



amd-ryzen-9-5900x

AMD Ryzen 9 5900X 12-Core testing with a ASUS PRIME B350M-A (6203 BIOS) and Sapphire AMD Radeon RX 6700 XT 12GB on Fedora 39 via the Phoronix Test Suite.

Test Systems:

AMD Ryzen 9 5900X 12-Core

Processor: AMD Ryzen 9 5900X 12-Core @ 3.70GHz (12 Cores / 24 Threads), Motherboard: ASUS PRIME B350M-A (6203 BIOS), Chipset: AMD Starship/Matisse, Memory: 32GB, Disk: Samsung SSD 960 EVO 500GB + 2000GB Samsung SSD 860 + 2000GB Samsung SSD 870, Graphics: Sapphire AMD Radeon RX 6700 XT 12GB, Audio: AMD Navi 21/23, Network: Realtek RTL8111/8168/8211/8411

OS: Fedora 39, Kernel: 6.8.11-200.fc39.x86_64 (x86_64), Desktop: GNOME Shell 45.7, Display Server: X Server 1.19.6 + Wayland, OpenGL: 4.6 Mesa 23.3.6 (LLVM 17.0.6 DRM 3.57), OpenCL: OpenCL 3.0 + OpenCL 2.1 AMD-APP (3590.0) + OpenCL 1.2 LINUX + OpenCL 1.1 Mesa 23.3.6 + OpenCL 3.0 PoCL 4.0 Linux RELOC SPIR LLVM 16.0.6 SLEEF DISTRO POCL_DEBUG, Compiler: Clang 17.0.6 + LLVM 17.0.6, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: amdgpu.runpm=0 - Transparent Huge Pages: madvise
 Environment Notes: MUTTER_DEBUG_FORCE_KMS_MODE=simple
 Compiler Notes: --build=x86_64-redhat-linux --disable-libunwind-exceptions --enable-__cxa_atexit --enable-bootstrap --enable-cet --enable-checking=release --enable-gnu-indirect-function --enable-gnu-unique-object --enable-initfini-array --enable-languages=c,c++,fortran,obj-c++,ada,go,d,m2,lto --enable-libstdcxx-backtrace --enable-link-serialization=1 --enable-multilib --enable-offload-defaulted --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --mandir=/usr/share/man --with-arch_32=i686 --with-build-config=bootstrap-lto --with-gcc-major-version-only --with-libstdcxx-zoneinfo=/usr/share/zoneinfo --with-linker-hash-style=gnu --with-tune=generic --without-cuda-driver
 Processor Notes: Scaling Governor: acpi-cpufreq schedutil (Boost: Enabled) - CPU Microcode: 0xa20120a
 Security Notes: SELinux + gather_data_sampling: Not affected + itlb_multihit: Not affected + I1tf: Not affected + mds: Not affected + meltdown: Not affected + mmio_stale_data: Not affected + reg_file_data_sampling: Not affected + retbleed: Not affected + spec_rstack_overflow: Vulnerable: Safe RET no microcode + spec_store_bypass: Mitigation of SSB disabled via prctl + spectre_v1: Mitigation of usercopy/swaps barriers and __user pointer sanitization + spectre_v2: Mitigation of Retpolines; IBPB: conditional; IBRS_FW; STIBP: always-on; RSB filling; PBRBS-eIBRS: Not affected; BHI: Not affected + srbds: Not affected + tsx_async_abort: Not affected

AMD Ryzen 9 5900X 12-Core PBO Curve -30

Processor: AMD Ryzen 9 5900X 12-Core @ 3.70GHz (12 Cores / 24 Threads), Motherboard: ASUS PRIME B350M-A (6203 BIOS), Chipset: AMD Starship/Matisse, Memory: 32GB, Disk: Samsung SSD 960 EVO 500GB + 2000GB Samsung SSD 860 + 2000GB Samsung SSD 870, Graphics: Sapphire AMD Radeon RX 6700 XT 12GB, Audio: AMD Navi 21/23, Network: Realtek RTL8111/8168/8211/8411

OS: Fedora 39, Kernel: 6.9.5-100.fc39.x86_64 (x86_64), Desktop: GNOME Shell 45.7, Display Server: X Server 1.19.6 + Wayland, OpenGL: 4.6 Mesa 23.3.6 (LLVM 17.0.6 DRM 3.57), OpenCL: OpenCL 3.0 + OpenCL 2.1 AMD-APP (3590.0) + OpenCL 1.2 LINUX + OpenCL 1.1 Mesa 23.3.6 + OpenCL 3.0 PoCL 4.0 Linux RELOC SPIR LLVM 16.0.6 SLEEP DISTRO POCL_DEBUG, Compiler: Clang 17.0.6 + LLVM 17.0.6, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: amdgpu.runpm=0 - Transparent Huge Pages: madvise
 Environment Notes: MUTTER_DEBUG_FORCE_KMS_MODE=simple
 Compiler Notes: --build=x86_64-redhat-linux --disable-libunwind-exceptions --enable-__cxa_atexit --enable-bootstrap --enable-cet --enable-checking=release --enable-gnu-indirect-function --enable-gnu-unique-object --enable-initfini-array --enable-languages=c,c++,fortran,obj-c++,ada,go,d,m2,lto --enable-libstdcxx-backtrace --enable-link-serialization=1 --enable-multilib --enable-offload-defaulted --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --mandir=/usr/share/man --with-arch_32=i686 --with-build-config=bootstrap-lto --with-gcc-major-version-only --with-libstdcxx-zoneinfo=/usr/share/zoneinfo --with-linker-hash-style=gnu --with-tune=generic --without-cuda-driver
 Processor Notes: Scaling Governor: acpi-cpufreq schedutil (Boost: Enabled) - CPU Microcode: 0xa20120a
 Security Notes: SELinux + gather_data_sampling: Not affected + itlb_multihit: Not affected + I1tf: Not affected + mds: Not affected + meltdown: Not affected + mmio_stale_data: Not affected + reg_file_data_sampling: Not affected + retbleed: Not affected + spec_rstack_overflow: Vulnerable: Safe RET no microcode + spec_store_bypass: Mitigation of SSB disabled via prctl + spectre_v1: Mitigation of usercopy/swaps barriers and __user pointer sanitization + spectre_v2: Mitigation of Retpolines; IBPB: conditional; IBRS_FW; STIBP: always-on; RSB filling; PBRBS-eIBRS: Not affected; BHI: Not affected + srbds: Not affected + tsx_async_abort: Not affected

	AMD Ryzen 9 5900X 12-Core	AMD Ryzen 9 5900X 12-Core PBO Curve -30
Sysbench - CPU (Events/sec)		72385
Standard Deviation		0.5%
Cpuminer-Opt - Magi (kH/s)		387.11
Standard Deviation		3.4%
Cpuminer-Opt - x20r (kH/s)		4507
Standard Deviation		1.2%
Cpuminer-Opt - scrypt (kH/s)		185.19
Standard Deviation		1.4%
Cpuminer-Opt - Deepcoin (kH/s)		5988
Standard Deviation		0.7%
Cpuminer-Opt - Ringcoin (kH/s)		2223
Standard Deviation		0.9%
Cpuminer-Opt - Blake-2 S (kH/s)		92633

	Standard Deviation	0.2%
Cpuminer-Opt - Garlicoin (kH/s)		2403
	Standard Deviation	0.5%
Cpuminer-Opt - Skeincoin (kH/s)		24813
	Standard Deviation	1.2%
Cpuminer-Opt - Myriad-Groestl (kH/s)		8268
	Standard Deviation	2.1%
Cpuminer-Opt - LBC, LBRY Credits (kH/s)		9480
	Standard Deviation	0.5%
Cpuminer-Opt - Q.S.2.P (kH/s)		35460
	Standard Deviation	0.6%
Cpuminer-Opt - T.S.2.O (kH/s)		50723
	Standard Deviation	0.3%
RAMspeed SMP - Add - Integer (MB/s)		37563
	Standard Deviation	0.9%
RAMspeed SMP - Copy - Integer (MB/s)		38200
	Standard Deviation	1.2%
RAMspeed SMP - Scale - Integer (MB/s)		39053
	Standard Deviation	0.8%
RAMspeed SMP - Triad - Integer (MB/s)		37883
	Standard Deviation	1.1%
RAMspeed SMP - Average - Integer (MB/s)		38075
	Standard Deviation	0.5%
RAMspeed SMP - Add - Floating Point (MB/s)		38021
	Standard Deviation	0.5%
RAMspeed SMP - Copy - Floating Point (MB/s)		37984
	Standard Deviation	1.2%
RAMspeed SMP - Scale - Floating Point (MB/s)		38503
	Standard Deviation	0.7%
RAMspeed SMP - Triad - Floating Point (MB/s)		37404
	Standard Deviation	0.6%
RAMspeed SMP - Average - Floating Point (MB/s)		37704
	Standard Deviation	0.4%
AIO-Stress - Rand Write (MB/s)		2547
	Standard Deviation	2%
Sysbench - RAM / Memory (MiB/sec)		13959
	Standard Deviation	0.3%
7-Zip Compression - Compression Rating (MIPS)	110620	
	Standard Deviation	0.3%
7-Zip Compression - D.R (MIPS)	112442	
	Standard Deviation	0.6%

Sysbench 1.0.20

Test: CPU

▶ Events Per Second, More Is Better

AMD Ryzen 9 5900X 12-Core PBO Curve -30

SE +/- 204.25, N = 3



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

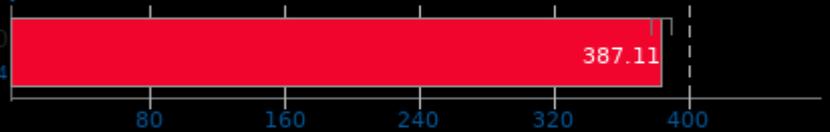
Cpuminer-Opt 24.3

Algorithm: Magi

▶ kH/s, More Is Better

AMD Ryzen 9 5900X 12-Core PBO Curve -30

SE +/- 6.54, N = 4



1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lgmp

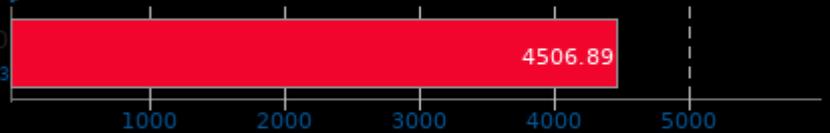
Cpuminer-Opt 24.3

Algorithm: x20r

▶ kH/s, More Is Better

AMD Ryzen 9 5900X 12-Core PBO Curve -30

SE +/- 31.97, N = 3



1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lgmp

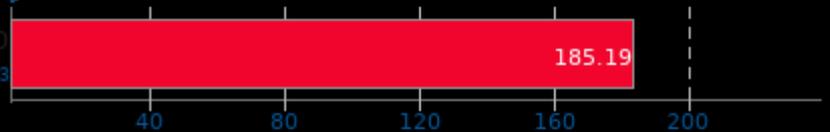
Cpuminer-Opt 24.3

Algorithm: script

▶ kH/s, More Is Better

AMD Ryzen 9 5900X 12-Core PBO Curve -30

SE +/- 1.45, N = 3



1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lgmp

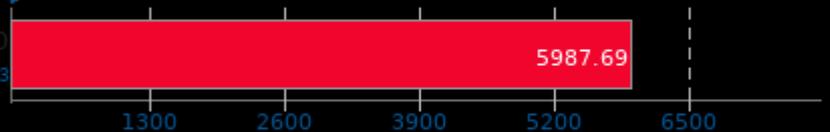
Cpuminer-Opt 24.3

Algorithm: Deepcoin

▶ kH/s, More Is Better

AMD Ryzen 9 5900X 12-Core PBO Curve -30

SE +/- 23.67, N = 3



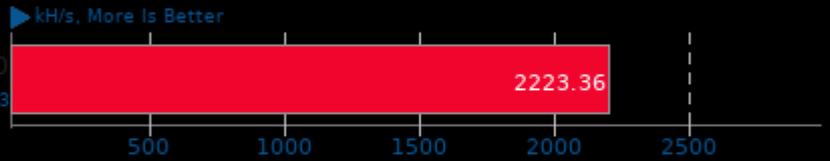
1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lgmp

Cpuminer-Opt 24.3

Algorithm: Ringcoin

AMD Ryzen 9 5900X 12-Core PBO Curve -30

SE +/- 11.48, N = 3



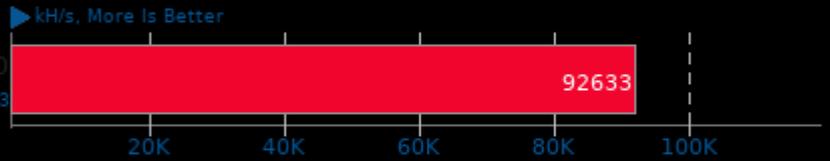
1. (CXX) g++ options: -O2 -lcurl -lz -lthread -lgmp

Cpuminer-Opt 24.3

Algorithm: Blake-2 S

AMD Ryzen 9 5900X 12-Core PBO Curve -30

SE +/- 109.29, N = 3



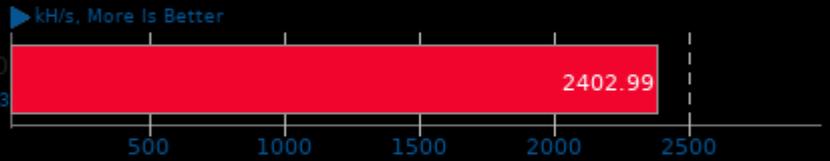
1. (CXX) g++ options: -O2 -lcurl -lz -lthread -lgmp

Cpuminer-Opt 24.3

Algorithm: Garlicoin

AMD Ryzen 9 5900X 12-Core PBO Curve -30

SE +/- 7.13, N = 3



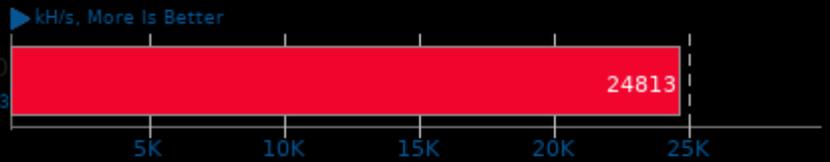
1. (CXX) g++ options: -O2 -lcurl -lz -lthread -lgmp

Cpuminer-Opt 24.3

Algorithm: Skeincoin

AMD Ryzen 9 5900X 12-Core PBO Curve -30

SE +/- 178.54, N = 3



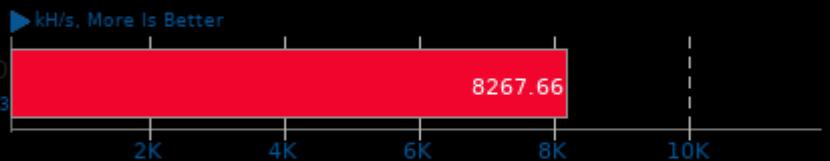
1. (CXX) g++ options: -O2 -lcurl -lz -lthread -lgmp

Cpuminer-Opt 24.3

Algorithm: Myriad-Groestl

AMD Ryzen 9 5900X 12-Core PBO Curve -30

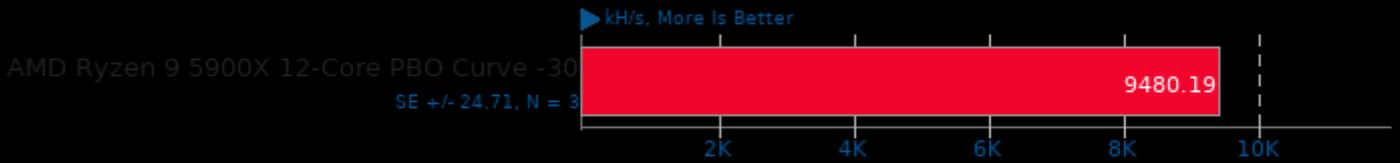
SE +/- 102.34, N = 3



1. (CXX) g++ options: -O2 -lcurl -lz -lthread -lgmp

Cpuminer-Opt 24.3

Algorithm: LBC, LBRY Credits



Cpuminer-Opt 24.3

Algorithm: Quad SHA-256, Pyrite



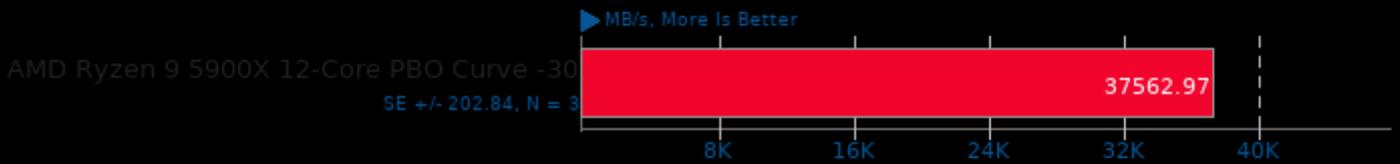
Cpuminer-Opt 24.3

Algorithm: Triple SHA-256, Onecoin



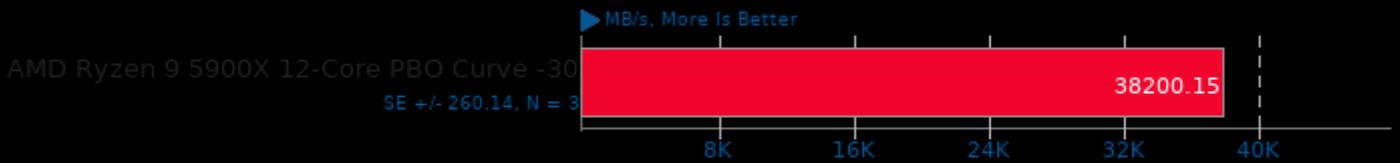
RAMspeed SMP 3.5.0

Type: Add - Benchmark: Integer



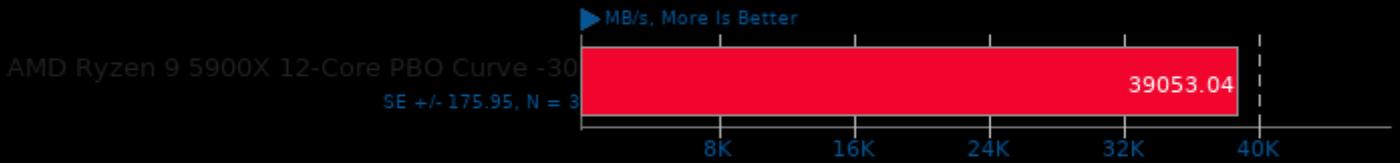
RAMspeed SMP 3.5.0

Type: Copy - Benchmark: Integer



RAMspeed SMP 3.5.0

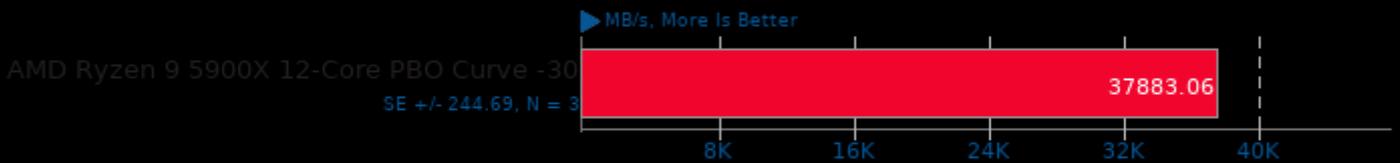
Type: Scale - Benchmark: Integer



1. (CO) gcc options: -O3 -march=native

RAMspeed SMP 3.5.0

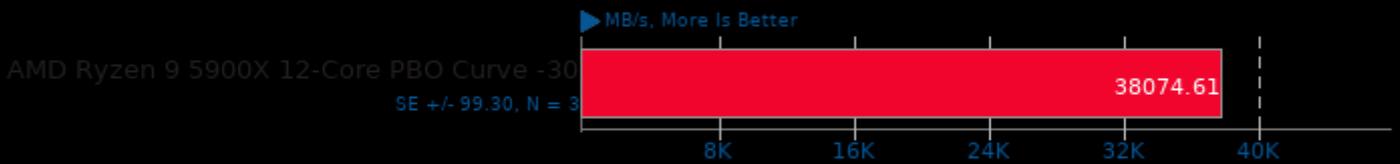
Type: Triad - Benchmark: Integer



1. (CO) gcc options: -O3 -march=native

RAMspeed SMP 3.5.0

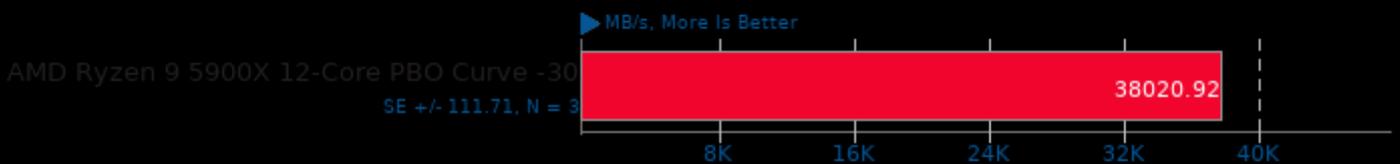
Type: Average - Benchmark: Integer



1. (CO) gcc options: -O3 -march=native

RAMspeed SMP 3.5.0

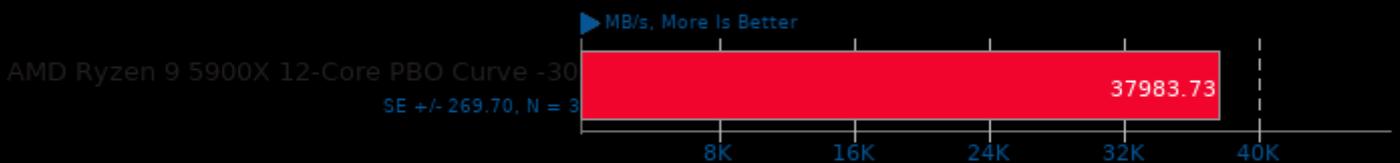
Type: Add - Benchmark: Floating Point



1. (CO) gcc options: -O3 -march=native

RAMspeed SMP 3.5.0

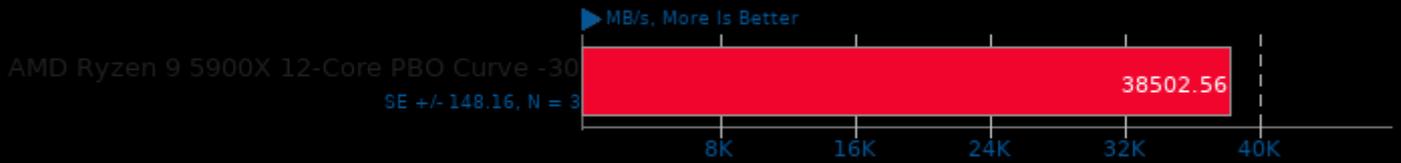
Type: Copy - Benchmark: Floating Point



1. (CO) gcc options: -O3 -march=native

RAMspeed SMP 3.5.0

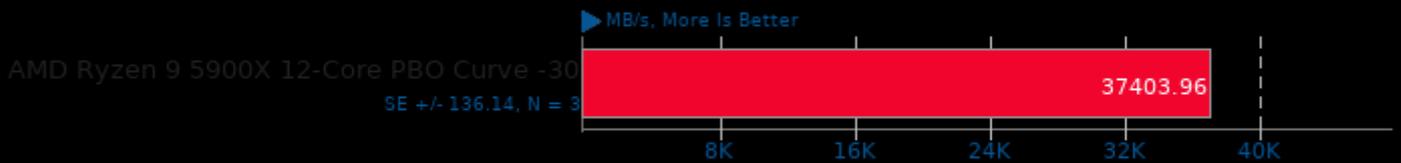
Type: Scale - Benchmark: Floating Point



1, (CO) gcc options: -O3 -march=native

RAMspeed SMP 3.5.0

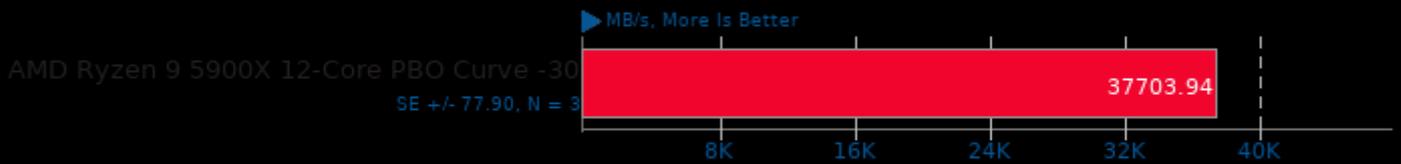
Type: Triad - Benchmark: Floating Point



1, (CO) gcc options: -O3 -march=native

RAMspeed SMP 3.5.0

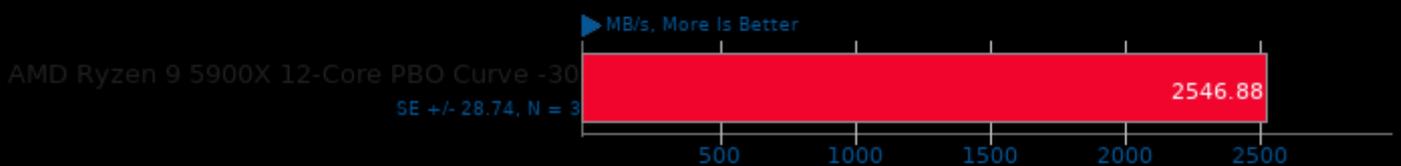
Type: Average - Benchmark: Floating Point



1, (CO) gcc options: -O3 -march=native

AIO-Stress 0.21

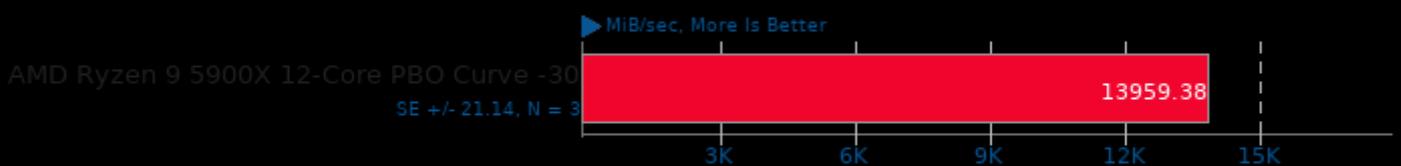
Test: Random Write



1, (CO) gcc options: -O3 -pthread -laio

Sysbench 1.0.20

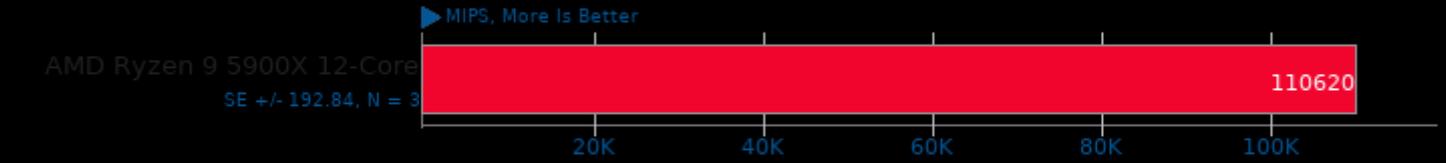
Test: RAM / Memory



1, (CO) gcc options: -O2 -funroll-loops -rdynamic -ldl -laio -lm

7-Zip Compression 24.05

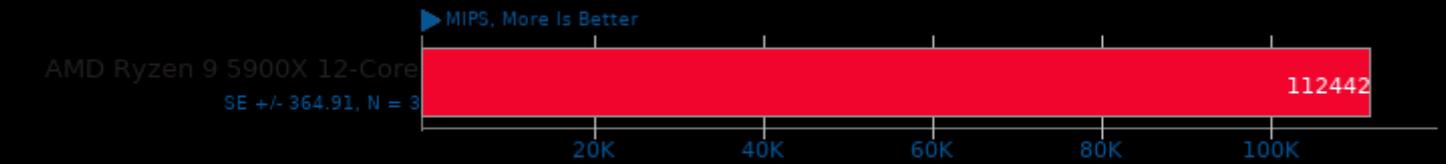
Test: Compression Rating



1. (CXX) g++ options: -lpthread -ldl -O2 -fPIC

7-Zip Compression 24.05

Test: Decompression Rating



1. (CXX) g++ options: -lpthread -ldl -O2 -fPIC

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