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AMD Ryzen 9 5950X - Ubuntu 21.04 vs. Ubuntu 21.10

Early Ubuntu 21.10 Linux benchmarking by Michael Larabel.

Automated Executive Summary

Ubuntu 21.10 22 Aug had the most wins, coming in first place for 63% of the tests.

Based on the geometric mean of all complete results, the fastest (Ubuntu 21.10 22 Aug) was 1.019x the speed of the slowest (Ubuntu 21.04).

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

Basemark GPU (Renderer: OpenGL - Resolution: 1920 x 1080 - Graphics Preset: High) at 1.152x

Numpy Benchmark at 1.125x

Basemark GPU (Renderer: OpenGL - Resolution: 1920 x 1080 - Graphics Preset: Medium) at 1.122x

VP9 libvpx Encoding (Speed: Speed 5 - Input: Bosphorus 4K) at 1.091x

NCNN (Target: CPU - Model: regnety_400m) at 1.078x

Basemark GPU (Renderer: Vulkan - Resolution: 1920 x 1080 - Graphics Preset: Medium) at 1.078x

ET: Legacy (Resolution: 3840 x 2160) at 1.076x

Basemark GPU (Renderer: Vulkan - Resolution: 1920 x 1080 - Graphics Preset: High) at 1.076x

VP9 libvpx Encoding (Speed: Speed 0 - Input: Bosphorus 4K) at 1.074x

NCNN (Target: CPU - Model: yolov4-tiny) at 1.072x.

Test Systems:

Ubuntu 21.04

Processor: AMD Ryzen 9 5950X 16-Core @ 3.40GHz (16 Cores / 32 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (WI-FI) (3801 BIOS), Chipset: AMD Starship/Matisse, Memory: 32GB, Disk: 1000GB Sabrent Rocket 4.0 Plus, Graphics: AMD Radeon RX 5600 OEM/5600 XT / 5700/5700 8GB (2100/875MHz), Audio: AMD Navi 10 HDMI Audio, Monitor: ASUS MG28U, Network: Realtek RTL8125 2.5GbE + Intel I211 + Intel Wi-Fi 6 AX200

OS: Ubuntu 21.04, Kernel: 5.11.0-31-generic (x86_64), Desktop: GNOME Shell 3.38.4, Display Server: X Server 1.20.11 + Wayland, OpenGL: 4.6 Mesa 21.0.3 (LLVM 12.0.0), Vulkan: 1.2.145, 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,objc++,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-gDeRY6/gcc-10-10.3.0/debian/tmp-nvptx/usr,amdgn-amdhsa=/build/gcc-10-gDeRY6/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: acpi-cpufreq schedutil (Boost: Enabled) - CPU Microcode: 0xa201016
 Python Notes: Python 3.9.5
 Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swaps barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbd: Not affected + tsx_async_abort: Not affected

Ubuntu 21.10 22 Aug

Processor: AMD Ryzen 9 5950X 16-Core @ 3.40GHz (16 Cores / 32 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (WI-FI) (3801 BIOS), Chipset: AMD Starship/Matisse, Memory: 32GB, Disk: 1000GB Sabrent Rocket 4.0 Plus, Graphics: AMD Radeon RX 5600 OEM/5600 XT / 5700/5700 (2100/875MHz), Audio: AMD Navi 10 HDMI Audio, Monitor: ASUS MG28U, Network: Realtek RTL8125 2.5GbE + Intel I211 + Intel Wi-Fi 6 AX200

OS: Ubuntu 21.10, Kernel: 5.13.0-14-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 11.2.0, 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-cet --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,objc++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-link-serialization=2 --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-11-M6DaQn/gcc-11-11.2.0/debian/tmp-nvptx/usr,amdgn-amdhsa=/build/gcc-11-M6DaQn/gcc-11-11.2.0/debian/tmp-gcn/usr --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: acpi-cpufreq schedutil (Boost: Enabled) - CPU Microcode: 0xa201016
 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/swaps barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbd: Not affected + tsx_async_abort: Not affected

	Ubuntu 21.04	Ubuntu 21.10 22 Aug
GravityMark - 1920 x 1080 - OpenGL (FPS)	92.3	93.3
Normalized	98.93%	100%

	Standard Deviation	0.9%	2.1%
GravityMark - 1920 x 1080 - Vulkan (FPS)	94.6	97.1	
Normalized	97.43%	100%	
Standard Deviation	0.4%	1.3%	
GravityMark - 3840 x 2160 - OpenGL (FPS)	59.9	60.7	
Normalized	98.68%	100%	
Standard Deviation	1.9%	0.6%	
GravityMark - 3840 x 2160 - Vulkan (FPS)	63.7	66.0	
Normalized	96.52%	100%	
Standard Deviation	0.2%	0.3%	
ET: Legacy - 3840 x 2160 (FPS)	600.4	646.3	
Normalized	92.9%	100%	
Standard Deviation	2.4%	0.5%	
Tesseract - 1920 x 1080 (FPS)	678.5145	901.3503	
Normalized	75.28%	100%	
Standard Deviation	6%	2.5%	
Tesseract - 3840 x 2160 (FPS)	420.2259	426.4964	
Normalized	98.53%	100%	
Standard Deviation	0.3%	0.5%	
Unvanquished - 1920 x 1080 - Ultra (FPS)	394.5	421.7	
Normalized	93.55%	100%	
Standard Deviation	1.2%	1%	
WireGuard + Linux Networking Stack Stress Test	148.090	148.823	
Normalized	100%	99.51%	
Standard Deviation	0.9%	0.5%	
Xmrig - Monero - 1M (H/s)	7705	7624	
Normalized	100%	98.95%	
Standard Deviation	3.2%	3.4%	
Xmrig - Wownero - 1M (H/s)	13819	13741	
Normalized	100%	99.44%	
Standard Deviation	0.3%	0.4%	
SVT-AV1 - Preset 4 - Bosphorus 4K (FPS)	2.135	2.159	
Normalized	98.89%	100%	
Standard Deviation	0.3%	0.3%	
SVT-AV1 - Preset 8 - Bosphorus 4K (FPS)	22.801	23.396	
Normalized	97.46%	100%	
Standard Deviation	0.3%	0.4%	
VP9 libvpx Encoding - Speed 0 - Bosphorus 4K (FPS)	8.27	8.88	
Normalized	93.13%	100%	
Standard Deviation	0.1%	0.3%	
VP9 libvpx Encoding - Speed 5 - Bosphorus 4K (FPS)	20.47	22.33	
Normalized	91.67%	100%	
Standard Deviation	1.2%	1.3%	
Stockfish - Total Time (Nodes/s)	57110672	55896392	
Normalized	100%	97.87%	
Standard Deviation	2.4%	3.7%	
Timed LLVM Compilation - Ninja (sec)	383.944	370.577	
Normalized	96.52%	100%	
Standard Deviation	0.2%	0.4%	
Timed LLVM Compilation - Unix Makefiles (sec)	400.877	391.641	
Normalized	97.7%	100%	
Standard Deviation	1.2%	2.1%	
Timed Mesa Compilation - Time To Compile (sec)	29.875	30.226	
Normalized	100%	98.84%	
Standard Deviation	0.4%	0.1%	

Numpy Benchmark (Score)	539.11	606.57
Normalized	88.88%	100%
Standard Deviation	1%	0.8%
DeepSpeech - CPU (sec)	62.43388	61.81286
Normalized	99.01%	100%
Standard Deviation	1.4%	1.1%
ASTC Encoder - Medium (sec)	3.3924	3.4052
Normalized	100%	99.62%
Standard Deviation	2.2%	1.1%
ASTC Encoder - Thorough (sec)	7.3081	7.3469
Normalized	100%	99.47%
Standard Deviation	1.2%	0.5%
ASTC Encoder - Exhaustive (sec)	36.8858	36.7259
Normalized	99.57%	100%
Standard Deviation	0.5%	0.4%
SQLite Speedtest - Timed Time - Size 1,000 (sec)	42.507	43.334
Normalized	100%	98.09%
Standard Deviation	2.3%	0.5%
Darktable - Boat - CPU-only (sec)	5.437	5.435
Normalized	99.96%	100%
Standard Deviation	0.1%	0.5%
Darktable - Masskrug - CPU-only (sec)	6.183	6.188
Normalized	100%	99.92%
Standard Deviation	0.4%	0.2%
Darktable - Server Rack - CPU-only (sec)	0.193	0.193
Normalized	100%	0.6%
Darktable - Server Room - CPU-only (sec)	5.894	5.918
Normalized	100%	99.59%
Standard Deviation	0.2%	0.4%
GIMP - resize (sec)	6.066	5.972
Normalized	98.45%	100%
Standard Deviation	1.5%	1.6%
GIMP - rotate (sec)	8.753	8.603
Normalized	98.29%	100%
Standard Deviation	0.9%	0.5%
GIMP - auto-levels (sec)	9.585	9.746
Normalized	100%	98.35%
Standard Deviation	0.9%	0.3%
GIMP - unsharp-mask (sec)	12.287	12.314
Normalized	100%	99.78%
Standard Deviation	0.4%	0.1%
G'MIC - 2.F.P.1.T (sec)	87.568	89.111
Normalized	100%	98.27%
Standard Deviation	1.2%	0.4%
G'MIC - P.I.O.A.3.V.1.T (sec)	10.964	10.804
Normalized	98.54%	100%
Standard Deviation	0.5%	0.3%
G'MIC - 3.E.F.I.R.C.1.T (sec)	41.084	40.829
Normalized	99.38%	100%
Standard Deviation	0.3%	0.9%
Hugin - P.P.A.S.T (sec)	34.377	34.890
Normalized	100%	98.53%
Standard Deviation	0.7%	0.9%
LibreOffice - 2.D.T.P (sec)	5.156	5.141
Normalized	99.71%	100%

Standard Deviation	2.5%	2.4%
OCRMyPDF - P.6.P.P.D (sec)	12.582	12.533
Normalized	99.61%	100%
Standard Deviation	0.9%	0.7%
OpenSCAD - Pistol (sec)	74.615	74.538
Normalized	99.9%	100%
Standard Deviation	2.3%	2.5%
OpenSCAD - Retro Car (sec)	3.460	3.410
Normalized	98.55%	100%
Standard Deviation	0.2%	1.3%
OpenSCAD - Mini-ITX Case (sec)	33.470	33.138
Normalized	99.01%	100%
Standard Deviation	1.6%	2%
OpenSCAD - P.M.S (sec)	6.540	6.691
Normalized	100%	97.74%
Standard Deviation	1.5%	0.4%
OpenSCAD - L.P.C.S (sec)	13.525	13.901
Normalized	100%	97.3%
Standard Deviation	0.9%	5%
RawTherapee - T.B.T (sec)	47.056	47.255
Normalized	100%	99.58%
Standard Deviation	0.3%	0.1%
NCNN - CPU - mobilenet (ms)	12.32	12.18
Normalized	98.86%	100%
Standard Deviation	0%	0.1%
NCNN - CPU-v2-v2 - mobilenet-v2 (ms)	4.31	4.22
Normalized	97.91%	100%
Standard Deviation	0.6%	0.1%
NCNN - CPU-v3-v3 - mobilenet-v3 (ms)	3.84	3.72
Normalized	96.88%	100%
Standard Deviation	0.3%	0.9%
NCNN - CPU - shufflenet-v2 (ms)	4.12	4.05
Normalized	98.3%	100%
Standard Deviation	0.1%	0.4%
NCNN - CPU - mnasnet (ms)	3.89	3.75
Normalized	96.4%	100%
Standard Deviation	0.1%	0.2%
NCNN - CPU - efficientnet-b0 (ms)	5.27	5.06
Normalized	96.02%	100%
Standard Deviation	0.2%	0%
NCNN - CPU - blazeface (ms)	1.79	1.77
Normalized	98.88%	100%
Standard Deviation	0.3%	0.6%
NCNN - CPU - googlenet (ms)	13.14	12.54
Normalized	95.43%	100%
Standard Deviation	0.2%	0.6%
NCNN - CPU - vgg16 (ms)	60.24	58.19
Normalized	96.6%	100%
Standard Deviation	0.2%	0.2%
NCNN - CPU - resnet18 (ms)	14.77	14.27
Normalized	96.61%	100%
Standard Deviation	0.1%	0%
NCNN - CPU - alexnet (ms)	11.63	11.13
Normalized	95.7%	100%
Standard Deviation	0.1%	0.2%

NCNN - CPU - resnet50 (ms)	24.67	24.18
Normalized	98.01%	100%
Standard Deviation	0.9%	0.4%
NCNN - CPU - yolov4-tiny (ms)	21.50	20.06
Normalized	93.3%	100%
Standard Deviation	0.2%	0.3%
NCNN - CPU - squeezenet_ssd (ms)	15.30	14.40
Normalized	94.12%	100%
Standard Deviation	1.7%	0.8%
NCNN - CPU - regnety_400m (ms)	9.80	9.09
Normalized	92.76%	100%
Standard Deviation	0.3%	0.4%
NCNN - Vulkan GPU - mobilenet (ms)	6.78	6.68
Normalized	98.53%	100%
Standard Deviation	0.2%	0.2%
NCNN - Vulkan GPU-v2-v2 - mobilenet-v2 (ms)	2.36	2.35
Normalized	99.58%	100%
Standard Deviation	0%	0.4%
NCNN - Vulkan GPU-v3-v3 - mobilenet-v3 (ms)	3.14	3.08
Normalized	98.09%	100%
Standard Deviation	0.3%	0.2%
NCNN - Vulkan GPU - mnasnet (ms)	2.43	2.41
Normalized	99.18%	100%
Standard Deviation	0.2%	0.2%
NCNN - Vulkan GPU - efficientnet-b0 (ms)	6.41	6.32
Normalized	98.6%	100%
Standard Deviation	0.2%	0.1%
NCNN - Vulkan GPU - blazeface (ms)	1.56	1.56
Standard Deviation	0.4%	1.6%
NCNN - Vulkan GPU - googlenet (ms)	4.32	4.22
Normalized	97.69%	100%
Standard Deviation	0.7%	0.1%
NCNN - Vulkan GPU - vgg16 (ms)	13.18	13.27
Normalized	100%	99.32%
Standard Deviation	0.6%	0.5%
NCNN - Vulkan GPU - resnet18 (ms)	2.02	2.05
Normalized	100%	98.54%
Standard Deviation	0%	1.6%
NCNN - Vulkan GPU - alexnet (ms)	5.19	5.16
Normalized	99.42%	100%
Standard Deviation	0.1%	0%
NCNN - Vulkan GPU - resnet50 (ms)	4.95	4.92
Normalized	99.39%	100%
Standard Deviation	0.2%	0.5%
NCNN - Vulkan GPU - yolov4-tiny (ms)	8.19	8.12
Normalized	99.15%	100%
Standard Deviation	0.1%	0.2%
NCNN - Vulkan GPU - regnety_400m (ms)	3.29	3.22
Normalized	97.87%	100%
Standard Deviation	0.2%	0.3%
TNN - CPU - DenseNet (ms)	2455	2414
Normalized	98.32%	100%
Standard Deviation	0.3%	0.7%
TNN - CPU - MobileNet v2 (ms)	224.844	227.845
Normalized	100%	98.68%

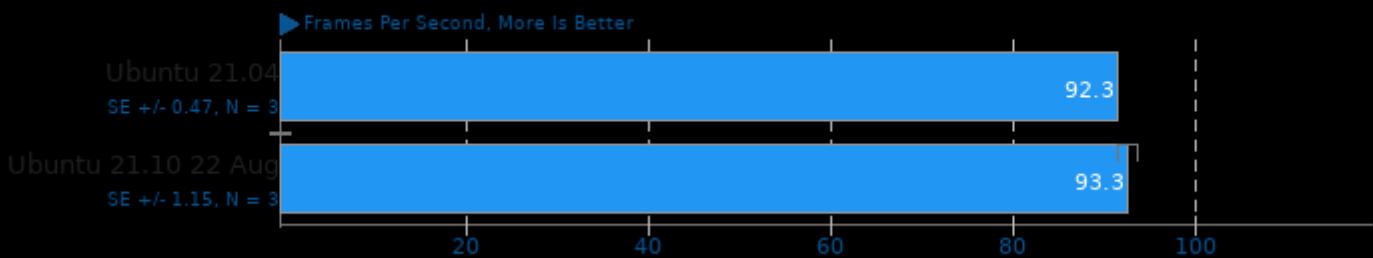
	Standard Deviation	0.5%	0.2%
TNN - CPU - SqueezeNet v2 (ms)	Normalized	51.596	51.452
	Standard Deviation	0.8%	0.6%
TNN - CPU - SqueezeNet v1.1 (ms)	Normalized	213.946	214.431
	Standard Deviation	0.3%	0.1%
PlaidML - No - Inference - VGG16 - CPU (FPS)	Normalized	21.02	20.75
	Standard Deviation	2.3%	0.7%
PlaidML - No - Inference - VGG19 - CPU (FPS)	Normalized	16.89	17.10
	Standard Deviation	0.7%	0.7%
PlaidML - No - Inference - ResNet 50 - CPU (FPS)	Normalized	8.40	8.23
	Standard Deviation	0.6%	1.5%
Basemark GPU - OpenGL - 1920 x 1080 - High (FPS)	Normalized	178.51	205.63
	Standard Deviation	2.5%	1.3%
Basemark GPU - OpenGL - 3840 x 2160 - High (FPS)	Normalized	87.70	88.05
	Standard Deviation	0.1%	0.2%
Basemark GPU - Vulkan - 1920 x 1080 - High (FPS)	Normalized	190.54	204.97
	Standard Deviation	0.1%	0.6%
Basemark GPU - Vulkan - 3840 x 2160 - High (FPS)	Normalized	84.06	87.67
	Standard Deviation	0.4%	0.1%
Basemark GPU - OpenGL - 1920 x 1080 - Medium	Normalized	310.49	348.51
	Standard Deviation	0.9%	4.1%
Basemark GPU - OpenGL - 3840 x 2160 - Medium	Normalized	191.52	237.42
	Standard Deviation	7.4%	9.2%
Basemark GPU - Vulkan - 1920 x 1080 - Medium (FPS)	Normalized	1080	1165
	Standard Deviation	0.1%	0.1%
Basemark GPU - Vulkan - 3840 x 2160 - Medium (FPS)	Normalized	441.19	453.84
	Standard Deviation	0.2%	0.1%
IndigoBench - CPU - Bedroom (M samples/s)	Normalized	4.130	4.108
	Standard Deviation	0.4%	0.2%
IndigoBench - CPU - Supercar (M samples/s)	Normalized	8.671	8.624
	Standard Deviation	0.2%	0.2%
Blender - BMW27 - CPU-Only (sec)	Normalized	79.98	80.34
	Standard Deviation	0.2%	0.1%
Blender - Classroom - CPU-Only (sec)	Normalized	230.08	232.07
	Standard Deviation	0.1%	0.3%
Blender - Fishy Cat - CPU-Only (sec)	Normalized	104.25	104.89
	Standard Deviation	0.1%	0.1%

Blender - Barbershop - CPU-Only (sec)	297.60	299.92
Normalized	100%	99.23%
Standard Deviation	0.2%	0.1%
Blender - Pabellon Barcelona - CPU-Only (sec)	253.84	254.63
Normalized	100%	99.69%
Standard Deviation	0.1%	0.1%
PyBench - T.F.A.T.T (Milliseconds)	749	736
Normalized	98.26%	100%
Standard Deviation	0.5%	0.6%
PyPerformance - go (Milliseconds)	184	183
Normalized	99.46%	100%
Standard Deviation		0%
PyPerformance - 2to3 (Milliseconds)	233	235
Normalized	100%	99.15%
Standard Deviation	0.4%	0%
PyPerformance - chaos (Milliseconds)	81.0	78.3
Normalized	96.67%	100%
Standard Deviation	0.3%	0.4%
PyPerformance - float (Milliseconds)	82.3	81.4
Normalized	98.91%	100%
Standard Deviation	0.3%	0.2%
PyPerformance - pathlib (Milliseconds)	12.5	12.5
Normalized	0.5%	0.5%
PyPerformance - raytrace (Milliseconds)	350	346
Normalized	98.86%	100%
Standard Deviation	0.2%	0.3%
PyPerformance - json.loads (Milliseconds)	17.5	17.3
Normalized	98.86%	100%
Standard Deviation	0%	0.3%
PyPerformance - crypto_pyaes (Milliseconds)	76.3	77.0
Normalized	100%	99.09%
Standard Deviation	0.1%	0.1%
PyPerformance - regex_compile (Milliseconds)	121	122
Normalized	100%	99.18%
Standard Deviation		0%
PyPerformance - python_startup (Milliseconds)	5.76	5.79
Normalized	100%	99.48%
Standard Deviation	0.4%	0.3%
PyPerformance - django_template (Milliseconds)	34.8	35.1
Normalized	100%	99.15%
Standard Deviation	0.3%	0%
PyPerformance - pickle_pure_python (Milliseconds)	320	315
Normalized	98.44%	100%
Standard Deviation	0.2%	0.2%
Selenium - StyleBench - Firefox (Runs / Minute)	110	110
Standard Deviation	0.9%	2.3%
Selenium - Jetstream 2 - Firefox (Score)	98.663	99.108
Normalized	99.55%	100%
Standard Deviation	1.8%	1%
Selenium - Speedometer - Firefox (Runs/min)	134	137
Normalized	97.81%	100%
Standard Deviation	0.7%	0.4%
Selenium - PSPDFKit WASM - Firefox (Score)	2841	2839
Normalized	99.93%	100%
Standard Deviation	0.4%	0.4%

Selenium - W.i - Firefox (ms)	24.5	24.6
Normalized	100%	99.59%
Standard Deviation	0.4%	1%
Selenium - W.c - Firefox (ms)	283.0	285.7
Normalized	100%	99.05%
Standard Deviation	0.9%	1%
Chaos Group V-RAY - CPU (vsamples)	21495	20984
Normalized	100%	97.62%
Standard Deviation	2.4%	1.7%

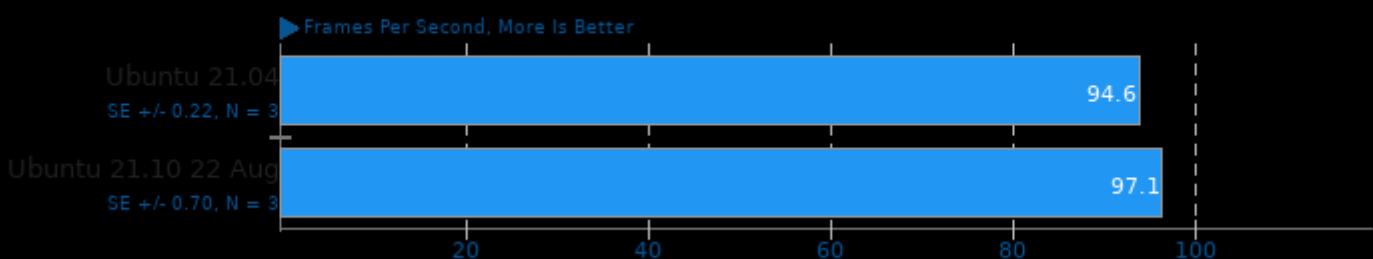
GravityMark 1.2

Resolution: 1920 x 1080 - Renderer: OpenGL



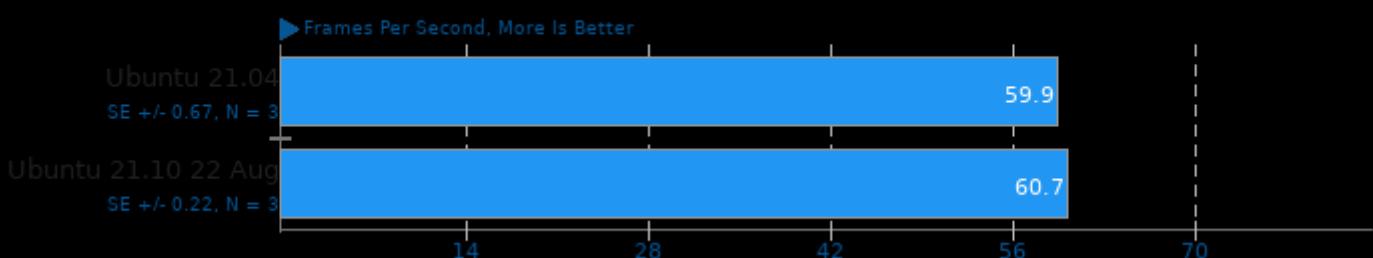
GravityMark 1.2

Resolution: 1920 x 1080 - Renderer: Vulkan



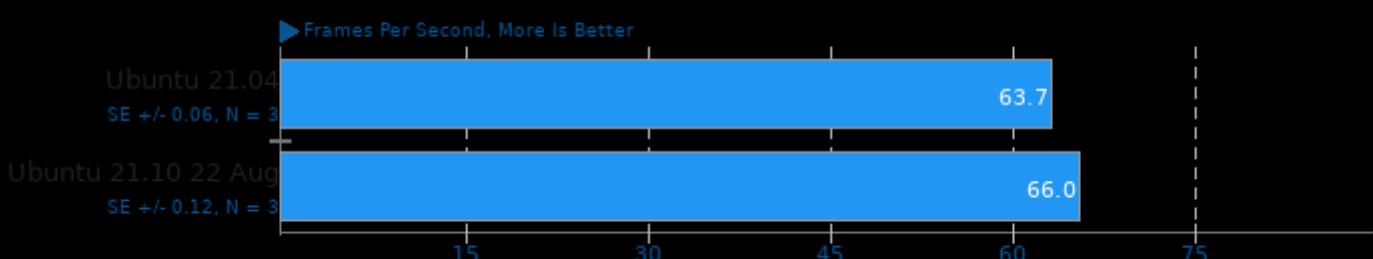
GravityMark 1.2

Resolution: 3840 x 2160 - Renderer: OpenGL



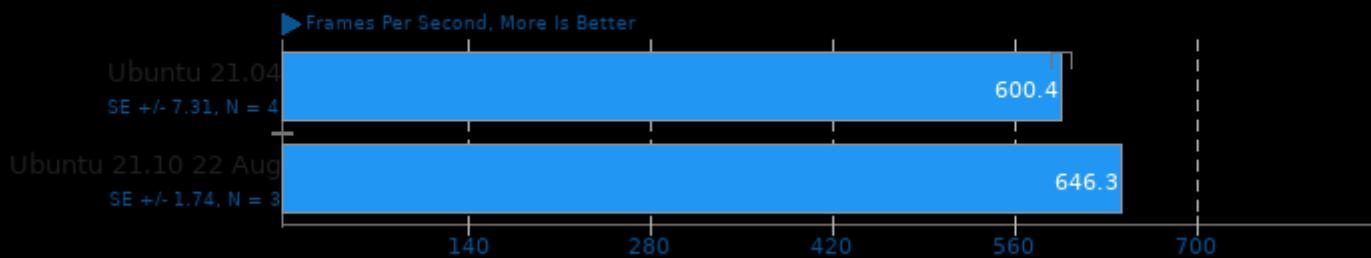
GravityMark 1.2

Resolution: 3840 x 2160 - Renderer: Vulkan



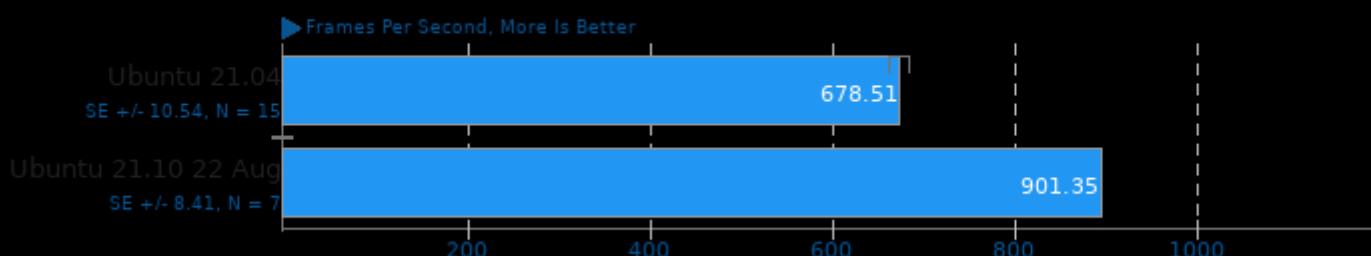
ET: Legacy 2.77

Resolution: 3840 x 2160



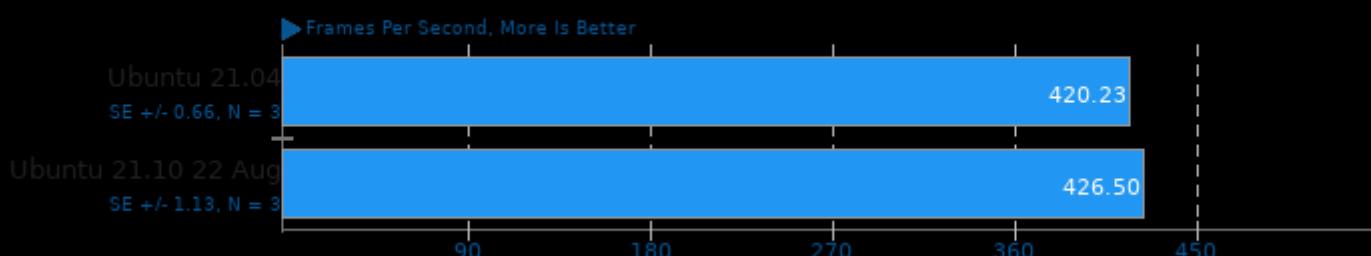
Tesseract 2014-05-12

Resolution: 1920 x 1080



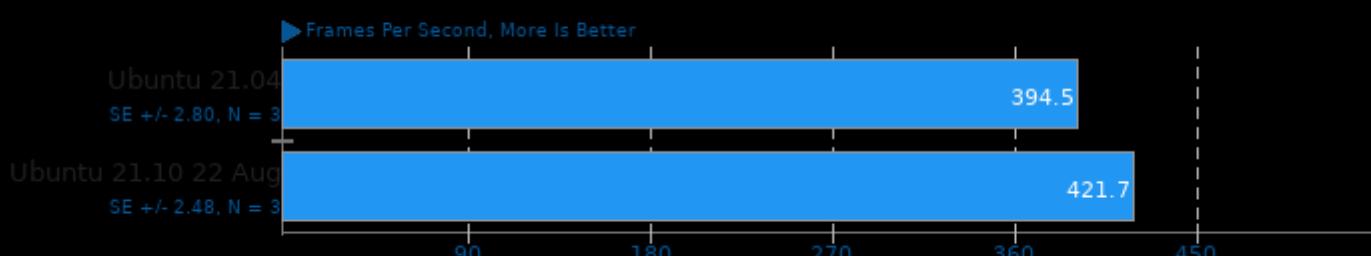
Tesseract 2014-05-12

Resolution: 3840 x 2160

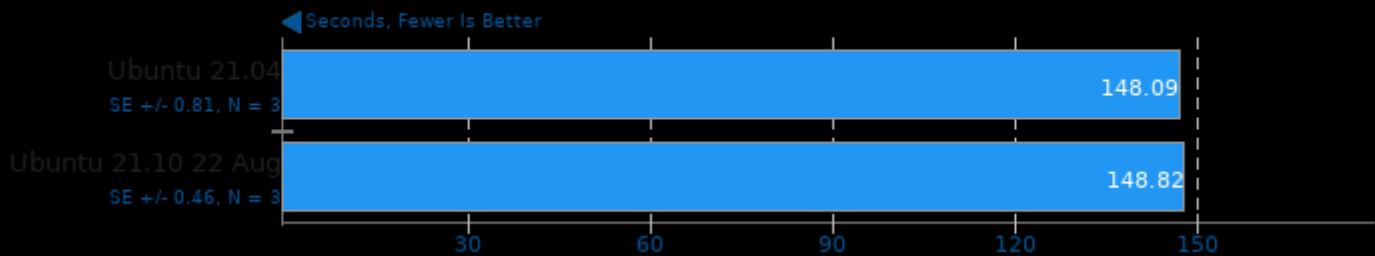


Unvanquished 0.52.1

Resolution: 1920 x 1080 - Effects Quality: Ultra

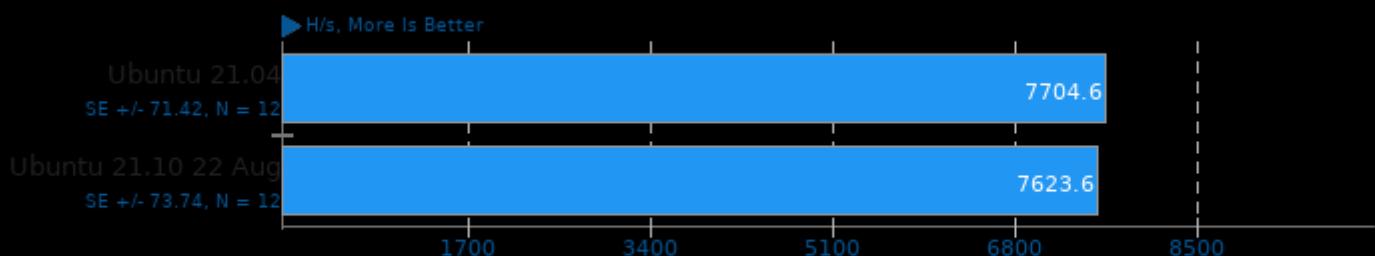


WireGuard + Linux Networking Stack Stress Test



Xmrig 6.12.1

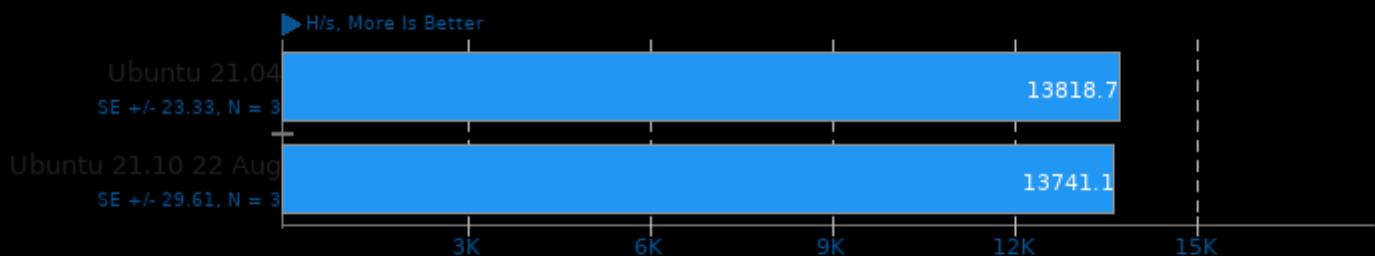
Variant: Monero - Hash Count: 1M



1. (CXX) g++ options: -fexceptions -fno-rtti -maes -O3 -Ofast -static-libgcc -static-libstdc++ -rdynamic -lssl -lcrypto -luv -lpthread -lrt -ldl -lhwloc

Xmrig 6.12.1

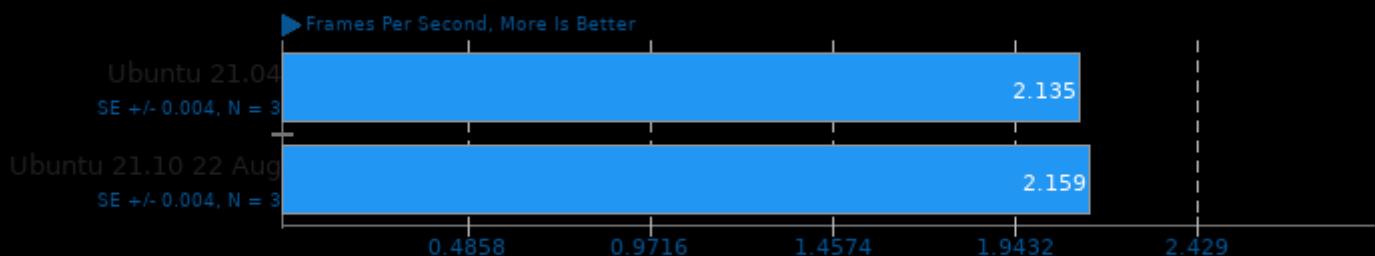
Variant: Wownero - Hash Count: 1M



1. (CXX) g++ options: -fexceptions -fno-rtti -maes -O3 -Ofast -static-libgcc -static-libstdc++ -rdynamic -lssl -lcrypto -luv -lpthread -lrt -ldl -lhwloc

SVT-AV1 0.8.7

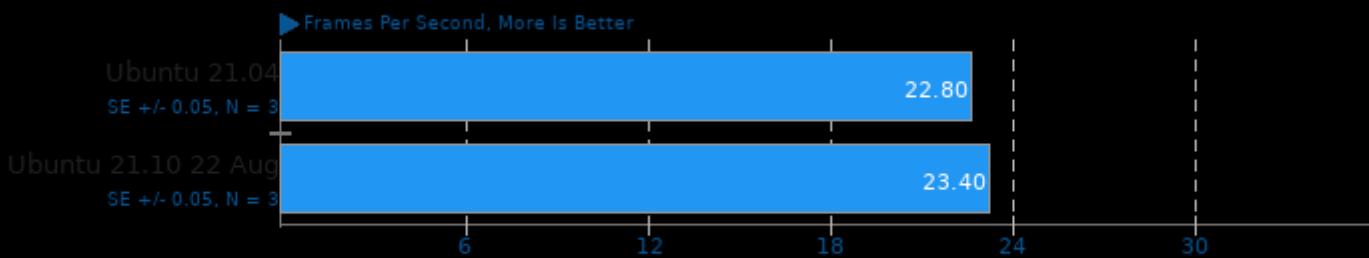
Encoder Mode: Preset 4 - Input: Bosphorus 4K



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

SVT-AV1 0.8.7

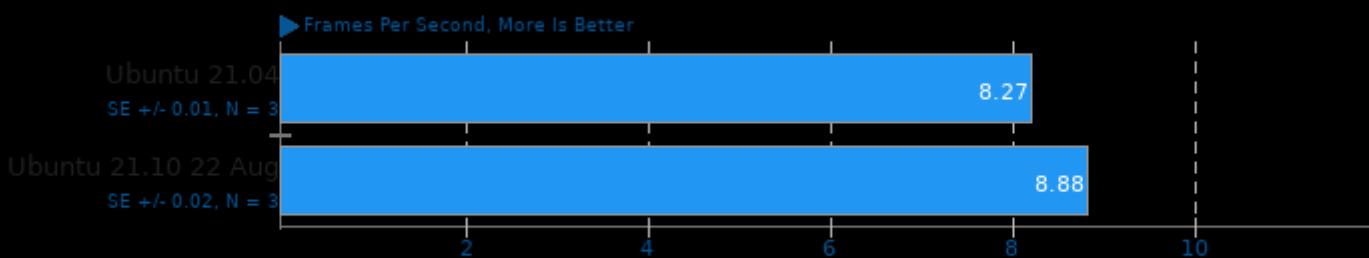
Encoder Mode: Preset 8 - Input: Bosphorus 4K



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

VP9 libvpx Encoding 1.10.0

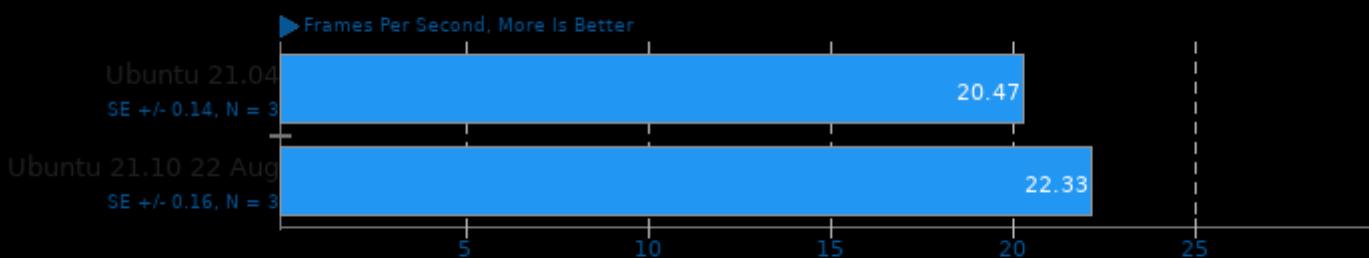
Speed: Speed 0 - Input: Bosphorus 4K



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

VP9 libvpx Encoding 1.10.0

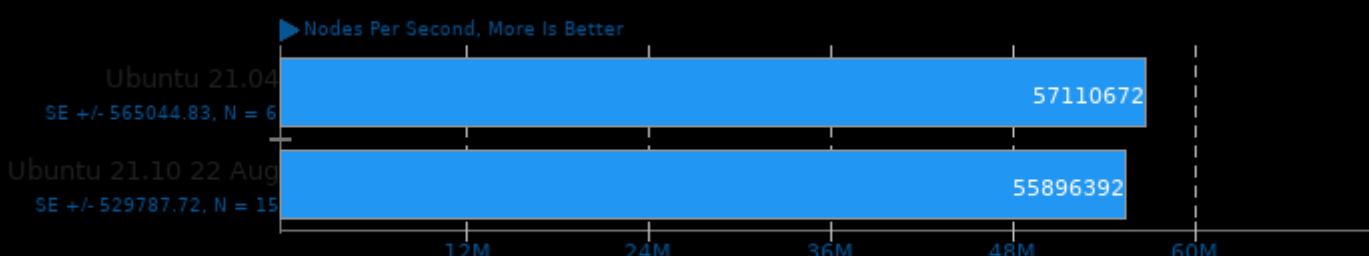
Speed: Speed 5 - Input: Bosphorus 4K



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

Stockfish 13

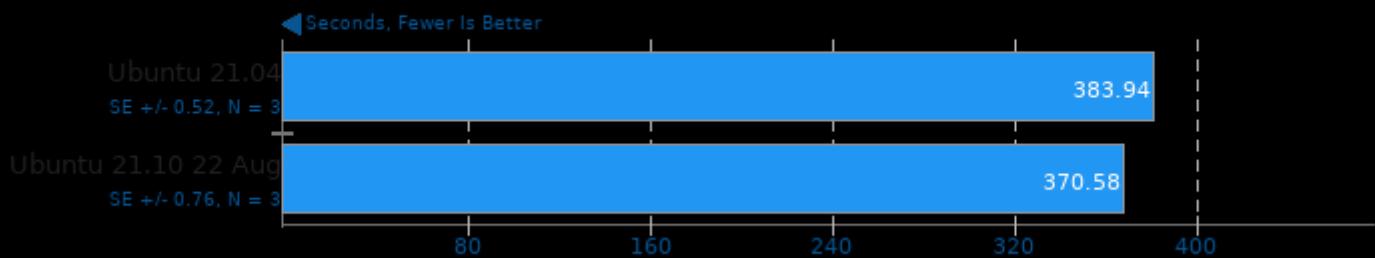
Total Time



1. (CXX) g++ options: -lgcov -m64 -lpthread -fno-exceptions -std=c++17 -fprofile-use -fno-peel-loops -fno-tracer -pedantic -O3 -msse -msse3 -mpopcnt -

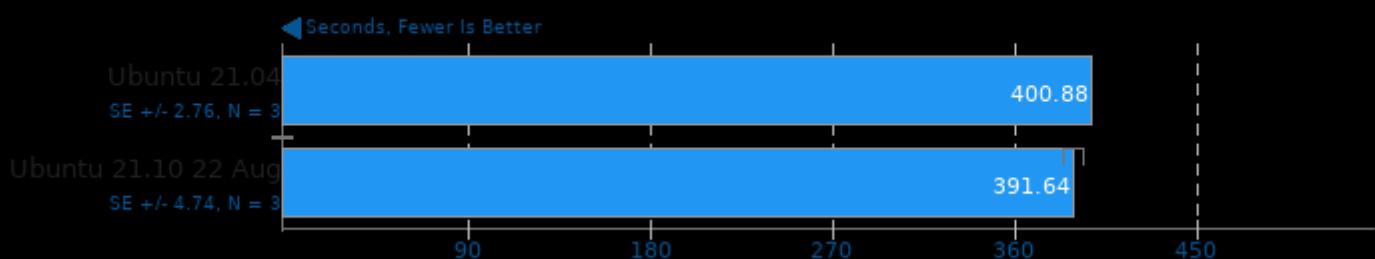
Timed LLVM Compilation 12.0

Build System: Ninja



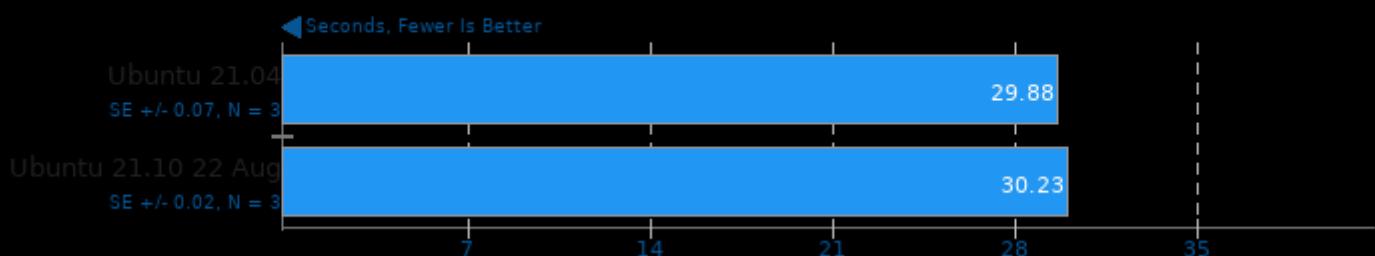
Timed LLVM Compilation 12.0

Build System: Unix Makefiles

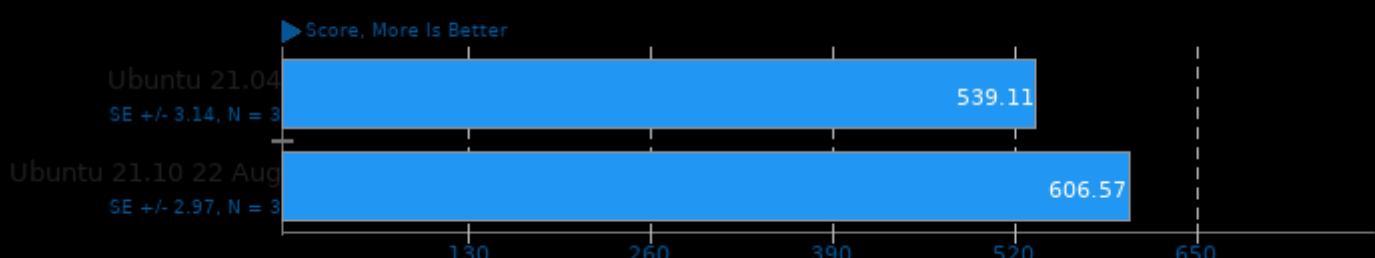


Timed Mesa Compilation 21.0

Time To Compile

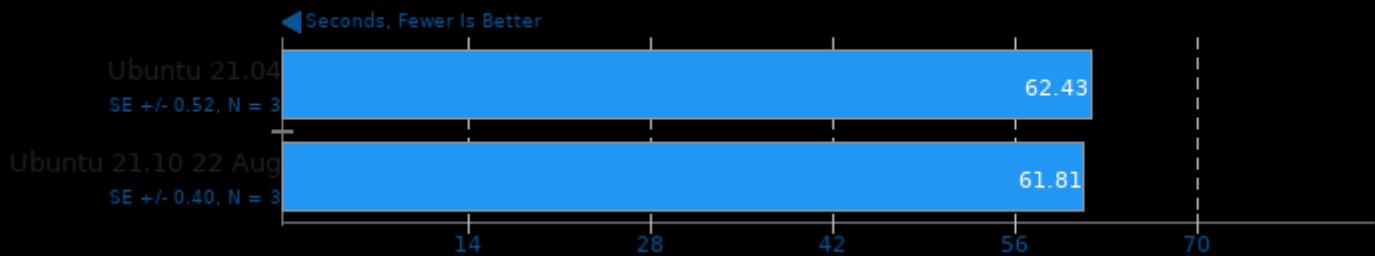


Numpy Benchmark



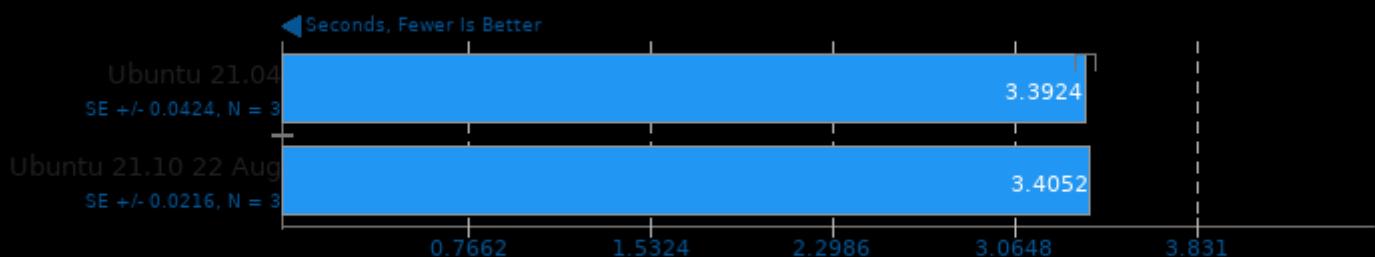
DeepSpeech 0.6

Acceleration: CPU



ASTC Encoder 3.0

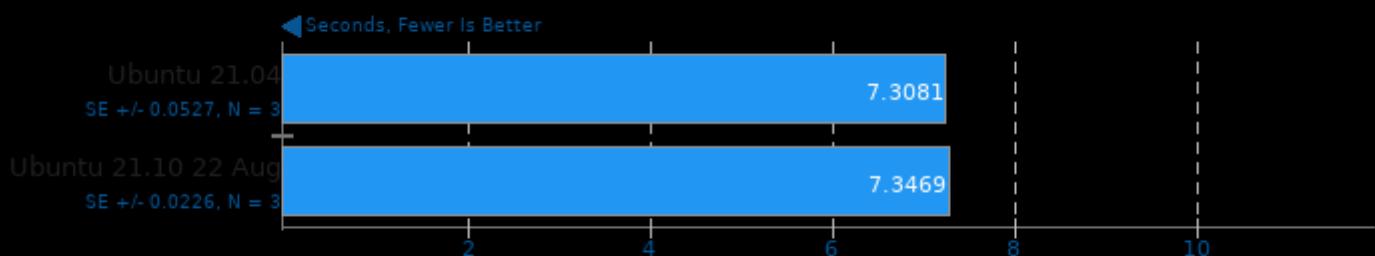
Preset: Medium



1. (CXX) g++ options: -O3 -fno -pthread

ASTC Encoder 3.0

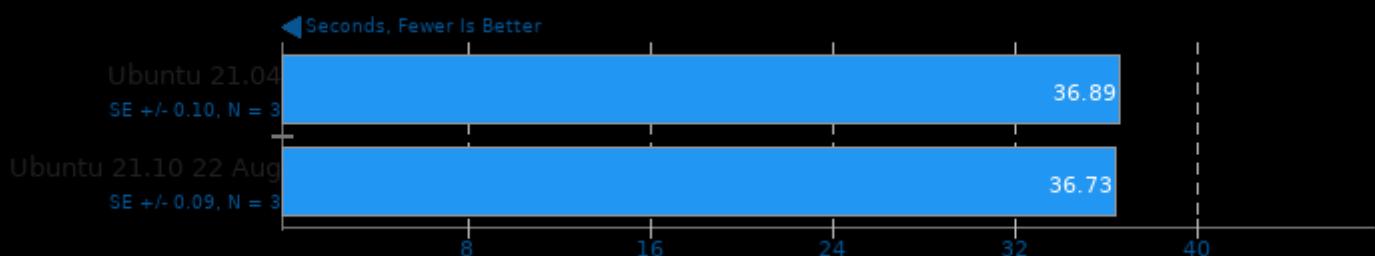
Preset: Thorough



1. (CXX) g++ options: -O3 -fno -pthread

ASTC Encoder 3.0

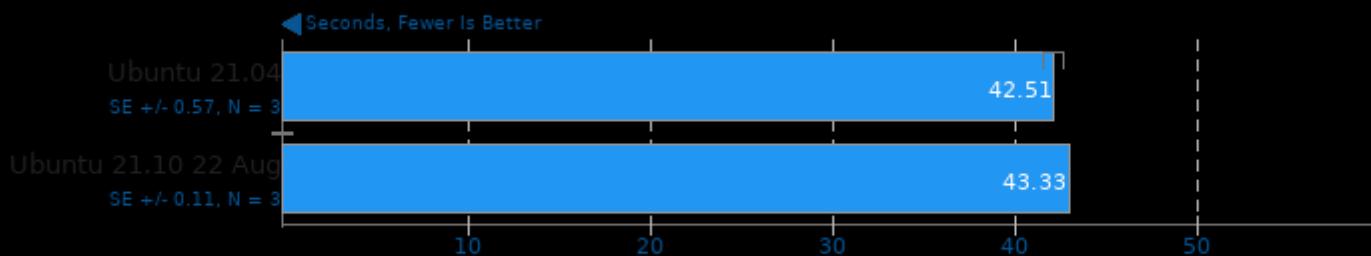
Preset: Exhaustive



1. (CXX) g++ options: -O3 -fno -pthread

SQLite Speedtest 3.30

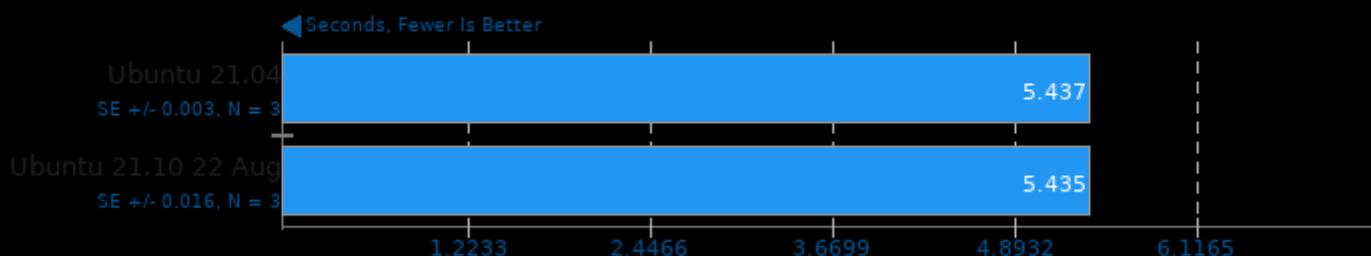
Timed Time - Size 1,000



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

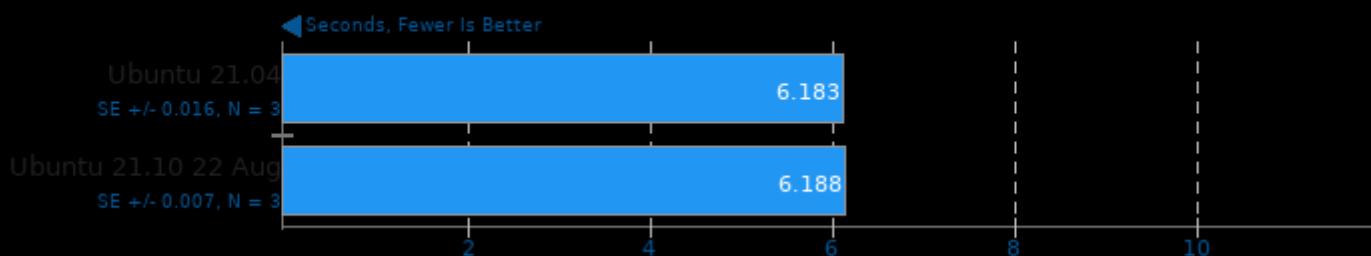
Darktable 3.4.1

Test: Boat - Acceleration: CPU-only



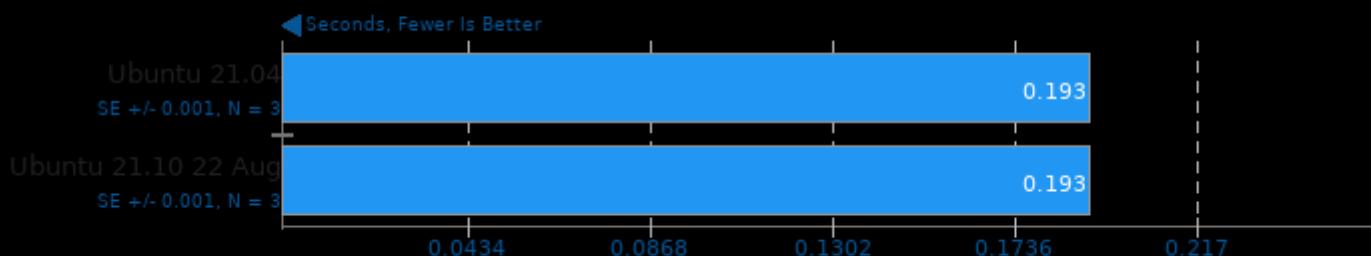
Darktable 3.4.1

Test: Masskrug - Acceleration: CPU-only



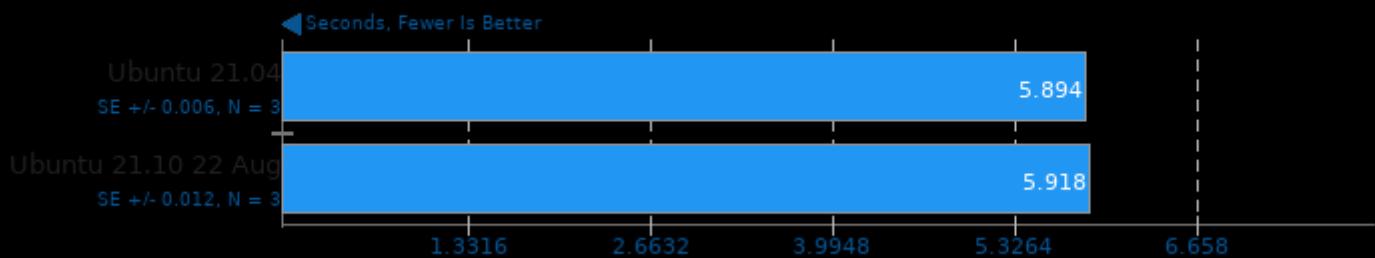
Darktable 3.4.1

Test: Server Rack - Acceleration: CPU-only



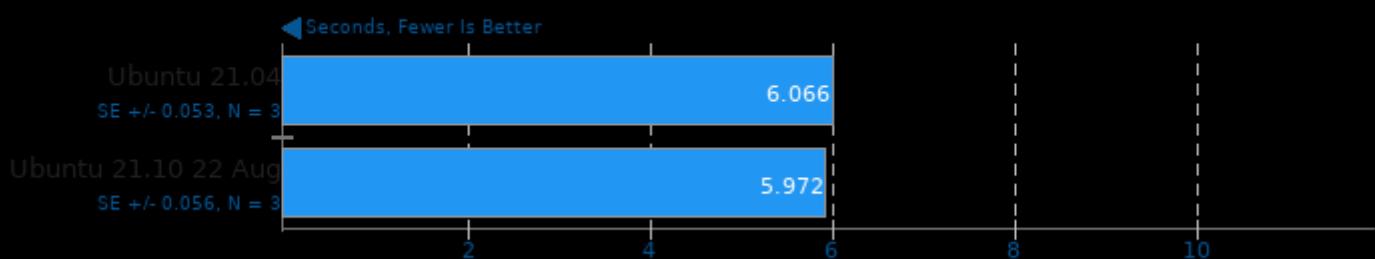
Darktable 3.4.1

Test: Server Room - Acceleration: CPU-only



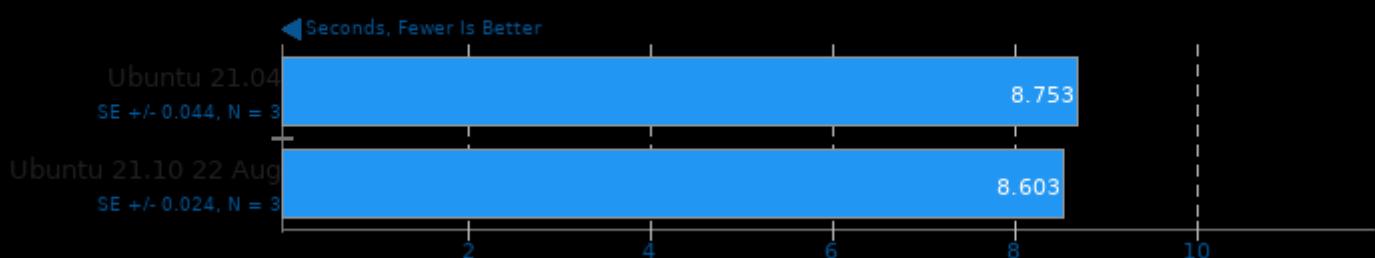
GIMP 2.10.22

Test: resize



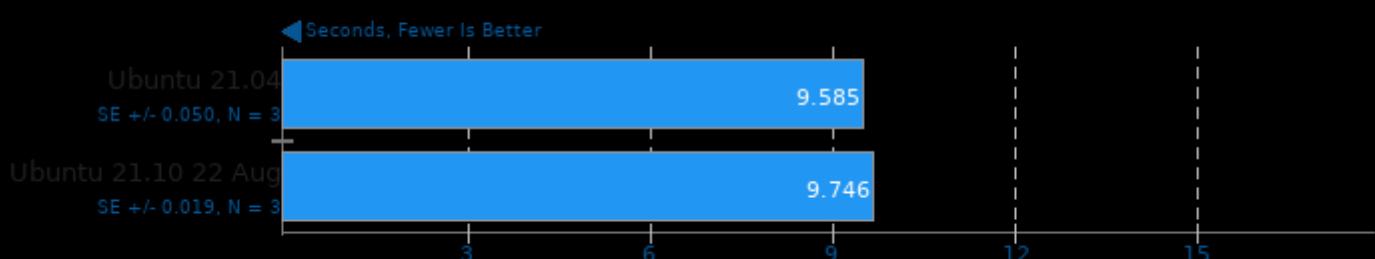
GIMP 2.10.22

Test: rotate



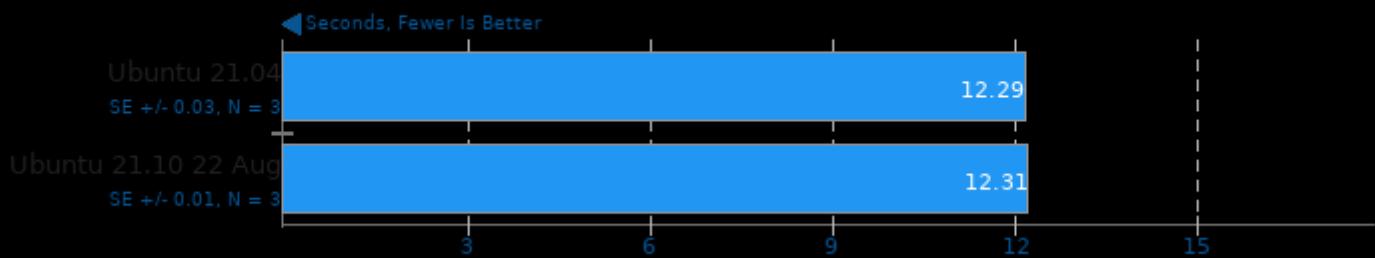
GIMP 2.10.22

Test: auto-levels

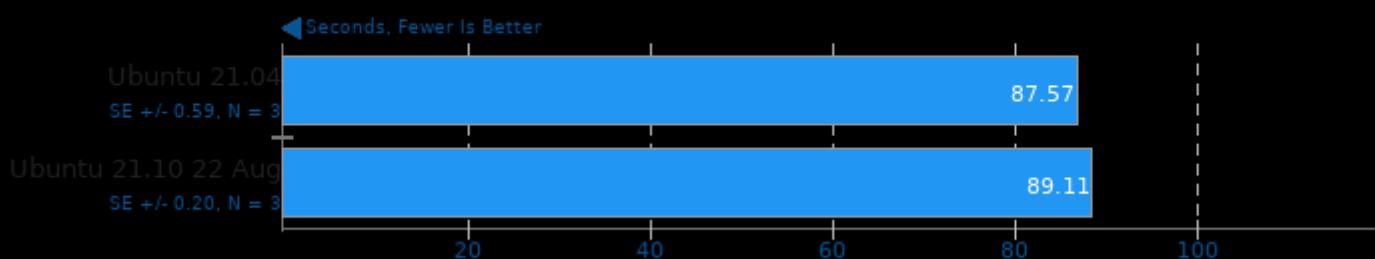


GIMP 2.10.22

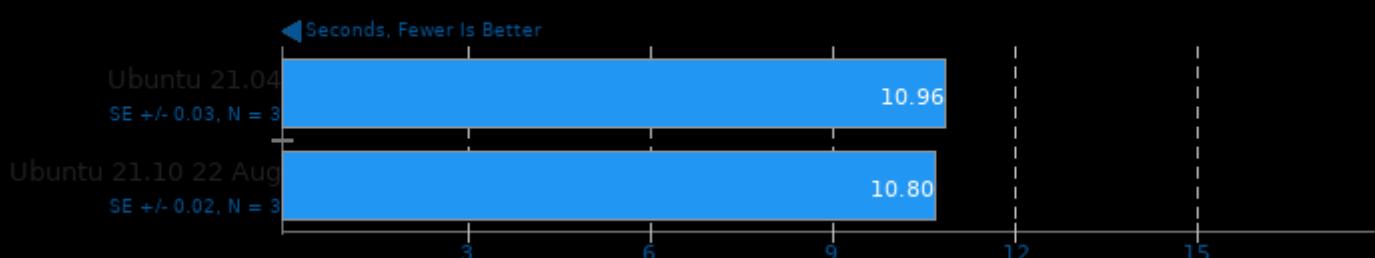
Test: unsharp-mask

**G'MIC**

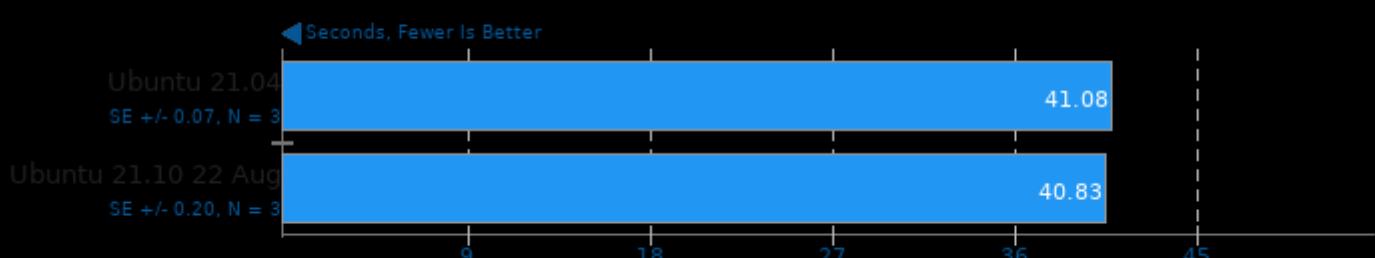
Test: 2D Function Plotting, 1000 Times

**G'MIC**

Test: Plotting Isosurface Of A 3D Volume, 1000 Times

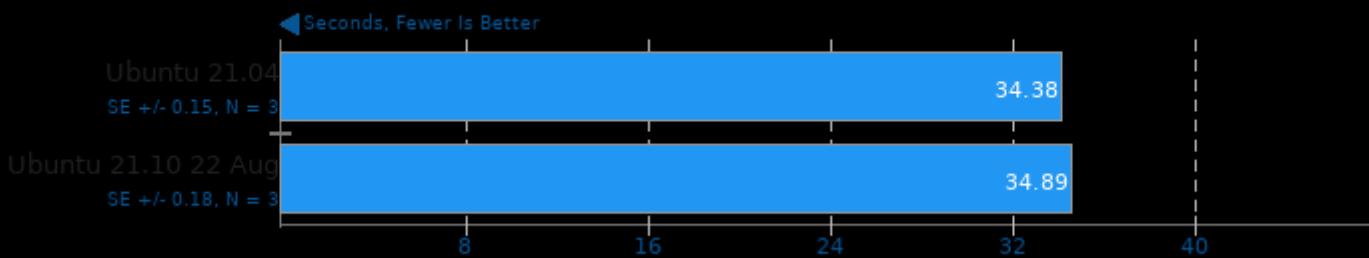
**G'MIC**

Test: 3D Elevated Function In Random Colors, 100 Times



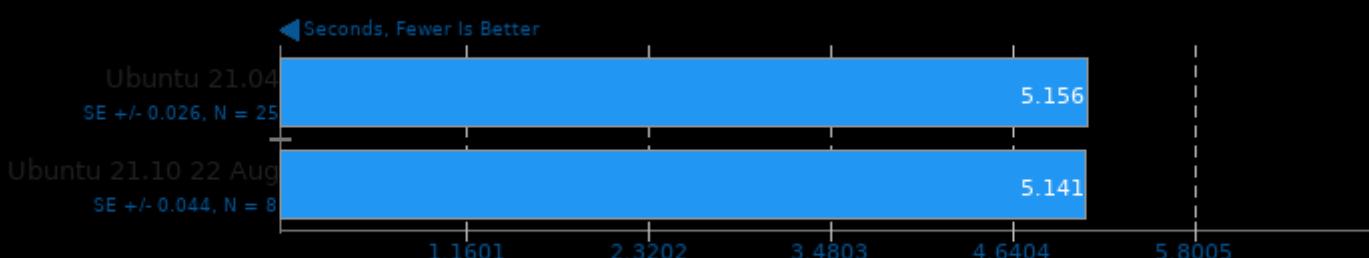
Hugin

Panorama Photo Assistant + Stitching Time



LibreOffice

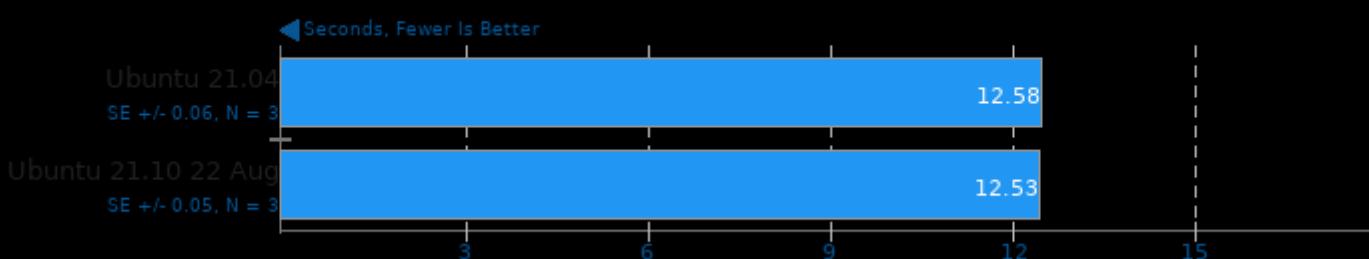
Test: 20 Documents To PDF



1. LibreOffice 7.1.5.2 10(Build:2)

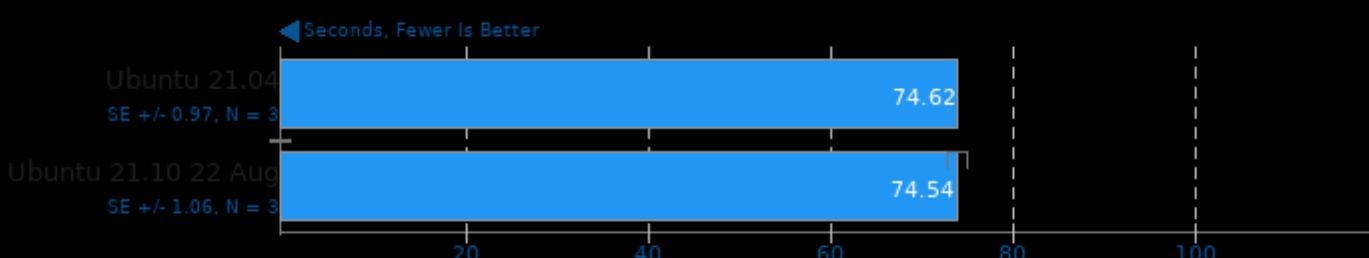
OCRMypdf 10.3.1+dfsg

Processing 60 Page PDF Document



OpenSCAD

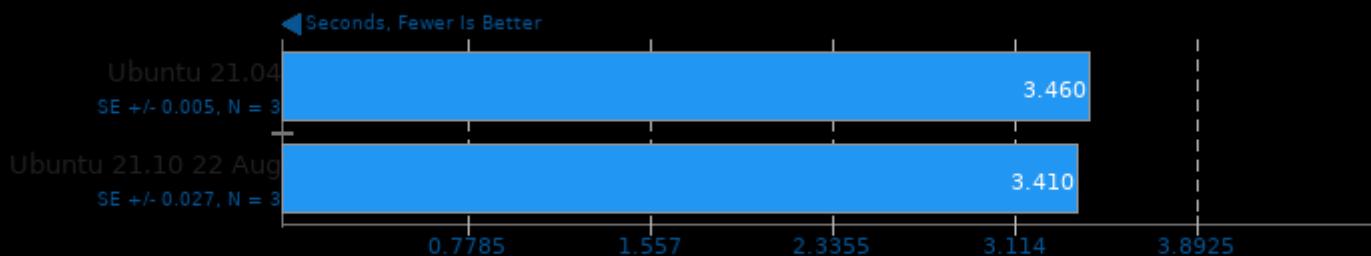
Render: Pistol



1. OpenSCAD version 2021.01

OpenSCAD

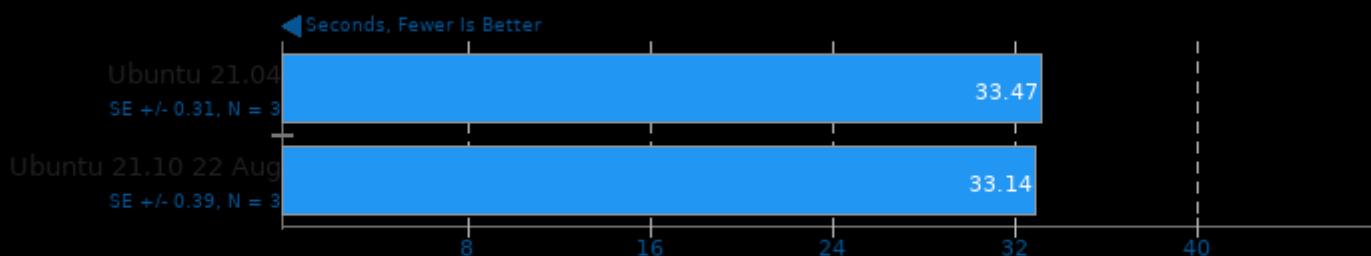
Render: Retro Car



1. OpenSCAD version 2021.01

OpenSCAD

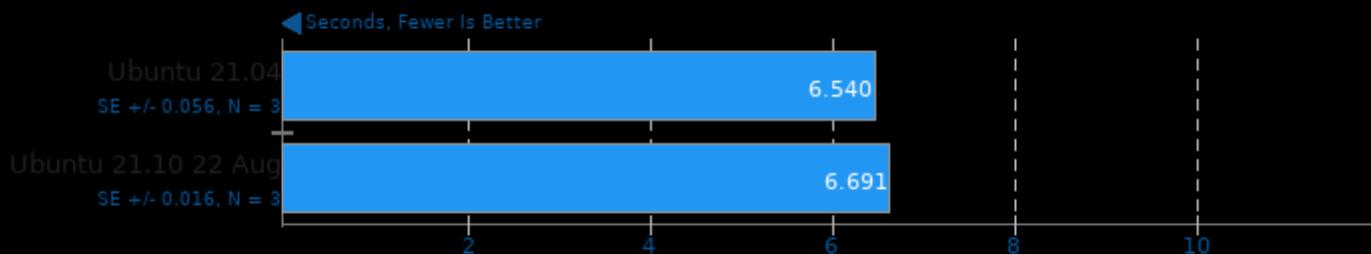
Render: Mini-ITX Case



1. OpenSCAD version 2021.01

OpenSCAD

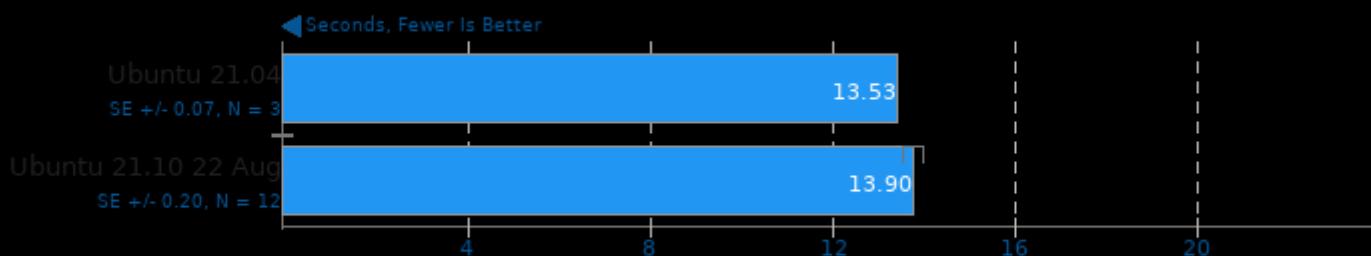
Render: Projector Mount Swivel



1. OpenSCAD version 2021.01

OpenSCAD

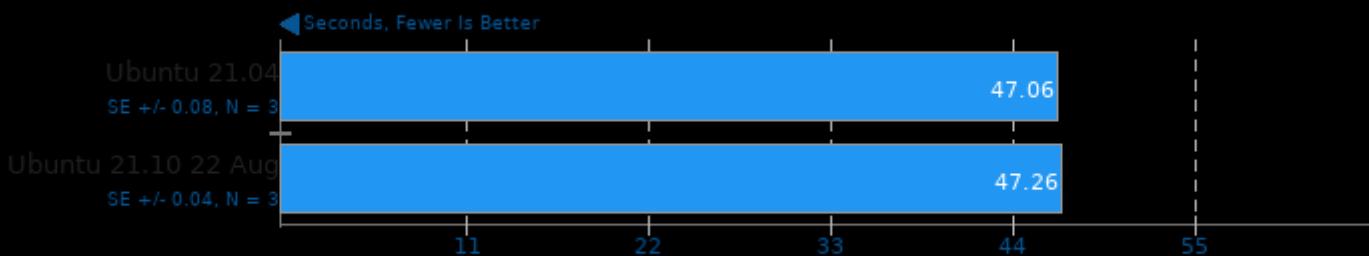
Render: Leonardo Phone Case Slim



1. OpenSCAD version 2021.01

RawTherapee

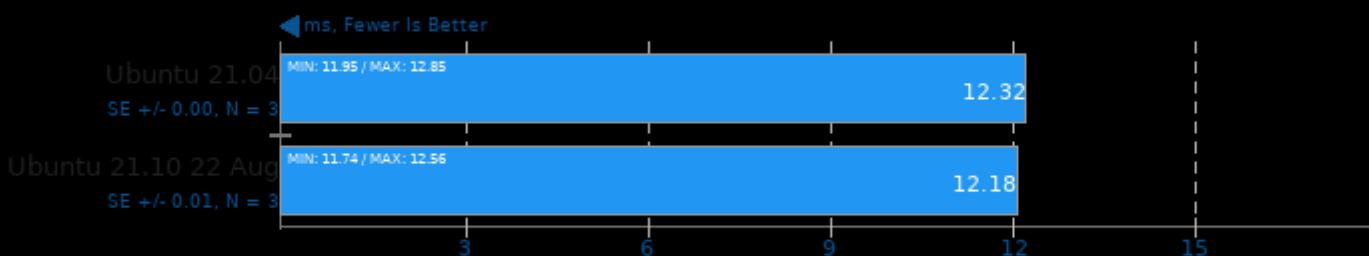
Total Benchmark Time



1. RawTherapee, version 5.8, command line.

NCNN 20210720

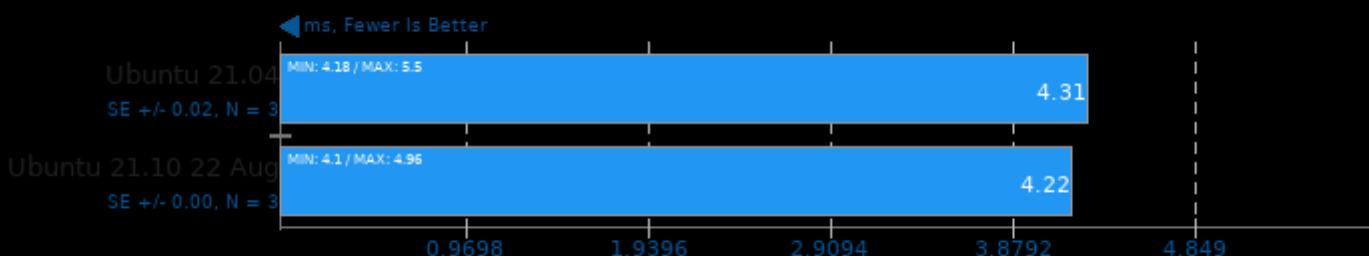
Target: CPU - Model: mobilenet



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

NCNN 20210720

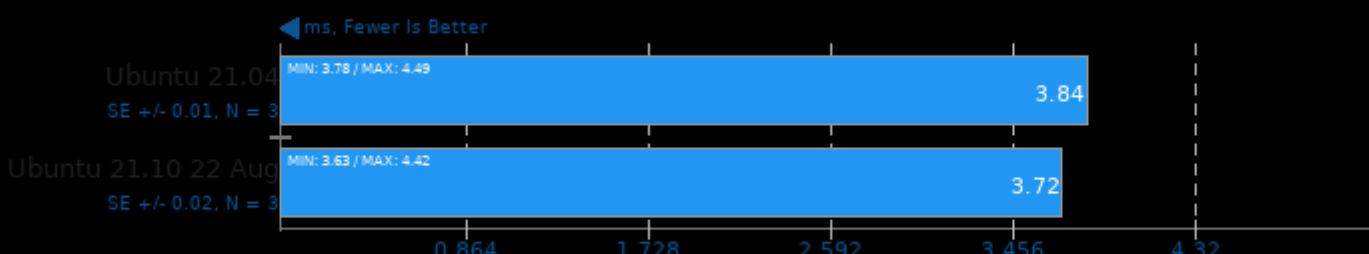
Target: CPU-v2-v2 - Model: mobilenet-v2



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

NCNN 20210720

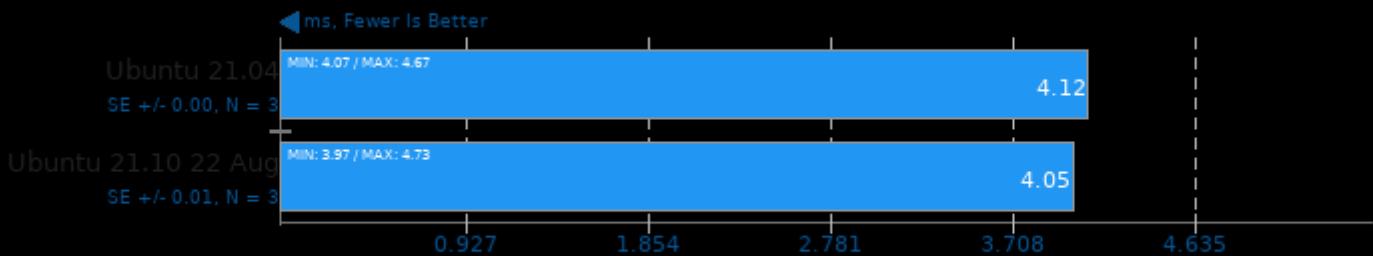
Target: CPU-v3-v3 - Model: mobilenet-v3



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

NCNN 20210720

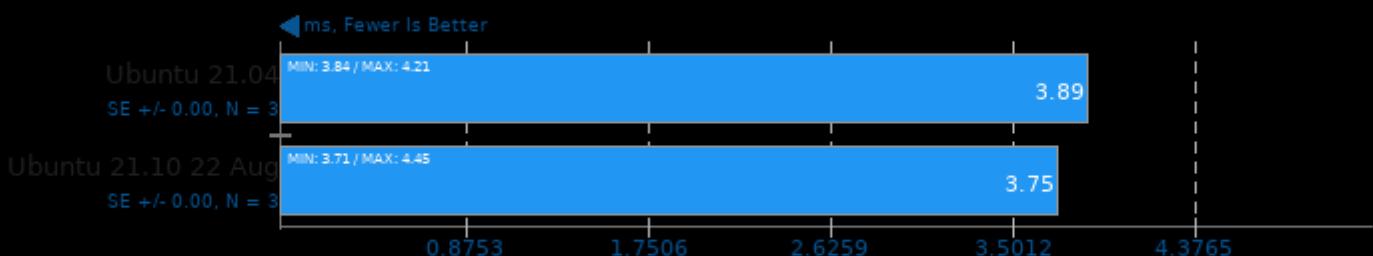
Target: CPU - Model: shufflenet-v2



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

NCNN 20210720

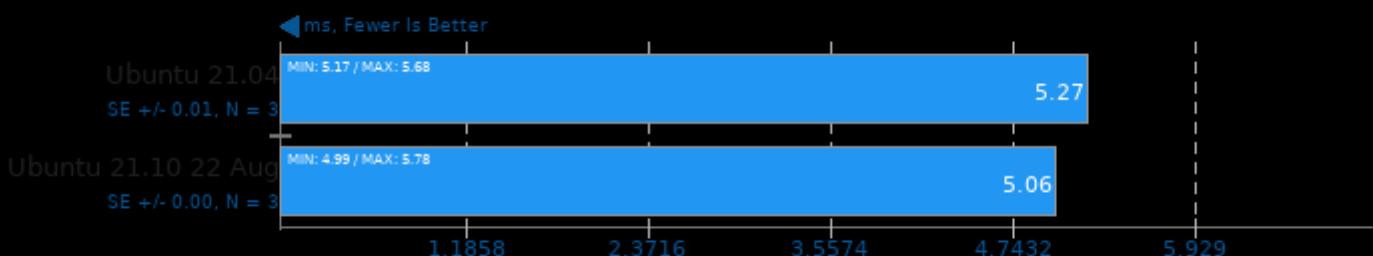
Target: CPU - Model: mnasnet



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

NCNN 20210720

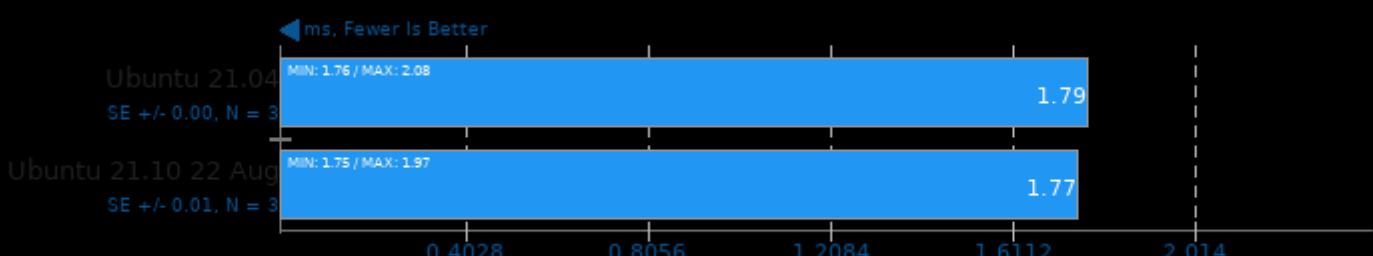
Target: CPU - Model: efficientnet-b0



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

NCNN 20210720

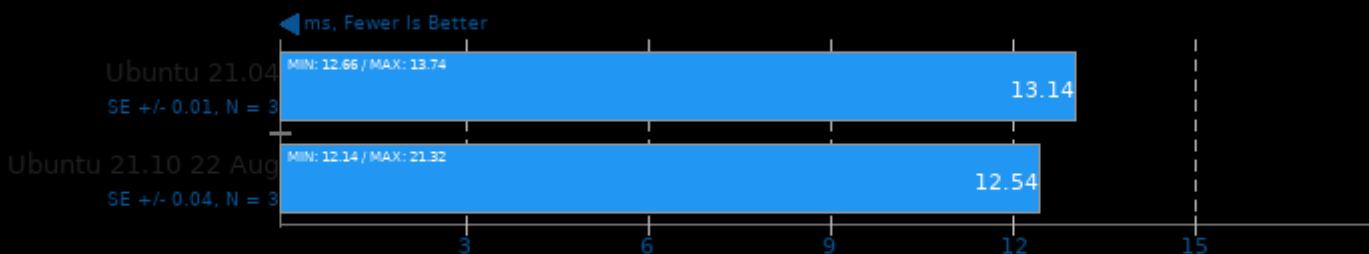
Target: CPU - Model: blazeface



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

NCNN 20210720

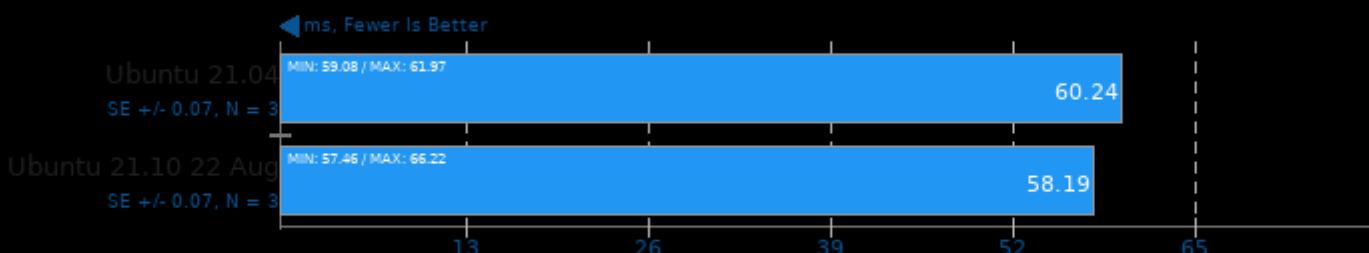
Target: CPU - Model: googlenet



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

NCNN 20210720

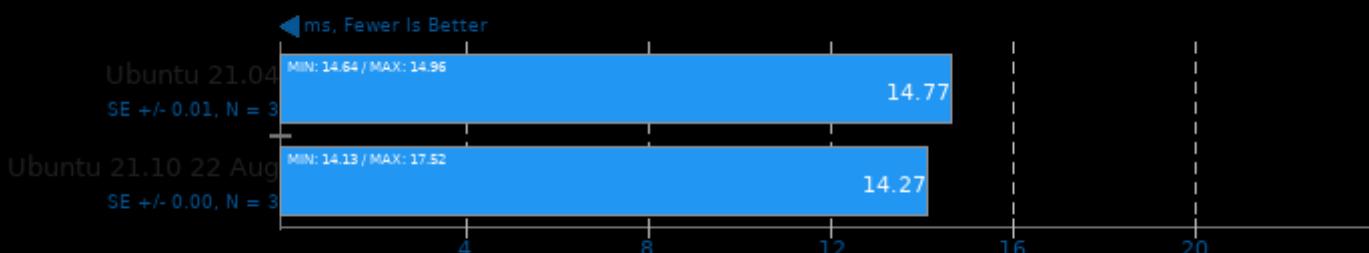
Target: CPU - Model: vgg16



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

NCNN 20210720

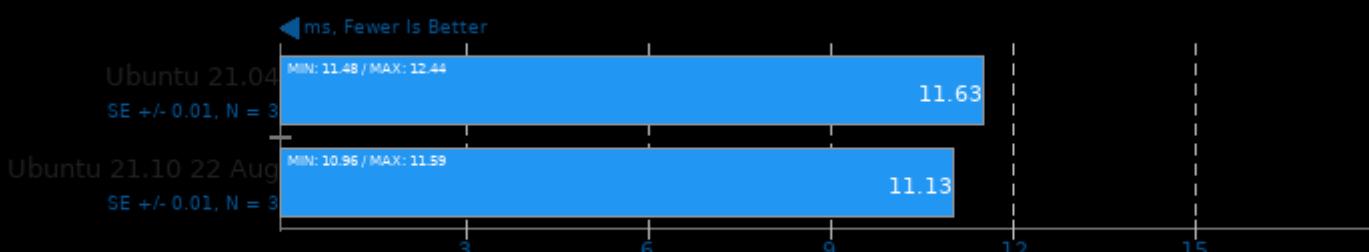
Target: CPU - Model: resnet18



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

NCNN 20210720

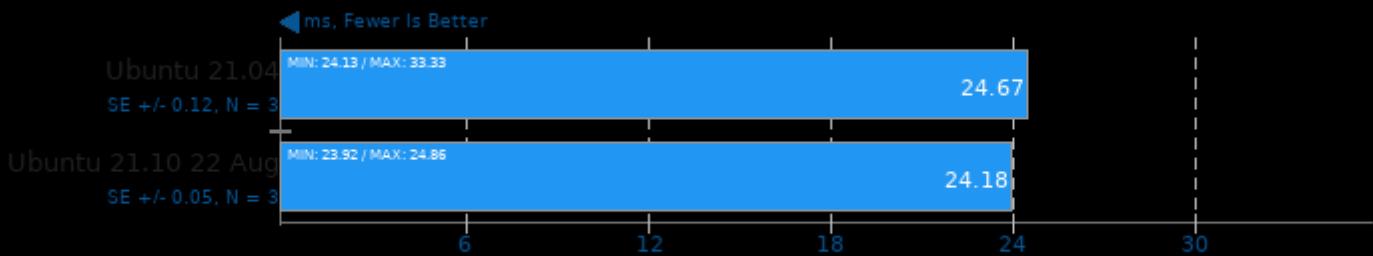
Target: CPU - Model: alexnet



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

NCNN 20210720

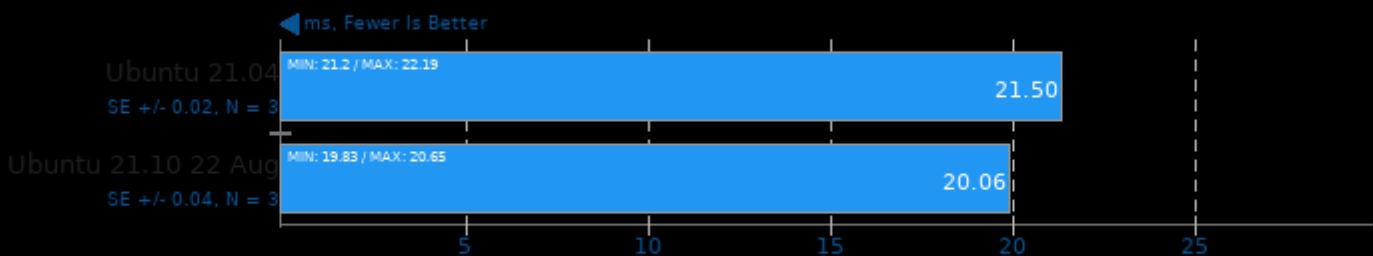
Target: CPU - Model: resnet50



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

NCNN 20210720

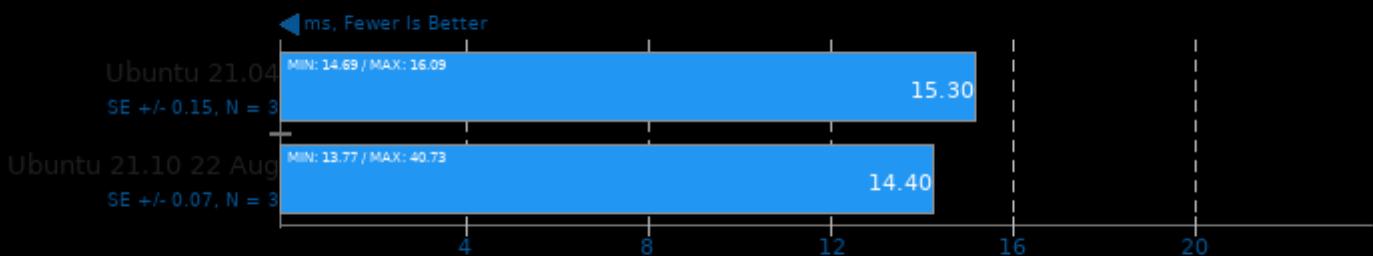
Target: CPU - Model: yolov4-tiny



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

NCNN 20210720

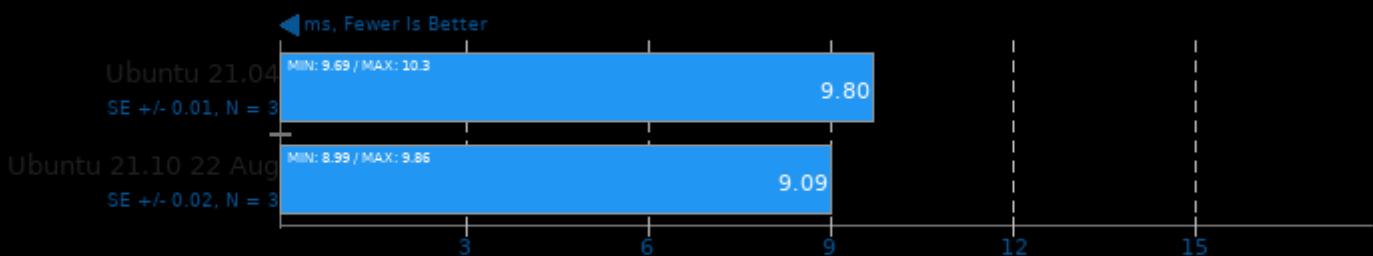
Target: CPU - Model: squeezeenet_ssdl



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

NCNN 20210720

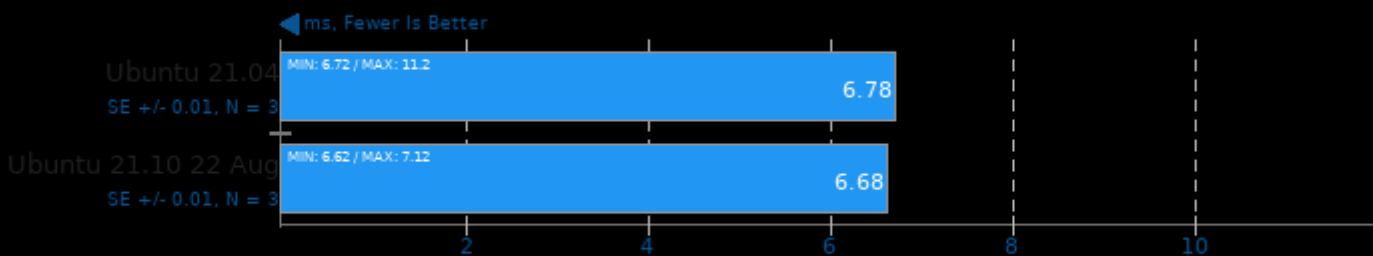
Target: CPU - Model: regnety_400m



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

NCNN 20210720

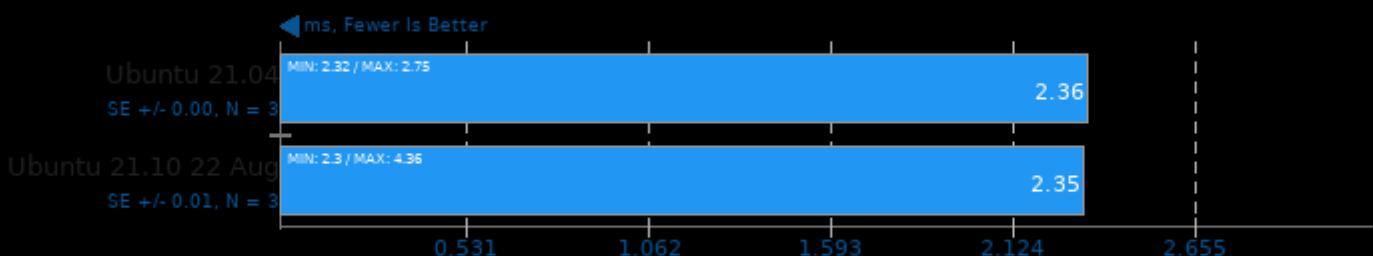
Target: Vulkan GPU - Model: mobilenet



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

NCNN 20210720

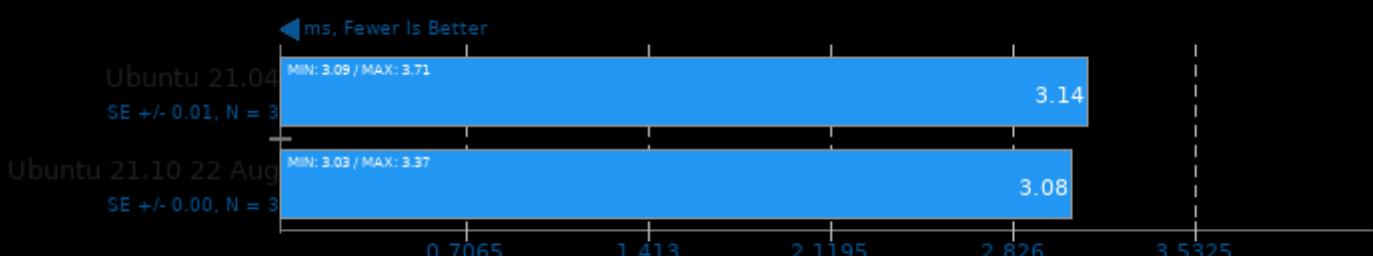
Target: Vulkan GPU-v2-v2 - Model: mobilenet-v2



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

NCNN 20210720

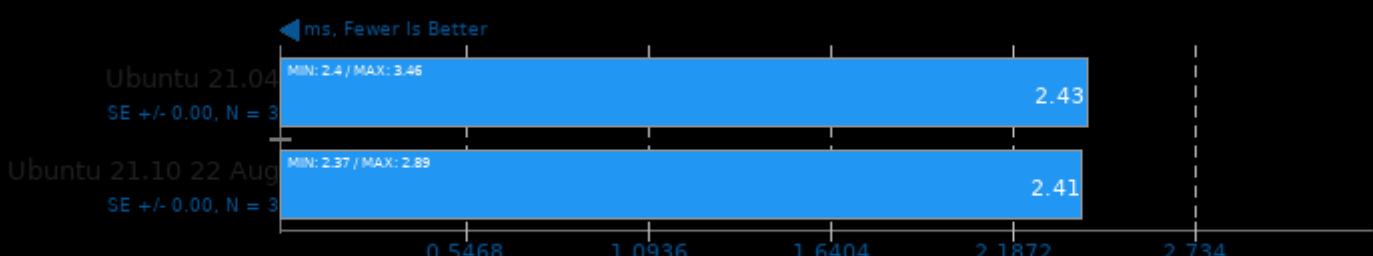
Target: Vulkan GPU-v3-v3 - Model: mobilenet-v3



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

NCNN 20210720

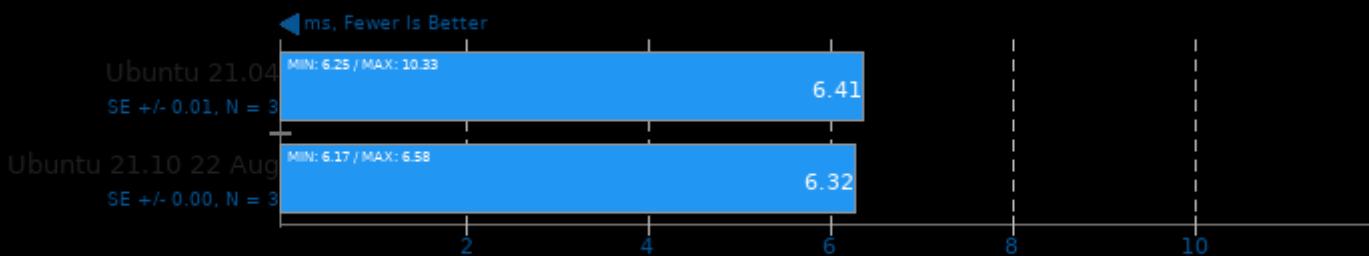
Target: Vulkan GPU - Model: mnasnet



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

NCNN 20210720

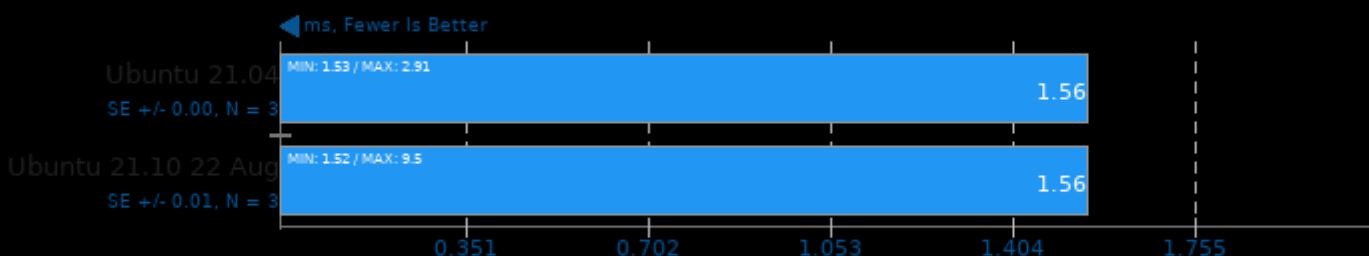
Target: Vulkan GPU - Model: efficientnet-b0



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

NCNN 20210720

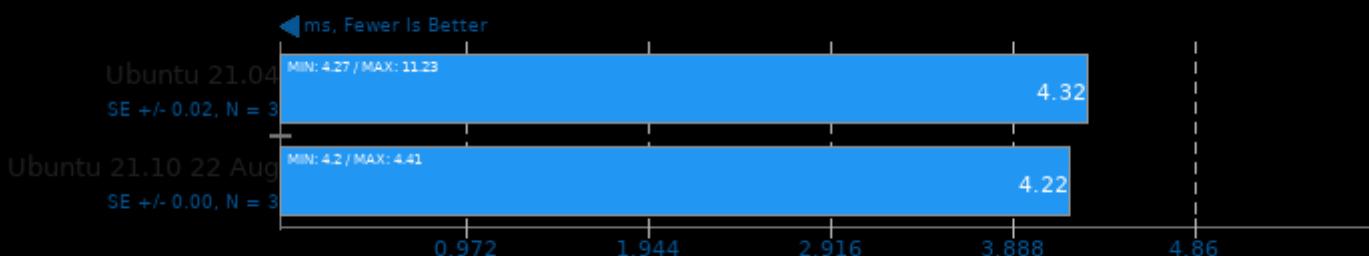
Target: Vulkan GPU - Model: blazeface



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

NCNN 20210720

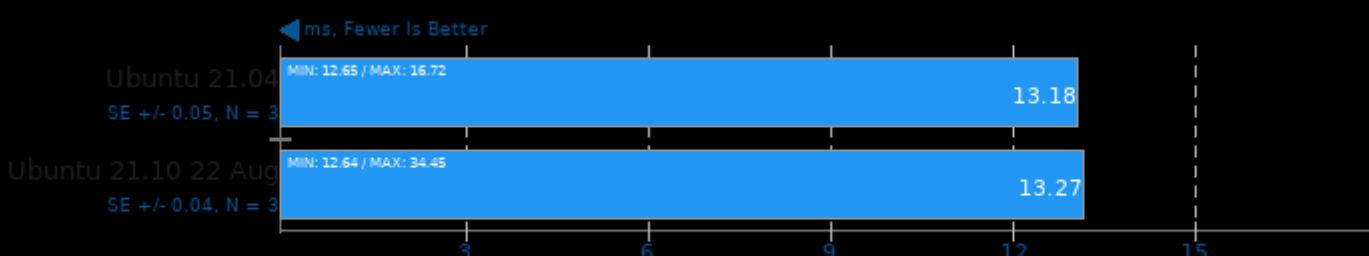
Target: Vulkan GPU - Model: googlenet



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

NCNN 20210720

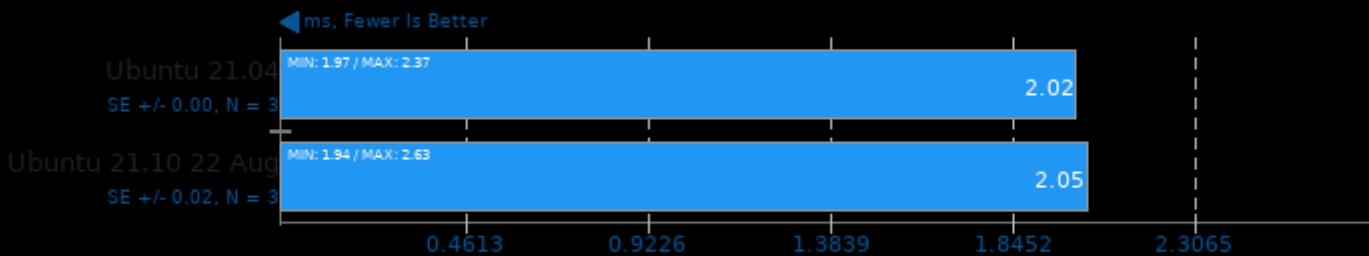
Target: Vulkan GPU - Model: vgg16



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

NCNN 20210720

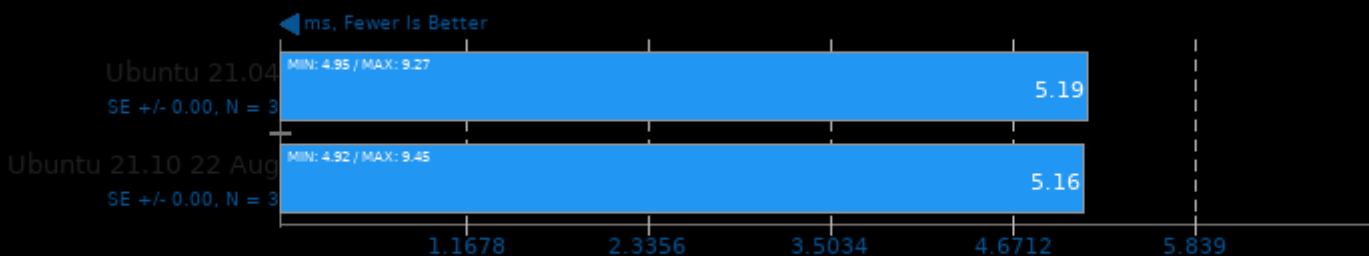
Target: Vulkan GPU - Model: resnet18



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

NCNN 20210720

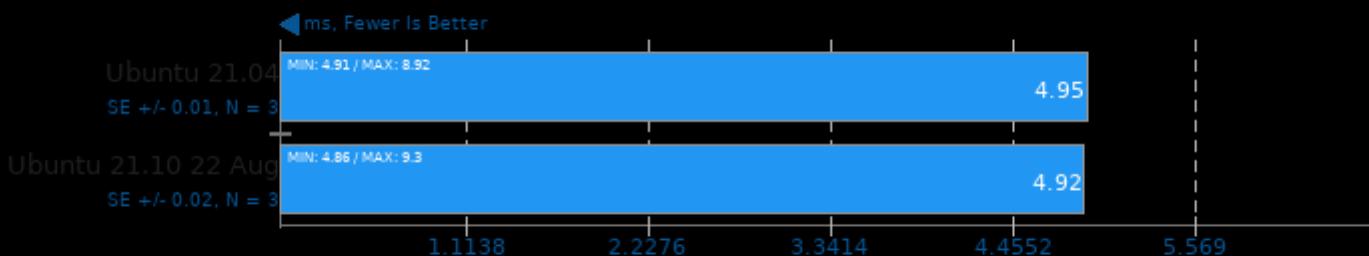
Target: Vulkan GPU - Model: alexnet



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

NCNN 20210720

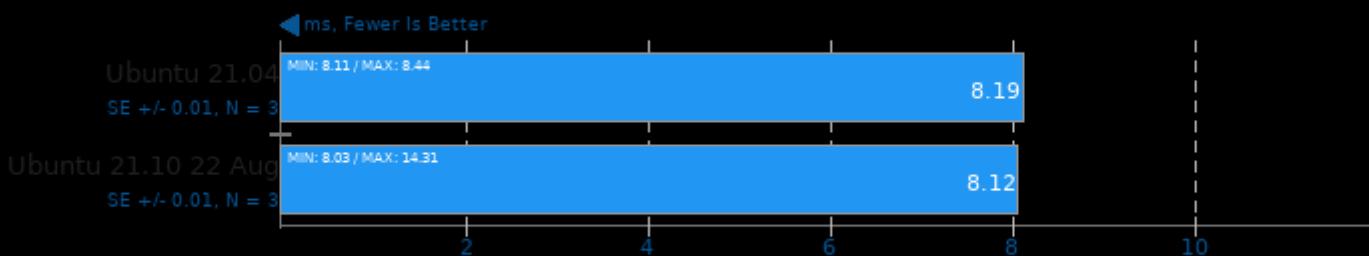
Target: Vulkan GPU - Model: resnet50



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

NCNN 20210720

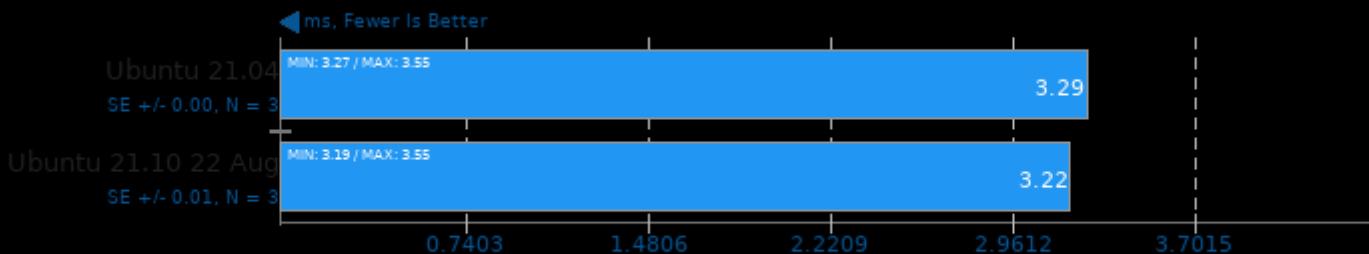
Target: Vulkan GPU - Model: yolov4-tiny



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

NCNN 20210720

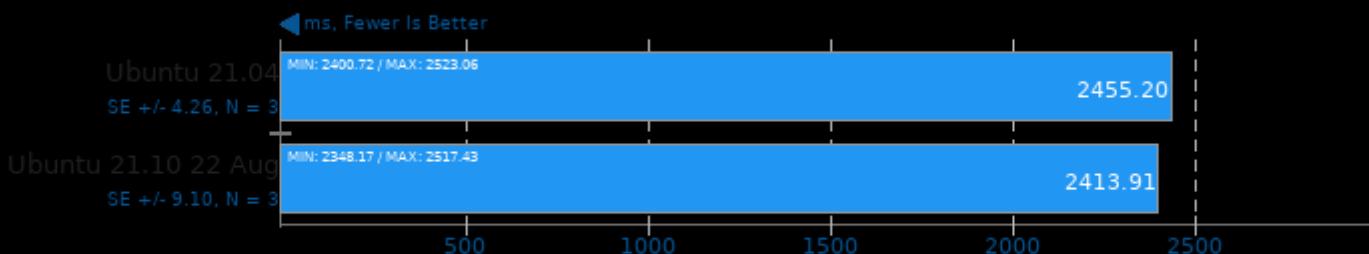
Target: Vulkan GPU - Model: regnety_400m



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

TNN 0.3

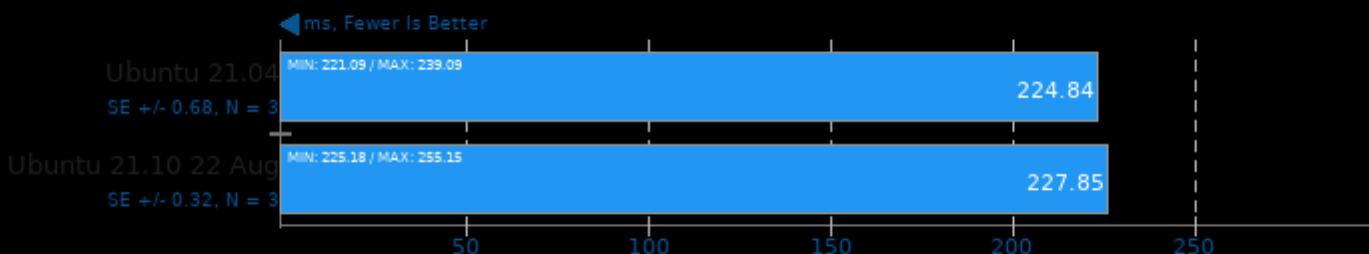
Target: CPU - Model: DenseNet



1. (CXX) g++ options: -fopenmp -pthread -fvisibility=hidden -fvisibility=default -O3 -rdynamic -ldl

TNN 0.3

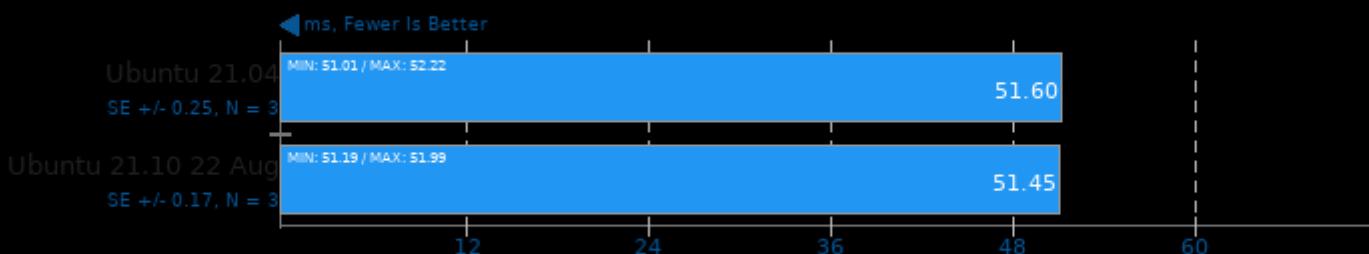
Target: CPU - Model: MobileNet v2



1. (CXX) g++ options: -fopenmp -pthread -fvisibility=hidden -fvisibility=default -O3 -rdynamic -ldl

TNN 0.3

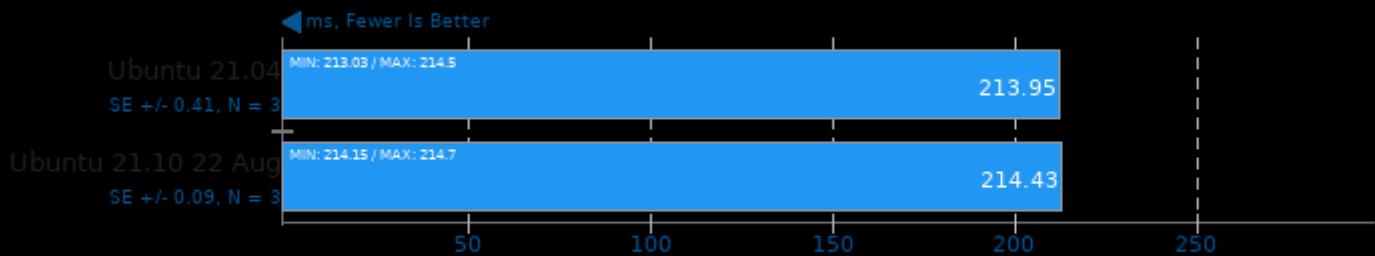
Target: CPU - Model: SqueezeNet v2



1. (CXX) g++ options: -fopenmp -pthread -fvisibility=hidden -fvisibility=default -O3 -rdynamic -ldl

TNN 0.3

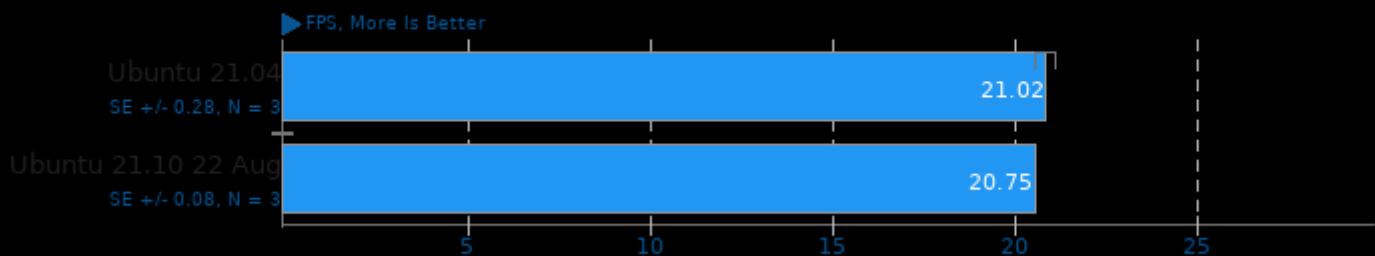
Target: CPU - Model: SqueezeNet v1.1



1. (CXX) g++ options: -fopenmp -pthread -fvisibility=hidden -fvisibility=default -O3 -rdynamic -ldl

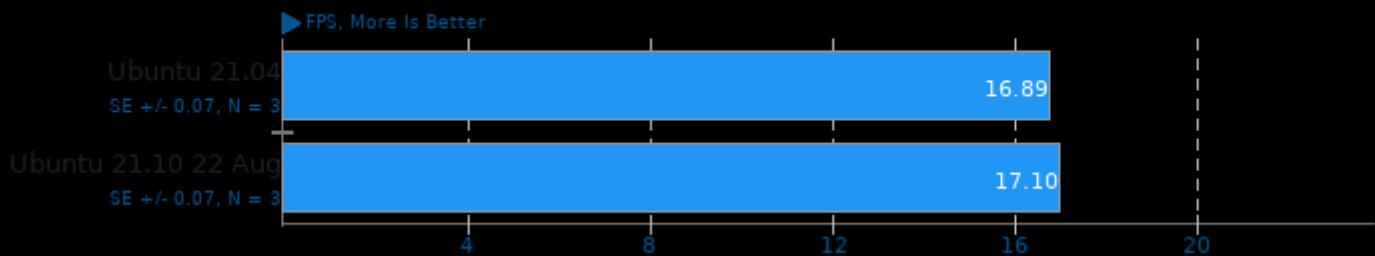
PlaidML

FP16: No - Mode: Inference - Network: VGG16 - Device: CPU



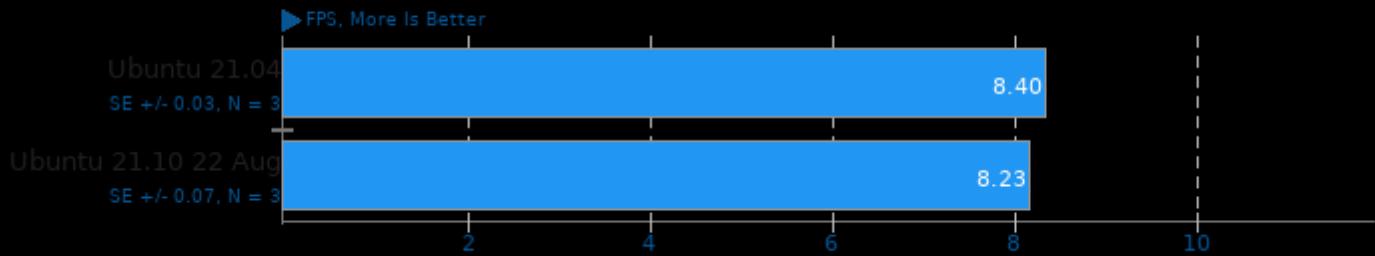
PlaidML

FP16: No - Mode: Inference - Network: VGG19 - Device: CPU



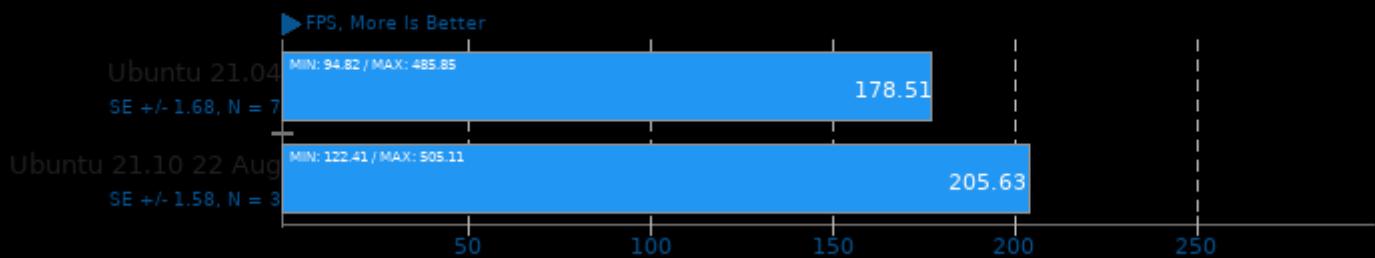
PlaidML

FP16: No - Mode: Inference - Network: ResNet 50 - Device: CPU



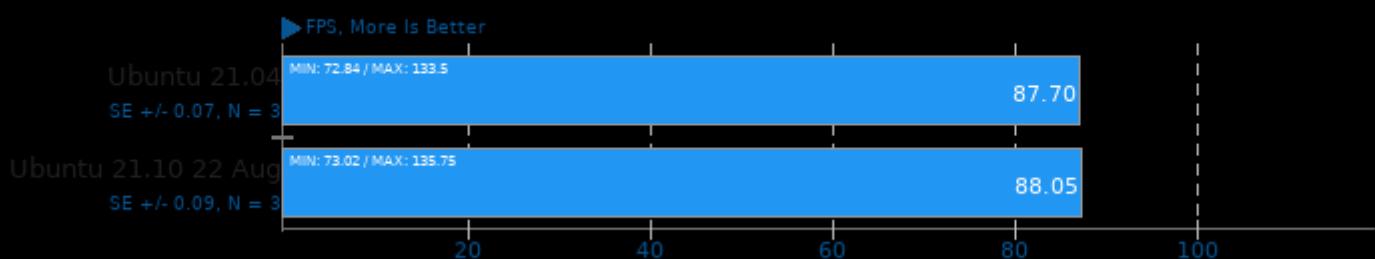
Basemark GPU 1.2

Renderer: OpenGL - Resolution: 1920 x 1080 - Graphics Preset: High



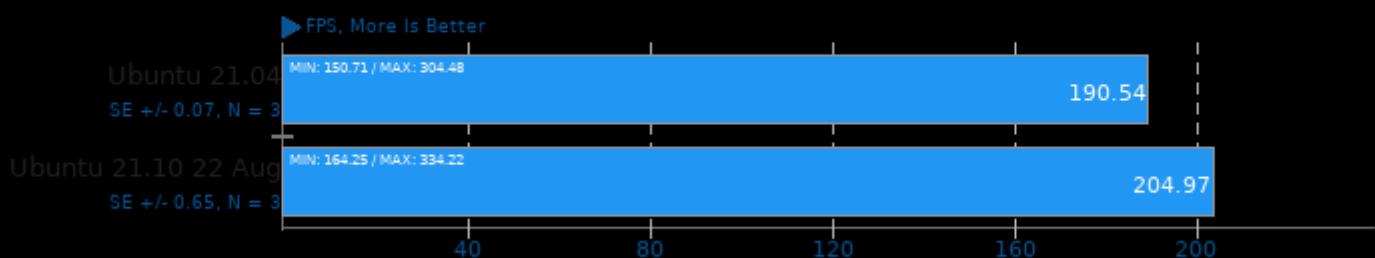
Basemark GPU 1.2

Renderer: OpenGL - Resolution: 3840 x 2160 - Graphics Preset: High



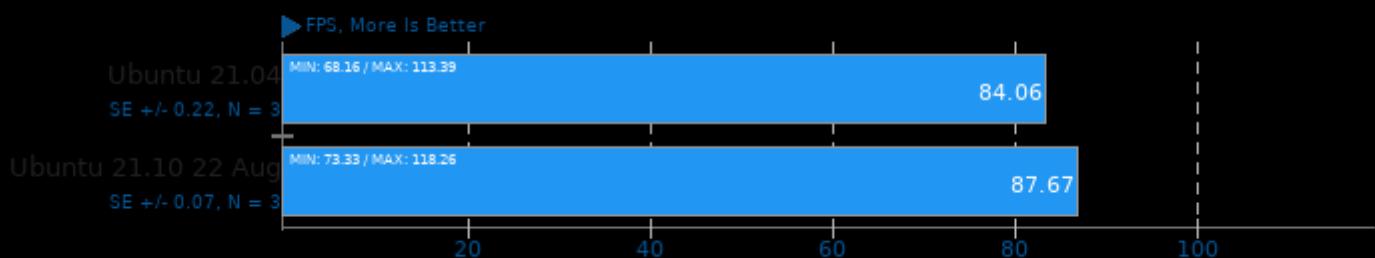
Basemark GPU 1.2

Renderer: Vulkan - Resolution: 1920 x 1080 - Graphics Preset: High



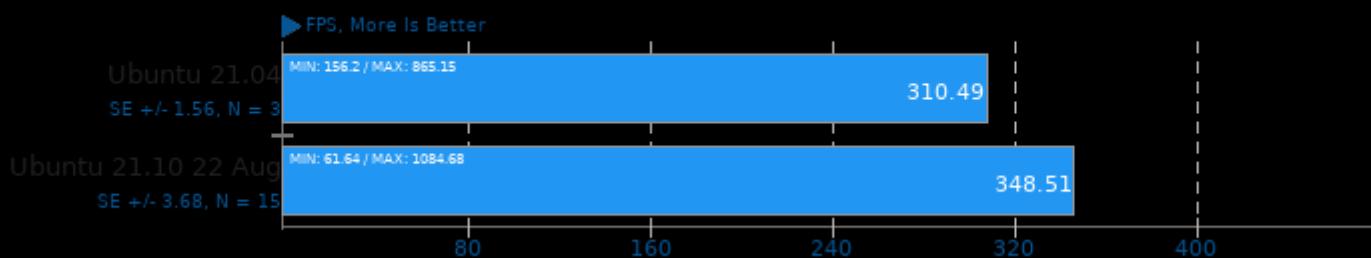
Basemark GPU 1.2

Renderer: Vulkan - Resolution: 3840 x 2160 - Graphics Preset: High



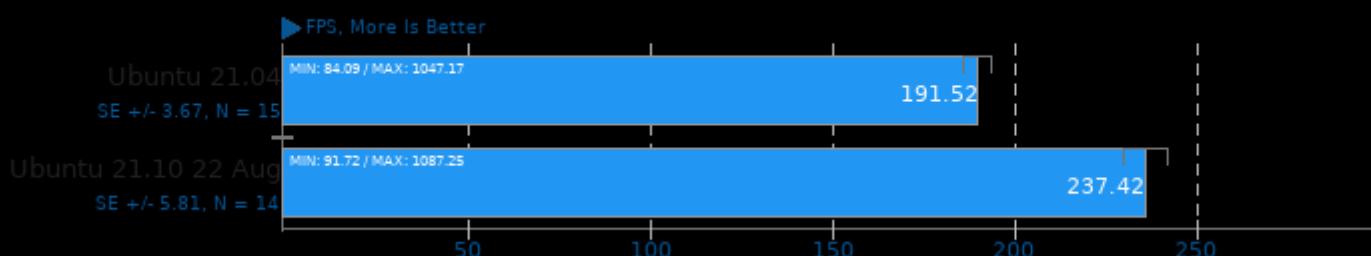
Basemark GPU 1.2

Renderer: OpenGL - Resolution: 1920 x 1080 - Graphics Preset: Medium



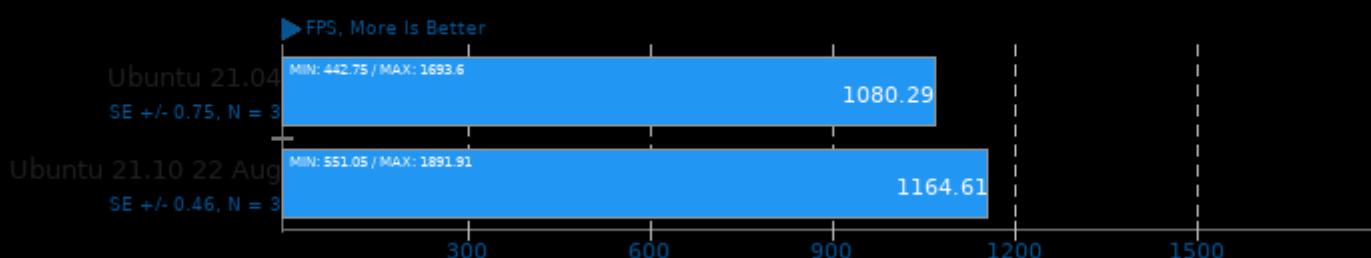
Basemark GPU 1.2

Renderer: OpenGL - Resolution: 3840 x 2160 - Graphics Preset: Medium



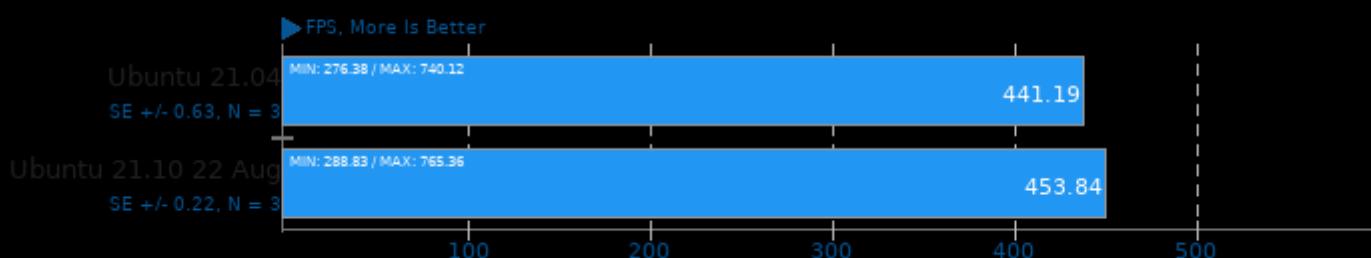
Basemark GPU 1.2

Renderer: Vulkan - Resolution: 1920 x 1080 - Graphics Preset: Medium



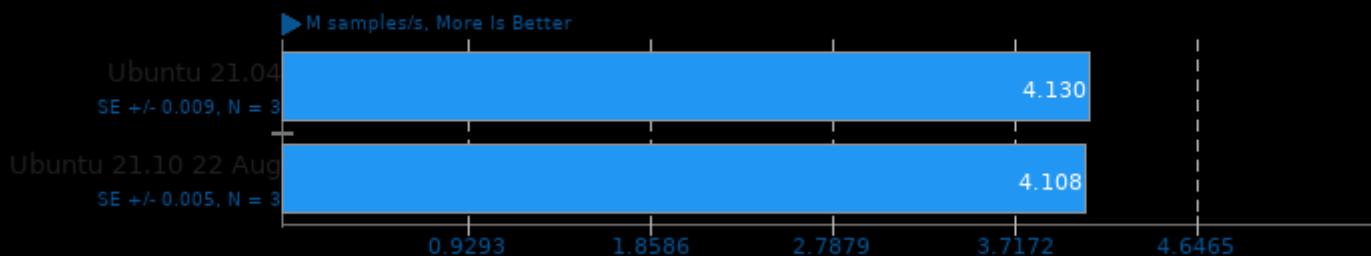
Basemark GPU 1.2

Renderer: Vulkan - Resolution: 3840 x 2160 - Graphics Preset: Medium



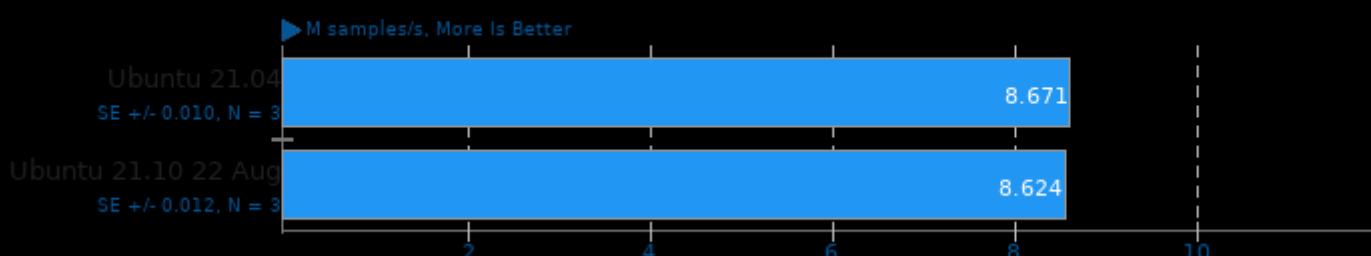
IndigoBench 4.4

Acceleration: CPU - Scene: Bedroom



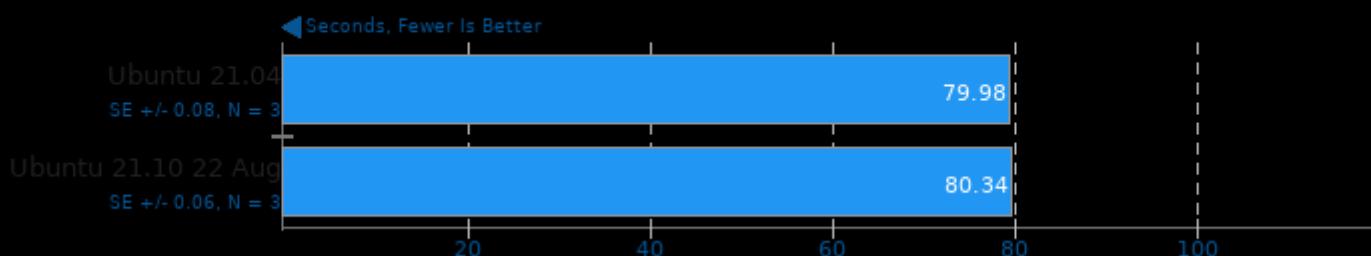
IndigoBench 4.4

Acceleration: CPU - Scene: Supercar



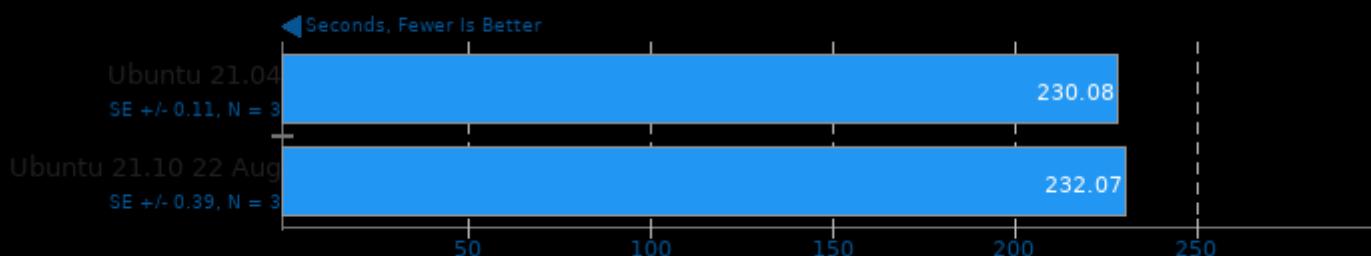
Blender 2.92

Blend File: BMW27 - Compute: CPU-Only



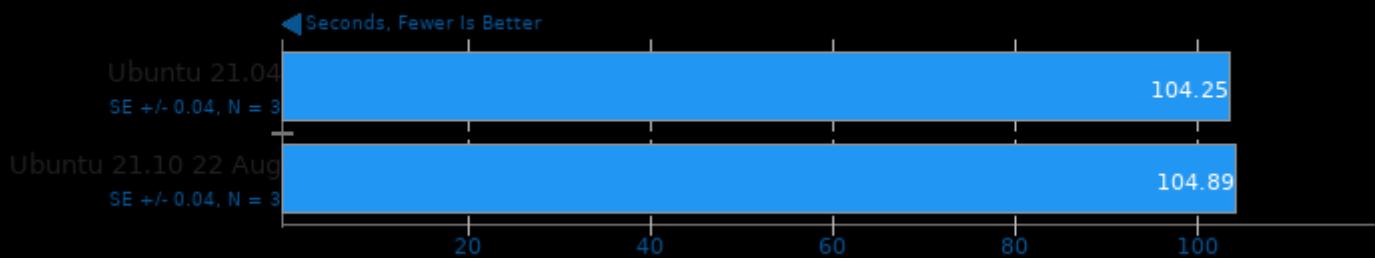
Blender 2.92

Blend File: Classroom - Compute: CPU-Only



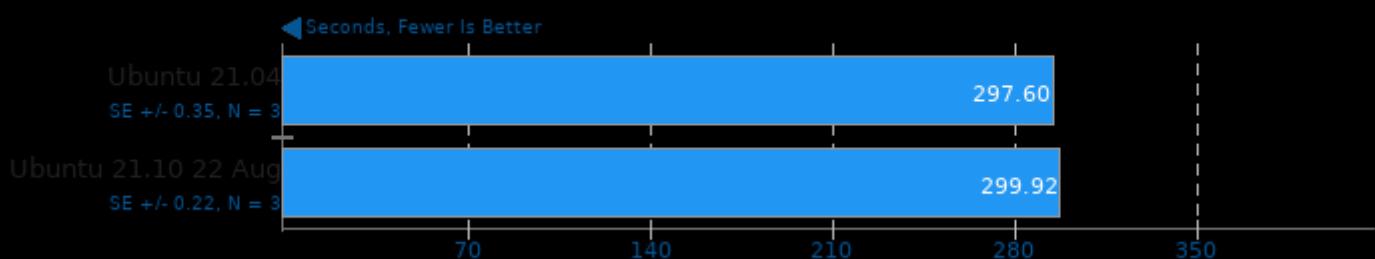
Blender 2.92

Blend File: Fishy Cat - Compute: CPU-Only



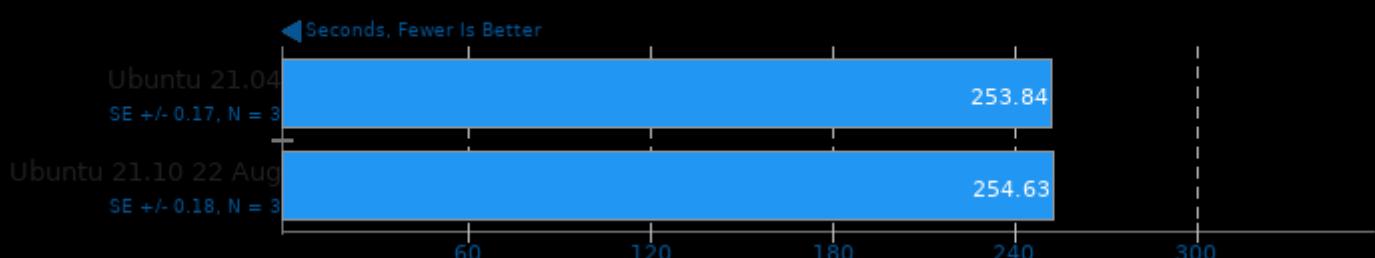
Blender 2.92

Blend File: Barbershop - Compute: CPU-Only



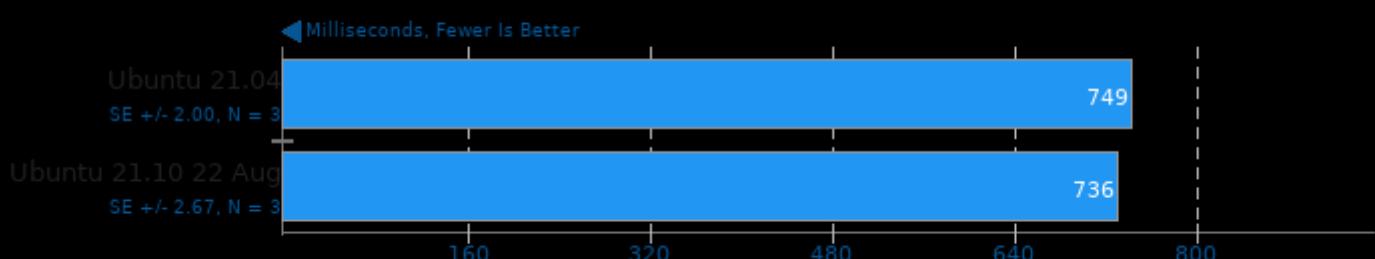
Blender 2.92

Blend File: Pabellon Barcelona - Compute: CPU-Only



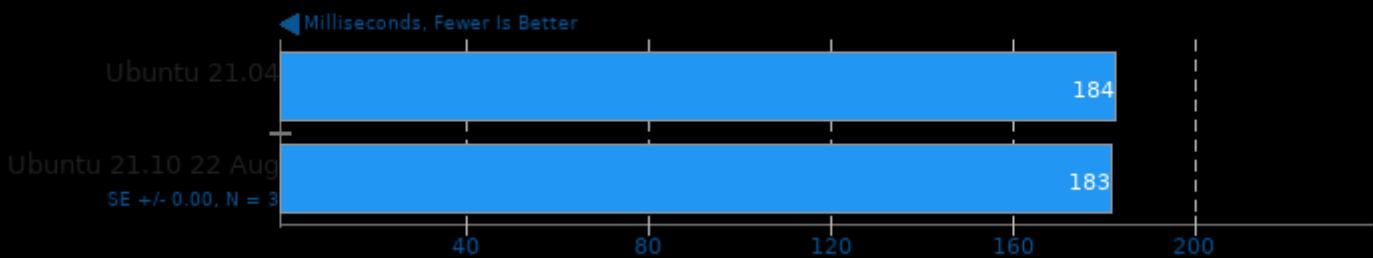
PyBench 2018-02-16

Total For Average Test Times



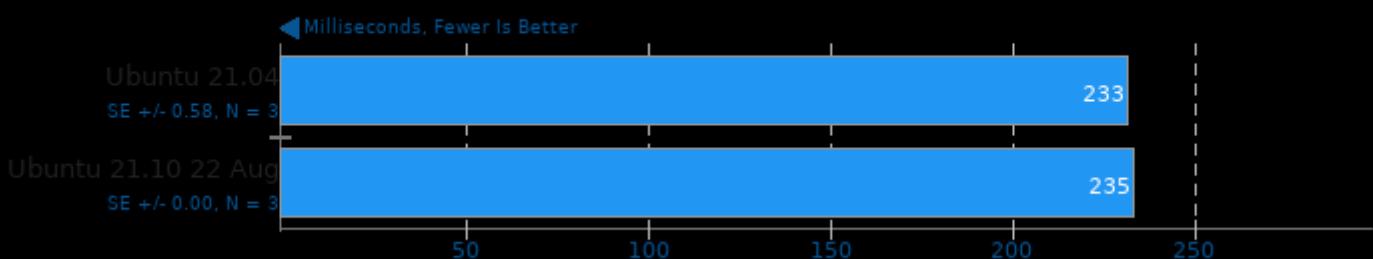
PyPerformance 1.0.0

Benchmark: go



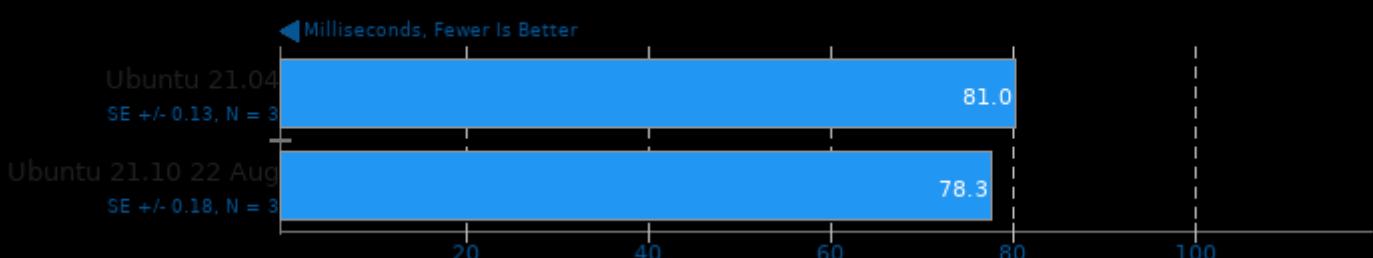
PyPerformance 1.0.0

Benchmark: 2to3



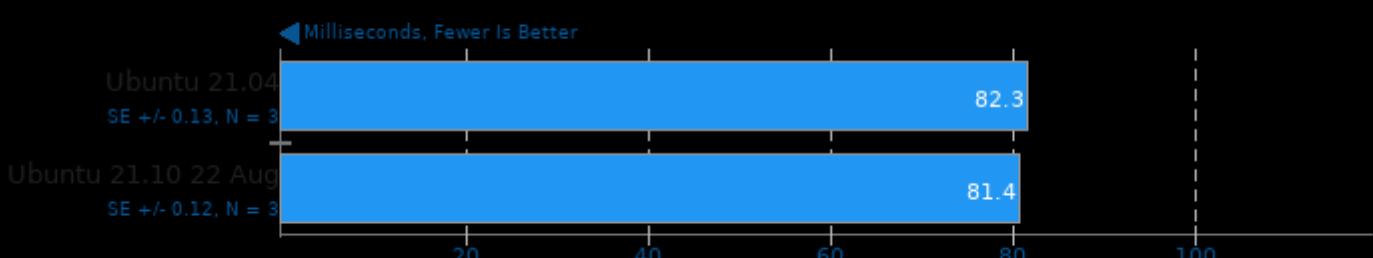
PyPerformance 1.0.0

Benchmark: chaos



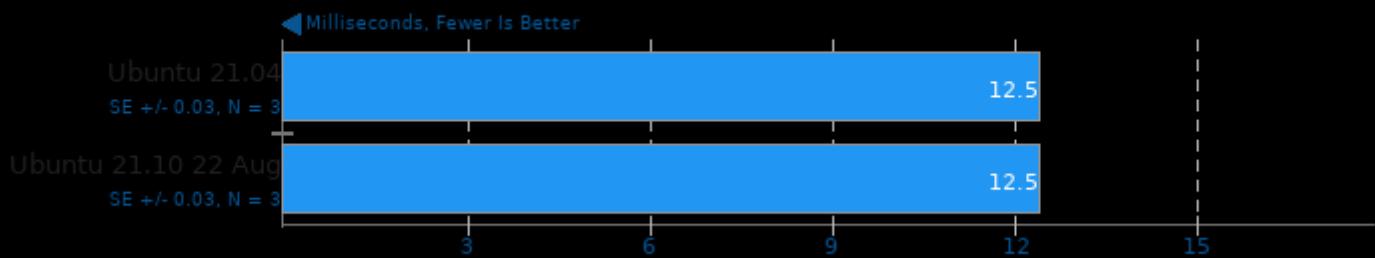
PyPerformance 1.0.0

Benchmark: float



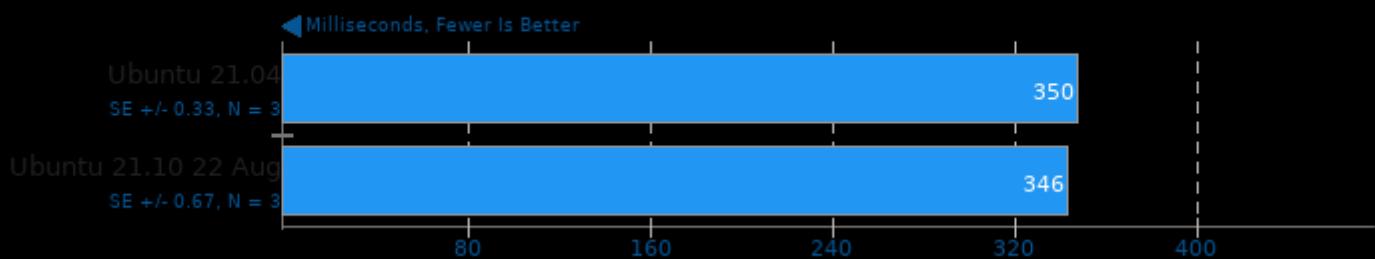
PyPerformance 1.0.0

Benchmark: pathlib



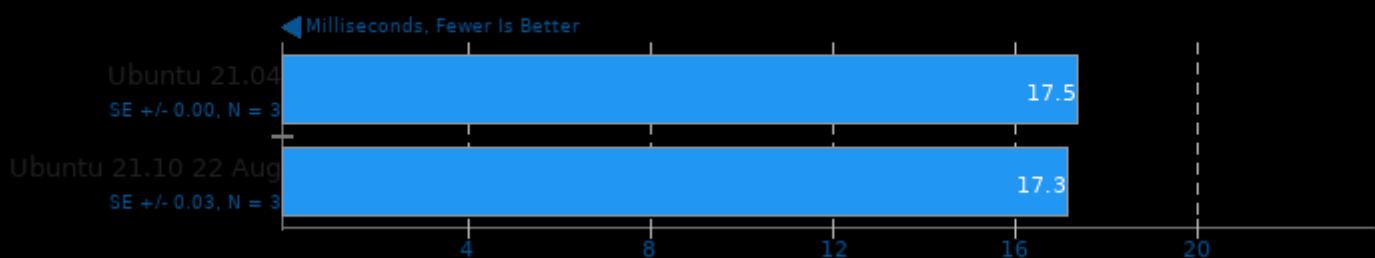
PyPerformance 1.0.0

Benchmark: raytrace



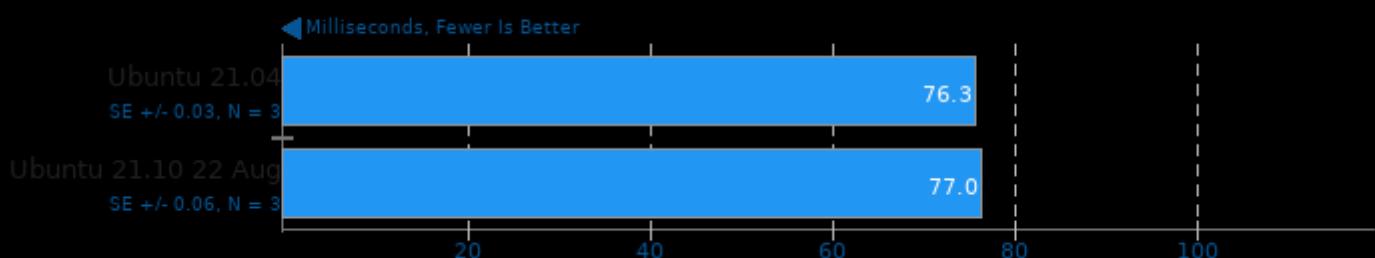
PyPerformance 1.0.0

Benchmark: json.loads



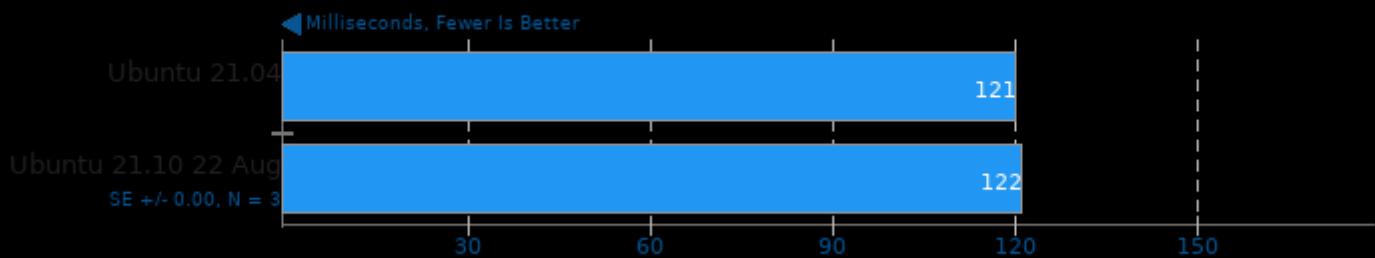
PyPerformance 1.0.0

Benchmark: crypto_pyaes



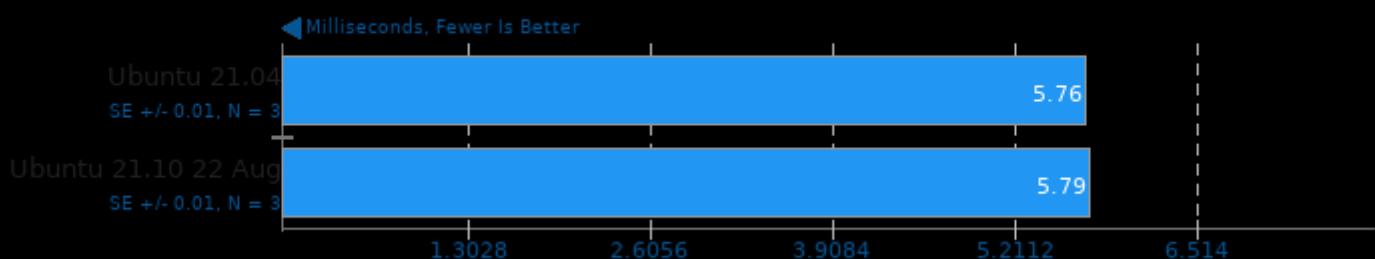
PyPerformance 1.0.0

Benchmark: regex_compile



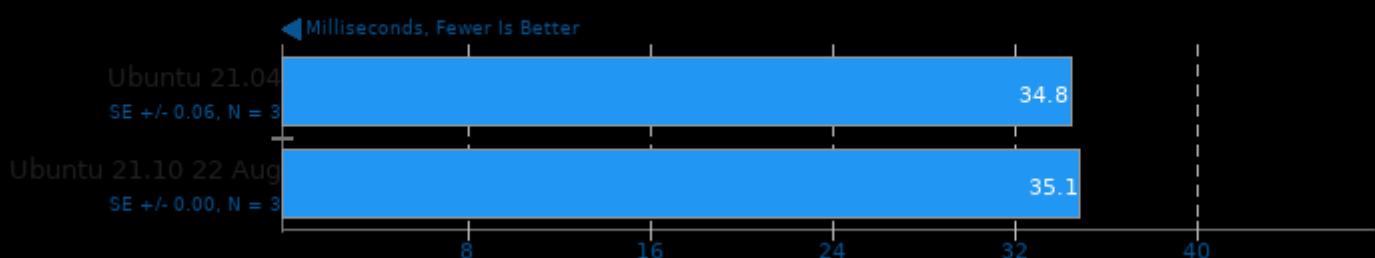
PyPerformance 1.0.0

Benchmark: python_startup



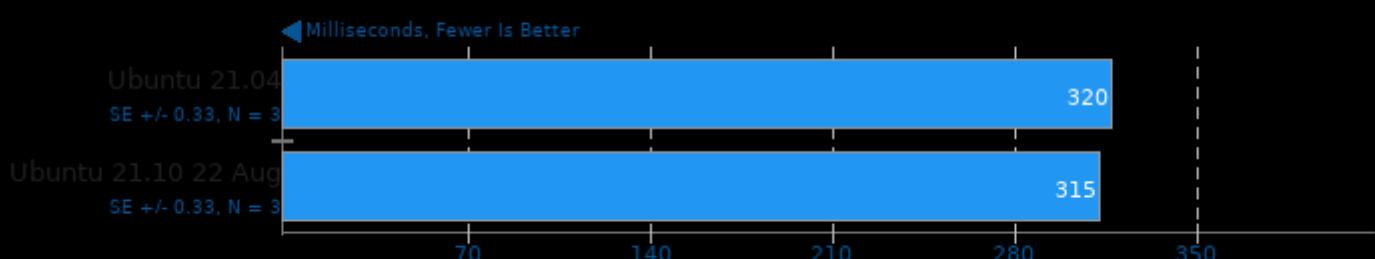
PyPerformance 1.0.0

Benchmark: django_template



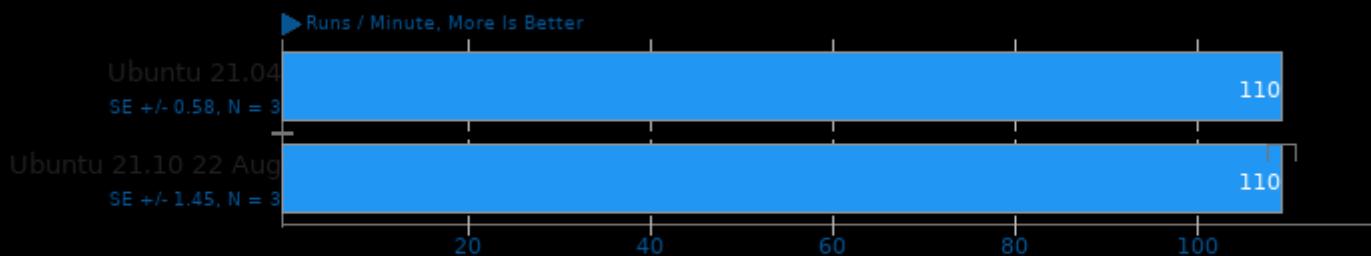
PyPerformance 1.0.0

Benchmark: pickle_pure_python



Selenium

Benchmark: StyleBench - Browser: Firefox

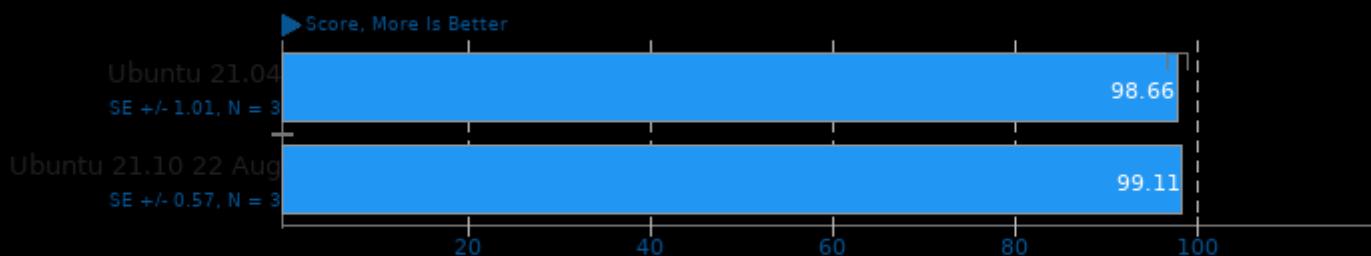


1. Ubuntu 21.04: firefox 91.0.1

2. Ubuntu 21.10 22 Aug: firefox 91.0

Selenium

Benchmark: Jetstream 2 - Browser: Firefox

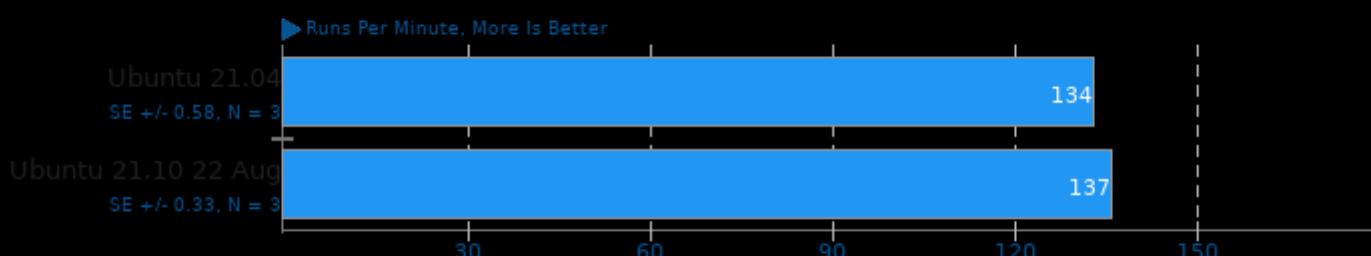


1. Ubuntu 21.04: firefox 91.0.1

2. Ubuntu 21.10 22 Aug: firefox 91.0

Selenium

Benchmark: Speedometer - Browser: Firefox

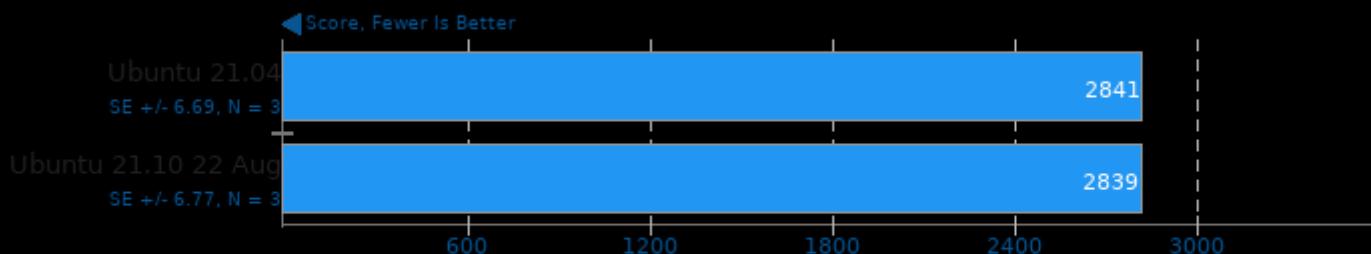


1. Ubuntu 21.04: firefox 91.0.1

2. Ubuntu 21.10 22 Aug: firefox 91.0

Selenium

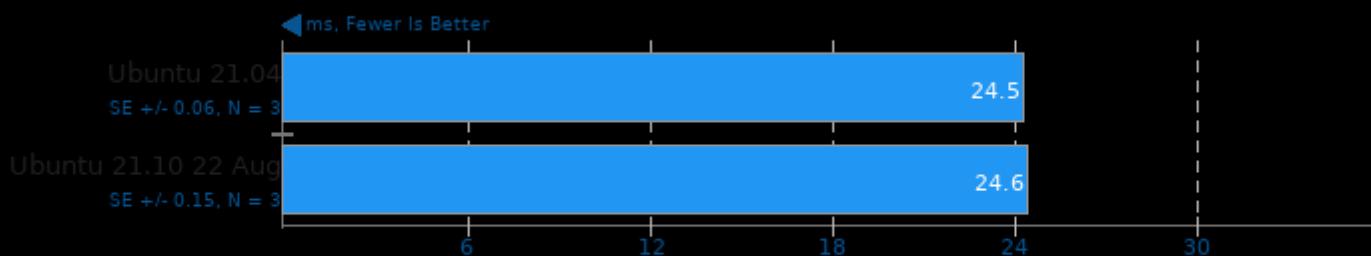
Benchmark: PSPDFKit WASM - Browser: Firefox



1. Ubuntu 21.04: firefox 91.0.1
2. Ubuntu 21.10 22 Aug: firefox 91.0

Selenium

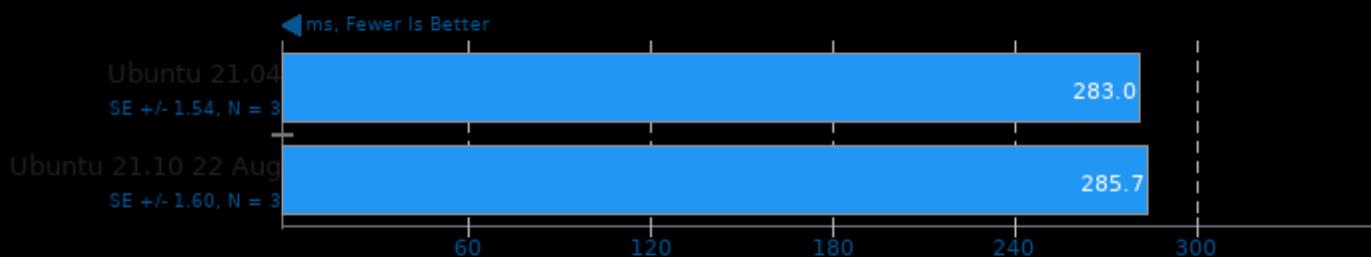
Benchmark: WASM imageConvolute - Browser: Firefox



1. Ubuntu 21.04: firefox 91.0.1
2. Ubuntu 21.10 22 Aug: firefox 91.0

Selenium

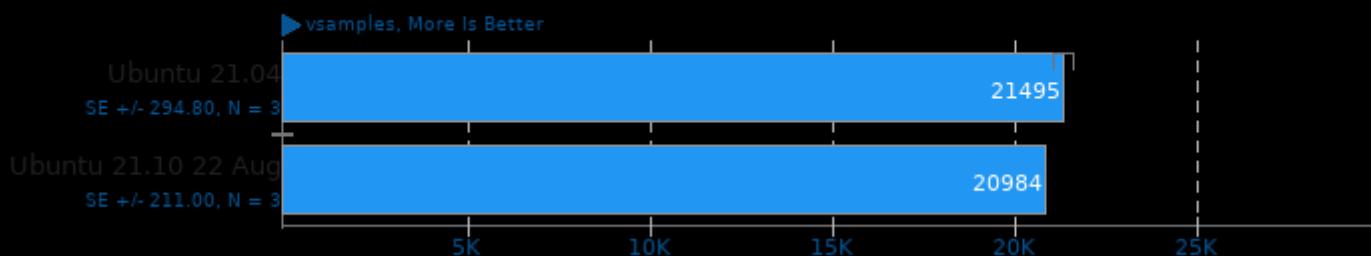
Benchmark: WASM collisionDetection - Browser: Firefox



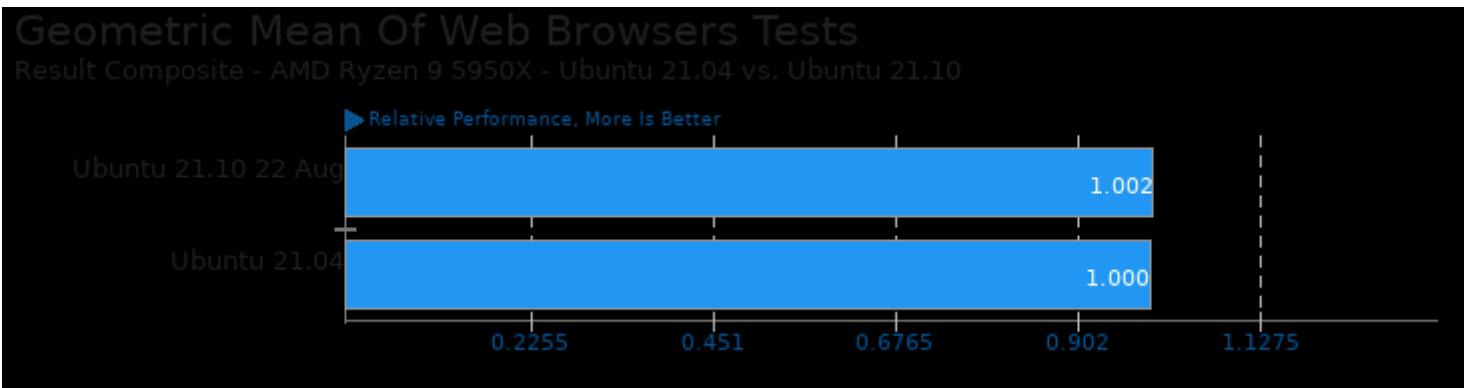
1. Ubuntu 21.04: firefox 91.0.1
2. Ubuntu 21.10 22 Aug: firefox 91.0

Chaos Group V-RAY 5

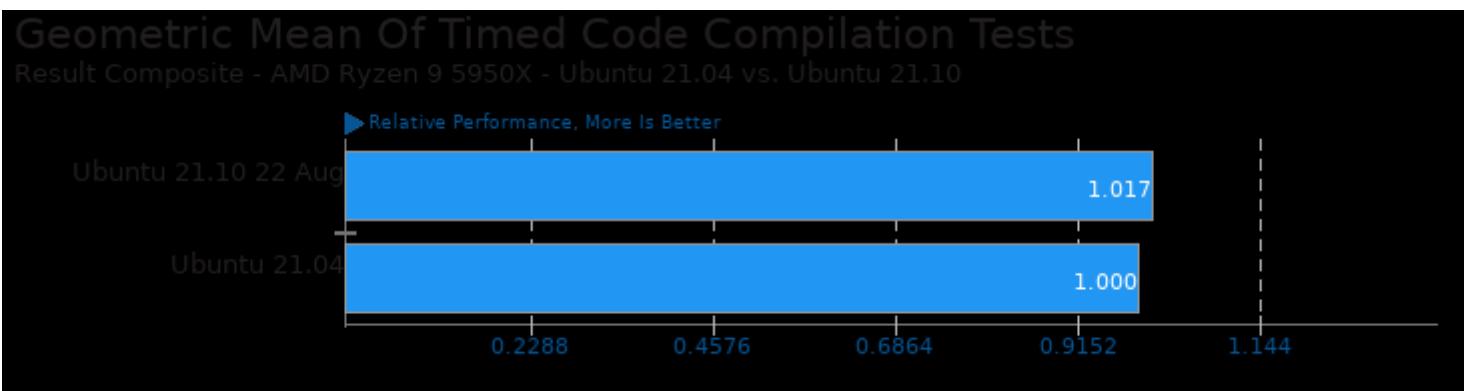
Mode: CPU



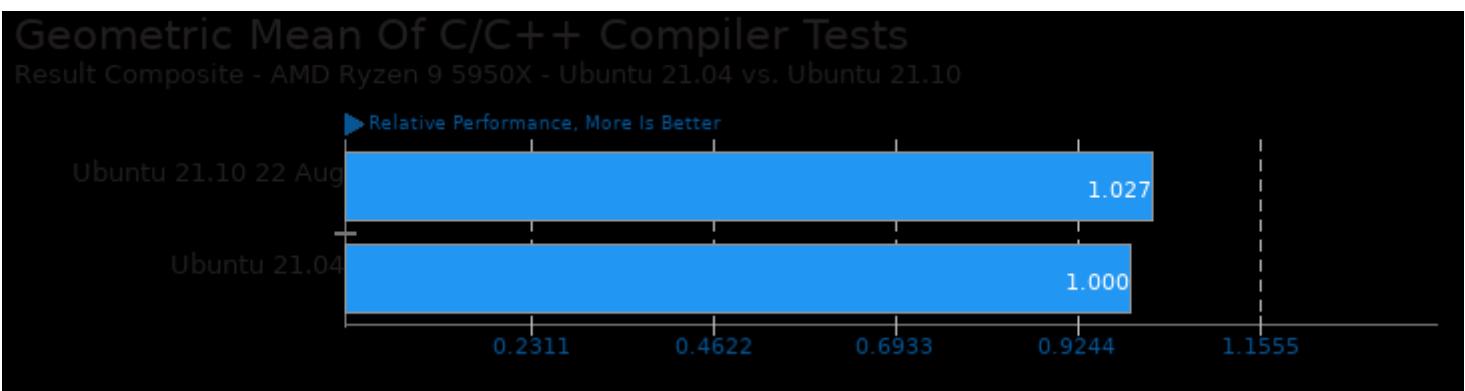
These geometric means are based upon test groupings / test suites for this result file.



Geometric mean based upon tests: system/selenium



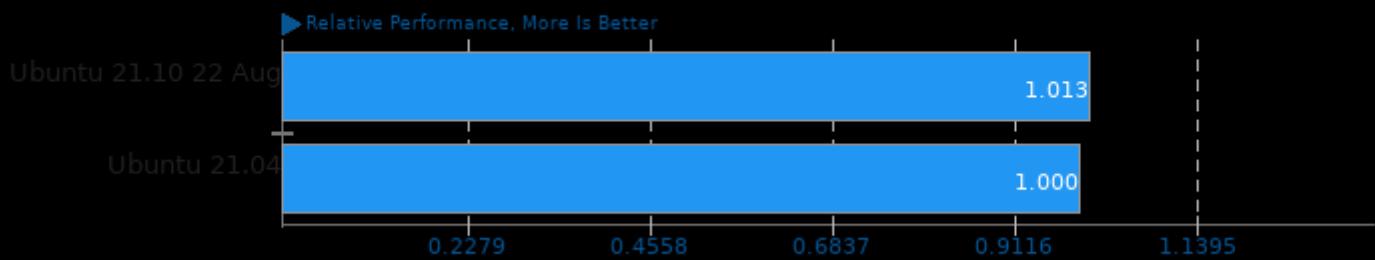
Geometric mean based upon tests: pts/build-llvm and pts/build-mesa



Geometric mean based upon tests: pts/vpxenc, pts/stockfish, pts/build-llvm, pts/sqlite-speedtest and pts/svt-av1

Geometric Mean Of CPU Massive Tests

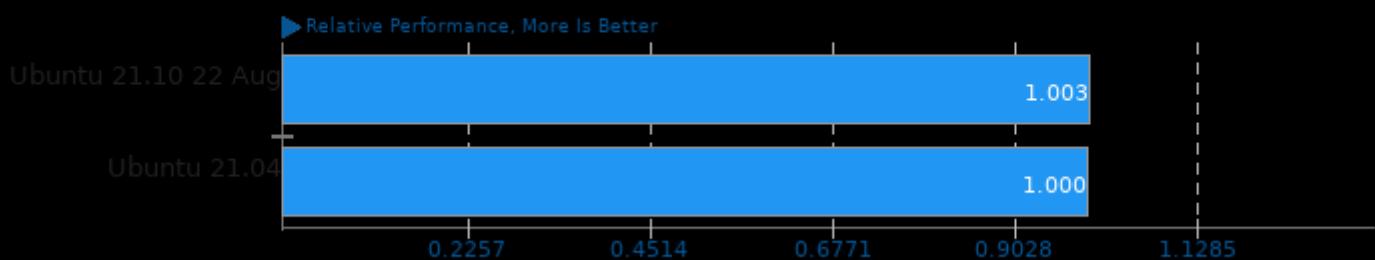
Result Composite - AMD Ryzen 9 5950X - Ubuntu 21.04 vs. Ubuntu 21.10



Geometric mean based upon tests: pts/build-llvm, pts/svt-av1, pts/vpxenc, pts/numpy, pts/plaidml, pts/stockfish, pts/v-ray, pts/blender and system/darktable

Geometric Mean Of Creator Workloads Tests

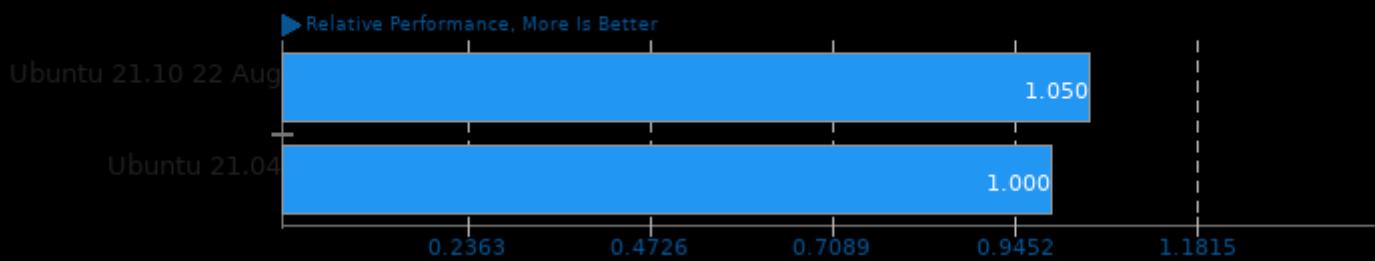
Result Composite - AMD Ryzen 9 5950X - Ubuntu 21.04 vs. Ubuntu 21.10



Geometric mean based upon tests: pts/blender, pts/v-ray, pts/indigobench, system/ocrmypdf, pts/vpxenc, pts/svt-av1, system/gmic, system/rawtherapee, system/gimp, system/hugin, system/darktable, pts/astcenc, pts/deepspeech and system/openscad

Geometric Mean Of Encoding Tests

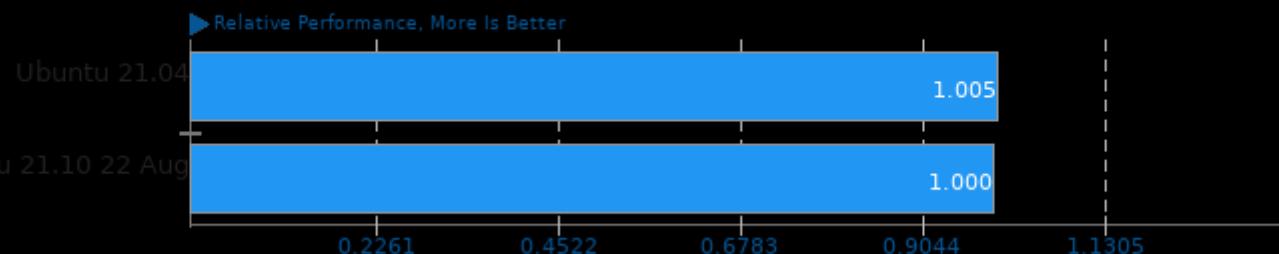
Result Composite - AMD Ryzen 9 5950X - Ubuntu 21.04 vs. Ubuntu 21.10



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

Geometric Mean Of Game Development Tests

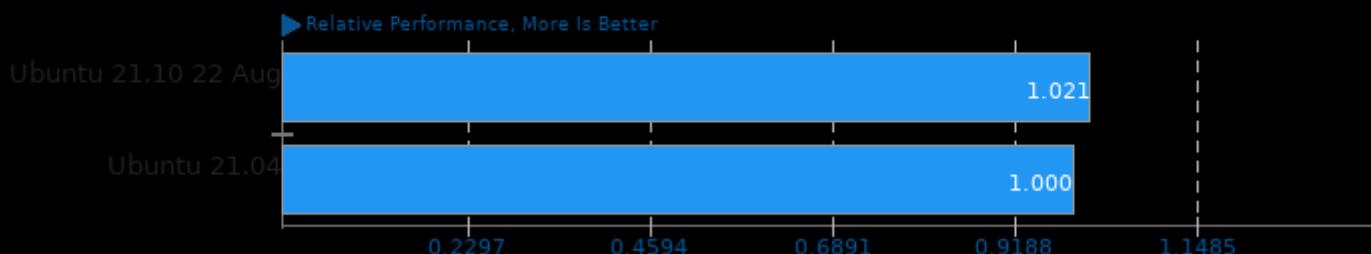
Result Composite - AMD Ryzen 9 5950X - Ubuntu 21.04 vs. Ubuntu 21.10



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

Geometric Mean Of HPC - High Performance Computing Tests

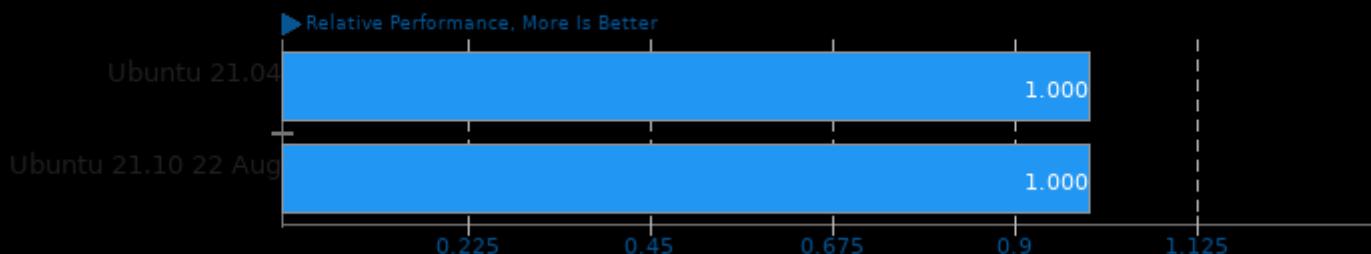
Result Composite - AMD Ryzen 9 5950X - Ubuntu 21.04 vs. Ubuntu 21.10



Geometric mean based upon tests: pts/ncnn, pts/tnn, pts/numpy, pts/deepspeech and pts/plaidml

Geometric Mean Of Imaging Tests

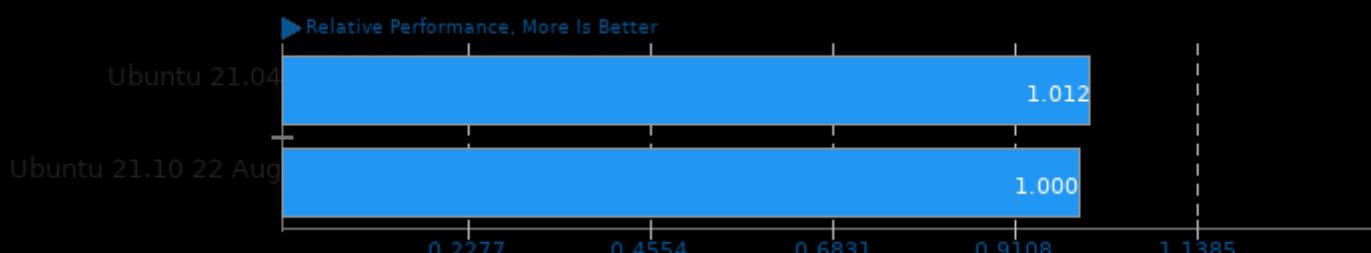
Result Composite - AMD Ryzen 9 5950X - Ubuntu 21.04 vs. Ubuntu 21.10



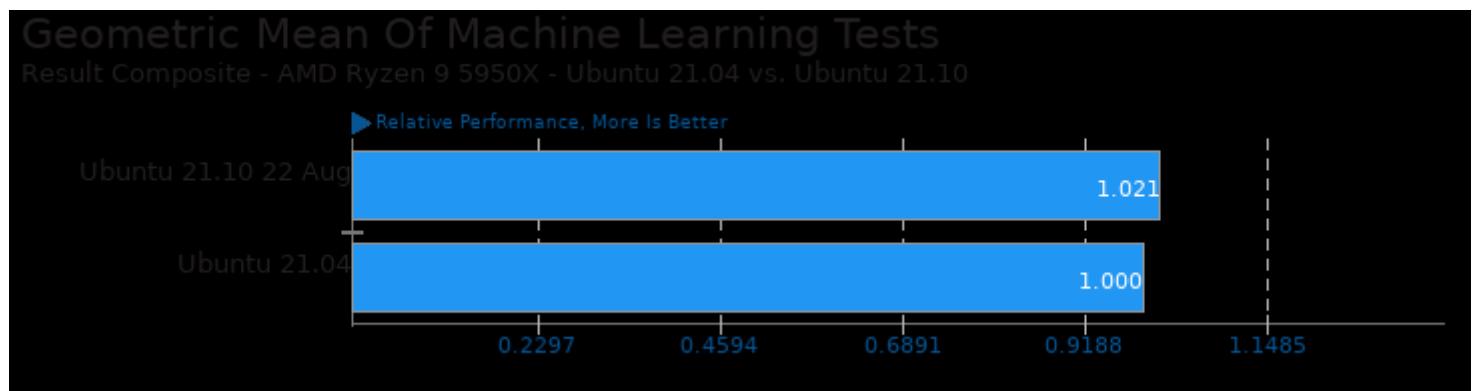
Geometric mean based upon tests: system/gmic, system/rawtherapee, system/gimp, system/hugin and system/darktable

Geometric Mean Of Common Kernel Benchmarks Tests

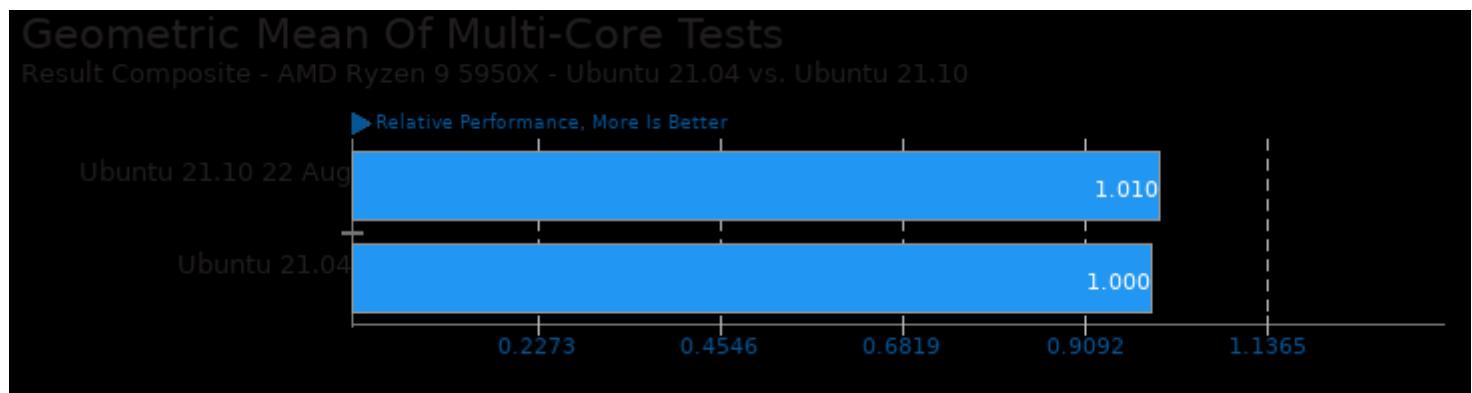
Result Composite - AMD Ryzen 9 5950X - Ubuntu 21.04 vs. Ubuntu 21.10



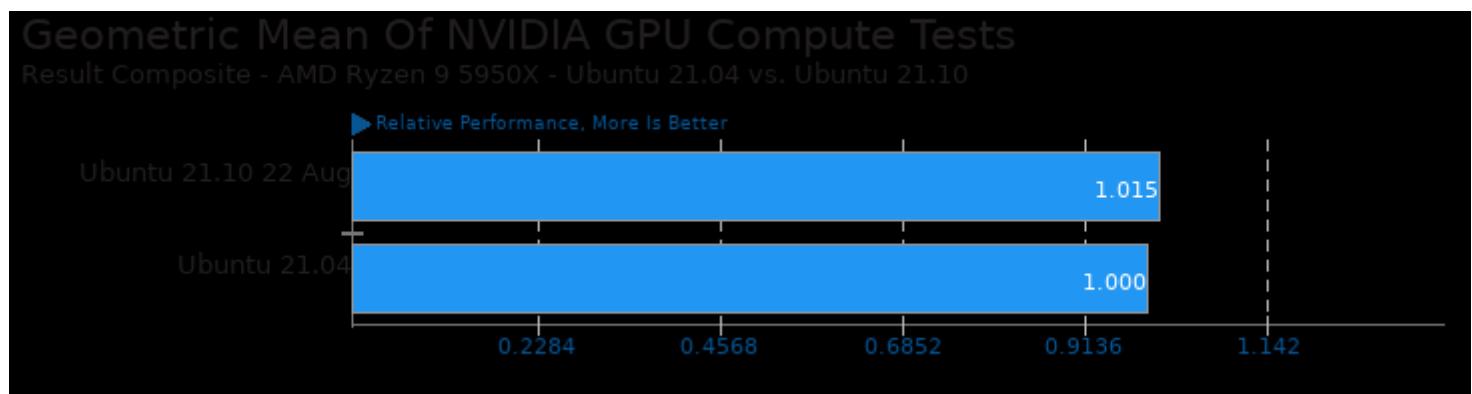
Geometric mean based upon tests: system/wireguard and pts/sqlite-speedtest



Geometric mean based upon tests: pts/ncnn, pts/tnn, pts/numpy, pts/deepspeech and pts/plaidml



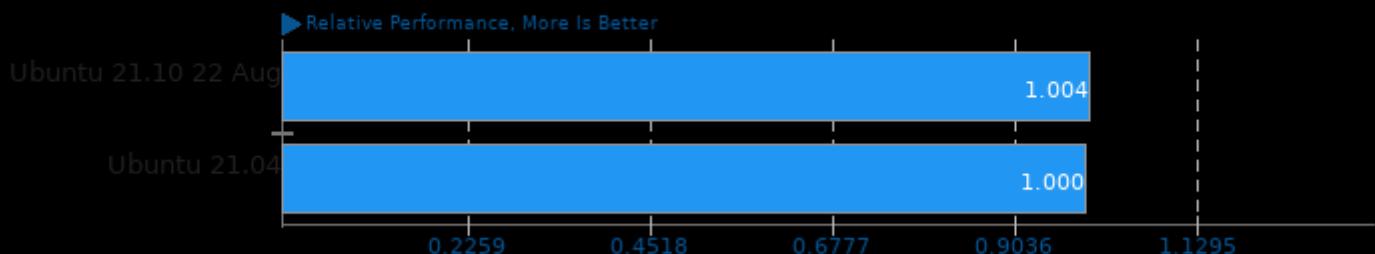
Geometric mean based upon tests: pts/blender, pts/stockfish, pts/vpxenc, pts/svt-av1, pts/build-llvm, pts/build-mesa, pts/v-ray and pts/indigobench



Geometric mean based upon tests: pts/plaidml, pts/indigobench, pts/v-ray, pts/blender and pts/ncnn

Geometric Mean Of Productivity Tests

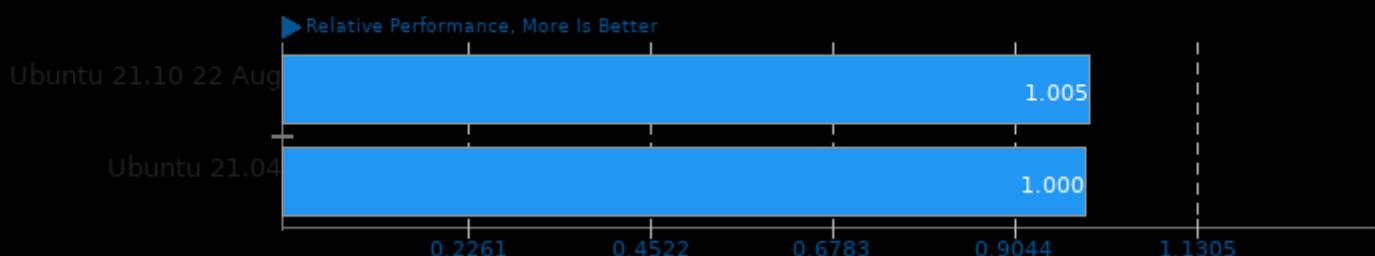
Result Composite - AMD Ryzen 9 5950X - Ubuntu 21.04 vs. Ubuntu 21.10



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

Geometric Mean Of Programmer / Developer System Benchmarks Tests

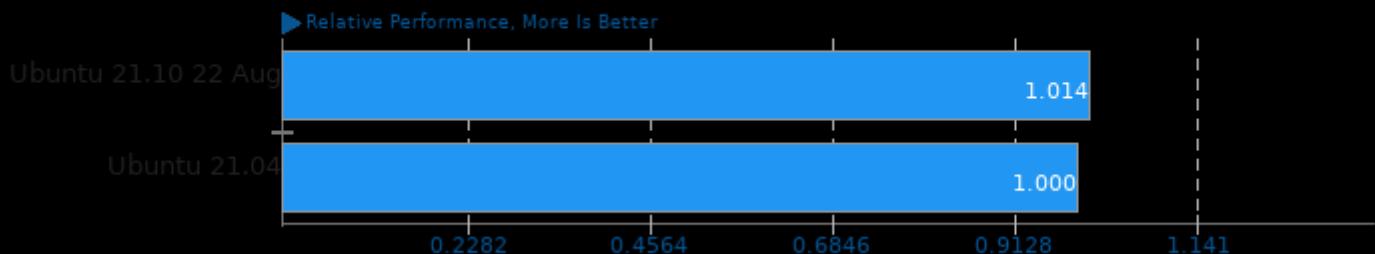
Result Composite - AMD Ryzen 9 5950X - Ubuntu 21.04 vs. Ubuntu 21.10



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

Geometric Mean Of Python Tests

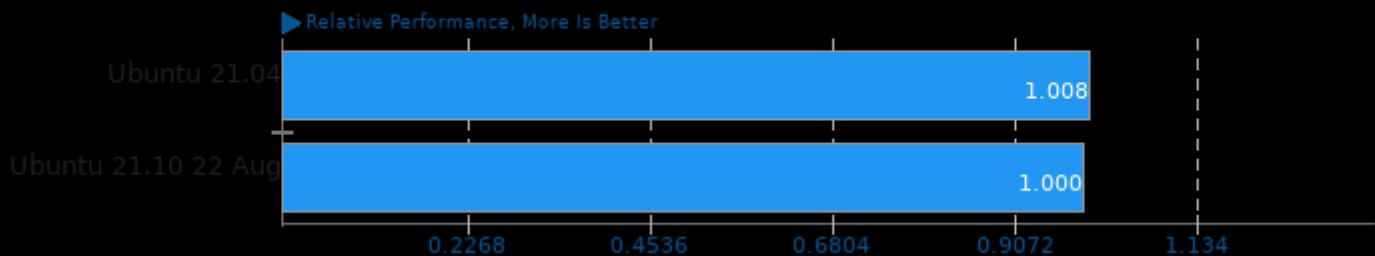
Result Composite - AMD Ryzen 9 5950X - Ubuntu 21.04 vs. Ubuntu 21.10



Geometric mean based upon tests: pts/pybench, pts/numpy and pts/pyperformance

Geometric Mean Of Renderers Tests

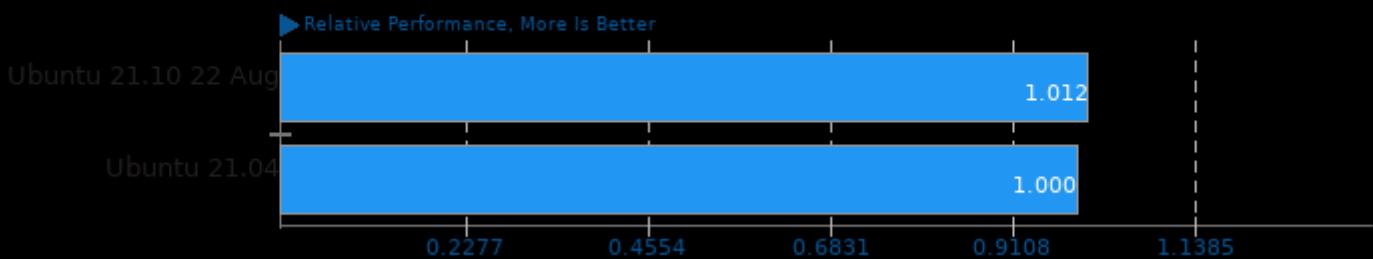
Result Composite - AMD Ryzen 9 5950X - Ubuntu 21.04 vs. Ubuntu 21.10



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

Geometric Mean Of Server CPU Tests

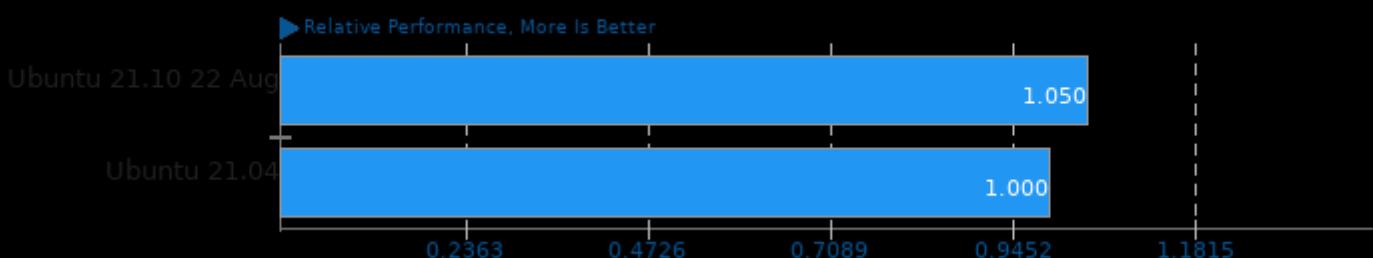
Result Composite - AMD Ryzen 9 5950X - Ubuntu 21.04 vs. Ubuntu 21.10



Geometric mean based upon tests: pts/svt-av1, pts/stockfish, pts/build-llvm, system/gimp, pts/blender, pts/pybench and pts/numpy

Geometric Mean Of Single-Threaded Tests

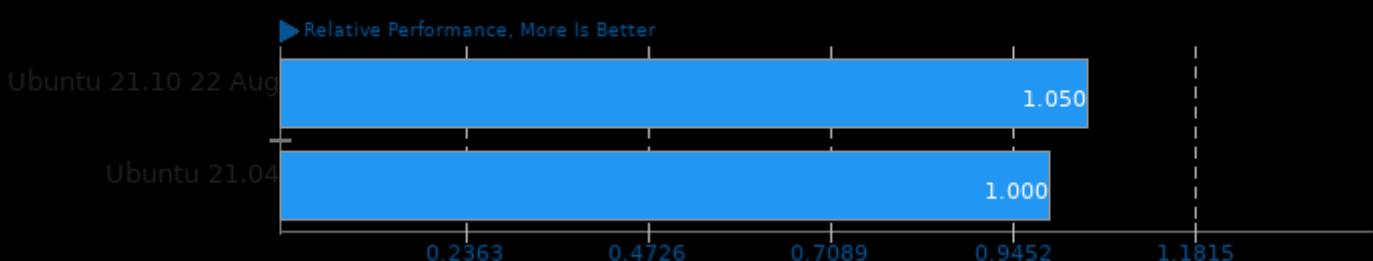
Result Composite - AMD Ryzen 9 5950X - Ubuntu 21.04 vs. Ubuntu 21.10



Geometric mean based upon tests: pts/numpy, pts/deepspeech and pts/pybench

Geometric Mean Of Video Encoding Tests

Result Composite - AMD Ryzen 9 5950X - Ubuntu 21.04 vs. Ubuntu 21.10



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

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 18:38.