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Gold stuff

2 x Intel Xeon Gold 5220R testing with a TYAN S7106 (V2.01.B40 BIOS) and llvmpipe on Ubuntu 20.04 via the Phoronix Test Suite.

Automated Executive Summary

1 had the most wins, coming in first place for 27% of the tests.

Based on the geometric mean of all complete results, the fastest (1) was 1.016x the speed of the slowest (2). 3 was 0.991x the speed of 1, 4 was 0.997x the speed of 3, 2 was 0.996x the speed of 4.

The results with the greatest spread from best to worst included:

Redis (Test: LPOP) at 1.558x

ASKAP (Test: tConvolve MT - Gridding) at 1.096x

Redis (Test: GET) at 1.086x

ASKAP (Test: Hogbom Clean OpenMP) at 1.04x

Redis (Test: LPUSH) at 1.038x

Redis (Test: SET) at 1.034x

Cpuminer-Opt (Algorithm: Skeincoin) at 1.033x

Cpuminer-Opt (Algorithm: Triple SHA-256, Onecoin) at 1.03x

NAS Parallel Benchmarks (Test / Class: EP.C) at 1.028x

Cpuminer-Opt (Algorithm: LBC, LBRY Credits) at 1.027x.

Test Systems:

1

2

3

4

Processor: 2 x Intel Xeon Gold 5220R @ 3.90GHz (36 Cores / 72 Threads), Motherboard: TYAN S7106 (V2.01.B40 BIOS), Chipset: Intel Sky Lake-E DMI3 Registers, Memory: 94GB, Disk: 500GB Samsung SSD 860, Graphics: llvmpipe, Monitor: VE228, Network: 2 x Intel I210 + 2 x QLogic cLOM8214 1/10GbE

OS: Ubuntu 20.04, Kernel: 5.9.0-050900rc6-generic (x86_64) 20200920, Desktop: GNOME Shell 3.36.4, Display Server: X Server 1.20.9, Display Driver: modesetting 1.20.9, OpenGL: 3.3 Mesa 20.0.4 (LLVM 9.0.1 256 bits), 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 powersave - CPU Microcode: 0x5003003

Security Notes: itlb_multihit: KVM: Mitigation of VMX disabled + i1f: 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 Enhanced IBRS IPB: conditional RSB filling + srbs: Not affected + tsx_async_abort: Mitigation of TSX disabled

	1	2	3	4
Redis - LPOP (Req/sec)	2492023	1599615	1613933	1609762
Normalized	100%	64.19%	64.76%	64.6%
Standard Deviation	4.6%	1.3%	0.6%	1.1%
ASKAP - tConvolve MT - Gridding	3272	2988	3274	3176
(Million Grid Points/sec)				
Normalized	99.96%	91.28%	100%	97.02%
Standard Deviation	2.9%	0.9%	1.9%	4.3%
Redis - GET (Req/sec)	2385412	2243570	2208014	2197470
Normalized	100%	94.05%	92.56%	92.12%
Standard Deviation	1.2%	2.2%	1.8%	1.3%
ASKAP - H.C.O (Iterations/sec)	585.078	596.426	608.524	596.426
Normalized	96.15%	98.01%	100%	98.01%
Standard Deviation	2.7%	0.3%	0.4%	0.3%
Redis - LPUSH (Req/sec)	1509546	1542798	1521175	1486022

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	Normalized	97.84%	100%	98.6%	96.32%
	Standard Deviation	2.7%	0.6%	1.3%	5.7%
Redis - SET (Req/sec)	1766435	1774663	1766252	1826016	
	Normalized	96.74%	97.19%	96.73%	100%
	Standard Deviation	1.7%	3%	1.5%	0.7%
Cpuminer-Opt - Skeincoin (kH/s)	175430	176407	170700	176393	
	Normalized	99.45%	100%	96.76%	99.99%
	Standard Deviation	2.7%	2.3%	2.1%	1.2%
Cpuminer-Opt - T.S.2.O (kH/s)	281323	279337	280933	273127	
	Normalized	100%	99.29%	99.86%	97.09%
	Standard Deviation	0.8%	2%	1.1%	1.5%
NAS Parallel Benchmarks - EP.C	3641	3595	3672	3573	
	(Mop/s)				
	Normalized	99.17%	97.9%	100%	97.3%
	Standard Deviation	0.7%	1.2%	1.6%	0.9%
Cpuminer-Opt - LBC, LBRY Credits	98743	96117	97760	96923	
	(kH/s)				
	Normalized	100%	97.34%	99%	98.16%
	Standard Deviation	1.3%	2.2%	1.9%	2.9%
ASKAP - tConvolve OpenMP	5521	5509	5399	5437	
Gridding (Million Grid Points/sec)					
	Normalized	100%	99.79%	97.79%	98.48%
	Standard Deviation	2.6%	1.2%	2.4%	2.9%
Cpuminer-Opt - Myriad-Groestl (kH/s)	11155	11266	11303	11388	
	Normalized	97.95%	98.93%	99.25%	100%
	Standard Deviation	3.5%	2.7%	2.5%	5%
Cpuminer-Opt - Q.S.2.P (kH/s)	208293	212607	210365	212040	
	Normalized	97.97%	100%	98.95%	99.73%
	Standard Deviation	2.8%	0.5%	2.8%	3%
Cpuminer-Opt - Ringcoin (kH/s)	3348	3374	3343	3310	
	Normalized	99.23%	100%	99.07%	98.11%
	Standard Deviation	1.3%	0.8%	2.1%	3%
Cpuminer-Opt - Blake-2 S (kH/s)	1115825	1097290	1113763	1115883	
	Normalized	99.99%	98.33%	99.81%	100%
	Standard Deviation	2.9%	0.8%	1%	4.3%
Izbench - Zstd 8 - Compression (MB/s)	76	76	77	77	
	Normalized	98.7%	98.7%	100%	100%
Gcrypt Library (sec)	230.955	230.332	231.281	233.229	
	Normalized	99.73%	100%	99.59%	98.76%
	Standard Deviation	0.1%	0.3%	0.5%	1.3%
Izbench - Brotli 2 - Compression	169	171	171	171	
	Normalized	98.83%	100%	100%	100%
	Standard Deviation	0.9%			
FinanceBench - Repo OpenMP (ms)	53411	53330	52787	53237	
	Normalized	98.83%	98.98%	100%	99.16%
	Standard Deviation	2.7%	1.4%	0.5%	0.4%
FinanceBench - Bonds OpenMP (ms)	93584	92690	93647	93313	
	Normalized	99.04%	100%	98.98%	99.33%
	Standard Deviation	1.9%	0.6%	1.6%	1.2%
Izbench - Crush 0 - Compression	97	97	98	98	
	Normalized	98.98%	98.98%	100%	100%
Cpuminer-Opt - Garlicoin (kH/s)	12453	12467	12350	12380	
	Normalized	99.89%	100%	99.06%	99.3%
	Standard Deviation	2.9%	1.3%	1.1%	1.1%

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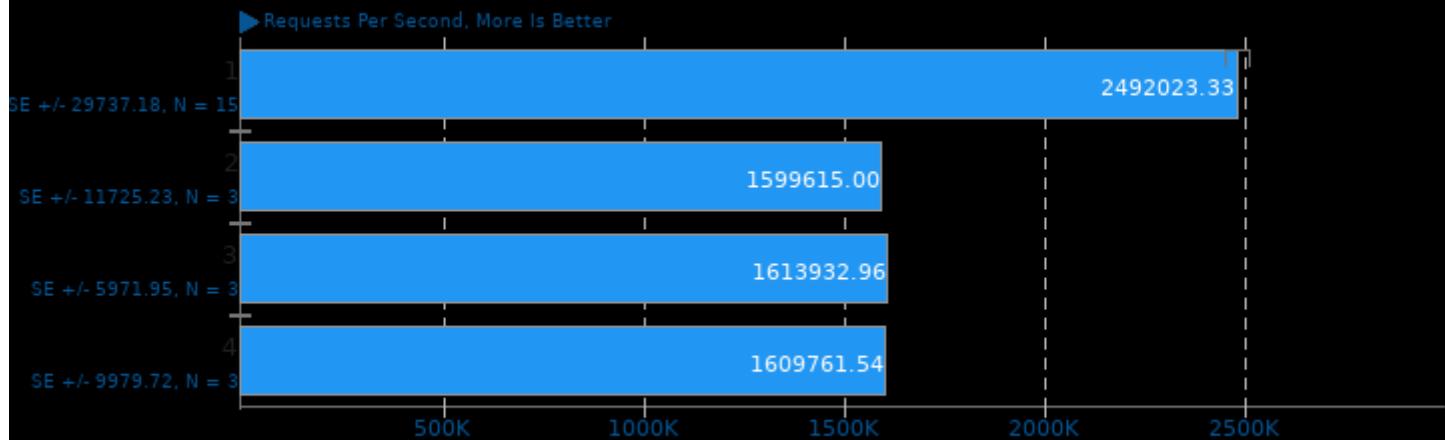
ASKAP - tConvolve MPI - Degridding (Mpix/sec)	6584	6609	6548	6609
Normalized	99.63%	100%	99.08%	100%
Standard Deviation	0.6%	0.3%	0.3%	0.3%
Izbench - Zstd 8 - Decompression	1439	1446	1448	1452
Normalized	99.1%	99.59%	99.72%	100%
Standard Deviation	0.2%	0.2%	0.1%	0.1%
ASKAP - tConvolve OpenMP - Degridding (Million Grid Points/sec)	4734	4727	4727	4692
Normalized	100%	99.85%	99.85%	99.12%
Standard Deviation	0.9%	1%	1%	0.9%
ASKAP - tConvolve MPI - Gridding (Mpix/sec)	7718	7718	7668	7667
Normalized	100%	100%	99.35%	99.35%
Standard Deviation	0.7%	0%	0.6%	0%
Izbench - Zstd 1 - Decompression	1520	1521	1522	1529
Normalized	99.41%	99.48%	99.54%	100%
Standard Deviation	0.1%	0%	0.1%	0.1%
NAS Parallel Benchmarks - BT.C (Mop/s)	93370	92832	92967	92865
Normalized	100%	99.42%	99.57%	99.46%
Standard Deviation	0.6%	0%	0.1%	0.2%
Izbench - Libdeflate 1 - Decompression (MB/s)	977	978	982	979
Normalized	99.49%	99.59%	100%	99.69%
Standard Deviation	0.2%		0.2%	
Izbench - Libdeflate 1 - Compression (MB/s)	206	207	207	207
Normalized	99.52%	100%	100%	100%
Standard Deviation	0.8%			
NAS Parallel Benchmarks - L.U.C (Mop/s)	99459	99344	99686	99810
Normalized	99.65%	99.53%	99.88%	100%
Standard Deviation	0.2%	0.2%	0.3%	0.1%
Izbench - Zstd 1 - Compression (MB/s)	447	447	447	449
Normalized	99.55%	99.55%	99.55%	100%
Standard Deviation	0.2%	0.1%		
Redis - SADD (Reqs/sec)	2003478	2006307	2011425	2007727
Normalized	99.6%	99.75%	100%	99.82%
Standard Deviation	1%	1%	3%	1.3%
Izbench - Brotli 0 - Decompression (MB/s)	526	527	528	528
Normalized	99.62%	99.81%	100%	100%
Standard Deviation			0.2%	
NAS Parallel Benchmarks - SP.B (Mop/s)	41289	41166	41307	41315
Normalized	99.94%	99.64%	99.98%	100%
Standard Deviation	0.8%	0.2%	0.4%	0.3%
Izbench - Brotli 2 - Decompression (MB/s)	603	604	605	605
Normalized	99.67%	99.83%	100%	100%
Standard Deviation	1%	0.1%		
GnuPG - 2.7.S.F.E (sec)	77.872	77.617	77.683	77.674
Normalized	99.67%	100%	99.92%	99.93%

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Standard Deviation	0.7%	0.1%	0.2%	0.2%
QuantLib (MFLOPS)	2231	2233	2236	2230
Normalized	99.76%	99.86%	100%	99.75%
Standard Deviation	0.5%	0.2%	0.1%	0.2%
Izbench - Crush 0 - Decompression	434	435	435	435
(MB/s)				
Normalized	99.77%	100%	100%	100%
Standard Deviation	0.2%			
Izbench - Brotli 0 - Compression	402	402	402	402
Standard Deviation	0.1%			
Izbench - XZ 0 - Decompression	100	100	100	100
Izbench - XZ 0 - Compression (MB/s)	38	38	38	38
Standard Deviation	1.5%			
ASKAP - tConvolve MT - Degridding	6098	5496	6123	6134
(Million Grid Points/sec)				
Normalized	99.41%	89.6%	99.82%	100%
Standard Deviation	1.9%	1.7%	6.8%	20%
Cpuminer-Opt - Deepcoin (kH/s)	10063	9831	10046	9972
Normalized	100%	97.69%	99.84%	99.1%
Standard Deviation	8.1%	6.1%	5.7%	6.3%
Cpuminer-Opt - x25x (kH/s)	945.86	912.94	941.00	908.63
Normalized	100%	96.52%	99.49%	96.06%
Standard Deviation	2.8%	10.6%	3.5%	10.6%
Cpuminer-Opt - Magi (kH/s)	702.26	711.53	705.45	720.27
Normalized	97.5%	98.79%	97.94%	100%
Standard Deviation	0.1%	6.4%	0.8%	7%
NAS Parallel Benchmarks - EP.D	3775	3522	3848	3693
(Mop/s)				
Normalized	98.12%	91.53%	100%	95.99%
Standard Deviation	3.5%	17.7%	2.9%	13.4%

Redis 6.0.9

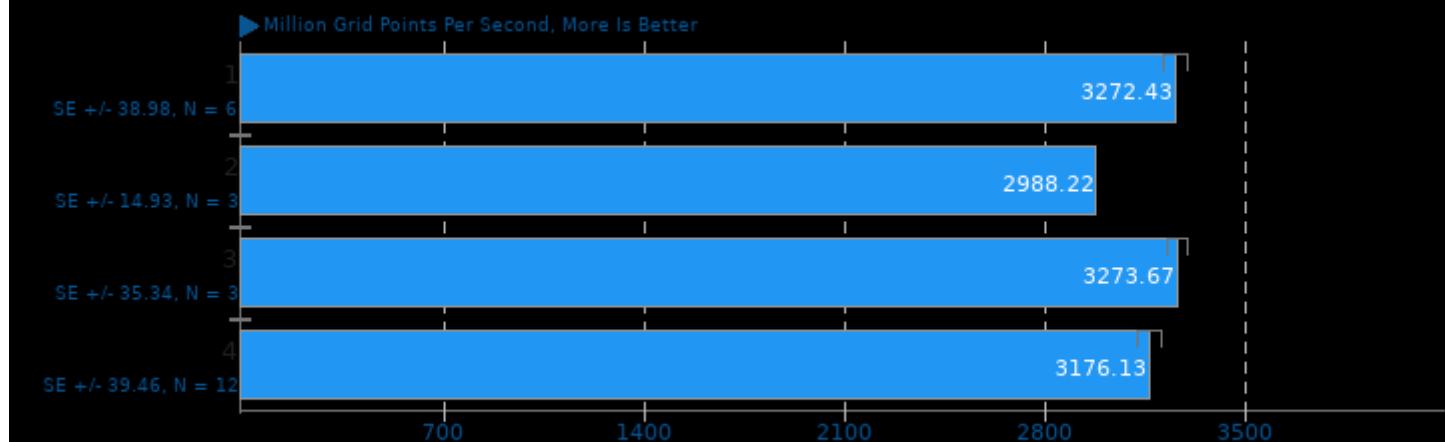
Test: LPOP



1. (CXX) g++ options: -MM -MT -g3 -fvisibility=hidden -O3

ASKAP 1.0

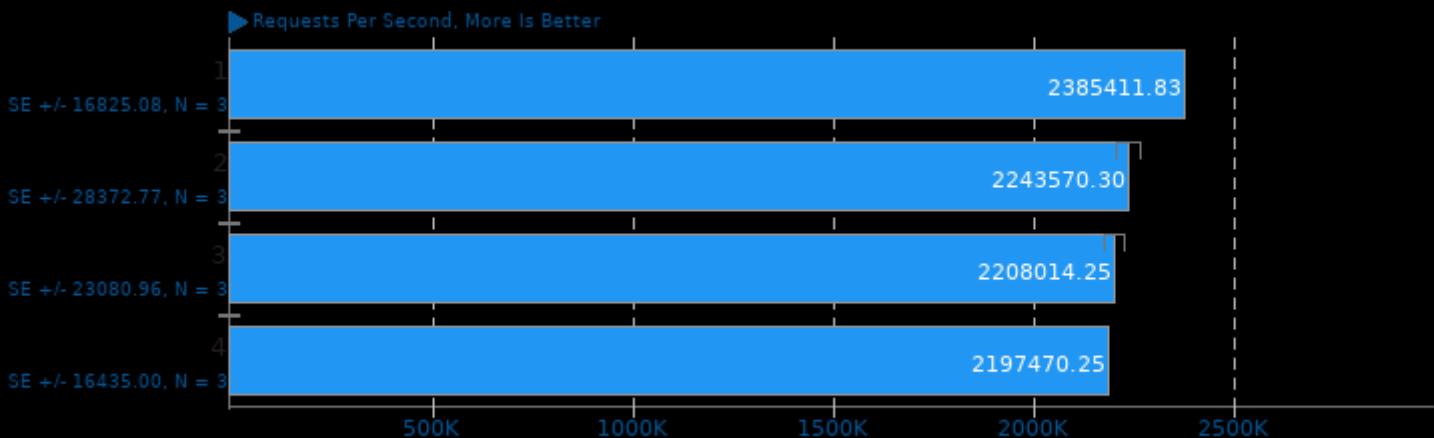
Test: tConvolve MT - Gridding



1. (CXX) g++ options: -O3 -fstrict-aliasing -fopenmp

Redis 6.0.9

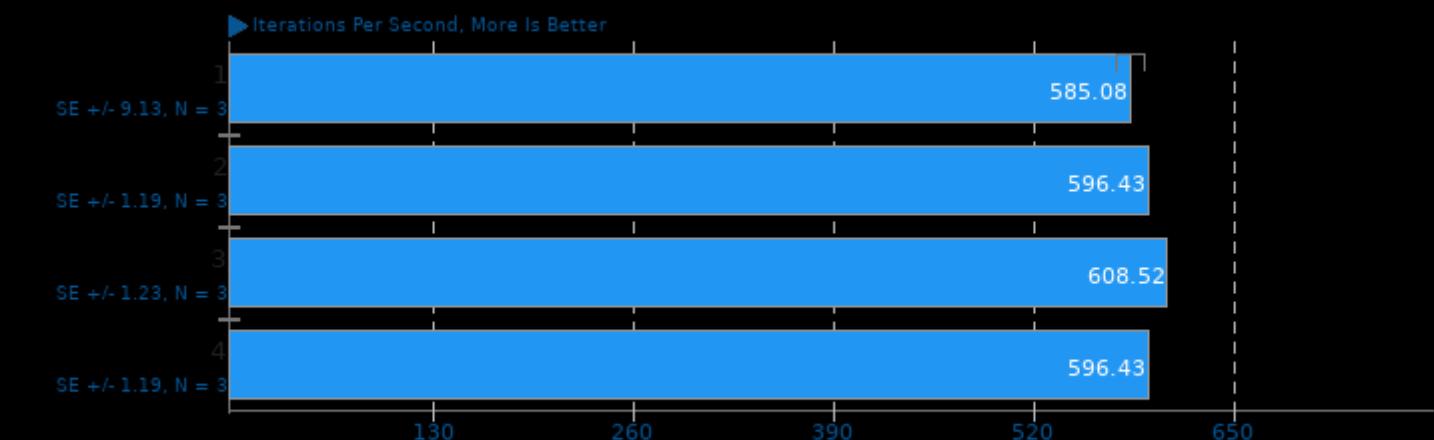
Test: GET



1. (CXX) g++ options: -MM -MT -g3 -fvisibility=hidden -O3

ASKAP 1.0

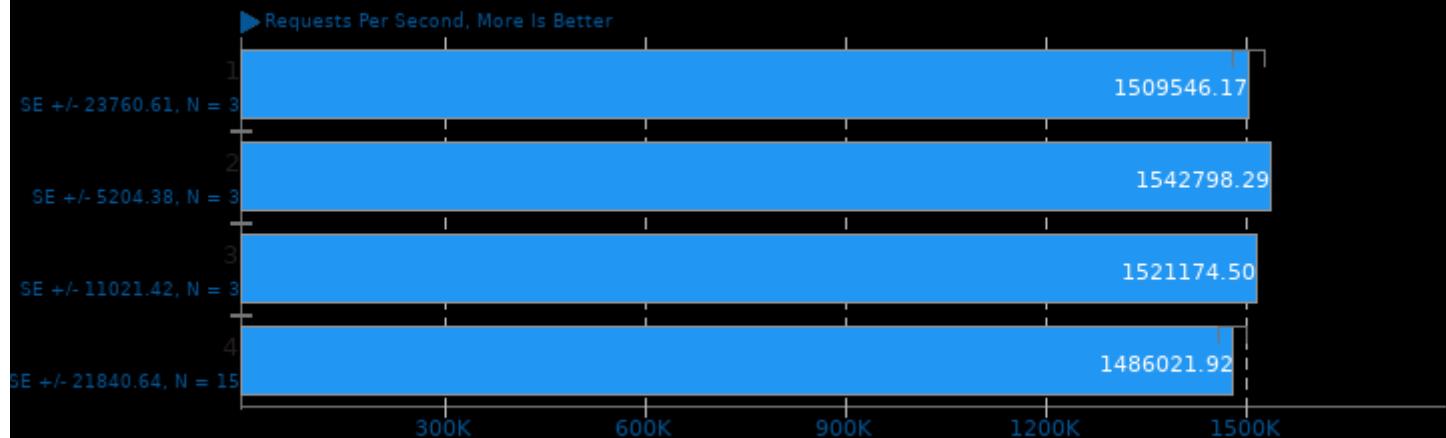
Test: Hogbom Clean OpenMP



1. (CXX) g++ options: -O3 -fstrict-aliasing -fopenmp

Redis 6.0.9

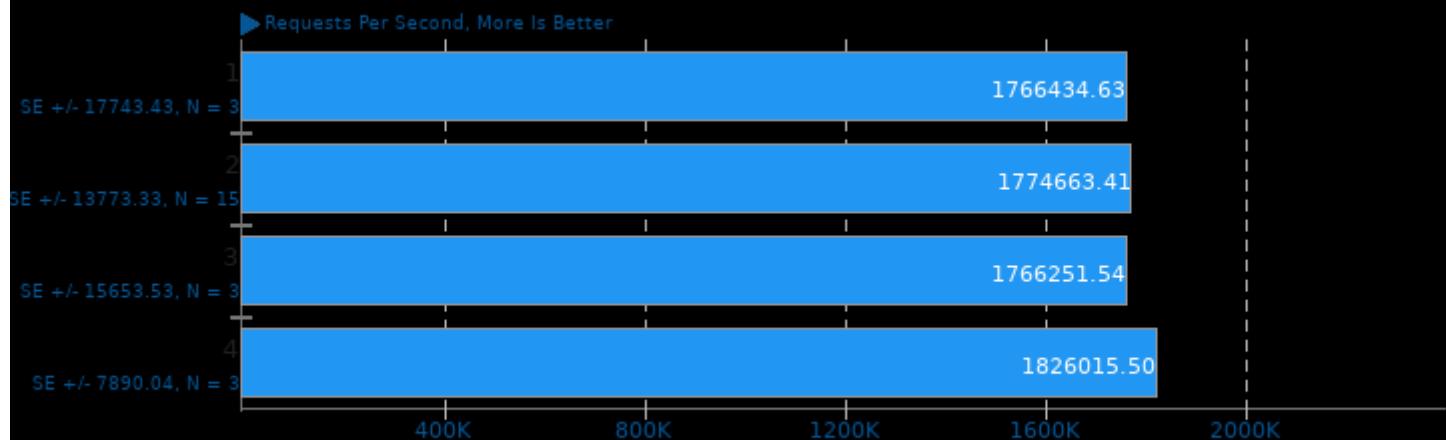
Test: LPUSH



1. (CXX) g++ options: -MM -MT -g3 -fvisibility=hidden -O3

Redis 6.0.9

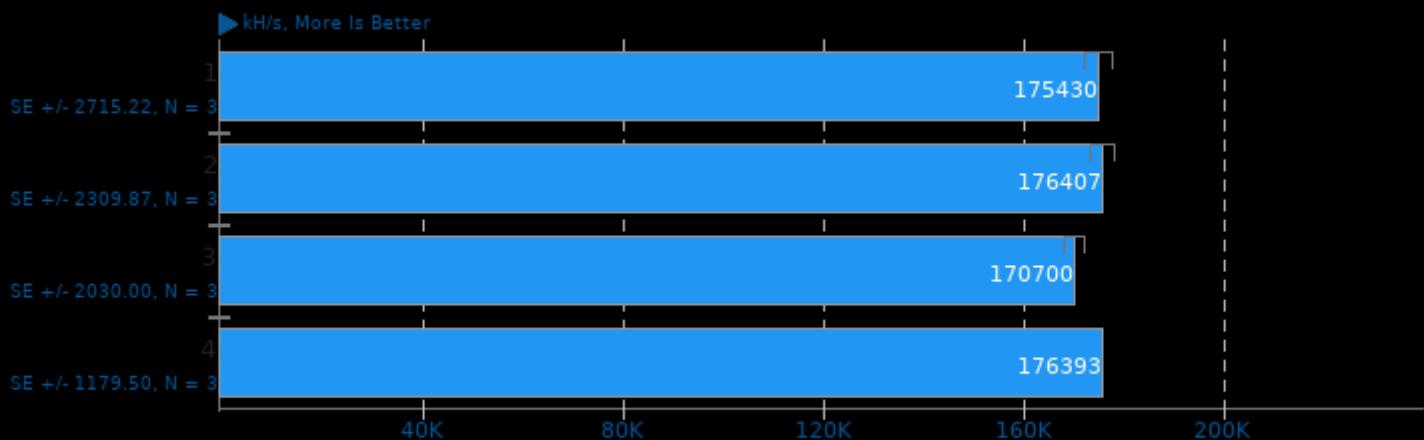
Test: SET



1. (CXX) g++ options: -MM -MT -g3 -fvisibility=hidden -O3

Cpuminer-Opt 3.15.5

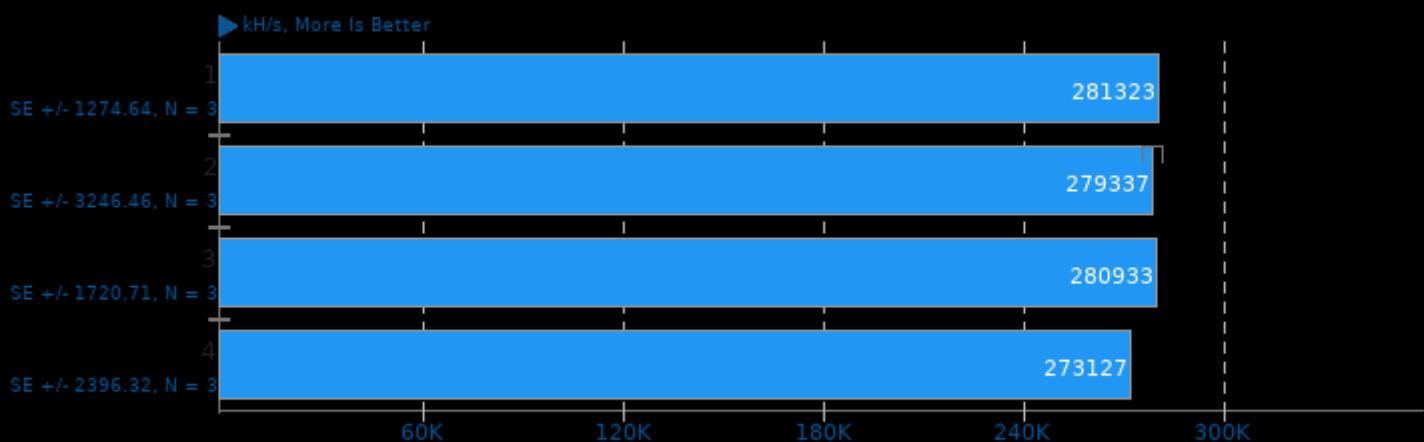
Algorithm: Skeincoin



1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp

Cpuminer-Opt 3.15.5

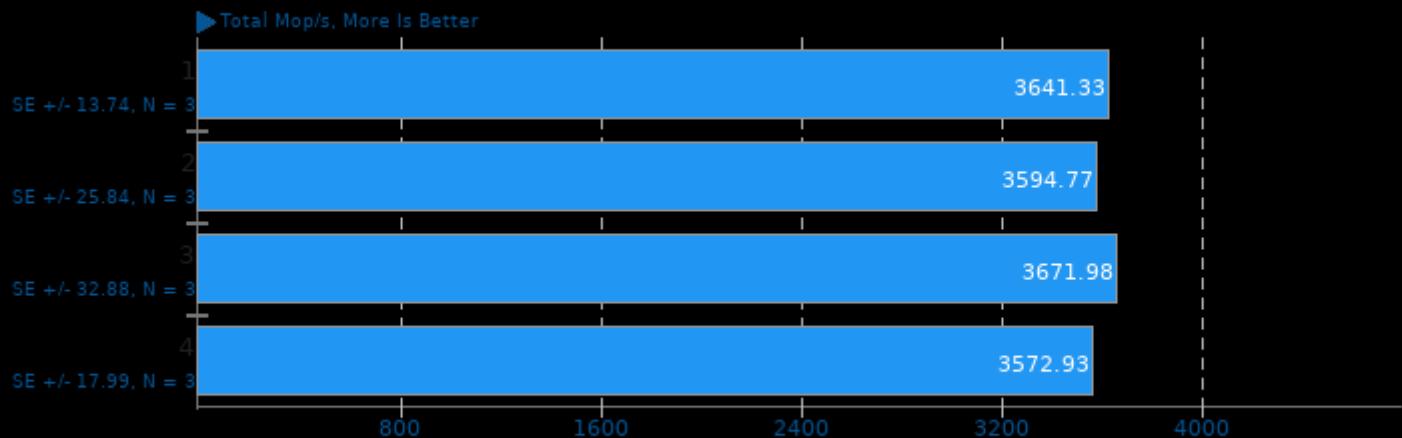
Algorithm: Triple SHA-256, Onecoin



1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp

NAS Parallel Benchmarks 3.4

Test / Class: EP.C

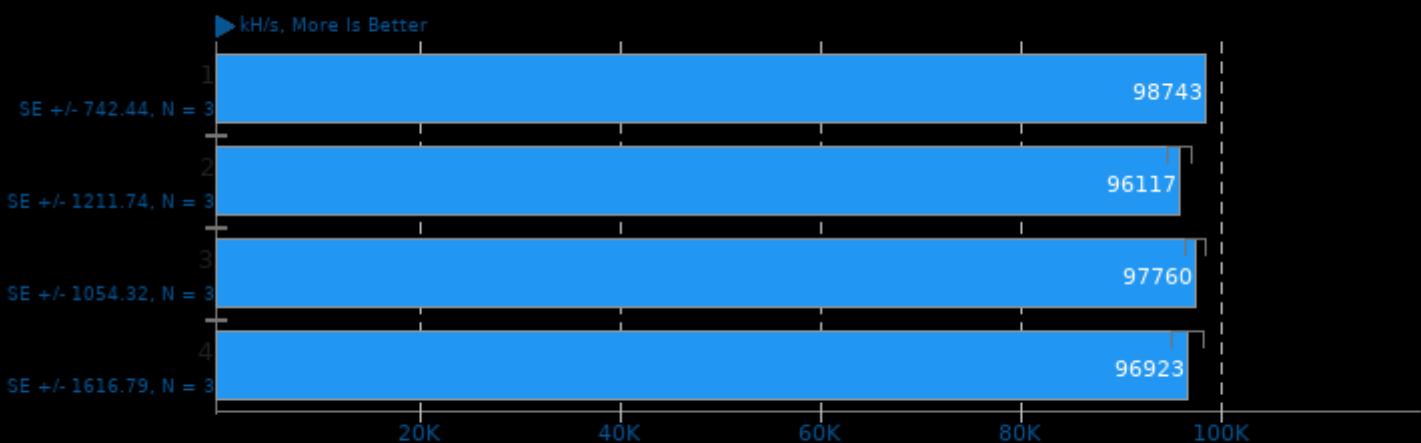


1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi

2. Open MPI 4.0.3

Cpuminer-Opt 3.15.5

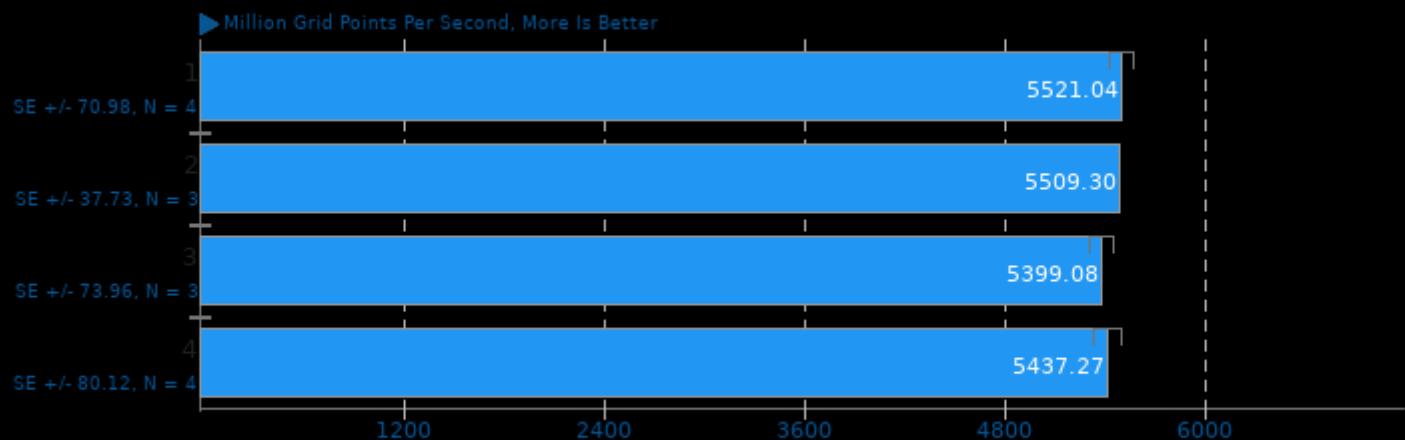
Algorithm: LBC, LBRY Credits



1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp

ASKAP 1.0

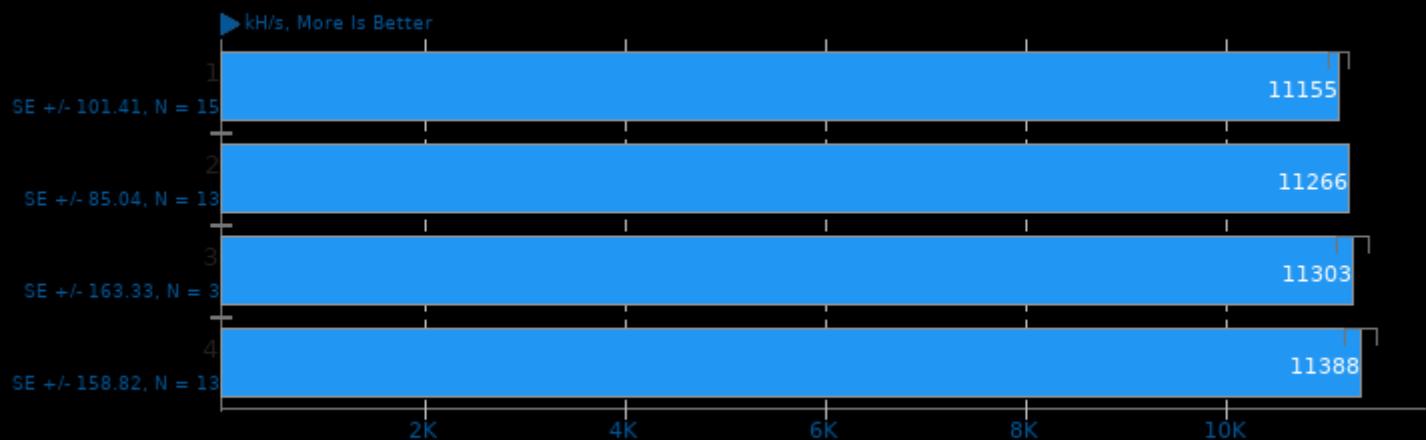
Test: tConvolve OpenMP - Gridding



1. (CXX) g++ options: -O3 -fstrict-aliasing -fopenmp

Cpuminer-Opt 3.15.5

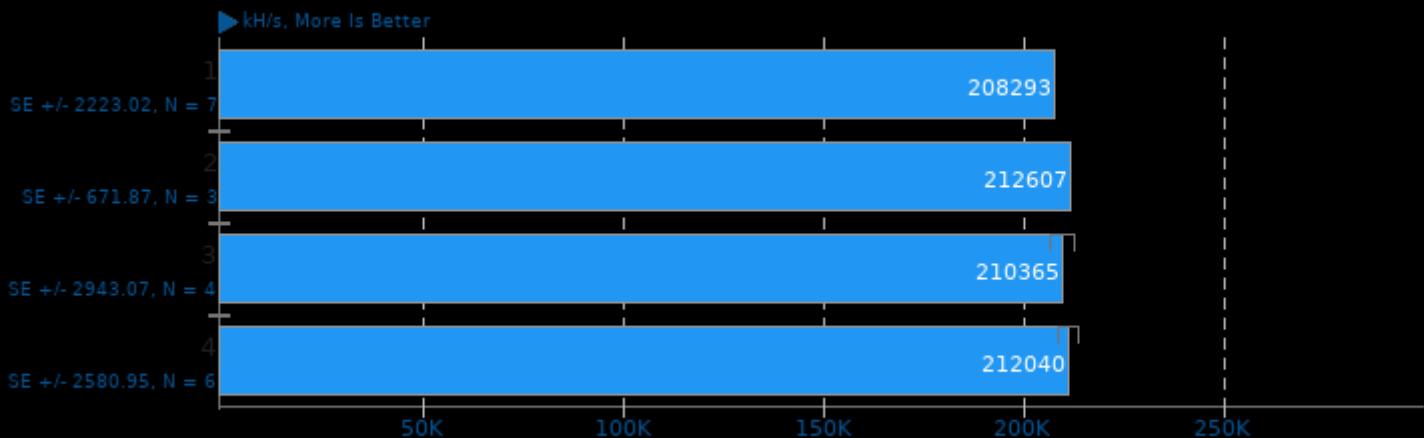
Algorithm: Myriad-Groestl



1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp

Cpuminer-Opt 3.15.5

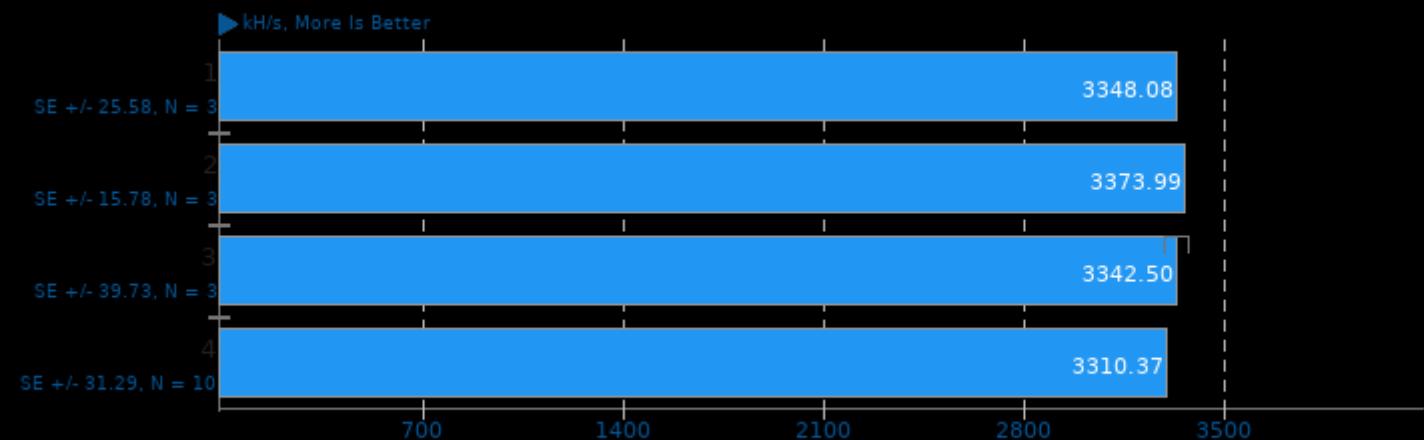
Algorithm: Quad SHA-256, Pyrite



1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp

Cpuminer-Opt 3.15.5

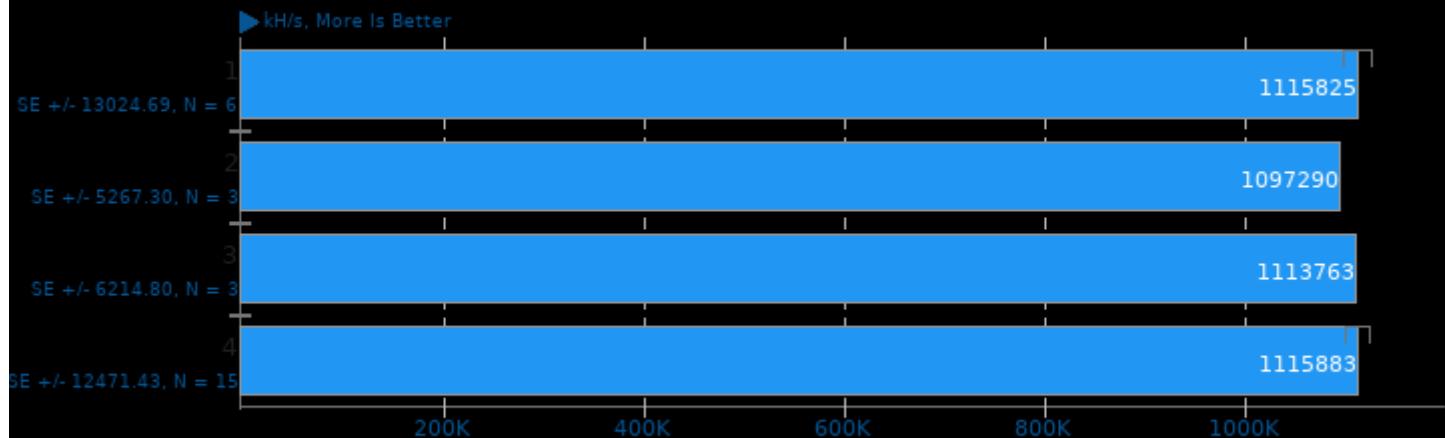
Algorithm: Ringcoin



1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp

Cpuminer-Opt 3.15.5

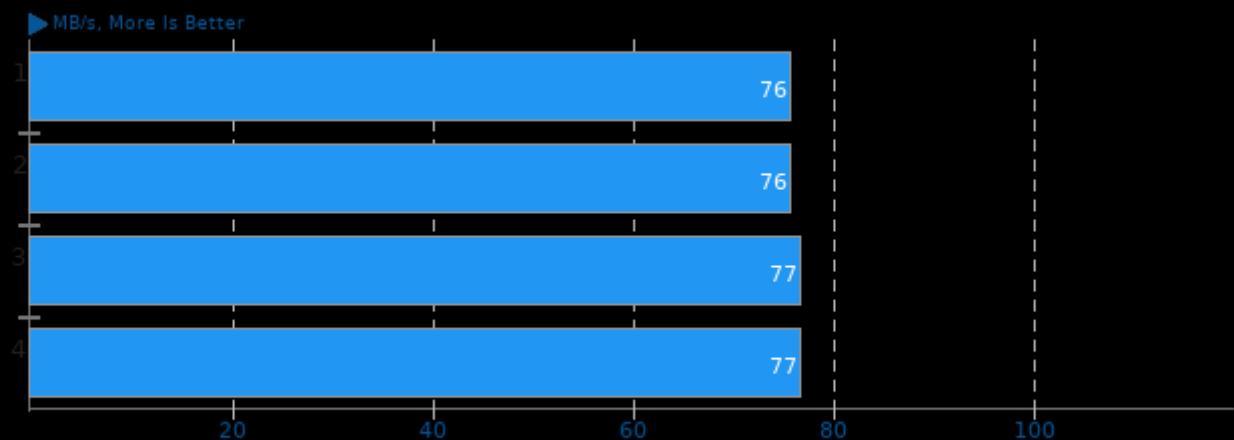
Algorithm: Blake-2 S



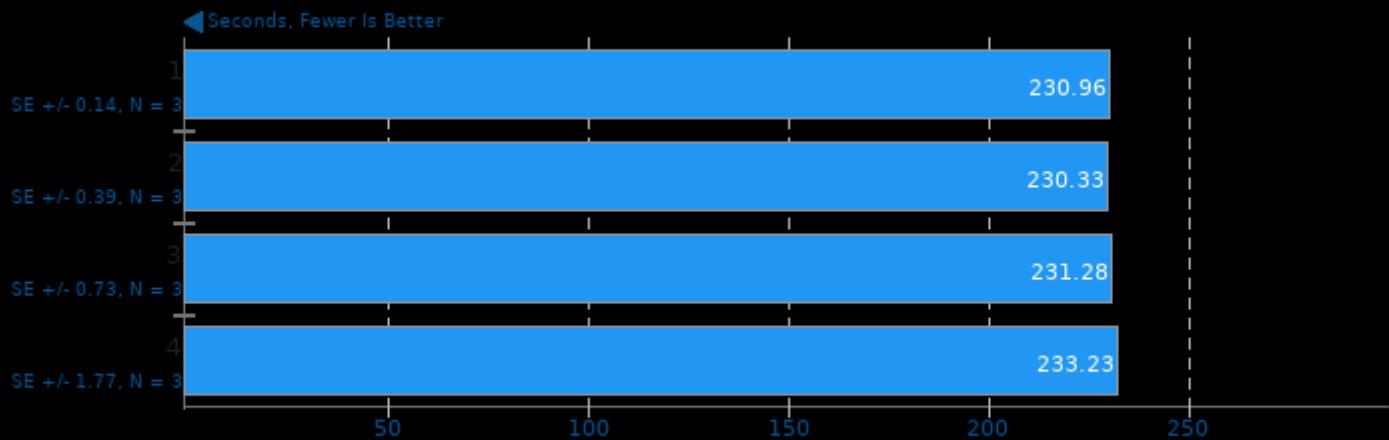
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp

Izbench 1.8

Test: Zstd 8 - Process: Compression



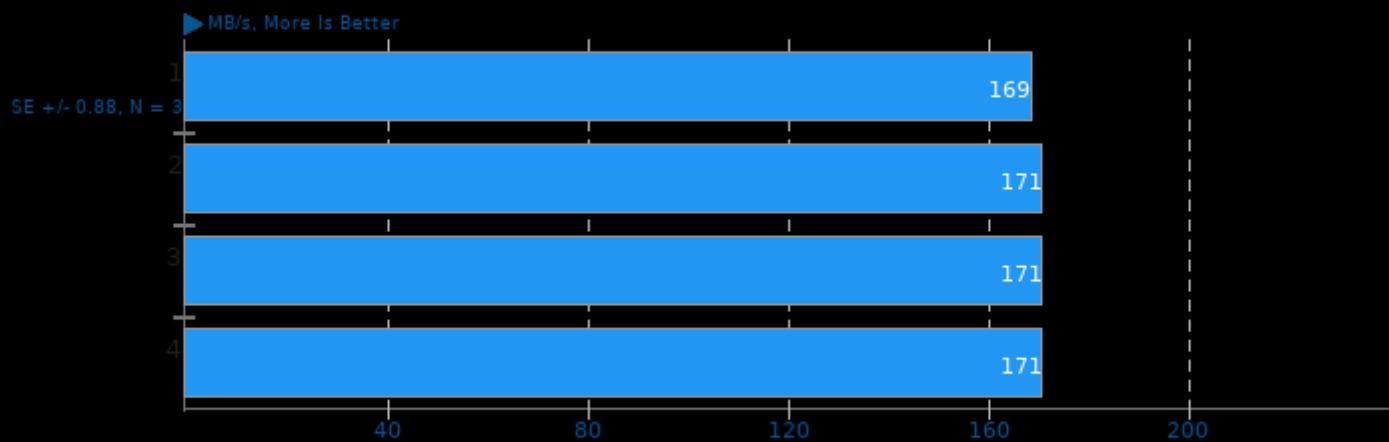
Gcrypt Library 1.9



1. (CC) gcc options: -O2 -fvisibility=hidden

Izbench 1.8

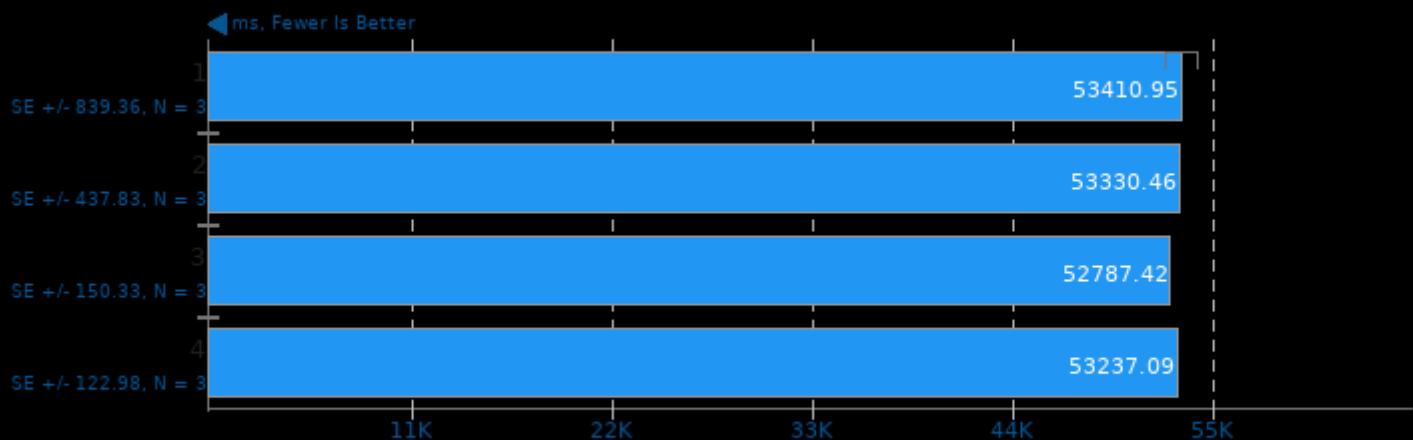
Test: Brotli 2 - Process: Compression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3 -std=c++11

FinanceBench 2016-07-25

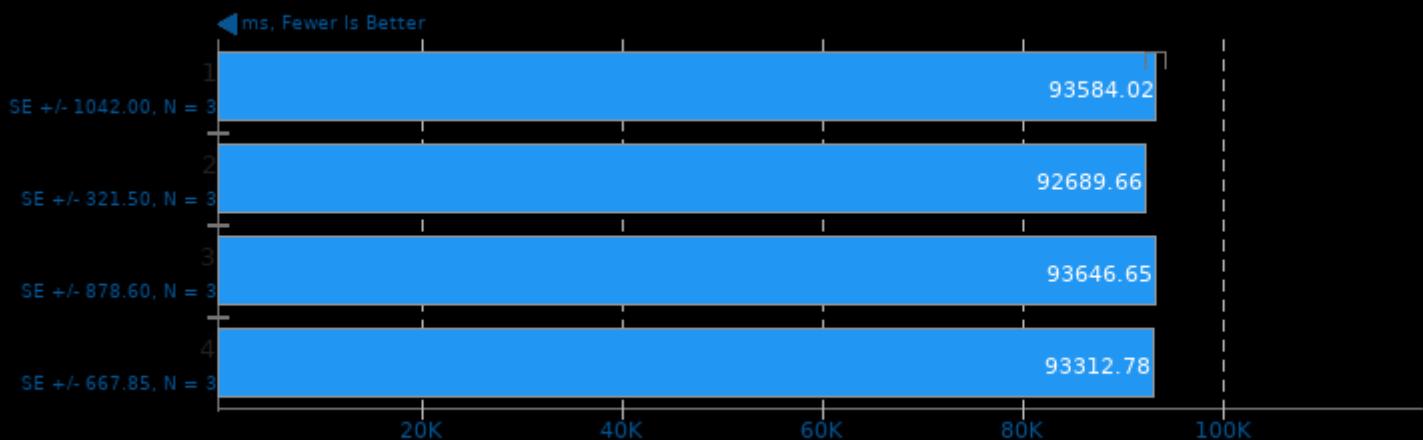
Benchmark: Repo OpenMP



1. (CXX) g++ options: -O3 -march=native -fopenmp

FinanceBench 2016-07-25

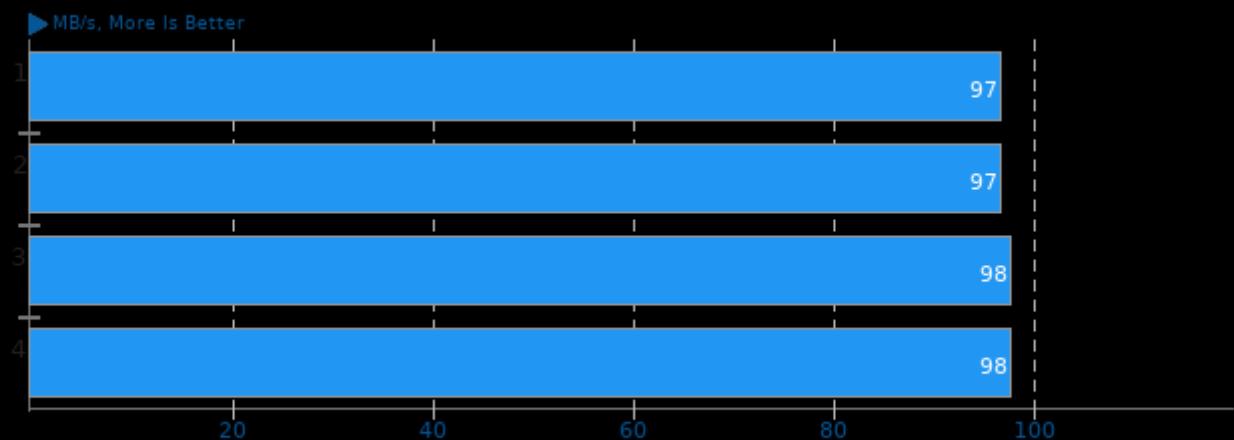
Benchmark: Bonds OpenMP



1. (CXX) g++ options: -O3 -march=native -fopenmp

Izbench 1.8

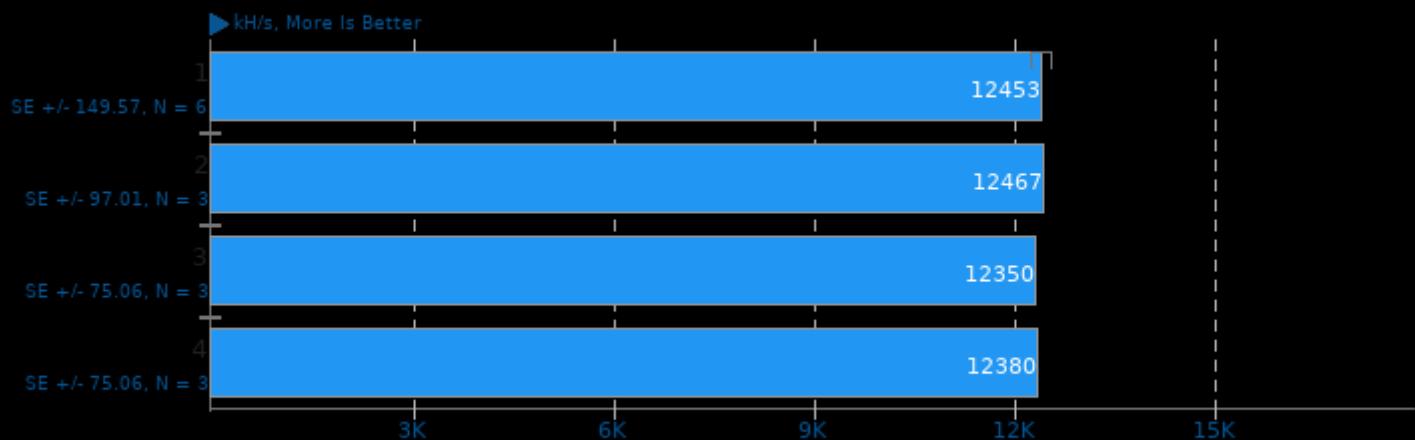
Test: Crush 0 - Process: Compression



1. (CXX) g++ options: -fthread-frame-pointer -fstrict-aliasing -ffast-math -O3 -std=c++11

Cpuminer-Opt 3.15.5

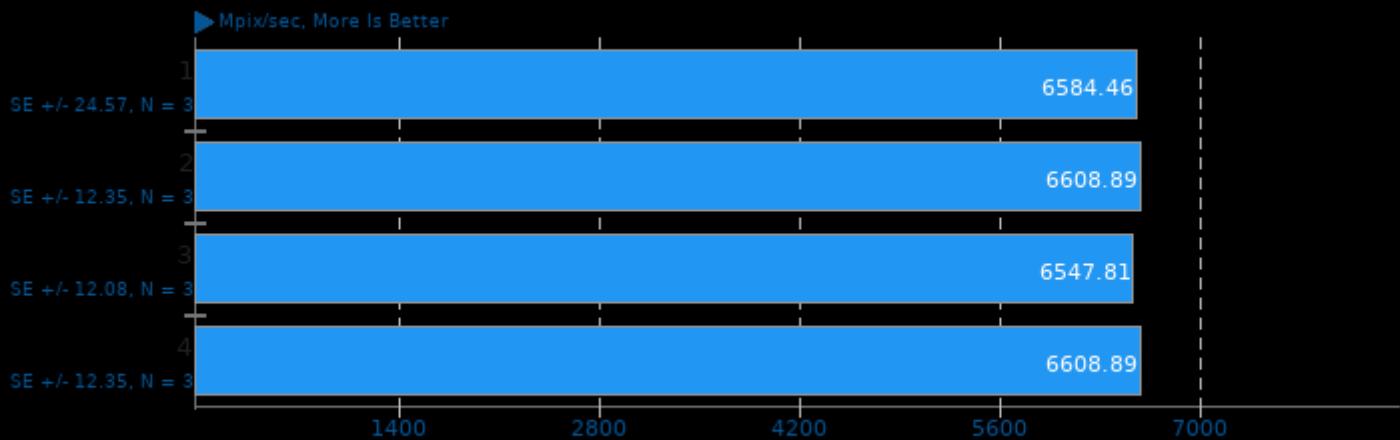
Algorithm: Garlicoin



1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp

ASKAP 1.0

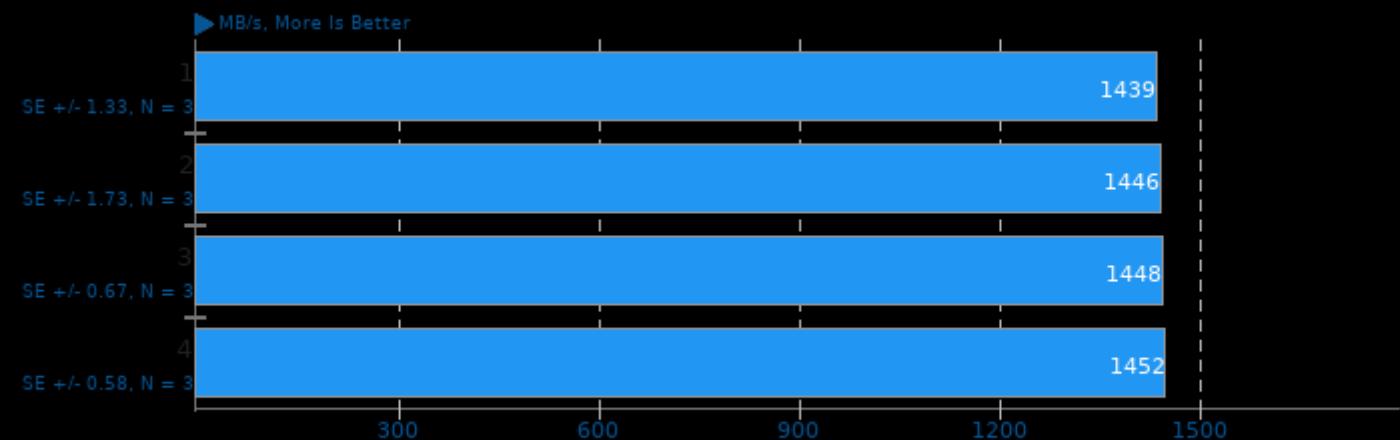
Test: tConvolve MPI - Degridding



1. (CXX) g++ options: -O3 -fstrict-aliasing -fopenmp

Izbench 1.8

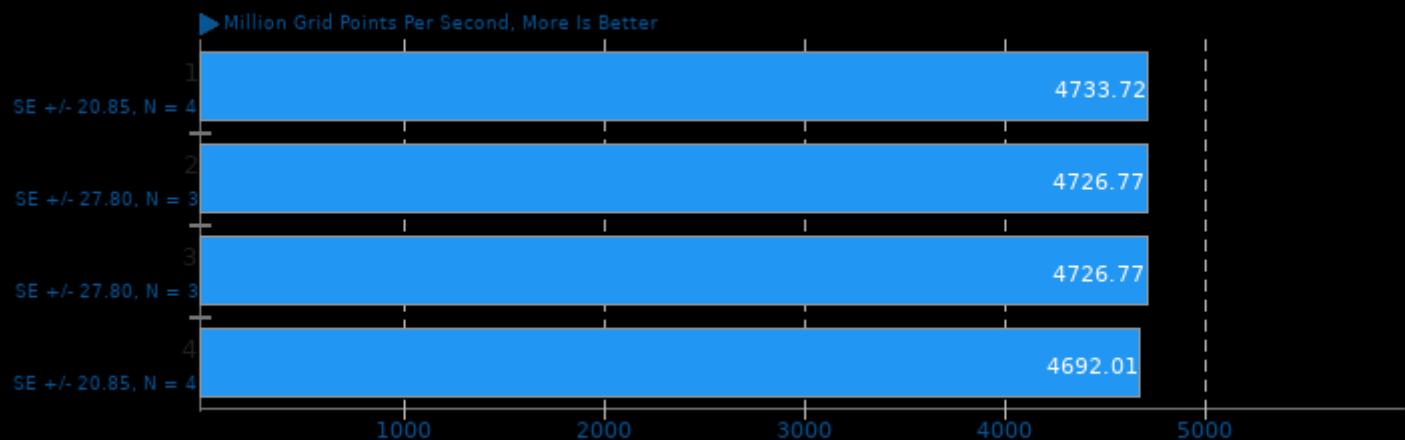
Test: Zstd 8 - Process: Decompression



1. (CXX) g++ options: -fthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3 -std=c++11

ASKAP 1.0

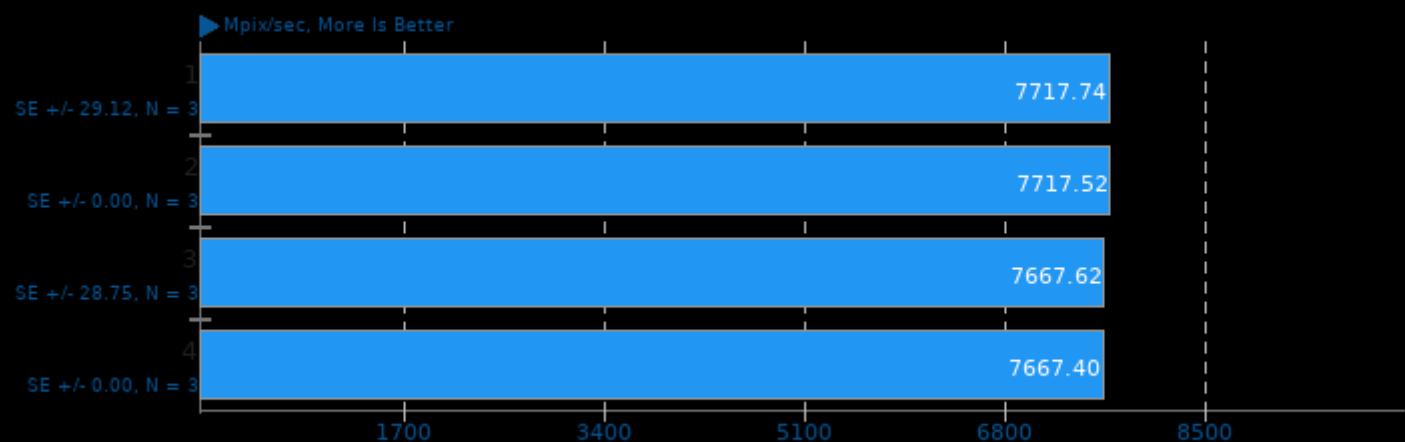
Test: tConvolve OpenMP - Degridding



1. (CXX) g++ options: -O3 -fstrict-aliasing -fopenmp

ASKAP 1.0

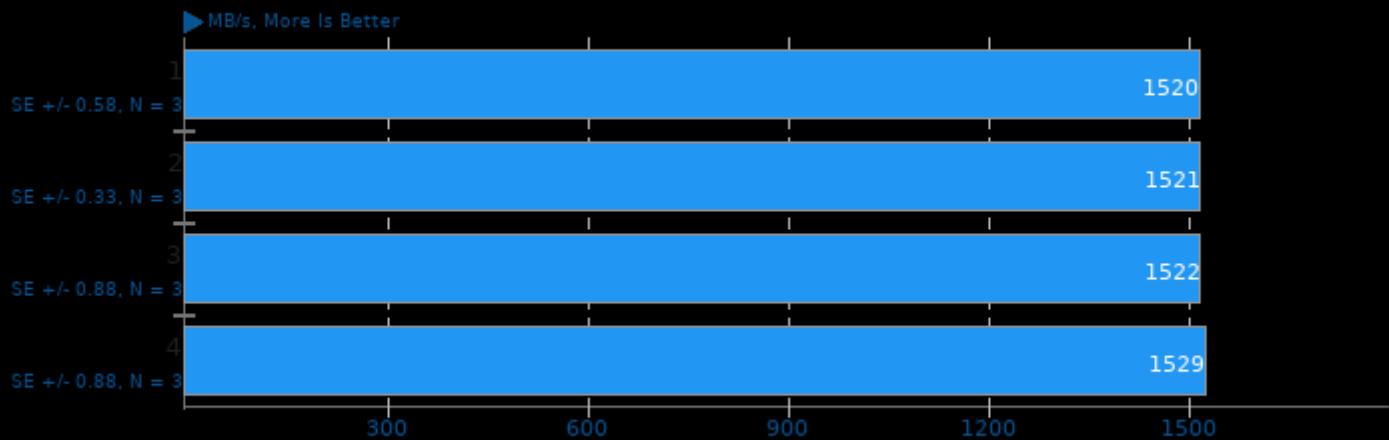
Test: tConvolve MPI - Gridding



1. (CXX) g++ options: -O3 -fstrict-aliasing -fopenmp

Izbench 1.8

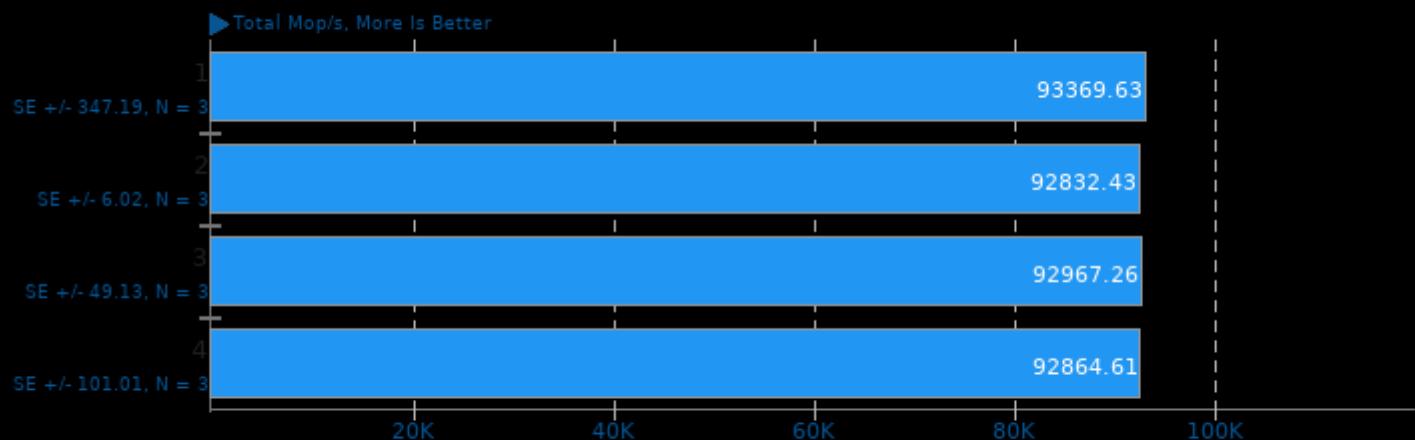
Test: Zstd 1 - Process: Decompression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3 -std=c++11
 2. Open MPI 4.0.3

NAS Parallel Benchmarks 3.4

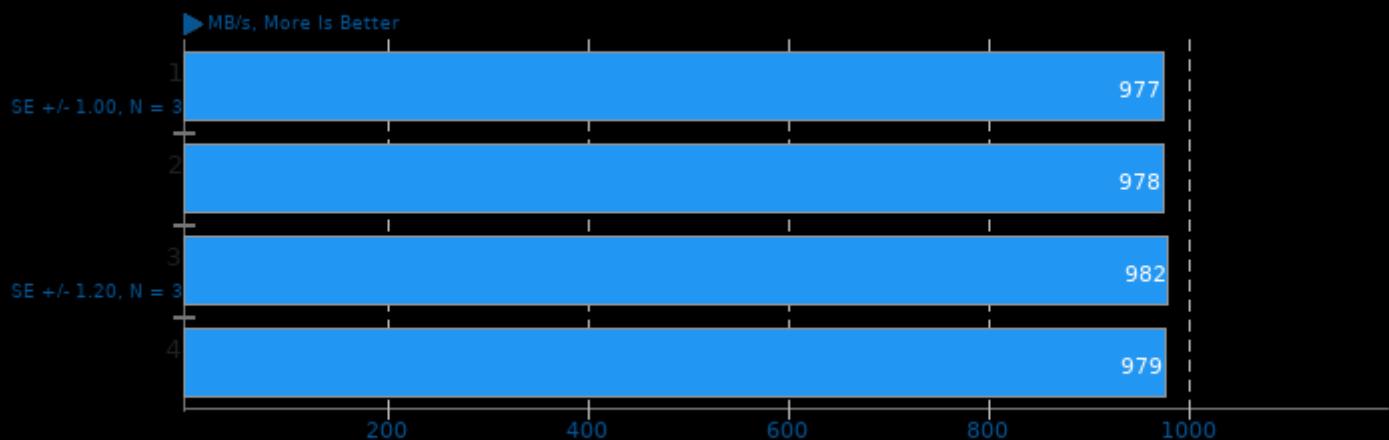
Test / Class: BT.C



1. (F9X) gfortran options: -O3 -march=native -pthread -Impi_usempif08 -Impi_mpifh -Impi
 2. Open MPI 4.0.3

Izbench 1.8

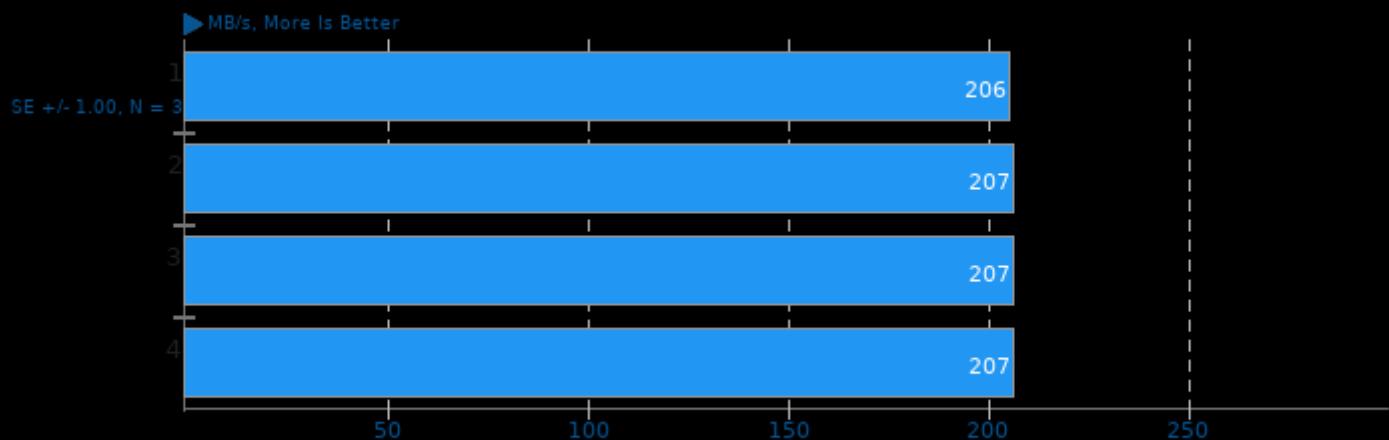
Test: Libdeflate 1 - Process: Decompression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3 -std=c++11

Izbench 1.8

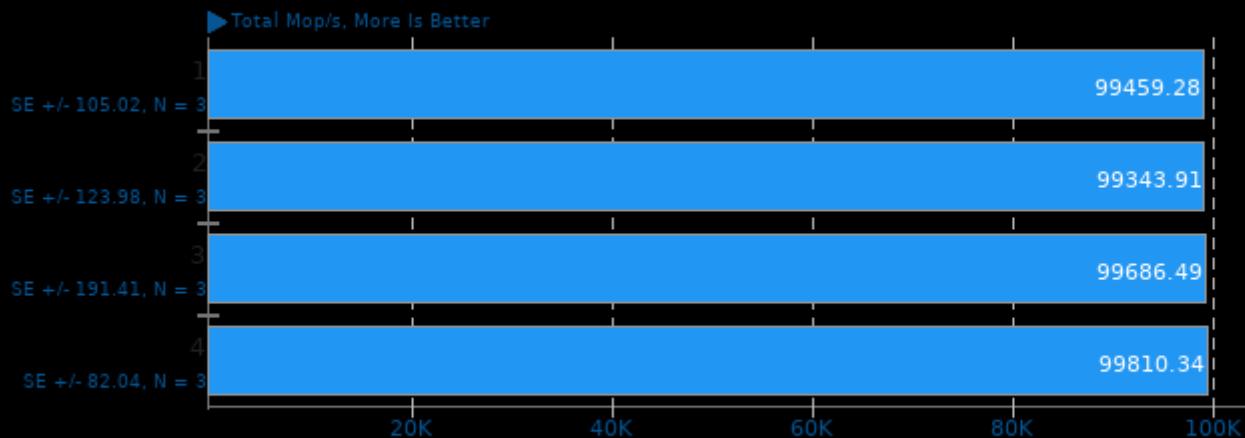
Test: Libdeflate 1 - Process: Compression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3 -std=c++11

NAS Parallel Benchmarks 3.4

Test / Class: LU.C

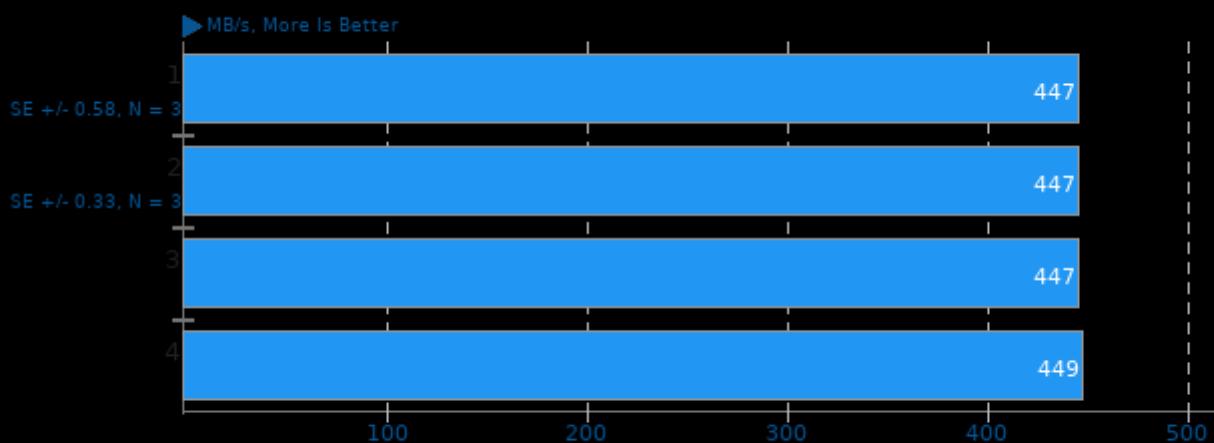


1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi

2. Open MPI 4.0.3

Izbench 1.8

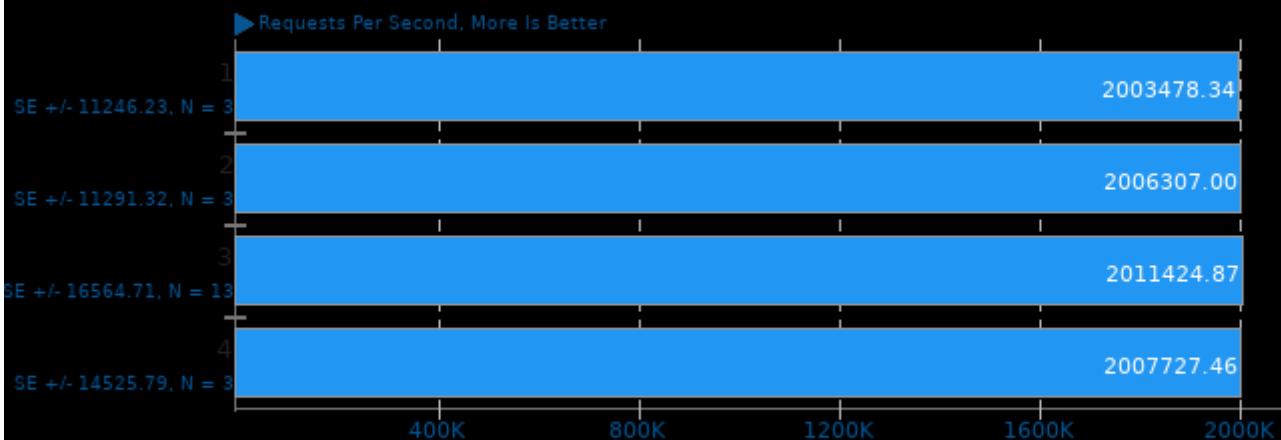
Test: Zstd 1 - Process: Compression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3 -std=c++11

Redis 6.0.9

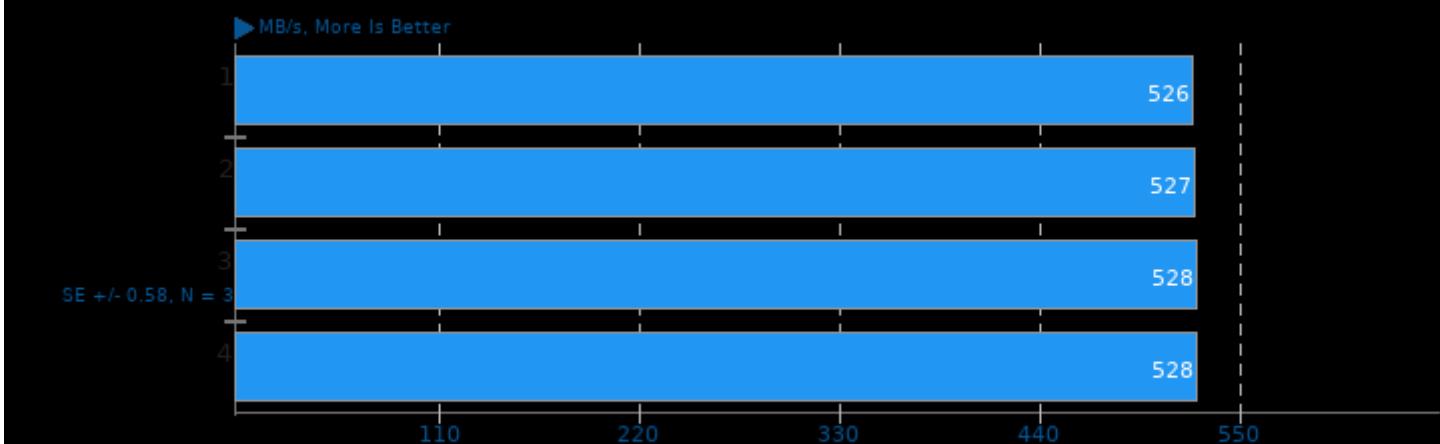
Test: SADD



1. (CXX) g++ options: -MM -MT -g3 -fvisibility=hidden -O3

lzbench 1.8

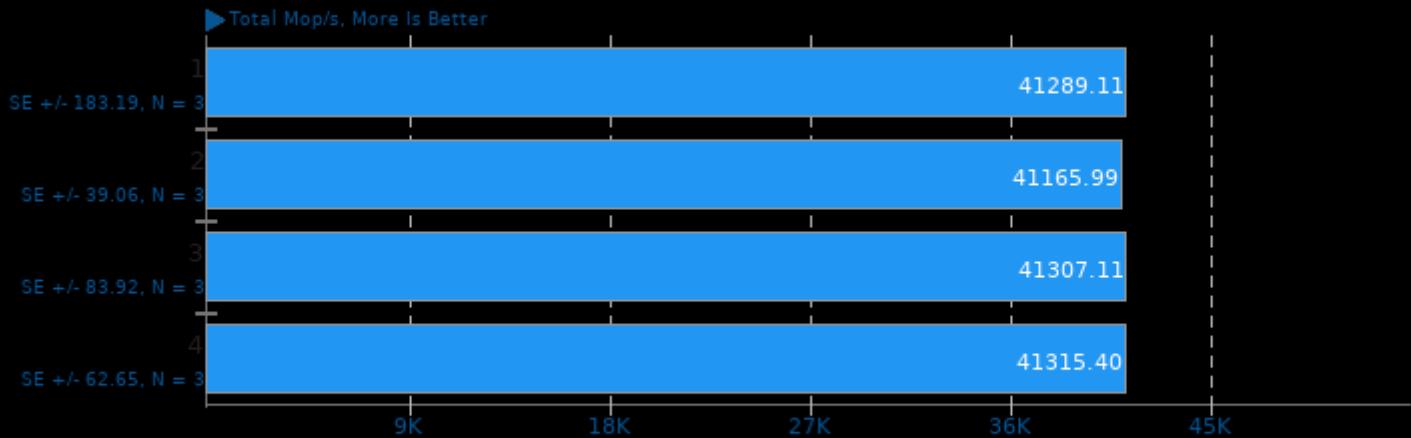
Test: Brotli 0 - Process: Decompression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3 -std=c++11

NAS Parallel Benchmarks 3.4

Test / Class: SP.B

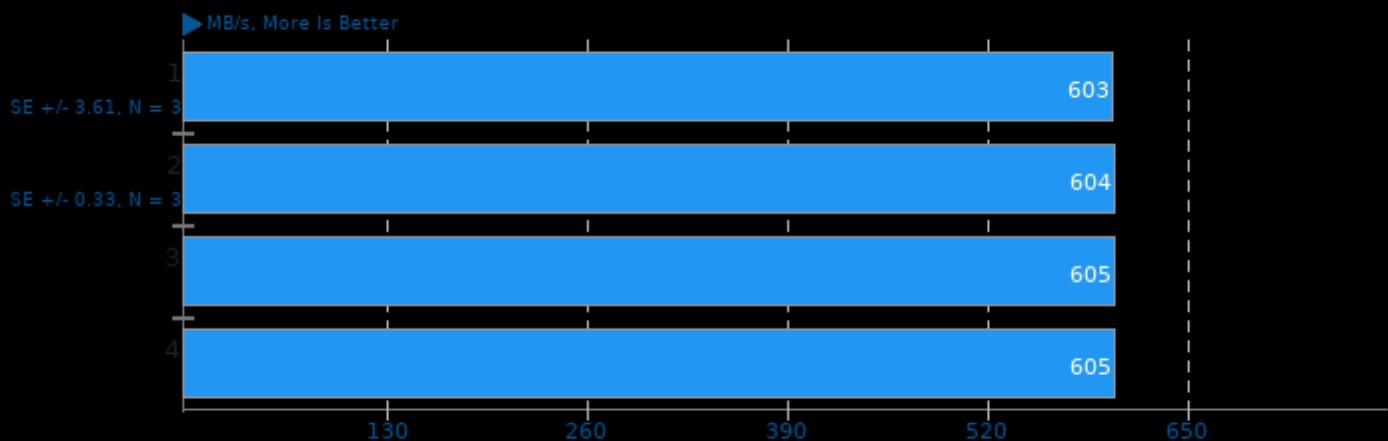


1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi

2. Open MPI 4.0.3

Izbench 1.8

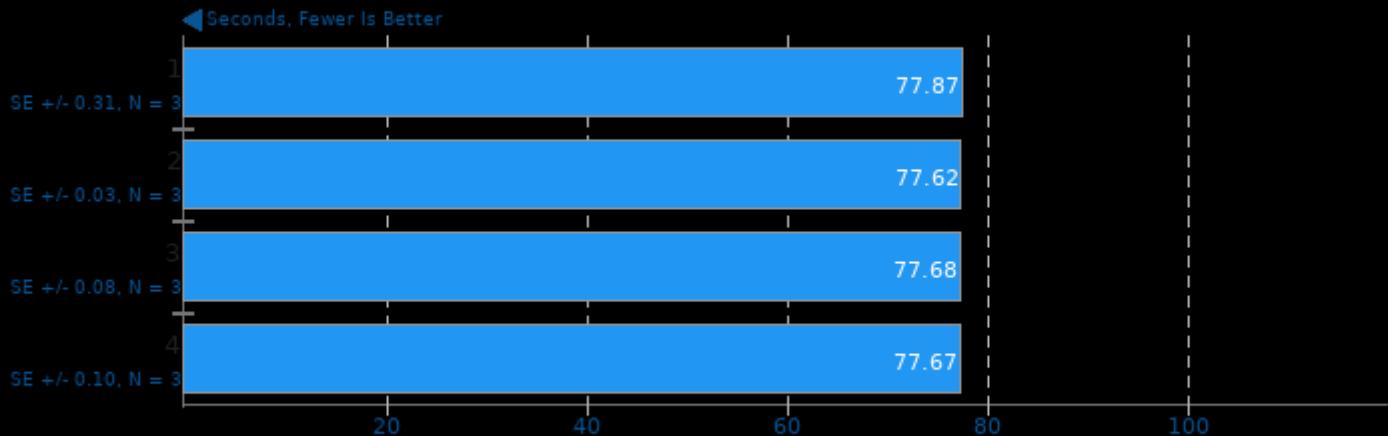
Test: Brotli 2 - Process: Decompression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3 -std=c++11

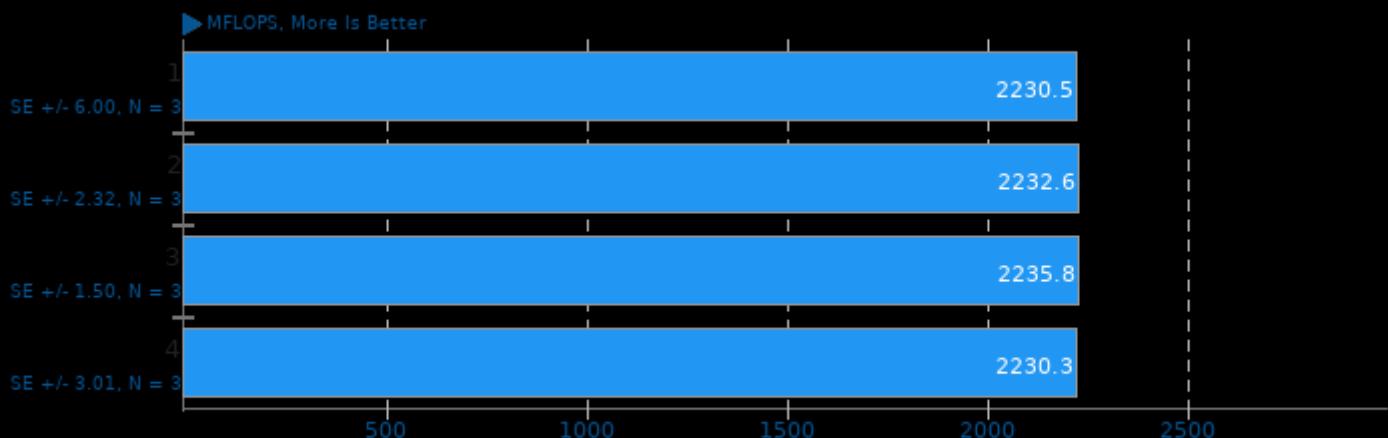
GnuPG 2.2.27

2.7GB Sample File Encryption



1. (CC) gcc options: -O2

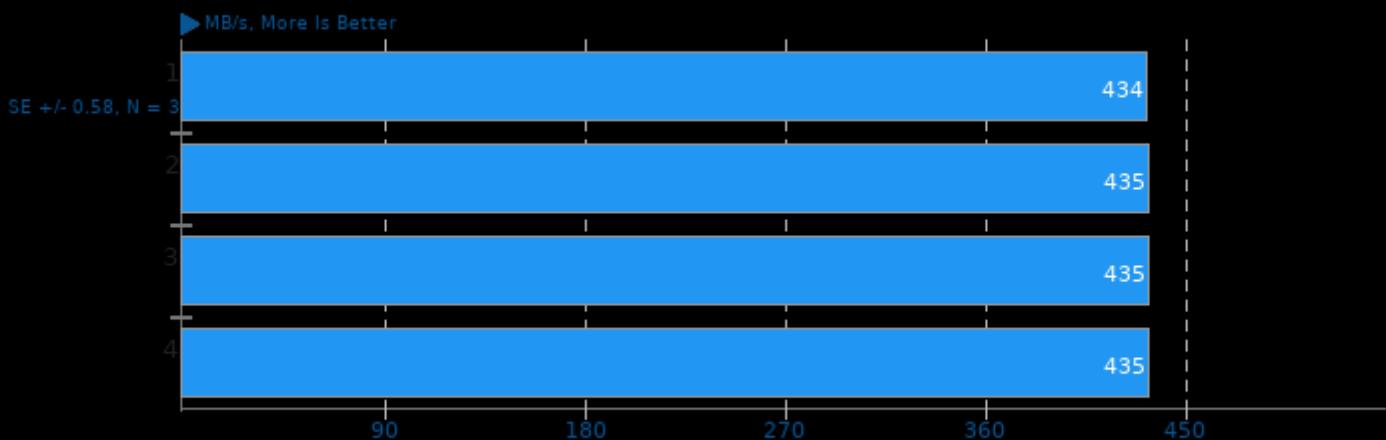
QuantLib 1.21



1. (CXX) g++ options: -O3 -march=native -rdynamic

Izbench 1.8

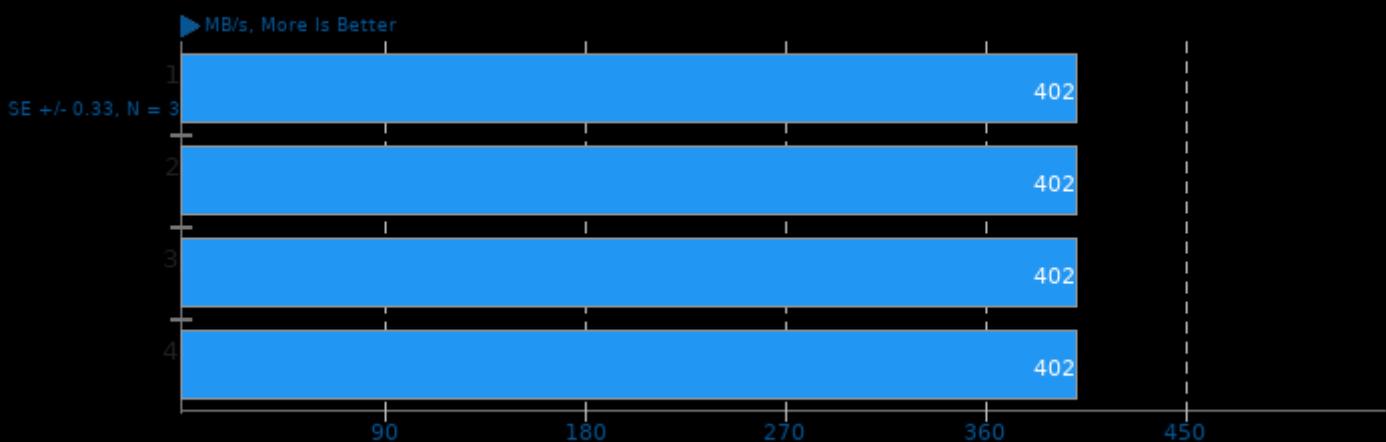
Test: Crush 0 - Process: Decompression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3 -std=c++11

Izbench 1.8

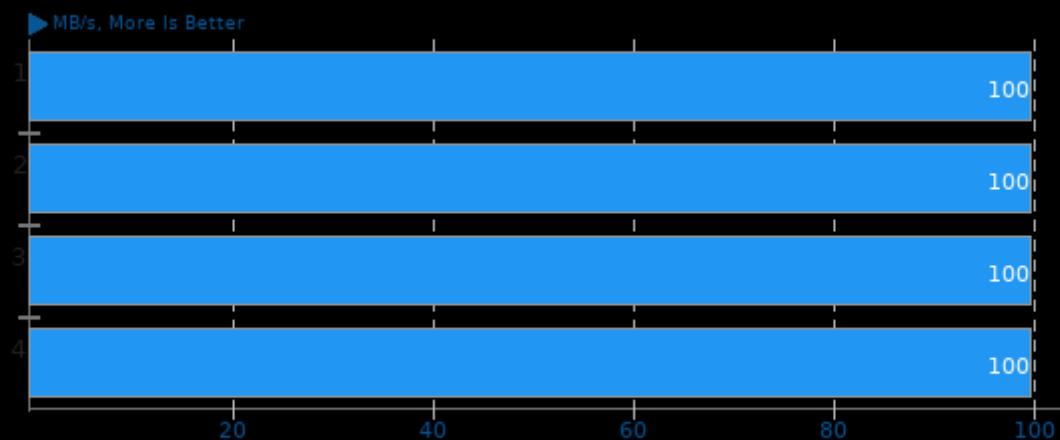
Test: Brotli 0 - Process: Compression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3 -std=c++11

Izbench 1.8

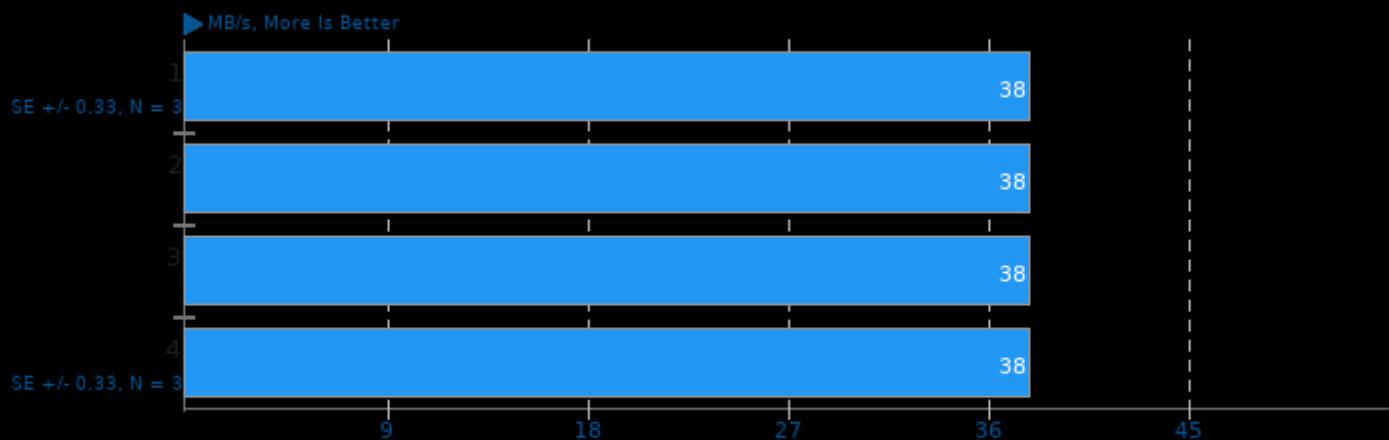
Test: XZ 0 - Process: Decompression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3 -std=c++11

Izbench 1.8

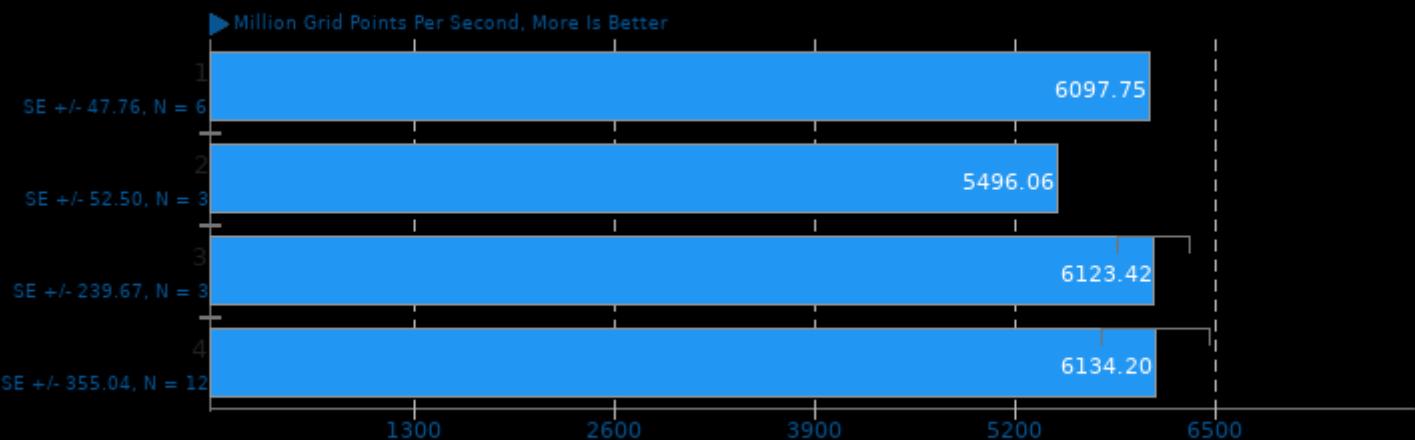
Test: XZ 0 - Process: Compression



1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3 -std=c++11

ASKAP 1.0

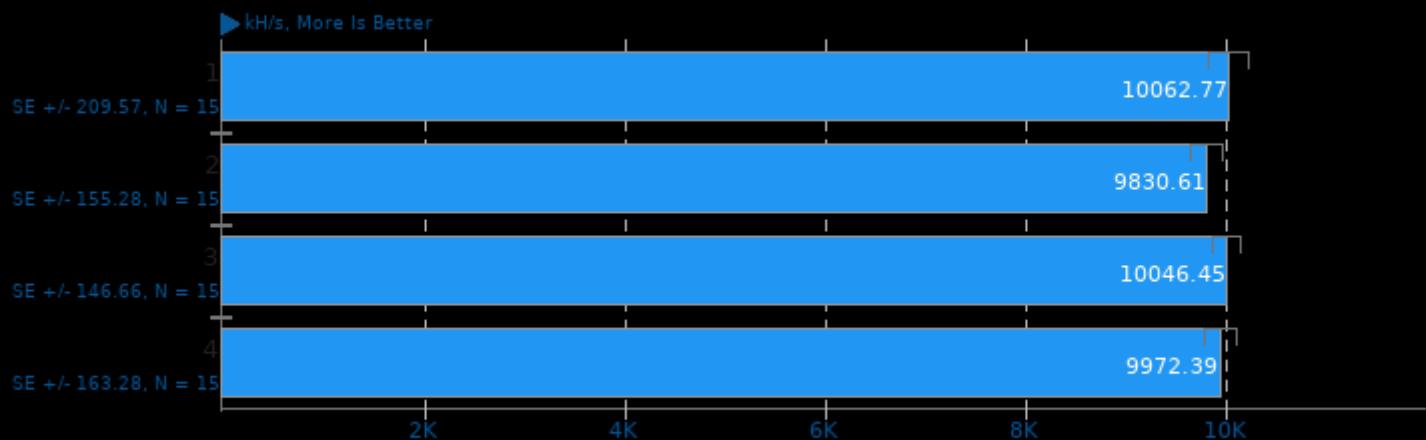
Test: tConvolve MT - Degridding



1. (CXX) g++ options: -O3 -fstrict-aliasing -fopenmp

Cpuminer-Opt 3.15.5

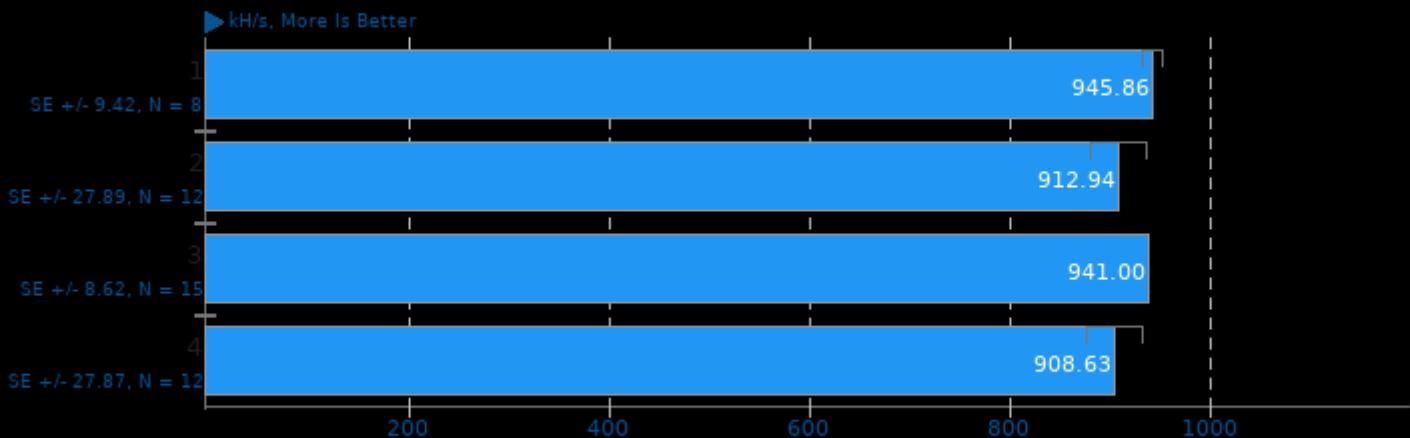
Algorithm: Deepcoin



1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp

Cpuminer-Opt 3.15.5

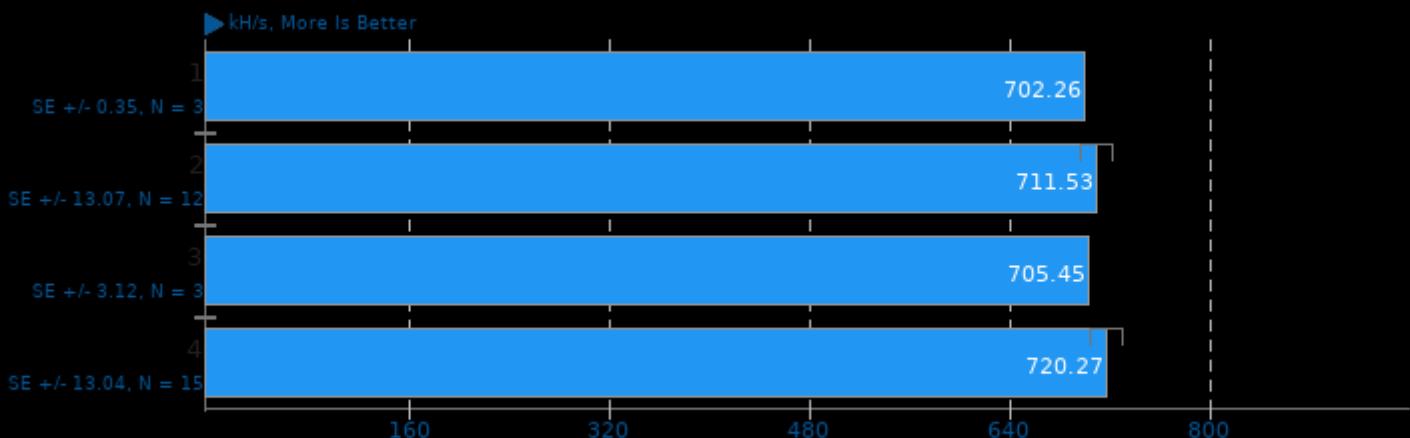
Algorithm: x25x



1. (CXX) g++ options: -O2 -curl -lz -pthread -lssl -lcrypto -lgmp

Cpuminer-Opt 3.15.5

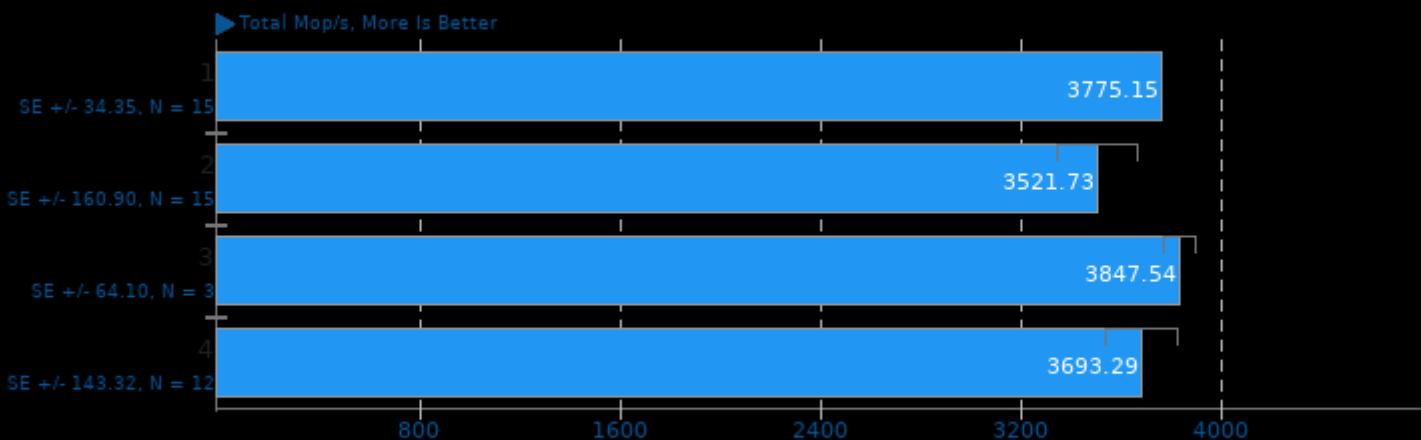
Algorithm: Magi



1. (CXX) g++ options: -O2 -curl -lz -pthread -lssl -lcrypto -lgmp

NAS Parallel Benchmarks 3.4

Test / Class: EP.D

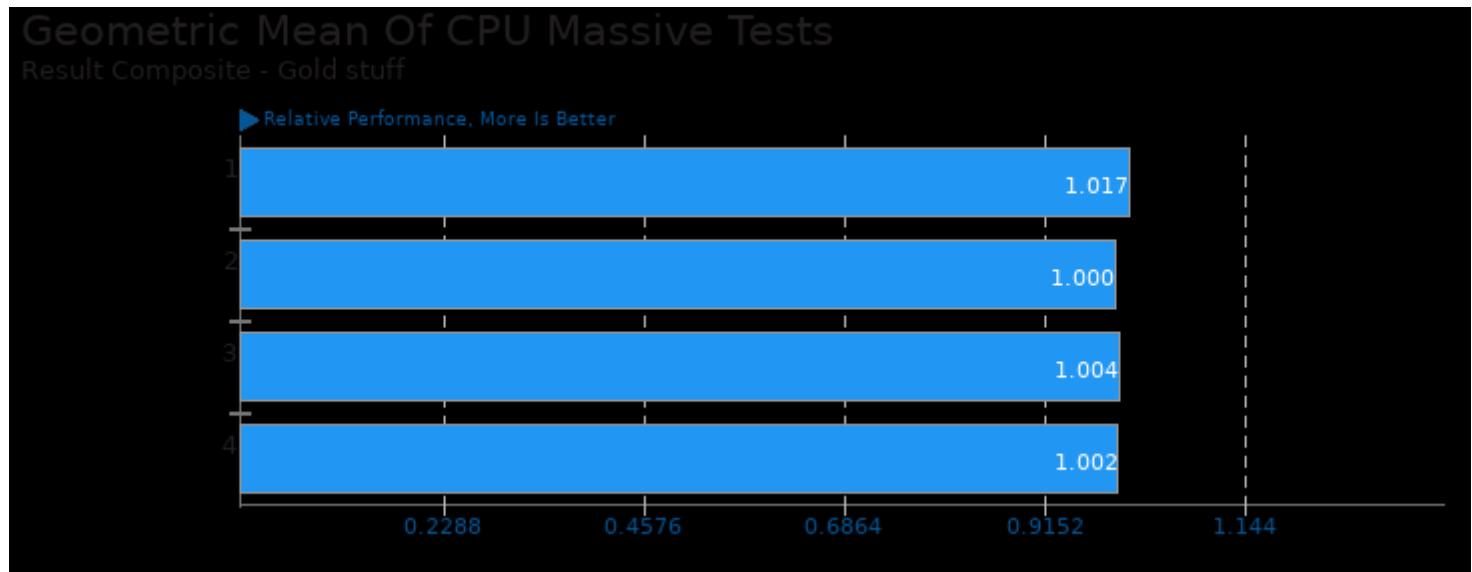


1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi

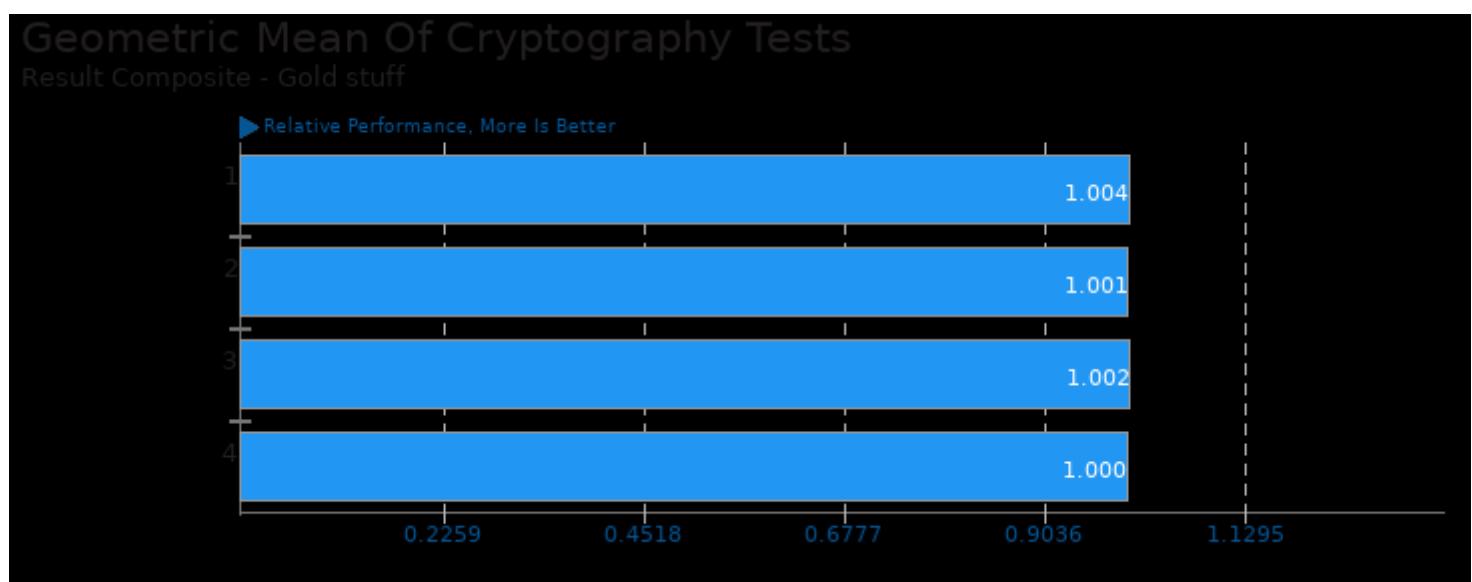
2. Open MPI 4.0.3

Gold stuff

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



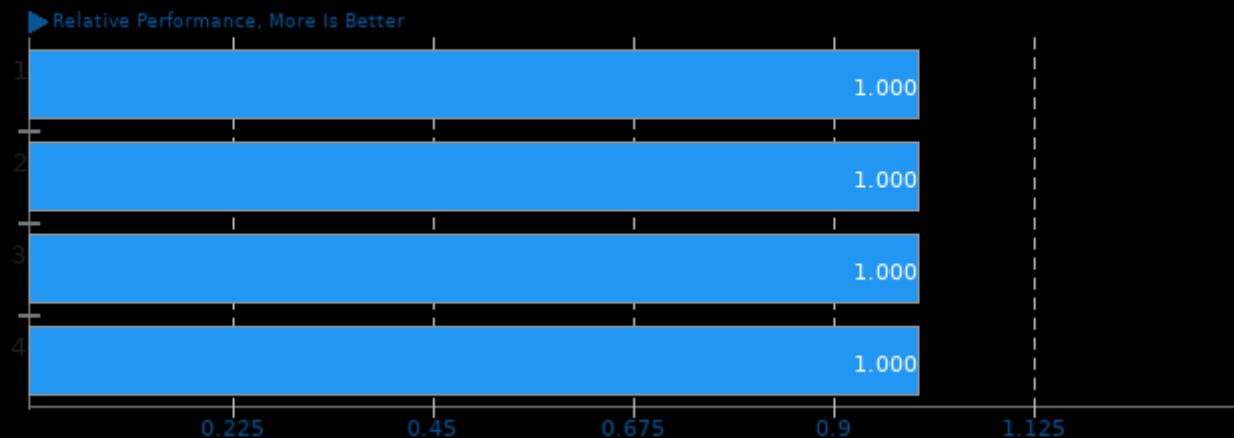
Geometric mean based upon tests: pts/lzbench, pts/npb, pts/redis and pts/cpuminer-opt



Geometric mean based upon tests: pts/gnupg, pts/gcrypt and pts/cpuminer-opt

Gold stuff**Geometric Mean Of Finance Tests**

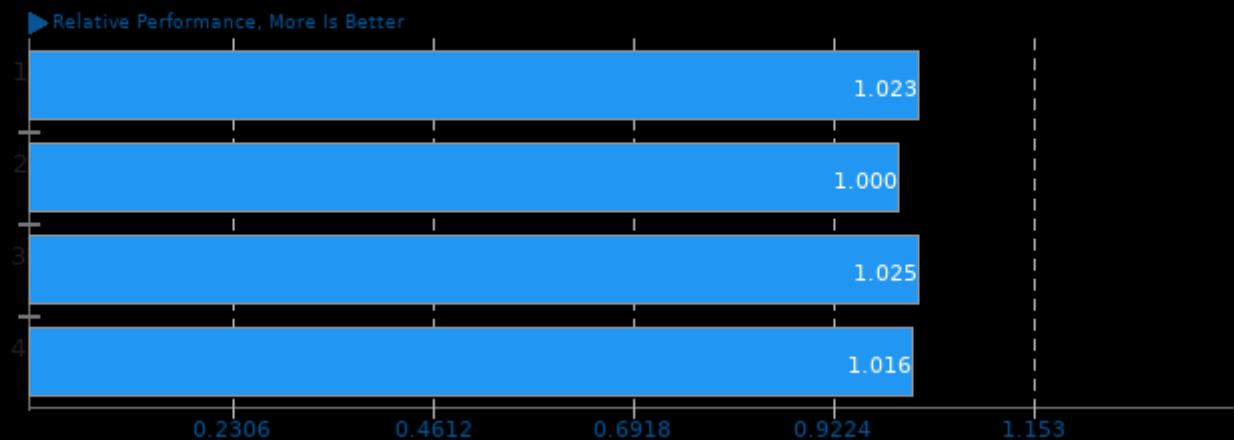
Result Composite - Gold stuff



Geometric mean based upon tests: pts/financebench and pts/quantlib

Geometric Mean Of HPC - High Performance Computing Tests

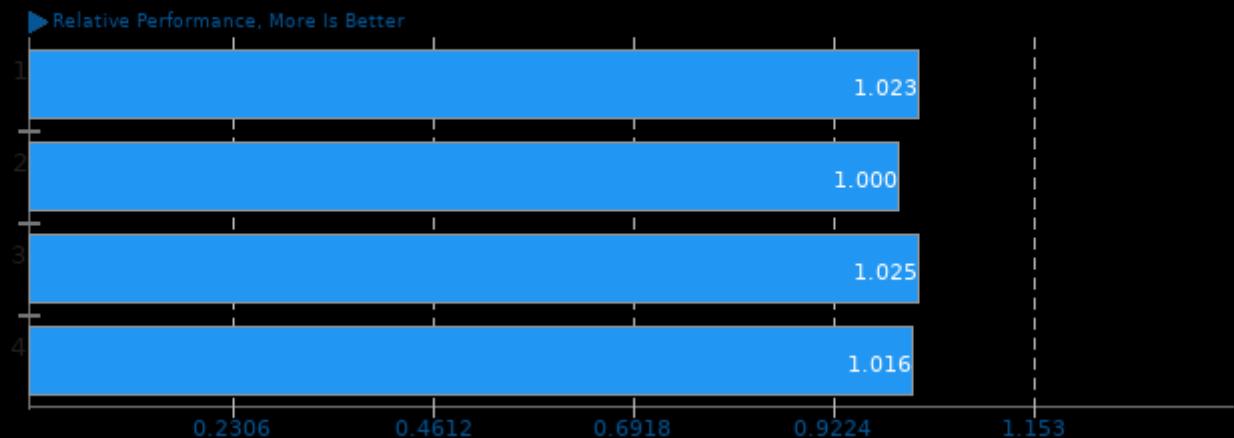
Result Composite - Gold stuff



Geometric mean based upon tests: pts/npb and pts/askap

Gold stuff**Geometric Mean Of MPI Benchmarks Tests**

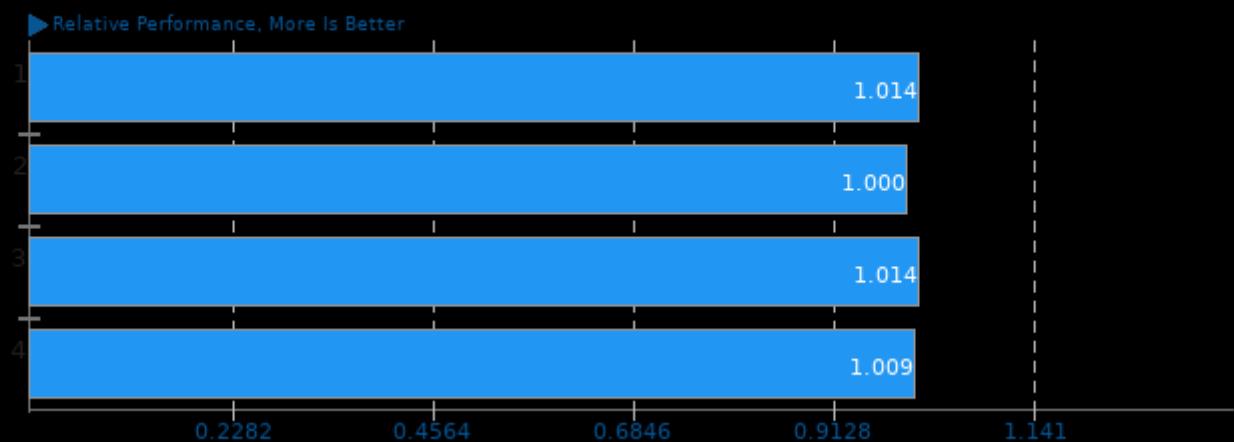
Result Composite - Gold stuff



Geometric mean based upon tests: pts/askap and pts/npb

Geometric Mean Of Multi-Core Tests

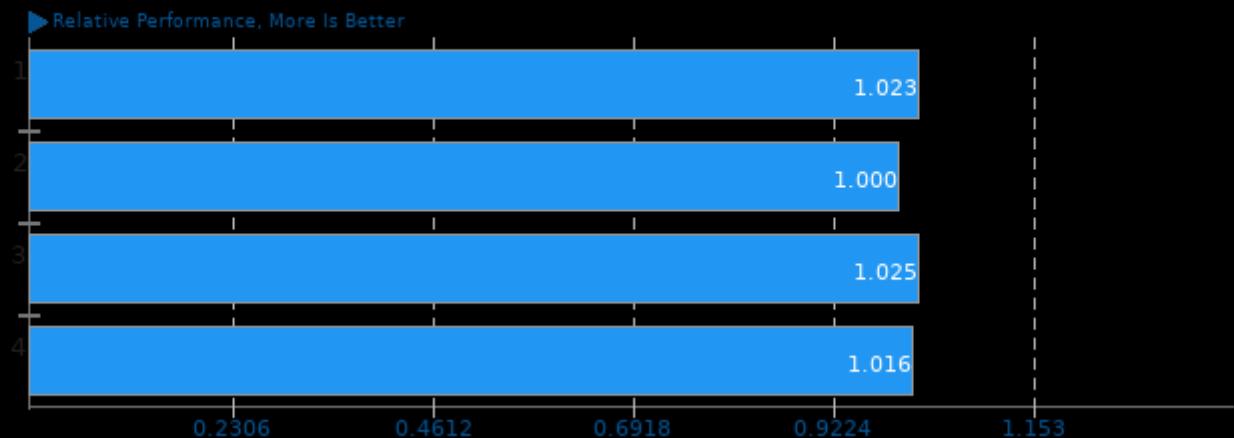
Result Composite - Gold stuff



Geometric mean based upon tests: pts/cpuminer-opt, pts/askap and pts/npb

Gold stuff**Geometric Mean Of OpenMPI Tests**

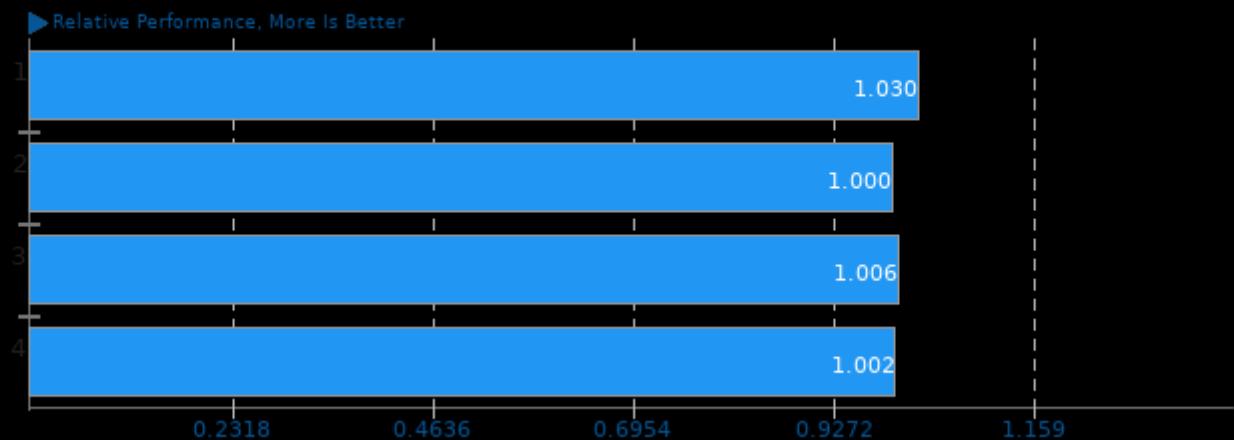
Result Composite - Gold stuff



Geometric mean based upon tests: pts/askap and pts/npb

Geometric Mean Of Server CPU Tests

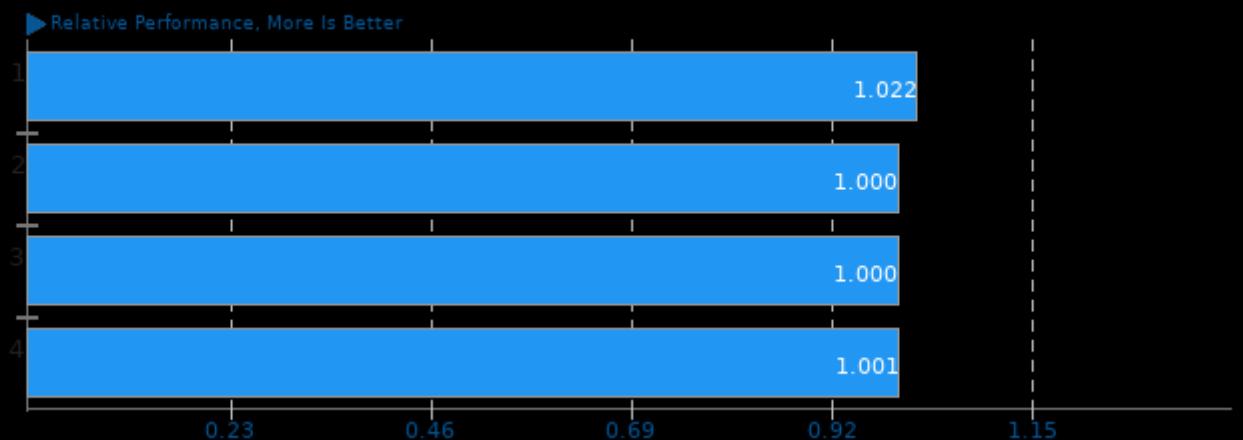
Result Composite - Gold stuff



Geometric mean based upon tests: pts/npb, pts/redis and pts/cpuminer-opt

Geometric Mean Of Single-Threaded Tests

Result Composite - Gold stuff



Geometric mean based upon tests: pts/lzbench, pts/gnupg and pts/redis

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 09:00.