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AMD Ryzen 7 5800U testing with a HP 8886 (T80 Ver. 01.02.02 BIOS) and AMD Cezanne 512MB on Ubuntu 21.10 via the Phoronix Test Suite. Dual-Channel

Automated Executive Summary

AMD Cezanne - AMD Ryzen 7 5800U dual-channel had the most wins, coming in first place for 95% of the tests.

Based on the geometric mean of all complete results, the fastest (AMD Cezanne - AMD Ryzen 7 5800U dual-channel) was 1.2x the speed of the slowest (AMD Cezanne - AMD Ryzen 7 5800U).

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

Sysbench (Test: Memory) at 4.434x
ParaView (Test: Wavelet Contour - Resolution: 1920 x 1080) at 1.647x
ParaView (Test: Wavelet Contour - Resolution: 1920 x 1080) at 1.647x
x265 (Video Input: Bosphorus 1080p) at 1.169x
ParaView (Test: Wavelet Volume - Resolution: 1920 x 1080) at 1.157x
ParaView (Test: Wavelet Volume - Resolution: 1920 x 1080) at 1.157x
ParaView (Test: Many Spheres - Resolution: 1920 x 1080) at 1.15x
ParaView (Test: Many Spheres - Resolution: 1920 x 1080) at 1.15x
Rodinia (Test: OpenMP CFD Solver) at 1.126x

x265 (Video Input: Bosphorus 4K) at 1.112x.

Test Systems:

AMD Cezanne - AMD Ryzen 7 5800U

Processor: AMD Ryzen 7 5800U @ 1.90GHz (8 Cores / 16 Threads), Motherboard: HP 8886 (T80 Ver. 01.02.02 BIOS), Chipset: AMD Renoir Root Complex, Memory: 16GB, Disk: 2000GB CT2000P5SSD8, Graphics: AMD Cezanne 512MB (2000/400MHz), Audio: AMD Device 1637, Network: Realtek RTL8822CE 802.11ac PCIe

OS: Ubuntu 21.10, Kernel: 5.14.0-051400rc5-generic (x86_64) 20210808, Desktop: GNOME Shell 40.2, Display Server: X Server + Wayland, OpenGL: 4.6 Mesa 21.1.4 (LLVM 12.0.1), Vulkan: 1.2.168, Compiler: GCC 11.2.0, 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-bootstrap --enable-cet --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-link-serialization=2 --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-11-M6DaQn/gcc-11-11.2.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-11-M6DaQn/gcc-11-11.2.0/debian/tmp-gcn/usr --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-build-config=bootstrap-lto-lean --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 performance (Boost: Enabled) - CPU Microcode: 0xa50000c
Python Notes: Python 3.9.6
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 Cezanne - AMD Ryzen 7 5800U dual-channel

Processor: AMD Ryzen 7 5800U @ 1.90GHz (8 Cores / 16 Threads), Motherboard: HP 8886 (T80 Ver. 01.02.02 BIOS), Chipset: AMD Renoir Root Complex, Memory: 32GB, Disk: 2000GB CT2000P5SSD8, Graphics: AMD Cezanne 512MB (2000/400MHz), Audio: AMD Device 1637, Network: Realtek RTL8822CE 802.11ac PCIe

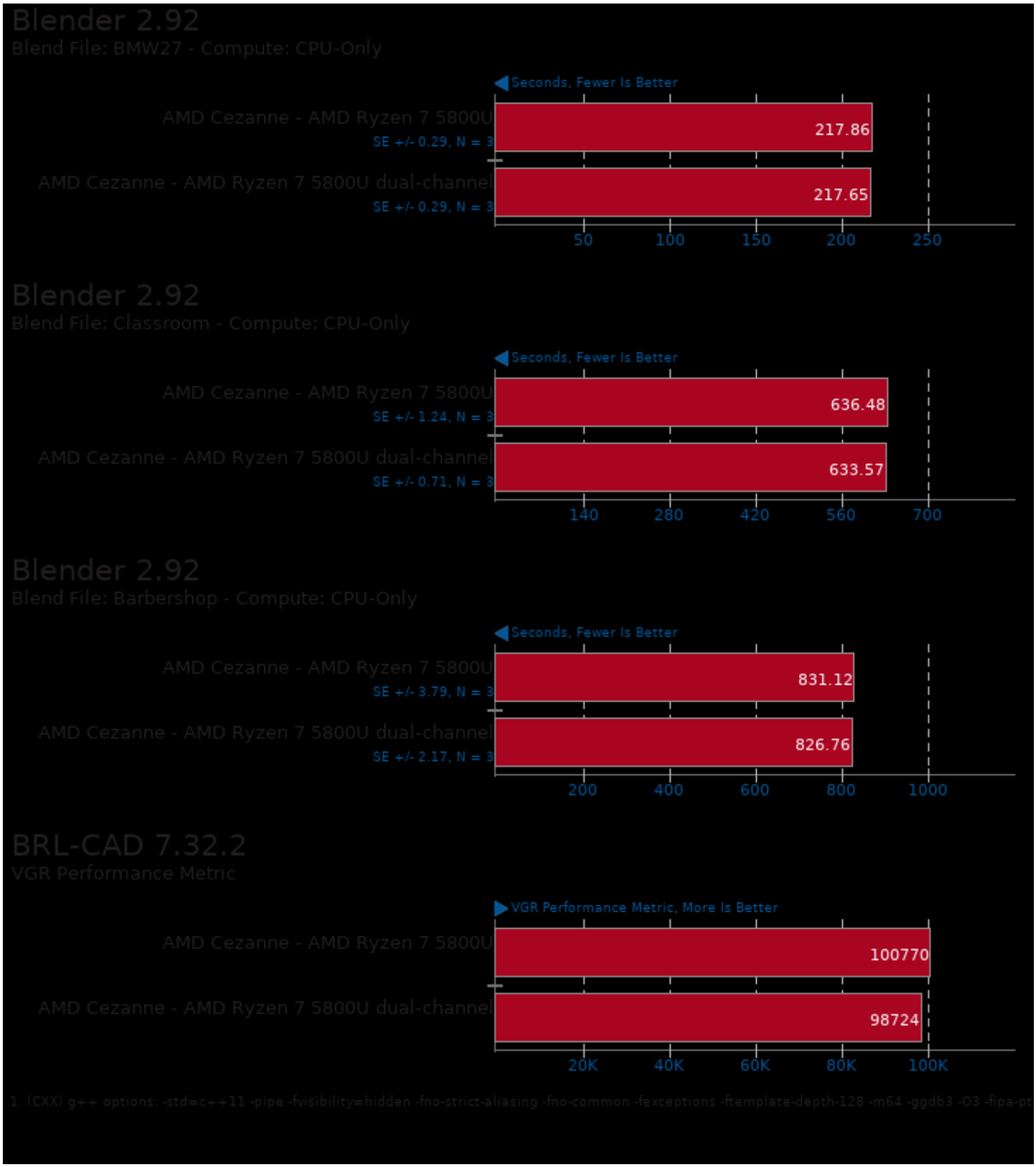
OS: Ubuntu 21.10, Kernel: 5.13.0-14-generic (x86_64), Desktop: GNOME Shell 40.2, Display Server: X Server + Wayland, OpenGL: 4.6 Mesa 21.1.4 (LLVM 12.0.1), Vulkan: 1.2.168, Compiler: GCC 11.2.0, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --enable-cet --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-link-serialization=2 --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-11-M6DaQn/gcc-11-11.2.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-11-M6DaQn/gcc-11-11.2.0/debian/tmp-gcn/usr --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-build-config=bootstrap-lto-lean --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 performance (Boost: Enabled) - CPU Microcode: 0xa50000c
Python Notes: Python 2.7.18 + Python 3.9.6
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

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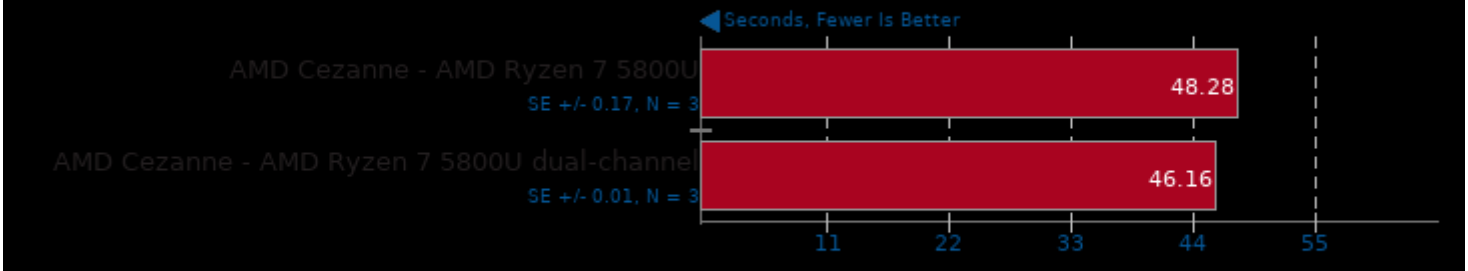
	AMD Cezanne - AMD Ryzen 7 5800U	AMD Cezanne - AMD Ryzen 7 5800U dual-channel
Blender - BMW27 - CPU-Only (sec)	217.86	217.65
Normalized	99.9%	100%
Standard Deviation	0.2%	0.2%
Blender - Classroom - CPU-Only (sec)	636.48	633.57
Normalized	99.54%	100%
Standard Deviation	0.3%	0.2%
Blender - Barbershop - CPU-Only (sec)	831.12	826.76
Normalized	99.48%	100%
Standard Deviation	0.8%	0.5%
BRL-CAD - V.P.M (VGR Performance Metric)	100770	98724
Normalized	100%	97.97%
Git - T.T.C.C.G.C (sec)	48.279	46.162
Normalized	95.62%	100%
Standard Deviation	0.6%	0%
Himeno Benchmark - P.P.S (MFLOPS)	4196	4439
Normalized	94.51%	100%
Standard Deviation	6.8%	4.9%
ParaView - Many Spheres - 1920 x 1080 (Frames / Sec)	7.61	8.75
Normalized	86.97%	100%
Standard Deviation	2.3%	0.5%
ParaView - Many Spheres - 1920 x 1080 (MiPolys /	762.812	877.457
Normalized	86.93%	100%
Standard Deviation	2.3%	0.4%
ParaView - Wavelet Volume - 1920 x 1080 (Frames /	76.89	89.00
Normalized	86.39%	100%
Standard Deviation	0.8%	0.6%
ParaView - Wavelet Volume - 1920 x 1080 (MiVoxels / Sec)	1230	1424
Normalized	86.4%	100%
Standard Deviation	0.8%	0.6%
ParaView - Wavelet Contour - 1920 x 1080 (Frames / Sec)	41.27	67.97
Normalized	60.72%	100%
Standard Deviation	0.2%	0.4%
ParaView - Wavelet Contour - 1920 x 1080 (MiPolys / Sec)	430.083	708.374
Normalized	60.71%	100%
Standard Deviation	0.1%	0.4%
Parboil - OpenMP CUTCP (sec)	2.232203	2.154727
Normalized	96.53%	100%
Standard Deviation	1.6%	0.2%
Rodinia - OpenMP LavaMD (sec)	290.875	290.869
Normalized	100%	100%
Standard Deviation	0.3%	0.3%
Rodinia - OpenMP CFD Solver (sec)	29.006	25.770
Normalized	88.84%	100%
Standard Deviation	1.8%	0.4%
Swet - Average (Operations/sec)	925966839	985342427
Normalized	93.97%	100%
Standard Deviation	0.2%	1.6%
Sysbench - Memory (MiB/sec)	4260	18886

Normalized	22.56%	100%
Standard Deviation	0.6%	4.3%
Sysbench - CPU (Events/sec)	**35526**	**36329**
Normalized	97.79%	100%
Standard Deviation	0.4%	0%
x265 - Bosphorus 4K (FPS)	**8.38**	**9.32**
Normalized	89.91%	100%
Standard Deviation	2.2%	2.5%
x265 - Bosphorus 1080p (FPS)	**36.36**	**42.49**
Normalized	85.57%	100%
Standard Deviation	2.1%	1.8%


Blender 2.92
Blend File: BMW27 - Compute: CPU-Only
Seconds, Fewer Is Better
AMD Cezanne - AMD Ryzen 7 5800U
SE +/- 0.29, N = 3
217.86
AMD Cezanne - AMD Ryzen 7 5800U dual-channel
SE +/- 0.29, N = 3
217.65
50
100
150
200
250
Blender 2.92
Blend File: Classroom - Compute: CPU-Only
Seconds, Fewer Is Better
AMD Cezanne - AMD Ryzen 7 5800U
SE +/- 1.24, N = 3
636.48
AMD Cezanne - AMD Ryzen 7 5800U dual-channel
SE +/- 0.71, N = 3
633.57
140
280
420
560
700
Blender 2.92
Blend File: Barbershop - Compute: CPU-Only
Seconds, Fewer Is Better
AMD Cezanne - AMD Ryzen 7 5800U
SE +/- 3.79, N = 3
831.12
AMD Cezanne - AMD Ryzen 7 5800U dual-channel
SE +/- 2.17, N = 3
826.76
200
400
600
800
1000
BRL-CAD 7.32.2
VGR Performance Metric
VGR Performance Metric, More Is Better
AMD Cezanne - AMD Ryzen 7 5800U
100770
AMD Cezanne - AMD Ryzen 7 5800U dual-channel
98724
20K
40K
60K
80K
100K
1. (CXX) g++ options: -std=c++11 -pipe -fvisibility=hidden -fno-strict-aliasing -fno-common -fexceptions -ftemplate-depth-128 -m64 -ggdb3 -O3 -fipa-pt

Git

Time To Complete Common Git Commands



1. git version 2.32.0

Himeno Benchmark 3.0

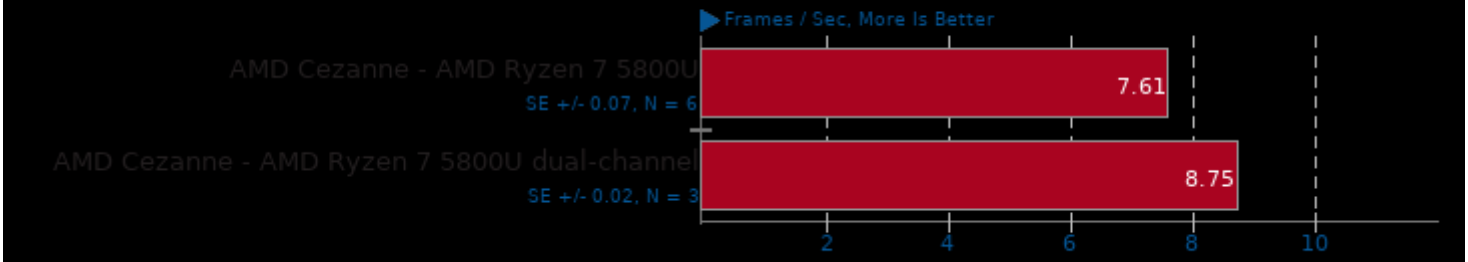
Poisson Pressure Solver



1. (CC) gcc options: -O3 -mavx2

ParaView 5.9

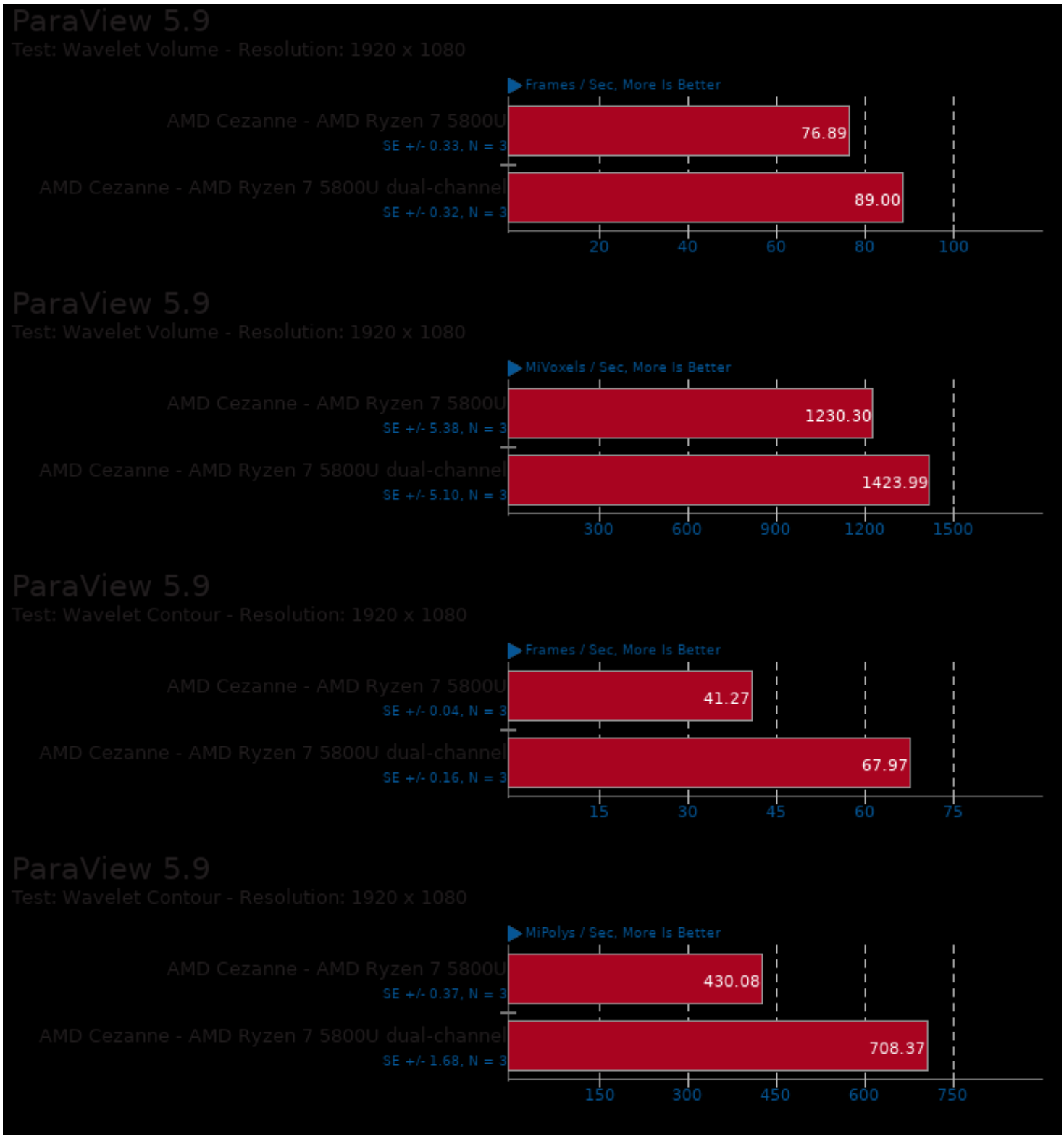
Test: Many Spheres - Resolution: 1920 x 1080



ParaView 5.9

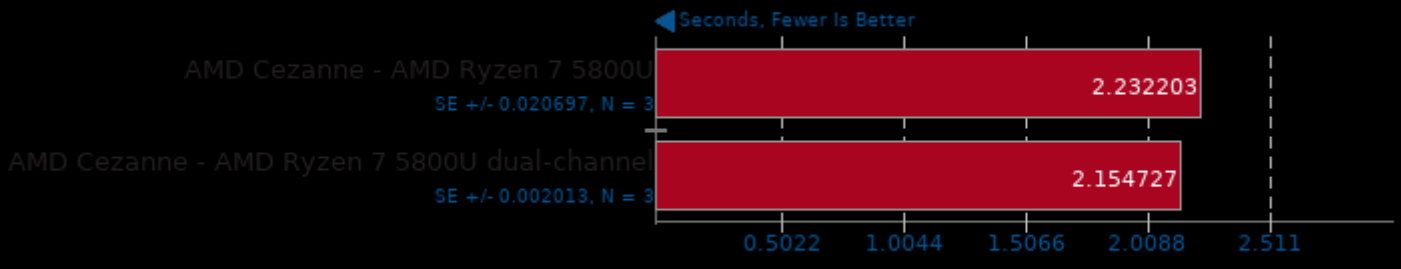
Test: Many Spheres - Resolution: 1920 x 1080




ParaView 5.9
Test: Wavelet Volume - Resolution: 1920 x 1080
Frames / Sec, More Is Better
AMD Cezanne - AMD Ryzen 7 5800U
SE +/- 0.33, N = 3
76.89
AMD Cezanne - AMD Ryzen 7 5800U dual-channel
SE +/- 0.32, N = 3
89.00
20
40
60
80
100
ParaView 5.9
Test: Wavelet Volume - Resolution: 1920 x 1080
MiVoxels / Sec, More Is Better
AMD Cezanne - AMD Ryzen 7 5800U
SE +/- 5.38, N = 3
1230.30
AMD Cezanne - AMD Ryzen 7 5800U dual-channel
SE +/- 5.10, N = 3
1423.99
300
600
900
1200
1500
ParaView 5.9
Test: Wavelet Contour - Resolution: 1920 x 1080
Frames / Sec, More Is Better
AMD Cezanne - AMD Ryzen 7 5800U
SE +/- 0.04, N = 3
41.27
AMD Cezanne - AMD Ryzen 7 5800U dual-channel
SE +/- 0.16, N = 3
67.97
15
30
45
60
75
ParaView 5.9
Test: Wavelet Contour - Resolution: 1920 x 1080
MiPolys / Sec, More Is Better
AMD Cezanne - AMD Ryzen 7 5800U
SE +/- 0.37, N = 3
430.08
AMD Cezanne - AMD Ryzen 7 5800U dual-channel
SE +/- 1.68, N = 3
708.37
150
300
450
600
750

Parboil 2.5

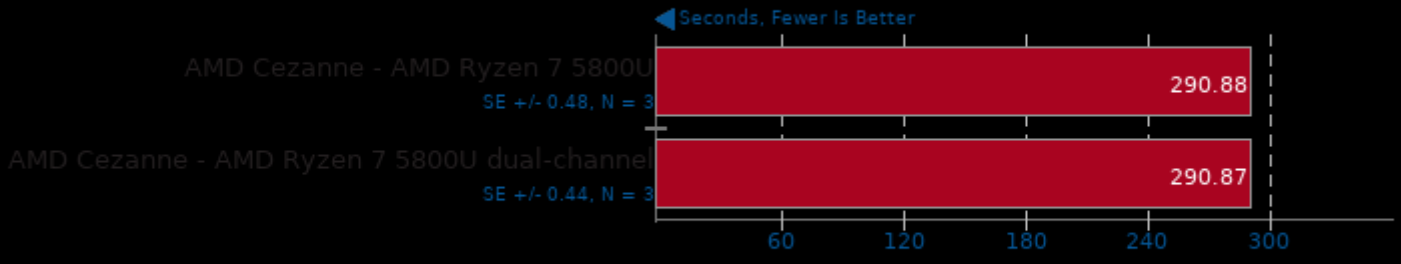
Test: OpenMP CUTCP



1. (CXX) g++ options: -lm -lpthread -lgomp -O3 -ffast-math -fopenmp

Rodinia 3.1

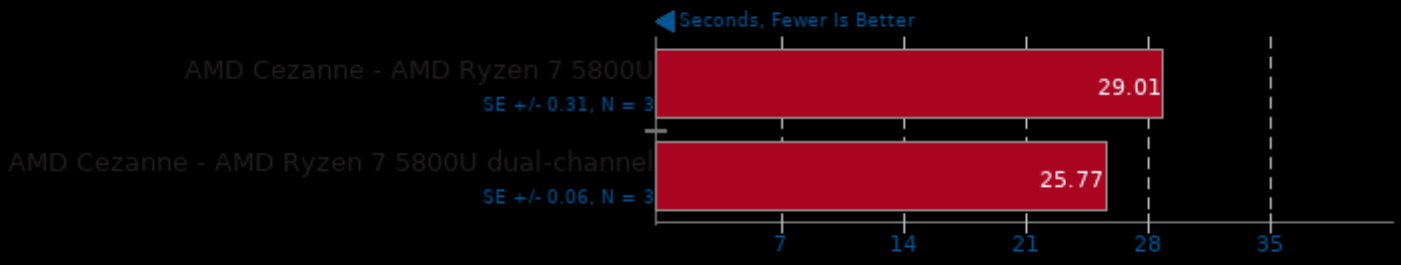
Test: OpenMP LavaMD



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

Rodinia 3.1

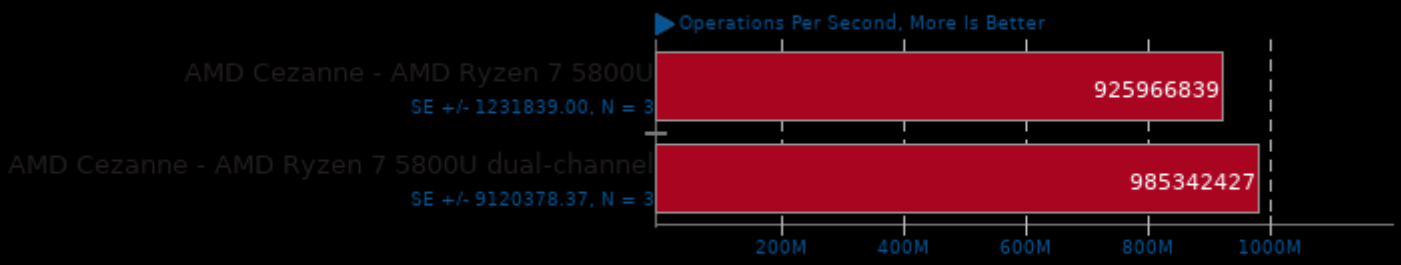
Test: OpenMP CFD Solver



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

Swet 1.5.16

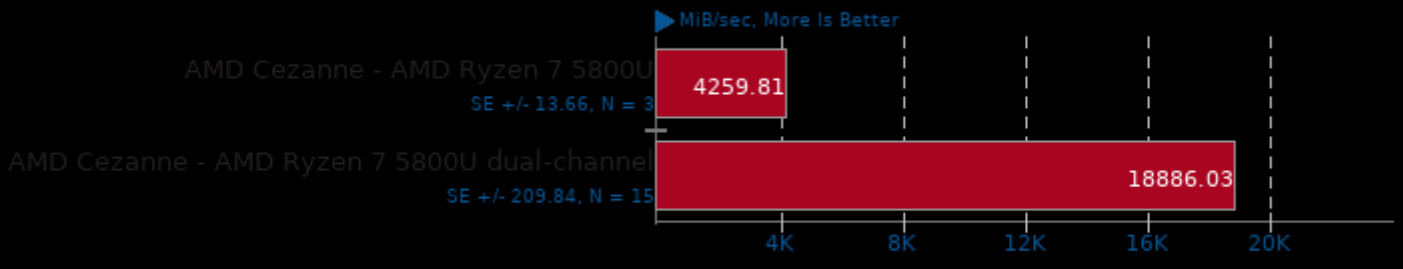
Average



1. (CC) gcc options: -lm -lpthread -lcurses -lrt

Sysbench 1.0.20

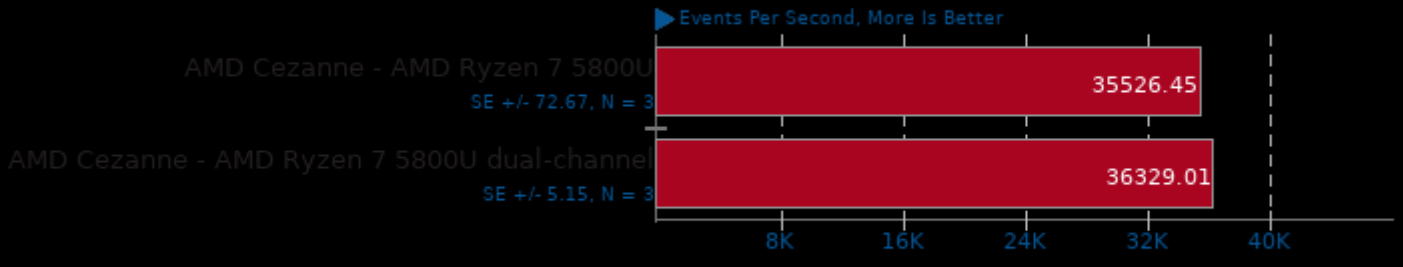
Test: Memory



1. (CC) gcc options: -pthread -O2 -funroll-loops -rdynamic -ldl -laio -lm

Sysbench 1.0.20

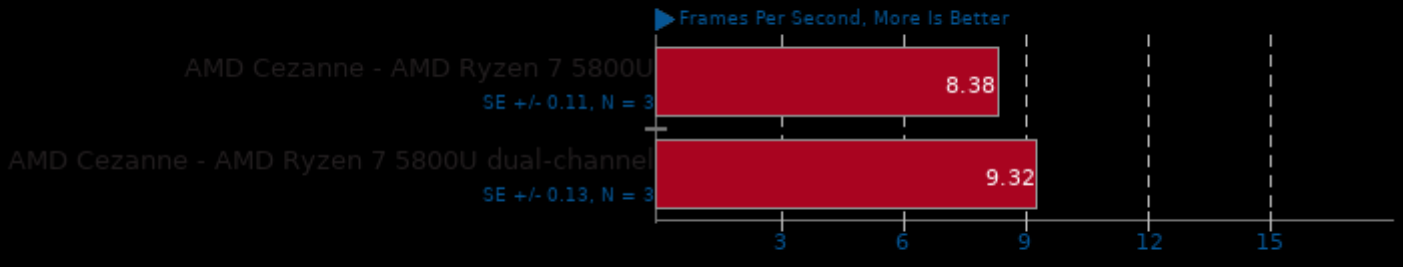
Test: CPU



1. (CC) gcc options: -pthread -O2 -funroll-loops -rdynamic -ldl -laio -lm

x265 3.4

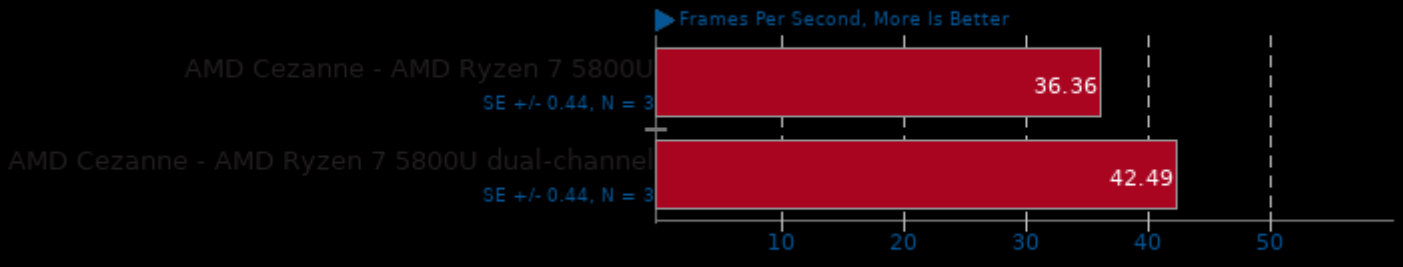
Video Input: Bosphorus 4K



1. (CXX) g++ options: -O3 -rdynamic -lpthread -lrt -ldl -lnuma

x265 3.4

Video Input: Bosphorus 1080p



1. (CXX) g++ options: -O3 -rdynamic -lpthread -lrt -ldl -lnuma

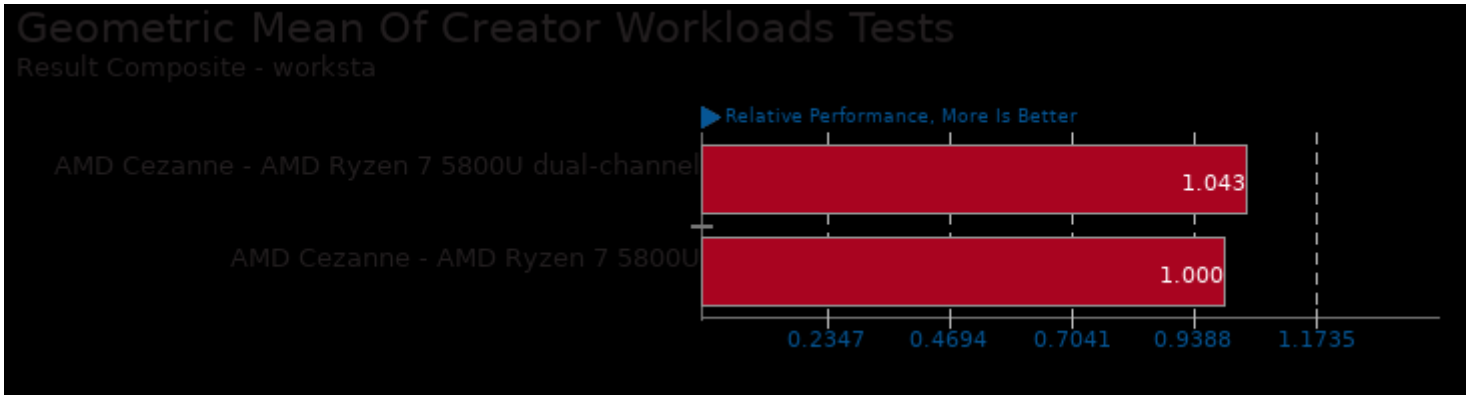
These geometric means are based upon test groupings / test suites for this result file.



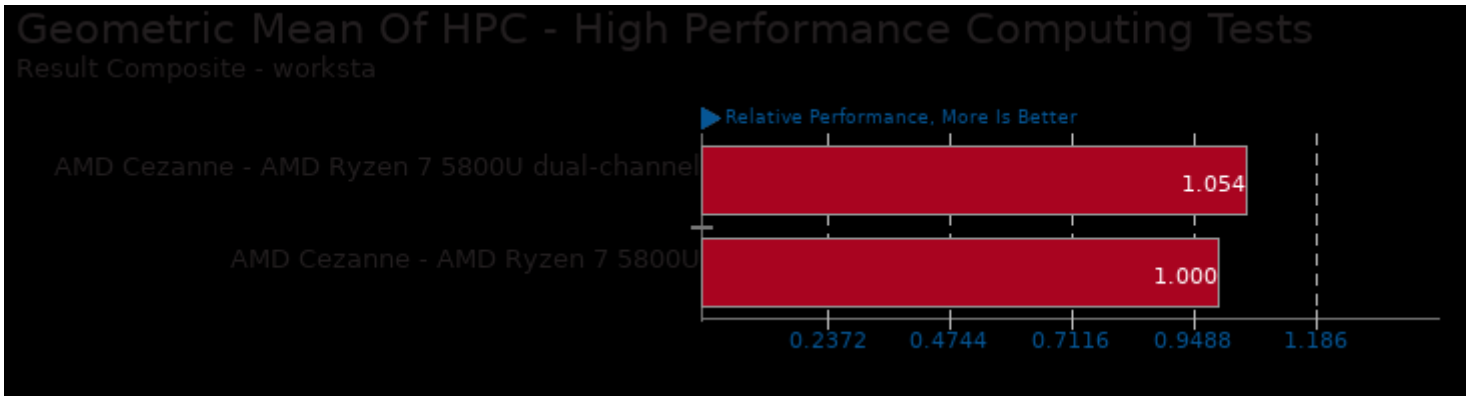
Geometric mean based upon tests: pts/himeno and pts/x265



Geometric mean based upon tests: pts/brl-cad, pts/x265, pts/himeno, pts/parboil, pts/rodinia, pts/swet, pts/sysbench and pts/blender



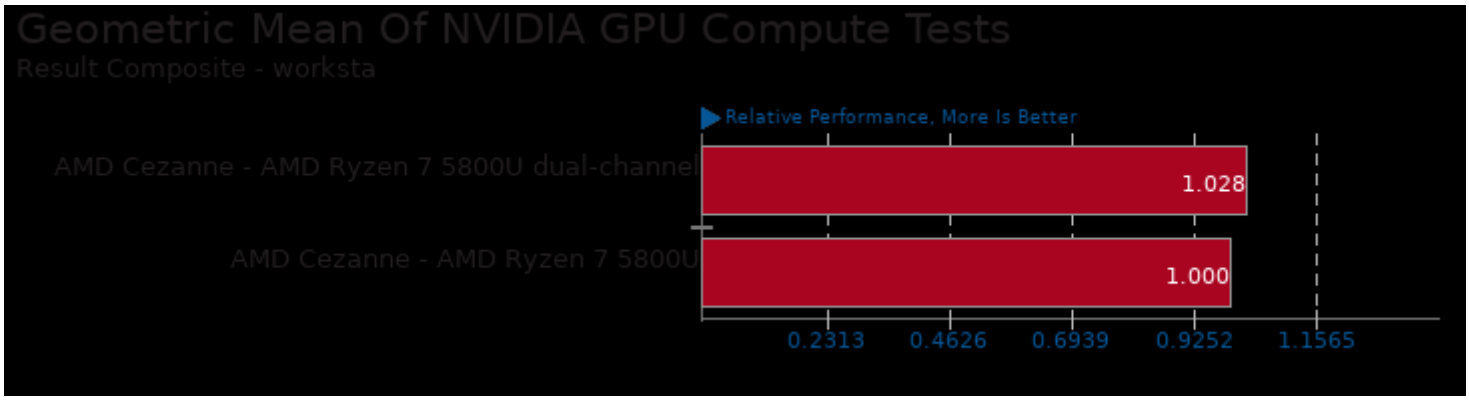
Geometric mean based upon tests: pts/blender, pts/x265 and pts/brl-cad



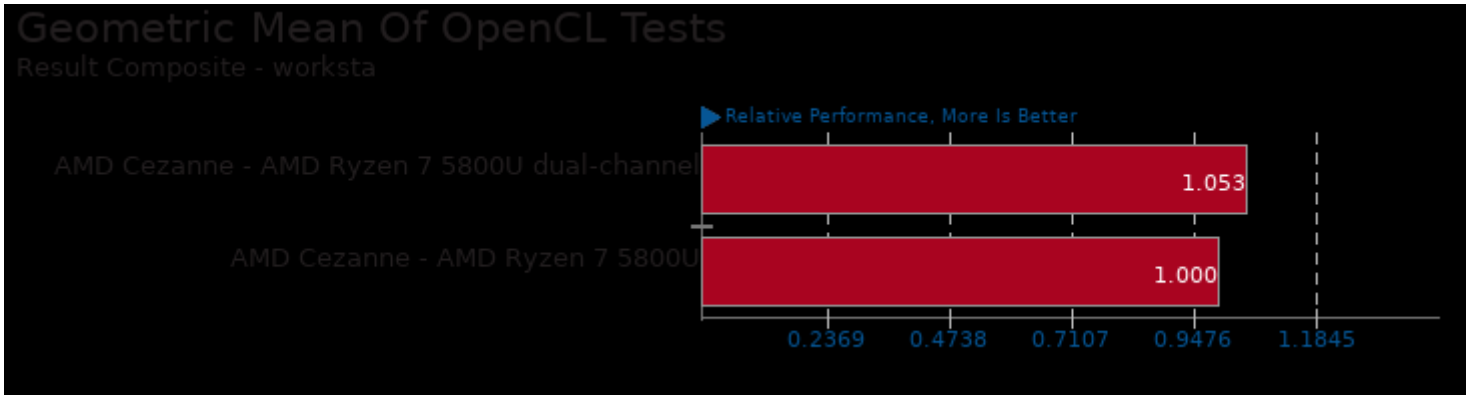
Geometric mean based upon tests: pts/rodinia, pts/parboil and pts/himeno



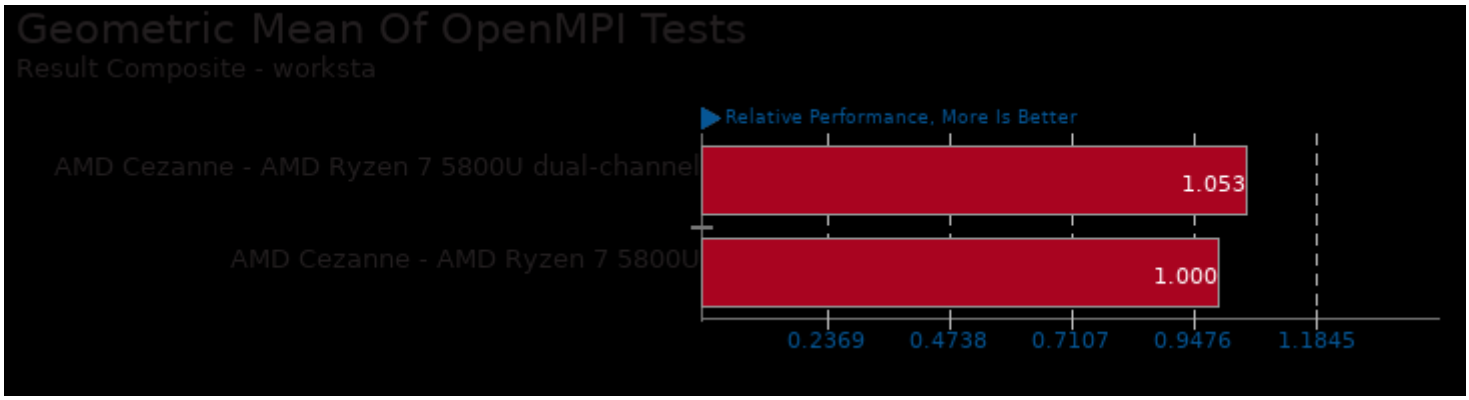
Geometric mean based upon tests: pts/blender, pts/sysbench, pts/x265, pts/rodinia, pts/parboil and pts/swet



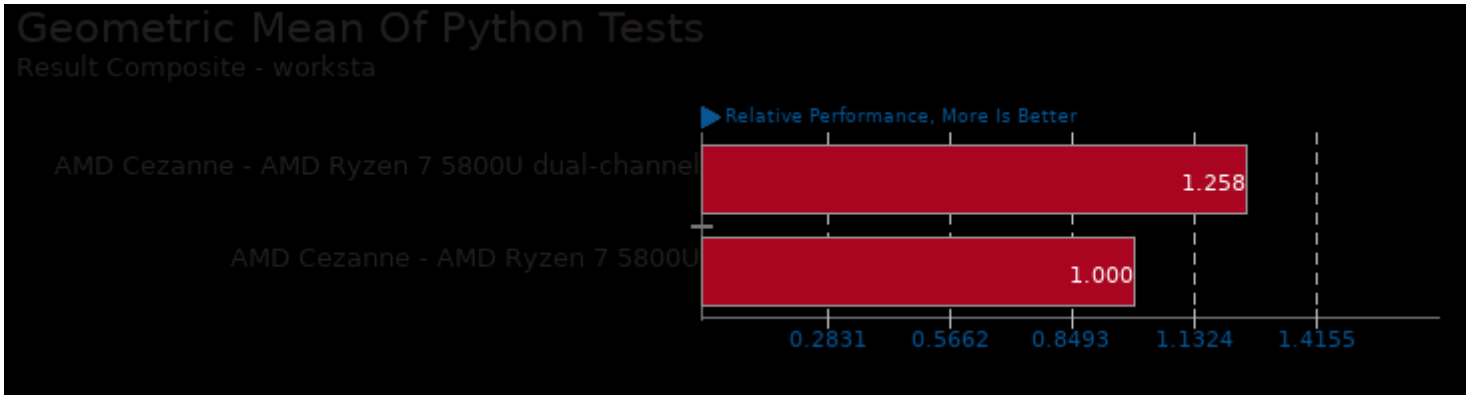
Geometric mean based upon tests: pts/rodinia and pts/blender



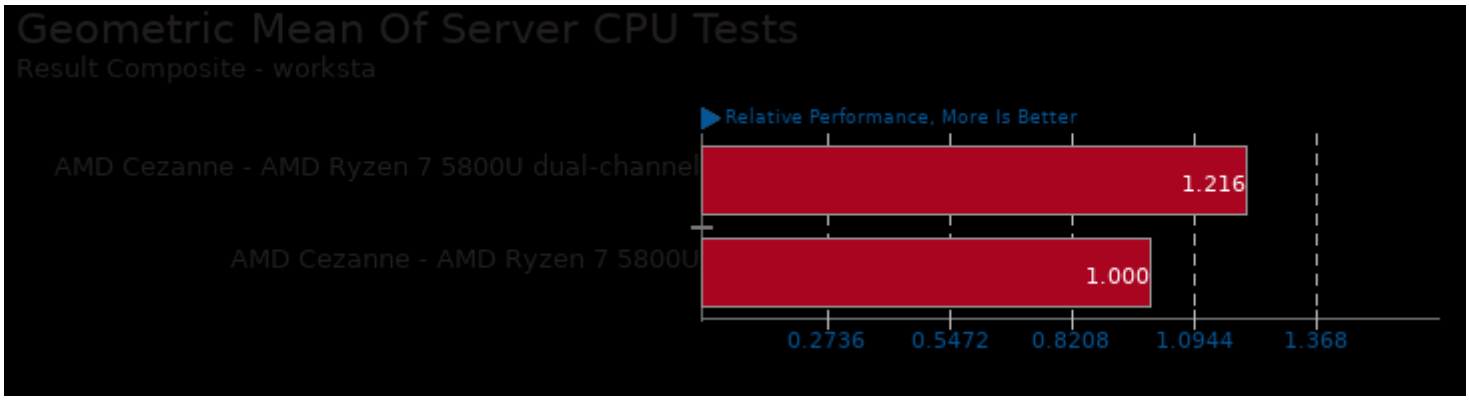
Geometric mean based upon tests: pts/rodinia and pts/parboil



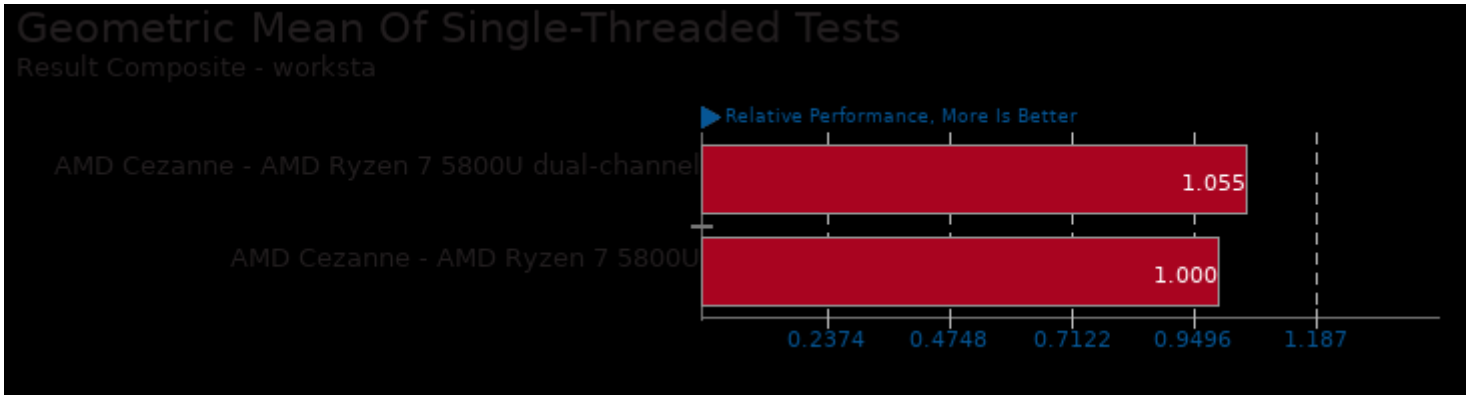
Geometric mean based upon tests: pts/parboil and pts/rodinia



Geometric mean based upon tests: pts/paraview and pts/parboil



Geometric mean based upon tests: pts/rodinia, pts/x265, pts/himeno, pts/sysbench and pts/blender



Geometric mean based upon tests: pts/swet and pts/git



Geometric mean based upon tests: pts/blender, pts/rodinia, pts/parboil, pts/himeno, pts/brl-cad, pts/x265, pts/paraview, pts/swet, pts/sysbench and pts/git

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 16:20.