

www.phoronix-test-suite.com

5900X AMD Linux 5.12 KFence Overhead Test

Linux KFence benchmarks quick tests by Michael Larabel.

Automated Executive Summary

kfence.sample_interval=500 had the most wins, coming in first place for 50% of the tests.

Based on the geometric mean of all complete results, the fastest (kfence.sample_interval=500) was 1.006x the speed of the slowest (kfence.sample_interval=100). KFence Disabled was 0.996x the speed of kfence.sample_interval=500 and kfence.sample_interval=100 was 0.997x the speed of KFence Disabled.

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

ParaView (Test: Wavelet Volume - Resolution: 1920 x 1080) at 1.07x
ParaView (Test: Wavelet Volume - Resolution: 1920 x 1080) at 1.07x
OSBench (Test: Memory Allocations) at 1.067x
srsLTE (Test: PHY_DL_Test) at 1.048x
Stress-NG (Test: Context Switching) at 1.048x
srsLTE (Test: PHY_DL_Test) at 1.046x
Basemark GPU (Renderer: OpenGL - Resolution: 1920 x 1080 - Graphics Preset: High) at 1.041x
Selenium (Benchmark: Jetstream 2 - Browser: Firefox) at 1.04x
OSBench (Test: Create Files) at 1.039x

5900X AMD Linux 5.12 KFence Overhead Test

OSBench (Test: Launch Programs) at 1.038x.

Test Systems:

KFence Disabled

kfence.sample_interval=100

kfence.sample_interval=500

Processor: AMD Ryzen 9 5900X 12-Core @ 3.70GHz (12 Cores / 24 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (3402 BIOS), Chipset: AMD Starship/Matisse, Memory: 16GB, Disk: 1000GB Sabrent Rocket 4.0 Plus + 2000GB, Graphics: AMD Radeon RX 6800 16GB (2475/1000MHz), Audio: AMD Device ab28, Monitor: ASUS VP28U, Network: Realtek RTL8125 2.5GbE + Intel I211

OS: Ubuntu 20.04, Kernel: 5.12.0-051200rc7daily20210418-generic (x86_64) 20210417, Desktop: GNOME Shell 3.36.7, Display Server: X Server 1.20.9, OpenGL: 4.6 Mesa 21.2.0-devel (git-c74d93c 2021-04-18 focal-oibaf-ppa) (LLVM 12.0.0), Vulkan: 1.1.168, Compiler: GCC 9.3.0 + CUDA 11.2, 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-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-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-9-HskZEa/gcc-9-9.3.0/debian/tmp-nvptx/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-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 / Block Size: 4096
Processor Notes: Scaling Governor: acpi-cpufreq ondemand (Boost: Enabled) - CPU Microcode: 0xa201009
Python Notes: Python 3.8.5
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

	KFence Disabled	kfence.sample_interval=100	kfence.sample_interval=500
Flexible IO Tester - Rand Read - IO_uring - No - Yes - 4KB (IOPS)	**321667**	**326000**	323667
Normalized	98.67%	100%	99.28%
Standard Deviation	0.9%		1%
FS-Mark - 1.F.1.S (Files/s)	**630.0**	634.3	**666.0**
Normalized	94.59%	95.24%	100%
Standard Deviation	2.6%	22.2%	2.5%
Compile Bench - Initial Create (MB/s)	**739.97**	760.78	**761.92**
Normalized	97.12%	99.85%	100%
Standard Deviation	2%	1.5%	1.5%
RealSR-NCNN - 4x - Yes (sec)	**32.045**	**32.123**	32.079
Normalized	100%	99.76%	99.89%
Standard Deviation	0.1%	0.1%	0.2%

5900X AMD Linux 5.12 KFence Overhead Test

Waifu2x-NCNN Vulkan - 2x - 3 - Yes (sec)	**3.600**	3.609	**3.623**
Normalized	100%	99.75%	99.37%
Standard Deviation	0.7%	0.5%	0.9%
Tesseract - 3840 x 2160 (FPS)	**765.6192**	752.4988	**744.2564**
Normalized	100%	98.29%	97.21%
Standard Deviation	1.7%	2.8%	1.4%
Unigine Superposition - 1920 x 1080 - Fullscreen - Low - OpenGL (FPS)	**269.2**	**267.3**	268.7
Normalized	100%	99.29%	99.81%
Standard Deviation	0.7%	0.9%	0.9%
GLmark2 - 1920 x 1080 (Score)	18803	**19066**	**18672**
Normalized	98.62%	100%	97.93%
GLmark2 - 3840 x 2160 (Score)	8391	**8388**	**8393**
Normalized	99.98%	99.94%	100%
ParaView - Many Spheres - 1920 x 1080 (Frames / Sec)	**146.26**	**149.01**	147.63
Normalized	98.15%	100%	99.07%
Standard Deviation	0.7%	0.5%	0.7%
ParaView - Many Spheres - 1920 x 1080 (MiPolys / Sec)	**14664**	**14939**	14800
Normalized	98.16%	100%	99.07%
Standard Deviation	0.7%	0.5%	0.7%
ParaView - Wavelet Volume - 1920 x 1080 (Frames / Sec)	**566.70**	543.83	**529.78**
Normalized	100%	95.96%	93.49%
Standard Deviation	0.7%	2.2%	2.4%
ParaView - Wavelet Volume - 1920 x 1080 (MiVoxels / Sec)	**9067**	8701	**8477**
Normalized	100%	95.96%	93.49%
Standard Deviation	0.7%	2.2%	2.4%
ParaView - Wavelet Contour - 1920 x 1080 (Frames / Sec)	**381.31**	381.86	**383.90**
Normalized	99.33%	99.47%	100%
Standard Deviation	1.1%	1.2%	0.2%
ParaView - Wavelet Contour - 1920 x 1080 (MiPolys / Sec)	**3974**	3979	**4001**
Normalized	99.33%	99.47%	100%
Standard Deviation	1.1%	1.2%	0.2%
OSBench - Create Files (us/Event)	10.422784	**10.548524**	**10.148533**
Normalized	97.37%	96.21%	100%
Standard Deviation	1.6%	0.7%	1.7%
OSBench - Create Threads (us/Event)	**7.882516**	**8.169810**	7.934809
Normalized	100%	96.48%	99.34%
Standard Deviation	2.3%	1.4%	2.4%
OSBench - Launch Programs (us/Event)	**27.205944**	26.954412	**26.206970**
Normalized	96.33%	97.23%	100%
Standard Deviation	2.5%	2.4%	2.4%
OSBench - Create Processes (us/Event)	**17.022292**	**17.294884**	17.030239
Normalized	100%	98.42%	99.95%
Standard Deviation	2.4%	2.2%	2.4%
OSBench - Memory Allocations (Ns/Event)	54.647366	**56.193988**	**52.651008**
Normalized	96.35%	93.7%	100%
Standard Deviation	0.3%	2.4%	0.5%
QuantLib (MFLOPS)	**3172**	**3075**	3163

5900X AMD Linux 5.12 KFence Overhead Test

Normalized	100%	96.95%	99.71%
Standard Deviation	4.8%	3.6%	4.4%
simdjson - Kostya (GB/s)	3.76	**3.66**	**3.77**
Normalized	99.73%	97.08%	100%
Standard Deviation	0.5%	0.4%	2.1%
simdjson - PartialTweets (GB/s)	**4.81**	4.82	**4.83**
Normalized	99.59%	99.79%	100%
Standard Deviation	1.9%	2.5%	2.4%
simdjson - DistinctUserID (GB/s)	5.36	**5.24**	**5.42**
Normalized	98.89%	96.68%	100%
Standard Deviation	2.1%	0.7%	1.5%
srsLTE - OFDM_Test (Samples / Second)	163133333	**160600000**	**164166667**
Normalized	99.37%	97.83%	100%
Standard Deviation	1.1%	0.2%	1.9%
srsLTE - PHY_DL_Test (eNb Mb/s)	357.3	**346.1**	**362.7**
Normalized	98.51%	95.42%	100%
Standard Deviation	1.3%	1.4%	0.6%
srsLTE - PHY_DL_Test (UE Mb/s)	129.2	**124.8**	**130.6**
Normalized	98.93%	95.56%	100%
Standard Deviation	1.9%	1%	0.2%
LuxCoreRender - DLSC - CPU (M	2.97	**2.96**	**2.98**
Normalized	99.66%	99.33%	100%
Standard Deviation	1.3%	0.8%	0.5%
LuxCoreRender - Danish Mood - CPU (M samples/sec)	2.38	**2.36**	**2.39**
Normalized	99.58%	98.74%	100%
Standard Deviation	2.5%	1.5%	1.8%
LuxCoreRender - Orange Juice - CPU (M samples/sec)	4.63	**4.60**	**4.64**
Normalized	99.78%	99.14%	100%
Standard Deviation	0.3%	0.4%	0.3%
SVT-HEVC - 7 - Bosphorus 1080p (FPS)	**178.19**	178.61	**179.18**
Normalized	99.45%	99.68%	100%
Standard Deviation	0.7%	1.2%	0.5%
SVT-HEVC - 10 - Bosphorus 1080p (FPS)	**325.17**	333.09	**333.65**
Normalized	97.46%	99.83%	100%
Standard Deviation	1%	0.4%	0.3%
SVT-VP9 - VMAF Optimized - Bosphorus 1080p (FPS)	**224.18**	224.76	**225.79**
Normalized	99.29%	99.54%	100%
Standard Deviation	1.3%	1.8%	1.3%
SVT-VP9 - P.S.O - Bosphorus 1080p (FPS)	**230.49**	231.67	**232.63**
Normalized	99.08%	99.59%	100%
Standard Deviation	0.1%	0.1%	0.2%
SVT-VP9 - V.Q.O - Bosphorus 1080p (FPS)	**207.49**	209.47	**210.40**
Normalized	98.62%	99.56%	100%
Standard Deviation	0.5%	0.3%	0.6%
Stockfish - Total Time (Nodes/s)	**43836738**	**43226332**	43693518
Normalized	100%	98.61%	99.67%
Standard Deviation	1%	2.4%	1.5%
Timed GDB GNU Debugger Compilation - Time To Compile (sec)	74.558	**74.572**	**74.409**
Normalized	99.8%	99.78%	100%
Standard Deviation	0.4%	0.3%	0.3%

5900X AMD Linux 5.12 KFence Overhead Test

Timed Godot Game Engine Compilation - Time To Compile (sec)	**88.894**	88.564	**88.465**
Normalized	99.52%	99.89%	100%
Standard Deviation	0.3%	0.7%	0.5%
Timed Linux Kernel Compilation - Time To Compile (sec)	**59.091**	58.656	**58.655**
Normalized	99.26%	100%	100%
Standard Deviation	1.1%	1.5%	1.6%
Timed Mesa Compilation - Time To Compile (sec)	**36.578**	**36.210**	36.243
Normalized	98.99%	100%	99.91%
Standard Deviation	0.2%	0.4%	0.2%
Timed Wasmer Compilation - Time To Compile (sec)	**63.118**	62.938	**62.726**
Normalized	99.38%	99.66%	100%
Standard Deviation	0.4%	0.4%	0.6%
SecureMark - SecureMark-TLS (marks)	**325735**	**317860**	321260
Normalized	100%	97.58%	98.63%
Standard Deviation	1%	2.5%	2%
Liquid-DSP - 16 - 256 - 57 (samples/s)	**857143333**	**855020000**	856216667
Normalized	100%	99.75%	99.89%
Standard Deviation	0.2%	1%	1.2%
Liquid-DSP - 24 - 256 - 57 (samples/s)	**899796667**	903696667	**904190000**
Normalized	99.51%	99.95%	100%
Standard Deviation	0.1%	0.2%	0.4%
KeyDB (Ops/sec)	**781746**	777726	**773280**
Normalized	100%	99.49%	98.92%
Standard Deviation	0.3%	0.5%	0.3%
SQLite Speedtest - Timed Time - Size 1,000 (sec)	44.467	**44.427**	**44.478**
Normalized	99.91%	100%	99.89%
Standard Deviation	2.2%	0.3%	0.9%
Hugin - P.P.A.S.T (sec)	**35.440**	35.806	**36.323**
Normalized	100%	98.98%	97.57%
Standard Deviation	1.3%	0.8%	1%
Inkscape - SVG Files To PNG (sec)	**18.090**	**17.580**	17.894
Normalized	97.18%	100%	98.25%
Standard Deviation	1.4%	0.4%	1.1%
LibreOffice - 2.D.T.P (sec)	5.121	**5.156**	**5.081**
Normalized	99.22%	98.55%	100%
Standard Deviation	2.7%	2.5%	2.3%
OCRMyPDF - P.6.P.P.D (sec)	17.391	**17.299**	**17.538**
Normalized	99.47%	100%	98.64%
Standard Deviation	0.5%	0.8%	0.5%
RawTherapee - T.B.T (sec)	**46.393**	**46.356**	46.370
Normalized	99.92%	100%	99.97%
Standard Deviation	0.2%	0.2%	0.3%
Stress-NG - MMAP (Bogo Ops/s)	**381.25**	**378.37**	380.88
Normalized	100%	99.24%	99.9%
Standard Deviation	0.6%	0.7%	0.4%
Stress-NG - NUMA (Bogo Ops/s)	402.41	**399.68**	**404.41**
Normalized	99.51%	98.83%	100%
Standard Deviation	0.6%	1.1%	1.5%
Stress-NG - MEMFD (Bogo Ops/s)	**1162**	**1149**	1153

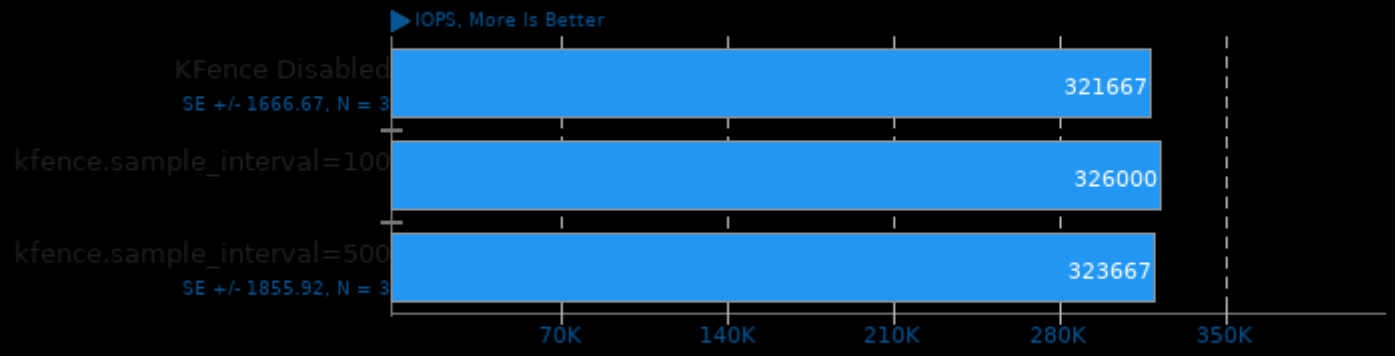
5900X AMD Linux 5.12 KFence Overhead Test

Normalized	100%	98.91%	99.2%
Standard Deviation	0.2%	0.1%	0%
Stress-NG - SENDFILE (Bogo Ops/s)	308702	**309225**	**308195**
Normalized	99.83%	100%	99.67%
Standard Deviation	0.3%	0%	0.1%
Stress-NG - Semaphores (Bogo Ops/s)	**1743254**	1744082	**1748356**
Normalized	99.71%	99.76%	100%
Standard Deviation	0.1%	0.2%	0.9%
Stress-NG - Socket Activity (Bogo Ops/s)	**9495**	**9301**	9353
Normalized	100%	97.95%	98.5%
Standard Deviation	0.4%	2.1%	2.4%
Stress-NG - Context Switching (Bogo Ops/s)	**6810941**	**7134643**	7041804
Normalized	95.46%	100%	98.7%
Standard Deviation	1.8%	0.5%	2.3%
Basemark GPU - OpenGL - 1920 x 1080 - High (FPS)	182.53	**175.68**	**182.81**
Normalized	99.85%	96.1%	100%
Standard Deviation	4.3%	1.4%	0.8%
Basemark GPU - OpenGL - 1920 x 1080 - Medium (FPS)	**333.52**	335.96	**341.87**
Normalized	97.56%	98.27%	100%
Standard Deviation	2.4%	0.8%	2.9%
Selenium - Kraken - Firefox (ms)	**813.7**	**801.7**	805.6
Normalized	98.53%	100%	99.52%
Standard Deviation	1.4%	2.1%	0.9%
Selenium - Jetstream 2 - Firefox (Score)	**99.929**	**103.936**	101.235
Normalized	96.14%	100%	97.4%
Standard Deviation	2.4%	1%	2.5%
Selenium - PSPDFKit WASM - Firefox (Score)	**2843**	2840	**2829**
Normalized	99.51%	99.61%	100%
Standard Deviation	0.5%	0.2%	0.7%
Selenium - W.i - Firefox (ms)	**24.7**	**25.2**	**24.7**
Normalized	100%	98.02%	100%
Standard Deviation	1.2%	1.8%	0.2%
Selenium - W.c - Firefox (ms)	**286.7**	**281.4**	284.2
Normalized	98.15%	100%	99.01%
Standard Deviation	2.4%	0.8%	2.2%
InfluxDB - 4 - 10000 - 2,5000,1 - 10000	**2047512**	**2064493**	2060518
Normalized	99.18%	100%	99.81%
Standard Deviation	1.2%	0.6%	0.2%
InfluxDB - 64 - 10000 - 2,5000,1 - 10000 (val/sec)	2228858	**2219965**	**2236527**
Normalized	99.66%	99.26%	100%
Standard Deviation	0.8%	0.2%	0.1%

5900X AMD Linux 5.12 KFence Overhead Test

Flexible IO Tester 3.25

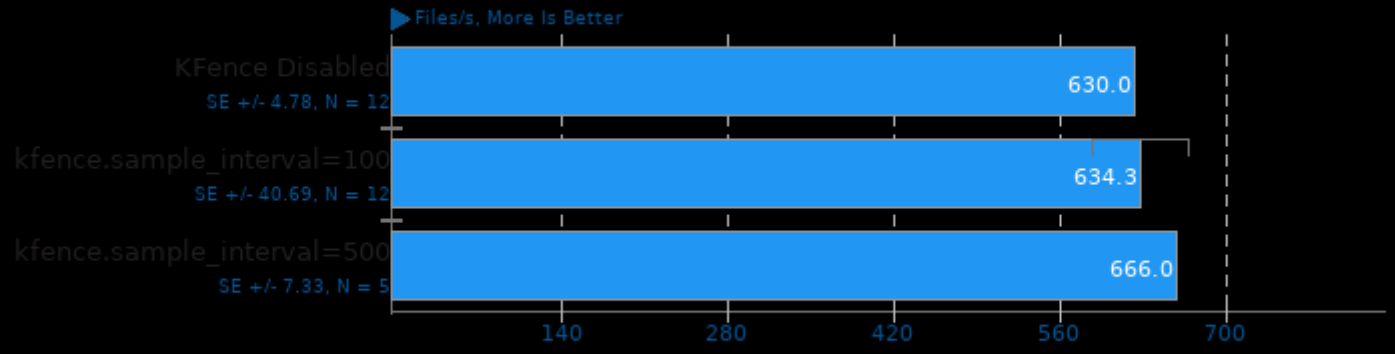
Type: Random Read - Engine: IO_uring - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory



1. (CC) gcc options: -rdynamic -ll -lnuma -lrt -lz -lpthread -lm -ldl -laio -lcurl -lssl -lcrypto -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOU

FS-Mark 3.3

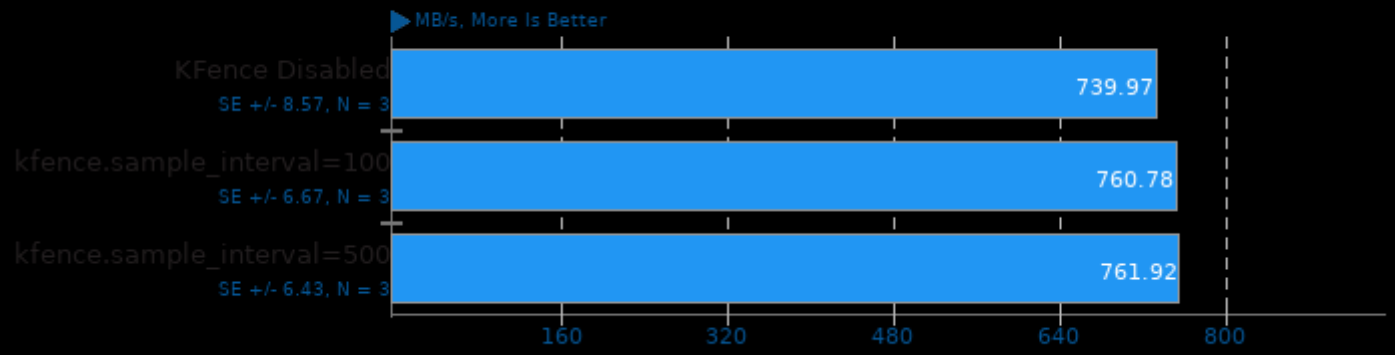
Test: 1000 Files, 1MB Size



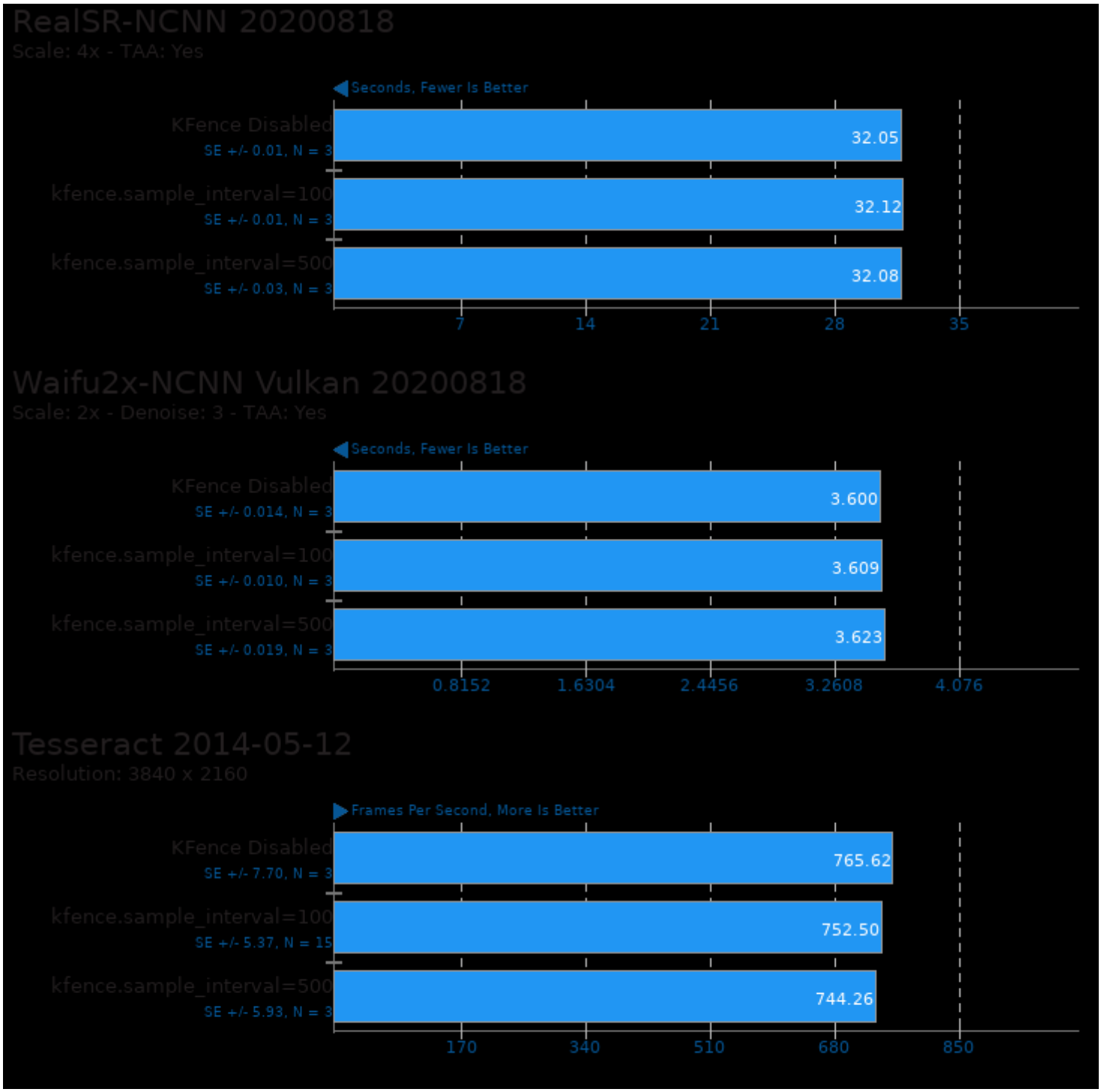
1. (CC) gcc options: -static

Compile Bench 0.6

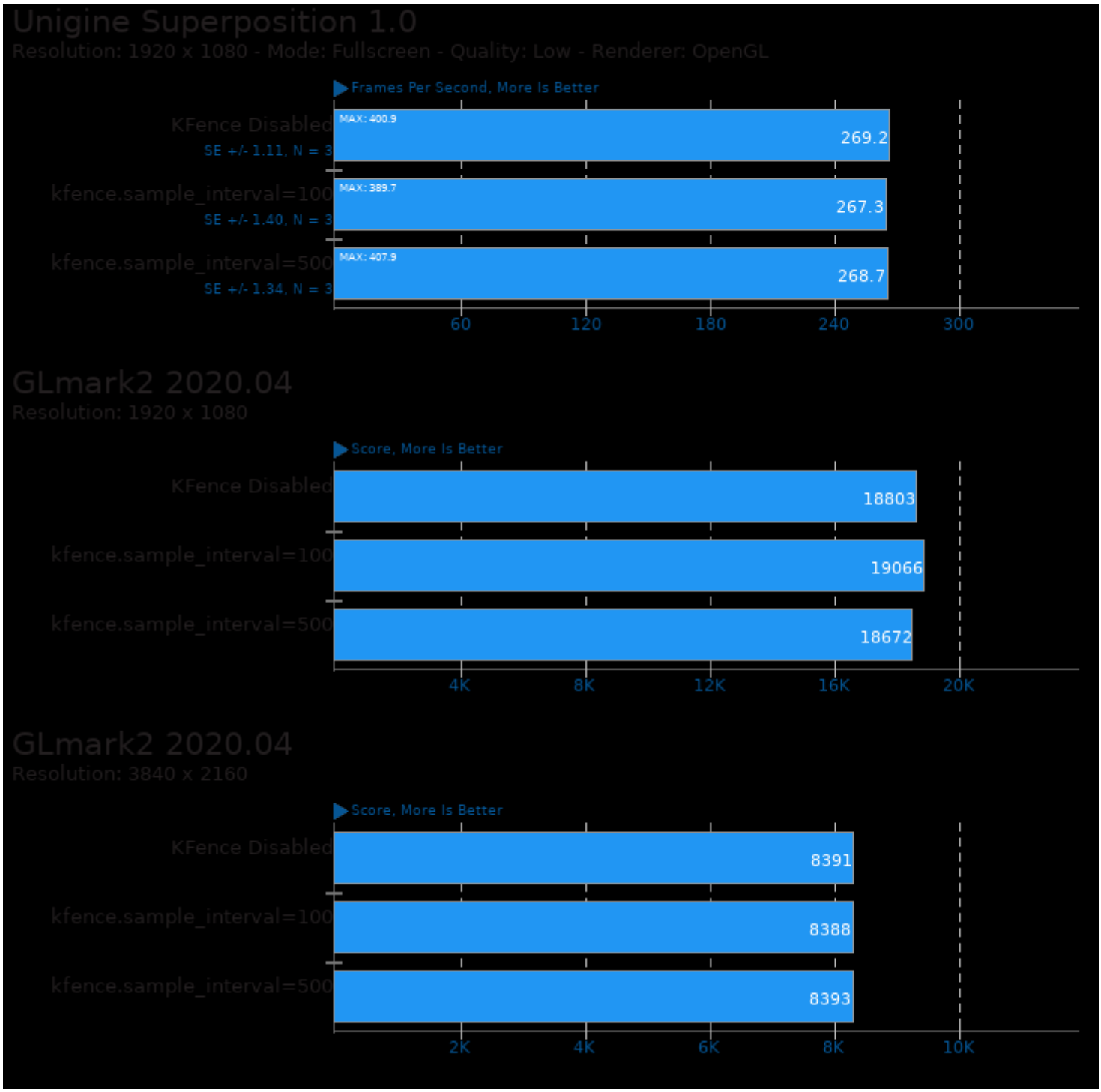
Test: Initial Create



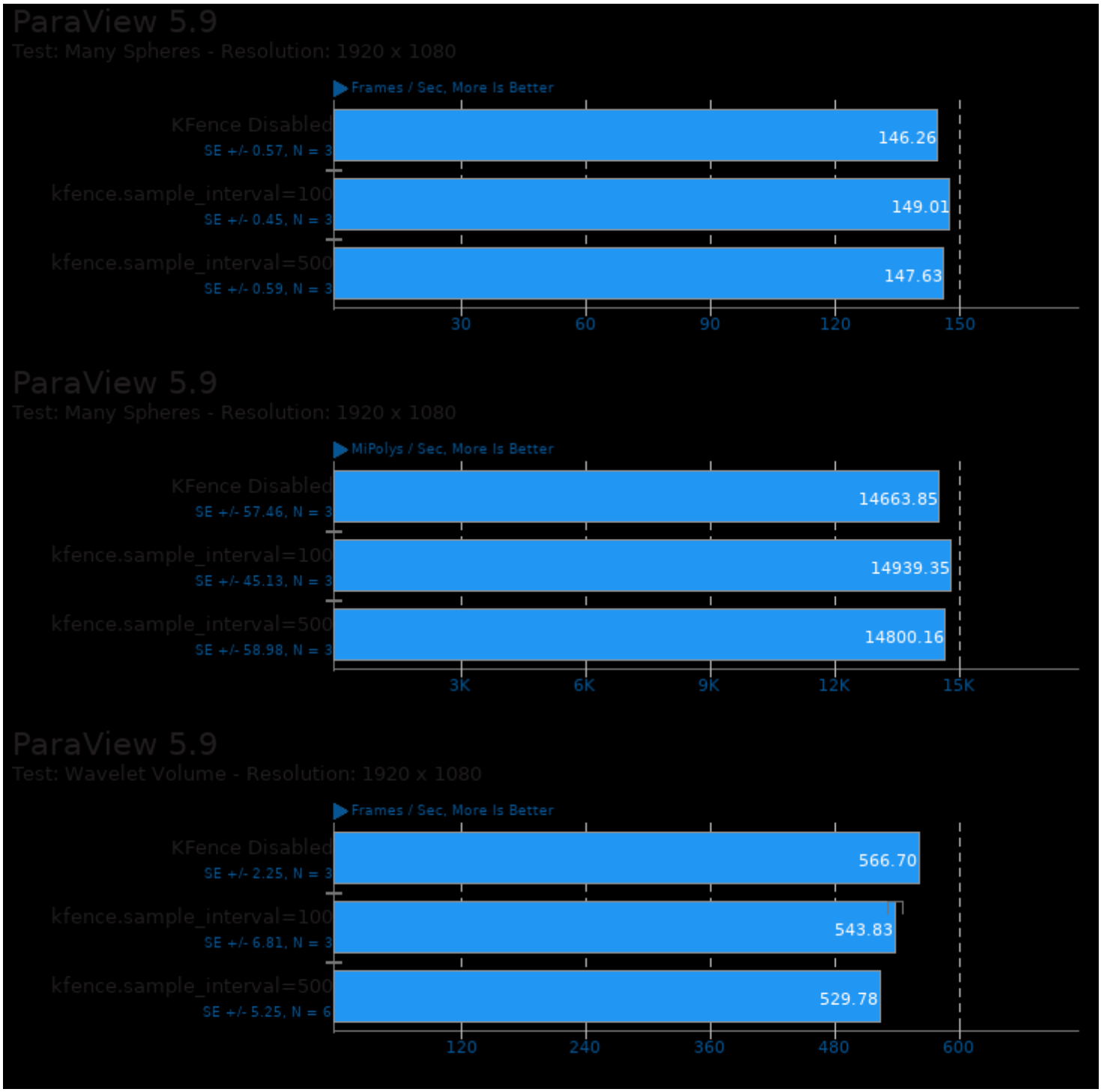
5900X AMD Linux 5.12 KFence Overhead Test



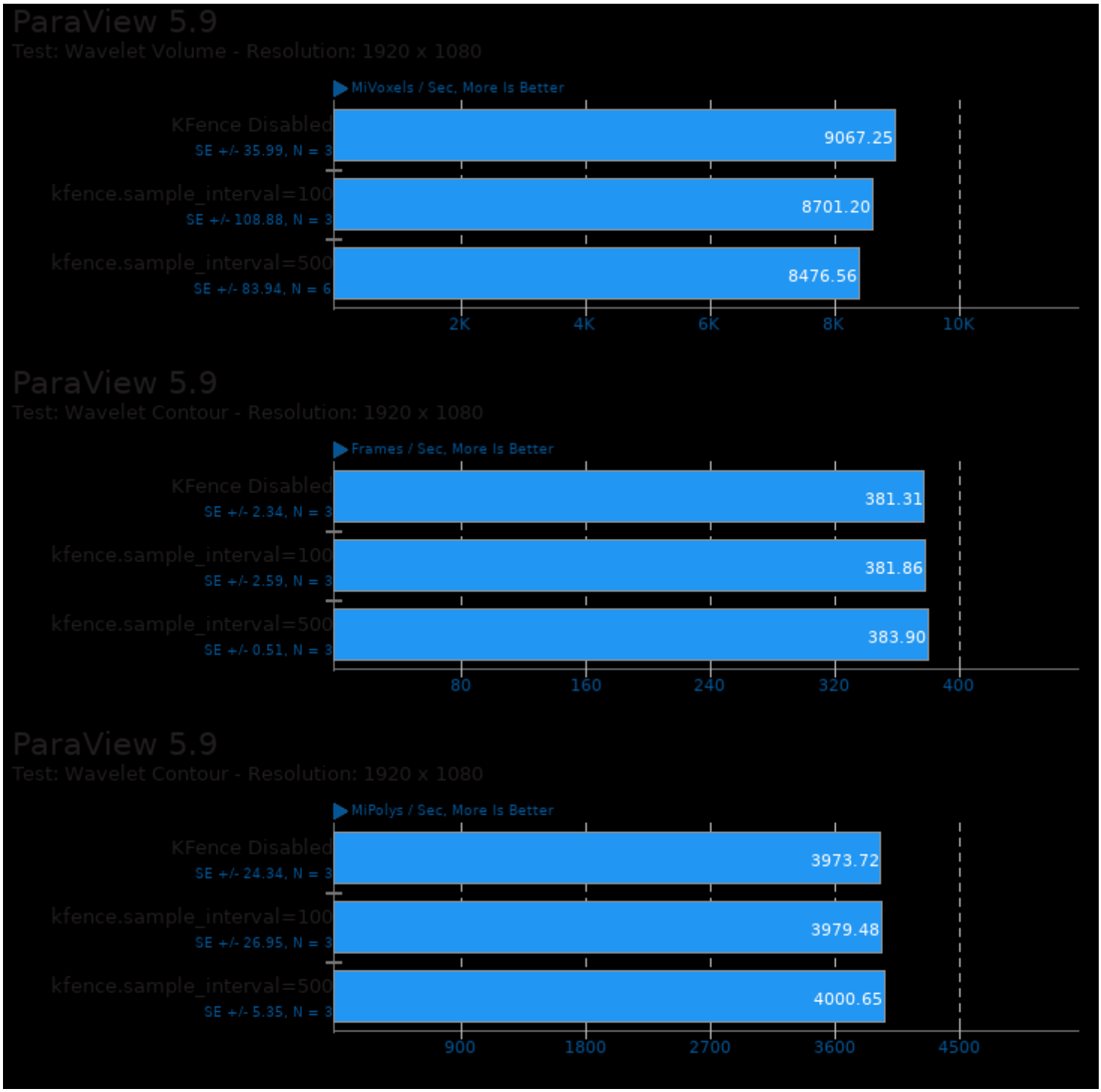
5900X AMD Linux 5.12 KFence Overhead Test



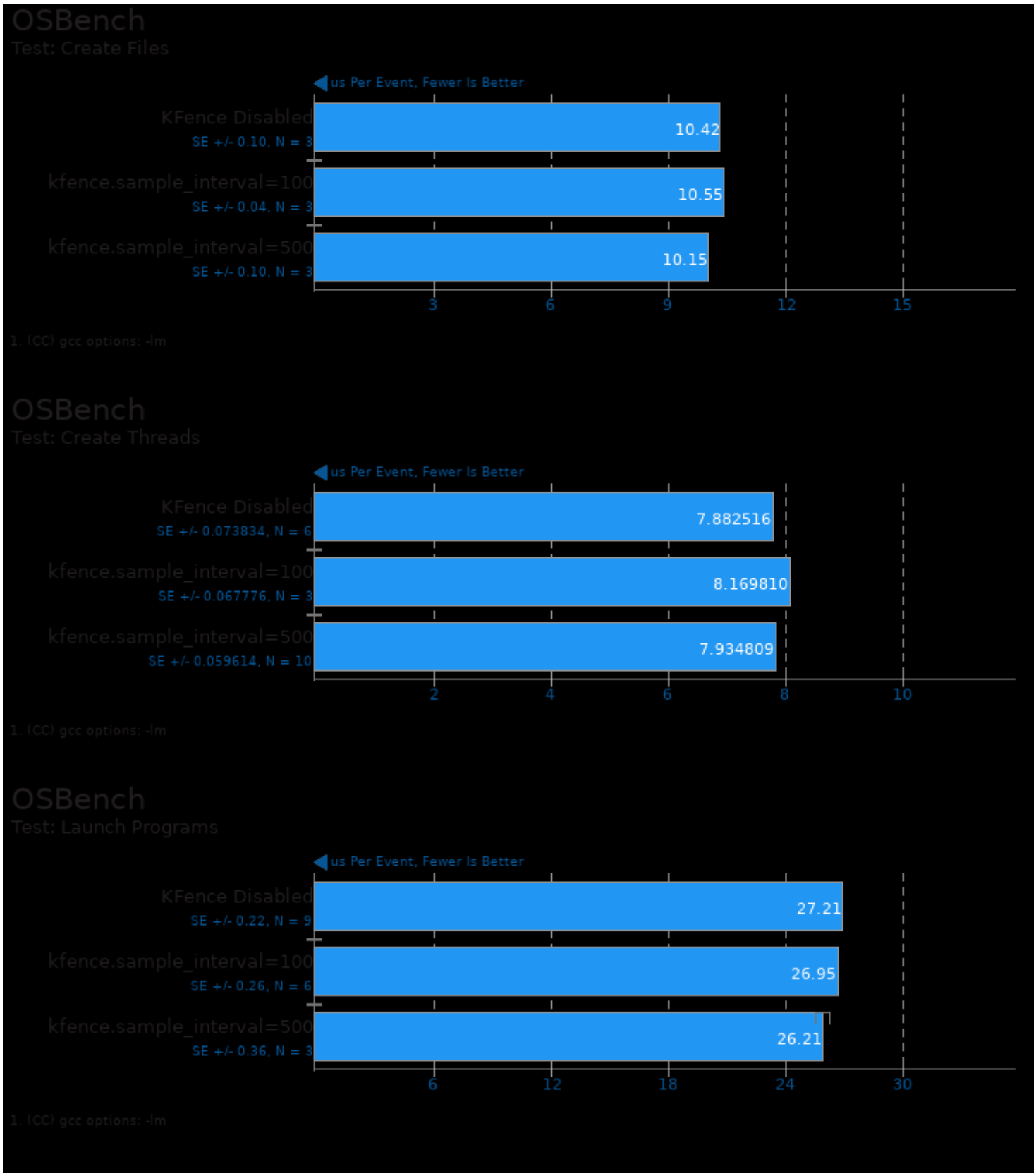
5900X AMD Linux 5.12 KFence Overhead Test



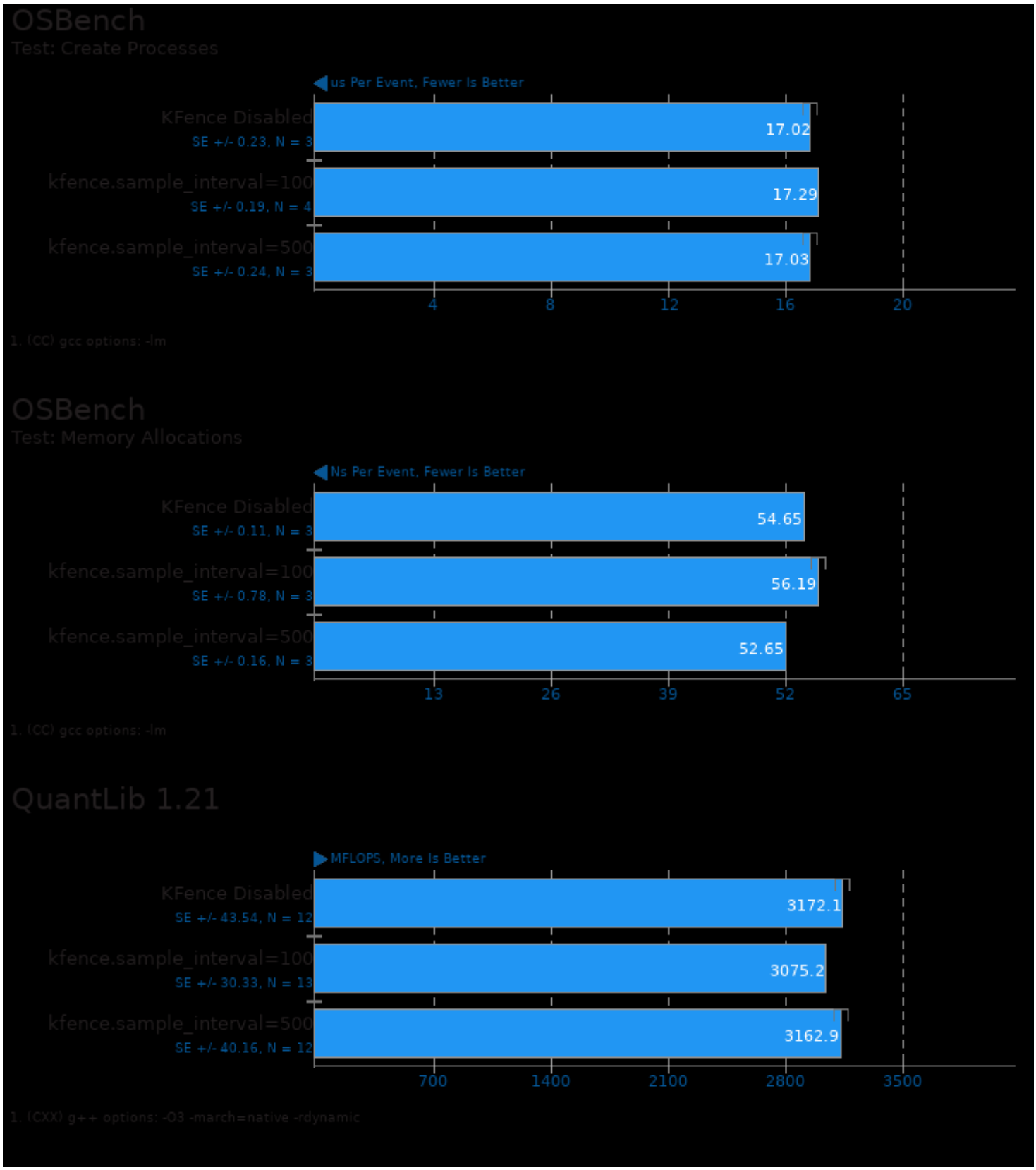
5900X AMD Linux 5.12 KFence Overhead Test



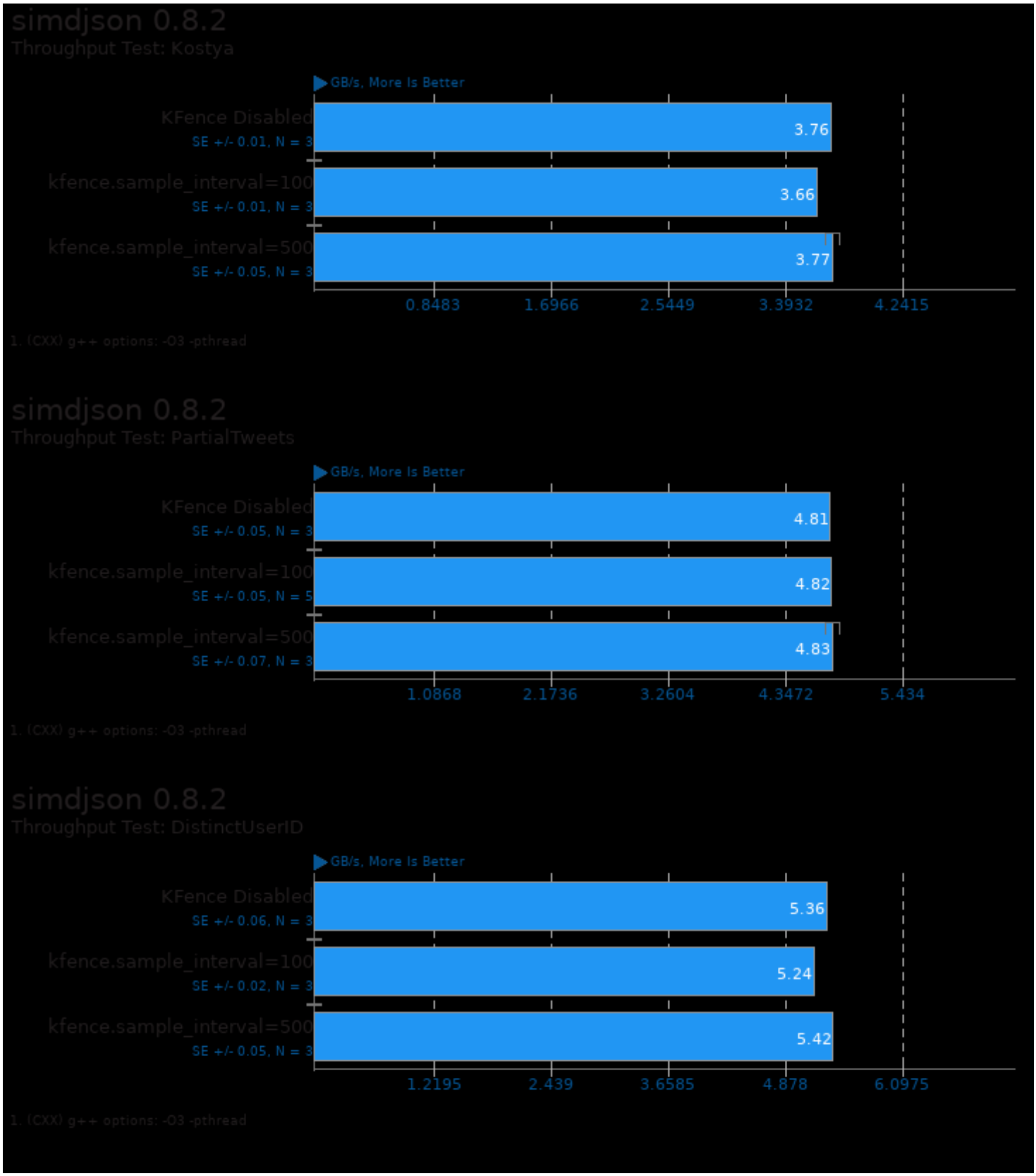
5900X AMD Linux 5.12 KFence Overhead Test



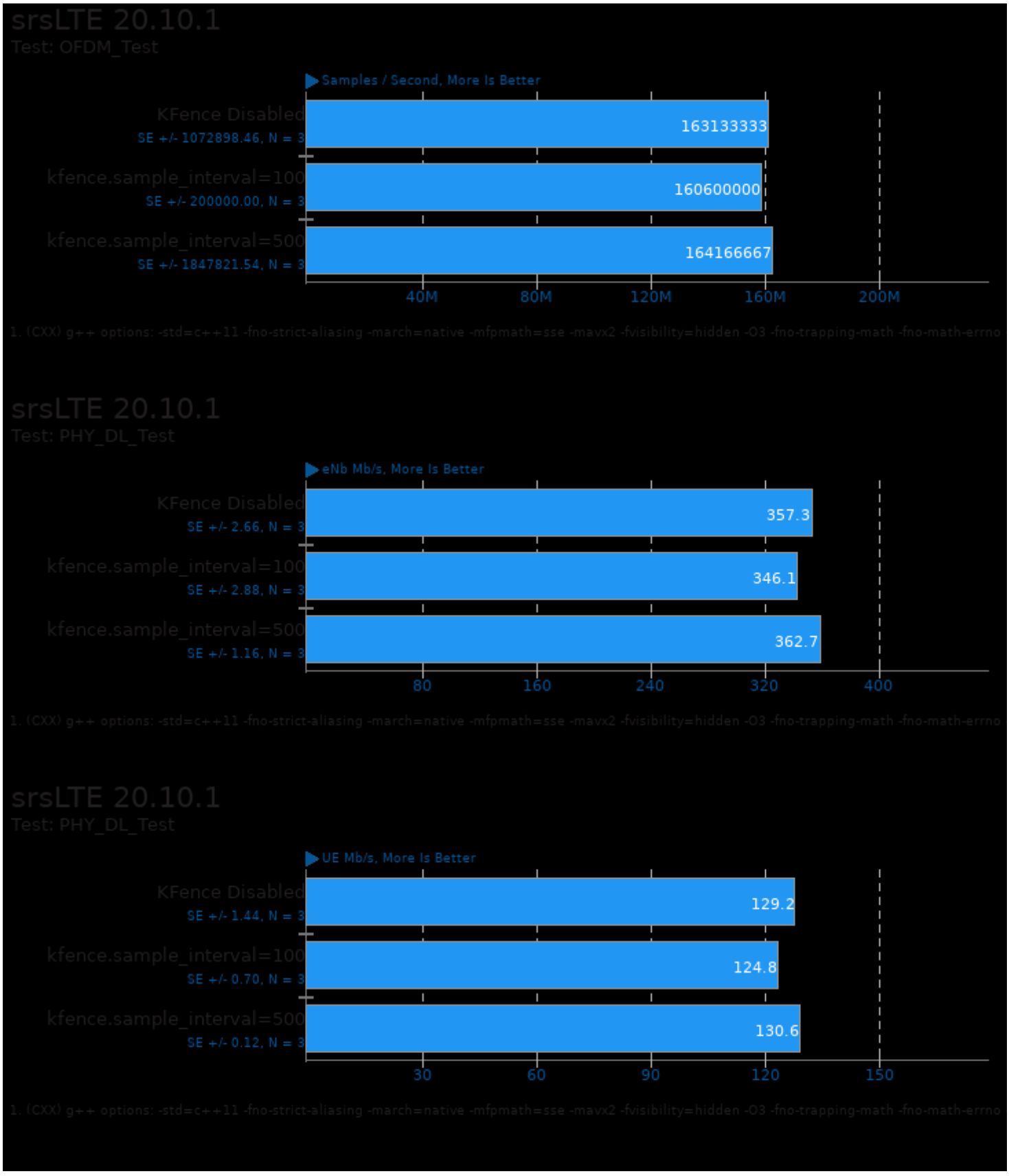
5900X AMD Linux 5.12 KFence Overhead Test



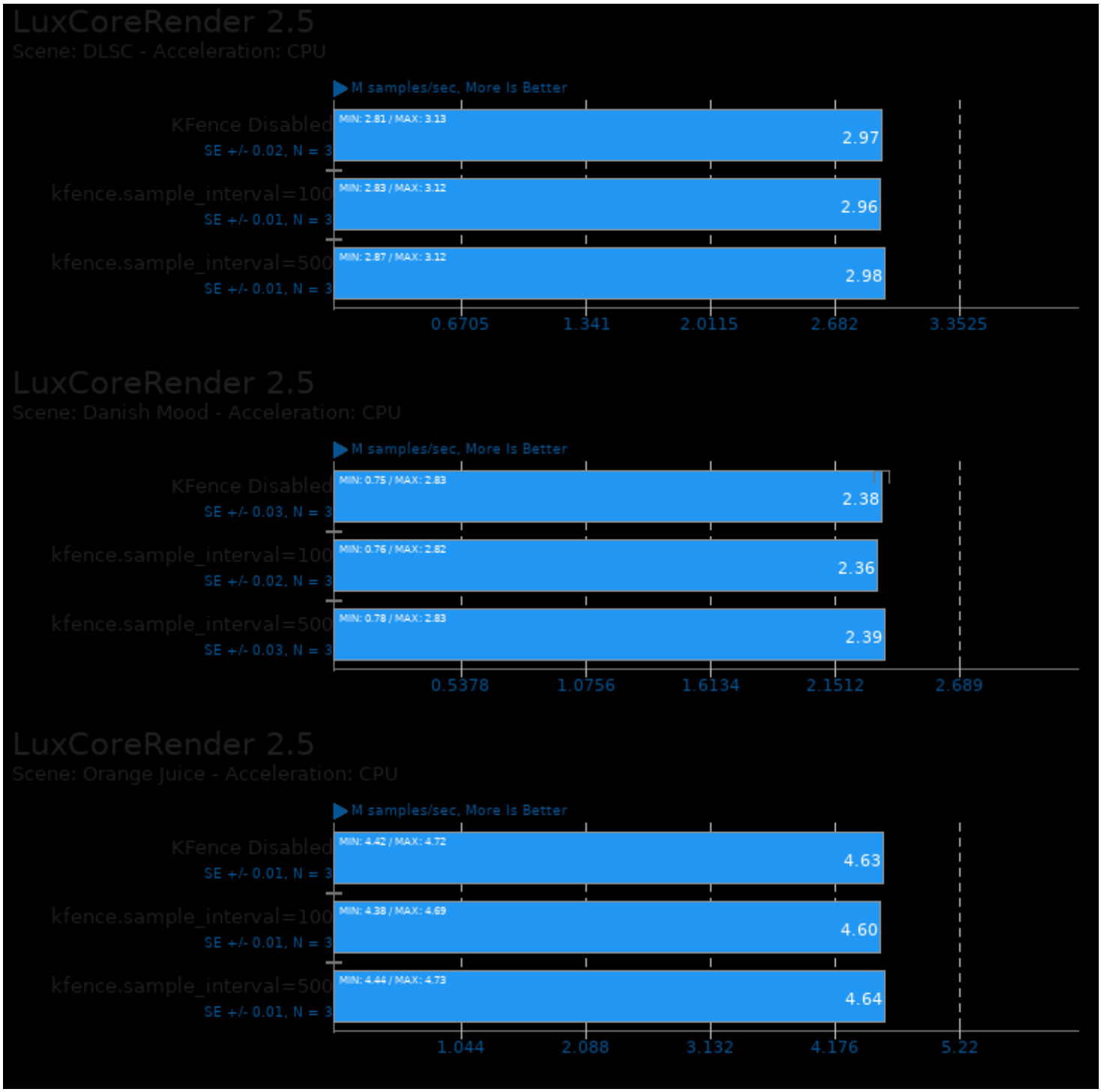
5900X AMD Linux 5.12 KFence Overhead Test



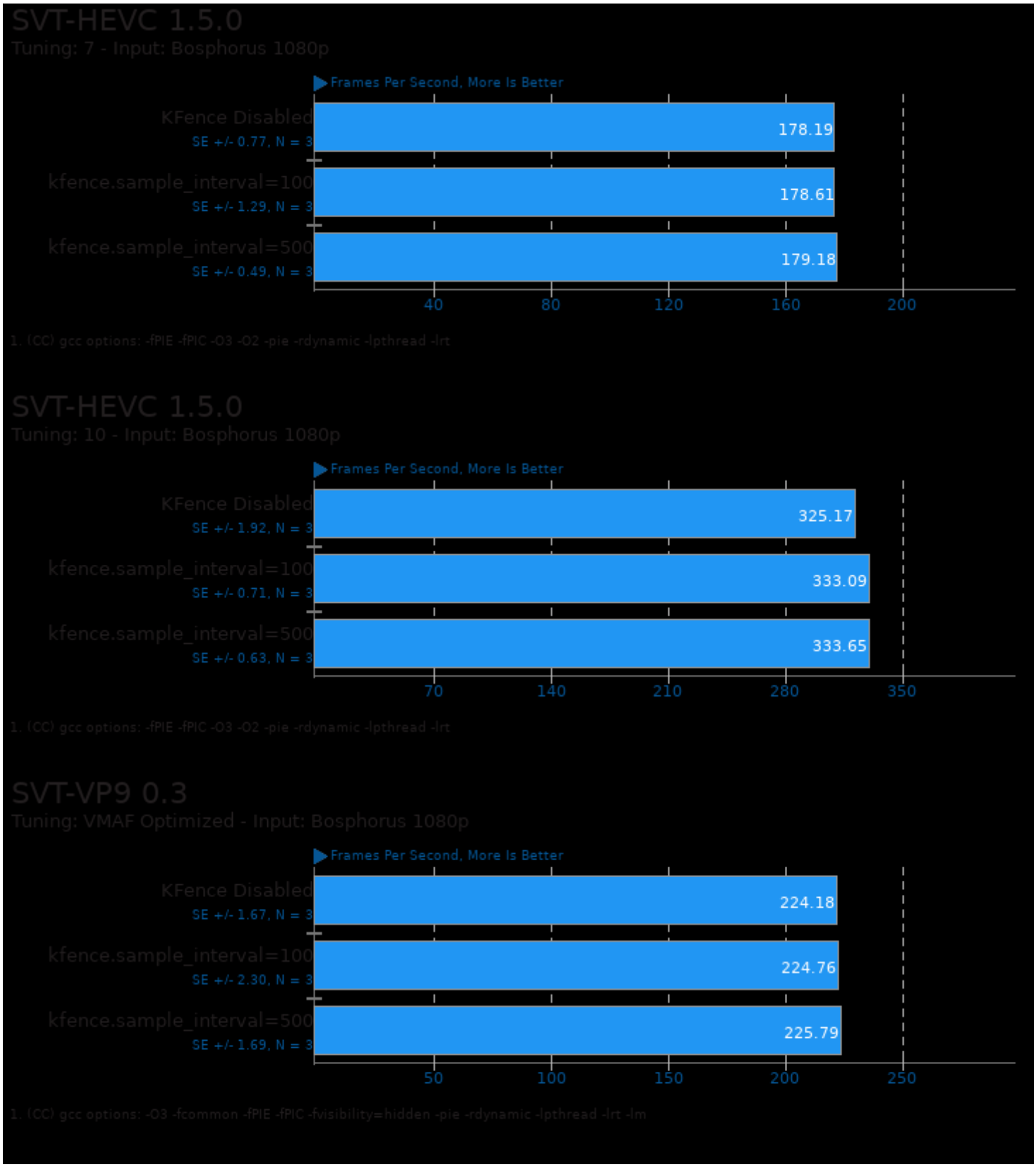
5900X AMD Linux 5.12 KFence Overhead Test



5900X AMD Linux 5.12 KFence Overhead Test



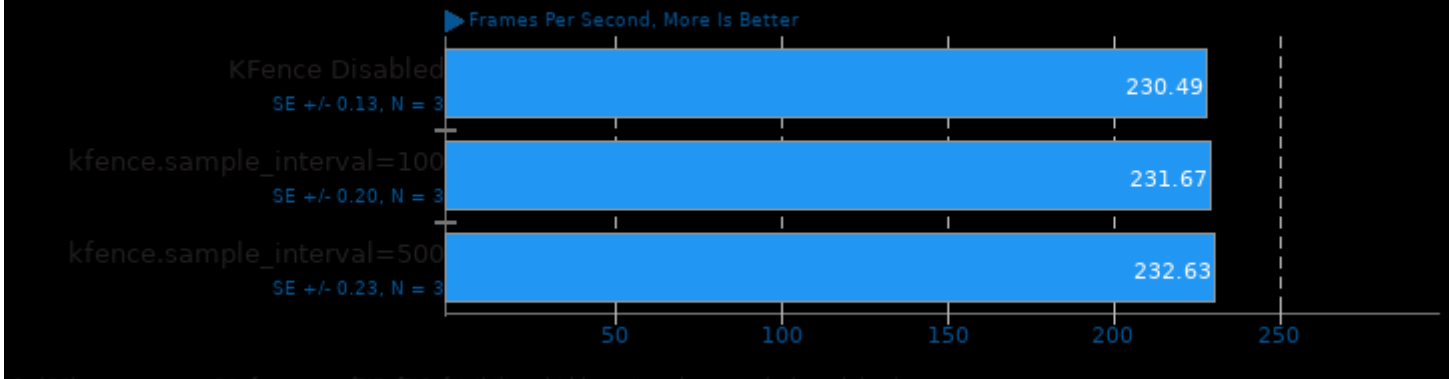
5900X AMD Linux 5.12 KFence Overhead Test



5900X AMD Linux 5.12 KFence Overhead Test

SVT-VP9 0.3

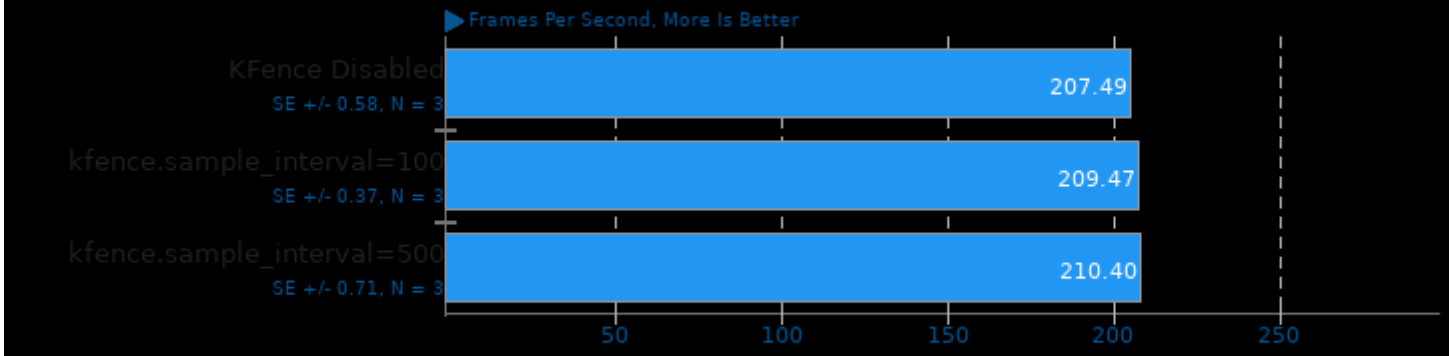
Tuning: PSNR/SSIM Optimized - Input: Bosphorus 1080p



1. (CC) gcc options: -O3 -fcommon -fPIE -fPIC -fvisibility=hidden -pie -rdynamic -lpthread -lrt -lm

SVT-VP9 0.3

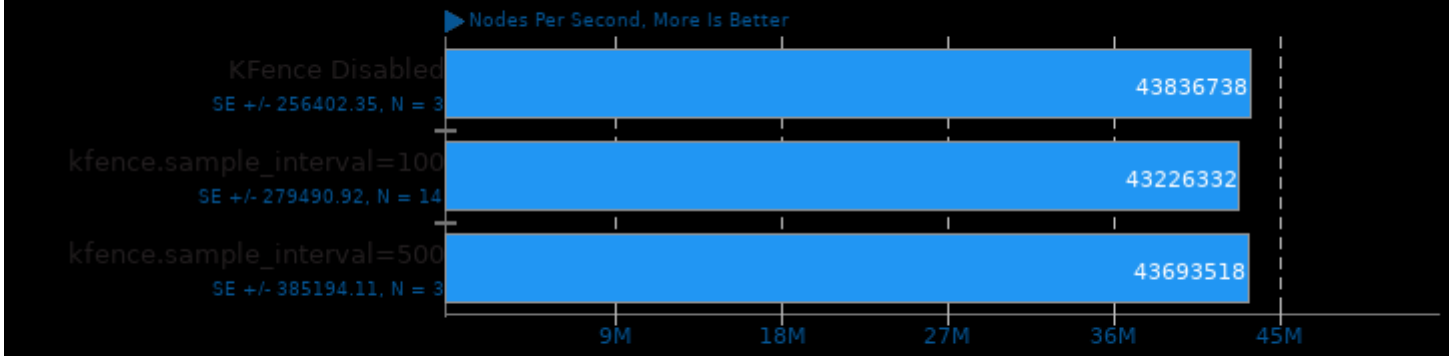
Tuning: Visual Quality Optimized - Input: Bosphorus 1080p



1. (CC) gcc options: -O3 -fcommon -fPIE -fPIC -fvisibility=hidden -pie -rdynamic -lpthread -lrt -lm

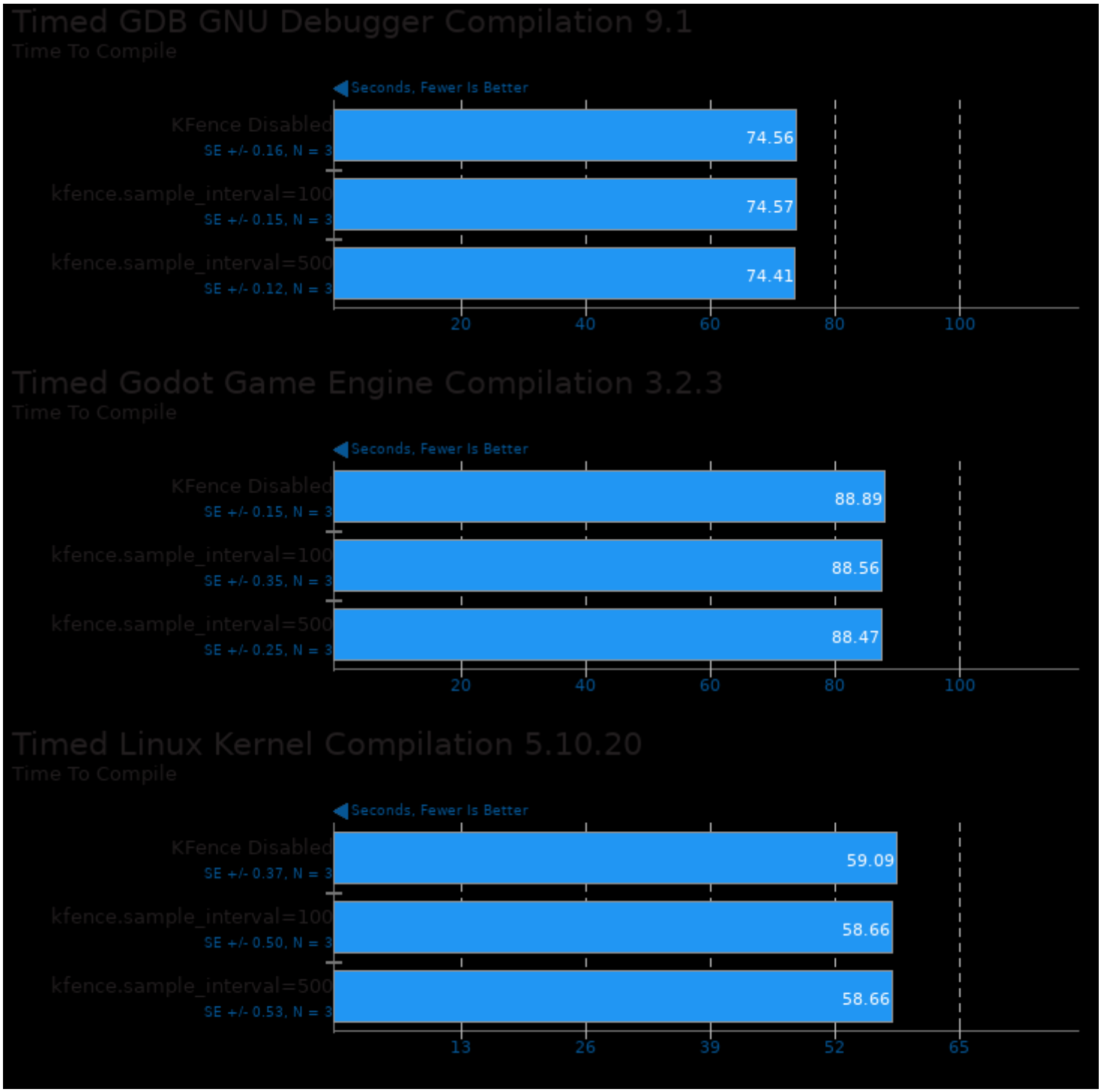
Stockfish 13

Total Time

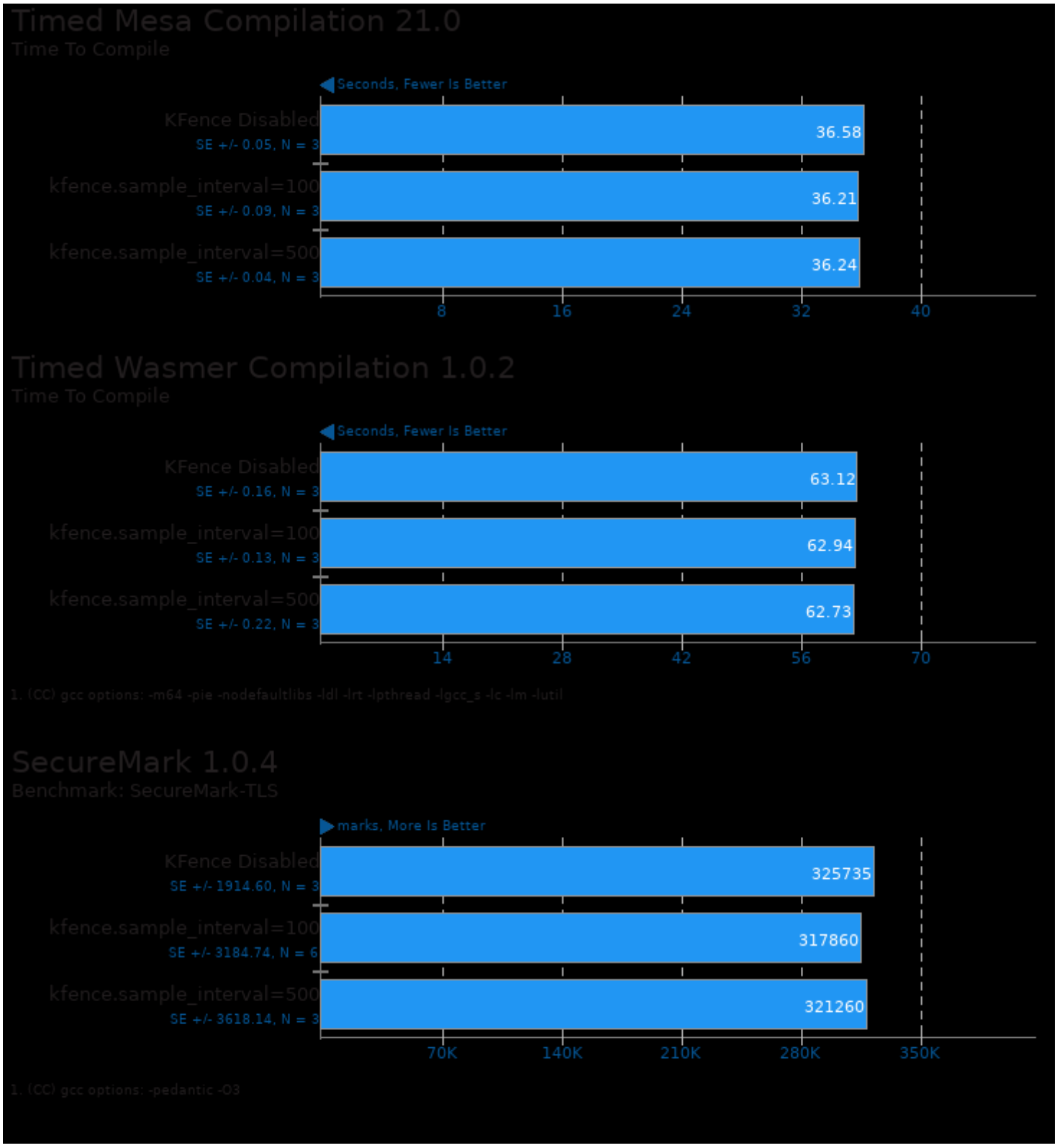


1. (CXX) g++ options: -lgcov -m64 -lpthread -fno-exceptions -std=c++17 -fprofile-use -fno-peel-loops -fno-tracer -pedantic -O3 -msse -msse3 -mpopcnt -

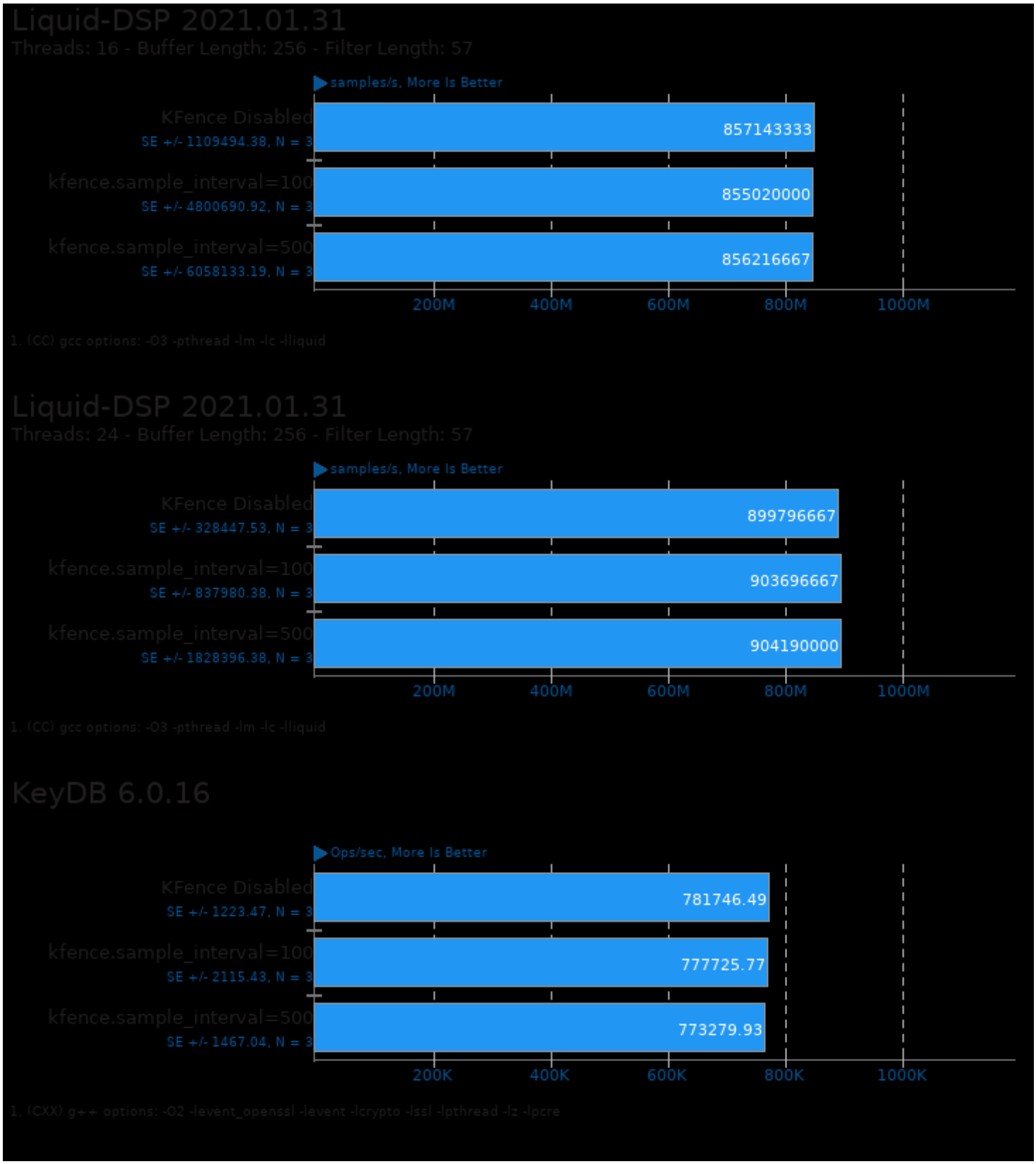
5900X AMD Linux 5.12 KFence Overhead Test



5900X AMD Linux 5.12 KFence Overhead Test



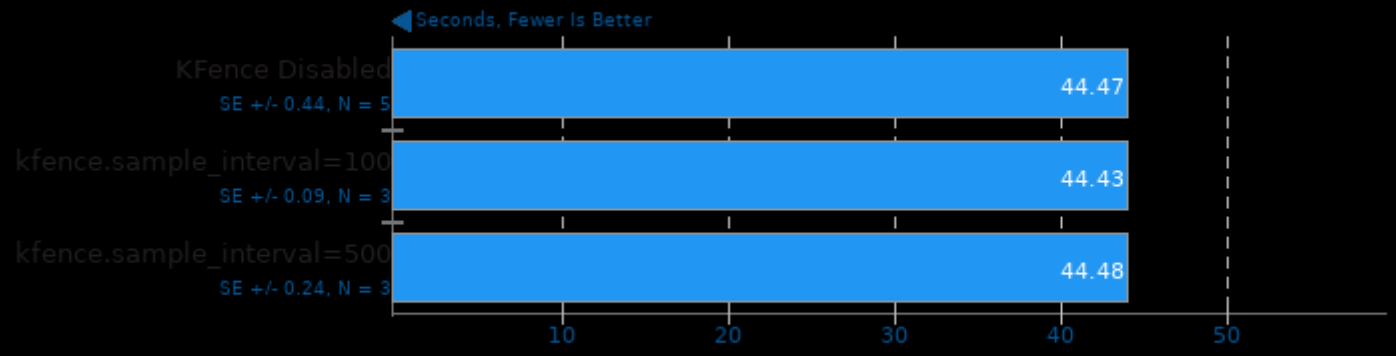
5900X AMD Linux 5.12 KFence Overhead Test



5900X AMD Linux 5.12 KFence Overhead Test

SQLite Speedtest 3.30

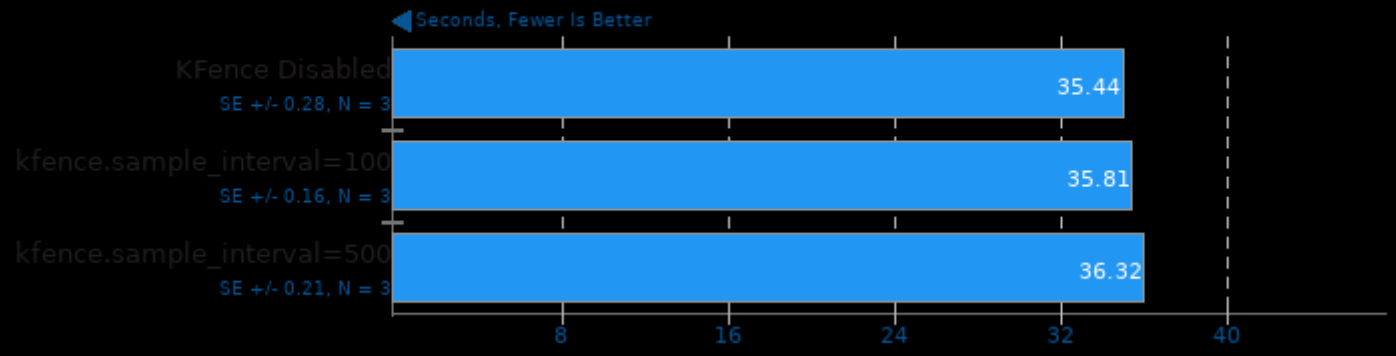
Timed Time - Size 1,000



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

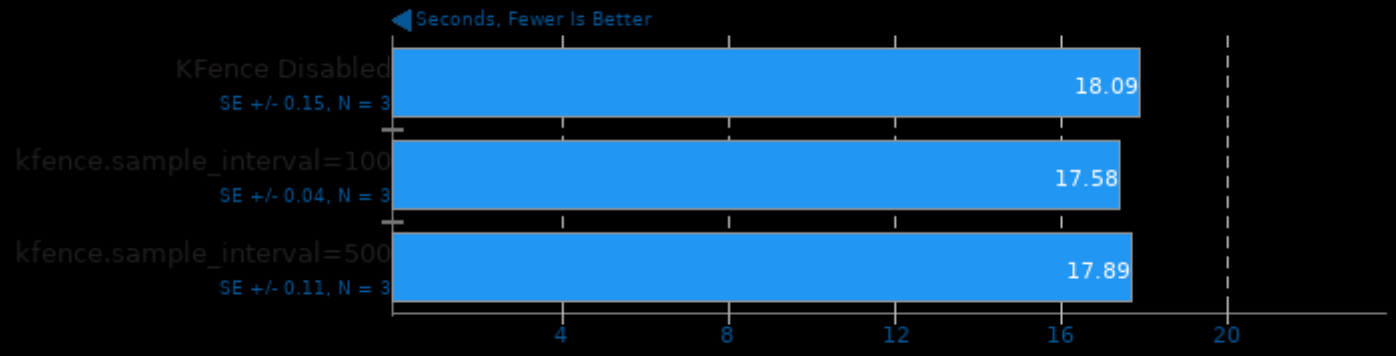
Hugin

Panorama Photo Assistant + Stitching Time



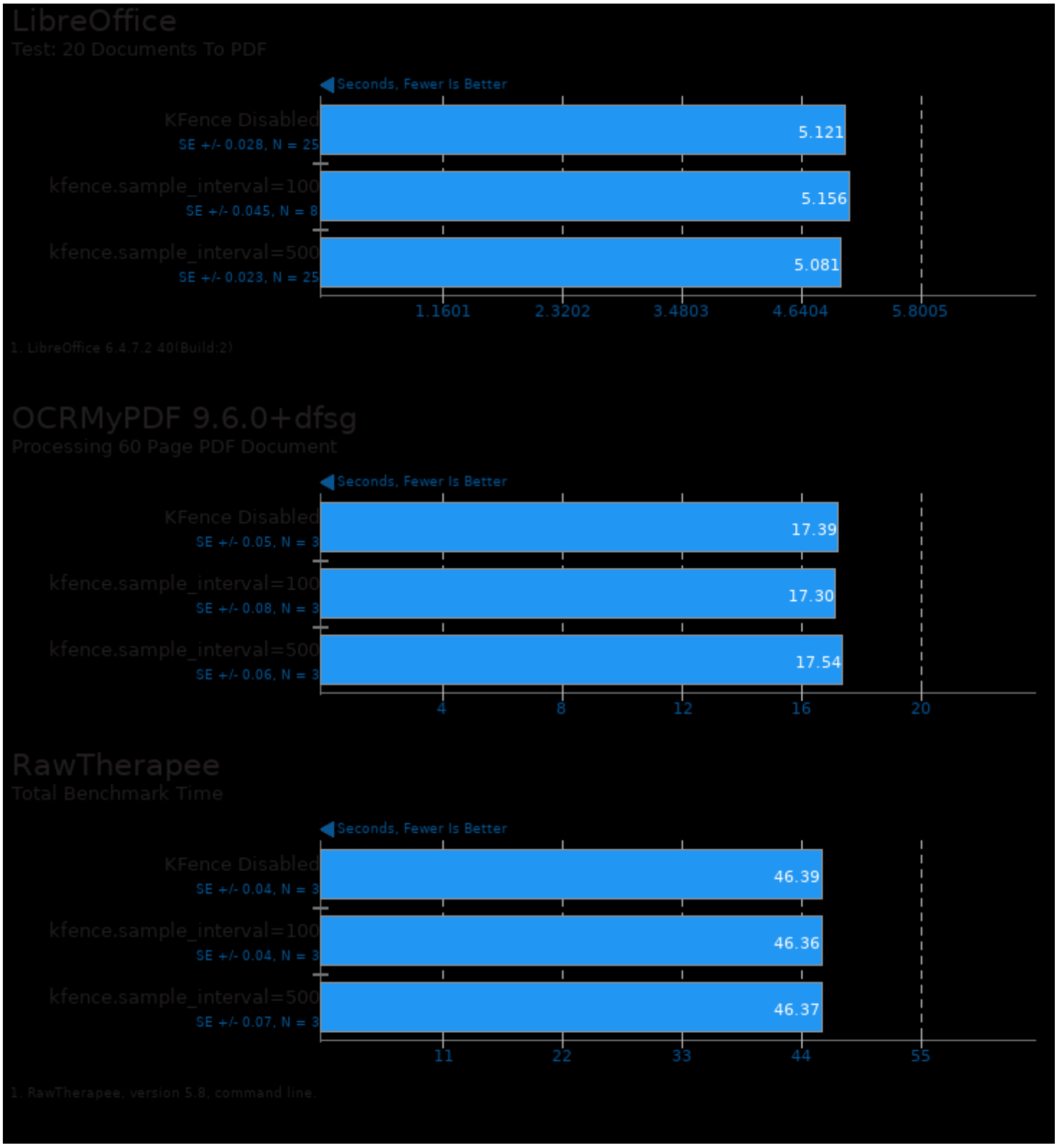
Inkscape

Operation: SVG Files To PNG

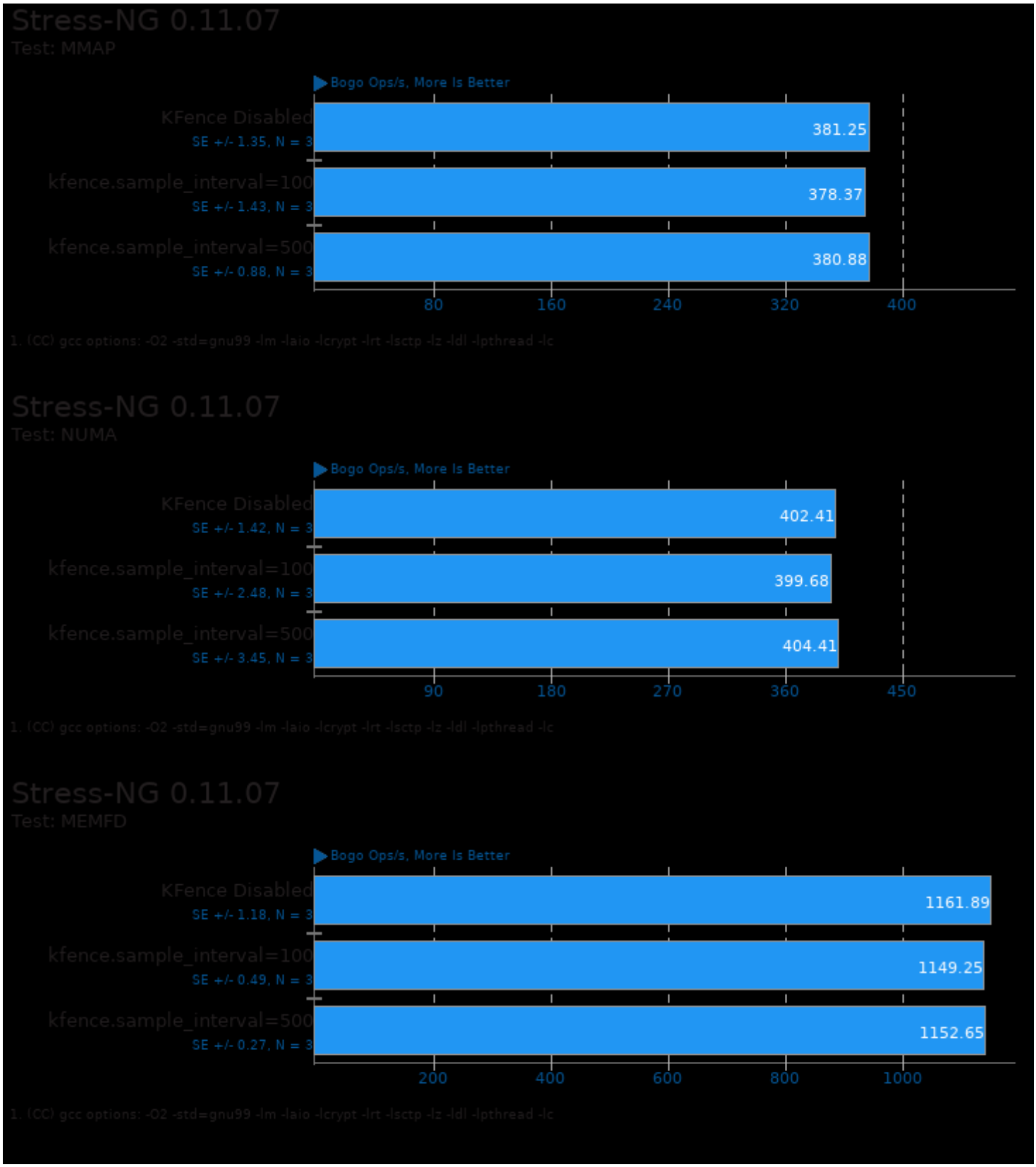


1. Inkscape 0.92.5 (2060ec1f9f, 2020-04-08)

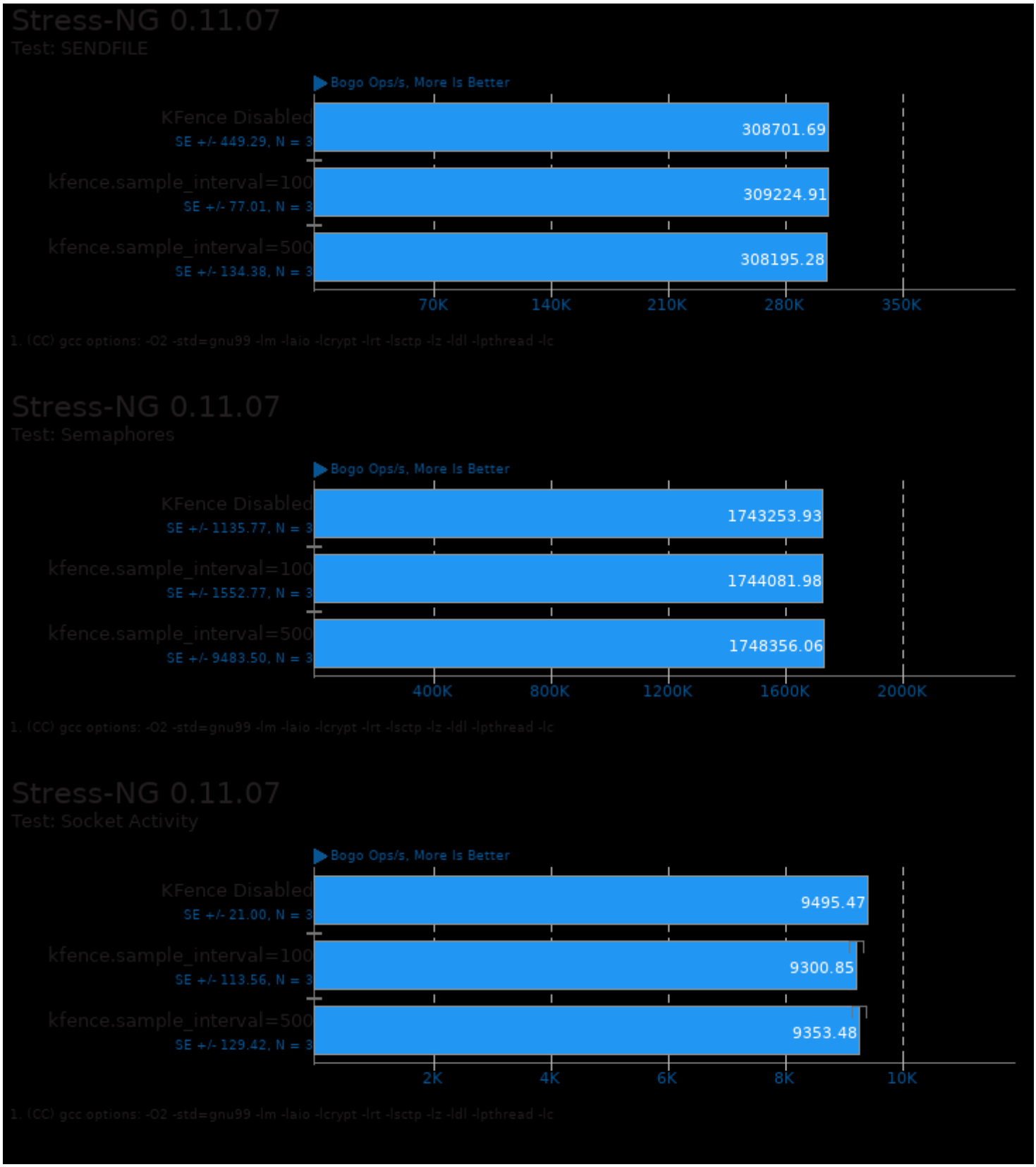
5900X AMD Linux 5.12 KFence Overhead Test



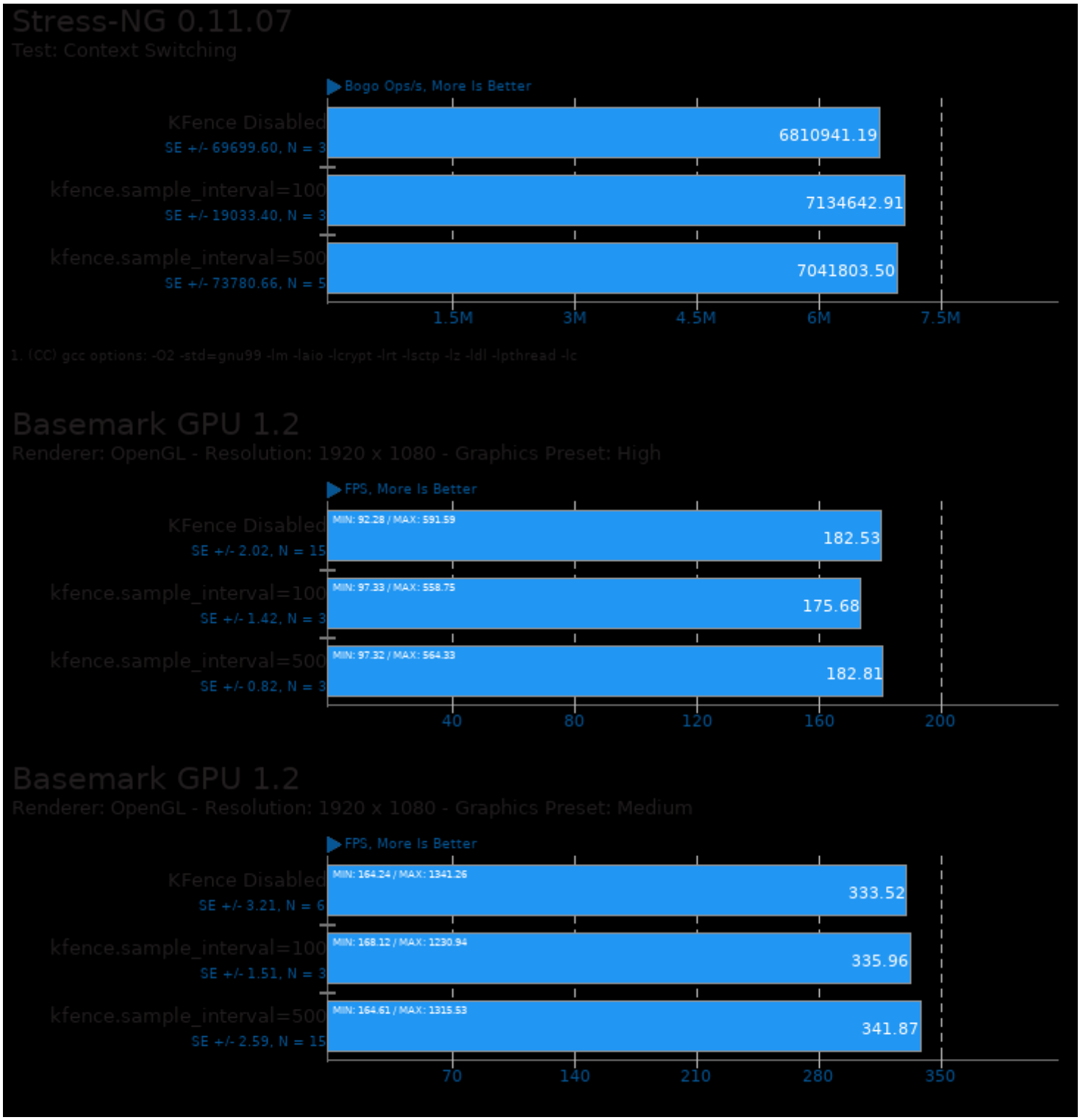
5900X AMD Linux 5.12 KFence Overhead Test



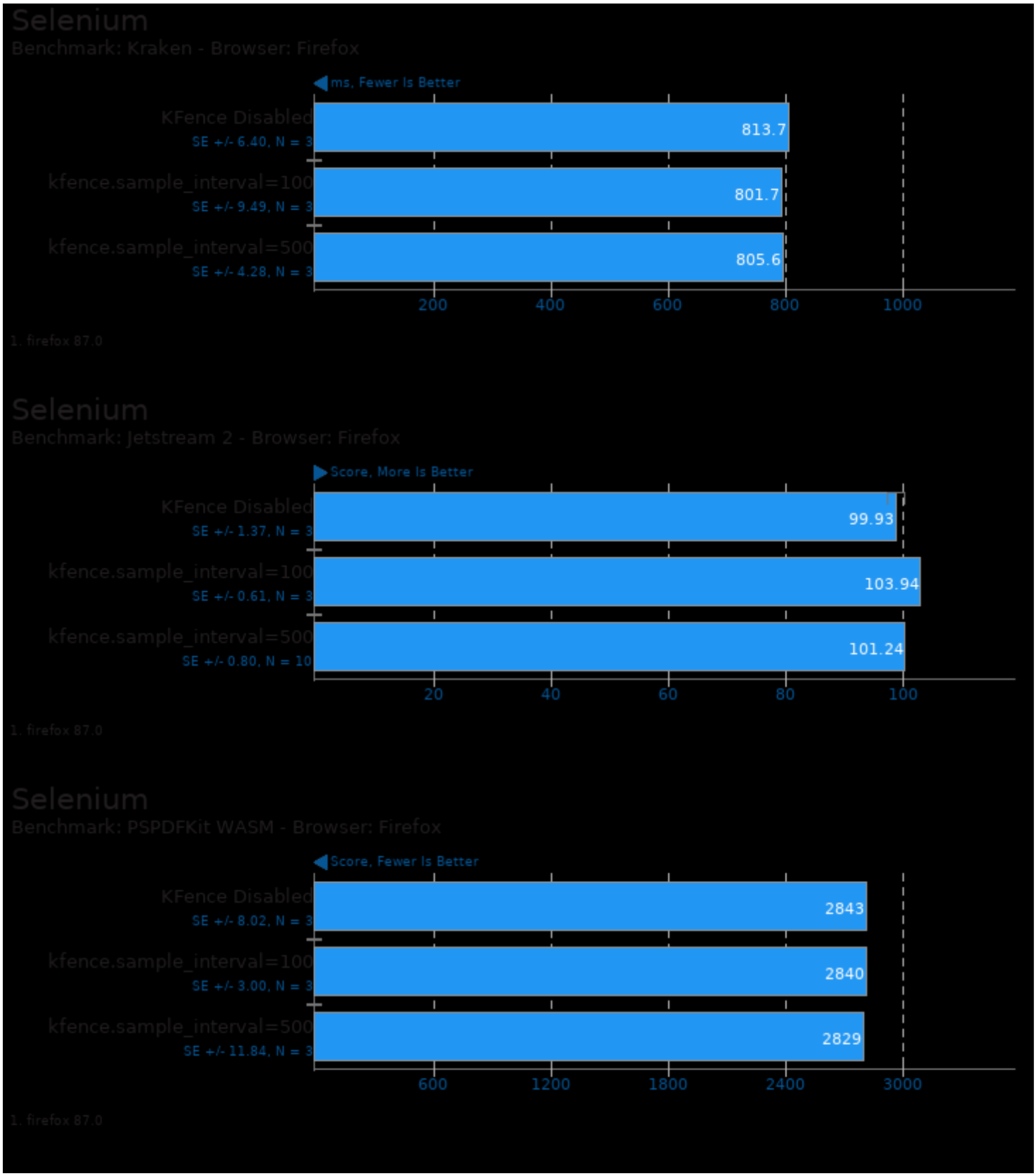
5900X AMD Linux 5.12 KFence Overhead Test



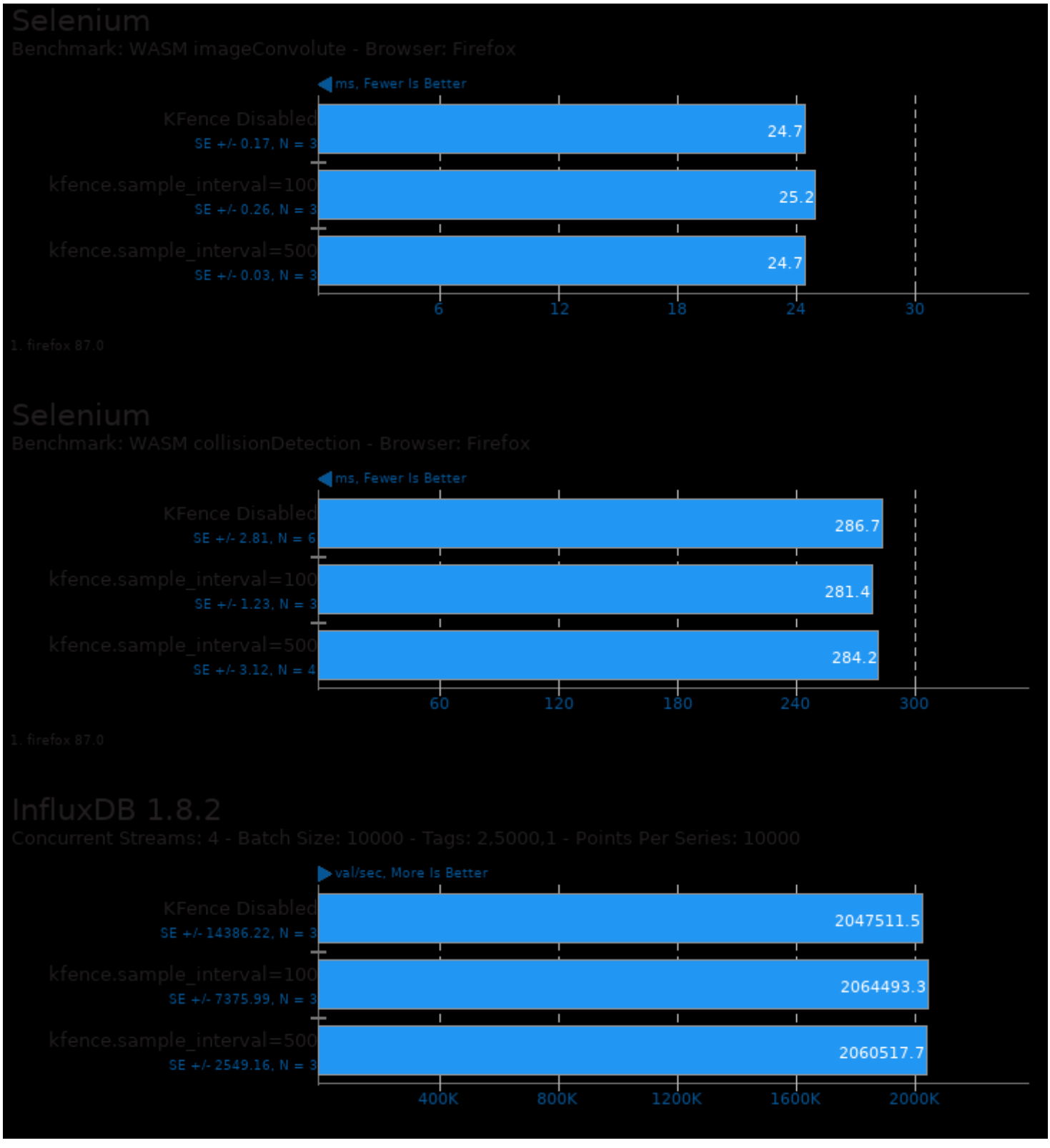
5900X AMD Linux 5.12 KFence Overhead Test



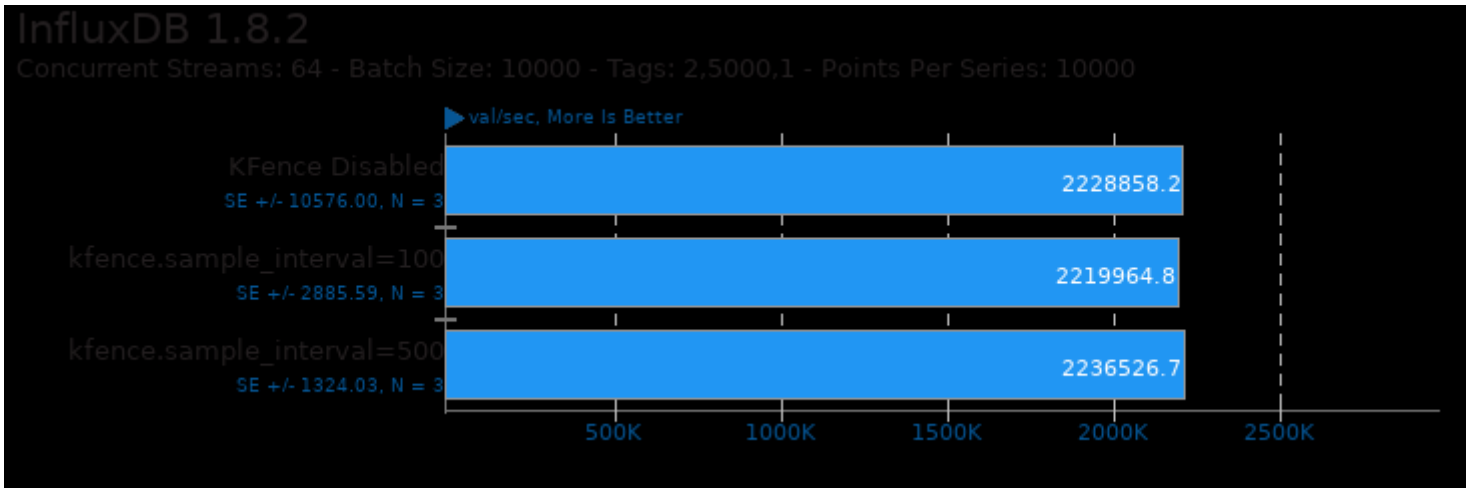
5900X AMD Linux 5.12 KFence Overhead Test



5900X AMD Linux 5.12 KFence Overhead Test

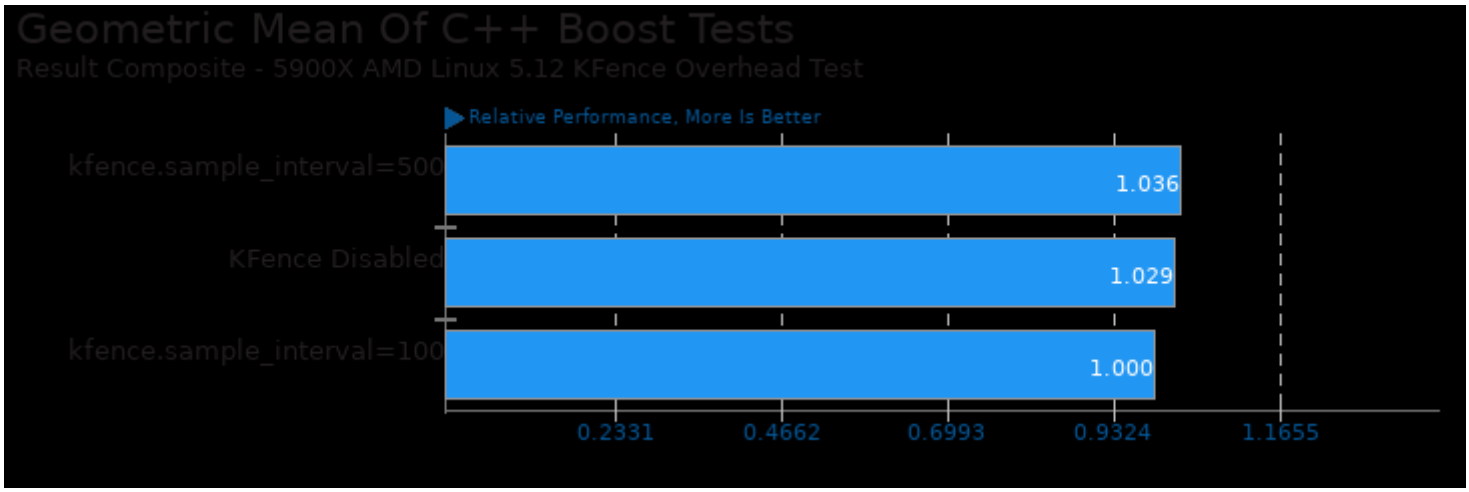


5900X AMD Linux 5.12 KFence Overhead Test

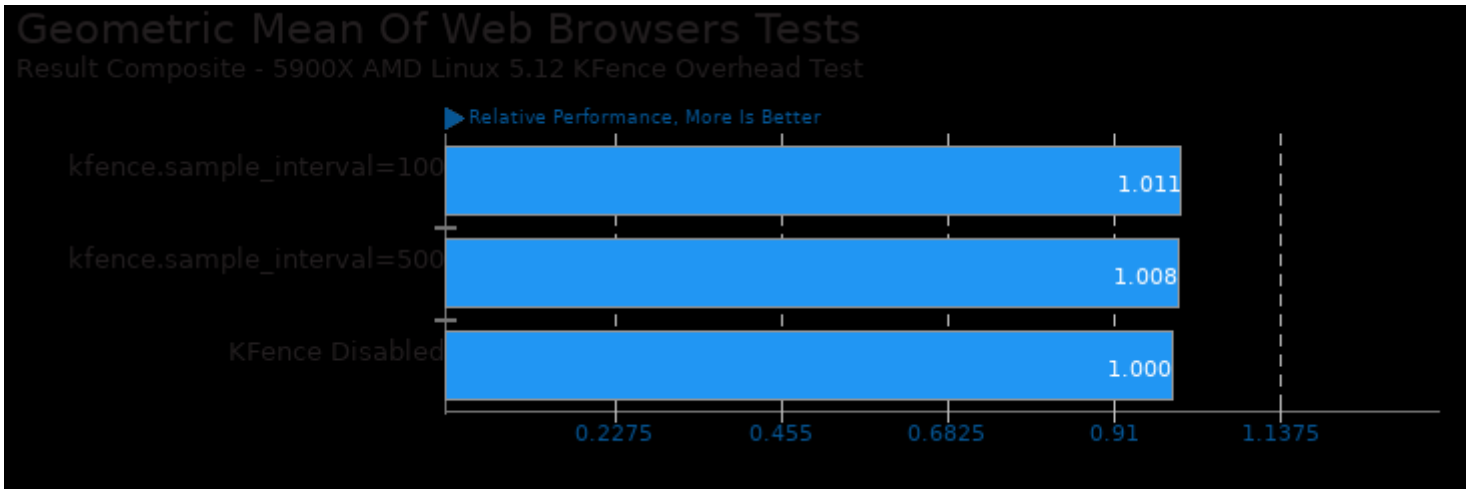


5900X AMD Linux 5.12 KFence Overhead Test

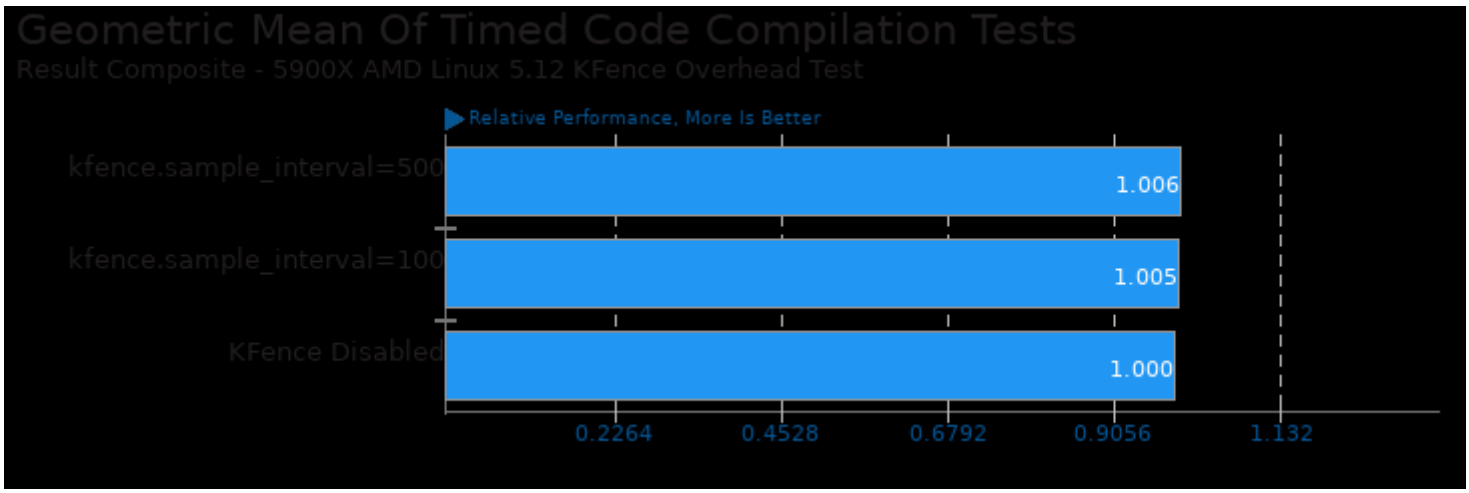
These geometric means are based upon test groupings / test suites for this result file.



Geometric mean based upon tests: pts/quantlib and pts/srslte

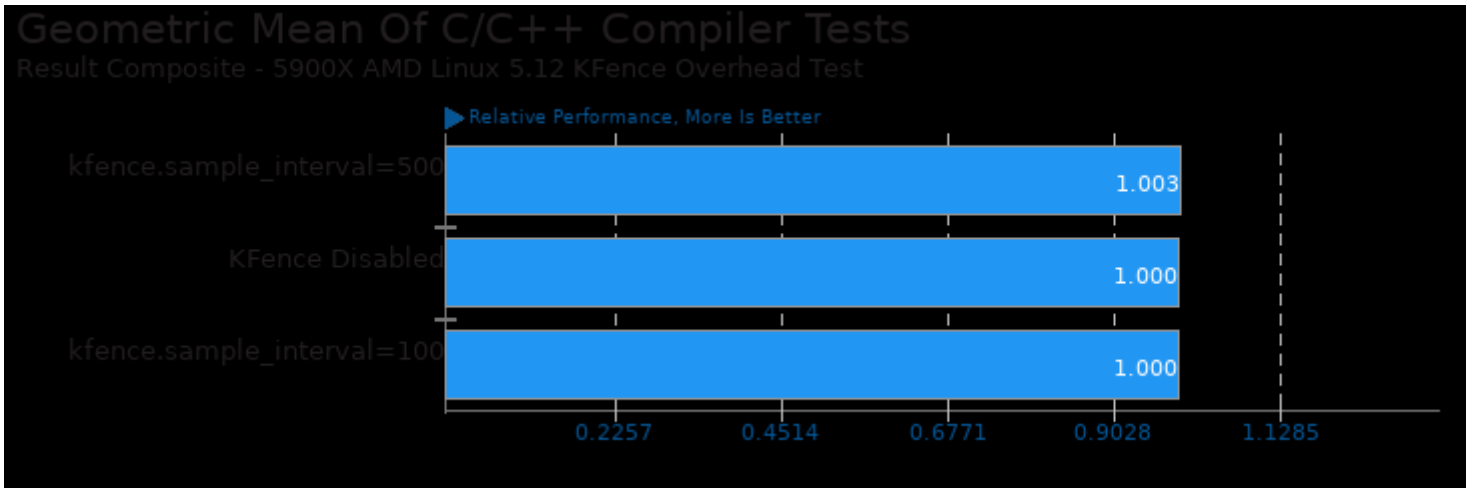


Geometric mean based upon tests: system/selenium

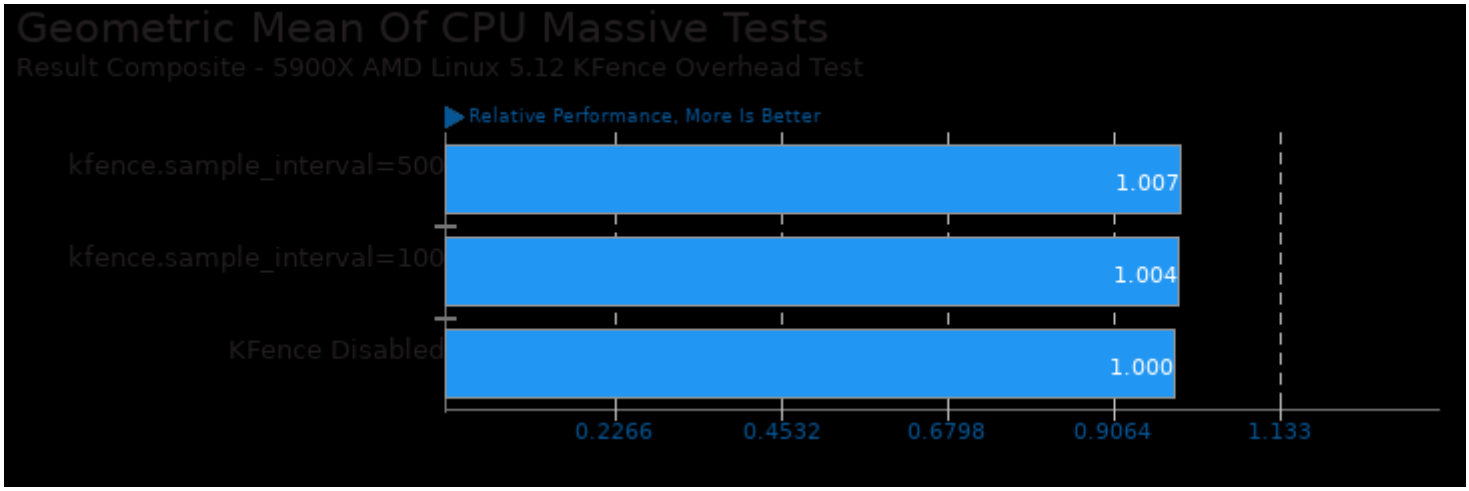


Geometric mean based upon tests: pts/build-linux-kernel, pts/build-gdb, pts/build-godot, pts/build-wasmer and pts/build-mesa

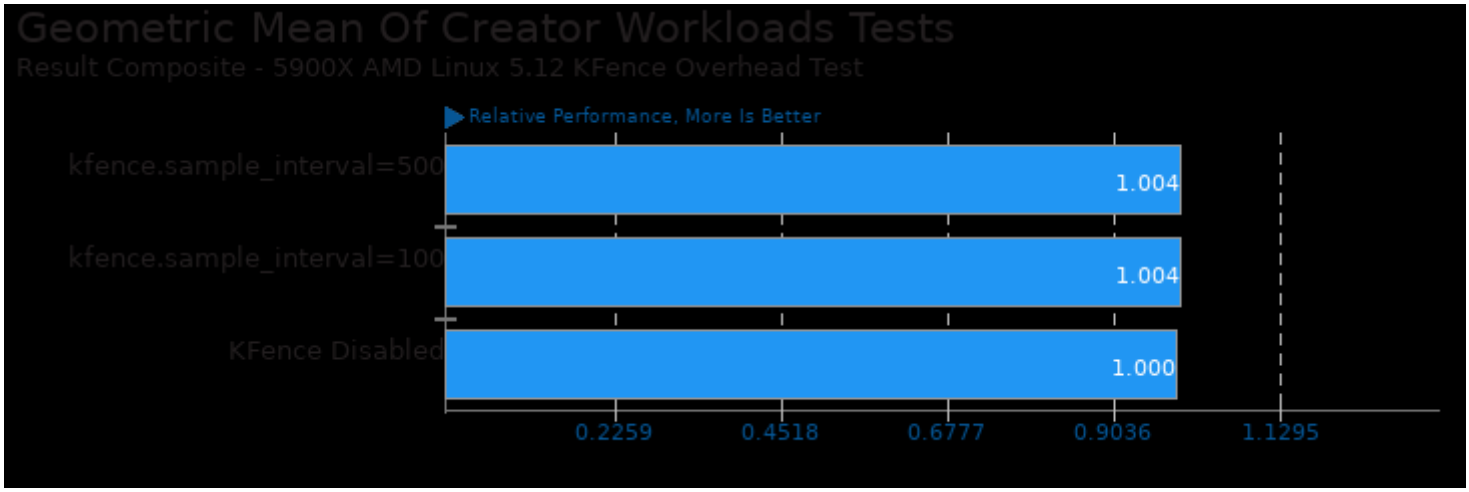
5900X AMD Linux 5.12 KFence Overhead Test



Geometric mean based upon tests: pts/stockfish, pts/sqlite-speedtest, pts/svt-vp9, pts/build-gdb and pts/keydb



Geometric mean based upon tests: pts/build-linux-kernel, pts/compilebench, pts/svt-hevc, pts/svt-vp9, pts/stockfish and pts/stress-ng

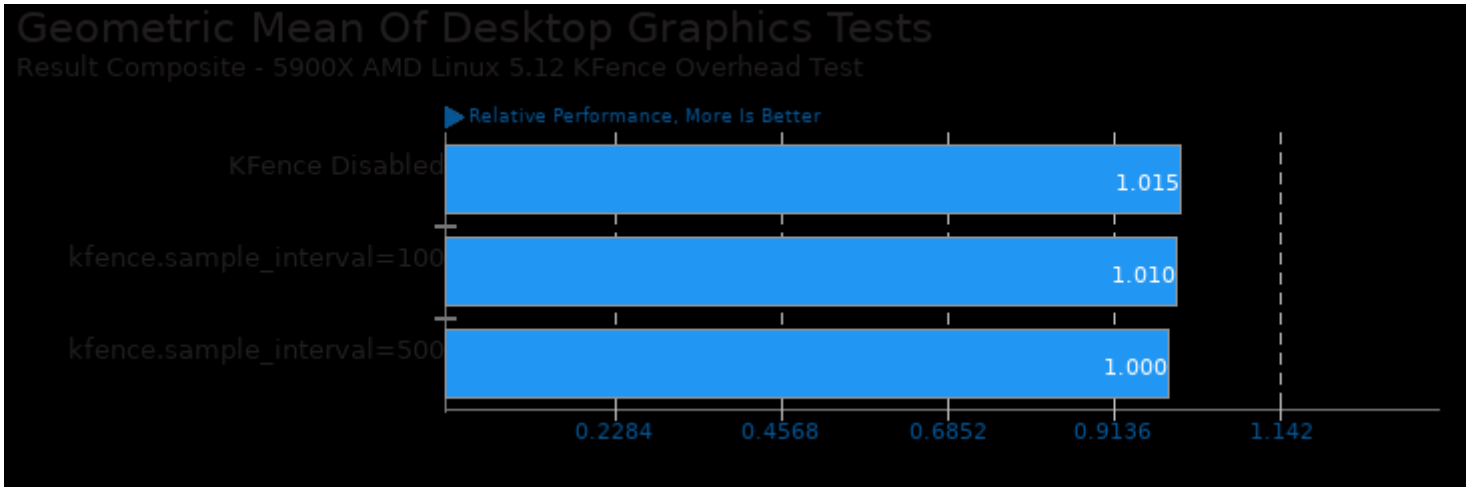


Geometric mean based upon tests: pts/luxcorerender, system/ocrmypdf, pts/svt-vp9, pts/svt-hevc, system/inkscape, system/rawtherapee, system/hugin and pts/build-godot

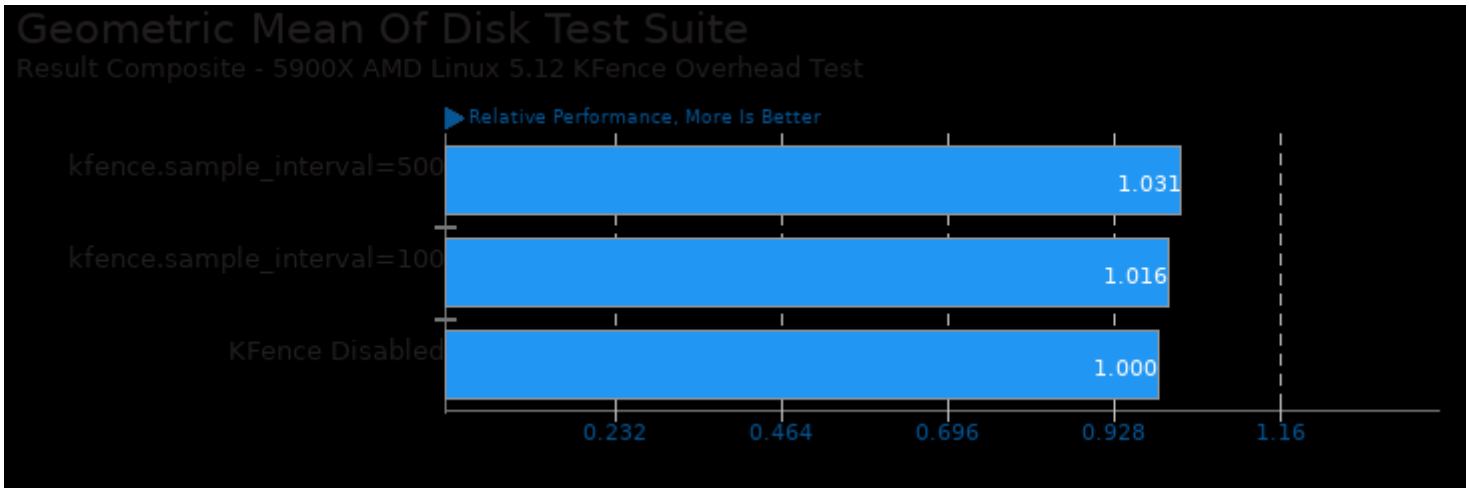
5900X AMD Linux 5.12 KFence Overhead Test



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

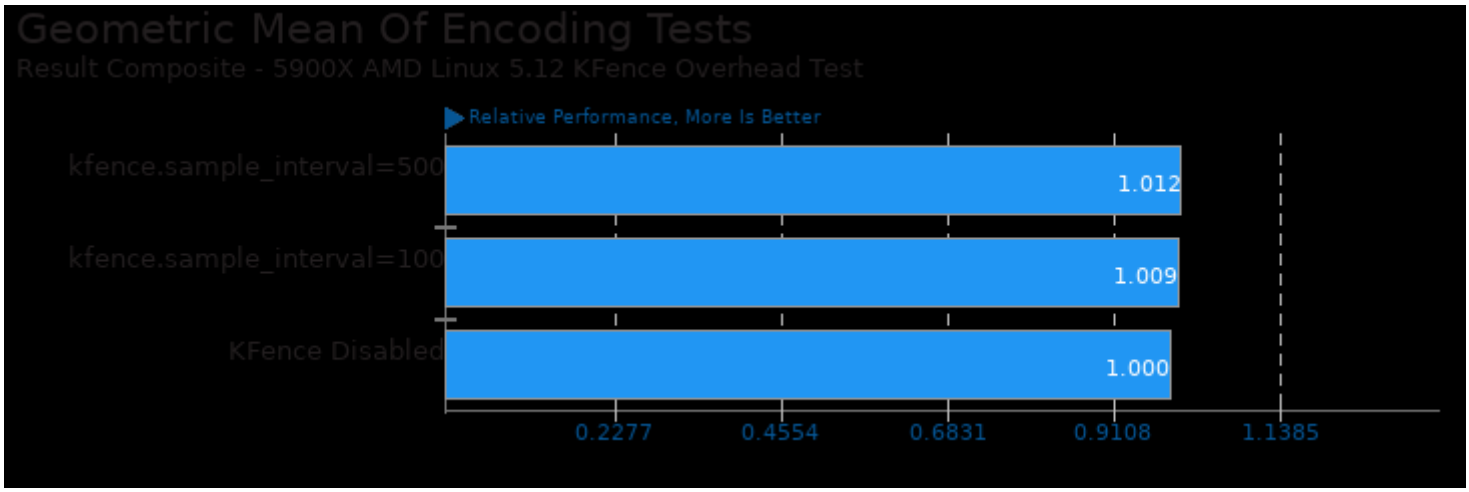


Geometric mean based upon tests: pts/tesseract, pts/paraview and pts/glmark2

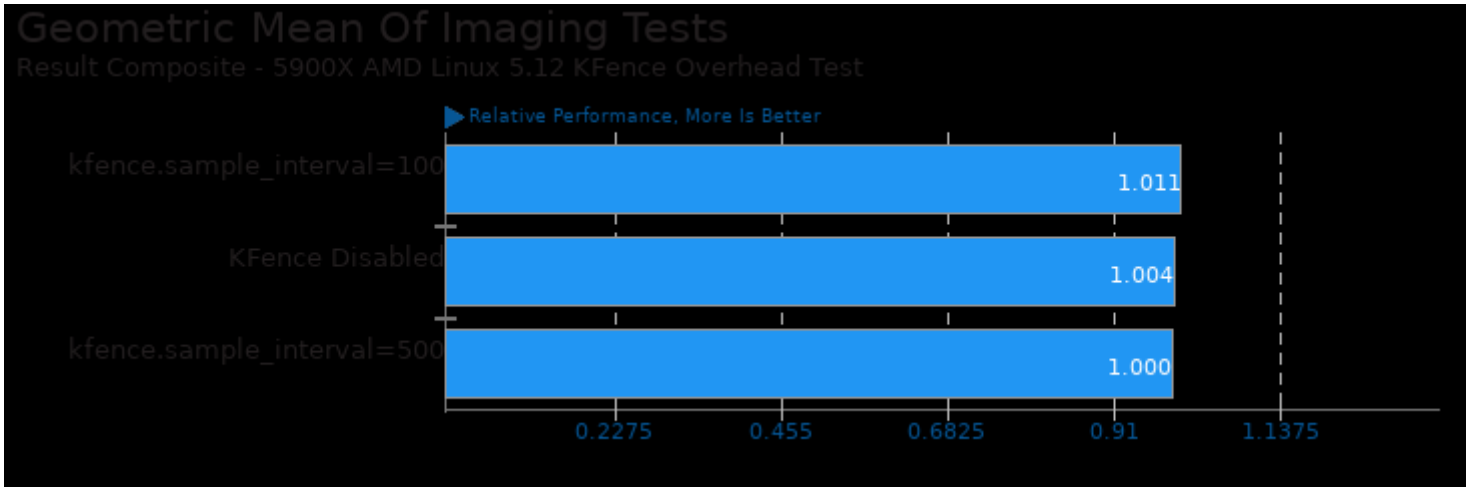


Geometric mean based upon tests: pts/fs-mark, pts/compilebench and pts/fio

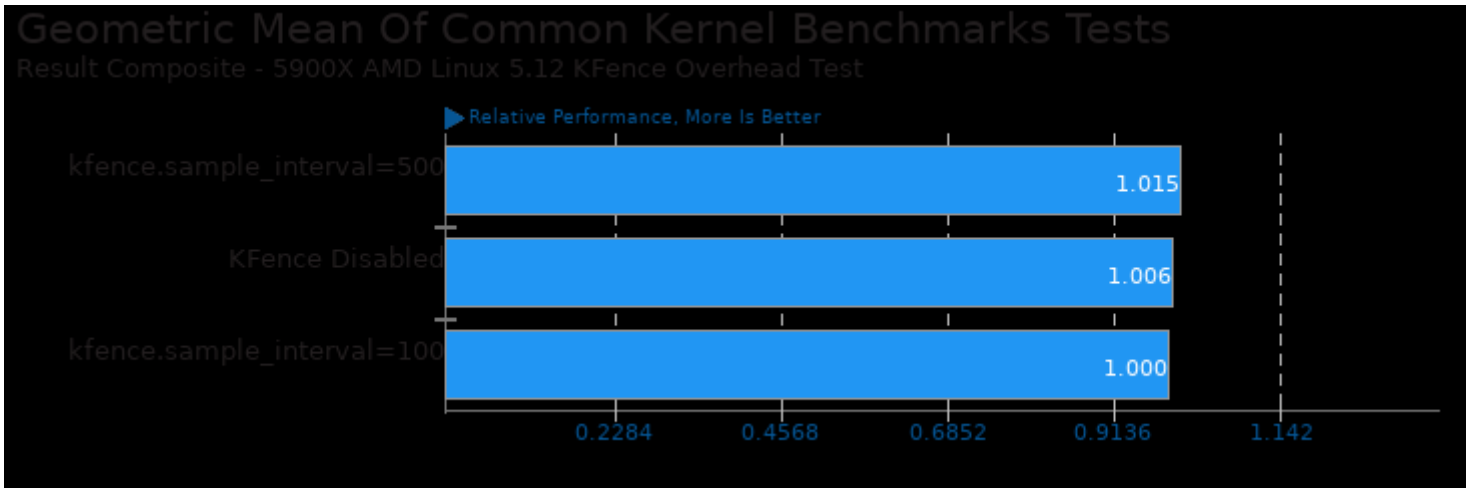
5900X AMD Linux 5.12 KFence Overhead Test



Geometric mean based upon tests: pts/svt-vp9 and pts/svt-hevc

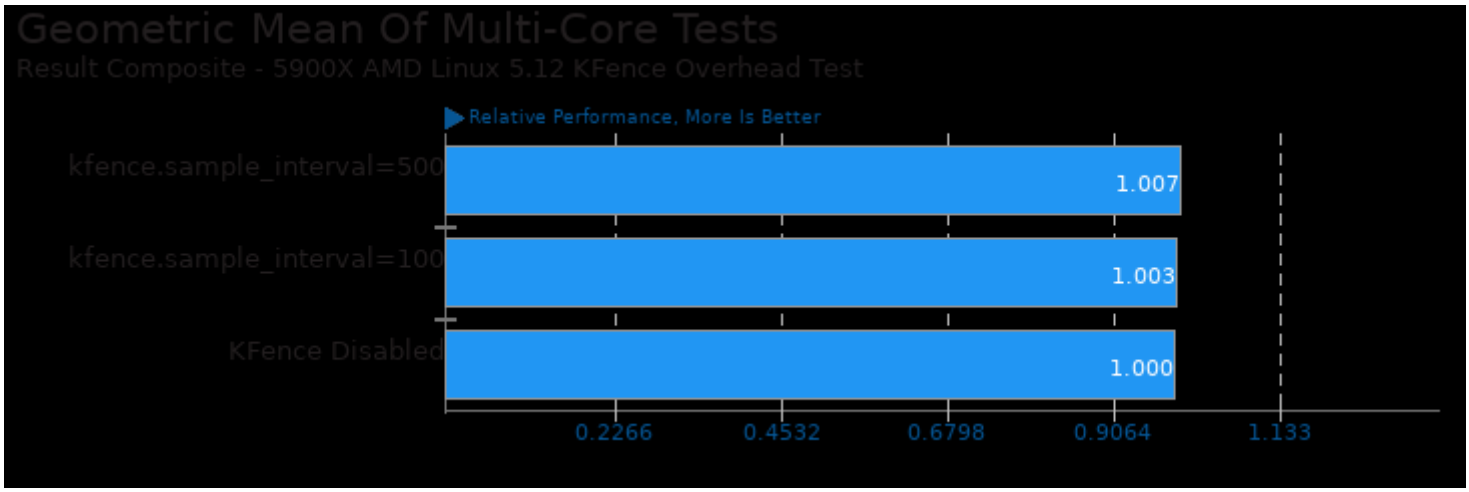


Geometric mean based upon tests: system/inkscape, system/rawtherapee and system/hugin

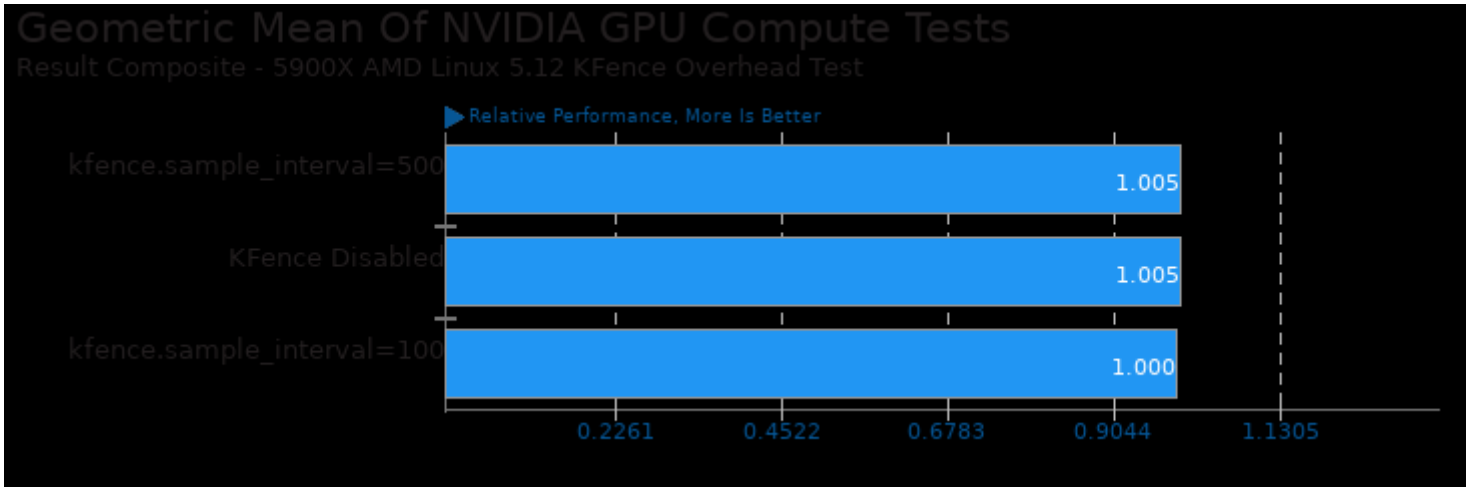


Geometric mean based upon tests: pts/sqlite-speedtest, pts/stress-ng and pts/osbench

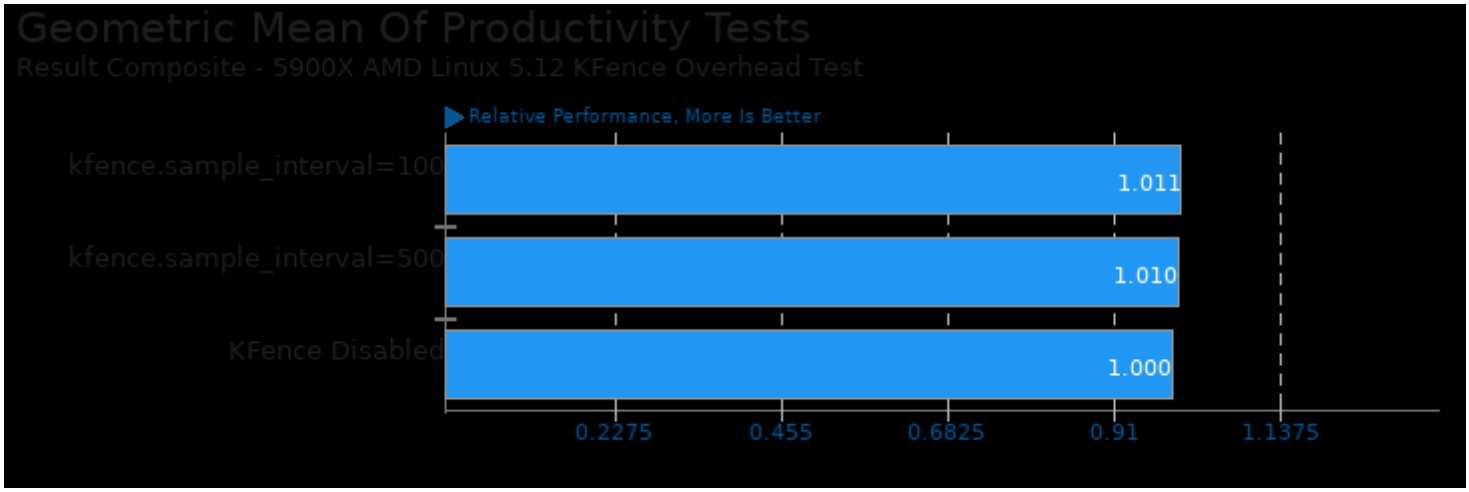
5900X AMD Linux 5.12 KFence Overhead Test



Geometric mean based upon tests: pts/stockfish, pts/svt-vp9, pts/svt-hevc, pts/build-linux-kernel, pts/build-gdb, pts/build-godot, pts/build-wasmer, pts/build-mesa and pts/luxcorerender

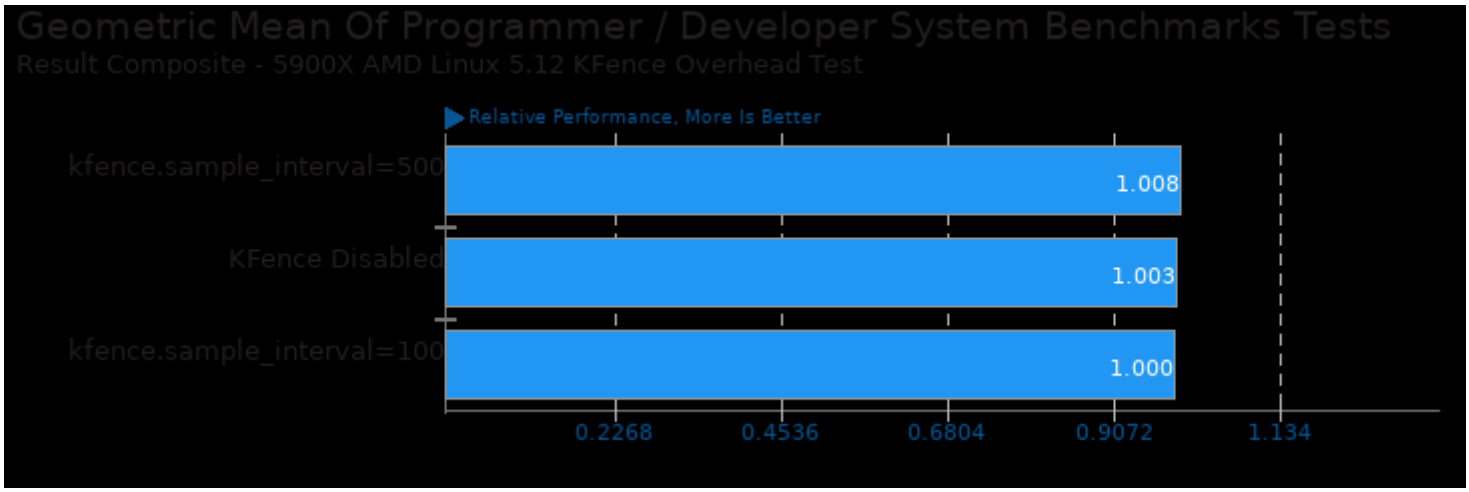


Geometric mean based upon tests: pts/luxcorerender, pts/realsr-ncnn and pts/waifu2x-ncnn

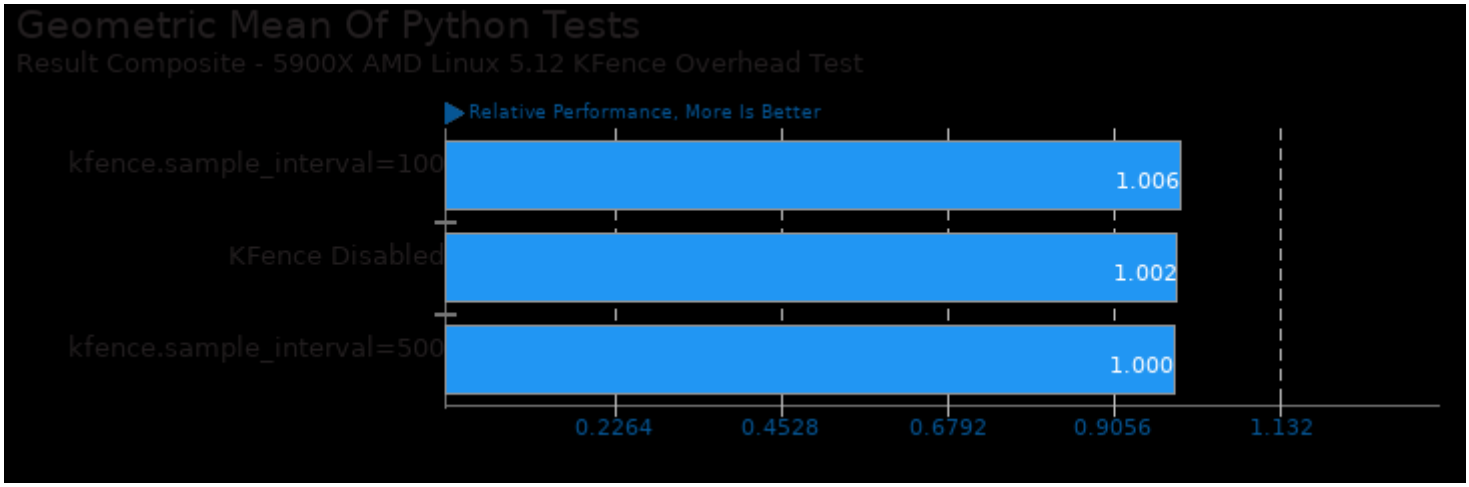


Geometric mean based upon tests: system/libreoffice and system/inkscape

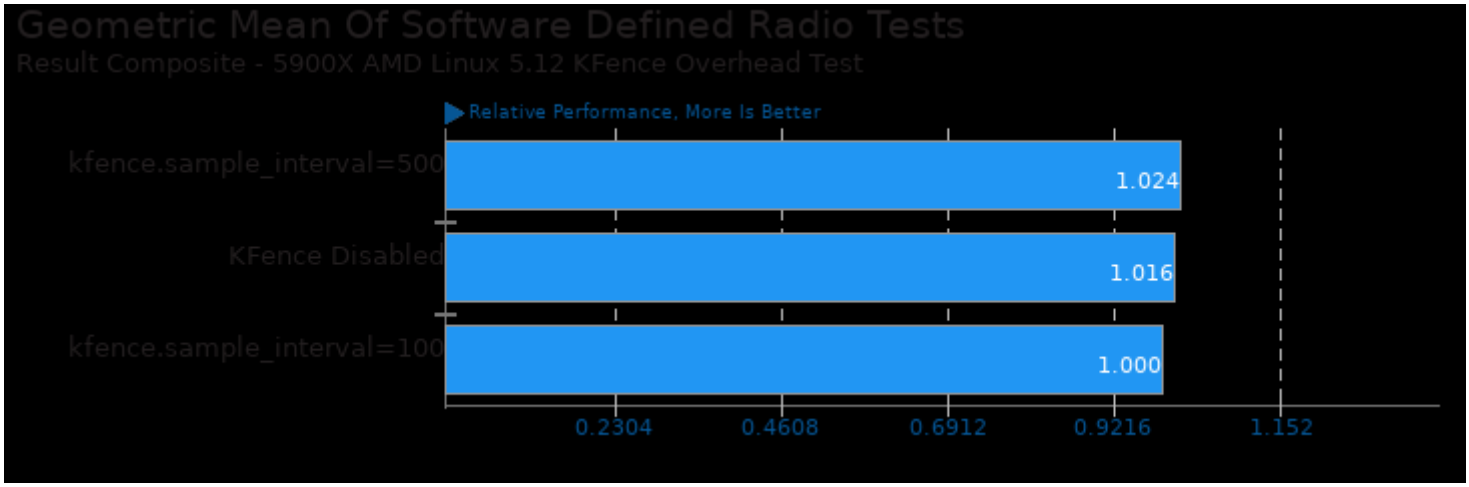
5900X AMD Linux 5.12 KFence Overhead Test



Geometric mean based upon tests: pts/simdjson, pts/sqlite-speedtest, pts/build-linux-kernel, pts/build-gdb, pts/build-godot, pts/build-wasmer and pts/build-mesa



Geometric mean based upon tests: pts/compilebench, pts/glmark2, pts/paraview, pts/build-godot, pts/build-mesa, system/ocrmypdf and system/selenium

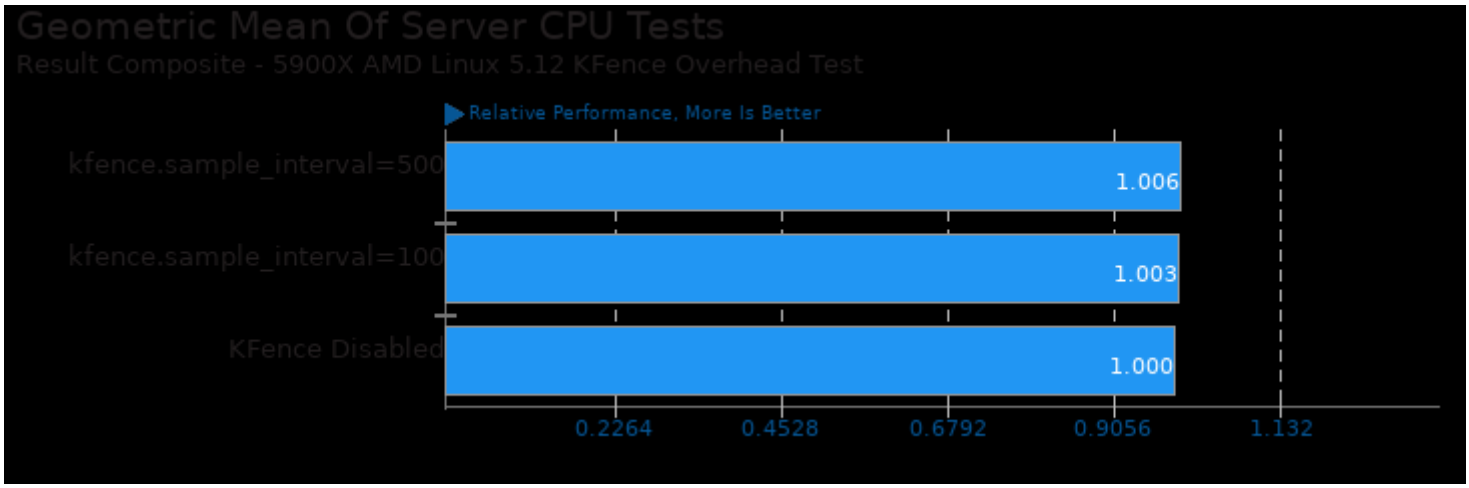


Geometric mean based upon tests: pts/liquid-dsp and pts/srslte

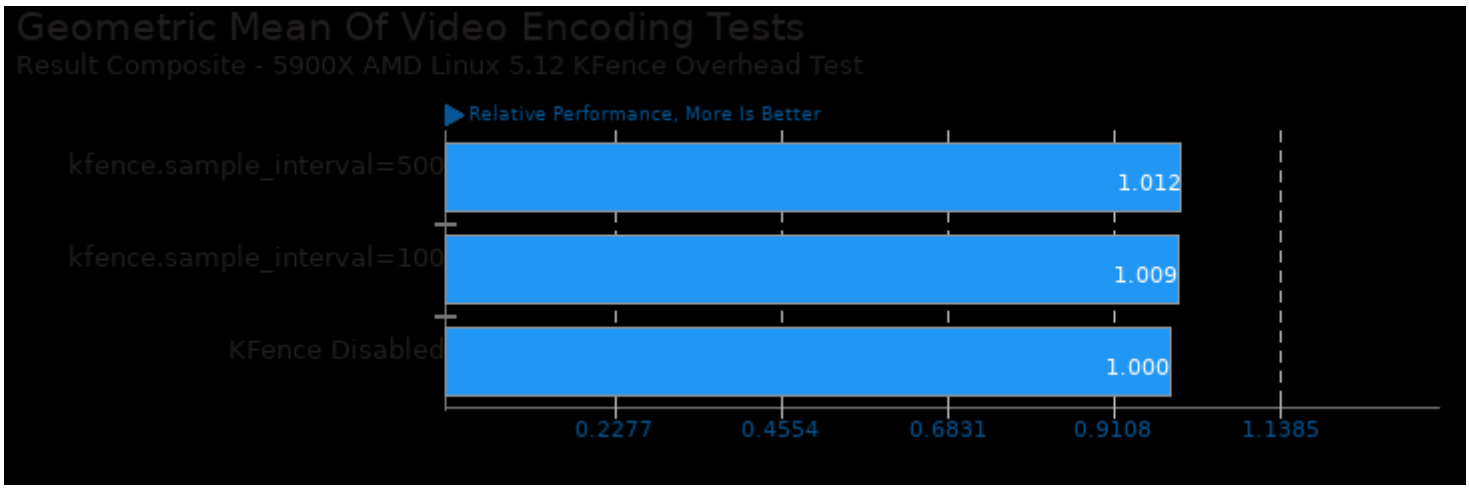
5900X AMD Linux 5.12 KFence Overhead Test



Geometric mean based upon tests: pts/keydb, pts/simdjson, pts/sqlite-speedtest and pts/influxdb

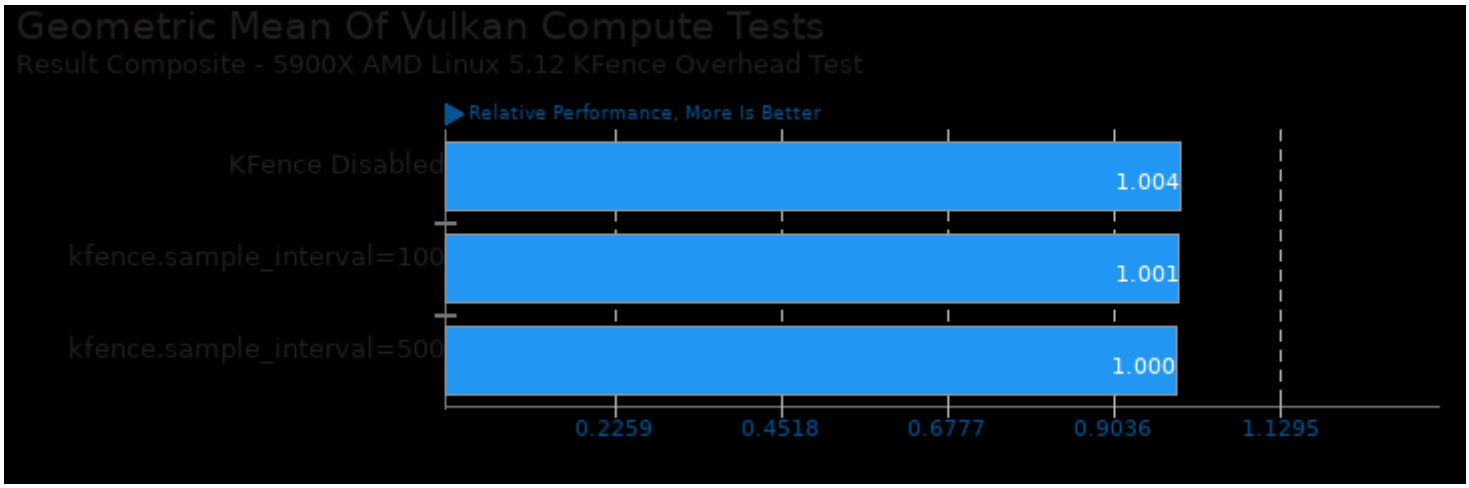


Geometric mean based upon tests: pts/svt-hevc, pts/svt-vp9, pts/stockfish, pts/build-linux-kernel and pts/stress-ng



Geometric mean based upon tests: pts/svt-vp9 and pts/svt-hevc

5900X AMD Linux 5.12 KFence Overhead Test



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

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 20:35.