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test-multicore

AMD GX-424CC SOC testing with a Advantech Co DPX-W256 (W2560000060V116 BIOS) and AMD Radeon R4/R5 256MB on Ubuntu 20.04 via the Phoronix Test Suite.

Test Systems:

AMD GX-424CC SOC

Processor: AMD GX-424CC SOC @ 2.40GHz (4 Cores), Motherboard: Advantech Co DPX-W256 (W2560000060V116 BIOS), Chipset: AMD 16h, Memory: 2 x 4096 MB DDR3-1600MT/s SQR-SD3N-4G1K6SSGB, Disk: 32GB SQF-SLMV1-32G-BS + 250GB SSD 860 EVO mSAT, Graphics: AMD Radeon R4/R5 256MB (300MHz), Audio: AMD Kabini HDMI/DP, Network: 2 x Realtek RTL8111/8168/8411

OS: Ubuntu 20.04, Kernel: 5.11.0-25-generic (x86_64), Desktop: GNOME Shell 3.36.9, Display Server: X Server, OpenGL: 4.5 Mesa 21.0.3 (LLVM 12.0.0), Vulkan: 1.0.2, Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 1920x1080

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

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--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
Processor Notes: Scaling Governor: acpi-cpufreq ondemand - CPU Microcode: 0x7030105
Java Notes: OpenJDK Runtime Environment (build 11.0.11+9-Ubuntu-0ubuntu2.20.04)
Python Notes: Python 3.8.10
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 STIBP: disabled RSB filling + srbds: Not affected + tsx_async_abort: Not affected

	AMD GX-424CC SOC
High Performance Conjugate Gradient (GFLOP/s)	0.917146
Standard Deviation	0.1%
NAS Parallel Benchmarks - BT.C (Mop/s)	3518
Standard Deviation	0.1%
NAS Parallel Benchmarks - CG.C (Mop/s)	311.93
Standard Deviation	0.5%
NAS Parallel Benchmarks - EP.C (Mop/s)	115.89
Standard Deviation	0.7%
NAS Parallel Benchmarks - EP.D (Mop/s)	116.37
Standard Deviation	0.1%
NAS Parallel Benchmarks - FT.C (Mop/s)	1377
Standard Deviation	35.6%
NAS Parallel Benchmarks - LU.C (Mop/s)	3230
Standard Deviation	0.1%
NAS Parallel Benchmarks - MG.C (Mop/s)	1557
Standard Deviation	0.1%
NAS Parallel Benchmarks - SP.B (Mop/s)	1076
Standard Deviation	0%
NAS Parallel Benchmarks - SP.C (Mop/s)	1092
Standard Deviation	0.1%
Parboil - OpenMP LBM (sec)	580.497966
Standard Deviation	0%
Parboil - OpenMP CUTCP (sec)	28.133212
Standard Deviation	0.3%
Parboil - OpenMP Stencil (sec)	105.502449
Standard Deviation	0.4%
Parboil - O.M.G (sec)	51.965495
Standard Deviation	0.5%
Rodinia - OpenMP LavaMD (sec)	2816
Standard Deviation	0.2%
Rodinia - OpenMP HotSpot3D (sec)	459.602
Standard Deviation	0.1%
Rodinia - OpenMP Leukocyte (sec)	1344
Standard Deviation	0.1%
Rodinia - OpenMP CFD Solver (sec)	305.337
Standard Deviation	0.5%
Rodinia - O.S (sec)	88.193
Standard Deviation	0.3%
NAMD - ATPase Simulation - 327,506 Atoms (days/ns)	**22.57007**
Normalized	100%

Standard Deviation	0.2%
Pennant - sedovbig (Hydro Cycle Time - sec)	854.9417
Standard Deviation	0.3%
Pennant - leblancbig (Hydro Cycle Time - sec)	470.9698
Standard Deviation	0.3%
LAMMPS Molecular Dynamics Simulator - 20k Atoms (ns/day)	0.713
Standard Deviation	0.7%
LAMMPS Molecular Dynamics Simulator - Rhodopsin Protein	0.765
Standard Deviation	1%
libgav1 - Chimera 1080p (FPS)	30.39
Standard Deviation	0.2%
libgav1 - Summer Nature 4K (FPS)	9.48
Standard Deviation	0.2%
libgav1 - S.N.1 (FPS)	35.87
Standard Deviation	0.2%
libgav1 - C.1.1.b (FPS)	9.23
Standard Deviation	0.1%
Zstd Compression - 3 - Compression Speed (MB/s)	**159.1**
Normalized	100%
Standard Deviation	0.2%
Zstd Compression - 3 - D.S (MB/s)	**921.4**
Normalized	100%
Standard Deviation	0.1%
Zstd Compression - 8 - Compression Speed (MB/s)	**25.9**
Normalized	100%
Standard Deviation	0.2%
Zstd Compression - 8 - D.S (MB/s)	**945.6**
Normalized	100%
Standard Deviation	0.2%
Zstd Compression - 19 - Compression Speed (MB/s)	**4.10**
Normalized	100%
Standard Deviation	0.4%
Zstd Compression - 19 - D.S (MB/s)	**757.1**
Normalized	100%
Standard Deviation	0.1%
Zstd Compression - 3, Long Mode - Compression Speed (MB/s)	**142.6**
Normalized	100%
Standard Deviation	0.4%
Zstd Compression - 3, Long Mode - D.S (MB/s)	**978.6**
Normalized	100%
Standard Deviation	0.4%
Zstd Compression - 8, Long Mode - Compression Speed (MB/s)	**25.9**
Normalized	100%
Standard Deviation	0%
Zstd Compression - 8, Long Mode - D.S (MB/s)	**997.1**
Normalized	100%
Standard Deviation	0%
Zstd Compression - 19, Long Mode - Compression Speed (MB/s)	**3.59**
Normalized	100%
Standard Deviation	0.3%
Zstd Compression - 19, Long Mode - D.S (MB/s)	**808.1**
Normalized	100%
Standard Deviation	0.2%
ArrayFire - BLAS CPU (GFLOPS)	**31.9015**
Normalized	100%

Standard Deviation	1.7%
John The Ripper - Blowfish (Real C/S)	2065
Standard Deviation	0.4%
John The Ripper - MD5 (Real C/S)	63560
Standard Deviation	0.1%
LuxCoreRender - DLSC - CPU (M samples/sec)	0.11
Standard Deviation	0%
LuxCoreRender - Orange Juice - CPU (M samples/sec)	0.14
Standard Deviation	0%
LuxCoreRender - R.C.a.P - CPU (M samples/sec)	0.45
Standard Deviation	0%
GraphicsMagick - Swirl (Iterations/min)	42
Standard Deviation	1.4%
GraphicsMagick - Rotate (Iterations/min)	213
GraphicsMagick - Sharpen (Iterations/min)	14
GraphicsMagick - Enhanced (Iterations/min)	14
GraphicsMagick - Resizing (Iterations/min)	59
GraphicsMagick - Noise-Gaussian (Iterations/min)	23
GraphicsMagick - HWB Color Space (Iterations/min)	133
dav1d - Chimera 1080p (FPS)	60.39
Standard Deviation	0.2%
dav1d - Summer Nature 4K (FPS)	14.24
Standard Deviation	0%
dav1d - S.N.1 (FPS)	56.04
Standard Deviation	0.4%
dav1d - C.1.1.b (FPS)	32.07
Standard Deviation	0.2%
OSPray - San Miguel - SciVis (FPS)	1.00
Standard Deviation	0.1%
OSPray - XFrog Forest - SciVis (FPS)	0.16
Standard Deviation	0.1%
OSPray - San Miguel - Path Tracer (FPS)	0.08
Standard Deviation	0.1%
OSPray - NASA Streamlines - SciVis (FPS)	1.22
Standard Deviation	0.1%
OSPray - XFrog Forest - Path Tracer (FPS)	0.09
Standard Deviation	0.1%
OSPray - M.R - SciVis (FPS)	0.88
Standard Deviation	0%
OSPray - NASA Streamlines - Path Tracer (FPS)	0.24
Standard Deviation	0.1%
TTSIOD 3D Renderer - P.R.W.S.S.M (FPS)	**50.2037**
Normalized	100%
Standard Deviation	0.2%
AOM AV1 - Speed 0 Two-Pass - Bosphorus 4K (FPS)	0.01
Standard Deviation	0%
AOM AV1 - Speed 4 Two-Pass - Bosphorus 4K (FPS)	0.23
Standard Deviation	0%
AOM AV1 - Speed 6 Realtime - Bosphorus 4K (FPS)	1.08
Standard Deviation	0.5%
AOM AV1 - Speed 6 Two-Pass - Bosphorus 4K (FPS)	0.42
Standard Deviation	0%

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AOM AV1 - Speed 8 Realtime - Bosphorus 4K (FPS)	3.97
Standard Deviation	0.4%
AOM AV1 - Speed 9 Realtime - Bosphorus 4K (FPS)	6.28
Standard Deviation	0.1%
AOM AV1 - Speed 0 Two-Pass - Bosphorus 1080p (FPS)	0.03
Standard Deviation	0%
AOM AV1 - Speed 4 Two-Pass - Bosphorus 1080p (FPS)	0.54
Standard Deviation	0%
AOM AV1 - Speed 6 Realtime - Bosphorus 1080p (FPS)	1.96
Standard Deviation	0%
AOM AV1 - Speed 6 Two-Pass - Bosphorus 1080p (FPS)	1.47
Standard Deviation	0.4%
AOM AV1 - Speed 8 Realtime - Bosphorus 1080p (FPS)	14.52
Standard Deviation	0.8%
AOM AV1 - Speed 9 Realtime - Bosphorus 1080p (FPS)	18.51
Standard Deviation	0.4%
Embree - Pathtracer - Crown (FPS)	0.9295
Standard Deviation	2.1%
Embree - Pathtracer ISPC - Crown (FPS)	0.8519
Standard Deviation	0.2%
Embree - Pathtracer - Asian Dragon (FPS)	1.1990
Standard Deviation	0.3%
Embree - Pathtracer - Asian Dragon Obj (FPS)	1.0661
Standard Deviation	0.6%
Embree - Pathtracer ISPC - Asian Dragon (FPS)	1.0295
Standard Deviation	0.4%
Embree - Pathtracer ISPC - Asian Dragon Obj (FPS)	0.9023
Standard Deviation	0.2%
Kvazaar - Bosphorus 4K - Slow (FPS)	0.11
Standard Deviation	0%
Kvazaar - Bosphorus 4K - Medium (FPS)	0.11
Standard Deviation	0%
Kvazaar - Bosphorus 1080p - Slow (FPS)	0.52
Standard Deviation	0%
Kvazaar - Bosphorus 1080p - Medium (FPS)	0.52
Standard Deviation	0%
Kvazaar - Bosphorus 4K - Very Fast (FPS)	0.33
Standard Deviation	0%
Kvazaar - Bosphorus 4K - Ultra Fast (FPS)	0.75
Standard Deviation	0%
Kvazaar - Bosphorus 1080p - Very Fast (FPS)	1.37
Standard Deviation	0.4%
Kvazaar - Bosphorus 1080p - Ultra Fast (FPS)	3
rav1e - 1 (FPS)	0.060
Standard Deviation	1%
rav1e - 5 (FPS)	0.169
Standard Deviation	0.7%
rav1e - 6 (FPS)	0.214
Standard Deviation	0%
rav1e - 10 (FPS)	0.589
Standard Deviation	0.3%
SVT-AV1 - Preset 4 - Bosphorus 4K (FPS)	0.009
Standard Deviation	6.2%

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SVT-AV1 - Preset 8 - Bosphorus 4K (FPS)	0.125
Standard Deviation	0.5%
SVT-AV1 - Preset 4 - Bosphorus 1080p (FPS)	0.039
Standard Deviation	0%
SVT-AV1 - Preset 8 - Bosphorus 1080p (FPS)	0.599
Standard Deviation	2.2%
SVT-HEVC - 1 - Bosphorus 1080p (FPS)	0.05
Standard Deviation	0%
SVT-HEVC - 7 - Bosphorus 1080p (FPS)	0.53
Standard Deviation	1.1%
SVT-HEVC - 10 - Bosphorus 1080p (FPS)	1.13
Standard Deviation	0.5%
VP9 libvpx Encoding - Speed 0 - Bosphorus 4K (FPS)	0.41
Standard Deviation	0%
VP9 libvpx Encoding - Speed 5 - Bosphorus 4K (FPS)	1.40
Standard Deviation	0.4%
VP9 libvpx Encoding - Speed 0 - Bosphorus 1080p (FPS)	1.14
Standard Deviation	0%
VP9 libvpx Encoding - Speed 5 - Bosphorus 1080p (FPS)	4.14
Standard Deviation	0.1%
x264 - H.2.V.E (FPS)	**8.06**
Normalized	100%
Standard Deviation	2%
x265 - Bosphorus 4K (FPS)	1.34
Standard Deviation	0%
x265 - Bosphorus 1080p (FPS)	5.90
Standard Deviation	0.4%
ACES DGEMM - S.F.P.R (GFLOP/s)	**0.077119**
Normalized	100%
Standard Deviation	0.4%
Intel Open Image Denoise - RT.hdr_alb_nrm.3840x2160 (Images /	0.02
Standard Deviation	0.1%
Intel Open Image Denoise - RT.ldr_alb_nrm.3840x2160 (Images /	0.02
Standard Deviation	0%
Intel Open Image Denoise - RTLightmap.hdr.4096x4096 (Images /	0.01
Standard Deviation	0.1%
OpenVKL - vklBenchmark (Items / Sec)	13
OpenVKL - vklBenchmarkVdbVolume (Items / Sec)	1884875
Standard Deviation	1%
OpenVKL - vklBenchmarkStructuredVolume (Items / Sec)	7735703
Standard Deviation	2.4%
OpenVKL - vklBenchmarkUnstructuredVolume (Items / Sec)	296881
Standard Deviation	0%
Coremark - CoreMark Size 666 - I.P.S (Iterations/Sec)	**38642**
Normalized	99.61%
Standard Deviation	0.9%
7-Zip Compression - C.S.T (MIPS)	**5153**
Normalized	100%
Standard Deviation	0.9%
Stockfish - Total Time (Nodes/s)	**2106101**
Normalized	99.87%
Standard Deviation	1.8%
asmFish - 1.H.M.2.D (Nodes/s)	**3124268**
Normalized	100%

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Standard Deviation	0.6%
Swet - Average (Operations/sec)	**201914966**
Normalized	100%
Standard Deviation	1%
ebizzy (Records/s)	7042
Standard Deviation	1%
libavif avifenc - 0 (sec)	890.965
Standard Deviation	0.5%
libavif avifenc - 2 (sec)	467.953
Standard Deviation	0.3%
libavif avifenc - 6 (sec)	140.966
Standard Deviation	0.4%
libavif avifenc - 10 (sec)	21.447
Standard Deviation	0.9%
libavif avifenc - 6, Lossless (sec)	767.013
Standard Deviation	0.6%
libavif avifenc - 10, Lossless (sec)	31.989
Standard Deviation	0.3%
Timed Apache Compilation - Time To Compile (sec)	**138.618**
Normalized	100%
Standard Deviation	0.2%
Timed FFmpeg Compilation - Time To Compile (sec)	**643.458**
Normalized	100%
Standard Deviation	0.2%
Timed GCC Compilation - Time To Compile (sec)	**7617**
Normalized	99.75%
Standard Deviation	0.9%
Timed GDB GNU Debugger Compilation - Time To Compile (sec)	**663.640**
Normalized	100%
Standard Deviation	0.4%
Timed Godot Game Engine Compilation - Time To Compile (sec)	**1653**
Normalized	100%
Standard Deviation	0.1%
Timed ImageMagick Compilation - Time To Compile (sec)	**327.549**
Normalized	100%
Standard Deviation	0.2%
Timed Linux Kernel Compilation - Time To Compile (sec)	**1116**
Normalized	100%
Standard Deviation	0.4%
Timed LLVM Compilation - Ninja (sec)	10918
Standard Deviation	0%
Timed LLVM Compilation - Unix Makefiles (sec)	11016
Standard Deviation	0.1%
Timed Mesa Compilation - Time To Compile (sec)	**692.801**
Normalized	100%
Standard Deviation	0.2%
Timed MPlayer Compilation - Time To Compile (sec)	**455.027**
Normalized	100%
Standard Deviation	0.1%
Timed Node.js Compilation - Time To Compile (sec)	**7027**
Normalized	100%
Standard Deviation	0.1%
Timed PHP Compilation - Time To Compile (sec)	**528.433**
Normalized	100%
Standard Deviation	0%

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Build2 - Time To Compile (sec)	**1587**
Normalized	100%
Standard Deviation	0.2%
C-Ray - Total Time - 4.1.R.P.P (sec)	**713.052**
Normalized	100%
Standard Deviation	0%
Parallel BZIP2 Compression - 2.F.C (sec)	**37.310**
Normalized	100%
Standard Deviation	1.7%
POV-Ray - Trace Time (sec)	**542.558**
Normalized	100%
Standard Deviation	0.4%
Primesieve - 1.P.N.G (sec)	**246.931**
Normalized	100%
Standard Deviation	0.2%
Rust Mandelbrot - T.T.C.S.P.M (sec)	**174.668**
Normalized	100%
Standard Deviation	0.4%
Rust Prime Benchmark - P.N.T.T.2.0.0 (sec)	**137.678**
Normalized	100%
Standard Deviation	0.2%
Smallpt - G.I.R.1.S (sec)	**122.772**
Normalized	100%
Standard Deviation	2.6%
Tungsten Renderer - Hair (sec)	281.968
Standard Deviation	0.1%
Tungsten Renderer - Water Caustic (sec)	174.280
Standard Deviation	0.3%
Tungsten Renderer - Non-Exponential (sec)	74.5949
Standard Deviation	0.6%
Tungsten Renderer - Volumetric Caustic (sec)	106.489
Standard Deviation	0.5%
YafaRay - T.T.F.S.S (sec)	**1374**
Normalized	100%
Standard Deviation	0.6%
oneDNN - IP Shapes 1D - f32 - CPU (ms)	96.2267
Standard Deviation	0.3%
oneDNN - IP Shapes 3D - f32 - CPU (ms)	49.1076
Standard Deviation	0.7%
oneDNN - IP Shapes 1D - u8s8f32 - CPU (ms)	41.4672
Standard Deviation	0.1%
oneDNN - IP Shapes 3D - u8s8f32 - CPU (ms)	17.5960
Standard Deviation	0.6%
oneDNN - C.B.S.A - f32 - CPU (ms)	101.0684
Standard Deviation	1.1%
oneDNN - D.B.s - f32 - CPU (ms)	214.029
Standard Deviation	0.4%
oneDNN - D.B.s - f32 - CPU (ms)	318.858
Standard Deviation	0.1%
oneDNN - C.B.S.A - u8s8f32 - CPU (ms)	100.409
Standard Deviation	0.3%
oneDNN - D.B.s - u8s8f32 - CPU (ms)	46.1858
Standard Deviation	0.4%
oneDNN - D.B.s - u8s8f32 - CPU (ms)	70.6852

Standard Deviation	0.5%
oneDNN - R.N.N.T - f32 - CPU (ms)	125912
Standard Deviation	0%
oneDNN - R.N.N.I - f32 - CPU (ms)	62620
Standard Deviation	0.2%
oneDNN - R.N.N.T - u8s8f32 - CPU (ms)	126045
Standard Deviation	0.2%
oneDNN - R.N.N.I - u8s8f32 - CPU (ms)	62670
Standard Deviation	0.2%
oneDNN - M.M.B.S.T - f32 - CPU (ms)	42.4270
Standard Deviation	0.3%
oneDNN - R.N.N.T - bf16bf16bf16 - CPU (ms)	126000
Standard Deviation	0%
oneDNN - R.N.N.I - bf16bf16bf16 - CPU (ms)	62539
Standard Deviation	0.1%
oneDNN - M.M.B.S.T - u8s8f32 - CPU (ms)	46.8205
Standard Deviation	0.3%
AOBench - 2048 x 2048 - Total Time (sec)	**123.983**
Normalized	99.8%
Standard Deviation	0.3%
Timed Eigen Compilation - Time To Compile (sec)	**354.793**
Normalized	100%
Standard Deviation	0.1%
Timed Erlang/OTP Compilation - Time To Compile (sec)	**849.933**
Normalized	100%
Standard Deviation	0.1%
Timed Wasmer Compilation - Time To Compile (sec)	**1158**
Normalized	100%
Standard Deviation	1.1%
FFmpeg - H.2.H.T.N.D (sec)	**20.211**
Normalized	98.65%
Standard Deviation	0.4%
m-queens - Time To Solve (sec)	**555.129**
Normalized	100%
Standard Deviation	0%
N-Queens - Elapsed Time (sec)	**90.998**
Normalized	100%
Standard Deviation	0.3%
Radiance Benchmark - Serial (sec)	2757
Radiance Benchmark - SMP Parallel (sec)	922.835
Cpuminer-Opt - Magi (kH/s)	24.51
Standard Deviation	0.3%
Cpuminer-Opt - x25x (kH/s)	21.39
Standard Deviation	0.4%
Cpuminer-Opt - Deepcoin (kH/s)	720.53
Standard Deviation	6.4%
Cpuminer-Opt - Ringcoin (kH/s)	171.57
Standard Deviation	3%
Cpuminer-Opt - Blake-2 S (kH/s)	18920
Standard Deviation	6.9%
Cpuminer-Opt - Garlicoin (kH/s)	128.63
Standard Deviation	2%
Cpuminer-Opt - Skeincoin (kH/s)	1664
Standard Deviation	1.2%

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Cpuminer-Opt - Myriad-Groestl (kH/s)	1044
Standard Deviation	1.6%
Cpuminer-Opt - LBC, LBRY Credits (kH/s)	682.02
Standard Deviation	7%
Cpuminer-Opt - Q.S.2.P (kH/s)	3330
Standard Deviation	12.2%
Cpuminer-Opt - T.S.2.O (kH/s)	2595
Standard Deviation	11.9%
ASKAP - tConvolve MT - Gridding (Million Grid Points/sec)	**237.800**
Normalized	100%
Standard Deviation	0.1%
ASKAP - tConvolve MT - Degridding (Million Grid Points/sec)	**401.293**
Normalized	100%
Standard Deviation	0.3%
ASKAP - tConvolve MPI - Degridding (Mpix/sec)	**157.628**
Normalized	100%
Standard Deviation	0.3%
ASKAP - tConvolve MPI - Gridding (Mpix/sec)	**134.104**
Normalized	100%
Standard Deviation	0.2%
ASKAP - tConvolve OpenMP - Gridding (Million Grid Points/sec)	**217.062**
Normalized	100%
Standard Deviation	0.6%
ASKAP - tConvolve OpenMP - Degridding (Million Grid Points/sec)	**409.625**
Normalized	100%
Standard Deviation	0.2%
ASKAP - H.C.O (Iterations/sec)	**34.2587**
Normalized	100%
Standard Deviation	0.4%
Intel MPI Benchmarks - IMB-P2P PingPong (Msg/sec)	**1416302**
Normalized	100%
Standard Deviation	4.7%
Intel MPI Benchmarks - IMB-MPI1 Exchange (Mbytes/sec)	**1609**
Normalized	100%
Standard Deviation	1.2%
Intel MPI Benchmarks - IMB-MPI1 Exchange (usec)	**1054**
Normalized	100%
Standard Deviation	3.4%
Intel MPI Benchmarks - IMB-MPI1 PingPong (Mbytes/sec)	**1311**
Normalized	100%
Standard Deviation	2.2%
Intel MPI Benchmarks - IMB-MPI1 Sendrecv (Mbytes/sec)	**1593**
Normalized	100%
Standard Deviation	1.1%
Intel MPI Benchmarks - IMB-MPI1 Sendrecv (usec)	**548.76**
Normalized	100%
Standard Deviation	4.2%
GROMACS - MPI CPU - water_GMX50_bare (Ns/Day)	0.039
Standard Deviation	0%
MariaDB - 1 (Queries/sec)	2239
Standard Deviation	0.9%
MariaDB - 4 (Queries/sec)	1193
Standard Deviation	0.2%
MariaDB - 8 (Queries/sec)	720
Standard Deviation	0.4%

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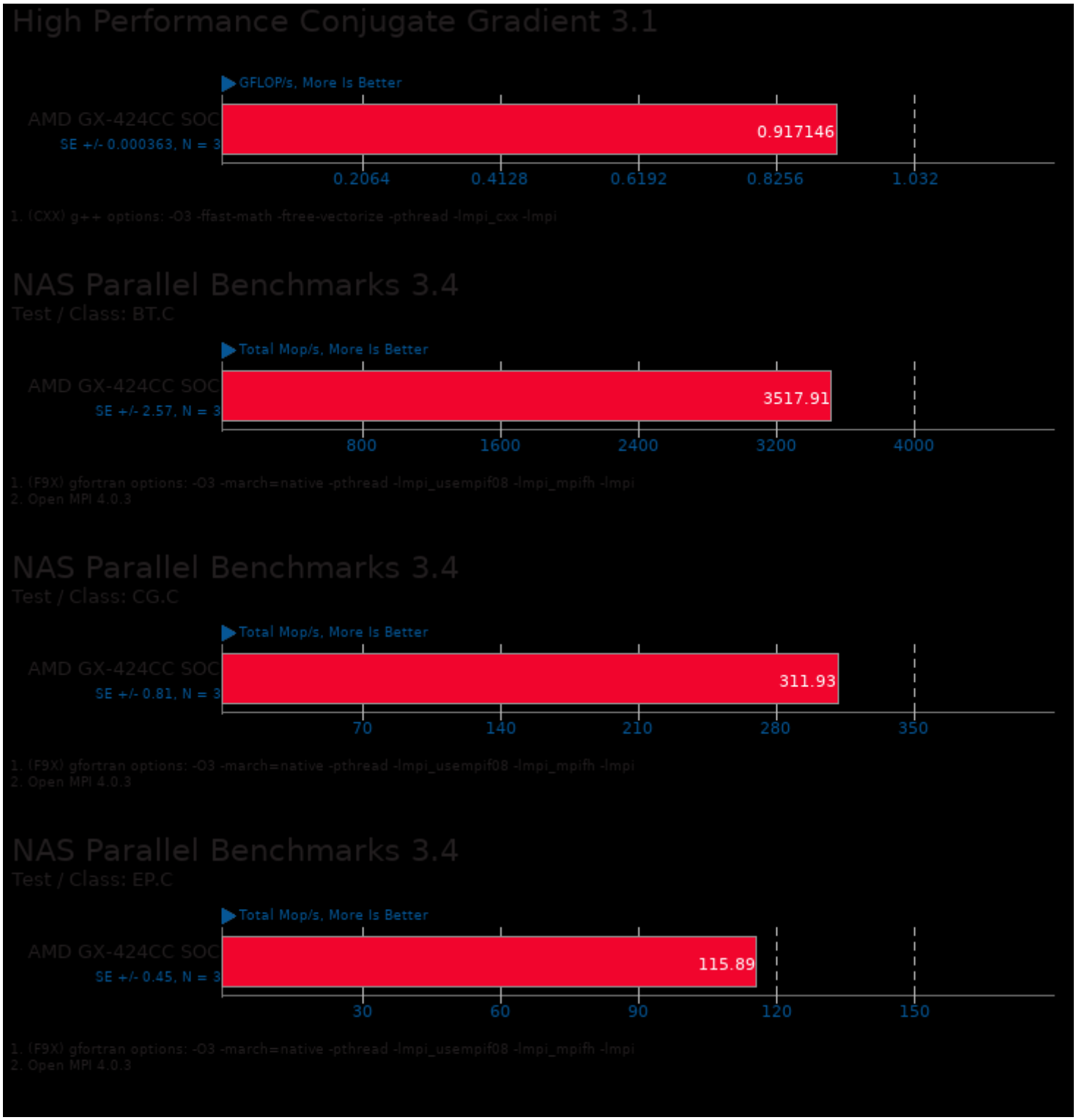
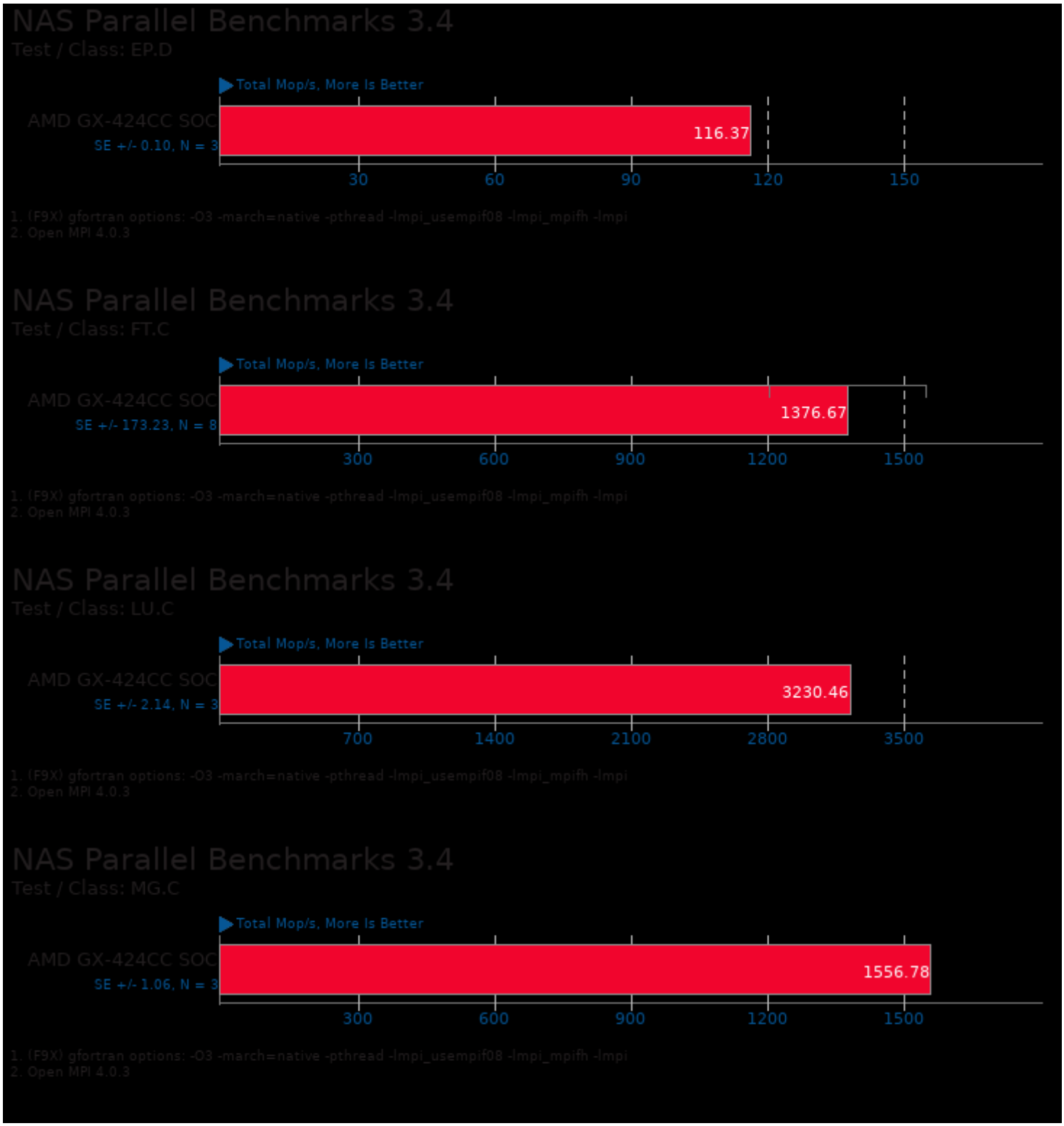
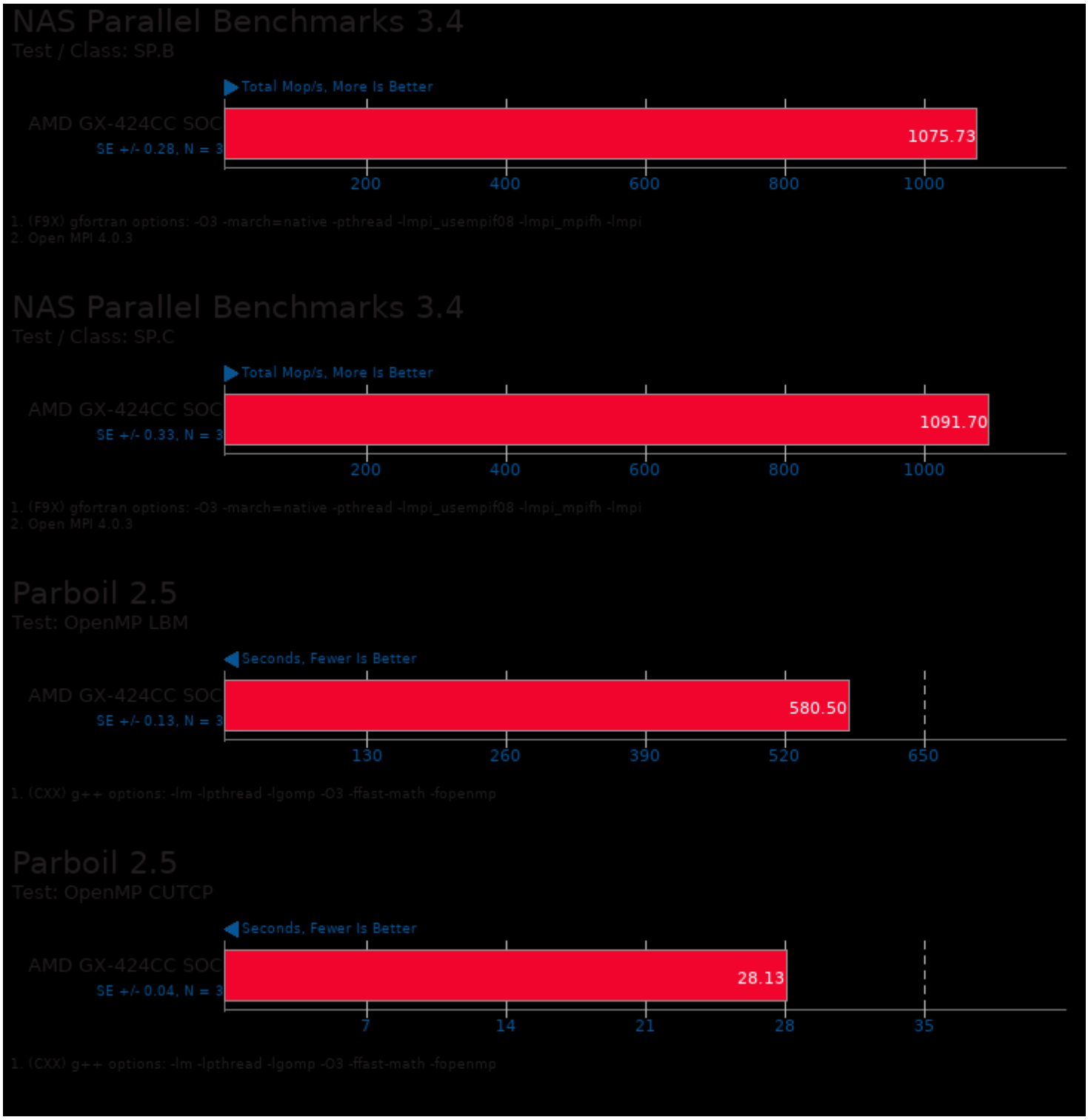
MariaDB - 16 (Queries/sec)	393
Standard Deviation	0%
MariaDB - 32 (Queries/sec)	205
Standard Deviation	0.6%
MariaDB - 64 (Queries/sec)	104
Standard Deviation	0%
OpenVKL - vklBenchmark ISPC (Items / Sec)	5
OpenVKL - v.S (Items / Sec)	4
MariaDB - 1 (Queries/sec)	3492
Standard Deviation	0.2%
MariaDB - 8 (Queries/sec)	1402
Standard Deviation	0.4%
MariaDB - 16 (Queries/sec)	737
Standard Deviation	0.4%
MariaDB - 32 (Queries/sec)	374
Standard Deviation	0.1%
MariaDB - 64 (Queries/sec)	190
Standard Deviation	0.3%
MariaDB - 128 (Queries/sec)	95
Standard Deviation	0.1%
MariaDB - 256 (Queries/sec)	76
Standard Deviation	0.8%
MariaDB - 512 (Queries/sec)	34
Standard Deviation	0.6%
MariaDB - 1024 (Queries/sec)	8
Standard Deviation	1.5%
MariaDB - 2048 (Queries/sec)	8
Standard Deviation	0.5%
MariaDB - 4096 (Queries/sec)	8
Standard Deviation	0.5%
Sysbench - RAM / Memory (MiB/sec)	4400
Standard Deviation	1.5%
Sysbench - CPU (Events/sec)	4443
Standard Deviation	0%
OpenVINO - F.D.0.F - CPU (FPS)	0.11
Standard Deviation	0%
OpenVINO - F.D.0.F - CPU (ms)	36770
Standard Deviation	0.7%
OpenVINO - F.D.0.F - CPU (FPS)	0.11
Standard Deviation	0%
OpenVINO - F.D.0.F - CPU (ms)	36707
Standard Deviation	0.3%
OpenVINO - P.D.0.F - CPU (FPS)	0.07
Standard Deviation	0%
OpenVINO - P.D.0.F - CPU (ms)	56075
Standard Deviation	0.7%
OpenVINO - P.D.0.F - CPU (FPS)	0.07
Standard Deviation	0%
OpenVINO - P.D.0.F - CPU (ms)	56334
Standard Deviation	0.1%
OpenVINO - A.G.R.R.0.F - CPU (FPS)	323.04
Standard Deviation	0.3%
OpenVINO - A.G.R.R.0.F - CPU (ms)	11.81

Standard Deviation	0.3%
OpenVINO - A.G.R.R.0.F - CPU (FPS)	323.47
Standard Deviation	0.3%
OpenVINO - A.G.R.R.0.F - CPU (ms)	11.81
Standard Deviation	0.2%
IndigoBench - CPU - Bedroom (M samples/s)	0.147
Standard Deviation	0%
IndigoBench - CPU - Supercar (M samples/s)	0.284
Standard Deviation	0.8%
Apache Cassandra - Writes (Op/s)	5578
Standard Deviation	2.3%
Blender - BMW27 - CPU-Only (sec)	2341
Standard Deviation	0.3%
Xsbench (Lookups/s)	217073
Standard Deviation	0.2%
NeatBench - All (FPS)	0.883
Standard Deviation	0.2%
NeatBench - CPU (FPS)	0.884
Standard Deviation	0.2%
Natron - Spaceship (FPS)	0.3
Standard Deviation	0%
Appleseed - Emily (sec)	5238
Appleseed - Disney Material (sec)	4011
Appleseed - Material Tester (sec)	3278

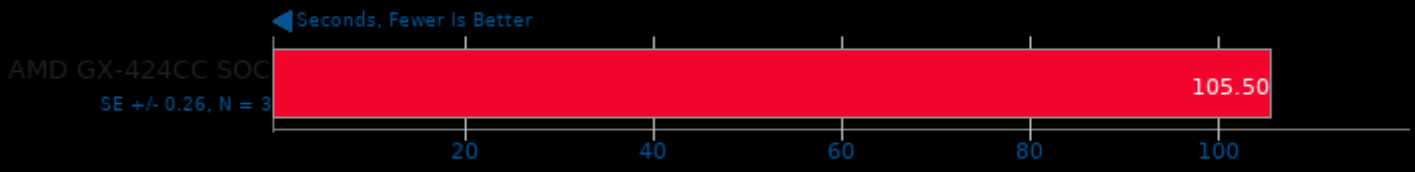

High Performance Conjugate Gradient 3.1
GFLOP/s, More Is Better
AMD GX-424CC SOC
SE +/- 0.000363, N = 3
0.917146
0.2064
0.4128
0.6192
0.8256
1.032
1. (CXX) g++ options: -O3 -ffast-math -ftree-vectorize -pthread -lmpi_cxx -lmpi
NAS Parallel Benchmarks 3.4
Test / Class: BT.C
Total Mop/s, More Is Better
AMD GX-424CC SOC
SE +/- 2.57, N = 3
3517.91
800
1600
2400
3200
4000
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 4.0.3
NAS Parallel Benchmarks 3.4
Test / Class: CG.C
Total Mop/s, More Is Better
AMD GX-424CC SOC
SE +/- 0.81, N = 3
311.93
70
140
210
280
350
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 4.0.3
NAS Parallel Benchmarks 3.4
Test / Class: EP.C
Total Mop/s, More Is Better
AMD GX-424CC SOC
SE +/- 0.45, N = 3
115.89
30
60
90
120
150
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 4.0.3


NAS Parallel Benchmarks 3.4
Test / Class: EP.D
Total Mop/s, More Is Better
AMD GX-424CC SOC
SE +/- 0.10, N = 3
116.37
30
60
90
120
150
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 4.0.3
NAS Parallel Benchmarks 3.4
Test / Class: FT.C
Total Mop/s, More Is Better
AMD GX-424CC SOC
SE +/- 173.23, N = 8
1376.67
300
600
900
1200
1500
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 4.0.3
NAS Parallel Benchmarks 3.4
Test / Class: LU.C
Total Mop/s, More Is Better
AMD GX-424CC SOC
SE +/- 2.14, N = 3
3230.46
700
1400
2100
2800
3500
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 4.0.3
NAS Parallel Benchmarks 3.4
Test / Class: MG.C
Total Mop/s, More Is Better
AMD GX-424CC SOC
SE +/- 1.06, N = 3
1556.78
300
600
900
1200
1500
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 4.0.3


NAS Parallel Benchmarks 3.4
Test / Class: SP.B
Total Mop/s, More Is Better
AMD GX-424CC SOC
SE +/- 0.28, N = 3
1075.73
200
400
600
800
1000
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 4.0.3
NAS Parallel Benchmarks 3.4
Test / Class: SP.C
Total Mop/s, More Is Better
AMD GX-424CC SOC
SE +/- 0.33, N = 3
1091.70
200
400
600
800
1000
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 4.0.3
Parboil 2.5
Test: OpenMP LBM
Seconds, Fewer Is Better
AMD GX-424CC SOC
SE +/- 0.13, N = 3
580.50
130
260
390
520
650
1. (CXX) g++ options: -lm -lpthread -lgomp -O3 -ffast-math -fopenmp
Parboil 2.5
Test: OpenMP CUTCP
Seconds, Fewer Is Better
AMD GX-424CC SOC
SE +/- 0.04, N = 3
28.13
7
14
21
28
35
1. (CXX) g++ options: -lm -lpthread -lgomp -O3 -ffast-math -fopenmp

Parboil 2.5

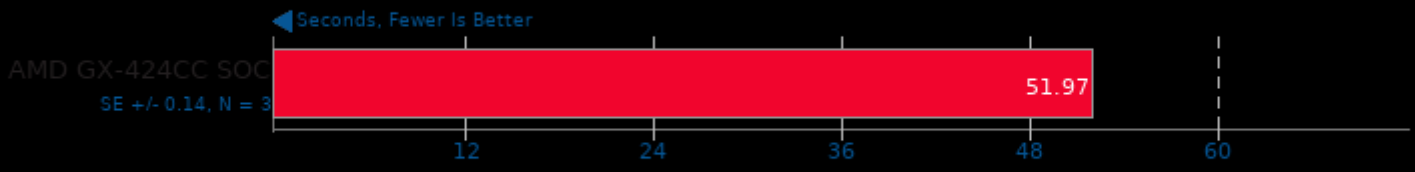
Test: OpenMP Stencil



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

Parboil 2.5

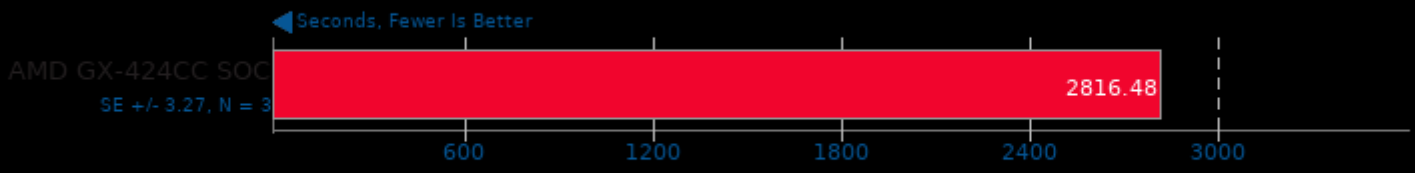
Test: OpenMP MRI Gridding



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

Rodinia 3.1

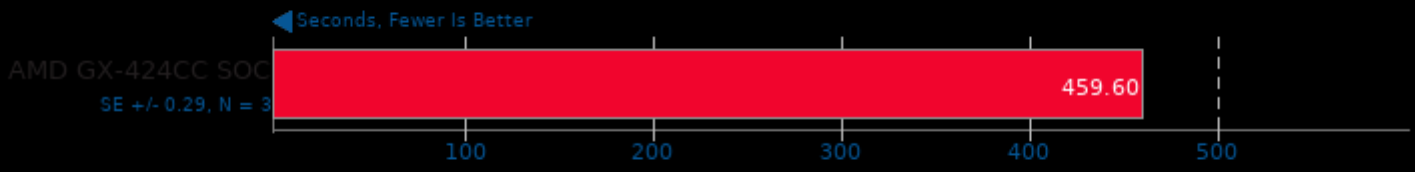
Test: OpenMP LavaMD



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

Rodinia 3.1

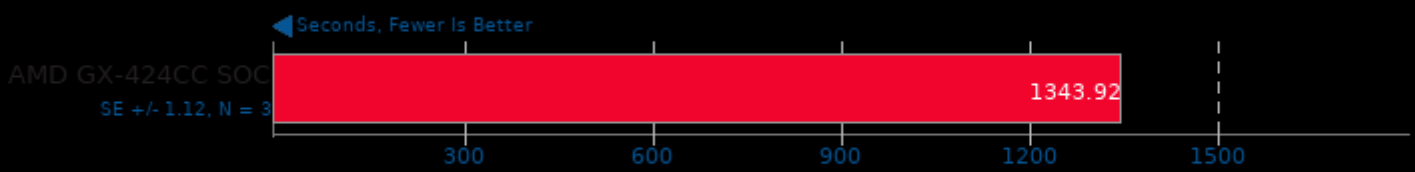
Test: OpenMP HotSpot3D



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

Rodinia 3.1

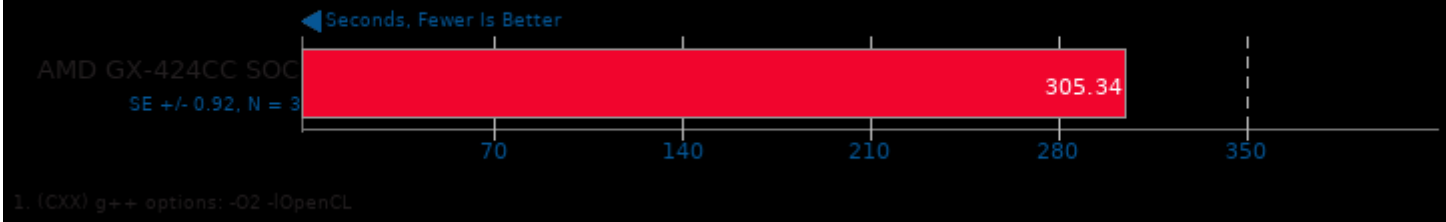
Test: OpenMP Leukocyte



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

Rodinia 3.1

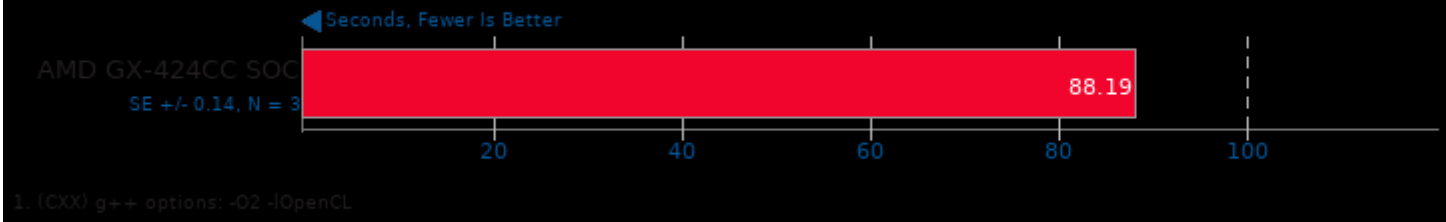
Test: OpenMP CFD Solver



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

Rodinia 3.1

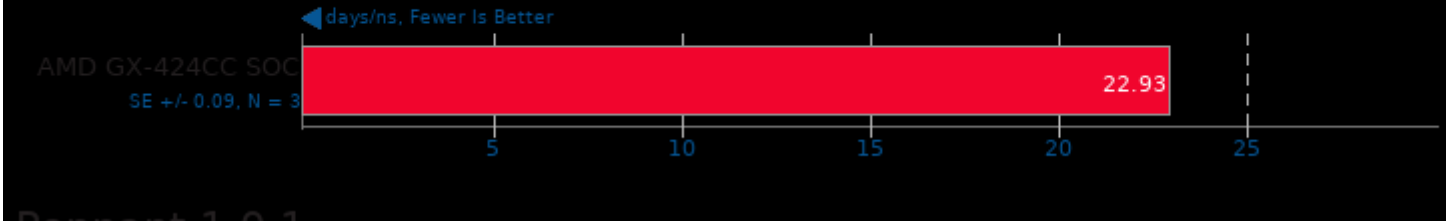
Test: OpenMP Streamcluster



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

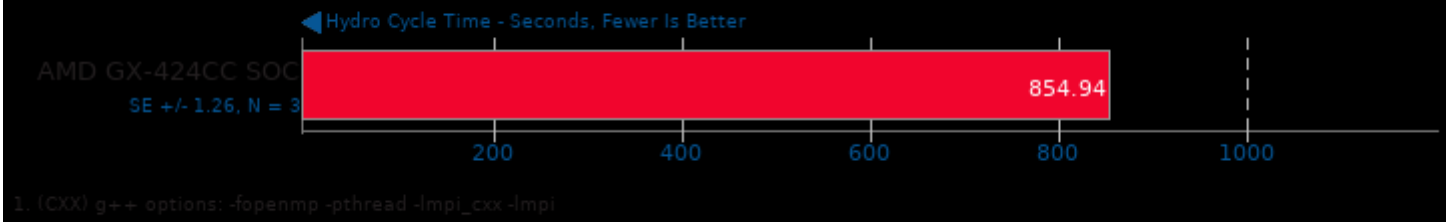
NAMD 2.14

ATPase Simulation - 327,506 Atoms



Pennant 1.0.1

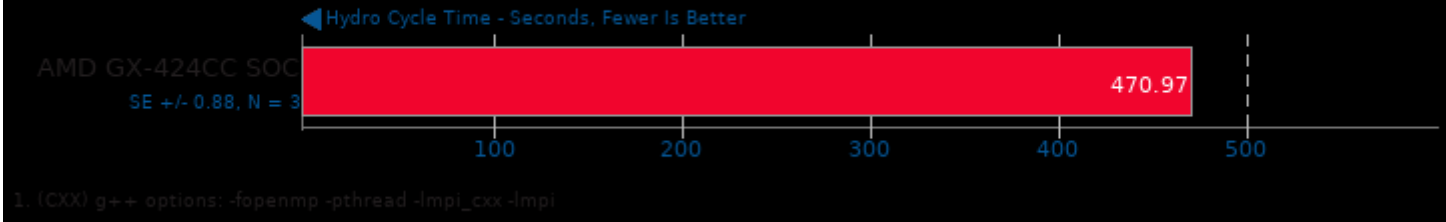
Test: sedovbig



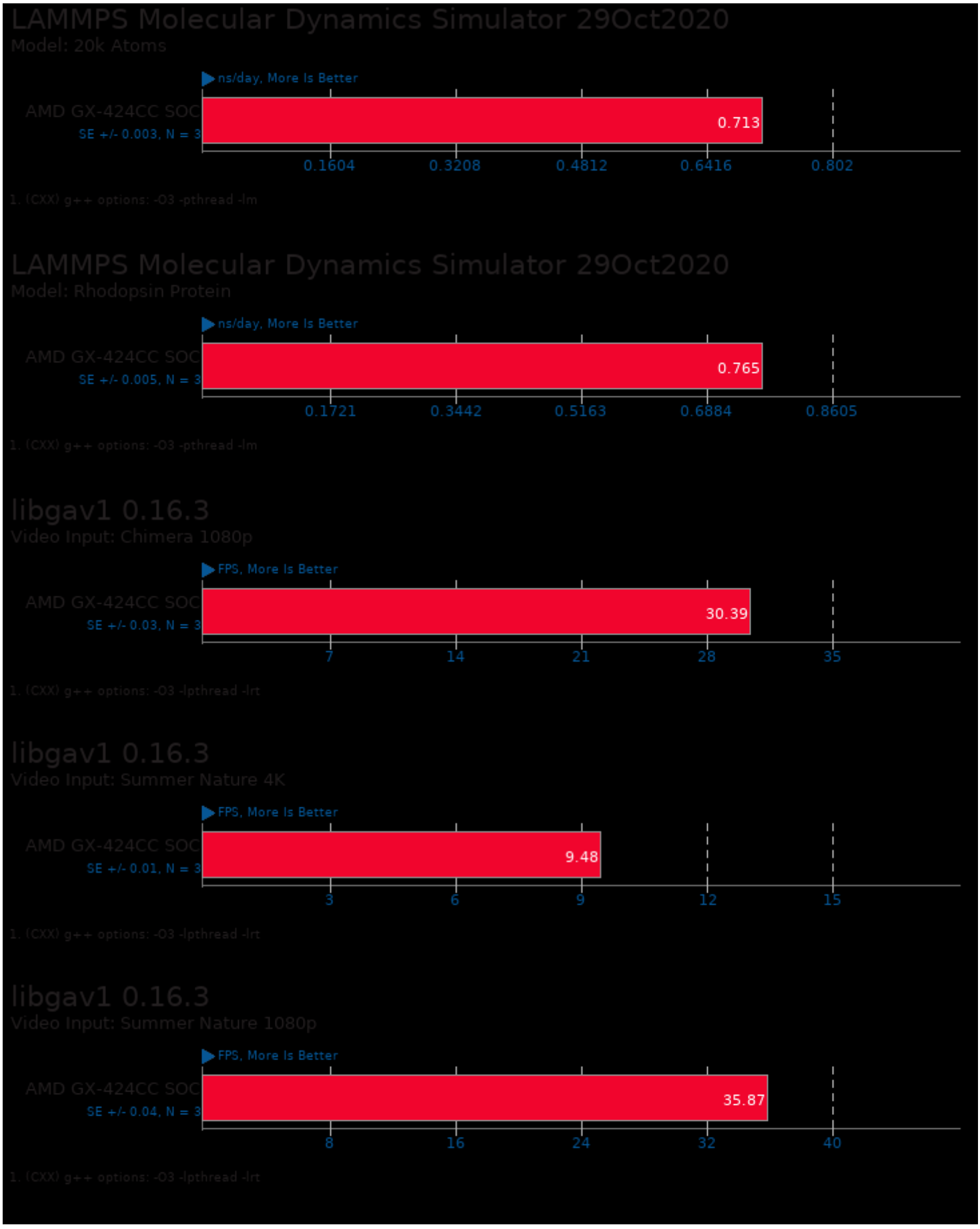
1. (CXX) g++ options: -fopenmp -pthread -lmpi_cxx -lmpi

Pennant 1.0.1

Test: leblancbig

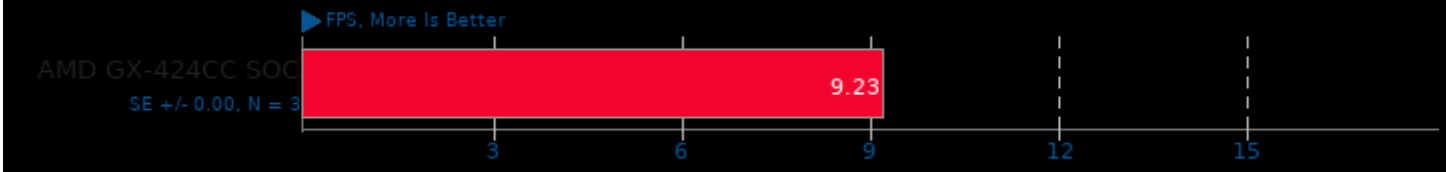


1. (CXX) g++ options: -fopenmp -pthread -lmpi_cxx -lmpi


LAMMPS Molecular Dynamics Simulator 29Oct2020
Model: 20k Atoms
ns/day, More Is Better
AMD GX-424CC SOC
SE +/- 0.003, N = 3
0.713
0.1604
0.3208
0.4812
0.6416
0.802
1. (CXX) g++ options: -O3 -pthread -lm
LAMMPS Molecular Dynamics Simulator 29Oct2020
Model: Rhodopsin Protein
ns/day, More Is Better
AMD GX-424CC SOC
SE +/- 0.005, N = 3
0.765
0.1721
0.3442
0.5163
0.6884
0.8605
1. (CXX) g++ options: -O3 -pthread -lm
libgav1 0.16.3
Video Input: Chimera 1080p
FPS, More Is Better
AMD GX-424CC SOC
SE +/- 0.03, N = 3
30.39
7
14
21
28
35
1. (CXX) g++ options: -O3 -lpthread -lrt
libgav1 0.16.3
Video Input: Summer Nature 4K
FPS, More Is Better
AMD GX-424CC SOC
SE +/- 0.01, N = 3
9.48
3
6
9
12
15
1. (CXX) g++ options: -O3 -lpthread -lrt
libgav1 0.16.3
Video Input: Summer Nature 1080p
FPS, More Is Better
AMD GX-424CC SOC
SE +/- 0.04, N = 3
35.87
8
16
24
32
40
1. (CXX) g++ options: -O3 -lpthread -lrt

libgav1 0.16.3

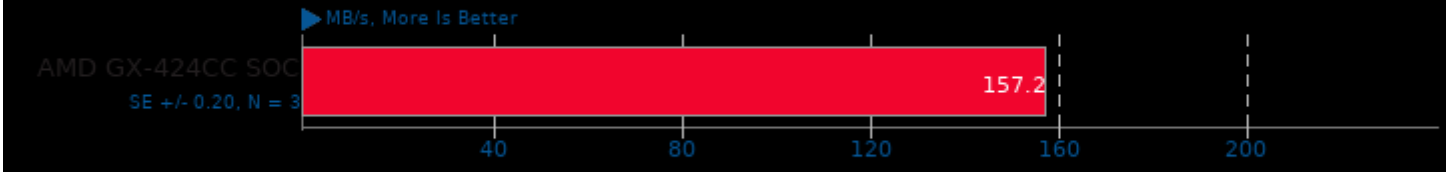
Video Input: Chimera 1080p 10-bit



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

Zstd Compression 1.5.0

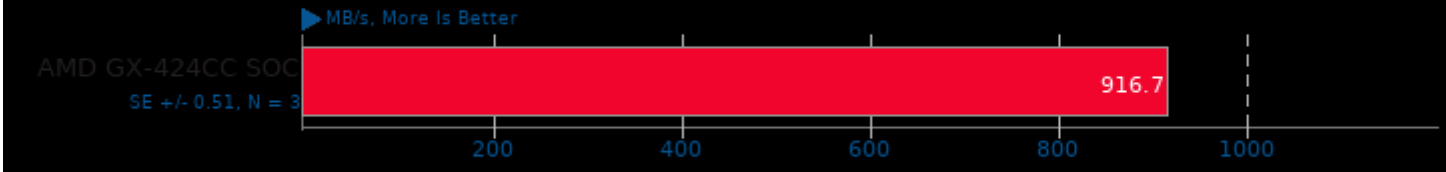
Compression Level: 3 - Compression Speed



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

Zstd Compression 1.5.0

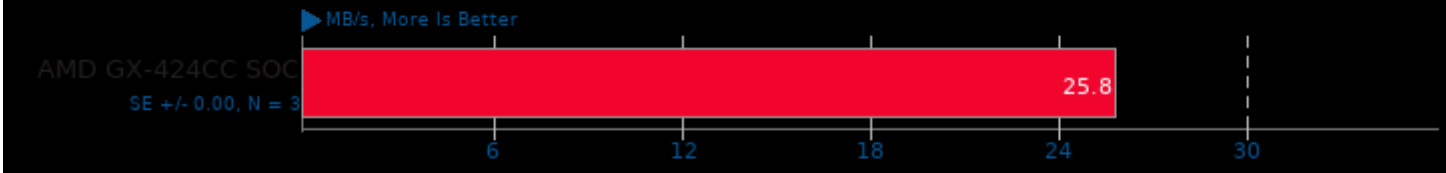
Compression Level: 3 - Decompression Speed



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

Zstd Compression 1.5.0

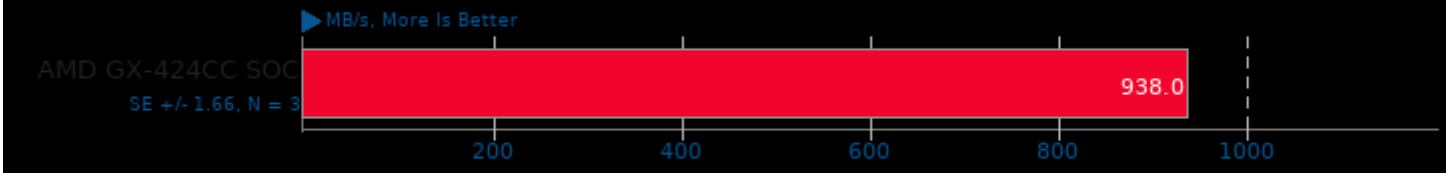
Compression Level: 8 - Compression Speed



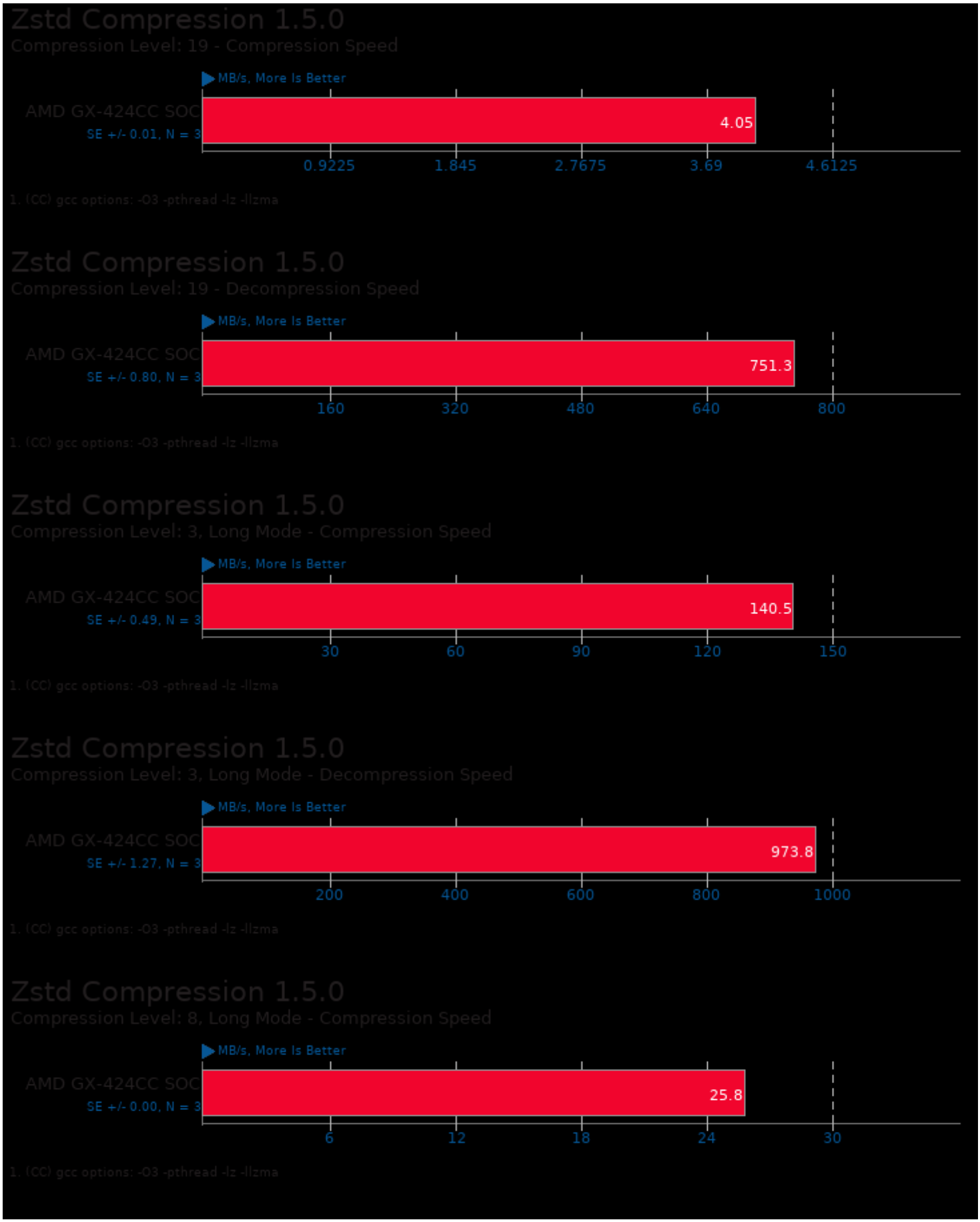
1. (CC) gcc options: -O3 -pthread -lz -llzma

Zstd Compression 1.5.0

Compression Level: 8 - Decompression Speed

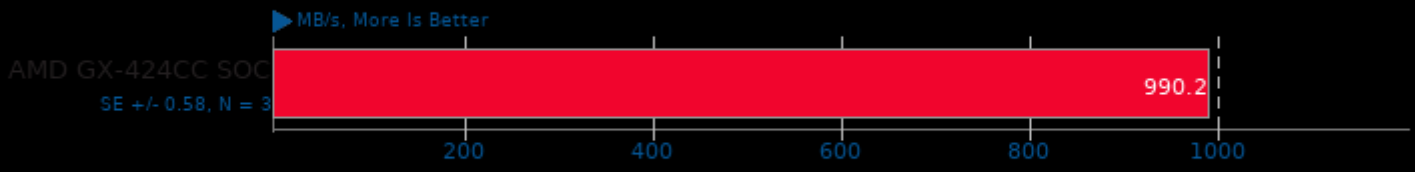


1. (CC) gcc options: -O3 -pthread -lz -llzma


Zstd Compression 1.5.0
Compression Level: 19 - Compression Speed
MB/s, More Is Better
AMD GX-424CC SOC
SE +/- 0.01, N = 3
4.05
0.9225
1.845
2.7675
3.69
4.6125
1. (CC) gcc options: -O3 -pthread -lz -llzma
Zstd Compression 1.5.0
Compression Level: 19 - Decompression Speed
MB/s, More Is Better
AMD GX-424CC SOC
SE +/- 0.80, N = 3
751.3
160
320
480
640
800
1. (CC) gcc options: -O3 -pthread -lz -llzma
Zstd Compression 1.5.0
Compression Level: 3, Long Mode - Compression Speed
MB/s, More Is Better
AMD GX-424CC SOC
SE +/- 0.49, N = 3
140.5
30
60
90
120
150
1. (CC) gcc options: -O3 -pthread -lz -llzma
Zstd Compression 1.5.0
Compression Level: 3, Long Mode - Decompression Speed
MB/s, More Is Better
AMD GX-424CC SOC
SE +/- 1.27, N = 3
973.8
200
400
600
800
1000
1. (CC) gcc options: -O3 -pthread -lz -llzma
Zstd Compression 1.5.0
Compression Level: 8, Long Mode - Compression Speed
MB/s, More Is Better
AMD GX-424CC SOC
SE +/- 0.00, N = 3
25.8
6
12
18
24
30
1. (CC) gcc options: -O3 -pthread -lz -llzma

Zstd Compression 1.5.0

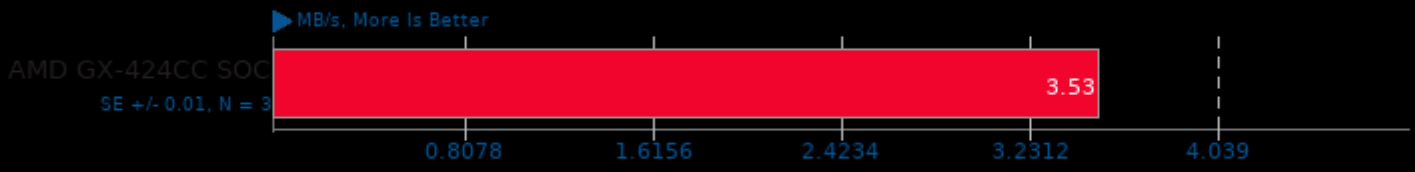
Compression Level: 8, Long Mode - Decompression Speed



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

Zstd Compression 1.5.0

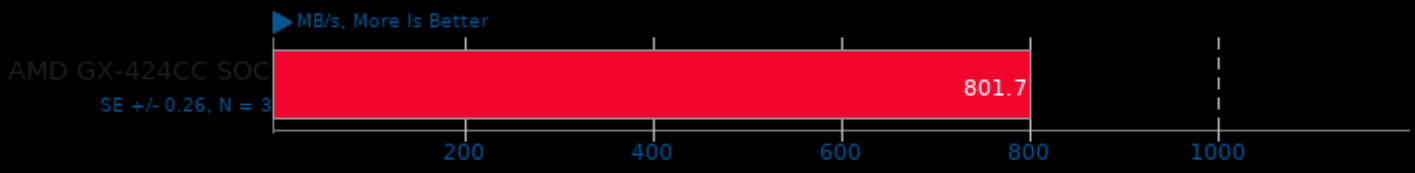
Compression Level: 19, Long Mode - Compression Speed



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

Zstd Compression 1.5.0

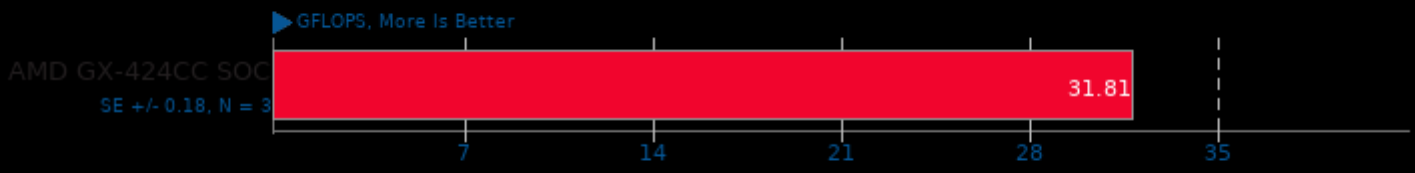
Compression Level: 19, Long Mode - Decompression Speed



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

ArrayFire 3.7

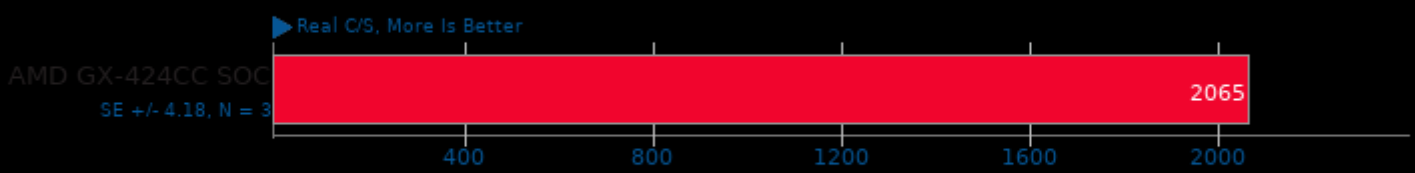
Test: BLAS CPU



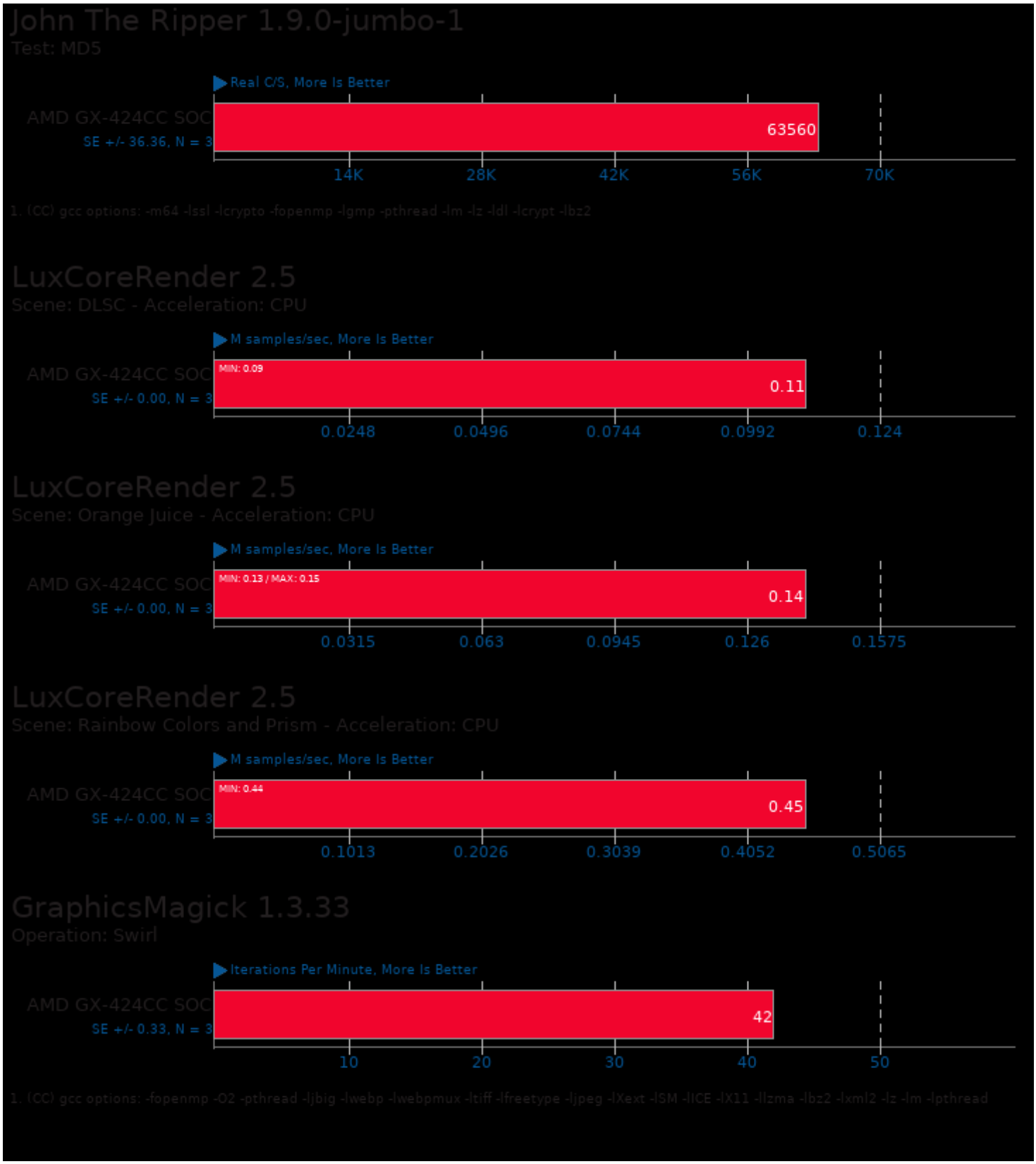
1. (CXX) g++ options: -rdynamic

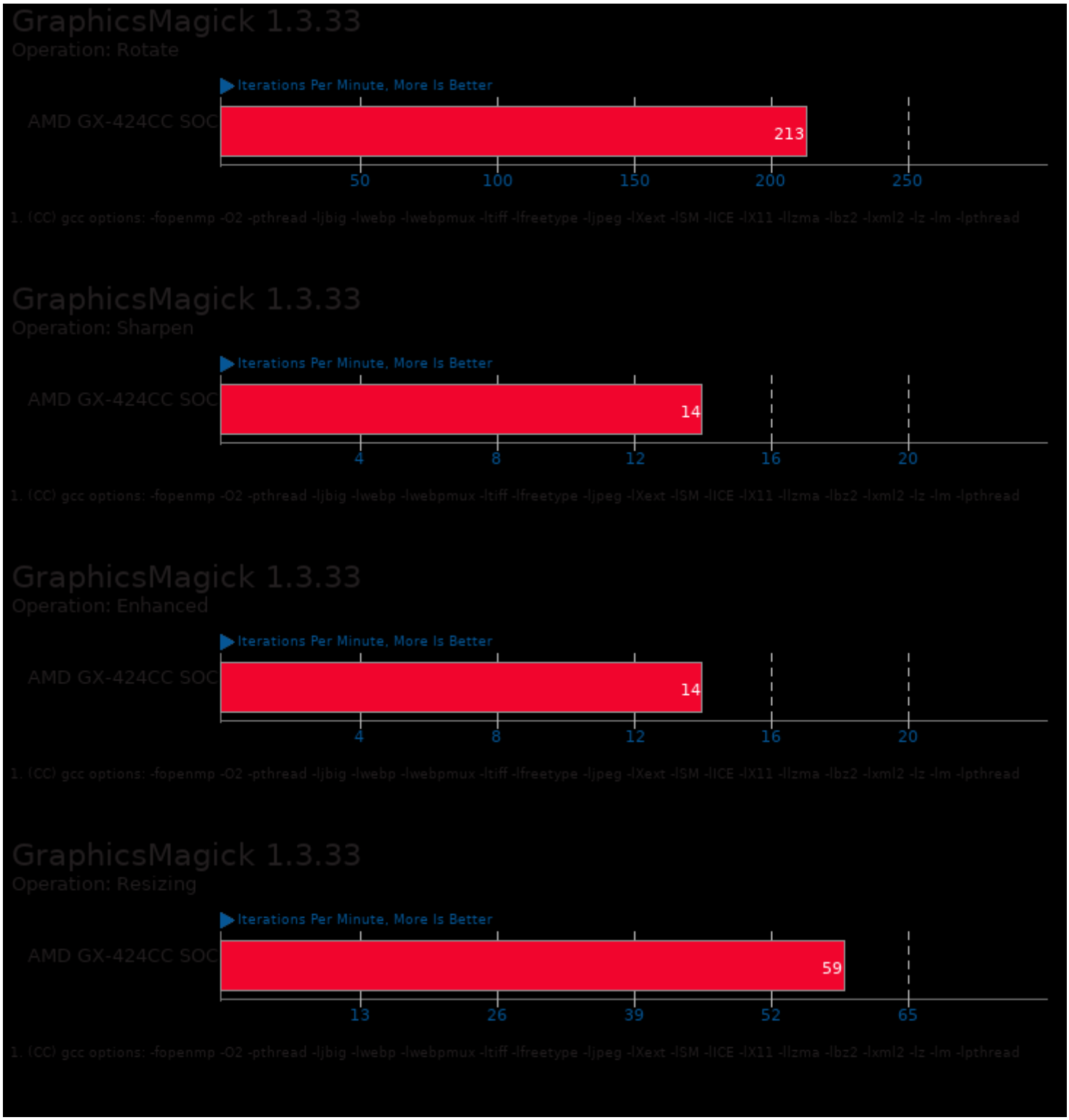
John The Ripper 1.9.0-jumbo-1

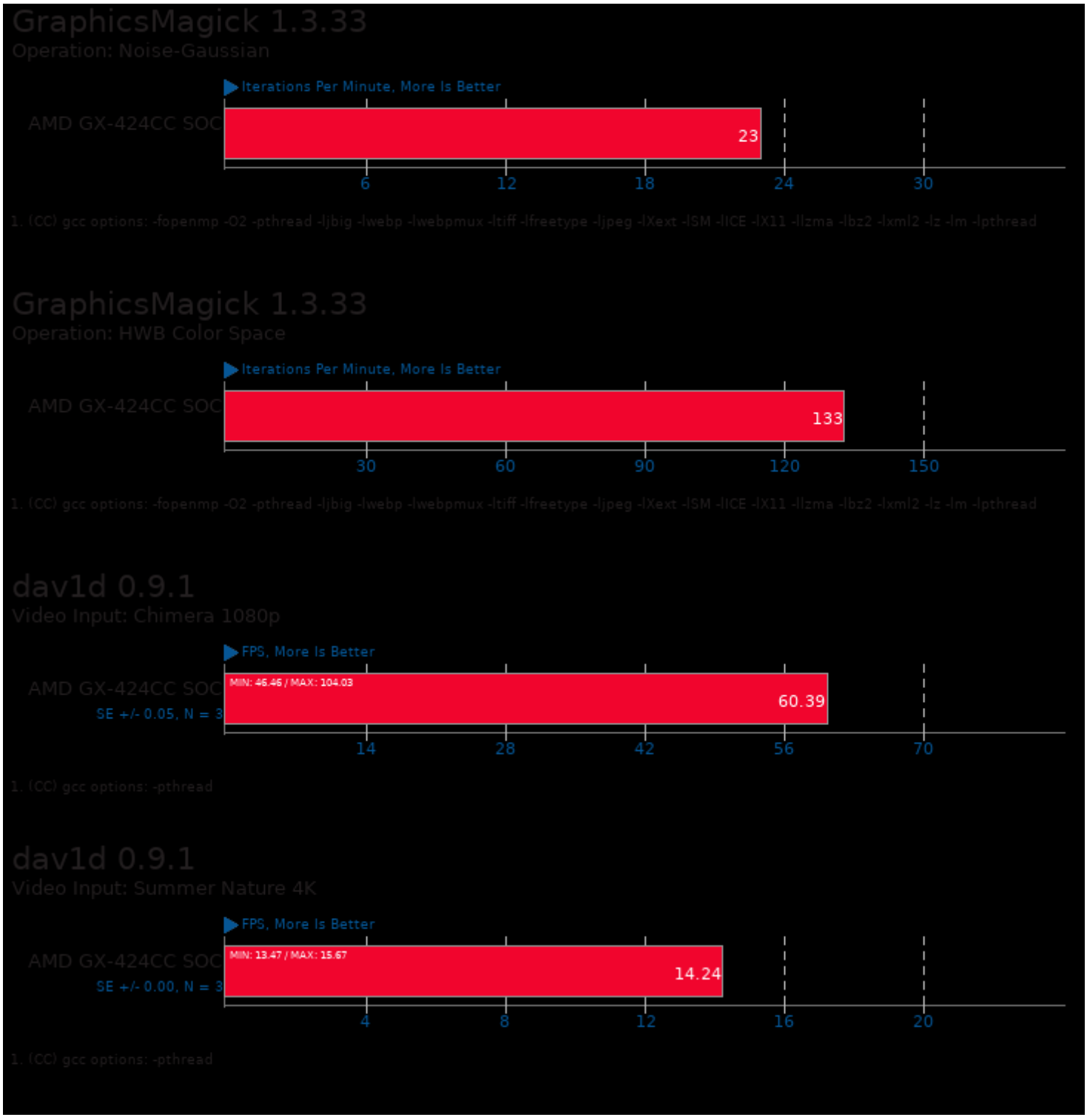
Test: Blowfish



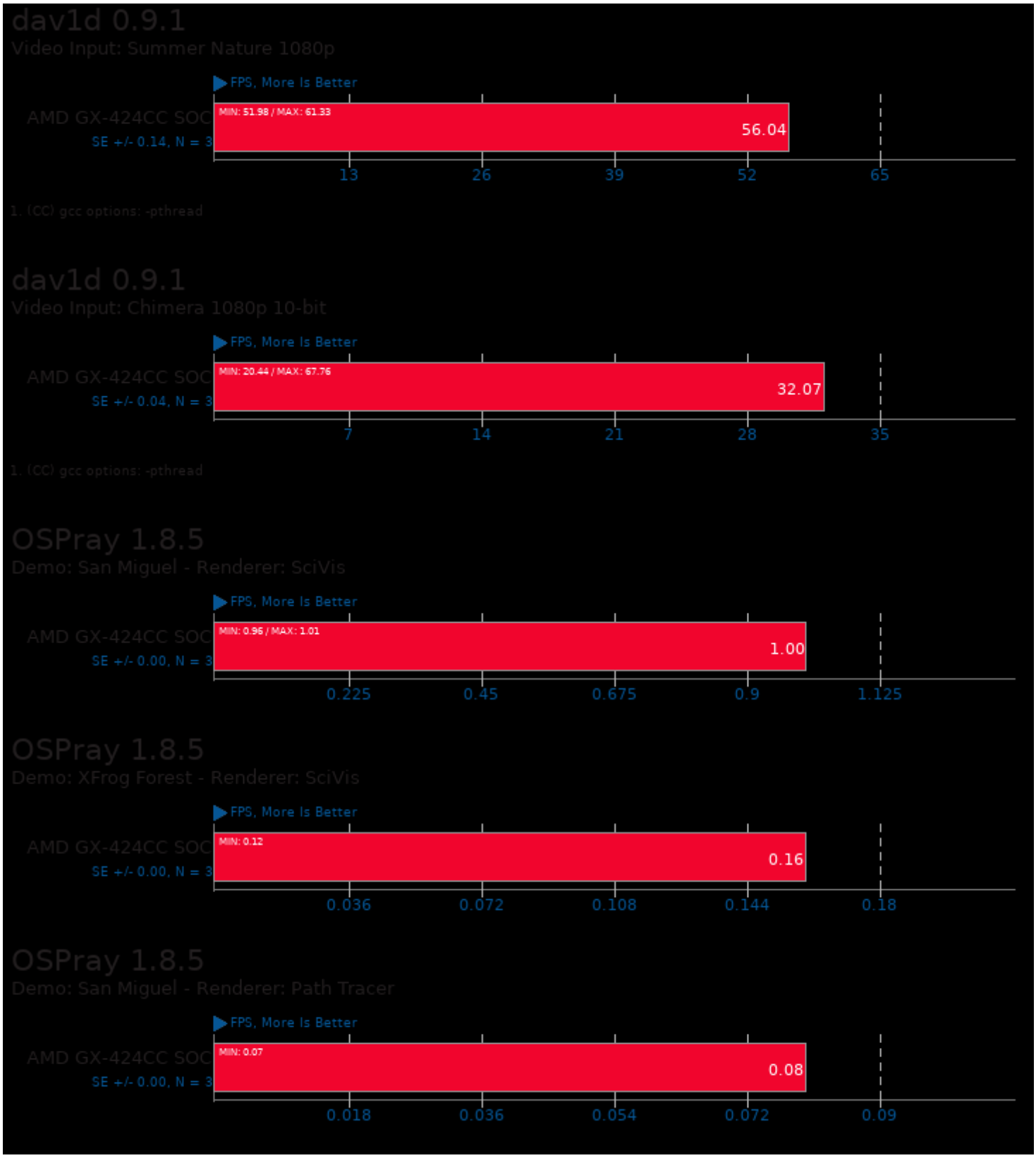
1. (CC) gcc options: -m64 -lssl -lcrypto -fopenmp -lgmp -pthread -lm -lz -ldl -lcrypt -lbz2


John The Ripper 1.9.0-jumbo-1
Test: MD5
Real C/S, More Is Better
AMD GX-424CC SOC
SE +/- 36.36, N = 3
63560
14K
28K
42K
56K
70K
1. (CC) gcc options: -m64 -lssl -lcrypto -fopenmp -lgmp -pthread -lm -lz -ldl -lcrypt -lbz2
LuxCoreRender 2.5
Scene: DLSC - Acceleration: CPU
M samples/sec, More Is Better
AMD GX-424CC SOC
SE +/- 0.00, N = 3
MIN: 0.09
0.11
0.0248
0.0496
0.0744
0.0992
0.124
LuxCoreRender 2.5
Scene: Orange Juice - Acceleration: CPU
M samples/sec, More Is Better
AMD GX-424CC SOC
SE +/- 0.00, N = 3
MIN: 0.13 / MAX: 0.15
0.14
0.0315
0.063
0.0945
0.126
0.1575
LuxCoreRender 2.5
Scene: Rainbow Colors and Prism - Acceleration: CPU
M samples/sec, More Is Better
AMD GX-424CC SOC
SE +/- 0.00, N = 3
MIN: 0.44
0.45
0.1013
0.2026
0.3039
0.4052
0.5065
GraphicsMagick 1.3.33
Operation: Swirl
Iterations Per Minute, More Is Better
AMD GX-424CC SOC
SE +/- 0.33, N = 3
42
10
20
30
40
50
1. (CC) gcc options: -fopenmp -O2 -pthread -ljbig -lwebp -lwebpmux -ltiff -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -llzma -lbz2 -lxml2 -lz -lm -lpthread

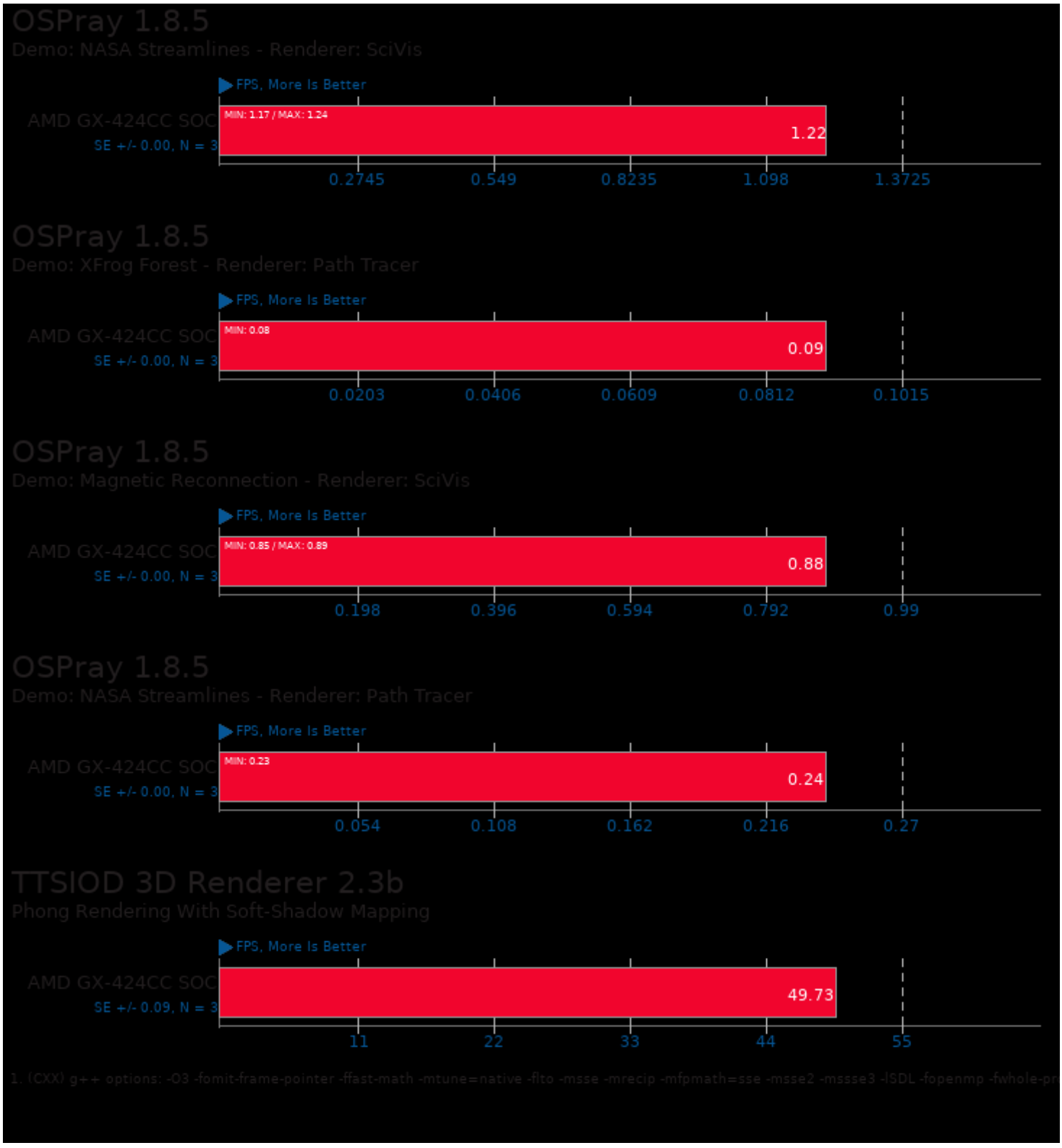

GraphicsMagick 1.3.33
Operation: Rotate
Iterations Per Minute, More Is Better
AMD GX-424CC SOC
213
50
100
150
200
250
1. (CC) gcc options: -fopenmp -O2 -pthread -ljbig -lwebp -lwebpmux -ltiff -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -llzma -lbz2 -lxml2 -lz -lm -lpthread
GraphicsMagick 1.3.33
Operation: Sharpen
Iterations Per Minute, More Is Better
AMD GX-424CC SOC
14
4
8
12
16
20
1. (CC) gcc options: -fopenmp -O2 -pthread -ljbig -lwebp -lwebpmux -ltiff -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -llzma -lbz2 -lxml2 -lz -lm -lpthread
GraphicsMagick 1.3.33
Operation: Enhanced
Iterations Per Minute, More Is Better
AMD GX-424CC SOC
14
4
8
12
16
20
1. (CC) gcc options: -fopenmp -O2 -pthread -ljbig -lwebp -lwebpmux -ltiff -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -llzma -lbz2 -lxml2 -lz -lm -lpthread
GraphicsMagick 1.3.33
Operation: Resizing
Iterations Per Minute, More Is Better
AMD GX-424CC SOC
59
13
26
39
52
65
1. (CC) gcc options: -fopenmp -O2 -pthread -ljbig -lwebp -lwebpmux -ltiff -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -llzma -lbz2 -lxml2 -lz -lm -lpthread

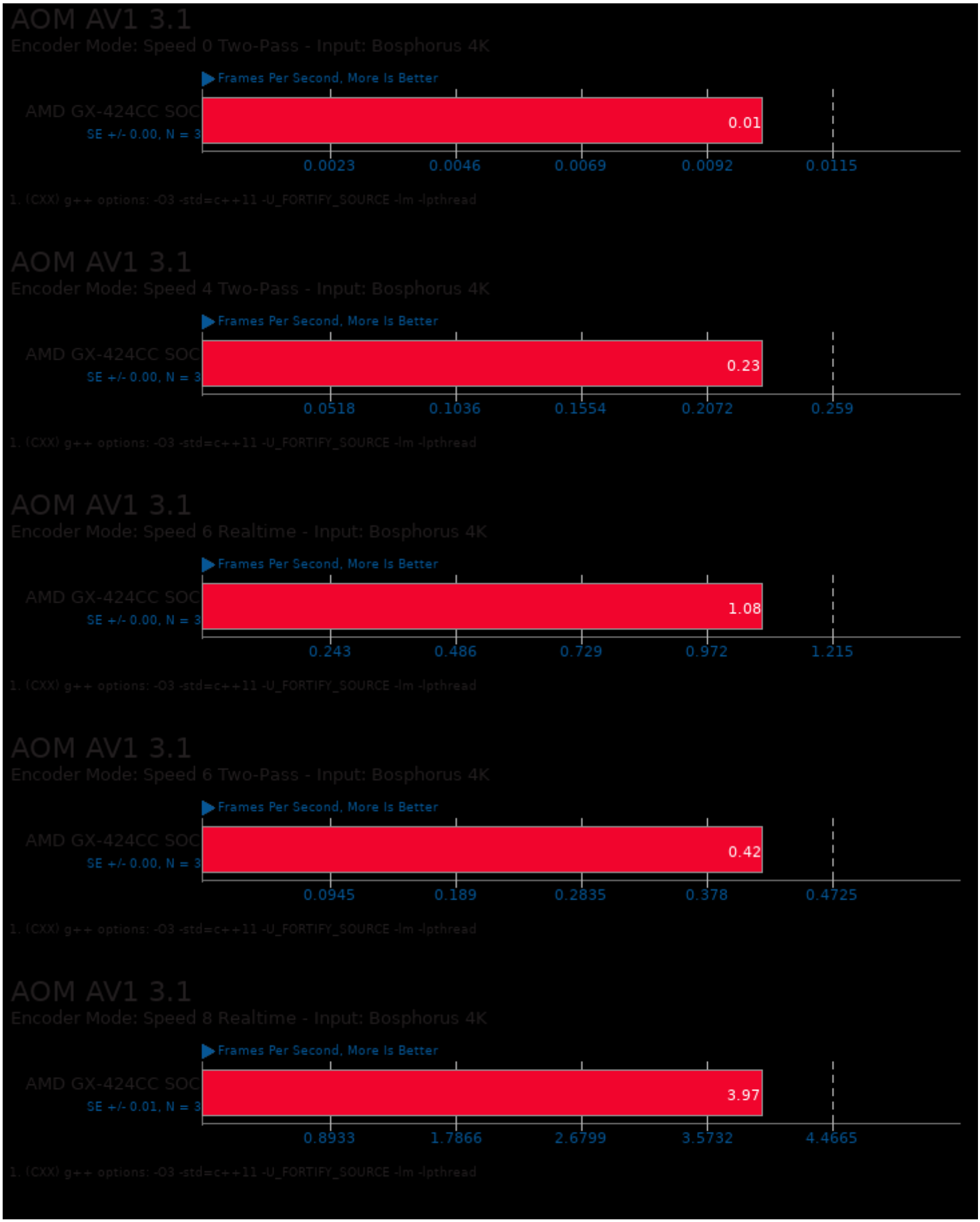

GraphicsMagick 1.3.33
Operation: Noise-Gaussian
Iterations Per Minute, More Is Better
AMD GX-424CC SOC
23
6
12
18
24
30
1. (CC) gcc options: -fopenmp -O2 -pthread -ljbig -lwebp -lwebpmux -ltiff -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -llzma -lbz2 -lxml2 -lz -lm -lpthread
GraphicsMagick 1.3.33
Operation: HWB Color Space
Iterations Per Minute, More Is Better
AMD GX-424CC SOC
133
30
60
90
120
150
1. (CC) gcc options: -fopenmp -O2 -pthread -ljbig -lwebp -lwebpmux -ltiff -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -llzma -lbz2 -lxml2 -lz -lm -lpthread
dav1d 0.9.1
Video Input: Chimera 1080p
FPS, More Is Better
AMD GX-424CC SOC
MIN: 46.46 / MAX: 104.03
SE +/- 0.05, N = 3
60.39
14
28
42
56
70
1. (CC) gcc options: -pthread
dav1d 0.9.1
Video Input: Summer Nature 4K
FPS, More Is Better
AMD GX-424CC SOC
MIN: 13.47 / MAX: 15.67
SE +/- 0.00, N = 3
14.24
4
8
12
16
20
1. (CC) gcc options: -pthread

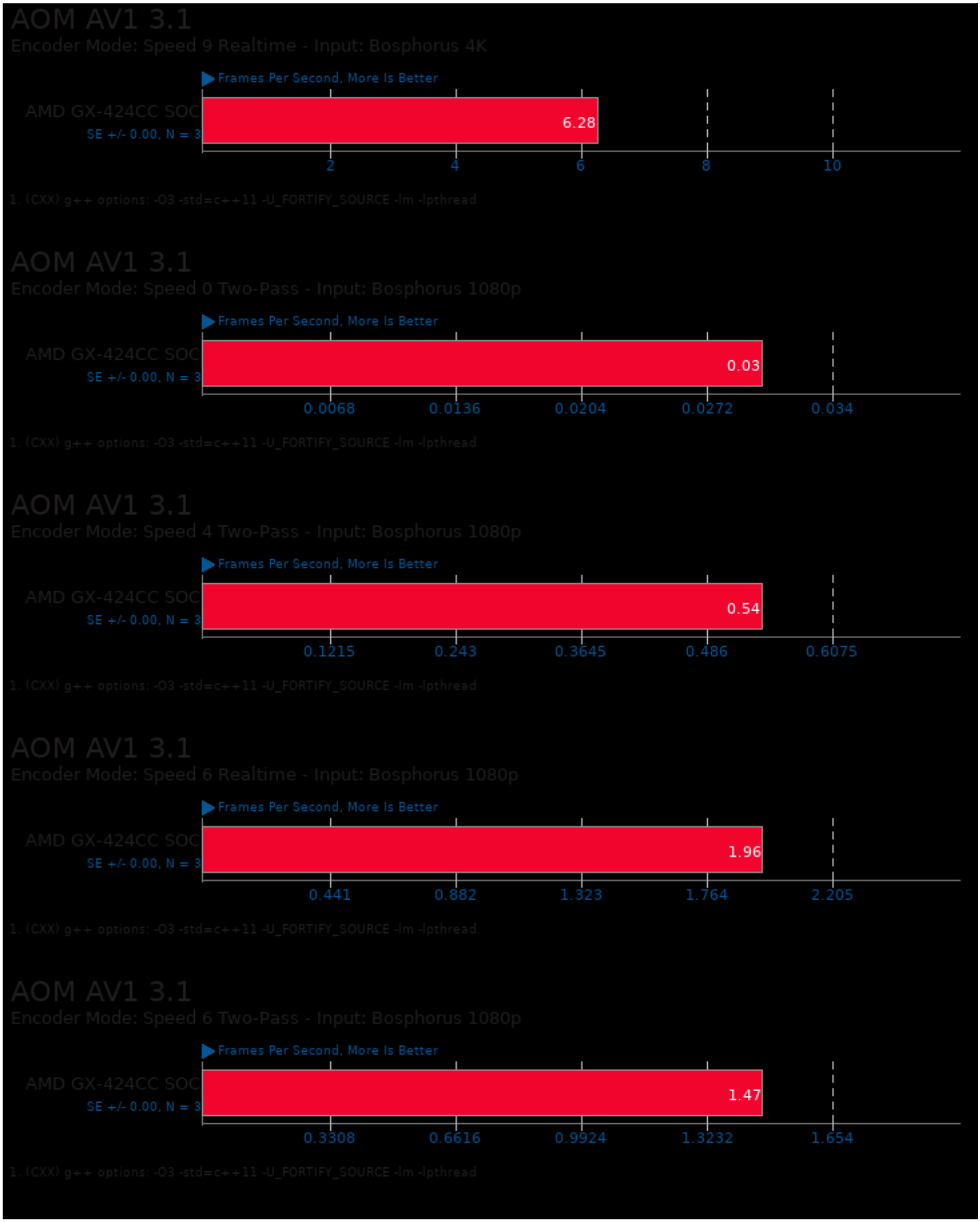
test-multicore

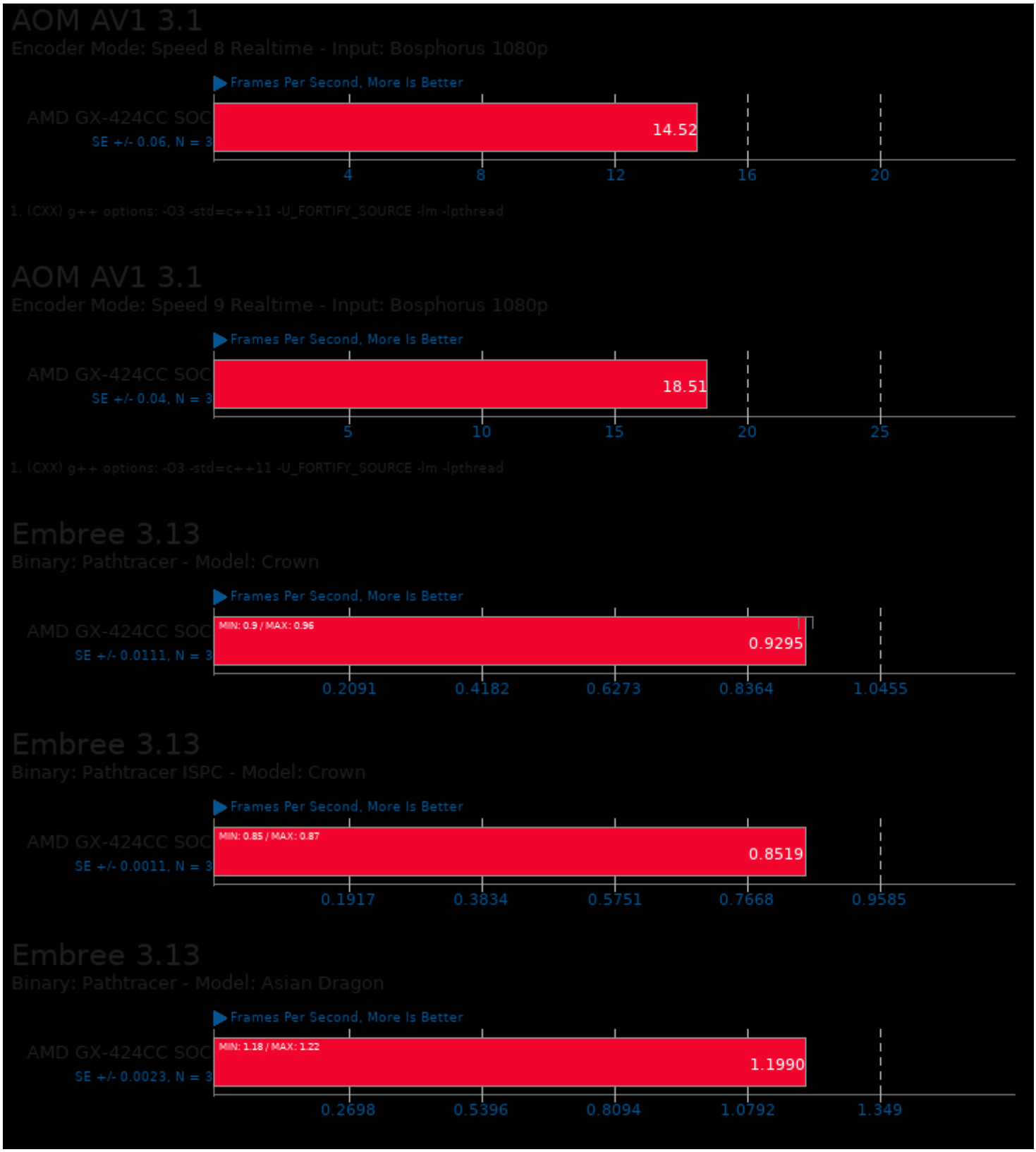


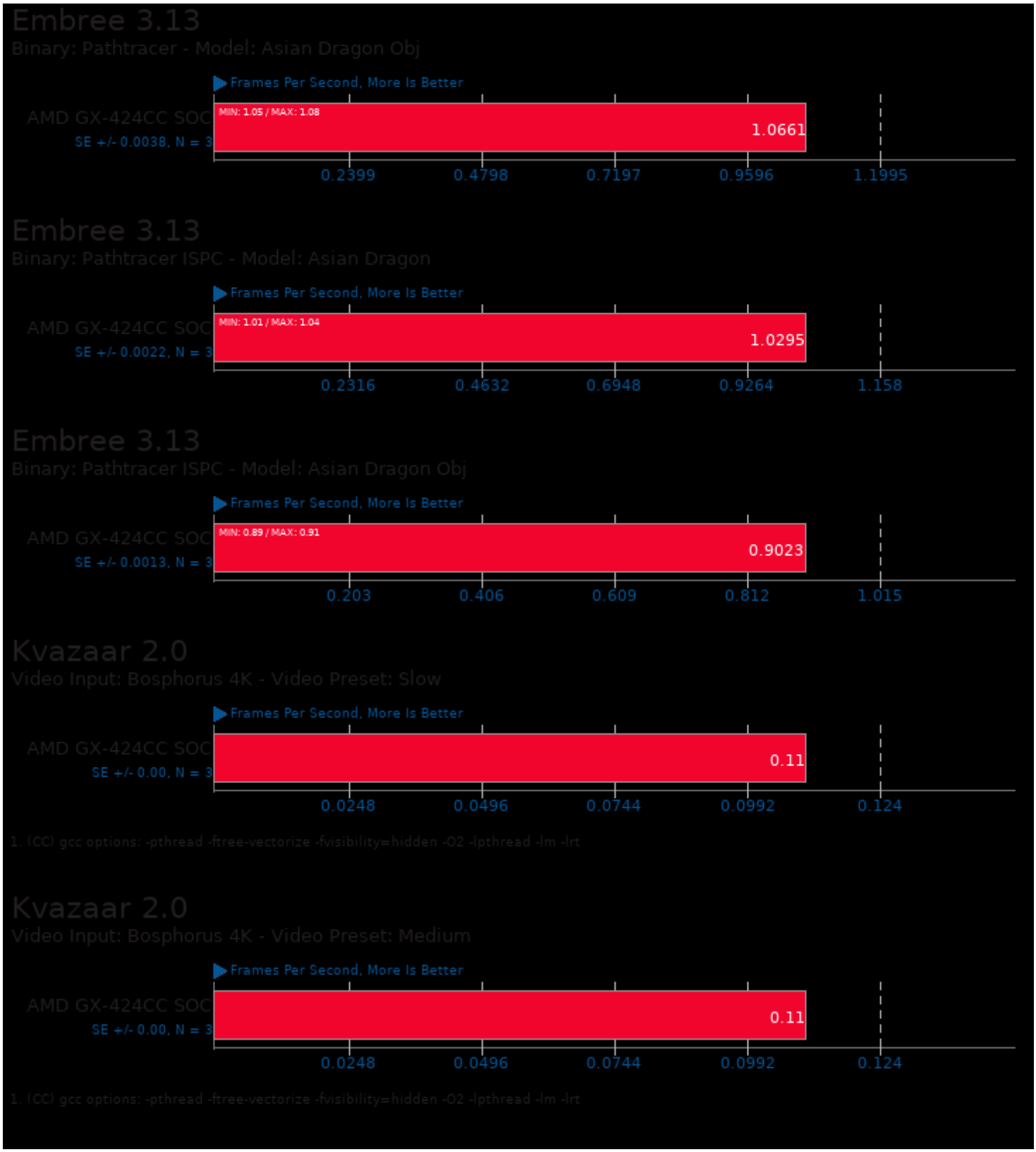
test-multicore



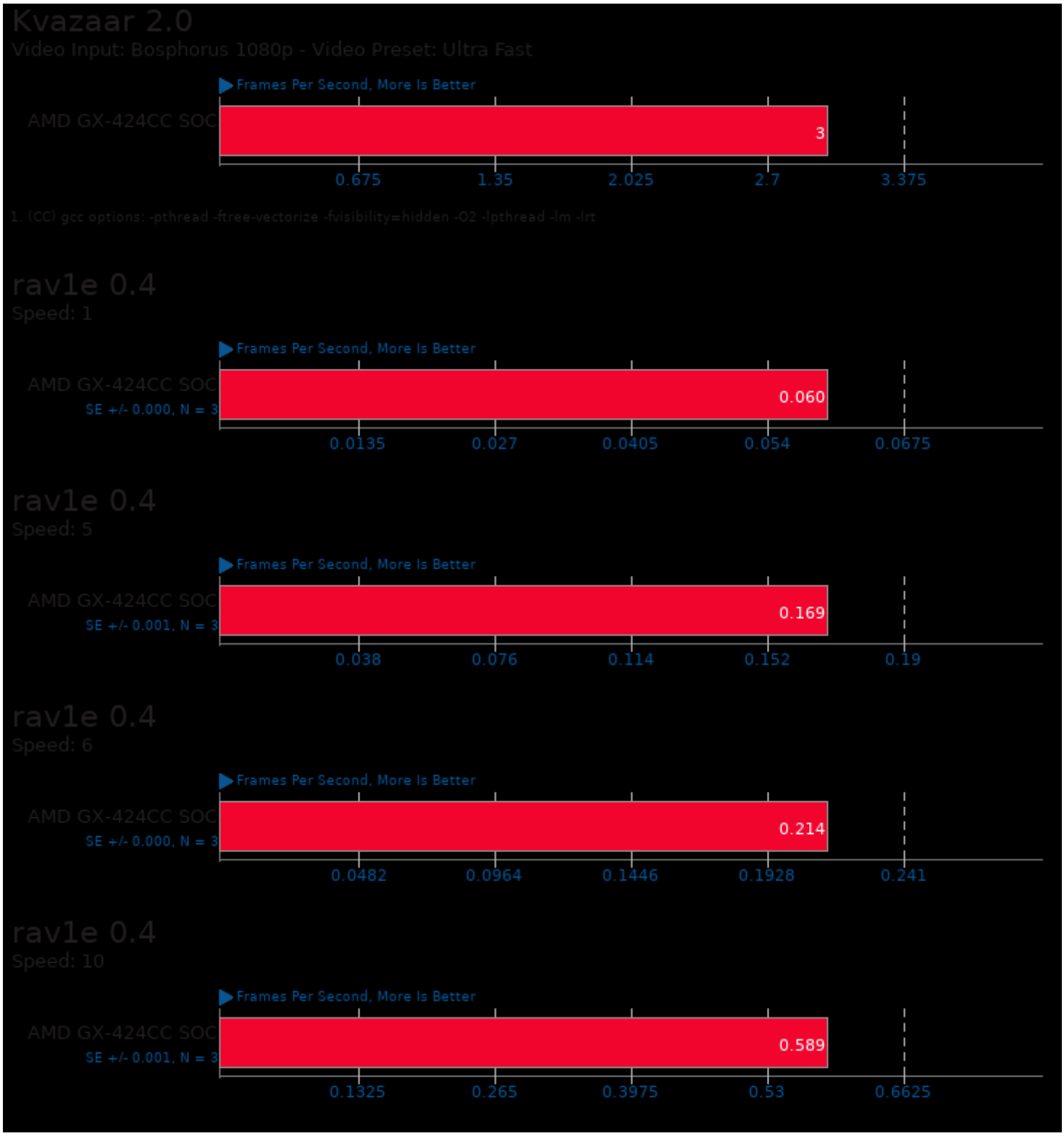

AOM AV1 3.1
Encoder Mode: Speed 0 Two-Pass - Input: Bosphorus 4K
Frames Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 0.00, N = 3
0.01
0.0023
0.0046
0.0069
0.0092
0.0115
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 3.1
Encoder Mode: Speed 4 Two-Pass - Input: Bosphorus 4K
Frames Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 0.00, N = 3
0.23
0.0518
0.1036
0.1554
0.2072
0.259
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 3.1
Encoder Mode: Speed 6 Realtime - Input: Bosphorus 4K
Frames Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 0.00, N = 3
1.08
0.243
0.486
0.729
0.972
1.215
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 3.1
Encoder Mode: Speed 6 Two-Pass - Input: Bosphorus 4K
Frames Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 0.00, N = 3
0.42
0.0945
0.189
0.2835
0.378
0.4725
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 3.1
Encoder Mode: Speed 8 Realtime - Input: Bosphorus 4K
Frames Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 0.01, N = 3
3.97
0.8933
1.7866
2.6799
3.5732
4.4665
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread


AOM AV1 3.1
Encoder Mode: Speed 9 Realtime - Input: Bosphorus 4K
Frames Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 0.00, N = 3
6.28
2
4
6
8
10
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 3.1
Encoder Mode: Speed 0 Two-Pass - Input: Bosphorus 1080p
Frames Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 0.00, N = 3
0.03
0.0068
0.0136
0.0204
0.0272
0.034
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 3.1
Encoder Mode: Speed 4 Two-Pass - Input: Bosphorus 1080p
Frames Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 0.00, N = 3
0.54
0.1215
0.243
0.3645
0.486
0.6075
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 3.1
Encoder Mode: Speed 6 Realtime - Input: Bosphorus 1080p
Frames Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 0.00, N = 3
1.96
0.441
0.882
1.323
1.764
2.205
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 3.1
Encoder Mode: Speed 6 Two-Pass - Input: Bosphorus 1080p
Frames Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 0.00, N = 3
1.47
0.3308
0.6616
0.9924
1.3232
1.654
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread


AOM AV1 3.1
Encoder Mode: Speed 8 Realtime - Input: Bosphorus 1080p
Frames Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 0.06, N = 3
14.52
4
8
12
16
20
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
AOM AV1 3.1
Encoder Mode: Speed 9 Realtime - Input: Bosphorus 1080p
Frames Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 0.04, N = 3
18.51
5
10
15
20
25
1. (CXX) g++ options: -O3 -std=c++11 -U_FORTIFY_SOURCE -lm -lpthread
Embree 3.13
Binary: Pathtracer - Model: Crown
Frames Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 0.0111, N = 3
MIN: 0.9 / MAX: 0.96
0.9295
0.2091
0.4182
0.6273
0.8364
1.0455
Embree 3.13
Binary: Pathtracer ISPC - Model: Crown
Frames Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 0.0011, N = 3
MIN: 0.85 / MAX: 0.87
0.8519
0.1917
0.3834
0.5751
0.7668
0.9585
Embree 3.13
Binary: Pathtracer - Model: Asian Dragon
Frames Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 0.0023, N = 3
MIN: 1.18 / MAX: 1.22
1.1990
0.2698
0.5396
0.8094
1.0792
1.349

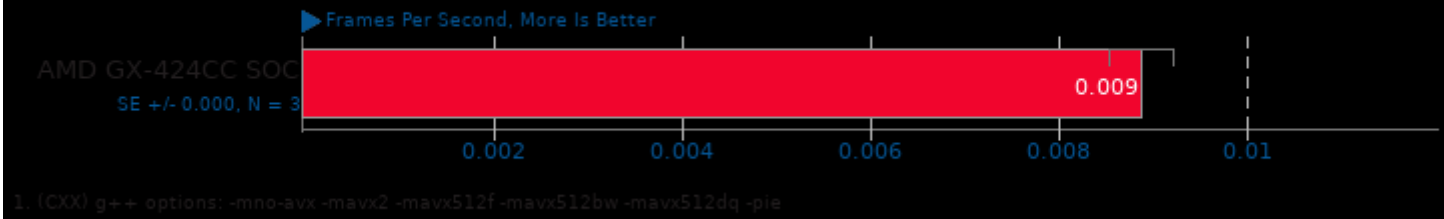

Embree 3.13
Binary: Pathtracer - Model: Asian Dragon Obj
Frames Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 0.0038, N = 3
MIN: 1.05 / MAX: 1.08
1.0661
0.2399
0.4798
0.7197
0.9596
1.1995
Embree 3.13
Binary: Pathtracer ISPC - Model: Asian Dragon
Frames Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 0.0022, N = 3
MIN: 1.01 / MAX: 1.04
1.0295
0.2316
0.4632
0.6948
0.9264
1.158
Embree 3.13
Binary: Pathtracer ISPC - Model: Asian Dragon Obj
Frames Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 0.0013, N = 3
MIN: 0.89 / MAX: 0.91
0.9023
0.203
0.406
0.609
0.812
1.015
Kvazaar 2.0
Video Input: Bosphorus 4K - Video Preset: Slow
Frames Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 0.00, N = 3
0.11
0.0248
0.0496
0.0744
0.0992
0.124
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt
Kvazaar 2.0
Video Input: Bosphorus 4K - Video Preset: Medium
Frames Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 0.00, N = 3
0.11
0.0248
0.0496
0.0744
0.0992
0.124
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt


Kvazaar 2.0
Video Input: Bosphorus 1080p - Video Preset: Slow
Frames Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 0.00, N = 3
0.52
0.117
0.234
0.351
0.468
0.585
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt
Kvazaar 2.0
Video Input: Bosphorus 1080p - Video Preset: Medium
Frames Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 0.00, N = 3
0.52
0.117
0.234
0.351
0.468
0.585
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt
Kvazaar 2.0
Video Input: Bosphorus 4K - Video Preset: Very Fast
Frames Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 0.00, N = 3
0.33
0.0743
0.1486
0.2229
0.2972
0.3715
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt
Kvazaar 2.0
Video Input: Bosphorus 4K - Video Preset: Ultra Fast
Frames Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 0.00, N = 3
0.75
0.1688
0.3376
0.5064
0.6752
0.844
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt
Kvazaar 2.0
Video Input: Bosphorus 1080p - Video Preset: Very Fast
Frames Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 0.00, N = 3
1.37
0.3083
0.6166
0.9249
1.2332
1.5415
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt


Kvazaar 2.0
Video Input: Bosphorus 1080p - Video Preset: Ultra Fast
Frames Per Second, More Is Better
AMD GX-424CC SOC
3
0.675
1.35
2.025
2.7
3.375
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt
rav1e 0.4
Speed: 1
Frames Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 0.000, N = 3
0.060
0.0135
0.027
0.0405
0.054
0.0675
rav1e 0.4
Speed: 5
Frames Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 0.001, N = 3
0.169
0.038
0.076
0.114
0.152
0.19
rav1e 0.4
Speed: 6
Frames Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 0.000, N = 3
0.214
0.0482
0.0964
0.1446
0.1928
0.241
rav1e 0.4
Speed: 10
Frames Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 0.001, N = 3
0.589
0.1325
0.265
0.3975
0.53
0.6625

SVT-AV1 0.8.7

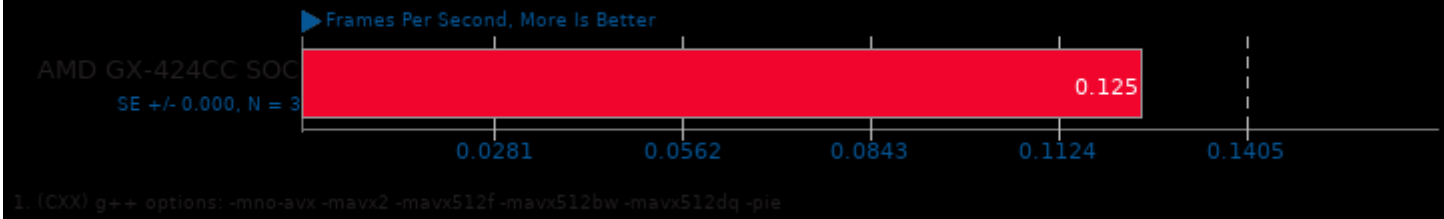
Encoder Mode: Preset 4 - Input: Bosphorus 4K



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

SVT-AV1 0.8.7

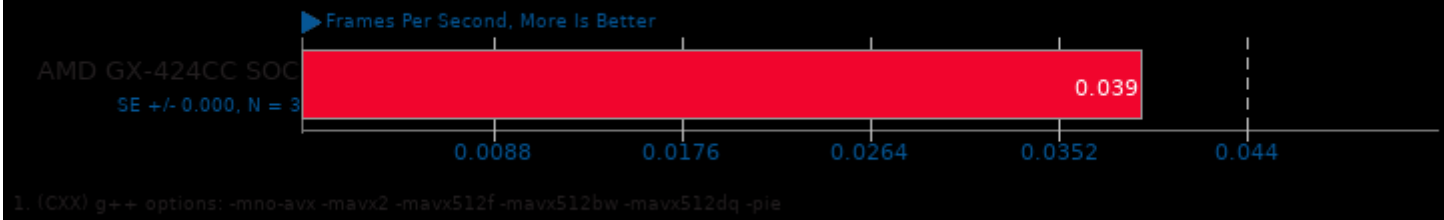
Encoder Mode: Preset 8 - Input: Bosphorus 4K



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

SVT-AV1 0.8.7

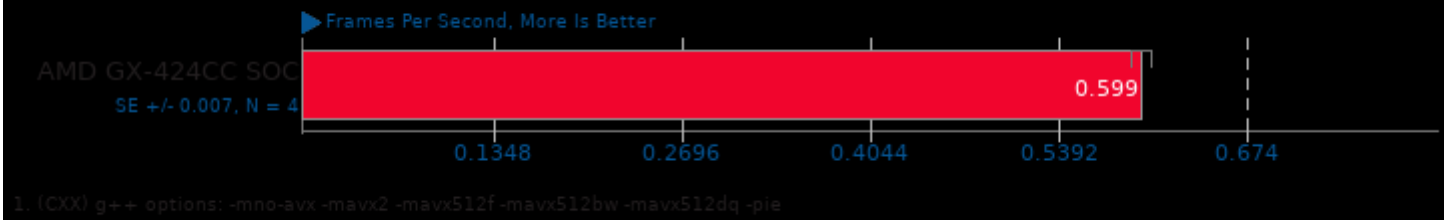
Encoder Mode: Preset 4 - Input: Bosphorus 1080p



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

SVT-AV1 0.8.7

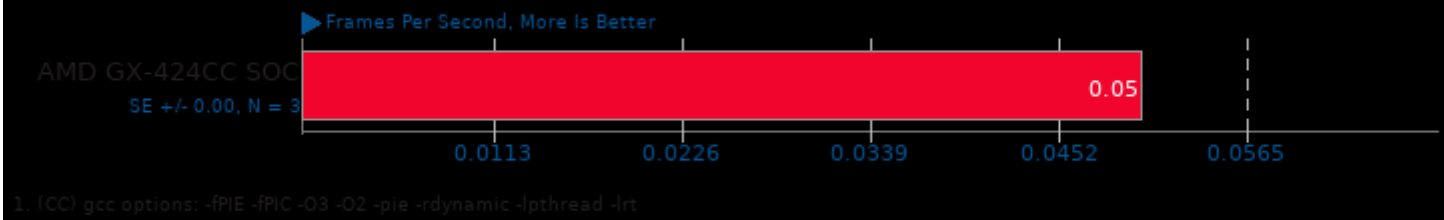
Encoder Mode: Preset 8 - Input: Bosphorus 1080p



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

SVT-HEVC 1.5.0

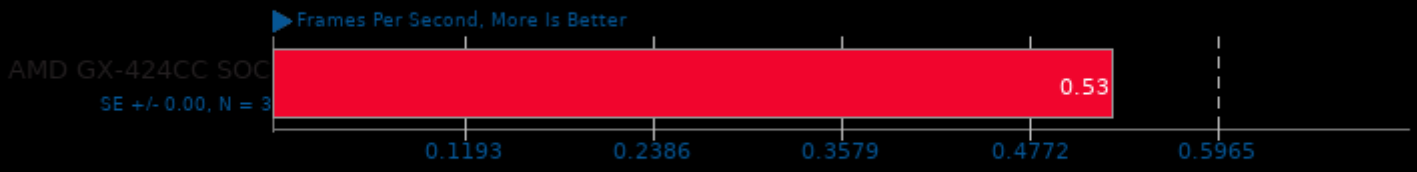
Tuning: 1 - Input: Bosphorus 1080p



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

SVT-HEVC 1.5.0

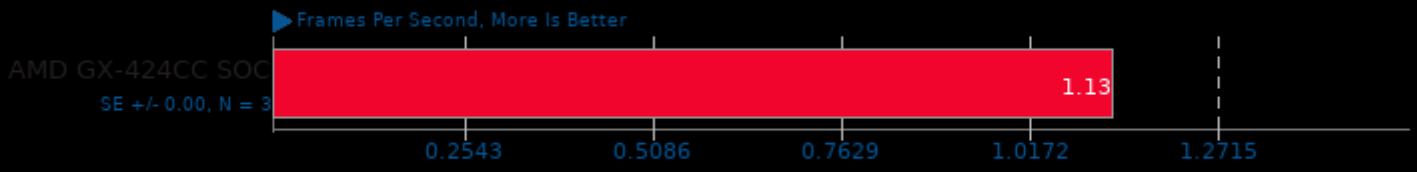
Tuning: 7 - Input: Bosphorus 1080p



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

SVT-HEVC 1.5.0

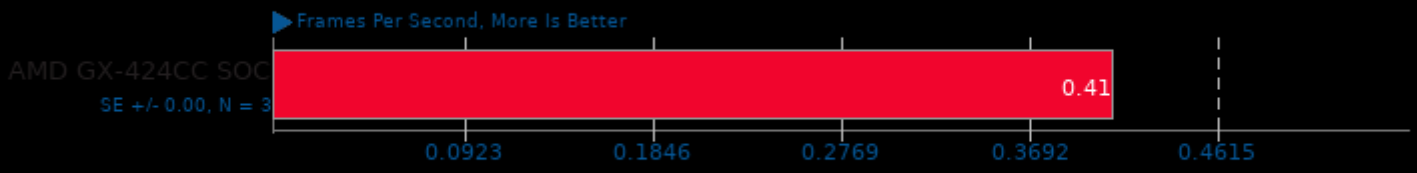
Tuning: 10 - Input: Bosphorus 1080p



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

VP9 libvpx Encoding 1.10.0

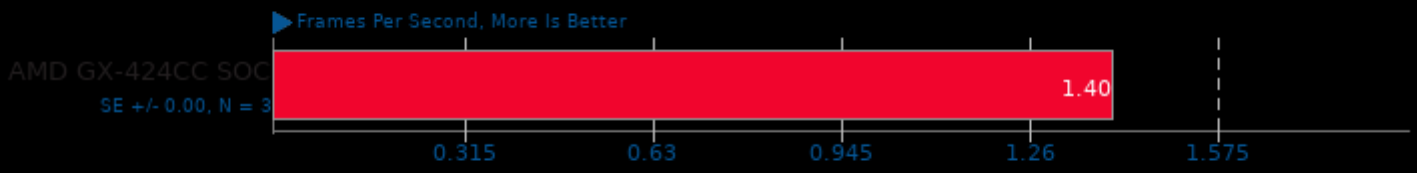
Speed: Speed 0 - Input: Bosphorus 4K



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

VP9 libvpx Encoding 1.10.0

Speed: Speed 5 - Input: Bosphorus 4K



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

VP9 libvpx Encoding 1.10.0

Speed: Speed 0 - Input: Bosphorus 1080p

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

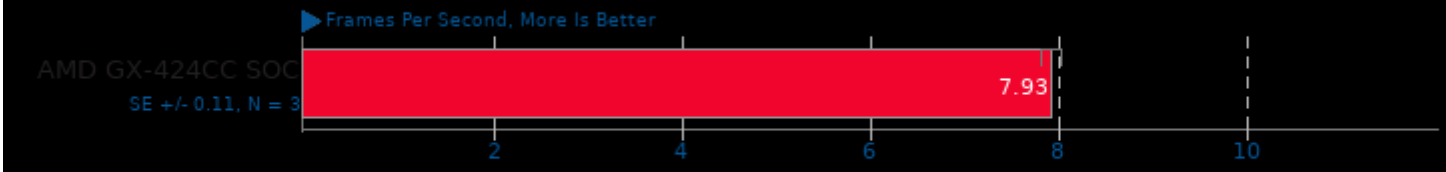
VP9 libvpx Encoding 1.10.0

Speed: Speed 5 - Input: Bosphorus 1080p

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

x264 2019-12-17

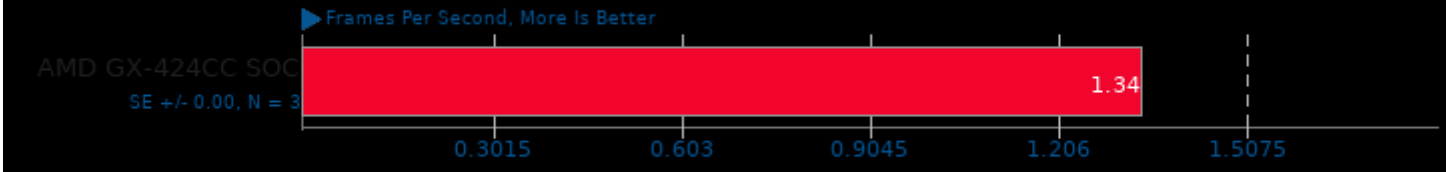
H.264 Video Encoding



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

x265 3.4

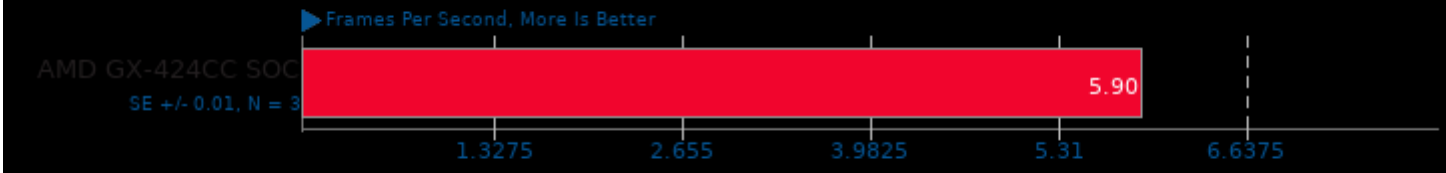
Video Input: Bosphorus 4K



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

x265 3.4

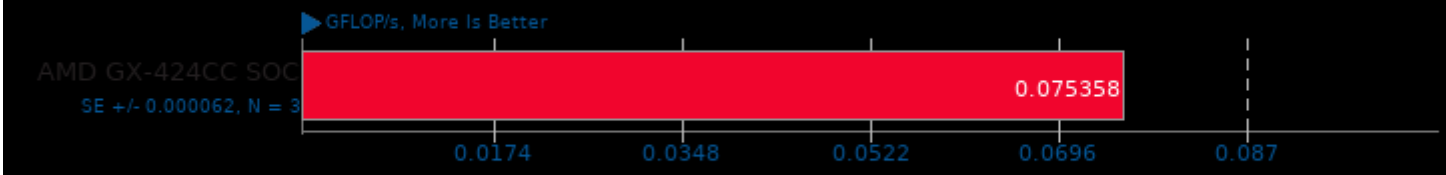
Video Input: Bosphorus 1080p



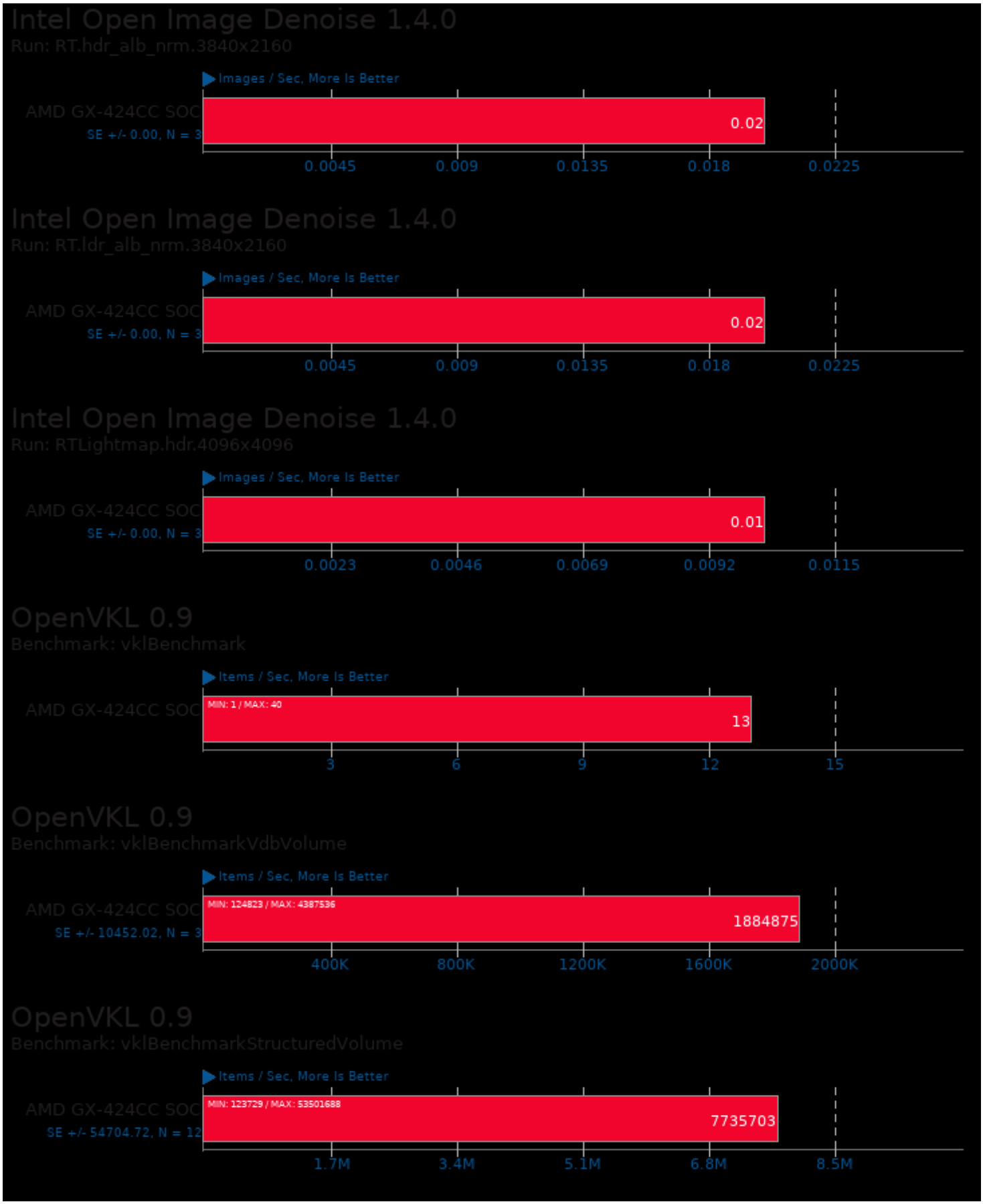
1. (CXX) g++ options: -O3 -rdynamic -lpthread -lrt -ldl -lnuma

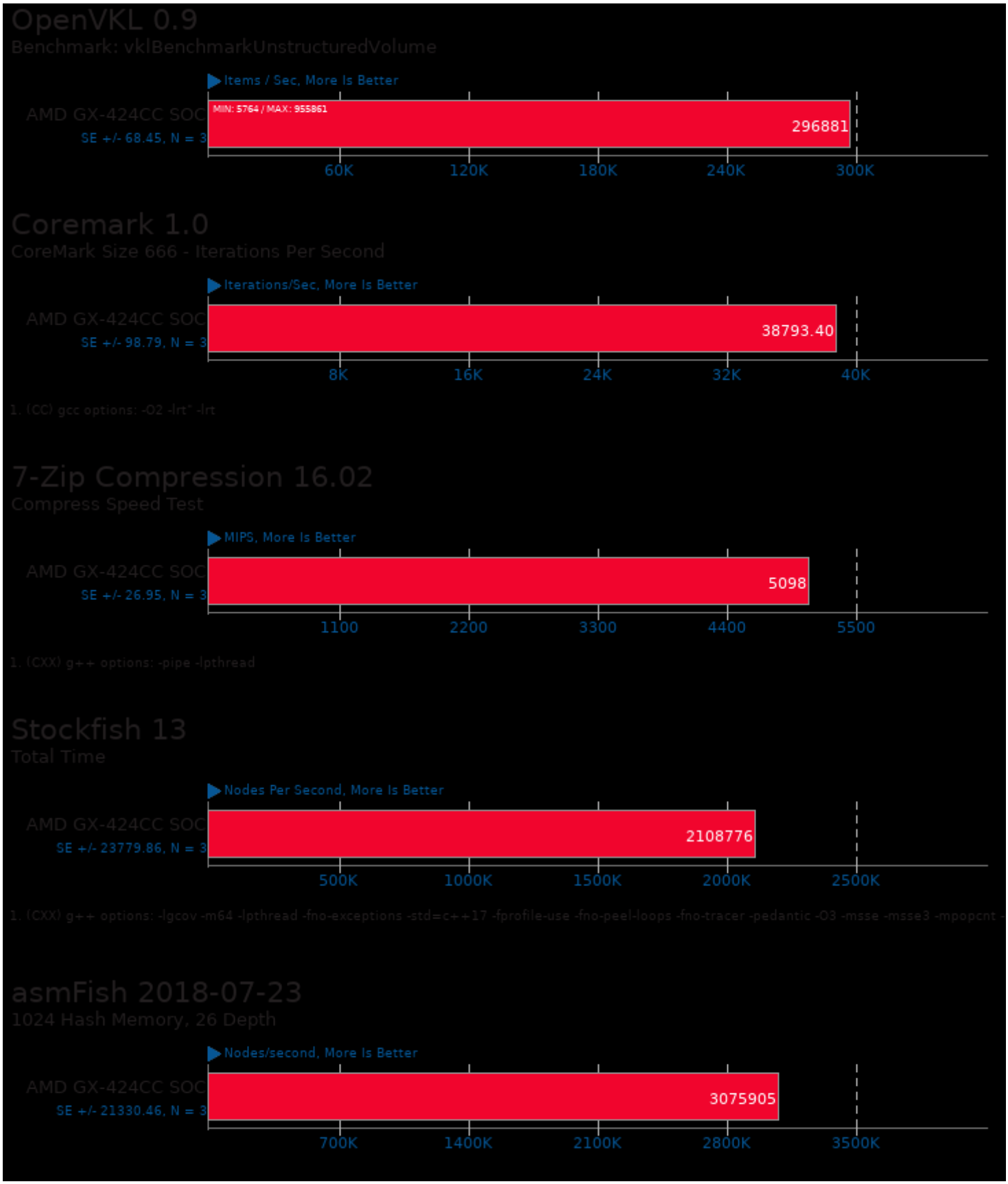
ACES DGEMM 1.0

Sustained Floating-Point Rate



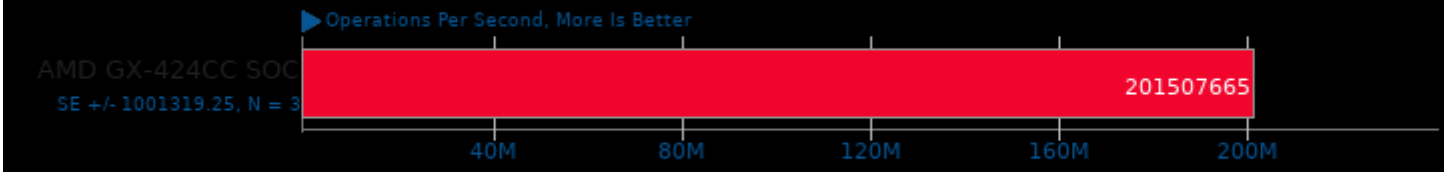
1. (CC) gcc options: -O3 -march=native -fopenmp


Intel Open Image Denoise 1.4.0
Run: RT.hdr_alb_nrm.3840x2160
Images / Sec, More Is Better
AMD GX-424CC SOC
SE +/- 0.00, N = 3
0.02
0.0045
0.009
0.0135
0.018
0.0225
Intel Open Image Denoise 1.4.0
Run: RT.ldr_alb_nrm.3840x2160
Images / Sec, More Is Better
AMD GX-424CC SOC
SE +/- 0.00, N = 3
0.02
0.0045
0.009
0.0135
0.018
0.0225
Intel Open Image Denoise 1.4.0
Run: RTLightmap.hdr.4096x4096
Images / Sec, More Is Better
AMD GX-424CC SOC
SE +/- 0.00, N = 3
0.01
0.0023
0.0046
0.0069
0.0092
0.0115
OpenVKL 0.9
Benchmark: vklBenchmark
Items / Sec, More Is Better
AMD GX-424CC SOC
MIN: 1 / MAX: 40
13
3
6
9
12
15
OpenVKL 0.9
Benchmark: vklBenchmarkVdbVolume
Items / Sec, More Is Better
AMD GX-424CC SOC
SE +/- 10452.02, N = 3
MIN: 124823 / MAX: 4387536
1884875
400K
800K
1200K
1600K
2000K
OpenVKL 0.9
Benchmark: vklBenchmarkStructuredVolume
Items / Sec, More Is Better
AMD GX-424CC SOC
SE +/- 54704.72, N = 12
MIN: 123729 / MAX: 53501688
7735703
1.7M
3.4M
5.1M
6.8M
8.5M


OpenVKL 0.9
Benchmark: vklBenchmarkUnstructuredVolume
Items / Sec, More Is Better
AMD GX-424CC SOC
MIN: 5764 / MAX: 955861
SE +/- 68.45, N = 3
296881
60K
120K
180K
240K
300K
Coremark 1.0
CoreMark Size 666 - Iterations Per Second
Iterations/Sec, More Is Better
AMD GX-424CC SOC
SE +/- 98.79, N = 3
38793.40
8K
16K
24K
32K
40K
1. (CC) gcc options: -O2 -lrt" -lrt
7-Zip Compression 16.02
Compress Speed Test
MIPS, More Is Better
AMD GX-424CC SOC
SE +/- 26.95, N = 3
5098
1100
2200
3300
4400
5500
1. (CXX) g++ options: -pipe -lpthread
Stockfish 13
Total Time
Nodes Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 23779.86, N = 3
2108776
500K
1000K
1500K
2000K
2500K
1. (CXX) g++ options: -lgcov -m64 -lpthread -fno-exceptions -std=c++17 -fprofile-use -fno-peel-loops -fno-tracer -pedantic -O3 -msse -msse3 -mpopcnt
asmFish 2018-07-23
1024 Hash Memory, 26 Depth
Nodes/second, More Is Better
AMD GX-424CC SOC
SE +/- 21330.46, N = 3
3075905
700K
1400K
2100K
2800K
3500K

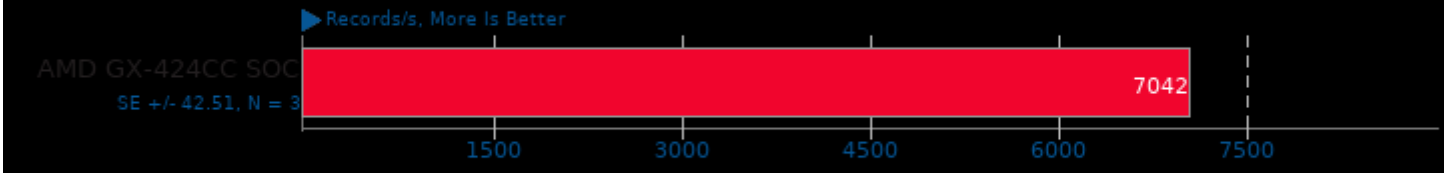
Swet 1.5.16

Average



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

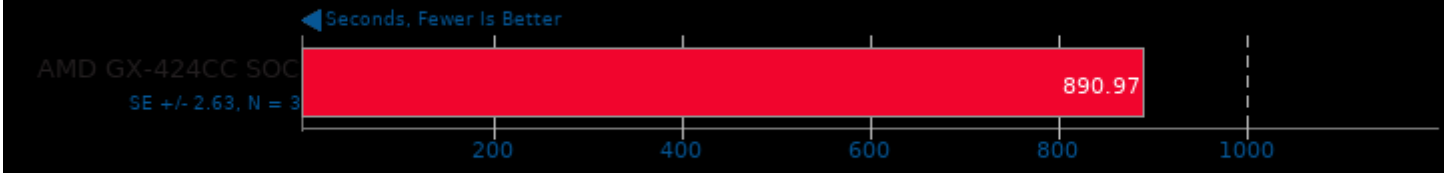
ebizzy 0.3



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

libavif avifenc 0.9.0

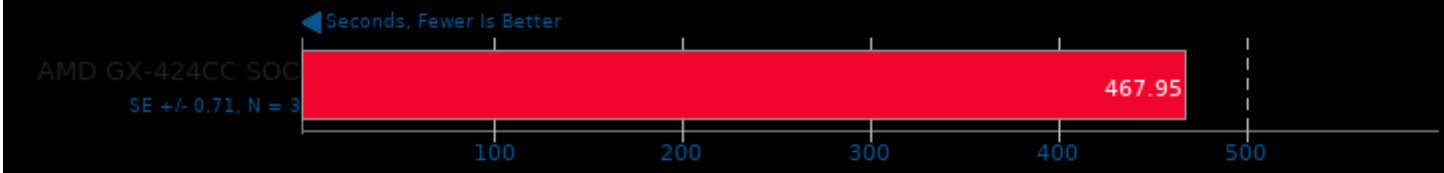
Encoder Speed: 0



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

libavif avifenc 0.9.0

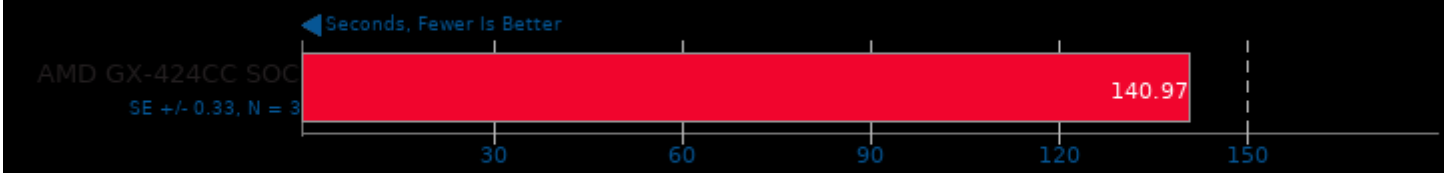
Encoder Speed: 2



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

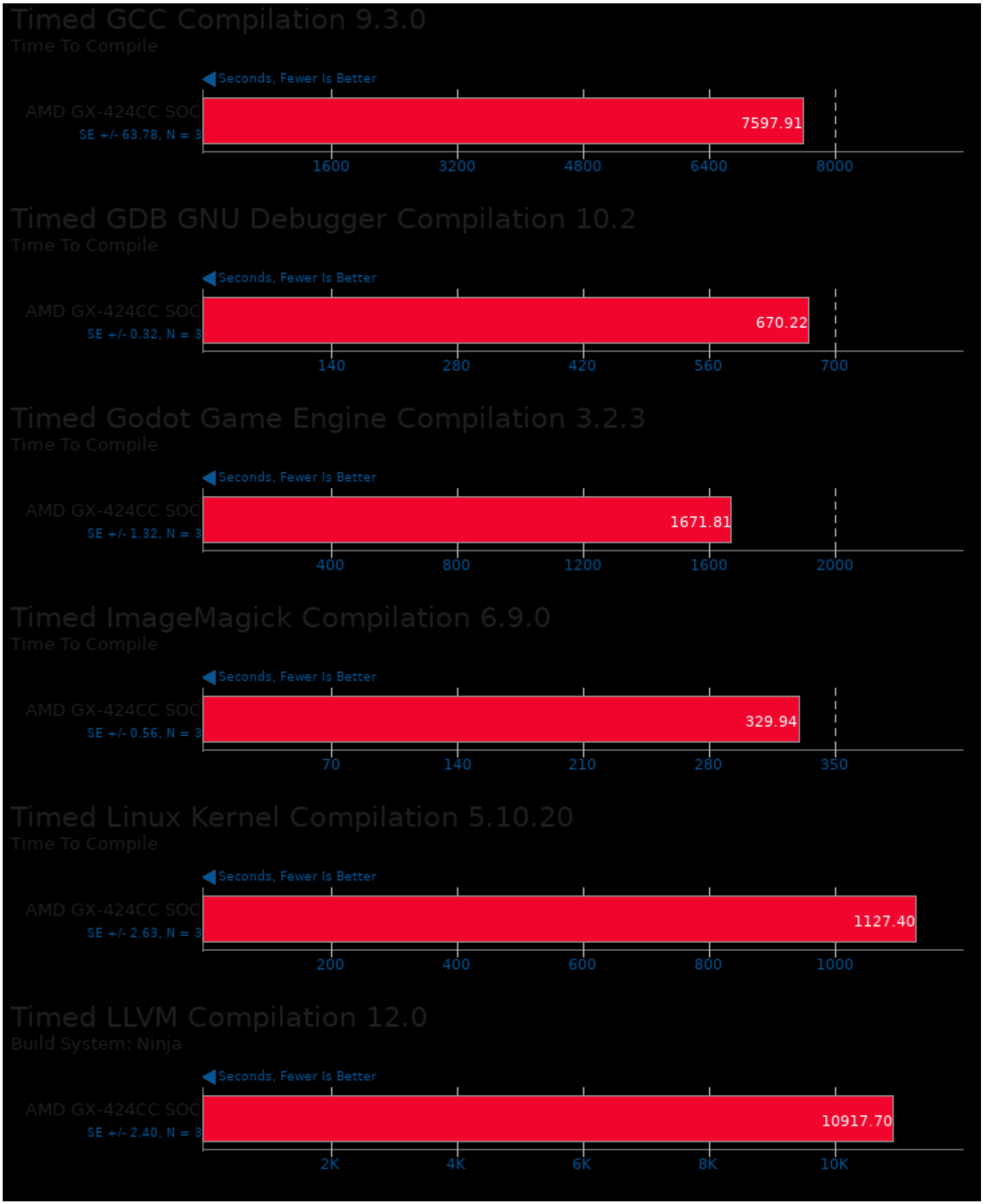
libavif avifenc 0.9.0

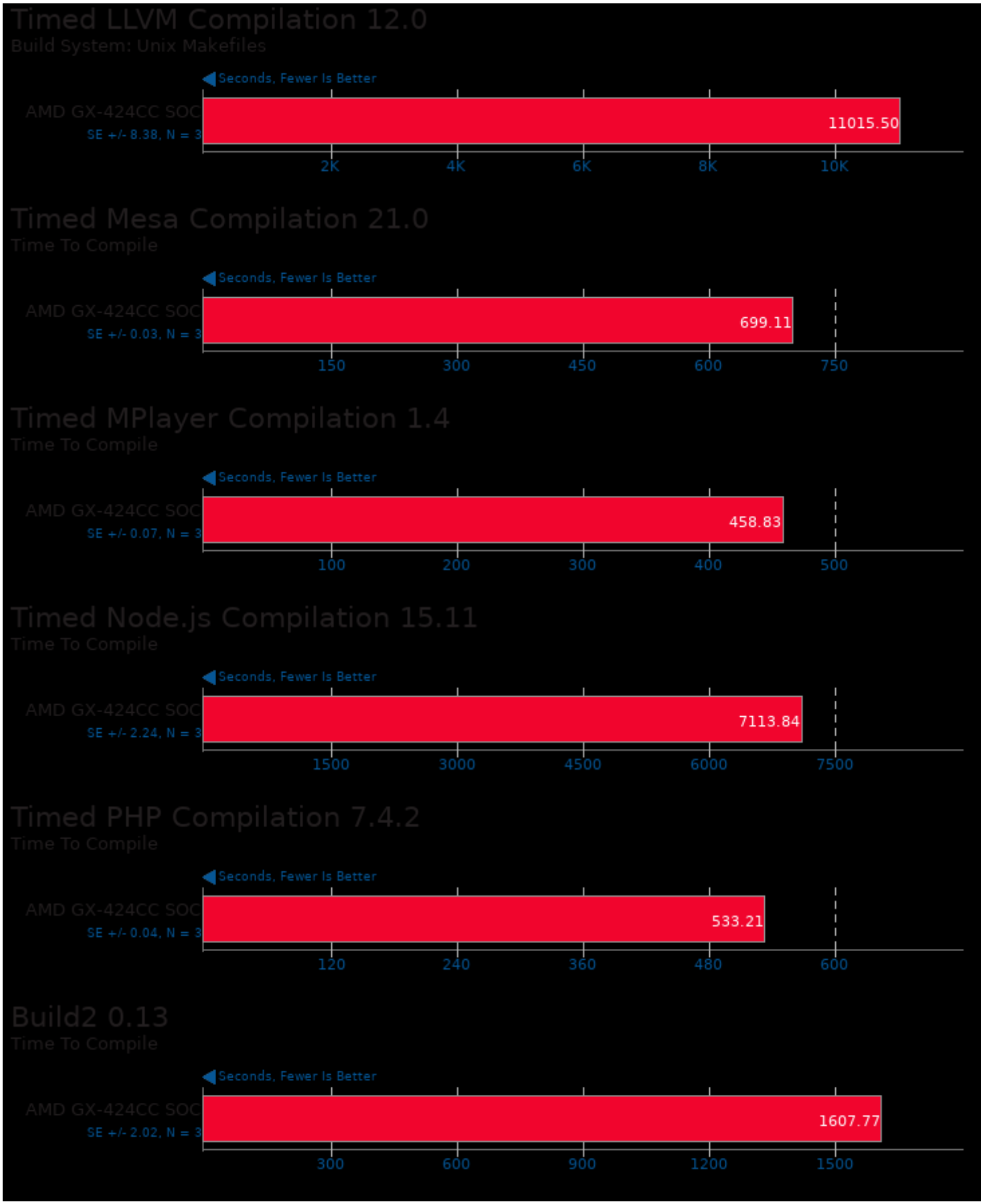
Encoder Speed: 6



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

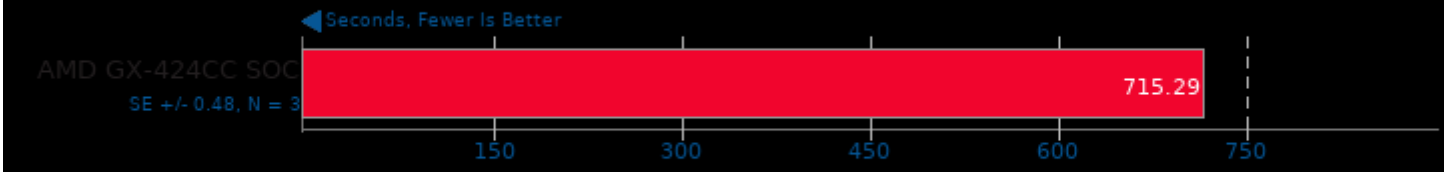

libavif avifenc 0.9.0
Encoder Speed: 10
Seconds, Fewer Is Better
AMD GX-424CC SOC
SE +/- 0.11, N = 3
21.45
5
10
15
20
25
1. (CXX) g++ options: -O3 -fPIC -lm
libavif avifenc 0.9.0
Encoder Speed: 6, Lossless
Seconds, Fewer Is Better
AMD GX-424CC SOC
SE +/- 2.53, N = 3
767.01
170
340
510
680
850
1. (CXX) g++ options: -O3 -fPIC -lm
libavif avifenc 0.9.0
Encoder Speed: 10, Lossless
Seconds, Fewer Is Better
AMD GX-424CC SOC
SE +/- 0.05, N = 3
31.99
7
14
21
28
35
1. (CXX) g++ options: -O3 -fPIC -lm
Timed Apache Compilation 2.4.41
Time To Compile
Seconds, Fewer Is Better
AMD GX-424CC SOC
SE +/- 0.10, N = 3
139.67
30
60
90
120
150
Timed FFmpeg Compilation 4.4
Time To Compile
Seconds, Fewer Is Better
AMD GX-424CC SOC
SE +/- 0.09, N = 3
648.00
140
280
420
560
700


Timed GCC Compilation 9.3.0
Time To Compile
Seconds, Fewer Is Better
AMD GX-424CC SOC
SE +/- 63.78, N = 3
7597.91
1600
3200
4800
6400
8000
Timed GDB GNU Debugger Compilation 10.2
Time To Compile
Seconds, Fewer Is Better
AMD GX-424CC SOC
SE +/- 0.32, N = 3
670.22
140
280
420
560
700
Timed Godot Game Engine Compilation 3.2.3
Time To Compile
Seconds, Fewer Is Better
AMD GX-424CC SOC
SE +/- 1.32, N = 3
1671.81
400
800
1200
1600
2000
Timed ImageMagick Compilation 6.9.0
Time To Compile
Seconds, Fewer Is Better
AMD GX-424CC SOC
SE +/- 0.56, N = 3
329.94
70
140
210
280
350
Timed Linux Kernel Compilation 5.10.20
Time To Compile
Seconds, Fewer Is Better
AMD GX-424CC SOC
SE +/- 2.63, N = 3
1127.40
200
400
600
800
1000
Timed LLVM Compilation 12.0
Build System: Ninja
Seconds, Fewer Is Better
AMD GX-424CC SOC
SE +/- 2.40, N = 3
10917.70
2K
4K
6K
8K
10K


Timed LLVM Compilation 12.0
Build System: Unix Makefiles
Seconds, Fewer Is Better
AMD GX-424CC SOC
SE +/- 8.38, N = 3
11015.50
2K
4K
6K
8K
10K
Timed Mesa Compilation 21.0
Time To Compile
Seconds, Fewer Is Better
AMD GX-424CC SOC
SE +/- 0.03, N = 3
699.11
150
300
450
600
750
Timed MPlayer Compilation 1.4
Time To Compile
Seconds, Fewer Is Better
AMD GX-424CC SOC
SE +/- 0.07, N = 3
458.83
100
200
300
400
500
Timed Node.js Compilation 15.11
Time To Compile
Seconds, Fewer Is Better
AMD GX-424CC SOC
SE +/- 2.24, N = 3
7113.84
1500
3000
4500
6000
7500
Timed PHP Compilation 7.4.2
Time To Compile
Seconds, Fewer Is Better
AMD GX-424CC SOC
SE +/- 0.04, N = 3
533.21
120
240
360
480
600
Build2 0.13
Time To Compile
Seconds, Fewer Is Better
AMD GX-424CC SOC
SE +/- 2.02, N = 3
1607.77
300
600
900
1200
1500

C-Ray 1.1

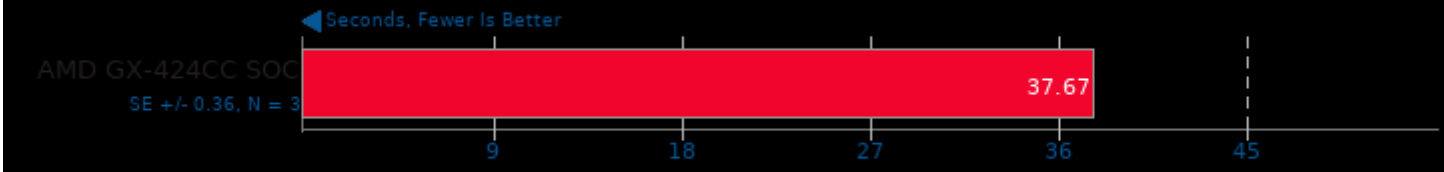
Total Time - 4K, 16 Rays Per Pixel



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

Parallel BZIP2 Compression 1.1.12

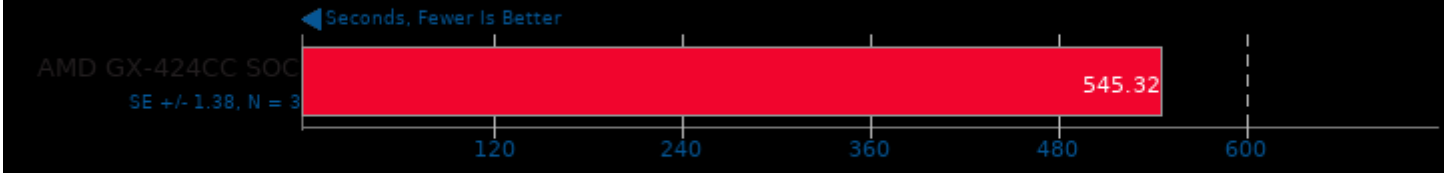
256MB File Compression



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

POV-Ray 3.7.0.7

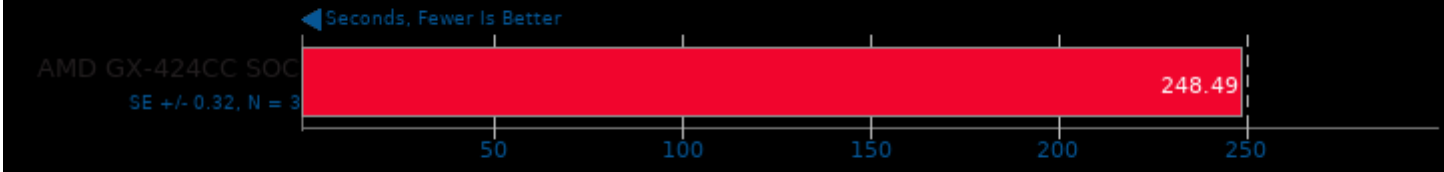
Trace Time



1. (CXX) g++ options: -pipe -O3 -ffast-math -march=native -pthread -lSDL -lXpm -lSM -lICE -lX11 -lIlmImf -lImath -lHalf -lIex -lIexMath -lIlmThread -lpthre

Primesieve 7.4

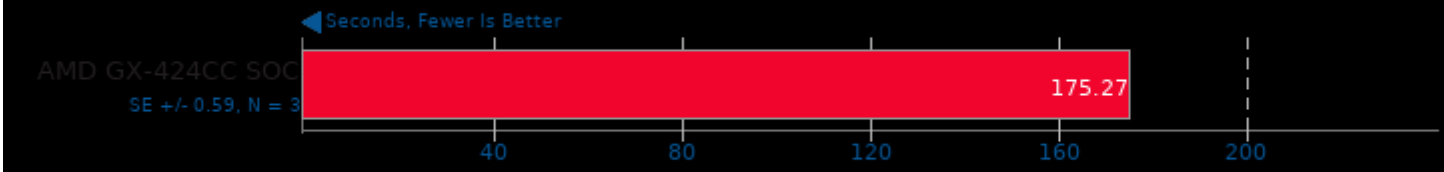
1e12 Prime Number Generation



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

Rust Mandelbrot

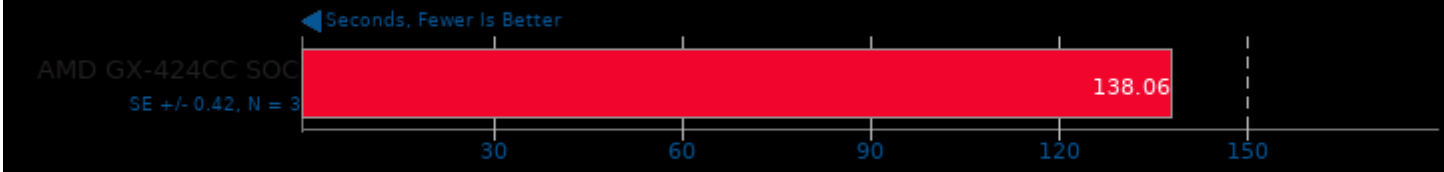
Time To Complete Serial/Parallel Mandelbrot



1. (CC) gcc options: -m64 -pie -nodefaultlibs -ldl -lrt -lpthread -lgcc_s -lc -lm -lutil

Rust Prime Benchmark

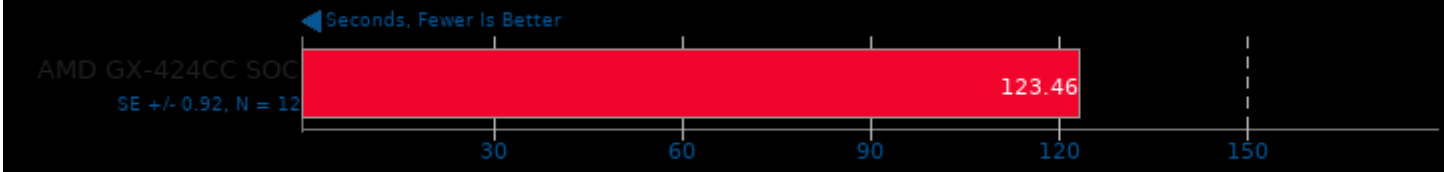
Prime Number Test To 200,000,000



1. (CC) gcc options: -m64 -pie -nodefaultlibs -ldl -lrt -lpthread -lgcc_s -lc -lm -lutil

Smallpt 1.0

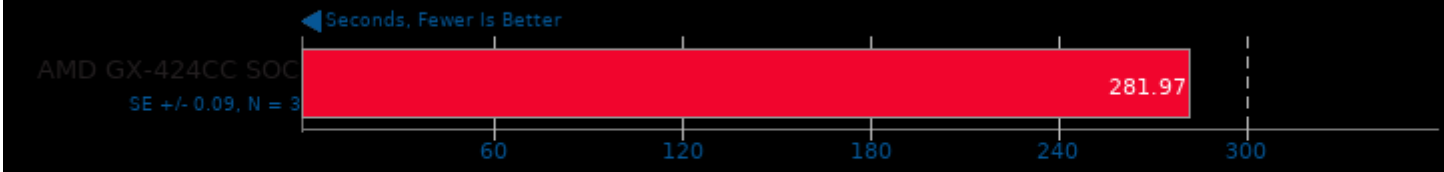
Global Illumination Renderer; 128 Samples



1. (CXX) g++ options: -fopenmp -O3

Tungsten Renderer 0.2.2

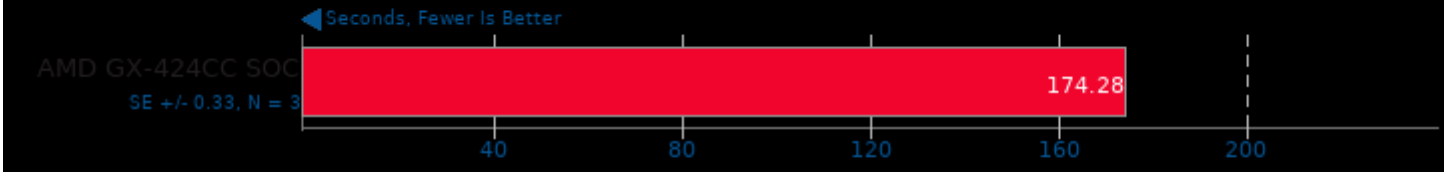
Scene: Hair



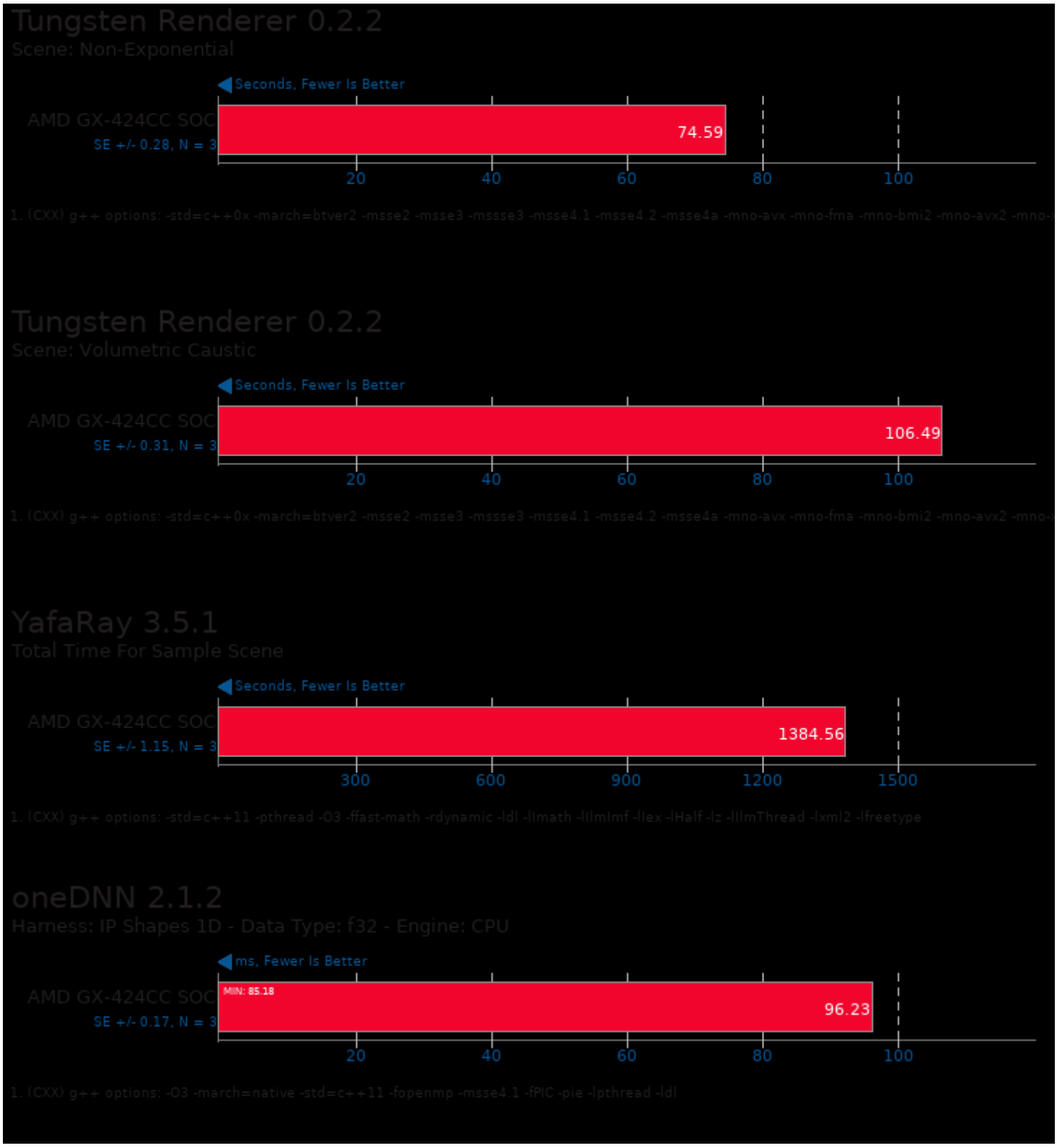
1. (CXX) g++ options: -std=c++0x -march=btver2 -msse2 -msse3 -mssse3 -msse4.1 -msse4.2 -msse4a -mno-avx -mno-fma -mno-bmi2 -mno-avx2 -mno-

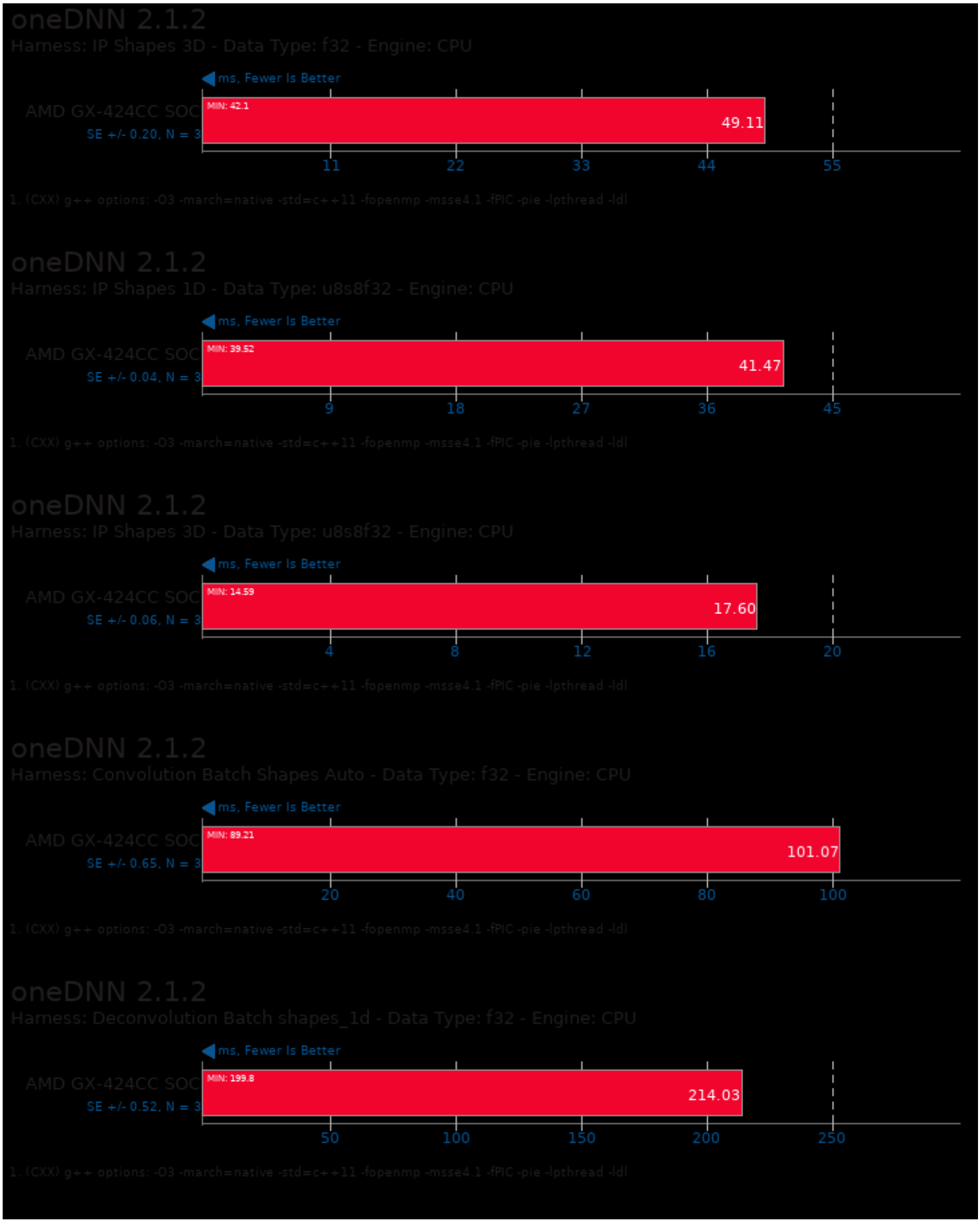
Tungsten Renderer 0.2.2

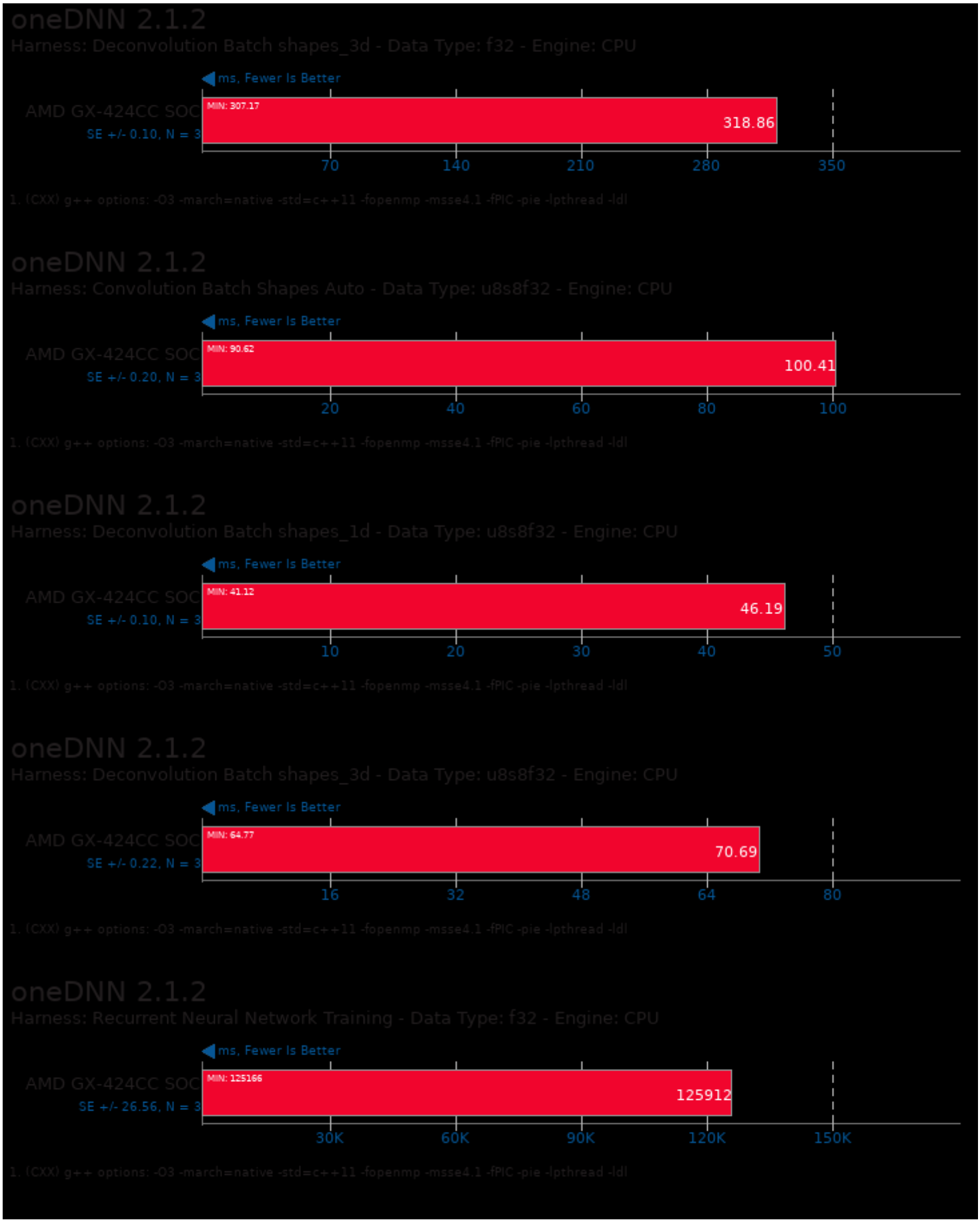
Scene: Water Caustic

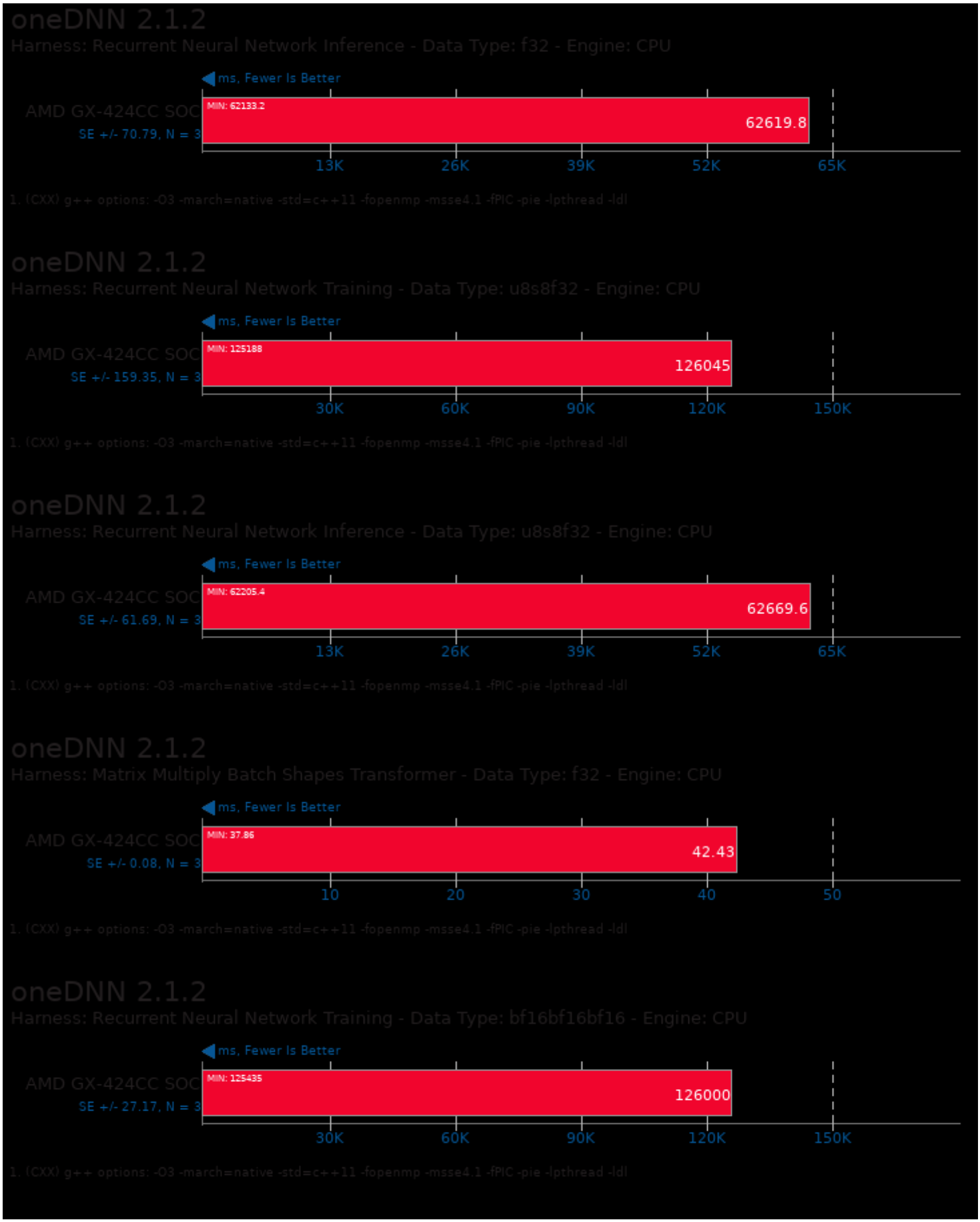


1. (CXX) g++ options: -std=c++0x -march=btver2 -msse2 -msse3 -mssse3 -msse4.1 -msse4.2 -msse4a -mno-avx -mno-fma -mno-bmi2 -mno-avx2 -mno-


Tungsten Renderer 0.2.2
Scene: Non-Exponential
Seconds, Fewer Is Better
AMD GX-424CC SOC
SE +/- 0.28, N = 3
74.59
20
40
60
80
100
1. (CXX) g++ options: -std=c++0x -march=btver2 -msse2 -msse3 -mssse3 -msse4.1 -msse4.2 -msse4a -mno-avx -mno-fma -mno-bmi2 -mno-avx2 -mno-
Tungsten Renderer 0.2.2
Scene: Volumetric Caustic
Seconds, Fewer Is Better
AMD GX-424CC SOC
SE +/- 0.31, N = 3
106.49
20
40
60
80
100
1. (CXX) g++ options: -std=c++0x -march=btver2 -msse2 -msse3 -mssse3 -msse4.1 -msse4.2 -msse4a -mno-avx -mno-fma -mno-bmi2 -mno-avx2 -mno-
YafaRay 3.5.1
Total Time For Sample Scene
Seconds, Fewer Is Better
AMD GX-424CC SOC
SE +/- 1.15, N = 3
1384.56
300
600
900
1200
1500
1. (CXX) g++ options: -std=c++11 -pthread -O3 -ffast-math -rdynamic -ldl -lImath -lIlmImf -lIex -lHalf -lz -lIlmThread -lxml2 -lfreetype
oneDNN 2.1.2
Harness: IP Shapes 1D - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
AMD GX-424CC SOC
SE +/- 0.17, N = 3
MIN: 85.18
96.23
20
40
60
80
100
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl

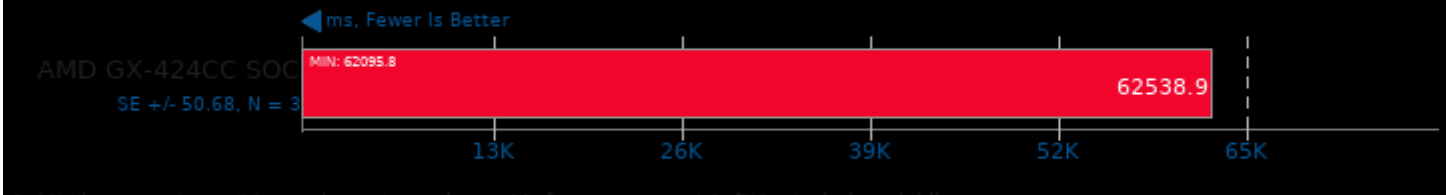

oneDNN 2.1.2
Harness: IP Shapes 3D - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
AMD GX-424CC SOC
SE +/- 0.20, N = 3
MIN: 42.1
49.11
11
22
33
44
55
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 2.1.2
Harness: IP Shapes 1D - Data Type: u8s8f32 - Engine: CPU
ms, Fewer Is Better
AMD GX-424CC SOC
SE +/- 0.04, N = 3
MIN: 39.52
41.47
9
18
27
36
45
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 2.1.2
Harness: IP Shapes 3D - Data Type: u8s8f32 - Engine: CPU
ms, Fewer Is Better
AMD GX-424CC SOC
SE +/- 0.06, N = 3
MIN: 14.59
17.60
4
8
12
16
20
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 2.1.2
Harness: Convolution Batch Shapes Auto - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
AMD GX-424CC SOC
SE +/- 0.65, N = 3
MIN: 89.21
101.07
20
40
60
80
100
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 2.1.2
Harness: Deconvolution Batch shapes_1d - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
AMD GX-424CC SOC
SE +/- 0.52, N = 3
MIN: 199.8
214.03
50
100
150
200
250
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl


oneDNN 2.1.2
Harness: Deconvolution Batch shapes_3d - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
AMD GX-424CC SOC
SE +/- 0.10, N = 3
MIN: 307.17
318.86
70
140
210
280
350
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 2.1.2
Harness: Convolution Batch Shapes Auto - Data Type: u8s8f32 - Engine: CPU
ms, Fewer Is Better
AMD GX-424CC SOC
SE +/- 0.20, N = 3
MIN: 90.62
100.41
20
40
60
80
100
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 2.1.2
Harness: Deconvolution Batch shapes_1d - Data Type: u8s8f32 - Engine: CPU
ms, Fewer Is Better
AMD GX-424CC SOC
SE +/- 0.10, N = 3
MIN: 41.12
46.19
10
20
30
40
50
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 2.1.2
Harness: Deconvolution Batch shapes_3d - Data Type: u8s8f32 - Engine: CPU
ms, Fewer Is Better
AMD GX-424CC SOC
SE +/- 0.22, N = 3
MIN: 64.77
70.69
16
32
48
64
80
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 2.1.2
Harness: Recurrent Neural Network Training - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
AMD GX-424CC SOC
SE +/- 26.56, N = 3
MIN: 125166
125912
30K
60K
90K
120K
150K
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl


oneDNN 2.1.2
Harness: Recurrent Neural Network Inference - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
AMD GX-424CC SOC
SE +/- 70.79, N = 3
MIN: 62133.2
62619.8
13K
26K
39K
52K
65K
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 2.1.2
Harness: Recurrent Neural Network Training - Data Type: u8s8f32 - Engine: CPU
ms, Fewer Is Better
AMD GX-424CC SOC
SE +/- 159.35, N = 3
MIN: 125188
126045
30K
60K
90K
120K
150K
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 2.1.2
Harness: Recurrent Neural Network Inference - Data Type: u8s8f32 - Engine: CPU
ms, Fewer Is Better
AMD GX-424CC SOC
SE +/- 61.69, N = 3
MIN: 62205.4
62669.6
13K
26K
39K
52K
65K
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 2.1.2
Harness: Matrix Multiply Batch Shapes Transformer - Data Type: f32 - Engine: CPU
ms, Fewer Is Better
AMD GX-424CC SOC
SE +/- 0.08, N = 3
MIN: 37.86
42.43
10
20
30
40
50
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl
oneDNN 2.1.2
Harness: Recurrent Neural Network Training - Data Type: bf16bf16bf16 - Engine: CPU
ms, Fewer Is Better
AMD GX-424CC SOC
SE +/- 27.17, N = 3
MIN: 125435
126000
30K
60K
90K
120K
150K
1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl

oneDNN 2.1.2

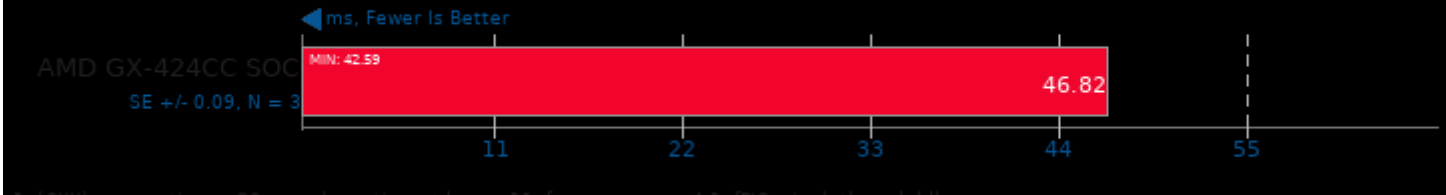
Harness: Recurrent Neural Network Inference - Data Type: bf16bf16bf16 - Engine: CPU



1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl

oneDNN 2.1.2

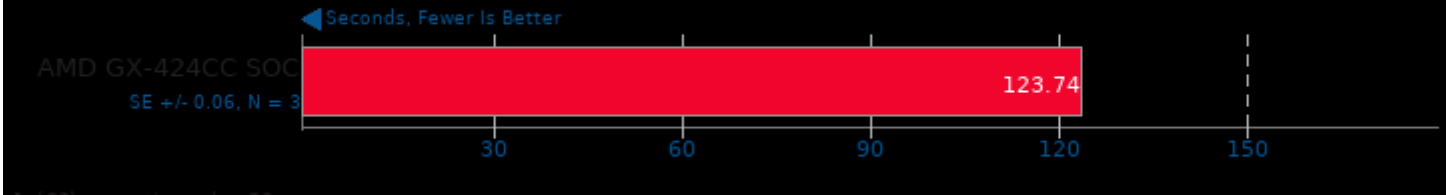
Harness: Matrix Multiply Batch Shapes Transformer - Data Type: u8s8f32 - Engine: CPU



1. (CXX) g++ options: -O3 -march=native -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread -ldl

AOBench

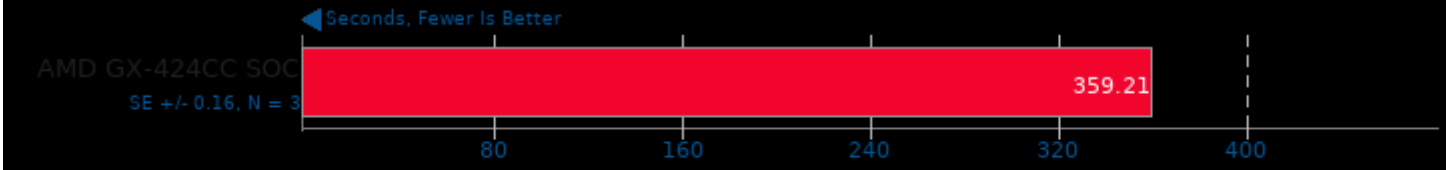
Size: 2048 x 2048 - Total Time



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

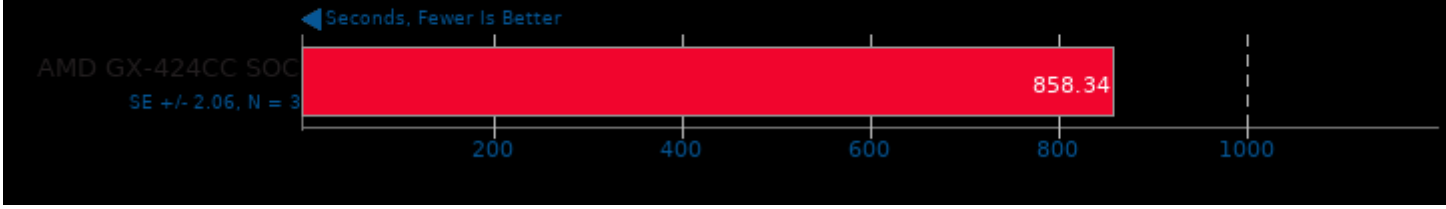
Timed Eigen Compilation 3.3.9

Time To Compile



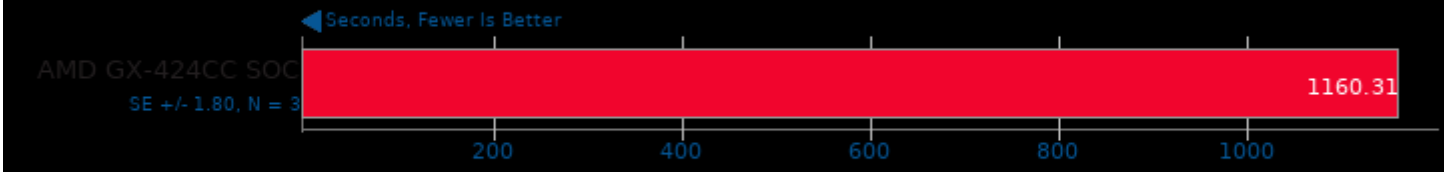
Timed Erlang/OTP Compilation 23.2

Time To Compile



Timed Wasmer Compilation 1.0.2

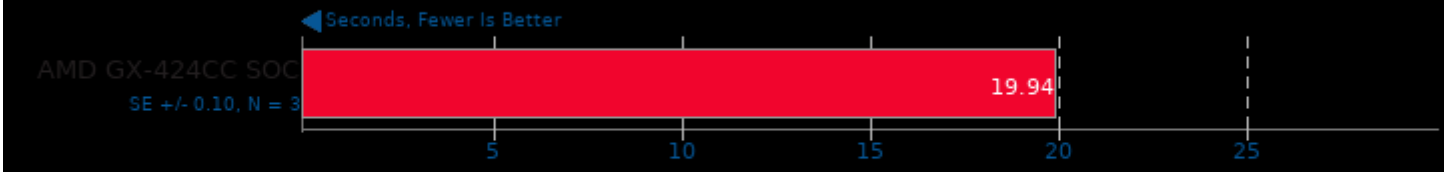
Time To Compile



1. (CC) gcc options: -m64 -pie -nodefaultlibs -ldl -lrt -lpthread -lgcc_s -lc -lm -lutil

FFmpeg 4.0.2

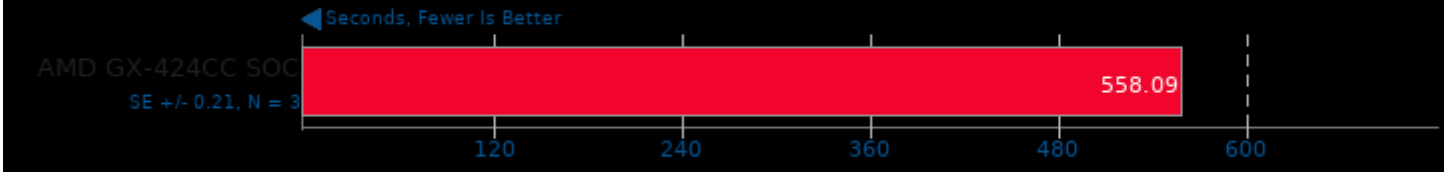
H.264 HD To NTSC DV



1. (CC) gcc options: -lavdevice -lavfilter -lavformat -lavcodec -lswresample -lswscale -lavutil -lXv -lX11 -lXext -lm -lxcb -lasound -pthread -lva -lbz2 -llzma

m-queens 1.2

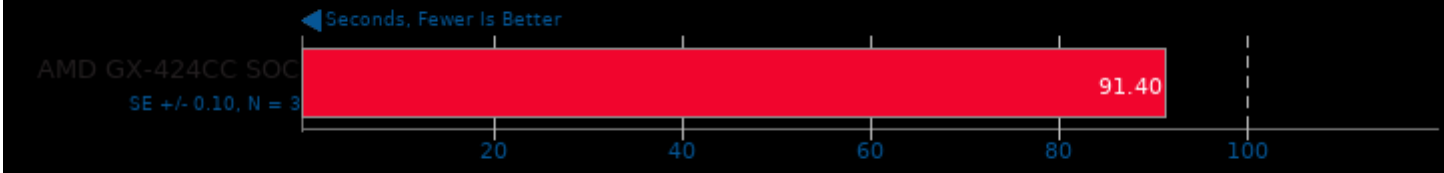
Time To Solve



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

N-Queens 1.0

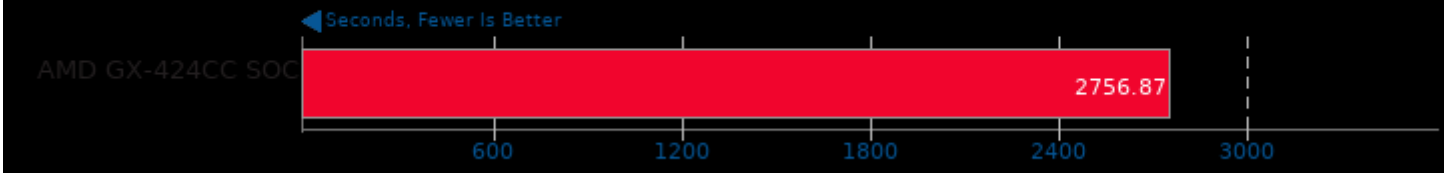
Elapsed Time



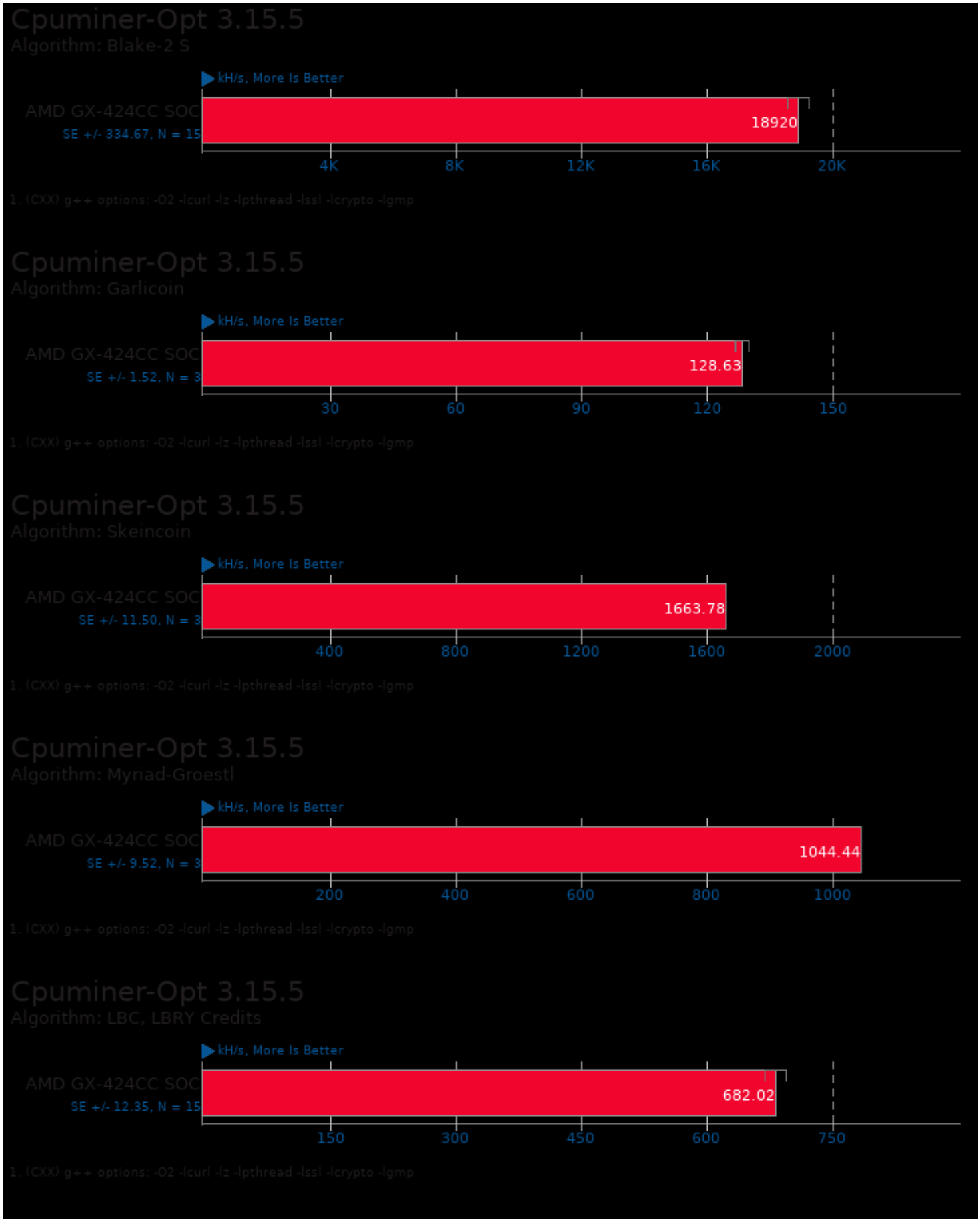
1. (CC) gcc options: -static -fopenmp -O3 -march=native

Radiance Benchmark 5.0

Test: Serial

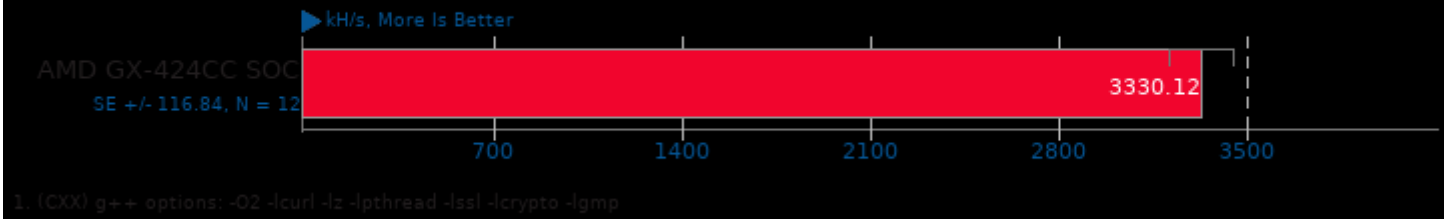



Radiance Benchmark 5.0
Test: SMP Parallel
Seconds, Fewer Is Better
AMD GX-424CC SOC
922.84
200
400
600
800
1000
Cpuminer-Opt 3.15.5
Algorithm: Magi
kH/s, More Is Better
AMD GX-424CC SOC
SE +/- 0.04, N = 3
24.51
6
12
18
24
30
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp
Cpuminer-Opt 3.15.5
Algorithm: x25x
kH/s, More Is Better
AMD GX-424CC SOC
SE +/- 0.05, N = 3
21.39
5
10
15
20
25
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp
Cpuminer-Opt 3.15.5
Algorithm: Deepcoin
kH/s, More Is Better
AMD GX-424CC SOC
SE +/- 13.22, N = 12
720.53
160
320
480
640
800
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp
Cpuminer-Opt 3.15.5
Algorithm: Ringcoin
kH/s, More Is Better
AMD GX-424CC SOC
SE +/- 1.31, N = 15
171.57
40
80
120
160
200
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp


Cpuminer-Opt 3.15.5
Algorithm: Blake-2 S
kH/s, More Is Better
AMD GX-424CC SOC
SE +/- 334.67, N = 15
18920
4K
8K
12K
16K
20K
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp
Cpuminer-Opt 3.15.5
Algorithm: Garlicoin
kH/s, More Is Better
AMD GX-424CC SOC
SE +/- 1.52, N = 3
128.63
30
60
90
120
150
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp
Cpuminer-Opt 3.15.5
Algorithm: Skeincoin
kH/s, More Is Better
AMD GX-424CC SOC
SE +/- 11.50, N = 3
1663.78
400
800
1200
1600
2000
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp
Cpuminer-Opt 3.15.5
Algorithm: Myriad-Groestl
kH/s, More Is Better
AMD GX-424CC SOC
SE +/- 9.52, N = 3
1044.44
200
400
600
800
1000
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp
Cpuminer-Opt 3.15.5
Algorithm: LBC, LBRY Credits
kH/s, More Is Better
AMD GX-424CC SOC
SE +/- 12.35, N = 15
682.02
150
300
450
600
750
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp

Cpuminer-Opt 3.15.5

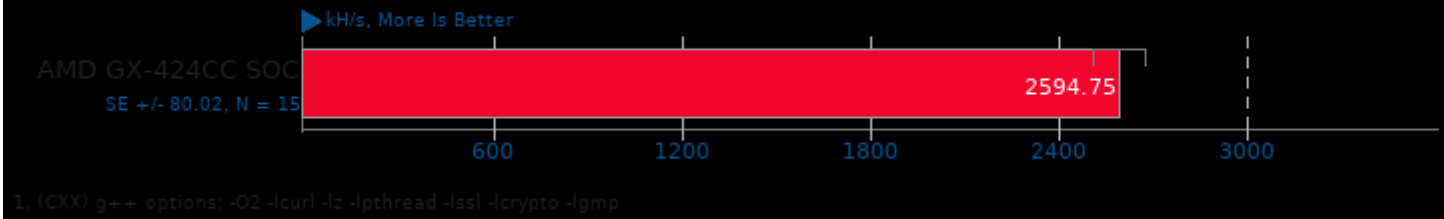
Algorithm: Quad SHA-256, Pyrite



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

Cpuminer-Opt 3.15.5

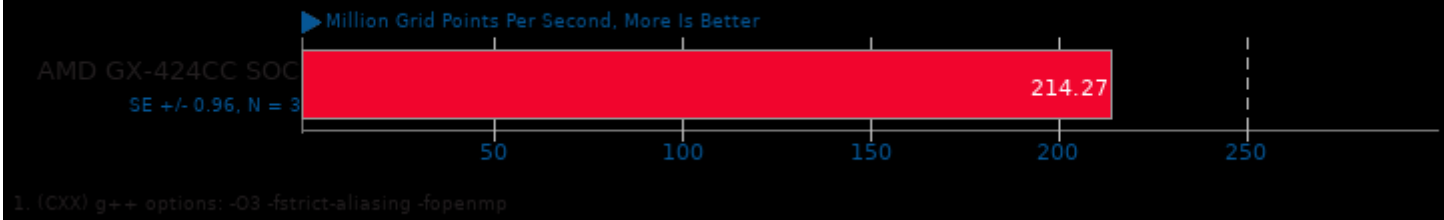
Algorithm: Triple SHA-256, Onecoin



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

ASKAP 1.0

Test: tConvolve MT - Gridding



1. (CXX) g++ options: -O3 -fstrict-aliasing -fopenmp

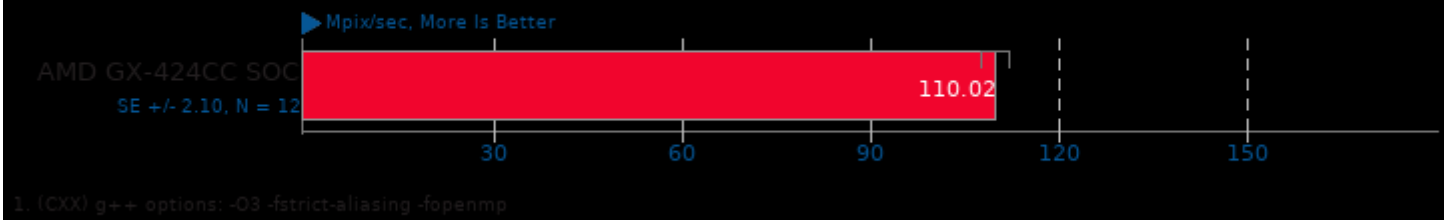
ASKAP 1.0

Test: tConvolve MT - Degridding

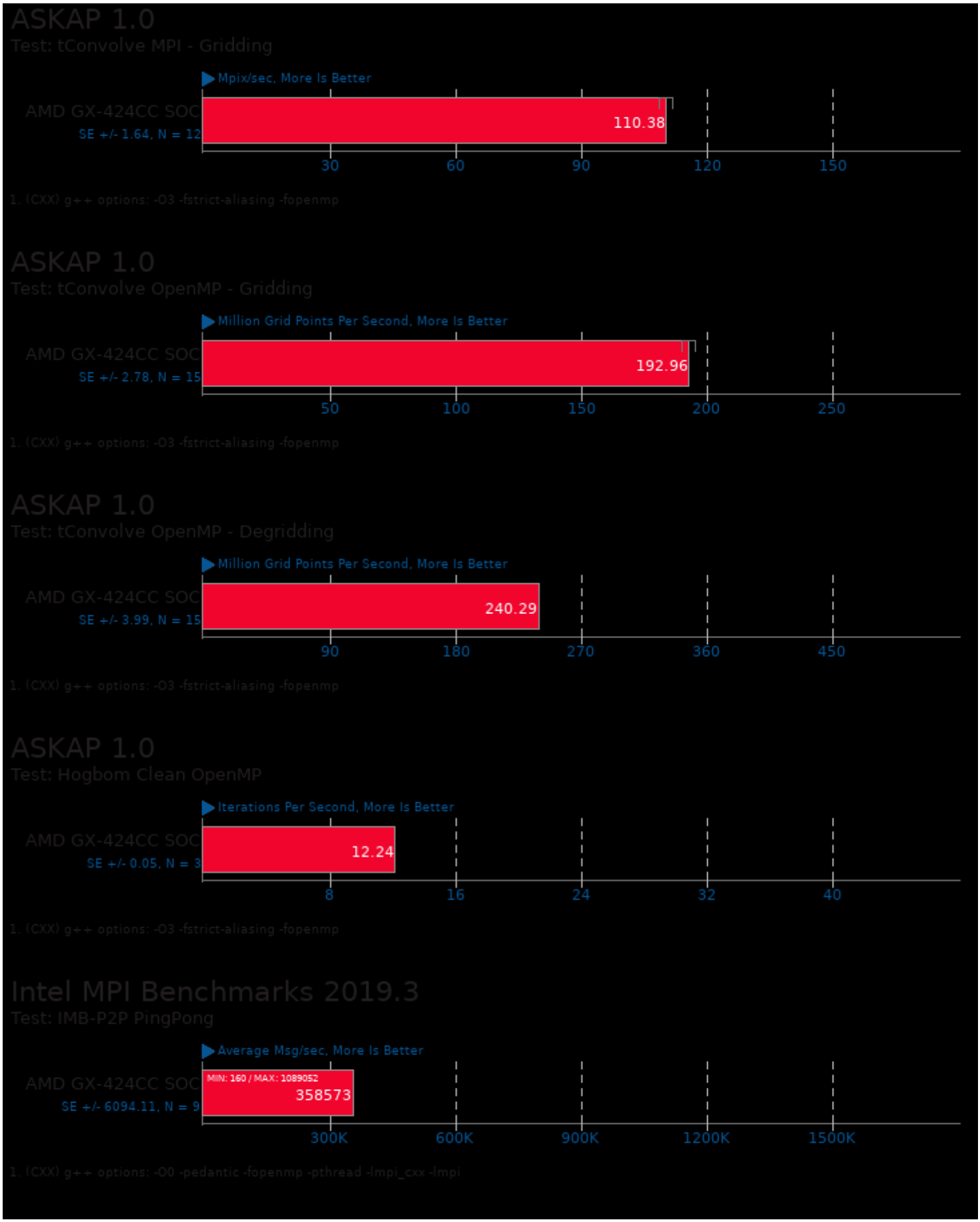
1. (CXX) g++ options: -O3 -fstrict-aliasing -fopenmp

ASKAP 1.0

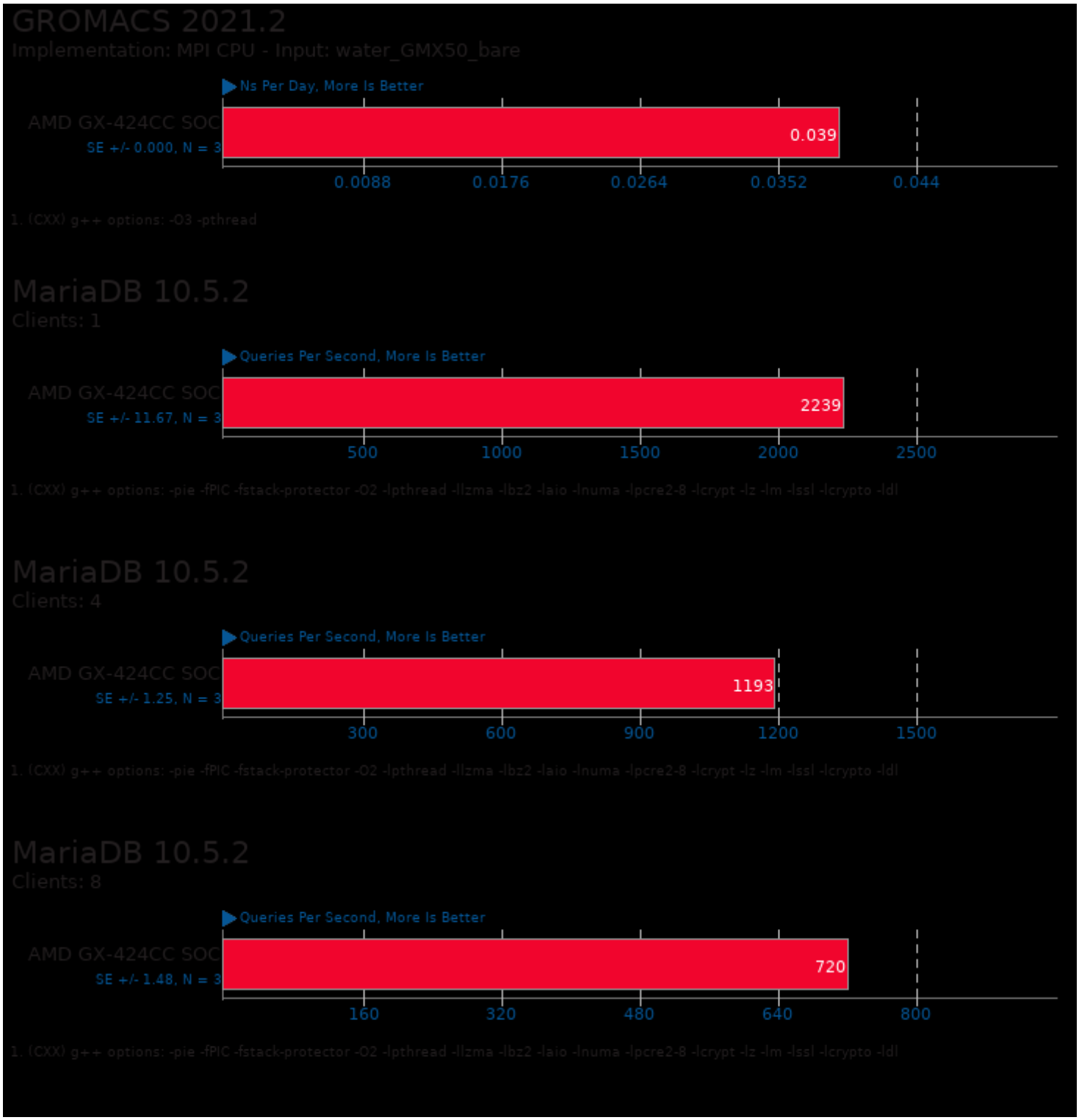
Test: tConvolve MPI - Degridding



1. (CXX) g++ options: -O3 -fstrict-aliasing -fopenmp

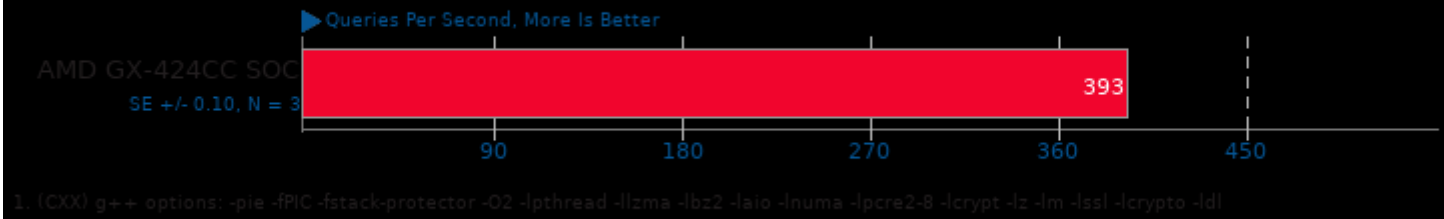

ASKAP 1.0
Test: tConvolve MPI - Gridding
Mpix/sec, More Is Better
AMD GX-424CC SOC
SE +/- 1.64, N = 12
110.38
30
60
90
120
150
1. (CXX) g++ options: -O3 -fstrict-aliasing -fopenmp
ASKAP 1.0
Test: tConvolve OpenMP - Gridding
Million Grid Points Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 2.78, N = 15
192.96
50
100
150
200
250
1. (CXX) g++ options: -O3 -fstrict-aliasing -fopenmp
ASKAP 1.0
Test: tConvolve OpenMP - Degridding
Million Grid Points Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 3.99, N = 15
240.29
90
180
270
360
450
1. (CXX) g++ options: -O3 -fstrict-aliasing -fopenmp
ASKAP 1.0
Test: Hogbom Clean OpenMP
Iterations Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 0.05, N = 3
12.24
8
16
24
32
40
1. (CXX) g++ options: -O3 -fstrict-aliasing -fopenmp
Intel MPI Benchmarks 2019.3
Test: IMB-P2P PingPong
Average Msg/sec, More Is Better
AMD GX-424CC SOC
SE +/- 6094.11, N = 9
MIN: 160 / MAX: 1089052
358573
300K
600K
900K
1200K
1500K
1. (CXX) g++ options: -O0 -pedantic -fopenmp -pthread -lmpi_cxx -lmpi


Intel MPI Benchmarks 2019.3
Test: IMB-MPI1 Exchange
Average Mbytes/sec, More Is Better
AMD GX-424CC SOC
MAX: 5199.12
449.43
SE +/- 24.97, N = 12
300
600
900
1200
1500
1. (CXX) g++ options: -O0 -pedantic -fopenmp -pthread -lmpi_cxx -lmpi
Intel MPI Benchmarks 2019.3
Test: IMB-MPI1 Exchange
Average usec, Fewer Is Better
AMD GX-424CC SOC
MIN: 2.27 / MAX: 37052.34
6384.23
SE +/- 231.44, N = 12
1400
2800
4200
5600
7000
1. (CXX) g++ options: -O0 -pedantic -fopenmp -pthread -lmpi_cxx -lmpi
Intel MPI Benchmarks 2019.3
Test: IMB-MPI1 PingPong
Average Mbytes/sec, More Is Better
AMD GX-424CC SOC
MIN: 0.53 / MAX: 2832.98
576.91
SE +/- 50.45, N = 15
300
600
900
1200
1500
1. (CXX) g++ options: -O0 -pedantic -fopenmp -pthread -lmpi_cxx -lmpi
Intel MPI Benchmarks 2019.3
Test: IMB-MPI1 Sendrecv
Average Mbytes/sec, More Is Better
AMD GX-424CC SOC
MAX: 5372.33
564.13
SE +/- 54.00, N = 9
300
600
900
1200
1500
1. (CXX) g++ options: -O0 -pedantic -fopenmp -pthread -lmpi_cxx -lmpi
Intel MPI Benchmarks 2019.3
Test: IMB-MPI1 Sendrecv
Average usec, Fewer Is Better
AMD GX-424CC SOC
MIN: 1.09 / MAX: 28102.54
4512.20
SE +/- 452.53, N = 9
1000
2000
3000
4000
5000
1. (CXX) g++ options: -O0 -pedantic -fopenmp -pthread -lmpi_cxx -lmpi


GROMACS 2021.2
Implementation: MPI CPU - Input: water_GMX50_bare
Ns Per Day, More Is Better
AMD GX-424CC SOC
SE +/- 0.000, N = 3
0.039
0.0088
0.0176
0.0264
0.0352
0.044
1. (CXX) g++ options: -O3 -pthread
MariaDB 10.5.2
Clients: 1
Queries Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 11.67, N = 3
2239
500
1000
1500
2000
2500
1. (CXX) g++ options: -pie -fPIC -fstack-protector -O2 -lpthread -llzma -lbz2 -laio -lnuma -lpcre2-8 -lcrypt -lz -lm -lssl -lcrypto -ldl
MariaDB 10.5.2
Clients: 4
Queries Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 1.25, N = 3
1193
300
600
900
1200
1500
1. (CXX) g++ options: -pie -fPIC -fstack-protector -O2 -lpthread -llzma -lbz2 -laio -lnuma -lpcre2-8 -lcrypt -lz -lm -lssl -lcrypto -ldl
MariaDB 10.5.2
Clients: 8
Queries Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 1.48, N = 3
720
160
320
480
640
800
1. (CXX) g++ options: -pie -fPIC -fstack-protector -O2 -lpthread -llzma -lbz2 -laio -lnuma -lpcre2-8 -lcrypt -lz -lm -lssl -lcrypto -ldl

MariaDB 10.5.2

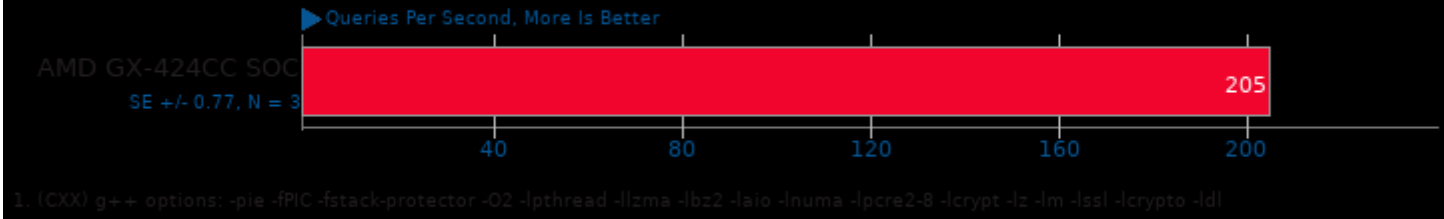
Clients: 16



1. (CXX) g++ options: -pie -fPIC -fstack-protector -O2 -lpthread -llzma -lbz2 -laio -lnuma -lpcre2-8 -lcrypt -lz -lm -lssl -lcrypto -ldl

MariaDB 10.5.2

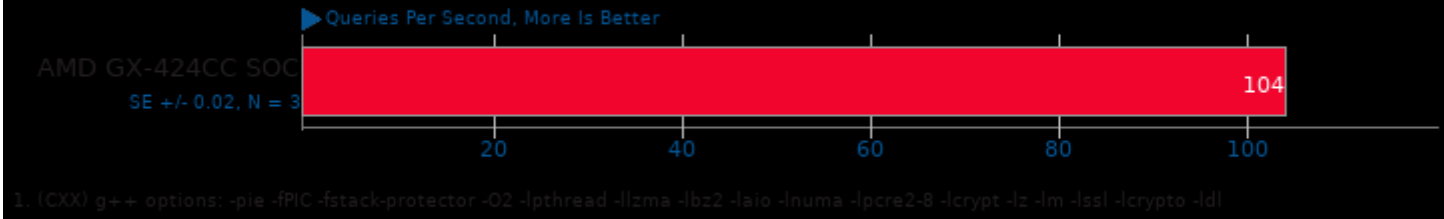
Clients: 32



1. (CXX) g++ options: -pie -fPIC -fstack-protector -O2 -lpthread -llzma -lbz2 -laio -lnuma -lpcre2-8 -lcrypt -lz -lm -lssl -lcrypto -ldl

MariaDB 10.5.2

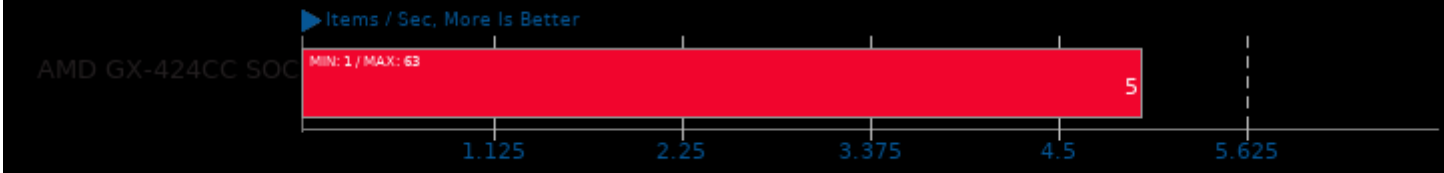
Clients: 64



1. (CXX) g++ options: -pie -fPIC -fstack-protector -O2 -lpthread -llzma -lbz2 -laio -lnuma -lpcre2-8 -lcrypt -lz -lm -lssl -lcrypto -ldl

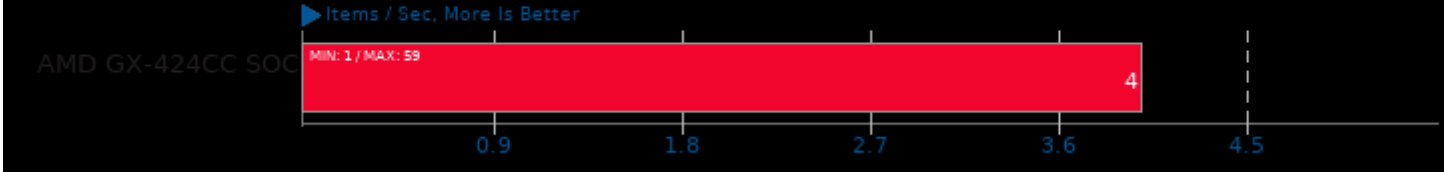
OpenVKL 1.0

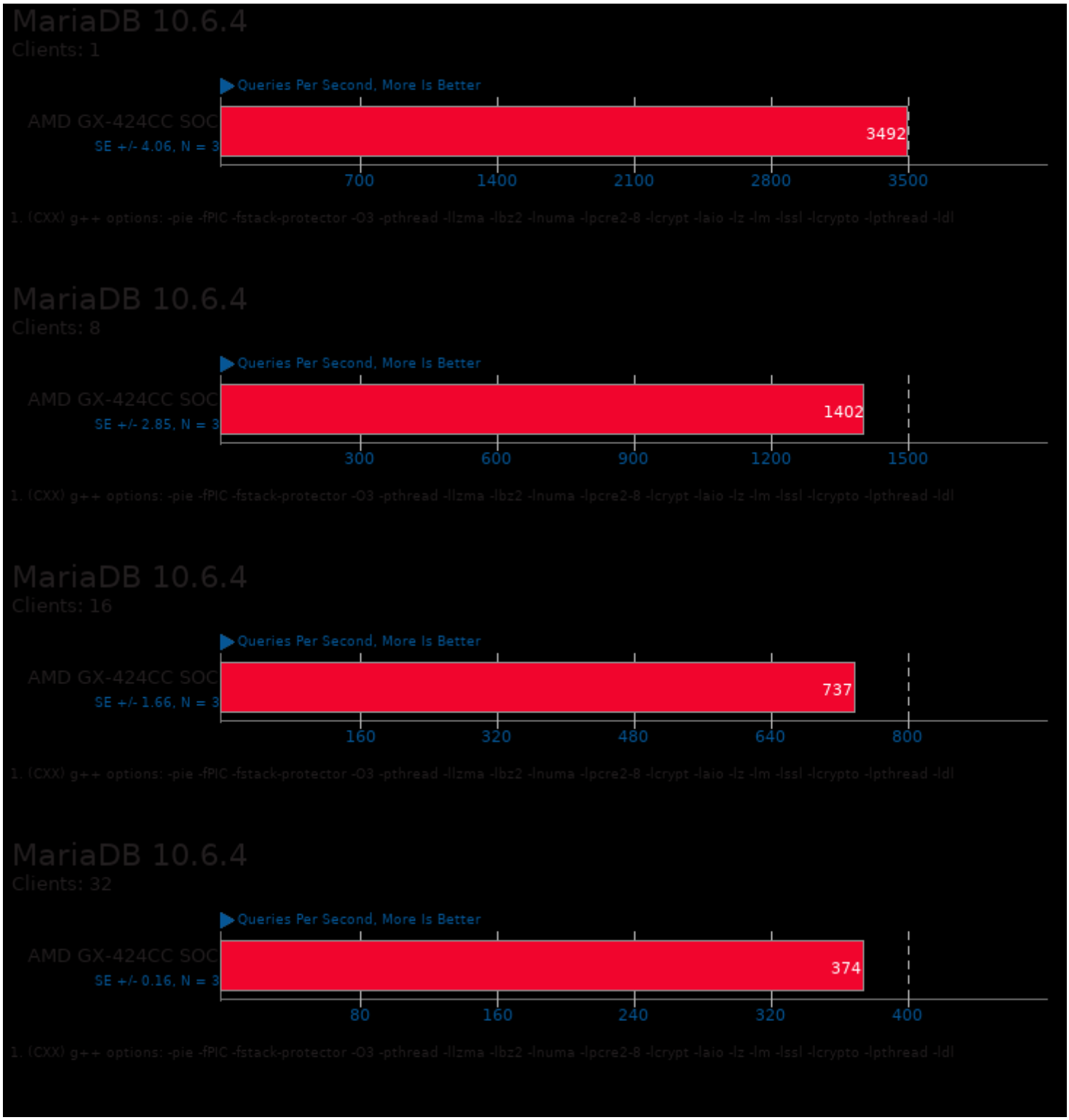
Benchmark: vklBenchmark ISPC

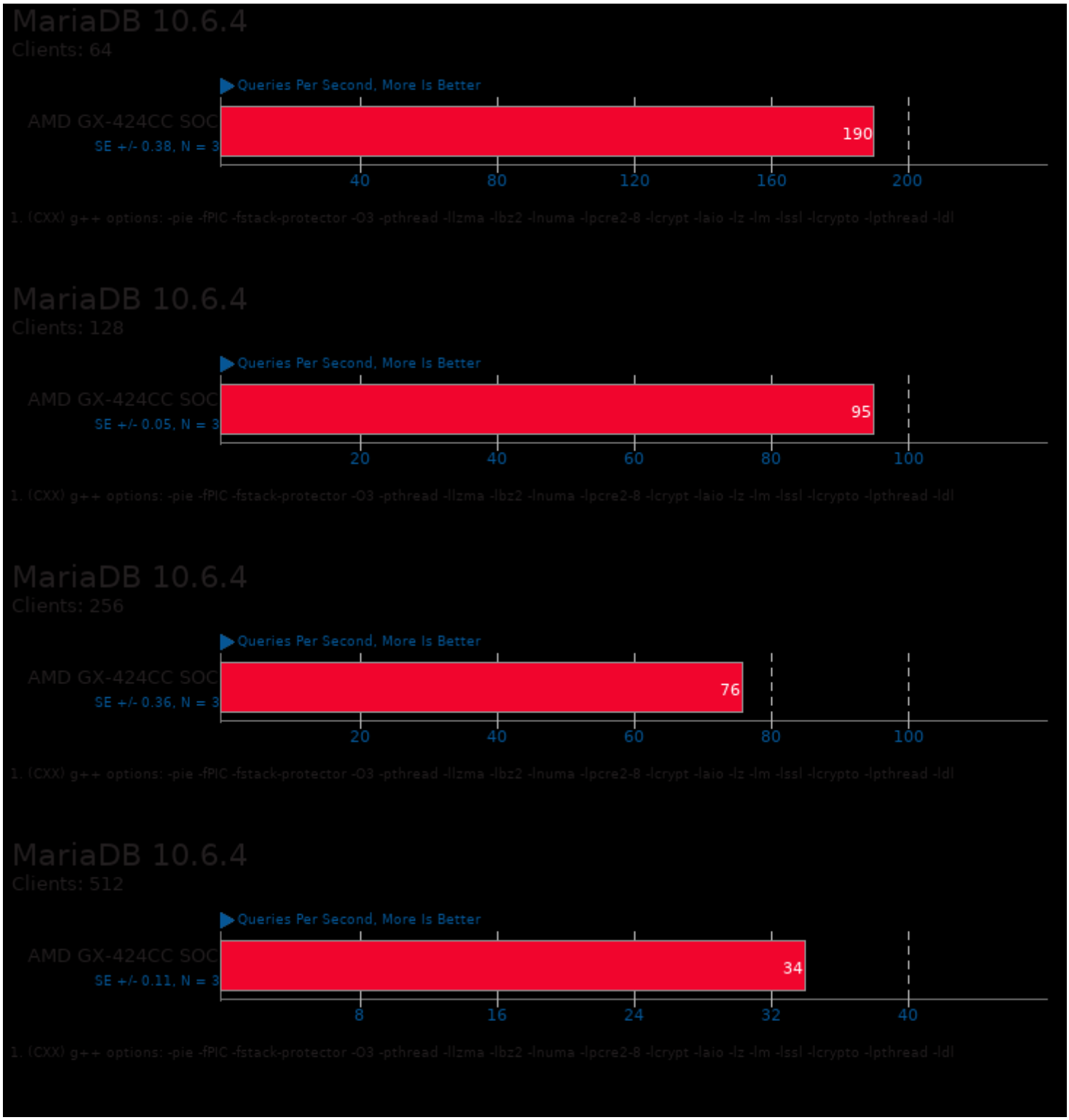


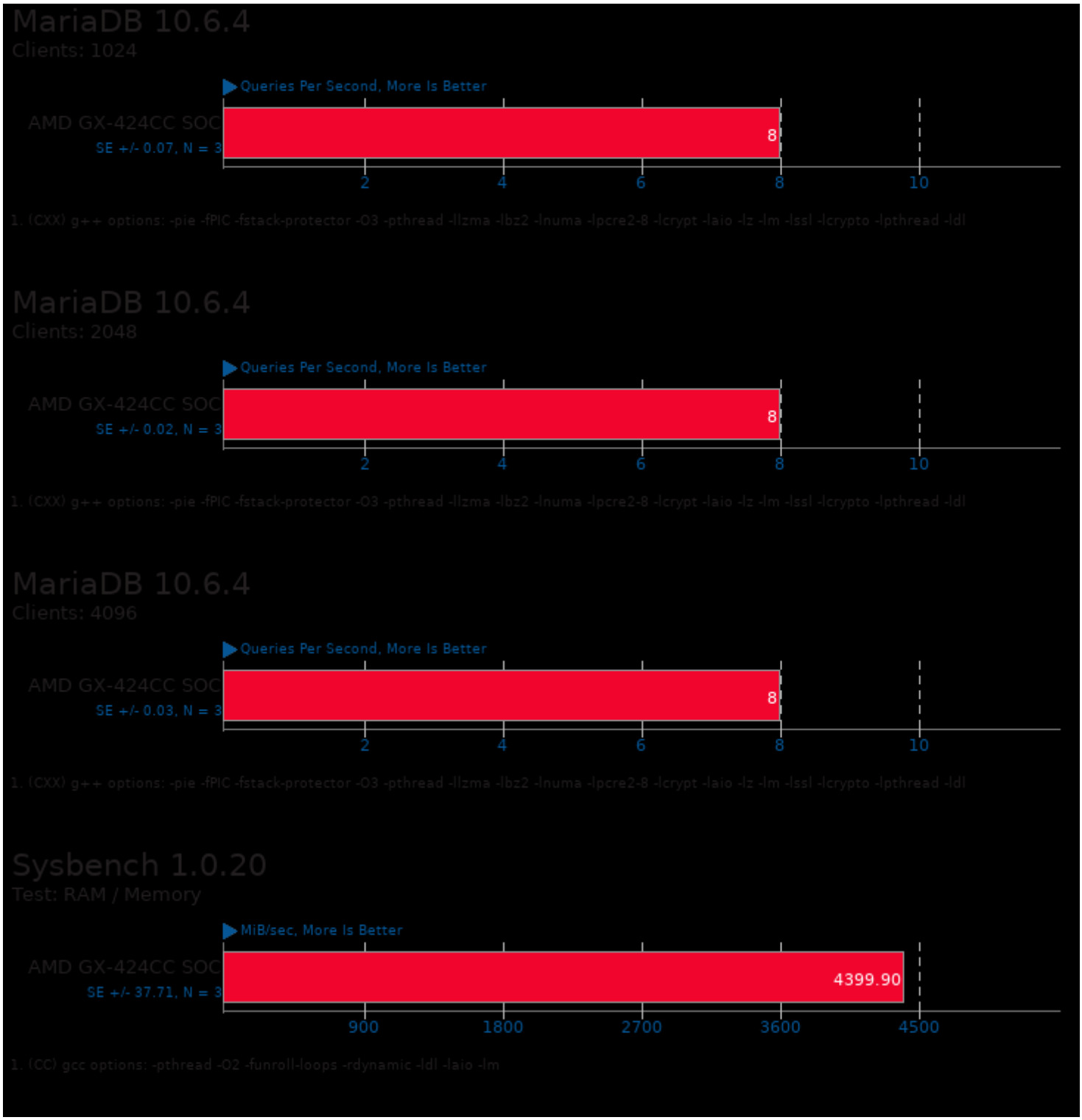
OpenVKL 1.0

Benchmark: vklBenchmark Scalar



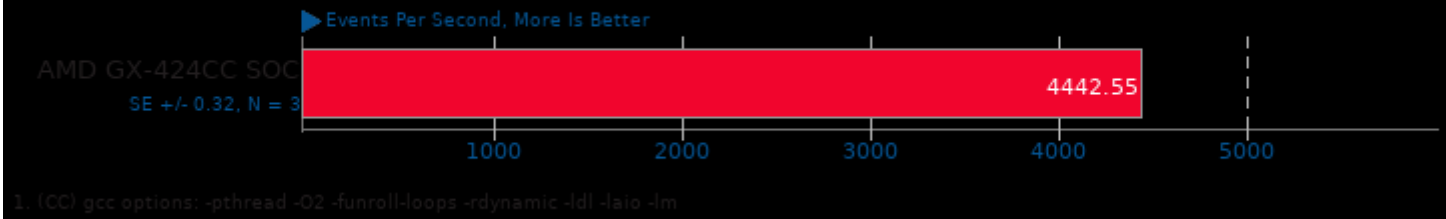

MariaDB 10.6.4
Clients: 1
Queries Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 4.06, N = 3
3492
700
1400
2100
2800
3500
1. (CXX) g++ options: -pie -fPIC -fstack-protector -O3 -pthread -llzma -lbz2 -lnuma -lpcre2-8 -lcrypt -laio -lz -lm -lssl -lcrypto -lpthread -ldl
MariaDB 10.6.4
Clients: 8
Queries Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 2.85, N = 3
1402
300
600
900
1200
1500
1. (CXX) g++ options: -pie -fPIC -fstack-protector -O3 -pthread -llzma -lbz2 -lnuma -lpcre2-8 -lcrypt -laio -lz -lm -lssl -lcrypto -lpthread -ldl
MariaDB 10.6.4
Clients: 16
Queries Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 1.66, N = 3
737
160
320
480
640
800
1. (CXX) g++ options: -pie -fPIC -fstack-protector -O3 -pthread -llzma -lbz2 -lnuma -lpcre2-8 -lcrypt -laio -lz -lm -lssl -lcrypto -lpthread -ldl
MariaDB 10.6.4
Clients: 32
Queries Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 0.16, N = 3
374
80
160
240
320
400
1. (CXX) g++ options: -pie -fPIC -fstack-protector -O3 -pthread -llzma -lbz2 -lnuma -lpcre2-8 -lcrypt -laio -lz -lm -lssl -lcrypto -lpthread -ldl


MariaDB 10.6.4
Clients: 64
Queries Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 0.38, N = 3
190
40
80
120
160
200
1. (CXX) g++ options: -pie -fPIC -fstack-protector -O3 -pthread -llzma -lbz2 -lnuma -lpcre2-8 -lcrypt -laio -lz -lm -lssl -lcrypto -lpthread -ldl
MariaDB 10.6.4
Clients: 128
Queries Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 0.05, N = 3
95
20
40
60
80
100
1. (CXX) g++ options: -pie -fPIC -fstack-protector -O3 -pthread -llzma -lbz2 -lnuma -lpcre2-8 -lcrypt -laio -lz -lm -lssl -lcrypto -lpthread -ldl
MariaDB 10.6.4
Clients: 256
Queries Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 0.36, N = 3
76
20
40
60
80
100
1. (CXX) g++ options: -pie -fPIC -fstack-protector -O3 -pthread -llzma -lbz2 -lnuma -lpcre2-8 -lcrypt -laio -lz -lm -lssl -lcrypto -lpthread -ldl
MariaDB 10.6.4
Clients: 512
Queries Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 0.11, N = 3
34
8
16
24
32
40
1. (CXX) g++ options: -pie -fPIC -fstack-protector -O3 -pthread -llzma -lbz2 -lnuma -lpcre2-8 -lcrypt -laio -lz -lm -lssl -lcrypto -lpthread -ldl


MariaDB 10.6.4
Clients: 1024
Queries Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 0.07, N = 3
8
2
4
6
8
10
1. (CXX) g++ options: -pie -fPIC -fstack-protector -O3 -pthread -llzma -lbz2 -lnuma -lpcre2-8 -lcrypt -laio -lz -lm -lssl -lcrypto -lpthread -ldl
MariaDB 10.6.4
Clients: 2048
Queries Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 0.02, N = 3
8
2
4
6
8
10
1. (CXX) g++ options: -pie -fPIC -fstack-protector -O3 -pthread -llzma -lbz2 -lnuma -lpcre2-8 -lcrypt -laio -lz -lm -lssl -lcrypto -lpthread -ldl
MariaDB 10.6.4
Clients: 4096
Queries Per Second, More Is Better
AMD GX-424CC SOC
SE +/- 0.03, N = 3
8
2
4
6
8
10
1. (CXX) g++ options: -pie -fPIC -fstack-protector -O3 -pthread -llzma -lbz2 -lnuma -lpcre2-8 -lcrypt -laio -lz -lm -lssl -lcrypto -lpthread -ldl
Sysbench 1.0.20
Test: RAM / Memory
MiB/sec, More Is Better
AMD GX-424CC SOC
SE +/- 37.71, N = 3
4399.90
900
1800
2700
3600
4500
1. (CC) gcc options: -pthread -O2 -funroll-loops -rdynamic -ldl -laio -lm

Sysbench 1.0.20

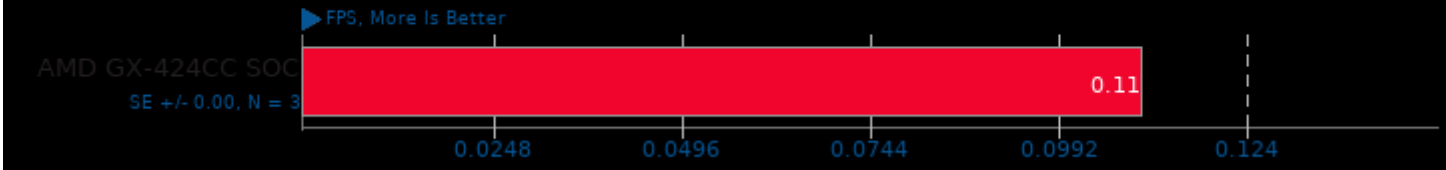
Test: CPU



1. (CC) gcc options: -pthread -O2 -funroll-loops -rdynamic -ldl -laio -lm

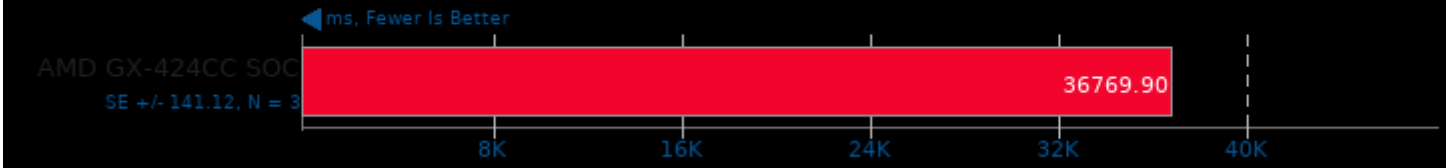
OpenVINO 2021.1

Model: Face Detection 0106 FP16 - Device: CPU



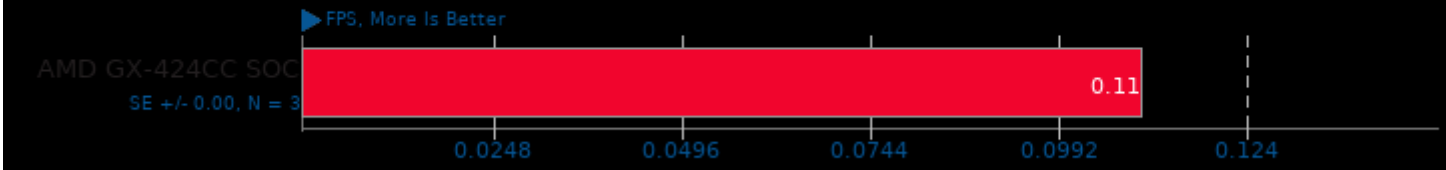
OpenVINO 2021.1

Model: Face Detection 0106 FP16 - Device: CPU



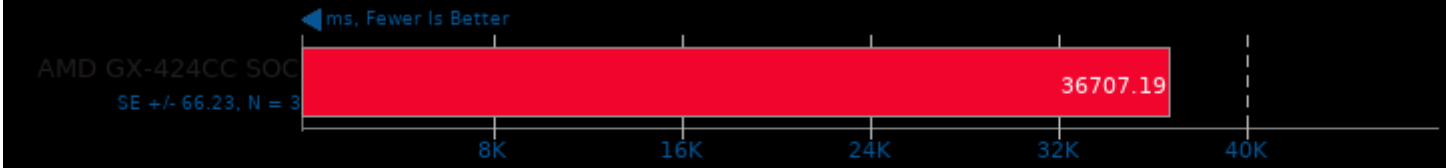
OpenVINO 2021.1

Model: Face Detection 0106 FP32 - Device: CPU



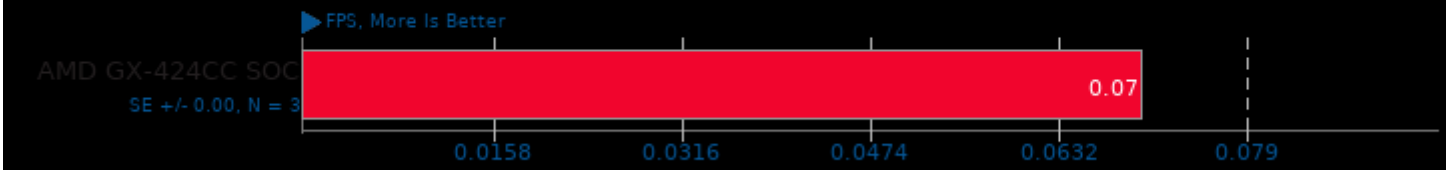
OpenVINO 2021.1

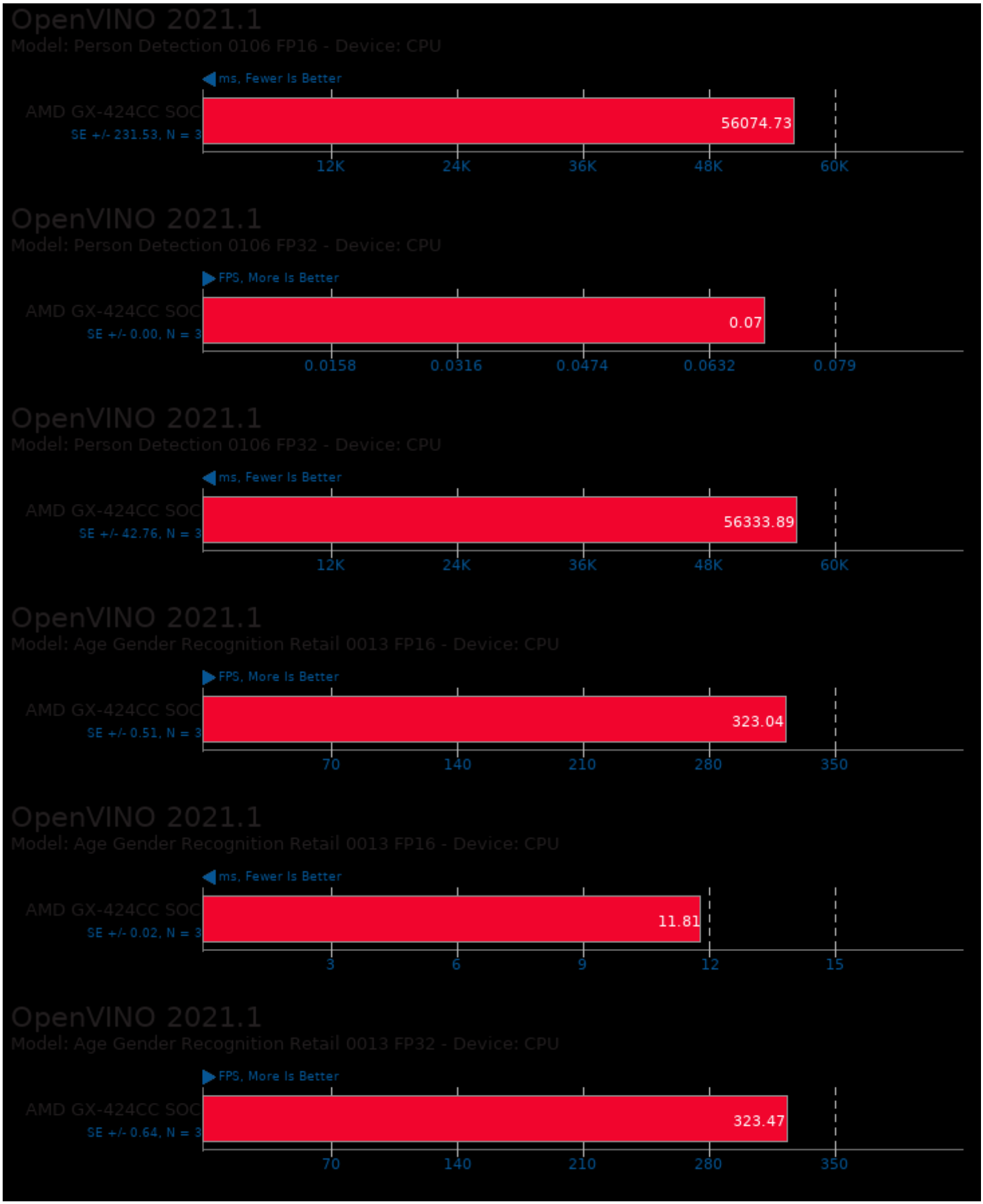
Model: Face Detection 0106 FP32 - Device: CPU

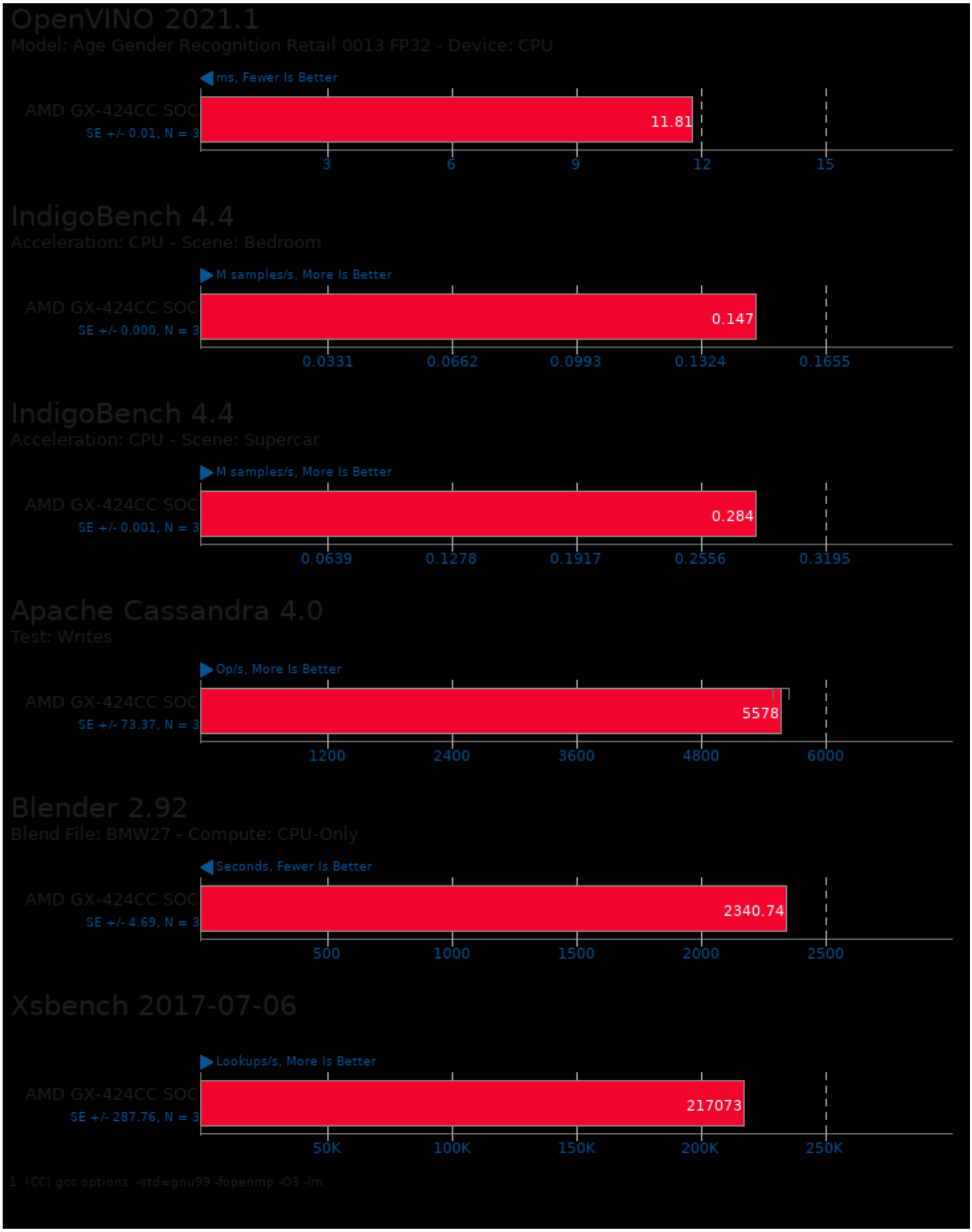


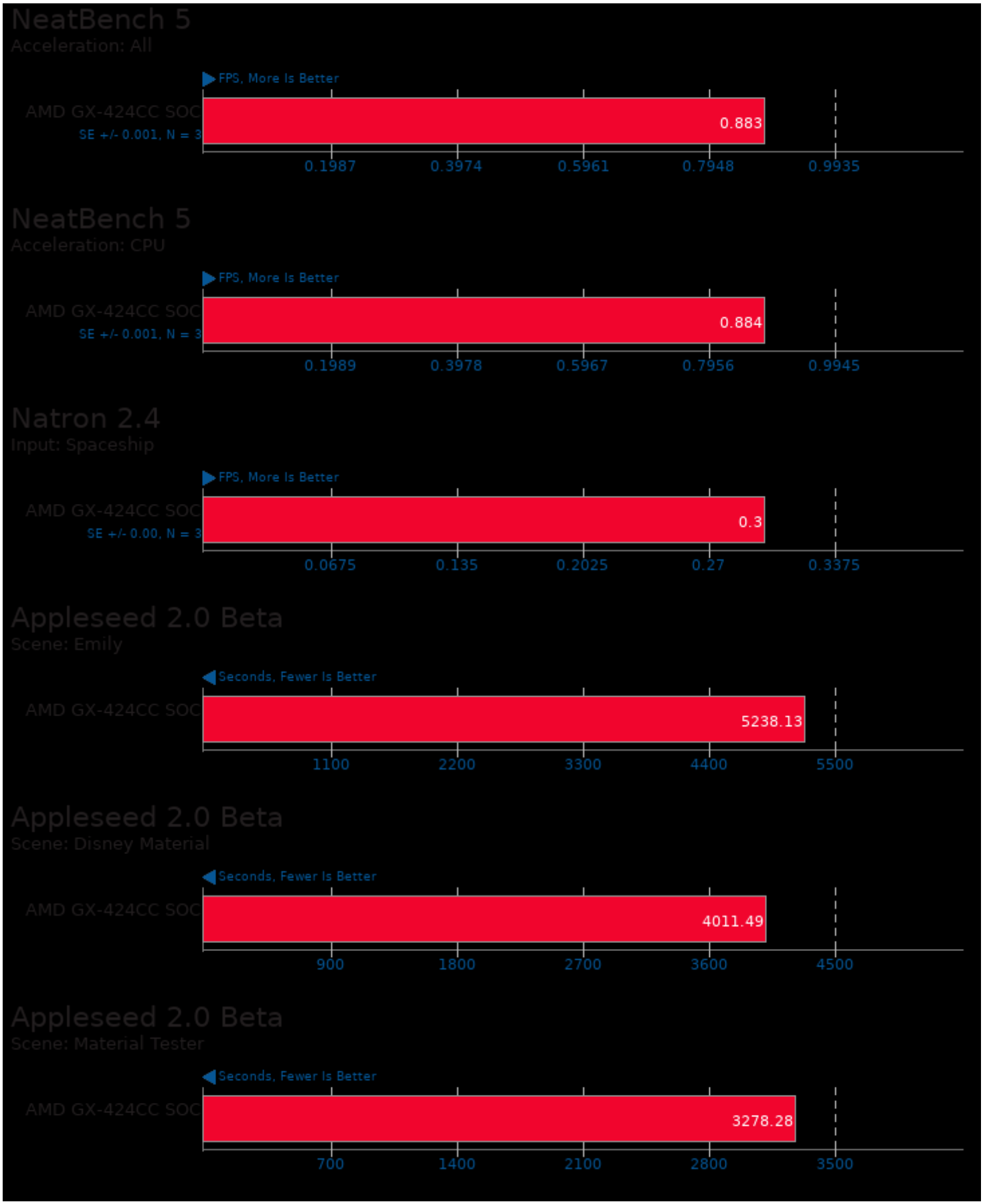
OpenVINO 2021.1

Model: Person Detection 0106 FP16 - Device: CPU




OpenVINO 2021.1
Model: Person Detection 0106 FP16 - Device: CPU
ms, Fewer Is Better
AMD GX-424CC SOC
SE +/- 231.53, N = 3
56074.73
12K
24K
36K
48K
60K
OpenVINO 2021.1
Model: Person Detection 0106 FP32 - Device: CPU
FPS, More Is Better
AMD GX-424CC SOC
SE +/- 0.00, N = 3
0.07
0.0158
0.0316
0.0474
0.0632
0.079
OpenVINO 2021.1
Model: Person Detection 0106 FP32 - Device: CPU
ms, Fewer Is Better
AMD GX-424CC SOC
SE +/- 42.76, N = 3
56333.89
12K
24K
36K
48K
60K
OpenVINO 2021.1
Model: Age Gender Recognition Retail 0013 FP16 - Device: CPU
FPS, More Is Better
AMD GX-424CC SOC
SE +/- 0.51, N = 3
323.04
70
140
210
280
350
OpenVINO 2021.1
Model: Age Gender Recognition Retail 0013 FP16 - Device: CPU
ms, Fewer Is Better
AMD GX-424CC SOC
SE +/- 0.02, N = 3
11.81
3
6
9
12
15
OpenVINO 2021.1
Model: Age Gender Recognition Retail 0013 FP32 - Device: CPU
FPS, More Is Better
AMD GX-424CC SOC
SE +/- 0.64, N = 3
323.47
70
140
210
280
350


OpenVINO 2021.1
Model: Age Gender Recognition Retail 0013 FP32 - Device: CPU
ms, Fewer Is Better
AMD GX-424CC SOC
SE +/- 0.01, N = 3
11.81
3
6
9
12
15
IndigoBench 4.4
Acceleration: CPU - Scene: Bedroom
M samples/s, More Is Better
AMD GX-424CC SOC
SE +/- 0.000, N = 3
0.147
0.0331
0.0662
0.0993
0.1324
0.1655
IndigoBench 4.4
Acceleration: CPU - Scene: Supercar
M samples/s, More Is Better
AMD GX-424CC SOC
SE +/- 0.001, N = 3
0.284
0.0639
0.1278
0.1917
0.2556
0.3195
Apache Cassandra 4.0
Test: Writes
Op/s, More Is Better
AMD GX-424CC SOC
SE +/- 73.37, N = 3
5578
1200
2400
3600
4800
6000
Blender 2.92
Blend File: BMW27 - Compute: CPU-Only
Seconds, Fewer Is Better
AMD GX-424CC SOC
SE +/- 4.69, N = 3
2340.74
500
1000
1500
2000
2500
Xsbench 2017-07-06
Lookups/s, More Is Better
AMD GX-424CC SOC
SE +/- 287.76, N = 3
217073
50K
100K
150K
200K
250K
1. (CC) gcc options: -std=gnu99 -fopenmp -O3 -lm



This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024

10:06.