

www.phoronix-test-suite.com

2022-08-10-1558

KVM testing on Ubuntu 22.04 via the Phoronix Test Suite.

Test Systems:

BlockVolume - AMD EPYC 7J13 64-Core

Processor: AMD EPYC 7J13 64-Core (2 Cores / 4 Threads), Motherboard: QEMU Standard PC (i440FX + PIIX 1996) (1.5.1 BIOS), Chipset: Intel 440FX 82441FX PMC, Memory: 32GB, Disk: 50GB BlockVolume, Graphics: bochs-drmdrmfb, Monitor: QEMU Monitor, Network: Red Hat Virtio device

OS: Ubuntu 22.04, Kernel: 5.15.0-1016-oracle (x86_64), Vulkan: 1.2.204, Compiler: GCC 11.2.0, File-System: ext4, Screen Resolution: 1024x768, System Layer: KVM

Kernel Notes: libiscsi.debug_libiscsi_eh=1 - Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --enable-cet --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++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-link-serialization=2 --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-11-gBFGDP/gcc-11-11.2.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-11-gBFGDP/gcc-11-11.2.0/debian/tmp-gcn/usr --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-build-config=bootstrap-lto-lean --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32

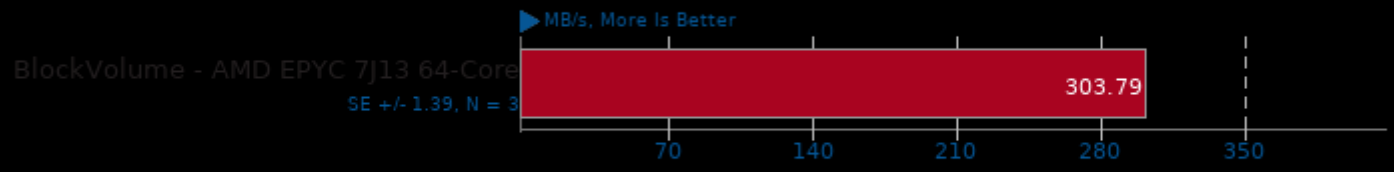
--with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Disk Notes: MQ-DEADLINE / discard,errors=remount-ro,relatime,rw / Block Size: 4096
Processor Notes: CPU Microcode: 0x1000065
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + mmio_stale_data: Not affected + retbleed: 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 Retpolines IBPB: conditional IBRS_FW STIBP: conditional RSB filling + srbds: Not affected + tsx_async_abort: Not affected

	BlockVolume - AMD EPYC 7J13 64-Core
Dbench - 1 (MB/s)	303.791
Standard Deviation	0.8%
Dbench - 6 (MB/s)	383.199
Standard Deviation	0.3%
Dbench - 12 (MB/s)	418.453
Standard Deviation	0.5%
Dbench - 48 (MB/s)	427.906
Standard Deviation	1%
Dbench - 128 (MB/s)	409.336
Standard Deviation	0.3%
Dbench - 256 (MB/s)	366.749
Standard Deviation	1.5%
RAMspeed SMP - Add - Integer (MB/s)	36528
Standard Deviation	0.4%
RAMspeed SMP - Copy - Integer (MB/s)	35728
Standard Deviation	0.5%
RAMspeed SMP - Scale - Integer (MB/s)	35847
Standard Deviation	0.7%
RAMspeed SMP - Triad - Integer (MB/s)	35705
Standard Deviation	0%
RAMspeed SMP - Average - Integer (MB/s)	35843
Standard Deviation	0.9%
RAMspeed SMP - Add - Floating Point (MB/s)	36364
Standard Deviation	1%
RAMspeed SMP - Copy - Floating Point (MB/s)	35744
Standard Deviation	0.5%
RAMspeed SMP - Scale - Floating Point (MB/s)	36259
Standard Deviation	0.4%
RAMspeed SMP - Triad - Floating Point (MB/s)	36515
Standard Deviation	0.6%
RAMspeed SMP - Average - Floating Point (MB/s)	36312
Standard Deviation	0.1%
Stream - Copy (MB/s)	44727
Standard Deviation	0.1%
Stream - Scale (MB/s)	32803
Standard Deviation	0.1%
Stream - Triad (MB/s)	34738
Standard Deviation	0.1%
Stream - Add (MB/s)	34762
Standard Deviation	0.1%
High Performance Conjugate Gradient (GFLOP/s)	4.15922
Standard Deviation	0.3%

NAS Parallel Benchmarks - BT.C (Mop/s)	4827
Standard Deviation	0.3%
NAS Parallel Benchmarks - CG.C (Mop/s)	3023
Standard Deviation	0.8%
NAS Parallel Benchmarks - EP.C (Mop/s)	172.56
Standard Deviation	0.7%
NAS Parallel Benchmarks - EP.D (Mop/s)	173.27
Standard Deviation	0.1%
NAS Parallel Benchmarks - FT.C (Mop/s)	7504
Standard Deviation	0%
NAS Parallel Benchmarks - LU.C (Mop/s)	11430
Standard Deviation	0.5%
NAS Parallel Benchmarks - MG.C (Mop/s)	11933
Standard Deviation	0.1%
NAS Parallel Benchmarks - SP.B (Mop/s)	3896
Standard Deviation	0.4%
NAS Parallel Benchmarks - SP.C (Mop/s)	3707
Standard Deviation	0.2%
FFTE - N.2.3.C.F.R (MFLOPS)	13914
Standard Deviation	0.1%
BLAKE2 (Cycles/Byte)	4.71
Standard Deviation	0%
CacheBench - Read (MB/s)	2457
Standard Deviation	0%
CacheBench - Write (MB/s)	22456
Standard Deviation	0.1%
CacheBench - R.M.W (MB/s)	44880
Standard Deviation	0.2%
SciMark - Composite (Mflops)	592.57
Standard Deviation	0.1%
SciMark - Monte Carlo (Mflops)	125.72
Standard Deviation	0.1%
SciMark - F.F.T (Mflops)	352.02
Standard Deviation	0.7%
SciMark - S.M.M (Mflops)	556.65
Standard Deviation	0.1%
SciMark - D.L.M.F (Mflops)	1012
Standard Deviation	0.1%
SciMark - J.S.O.R (Mflops)	916.88
Standard Deviation	0%
x264 - Bosphorus 4K (FPS)	6.53
Standard Deviation	0.1%
x264 - Bosphorus 1080p (FPS)	27.89
Standard Deviation	0.1%
Himeno Benchmark - P.P.S (MFLOPS)	3414
Standard Deviation	5.1%
7-Zip Compression - Compression Rating (MIPS)	17717
Standard Deviation	1.1%
7-Zip Compression - D.R (MIPS)	13728
Standard Deviation	0%
Stockfish - Total Time (Nodes/s)	5568845
Standard Deviation	2.3%
ebizzy (Records/s)	42686

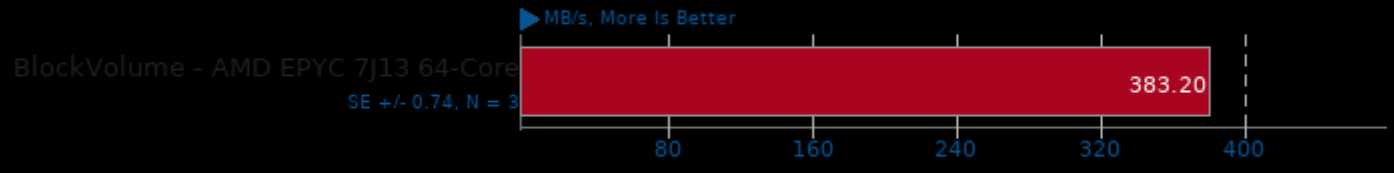
Standard Deviation	6.3%
C-Ray - Total Time - 4.1.R.P.P (sec)	306.025
Standard Deviation	0.1%
Smallpt - G.I.R.1.S (sec)	50.137
Standard Deviation	0.1%
Gzip Compression - L.S.T.A.T.t.g (sec)	47.340
Standard Deviation	2.4%
FLAC Audio Encoding - WAV To FLAC (sec)	18.418
Standard Deviation	0.5%
LAME MP3 Encoding - WAV To MP3 (sec)	8.656
Standard Deviation	0.1%
Hierarchical INTegration - FLOAT (QUIPs)	347472255
Standard Deviation	0.2%

Dbench 4.0
Client Count: 1



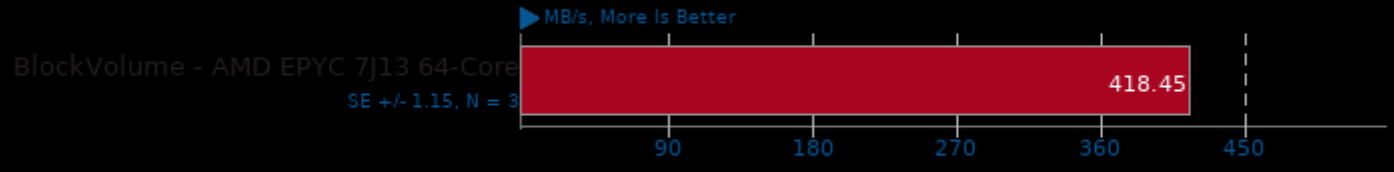
1. (CC) gcc options: -lpopt -O2

Dbench 4.0
Client Count: 6



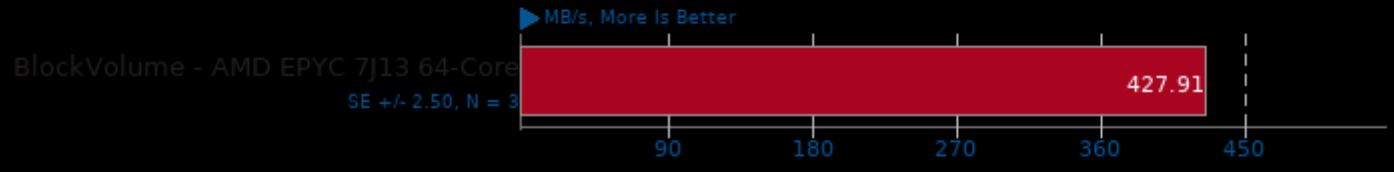
1. (CC) gcc options: -lpopt -O2

Dbench 4.0
Client Count: 12



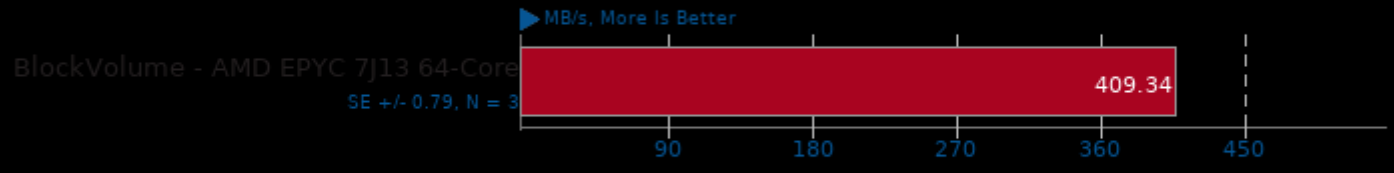
1. (CC) gcc options: -lpopt -O2

Dbench 4.0
Client Count: 48



1. (CC) gcc options: -lpopt -O2

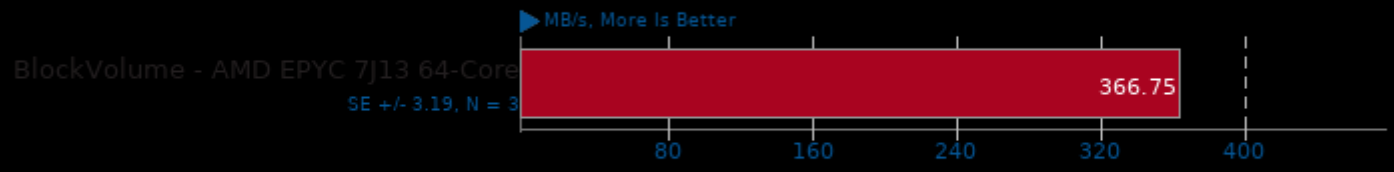
Dbench 4.0
Client Count: 128



1. (CC) gcc options: -lpopt -O2

Dbench 4.0

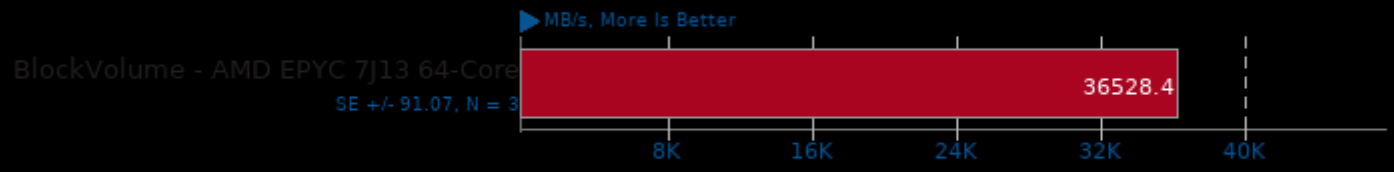
Client Count: 256



1. (CC) gcc options: -lpopt -O2

RAMspeed SMP 3.5.0

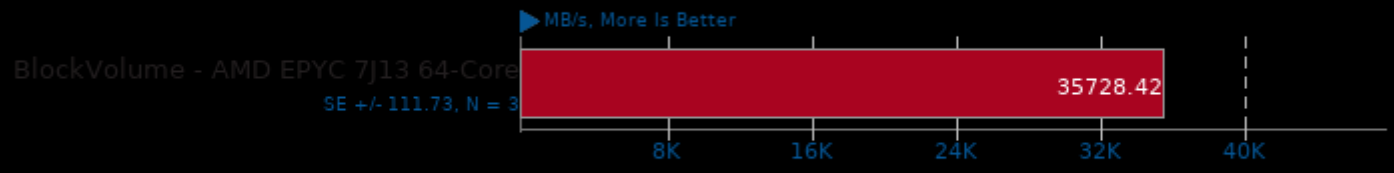
Type: Add - Benchmark: Integer



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

RAMspeed SMP 3.5.0

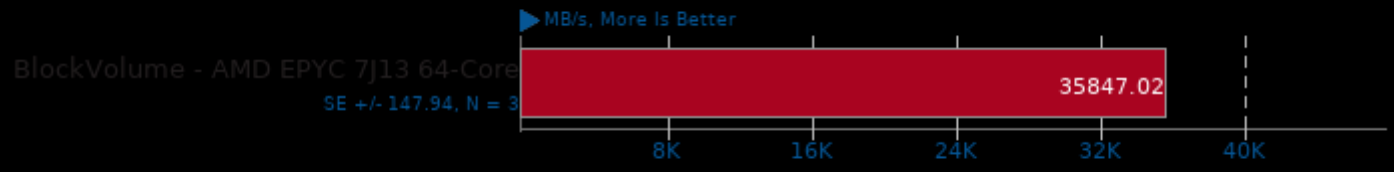
Type: Copy - Benchmark: Integer



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

RAMspeed SMP 3.5.0

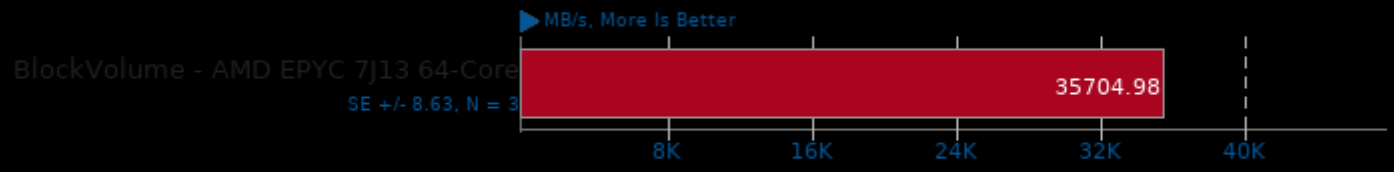
Type: Scale - Benchmark: Integer



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

RAMspeed SMP 3.5.0

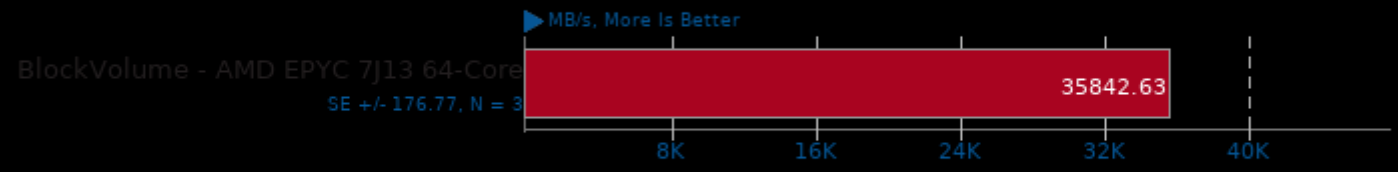
Type: Triad - Benchmark: Integer



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

RAMspeed SMP 3.5.0

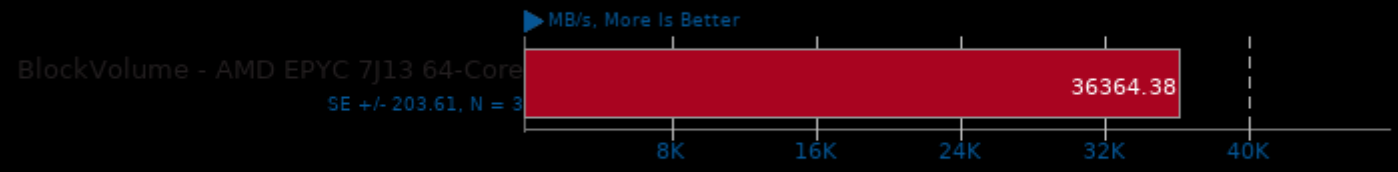
Type: Average - Benchmark: Integer



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

RAMspeed SMP 3.5.0

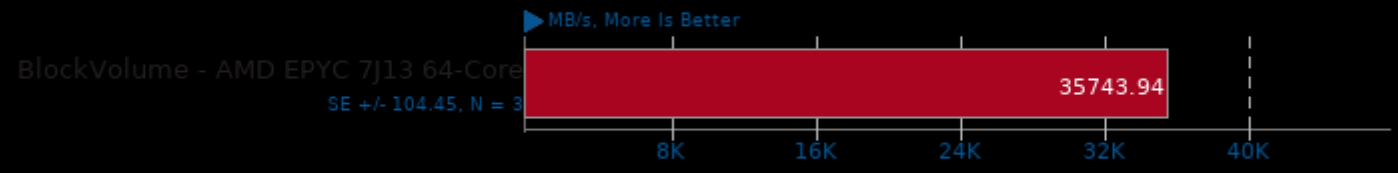
Type: Add - Benchmark: Floating Point



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

RAMspeed SMP 3.5.0

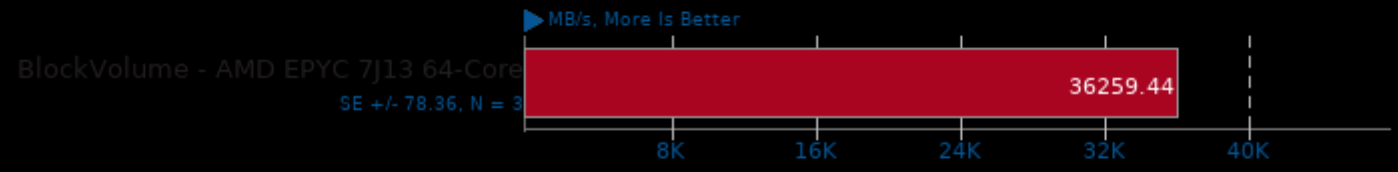
Type: Copy - Benchmark: Floating Point



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

RAMspeed SMP 3.5.0

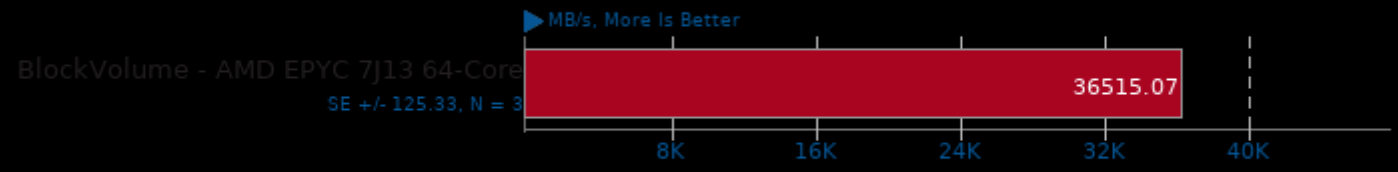
Type: Scale - Benchmark: Floating Point



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

RAMspeed SMP 3.5.0

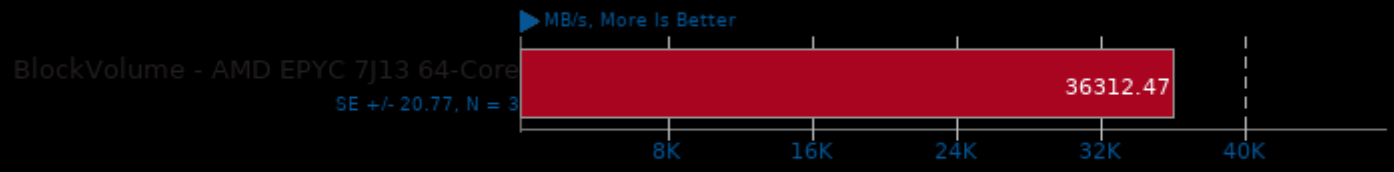
Type: Triad - Benchmark: Floating Point



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

RAMspeed SMP 3.5.0

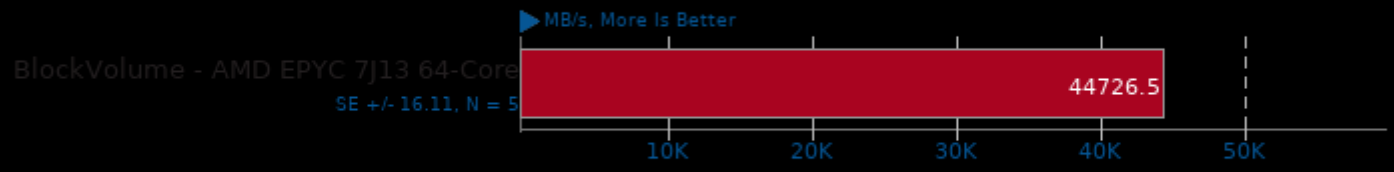
Type: Average - Benchmark: Floating Point



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

Stream 2013-01-17

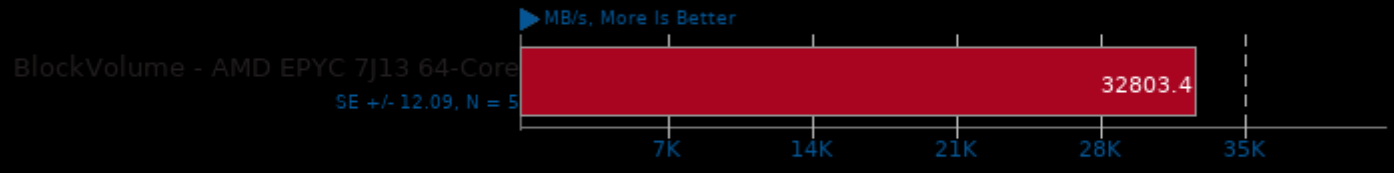
Type: Copy



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

Stream 2013-01-17

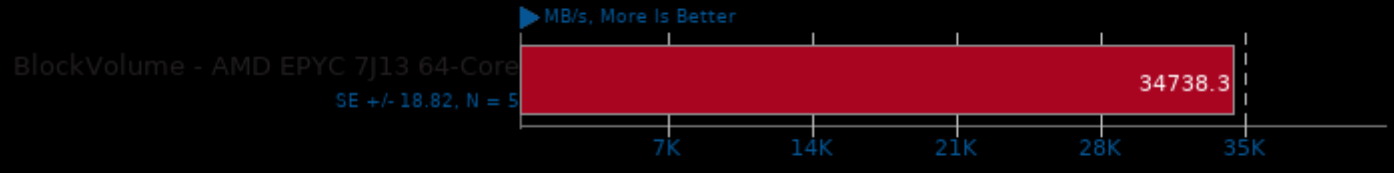
Type: Scale



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

Stream 2013-01-17

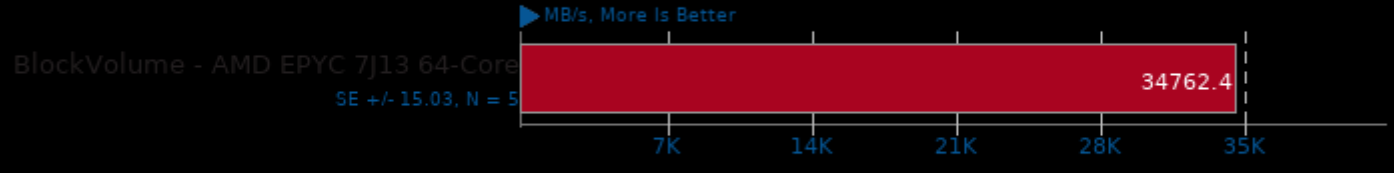
Type: Triad



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

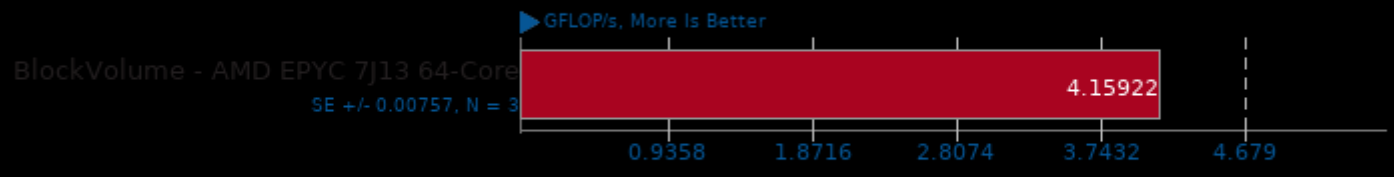
Stream 2013-01-17

Type: Add



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

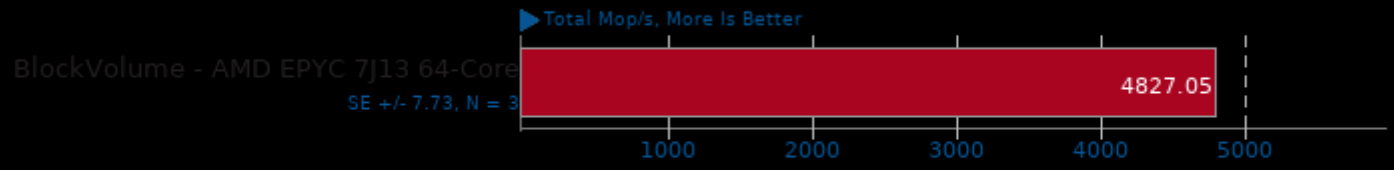
High Performance Conjugate Gradient 3.1



1. (CXX) g++ options: -O3 -ffast-math -ftree-vectorize -lmpi_cxx -lmpi

NAS Parallel Benchmarks 3.4

Test / Class: BT.C



1. (F9X) gfortran options: -O3 -march=native -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -levent_core -levent_pthreads -lm -lz
2. Open MPI 4.1.2

NAS Parallel Benchmarks 3.4

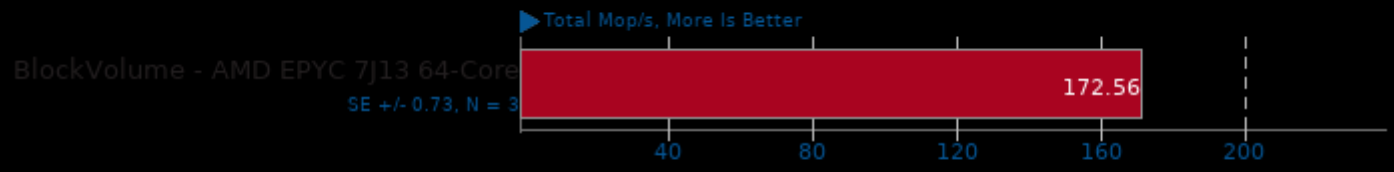
Test / Class: CG.C



1. (F9X) gfortran options: -O3 -march=native -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -levent_core -levent_pthreads -lm -lz
2. Open MPI 4.1.2

NAS Parallel Benchmarks 3.4

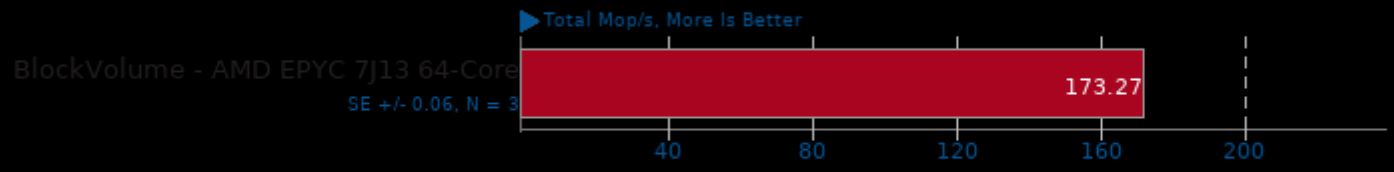
Test / Class: EP.C



1. (F9X) gfortran options: -O3 -march=native -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -levent_core -levent_pthreads -lm -lz
2. Open MPI 4.1.2

NAS Parallel Benchmarks 3.4

Test / Class: EP.D



1. (F9X) gfortran options: -O3 -march=native -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -levent_core -levent_pthreads -lm -lz
2. Open MPI 4.1.2

NAS Parallel Benchmarks 3.4

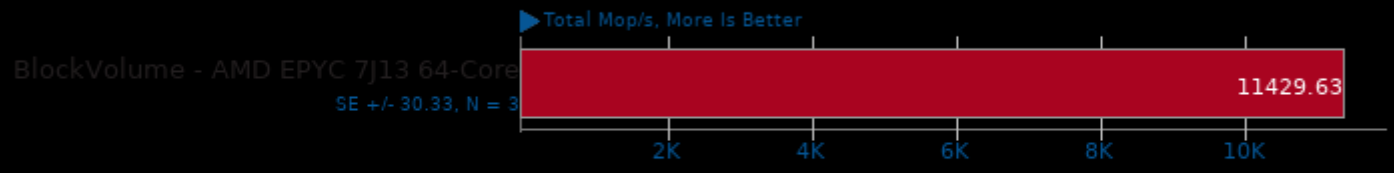
Test / Class: FT.C



1. (F9X) gfortran options: -O3 -march=native -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -levent_core -levent_pthreads -lm -lz
2. Open MPI 4.1.2

NAS Parallel Benchmarks 3.4

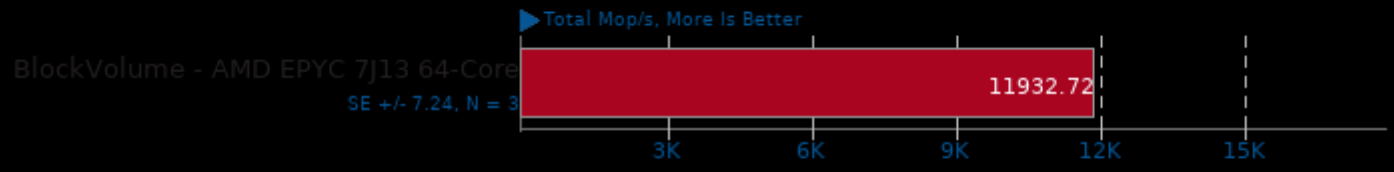
Test / Class: LU.C



1. (F9X) gfortran options: -O3 -march=native -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -levent_core -levent_pthreads -lm -lz
2. Open MPI 4.1.2

NAS Parallel Benchmarks 3.4

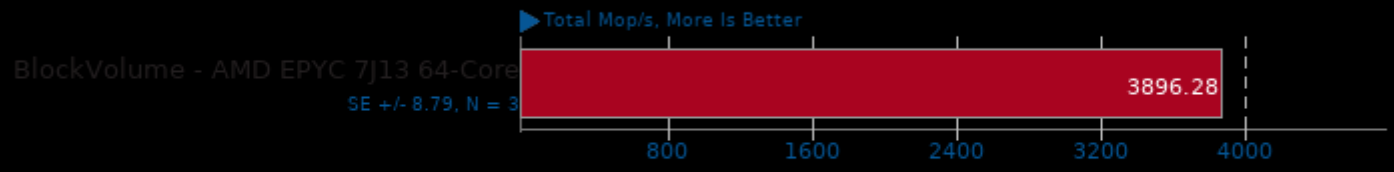
Test / Class: MG.C



1. (F9X) gfortran options: -O3 -march=native -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -levent_core -levent_pthreads -lm -lz
2. Open MPI 4.1.2

NAS Parallel Benchmarks 3.4

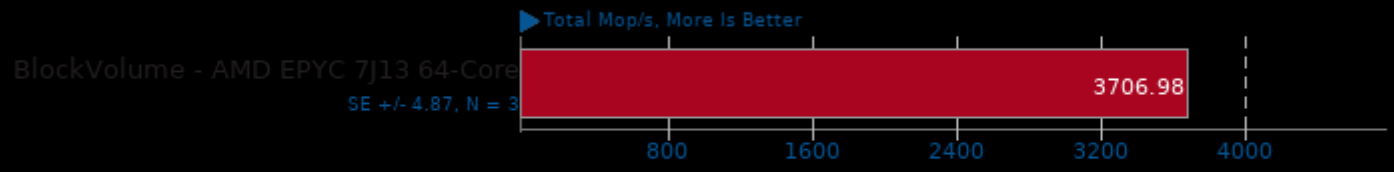
Test / Class: SP.B



1. (F9X) gfortran options: -O3 -march=native -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -levent_core -levent_pthreads -lm -lz
2. Open MPI 4.1.2

NAS Parallel Benchmarks 3.4

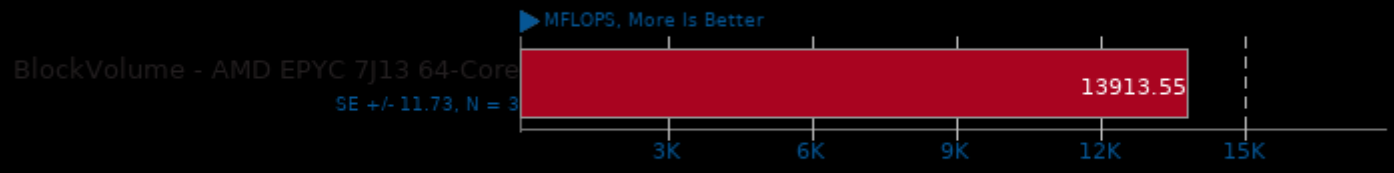
Test / Class: SP.C



1. (F9X) gfortran options: -O3 -march=native -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -levent_core -levent_pthreads -lm -lz
2. Open MPI 4.1.2

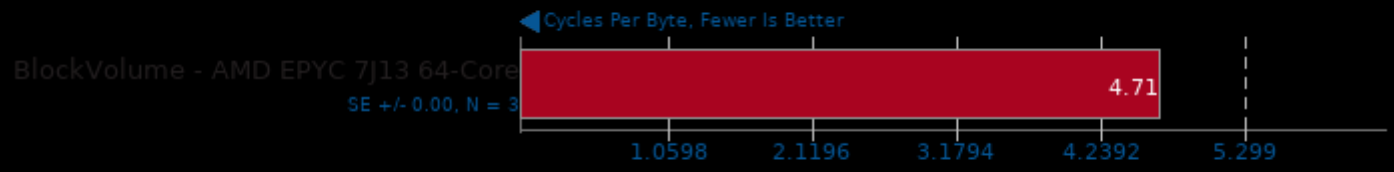
FFTE 7.0

N=256, 3D Complex FFT Routine



1. (F9X) gfortran options: -O3 -fomit-frame-pointer -fopenmp

BLAKE2 20170307



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

CacheBench

Test: Read



1. (CC) gcc options: -lrt

CacheBench

Test: Write



1. (CC) gcc options: -lrt

CacheBench

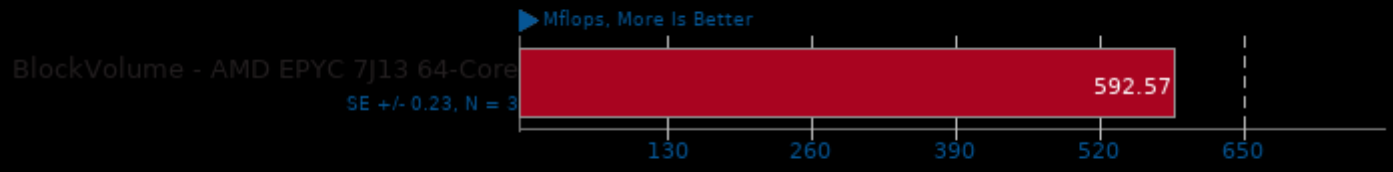
Test: Read / Modify / Write



1. (CC) gcc options: -lrt

SciMark 2.0

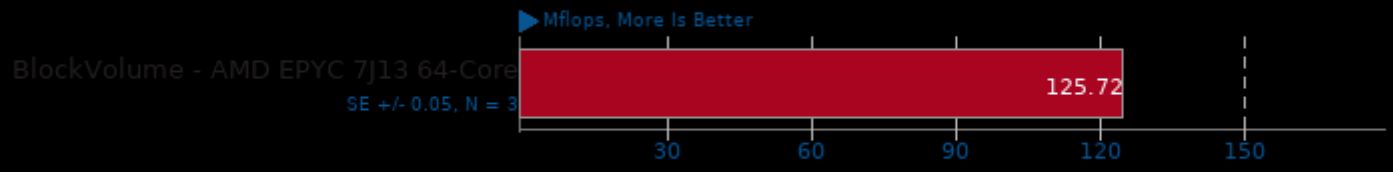
Computational Test: Composite



1. (CC) gcc options: -lm

SciMark 2.0

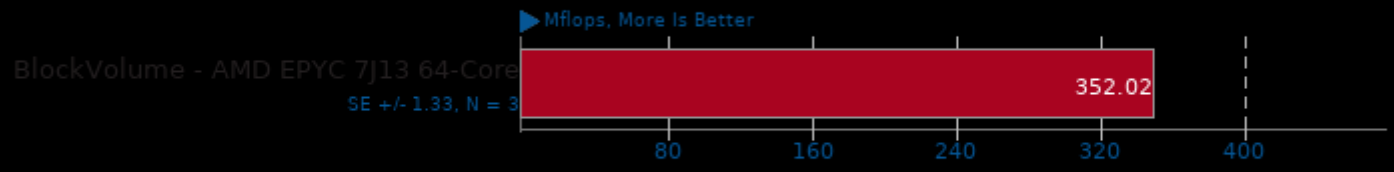
Computational Test: Monte Carlo



1. (CC) gcc options: -lm

SciMark 2.0

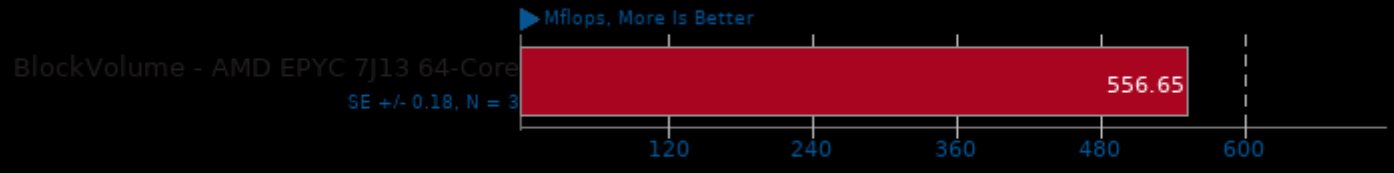
Computational Test: Fast Fourier Transform



1. (CC) gcc options: -lm

SciMark 2.0

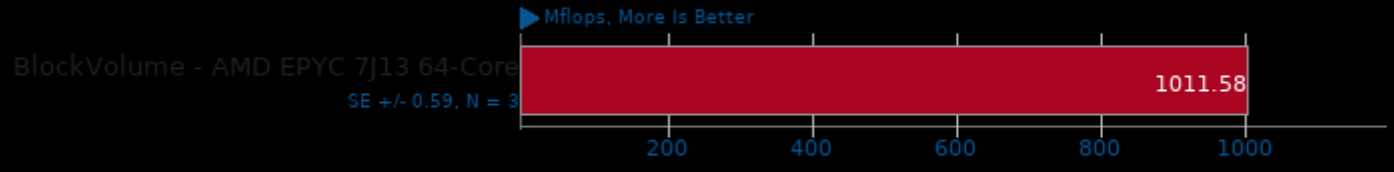
Computational Test: Sparse Matrix Multiply



1. (CC) gcc options: -lm

SciMark 2.0

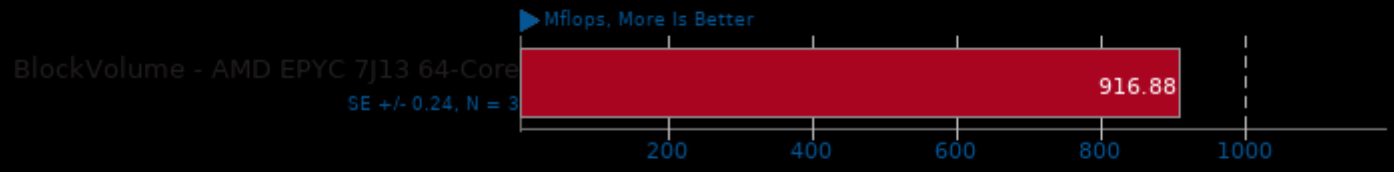
Computational Test: Dense LU Matrix Factorization



1. (CC) gcc options: -lm

SciMark 2.0

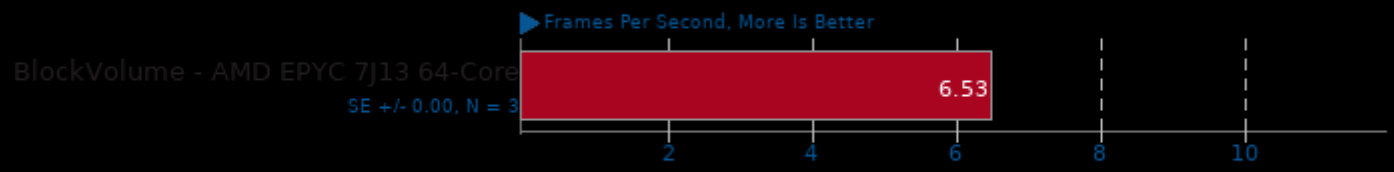
Computational Test: Jacobi Successive Over-Relaxation



1. (CC) gcc options: -lm

x264 2022-02-22

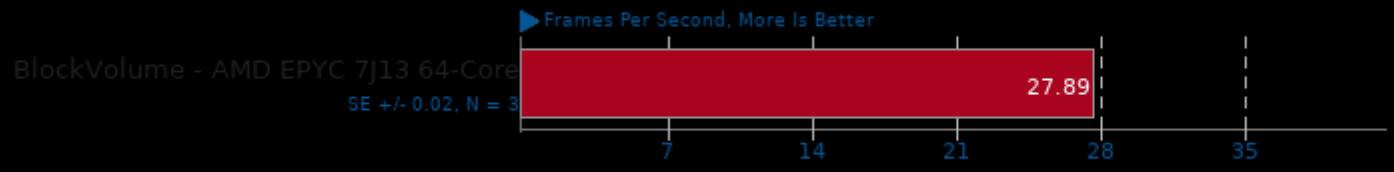
Video Input: Bosphorus 4K



1. (CC) gcc options: -ldl -m64 -lm -lpthread -O3 -flto

x264 2022-02-22

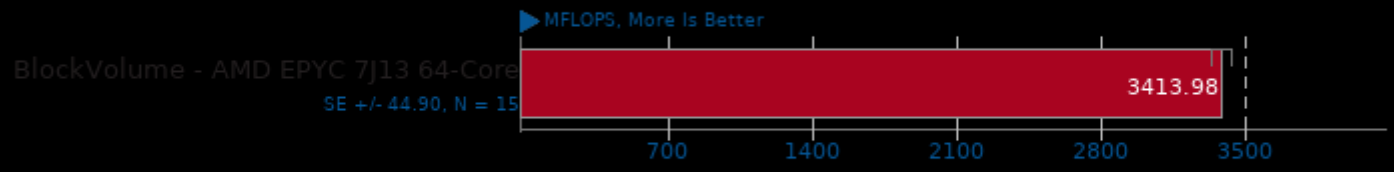
Video Input: Bosphorus 1080p



1. (CC) gcc options: -ldl -m64 -lm -lpthread -O3 -flto

Himeno Benchmark 3.0

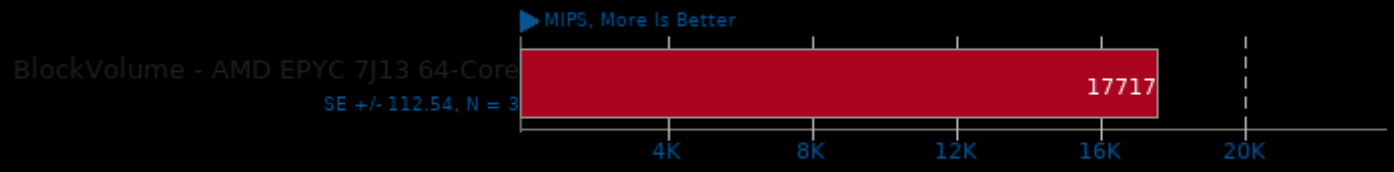
Poisson Pressure Solver



1. (CC) gcc options: -O3 -mavx2

7-Zip Compression 22.00

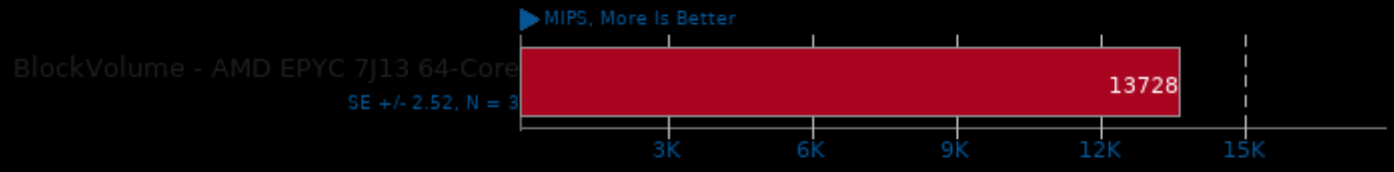
Test: Compression Rating



1. (CXX) g++ options: -lpthread -ldl -O2 -fPIC

7-Zip Compression 22.00

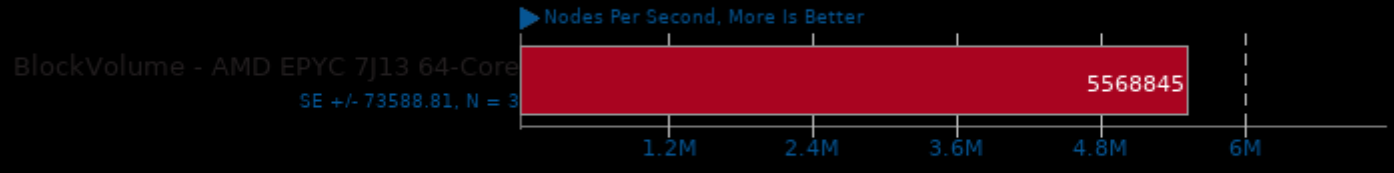
Test: Decompression Rating



1. (CXX) g++ options: -lpthread -ldl -O2 -fPIC

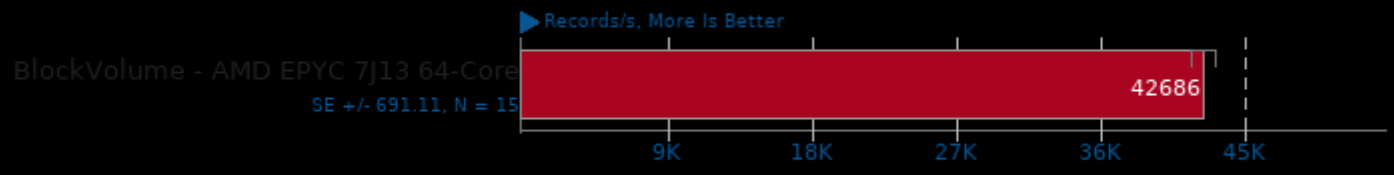
Stockfish 15

Total Time



1. (CXX) g++ options: -lgcov -m64 -lpthread -fno-exceptions -std=c++17 -fno-peel-loops -fno-tracer -pedantic -O3 -msse -msse3 -mpopcnt -mavx2 -msse

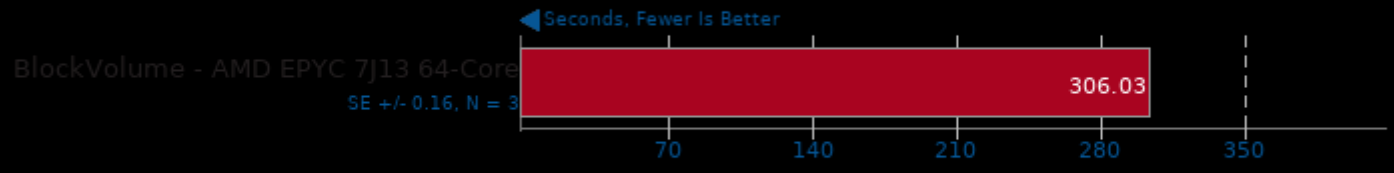
ebizzy 0.3



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

C-Ray 1.1

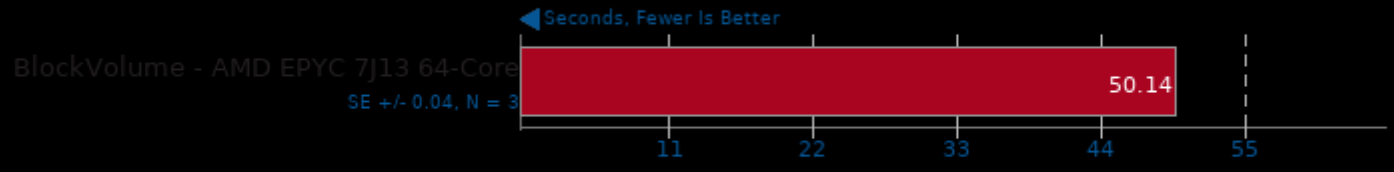
Total Time - 4K, 16 Rays Per Pixel



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

Smallpt 1.0

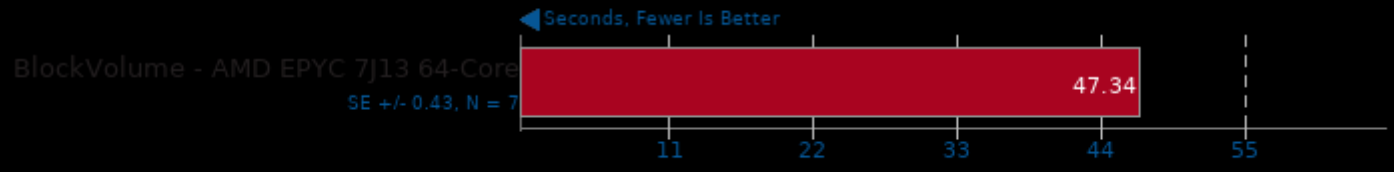
Global Illumination Renderer; 128 Samples



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

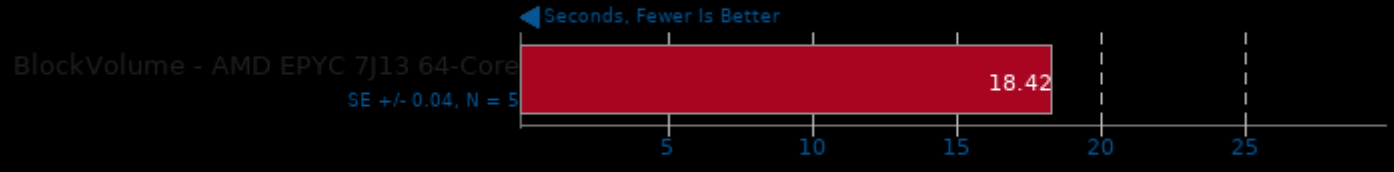
Gzip Compression

Linux Source Tree Archiving To .tar.gz

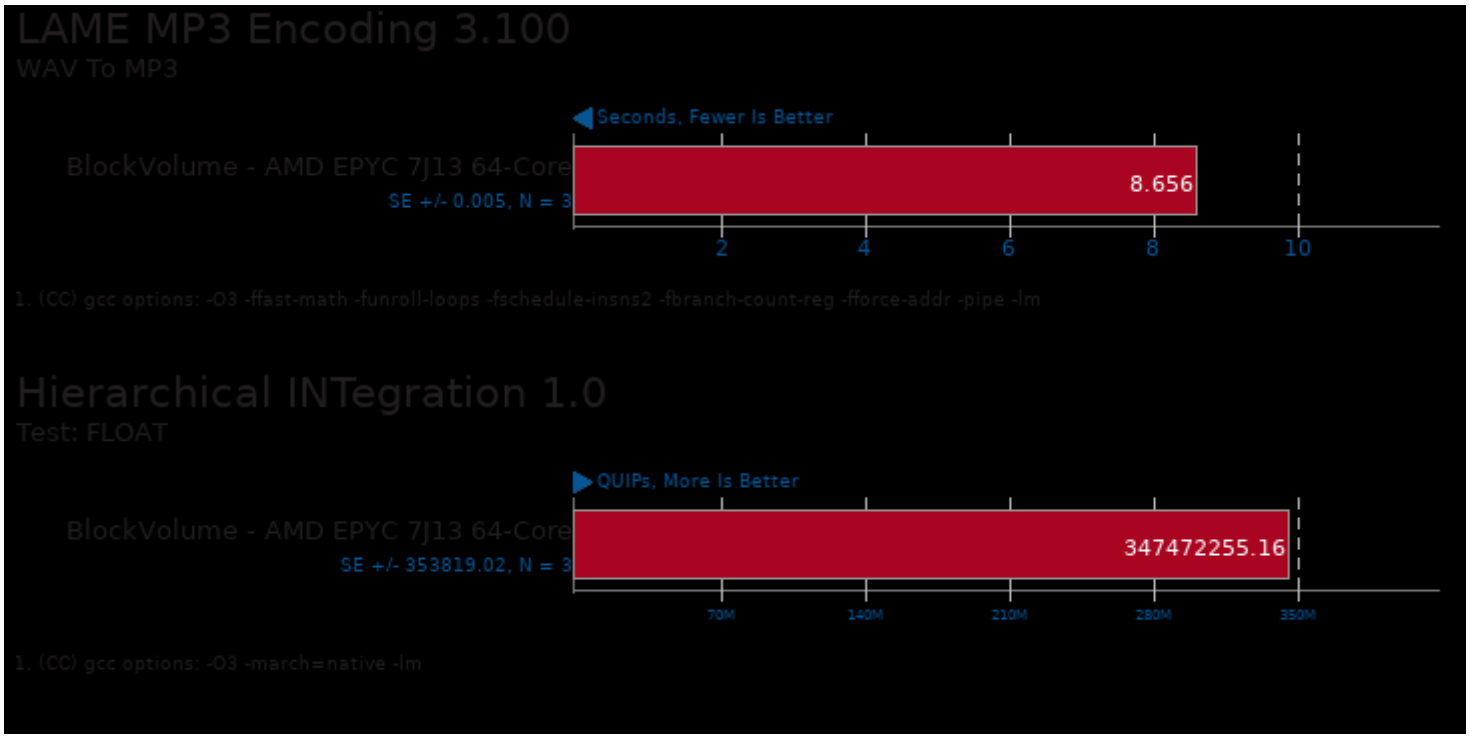


FLAC Audio Encoding 1.3.3

WAV To FLAC



1. (CXX) g++ options: -fvisibility=hidden -lm



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