

www.phoronix-test-suite.com

rpi unmatched

ARMv8 Cortex-A72 testing with a BCM2835 Raspberry Pi 400 Rev 1.0 and V3D 4.2 4GB on Debian 10 via the Phoronix Test Suite.

Test Systems:

Raspberry Pi 400

Processor: ARMv8 Cortex-A72 @ 1.80GHz (4 Cores), Motherboard: BCM2835 Raspberry Pi 400 Rev 1.0, Memory: 4096MB, Disk: 32GB GB1QT, Graphics: V3D 4.2 4GB, Monitor: DELL P2210H

OS: Debian 10, Kernel: 5.4.51-v8+ (aarch64), Desktop: LXDE 0.10.0, Display Server: X Server 1.20.4, OpenGL: 2.1 Mesa 19.3.2, Compiler: GCC 8.3.0, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: snd_bcm2835.enable_compat_alsa=0 snd_bcm2835.enable_hdmi=1 snd_bcm2835.enable_headphones=1
Compiler Notes: --build=aarch64-linux-gnu --disable-libphobos --disable-libquadmath --disable-libquadmath-support --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-fix-cortex-a53-843419 --enable-gnu-unique-object --enable-languages=c,ada,c++,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-plugin --enable-shared --enable-threads=posix --host=aarch64-linux-gnu --program-prefix=aarch64-linux-gnu- --target=aarch64-linux-gnu --with-default-libstdcxx-abi=new --with-gcc-major-version-only -v
Processor Notes: Scaling Governor: cpufreq-dt ondemand

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Python Notes: Python 2.7.16 + Python 3.7.3
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Vulnerable + spectre_v1: Mitigation of __user pointer sanitization + spectre_v2: Vulnerable + srbds: Not affected + tsx_async_abort: Not affected

	Raspberry Pi 400
Zstd Compression - 19 - Compression Speed (MB/s)	**2.99**
Normalized	99.01%
Standard Deviation	1.5%
Zstd Compression - 19, Long Mode - Compression Speed (MB/s)	**2.73**
Normalized	100%
Standard Deviation	0.6%
GNU Octave Benchmark (sec)	36.771
Standard Deviation	1.2%
OCRMyPDF - P.6.P.P.D (sec)	313.581
Standard Deviation	4.4%
Timed GDB GNU Debugger Compilation - Time To Compile (sec)	864.724
Standard Deviation	1.9%
PHPBench - P.B.S (Score)	152791
Standard Deviation	0.3%
PyBench - T.F.A.T.T (Milliseconds)	4780
Standard Deviation	0.4%
7-Zip Compression - C.S.T (MIPS)	4309
Standard Deviation	0.1%
x265 - Bosphorus 4K (FPS)	0.29
Standard Deviation	0%
GraphicsMagick - HWB Color Space (Iterations/min)	160
GraphicsMagick - Noise-Gaussian (Iterations/min)	27
GraphicsMagick - Resizing (Iterations/min)	57
GraphicsMagick - Enhanced (Iterations/min)	21
GraphicsMagick - Sharpen (Iterations/min)	17
GraphicsMagick - Rotate (Iterations/min)	110
Standard Deviation	3.3%
GraphicsMagick - Swirl (Iterations/min)	53
Standard Deviation	1.1%
Zstd Compression - 8 - D.S (MB/s)	893.7
Standard Deviation	0.8%
Zstd Compression - 8 - Compression Speed (MB/s)	14.2
Standard Deviation	0%
Zstd Compression - 3 - D.S (MB/s)	893.8
Standard Deviation	0.6%
Zstd Compression - 3 - Compression Speed (MB/s)	72.5
Standard Deviation	0.1%
WebP Image Encode - Q.1.H.C (Encode Time - sec)	23.173
Standard Deviation	0.2%
WebP Image Encode - Q.1.L (Encode Time - sec)	82.817
Standard Deviation	0.6%
WebP Image Encode - Quality 100 (Encode Time - sec)	10.165
Standard Deviation	0.4%
WebP Image Encode - Default (Encode Time - sec)	7.483
Standard Deviation	0.6%

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Dolfyn - C.F.D (sec)	110.907
Standard Deviation	4.2%
Google SynthMark - VoiceMark_100 (Voices)	249.941
Standard Deviation	2.8%
RNNoise (sec)	54.895
Standard Deviation	2.4%
eSpeak-NG Speech Engine - T.T.S.S (sec)	147.524
Standard Deviation	4.6%
Smallpt - G.I.R.1.S (sec)	101.425
Standard Deviation	0.2%
WavPack Audio Encoding - WAV To WavPack (sec)	190.972
Standard Deviation	0.4%
FLAC Audio Encoding - WAV To FLAC (sec)	77.629
Standard Deviation	1.5%
Stress-NG - S.V.M.P (Bogo Ops/s)	1036078
Standard Deviation	1.5%
Stress-NG - G.Q.D.S (Bogo Ops/s)	12.90
Standard Deviation	2.9%
Stress-NG - G.C.S.F (Bogo Ops/s)	99763
Standard Deviation	0.2%
Stress-NG - Context Switching (Bogo Ops/s)	307648
Standard Deviation	0.5%
Stress-NG - Socket Activity (Bogo Ops/s)	468.95
Standard Deviation	0.1%
Stress-NG - Memory Copying (Bogo Ops/s)	115.88
Standard Deviation	3.5%
Stress-NG - Vector Math (Bogo Ops/s)	4457
Standard Deviation	0.1%
Stress-NG - Matrix Math (Bogo Ops/s)	1385
Standard Deviation	1.6%
Stress-NG - Semaphores (Bogo Ops/s)	249162
Standard Deviation	0.3%
Stress-NG - CPU Stress (Bogo Ops/s)	498.16
Standard Deviation	0.4%
Stress-NG - CPU Cache (Bogo Ops/s)	89.15
Standard Deviation	0.7%
Stress-NG - SENDFILE (Bogo Ops/s)	14559
Standard Deviation	0.1%
Stress-NG - Forking (Bogo Ops/s)	3159
Standard Deviation	1%
Stress-NG - Malloc (Bogo Ops/s)	2911739
Standard Deviation	0.3%
Stress-NG - Crypto (Bogo Ops/s)	302.56
Standard Deviation	0.3%
Stress-NG - Atomic (Bogo Ops/s)	90846
Standard Deviation	0.1%
Stress-NG - MEMFD (Bogo Ops/s)	17.95
Standard Deviation	0.3%
Stress-NG - NUMA (Bogo Ops/s)	43.42
Standard Deviation	0.1%
Stress-NG - MMAP (Bogo Ops/s)	4.58
Standard Deviation	0.4%
OpenSSL - RSA4096 (verify/s)	8927

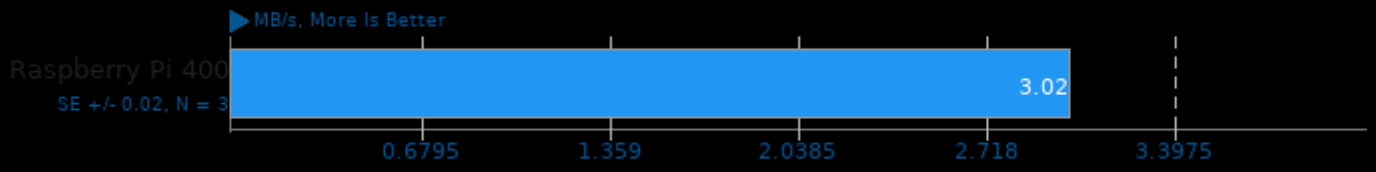
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Standard Deviation	0%
OpenSSL - RSA4096 (sign/s)	115.5
Standard Deviation	0.1%
OpenSSL - SHA256 (byte/s)	443038760
Standard Deviation	0.1%
Coremark - CoreMark Size 666 - I.P.S (Iterations/Sec)	39710
Standard Deviation	0.1%
Gzip Compression - L.S.T.A.T.t.g (sec)	140.264
Standard Deviation	10.5%
Monkey Audio Encoding - WAV To APE (sec)	43.899
Standard Deviation	6.5%

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Zstd Compression 1.5.0

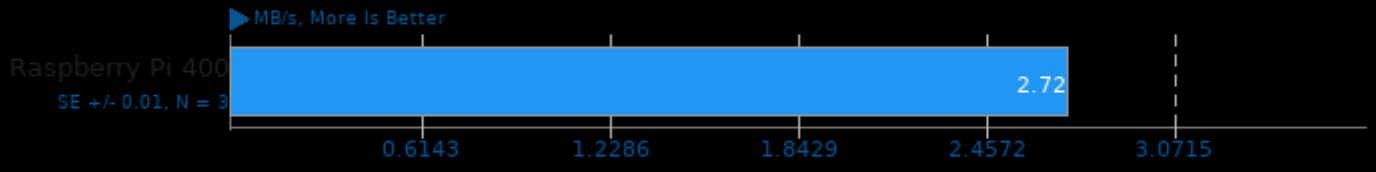
Compression Level: 19 - Compression Speed



1. (CC) gcc options: -O3 -pthread -lz -llzma

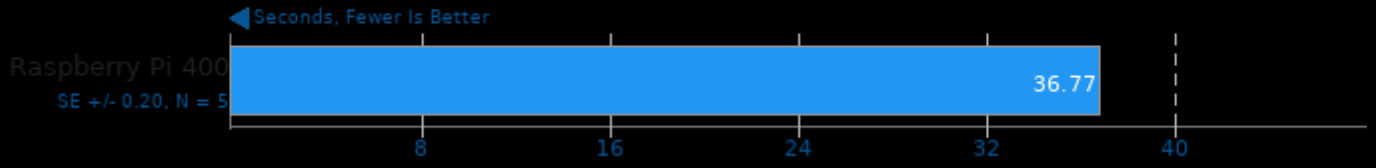
Zstd Compression 1.5.0

Compression Level: 19, Long Mode - Compression Speed



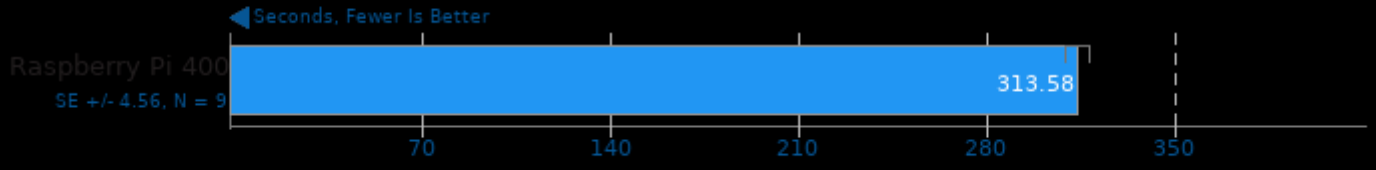
1. (CC) gcc options: -O3 -pthread -lz -llzma

GNU Octave Benchmark 4.4.1



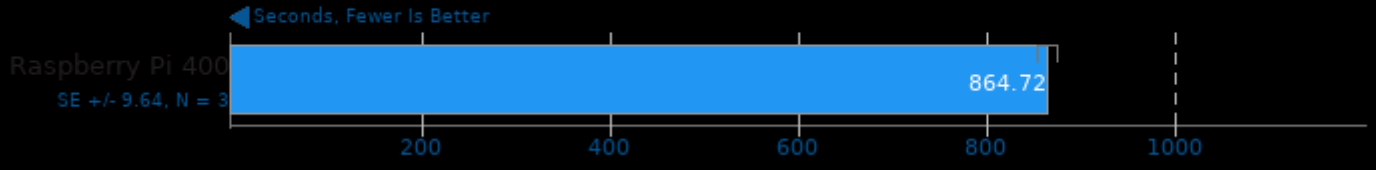
OCRMyPDF 8.0.1+dfsg

Processing 60 Page PDF Document



Timed GDB GNU Debugger Compilation 10.2

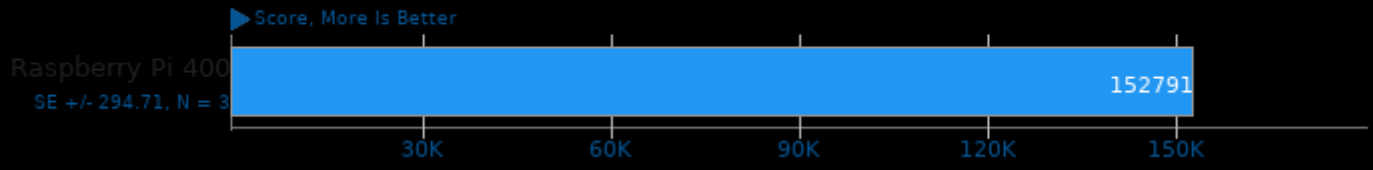
Time To Compile



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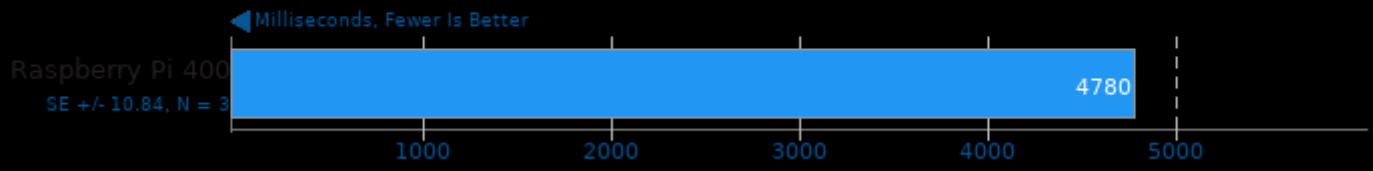
PHPBench 0.8.1

PHP Benchmark Suite



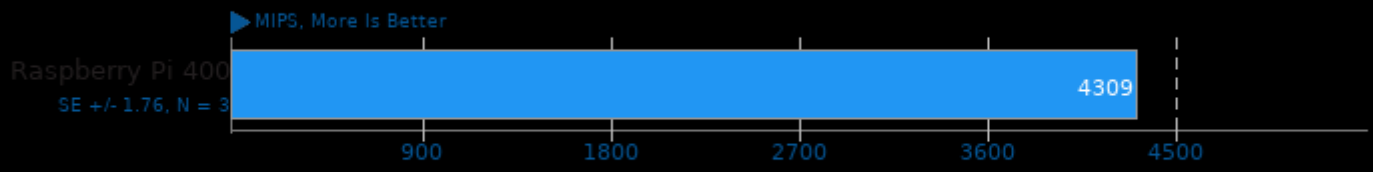
PyBench 2018-02-16

Total For Average Test Times



7-Zip Compression 16.02

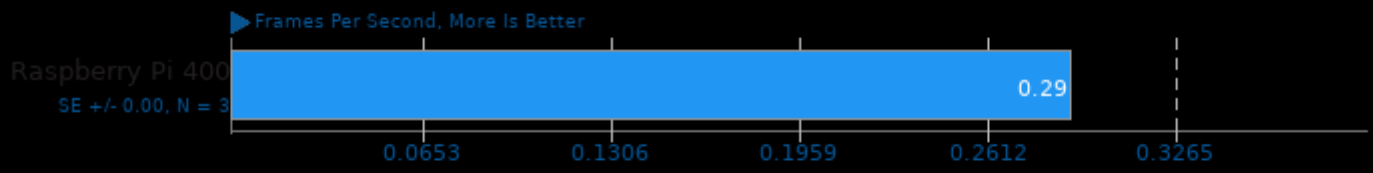
Compress Speed Test



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

x265 3.4

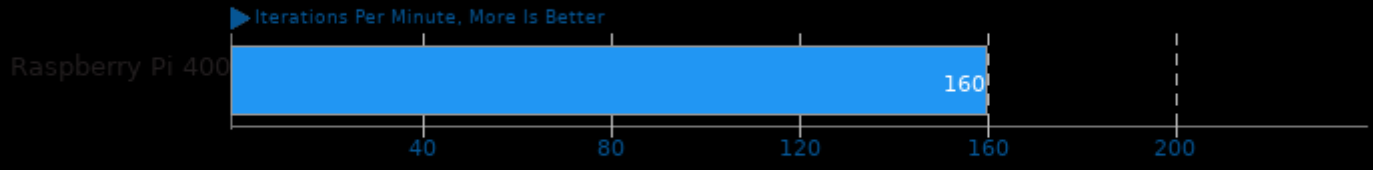
Video Input: Bosphorus 4K



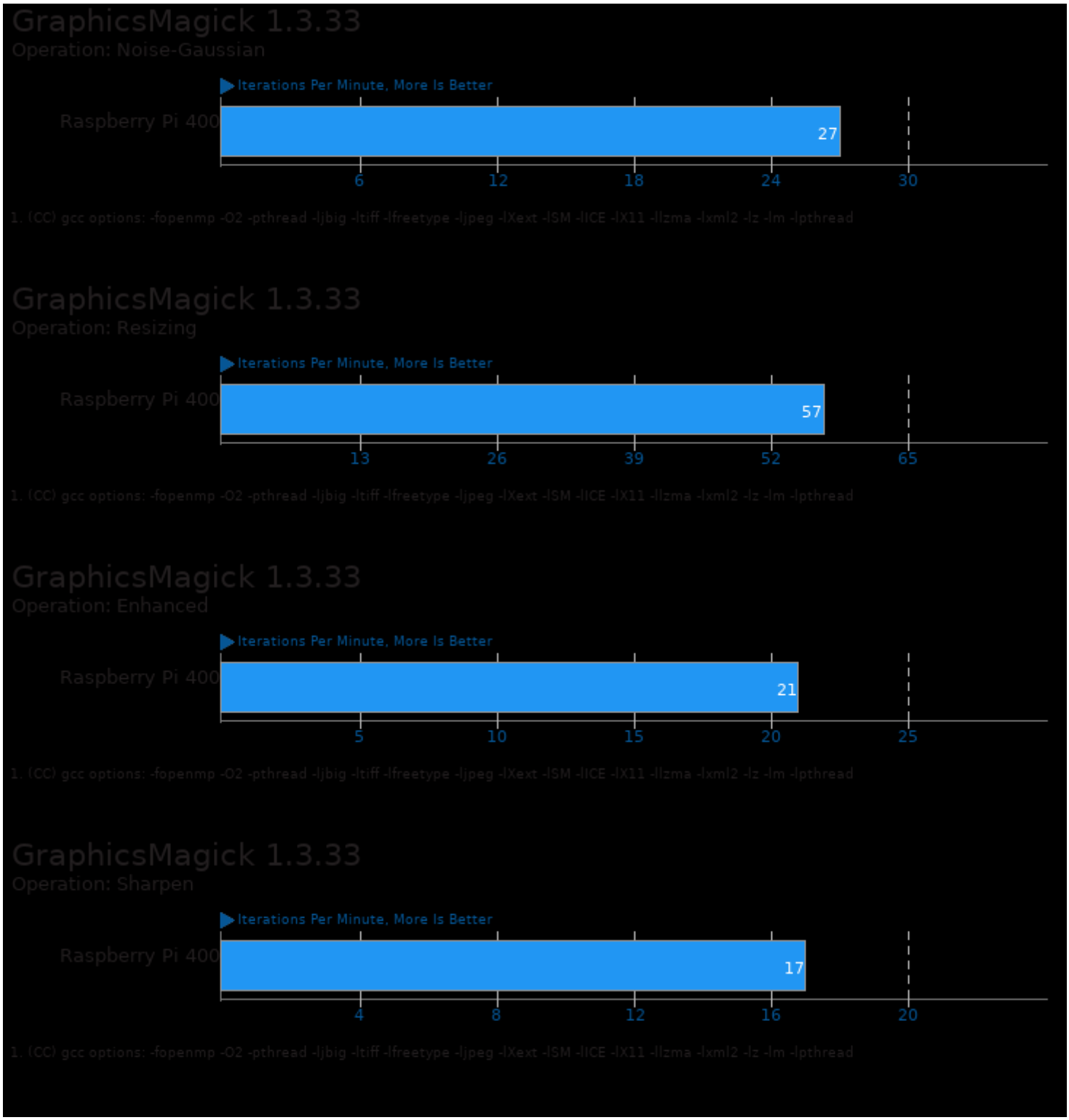
1. (CXX) g++ options: -O3 -rdynamic -lpthread -lrt -ldl -lnuma

GraphicsMagick 1.3.33

Operation: HWB Color Space

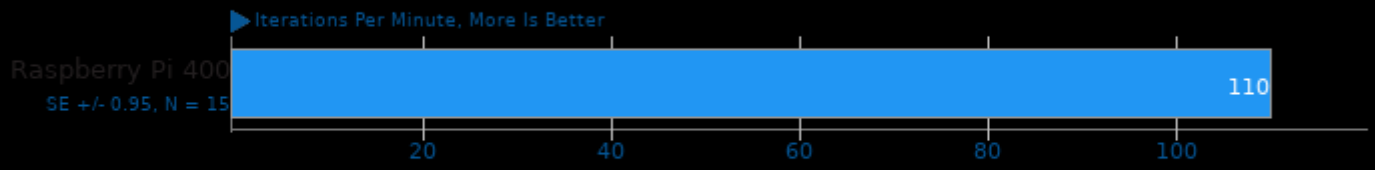


1. (CC) gcc options: -fopenmp -O2 -pthread -ljbig -ltiff -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -llzma -lxml2 -lz -lm -lpthread


GraphicsMagick 1.3.33
Operation: Noise-Gaussian
Iterations Per Minute, More Is Better
Raspberry Pi 400
27
6
12
18
24
30
1. (CC) gcc options: -fopenmp -O2 -pthread -ljbig -ltiff -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -llzma -lxml2 -lz -lm -lpthread
GraphicsMagick 1.3.33
Operation: Resizing
Iterations Per Minute, More Is Better
Raspberry Pi 400
57
13
26
39
52
65
1. (CC) gcc options: -fopenmp -O2 -pthread -ljbig -ltiff -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -llzma -lxml2 -lz -lm -lpthread
GraphicsMagick 1.3.33
Operation: Enhanced
Iterations Per Minute, More Is Better
Raspberry Pi 400
21
5
10
15
20
25
1. (CC) gcc options: -fopenmp -O2 -pthread -ljbig -ltiff -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -llzma -lxml2 -lz -lm -lpthread
GraphicsMagick 1.3.33
Operation: Sharpen
Iterations Per Minute, More Is Better
Raspberry Pi 400
17
4
8
12
16
20
1. (CC) gcc options: -fopenmp -O2 -pthread -ljbig -ltiff -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -llzma -lxml2 -lz -lm -lpthread

GraphicsMagick 1.3.33

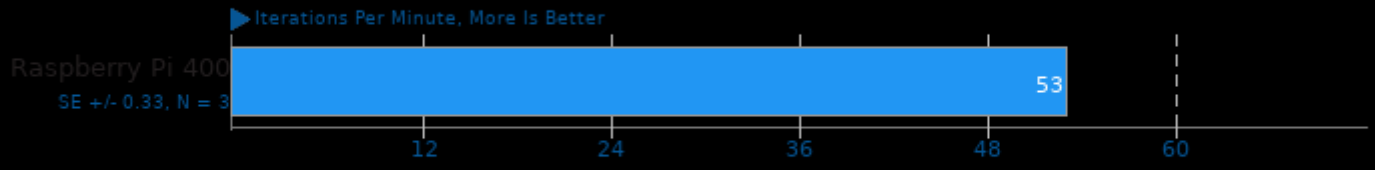
Operation: Rotate



1. (CC) gcc options: -fopenmp -O2 -pthread -ljbig -ltiff -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -llzma -lxml2 -lz -lm -lpthread

GraphicsMagick 1.3.33

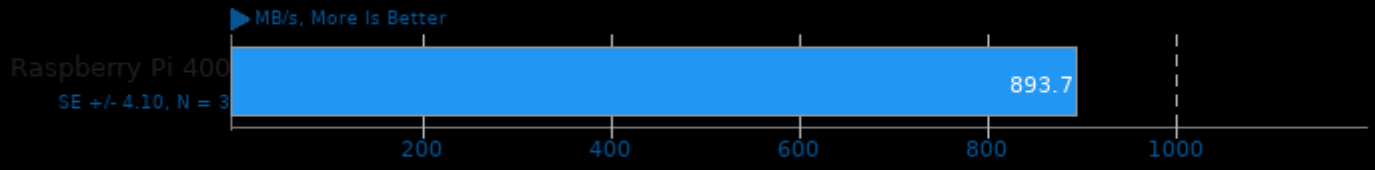
Operation: Swirl



1. (CC) gcc options: -fopenmp -O2 -pthread -ljbig -ltiff -lfreetype -ljpeg -lXext -lSM -lICE -lX11 -llzma -lxml2 -lz -lm -lpthread

Zstd Compression 1.5.0

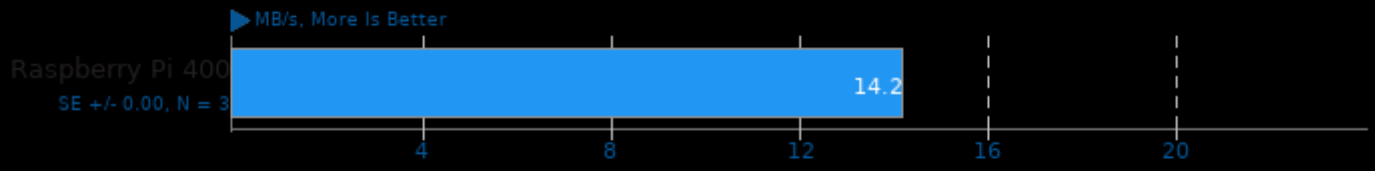
Compression Level: 8 - Decompression Speed



1. (CC) gcc options: -O3 -pthread -lz -llzma

Zstd Compression 1.5.0

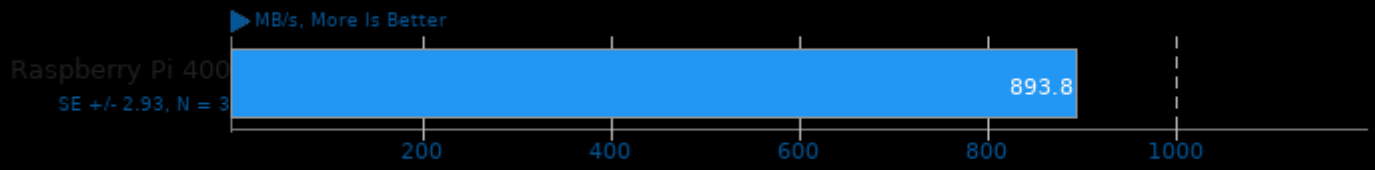
Compression Level: 8 - Compression Speed



1. (CC) gcc options: -O3 -pthread -lz -llzma

Zstd Compression 1.5.0

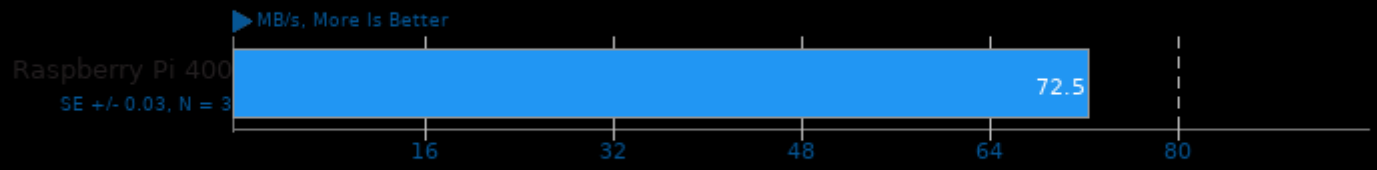
Compression Level: 3 - Decompression Speed



1. (CC) gcc options: -O3 -pthread -lz -llzma

Zstd Compression 1.5.0

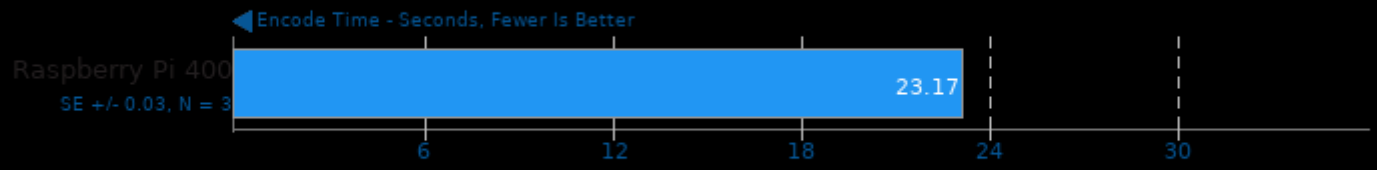
Compression Level: 3 - Compression Speed



1. (CC) gcc options: -O3 -pthread -lz -llzma

WebP Image Encode 1.1

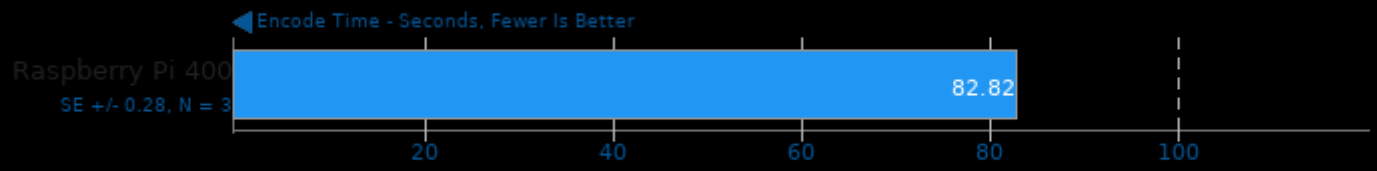
Encode Settings: Quality 100, Highest Compression



1. (CC) gcc options: -fvisibility=hidden -O2 -pthread -lm -ljpeg -lpng16 -ltiff

WebP Image Encode 1.1

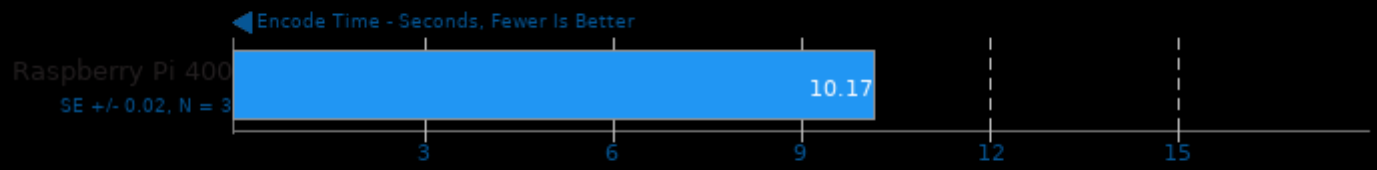
Encode Settings: Quality 100, Lossless



1. (CC) gcc options: -fvisibility=hidden -O2 -pthread -lm -ljpeg -lpng16 -ltiff

WebP Image Encode 1.1

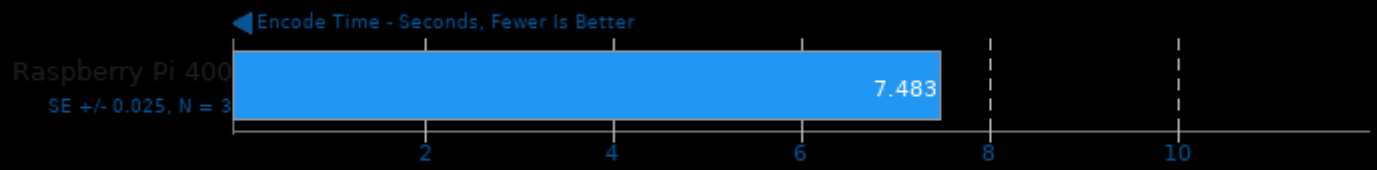
Encode Settings: Quality 100



1. (CC) gcc options: -fvisibility=hidden -O2 -pthread -lm -ljpeg -lpng16 -ltiff

WebP Image Encode 1.1

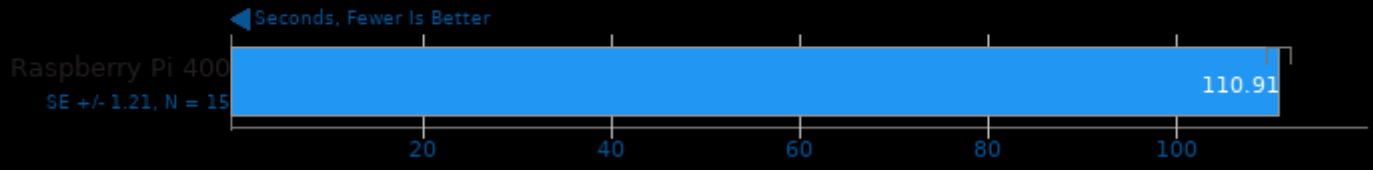
Encode Settings: Default



1. (CC) gcc options: -fvisibility=hidden -O2 -pthread -lm -ljpeg -lpng16 -ltiff

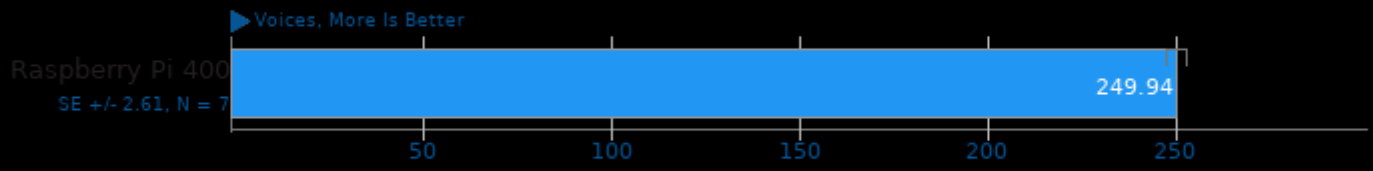
Dolfyn 0.527

Computational Fluid Dynamics



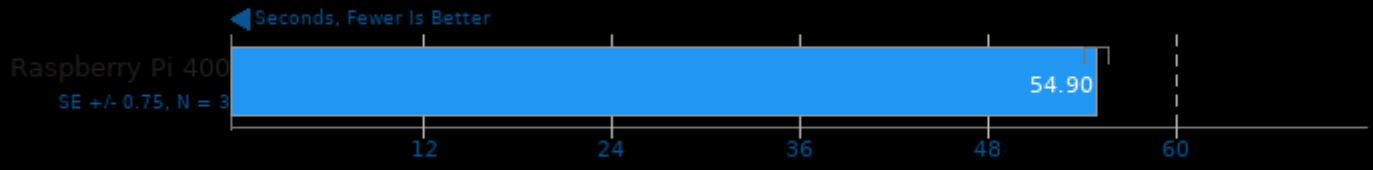
Google SynthMark 20201109

Test: VoiceMark_100



1. (CXX) g++ options: -lm -lpthread -std=c++11 -Ofast

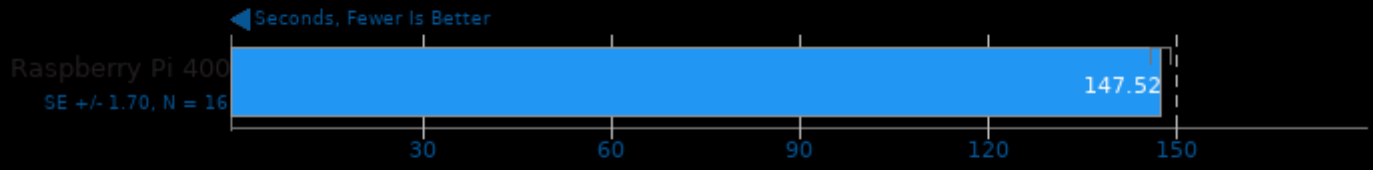
RNNoise 2020-06-28



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

eSpeak-NG Speech Engine 20200907

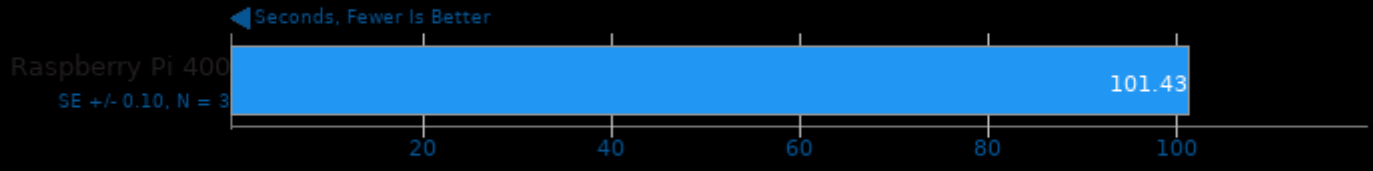
Text-To-Speech Synthesis



1. (CC) gcc options: -O2 -std=c99

Smallpt 1.0

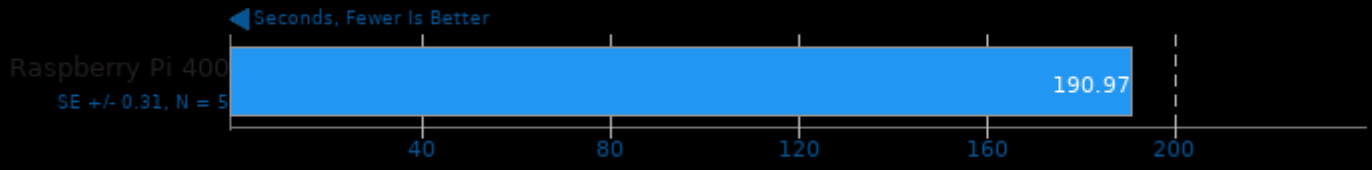
Global Illumination Renderer; 128 Samples



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

WavPack Audio Encoding 5.3

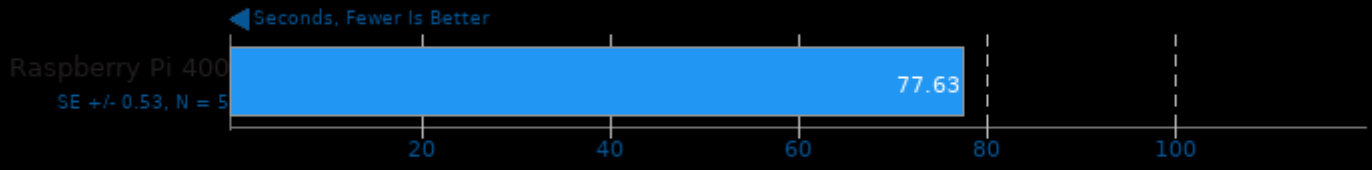
WAV To WavPack



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

FLAC Audio Encoding 1.3.2

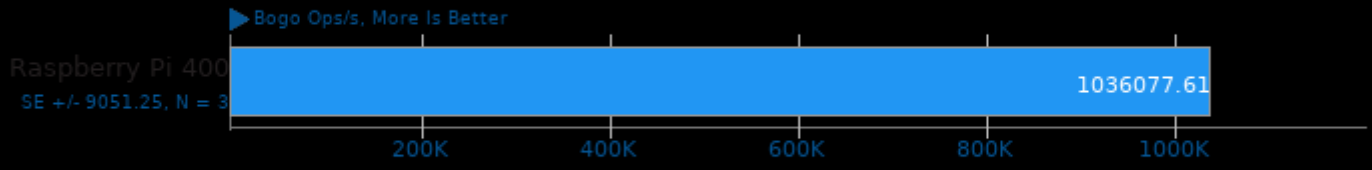
WAV To FLAC



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

Stress-NG 0.13.02

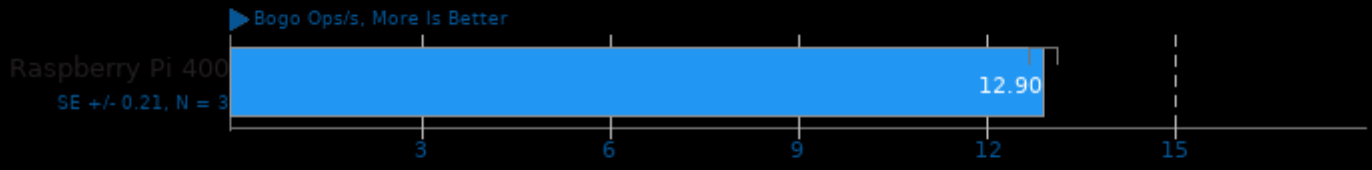
Test: System V Message Passing



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

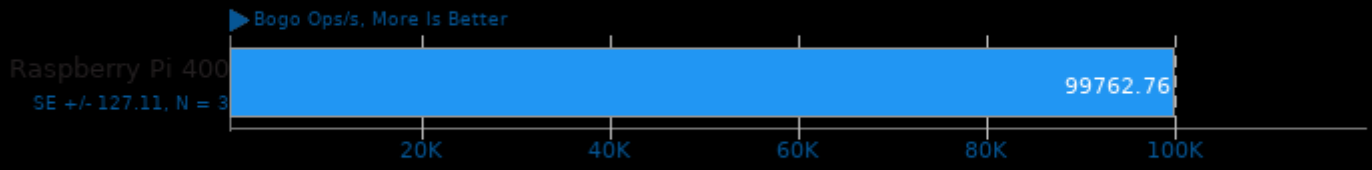
Test: Glibc Qsort Data Sorting



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

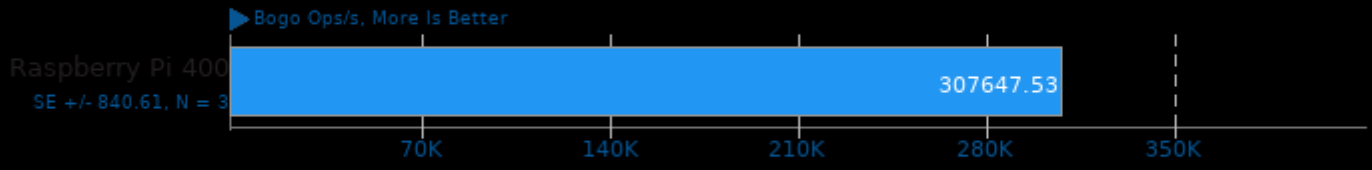
Test: Glibc C String Functions



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

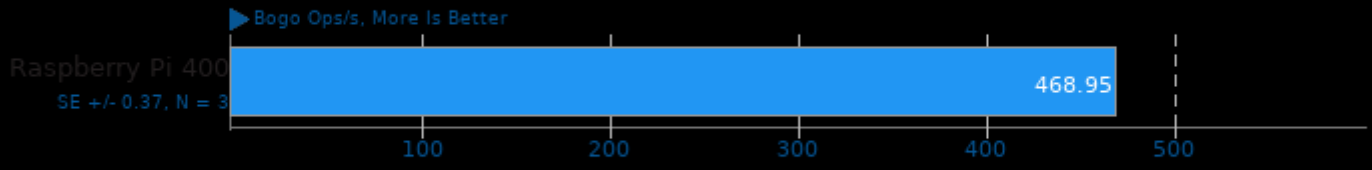
Test: Context Switching



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

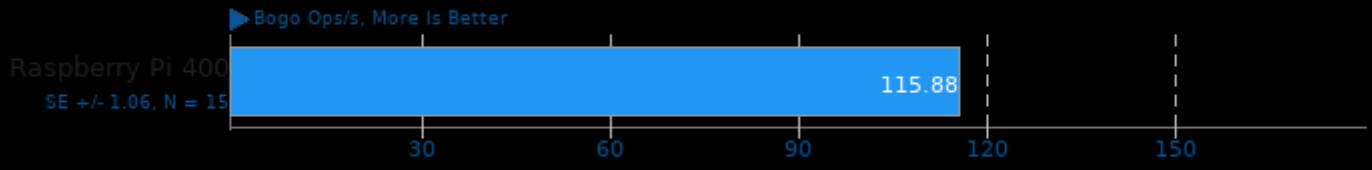
Test: Socket Activity



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

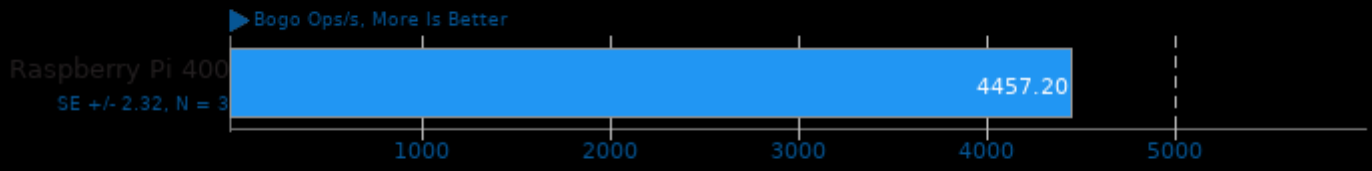
Test: Memory Copying



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

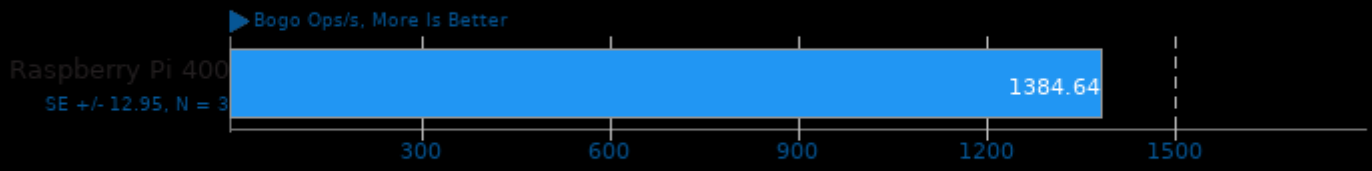
Test: Vector Math



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

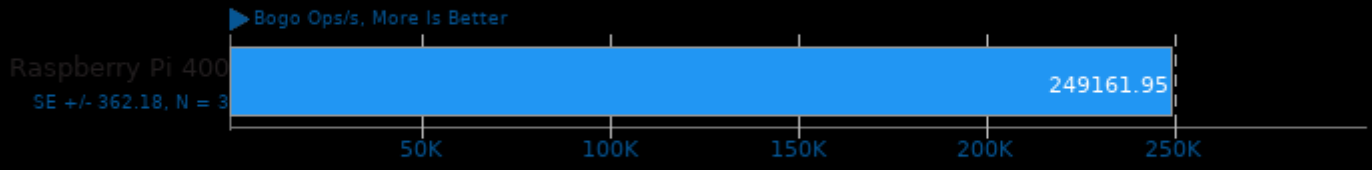
Test: Matrix Math



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

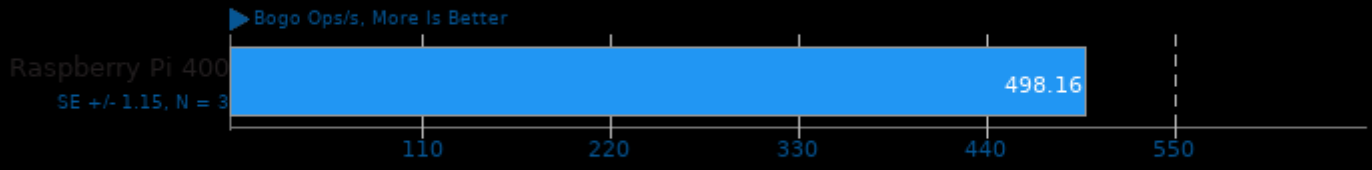
Test: Semaphores



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

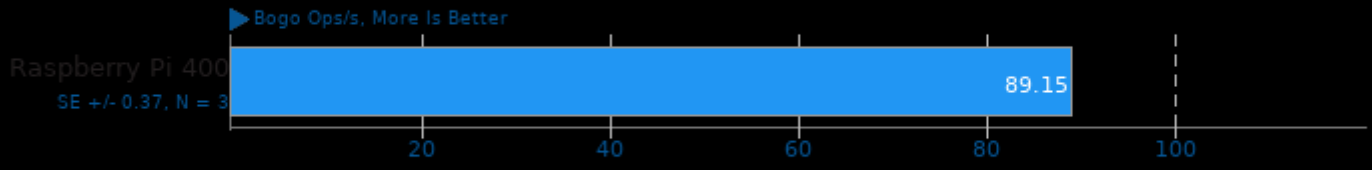
Test: CPU Stress



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

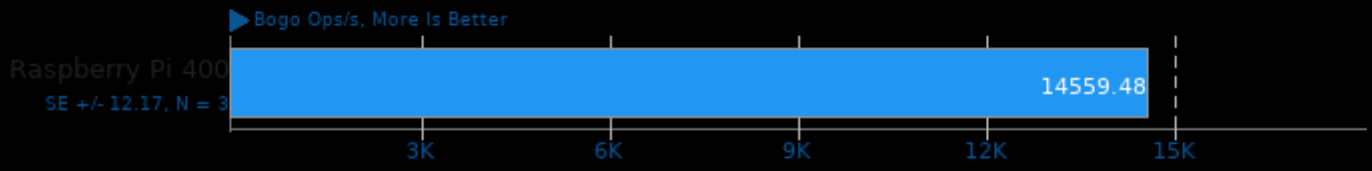
Test: CPU Cache



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

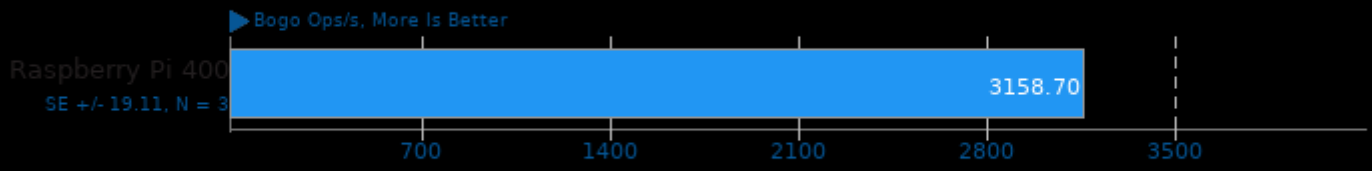
Test: SENDFILE



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

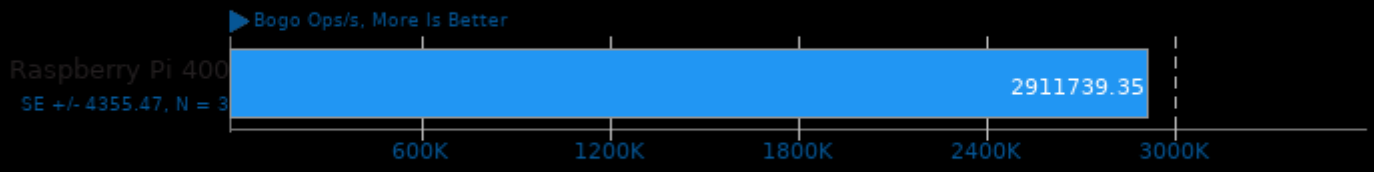
Test: Forking



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

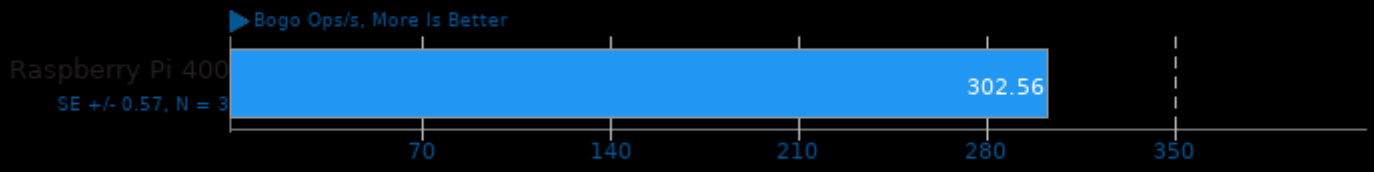
Test: Malloc



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

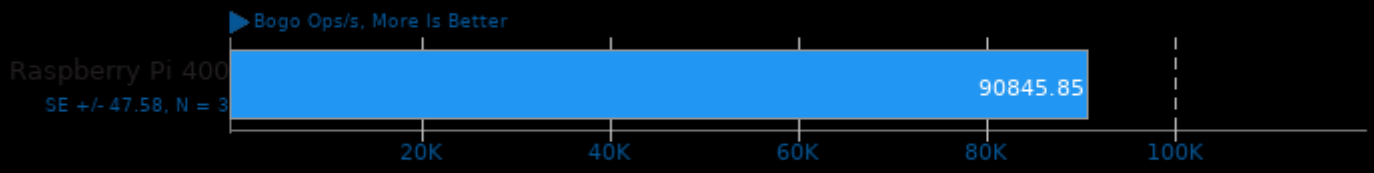
Test: Crypto



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

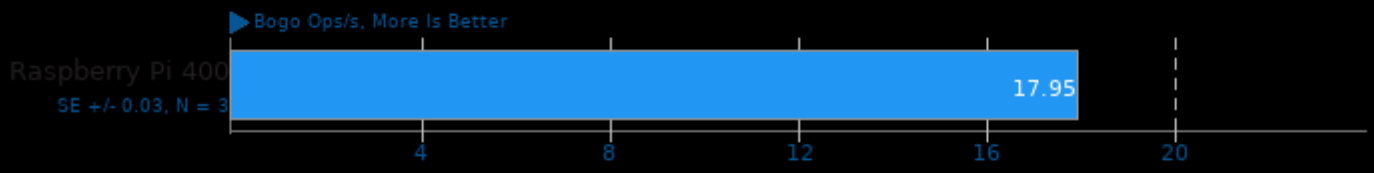
Test: Atomic



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

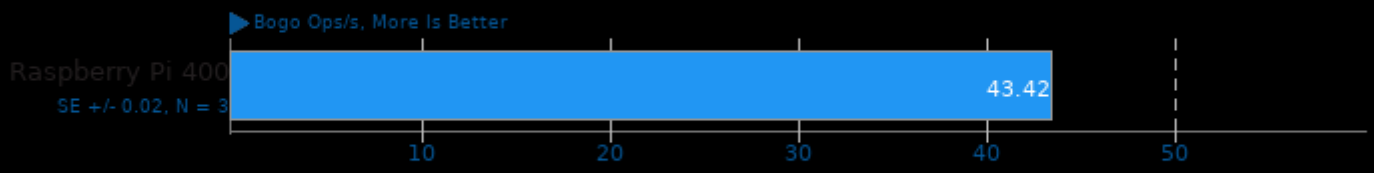
Test: MEMFD



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

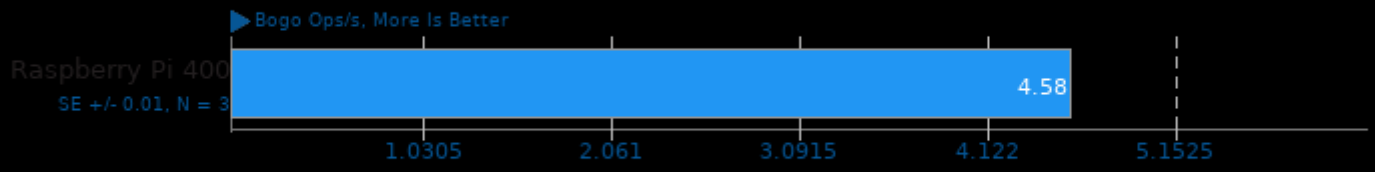
Test: NUMA



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

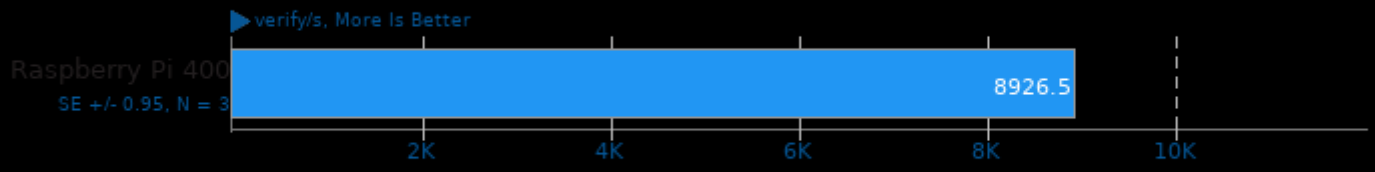
Test: MMAP



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

OpenSSL 3.0

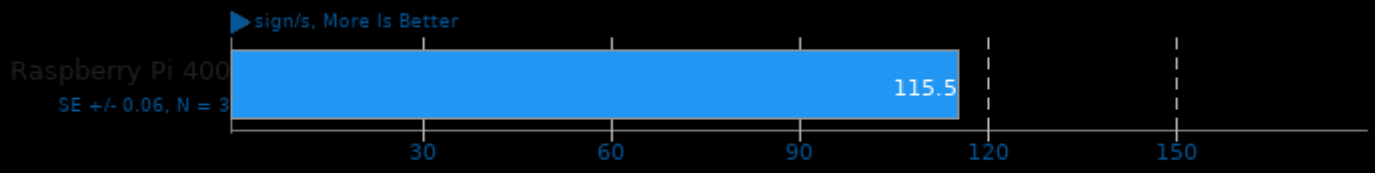
Algorithm: RSA4096



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

OpenSSL 3.0

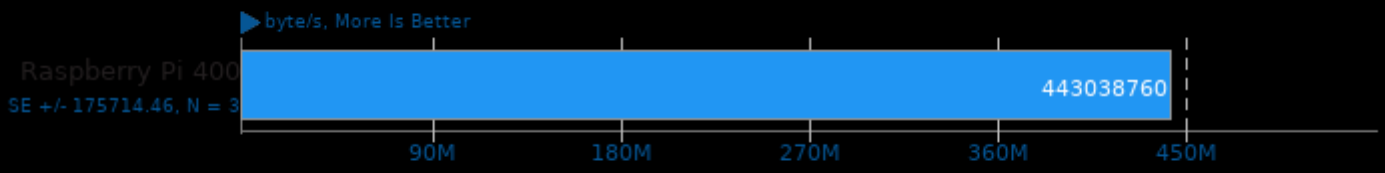
Algorithm: RSA4096



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

OpenSSL 3.0

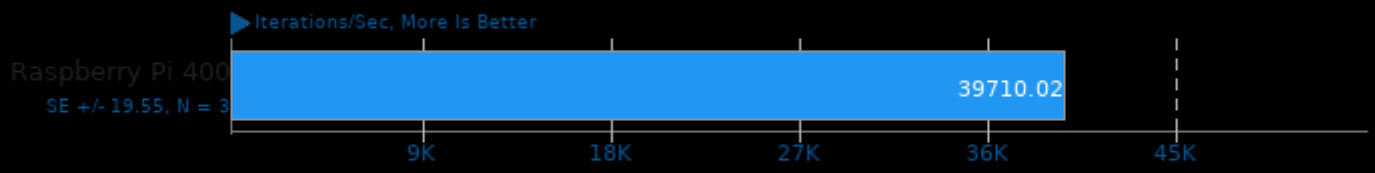
Algorithm: SHA256



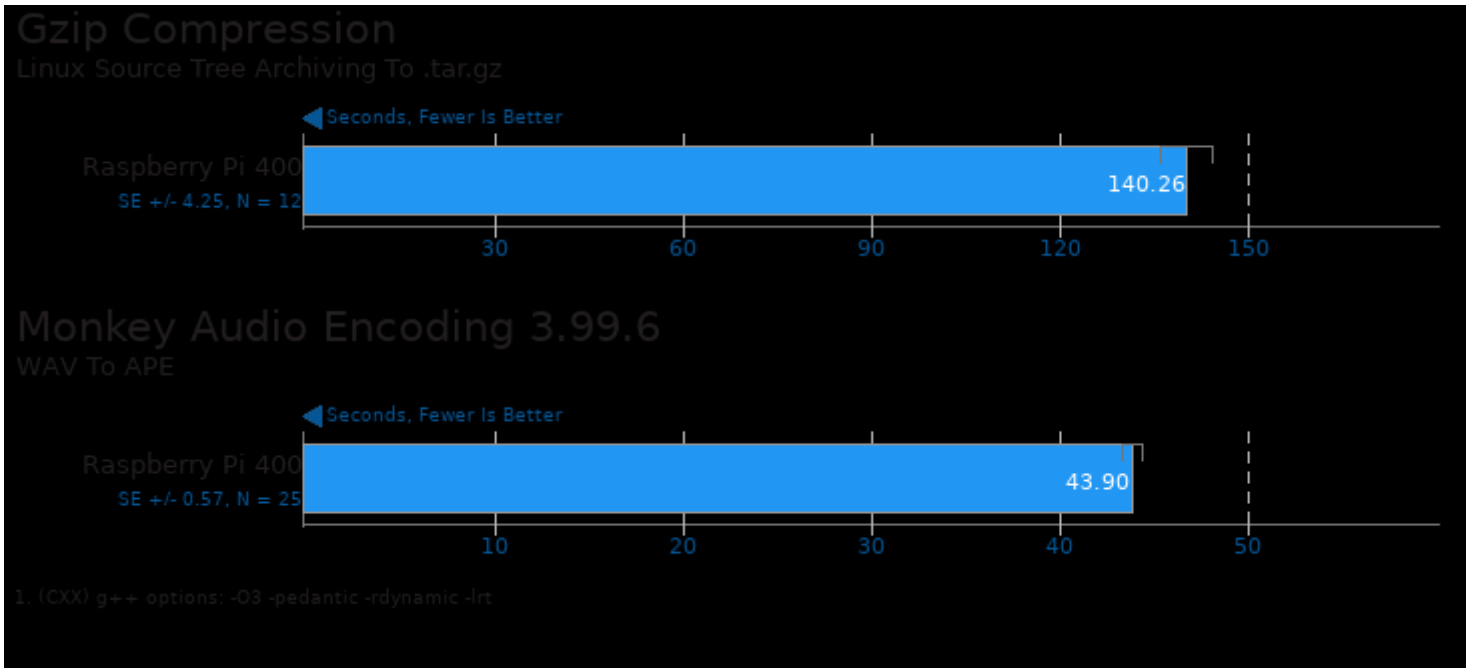
1. (CC) gcc options: -pthread -O3 -lssl -lcrypto -ldl

Coremark 1.0

CoreMark Size 666 - Iterations Per Second



1. (CC) gcc options: -O2 -lrt" -lrt



This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 03:44.