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cc23assignment2

Xen HVM domU 4.2.amazon testing on Ubuntu 22.04 via the Phoronix Test Suite.

Automated Executive Summary

typeT had the most wins, coming in first place for 76% of the tests.

Test Systems:

Intel Xeon E5-2686 v4

typeT

Processor: Intel Xeon E5-2686 v4 (2 Cores), Motherboard: Xen HVM domU (4.2.amazon BIOS), Chipset: Intel 440FX 82441FX PMC, Memory: 8GB, Disk: 8GB, Graphics: Cirrus Logic GD 5446

OS: Ubuntu 22.04, Kernel: 5.15.0-1028-aws (x86_64), Vulkan: 1.2.204, Compiler: GCC 11.3.0, File-System: ext4, System Layer: Xen HVM domU 4.2.amazon

Kernel Notes: Transparent Huge Pages: madvise

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --enable-cet --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-serialization=2 --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-11-xKiWfi/gcc-11-11.3.0/debian/tmp-nvptx/usr,amdgn-amdhsa=/build/gcc-11-xKiWfi/gcc-11-11.3.0/debian/tmp-gcn/usr --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: 0xb000040

Security Notes: itlb_multithit: KVM: Mitigation of VMX unsupported + l1tf: Mitigation of PTE Inversion + mds: Vulnerable: Clear buffers attempted no microcode; SMT Host state unknown + meltdown: Mitigation of PTI + mmio_stale_data: Vulnerable: Clear buffers attempted no microcode; SMT Host state unknown + rebleed: Not affected + spec_store_bypass: Vulnerable + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Retpolines STIBP: disabled RSB filling PBRSB-eIBRS: Not affected + srbs: Not affected + tsx_async_abort: Not affected

typeM

Processor: Intel Xeon E5-2651 v2 (2 Cores), Motherboard: Xen HVM domU (4.2.amazon BIOS), Chipset: Intel 440FX 82441FX PMC, Memory: 8GB, Disk: 8GB, Graphics: Cirrus Logic GD 5446

OS: Ubuntu 22.04, Kernel: 5.15.0-1028-aws (x86_64), Vulkan: 1.2.204, Compiler: GCC 11.3.0, File-System: ext4, System Layer: Xen HVM domU 4.2.amazon

Kernel Notes: Transparent Huge Pages: madvise

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --enable-cet --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-serialization=2 --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-11-xKiWfi/gcc-11-11.3.0/debian/tmp-nvptx/usr,amdgn-amdhsa=/build/gcc-11-xKiWfi/gcc-11-11.3.0/debian/tmp-gcn/usr --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: 0x42e

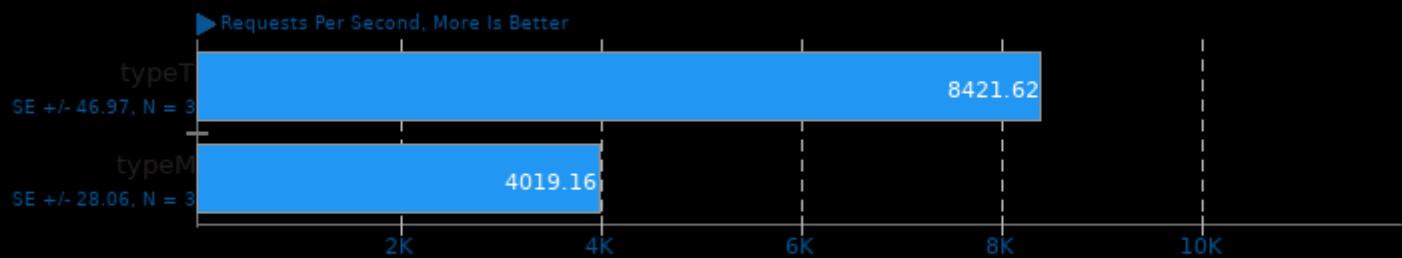
Security Notes: itlb_multithit: KVM: Mitigation of VMX unsupported + l1tf: Mitigation of PTE Inversion + mds: Vulnerable: Clear buffers attempted no microcode; SMT Host state unknown + meltdown: Mitigation of PTI + mmio_stale_data: Unknown: No mitigations + rebleed: Not affected + spec_store_bypass: Vulnerable + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Retpolines STIBP: disabled RSB filling PBRSB-eIBRS: Not affected + srbs: Not affected + tsx_async_abort: Not affected

	Intel Xeon E5-2686 v4	typeT	typeM
Apache HTTP Server - 20 (Req/sec)	8422	4019	
Normalized	100%	47.72%	
Standard Deviation	1%	1.2%	
Apache HTTP Server - 1000 (Req/sec)	7879	3800	
Normalized	100%	48.23%	
Standard Deviation	0.6%	2.2%	
Apache HTTP Server - 500 (Req/sec)	8037	3885	
Normalized	100%	48.35%	
Standard Deviation	1.1%	2.9%	
Apache HTTP Server - 200 (Req/sec)	8116	3964	
Normalized	100%	48.85%	
Standard Deviation	0.7%	1.3%	
Apache HTTP Server - 100 (Req/sec)	8101	4008	
Normalized	100%	49.48%	
Standard Deviation	0.1%	2%	
OpenSSL - SHA256 (byte/s)	444463267		223973914
Normalized	100%	50.39%	
Standard Deviation	0%	2.4%	
Apache HTTP Server - 1 (Req/sec)	4231	2218	
Normalized	100%	52.42%	
Standard Deviation	0.6%	1.5%	

LAME MP3 Encoding - WAV To MP3 (sec)	14.029	25.838
Normalized	100%	54.3%
Standard Deviation	1.1%	0.7%
OpenSSL - RSA4096 (verify/s)	16025	8827
Normalized	100%	55.08%
Standard Deviation	0.2%	2.5%
John The Ripper - Blowfish (Real C/S)	1555	863
Normalized	100%	55.5%
Standard Deviation	0.1%	3.1%
OpenSSL - RSA4096 (sign/s)	245.6	138.4
Normalized	100%	56.35%
Standard Deviation	1.1%	1.4%
Loopback TCP Network Performance -	19.713	33.022
T.T.T.1.V.L (sec)		
Normalized	100%	59.7%
Standard Deviation	0.4%	1.1%
Stream - Add (MB/s)	18415	13286
Normalized	100%	72.15%
Standard Deviation	0.7%	1.5%

Apache HTTP Server 2.4.48

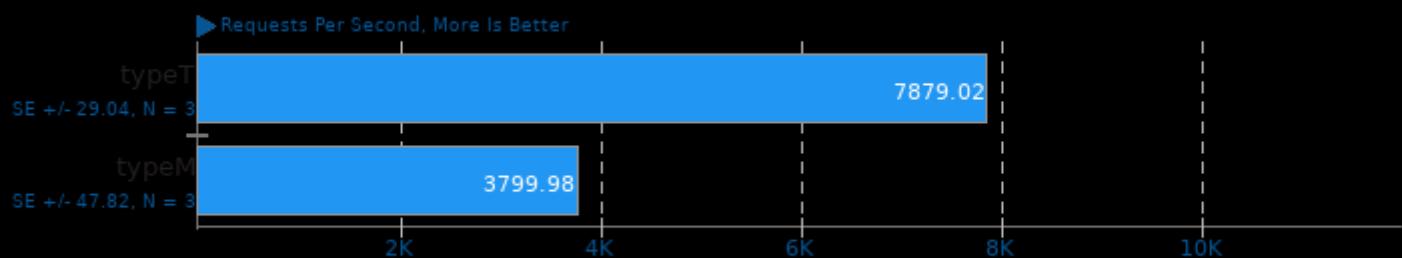
Concurrent Requests: 20



1. (CC) gcc options: -shared -fPIC -O2

Apache HTTP Server 2.4.48

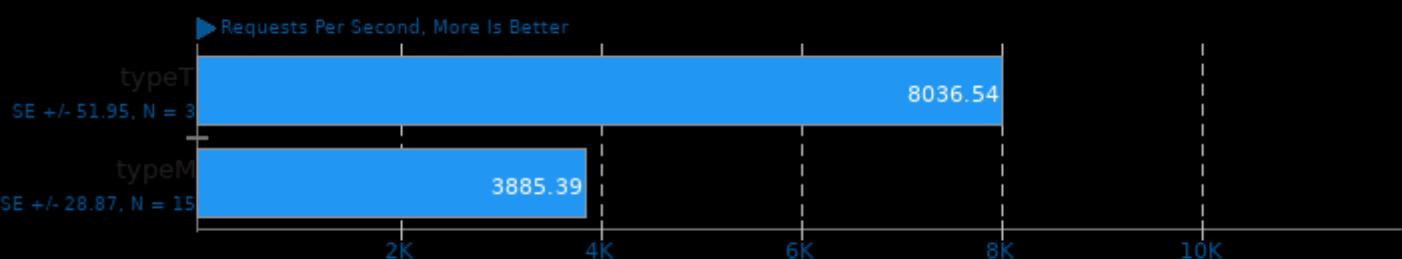
Concurrent Requests: 1000



1. (CC) gcc options: -shared -fPIC -O2

Apache HTTP Server 2.4.48

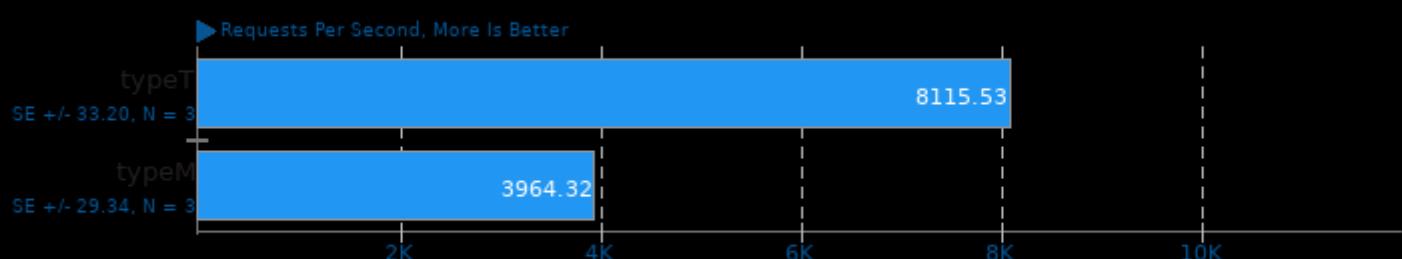
Concurrent Requests: 500



1. (CC) gcc options: -shared -fPIC -O2

Apache HTTP Server 2.4.48

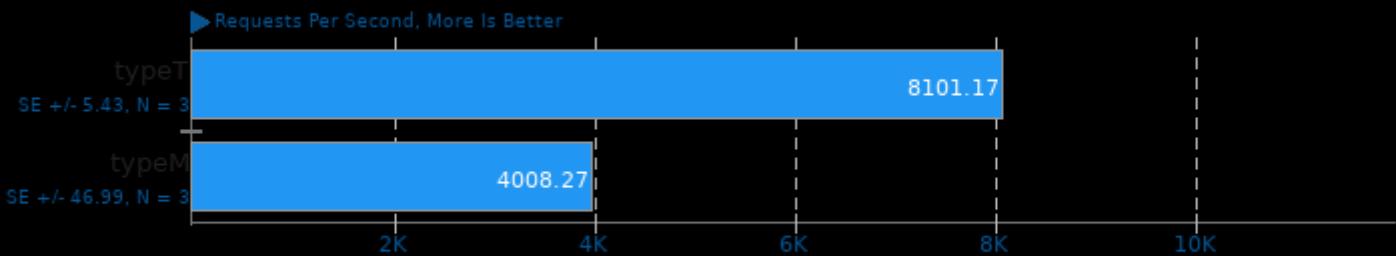
Concurrent Requests: 200



1. (CC) gcc options: -shared -fPIC -O2

Apache HTTP Server 2.4.48

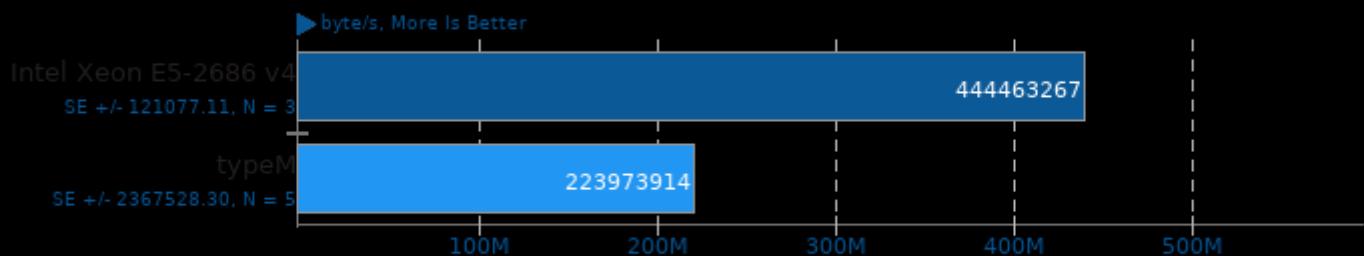
Concurrent Requests: 100



1. (CC) gcc options: -shared -fPIC -O2

OpenSSL 3.0

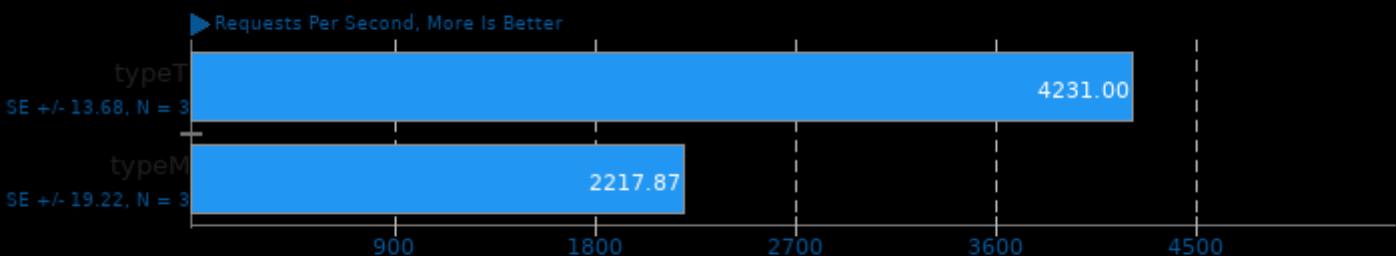
Algorithm: SHA256



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

Apache HTTP Server 2.4.48

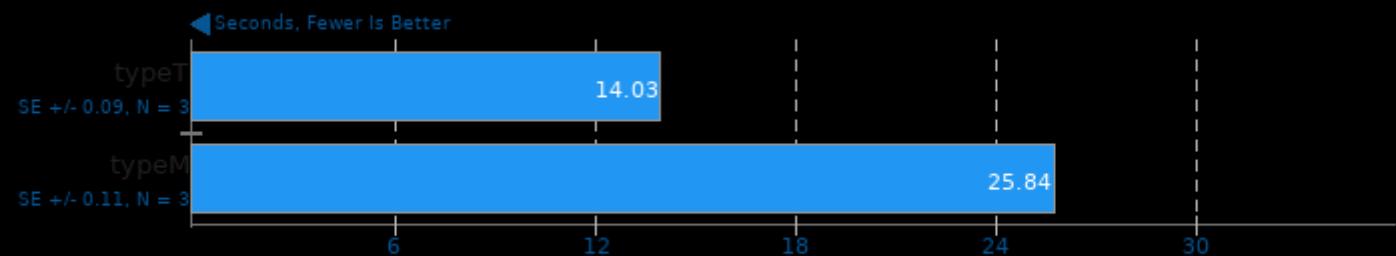
Concurrent Requests: 1



1. (CC) gcc options: -shared -fPIC -O2

LAME MP3 Encoding 3.100

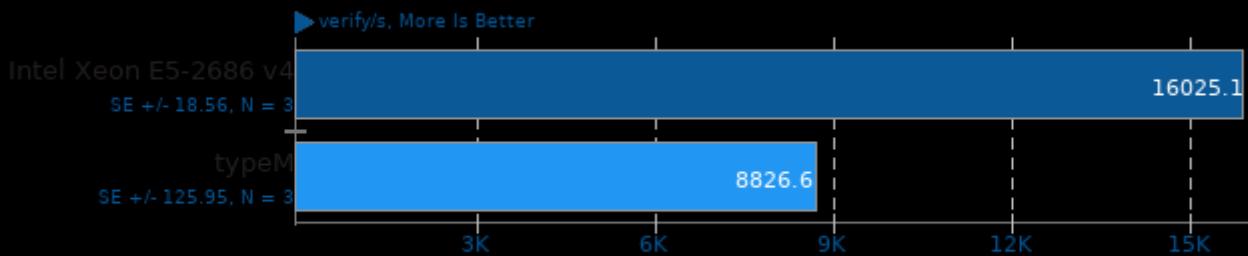
WAV To MP3



1. (CC) gcc options: -O3 -ffast-math -funroll-loops -fschedule-insns2 -fbranch-count-reg -fforce-addr -pipe -lm

OpenSSL 3.0

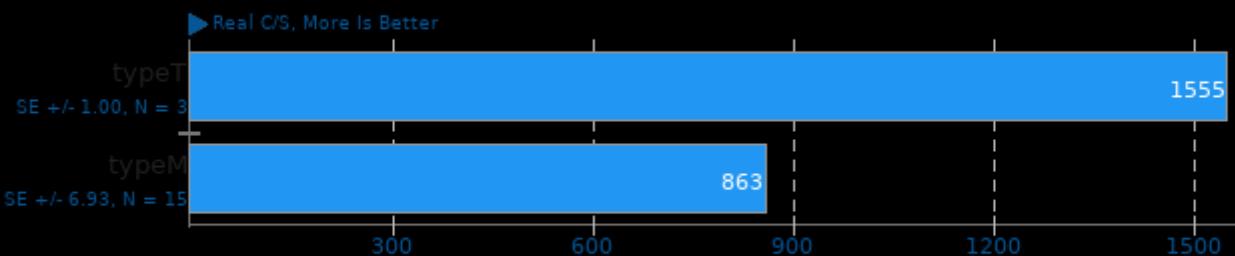
Algorithm: RSA4096



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

John The Ripper 1.8.0

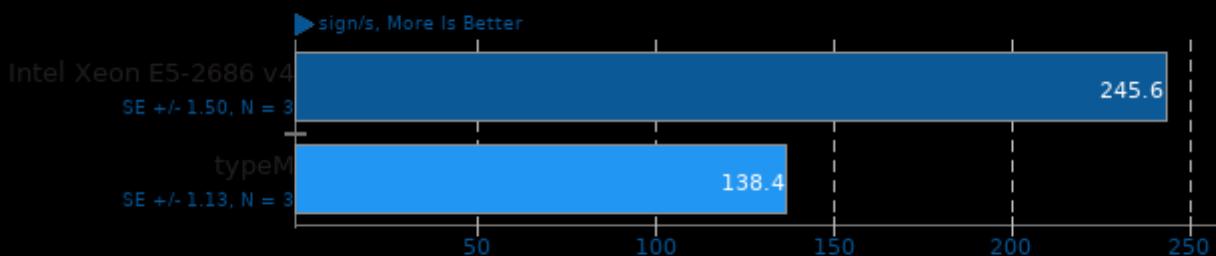
Test: Blowfish



1. (CC) gcc options: -fopenmp -lcrypt

OpenSSL 3.0

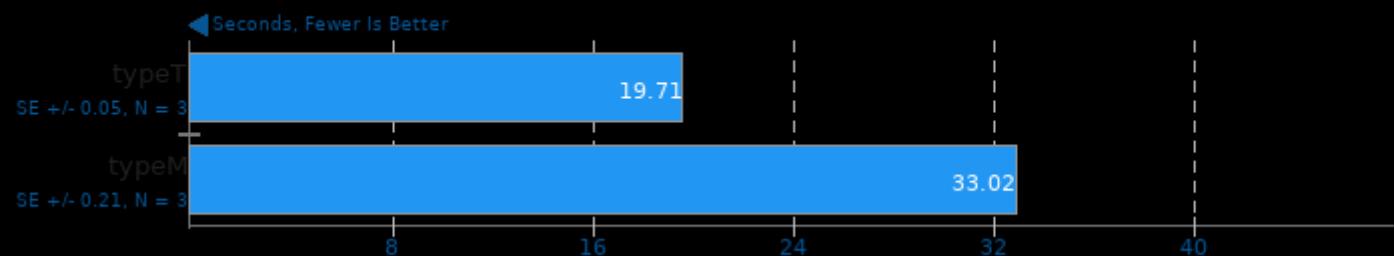
Algorithm: RSA4096



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

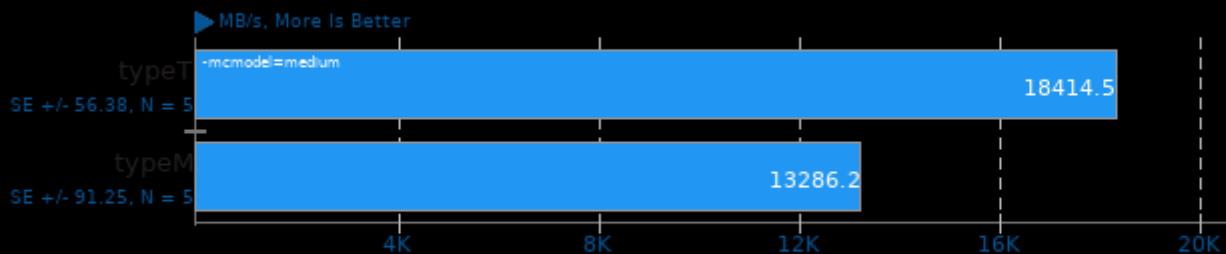
Loopback TCP Network Performance

Time To Transfer 10GB Via Loopback



Stream 2013-01-17

Type: Add



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

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