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test1

2 x AMD EPYC 7763 64-Core testing with a Supermicro H12DSU-iN v1.01 (2.1 BIOS) and ASPEED on AlmaLinux 9.0 via the Phoronix Test Suite.

Automated Executive Summary

20220915 had the most wins, coming in first place for 57% of the tests.

The results with the greatest spread from best to worst included:

*CacheBench (Write Cache) at 26.58x
t-test1 (Threads: 1) at 14.509x
t-test1 (Threads: 2) at 11.005x
RAMspeed SMP (Type: Add - Benchmark: Floating Point) at 9.206x
RAMspeed SMP (Type: Add - Benchmark: Integer) at 9.158x
RAMspeed SMP (Type: Triad - Benchmark: Integer) at 9.092x
CacheBench (Read Cache) at 8.902x
RAMspeed SMP (Type: Average - Benchmark: Integer) at 8.32x
RAMspeed SMP (Type: Triad - Benchmark: Floating Point) at 8.315x
Tinymembench (Standard Memcpy) at 8.167x.*

Test Systems:

sample1

2 x AMD EPYC 7763 64-Core

sample2

Processor: 2 x AMD EPYC 7763 64-Core @ 2.45GHz (128 Cores / 256 Threads), Motherboard: Supermicro H12DSU-iN v1.01 (2.1 BIOS), Chipset: AMD Starship/Matisse, Memory: 256GB, Disk: 512GB KINGSTON SKC6005 + 2 x 16001GB Seagate ST16000NM000J-2T, Graphics: ASPEED, Monitor: SMB1920NW, Network: 2 x Intel X710 for 10GBASE-T

OS: AlmaLinux 9.0, Kernel: 5.14.0-70.22.1.el9_0.x86_64 (x86_64), Desktop: GNOME Shell 40.9, Display Server: X Server 1.20.11, Compiler: GCC 11.2.1 20220127, File-System: xfs, Screen Resolution: 1440x900

Kernel Notes: Transparent Huge Pages: always
Compiler Notes: --build=x86_64-redhat-linux --disable-libunwind-exceptions --enable-_cxa_atexit --enable-bootstrap --enable-cet --enable-checking=release --enable-gnu-indirect-function --enable-gnu-unique-object --enable-host-bind-now --enable-host-pie --enable-initfini-array --enable-languages=c,c++,fortran,lto --enable-link-serialization=1 --enable-multilib --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --mandir=/usr/share/man --with-arch_32=x86-64 --with-arch_64=x86-64-v2 --with-build-config=bootstrap-lto --with-gcc-major-version-only --with-linker-hash-style=gnu --with-tune=generic --without-cuda-driver --without-isl

Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa001144
Security Notes: SELinux + itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Retpolines IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

20220915

Processor: 2 x AMD EPYC 7763 64-Core @ 2.45GHz (128 Cores / 256 Threads), Motherboard: Supermicro H12DSU-iN v1.01 (2.1 BIOS), Chipset: AMD Starship/Matisse, Memory: 256GB, Disk: 512GB KINGSTON SKC6005 + 2 x 16001GB Seagate ST16000NM000J-2T, Graphics: ASPEED, Network: 2 x Intel X710 for 10GBASE-T

OS: AlmaLinux 9.0, Kernel: 5.14.0-70.22.1.el9_0.x86_64 (x86_64), Desktop: GNOME Shell 40.9, Display Server: X Server 1.20.11, Compiler: GCC 11.2.1 20220127, File-System: xfs, Screen Resolution: 1024x768

Kernel Notes: Transparent Huge Pages: always
Compiler Notes: --build=x86_64-redhat-linux --disable-libunwind-exceptions --enable-_cxa_atexit --enable-bootstrap --enable-cet --enable-checking=release --enable-gnu-indirect-function --enable-gnu-unique-object --enable-host-bind-now --enable-host-pie --enable-initfini-array --enable-languages=c,c++,fortran,lto --enable-link-serialization=1 --enable-multilib --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --mandir=/usr/share/man --with-arch_32=x86-64 --with-arch_64=x86-64-v2 --with-build-config=bootstrap-lto --with-gcc-major-version-only --with-linker-hash-style=gnu --with-tune=generic --without-cuda-driver --without-isl

Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa001144
Security Notes: SELinux + itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Retpolines IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

20220917_setMax353

Processor: 2 x AMD EPYC 7763 64-Core @ 3.53GHz (128 Cores / 256 Threads), Motherboard: Supermicro H12DSU-iN v1.01 (2.1 BIOS), Chipset: AMD Starship/Matisse, Memory: 256GB, Disk: 512GB KINGSTON SKC6005 + 2 x 16001GB Seagate ST16000NM000J-2T, Graphics: ASPEED, Network: 2 x Intel X710 for 10GBASE-T

OS: AlmaLinux 9.0, Kernel: 5.14.0-70.22.1.el9_0.x86_64 (x86_64), Desktop: GNOME Shell 40.9, Display Server: X Server 1.20.11, Compiler: GCC 11.2.1 20220127, File-System: xfs, Screen Resolution: 1024x768

Kernel Notes: Transparent Huge Pages: always
Compiler Notes: --build=x86_64-redhat-linux --disable-libunwind-exceptions --enable-_cxa_atexit --enable-bootstrap --enable-cet --enable-checking=release --enable-gnu-indirect-function --enable-gnu-unique-object --enable-host-bind-now --enable-host-pie --enable-initfini-array --enable-languages=c,c++,fortran,lto --enable-link-serialization=1 --enable-multilib --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --mandir=/usr/share/man

--with-arch_32=x86-64 --with-arch_64=x86-64-v2 --with-build-config=bootstrap-lto --with-gcc-major-version-only --with-linker-hash-style=gnu --with-tune=generic
--without-cuda-driver --without-isl

Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa001144
Security Notes: SELinux + itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl + spectre_v1: Mitigation of usercopy/swaps barriers and __user pointer sanitization + spectre_v2: Mitigation of Retpolines IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

	sample1	2 x AMD EPYC 7763 64-Core	sample2	20220915	20220917_setM ax353
Rodinia - OpenMP LavaMD (sec)	23.221		23.316		
Normalized	100%		99.59%		
Standard Deviation	2.5%		2.2%		
Rodinia - OpenMP HotSpot3D (sec)	95.290				
Standard Deviation	12.6%				
Rodinia - OpenMP Leukocyte	51.919				
Standard Deviation	2.8%				
Rodinia - OpenMP CFD Solver (sec)	7.314		11.102		
Normalized	100%		65.88%		
Standard Deviation	23.2%		50.7%		
Rodinia - O.S (sec)	7.509				
Standard Deviation	6.2%				
NAMD - ATPase Simulation - 327,506 Atoms (days/ns)	0.23453		0.23319		
Normalized	98.17%		98.73%		
Standard Deviation	4.9%		4.7%		
Stockfish - Total Time (Nodes/s)	282471669		278527804		
Normalized	99.26%		97.87%		
Standard Deviation	7.5%		7.8%		
RAMspeed SMP - Add - Integer (MB/s)	4128	37592	37805		
Normalized	10.92%	99.44%	100%		
Standard Deviation	1.7%	1.1%	1.4%		
RAMspeed SMP - Copy - Integer (MB/s)	4942	34465	34659		
Normalized	14.26%	99.44%	100%		
Standard Deviation	1.2%	0.4%	0.5%		
RAMspeed SMP - Scale - Integer (MB/s)	4721	38064	37730		
Normalized	12.4%	100%	99.12%		
Standard Deviation	0.6%	0.6%	1%		
RAMspeed SMP - Triad - Integer (MB/s)	4063	36938	36839		
Normalized	11%	100%	99.73%		
Standard Deviation	1.9%	1.5%	1.9%		
RAMspeed SMP - Average - Integer (MB/s)	4422	36793	36717		
Normalized	12.02%	100%	99.79%		
Standard Deviation	0.9%	0.6%	0.4%		

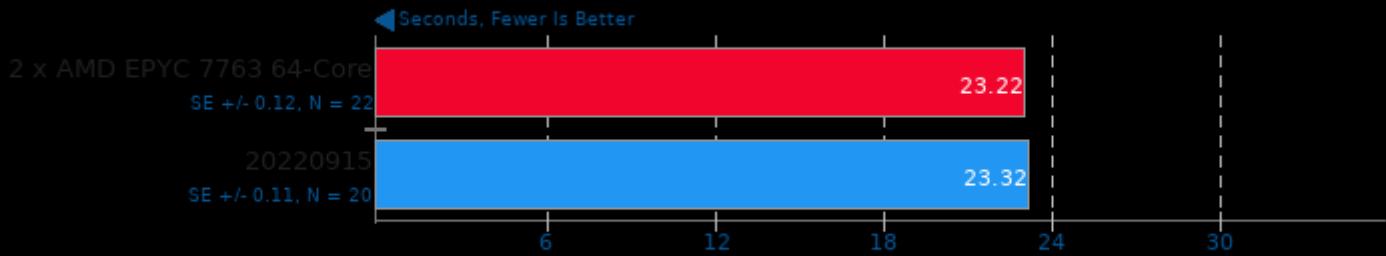
RAMspeed SMP - Add - Floating Point (MB/s)	4082	37416	37575
Normalized Standard Deviation	10.86% 1.7%	99.58% 1.3%	100% 1.1%
RAMspeed SMP - Copy - Floating Point (MB/s)	4882	34654	34328
Normalized Standard Deviation	14.09% 1.7%	100% 6.7%	99.06% 0.5%
RAMspeed SMP - Scale - Floating Point (MB/s)	4847	35992	35159
Normalized Standard Deviation	13.47% 1.7%	100% 0.6%	97.68% 0.5%
RAMspeed SMP - Triad - Floating Point (MB/s)	4110	33782	34175
Normalized Standard Deviation	12.03% 0.8%	98.85% 4.5%	100% 4.5%
RAMspeed SMP - Average - Floating Point (MB/s)	4522	35275	34931
Normalized Standard Deviation	12.82% 0.6%	100% 1.5%	99.02% 0.7%
Kvazaar - Bosphorus 4K - Slow (FPS)	31.61		32.17
Normalized Standard Deviation	98.26% 1.4%		100% 2%
Kvazaar - Bosphorus 4K - Medium (FPS)	31.97		32.48
Normalized Standard Deviation	98.43% 1.6%		100% 2.1%
Kvazaar - Bosphorus 1080p - Slow (FPS)	92.55		93.34
Normalized Standard Deviation	99.15% 1.7%		100% 1.7%
Kvazaar - Bosphorus 1080p - Medium (FPS)	94.31		95.74
Normalized Standard Deviation	98.51% 1.6%		100% 1.6%
Kvazaar - Bosphorus 4K - Very Fast (FPS)	57.14		57.62
Normalized Standard Deviation	99.17% 2.2%		100% 2.5%
Kvazaar - Bosphorus 4K - Ultra Fast (FPS)	59.93		60.07
Normalized Standard Deviation	99.77% 1.6%		100% 2.4%
Kvazaar - Bosphorus 1080p - Very Fast (FPS)	198.36		198.07
Normalized Standard Deviation	100% 1.6%		99.85% 1.9%
Kvazaar - Bosphorus 1080p - Ultra Fast (FPS)	219.96		216.89
Normalized Standard Deviation	100% 3.7%		98.6% 3.6%
x264 - Bosphorus 4K (FPS)	66.50		66.84

Normalized	99.49%	100%
Standard Deviation	3.3%	7.3%
x264 - Bosphorus 1080p (FPS)	183.48	178.64
Normalized	100%	97.36%
Standard Deviation	2.2%	5%
x265 - Bosphorus 4K (FPS)	19.92	19.75
Normalized	100%	99.15%
Standard Deviation	3.3%	3%
x265 - Bosphorus 1080p (FPS)	64.69	64.41
Normalized	100%	99.57%
Standard Deviation	5.6%	5.9%
7-Zip Compression - Compression Rating (MIPS)	455735	
Standard Deviation	8.7%	
7-Zip Compression - D.R (MIPS)	729143	
Standard Deviation	2.2%	
asmFish - 1.H.M.2.D (Nodes/s)	312432408	318267093
Normalized	98.17%	100%
Standard Deviation	1.2%	1.8%
Timed GCC Compilation - Time To Compile (sec)	661.767	659.024
Normalized	99.59%	100%
Standard Deviation	0.5%	0.3%
Timed Linux Kernel Compilation - defconfig (sec)	20.869	20.669
Normalized	99.04%	100%
Standard Deviation	2.4%	2.4%
POV-Ray - Trace Time (sec)	7.425	7.319
Normalized	98.57%	100%
Standard Deviation	0.6%	1.7%
Radiance Benchmark - Serial	578.28	578.979
Normalized	100%	99.88%
Radiance Benchmark - SMP Parallel (sec)	175.657	177.397
Normalized	100%	99.9%
Standard Deviation	0.2%	0.2%
OpenSSL - SHA256 (byte/s)	21738592173	33832132286
Normalized	64.25%	100%
Standard Deviation	166.6%	136.1%
OpenSSL - RSA4096 (sign/s)	1688	1686
Normalized	100%	100%
Standard Deviation	0.2%	0.1%
OpenSSL - RSA4096 (verify/s)	114251	114709
Normalized	99.6%	100%
Standard Deviation	0.2%	0.1%
Blender - Barbershop - CPU-Only (sec)	1728	
Standard Deviation	0.3%	
ctx_clock - C.S.T (Clocks)	1710	1712
Normalized	100%	99.88%
Standard Deviation	2.5%	2.7%
Sysbench - CPU (Events/sec)	47412	47424
Normalized	99.97%	100%
Standard Deviation	0.4%	0.3%

Tinymembench - Standard Memcpy (MB/s)	2819	23019
Normalized	12.24%	100%
Standard Deviation	0.6%	0.9%
Tinymembench - Standard Memset (MB/s)	4230	33613
Normalized	12.58%	100%
Standard Deviation	0%	0.2%
MBW - Memory Copy - 1024 MiB (MiB/s)	2260	15853
Normalized	14.25%	100%
Standard Deviation	0.5%	0.4%
MBW - M.C.F.B.S - 1024 MiB (MiB/s)	1368	9219
Normalized	14.84%	100%
Standard Deviation	0.3%	4.9%
t-test1 - 1 (sec)	192.276	13.252
Normalized	6.89%	100%
Standard Deviation	0.6%	0.7%
t-test1 - 2 (sec)	65.885	5.987
Normalized	9.09%	100%
Standard Deviation	0.3%	0.5%
CacheBench - Read Cache	301.889247	2687
Normalized	11.23%	100%
Standard Deviation	0%	0%
CacheBench - Write Cache	970.205040	25788
Normalized	3.76%	100%
Standard Deviation	0.3%	0%

Rodinia 3.1

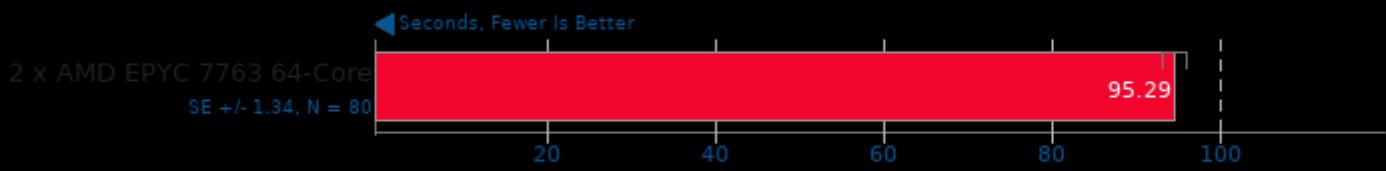
Test: OpenMP LavaMD



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

Rodinia 3.1

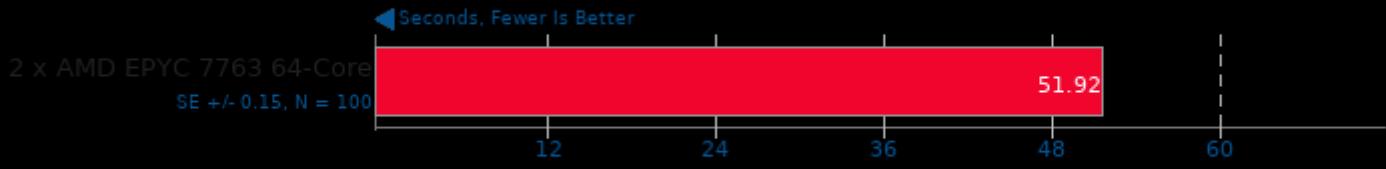
Test: OpenMP HotSpot3D



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

Rodinia 3.1

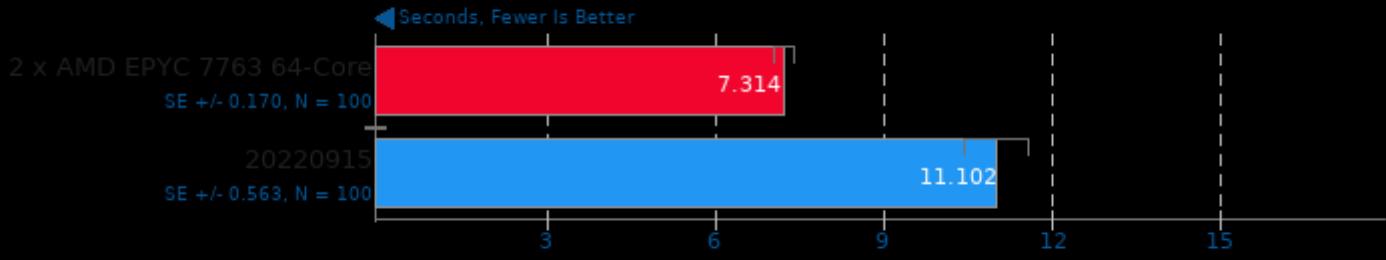
Test: OpenMP Leukocyte



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

Rodinia 3.1

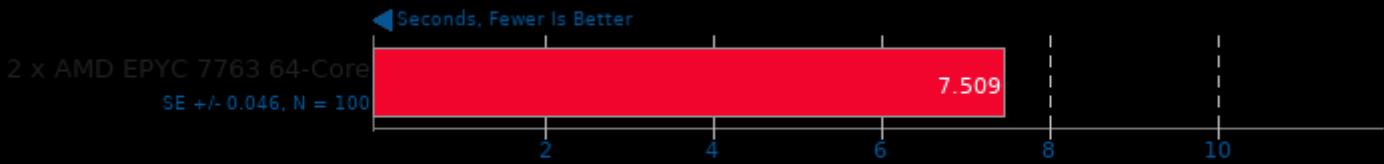
Test: OpenMP CFD Solver



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

Rodinia 3.1

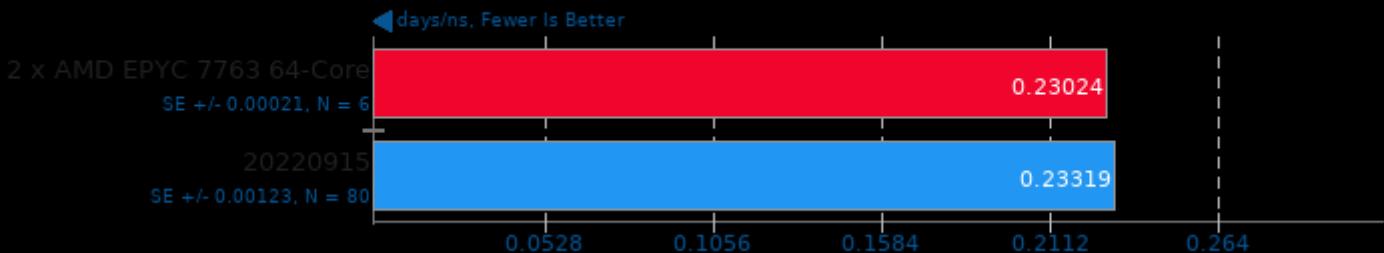
Test: OpenMP Streamcluster



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

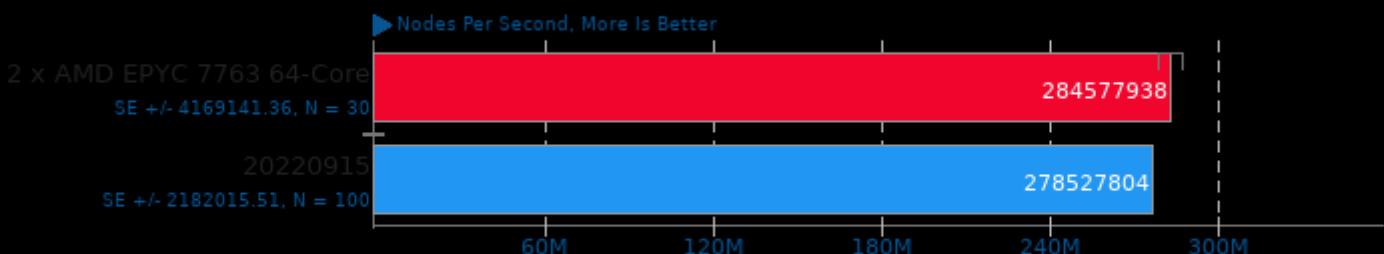
NAMD 2.14

ATPase Simulation - 327,506 Atoms



Stockfish 15

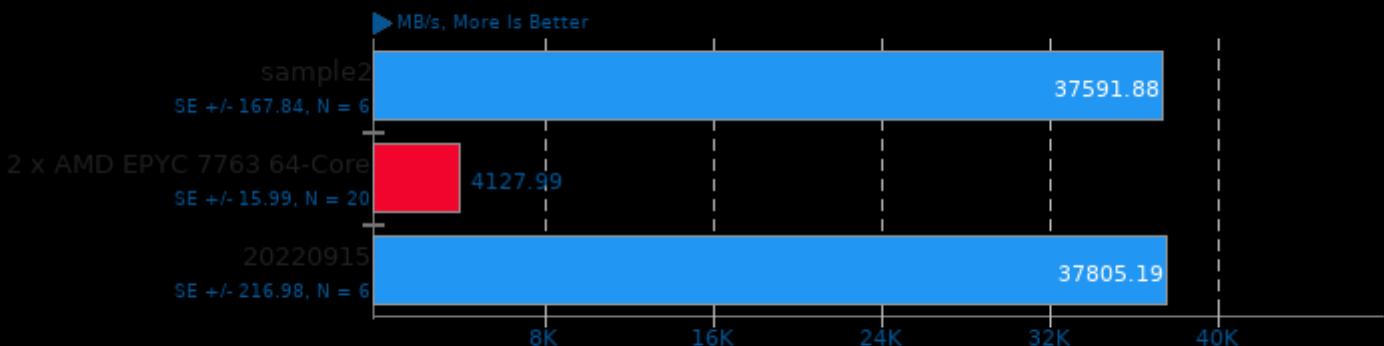
Total Time



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

RAMspeed SMP 3.5.0

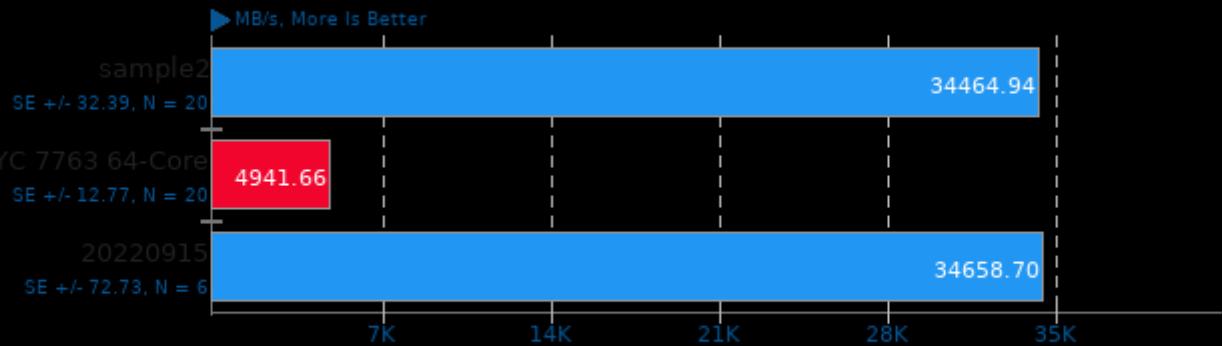
Type: Add - Benchmark: Integer



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

RAMspeed SMP 3.5.0

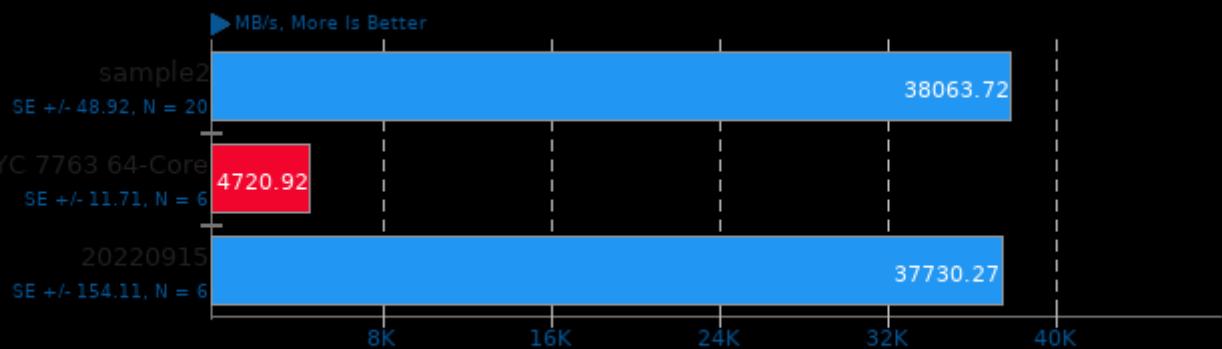
Type: Copy - Benchmark: Integer



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

RAMspeed SMP 3.5.0

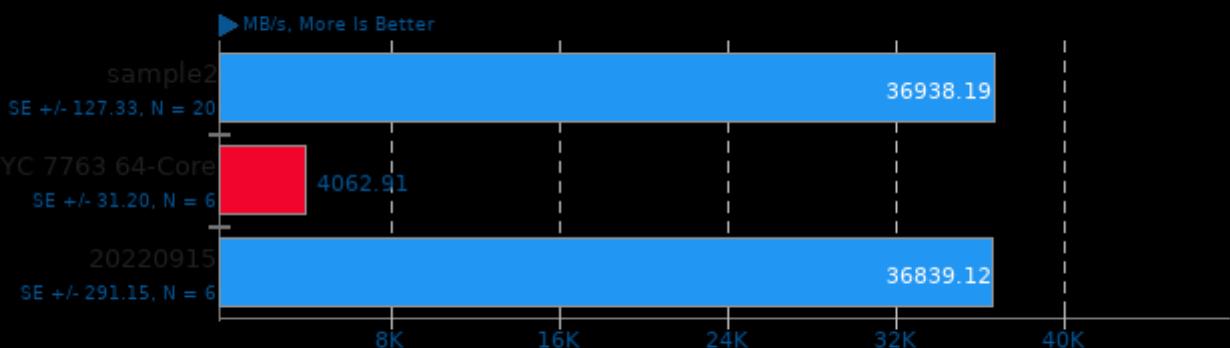
Type: Scale - Benchmark: Integer



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

RAMspeed SMP 3.5.0

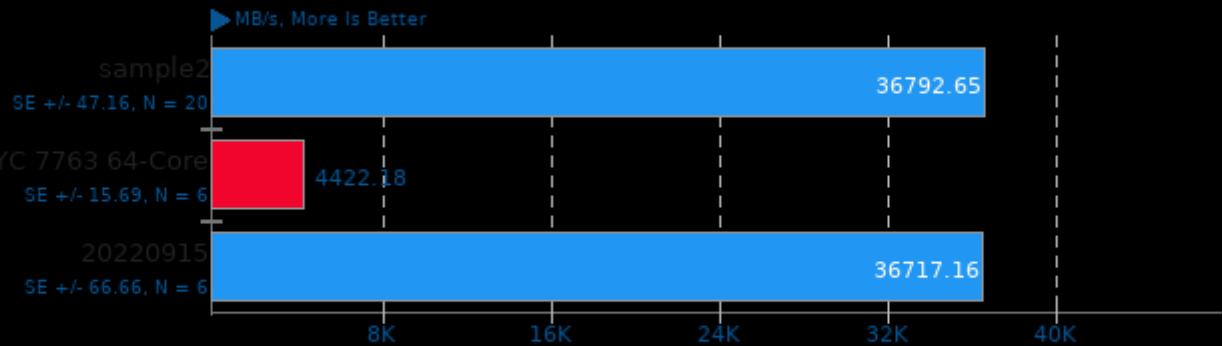
Type: Triad - Benchmark: Integer



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

RAMspeed SMP 3.5.0

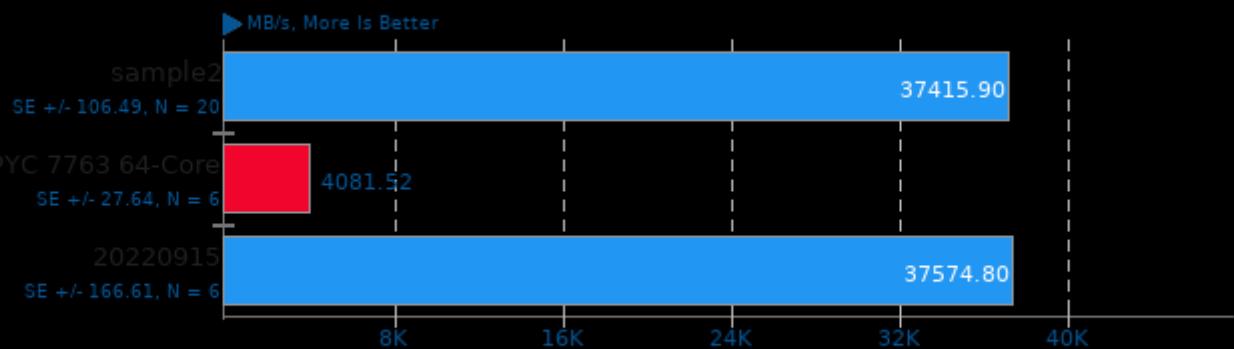
Type: Average - Benchmark: Integer



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

RAMspeed SMP 3.5.0

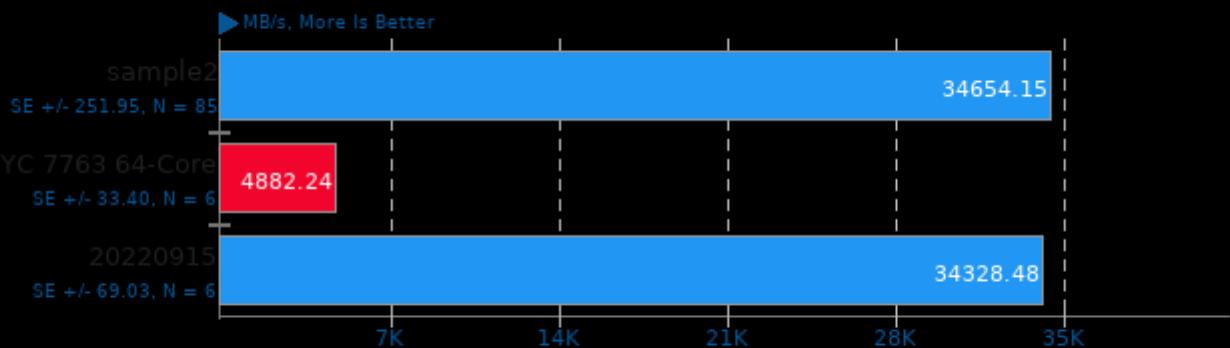
Type: Add - Benchmark: Floating Point



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

RAMspeed SMP 3.5.0

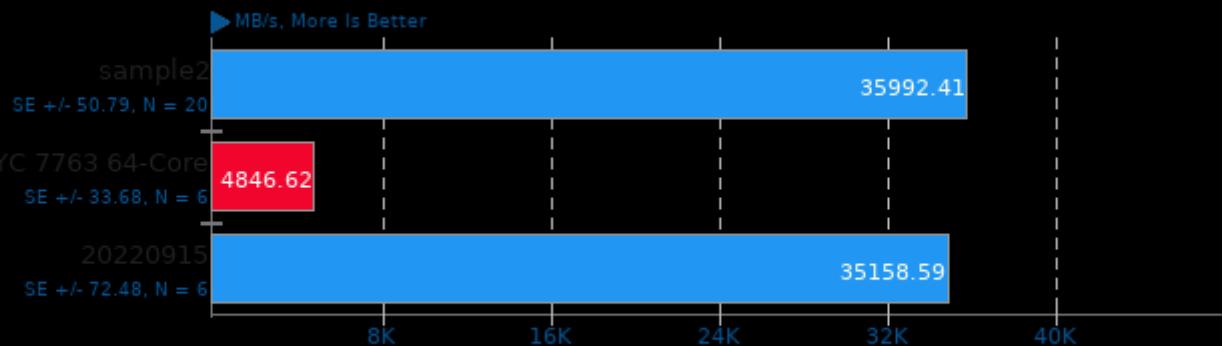
Type: Copy - Benchmark: Floating Point



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

RAMspeed SMP 3.5.0

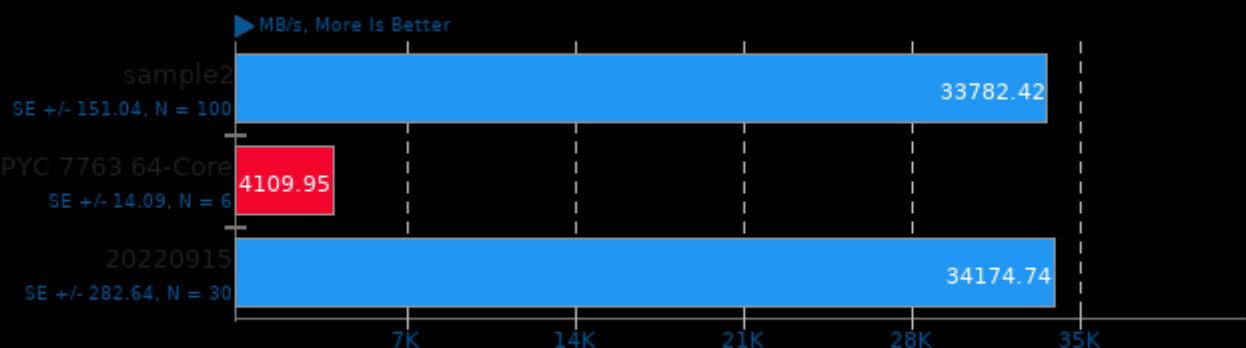
Type: Scale - Benchmark: Floating Point



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

RAMspeed SMP 3.5.0

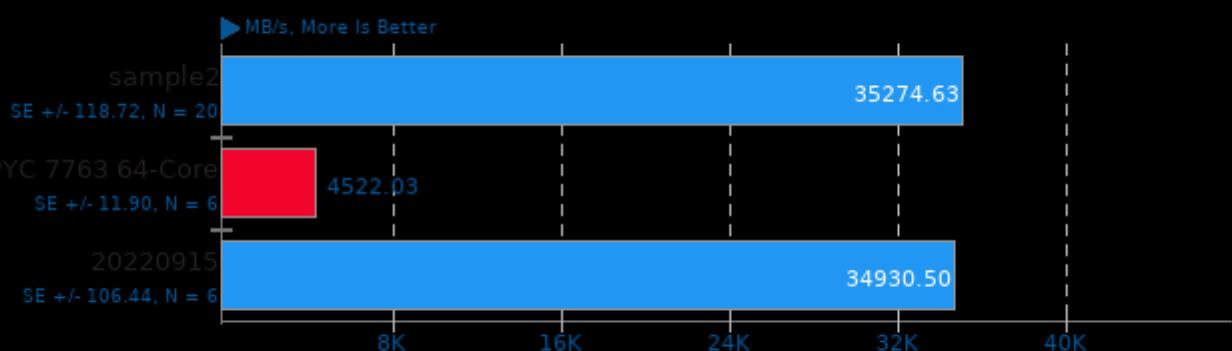
Type: Triad - Benchmark: Floating Point



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

RAMspeed SMP 3.5.0

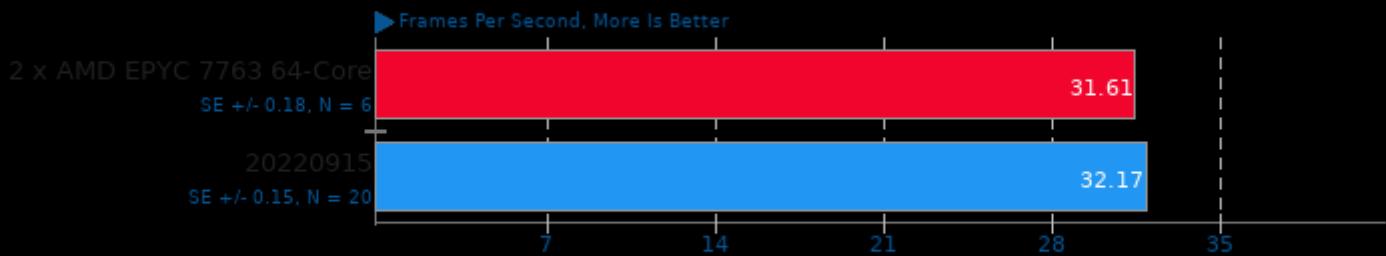
Type: Average - Benchmark: Floating Point



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

Kvazaar 2.1

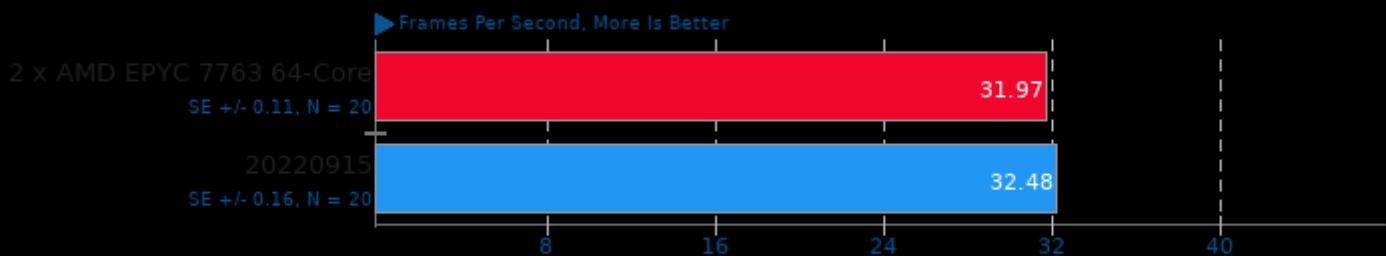
Video Input: Bosphorus 4K - Video Preset: Slow



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

Kvazaar 2.1

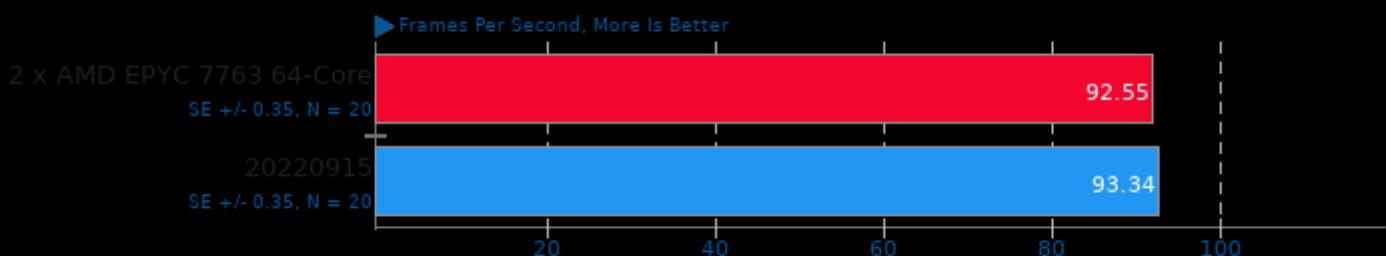
Video Input: Bosphorus 4K - Video Preset: Medium



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

Kvazaar 2.1

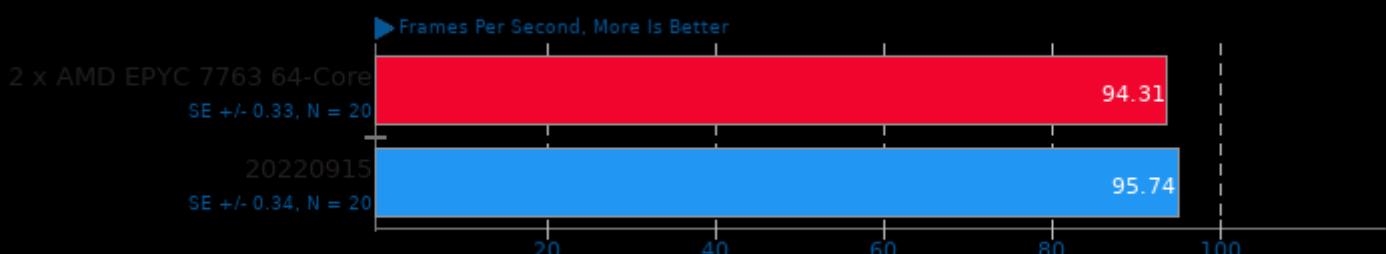
Video Input: Bosphorus 1080p - Video Preset: Slow



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

Kvazaar 2.1

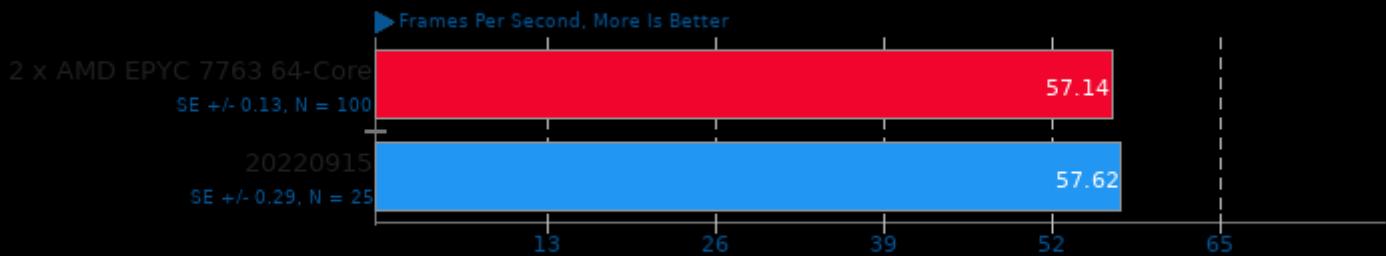
Video Input: Bosphorus 1080p - Video Preset: Medium



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

Kvazaar 2.1

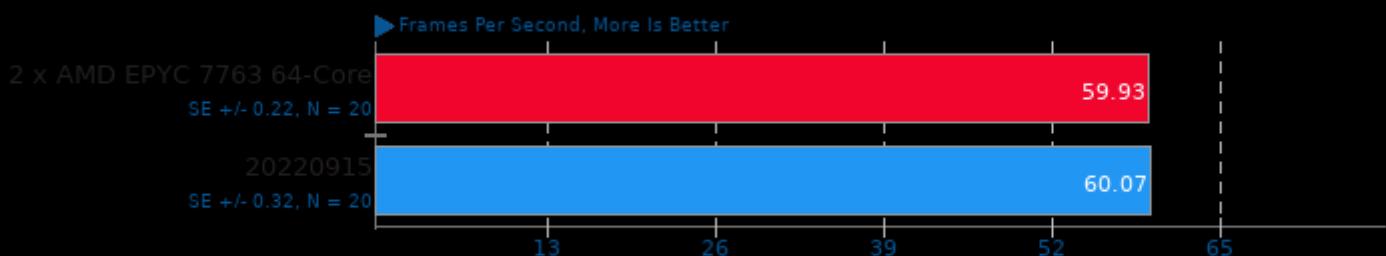
Video Input: Bosphorus 4K - Video Preset: Very Fast



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

Kvazaar 2.1

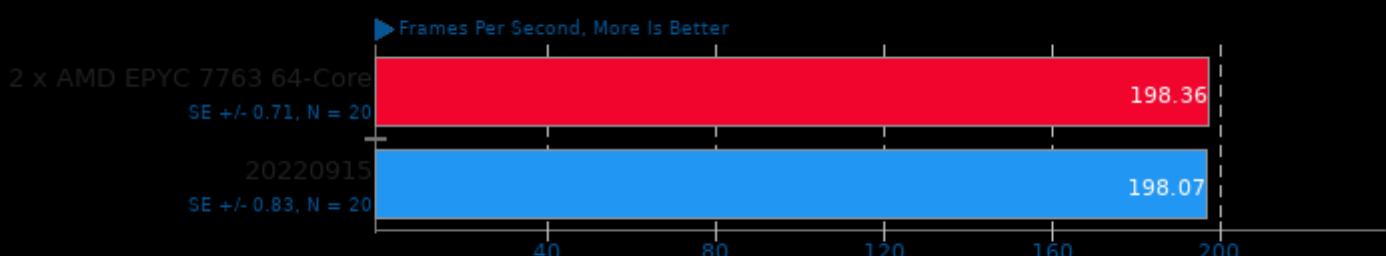
Video Input: Bosphorus 4K - Video Preset: Ultra Fast



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

Kvazaar 2.1

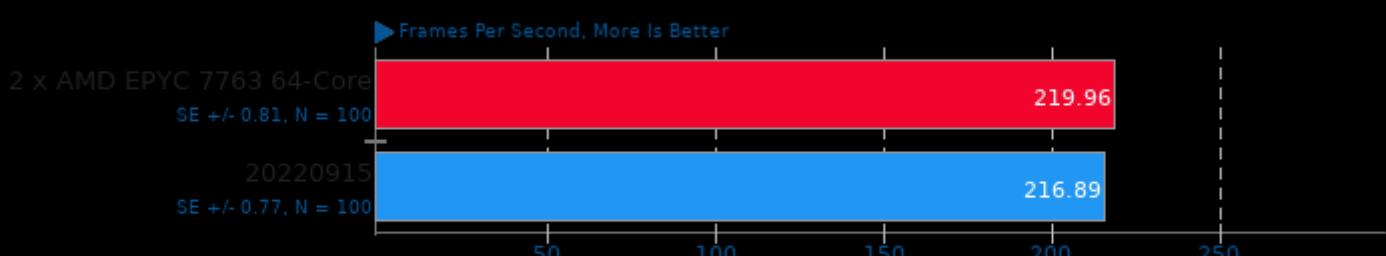
Video Input: Bosphorus 1080p - Video Preset: Very Fast



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

Kvazaar 2.1

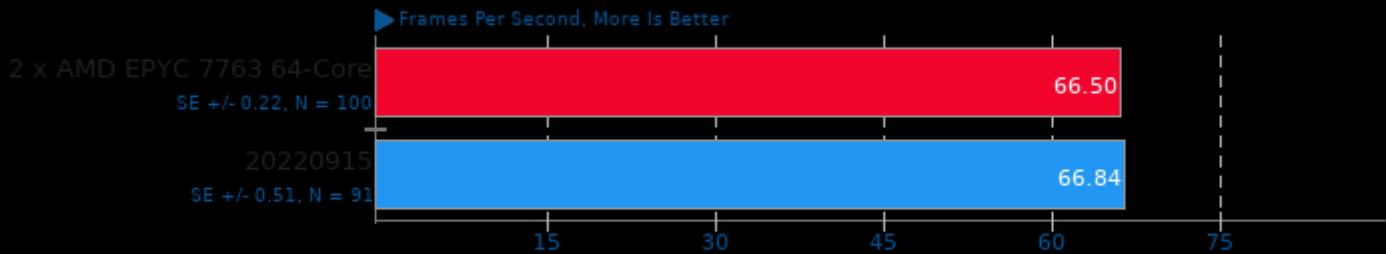
Video Input: Bosphorus 1080p - Video Preset: Ultra Fast



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

x264 2022-02-22

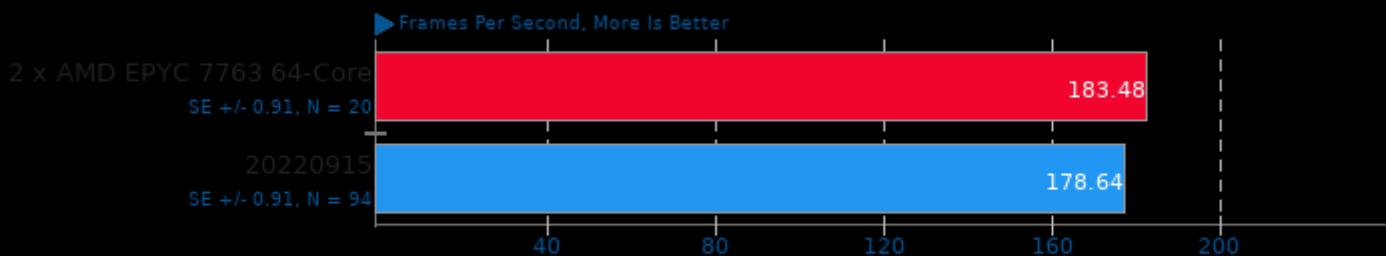
Video Input: Bosphorus 4K



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

x264 2022-02-22

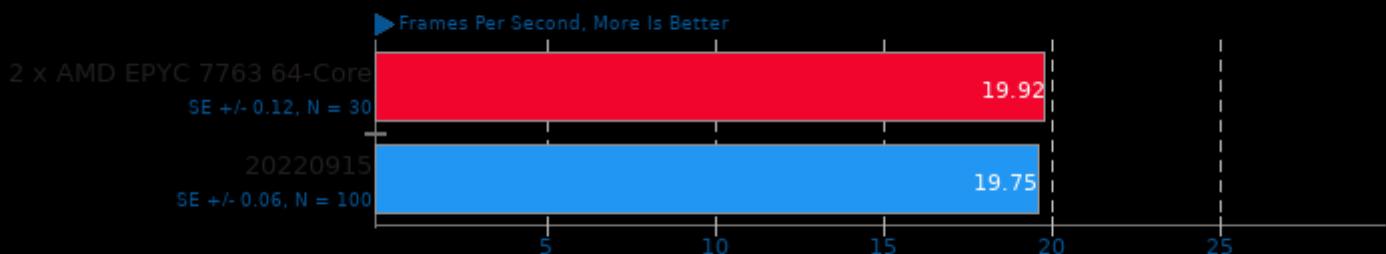
Video Input: Bosphorus 1080p



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

x265 3.4

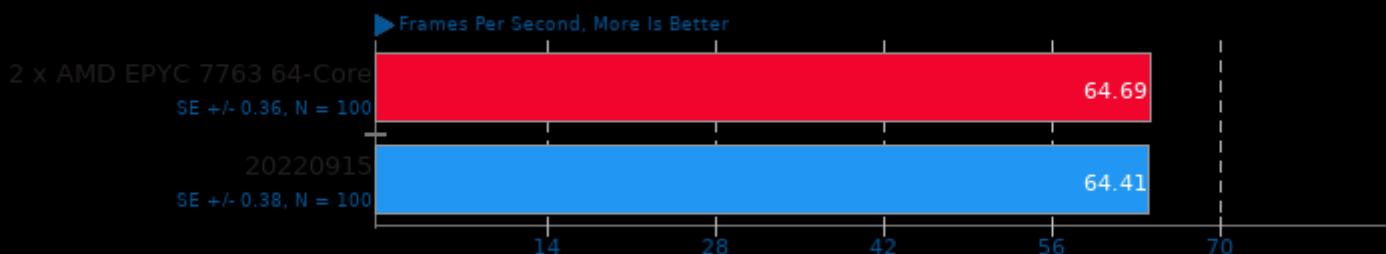
Video Input: Bosphorus 4K



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

x265 3.4

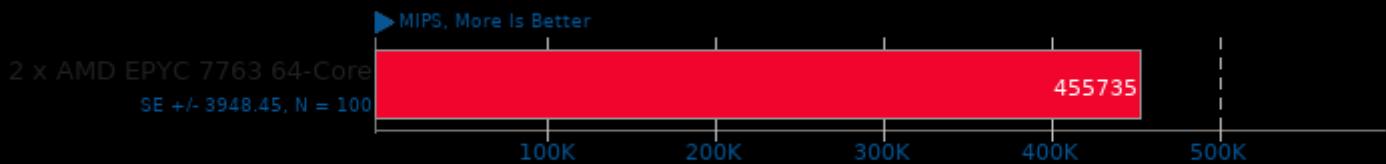
Video Input: Bosphorus 1080p



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

7-Zip Compression 22.00

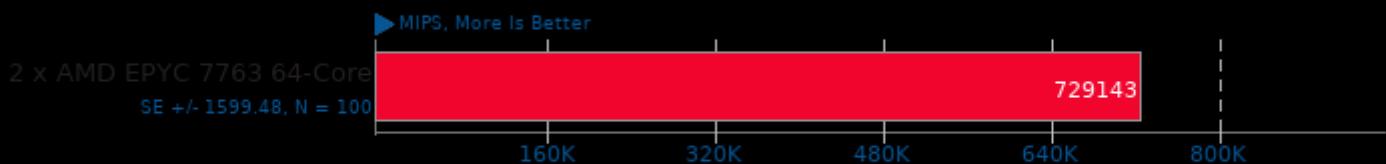
Test: Compression Rating



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

7-Zip Compression 22.00

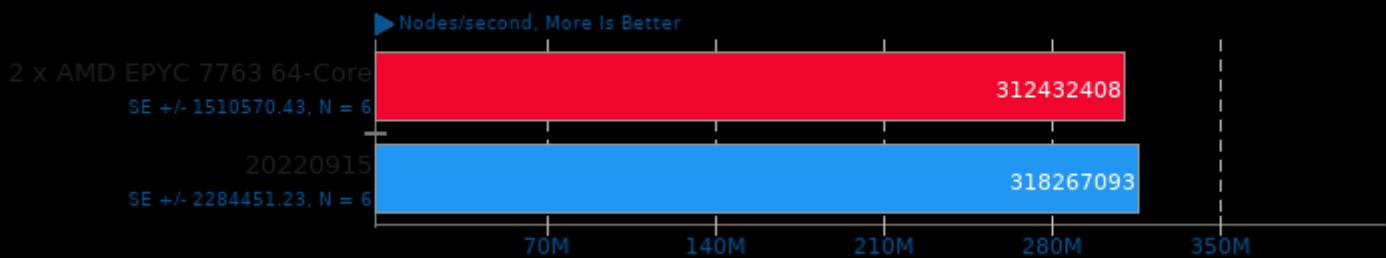
Test: Decompression Rating



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

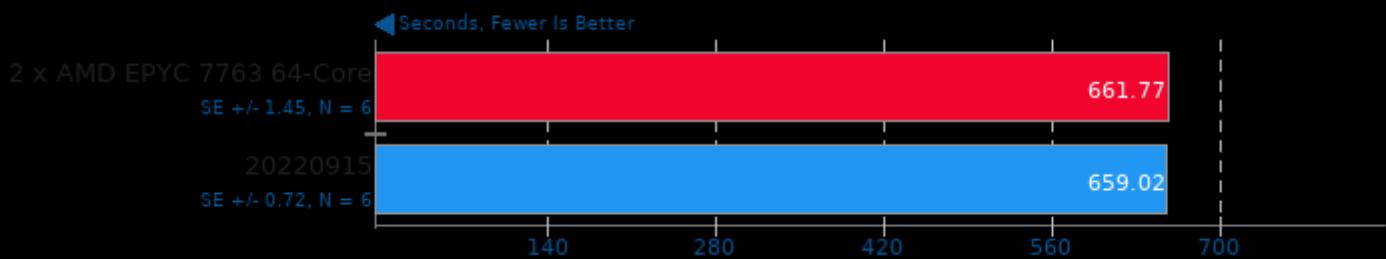
asmFish 2018-07-23

1024 Hash Memory, 26 Depth



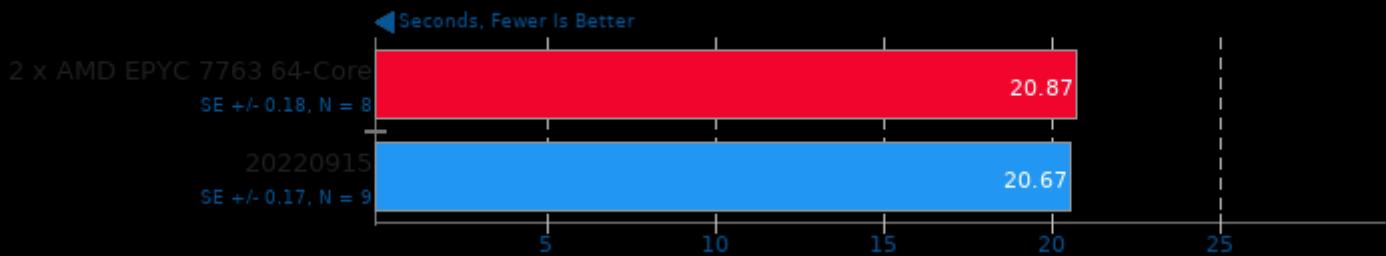
Timed GCC Compilation 11.2.0

Time To Compile



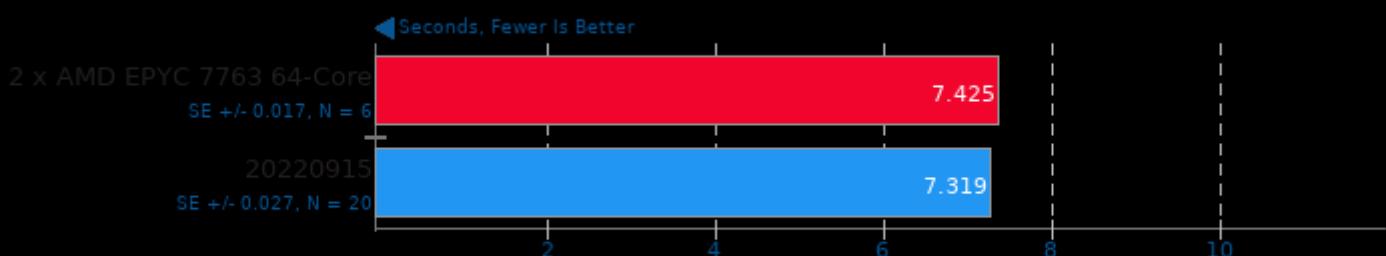
Timed Linux Kernel Compilation 5.18

Build: defconfig



POV-Ray 3.7.0.7

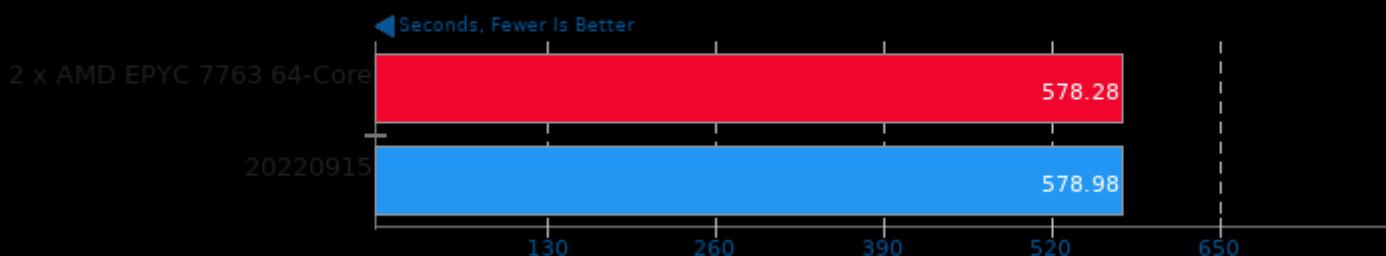
Trace Time



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

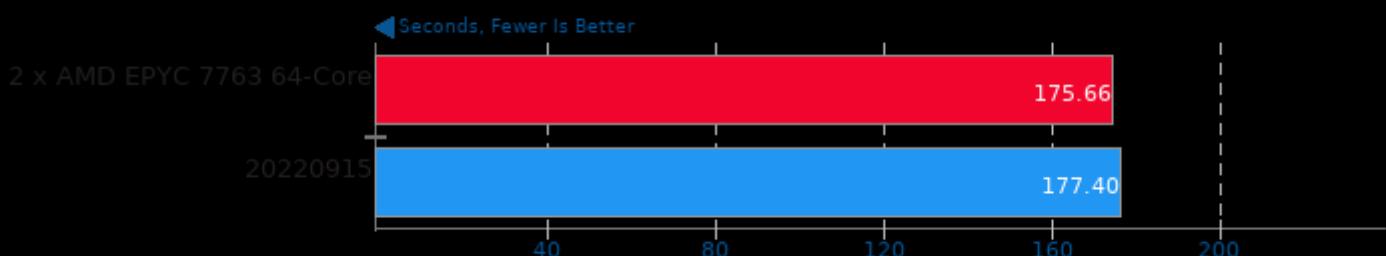
Radiance Benchmark 5.0

Test: Serial



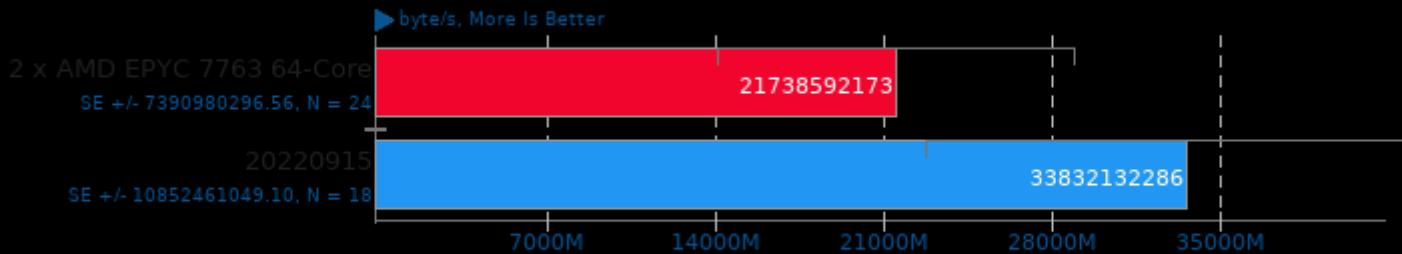
Radiance Benchmark 5.0

Test: SMP Parallel



OpenSSL 3.0

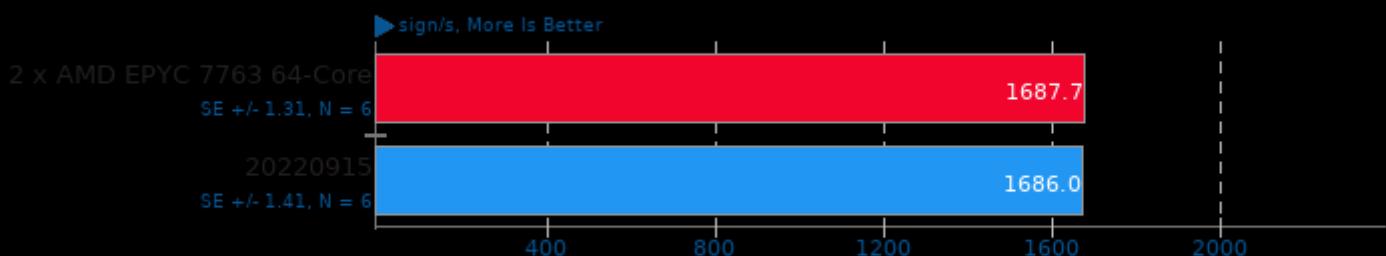
Algorithm: SHA256



1. (CC) gcc options: -pthread -m64 -O3 -lssl -lcrypto -ldl

OpenSSL 3.0

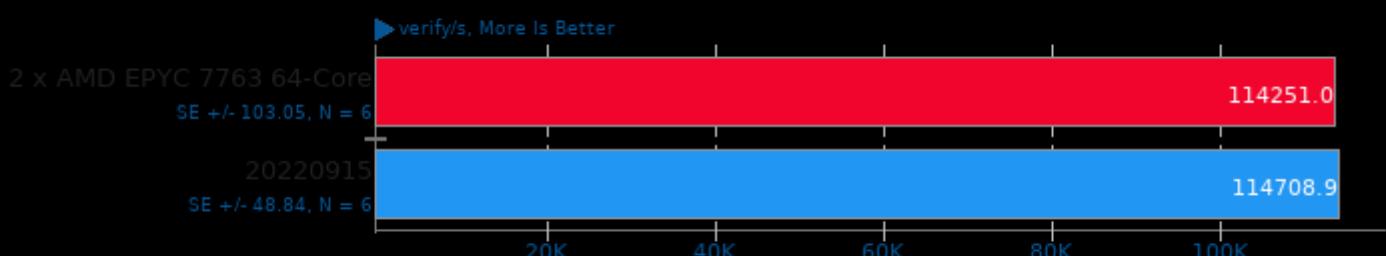
Algorithm: RSA4096



1. (CC) gcc options: -pthread -m64 -O3 -lssl -lcrypto -ldl

OpenSSL 3.0

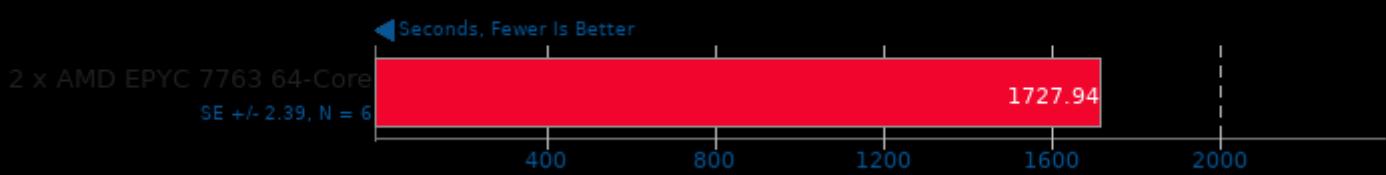
Algorithm: RSA4096



1. (CC) gcc options: -pthread -m64 -O3 -lssl -lcrypto -ldl

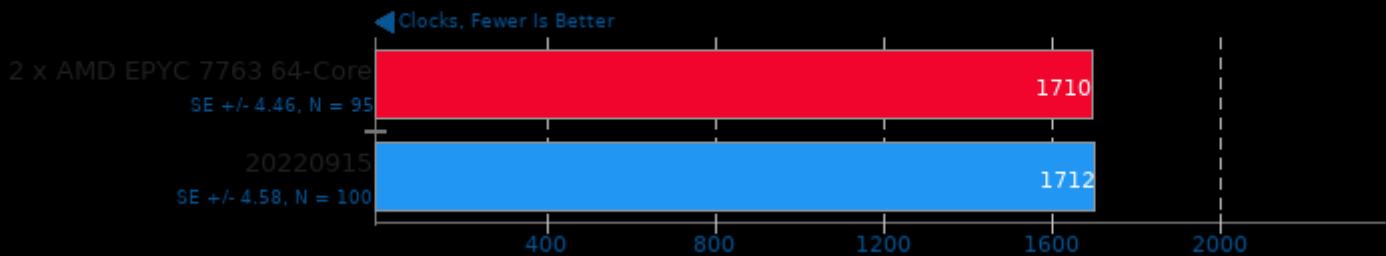
Blender 3.2

Blend File: Barbershop - Compute: CPU-Only



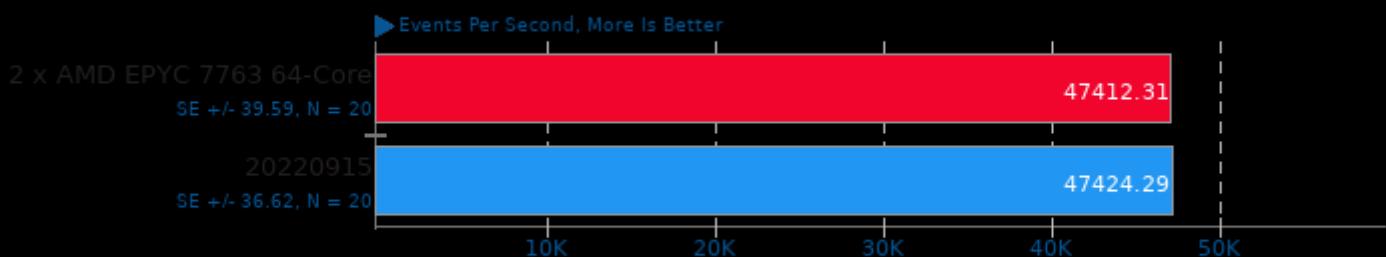
ctx_clock

Context Switch Time



Sysbench 1.0.20

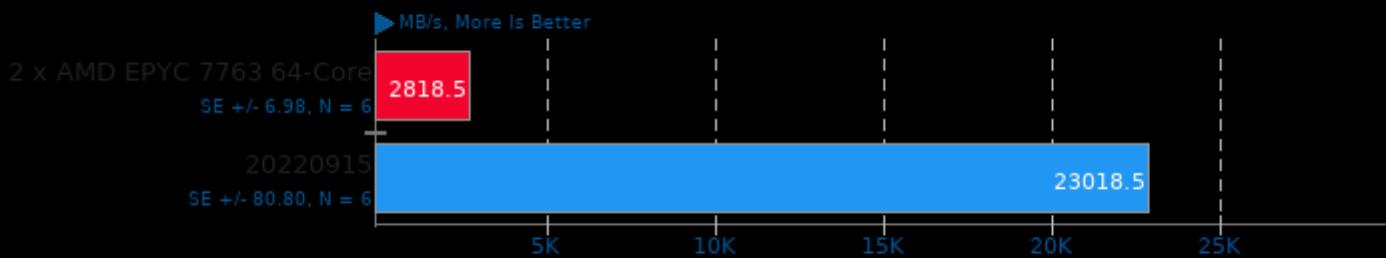
Test: CPU



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

Tinymembench 2018-05-28

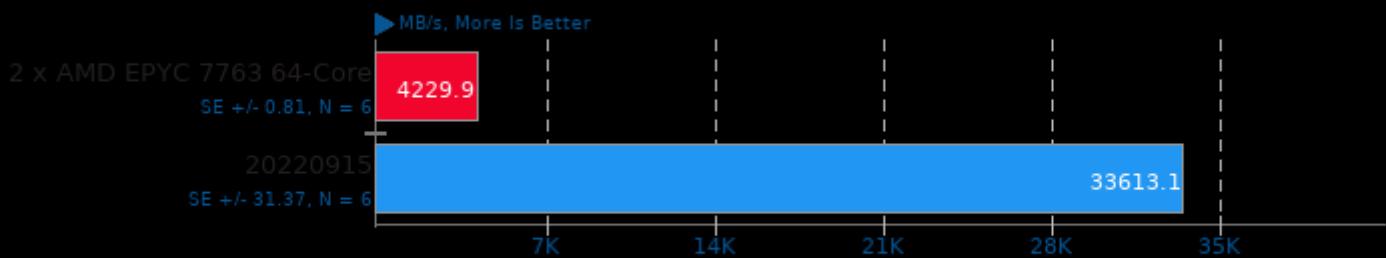
Standard Memcpy



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

Tinymembench 2018-05-28

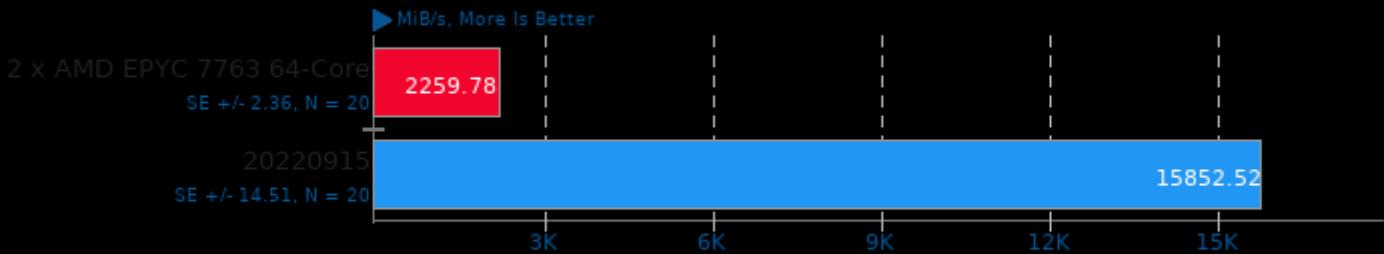
Standard Memset



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

MBW 2018-09-08

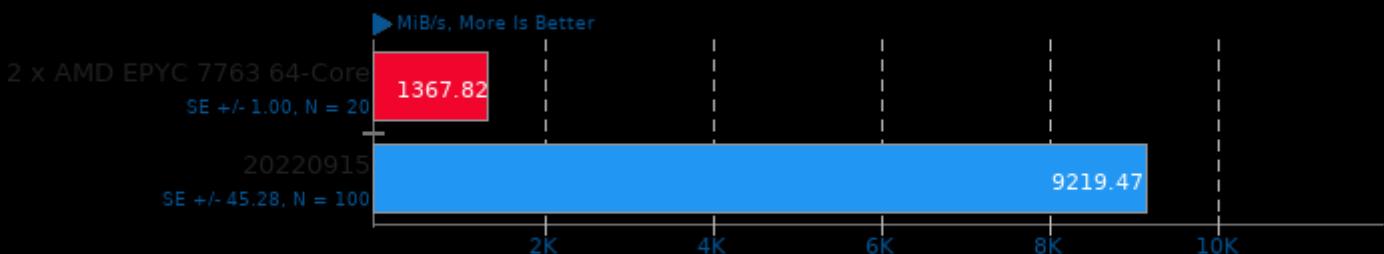
Test: Memory Copy - Array Size: 1024 MiB



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

MBW 2018-09-08

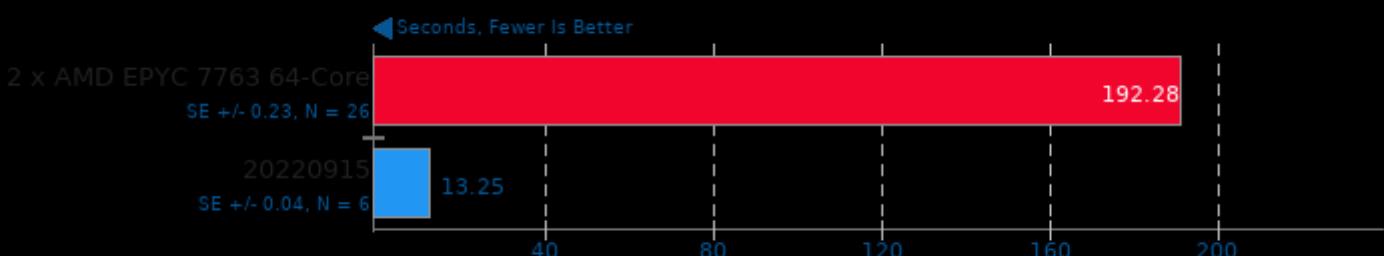
Test: Memory Copy, Fixed Block Size - Array Size: 1024 MiB



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

t-test1 2017-01-13

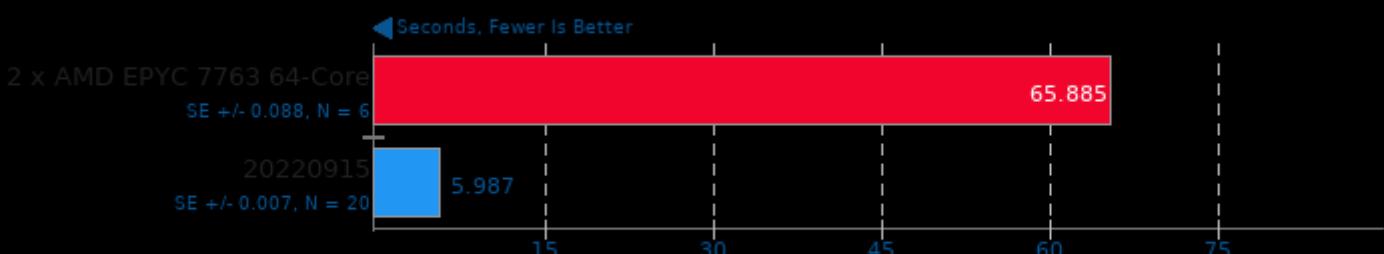
Threads: 1



1. (CC) gcc options: -pthread

t-test1 2017-01-13

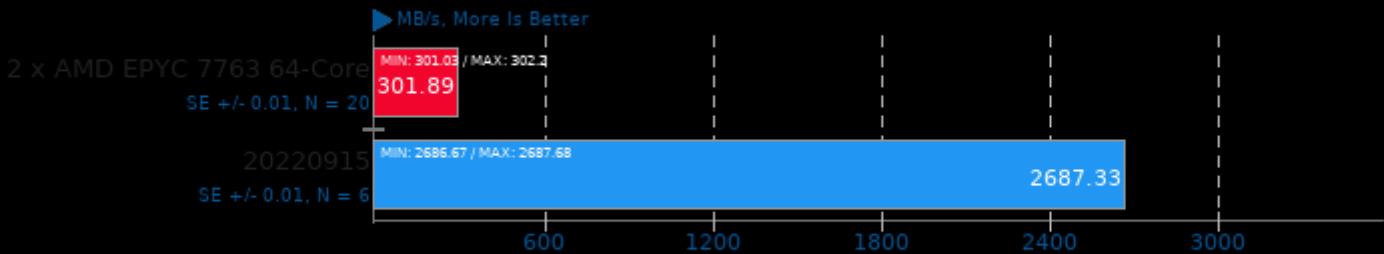
Threads: 2



1. (CC) gcc options: -pthread

CacheBench

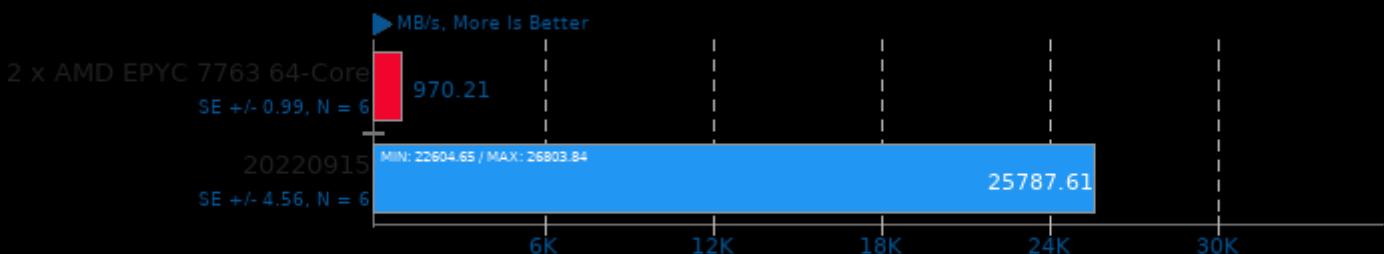
Read Cache



1. (CC) gcc options: -lrt

CacheBench

Write Cache



1. (CC) gcc options: -lrt

This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 11:05.