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rx 6800 opencl

AMD Ryzen 9 5900X 12-Core testing with a ASRock X570 Taichi (P3.61 BIOS) and AMD Radeon RX 6800/6800 XT / 6900 16GB on Ubuntu 20.04 via the Phoronix Test Suite.

Test Systems:

AMD Radeon RX 6800 - AMD Ryzen 9 5900X 12-Core

Processor: AMD Ryzen 9 5900X 12-Core @ 3.70GHz (12 Cores / 24 Threads), Motherboard: ASRock X570 Taichi (P3.61 BIOS), Chipset: AMD Starship/Matisse, Memory: 8192 MB + 16384 MB DDR4-2400MT/s, Disk: 1000GB Samsung SSD 860, Graphics: AMD Radeon RX 6800/6800 XT / 6900 16GB (2475/1000MHz), Audio: AMD Device ab28, Monitor: 2270W, Network: Intel I211 + Intel Wi-Fi 6 AX200

OS: Ubuntu 20.04, Kernel: 5.4.0-53-generic (x86_64), Desktop: GNOME Shell 3.36.4, Display Server: X Server 1.20.8, Display Driver: modesetting 1.20.8, OpenGL: 4.6.14756, OpenCL: OpenCL 2.0 AMD-APP (3188.4), Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 1920x1080

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

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--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: acpi-cpufreq ondemand - CPU Microcode: 0xa201009
Python Notes: Python 2.7.18 + Python 3.8.5
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + 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 AMD retpoline IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

	AMD Radeon RX 6800 - AMD Ryzen 9 5900X 12-Core
SHOC Scalable HeterOgeneous Computing - OpenCL - Triad (GB/s)	14.6517
Standard Deviation	2.3%
SHOC Scalable HeterOgeneous Computing - OpenCL - FFT SP (GFLOPS)	1660
Standard Deviation	0.2%
SHOC Scalable HeterOgeneous Computing - OpenCL - MD5 Hash (GHash/s)	27.6715
Standard Deviation	0%
SHOC Scalable HeterOgeneous Computing - OpenCL - Max SP Flops (GFLOPS)	17618
Standard Deviation	0.4%
SHOC Scalable HeterOgeneous Computing - OpenCL - Bus Speed Download (GB/s)	28.4710
Standard Deviation	0.1%
SHOC Scalable HeterOgeneous Computing - OpenCL - Bus Speed Readback (GB/s)	20.4022
Standard Deviation	0%
SHOC Scalable HeterOgeneous Computing - OpenCL - T.R.B (GB/s)	847.104
Standard Deviation	0.9%
cl-mem - Copy (GB/s)	342.2
Standard Deviation	0%
cl-mem - Read (GB/s)	463.7
Standard Deviation	0.2%
cl-mem - Write (GB/s)	445.5
Standard Deviation	0.1%
Rodinia - OpenCL Myocyte (sec)	93.165
Standard Deviation	1.3%
Darktable - Boat - OpenCL (sec)	13.163
Standard Deviation	0.1%
Darktable - Masskrug - OpenCL (sec)	6.459
Standard Deviation	0.1%
Darktable - Server Rack - OpenCL (sec)	0.185
Standard Deviation	0.5%
Darktable - Server Room - OpenCL (sec)	5.733
Standard Deviation	0.3%
Blender - BMW27 - OpenCL (sec)	272.48
Standard Deviation	2.9%
Blender - Barbershop - OpenCL (sec)	474.56
Standard Deviation	2.9%
SmallPT GPU - GPU - 1920 x 1080 - Caustic (Samples/sec)	1606660086

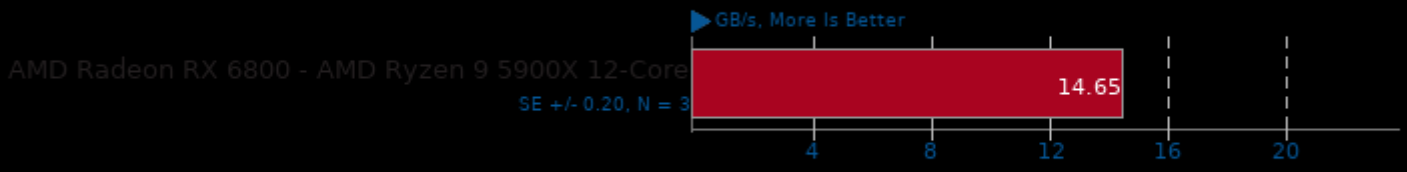
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Standard Deviation	0%
SmallPT GPU - GPU - 1920 x 1080 - Cornell (Samples/sec)	1606660222
Standard Deviation	0%
SmallPT GPU - GPU - 1920 x 1080 - Caustic3 (Samples/sec)	1606660359
Standard Deviation	0%
LuxMark - GPU - Hotel (Score)	7069
Standard Deviation	0.5%
LuxMark - GPU - Microphone (Score)	39208
Standard Deviation	0.2%
LuxMark - GPU - Luxball HDR (Score)	54867
Standard Deviation	0.3%
clpeak - Kernel Latency (us)	12.74
Standard Deviation	2.7%
clpeak - I.C.I (GIOPS)	3513
Standard Deviation	0%
clpeak - S.P.F (GFLOPS)	16943
Standard Deviation	2.5%
clpeak - D.P.D (GFLOPS)	1113
Standard Deviation	0%
clpeak - G.M.B (GBPS)	456.69
Standard Deviation	0%
clpeak - T.B.e (GBPS)	13.73
Standard Deviation	0.4%
clpeak - T.B.e (GBPS)	17.80
Standard Deviation	0.3%

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SHOC Scalable HeterOgeneous Computing 2015-11-10

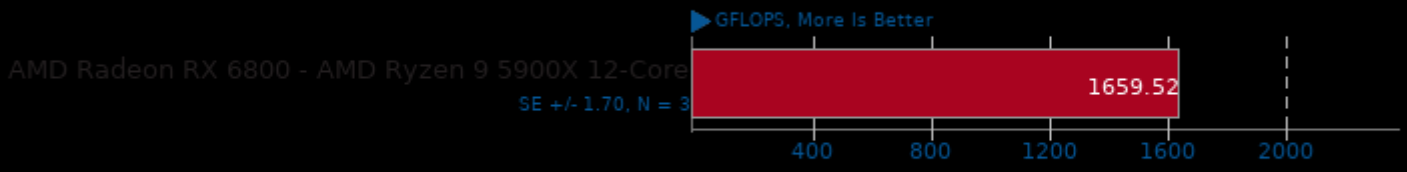
Target: OpenCL - Benchmark: Triad



1. (CXX) g++ options: -O2 -lSHOCCommonMPI -lSHOCCommonOpenCL -lSHOCCommon -lOpenCL -lrt -pthread -lmpi_cxx -lmpi

SHOC Scalable HeterOgeneous Computing 2015-11-10

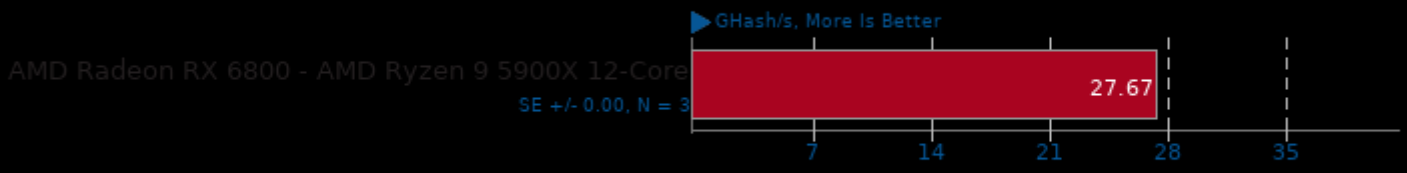
Target: OpenCL - Benchmark: FFT SP



1. (CXX) g++ options: -O2 -lSHOCCommonMPI -lSHOCCommonOpenCL -lSHOCCommon -lOpenCL -lrt -pthread -lmpi_cxx -lmpi

SHOC Scalable HeterOgeneous Computing 2015-11-10

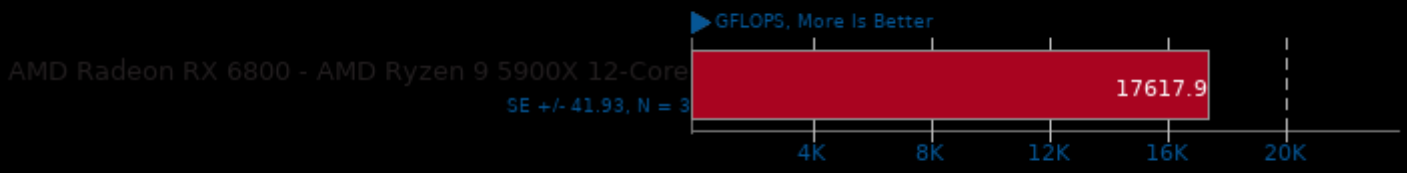
Target: OpenCL - Benchmark: MD5 Hash



1. (CXX) g++ options: -O2 -lSHOCCommonMPI -lSHOCCommonOpenCL -lSHOCCommon -lOpenCL -lrt -pthread -lmpi_cxx -lmpi

SHOC Scalable HeterOgeneous Computing 2015-11-10

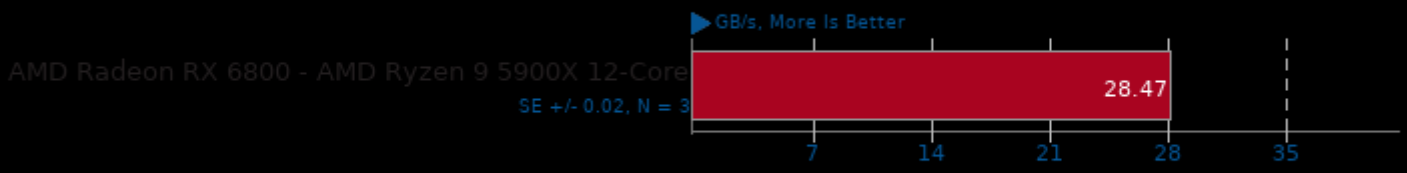
Target: OpenCL - Benchmark: Max SP Flops



1. (CXX) g++ options: -O2 -lSHOCCommonMPI -lSHOCCommonOpenCL -lSHOCCommon -lOpenCL -lrt -pthread -lmpi_cxx -lmpi

SHOC Scalable HeterOgeneous Computing 2015-11-10

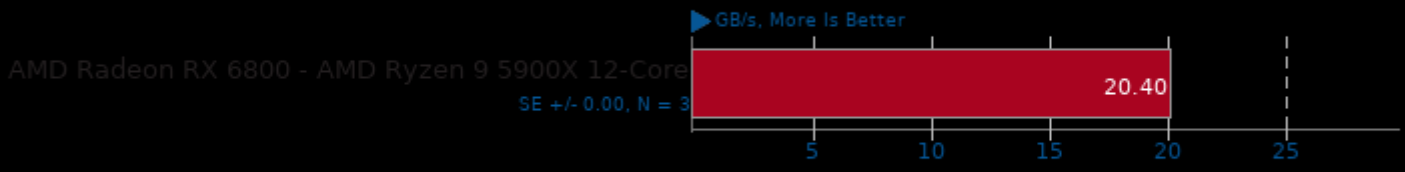
Target: OpenCL - Benchmark: Bus Speed Download



1. (CXX) g++ options: -O2 -lSHOCCommonMPI -lSHOCCommonOpenCL -lSHOCCommon -lOpenCL -lrt -pthread -lmpi_cxx -lmpi

SHOC Scalable HeterOgeneous Computing 2015-11-10

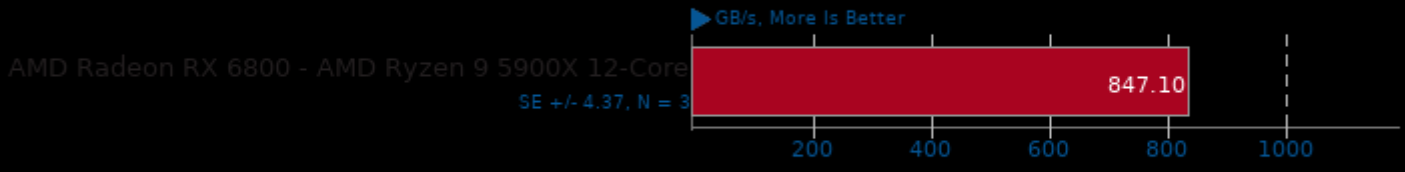
Target: OpenCL - Benchmark: Bus Speed Readback



1. (CXX) g++ options: -O2 -lSHOCCommonMPI -lSHOCCommonOpenCL -lSHOCCommon -lOpenCL -lrt -pthread -lmpi_cxx -lmpi

SHOC Scalable HeterOgeneous Computing 2015-11-10

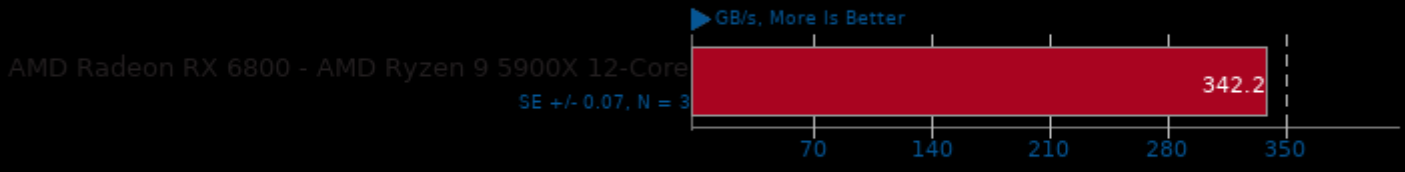
Target: OpenCL - Benchmark: Texture Read Bandwidth



1. (CXX) g++ options: -O2 -lSHOCCommonMPI -lSHOCCommonOpenCL -lSHOCCommon -lOpenCL -lrt -pthread -lmpi_cxx -lmpi

cl-mem 2017-01-13

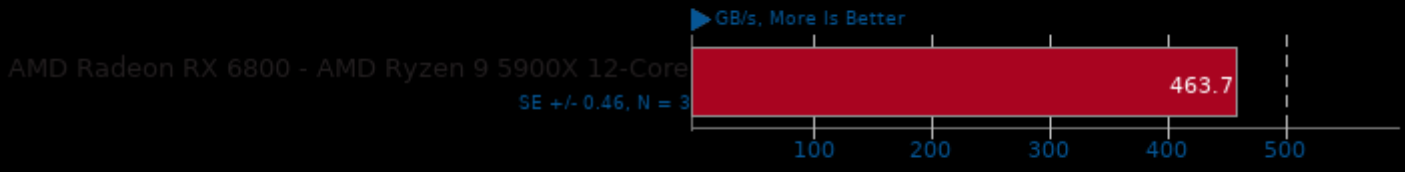
Benchmark: Copy



1. (CC) gcc options: -O2 -flto -lOpenCL

cl-mem 2017-01-13

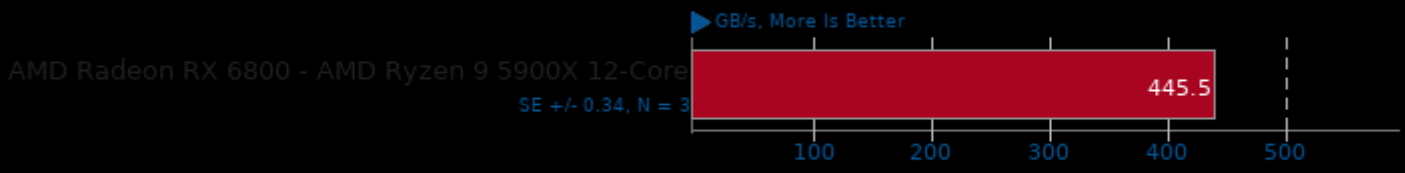
Benchmark: Read



1. (CC) gcc options: -O2 -flto -lOpenCL

cl-mem 2017-01-13

Benchmark: Write

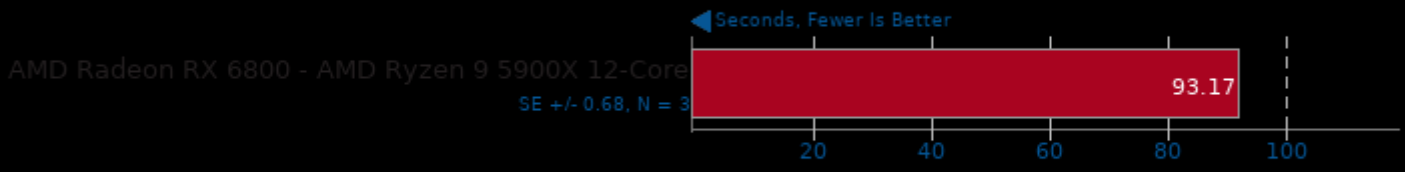


1. (CC) gcc options: -O2 -flto -lOpenCL

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Rodinia 3.1

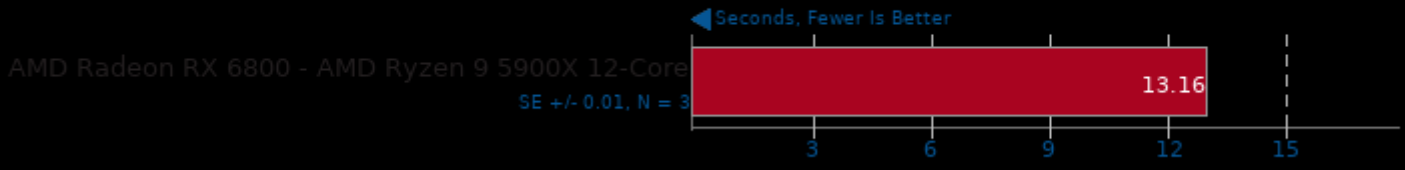
Test: OpenCL Myocyte



1. (CXX) g++ options: -O2 -lOpenCL

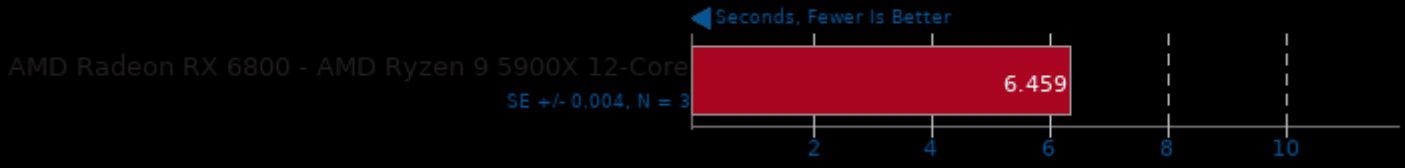
Darktable 3.0.1

Test: Boat - Acceleration: OpenCL



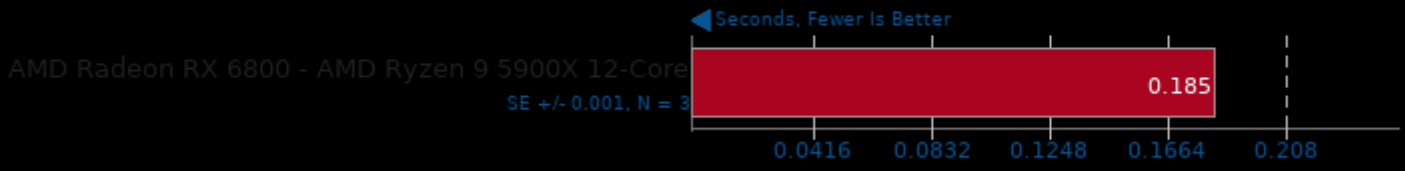
Darktable 3.0.1

Test: Masskrug - Acceleration: OpenCL



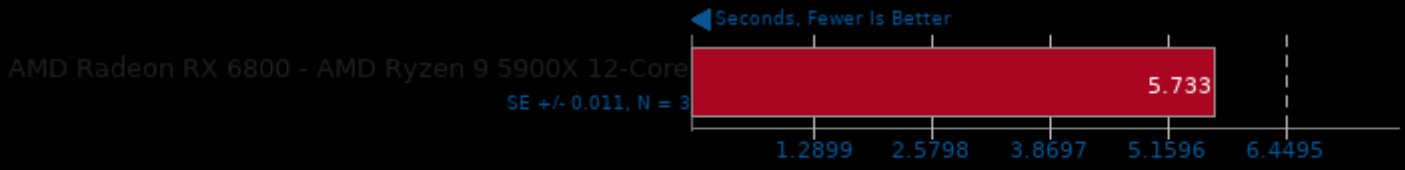
Darktable 3.0.1

Test: Server Rack - Acceleration: OpenCL



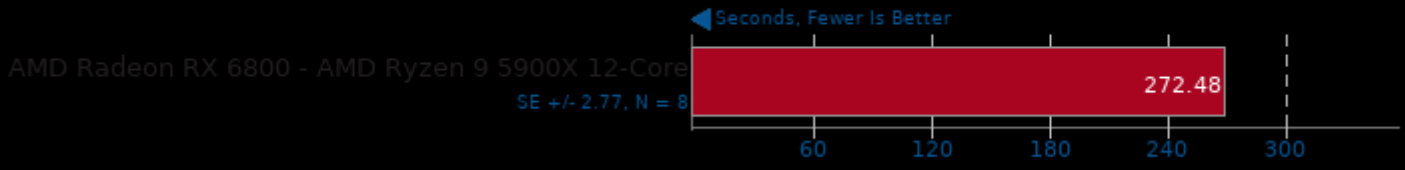
Darktable 3.0.1

Test: Server Room - Acceleration: OpenCL



Blender 2.90

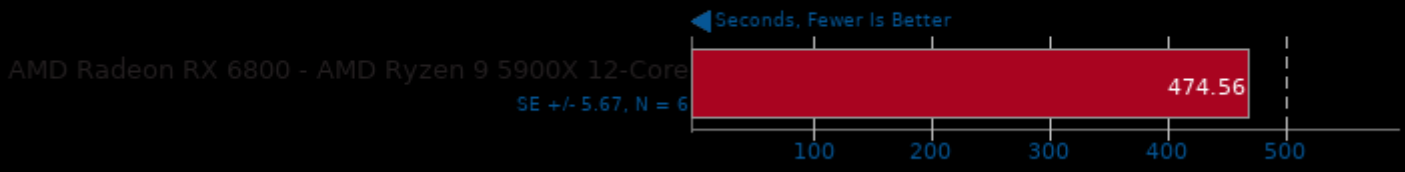
Blend File: BMW27 - Compute: OpenCL



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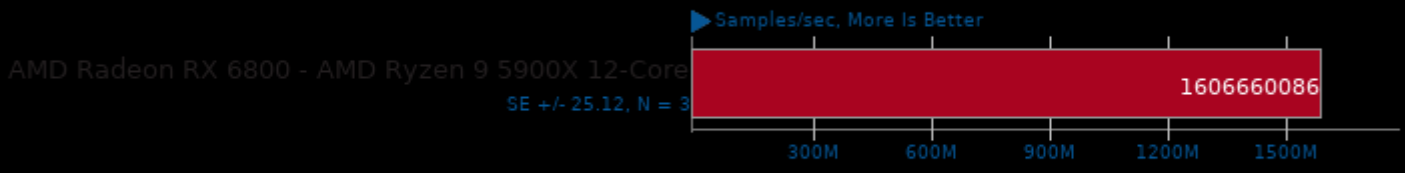
Blender 2.90

Blend File: Barbershop - Compute: OpenCL



SmallPT GPU 1.6pts1

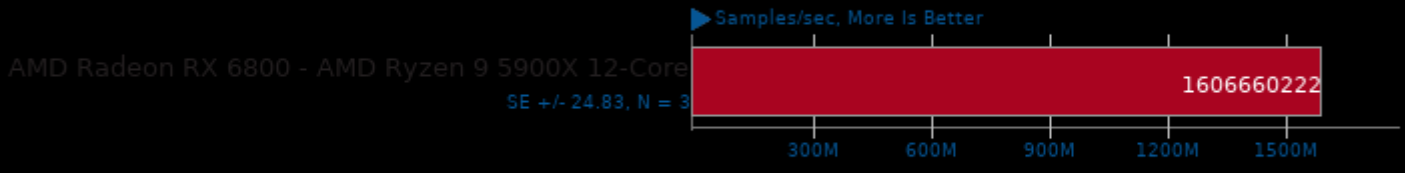
OpenCL Device: GPU - Resolution: 1920 x 1080 - Scene: Caustic



1. (CC) gcc options: -O3 -lm -ftree-vectorize -funroll-loops -lglut -lOpenCL -lGL

SmallPT GPU 1.6pts1

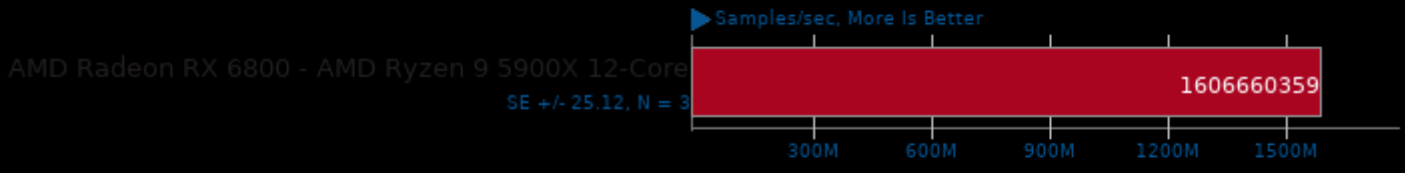
OpenCL Device: GPU - Resolution: 1920 x 1080 - Scene: Cornell



1. (CC) gcc options: -O3 -lm -ftree-vectorize -funroll-loops -lglut -lOpenCL -lGL

SmallPT GPU 1.6pts1

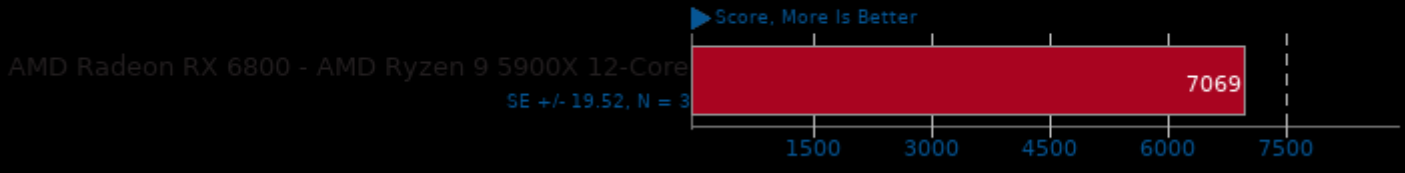
OpenCL Device: GPU - Resolution: 1920 x 1080 - Scene: Caustic3



1. (CC) gcc options: -O3 -lm -ftree-vectorize -funroll-loops -lglut -lOpenCL -lGL

LuxMark 3.1

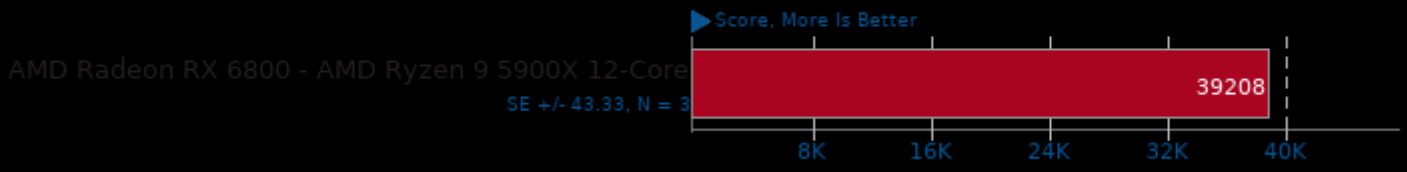
OpenCL Device: GPU - Scene: Hotel



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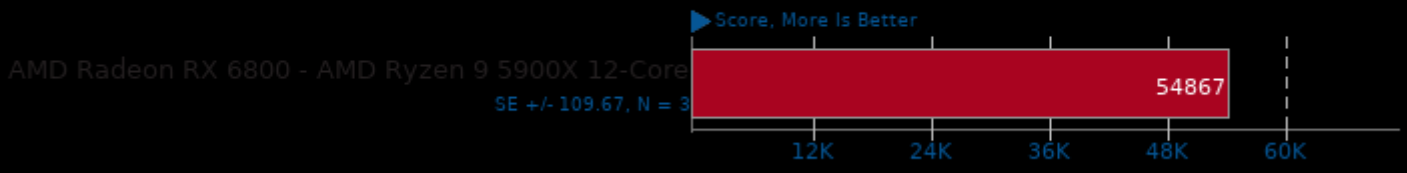
LuxMark 3.1

OpenCL Device: GPU - Scene: Microphone



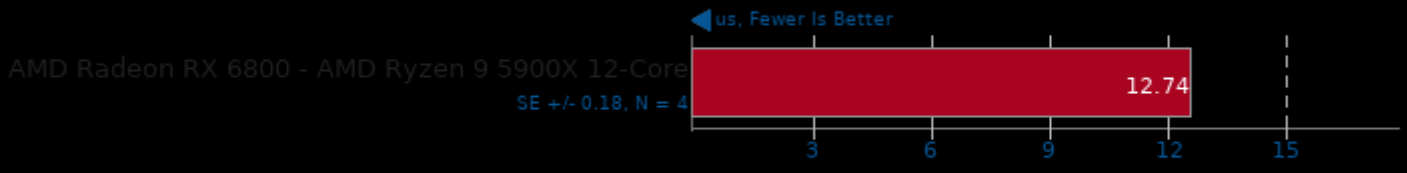
LuxMark 3.1

OpenCL Device: GPU - Scene: Luxball HDR



clpeak

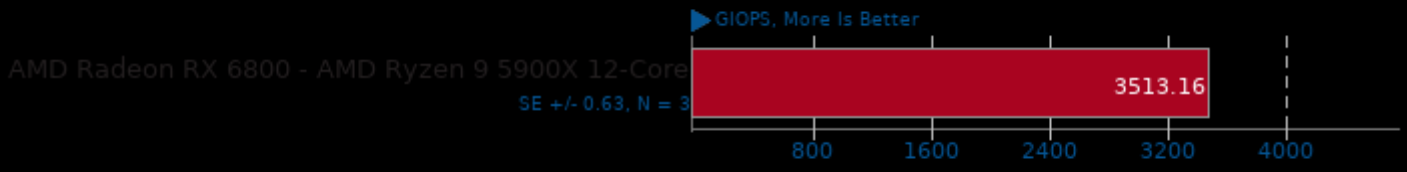
OpenCL Test: Kernel Latency



1: (CXX) g++ options: -O3 -rdynamic -lOpenCL

clpeak

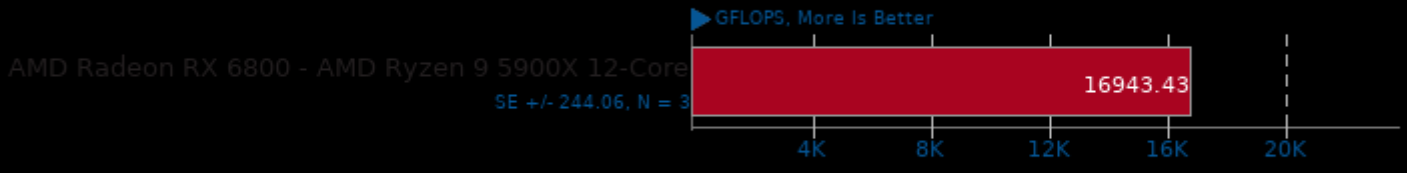
OpenCL Test: Integer Compute INT



1: (CXX) g++ options: -O3 -rdynamic -lOpenCL

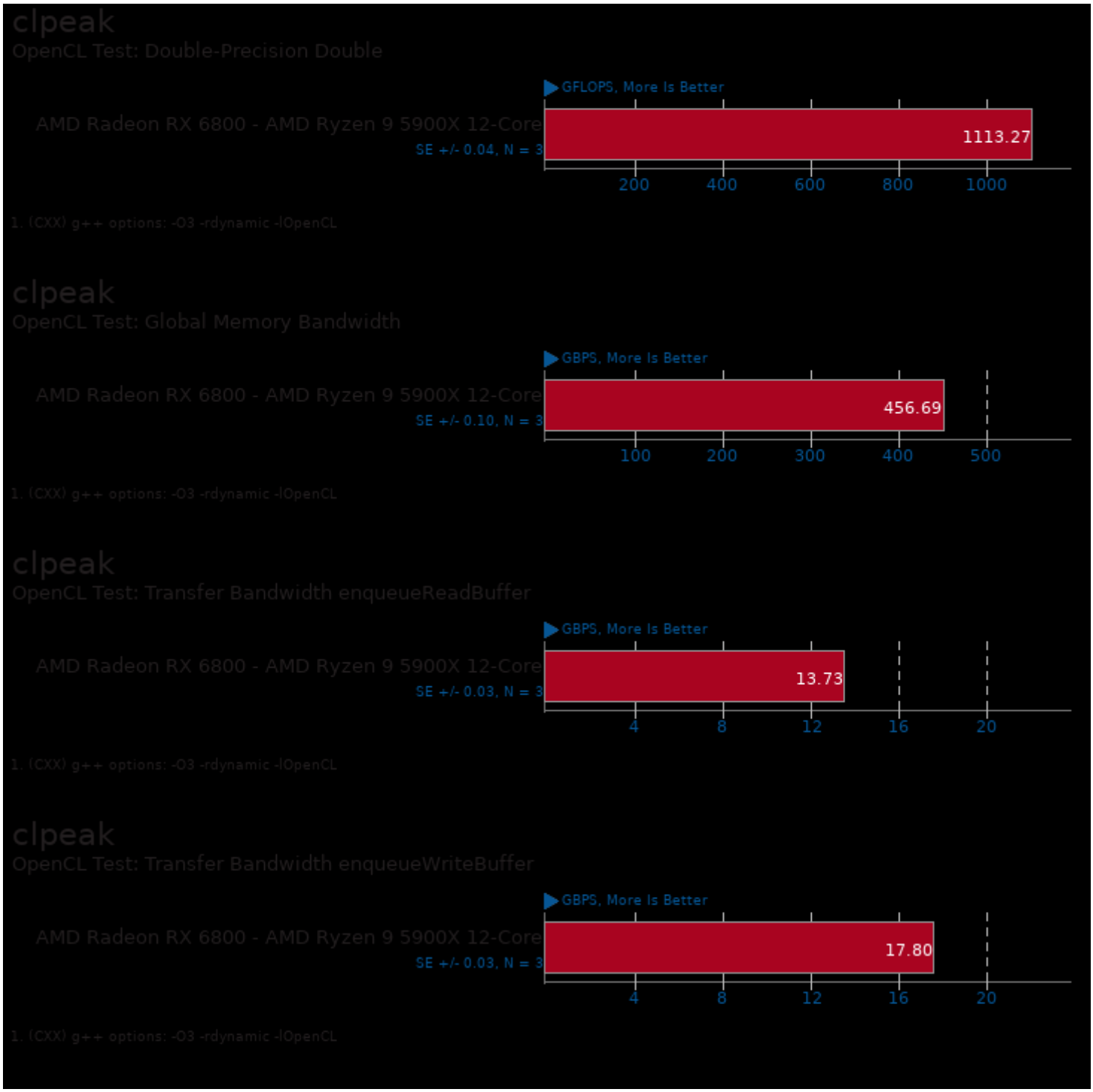
clpeak

OpenCL Test: Single-Precision Float



1: (CXX) g++ options: -O3 -rdynamic -lOpenCL

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