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SSD Testing

Tests for a future article.

Automated Executive Summary

WD_BLACK SN850 1TB had the most wins, coming in first place for 75% of the tests.

Based on the geometric mean of all complete results, the fastest (WD_BLACK SN850 1TB) was 3.492x the speed of the slowest (Samsung 980 PRO 1TB). Sabrent Rocket 4.0 1TB was 0.647x the speed of WD_BLACK SN850 1TB, Sabrenet Rocket 4.0 Plus 1TB was 0.745x the speed of Sabrent Rocket 4.0 1TB, Corsair Force MP600 1TB was 0.852x the speed of Sabrenet Rocket 4.0 Plus 1TB, Samsung 980 PRO 1TB was 0.698x the speed of Corsair Force MP600 1TB.

Test Systems:

Sabrenet Rocket 4.0 Plus 1TB

Processor: AMD Ryzen 9 5900X 12-Core @ 3.70GHz (12 Cores / 24 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (3202 BIOS), Chipset: AMD Starship/Matisse, Memory: 16GB, Disk: 1000GB Sabrent Rocket 4.0 Plus,

Graphics: Sapphire AMD Radeon RX 5600 OEM/5600 XT / 5700/5700 6GB (1780/875MHz), Audio: AMD Navi 10 HDMI Audio, Monitor: ASUS VP28U, Network: Realtek RTL8125 2.5GbE + Intel I211

OS: Ubuntu 20.10, Kernel: 5.12.0-051200rc2-generic (x86_64) 20210306, Desktop: GNOME Shell 3.38.1, Display Server: X Server 1.20.9, OpenGL: 4.6 Mesa 20.2.1 (LLVM 11.0.0), Vulkan: 1.2.131, Compiler: GCC 10.2.0, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
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++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-gcn/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
Disk Notes: NONE / errors=remount-ro,relatime,rw / Block Size: 4096
Processor Notes: Scaling Governor: acpi-cpufreq schedutil (Boost: Enabled) - CPU Microcode: 0xa201009
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

Corsair Force MP600 1TB

Processor: AMD Ryzen 9 5900X 12-Core @ 3.70GHz (12 Cores / 24 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (3202 BIOS), Chipset: AMD Starship/Matisse, Memory: 16GB, Disk: 1000GB Sabrent Rocket 4.0 Plus + 1000GB Corsair Force MP600, Graphics: Sapphire AMD Radeon RX 5600 OEM/5600 XT / 5700/5700 6GB (1780/875MHz), Audio: AMD Navi 10 HDMI Audio, Monitor: ASUS VP28U, Network: Realtek RTL8125 2.5GbE + Intel I211

OS: Ubuntu 20.10, Kernel: 5.12.0-051200rc2-generic (x86_64) 20210306, Desktop: GNOME Shell 3.38.1, Display Server: X Server 1.20.9, OpenGL: 4.6 Mesa 20.2.1 (LLVM 11.0.0), Vulkan: 1.2.131, Compiler: GCC 10.2.0, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
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++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-gcn/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
Disk Notes: NONE / relatime,rw / Block Size: 4096
Processor Notes: Scaling Governor: acpi-cpufreq schedutil (Boost: Enabled) - CPU Microcode: 0xa201009
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

Samsung 980 PRO 1TB

Processor: AMD Ryzen 9 5900X 12-Core @ 3.70GHz (12 Cores / 24 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (3202 BIOS), Chipset: AMD Starship/Matisse, Memory: 16GB, Disk: 1000GB Sabrent Rocket 4.0 Plus + 1000GB Samsung SSD 980 PRO 1TB, Graphics: Sapphire AMD Radeon RX 5600 OEM/5600 XT / 5700/5700 6GB (1780/875MHz), Audio: AMD Navi 10 HDMI Audio, Monitor: ASUS VP28U, Network: Realtek RTL8125 2.5GbE + Intel I211

OS: Ubuntu 20.10, Kernel: 5.12.0-051200rc2-generic (x86_64) 20210306, Desktop: GNOME Shell 3.38.1, Display Server: X Server 1.20.9, OpenGL: 4.6 Mesa 20.2.1 (LLVM 11.0.0), Vulkan: 1.2.131, Compiler: GCC 10.2.0, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
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++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-gcn/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
Disk Notes: NONE / relatime,rw / Block Size: 4096
Processor Notes: Scaling Governor: acpi-cpufreq schedutil (Boost: Enabled) - CPU Microcode: 0xa201009
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

WD_BLACK SN850 1TB

Processor: AMD Ryzen 9 5900X 12-Core @ 3.70GHz (12 Cores / 24 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (3202 BIOS), Chipset: AMD Starship/Matisse, Memory: 16GB, Disk: 1000GB Sabrent Rocket 4.0 Plus + 1000GB Western Digital WD_BLACK SN850 1TB, Graphics: Sapphire AMD Radeon RX 5600 OEM/5600 XT / 5700/5700 6GB (1780/875MHz), Audio: AMD Navi 10 HDMI Audio, Monitor: ASUS VP28U, Network: Realtek RTL8125 2.5GbE + Intel I211

OS: Ubuntu 20.10, Kernel: 5.12.0-051200rc2-generic (x86_64) 20210306, Desktop: GNOME Shell 3.38.1, Display Server: X Server 1.20.9, OpenGL: 4.6 Mesa 20.2.1 (LLVM 11.0.0), Vulkan: 1.2.131, Compiler: GCC 10.2.0, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
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++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-gcn/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
Disk Notes: NONE / relatime,rw / Block Size: 4096
Processor Notes: Scaling Governor: acpi-cpufreq schedutil (Boost: Enabled) - CPU Microcode: 0xa201009
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

Sabrent Rocket 4.0 1TB

Processor: AMD Ryzen 9 5900X 12-Core @ 3.70GHz (12 Cores / 24 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (3202 BIOS), Chipset: AMD Starship/Matisse, Memory: 16GB, Disk: 1000GB Sabrent Rocket 4.0 Plus + 1000GB Sabrent Rocket 4.0 1TB, Graphics: Sapphire AMD Radeon RX 5600 OEM/5600 XT / 5700/5700 6GB (1780/875MHz), Audio: AMD Navi 10 HDMI Audio, Monitor: ASUS VP28U, Network: Realtek RTL8125 2.5GbE + Intel I211

OS: Ubuntu 20.10, Kernel: 5.12.0-051200rc2-generic (x86_64) 20210306, Desktop: GNOME Shell 3.38.1, Display Server: X Server 1.20.9, OpenGL: 4.6 Mesa 20.2.1 (LLVM 11.0.0), Vulkan: 1.2.131, Compiler: GCC 10.2.0, File-System: ext4, Screen Resolution: 3840x2160

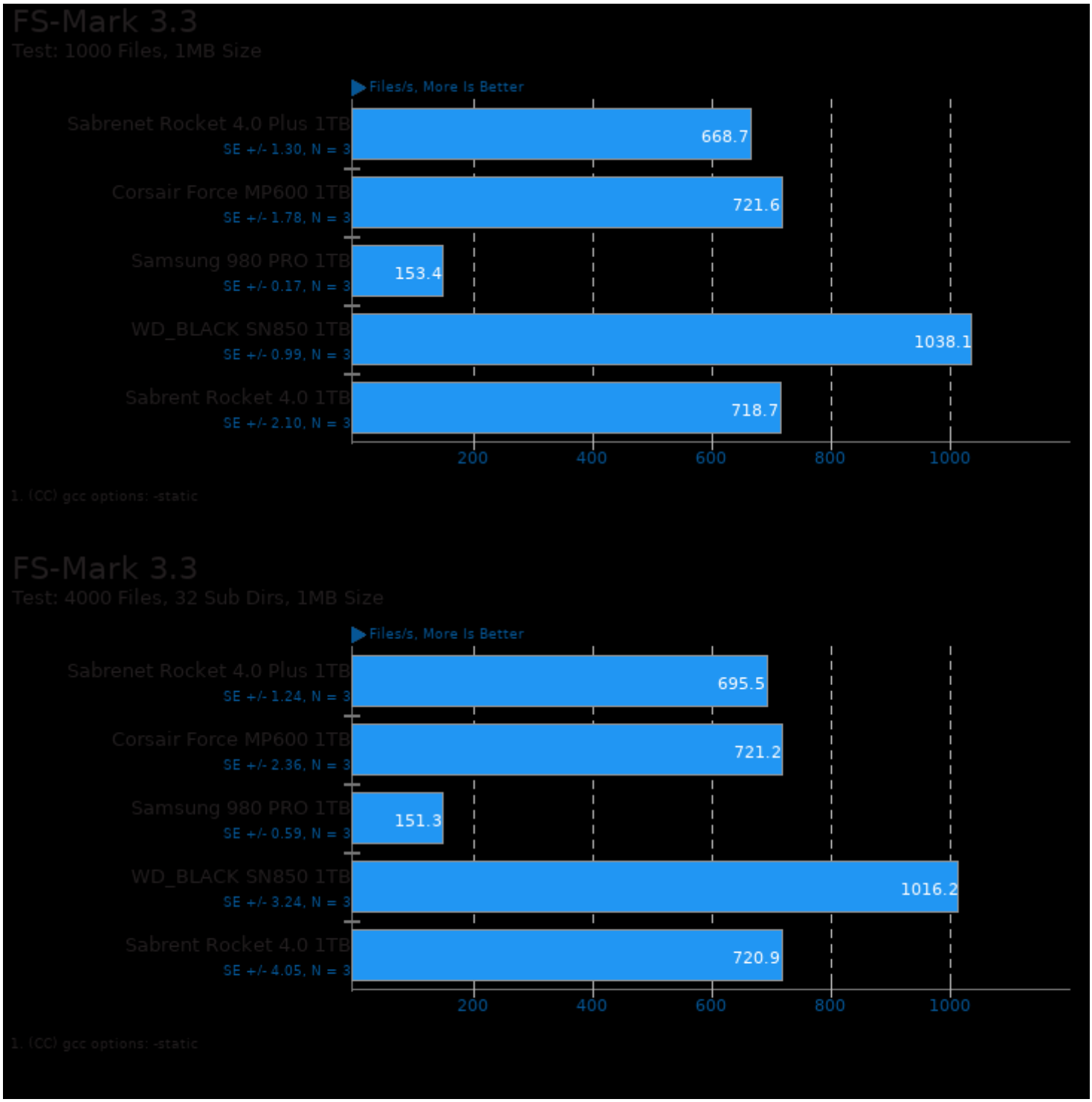
Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-gcn/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
Disk Notes: NONE / relatime,rw / Block Size: 4096
Processor Notes: Scaling Governor: acpi-cpufreq schedutil (Boost: Enabled) - CPU Microcode: 0xa201009
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

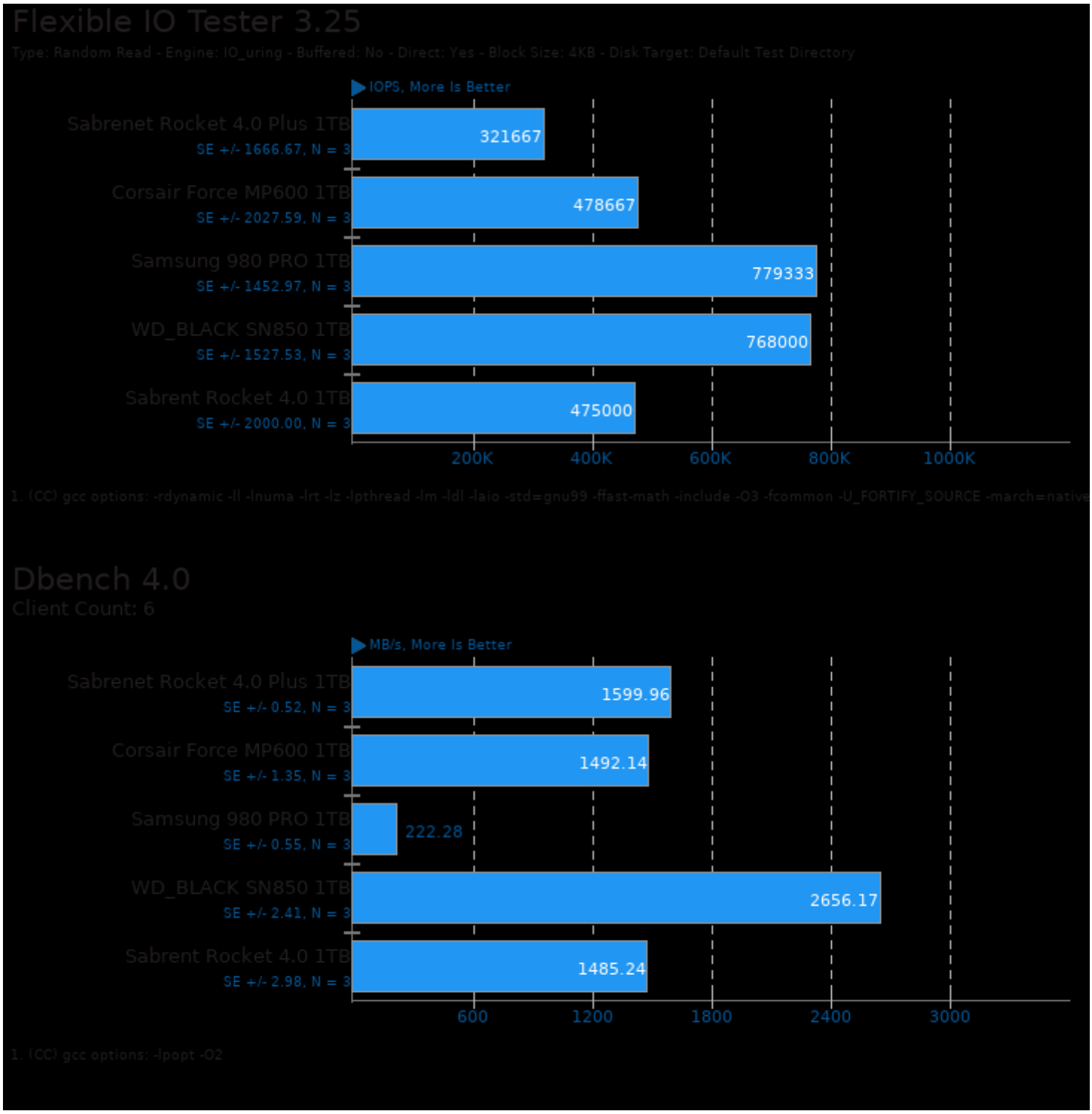
SSD Testing

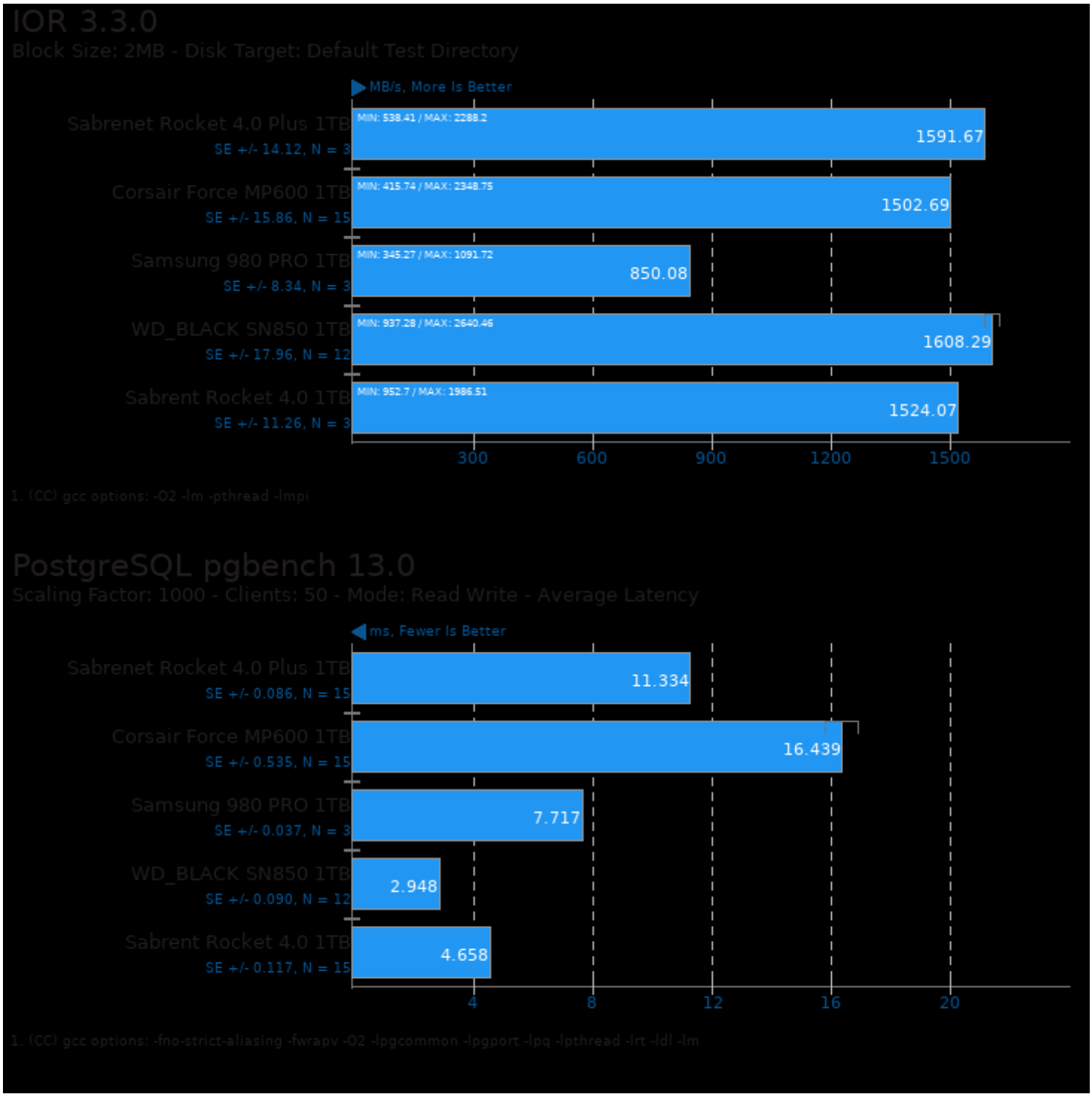
	Sabrenet Rocket 4.0 Plus	Corsair Force MP600 1TB	Samsung 980 PRO 1TB	WD_BLACK SN850 1TB	Sabrent Rocket 4.0 1TB
FS-Mark - 1.F.1.S (Files/s)	668.7	721.6	**153.4**	**1038**	718.7
Normalized	64.42%	69.51%	14.78%	100%	69.23%
Standard Deviation	0.3%	0.4%	0.2%	0.2%	0.5%
FS-Mark - 4.F.3.S.D.1.S (Files/s)	695.5	721.2	**151.3**	**1016**	720.9
Normalized	68.44%	70.97%	14.89%	100%	70.94%
Standard Deviation	0.3%	0.6%	0.7%	0.6%	1%
Flexible IO Tester - Rand Read - IO_uring - No - Yes - 4KB (IOPS)	**321667**	478667	**779333**	768000	475000
Normalized	41.27%	61.42%	100%	98.55%	60.95%
Standard Deviation	0.9%	0.7%	0.3%	0.3%	0.7%
Dbench - 6 (MB/s)	1600	1492	**222.284**	**2656**	1485
Normalized	60.24%	56.18%	8.37%	100%	55.92%
Standard Deviation	0.1%	0.2%	0.4%	0.2%	0.3%
IOR - 2MB (MB/s)	1592	1503	**850.08**	**1608**	1524
Normalized	98.97%	93.43%	52.86%	100%	94.76%
Standard Deviation	1.5%	4.1%	1.7%	3.9%	1.3%
PostgreSQL pgbench - 1000 - 50 - Read Write - Average Latency	11.334	**16.439**	7.717	**2.948**	4.658
Normalized	26.01%	17.93%	38.2%	100%	63.29%
Standard Deviation	2.9%	12.6%	0.8%	10.6%	9.7%
PostgreSQL pgbench - 1000 - 50 - Read Write (TPS)	4416	**3089**	6481	**17144**	10828
Normalized	25.76%	18.02%	37.8%	100%	63.16%
Standard Deviation	3%	13.1%	0.8%	11%	9.4%
PostgreSQL pgbench - 1000 - 1 - Read Write - Average Latency	2.330	**3.602**	3.515	**0.464**	1.361
Normalized	19.91%	12.88%	13.2%	100%	34.09%
Standard Deviation	16.4%	9.8%	1.2%	0.6%	18.1%
PostgreSQL pgbench - 1000 - 1 - Read Write (TPS)	441	**280**	285	**2156**	776
Normalized	20.45%	12.99%	13.22%	100%	35.99%
Standard Deviation	18.3%	10.9%	1.3%	0.5%	32.5%
MariaDB - 16 (Queries/sec)	1250	674	**253**	**3469**	1805
Normalized	36.03%	19.43%	7.29%	100%	52.03%
Standard Deviation	1.5%	52.3%	0.4%	2%	0.2%
MariaDB - 8 (Queries/sec)	1536	578	**260**	**3565**	1872
Normalized	43.09%	16.21%	7.29%	100%	52.51%
Standard Deviation	12.3%	15.2%	4%	3.9%	0.3%
IOR - 256MB (MB/s)	958.47	**914.77**	1593	1528	**2003**
Normalized	47.86%	45.68%	79.54%	76.3%	100%
Standard Deviation	4.1%	44.7%	8%	10.5%	1.1%
FS-Mark - 5.F.1.S.4.T (Files/s)	1406	1333	**335.2**	**2473**	1289
Normalized	56.85%	53.9%	13.55%	100%	52.12%
Standard Deviation	15.4%	1.2%	0.2%	0.8%	1.4%
Flexible IO Tester - Seq Write - IO_uring - No - Yes - 2MB (MB/s)	4017	4088	4733	**5075**	**3736**
Normalized	79.15%	80.55%	93.26%	100%	73.62%
Standard Deviation	43.5%	0.1%	0.5%	1.7%	15.8%
Flexible IO Tester - Seq Read - IO_uring - No - Yes - 2MB (MB/s)	**6436**	4690	6293	6362	**4493**
Normalized	100%	72.87%	97.78%	98.85%	69.81%
Standard Deviation	0%	1.8%	0%	1.2%	6.2%

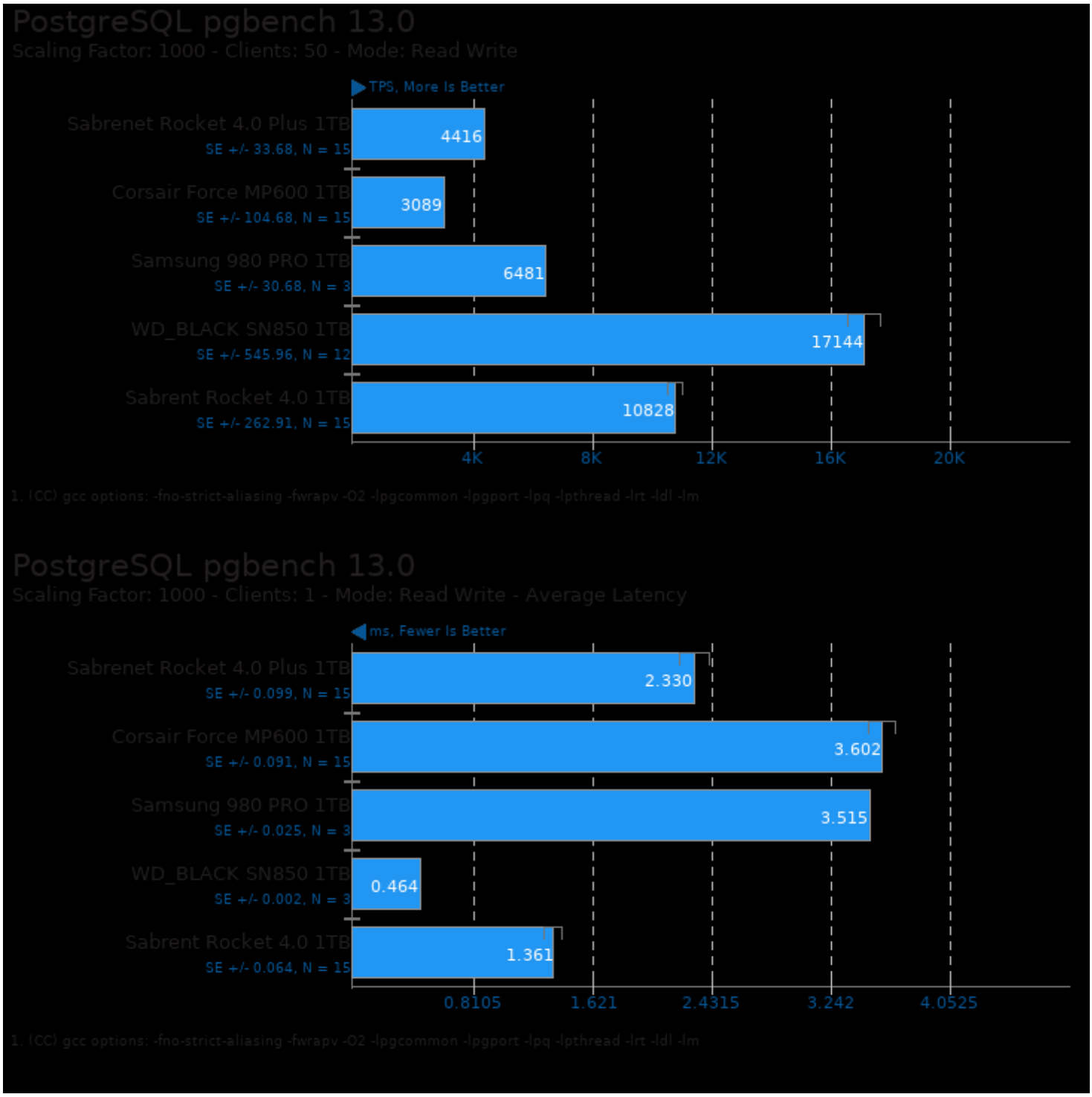
SSD Testing

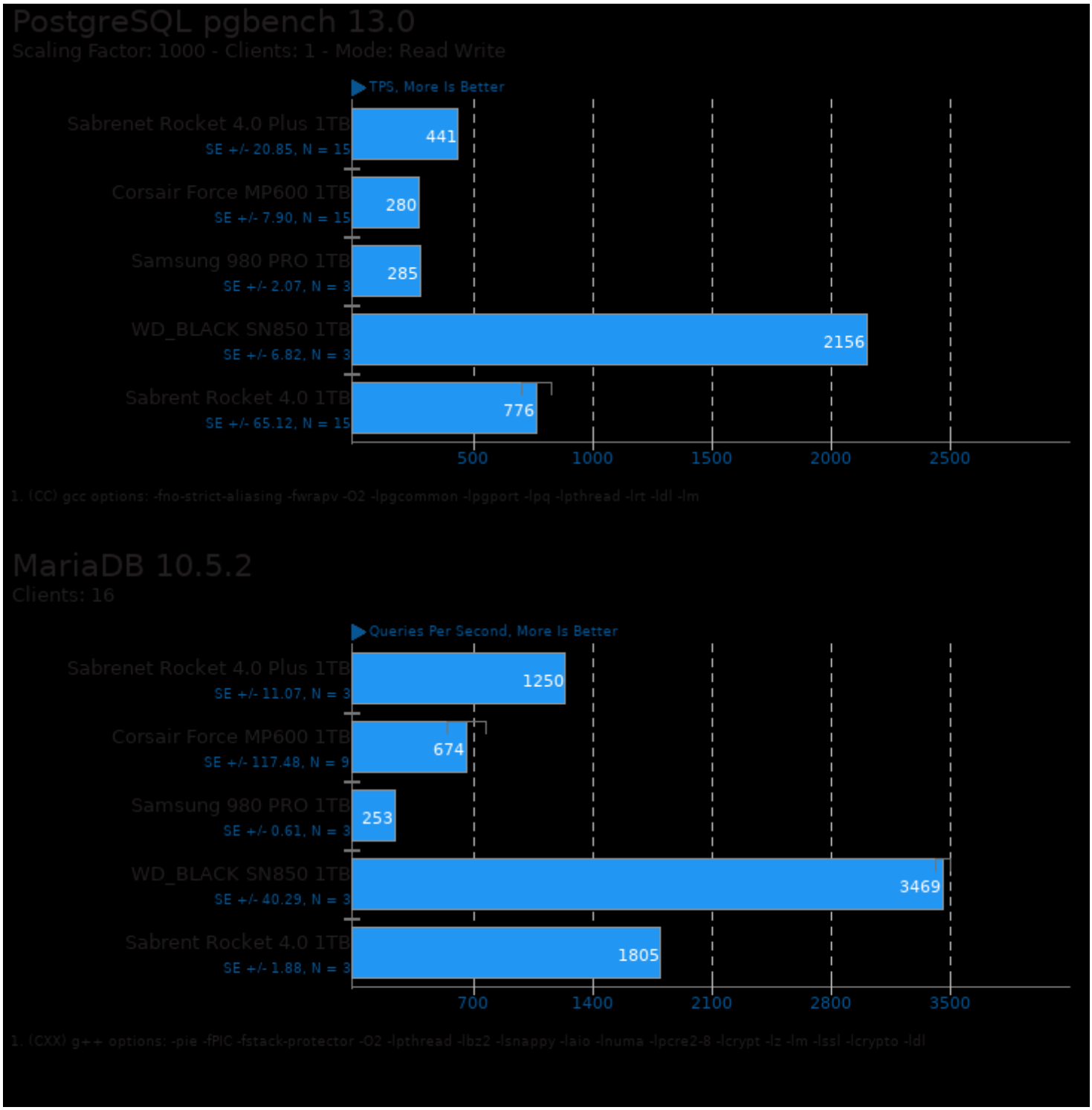
Flexible IO Tester - Rand Write - IO_uring - No - Yes - 4KB (IOPS)	**450750**	**880333**	844667	712000	870333
Normalized	51.2%	100%	95.95%	80.88%	98.86%
Standard Deviation	20.5%	1.2%	0.7%	0.4%	1.7%

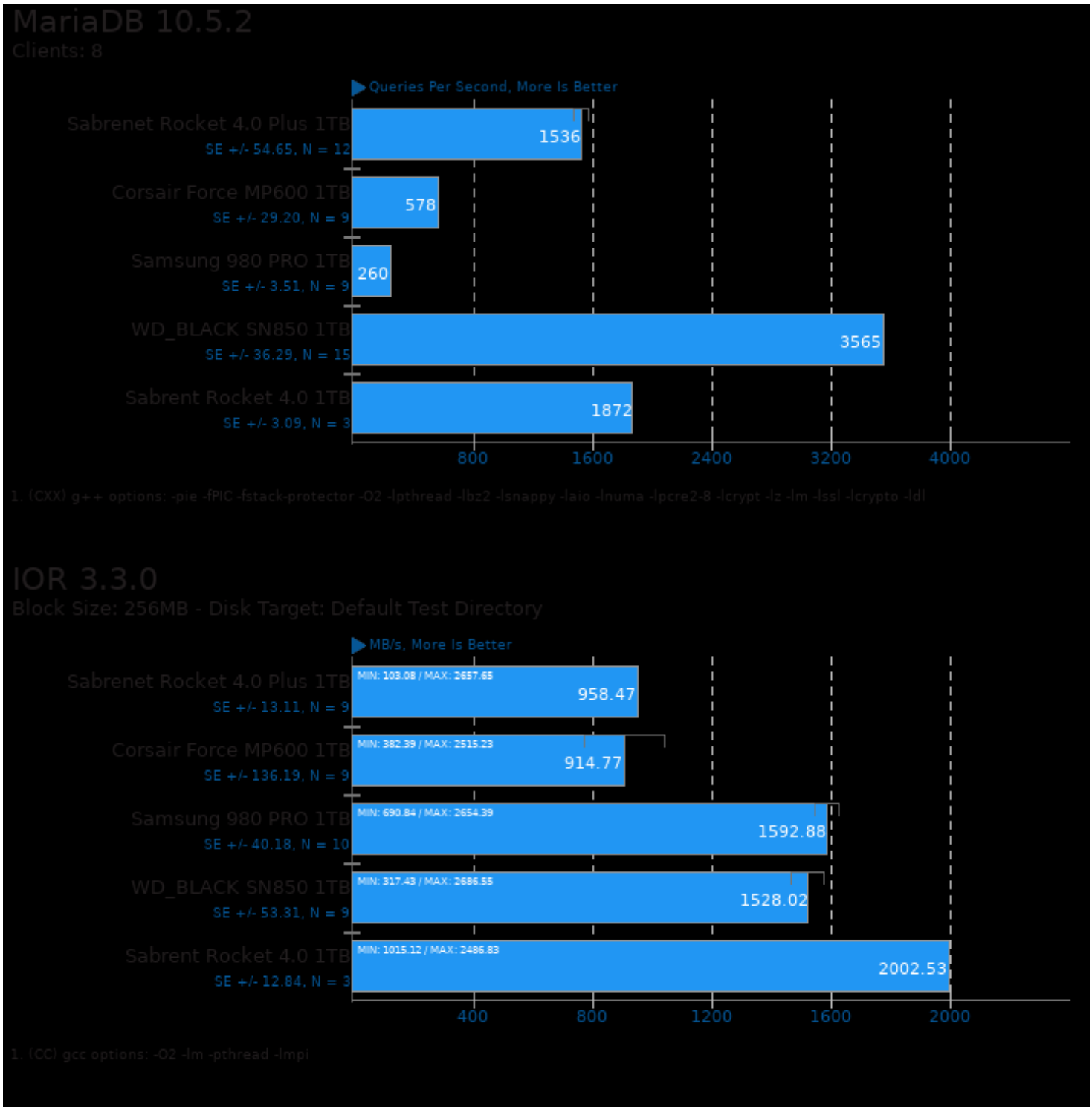

FS-Mark 3.3
Test: 1000 Files, 1MB Size
Files/s, More Is Better
Sabrenet Rocket 4.0 Plus 1TB
SE +/- 1.30, N = 3
668.7
Corsair Force MP600 1TB
SE +/- 1.78, N = 3
721.6
Samsung 980 PRO 1TB
SE +/- 0.17, N = 3
153.4
WD_BLACK SN850 1TB
SE +/- 0.99, N = 3
1038.1
Sabrent Rocket 4.0 1TB
SE +/- 2.10, N = 3
718.7
200
400
600
800
1000
1. (CC) gcc options: -static
FS-Mark 3.3
Test: 4000 Files, 32 Sub Dirs, 1MB Size
Files/s, More Is Better
Sabrenet Rocket 4.0 Plus 1TB
SE +/- 1.24, N = 3
695.5
Corsair Force MP600 1TB
SE +/- 2.36, N = 3
721.2
Samsung 980 PRO 1TB
SE +/- 0.59, N = 3
151.3
WD_BLACK SN850 1TB
SE +/- 3.24, N = 3
1016.2
Sabrent Rocket 4.0 1TB
SE +/- 4.05, N = 3
720.9
200
400
600
800
1000
1. (CC) gcc options: -static


Flexible IO Tester 3.25
Type: Random Read - Engine: IO_uring - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
Sabrenet Rocket 4.0 Plus 1TB
SE +/- 1666.67, N = 3
321667
Corsair Force MP600 1TB
SE +/- 2027.59, N = 3
478667
Samsung 980 PRO 1TB
SE +/- 1452.97, N = 3
779333
WD_BLACK SN850 1TB
SE +/- 1527.53, N = 3
768000
Sabrent Rocket 4.0 1TB
SE +/- 2000.00, N = 3
475000
200K
400K
600K
800K
1000K
1. (CC) gcc options: -rdynamic -ll -lnuma -lrt -lz -lpthread -lm -ldl -laio -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -march=native
Dbench 4.0
Client Count: 6
MB/s, More Is Better
Sabrenet Rocket 4.0 Plus 1TB
SE +/- 0.52, N = 3
1599.96
Corsair Force MP600 1TB
SE +/- 1.35, N = 3
1492.14
Samsung 980 PRO 1TB
SE +/- 0.55, N = 3
222.28
WD_BLACK SN850 1TB
SE +/- 2.41, N = 3
2656.17
Sabrent Rocket 4.0 1TB
SE +/- 2.98, N = 3
1485.24
600
1200
1800
2400
3000
1. (CC) gcc options: -lpopt -O2


IOR 3.3.0
Block Size: 2MB - Disk Target: Default Test Directory
MB/s, More Is Better
Sabrenet Rocket 4.0 Plus 1TB
SE +/- 14.12, N = 3
MIN: 538.41 / MAX: 2288.2
1591.67
Corsair Force MP600 1TB
SE +/- 15.86, N = 15
MIN: 415.74 / MAX: 2348.75
1502.69
Samsung 980 PRO 1TB
SE +/- 8.34, N = 3
MIN: 345.27 / MAX: 1091.72
850.08
WD_BLACK SN850 1TB
SE +/- 17.96, N = 12
MIN: 937.28 / MAX: 2640.46
1608.29
Sabrent Rocket 4.0 1TB
SE +/- 11.26, N = 3
MIN: 952.7 / MAX: 1986.51
1524.07
300
600
900
1200
1500
1. (CC) gcc options: -O2 -lm -pthread -lmpi
PostgreSQL pgbench 13.0
Scaling Factor: 1000 - Clients: 50 - Mode: Read Write - Average Latency
ms, Fewer Is Better
Sabrenet Rocket 4.0 Plus 1TB
SE +/- 0.086, N = 15
11.334
Corsair Force MP600 1TB
SE +/- 0.535, N = 15
16.439
Samsung 980 PRO 1TB
SE +/- 0.037, N = 3
7.717
WD_BLACK SN850 1TB
SE +/- 0.090, N = 12
2.948
Sabrent Rocket 4.0 1TB
SE +/- 0.117, N = 15
4.658
4
8
12
16
20
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

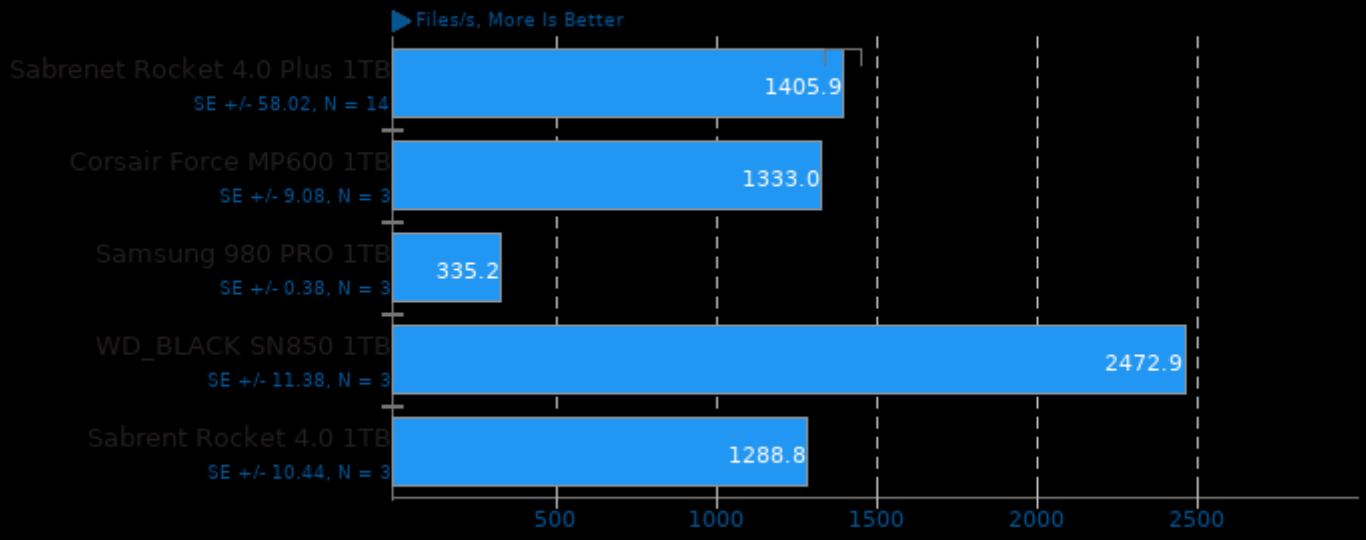

PostgreSQL pgbench 13.0
Scaling Factor: 1000 - Clients: 50 - Mode: Read Write
TPS, More Is Better
Sabrenet Rocket 4.0 Plus 1TB
SE +/- 33.68, N = 15
4416
Corsair Force MP600 1TB
SE +/- 104.68, N = 15
3089
Samsung 980 PRO 1TB
SE +/- 30.68, N = 3
6481
WD_BLACK SN850 1TB
SE +/- 545.96, N = 12
17144
Sabrent Rocket 4.0 1TB
SE +/- 262.91, N = 15
10828
4K
8K
12K
16K
20K
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm
PostgreSQL pgbench 13.0
Scaling Factor: 1000 - Clients: 1 - Mode: Read Write - Average Latency
ms, Fewer Is Better
Sabrenet Rocket 4.0 Plus 1TB
SE +/- 0.099, N = 15
2.330
Corsair Force MP600 1TB
SE +/- 0.091, N = 15
3.602
Samsung 980 PRO 1TB
SE +/- 0.025, N = 3
3.515
WD_BLACK SN850 1TB
SE +/- 0.002, N = 3
0.464
Sabrent Rocket 4.0 1TB
SE +/- 0.064, N = 15
1.361
0.8105
1.621
2.4315
3.242
4.0525
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm


PostgreSQL pgbench 13.0
Scaling Factor: 1000 - Clients: 1 - Mode: Read Write
TPS, More Is Better
Sabrenet Rocket 4.0 Plus 1TB
SE +/- 20.85, N = 15
441
Corsair Force MP600 1TB
SE +/- 7.90, N = 15
280
Samsung 980 PRO 1TB
SE +/- 2.07, N = 3
285
WD_BLACK SN850 1TB
SE +/- 6.82, N = 3
2156
Sabrent Rocket 4.0 1TB
SE +/- 65.12, N = 15
776
500
1000
1500
2000
2500
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm
MariaDB 10.5.2
Clients: 16
Queries Per Second, More Is Better
Sabrenet Rocket 4.0 Plus 1TB
SE +/- 11.07, N = 3
1250
Corsair Force MP600 1TB
SE +/- 117.48, N = 9
674
Samsung 980 PRO 1TB
SE +/- 0.61, N = 3
253
WD_BLACK SN850 1TB
SE +/- 40.29, N = 3
3469
Sabrent Rocket 4.0 1TB
SE +/- 1.88, N = 3
1805
700
1400
2100
2800
3500
1. (CXX) g++ options: -pie -fPIC -fstack-protector -O2 -lpthread -lbz2 -lsnappy -laio -lnuma -lpcre2-8 -lcrypt -lz -lm -lssl -lcrypto -ldl


MariaDB 10.5.2
Clients: 8
Queries Per Second, More Is Better
Sabrenet Rocket 4.0 Plus 1TB
SE +/- 54.65, N = 12
1536
Corsair Force MP600 1TB
SE +/- 29.20, N = 9
578
Samsung 980 PRO 1TB
SE +/- 3.51, N = 9
260
WD_BLACK SN850 1TB
SE +/- 36.29, N = 15
3565
Sabrent Rocket 4.0 1TB
SE +/- 3.09, N = 3
1872
800
1600
2400
3200
4000
1. (CXX) g++ options: -pie -fPIC -fstack-protector -O2 -lpthread -lbz2 -lsnappy -laio -lnuma -lpcre2-8 -lcrypt -lz -lm -lssl -lcrypto -ldl
IOR 3.3.0
Block Size: 256MB - Disk Target: Default Test Directory
MB/s, More Is Better
Sabrenet Rocket 4.0 Plus 1TB
SE +/- 13.11, N = 9
MIN: 103.08 / MAX: 2657.65
958.47
Corsair Force MP600 1TB
SE +/- 136.19, N = 9
MIN: 382.39 / MAX: 2515.23
914.77
Samsung 980 PRO 1TB
SE +/- 40.18, N = 10
MIN: 690.84 / MAX: 2654.39
1592.88
WD_BLACK SN850 1TB
SE +/- 53.31, N = 9
MIN: 317.43 / MAX: 2686.55
1528.02
Sabrent Rocket 4.0 1TB
SE +/- 12.84, N = 3
MIN: 1015.12 / MAX: 2486.83
2002.53
400
800
1200
1600
2000
1. (CC) gcc options: -O2 -lm -pthread -lmpi

FS-Mark 3.3

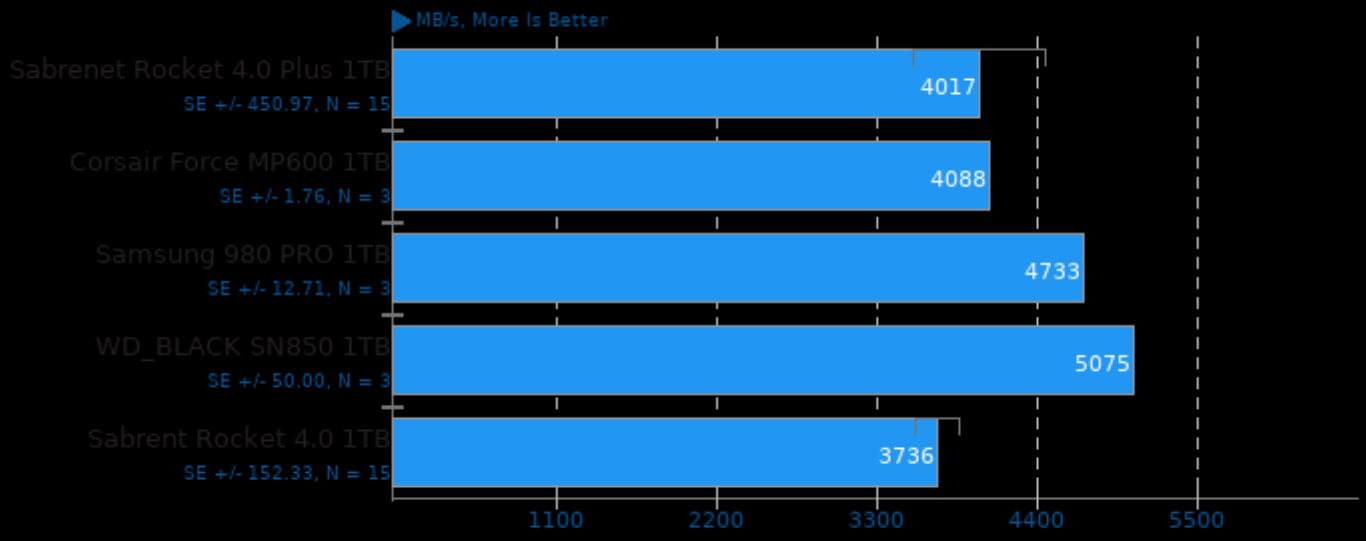
Test: 5000 Files, 1MB Size, 4 Threads



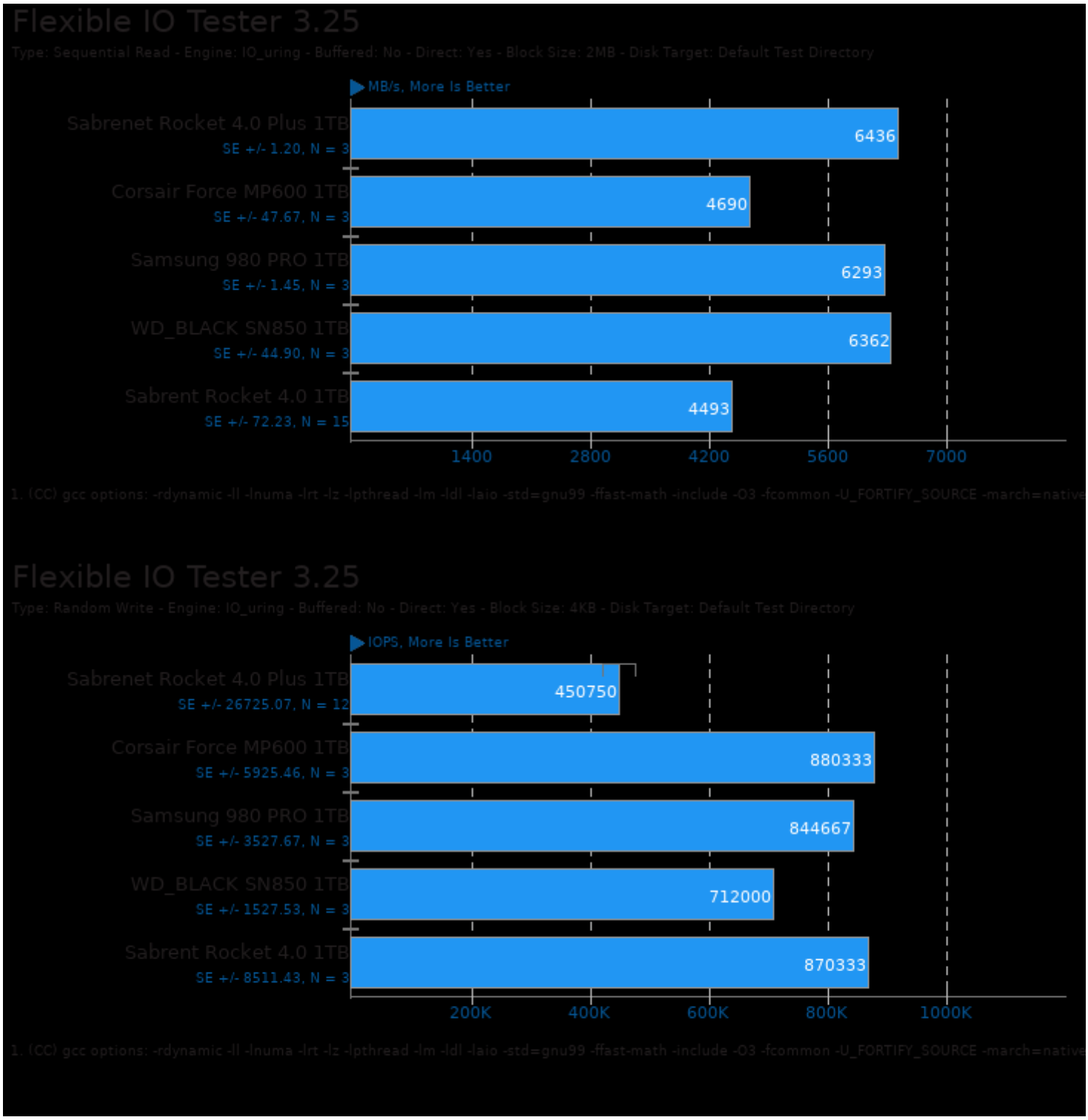
1. (CC) gcc options: -static

Flexible IO Tester 3.25

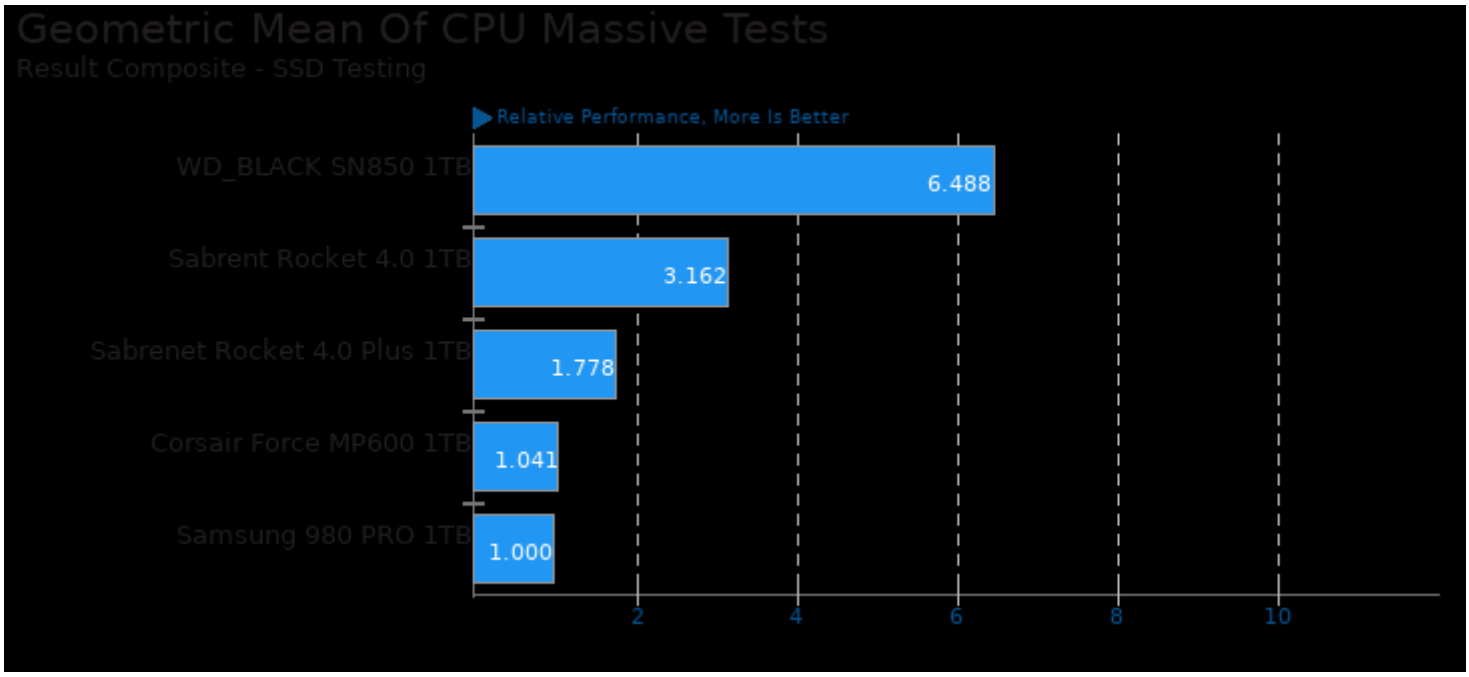
Type: Sequential Write - Engine: IO_uring - Buffered: No - Direct: Yes - Block Size: 2MB - Disk Target: Default Test Directory



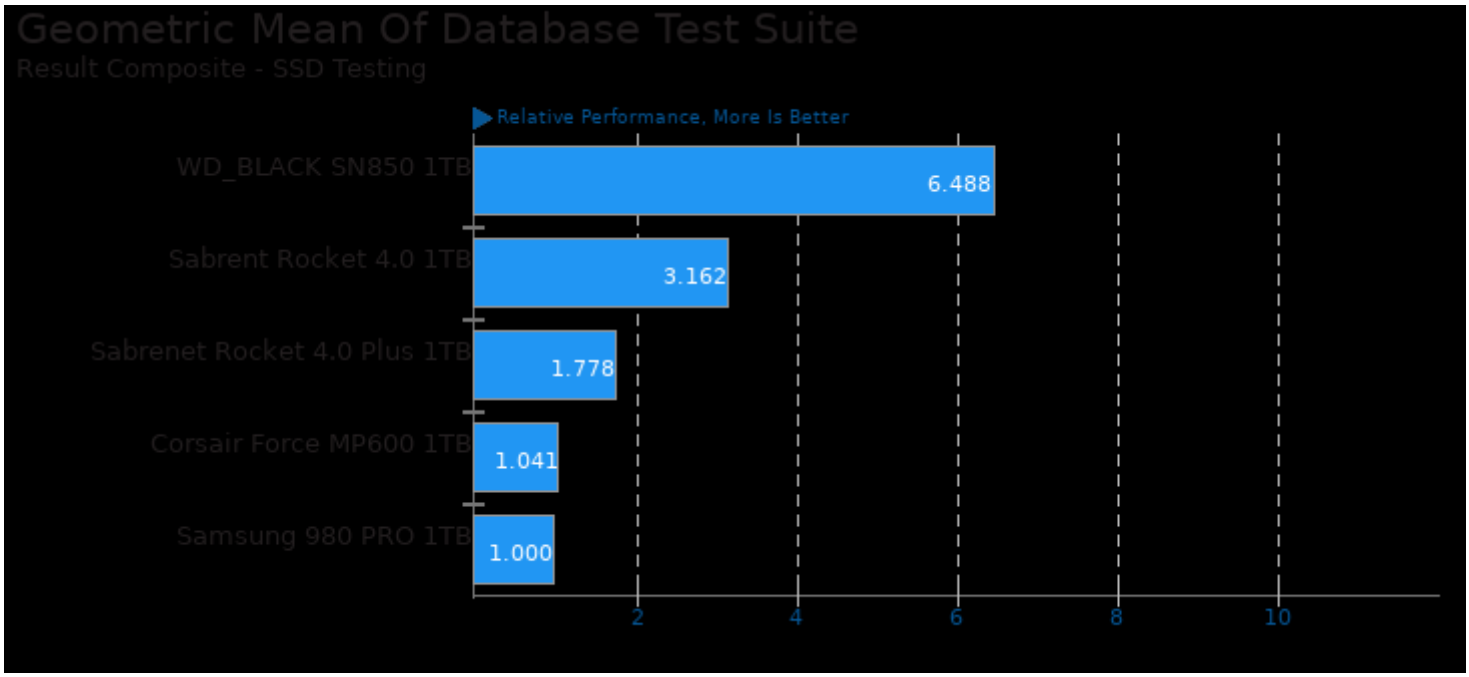
1. (CC) gcc options: -rdynamic -ll -lnuma -lrt -lz -lpthread -lm -ldl -laio -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -march=native


Flexible IO Tester 3.25
Type: Sequential Read - Engine: IO_uring - Buffered: No - Direct: Yes - Block Size: 2MB - Disk Target: Default Test Directory
MB/s, More Is Better
Sabrenet Rocket 4.0 Plus 1TB
SE +/- 1.20, N = 3
6436
Corsair Force MP600 1TB
SE +/- 47.67, N = 3
4690
Samsung 980 PRO 1TB
SE +/- 1.45, N = 3
6293
WD_BLACK SN850 1TB
SE +/- 44.90, N = 3
6362
Sabrent Rocket 4.0 1TB
SE +/- 72.23, N = 15
4493
1400
2800
4200
5600
7000
1. (CC) gcc options: -rdynamic -ll -lnuma -lrt -lz -lpthread -lm -ldl -laio -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -march=native
Flexible IO Tester 3.25
Type: Random Write - Engine: IO_uring - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
Sabrenet Rocket 4.0 Plus 1TB
SE +/- 26725.07, N = 12
450750
Corsair Force MP600 1TB
SE +/- 5925.46, N = 3
880333
Samsung 980 PRO 1TB
SE +/- 3527.67, N = 3
844667
WD_BLACK SN850 1TB
SE +/- 1527.53, N = 3
712000
Sabrent Rocket 4.0 1TB
SE +/- 8511.43, N = 3
870333
200K
400K
600K
800K
1000K
1. (CC) gcc options: -rdynamic -ll -lnuma -lrt -lz -lpthread -lm -ldl -laio -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -march=native

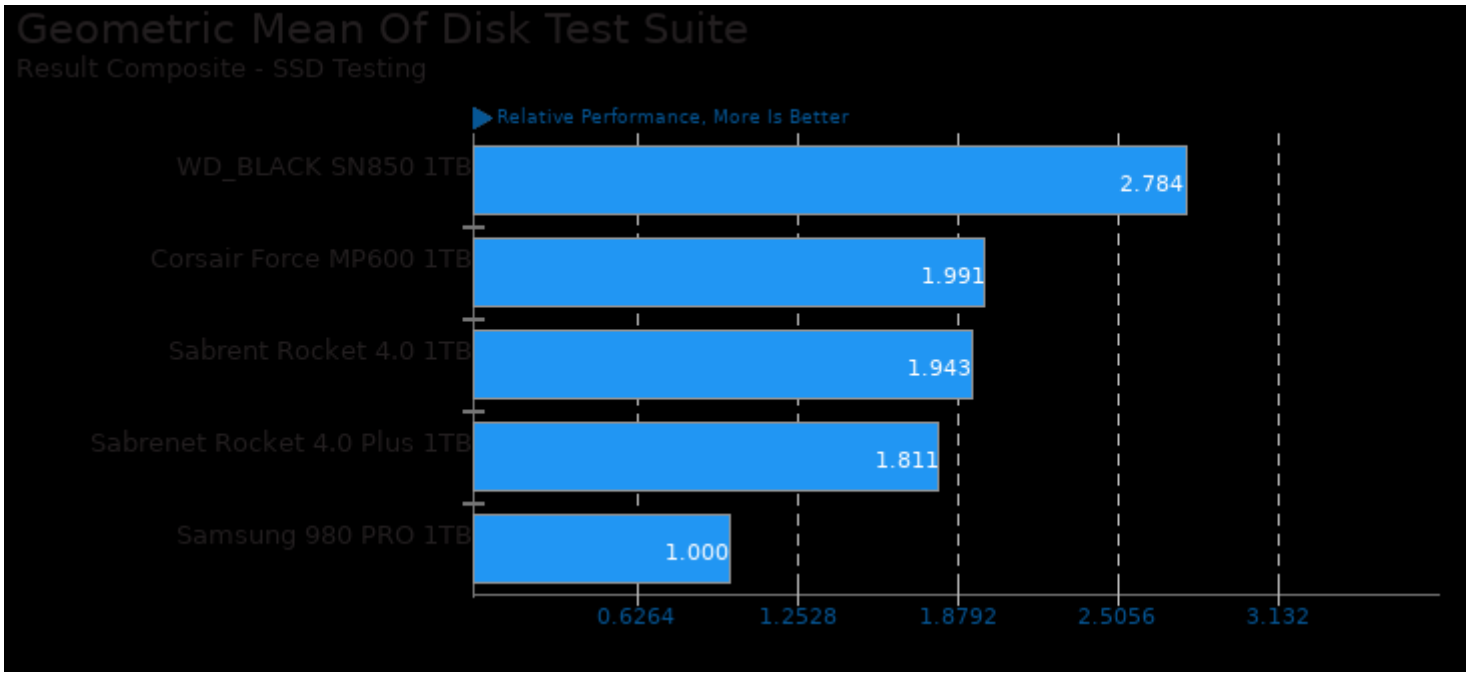
These geometric means are based upon test groupings / test suites for this result file.



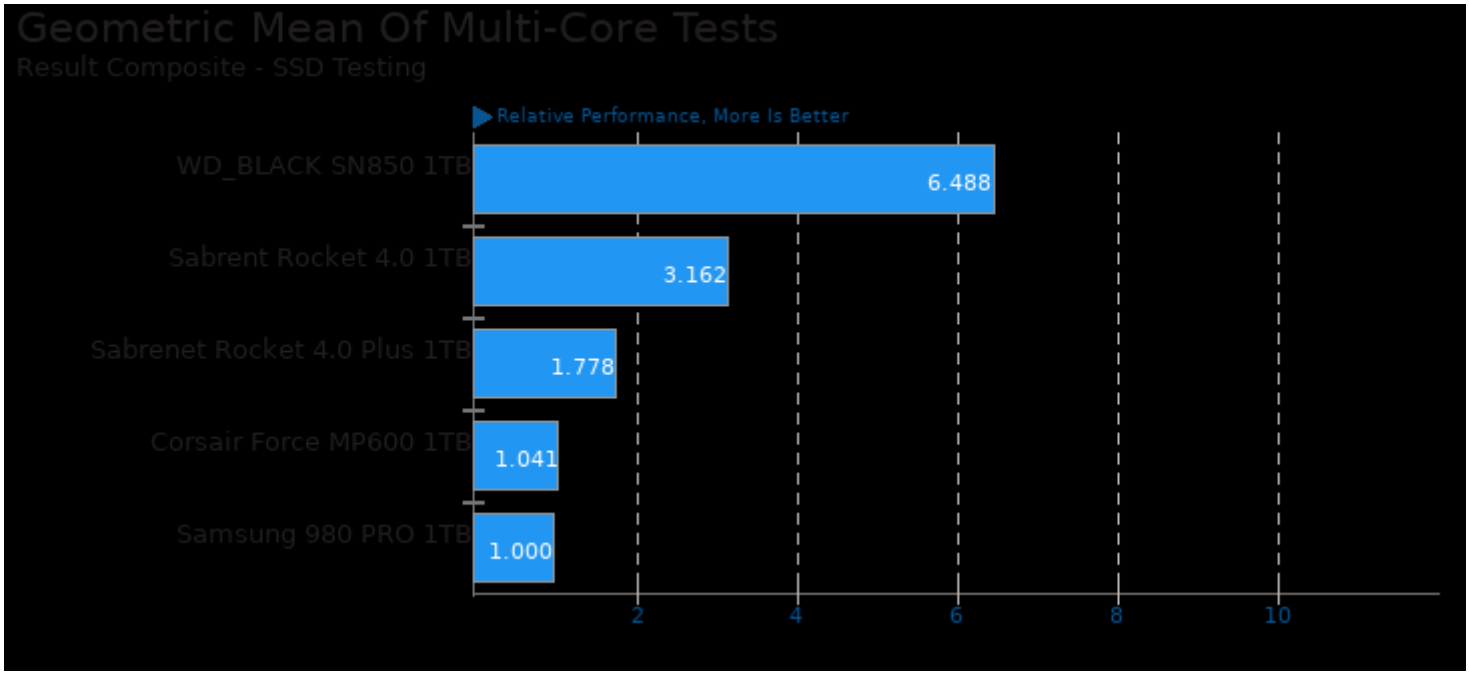
Geometric mean based upon tests: pts/mysqlslap and pts/pgbench



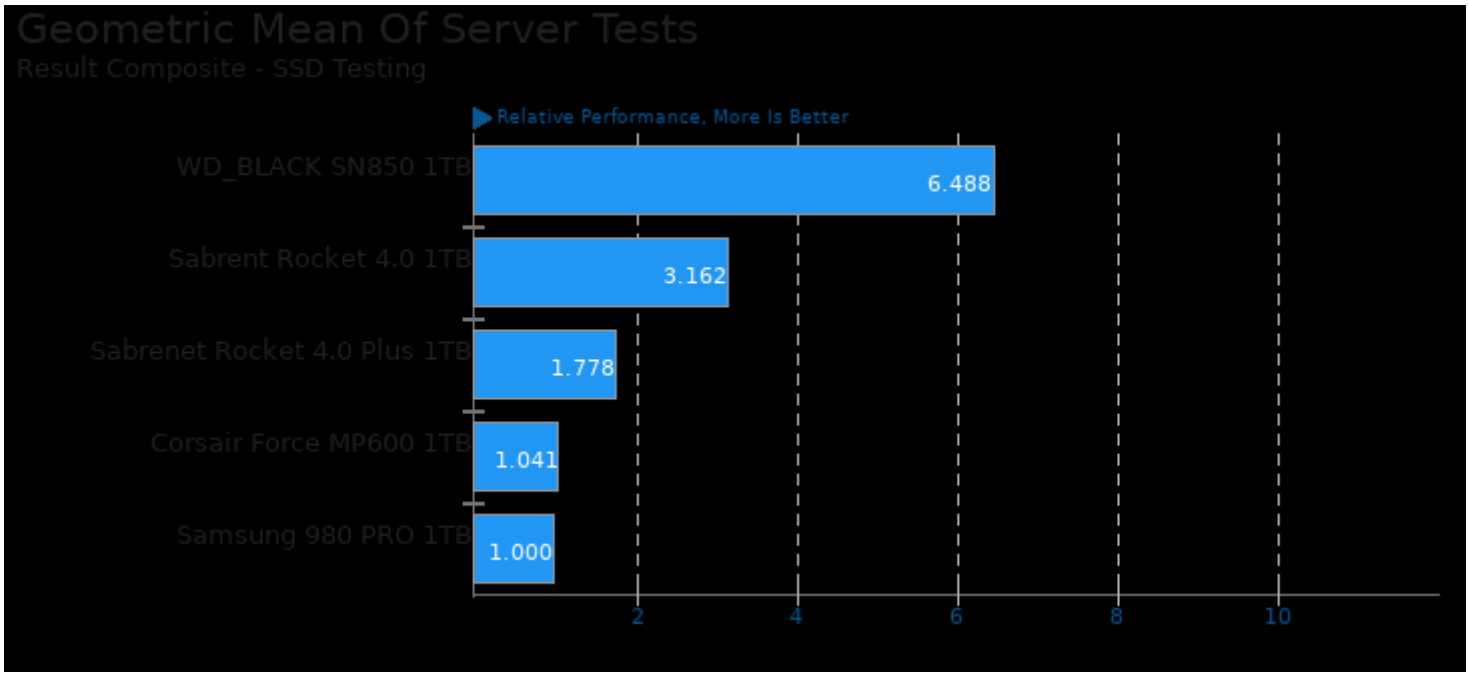
Geometric mean based upon tests: pts/pgbench and pts/mysqlslap



Geometric mean based upon tests: pts/fs-mark, pts/dbench and pts/fio



Geometric mean based upon tests: pts/mysqlslap and pts/pgbench



Geometric mean based upon tests: pts/mysqlslap and pts/pgbench

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 05:59.