



## 7700k xmas

Intel Core i7-7700K testing with a MSI Z270-A PRO (MS-7A71) v1.0 (1.60 BIOS) and MSI Intel HD 630 3GB on Ubuntu 20.04 via the Phoronix Test Suite.

### Automated Executive Summary

*1 had the most wins, coming in first place for 73% of the tests.*

*Based on the geometric mean of all complete results, the fastest (1) was 1.001x the speed of the slowest (2). 4 was 1x the speed of 1, 3 was 1x the speed of 4, 2 was 0.999x the speed of 3.*

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

*CLOMP (Static OMP Speedup) at 1.067x  
VKMark (Resolution: 1920 x 1080) at 1.026x  
VkResample (Upscale: 2x - Precision: Single) at 1.021x  
NCNN (Target: Vulkan GPU - Model: yolov4-tiny) at 1.018x  
VKMark (Resolution: 2560 x 1440) at 1.009x  
VkResample (Upscale: 2x - Precision: Double) at 1.009x  
Monkey Audio Encoding (WAV To APE) at 1.007x  
NCNN (Target: Vulkan GPU-v3-v3 - Model: mobilenet-v3) at 1.006x  
NCNN (Target: Vulkan GPU - Model: resnet18) at 1.005x*

VKMark (Resolution: 3840 x 2160) at 1.005x.

## Test Systems:

1

2

3

4

Processor: Intel Core i7-7700K @ 4.50GHz (4 Cores / 8 Threads), Motherboard: MSI Z270-A PRO (MS-7A71) v1.0 (1.60 BIOS), Chipset: Intel Xeon E3-1200 v6/7th + Z270, Memory: 16GB, Disk: 256GB Samsung SSD 850, Graphics: MSI Intel HD 630 3GB (1150MHz), Audio: Realtek ALC892, Monitor: LG Ultra HD, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 20.04, Kernel: 5.9.0-050900rc8daily20201011-generic (x86\_64) 20201010, Desktop: GNOME Shell, Display Server: X Server 1.20.8, Display Driver: modesetting 1.20.8, OpenGL: 4.6 Mesa 20.0.4, OpenCL: OpenCL 2.1, Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 3840x2160

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\_pstate powersave - CPU Microcode: 0xde - 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/swappgs 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: Mitigation of Clear buffers; SMT vulnerable

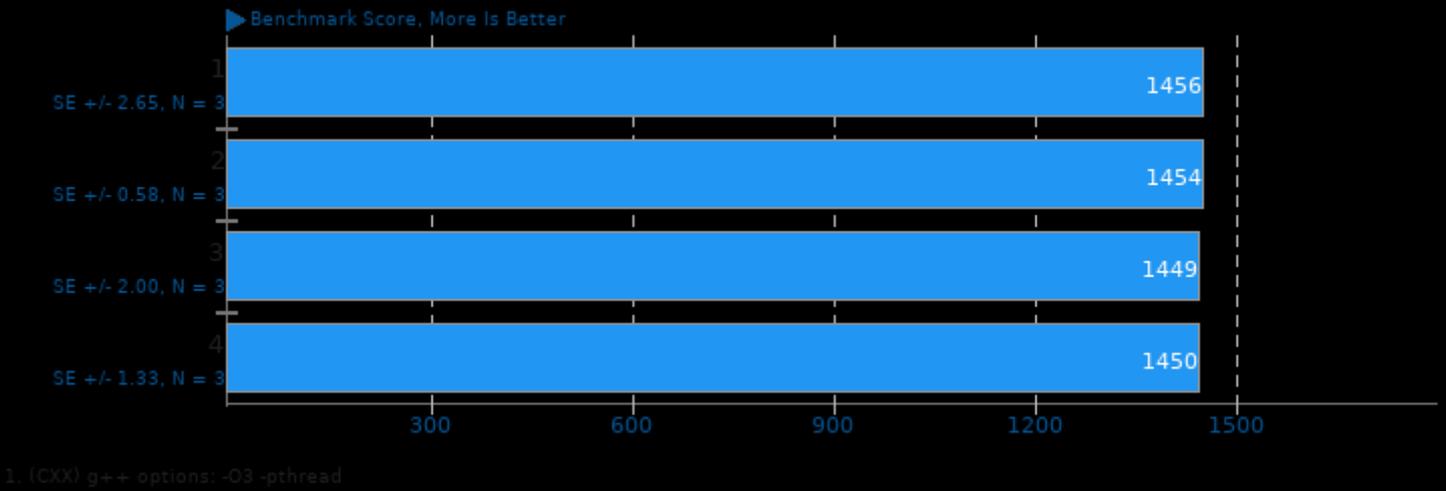
	1	2	3	4
<b>VkFFT (Benchmark Score)</b>	<b>1456</b>	1454	<b>1449</b>	1450
Normalized	100%	99.86%	99.52%	99.59%
Standard Deviation	0.3%	0.1%	0.2%	0.2%
<b>VkResample - 2x - Double (ms)</b>	<b>940.223</b>	948.491	<b>949.022</b>	942.633
Normalized	100%	99.13%	99.07%	99.74%
Standard Deviation	0%	0.2%	0.4%	0%
<b>VkResample - 2x - Single (ms)</b>	<b>405.468</b>	400.006	<b>397.074</b>	401.185
Normalized	97.93%	99.27%	100%	98.98%
Standard Deviation	0%	0.3%	0.1%	0.4%
<b>VKMark - 1920 x 1080 (VKMark Score)</b>	<b>736</b>	729	<b>717</b>	723
Normalized	100%	99.05%	97.42%	98.23%
Standard Deviation	0.1%	0.1%	0.4%	0.6%
<b>VKMark - 2560 x 1440 (VKMark Score)</b>	<b>429</b>	428	<b>425</b>	426

	Normalized	100%	99.77%	99.07%	99.3%
<b>VKMark - 3840 x 2160 (VKMark Score)</b>		<b>189</b>	<b>189</b>	<b>188</b>	<b>188</b>
	Normalized	100%	100%	99.47%	99.47%
<b>CLOMP - Static OMP Speedup (Speedup)</b>		<b>1.5</b>	<b>1.5</b>	<b>1.6</b>	<b>1.6</b>
	Normalized	93.75%	93.75%	100%	100%
	Standard Deviation	3.3%	3.3%	0%	2.8%
<b>Build2 - Time To Compile (sec)</b>		<b>221.726</b>	<b>222.614</b>	222.043	222.108
	Normalized	100%	99.6%	99.86%	99.83%
	Standard Deviation	0.2%	0.5%	0.6%	0.1%
<b>Timed Eigen Compilation - Time To Compile (sec)</b>		<b>73.808</b>	<b>74.054</b>	74.037	74.042
	Normalized	100%	99.67%	99.69%	99.68%
	Standard Deviation	0.1%	0%	0.2%	0.1%
<b>Monkey Audio Encoding - WAV To APE (sec)</b>		10.942	<b>10.944</b>	10.897	<b>10.873</b>
	Normalized	99.37%	99.35%	99.78%	100%
	Standard Deviation	0.7%	0.7%	0.4%	0.2%
<b>Opus Codec Encoding - WAV To Opus Encode (sec)</b>		8.521	<b>8.513</b>	8.519	<b>8.524</b>
	Normalized	99.91%	100%	99.93%	99.87%
	Standard Deviation	0.1%	0%	0.1%	0.2%
<b>NCNN - CPU - mobilenet (ms)</b>		<b>23.66</b>	<b>23.56</b>	23.61	<b>23.56</b>
	Normalized	99.58%	100%	99.79%	100%
	Standard Deviation	1%	0.1%	0.4%	0%
<b>NCNN - CPU-v2-v2 - mobilenet-v2 (ms)</b>		<b>6.25</b>	<b>6.28</b>	<b>6.28</b>	6.27
	Normalized	100%	99.52%	99.52%	99.68%
	Standard Deviation	0.4%	0.4%	0.2%	0.3%
<b>NCNN - CPU-v3-v3 - mobilenet-v3 (ms)</b>		<b>5.12</b>	<b>5.13</b>	<b>5.12</b>	<b>5.13</b>
	Normalized	100%	99.81%	100%	99.81%
	Standard Deviation	0.3%	0.4%	0.4%	0.5%
<b>NCNN - CPU - shufflenet-v2 (ms)</b>		<b>7.46</b>	<b>7.48</b>	7.47	<b>7.46</b>
	Normalized	100%	99.73%	99.87%	100%
	Standard Deviation	0.1%	0.3%	0.4%	0.1%
<b>NCNN - CPU - mnasnet (ms)</b>		<b>5.18</b>	<b>5.20</b>	5.19	5.19
	Normalized	100%	99.62%	99.81%	99.81%
	Standard Deviation	0.2%	0.3%	0.3%	0.2%
<b>NCNN - CPU - efficientnet-b0 (ms)</b>		<b>8.48</b>	8.50	8.49	<b>8.52</b>
	Normalized	100%	99.76%	99.88%	99.53%
	Standard Deviation	0.1%	0.1%	0.2%	0.2%
<b>NCNN - CPU - blazeface (ms)</b>		2.04	2.04	2.04	2.04
	Standard Deviation	0%	0.3%	0.3%	0%
<b>NCNN - CPU - googlenet (ms)</b>		<b>16.96</b>	16.94	<b>16.93</b>	16.94
	Normalized	99.82%	99.94%	100%	99.94%
	Standard Deviation	0.1%	0.1%	0%	0.1%
<b>NCNN - CPU - vgg16 (ms)</b>		<b>70.64</b>	70.71	70.67	<b>70.74</b>
	Normalized	100%	99.9%	99.96%	99.86%
	Standard Deviation	0.1%	0.1%	0%	0.1%
<b>NCNN - CPU - resnet18 (ms)</b>		<b>16.76</b>	16.77	<b>16.76</b>	<b>16.79</b>
	Normalized	100%	99.94%	100%	99.82%
	Standard Deviation	0.1%	0.1%	0.2%	0%
<b>NCNN - CPU - alexnet (ms)</b>		<b>14.63</b>	<b>14.59</b>	14.62	<b>14.59</b>
	Normalized	99.73%	100%	99.79%	100%
	Standard Deviation	0.4%	0.1%	0.3%	0.1%

NCNN - CPU - resnet50 (ms)	35.86	35.90	35.92	35.97
Normalized	100%	99.89%	99.83%	99.69%
Standard Deviation	0%	0.1%	0.1%	0.1%
NCNN - CPU - yolov4-tiny (ms)	32.10	32.06	32.04	32.05
Normalized	99.81%	99.94%	100%	99.97%
Standard Deviation	0.6%	0.1%	0.1%	0.1%
NCNN - CPU - squeezeNet_ssd (ms)	25.17	25.27	25.23	25.23
Normalized	100%	99.6%	99.76%	99.76%
Standard Deviation	0.1%	0.2%	0.1%	0%
NCNN - CPU - regnety_400m (ms)	13.33	13.35	13.34	13.38
Normalized	100%	99.85%	99.93%	99.63%
Standard Deviation	0.2%	0.3%	0.3%	0.8%
NCNN - Vulkan GPU - mobilenet (ms)	23.50	23.61	23.57	23.55
Normalized	100%	99.53%	99.7%	99.79%
Standard Deviation	0%	0.6%	0%	0.1%
NCNN - Vulkan GPU-v2-v2 - mobilenet-v2 (ms)	6.28	6.28	6.29	6.28
Normalized	100%	100%	99.84%	100%
Standard Deviation	0.2%	0.1%	0.2%	0.1%
NCNN - Vulkan GPU-v3-v3 - mobilenet-v3 (ms)	5.12	5.14	5.15	5.14
Normalized	100%	99.61%	99.42%	99.61%
Standard Deviation	0.1%	0.1%	0.1%	0.1%
NCNN - Vulkan GPU - shufflenet-v2	7.46	7.46	7.47	7.46
Normalized	100%	100%	99.87%	100%
Standard Deviation	0.2%	0.1%	0.3%	0.2%
NCNN - Vulkan GPU - mnasnet (ms)	5.19	5.18	5.19	5.19
Normalized	99.81%	100%	99.81%	99.81%
Standard Deviation	0%	0.4%	0.4%	0.3%
NCNN - Vulkan GPU - efficientnet-b0 (ms)	8.49	8.50	8.51	8.51
Normalized	100%	99.88%	99.76%	99.76%
Standard Deviation	0.4%	0.2%	0.1%	0.1%
NCNN - Vulkan GPU - blazeface (ms)	2.04	2.04	2.04	2.05
Normalized	100%	100%	100%	99.51%
Standard Deviation	0%	0.3%	0%	0.3%
NCNN - Vulkan GPU - googlenet (ms)	16.91	16.98	16.96	16.96
Normalized	100%	99.59%	99.71%	99.71%
Standard Deviation	0.1%	0.2%	0.1%	0.2%
NCNN - Vulkan GPU - vgg16 (ms)	70.51	70.67	70.60	70.68
Normalized	100%	99.77%	99.87%	99.76%
Standard Deviation	0.1%	0.1%	0%	0%
NCNN - Vulkan GPU - resnet18 (ms)	16.76	16.76	16.78	16.85
Normalized	100%	100%	99.88%	99.47%
Standard Deviation	0.1%	0.2%	0.1%	1%
NCNN - Vulkan GPU - alexnet (ms)	14.58	14.59	14.62	14.60
Normalized	100%	99.93%	99.73%	99.86%
Standard Deviation	0.1%	0.2%	0.1%	0.1%
NCNN - Vulkan GPU - resnet50 (ms)	35.81	35.95	35.94	35.93
Normalized	100%	99.61%	99.64%	99.67%
Standard Deviation	0.1%	0.2%	0.1%	0%
NCNN - Vulkan GPU - yolov4-tiny (ms)	31.95	32.11	32.53	32.04
Normalized	100%	99.5%	98.22%	99.72%
Standard Deviation	0.1%	0.2%	2.4%	0%

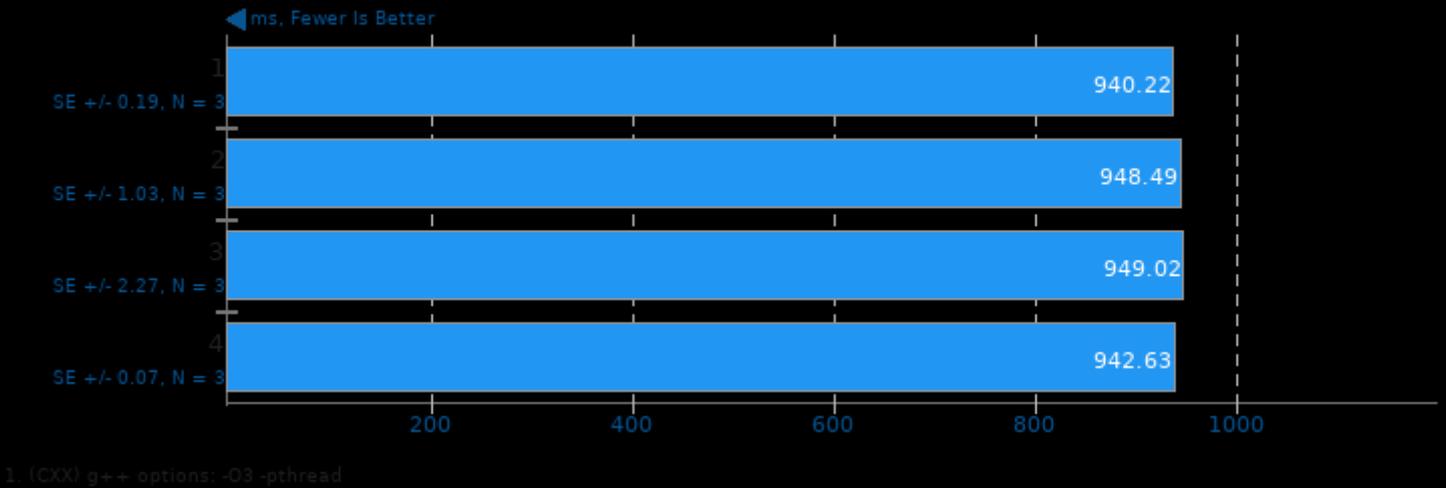
<b>NCNN - Vulkan GPU - squeezenet_ssd</b>	<b>25.18</b>	25.25	25.23	<b>25.26</b>
(ms)				
Normalized	100%	99.72%	99.8%	99.68%
Standard Deviation	0.1%	0.2%	0.1%	0.1%
<b>NCNN - Vulkan GPU - regnety_400m</b>	<b>13.33</b>	13.32	<b>13.33</b>	<b>13.29</b>
(ms)				
Normalized	99.7%	99.77%	99.7%	100%
Standard Deviation	0.2%	0.2%	0.3%	0.3%
<b>WavPack Audio Encoding - WAV To WavPack (sec)</b>	<b>14.436</b>	14.432	<b>14.431</b>	14.432
Normalized	99.97%	99.99%	100%	99.99%
Standard Deviation	0%	0%	0%	0%

### VkFFT 1.1.1



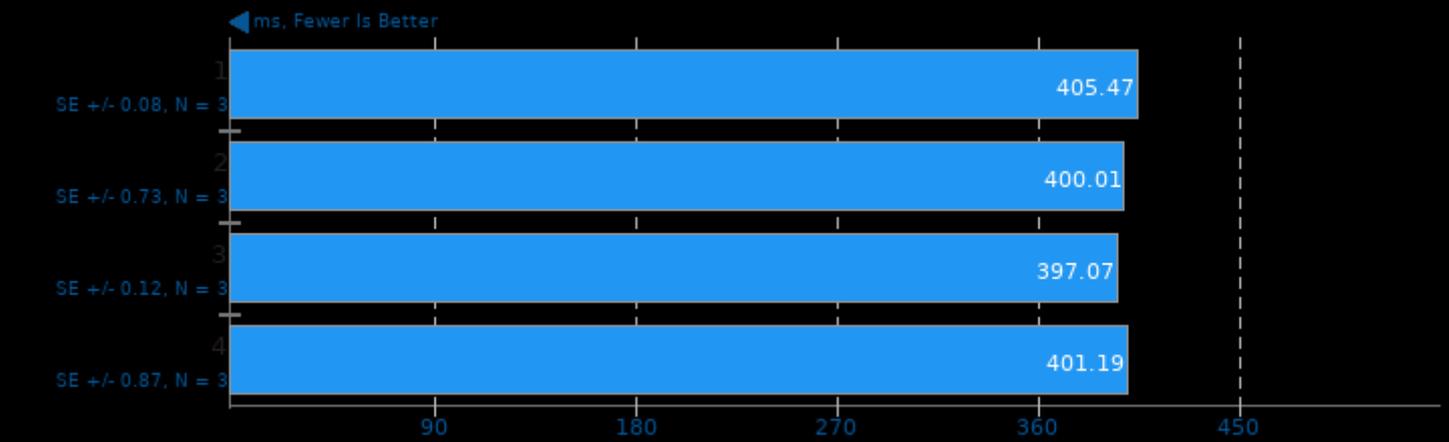
### VkResample 1.0

Upscale: 2x - Precision: Double



### VkResample 1.0

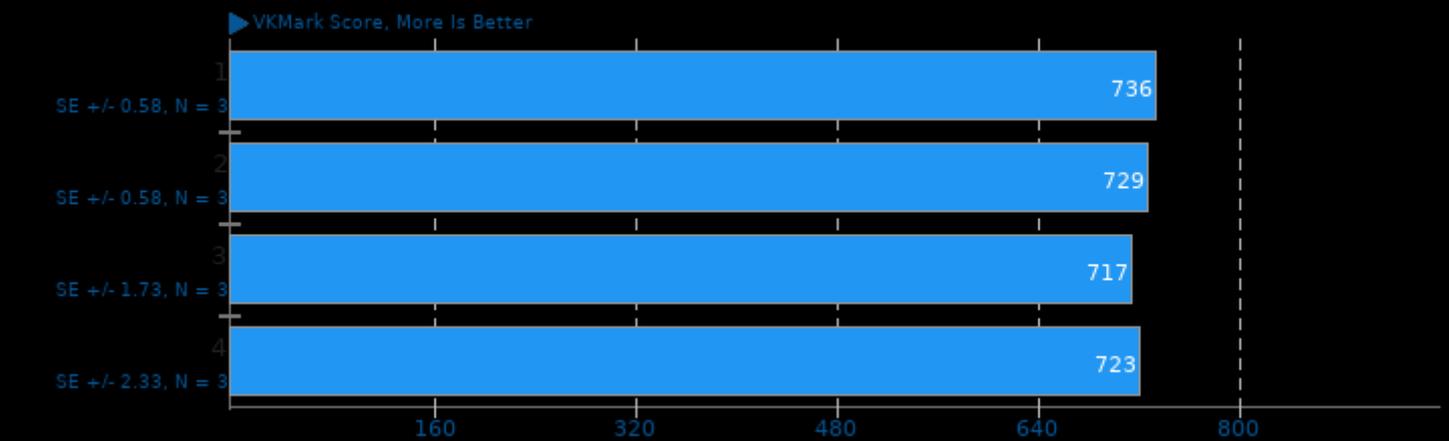
Upscale: 2x - Precision: Single



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

### VKMark 2020-05-21

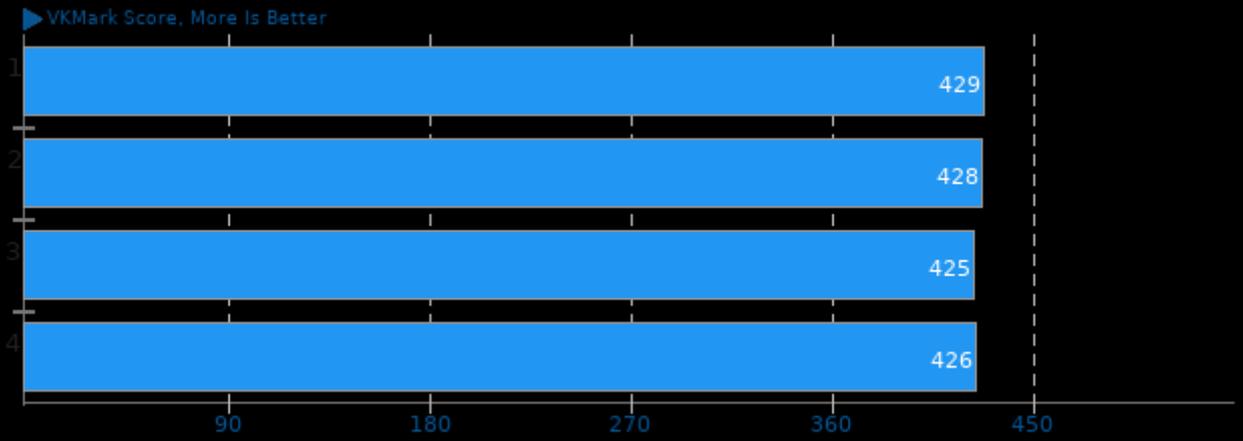
Resolution: 1920 x 1080



1. (CXX) g++ options: -pthread -fdl -pipe -std=c++14 -MD -MQ -MF

### VKMark 2020-05-21

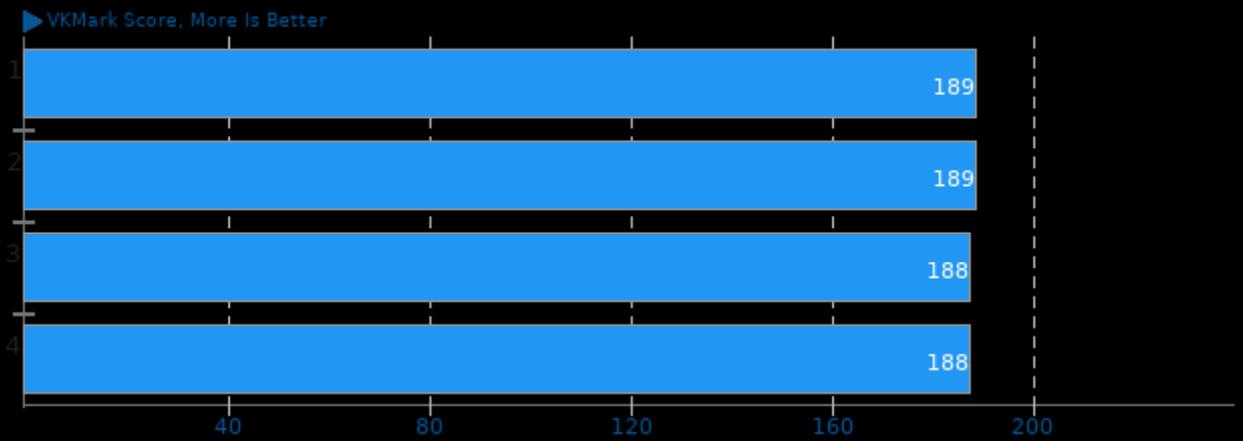
Resolution: 2560 x 1440



1. (CXX) g++ options: -pthread -ldl -pipe -std=c++14 -MD -MQ -MF

### VKMark 2020-05-21

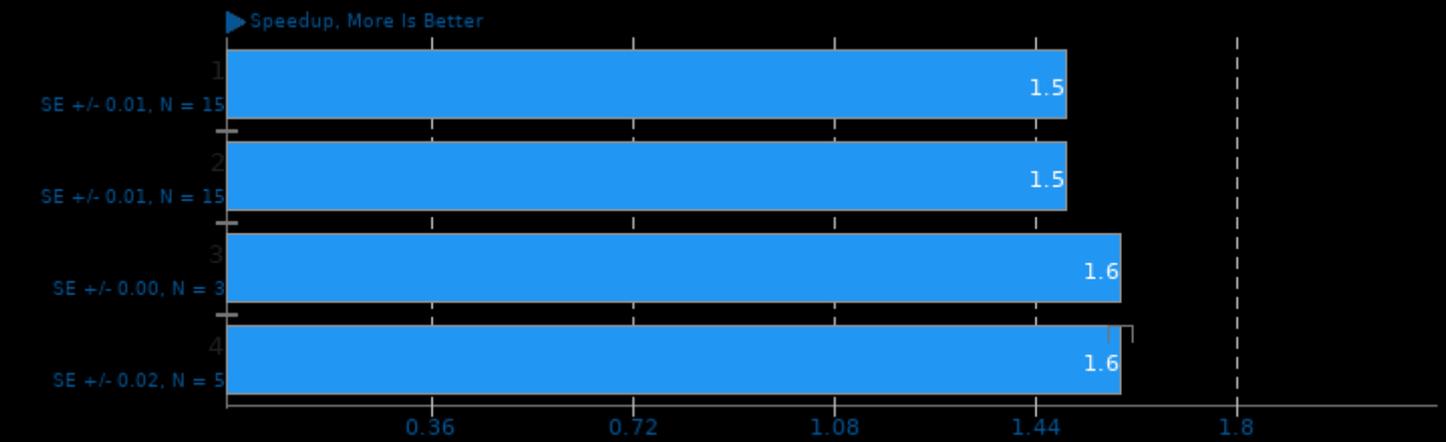
Resolution: 3840 x 2160



1. (CXX) g++ options: -pthread -ldl -pipe -std=c++14 -MD -MQ -MF

### CLOMP 1.2

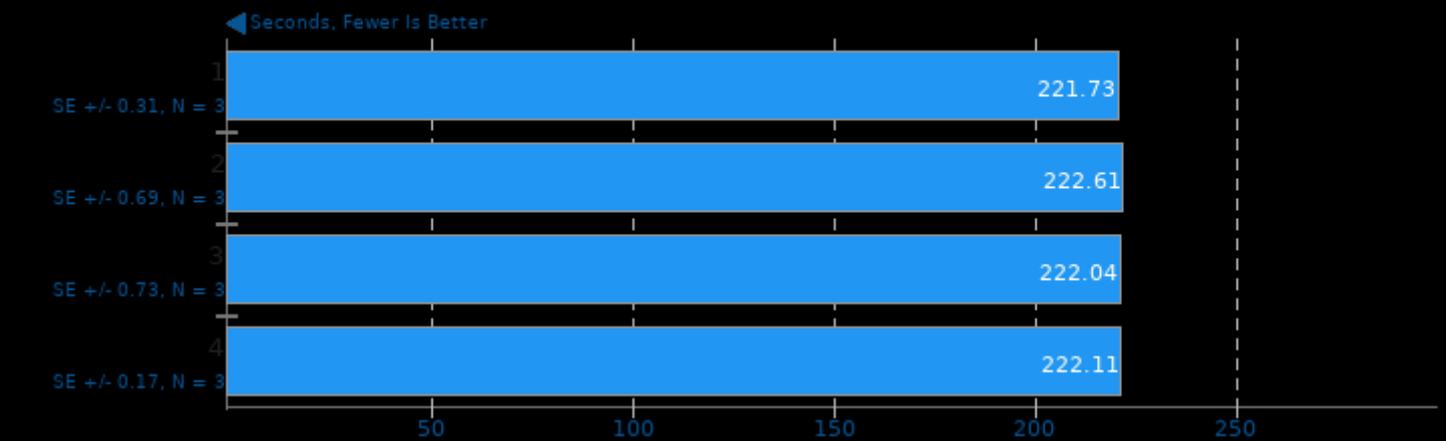
Static OMP Speedup



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

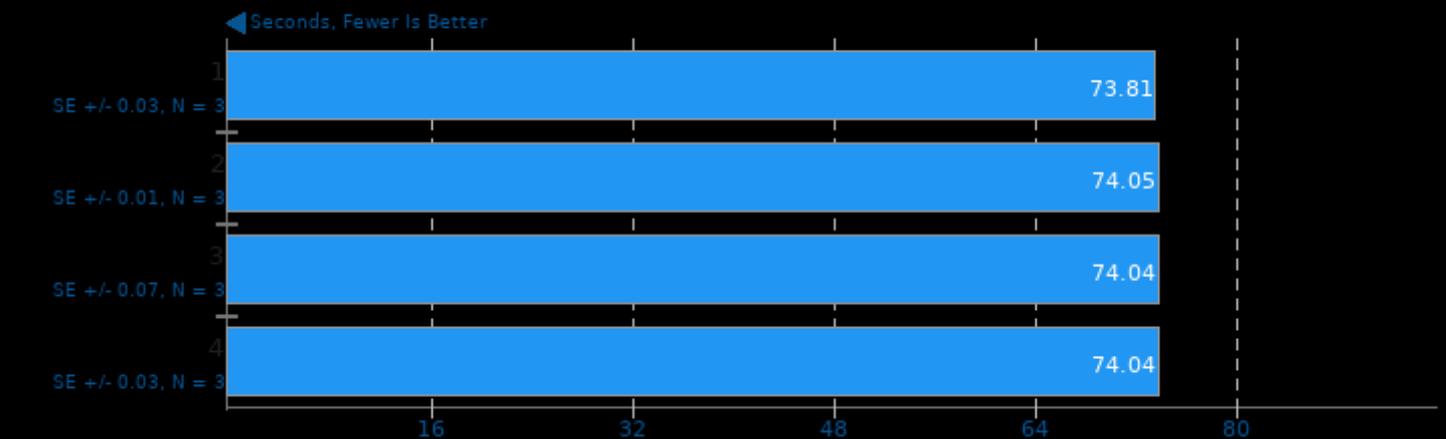
### Build2 0.13

Time To Compile



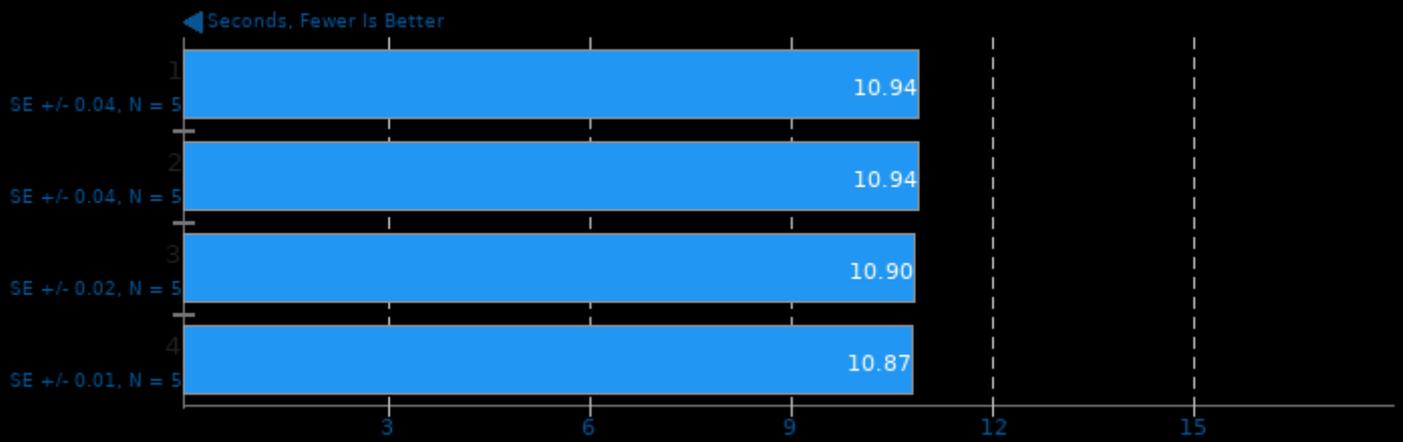
### Timed Eigen Compilation 3.3.9

Time To Compile



## Monkey Audio Encoding 3.99.6

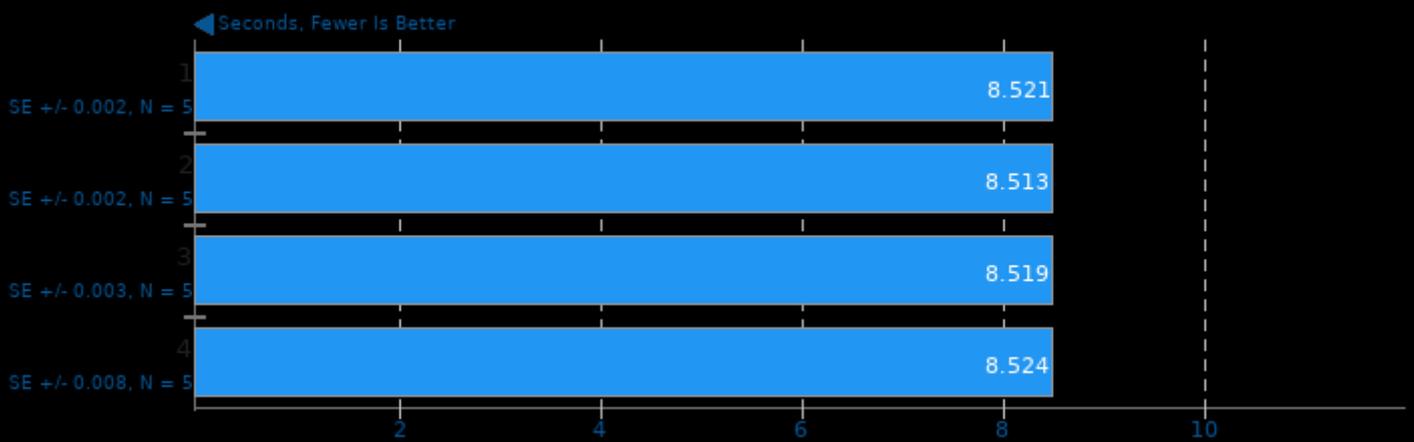
WAV To APE



1. (CXX) g++ options: -O3 -pedantic -rdynamic -lrt

## Opus Codec Encoding 1.3.1

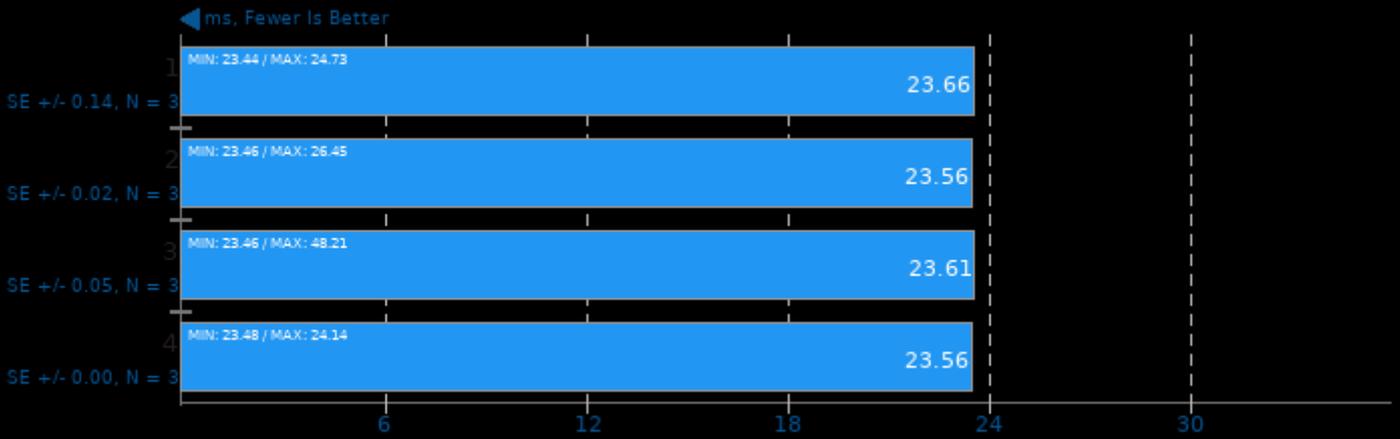
WAV To Opus Encode



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

### NCNN 20201218

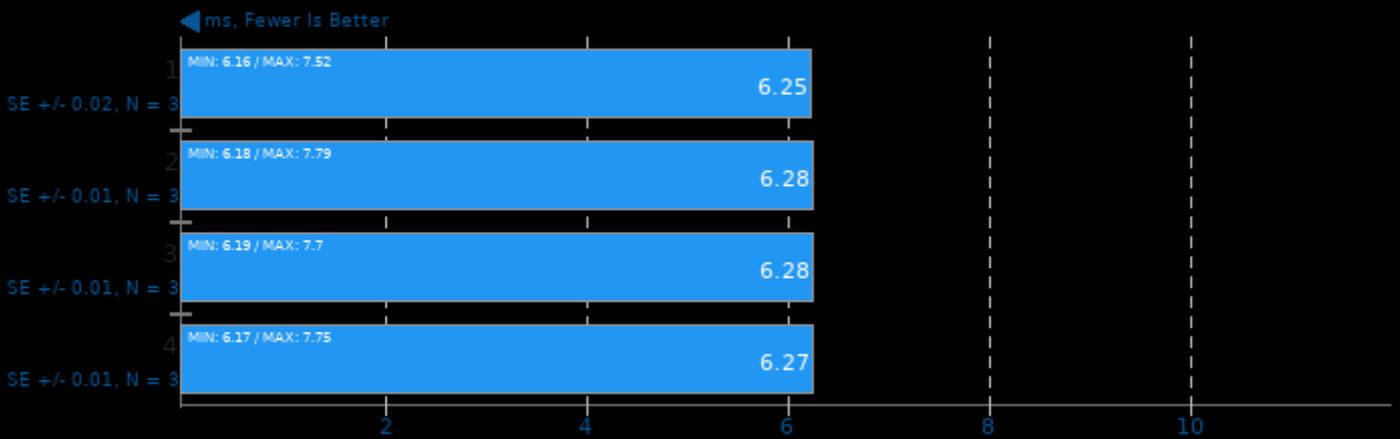
Target: CPU - Model: mobilenet



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

### NCNN 20201218

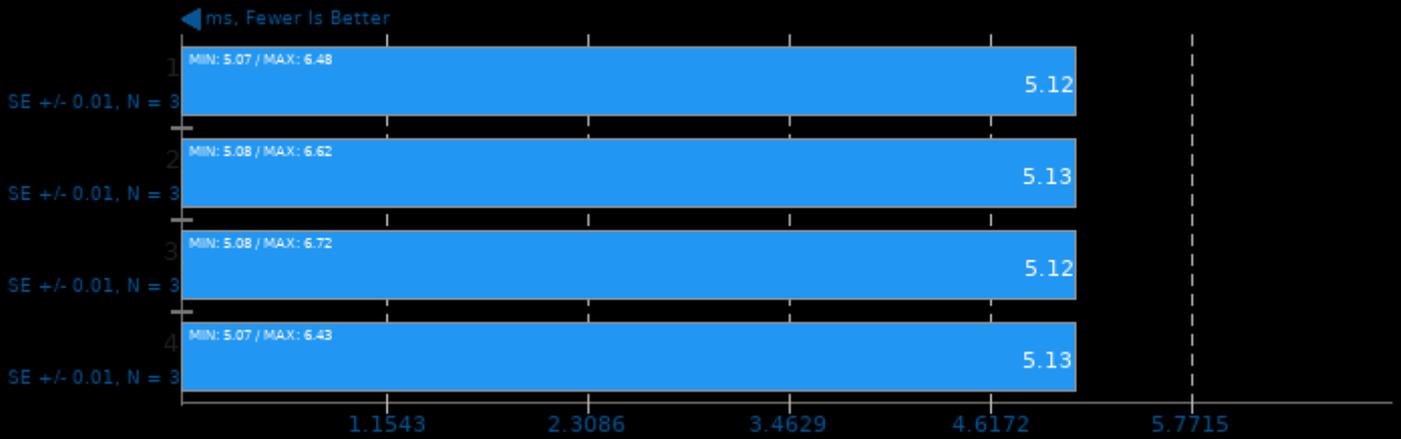
Target: CPU-v2-v2 - Model: mobilenet-v2



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

### NCNN 20201218

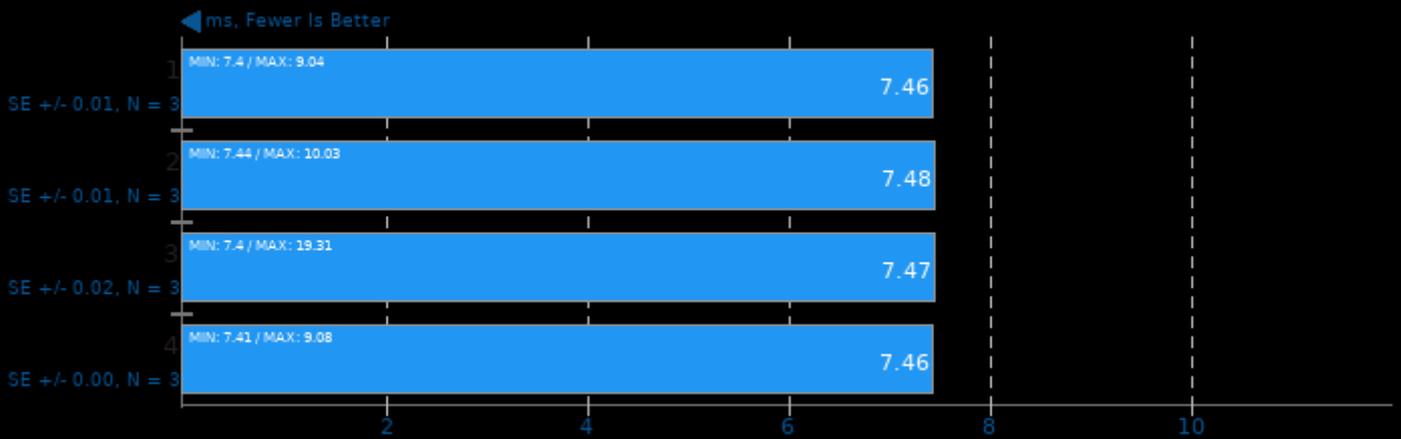
Target: CPU-v3-v3 - Model: mobilenet-v3



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

### NCNN 20201218

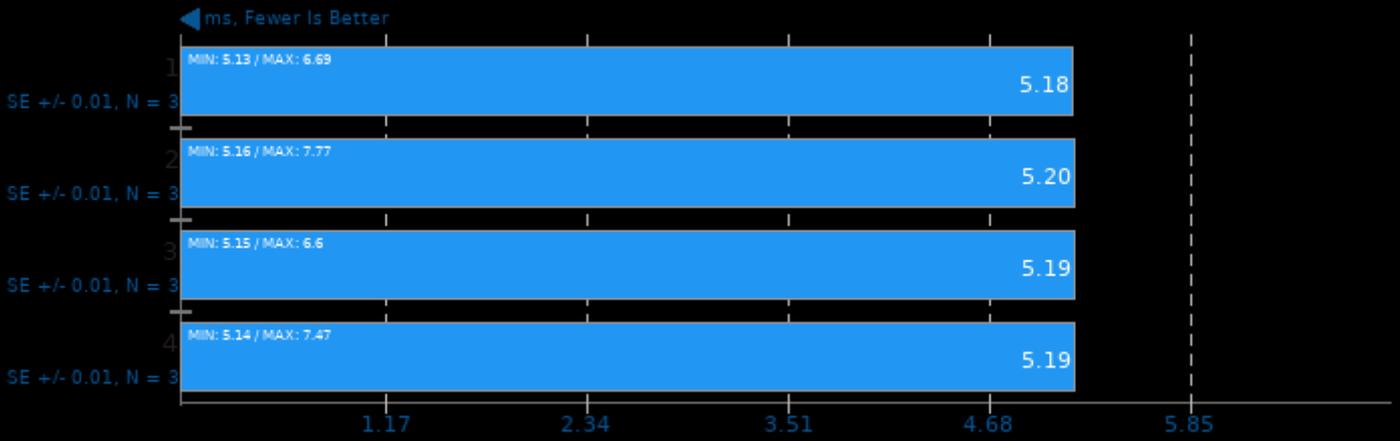
Target: CPU - Model: shufflenet-v2



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

### NCNN 20201218

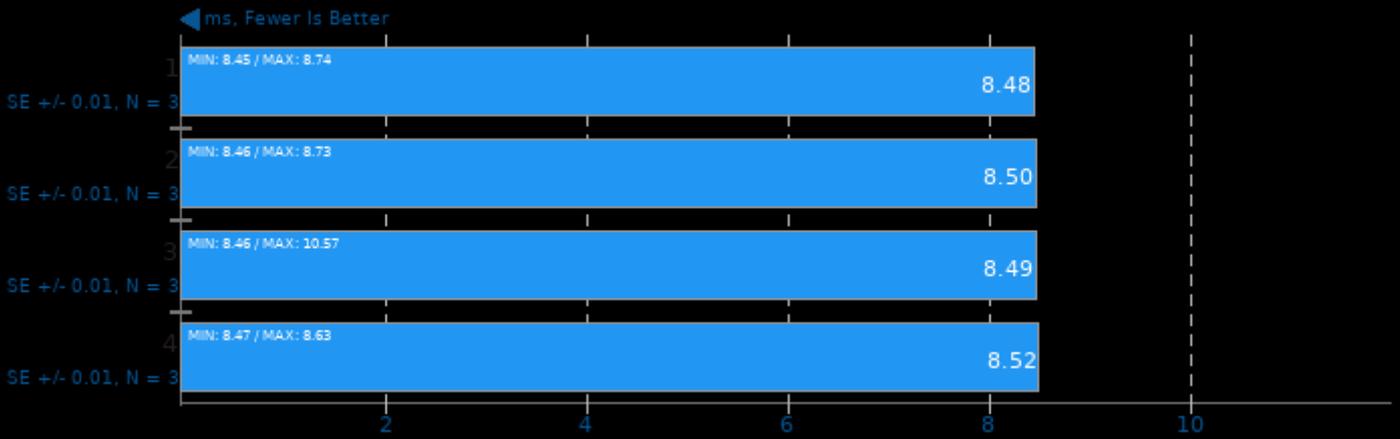
Target: CPU - Model: mnasnet



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

### NCNN 20201218

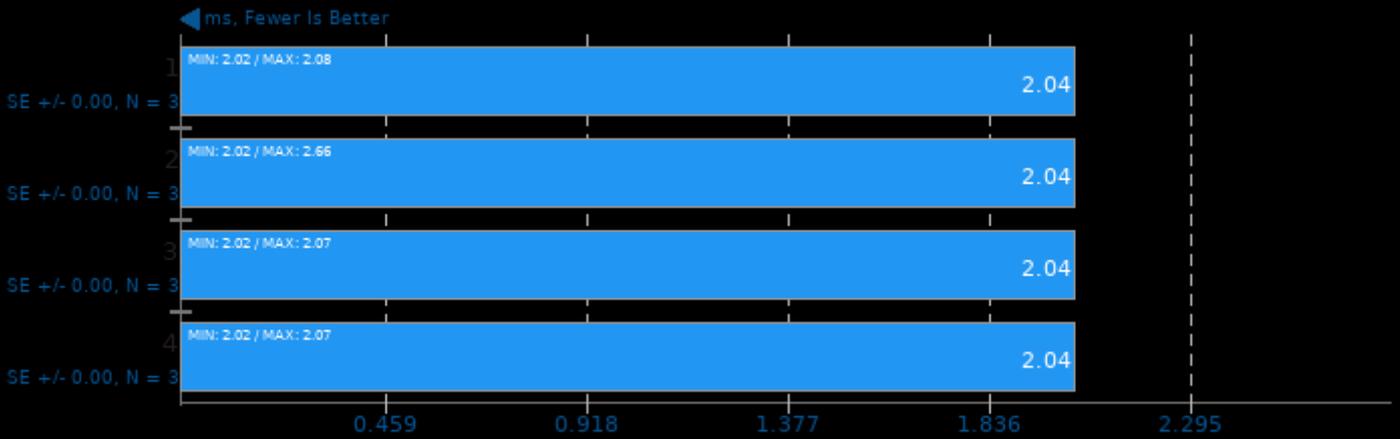
Target: CPU - Model: efficientnet-b0



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

### NCNN 20201218

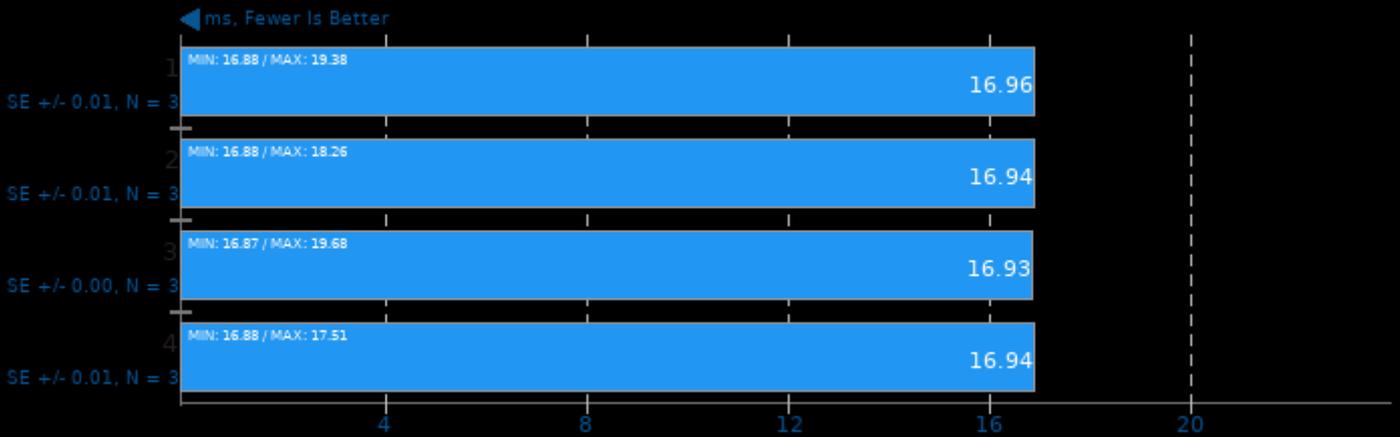
Target: CPU - Model: blazeface



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

### NCNN 20201218

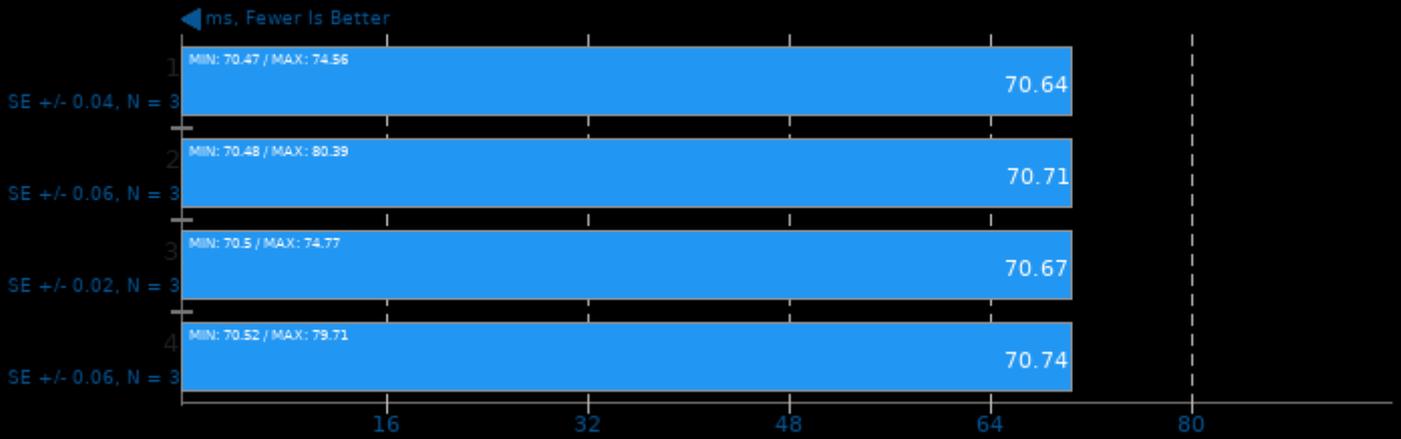
Target: CPU - Model: googlenet



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

### NCNN 20201218

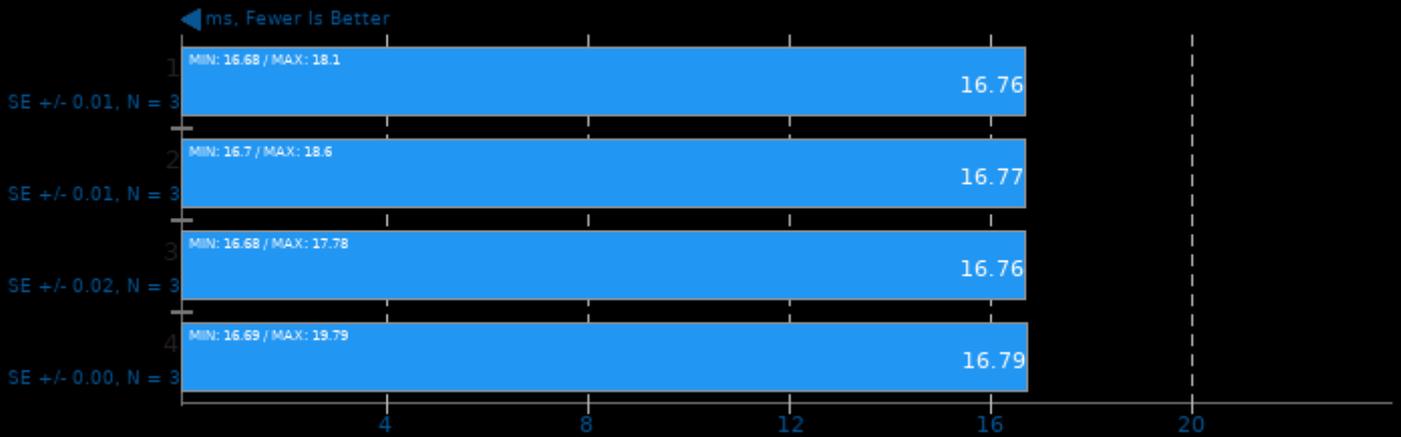
Target: CPU - Model: vgg16



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

### NCNN 20201218

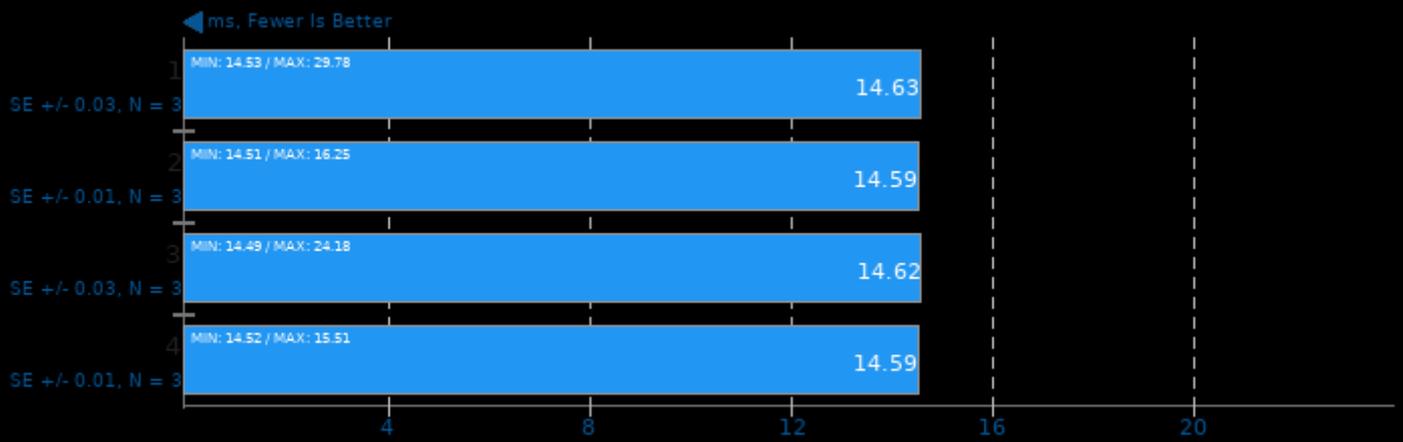
Target: CPU - Model: resnet18



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

### NCNN 20201218

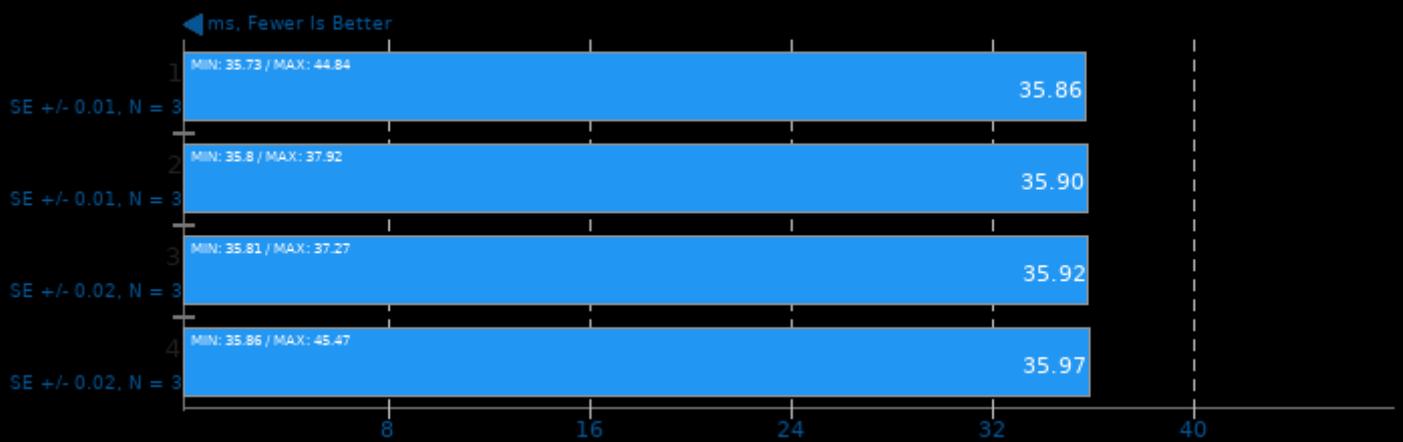
Target: CPU - Model: alexnet



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

### NCNN 20201218

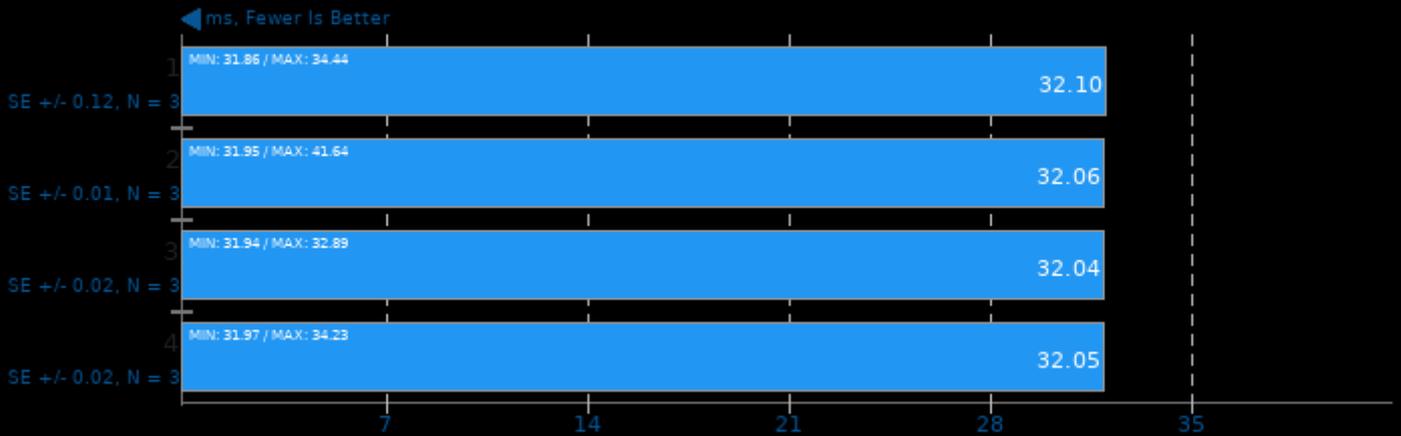
Target: CPU - Model: resnet50



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

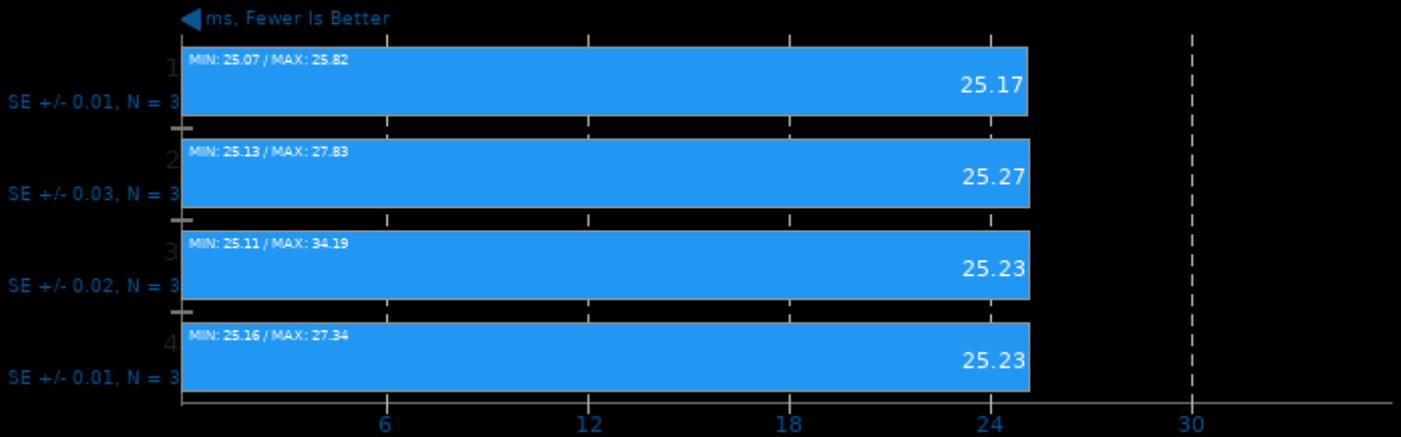
### NCNN 20201218

Target: CPU - Model: yolov4-tiny



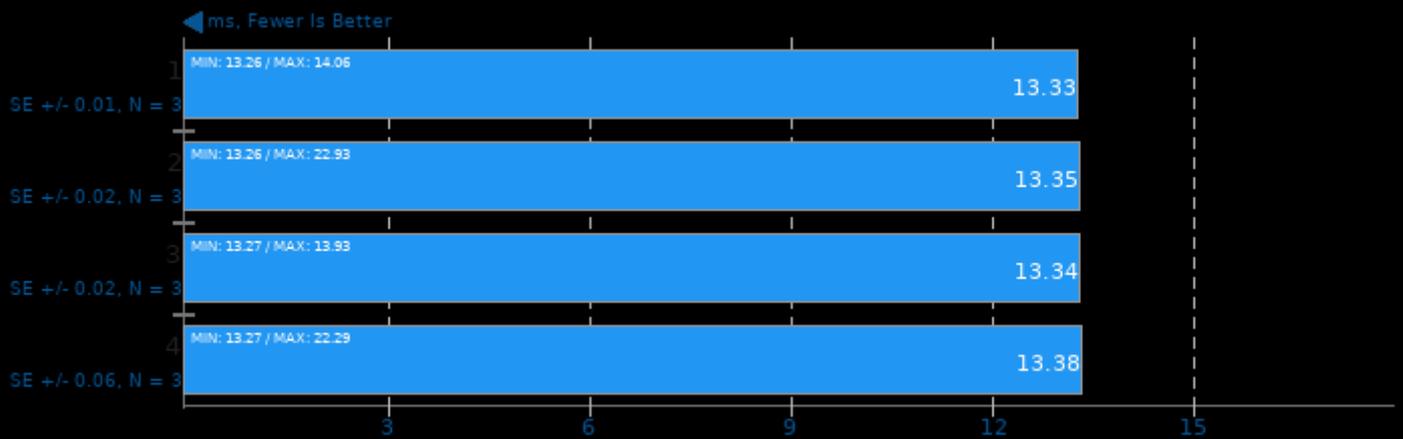
### NCNN 20201218

Target: CPU - Model: squeezenet\_ssd



### NCNN 20201218

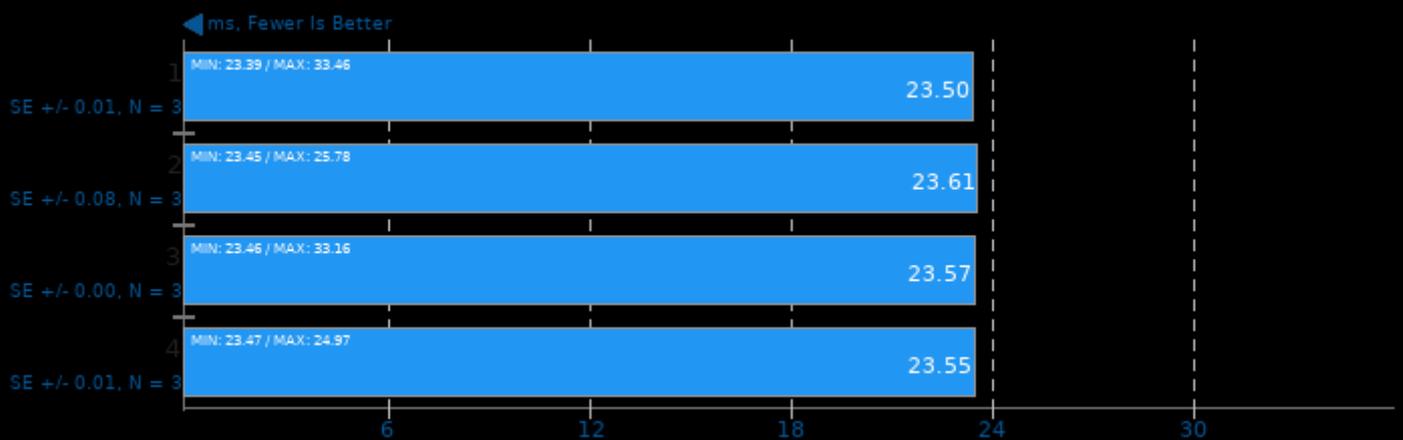
Target: CPU - Model: regnety\_400m



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

### NCNN 20201218

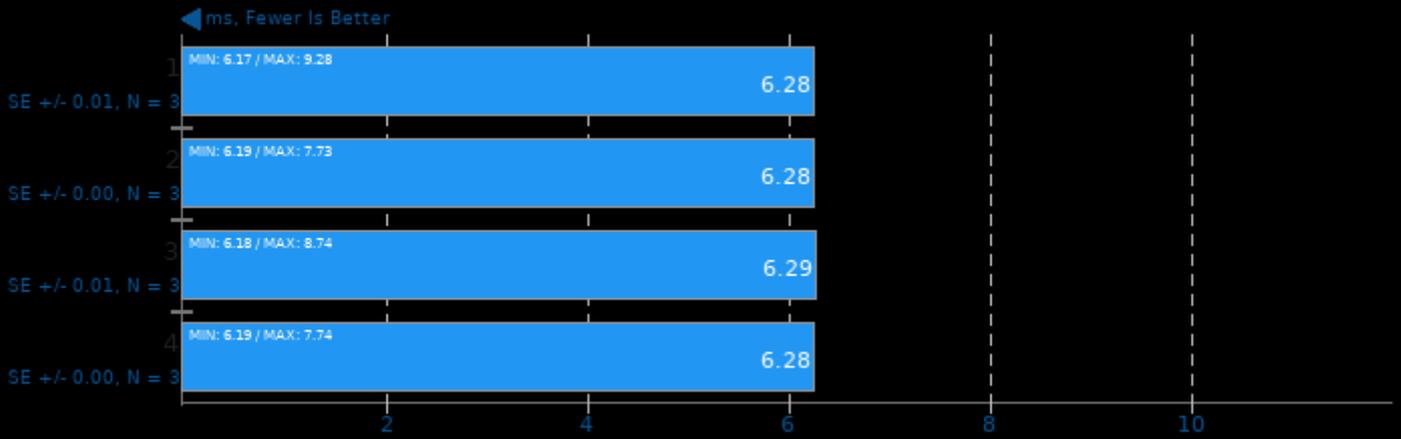
Target: Vulkan GPU - Model: mobilenet



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

### NCNN 20201218

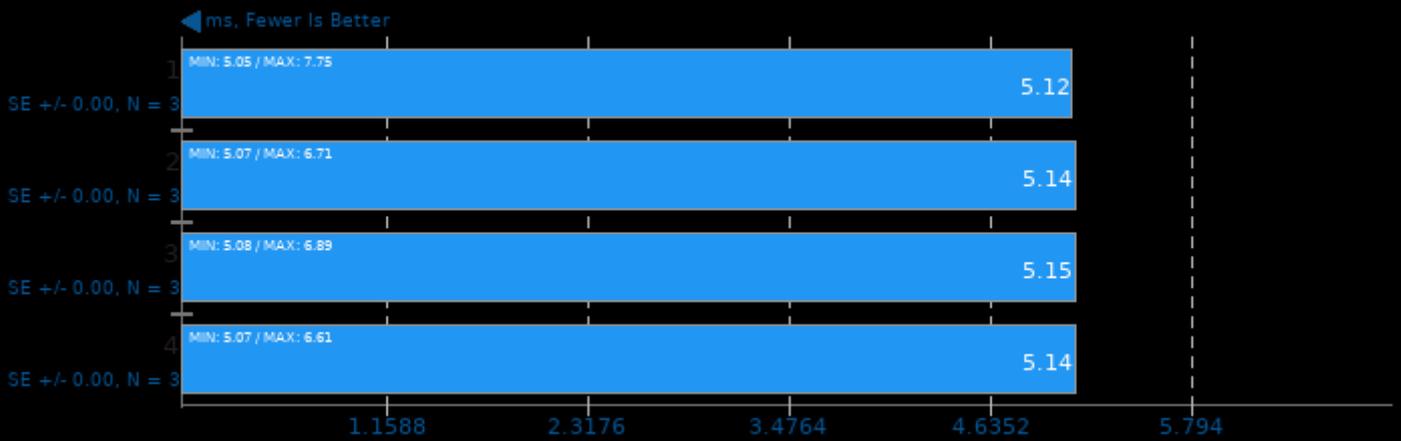
Target: Vulkan GPU-v2-v2 - Model: mobilenet-v2



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

### NCNN 20201218

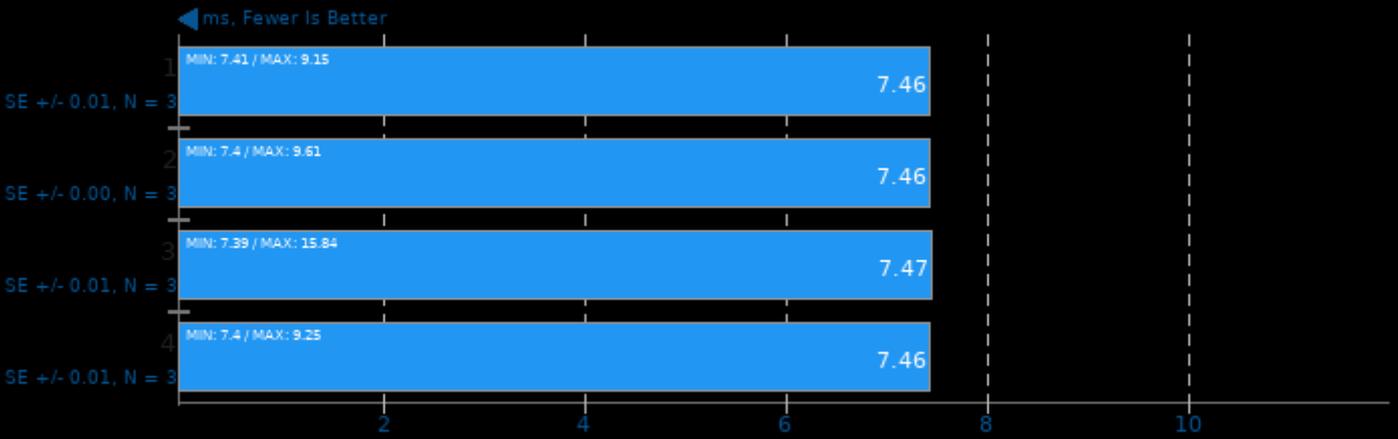
Target: Vulkan GPU-v3-v3 - Model: mobilenet-v3



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

### NCNN 20201218

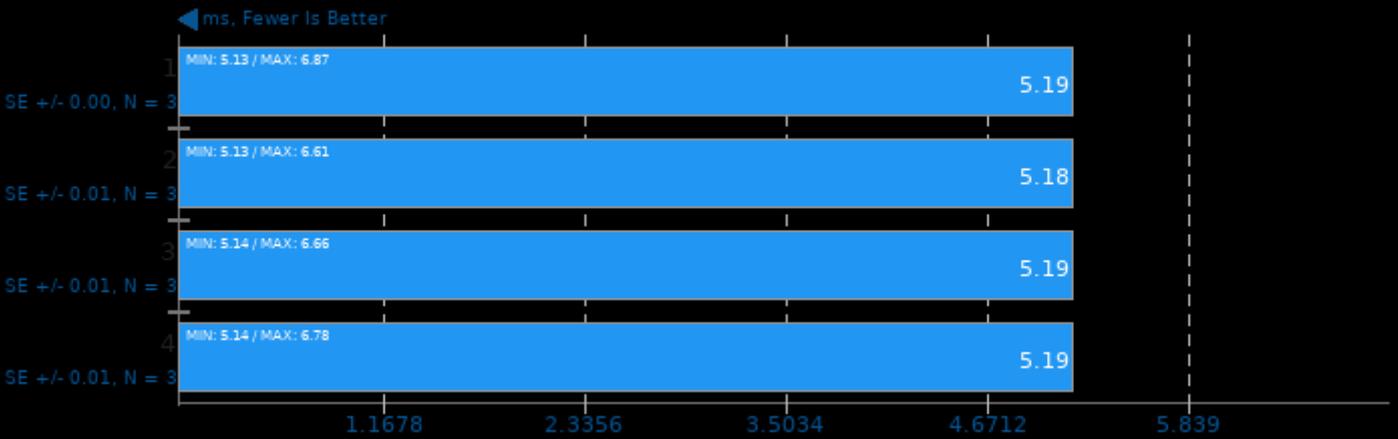
Target: Vulkan GPU - Model: shufflenet-v2



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

### NCNN 20201218

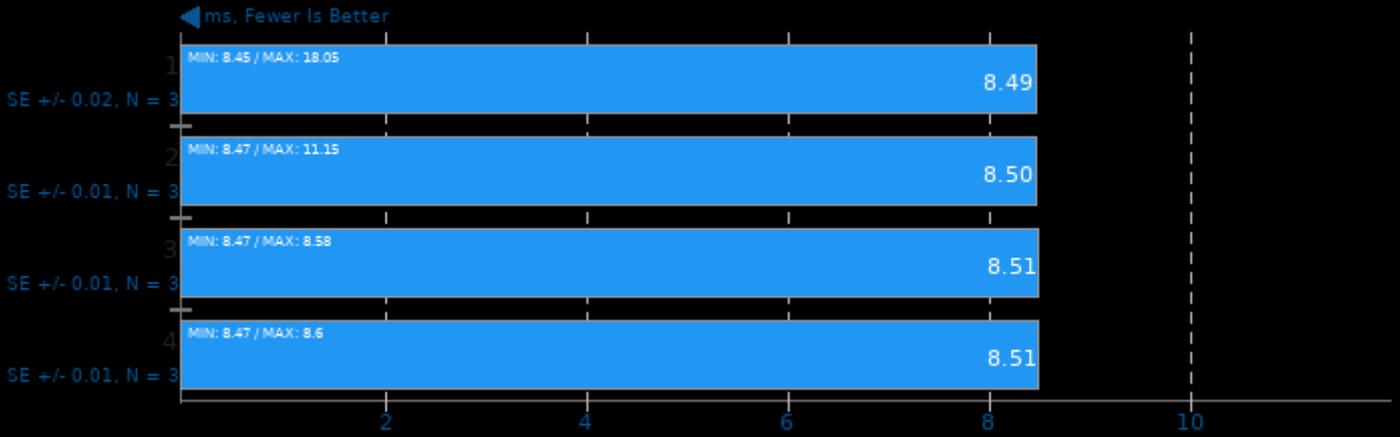
Target: Vulkan GPU - Model: mnasnet



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

### NCNN 20201218

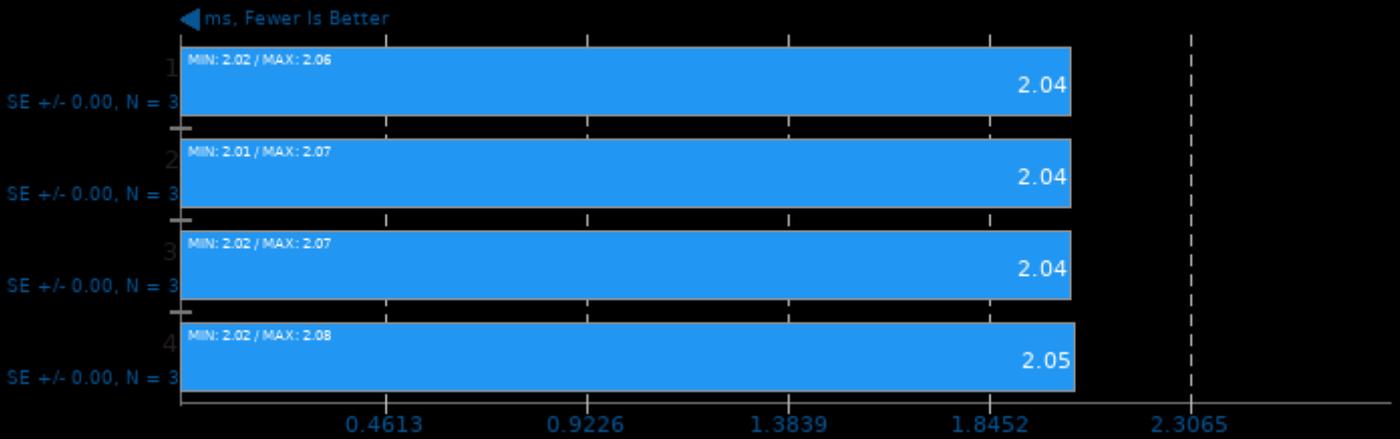
Target: Vulkan GPU - Model: efficientnet-b0



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

### NCNN 20201218

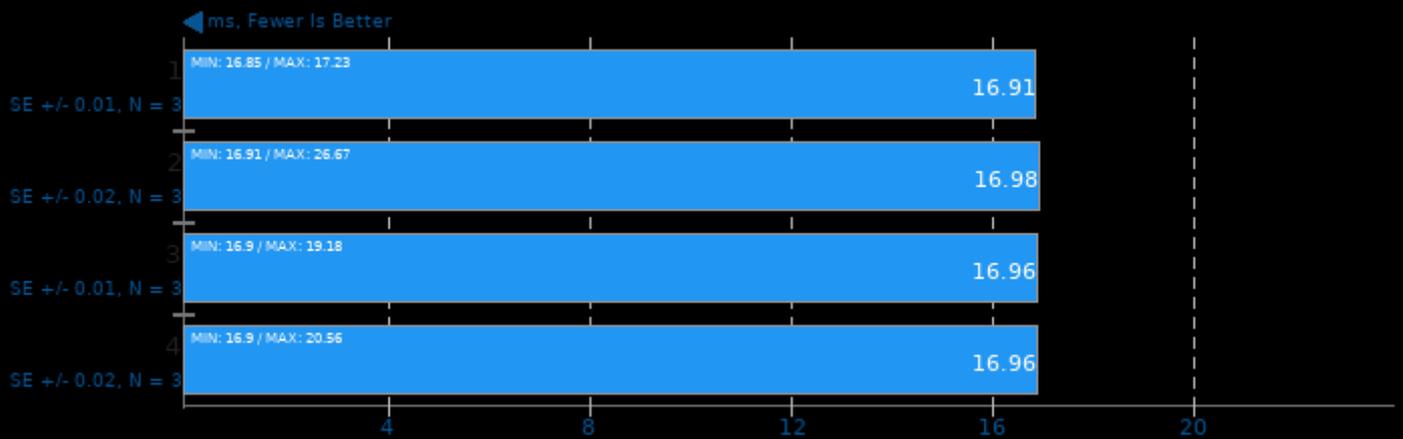
Target: Vulkan GPU - Model: blazeface



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

### NCNN 20201218

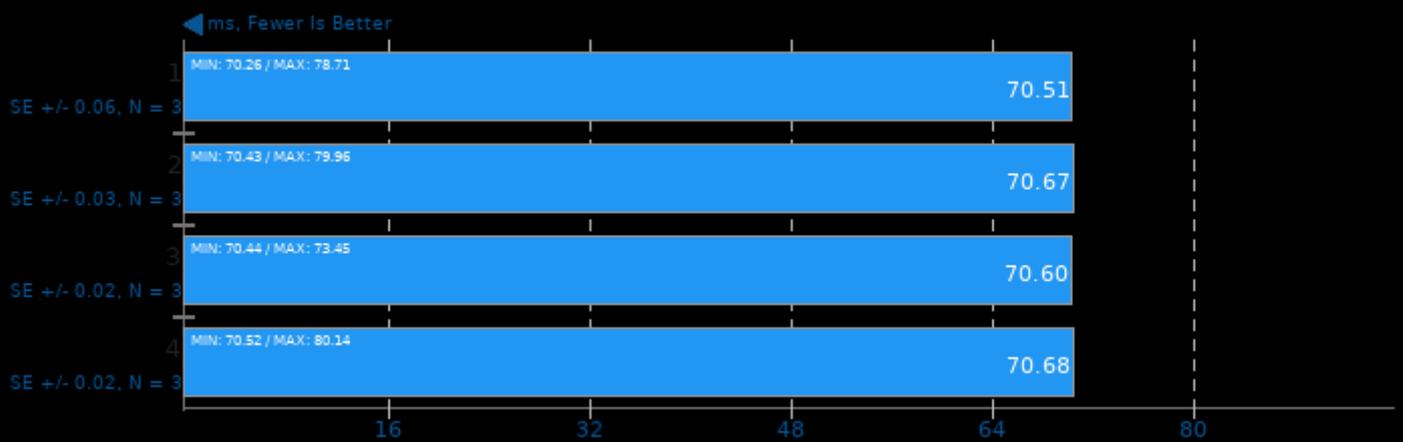
Target: Vulkan GPU - Model: googlenet



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

### NCNN 20201218

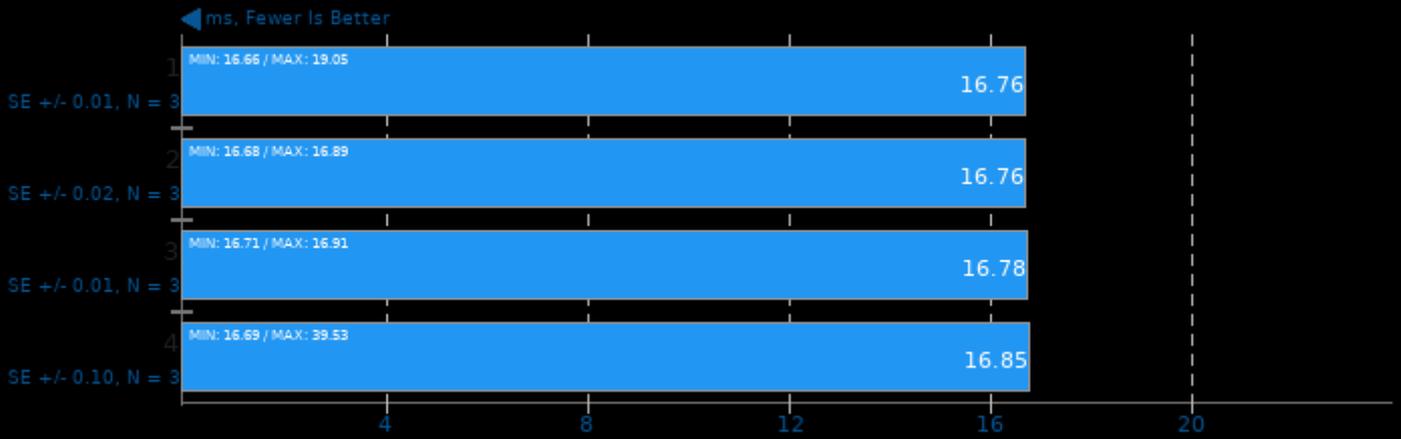
Target: Vulkan GPU - Model: vgg16



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

### NCNN 20201218

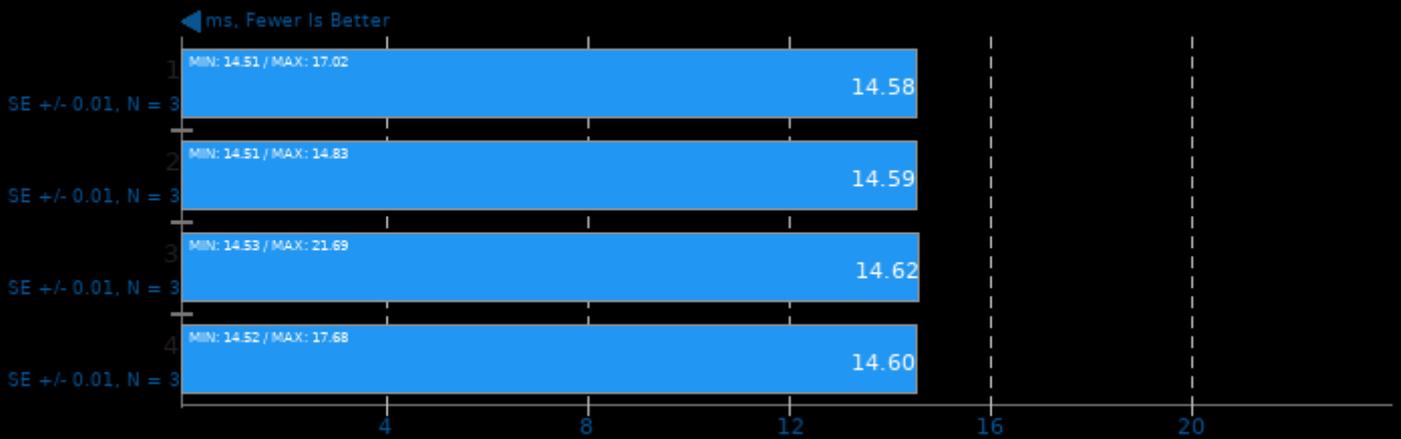
Target: Vulkan GPU - Model: resnet18



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

### NCNN 20201218

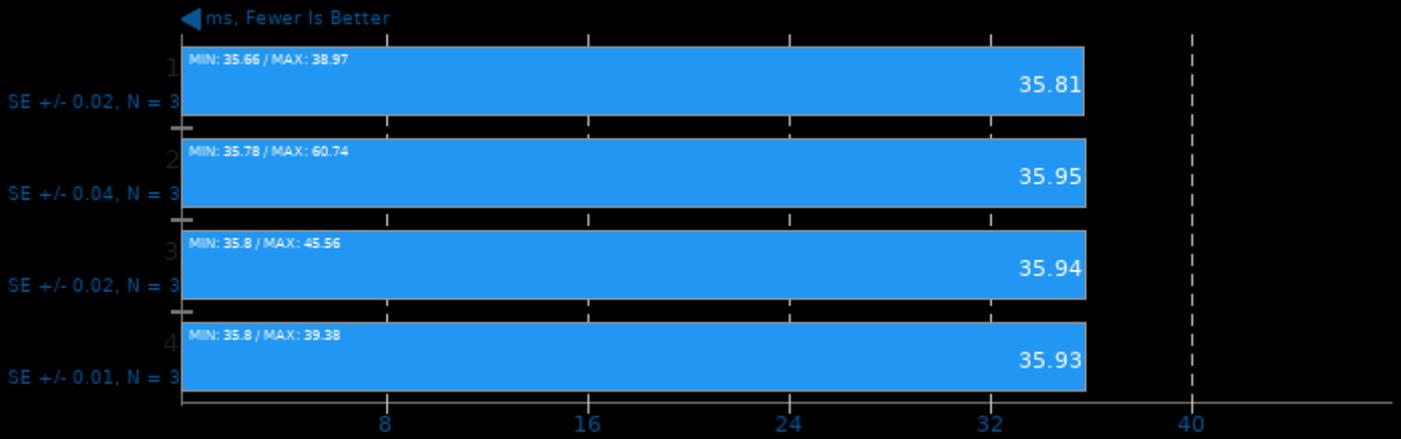
Target: Vulkan GPU - Model: alexnet



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

### NCNN 20201218

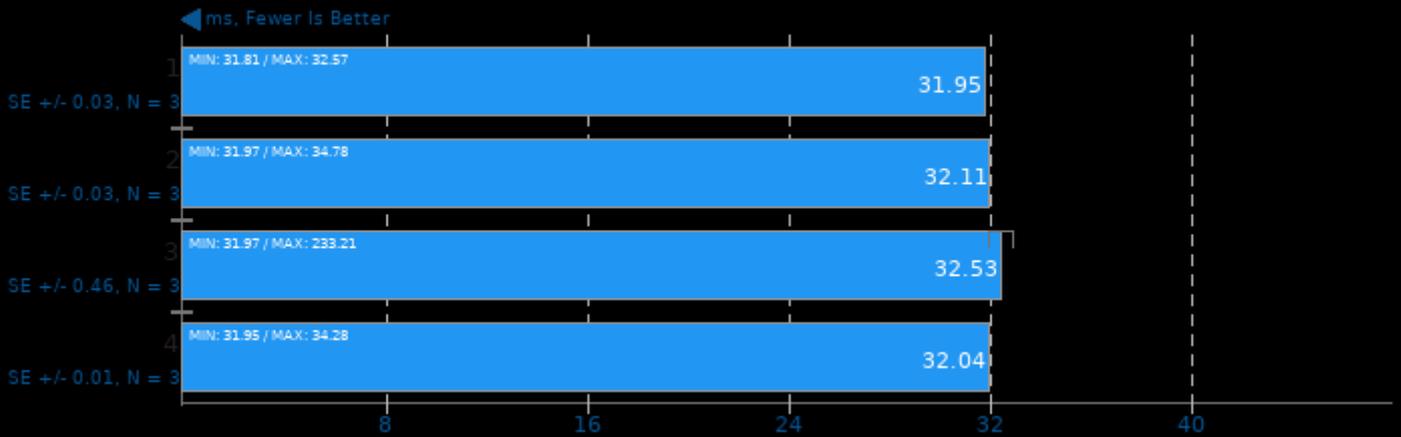
Target: Vulkan GPU - Model: resnet50



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

### NCNN 20201218

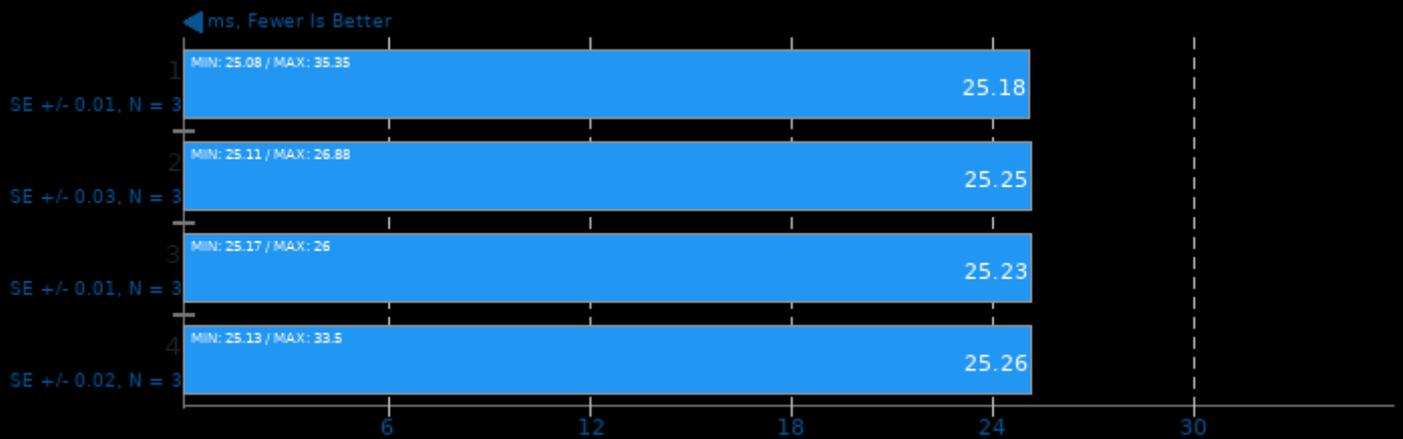
Target: Vulkan GPU - Model: yolov4-tiny



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

## NCNN 20201218

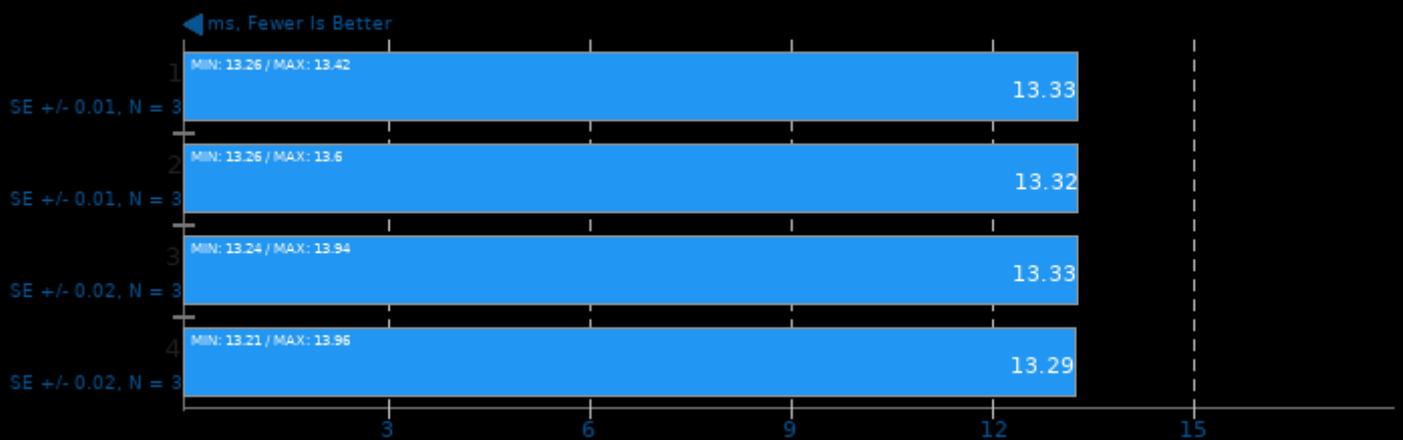
Target: Vulkan GPU - Model: squeezenet\_ssd



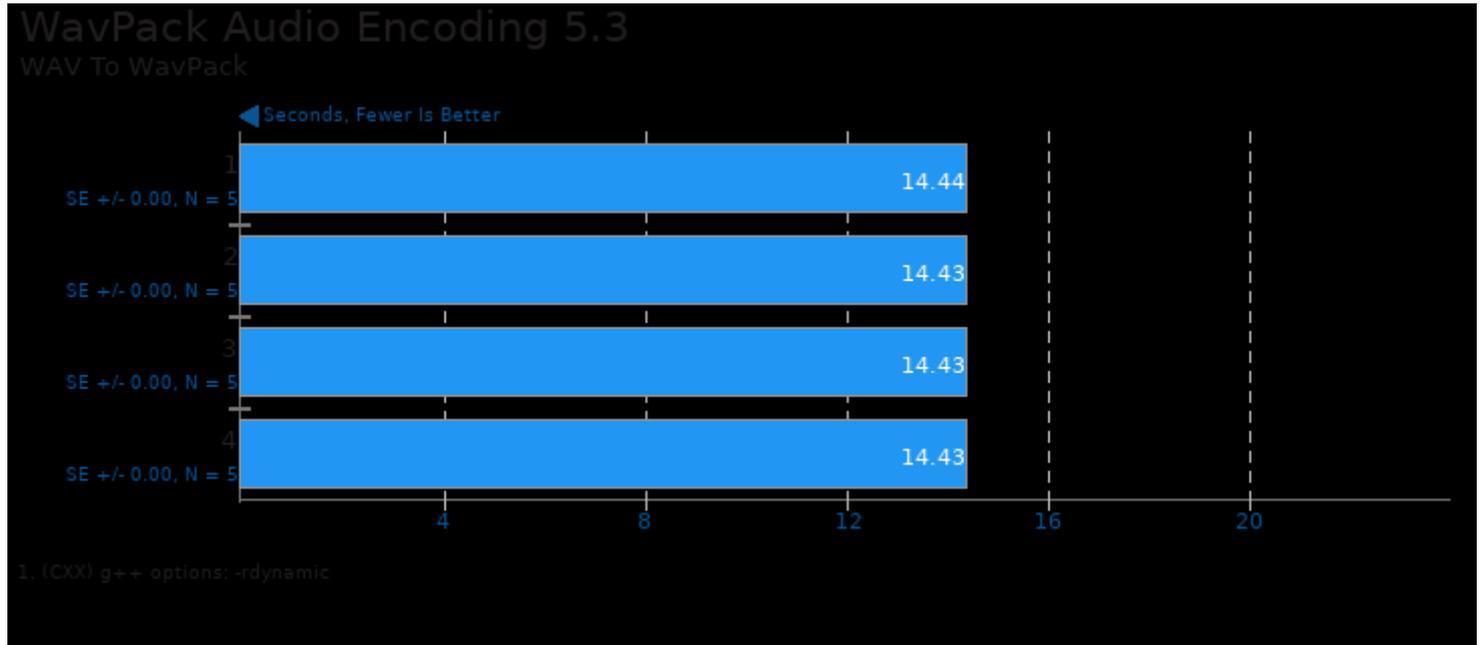
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread

## NCNN 20201218

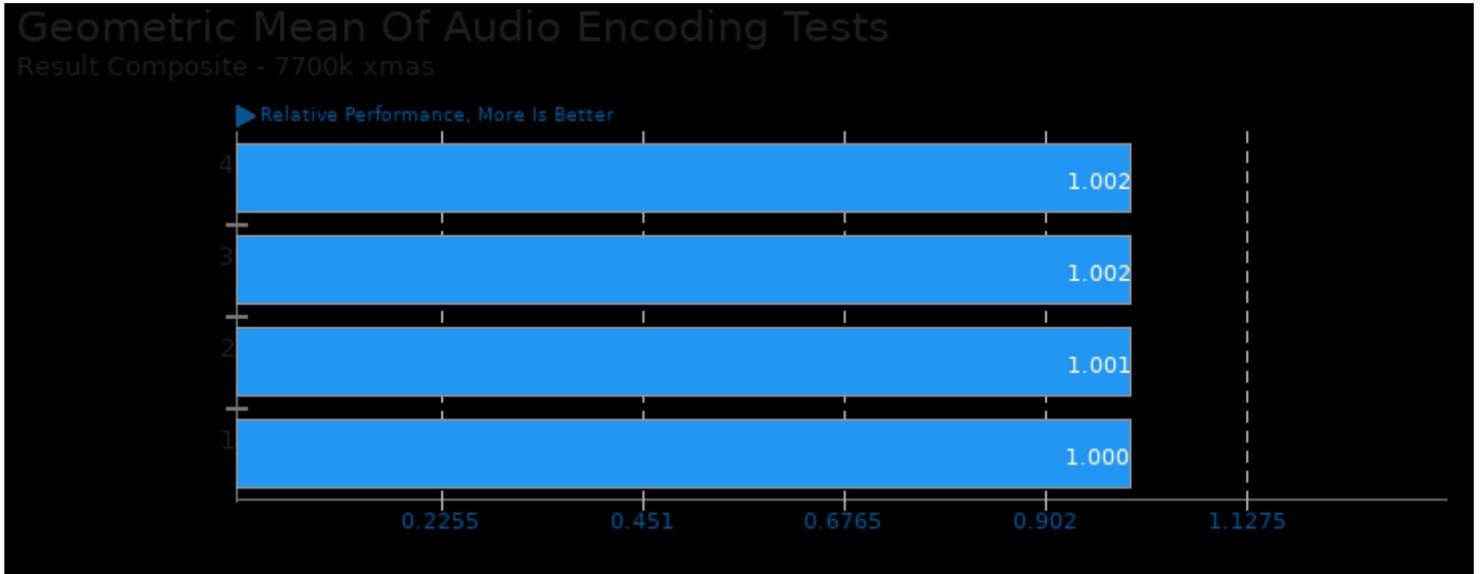
Target: Vulkan GPU - Model: regnety\_400m



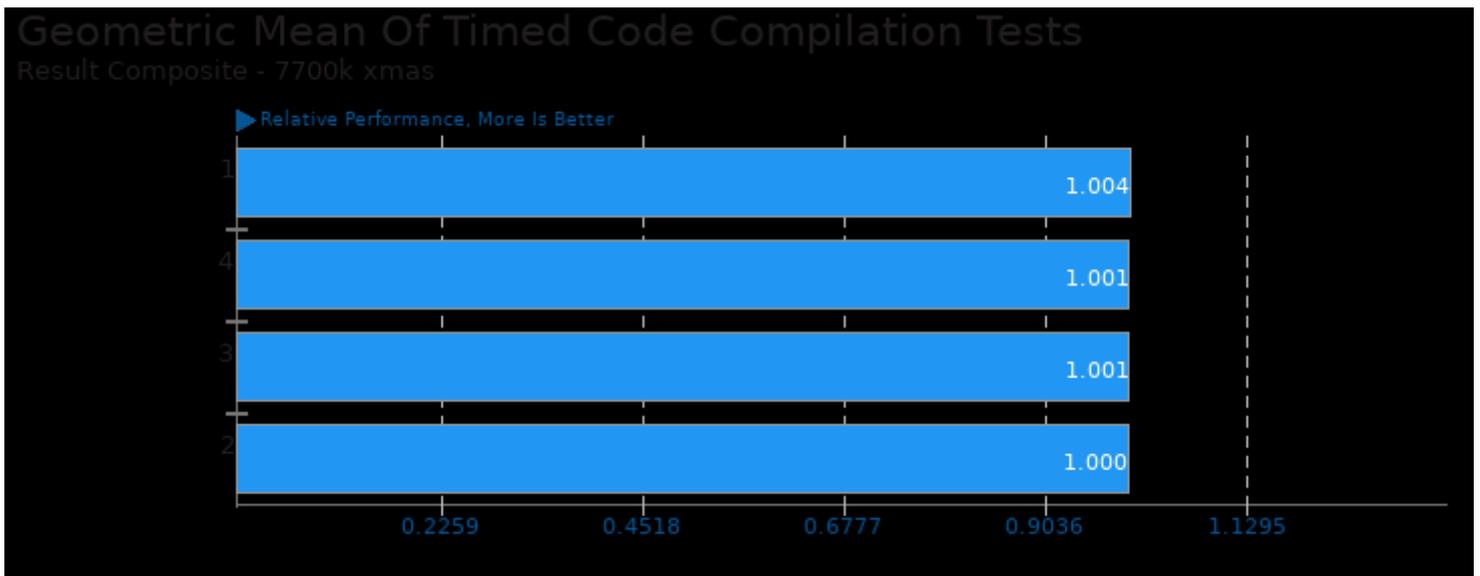
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread



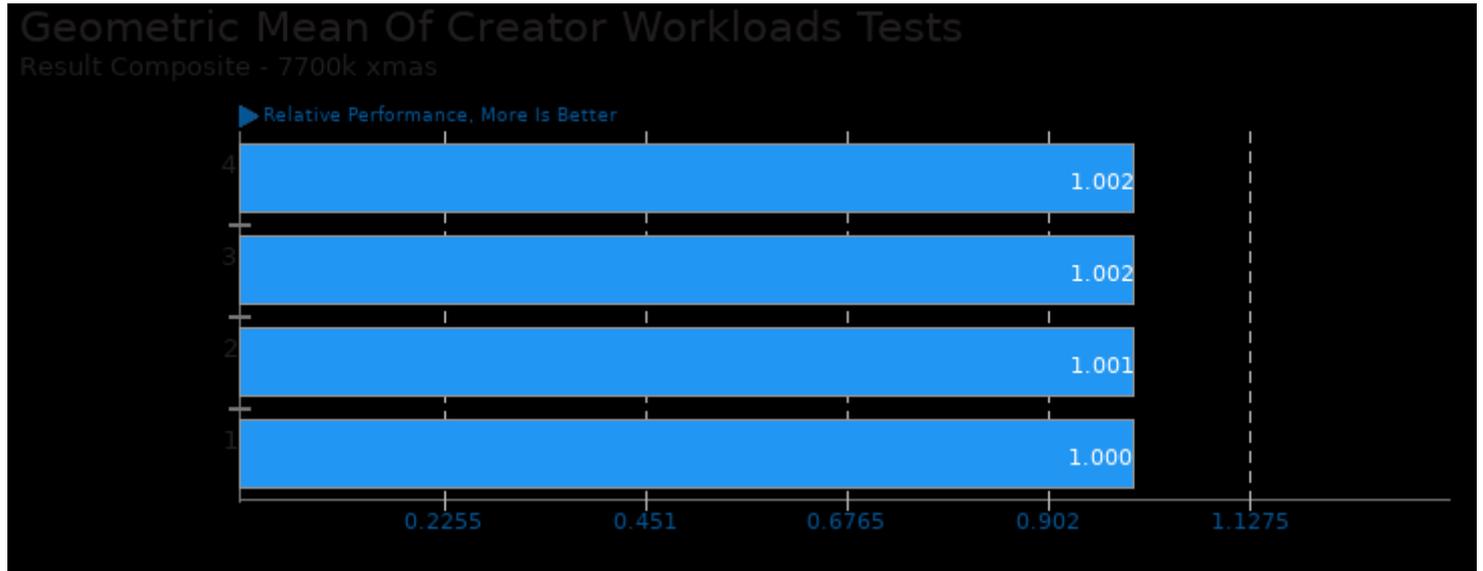
These geometric means are based upon test groupings / test suites for this result file.



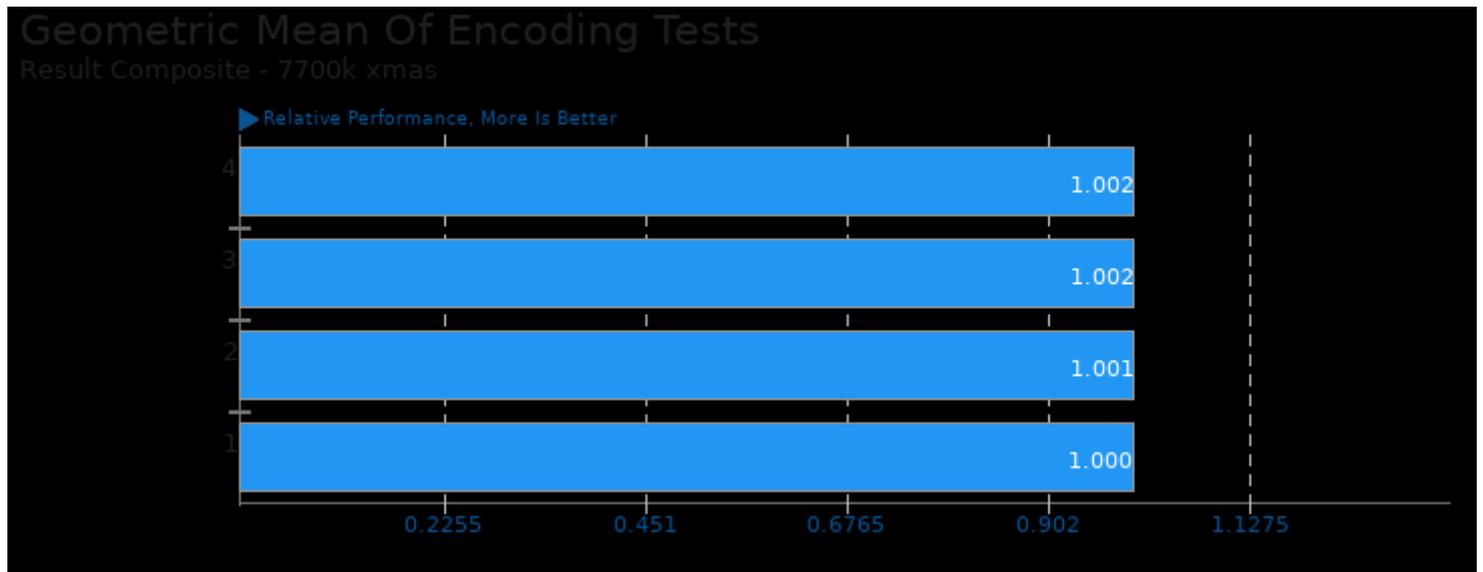
Geometric mean based upon tests: pts/encode-ape, pts/encode-wavpack and pts/encode-opus



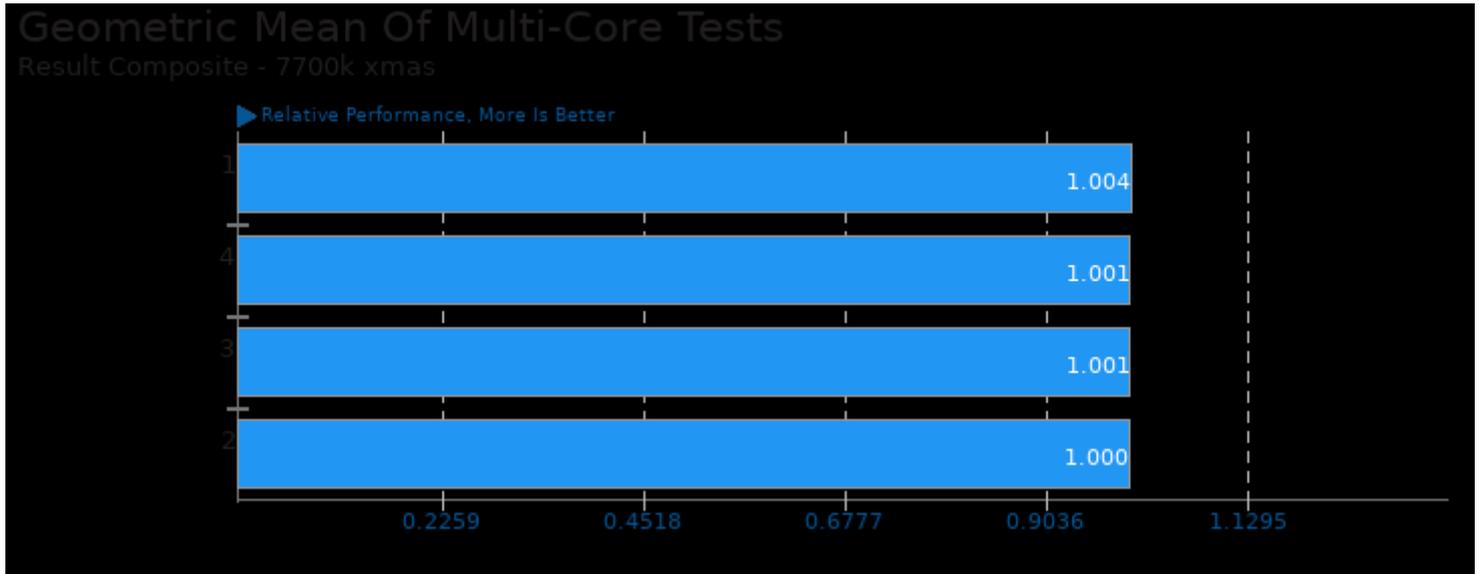
Geometric mean based upon tests: pts/build-eigen and pts/build2



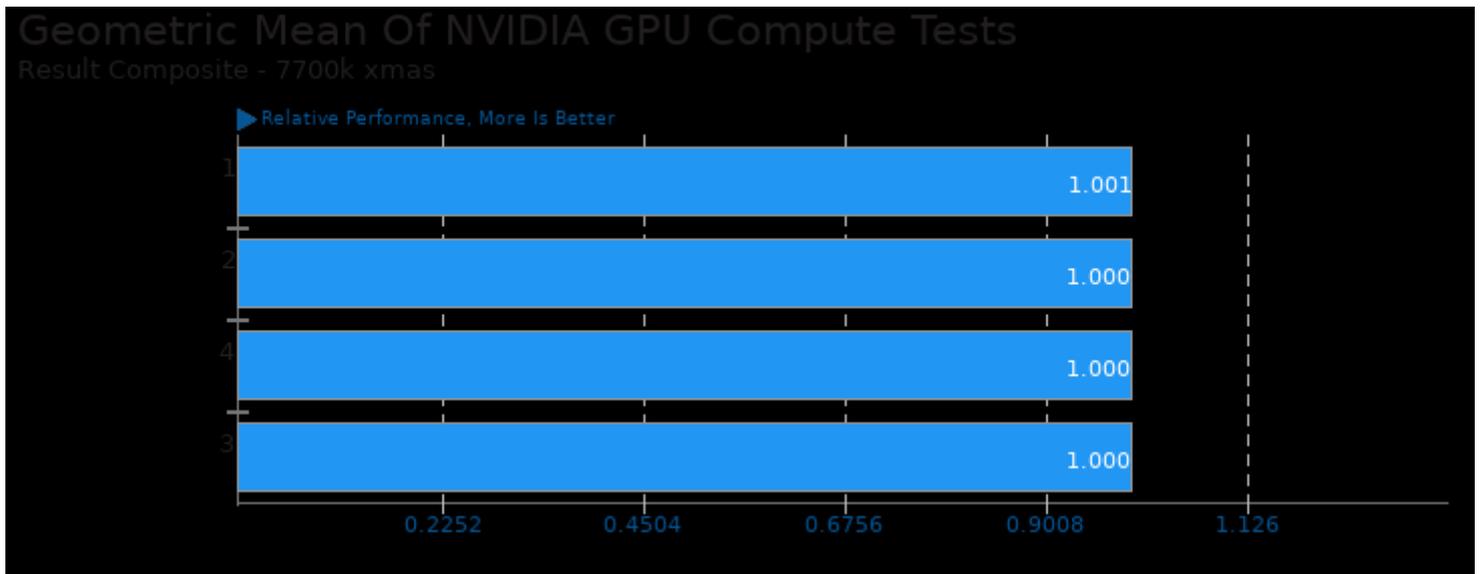
Geometric mean based upon tests: pts/encode-ape, pts/encode-wavpack and pts/encode-opus



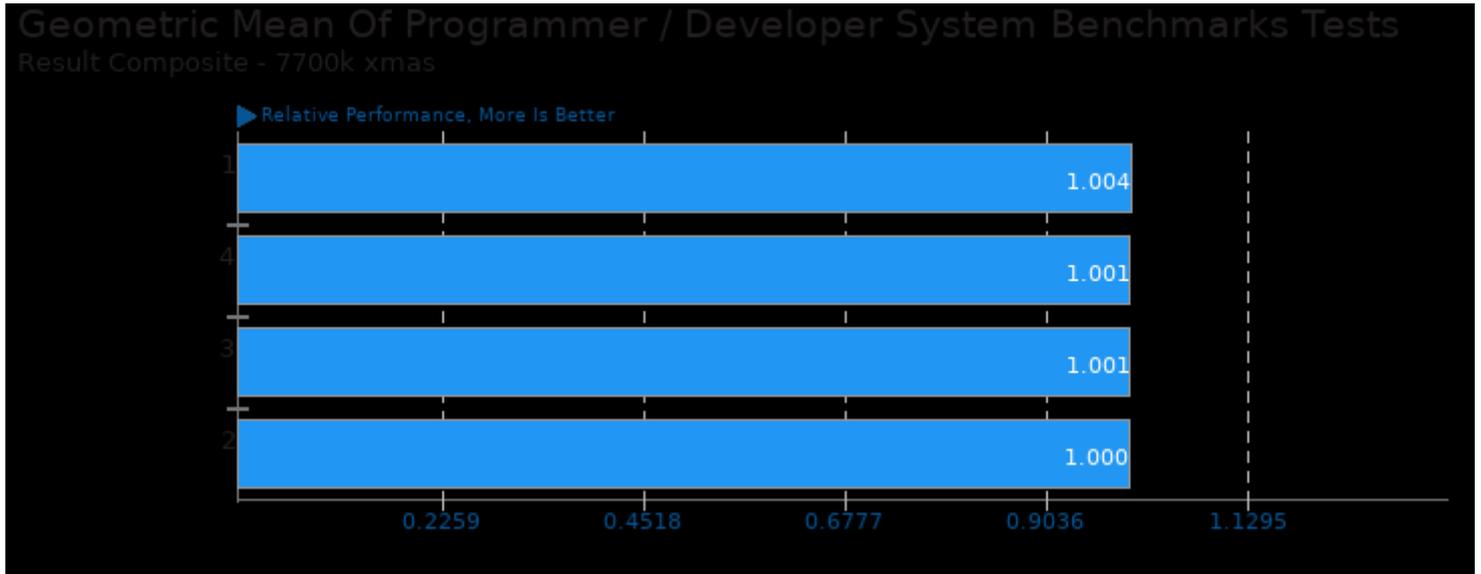
Geometric mean based upon tests: pts/encode-ape, pts/encode-wavpack and pts/encode-opus



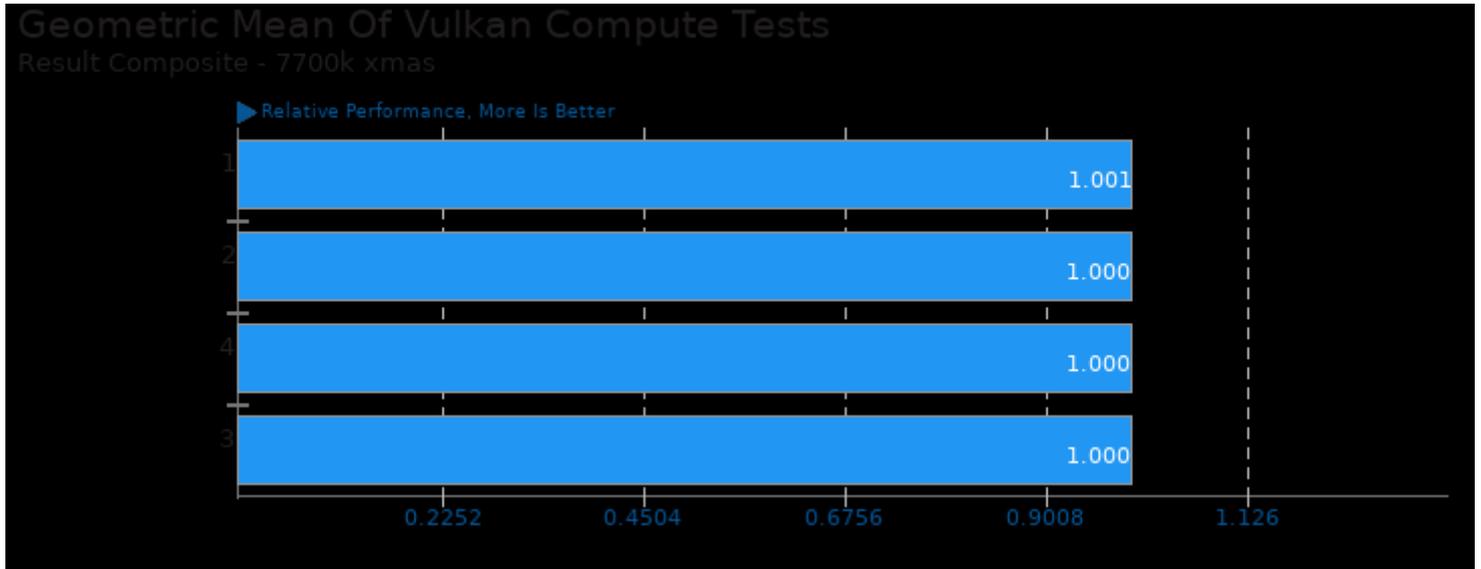
Geometric mean based upon tests: pts/build-eigen and pts/build2



Geometric mean based upon tests: pts/vkfft, pts/vkresample and pts/ncnn



Geometric mean based upon tests: pts/build-eigen and pts/build2



Geometric mean based upon tests: pts/vkfft, pts/vkresample and pts/ncnn

*This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 14:54.*