



server-evaluation

Intel Core i7-4770 testing with a MSI H87-G43 (MS-7816) v1.0 (V2.14B11 BIOS) and Intel Xeon E3-1200 v3/4th Gen Core IGP on Ubuntu 17.10 via the Phoronix Test Suite.

Test Systems:

SB34

Processor: Intel Core i7-4770 @ 3.90GHz (4 Cores / 8 Threads), Motherboard: MSI H87-G43 (MS-7816) v1.0 (V2.14B11 BIOS), Chipset: Intel 4th Gen Core DRAM, Memory: 4 x 8192 MB DDR3-1600MT/s, Disk: 2 x 2000GB Western Digital WD2000FYYZ-0, Graphics: Intel Xeon E3-1200 v3/4th Gen Core IGP, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 17.10, Kernel: 4.13.0-38-generic (x86_64), Compiler: GCC 7.2.0, File-System: ext4

```
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++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes
--enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --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 --with-tune=generic --without-cuda-driver -v
```

Processor Notes: Scaling Governor: intel_pstate performance

Security Notes: KPTI + OSB (observable speculation barrier Intel v6) + Full generic retpoline IBPB (Intel v4) Protection

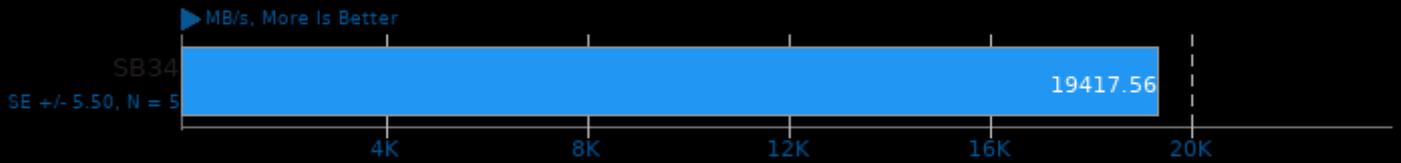
SB34

Stream - Copy (MB/s)	19418
Standard Deviation	0.1%
Stream - Scale (MB/s)	14273
Standard Deviation	0.1%
Stream - Triad (MB/s)	16103
Standard Deviation	0.1%
Stream - Add (MB/s)	16131
Standard Deviation	0.2%
Timed MAFFT Alignment - M.S.A (sec)	4.29
Standard Deviation	6.5%
TSCP - A.C.P (Nodes/s)	1305277
Standard Deviation	1%
TTSIOD 3D Renderer - P.R.W.S.S.M (FPS)	202.95
Standard Deviation	0.3%
x264 - H.2.V.E (FPS)	38.07
Standard Deviation	0.1%
GraphicsMagick - HWB Color Space (Iterations/min)	216
GraphicsMagick - L.A.T (Iterations/min)	99
GraphicsMagick - Sharpen (Iterations/min)	131
GraphicsMagick - Resizing (Iterations/min)	196
Standard Deviation	0.3%
Himeno Benchmark - P.P.S (MFLOPS)	1992
Standard Deviation	5.1%
7-Zip Compression - C.S.T (MIPS)	21617
Standard Deviation	1.8%
C-Ray - Total Time (sec)	24.88
Standard Deviation	0%
Parallel BZIP2 Compression - 2.F.C (sec)	9.19
Standard Deviation	0.4%
POV-Ray - Trace Time (sec)	130.70
Standard Deviation	0.2%
Smallpt - G.I.R.1.S (sec)	76
FLAC Audio Encoding - WAV To FLAC (sec)	11.76
Standard Deviation	0.4%
LAME MP3 Encoding - WAV To MP3 (sec)	32.48
Standard Deviation	0.4%
FFmpeg - H.2.H.T.N.D (sec)	6.85
Standard Deviation	0.5%
Tachyon - Total Time (sec)	12.96
Standard Deviation	0.2%
OpenSSL - R.4.b.P (Signs/sec)	674.50
Standard Deviation	0%
Apache Benchmark - S.W.P.S (Reqs/sec)	21564
Standard Deviation	0.4%
RAMspeed SMP - Integer Add (MB/s)	16308

RAMspeed SMP - Integer Copy (MB/s) 14452
RAMspeed SMP - Integer Scale (MB/s) 14430
RAMspeed SMP - Floating-Point Add (MB/s) 16349
 Stream - Add (MB/s) 16136
 Standard Deviation 0.2%
 Stream - Copy (MB/s) 19419
 Standard Deviation 0%
 Stream - Scale (MB/s) 14285
 Standard Deviation 0.1%
CacheBench - Read Cache (MB/s) 3303
 Standard Deviation 0%
CacheBench - Write Cache (MB/s) 25751
 Standard Deviation 0%

Stream 2013-01-17

Type: Copy



Stream 2013-01-17

Type: Scale



Stream 2013-01-17

Type: Triad



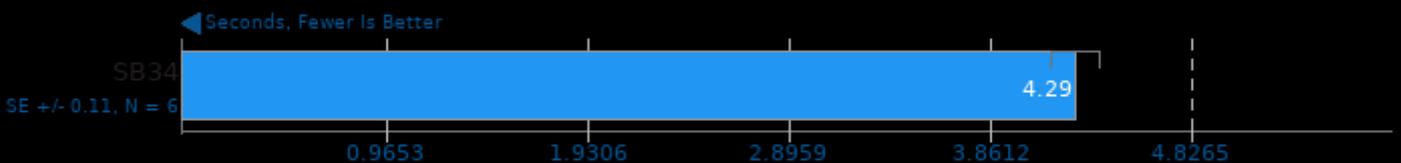
Stream 2013-01-17

Type: Add



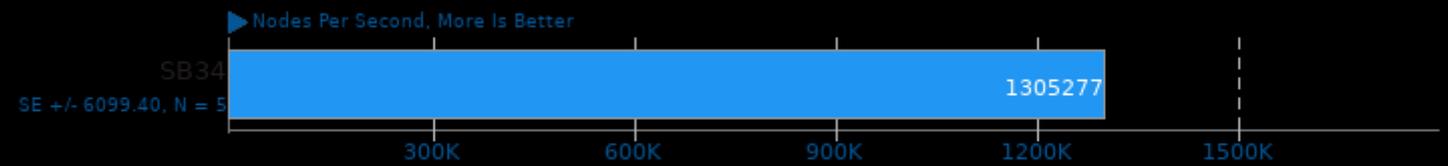
Timed MAFFT Alignment 7.392

Multiple Sequence Alignment



TSCP 1.81

AI Chess Performance



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

TTSIOD 3D Renderer 2.3a

Phong Rendering With Soft-Shadow Mapping



1, (CXX) g++ options: -O3 -fomit-frame-pointer -ffast-math -mtune=native -fno-plt -msse -mrecip -mfpmath=sse -msse2 -msse3 -lsdl -lstdc++

x264 2018-02-05

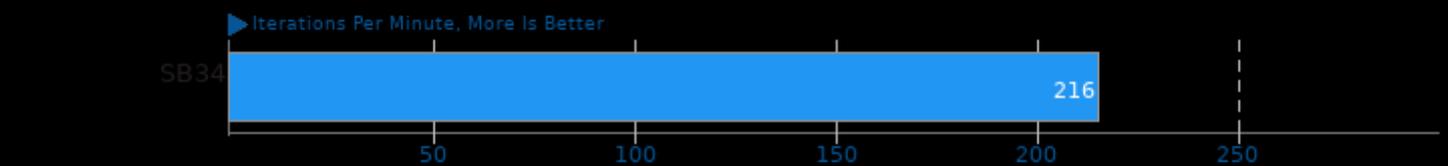
H.264 Video Encoding



1, (CC) gcc options: -ldl -m64 -lm -lpthread -O3 -ffast-math -std=gnu99 -fPIC -fomit-frame-pointer -fno-tree-vectorize

GraphicsMagick 1.3.28

HWB Color Space



1, (CC) gcc options: -fopenmp -O2 -pthread -ljpeg -lwebp -lwebpmux -ltiff -ljpeg -lXext -lX11 -llzma -lz -lm -lgomp -lpthread

GraphicsMagick 1.3.28

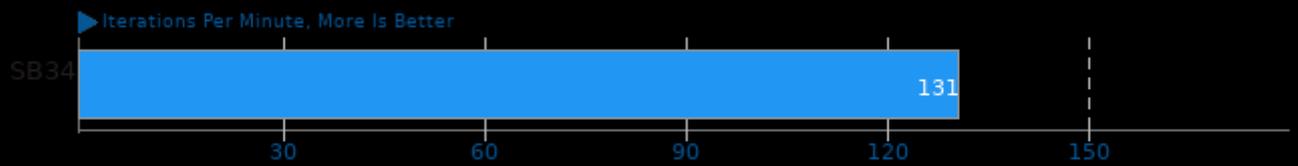
Local Adaptive Thresholding



1, (CC) gcc options: -fopenmp -O2 -pthread -ljpeg -lwebp -lwebpmux -ltiff -ljpeg -lXext -lX11 -llzma -lz -lm -lgomp -lpthread

GraphicsMagick 1.3.28

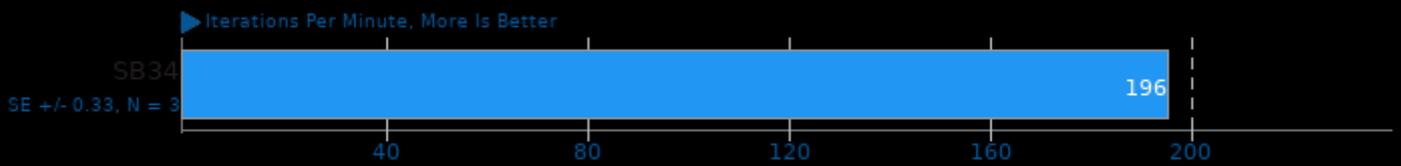
Sharpen



1. (CC) gcc options: -fopenmp -O2 -pthread -ljpeg -lwebp -lwebpmux -ltiff -ljpeg -lXext -lX11 -llzma -lz -lm -lgomp -lpthread

GraphicsMagick 1.3.28

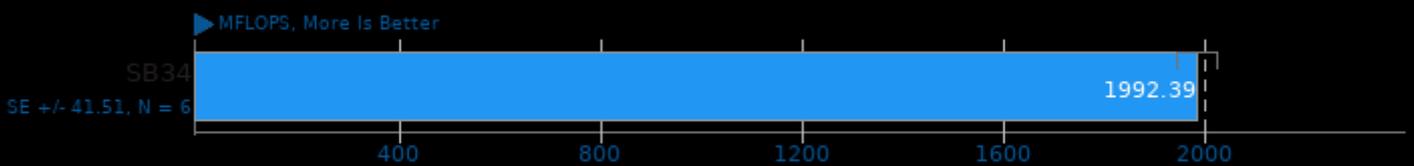
Resizing



1. (CC) gcc options: -fopenmp -O2 -pthread -ljpeg -lwebp -lwebpmux -ltiff -ljpeg -lXext -lX11 -llzma -lz -lm -lgomp -lpthread

Himeno Benchmark 3.0

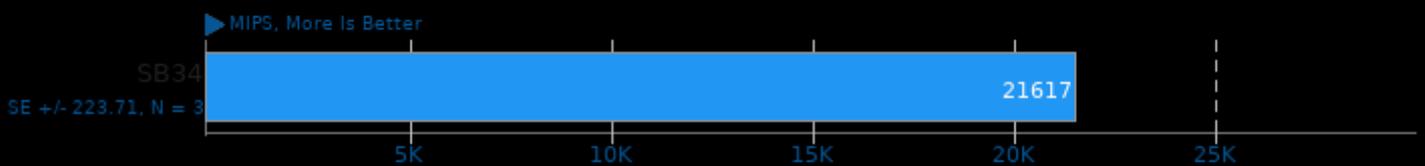
Poisson Pressure Solver



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

7-Zip Compression 16.02

Compress Speed Test



1. (CXX) g++ options: -pipe -lpthread

C-Ray 1.1

Total Time



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

Parallel BZIP2 Compression 1.1.12

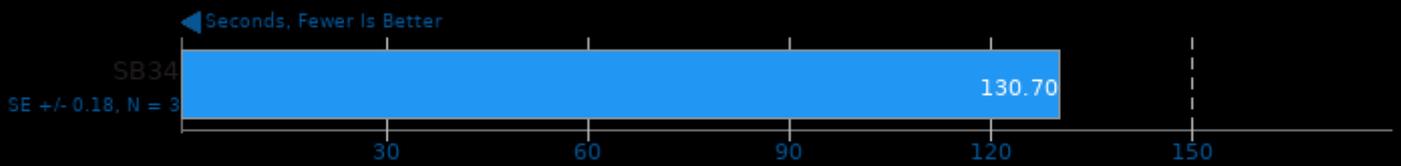
256MB File Compression



1. (CXX) g++ options: -O2 -pthread -lbz2 -lpthread

POV-Ray 3.7.0.7

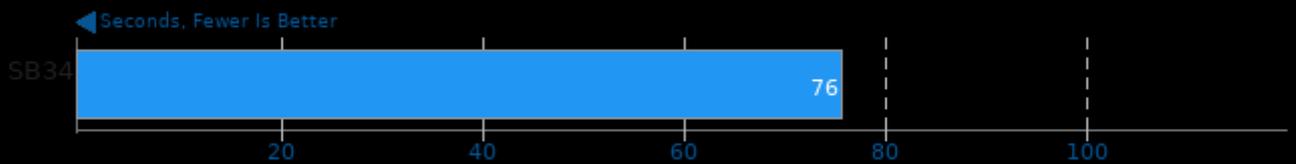
Trace Time



1. (CXX) g++ options: -pipe -O3 -ffast-math -march=native -pthread -fSDXL -fX11 -ftiff -ljpeg -lpng -lz -lrt -lm -lboost_thread -lboost_system

Smallpt 1.0

Global Illumination Renderer; 100 Samples



1. (CXX) g++ options: -fopenmp

FLAC Audio Encoding 1.3.2

WAV To FLAC



1. (CXX) g++ options: -O2 -fvisibility=hidden -lm

LAME MP3 Encoding 3.100

WAV To MP3



1. (CC) gcc options: -lm

FFmpeg 3.4.1

H.264 HD To NTSC DV



1. (CC) gcc options: -lavdevice -lavfilter -lavformat -lavcodec -lswresample -lswscale -lavutil -lxcbr -lxcbr-fixes -lxcbr-shape -lasound -lm -ldl -lzma -pthreads

Tachyon 0.98.9

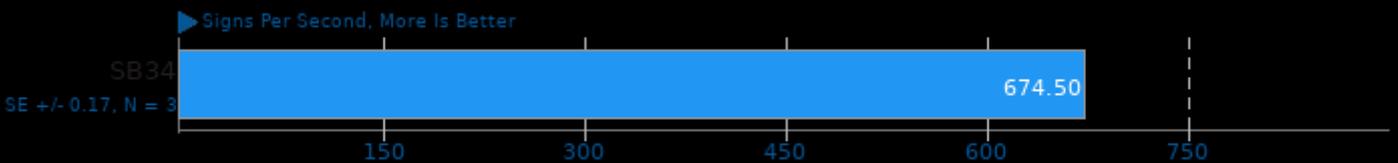
Total Time



1. (CC) gcc options: -m32 -O3 -fomit-frame-pointer -ffast-math -ltachyon -lm -lpthread

OpenSSL 1.1.0f

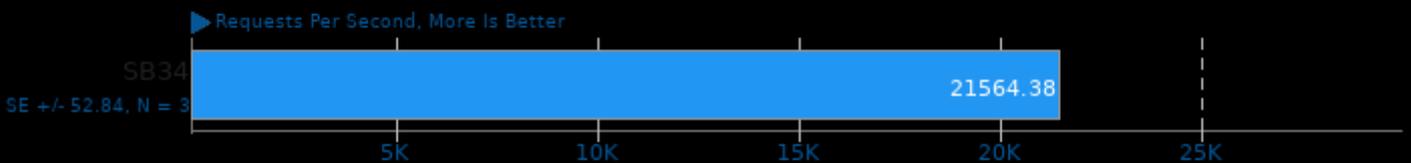
RSA 4096-bit Performance



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

Apache Benchmark 2.4.29

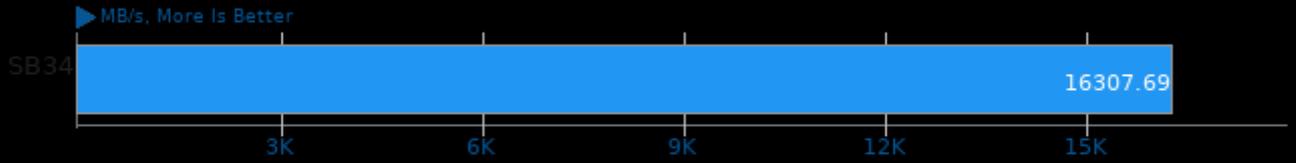
Static Web Page Serving



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

RAMspeed SMP 3.5.0

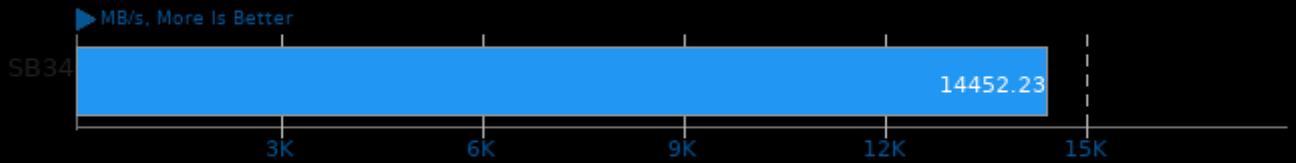
Integer Add



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

RAMspeed SMP 3.5.0

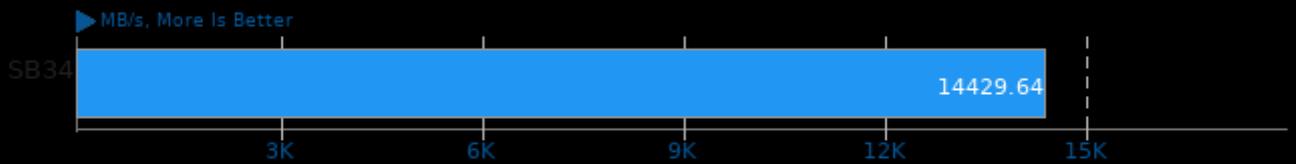
Integer Copy



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

RAMspeed SMP 3.5.0

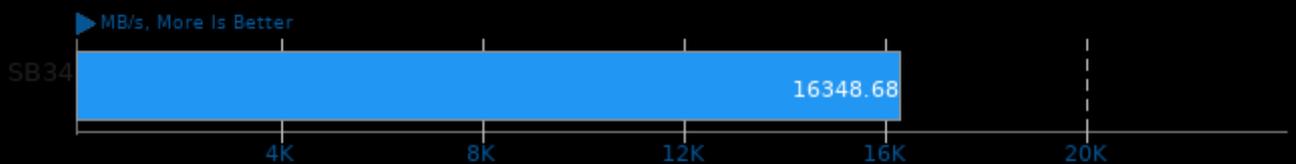
Integer Scale



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

RAMspeed SMP 3.5.0

Floating-Point Add



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

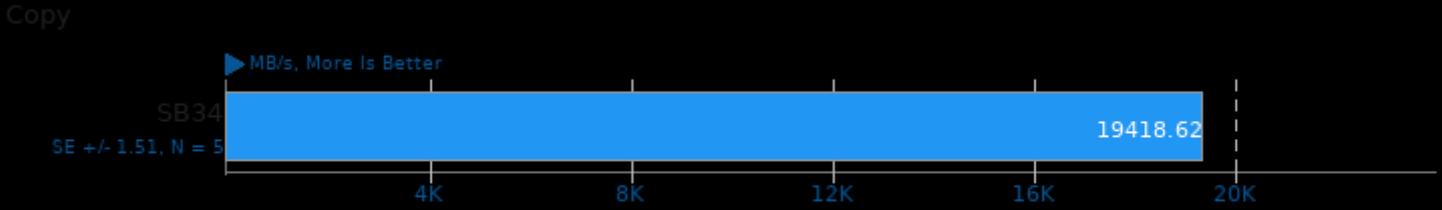
Stream 2013-01-17

Add



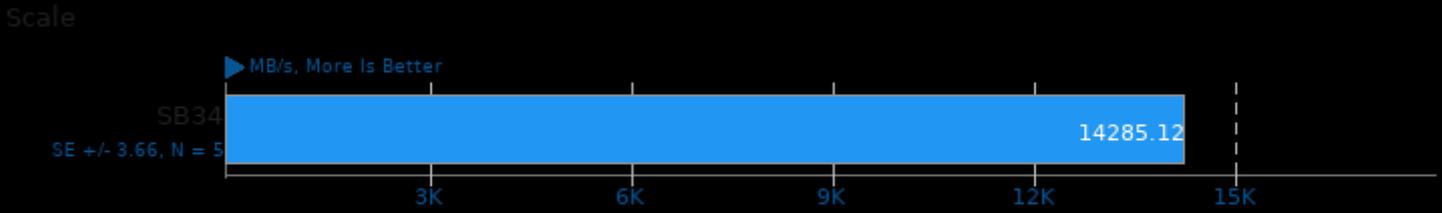
1. (CO) gcc options: -O3 -march=native -fopenmp

Stream 2013-01-17



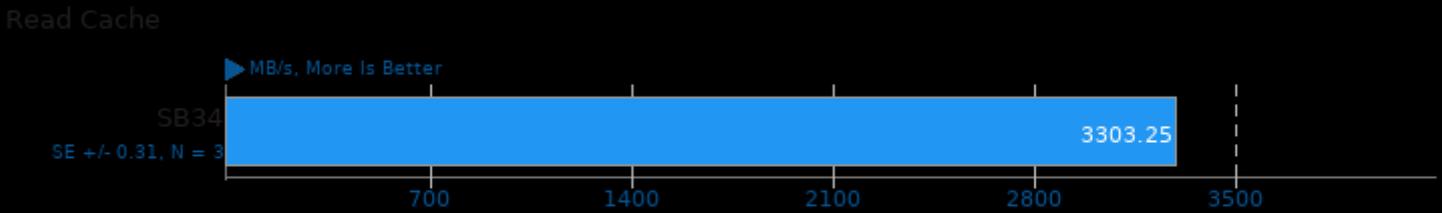
1. (CC) gcc options: -O3 -march=native -fopenmp

Stream 2013-01-17



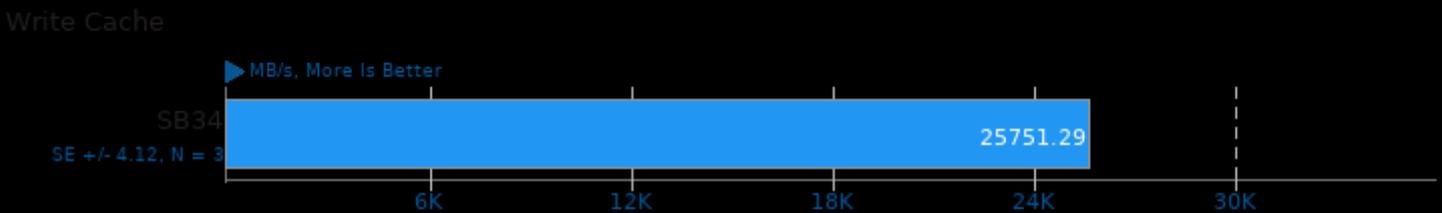
1. (CC) gcc options: -O3 -march=native -fopenmp

CacheBench



1. (CC) gcc options: -lrt

CacheBench



1. (CC) gcc options: -lrt

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