



[www.phoronix-test-suite.com](http://www.phoronix-test-suite.com)

## **test-cpu-3750**

AMD Ryzen 7 1700 Eight-Core testing with a ASRock X370 Gaming X (P5.20 BIOS) and Sapphire AMD Radeon RX 470/480/570/570X/580/580X/590 4GB on Arch rolling via the Phoronix Test Suite.

### **Test Systems:**

**Samsung SSD 970 EVO - AMD Ryzen 7 1700 Eight-Core**

**AMD Ryzen 7 1700 Eight-Core**

**AMD Ryzen 7 1700 Eight-Core - Sapphire AMD Radeon RX**

Processor: AMD Ryzen 7 1700 Eight-Core @ 3.00GHz (8 Cores / 16 Threads), Motherboard: ASRock X370 Gaming X (P5.20 BIOS), Chipset: AMD 17h, Memory: 32GB, Disk: Samsung SSD 970 EVO 250GB + 256GB TS256GSSD370 + SATA3 240GB SSD, Graphics: Sapphire AMD Radeon RX 470/480/570/570X/580/580X/590 4GB (1284/1750MHz), Audio: AMD Ellesmere HDMI Audio, Monitor: MSI MAG341CQ, Network: Intel I211

OS: Arch rolling, Kernel: 5.11.16-arch1-1 (x86\_64), Desktop: Xfce 4.16, Display Server: X Server 1.20.11, OpenGL: 4.6

Mesa 21.0.3 (LLVM 11.1.0), OpenCL: OpenCL 1.1 Mesa 21.0.3, Vulkan: 1.2.145, Compiler: GCC 10.2.0 + Clang 11.1.0 + LLVM 11.1.0, File-System: ext4, Screen Resolution: 3440x1440

Kernel Notes: Transparent Huge Pages: madvise

Environment Notes: NVM\_CD\_FLAGS=

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-liberty --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 ondemand (Boost: Enabled) - CPU Microcode: 0x8001137

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 + srbs: Not affected + tsx\_async\_abort: Not affected

Samsung SSD 970	AMD Ryzen 7 1700	AMD Ryzen 7 1700
EVO - AMD Ryzen 7	Eight-Core	Eight-Core - Sapphire
1700 Eight-Core		AMD Radeon RX

<b>IOR - 2MB - /home/kub0x/nvme_disk (MB/s)</b>	235.57
Standard Deviation	1%
<b>IOR - 4MB - /home/kub0x/nvme_disk (MB/s)</b>	243.12
Standard Deviation	0.5%
<b>IOR - 8MB - /home/kub0x/nvme_disk (MB/s)</b>	249.88
Standard Deviation	0.3%
<b>IOR - 16MB - /home/kub0x/nvme_disk (MB/s)</b>	201.89
Standard Deviation	4.8%
<b>Parboil - OpenCL BFS (sec)</b>	1.726123
Standard Deviation	1%
<b>GNU GMP GMPbench - Total Time (GMPbench Score)</b>	4542
<b>Java SciMark - Composite (Mflops)</b>	2441
Standard Deviation	0.9%
<b>Java SciMark - Monte Carlo (Mflops)</b>	1404
Standard Deviation	0.2%
<b>Java SciMark - F.F.T (Mflops)</b>	1455
Standard Deviation	2.9%
<b>Java SciMark - S.M.M (Mflops)</b>	2388
Standard Deviation	0%
<b>Java SciMark - D.L.M.F (Mflops)</b>	5580
Standard Deviation	1.9%
<b>Java SciMark - J.S.O.R (Mflops)</b>	1379
Standard Deviation	0%
<b>LuaJIT - Composite (Mflops)</b>	1267
Standard Deviation	0.5%
<b>LuaJIT - Monte Carlo (Mflops)</b>	431.46
Standard Deviation	0.2%
<b>LuaJIT - F.F.T (Mflops)</b>	255.53
Standard Deviation	0.1%
<b>LuaJIT - S.M.M (Mflops)</b>	1042
Standard Deviation	0.1%
<b>LuaJIT - D.L.M.F (Mflops)</b>	2987
Standard Deviation	1%

<b>LuaJIT - J.S.O.R (Mflops)</b>	1621
Standard Deviation	0%
<b>GnuPG - 2.7.S.F.E (sec)</b>	63.233
Standard Deviation	2.4%
<b>C-Blosc - blosclz (MB/s)</b>	8121
Standard Deviation	0.8%
<b>Izbench - XZ 0 - Compression (MB/s)</b>	32
Standard Deviation	1.8%
<b>Izbench - XZ 0 - Decompression (MB/s)</b>	97
Standard Deviation	0%
<b>Izbench - Zstd 1 - Compression (MB/s)</b>	447
Standard Deviation	0%
<b>Izbench - Zstd 1 - Decompression (MB/s)</b>	1397
Standard Deviation	0.1%
<b>Izbench - Zstd 8 - Compression (MB/s)</b>	80
Standard Deviation	0.7%
<b>Izbench - Zstd 8 - Decompression (MB/s)</b>	1550
Standard Deviation	0.2%
<b>Izbench - Crush 0 - Compression (MB/s)</b>	72
Standard Deviation	0%
<b>Izbench - Crush 0 - Decompression (MB/s)</b>	428
Standard Deviation	0.1%
<b>Izbench - Brotli 0 - Compression (MB/s)</b>	410
Standard Deviation	0.1%
<b>Izbench - Brotli 0 - Decompression (MB/s)</b>	507
Standard Deviation	0.1%
<b>Izbench - Brotli 2 - Compression (MB/s)</b>	171
Standard Deviation	0%
<b>Izbench - Brotli 2 - Decompression (MB/s)</b>	590
Standard Deviation	0.3%
<b>Izbench - Libdeflate 1 - Compression (MB/s)</b>	203
Standard Deviation	2.2%
<b>LZ4 Compression - 1 - Compression Speed (MB/s)</b>	6589
Standard Deviation	0.1%
<b>LZ4 Compression - 1 - D.S (MB/s)</b>	7381
Standard Deviation	1.4%
<b>LZ4 Compression - 3 - Compression Speed (MB/s)</b>	38.82
Standard Deviation	0.8%
<b>LZ4 Compression - 3 - D.S (MB/s)</b>	7148
Standard Deviation	0.3%
<b>LZ4 Compression - 9 - Compression Speed (MB/s)</b>	37.83
Standard Deviation	2.1%
<b>LZ4 Compression - 9 - D.S (MB/s)</b>	7159
Standard Deviation	0.1%
<b>Zstd Compression - 3 - Compression Speed (MB/s)</b>	1760
Standard Deviation	1%
<b>Zstd Compression - 3 - D.S (MB/s)</b>	2755
Standard Deviation	0.1%

Zstd Compression - 8 - Compression Speed (MB/s)	222.0
Standard Deviation	0.8%
Zstd Compression - 8 - D.S (MB/s)	2843
Standard Deviation	0.1%
Zstd Compression - 19 - Compression Speed (MB/s)	20.9
Standard Deviation	2.2%
Zstd Compression - 19 - D.S (MB/s)	2597
Standard Deviation	0.1%
Zstd Compression - 3, Long Mode - Compression Speed (MB/s)	777.2
Standard Deviation	0.5%
Zstd Compression - 3, Long Mode - D.S	2920
Standard Deviation	0.1%
Zstd Compression - 8, Long Mode - Compression Speed (MB/s)	291.6
Standard Deviation	0.8%
Zstd Compression - 8, Long Mode - D.S	3025
Standard Deviation	0.1%
Zstd Compression - 19, Long Mode - Compression Speed (MB/s)	18.2
Standard Deviation	2.5%
Zstd Compression - 19, Long Mode - D.S (MB/s)	2576
Standard Deviation	0.1%
7-Zip Compression - C.S.T (MIPS)	34130
Standard Deviation	1.5%
Parallel BZIP2 Compression - 2.F.C (sec)	4.772
Standard Deviation	0.8%
Gzip Compression - L.S.T.A.T.t.g (sec)	46.749
Standard Deviation	0.7%
XZ Compression - C.u.1.0.3.s.i.i.C.L.9 (sec)	47.458
Standard Deviation	0.4%
System GZIP Decompression (sec)	3.395
Standard Deviation	0%
System XZ Decompression (sec)	4.450
Standard Deviation	0%
System ZLIB Decompression (ms)	1948
Standard Deviation	0.1%
RAR Compression - L.S.T.A.T.R (sec)	71.997
Standard Deviation	2.4%
Crypto++ - All Algorithms (MiB/s)	1406
Crypto++ - Keyed Algorithms (MiB/s)	554.352098
Crypto++ - Unkeyed Algorithms (MiB/s)	321.694665
Crypto++ - I.E.C.P.K.A (MiB/s)	4135
BLAKE2 (Cycles/Byte)	5.11
Xmrig - Monero - 1M (H/s)	1901
Xmrig - Wownero - 1M (H/s)	3158
Bork File Encrypter - F.E.T (sec)	10.369
Normalized	100%

<b>ArrayFire - BLAS CPU (GFLOPS)</b>	211.291
<b>ArrayFire - BLAS OpenCL (GFLOPS)</b>	1428
<b>ArrayFire - C.G.C (ms)</b>	35.52
<b>Botan - KASUMI (MiB/s)</b>	80.907
<b>Botan - KASUMI - Decrypt (MiB/s)</b>	78.311
<b>Botan - AES-256 (MiB/s)</b>	4944
<b>Botan - AES-256 - Decrypt (MiB/s)</b>	4951
<b>Botan - Twofish (MiB/s)</b>	320.888
<b>Botan - Twofish - Decrypt (MiB/s)</b>	324.035
<b>Botan - Blowfish (MiB/s)</b>	385.235
<b>Botan - Blowfish - Decrypt (MiB/s)</b>	389.487
<b>Botan - CAST-256 (MiB/s)</b>	126.41
<b>Botan - CAST-256 - Decrypt (MiB/s)</b>	126.47
<b>Botan - ChaCha20Poly1305 (MiB/s)</b>	441.36
<b>Botan - ChaCha20Poly1305 - Decrypt (MiB/s)</b>	436.821
<b>Aircrack-ng (k/s)</b>	13799
<b>Cpuminer-Opt - Magi (kH/s)</b>	320
<b>Cpuminer-Opt - x25x (kH/s)</b>	242.46
<b>Cpuminer-Opt - Deepcoin (kH/s)</b>	4573
<b>Cpuminer-Opt - Ringcoin (kH/s)</b>	1655
<b>Cpuminer-Opt - Blake-2 S (kH/s)</b>	210610
<b>Cpuminer-Opt - Garlicoin (kH/s)</b>	1190
<b>Cpuminer-Opt - Skeincoin (kH/s)</b>	38070
<b>Cpuminer-Opt - Myriad-Groestl (kH/s)</b>	11460
<b>Cpuminer-Opt - LBC, LBRY Credits (kH/s)</b>	10900
<b>Cpuminer-Opt - Q.S.2.P (kH/s)</b>	63800
<b>Cpuminer-Opt - T.S.2.O (kH/s)</b>	87170
<b>Cryptsetup - PBKDF2-sha512 (Iterations/sec)</b>	1367113
<b>Cryptsetup - PBKDF2-whirlpool</b>	584490
<b>Cryptsetup - A.X.2.E (MiB/s)</b>	2490
<b>Cryptsetup - A.X.2.D (MiB/s)</b>	2500
<b>Cryptsetup - S.X.2.E (MiB/s)</b>	351.1
<b>Cryptsetup - S.X.2.D (MiB/s)</b>	348.8
<b>Cryptsetup - T.X.2.E (MiB/s)</b>	360.3
<b>Cryptsetup - A.X.5.E (MiB/s)</b>	2142
<b>Cryptsetup - A.X.5.D (MiB/s)</b>	2128
<b>Cryptsetup - S.X.5.E (MiB/s)</b>	351.5
<b>Cryptsetup - S.X.5.D (MiB/s)</b>	348.3
<b>Cryptsetup - T.X.5.E (MiB/s)</b>	359.9
<b>Cryptsetup - T.X.5.D (MiB/s)</b>	359.2
<b>CacheBench - Read (MB/s)</b>	2781
<b>CacheBench - Write (MB/s)</b>	24462
<b>CacheBench - R.M.W (MB/s)</b>	48450
<b>RAMspeed SMP - Add - Integer (MB/s)</b>	20912
<b>RAMspeed SMP - Copy - Integer (MB/s)</b>	18452
<b>RAMspeed SMP - Scale - Integer (MB/s)</b>	17283
<b>RAMspeed SMP - Triad - Integer (MB/s)</b>	17197
<b>RAMspeed SMP - Average - Integer (MB/s)</b>	18659

<b>RAMspeed SMP - Add - Floating Point (MB/s)</b>	21043
<b>RAMspeed SMP - Copy - Floating Point</b>	18531
<b>RAMspeed SMP - Scale - Floating Point</b>	17884
<b>RAMspeed SMP - Triad - Floating Point</b>	20414
<b>RAMspeed SMP - Average - Floating Point (MB/s)</b>	19458
<b>Tinymembench - Standard Memcpy (MB/s)</b>	12766
<b>Tinymembench - Standard Memset (MB/s)</b>	10197
<b>MBW - Memory Copy - 128 MiB (MiB/s)</b>	12035
<b>MBW - Memory Copy - 512 MiB (MiB/s)</b>	12301
<b>MBW - Memory Copy - 1024 MiB (MiB/s)</b>	12373
<b>MBW - Memory Copy - 4096 MiB (MiB/s)</b>	12171
<b>MBW - Memory Copy - 8192 MiB (MiB/s)</b>	12528
<b>MBW - M.C.F.B.S - 128 MiB (MiB/s)</b>	6350
<b>MBW - M.C.F.B.S - 512 MiB (MiB/s)</b>	7058
<b>MBW - M.C.F.B.S - 1024 MiB (MiB/s)</b>	7070
<b>MBW - M.C.F.B.S - 4096 MiB (MiB/s)</b>	7254
<b>MBW - M.C.F.B.S - 8192 MiB (MiB/s)</b>	7313
<b>t-test1 - 1 (sec)</b>	23.228
<b>t-test1 - 2 (sec)</b>	7.62
<b>Rodinia - OpenMP LavaMD (sec)</b>	273.966
<b>Rodinia - OpenMP HotSpot3D (sec)</b>	113.123
<b>Rodinia - OpenMP Leukocyte (sec)</b>	146.716
<b>Rodinia - OpenMP CFD Solver (sec)</b>	30.237
<b>Rodinia - O.S (sec)</b>	29.009
<b>Parboil - OpenMP LBM (sec)</b>	139.726059
<b>Parboil - OpenMP CUTCP (sec)</b>	3.117468
<b>Parboil - OpenMP Stencil (sec)</b>	14.004133
<b>Parboil - O.M.G (sec)</b>	96.698586
<b>ONNX Runtime - yolov4 - OpenMP CPU (Inferences/min)</b>	190
<b>ONNX Runtime - fcn-resnet101-11 - OpenMP CPU (Inferences/min)</b>	36
<b>ONNX Runtime - shufflenet-v2-10 - OpenMP CPU (Inferences/min)</b>	8847
<b>ONNX Runtime - super-resolution-10 - OpenMP CPU (Inferences/min)</b>	2741
<b>LAMMPS Molecular Dynamics Simulator - 20k Atoms (ns/day)</b>	5.334
<b>LAMMPS Molecular Dynamics Simulator - Rhodopsin Protein (ns/day)</b>	5.15
<b>Himeno Benchmark - P.P.S (MFLOPS)</b>	3980
<b>CppPerformanceBenchmarks - Atol (sec)</b>	79.107
<b>CppPerformanceBenchmarks - Ctype (sec)</b>	38.594
<b>CppPerformanceBenchmarks - Math Library (sec)</b>	350.179

<b>CppPerformanceBenchmarks - Rand Numbers (sec)</b>	1223
<b>CppPerformanceBenchmarks - Stepanov Vector (sec)</b>	85.285
<b>CppPerformanceBenchmarks - Function Objects (sec)</b>	17.034
<b>CppPerformanceBenchmarks - S.A (sec)</b>	32.406
<b>NGINX Benchmark - S.W.P.S (Reqs/sec)</b>	20958

## IOR 3.3.0

Block Size: 2MB - Disk Target: /home/kub0x/nvme\_disk



1. (CC) gcc options: -O2 -lm -pthread -lmpi

## IOR 3.3.0

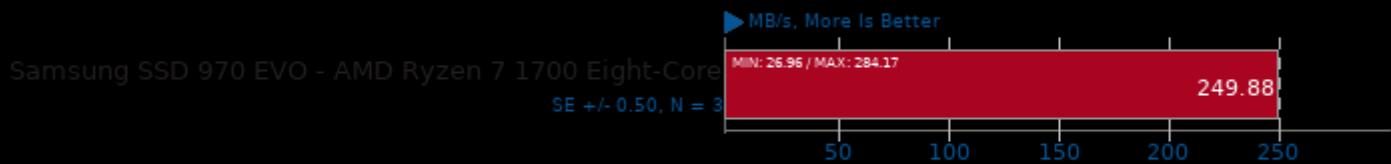
Block Size: 4MB - Disk Target: /home/kub0x/nvme\_disk



1. (CC) gcc options: -O2 -lm -pthread -lmpi

## IOR 3.3.0

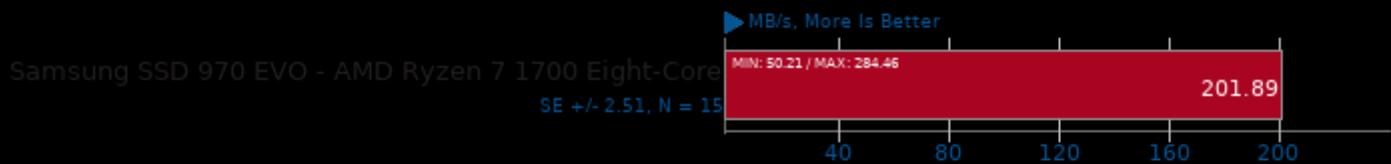
Block Size: 8MB - Disk Target: /home/kub0x/nvme\_disk



1. (CC) gcc options: -O2 -lm -pthread -lmpi

## IOR 3.3.0

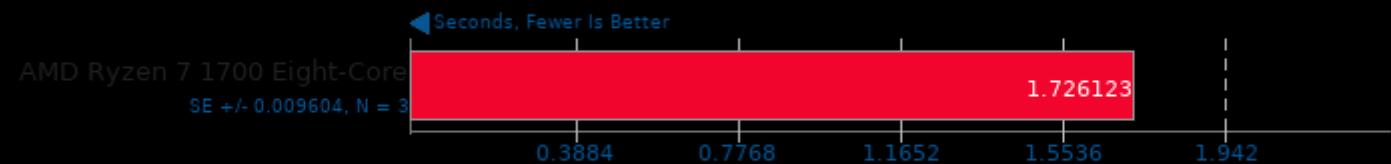
Block Size: 16MB - Disk Target: /home/kub0x/nvme\_disk



1. (CC) gcc options: -O2 -lm -pthread -lmpi

## Parboil 2.5

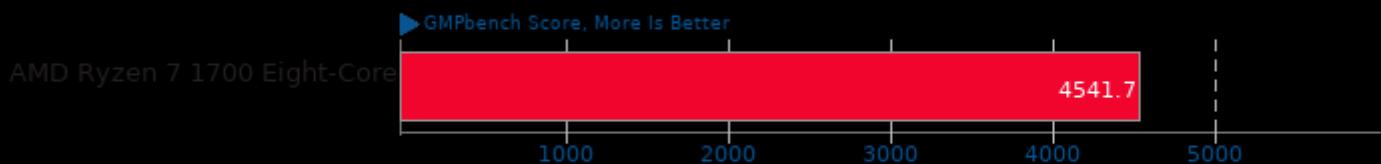
Test: OpenCL BFS



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

## GNU GMP GMPbench 6.2.1

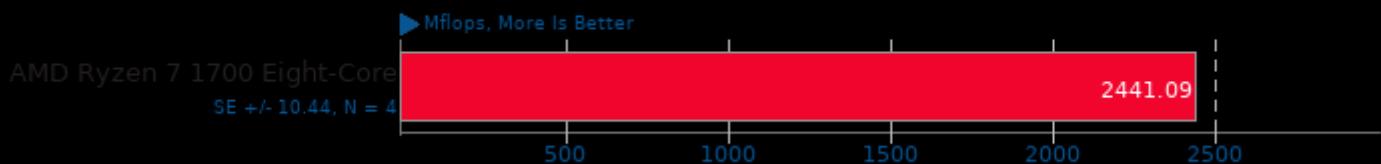
Total Time



1. (CC) gcc options: -O3 -fomit-frame-pointer -lm

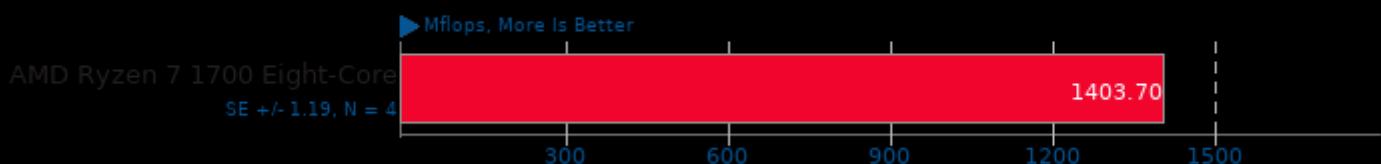
## Java SciMark 2.0

Computational Test: Composite



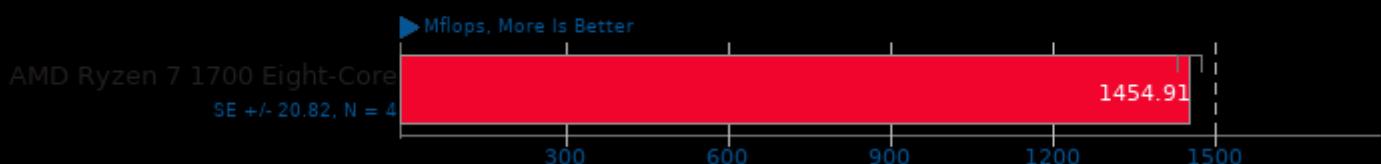
## Java SciMark 2.0

Computational Test: Monte Carlo



## Java SciMark 2.0

Computational Test: Fast Fourier Transform



## Java SciMark 2.0

Computational Test: Sparse Matrix Multiply



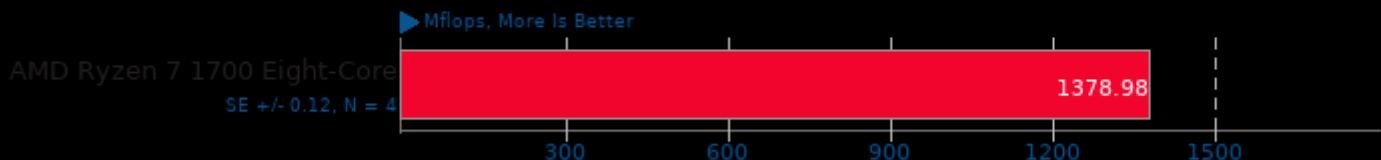
## Java SciMark 2.0

Computational Test: Dense LU Matrix Factorization



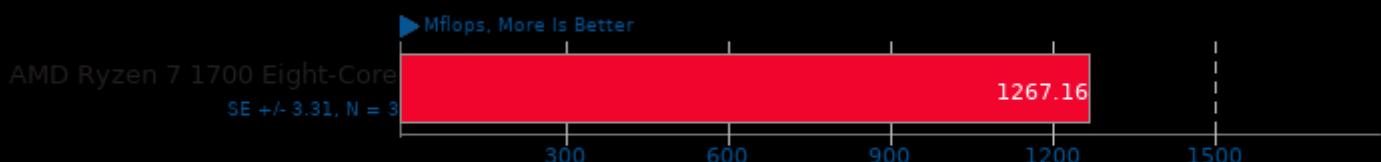
## Java SciMark 2.0

Computational Test: Jacobi Successive Over-Relaxation



## LuajIT 2.1-git

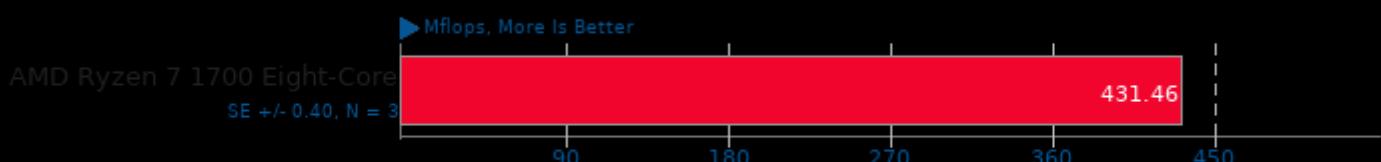
Test: Composite



1. (CC) gcc options: -lm -ldl -O2 -fomit-frame-pointer -U\_FORTIFY\_SOURCE -fno-stack-protector

## LuajIT 2.1-git

Test: Monte Carlo



1. (CC) gcc options: -lm -ldl -O2 -fomit-frame-pointer -U\_FORTIFY\_SOURCE -fno-stack-protector

## LuajIT 2.1-git

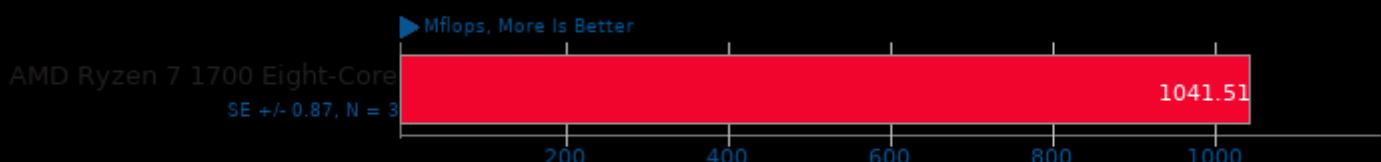
Test: Fast Fourier Transform



1. (CC) gcc options: -lm -ldl -O2 -fomit-frame-pointer -U\_FORTIFY\_SOURCE -fno-stack-protector

## LuajIT 2.1-git

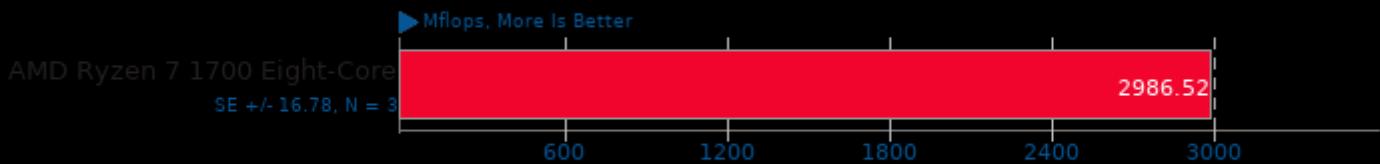
Test: Sparse Matrix Multiply



1. (CC) gcc options: -lm -ldl -O2 -fomit-frame-pointer -U\_FORTIFY\_SOURCE -fno-stack-protector

## LuaJIT 2.1-git

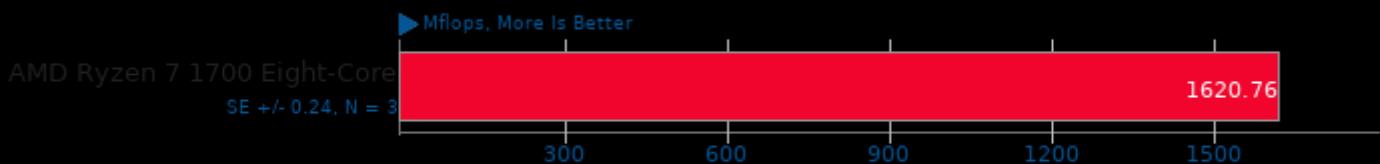
Test: Dense LU Matrix Factorization



1. (CC) gcc options: -lm -ldl -O2 -fomit-frame-pointer -U\_FORTIFY\_SOURCE -fno-stack-protector

## LuaJIT 2.1-git

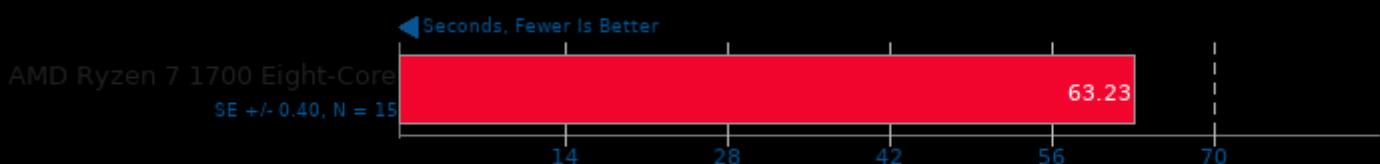
Test: Jacobi Successive Over-Relaxation



1. (CC) gcc options: -lm -ldl -O2 -fomit-frame-pointer -U\_FORTIFY\_SOURCE -fno-stack-protector

## GnuPG 2.2.27

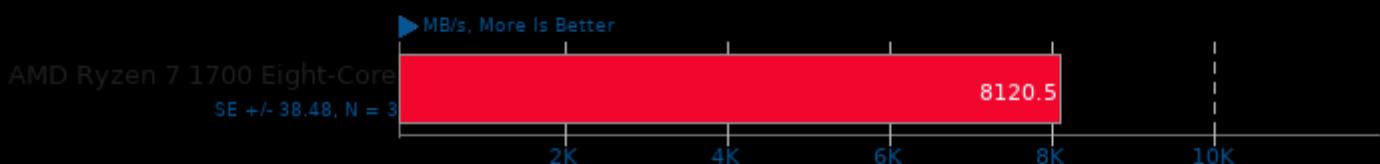
2.7GB Sample File Encryption



1. (CC) gcc options: -O2

## C-Blosc 2.0 Beta 5

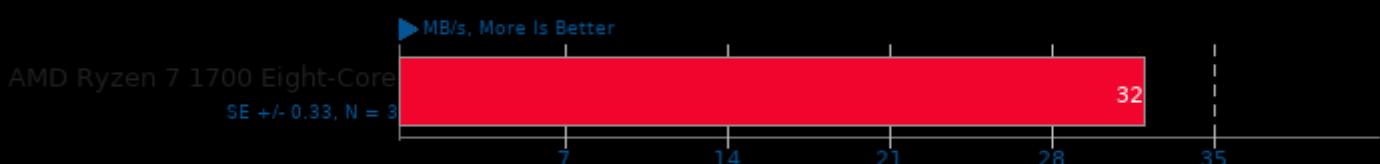
Compressor: blosclz



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

## Izbench 1.8

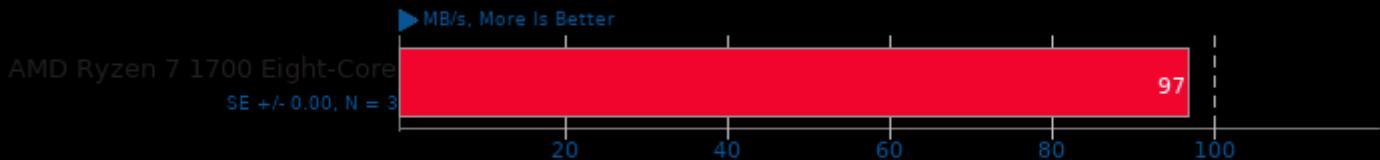
Test: XZ 0 - Process: Compression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

## Izbench 1.8

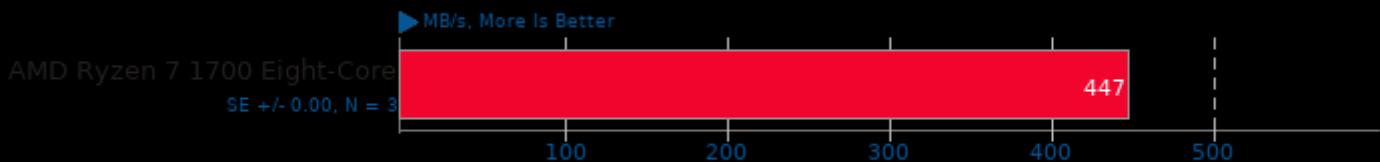
Test: XZ 0 - Process: Decompression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

## Izbench 1.8

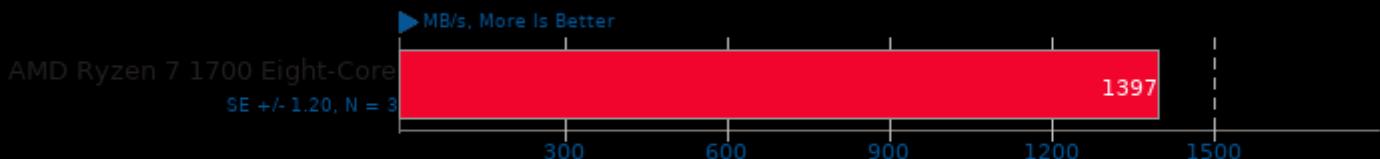
Test: Zstd 1 - Process: Compression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

## Izbench 1.8

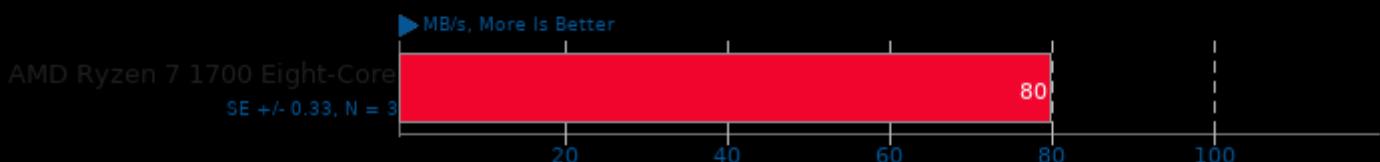
Test: Zstd 1 - Process: Decompression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

## Izbench 1.8

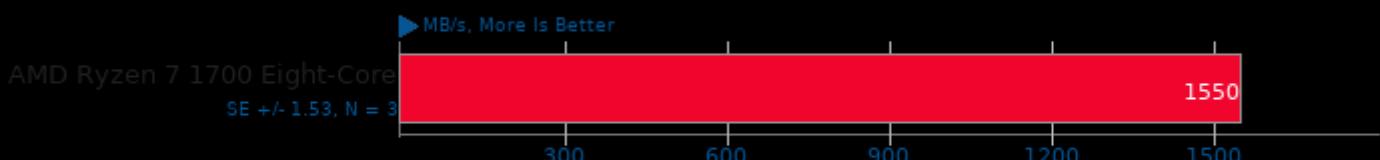
Test: Zstd 8 - Process: Compression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

## Izbench 1.8

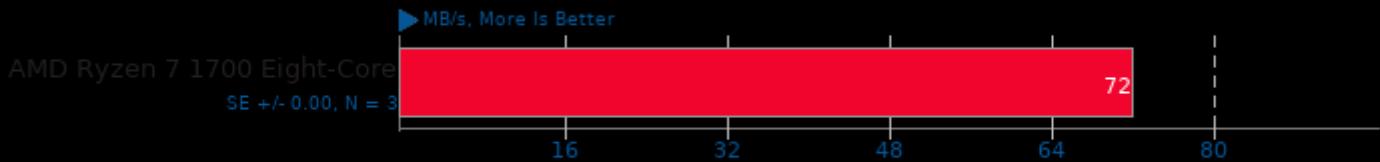
Test: Zstd 8 - Process: Decompression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

## Izbench 1.8

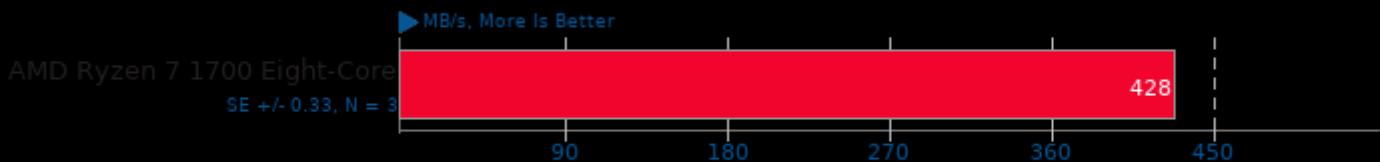
Test: Crush 0 - Process: Compression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

## Izbench 1.8

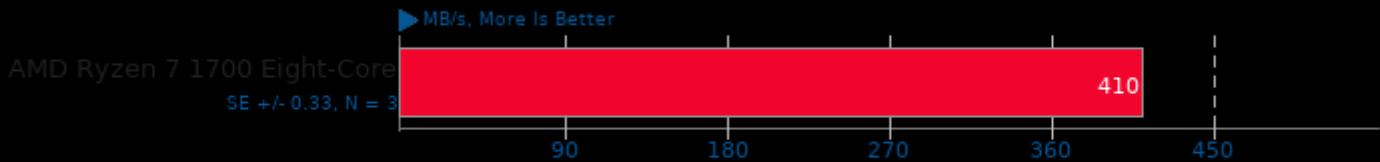
Test: Crush 0 - Process: Decompression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

## Izbench 1.8

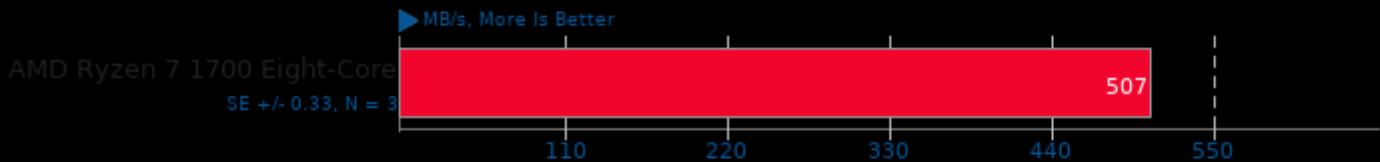
Test: Brotli 0 - Process: Compression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

## Izbench 1.8

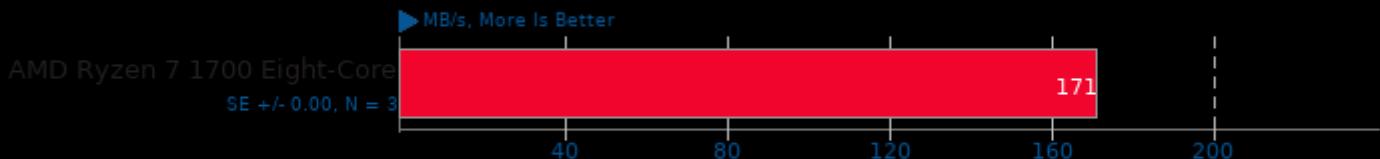
Test: Brotli 0 - Process: Decompression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

## Izbench 1.8

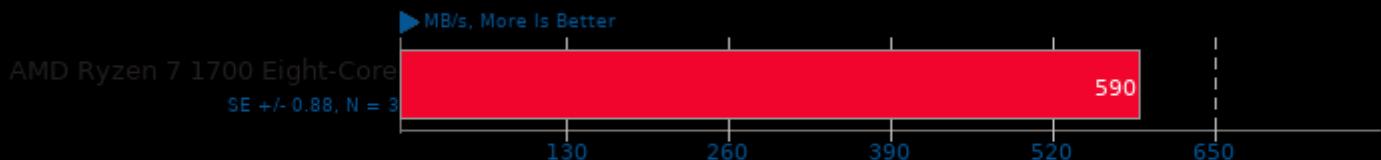
Test: Brotli 2 - Process: Compression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

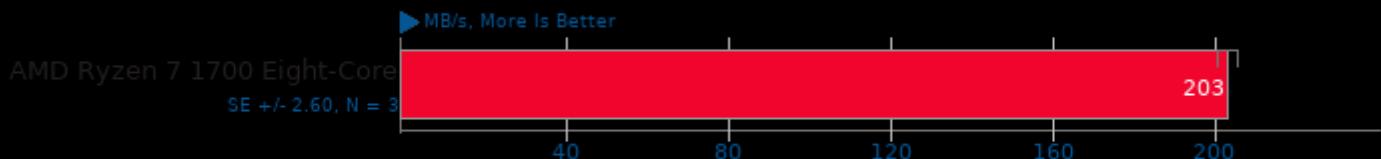
## Izbench 1.8

Test: Brotli 2 - Process: Decompression



## Izbench 1.8

Test: Libdeflate 1 - Process: Compression



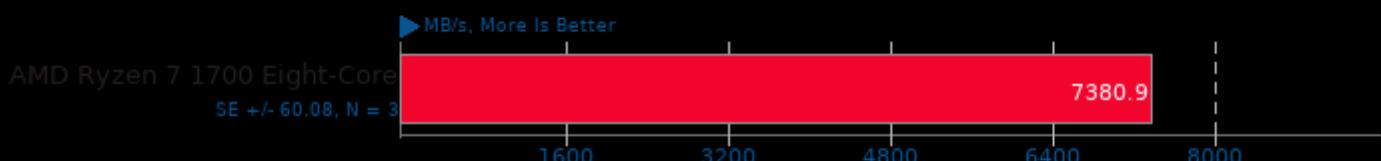
## LZ4 Compression 1.9.3

Compression Level: 1 - Compression Speed



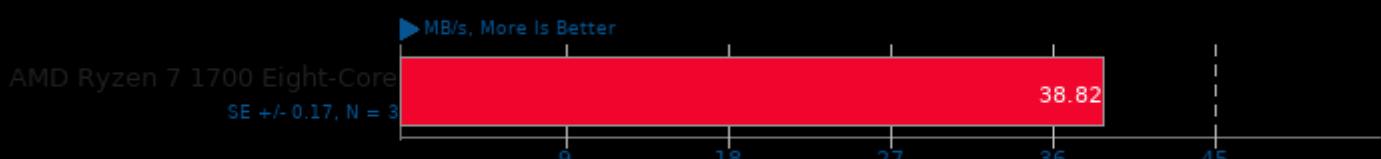
## LZ4 Compression 1.9.3

Compression Level: 1 - Decompression Speed



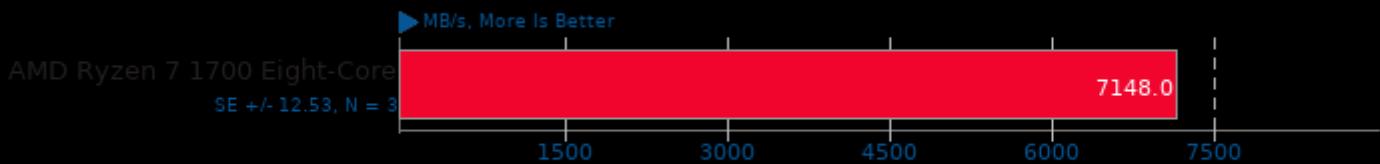
## LZ4 Compression 1.9.3

Compression Level: 3 - Compression Speed



## LZ4 Compression 1.9.3

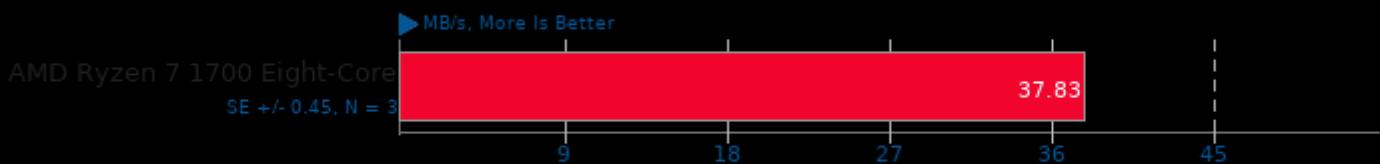
Compression Level: 3 - Decompression Speed



1. (CC) gcc options: -O3

## LZ4 Compression 1.9.3

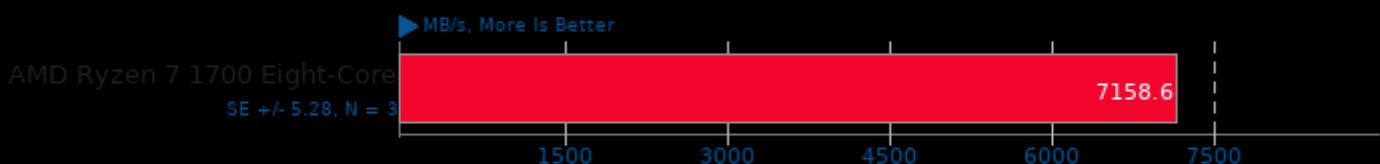
Compression Level: 9 - Compression Speed



1. (CC) gcc options: -O3

## LZ4 Compression 1.9.3

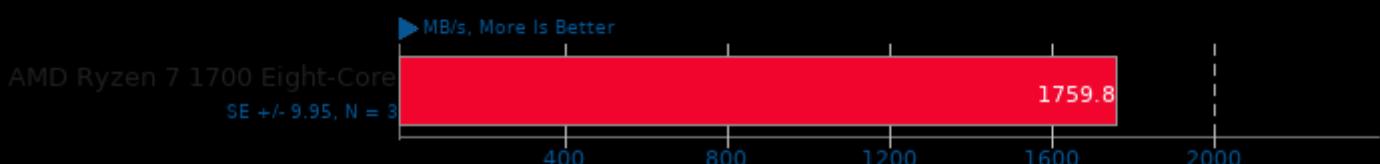
Compression Level: 9 - Decompression Speed



1. (CC) gcc options: -O3

## Zstd Compression 1.4.9

Compression Level: 3 - Compression Speed



1. (CC) gcc options: -O3 -pthread -lz -lizma -llz4

## Zstd Compression 1.4.9

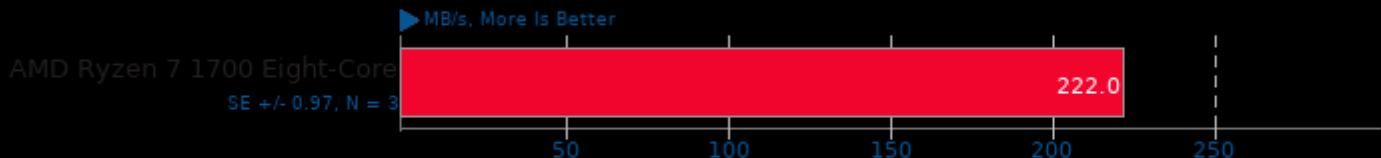
Compression Level: 3 - Decompression Speed



1. (CC) gcc options: -O3 -pthread -lz -lizma -llz4

## Zstd Compression 1.4.9

Compression Level: 8 - Compression Speed



1. (CC) gcc options: -O3 -pthread -lz -lzma -llz4

## Zstd Compression 1.4.9

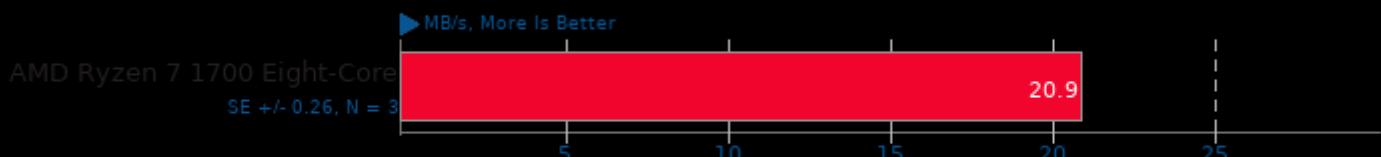
Compression Level: 8 - Decompression Speed



1. (CC) gcc options: -O3 -pthread -lz -lzma -llz4

## Zstd Compression 1.4.9

Compression Level: 19 - Compression Speed



1. (CC) gcc options: -O3 -pthread -lz -lzma -llz4

## Zstd Compression 1.4.9

Compression Level: 19 - Decompression Speed



1. (CC) gcc options: -O3 -pthread -lz -lzma -llz4

## Zstd Compression 1.4.9

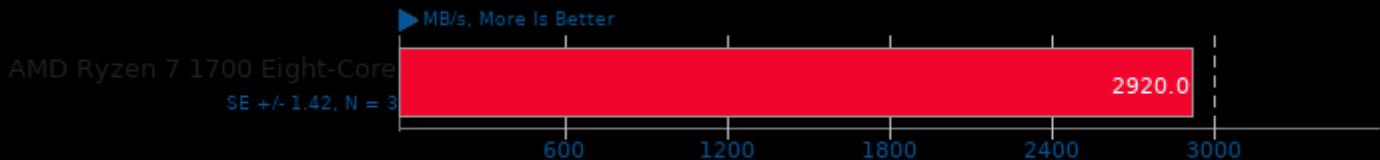
Compression Level: 3, Long Mode - Compression Speed



1. (CC) gcc options: -O3 -pthread -lz -lzma -llz4

## Zstd Compression 1.4.9

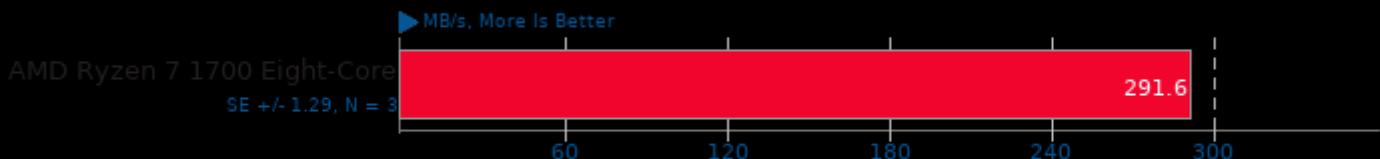
Compression Level: 3, Long Mode - Decompression Speed



1. (CC) gcc options: -O3 -pthread -lz -lzma -llz4

## Zstd Compression 1.4.9

Compression Level: 8, Long Mode - Compression Speed



1. (CC) gcc options: -O3 -pthread -lz -lzma -llz4

## Zstd Compression 1.4.9

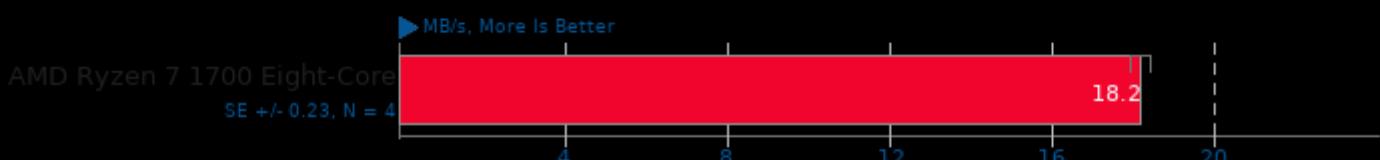
Compression Level: 8, Long Mode - Decompression Speed



1. (CC) gcc options: -O3 -pthread -lz -lzma -llz4

## Zstd Compression 1.4.9

Compression Level: 19, Long Mode - Compression Speed



1. (CC) gcc options: -O3 -pthread -lz -lzma -llz4

## Zstd Compression 1.4.9

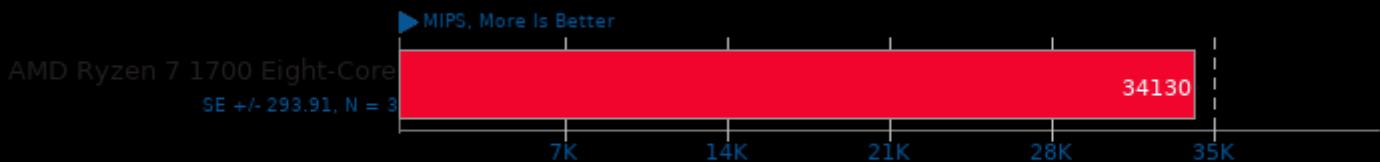
Compression Level: 19, Long Mode - Decompression Speed



1. (CC) gcc options: -O3 -pthread -lz -lzma -llz4

## 7-Zip Compression 16.02

Compress Speed Test



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

## Parallel BZIP2 Compression 1.1.12

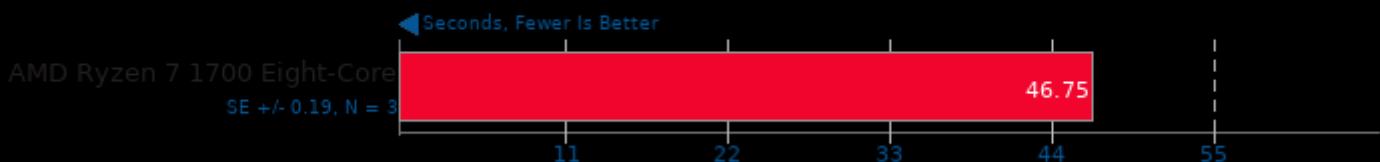
256MB File Compression



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

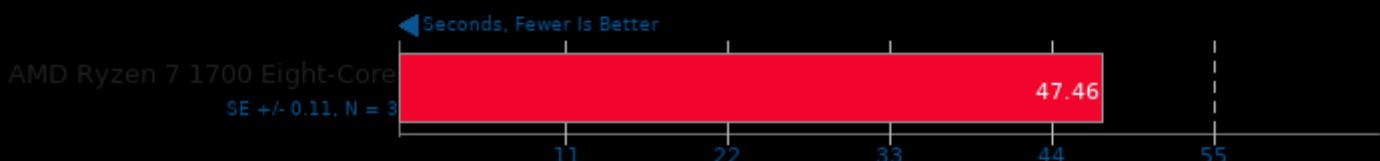
## Gzip Compression

Linux Source Tree Archiving To .tar.gz



## XZ Compression 5.2.4

Compressing ubuntu-16.04.3-server-i386.img, Compression Level 9

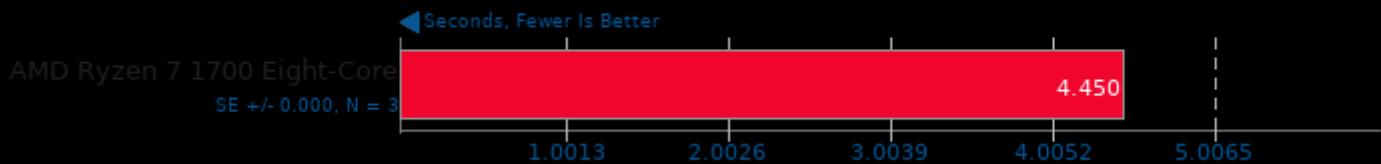


1. (CC) gcc options: -fthread -fvisibility=hidden -O2

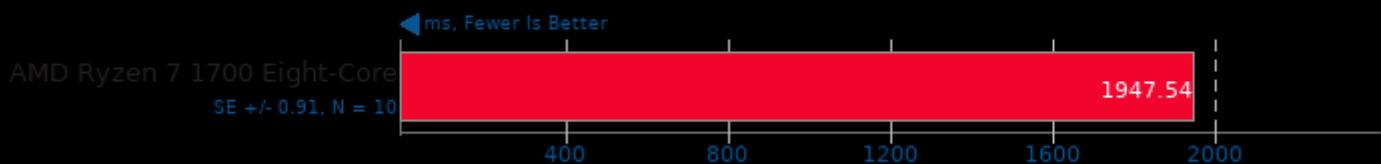
## System GZIP Decompression



## System XZ Decompression

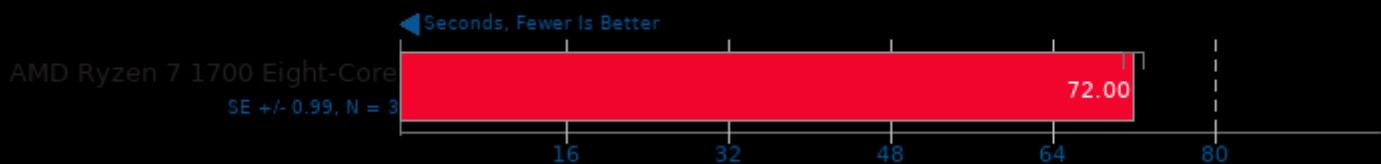


## System ZLIB Decompression 1.2.7



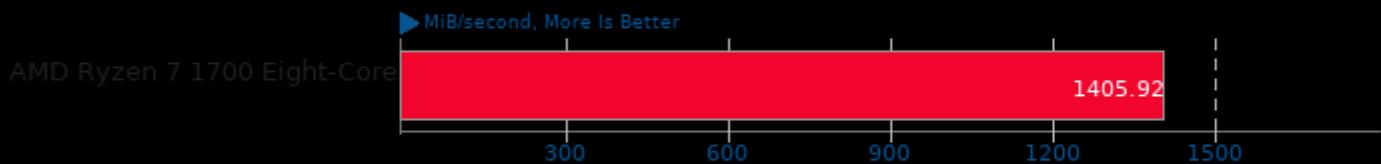
## RAR Compression 5.6.1

Linux Source Tree Archiving To RAR



## Crypto++ 8.2

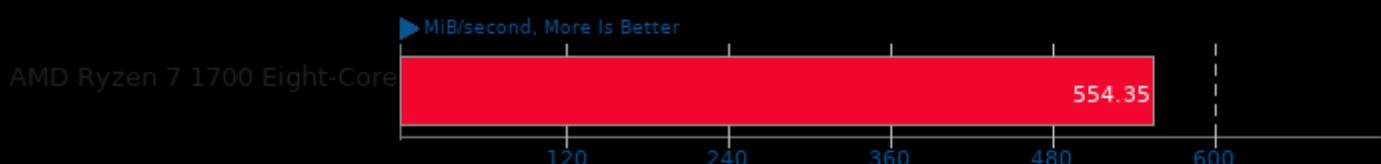
Test: All Algorithms



1. (CXX) g++ options: -g2 -O3 -fPIC -pthread -pipe

## Crypto++ 8.2

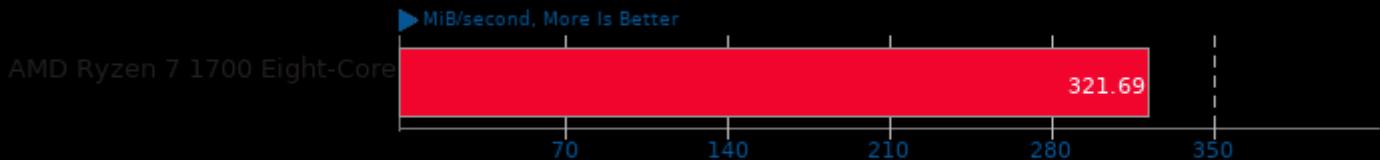
Test: Keyed Algorithms



1. (CXX) g++ options: -g2 -O3 -fPIC -pthread -pipe

## Crypto++ 8.2

Test: Unkeyed Algorithms



1. (CXX) g++ options: -g2 -O3 -fPIC -pthread -pipe

## Crypto++ 8.2

Test: Integer + Elliptic Curve Public Key Algorithms



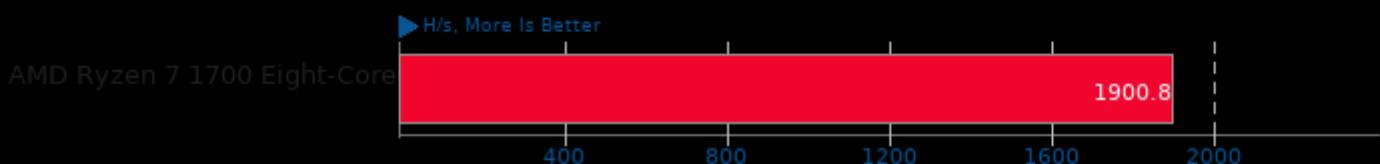
1. (CXX) g++ options: -g2 -O3 -fPIC -pthread -pipe

## BLAKE2 20170307



## Xmrig 6.12.1

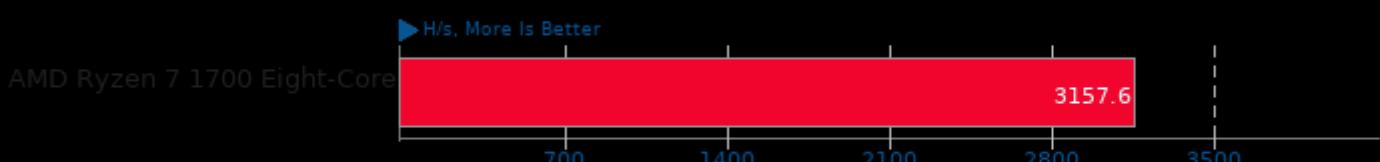
Variant: Monero - Hash Count: 1M



1. (CXX) g++ options: -fexceptions -fno-rtti -maes -O3 -Ofast -static-libgcc -static-libstdc++ -rdynamic -lssl -lcrypto -luv -lpthread -lrt -ldl -lhwloc

## Xmrig 6.12.1

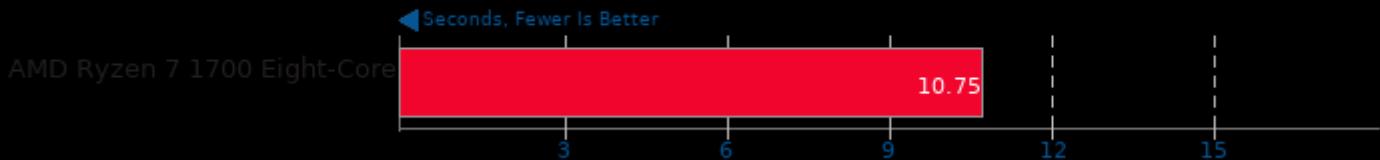
Variant: Wownero - Hash Count: 1M



1. (CXX) g++ options: -fexceptions -fno-rtti -maes -O3 -Ofast -static-libgcc -static-libstdc++ -rdynamic -lssl -lcrypto -luv -lpthread -lrt -ldl -lhwloc

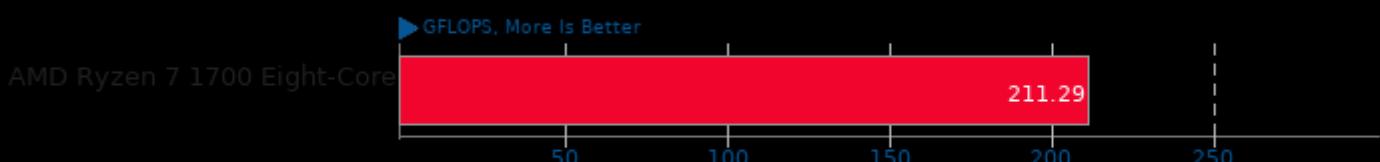
## Bork File Encrypter 1.4

File Encryption Time



## ArrayFire 3.7

Test: BLAS CPU



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

## ArrayFire 3.7

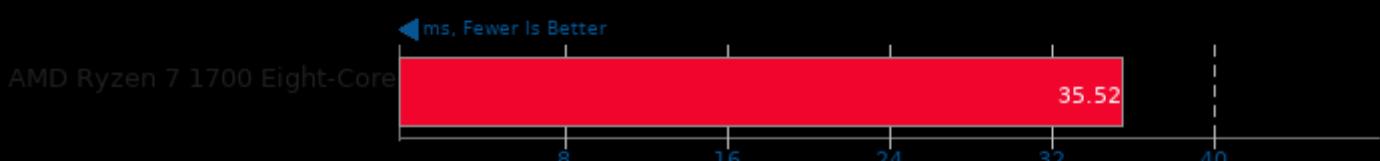
Test: BLAS OpenCL



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

## ArrayFire 3.7

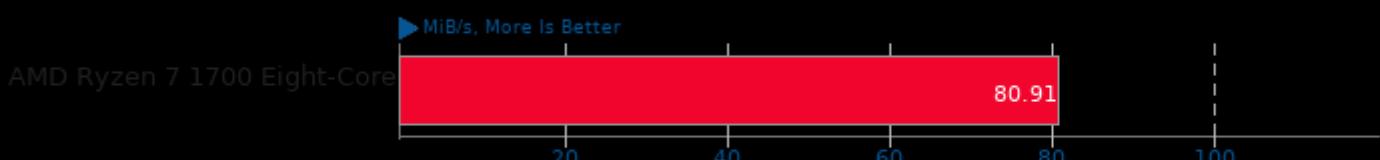
Test: Conjugate Gradient CPU



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

## Botan 2.17.3

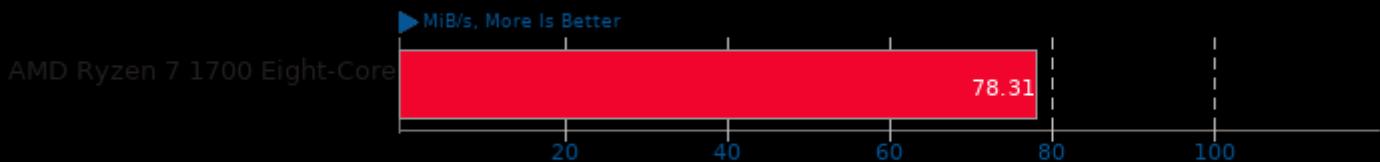
Test: KASUMI



1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

**Botan 2.17.3**

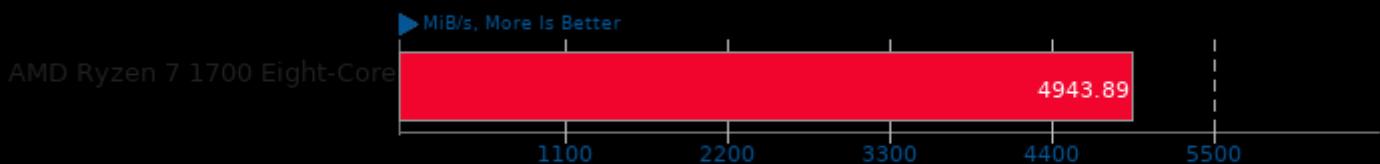
Test: KASUMI - Decrypt



1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

**Botan 2.17.3**

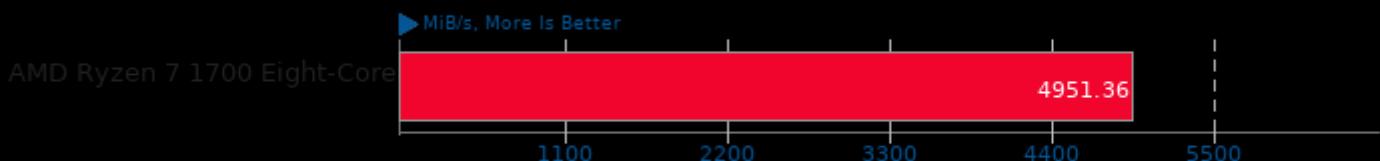
Test: AES-256



1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

**Botan 2.17.3**

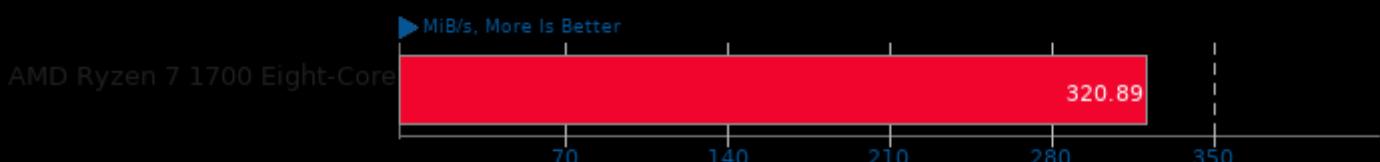
Test: AES-256 - Decrypt



1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

**Botan 2.17.3**

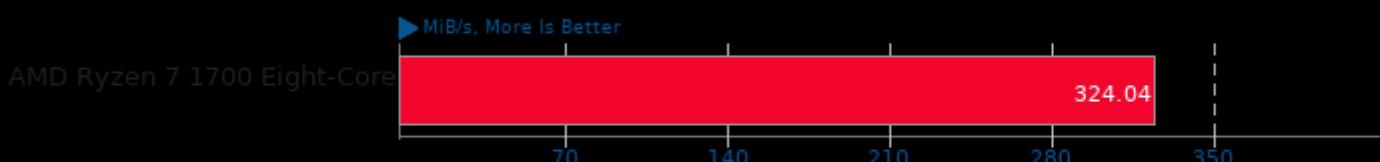
Test: Twofish



1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

**Botan 2.17.3**

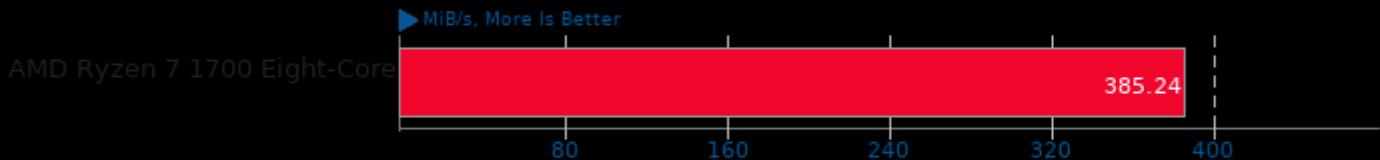
Test: Twofish - Decrypt



1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

## Botan 2.17.3

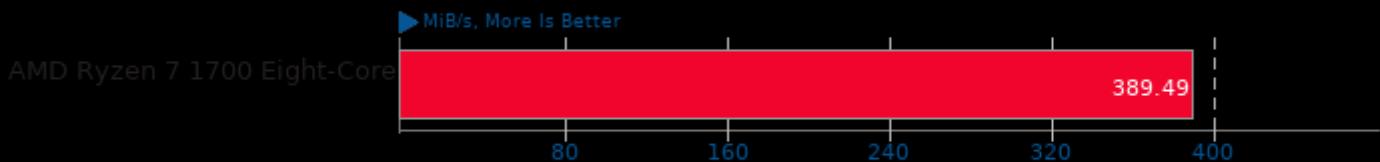
Test: Blowfish



1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

## Botan 2.17.3

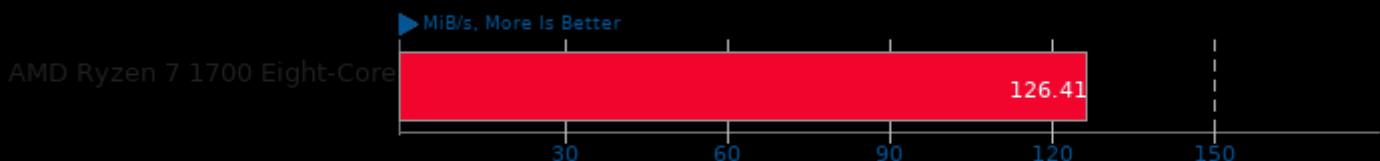
Test: Blowfish - Decrypt



1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

## Botan 2.17.3

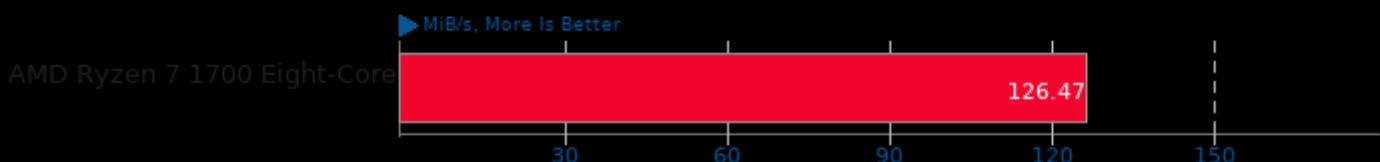
Test: CAST-256



1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

## Botan 2.17.3

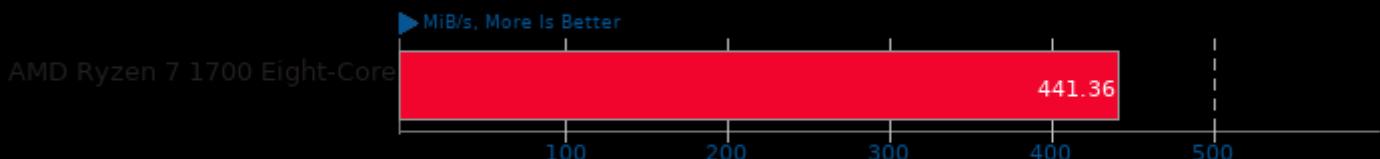
Test: CAST-256 - Decrypt



1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

## Botan 2.17.3

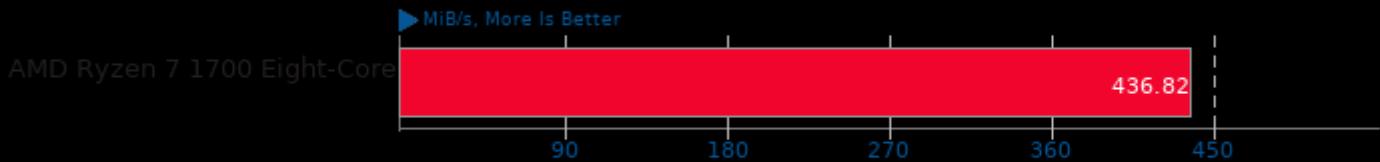
Test: ChaCha20Poly1305



1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

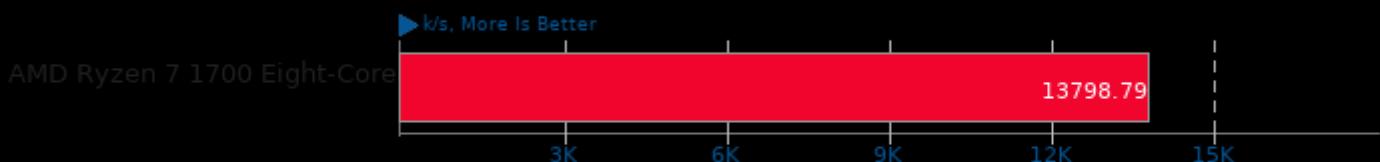
## Botan 2.17.3

Test: ChaCha20Poly1305 - Decrypt



1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

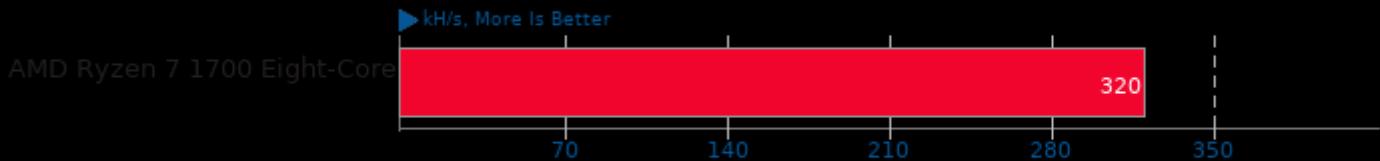
## Aircrack-ng 1.5.2



1. (CXX) g++ options: -O3 -fvisibility=hidden -masm=intel -fcommon -rdynamic -lsqlite3 -lpthread -lz -lcrypto -lhwloc -ldl -lm -pthread

## Cpuminer-Opt 3.15.5

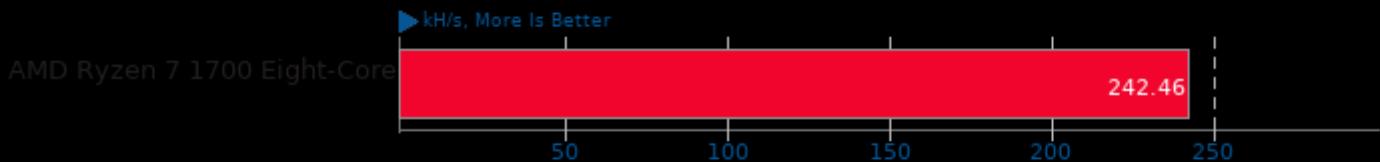
Algorithm: Magi



1. (CXX) g++ options: -O2 -curl -lz -jansson -pthread -lssl -lcrypto -lgmp

## Cpuminer-Opt 3.15.5

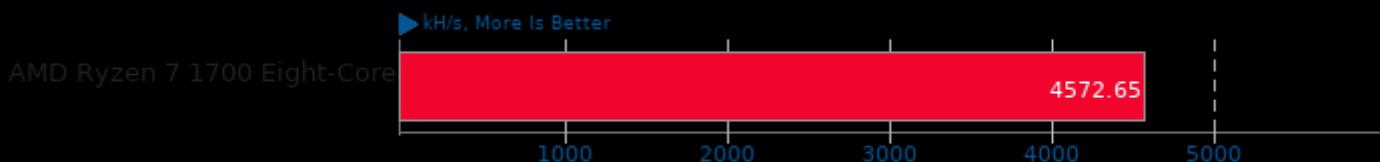
Algorithm: x25x



1. (CXX) g++ options: -O2 -curl -lz -jansson -pthread -lssl -lcrypto -lgmp

## Cpuminer-Opt 3.15.5

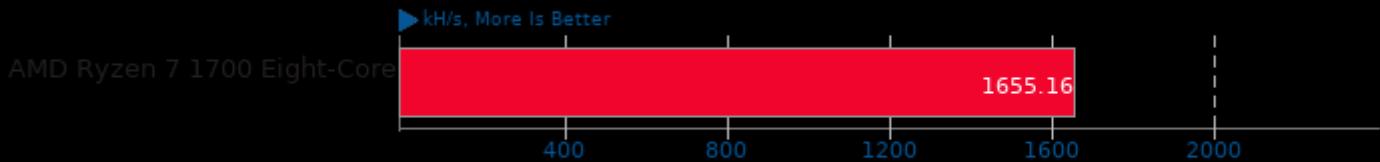
Algorithm: Deepcoin



1. (CXX) g++ options: -O2 -curl -lz -jansson -pthread -lssl -lcrypto -lgmp

## Cpuminer-Opt 3.15.5

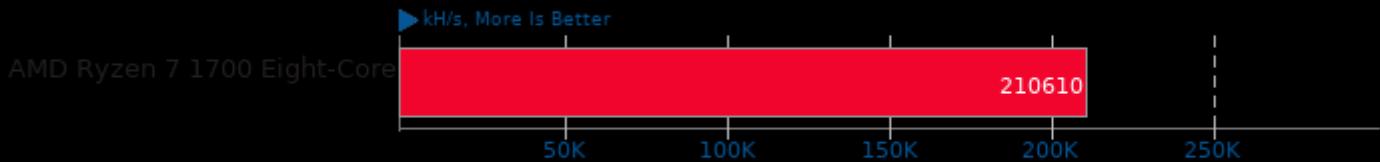
Algorithm: Ringcoin



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

## Cpuminer-Opt 3.15.5

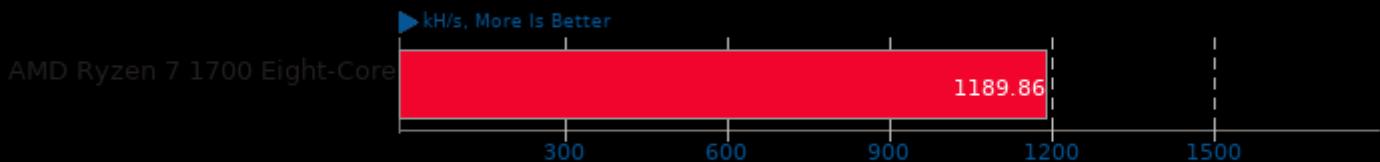
Algorithm: Blake-2 S



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

## Cpuminer-Opt 3.15.5

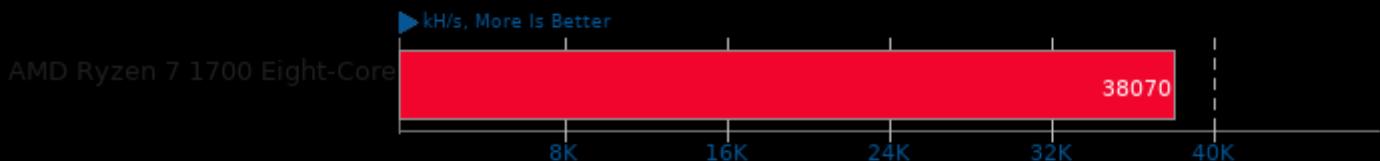
Algorithm: Garlicoin



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

## Cpuminer-Opt 3.15.5

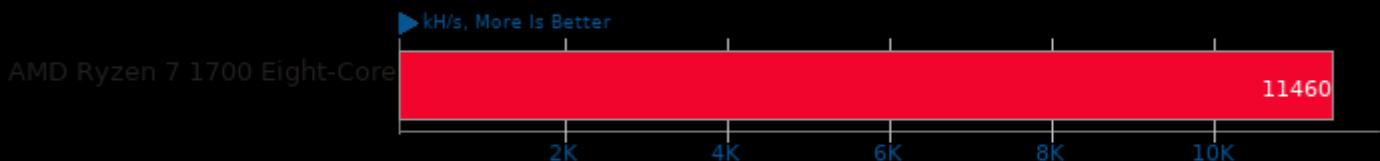
Algorithm: Skeincoin



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

## Cpuminer-Opt 3.15.5

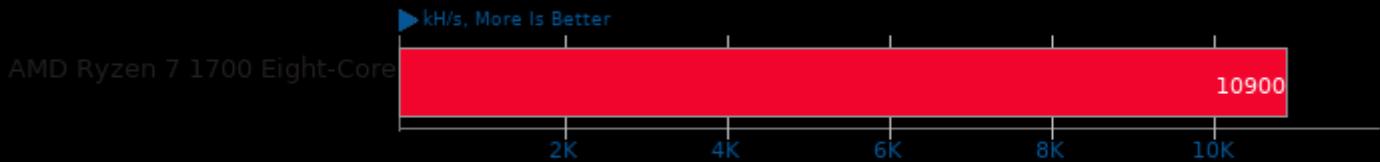
Algorithm: Myriad-Groestl



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

## Cpuminer-Opt 3.15.5

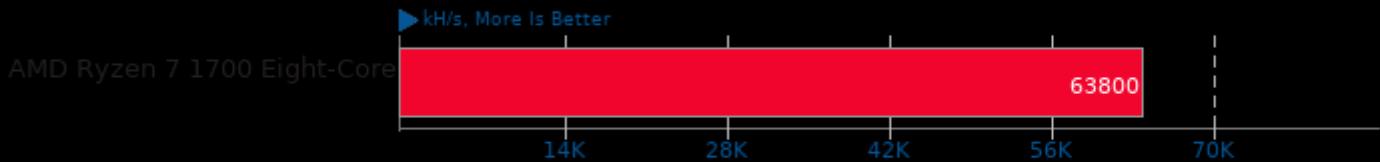
Algorithm: LBC, LBRY Credits



1. (CXX) g++ options: -O2 -curl -lz -jansson -pthread -lssl -crypto -lgmp

## Cpuminer-Opt 3.15.5

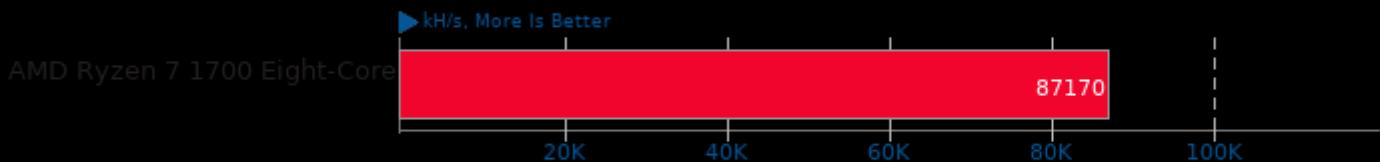
Algorithm: Quad SHA-256, Pyrite



1. (CXX) g++ options: -O2 -curl -lz -jansson -pthread -lssl -crypto -lgmp

## Cpuminer-Opt 3.15.5

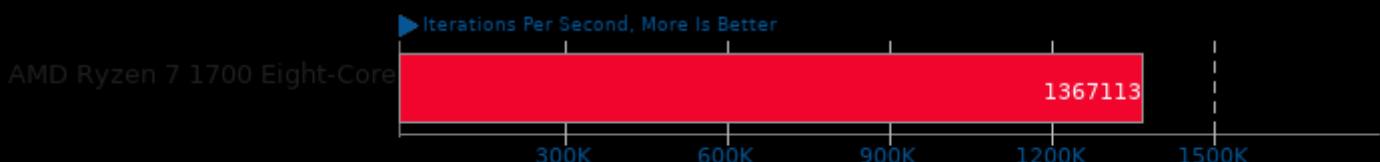
Algorithm: Triple SHA-256, Onecoin



1. (CXX) g++ options: -O2 -curl -lz -jansson -pthread -lssl -crypto -lgmp

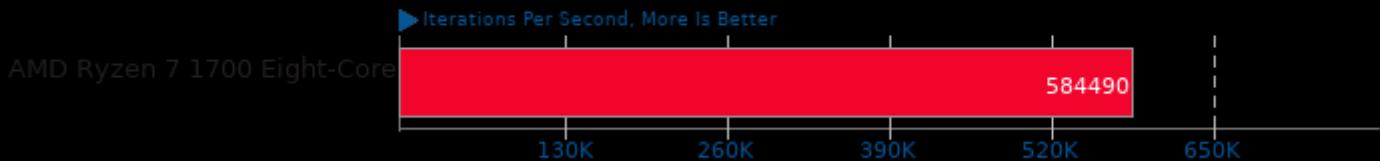
## Cryptsetup

PBKDF2-sha512



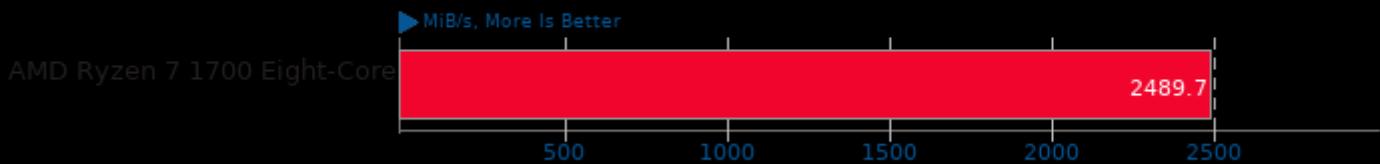
## Cryptsetup

PBKDF2-whirlpool



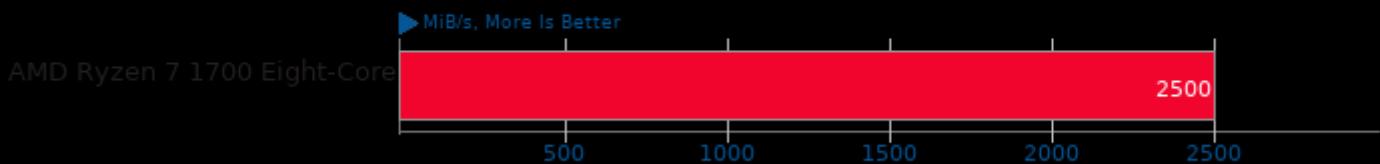
## Cryptsetup

AES-XTS 256b Encryption



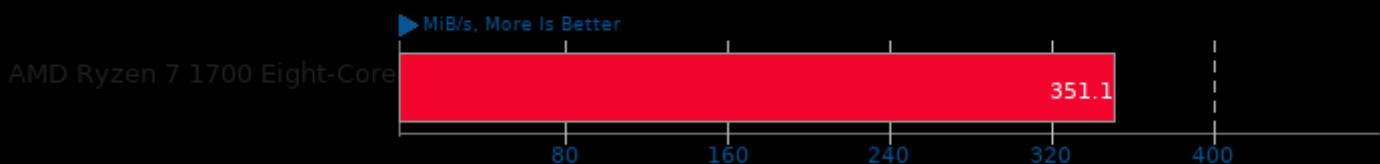
## Cryptsetup

AES-XTS 256b Decryption



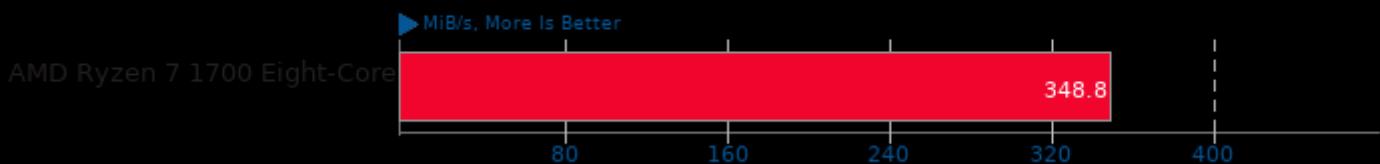
## Cryptsetup

Serpent-XTS 256b Encryption



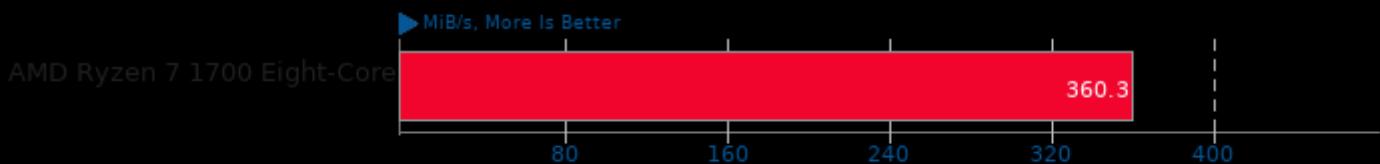
## Cryptsetup

Serpent-XTS 256b Decryption



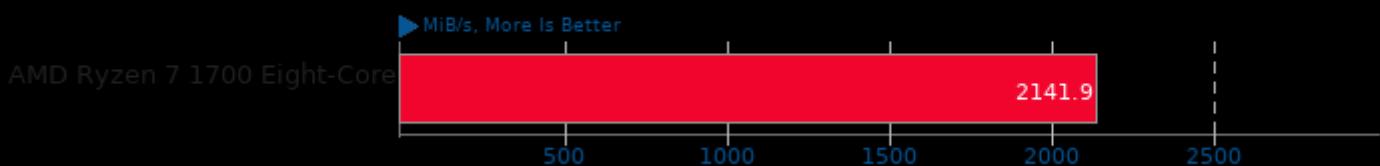
## Cryptsetup

Twofish-XTS 256b Encryption



## Cryptsetup

AES-XTS 512b Encryption



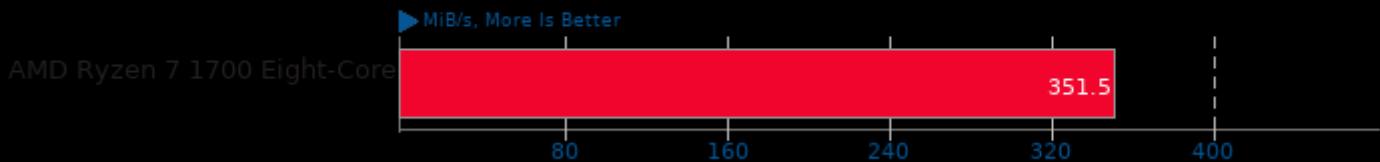
## Cryptsetup

AES-XTS 512b Decryption



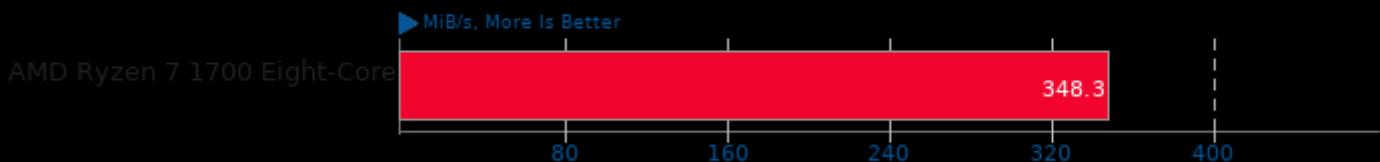
## Cryptsetup

Serpent-XTS 512b Encryption



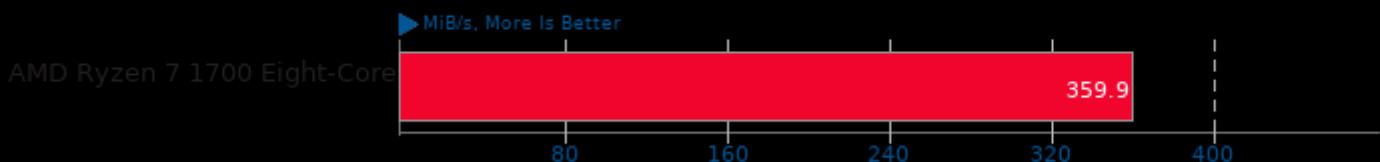
## Cryptsetup

Serpent-XTS 512b Decryption



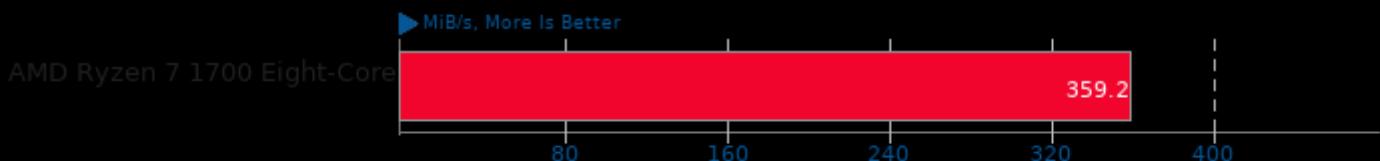
## Cryptsetup

Twofish-XTS 512b Encryption



## Cryptsetup

Twofish-XTS 512b Decryption



## CacheBench

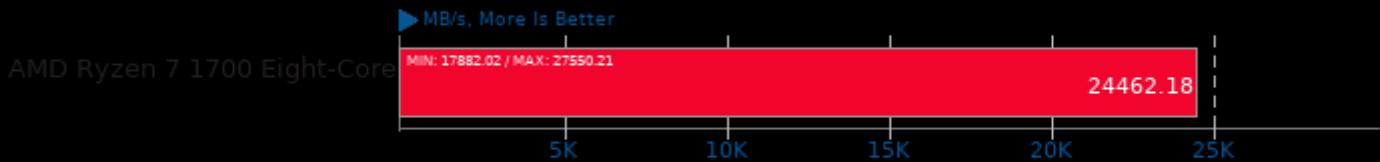
Test: Read



1. (CC) gcc options: -fomit-frame-pointer

## CacheBench

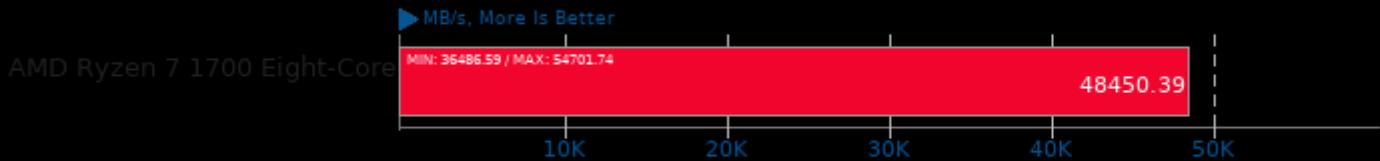
Test: Write



1. (CC) gcc options: -lrt

## CacheBench

Test: Read / Modify / Write



1. (CC) gcc options: -lrt

## 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

## Tinymembench 2018-05-28

Standard Memcpy



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

## Tinymembench 2018-05-28

Standard Memset



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

## MBW 2018-09-08

Test: Memory Copy - Array Size: 128 MiB



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

**MBW 2018-09-08**

Test: Memory Copy - Array Size: 512 MiB



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

**MBW 2018-09-08**

Test: Memory Copy - Array Size: 1024 MiB



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

**MBW 2018-09-08**

Test: Memory Copy - Array Size: 4096 MiB



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

**MBW 2018-09-08**

Test: Memory Copy - Array Size: 8192 MiB



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

**MBW 2018-09-08**

Test: Memory Copy, Fixed Block Size - Array Size: 128 MiB



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

**MBW 2018-09-08**

Test: Memory Copy, Fixed Block Size - Array Size: 512 MiB



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

**MBW 2018-09-08**

Test: Memory Copy, Fixed Block Size - Array Size: 1024 MiB



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

**MBW 2018-09-08**

Test: Memory Copy, Fixed Block Size - Array Size: 4096 MiB



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

**MBW 2018-09-08**

Test: Memory Copy, Fixed Block Size - Array Size: 8192 MiB



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

**t-test1 2017-01-13**

Threads: 1



1. (CC) gcc options: -pthread

**t-test1 2017-01-13**

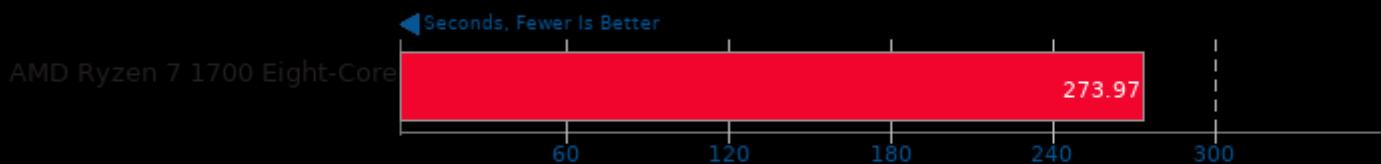
Threads: 2



1. (CC) gcc options: -pthread

**Rodinia 3.1**

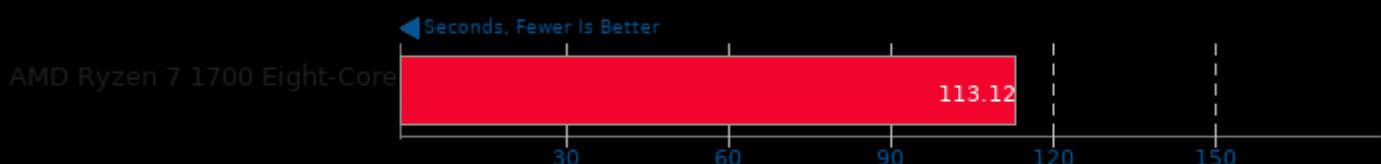
Test: OpenMP LavaMD



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

**Rodinia 3.1**

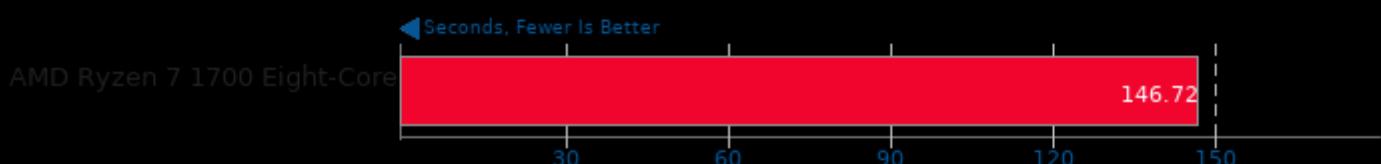
Test: OpenMP HotSpot3D



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

**Rodinia 3.1**

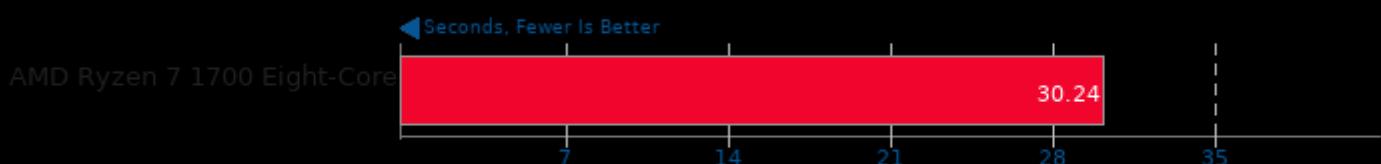
Test: OpenMP Leukocyte



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

**Rodinia 3.1**

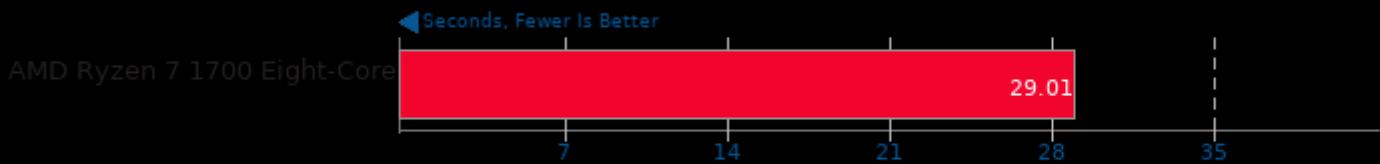
Test: OpenMP CFD Solver



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

## Rodinia 3.1

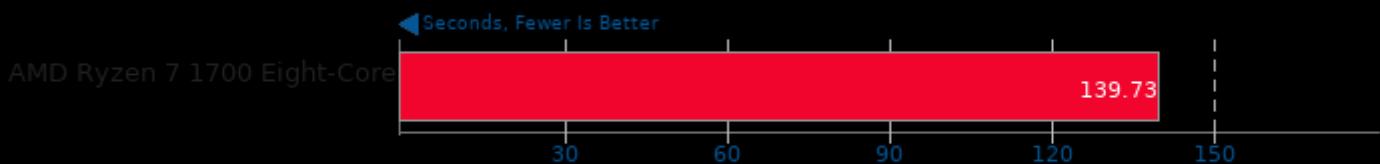
Test: OpenMP Streamcluster



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

## Parboil 2.5

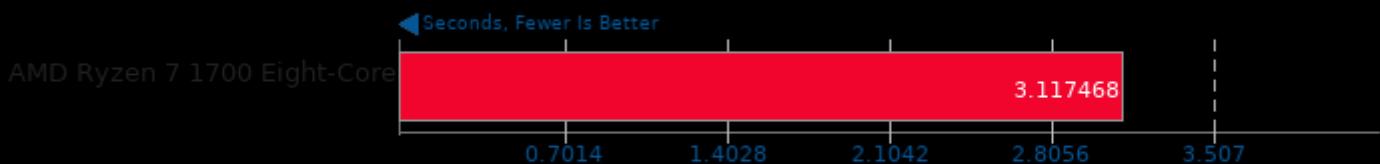
Test: OpenMP LBM



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

## Parboil 2.5

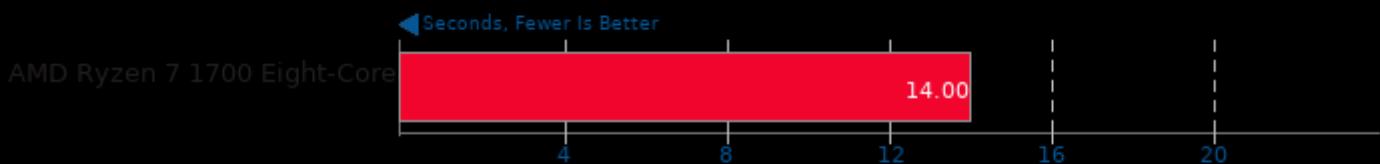
Test: OpenMP CUTCP



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

## Parboil 2.5

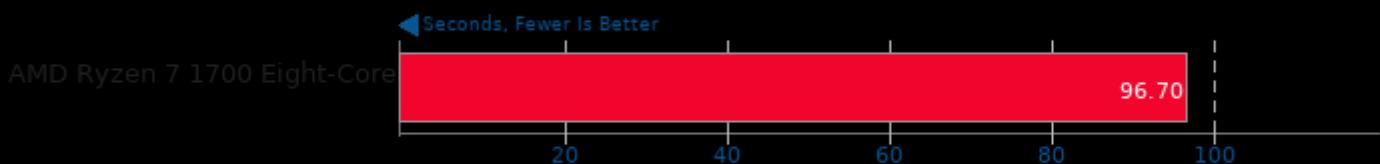
Test: OpenMP Stencil



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

## Parboil 2.5

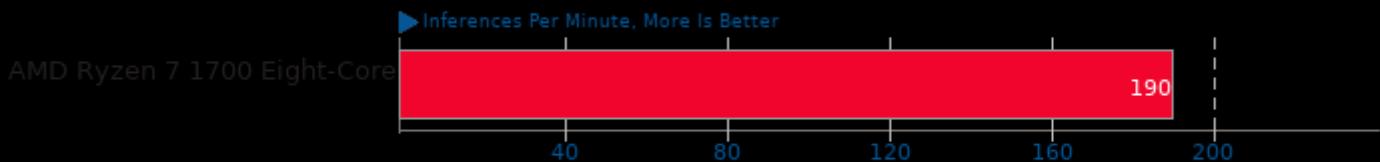
Test: OpenMP MRI Gridding



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

## ONNX Runtime 1.6

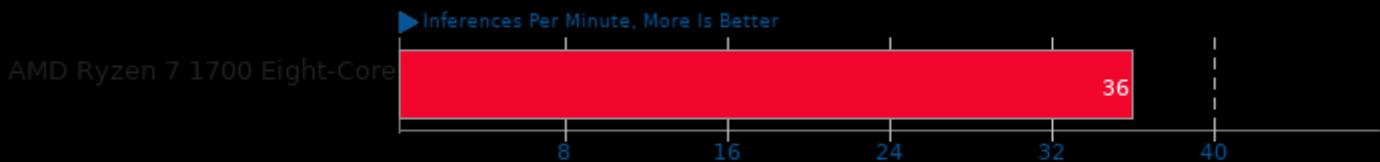
Model: yolov4 - Device: OpenMP CPU



1. (CXX) g++ options: -fopenmp -ffunction-sections -O3 -ldl -lrt

## ONNX Runtime 1.6

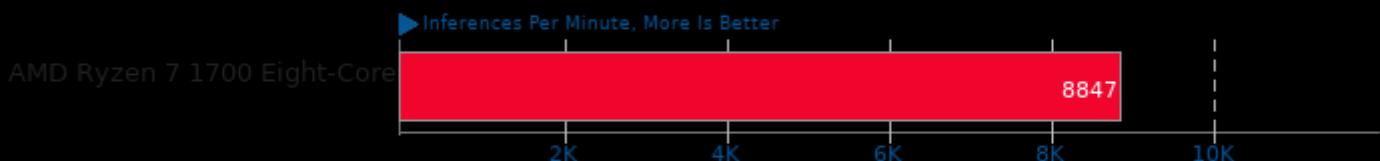
Model: fcn-resnet101-11 - Device: OpenMP CPU



1. (CXX) g++ options: -fopenmp -ffunction-sections -O3 -ldl -lrt

## ONNX Runtime 1.6

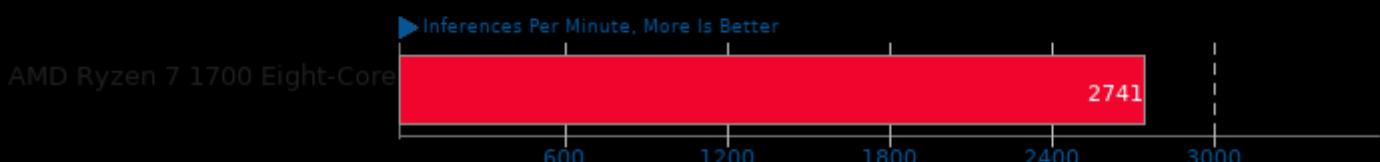
Model: shufflenet-v2-10 - Device: OpenMP CPU



1. (CXX) g++ options: -fopenmp -ffunction-sections -O3 -ldl -lrt

## ONNX Runtime 1.6

Model: super-resolution-10 - Device: OpenMP CPU



1. (CXX) g++ options: -fopenmp -ffunction-sections -O3 -ldl -lrt

## LAMMPS Molecular Dynamics Simulator 29Oct2020

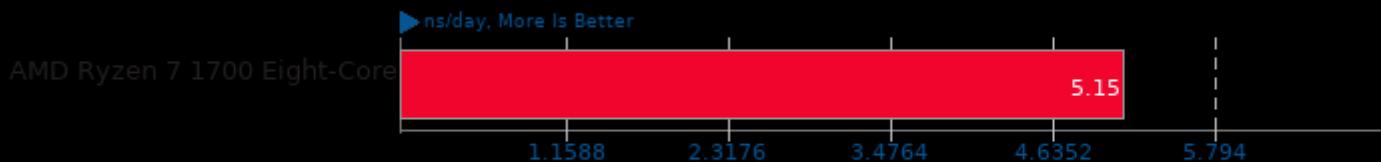
Model: 20k Atoms



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

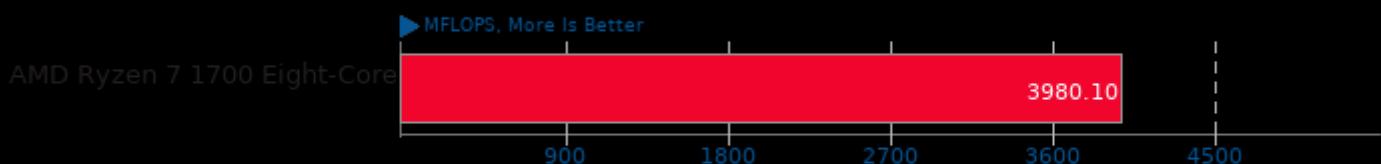
## LAMMPS Molecular Dynamics Simulator 29Oct2020

Model: Rhodopsin Protein



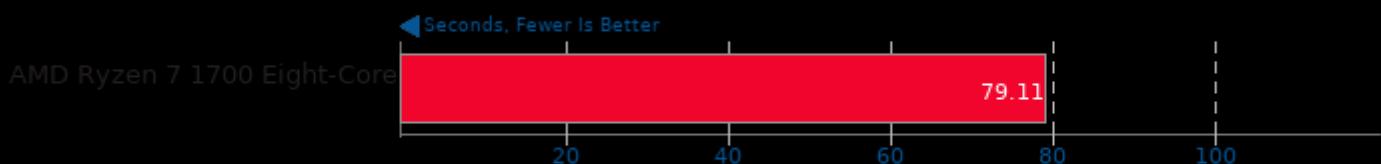
## Himeno Benchmark 3.0

Poisson Pressure Solver



## CppPerformanceBenchmarks 9

Test: Atol



## CppPerformanceBenchmarks 9

Test: CType



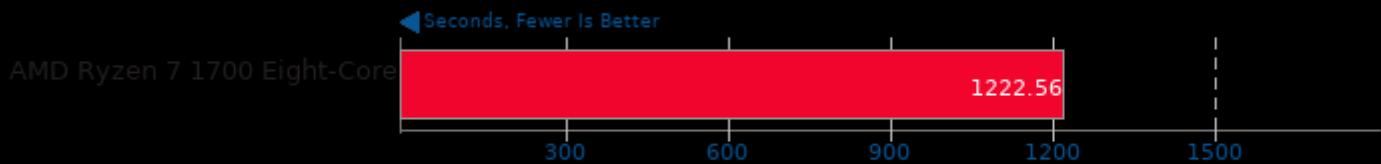
## CppPerformanceBenchmarks 9

Test: Math Library



## CppPerformanceBenchmarks 9

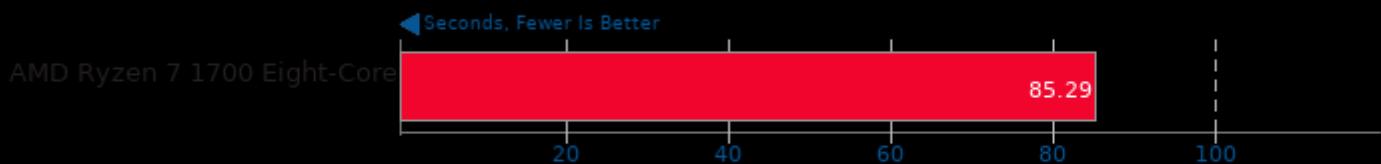
Test: Random Numbers



1. (CXX) g++ options: -std=c++11 -O3

## CppPerformanceBenchmarks 9

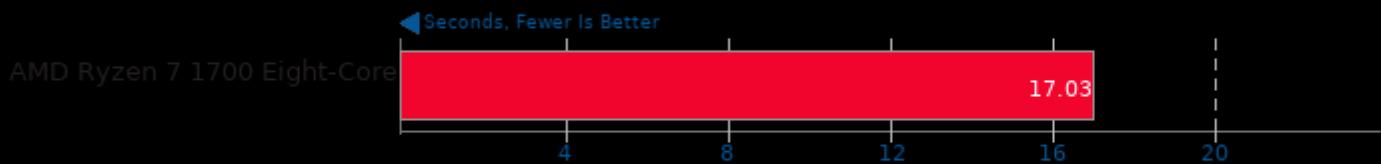
Test: Stepanov Vector



1. (CXX) g++ options: -std=c++11 -O3

## CppPerformanceBenchmarks 9

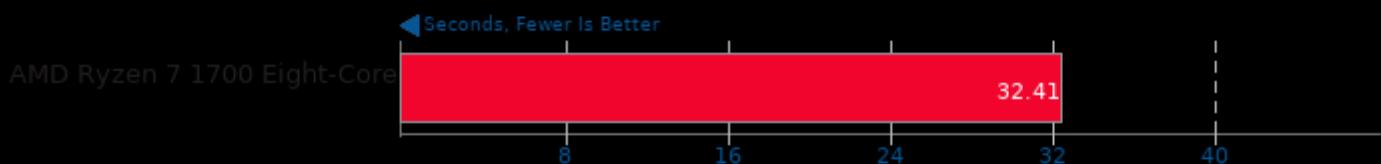
Test: Function Objects



1. (CXX) g++ options: -std=c++11 -O3

## CppPerformanceBenchmarks 9

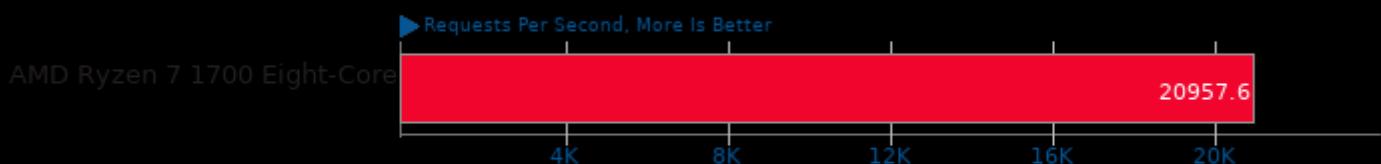
Test: Stepanov Abstraction



1. (CXX) g++ options: -std=c++11 -O3

## NGINX Benchmark 1.9.9

Static Web Page Serving



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

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