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cpu-results

AMD Ryzen 5 3600 6-Core testing with a Gigabyte AB350M-DS3H V2-CF (F50 BIOS) and Gigabyte AMD Radeon RX 470/480/570/570X/580/580X/590 4GB on Arch rolling via the Phoronix Test Suite.

Test Systems:

Ryzen 3600

Processor: AMD Ryzen 5 3600 6-Core @ 3.60GHz (6 Cores / 12 Threads), Motherboard: Gigabyte AB350M-DS3H V2-CF (F50 BIOS), Chipset: AMD Starship/Matisse, Memory: 48GB, Disk: 3001GB Seagate ST3000DM001-1E61 + 3001GB Western Digital WD30PURZ-85G + 480GB Western Digital WDS480G2G0B-, Graphics: Gigabyte AMD Radeon RX 470/480/570/570X/580/580X/590 4GB (1244/1750MHz), Audio: AMD Ellesmere HDMI Audio, Monitor: PHL 288P6L + U28E590 + Philips FTV, Network: Realtek RTL8111/8168/8411

OS: Arch rolling, Kernel: 5.10.1-arch1-1 (x86_64), Desktop: KDE Plasma 5.20.4, Display Server: X Server 1.20.9, Display Driver: modesetting 1.20.9, OpenGL: 4.6 Mesa 20.3.1 (LLVM 11.0.0), OpenCL: OpenCL 1.1 Mesa 20.3.1 + OpenCL 2.0 AMD-APP.dbg (3212.0), Vulkan: 1.2.145, Compiler: GCC 10.2.0 + Clang 11.0.0Target: + LLVM 11.0.0, File-System: btrfs, Screen Resolution: 7680x2160

Compiler Notes: --disable-libssp --disable-libstdcxx-pch --disable-libunwind-exceptions --disable-werror --enable-__cxa_atexit --enable-cet=auto --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-default-ssp --enable-gnu-indirect-function --enable-gnu-unique-object --enable-install-libiberty --enable-languages=c,c++,ada,fortran,go,lto,objc,obj-c++,d --enable-lto --enable-multilib --enable-plugin --enable-shared --enable-threads=posix --mandir=/usr/share/man --with-isl --with-linker-hash-style=gnu
Processor Notes: Scaling Governor: acpi-cpufreq schedutil - CPU Microcode: 0x8701013
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional STIBP: conditional RSB filling + srbds: Not affected + tsx_async_abort: Not affected

Ryzen 1700

Processor: AMD Ryzen 7 1700 Eight-Core @ 3.00GHz (8 Cores / 16 Threads), Motherboard: Gigabyte A320M-S2H-CF (F52 BIOS), Chipset: AMD 17h, Memory: 32GB, Disk: 4001GB Seagate ST4000DM004-2CV1 + 480GB Western Digital WDS480G2G0B + 16GB Cruzer Blade, Graphics: AMD Radeon RX 5500/5500M / Pro 5500M (1900/875MHz), Audio: AMD Navi 10 HDMI Audio, Monitor: LG TV, Network: Realtek RTL8111/8168/8411

OS: Arch rolling, Kernel: 5.9.14-arch1-1 (x86_64), Desktop: KDE Plasma 5.20.4, Display Server: X Server 1.20.9, Display Driver: modesetting 1.20.9, OpenGL: 4.6 Mesa 20.3.1 (LLVM 11.0.0), Vulkan: 1.2.145, Compiler: GCC 10.2.0 + Clang 11.0.0Target: + LLVM 11.0.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --disable-libssp --disable-libstdcxx-pch --disable-libunwind-exceptions --disable-werror --enable-__cxa_atexit --enable-cet=auto --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-default-ssp --enable-gnu-indirect-function --enable-gnu-unique-object --enable-install-libiberty --enable-languages=c,c++,ada,fortran,go,lto,objc,obj-c++,d --enable-lto --enable-multilib --enable-plugin --enable-shared --enable-threads=posix --mandir=/usr/share/man --with-isl --with-linker-hash-style=gnu
Processor Notes: Scaling Governor: acpi-cpufreq schedutil - CPU Microcode: 0x8001138
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional STIBP: disabled RSB filling + srbds: Not affected + tsx_async_abort: Not affected

AMD Ryzen 7 1700 Eight-Core - AMD Radeon RX #1

Processor: AMD Ryzen 7 1700 Eight-Core @ 3.00GHz (8 Cores / 16 Threads), Motherboard: Gigabyte A320M-S2H-CF (F52 BIOS), Chipset: AMD 17h, Memory: 32GB, Disk: 4001GB Seagate ST4000DM004-2CV1 + 480GB Western Digital WDS480G2G0B + 16GB Cruzer Blade, Graphics: AMD Radeon RX 5500/5500M / Pro 5500M (1900/875MHz), Audio: AMD Navi 10 HDMI Audio, Monitor: LG TV, Network: Realtek RTL8111/8168/8411

OS: Arch rolling, Kernel: 5.9.14-arch1-1 (x86_64), Desktop: KDE Plasma 5.20.4, Display Server: X Server 1.20.9, Display Driver: modesetting 1.20.9, Vulkan: 1.2.145, Compiler: GCC 10.2.0 + Clang 11.0.0Target: + LLVM 11.0.0, File-System: ext4, Screen Resolution: 1920x1080

Processor Notes: Scaling Governor: acpi-cpufreq schedutil - CPU Microcode: 0x8001138
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional STIBP: disabled RSB filling + srbds: Not affected + tsx_async_abort: Not affected

AMD Ryzen 7 1700 Eight-Core - AMD Radeon RX #2

Processor: AMD Ryzen 7 1700 Eight-Core @ 3.00GHz (8 Cores / 16 Threads), Motherboard: Gigabyte A320M-S2H-CF (F52 BIOS), Chipset: AMD 17h, Memory: 32GB, Disk: 4001GB Seagate ST4000DM004-2CV1 + 480GB Western Digital WDS480G2G0B + 16GB Cruzer Blade, Graphics: AMD Radeon RX 5500/5500M / Pro 5500M (1900/875MHz), Audio: AMD Navi 10 HDMI Audio, Monitor: LG TV, Network: Realtek RTL8111/8168/8411

OS: Arch rolling, Kernel: 5.9.14-arch1-1 (x86_64), Desktop: KDE Plasma 5.20.4, Display Server: X Server 1.20.9, Display Driver: modesetting 1.20.9, OpenGL: 4.6 Mesa 20.3.1 (LLVM 11.0.0), Vulkan: 1.2.145, Compiler: GCC 10.2.0 + Clang 11.0.0Target: + LLVM 11.0.0, File-System: ext4, Screen Resolution: 1920x1080

Processor Notes: Scaling Governor: acpi-cpufreq schedutil - CPU Microcode: 0x8001138
Python Notes: Python 3.9.1
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and

seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional STIBP: disabled RSB filling + srbds: Not affected + tsx_async_abort: Not affected

AMD Ryzen 5 3600 6-Core - Gigabyte AMD Radeon RX #1

AMD Ryzen 5 3600 6-Core - Gigabyte AMD Radeon RX #2

Processor: AMD Ryzen 5 3600 6-Core @ 3.60GHz (6 Cores / 12 Threads), Motherboard: Gigabyte AB350M-DS3H V2-CF (F50 BIOS), Chipset: AMD Starship/Matisse, Memory: 48GB, Disk: 3001GB Seagate ST3000DM001-1E61 + 3001GB Western Digital WD30PURZ-85G + 480GB Western Digital WDS480G2G0B-, Graphics: Gigabyte AMD Radeon RX 470/480/570/570X/580/580X/590 4GB (1244/1750MHz), Audio: AMD Ellesmere HDMI Audio, Monitor: PHL 288P6L + U28E590 + Philips FTV, Network: Realtek RTL8111/8168/8411

OS: Arch rolling, Kernel: 5.10.1-arch1-1 (x86_64), Desktop: KDE Plasma 5.20.4, Display Server: X Server 1.20.9, Display Driver: modesetting 1.20.9, OpenGL: 4.6 Mesa 20.3.1 (LLVM 11.0.0), OpenCL: OpenCL 1.1 Mesa 20.3.1 + OpenCL 2.0 AMD-APP.dbg (3212.0), Vulkan: 1.2.145, Compiler: GCC 10.2.0 + Clang 11.0.0Target: + LLVM 11.0.0, File-System: btrfs, Screen Resolution: 3840x2160

Processor Notes: Scaling Governor: acpi-cpufreq schedutil - CPU Microcode: 0x8701013
Python Notes: Python 3.9.1
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional STIBP: conditional RSB filling + srbds: Not affected + tsx_async_abort: Not affected

AMD Ryzen 5 3600 6-Core

Processor: AMD Ryzen 5 3600 6-Core @ 3.60GHz (6 Cores / 12 Threads), Motherboard: Gigabyte AB350M-DS3H V2-CF (F50 BIOS), Chipset: AMD Starship/Matisse, Memory: 48GB, Disk: 3001GB Seagate ST3000DM001-1E61 + 3001GB Western Digital WD30PURZ-85G + 480GB Western Digital WDS480G2G0B-, Graphics: Gigabyte AMD Radeon RX 470/480/570/570X/580/580X/590 4GB (1244/1750MHz), Audio: AMD Ellesmere HDMI Audio, Monitor: PHL 288P6L + U28E590 + Philips FTV, Network: Realtek RTL8111/8168/8411

OS: Arch rolling, Kernel: 5.10.1-arch1-1 (x86_64), Desktop: KDE Plasma 5.20.4, Display Server: X Server 1.20.9, Display Driver: modesetting 1.20.9, OpenCL: OpenCL 1.1 Mesa 20.3.1 + OpenCL 2.0 AMD-APP.dbg (3212.0), Vulkan: 1.2.145, Compiler: GCC 10.2.0 + Clang 11.0.0Target: + LLVM 11.0.0, File-System: btrfs, Screen Resolution: 3840x2160

Processor Notes: Scaling Governor: acpi-cpufreq schedutil - CPU Microcode: 0x8701013
Java Notes: OpenJDK Runtime Environment (build 1.8.0_265-b01)
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional STIBP: conditional RSB filling + srbds: Not affected + tsx_async_abort: Not affected

AMD Ryzen 7 1700 Eight-Core

Processor: AMD Ryzen 7 1700 Eight-Core @ 3.00GHz (8 Cores / 16 Threads), Motherboard: Gigabyte A320M-S2H-CF (F52 BIOS), Chipset: AMD 17h, Memory: 32GB, Disk: 4001GB Seagate ST4000DM004-2CV1 + 480GB Western Digital WDS480G2G0B + 16GB Cruzer Blade, Graphics: AMD Radeon RX 5500/5500M / Pro 5500M (1900/875MHz), Audio: AMD Navi 10 HDMI Audio, Monitor: LG TV, Network: Realtek RTL8111/8168/8411

OS: Arch rolling, Kernel: 5.9.14-arch1-1 (x86_64), Desktop: KDE Plasma 5.20.4, Display Server: X Server 1.20.9, Display Driver: modesetting 1.20.9, OpenGL: 4.6 Mesa 20.3.1 (LLVM 11.0.0), Vulkan: 1.2.145, Compiler: GCC 10.2.0 + Clang 11.0.0Target: + LLVM 11.0.0, File-System: ext4, Screen Resolution: 1920x1080

Processor Notes: Scaling Governor: acpi-cpufreq schedutil - CPU Microcode: 0x8001138
Java Notes: OpenJDK Runtime Environment (build 1.8.0_265-b01)
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and

seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional STIBP: disabled RSB filling + srbds: Not affected + tsx_async_abort: Not affected

	Ryzen 3600	Ryzen 1700	AMD Ryzen 7 1700 Eight-Core - AMD Radeon RX #1	AMD Ryzen 7 1700 Eight-Core - AMD Radeon RX #2	AMD Ryzen 5 3600 6-Core - Gigabyte AMD Radeon RX	AMD Ryzen 5 3600 6-Core - Gigabyte AMD Radeon RX	AMD Ryzen 5 3600 6-Core	AMD Ryzen 7 1700 Eight-Core
Rodinia - OpenMP LavaMD (sec)	**42.463**	**41.541**						
Normalized	97.83%	100%						
Standard Deviation	1%	3%						
Rodinia - OpenMP CFD Solver (sec)	**37.198**	**31.021**						
Normalized	83.39%	100%						
Standard Deviation	8.6%	1.3%						
NAMD - ATPase Simulation - 327,506 Atoms (days/ns)	**2.91788**	**2.97173**						
Normalized	100%	98.19%						
Standard Deviation	0.8%	0.7%						
Kvazaar - Bosphorus 4K - Slow (FPS)	**4.11**	**3.12**						
Normalized	100%	75.91%						
Standard Deviation	1.2%	3.6%						
Kvazaar - Bosphorus 4K - Medium (FPS)	**4.22**	**3.20**						
Normalized	100%	75.83%						
Standard Deviation	0.7%	0.8%						
Kvazaar - Bosphorus 1080p - Slow (FPS)	**16.99**	**13.91**						
Normalized	100%	81.87%						
Standard Deviation	1.2%	7.4%						
Kvazaar - Bosphorus 1080p - Medium (FPS)	**17.48**	**14.48**						
Normalized	100%	82.84%						
Standard Deviation	0.7%	0.3%						
Kvazaar - Bosphorus 4K - Very Fast (FPS)	**11.68**	**8.93**						
Normalized	100%	76.46%						
Standard Deviation	1.2%	0.6%						
Kvazaar - Bosphorus 4K - Ultra Fast (FPS)	**20.99**	**16.11**						
Normalized	100%	76.75%						
Standard Deviation	0.5%	0.5%						

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Kvazaar - Bosphorus 1080p - Very Fast (FPS)	45.42	34.09		
Normalized	100%	75.06%		
Standard Deviation	0.6%	0.5%		
Kvazaar - Bosphorus 1080p - Ultra Fast (FPS)	78.12	61.85		
Normalized	100%	79.17%		
Standard Deviation	1.7%	0.3%		
x264 - H.2.V.E (FPS)	71.50	57.74		
Normalized	100%	80.76%		
Standard Deviation	3%	24.8%		
x265 - Bosphorus 4K (FPS)	9.59	6.63		
Normalized	100%	69.13%		
Standard Deviation	1.1%	14.8%		
x265 - Bosphorus 1080p (FPS)	45.08	30.63		
Normalized	100%	67.95%		
Standard Deviation	2.2%	4.4%		
Stockfish - Total Time (Nodes/s)	18822629	16971247		
Normalized	100%	90.16%		
Standard Deviation	1.1%	6.5%		
asmFish - 1.H.M.2.D (Nodes/s)	18999793	17064268		
Normalized	100%	89.81%		
Standard Deviation	0.9%	2.8%		
POV-Ray - Trace Time (sec)	63.364	80.284		
Normalized	100%	78.92%		
Standard Deviation	0.5%	3.5%		
OpenSSL - R.4.b.P (Signs/sec)	1674	1291		
Normalized	100%	77.11%		
Standard Deviation	2.9%	2.6%		
ctx_clock - C.S.T (Clocks)	252	240		
Normalized	95.24%	100%		
Sysbench - CPU (Events/sec)	12430	12874		
Normalized	96.55%	100%		
Standard Deviation	0%	2.5%		
Blender - Barbershop - CPU-Only (sec)	1416	1849		
Normalized	100%	76.57%		
PHPBench - P.B.S (Score)			459764	661260
Normalized			69.53%	100%
Standard Deviation			0.8%	0.8%
PyBench - T.F.A.T.T (Milliseconds)			1437	1017
Normalized			70.77%	100%
Standard Deviation			1.1%	

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Java SciMark - Composite (Mflops)	**3001**	**2214**
Normalized	100%	73.77%
Standard Deviation	0.9%	3.4%
Java SciMark - Monte Carlo (Mflops)	**1584**	**1214**
Normalized	100%	76.63%
Standard Deviation	1.1%	3.9%
Java SciMark - F.F.T (Mflops)	**1771**	**1427**
Normalized	100%	80.59%
Standard Deviation	3.7%	1.9%
Java SciMark - S.M.M (Mflops)	**2651**	**2092**
Normalized	100%	78.92%
Standard Deviation	1.6%	2.6%
Java SciMark - D.L.M.F (Mflops)	**7360**	**5094**
Normalized	100%	69.21%
Standard Deviation	2.2%	4.7%
Java SciMark - J.S.O.R (Mflops)	**1637**	**1241**
Normalized	100%	75.77%
Standard Deviation	0.2%	3.4%
Bork File Encrypter - F.E.T (sec)	**8.954**	**12.752**
Normalized	100%	70.22%
Standard Deviation	2.5%	9.3%
DaCapo Benchmark - H2 (msec)	**4321**	**6260**
Normalized	100%	69.03%
Standard Deviation	4.1%	4.6%
DaCapo Benchmark - Jython (msec)	**4232**	**5970**
Normalized	100%	70.89%
Standard Deviation	2%	1%
DaCapo Benchmark - Eclipse (msec)	**19293**	**27357**
Normalized	100%	70.52%
Standard Deviation	0.5%	12.6%
Renaissance - Scala Dotty (ms)	**1208**	**2045**
Normalized	100%	59.07%
Standard Deviation	2.9%	39.7%
Renaissance - Rand Forest (ms)	**1703**	**2419**
Normalized	100%	70.38%
Standard Deviation	3.8%	5.4%
Renaissance - Apache Spark ALS (ms)	**1963**	**2406**
Normalized	100%	81.6%
Standard Deviation	8.8%	1.9%

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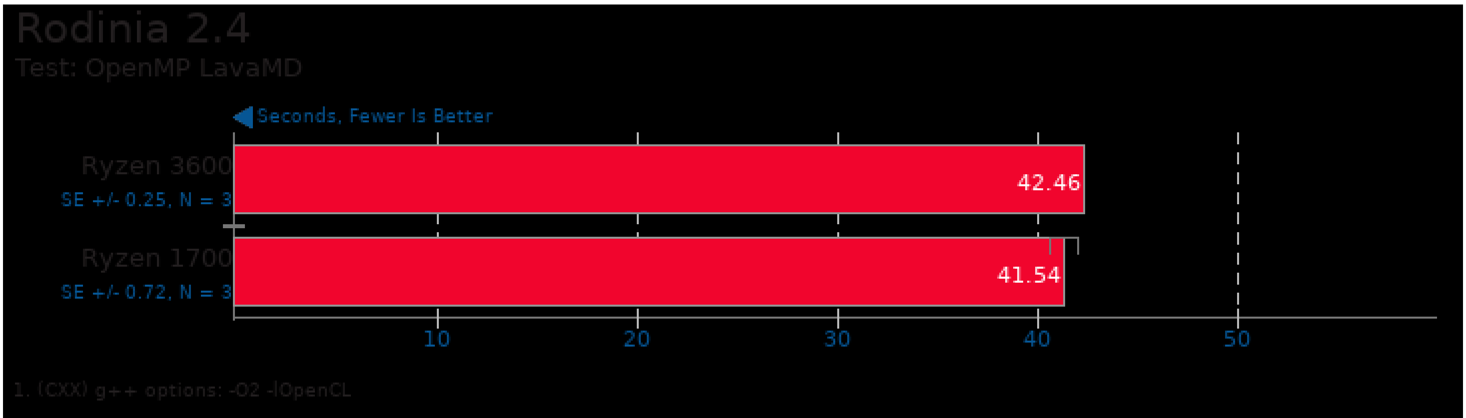
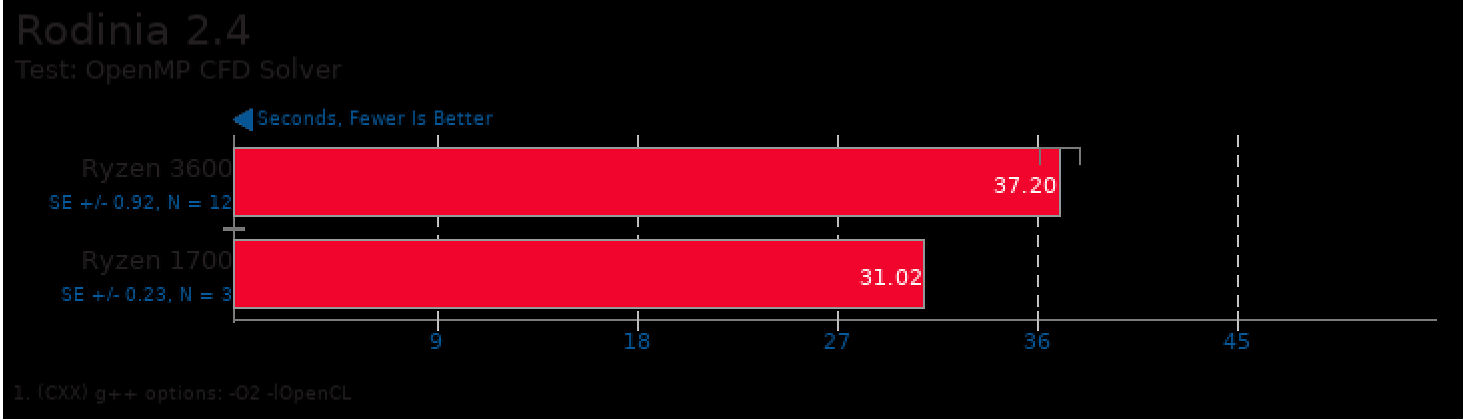
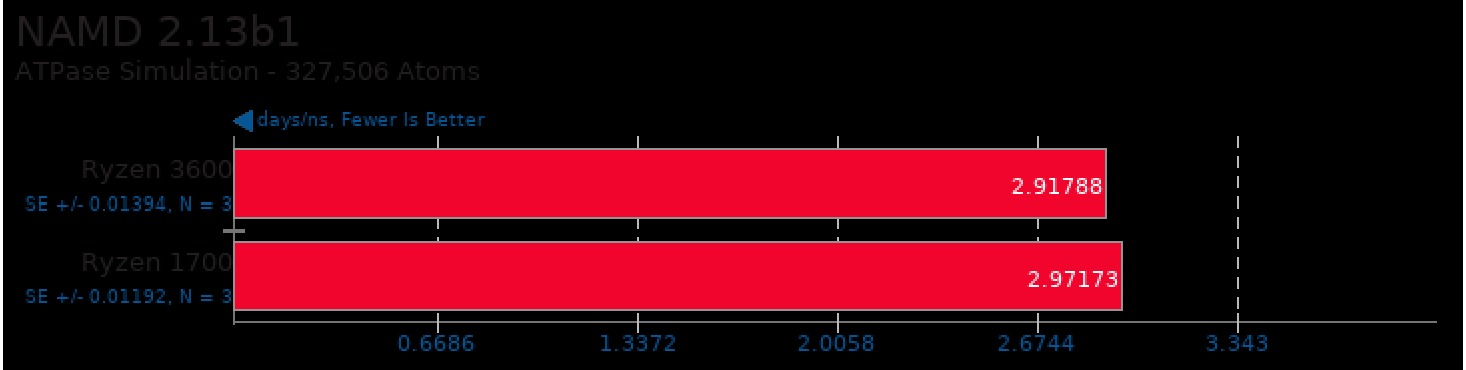
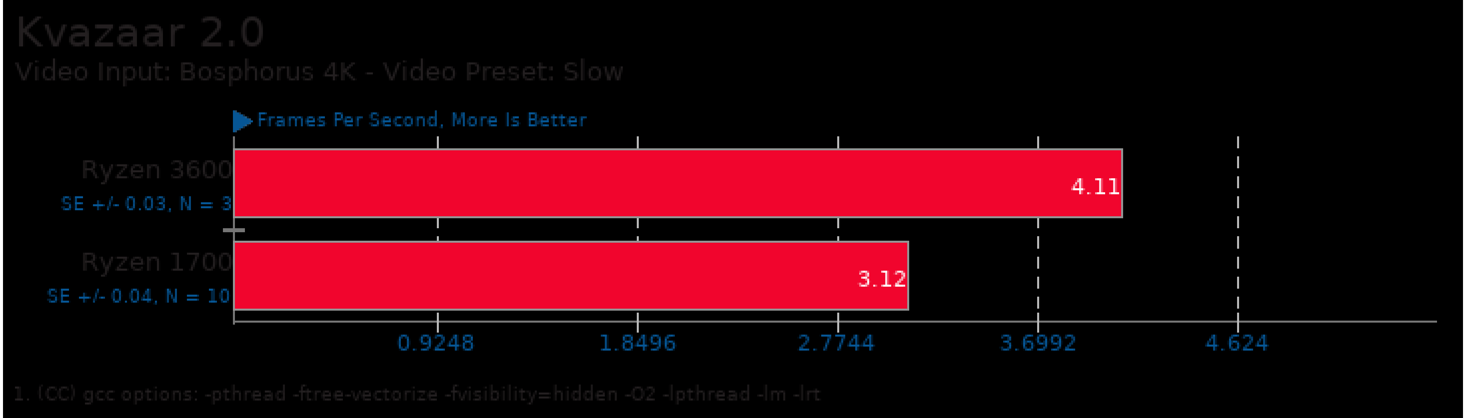
Renaissance - Apache Spark Bayes (ms)	1609	2242
Normalized	100%	71.76%
Standard Deviation	5.9%	2.6%
Renaissance - Savina Reactors.IO (ms)	12675	15983
Normalized	100%	79.3%
Standard Deviation	2.9%	4.7%
Renaissance - A.S.P (ms)	3476	3889
Normalized	100%	89.38%
Standard Deviation	6.1%	1.2%
Renaissance - T.H.R (ms)	2012	3020
Normalized	100%	66.63%
Standard Deviation	8.5%	3.4%
Renaissance - I.M.D.S (ms)	5266	13161
Normalized	100%	40.01%
Standard Deviation	14.6%	192.5%
Renaissance - A.U.C.T (ms)	10609	12232
Normalized	100%	86.73%
Standard Deviation	2.7%	2.3%
Renaissance - G.A.U.J.F (ms)	1675	2927
Normalized	100%	57.21%
Standard Deviation	3%	3.5%
Sunflow Rendering System - G.I.I.S (sec)	1.792	1.887
Normalized	100%	94.97%
Standard Deviation	2.5%	1.3%

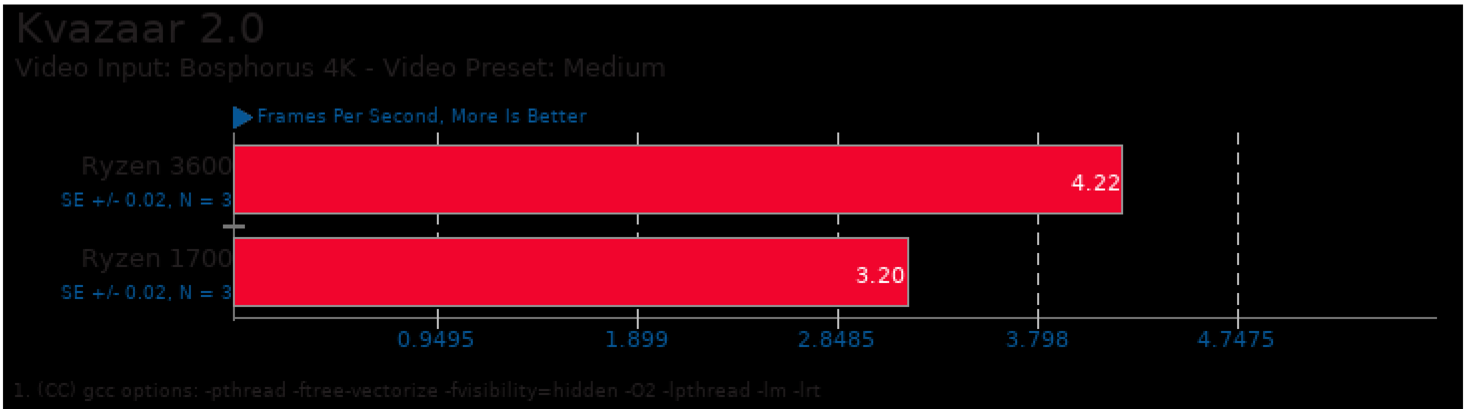

Rodinia 2.4
Test: OpenMP LavaMD
Seconds, Fewer Is Better
Ryzen 3600
SE +/- 0.25, N = 3
42.46
Ryzen 1700
SE +/- 0.72, N = 3
41.54
10
20
30
40
50
1. (CXX) g++ options: -O2 -lOpenCL


Rodinia 2.4
Test: OpenMP CFD Solver
Seconds, Fewer Is Better
Ryzen 3600
SE +/- 0.92, N = 12
37.20
Ryzen 1700
SE +/- 0.23, N = 3
31.02
9
18
27
36
45
1. (CXX) g++ options: -O2 -lOpenCL

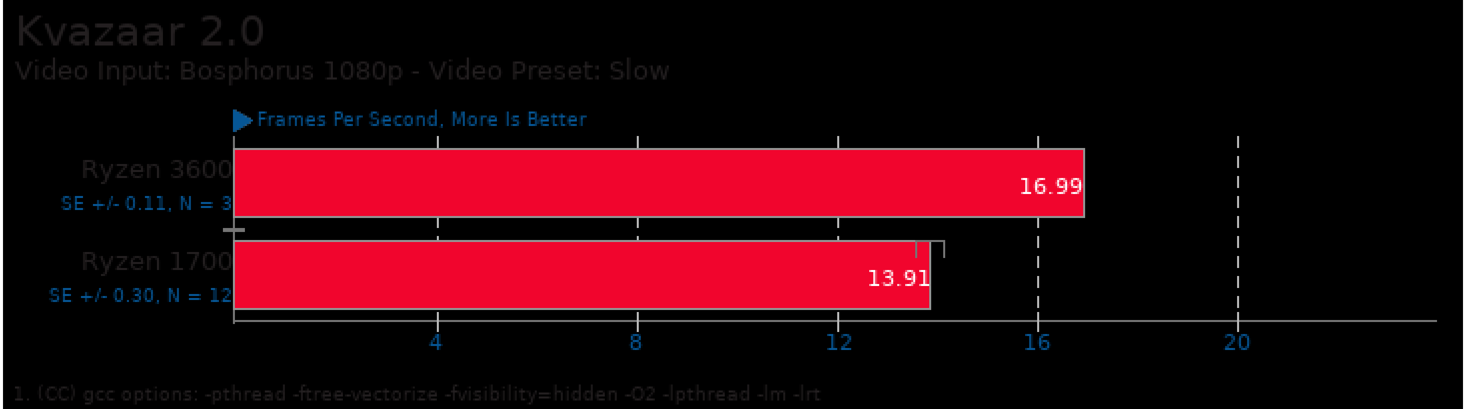

NAMD 2.13b1
ATPase Simulation - 327,506 Atoms
days/ns, Fewer Is Better
Ryzen 3600
SE +/- 0.01394, N = 3
2.91788
Ryzen 1700
SE +/- 0.01192, N = 3
2.97173
0.6686
1.3372
2.0058
2.6744
3.343


Kvazaar 2.0
Video Input: Bosphorus 4K - Video Preset: Slow
Frames Per Second, More Is Better
Ryzen 3600
SE +/- 0.03, N = 3
4.11
Ryzen 1700
SE +/- 0.04, N = 10
3.12
0.9248
1.8496
2.7744
3.6992
4.624
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt

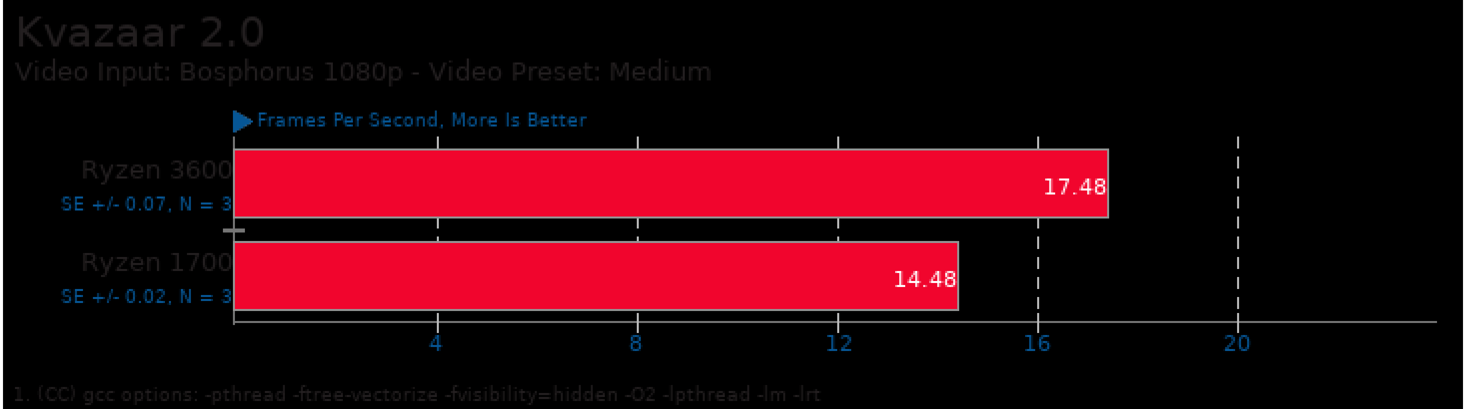
cpu-results



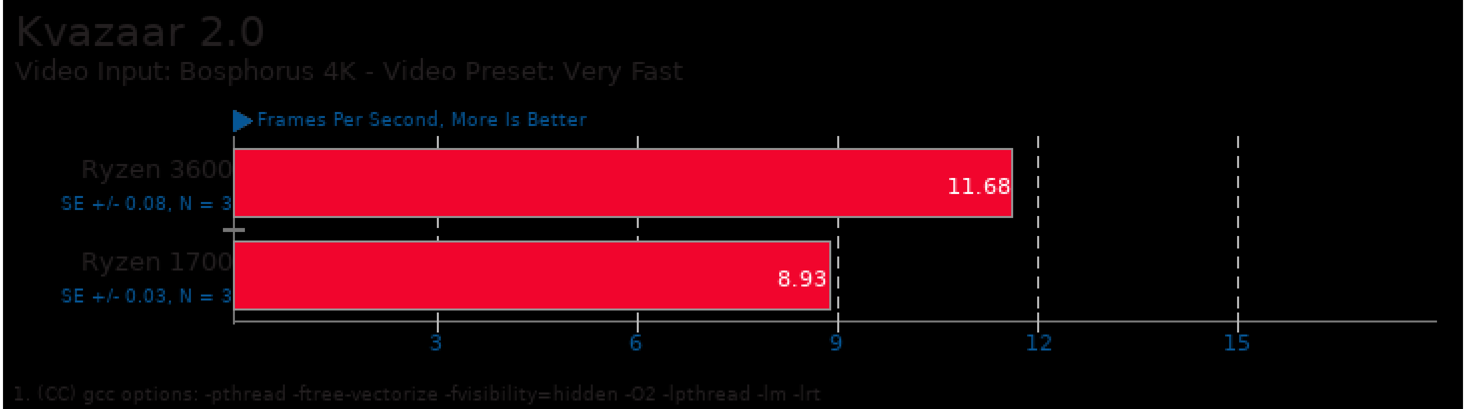
Kvazaar 2.0
Video Input: Bosphorus 4K - Video Preset: Medium
Frames Per Second, More Is Better
Ryzen 3600
SE +/- 0.02, N = 3
4.22
Ryzen 1700
SE +/- 0.02, N = 3
3.20
0.9495
1.899
2.8485
3.798
4.7475
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt



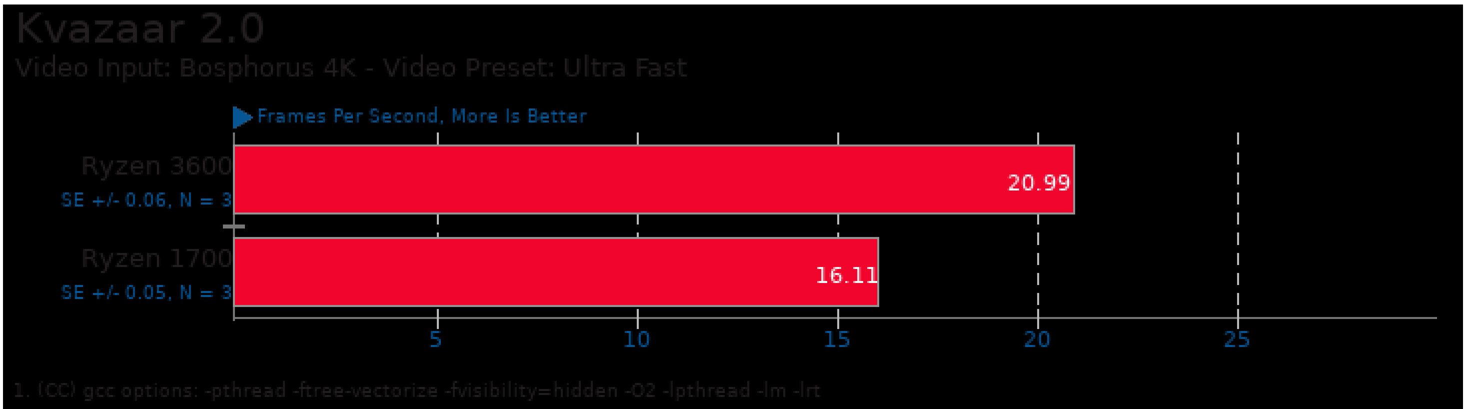
Kvazaar 2.0
Video Input: Bosphorus 1080p - Video Preset: Slow
Frames Per Second, More Is Better
Ryzen 3600
SE +/- 0.11, N = 3
16.99
Ryzen 1700
SE +/- 0.30, N = 12
13.91
4
8
12
16
20
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt

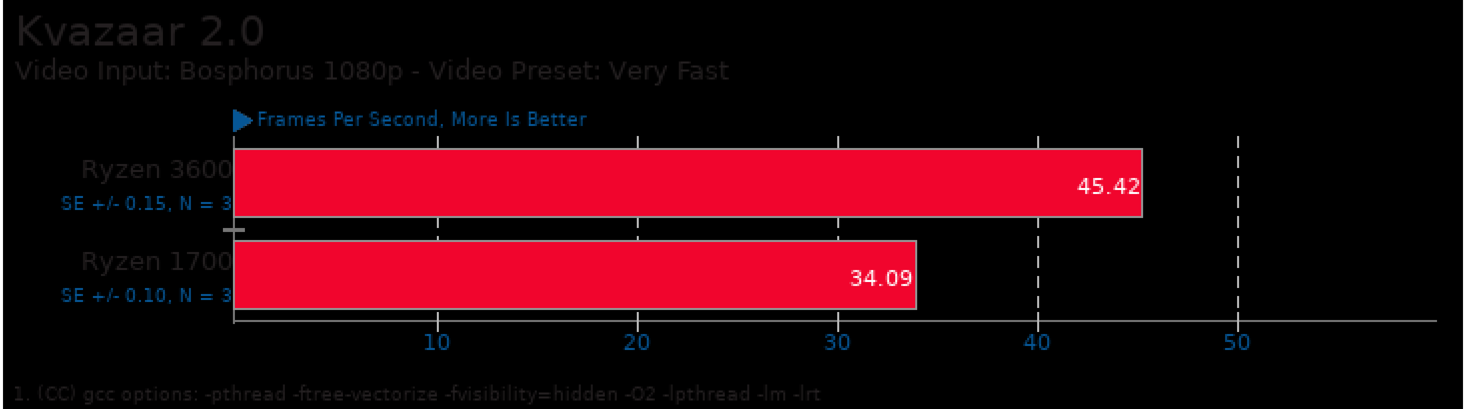


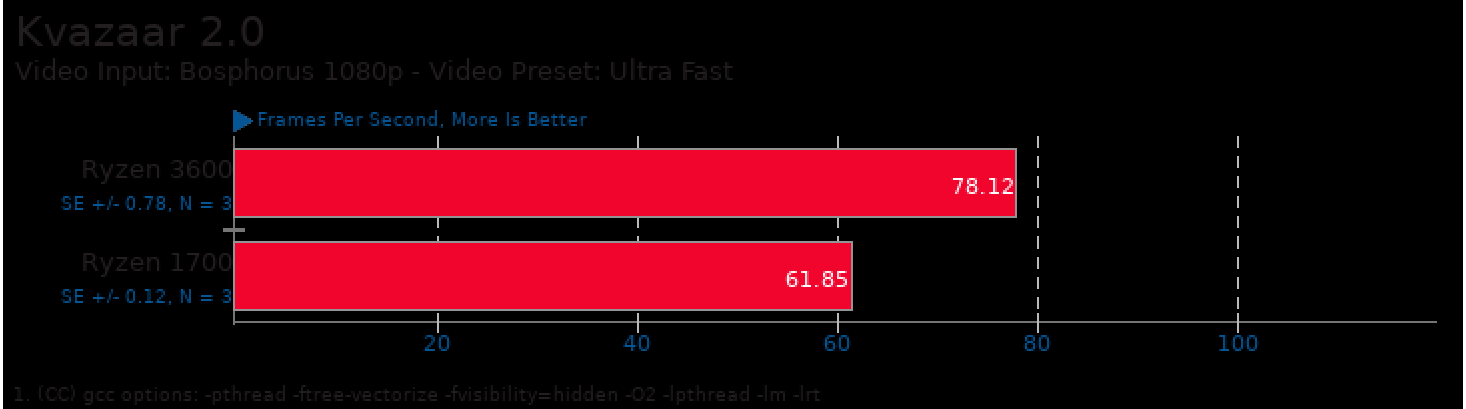
Kvazaar 2.0
Video Input: Bosphorus 1080p - Video Preset: Medium
Frames Per Second, More Is Better
Ryzen 3600
SE +/- 0.07, N = 3
17.48
Ryzen 1700
SE +/- 0.02, N = 3
14.48
4
8
12
16
20
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt

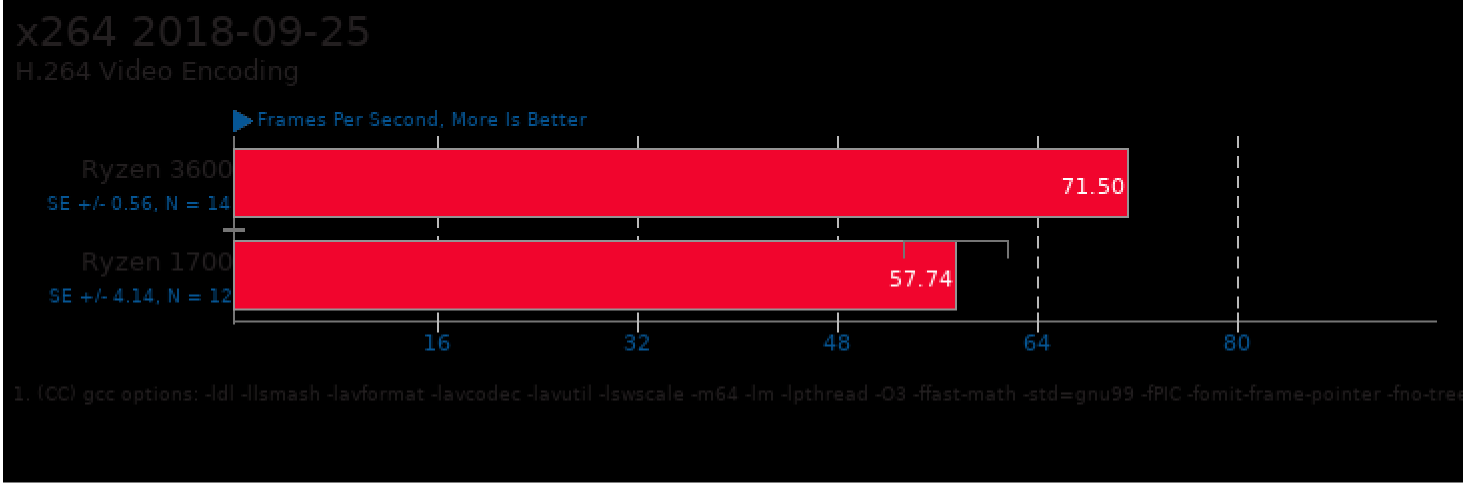


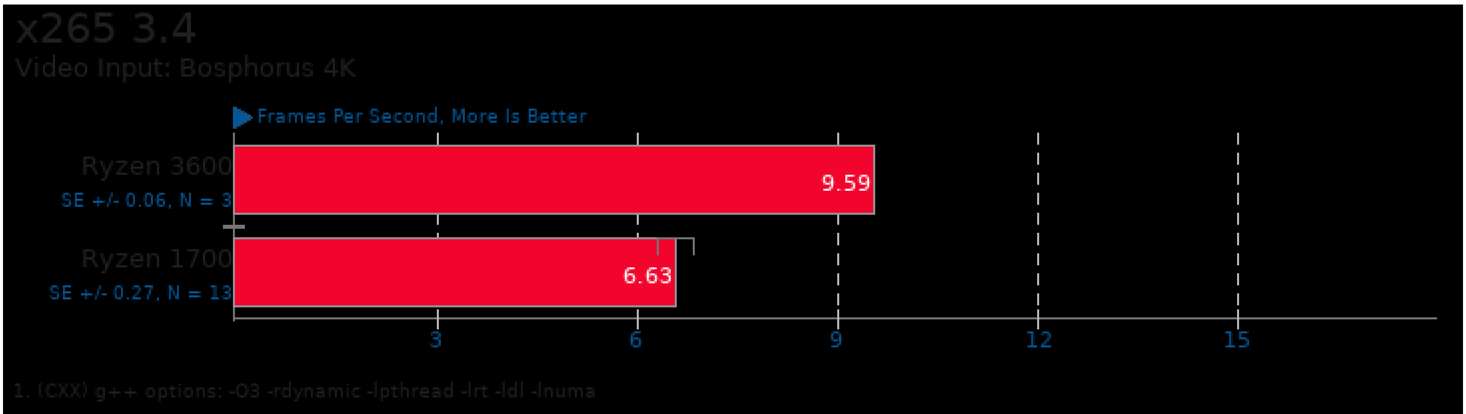
Kvazaar 2.0
Video Input: Bosphorus 4K - Video Preset: Very Fast
Frames Per Second, More Is Better
Ryzen 3600
SE +/- 0.08, N = 3
11.68
Ryzen 1700
SE +/- 0.03, N = 3
8.93
3
6
9
12
15
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt

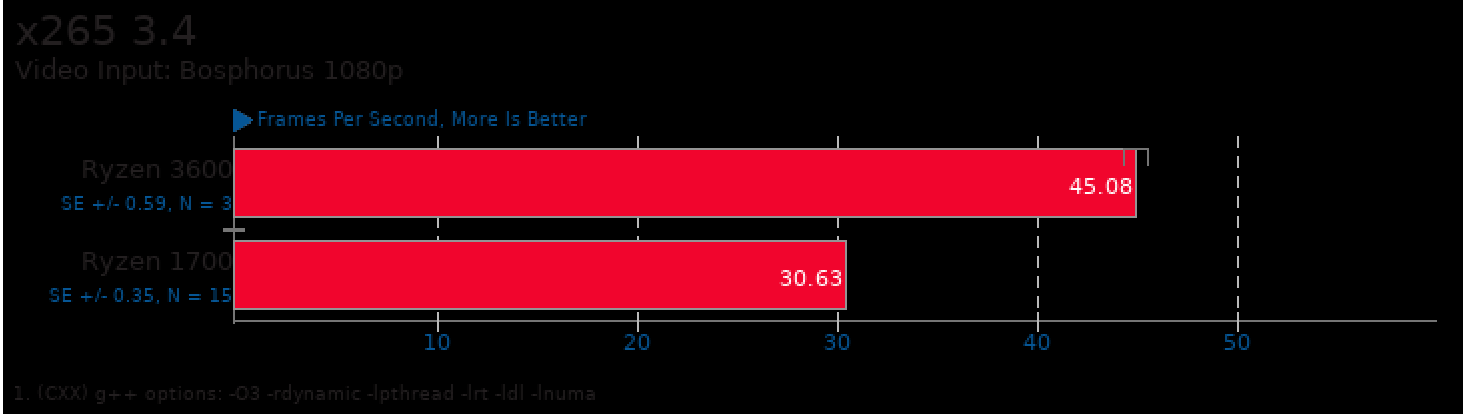

Kvazaar 2.0
Video Input: Bosphorus 4K - Video Preset: Ultra Fast
Frames Per Second, More Is Better
Ryzen 3600
SE +/- 0.06, N = 3
20.99
Ryzen 1700
SE +/- 0.05, N = 3
16.11
5
10
15
20
25
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt

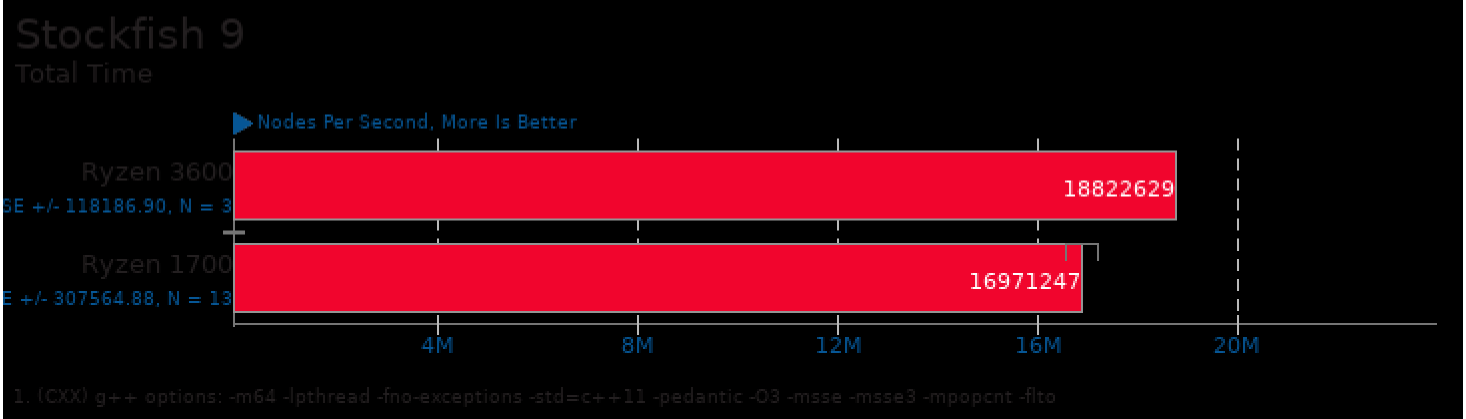

Kvazaar 2.0
Video Input: Bosphorus 1080p - Video Preset: Very Fast
Frames Per Second, More Is Better
Ryzen 3600
SE +/- 0.15, N = 3
45.42
Ryzen 1700
SE +/- 0.10, N = 3
34.09
10
20
30
40
50
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt

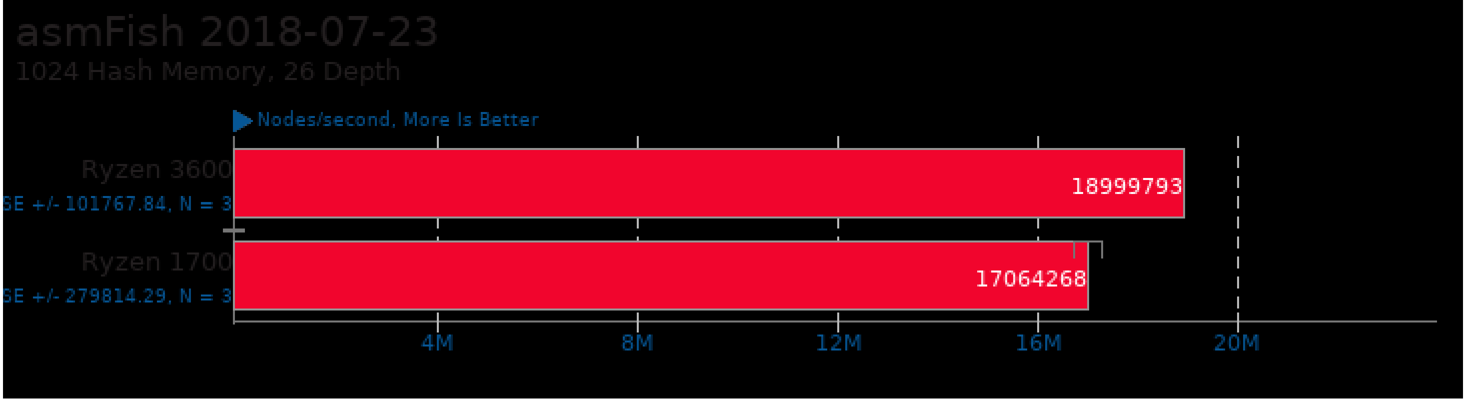

Kvazaar 2.0
Video Input: Bosphorus 1080p - Video Preset: Ultra Fast
Frames Per Second, More Is Better
Ryzen 3600
SE +/- 0.78, N = 3
78.12
Ryzen 1700
SE +/- 0.12, N = 3
61.85
20
40
60
80
100
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt

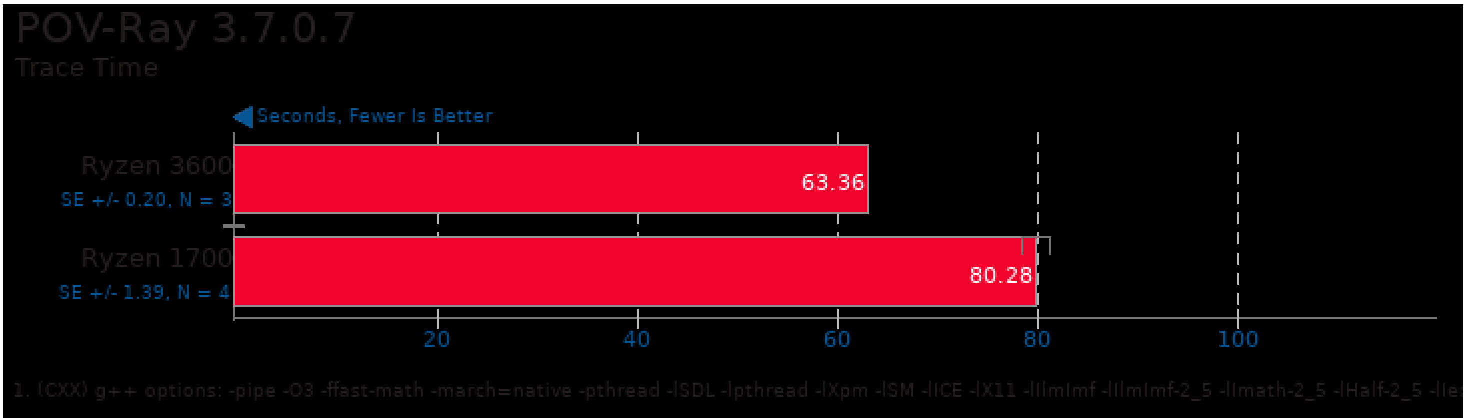

x264 2018-09-25
H.264 Video Encoding
Frames Per Second, More Is Better
Ryzen 3600
SE +/- 0.56, N = 14
71.50
Ryzen 1700
SE +/- 4.14, N = 12
57.74
16
32
48
64
80
1. (CC) gcc options: -ldl -llsmash -lavformat -lavcodec -lavutil -lswscale -m64 -lm -lpthread -O3 -ffast-math -std=gnu99 -fPIC -fomit-frame-pointer -fno-tree

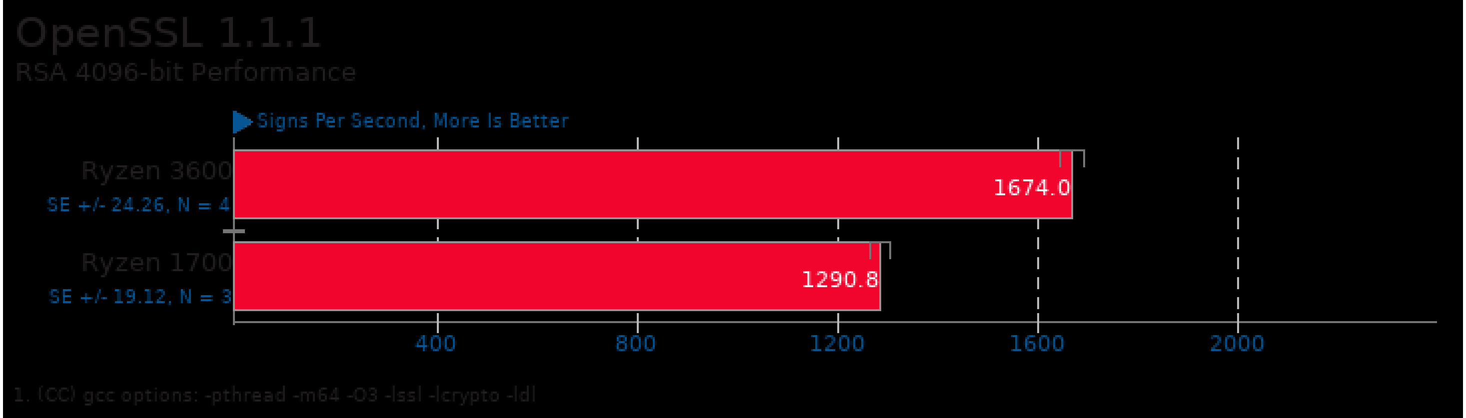

x265 3.4
Video Input: Bosphorus 4K
Frames Per Second, More Is Better
Ryzen 3600
SE +/- 0.06, N = 3
9.59
Ryzen 1700
SE +/- 0.27, N = 13
6.63
3
6
9
12
15
1. (CXX) g++ options: -O3 -rdynamic -lpthread -lrt -ldl -lnuma

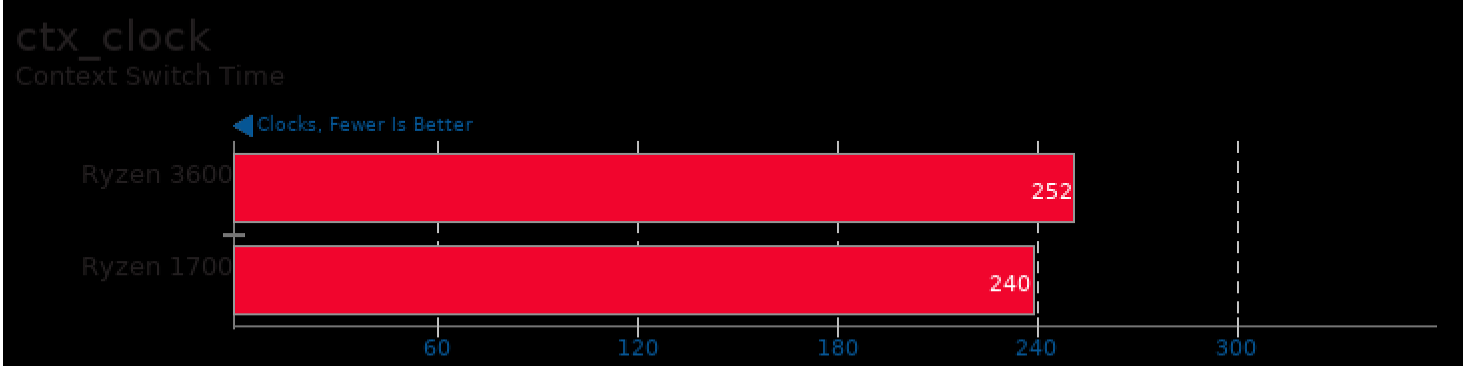

x265 3.4
Video Input: Bosphorus 1080p
Frames Per Second, More Is Better
Ryzen 3600
SE +/- 0.59, N = 3
45.08
Ryzen 1700
SE +/- 0.35, N = 15
30.63
10
20
30
40
50
1. (CXX) g++ options: -O3 -rdynamic -lpthread -lrt -ldl -lnuma

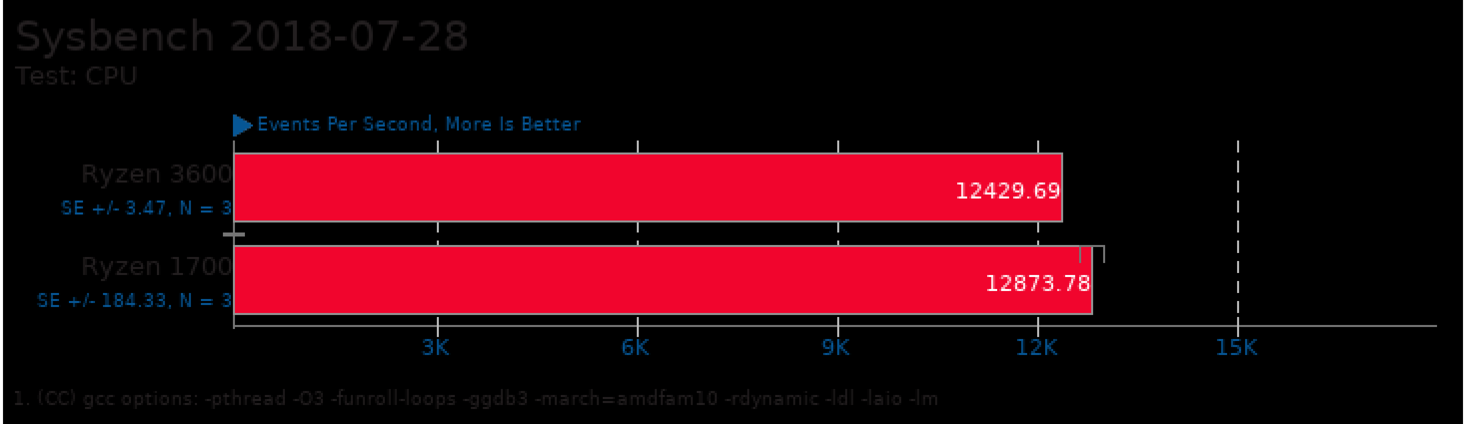

Stockfish 9
Total Time
Nodes Per Second, More Is Better
Ryzen 3600
SE +/- 118186.90, N = 3
18822629
Ryzen 1700
SE +/- 307564.88, N = 13
16971247
4M
8M
12M
16M
20M
1. (CXX) g++ options: -m64 -lpthread -fno-exceptions -std=c++11 -pedantic -O3 -msse -msse3 -mpopcnt -flto

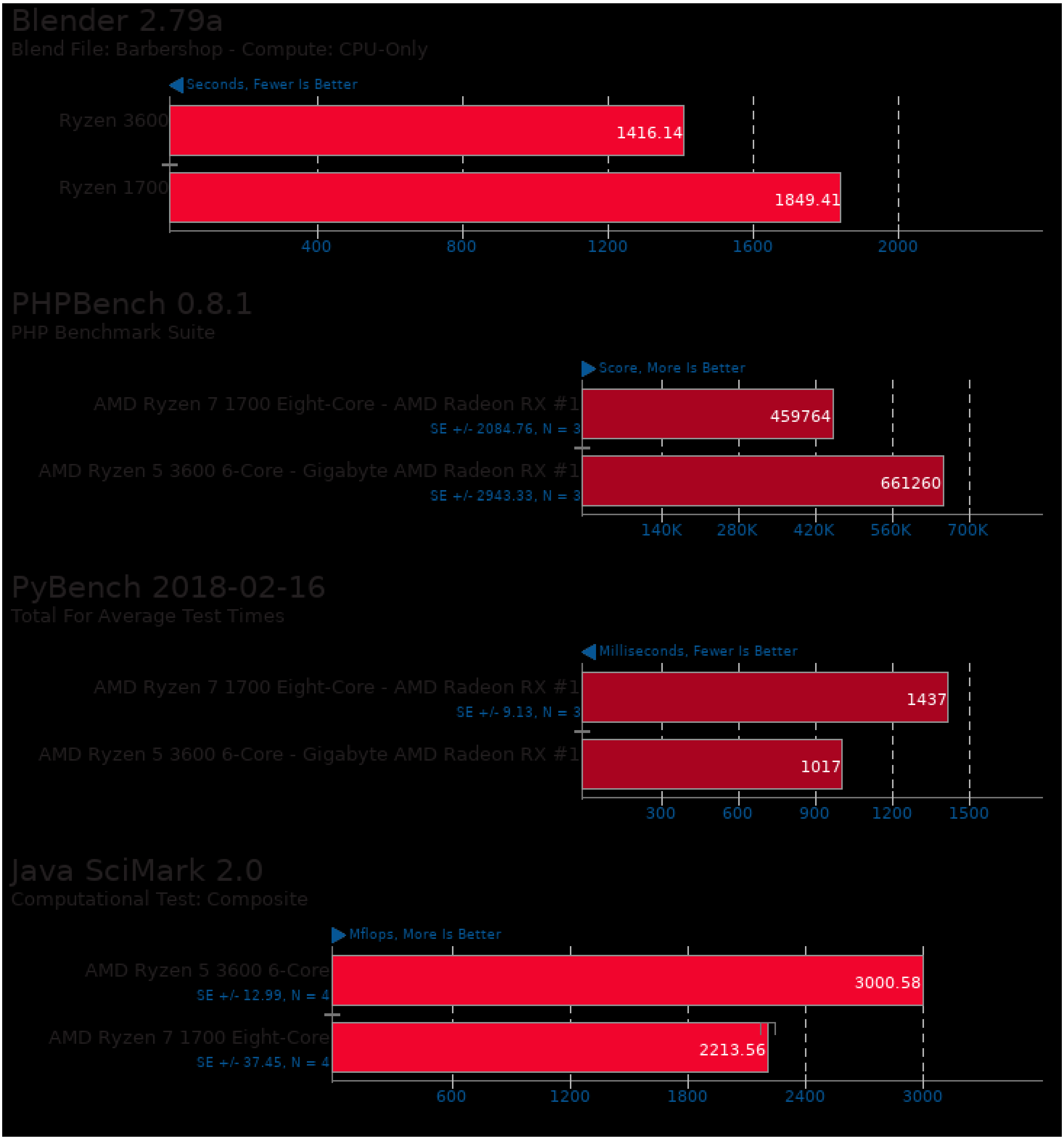

asmFish 2018-07-23
1024 Hash Memory, 26 Depth
Nodes/second, More Is Better
Ryzen 3600
SE +/- 101767.84, N = 3
18999793
Ryzen 1700
SE +/- 279814.29, N = 3
17064268
4M
8M
12M
16M
20M


POV-Ray 3.7.0.7
Trace Time
Seconds, Fewer Is Better
Ryzen 3600
SE +/- 0.20, N = 3
63.36
Ryzen 1700
SE +/- 1.39, N = 4
80.28
20
40
60
80
100
1. (CXX) g++ options: -pipe -O3 -ffast-math -march=native -pthread -lSDL -lpthread -lXpm -lSM -lICE -lX11 -lIlmImf -lIlmImf-2_5 -lImath-2_5 -lHalf-2_5 -lIe

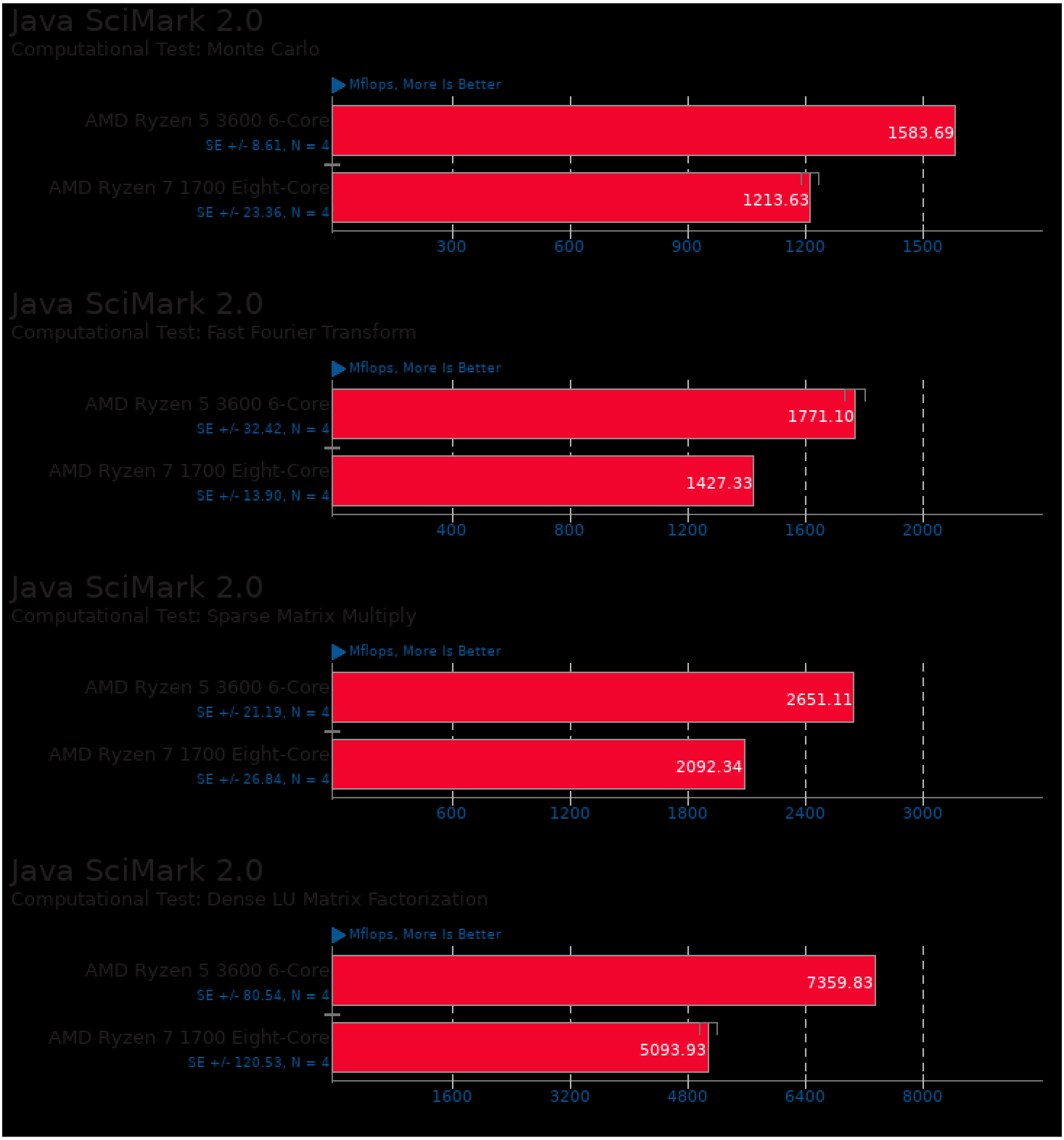

OpenSSL 1.1.1
RSA 4096-bit Performance
Signs Per Second, More Is Better
Ryzen 3600
SE +/- 24.26, N = 4
1674.0
Ryzen 1700
SE +/- 19.12, N = 3
1290.8
400
800
1200
1600
2000
1. (CC) gcc options: -pthread -m64 -O3 -lssl -lcrypto -ldl


ctx_clock
Context Switch Time
Clocks, Fewer Is Better
Ryzen 3600
252
Ryzen 1700
240
60
120
180
240
300

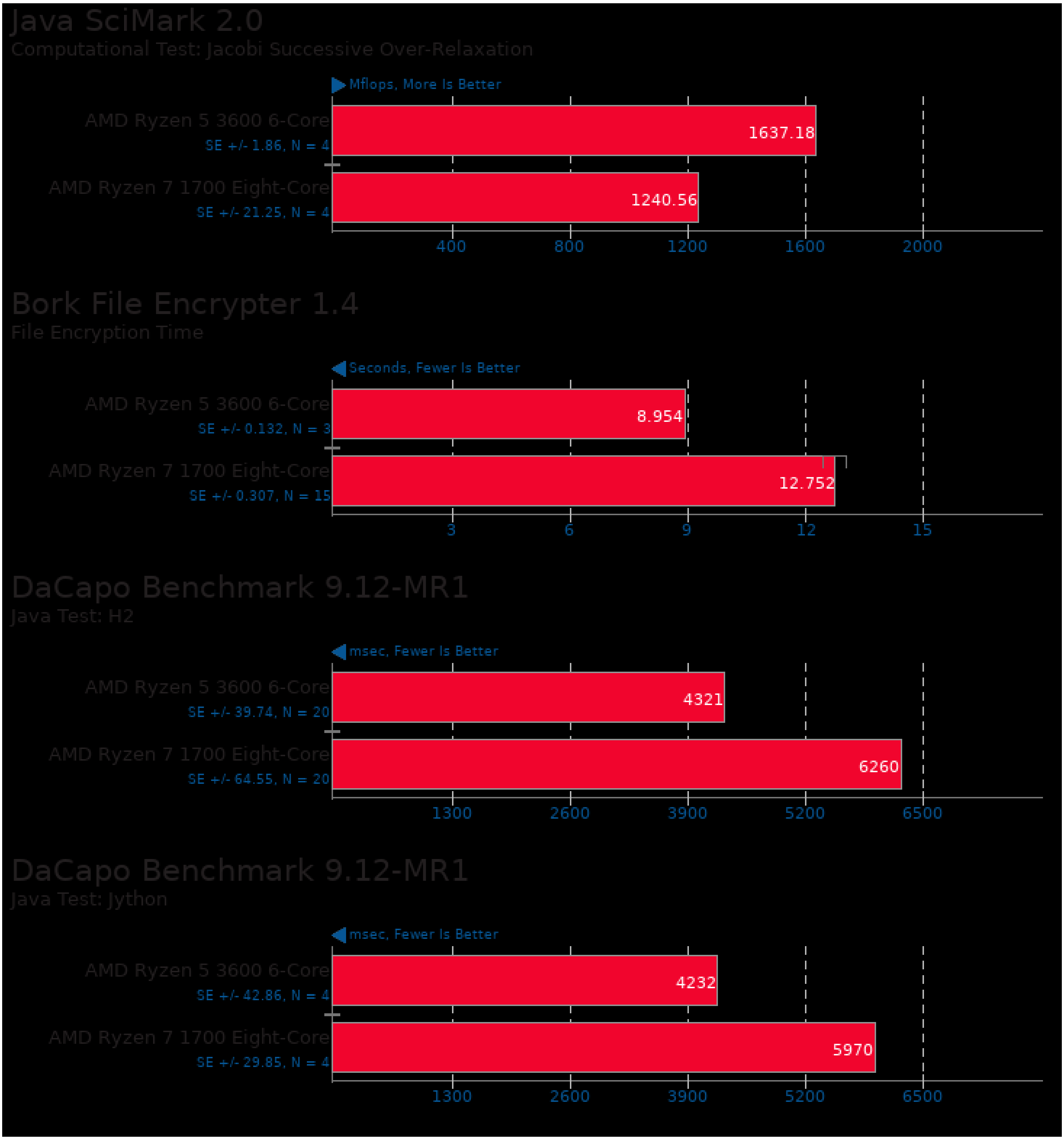

Sysbench 2018-07-28
Test: CPU
Events Per Second, More Is Better
Ryzen 3600
SE +/- 3.47, N = 3
12429.69
Ryzen 1700
SE +/- 184.33, N = 3
12873.78
3K
6K
9K
12K
15K
1. (CC) gcc options: -pthread -O3 -funroll-loops -ggdb3 -march=amdfam10 -rdynamic -ldl -laio -lm


Blender 2.79a
Blend File: Barbershop - Compute: CPU-Only
Seconds, Fewer Is Better
Ryzen 3600
1416.14
Ryzen 1700
1849.41
400
800
1200
1600
2000
PHPBench 0.8.1
PHP Benchmark Suite
Score, More Is Better
AMD Ryzen 7 1700 Eight-Core - AMD Radeon RX #1
SE +/- 2084.76, N = 3
459764
AMD Ryzen 5 3600 6-Core - Gigabyte AMD Radeon RX #1
SE +/- 2943.33, N = 3
661260
140K
280K
420K
560K
700K
PyBench 2018-02-16
Total For Average Test Times
Milliseconds, Fewer Is Better
AMD Ryzen 7 1700 Eight-Core - AMD Radeon RX #1
SE +/- 9.13, N = 3
1437
AMD Ryzen 5 3600 6-Core - Gigabyte AMD Radeon RX #1
1017
300
600
900
1200
1500
Java SciMark 2.0
Computational Test: Composite
Mflops, More Is Better
AMD Ryzen 5 3600 6-Core
SE +/- 12.99, N = 4
3000.58
AMD Ryzen 7 1700 Eight-Core
SE +/- 37.45, N = 4
2213.56
600
1200
1800
2400
3000

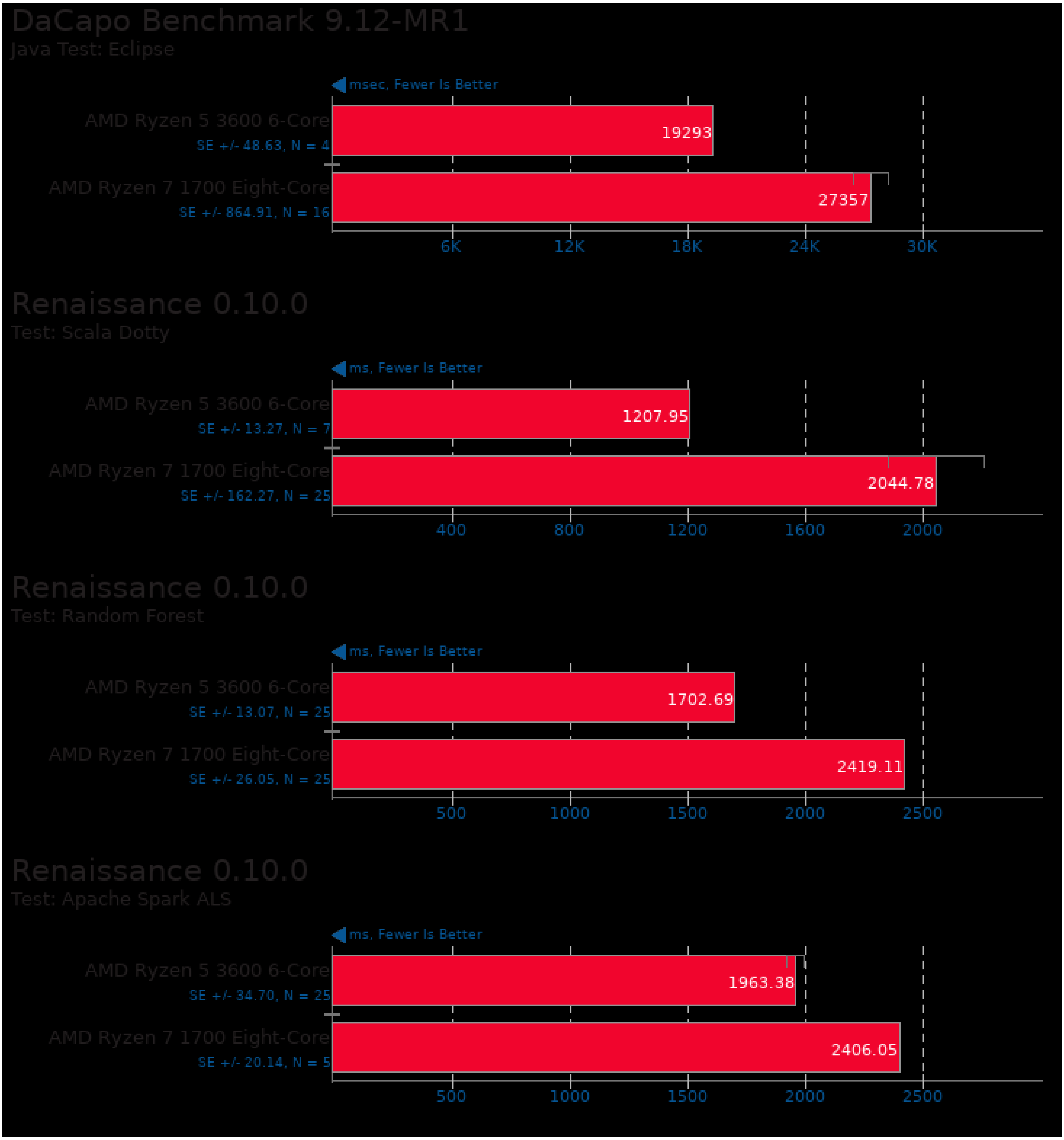
cpu-results

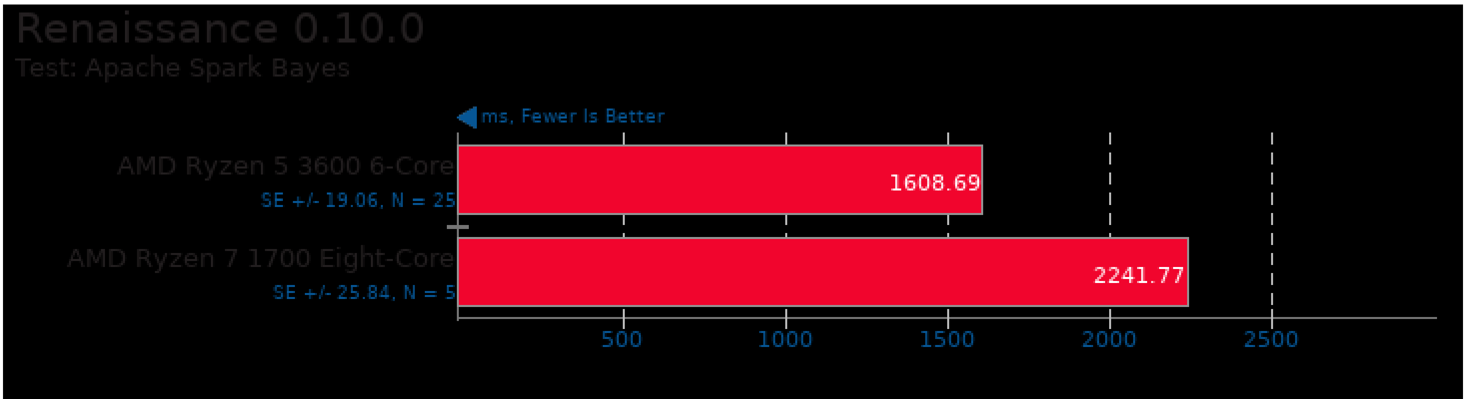

Java SciMark 2.0
Computational Test: Monte Carlo
Mflops, More Is Better
AMD Ryzen 5 3600 6-Core
SE +/- 8.61, N = 4
1583.69
AMD Ryzen 7 1700 Eight-Core
SE +/- 23.36, N = 4
1213.63
300
600
900
1200
1500
Java SciMark 2.0
Computational Test: Fast Fourier Transform
Mflops, More Is Better
AMD Ryzen 5 3600 6-Core
SE +/- 32.42, N = 4
1771.10
AMD Ryzen 7 1700 Eight-Core
SE +/- 13.90, N = 4
1427.33
400
800
1200
1600
2000
Java SciMark 2.0
Computational Test: Sparse Matrix Multiply
Mflops, More Is Better
AMD Ryzen 5 3600 6-Core
SE +/- 21.19, N = 4
2651.11
AMD Ryzen 7 1700 Eight-Core
SE +/- 26.84, N = 4
2092.34
600
1200
1800
2400
3000
Java SciMark 2.0
Computational Test: Dense LU Matrix Factorization
Mflops, More Is Better
AMD Ryzen 5 3600 6-Core
SE +/- 80.54, N = 4
7359.83
AMD Ryzen 7 1700 Eight-Core
SE +/- 120.53, N = 4
5093.93
1600
3200
4800
6400
8000

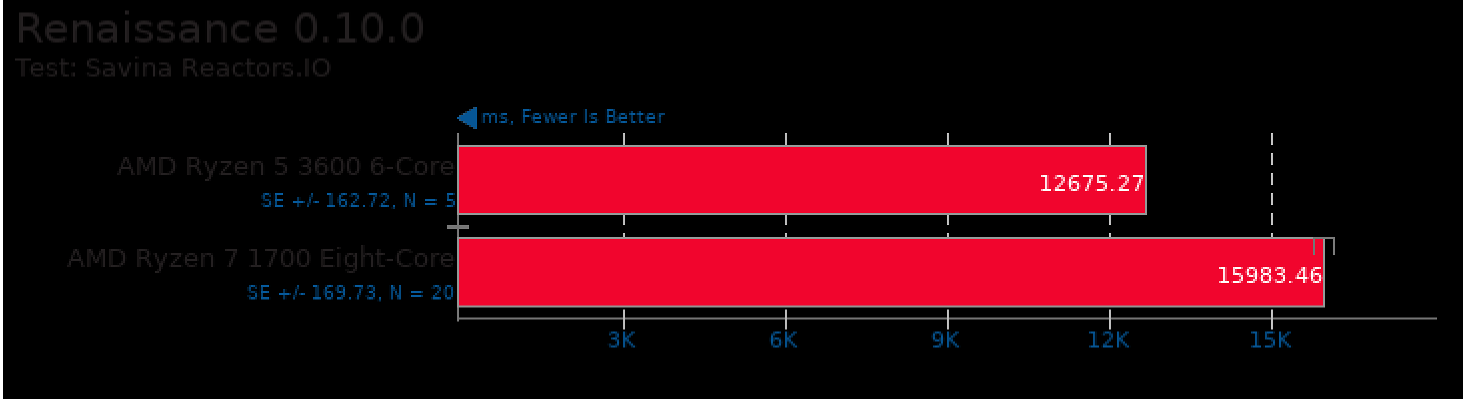
cpu-results

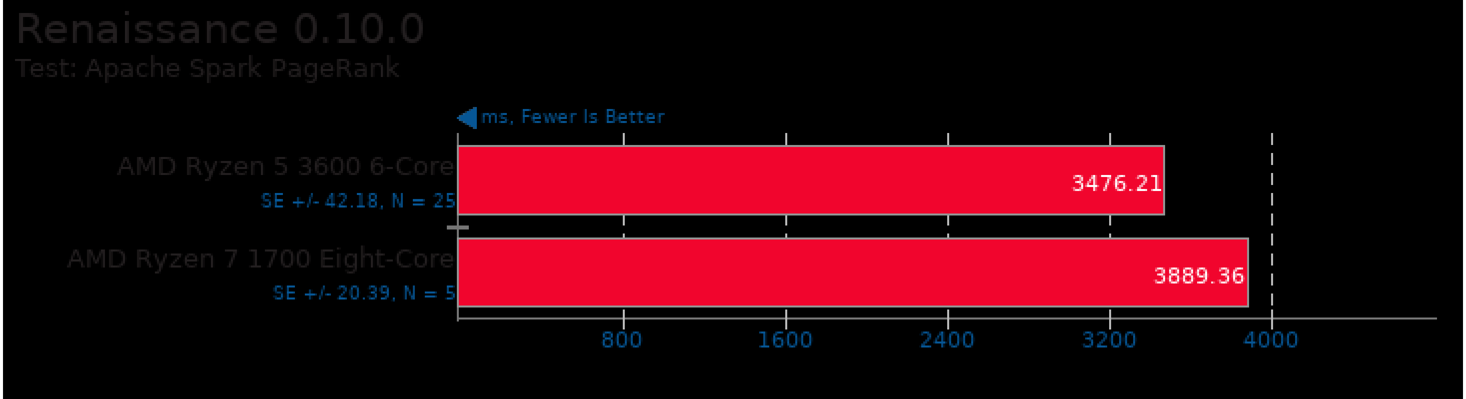


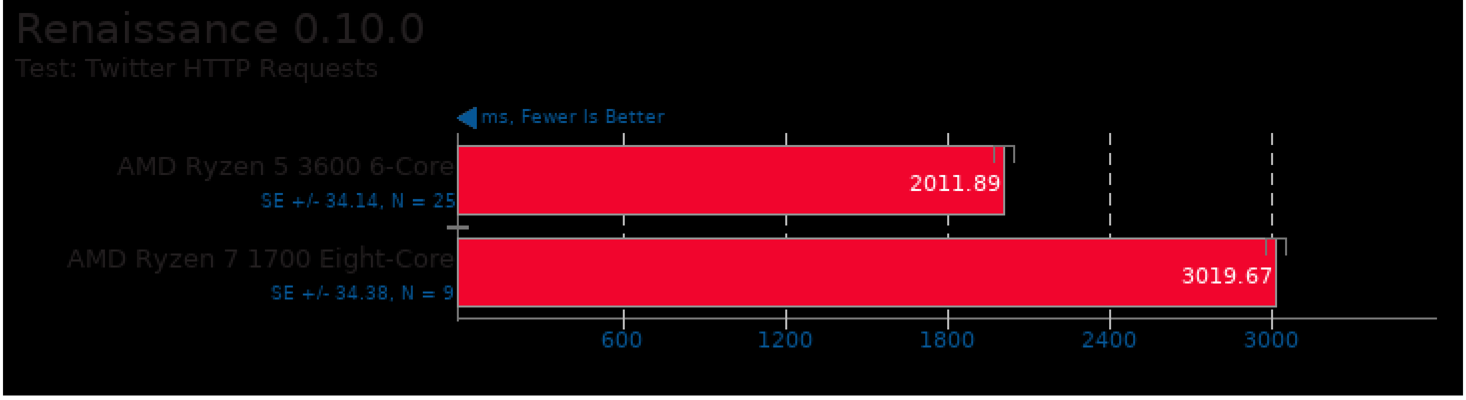
Java SciMark 2.0
Computational Test: Jacobi Successive Over-Relaxation
Mflops, More Is Better
AMD Ryzen 5 3600 6-Core
SE +/- 1.86, N = 4
1637.18
AMD Ryzen 7 1700 Eight-Core
SE +/- 21.25, N = 4
1240.56
400
800
1200
1600
2000
Bork File Encrypter 1.4
File Encryption Time
Seconds, Fewer Is Better
AMD Ryzen 5 3600 6-Core
SE +/- 0.132, N = 3
8.954
AMD Ryzen 7 1700 Eight-Core
SE +/- 0.307, N = 15
12.752
3
6
9
12
15
DaCapo Benchmark 9.12-MR1
Java Test: H2
msec, Fewer Is Better
AMD Ryzen 5 3600 6-Core
SE +/- 39.74, N = 20
4321
AMD Ryzen 7 1700 Eight-Core
SE +/- 64.55, N = 20
6260
1300
2600
3900
5200
6500
DaCapo Benchmark 9.12-MR1
Java Test: Jython
msec, Fewer Is Better
AMD Ryzen 5 3600 6-Core
SE +/- 42.86, N = 4
4232
AMD Ryzen 7 1700 Eight-Core
SE +/- 29.85, N = 4
5970
1300
2600
3900
5200
6500

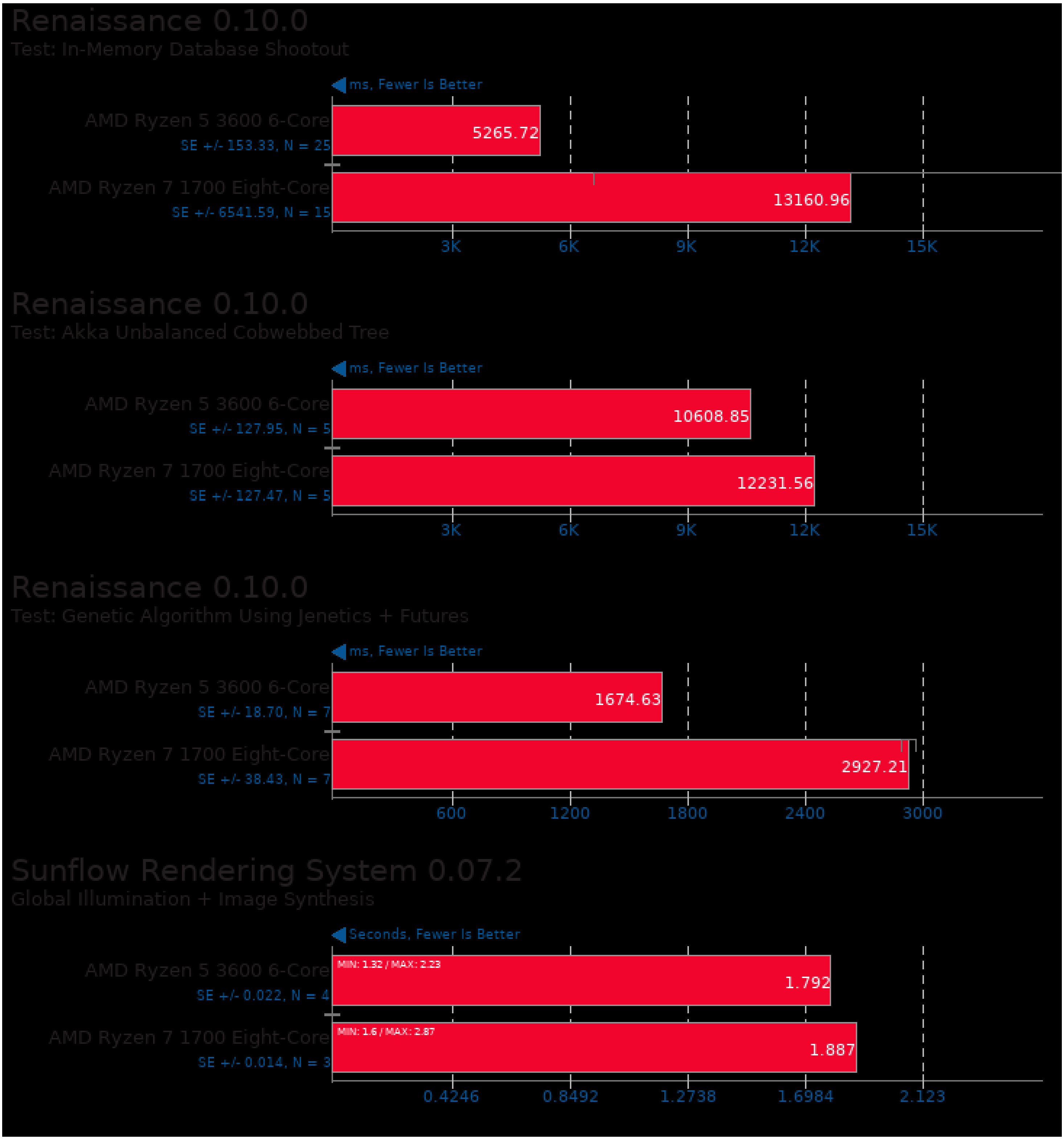

DaCapo Benchmark 9.12-MR1
Java Test: Eclipse
msec, Fewer Is Better
AMD Ryzen 5 3600 6-Core
SE +/- 48.63, N = 4
19293
AMD Ryzen 7 1700 Eight-Core
SE +/- 864.91, N = 16
27357
6K
12K
18K
24K
30K
Renaissance 0.10.0
Test: Scala Dotty
ms, Fewer Is Better
AMD Ryzen 5 3600 6-Core
SE +/- 13.27, N = 7
1207.95
AMD Ryzen 7 1700 Eight-Core
SE +/- 162.27, N = 25
2044.78
400
800
1200
1600
2000
Renaissance 0.10.0
Test: Random Forest
ms, Fewer Is Better
AMD Ryzen 5 3600 6-Core
SE +/- 13.07, N = 25
1702.69
AMD Ryzen 7 1700 Eight-Core
SE +/- 26.05, N = 25
2419.11
500
1000
1500
2000
2500
Renaissance 0.10.0
Test: Apache Spark ALS
ms, Fewer Is Better
AMD Ryzen 5 3600 6-Core
SE +/- 34.70, N = 25
1963.38
AMD Ryzen 7 1700 Eight-Core
SE +/- 20.14, N = 5
2406.05
500
1000
1500
2000
2500


Renaissance 0.10.0
Test: Apache Spark Bayes
ms, Fewer Is Better
AMD Ryzen 5 3600 6-Core
SE +/- 19.06, N = 25
1608.69
AMD Ryzen 7 1700 Eight-Core
SE +/- 25.84, N = 5
2241.77
500
1000
1500
2000
2500


Renaissance 0.10.0
Test: Savina Reactors.IO
ms, Fewer Is Better
AMD Ryzen 5 3600 6-Core
SE +/- 162.72, N = 5
12675.27
AMD Ryzen 7 1700 Eight-Core
SE +/- 169.73, N = 20
15983.46
3K
6K
9K
12K
15K


Renaissance 0.10.0
Test: Apache Spark PageRank
ms, Fewer Is Better
AMD Ryzen 5 3600 6-Core
SE +/- 42.18, N = 25
3476.21
AMD Ryzen 7 1700 Eight-Core
SE +/- 20.39, N = 5
3889.36
800
1600
2400
3200
4000


Renaissance 0.10.0
Test: Twitter HTTP Requests
ms, Fewer Is Better
AMD Ryzen 5 3600 6-Core
SE +/- 34.14, N = 25
2011.89
AMD Ryzen 7 1700 Eight-Core
SE +/- 34.38, N = 9
3019.67
600
1200
1800
2400
3000



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