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test

2 x Intel Xeon E5-2620 v3 testing with a Supermicro X10DDW-i v1.10 (3.1 BIOS) and ASPEED on CentOS Linux 7 via the Phoronix Test Suite.

Test Systems:

test

Processor: 2 x Intel Xeon E5-2620 v3 @ 3.20GHz (12 Cores / 24 Threads), Motherboard: Supermicro X10DDW-i v1.10 (3.1 BIOS), Chipset: Intel Xeon E7 v3/Xeon, Memory: 4 x 16384 MB DDR4-1866MT/s Micron 18ASF2G72PDZ-2G6D1, Disk: 4 x 4001GB Western Digital WD4002FYYZ-0, Graphics: ASPEED, Network: 2 x Intel I350

OS: CentOS Linux 7, Kernel: 3.10.0-957.el7.x86_64 (x86_64), Compiler: GCC 4.8.5 20150623, File-System: ext4, Screen Resolution: 1024x768

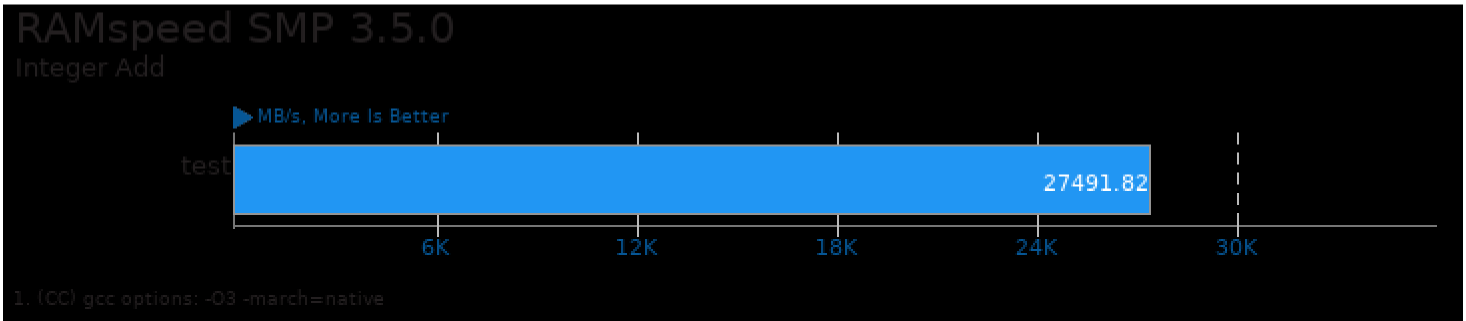
Compiler Notes: --build=x86_64-redhat-linux --disable-libgcj --disable-libunwind-exceptions --enable-__cxa_atexit --enable-bootstrap --enable-checking=release --enable-gnu-indirect-function --enable-gnu-unique-object --enable-initfini-array --enable-languages=c,c++,objc,obj-c++,java,fortran,ada,go,lto --enable-plugin --enable-shared --enable-threads=posix --mandir=/usr/share/man --with-arch_32=x86-64 --with-linker-hash-style=gnu --with-tune=generic
Processor Notes: Scaling Governor: intel_pstate powersave
Security Notes: l1tf: Mitigation of PTE Inversion; VMX: SMT vulnerable L1D conditional cache flushes + meltdown: Mitigation of PTI + spec_store_bypass: Mitigation of SSB

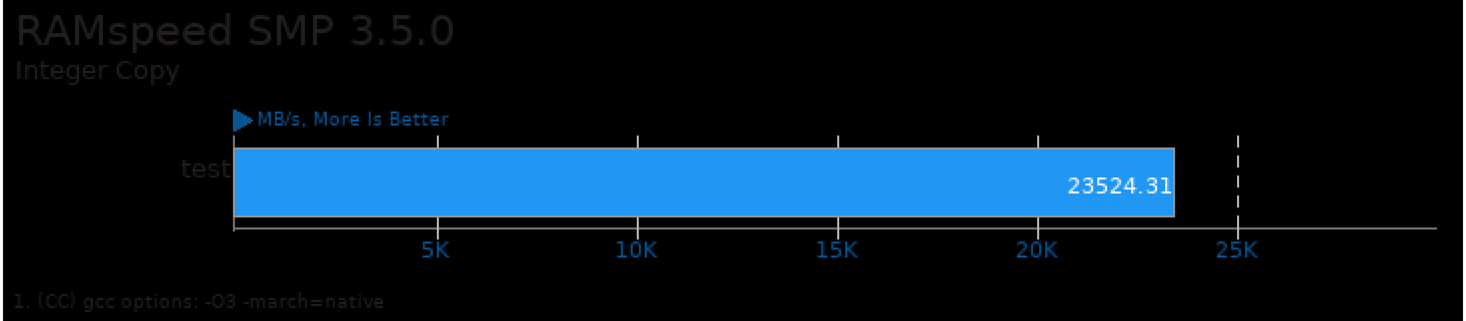
test

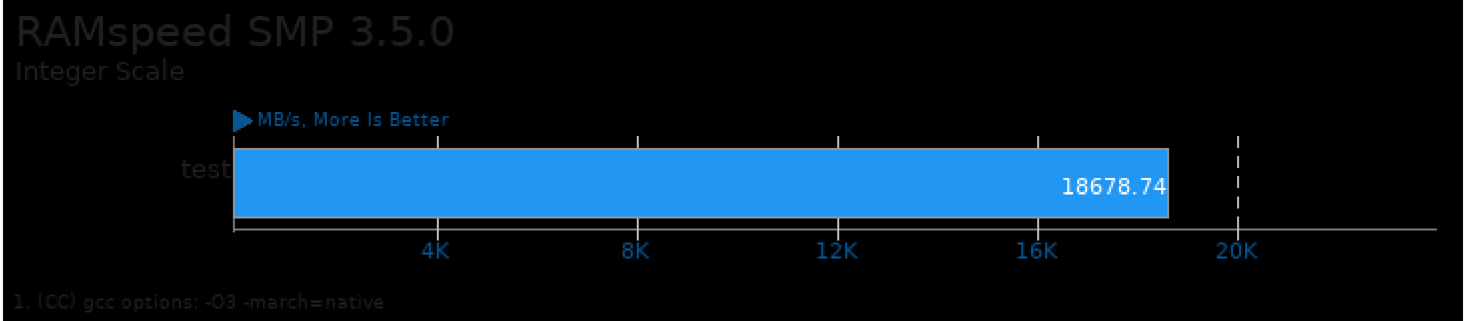
disabled via prctl and seccomp + spectre_v1: Mitigation of Load fences __user pointer sanitization + spectre_v2: Mitigation of Full retpoline

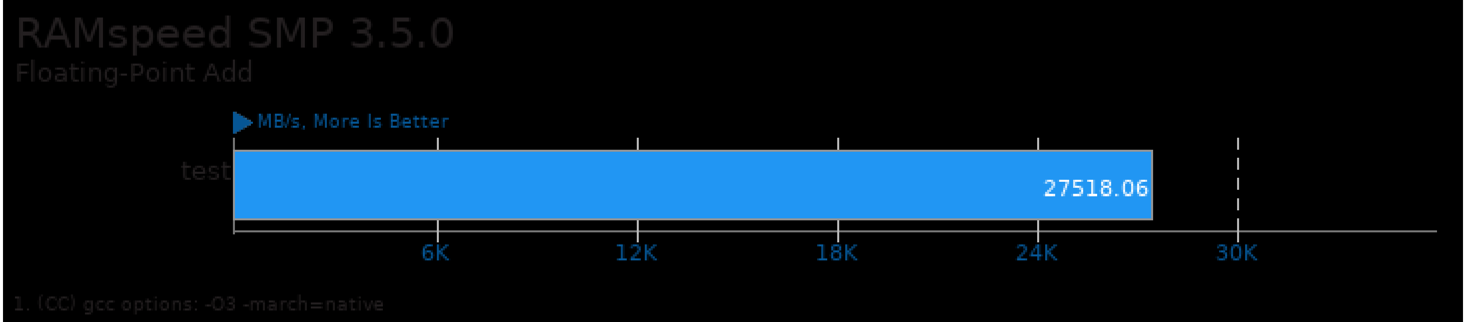
	test
RAMspeed SMP - Integer Add (MB/s)	27492
RAMspeed SMP - Integer Copy (MB/s)	23524
RAMspeed SMP - Integer Scale (MB/s)	18679
RAMspeed SMP - Floating-Point Add (MB/s)	27518
Stream - Add (MB/s)	38384
Standard Deviation	0.6%
Stream - Copy (MB/s)	44776
Standard Deviation	0.1%
Stream - Scale (MB/s)	34120
Standard Deviation	0.4%
Tinymembench - Standard Memcpy (MB/s)	10035
Standard Deviation	0.3%
Tinymembench - Standard Memset (MB/s)	9222
Standard Deviation	1.2%
MBW - Memory Copy - 1024 MiB (MiB/s)	9603
Standard Deviation	2%
MBW - M.C.F.B.S - 1024 MiB (MiB/s)	5953
Standard Deviation	0.8%
Rodinia - OpenMP LavaMD (sec)	128.14
Standard Deviation	0.1%
Rodinia - OpenMP CFD Solver (sec)	43.02
Standard Deviation	2.8%
NAMD - ATPase Simulation - 327,506 Atoms (days/ns)	1.96051
Standard Deviation	0.3%
CacheBench - Read Cache (MB/s)	2706
Standard Deviation	0.3%
CacheBench - Write Cache (MB/s)	21624
Standard Deviation	0.8%
7-Zip Compression - C.S.T (MIPS)	44566
Standard Deviation	0.5%
Stockfish - Total Time (Nodes/s)	22412268
Standard Deviation	1.2%
asmFish - 1.H.M.2.D (Nodes/s)	24166506
Standard Deviation	2.8%
Timed GCC Compilation - Time To Compile (sec)	1227
Timed Linux Kernel Compilation - Time To Compile (sec)	75.37
Standard Deviation	2.6%
POV-Ray - Trace Time (sec)	60.38
Standard Deviation	0.2%
OpenSSL - R.4.b.P (Signs/sec)	1408
Standard Deviation	0.1%
ctx_clock - C.S.T (Clocks)	535
Standard Deviation	0.3%
Sysbench - CPU (Events/sec)	16070
Standard Deviation	0%

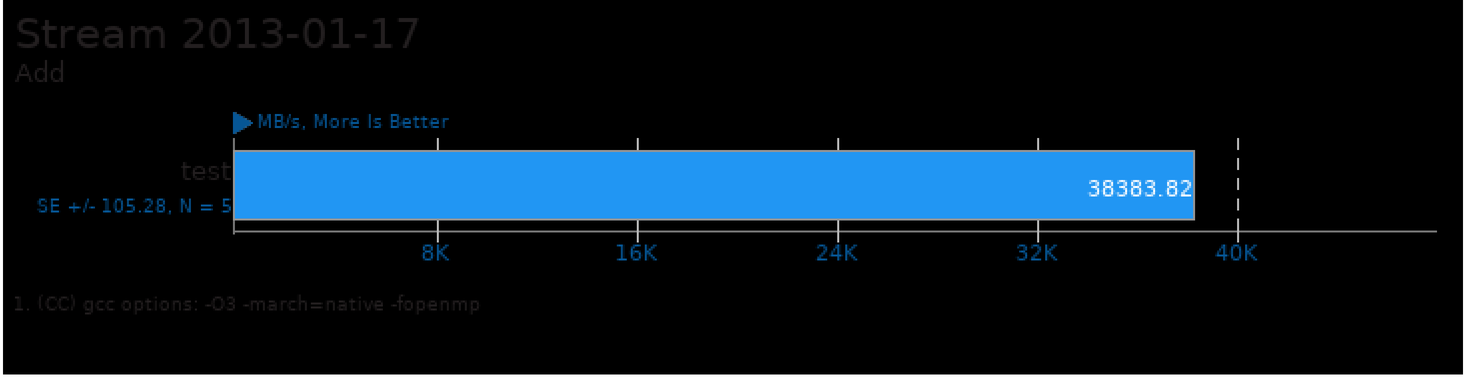
test


RAMspeed SMP 3.5.0
Integer Add
MB/s, More Is Better
test
27491.82
6K
12K
18K
24K
30K
1. (CC) gcc options: -O3 -march=native

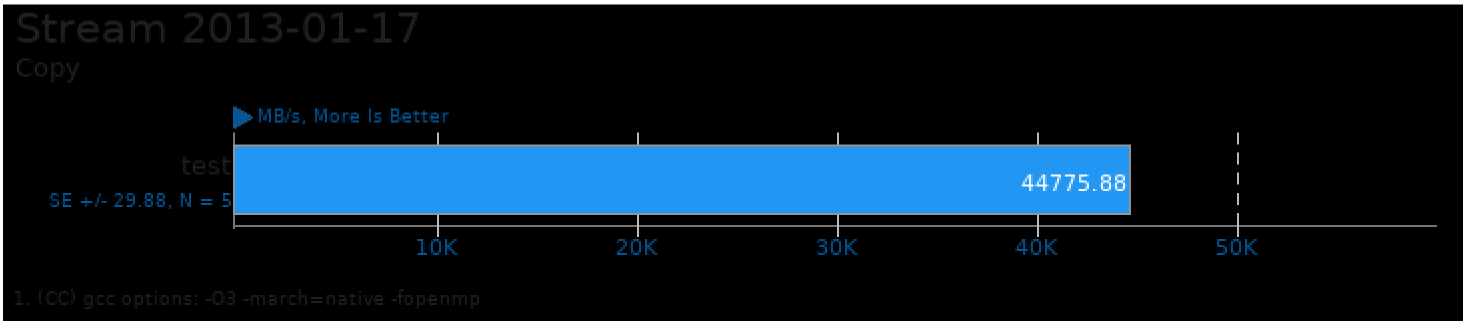

RAMspeed SMP 3.5.0
Integer Copy
MB/s, More Is Better
test
23524.31
5K
10K
15K
20K
25K
1. (CC) gcc options: -O3 -march=native


RAMspeed SMP 3.5.0
Integer Scale
MB/s, More Is Better
test
18678.74
4K
8K
12K
16K
20K
1. (CC) gcc options: -O3 -march=native

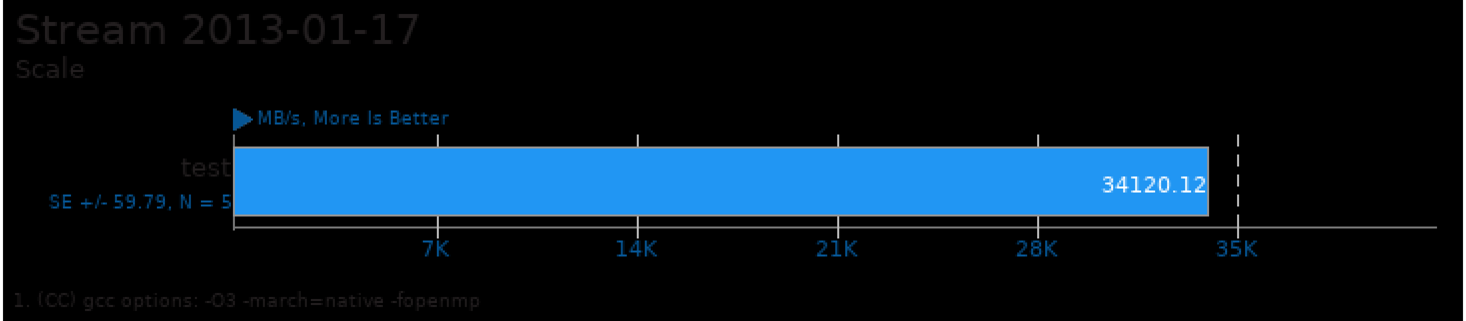

RAMspeed SMP 3.5.0
Floating-Point Add
MB/s, More Is Better
test
27518.06
6K
12K
18K
24K
30K
1. (CC) gcc options: -O3 -march=native


Stream 2013-01-17
Add
MB/s, More Is Better
test
SE +/- 105.28, N = 5
38383.82
8K
16K
24K
32K
40K
1. (CC) gcc options: -O3 -march=native -fopenmp

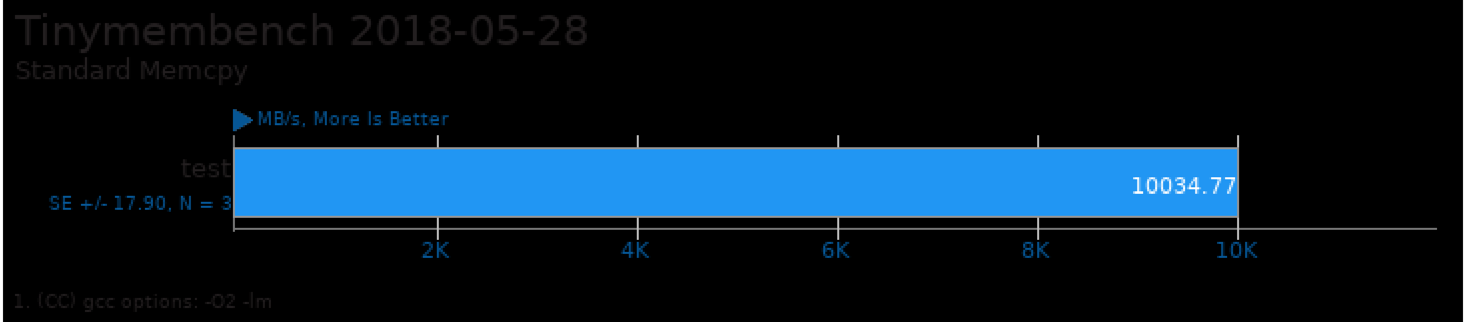
test



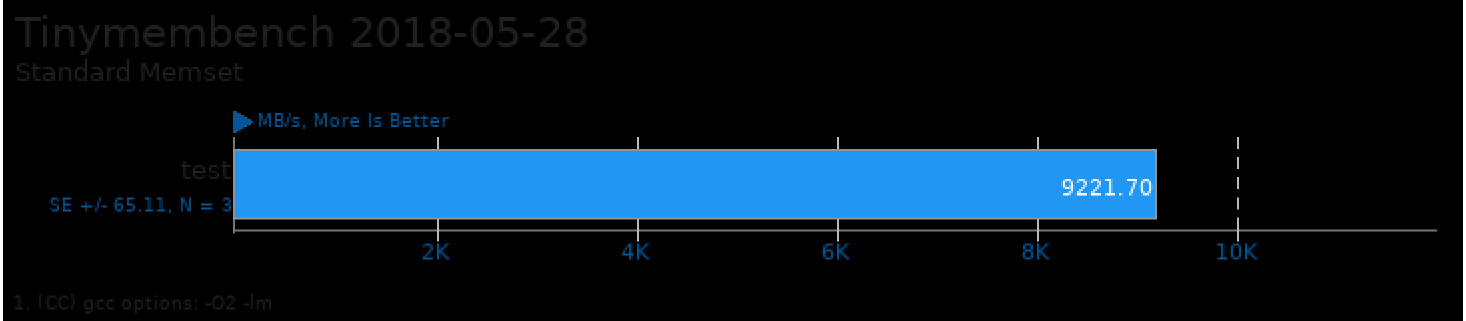
Stream 2013-01-17
Copy
MB/s, More Is Better
test
SE +/- 29.88, N = 5
44775.88
10K
20K
30K
40K
50K
1. (CC) gcc options: -O3 -march=native -fopenmp



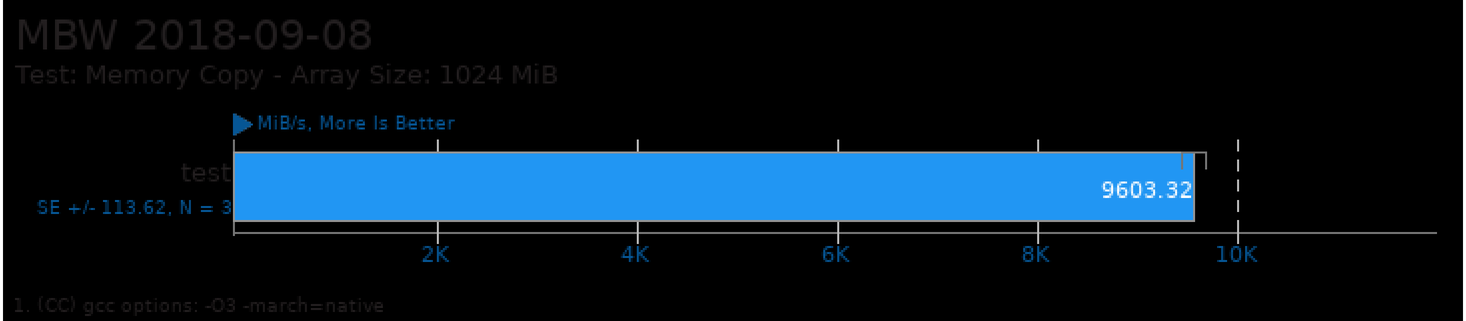
Stream 2013-01-17
Scale
MB/s, More Is Better
test
SE +/- 59.79, N = 5
34120.12
7K
14K
21K
28K
35K
1. (CC) gcc options: -O3 -march=native -fopenmp



Tinymembench 2018-05-28
Standard Memcpy
MB/s, More Is Better
test
SE +/- 17.90, N = 3
10034.77
2K
4K
6K
8K
10K
1. (CC) gcc options: -O2 -lm

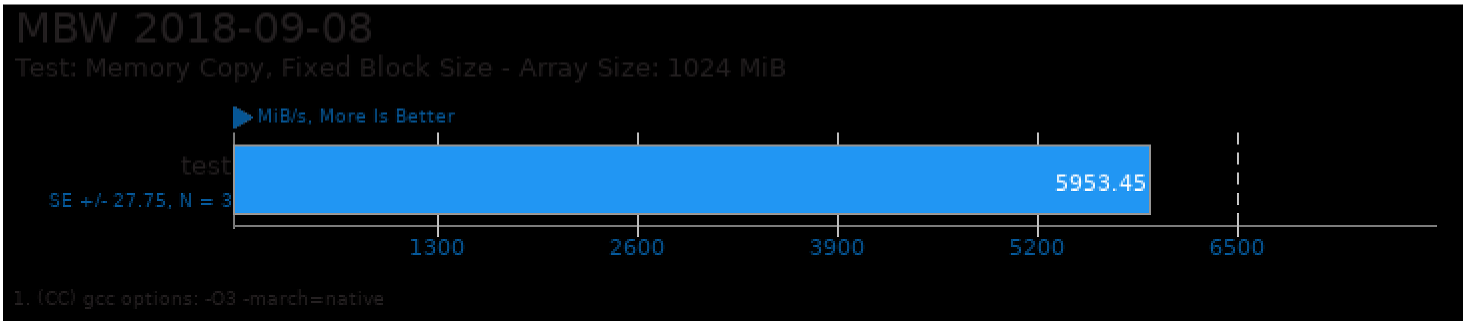


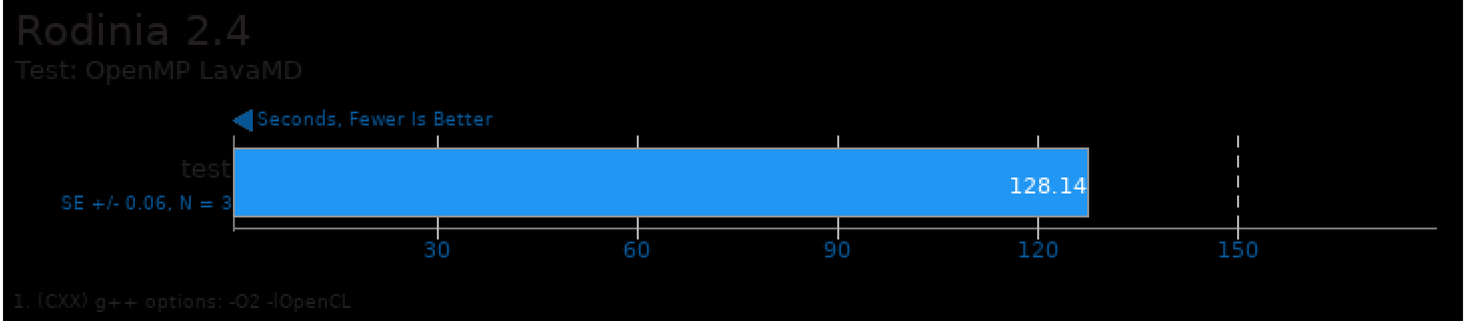
Tinymembench 2018-05-28
Standard Memset
MB/s, More Is Better
test
SE +/- 65.11, N = 3
9221.70
2K
4K
6K
8K
10K
1. (CC) gcc options: -O2 -lm

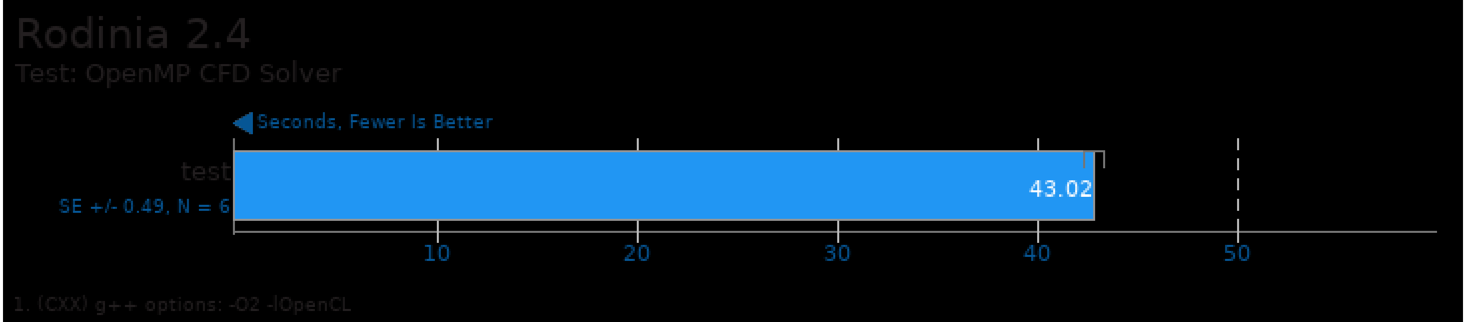


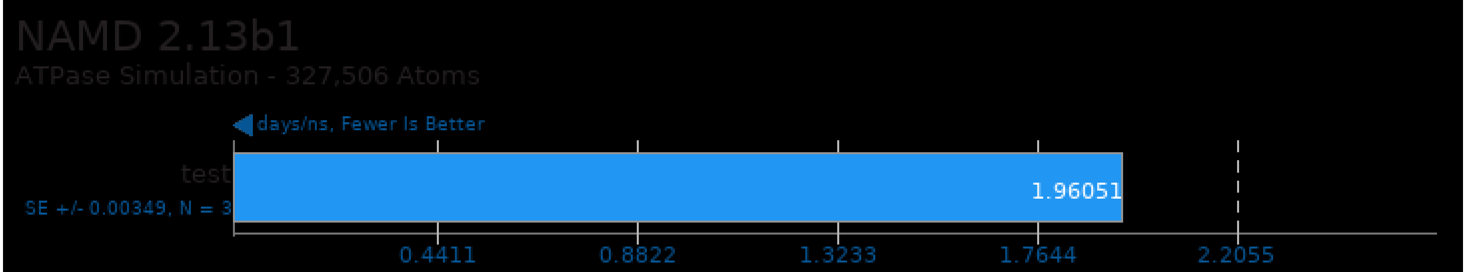
MBW 2018-09-08
Test: Memory Copy - Array Size: 1024 MiB
MiB/s, More Is Better
test
SE +/- 113.62, N = 3
9603.32
2K
4K
6K
8K
10K
1. (CC) gcc options: -O3 -march=native

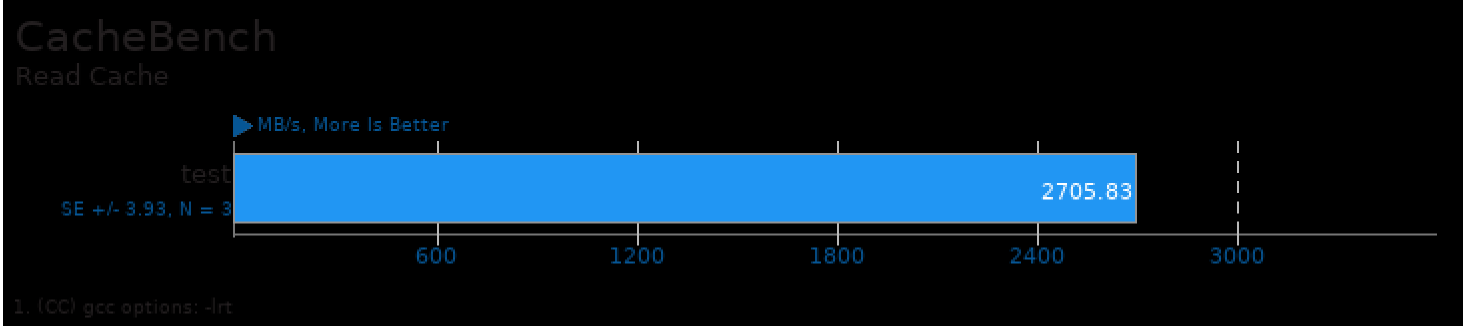
test


MBW 2018-09-08
Test: Memory Copy, Fixed Block Size - Array Size: 1024 MiB
MiB/s, More Is Better
test
SE +/- 27.75, N = 3
5953.45
1300
2600
3900
5200
6500
1. (CC) gcc options: -O3 -march=native


Rodinia 2.4
Test: OpenMP LavaMD
Seconds, Fewer Is Better
test
SE +/- 0.06, N = 3
128.14
30
60
90
120
150
1. (CXX) g++ options: -O2 -lOpenCL

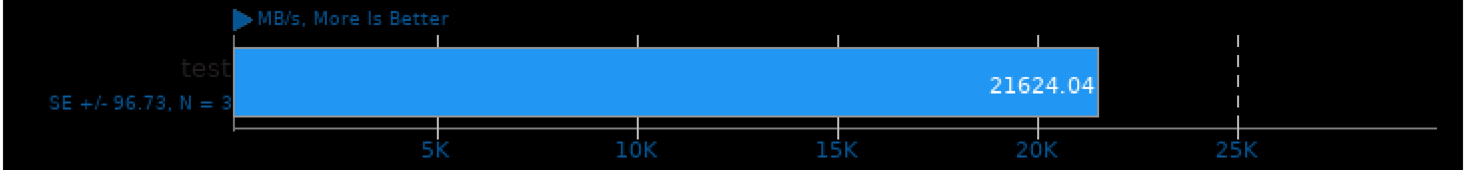

Rodinia 2.4
Test: OpenMP CFD Solver
Seconds, Fewer Is Better
test
SE +/- 0.49, N = 6
43.02
10
20
30
40
50
1. (CXX) g++ options: -O2 -lOpenCL


NAMD 2.13b1
ATPase Simulation - 327,506 Atoms
days/ns, Fewer Is Better
test
SE +/- 0.00349, N = 3
1.96051
0.4411
0.8822
1.3233
1.7644
2.2055


CacheBench
Read Cache
MB/s, More Is Better
test
SE +/- 3.93, N = 3
2705.83
600
1200
1800
2400
3000
1. (CC) gcc options: -lrt

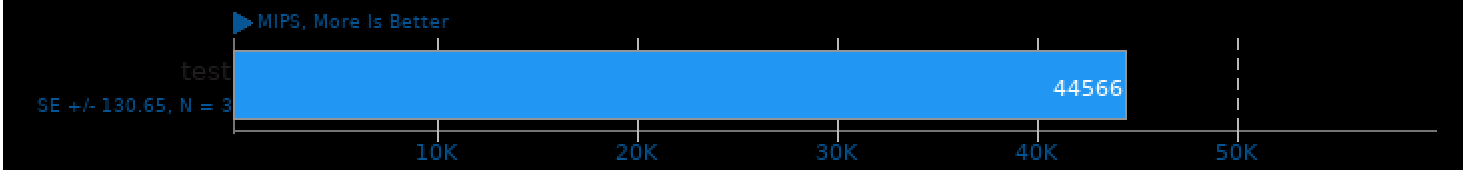
test

CacheBench
Write Cache



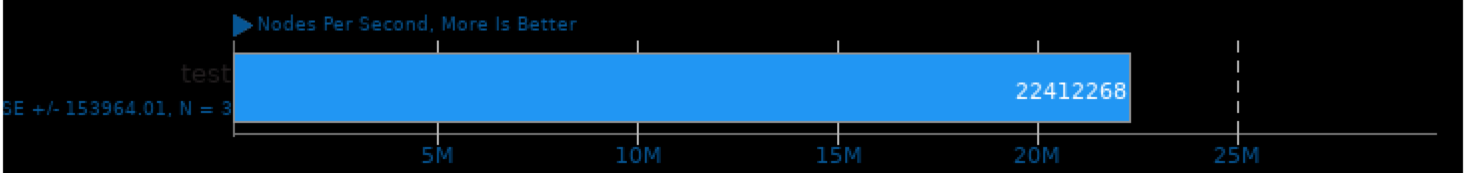
1. (CC) gcc options: -lrt

7-Zip Compression 16.02
Compress Speed Test



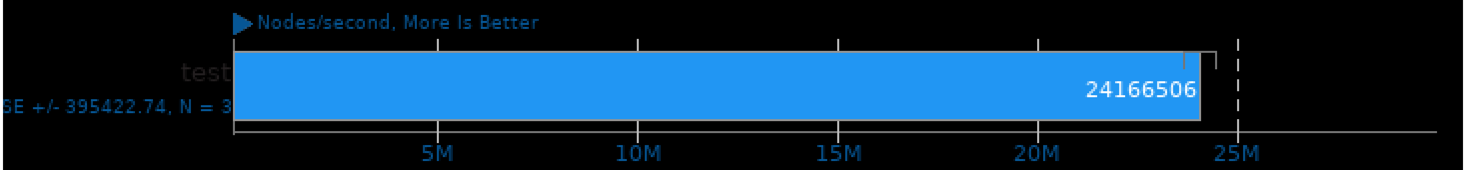
1. (CXX) g++ options: -pipe -lpthread

Stockfish 9
Total Time

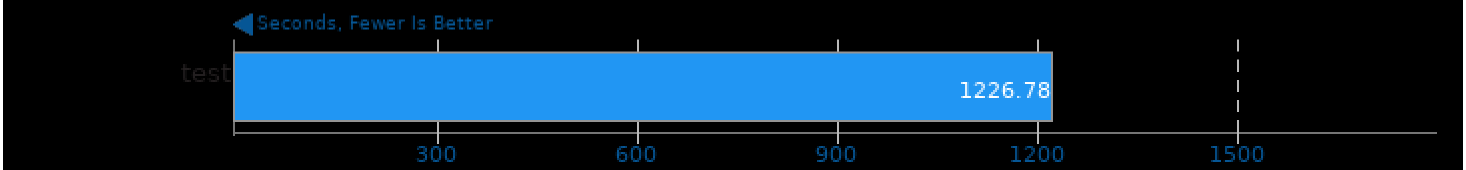


1. (CXX) g++ options: -m64 -lpthread -fno-exceptions -std=c++11 -pedantic -O3 -msse -msse3 -mpopcnt -flto

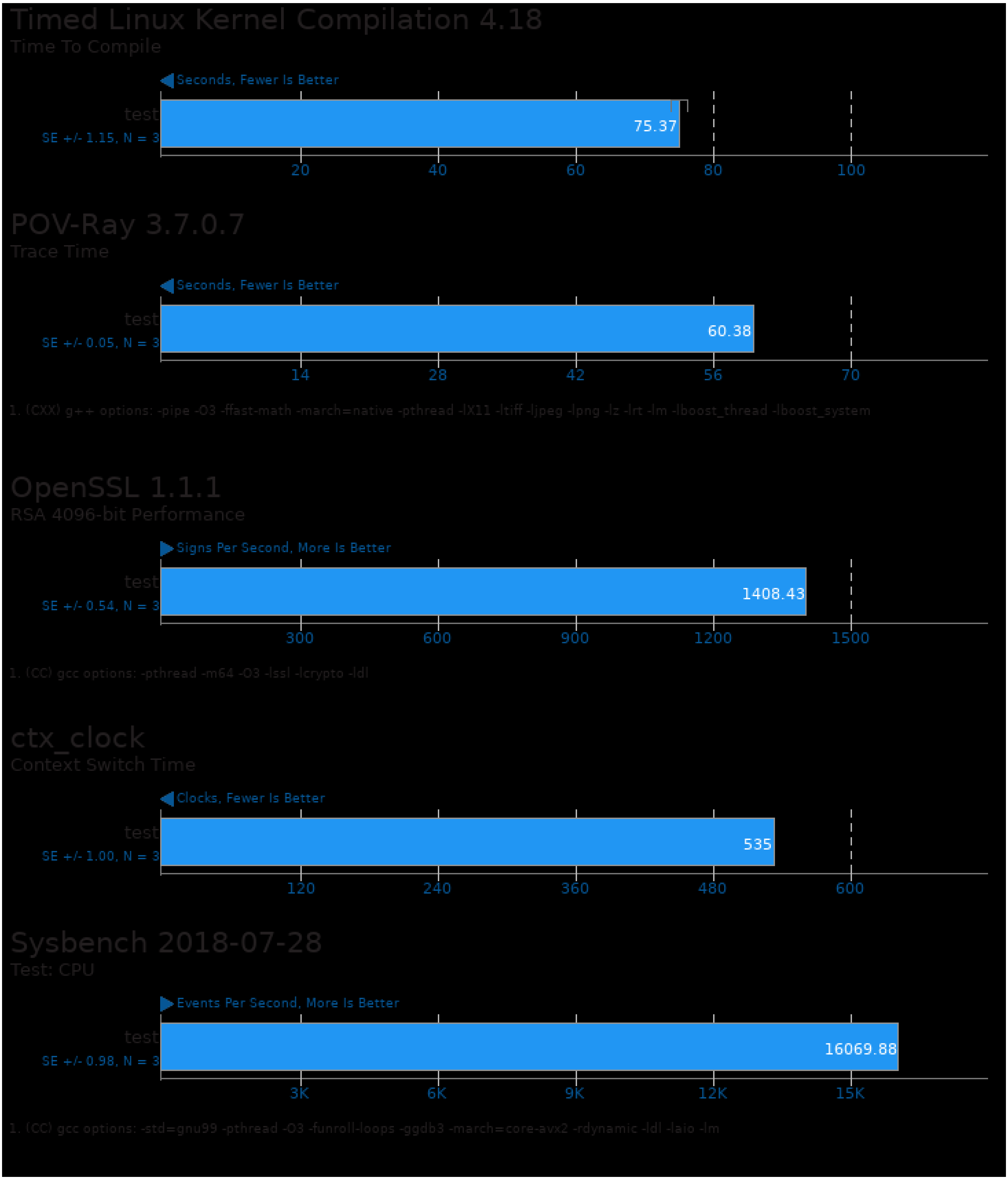
asmFish 2018-07-23
1024 Hash Memory, 26 Depth



Timed GCC Compilation 8.2
Time To Compile



test



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