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Dual-Core ARM Tegra 2 Arch Linux

CompuLab Trim-Slice desktop running Ubuntu 11.04 Linux 2.6.38 kernel compared to the Arch Linux Trim-Slice build. The Trim-Slice is a NVIDIA TEGRA 2 ARM platform with a dual-core ARMv7 Cortex A9 clocked at 1.0GHz. With a SATA HDD and 1GB of RAM. Testing by Michael Larabel for a future article on Phoronix.com.

Automated Executive Summary

Ubuntu 11.04 had the most wins, coming in first place for 72% of the tests.

Based on the geometric mean of all complete results, the fastest (Ubuntu 11.04) was 1.107x the speed of the slowest (Arch Linux).

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

*Timed MrBayes Analysis (Primate Phylogeny Analysis) at 71.791x
Apache Benchmark (Static Web Page Serving) at 3.997x
GraphicsMagick (Operation: Local Adaptive Thresholding) at 1.5x
GraphicsMagick (Operation: Sharpen) at 1.5x
Sudokut (Total Time) at 1.239x
GraphicsMagick (Operation: Blur) at 1.222x
FLAC Audio Encoding (WAV To FLAC) at 1.182x
C-Ray (Total Time) at 1.132x*

*POV-Ray (Total Time) at 1.125x
 Smallpt (Global Illumination Renderer; 100 Samples) at 1.112x.*

Test Systems:

Ubuntu 11.04

Processor: ARMv7 rev 0 @ 1.00GHz (2 Cores), Motherboard: trimslice, Memory: 875MB, Disk: 250GB HM251HI, Graphics: NVIDIA TEGRA, Network: Realtek RTL8111/8168B

OS: Ubuntu 11.04, Kernel: 2.6.38.3-trimslice-1.01-01637-gc2b2d3e (armv7l), Desktop: GNOME 2.32.1, Display Server: X Server 1.10.1, Display Driver: tegra, OpenGL: 2.1 Mesa 7.10.2, Compiler: GCC 4.5.2, File-System: ext3, Screen Resolution: 1024x768

System Notes: Disk Scheduler: CFQ. Python 2.7.1+.

Arch Linux

Processor: ARMv7 rev 0 @ 1.00GHz (2 Cores), Motherboard: trimslice, Memory: 874MB, Disk: 250GB HM251HI + 16GB SD16G, Graphics: NVIDIA TEGRA, Network: Realtek RTL8111/8168B

OS: Arch Linux 2011.11-trimslice, Kernel: 2.6.38.3-ARCH (armv7l), Display Driver: NVIDIA, Compiler: GCC 4.6.2, File-System: ext2, Screen Resolution: 1280x960

System Notes: Disk Scheduler: CFQ.

	Ubuntu 11.04	Arch Linux
Apache Benchmark - S.W.P.S (Reqs/sec)	231.59	925.66
Normalized	25.02%	100%
Standard Deviation	0.5%	1.3%
BlogBench - Read (Final Score)	50777	
Standard Deviation	6.2%	
BlogBench - Write (Final Score)	168	
Standard Deviation	9.4%	
Timed Apache Compilation - Time To Compile (sec)	438.34	
Standard Deviation	0.6%	
Timed ImageMagick Compilation - Time To Compile	1205	
Standard Deviation	3.4%	
Timed MPlayer Compilation - Time To Compile (sec)	663.36	
Standard Deviation	3.2%	
BYTE Unix Benchmark - Dhrystone 2 (LPS)	2648352	
Standard Deviation	1.5%	
BYTE Unix Benchmark - R.A (LPS)	1	

BYTE Unix Benchmark - Integer Arithmetic (LPS)	1	Standard Deviation 0%
BYTE Unix Benchmark - F.P.A (LPS)	1	Standard Deviation 0%
C-Ray - Total Time (sec)	1309	1482
Normalized	100%	88.34%
Standard Deviation	0.1%	0.3%
CacheBench - Read (MB/s)	1425	1326
Normalized	100%	93.07%
Standard Deviation	1.6%	0%
CacheBench - Write (MB/s)	2841	2637
Normalized	100%	92.83%
Standard Deviation	1.4%	0%
CacheBench - R.M.W (MB/s)	2051	1949
Normalized	100%	95.04%
Standard Deviation	3.3%	0%
CLOMP - Static OMP Speedup (Speedup)	0.79	2.00
Normalized	39.5%	100%
Standard Deviation	8.7%	1.1%
Compile Bench - Initial Create (MB/s)	11.24	
Standard Deviation	2.2%	
Compile Bench - Compile (MB/s)	12.23	
Standard Deviation	1.9%	
Compile Bench - Read Compiled Tree (MB/s)	2.53	
Standard Deviation	0.8%	
7-Zip Compression - C.S.T (MIPS)	746	721
Normalized	100%	96.65%
Standard Deviation	1.4%	0.4%
Gzip Compression - 2.F.C (sec)	165.04	
Standard Deviation	3.3%	
LZMA Compression - 2.F.C (sec)	835.36	
Standard Deviation	0.5%	
Parallel BZIP2 Compression - 2.F.C (sec)	207.17	
Standard Deviation	3.2%	
ddraw - R.T.P.I.C (sec)	199.74	191.98
Normalized	96.11%	100%
Standard Deviation	1.1%	2.7%
Monkey Audio Encoding - WAV To APE (sec)	117.62	
Standard Deviation	5.5%	
FLAC Audio Encoding - WAV To FLAC (sec)	70.66	59.78
Normalized	84.6%	100%
Standard Deviation	0.3%	1.2%
LAME MP3 Encoding - WAV To MP3 (sec)	131.01	
Standard Deviation	0.5%	
Ogg Encoding - WAV To Ogg (sec)	83.67	
Standard Deviation	0.5%	
WavPack Audio Encoding - WAV To WavPack (sec)	89.58	
Standard Deviation	0.8%	
FFmpeg - AVI To NTSC VCD (sec)	296.42	238.19
Normalized	80.36%	100%
Standard Deviation	3.1%	9.2%
FS-Mark - 1.F.1.S (Files/s)	4.47	
Standard Deviation	1.3%	

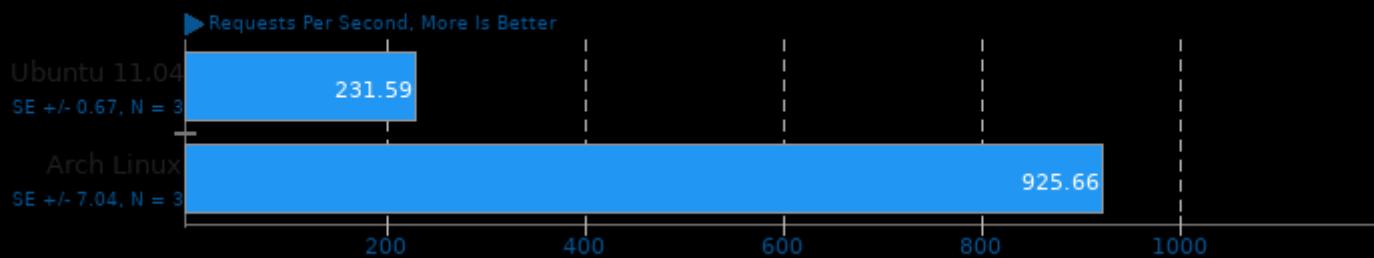
FS-Mark - 1.F.1.S.N.S.F (Files/s)	17.10	
Standard Deviation	1%	
FS-Mark - 5.F.1.S.4.T (Files/s)	8.13	
Standard Deviation	2.8%	
FS-Mark - 4.F.3.S.D.1.S (Files/s)	4.57	
Standard Deviation	1.3%	
Gcrypt Library - C.E.C (us)	12647	
Standard Deviation	1.3%	
GnuPG - 1.F.E (sec)	95.02	
Standard Deviation	0.7%	
GraphicsMagick - HWB Color Space (Iterations/min)	20	21
Normalized	95.24%	100%
Standard Deviation	2.9%	0%
GraphicsMagick - Blur (Iterations/min)	11	9
Normalized	100%	81.82%
Standard Deviation	0%	0%
GraphicsMagick - L.A.T (Iterations/min)	6	4
Normalized	100%	66.67%
Standard Deviation	0%	0%
GraphicsMagick - Resizing (Iterations/min)	14	13
Normalized	100%	92.86%
Standard Deviation	0%	0%
GraphicsMagick - Sharpen (Iterations/min)	9	6
Normalized	100%	66.67%
Standard Deviation	0%	0%
Himeno Benchmark - P.P.S (MFLOPS)	99.58	92.33
Normalized	100%	92.72%
Standard Deviation	0.3%	1.6%
Timed HMMer Search - P.D.S (sec)	309.76	303.37
Normalized	97.94%	100%
Standard Deviation	0.4%	0.9%
IOzone - 4Kb - 2GB - Write Performance (MB/s)	18.75	
Standard Deviation	2.5%	
IOzone - 4Kb - 2GB - Read Performance (MB/s)	8.72	
Standard Deviation	2%	
IOzone - 64Kb - 2GB - Write Performance (MB/s)	18.36	
Standard Deviation	0.9%	
IOzone - 64Kb - 2GB - Read Performance (MB/s)	6.68	
Standard Deviation	2.2%	
Timed MAFFT Alignment - M.S.A (sec)	187.75	188.18
Normalized	100%	99.77%
Standard Deviation	0.8%	0.1%
Timed MrBayes Analysis - P.P.A (sec)	452.15	32460
Normalized	100%	1.39%
Standard Deviation	0.5%	
N-Queens - Elapsed Time (sec)	996.66	920.01
Normalized	92.31%	100%
Standard Deviation	0%	0.1%
Loopback TCP Network Performance - T.T.T.1.V.L	506.40	
Standard Deviation	2.7%	
NGINX Benchmark - S.W.P.S (Req/sec)	1959	
Standard Deviation	1.3%	
NAS Parallel Benchmarks - BT.A (Mop/s)	350.15	327.72
Normalized	100%	93.59%

	Standard Deviation	0%	0.1%
NAS Parallel Benchmarks - CG.B (Mop/s)	60.60	65.80	
Normalized	92.1%	100%	
Standard Deviation	3.1%	1.4%	
NAS Parallel Benchmarks - EP.B (Mop/s)	8.45	8.28	
Normalized	100%	97.99%	
Standard Deviation	0.2%	1%	
NAS Parallel Benchmarks - LU.A (Mop/s)	209.38	201.98	
Normalized	100%	96.47%	
Standard Deviation	1.7%	0.2%	
NAS Parallel Benchmarks - MG.B (Mop/s)	222.96	202.88	
Normalized	100%	90.99%	
Standard Deviation	0.5%	0.9%	
NAS Parallel Benchmarks - SP.A (Mop/s)	166.00	160.89	
Normalized	100%	96.92%	
Standard Deviation	0.8%	0.3%	
NAS Parallel Benchmarks - UA.A (Mop/s)	1.32	1.40	
Normalized	94.29%	100%	
Standard Deviation	1.2%	0%	
OpenSSL - R.4.b.P (Signs/sec)	3.73	3.55	
Normalized	100%	95.17%	
Standard Deviation	2.6%	1.6%	
PHPBench - P.B.S (Score)	8770		
Standard Deviation	0.3%		
PostMark - D.T.P (TPS)	43		
Standard Deviation	1.9%		
POV-Ray - Total Time (sec)	6865	7724	
Normalized	100%	88.88%	
PyBench - T.F.A.T.T (Milliseconds)	18793		
Standard Deviation	0.1%		
Sample Pi Program - P.T.S.v.8.0 (sec)	35.75		
Standard Deviation	1%		
SciMark - Composite (Mflops)	78.49		
Standard Deviation	3.1%		
SciMark - F.F.T (Mflops)	19.27		
Standard Deviation	0.6%		
SciMark - J.S.O.R (Mflops)	157.53		
Standard Deviation	7%		
SciMark - Monte Carlo (Mflops)	48.50		
Standard Deviation	0.3%		
SciMark - S.M.M (Mflops)	82.99		
Standard Deviation	0.3%		
SciMark - D.L.M.F (Mflops)	84.16		
Standard Deviation	1.3%		
Smallpt - G.I.R.1.S (sec)	2889	3213	
Normalized	100%	89.92%	
Standard Deviation	0.2%	0.1%	
SQLite - D.T.D (sec)	908.17		
Standard Deviation	0.4%		
Stream - Copy (MB/s)	991.72	958.66	
Normalized	100%	96.67%	
Standard Deviation	0.7%	0.3%	
Stream - Scale (MB/s)	1052	1010	
Normalized	100%	96.02%	

Standard Deviation	1.1%	0.2%
Stream - Add (MB/s)	979.78	921.54
Normalized	100%	94.06%
Standard Deviation	1.3%	0.3%
Stream - Triad (MB/s)	979.03	908.55
Normalized	100%	92.8%
Standard Deviation	1.3%	0.3%
Sudokut - Total Time (sec)	216.19	267.96
Normalized	100%	80.68%
Standard Deviation	0.9%	0.1%
Threaded I/O Tester - Write - 32MB - 8 (MB/s)	13.92	
Standard Deviation	2.5%	
Threaded I/O Tester - Read - 32MB - 8 (MB/s)	534.41	
Standard Deviation	0.6%	
TSCP - A.C.P (Nodes/s)	63187	
Standard Deviation	0%	
Unpacking The Linux Kernel - linux-2.6.32.tar.bz2	125.92	133.80
Normalized	100%	94.11%
Standard Deviation	3.5%	14.6%
VP8 libvpx Encoding - vpxenc (FPS)	1	1
Standard Deviation	0%	0%

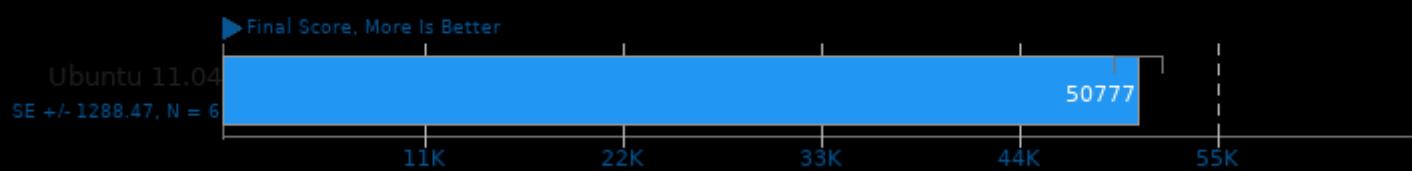
Apache Benchmark 2.2.17

Static Web Page Serving



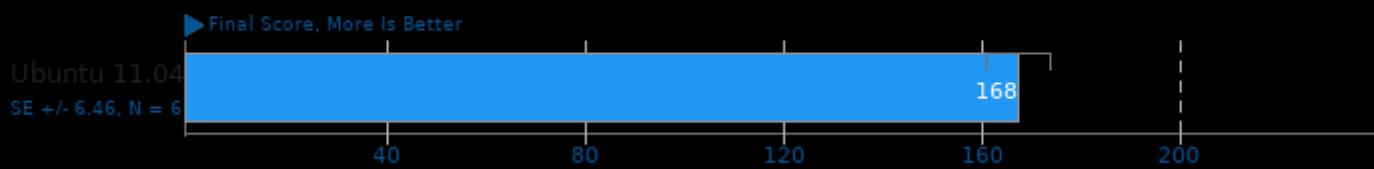
BlogBench 1.0

Test: Read



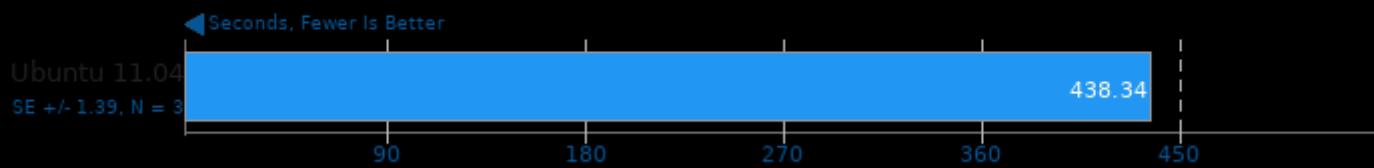
BlogBench 1.0

Test: Write



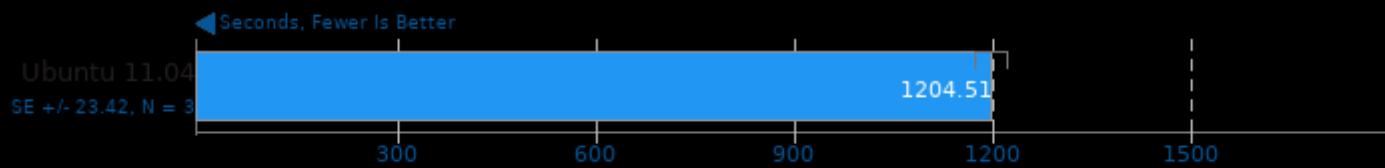
Timed Apache Compilation 2.2.17

Time To Compile



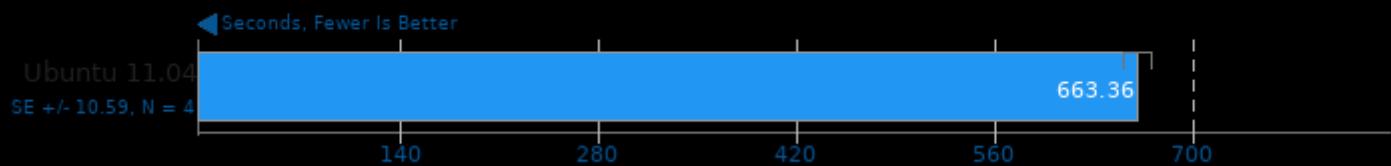
Timed ImageMagick Compilation 6.6.3-4

Time To Compile



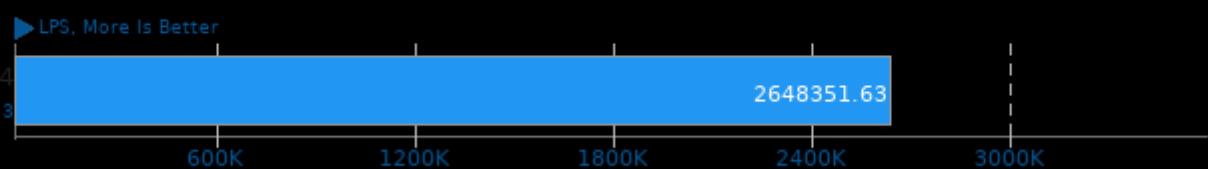
Timed MPlayer Compilation 1.0-rc3

Time To Compile



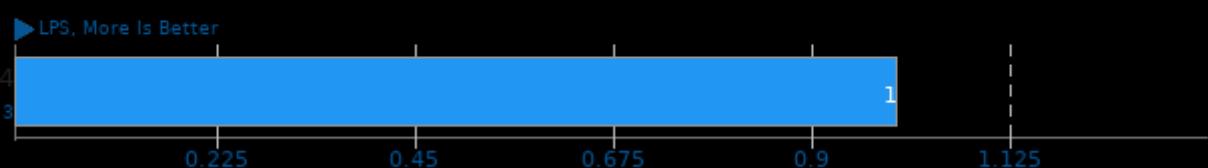
BYTE Unix Benchmark 3.6

Computational Test: Dhrystone 2



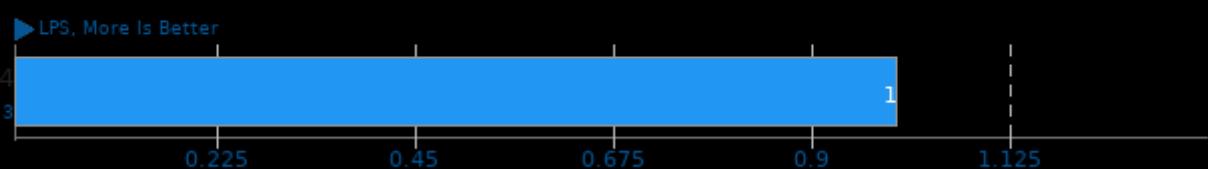
BYTE Unix Benchmark 3.6

Computational Test: Register Arithmetic



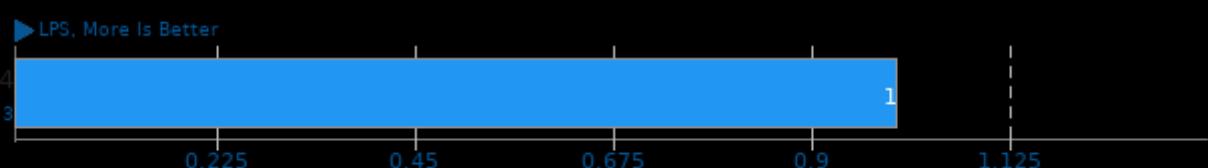
BYTE Unix Benchmark 3.6

Computational Test: Integer Arithmetic



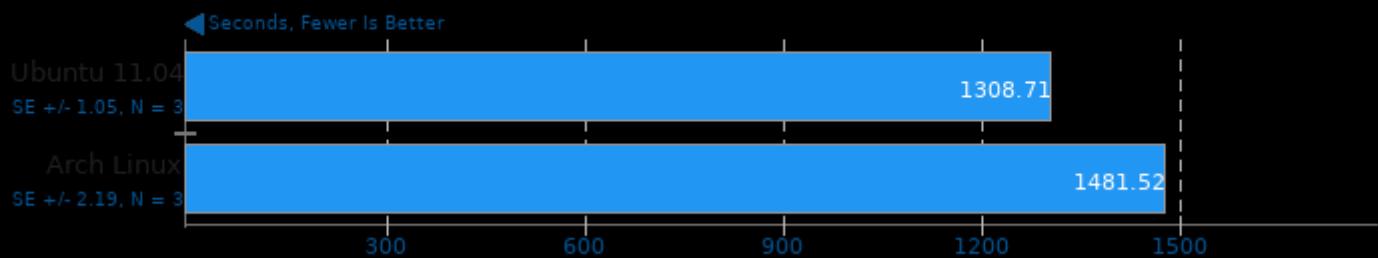
BYTE Unix Benchmark 3.6

Computational Test: Floating-Point Arithmetic



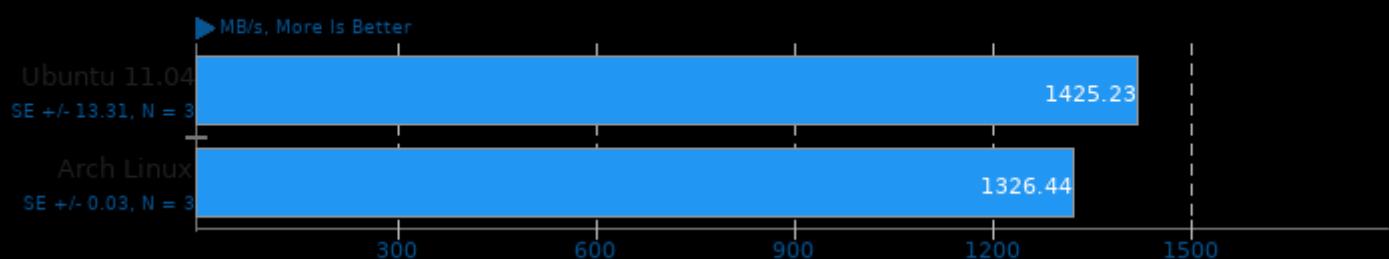
C-Ray 1.1

Total Time



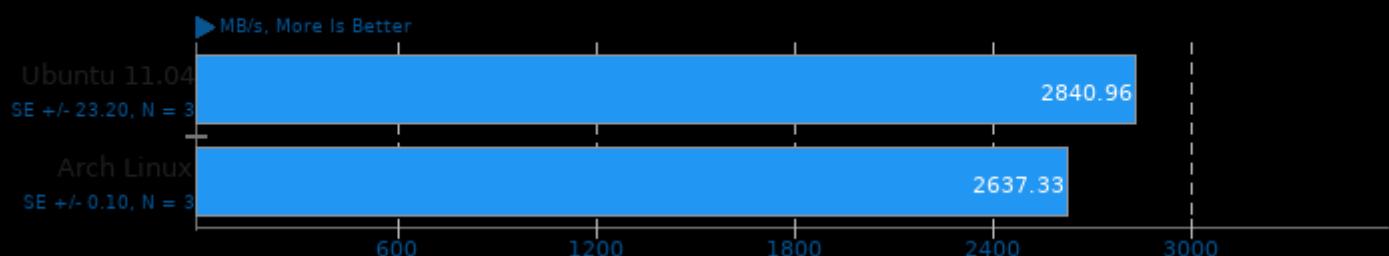
CacheBench

Test: Read



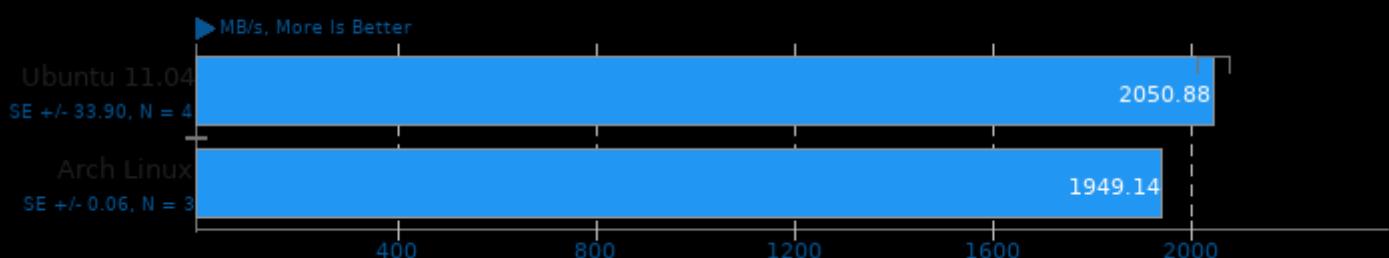
CacheBench

Test: Write



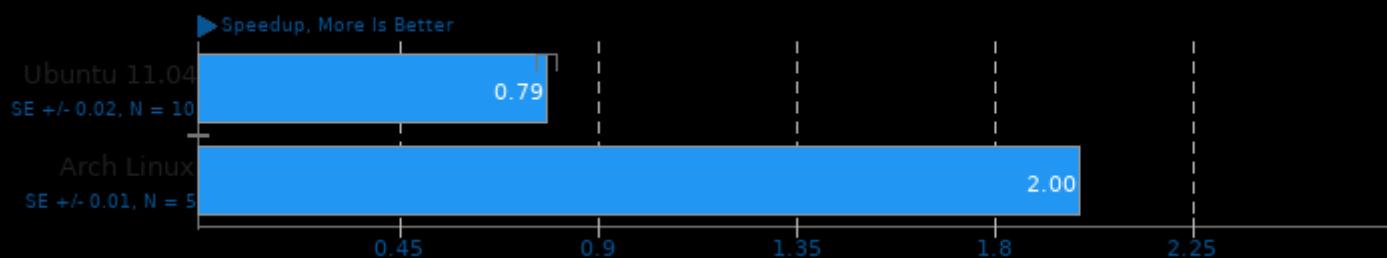
CacheBench

Test: Read / Modify / Write



CLOMP 3.3

Static OMP Speedup



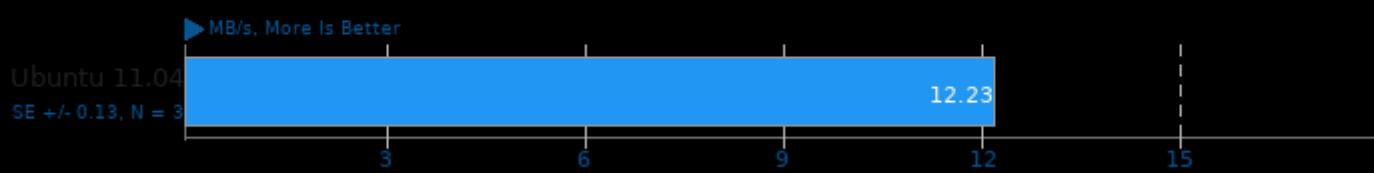
Compile Bench 0.6

Test: Initial Create



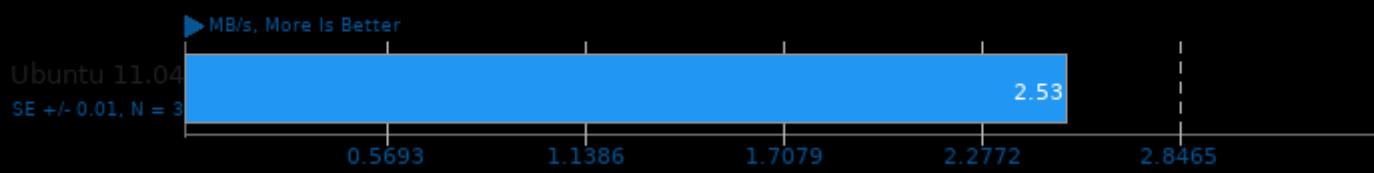
Compile Bench 0.6

Test: Compile



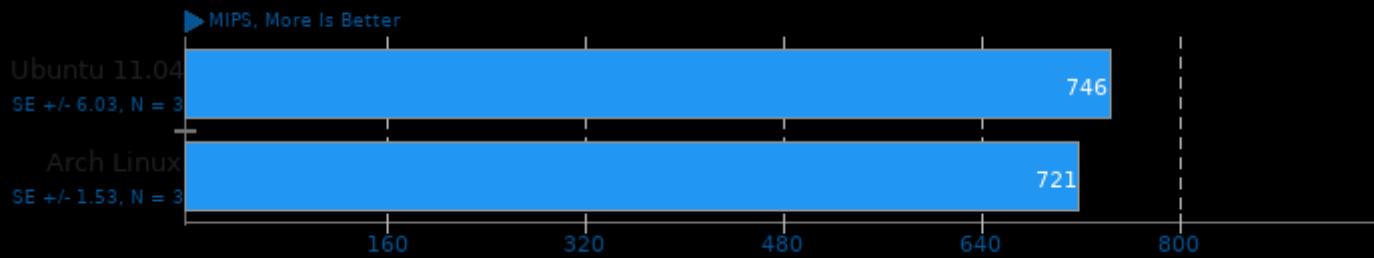
Compile Bench 0.6

Test: Read Compiled Tree



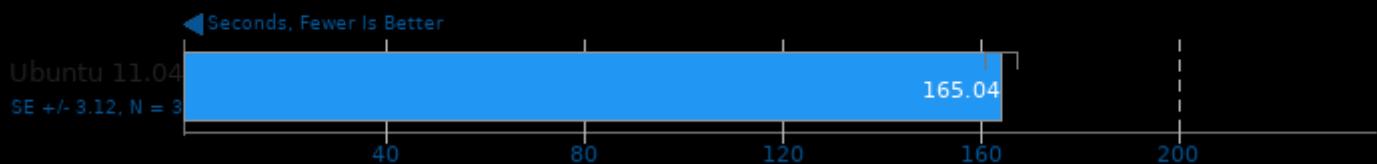
7-Zip Compression 9.20.1

Compress Speed Test



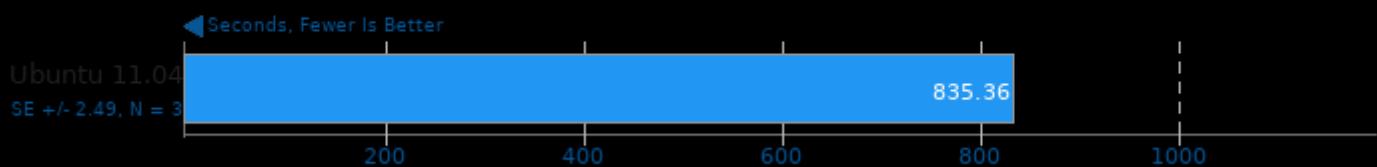
Gzip Compression

2GB File Compression



LZMA Compression

256MB File Compression



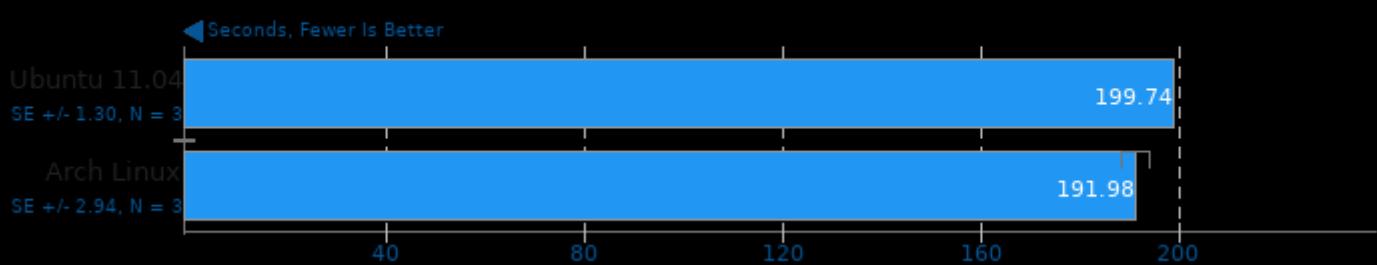
Parallel BZIP2 Compression 1.0.5

256MB File Compression



dcraw

RAW To PPM Image Conversion



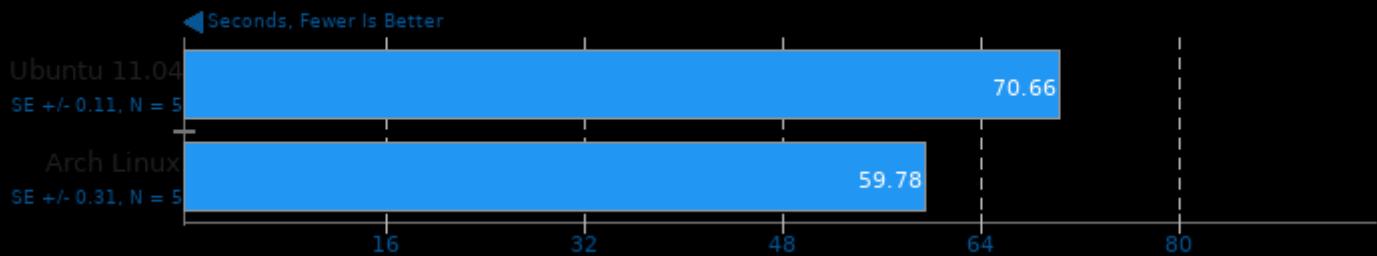
Monkey Audio Encoding 3.99u4b5s6

WAV To APE



FLAC Audio Encoding 1.2.1

WAV To FLAC



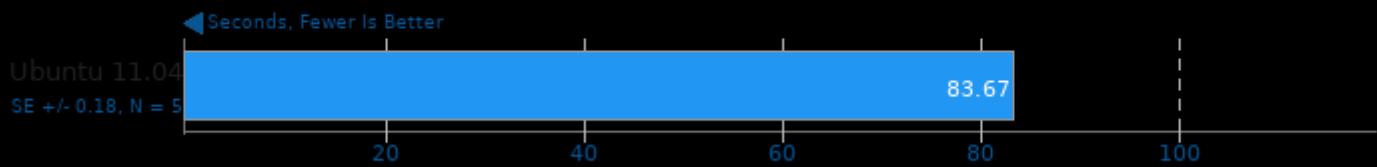
LAME MP3 Encoding 3.99.3

WAV To MP3



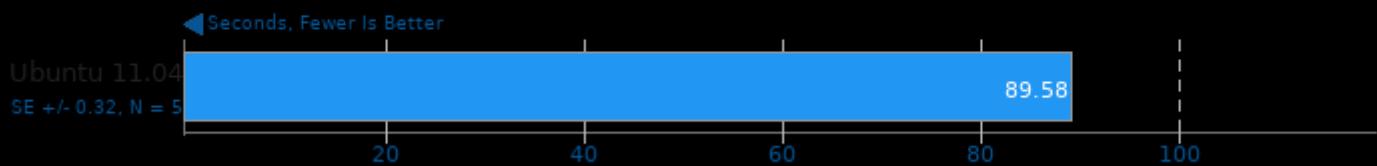
Ogg Encoding 1.2.0

WAV To Ogg



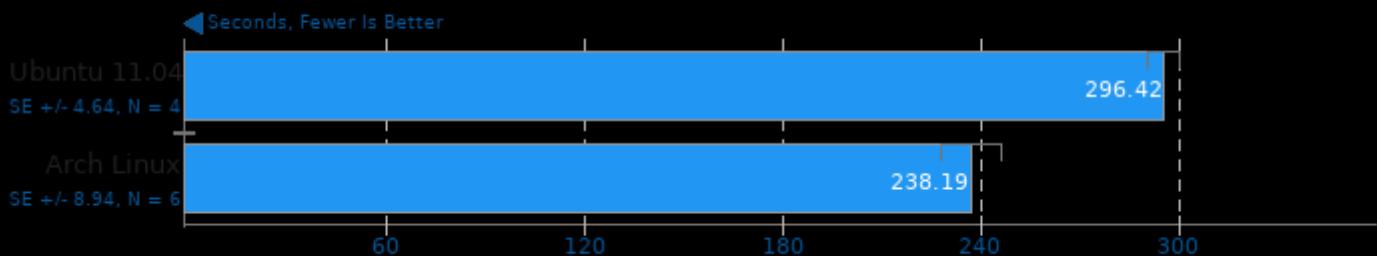
WavPack Audio Encoding 4.41.0

WAV To WavPack



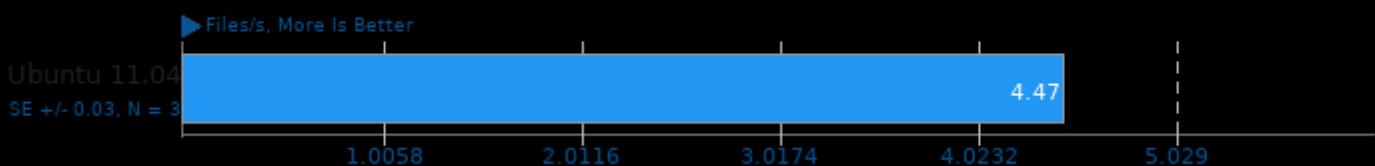
FFmpeg 0.8.7

AVI To NTSC VCD



FS-Mark 3.3

Test: 1000 Files, 1MB Size



FS-Mark 3.3

Test: 1000 Files, 1MB Size, No Sync/FSync



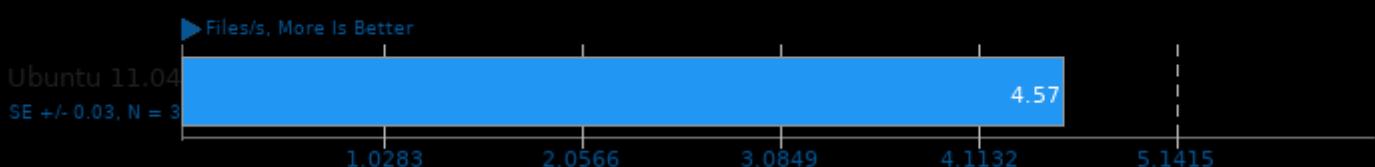
FS-Mark 3.3

Test: 5000 Files, 1MB Size, 4 Threads



FS-Mark 3.3

Test: 4000 Files, 32 Sub Dirs, 1MB Size



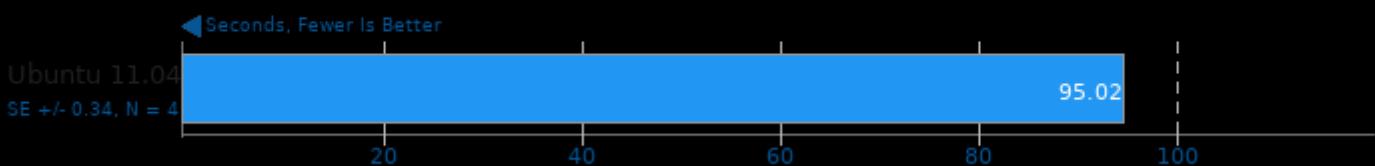
Gcrypt Library 1.4.4

CAMELLIA256-ECB Cipher



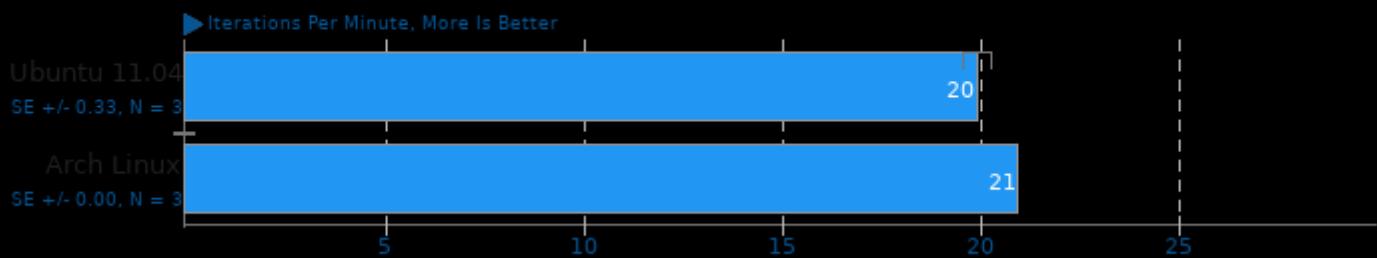
GnuPG 1.4.10

1GB File Encryption



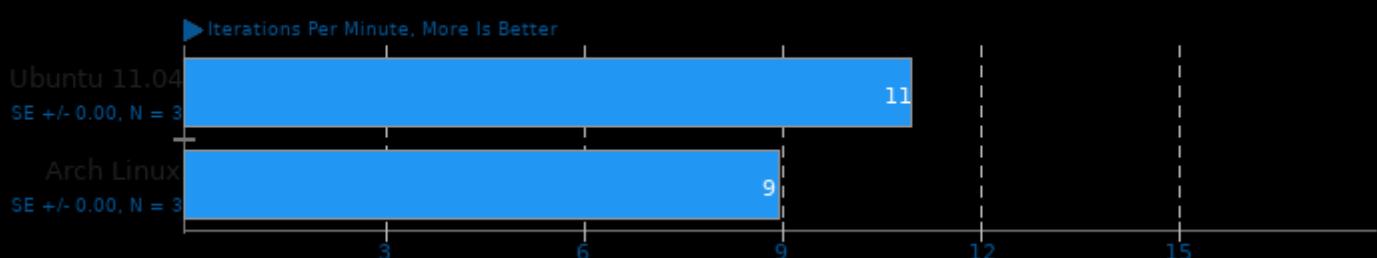
GraphicsMagick 1.3.12

Operation: HWB Color Space



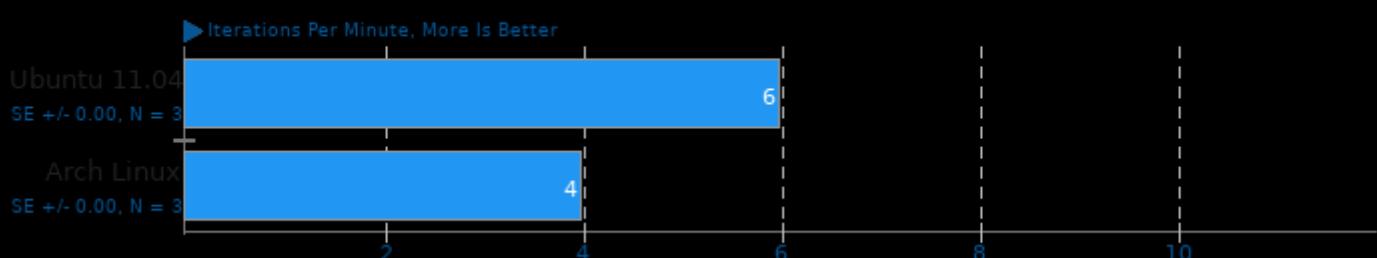
GraphicsMagick 1.3.12

Operation: Blur



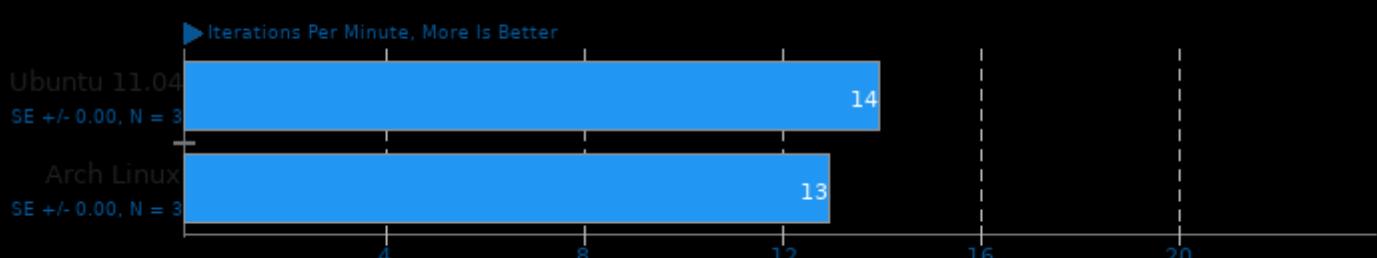
GraphicsMagick 1.3.12

Operation: Local Adaptive Thresholding



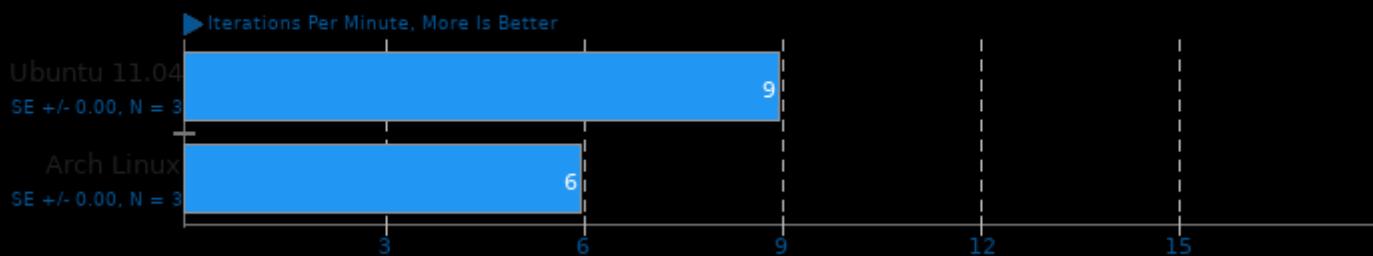
GraphicsMagick 1.3.12

Operation: Resizing



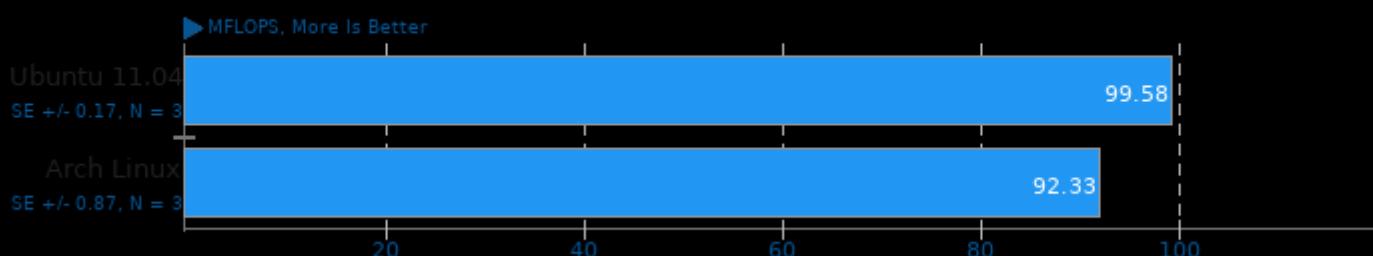
GraphicsMagick 1.3.12

Operation: Sharpen



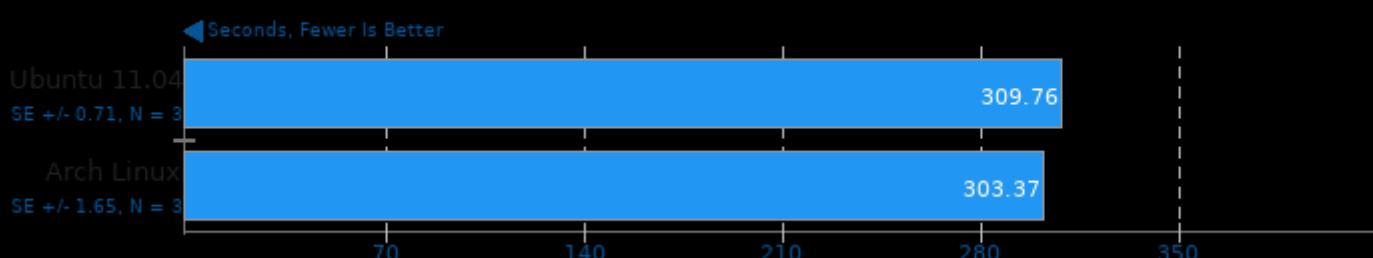
Himeno Benchmark 3.0

Poisson Pressure Solver



Timed HMMer Search 2.3.2

Pfam Database Search



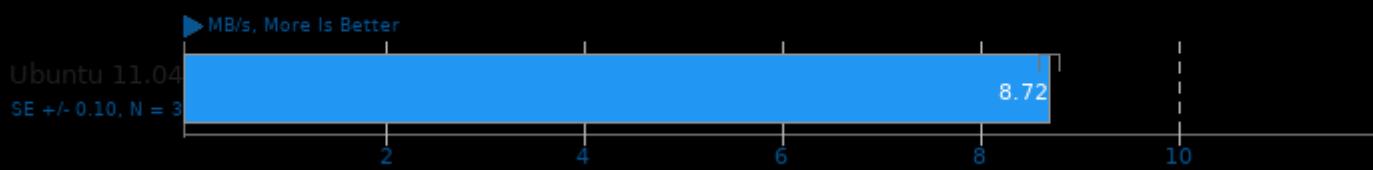
IOzone 3.347

Record Size: 4Kb - File Size: 2GB - Disk Test: Write Performance



IOzone 3.347

Record Size: 4Kb - File Size: 2GB - Disk Test: Read Performance



IOzone 3.347

Record Size: 64Kb - File Size: 2GB - Disk Test: Write Performance



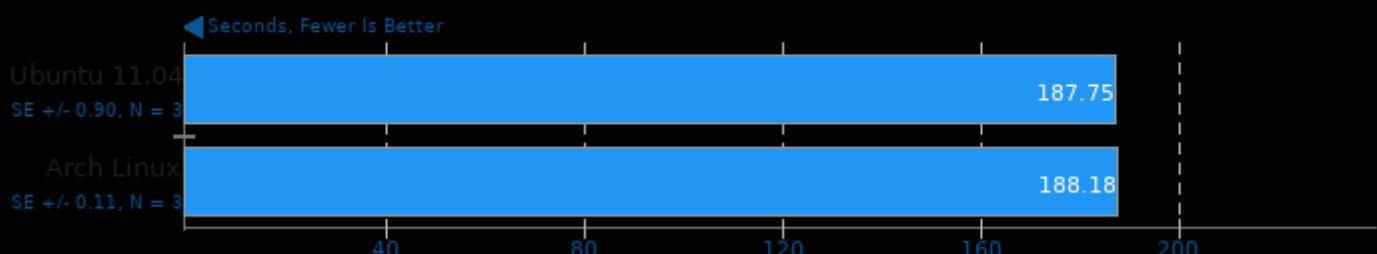
IOzone 3.347

Record Size: 64Kb - File Size: 2GB - Disk Test: Read Performance



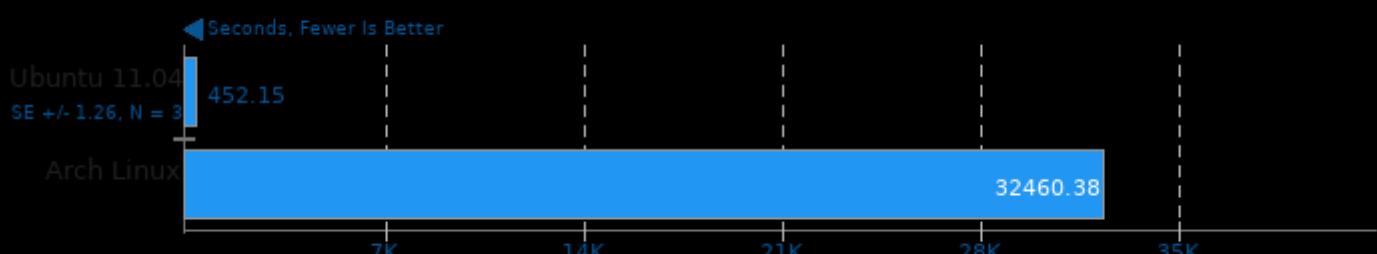
Timed MAFFT Alignment 6.864

Multiple Sequence Alignment



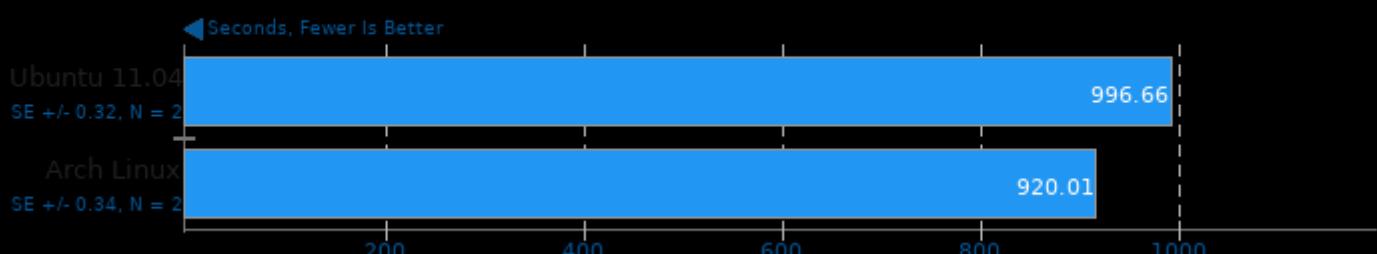
Timed MrBayes Analysis 3.1.2

Primate Phylogeny Analysis



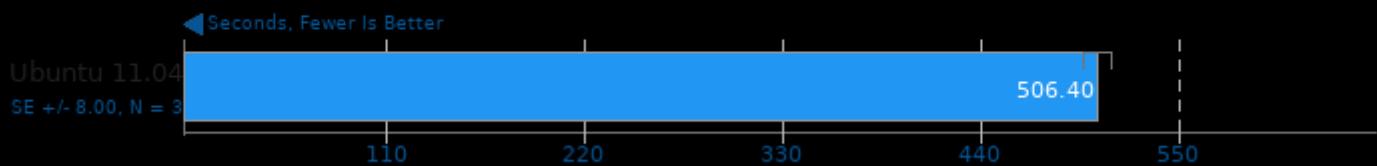
N-Queens 1.0

Elapsed Time



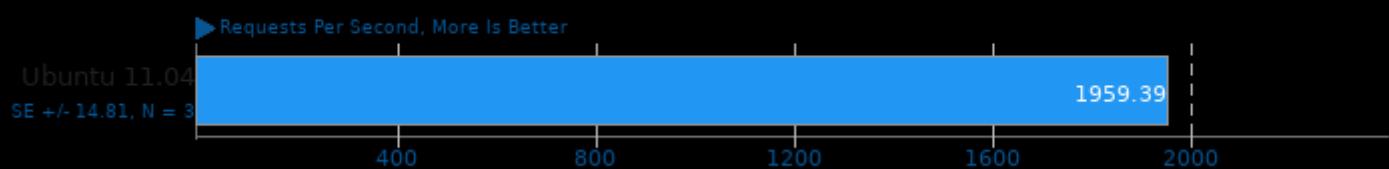
Loopback TCP Network Performance

Time To Transfer 10GB Via Loopback



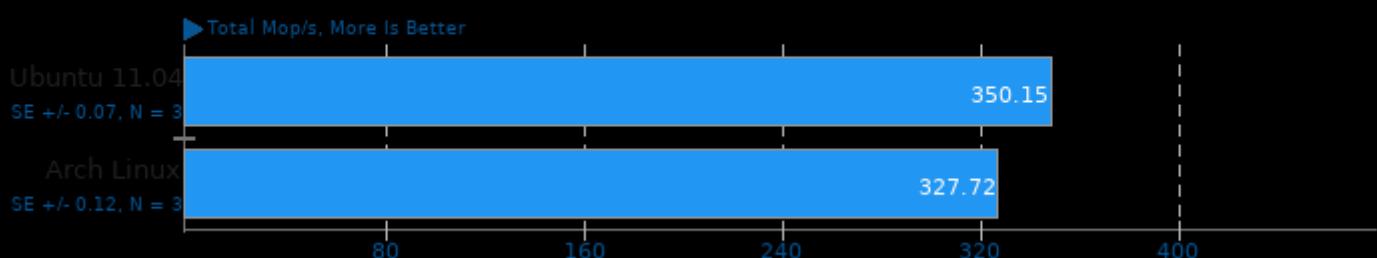
NGINX Benchmark 0.8.53

Static Web Page Serving



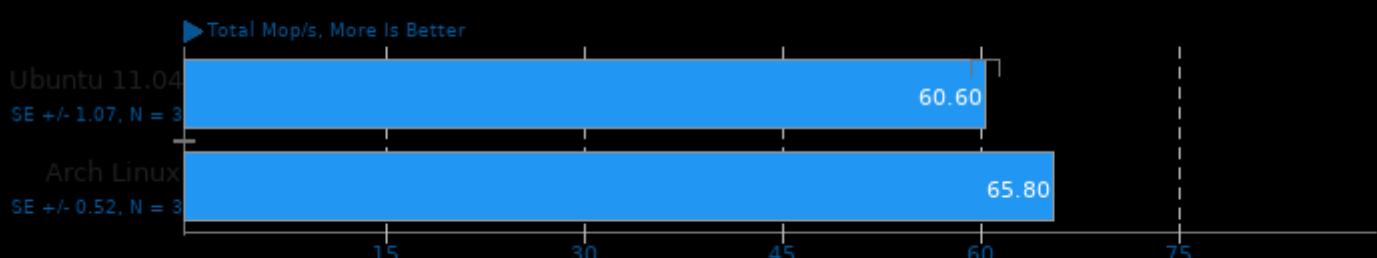
NAS Parallel Benchmarks 3.3

Test / Class: BT.A



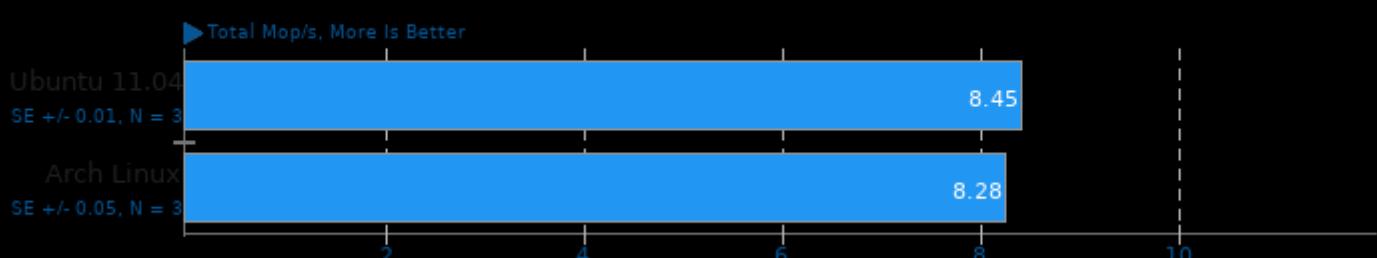
NAS Parallel Benchmarks 3.3

Test / Class: CG.B



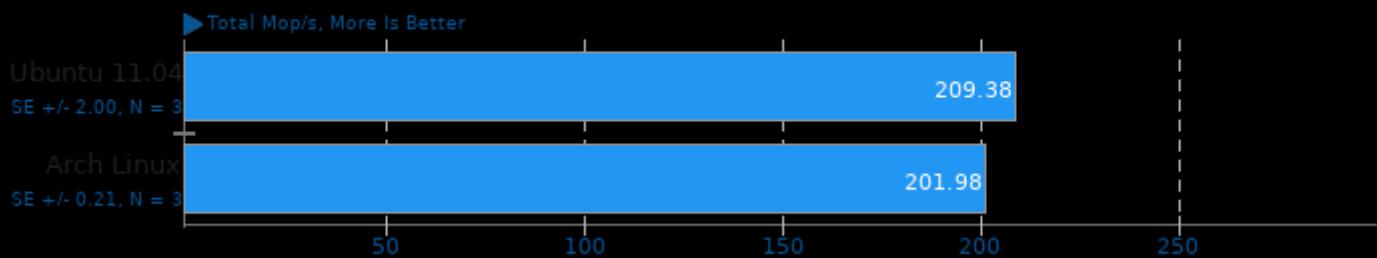
NAS Parallel Benchmarks 3.3

Test / Class: EP.B



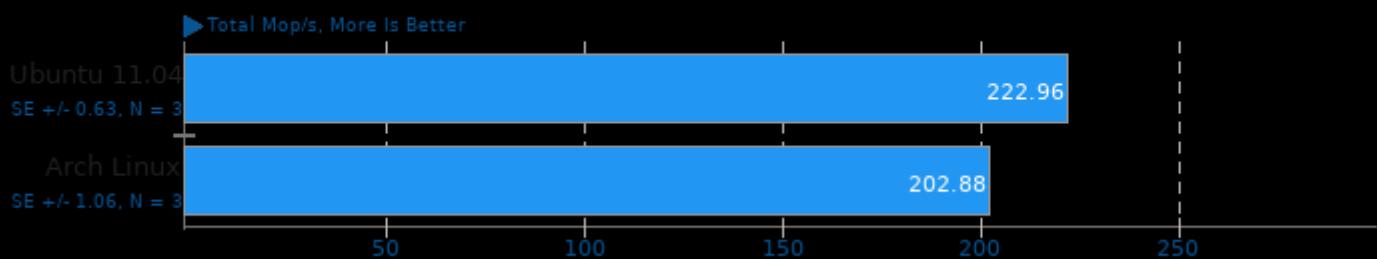
NAS Parallel Benchmarks 3.3

Test / Class: LU.A



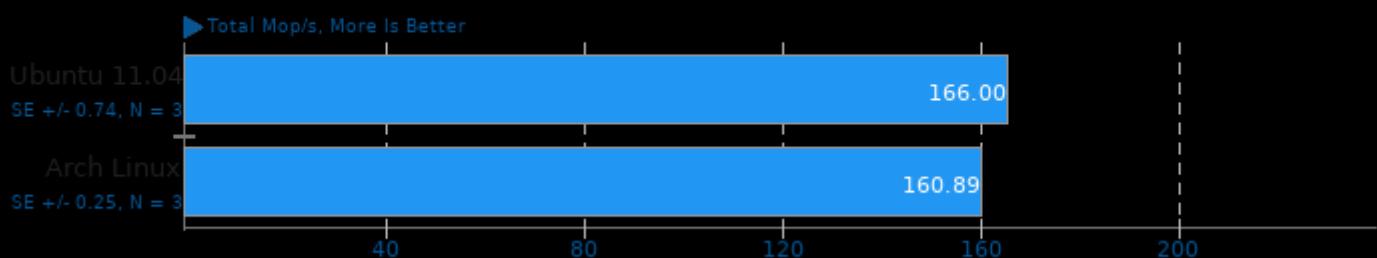
NAS Parallel Benchmarks 3.3

Test / Class: MG.B



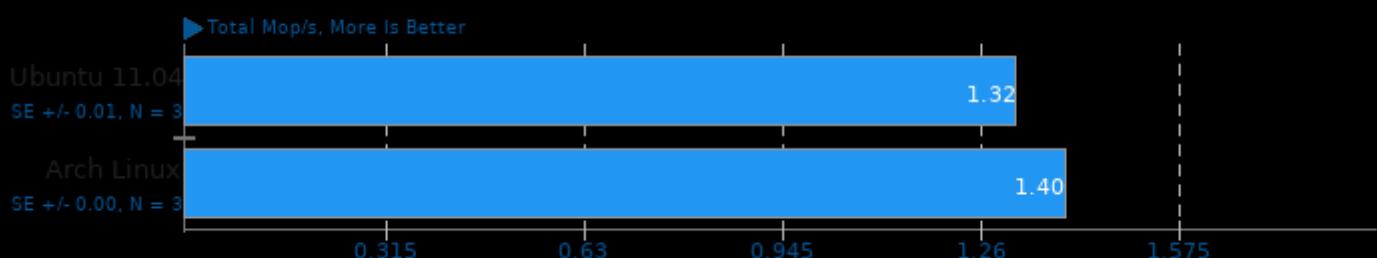
NAS Parallel Benchmarks 3.3

Test / Class: SP.A



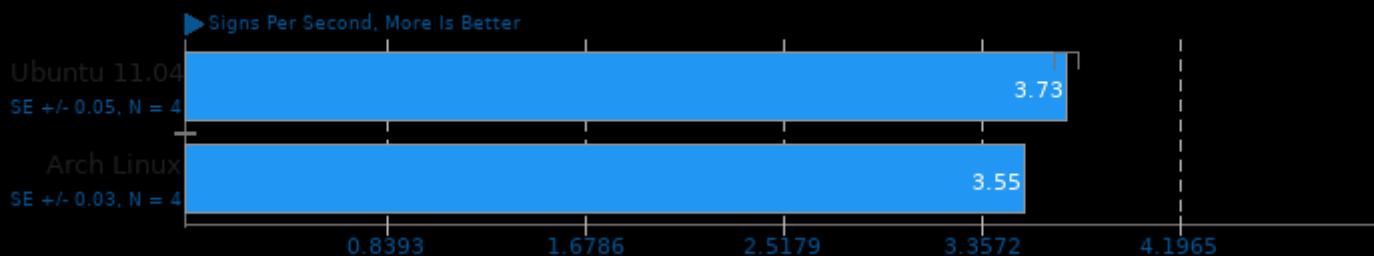
NAS Parallel Benchmarks 3.3

Test / Class: UA.A



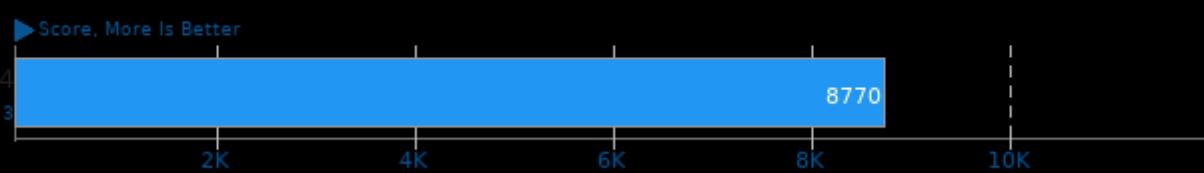
OpenSSL 1.0.0e

RSA 4096-bit Performance



PHPBench 0.8.1

PHP Benchmark Suite



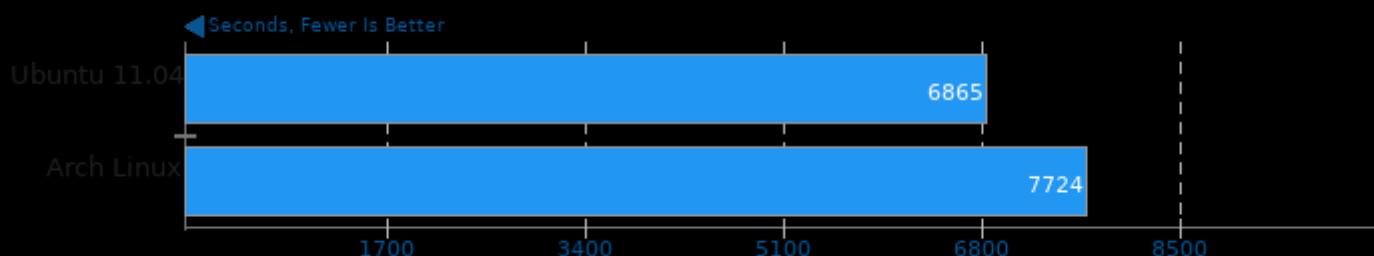
PostMark 1.51

Disk Transaction Performance



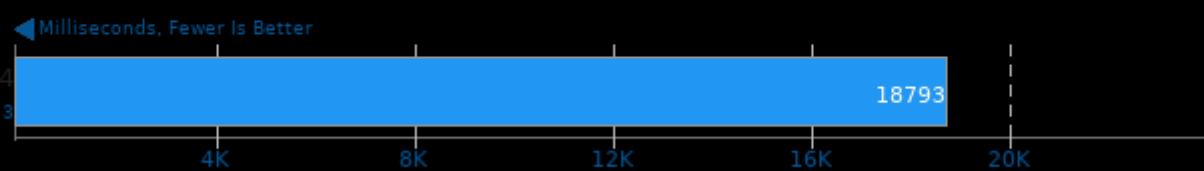
POV-Ray 3.6.1

Total Time



PyBench 2008-08-14

Total For Average Test Times



Sample Pi Program

Phoronix Test Suite v3.8.0m0



SciMark 2.0

Computational Test: Composite



SciMark 2.0

Computational Test: Fast Fourier Transform



SciMark 2.0

Computational Test: Jacobi Successive Over-Relaxation



SciMark 2.0

Computational Test: Monte Carlo



SciMark 2.0

Computational Test: Sparse Matrix Multiply



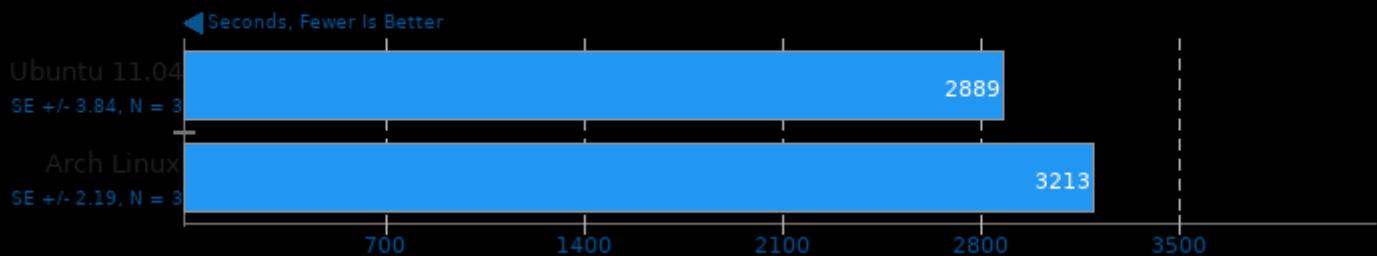
SciMark 2.0

Computational Test: Dense LU Matrix Factorization



Smallpt 1.0

Global Illumination Renderer; 100 Samples



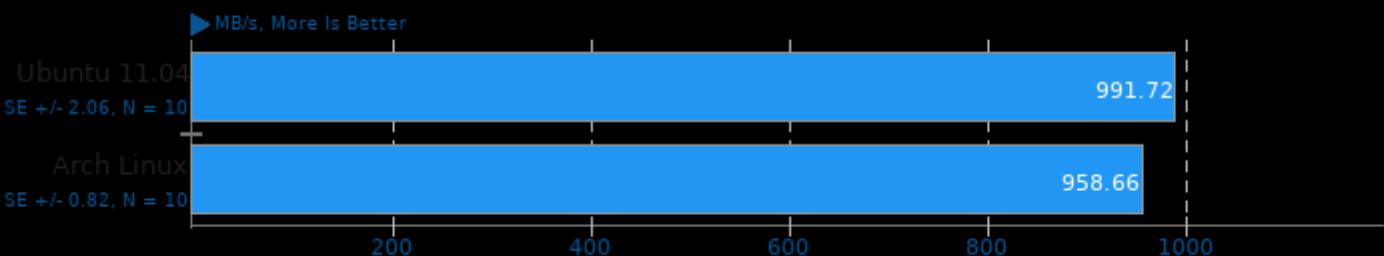
SQLite 3.7.3

Test Target: Default Test Directory



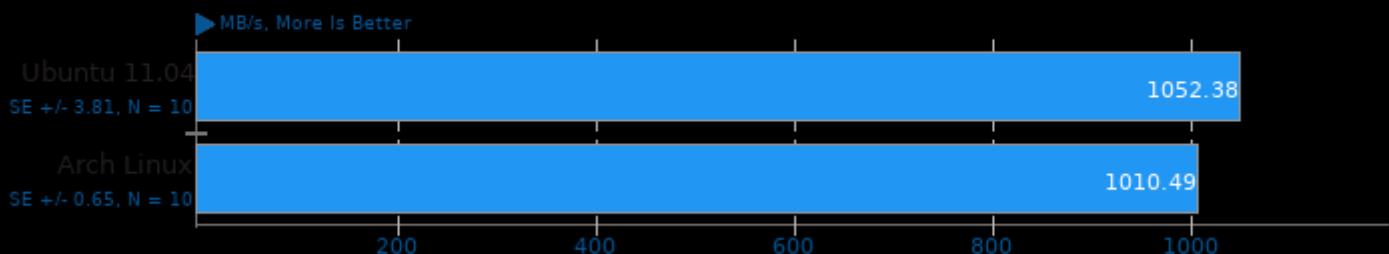
Stream 2009-04-11

Type: Copy



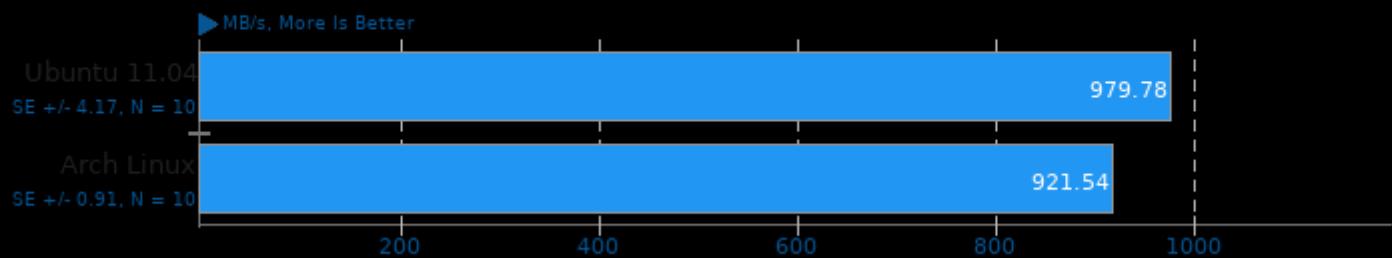
Stream 2009-04-11

Type: Scale



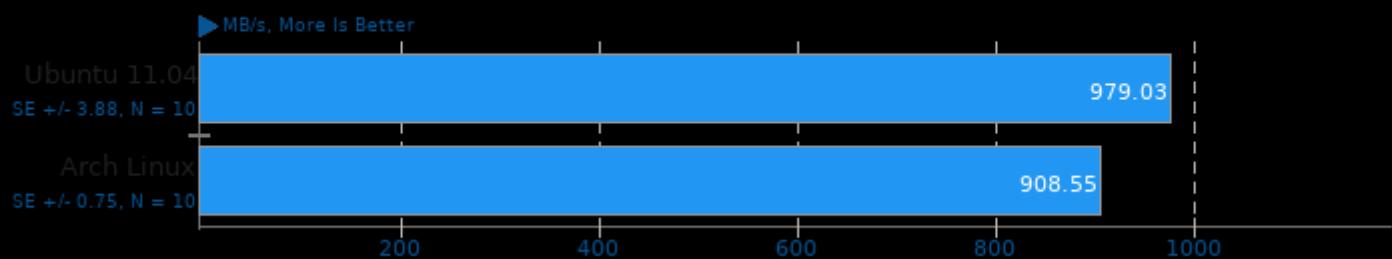
Stream 2009-04-11

Type: Add



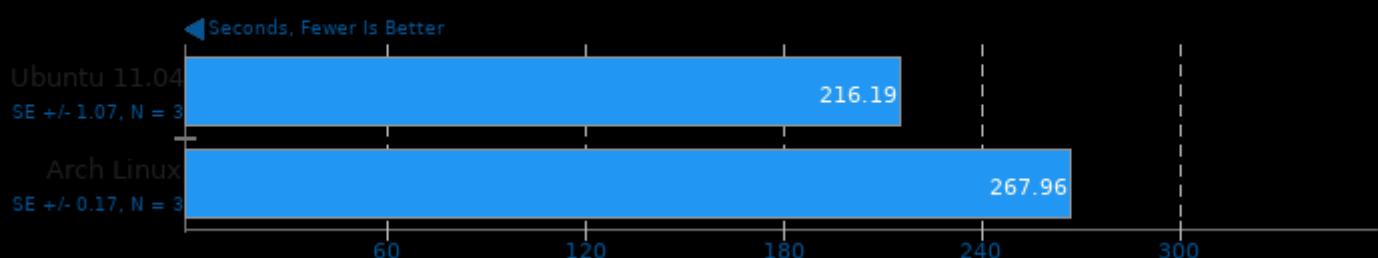
Stream 2009-04-11

Type: Triad



Sudokut 0.4

Total Time



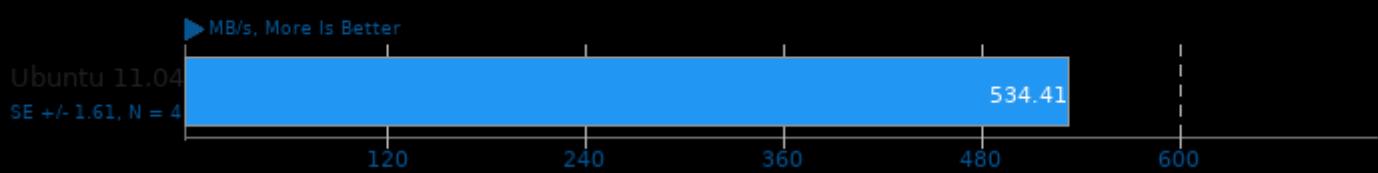
Threaded I/O Tester 0.3.3

Test: Write - Size Per Thread: 32MB - Thread Count: 8



Threaded I/O Tester 0.3.3

Test: Read - Size Per Thread: 32MB - Thread Count: 8



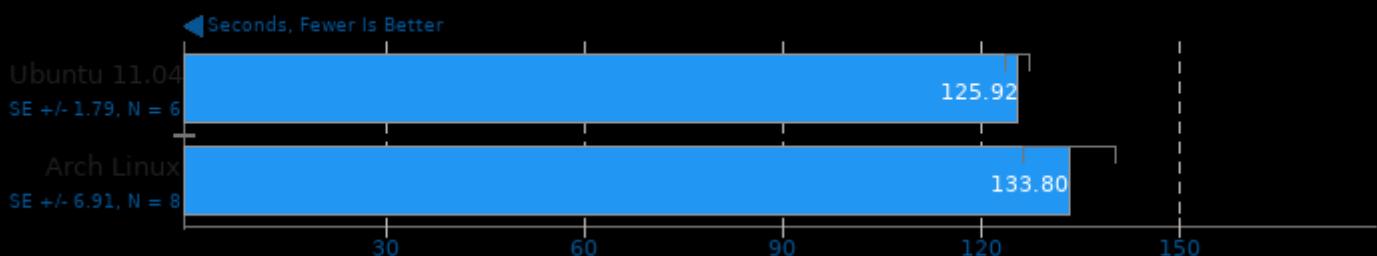
TSCP 1.81

AI Chess Performance



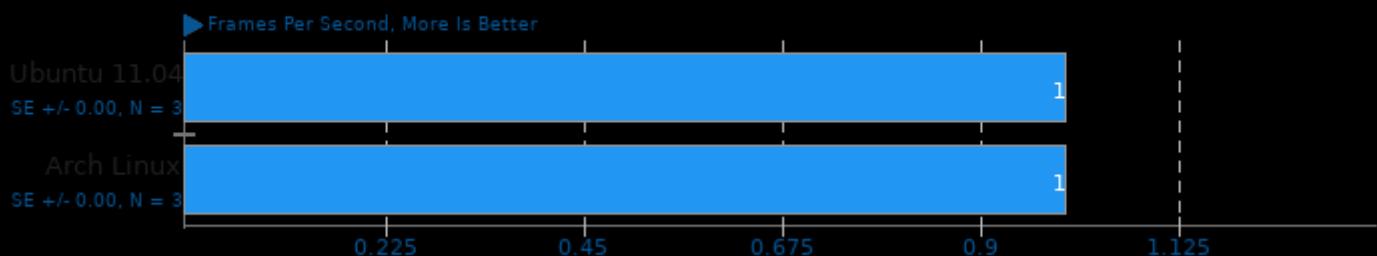
Unpacking The Linux Kernel

linux-2.6.32.tar.bz2



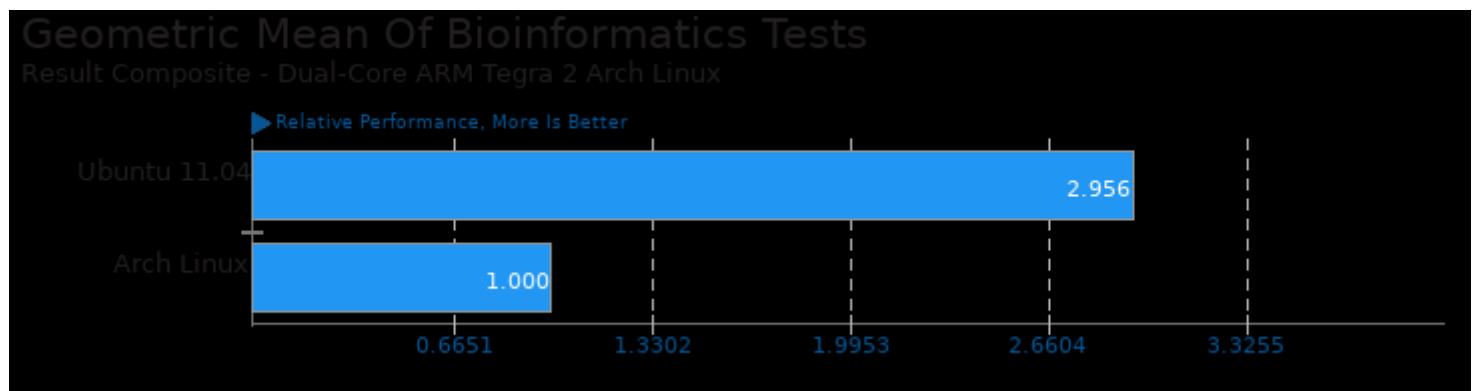
VP8 libvpx Encoding 0.9.7-p1

vpxenc

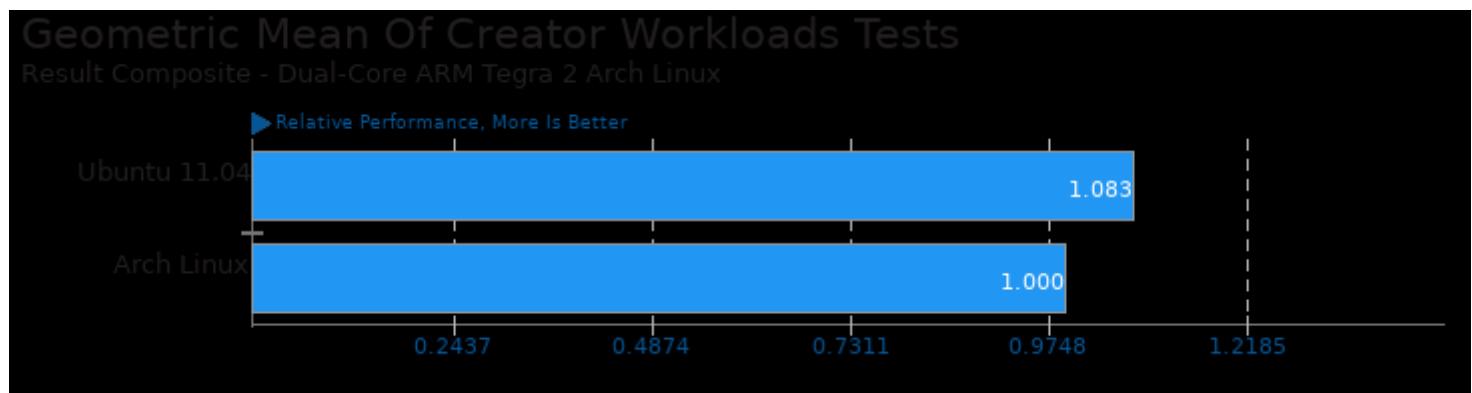


Dual-Core ARM Tegra 2 Arch Linux

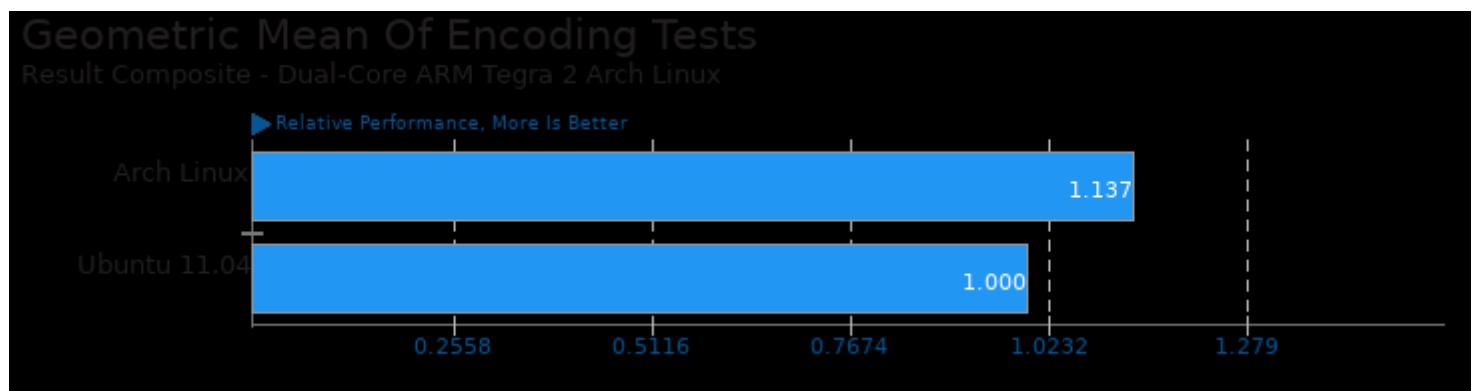
These geometric means are based upon test groupings / test suites for this result file.



Geometric mean based upon tests: pts/himeno, pts/mrbayes, pts/hmmer and pts/mafft



Geometric mean based upon tests: pts/c-ray, pts/povray, pts/smallpt, pts/ffmpeg, pts/vpxenc, pts/encode-mp3, pts/encode-ogg, pts/encode-flac, pts/encode-ape, pts/encode-wavpack, pts/graphics-magick and pts/dcraw

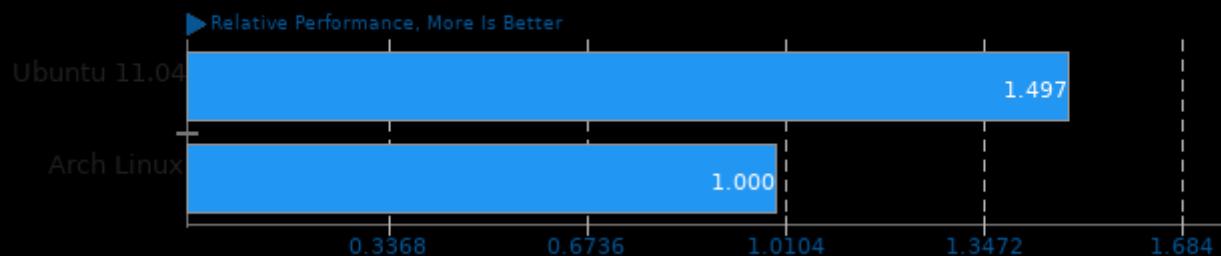


Geometric mean based upon tests: pts/encode-mp3, pts/encode-ogg, pts/encode-flac, pts/encode-ape, pts/encode-wavpack, pts/ffmpeg and pts/vpxenc

Dual-Core ARM Tegra 2 Arch Linux

Geometric Mean Of HPC - High Performance Computing Tests

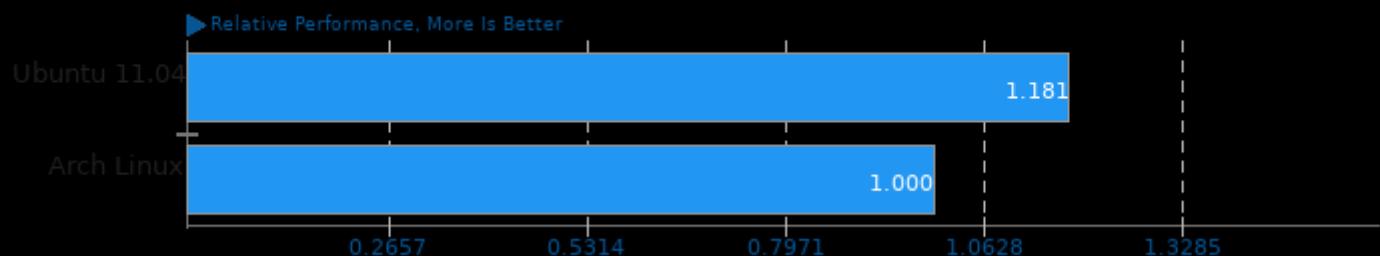
Result Composite - Dual-Core ARM Tegra 2 Arch Linux



Geometric mean based upon tests: pts/npb, pts/himeno, pts/mrbayes, pts/hmmer and pts/mafft

Geometric Mean Of Imaging Tests

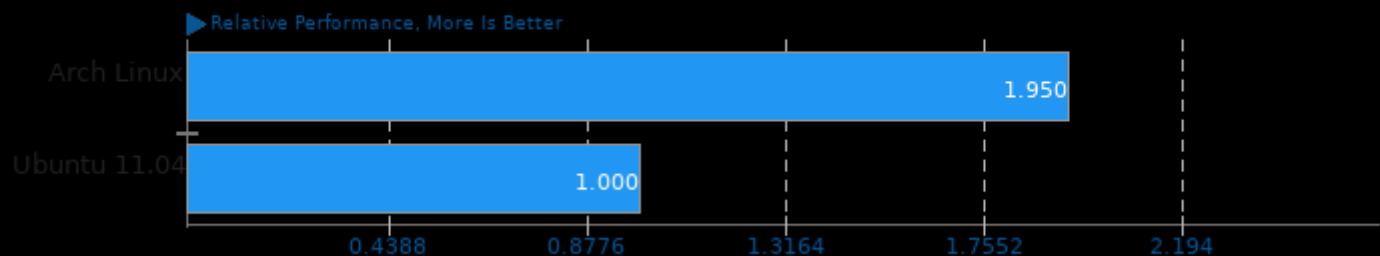
Result Composite - Dual-Core ARM Tegra 2 Arch Linux



Geometric mean based upon tests: pts/graphics-magick and pts/dcraw

Geometric Mean Of Common Kernel Benchmarks Tests

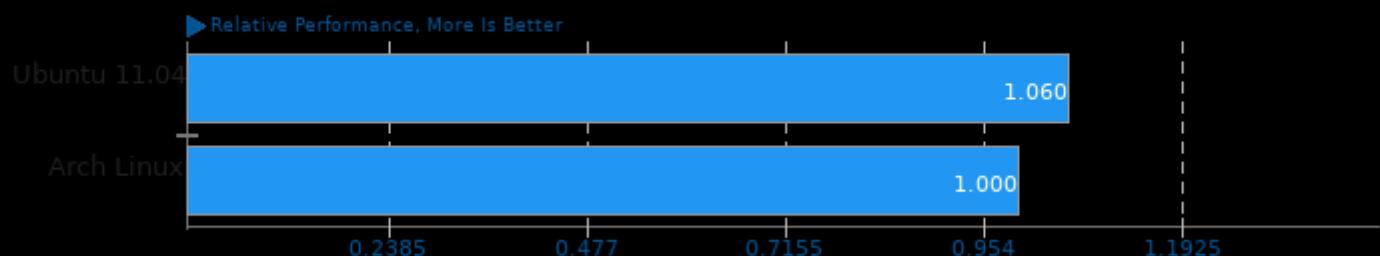
Result Composite - Dual-Core ARM Tegra 2 Arch Linux



Geometric mean based upon tests: pts/apache, pts/postmark and pts/openssl

Geometric Mean Of Memory Test Suite

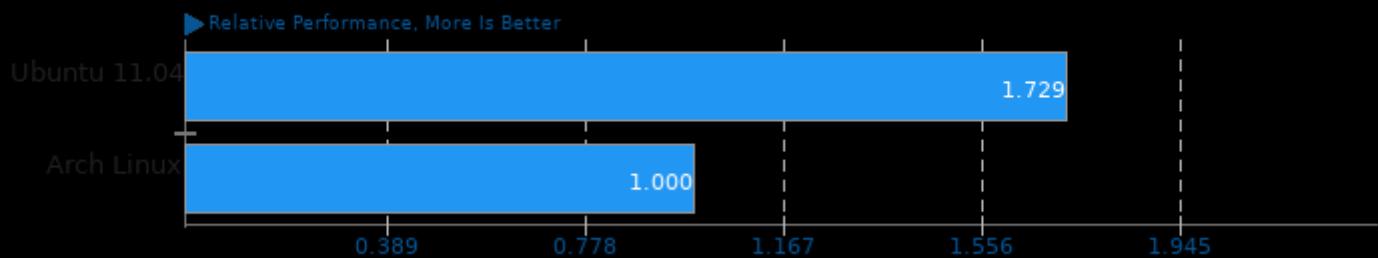
Result Composite - Dual-Core ARM Tegra 2 Arch Linux



Geometric mean based upon tests: pts/stream and pts/cachebench

Geometric Mean Of MPI Benchmarks Tests

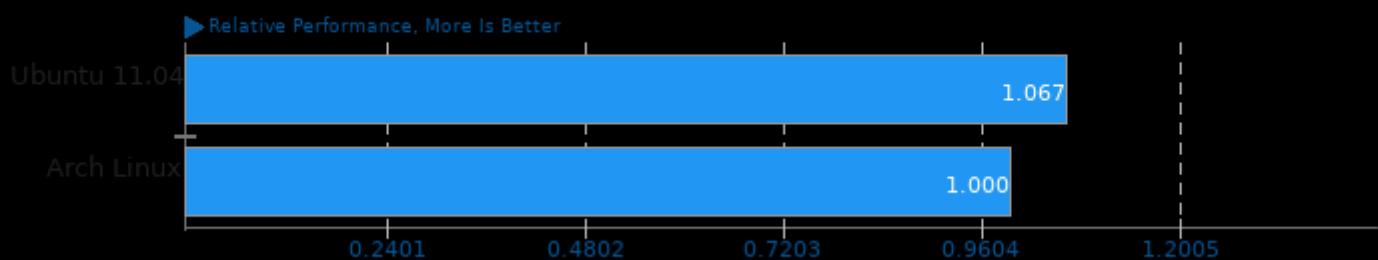
Result Composite - Dual-Core ARM Tegra 2 Arch Linux



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

Geometric Mean Of Multi-Core Tests

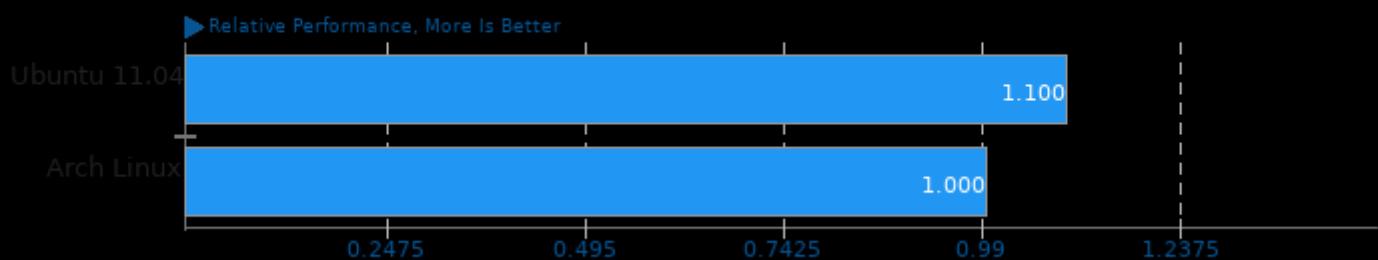
Result Composite - Dual-Core ARM Tegra 2 Arch Linux



Geometric mean based upon tests: pts/c-ray, pts/povray, pts/n-queens, pts/ffmpeg, pts/vpxenc, pts/npb, pts/smallpt, pts/graphics-magick, pts/compress-7zip, pts/compress-pbzip2, pts/build-apache, pts/build-imagemagick and pts/build-mplayer

Geometric Mean Of Raytracing Tests

Result Composite - Dual-Core ARM Tegra 2 Arch Linux

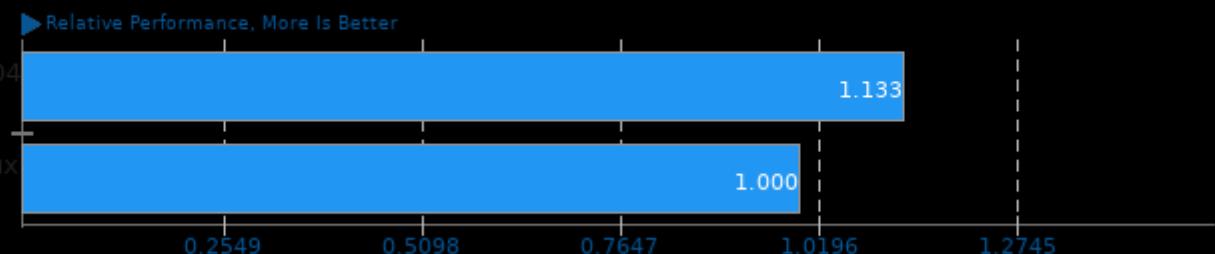


Geometric mean based upon tests: pts/c-ray and pts/povray

Dual-Core ARM Tegra 2 Arch Linux

Geometric Mean Of Renderers Tests

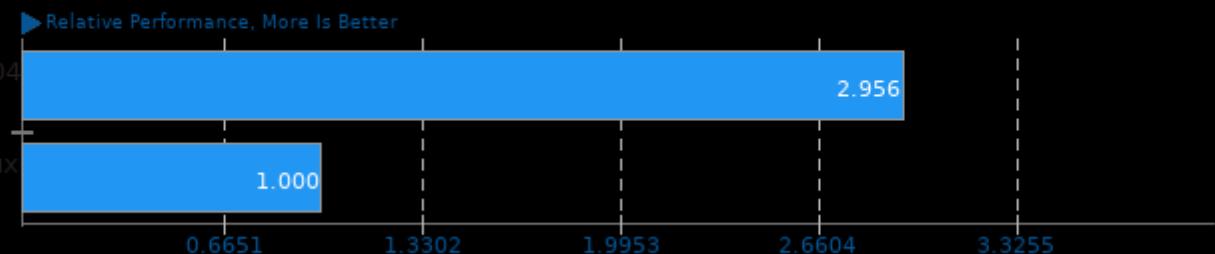
Result Composite - Dual-Core ARM Tegra 2 Arch Linux



Geometric mean based upon tests: pts/c-ray, pts/povray and pts/smallpt

Geometric Mean Of Scientific Computing Tests

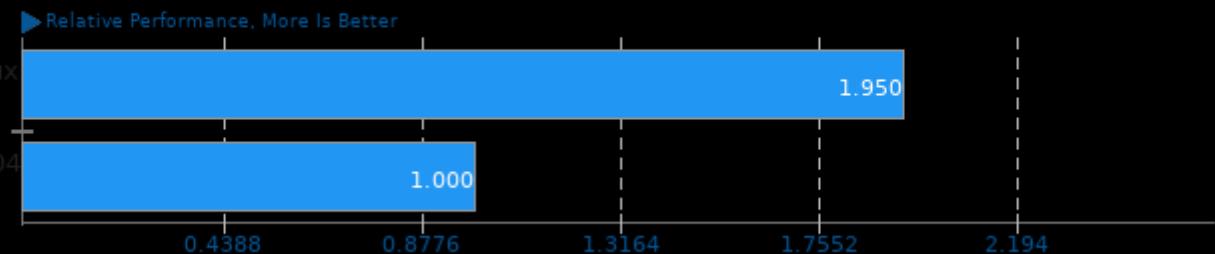
Result Composite - Dual-Core ARM Tegra 2 Arch Linux



Geometric mean based upon tests: pts/himeno, pts/mrbayes, pts/hmmer and pts/mafft

Geometric Mean Of Server Tests

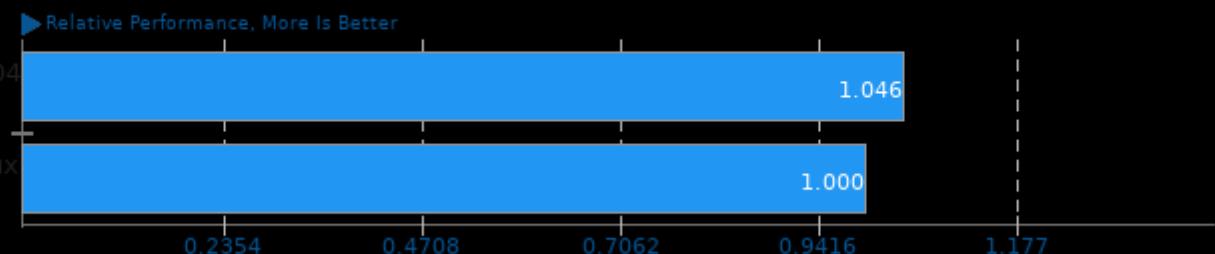
Result Composite - Dual-Core ARM Tegra 2 Arch Linux



Geometric mean based upon tests: pts/apache, pts/nginx, pts/blogbench, pts/phpbench, pts/openssl and pts/sqlite

Geometric Mean Of Server CPU Tests

Result Composite - Dual-Core ARM Tegra 2 Arch Linux

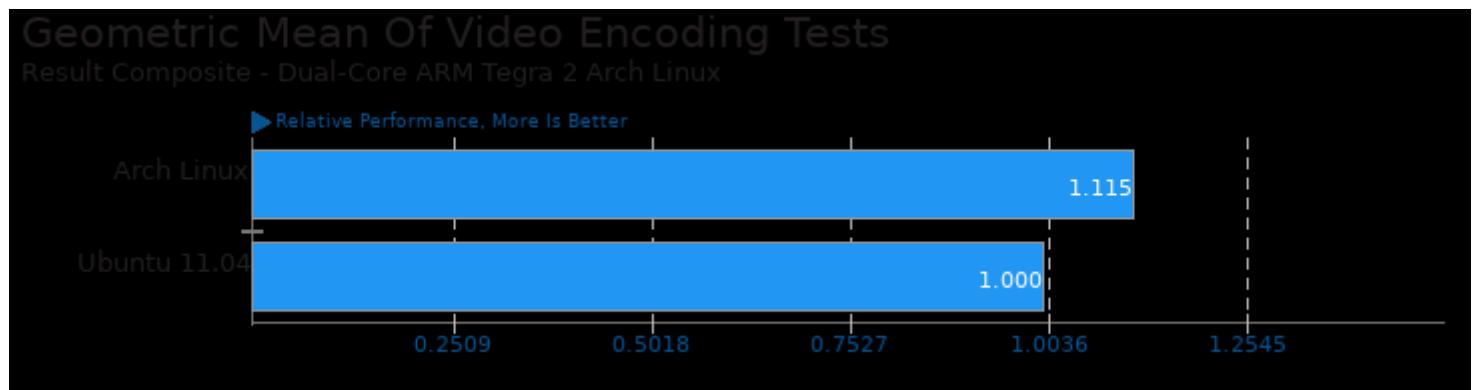


Geometric mean based upon tests: pts/npb, pts/himeno, pts/compress-7zip, pts/c-ray, pts/povray, pts/openssl,

pts/pybench, pts/phpbench and pts/stream



Geometric mean based upon tests: pts/byte, pts/cachebench, pts/scimark2, pts/compress-gzip, pts/dcraw, pts/encode-flac, pts/encode-mp3, pts/encode-ogg, pts/gnupg, pts/sudokut, pts/pybench, pts/phpbench and pts/nginx



Geometric mean based upon tests: pts/ffmpeg and pts/vpxenc

This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 07:56.