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# 5950x6-20-22

AMD 5950X | Gigabyte X570 AORUS ELITE | Gentoo

## Test Systems:

### AMD Ryzen 9 5950X 16-Core

Processor: AMD Ryzen 9 5950X 16-Core @ 3.40GHz (16 Cores / 32 Threads), Motherboard: Gigabyte X570 AORUS ELITE WIFI (F37c BIOS), Chipset: AMD Starship/Matisse, Memory: 4 x 8 GB DDR4-3600MT/s CMK16GX4M2Z3200C16, Disk: 2 x 1000GB Samsung SSD 980 PRO 1TB, Graphics: eVGA NVIDIA GeForce GTX 1060 6GB, Audio: NVIDIA GP106 HD Audio, Monitor: DELL 2707WFP, Network: Intel I211 + Intel Dual Band-AC 3168NGW

OS: Gentoo 2.8, Kernel: 5.18.5-gentoo-harambe-edition (x86_64), Desktop: KDE Plasma 5.25.0, Display Server: X Server 1.21.1.3, Display Driver: NVIDIA 515.48.07, Compiler: GCC 11.3.0, File-System: ext4, Screen Resolution: 3840x1200

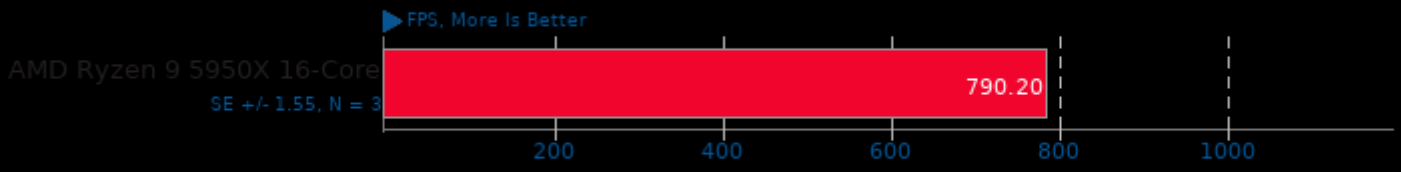
Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --bindir=/usr/x86_64-pc-linux-gnu/gcc-bin/11.3.0 --build=x86_64-pc-linux-gnu --datadir=/usr/share/gcc-data/x86_64-pc-linux-gnu/11.3.0 --disable-cet

--disable-default-ssp --disable-esp --disable-fixed-point --disable-isl-version-check --disable-libada --disable-libssp --disable-libstdcxx-pch --disable-libunwind-exceptions --disable-libvtv --disable-nls --disable-systemtap --disable-valgrind-annotations --disable-vtable-verify --disable-werror --enable-__cxa_atexit --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-languages=c,c++,go,fortran --enable-libgomp --enable-libstdcxx-time --enable-lto --enable-multilib --enable-obsolete --enable-secureplt --enable-shared --enable-targets=all --enable-threads=posix --host=x86_64-pc-linux-gnu --includedir=/usr/lib/gcc/x86_64-pc-linux-gnu/11.3.0/include --mandir=/usr/share/gcc-data/x86_64-pc-linux-gnu/11.3.0/man --with-build-config=bootstrap-lto --with-isl --with-multilib-list=m32,m64 --with-python-dir=/share/gcc-data/x86_64-pc-linux-gnu/11.3.0/python --with-zstd
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa201016
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + mmio_stale_data: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Vulnerable IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

| | AMD Ryzen 9 5950X 16-Core |
|---|---|
| **dav1d - Chimera 1080p (FPS)** | 790.20 |
| **Standard Deviation** | 0.3% |
| **dav1d - Summer Nature 4K (FPS)** | 302.14 |
| **Standard Deviation** | 0.5% |
| **dav1d - S.N.1 (FPS)** | 1150 |
| **Standard Deviation** | 1% |
| **dav1d - C.1.1.b (FPS)** | 663.16 |
| **Standard Deviation** | 0.9% |
| **SVT-AV1 - Preset 4 - Bosphorus 4K (FPS)** | 3.327 |
| **Standard Deviation** | 0.3% |
| **SVT-AV1 - Preset 8 - Bosphorus 4K (FPS)** | 55.743 |
| **Standard Deviation** | 0.8% |
| **SVT-AV1 - Preset 10 - Bosphorus 4K (FPS)** | 127.747 |
| **Standard Deviation** | 1.5% |
| **SVT-AV1 - Preset 12 - Bosphorus 4K (FPS)** | 148.491 |
| **Standard Deviation** | 0.3% |
| **SVT-AV1 - Preset 4 - Bosphorus 1080p (FPS)** | 7.120 |
| **Standard Deviation** | 2.1% |
| **SVT-AV1 - Preset 8 - Bosphorus 1080p (FPS)** | 176.105 |
| **Standard Deviation** | 0.7% |
| **SVT-AV1 - Preset 10 - Bosphorus 1080p (FPS)** | 343.037 |
| **Standard Deviation** | 1.2% |
| **SVT-AV1 - Preset 12 - Bosphorus 1080p (FPS)** | 569.592 |
| **Standard Deviation** | 0.8% |
| **x264 - Bosphorus 4K (FPS)** | 59.98 |
| **Standard Deviation** | 0.6% |
| **x264 - Bosphorus 1080p (FPS)** | 226.65 |
| **Standard Deviation** | 0.7% |
| **x265 - Bosphorus 4K (FPS)** | 29.90 |
| **Standard Deviation** | 0.6% |
| **x265 - Bosphorus 1080p (FPS)** | 93.22 |
| **Standard Deviation** | 0.4% |
| **7-Zip Compression - Compression Rating (MIPS)** | 141788 |
| **Standard Deviation** | 0.8% |
| **7-Zip Compression - D.R (MIPS)** | 149387 |
| **Standard Deviation** | 0% |
| **Timed Linux Kernel Compilation - defconfig (sec)** | 42.556 |
| **Standard Deviation** | 0.2% |
| **FFmpeg - H.2.H.T.N.D (sec)** | 4.205 |
| **Standard Deviation** | 1.7% |

## dav1d 1.0

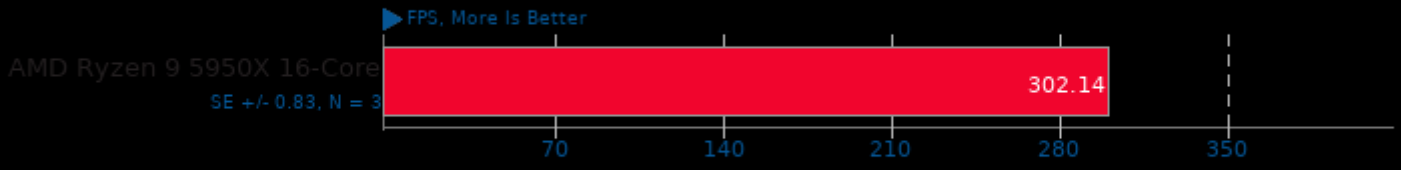
Video Input: Chimera 1080p




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

## dav1d 1.0

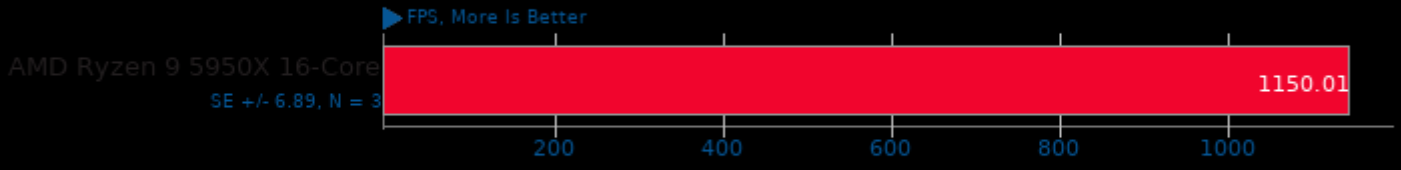
Video Input: Summer Nature 4K




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

## dav1d 1.0

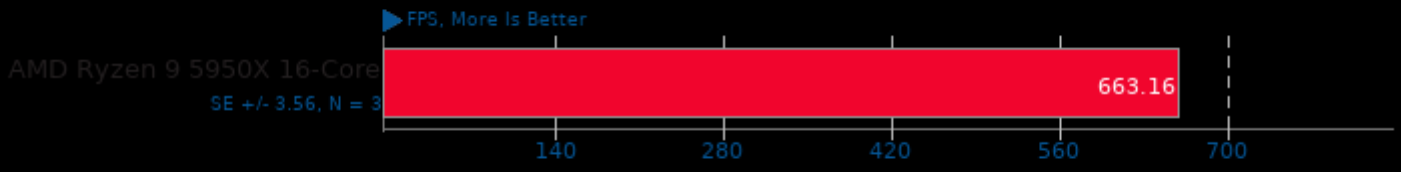
Video Input: Summer Nature 1080p




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

## dav1d 1.0

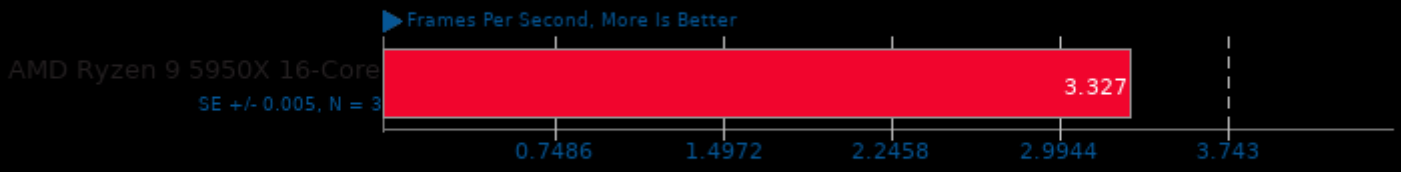
Video Input: Chimera 1080p 10-bit



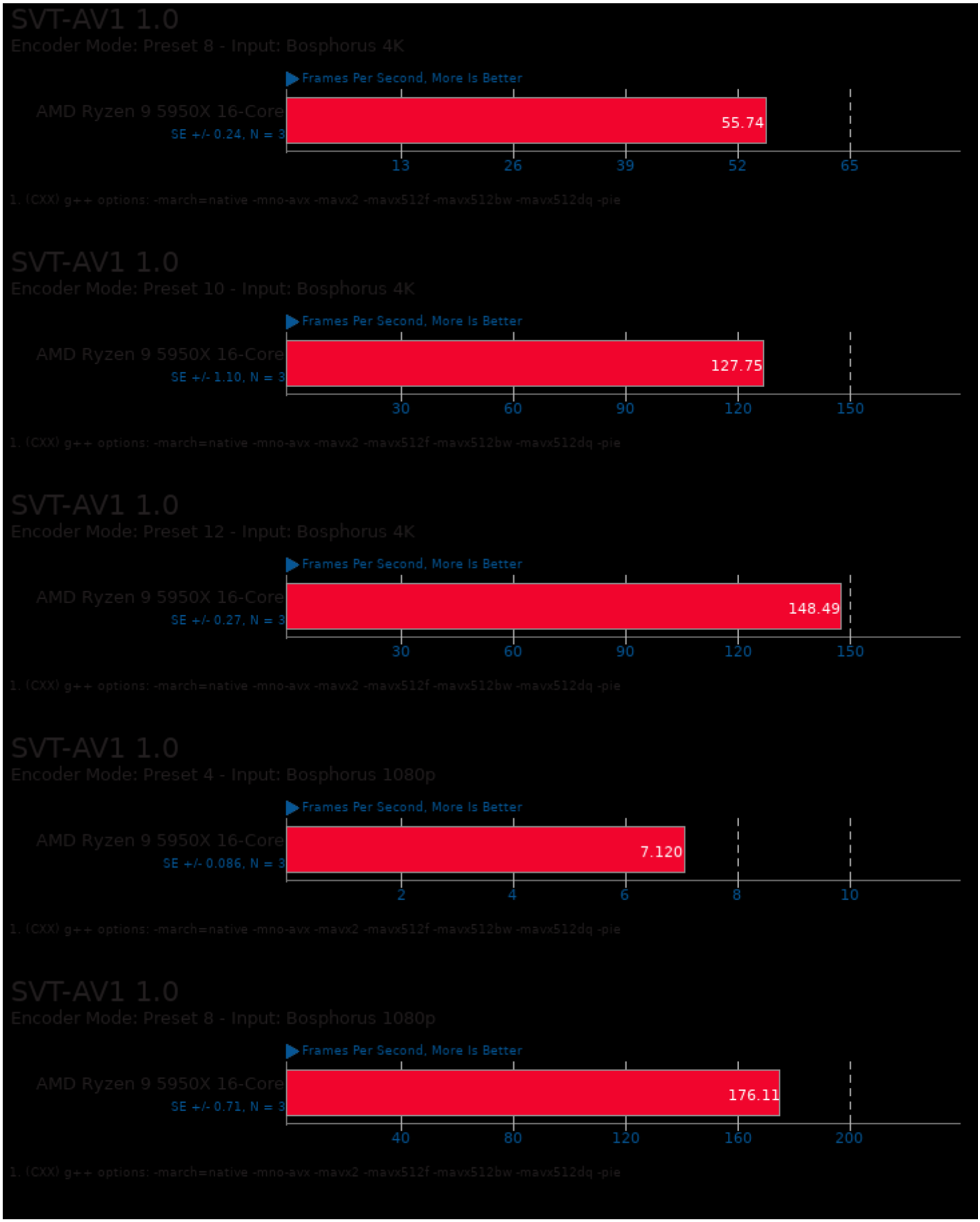

1. (CC) gcc options: -pthread -lm

## SVT-AV1 1.0

Encoder Mode: Preset 4 - Input: Bosphorus 4K

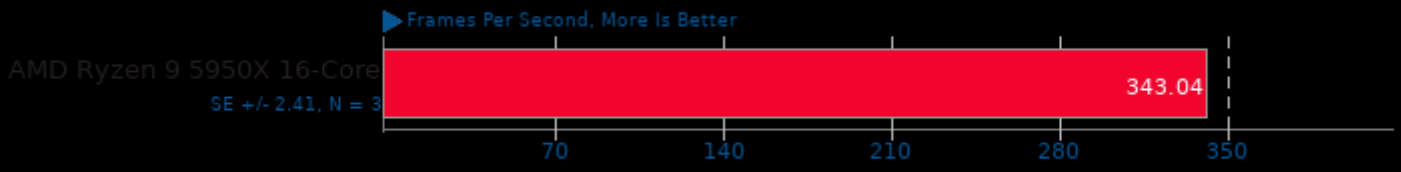



1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie


SVT-AV1 1.0
Encoder Mode: Preset 8 - Input: Bosphorus 4K
Frames Per Second, More Is Better
AMD Ryzen 9 5950X 16-Core
SE +/- 0.24, N = 3
55.74
13
26
39
52
65
1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie
SVT-AV1 1.0
Encoder Mode: Preset 10 - Input: Bosphorus 4K
Frames Per Second, More Is Better
AMD Ryzen 9 5950X 16-Core
SE +/- 1.10, N = 3
127.75
30
60
90
120
150
1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie
SVT-AV1 1.0
Encoder Mode: Preset 12 - Input: Bosphorus 4K
Frames Per Second, More Is Better
AMD Ryzen 9 5950X 16-Core
SE +/- 0.27, N = 3
148.49
30
60
90
120
150
1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie
SVT-AV1 1.0
Encoder Mode: Preset 4 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
AMD Ryzen 9 5950X 16-Core
SE +/- 0.086, N = 3
7.120
2
4
6
8
10
1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie
SVT-AV1 1.0
Encoder Mode: Preset 8 - Input: Bosphorus 1080p
Frames Per Second, More Is Better
AMD Ryzen 9 5950X 16-Core
SE +/- 0.71, N = 3
176.11
40
80
120
160
200
1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie

## SVT-AV1 1.0

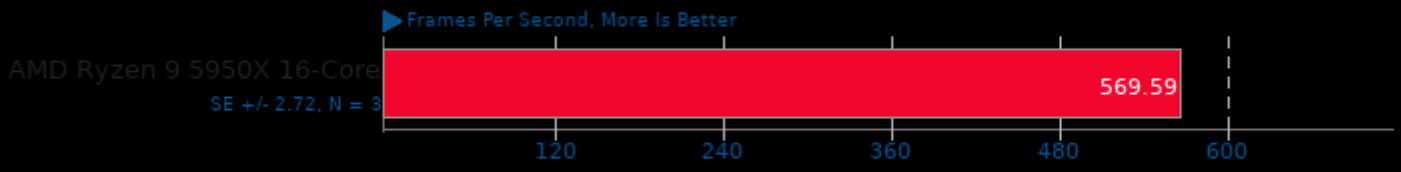
Encoder Mode: Preset 10 - Input: Bosphorus 1080p




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

## SVT-AV1 1.0

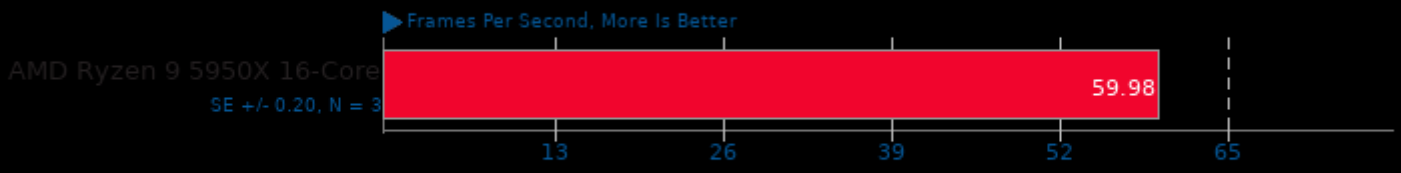
Encoder Mode: Preset 12 - Input: Bosphorus 1080p




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

## x264 2022-02-22

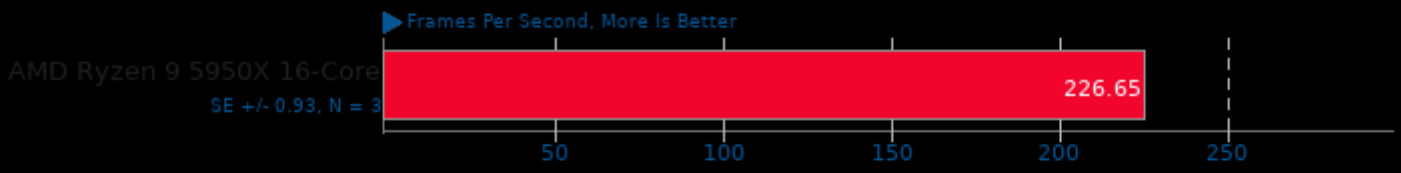
Video Input: Bosphorus 4K




1. (CC) gcc options: -ldl -lavformat -lavcodec -lavutil -lswscale -m64 -lm -lpthread -O3 -flto

## x264 2022-02-22

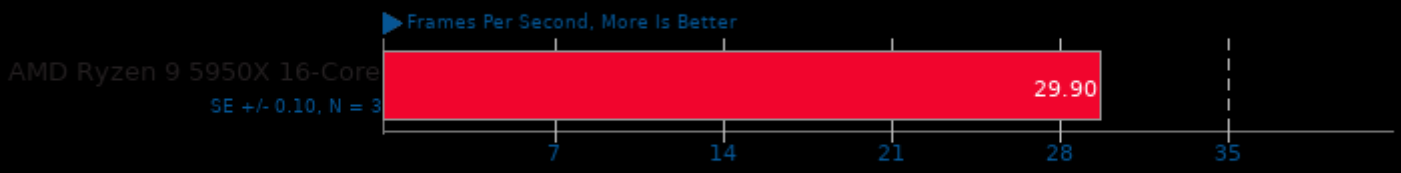
Video Input: Bosphorus 1080p



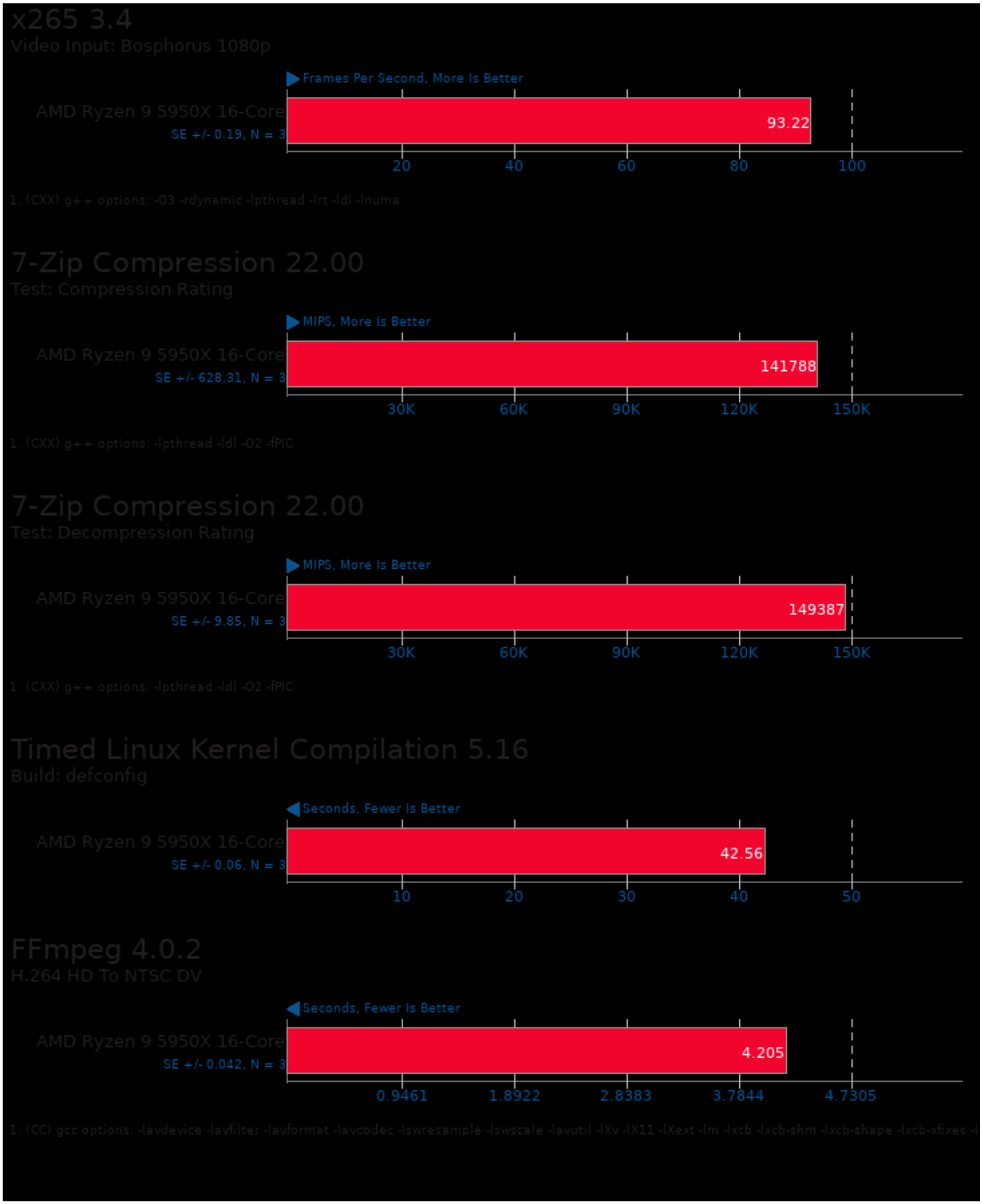

1. (CC) gcc options: -ldl -lavformat -lavcodec -lavutil -lswscale -m64 -lm -lpthread -O3 -flto

## x265 3.4

Video Input: Bosphorus 4K




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




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