www.phoronix-test-suite.com

native

Docker testing on Ubuntu 20.10 via the Phoronix Test Suite.

Test Systems:

2 x 275GB Virtual Disk

Processor: Intel Core i5-8305G (2 Cores / 4 Threads), Memory: 3072MB, Disk: 2 x 275GB Virtual Disk

OS: Ubuntu 20.10, Kernel: 4.19.84-microsoft-standard+ (x86_64), Compiler: GCC 10.3.0, File-System: overlayfs, Screen Resolution: 1024x768, System Layer: Docker

Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-link-mutex --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-10-poYruo/gcc-10-10.3.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-10-poYruo/gcc-10-10.3.0/debian/tmp-gcn/usr,hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-build-config=bootstrap-lto-lean --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: intel_cpufreq ondemand - CPU Microcode: 0x5003102
Disk Scheduler Notes: MQ-DEADLINE

native

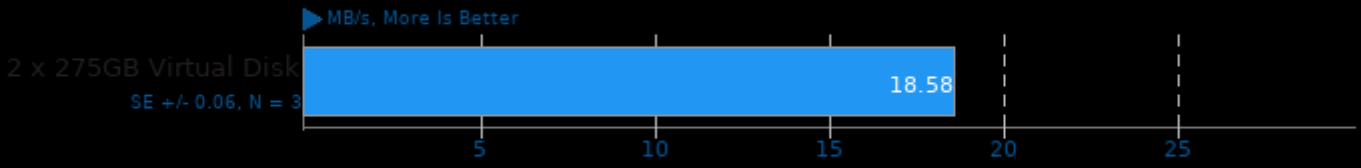
Python Notes: Python 2.7.18 + Python 3.8.10
Security Notes: itlb_multihit: KVM: Mitigation of VMX disabled + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Enhanced IBRS IBPB: conditional RSB filling + srbds: Not affected + tsx_async_abort: Mitigation of TSX disabled

	2 x 275GB Virtual Disk
IOzone - 4Kb - 8GB - Write Performance (MB/s)	18.58
Standard Deviation	0.6%
IOzone - 4Kb - 8GB - Read Performance (MB/s)	5129
Standard Deviation	2.1%
LevelDB - Seq Fill (us/Op)	576.761
Standard Deviation	0.8%
LevelDB - Seq Fill (MB/s)	10.7
Standard Deviation	0.9%
LevelDB - Rand Delete (us/Op)	555.659
Standard Deviation	0.2%
Compile Bench - Compile (MB/s)	1880
Standard Deviation	3.2%
LevelDB - Rand Read (us/Op)	53.322
Standard Deviation	5.8%
LevelDB - Hot Read (us/Op)	52.960
Standard Deviation	5.2%
Threaded I/O Tester - Rand Write - 64MB - 16 (MB/s)	3238
Standard Deviation	7%
Threaded I/O Tester - Rand Read - 64MB - 16 (MB/s)	204519
Standard Deviation	26.4%
LevelDB - Seek Rand (us/Op)	61.355
Standard Deviation	0.6%
LevelDB - Rand Fill (us/Op)	577.638
Standard Deviation	0.4%
LevelDB - Rand Fill (MB/s)	10.7
Standard Deviation	0%
LevelDB - Overwrite (us/Op)	574.525
Standard Deviation	0.2%
LevelDB - Overwrite (MB/s)	10.8
Standard Deviation	0.5%
Gzip Compression - L.S.T.A.T.t.g (sec)	43.364
Standard Deviation	0.1%
Threaded I/O Tester - Write - 64MB - 16 (MB/s)	82.958
Standard Deviation	2.2%
Threaded I/O Tester - Read - 64MB - 16 (MB/s)	22980
Standard Deviation	1.2%
Unpacking The Linux Kernel - linux-4.15.tar.xz (sec)	7.195
Standard Deviation	0.7%
LevelDB - Fill Sync (us/Op)	1024
Standard Deviation	0.8%
LevelDB - Fill Sync (MB/s)	6
Compile Bench - Read Compiled Tree (MB/s)	815.61
Standard Deviation	14.3%
Compile Bench - Initial Create (MB/s)	464.54

Standard Deviation 4.9%

IOzone 3.465

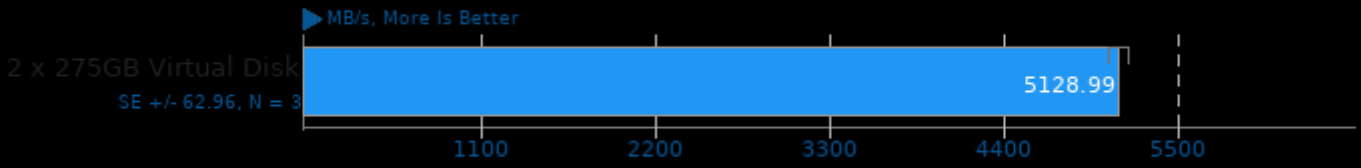
Record Size: 4Kb - File Size: 8GB - Disk Test: Write Performance



1. (CC) gcc options: -O3

IOzone 3.465

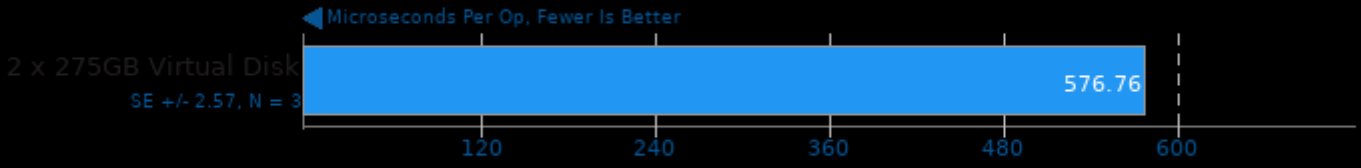
Record Size: 4Kb - File Size: 8GB - Disk Test: Read Performance



1. (CC) gcc options: -O3

LevelDB 1.22

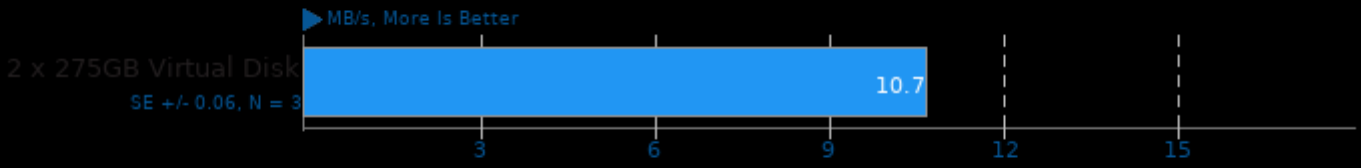
Benchmark: Sequential Fill



1. (CXX) g++ options: -O3 -lsnappy -lpthread

LevelDB 1.22

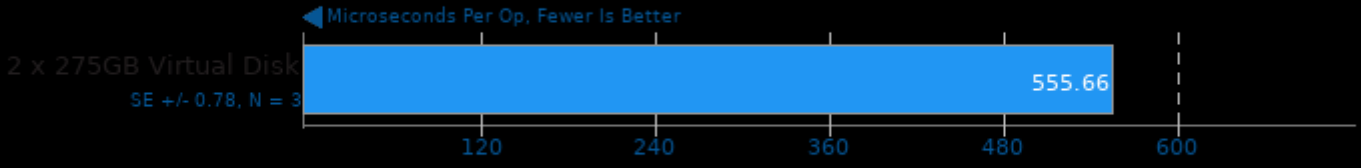
Benchmark: Sequential Fill



1. (CXX) g++ options: -O3 -lsnappy -lpthread

LevelDB 1.22

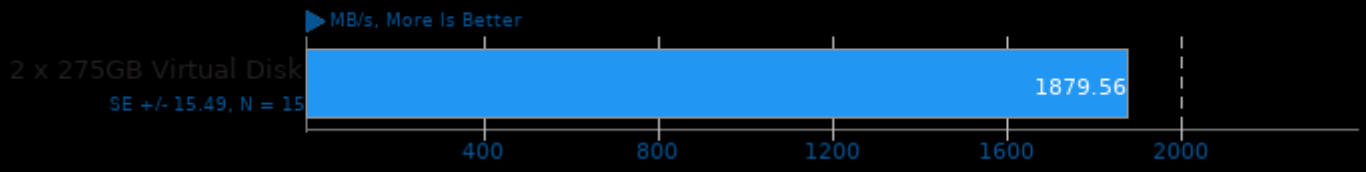
Benchmark: Random Delete



1. (CXX) g++ options: -O3 -lsnappy -lpthread

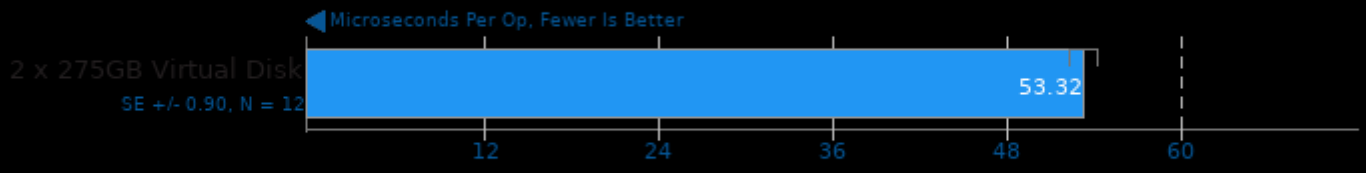
Compile Bench 0.6

Test: Compile



LevelDB 1.22

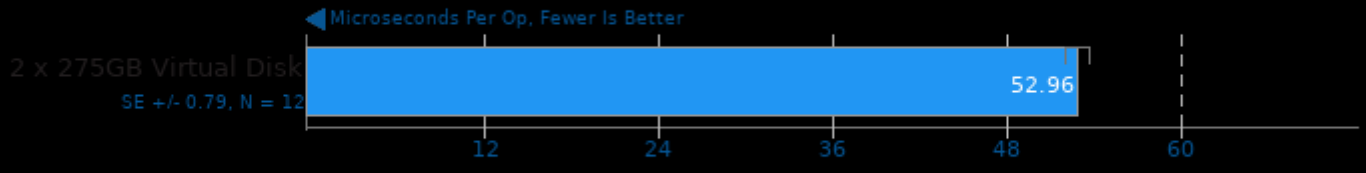
Benchmark: Random Read



1. (CXX) g++ options: -O3 -lsnappy -lpthread

LevelDB 1.22

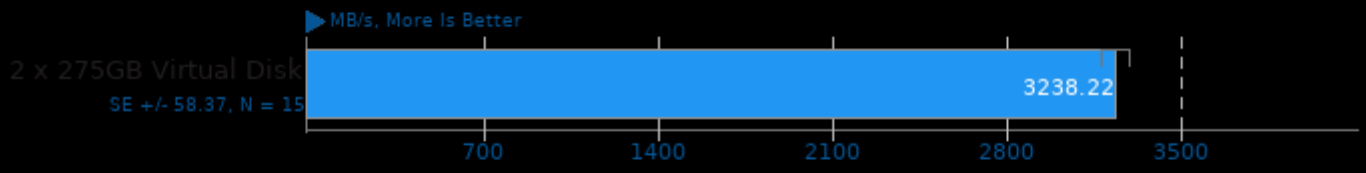
Benchmark: Hot Read



1. (CXX) g++ options: -O3 -lsnappy -lpthread

Threaded I/O Tester 20170503

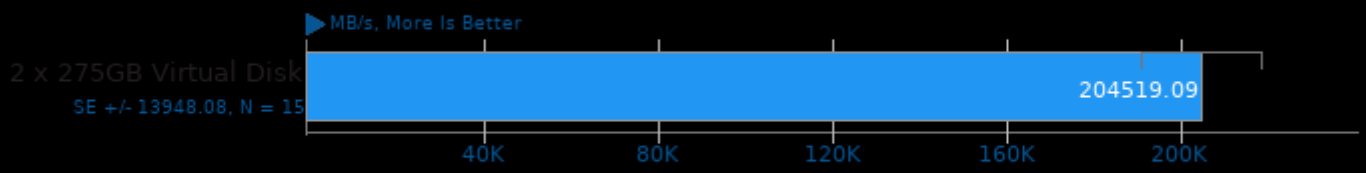
Test: Random Write - Size Per Thread: 64MB - Thread Count: 16



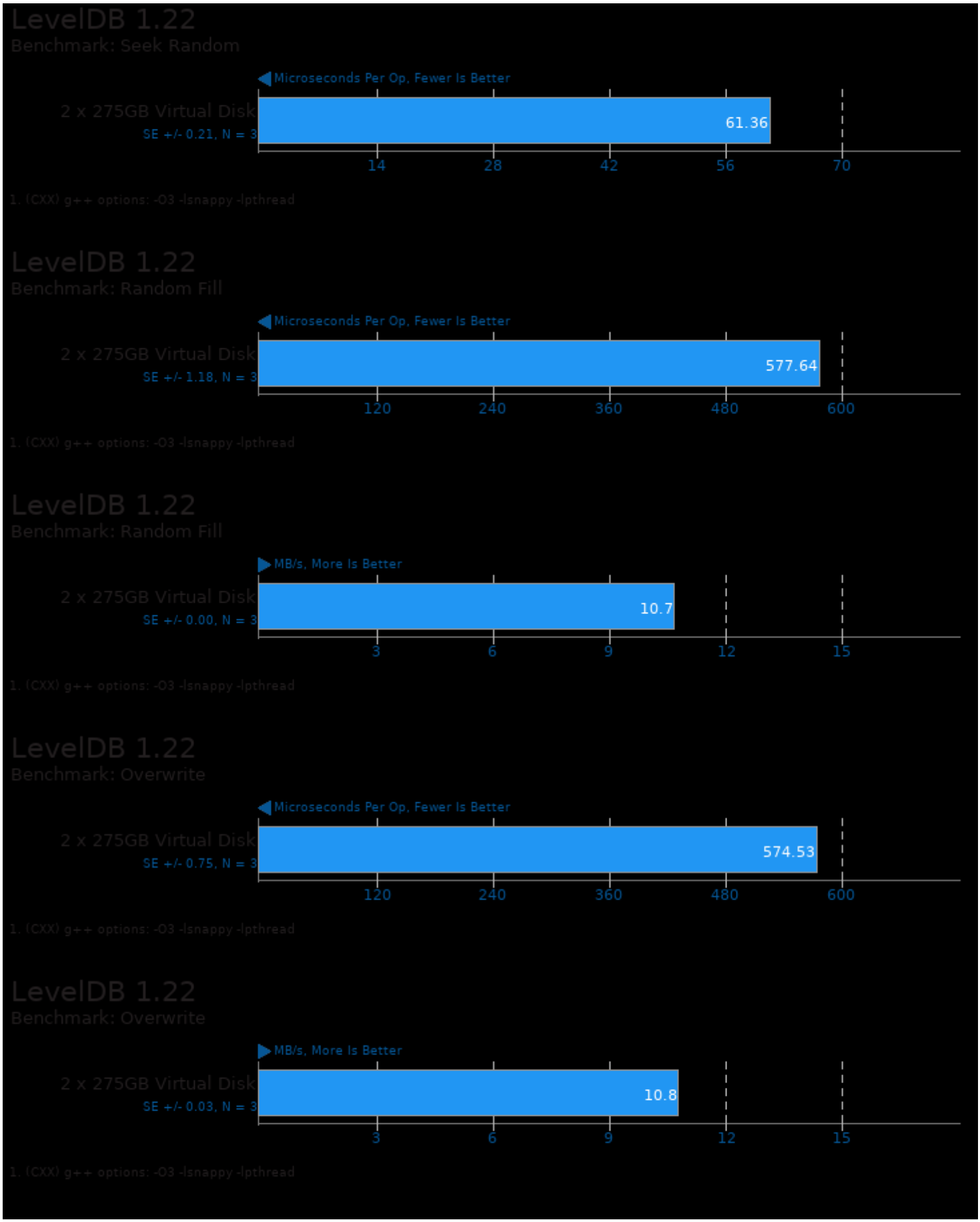
1. (CC) gcc options: -O2

Threaded I/O Tester 20170503

Test: Random Read - Size Per Thread: 64MB - Thread Count: 16

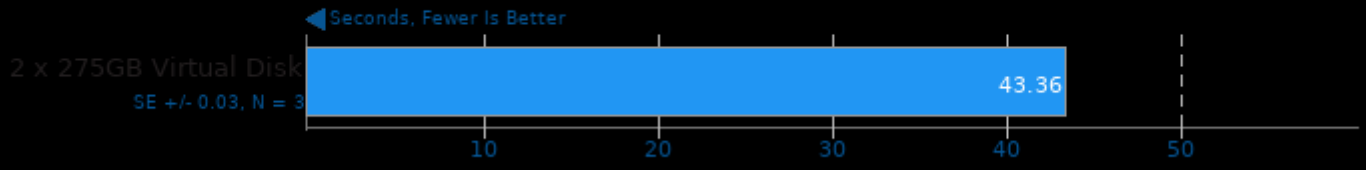


1. (CC) gcc options: -O2


LevelDB 1.22
Benchmark: Seek Random
Microseconds Per Op, Fewer Is Better
2 x 275GB Virtual Disk
SE +/- 0.21, N = 3
61.36
14
28
42
56
70
1. (CXX) g++ options: -O3 -lsnappy -lpthread
LevelDB 1.22
Benchmark: Random Fill
Microseconds Per Op, Fewer Is Better
2 x 275GB Virtual Disk
SE +/- 1.18, N = 3
577.64
120
240
360
480
600
1. (CXX) g++ options: -O3 -lsnappy -lpthread
LevelDB 1.22
Benchmark: Random Fill
MB/s, More Is Better
2 x 275GB Virtual Disk
SE +/- 0.00, N = 3
10.7
3
6
9
12
15
1. (CXX) g++ options: -O3 -lsnappy -lpthread
LevelDB 1.22
Benchmark: Overwrite
Microseconds Per Op, Fewer Is Better
2 x 275GB Virtual Disk
SE +/- 0.75, N = 3
574.53
120
240
360
480
600
1. (CXX) g++ options: -O3 -lsnappy -lpthread
LevelDB 1.22
Benchmark: Overwrite
MB/s, More Is Better
2 x 275GB Virtual Disk
SE +/- 0.03, N = 3
10.8
3
6
9
12
15
1. (CXX) g++ options: -O3 -lsnappy -lpthread

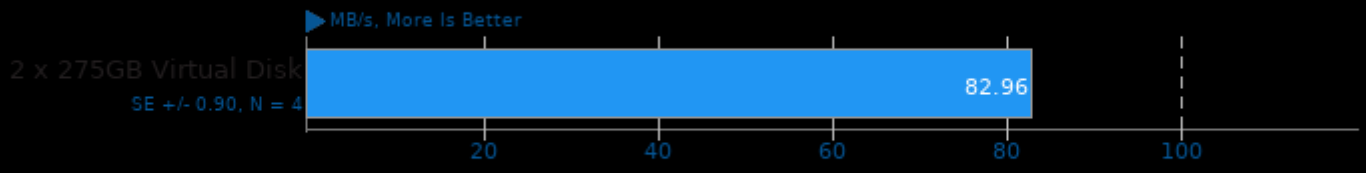
Gzip Compression

Linux Source Tree Archiving To .tar.gz



Threaded I/O Tester 20170503

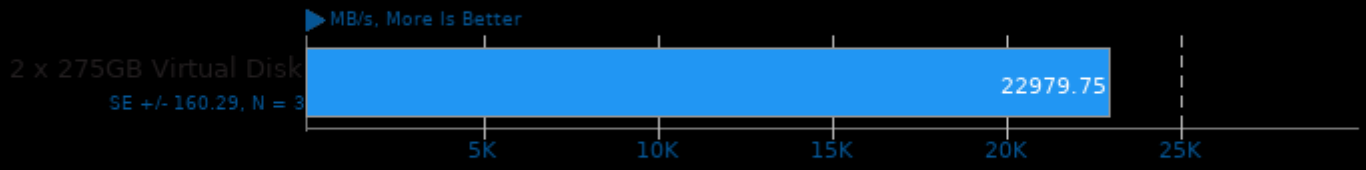
Test: Write - Size Per Thread: 64MB - Thread Count: 16



1. (CC) gcc options: -O2

Threaded I/O Tester 20170503

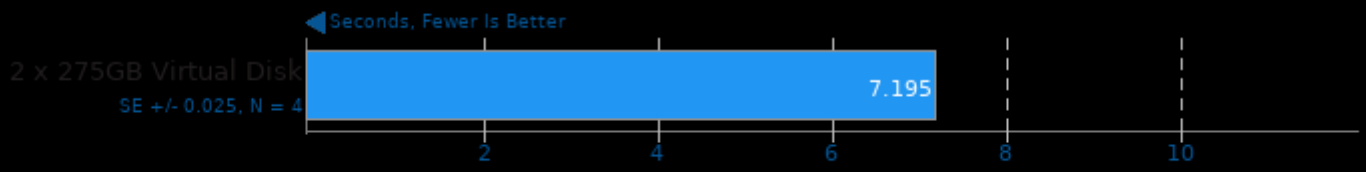
Test: Read - Size Per Thread: 64MB - Thread Count: 16



1. (CC) gcc options: -O2

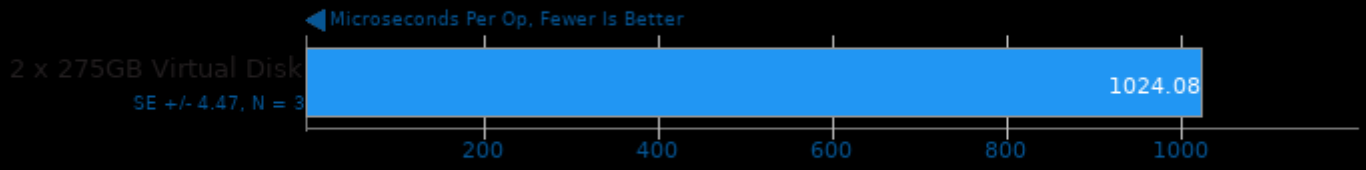
Unpacking The Linux Kernel

linux-4.15.tar.xz

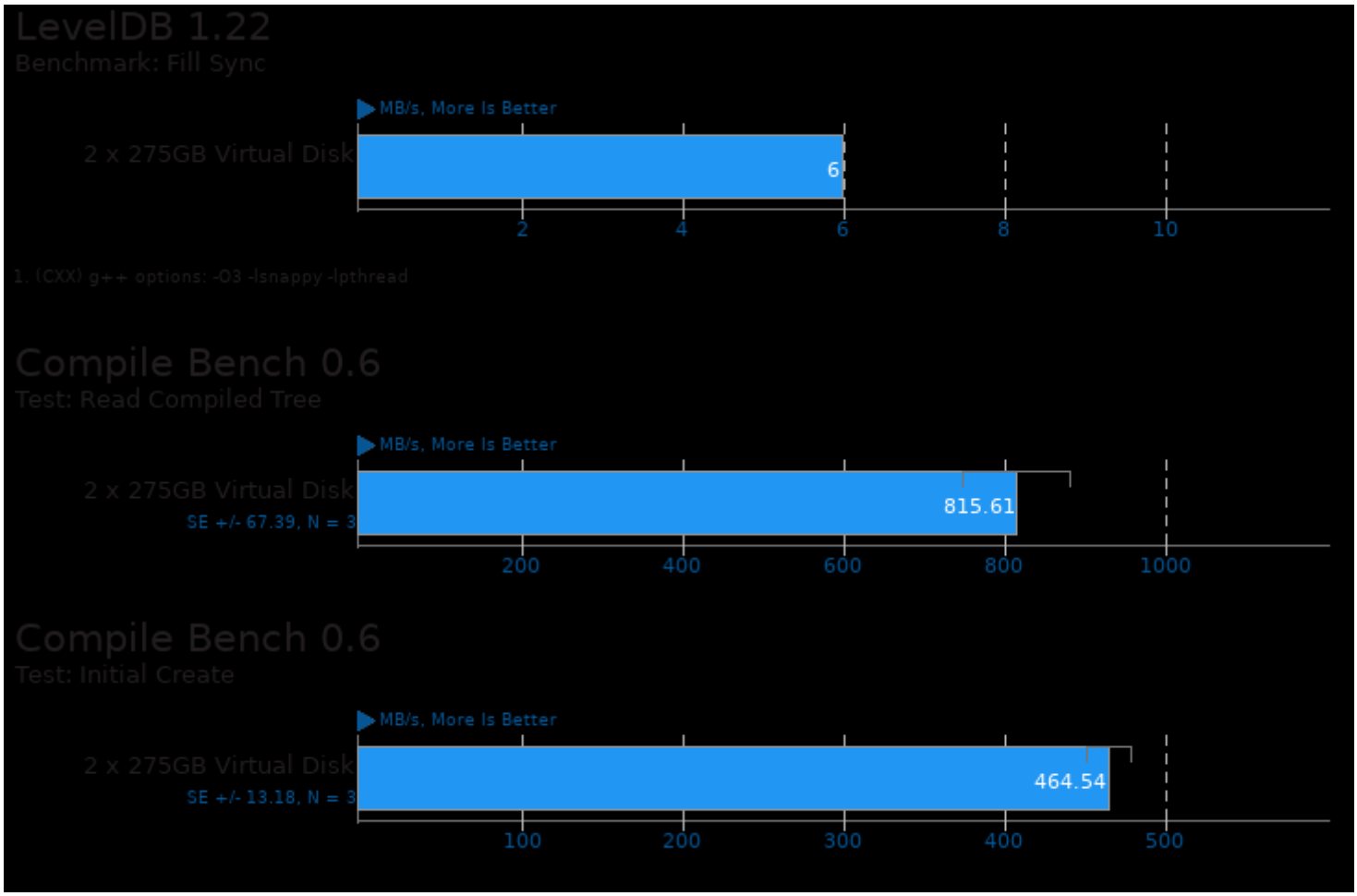


LevelDB 1.22

Benchmark: Fill Sync



1. (CXX) g++ options: -O3 -lsnappy -lpthread



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