


**www.phoronix-test-suite.com**

# 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 |
|---|---|---|---|---|
| **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% |
| **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% |
| **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% |
| **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% |
| **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% |
| **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% |
| **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% |
| **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% |

# windows-10-rocket-lake

| | | | | |
|---|---|---|---|---|
| **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% |
| **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% |
| **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% |
| **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% | |
| **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% |
| **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% |
| **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% | |
| **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% |
| **LeelaChessZero - Rand (Nodes/s)** | 184460 | **176539** | **278210** | |
| Normalized | 66.3% | 63.46% | 100% | |
| Standard Deviation | 0% | 1.6% | 0.4% | |
| **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% |
| 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% |
| 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% |
| 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% |
| 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% |
| 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% |

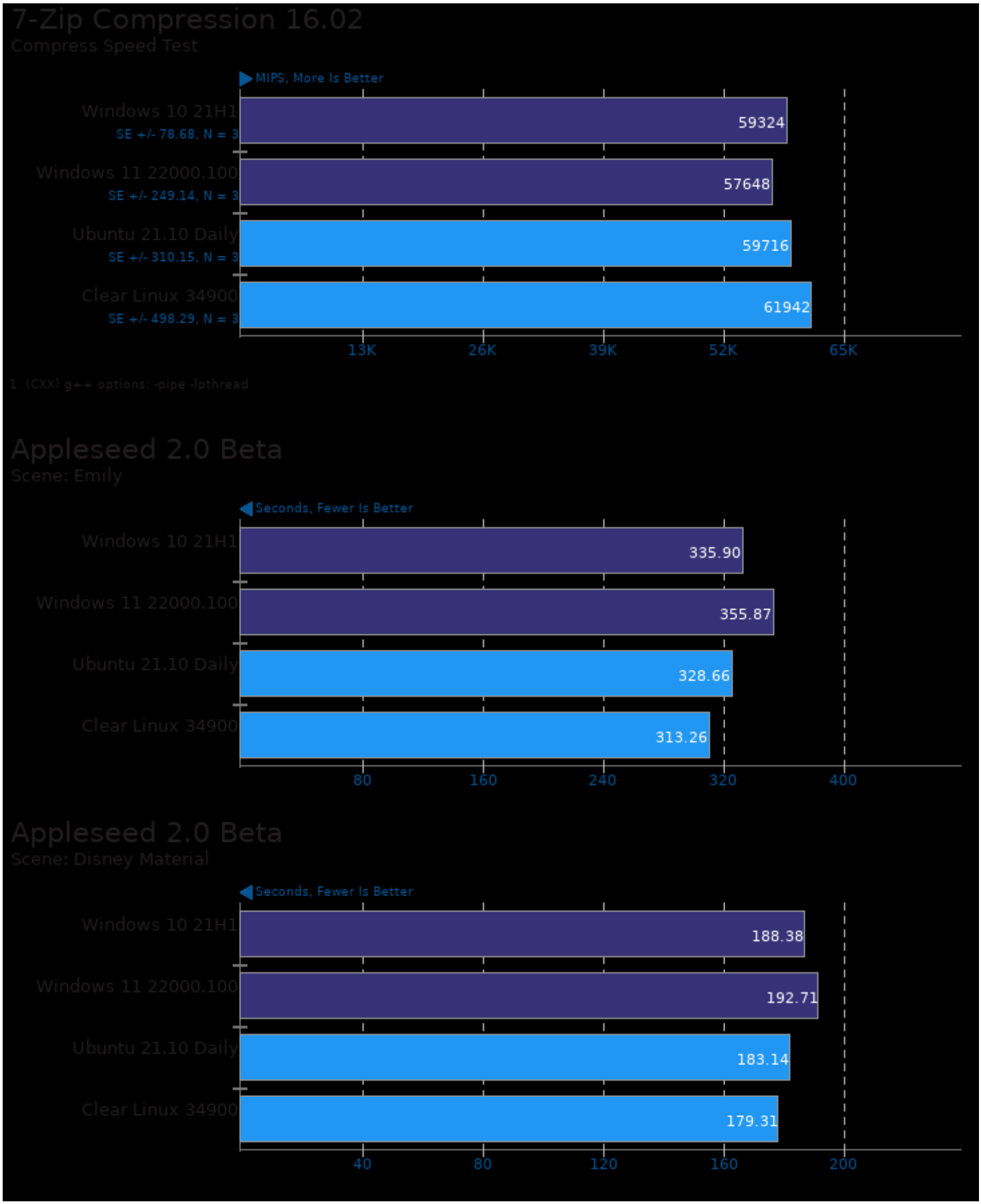
| | | | | |
|---|---|---|---|---|
| **Opus Codec Encoding - WAV To Opus Encode (sec)** | 7.217 | 7.310 | 6.466 | 6.118 |
| **Normalized** | 84.77% | 83.69% | 94.62% | 100% |
| **Standard Deviation** | 0.4% | 2.2% | 0.4% | 0.4% |
| **ParaView - Many Spheres - 1920 x 1080 (Frames / Sec)** | 43.53 | 43.37 | 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% |
| **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% |
| **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% |
| **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% |
| **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% |

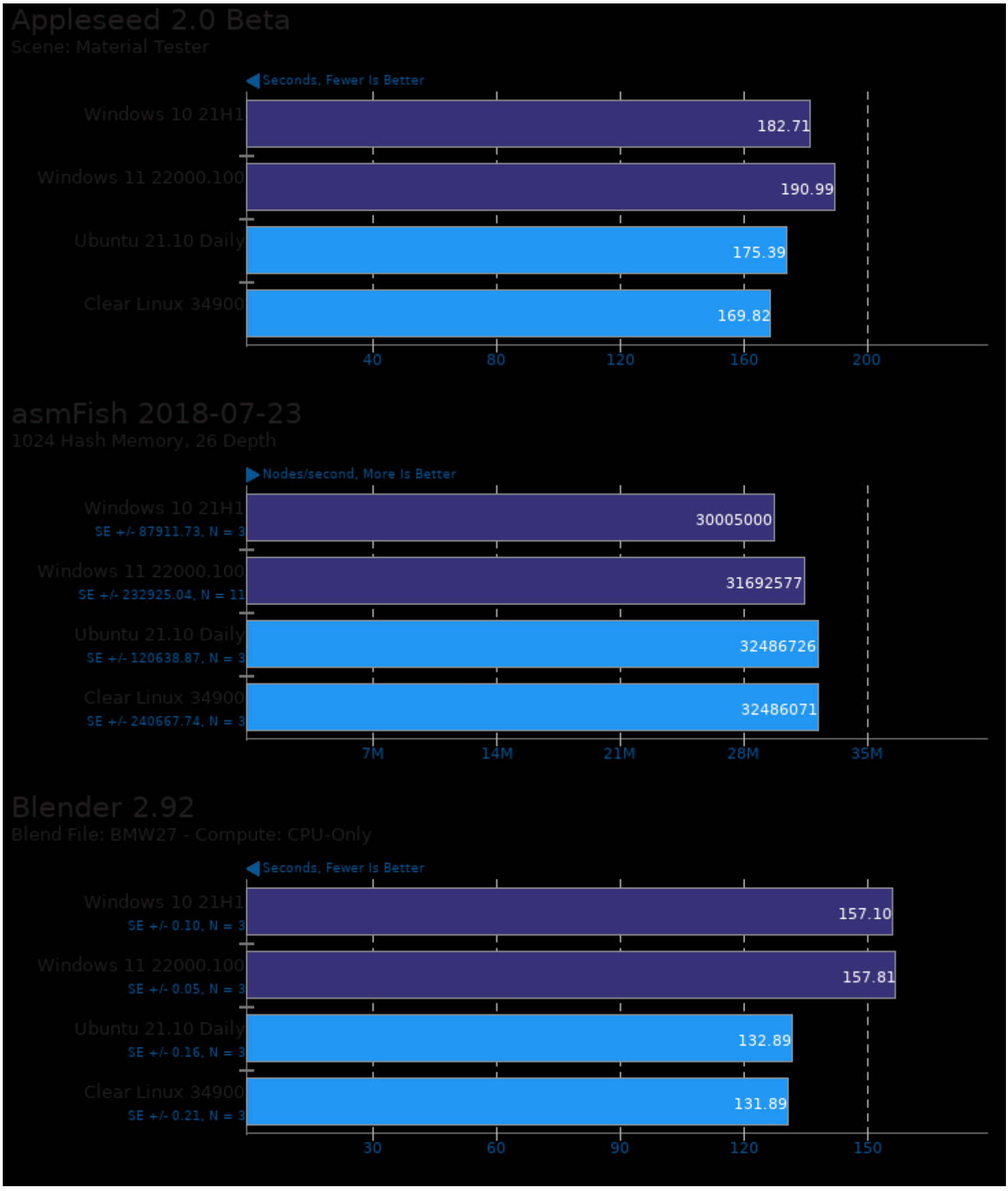
| | | | | |
|---|---|---|---|---|
| **Sudokut - Total Time (sec)** | 24.905 | **29.195** | **7.200** | 7.456 |
| **Normalized** | 28.91% | 24.66% | 100% | 96.57% |
| **Standard Deviation** | 0.4% | 0.3% | 0.2% | 0.6% |
| **SVT-AV1 - Preset 4 - Bosphorus 4K (FPS)** | 1.739 | **1.455** | 1.738 | **1.866** |
| **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% |
| **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% |
| **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% |
| **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% |
| **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% |
| **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% |

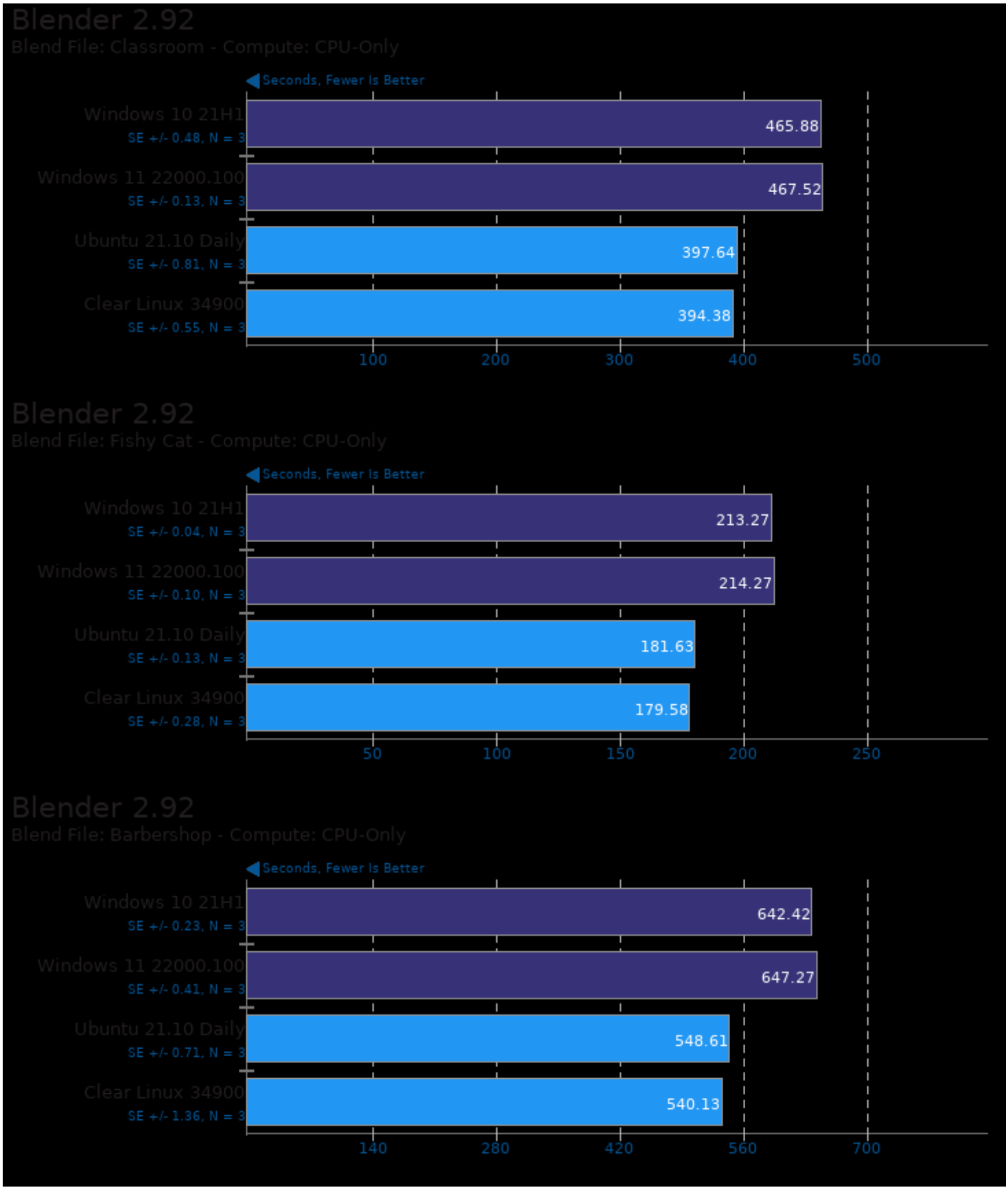
| | | | | |
|---|---|---|---|---|
| Standard Deviation | 0.2% | 0.3% | 0.3% | 0.1% |
| **WebP Image Encode - Q.1.L.H.C (Encode Time - sec)** | 28.707 | **30.345** | 28.478 | **25.174** |
| Normalized | 87.69% | 82.96% | 88.4% | 100% |
| Standard Deviation | 0.5% | 0.4% | 0.3% | 0.3% |
| **x264 - H.2.V.E (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% |
| **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% | |
| **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% |

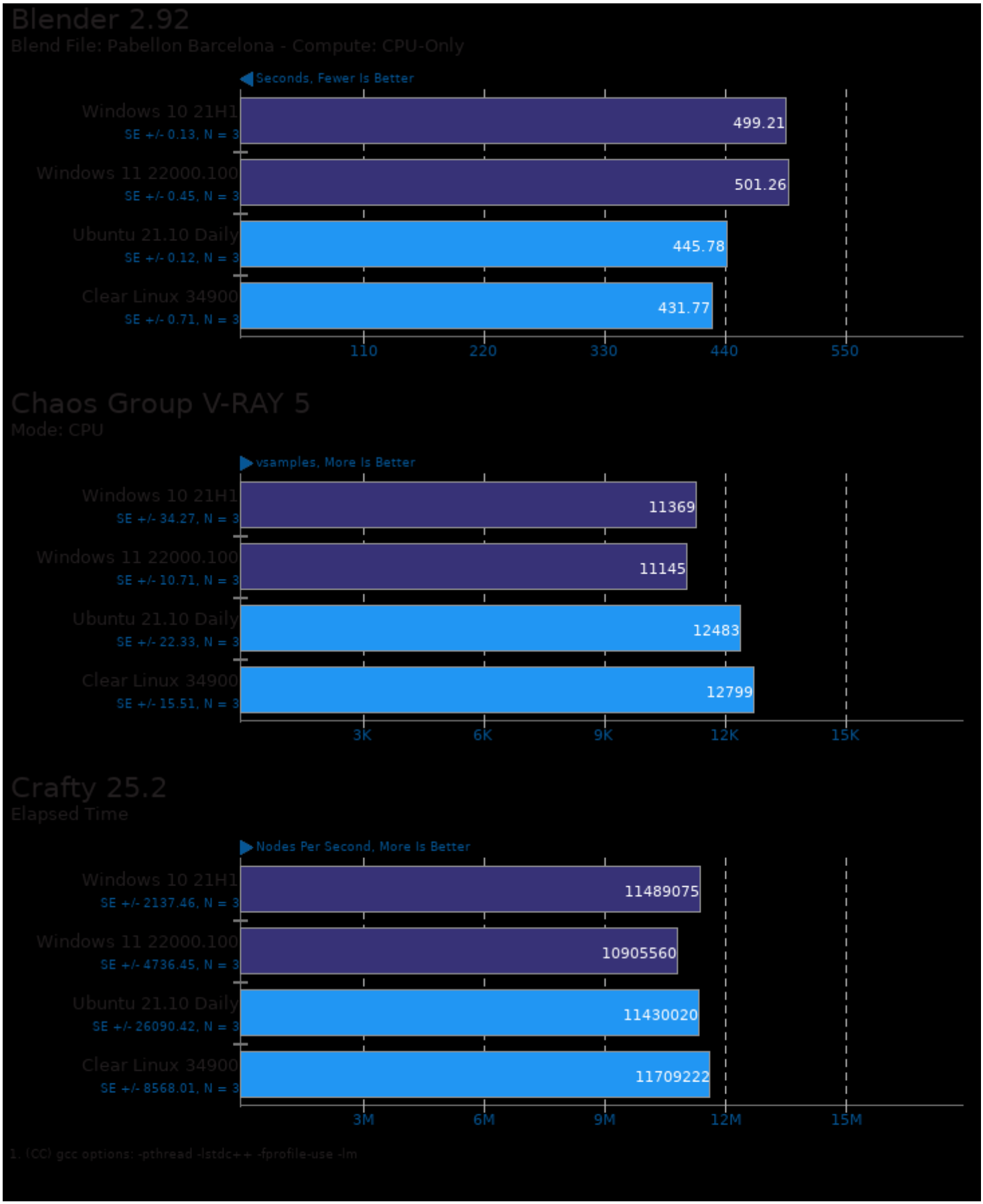
# windows-10-rocket-lake

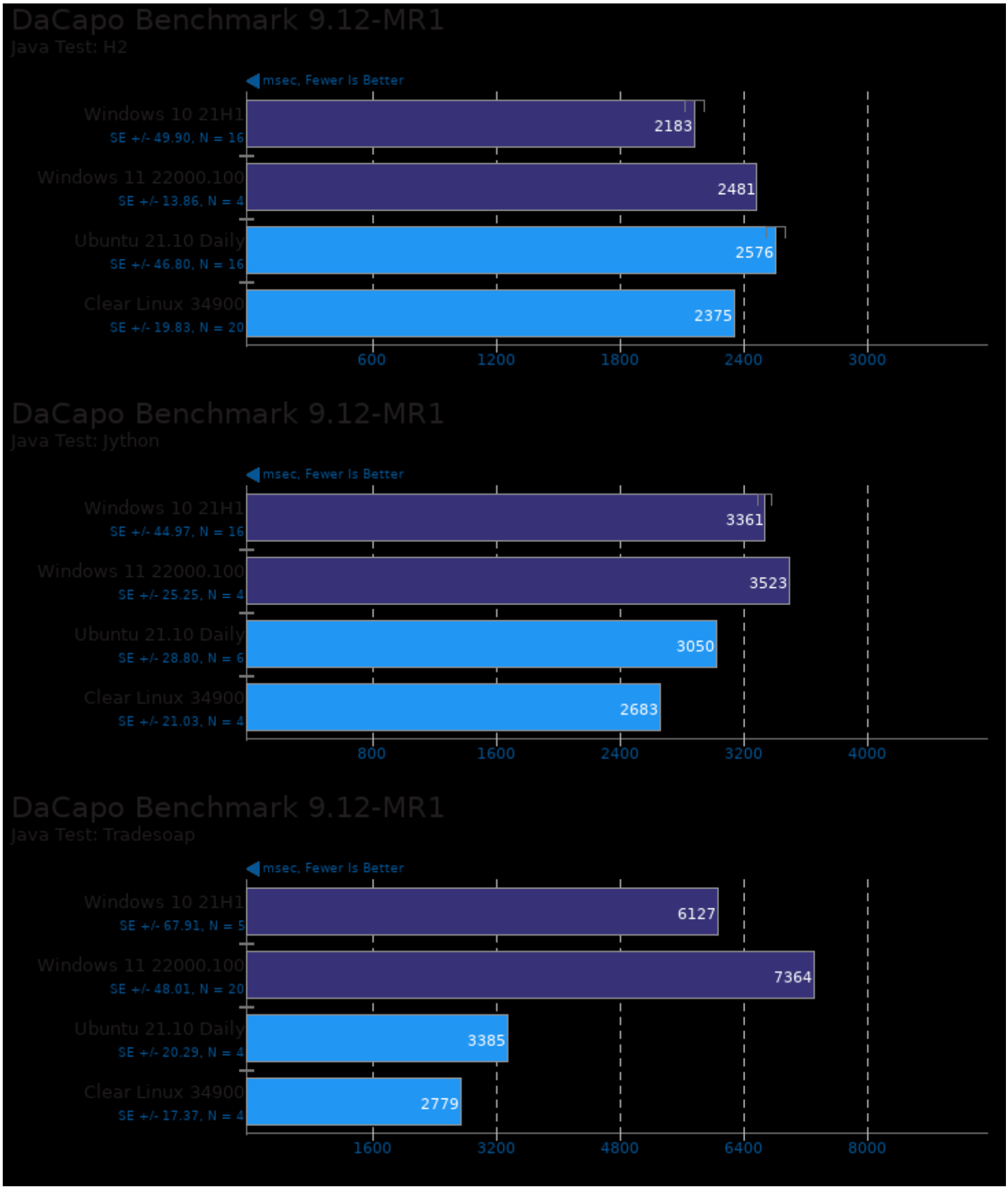
| | | | | |
|---|---|---|---|---|
| **Zstd Compression - 19, Long Mode - D.S (MB/s)** | 4076 | 3996 | 4651 | 4813 |
| **Normalized** | 84.68% | 83.02% | 96.63% | 100% |
| **Standard Deviation** | 0.2% | 0.1% | 0.3% | 0.2% |

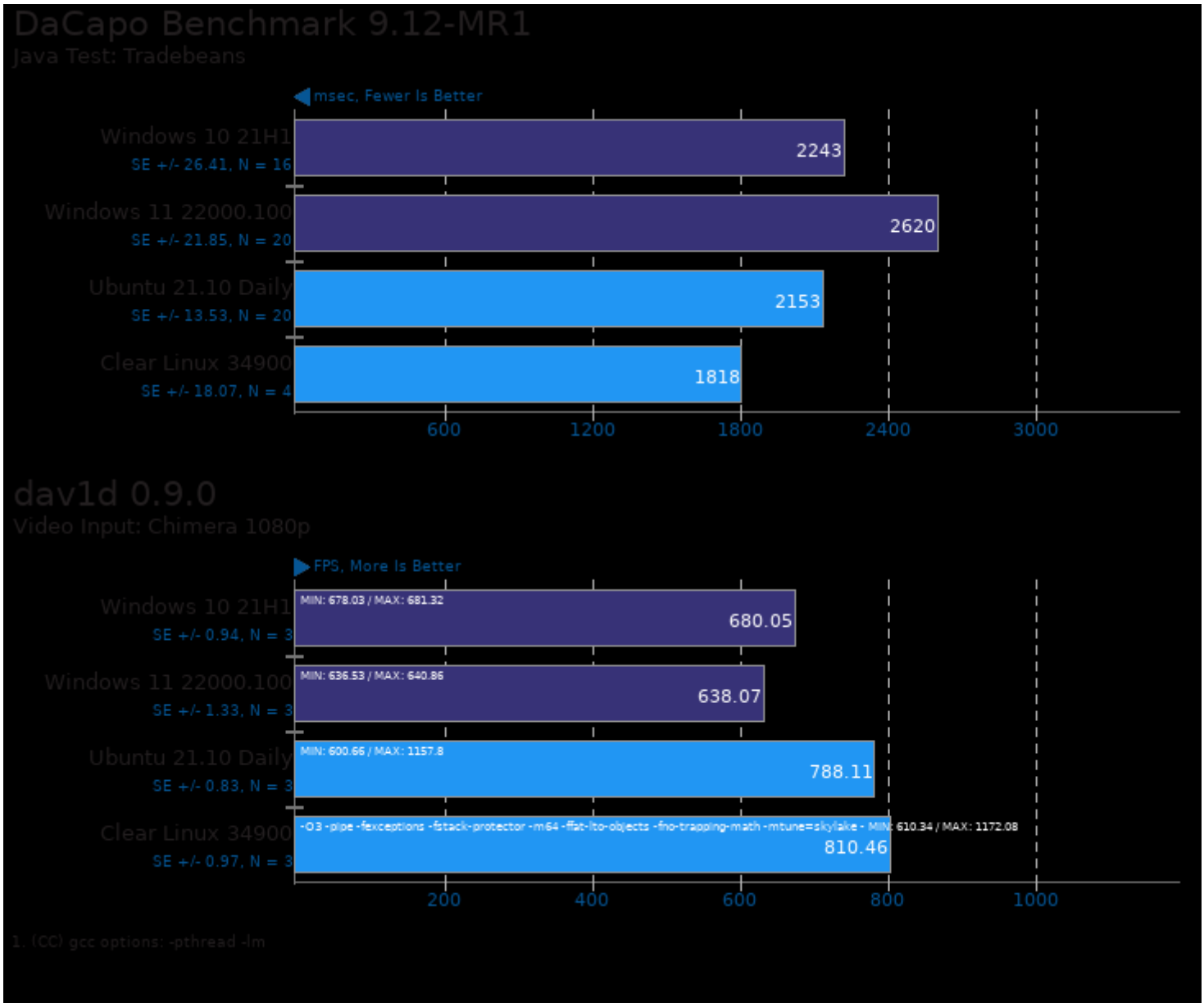

7-Zip Compression 16.02
Compress Speed Test
MIPS, More Is Better
Windows 10 21H1
SE +/- 78.68, N = 3
59324
Windows 11 22000.100
SE +/- 249.14, N = 3
57648
Ubuntu 21.10 Daily
SE +/- 310.15, N = 3
59716
Clear Linux 34900
SE +/- 498.29, N = 3
61942
13K
26K
39K
52K
65K
1. (CXX) g++ options: -pipe -lpthread
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

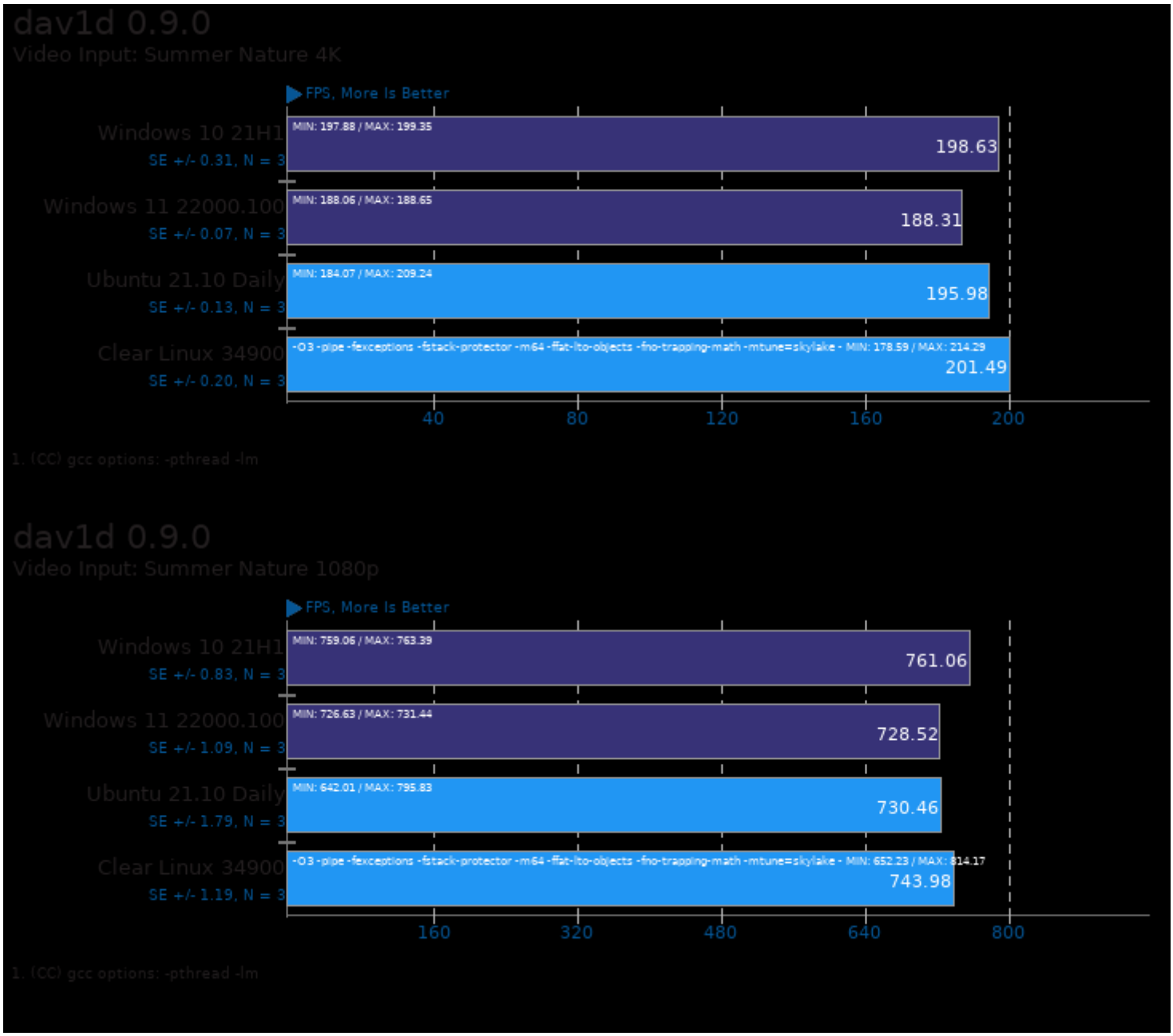

Appleseed 2.0 Beta
Scene: Material Tester
Seconds, Fewer Is Better
Windows 10 21H1
182.71
Windows 11 22000.100
190.99
Ubuntu 21.10 Daily
175.39
Clear Linux 34900
169.82
40
80
120
160
200
asmFish 2018-07-23
1024 Hash Memory, 26 Depth
Nodes/second, More Is Better
Windows 10 21H1
SE +/- 87911.73, N = 3
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
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

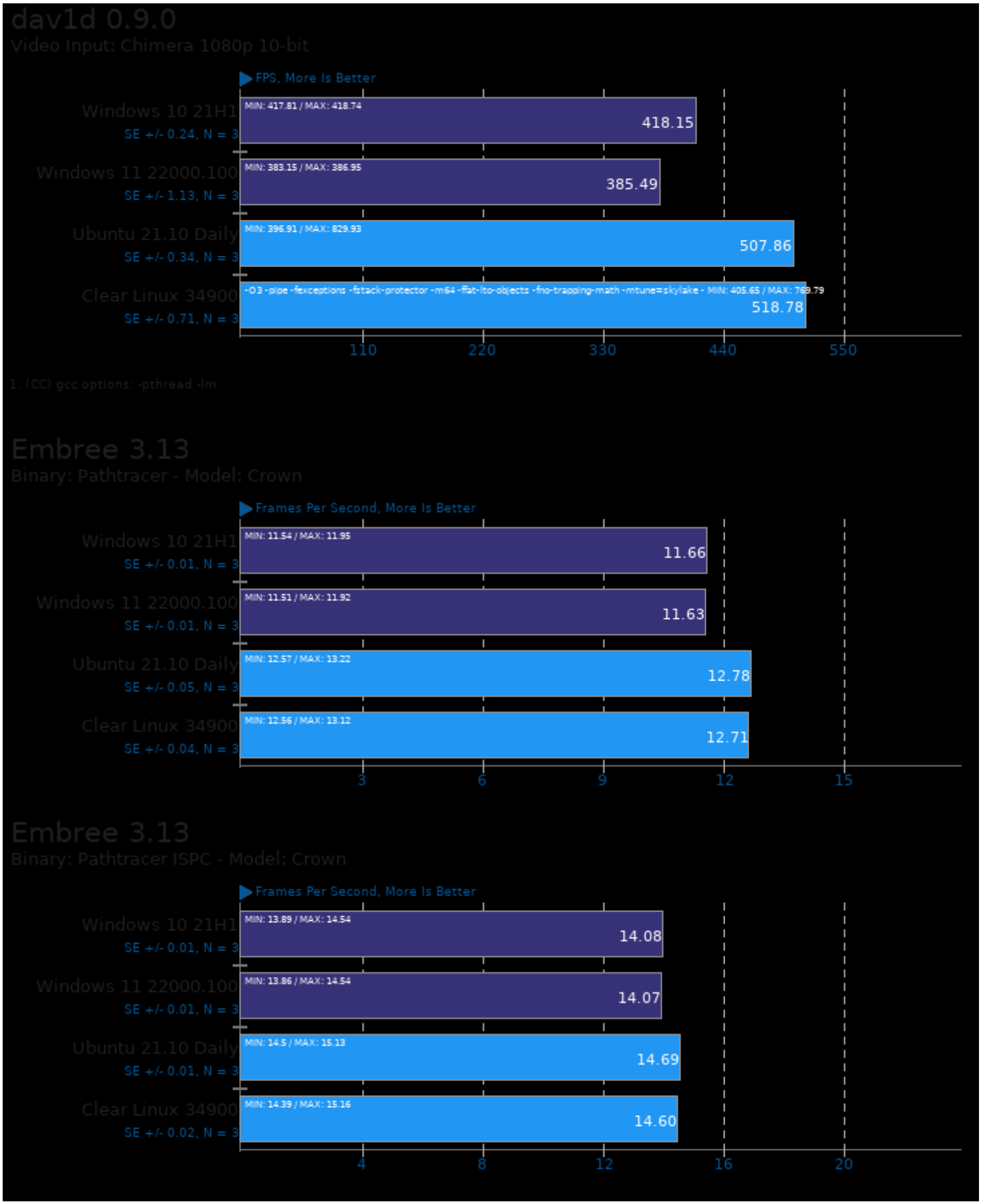

Blender 2.92
Blend File: Classroom - Compute: CPU-Only
Seconds, Fewer Is Better
Windows 10 21H1
SE +/- 0.48, N = 3
465.88
Windows 11 22000.100
SE +/- 0.13, N = 3
467.52
Ubuntu 21.10 Daily
SE +/- 0.81, N = 3
397.64
Clear Linux 34900
SE +/- 0.55, N = 3
394.38
100
200
300
400
500
Blender 2.92
Blend File: 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

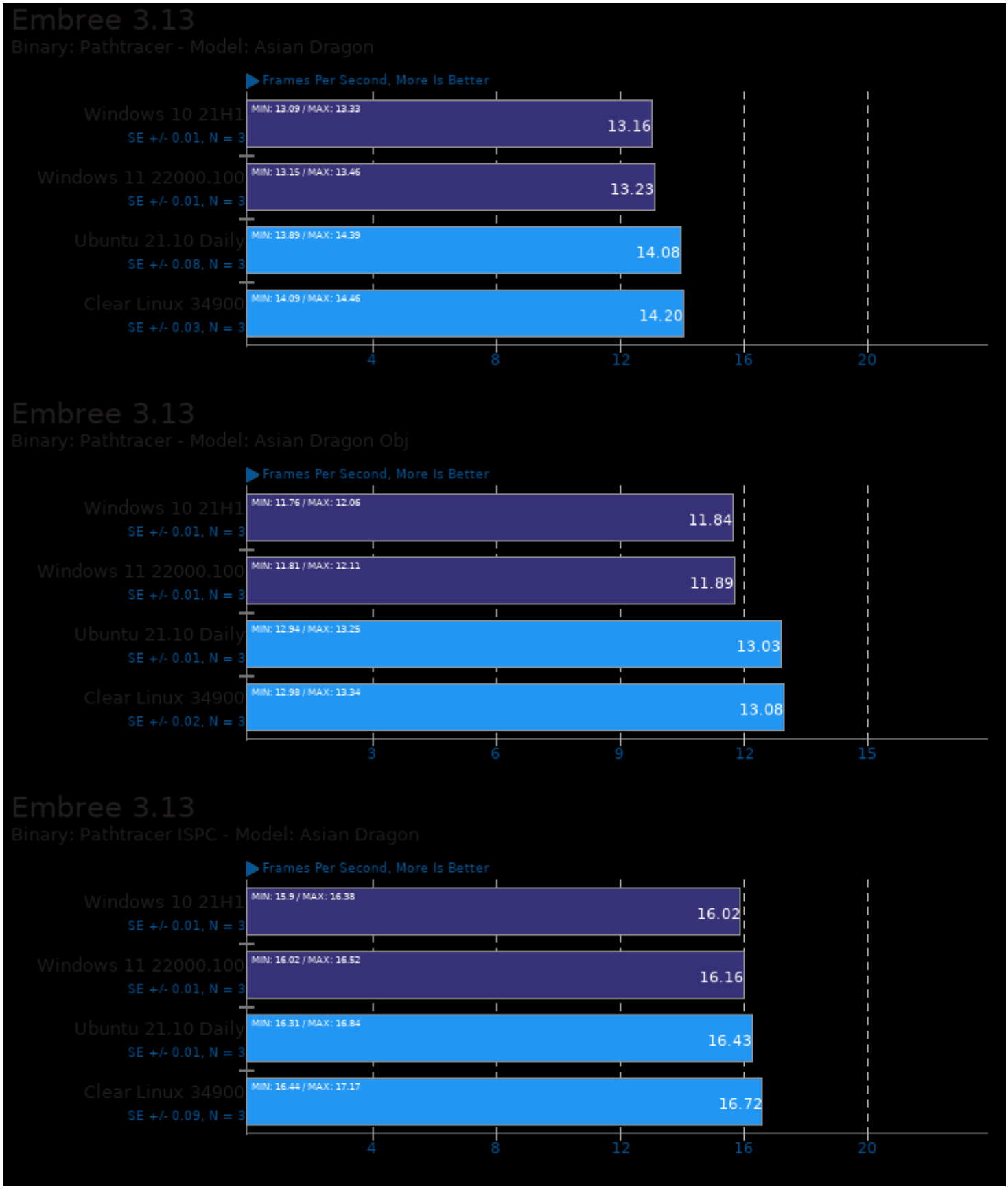

Blender 2.92
Blend File: Pabellon Barcelona - Compute: CPU-Only
Seconds, Fewer Is Better
Windows 10 21H1
SE +/- 0.13, N = 3
499.21
Windows 11 22000.100
SE +/- 0.45, N = 3
501.26
Ubuntu 21.10 Daily
SE +/- 0.12, N = 3
445.78
Clear Linux 34900
SE +/- 0.71, N = 3
431.77
110
220
330
440
550
Chaos Group V-RAY 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
Crafty 25.2
Elapsed Time
Nodes Per Second, More Is Better
Windows 10 21H1
SE +/- 2137.46, N = 3
11489075
Windows 11 22000.100
SE +/- 4736.45, N = 3
10905560
Ubuntu 21.10 Daily
SE +/- 26090.42, N = 3
11430020
Clear Linux 34900
SE +/- 8568.01, N = 3
11709222
3M
6M
9M
12M
15M
1. (CC) gcc options: -pthread -lstdc++ -fprofile-use -lm


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
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 -flat-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

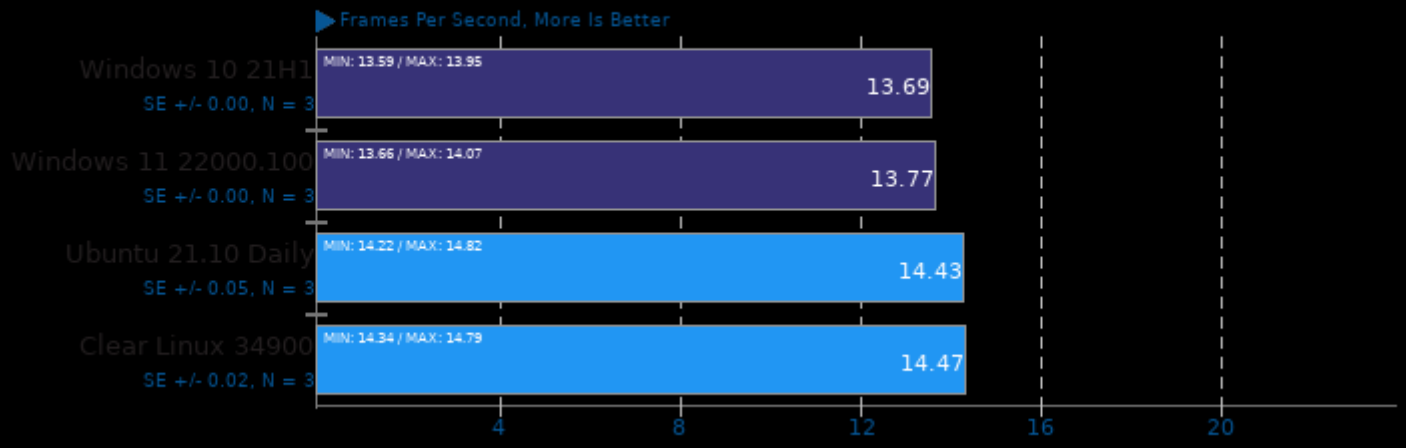

dav1d 0.9.0
Video Input: Summer Nature 4K
FPS, More Is Better
Windows 10 21H1
SE +/- 0.31, N = 3
MIN: 197.88 / MAX: 199.35
198.63
Windows 11 22000.100
SE +/- 0.07, N = 3
MIN: 188.06 / MAX: 188.65
188.31
Ubuntu 21.10 Daily
SE +/- 0.13, N = 3
MIN: 184.07 / MAX: 209.24
195.98
Clear Linux 34900
SE +/- 0.20, 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

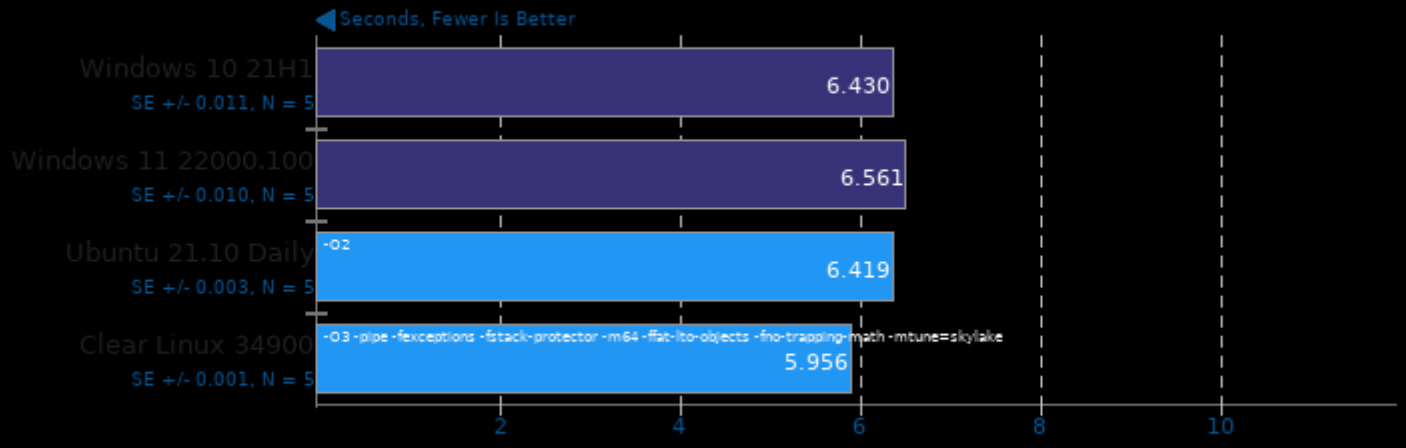
## Embree 3.13

Binary: Pathtracer ISPC - Model: Asian Dragon Obj




## FLAC Audio Encoding 1.3.2

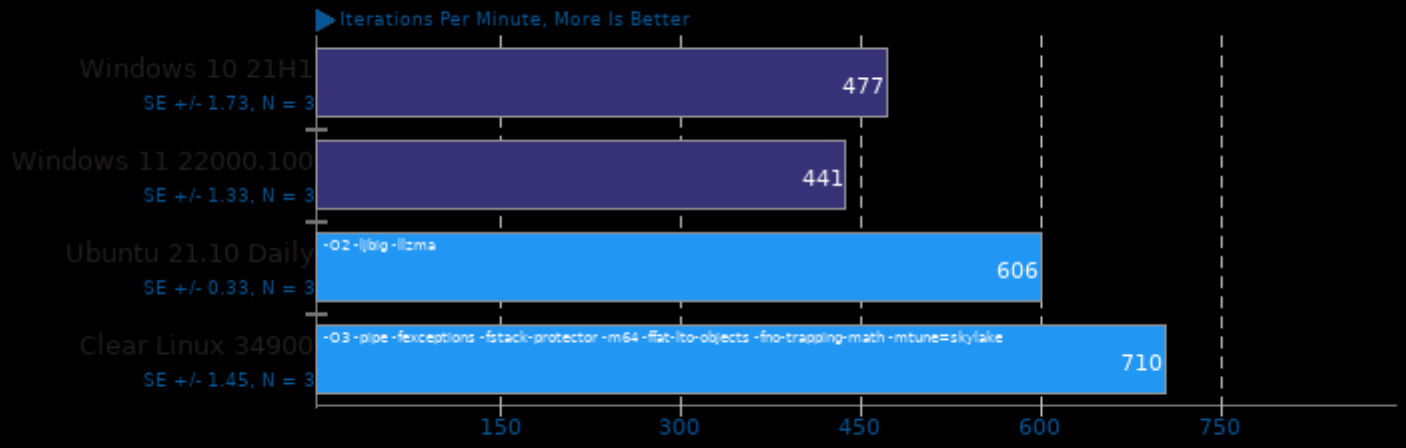
WAV To FLAC



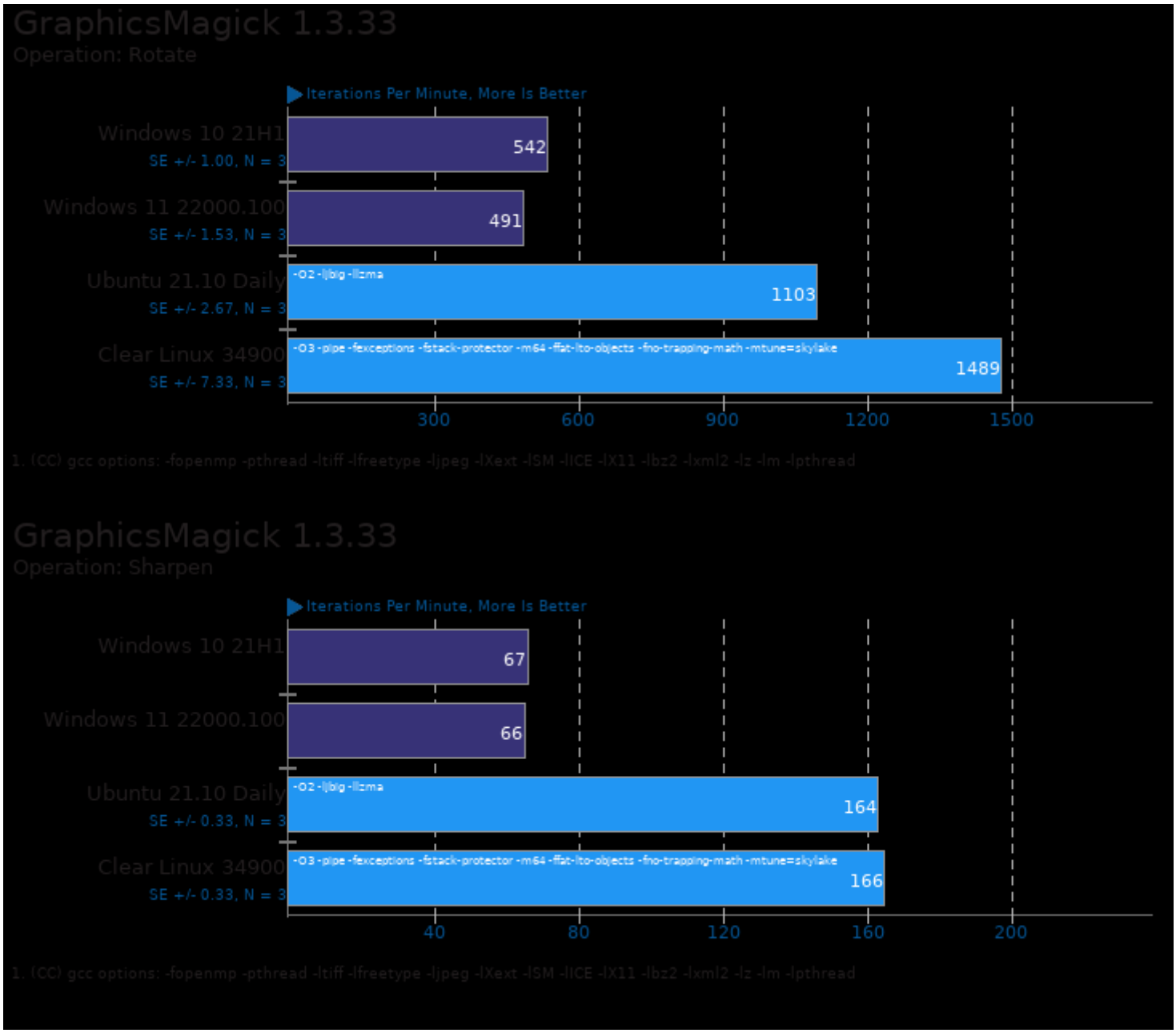

1. (CXX) g++ options: -fvisibility=hidden -logg -lm

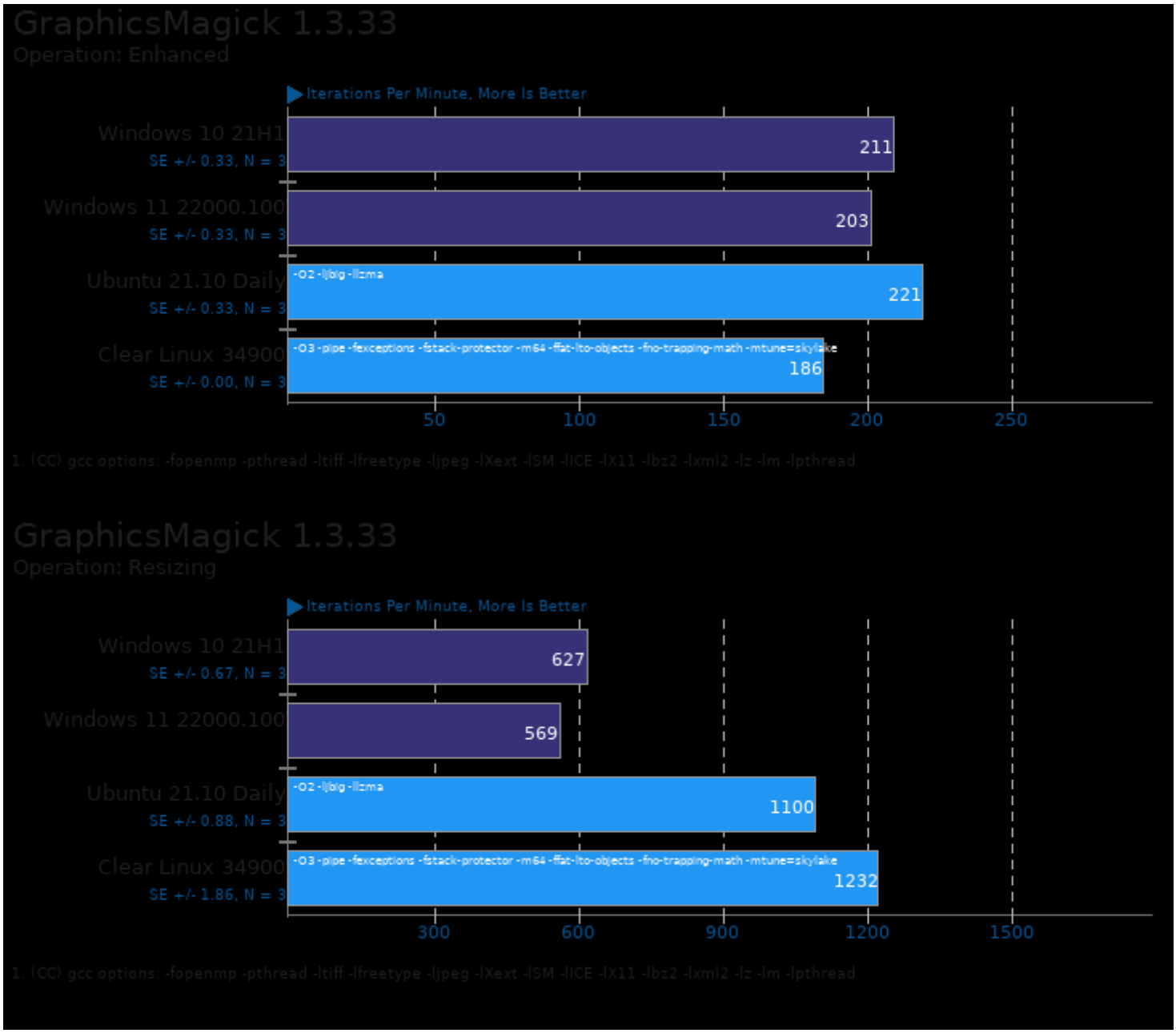
## GraphicsMagick 1.3.33

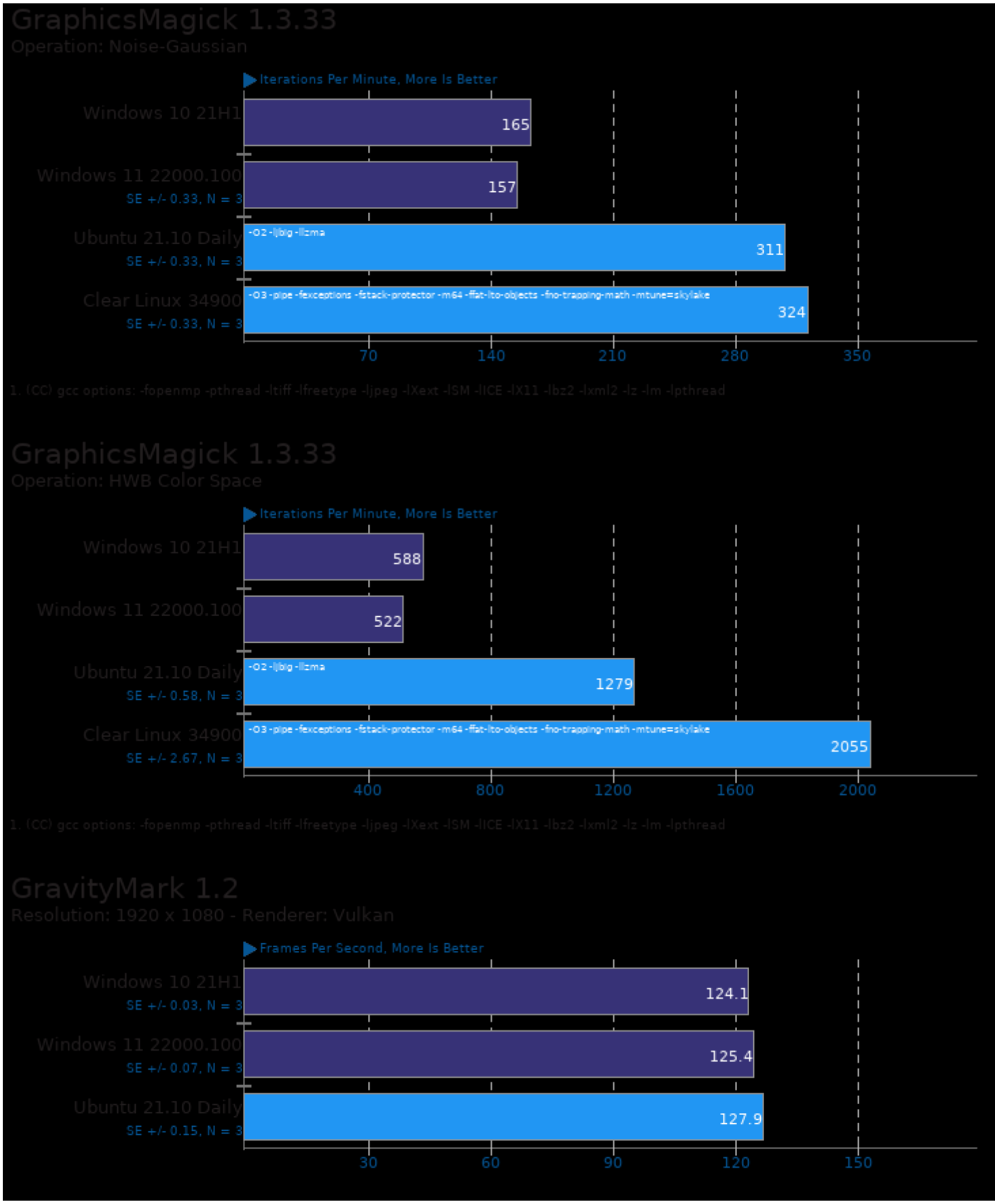
Operation: Swirl

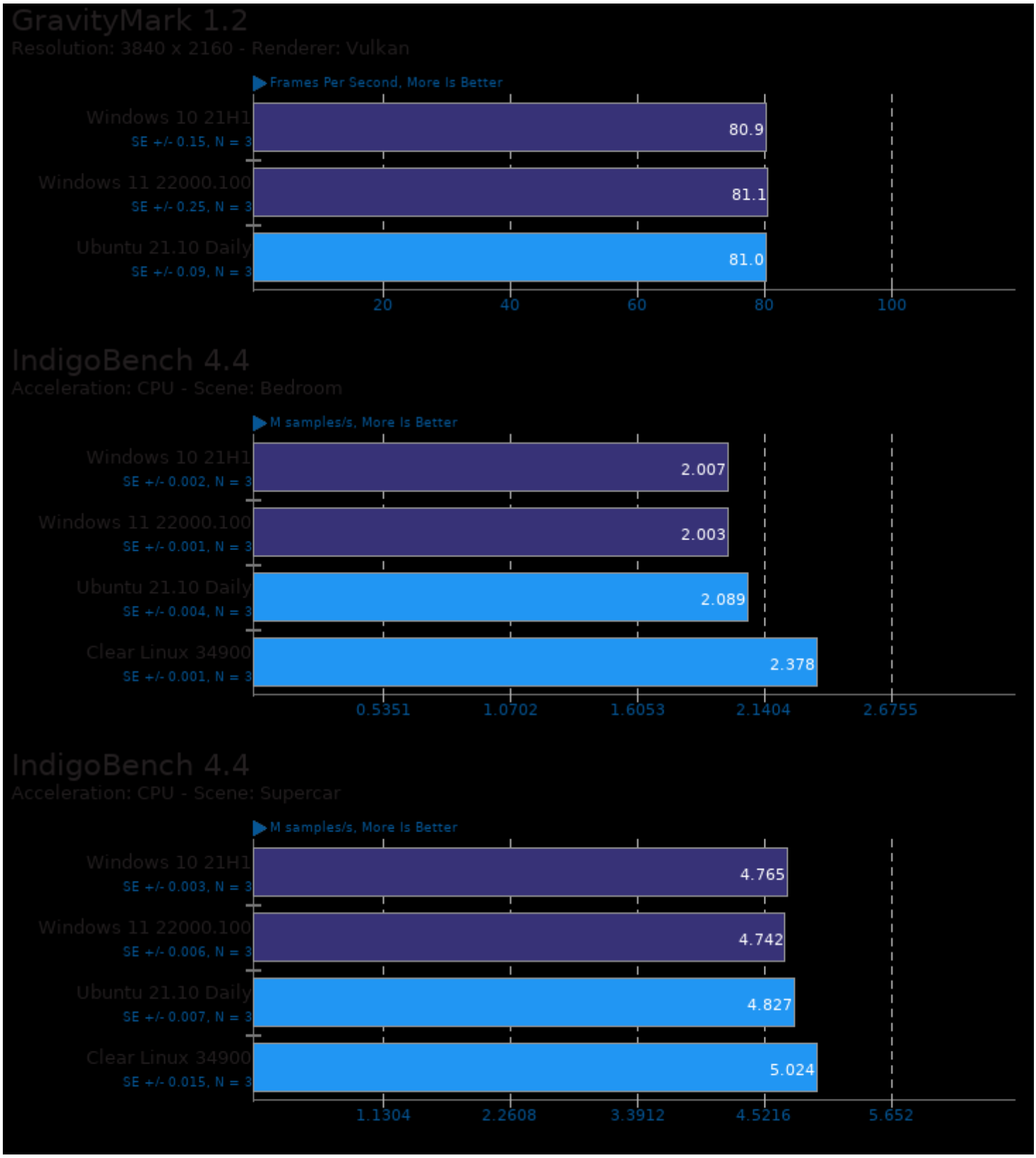



1. (CC) gcc options: -fopenmp -pthread -ltiff -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -lbz2 -lxml2 -lz -lm -lpthread


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
SE +/- 0.33, N = 3
-O2 -ljbig -llzma
164
Clear Linux 34900
SE +/- 0.33, N = 3
-O3 -pipe -fexceptions -fstack-protector -m64 -ffat-lto-objects -fno-trapping-math -mtune=skylake
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
SE +/- 0.33, N = 3
-O2 -ljbig -llzma
221
Clear Linux 34900
SE +/- 0.00, N = 3
-O3 -pipe -fexceptions -fstack-protector -m64 -ffat-lto-objects -fno-trapping-math -mtune=skylake
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

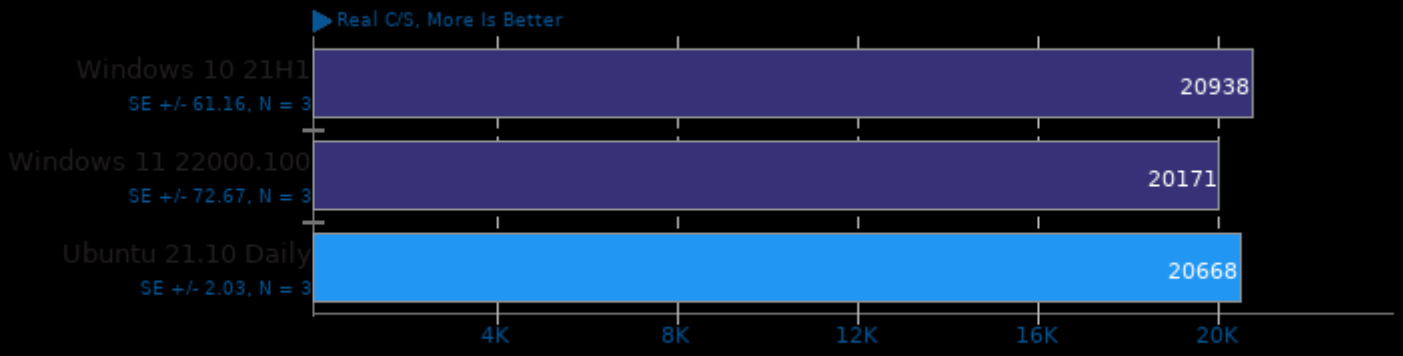

GraphicsMagick 1.3.33
Operation: Noise-Gaussian
Iterations Per Minute, More Is Better
Windows 10 21H1
165
Windows 11 22000.100
SE +/- 0.33, N = 3
157
Ubuntu 21.10 Daily
SE +/- 0.33, N = 3
-O2 -ljbig -llzma
311
Clear Linux 34900
SE +/- 0.33, N = 3
-O3 -pipe -fexceptions -fstack-protector -m64 -ffat-lto-objects -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
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
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


Intel Open Image Denoise 1.4.0
Run: RT.hdr_alb_nrm.3840x2160
Images / Sec, More Is Better
Windows 10 21H1
SE +/- 0.00, N = 3
0.43
Windows 11 22000.100
SE +/- 0.00, N = 3
0.43
Ubuntu 21.10 Daily
SE +/- 0.00, N = 3
0.44
Clear Linux 34900
SE +/- 0.00, N = 3
0.44
0.099
0.198
0.297
0.396
0.495
Intel Open Image Denoise 1.4.0
Run: RT.ldr_alb_nrm.3840x2160
Images / Sec, More Is Better
Windows 10 21H1
SE +/- 0.00, N = 3
0.43
Windows 11 22000.100
SE +/- 0.00, N = 3
0.43
Ubuntu 21.10 Daily
SE +/- 0.00, N = 3
0.44
Clear Linux 34900
SE +/- 0.00, N = 3
0.44
0.099
0.198
0.297
0.396
0.495
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

## John The Ripper 1.9.0-jumbo-1

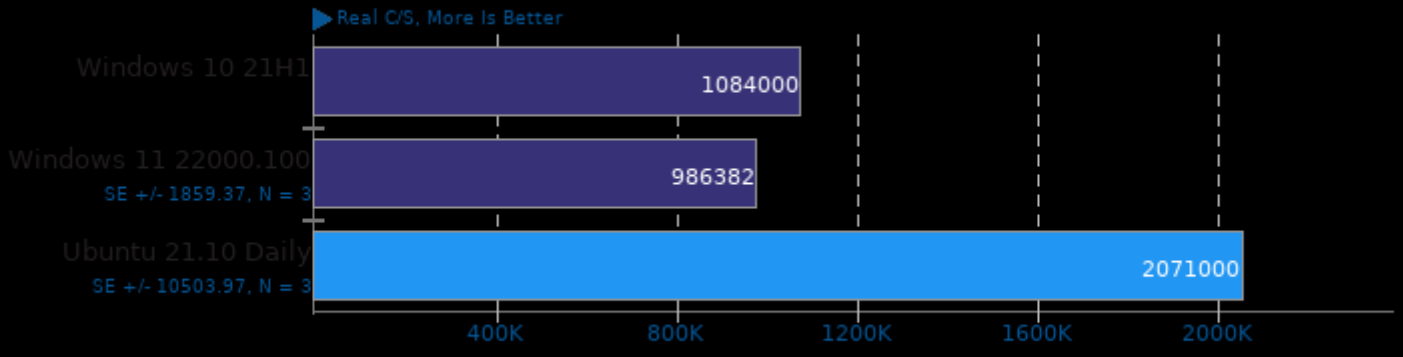
Test: Blowfish




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

## John The Ripper 1.9.0-jumbo-1

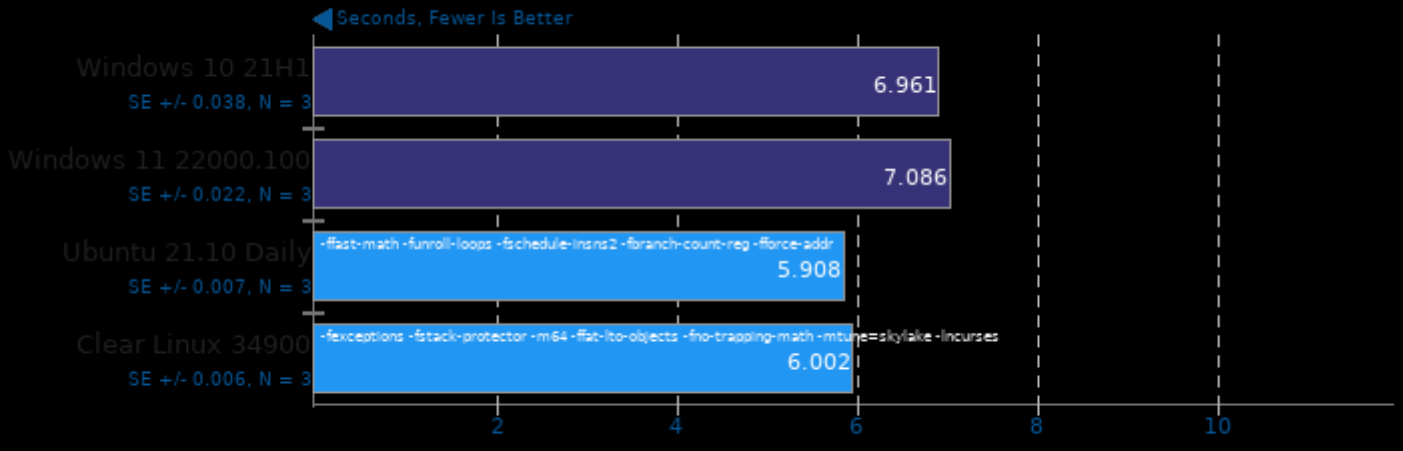
Test: MD5



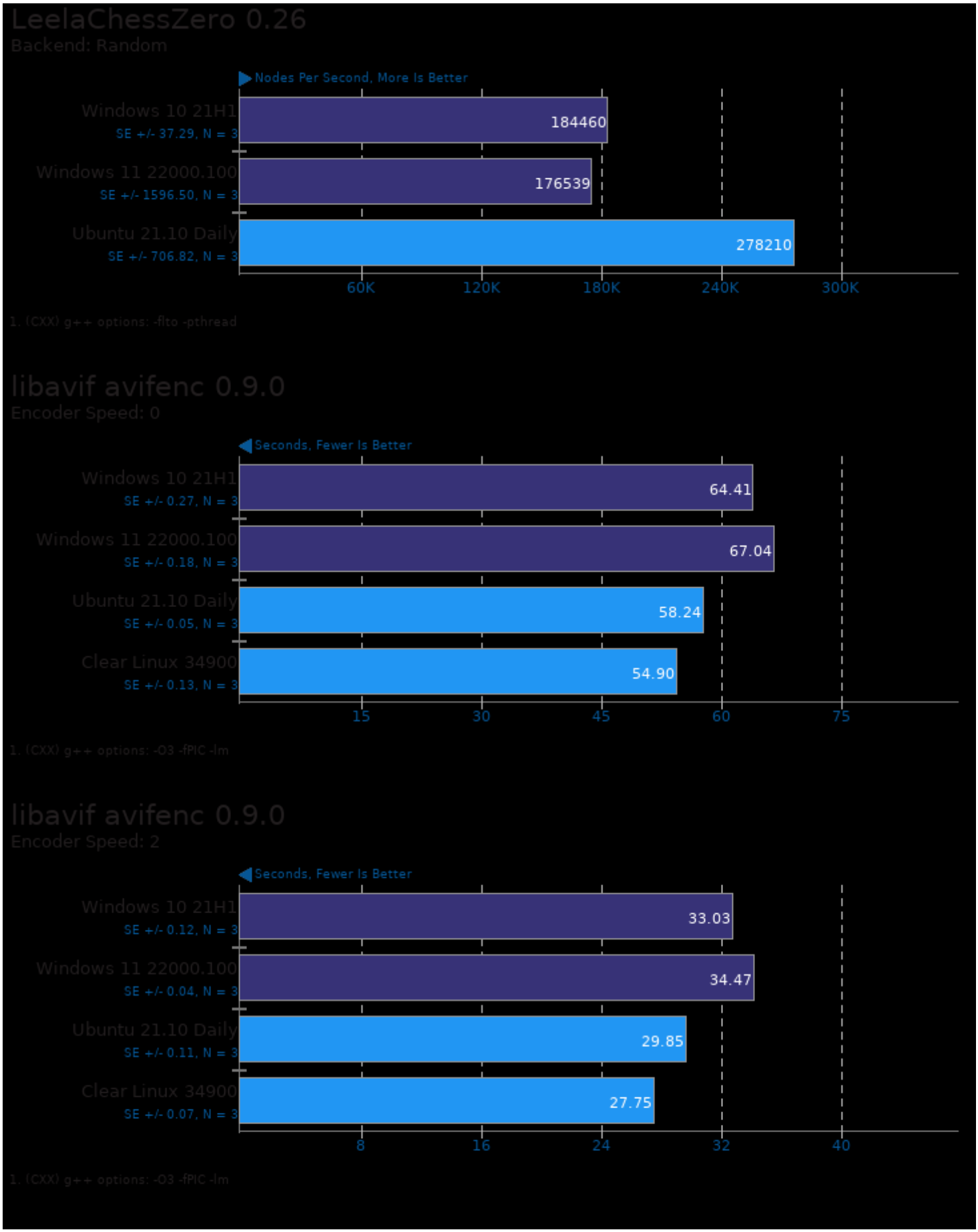

1. (CC) gcc options: -m64 -lssl -lcrypto -fopenmp -pthread -lm -lz -ldl -lcrypt -lbz2

## LAME MP3 Encoding 3.100

WAV To MP3

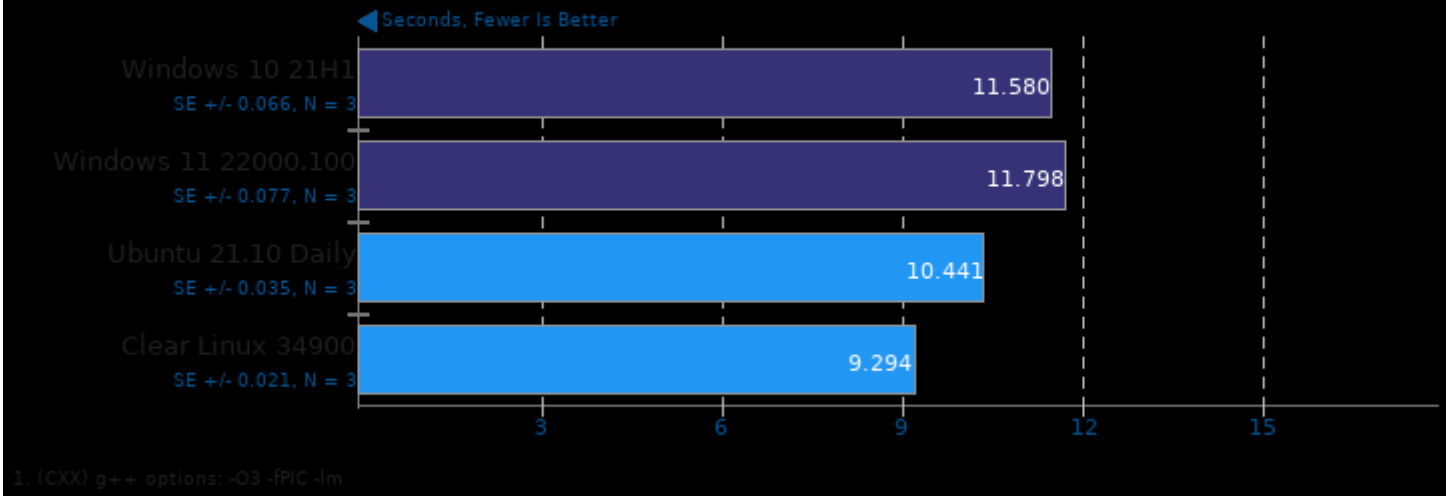



1. (CC) gcc options: -O3 -pipe -lm


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
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

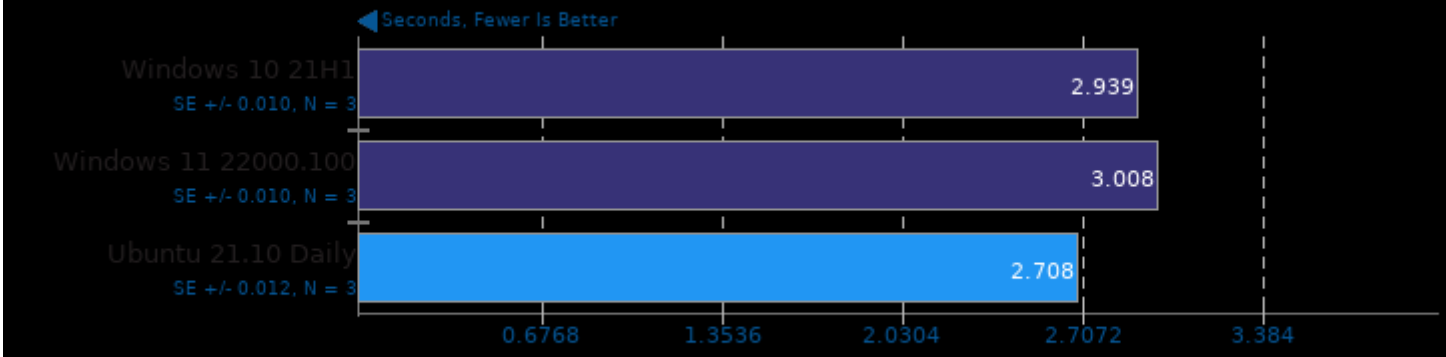
Encoder Speed: 6




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

## libavif avifenc 0.9.0

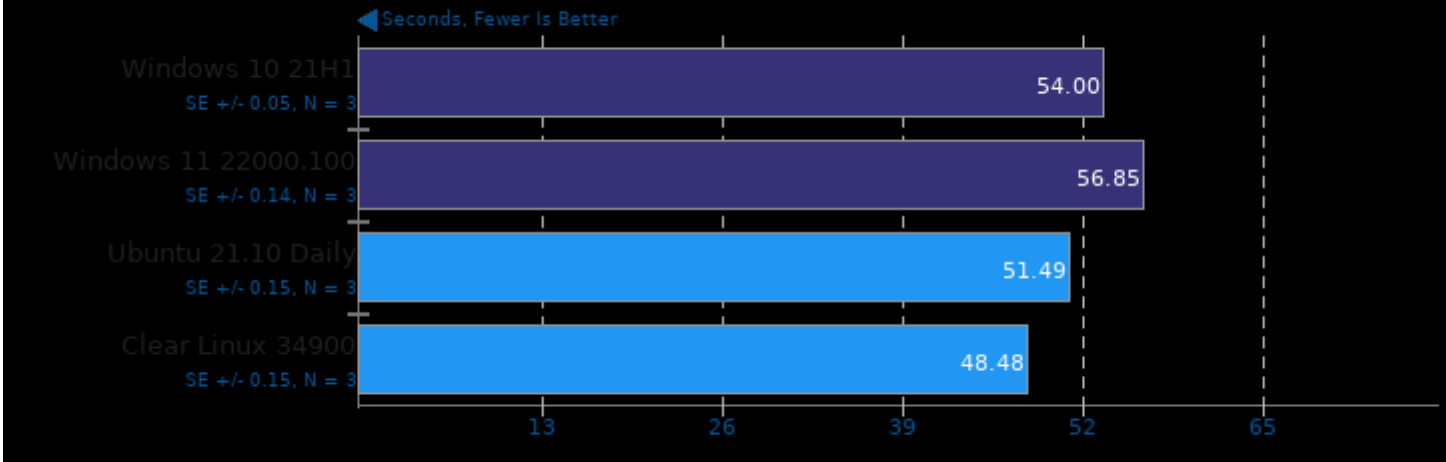
Encoder Speed: 10



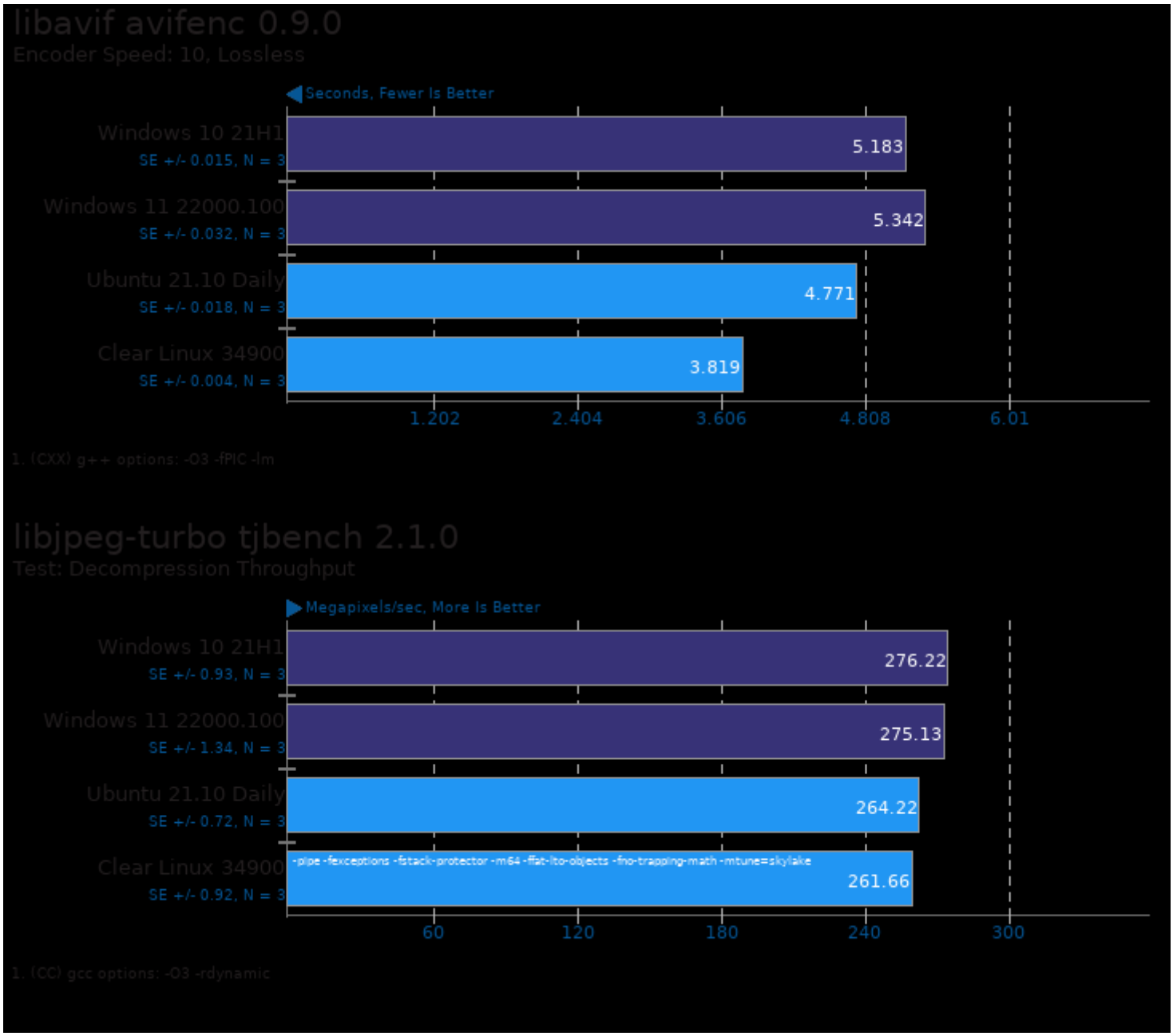

1. (CXX) g++ options: -O3 -fPIC -lm

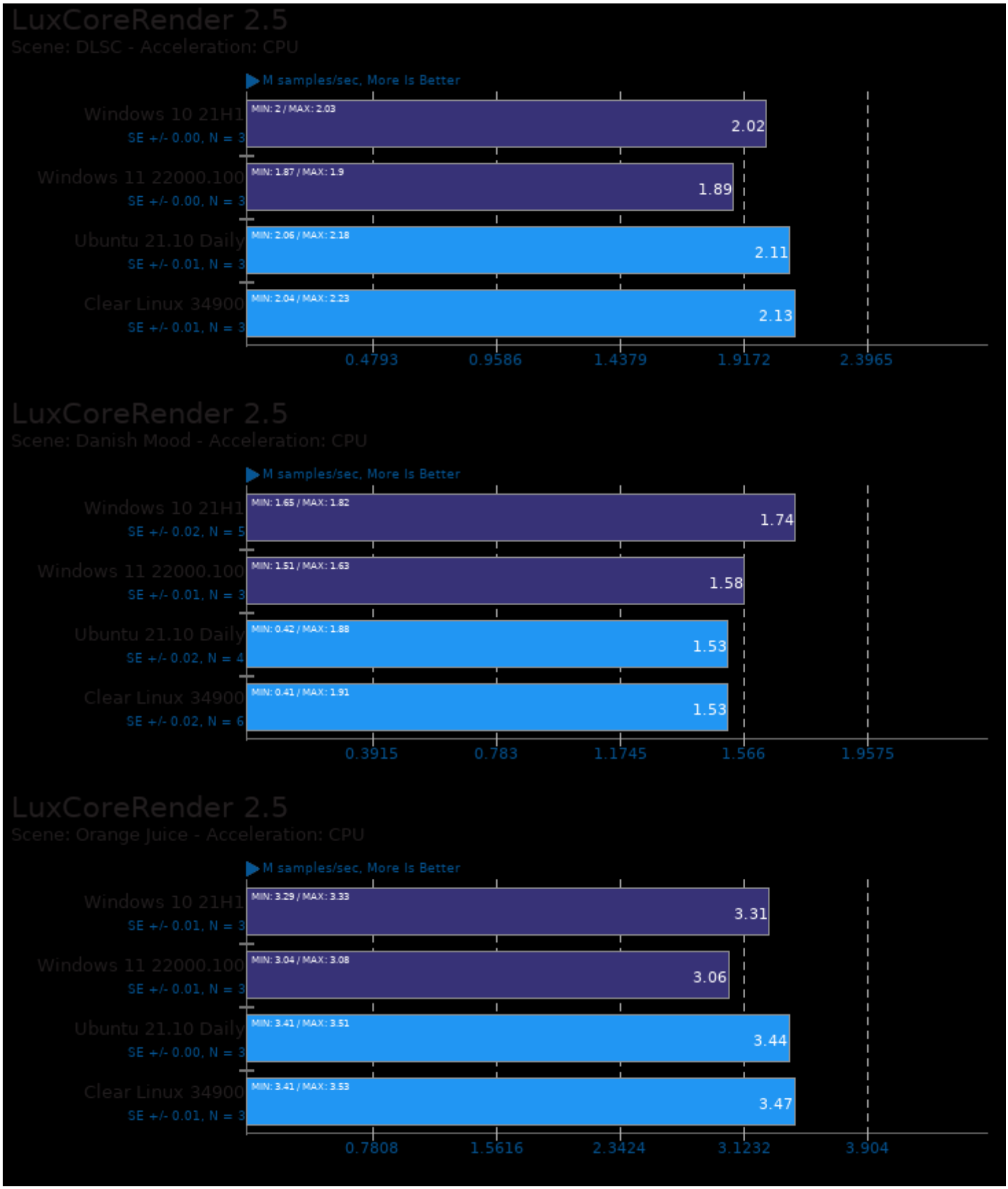
## libavif avifenc 0.9.0

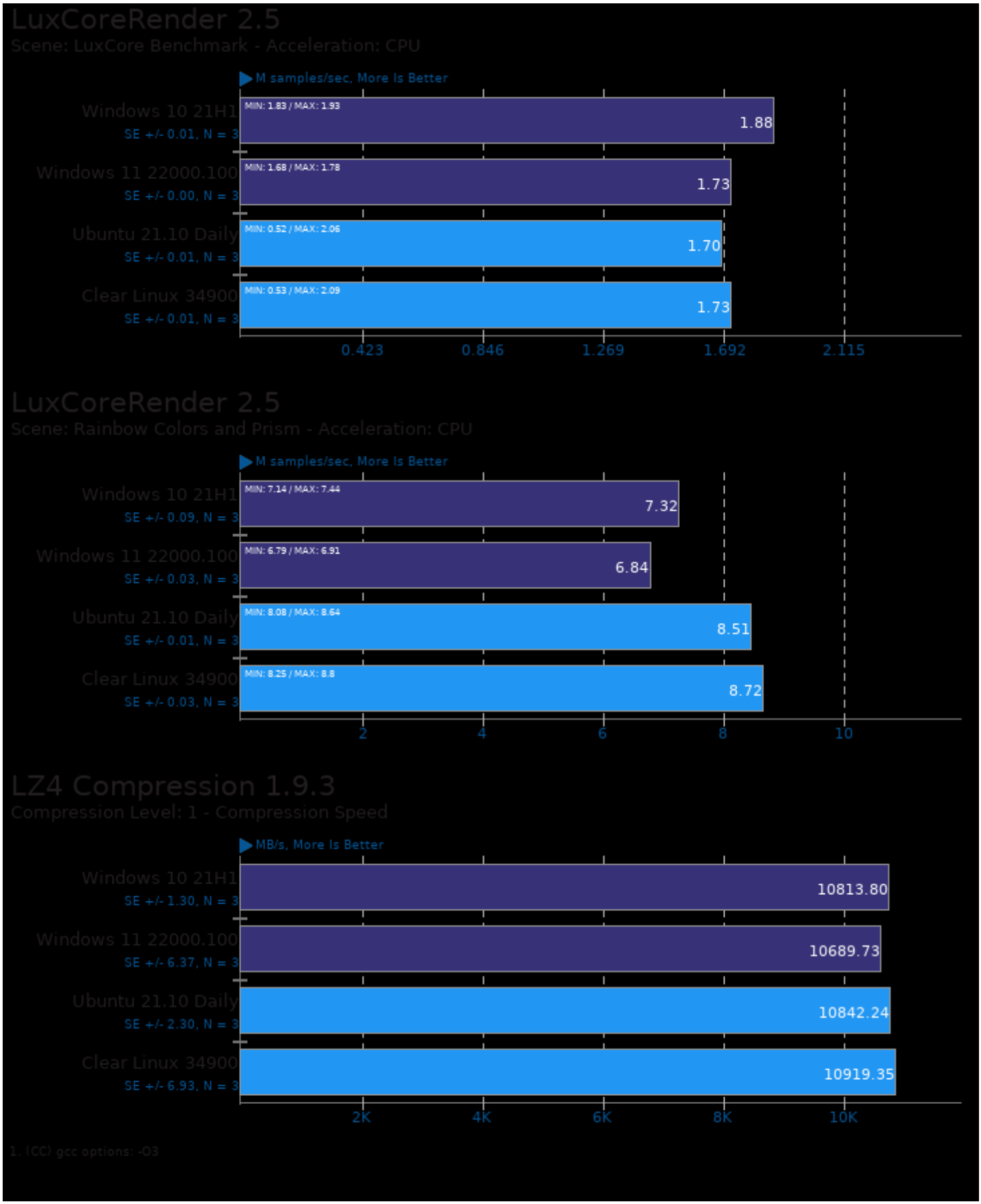
Encoder Speed: 6, Lossless

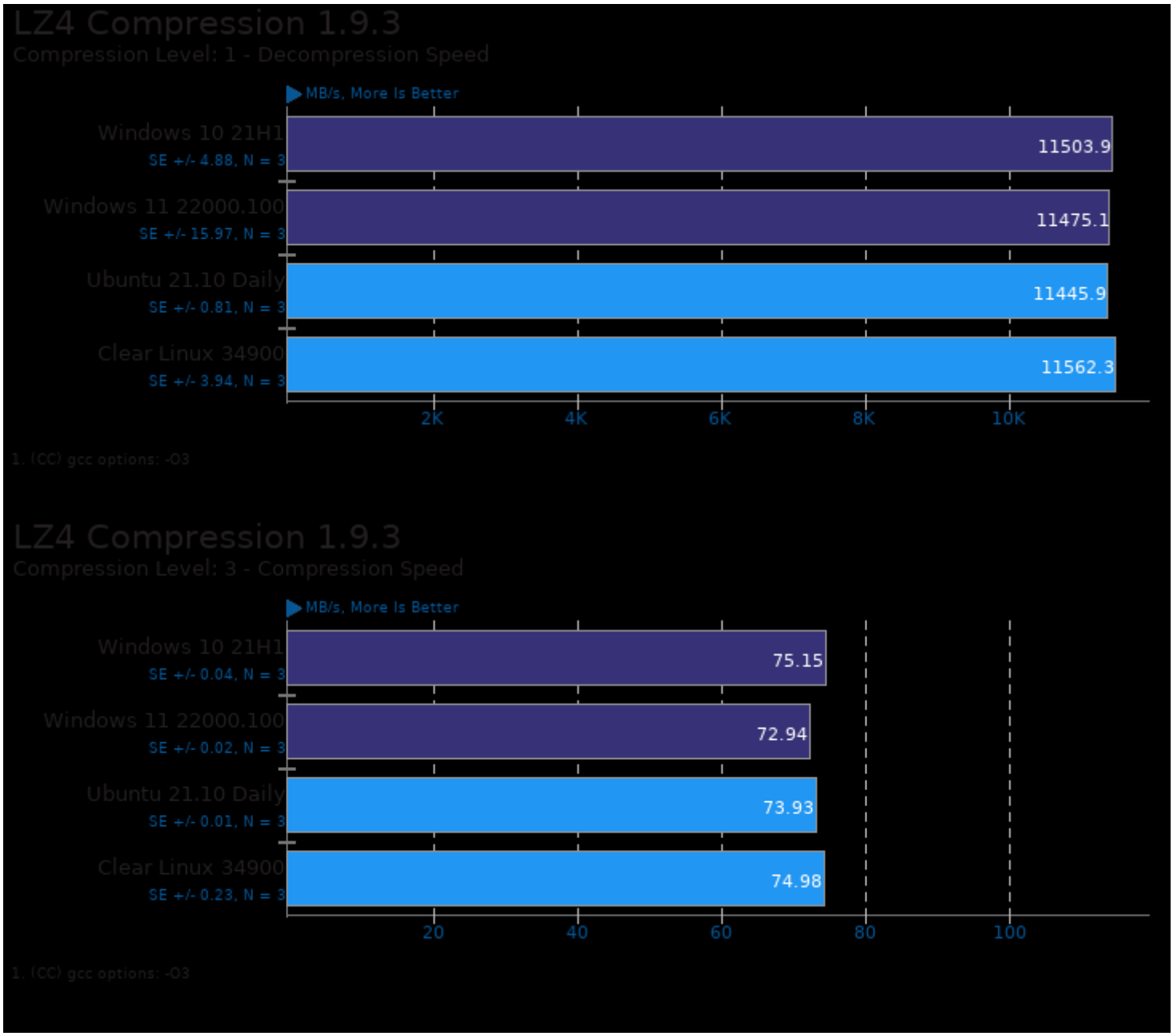


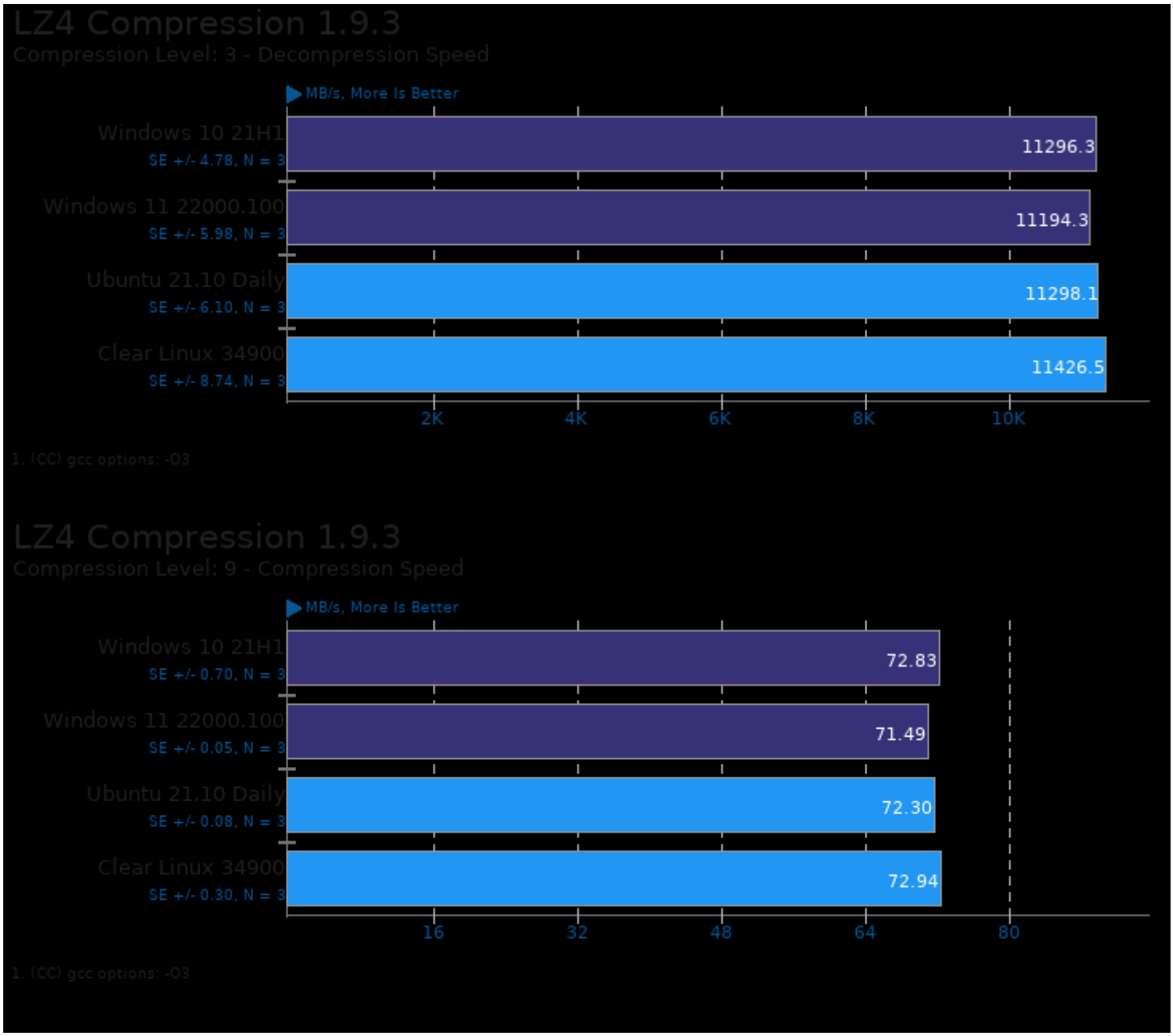

1. (CXX) g++ options: -O3 -fPIC -lm

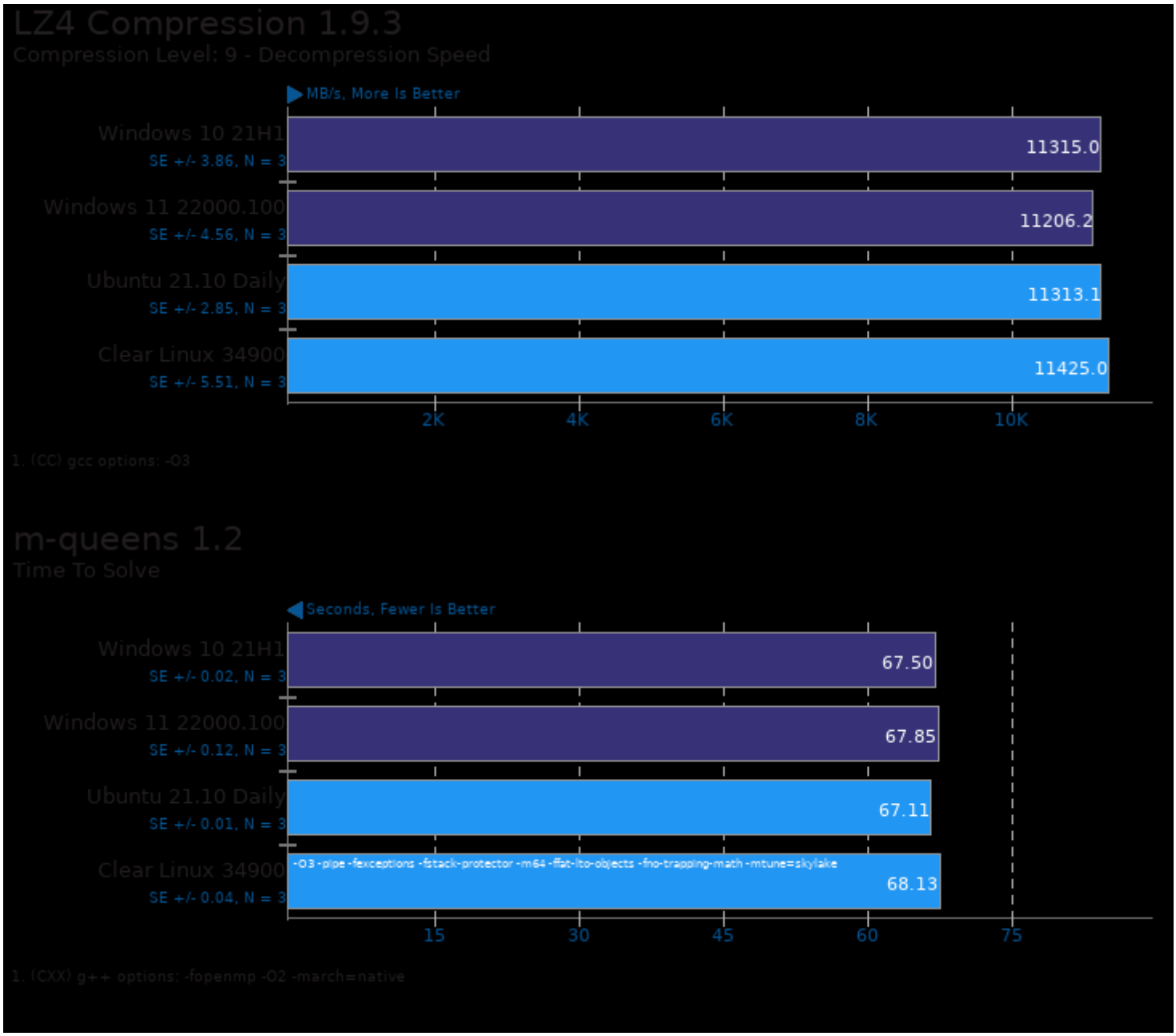

libavif avifenc 0.9.0
Encoder Speed: 10, Lossless
Seconds, Fewer Is Better
Windows 10 21H1
SE +/- 0.015, N = 3
5.183
Windows 11 22000.100
SE +/- 0.032, N = 3
5.342
Ubuntu 21.10 Daily
SE +/- 0.018, N = 3
4.771
Clear Linux 34900
SE +/- 0.004, N = 3
3.819
1.202
2.404
3.606
4.808
6.01
1. (CXX) g++ options: -O3 -fPIC -lm
libjpeg-turbo tjbench 2.1.0
Test: Decompression Throughput
Megapixels/sec, More Is Better
Windows 10 21H1
SE +/- 0.93, N = 3
276.22
Windows 11 22000.100
SE +/- 1.34, N = 3
275.13
Ubuntu 21.10 Daily
SE +/- 0.72, N = 3
264.22
Clear Linux 34900
SE +/- 0.92, N = 3
-pipe -fexceptions -fstack-protector -m64 -flat-lto-objects -fno-trapping-math -mtune=skylake
261.66
60
120
180
240
300
1. (CC) gcc options: -O3 -rdynamic


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
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

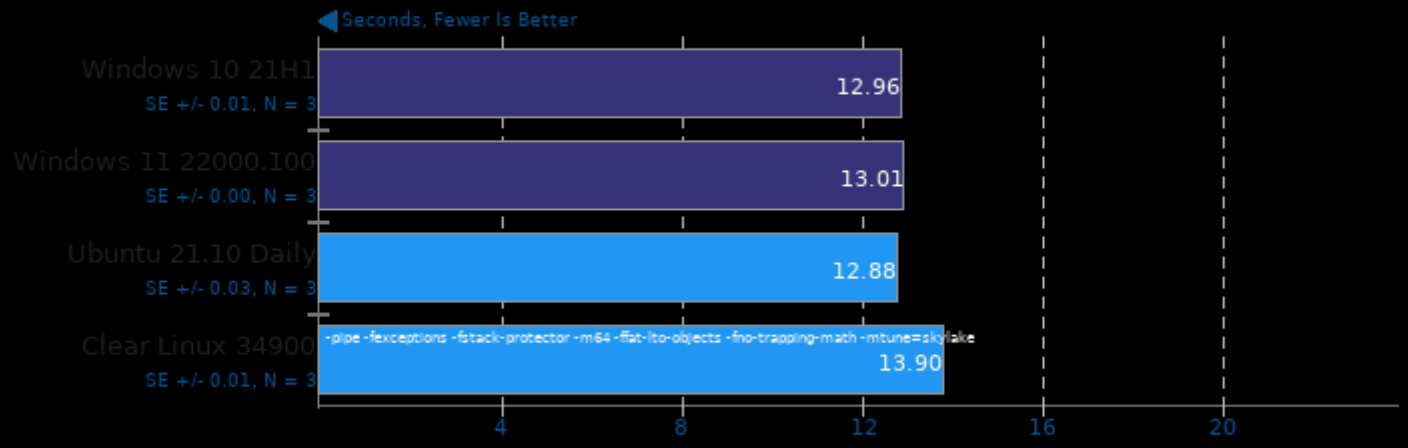

LZ4 Compression 1.9.3
Compression Level: 1 - Decompression Speed
MB/s, More Is Better
Windows 10 21H1
SE +/- 4.88, N = 3
11503.9
Windows 11 22000.100
SE +/- 15.97, N = 3
11475.1
Ubuntu 21.10 Daily
SE +/- 0.81, N = 3
11445.9
Clear Linux 34900
SE +/- 3.94, N = 3
11562.3
2K
4K
6K
8K
10K
1. (CC) gcc options: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

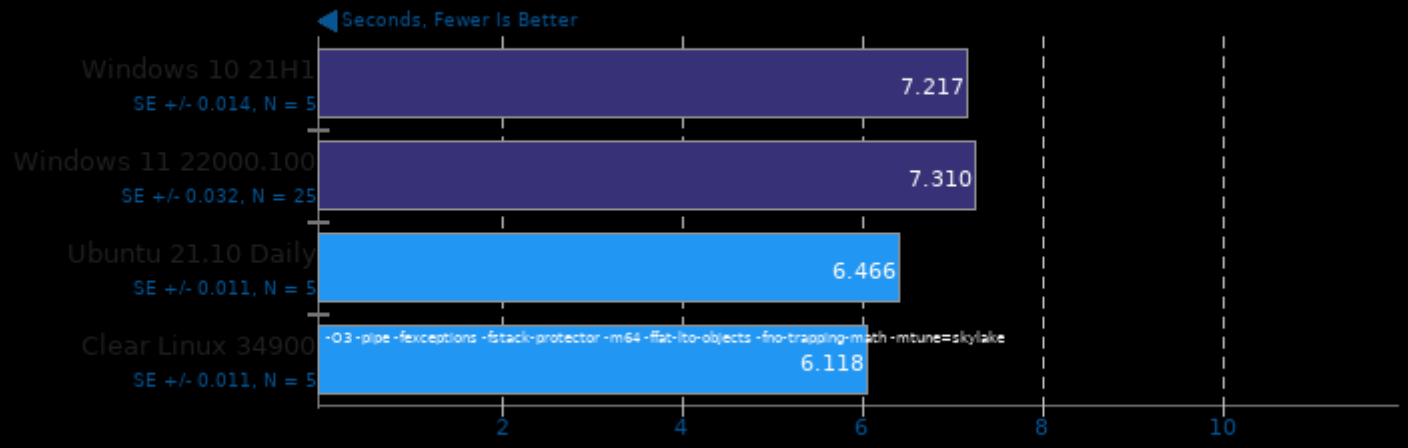
Elapsed Time




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

## Opus Codec Encoding 1.3.1

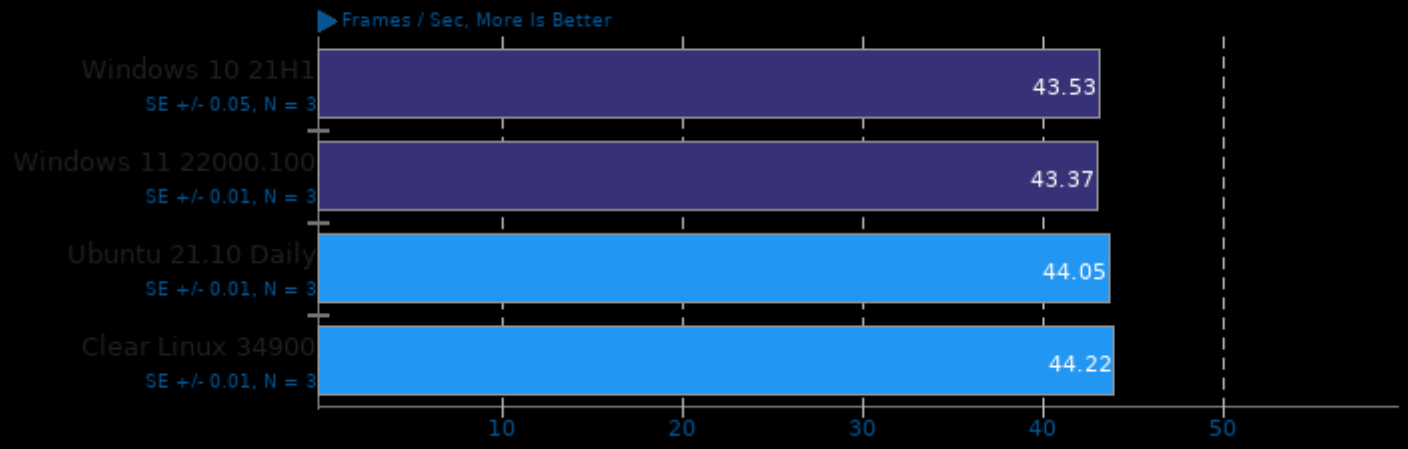
WAV To Opus Encode



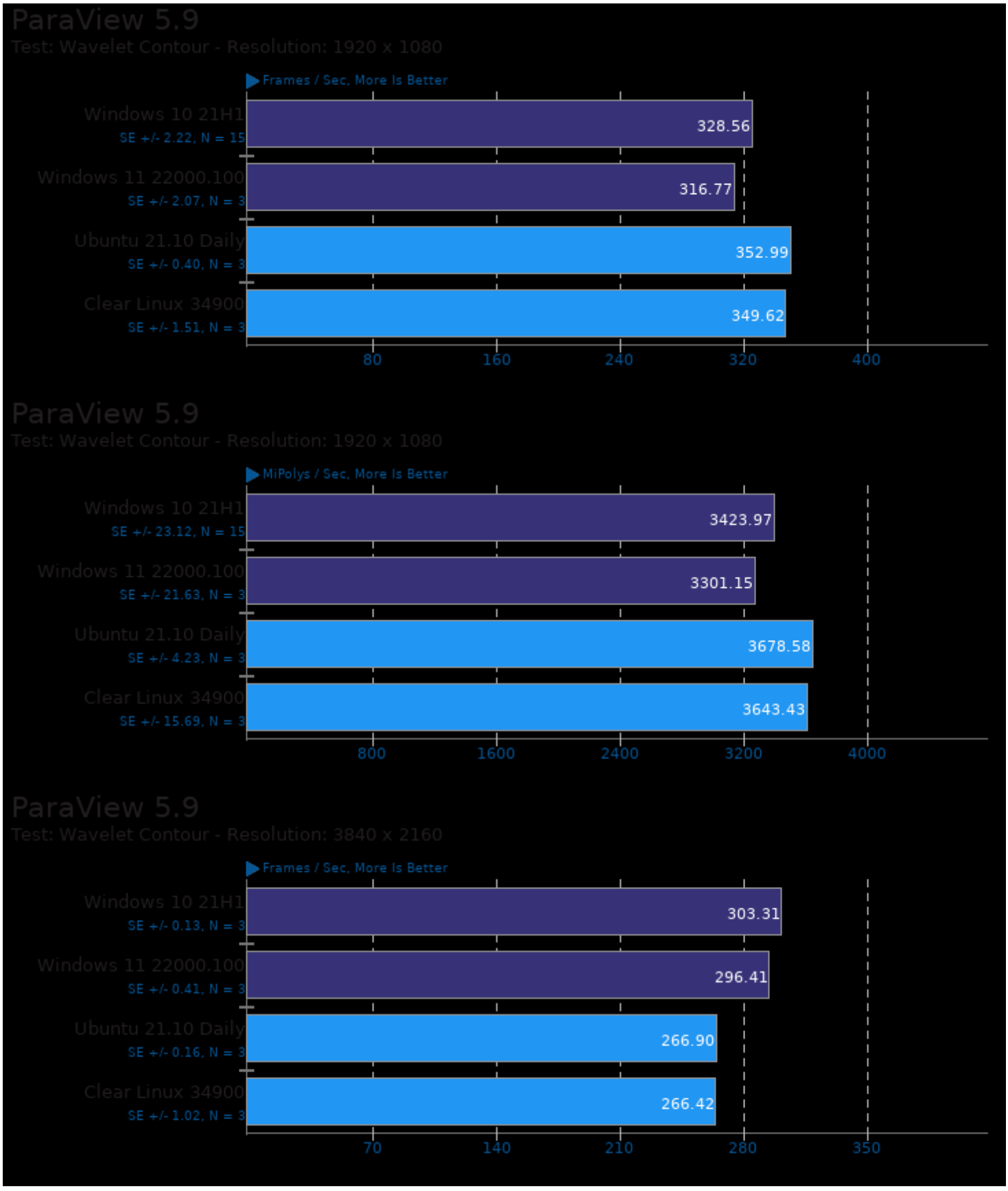

1. (CXX) g++ options: -fvisibility=hidden -logg -lm

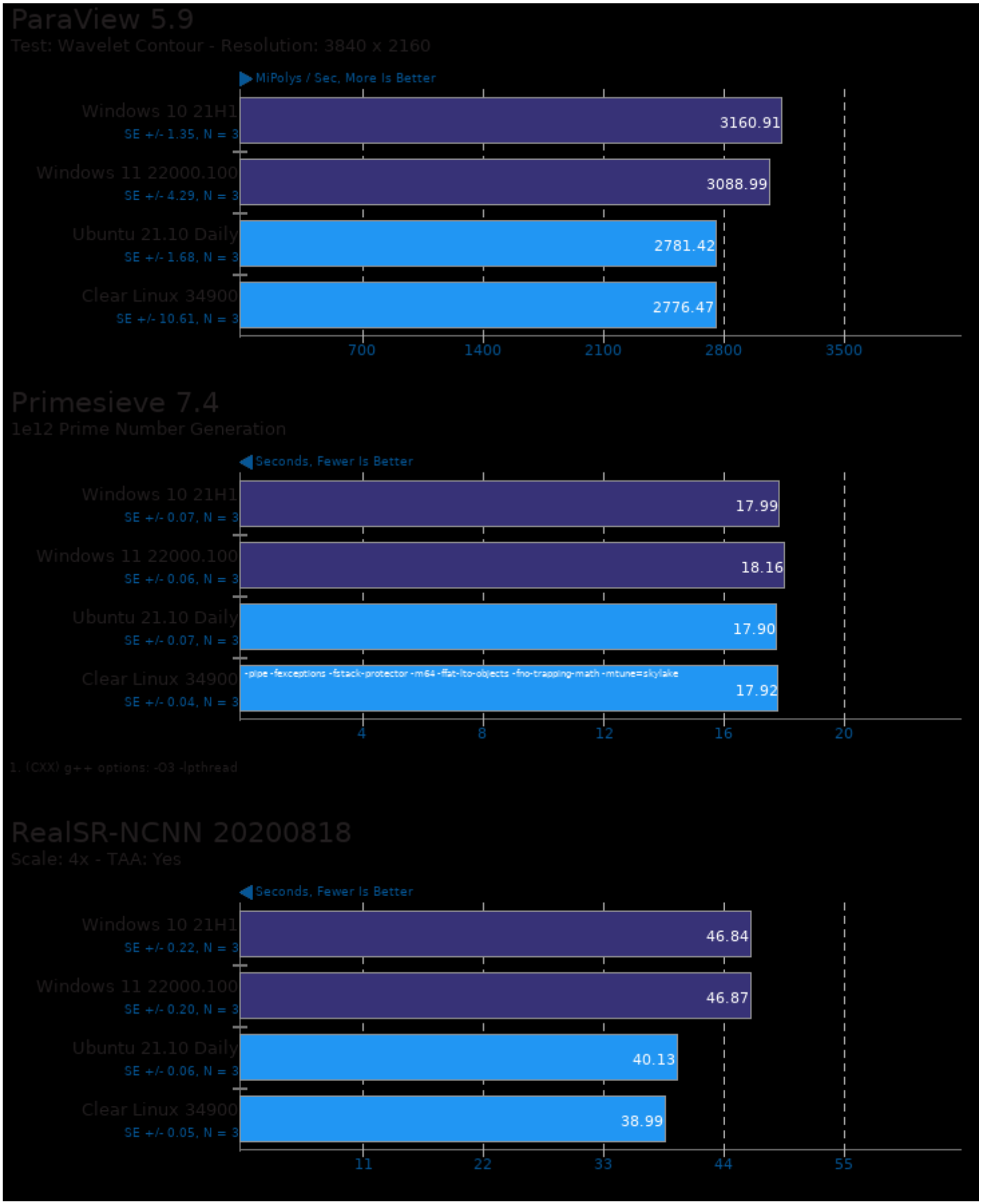
## ParaView 5.9

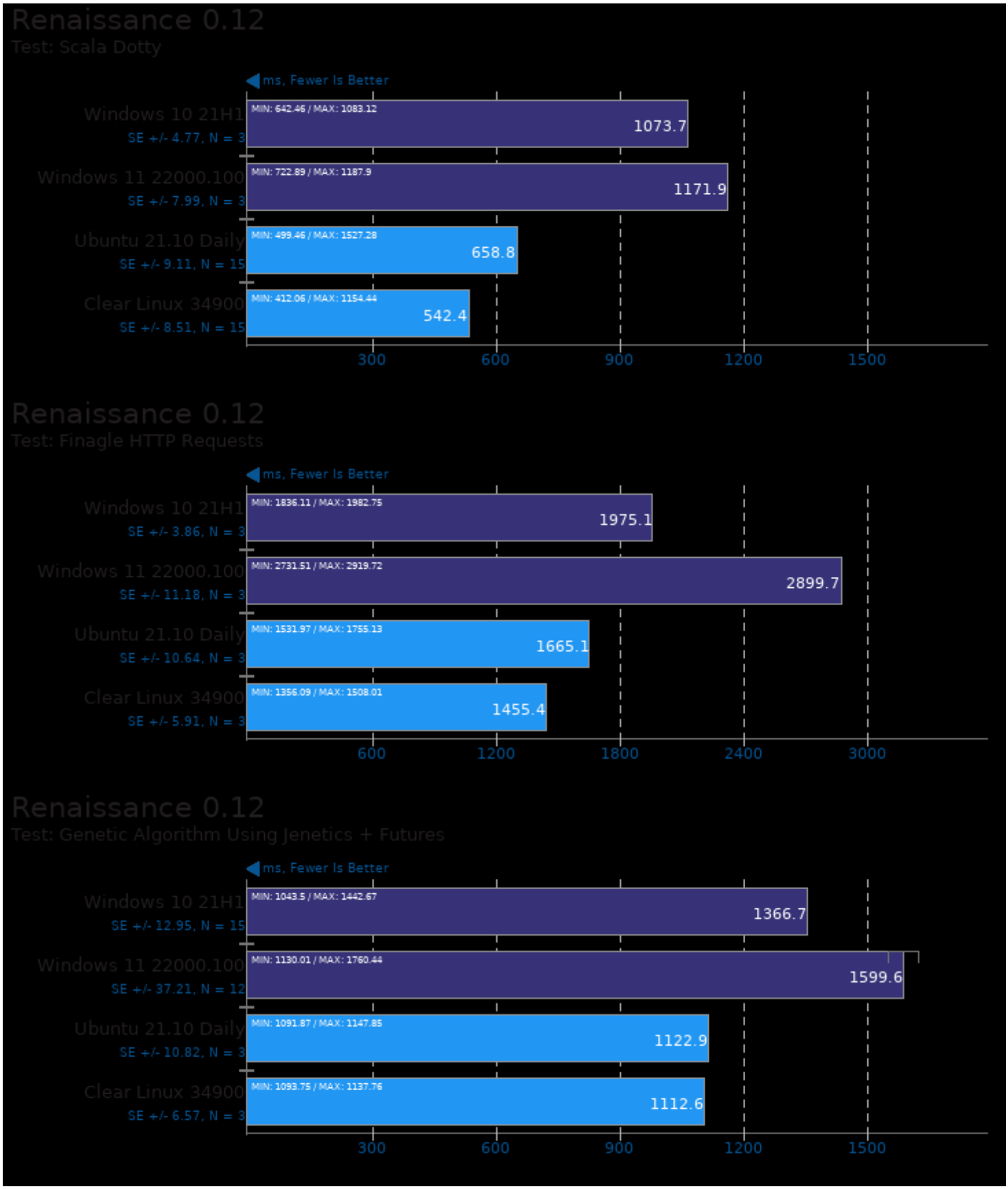
Test: Many Spheres - Resolution: 1920 x 1080

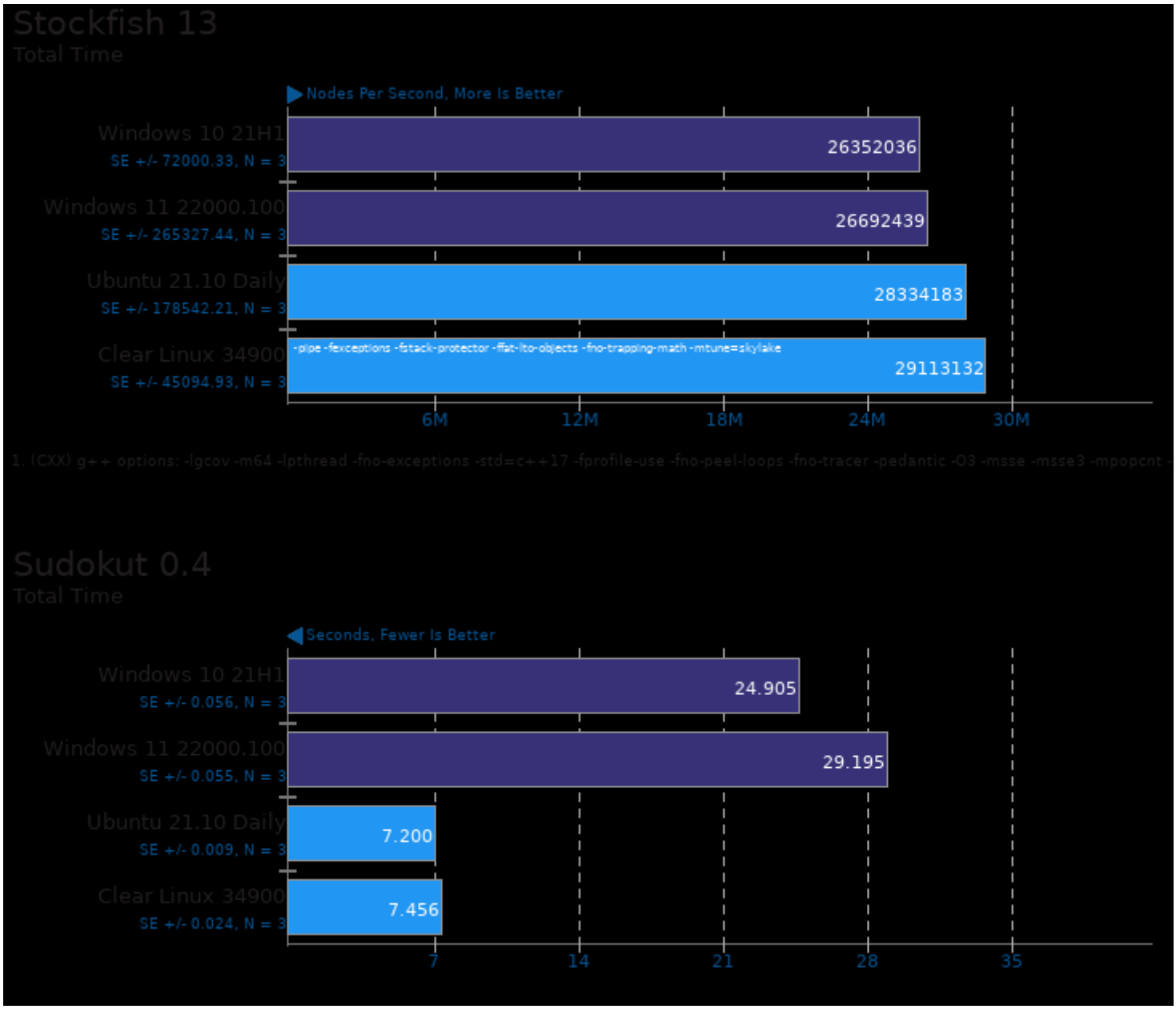


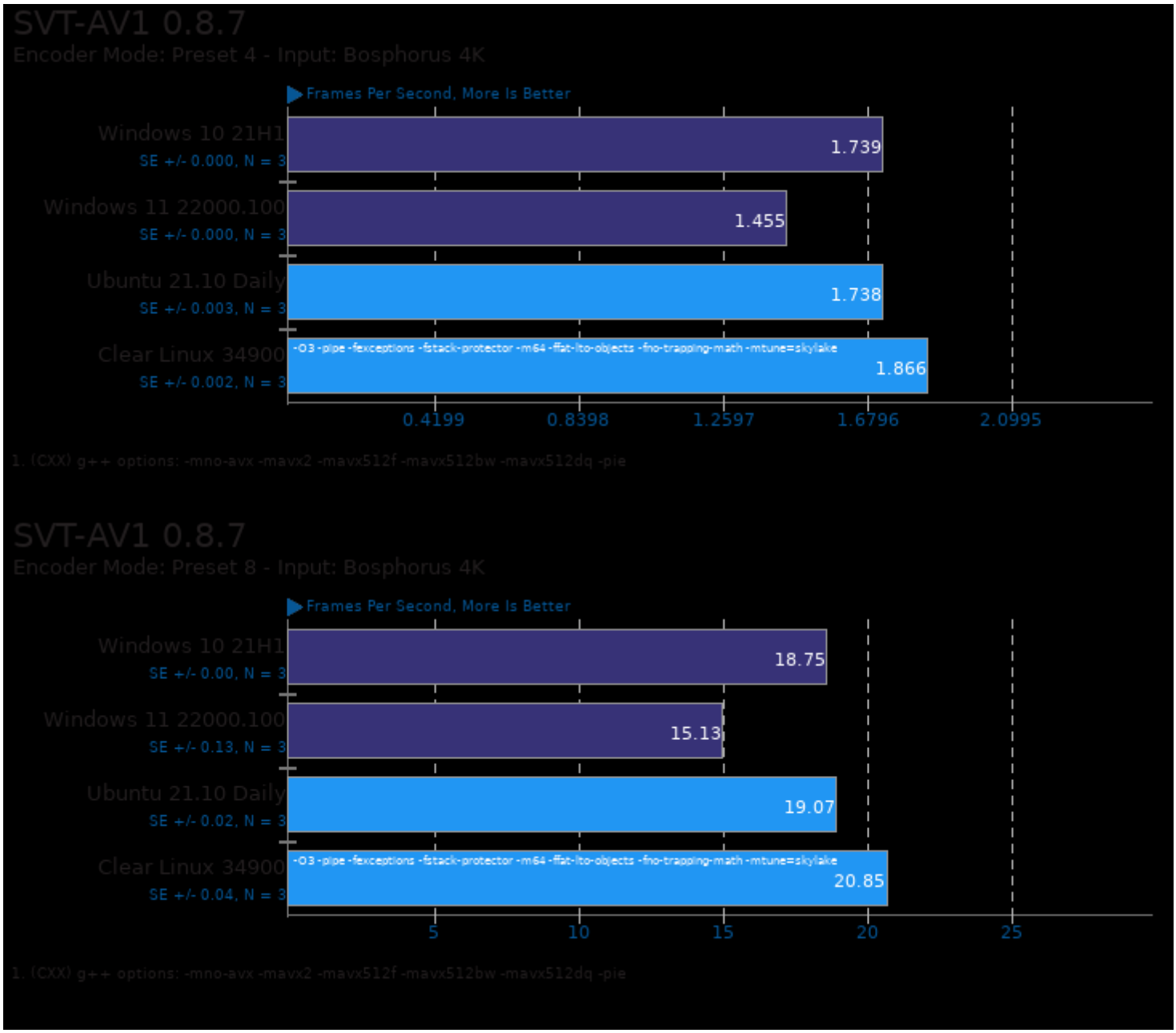

ParaView 5.9
Test: Many Spheres - Resolution: 1920 x 1080
MiPolys / Sec, More Is Better
Windows 10 21H1
SE +/- 5.02, N = 3
4364.40
Windows 11 22000.100
SE +/- 1.17, N = 3
4347.86
Ubuntu 21.10 Daily
SE +/- 0.51, N = 3
4416.06
Clear Linux 34900
SE +/- 0.38, N = 3
4433.24
1000
2000
3000
4000
5000
ParaView 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

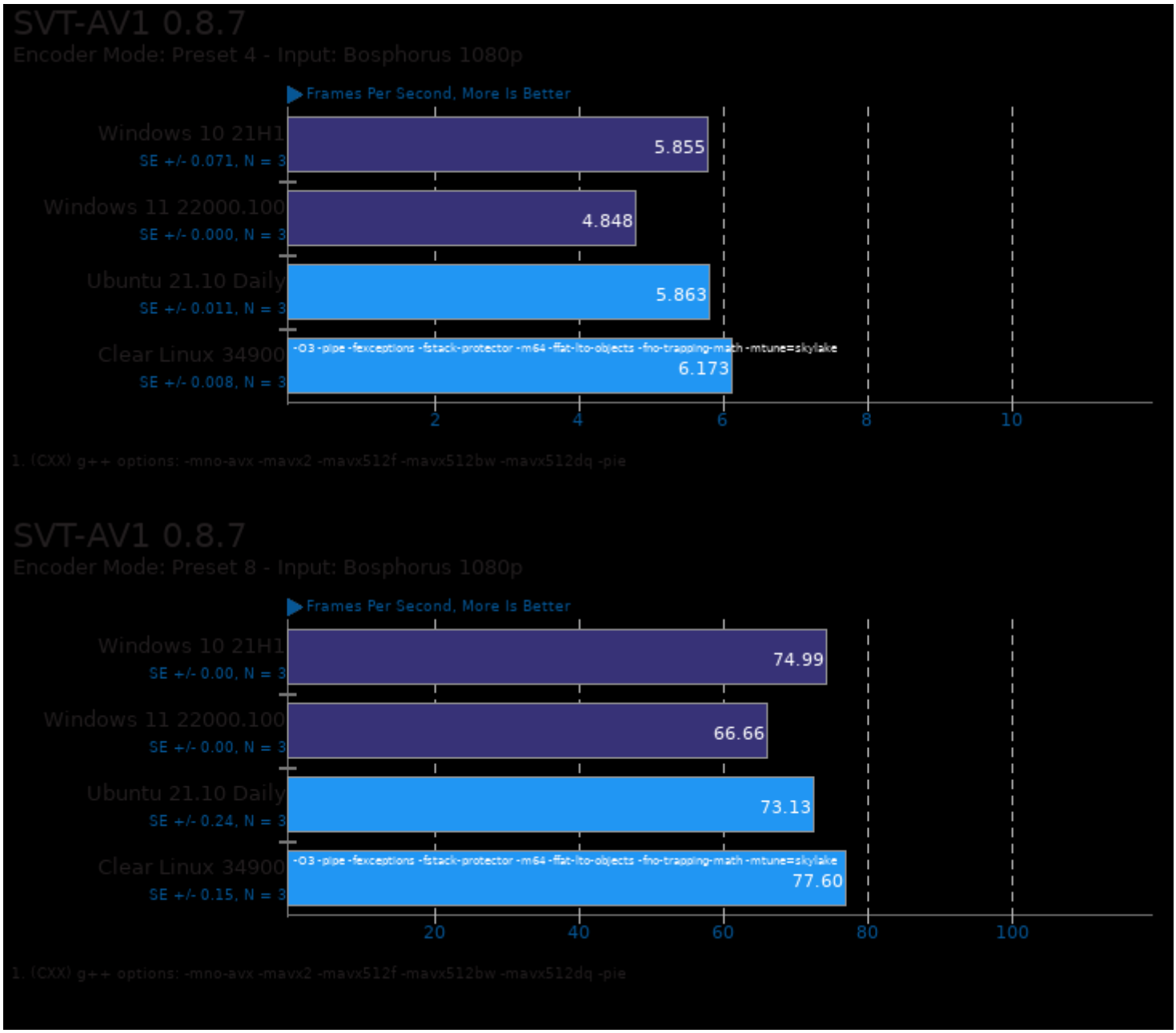

ParaView 5.9
Test: Wavelet Contour - Resolution: 1920 x 1080
Frames / Sec, More Is Better
Windows 10 21H1
SE +/- 2.22, N = 15
328.56
Windows 11 22000.100
SE +/- 2.07, N = 3
316.77
Ubuntu 21.10 Daily
SE +/- 0.40, N = 3
352.99
Clear Linux 34900
SE +/- 1.51, N = 3
349.62
80
160
240
320
400
ParaView 5.9
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

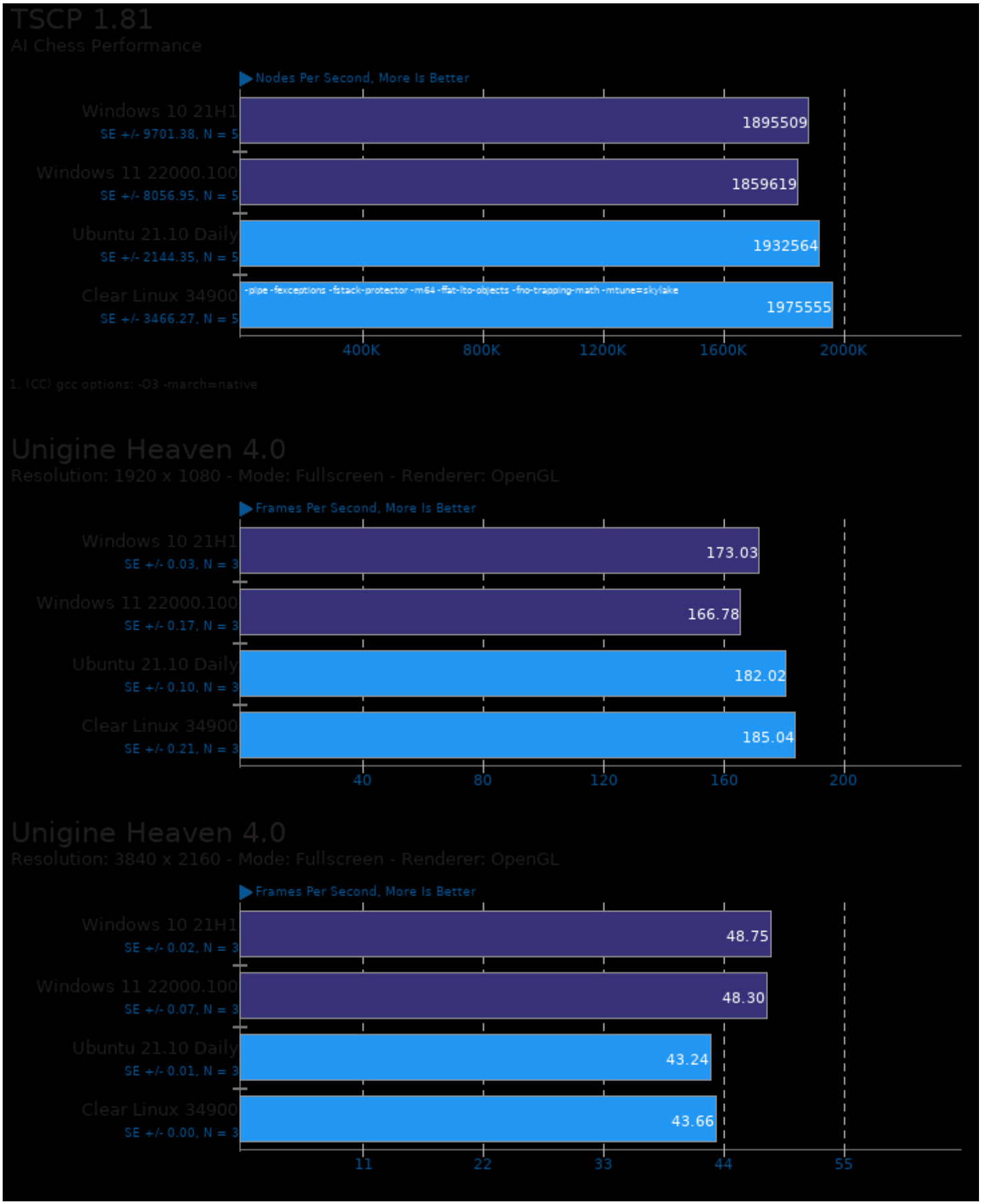

ParaView 5.9
Test: Wavelet Contour - Resolution: 3840 x 2160
MiPolys / Sec, More Is Better
Windows 10 21H1
SE +/- 1.35, N = 3
3160.91
Windows 11 22000.100
SE +/- 4.29, N = 3
3088.99
Ubuntu 21.10 Daily
SE +/- 1.68, N = 3
2781.42
Clear Linux 34900
SE +/- 10.61, N = 3
2776.47
700
1400
2100
2800
3500
Primesieve 7.4
1e12 Prime Number Generation
Seconds, Fewer Is Better
Windows 10 21H1
SE +/- 0.07, N = 3
17.99
Windows 11 22000.100
SE +/- 0.06, N = 3
18.16
Ubuntu 21.10 Daily
SE +/- 0.07, N = 3
17.90
Clear Linux 34900
SE +/- 0.04, N = 3
-pipe -fexceptions -fstack-protector -m64 -flat-lto-objects -fno-trapping-math -mtune=skylake
17.92
4
8
12
16
20
1. (CXX) g++ options: -O3 -lpthread
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

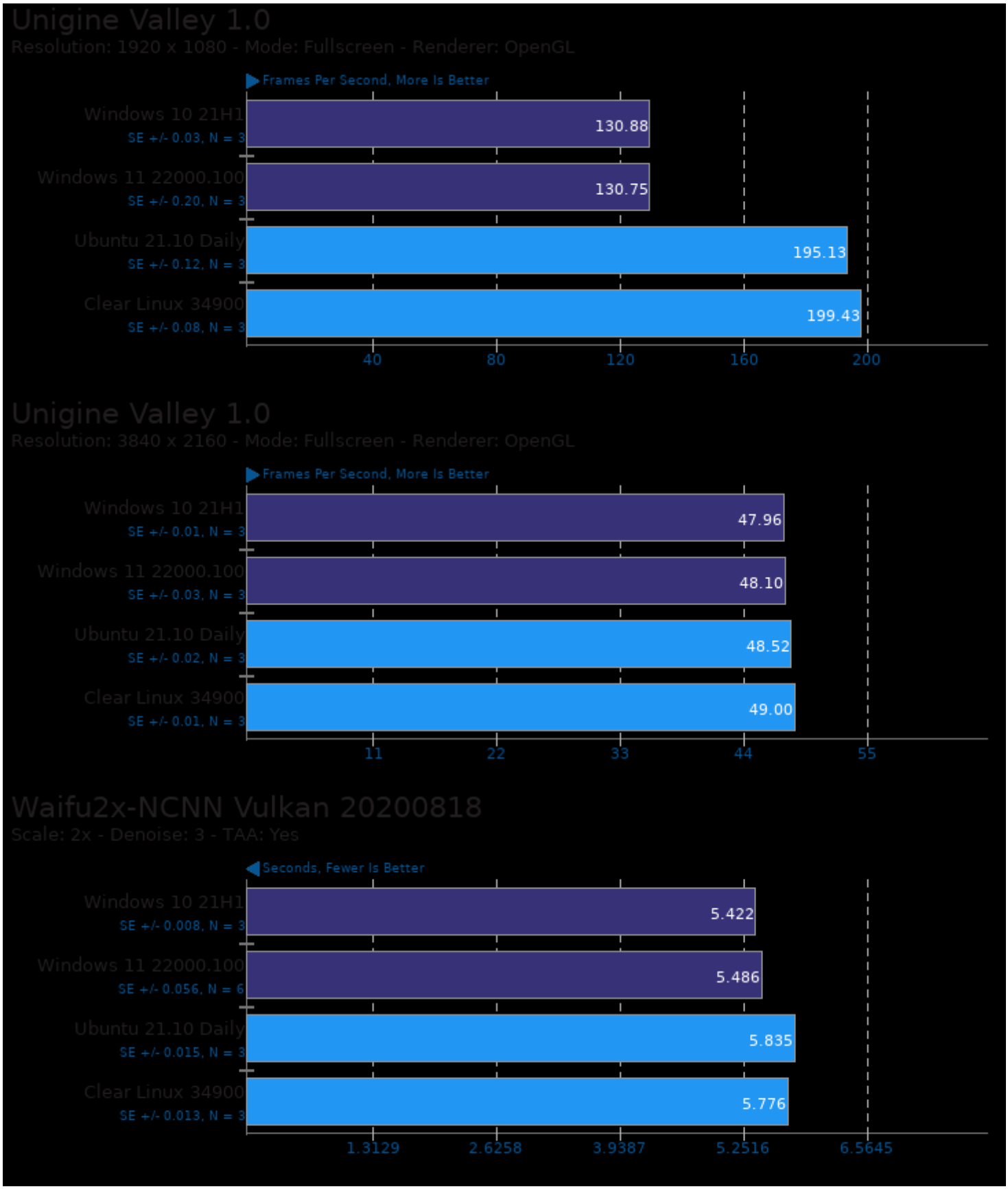

Renaissance 0.12
Test: Scala Dotty
ms, Fewer Is Better
Windows 10 21H1
SE +/- 4.77, N = 3
MIN: 642.46 / MAX: 1083.12
1073.7
Windows 11 22000.100
SE +/- 7.99, N = 3
MIN: 722.89 / MAX: 1187.9
1171.9
Ubuntu 21.10 Daily
SE +/- 9.11, N = 15
MIN: 499.46 / MAX: 1527.28
658.8
Clear Linux 34900
SE +/- 8.51, N = 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

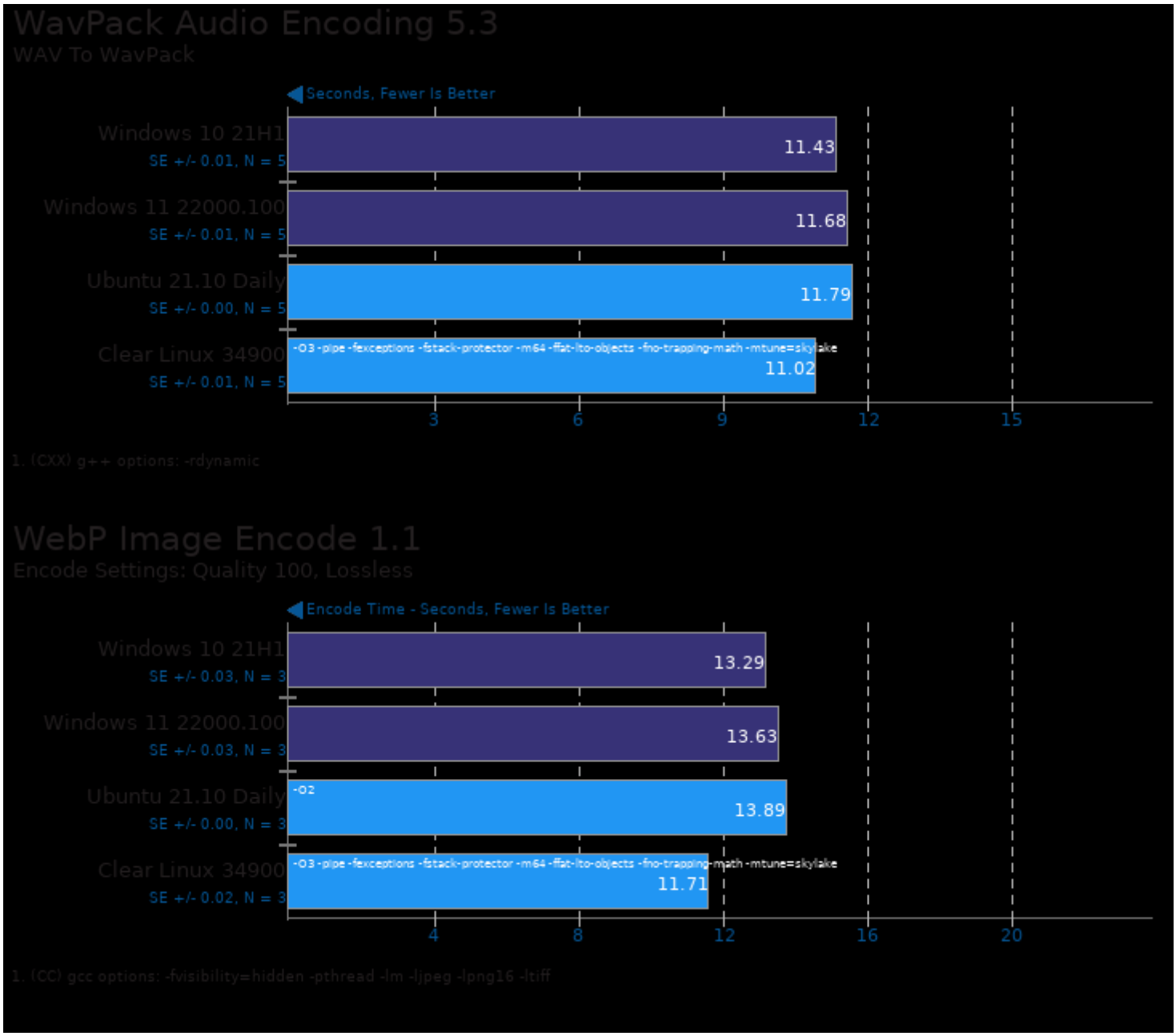

Stockfish 13
Total Time
Nodes Per Second, More Is Better
Windows 10 21H1
SE +/- 72000.33, N = 3
26352036
Windows 11 22000.100
SE +/- 265327.44, N = 3
26692439
Ubuntu 21.10 Daily
SE +/- 178542.21, N = 3
28334183
Clear Linux 34900
SE +/- 45094.93, N = 3
-pipe -fexceptions -fstack-protector -ffat-lto-objects -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
Sudokut 0.4
Total Time
Seconds, Fewer Is Better
Windows 10 21H1
SE +/- 0.056, N = 3
24.905
Windows 11 22000.100
SE +/- 0.055, N = 3
29.195
Ubuntu 21.10 Daily
SE +/- 0.009, N = 3
7.200
Clear Linux 34900
SE +/- 0.024, N = 3
7.456
7
14
21
28
35

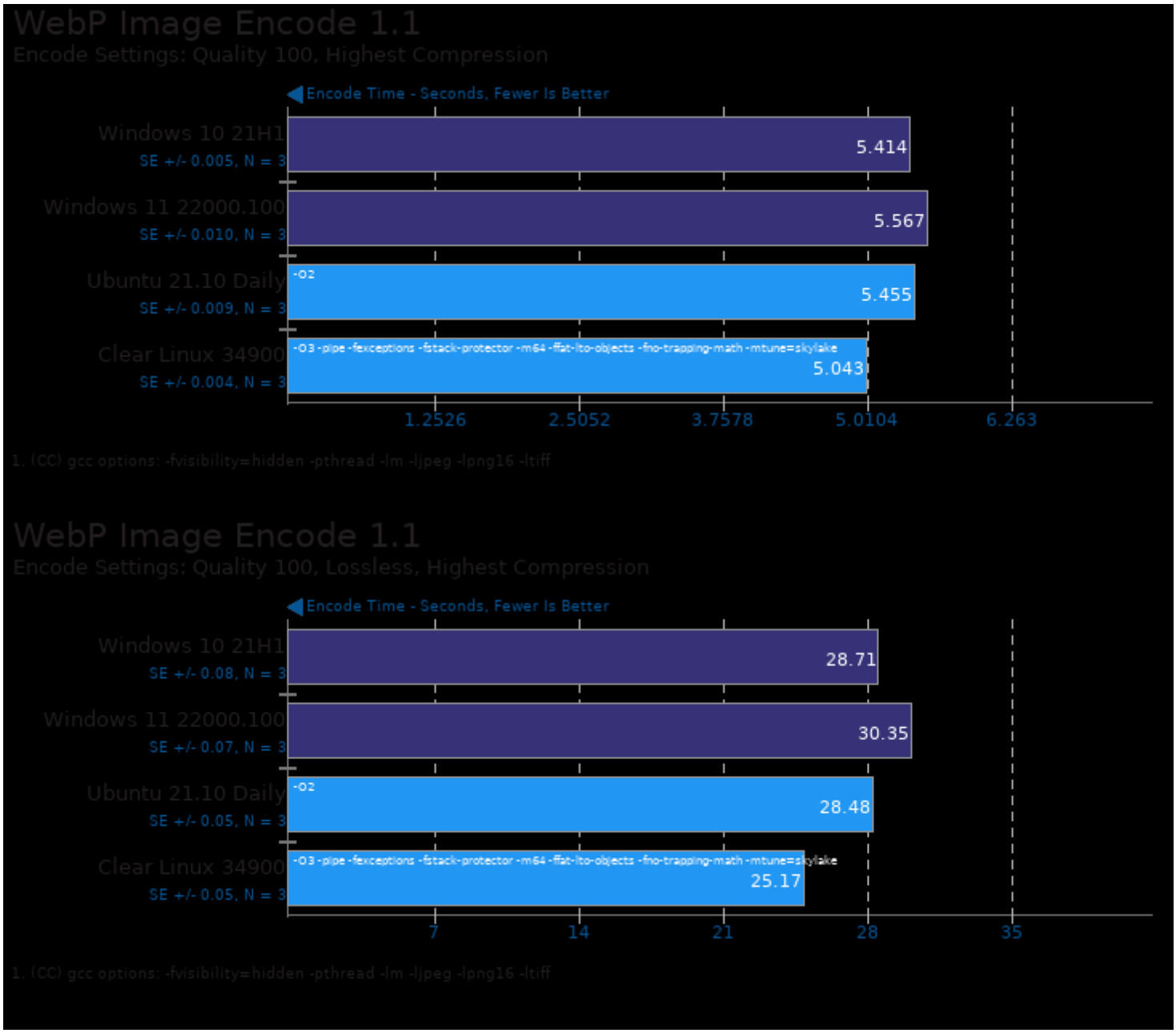

SVT-AV1 0.8.7
Encoder Mode: Preset 4 - Input: Bosphorus 4K
Frames Per Second, More Is Better
Windows 10 21H1
SE +/- 0.000, N = 3
1.739
Windows 11 22000.100
SE +/- 0.000, N = 3
1.455
Ubuntu 21.10 Daily
SE +/- 0.003, N = 3
1.738
Clear Linux 34900
SE +/- 0.002, N = 3
-O3 -pipe -fexceptions -fstack-protector -m64 -flat-lto-objects -fno-trapping-math -mtune=skylake
1.866
0.4199
0.8398
1.2597
1.6796
2.0995
1. (CXX) g++ options: -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie
SVT-AV1 0.8.7
Encoder Mode: Preset 8 - Input: Bosphorus 4K
Frames Per Second, More Is Better
Windows 10 21H1
SE +/- 0.00, N = 3
18.75
Windows 11 22000.100
SE +/- 0.13, N = 3
15.13
Ubuntu 21.10 Daily
SE +/- 0.02, N = 3
19.07
Clear Linux 34900
SE +/- 0.04, N = 3
-O3 -pipe -fexceptions -fstack-protector -m64 -flat-lto-objects -fno-trapping-math -mtune=skylake
20.85
5
10
15
20
25
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


TSCP 1.81
AI Chess Performance
Nodes Per Second, More Is Better
Windows 10 21H1
SE +/- 9701.38, N = 5
1895509
Windows 11 22000.100
SE +/- 8056.95, N = 5
1859619
Ubuntu 21.10 Daily
SE +/- 2144.35, N = 5
1932564
Clear Linux 34900
SE +/- 3466.27, N = 5
-pipe -fexceptions -fstack-protector -m64 -flat-lto-objects -fno-trapping-math -mtune=skylake
1975555
400K
800K
1200K
1600K
2000K
1. (CC) gcc options: -O3 -march=native
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

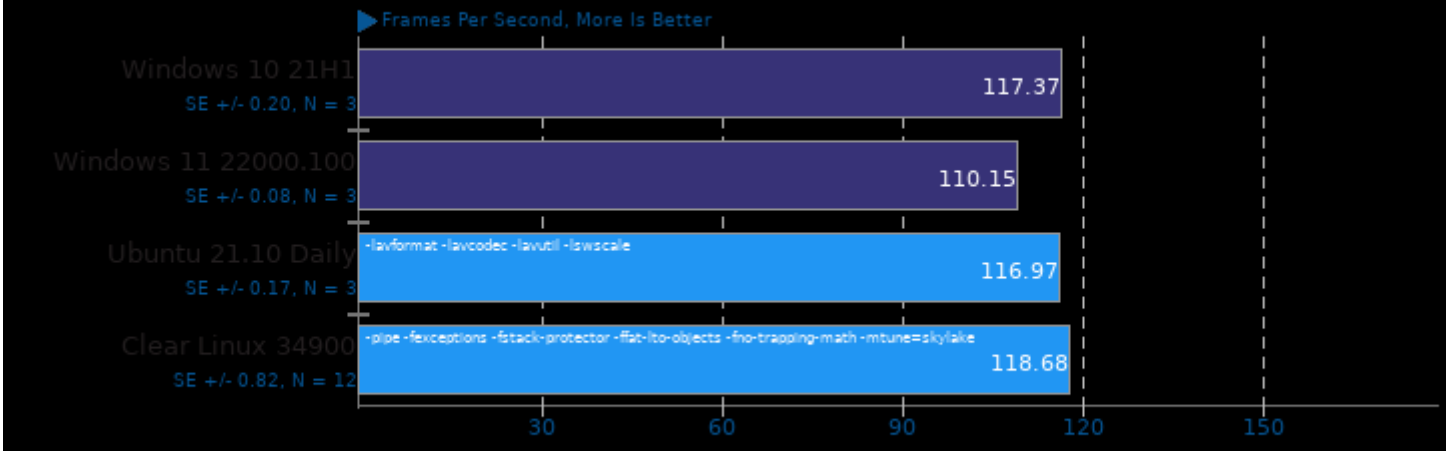

Unigine Valley 1.0
Resolution: 1920 x 1080 - Mode: Fullscreen - Renderer: OpenGL
Frames Per Second, More Is Better
Windows 10 21H1
SE +/- 0.03, N = 3
130.88
Windows 11 22000.100
SE +/- 0.20, N = 3
130.75
Ubuntu 21.10 Daily
SE +/- 0.12, N = 3
195.13
Clear Linux 34900
SE +/- 0.08, N = 3
199.43
40
80
120
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
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


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 -flto=auto -ffat-lto-objects -fno-trapping-math -mtune=skylake
11.02
3
6
9
12
15
1. (CXX) g++ options: -rdynamic
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=auto -ffat-lto-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

## x264 2019-12-17

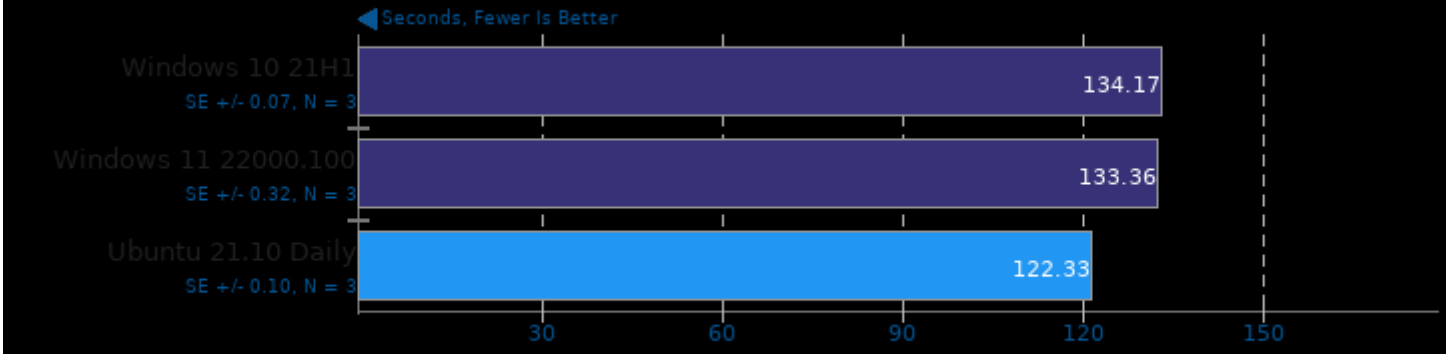
H.264 Video Encoding




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

## YafaRay 3.5.1

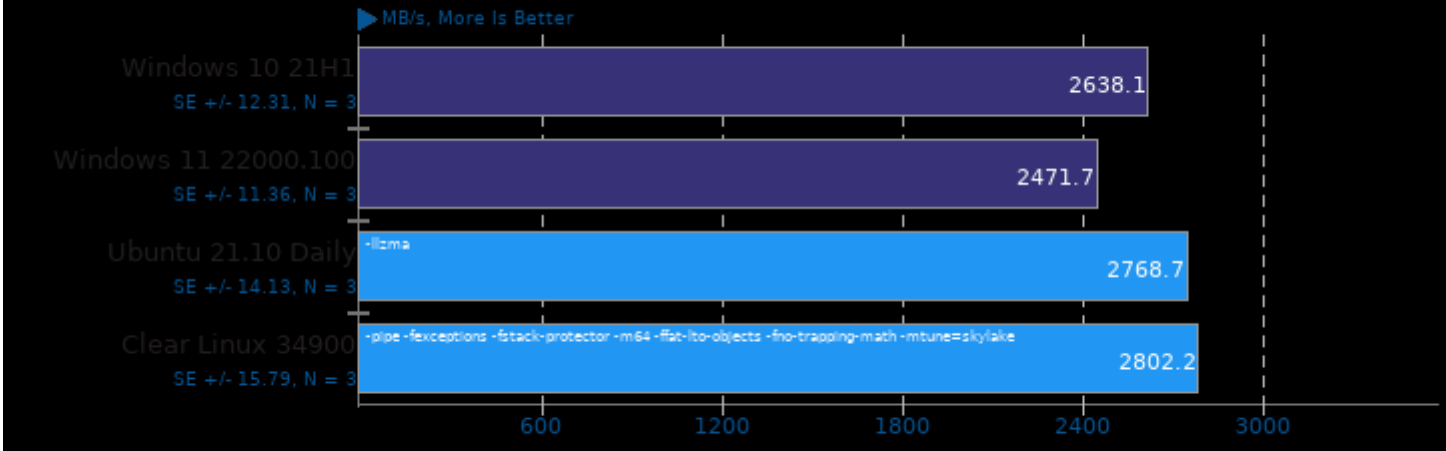
Total Time For Sample Scene



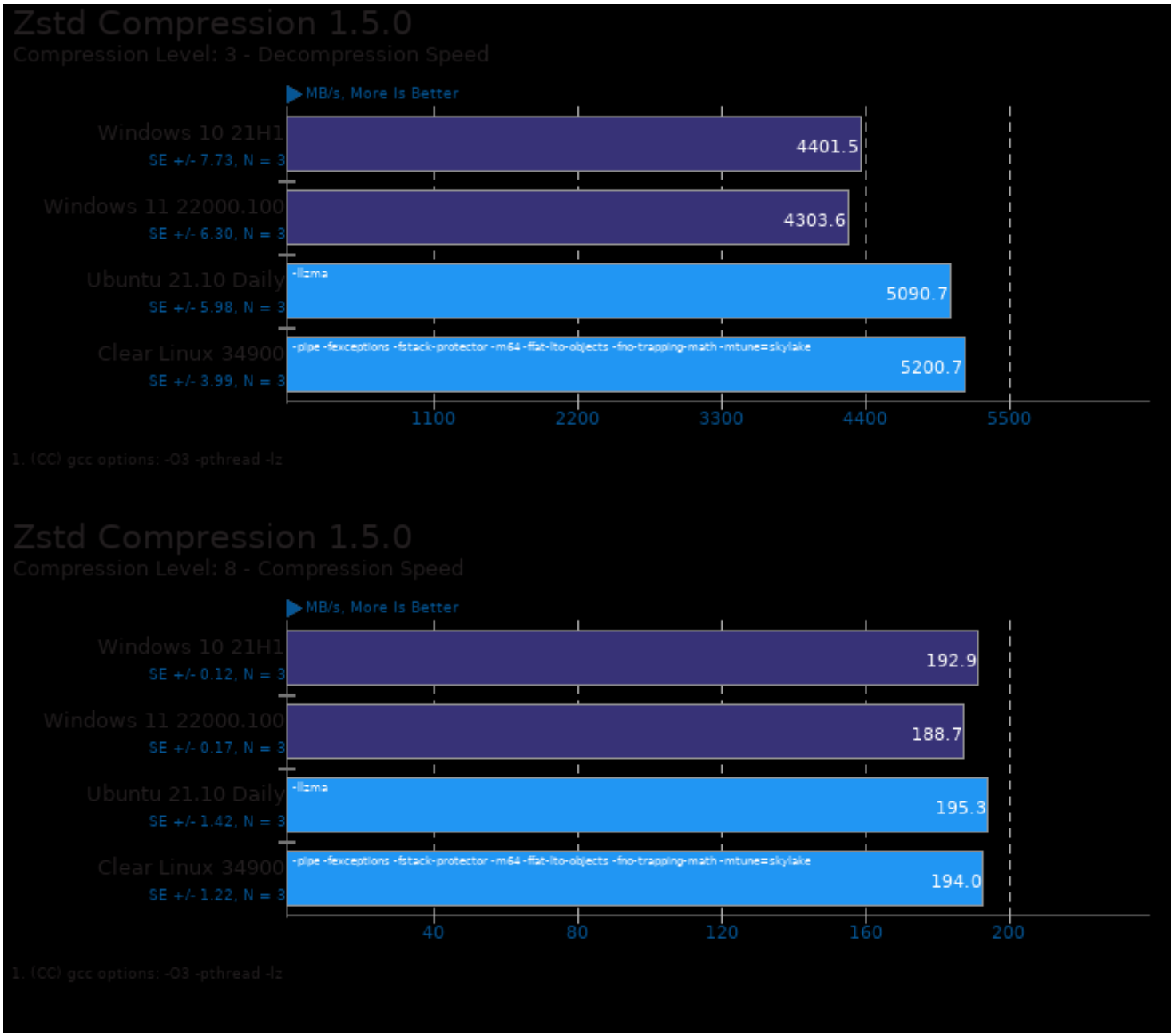

1. (CXX) g++ options: -std=c++11 -pthread -O3 -ffast-math -rdynamic -ldl -lImath -lIlmImf -lIex -lHalf -lz -lIlmThread -lxml2 -lfreetype

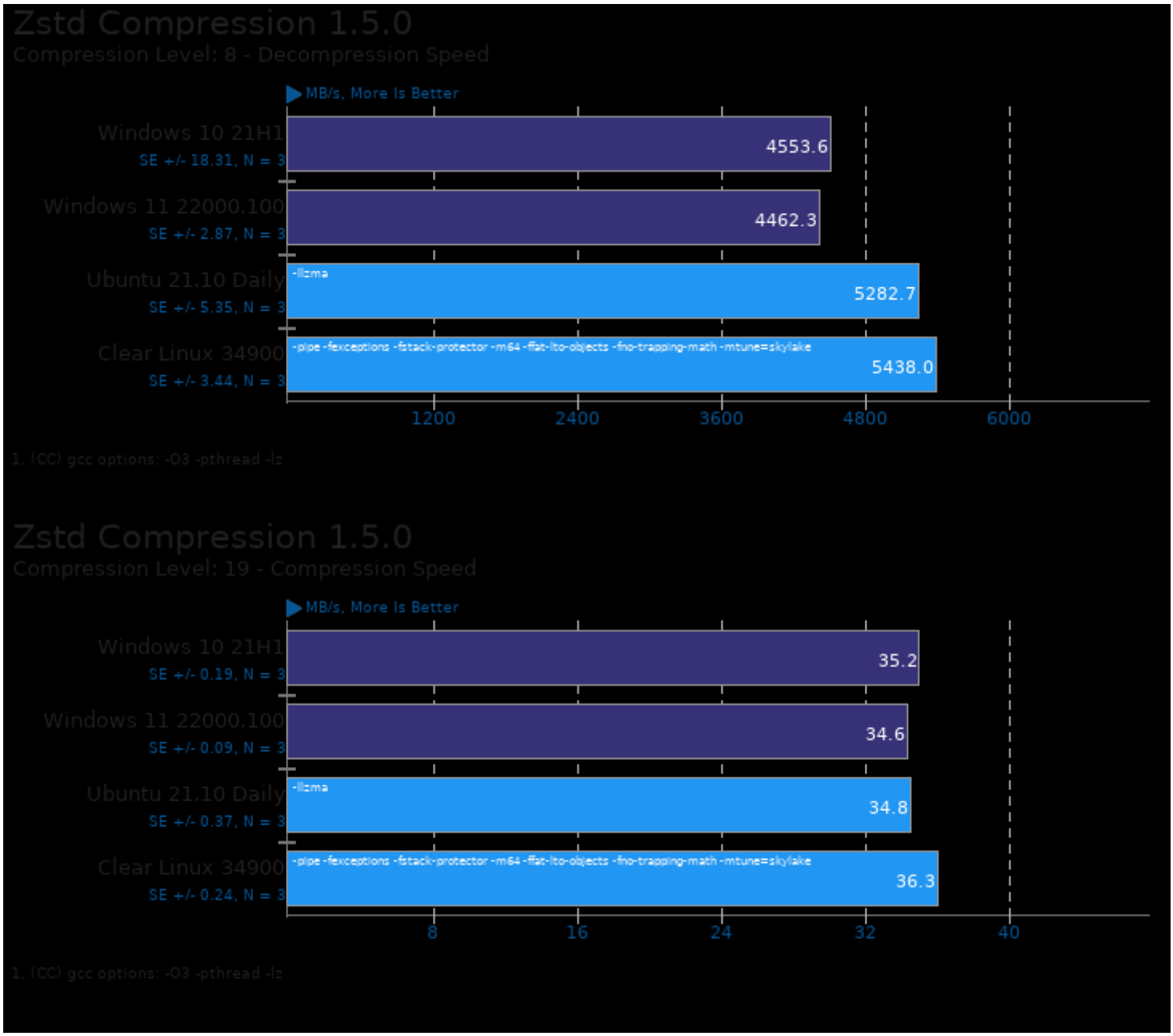
## Zstd Compression 1.5.0

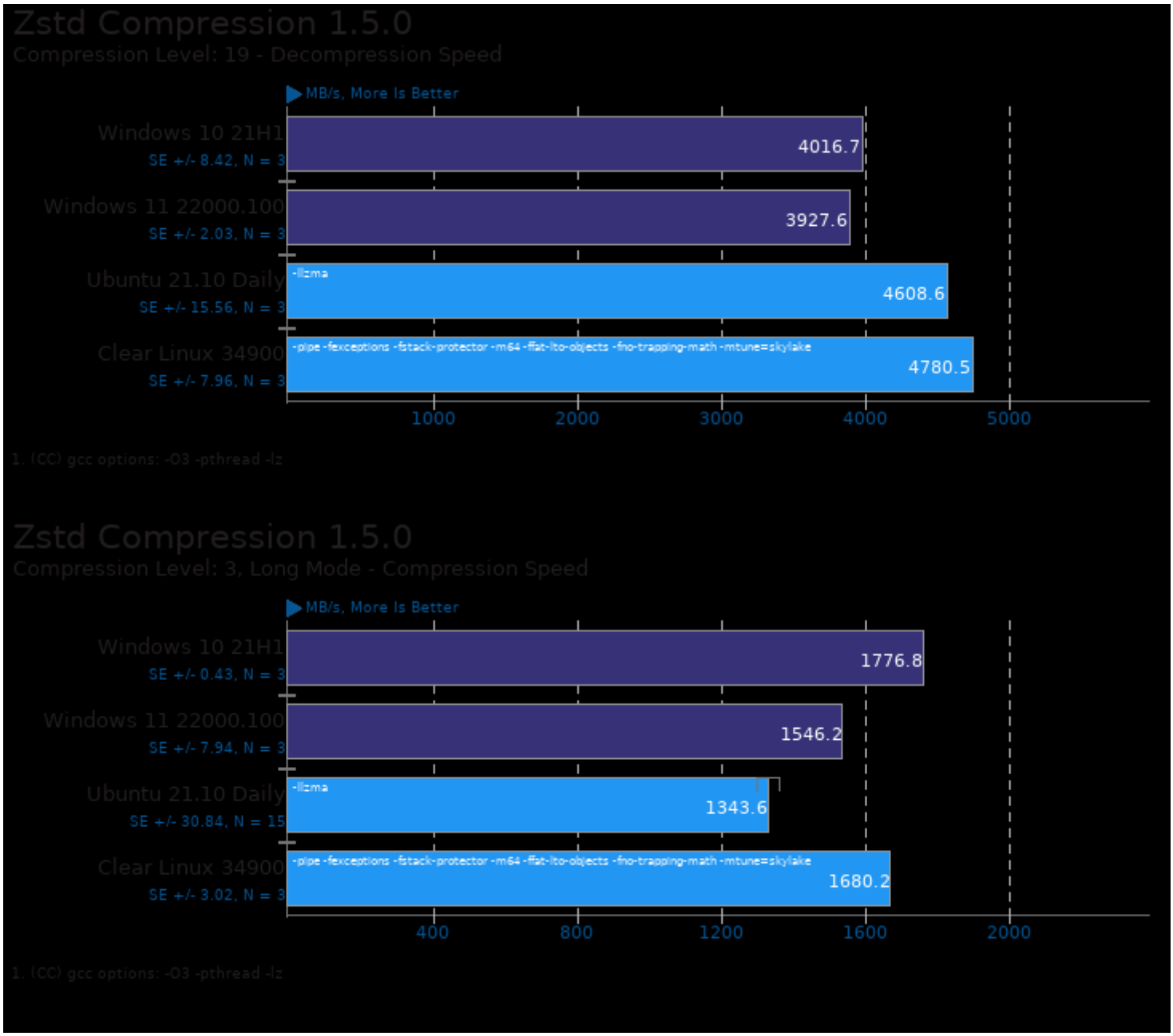
Compression Level: 3 - Compression Speed

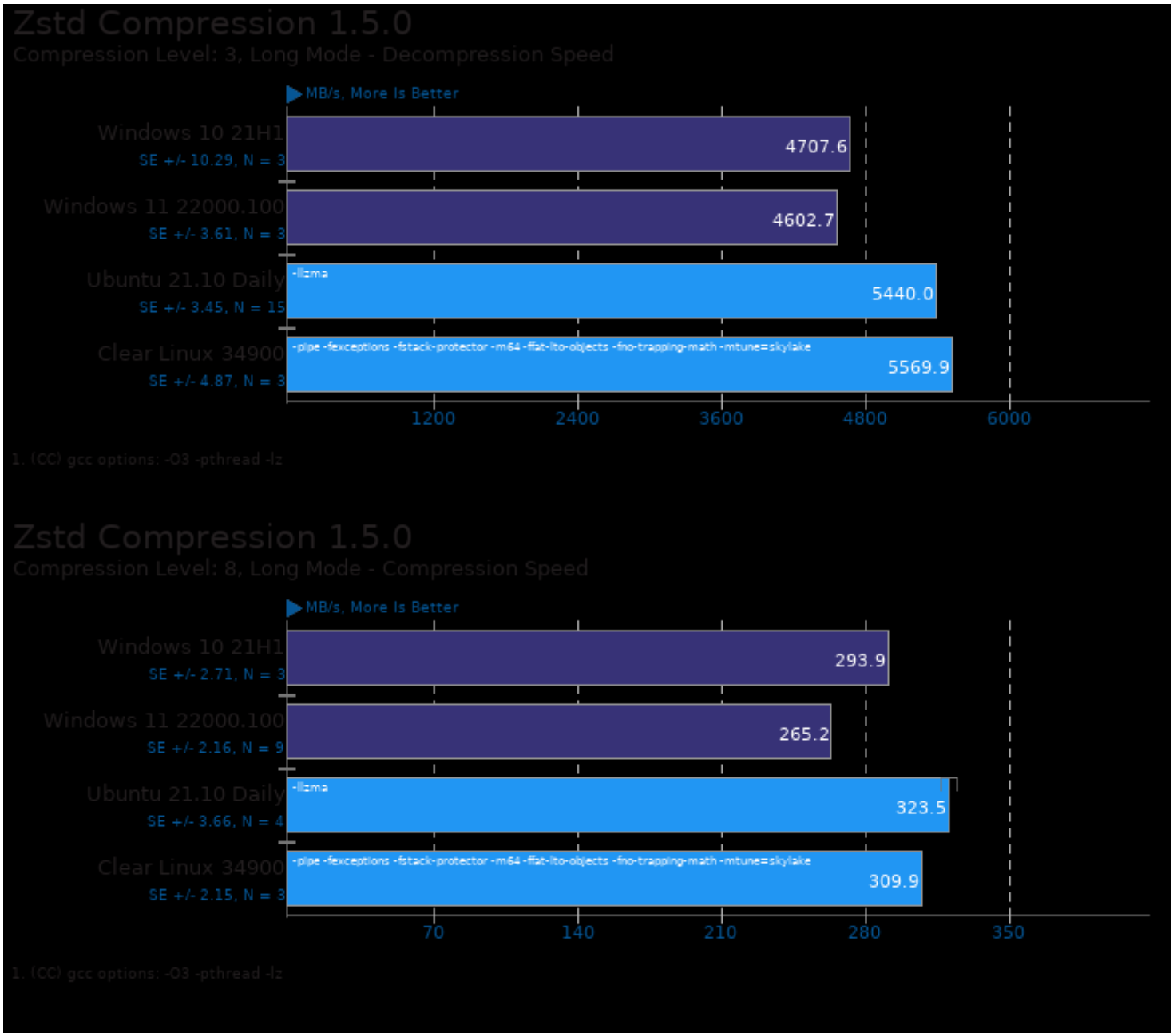


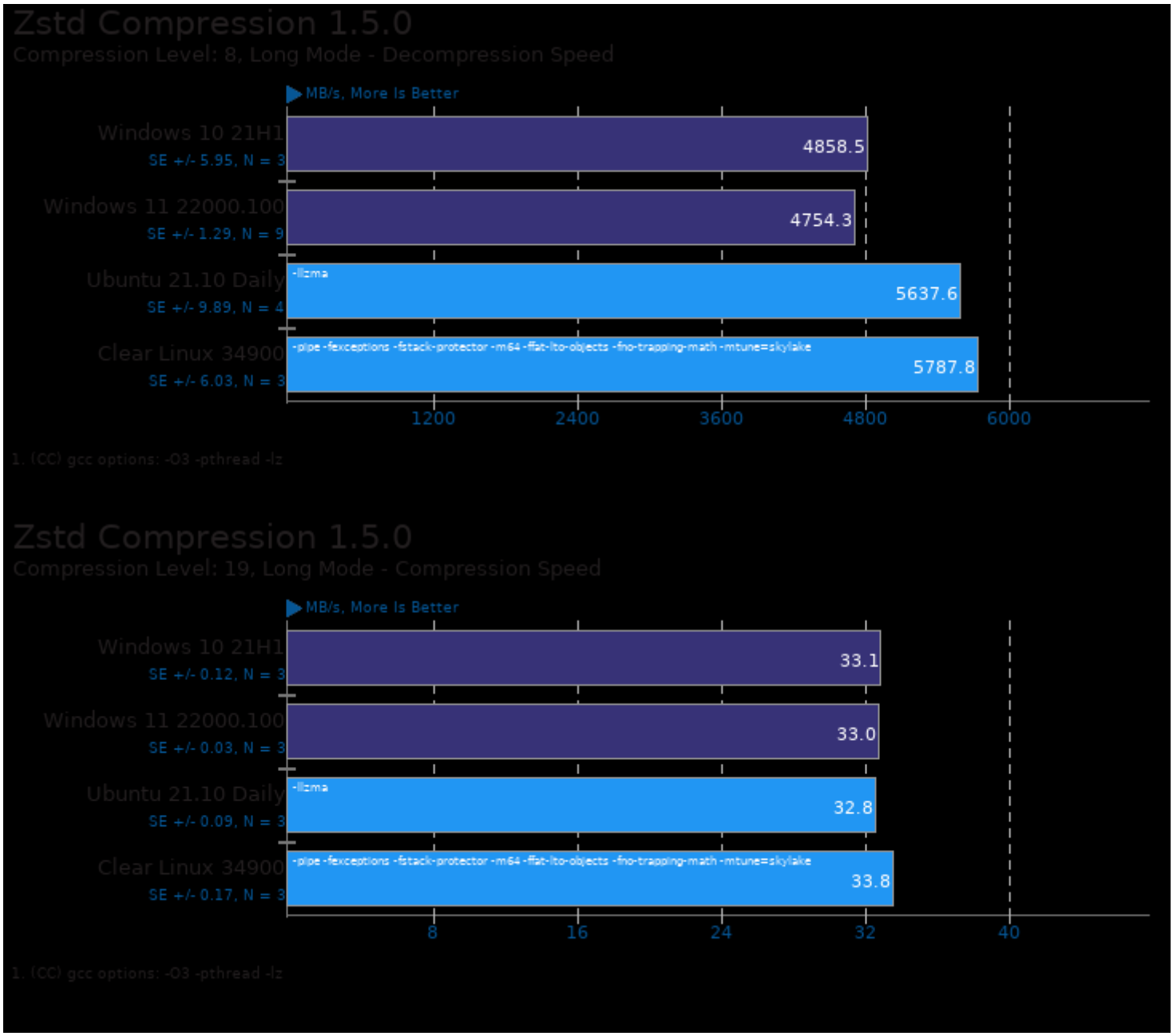

1. (CC) gcc options: -O3 -pthread -lz

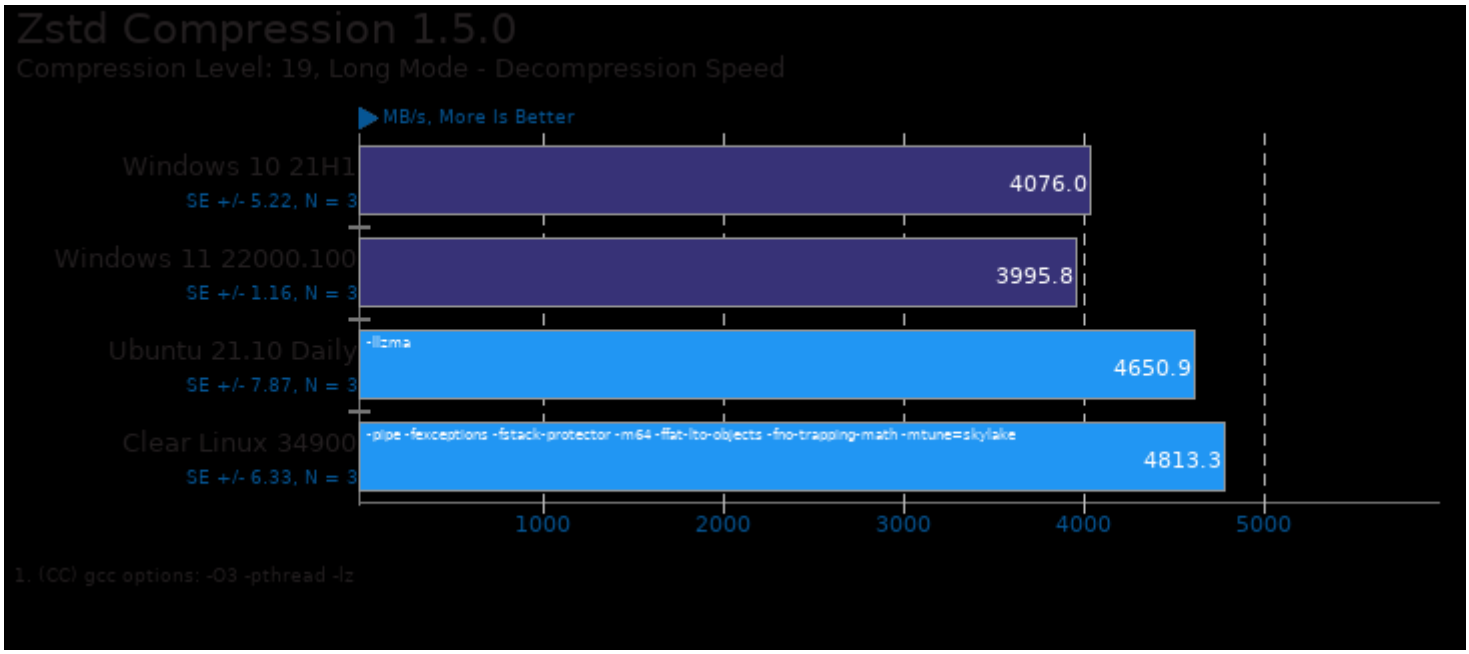

Zstd Compression 1.5.0
Compression Level: 3 - Decompression Speed
MB/s, More Is Better
Windows 10 21H1
SE +/- 7.73, N = 3
4401.5
Windows 11 22000.100
SE +/- 6.30, N = 3
4303.6
Ubuntu 21.10 Daily
SE +/- 5.98, N = 3
-llzma
5090.7
Clear Linux 34900
SE +/- 3.99, N = 3
-pipe -fexceptions -fstack-protector -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

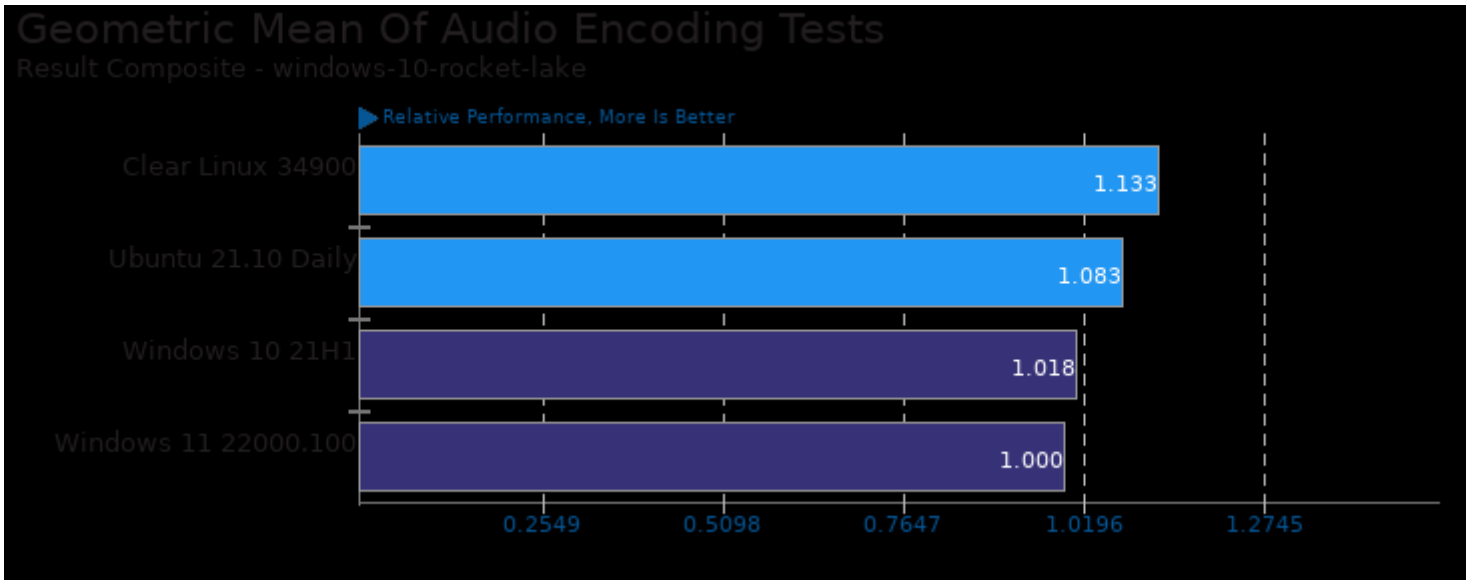

Zstd Compression 1.5.0
Compression Level: 19 - Decompression Speed
MB/s, More Is Better
Windows 10 21H1
SE +/- 8.42, N = 3
4016.7
Windows 11 22000.100
SE +/- 2.03, N = 3
3927.6
Ubuntu 21.10 Daily
SE +/- 15.56, N = 3
-llzma
4608.6
Clear Linux 34900
SE +/- 7.96, N = 3
-pipe -fexceptions -fstack-protector -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

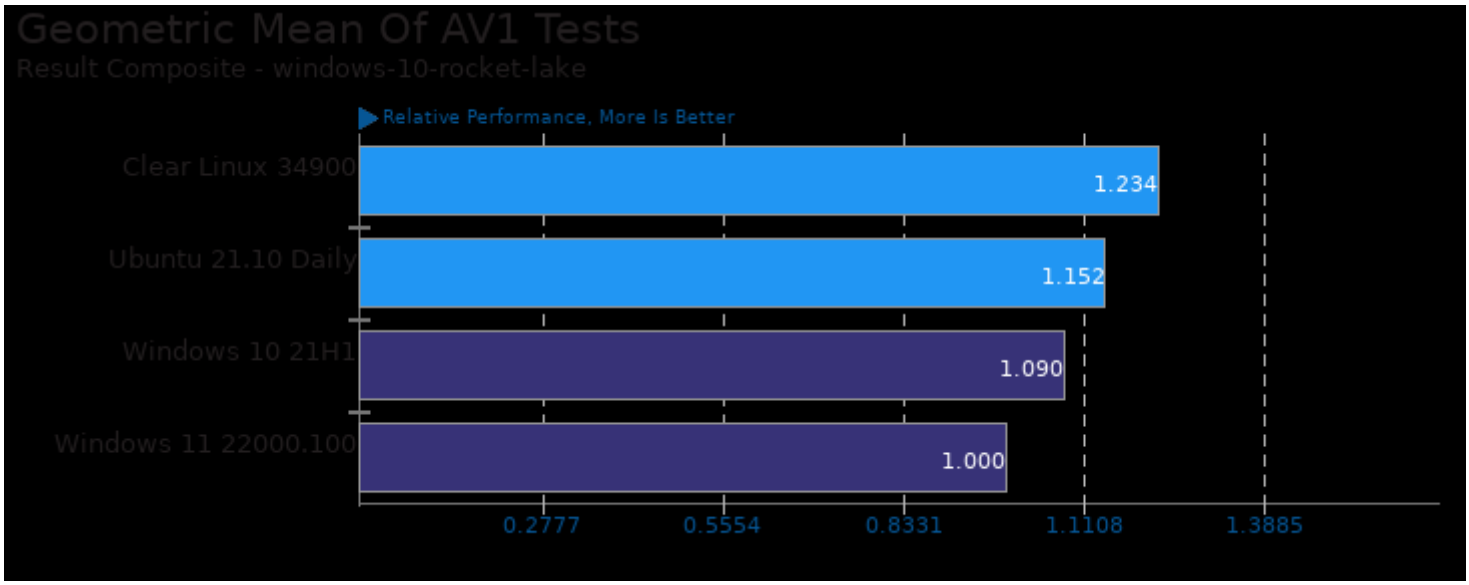

Zstd Compression 1.5.0
Compression Level: 8, Long Mode - Decompression Speed
MB/s, More Is Better
Windows 10 21H1
SE +/- 5.95, N = 3
4858.5
Windows 11 22000.100
SE +/- 1.29, N = 9
4754.3
Ubuntu 21.10 Daily
SE +/- 9.89, N = 4
-llzma
5637.6
Clear Linux 34900
SE +/- 6.03, N = 3
-pipe -fexceptions -fstack-protector -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

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



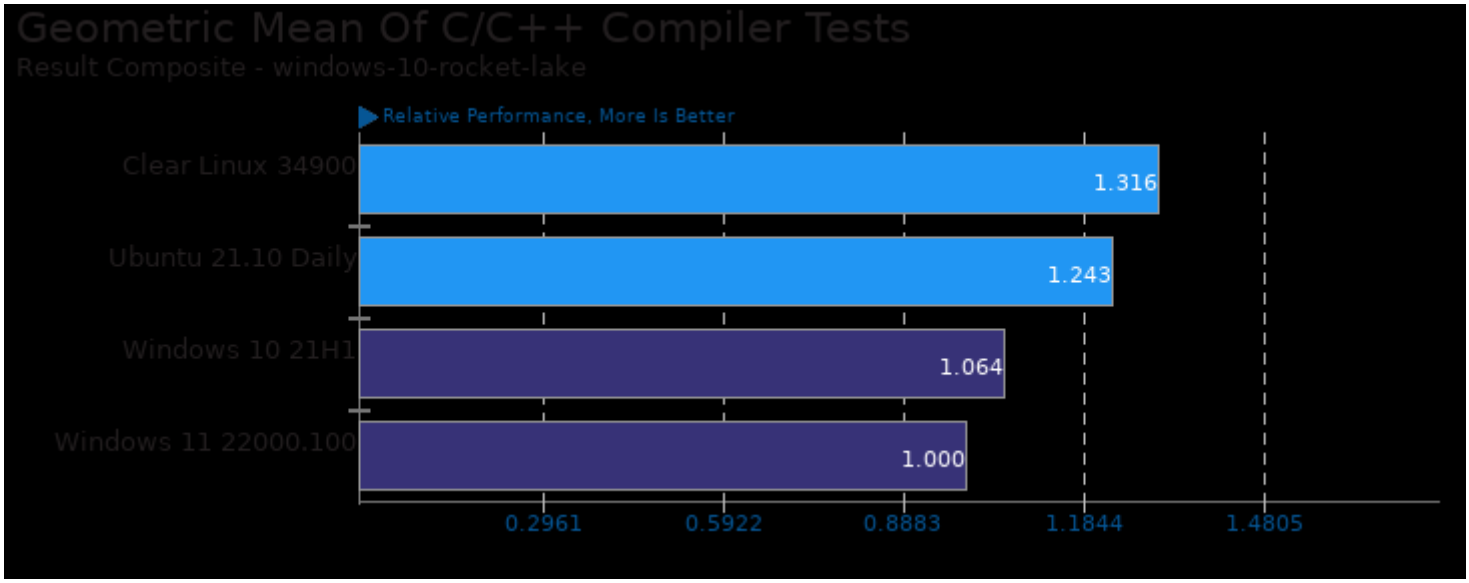

Geometric mean based upon tests: pts/encode-mp3, pts/encode-flac, pts/encode-wavpack and pts/encode-opus



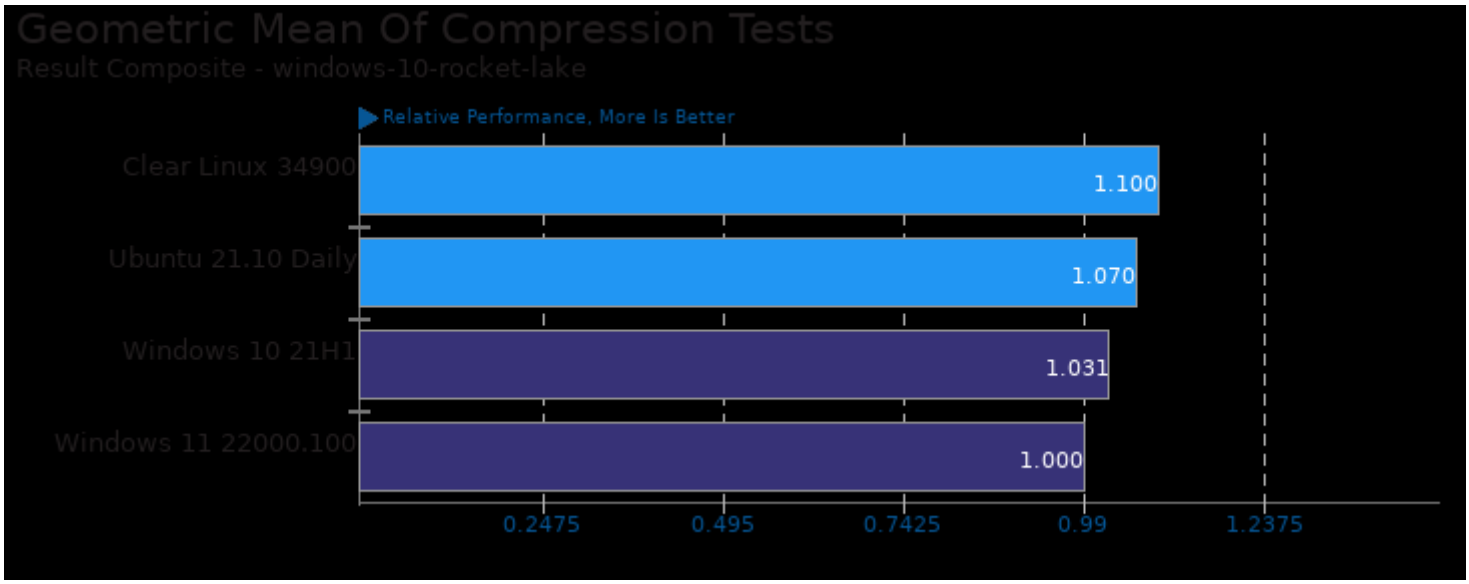

Geometric mean based upon tests: pts/dav1d, pts/svt-av1 and pts/avifenc



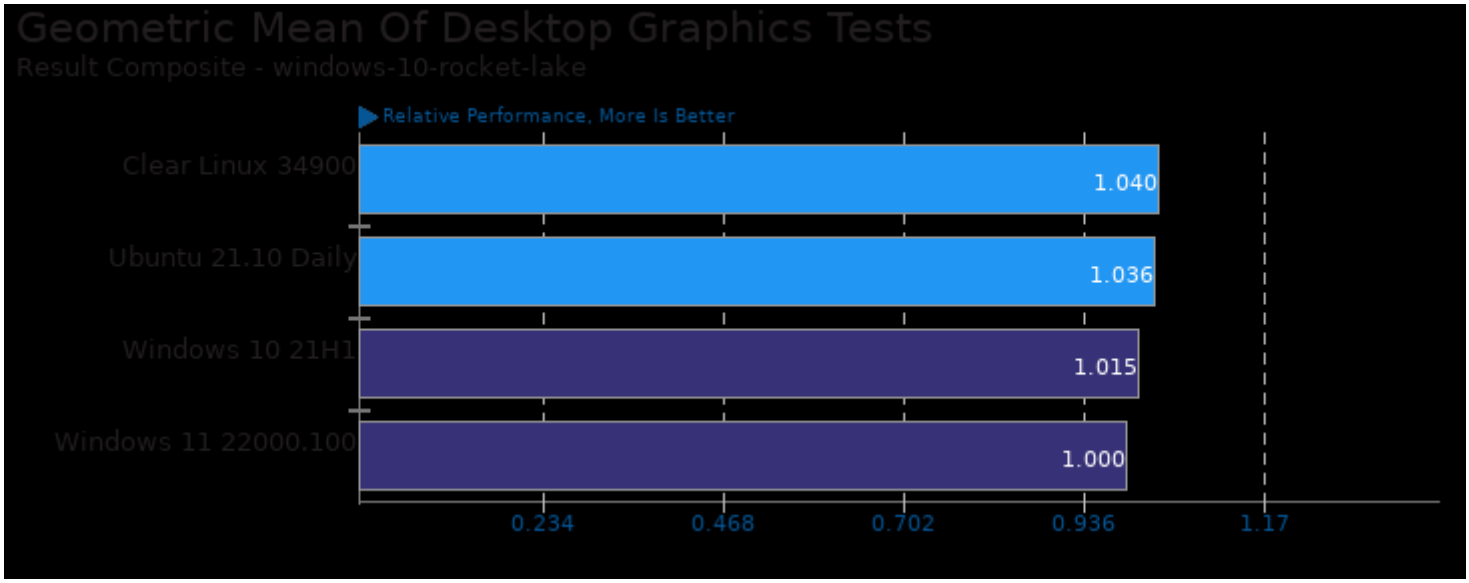

Geometric mean based upon tests: pts/crafty, pts/tscp, pts/lczero, pts/stockfish, pts/asmfish, pts/n-queens and pts/m-queens



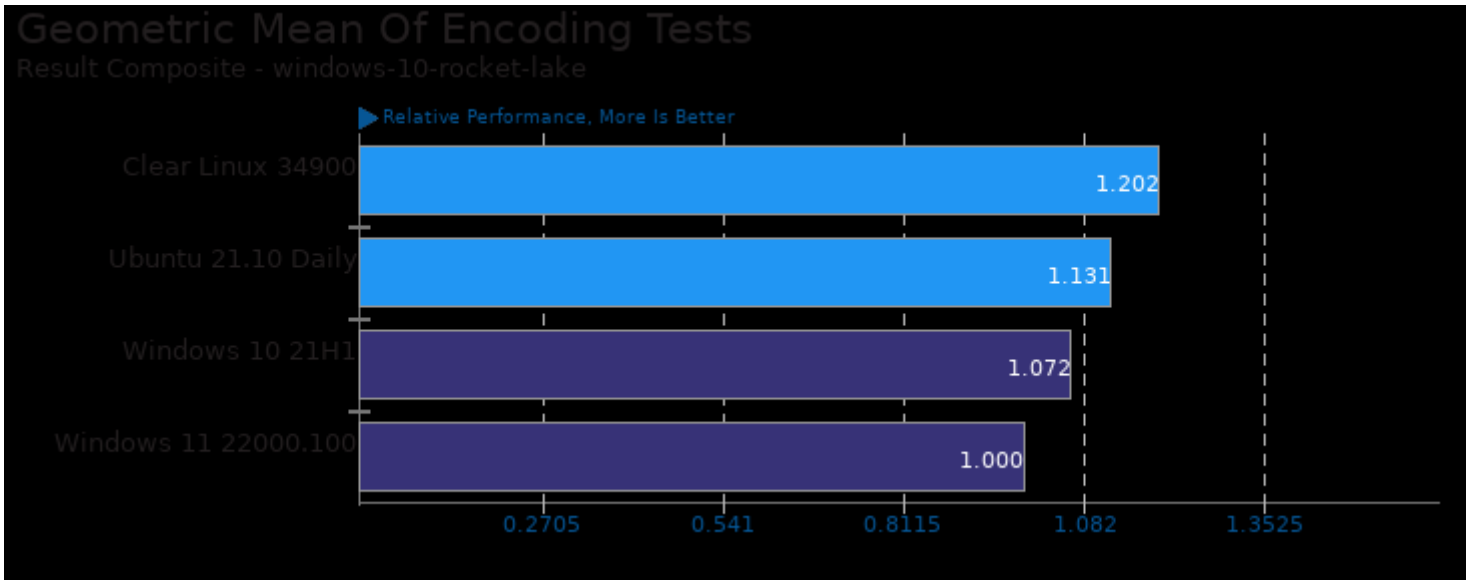

Geometric mean based upon tests: pts/tscp, pts/graphics-magick, pts/stockfish, pts/compress-7zip, pts/encode-mp3, pts/encode-flac, pts/john-the-ripper, pts/dav1d, pts/x264, pts/compress-zstd and pts/svt-av1



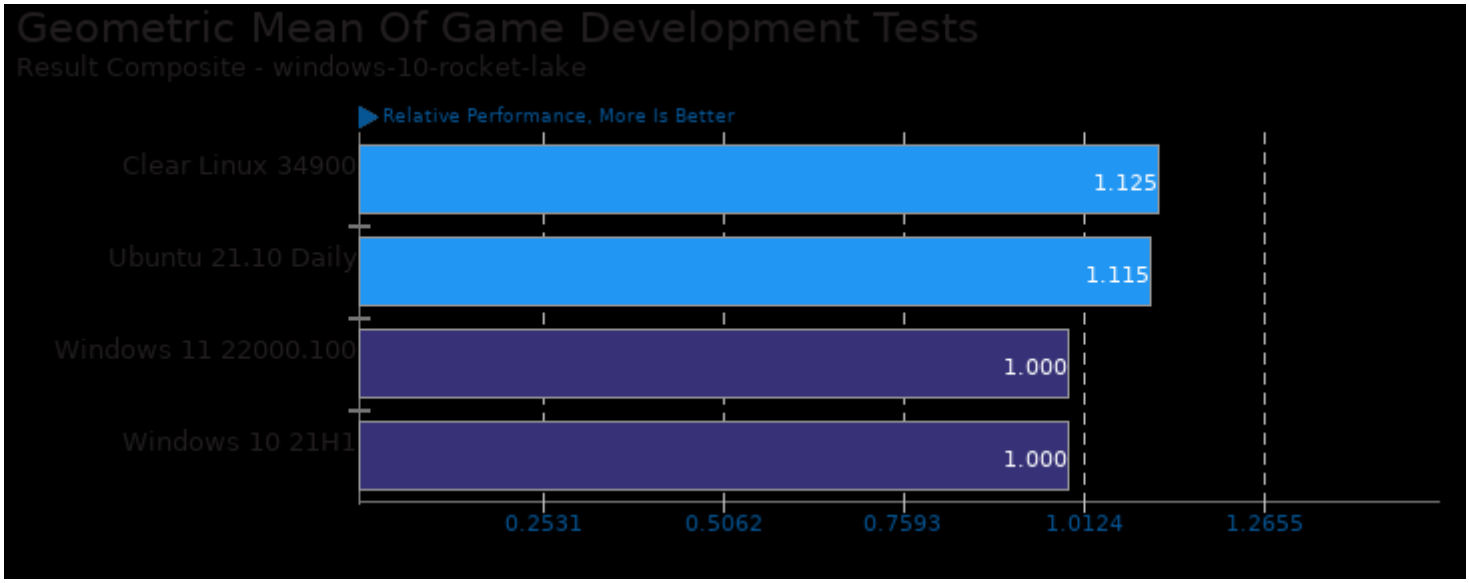

Geometric mean based upon tests: pts/compress-7zip, pts/compress-zstd and pts/compress-lz4



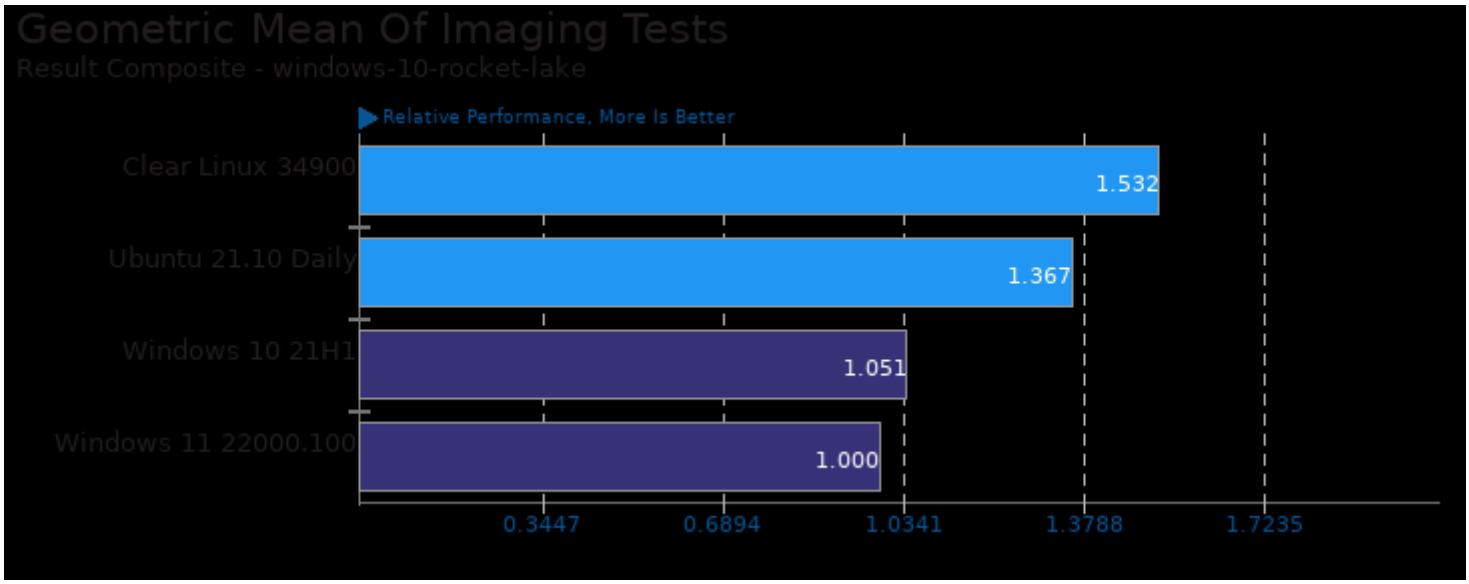

Geometric mean based upon tests: pts/paraview, pts/unigine-valley and pts/unigine-heaven



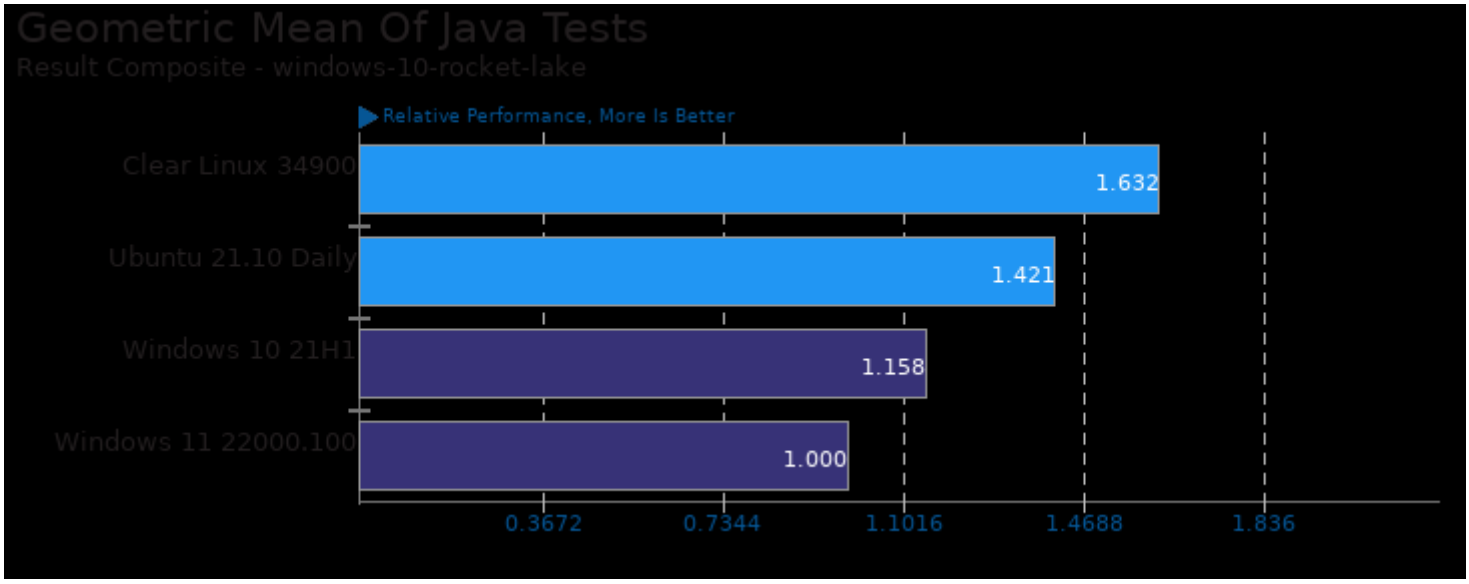

Geometric mean based upon tests: pts/encode-mp3, pts/encode-flac, pts/encode-wavpack, pts/encode-opus, pts/x264, pts/dav1d, pts/svt-av1 and pts/avifenc



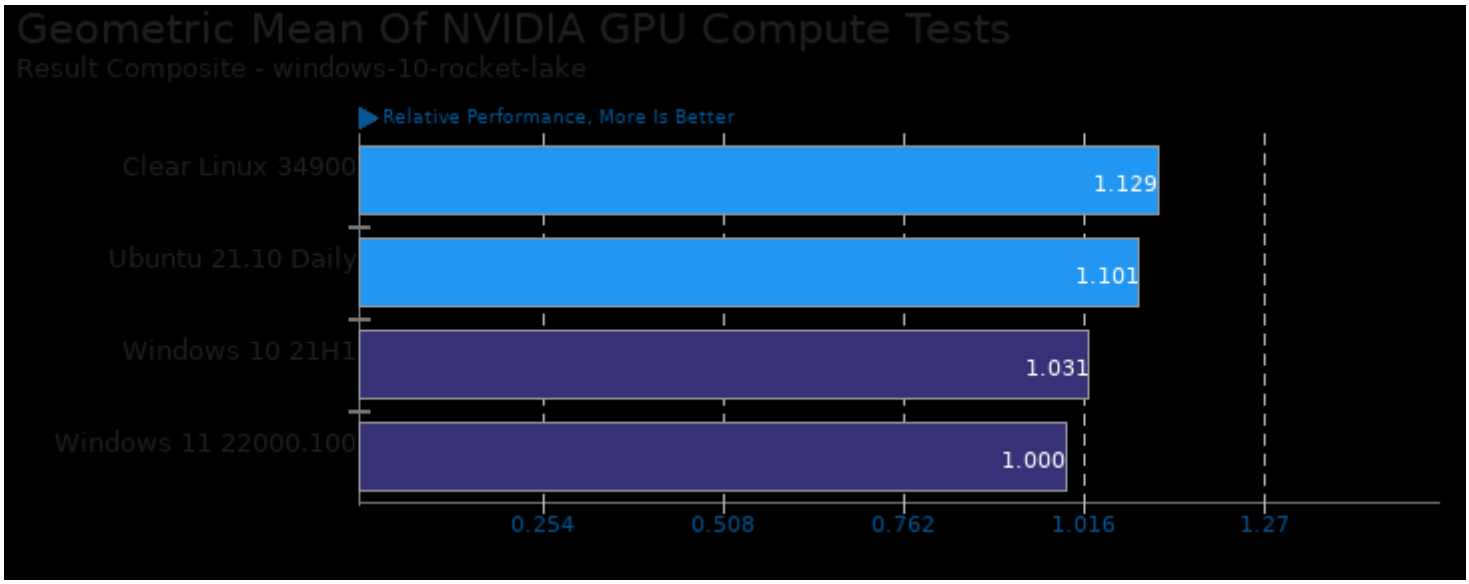

Geometric mean based upon tests: pts/blender and pts/oidn



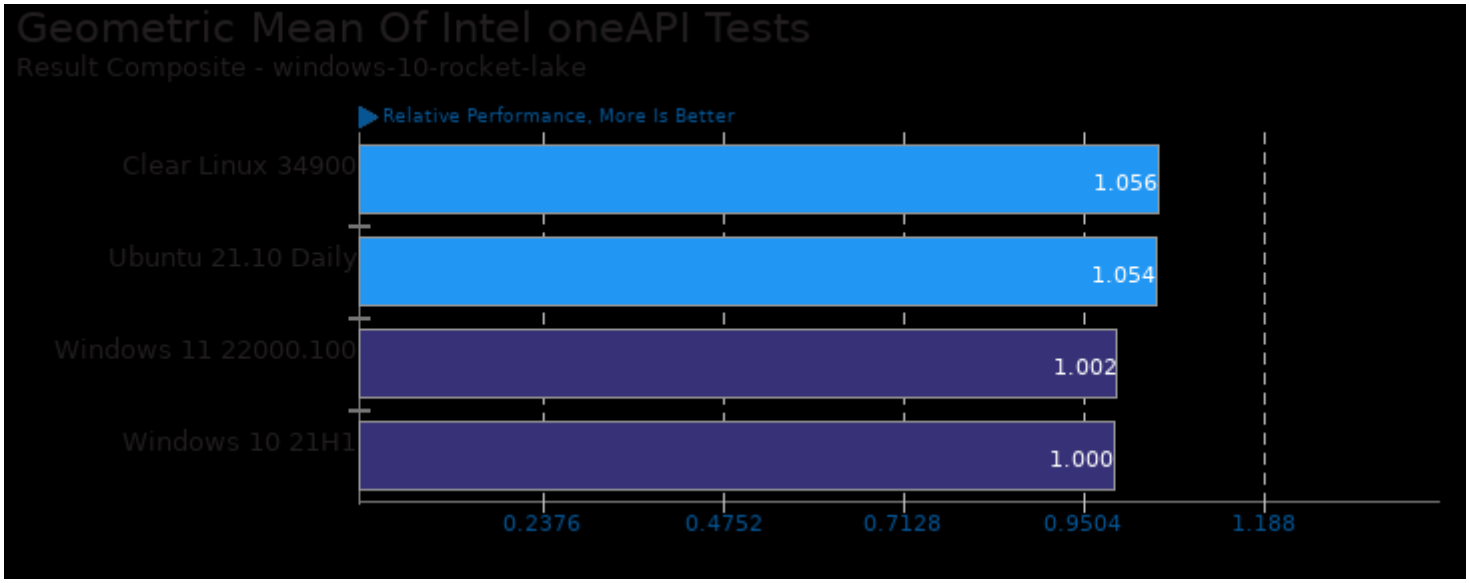

Geometric mean based upon tests: pts/graphics-magick, pts/webp, pts/tjbench and pts/avifenc



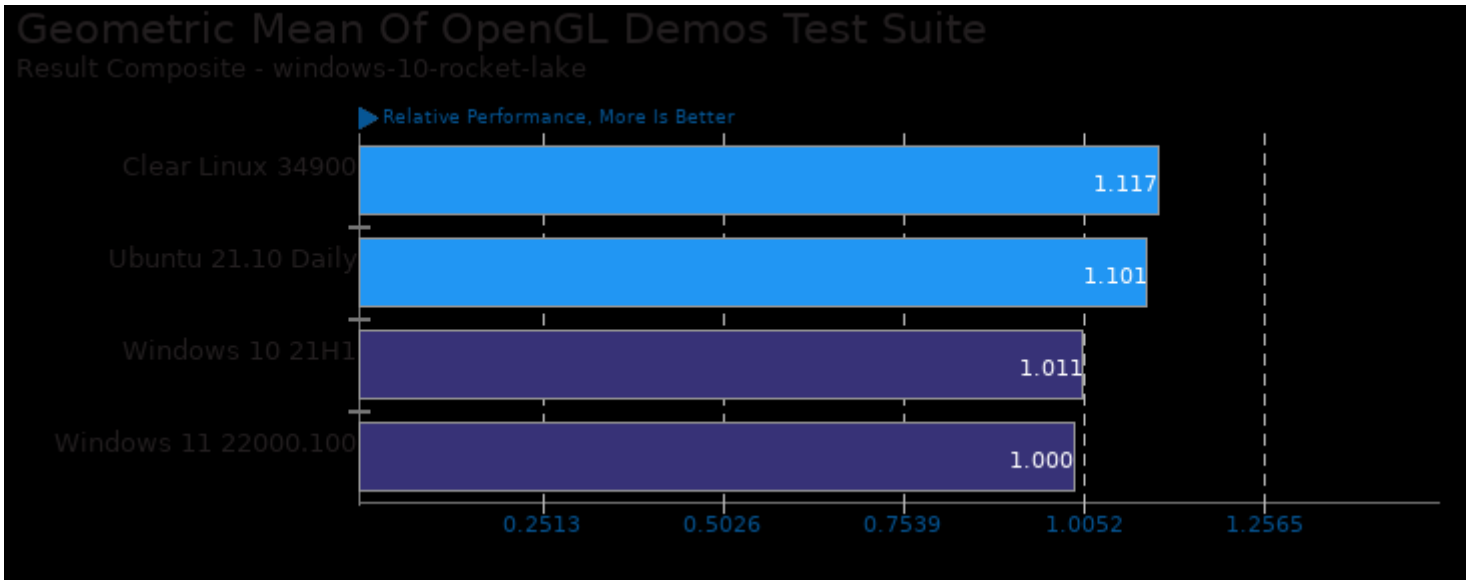

Geometric mean based upon tests: pts/dacapobench and pts/renaissance



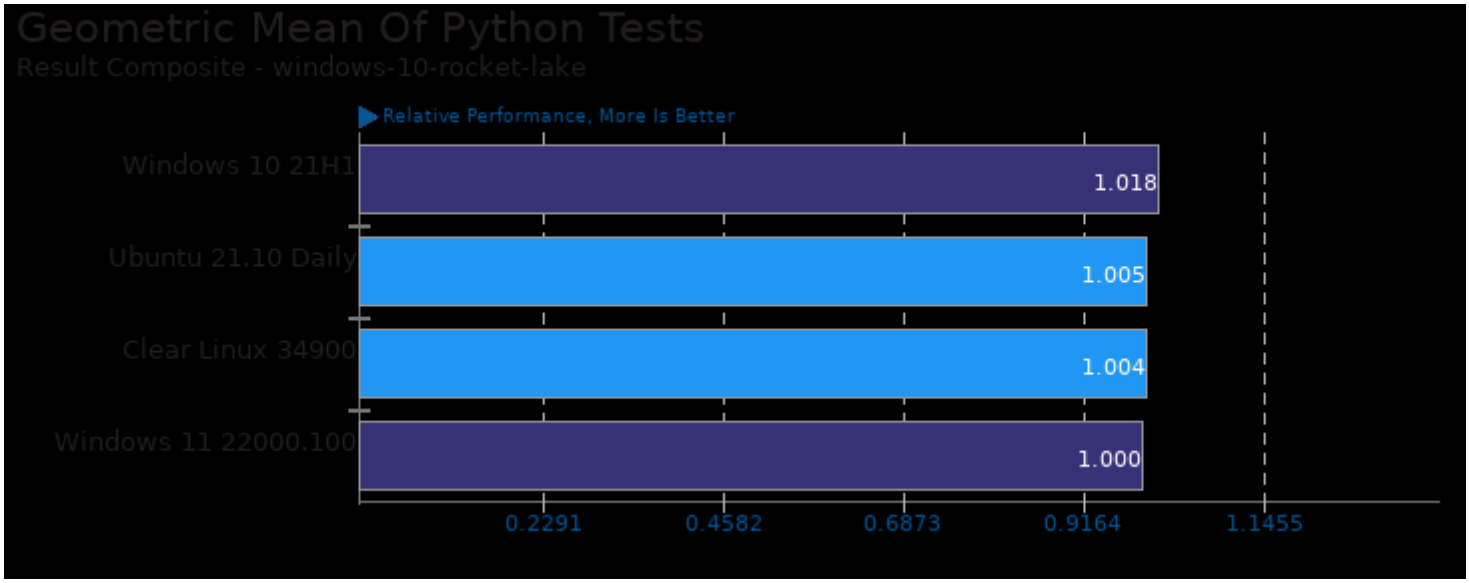

Geometric mean based upon tests: pts/luxcorerender, pts/lczero, pts/indigobench, pts/v-ray, pts/blender, pts/realsr-ncnn and pts/waifu2x-ncnn



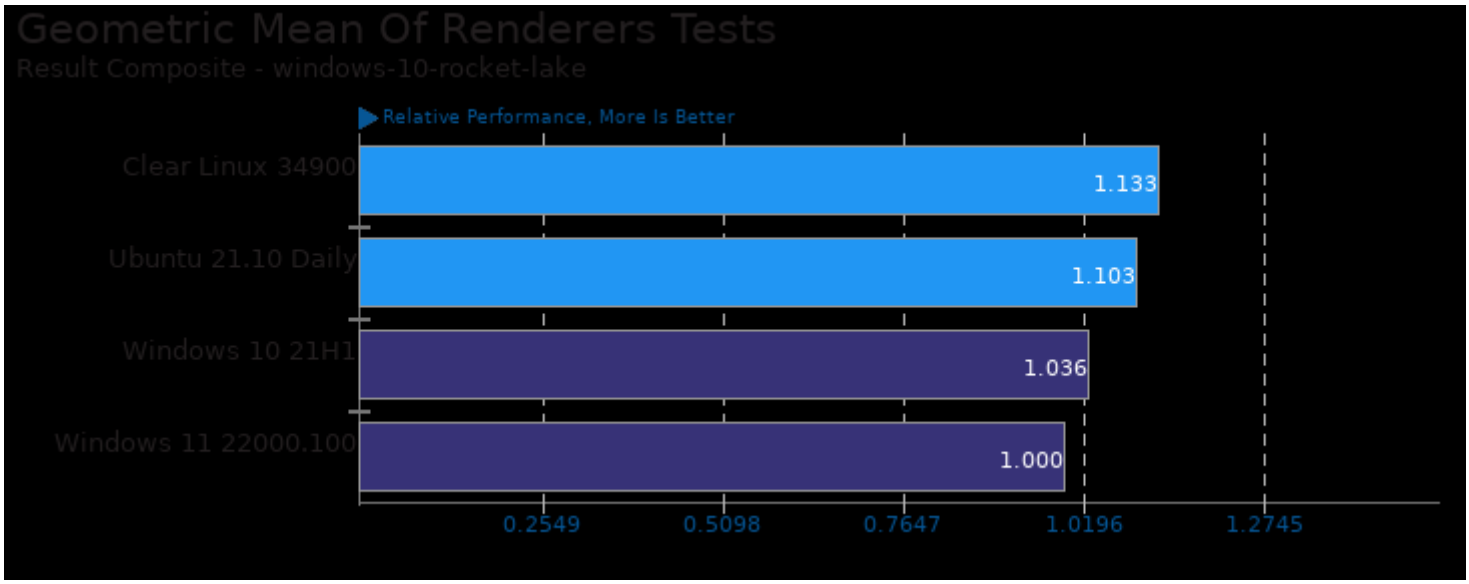

Geometric mean based upon tests: pts/embree and pts/oidn



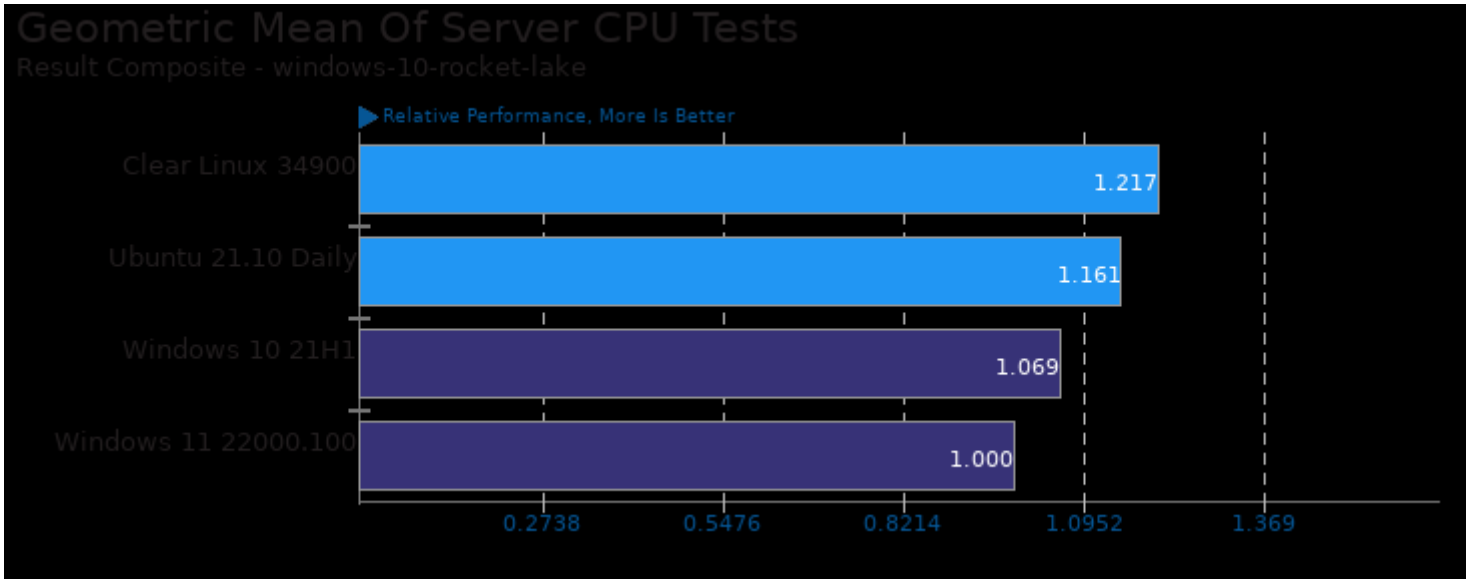

Geometric mean based upon tests: pts/unigine-valley and pts/unigine-heaven



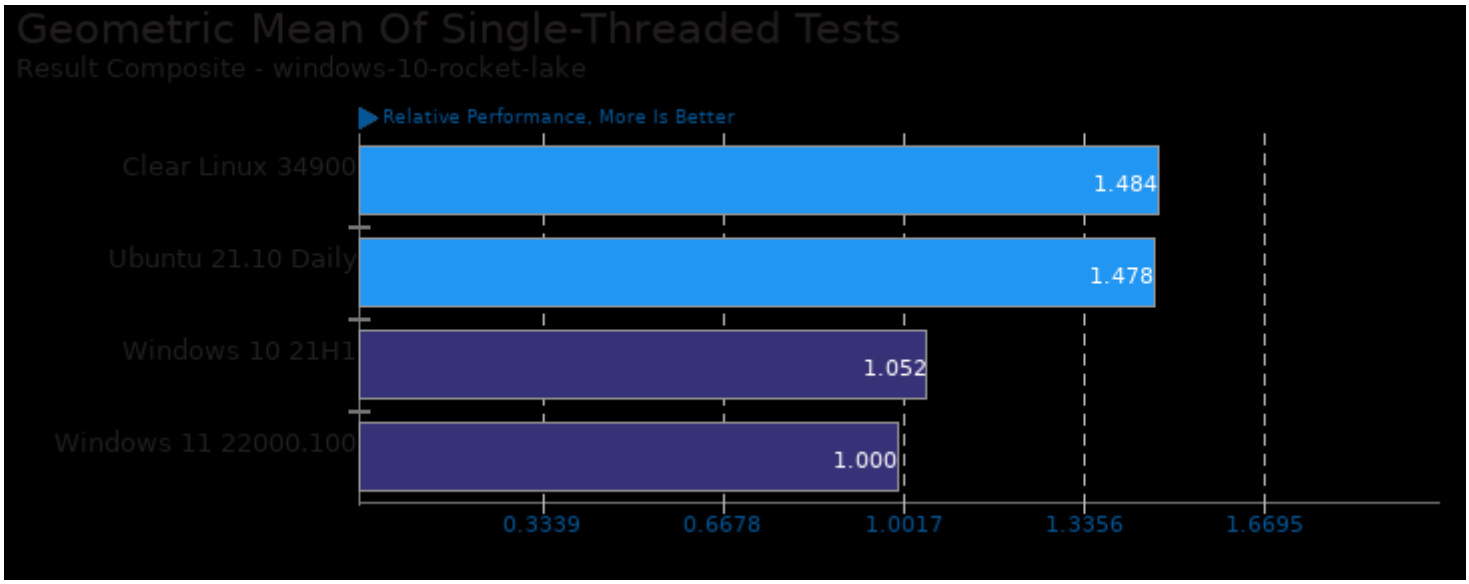

Geometric mean based upon tests: pts/paraview and pts/yafaray



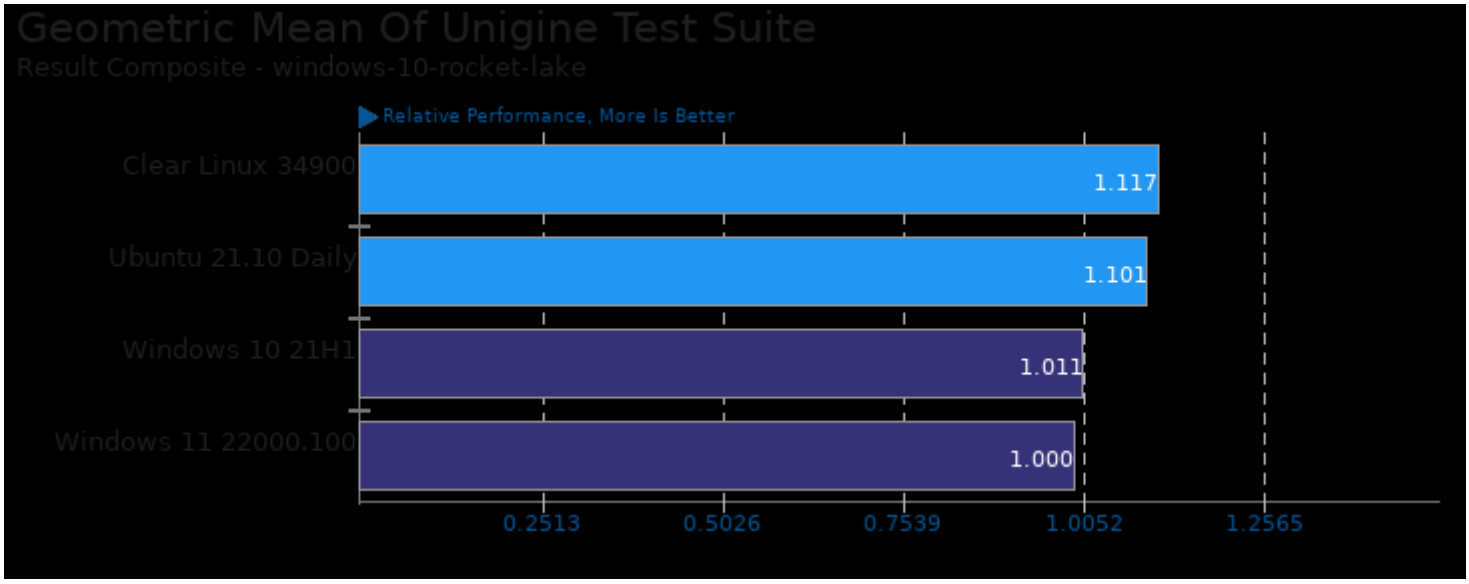

Geometric mean based upon tests: pts/yafaray, pts/blender, pts/appleseed, pts/luxcorerender, pts/v-ray and pts/indigobench



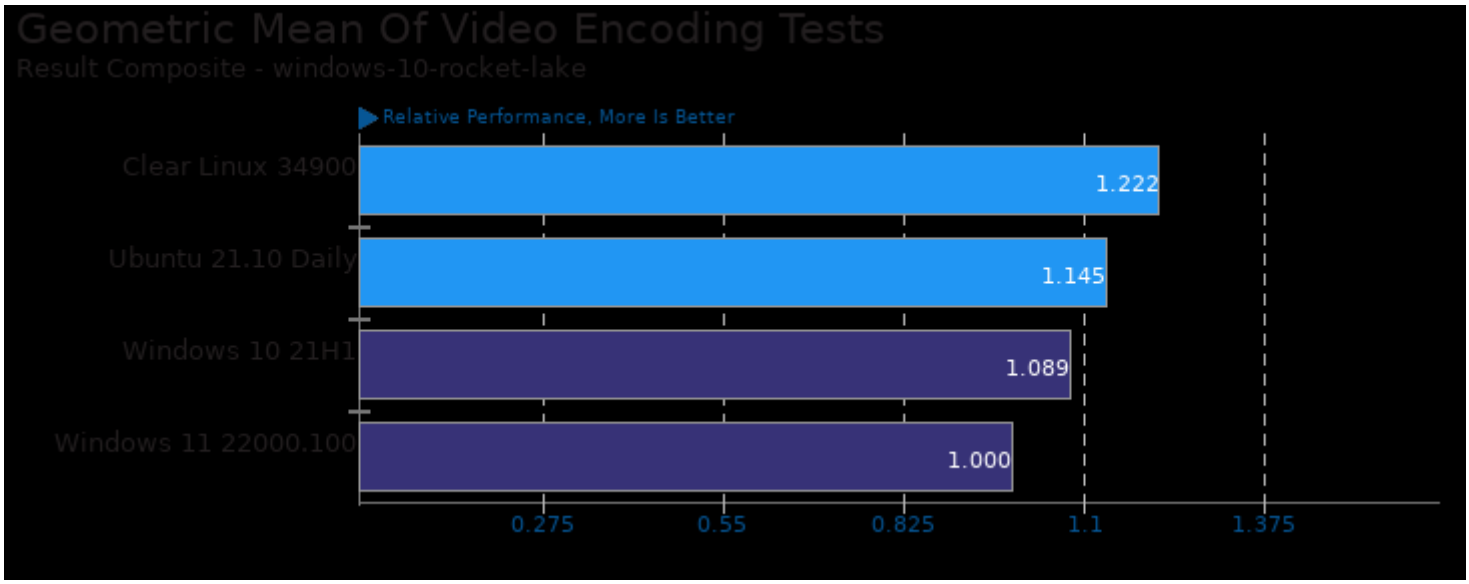

Geometric mean based upon tests: pts/dacapobench, pts/renaissance, pts/john-the-ripper, pts/svt-av1, pts/x264, pts/dav1d, pts/compress-7zip, pts/stockfish, pts/asmfish, pts/compress-zstd, pts/m-queens, pts/tjbench, pts/blender and pts/appleseed



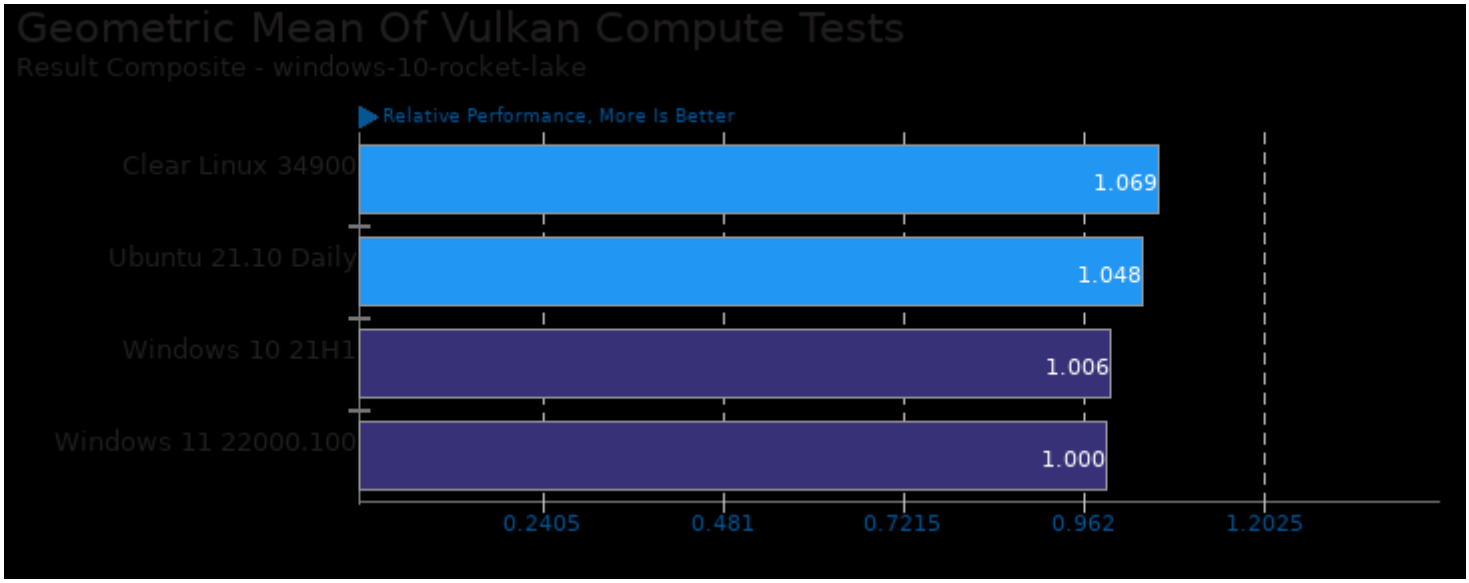

Geometric mean based upon tests: pts/encode-flac, pts/encode-mp3, pts/sudokut and pts/tjbench



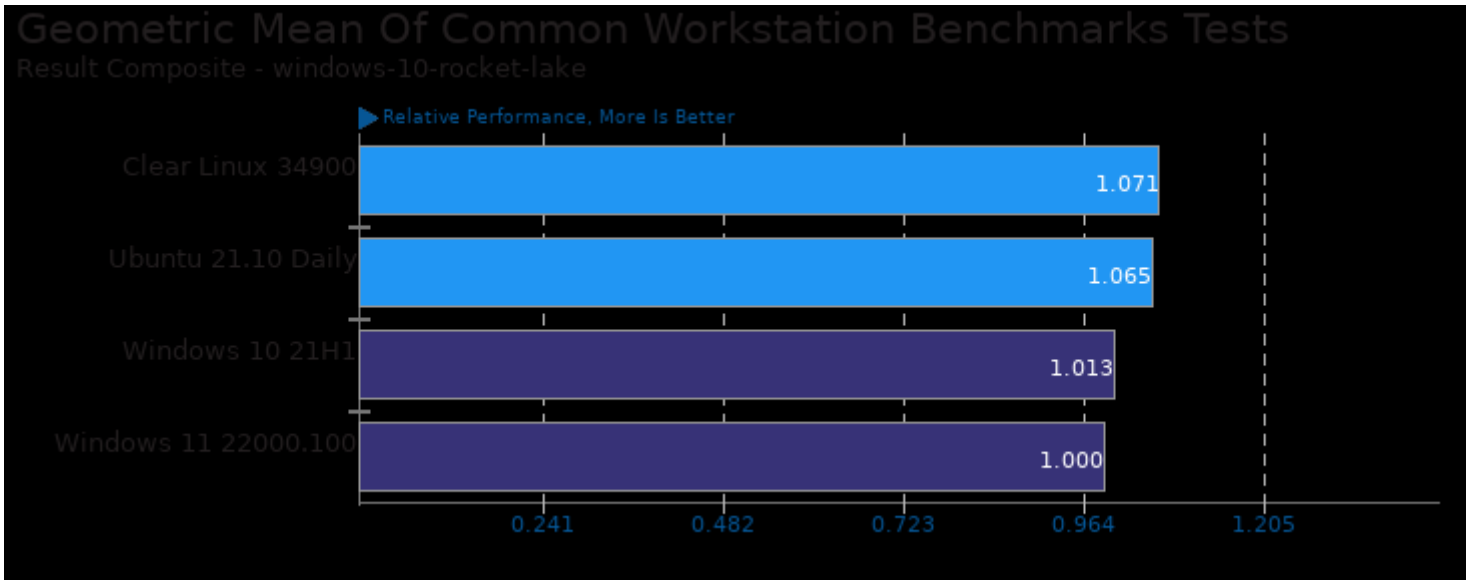

Geometric mean based upon tests: pts/unigine-valley and pts/unigine-heaven




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 08:46.*