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Intel Core i7-8550U testing with a Dell 0H0VG3 (1.10.0 BIOS) and Intel UHD 620 KBL GT2 3GB on Ubuntu 20.10 via the Phoronix Test Suite.

Automated Executive Summary

2 had the most wins, coming in first place for 41% of the tests.

Based on the geometric mean of all complete results, the fastest (1) was 1.221x the speed of the slowest (2). 3 was 0.841x the speed of 1 and 2 was 0.973x the speed of 3.

Test Systems:

1

2

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3

Processor: Intel Core i7-8550U @ 4.00GHz (4 Cores / 8 Threads), Motherboard: Dell 0H0VG3 (1.10.0 BIOS), Chipset: Intel Xeon E3-1200 v6/7th, Memory: 8GB, Disk: PM961 NVMe SAMSUNG 256GB, Graphics: Intel UHD 620 KBL GT2 3GB (1150MHz), Audio: Realtek ALC3271, Network: Qualcomm Atheros QCA6174 802.11ac

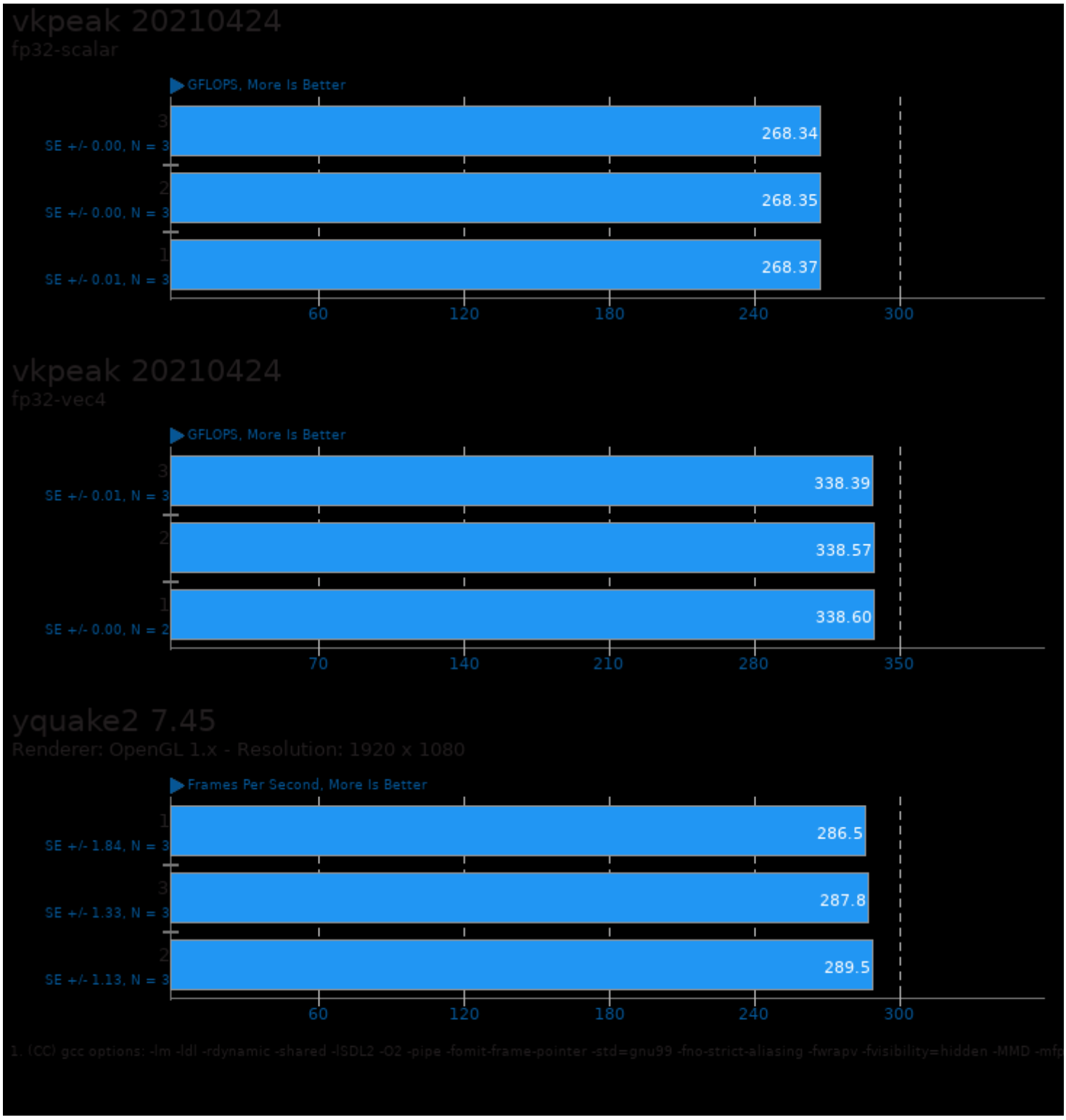
OS: Ubuntu 20.10, Kernel: 5.8.0-50-generic (x86_64), Desktop: GNOME Shell 3.38.2, Display Server: X Server 1.20.9, OpenGL: 4.6 Mesa 20.2.6, OpenCL: OpenCL 2.1, Vulkan: 1.2.145, Compiler: GCC 10.2.0, File-System: ext4, Screen Resolution: 1920x1080

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++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-gcn/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: 0xe0 - Thermald 2.3
Python Notes: Python 3.8.6
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

	1	2	3
vkpeak - fp32-scalar (GFLOPS)	**268.37**	268.35	**268.34**
Normalized	100%	99.99%	99.99%
Standard Deviation	0%	0%	0%
vkpeak - fp32-vec4 (GFLOPS)	**338.6**	338.57	**338.39**
Normalized	100%	99.99%	99.94%
Standard Deviation	0%		0%
yquake2 - OpenGL 1.x - 1920 x 1080 (FPS)	**286.5**	**289.5**	287.8
Normalized	98.96%	100%	99.41%
Standard Deviation	1.1%	0.7%	0.8%
yquake2 - OpenGL 3.x - 1920 x 1080 (FPS)	**256.1**	**256.1**	**257.5**
Normalized	99.46%	99.46%	100%
Standard Deviation	0.9%	1.5%	0.5%
yquake2 - Software CPU - 1920 x 1080 (FPS)	**87.3**	**87.0**	**87.3**
Normalized	100%	99.66%	100%
Standard Deviation	0.9%	1.3%	0.9%
Chia Blockchain VDF - Square (IPS)	121333	**121733**	**121033**
Normalized	99.67%	100%	99.42%
Standard Deviation	0.6%	0.1%	0.4%
Chia Blockchain VDF - Square (IPS)	179850	**178275**	**183067**
Normalized	98.24%	97.38%	100%
Standard Deviation	2.8%	3%	2%
vkpeak - fp16-scalar (GFLOPS)		**445.17**	**556.55**
Normalized		79.99%	100%
Standard Deviation			28.4%
vkpeak - fp16-vec4 (GFLOPS)		766.38	**766.39**
Normalized		100%	100%
vkpeak - fp64-scalar (GFLOPS)		100.49	100.49
vkpeak - fp64-vec4 (GFLOPS)		**96.34**	**96.32**

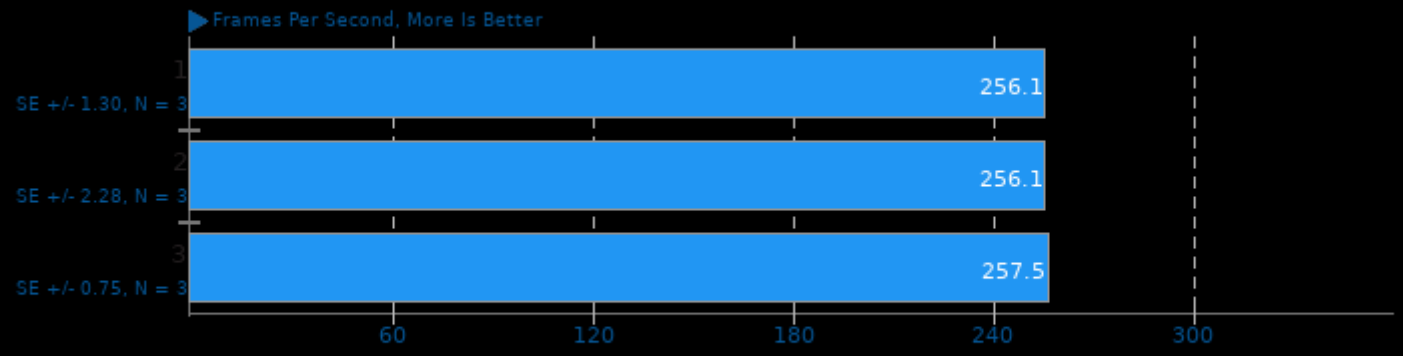
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Normalized	100%	99.98%
vkpeak - int32-scalar (GIOPS)	**132.59**	**132.49**
Normalized	100%	99.92%
vkpeak - int32-vec4 (GIOPS)		142.82
vkpeak - int16-scalar (GIOPS)		144.43
vkpeak - int16-vec4 (GIOPS)		145.86


vkpeak 20210424
fp32-scalar
GFLOPS, More Is Better
3
SE +/- 0.00, N = 3
268.34
2
SE +/- 0.00, N = 3
268.35
1
SE +/- 0.01, N = 3
268.37
60
120
180
240
300
vkpeak 20210424
fp32-vec4
GFLOPS, More Is Better
3
SE +/- 0.01, N = 3
338.39
2
338.57
1
SE +/- 0.00, N = 2
338.60
70
140
210
280
350
yquake2 7.45
Renderer: OpenGL 1.x - Resolution: 1920 x 1080
Frames Per Second, More Is Better
1
SE +/- 1.84, N = 3
286.5
3
SE +/- 1.33, N = 3
287.8
2
SE +/- 1.13, N = 3
289.5
60
120
180
240
300
1. (CC) gcc options: -lm -ldl -rdynamic -shared -lSDL2 -O2 -pipe -fomit-frame-pointer -std=gnu99 -fno-strict-aliasing -fwrapv -fvisibility=hidden -MMD -mfp

yquake2 7.45

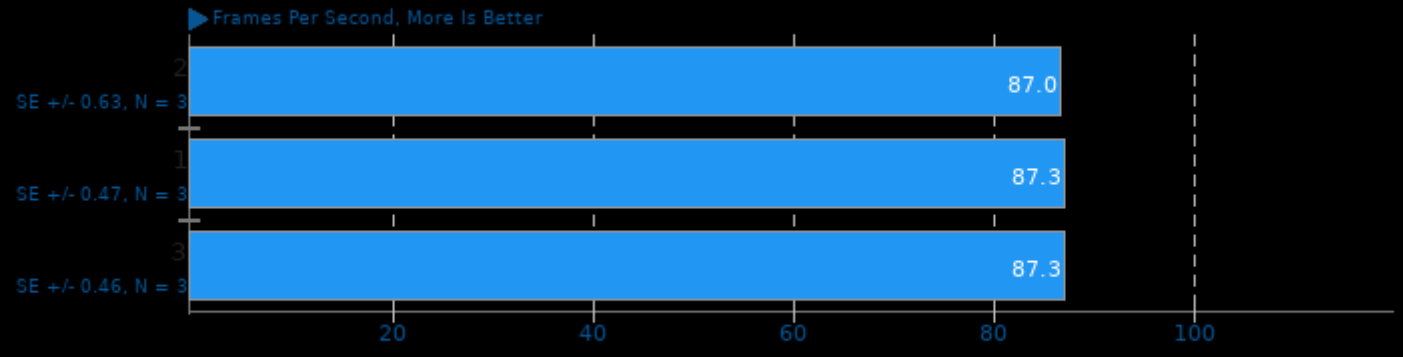
Renderer: OpenGL 3.x - Resolution: 1920 x 1080



1. (CC) gcc options: -lm -ldl -rdynamic -shared -lSDL2 -O2 -pipe -fomit-frame-pointer -std=gnu99 -fno-strict-aliasing -fwrapv -fvisibility=hidden -MMD -mf

yquake2 7.45

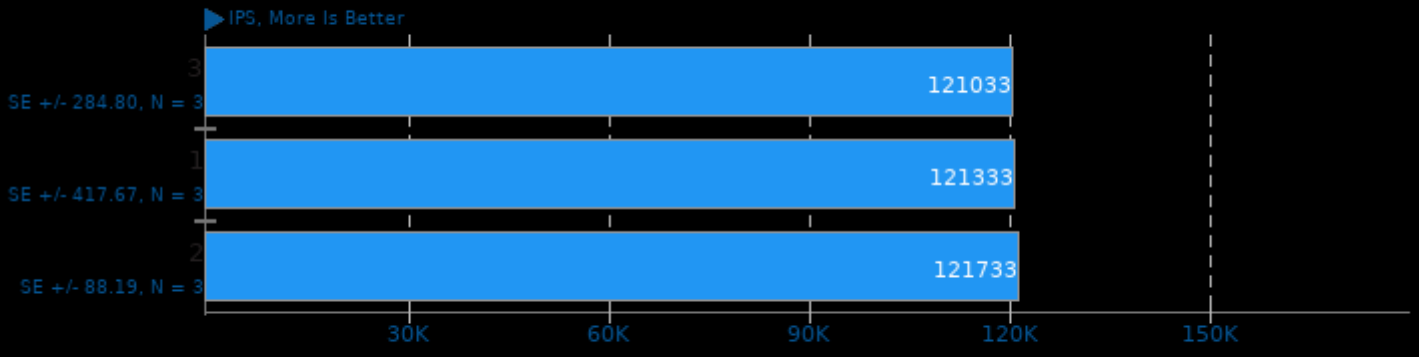
Renderer: Software CPU - Resolution: 1920 x 1080



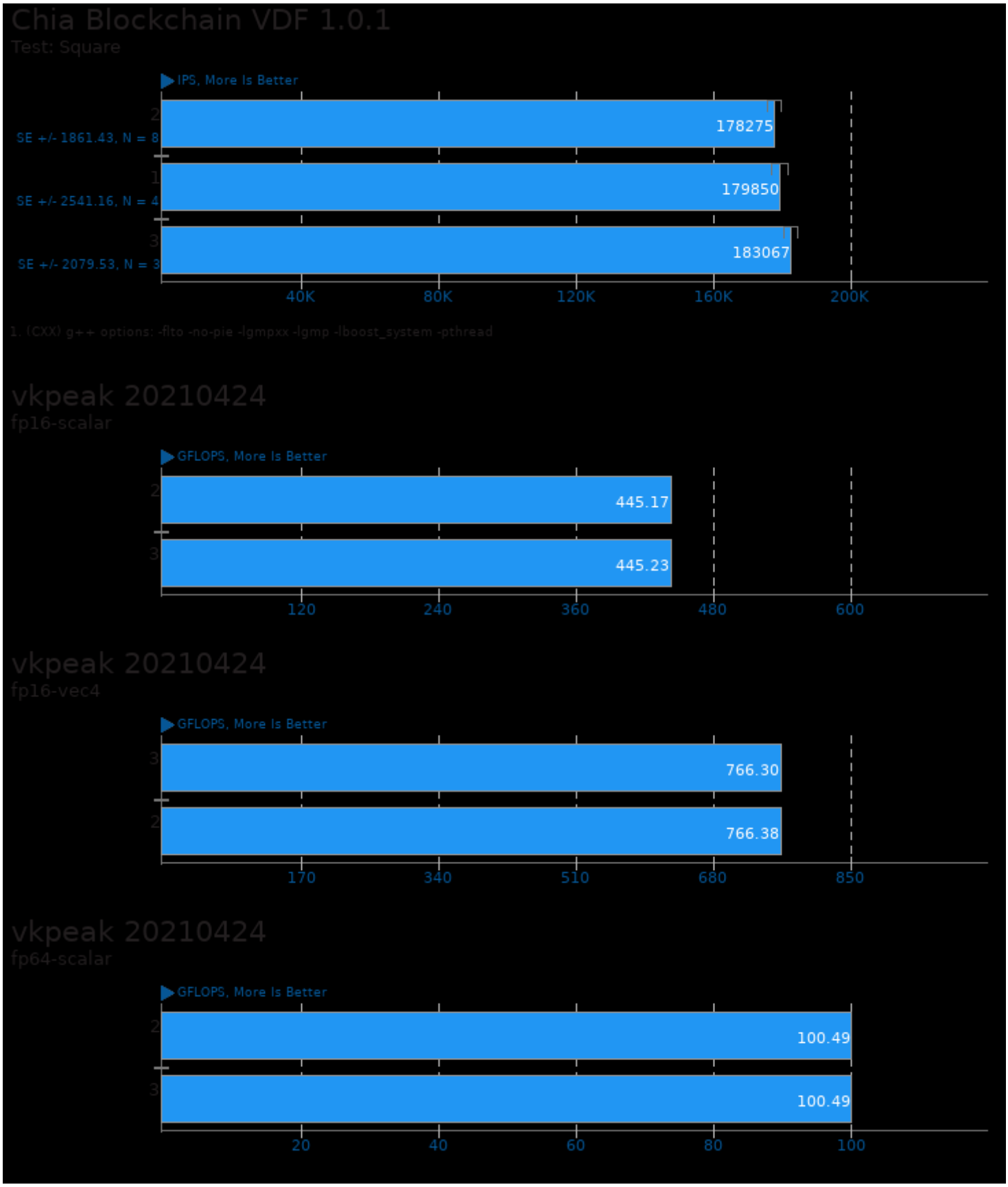
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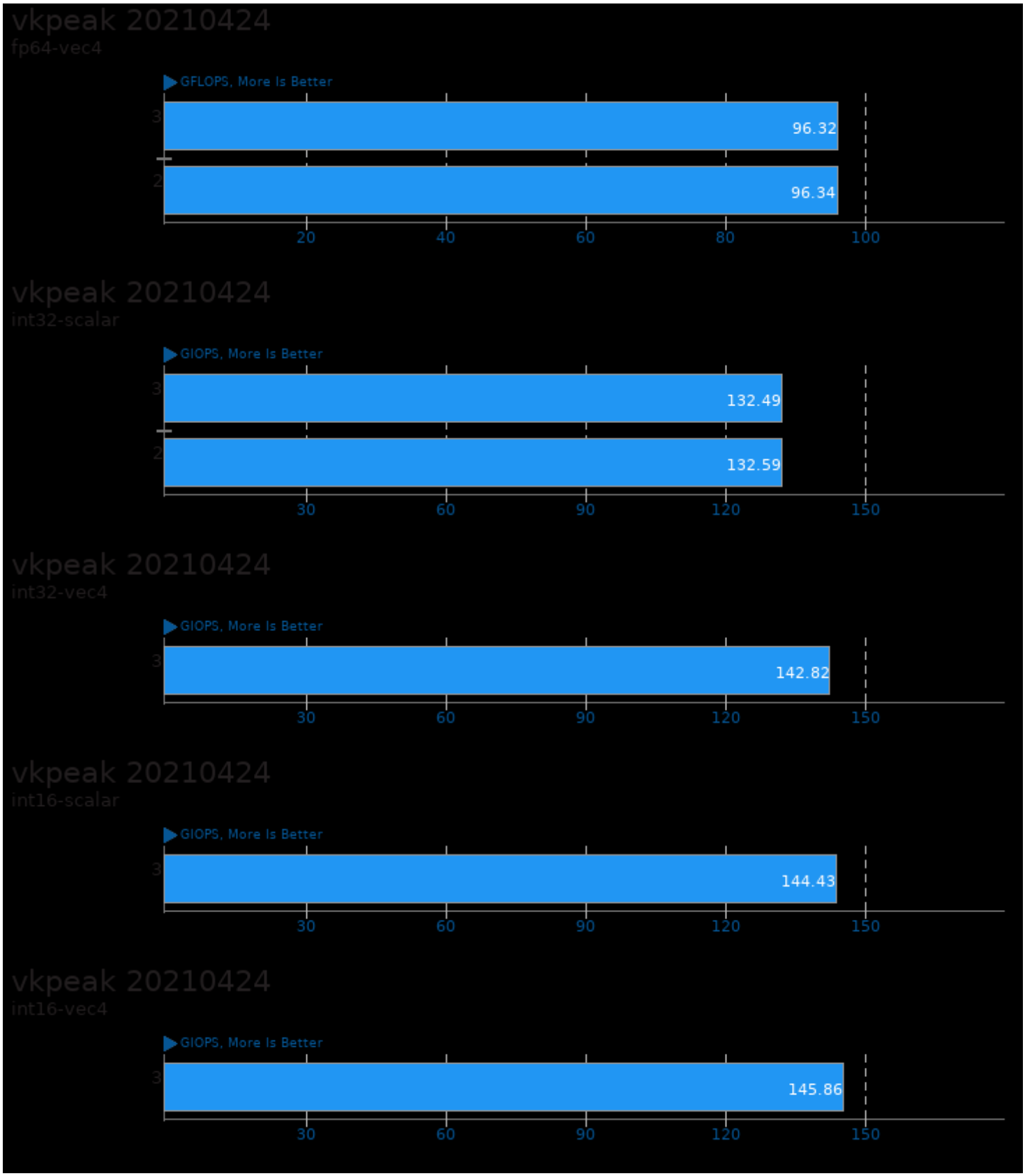
Chia Blockchain VDF 1.0.1

Test: Square



1. (CXX) g++ options: -flto -no-pie -lgmpxx -lgmp -lboost_system -pthread


Chia Blockchain VDF 1.0.1
Test: Square
IPS, More Is Better
2
SE +/- 1861.43, N = 8
178275
1
SE +/- 2541.16, N = 4
179850
3
SE +/- 2079.53, N = 3
183067
40K
80K
120K
160K
200K
1. (CXX) g++ options: -flto -no-pie -lgmpxx -lgmp -lboost_system -pthread
vkpeak 20210424
fp16-scalar
GFLOPS, More Is Better
2
445.17
3
445.23
120
240
360
480
600
vkpeak 20210424
fp16-vec4
GFLOPS, More Is Better
3
766.30
2
766.38
170
340
510
680
850
vkpeak 20210424
fp64-scalar
GFLOPS, More Is Better
2
100.49
3
100.49
20
40
60
80
100



This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 08:05.