



www.phoronix-test-suite.com

default-kernel

KVM testing on Debian 11 via the Phoronix Test Suite.

Test Systems:

0001

Processor: 16 x AMD Ryzen 9 5900X 12-Core (16 Cores), Motherboard: QEMU Standard PC (Q35 + ICH9 2009) (Arch Linux 1.16.0-3-3 BIOS), Chipset: Intel 82G33/G31/P35/P31 + ICH9, Memory: 16GB, Disk: 97GB, Graphics: Red Hat Virtio GPU, Audio: QEMU Generic, Monitor: QEMU Monitor, Network: Red Hat Virtio device

OS: Debian 11, Kernel: 5.10.0-18-amd64 (x86_64), Desktop: Xfce, Display Server: X Server 1.20.11, Vulkan: 1.0.2, Compiler: GCC 10.2.1 20210110, File-System: ext4, Screen Resolution: 1280x800, System Layer: KVM

Kernel Notes: Transparent Huge Pages: always
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,objc++,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-Km9U7s/gcc-10-10.2.1/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-10-Km9U7s/gcc-10-10.2.1/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: CPU Microcode: 0xa201009

Security Notes: itlb_multithit: Not affected + I1tf: Not affected + mds: Not affected + meltdown: Not affected + mmio_stale_data: Not affected + rebleed: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Retpolines IBPB: conditional IBRS_FW STIBP: disabled RSB filling PBRSB-eIBRS: Not affected + srbd: Not affected + tsx_async_abort: Not affected

0002

0003

default

Processor: AMD Ryzen 9 5900X 12-Core (12 Cores), Motherboard: QEMU Standard PC (Q35 + ICH9 2009) (Arch Linux 1.16.0-3-3 BIOS), Chipset: Intel 82G33/G31/P35/P31 + ICH9, Memory: 16GB, Disk: 97GB, Graphics: Red Hat Virtio GPU, Audio: QEMU Generic, Monitor: QEMU Monitor, Network: Red Hat Virtio device

OS: Debian 11, Kernel: 5.10.0-18-amd64 (x86_64), Display Server: X Server 1.20.11, Vulkan: 1.0.2, Compiler: GCC 10.2.1 20210110, File-System: ext4, Screen Resolution: 1280x800, System Layer: KVM

Kernel Notes: Transparent Huge Pages: always

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,objc++,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-Km9U7s/gcc-10-10.2.1/debian/tmp-nvptx/usr,amdgn-amdhsa=/build/gcc-10-Km9U7s/gcc-10-10.2.1/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: CPU Microcode: 0xa201009

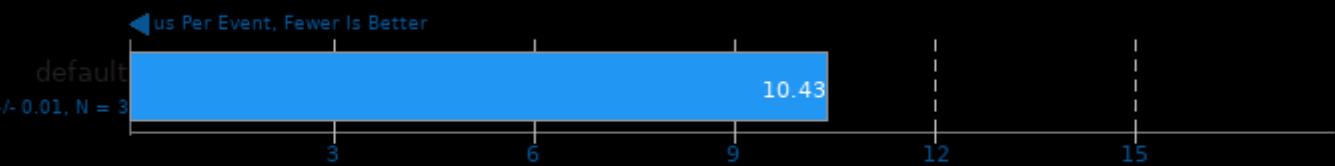
Security Notes: itlb_multithit: Not affected + I1tf: Not affected + mds: Not affected + meltdown: Not affected + mmio_stale_data: Not affected + rebleed: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Retpolines IBPB: conditional IBRS_FW STIBP: disabled RSB filling PBRSB-eIBRS: Not affected + srbd: Not affected + tsx_async_abort: Not affected

	0001	0002	0003	default
OSBench - Create Files (us/Event)				10.431546
Standard Deviation				0.2%
OSBench - Create Threads (us/Event)				8.656502
Standard Deviation				5.7%
OSBench - Launch Programs				27.035872
Standard Deviation				1.8%
OSBench - Create Processes				16.504129
Standard Deviation				1.2%
OSBench - Memory Allocations (Ns/Event)				54.947376
Standard Deviation				0.1%
Timed GCC Compilation - Time To Compile (sec)				749.856
Standard Deviation				0.3%
OpenSSL - RSA4096 (sign/s)				3749
Standard Deviation				0.1%
OpenSSL - RSA4096 (verify/s)				248233
Standard Deviation				0.2%
BenchmarkMutex - S.M.L.S (ns)				16.7
Standard Deviation				0.6%

BenchmarkMutex - M.L.U.s (ns)	19.7
Standard Deviation	0.3%
BenchmarkMutex - M.L.U.s.m (ns)	13.1
Standard Deviation	2.3%
BenchmarkMutex - M.L.U.s.m (ns)	15.0
Standard Deviation	0.4%
BenchmarkMutex - S.R.A.A (ns)	8.77
Standard Deviation	1%
BenchmarkMutex - M.L.U.s (ns)	21.4
Standard Deviation	0.3%
BenchmarkMutex - M.L.U.p (ns)	9.40
Standard Deviation	0.3%
BenchmarkMutex - M.L.U.t (ns)	8.33
Standard Deviation	2.4%

OSBench

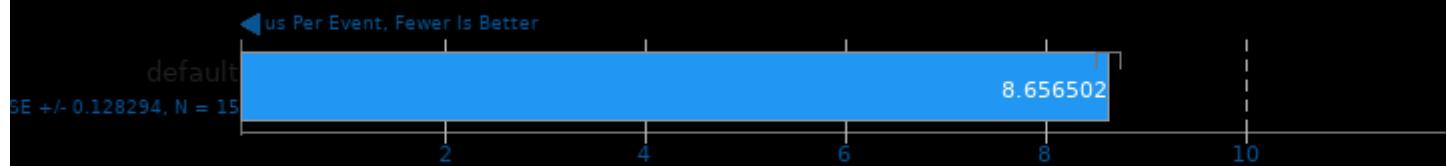
Test: Create Files



1. (CC) gcc options: -lm

OSBench

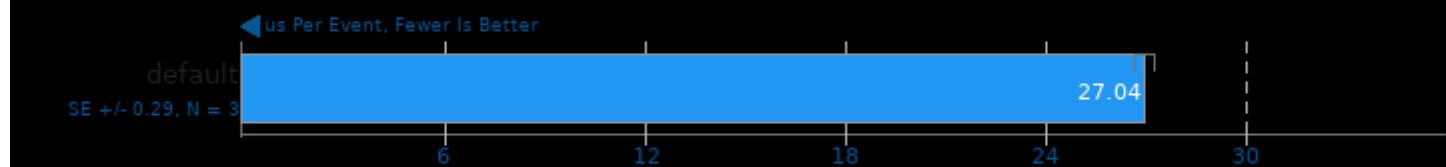
Test: Create Threads



1. (CC) gcc options: -lm

OSBench

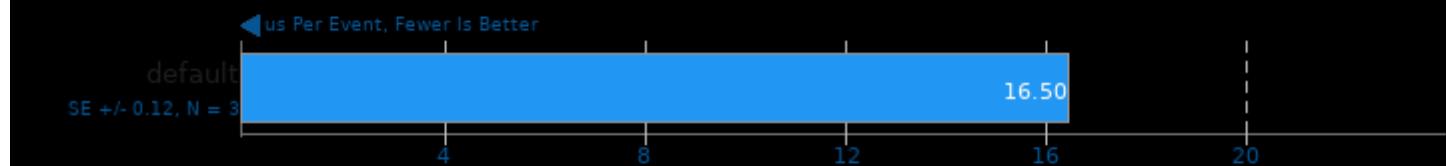
Test: Launch Programs



1. (CC) gcc options: -lm

OSBench

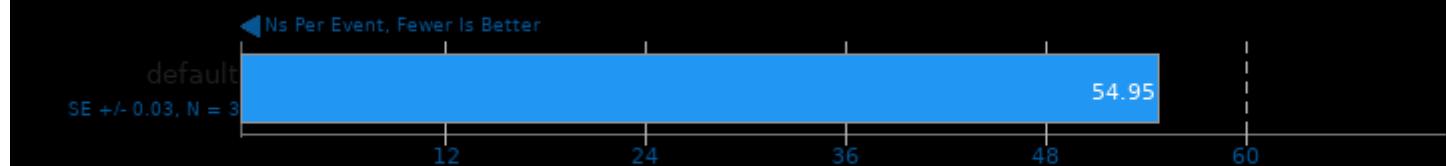
Test: Create Processes



1. (CC) gcc options: -lm

OSBench

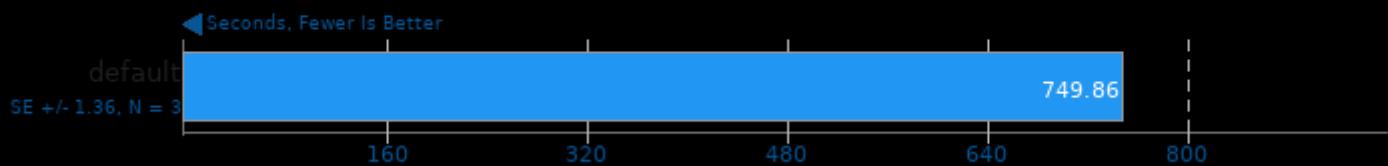
Test: Memory Allocations



1. (CC) gcc options: -lm

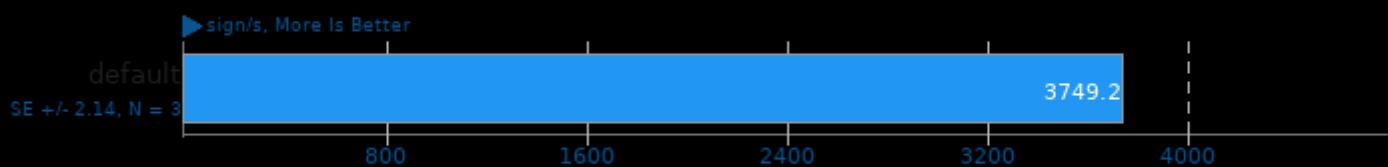
Timed GCC Compilation 11.2.0

Time To Compile



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

BenchmarkMutex

Benchmark: Shared Mutex Lock Shared



1. (CXX) g++ options: -std=c++17 -lbenchmark -pthread

BenchmarkMutex

Benchmark: Mutex Lock Unlock spinlock



1. (CXX) g++ options: -std=c++17 -lbenchmark -pthread

BenchmarkMutex

Benchmark: Mutex Lock Unlock std::mutex



1. (CXX) g++ options: -std=c++17 -lbenchmark -pthread

BenchmarkMutex

Benchmark: Mutex Lock Unlock std::mutex



1. (CXX) g++ options: -std=c++17 -lbenchmark -pthread

BenchmarkMutex

Benchmark: Semaphore Release And Acquire



1. (CXX) g++ options: -std=c++17 -lbenchmark -pthread

BenchmarkMutex

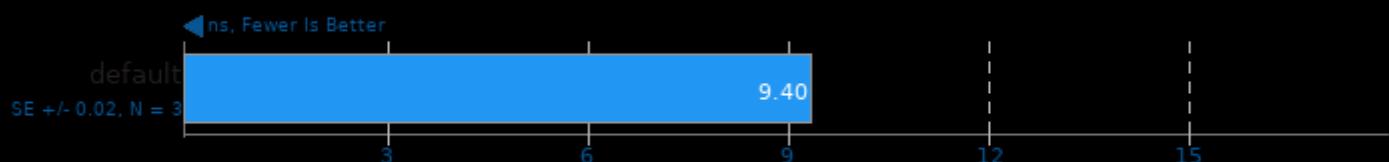
Benchmark: Mutex Lock Unlock spinlock_amd



1. (CXX) g++ options: -std=c++17 -lbenchmark -pthread

BenchmarkMutex

Benchmark: Mutex Lock Unlock pthread_mutex



1. (CXX) g++ options: -std=c++17 -lbenchmark -pthread

