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/home/user/slow_32GB

3000MHz 16GB RAM quick test against 32GB of 2400MHz RAM

Automated Executive Summary

boosted_16GB had the most wins, coming in first place for 92% of the tests.

Based on the geometric mean of all complete results, the fastest (boosted_16GB) was 1.141x the speed of the slowest (slow_32GB). fast_16GB was 0.921x the speed of boosted_16GB and slow_32GB was 0.952x the speed of fast_16GB.

Test Systems:

slow_32GB

Processor: AMD Ryzen 5 2600 Six-Core @ 3.40GHz (6 Cores / 12 Threads), Motherboard: ASUS PRIME B450M-A (3002 BIOS), Chipset: AMD 17h, Memory: 32GB, Disk: Samsung SSD 970 EVO 250GB, Graphics: Sapphire AMD Radeon RX 460/560D / Pro 450/455/460/555/555X/560/560X (1226/1500MHz), Audio: AMD Baffin HDMI/DP, Monitor: PL2474H, Network: Realtek RTL8111/8168/8411

OS: Debian testing, Kernel: 5.15.0-1-amd64 (x86_64), Display Server: X Server 1.20.11, Vulkan: 1.2.182, Compiler: GCC 11.2.0, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: Transparent Huge Pages: always
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-11-9Chg0b/gcc-11-11.2.0/debian/tmp-nvptx/usr,amdgn-amdhsa=/build/gcc-11-9Chg0b/gcc-11-11.2.0/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: Scaling Governor: acpi-cpufreq schedutil (Boost: Disabled) - CPU Microcode: 0x800820d
Security Notes: itlb_multihit: Not affected + 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/swaps barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retrpoline IBPB: conditional STIBP: disabled RSB filling + srbs: Not affected + tsx_async_abort: Not affected

fast_16GB

Processor: AMD Ryzen 5 2600 Six-Core @ 3.40GHz (6 Cores / 12 Threads), Motherboard: ASUS PRIME B450M-A (3002 BIOS), Chipset: AMD 17h, Memory: 16GB, Disk: Samsung SSD 970 EVO 250GB, Graphics: Sapphire AMD Radeon RX 460/560D / Pro 450/455/460/555/555X/560/560X 4GB (1226/1500MHz), Audio: AMD Baffin HDMI/DP, Monitor: PL2474H, Network: Realtek RTL8111/8168/8411

OS: Debian testing, Kernel: 5.15.0-1-amd64 (x86_64), Display Server: X Server 1.20.11, OpenGL: 4.6 Mesa 21.2.5 (LLVM 12.0.1), Vulkan: 1.2.182, Compiler: GCC 11.2.0, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: Transparent Huge Pages: always
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-11-9Chg0b/gcc-11-11.2.0/debian/tmp-nvptx/usr,amdgn-amdhsa=/build/gcc-11-9Chg0b/gcc-11-11.2.0/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: Scaling Governor: acpi-cpufreq schedutil (Boost: Disabled) - CPU Microcode: 0x800820d
Security Notes: itlb_multihit: Not affected + 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/swaps barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retrpoline IBPB: conditional STIBP: disabled RSB filling + srbs: Not affected + tsx_async_abort: Not affected

boosted_16GB

Processor: AMD Ryzen 5 2600 Six-Core @ 3.85GHz (6 Cores / 12 Threads), Motherboard: ASUS PRIME B450M-A (3002 BIOS), Chipset: AMD 17h, Memory: 16GB, Disk: Samsung SSD 970 EVO 250GB, Graphics: Sapphire AMD Radeon RX 460/560D / Pro 450/455/460/555/555X/560/560X 4GB (1226/1500MHz), Audio: AMD Baffin HDMI/DP, Monitor: PL2474H, Network: Realtek RTL8111/8168/8411

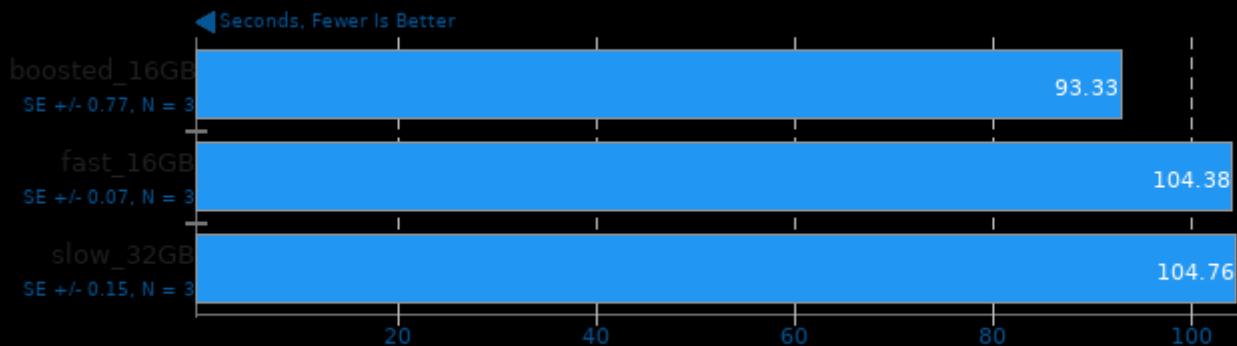
OS: Debian testing, Kernel: 5.15.0-1-amd64 (x86_64), Display Server: X Server 1.20.11, OpenGL: 4.6 Mesa 21.2.5 (LLVM 12.0.1), Vulkan: 1.2.182, Compiler: GCC 11.2.0, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: Transparent Huge Pages: always
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-11-9Chg0b/gcc-11-11.2.0/debian/tmp-nvptx/usr,amdgn-amdhsa=/build/gcc-11-9Chg0b/gcc-11-11.2.0/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: Scaling Governor: acpi-cpufreq schedutil (Boost: Enabled) - CPU Microcode: 0x800820d
Security Notes: itlb_multihit: Not affected + 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/swaps barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retrpoline IBPB: conditional STIBP: disabled RSB filling + srbs: Not affected + tsx_async_abort: Not affected

	slow_32GB	fast_16GB	boosted_16GB
C-Ray - Total Time - 4.1.R.P.P (sec)	104.764	104.376	93.333
Normalized	89.09%	89.42%	100%
Standard Deviation	0.2%	0.1%	1.4%
SciMark - Composite (Mflops)	445.28	442.73	511.52
Normalized	87.05%	86.55%	100%
Standard Deviation	1.2%	2.5%	0.9%
Stream - Copy (MB/s)	29408	35055	35001
Normalized	83.89%	100%	99.85%
Standard Deviation	0.6%	0.3%	0.2%
Himeno Benchmark - P.P.S (MFLOPS)	1064	1067	1206
Normalized	88.21%	88.48%	100%
Standard Deviation	0.4%	0.6%	0.3%
Loopback TCP Network Performance - T.T.T.1.V.L (sec)	13.751	13.107	12.330
Normalized	89.67%	94.07%	100%
Standard Deviation	2.3%	2.5%	1.2%
SciMark - J.S.O.R (Mflops)	887.85	888.79	1003
Normalized	88.53%	88.63%	100%
Standard Deviation	0.8%	0.8%	0.1%
SciMark - D.L.M.F (Mflops)	532.73	516.07	622.47
Normalized	85.58%	82.91%	100%
Standard Deviation	7%	12.7%	3.9%
SciMark - S.M.M (Mflops)	545.59	550.53	639.81
Normalized	85.27%	86.05%	100%
Standard Deviation	5%	2.4%	0.1%
SciMark - F.F.T (Mflops)	146.33	154.91	163.33
Normalized	89.59%	94.84%	100%
Standard Deviation	1.9%	3.3%	3.2%
SciMark - Monte Carlo (Mflops)	113.89	114.01	129.13
Normalized	88.2%	88.29%	100%
Standard Deviation	0.1%	0.2%	0.1%
Stream - Add (MB/s)	22700	25800	25820
Normalized	87.92%	99.92%	100%
Standard Deviation	0.3%	0.1%	0%
Stream - Triad (MB/s)	22777	26001	26012
Normalized	87.56%	99.96%	100%
Standard Deviation	0.1%	0.1%	0.1%
Stream - Scale (MB/s)	20028	22397	22428
Normalized	89.3%	99.86%	100%
Standard Deviation	0.3%	0.1%	0.1%

C-Ray 1.1

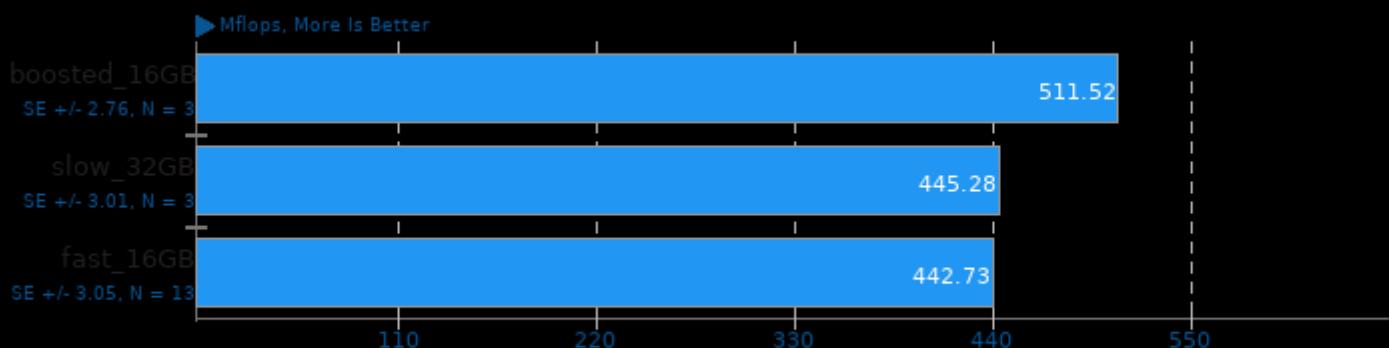
Total Time - 4K, 16 Rays Per Pixel



1. (CC) gcc options: -lm -fthread -O3

SciMark 2.0

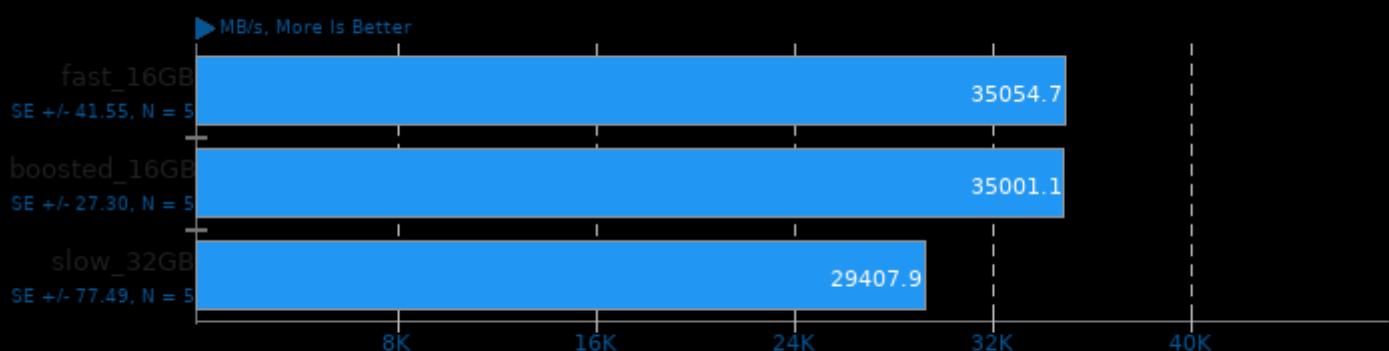
Computational Test: Composite



1. (CC) gcc options: -lm

Stream 2013-01-17

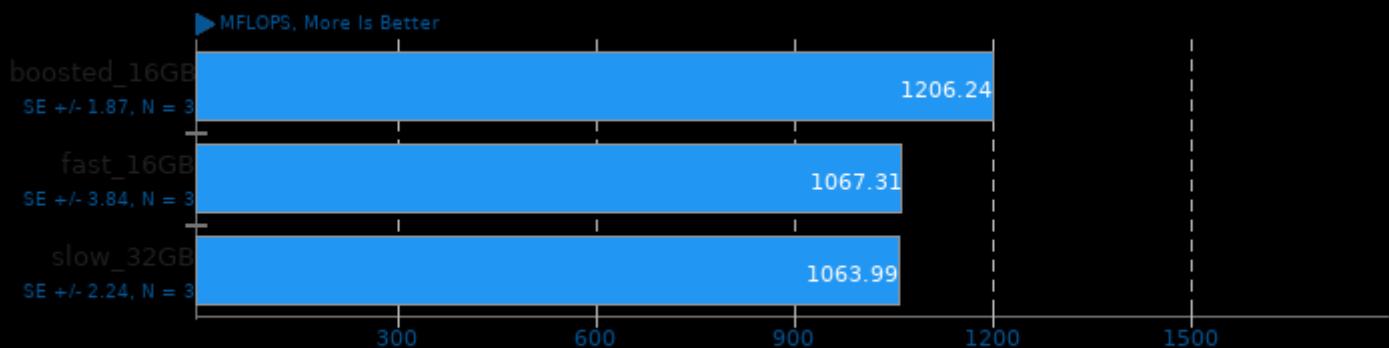
Type: Copy



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

Himeno Benchmark 3.0

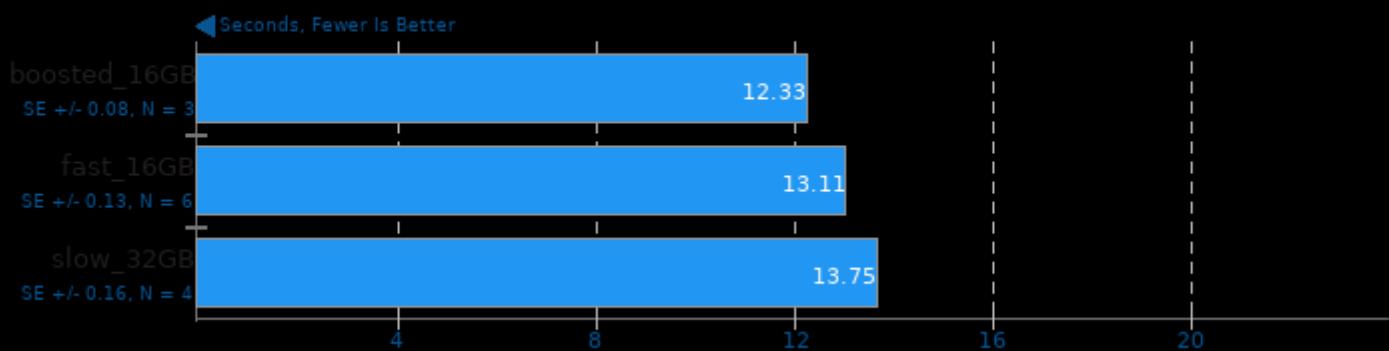
Poisson Pressure Solver



1. (CC) gcc options: -O3 -mavx2

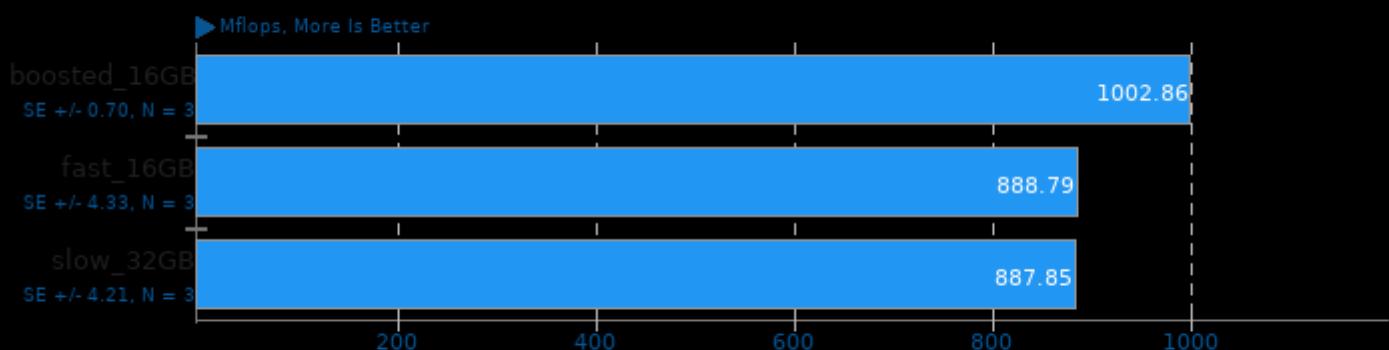
Loopback TCP Network Performance

Time To Transfer 10GB Via Loopback



SciMark 2.0

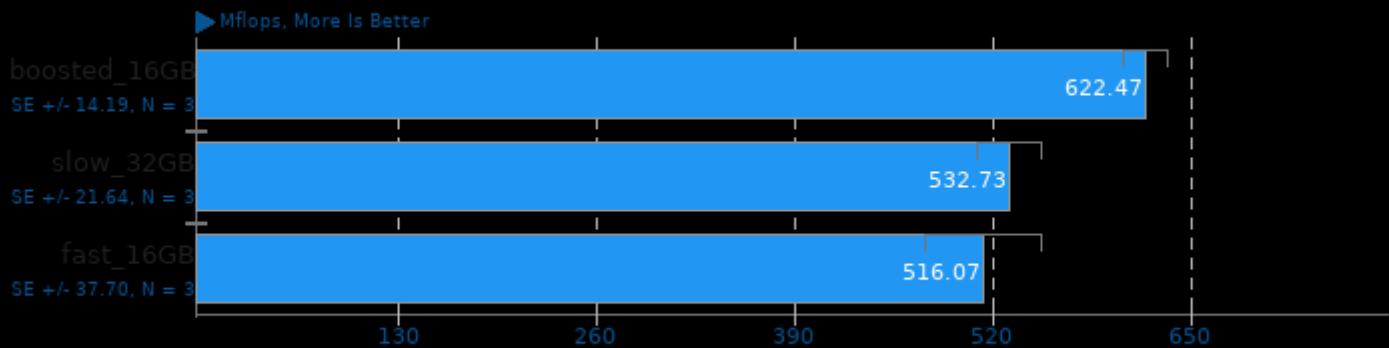
Computational Test: Jacobi Successive Over-Relaxation



1. (CC) gcc options: -lm

SciMark 2.0

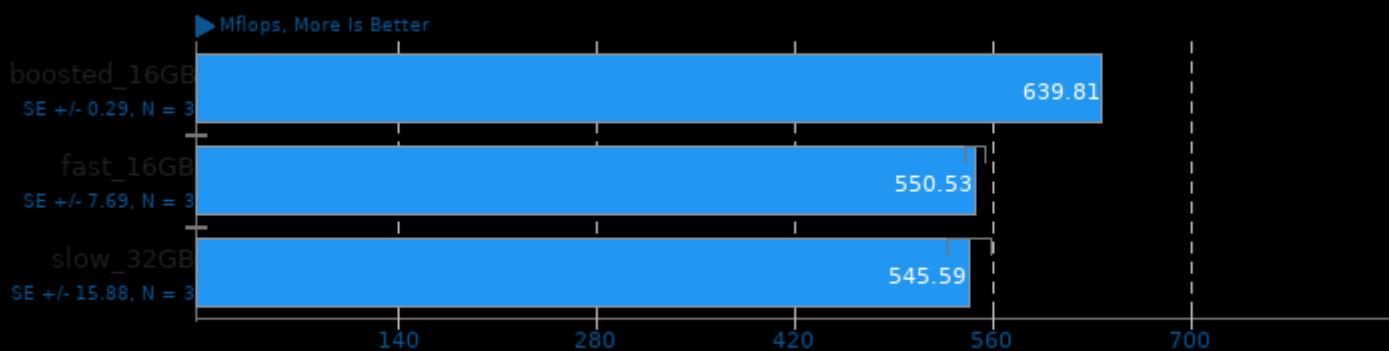
Computational Test: Dense LU Matrix Factorization



1. (CC) gcc options: -lm

SciMark 2.0

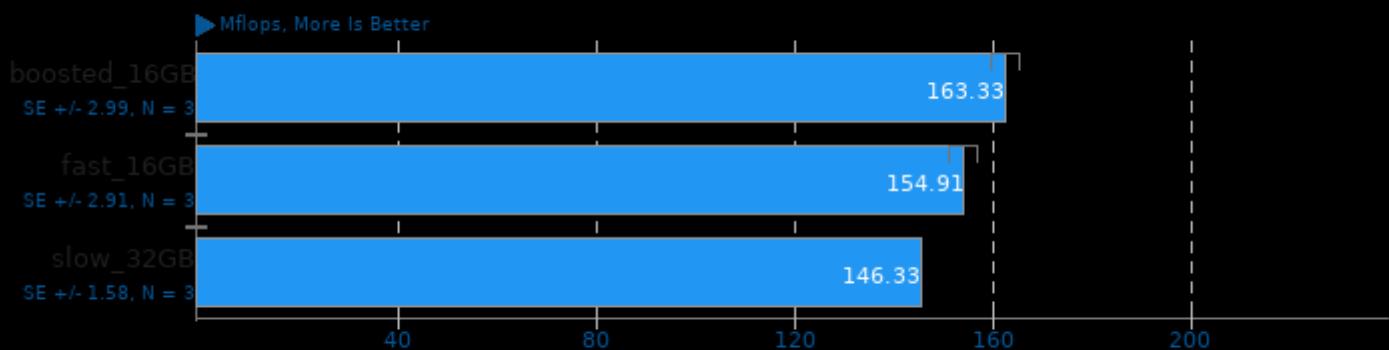
Computational Test: Sparse Matrix Multiply



1. (CC) gcc options: -lm

SciMark 2.0

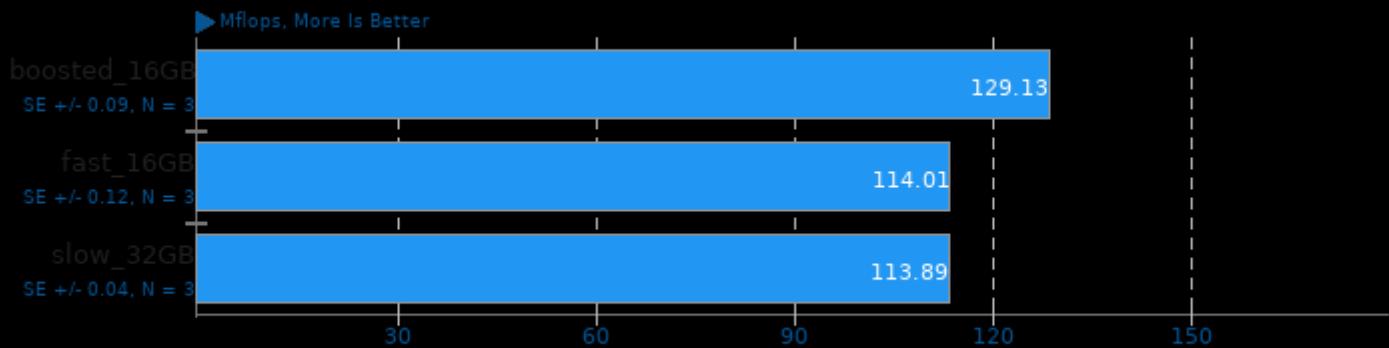
Computational Test: Fast Fourier Transform



1. (CC) gcc options: -lm

SciMark 2.0

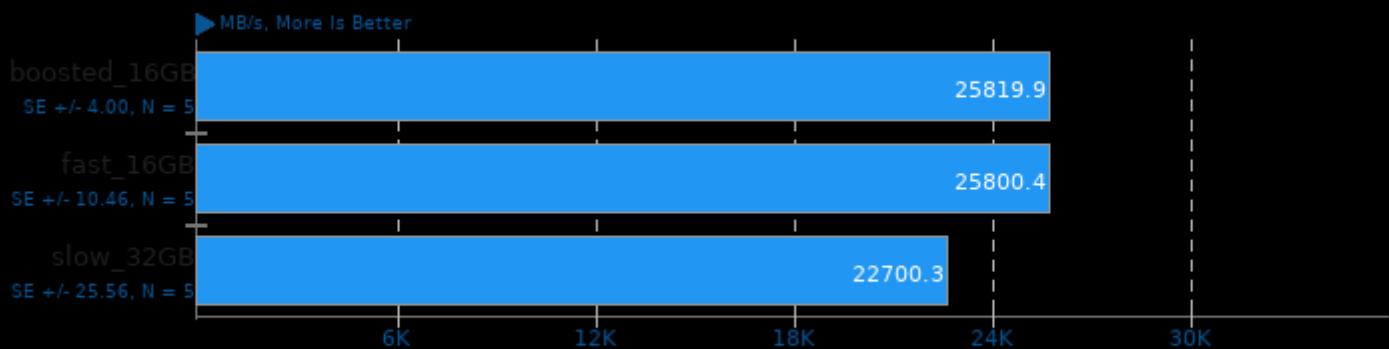
Computational Test: Monte Carlo



1. (CC) gcc options: -lm

Stream 2013-01-17

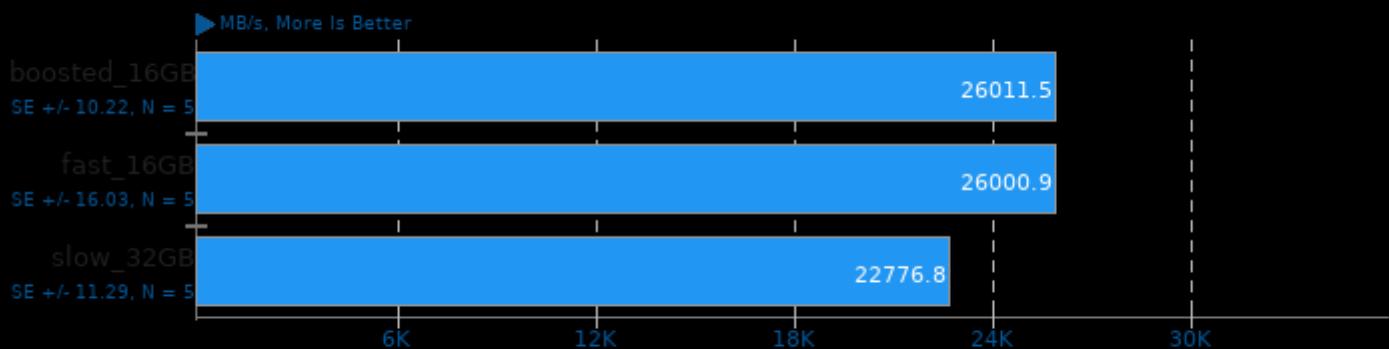
Type: Add



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

Stream 2013-01-17

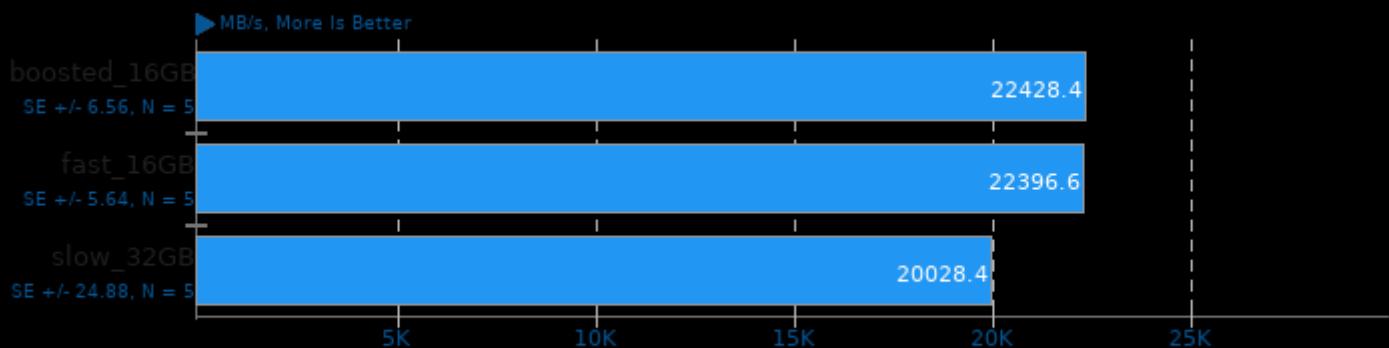
Type: Triad



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

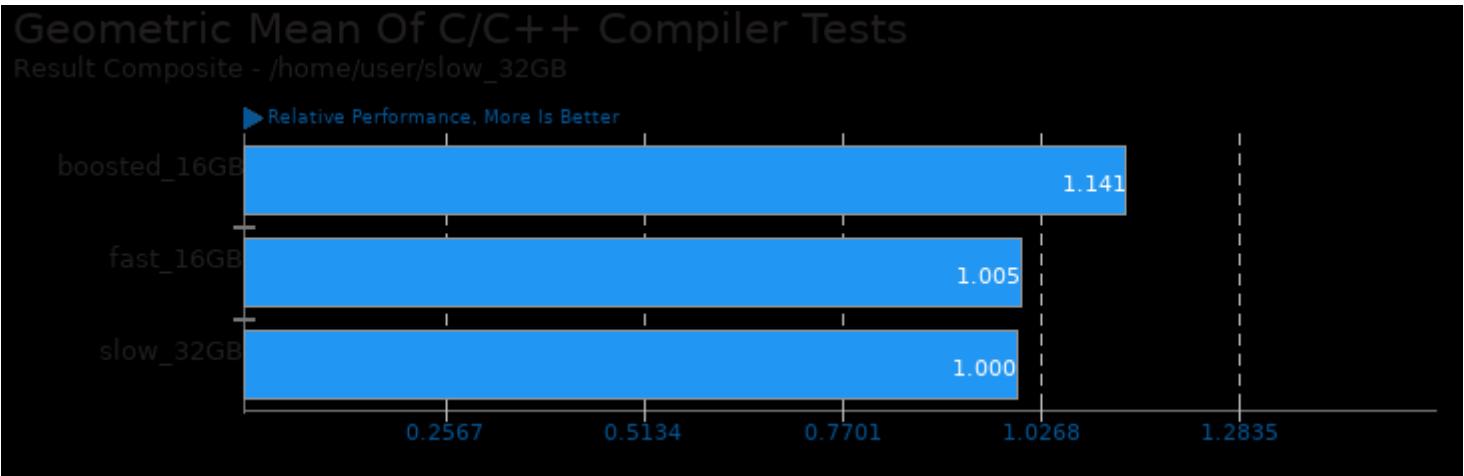
Stream 2013-01-17

Type: Scale



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

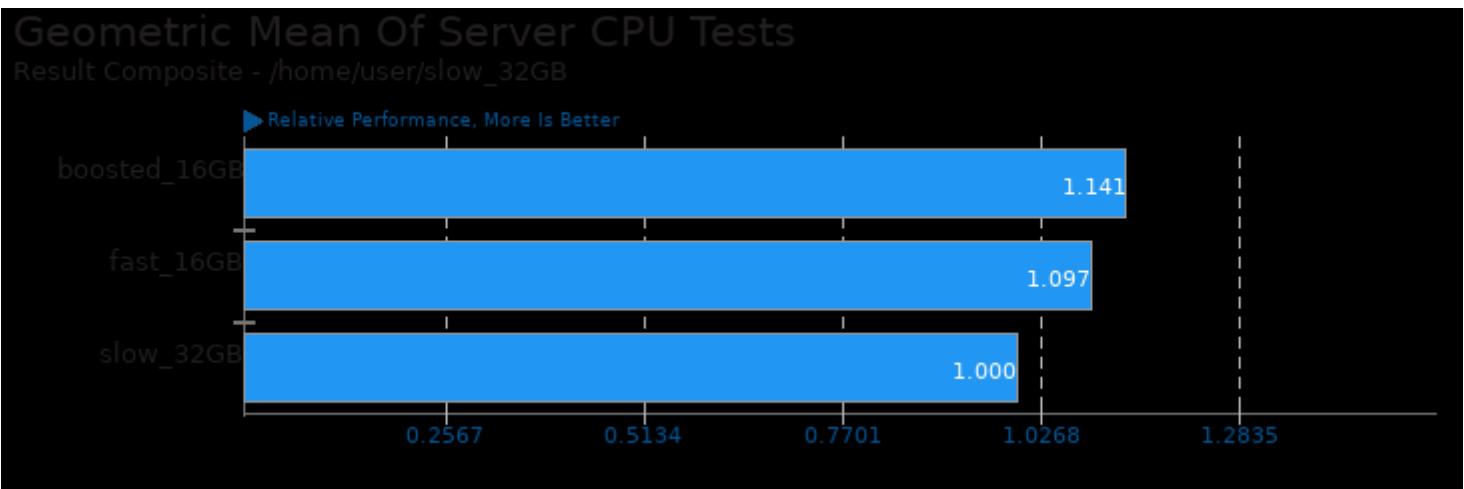
These geometric means are based upon test groupings / test suites for this result file.



Geometric mean based upon tests: pts/scimark2, pts/himeno and pts/c-ray



Geometric mean based upon tests: pts/c-ray, pts/himeno and pts/stream



Geometric mean based upon tests: pts/himeno, pts/c-ray and pts/stream

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 08:08.