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Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

AMD Ryzen 9 3900X 12-Core testing benchmarks on Ubuntu Linux by Michael Larabel.

Test Systems:

Ryzen 9 3900X

Processor: AMD Ryzen 9 3900X 12-Core @ 3.80GHz (12 Cores / 24 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (WI-FI) (1001 BIOS), Chipset: AMD Starship/Matisse, Memory: 16384MB, Disk: 280GB INTEL SSDPE21D280GA, Graphics: AMD Radeon RX 56/64 8GB (1630/945MHz), Audio: AMD Vega 10 HDMI Audio, Monitor: ASUS VP28U, Network: Realtek Device 8125 + Intel I211 + Intel Device 2723

OS: Ubuntu 19.10, Kernel: 5.3.0-10-generic (x86_64), Desktop: GNOME Shell 3.34.0, Display Server: X Server 1.20.5, Display Driver: amdgpu 19.0.1, OpenGL: 4.5 Mesa 19.1.6 (LLVM 8.0.1), Compiler: GCC 9.2.1 20190909, File-System: ext4, Screen Resolution: 3840x2160

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

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--program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Disk Notes: NONE / errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Graphics Notes: GLAMOR
Java Notes: OpenJDK Runtime Environment (build 11.0.5-ea+6-post-Ubuntu-1ubuntu2)
Python Notes: Python 2.7.16+ + Python 3.7.4+
Security Notes: l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional STIBP: always-on RSB filling

	Ryzen 9 3900X
FS-Mark - 1.F.1.S (Files/s)	701.00
Standard Deviation	1.3%
FS-Mark - 5.F.1.S.4.T (Files/s)	1059
Standard Deviation	1.2%
FS-Mark - 4.F.3.S.D.1.S (Files/s)	695.87
Standard Deviation	0.2%
FS-Mark - 1.F.1.S.N.S.F (Files/s)	2837
Standard Deviation	0.2%
BlogBench - Read (Final Score)	581533
Standard Deviation	3%
BlogBench - Write (Final Score)	24205
Standard Deviation	1.7%
Compile Bench - Compile (MB/s)	2160
Standard Deviation	1.9%
Compile Bench - Initial Create (MB/s)	730.81
Standard Deviation	1.3%
Compile Bench - Read Compiled Tree (MB/s)	3946
Standard Deviation	0.9%
Unpacking The Linux Kernel - linux-4.15.tar.xz (sec)	4.91
Standard Deviation	1.4%
GeeXLab - 1920 x 1080 - GL2 AntTweakBar (FPS)	3490
Standard Deviation	1.8%
GeeXLab - 1920 x 1080 - GL3 Vertex Pool (FPS)	8852
Standard Deviation	1.7%
GeeXLab - 1920 x 1080 - GL2 Cell Shading (FPS)	4450
Standard Deviation	0.4%
GeeXLab - 1920 x 1080 - GL2 Tunnel Beauty (FPS)	101.90
Standard Deviation	0.2%
GeeXLab - 1920 x 1080 - GL3 Mesh Exploder (FPS)	3558
Standard Deviation	0.4%
GeeXLab - 1920 x 1080 - GL2 Hot Tunnel DNA (FPS)	325.31
Standard Deviation	45.5%
GeeXLab - 1920 x 1080 - G.N.A.E (FPS)	3591
Standard Deviation	25.5%
ParaView - Many Spheres - 1920 x 1080 (Frames / Sec)	40.66
Standard Deviation	0.7%
ParaView - Many Spheres - 1920 x 1080 (MiPolys / Sec)	4076
Standard Deviation	0.7%
ParaView - Wavelet Volume - 1920 x 1080 (Frames / Sec)	193.28
Standard Deviation	4.4%
ParaView - Wavelet Volume - 1920 x 1080 (MiVoxels / Sec)	3093

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Standard Deviation	4.4%
ParaView - Wavelet Contour - 1920 x 1080 (Frames / Sec)	233.01
Standard Deviation	5.8%
ParaView - Wavelet Contour - 1920 x 1080 (MiPolys / Sec)	2428
Standard Deviation	5.8%
APITest - 1920 x 1080 - U.G (FPS)	10.25
Standard Deviation	6.8%
APITest - 1920 x 1080 - T.G (FPS)	150.46
Standard Deviation	4.8%
APITest - 1920 x 1080 - T.G (FPS)	553.99
Standard Deviation	1.3%
APITest - 1920 x 1080 - U.G (FPS)	21.04
Standard Deviation	1.2%
APITest - 1920 x 1080 - U.G (FPS)	6.49
Standard Deviation	4.9%
APITest - 1920 x 1080 - U.G (FPS)	11.96
Standard Deviation	0.6%
APITest - 1920 x 1080 - D.G (FPS)	12.91
Standard Deviation	5.1%
APITest - 1920 x 1080 - D.G (FPS)	81.16
Standard Deviation	2.5%
APITest - 1920 x 1080 - U.G (FPS)	13.04
Standard Deviation	5.2%
APITest - 1920 x 1080 - U.G (FPS)	3.58
Standard Deviation	15.5%
APITest - 1920 x 1080 - U.G (FPS)	81.03
Standard Deviation	2.9%
APITest - 1920 x 1080 - T.G (FPS)	144.95
Standard Deviation	5.2%
APITest - 1920 x 1080 - T.G (FPS)	245.14
Standard Deviation	2.8%
APITest - 1920 x 1080 - T.G (FPS)	565.23
Standard Deviation	1.1%
APITest - 1920 x 1080 - D.G (FPS)	12.86
Standard Deviation	5.4%
APITest - 1920 x 1080 - U.G.S (FPS)	64.29
Standard Deviation	0.2%
APITest - 1920 x 1080 - U.G (FPS)	12.67
Standard Deviation	2.8%
APITest - 1920 x 1080 - U.G.N (FPS)	64.19
Standard Deviation	0.2%
APITest - 1920 x 1080 - U.G.S (FPS)	64.13
Standard Deviation	0.2%
APITest - 1920 x 1080 - U.G.N (FPS)	64.23
Standard Deviation	0.2%
RAMspeed SMP - Add - Integer (MB/s)	31275
RAMspeed SMP - Copy - Integer (MB/s)	26488
RAMspeed SMP - Scale - Integer (MB/s)	26815
RAMspeed SMP - Triad - Integer (MB/s)	31365
RAMspeed SMP - Average - Integer (MB/s)	28989
RAMspeed SMP - Add - Floating Point (MB/s)	31267
RAMspeed SMP - Copy - Floating Point (MB/s)	26468

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RAMspeed SMP - Scale - Floating Point (MB/s)	25272
RAMspeed SMP - Triad - Floating Point (MB/s)	31270
RAMspeed SMP - Average - Floating Point (MB/s)	28852
Stream - Copy (MB/s)	16529
Standard Deviation	0%
Stream - Scale (MB/s)	16735
Standard Deviation	0.2%
Stream - Triad (MB/s)	18355
Standard Deviation	0.5%
Stream - Add (MB/s)	18273
Standard Deviation	0.9%
Tinymembench - Standard Memcpy (MB/s)	10064
Standard Deviation	0.3%
Tinymembench - Standard Memset (MB/s)	14660
Standard Deviation	0.5%
MBW - Memory Copy - 1024 MiB (MiB/s)	19275
Standard Deviation	0.3%
MBW - M.C.F.B.S - 1024 MiB (MiB/s)	10278
Standard Deviation	0.2%
t-test1 - 1 (sec)	23.47
Standard Deviation	0.4%
t-test1 - 2 (sec)	7.76
Standard Deviation	0.3%
Sockperf - Throughput (Messages/sec)	531661
Standard Deviation	2.1%
Sockperf - Latency Ping Pong (usec)	2.96
Standard Deviation	3%
Sockperf - Latency Under Load (usec)	16.04
Standard Deviation	22.5%
NAS Parallel Benchmarks - BT.C (Mop/s)	25008
Standard Deviation	1%
NAS Parallel Benchmarks - EP.C (Mop/s)	785.46
Standard Deviation	0.4%
NAS Parallel Benchmarks - EP.D (Mop/s)	778.34
Standard Deviation	0.1%
NAS Parallel Benchmarks - FT.C (Mop/s)	8823
Standard Deviation	0.3%
NAS Parallel Benchmarks - LU.C (Mop/s)	26164
Standard Deviation	0.1%
NAS Parallel Benchmarks - MG.C (Mop/s)	13815
Standard Deviation	0.1%
NAS Parallel Benchmarks - SP.B (Mop/s)	8939
Standard Deviation	0.4%
HPC Challenge - G-HPL (GFLOPS)	59.84163
Standard Deviation	1.6%
HPC Challenge - G-Ffte (GFLOPS)	5.50855
Standard Deviation	1%
HPC Challenge - G-Ffte (GFLOP/s)	5.50855
Standard Deviation	1%
HPC Challenge - EP-DGEMM (GFLOPS)	36.16980
Standard Deviation	0.3%
HPC Challenge - G-Ptrans (GB/s)	2.70206
Standard Deviation	0.1%

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HPC Challenge - EP-STREAM Triad (GB/s)	2.13527
Standard Deviation	0%
HPC Challenge - G-Rand Access (GUP/s)	0.08718
Standard Deviation	0.3%
HPC Challenge - R.R.L (usecs)	0.34359
Standard Deviation	0.8%
HPC Challenge - R.R.B (GB/s)	5.03924
Standard Deviation	3.9%
HPC Challenge - M.P.P.B (MB/s)	24028
Standard Deviation	0.9%
Parboil - OpenMP LBM (sec)	151.79
Standard Deviation	0.1%
Parboil - OpenMP CUTCP (sec)	2.09
Standard Deviation	0.7%
Parboil - OpenMP Stencil (sec)	15.12
Standard Deviation	0.1%
Parboil - O.M.G (sec)	29.09
Standard Deviation	0.3%
CloverLeaf - L.E.H (sec)	3.77
Standard Deviation	0.3%
CP2K Molecular Dynamics - Fayalite-FIST Data (sec)	324.69
Rodinia - OpenMP LavaMD (sec)	20.49
Standard Deviation	0.1%
Rodinia - OpenMP CFD Solver (sec)	13.36
Standard Deviation	0.9%
Rodinia - O.S (sec)	21.56
Standard Deviation	2.2%
CLOMP - Static OMP Speedup (Speedup)	2.41
Standard Deviation	2.9%
NAMD - ATPase Simulation - 327,506 Atoms (days/ns)	1.45038
Standard Deviation	0.9%
PolyBench-C - C.C (sec)	2.03
Standard Deviation	0.8%
PolyBench-C - C.C (sec)	2.05
Standard Deviation	0.5%
PolyBench-C - 3.M.M (sec)	2.06
Standard Deviation	2.8%
lzbench - XZ 0 - Compression (MB/s)	38
lzbench - XZ 0 - Decompression (MB/s)	117
Standard Deviation	1%
lzbench - Zstd 1 - Compression (MB/s)	481
Standard Deviation	1%
lzbench - Zstd 1 - Decompression (MB/s)	1286
Standard Deviation	0.9%
lzbench - Brotli 0 - Compression (MB/s)	486
Standard Deviation	0.4%
lzbench - Brotli 0 - Decompression (MB/s)	575
lzbench - Libdeflate 1 - Compression (MB/s)	251
Standard Deviation	0.8%
lzbench - Libdeflate 1 - Decompression (MB/s)	1145
Standard Deviation	1%
FFTE - N.2.1.C.F.R (MFLOPS)	9914
Standard Deviation	1.6%

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FFTW - Stock - 1D FFT Size 32 (Mflops)	11252
Standard Deviation	1.5%
FFTW - Stock - 2D FFT Size 32 (Mflops)	11094
Standard Deviation	0.8%
FFTW - Stock - 1D FFT Size 4096 (Mflops)	8788
Standard Deviation	0.8%
FFTW - Stock - 2D FFT Size 4096 (Mflops)	6706
Standard Deviation	0.2%
FFTW - Float + SSE - 1D FFT Size 32 (Mflops)	15306
Standard Deviation	1.7%
FFTW - Float + SSE - 2D FFT Size 32 (Mflops)	46787
Standard Deviation	0.6%
FFTW - Float + SSE - 1D FFT Size 4096 (Mflops)	59034
Standard Deviation	2.1%
FFTW - Float + SSE - 2D FFT Size 4096 (Mflops)	20806
Standard Deviation	1.2%
QMCPACK (Execution Time - sec)	928.80
Timed HMMer Search - P.D.S (sec)	5.42
Standard Deviation	2.6%
Timed MAFFT Alignment - M.S.A (sec)	2.12
Standard Deviation	7.6%
BLAKE2 (Cycles/Byte)	8.59
Standard Deviation	1.4%
dav1d - Summer Nature 4K (FPS)	173.85
Standard Deviation	0.2%
dav1d - S.N.1 (FPS)	465.25
Standard Deviation	0.5%
GNU GMP GMPbench - Total Time (GMPbench Score)	5926
Go Benchmarks - http (ns/op)	4865
Standard Deviation	0.6%
Go Benchmarks - json (ns/op)	3877172
Standard Deviation	0.6%
Go Benchmarks - build (ns/op)	18314688895
Standard Deviation	0.6%
Go Benchmarks - garbage (ns/op)	899027
Standard Deviation	0.6%
Java SciMark - Composite (Mflops)	3072
Standard Deviation	2.3%
Java SciMark - Monte Carlo (Mflops)	1744
Standard Deviation	0.6%
Java SciMark - F.F.T (Mflops)	1926
Standard Deviation	19.1%
Java SciMark - S.M.M (Mflops)	2740
Standard Deviation	0.3%
Java SciMark - D.L.M.F (Mflops)	6903
Standard Deviation	0.4%
Java SciMark - J.S.O.R (Mflops)	2045
Standard Deviation	0.3%
Bork File Encrypter - F.E.T (sec)	8.36
Standard Deviation	0.8%
DaCapo Benchmark - H2 (msec)	3129
Standard Deviation	1.1%
DaCapo Benchmark - Jython (msec)	3993

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Standard Deviation	1.1%
DaCapo Benchmark - Tradesoap (msec)	3663
Standard Deviation	1.5%
DaCapo Benchmark - Tradebeans (msec)	4153
Standard Deviation	0.9%
Renaissance - Apache Spark ALS (ms)	4807
Standard Deviation	2.3%
Renaissance - Apache Spark Bayes (ms)	5873
Standard Deviation	1.9%
Renaissance - Savina Reactors.IO (ms)	12386
Standard Deviation	7.1%
Renaissance - A.S.P (ms)	17204
Standard Deviation	2.5%
Renaissance - I.M.D.S (ms)	5833
Standard Deviation	5.2%
Renaissance - A.U.C.T (ms)	10761
Standard Deviation	1.2%
Fhourstones - C.C.4.S (Kpos / sec)	15154
Standard Deviation	1%
CacheBench - Read (MB/s)	3143
Standard Deviation	1.6%
CacheBench - Write (MB/s)	32637
Standard Deviation	0.1%
CacheBench - R.M.W (MB/s)	62469
Standard Deviation	0.3%
SciMark - Composite (Mflops)	664.18
Standard Deviation	0.9%
SciMark - Monte Carlo (Mflops)	159.06
Standard Deviation	0.8%
SciMark - F.F.T (Mflops)	359.77
Standard Deviation	1.4%
SciMark - S.M.M (Mflops)	782.42
Standard Deviation	2.9%
SciMark - D.L.M.F (Mflops)	710.18
Standard Deviation	4.9%
SciMark - J.S.O.R (Mflops)	1309
Standard Deviation	1%
Botan - KASUMI - Encrypt (MiB/s)	103.00
Standard Deviation	0%
Botan - KASUMI - Decrypt (MiB/s)	98.65
Standard Deviation	0.1%
Botan - AES-256 - Encrypt (MiB/s)	6039
Standard Deviation	1%
Botan - AES-256 - Decrypt (MiB/s)	6080
Standard Deviation	1%
Botan - Twofish - Encrypt (MiB/s)	395.95
Standard Deviation	0.8%
Botan - Twofish - Decrypt (MiB/s)	394.54
Standard Deviation	0.8%
Botan - Blowfish - Encrypt (MiB/s)	296.25
Standard Deviation	0.5%
Botan - Blowfish - Decrypt (MiB/s)	294.67
Standard Deviation	0.4%

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Botan - CAST-256 - Encrypt (MiB/s)	159.30
Standard Deviation	1%
Botan - CAST-256 - Decrypt (MiB/s)	159.15
Standard Deviation	1%
Crafty - Elapsed Time (Nodes/s)	9212967
Standard Deviation	1.3%
TSCP - A.C.P (Nodes/s)	1371576
Standard Deviation	1%
John The Ripper - Blowfish (Real C/S)	20268
Standard Deviation	0.6%
GraphicsMagick - Swirl (Iterations/min)	781
Standard Deviation	0.4%
GraphicsMagick - Rotate (Iterations/min)	761
Standard Deviation	0.5%
GraphicsMagick - Sharpen (Iterations/min)	195
Standard Deviation	0.3%
GraphicsMagick - Enhanced (Iterations/min)	299
GraphicsMagick - Resizing (Iterations/min)	1474
Standard Deviation	0.1%
GraphicsMagick - Noise-Gaussian (Iterations/min)	367
GraphicsMagick - HWB Color Space (Iterations/min)	1479
Standard Deviation	0.8%
MKL-DNN - IP Batch 1D - f32 (ms)	17.15
Standard Deviation	1.2%
MKL-DNN - IP Batch All - f32 (ms)	209.57
Standard Deviation	0.6%
MKL-DNN - C.B.c - f32 (ms)	18.41
Standard Deviation	0.3%
MKL-DNN - C.B.c - f32 (ms)	2055
Standard Deviation	0.1%
MKL-DNN - D.B.d - f32 (ms)	23.87
Standard Deviation	0.6%
MKL-DNN - D.B.d - f32 (ms)	4.99
Standard Deviation	0.4%
MKL-DNN - C.B.c - f32 (ms)	250.23
Standard Deviation	0.4%
MKL-DNN - D.B.d - f32 (ms)	6005
Standard Deviation	0.3%
MKL-DNN - C.B.c - f32 (ms)	109.38
Standard Deviation	0.4%
AOM AV1 - AV1 Video Encoding (FPS)	0.13
Standard Deviation	0%
SVT-AV1 - Enc Mode 4 - 1080p (FPS)	5.54
Standard Deviation	0.4%
SVT-AV1 - Enc Mode 8 - 1080p (FPS)	43.17
Standard Deviation	0.5%
SVT-HEVC - 1.8.b.Y.T.H.V.E (FPS)	76.45
Standard Deviation	0%
SVT-AV1 - Enc Mode 0 - 1080p (FPS)	0.06
Standard Deviation	0%
SVT-AV1 - Enc Mode 4 - 1080p (FPS)	4.45
Standard Deviation	0.5%
SVT-AV1 - Enc Mode 8 - 1080p (FPS)	43.89

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Standard Deviation	0.1%
SVT-VP9 - 1.8.b.Y.T.V.V.E (FPS)	208.87
Standard Deviation	2.3%
VP9 libvpx Encoding - v.V.1.V.E (FPS)	164.79
Standard Deviation	0.9%
x264 - H.2.V.E (FPS)	135.95
Standard Deviation	3%
x265 - H.2.1.V.E (FPS)	60.86
Standard Deviation	0.2%
Coremark - CoreMark Size 666 - I.P.S (Iterations/Sec)	548798
Standard Deviation	1.4%
Himeno Benchmark - P.P.S (MFLOPS)	1344
Standard Deviation	1.2%
7-Zip Compression - C.S.T (MIPS)	77588
Standard Deviation	0.8%
Stockfish - Total Time (Nodes/s)	38131528
Standard Deviation	1.5%
asmFish - 1.H.M.2.D (Nodes/s)	39550554
Standard Deviation	0.7%
Swet - Average (Operations/sec)	826103610
Standard Deviation	1.7%
ebizzy (Records/s)	1074191
Standard Deviation	1.8%
Timed GCC Compilation - Time To Compile (sec)	688.14
Standard Deviation	0.1%
Timed LLVM Compilation - Time To Compile (sec)	246.88
Timed PHP Compilation - Time To Compile (sec)	43.41
Standard Deviation	1.4%
C-Ray - Total Time - 4.1.R.P.P (sec)	42.79
Standard Deviation	0.2%
Parallel BZIP2 Compression - 2.F.C (sec)	2.42
Standard Deviation	2%
Primesieve - 1.P.N.G (sec)	15.83
Standard Deviation	0.5%
Rust Mandelbrot - T.T.C.S.P.M (sec)	36.86
Standard Deviation	0.9%
Rust Prime Benchmark - P.N.T.T.2.0.0 (sec)	30.63
Standard Deviation	0.3%
Smallpt - G.I.R.1.S (sec)	7.05
Standard Deviation	0.2%
Tungsten Renderer - Hair (sec)	17.74
Standard Deviation	0.2%
Tungsten Renderer - Water Caustic (sec)	23.94
Standard Deviation	0.7%
Tungsten Renderer - Non-Exponential (sec)	5.81
Standard Deviation	0.2%
Tungsten Renderer - Volumetric Caustic (sec)	7.48
Standard Deviation	0.1%
Node.js Octane Benchmark (Score)	51895
Standard Deviation	1.2%
AOBench - 2048 x 2048 - Total Time (sec)	30.98
Standard Deviation	0.3%
Bullet Physics Engine - Raytests (sec)	2.07

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Standard Deviation	0.5%
Bullet Physics Engine - 3000 Fall (sec)	3.32
Standard Deviation	0.4%
Bullet Physics Engine - 1000 Stack (sec)	4.01
Standard Deviation	0.5%
Bullet Physics Engine - 1000 Convex (sec)	3.73
Standard Deviation	0.4%
Bullet Physics Engine - 136 Ragdolls (sec)	2.12
Standard Deviation	0.3%
Bullet Physics Engine - Prim Trimesh (sec)	0.78
Standard Deviation	0.3%
Bullet Physics Engine - Convex Trimesh (sec)	0.93
Standard Deviation	0.4%
LZMA Compression - 2.F.C (sec)	218.12
Standard Deviation	0%
XZ Compression - C.u.1.0.3.s.i.i.C.L.9 (sec)	25.41
Standard Deviation	0.5%
Zstd Compression - C.u.1.0.3.s.i.i.C.L.1 (sec)	18.04
Standard Deviation	0.4%
dcraw - R.T.P.I.C (sec)	39.11
Standard Deviation	0.2%
FLAC Audio Encoding - WAV To FLAC (sec)	7.62
Standard Deviation	0.9%
LAME MP3 Encoding - WAV To MP3 (sec)	7.04
Standard Deviation	2.3%
eSpeak Speech Engine - T.T.S.S (sec)	27.01
Standard Deviation	1.7%
FFmpeg - H.2.H.T.N.D (sec)	7.05
Standard Deviation	1.3%
Hackbench - 16 - Thread (sec)	39.39
Standard Deviation	1.6%
Hackbench - 16 - Process (sec)	36.49
Standard Deviation	1%
Hackbench - 32 - Process (sec)	69.52
Standard Deviation	2%
m-queens - Time To Solve (sec)	46.85
Standard Deviation	0.1%
Minion - Graceful (sec)	41.22
Standard Deviation	0.6%
Minion - Solitaire (sec)	60.74
Standard Deviation	1.4%
Minion - Quasigroup (sec)	108.77
Standard Deviation	1.9%
N-Queens - Elapsed Time (sec)	9.14
Standard Deviation	0.2%
OpenCV Benchmark (sec)	62.07
Standard Deviation	1%
Perl Benchmarks - Pod2html (sec)	0.11137420
Standard Deviation	0.9%
Perl Benchmarks - Interpreter (sec)	0.00130219
Standard Deviation	0.4%
Radiance Benchmark - Serial (sec)	540.41
Radiance Benchmark - SMP Parallel (sec)	174.61

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R Benchmark (sec)	0.1661
Standard Deviation	0.4%
Sudokut - Total Time (sec)	12.49
Standard Deviation	1.6%
OpenSSL - R.4.b.P (Signs/sec)	3500
Standard Deviation	0.3%
Cpuminer-Opt - m7m (kH/s - Hash Speed)	624.95
Standard Deviation	0.2%
Cpuminer-Opt - deep (kH/s - Hash Speed)	11333
Standard Deviation	0.1%
Cpuminer-Opt - lbry (kH/s - Hash Speed)	34663
Standard Deviation	0.1%
Cpuminer-Opt - skein (kH/s - Hash Speed)	39690
Cpuminer-Opt - myr-gr (kH/s - Hash Speed)	13993
Standard Deviation	0.1%
Cpuminer-Opt - sha256t (kH/s - Hash Speed)	86783
Standard Deviation	0.6%
glibc bench - cos (nanoseconds)	42.14
Standard Deviation	0.4%
glibc bench - exp (nanoseconds)	4.97
Standard Deviation	1.2%
glibc bench - ffs (nanoseconds)	1.75
Standard Deviation	1.1%
glibc bench - sin (nanoseconds)	42.17
Standard Deviation	0.9%
glibc bench - log2 (nanoseconds)	5.81
Standard Deviation	1.7%
glibc bench - modf (nanoseconds)	2.20
Standard Deviation	1.1%
glibc bench - sinh (nanoseconds)	7.82
Standard Deviation	0.8%
glibc bench - sqrt (nanoseconds)	2.24
Standard Deviation	0.2%
glibc bench - tanh (nanoseconds)	10.54
Standard Deviation	1%
glibc bench - asinh (nanoseconds)	8.34
Standard Deviation	1.1%
glibc bench - atanh (nanoseconds)	10.10
Standard Deviation	1.3%
glibc bench - ffsll (nanoseconds)	1.74
Standard Deviation	1%
glibc bench - sincos (nanoseconds)	12.32
Standard Deviation	0.8%
glibc bench - pthread_once (nanoseconds)	1.74
Standard Deviation	1.1%
Cryptsetup - PBKDF2-sha512 (Iterations/sec)	1895088
Standard Deviation	0.7%
Cryptsetup - PBKDF2-whirlpool (Iterations/sec)	746199
Standard Deviation	1.1%
libjpeg-turbo tjbench - D.T (Megapixels/sec)	221.65
Standard Deviation	1%
GROMACS - Water Benchmark (Ns/Day)	0.97
Standard Deviation	0.3%

Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

PostgreSQL pgbench - Buffer Test - Normal Load - Read Only (TPS)	286845
Standard Deviation	0%
PostgreSQL pgbench - Buffer Test - Normal Load - Read Write	40111
Standard Deviation	0.5%
CppPerformanceBenchmarks - Math Library (sec)	271.41
Standard Deviation	2.9%
GNU Octave Benchmark (sec)	13.28
Standard Deviation	0.7%
Memtier_benchmark - Redis (Ops/sec)	2761743
Standard Deviation	0.8%
Redis - LPOP (Reqs/sec)	2809835
Standard Deviation	2.1%
Redis - SADD (Reqs/sec)	2234770
Standard Deviation	4.6%
Redis - LPUSH (Reqs/sec)	1707623
Standard Deviation	1.2%
Redis - GET (Reqs/sec)	2718422
Standard Deviation	5.7%
Redis - SET (Reqs/sec)	1958792
Standard Deviation	5.7%
Stress-NG - Crypto (Bogo Ops/s)	3467
Standard Deviation	0.6%
Stress-NG - CPU Stress (Bogo Ops/s)	4479
Standard Deviation	0.5%
Stress-NG - Matrix Math (Bogo Ops/s)	89158
Standard Deviation	0.1%
Stress-NG - Vector Math (Bogo Ops/s)	33111
Standard Deviation	0.2%
Stress-NG - Memory Copying (Bogo Ops/s)	9394
Standard Deviation	2.5%
Stress-NG - Context Switching (Bogo Ops/s)	5843600
Standard Deviation	16.5%
ctx_clock - C.S.T (Clocks)	152
Sysbench - Memory (Events/sec)	9170683
Standard Deviation	0.1%
Sysbench - CPU (Events/sec)	25588
Standard Deviation	0.1%
Optcarrot - O.B (FPS)	104.87
Standard Deviation	2.1%
Qmlbench - Fib10 (Frames)	2065
Qmlbench - Canvas Text Simple (Frames)	378
Qmlbench - C.D.F (Frames)	575.40
Qmlbench - M.I.A (Frames)	961
Chaos Group V-RAY - CPU (Ksamples)	20355
Standard Deviation	1%
IndigoBench - Bedroom (M samples/s)	2.04
Standard Deviation	0.3%
IndigoBench - Supercar (M samples/s)	4.35
Standard Deviation	0.2%
Blender - BMW27 - CPU-Only (sec)	113.97
Standard Deviation	0.1%
Blender - Classroom - CPU-Only (sec)	319.25
Standard Deviation	0.3%

Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

Blender - Fishy Cat - CPU-Only (sec)	164.84
Standard Deviation	0.1%
Blender - Barbershop - CPU-Only (sec)	461.70
Standard Deviation	0.4%
Blender - Pabellon Barcelona - CPU-Only (sec)	394.88
Standard Deviation	0.4%
Xsbench (Lookups/s)	2655102
Standard Deviation	0%
Memcached mcperf - Add (Operations/sec)	60289
Standard Deviation	27.9%
Memcached mcperf - Get (Operations/sec)	90120
Standard Deviation	2.9%
Memcached mcperf - Set (Operations/sec)	53908
Standard Deviation	7.2%
Memcached mcperf - Append (Operations/sec)	61501
Standard Deviation	18.2%
Memcached mcperf - Delete (Operations/sec)	95557
Standard Deviation	4.5%
Memcached mcperf - Prepend (Operations/sec)	69637
Standard Deviation	36.4%
Memcached mcperf - Replace (Operations/sec)	55534
Standard Deviation	1.6%
Numenta Anomaly Benchmark - Time To Completion (sec)	204.63
Standard Deviation	0.7%
Hierarchical INTegration - FLOAT (QUIPs)	390086832
Standard Deviation	1.7%
NGINX Benchmark - S.W.P.S (Reqs/sec)	40633
Standard Deviation	0.6%
NeatBench - CPU (FPS)	23.30
Standard Deviation	0.7%
Apache Benchmark - S.W.P.S (Reqs/sec)	38817
Standard Deviation	1.2%
Appleseed - Emily (sec)	271.14
Appleseed - Disney Material (sec)	167.45
Appleseed - Material Tester (sec)	164.43
Apache Siege - 200 (Transactions/sec)	89526
Standard Deviation	8.2%
Apache Siege - 250 (Transactions/sec)	78790
Standard Deviation	10.2%
Geekbench - CPU Multi Core (Score)	10840
Standard Deviation	0.2%
Geekbench - CPU Multi Core - Gaussian Blur (Mpixels/sec)	772.53
Standard Deviation	0.1%
Geekbench - CPU Multi Core - Face Detection (images/sec)	133.47
Standard Deviation	0.1%
Geekbench - CPU Multi Core - Horizon Detection (Gpixels/sec)	236.80
Standard Deviation	0.1%
Geekbench - CPU Single Core (Score)	1365
Standard Deviation	0.2%
Geekbench - CPU Single Core - Gaussian Blur (Mpixels/sec)	85.10
Standard Deviation	1.6%
Geekbench - CPU Single Core - Face Detection (images/sec)	11.03
Standard Deviation	1%

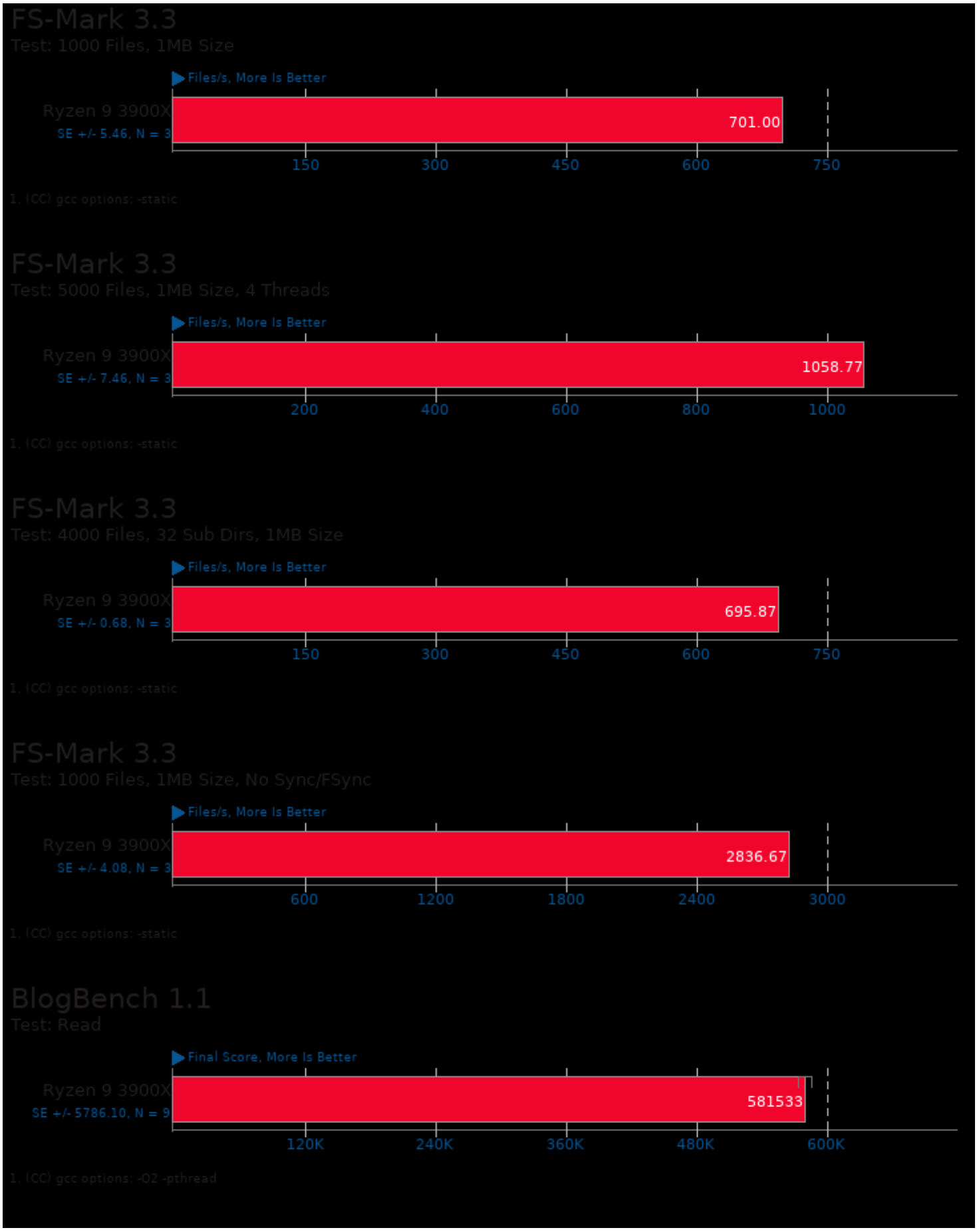
Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

Geekbench - CPU Single Core - Horizon Detection (Gpixels/sec)	29.30
Standard Deviation	3.3%
Novabench - CPU (CPU Score)	2125
Standard Deviation	0.5%
Novabench - RAM (RAM Score)	320
Standard Deviation	0.2%
Novabench - RAM (MB/s)	41242
Standard Deviation	0.5%
PHPBench - P.B.S (Score)	671189
Standard Deviation	2.5%
Selenium - ARES-6 - Firefox (ms)	48.72
Standard Deviation	0.4%
Selenium - Octane - Firefox (Geometric Mean)	37467
Standard Deviation	1.3%
Selenium - WebXPRT - Firefox (Score)	271
Standard Deviation	0.4%
Selenium - Basemark - Firefox (Overall Score)	762.05
Standard Deviation	3.2%
Selenium - Jetstream - Firefox (Score)	222.74
Standard Deviation	0.6%
Selenium - CanvasMark - Firefox (Score)	14950
Standard Deviation	3.5%
Selenium - MotionMark - Firefox (Score)	115.25
Standard Deviation	21.7%
Selenium - Speedometer - Firefox (Runs/min)	100.33
Standard Deviation	0.6%
Selenium - ARES-6 - Google Chrome (ms)	19.15
Standard Deviation	0.8%
Selenium - Octane - Google Chrome (Geometric Mean)	49262
Standard Deviation	1.7%
Selenium - WebXPRT - Google Chrome (Score)	268
Standard Deviation	0.4%
Selenium - Basemark - Google Chrome (Overall Score)	1439
Standard Deviation	3.7%
Selenium - Jetstream - Google Chrome (Score)	230.94
Standard Deviation	0.6%
Selenium - CanvasMark - Google Chrome (Score)	19835
Standard Deviation	1.2%
Selenium - MotionMark - Google Chrome (Score)	549.06
Standard Deviation	3%
Selenium - Speedometer - Google Chrome (Runs/min)	138
RAR Compression - L.S.T.A.T.R (sec)	65.71
Standard Deviation	2.1%
Git - T.T.C.C.G.C (sec)	4.83
Standard Deviation	1.6%
PHP Micro Benchmarks - Zend bench (sec)	0.40
Standard Deviation	1.4%
PHP Micro Benchmarks - Zend micro_bench (sec)	2.01
Standard Deviation	2%
Tesseract OCR - T.T.O.7.I (sec)	23.88
Standard Deviation	0.9%
BRL-CAD - V.P.M (VGR Performance Metric)	178663
Systemd Total Boot Time - Total (ms)	55426

Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

Systemd Total Boot Time - Kernel (ms)	2896
Systemd Total Boot Time - Loader (ms)	3428
Systemd Total Boot Time - Firmware (ms)	24914
Systemd Total Boot Time - Userspace (ms)	52530
LeelaChessZero - BLAS (Nodes/s)	7.39
Standard Deviation	43.1%
LeelaChessZero - Rand (Nodes/s)	133545
Standard Deviation	0.9%
Embree - Pathtracer - Crown (FPS)	14.09
Standard Deviation	2.1%
Embree - Pathtracer ISPC - Crown (FPS)	13.43
Standard Deviation	0.2%
Embree - Pathtracer - Asian Dragon (FPS)	15.11
Standard Deviation	1.2%
Embree - Pathtracer - Asian Dragon Obj (FPS)	13.59
Standard Deviation	0.3%
Embree - Pathtracer ISPC - Asian Dragon (FPS)	14.85
Standard Deviation	0.1%
Embree - Pathtracer ISPC - Asian Dragon Obj (FPS)	13.04
Standard Deviation	0%
OSPray - San Miguel - SciVis (FPS)	19.23
Standard Deviation	0%
OSPray - XFrog Forest - SciVis (FPS)	3.55
Standard Deviation	0.1%
OSPray - San Miguel - Path Tracer (FPS)	1.46
Standard Deviation	0.1%
OSPray - NASA Streamlines - SciVis (FPS)	27.03
Standard Deviation	0%
OSPray - XFrog Forest - Path Tracer (FPS)	1.86
Standard Deviation	0.2%
OSPray - M.R - SciVis (FPS)	12.82
Standard Deviation	0%
OSPray - NASA Streamlines - Path Tracer (FPS)	5.49
Standard Deviation	0.2%
OSPray - M.R - Path Tracer (FPS)	200
LuxCoreRender - DLSC (M samples/sec)	2.53
Standard Deviation	3.8%
LuxCoreRender - R.C.a.P (M samples/sec)	2.20
Standard Deviation	1%

Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks



Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

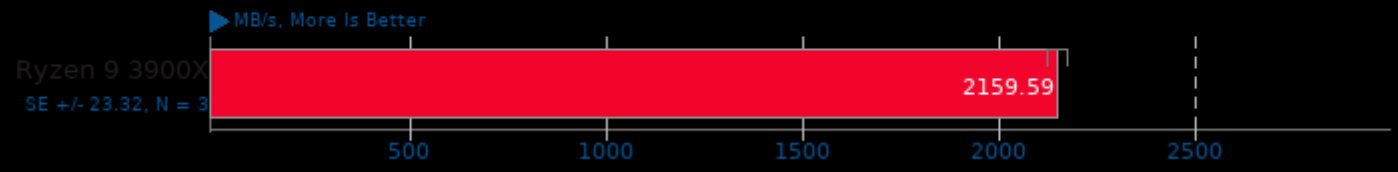
BlogBench 1.1

Test: Write

1. (CC) gcc options: -O2 -pthread

Compile Bench 0.6

Test: Compile



Compile Bench 0.6

Test: Initial Create

Compile Bench 0.6

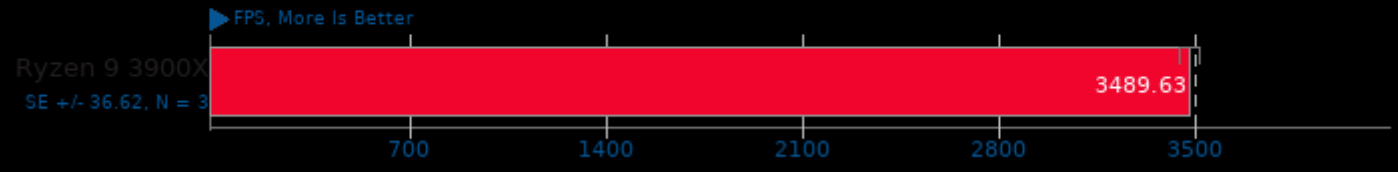
Test: Read Compiled Tree

Unpacking The Linux Kernel

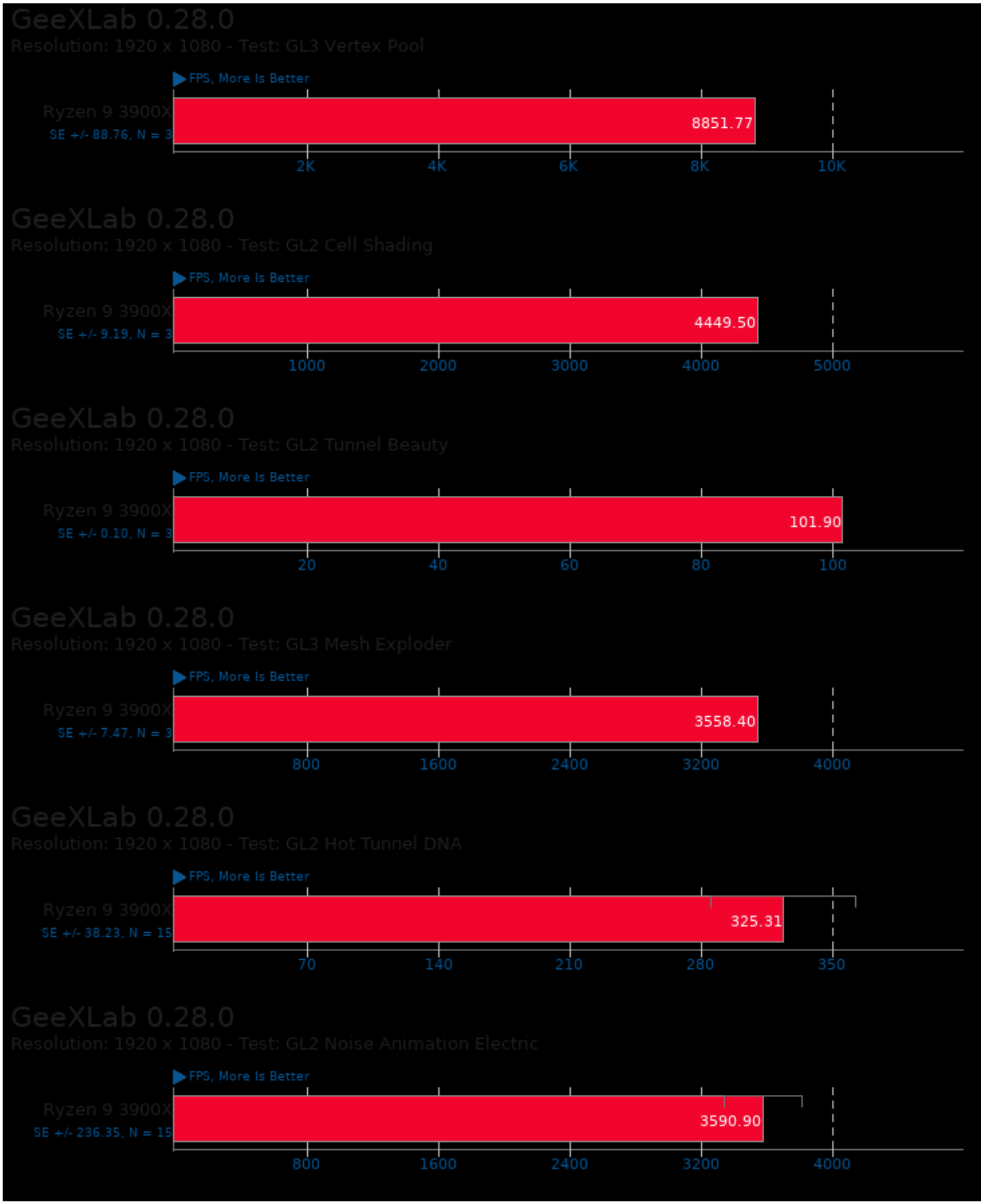
linux-4.15.tar.xz

GeeXLab 0.28.0

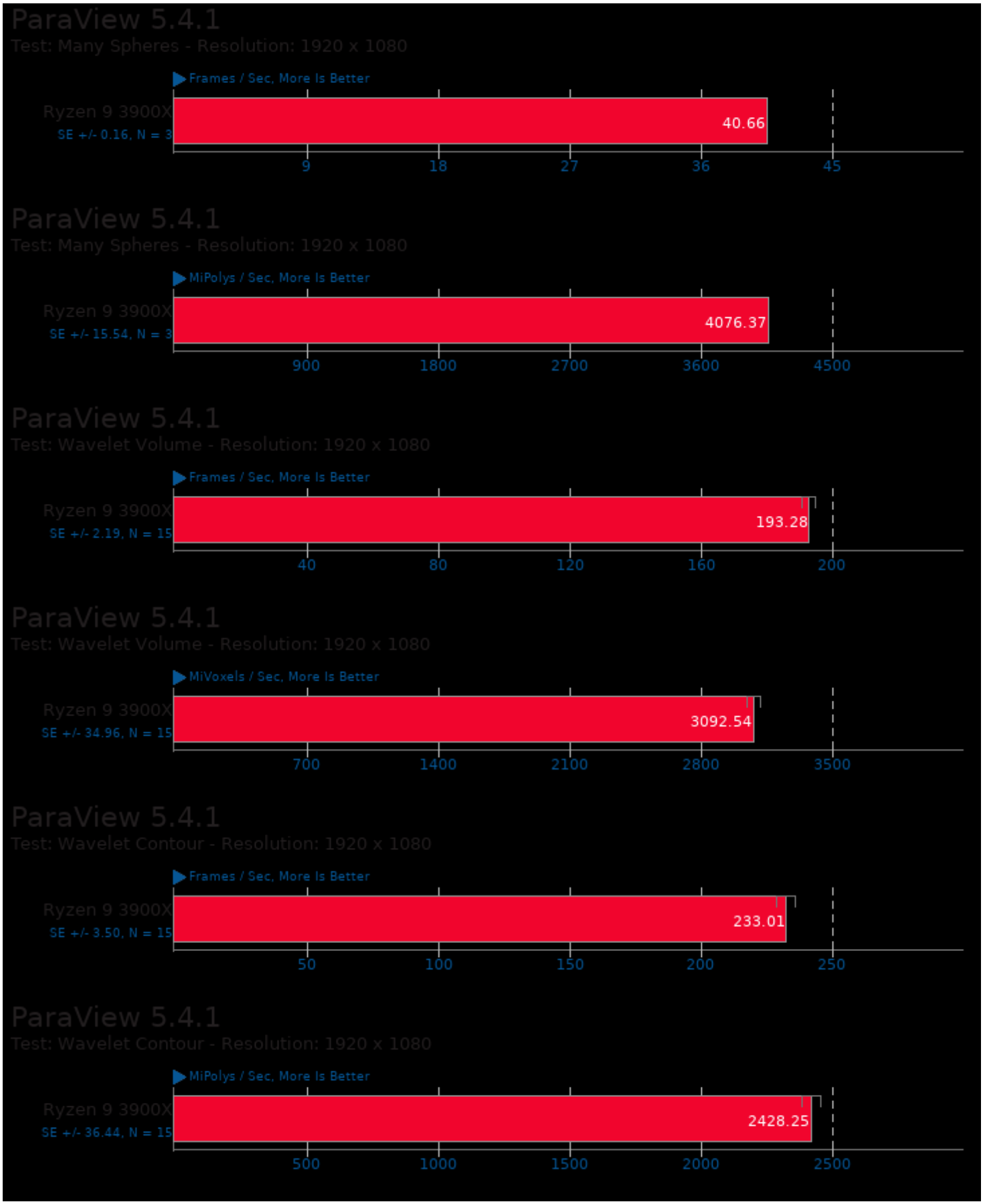
Resolution: 1920 x 1080 - Test: GL2 AntTweakBar



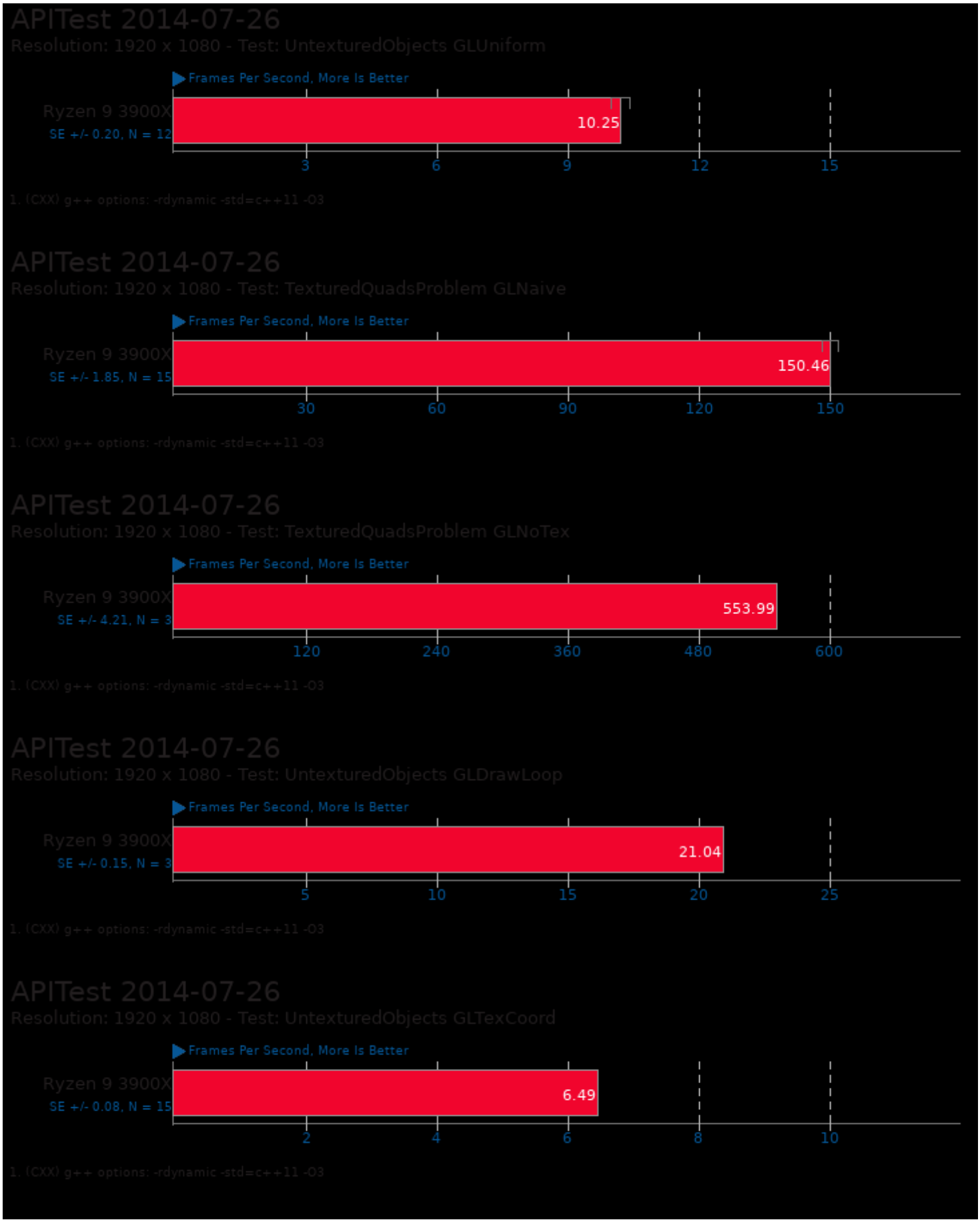
Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

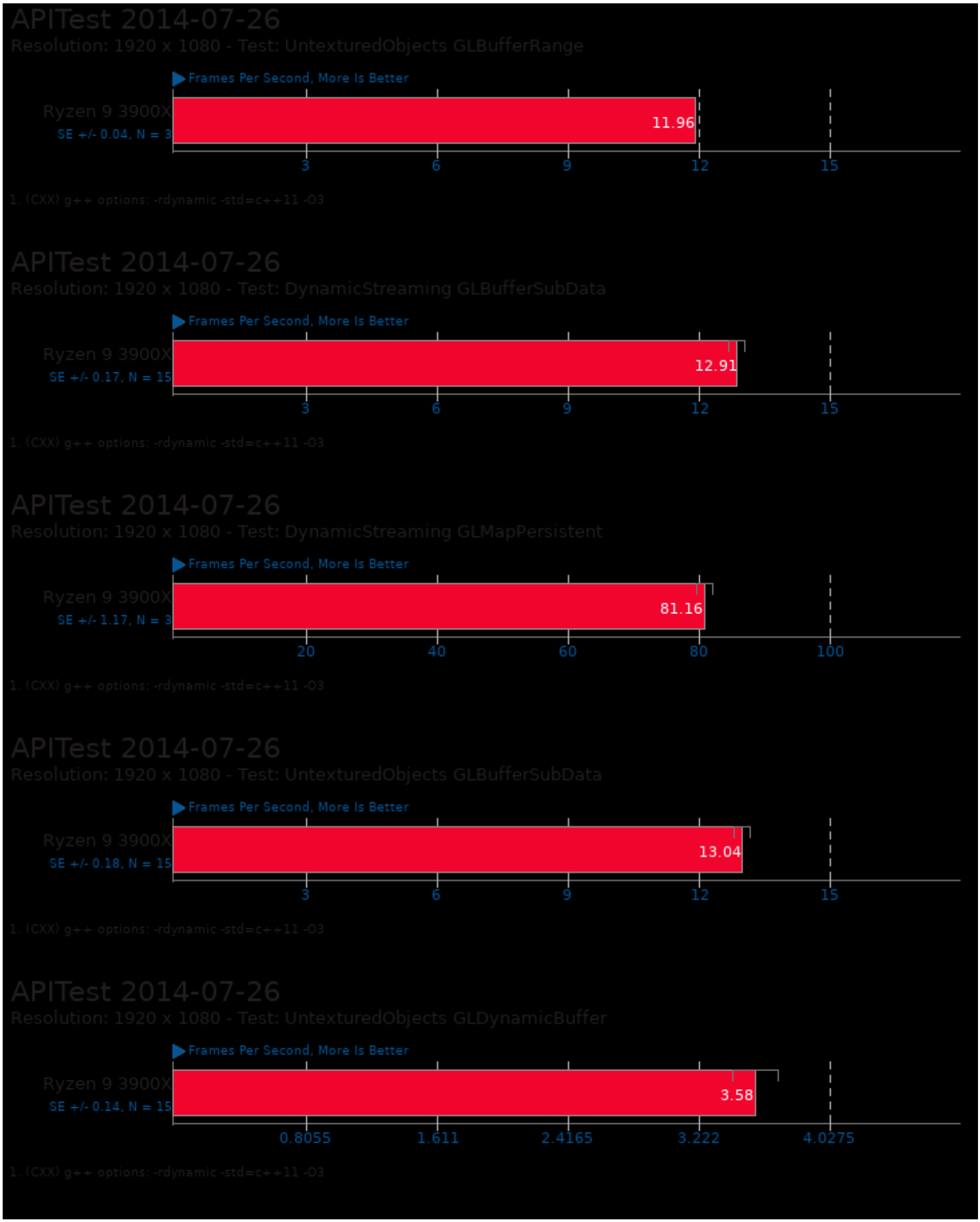


Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

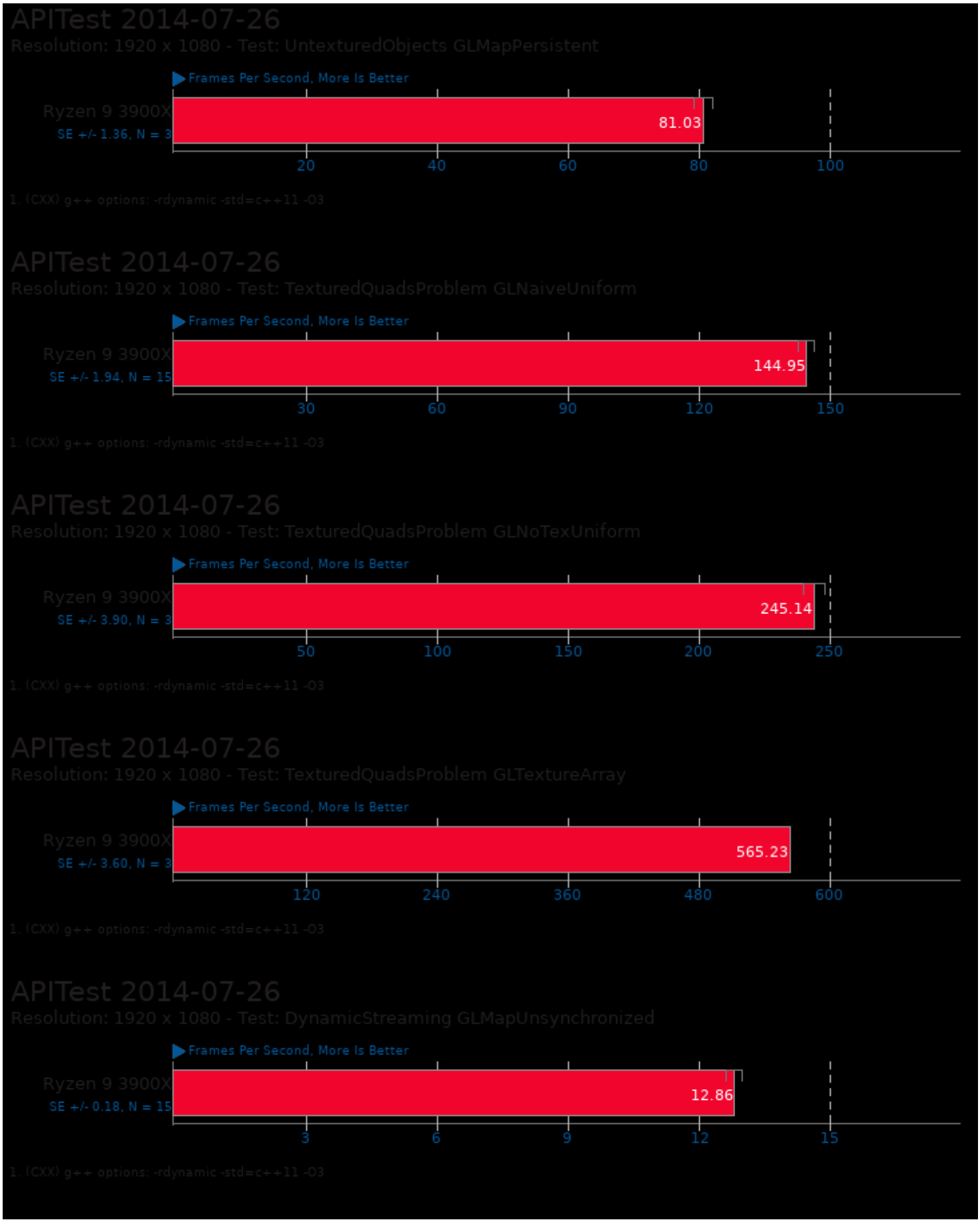


Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

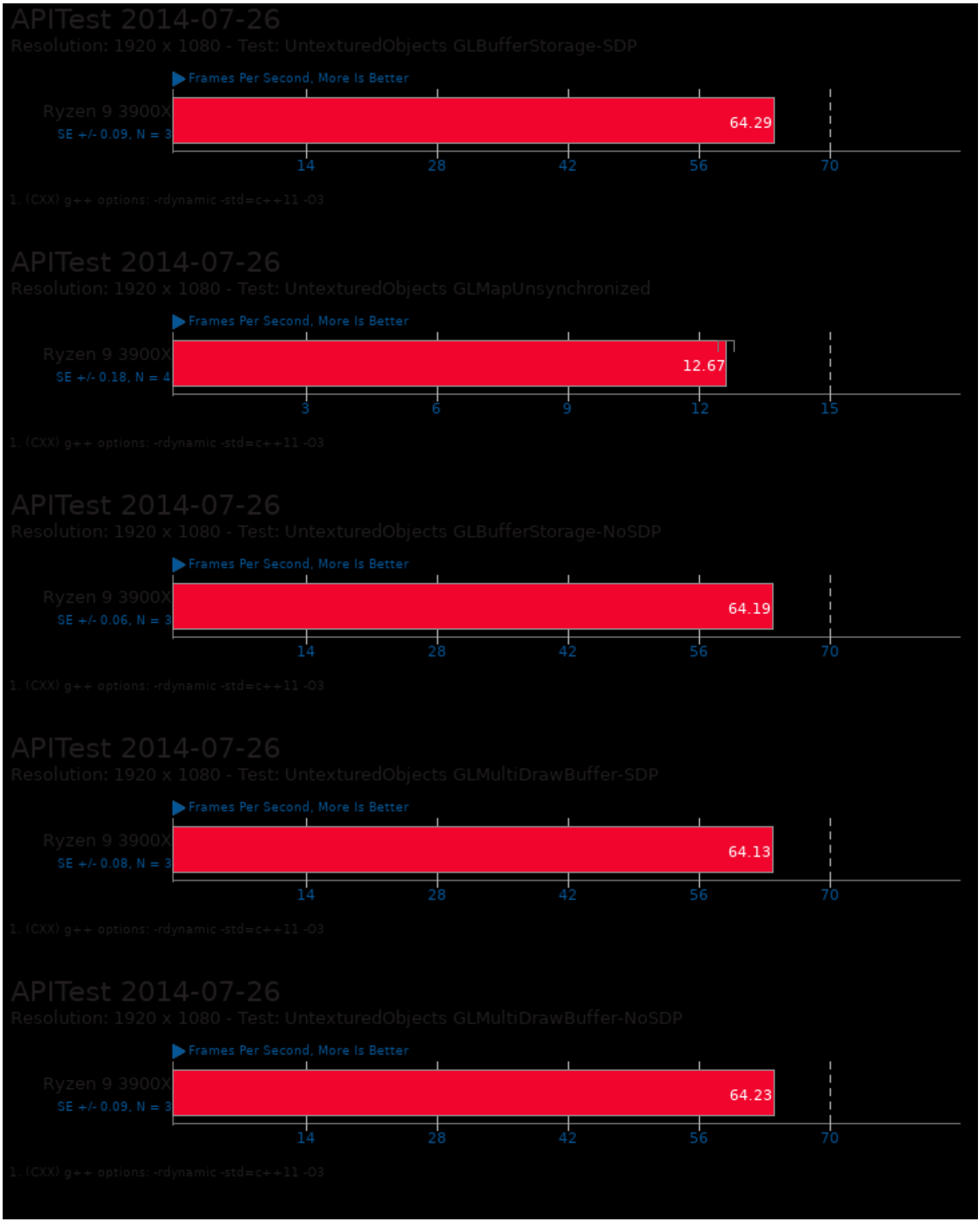



APITest 2014-07-26
Resolution: 1920 x 1080 - Test: UntexturedObjects GLBufferRange
Frames Per Second, More Is Better
Ryzen 9 3900X
SE +/- 0.04, N = 3
11.96
3
6
9
12
15
1. (CXX) g++ options: -rdynamic -std=c++11 -O3
APITest 2014-07-26
Resolution: 1920 x 1080 - Test: DynamicStreaming GLBufferSubData
Frames Per Second, More Is Better
Ryzen 9 3900X
SE +/- 0.17, N = 15
12.91
3
6
9
12
15
1. (CXX) g++ options: -rdynamic -std=c++11 -O3
APITest 2014-07-26
Resolution: 1920 x 1080 - Test: DynamicStreaming GLMapPersistent
Frames Per Second, More Is Better
Ryzen 9 3900X
SE +/- 1.17, N = 3
81.16
20
40
60
80
100
1. (CXX) g++ options: -rdynamic -std=c++11 -O3
APITest 2014-07-26
Resolution: 1920 x 1080 - Test: UntexturedObjects GLBufferSubData
Frames Per Second, More Is Better
Ryzen 9 3900X
SE +/- 0.18, N = 15
13.04
3
6
9
12
15
1. (CXX) g++ options: -rdynamic -std=c++11 -O3
APITest 2014-07-26
Resolution: 1920 x 1080 - Test: UntexturedObjects GLDynamicBuffer
Frames Per Second, More Is Better
Ryzen 9 3900X
SE +/- 0.14, N = 15
3.58
0.8055
1.611
2.4165
3.222
4.0275
1. (CXX) g++ options: -rdynamic -std=c++11 -O3

Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks



Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks



Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

Stream 2013-01-17
Type: Copy

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

Stream 2013-01-17
Type: Scale

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

Stream 2013-01-17
Type: Triad

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

Stream 2013-01-17
Type: Add

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

Tinymembench 2018-05-28
Standard Memcpy

1. (CC) gcc options: -O2 -lm

Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

Tinymembench 2018-05-28

Standard Memset

1. (CC) gcc options: -O2 -lm

MBW 2018-09-08

Test: Memory Copy - Array Size: 1024 MiB

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

MBW 2018-09-08

Test: Memory Copy, Fixed Block Size - Array Size: 1024 MiB

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

t-test1 2017-01-13

Threads: 1

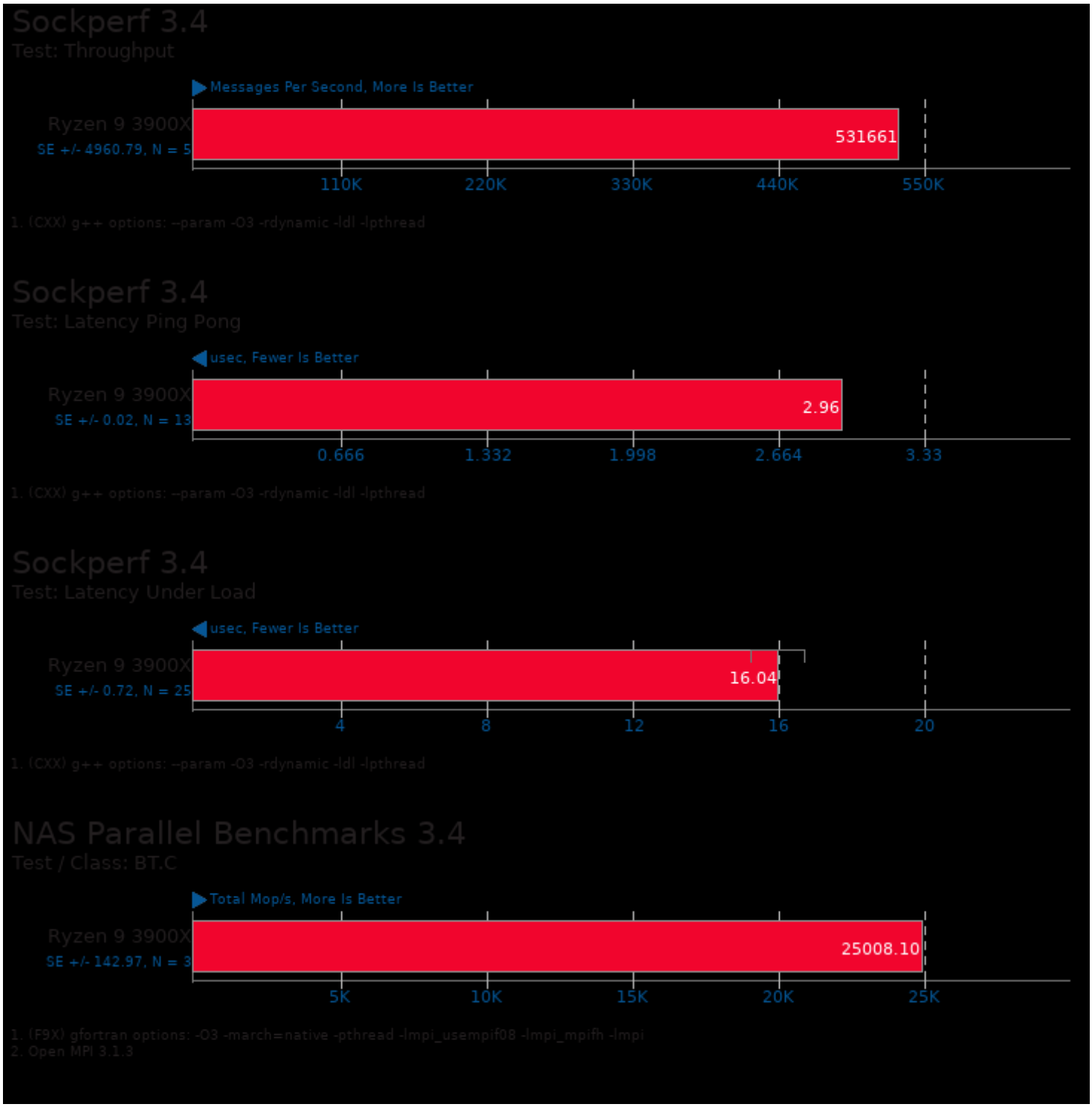
1. (CC) gcc options: -pthread

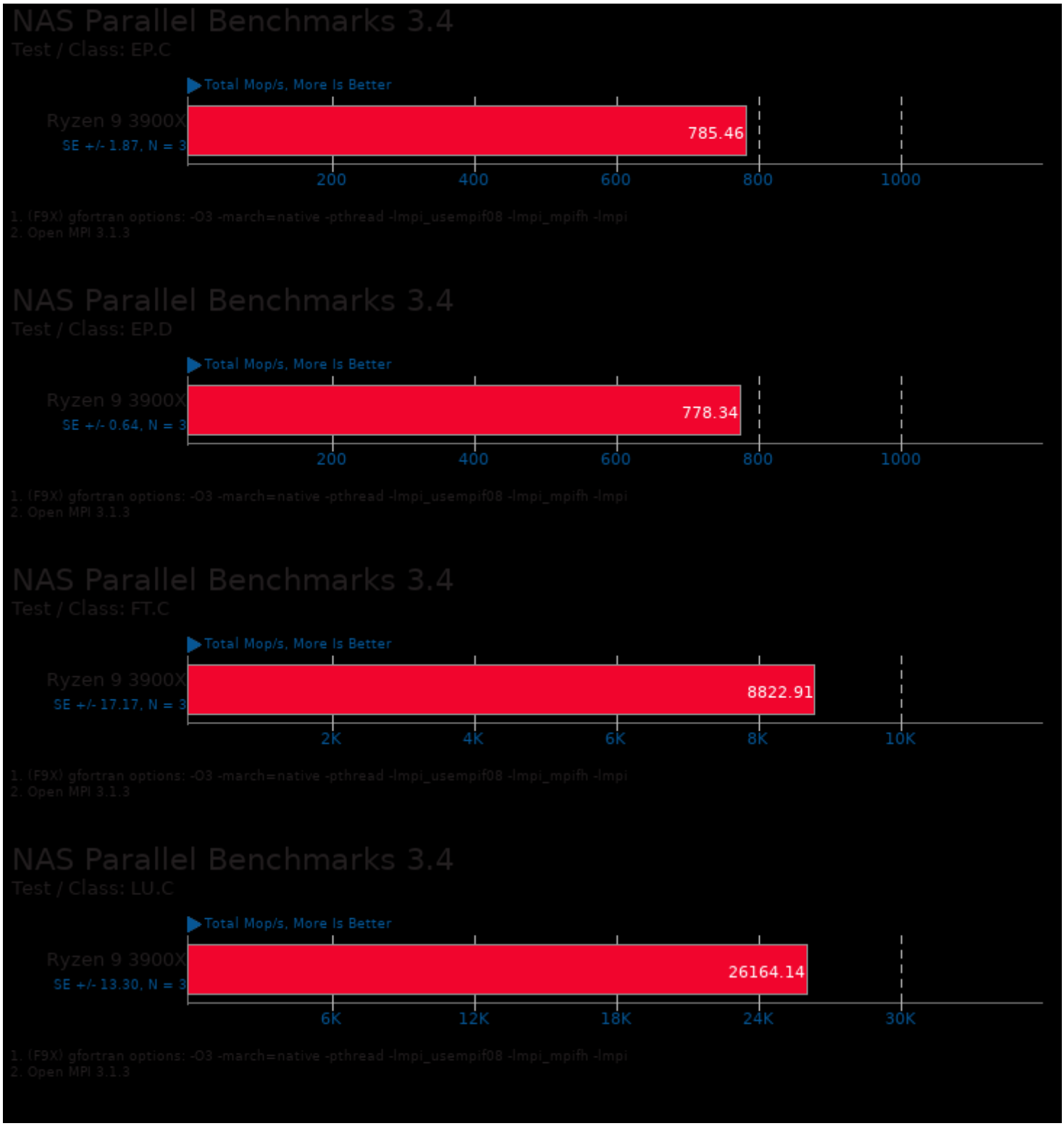
t-test1 2017-01-13

Threads: 2

1. (CC) gcc options: -pthread

Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks




NAS Parallel Benchmarks 3.4
Test / Class: EP.C
Total Mop/s, More Is Better
Ryzen 9 3900X
SE +/- 1.87, N = 3
785.46
200
400
600
800
1000
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 3.1.3
NAS Parallel Benchmarks 3.4
Test / Class: EP.D
Total Mop/s, More Is Better
Ryzen 9 3900X
SE +/- 0.64, N = 3
778.34
200
400
600
800
1000
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 3.1.3
NAS Parallel Benchmarks 3.4
Test / Class: FT.C
Total Mop/s, More Is Better
Ryzen 9 3900X
SE +/- 17.17, N = 3
8822.91
2K
4K
6K
8K
10K
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 3.1.3
NAS Parallel Benchmarks 3.4
Test / Class: LU.C
Total Mop/s, More Is Better
Ryzen 9 3900X
SE +/- 13.30, N = 3
26164.14
6K
12K
18K
24K
30K
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 3.1.3

Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

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Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

Parboil 2.5
Test: OpenMP LBM

1. (CXX) g++ options: -lm -lpthread -lgomp -O3 -ffast-math -fopenmp

Parboil 2.5
Test: OpenMP CUTCP

1. (CXX) g++ options: -lm -lpthread -lgomp -O3 -ffast-math -fopenmp

Parboil 2.5
Test: OpenMP Stencil

1. (CXX) g++ options: -lm -lpthread -lgomp -O3 -ffast-math -fopenmp

Parboil 2.5
Test: OpenMP MRI Gridding

1. (CXX) g++ options: -lm -lpthread -lgomp -O3 -ffast-math -fopenmp

CloverLeaf
Lagrangian-Eulerian Hydrodynamics

1. (F9X) gfortran options: -O3 -march=native -funroll-loops -fopenmp

Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

CP2K Molecular Dynamics 6.1

Fayalite-FIST Data

Rodinia 2.4

Test: OpenMP LavaMD

1. (CXX) g++ options: -O2 -lOpenCL

Rodinia 2.4

Test: OpenMP CFD Solver

1. (CXX) g++ options: -O2 -lOpenCL

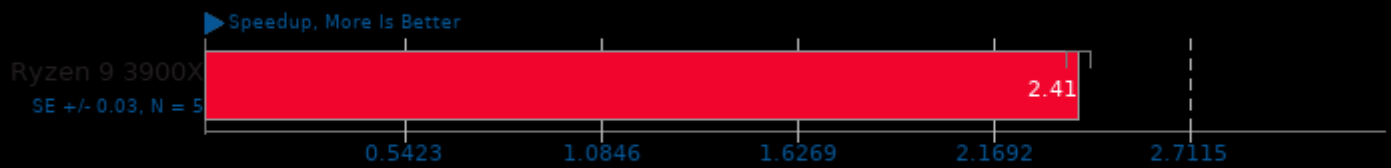
Rodinia 2.4

Test: OpenMP Streamcluster

1. (CXX) g++ options: -O2 -lOpenCL

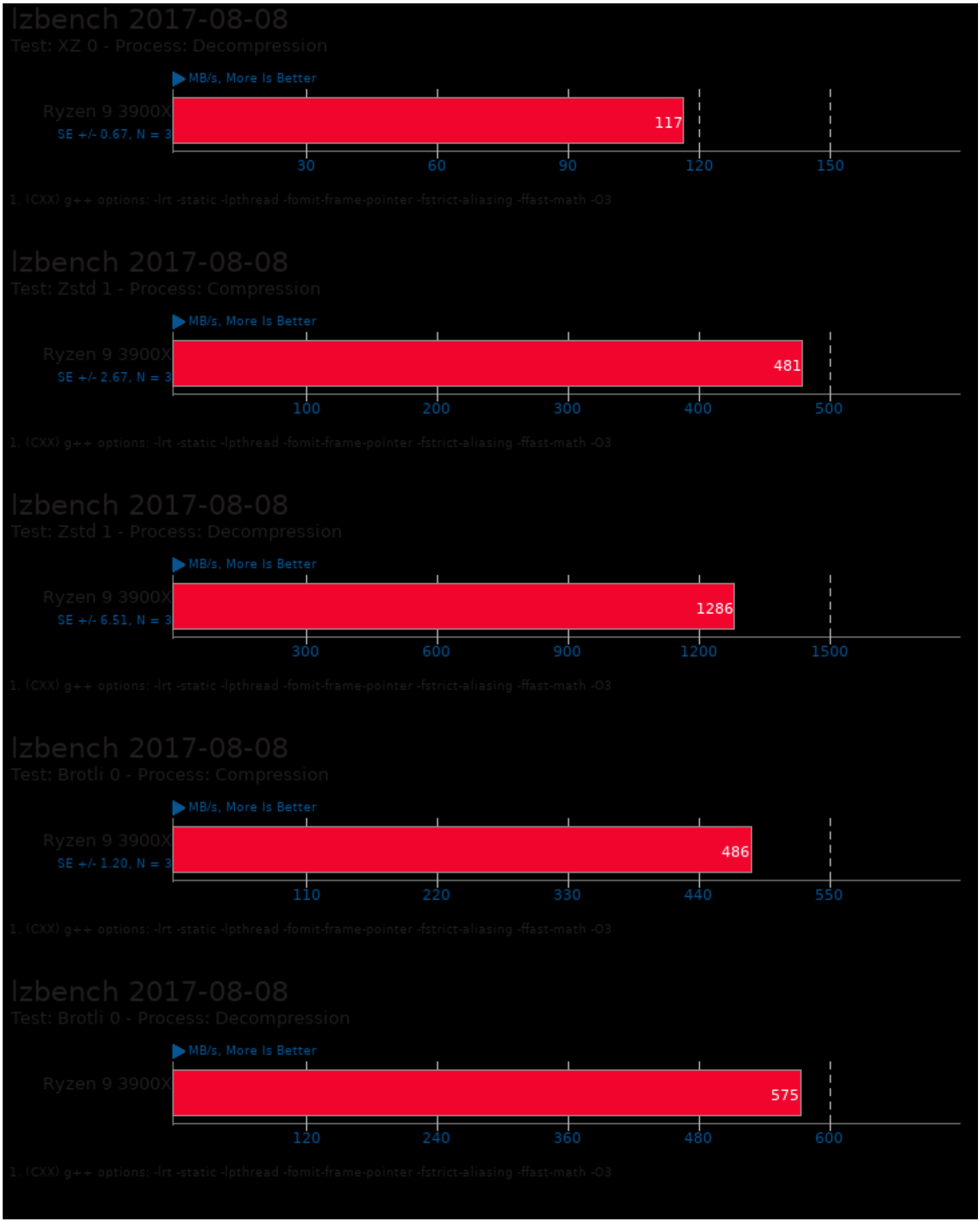
CLOMP 3.3

Static OMP Speedup



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

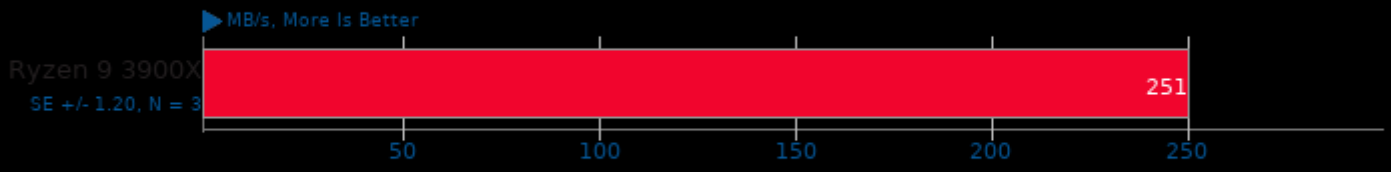
Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks


lzbench 2017-08-08
Test: XZ 0 - Process: Decompression
MB/s, More Is Better
Ryzen 9 3900X
SE +/- 0.67, N = 3
117
30
60
90
120
150
1. (CXX) g++ options: -lrt -static -lpthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3
lzbench 2017-08-08
Test: Zstd 1 - Process: Compression
MB/s, More Is Better
Ryzen 9 3900X
SE +/- 2.67, N = 3
481
100
200
300
400
500
1. (CXX) g++ options: -lrt -static -lpthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3
lzbench 2017-08-08
Test: Zstd 1 - Process: Decompression
MB/s, More Is Better
Ryzen 9 3900X
SE +/- 6.51, N = 3
1286
300
600
900
1200
1500
1. (CXX) g++ options: -lrt -static -lpthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3
lzbench 2017-08-08
Test: Brotli 0 - Process: Compression
MB/s, More Is Better
Ryzen 9 3900X
SE +/- 1.20, N = 3
486
110
220
330
440
550
1. (CXX) g++ options: -lrt -static -lpthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3
lzbench 2017-08-08
Test: Brotli 0 - Process: Decompression
MB/s, More Is Better
Ryzen 9 3900X
575
120
240
360
480
600
1. (CXX) g++ options: -lrt -static -lpthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

lzbench 2017-08-08

Test: Libdeflate 1 - Process: Compression



1. (CXX) g++ options: -lrt -static -lpthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

lzbench 2017-08-08

Test: Libdeflate 1 - Process: Decompression

1. (CXX) g++ options: -lrt -static -lpthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

FFTE 6.0

Test: N=256, 1D Complex FFT Routine

1. (F9X) gfortran options: -O3 -fomit-frame-pointer -fopenmp -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi

FFTW 3.3.6

Build: Stock - Size: 1D FFT Size 32

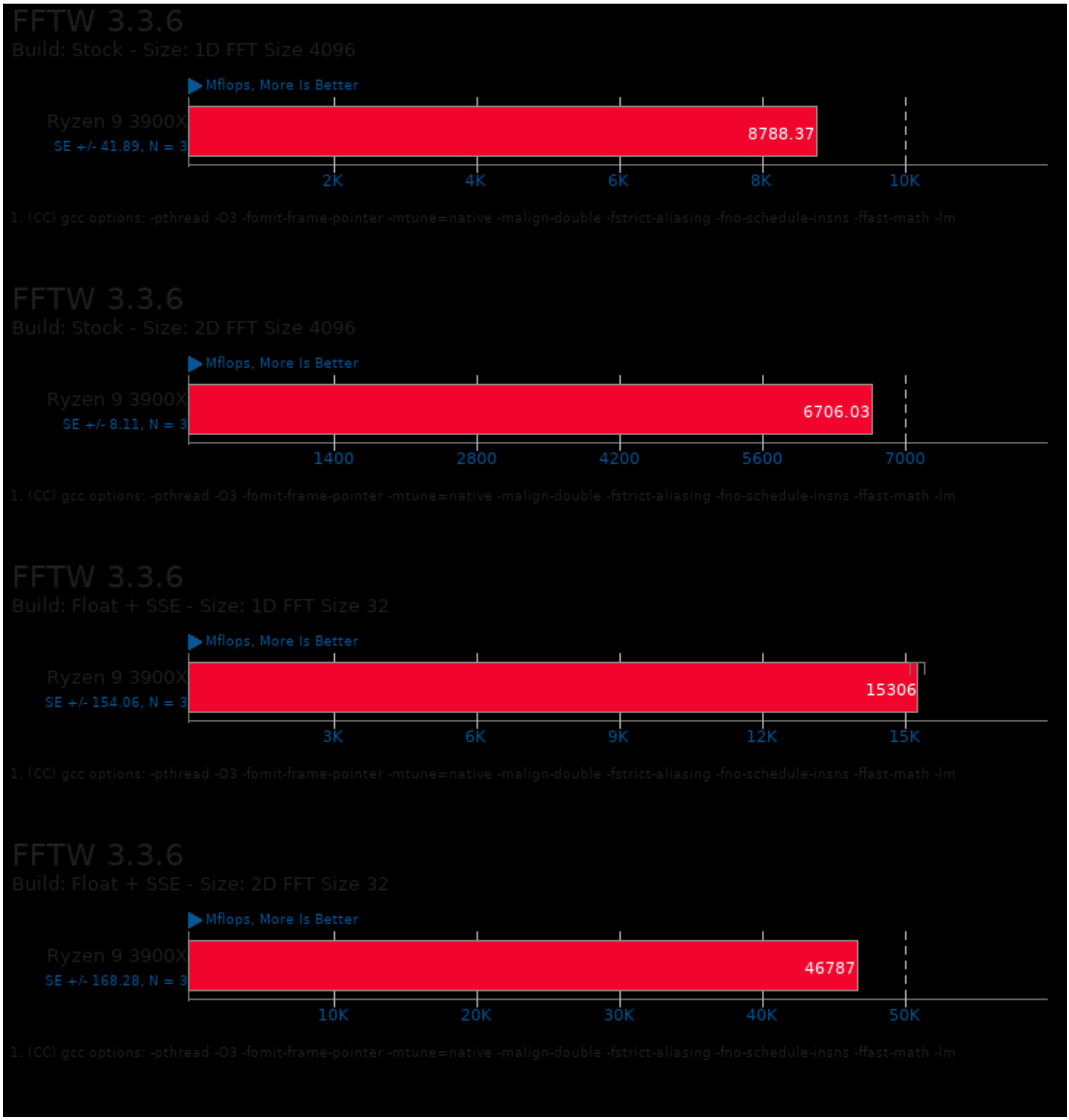
1. (CC) gcc options: -pthread -O3 -fomit-frame-pointer -mtune=native -malign-double -fstrict-aliasing -fno-schedule-insns -ffast-math -lm

FFTW 3.3.6

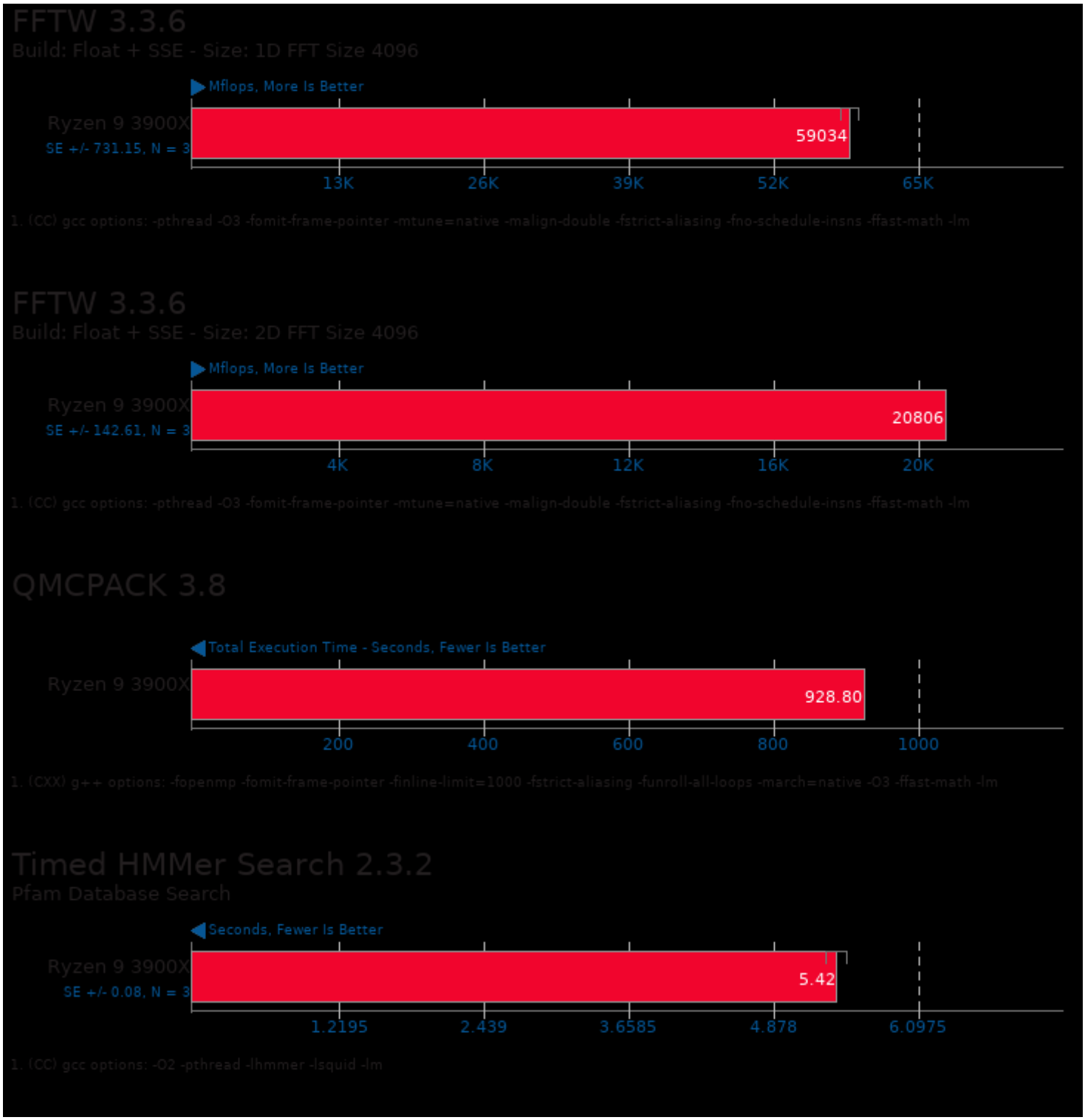
Build: Stock - Size: 2D FFT Size 32

1. (CC) gcc options: -pthread -O3 -fomit-frame-pointer -mtune=native -malign-double -fstrict-aliasing -fno-schedule-insns -ffast-math -lm

Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks



Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks



Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

Timed MAFFT Alignment 7.392

Multiple Sequence Alignment

1. (CC) gcc options: -std=c99 -O3 -lm -lpthread

BLAKE2 20170307

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

dav1d 0.4.0

Video Input: Summer Nature 4K

1. (CC) gcc options: -pthread

dav1d 0.4.0

Video Input: Summer Nature 1080p

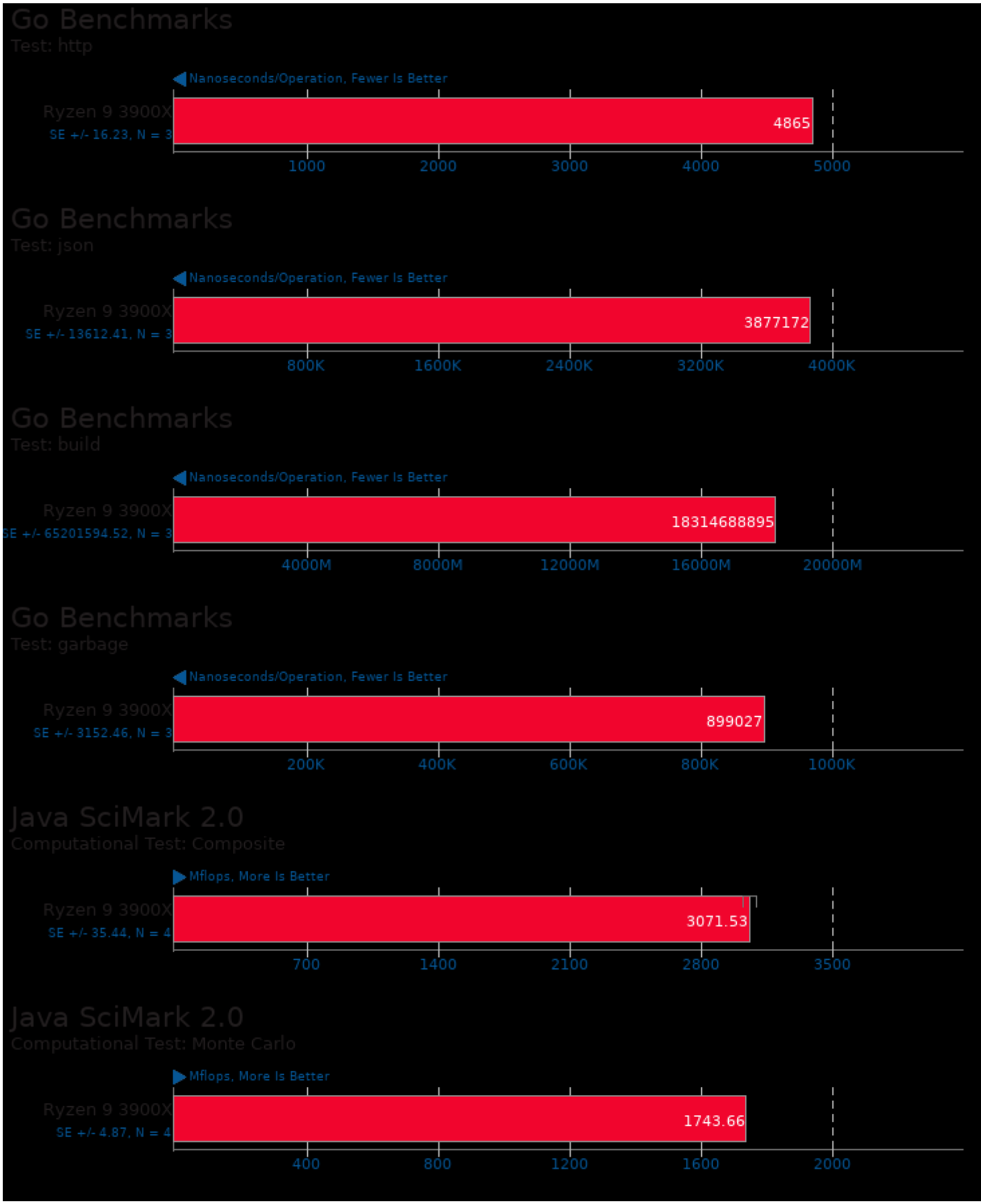
1. (CC) gcc options: -pthread

GNU GMP GMPbench 6.1.2

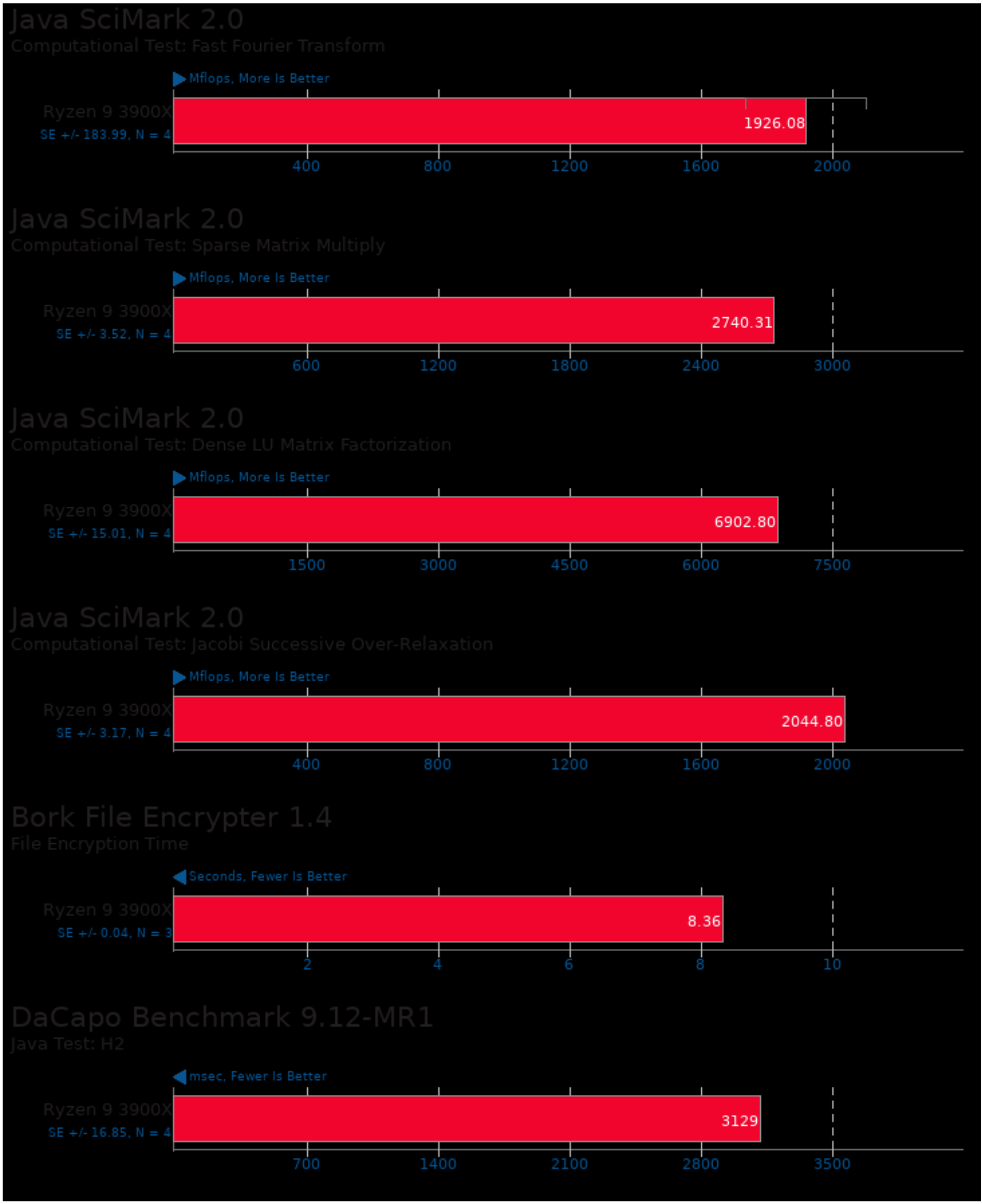
Total Time

1. (CC) gcc options: -O3 -fomit-frame-pointer -lm

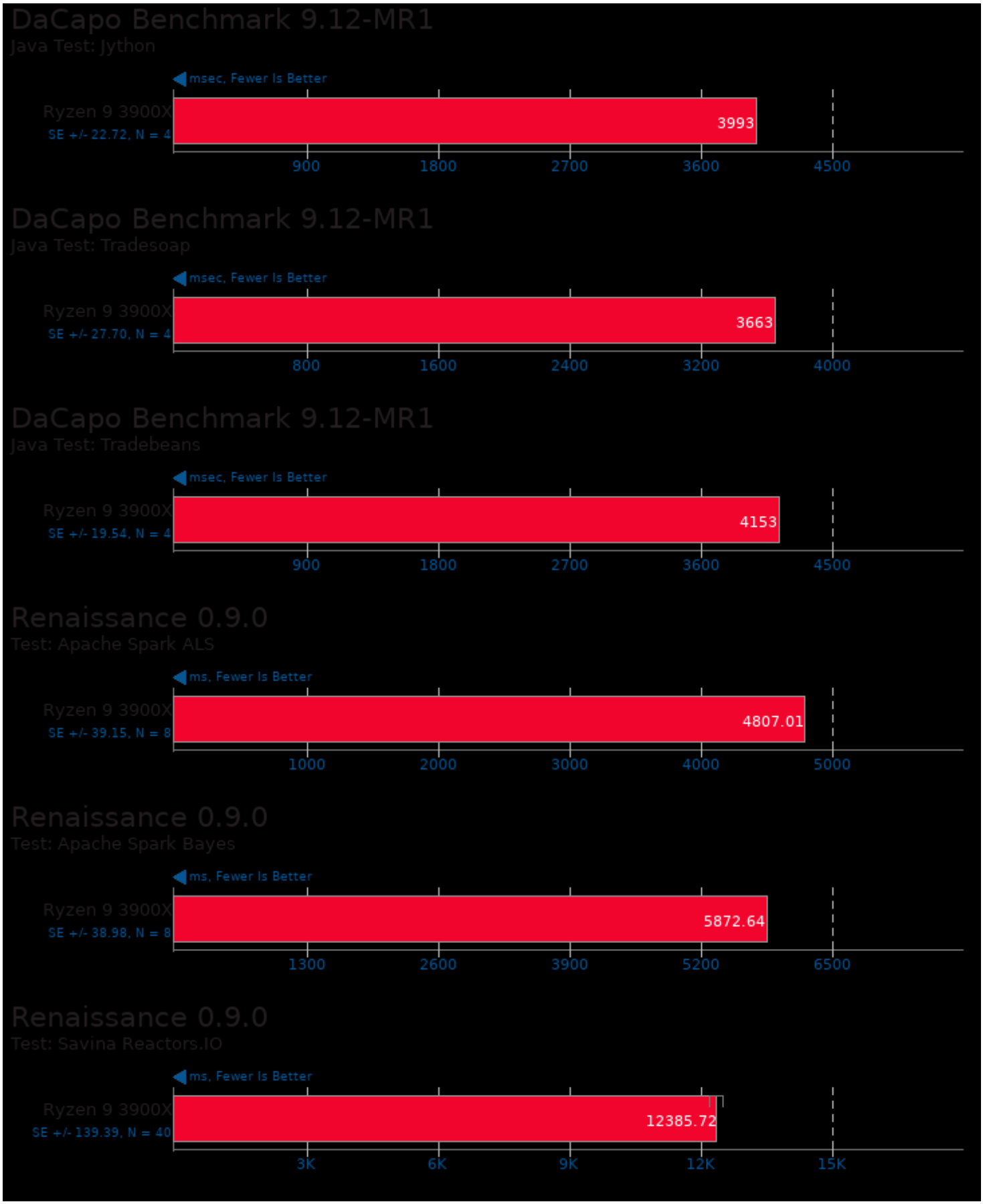
Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks



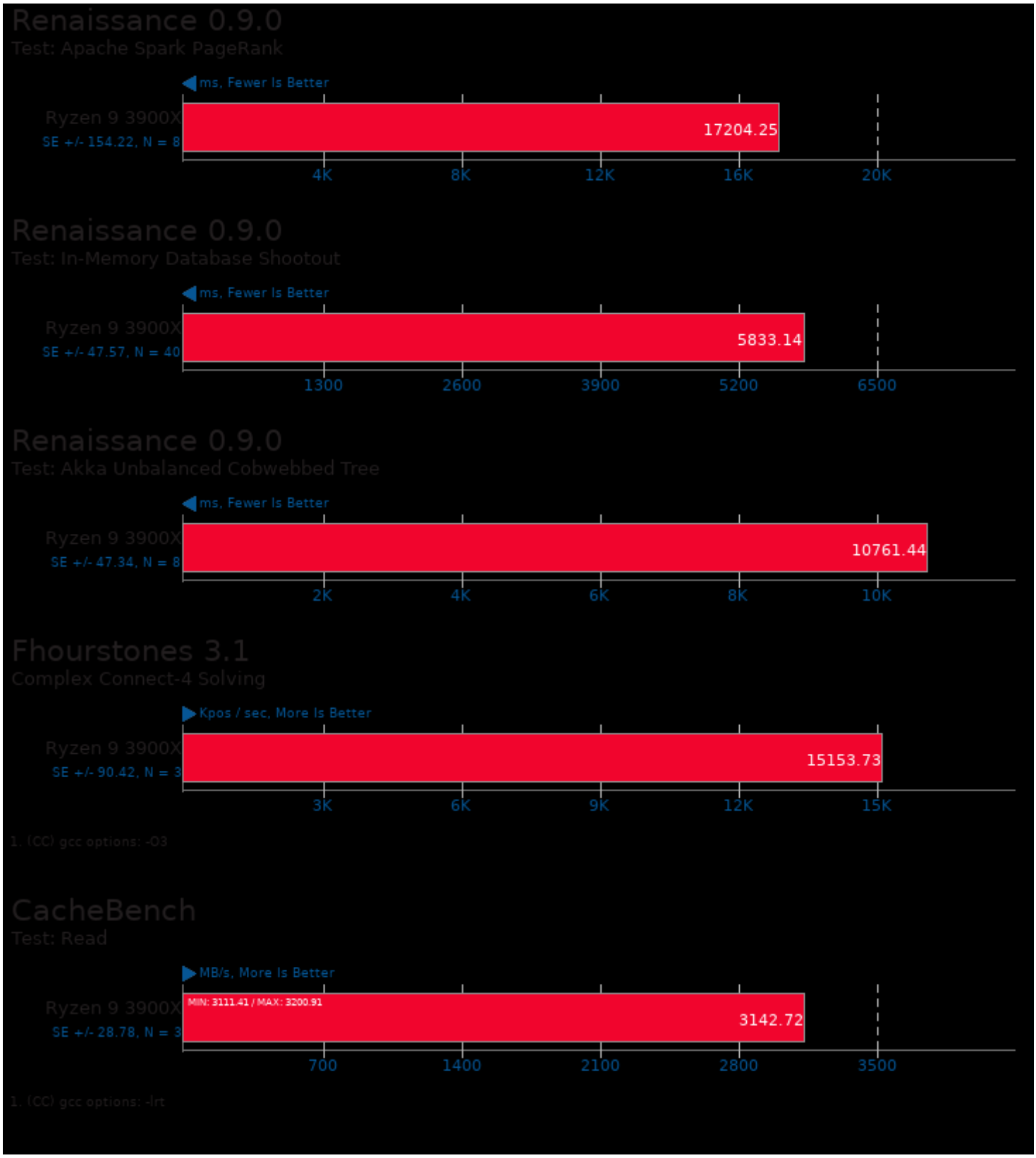
Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks



Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

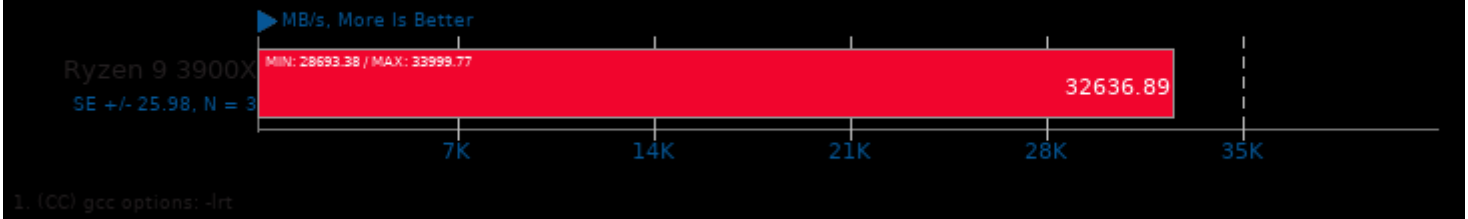


Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks



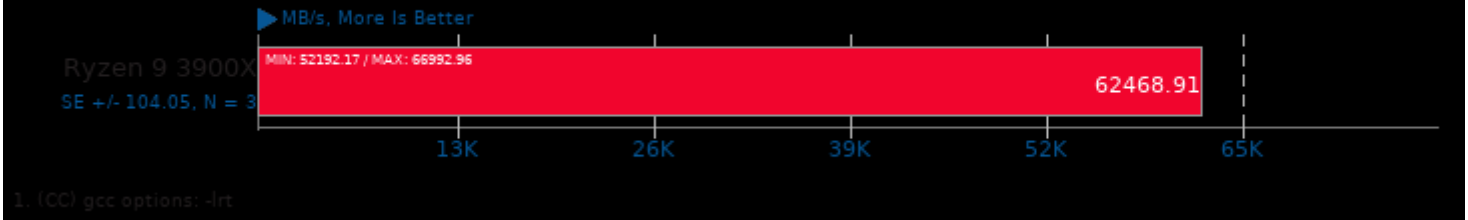
Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

CacheBench
Test: Write



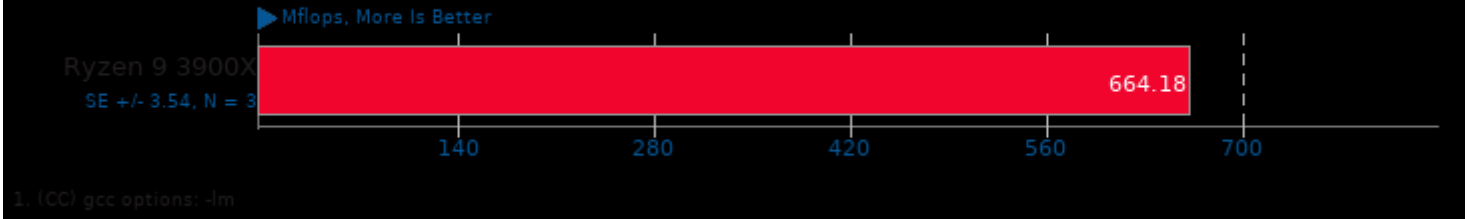
1. (CC) gcc options: -lrt

CacheBench
Test: Read / Modify / Write



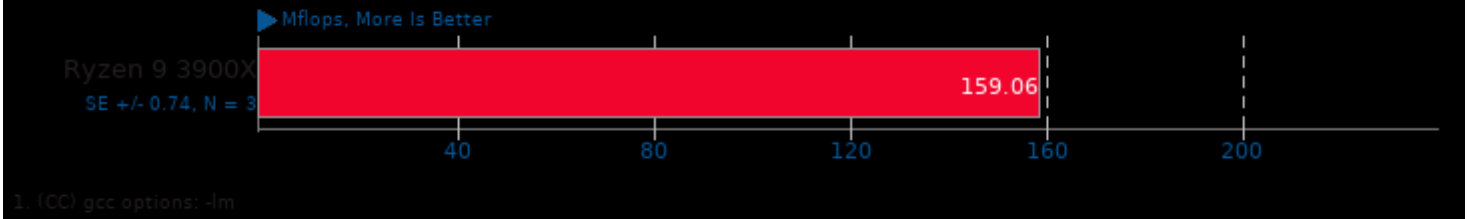
1. (CC) gcc options: -lrt

SciMark 2.0
Computational Test: Composite



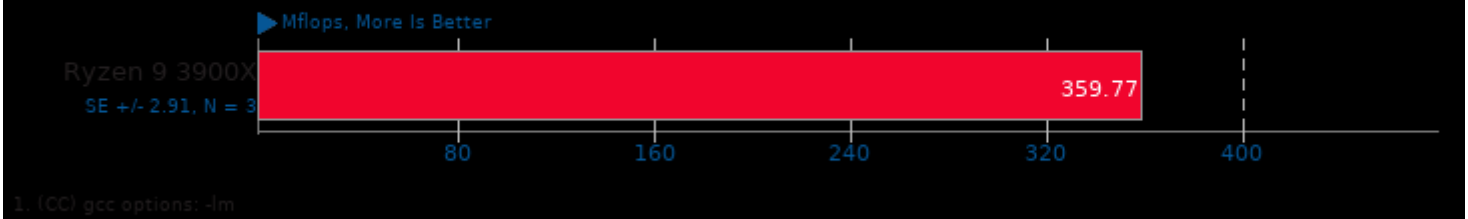
1. (CC) gcc options: -lm

SciMark 2.0
Computational Test: Monte Carlo



1. (CC) gcc options: -lm

SciMark 2.0
Computational Test: Fast Fourier Transform



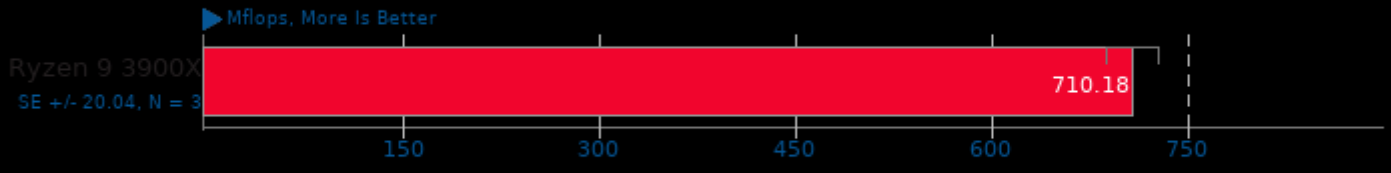
1. (CC) gcc options: -lm

Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

SciMark 2.0
Computational Test: Sparse Matrix Multiply

1. (CC) gcc options: -lm

SciMark 2.0
Computational Test: Dense LU Matrix Factorization



1. (CC) gcc options: -lm

SciMark 2.0
Computational Test: Jacobi Successive Over-Relaxation

1. (CC) gcc options: -lm

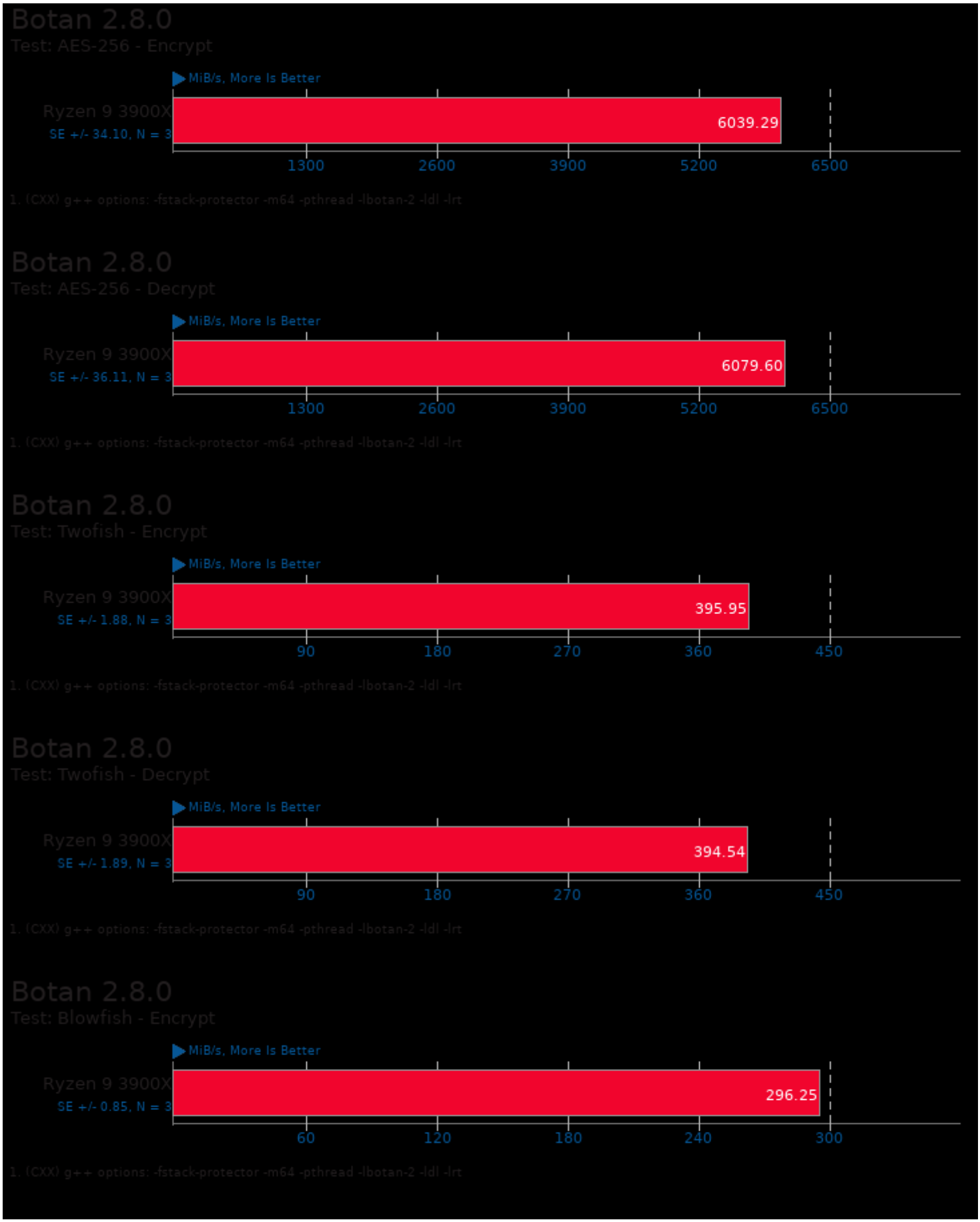
Botan 2.8.0
Test: KASUMI - Encrypt

1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

Botan 2.8.0
Test: KASUMI - Decrypt

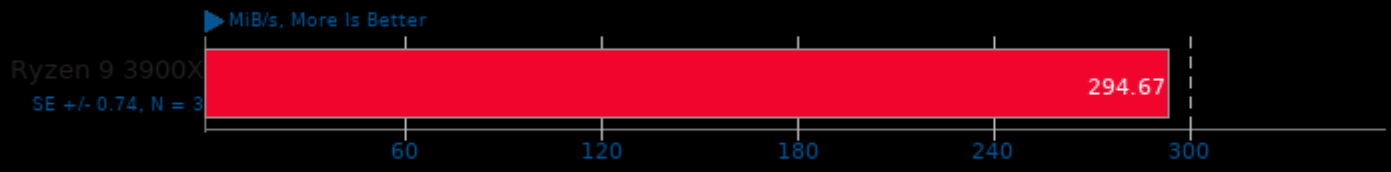
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks



Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

Botan 2.8.0
Test: Blowfish - Decrypt



1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

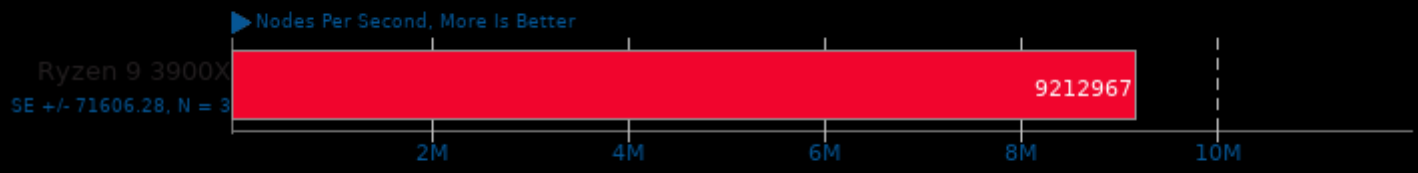
Botan 2.8.0
Test: CAST-256 - Encrypt

1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

Botan 2.8.0
Test: CAST-256 - Decrypt

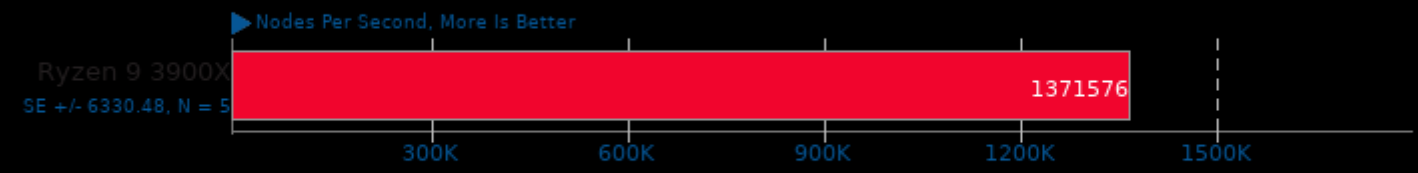
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

Crafty 25.2
Elapsed Time



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

TSCP 1.81
AI Chess Performance



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

Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

John The Ripper 1.9.0-jumbo-1

Test: Blowfish

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

GraphicsMagick 1.3.33

Operation: Swirl

1. (CC) gcc options: -fopenmp -O2 -pthread -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -lbz2 -lxml2 -lz -lm -lpthread

GraphicsMagick 1.3.33

Operation: Rotate

1. (CC) gcc options: -fopenmp -O2 -pthread -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -lbz2 -lxml2 -lz -lm -lpthread

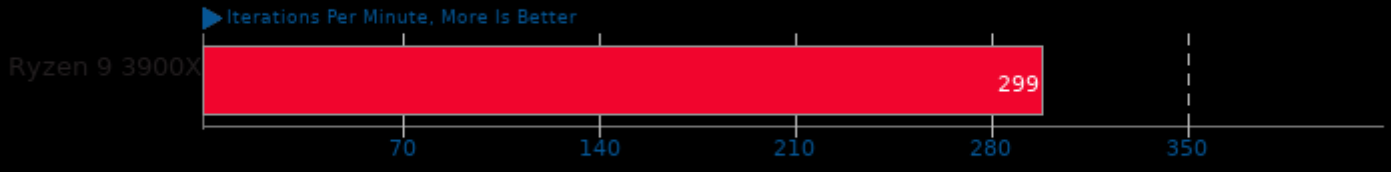
GraphicsMagick 1.3.33

Operation: Sharpen

1. (CC) gcc options: -fopenmp -O2 -pthread -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -lbz2 -lxml2 -lz -lm -lpthread

GraphicsMagick 1.3.33

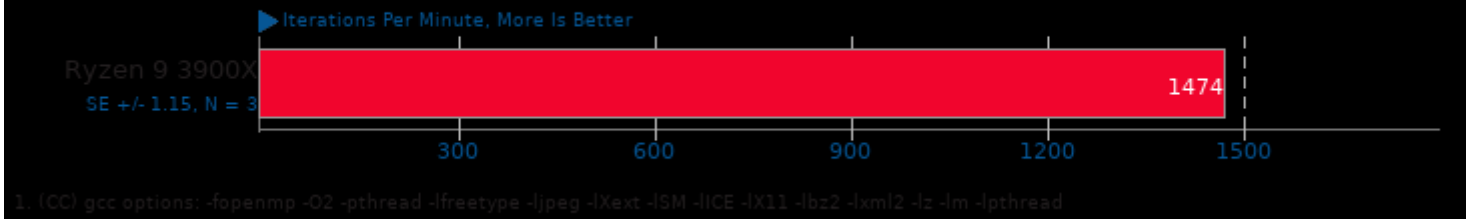
Operation: Enhanced



1. (CC) gcc options: -fopenmp -O2 -pthread -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -lbz2 -lxml2 -lz -lm -lpthread

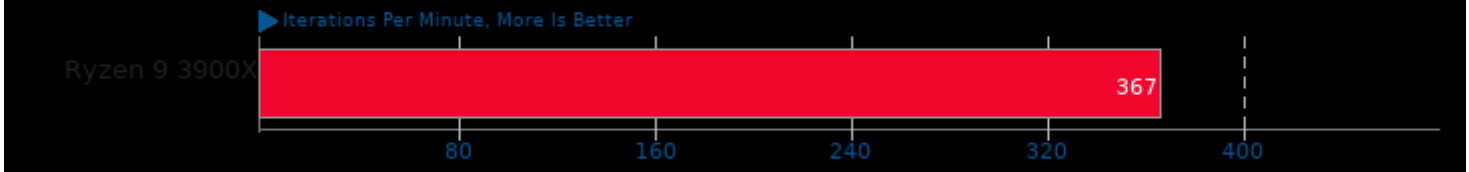
Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

GraphicsMagick 1.3.33
Operation: Resizing



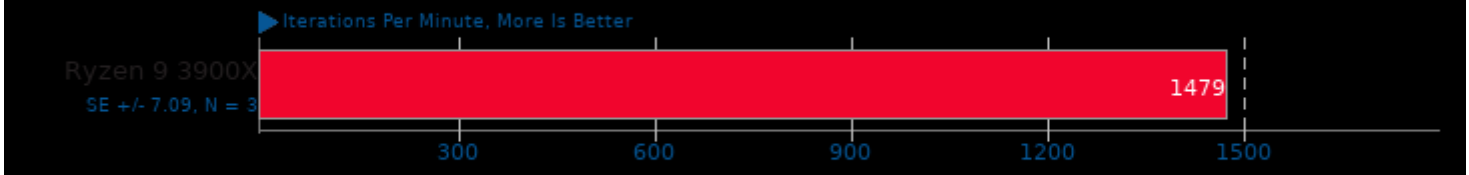
1. (CC) gcc options: -fopenmp -O2 -pthread -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -lbz2 -lxml2 -lz -lm -lpthread

GraphicsMagick 1.3.33
Operation: Noise-Gaussian



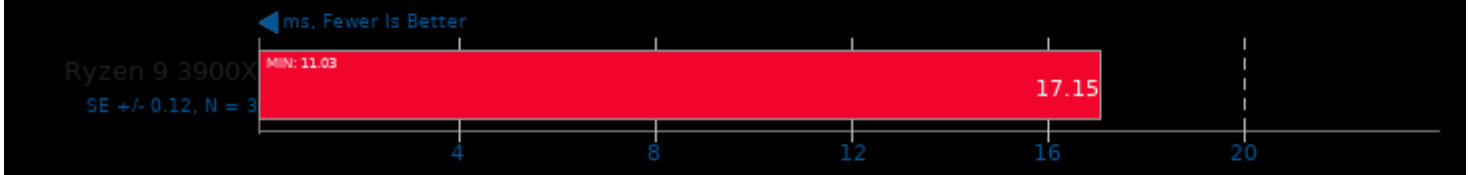
1. (CC) gcc options: -fopenmp -O2 -pthread -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -lbz2 -lxml2 -lz -lm -lpthread

GraphicsMagick 1.3.33
Operation: HWB Color Space



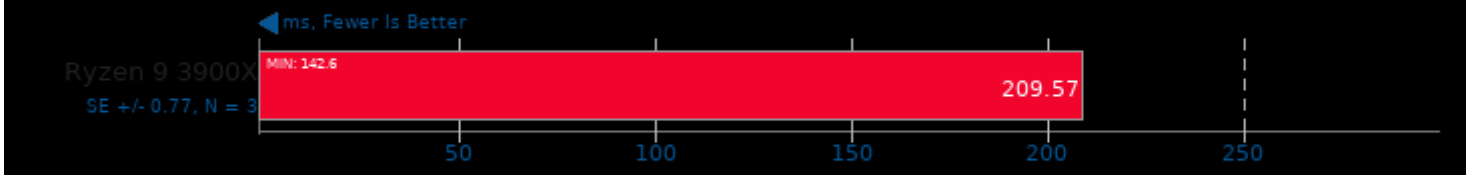
1. (CC) gcc options: -fopenmp -O2 -pthread -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -lbz2 -lxml2 -lz -lm -lpthread

MKL-DNN 2019-04-16
Harness: IP Batch 1D - Data Type: f32



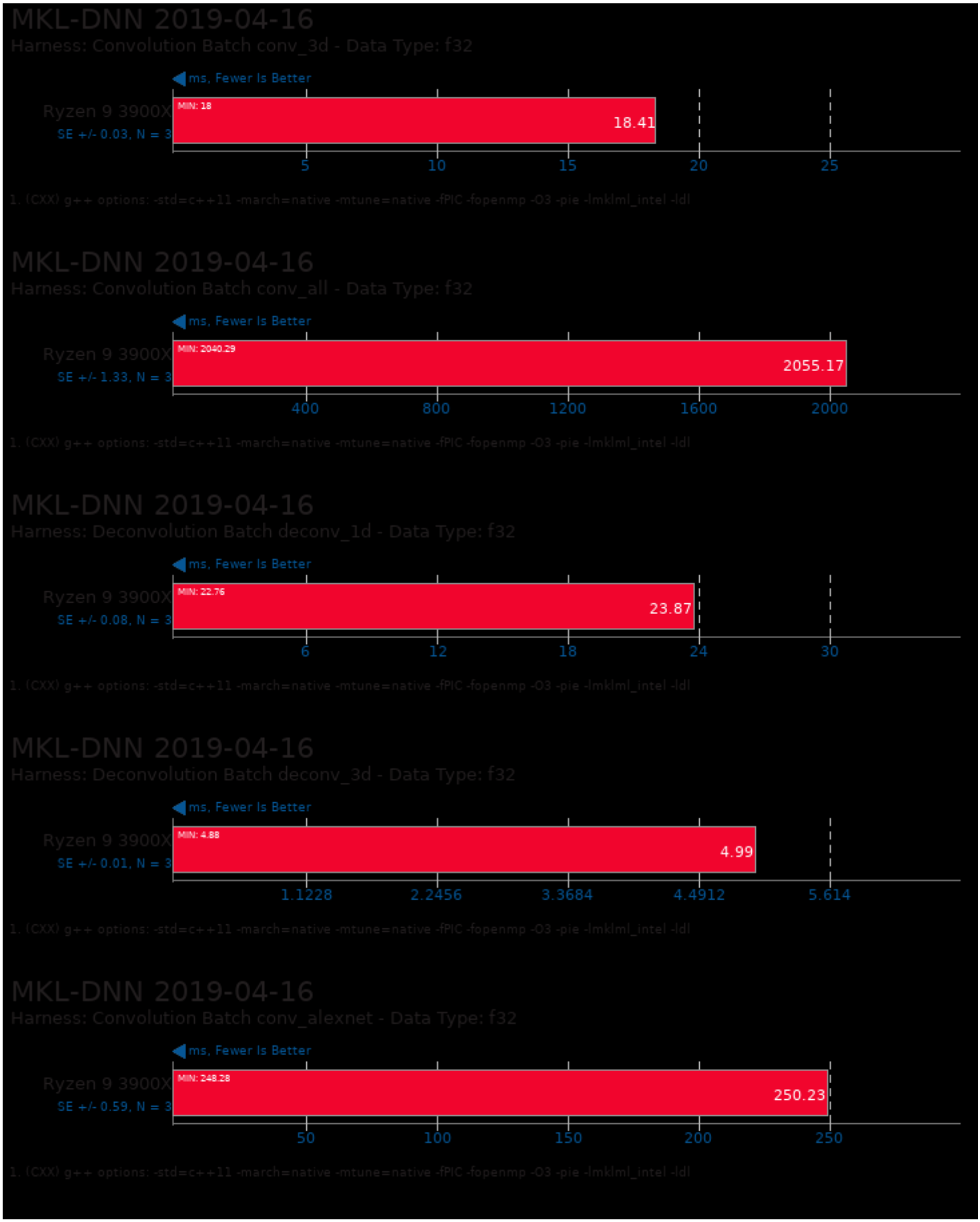
1. (CXX) g++ options: -std=c++11 -march=native -mtune=native -fPIC -fopenmp -O3 -pie -lmklml_intel -ldl

MKL-DNN 2019-04-16
Harness: IP Batch All - Data Type: f32



1. (CXX) g++ options: -std=c++11 -march=native -mtune=native -fPIC -fopenmp -O3 -pie -lmklml_intel -ldl

Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks



Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

MKL-DNN 2019-04-16

Harness: Deconvolution Batch deconv_all - Data Type: f32

1. (CXX) g++ options: -std=c++11 -march=native -mtune=native -fPIC -fopenmp -O3 -pie -lmklml_intel -ldl

MKL-DNN 2019-04-16

Harness: Convolution Batch conv_googlenet_v3 - Data Type: f32

1. (CXX) g++ options: -std=c++11 -march=native -mtune=native -fPIC -fopenmp -O3 -pie -lmklml_intel -ldl

AOM AV1 2019-09-16

AV1 Video Encoding

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

SVT-AV1 0.6

Encoder Mode: Enc Mode 4 - Input: 1080p

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

SVT-AV1 0.6

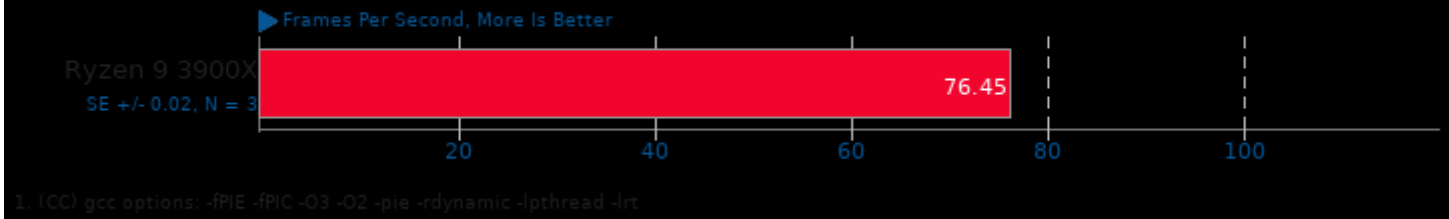
Encoder Mode: Enc Mode 8 - Input: 1080p

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

Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

SVT-HEVC 1.4.1

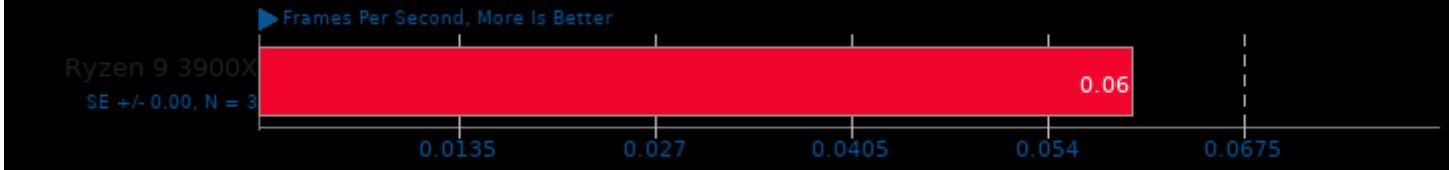
1080p 8-bit YUV To HEVC Video Encode



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

SVT-AV1 0.7

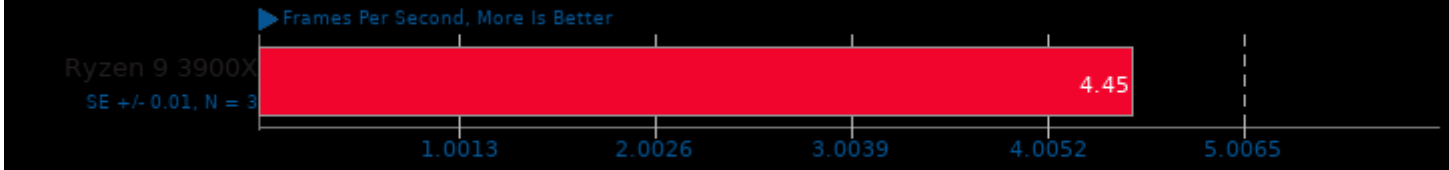
Encoder Mode: Enc Mode 0 - Input: 1080p



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

SVT-AV1 0.7

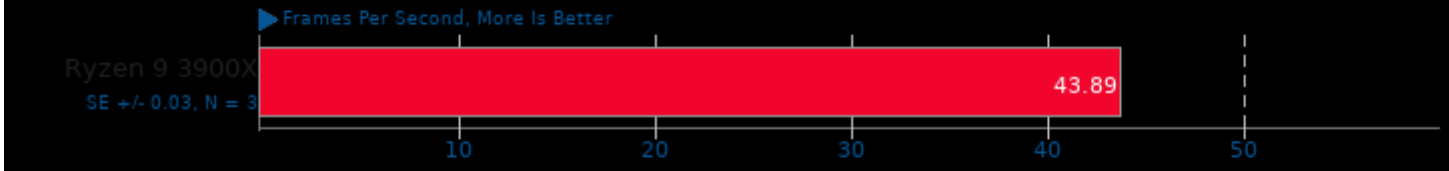
Encoder Mode: Enc Mode 4 - Input: 1080p



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

SVT-AV1 0.7

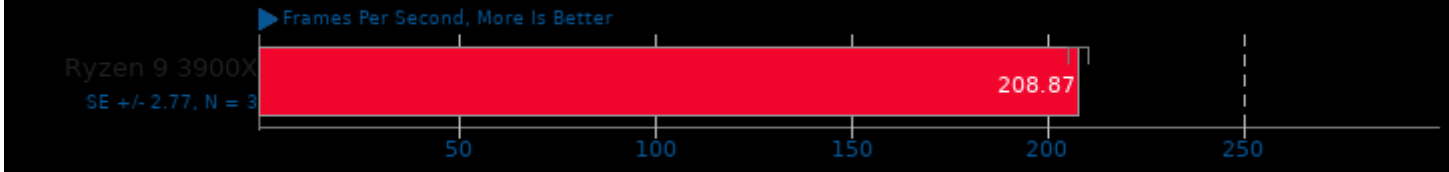
Encoder Mode: Enc Mode 8 - Input: 1080p



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

SVT-VP9 2019-09-09

1080p 8-bit YUV To VP9 Video Encode



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

VP9 libvpx Encoding 1.8.1

vpxenc VP9 1080p Video Encode

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

x264 2018-09-25

H.264 Video Encoding

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

x265 3.1.2

H.265 1080p Video Encoding

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

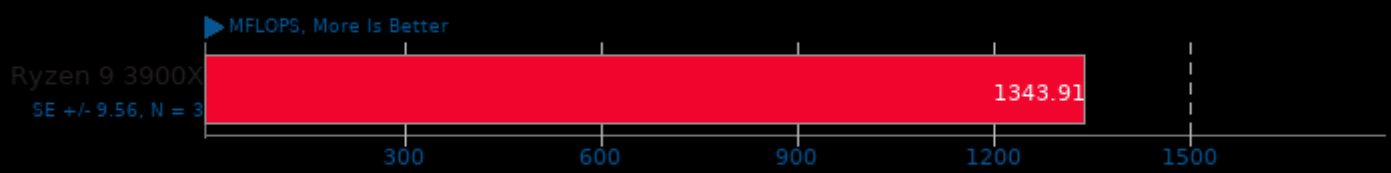
Coremark 1.0

CoreMark Size 666 - Iterations Per Second

1. (CC) gcc options: -O2 -lrt" -lrt

Himeno Benchmark 3.0

Poisson Pressure Solver

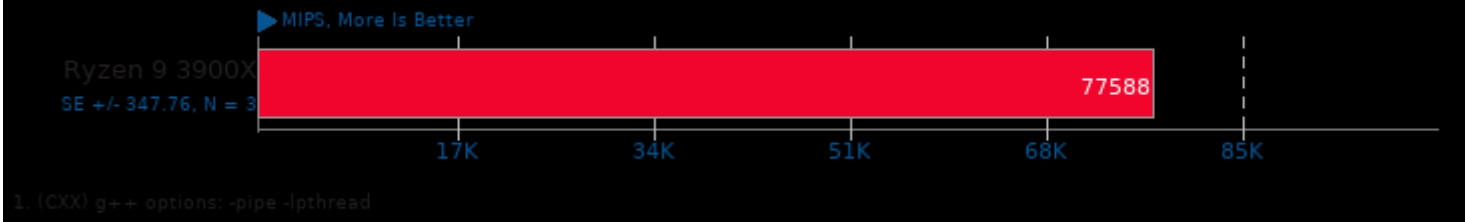


1. (CC) gcc options: -O3 -mavx2

Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

7-Zip Compression 16.02

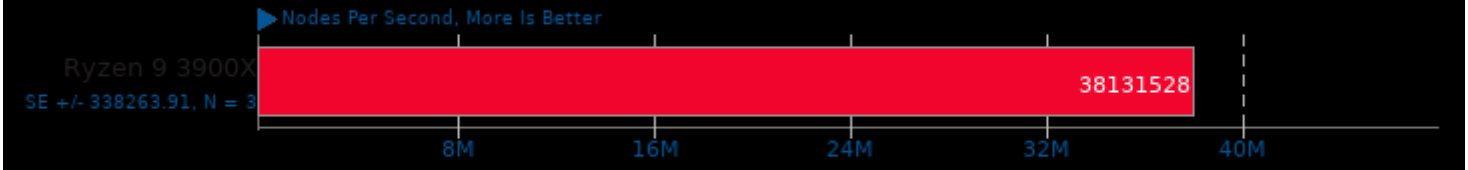
Compress Speed Test



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

Stockfish 9

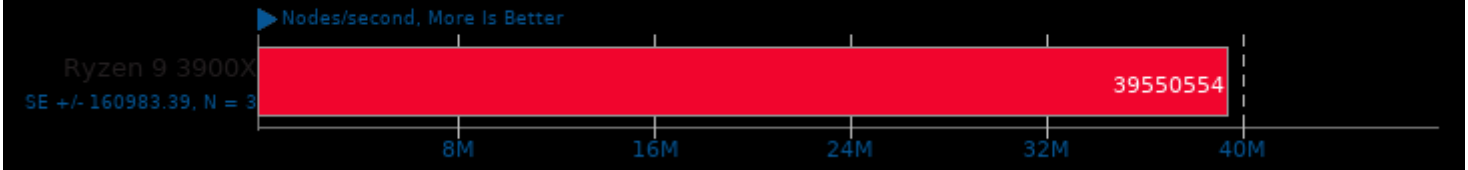
Total Time



1. (CXX) g++ options: -m64 -lpthread -fno-exceptions -std=c++11 -pedantic -O3 -msse -msse3 -mpopcnt -flto

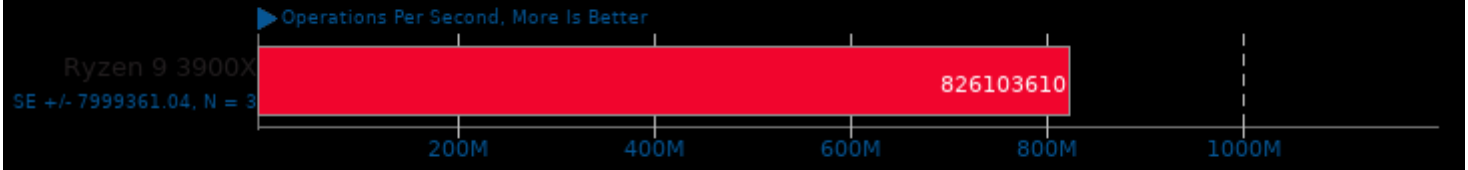
asmFish 2018-07-23

1024 Hash Memory, 26 Depth



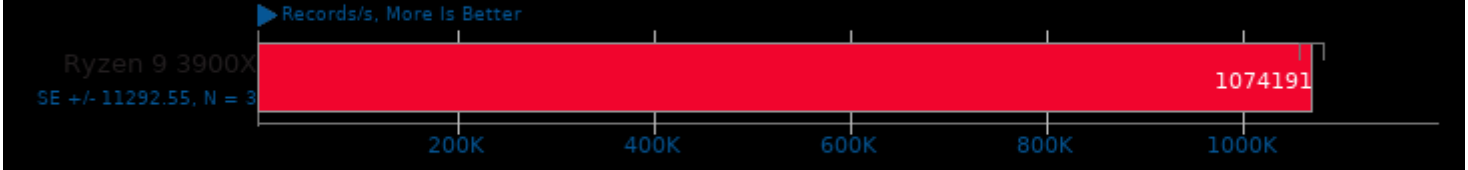
Swet 1.5.16

Average



1. (CC) gcc options: -lm -lpthread -lcurses -lrt

ebizzy 0.3

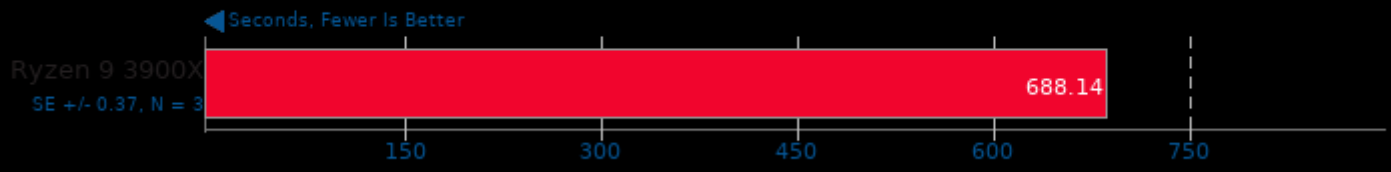


1. (CC) gcc options: -pthread -lpthread -O3 -march=native

Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

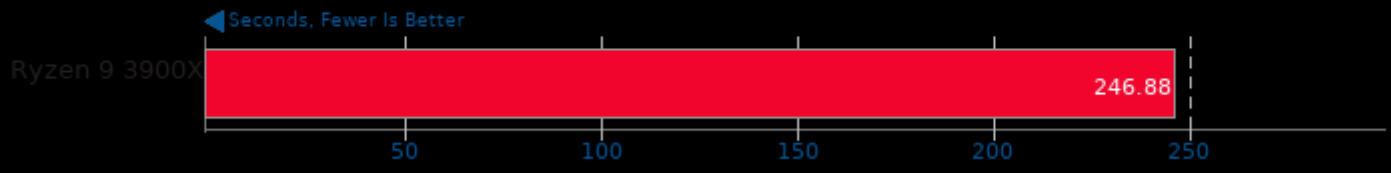
Timed GCC Compilation 8.2

Time To Compile



Timed LLVM Compilation 6.0.1

Time To Compile



Timed PHP Compilation 7.1.9

Time To Compile

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

C-Ray 1.1

Total Time - 4K, 16 Rays Per Pixel

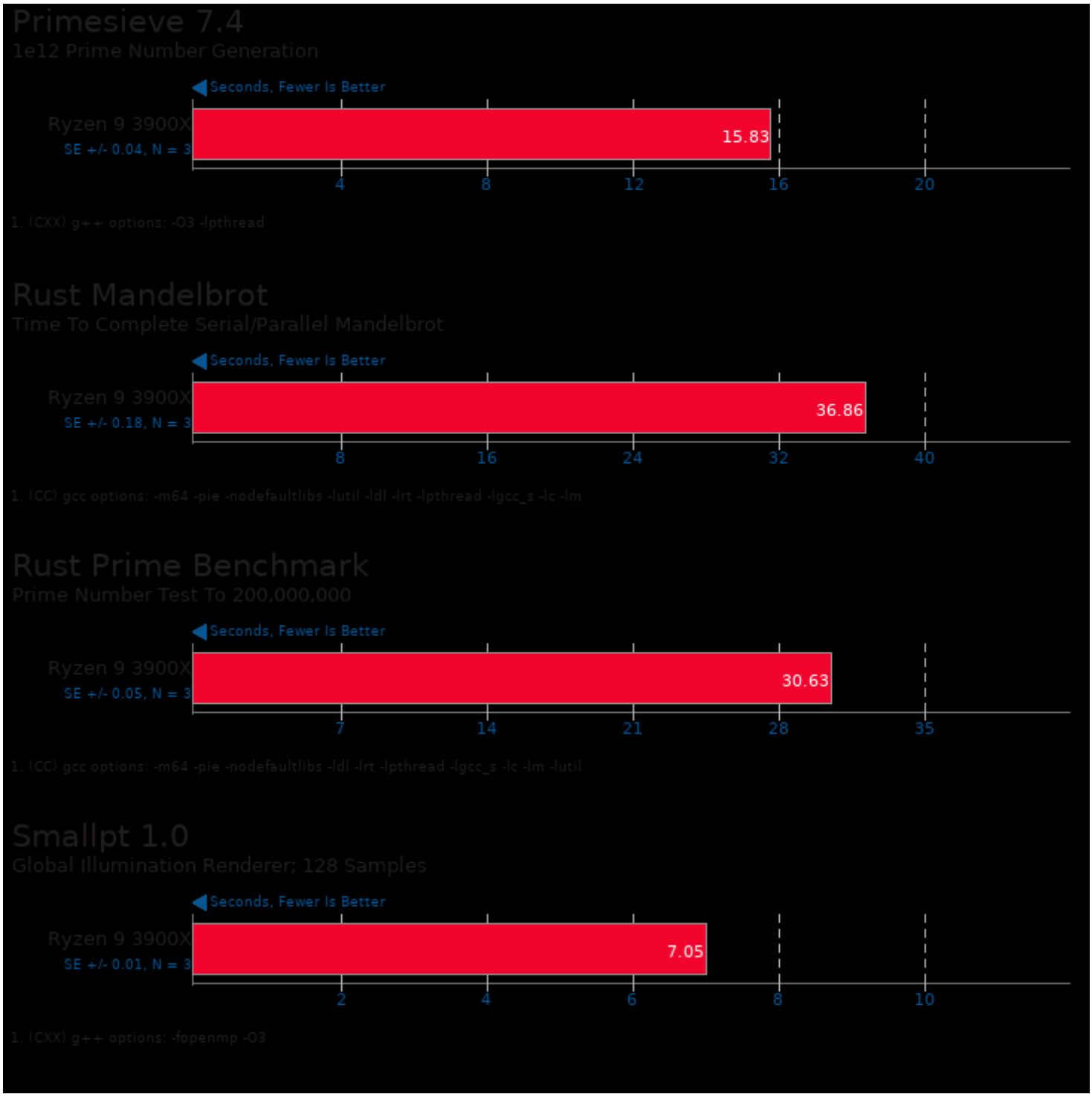
1. (CC) gcc options: -lm -lpthread -O3

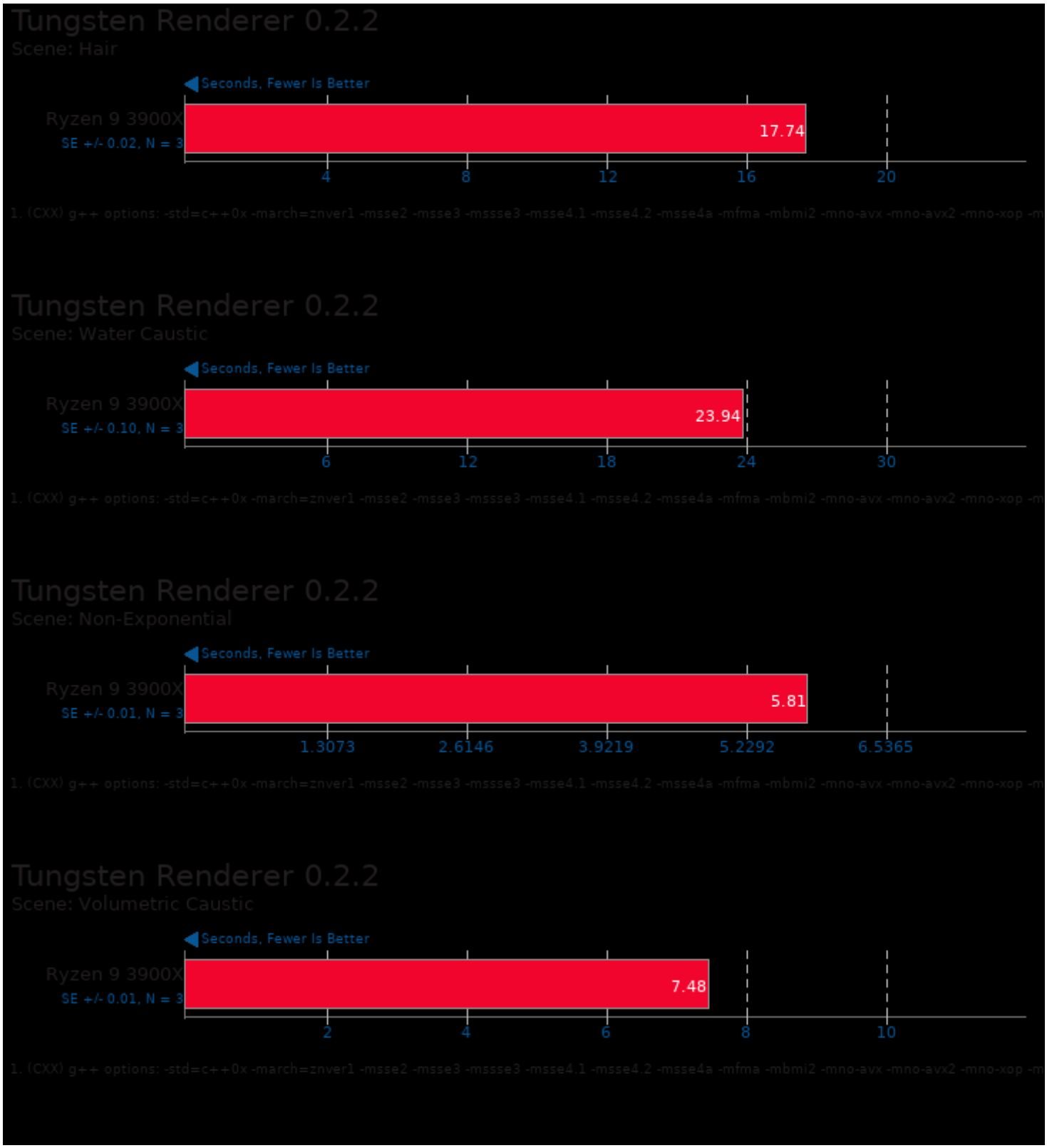
Parallel BZIP2 Compression 1.1.12

256MB File Compression

1. (CXX) g++ options: -O2 -pthread -lbz2 -lpthread

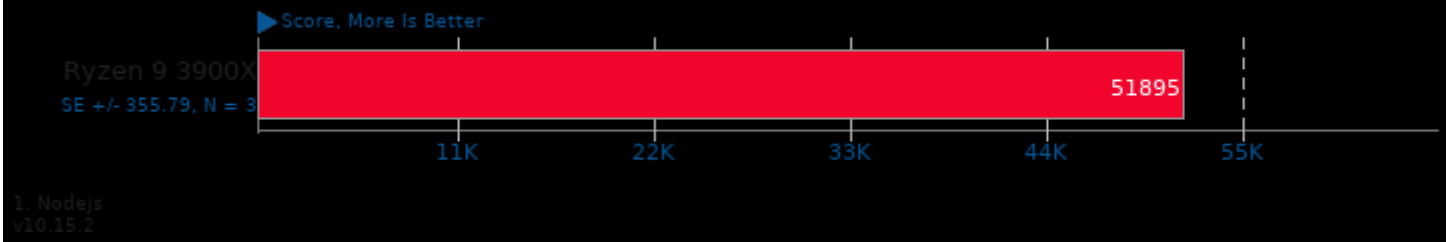
Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks




Tungsten Renderer 0.2.2
Scene: Hair
Seconds, Fewer Is Better
Ryzen 9 3900X
SE +/- 0.02, N = 3
17.74
4
8
12
16
20
1. (CXX) g++ options: -std=c++0x -march=znver1 -msse2 -msse3 -mssse3 -msse4.1 -msse4.2 -msse4a -mfma -mbmi2 -mno-avx -mno-avx2 -mno-xop -m
Tungsten Renderer 0.2.2
Scene: Water Caustic
Seconds, Fewer Is Better
Ryzen 9 3900X
SE +/- 0.10, N = 3
23.94
6
12
18
24
30
1. (CXX) g++ options: -std=c++0x -march=znver1 -msse2 -msse3 -mssse3 -msse4.1 -msse4.2 -msse4a -mfma -mbmi2 -mno-avx -mno-avx2 -mno-xop -m
Tungsten Renderer 0.2.2
Scene: Non-Exponential
Seconds, Fewer Is Better
Ryzen 9 3900X
SE +/- 0.01, N = 3
5.81
1.3073
2.6146
3.9219
5.2292
6.5365
1. (CXX) g++ options: -std=c++0x -march=znver1 -msse2 -msse3 -mssse3 -msse4.1 -msse4.2 -msse4a -mfma -mbmi2 -mno-avx -mno-avx2 -mno-xop -m
Tungsten Renderer 0.2.2
Scene: Volumetric Caustic
Seconds, Fewer Is Better
Ryzen 9 3900X
SE +/- 0.01, N = 3
7.48
2
4
6
8
10
1. (CXX) g++ options: -std=c++0x -march=znver1 -msse2 -msse3 -mssse3 -msse4.1 -msse4.2 -msse4a -mfma -mbmi2 -mno-avx -mno-avx2 -mno-xop -m

Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

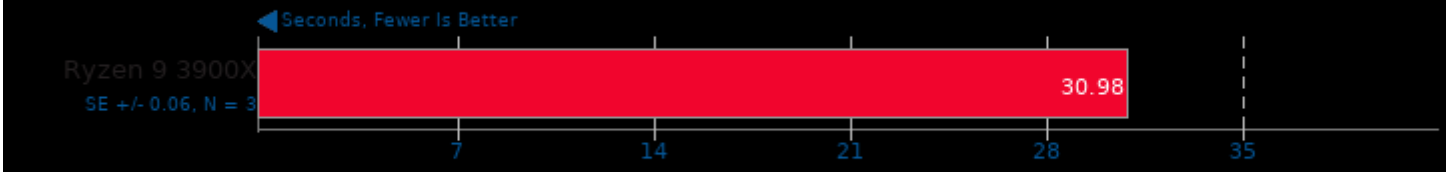
Node.js Octane Benchmark



1. Nodejs v10.15.2

AOBench

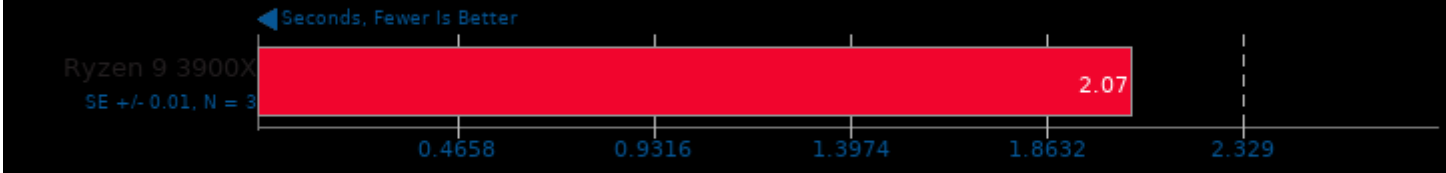
Size: 2048 x 2048 - Total Time



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

Bullet Physics Engine 2.81

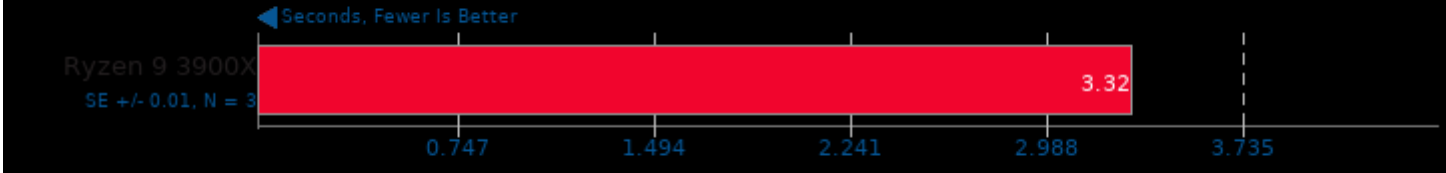
Test: Raytests



1. (CXX) g++ options: -O3 -rdynamic -lglut -lGL -lGLU

Bullet Physics Engine 2.81

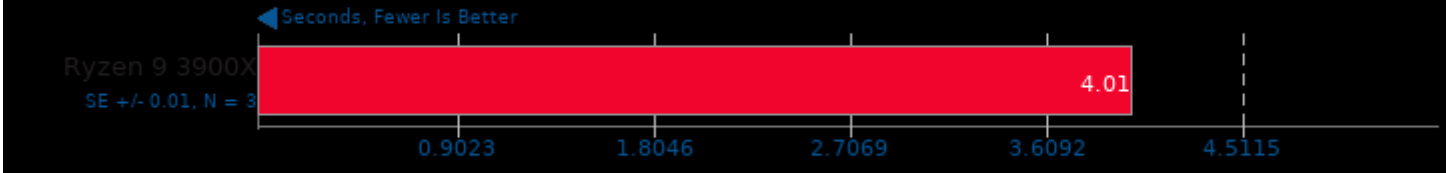
Test: 3000 Fall



1. (CXX) g++ options: -O3 -rdynamic -lglut -lGL -lGLU

Bullet Physics Engine 2.81

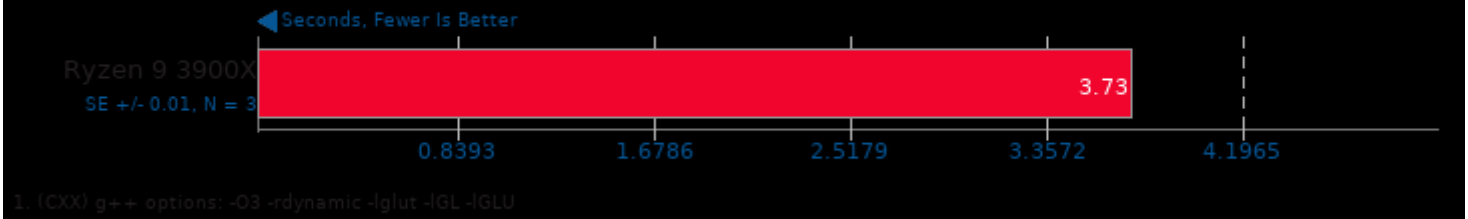
Test: 1000 Stack



1. (CXX) g++ options: -O3 -rdynamic -lglut -lGL -lGLU

Bullet Physics Engine 2.81

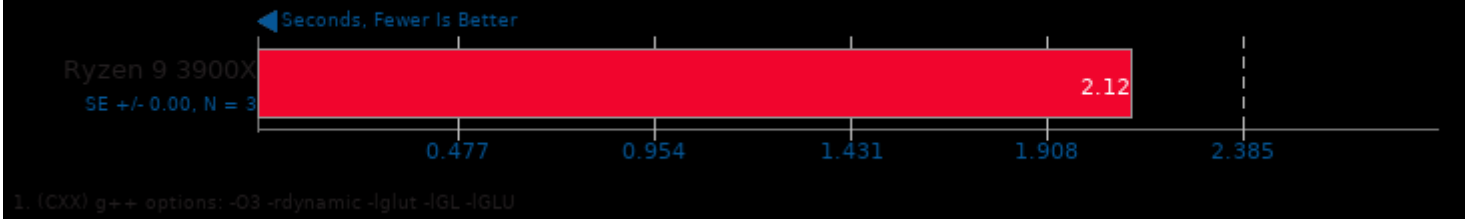
Test: 1000 Convex



1. (CXX) g++ options: -O3 -rdynamic -lglut -lGL -lGLU

Bullet Physics Engine 2.81

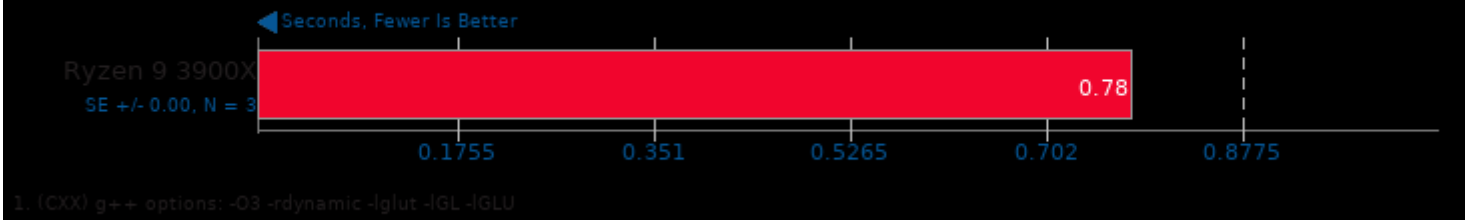
Test: 136 Ragdolls



1. (CXX) g++ options: -O3 -rdynamic -lglut -lGL -lGLU

Bullet Physics Engine 2.81

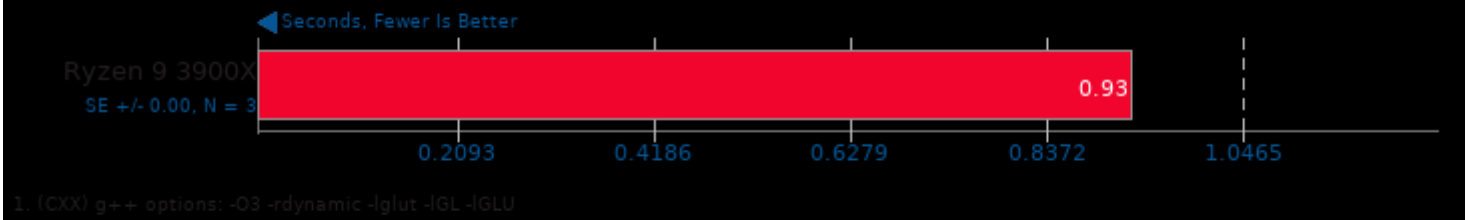
Test: Prim Trimesh



1. (CXX) g++ options: -O3 -rdynamic -lglut -lGL -lGLU

Bullet Physics Engine 2.81

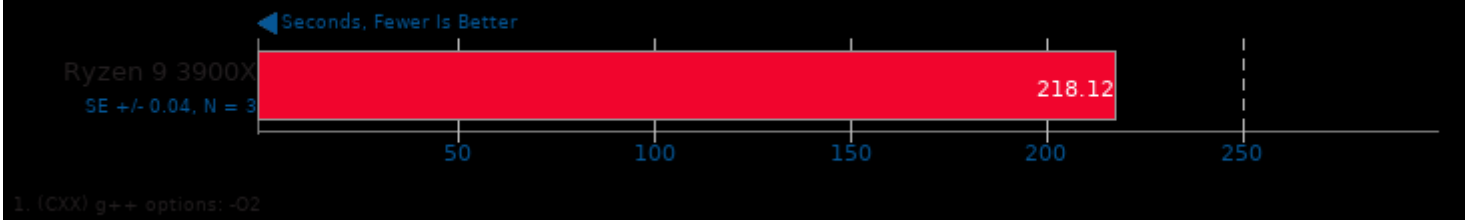
Test: Convex Trimesh



1. (CXX) g++ options: -O3 -rdynamic -lglut -lGL -lGLU

LZMA Compression

256MB File Compression



1. (CXX) g++ options: -O2

Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

XZ Compression 5.2.4

Compressing ubuntu-16.04.3-server-i386.img, Compression Level 9

1. (CC) gcc options: -pthread -fvisibility=hidden -O2

Zstd Compression 1.3.4

Compressing ubuntu-16.04.3-server-i386.img, Compression Level 19

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

dcraw

RAW To PPM Image Conversion

1. (CC) gcc options: -lm

FLAC Audio Encoding 1.3.2

WAV To FLAC

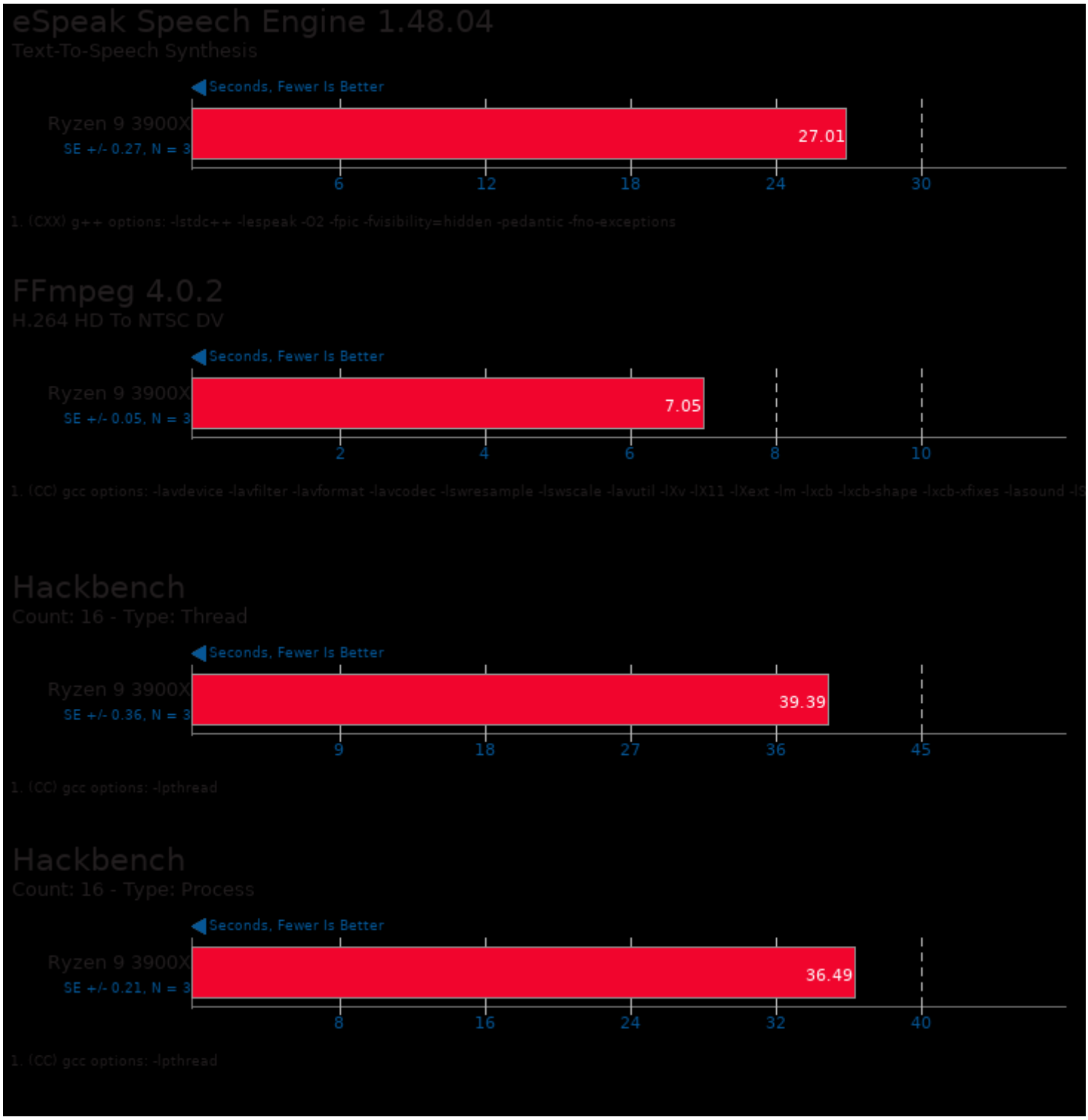
1. (CXX) g++ options: -O2 -fvisibility=hidden -logg -lm

LAME MP3 Encoding 3.100

WAV To MP3

1. (CC) gcc options: -O3 -ffast-math -funroll-loops -fschedule-insns2 -fbranch-count-reg -fforce-addr -pipe -lncurses -lm

Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks



Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

Hackbench

Count: 32 - Type: Process

1. (CC) gcc options: -lpthread

m-queens 1.2

Time To Solve

1. (CXX) g++ options: -fopenmp -O2 -march=native

Minion 1.8

Benchmark: Graceful

1. (CXX) g++ options: -std=gnu++11 -O3 -fomit-frame-pointer -rdynamic

Minion 1.8

Benchmark: Solitaire

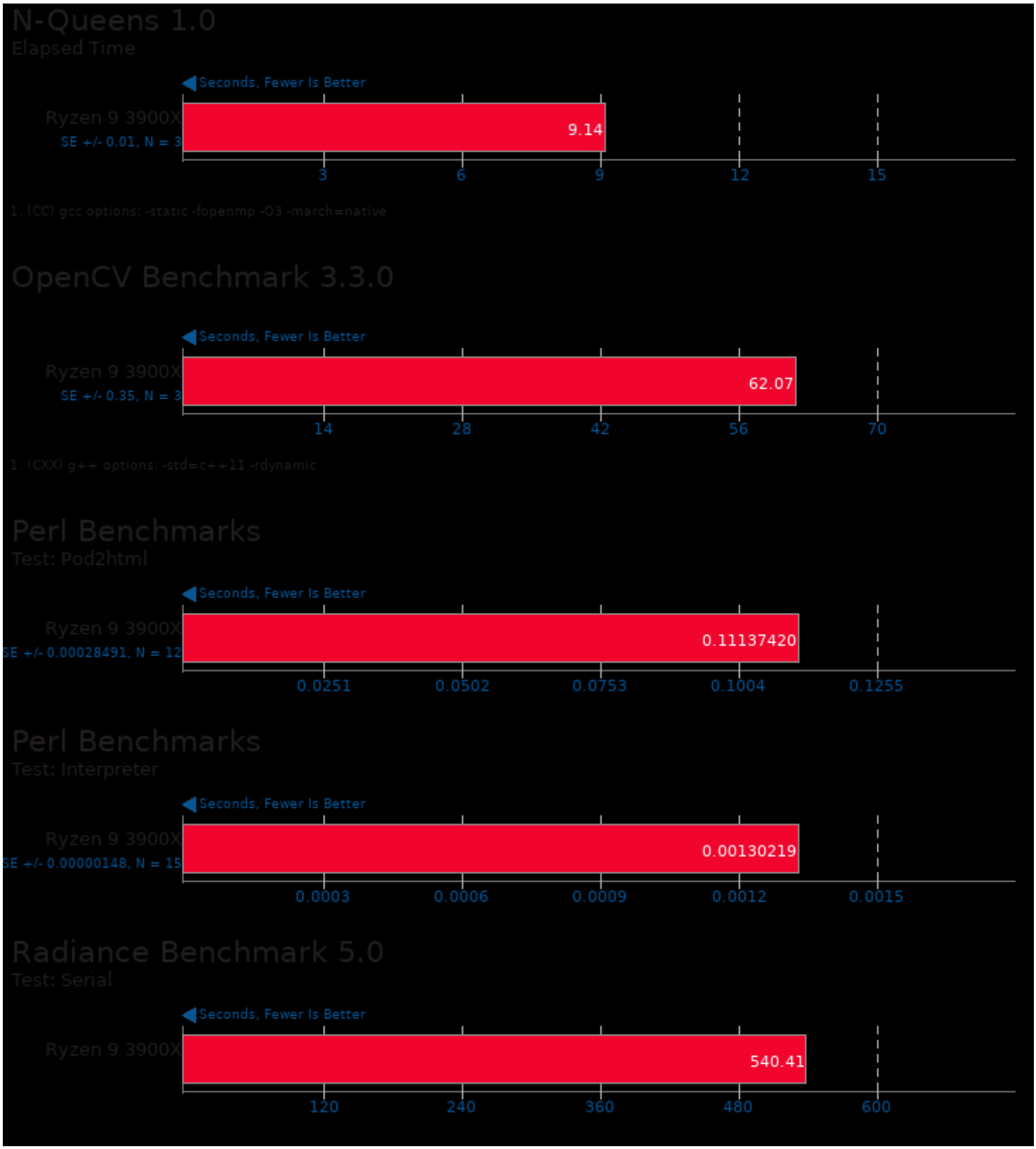
1. (CXX) g++ options: -std=gnu++11 -O3 -fomit-frame-pointer -rdynamic

Minion 1.8

Benchmark: Quasigroup

1. (CXX) g++ options: -std=gnu++11 -O3 -fomit-frame-pointer -rdynamic

Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

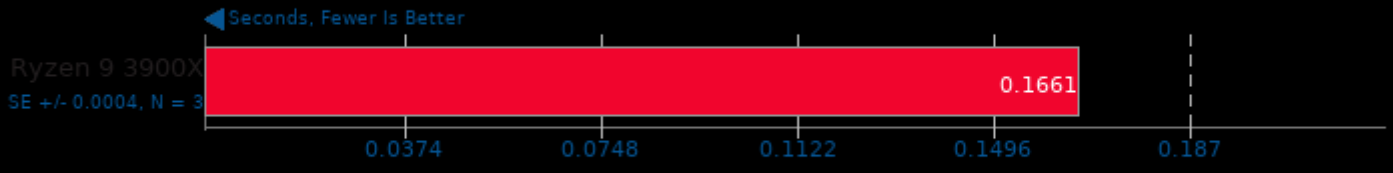


Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

Radiance Benchmark 5.0

Test: SMP Parallel

R Benchmark



1. R scripting front-end version 3.6.1 (2019-07-05)

Sudokut 0.4

Total Time

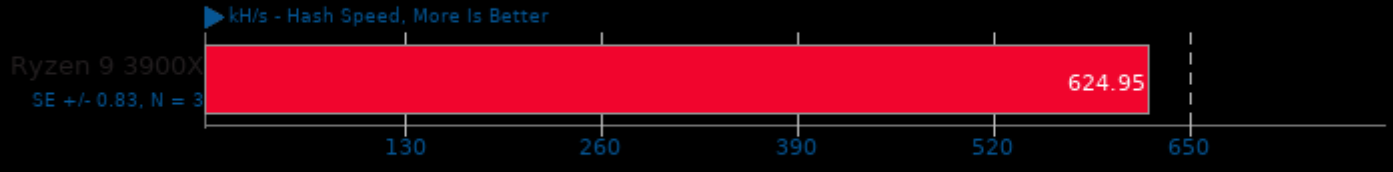
OpenSSL 1.1.1

RSA 4096-bit Performance

1. (CC) gcc options: -pthread -m64 -O3 -lssl -lcrypto -ldl

Cpuminer-Opt 3.8.8.1

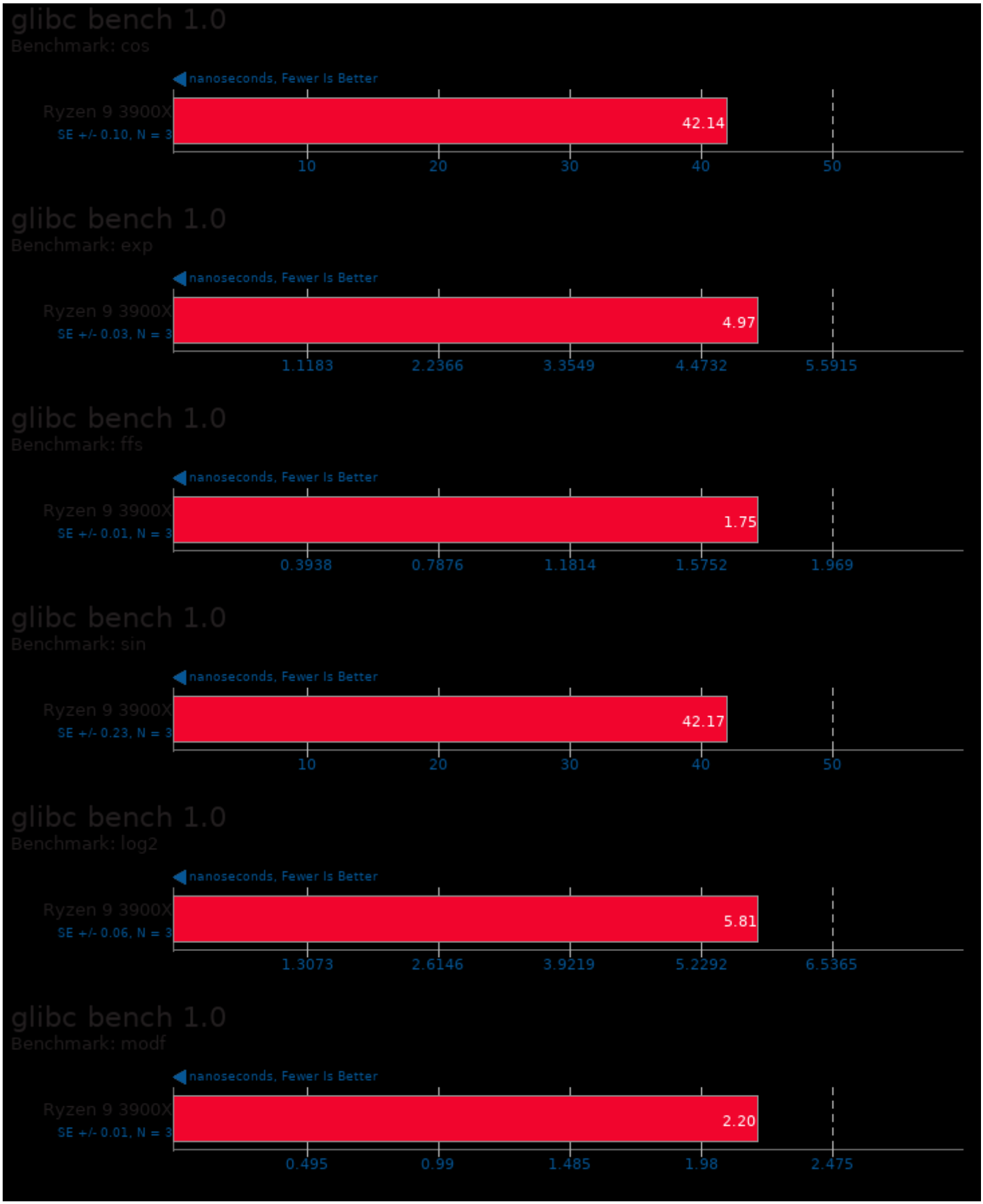
Algorithm: m7m



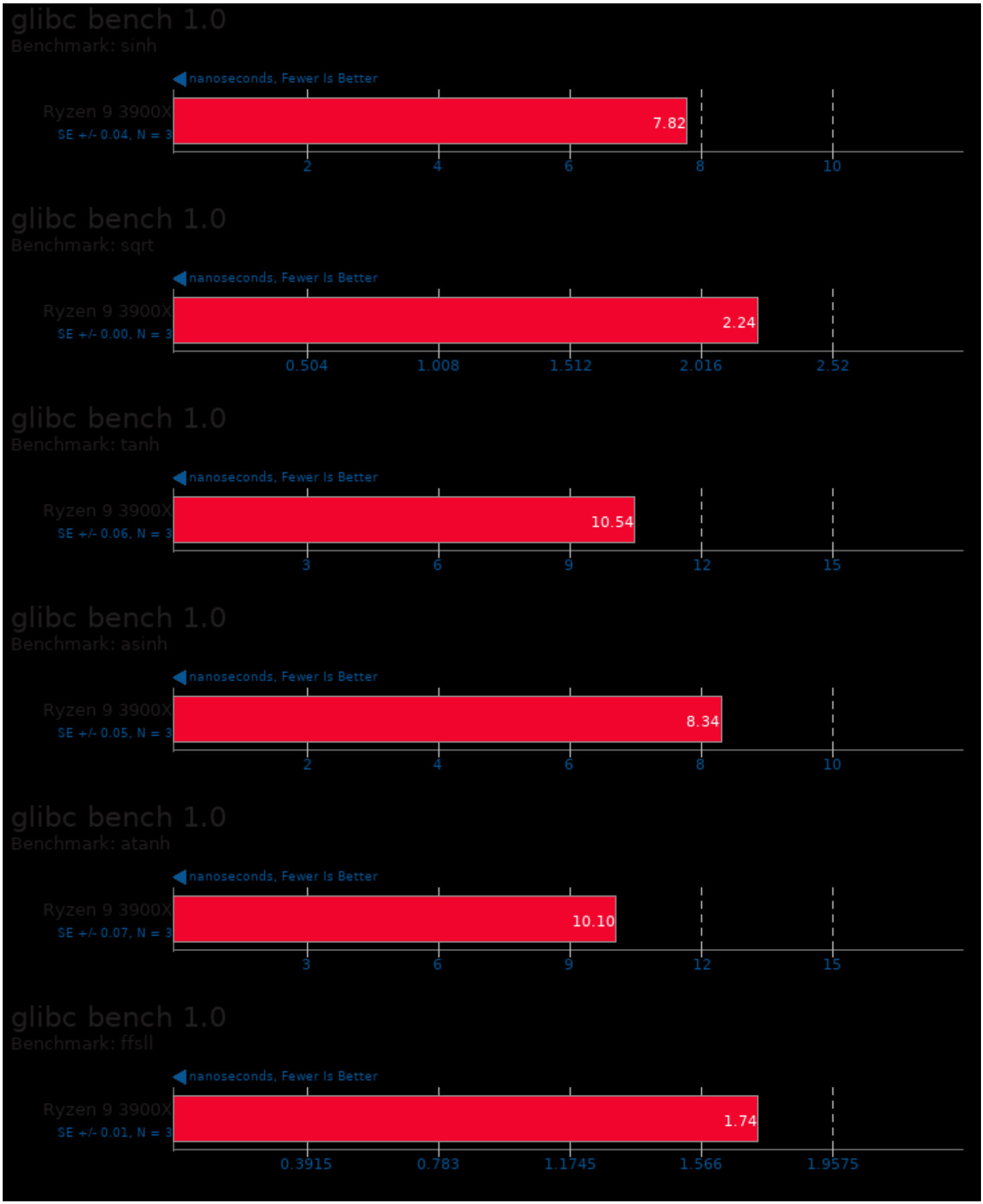
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp

Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

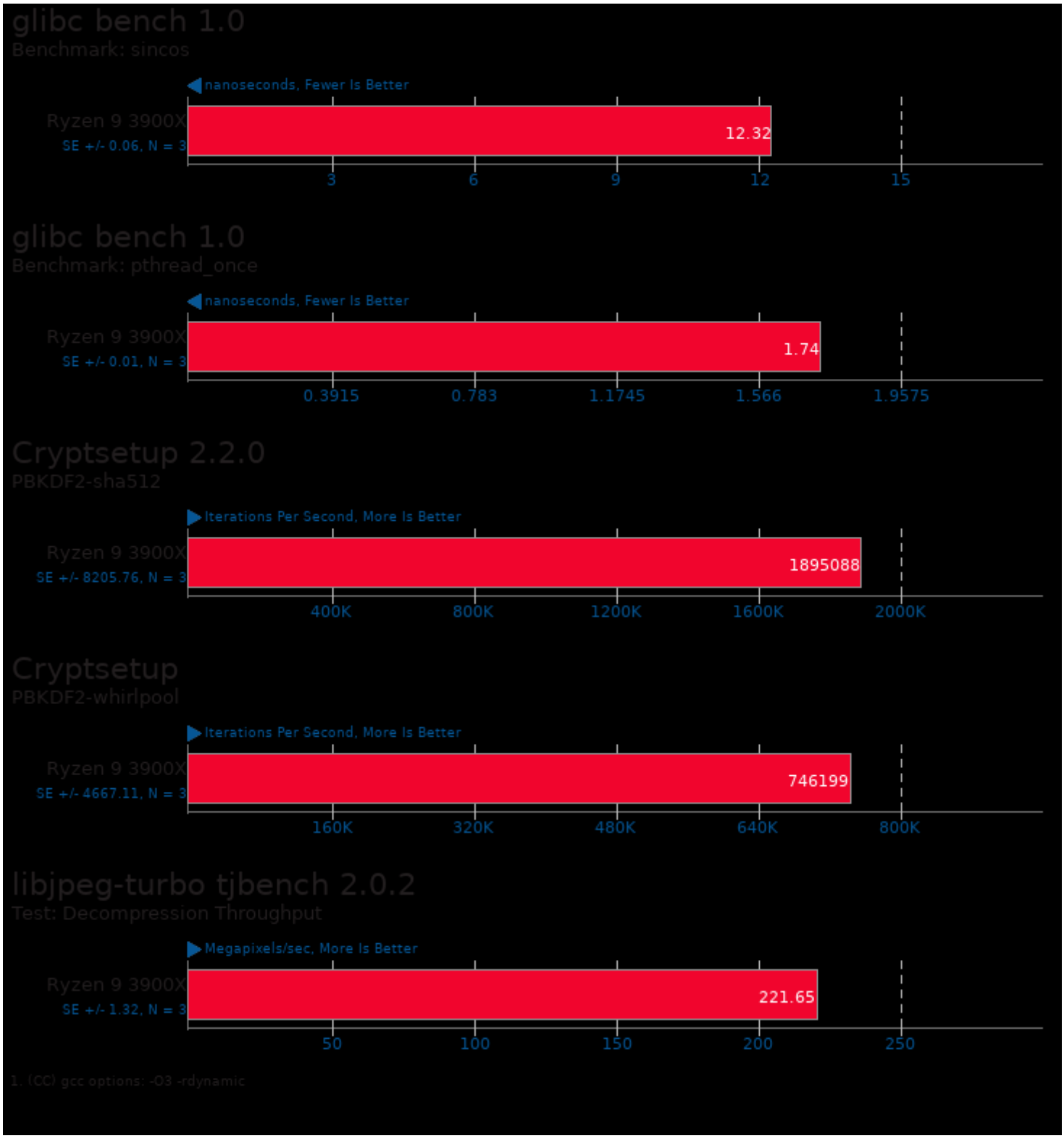
Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks



Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks



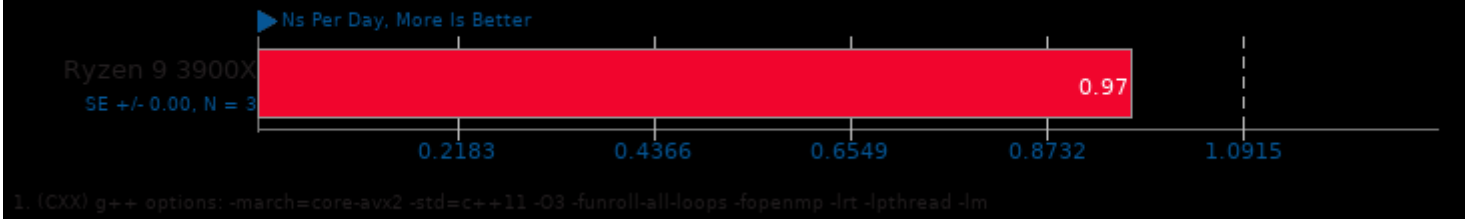
Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks



Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

GROMACS 2018.3

Water Benchmark



1. (CXX) g++ options: -march=core-avx2 -std=c++11 -O3 -funroll-all-loops -fopenmp -lrt -lpthread -lm

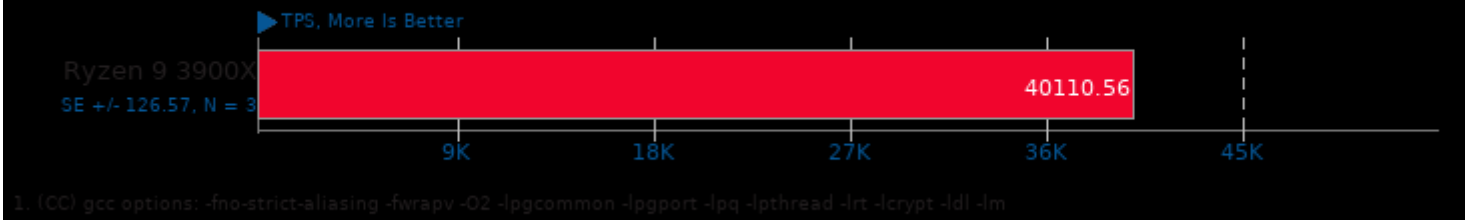
PostgreSQL pgbench 10.3

Scaling: Buffer Test - Test: Normal Load - Mode: Read Only

1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -lcrypt -ldl -lm

PostgreSQL pgbench 10.3

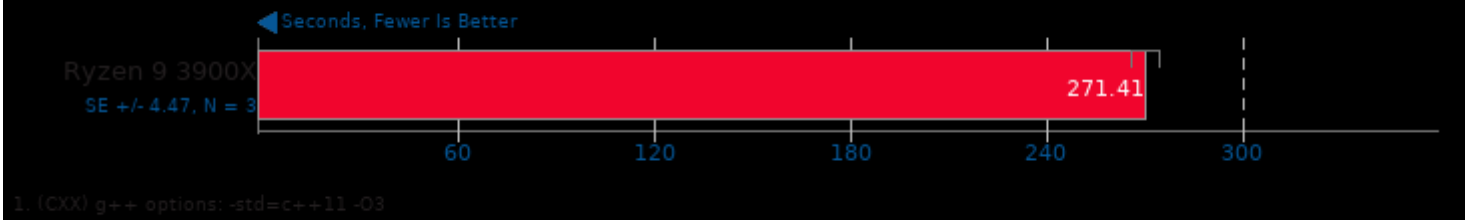
Scaling: Buffer Test - Test: Normal Load - Mode: Read Write



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -lcrypt -ldl -lm

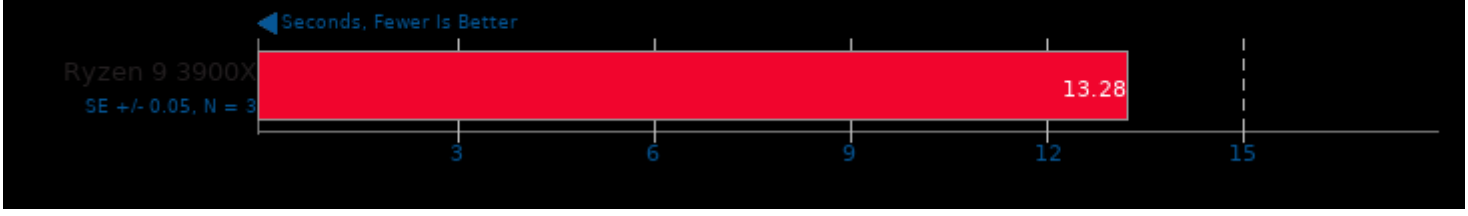
CppPerformanceBenchmarks 9

Test: Math Library



1. (CXX) g++ options: -std=c++11 -O3

GNU Octave Benchmark 4.4.1

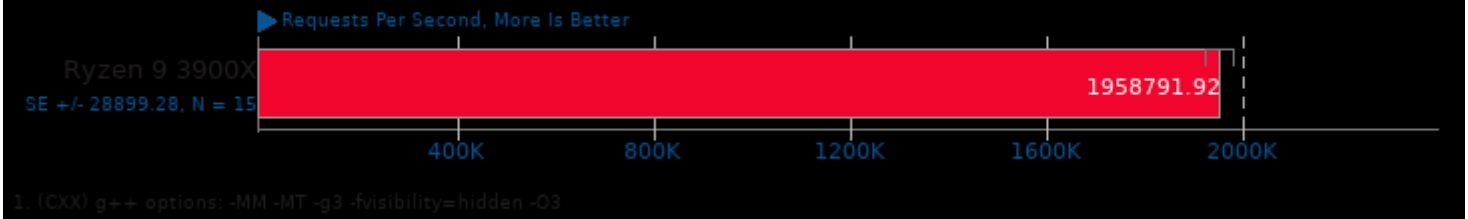


Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

Redis 5.0.5

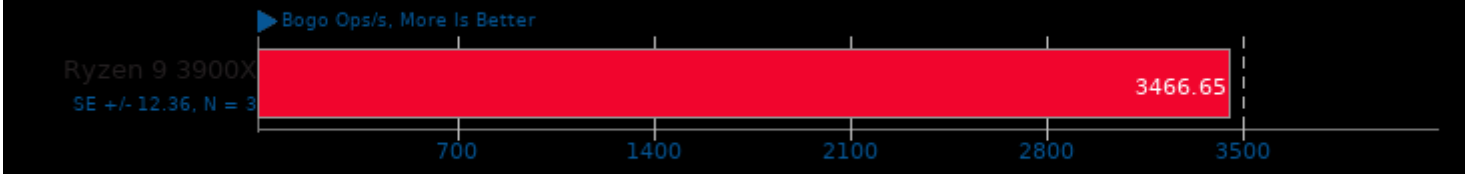
Test: SET



1. (CXX) g++ options: -MM -MT -g3 -fvisibility=hidden -O3

Stress-NG 0.07.26

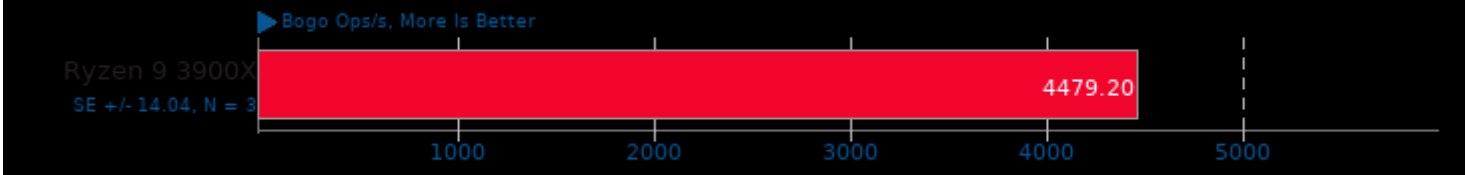
Test: Crypto



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

Stress-NG 0.07.26

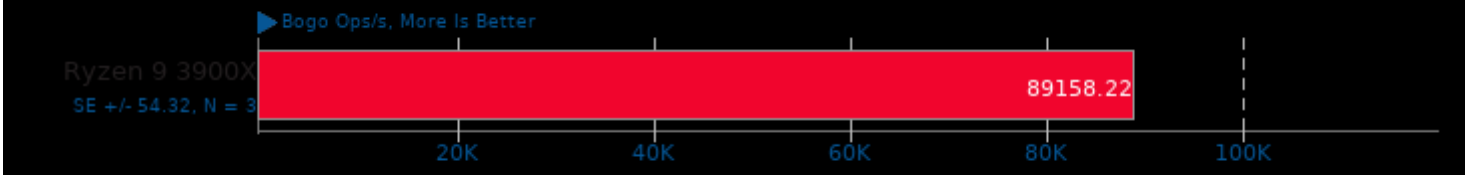
Test: CPU Stress



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

Stress-NG 0.07.26

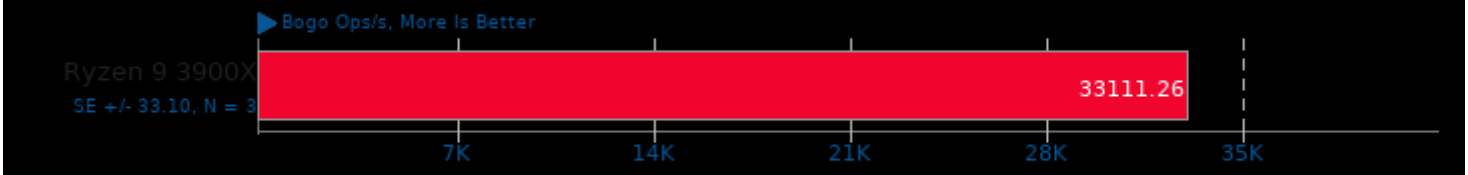
Test: Matrix Math



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

Stress-NG 0.07.26

Test: Vector Math

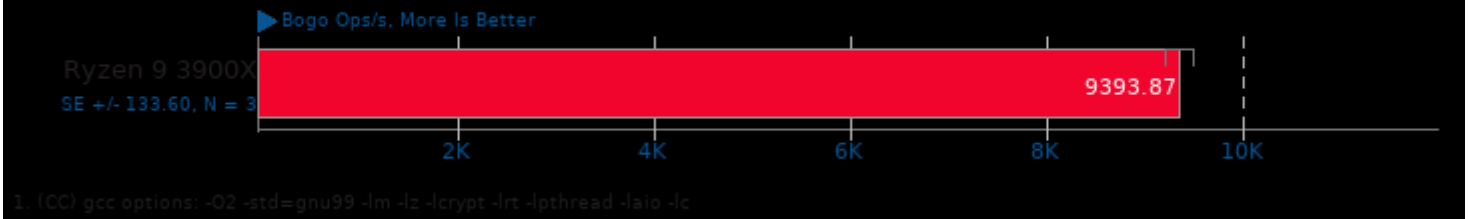


1. (CC) gcc options: -O2 -std=gnu99 -lm -lz -lcrypt -lrt -lpthread -laio -lc

Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

Stress-NG 0.07.26

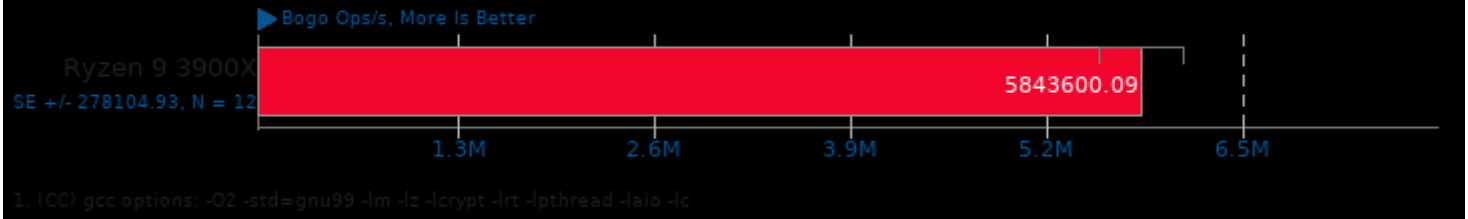
Test: Memory Copying



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

Stress-NG 0.07.26

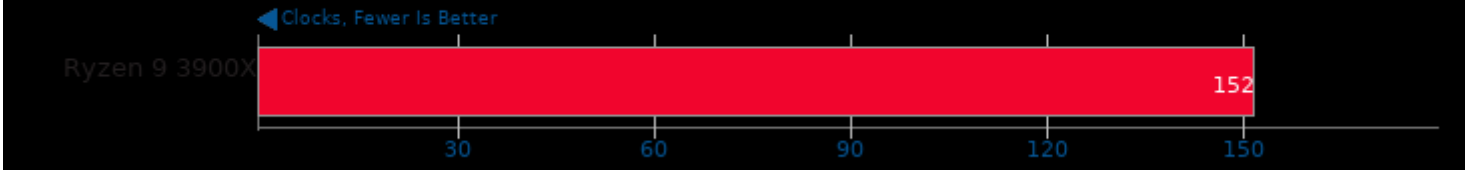
Test: Context Switching



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

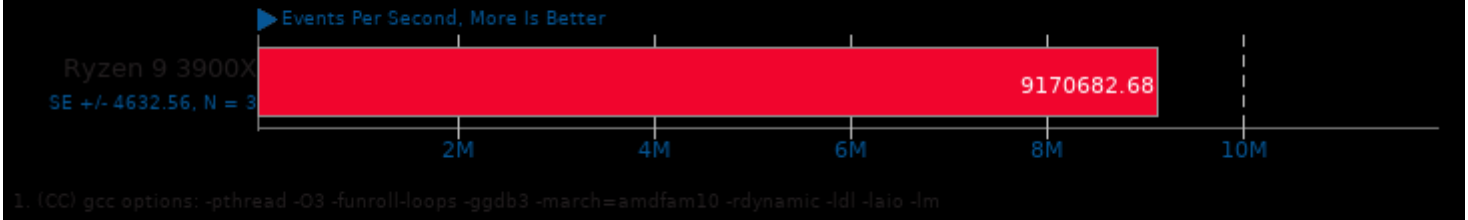
ctx_clock

Context Switch Time



Sysbench 2018-07-28

Test: Memory



1. (CC) gcc options: -pthread -O3 -funroll-loops -ggdb3 -march=amdfam10 -rdynamic -ldl -laio -lm

Sysbench 2018-07-28

Test: CPU

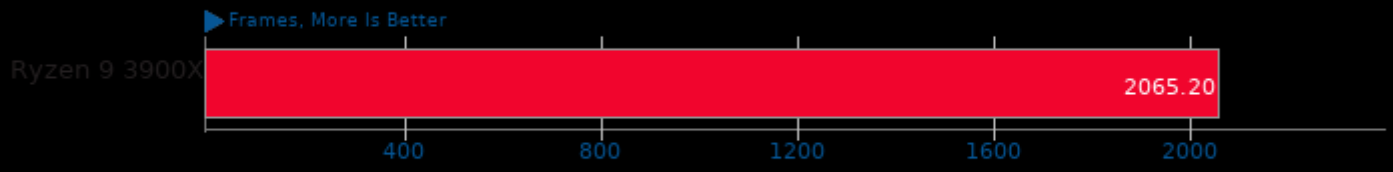
1. (CC) gcc options: -pthread -O3 -funroll-loops -ggdb3 -march=amdfam10 -rdynamic -ldl -laio -lm

Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

Optcarrot
Optimized Benchmark

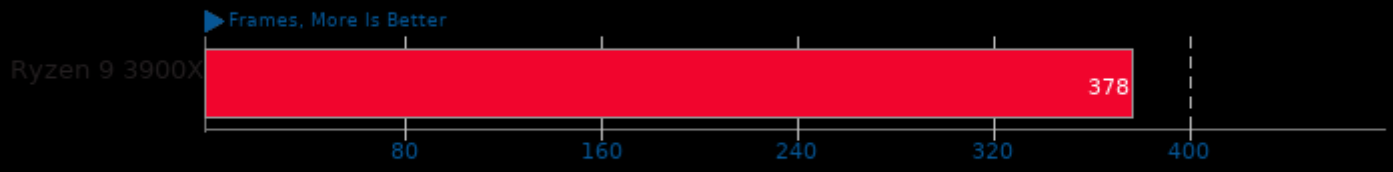
1. ruby 2.5.5p157 (2019-03-15 revision 67260) [x86_64-linux-gnu]

Qmlbench 2
Test: Fib10



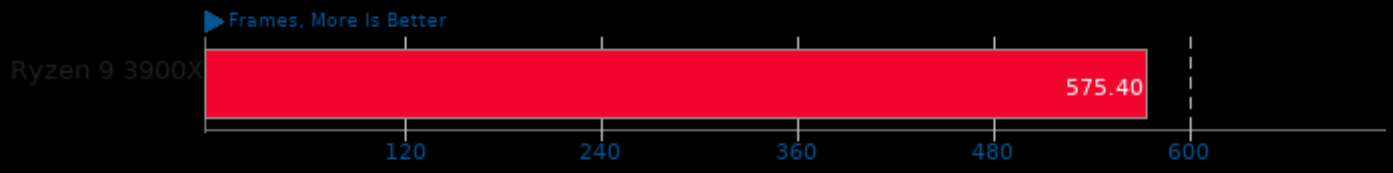
1. (CXX) g++ options: -lpthread

Qmlbench 2
Test: Canvas Text Simple



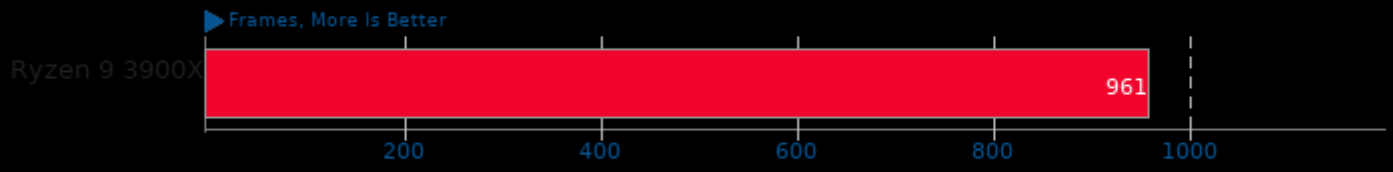
1. (CXX) g++ options: -lpthread

Qmlbench 2
Test: Creation Delegates Flow



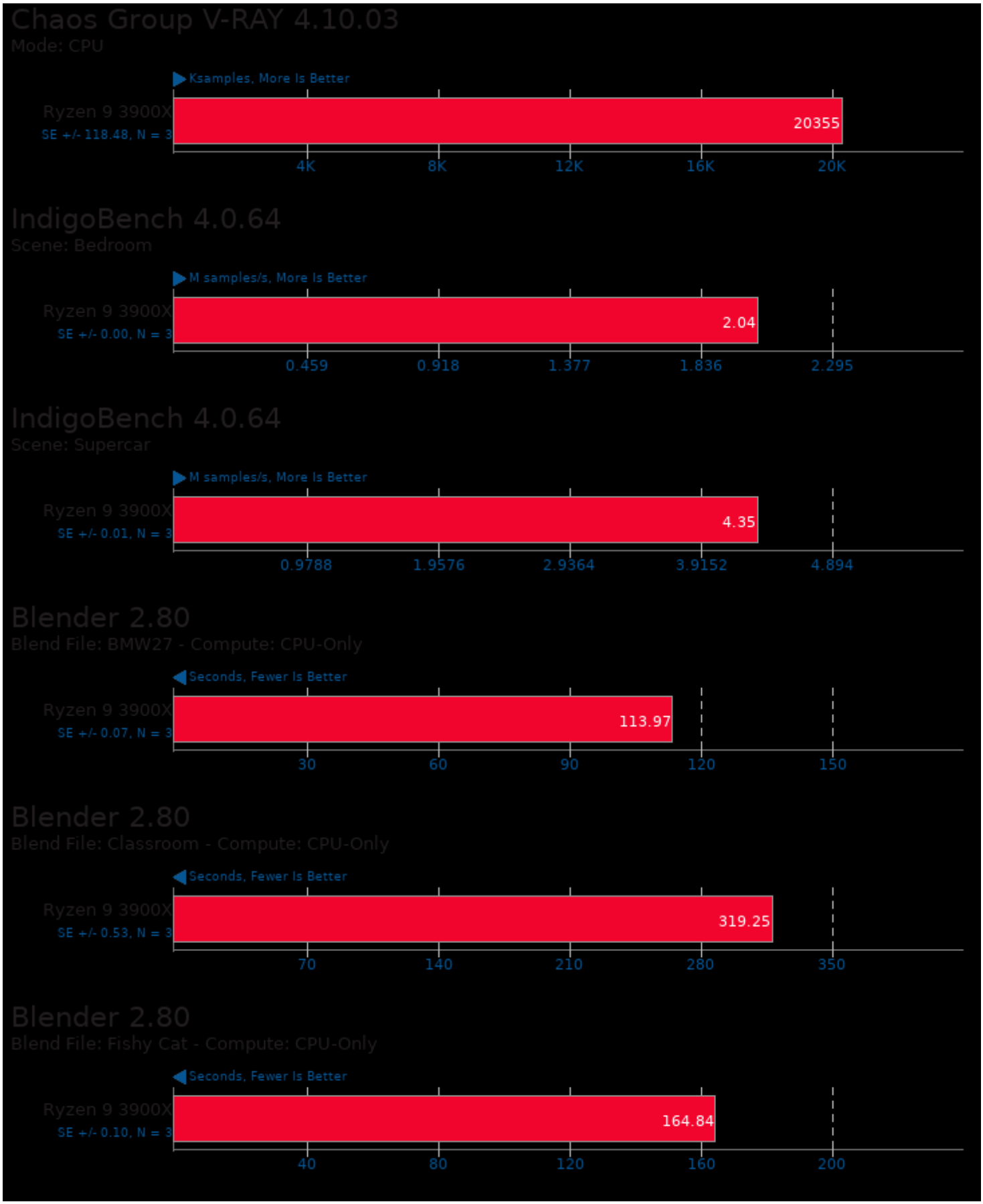
1. (CXX) g++ options: -lpthread

Qmlbench 2
Test: Moving Images Animations

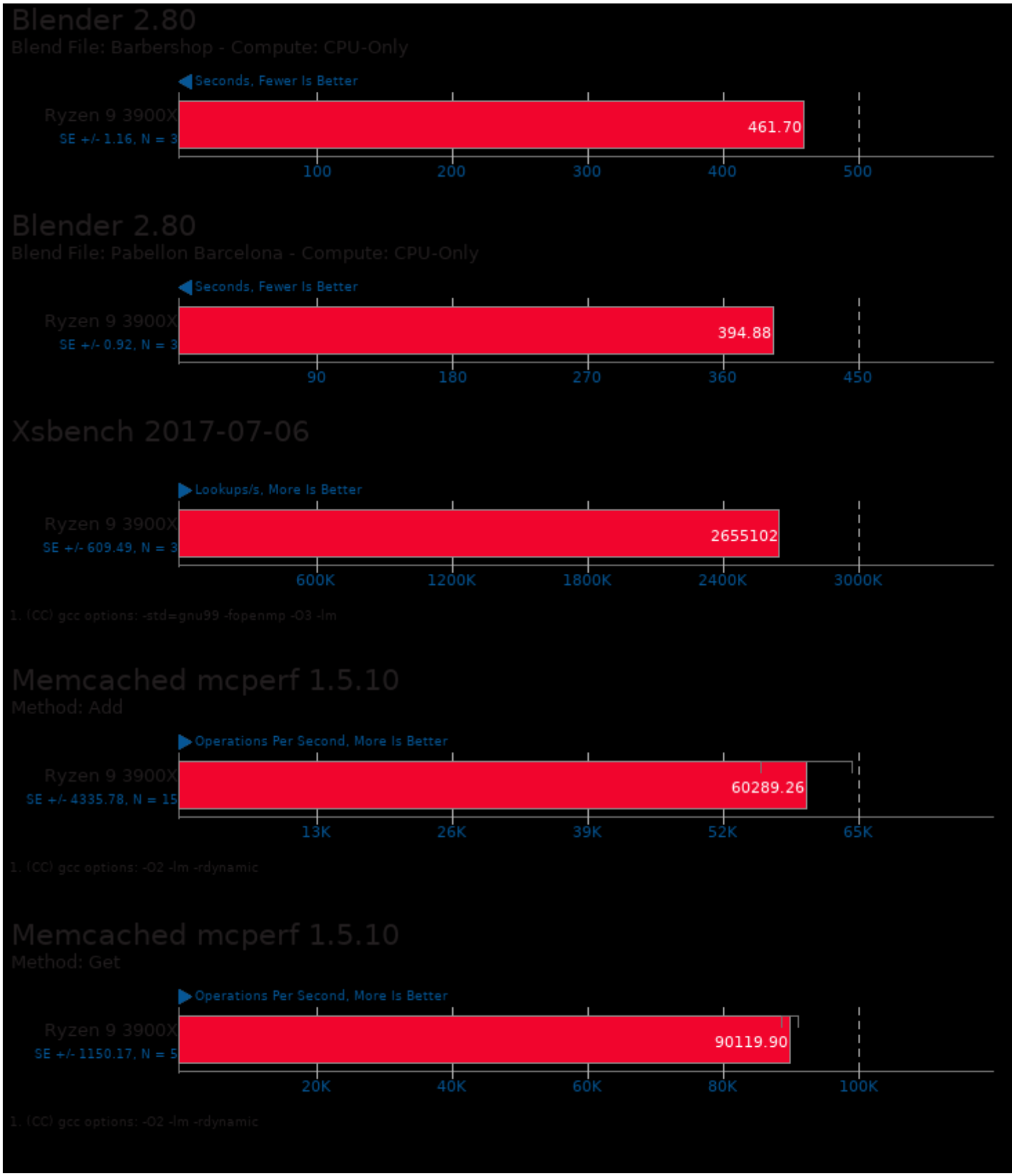


1. (CXX) g++ options: -lpthread

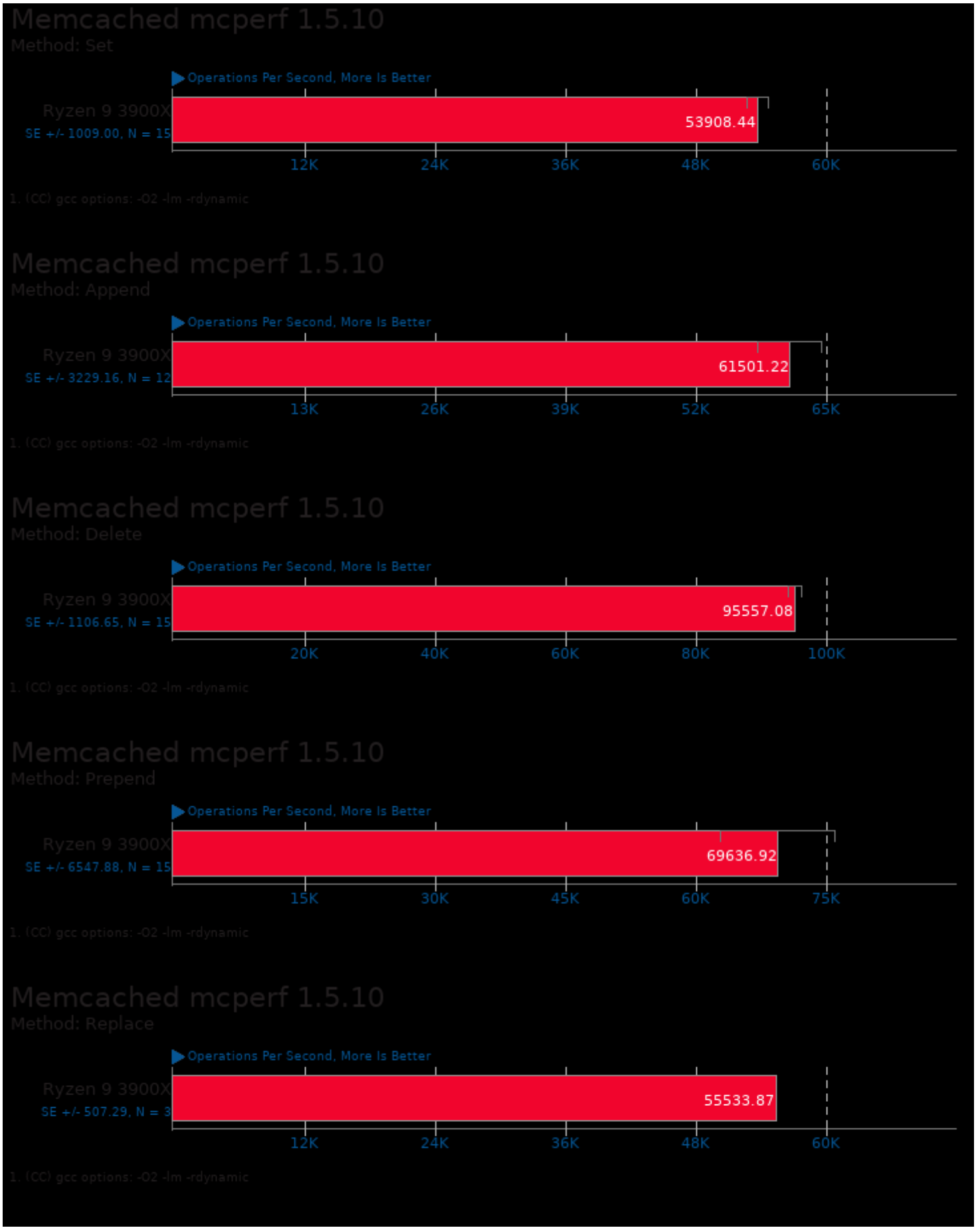
Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks



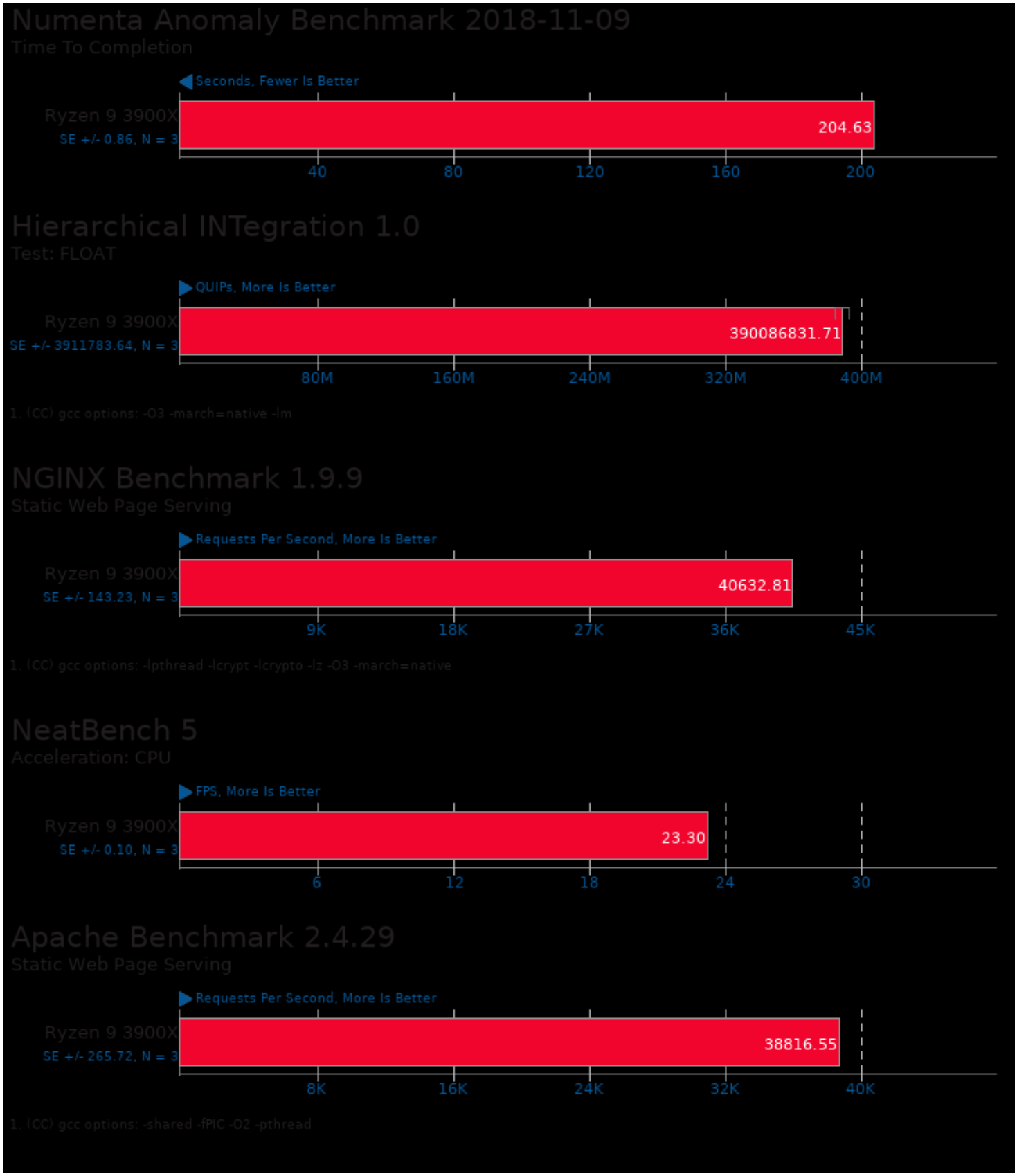
Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks



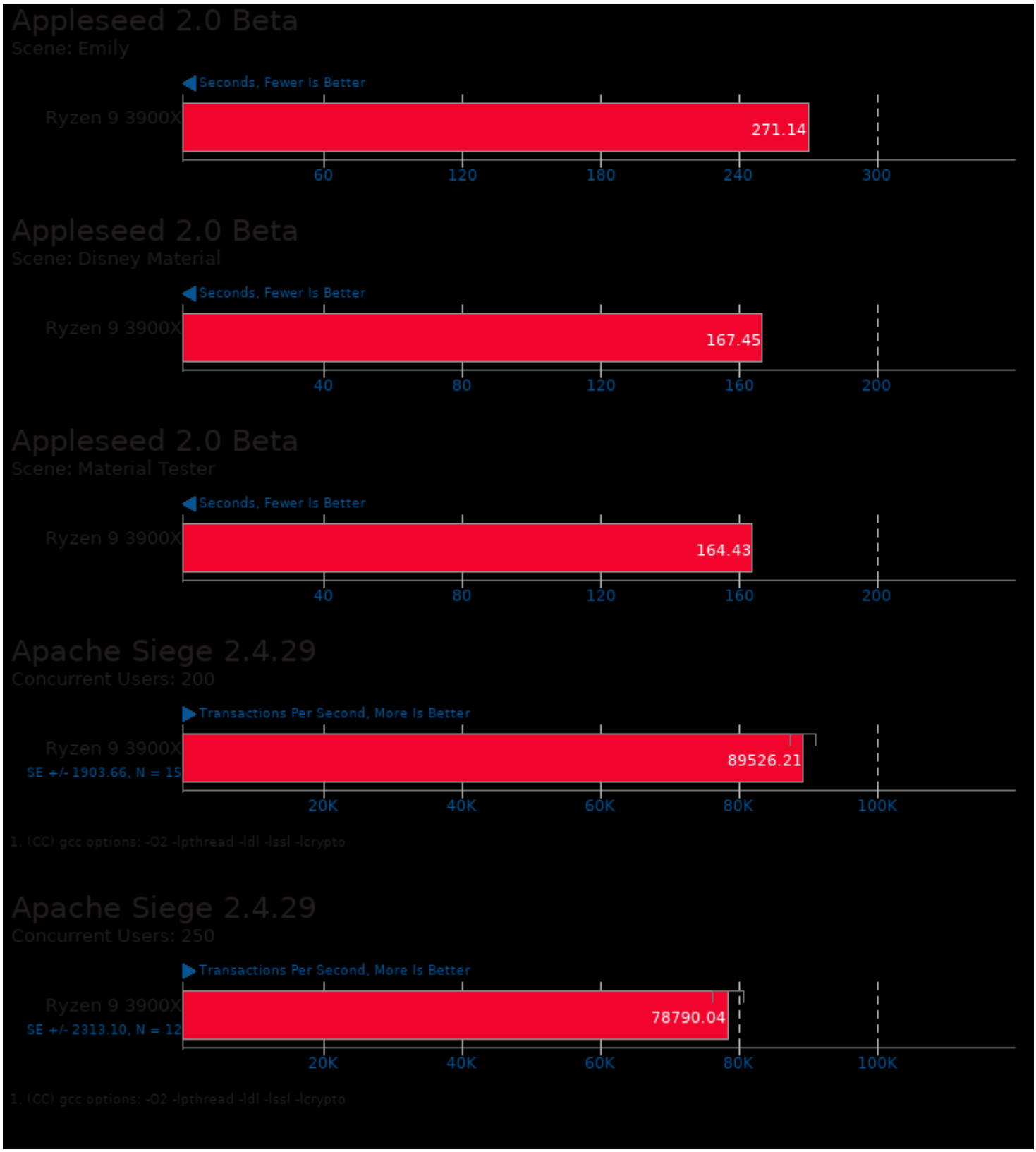
Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks



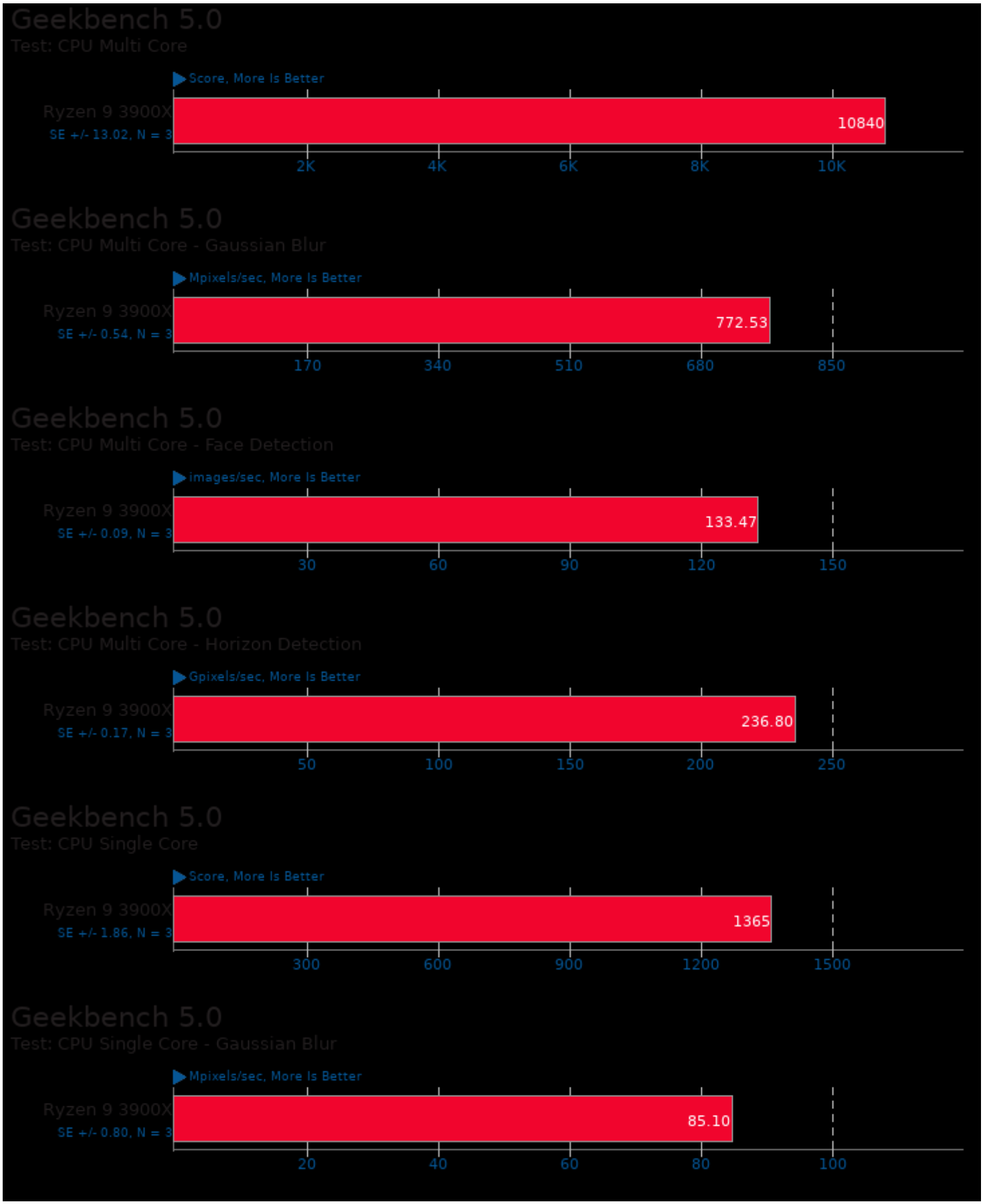
Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks



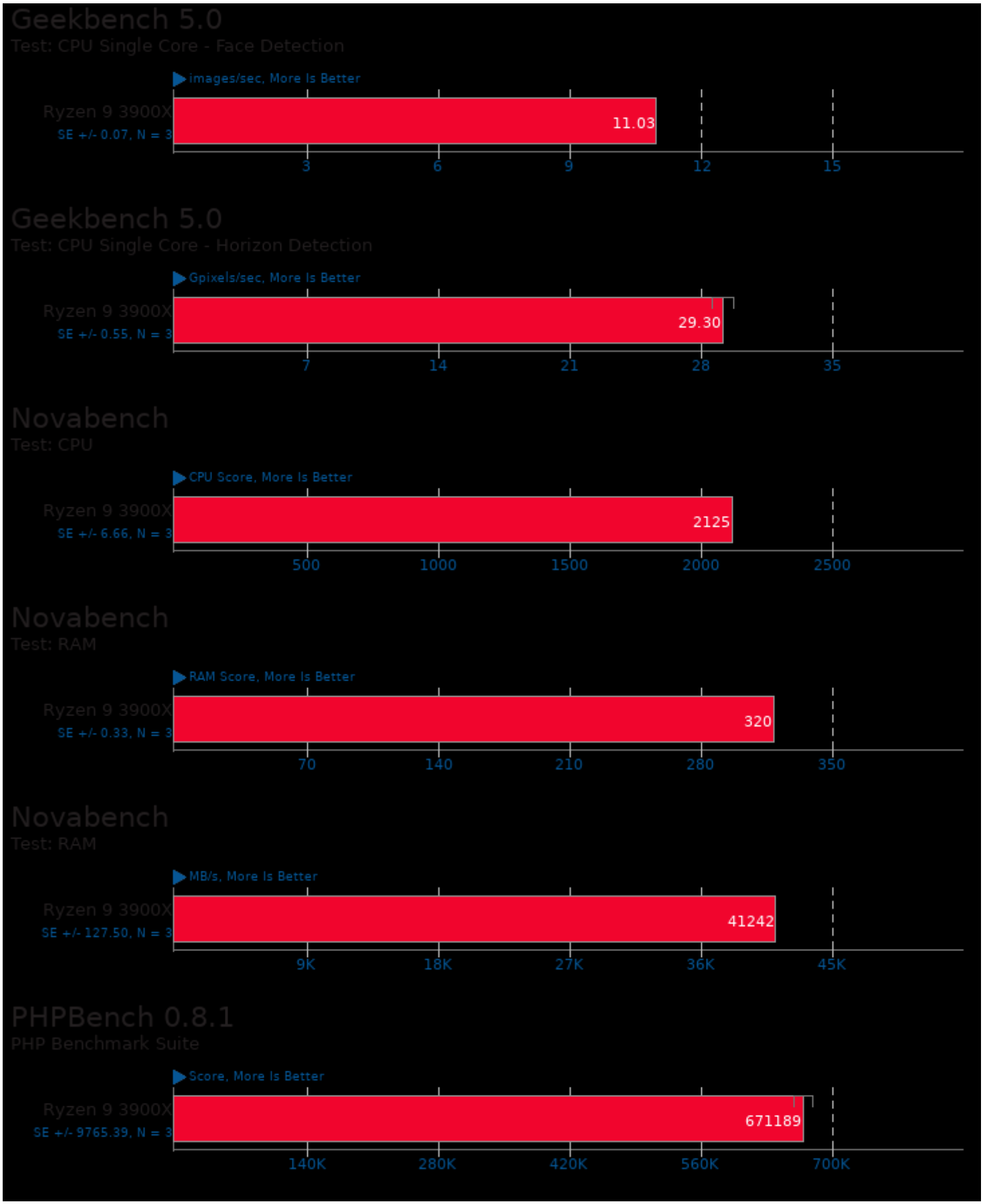
Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks



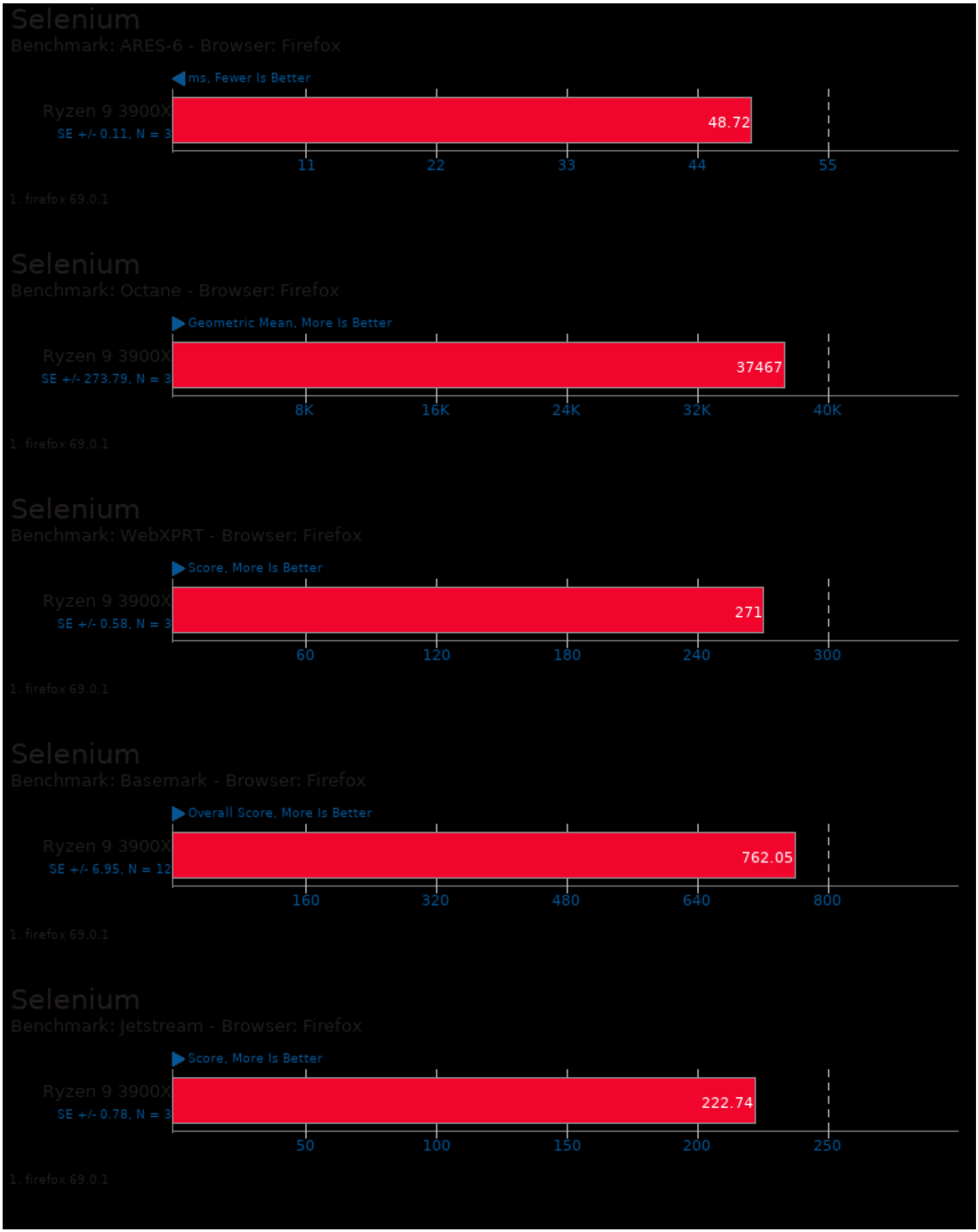
Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks



Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

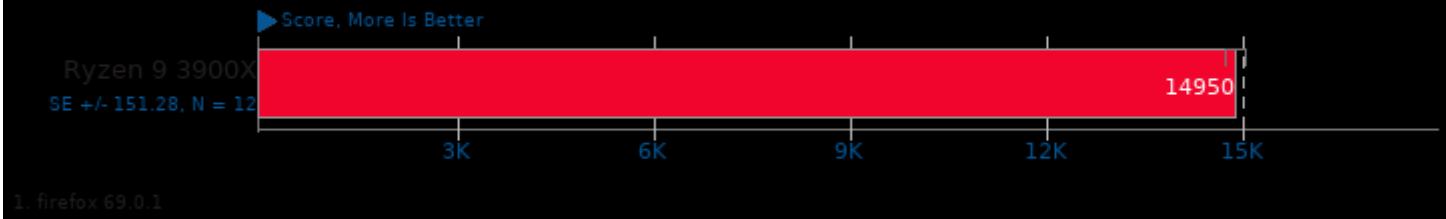


Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks



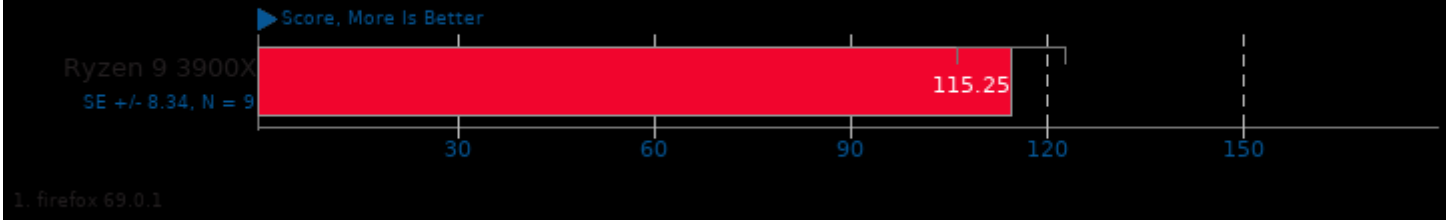
Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks

Selenium
Benchmark: CanvasMark - Browser: Firefox



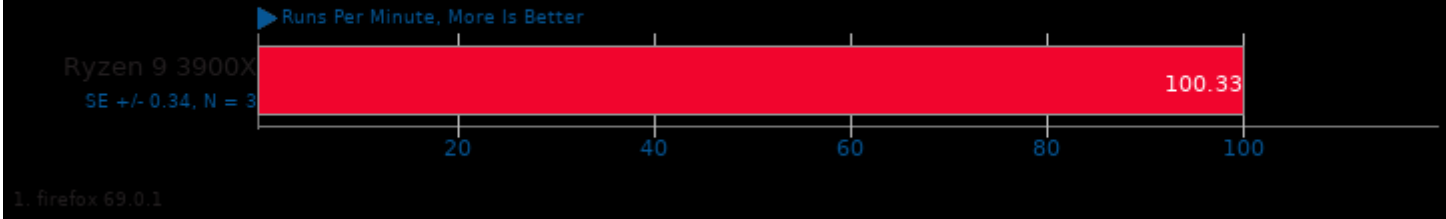
1. firefox 69.0.1

Selenium
Benchmark: MotionMark - Browser: Firefox



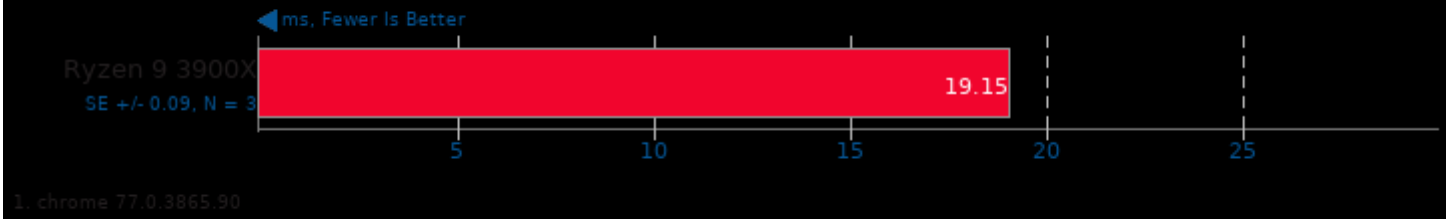
1. firefox 69.0.1

Selenium
Benchmark: Speedometer - Browser: Firefox



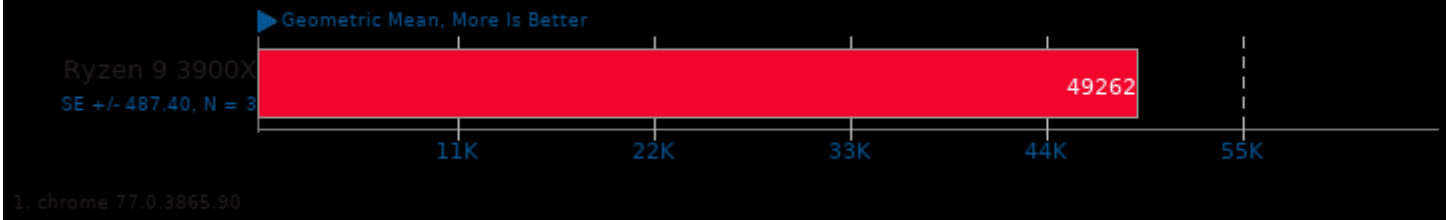
1. firefox 69.0.1

Selenium
Benchmark: ARES-6 - Browser: Google Chrome



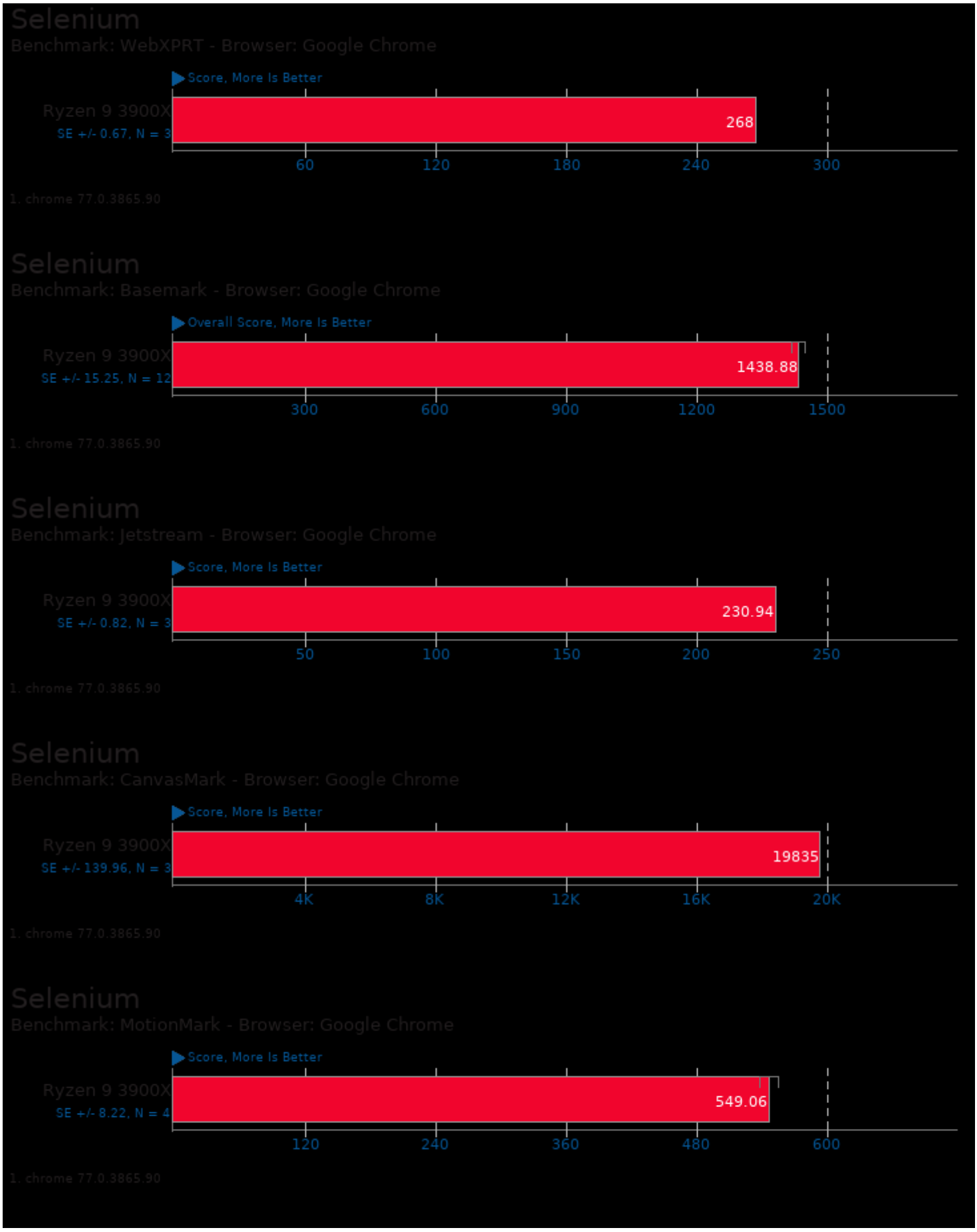
1. chrome 77.0.3865.90

Selenium
Benchmark: Octane - Browser: Google Chrome

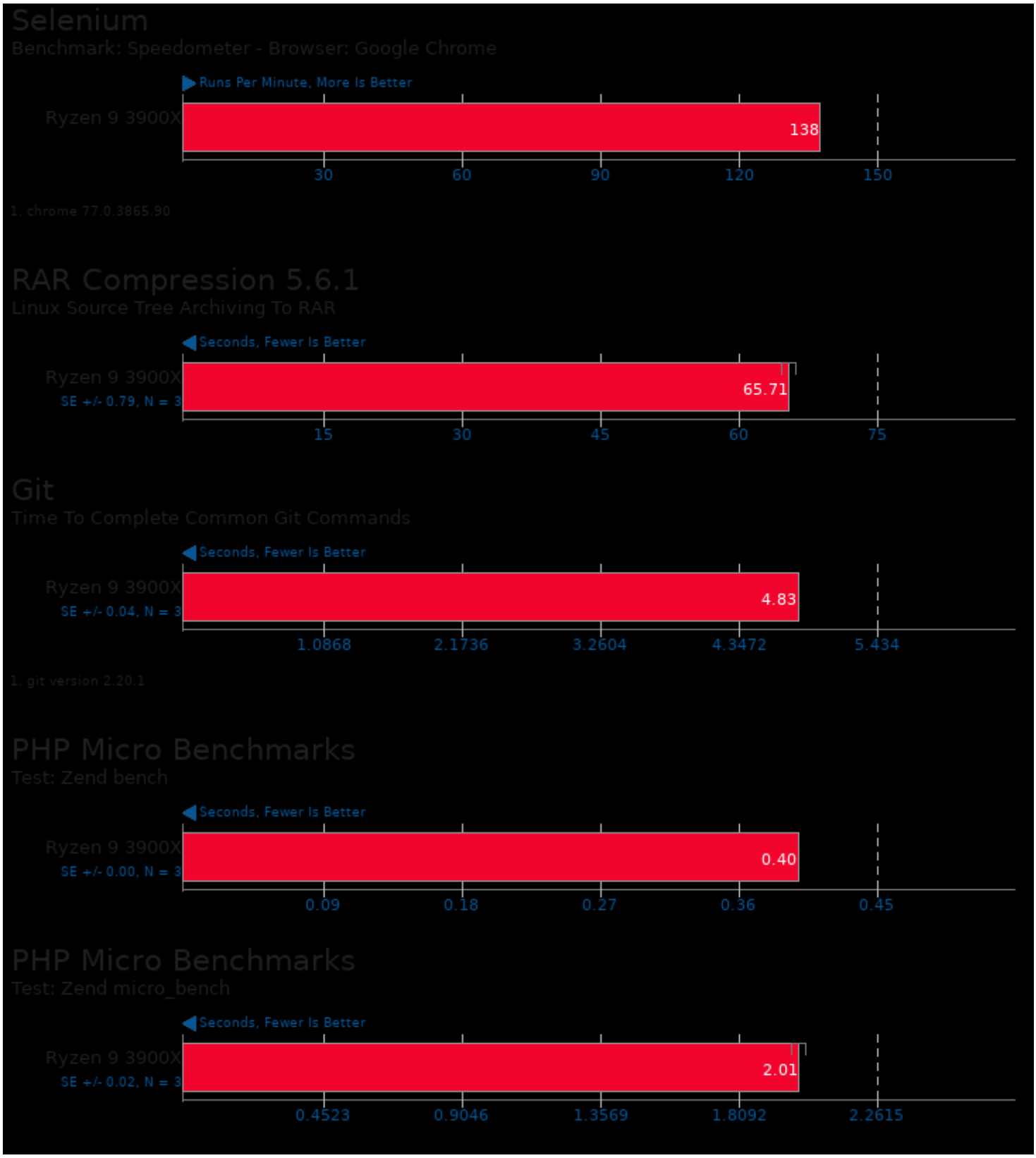


1. chrome 77.0.3865.90

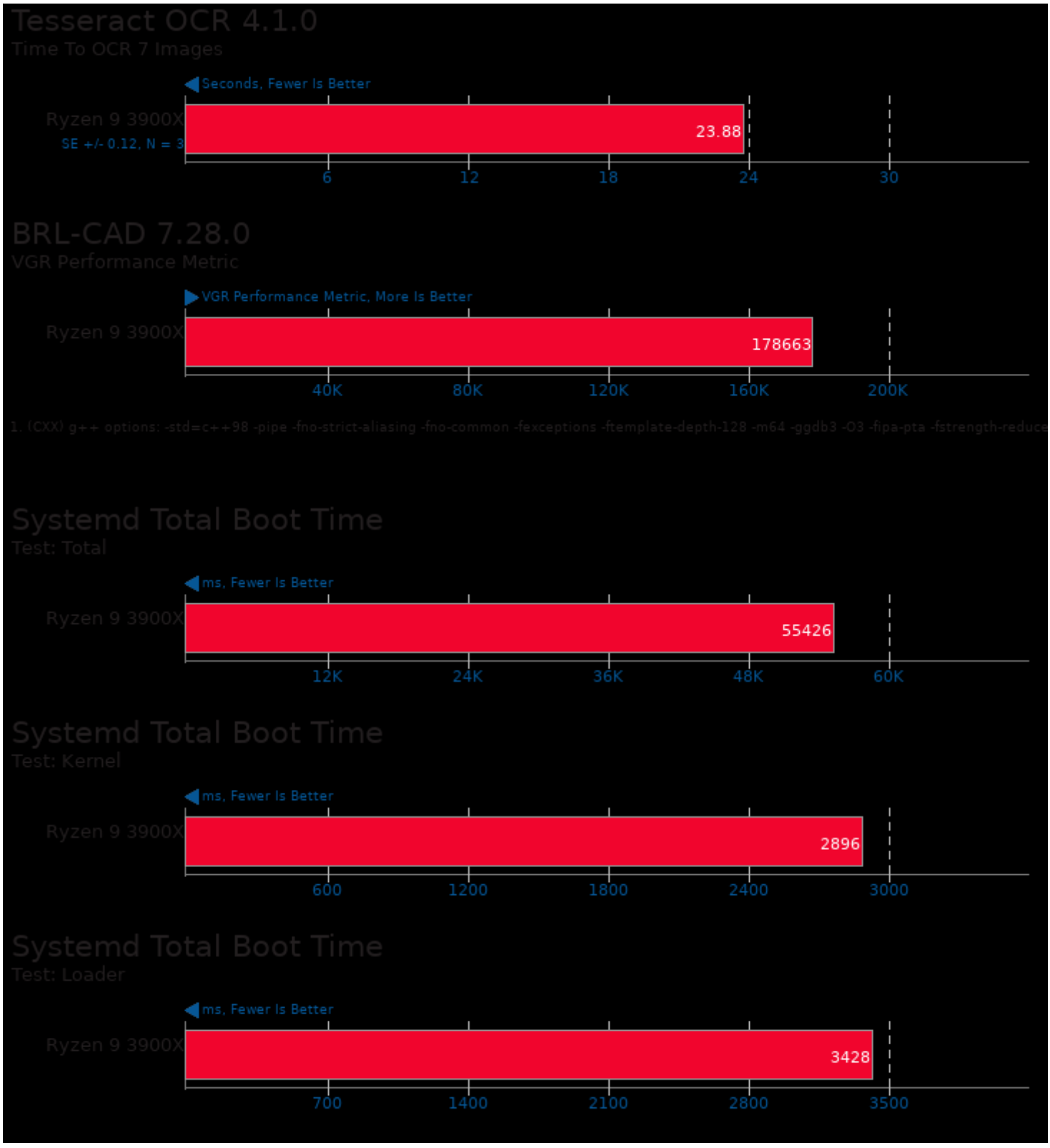
Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks



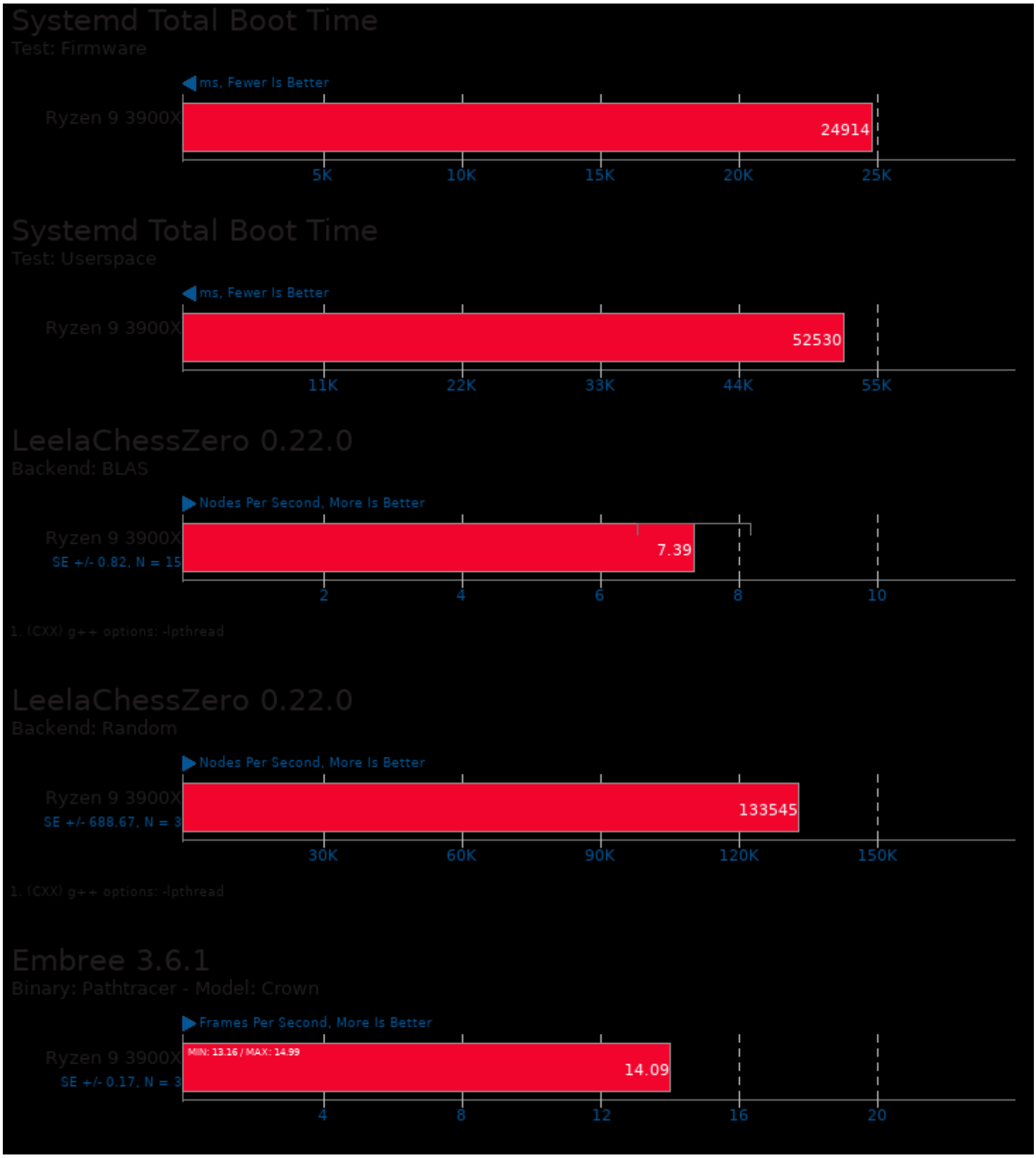
Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks



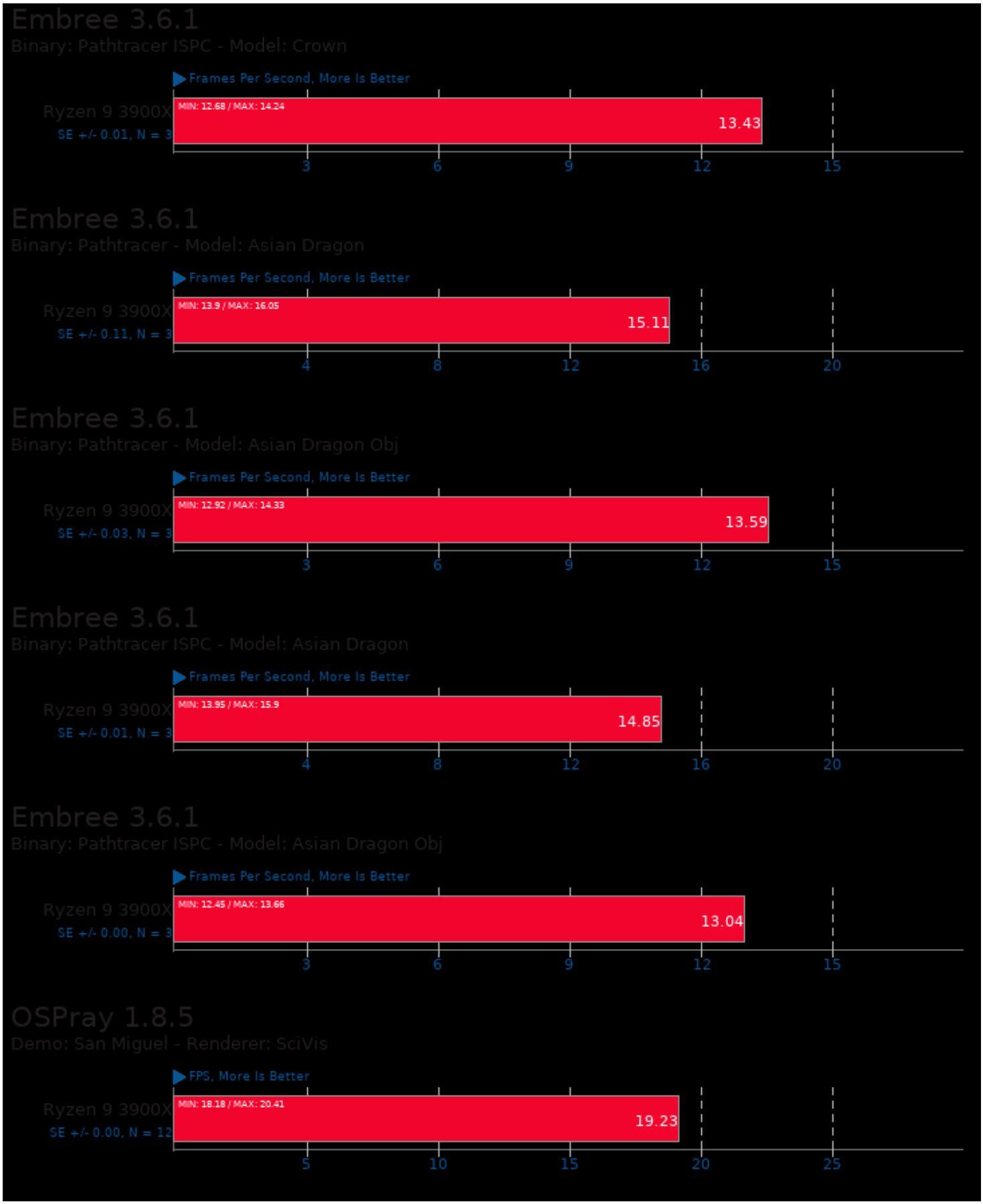
Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks



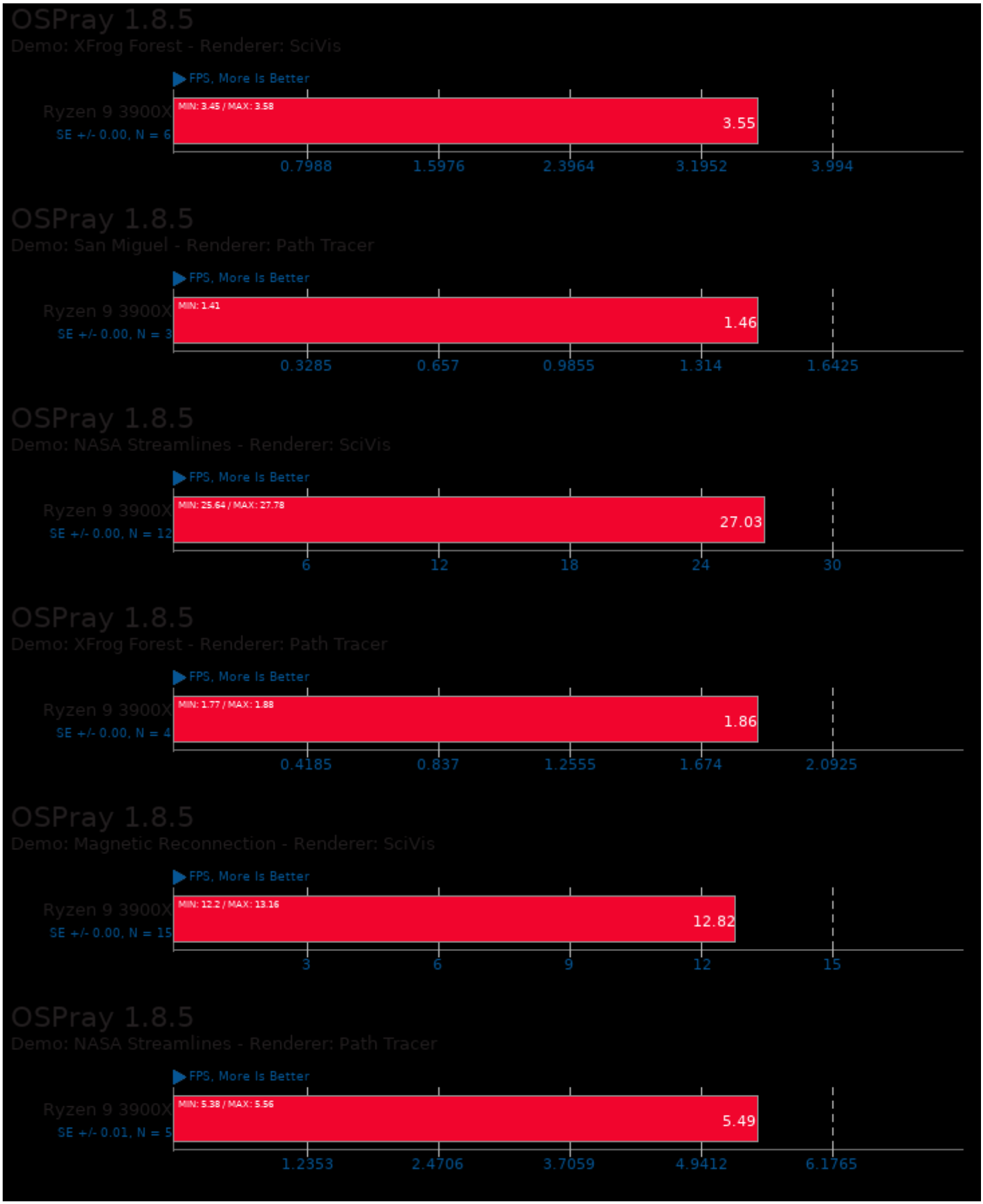
Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks



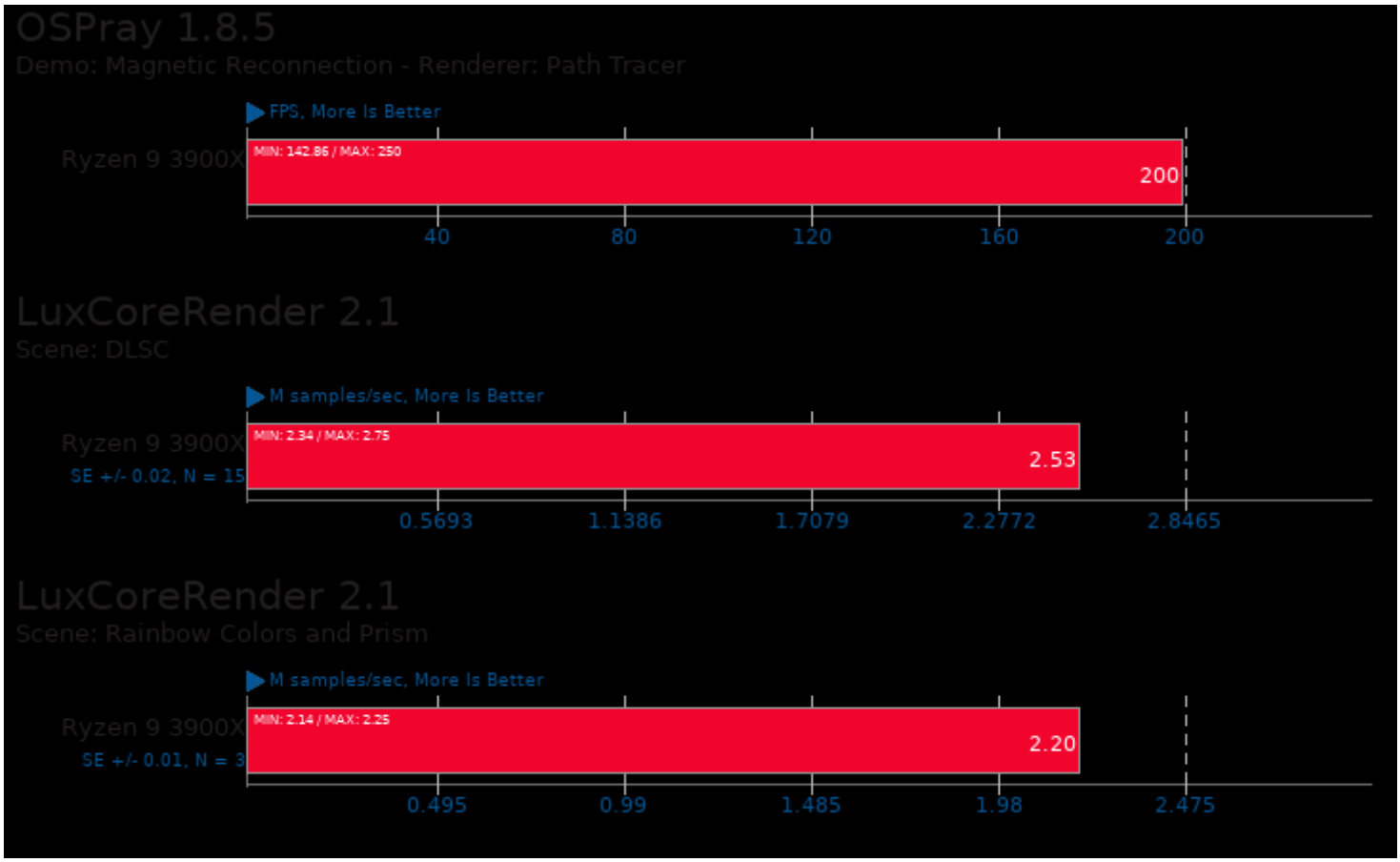
Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks



Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks



Ubuntu 19.10 AMD Ryzen 9 3900X Benchmarks



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