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Intel Core i7-4600U testing with a LENOVO 20A7CTO1WW (GRET40WW 1.17 BIOS) and Intel HD 4400 2GB on Ubuntu 20.04 via the Phoronix Test Suite.

Automated Executive Summary

baby524be had the most wins, coming in first place for 37% of the tests.

Test Systems:

baby72a20 #1

baby72a20 #2

Processor: Intel Core i7-4600U @ 3.30GHz (2 Cores / 4 Threads), Motherboard: LENOVO 20A7CTO1WW (GRET40WW 1.17 BIOS), Chipset: Intel Haswell-ULT DRAM, Memory: 8GB, Disk: 128GB TOSHIBA THNSNJ12, Graphics: Intel HD 4400 2GB (1100MHz), Audio: Intel Haswell-ULT HD Audio, Network: Intel I218-LM + Intel 7260

OS: Ubuntu 20.04, Kernel: 5.14.9-Baby+ (x86_64), Display Server: X Server 1.20.11, OpenGL: 4.5 Mesa 21.0.3, Vulkan: 1.2.145, Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 2560x1440

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_cpufreq performance - CPU Microcode: 0x26 - Thermald 1.9.1
Security Notes: itlb_multihit: KVM: Mitigation of VMX disabled + l1tf: Mitigation of PTE Inversion; VMX: conditional cache flushes SMT vulnerable + mds: Mitigation of Clear buffers; SMT vulnerable + meltdown: Mitigation of PTI + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Vulnerable IBPB: disabled STIBP: disabled + srbds: Mitigation of Microcode + tsx_async_abort: Not affected

baby524be

Processor: Intel Core i7-4600U @ 3.30GHz (2 Cores / 4 Threads), Motherboard: LENOVO 20A7CTO1WW (GRET40WW 1.17 BIOS), Chipset: Intel Haswell-ULT DRAM, Memory: 8GB, Disk: 128GB TOSHIBA THNSNJ12, Graphics: Intel HD 4400 2GB (1100MHz), Audio: Intel Haswell-ULT HD Audio, Network: Intel I218-LM + Intel 7260

OS: Ubuntu 20.04, Kernel: 5.14.9-Baby-dev+ (x86_64), Display Server: X Server 1.20.11, OpenGL: 4.5 Mesa 21.0.3, Vulkan: 1.2.145, Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 2560x1440

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_cpufreq performance - CPU Microcode: 0x26 - Thermald 1.9.1
Security Notes: itlb_multihit: KVM: Mitigation of VMX disabled + l1tf: Mitigation of PTE Inversion; VMX: conditional cache flushes SMT vulnerable + mds: Mitigation of Clear buffers; SMT vulnerable + meltdown: Mitigation of PTI + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Vulnerable IBPB: disabled STIBP: disabled + srbds: Mitigation of Microcode + tsx_async_abort: Not affected

5.11.0-37-generic

Processor: Intel Core i7-4600U @ 3.30GHz (2 Cores / 4 Threads), Motherboard: LENOVO 20A7CTO1WW (GRET40WW 1.17 BIOS), Chipset: Intel Haswell-ULT DRAM, Memory: 8GB, Disk: 128GB TOSHIBA THNSNJ12, Graphics: Intel HD 4400 2GB (1100MHz), Audio: Intel Haswell-ULT HD Audio, Network: Intel I218-LM + Intel 7260

OS: Ubuntu 20.04, Kernel: 5.11.0-37-generic (x86_64), Display Server: X Server 1.20.11, OpenGL: 4.5 Mesa 21.0.3, Vulkan: 1.2.145, Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 2560x1440

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_cpufreq ondemand - CPU Microcode: 0x26 - Thermald 1.9.1
Security Notes: itlb_multihit: KVM: Mitigation of VMX disabled + l1tf: Mitigation of PTE Inversion; VMX: conditional cache flushes SMT vulnerable + mds: Mitigation of Clear buffers; SMT vulnerable + meltdown: Mitigation of PTI + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full generic retpoline IBPB: conditional IBRS_FW STIBP: conditional RSB filling + srbds: Mitigation of Microcode + tsx_async_abort: Not affected

5.14.6-xanmod1-cacule

Processor: Intel Core i7-4600U @ 3.30GHz (2 Cores / 4 Threads), Motherboard: LENOVO 20A7CTO1WW (GRET40WW 1.17 BIOS), Chipset: Intel Haswell-ULT DRAM, Memory: 8GB, Disk: 128GB TOSHIBA THNSNJ12, Graphics: Intel HD 4400 2GB (1100MHz), Audio: Intel Haswell-ULT HD Audio, Network: Intel I218-LM + Intel 7260

OS: Ubuntu 20.04, Kernel: 5.14.6-xanmod1-cacule (x86_64), Display Server: X Server 1.20.11, OpenGL: 4.5 Mesa

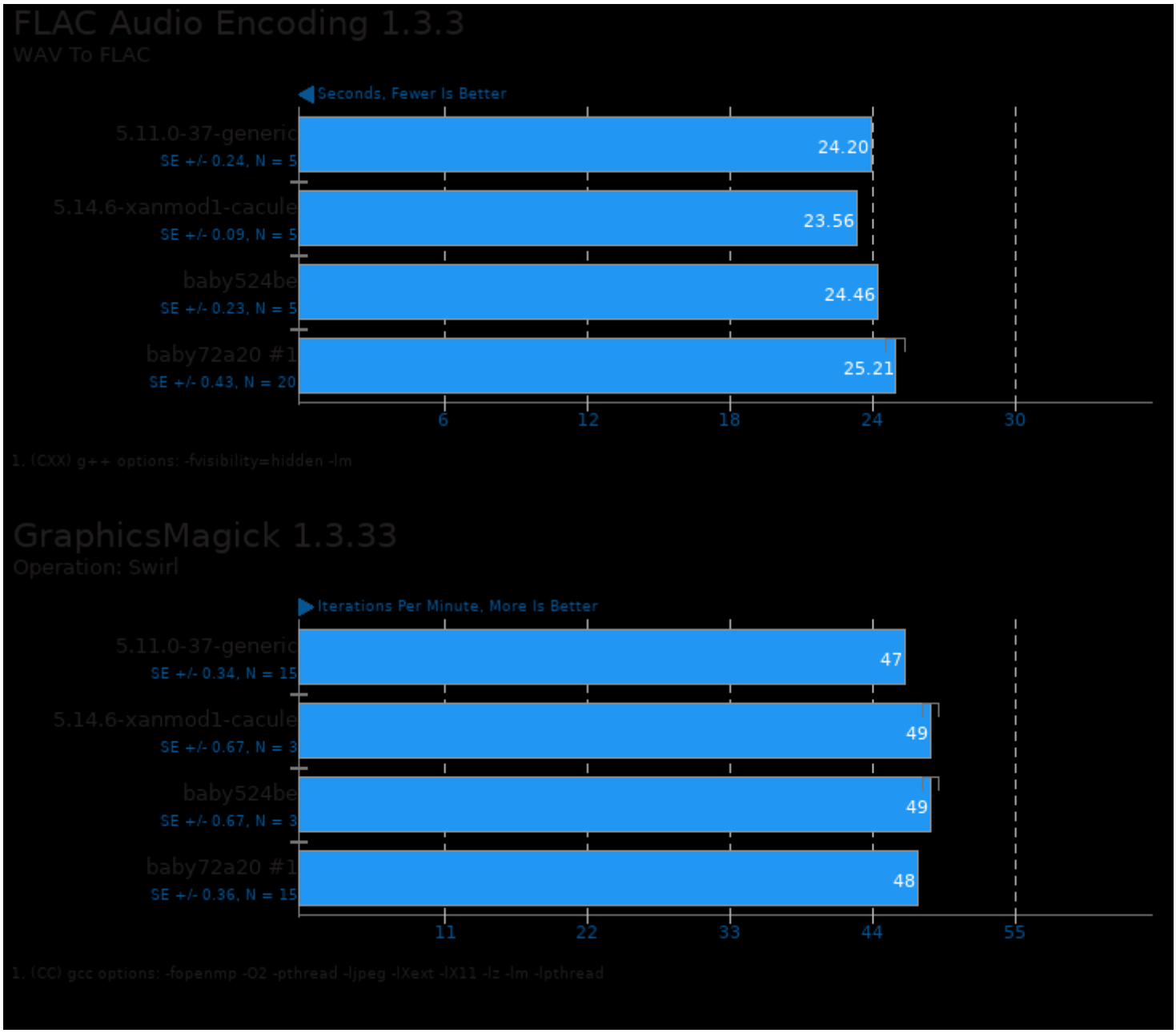
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21.0.3, Vulkan: 1.2.145, Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 2560x1440

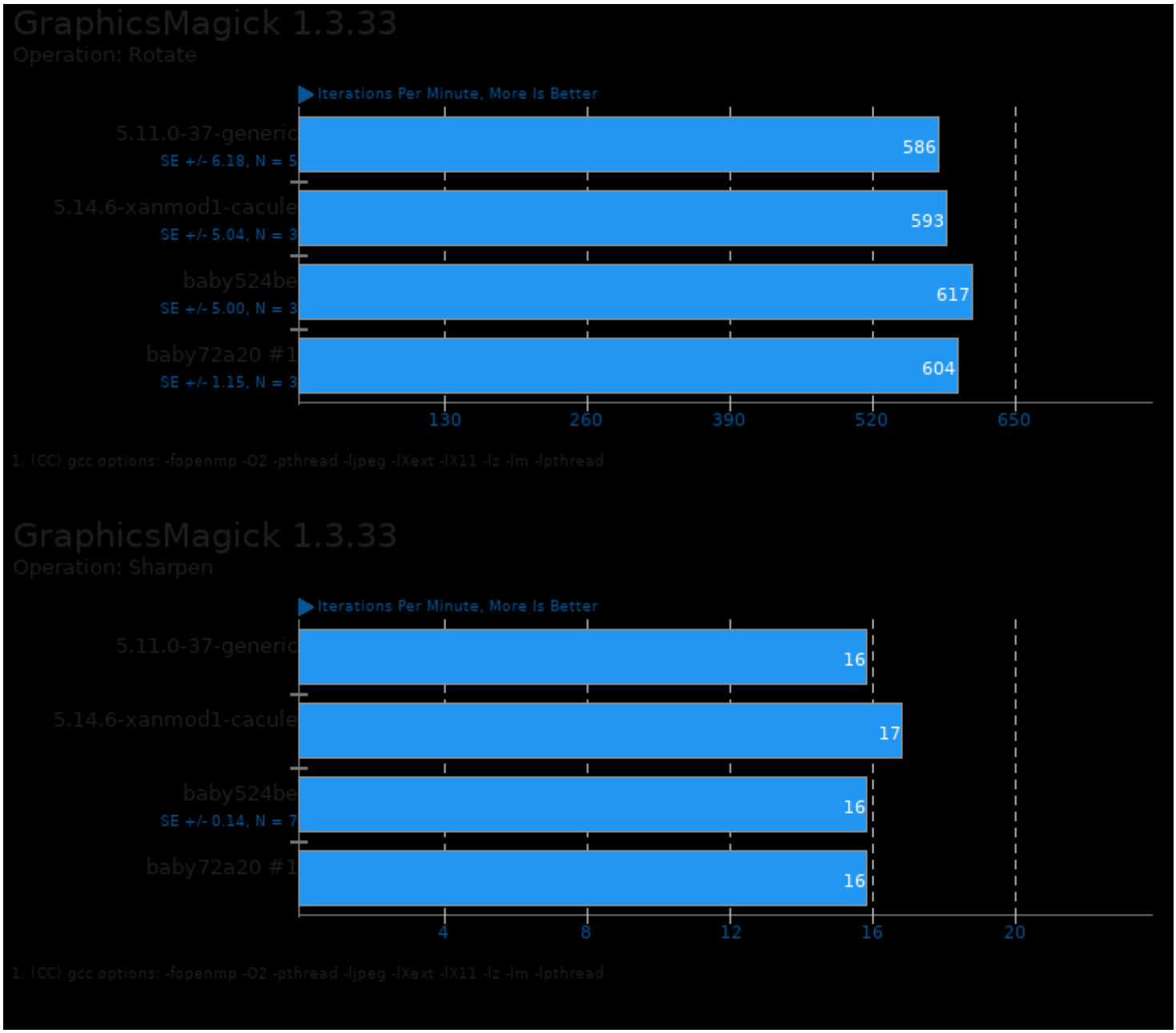
Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,gm2 --enable-libstdcxx-debug --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_cpufreq performance - CPU Microcode: 0x26 - Thermald 1.9.1
Security Notes: itlb_multihit: KVM: Mitigation of VMX disabled + l1tf: Mitigation of PTE Inversion; VMX: conditional cache flushes SMT vulnerable + mds: Mitigation of Clear buffers; SMT vulnerable + meltdown: Mitigation of PTI + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Vulnerable IBPB: disabled STIBP: disabled + srbds: Mitigation of Microcode + tsx_async_abort: Not affected

	baby72a20 #1	baby72a20 #2	baby524be	5.11.0-37-generic	5.14.6-xanmod1-cacule
FLAC Audio Encoding - WAV To FLAC (sec)	25.214		24.459	24.203	23.562
Normalized	93.45%		96.33%	97.35%	100%
Standard Deviation	7.6%		2.1%	2.3%	0.9%
GraphicsMagick - Swirl (Iterations/min)	48		49	47	49
Normalized	97.96%		100%	95.92%	100%
Standard Deviation	3%		2.4%	2.8%	2.4%
GraphicsMagick - Rotate (Iterations/min)	604		617	586	593
Normalized	97.89%		100%	94.98%	96.11%
Standard Deviation	0.3%		1.4%	2.4%	1.5%
GraphicsMagick - Sharpen (Iterations/min)	16		16	16	17
Normalized	94.12%		94.12%	94.12%	100%
Standard Deviation			2.3%		
GraphicsMagick - Enhanced (Iterations/min)	20		20	20	20
Standard Deviation					2.5%
GraphicsMagick - Resizing (Iterations/min)	120		122	121	122
Normalized	98.36%		100%	99.18%	100%
Standard Deviation	1.7%		1.2%	1.3%	1.2%
GraphicsMagick - Noise-Gaussian (Iterations/min)	35		35	35	35
Standard Deviation			1.6%	1.6%	
GraphicsMagick - HWB Color Space (Iterations/min)	199		199	195	196
Normalized	100%		100%	97.99%	98.49%
Standard Deviation	1%		1.3%	1.4%	1.2%

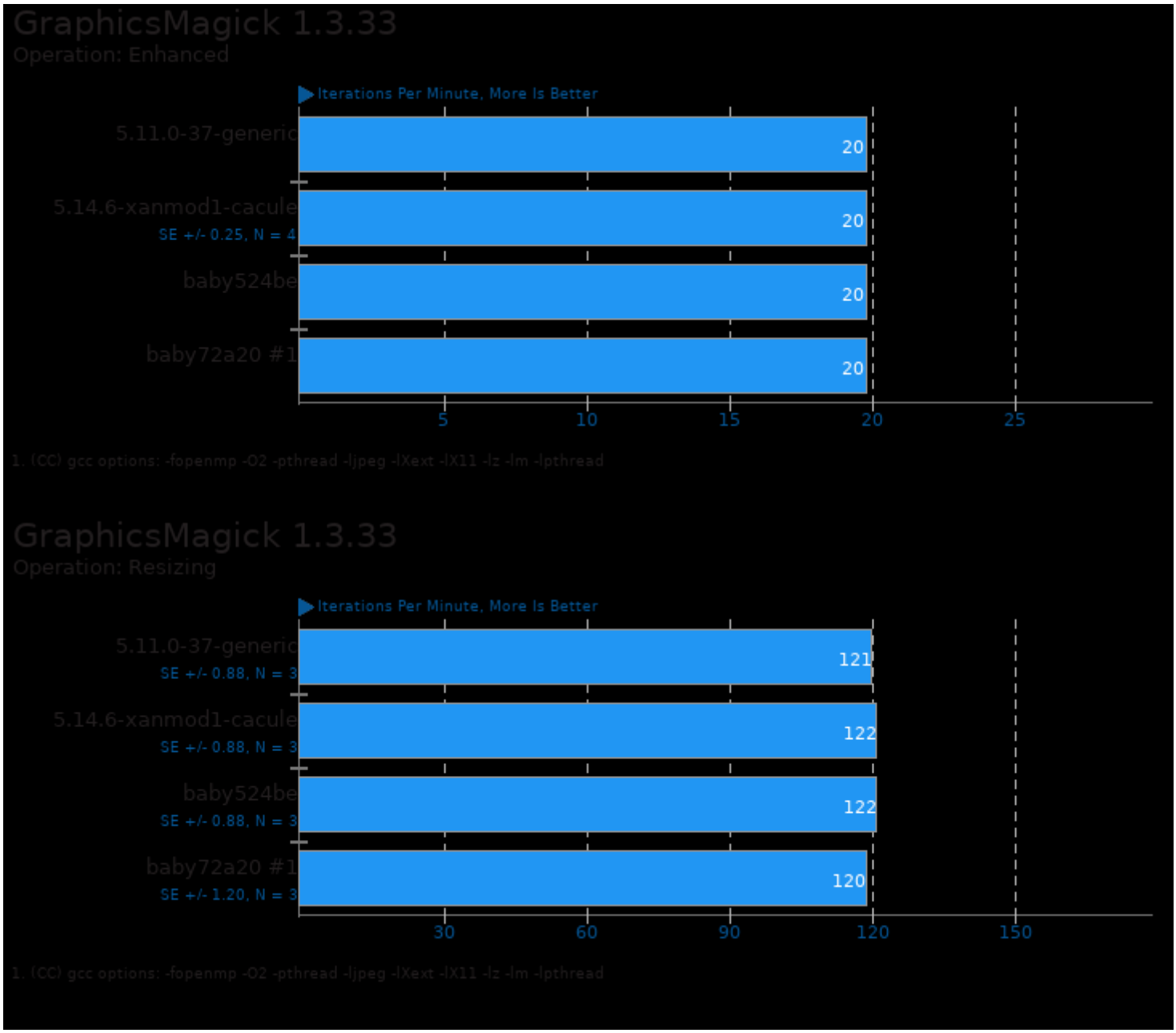
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FLAC Audio Encoding 1.3.3
WAV To FLAC
Seconds, Fewer Is Better
5.11.0-37-generic
SE +/- 0.24, N = 5
24.20
5.14.6-xanmod1-cacule
SE +/- 0.09, N = 5
23.56
baby524be
SE +/- 0.23, N = 5
24.46
baby72a20 #1
SE +/- 0.43, N = 20
25.21
6
12
18
24
30
1. (CXX) g++ options: -fvisibility=hidden -lm
GraphicsMagick 1.3.33
Operation: Swirl
Iterations Per Minute, More Is Better
5.11.0-37-generic
SE +/- 0.34, N = 15
47
5.14.6-xanmod1-cacule
SE +/- 0.67, N = 3
49
baby524be
SE +/- 0.67, N = 3
49
baby72a20 #1
SE +/- 0.36, N = 15
48
11
22
33
44
55
1. (CC) gcc options: -fopenmp -O2 -pthread -ljpeg -lXext -lX11 -lz -lm -lpthread

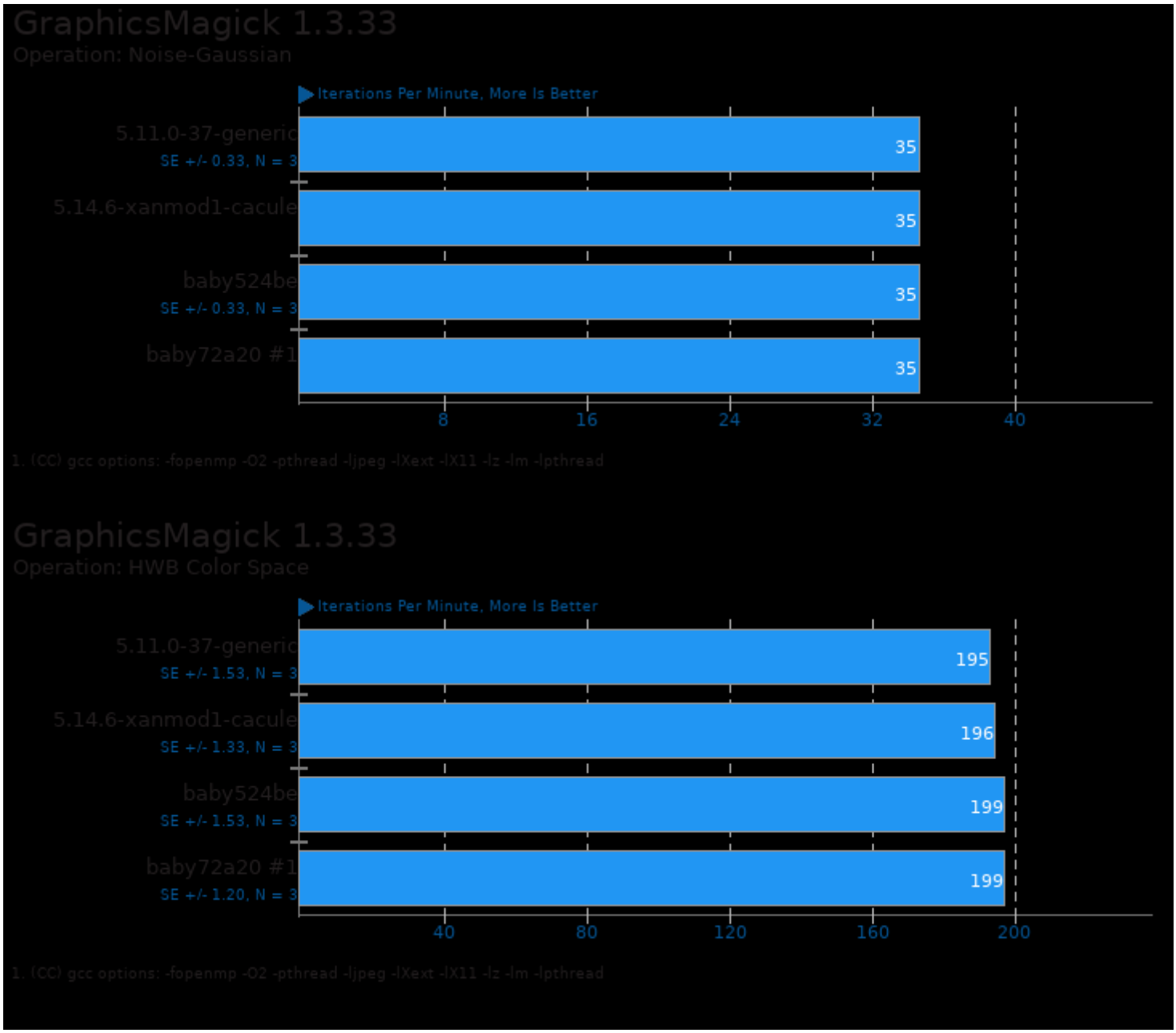
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GraphicsMagick 1.3.33
Operation: Rotate
Iterations Per Minute, More Is Better
5.11.0-37-generic
SE +/- 6.18, N = 5
586
5.14.6-xanmod1-cacule
SE +/- 5.04, N = 3
593
baby524be
SE +/- 5.00, N = 3
617
baby72a20 #1
SE +/- 1.15, N = 3
604
130
260
390
520
650
1. (CC) gcc options: -fopenmp -O2 -pthread -ljpeg -lXext -lX11 -lz -lm -lpthread
GraphicsMagick 1.3.33
Operation: Sharpen
Iterations Per Minute, More Is Better
5.11.0-37-generic
16
5.14.6-xanmod1-cacule
17
baby524be
SE +/- 0.14, N = 7
16
baby72a20 #1
16
4
8
12
16
20
1. (CC) gcc options: -fopenmp -O2 -pthread -ljpeg -lXext -lX11 -lz -lm -lpthread

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GraphicsMagick 1.3.33
Operation: Enhanced
Iterations Per Minute, More Is Better
5.11.0-37-generic
20
5.14.6-xanmod1-cacule
SE +/- 0.25, N = 4
20
baby524be
20
baby72a20 #1
20
5
10
15
20
25
1. (CC) gcc options: -fopenmp -O2 -pthread -ljpeg -lXext -lX11 -lz -lm -lpthread
GraphicsMagick 1.3.33
Operation: Resizing
Iterations Per Minute, More Is Better
5.11.0-37-generic
SE +/- 0.88, N = 3
121
5.14.6-xanmod1-cacule
SE +/- 0.88, N = 3
122
baby524be
SE +/- 0.88, N = 3
122
baby72a20 #1
SE +/- 1.20, N = 3
120
30
60
90
120
150
1. (CC) gcc options: -fopenmp -O2 -pthread -ljpeg -lXext -lX11 -lz -lm -lpthread

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This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 10:27.