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x470-pro

AMD Ryzen 5 2600X Six-Core testing with a ASUS PRIME X470-PRO (4207 BIOS) and Sapphire AMD Radeon RX 470/480/570/570X/580/580X 8GB on Ubuntu 18.04 via the Phoronix Test Suite.

Test Systems:

X470-Pro Ramspeed

Processor: AMD Ryzen 5 2600X Six-Core @ 3.60GHz (12 Cores), Motherboard: ASUS PRIME X470-PRO, Chipset: AMD Family 17h, Memory: 16384MB, Disk: 466GB, Graphics: Sapphire AMD POLARIS10 (DRM 3.27.0 4.20.0-042000-generic LLVM 7.0.0) 8192MB, Audio: AMD Ellesmere, Monitor: Philips 272P4, Network: Intel I211 Gigabit Connection

OS: Ubuntu 18.04, Kernel: 4.20.0-042000-generic (x86_64), Desktop: GNOME Shell 3.28.3, Display Driver: modesetting 1.20.1, OpenGL: 4.5 Mesa 18.2.8, File-System: btrfs, Screen Resolution: 2560x1440

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++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --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 --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: acpi-cpufreq ondemand

X470-Pro Unigine

X470-Pro OpenArena

X470-Pro Compress7zip

X470-Pro Git

X470-Pro OpenSSL

X470-Pro GPUTest

X470-Pro IOZone

Processor: AMD Ryzen 5 2600X Six-Core @ 3.60GHz (12 Cores), Motherboard: ASUS PRIME X470-PRO, Chipset: AMD Family 17h, Memory: 16384MB, Disk: 3001GB TOSHIBA DT01ACA3 + 2000GB P9230 + 1000GB Western Digital WD1001FALS-0, Graphics: Sapphire AMD Radeon RX 590 (POLARIS10 DRM 3.27.0 4.20.0-042000-generic LLVM 8.0.0) 8192MB, Audio: AMD Ellesmere, Network: Intel I211 Gigabit Connection

OS: Ubuntu 18.04, Kernel: 4.20.0-042000-generic (x86_64), Desktop: GNOME Shell 3.28.3, Display Driver: modesetting 1.20.1, OpenGL: 4.5 Mesa 19.1.0-devel (git-356ec7a 2019-03-30 bionic-oibaf-ppa), File-System: btrfs, Screen Resolution: 2560x1440

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++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --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 --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: acpi-cpufreq performance
Disk Mount Options Notes: relatime,rw,space_cache,ssd,subvol=/@home,subvolid=258

X470-Pro Dota2

X470-Pro Bioshock

X470-Pro CounterStrike

X470-Pro Darktable

Processor: AMD Ryzen 5 2600X Six-Core @ 3.60GHz (6 Cores / 12 Threads), Motherboard: ASUS PRIME X470-PRO (4207 BIOS), Chipset: AMD Family 17h, Memory: 16384MB, Disk: Samsung SSD 970 EVO 500GB + 256GB INTEL SSDPEKKW256G7 + 3001GB TOSHIBA DT01ACA3 + 2000GB P9230 + 1000GB Western Digital WD1001FALS-0, Graphics: Sapphire AMD Radeon RX 470/480/570/570X/580/580X 8GB (1560/2100MHz), Audio: AMD Ellesmere, Network: Intel I211

OS: Ubuntu 18.04, Kernel: 5.0.5-050005-generic (x86_64), Desktop: GNOME Shell 3.28.3, Display Server: X Server 1.20.1, Display Driver: modesetting 1.20.1, OpenGL: 4.5 Mesa 19.1.0-devel (git-e4e6a3d 2019-03-31 bionic-oibaf-ppa) (LLVM 8.0.0), Vulkan: 1.1.90, Compiler: GCC 7.3.0, File-System: btrfs, Screen Resolution: 2560x1440

Processor Notes: Scaling Governor: acpi-cpufreq performance

x470-pro

Security Notes: __user pointer sanitization + Full AMD retpoline IBPB: conditional STIBP: disabled RSB filling + SSB disabled via prctl and seccomp

	X470-Pro Ramspeed	X470-Pro Unigine	X470-Pro OpenArena	X470-Pro Compress7zip	X470-Pro Git	X470-Pro OpenSSL	X470-Pro GPUTest	X470-Pro IOZone	X470-Pro Dota2	X470-Pro Bioshock	X470-Pro CounterStrike	X470-Pro Darktable
RAMspeed SMP - Add - Integer (MB/s)	29066											
RAMspeed SMP - Copy - Integer (MB/s)	24321											
RAMspeed SMP - Scale - Integer (MB/s)	18722											
RAMspeed SMP - Triad - Integer (MB/s)	21815											
RAMspeed SMP - Average - Integer (MB/s)	23762											
RAMspeed SMP - Add - Floating Point (MB/s)	29072											
RAMspeed SMP - Copy - Floating Point (MB/s)	24561											
RAMspeed SMP - Scale - Floating Point (MB/s)	22782											
RAMspeed SMP - Triad - Floating Point (MB/s)	27226											
RAMspeed SMP - Average - Floating Point	26019											
Unigine Heaven - 2560 x 1440 - Fullscreen - OpenGL (FPS)		52.32										
Standard Deviation		0.1%										

OpenArena - 2560 x 1440 (FPS)	308.57				
Standard Deviation	1.3%				
7-Zip Compression - C.S.T (MIPS)		32630			
Standard Deviation		0.3%			
Git - T.T.C.C.G.C (sec)			5.74		
Standard Deviation			0.4%		
OpenSSL - R.4.b.P (Signs/sec)				1238	
Standard Deviation				0.4%	
GpuTest - GiMark - 2560 x 1440 - Fullscreen (Points)					9261
Standard Deviation					0%
GpuTest - Plot3D - 2560 x 1440 - Fullscreen (Points)					77983
Standard Deviation					8.3%
GpuTest - Furmark - 2560 x 1440 - Fullscreen (Points)					4754
Standard Deviation					0.6%
GpuTest - TessMark - 2560 x 1440 - Fullscreen (Points)					17567
Standard Deviation					0.2%
GpuTest - Triangle - 2560 x 1440 - Fullscreen (Points)					243679
Standard Deviation					0%

GpuTest - Pixmark Piano - 2560 x 1440 - Fullscreen (Points)	1155	
Standard Deviation	0%	
GpuTest - Pixmark Volplosion - 2560 x 1440 - Fullscreen (Points)	2769	
Standard Deviation	0.1%	
IOzone - 1MB - 2GB - Read Performance (MB/s)		13391
Standard Deviation		3.4%
IOzone - 1MB - 4GB - Read Performance (MB/s)		13855
Standard Deviation		4.1%
IOzone - 1MB - 8GB - Read Performance (MB/s)		14019
Standard Deviation		3.4%
IOzone - 4Kb - 2GB - Read Performance (MB/s)		8850
Standard Deviation		1.7%
IOzone - 4Kb - 4GB - Read Performance (MB/s)		9291
Standard Deviation		0.7%
IOzone - 4Kb - 8GB - Read Performance (MB/s)		9442
Standard Deviation		1.3%

IOzone - 1MB - 2GB - Write Performance (MB/s)	1481
Standard Deviation	24.9%
IOzone - 1MB - 4GB - Write Performance (MB/s)	943.27
Standard Deviation	26.9%
IOzone - 1MB - 8GB - Write Performance (MB/s)	832.90
Standard Deviation	3.2%
IOzone - 4Kb - 2GB - Write Performance (MB/s)	1296
Standard Deviation	17.6%
IOzone - 4Kb - 4GB - Write Performance (MB/s)	879.47
Standard Deviation	20.7%
IOzone - 4Kb - 8GB - Write Performance (MB/s)	745.57
Standard Deviation	10%
IOzone - 64Kb - 2GB - Read Performance (MB/s)	11995
Standard Deviation	0.7%
IOzone - 64Kb - 4GB - Read Performance (MB/s)	13117
Standard Deviation	1.3%
IOzone - 64Kb - 8GB - Read Performance (MB/s)	13715
Standard Deviation	2.3%

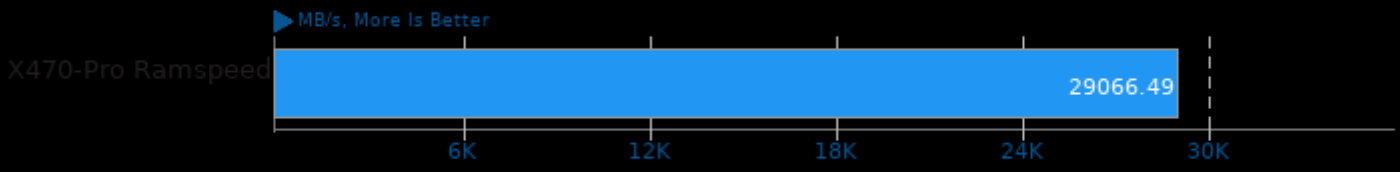
IOzone - 1MB - 512MB - Read Performance (MB/s)	10116	
Standard Deviation	3.2%	
IOzone - 4Kb - 512MB - Read Performance (MB/s)	7565	
Standard Deviation	2.1%	
IOzone - 64Kb - 2GB - Write Performance (MB/s)	1533	
Standard Deviation	19.2%	
IOzone - 64Kb - 4GB - Write Performance (MB/s)	942.16	
Standard Deviation	23.2%	
IOzone - 64Kb - 8GB - Write Performance (MB/s)	863.99	
Standard Deviation	3.2%	
IOzone - 1MB - 512MB - Write Performance (MB/s)	1467	
Standard Deviation	3.9%	
IOzone - 4Kb - 512MB - Write Performance (MB/s)	1212	
Standard Deviation	0.9%	
IOzone - 64Kb - 512MB - Read Performance (MB/s)	10223	
Standard Deviation	0.8%	
IOzone - 64Kb - 512MB - Write Performance (MB/s)	1491	
Standard Deviation	0.9%	
Darktable - Boat - OpenCL (sec)		11.98
Standard Deviation		1.5%

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Darktable - Masskrug - OpenCL (sec)	7.47
Standard Deviation	0.3%
Darktable - Server Rack - OpenCL (sec)	0.19
Standard Deviation	1.8%
Darktable - Server Room - OpenCL (sec)	4.86
Standard Deviation	0.5%

RAMspeed SMP 3.5.0

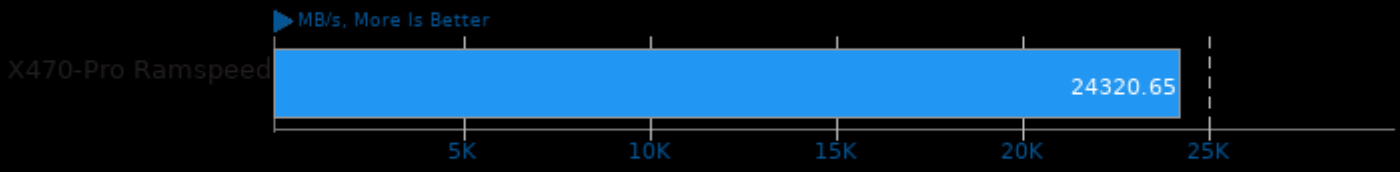
Type: Add - Benchmark: Integer



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

RAMspeed SMP 3.5.0

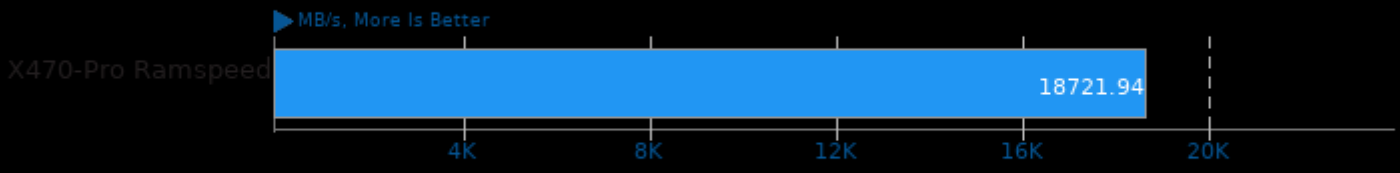
Type: Copy - Benchmark: Integer



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

RAMspeed SMP 3.5.0

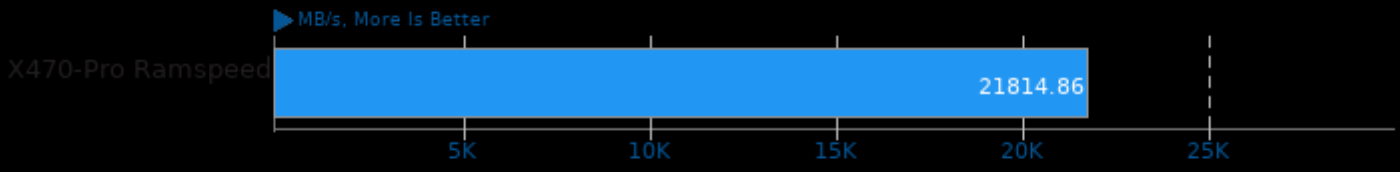
Type: Scale - Benchmark: Integer



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

RAMspeed SMP 3.5.0

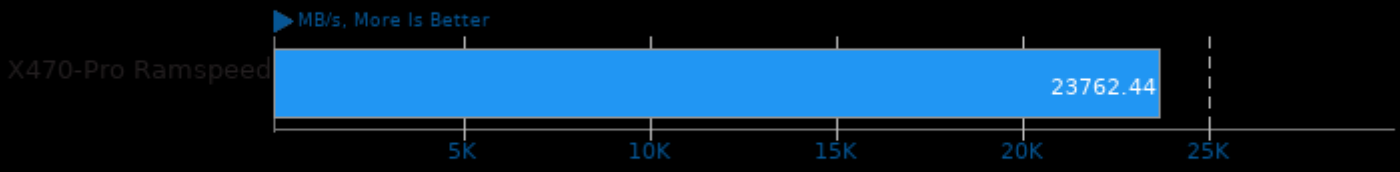
Type: Triad - Benchmark: Integer



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

RAMspeed SMP 3.5.0

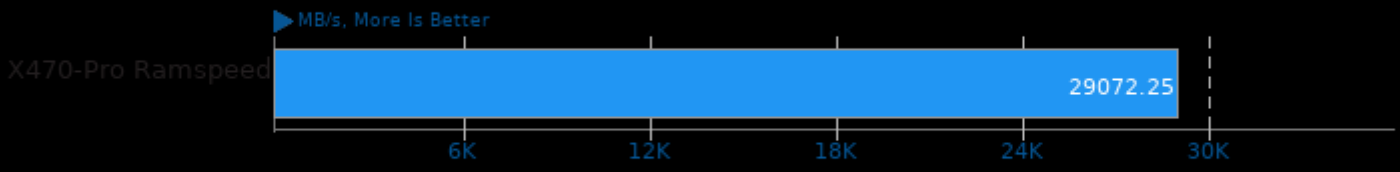
Type: Average - Benchmark: Integer



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

RAMspeed SMP 3.5.0

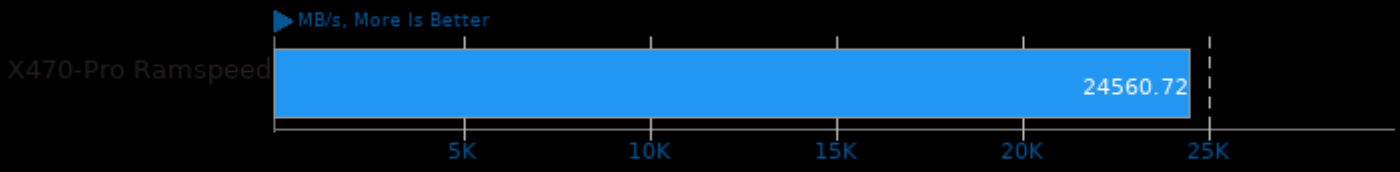
Type: Add - Benchmark: Floating Point



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

RAMspeed SMP 3.5.0

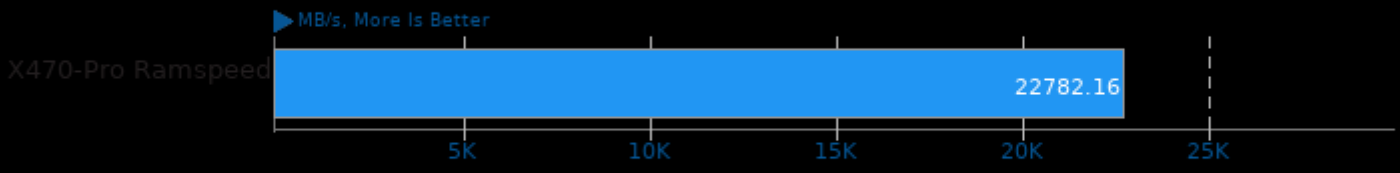
Type: Copy - Benchmark: Floating Point



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

RAMspeed SMP 3.5.0

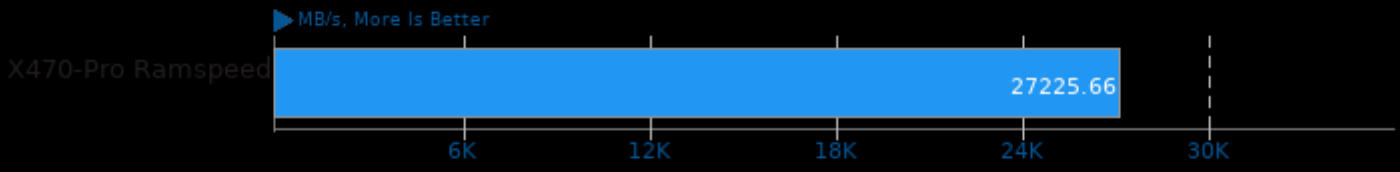
Type: Scale - Benchmark: Floating Point



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

RAMspeed SMP 3.5.0

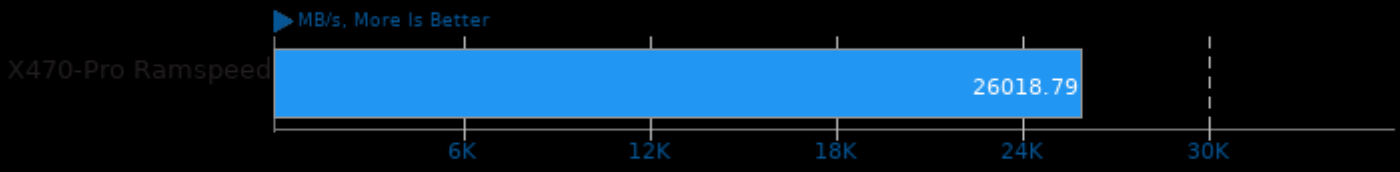
Type: Triad - Benchmark: Floating Point



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

RAMspeed SMP 3.5.0

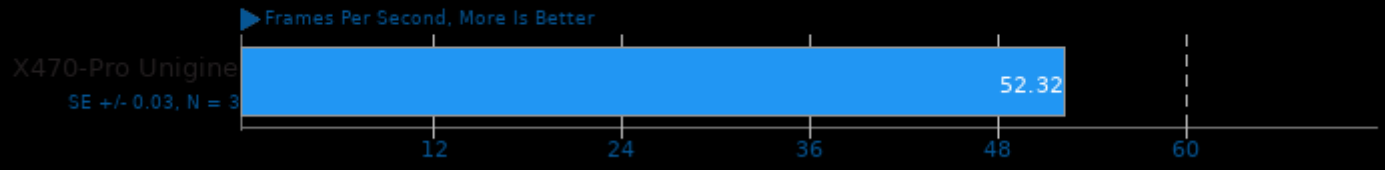
Type: Average - Benchmark: Floating Point



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

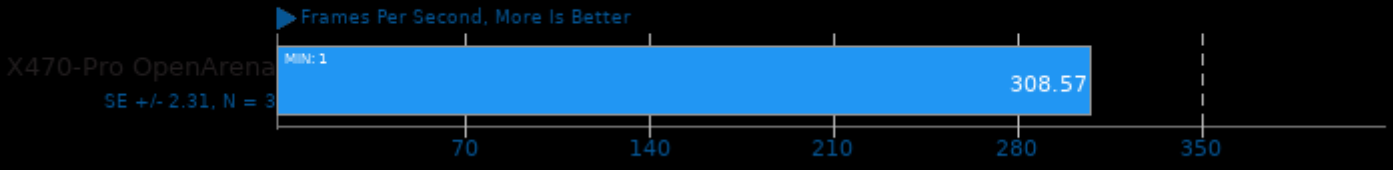
Unigine Heaven 4.0

Resolution: 2560 x 1440 - Mode: Fullscreen - Renderer: OpenGL



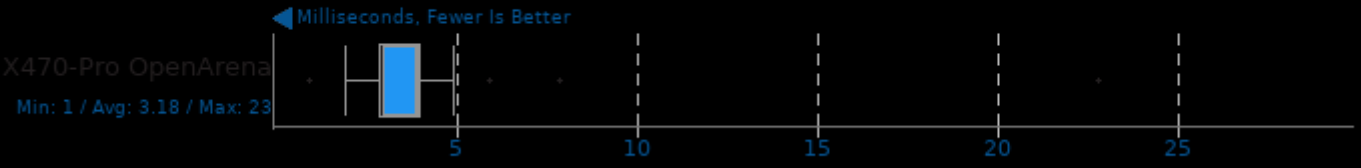
OpenArena 0.8.8

Resolution: 2560 x 1440



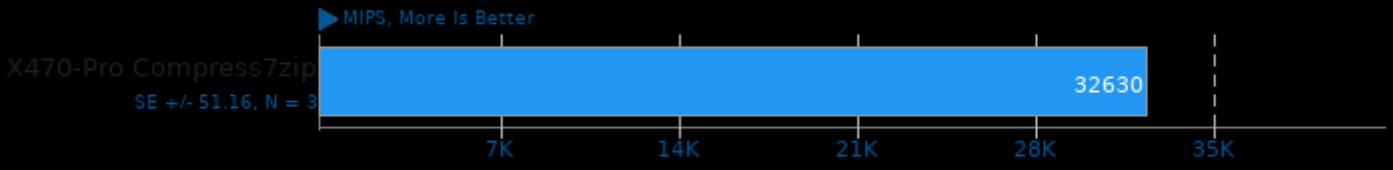
OpenArena 0.8.8

Resolution: 2560 x 1440 - Total Frame Time



7-Zip Compression 16.02

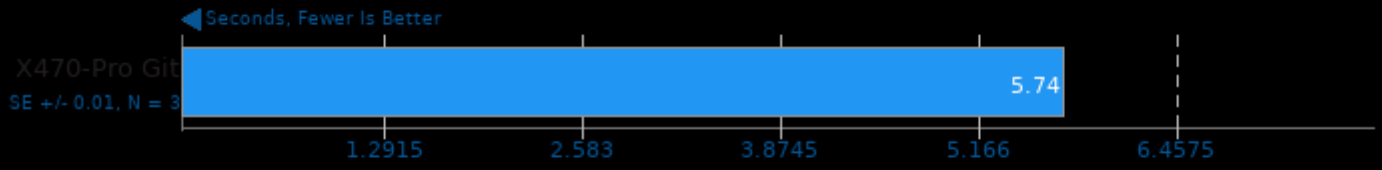
Compress Speed Test



1. (CXX) g++ options: -pipe -lpthread

Git

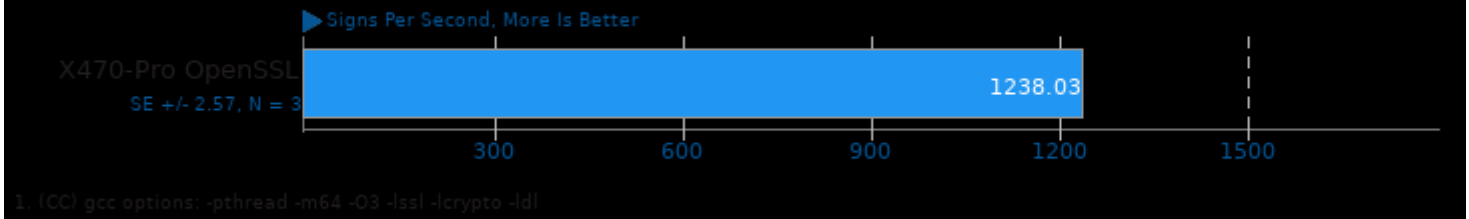
Time To Complete Common Git Commands



1. git version 2.17.1

OpenSSL 1.1.1

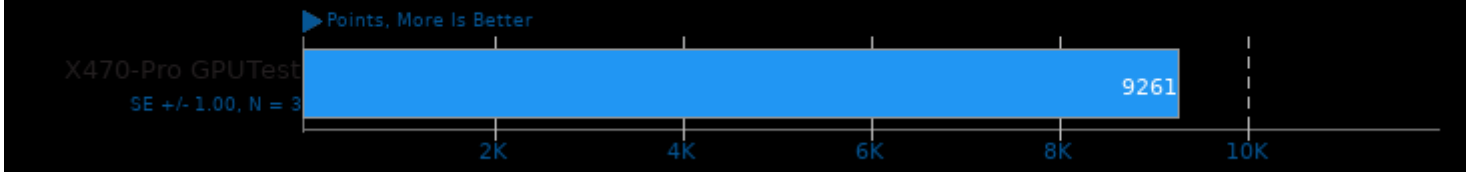
RSA 4096-bit Performance



1. (CC) gcc options: -pthread -m64 -O3 -lssl -lcrypto -ldl

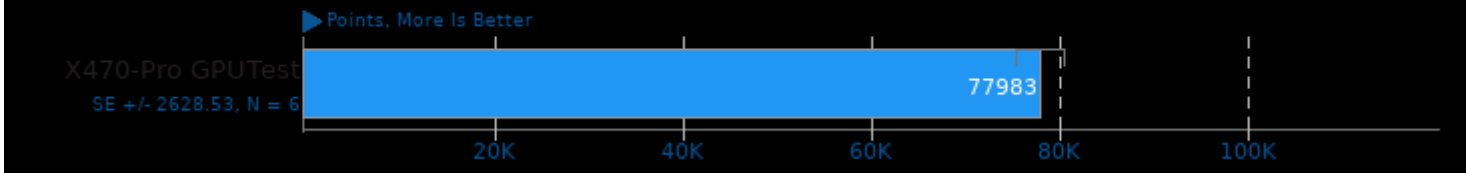
GpuTest 0.7.0

Test: GiMark - Resolution: 2560 x 1440 - Mode: Fullscreen



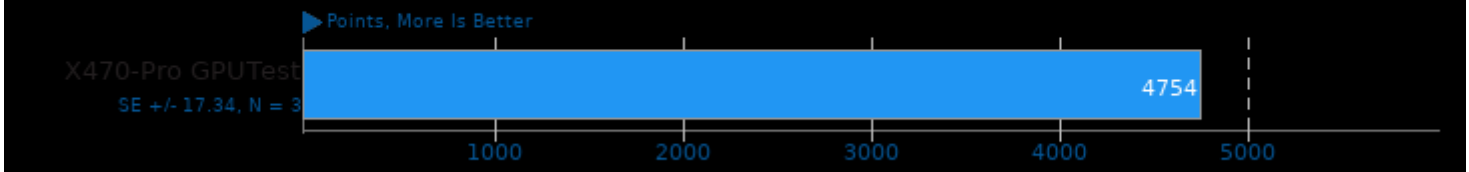
GpuTest 0.7.0

Test: Plot3D - Resolution: 2560 x 1440 - Mode: Fullscreen



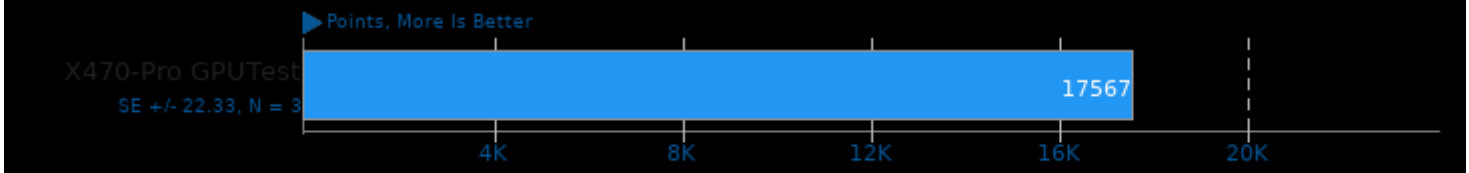
GpuTest 0.7.0

Test: Furmark - Resolution: 2560 x 1440 - Mode: Fullscreen



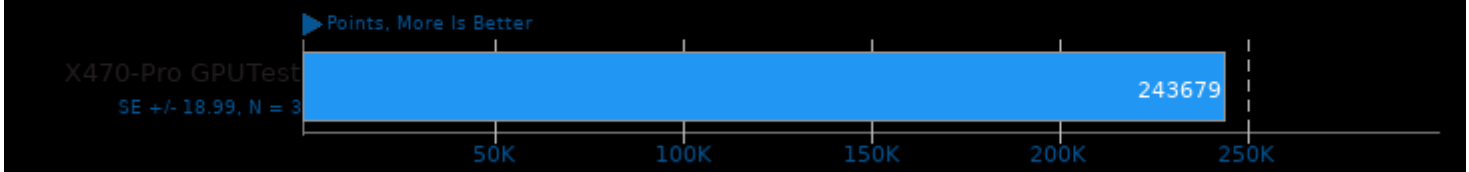
GpuTest 0.7.0

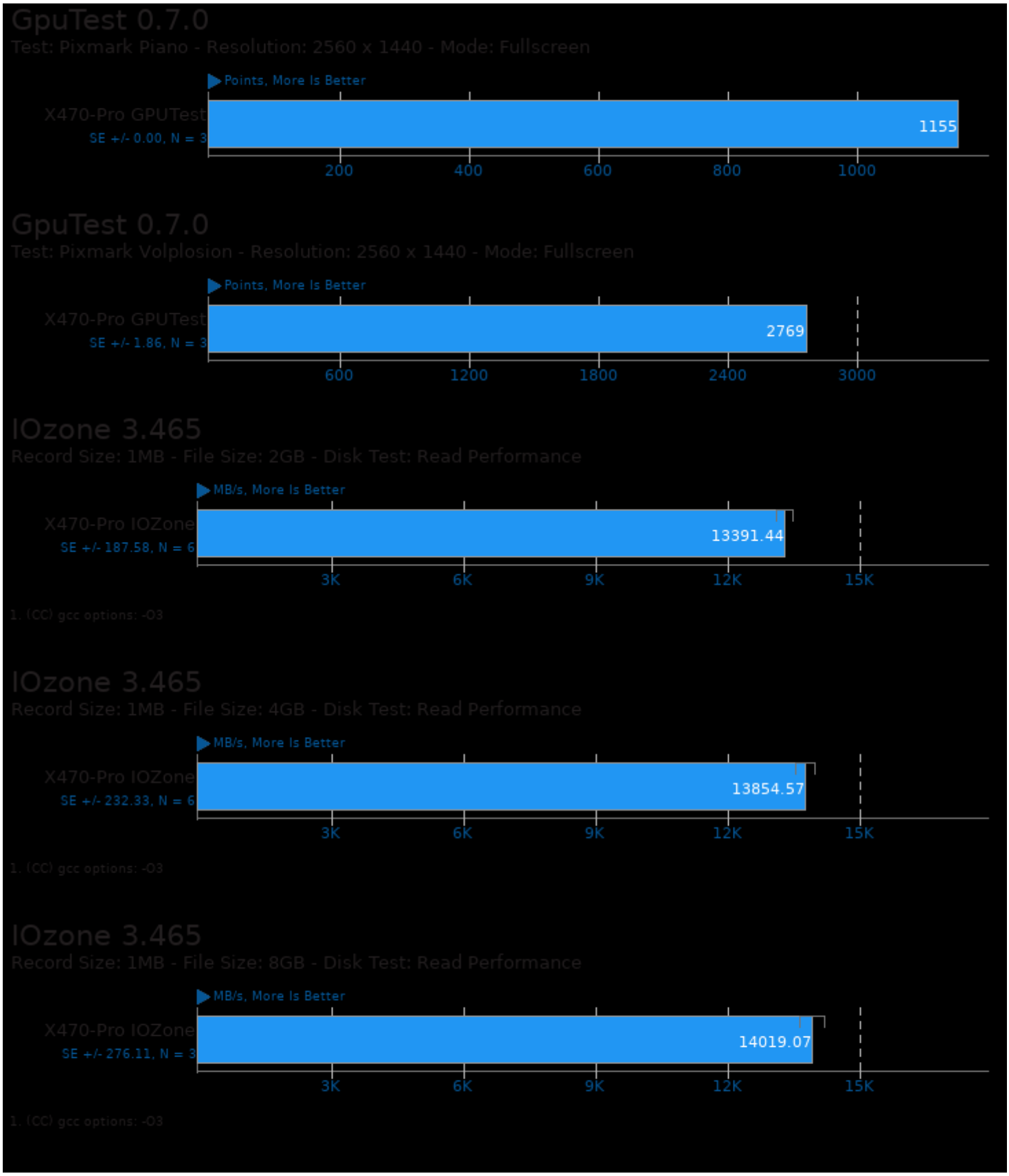
Test: TessMark - Resolution: 2560 x 1440 - Mode: Fullscreen

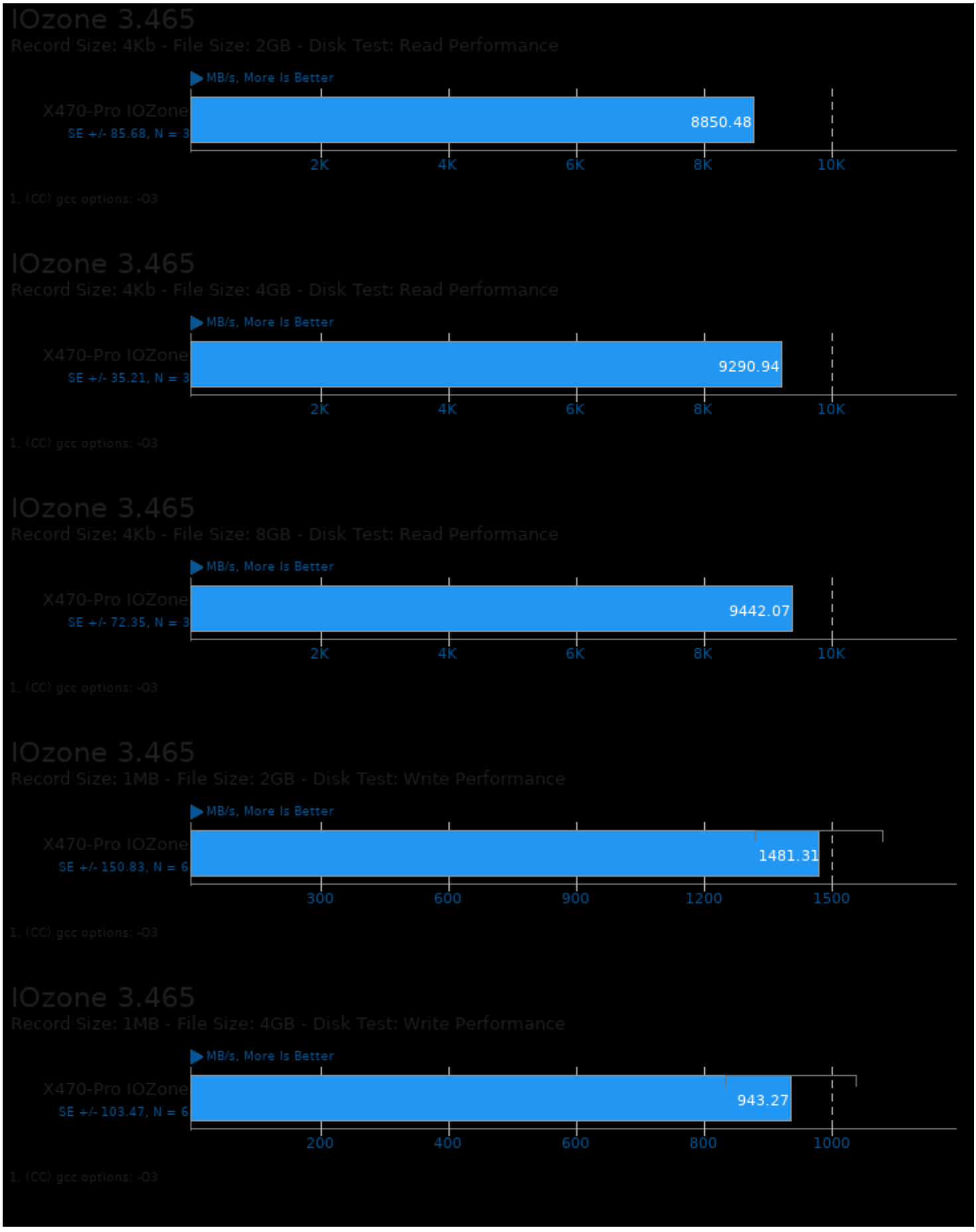


GpuTest 0.7.0

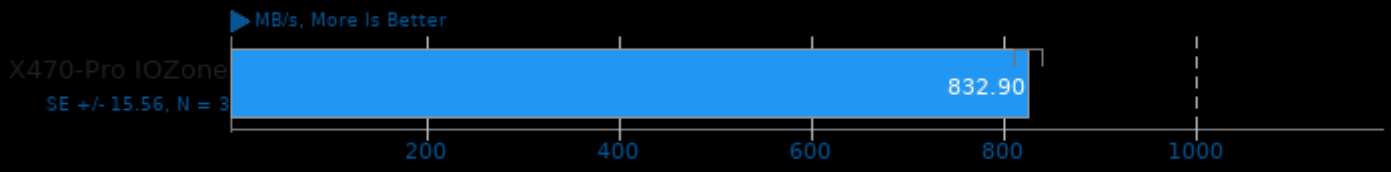
Test: Triangle - Resolution: 2560 x 1440 - Mode: Fullscreen




GpuTest 0.7.0
Test: Pixmark Piano - Resolution: 2560 x 1440 - Mode: Fullscreen
Points, More Is Better
X470-Pro GPUTest
SE +/- 0.00, N = 3
1155
200
400
600
800
1000
GpuTest 0.7.0
Test: Pixmark Volplosion - Resolution: 2560 x 1440 - Mode: Fullscreen
Points, More Is Better
X470-Pro GPUTest
SE +/- 1.86, N = 3
2769
600
1200
1800
2400
3000
IOzone 3.465
Record Size: 1MB - File Size: 2GB - Disk Test: Read Performance
MB/s, More Is Better
X470-Pro IOZone
SE +/- 187.58, N = 6
13391.44
3K
6K
9K
12K
15K
1. (CC) gcc options: -O3
IOzone 3.465
Record Size: 1MB - File Size: 4GB - Disk Test: Read Performance
MB/s, More Is Better
X470-Pro IOZone
SE +/- 232.33, N = 6
13854.57
3K
6K
9K
12K
15K
1. (CC) gcc options: -O3
IOzone 3.465
Record Size: 1MB - File Size: 8GB - Disk Test: Read Performance
MB/s, More Is Better
X470-Pro IOZone
SE +/- 276.11, N = 3
14019.07
3K
6K
9K
12K
15K
1. (CC) gcc options: -O3

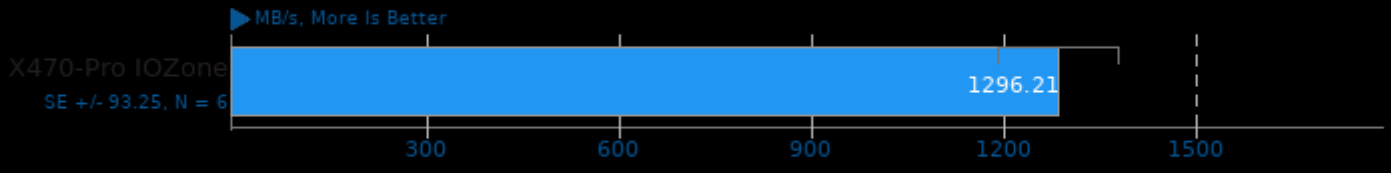

IOzone 3.465
Record Size: 4Kb - File Size: 2GB - Disk Test: Read Performance
MB/s, More Is Better
X470-Pro IOZone
SE +/- 85.68, N = 3
8850.48
2K
4K
6K
8K
10K
1. (CC) gcc options: -O3
IOzone 3.465
Record Size: 4Kb - File Size: 4GB - Disk Test: Read Performance
MB/s, More Is Better
X470-Pro IOZone
SE +/- 35.21, N = 3
9290.94
2K
4K
6K
8K
10K
1. (CC) gcc options: -O3
IOzone 3.465
Record Size: 4Kb - File Size: 8GB - Disk Test: Read Performance
MB/s, More Is Better
X470-Pro IOZone
SE +/- 72.35, N = 3
9442.07
2K
4K
6K
8K
10K
1. (CC) gcc options: -O3
IOzone 3.465
Record Size: 1MB - File Size: 2GB - Disk Test: Write Performance
MB/s, More Is Better
X470-Pro IOZone
SE +/- 150.83, N = 6
1481.31
300
600
900
1200
1500
1. (CC) gcc options: -O3
IOzone 3.465
Record Size: 1MB - File Size: 4GB - Disk Test: Write Performance
MB/s, More Is Better
X470-Pro IOZone
SE +/- 103.47, N = 6
943.27
200
400
600
800
1000
1. (CC) gcc options: -O3

IOzone 3.465
Record Size: 1MB - File Size: 8GB - Disk Test: Write Performance



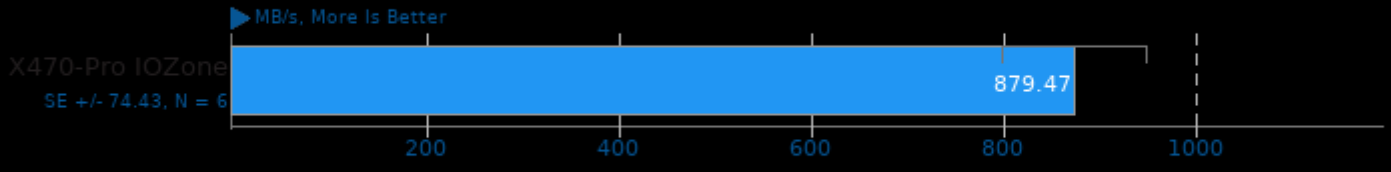
1. (CC) gcc options: -O3

IOzone 3.465
Record Size: 4Kb - File Size: 2GB - Disk Test: Write Performance



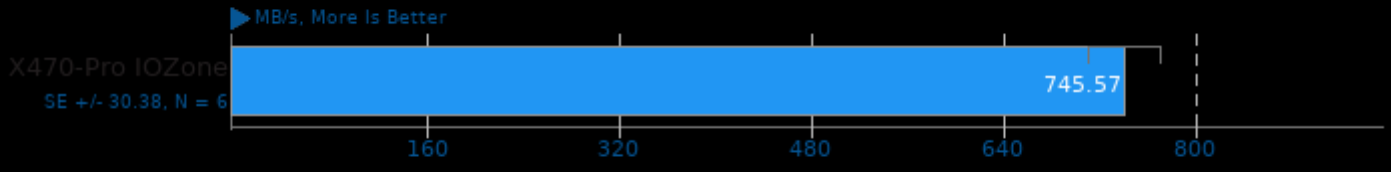
1. (CC) gcc options: -O3

IOzone 3.465
Record Size: 4Kb - File Size: 4GB - Disk Test: Write Performance



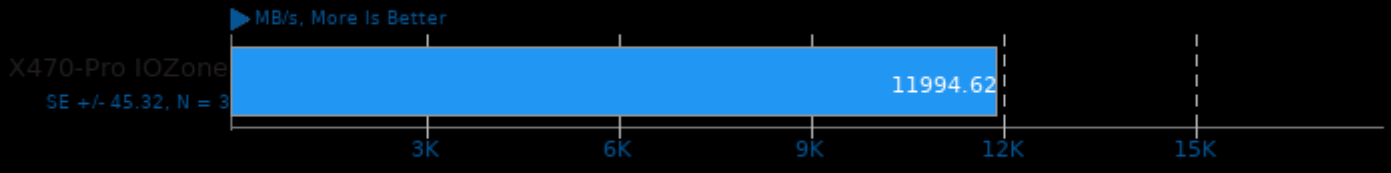
1. (CC) gcc options: -O3

IOzone 3.465
Record Size: 4Kb - File Size: 8GB - Disk Test: Write Performance

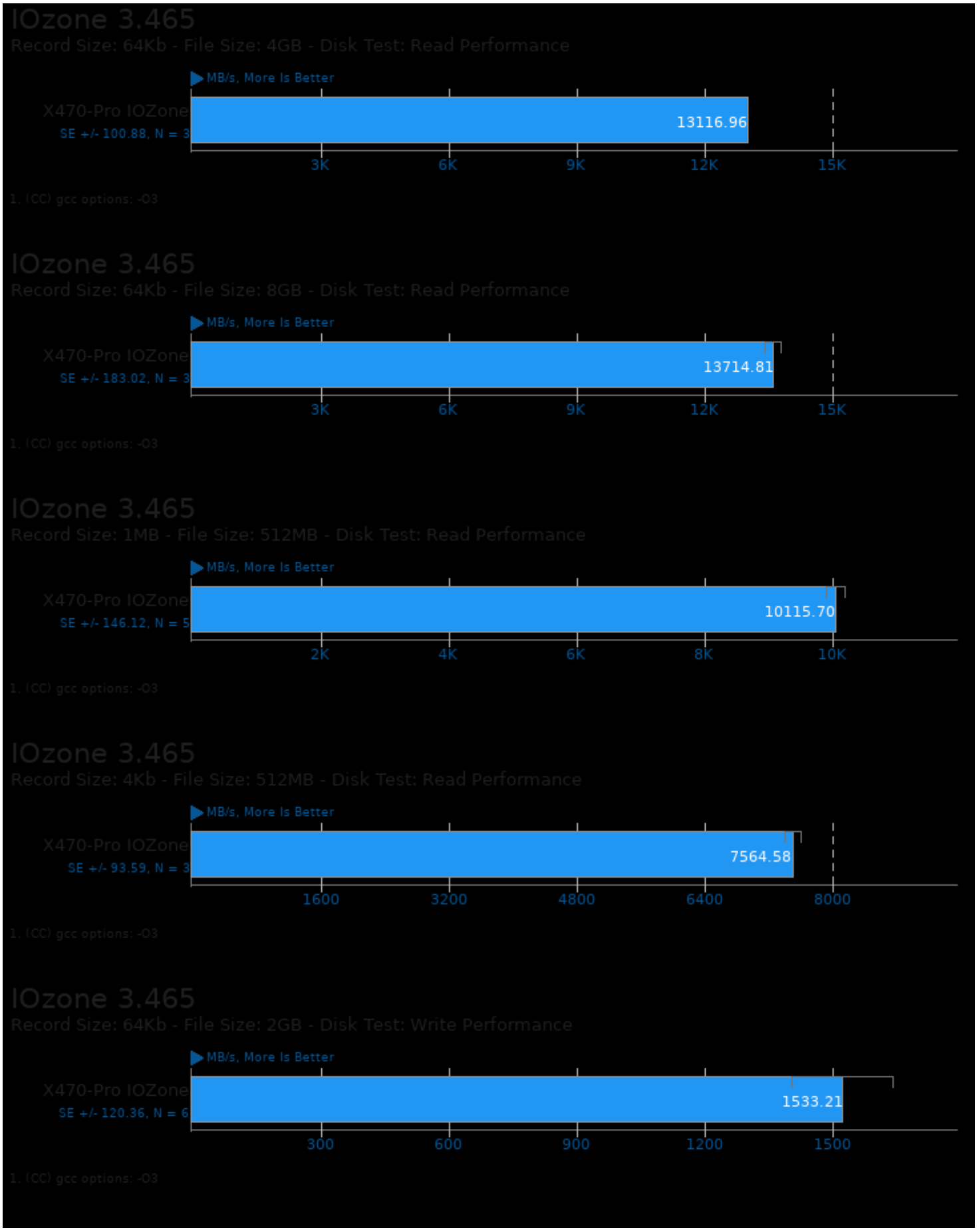


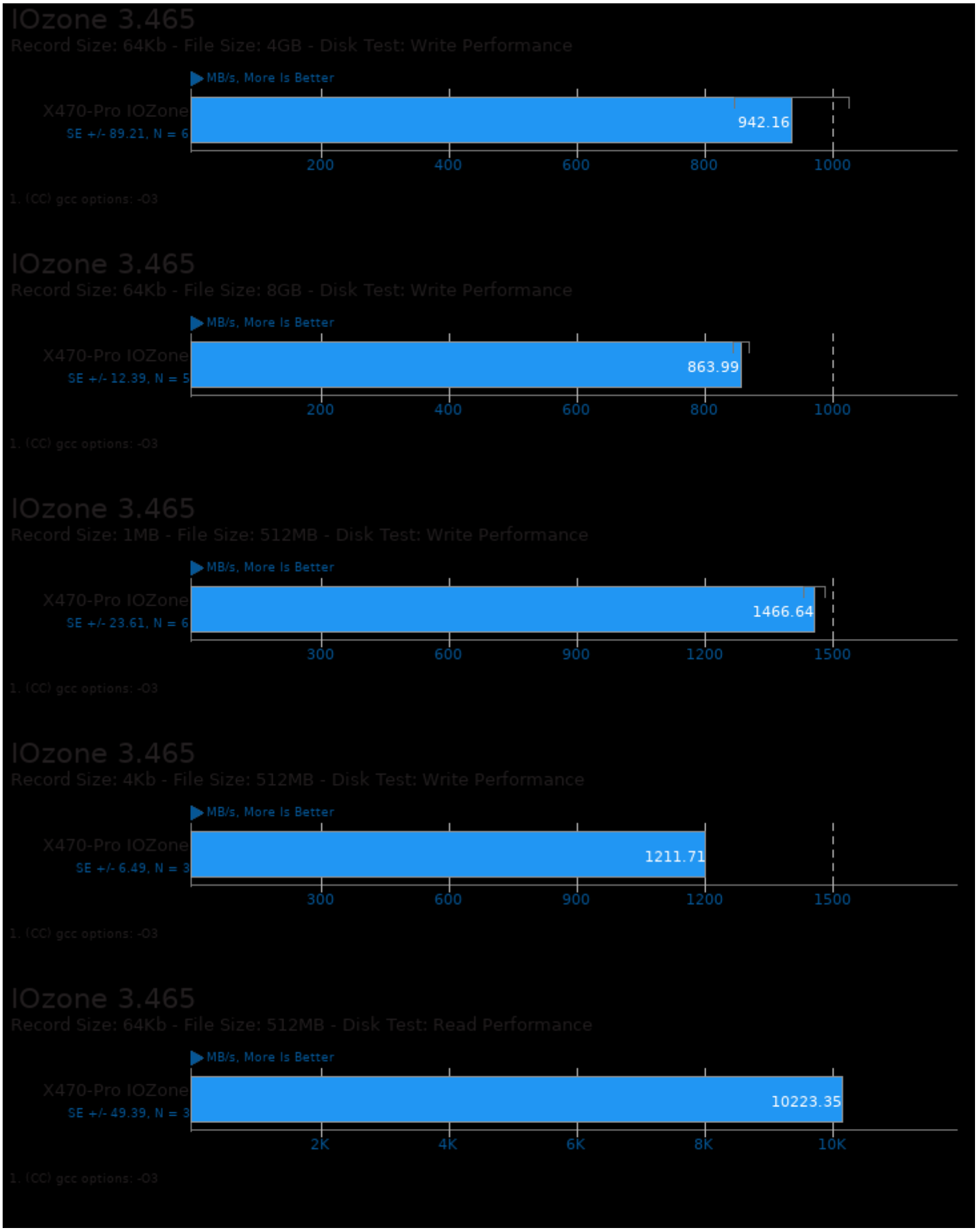
1. (CC) gcc options: -O3

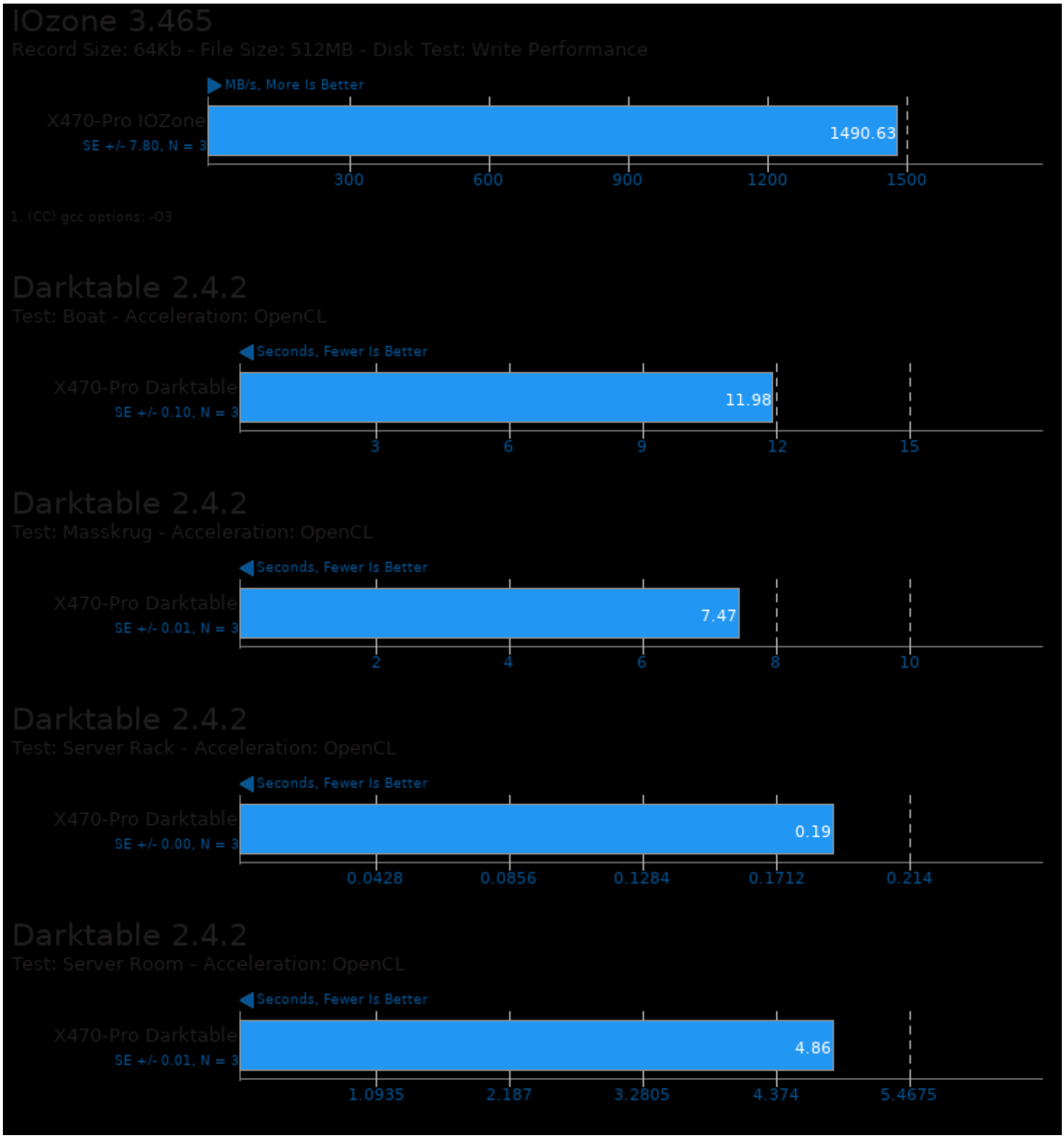
IOzone 3.465
Record Size: 64Kb - File Size: 2GB - Disk Test: Read Performance



1. (CC) gcc options: -O3


IOzone 3.465
Record Size: 64Kb - File Size: 4GB - Disk Test: Read Performance
MB/s, More Is Better
X470-Pro IOZone
SE +/- 100.88, N = 3
13116.96
3K
6K
9K
12K
15K
1. (CC) gcc options: -O3
IOzone 3.465
Record Size: 64Kb - File Size: 8GB - Disk Test: Read Performance
MB/s, More Is Better
X470-Pro IOZone
SE +/- 183.02, N = 3
13714.81
3K
6K
9K
12K
15K
1. (CC) gcc options: -O3
IOzone 3.465
Record Size: 1MB - File Size: 512MB - Disk Test: Read Performance
MB/s, More Is Better
X470-Pro IOZone
SE +/- 146.12, N = 5
10115.70
2K
4K
6K
8K
10K
1. (CC) gcc options: -O3
IOzone 3.465
Record Size: 4Kb - File Size: 512MB - Disk Test: Read Performance
MB/s, More Is Better
X470-Pro IOZone
SE +/- 93.59, N = 3
7564.58
1600
3200
4800
6400
8000
1. (CC) gcc options: -O3
IOzone 3.465
Record Size: 64Kb - File Size: 2GB - Disk Test: Write Performance
MB/s, More Is Better
X470-Pro IOZone
SE +/- 120.36, N = 6
1533.21
300
600
900
1200
1500
1. (CC) gcc options: -O3


IOzone 3.465
Record Size: 64Kb - File Size: 4GB - Disk Test: Write Performance
MB/s, More Is Better
X470-Pro IOZone
SE +/- 89.21, N = 6
942.16
200
400
600
800
1000
1. (CC) gcc options: -O3
IOzone 3.465
Record Size: 64Kb - File Size: 8GB - Disk Test: Write Performance
MB/s, More Is Better
X470-Pro IOZone
SE +/- 12.39, N = 5
863.99
200
400
600
800
1000
1. (CC) gcc options: -O3
IOzone 3.465
Record Size: 1MB - File Size: 512MB - Disk Test: Write Performance
MB/s, More Is Better
X470-Pro IOZone
SE +/- 23.61, N = 6
1466.64
300
600
900
1200
1500
1. (CC) gcc options: -O3
IOzone 3.465
Record Size: 4Kb - File Size: 512MB - Disk Test: Write Performance
MB/s, More Is Better
X470-Pro IOZone
SE +/- 6.49, N = 3
1211.71
300
600
900
1200
1500
1. (CC) gcc options: -O3
IOzone 3.465
Record Size: 64Kb - File Size: 512MB - Disk Test: Read Performance
MB/s, More Is Better
X470-Pro IOZone
SE +/- 49.39, N = 3
10223.35
2K
4K
6K
8K
10K
1. (CC) gcc options: -O3



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