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rx480common_vkCompute

AMD Ryzen 7 3800X 8-Core testing with a MSI MEG X570 ACE (MS-7C35) v1.0 (1.E2 BIOS) and AMD Radeon RX 480 8GB on Garuda Soaring via the Phoronix Test Suite.

Test Systems:

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Processor: AMD Ryzen 7 3800X 8-Core @ 3.90GHz (8 Cores / 16 Threads), Motherboard: MSI MEG X570 ACE (MS-7C35) v1.0 (1.E2 BIOS), Chipset: AMD Starship/Matisse, Memory: 32GB, Disk: 1000GB Samsung SSD 980 PRO 1TB + 250GB Samsung SSD 860, Graphics: AMD Radeon RX 480 8GB (1266/2000MHz), Audio: AMD Ellesmere HDMI Audio, Monitor: Acer VG270K, Network: Intel I211 + Realtek RTL8125 2.5GbE + Intel Wi-Fi 6 AX200

OS: Garuda Soaring, Kernel: 5.17.9-zen1-1-zen (x86_64), Desktop: KDE Plasma 5.24.5, Display Server: X Server 1.21.1.3, OpenGL: 4.6 Mesa 22.0.4 (LLVM 13.0.1 DRM 3.44), Vulkan: 1.3.204, Compiler: GCC 12.1.0 + Clang 13.0.1, File-System: btrfs, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: always
Compiler Notes: --disable-libssp --disable-libstdcxx-pch --disable-werror --enable-__cxa_atexit --enable-bootstrap --enable-cet=auto --enable-checking=release

```
--enable-clocale=gnu           --enable-default-pie          --enable-default-ssp          --enable-gnu-indirect-function      --enable-gnu-unique-object
--enable-languages=c,c++,ada,fortran,go,lto,objc,obj-c++ --enable-link-serialization=1 --enable-lto --enable-multilib --enable-plugin --enable-shared --enable-threads=posix
--mandir=/usr/share/man --with-build-config=bootstrap-lto --with-linker-hash-style=gnu
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0x8701021
Graphics Notes: GLAMOR - BAR1 / Visible vRAM Size: 256 MB
Security Notes: itlb_multithit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Retpolines IBPB: conditional STIBP: conditional RSB filling + srbds: Not affected + tsx_async_abort: Not affected
```

rx480common_vkCompute

vkpeak - fp32-scalar (GFLOPS)	4997
Standard Deviation	0.3%
vkpeak - fp32-vec4 (GFLOPS)	4886
Standard Deviation	0.2%
vkpeak - fp64-scalar (GFLOPS)	333.04
Standard Deviation	5.5%
vkpeak - fp64-vec4 (GFLOPS)	307.50
Standard Deviation	1.2%
vkpeak - int32-scalar (GIOPS)	1150
Standard Deviation	0.1%
vkpeak - int32-vec4 (GIOPS)	1148
Standard Deviation	0.7%
RealSR-NCNN - 4x - No (sec)	16.492
Standard Deviation	0.2%
RealSR-NCNN - 4x - Yes (sec)	116.644
Standard Deviation	0.6%
Waifu2x-NCNN Vulkan - 2x - 3 - Yes (sec)	9.550
Standard Deviation	0.1%
VkResample - 2x - Single (ms)	35.056
Standard Deviation	1%
NCNN - Vulkan GPU - mobilenet (ms)	6.38
Standard Deviation	0.6%
NCNN - Vulkan GPU-v2-v2 - mobilenet-v2 (ms)	3.31
Standard Deviation	1.1%
NCNN - Vulkan GPU-v3-v3 - mobilenet-v3 (ms)	4.57
Standard Deviation	0.2%
NCNN - Vulkan GPU - shufflenet-v2 (ms)	2.68
Standard Deviation	1.1%
NCNN - Vulkan GPU - mnasnet (ms)	3.49
Standard Deviation	0.7%
NCNN - Vulkan GPU - efficientnet-b0 (ms)	11.56
Standard Deviation	0.6%
NCNN - Vulkan GPU - blazeface (ms)	1.21
Standard Deviation	1.7%
NCNN - Vulkan GPU - googlenet (ms)	7.20
Standard Deviation	0.8%
NCNN - Vulkan GPU - vgg16 (ms)	16.41
Standard Deviation	0.2%
NCNN - Vulkan GPU - resnet18 (ms)	3.08
Standard Deviation	1.3%
NCNN - Vulkan GPU - alexnet (ms)	6.51
Standard Deviation	0.4%

NCNN - Vulkan GPU - resnet50 (ms) 8.22

Standard Deviation 0.7%

NCNN - Vulkan GPU - yolov4-tiny (ms) 8.63

Standard Deviation 0.7%

NCNN - Vulkan GPU - squeezenet_ssd (ms) 6.27

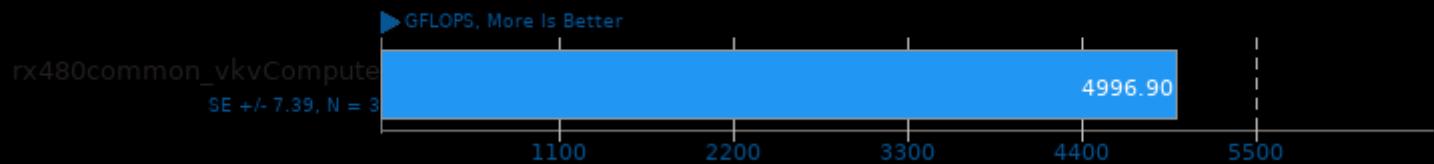
Standard Deviation 1%

NCNN - Vulkan GPU - regnety_400m (ms) 6.82

Standard Deviation 5.3%

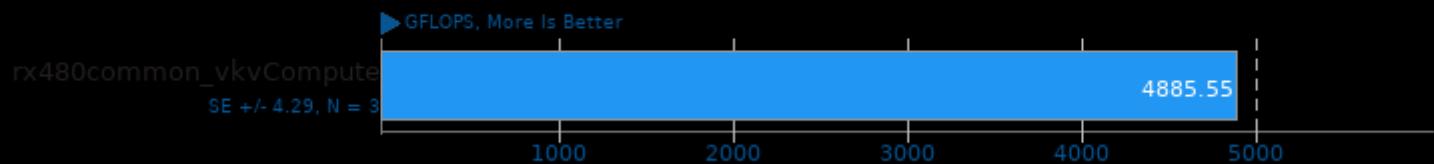
vkpeak 20210424

fp32-scalar



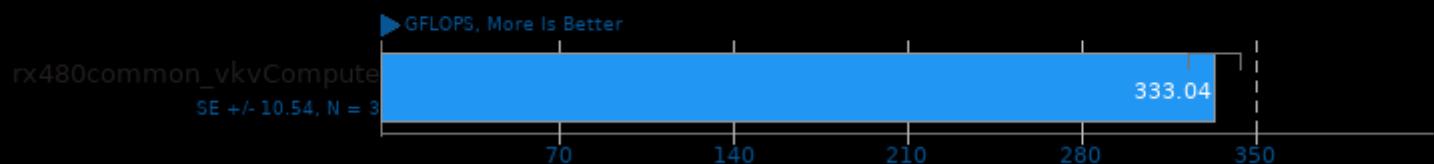
vkpeak 20210424

fp32-vec4



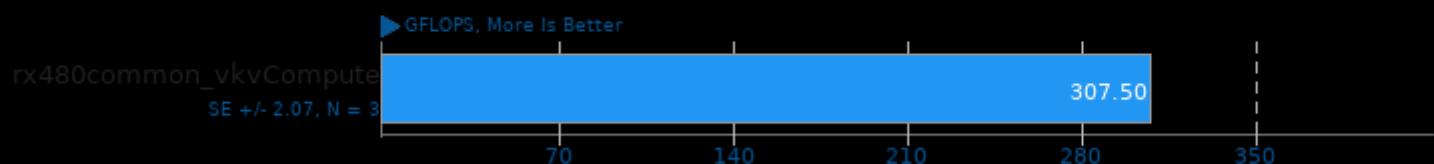
vkpeak 20210424

fp64-scalar



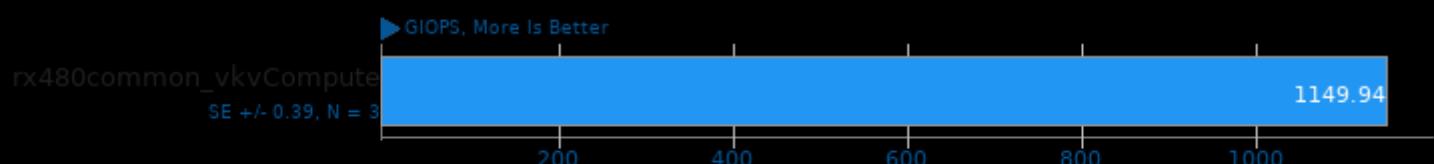
vkpeak 20210424

fp64-vec4



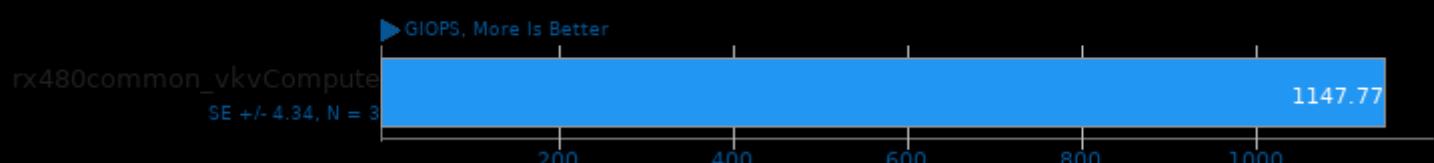
vkpeak 20210424

int32-scalar



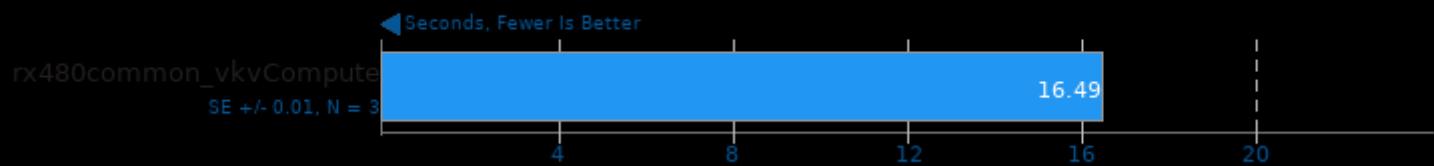
vkpeak 20210424

int32-vec4



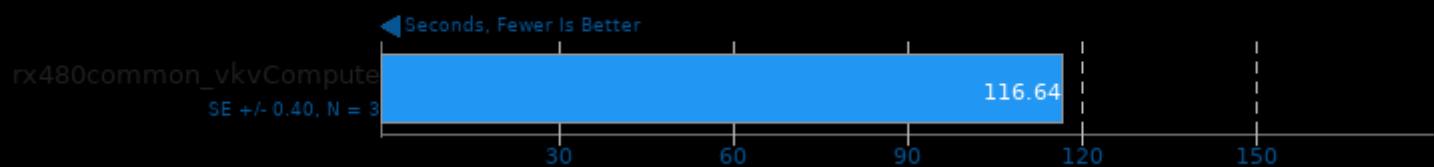
RealSR-NCNN 20200818

Scale: 4x - TAA: No



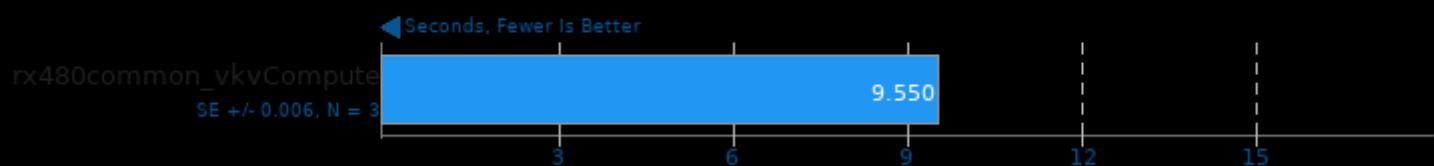
RealSR-NCNN 20200818

Scale: 4x - TAA: Yes



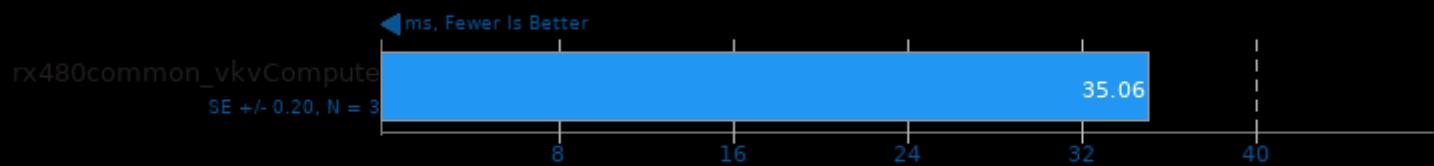
Waifu2x-NCNN Vulkan 20200818

Scale: 2x - Denoise: 3 - TAA: Yes



VkResample 1.0

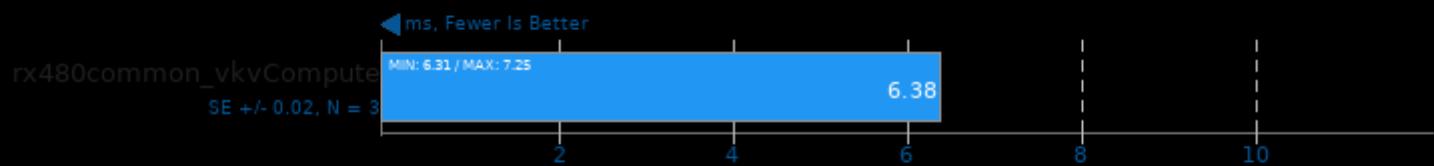
Upscale: 2x - Precision: Single



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

NCNN 20210720

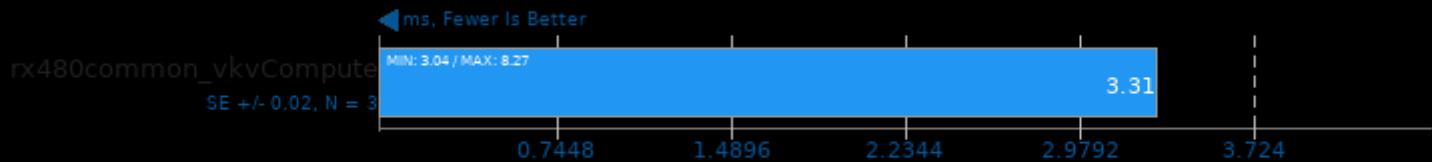
Target: Vulkan GPU - Model: mobilenet



1. (CXX) g++ options: -O3 -rdynamic -fomp -fthread

NCNN 20210720

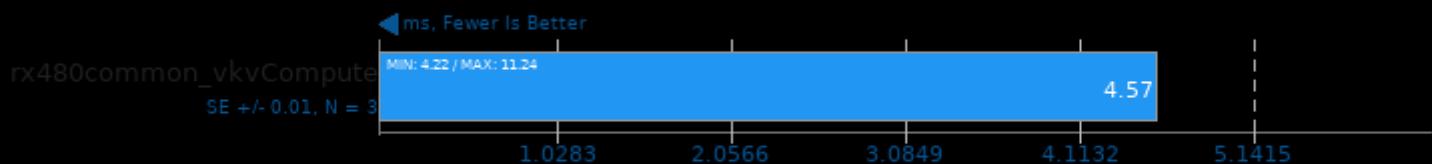
Target: Vulkan GPU-v2-v2 - Model: mobilenet-v2



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

NCNN 20210720

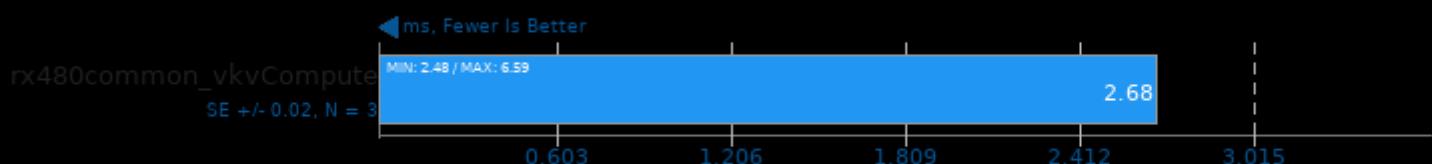
Target: Vulkan GPU-v3-v3 - Model: mobilenet-v3



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

NCNN 20210720

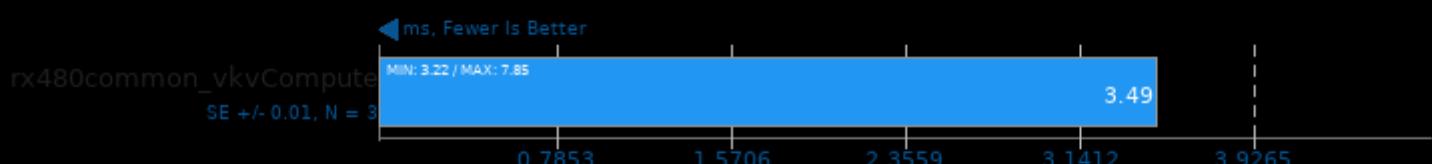
Target: Vulkan GPU - Model: shufflenet-v2



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

NCNN 20210720

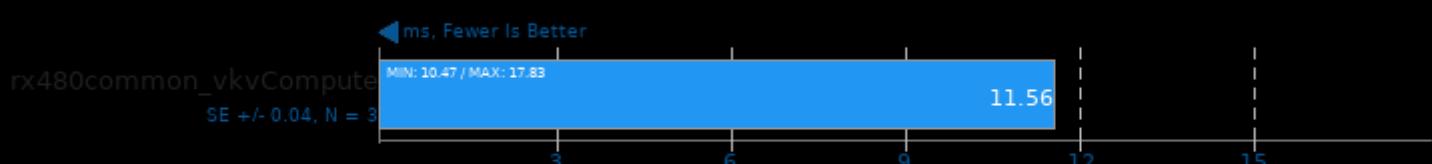
Target: Vulkan GPU - Model: mnasnet



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

NCNN 20210720

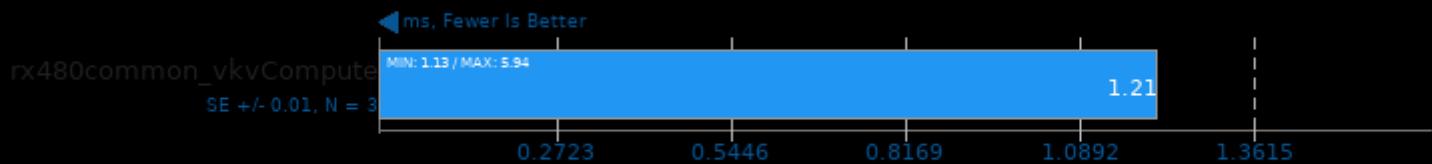
Target: Vulkan GPU - Model: efficientnet-b0



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

NCNN 20210720

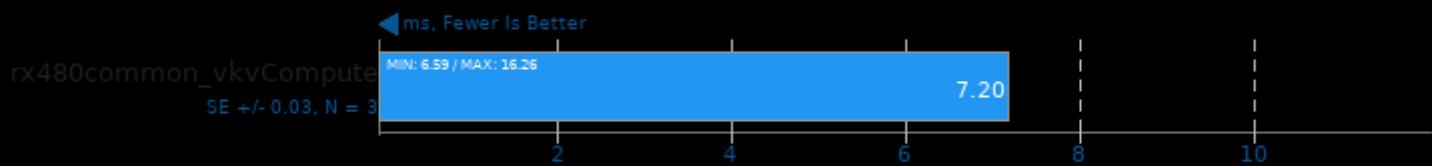
Target: Vulkan GPU - Model: blazeface



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

NCNN 20210720

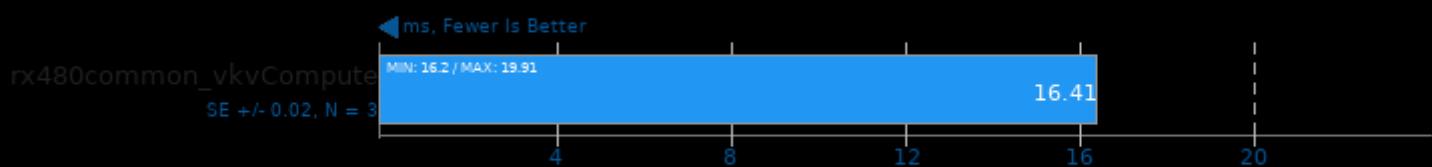
Target: Vulkan GPU - Model: googlenet



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

NCNN 20210720

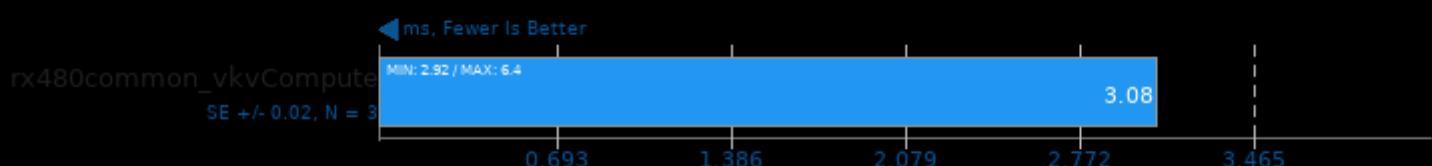
Target: Vulkan GPU - Model: vgg16



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

NCNN 20210720

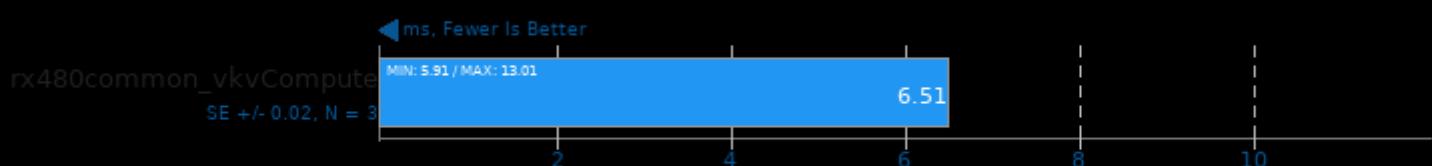
Target: Vulkan GPU - Model: resnet18



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

NCNN 20210720

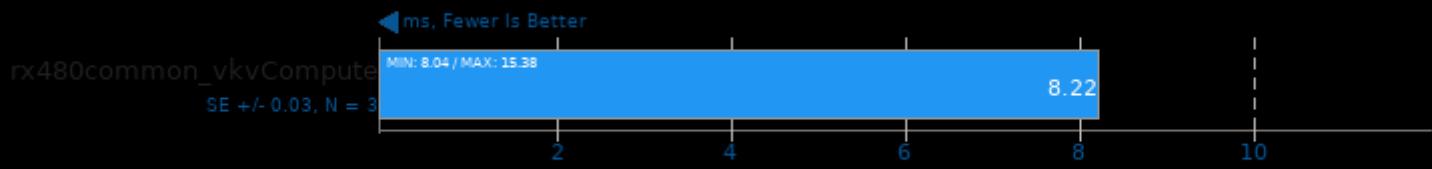
Target: Vulkan GPU - Model: alexnet



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

NCNN 20210720

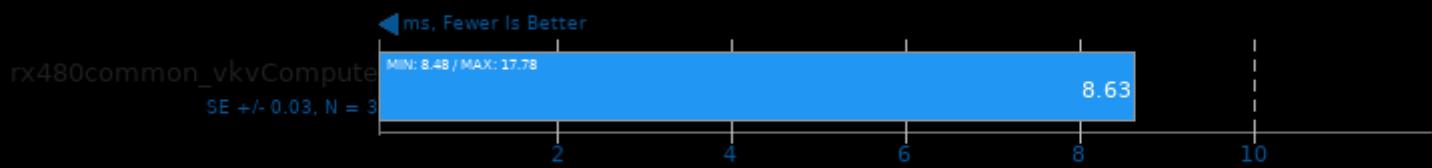
Target: Vulkan GPU - Model: resnet50



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

NCNN 20210720

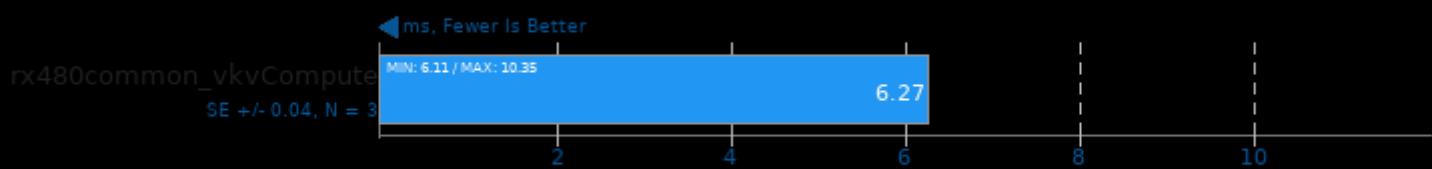
Target: Vulkan GPU - Model: yolov4-tiny



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

NCNN 20210720

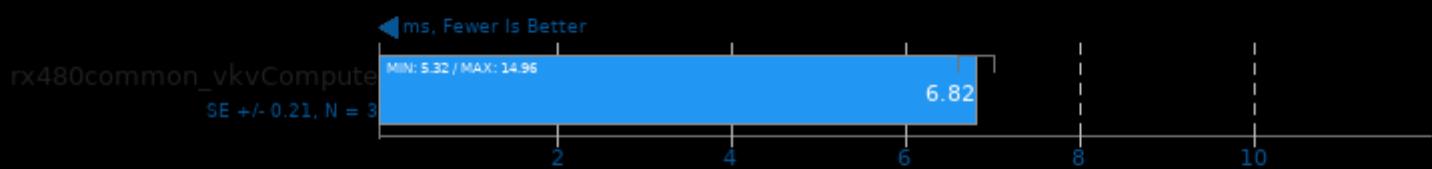
Target: Vulkan GPU - Model: squeezenet_ssd



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

NCNN 20210720

Target: Vulkan GPU - Model: regnety_400m



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

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