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g3258-scimark

Intel Core i7-5775C testing with a ASUS Z97I-PLUS (2704 BIOS) and ASUS Intel Iris Pro 6200 on Ubuntu 20.04 via the Phoronix Test Suite.

Automated Executive Summary

stock with undervolt had the most wins, coming in first place for 50% of the tests.

Based on the geometric mean of all complete results, the fastest (stock with undervolt) was 1.073x the speed of the slowest (westmere). native was 0.934x the speed of stock with undervolt and westmere was 0.998x the speed of native.

Test Systems:

native

westmere

Processor: Intel Pentium G3258 @ 4.00GHz (2 Cores), Motherboard: ASUS Z97I-PLUS (2401 BIOS), Chipset: Intel 4th

Gen Core DRAM, Memory: 8GB, Disk: 31GB Ultra, Graphics: ASUS Intel Xeon E3-1200 v3/4th Gen Core IGP (1100MHz), Audio: Intel Xeon E3-1200 v3/4th, Monitor: iScan Duo, Network: Intel I218-V

OS: Ubuntu 20.04, Kernel: 5.4.0-53-generic (x86_64), Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 1920x1080

Environment Notes: CXXFLAGS=-march=westmere CFLAGS=-march=westmere
 Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --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++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-9-HskZEA/gcc-9-9.3.0/debian/tmp-nvptx/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-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_pstate performance - CPU Microcode: 0x28 - Thermal 1.9.1

Security Notes: itlb_multihit: KVM: Vulnerable + I1tf: Mitigation of PTE Inversion + mds: Mitigation of Clear buffers; SMT disabled + meltdown: Mitigation of PTI + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swaps barriers and __user pointer sanitization + spectre_v2: Mitigation of Full generic retrpoline IBPB: conditional IBRS_FW STIBP: disabled RSB filling + srbd: Mitigation of Microcode + tsx_async_abort: Not affected

stock with undervolt

Processor: Intel Core i7-5775C @ 3.70GHz (4 Cores / 8 Threads), Motherboard: ASUS Z97I-PLUS (2704 BIOS), Chipset: Intel Broadwell-U DMI, Memory: 8GB, Disk: 128GB FCCT128M4SSD1, Graphics: ASUS Intel Iris Pro 6200 (1150MHz), Audio: Intel Broadwell-U Audio, Monitor: iScan Duo, Network: Intel I218-V

OS: Ubuntu 20.04, Kernel: 5.4.0-67-generic (x86_64), Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 1920x1080

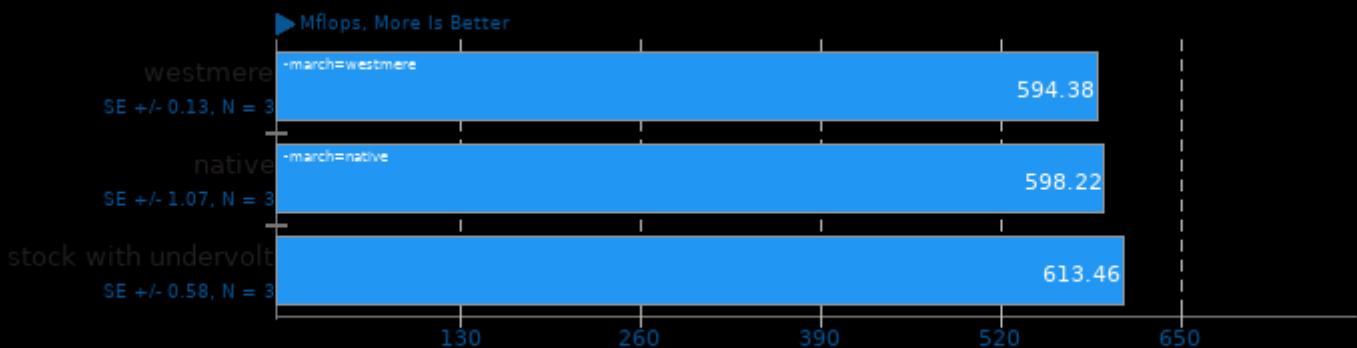
Kernel Notes: Transparent Huge Pages: madvise
 Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-9-HskZEA/gcc-9-9.3.0/debian/tmp-nvptx/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-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_pstate performance - CPU Microcode: 0x22 - Thermal 1.9.1
 Security Notes: itlb_multihit: KVM: Vulnerable + I1tf: Mitigation of PTE Inversion; VMX: vulnerable + mds: Vulnerable; SMT vulnerable + meltdown: Vulnerable + spec_store_bypass: Vulnerable + spectre_v1: Vulnerable: __user pointer sanitization and usercopy barriers only; no swaps barriers + spectre_v2: Vulnerable IBPB: disabled STIBP: disabled + srbd: Vulnerable + tsx_async_abort: Vulnerable

	native	westmere	stock with undervolt
SciMark - Composite (Mflops)	598.22	594.38	613.46
Normalized	97.52%	96.89%	100%
Standard Deviation	0.3%	0%	0.2%
SciMark - Monte Carlo (Mflops)	137.98	134.85	130.31
Normalized	100%	97.73%	94.44%
Standard Deviation	0%	0%	0%
SciMark - F.F.T (Mflops)	147.81	155.98	238.59
Normalized	61.95%	65.38%	100%
Standard Deviation	0.4%	0.6%	0%
SciMark - S.M.M (Mflops)	675.94	650.73	640.83
Normalized	100%	96.27%	94.81%
Standard Deviation	1.4%	0.1%	0%
SciMark - D.L.M.F (Mflops)	850.38	853.45	832.61
Normalized	99.64%	100%	97.56%
Standard Deviation	0%	0%	0.6%
SciMark - J.S.O.R (Mflops)	1179	1177	1225
Normalized	96.25%	96.07%	100%

Standard Deviation 0% 0.1% 0%

SciMark 2.0

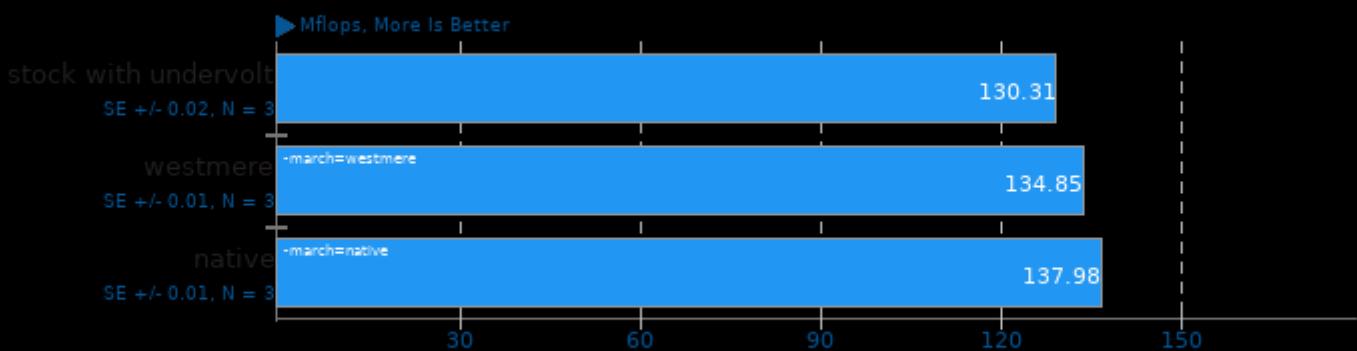
Computational Test: Composite



1. (CC) gcc options: -lm

SciMark 2.0

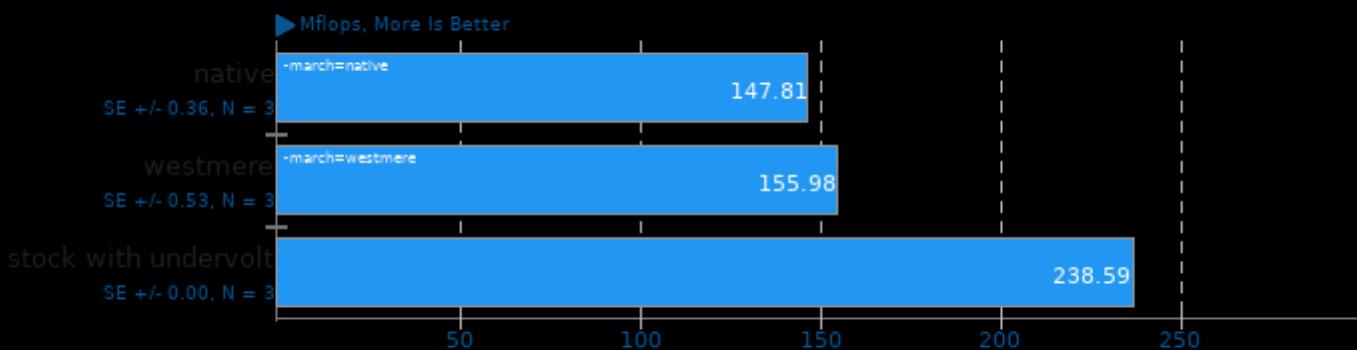
Computational Test: Monte Carlo



1. (CC) gcc options: -lm

SciMark 2.0

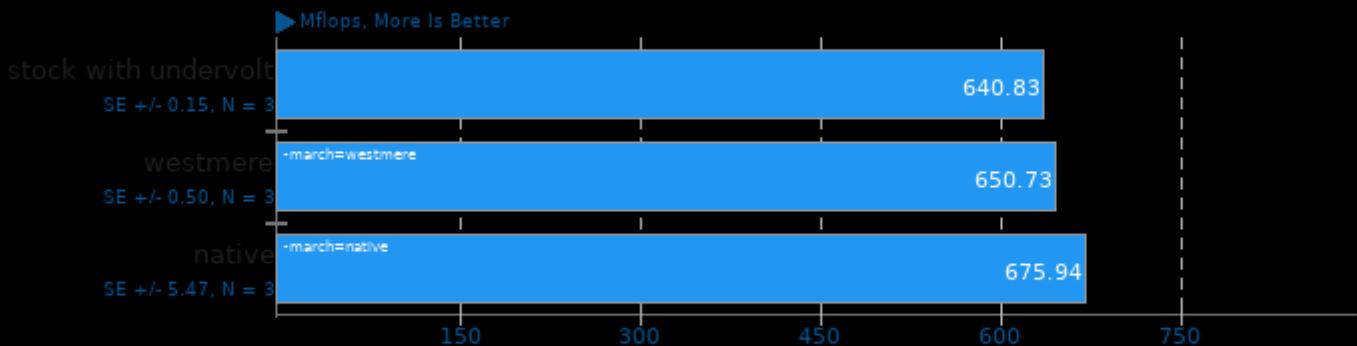
Computational Test: Fast Fourier Transform



1. (CC) gcc options: -lm

SciMark 2.0

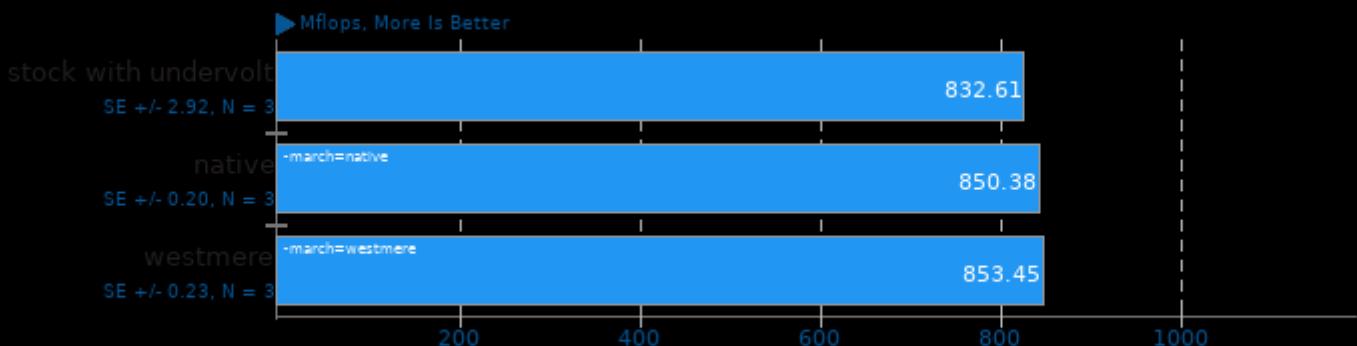
Computational Test: Sparse Matrix Multiply



1. (CC) gcc options: -lm

SciMark 2.0

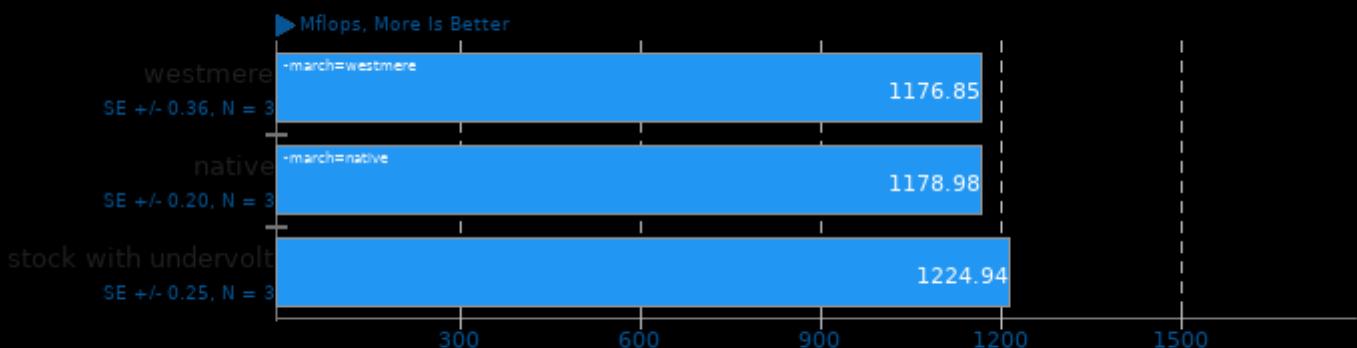
Computational Test: Dense LU Matrix Factorization



1. (CC) gcc options: -lm

SciMark 2.0

Computational Test: Jacobi Successive Over-Relaxation



1. (CC) gcc options: -lm

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