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cpu_suite_test

AMD Ryzen 9 5950X 16-Core testing with a ASUS ROG CROSSHAIR VIII IMPACT (3003 BIOS) and AMD SIENNA_CICHLID 16GB on Linuxmint 20.1 via the Phoronix Test Suite.

Test Systems:

Work_Machine

Processor: AMD Ryzen 9 5950X 16-Core @ 3.40GHz (16 Cores / 32 Threads), Motherboard: ASUS ROG CROSSHAIR VIII IMPACT (3003 BIOS), Chipset: AMD Starship/Matisse, Memory: 32GB, Disk: 1000GB Sabrent Rocket 4.0 1TB, Graphics: AMD SIENNA_CICHLID 16GB (2475/1000MHz), Audio: AMD Device ab28, Monitor: DELL U2518D, Network: Intel I211 + Intel Wi-Fi 6 AX200

OS: Linuxmint 20.1, Kernel: 5.10.8-051008-generic (x86_64), Desktop: Cinnamon 4.8.6, Display Server: X Server 1.20.9, Display Driver: amdgpu 19.1.0, OpenGL: 4.6 Mesa 20.2.6 (LLVM 11.0.0), Vulkan: 1.2.131, Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 2560x1440

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch

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--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 (Boost: Enabled) - CPU Microcode: 0xa201009
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

	Work_Machine
Rodinia - OpenMP LavaMD (sec)	13.033
Standard Deviation	0.2%
Rodinia - OpenMP CFD Solver (sec)	10.530
Standard Deviation	0.8%
NAMD - ATPase Simulation - 327,506 Atoms (days/ns)	1.01269
Standard Deviation	0.3%
Kvazaar - Bosphorus 4K - Slow (FPS)	10.94
Standard Deviation	0.3%
Kvazaar - Bosphorus 4K - Medium (FPS)	11.10
Standard Deviation	0.2%
Kvazaar - Bosphorus 1080p - Slow (FPS)	41.96
Standard Deviation	0.1%
Kvazaar - Bosphorus 1080p - Medium (FPS)	43.16
Standard Deviation	0.1%
Kvazaar - Bosphorus 4K - Very Fast (FPS)	27.84
Standard Deviation	0.4%
Kvazaar - Bosphorus 4K - Ultra Fast (FPS)	51.20
Standard Deviation	0.2%
Kvazaar - Bosphorus 1080p - Very Fast (FPS)	98.63
Standard Deviation	0.4%
Kvazaar - Bosphorus 1080p - Ultra Fast (FPS)	177.66
Standard Deviation	0.4%
x264 - H.2.V.E (FPS)	196.20
Standard Deviation	6.4%
x265 - Bosphorus 4K (FPS)	28.40
Standard Deviation	0.3%
x265 - Bosphorus 1080p (FPS)	82.82
Standard Deviation	0.7%
7-Zip Compression - C.S.T (MIPS)	117448
Standard Deviation	0.2%
Stockfish - Total Time (Nodes/s)	56172739
Standard Deviation	1.5%
asmFish - 1.H.M.2.D (Nodes/s)	60284795
Standard Deviation	1.4%
Timed Linux Kernel Compilation - Time To Compile (sec)	38.007
Standard Deviation	2.2%
POV-Ray - Trace Time (sec)	23.317
Standard Deviation	0.1%
Radiance Benchmark - Serial (sec)	438.319
Radiance Benchmark - SMP Parallel (sec)	139.551
OpenSSL - R.4.b.P (Signs/sec)	4837
Standard Deviation	0.2%

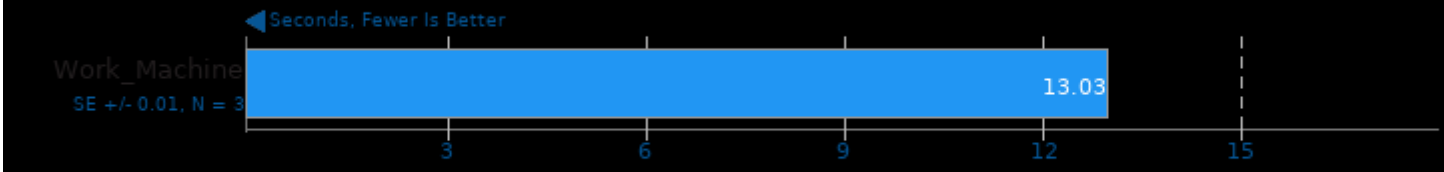
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ctx_clock - C.S.T (Clocks)	136
Sysbench - CPU (Events/sec)	90008
Standard Deviation	0%
Blender - Barbershop - CPU-Only (sec)	449.69

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Rodinia 2.4

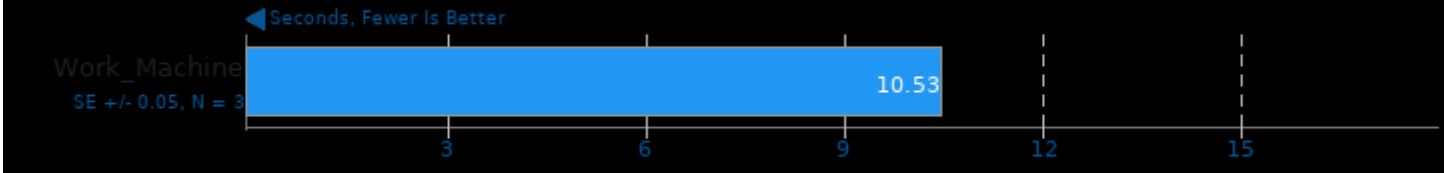
Test: OpenMP LavaMD



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

Rodinia 2.4

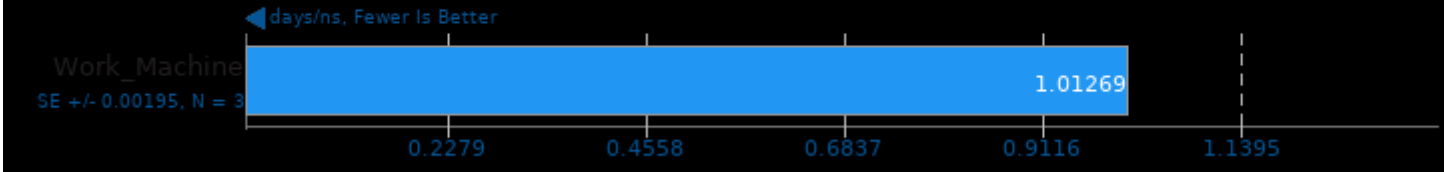
Test: OpenMP CFD Solver



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

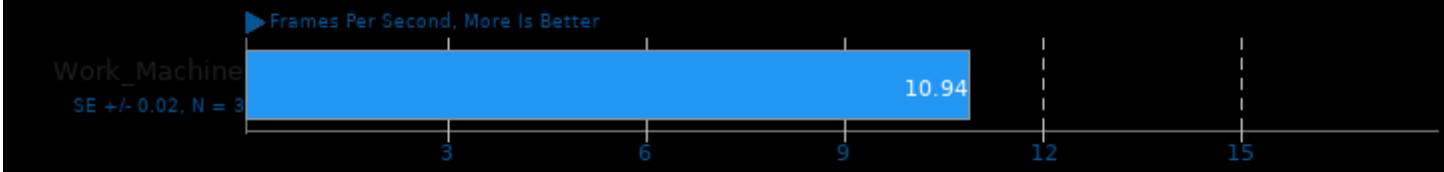
NAMD 2.13b1

ATPase Simulation - 327,506 Atoms



Kvazaar 2.0

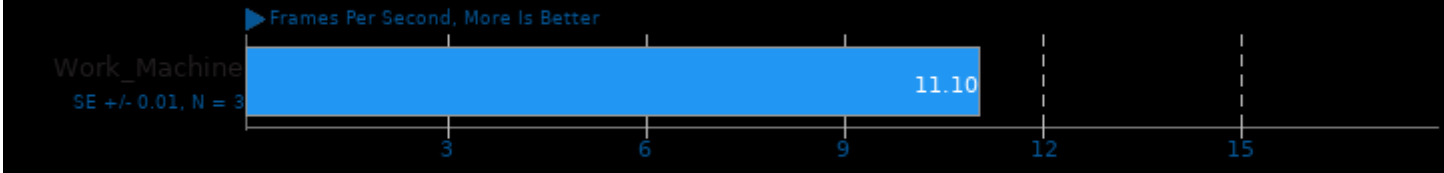
Video Input: Bosphorus 4K - Video Preset: Slow



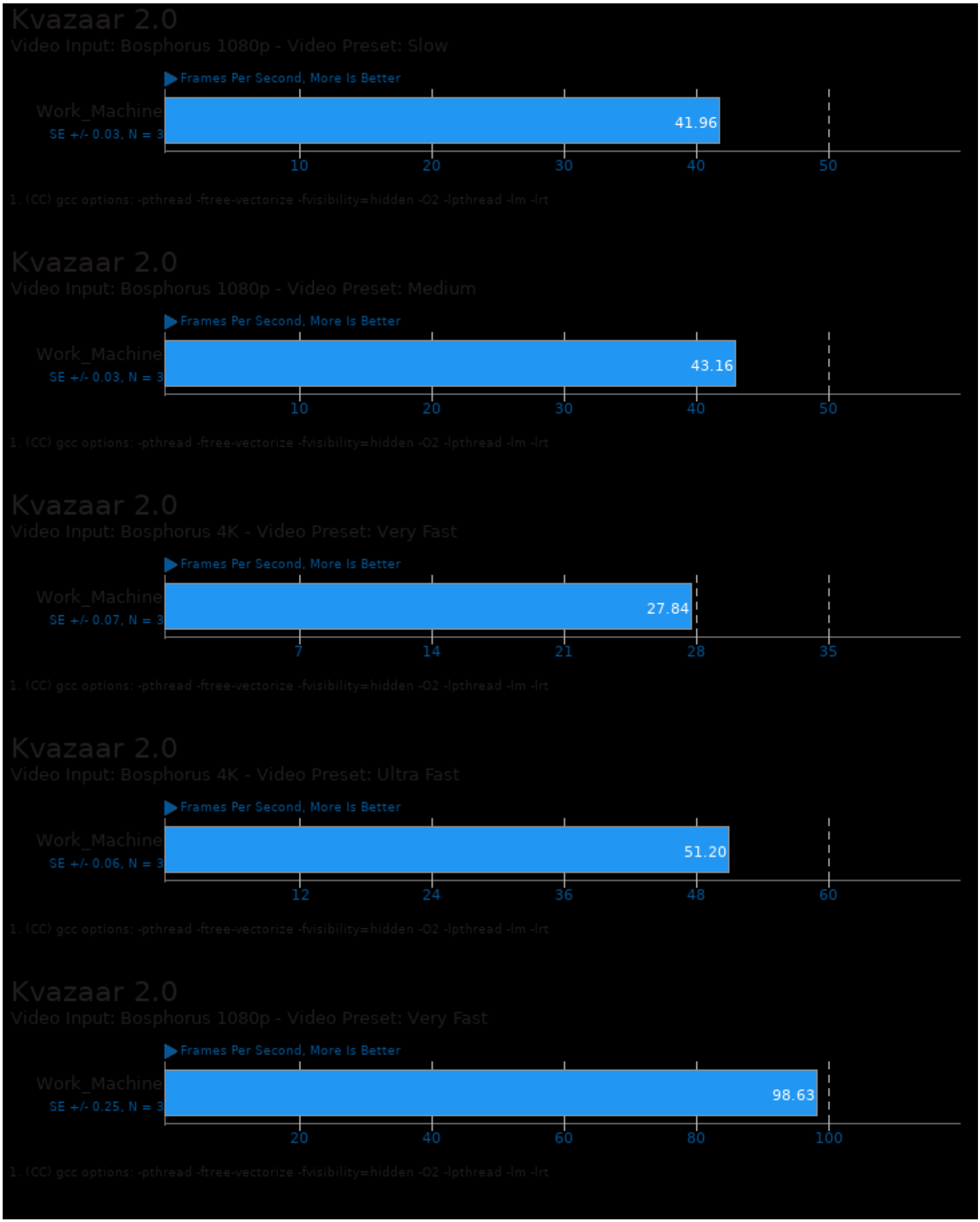
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt

Kvazaar 2.0

Video Input: Bosphorus 4K - Video Preset: Medium



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
Work_Machine
SE +/- 0.03, N = 3
41.96
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: Medium
Frames Per Second, More Is Better
Work_Machine
SE +/- 0.03, N = 3
43.16
10
20
30
40
50
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
Work_Machine
SE +/- 0.07, N = 3
27.84
7
14
21
28
35
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
Work_Machine
SE +/- 0.06, N = 3
51.20
12
24
36
48
60
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
Work_Machine
SE +/- 0.25, N = 3
98.63
20
40
60
80
100
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt

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Kvazaar 2.0

Video Input: Bosphorus 1080p - Video Preset: Ultra Fast



1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt

x264 2018-09-25

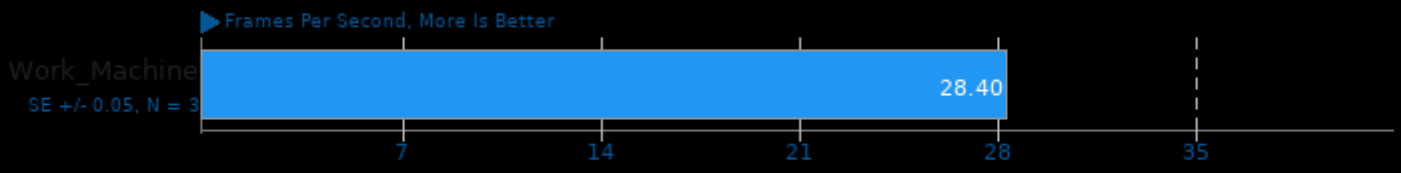
H.264 Video Encoding



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

x265 3.4

Video Input: Bosphorus 4K



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

x265 3.4

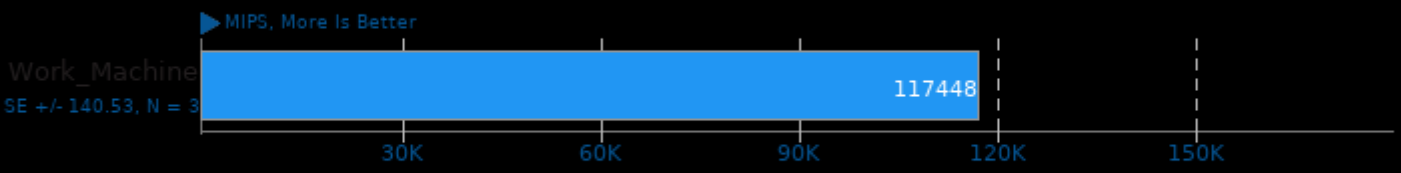
Video Input: Bosphorus 1080p



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

7-Zip Compression 16.02

Compress Speed Test

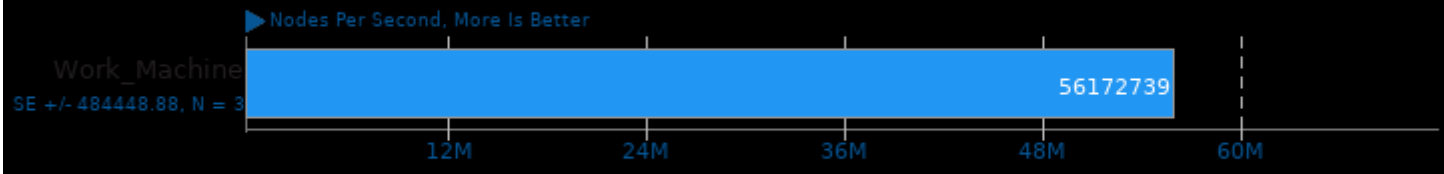


1. (CXX) g++ options: -pipe -lpthread

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Stockfish 9

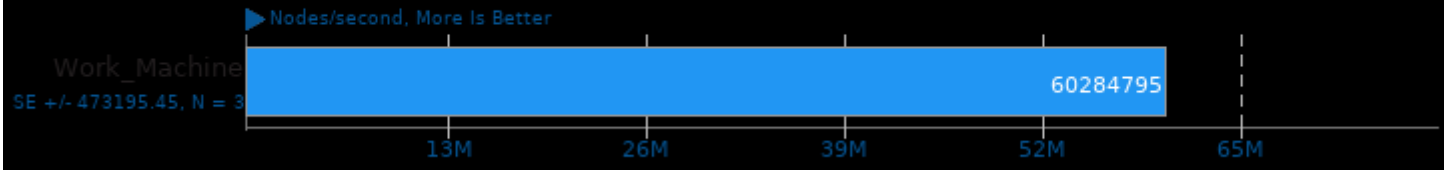
Total Time



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

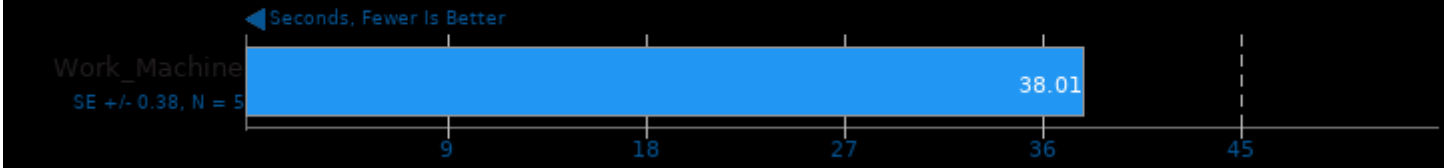
asmFish 2018-07-23

1024 Hash Memory, 26 Depth



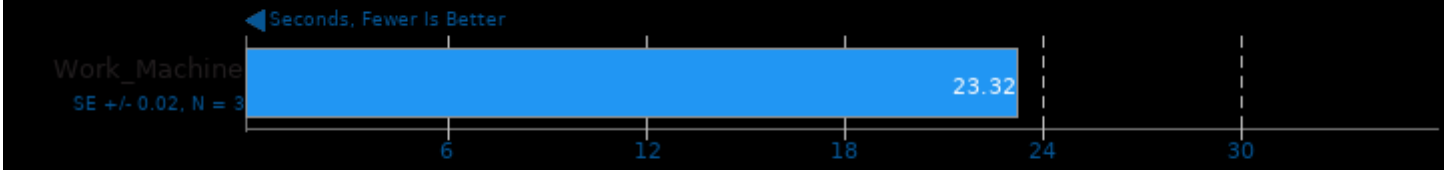
Timed Linux Kernel Compilation 4.18

Time To Compile



POV-Ray 3.7.0.7

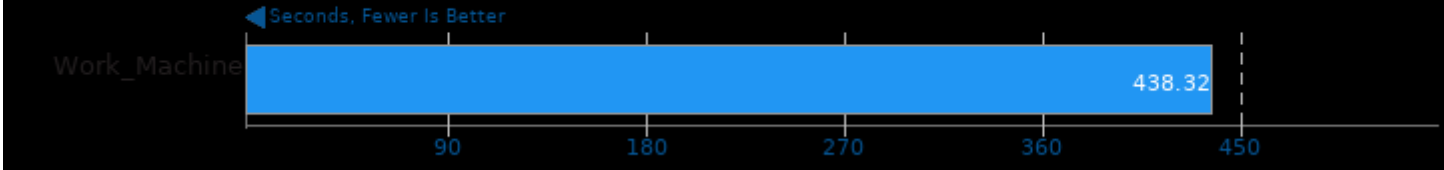
Trace Time



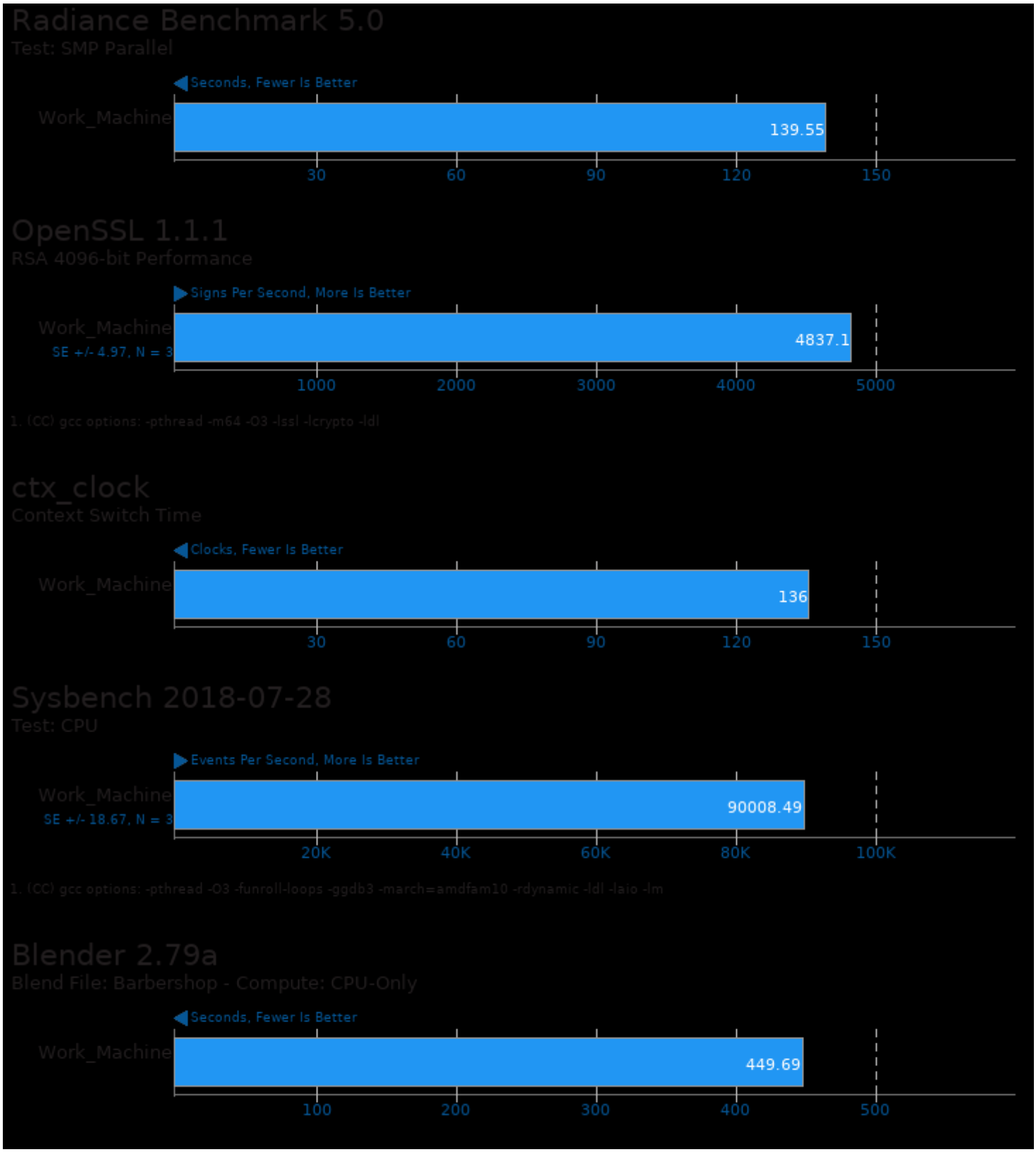
1. (CXX) g++ options: -pipe -O3 -ffast-math -march=native -pthread -lXpm -lSM -lICE -lX11 -ltiff -ljpeg -lpng -lz -lrt -lm -lboost_thread -lboost_system

Radiance Benchmark 5.0

Test: Serial



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