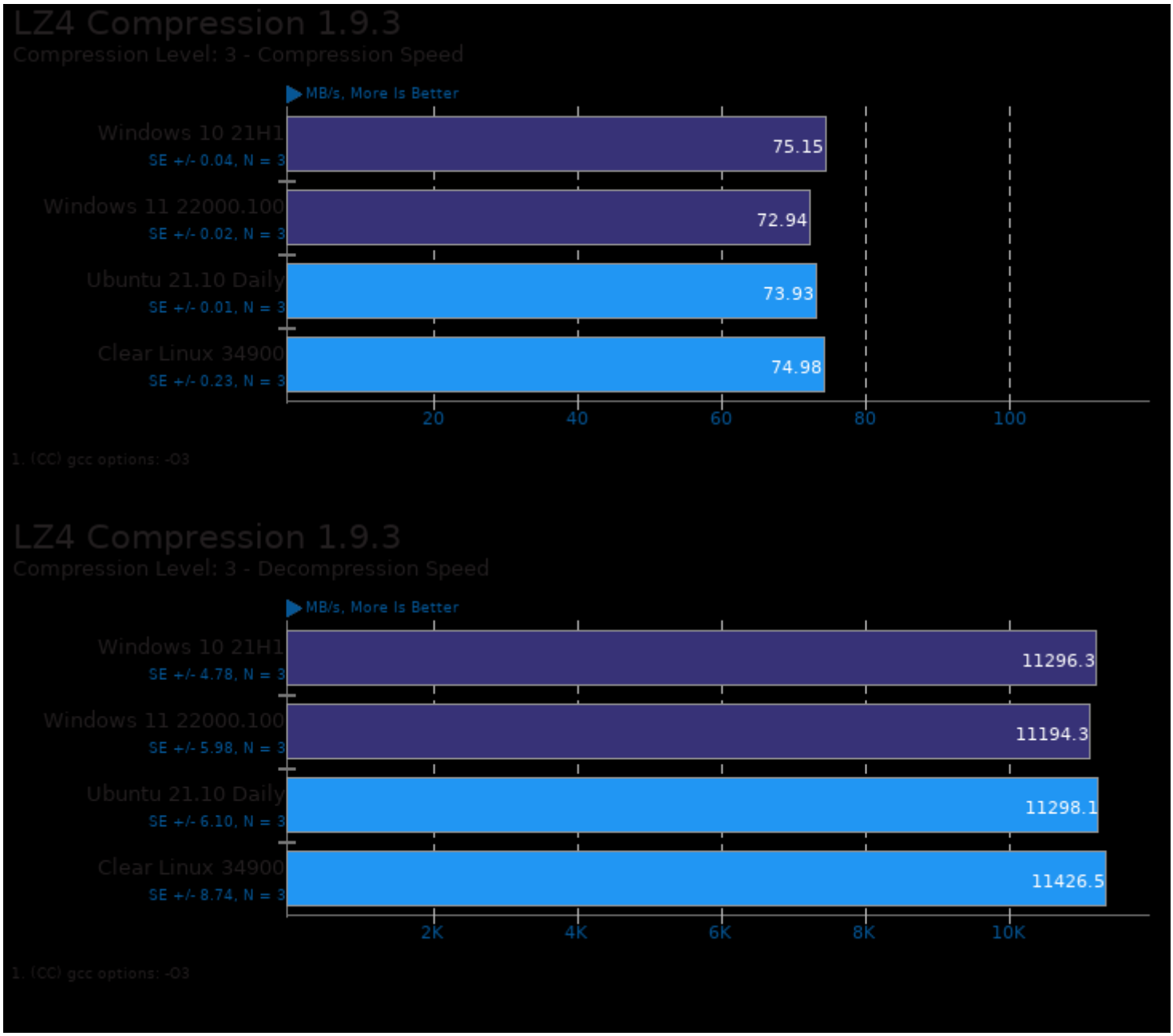

ParaView 5.9
Test: Wavelet Contour - Resolution: 3840 x 2160
MiPolys / Sec, More Is Better
Windows 10 21H1
SE +/- 1.35, N = 3
3160.91
Windows 11 22000.100
SE +/- 4.29, N = 3
3088.99
Ubuntu 21.10 Daily
SE +/- 1.68, N = 3
2781.42
Clear Linux 34900
SE +/- 10.61, N = 3
2776.47
700
1400
2100
2800
3500
LeelaChessZero 0.26
Backend: Random
Nodes Per Second, More Is Better
Windows 10 21H1
SE +/- 37.29, N = 3
184460
Windows 11 22000.100
SE +/- 1596.50, N = 3
176539
Ubuntu 21.10 Daily
SE +/- 706.82, N = 3
278210
60K
120K
180K
240K
300K
1. (CXX) g++ options: -flto -pthread
WebP Image Encode 1.1
Encode Settings: Quality 100, Lossless
Encode Time - Seconds, Fewer Is Better
Windows 10 21H1
SE +/- 0.03, N = 3
13.29
Windows 11 22000.100
SE +/- 0.03, N = 3
13.63
Ubuntu 21.10 Daily
SE +/- 0.00, N = 3
-O2
13.89
Clear Linux 34900
SE +/- 0.02, N = 3
-O3 -pipe -fexceptions -fstack-protector -m64 -flto-objects -fno-trapping-math -mtune=skylake
11.71
4
8
12
16
20
1. (CC) gcc options: -fvisibility=hidden -pthread -lm -ljpeg -lpng16 -ltiff

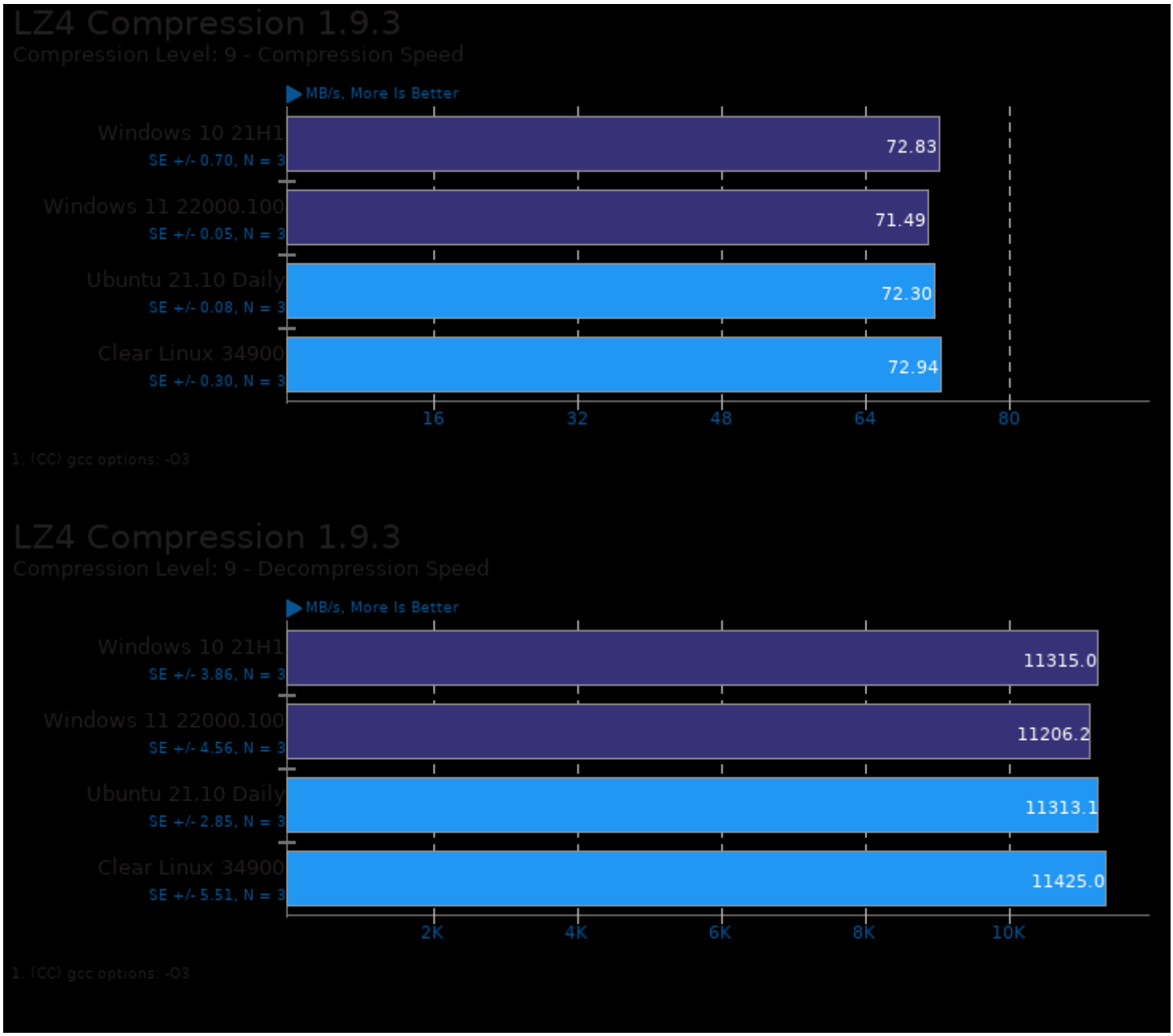

WebP Image Encode 1.1
Encode Settings: Quality 100, Highest Compression
Encode Time - Seconds, Fewer Is Better
Windows 10 21H1
SE +/- 0.005, N = 3
5.414
Windows 11 22000.100
SE +/- 0.010, N = 3
5.567
Ubuntu 21.10 Daily
SE +/- 0.009, N = 3
-O2
5.455
Clear Linux 34900
SE +/- 0.004, N = 3
-O3 -pipe -fexceptions -fstack-protector -m64 -ffat-lto-objects -fno-trapping-math -mtune=skylake
5.043
1.2526
2.5052
3.7578
5.0104
6.263
1. (CC) gcc options: -fvisibility=hidden -pthread -lm -ljpeg -lpng16 -ltiff
WebP Image Encode 1.1
Encode Settings: Quality 100, Lossless, Highest Compression
Encode Time - Seconds, Fewer Is Better
Windows 10 21H1
SE +/- 0.08, N = 3
28.71
Windows 11 22000.100
SE +/- 0.07, N = 3
30.35
Ubuntu 21.10 Daily
SE +/- 0.05, N = 3
-O2
28.48
Clear Linux 34900
SE +/- 0.05, N = 3
-O3 -pipe -fexceptions -fstack-protector -m64 -ffat-lto-objects -fno-trapping-math -mtune=skylake
25.17
7
14
21
28
35
1. (CC) gcc options: -fvisibility=hidden -pthread -lm -ljpeg -lpng16 -ltiff
DaCapo Benchmark 9.12-MR1
Java Test: H2
msec, Fewer Is Better
Windows 10 21H1
SE +/- 49.90, N = 16
2183
Windows 11 22000.100
SE +/- 13.86, N = 4
2481
Ubuntu 21.10 Daily
SE +/- 46.80, N = 16
2576
Clear Linux 34900
SE +/- 19.83, N = 20
2375
600
1200
1800
2400
3000

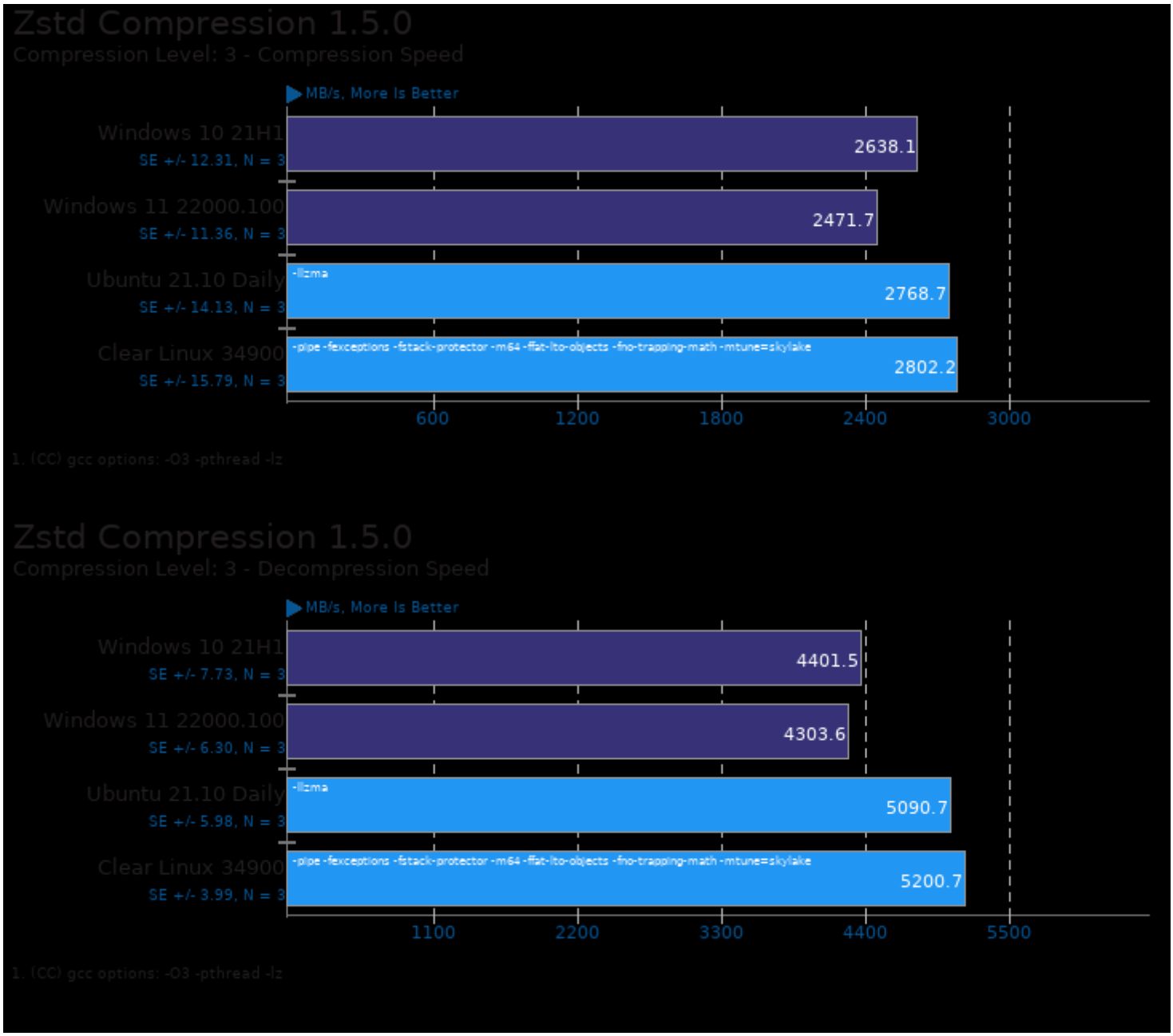

DaCapo Benchmark 9.12-MR1
Java Test: Jython
msec, Fewer Is Better
Windows 10 21H1
SE +/- 44.97, N = 16
3361
Windows 11 22000.100
SE +/- 25.25, N = 4
3523
Ubuntu 21.10 Daily
SE +/- 28.80, N = 6
3050
Clear Linux 34900
SE +/- 21.03, N = 4
2683
800
1600
2400
3200
4000
DaCapo Benchmark 9.12-MR1
Java Test: Tradesoap
msec, Fewer Is Better
Windows 10 21H1
SE +/- 67.91, N = 5
6127
Windows 11 22000.100
SE +/- 48.01, N = 20
7364
Ubuntu 21.10 Daily
SE +/- 20.29, N = 4
3385
Clear Linux 34900
SE +/- 17.37, N = 4
2779
1600
3200
4800
6400
8000
DaCapo Benchmark 9.12-MR1
Java Test: Tradebeans
msec, Fewer Is Better
Windows 10 21H1
SE +/- 26.41, N = 16
2243
Windows 11 22000.100
SE +/- 21.85, N = 20
2620
Ubuntu 21.10 Daily
SE +/- 13.53, N = 20
2153
Clear Linux 34900
SE +/- 18.07, N = 4
1818
600
1200
1800
2400
3000

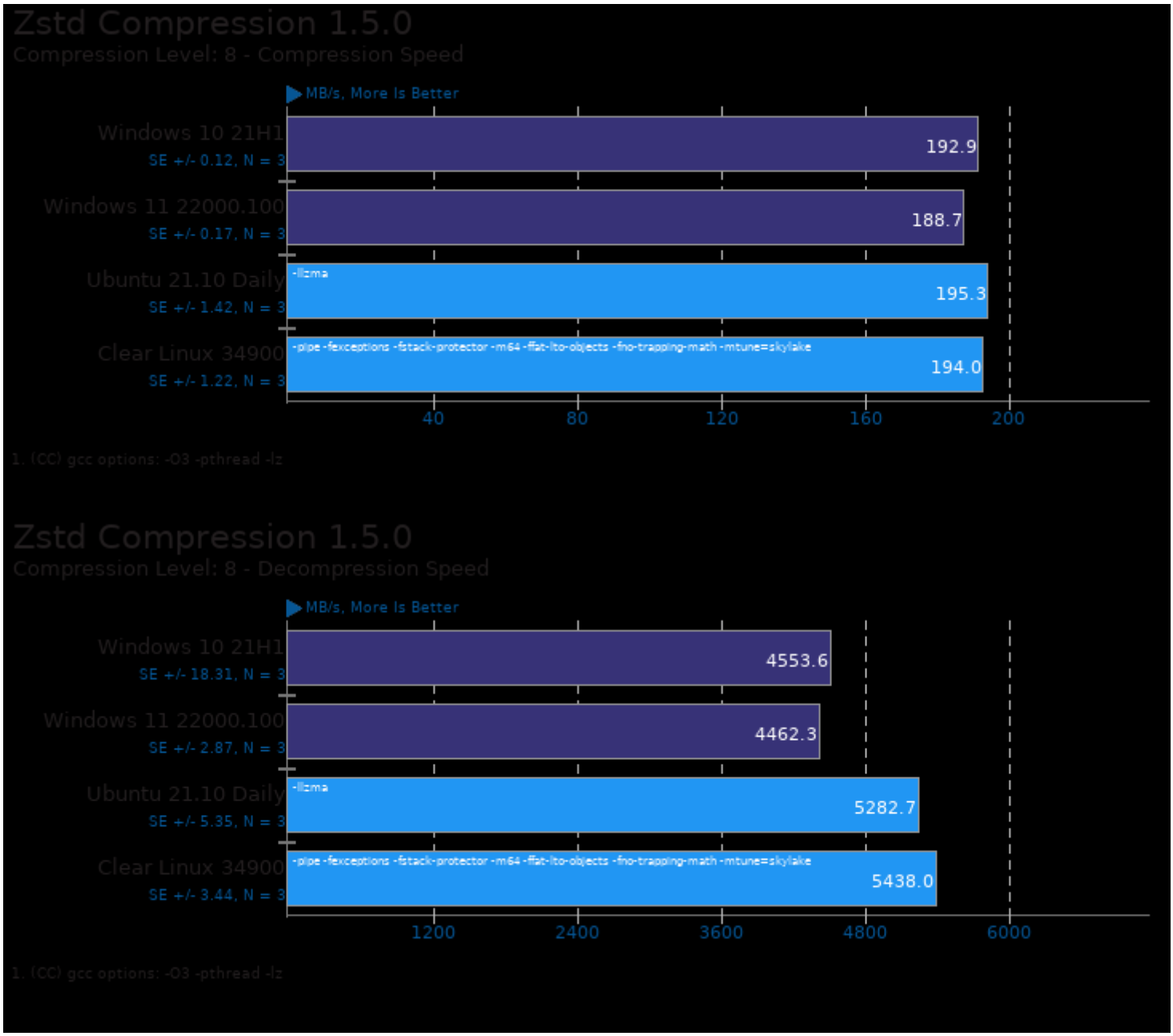

Renaissance 0.12
Test: Scala Dotty
ms, Fewer Is Better
Windows 10 21H1
SE +/- 4.77, N = 3
MIN: 642.46 / MAX: 1083.12
1073.7
Windows 11 22000.100
SE +/- 7.99, N = 3
MIN: 722.89 / MAX: 1187.9
1171.9
Ubuntu 21.10 Daily
SE +/- 9.11, N = 15
MIN: 499.46 / MAX: 1527.28
658.8
Clear Linux 34900
SE +/- 8.51, N = 15
MIN: 412.06 / MAX: 1154.44
542.4
300
600
900
1200
1500
Renaissance 0.12
Test: Finagle HTTP Requests
ms, Fewer Is Better
Windows 10 21H1
SE +/- 3.86, N = 3
MIN: 1836.11 / MAX: 1982.75
1975.1
Windows 11 22000.100
SE +/- 11.18, N = 3
MIN: 2731.51 / MAX: 2919.72
2899.7
Ubuntu 21.10 Daily
SE +/- 10.64, N = 3
MIN: 1531.97 / MAX: 1755.13
1665.1
Clear Linux 34900
SE +/- 5.91, N = 3
MIN: 1356.09 / MAX: 1508.01
1455.4
600
1200
1800
2400
3000
Renaissance 0.12
Test: Genetic Algorithm Using Jenetics + Futures
ms, Fewer Is Better
Windows 10 21H1
SE +/- 12.95, N = 15
MIN: 1043.5 / MAX: 1442.67
1366.7
Windows 11 22000.100
SE +/- 37.21, N = 12
MIN: 1130.01 / MAX: 1760.44
1599.6
Ubuntu 21.10 Daily
SE +/- 10.82, N = 3
MIN: 1091.87 / MAX: 1147.85
1122.9
Clear Linux 34900
SE +/- 6.57, N = 3
MIN: 1093.75 / MAX: 1137.76
1112.6
300
600
900
1200
1500

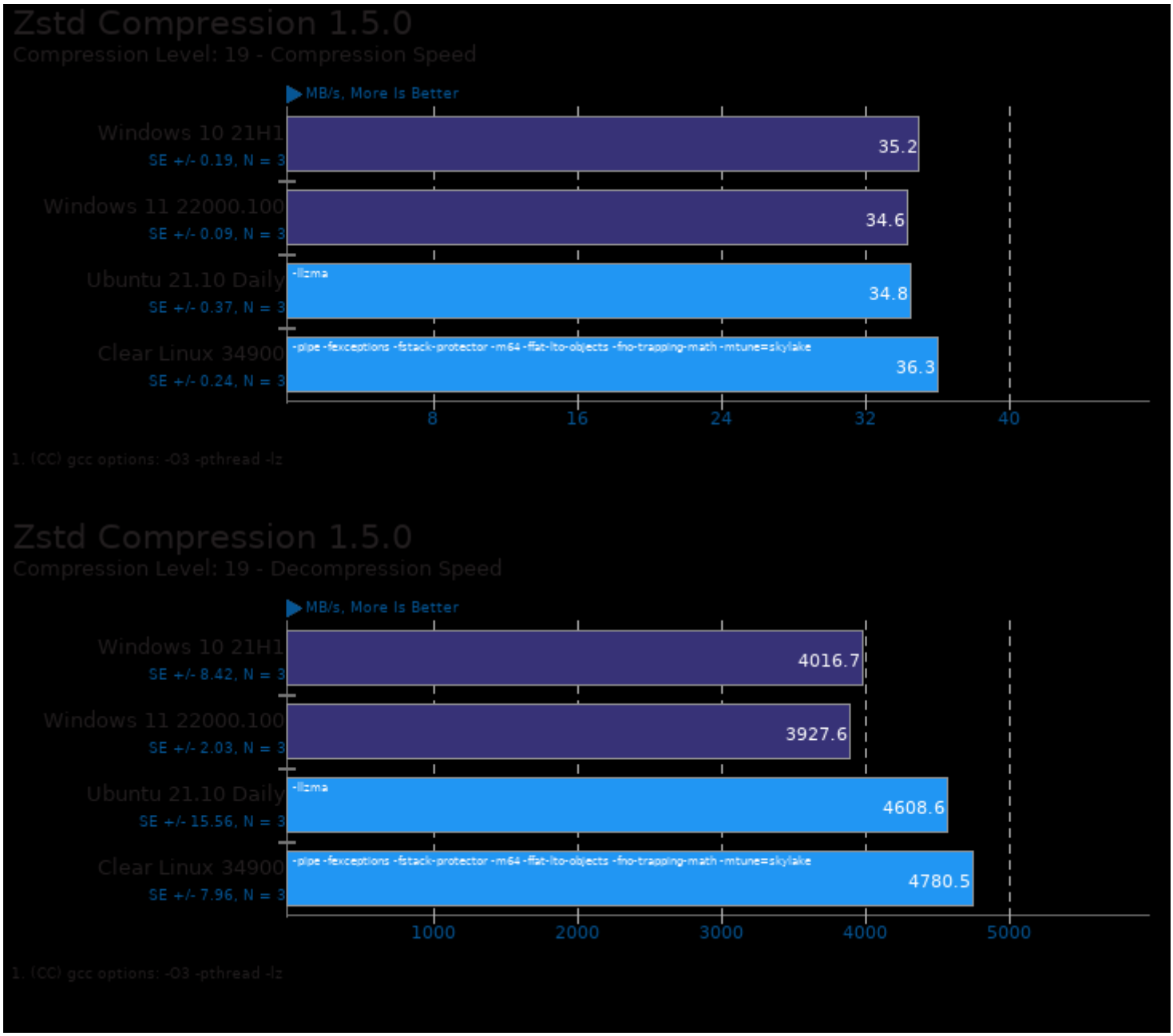

LZ4 Compression 1.9.3
Compression Level: 1 - Compression Speed
MB/s, More Is Better
Windows 10 21H1
SE +/- 1.30, N = 3
10813.80
Windows 11 22000.100
SE +/- 6.37, N = 3
10689.73
Ubuntu 21.10 Daily
SE +/- 2.30, N = 3
10842.24
Clear Linux 34900
SE +/- 6.93, N = 3
10919.35
2K
4K
6K
8K
10K
1. (CC) gcc options: -O3
LZ4 Compression 1.9.3
Compression Level: 1 - Decompression Speed
MB/s, More Is Better
Windows 10 21H1
SE +/- 4.88, N = 3
11503.9
Windows 11 22000.100
SE +/- 15.97, N = 3
11475.1
Ubuntu 21.10 Daily
SE +/- 0.81, N = 3
11445.9
Clear Linux 34900
SE +/- 3.94, N = 3
11562.3
2K
4K
6K
8K
10K
1. (CC) gcc options: -O3

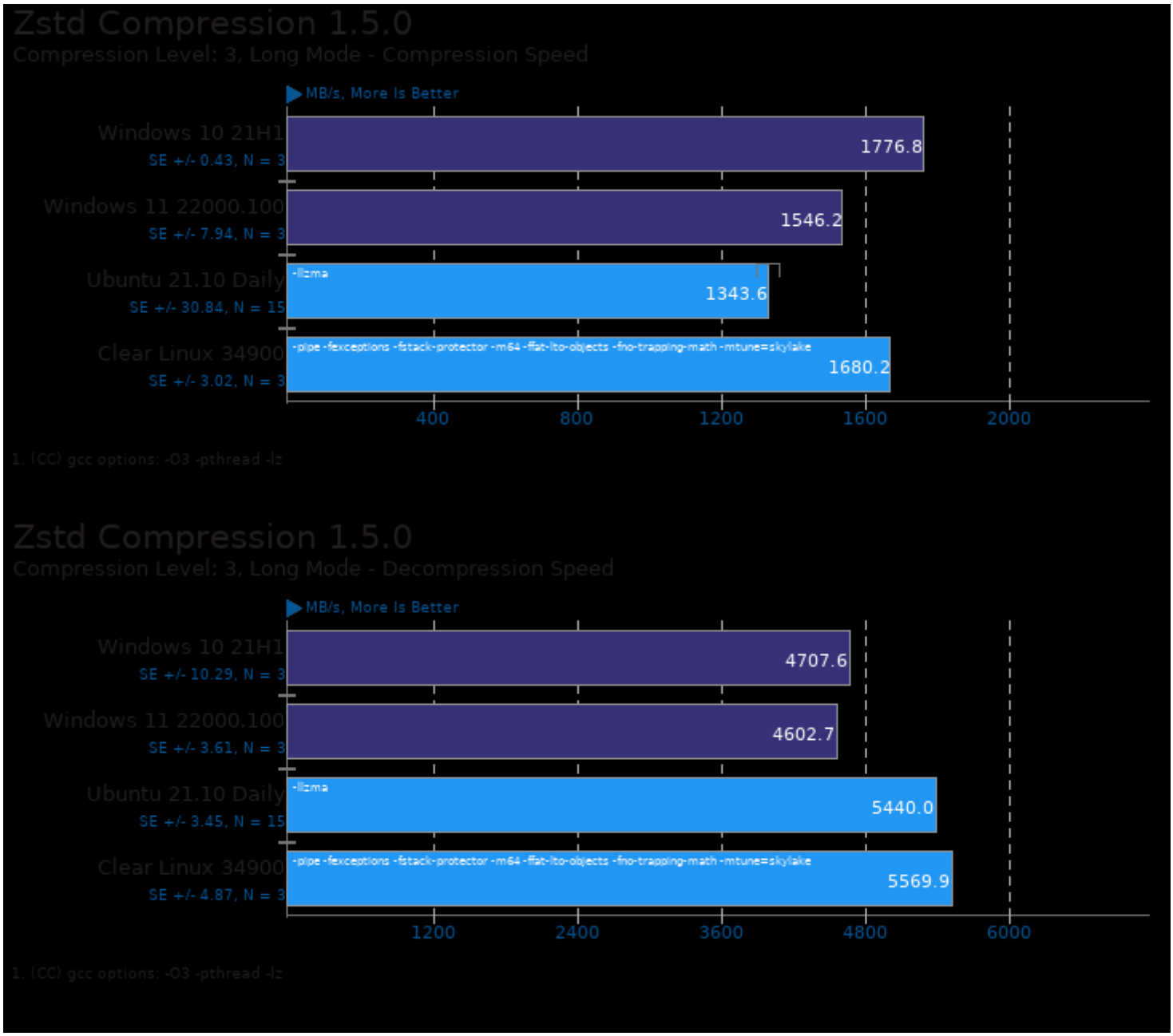

LZ4 Compression 1.9.3
Compression Level: 3 - Compression Speed
MB/s, More Is Better
Windows 10 21H1
SE +/- 0.04, N = 3
75.15
Windows 11 22000.100
SE +/- 0.02, N = 3
72.94
Ubuntu 21.10 Daily
SE +/- 0.01, N = 3
73.93
Clear Linux 34900
SE +/- 0.23, N = 3
74.98
20
40
60
80
100
1. (CC) gcc options: -O3
LZ4 Compression 1.9.3
Compression Level: 3 - Decompression Speed
MB/s, More Is Better
Windows 10 21H1
SE +/- 4.78, N = 3
11296.3
Windows 11 22000.100
SE +/- 5.98, N = 3
11194.3
Ubuntu 21.10 Daily
SE +/- 6.10, N = 3
11298.1
Clear Linux 34900
SE +/- 8.74, N = 3
11426.5
2K
4K
6K
8K
10K
1. (CC) gcc options: -O3

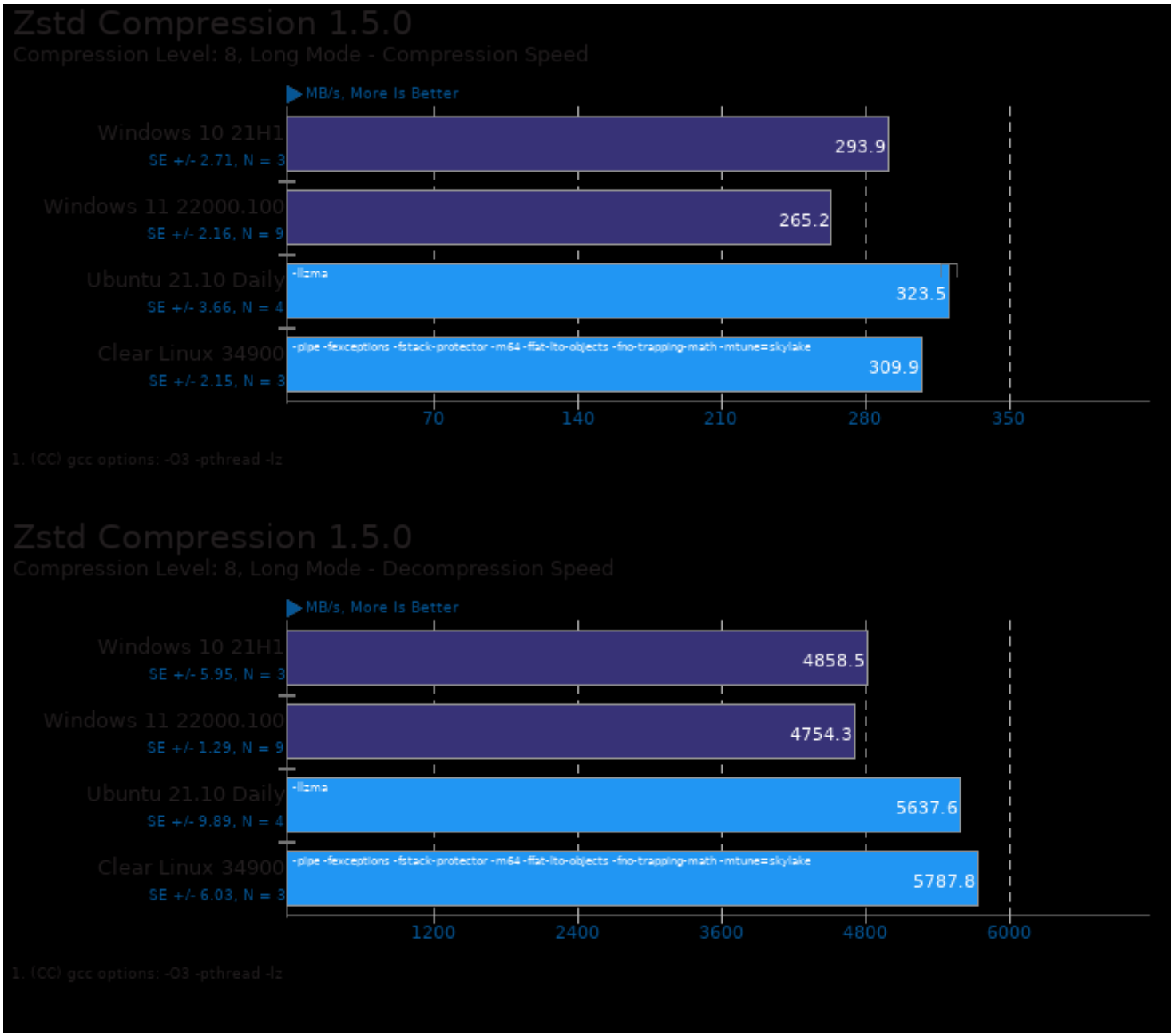

LZ4 Compression 1.9.3
Compression Level: 9 - Compression Speed
MB/s, More Is Better
Windows 10 21H1
SE +/- 0.70, N = 3
72.83
Windows 11 22000.100
SE +/- 0.05, N = 3
71.49
Ubuntu 21.10 Daily
SE +/- 0.08, N = 3
72.30
Clear Linux 34900
SE +/- 0.30, N = 3
72.94
16
32
48
64
80
1. (CC) gcc options: -O3
LZ4 Compression 1.9.3
Compression Level: 9 - Decompression Speed
MB/s, More Is Better
Windows 10 21H1
SE +/- 3.86, N = 3
11315.0
Windows 11 22000.100
SE +/- 4.56, N = 3
11206.2
Ubuntu 21.10 Daily
SE +/- 2.85, N = 3
11313.1
Clear Linux 34900
SE +/- 5.51, N = 3
11425.0
2K
4K
6K
8K
10K
1. (CC) gcc options: -O3

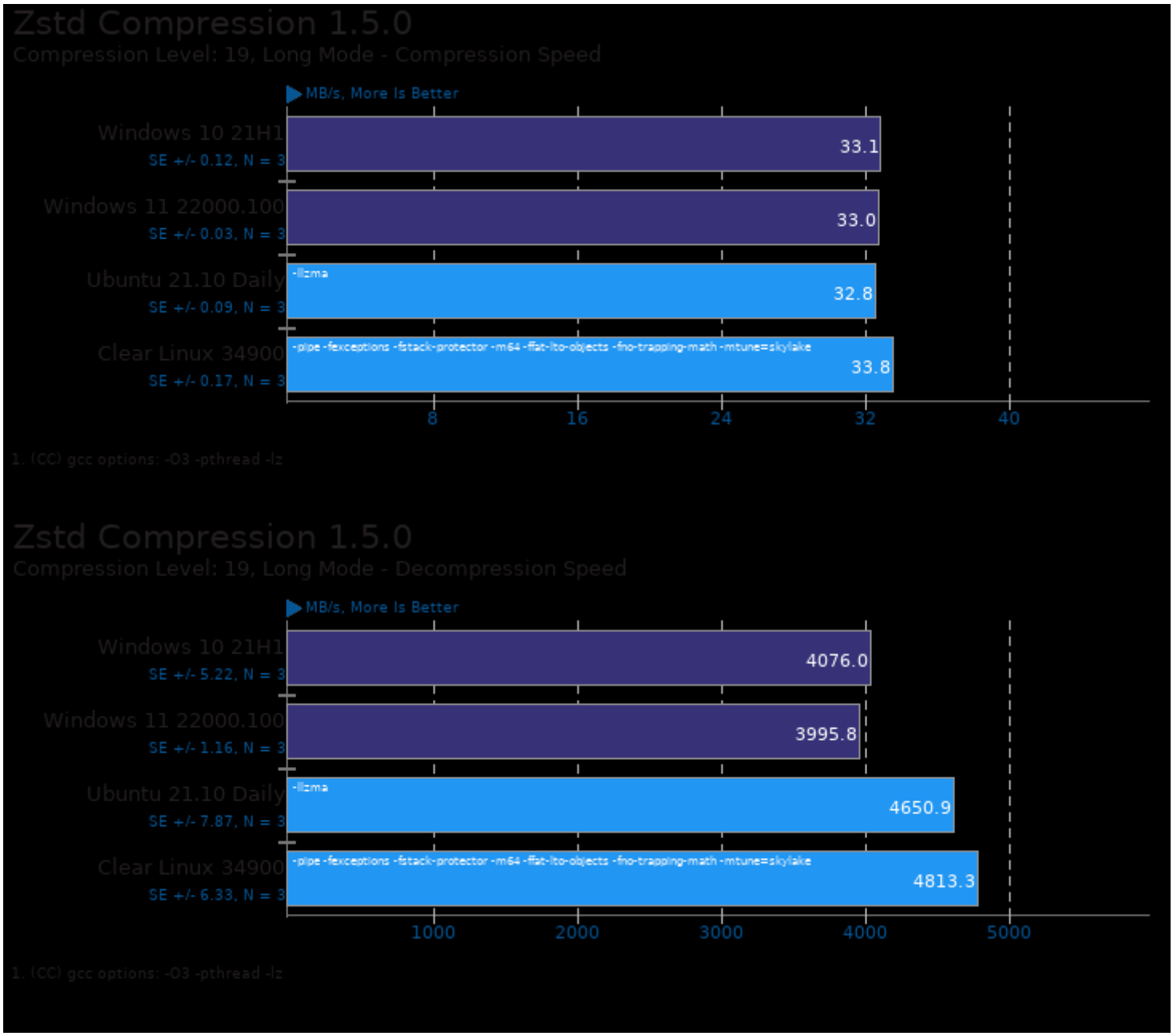

Zstd Compression 1.5.0
Compression Level: 3 - Compression Speed
MB/s, More Is Better
Windows 10 21H1
SE +/- 12.31, N = 3
2638.1
Windows 11 22000.100
SE +/- 11.36, N = 3
2471.7
Ubuntu 21.10 Daily
SE +/- 14.13, N = 3
-llzma
2768.7
Clear Linux 34900
SE +/- 15.79, N = 3
-pipe -fexceptions -fstack-protector -m64 -flat-lto-objects -fno-trapping-math -mtune=skylake
2802.2
600
1200
1800
2400
3000
1. (CC) gcc options: -O3 -pthread -lz
Zstd Compression 1.5.0
Compression Level: 3 - Decompression Speed
MB/s, More Is Better
Windows 10 21H1
SE +/- 7.73, N = 3
4401.5
Windows 11 22000.100
SE +/- 6.30, N = 3
4303.6
Ubuntu 21.10 Daily
SE +/- 5.98, N = 3
-llzma
5090.7
Clear Linux 34900
SE +/- 3.99, N = 3
-pipe -fexceptions -fstack-protector -m64 -flat-lto-objects -fno-trapping-math -mtune=skylake
5200.7
1100
2200
3300
4400
5500
1. (CC) gcc options: -O3 -pthread -lz


Zstd Compression 1.5.0
Compression Level: 8 - Compression Speed
MB/s, More Is Better
Windows 10 21H1
SE +/- 0.12, N = 3
192.9
Windows 11 22000.100
SE +/- 0.17, N = 3
188.7
Ubuntu 21.10 Daily
SE +/- 1.42, N = 3
-llzma
195.3
Clear Linux 34900
SE +/- 1.22, N = 3
-pipe -fexceptions -fstack-protector -m64 -flat-lto-objects -fno-trapping-math -mtune=skylake
194.0
40
80
120
160
200
1. (CC) gcc options: -O3 -pthread -lz
Zstd Compression 1.5.0
Compression Level: 8 - Decompression Speed
MB/s, More Is Better
Windows 10 21H1
SE +/- 18.31, N = 3
4553.6
Windows 11 22000.100
SE +/- 2.87, N = 3
4462.3
Ubuntu 21.10 Daily
SE +/- 5.35, N = 3
-llzma
5282.7
Clear Linux 34900
SE +/- 3.44, N = 3
-pipe -fexceptions -fstack-protector -m64 -flat-lto-objects -fno-trapping-math -mtune=skylake
5438.0
1200
2400
3600
4800
6000
1. (CC) gcc options: -O3 -pthread -lz


Zstd Compression 1.5.0
Compression Level: 19 - Compression Speed
MB/s, More Is Better
Windows 10 21H1
SE +/- 0.19, N = 3
35.2
Windows 11 22000.100
SE +/- 0.09, N = 3
34.6
Ubuntu 21.10 Daily
SE +/- 0.37, N = 3
-llzma
34.8
Clear Linux 34900
SE +/- 0.24, N = 3
-pipe -fexceptions -fstack-protector -m64 -flat-lto-objects -fno-trapping-math -mtune=skylake
36.3
8
16
24
32
40
1. (CC) gcc options: -O3 -pthread -lz
Zstd Compression 1.5.0
Compression Level: 19 - Decompression Speed
MB/s, More Is Better
Windows 10 21H1
SE +/- 8.42, N = 3
4016.7
Windows 11 22000.100
SE +/- 2.03, N = 3
3927.6
Ubuntu 21.10 Daily
SE +/- 15.56, N = 3
-llzma
4608.6
Clear Linux 34900
SE +/- 7.96, N = 3
-pipe -fexceptions -fstack-protector -m64 -flat-lto-objects -fno-trapping-math -mtune=skylake
4780.5
1000
2000
3000
4000
5000
1. (CC) gcc options: -O3 -pthread -lz

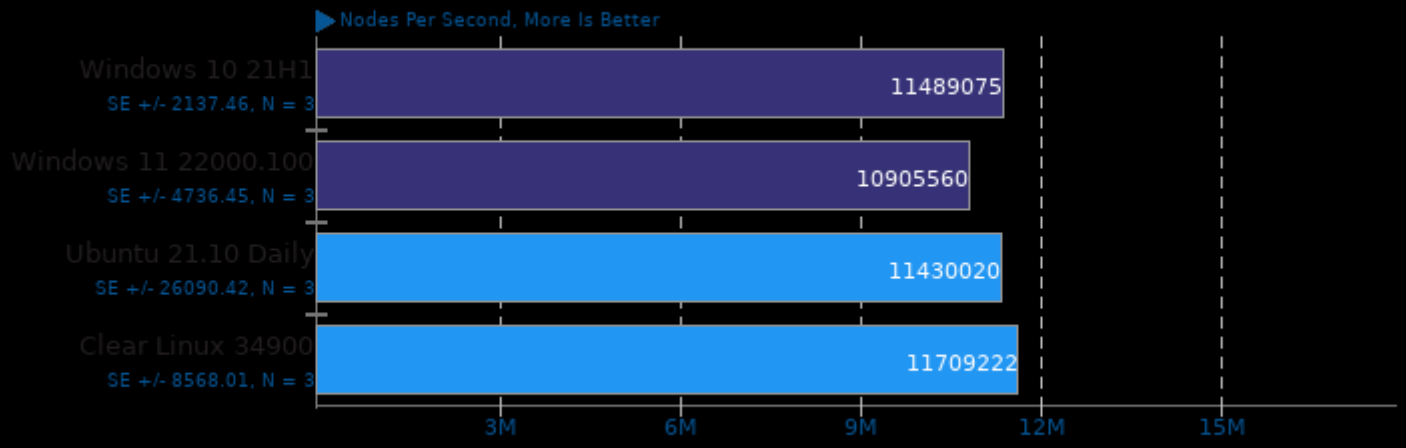

Zstd Compression 1.5.0
Compression Level: 3, Long Mode - Compression Speed
MB/s, More Is Better
Windows 10 21H1
SE +/- 0.43, N = 3
1776.8
Windows 11 22000.100
SE +/- 7.94, N = 3
1546.2
Ubuntu 21.10 Daily
SE +/- 30.84, N = 15
-llzma
1343.6
Clear Linux 34900
SE +/- 3.02, N = 3
-pipe -fexceptions -fstack-protector -m64 -flat-lto-objects -fno-trapping-math -mtune=skylake
1680.2
400
800
1200
1600
2000
1. (CC) gcc options: -O3 -pthread -lz
Zstd Compression 1.5.0
Compression Level: 3, Long Mode - Decompression Speed
MB/s, More Is Better
Windows 10 21H1
SE +/- 10.29, N = 3
4707.6
Windows 11 22000.100
SE +/- 3.61, N = 3
4602.7
Ubuntu 21.10 Daily
SE +/- 3.45, N = 15
-llzma
5440.0
Clear Linux 34900
SE +/- 4.87, N = 3
-pipe -fexceptions -fstack-protector -m64 -flat-lto-objects -fno-trapping-math -mtune=skylake
5569.9
1200
2400
3600
4800
6000
1. (CC) gcc options: -O3 -pthread -lz


Zstd Compression 1.5.0
Compression Level: 8, Long Mode - Compression Speed
MB/s, More Is Better
Windows 10 21H1
SE +/- 2.71, N = 3
293.9
Windows 11 22000.100
SE +/- 2.16, N = 9
265.2
Ubuntu 21.10 Daily
SE +/- 3.66, N = 4
-llzma
323.5
Clear Linux 34900
SE +/- 2.15, N = 3
-pipe -fexceptions -fstack-protector -m64 -flat-lto-objects -fno-trapping-math -mtune=skylake
309.9
70
140
210
280
350
1. (CC) gcc options: -O3 -pthread -lz
Zstd Compression 1.5.0
Compression Level: 8, Long Mode - Decompression Speed
MB/s, More Is Better
Windows 10 21H1
SE +/- 5.95, N = 3
4858.5
Windows 11 22000.100
SE +/- 1.29, N = 9
4754.3
Ubuntu 21.10 Daily
SE +/- 9.89, N = 4
-llzma
5637.6
Clear Linux 34900
SE +/- 6.03, N = 3
-pipe -fexceptions -fstack-protector -m64 -flat-lto-objects -fno-trapping-math -mtune=skylake
5787.8
1200
2400
3600
4800
6000
1. (CC) gcc options: -O3 -pthread -lz


Zstd Compression 1.5.0
Compression Level: 19, Long Mode - Compression Speed
MB/s, More Is Better
Windows 10 21H1
SE +/- 0.12, N = 3
33.1
Windows 11 22000.100
SE +/- 0.03, N = 3
33.0
Ubuntu 21.10 Daily
SE +/- 0.09, N = 3
-llzma
32.8
Clear Linux 34900
SE +/- 0.17, N = 3
-pipe -fexceptions -fstack-protector -m64 -flat-lto-objects -fno-trapping-math -mtune=skylake
33.8
8
16
24
32
40
1. (CC) gcc options: -O3 -pthread -lz
Zstd Compression 1.5.0
Compression Level: 19, Long Mode - Decompression Speed
MB/s, More Is Better
Windows 10 21H1
SE +/- 5.22, N = 3
4076.0
Windows 11 22000.100
SE +/- 1.16, N = 3
3995.8
Ubuntu 21.10 Daily
SE +/- 7.87, N = 3
-llzma
4650.9
Clear Linux 34900
SE +/- 6.33, N = 3
-pipe -fexceptions -fstack-protector -m64 -flat-lto-objects -fno-trapping-math -mtune=skylake
4813.3
1000
2000
3000
4000
5000
1. (CC) gcc options: -O3 -pthread -lz

Crafty 25.2

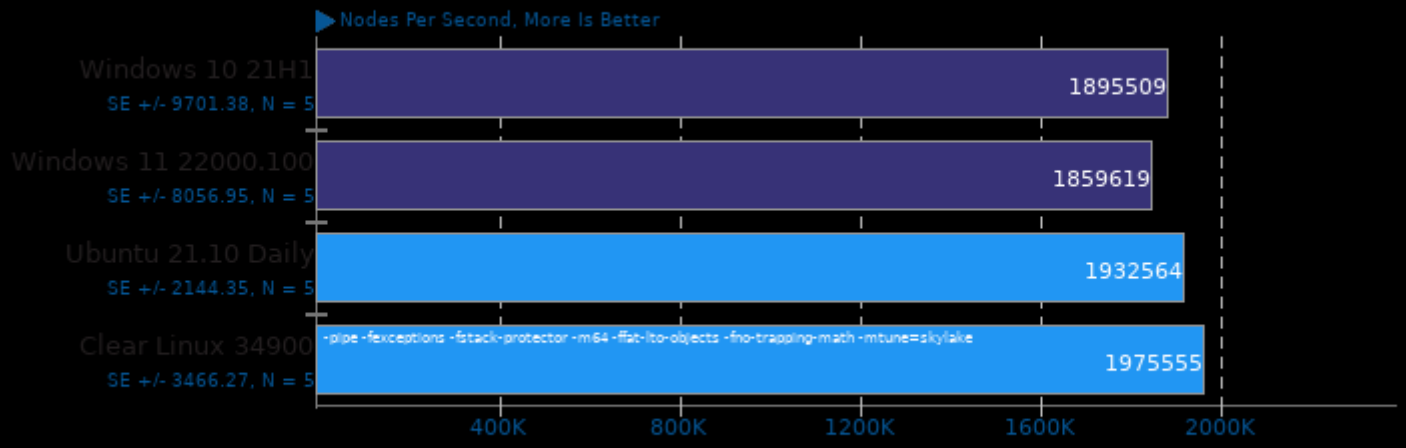
Elapsed Time



1. (CC) gcc options: -pthread -lstdc++ -fprofile-use -lm

TSCP 1.81

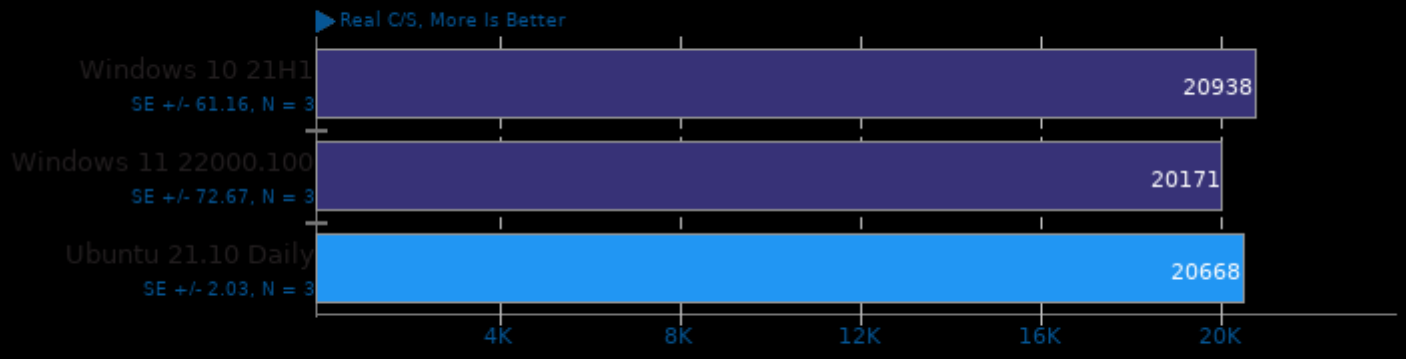
AI Chess Performance



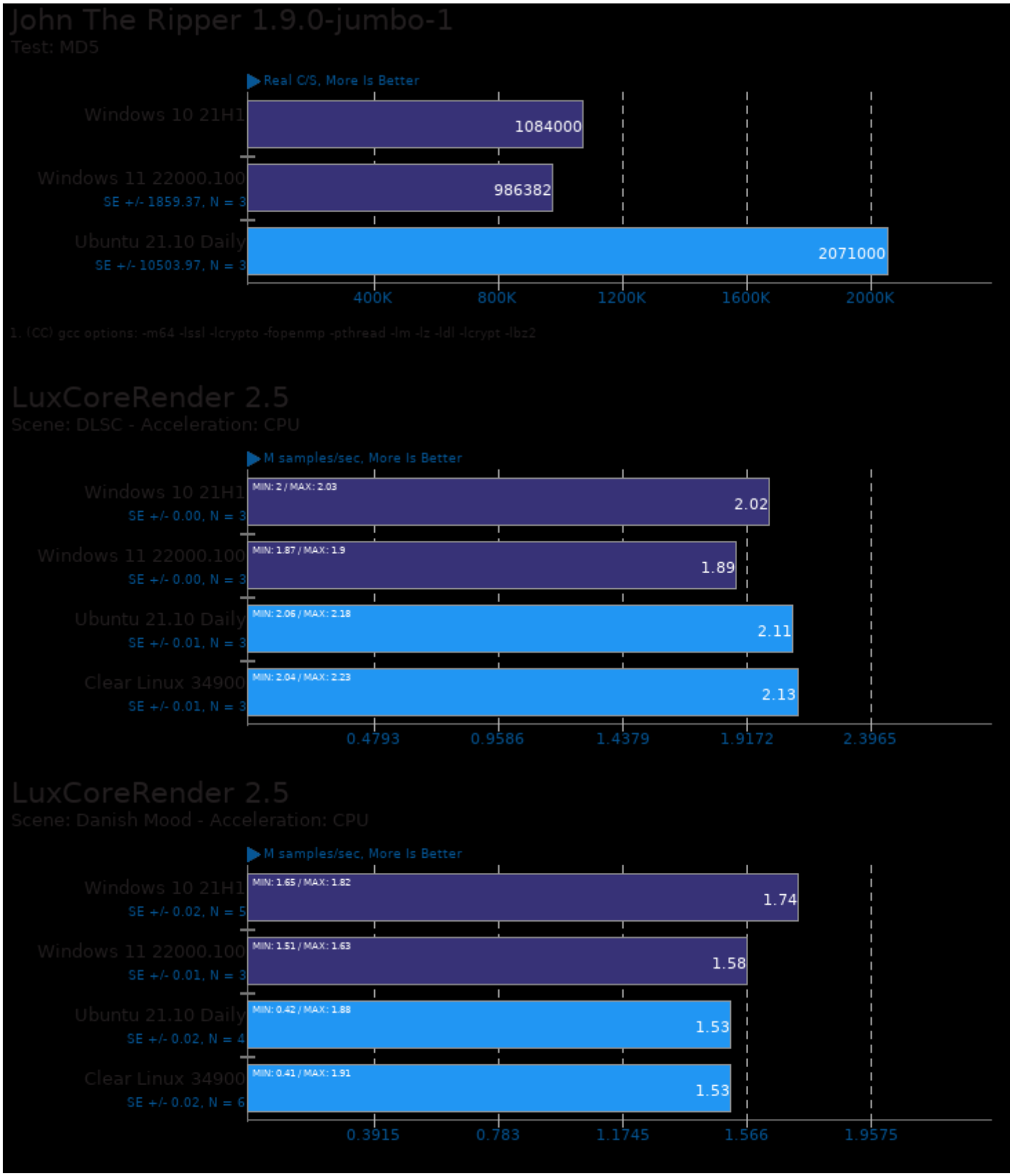
1. (CC) gcc options: -O3 -march=native

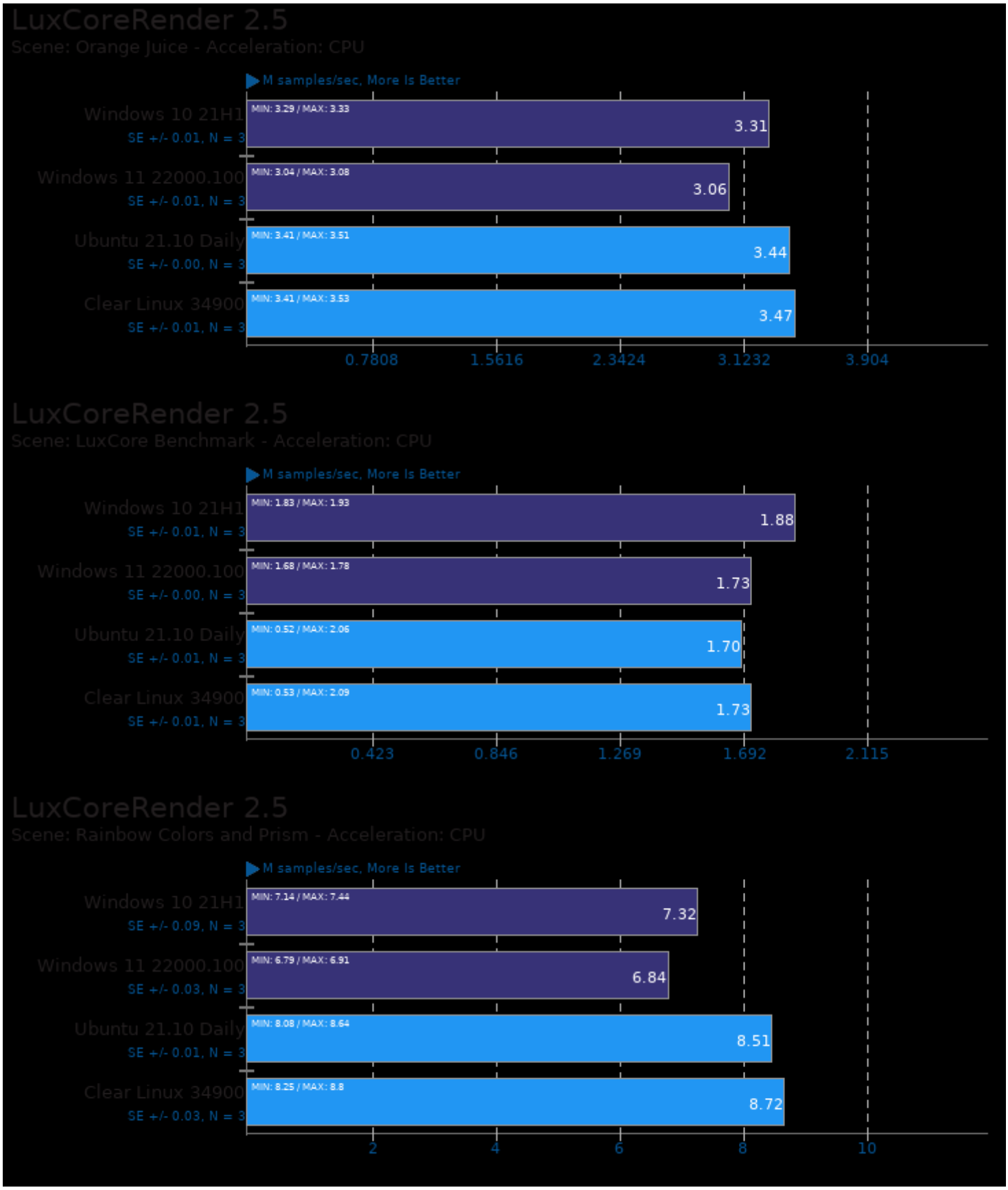
John The Ripper 1.9.0-jumbo-1

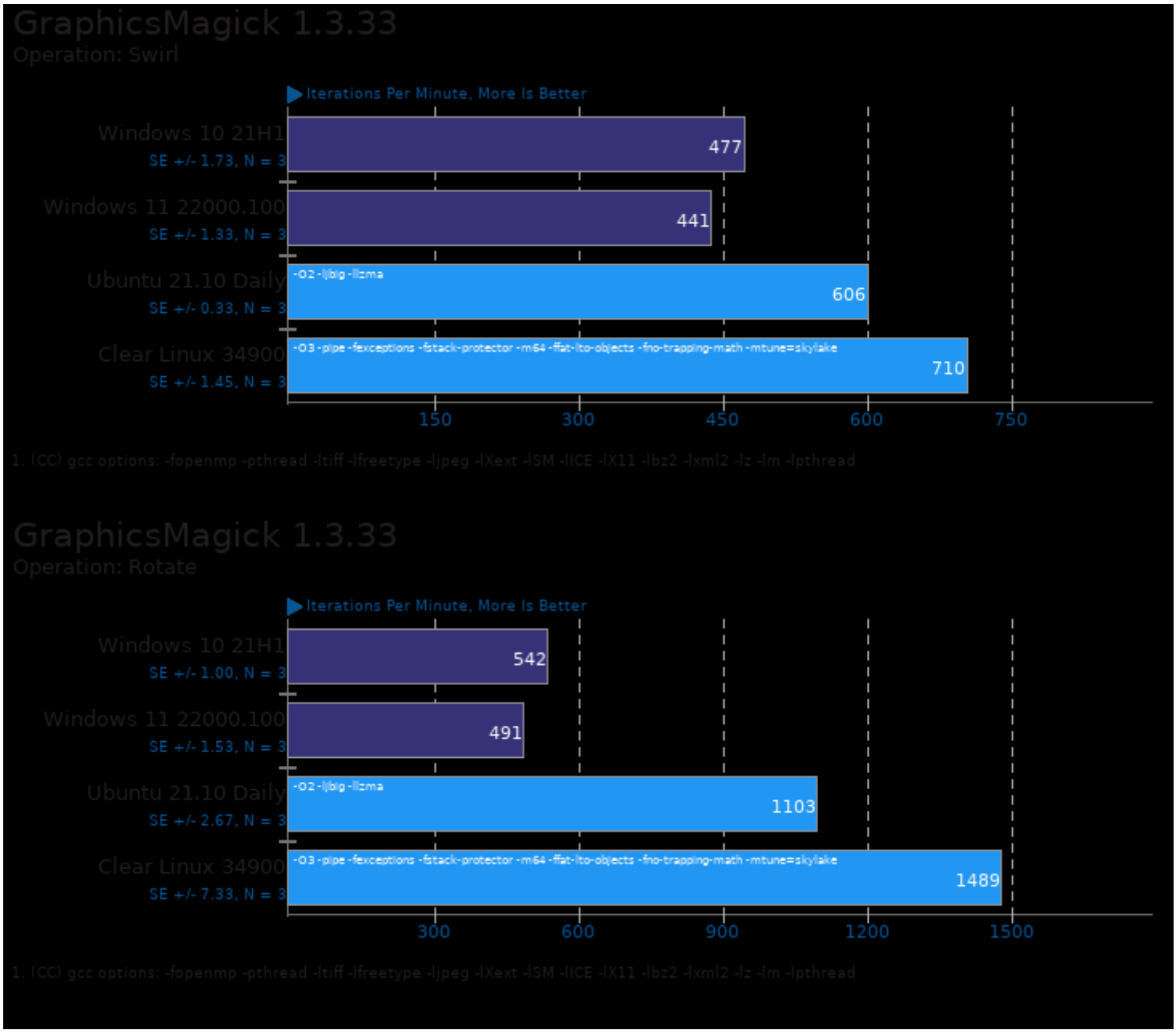
Test: Blowfish

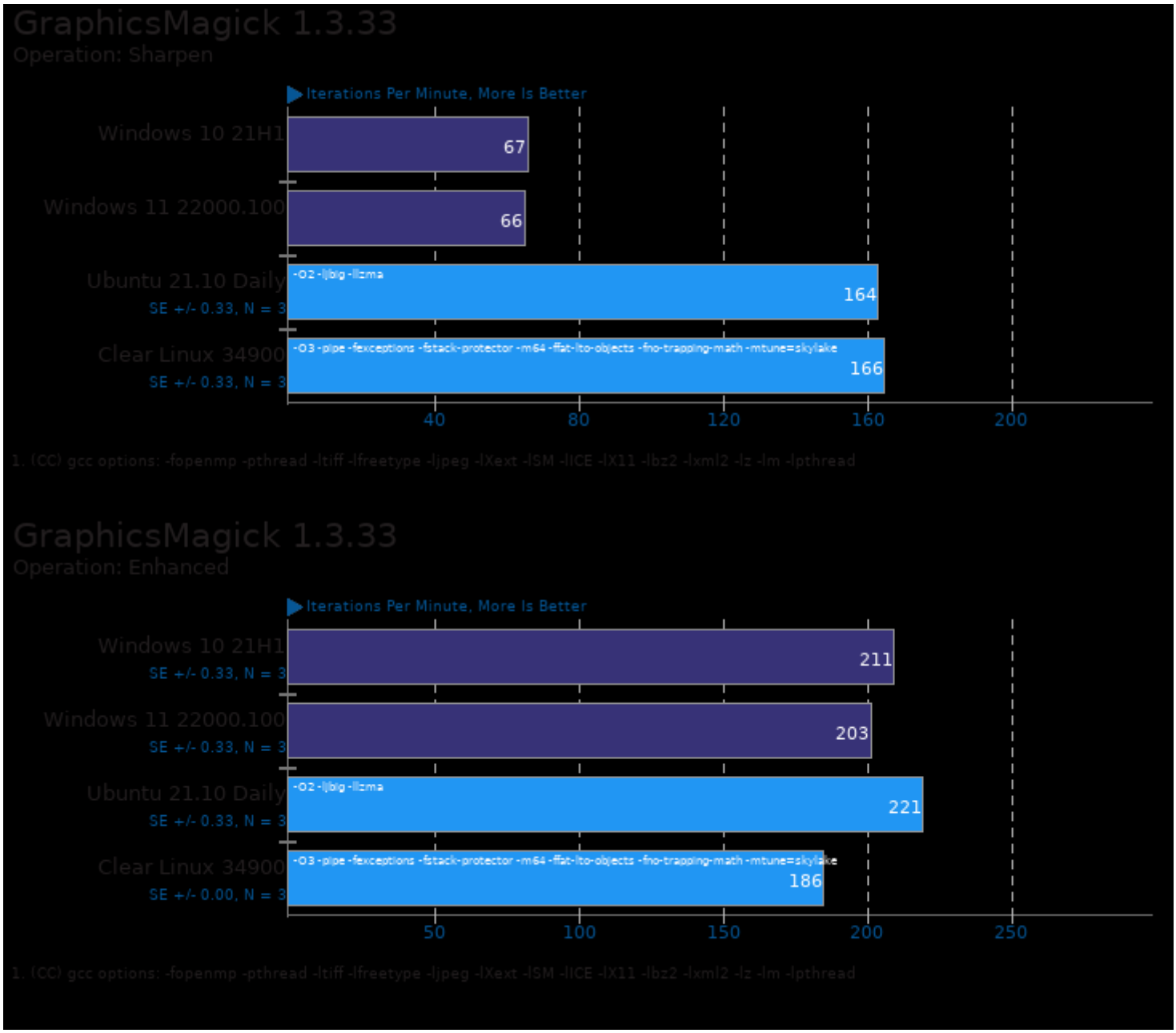


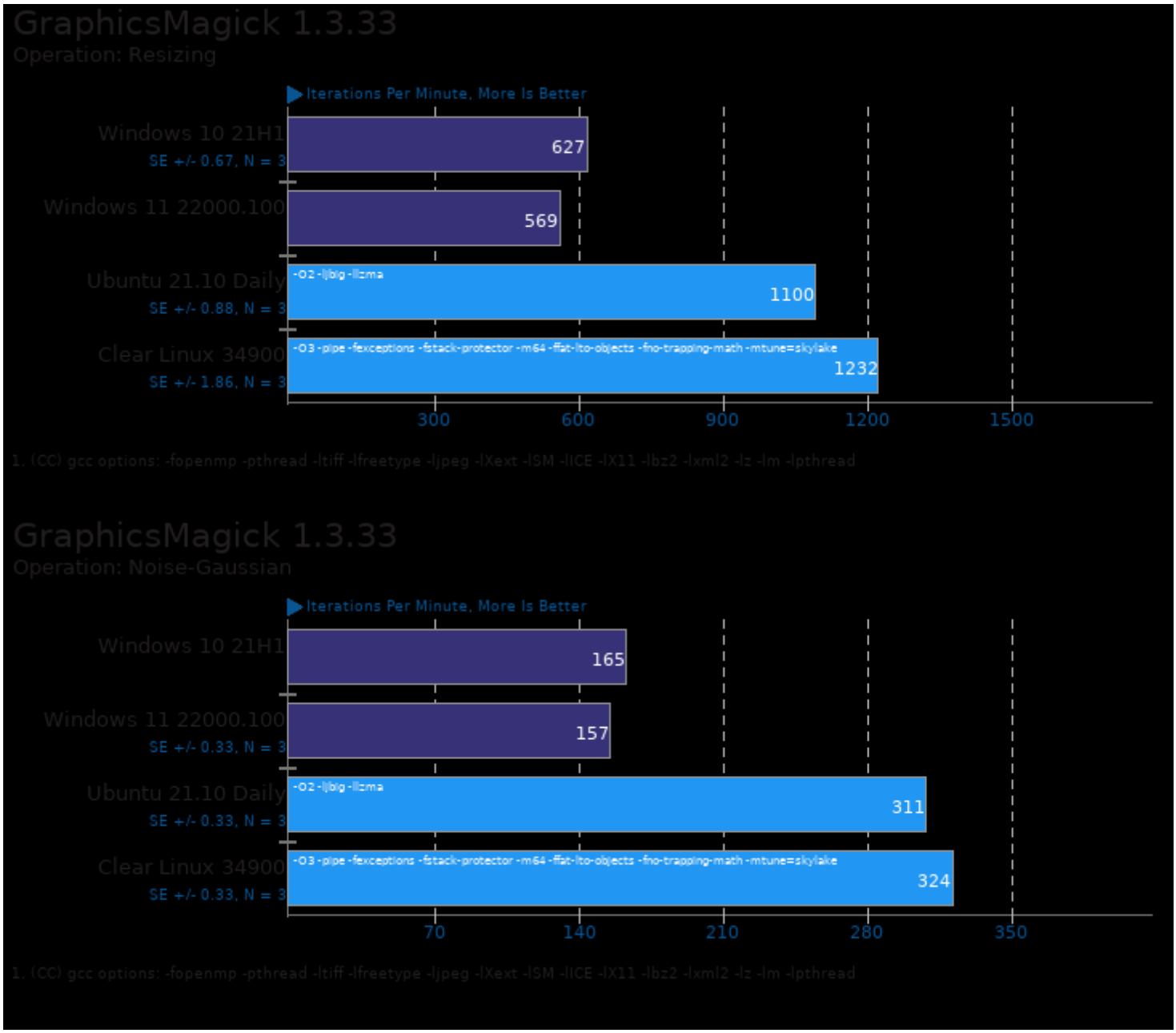
1. (CC) gcc options: -m64 -lssl -lcrypto -fopenmp -pthread -lm -lz -ldl -lcrypt -lbz2

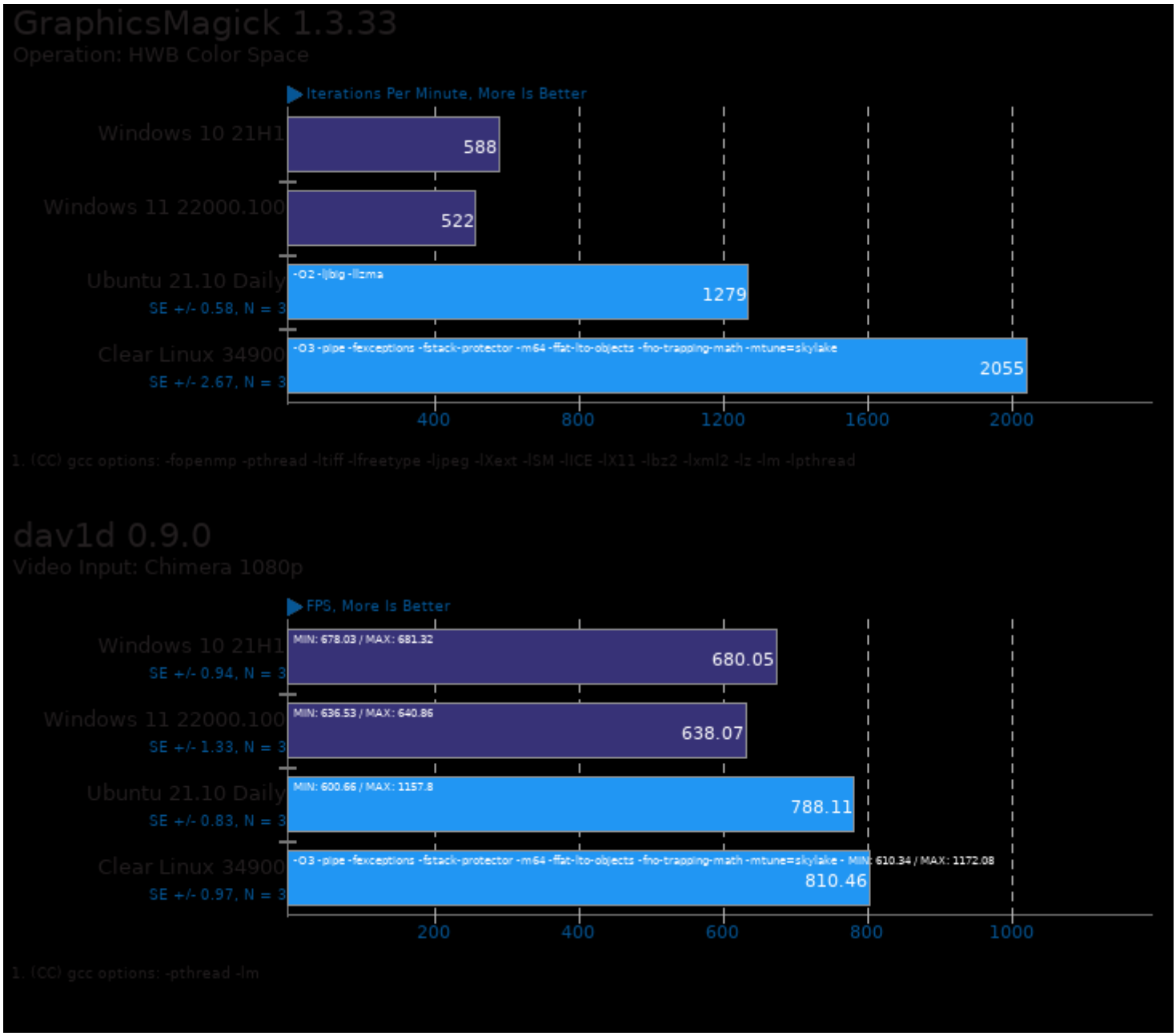

John The Ripper 1.9.0-jumbo-1
Test: MD5
Real C/S, More Is Better
Windows 10 21H1
1084000
Windows 11 22000.100
SE +/- 1859.37, N = 3
986382
Ubuntu 21.10 Daily
SE +/- 10503.97, N = 3
2071000
400K
800K
1200K
1600K
2000K
1. (CC) gcc options: -m64 -lssl -lcrypto -fopenmp -pthread -lm -lz -ldl -lcrypt -lbz2
LuxCoreRender 2.5
Scene: DLSC - Acceleration: CPU
M samples/sec, More Is Better
Windows 10 21H1
SE +/- 0.00, N = 3
MIN: 2 / MAX: 2.03
2.02
Windows 11 22000.100
SE +/- 0.00, N = 3
MIN: 1.87 / MAX: 1.9
1.89
Ubuntu 21.10 Daily
SE +/- 0.01, N = 3
MIN: 2.06 / MAX: 2.18
2.11
Clear Linux 34900
SE +/- 0.01, N = 3
MIN: 2.04 / MAX: 2.23
2.13
0.4793
0.9586
1.4379
1.9172
2.3965
LuxCoreRender 2.5
Scene: Danish Mood - Acceleration: CPU
M samples/sec, More Is Better
Windows 10 21H1
SE +/- 0.02, N = 5
MIN: 1.65 / MAX: 1.82
1.74
Windows 11 22000.100
SE +/- 0.01, N = 3
MIN: 1.51 / MAX: 1.63
1.58
Ubuntu 21.10 Daily
SE +/- 0.02, N = 4
MIN: 0.42 / MAX: 1.88
1.53
Clear Linux 34900
SE +/- 0.02, N = 6
MIN: 0.41 / MAX: 1.91
1.53
0.3915
0.783
1.1745
1.566
1.9575

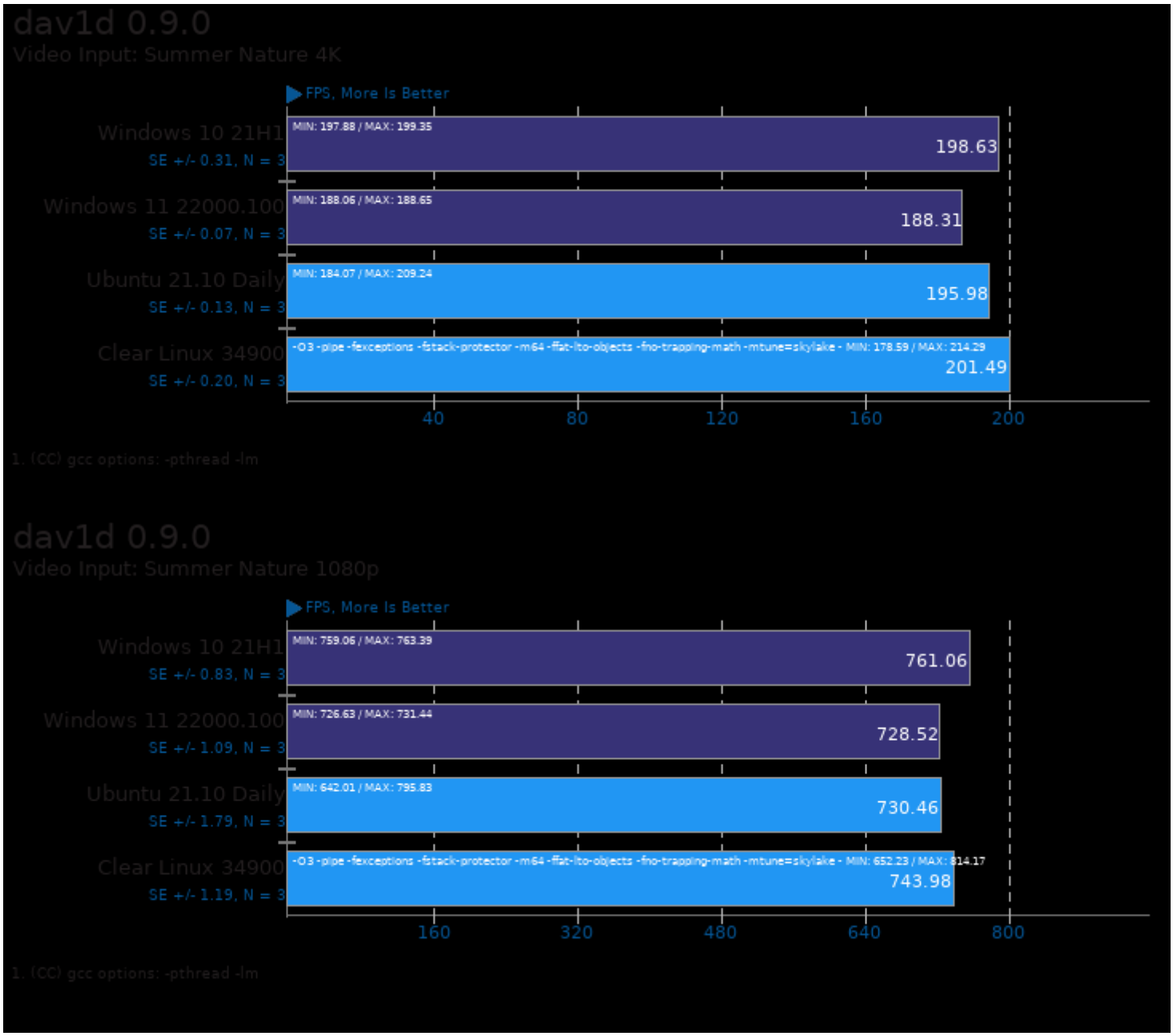

LuxCoreRender 2.5
Scene: Orange Juice - Acceleration: CPU
M samples/sec, More Is Better
Windows 10 21H1
SE +/- 0.01, N = 3
MIN: 3.29 / MAX: 3.33
3.31
Windows 11 22000.100
SE +/- 0.01, N = 3
MIN: 3.04 / MAX: 3.08
3.06
Ubuntu 21.10 Daily
SE +/- 0.00, N = 3
MIN: 3.41 / MAX: 3.51
3.44
Clear Linux 34900
SE +/- 0.01, N = 3
MIN: 3.41 / MAX: 3.53
3.47
0.7808
1.5616
2.3424
3.1232
3.904
LuxCoreRender 2.5
Scene: LuxCore Benchmark - Acceleration: CPU
M samples/sec, More Is Better
Windows 10 21H1
SE +/- 0.01, N = 3
MIN: 1.83 / MAX: 1.93
1.88
Windows 11 22000.100
SE +/- 0.00, N = 3
MIN: 1.68 / MAX: 1.78
1.73
Ubuntu 21.10 Daily
SE +/- 0.01, N = 3
MIN: 0.52 / MAX: 2.06
1.70
Clear Linux 34900
SE +/- 0.01, N = 3
MIN: 0.53 / MAX: 2.09
1.73
0.423
0.846
1.269
1.692
2.115
LuxCoreRender 2.5
Scene: Rainbow Colors and Prism - Acceleration: CPU
M samples/sec, More Is Better
Windows 10 21H1
SE +/- 0.09, N = 3
MIN: 7.14 / MAX: 7.44
7.32
Windows 11 22000.100
SE +/- 0.03, N = 3
MIN: 6.79 / MAX: 6.91
6.84
Ubuntu 21.10 Daily
SE +/- 0.01, N = 3
MIN: 8.08 / MAX: 8.64
8.51
Clear Linux 34900
SE +/- 0.03, N = 3
MIN: 8.25 / MAX: 8.8
8.72
2
4
6
8
10

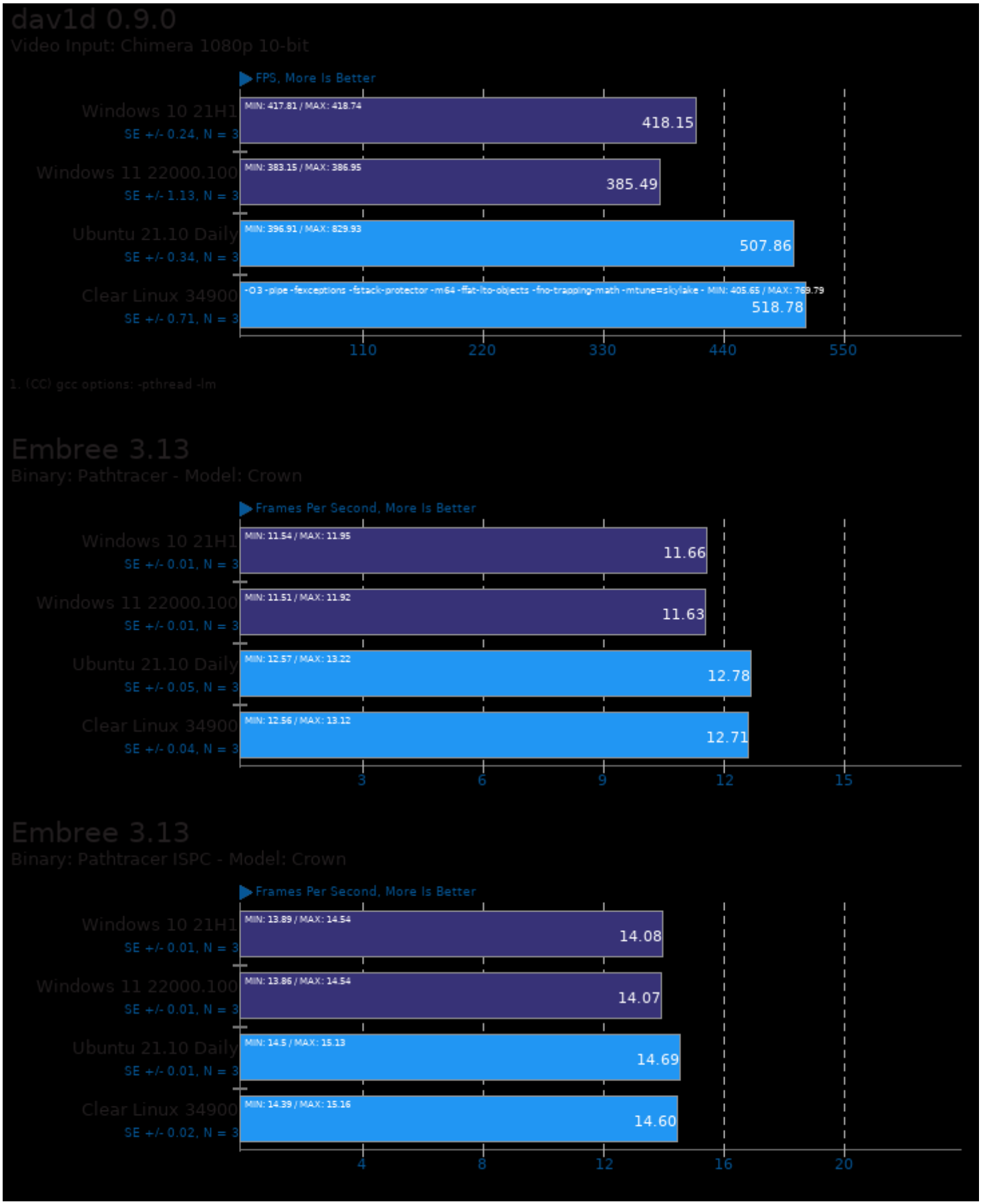

GraphicsMagick 1.3.33
Operation: Swirl
Iterations Per Minute, More Is Better
Windows 10 21H1
SE +/- 1.73, N = 3
477
Windows 11 22000.100
SE +/- 1.33, N = 3
441
Ubuntu 21.10 Daily
SE +/- 0.33, N = 3
-O2 -ljbig -llzma
606
Clear Linux 34900
SE +/- 1.45, N = 3
-O3 -pipe -fexceptions -fstack-protector -m64 -ffat-lto-objects -fno-trapping-math -mtune=skylake
710
150
300
450
600
750
1. (CC) gcc options: -fopenmp -pthread -ltiff -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -lbz2 -lxml2 -lz -lm -lpthread
GraphicsMagick 1.3.33
Operation: Rotate
Iterations Per Minute, More Is Better
Windows 10 21H1
SE +/- 1.00, N = 3
542
Windows 11 22000.100
SE +/- 1.53, N = 3
491
Ubuntu 21.10 Daily
SE +/- 2.67, N = 3
-O2 -ljbig -llzma
1103
Clear Linux 34900
SE +/- 7.33, N = 3
-O3 -pipe -fexceptions -fstack-protector -m64 -ffat-lto-objects -fno-trapping-math -mtune=skylake
1489
300
600
900
1200
1500
1. (CC) gcc options: -fopenmp -pthread -ltiff -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -lbz2 -lxml2 -lz -lm -lpthread

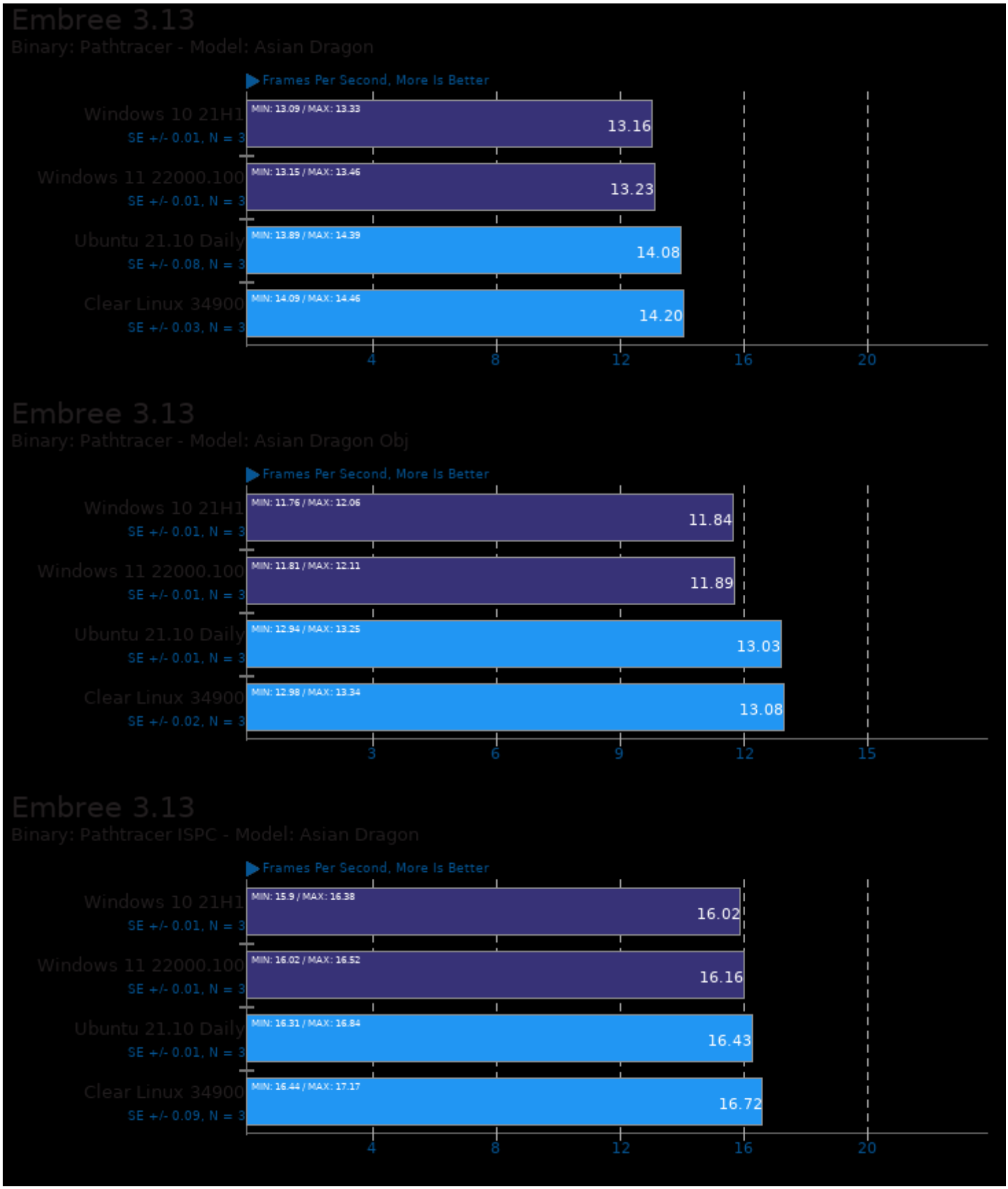

GraphicsMagick 1.3.33
Operation: Sharpen
Iterations Per Minute, More Is Better
Windows 10 21H1
67
Windows 11 22000.100
66
Ubuntu 21.10 Daily
-O2 -ljbig -llzma
SE +/- 0.33, N = 3
164
Clear Linux 34900
-O3 -pipe -fexceptions -fstack-protector -m64 -ffat-lto-objects -fno-trapping-math -mtune=skylake
SE +/- 0.33, N = 3
166
40
80
120
160
200
1. (CC) gcc options: -fopenmp -pthread -ltiff -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -lbz2 -lxml2 -lz -lm -lpthread
GraphicsMagick 1.3.33
Operation: Enhanced
Iterations Per Minute, More Is Better
Windows 10 21H1
SE +/- 0.33, N = 3
211
Windows 11 22000.100
SE +/- 0.33, N = 3
203
Ubuntu 21.10 Daily
-O2 -ljbig -llzma
SE +/- 0.33, N = 3
221
Clear Linux 34900
-O3 -pipe -fexceptions -fstack-protector -m64 -ffat-lto-objects -fno-trapping-math -mtune=skylake
SE +/- 0.00, N = 3
186
50
100
150
200
250
1. (CC) gcc options: -fopenmp -pthread -ltiff -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -lbz2 -lxml2 -lz -lm -lpthread


GraphicsMagick 1.3.33
Operation: Resizing
Iterations Per Minute, More Is Better
Windows 10 21H1
SE +/- 0.67, N = 3
627
Windows 11 22000.100
569
Ubuntu 21.10 Daily
SE +/- 0.88, N = 3
-O2 -ljbig -llzma
1100
Clear Linux 34900
SE +/- 1.86, N = 3
-O3 -pipe -fexceptions -fstack-protector -m64 -ffat-lto-objects -fno-trapping-math -mtune=skylake
1232
300
600
900
1200
1500
1. (CC) gcc options: -fopenmp -pthread -ltiff -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -lbz2 -lxml2 -lz -lm -lpthread
GraphicsMagick 1.3.33
Operation: Noise-Gaussian
Iterations Per Minute, More Is Better
Windows 10 21H1
165
Windows 11 22000.100
SE +/- 0.33, N = 3
157
Ubuntu 21.10 Daily
SE +/- 0.33, N = 3
-O2 -ljbig -llzma
311
Clear Linux 34900
SE +/- 0.33, N = 3
-O3 -pipe -fexceptions -fstack-protector -m64 -ffat-lto-objects -fno-trapping-math -mtune=skylake
324
70
140
210
280
350
1. (CC) gcc options: -fopenmp -pthread -ltiff -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -lbz2 -lxml2 -lz -lm -lpthread


GraphicsMagick 1.3.33
Operation: HWB Color Space
Iterations Per Minute, More Is Better
Windows 10 21H1
588
Windows 11 22000.100
522
Ubuntu 21.10 Daily
SE +/- 0.58, N = 3
-O2 -ljbig -llzma
1279
Clear Linux 34900
SE +/- 2.67, N = 3
-O3 -pipe -fexceptions -fstack-protector -m64 -ffat-lto-objects -fno-trapping-math -mtune=skylake
2055
400
800
1200
1600
2000
1. (CC) gcc options: -fopenmp -pthread -ltiff -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -lbz2 -lxml2 -lz -lm -lpthread
dav1d 0.9.0
Video Input: Chimera 1080p
FPS, More Is Better
Windows 10 21H1
SE +/- 0.94, N = 3
MIN: 678.03 / MAX: 681.32
680.05
Windows 11 22000.100
SE +/- 1.33, N = 3
MIN: 636.53 / MAX: 640.86
638.07
Ubuntu 21.10 Daily
SE +/- 0.83, N = 3
MIN: 600.66 / MAX: 1157.8
788.11
Clear Linux 34900
SE +/- 0.97, N = 3
-O3 -pipe -fexceptions -fstack-protector -m64 -ffat-lto-objects -fno-trapping-math -mtune=skylake - MIN: 610.34 / MAX: 1172.08
810.46
200
400
600
800
1000
1. (CC) gcc options: -pthread -lm

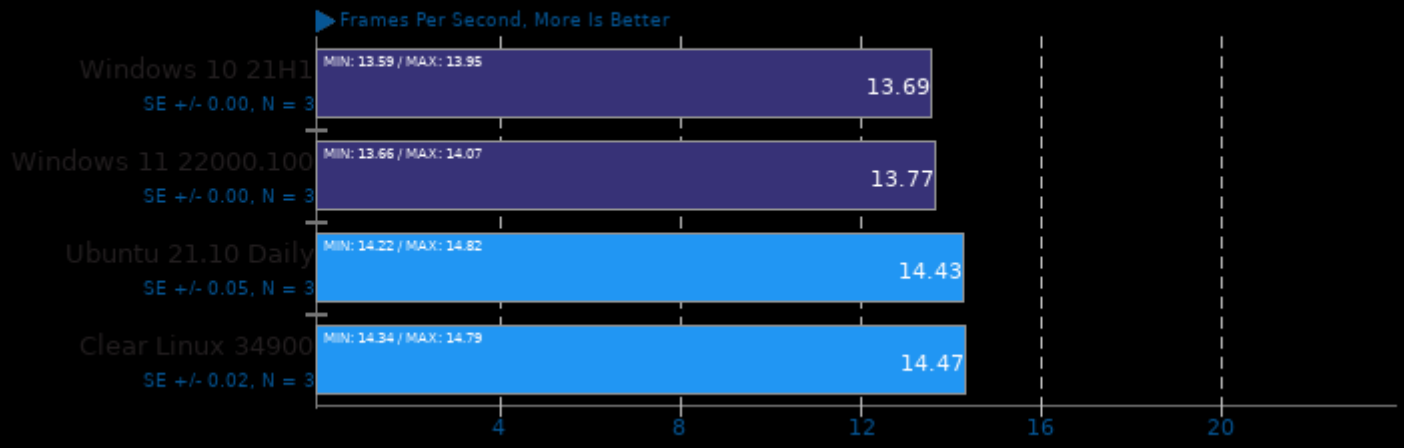

dav1d 0.9.0
Video Input: Summer Nature 4K
FPS, More Is Better
Windows 10 21H1
SE +/- 0.31, N = 3
MIN: 197.88 / MAX: 199.35
198.63
Windows 11 22000.100
SE +/- 0.07, N = 3
MIN: 188.06 / MAX: 188.65
188.31
Ubuntu 21.10 Daily
SE +/- 0.13, N = 3
MIN: 184.07 / MAX: 209.24
195.98
Clear Linux 34900
SE +/- 0.20, N = 3
-O3 -pipe -fexceptions -fstack-protector -m64 -flat-lto-objects -fno-trapping-math -mtune=skylake - MIN: 178.59 / MAX: 214.29
201.49
40
80
120
160
200
1. (CC) gcc options: -pthread -lm
dav1d 0.9.0
Video Input: Summer Nature 1080p
FPS, More Is Better
Windows 10 21H1
SE +/- 0.83, N = 3
MIN: 759.06 / MAX: 763.39
761.06
Windows 11 22000.100
SE +/- 1.09, N = 3
MIN: 726.63 / MAX: 731.44
728.52
Ubuntu 21.10 Daily
SE +/- 1.79, N = 3
MIN: 642.01 / MAX: 795.83
730.46
Clear Linux 34900
SE +/- 1.19, N = 3
-O3 -pipe -fexceptions -fstack-protector -m64 -flat-lto-objects -fno-trapping-math -mtune=skylake - MIN: 652.23 / MAX: 814.17
743.98
160
320
480
640
800
1. (CC) gcc options: -pthread -lm


dav1d 0.9.0
Video Input: Chimera 1080p 10-bit
FPS, More Is Better
Windows 10 21H1
SE +/- 0.24, N = 3
MIN: 417.81 / MAX: 418.74
418.15
Windows 11 22000.100
SE +/- 1.13, N = 3
MIN: 383.15 / MAX: 386.95
385.49
Ubuntu 21.10 Daily
SE +/- 0.34, N = 3
MIN: 396.91 / MAX: 829.93
507.86
Clear Linux 34900
SE +/- 0.71, N = 3
-O3 -pipe -fexceptions -fstack-protector -m64 -flat-lto-objects -fno-trapping-math -mtune=skylake - MIN: 405.65 / MAX: 769.79
518.78
110
220
330
440
550
1. (CC) gcc options: -pthread -lm
Embree 3.13
Binary: Pathtracer - Model: Crown
Frames Per Second, More Is Better
Windows 10 21H1
SE +/- 0.01, N = 3
MIN: 11.54 / MAX: 11.95
11.66
Windows 11 22000.100
SE +/- 0.01, N = 3
MIN: 11.51 / MAX: 11.92
11.63
Ubuntu 21.10 Daily
SE +/- 0.05, N = 3
MIN: 12.57 / MAX: 13.22
12.78
Clear Linux 34900
SE +/- 0.04, N = 3
MIN: 12.56 / MAX: 13.12
12.71
3
6
9
12
15
Embree 3.13
Binary: Pathtracer ISPC - Model: Crown
Frames Per Second, More Is Better
Windows 10 21H1
SE +/- 0.01, N = 3
MIN: 13.89 / MAX: 14.54
14.08
Windows 11 22000.100
SE +/- 0.01, N = 3
MIN: 13.86 / MAX: 14.54
14.07
Ubuntu 21.10 Daily
SE +/- 0.01, N = 3
MIN: 14.5 / MAX: 15.13
14.69
Clear Linux 34900
SE +/- 0.02, N = 3
MIN: 14.39 / MAX: 15.16
14.60
4
8
12
16
20


Embree 3.13
Binary: Pathtracer - Model: Asian Dragon
Frames Per Second, More Is Better
Windows 10 21H1
SE +/- 0.01, N = 3
MIN: 13.09 / MAX: 13.33
13.16
Windows 11 22000.100
SE +/- 0.01, N = 3
MIN: 13.15 / MAX: 13.46
13.23
Ubuntu 21.10 Daily
SE +/- 0.08, N = 3
MIN: 13.89 / MAX: 14.39
14.08
Clear Linux 34900
SE +/- 0.03, N = 3
MIN: 14.09 / MAX: 14.46
14.20
4
8
12
16
20
Embree 3.13
Binary: Pathtracer - Model: Asian Dragon Obj
Frames Per Second, More Is Better
Windows 10 21H1
SE +/- 0.01, N = 3
MIN: 11.76 / MAX: 12.06
11.84
Windows 11 22000.100
SE +/- 0.01, N = 3
MIN: 11.81 / MAX: 12.11
11.89
Ubuntu 21.10 Daily
SE +/- 0.01, N = 3
MIN: 12.94 / MAX: 13.25
13.03
Clear Linux 34900
SE +/- 0.02, N = 3
MIN: 12.98 / MAX: 13.34
13.08
3
6
9
12
15
Embree 3.13
Binary: Pathtracer ISPC - Model: Asian Dragon
Frames Per Second, More Is Better
Windows 10 21H1
SE +/- 0.01, N = 3
MIN: 15.9 / MAX: 16.38
16.02
Windows 11 22000.100
SE +/- 0.01, N = 3
MIN: 16.02 / MAX: 16.52
16.16
Ubuntu 21.10 Daily
SE +/- 0.01, N = 3
MIN: 16.31 / MAX: 16.84
16.43
Clear Linux 34900
SE +/- 0.09, N = 3
MIN: 16.44 / MAX: 17.17
16.72
4
8
12
16
20

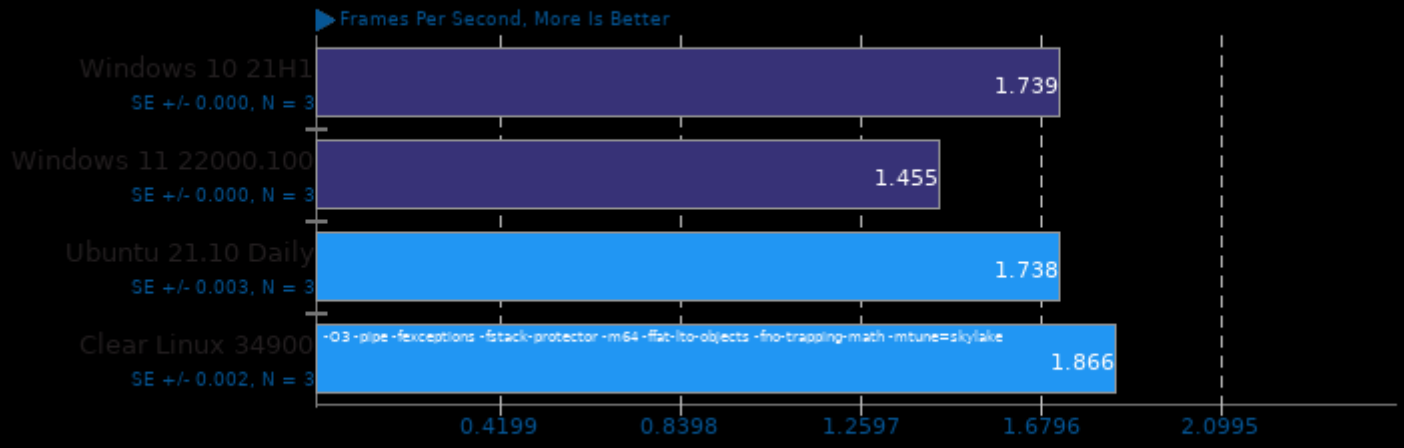
Embree 3.13

Binary: Pathtracer ISPC - Model: Asian Dragon Obj



SVT-AV1 0.8.7

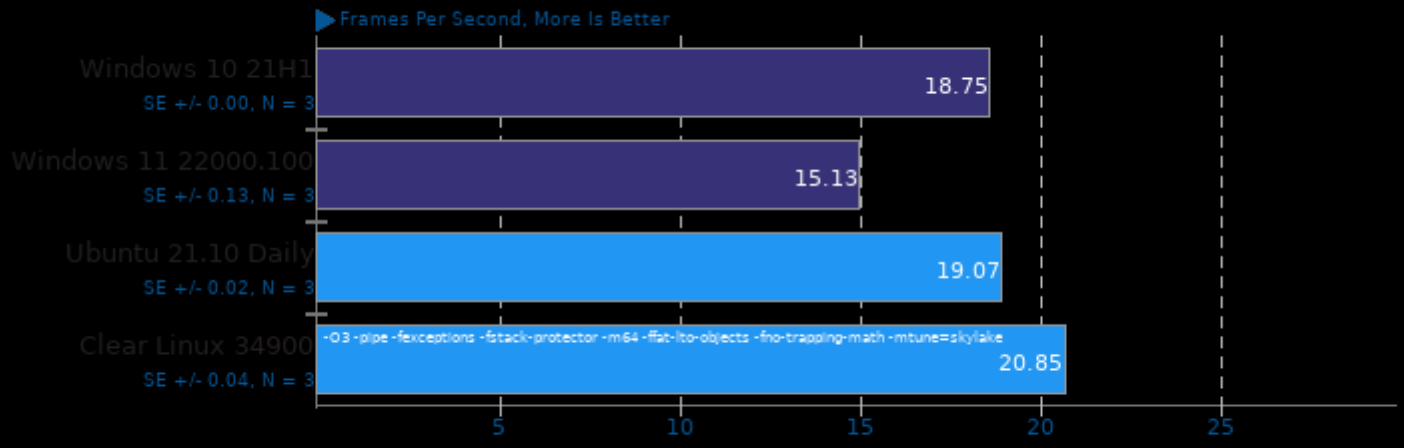
Encoder Mode: Preset 4 - Input: Bosphorus 4K



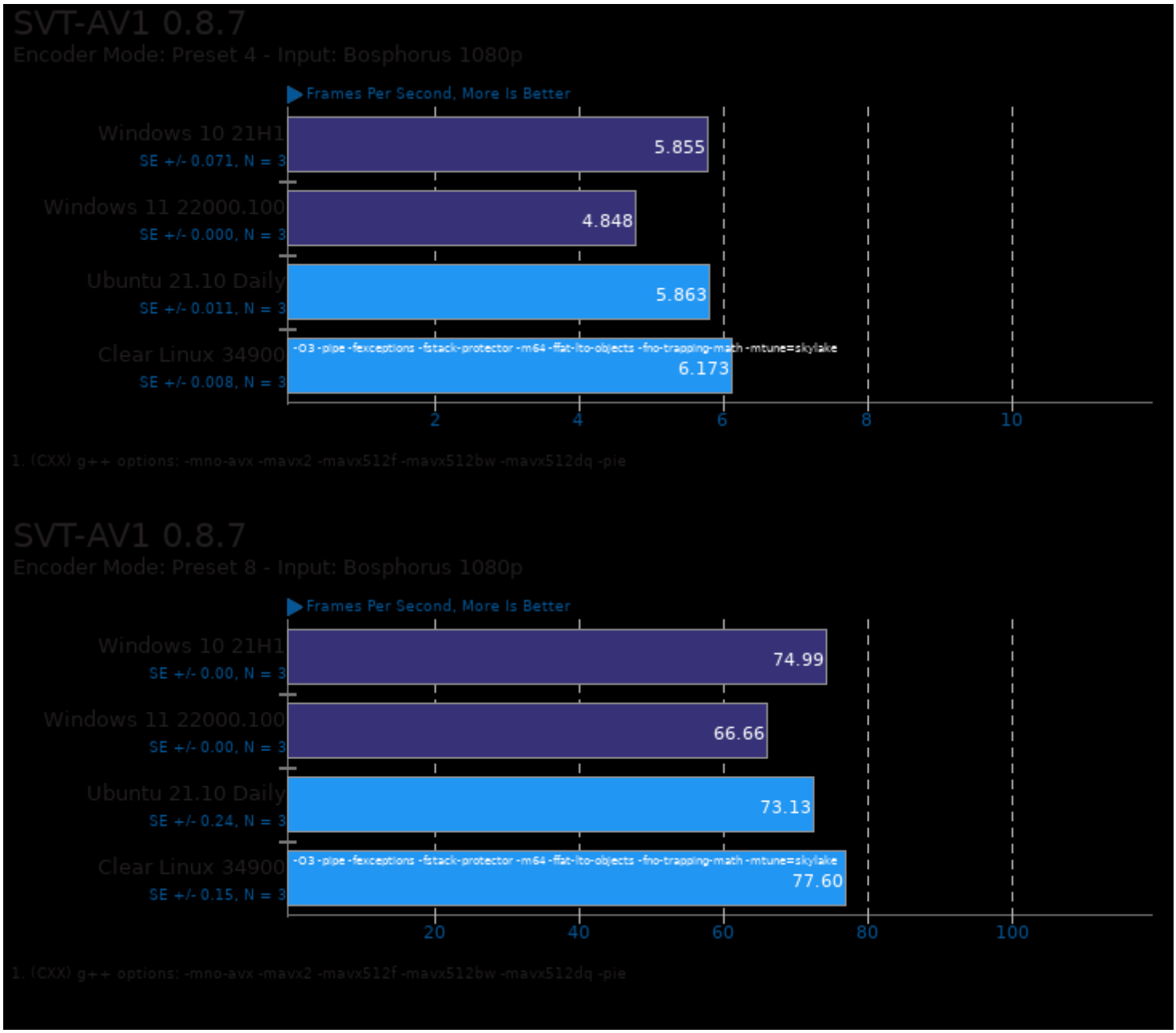
1: (CXX) g++ options: -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie

SVT-AV1 0.8.7

Encoder Mode: Preset 8 - Input: Bosphorus 4K

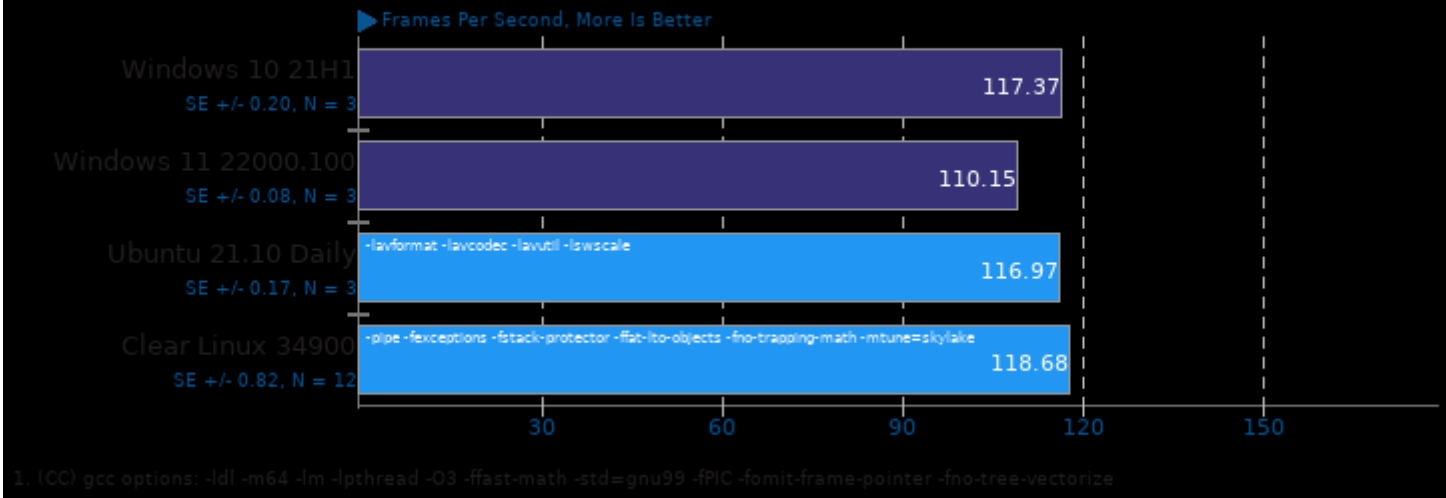


1: (CXX) g++ options: -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie


SVT-AV1 0.8.7
Encoder Mode: Preset 4 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
Windows 10 21H1
SE +/- 0.071, N = 3
5.855
Windows 11 22000.100
SE +/- 0.000, N = 3
4.848
Ubuntu 21.10 Daily
SE +/- 0.011, N = 3
5.863
Clear Linux 34900
SE +/- 0.008, N = 3
-O3 -pipe -fexceptions -fstack-protector -m64 -flat-lto-objects -fno-trapping-math -mtune=skylake
6.173
2
4
6
8
10
1. (CXX) g++ options: -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie
SVT-AV1 0.8.7
Encoder Mode: Preset 8 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
Windows 10 21H1
SE +/- 0.00, N = 3
74.99
Windows 11 22000.100
SE +/- 0.00, N = 3
66.66
Ubuntu 21.10 Daily
SE +/- 0.24, N = 3
73.13
Clear Linux 34900
SE +/- 0.15, N = 3
-O3 -pipe -fexceptions -fstack-protector -m64 -flat-lto-objects -fno-trapping-math -mtune=skylake
77.60
20
40
60
80
100
1. (CXX) g++ options: -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie

x264 2019-12-17

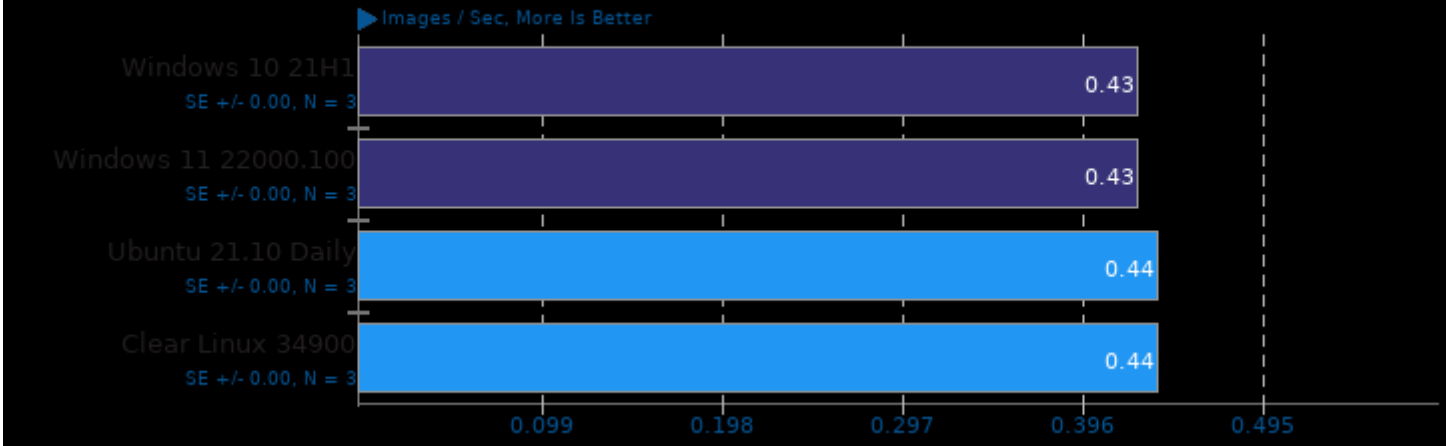
H.264 Video Encoding



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

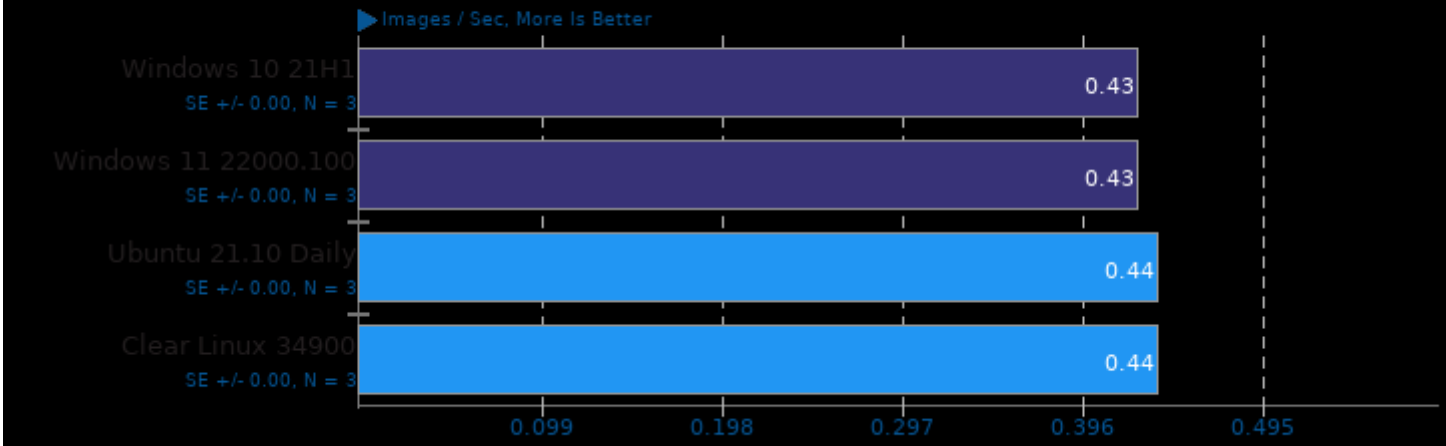
Intel Open Image Denoise 1.4.0

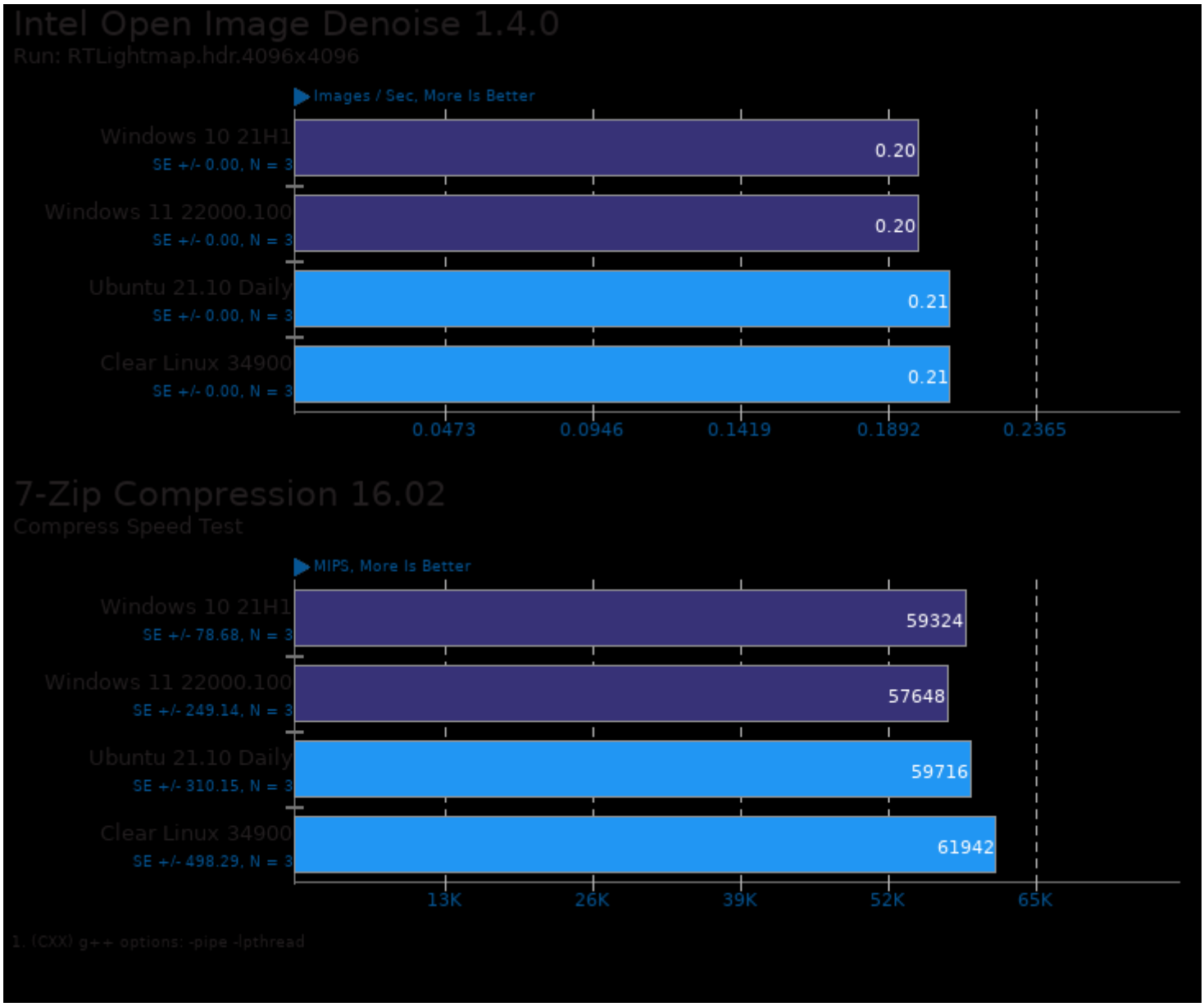
Run: RT.hdr_alb_nrm.3840x2160

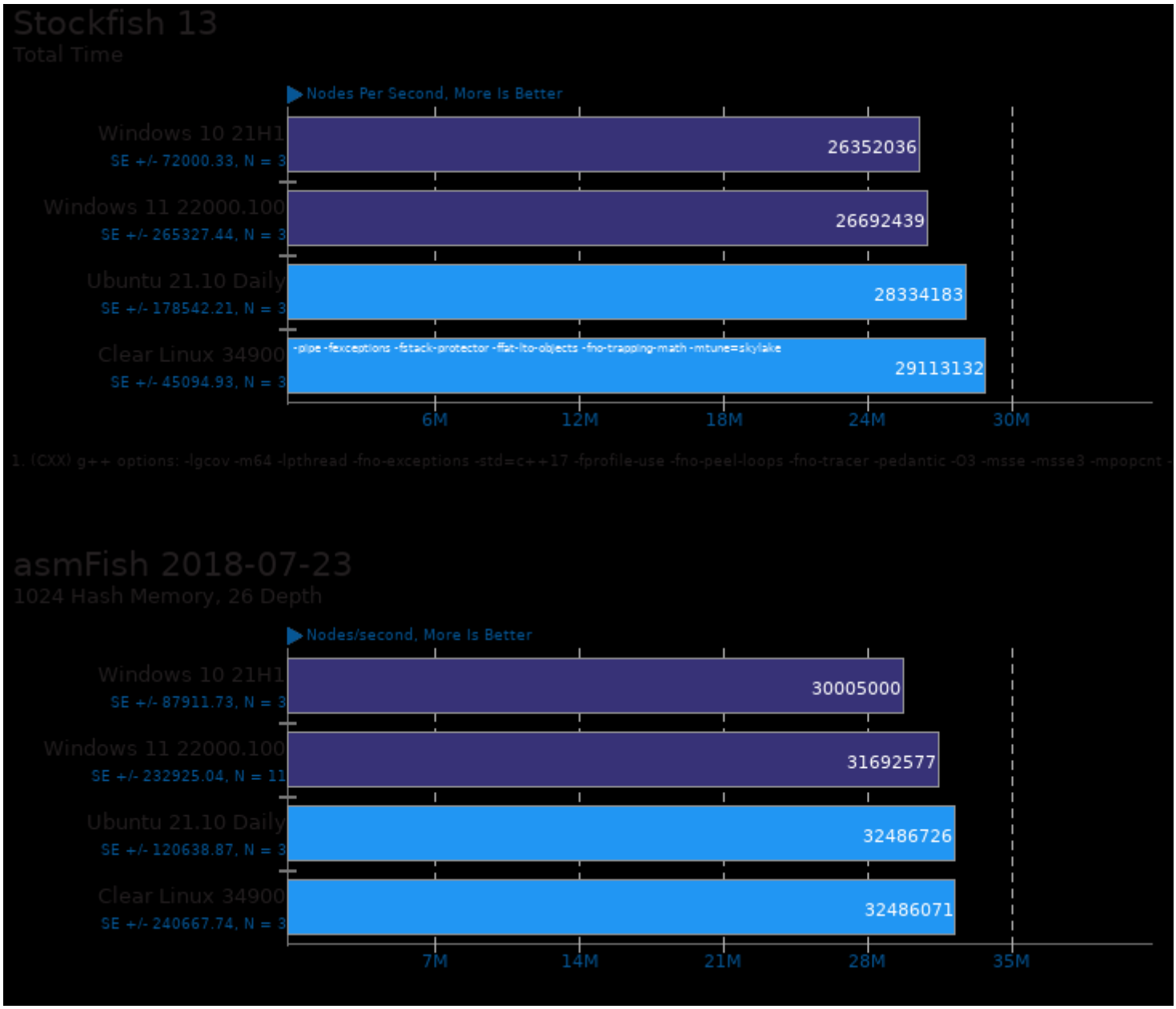


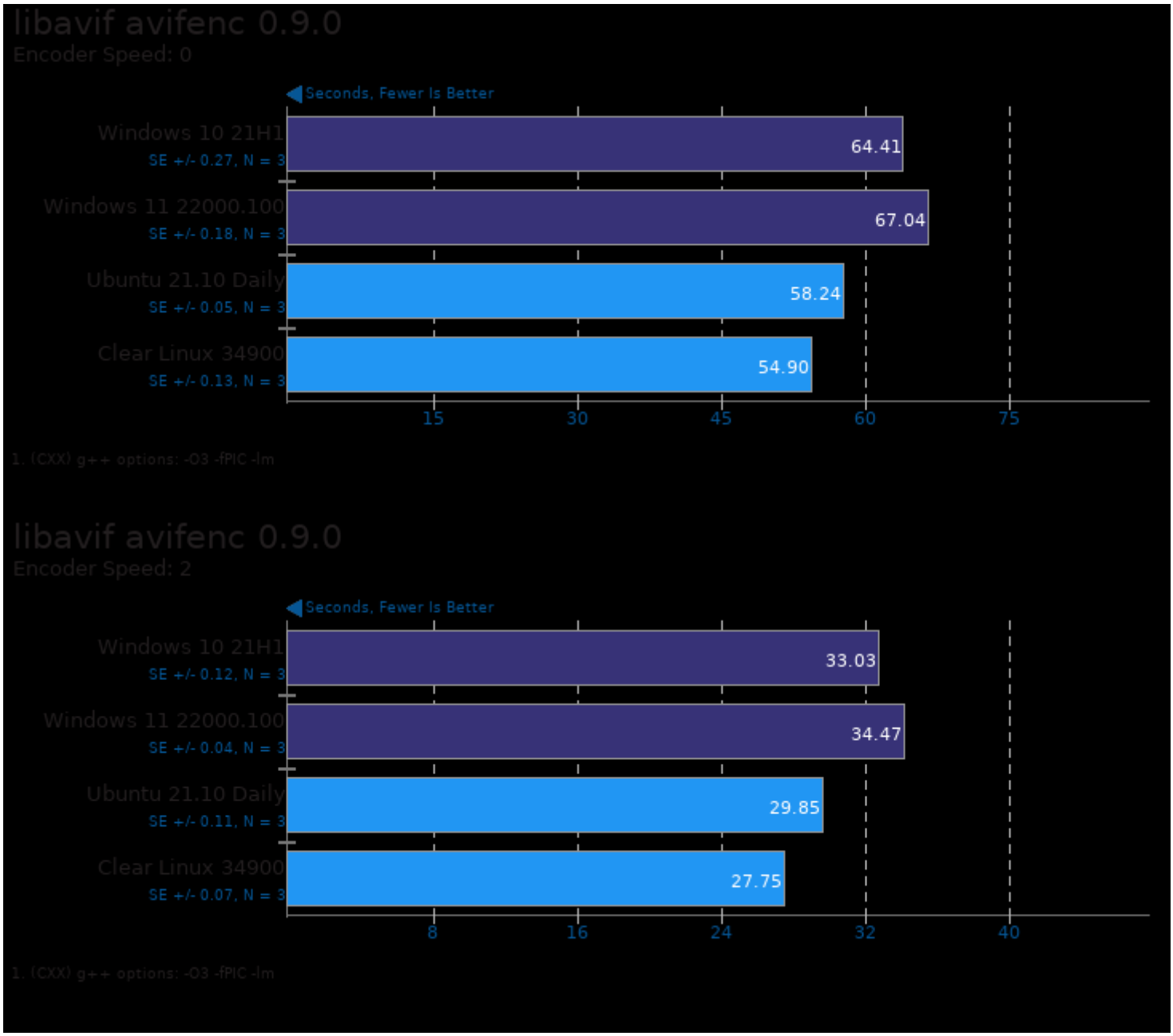
Intel Open Image Denoise 1.4.0

Run: RT.ldr_alb_nrm.3840x2160



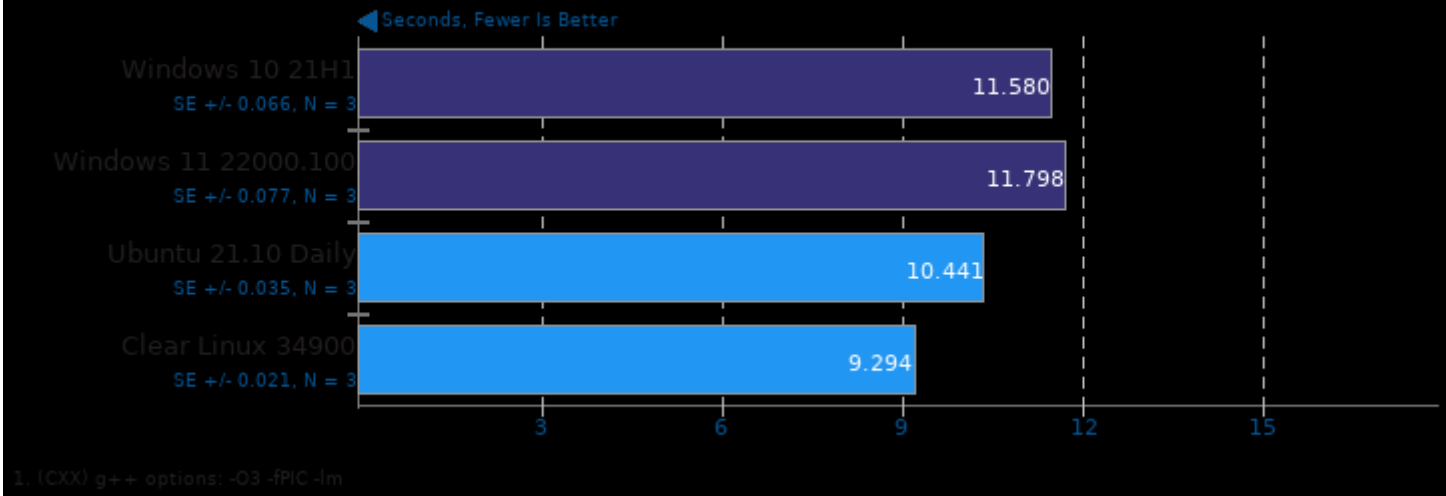

Intel Open Image Denoise 1.4.0
Run: RTLightmap.hdr.4096x4096
Images / Sec, More Is Better
Windows 10 21H1
SE +/- 0.00, N = 3
0.20
Windows 11 22000.100
SE +/- 0.00, N = 3
0.20
Ubuntu 21.10 Daily
SE +/- 0.00, N = 3
0.21
Clear Linux 34900
SE +/- 0.00, N = 3
0.21
0.0473
0.0946
0.1419
0.1892
0.2365
7-Zip Compression 16.02
Compress Speed Test
MIPS, More Is Better
Windows 10 21H1
SE +/- 78.68, N = 3
59324
Windows 11 22000.100
SE +/- 249.14, N = 3
57648
Ubuntu 21.10 Daily
SE +/- 310.15, N = 3
59716
Clear Linux 34900
SE +/- 498.29, N = 3
61942
13K
26K
39K
52K
65K
1. (CXX) g++ options: -pipe -lpthread


Stockfish 13
Total Time
Nodes Per Second, More Is Better
Windows 10 21H1
SE +/- 72000.33, N = 3
26352036
Windows 11 22000.100
SE +/- 265327.44, N = 3
26692439
Ubuntu 21.10 Daily
SE +/- 178542.21, N = 3
28334183
Clear Linux 34900
SE +/- 45094.93, N = 3
-pipe -fexceptions -fstack-protector -ffat-lto-objects -fno-trapping-math -mtune=skylake
29113132
6M
12M
18M
24M
30M
1. (CXX) g++ options: -lgcov -m64 -lpthread -fno-exceptions -std=c++17 -fprofile-use -fno-peel-loops -fno-tracer -pedantic -O3 -msse -msse3 -mpopcnt
asmFish 2018-07-23
1024 Hash Memory, 26 Depth
Nodes/second, More Is Better
Windows 10 21H1
SE +/- 87911.73, N = 3
30005000
Windows 11 22000.100
SE +/- 232925.04, N = 11
31692577
Ubuntu 21.10 Daily
SE +/- 120638.87, N = 3
32486726
Clear Linux 34900
SE +/- 240667.74, N = 3
32486071
7M
14M
21M
28M
35M


libavif avifenc 0.9.0
Encoder Speed: 0
Seconds, Fewer Is Better
Windows 10 21H1
SE +/- 0.27, N = 3
64.41
Windows 11 22000.100
SE +/- 0.18, N = 3
67.04
Ubuntu 21.10 Daily
SE +/- 0.05, N = 3
58.24
Clear Linux 34900
SE +/- 0.13, N = 3
54.90
15
30
45
60
75
1. (CXX) g++ options: -O3 -fPIC -lm
libavif avifenc 0.9.0
Encoder Speed: 2
Seconds, Fewer Is Better
Windows 10 21H1
SE +/- 0.12, N = 3
33.03
Windows 11 22000.100
SE +/- 0.04, N = 3
34.47
Ubuntu 21.10 Daily
SE +/- 0.11, N = 3
29.85
Clear Linux 34900
SE +/- 0.07, N = 3
27.75
8
16
24
32
40
1. (CXX) g++ options: -O3 -fPIC -lm

libavif avifenc 0.9.0

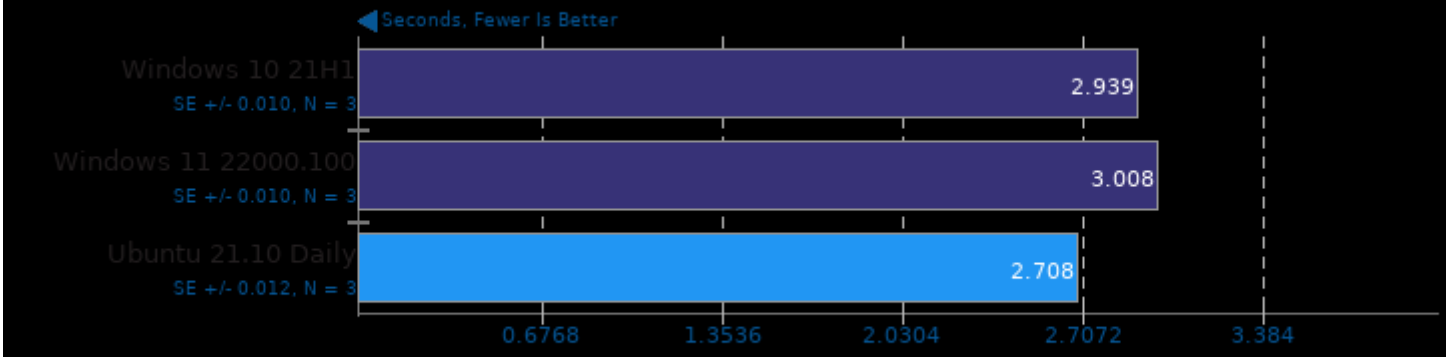
Encoder Speed: 6



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

libavif avifenc 0.9.0

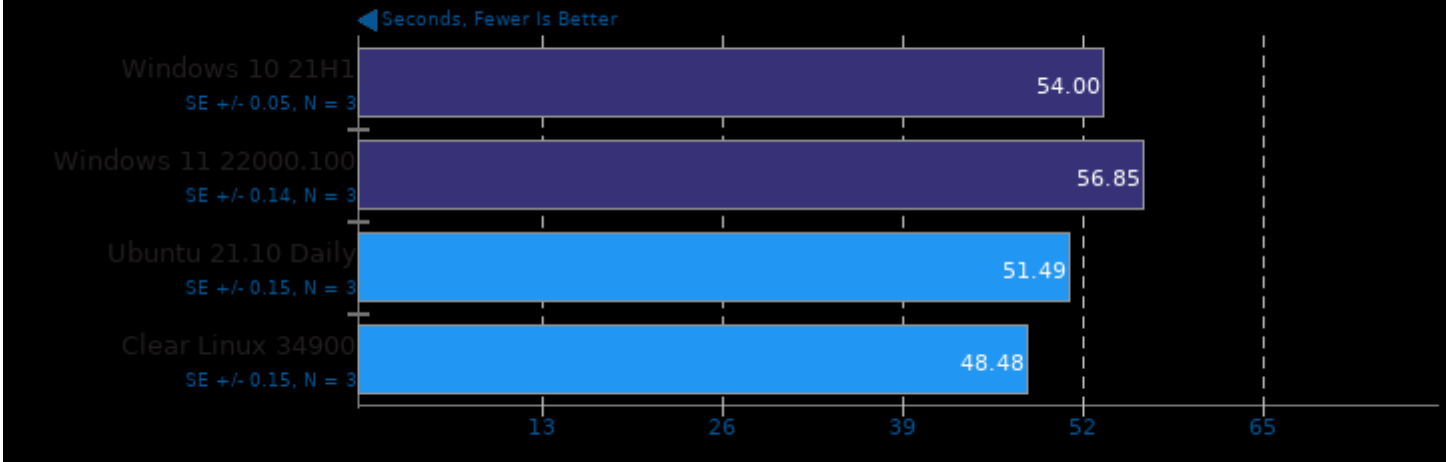
Encoder Speed: 10



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

libavif avifenc 0.9.0

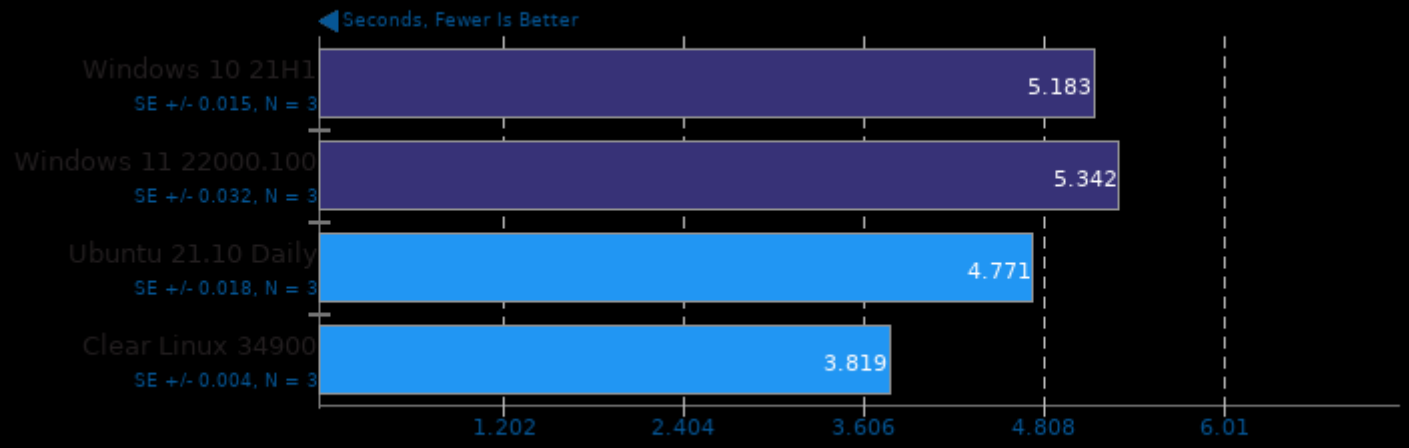
Encoder Speed: 6, Lossless



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

libavif avifenc 0.9.0

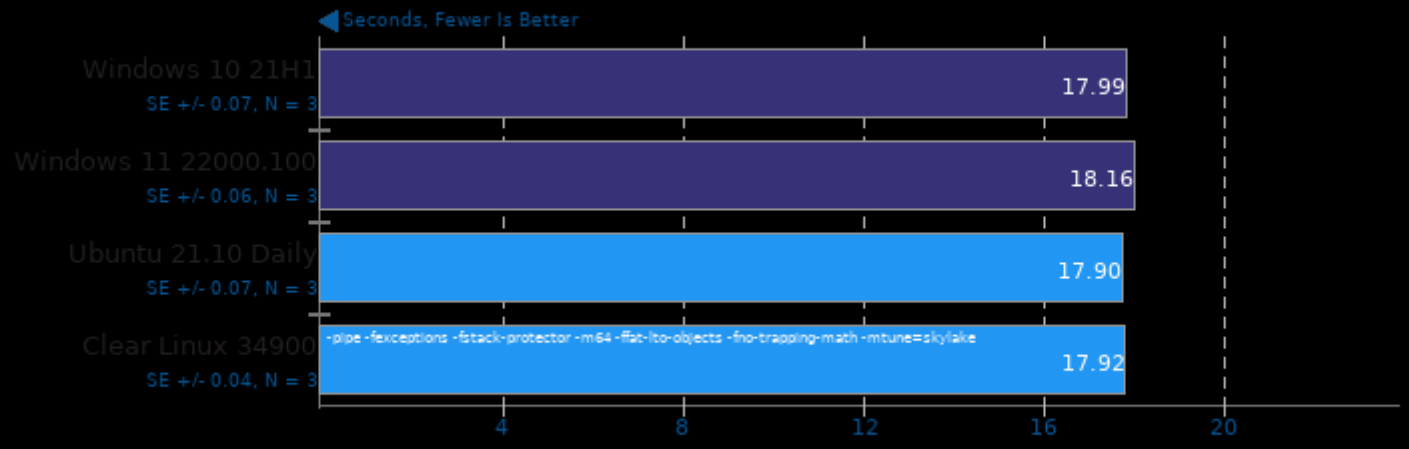
Encoder Speed: 10, Lossless



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

Primesieve 7.4

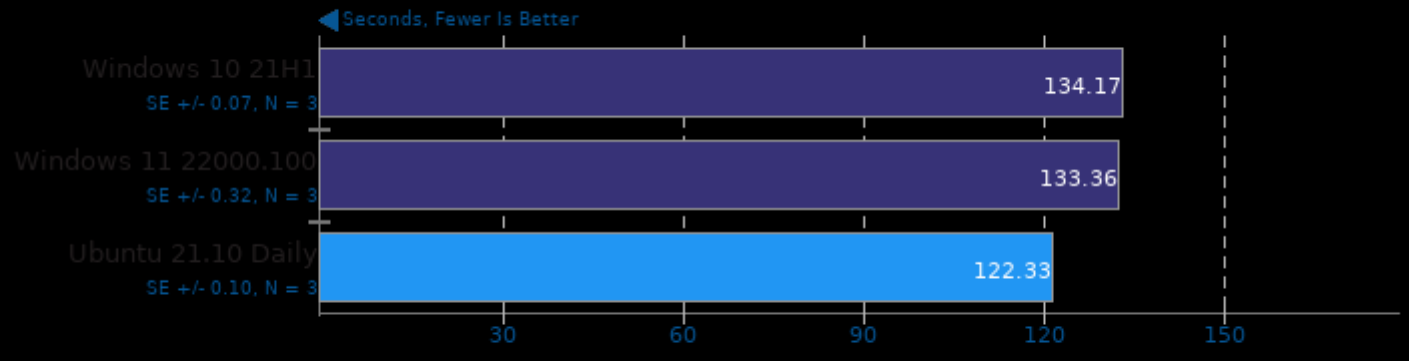
1e12 Prime Number Generation



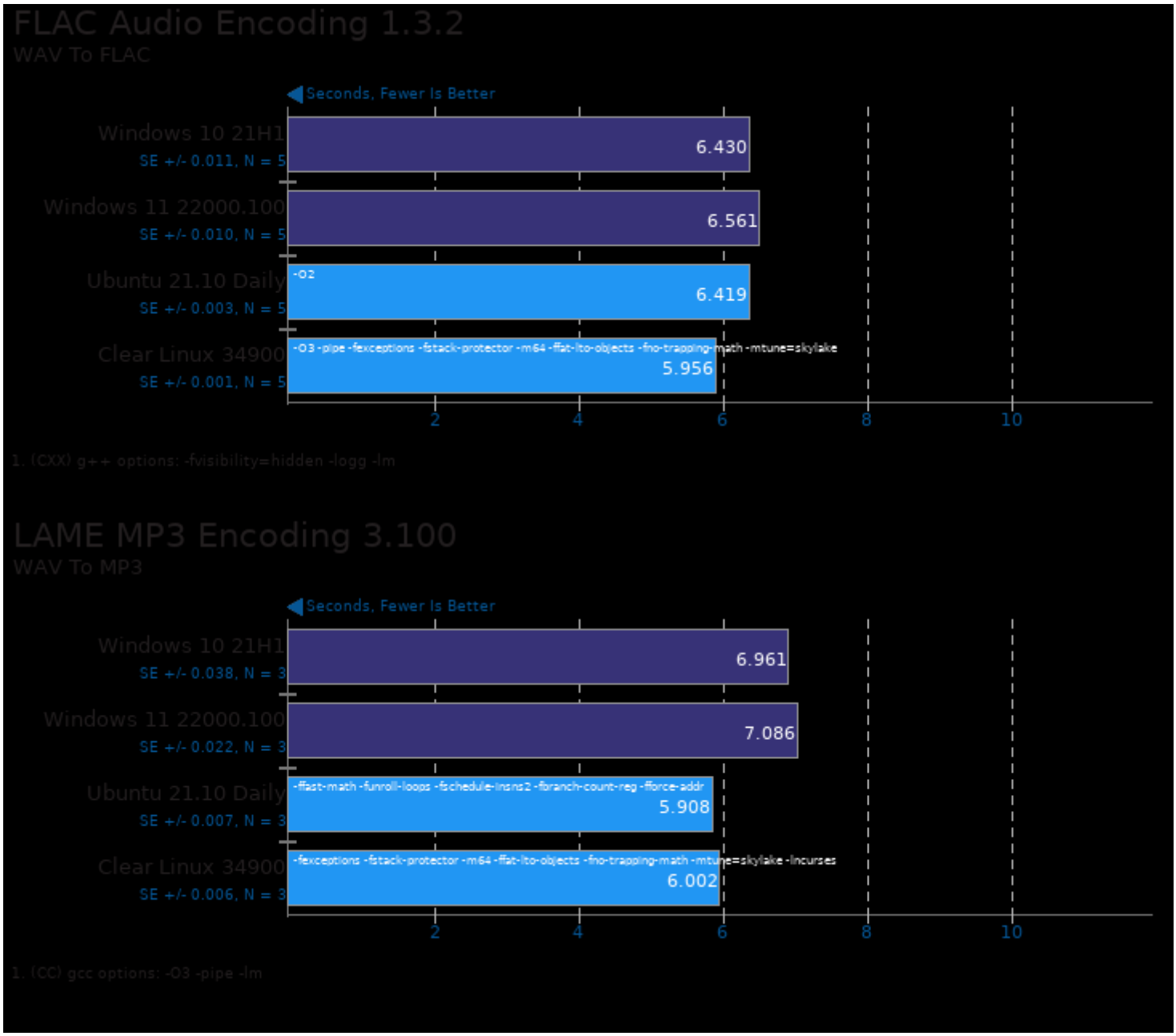
1. (CXX) g++ options: -O3 -lpthread

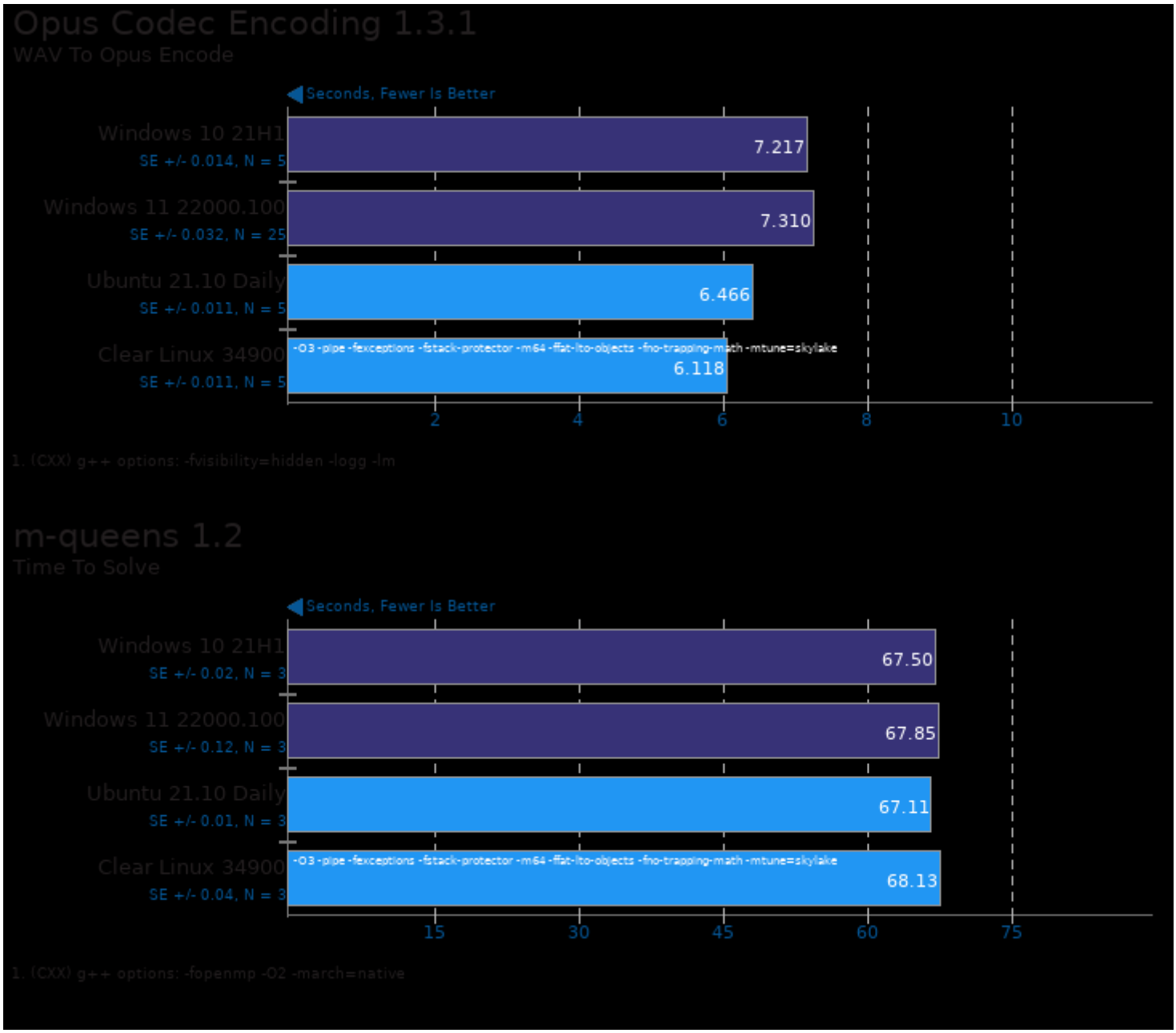
YafaRay 3.5.1

Total Time For Sample Scene



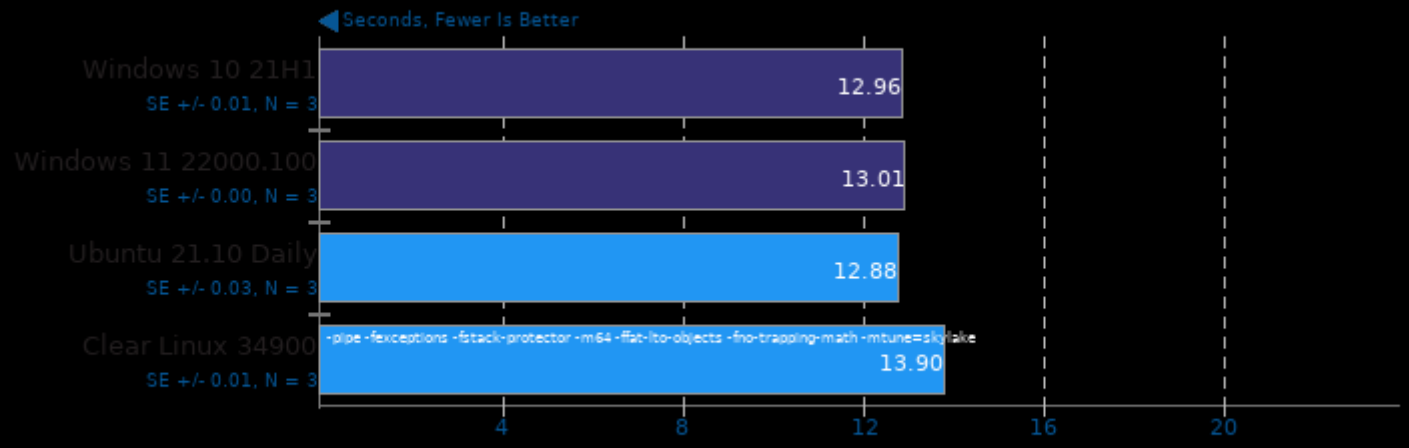
1. (CXX) g++ options: -std=c++11 -pthread -O3 -ffast-math -rdynamic -ldl -lImath -lIlmImf -lIex -lHalf -lz -lIlmThread -lxml2 -lfreetype


FLAC Audio Encoding 1.3.2
WAV To FLAC
Seconds, Fewer Is Better
Windows 10 21H1
SE +/- 0.011, N = 5
6.430
Windows 11 22000.100
SE +/- 0.010, N = 5
6.561
Ubuntu 21.10 Daily
SE +/- 0.003, N = 5
-O2
6.419
Clear Linux 34900
SE +/- 0.001, N = 5
-O3 -pipe -fexceptions -fstack-protector -m64 -ffat-lto-objects -fno-trapping-math -mtune=skylake
5.956
2
4
6
8
10
1. (CXX) g++ options: -fvisibility=hidden -logg -lm
LAME MP3 Encoding 3.100
WAV To MP3
Seconds, Fewer Is Better
Windows 10 21H1
SE +/- 0.038, N = 3
6.961
Windows 11 22000.100
SE +/- 0.022, N = 3
7.086
Ubuntu 21.10 Daily
SE +/- 0.007, N = 3
-ffast-math -funroll-loops -fschedule-insns2 -fbranch-count-reg -fforce-addr
5.908
Clear Linux 34900
SE +/- 0.006, N = 3
-fexceptions -fstack-protector -m64 -ffat-lto-objects -fno-trapping-math -mtune=skylake -lncurses
6.002
2
4
6
8
10
1. (CC) gcc options: -O3 -pipe -lm


Opus Codec Encoding 1.3.1
WAV To Opus Encode
Seconds, Fewer Is Better
Windows 10 21H1
SE +/- 0.014, N = 5
7.217
Windows 11 22000.100
SE +/- 0.032, N = 25
7.310
Ubuntu 21.10 Daily
SE +/- 0.011, N = 5
6.466
Clear Linux 34900
SE +/- 0.011, N = 5
-O3 -pipe -fexceptions -fstack-protector -m64 -flat-lto-objects -fno-trapping-math -mtune=skylake
6.118
2
4
6
8
10
1. (CXX) g++ options: -fvisibility=hidden -logg -lm
m-queens 1.2
Time To Solve
Seconds, Fewer Is Better
Windows 10 21H1
SE +/- 0.02, N = 3
67.50
Windows 11 22000.100
SE +/- 0.12, N = 3
67.85
Ubuntu 21.10 Daily
SE +/- 0.01, N = 3
67.11
Clear Linux 34900
SE +/- 0.04, N = 3
-O3 -pipe -fexceptions -fstack-protector -m64 -flat-lto-objects -fno-trapping-math -mtune=skylake
68.13
15
30
45
60
75
1. (CXX) g++ options: -fopenmp -O2 -march=native

N-Queens 1.0

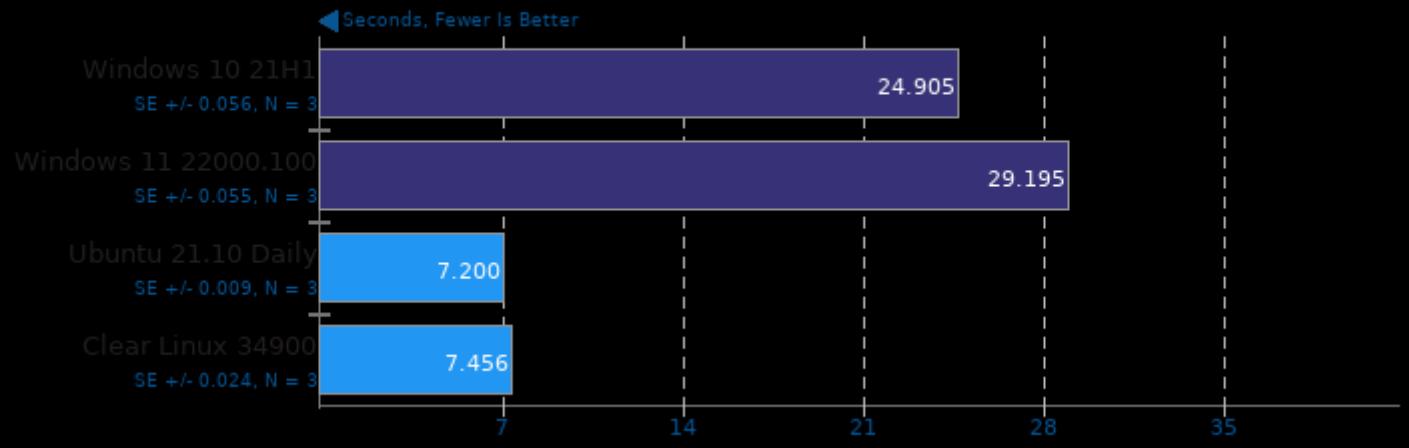
Elapsed Time



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

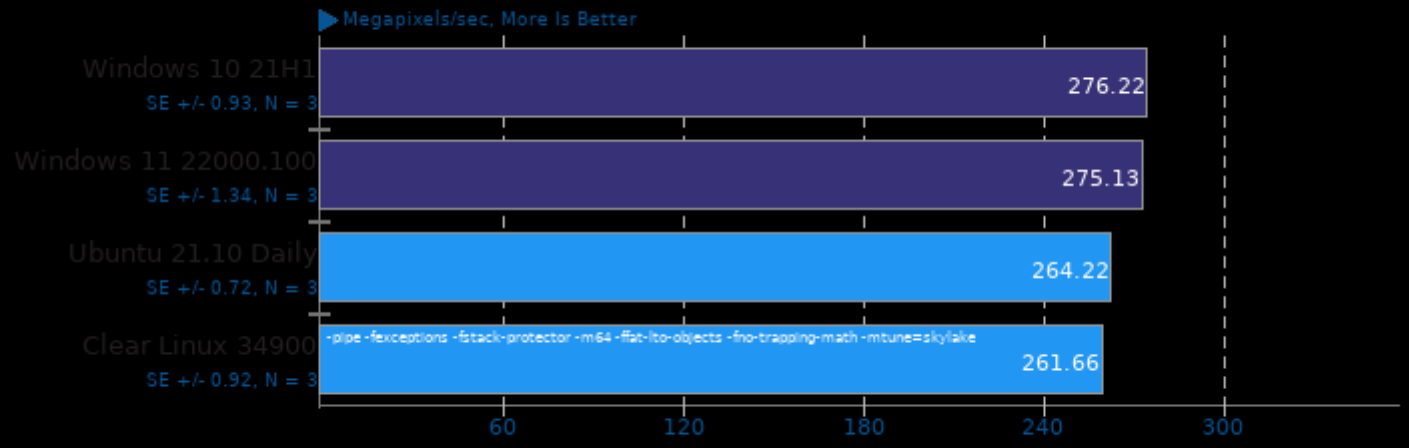
Sudokut 0.4

Total Time

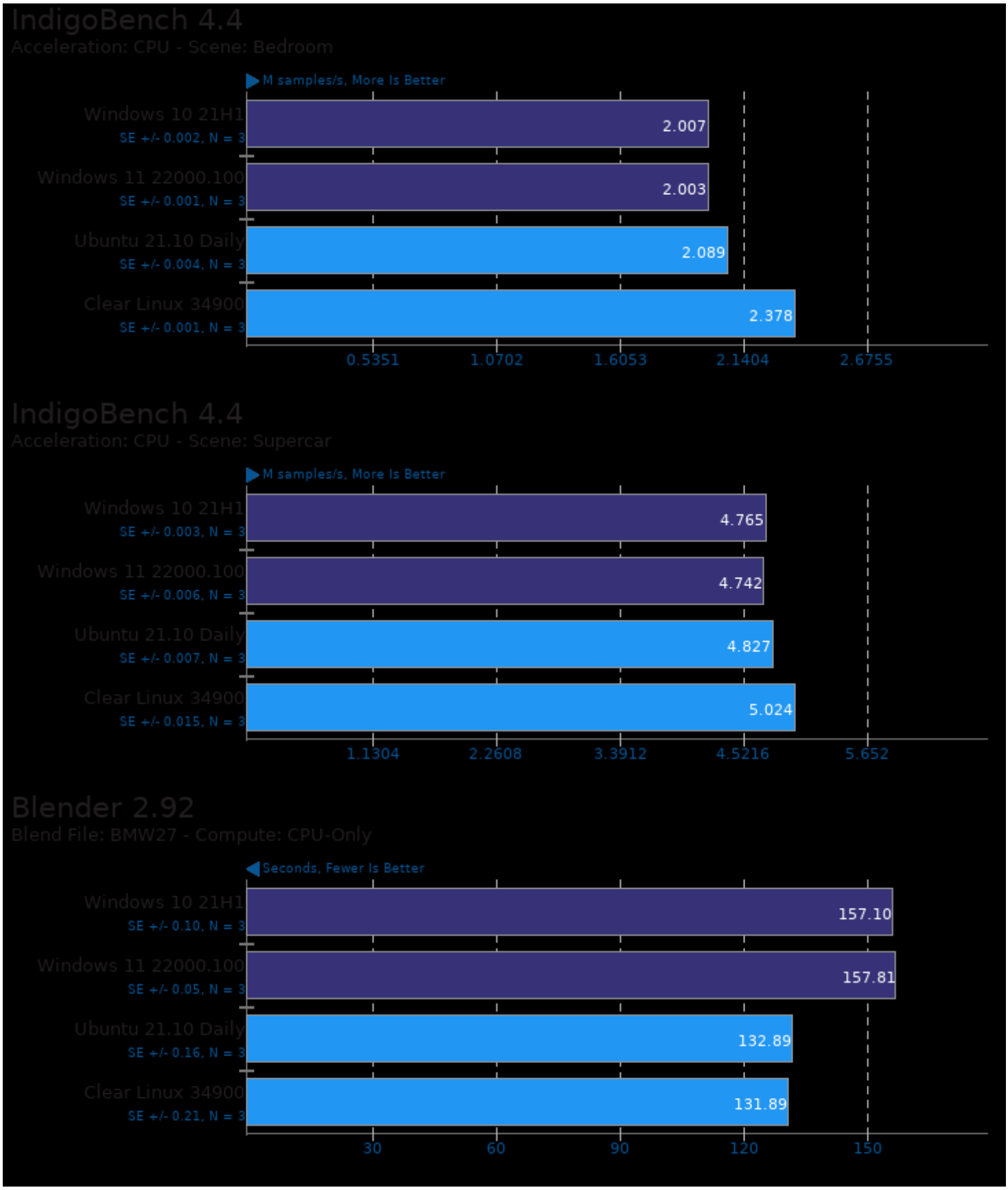


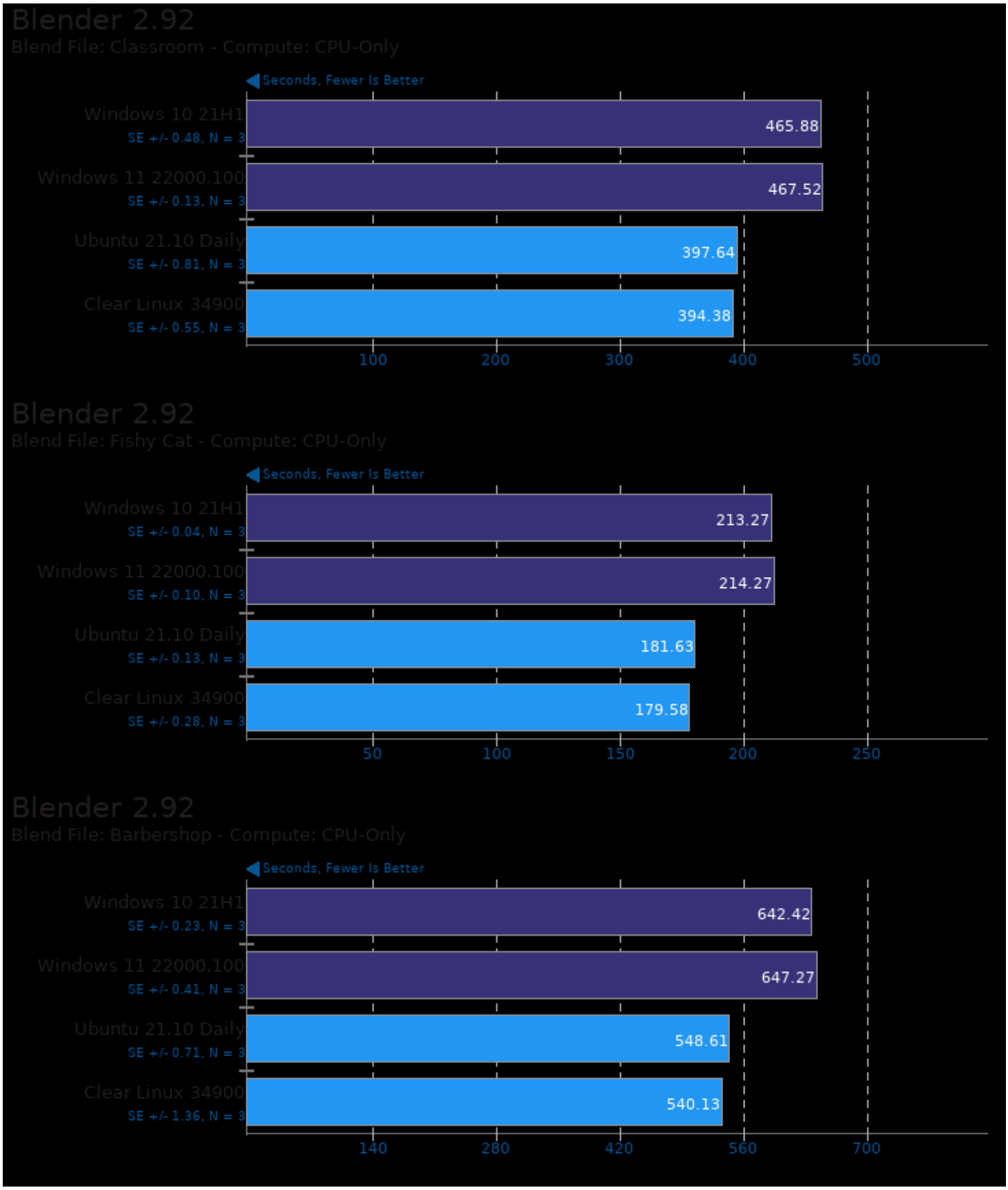
libjpeg-turbo tjbench 2.1.0

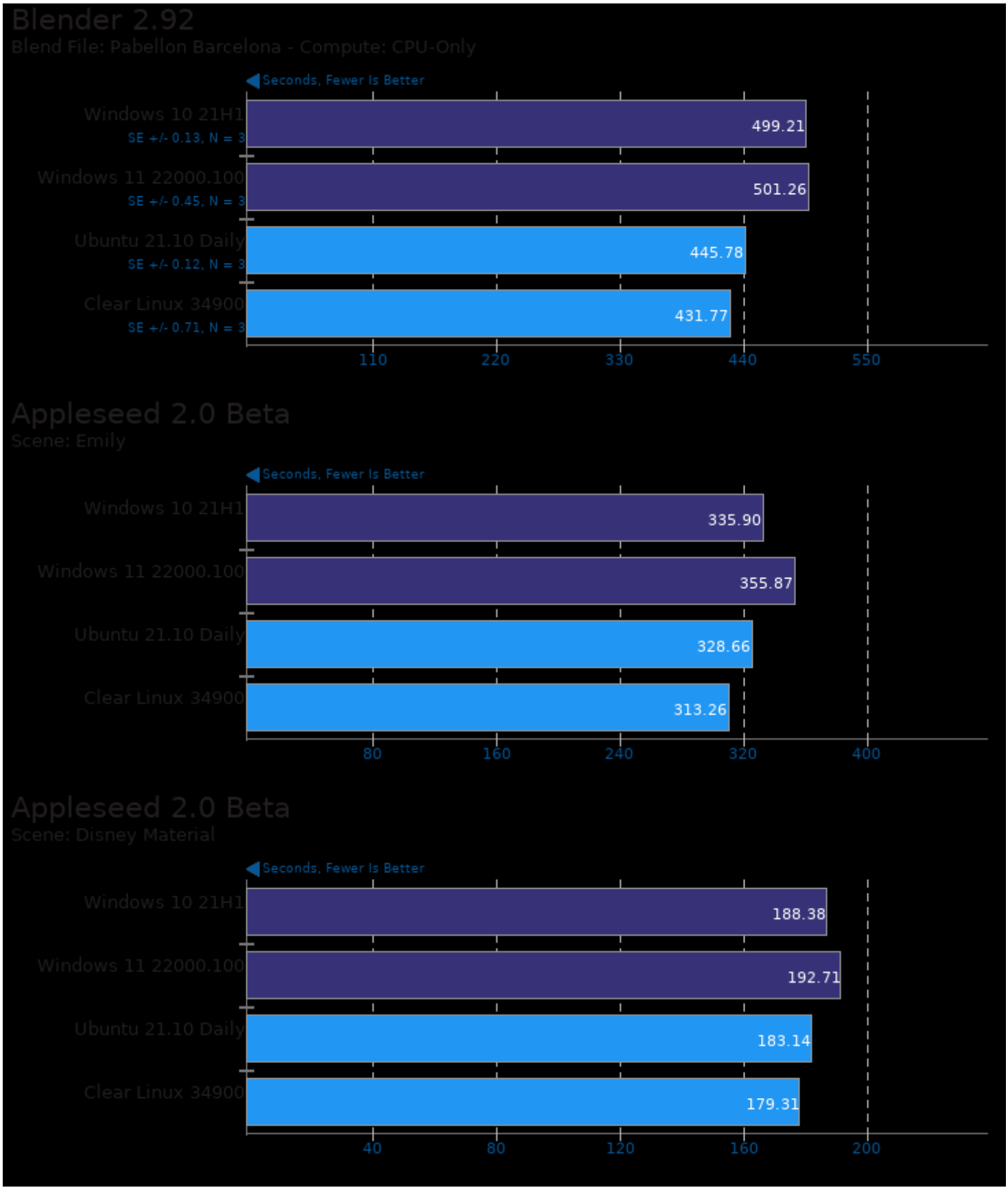
Test: Decompression Throughput

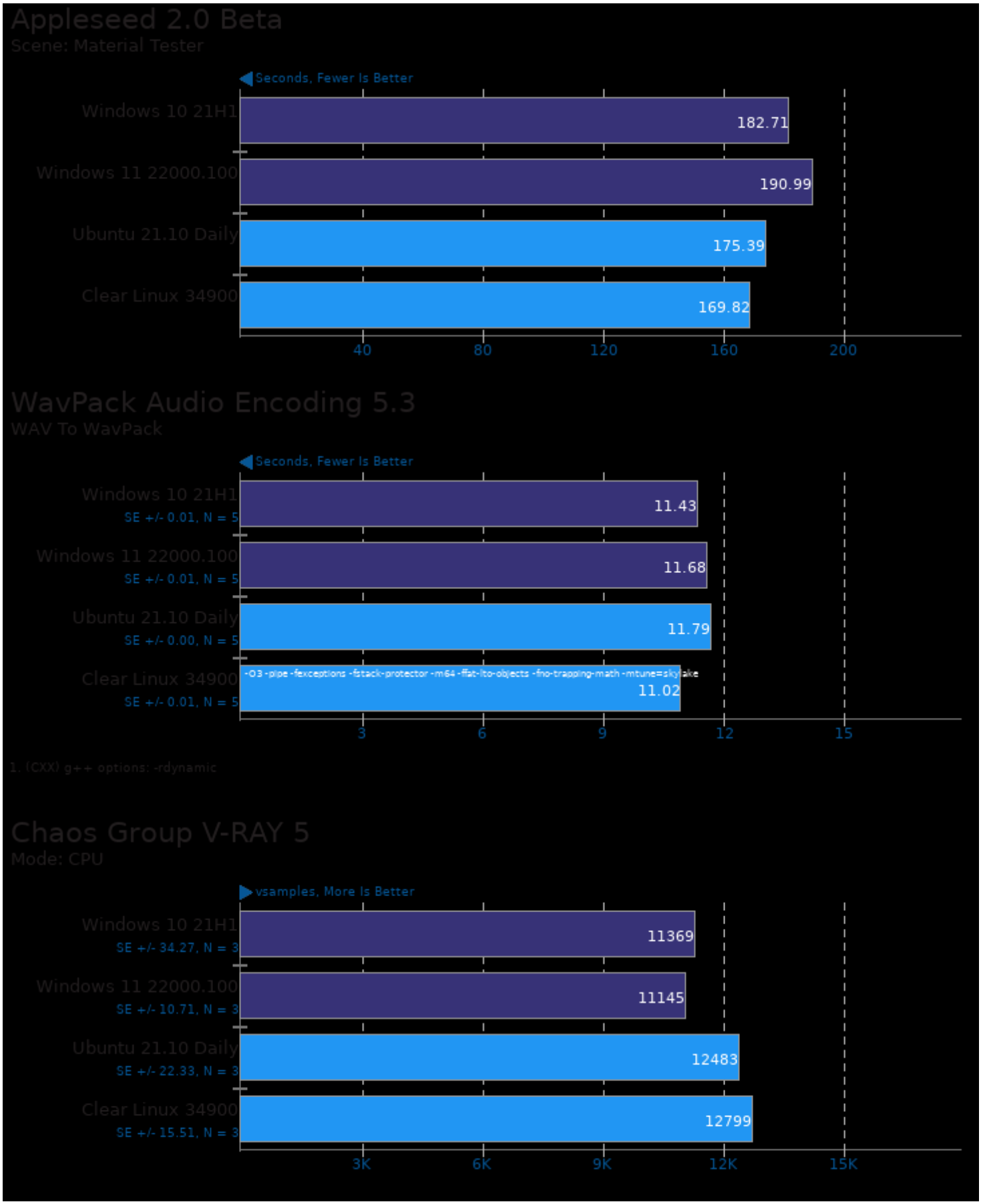


1. (CC) gcc options: -O3 -rdynamic

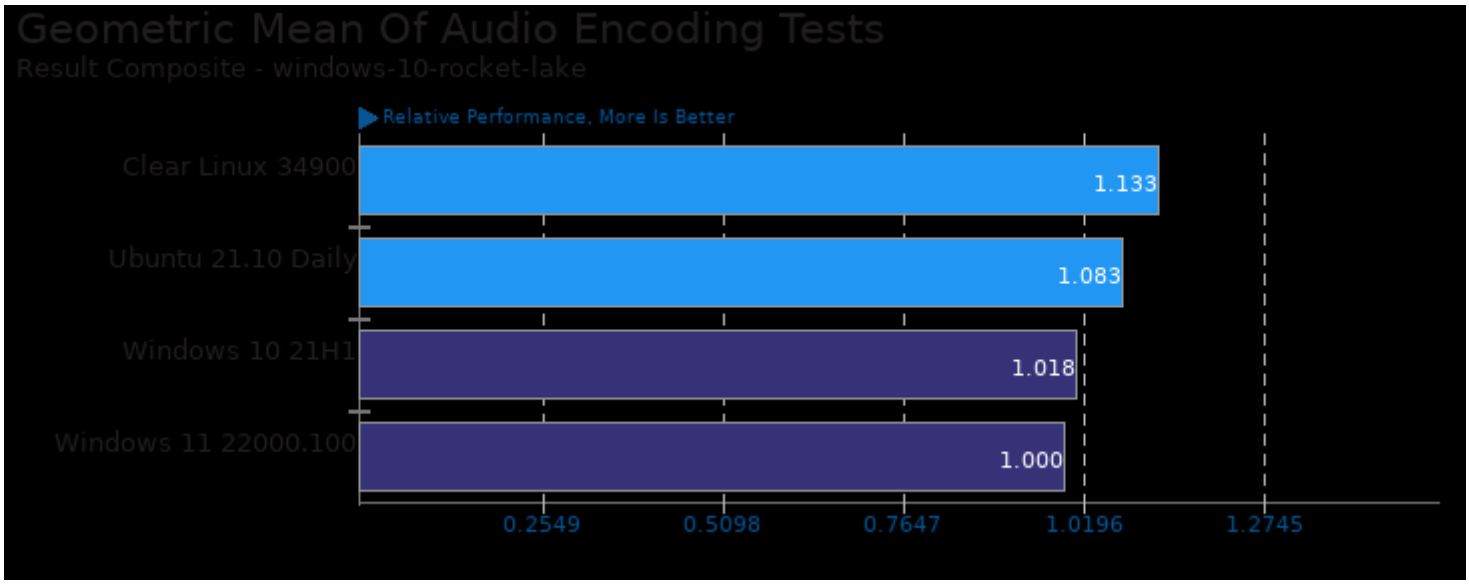

IndigoBench 4.4
Acceleration: CPU - Scene: Bedroom
M samples/s, More Is Better
Windows 10 21H1
SE +/- 0.002, N = 3
2.007
Windows 11 22000.100
SE +/- 0.001, N = 3
2.003
Ubuntu 21.10 Daily
SE +/- 0.004, N = 3
2.089
Clear Linux 34900
SE +/- 0.001, N = 3
2.378
0.5351
1.0702
1.6053
2.1404
2.6755
IndigoBench 4.4
Acceleration: CPU - Scene: Supercar
M samples/s, More Is Better
Windows 10 21H1
SE +/- 0.003, N = 3
4.765
Windows 11 22000.100
SE +/- 0.006, N = 3
4.742
Ubuntu 21.10 Daily
SE +/- 0.007, N = 3
4.827
Clear Linux 34900
SE +/- 0.015, N = 3
5.024
1.1304
2.2608
3.3912
4.5216
5.652
Blender 2.92
Blend File: BMW27 - Compute: CPU-Only
Seconds, Fewer Is Better
Windows 10 21H1
SE +/- 0.10, N = 3
157.10
Windows 11 22000.100
SE +/- 0.05, N = 3
157.81
Ubuntu 21.10 Daily
SE +/- 0.16, N = 3
132.89
Clear Linux 34900
SE +/- 0.21, N = 3
131.89
30
60
90
120
150


Blender 2.92
Blend File: Classroom - Compute: CPU-Only
Seconds, Fewer Is Better
Windows 10 21H1
SE +/- 0.48, N = 3
465.88
Windows 11 22000.100
SE +/- 0.13, N = 3
467.52
Ubuntu 21.10 Daily
SE +/- 0.81, N = 3
397.64
Clear Linux 34900
SE +/- 0.55, N = 3
394.38
100
200
300
400
500
Blender 2.92
Blend File: Fishy Cat - Compute: CPU-Only
Seconds, Fewer Is Better
Windows 10 21H1
SE +/- 0.04, N = 3
213.27
Windows 11 22000.100
SE +/- 0.10, N = 3
214.27
Ubuntu 21.10 Daily
SE +/- 0.13, N = 3
181.63
Clear Linux 34900
SE +/- 0.28, N = 3
179.58
50
100
150
200
250
Blender 2.92
Blend File: Barbershop - Compute: CPU-Only
Seconds, Fewer Is Better
Windows 10 21H1
SE +/- 0.23, N = 3
642.42
Windows 11 22000.100
SE +/- 0.41, N = 3
647.27
Ubuntu 21.10 Daily
SE +/- 0.71, N = 3
548.61
Clear Linux 34900
SE +/- 1.36, N = 3
540.13
140
280
420
560
700

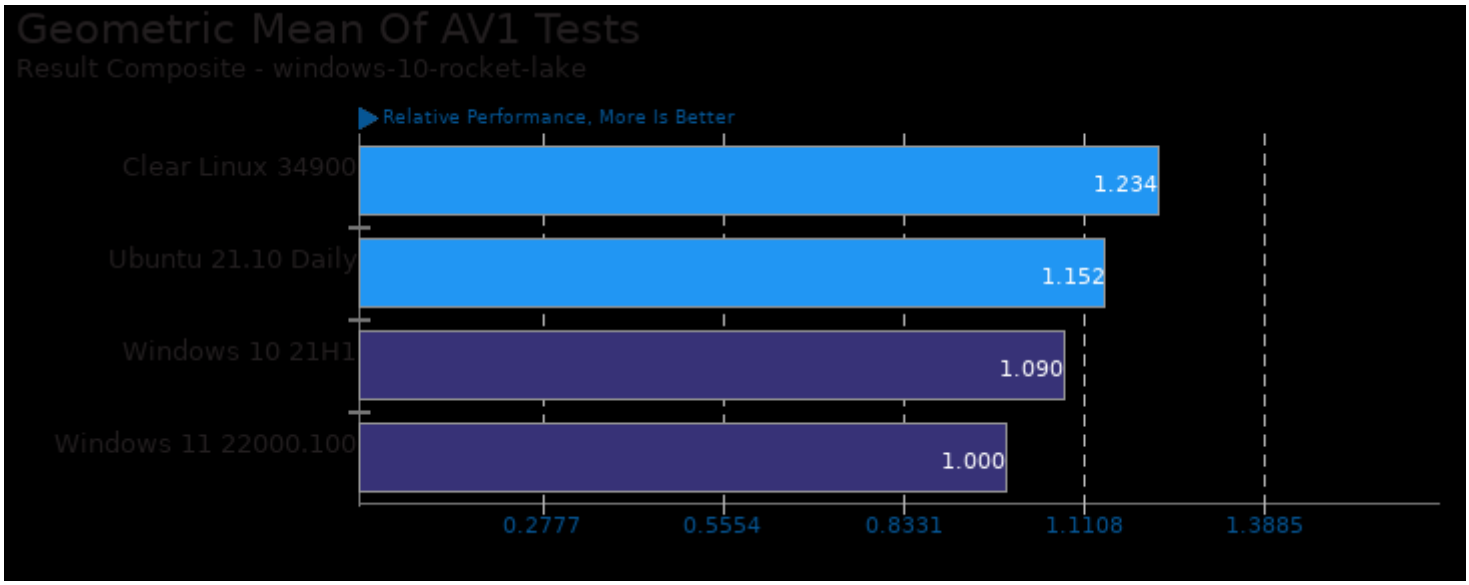

Blender 2.92
Blend File: Pabellon Barcelona - Compute: CPU-Only
Seconds, Fewer Is Better
Windows 10 21H1
SE +/- 0.13, N = 3
499.21
Windows 11 22000.100
SE +/- 0.45, N = 3
501.26
Ubuntu 21.10 Daily
SE +/- 0.12, N = 3
445.78
Clear Linux 34900
SE +/- 0.71, N = 3
431.77
110
220
330
440
550
Appleseed 2.0 Beta
Scene: Emily
Seconds, Fewer Is Better
Windows 10 21H1
335.90
Windows 11 22000.100
355.87
Ubuntu 21.10 Daily
328.66
Clear Linux 34900
313.26
80
160
240
320
400
Appleseed 2.0 Beta
Scene: Disney Material
Seconds, Fewer Is Better
Windows 10 21H1
188.38
Windows 11 22000.100
192.71
Ubuntu 21.10 Daily
183.14
Clear Linux 34900
179.31
40
80
120
160
200


Appleseed 2.0 Beta
Scene: Material Tester
Seconds, Fewer Is Better
Windows 10 21H1
182.71
Windows 11 22000.100
190.99
Ubuntu 21.10 Daily
175.39
Clear Linux 34900
169.82
40
80
120
160
200
WavPack Audio Encoding 5.3
WAV To WavPack
Seconds, Fewer Is Better
Windows 10 21H1
SE +/- 0.01, N = 5
11.43
Windows 11 22000.100
SE +/- 0.01, N = 5
11.68
Ubuntu 21.10 Daily
SE +/- 0.00, N = 5
11.79
Clear Linux 34900
SE +/- 0.01, N = 5
-O3 -pipe -fexceptions -fstack-protector -m64 -flat-lto-objects -fno-trapping-math -mtune=skylake
11.02
3
6
9
12
15
1. (CXX) g++ options: -rdynamic
Chaos Group V-RAY 5
Mode: CPU
vsamples, More Is Better
Windows 10 21H1
SE +/- 34.27, N = 3
11369
Windows 11 22000.100
SE +/- 10.71, N = 3
11145
Ubuntu 21.10 Daily
SE +/- 22.33, N = 3
12483
Clear Linux 34900
SE +/- 15.51, N = 3
12799
3K
6K
9K
12K
15K

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



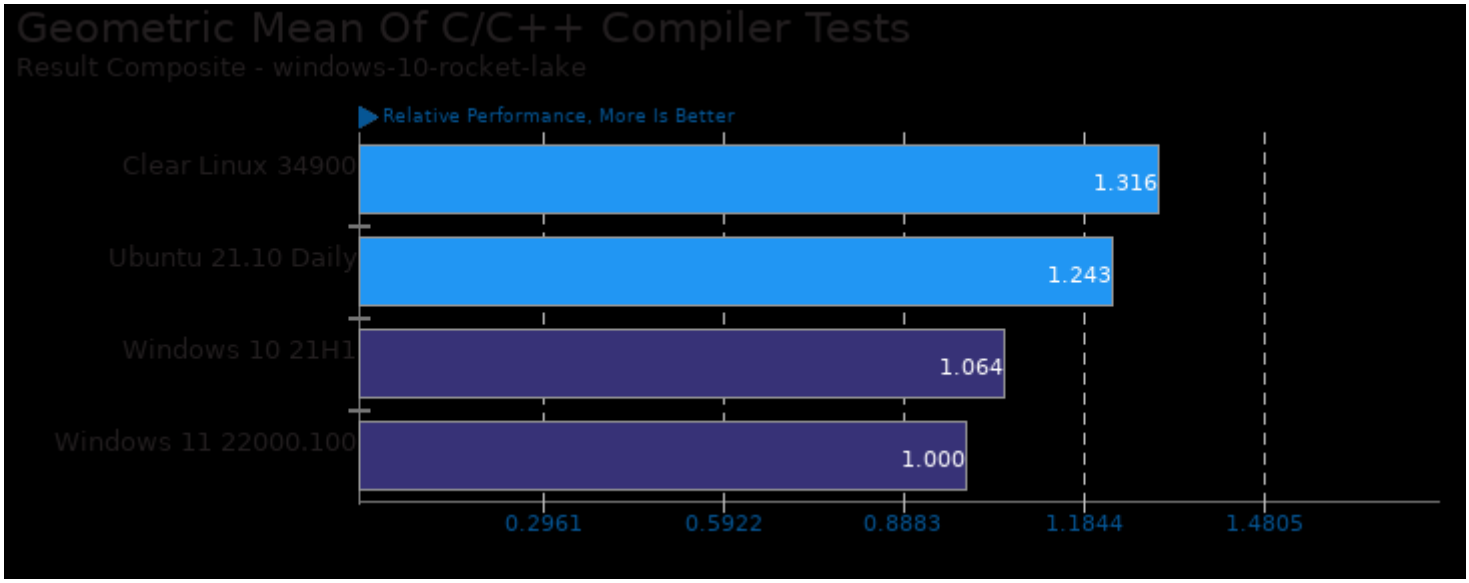
Geometric mean based upon tests: pts/encode-mp3, pts/encode-flac, pts/encode-wavpack and pts/encode-opus



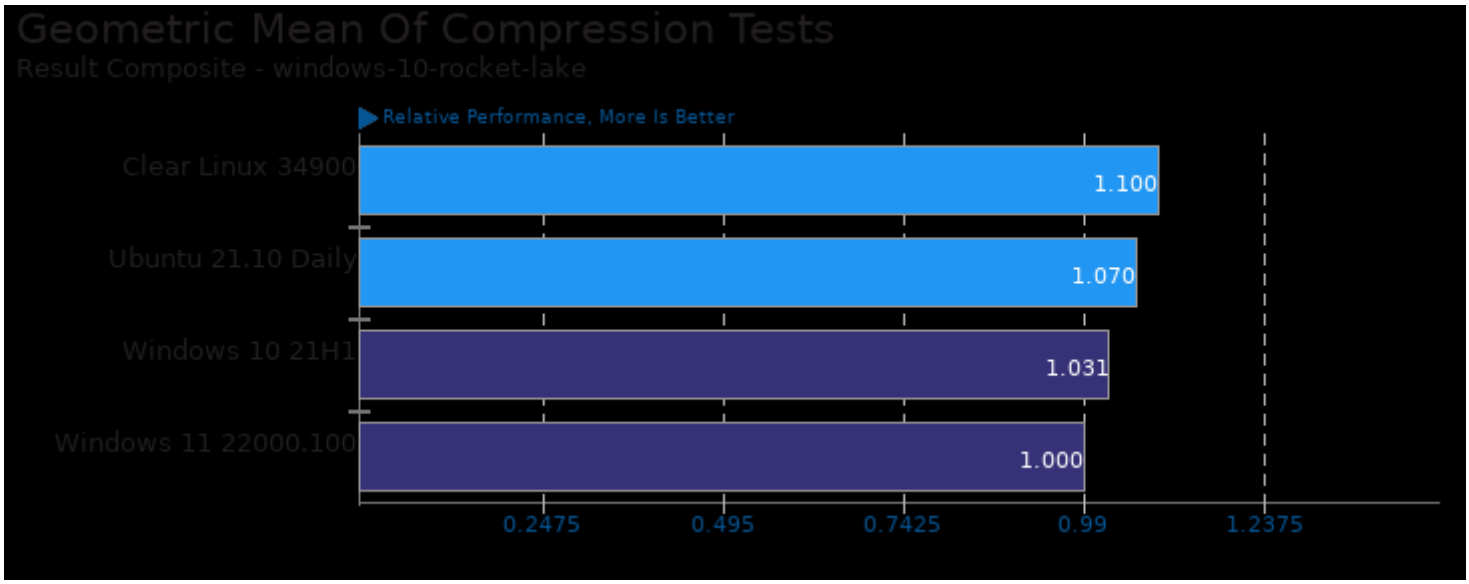
Geometric mean based upon tests: pts/dav1d, pts/svt-av1 and pts/avifenc



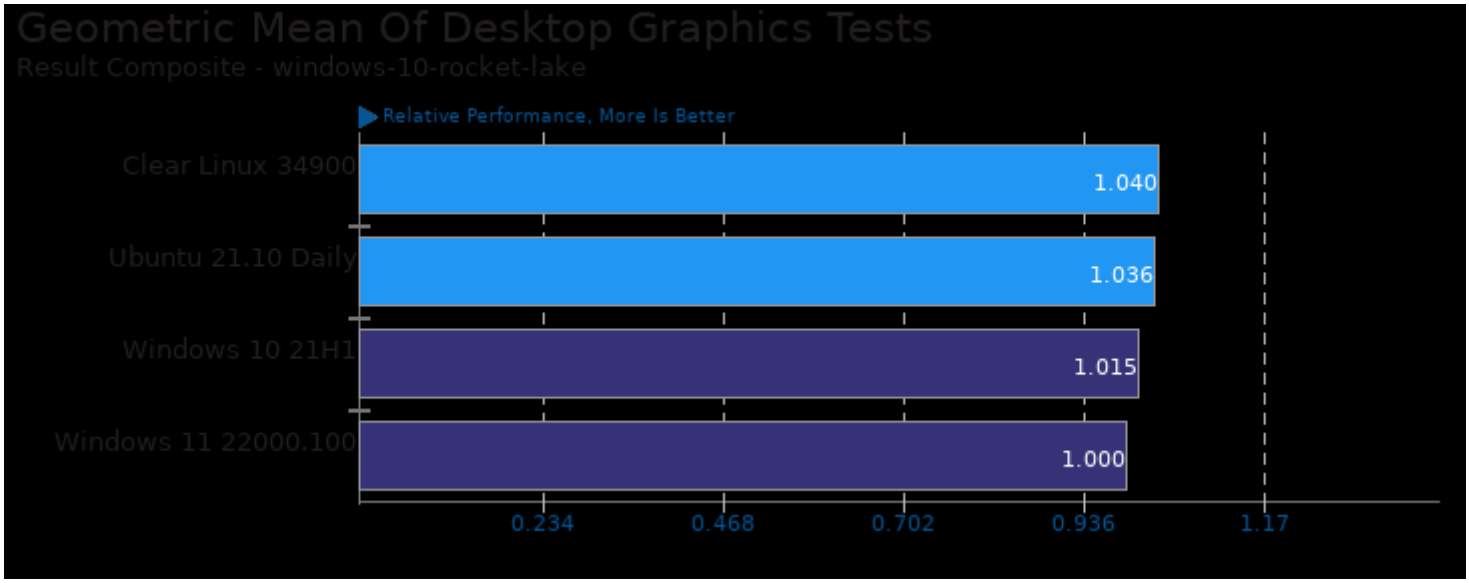
Geometric mean based upon tests: pts/crafty, pts/tscp, pts/lczero, pts/stockfish, pts/asmfish, pts/n-queens and pts/m-queens



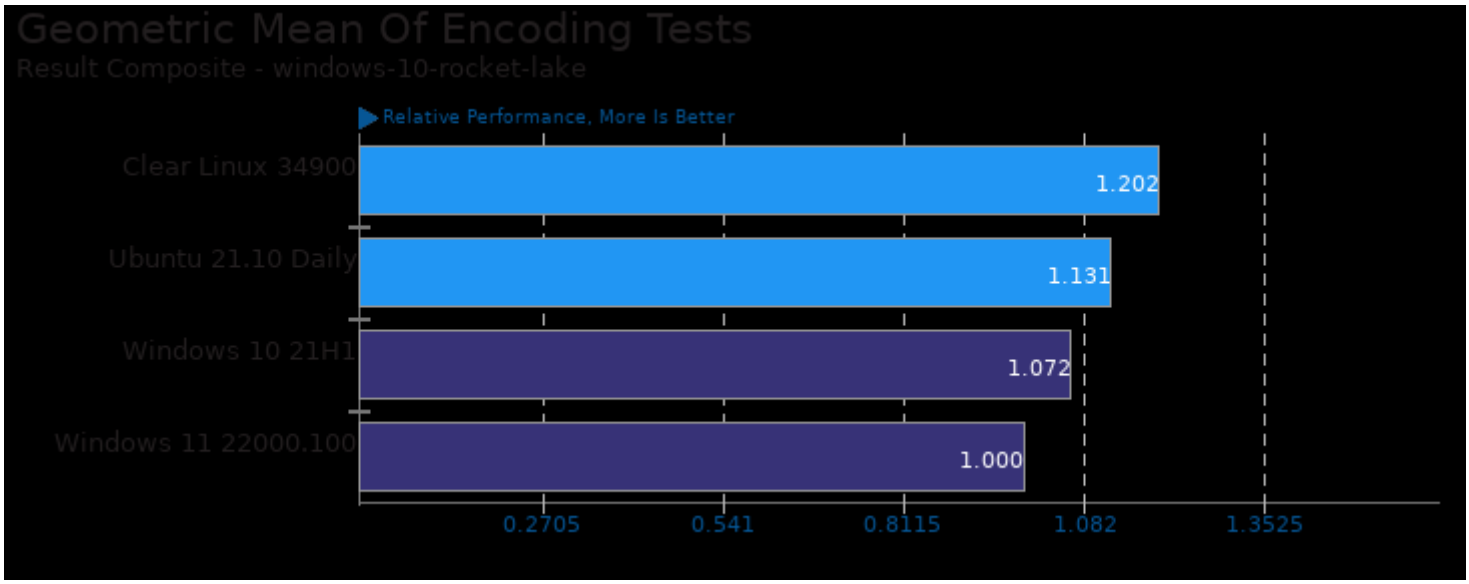
Geometric mean based upon tests: pts/tscp, pts/graphics-magick, pts/stockfish, pts/compress-7zip, pts/encode-mp3, pts/encode-flac, pts/john-the-ripper, pts/dav1d, pts/x264, pts/compress-zstd and pts/svt-av1



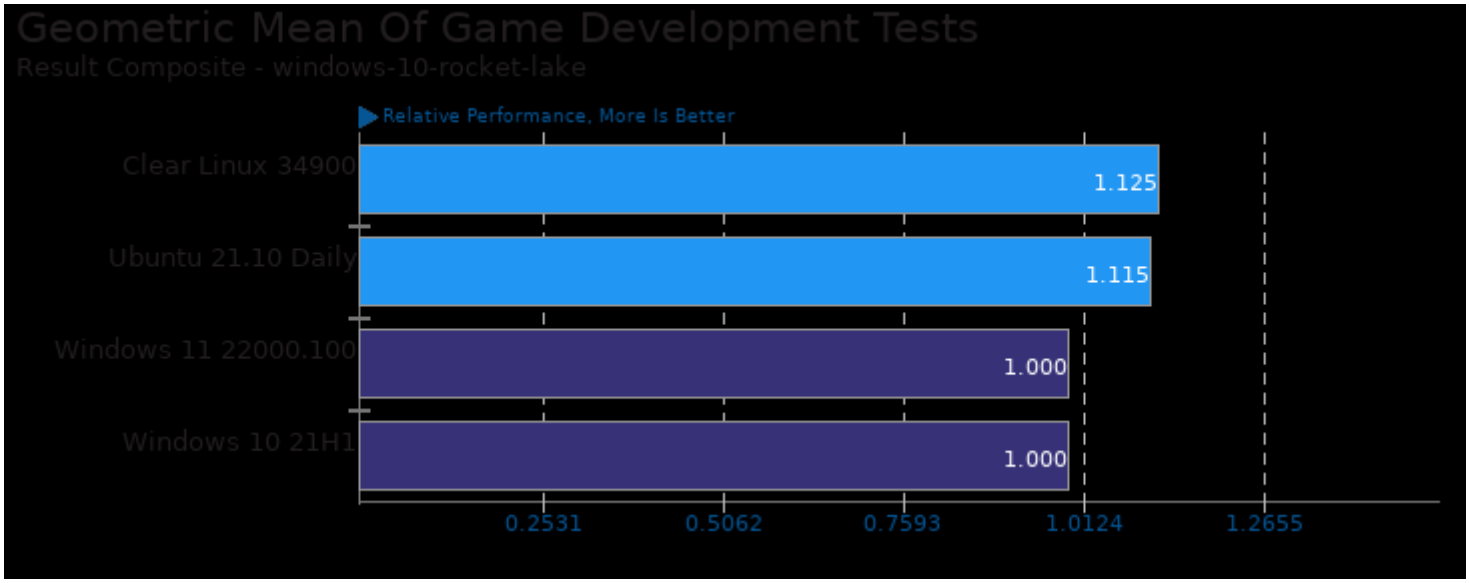
Geometric mean based upon tests: pts/compress-7zip, pts/compress-zstd and pts/compress-lz4



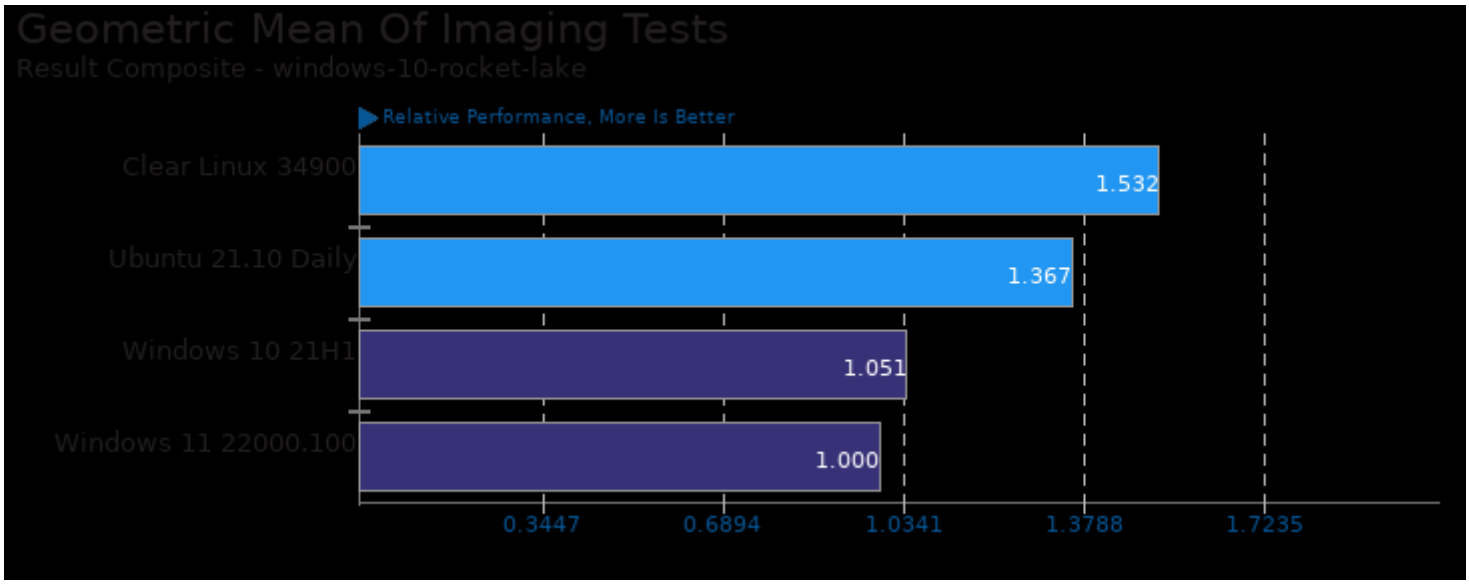
Geometric mean based upon tests: pts/paraview, pts/unigine-valley and pts/unigine-heaven



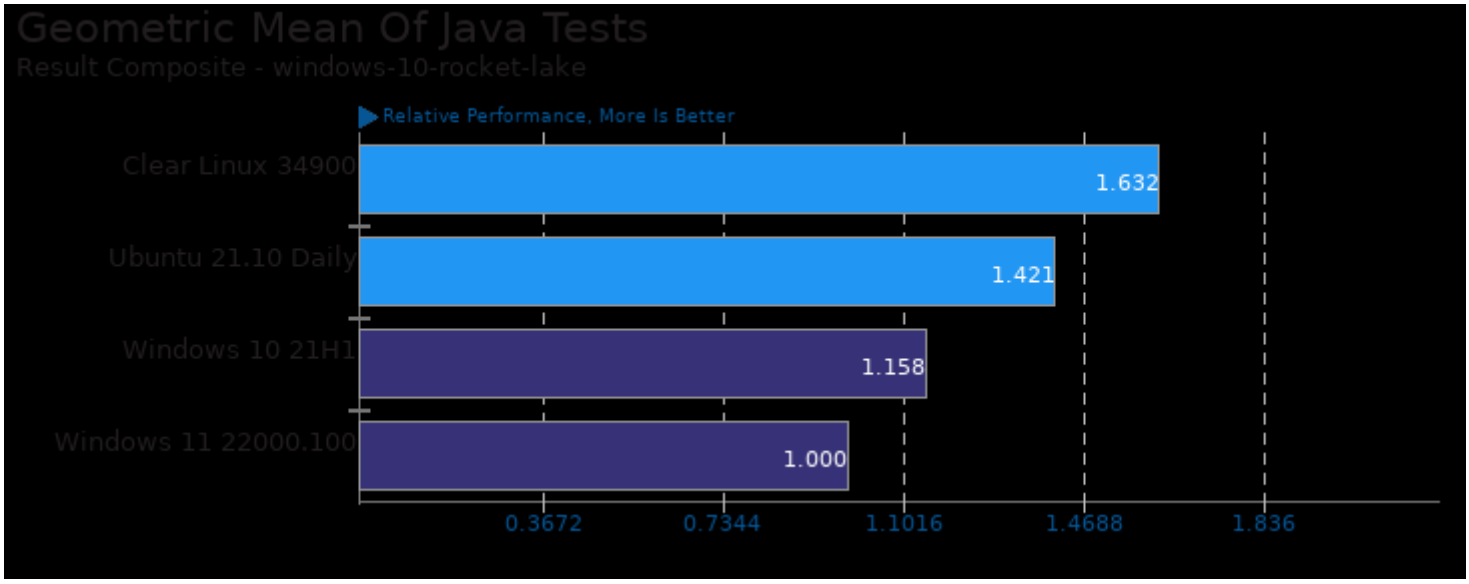
Geometric mean based upon tests: pts/encode-mp3, pts/encode-flac, pts/encode-wavpack, pts/encode-opus, pts/x264, pts/dav1d, pts/svt-av1 and pts/avifenc



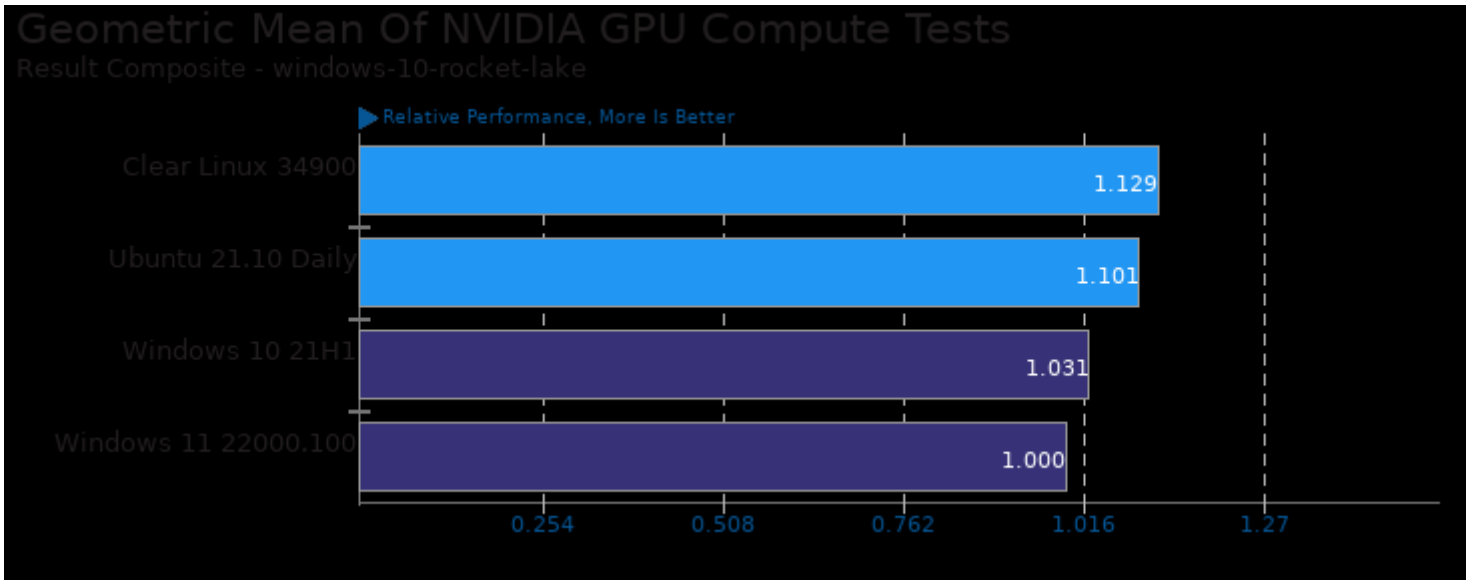
Geometric mean based upon tests: pts/blender and pts/oidn



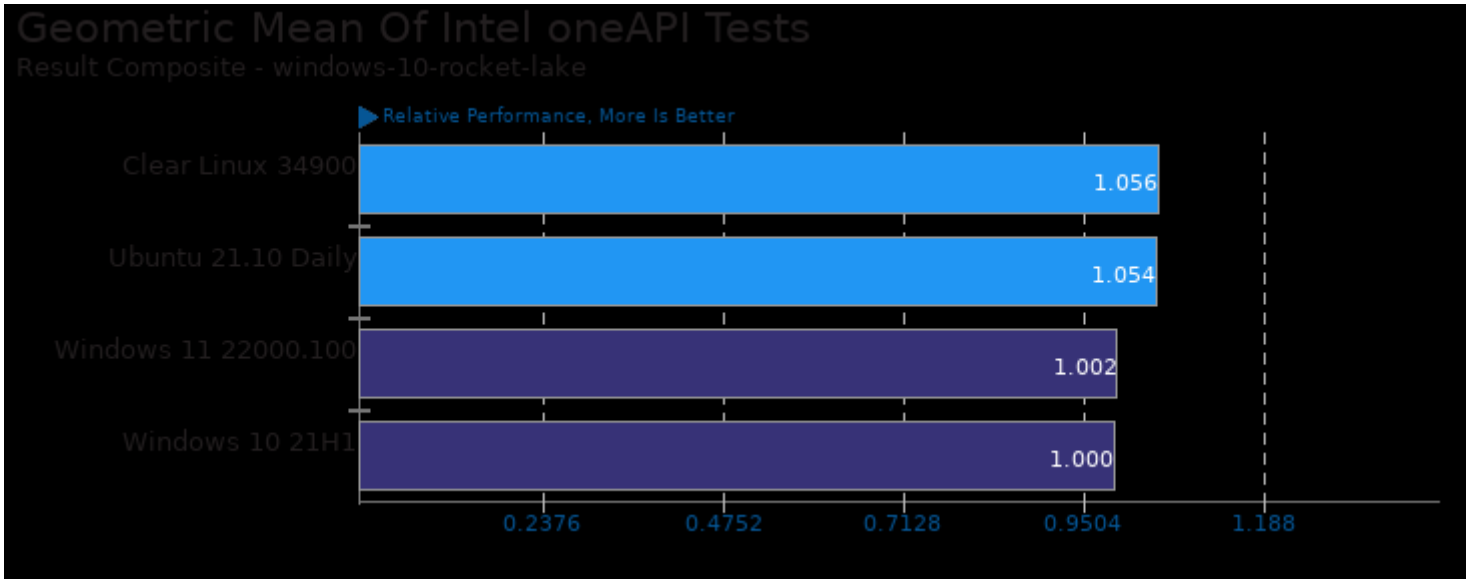
Geometric mean based upon tests: pts/graphics-magick, pts/webp, pts/tjbench and pts/avifenc



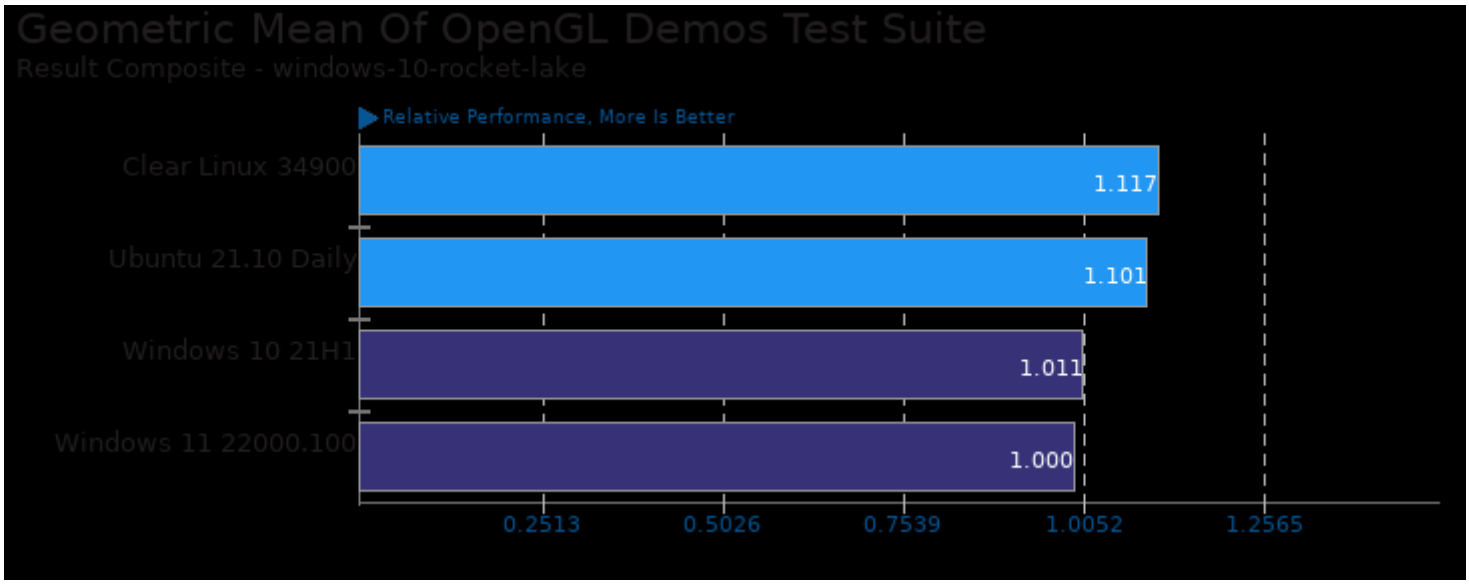
Geometric mean based upon tests: pts/dacapobench and pts/renaissance



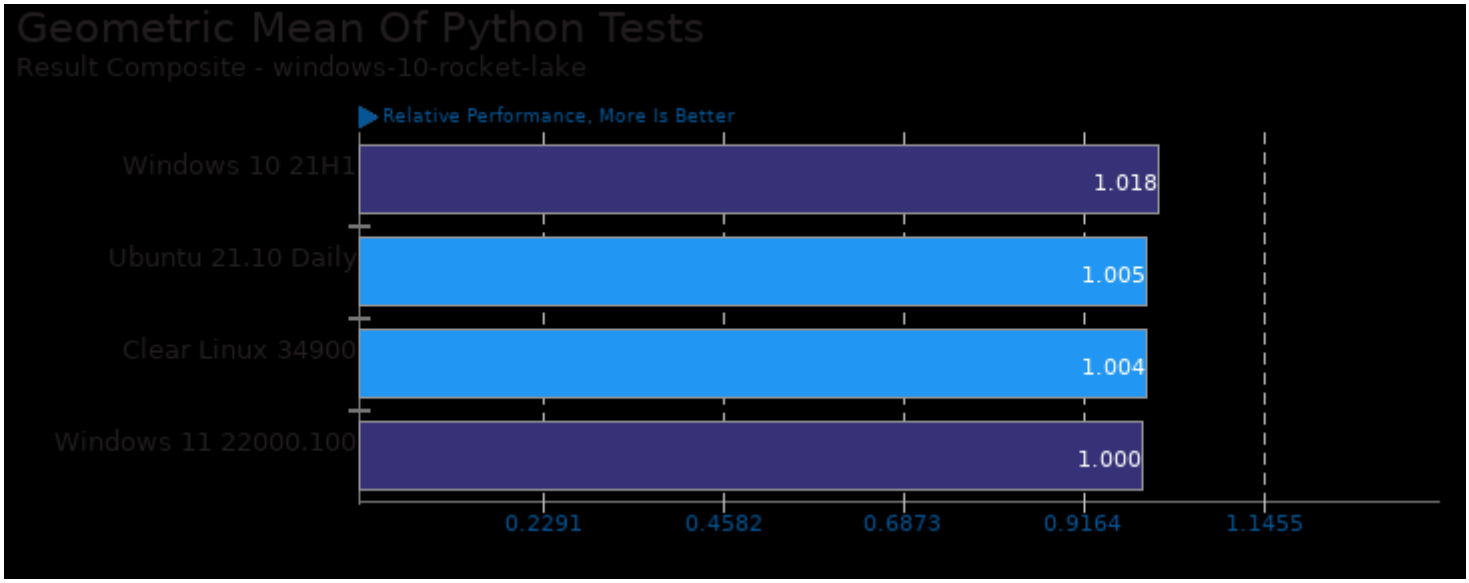
Geometric mean based upon tests: pts/luxcorerender, pts/lczero, pts/indigobench, pts/v-ray, pts/blender, pts/realsr-ncnn and pts/waifu2x-ncnn



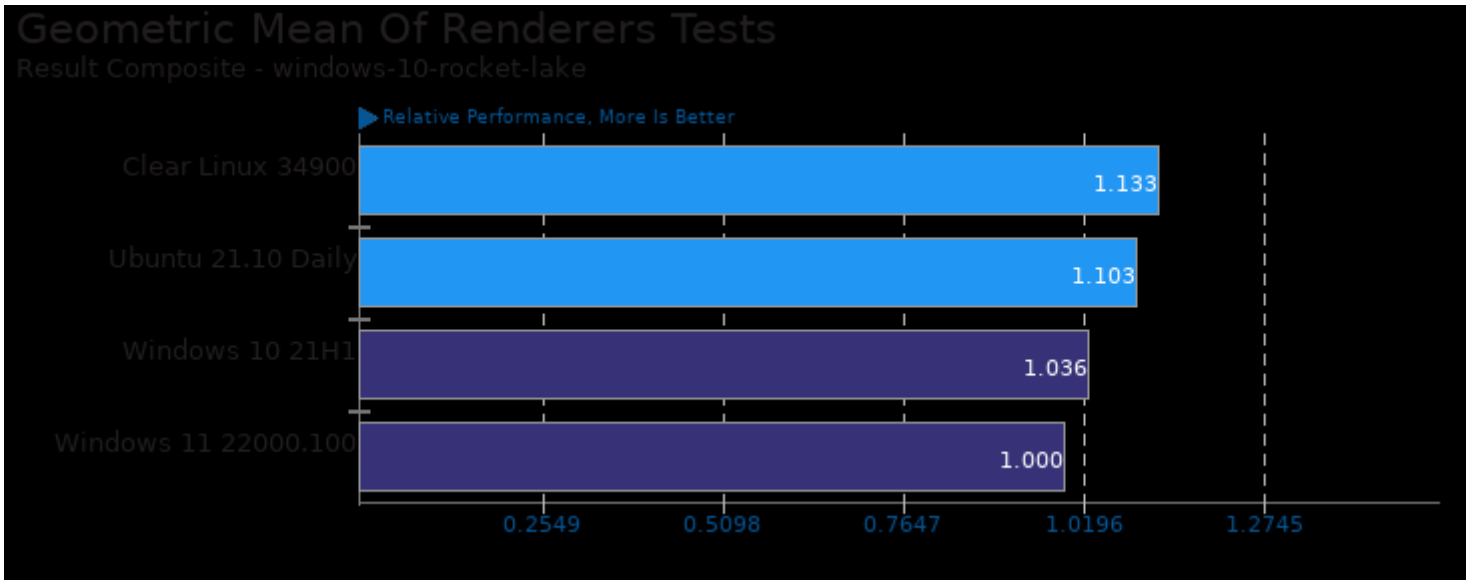
Geometric mean based upon tests: pts/embree and pts/oidn



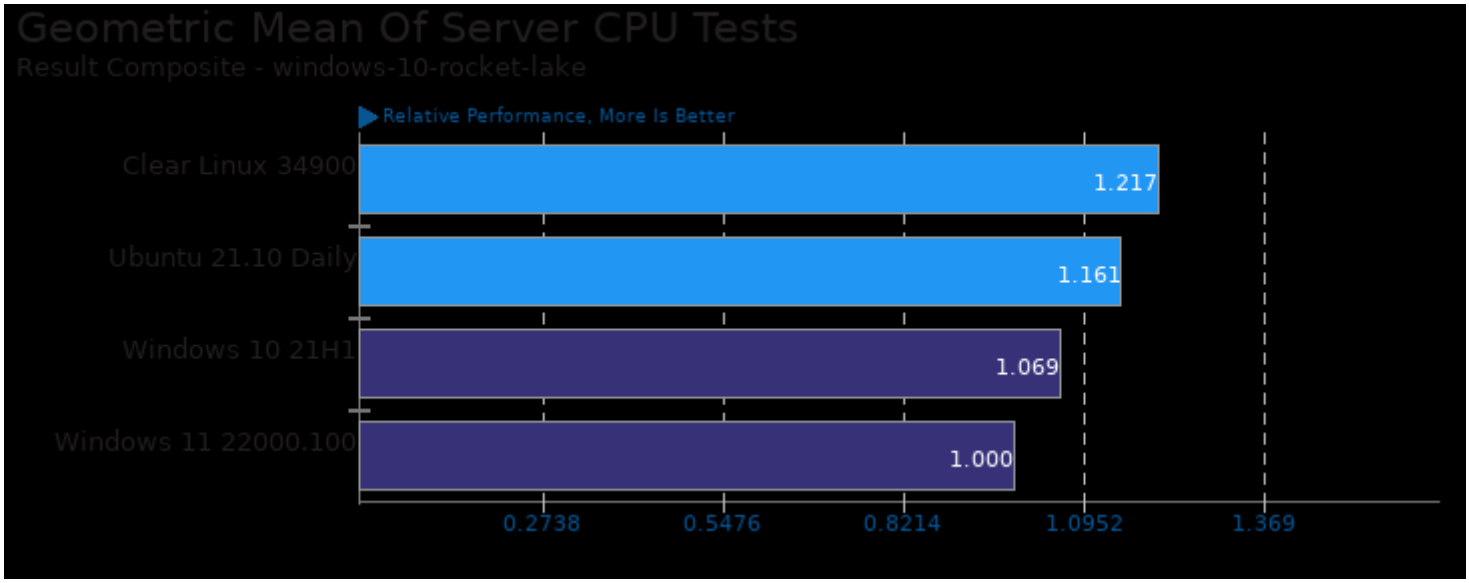
Geometric mean based upon tests: pts/unigine-valley and pts/unigine-heaven



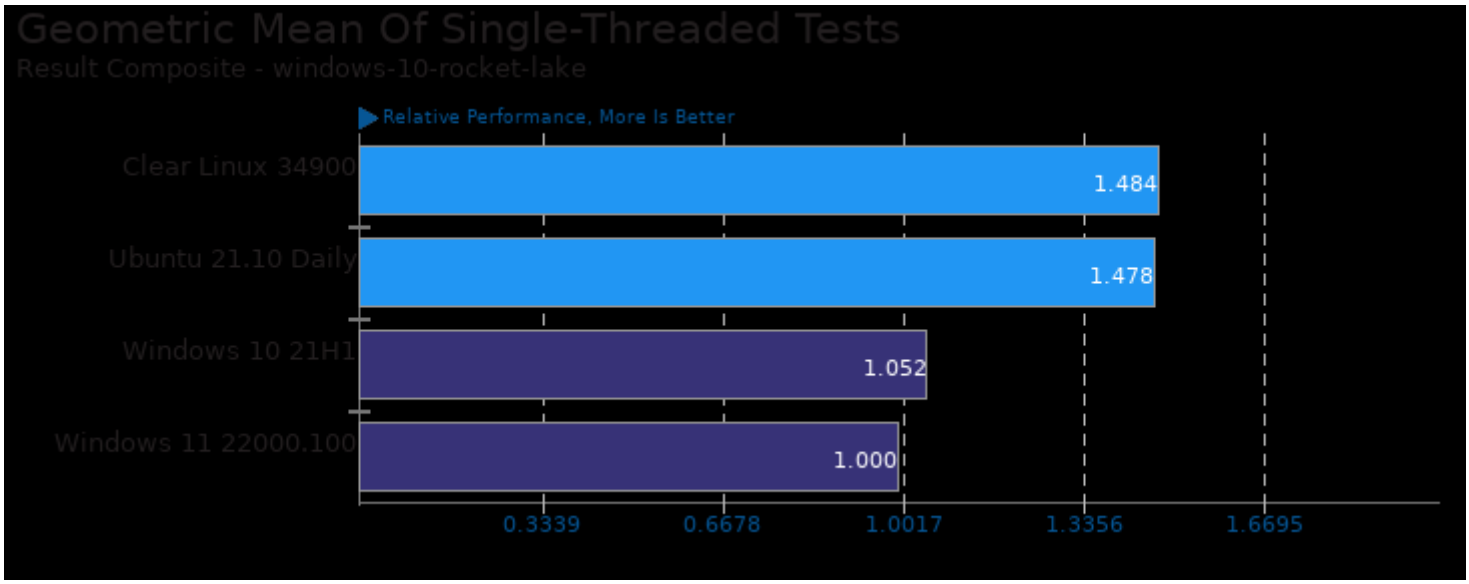
Geometric mean based upon tests: pts/paraview and pts/yafaray



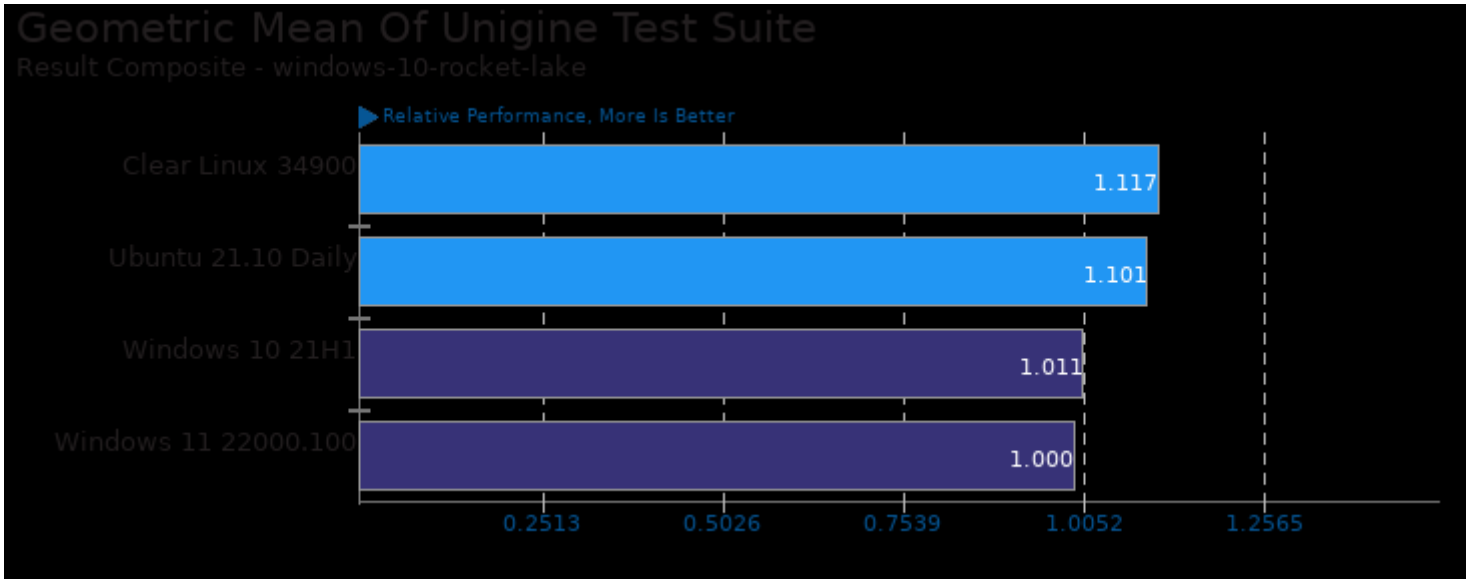
Geometric mean based upon tests: pts/yafaray, pts/blender, pts/appleseed, pts/luxcorerender, pts/v-ray and pts/indigobench



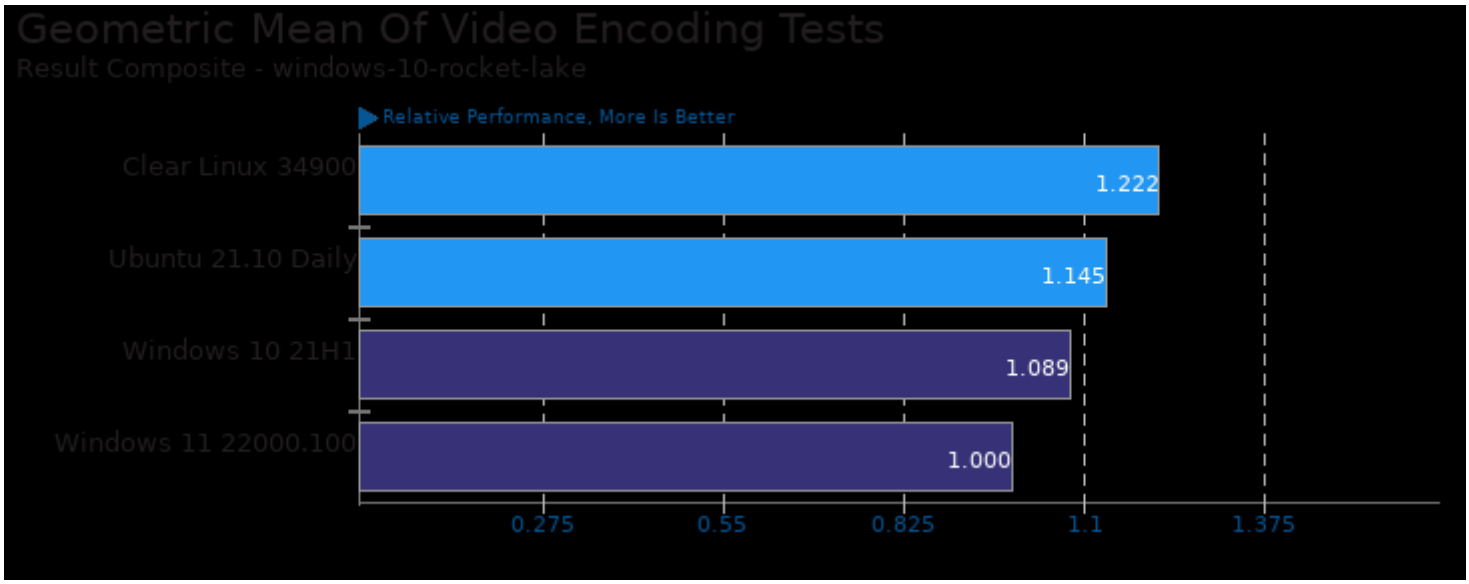
Geometric mean based upon tests: pts/dacapobench, pts/renaissance, pts/john-the-ripper, pts/svt-av1, pts/x264, pts/dav1d, pts/compress-7zip, pts/stockfish, pts/asmfish, pts/compress-zstd, pts/m-queens, pts/tjbench, pts/blender and pts/appleseed



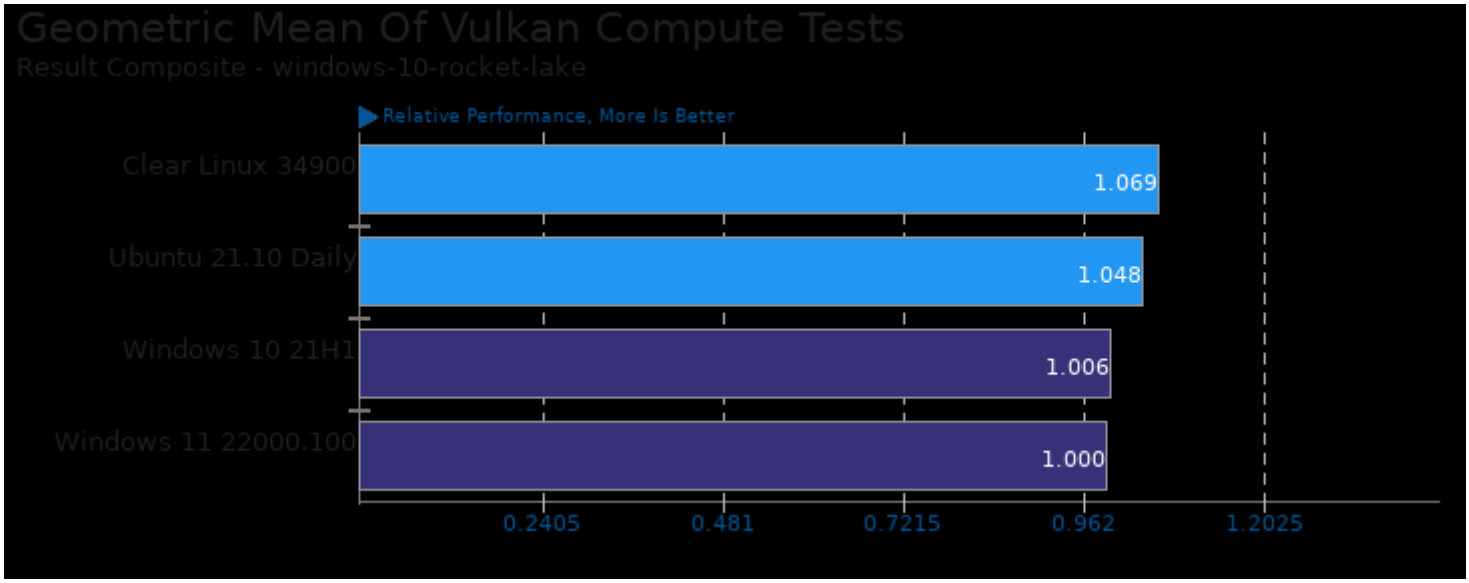
Geometric mean based upon tests: pts/encode-flac, pts/encode-mp3, pts/sudokut and pts/tjbench



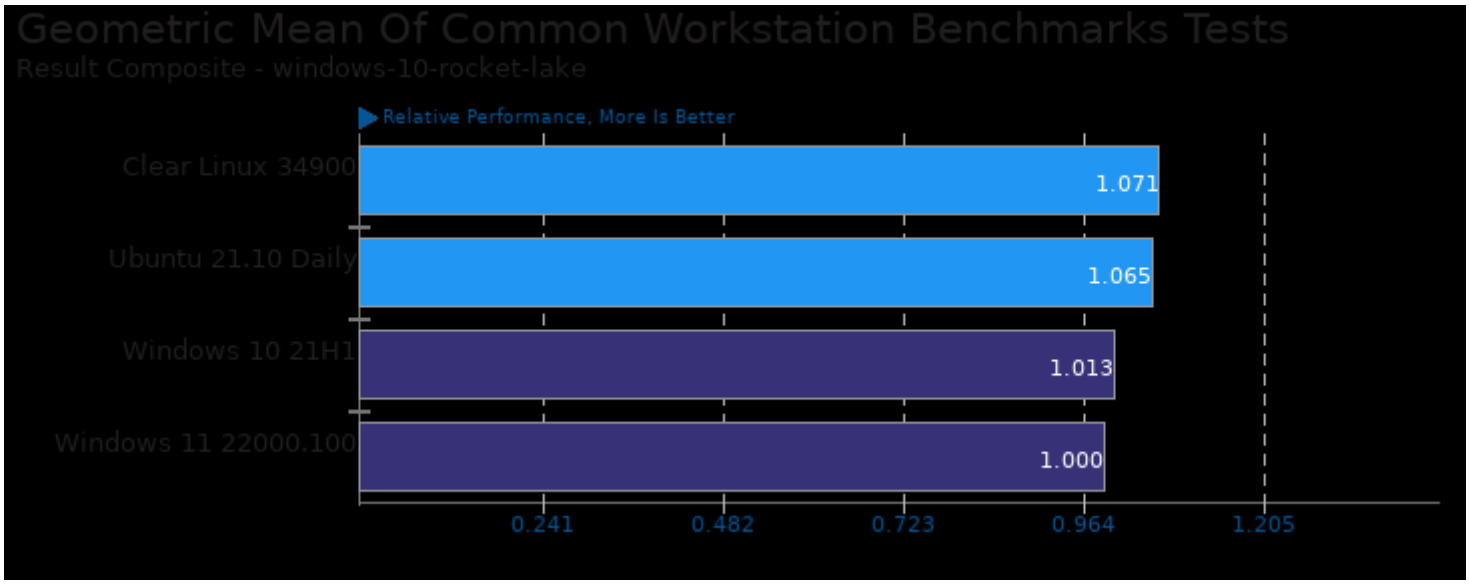
Geometric mean based upon tests: pts/unigine-valley and pts/unigine-heaven



Geometric mean based upon tests: pts/x264, pts/dav1d, pts/svt-av1 and pts/avifenc



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



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

This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 11:56.